# FORM 10-K

Annual report pursuant to section 13 and 15(d)

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## FILER

**Quantum Computing Inc.**

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Mailing Address
*5 MARINE VIEW PLZ, SUITE 214*
*HOBOKEN NJ 07030*

Business Address
*5 MARINE VIEW PLZ, SUITE 214*
*HOBOKEN NJ 07030*
*703-436-2161*

**UNITED STATES**
**SECURITIES AND EXCHANGE COMMISSION**
**Washington, D.C. 20549**

**FORM 10-K**

(Mark One)
☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2023

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________________ to __________________

Commission File Number 001-40615

**QUANTUM COMPUTING INC.**
(Exact name of registrant as specified in its charter)

| **Delaware** | **82-4533053** |
|---|---|
| (State or other jurisdiction of incorporation or organization) | (I.R.S Employer Identification No.) |
| **5 Marine View Plaza, Suite 214, Hoboken, NJ** | **07030** |
| (Address of principal executive offices) | (Zip Code) |

Registrant's telephone number, including area code (703) 436-2121

Securities registered pursuant to Section 12(b) of the Act:

| **Title of each class** | **Trading Symbol(s)** | **Name of each exchange on which registered** |
|---|---|---|
| Common Stock, par value $.0001 | QUBT | The Nasdaq Stock Market LLC |

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

| | | | |
|---|---|---|---|
| Large accelerated filer | ☐ | Accelerated filer | ☐ |
| Non-accelerated filer | ☐ | Smaller reporting company | ☒ |

Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒.

The aggregate market value of the voting and non-voting common stock held by non-affiliates of the registrant as of June 30, 2023 was $46,073,808 based on the closing price of $1.18 per share of Quantum Computing, Inc. common stock on the Nasdaq Stock Market LLC on that date.

As of March 28, 2024, there were 91,357,640 shares of the registrant's common stock issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE
None

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**Introductory Comments**

Throughout this Annual Report on Form 10-K, the terms "we," "us," "our," "the Company," "our Company," "QCi" and "QUBT," refer to Quantum Computing Inc., a Delaware corporation, and unless the context indicates otherwise, also includes our wholly-owned subsidiaries.



## PART I

## FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). In some cases, forward-looking statements are identified by terms such as "may," "will," "should," "could," "would," "expects," "plans," "anticipates," "believes," "estimates," "projects," "predicts," "potential" and similar expressions intended to identify forward-looking statements.

These forward-looking statements are only predictions and involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by such forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date of this Annual Report on Form 10-K. Except as otherwise required by law, we expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statement contained in this Annual Report on Form 10-K to reflect any change in our expectations or any change in events, conditions or circumstances on which any of our forward-looking statements are based. Factors that could cause or contribute to differences in our future financial and other results include those discussed in the risk factors set forth in Part I, Item 1A of this Annual Report on Form 10-K as well as those discussed elsewhere in this Annual Report on Form 10-K. We qualify all of our forward-looking statements by these cautionary statements.

## ITEM 1. BUSINESS.

### The Computing Landscape and The End of Moore's Law

For the past 45 years or so, silicon-based processor manufacturers have been able to double their processing power every 18 to 24 months, a phenomenon known in the computer industry as "Moore's Law." Recently, the computer processor industry has found it increasingly difficult to offer faster, more powerful processors due to fundamental physical effects limiting further size reduction of transistors.

Additionally, conventional computers are known to struggle with optimization problems known as *NP-complete* problems, which are a class of mathematical problems that can, in principle, be solved by conventional computers, with that caveat that the time to solution will grow exponentially with the size of the problem. These NP-complete problems require complex calculations that cannot currently be performed within any reasonable amount of time using conventional computer systems for problem sizes relevant to many industrial and government applications. Published academic research indicates that quantum computers may be ideally suited to solve optimization problems of this type.

Some computer science experts believe that quantum computing will be a potential solution to the hard limits now being approached by conventional computers that utilize silicon-based processors. While the date of practical relevance of quantum computers is hard to determine, we believe that quantum availability has already begun and that quantum computers with gradually increasing performance will be introduced by multiple vendors over the course of the next decade.

### The Company

Quantum Computing Inc. ("QCi" or the "Company") is an American company utilizing non-linear quantum optics (optical devices whose output due to quantum effects is exponentially, not linearly, related to inputs) to deliver quantum products for high-performance computing applications. QCi's products are designed to operate at room temperature and use low power. Our core technology enables the execution of a go-to-market strategy that emphasizes accessibility and affordability as the key selling points.

QCi was founded in 2018 and our initial business was developing platform agnostic enterprise software for quantum computing systems. In June 2022, QCi acquired its wholly-owned subsidiary QPhoton, Inc. (subsequently renamed QPhoton, LLC) ("QPhoton"), a photonics hardware company (the "QPhoton Merger"). That merger enables QCi to now offer high-performance quantum systems integrated with the Company's software platform, Qatalyst, that existed before the QPhoton Merger.



QCi's core technology is Entropy Quantum Computing ("EQC"). EQC is a patent pending methodology that utilizes the environment to drive controlled energy loss in a photonic architecture. Using quantum measurements of single photons as a source of feedback, the energy loss of the system is driven to a "ground state solution" where additional computational iterations no longer change the output. The ground state solution is the optimized result (the answer to the problem posed). This methodology allows for very low power consumption and room temperature operation. Also, due to the nature of the measurement and feedback process, EQC drives non-linear quantum interactions for "dense, fully connected" problem solving. We anticipate that our core technologies will enable us to develop and produce multiple generations of quantum machines with increasing computational power, capacity, and speed, as well as the eventual hardware miniaturization to produce optical integrated circuits to replace the discrete components currently used. We expect these systems to deliver performance advantages over classical computational machines with the long-term goal of solving complex problems more effectively and efficiently with greater scalability, lower power consumption, and lower cost.

In addition to our photonic computing platform, we have leveraged QCi's core technology to demonstrate powerful quantum sensing use cases in LIDAR (Light Detection and Ranging), reservoir computing (a form of neural network that can be used in machine learning applications) and quantum cyber authentication (a method for highly secure communication within a network). Several of these important technologies are already in early stages of commercialization.

Our longer-term product development plan is to migrate product designs based on discrete components to a set of optical integrated circuits built on wafers using a crystalline material called lithium niobate ("Thin Film Lithium Niobate" or "TFLN"). The Company believes that TFLN is an excellent material for design and implementation of optical integrated circuits suitable for our quantum computing and sensing products because it is crystal based and hence can have optical waveguides directly etched into the material. QCi possesses strong domain experience and intellectual property in TFLN design and chip fabrication and has completed initial production of several specialty devices such as electro-optical modulators ("EOM's"). The Company has begun buildout of a state-of-the-art TFLN chip manufacturing facility in a leased space within Arizona State University's Research Park in Tempe, Arizona. The Company's understanding is that this could be the nation's first dedicated optical integrated circuit manufacturing facility using TFLN wafers to achieve quantum effects. Our plan for the facility is to produce a range of custom lithium niobate chips for use in our own product lines as well as chips for sale in the commercial market. The Company has plans to support this initiative by applying for funding for distinct uses under both the Title 17 Clean Energy Financing Program managed by the US Department of Energy's Loan Programs Office and also the Creating Helpful Incentives to Produce Semiconductors Act of 2022 (the "CHIPS Act"), which allocates $52 billion for the revitalization and onshoring of semiconductor manufacturing in the U.S. The CHIPS Act funding specifically includes $39 billion in manufacturing incentives and $13 billion to support new research and development.

The recent market report published by *Market Research Reports: Document ID: LPI08232779; Published August 8, 2023* "**Thin Film Lithium Niobate Market Forecast 2023 – 2029**," indicates a significant underlying market growth for TFLN devices. The study covers use applications and segments that suggest the global TFLN EOM market, valued at $190.4 million in 2022, is forecast to grow an estimated $1,931.3 million by 2029 - a compound annual growth rate of 39 percent. The report further describes that the demand increase is principally driven by the material advantages that were summarized above. Specifically, TFLN EOM's have the advantages of large bandwidth, low power consumption, and small size.



**Our Strategy**

QCi's strategy is to provide a range of accessible and affordable quantum machines to commercial and government markets. Our proprietary technology is central to our strategy because we believe that it enables us to leverage the advantages of size, weight, power and cost (over competing cryogenic products to drive market adoption and volume of sales.

In addition to cloud-based access to our quantum computers, we offer on premises installation of our EQC product, rack-mountable and compatible with standard server room infrastructure requiring no need for special cooling, shielding, or power considerations. The Company believes the EQC's small rack-mountable size and low-energy consumption provides a substantial competitive edge as compared to superconducting, cryogenic quantum systems offered by competitors that are also designed to solve optimization problems.

We believe that the practical benefits to the customer of QCi's core offerings are:

- Powerful performance in speed and quality of solution for large complex optimization problems
- Plug and play compatibility with existing IT infrastructure
- Low power consumption – normal operation under 80 watts
- Scalability with potential for migration to nanophotonic system-on-a-chip designs

**Market Opportunity**

Despite enormous growth in the capabilities of conventional computers and silicon microprocessors, some of the world's most important computational problems are still considered impractical to solve in a reasonable period of time. Quantum computing represents a potential alternative approach to solving those problems because quantum computers apply the properties of quantum physics to operate in a fundamentally different way. Conventional computer chips use binary bits (ones and zeros) to represent information. Quantum computers utilize qubits (quantum bits), which leverage some of the properties of quantum physics, namely superposition and entanglement, to process computations that would be intractably difficult using conventional computers.

While quantum-based computers will not replace conventional computers in most applications, they are ideally suited to run optimization algorithms, as well as to calculate certain sensing, imaging, and cybersecurity problems that are beyond the reach of general silicon-based computing today. The Company believes that quantum solutions have the potential to bring order of magnitude advances in the fields of medicine, engineering, autonomous vehicles, and cybersecurity and that the demand for quantum computing in these market sectors will likely outpace and outperform the general-purpose computing market in the near- to mid-term and into the foreseeable future.

Our core technology offers practical, cost-effective solutions that materially advance the adoption of quantum machines across several market segments including:

1. Quantum Computing
2. Quantum Intelligence (Artificial Intelligence and Machine Learning)
3. Remote Sensing
4. Imaging
5. Cybersecurity



**Products and Products in Development**

The Company believes it is well-positioned in the marketplace due to the Company's core technology in integrated photonics that allows QCi to offer a suite of quantum machines and solutions to the market today with a robust technology roadmap for the future. The merger with QPhoton has broadened the Company's technology portfolio and enables us to develop a group of closely related products to EQC, based on our common core photonic technology.

**TFLN Optical Chips**

We believe that TFLN optical integrated circuits ("TFLN Optical Chips") will ultimately provide the greatest scalability and performance advantages for quantum information processing, sensing and imaging. The Company is developing proprietary chip designs and is completing a dedicated chip fabrication facility to develop and produce TFLN Optical Chips for quantum information processing and other single photon detection and sensing applications.

**Quantum Computing**

*Entropy Quantum Computer*

The core of QCi's hardware offering is the EQC, which leverages the principle of open quantum systems, meaning that the EQC does not need to be isolated from the outside world in order to function. The EQC differs from the more common gate-model architectures by using the entropy in the environment as a useful source of energy rather than as a source of noise. As a result, the EQC can operate in normal server room environments with a high degree of stability. The EQC works by encoding a problem into a photonic signal and then carefully modulating the loss of energy in the system, iterating until the system reaches the ground state (or optimal configuration) solution. The non-linear coupling of an optical feedback loop in the system enables full connectivity among all of the variables of a complex problem.

QCi launched a new EQC device during the first quarter of 2024 (Dirac-3) and plans to release a series of additional EQC products in the coming months and years. This planned evolution of technology and product enhancements will involve improving the size and capacity of the EQC machines, as well as speed, scalability and performance fidelity. The EQC is available both as a cloud-based subscription service, similar to other quantum machines, as well as an affordable on premises solution.

*Qatalyst*

QCi's evolution into quantum hardware computing was enabled by the prior creation of its Qatalyst software. The Qatalyst development platform was QCi's answer to the broader industry's current approach to quantum software development, which relies on highly trained scientists working with software development kits ("SDKs") at the circuit level, instead of a high-level language, which requires deep level quantum expertise to create quantum workflows. Qatalyst is not a tool kit, rather, a complete platform. Qatalyst enables developers to create and execute quantum-ready applications on conventional computers as well as multiple quantum computers. Users can call upon the same Qatalyst APIs (Application Programming Interfaces) on conventional computers to achieve optimization performance advantages using our cloud-based solution. We originally designed Qatalyst to facilitate access to multiple quantum processing units including Rigetti, Oxford Quantum Circuits and IonQ, QuEra, and Xanadu via the Amazon Web Services ("AWS") cloud-based Braket service. Qatalyst is now the interface to QCi's own EQC systems.



**Quantum Intelligence (Artificial Intelligence and Machine Learning)**

*Reservoir Computer*

Launched in June 2023, our first reservoir computing product is an edge device that is FPGA-based and optimized for recurrent neural network applications. "Compute at the edge" means to process, measure and analyze data locally (at the device) vs. over a network where data must be sent over the internet or through some cloud service. QCi's Reservoir Computer ("RC") is a standalone box that can be plugged into a local computer or server without having to connect over the internet. The RC hardware system's advantages over the more traditional software approaches to reservoir computing include significantly faster processing speeds, 80% - 95% less energy consumption, portability (size of power bank), affordability, and requiring significantly shorter training time. The RC delivers superior performance in time dependent tasks, such as chaotic time series prediction, unstructured financial model prediction, natural language processing and weather forecasting. Being deployed at a "compute at the edge" device, which provides the advantage of allowing data analysis to occur at the data collection point, reducing latency and dependency on network connections and providing more real-time processing of data. To date, the market for reservoir computing has been limited due to computing cost and technical implementation complexities, which the RC is designed to address. We anticipate that future generations of the RC will introduce greater speed of performance and scalability. This will enable the RC to participate in the large language model training and other applications. While technology challenges do remain in scaling this technology, this is one of the focus areas for QCi to gain significant share in the artificial intelligence / Machine Learning hardware market.

**Remote Sensing**

*LiDAR Applications*

QCi's Quantum LiDAR uses patented methodologies that leverage the selective use of quantum spatial-temporal modes to maximize the signal-to-noise ratio of weak information signals in a high noise background. This technology advancement allows QCi systems to see through dense fog and provide image fidelity at great distances with very high resolution in difficult environments such as snow, ice, and water. The practical benefits on payload and signal to noise enhancement can be used to produce LiDAR systems that are greatly enhanced in their ability to measure at improved resolution and distances from aircraft, drones and even satellites.

*Quantum Photonic Vibrometer*

Launched July 2023, QCi's Photonic Vibrometer is a proprietary, powerful instrument for remote vibration detection, sensing, and inspection. This device offers significant advancements in sensitivity, speed, and resolution, capable of discerning for the first time, highly obscured and non-line-of-sight objects. The first in the series of the system measures the vibration frequency of a remote target by utilizing fast-gated single photon counting to directly detect returning photons whose wavefunctions are dynamically modulated as they are reflected off the target. By counting photons at a megahertz rate, important properties such as material composition and mechanical integrity can be determined within seconds and, depending on detection distance, with microwatt to milliwatt optical power. Working at an eye-safe wavelength, the system can accurately characterize the vibration spectra of solid or liquid targets with vibration amplitude as small as 100 nanometers. The system can also remotely sense through obscured media or around corners where there is no line of sight, implying new capabilities in remote sensing, voice recognition, and ex vivo diagnostics.

We expect subsequent photonic vibrometer versions, currently under development, to reach significantly greater distances, minimize device footprint and weight, and optimize data gathering in increasingly challenging environmental conditions (for example, underground, underwater and at high altitudes affixed to a drone, plane or space-based platforms).

## Imaging

*Optical Imaging*

By leveraging the ability to count single photons, a key to the EQC, and filter their associated wave functions precisely, we can obtain optical imaging through otherwise opaque and dense materials. Quantum imaging has the potential to be a powerful supplement to modern reconstructed computerized tomography (CAT Scan) imaging applications, where tissue damage from high energy radiation needs to be avoided. We have built and are currently testing a prototype quantum imaging system.



## Cybersecurity

*Quantum Networks and Quantum Authentication*

QCi has developed a system to address one of the major challenges in cybersecurity, authentication of users on a network, which is currently facilitated by the distribution of "private keys" by a trusted third party. This approach is inherently insecure as keys are bundled and travel with the encrypted data, making it susceptible to harvest-and-decrypt-later vulnerability. QCi has developed a quantum authentication technology and methodology that eliminates the need for trust of third-party involvement in key distribution. Our approach uses a combination of a high-powered laser and a patented detection methodology deeply rooted in the fundamental principles of quantum mechanics, resulting in what we believe will be an unbreakable basis for private network communication.

**Industry Overview**

Quantum computing is a component of the large and global high-performance computing industry, which is comprised of hardware, software, and services for compute-intensive applications. The rapid adoption of technologies such as artificial intelligence, 3D imaging, artificial intelligence/large language models, and the Internet of Things (IoT), have served to exponentially increase the generation of data, driving up the demand for high-performance computing. Estimates of the size of this industry vary, but according to Grand View Research, the high-performance computing market was valued at $39.1 billion in 2019 and is expected to reach a value of $53.6 billion by 2027, see *Grand View Research - High Performance Computing Market Size Worth $53.6 Billion By 2027,* https://www.grandviewresearch.com/press-release/global-high-performance-computing-hpc-market (Information contained on, or that can be accessed through, this website is not incorporated by reference in this Annual Report, and you should not consider information on this website to be part of this Annual Report).

The high-performance computing market is important for many industries, including, but not limited to, IT, aerospace, healthcare, automotive, and e-commerce. Examples of compute-intensive applications include optimization, data management, analytics, encryption, natural language processing and complex modeling. Quantum computing is expected to be useful for similar applications. According to a report from Allied Market Research, the global enterprise quantum computing market size was valued at $1.3 billion in 2020 and is projected to reach $18.3 billion by 2030, growing at a compound annual growth rate of 29.7% from 2021 to 2030, according to a published report on the enterprise quantum computing market at https://www.alliedmarketresearch.com/enterprise-quantum-computing-market (Information contained on, or that can be accessed through, this website is not incorporated by reference in this Annual Report, and you should not consider information on this website to be part of this Annual Report).

While the current quantum computing market comprises a fraction of the broader high-performance computing market, we anticipate that quantum computers will unlock new applications that are unlikely to be addressable by existing high-performance computers comprised of leveraging classical processing units.

Quantum computing is a nascent and rapidly developing technology that has shown promise in delivering potentially disruptive computing capabilities. We believe that quantum computing's immense compute capabilities qualify it as a subset of high-performance computing. As quantum computing hardware continues to advance, we expect a corresponding growth in demand for software capable of leveraging the compute capabilities of quantum computing hardware. As an early participant in this rapidly growing ecosystem, we believe we are well-positioned to capture and drive a meaningful amount of this category growth. We believe that there is further potential upside from quantum computing and technology more broadly opening new markets not included in traditional high-performance computing market size estimates.

### Competition

The quantum computing industry is highly competitive and rapidly evolving and will likely remain so for the foreseeable future. As this industry continues to grow and mature, we expect a continued influx of new competitors, products, hardware advances, and concepts to emerge that can dramatically transform the industry and our business. Due to the high price point of quantum computing hardware today, novel business models may emerge to adapt to customer preferences in the high-performance computing industry. Our ability to evolve and adapt rapidly over an extended period of time will be critical in remaining competitive. We perform a broad range of research and development efforts to identify and position for the changing demands of future customers and users, industry trends, and competitive forces.

According to research conducted by The Quantum Insider (https://thequantuminsider.com/data), there are over 700 companies and approximately 400 university academic groups working in various aspects of quantum technology, with approximately 400 of these having a pure play focus on quantum computing, according to *The Landscape of the Quantum Start-up Ecosystem*, October 18, 2022, https://epjquantumtechnology.springeropen.com/articles/10.1140/epjqt/s40507-022-00146-x (Information contained on, or that can be accessed through, this website is not incorporated by reference in this Annual Report, and you should not consider information on this website to be part of this Annual Report).

These entities range in size from diversified global companies with significant research and development resources such as IBM, Google, Intel, Microsoft, Quantinuum (formerly Honeywell) and Amazon to recent market entrants such as D-Wave Quantum, Rigetti Computing, IonQ, PsiQuantum, Xanadu and Infleqtion (formerly ColdQuanta), as well as smaller privately funded development stage companies whose narrower product focuses may allow them to be more effective in deploying resources towards a specific industry demand. In addition, we face competition from large research organizations funded by sovereign nations such as China, Russia, Canada, Australia, and the United Kingdom, as well as the European Union, and we believe that additional countries will invest in quantum computing in the future. We will continue to face competition from the existing high-performance computing industry using classical (non-quantum) computers.

We believe that competition in this market segment will intensify. Many of our competitors may have longer operating histories, significantly greater financial, technical, product development and marketing resources, and greater name recognition than we do. Our competitors could use these resources to market or develop products or services that are more effective or less costly than any or all of our products or services.

### Intellectual Property

Our intellectual property consists of patents, trademarks, and trade secrets. Our trade secrets consist of product formulas, research and development, and unpatentable know-how, all of which we seek to protect, in part, by confidentiality agreements. To protect our intellectual property, we rely on a combination of laws and regulations, as well as contractual restrictions. Federal trademark law protects our registered trademarks. We also rely on the protection of laws regarding unregistered copyrights for certain content we create and trade secret laws to protect our proprietary technology. To further protect our intellectual property, we enter into confidentiality agreements with our executive officers, employees, consultants and directors.



#### *Trademarks*

The Company has one registered trademark, "QPhoton," and has applied for two additional trademarks, both of which are being used in commerce:

- QGraph
- Qatalyst

#### *Patents*

The Company has one granted United States patent.

| Country | Serial No. | Filing Date | Patent No. | Issue Date | Title | Status | Anticipated Expiration Date |
|---|---|---|---|---|---|---|---|
| USA | 17/560,816 | 12/23/2021 | 11,436,519 | 09/06/2022 | Machine Learning Mapping for Quantum Processing Units | Granted | 12/23/2041 |

***Exclusive License Agreement***

QCi has an exclusive license to seven patents issued to the Stevens Institute of Technology, pursuant to the license agreement dated December 17, 2020 by and among QPhoton and The Trustees of The Stevens Institute of Technology (the "Licensor"). QPhoton agreed to reimburse the Licensor for patent prosecution expenses in the amount of $125,041 and deliver to the Licensor an annual report and quarterly report pursuant to the terms of the license agreement. As consideration for the license and other rights granted under the license agreement, QPhoton agreed to pay the Licensor (i) $35,000 upon full execution of the license agreement, (ii) $28,000 each annual anniversary of the effective date of the license agreement, (iii) 9% of the membership units of QPhoton, LLC, and (iv) a royalty of 3.5% of the net sales price of each license product sold or license by QPhoton, LLC and any affiliate and sublicensee. On June 15, 2022, the Licensor agreed to assign the license agreement to QCi upon consummation of the QPhoton Merger.

**Government Regulation and Incentives**

*Encryption*

The U.S. government has historically tightly regulated the export of cryptographic technologies under the Arms Export Control Act and the associated International Traffic in Arms regulations (ITAR) as a form of munition. The logic behind the export restrictions is that the ability to secure information has great value to the military and intelligence agencies, and the US Government does not want those technologies sold or distributed to foreign adversaries. These regulations were relaxed in 1996 by executive order, but restrictions are still in place under the Export Administration Act that limit the export of some advanced encryption methods and technologies. Export of commercial encryption products to certain designated countries and terrorist groups is restricted, as are exports of military quality encryption technologies. Restrictions on encryption technology are in place in many other countries but the extent of regulation varies widely from country to country. Domestically, encryption technology is largely unregulated but law enforcement, intelligence and investigative agencies work closely with encryption technology developers to enable the US government to access encrypted data under certain conditions. We believe that quantum encryption and decryption products can be marketed to U.S. government agencies but that export opportunities may be limited. The National Security Agency (NSA) released the "Commercial National Security Algorithm Suite 2.0" (CNSA 2.0) Cybersecurity Advisory (CSA) to notify National Security Systems (NSS) owners, operators and vendors of the future quantum-resistant (QR) algorithms requirements for NSS networks that contain or transfer classified information or are otherwise critical to military and intelligence activities.



*Incentives*

In December 2018, the National Quantum Initiative Act (the "Quantum Act") was signed into law. The purpose of the Quantum Act is to "ensure the continued leadership of the United States in quantum information science" and to develop a unified national strategy for researching quantum information science. The Quantum Act authorizes a National Quantum Coordination Office inside the White House's Office of Science and Technology Policy to help coordinate research between agencies, serve as the federal point of contact and promote private commercialization of federal research breakthroughs over the next decade. In addition, President Trump announced the formation of a National Quantum Initiative consisting of key technology companies working in the field of quantum computing. The Company is a member of that Initiative and is also a member of the Quantum Economic Development Council.

The Quantum Act also authorized the creation of five National Quantum Information Science Research Centers within the Department of Energy and research and education centers in the National Science Foundation. The Quantum Act also anticipated the eventual creation of industry standards for QIS development, new research grant funding and increased collaboration with the private sector, to date those standards and industry funding opportunities have not materialized.

In August 2022 Congress passed, and President Biden signed, the Creating Helpful Incentives to Produce Semiconductors Act of 2022 (the "CHIPS Act"). The CHIPS Act was designed to address the global computer chip shortage and attract chip manufacturing, and innovation to the United States. The CHIPS Act is a $280 billion spending package aimed at encouraging the growth of the US-based semiconductor industry. To assist in securing the domestic chip supply, the CHIPS Act provides $52.7 billion for American semiconductor research, development, manufacturing, and workforce development. The Company is pursuing programs under the CHIPS Act as a potential avenue to finance a photonic chip manufacturing facility.

**Corporate Information**

Our executive offices are located at 5 Marine View Plaza, Suite 214, Hoboken, NJ 07030, and our telephone number is (703) 436-2121. Our corporate website is www.quantumcomputinginc.com. Information appearing on our website is not part of this Annual Report.

**Employees**

As of December 31, 2023, the Company had 39 full time employees and nine part time contract staff, 34 of whom are focused on product development. The employees are not part of a collective bargaining agreement and labor relationships are good. The Company offers a health and welfare benefit plan to current full time employees that provides medical, dental, vision, life and disability benefits. The Company also offers a 401(k) retirement savings plan and participation in the stock option plan to all full-time employees. There are no unpaid liabilities under the Company's benefit plans, and the Company has no obligation to pay for post-retirement health and medical costs of retired employees.



## ITEM 1A. RISK FACTORS.

This Annual Report on Form 10-K contains forward-looking statements that involve risks and uncertainties, such as statements of our objectives, expectations and intentions. The cautionary statements made in this Annual Report on Form 10-K should be read as applicable to all forward-looking statements wherever they appear in this report. Our actual results could differ materially from those discussed herein. Factors that could cause or contribute to such differences include those discussed below, as well as those discussed elsewhere in this Annual Report on Form 10-K.

### Risks Related to Our Financial Condition and Status as an Early-Stage Company

***We are in our early stages and have a limited operating history, which makes it difficult to forecast the future results of our operations.***

QCi was formed in 2018 and merged with QPhoton in June 2022. As a result of our limited operating history, our ability to accurately forecast our future results of operations is limited and subject to a number of uncertainties, including our ability to plan for and model future growth. Our ability to generate revenues will largely be dependent on our ability to develop and produce a suite of products based on quantum photonic technologies, with steadily increasing capabilities. Our technical roadmap may not be realized as quickly as hoped, or even at all. As a result, our historical results should not be considered indicative of our future performance. Further, in future periods, our growth could slow or decline for a number of reasons, including but not limited to slowing demand for our quantum products and services, increased competition, changes to technology, our inability to scale up our technology, a decrease in the growth of the market, or our failure, for any reason, to continue to take advantage of growth opportunities. Furthermore, the accompanying consolidated financial statements have been prepared assuming that we will continue as a going concern. We have not emerged from the development stage and may be unable to raise further equity. These factors raise substantial doubt about our ability to continue as a going concern. Our financial statements do not include any adjustments that might result from the outcome of this uncertainty.

We have also encountered, and will continue to encounter, risks and uncertainties frequently experienced by growing companies in rapidly changing industries. If our assumptions regarding these risks and uncertainties and our future growth are incorrect or change, or if we do not address these risks successfully, our operating and financial results could differ materially from our expectations, and our business could suffer. Our success as a business ultimately relies upon fundamental research and development breakthroughs in the coming years. There is no certainty these research and development milestones will be achieved as quickly as hoped, or even at all.

***We have a history of operating losses and expect to incur significant expenses and continuing losses for the foreseeable future.***

We incurred net losses each year since 2018 and we believe that we will continue to incur operating and net losses each quarter until at least the time we begin generating significant revenue from our products and services, which may never occur. Even with significant production, we may never become profitable from the sale of our products and services.

We expect to incur significantly higher losses in future periods as we continue to incur significant expenses in connection with the design, development and manufacturing of our quantum computers and other products and services, and as we expand our research and development activities, invest in manufacturing capabilities, build up inventories of components for our quantum computers and other products, increase our sales and marketing activities, develop our infrastructure, and increase our general and administrative functions to support our growing operations. We may find that these efforts are more expensive than we currently anticipate or that these efforts may not result in revenues, which would further increase our losses. If we are unable to achieve and/or sustain profitability, or if we are unable to achieve the growth that we expect from these investments, it could have a material adverse effect on our business, financial condition or results of operations. Our business model is unproven and may never allow us to cover our costs.

***We have a history of accumulated deficits, recurring losses and negative cash flows from operating activities. We may be unable to achieve or sustain profitability or remain a going concern.***

We are an early-stage company and we have not generated any material revenues to offset our operating expenses. If we are unable to generate significant revenues in future periods, we will not be able to achieve profitability, and if we should achieve, to maintain profitability. Beyond this, we may incur significant losses in the future for a number of reasons including other risks described in this document, and we may encounter unforeseen expenses, difficulties, complications, delays and other unknown events. Accordingly, we may not ever achieve profitability. We incurred negative cash flows from operating activities and recurring net losses in fiscal years 2023 and 2022. As of December 31, 2023, and 2022, our accumulated deficit was $149,718,453 and $119,987,781, respectively. These factors, among others, raised substantial doubt about our ability to continue as a going concern.



***We may not be able to scale our business quickly enough to meet customer and market demand, which could result in lower profitability or cause us to fail to execute on our business strategies.***

In order to grow our business, we will need to continually evolve and scale our business and operations to meet customer and market demand. However, commercial demand for quantum computing products and services may never develop. There are significant technological challenges associated with developing, producing, marketing and selling products and services in the high-performance computing industry, including our products and services, and we may not be able to resolve all of the difficulties that may arise in a timely or cost-effective manner, or at all. We may not be able to cost effectively manage production at a scale or quality consistent with customer demand in a timely or economical manner.

Our ability to scale is dependent also upon components that we must source from multiple countries, including China. Shortages or supply interruptions in any of these components will adversely impact our ability to generate revenues. Deterioration in the political relationship between the U.S. and China result in loss of access to suppliers of key components with little or no warning, which would adversely affect our ability to develop and manufacture our products. We are actively searching for alternative suppliers outside of China, but there is no assurance that we can locate comparable components at reasonable prices within the desired timeframes.

If large-scale development of our quantum computers other products commences, they may contain defects in design and manufacture that may cause them to not perform as expected or that may require repair and design changes. Our quantum computers are inherently complex and incorporate technology and components that may have not been used for computing products and that may contain defects and errors, particularly when first introduced. We have a limited frame of reference from which to evaluate the long-term performance of our computers. There can be no assurance that we will be able to detect and fix any defects in our quantum computers in a timely manner that does not disrupt our services to our customers. If our technology fails to perform as expected, customers may seek out a competitor or turn away from quantum computing entirely, each of which could adversely affect our sales and brand and could adversely affect our business, prospects and results of operations. If defects in our technology lead to erroneous outputs, third parties relying on those outputs may draw from them erroneous conclusions, creating a risk that we will be liable to those third parties.

If we cannot evolve and scale our business and operations effectively, we may not be able to execute our business strategies in a cost-effective manner and our business, financial condition, profitability and results of operations could be adversely affected.

***Even if the market in which we compete achieves its anticipated growth levels, our business could fail to grow at similar rates, if at all.***

Our success will depend upon our ability to expand, scale our operations, and increase our sales and support capability. Even if the market in which we compete meets the size estimates and growth forecasted, our business could fail to grow at similar rates, if at all.

Our growth is dependent upon our ability to successfully expand our products and services, retain customers, bring in new customers and retain critical talent. Unforeseen issues associated with scaling up and constructing quantum computing technology at commercially viable levels could negatively impact our business, financial condition and results of operations.

Our growth is dependent upon our ability to successfully market and sell our quantum computers and quantum computing products and services. We do not have experience with the large-scale production and sale of quantum computing technology. Our growth and long-term success will depend upon the development of our sales and production capabilities.



Moreover, because of our advanced technology, our customers will require particular support and service functions, some of which are not currently available and may never be available. If we experience delays in adding such support capacity or servicing our customers efficiently, or experience unforeseen issues with the reliability of our technology, we could overburden our servicing and support capabilities. Similarly, increasing the number of our products and services would require us to rapidly increase the availability of these services. Failure to adequately support and service our customers may inhibit our growth and ability to expand.

There is no assurance that we will be able to ramp our business to meet our sales, manufacturing, installation, servicing and quantum computing targets, that expected growth levels will prove accurate or that the pace of growth will continue at the current rate. Failure of QCi to grow at rates similar to that of the broader quantum computing industry may adversely affect our operating results and ability to effectively compete within the industry.

***We may not manage growth effectively.***

Our failure to manage growth effectively could harm our business, results of operations and financial condition. We anticipate that a period of significant expansion will be required to address potential growth. This expansion will place a significant strain on our management, operational and financial resources. Expansion will require significant cash investments and management resources and there is no guarantee that they will generate additional sales of our products or services, or that we will be able to avoid cost overruns or be able to hire additional personnel to support us. In addition, we will also need to ensure our compliance with regulatory requirements in various jurisdictions applicable to the sale, installation and servicing of our products. To manage the growth of our operations and personnel, we must establish and maintain appropriate and scalable operational and financial systems, procedures and controls and a qualified finance, administrative and operations staff. We may be unable to acquire the necessary capabilities and personnel required to manage growth or to identify, manage and exploit potential strategic relationships and market opportunities.

***We will require a significant amount of cash for expenditures as we invest in ongoing research and development and business operations and may need additional capital sooner than planned to pursue our business objectives and respond to business opportunities, challenges or unforeseen circumstances, and we cannot be sure that additional financing will be available. If we are unable to raise additional funding when needed, we may be required to delay, limit or substantially reduce our development efforts.***

Our business and future plans for expansion are capital-intensive, and we will require additional capital for equipment and facilities for hardware manufacturing and optical chip fabrication. The specific timing of cash inflows and outflows may fluctuate substantially from period to period. We will require a significant amount of cash for expenditures as we invest in ongoing research and development and business operations. Our operating plan may change because of factors currently unknown, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings or other sources. Such financings may result in dilution to stockholders, issuance of securities with priority as to liquidation and dividend and other rights more favorable than those of our common stock, imposition of debt covenants and repayment obligations or other restrictions that may adversely affect our business. Any funds we raise may not be sufficient to enable us to continue to implement our long-term business strategy. Further, our ability to raise additional capital may be adversely impacted by worsening global economic conditions and disruptions to and volatility in the credit and financial markets in the United States and worldwide resulting from disruptions in access to bank deposits or lending commitments due to bank failures, the military conflict between Russia and Ukraine and the related sanctions imposed against Russia, and the state of war between

Israel and Hamas and the related risk of a larger regional conflict. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe that we have sufficient funds for current or future operating plans.

There can be no assurance that financing will be available to we on favorable terms, or at all. The inability to obtain financing when needed may make it more difficult for us to operate our business or implement our growth plans and we may be required to delay, limit or substantially reduce our quantum computing development efforts. Our ability to raise additional capital through the sale of securities could be significantly impacted by the resale of our securities by holders of our securities, which could result in a significant decline in the trading price of our securities and potentially hinder our ability to raise capital on terms that are acceptable to us or at all.

***Failure to identify errors in the quantitative models we utilize to manage our business could adversely impact product performance and client relationships.***

We employ various quantitative models to manage our business. Any errors in the underlying models or model assumptions could have unanticipated and adverse consequences on our business and reputation.



***Our ability to use net operating loss carryforwards and other tax attributes may be limited in connection with the QPhoton Merger or other ownership changes.***

We have incurred losses during our history, do not expect to become profitable in the near future and may never achieve profitability. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset future taxable income, if any, until such unused losses expire, if at all.

Under current law, U.S. federal net operating loss carryforwards generated in taxable periods beginning after December 31, 2017, may be carried forward indefinitely, but the deductibility of such net operating loss carryforwards in taxable years beginning after December 31, 2020, is limited to 80% of taxable income, or less. It is uncertain if and to what extent various states will conform to the current law.

In addition, our net operating loss carryforwards are subject to review and possible adjustment by the IRS, and state tax authorities. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the "Code"), our federal net operating loss carryforwards and other tax attributes will become subject to an annual limitation in the event of certain cumulative changes in the ownership of the Company. An "ownership change" pursuant to Section 382 of the Code generally occurs if one or more stockholders or groups of stockholders who own at least 5% of a company's stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. Similar rules apply under state tax laws. Our ability to utilize our federal net operating loss carryforwards and other tax attributes to offset future taxable income or tax liabilities may be limited as a result of ownership changes, including potential changes in connection with the QPhoton Merger or other transactions. Similar rules may apply under state tax laws.

If we earn taxable income, such limitations could result in increased future income tax liability and our future cash flows could be adversely affected. We have recorded a valuation allowance related to our net operating loss carryforwards and other deferred tax assets due to the uncertainty of the ultimate realization of the future benefits of those assets.

## Risks Related to Our Business and Industry

***We have not produced any of our products at volume and we face significant barriers in our attempts to develop and manufacture our products, including the need to invent and develop new technology. If we cannot successfully overcome those barriers, our business will be negatively impacted and could fail.***

Producing quantum computers, sensors and networks is a difficult undertaking. There are significant engineering challenges that we must overcome. We face significant challenges in completing development of our quantum computers and other products, and in producing in sufficient volumes. Even if we complete development and achieve volume production of our products, if the cost, accuracy, performance characteristics or other specifications fall short of our expectations, our business, financial condition and results of operations would be adversely affected.

The performance capabilities of our products will depend on the development and production of TFLN Optical Chips to achieve scale, performance and cost. There is significant development and intellectual property risk in the specification, design and development of

TFLN Optical Chips and our plans could be impacted by lack of funding, competition or even unknown core technology factors intrinsic to the work. This would limit the ability of QCi to scale its growth to expected levels over the longer term and the Company could lose momentum.

***We may be unable to reduce the production cost sufficiently, which may prevent us from pricing our quantum systems competitively.***

Our revenue projections are dependent on the cost per manufactured system decreasing over the next several years as our quantum computers advance. These cost projections are based on economies of scale due to demand for our products and services, technological innovation and negotiations with third-party parts suppliers. If these cost savings do not materialize, the production cost may be higher than projected, making our quantum computing products and services less competitive than those offered by our competitors, which could have a material adverse effect on our business, financial condition or results of operations.



***If our products and services fail to deliver customer value to a broader range of customers than classical approaches, our business, financial condition and future prospects may be harmed.***

“Quantum advantage” refers to the moment when a quantum computer can compute faster than existing classical computers, while quantum supremacy is achieved once quantum computers are powerful enough to complete calculations that traditional supercomputers cannot perform at all. Broad quantum advantage is when quantum advantage is seen in many applications and developers prefer quantum computers to a traditional computer. No current quantum computers have reached a broad quantum advantage and they may never reach such advantage. While achieving a broad quantum advantage will be critical to the success of any quantum computing company, including us, it would not necessarily lead to commercial viability of the technology that accomplished such advantage, nor would it mean that such system could outperform classical computers in tasks other than the one used to determine a quantum advantage. As quantum computing technology continues to mature, broad quantum advantage, and quantum supremacy, may take years or decades to be realized, if it ever is. If we cannot develop quantum computers that have quantum advantage, customers may not continue to purchase our products and services. If other companies’ quantum computers reach a broad quantum advantage prior to the time we reach such capabilities, it could lead to a loss of customers. If any of these events occur, it could have a material adverse effect on our business, financial condition or results of operations.

***The quantum computing industry is competitive and we may not be successful in competing in this industry or establishing and maintaining confidence in our long-term business prospects among current and future partners and customers.***

Since the merger with QPhoton, our business strategy has broadened to include the manufacture of several lines of hardware in addition to the underlying software. As a result, the markets in which we now operate are rapidly evolving and highly competitive. As the marketplace continues to mature and new technologies and competitors enter, we expect competition to intensify. Our current competitors include:

- large, well-established tech companies that generally compete across our products, including IBM, Quantinuum, Google, Microsoft and Amazon;
- large research organizations funded by sovereign nations such as China, Russia, Canada, Australia and the United Kingdom, and those in the European Union; additional countries may decide to fund quantum computing programs in the future;
- less-established public and private companies with competing technology, including IonQ, Rigetti Computing, PsiQuantum, Xanadu and D-Wave Quantum, and companies located outside the United States; and
- new or emerging entrants seeking to develop competing technologies.

We compete based on various factors, including technology, price, performance, multi-cloud availability, brand recognition and reputation, customer support and differentiated capabilities, including ease of administration and use, scalability and reliability, data governance and security. Many of our competitors have substantially greater brand recognition, customer relationships, and financial, technical and other resources than we do, including an experienced sales force and sophisticated supply chain management. They may be able to respond more effectively than us to new or changing opportunities, technologies, standards, customer requirements and buying practices. In addition, many countries are focused on developing quantum computing solutions either in the private or public sector and may subsidize quantum computers, which may make it difficult for us to compete. Many of these competitors do not face the same challenges we do in growing our business. In addition, other competitors might be able to compete with us by bundling their other products in a way that does not allow us to offer a competitive solution.

Further, the industry might recognize the intrinsic advantages of optical integrated circuits in information processing applications and our competitors could shift to a more direct competitive approach using similar technologies, even with strong intellectual property protection.



Additionally, we must be able to achieve our objectives in a timely manner lest quantum computing lose ground to competitors, including competing technologies. Because there are a large number of market participants, including certain sovereign nations, focused on developing quantum computing technology, we must dedicate significant resources to achieving any technical objectives on the timelines established by our management team. Any failure to achieve objectives in a timely manner could adversely affect our business, operating results and financial condition.

For all of these reasons, competition may negatively impact our ability to maintain and grow consumption of our platform or put downward pressure on our prices and gross margins, any of which could materially harm our reputation, business, results of operations, and financial condition.

***We rely on access to high-performance third-party classical computing through public clouds and high-performance computing centers to deliver quantum products and services to customers. We may not be able to maintain connectivity with these resources, which could make it harder for us to reach customers or deliver products and services in a cost-effective manner.***

Our products and services may from time to time incorporate high-performance classical computing through public clouds to provide services to end users and our partners. These public cloud services are predominantly on AWS at the present time.

Any material change in our contractual and other business relationships with AWS or other cloud providers could result in reduced use of our products and services, increased expenses, including service credit obligations, and harm our brand and reputation, any of which could have a material adverse effect on our business, financial condition and results of operations.

Further, if our contractual and other business relationships with our partners are terminated or suspended, either by our partner or by us, or suffer a material change to which we are unable to adapt, such as the elimination of services or features on which we depend, we would be unable to provide our quantum computing products and services business at the same scale and would experience significant delays and incur additional expense in transitioning customers to a different public cloud provider.

***We depend on certain suppliers to source products. Failure to maintain our relationship with any of these suppliers, or a failure to replace any of these suppliers, could have a material adverse effect on our business, financial position, results of operations and cash flows.***

We buy our products and supplies from companies that manufacture and source products from the United States and abroad. Our ability to develop and maintain relationships with qualified suppliers who can satisfy our standards for quality and delivery in a timely and efficient manner is a significant challenge. Any failure to maintain our relationship with any of our largest suppliers, or a failure to replace any such supplier that is lost, could have a material adverse effect on our business, financial position, results of operations and cash flows.

We may be required to replace a supplier if their products do not meet our quality or safety standards, or if the United States government imposes restrictions on trade with certain countries, such as China. In addition, our suppliers could discontinue selling products at any time for reasons that may or may not be in our control or the suppliers' control, including shortages of raw materials, environmental and social supply chain issues, pandemic, labor disputes or weather conditions. Disruptions in transportation lines or the ongoing military conflict between Russia and Ukraine, the state of war between Israel and Hamas, or an invasion of Taiwan by China, may also cause global supply chain issues that affect us or our suppliers. We generally have multiple sources of supply, however, in some cases, materials are provided by a single supplier. The loss of, or substantial decrease in the availability of, products from our suppliers, or the loss of a key supplier, temporarily or permanently, could result in a material shortage of products, which could lead to price escalations that we may be unable to offset by our prices to our customers. When supply chain issues are later resolved and prices return to normal levels, we may be required to reduce the prices at which we sell our products to our customers in order to remain competitive. In addition, even where these risks do not materialize, we may incur costs as we prepare contingency plans to address such risks. Our operating results and inventory levels could suffer if we are unable to promptly replace a supplier who is unwilling or unable to satisfy our requirements with a supplier providing similar products. In addition, our suppliers' ability to deliver products may also be affected by raw material and commodity cost volatility or financing constraints caused by credit market conditions, which could materially and negatively impact our net sales and operating costs, at least until alternate sources of supply are arranged. Any delay or unavailability of key products required for our development activities in a timely or cost-effective manner could delay or prevent us from further developing our products and services on our expected timelines or at all and could materially harm our business.



***In order to compete, we must attract, retain and motivate key associates, and the failure to do so could have an adverse effect on our business, financial condition and results of operations.***

We depend on our executive officers and management team to run our business. As we develop new business models and new ways of working, we will need to develop suitable skill sets within our organization. In addition, our future success depends on our continuing ability to attract, develop, motivate and retain highly qualified and skilled employees that have highly technical set of skills. The current market for such positions is highly competitive. Qualified individuals are in high demand and we may incur significant costs to attract and retain them. Moreover, the loss of any of our senior management or other key employees or our inability to recruit and develop capable managers could adversely affect our ability to execute our business plan and we may be unable to find adequate replacements.

***Even if we are successful in developing our products and executing our strategy, competitors in the industry may achieve technological breakthroughs that render our quantum computing systems obsolete or inferior to other products.***

Our continued growth and success depend on our ability to innovate and develop quantum computing technology in a timely manner and effectively market these products. Without timely innovation and development, our quantum computing products and services could be rendered obsolete or less competitive by changing customer preferences or because of the introduction of a competitor's newer technologies. We believe that many competing technologies will require a technological breakthrough in one or more problems related to science, fundamental physics or manufacturing. While it is uncertain whether such technological breakthroughs will occur in the next several years, that does not preclude the possibility that such technological breakthroughs could eventually occur. Any technological breakthroughs that render our technology obsolete or inferior to other products could have a material adverse effect on our business, financial condition or results of operations.

***The quantum computing industry is in its early stages and volatile, and if it does not develop, if it develops slower than we anticipate, if it encounters negative publicity or if our quantum computing products and services do not achieve commercial adoption, the growth of our business will be harmed.***

The nascent market for quantum computers is still rapidly evolving, characterized by rapidly changing technologies, competitive pricing and competitive factors, evolving government regulation and industry standards, and changing customer demands and behaviors. Our success will depend to a substantial extent on the willingness of our potential customers to use, and increase their utilization of, our products and services, as well as on our ability to demonstrate the value of quantum computing to their respective organization, government agencies, and other purchasers of quantum computing offerings. Negative publicity concerning our products and services or the quantum computing industry as a whole could limit market acceptance of our offerings. If our clients and partners do not perceive the benefits of our products and services, or if they do not drive customer engagement, then our market may not develop at all, or it may develop more slowly than we expect. Similarly, individual and industry concerns or negative publicity regarding technophobic views in the context of quantum computing could limit market acceptance of our quantum computing products and services. If any of these events occur, our business, prospects, financial condition and operating results could be harmed.



In addition, our growth and future demand for our products is highly dependent upon the adoption by developers and customers of quantum computers, as well as on our ability to demonstrate the value of quantum computing to our customers. Delays in future generations of our quantum computers or technical failures at other quantum computing companies could limit acceptance of our products and services. Negative publicity concerning our products and services or the quantum computing industry as a whole could limit acceptance of our products and services. While we believe that quantum computing will solve many large-scale problems, it is possible that such problems may never be solvable by quantum computing technology. If our customers and partners do not see the benefits of our products and services, or if our products and services do not drive commercial sales, then demand for our products and services may not develop at all, or it may develop slower than we expect. If any of these events occur, it could have a material adverse effect on our business, financial condition and results of operations.

***We have experienced in the past, and could also suffer future disruptions, outages, defects and other performance and quality problems with our quantum computing products and services, our production technology partners or with the public cloud, data centers and internet infrastructure on which we rely.***

Our business depends on our quantum computing systems being available through the cloud with a high level of reliability. We have experienced, and may in the future further experience, disruptions, outages, defects and other performance and quality problems with our systems. We have also experienced, and may in the future further experience, disruptions, outages, defects and other performance and quality problems with the public cloud and internet infrastructure on which our systems rely. These problems can be caused by a variety of factors, including failed introductions of new functionality, vulnerabilities and defects in proprietary and open- source software, hardware components, human error or misconduct, capacity constraints, design limitations, denial of service attacks or other security-related incidents, foreign objects or debris, weather, construction, supply chain events, or accidents and other force majeure. We do not have a contractual right with our public cloud providers that compensates us for any losses due to availability interruptions in the public cloud.

Any disruptions, outages, defects and other performance and quality problems with our quantum computing system or with the public cloud, internet, and other infrastructure on which they rely could result in reduced use of our systems, increased expenses, including service credit obligations, and harm to our brand and reputation, any of which could have a material adverse effect on our business, financial condition and results of operations.

***Our future growth and success depend on our ability to sell effectively to government entities and large enterprises.***

Our potential customers are likely to include government agencies and large commercial enterprises. Therefore, our future success will depend on our ability to effectively sell our products to such customers. Sales to these end-customers involve risks that may not be present (or that are present to a lesser extent) with sales to non-governmental agencies or smaller customers. These risks include, but are not limited to, (i) increased purchasing power and leverage held by such customers in negotiating contractual arrangements with us and (ii) longer sales cycles and the associated risk that substantial time and resources may be spent on a potential end-customer that elects not to purchase our solutions. In addition, government contracts generally include the ability of government agencies to terminate early which, if exercised, would result in a lower contract value and lower than anticipated revenues. Such government contracts also may limit our ability to do business with foreign governments or prevent us from selling our products in certain countries.

***Our quantum computing systems may not be compatible with some or all industry-standard software and hardware in the future, which could harm our business.***

Since the merger with QPhoton, we have been focusing more of our efforts on creating quantum computing hardware, in addition to refining the software development platform to access our hardware, and application programing interfaces (“APIs”) to access our systems. The industry is rapidly evolving, and customers have many choices for programming languages, some of which may not be compatible with our own APIs. Our quantum computing development platform is designed to be compatible with most major software languages. If a proprietary (not open source) software toolset became the standard for quantum application development in the future by a competitor, however, usage of our hardware might be limited, which would have a negative impact on the Company. Similarly, if a piece of hardware that we could not integrate with became a necessary component for quantum computing (for instance, quantum networking), the result might have a negative impact on the Company.



***Unfavorable conditions in our industry or the global economy could limit our ability to grow our business and negatively affect our results of operations.***

Our results of operations may vary based on the impact of changes in our industry or the global economy on us or our customers and potential customers. Negative conditions in the general economy both in the United States and abroad, including conditions resulting from changes in gross domestic product growth, financial and credit market fluctuations, international trade relations, pandemics (such as the recent COVID-19 pandemic) and other health emergencies, political turmoil, natural catastrophes, warfare, and terrorist attacks on the United States or elsewhere, could cause a decrease in business investments, including the progress on development of quantum technologies, and negatively affect the growth of our business. In addition, in challenging economic times, our current or potential future customers may experience cash flow problems and as a result may modify, delay or cancel plans to purchase our products and services. Additionally, if our customers are not successful in generating sufficient revenue or are unable to secure financing, they may not be able to pay, or may delay payment of, accounts receivable as a result. Moreover, our key suppliers may reduce their output or become insolvent, thereby adversely impacting our ability to manufacture our products.

Furthermore, uncertain economic conditions may make it more difficult for us to raise funds through borrowings or private or public sales of debt or equity securities. We cannot predict the timing, location, strength or duration of any economic slowdown, instability or recovery, generally or within any particular industry.

***Government actions and regulations, such as tariffs and trade protection measures, may adversely impact our business, including our ability to obtain products from our suppliers***

Government actions and regulations, such as tariffs and trade protection measures, may limit our ability to obtain products from our suppliers or sell our products and services to customers. Political challenges between the United States and countries in which our suppliers are located and changes to trade policies, including tariff rates and customs duties, trade relations between the United States and those countries and other macroeconomic issues could adversely impact our business. During the last few years, the United States has imposed tariffs on certain products imported into the United States and some countries have imposed tariffs on U.S. imports in response. The U.S. government continues to add additional entities, in China and elsewhere, to restricted party lists impacting the ability of U.S. companies to provide products and, in certain cases, services, to these entities and, in some cases, to receive items or services from these entities. The U.S. government also continues to increase end-use restrictions on the provision of items and service to China and other countries including end-uses related to advanced computing. There is also a possibility of future tariffs, trade protection measures or other restrictions imposed on our products or on our customers by the United States or other countries that could have a material adverse effect on our business. Our technology could be deemed a matter of national security and, as such, our customer base could be tightly restricted. We also may accept government grants that place restrictions on the business' ability to operate. Any such actions could impact our business operations and have a material adverse effect on our business prospectus, financial condition and results of operations.

In addition, the Chinese government exercises significant control over China's economy through the allocation of resources, control of the incurrence and payment of foreign currency-denominated obligations, setting of monetary policy and provision of preferential treatment to particular industries or companies. Changes in any of these policies, laws and regulations could adversely affect the overall economy in China or our Chinese suppliers, which could harm our business through higher supply costs, reduced availability or both.

Also, due to concerns with the security of products and services from certain telecommunications equipment and services companies based in China, U.S. Congress has enacted bans on the use of certain Chinese-origin components or systems either in items sold to the U.S. government or in the internal networks of government contractors and subcontractors (even if those networks are not used for government-related projects). Further, the Chinese government has responded to these U.S. actions by indicating its intention to develop an unreliable entity list, which may limit the ability of companies on the list to engage in business with Chinese counterparties.



In June 2022, the import restrictions contained in the Uyghur Forced Labor Prevention Act ("UFLPA") became effective. The UFLPA creates a rebuttable presumption that any goods mined, produced or manufactured, wholly or in part, in the Xinjiang Uyghur Autonomous Region ("XUAR") of China, or produced by a listed entity, were made with forced labor and would therefore not be entitled to entry at any U.S. port. Importers are required to present clear and convincing evidence that such goods are not made with forced labor. While we do not source items from the XUAR or from listed parties, and we have increased our supply chain diligence, there is risk that our ability to import components and products may be adversely affected by the UFLPA.

Given the relatively fluid regulatory environment in China and the United States and uncertainty regarding how the U.S. government or Chinese and other foreign governments will act with respect to tariffs and international trade agreements and policies, a trade war, further governmental action related to tariffs or international trade policies, or additional tax or other regulatory changes in the future could directly and adversely impact our financial results and results of operations. We cannot predict what actions may ultimately be taken with respect to trade relations between the United States and China or other countries, what products may be subject to such actions or what actions may be taken by the other countries in retaliation. If we are unable to obtain or use components for inclusion in our products, if component prices increase significantly or if we are unable to export or sell our products to any of our customers, our business, liquidity, financial condition and/or results of operations would be materially and adversely affected.

***We may become subject to legal proceedings that could have a material adverse impact on our financial position and results of operations.***

From time to time and in the ordinary course of our business, we and certain of our subsidiaries may become involved in various legal proceedings. All such legal proceedings are inherently unpredictable and, regardless of the merits of the claims, litigation may be expensive, time-consuming and disruptive to our operations and distracting to management. If resolved against us, such legal proceedings could result in excessive verdicts, injunctive relief or other equitable relief that may affect how we operate our business. Similarly, if we settle such legal proceedings, it may affect how we operate our business. Future court decisions, alternative dispute resolution awards, business expansion or legislative activity may increase our exposure to litigation and regulatory investigations. In some cases, substantial noneconomic remedies or punitive damages may be sought. Although we maintain liability insurance coverage, there can be no assurance that such coverage will cover any particular verdict, judgment or settlement that may be entered against us, that such coverage will prove to be adequate or that such coverage will continue to remain available on acceptable terms, if at all. If we incur liability that exceeds our insurance coverage or that is not within the scope of the coverage in legal proceedings brought against us, it could have an adverse effect on our business, financial condition and results of operations.

***We intend to continue exploring strategic business acquisitions and other business combinations and transactions, which are subject to inherent risks.***

In order to expand our products and services and grow our market and client base, we may continue to seek and complete strategic business acquisitions and other combinations, investments, or partnerships that we believe are complementary to our business. The identification of suitable acquisition, strategic investment or strategic partnership candidates can be costly and time consuming and can distract our management team from our current operations. The completion of such transactions also have inherent risks that may have a material adverse effect on our business, financial condition, operating results or prospects, including, but not limited to: (i) failure to successfully integrate the business and financial operations, services, intellectual property, solutions or personnel of an acquired business and to maintain uniform standard controls, policies and procedures; (ii) diversion of management's attention from other business concerns; (iii) entry into markets in which we have little or no direct prior experience; (iv)) failure to achieve projected synergies and performance targets; (v) loss of clients or key personnel; (vi) incurrence of debt or assumption of known and unknown liabilities; (vii)) write-off of software development costs, goodwill, client lists and amortization of expenses related to intangible assets; (viii) dilutive issuances of equity securities; and (ix) accounting deficiencies that could arise in connection with, or as a result of, such transactions, including issues related to internal control over financial reporting and the time and cost associated with remedying such deficiencies. Even if we successfully complete a strategic transaction, we may not be able to effectively integrate the acquired business, technology, systems, control environment, solutions, personnel or operations into our business or not be able to achieve projected results or support the amount of consideration paid for such acquired businesses or invested in such transactions. In addition, we may incur unexpected costs, claims or liabilities during the strategic transaction or that we assume from the acquired company, or we may discover adverse conditions post- acquisition for which we have limited or no recourse, and we may not achieve the anticipated benefits of any strategic transaction.

***If we fail to establish and maintain an effective system of internal control, we may not be able to report our financial results accurately or prevent fraud. Any inability to report and file our financial results accurately and timely could harm our reputation and adversely impact the trading price of our common stock.***

Effective internal control is necessary for us to provide reliable financial reports and prevent fraud. If we cannot provide reliable financial reports or prevent fraud, we may not be able to manage our business as effectively as we would if an effective control environment existed, and our business and reputation with investors may be harmed. As a result, our small size and any current internal control deficiencies may adversely affect our financial condition, results of operations and access to capital.



***Unstable market and economic conditions may have serious adverse consequences on our business, financial condition and share price.***

The global economy, including credit and financial markets, has experienced extreme volatility and disruptions, including severely diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, inflation rates higher than historical norms, higher interest rates, bank failures and uncertainty about economic stability. For example, recent bank failures have resulted in volatility in the capital markets. Similarly, the ongoing military conflict between Russia and Ukraine, as well as the war between Israel and Hamas, has created extreme volatility in the global capital markets and are expected to have continuing global economic consequences, including disruptions of the global supply chain and energy markets. Any such volatility and disruptions may have adverse consequences on us or the third parties on whom we rely. If the equity and credit markets were to further deteriorate, including as a result of political unrest or war, it may make any necessary financing more difficult to obtain in a timely manner or on favorable terms, more costly or more dilutive. Higher than anticipated inflation rates have and are expected to continue to adversely affect us by increasing our costs, including labor and employee benefit costs, and costs for equipment and system components associated with system development. In addition, higher inflation could also increase our customers' operating costs, which could result in reduced budgets for our customers and potentially less demand for our systems. Any significant increases in inflation and related increase in interest rates could have a material adverse effect on our business, results of operations and financial condition. Even if inflation and interest rates decline from current levels, that may not result in a reduction of costs.

***We are subject to governmental export and import controls that could impair our ability to compete in international markets due to licensing requirements and subject us to liability if we are not in compliance with applicable laws.***

Our products and services are subject to U.S. export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, and various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Control. U.S. export control and economic sanctions laws include restrictions or prohibitions on the sale or supply of certain products, technologies, and services to U.S. Government embargoed or sanctioned countries, governments, persons and entities. In addition, certain products and technology may be subject to export licensing or approval requirements. Exports of our products and technology must be made in compliance with export control and sanctions laws and regulations. If we fail to comply with these laws and regulations, we and certain of our employees could be subject to substantial civil or criminal penalties, including the possible loss of export or import privileges, fines that which may be imposed on us and responsible employees or managers and, in extreme cases, the incarceration of responsible employees or managers.

In addition, various countries regulate the import of certain encryption technology, including through import permit and license requirements and have enacted laws that could limit our ability to distribute our products and technologies or could limit our end customers' ability to implement our services in those countries. Changes in our products or technologies or changes in applicable export or import laws and regulations also may create delays in the introduction and sale of our products and technologies in international markets or, in some cases, prevent the export or import of our products and technologies to certain countries, governments or persons altogether. Any change in export or import laws and regulations, shift in the enforcement or scope of existing laws and regulations, or change in the countries, governments, persons or technologies targeted by such laws and regulations could also result in decreased use of our products and services or in our decreased ability to export or sell our products and services to existing or potential customers. Any decreased use of our products and services or limitation on our ability to export or sell our products and services would likely adversely affect our business, financial condition and results of operations.

We expect to incur significant costs in complying with these regulations. Regulations related to quantum computing are currently evolving and we face risks associated with changes to these regulations.

***We may become subject to product liability claims, which could harm our financial condition and liquidity if we are not able to successfully defend or insure against such claims.***

We may become subject to product liability claims, even those without merit, which could harm our business prospects, operating results, and financial condition. We may face inherent risk of exposure to claims in the event that our products do not perform as expected or malfunction. A successful product liability claim against us could require us to pay a substantial monetary award. Moreover, a product liability claim could generate substantial negative publicity about our quantum computers and business and inhibit or prevent commercialization of other future quantum computers, which would have material adverse effects on our brand, business, prospects and operating results. Any insurance coverage might not be sufficient to cover all potential product liability claims. Any lawsuit seeking significant monetary damages either in excess of our coverage, or outside of our coverage, may have a material adverse effect on our reputation, business and financial condition. We may not be able to secure additional product liability insurance coverage on commercially acceptable terms or at reasonable costs when needed, particularly if we do face liability for our products and are forced to make a claim under our policy.



**Risks Related to Intellectual Property**

***Any failure to obtain, maintain and protect our intellectual property rights could impair our ability to protect and commercialize our proprietary products and technology and cause us to lose our competitive advantage.***

Our success depends, in significant part, on our ability to obtain, maintain, enforce and defend our intellectual property rights, including patents and trade secrets. We rely upon a combination of the intellectual property protections afforded by patent, copyright, trademark and trade secret laws in the United States and other jurisdictions, as well as license agreements and other contractual protections, to establish, maintain and enforce rights in our proprietary technologies. In addition, we seek to protect our intellectual property rights through nondisclosure and invention assignment agreements with our employees and consultants and through non-disclosure agreements with business partners and other third parties.

However, we may not be able to prevent unauthorized use of our intellectual property. Our trade secrets may also be compromised, which could cause us to lose our competitive advantage. Third parties may attempt to copy or otherwise obtain, use or infringe our intellectual property.

Monitoring and detecting unauthorized use of our intellectual property is difficult and costly, and the steps we have taken or take in the future to prevent infringement or misappropriation may not be sufficient. Any enforcement efforts we undertake, including litigation, could be time-consuming and expensive and could divert management's attention, which could harm our business, results of operations, and financial condition. In addition, existing intellectual property laws and contractual remedies may afford less protection than needed to safeguard our intellectual property portfolio, and third parties may develop competitive offerings in a manner that leaves us with limited means to enforce our intellectual property rights against them.

Patent, copyright, trademark and trade secret laws vary significantly throughout the world. A number of foreign countries do not protect intellectual property rights to the same extent as do the laws of the United States. Therefore, our intellectual property rights may not be as strong or as easily enforced outside of the United States and efforts to protect against the unauthorized use of our intellectual property rights, technology and other proprietary rights may be more expensive and difficult outside of the United States.

Failure to adequately protect our intellectual property rights could result in our competitors using our intellectual property to offer products, potentially resulting in the loss of some of our competitive advantage and a decrease in our revenue, which would adversely affect our business, financial condition and operating results.

***Our inability to secure patent protection or enforce our patent rights could have a material adverse effect on our ability to prevent others from commercializing similar products or technology.***

The application and registration of patents involves complex legal and factual questions. As a result, we cannot be certain that the patent applications that we file will result in patents being issued or that our patents (including licensed patents) and any future patents that do issue will afford protection against competitors with similar technology. Numerous patents and pending patent applications owned by others exist in the fields in which we have developed and are developing our products and services, and this may make it difficult for us to obtain certain patent coverage on our own. Any of our existing or pending patents may also be challenged by others on the basis that they are otherwise invalid or unenforceable. Furthermore, patent applications filed in foreign countries are subject to laws, rules and procedures that differ from those of the United States, and thus we cannot be certain that foreign patent applications related to issued U.S. patents will be issued.



Even if our patent applications succeed, it is still uncertain whether these patents (or any of the issued patents exclusively licensed to us) will be contested, circumvented, invalidated, found to be unenforceable or limited in scope in the future. The rights granted under any issued patents may not provide us with meaningful protection or competitive advantages. The intellectual property rights of others could bar us from licensing and exploiting any patents that issue from our pending applications, and the claims under any patents that issue from our patent applications may not be broad enough to prevent others from developing technologies that are similar or that achieve results similar to ours. In addition, patents issued to us may be infringed upon or designed around by others and others may obtain patents that we need to license or design around, either of which would increase costs and may adversely affect our business, prospects, financial condition and operating results.

***We may face patent infringement and other intellectual property claims that could be costly to defend, result in injunctions and significant damage awards, or limit our ability to use certain key technologies in the future, all of which could harm our business.***

Our success depends, in part, on our ability to develop and commercialize our products and services without infringing, misappropriating or otherwise violating the intellectual property rights of third parties. However, we may not be aware that our products, services or technologies are infringing, misappropriating or otherwise violating third-party intellectual property rights and such third parties may bring claims alleging such infringement, misappropriation or violation.

For example, there may be issued patents of which we are unaware, held by third parties that, if found to be valid and enforceable, could be alleged to be infringed by our current or future products, services or technologies. Also, because patent applications can take years to issue and are often afforded confidentiality for some period of time, there may currently be pending applications, unknown to us, that later result in issued patents that could cover our current or future products, services or technologies. The strength of our defenses will depend on the rights asserted, the interpretation of these rights, and our ability to invalidate the asserted rights. However, we could be unsuccessful in advancing non-infringement and/or invalidity arguments in our defense.

Although we carry general liability insurance, our insurance may not cover potential claims of this type or may not be adequate to indemnify us for all liability that may be imposed. We cannot predict the outcome of lawsuits and cannot ensure that the results of any such actions will not have an adverse effect on our business, financial condition or results of operations. Even if the claims do not result in litigation or are resolved in our favor, these claims, and the time and resources necessary to resolve them, could divert the resources of our management and harm our business and operating results. Further, there could be public announcements of the intellectual property litigation, and if securities analysts, investors or others perceive the potential impact to be negative or risks to be substantial, it could have an adverse effect on the price of our common stock. The occurrence of infringement claims may grow as the market for our products, services and technologies grows. Accordingly, our exposure to damages resulting from infringement claims could increase and this could further exhaust our financial and management resources.

***Cybersecurity risks and the failure to maintain the integrity of data belonging to the Company could expose us to data loss, litigation and liability, and our reputation could be significantly harmed.***

We may from time to time collect and retain large volumes of data relating to our business and from our customers for business purposes, including for transactional and promotional purposes, and our various information technology systems enter, process, summarize and report such data. The integrity and protection of this data is critical to our business. Maintaining compliance with the evolving regulations and requirements applicable to data security and information privacy protection could be difficult and may increase our expenses. In addition, a penetrated or compromised data system or the intentional, inadvertent or negligent release or disclosure of data could result in theft, loss or fraudulent or unlawful use of data relating to our company or our employees, independent distributors or preferred customers, which could harm our reputation, disrupt our operations, or result in remedial and other costs, fines or lawsuits.

Remote work has become more common and has increased risks to our information technology systems and data, as more of our employees utilize network connections, computers and devices outside our premises or network, including working at home, while in transit and in public locations. In addition, future or past business transactions (such as acquisitions or integrations) could expose us to additional cybersecurity risks and vulnerabilities, as our systems could be negatively affected by vulnerabilities present in acquired or integrated entities' systems and technologies. Furthermore, we may discover security issues that were not found during due diligence of such acquired or integrated entities, and it may be difficult to integrate companies into our information technology environment and security program.



***Computer malware, viruses, hacking, phishing attacks and spamming could harm our business and results of operations.***

Computer malware, viruses, physical or electronic break-ins and similar disruptions could lead to interruption and delays in our services and operations and loss, misuse or theft of data. Computer malware, viruses, computer hacking and phishing attacks against business networks have become more prevalent and may occur on our systems in the future.

Any attempts by hackers to disrupt our internal systems, if successful, could harm our business, be expensive to remedy and damage our reputation or brand. Our network security business disruption insurance may not be sufficient to cover significant expenses and losses related to direct attacks on our website or internal systems. Efforts to prevent hackers from entering our computer systems are expensive to implement and may limit the functionality of our services. Though it is difficult to determine what, if any, harm may directly result from any specific interruption or attack, any failure to maintain performance, reliability, security and availability of our products and services and technical infrastructure may harm our reputation, brand and our ability to attract customers. Any significant disruption to our website or internal computer systems could result in a loss of customers and could adversely affect our business and results of operations.

We have previously experienced, and may in the future experience, service disruptions, outages and other performance problems due to a variety of factors, including infrastructure changes, third-party service providers, human or software errors and capacity constraints. If our software application is unavailable when customers attempt to access it or it does not load as quickly as they expect, customers may seek other services.

Our quantum computer products rely on software that is highly technical and complex and may now or in the future contain undetected errors, bugs, or vulnerabilities. Some errors in our software code may only be discovered after the code has been deployed. Any errors, bugs, or vulnerabilities discovered in our code after deployment, inability to identify the cause or causes of performance problems within an acceptable period of time or difficultly maintaining and improving the performance of our platform, particularly during peak usage times, could result in damage to our reputation or brand, loss of revenues, or liability for damages, any of which could adversely affect our business and financial results.

We expect to continue to make significant investments to maintain and improve the availability of our cloud- based products and services and to enable rapid releases of new features and products. To the extent that we do not effectively address capacity constraints, upgrade our systems as needed and continually develop our technology and network architecture to accommodate actual and anticipated changes in technology, our business and operating results may be harmed.

***Growing our customer base depends upon the effective operation of our applications with operating systems, networks and standards that we do not control.***

We will be dependent on the interoperability of our applications with operating systems that we do not control, and any changes in such systems that degrade our potential products' functionality or give preferential treatment to competitive products could adversely affect the usage of our applications on quantum processing units. Additionally, in order to deliver high quality products, it is important that our products work well with a range of quantum computers, conventional computers, systems, networks and standards that we do not control. We may not be successful in developing relationships with key participants in the quantum computing industry or in developing products that operate effectively with these technologies, systems, networks or standards.

***We may not be able to protect our source code from copying if there is an unauthorized disclosure of source code.***

Source code, the detailed program commands for our operating systems and other software programs, is critical to our business. While, from time to time, we may license portions of our application and operating system source code to one or more licensees, we take significant measures to protect the secrecy of large portions of our source code. However, if a significant portion of our source code leaks, we might lose future trade secret protection for that source code. It may become easier for third parties to compete with our products by copying functionality, which could adversely affect our revenue and operating margins.



## Risks Related to Our Common Stock

***Our stock price has been and may continue to be volatile or may decline regardless of our operating performance, and you may lose part or all of your investment.***

The market price of our common stock has in the past and may going forward fluctuate widely in response to various factors, some of which are beyond our control, including:

- actions by competitors;
- actual or anticipated growth rates relative to our competitors;
- the public's response to press releases or other public announcements by us or third parties, including our filings with the Securities and Exchange Commission (the "SEC");
- economic, legal and regulatory factors unrelated to our performance;

- any future guidance that we may provide to the public, any changes in such guidance or any difference between our guidance and actual results;
- changes in financial estimates or recommendations by any securities analysts who follow our common stock;
- speculation by the press or investment community regarding our business;
- litigation;
- changes in key personnel; and
- future sales of our common stock by our officers, directors and significant stockholders.

In addition, the stock markets, including the Nasdaq Stock Market LLC ("Nasdaq") on which our common stock is listed, have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These broad market fluctuations may materially affect our stock price, regardless of our operating results. Furthermore, the market for our common stock historically has been limited and we cannot assure you that an active trading market will ever be developed or maintained. The price at which investors purchase shares of our common stock may not be indicative of the price that will prevail in the trading market. Market fluctuations and volatility, as well as general economic, market and political conditions, could reduce our market price. As a result, these factors may make it more difficult or impossible for you to sell your shares of our common stock for a positive return on your investment. In the past, stockholders have instituted securities class action litigation following periods of market volatility. If we were involved in securities litigation, we could incur substantial costs and our resources and the attention of management could be diverted from our business.



***Future sales of shares of our common stock, or the perception in the public markets that these sales may occur, may depress our stock price.***

The market price of our common stock could decline significantly as a result of sales of a large number of shares of our common stock. In addition, if our significant stockholders sell a large number of shares, or if we issue a large number of shares, the market price of our stock could decline. Any issuance of additional common stock by us in the future, or warrants or options to purchase our common stock, if exercised, would result in dilution to our existing stockholders. Such issuances could be made at a price that reflects a discount or a premium to the then-current trading price of our common stock. Moreover, the perception in the public market that stockholders might sell shares of our stock or that we could make a significant issuance of additional common stock in the future could depress the market for our shares. These sales, or the perception that these sales might occur, could depress the market price of our common stock or make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate.

***"Penny stock" rules may make buying or selling our common stock difficult, which may make our stock less liquid and make it harder for investors to buy and sell our securities.***

Trading in our common stock is subject to the SEC's "penny stock" rules and we expect that trading in our common stock will continue to be subject to the penny stock rules for the foreseeable future. The SEC has adopted regulations that generally define a penny stock to be any equity security that has a market price of less than $5.00 per share, subject to certain exceptions. These rules would require that any broker-dealer that recommends our common stock to persons other than prior customers and accredited investors must, prior to the sale, make a special written suitability determination for the purchaser and receive the purchaser's written agreement to execute the transaction. Unless an exception is available, the regulations require the delivery, prior to any transaction involving a penny stock, of a disclosure schedule explaining the penny stock market and the risks associated with trading in the penny stock market. In addition, broker-dealers must disclose commissions payable to both the broker-dealer and the registered representative and current quotations for the securities they offer. The additional burdens imposed upon broker-dealers by these requirements may discourage broker-dealers from effecting transactions in our common stock, which could severely limit the liquidity of, and consequently adversely affect the market price for, our common stock.

***Sales of our currently issued and outstanding stock may become freely tradable pursuant to Rule 144 and may dilute the market for your shares and have a depressive effect on the price of the shares of our common stock.***

A substantial minority of our outstanding shares of common stock are "restricted securities" within the meaning of Rule 144 under the Securities Act. In addition, we have issued notes that are convertible into shares of our common stock in connection with financing transactions and certain employment, director and consultant agreements, which shares of common stock, upon conversion, would also be considered "restricted securities." As restricted securities, these shares may be resold only pursuant to an effective registration statement or under the requirements of Rule 144 or other applicable exemptions from registration under the Act and as required under applicable state securities laws. Rule 144 provides in essence that an Affiliate (as such term is defined in Rule 144(a)(1)) of an issuer who has held restricted securities for a period of at least six months may, under certain conditions, sell every three months, in brokerage transactions, a number of shares that does not exceed the greater of 1% of a company's outstanding shares of common stock or the average weekly trading volume during the four calendar weeks prior to the sale. Rule 144 also permits, under certain circumstances, the sale of securities, without any limitation, by a person who is not an Affiliate of the company and who has satisfied a one-year holding period. The resale of significant amounts of our common stock under Rule 144 or under any other exemption from the registration requirements of the Securities Act, if available, or pursuant to subsequent registrations of our shares of common stock, could cause the market price of our shares of common stock to decline significantly.



***We currently do not intend to pay dividends on our common stock. As a result, your only opportunity to achieve a return on your investment is if the price of our common stock appreciates.***

We currently do not expect to declare or pay dividends on our common stock. In addition, in the future we may enter into agreements that prohibit or restrict our ability to declare or pay dividends on our common stock. As a result, your only opportunity to achieve a return on your investment will be if the market price of our common stock appreciates and you sell your shares at a profit.

***You may experience dilution of your ownership interest due to the future issuance of additional shares of our common stock.***

We are in a capital-intensive business and we do not have sufficient funds to finance the growth of our business or the costs of our development projects or to support our projected capital expenditures indefinitely. As a result, we will very likely require additional funds from future equity or debt financings, which may include the issuance of shares of preferred stock, convertible debt, or warrants to purchase shares of common stock, to purchase capital equipment, complete the development of new products and pay the general and administrative costs of our business. We may in the future issue our previously authorized and unissued securities, resulting in the dilution of the ownership interests of holders of our common stock. We are currently authorized to issue 250,000,000 shares of common stock. The potential issuance of such additional shares of common stock or of preferred stock or convertible debt may create downward pressure on the market price of our common stock. We may also issue additional shares of common stock or other securities that are convertible into or exercisable for common stock in future public offerings or private placements for capital raising purposes or for other business purposes. The future issuance of a substantial number of shares of common stock or the sale of a substantial number of shares in the public market, or the perception that such issuances or sales could occur, could adversely affect the prevailing market price of our common stock. A decline in the market price of our common stock could make it more difficult to raise funds through future offerings of our common shares or securities convertible into common stock.

In addition, these new securities could contain provisions, such as priorities on distributions and voting rights, that could affect the value of our existing common stock.

***Our executive officers and directors possess significant voting power with respect to our common stock, which will limit your influence on corporate matters.***

As of March 28, 2024, our directors and executive officers collectively beneficially own approximately 31.8% of the shares of our common stock including the beneficial ownership of Mr. Liscouski of 3.5% of the shares of our common stock and Dr. Yuping Huang of 25.0% of the shares of our common stock.

As a result, our insiders have the ability to significantly influence our management and affairs through the election and removal of the members of our board of directors (the "Board") and all other matters requiring stockholder approval, including any future merger, consolidation or sale of all or substantially all of our assets. This concentrated voting power could discourage others from initiating any potential merger, takeover or other change-of-control transaction that may otherwise be beneficial to our stockholders. Furthermore, this concentrated control will limit the practical effect of your influence over our business and affairs, through any stockholder vote or otherwise. Any of these effects could depress the market price of our common stock.

***Our articles of incorporation grant the Board the power to issue additional shares of common and preferred shares and to designate other classes of preferred shares, all without stockholder approval.***

Our authorized capital consists of 260,000,000 shares of capital stock of which 10,000,000 shares are authorized as preferred stock. The Board, without any action by our stockholders, may designate and issue shares of preferred stock in such series as it deems appropriate and establish the rights, preferences and privileges of such shares, including dividends, liquidation and voting rights, provided it is consistent with Delaware law.

The rights of holders of our preferred stock that may be issued could be superior to the rights of holders of our shares of common stock. The designation and issuance of shares of capital stock having preferential rights could adversely affect other rights appurtenant to shares of our common stock. Furthermore, any issuances of additional stock (common or preferred) will dilute the percentage of ownership interest of then-current holders of our capital stock and may dilute our book value per share.

## ITEM 1B. UNRESOLVED STAFF COMMENTS.

Not applicable

## ITEM 1C. CYBERSECURITY

A robust and consistent approach to cybersecurity is critical to achieving our strategic business objectives and protecting our intellectual property. As an advanced technology company developing quantum photonic products, we face a wide range of cybersecurity threats such as ransomware and denial-of-service attacks that affect most industry sectors, to attacks from highly sophisticated adversaries, including nation state actors, that target dual-use advanced technologies such as quantum computing. Our customers, suppliers and other business partners face similar cybersecurity threats, and a cybersecurity incident impacting us or any of these entities could materially adversely affect our operations, performance and results of operations. We are continually evaluating best practices and methods to protect the Company from a wide range of potential threats. Due to the risks that these cybersecurity threats pose to our business, we are investing in cyber defense systems and training programs.

The Board, through the Risk Committee, oversees the Company's processes for identifying and mitigating risks, including cybersecurity risks. Company management periodically briefs the Board on our cybersecurity and information security policies and plans, and the Board is apprised of cybersecurity incidents deemed to have a moderate or higher business impact. In the event of an incident, the Company has developed an incident response plan, which sets forth the steps to be followed from incident detection and assessment to mitigation, recovery and notification and reporting, including notifying functional areas (e.g. legal), as well as senior leadership and the Board, as appropriate.

We continue to evaluate our cybersecurity requirements to address the evolving cybersecurity risks that the Company faces in an increasingly technically capable environment. The Company has implemented policies for its personnel, including awareness programs, travel security programs and other related cybersecurity best practices. The information technology team manages the Company's cybersecurity policies, including employee training, with the ultimate goal of preventing cybersecurity incidents, if possible, while also maintaining IT system performance and data integrity to minimize the business impact should an incident occur. The Company is coordinating closely with the Board's Risk Committee to ensure that the Company will implement the appropriate cybersecurity technologies to protect the Company and its intellectual property.

Third parties play an important role in our cybersecurity program. We engage third-party services to conduct evaluations of our security controls, including penetration testing and consulting on best practices. The third-party services include testing both the design and operational effectiveness of security controls.

Although we take cybersecurity risks seriously, we may not be successful in preventing or mitigating a cybersecurity incident that could have a material adverse effect on the Company. While the Company maintains cybersecurity insurance, the costs related to cybersecurity threats or disruptions may not be fully insured. See Item 1A. "Risk Factors" for a discussion of cybersecurity risks.

## ITEM 2. PROPERTIES.

We maintain our current principal office at 5 Marine View Plaza, Suite 214, Hoboken, NJ 07030. The Company leases 7,503 square feet of office and laboratory space in a multistory, multi-tenant building in Hoboken, NJ under a five-year lease. Additionally, the Company has a fully executed lease for 9,261 square feet of office, laboratory and clean room space in a multi-tenant building in Tempe, AZ for 51-months, which will commence upon substantial completion of tenant improvements. The Company also has multiple leases or membership agreements in multi-tenant facilities that provides 24/7 furnished co-working space, conference room space, and other services on an as-needed basis, including approximately 350 square feet under a month-to-month lease in Leesburg, VA, approximately 300 square feet under a short-term agreement in Arlington, VA, and approximately 450 square feet under an annual operating lease in Minneapolis, MN.

## ITEM 3. LEGAL PROCEEDINGS.

Except as listed below, there is no action, suit, or proceeding by any court, public board, government agency, self-regulatory organization or body pending or, to the knowledge of the executive officers of the Company or our subsidiaries, threatened against or affecting the Company, our common stock, our subsidiaries, or the Company's or its subsidiaries' officers or directors in their capacities as such, in which an adverse decision could have a material adverse effect on the Company.

BV Advisory Partners, LLC ("BV Advisory") was purportedly a shareholder of QPhoton, the predecessor in interest to QPhoton, LLC, a wholly owned subsidiary of the Company (both referred to as "QPhoton" in this Legal Proceedings discussion). On October 13, 2022, BV Advisory filed a petition in the Court of Chancery of the State of Delaware seeking appraisal rights on the shares of common stock of QPhoton it allegedly owns (which shares represented 10% of the shares of common stock of QPhoton outstanding immediately prior to the Company's acquisition of QPhoton) pursuant to Section 262 of the General Corporation Law of the State of Delaware. The parties are currently engaged in discovery and the Company does not have sufficient information to assess the potential impact of the appraisal demand at this time.

In addition, on March 1, 2021, QPhoton entered into a Note Purchase Agreement with BV Advisory. Under the Note Purchase Agreement, on March 1, 2021, March 23, 2021 and July 9, 2021, QPhoton and BV Advisory entered into convertible promissory notes for $200,592, $150,000, and $150,000, respectively, for a total of $500,592 (the "BV Notes"). The BV Notes all bore interest at a rate of 6% per annum and matured two years from the grant date.

On June 16, 2022, the effective date of our acquisition of QPhoton, QPhoton tendered a cashier's check to BV Advisory in the amount of $535,684.24, representing the full principal balance of the BV Notes and accrued interest through June 16, 2022. BV subsequently filed suit against the Company disputing the calculation of the payment amount and asserting other claims.

On August 16, 2022, BV Advisory filed a complaint in the Court of Chancery of the State of Delaware naming the Company and certain of its directors and officers (among others) as defendants (the "Lawsuit"). BV Advisory is seeking, among other relief, monetary damages for an alleged breach of the Note Purchase Agreement between BV Advisory and QPhoton, as well as monetary damages for alleged breach of an alleged binding letter of intent among Barksdale Global Holdings, LLC ("BGH"), Inference Ventures, LLC ("Inference Ventures") and QPhoton. BV Advisory and its affiliates claim that pursuant to the letter of intent they had the right to acquire additional shares in QPhoton by investing $2.5 million in QPhoton. BV Advisory claims QPhoton refused to allow BV Advisory to purchase the equity. However, BV Advisory never made the additional investment in QPhoton. The Company believes that BV Advisory's claims have no merit and intends to defend itself vigorously. Moreover, the Company believes that numerous alleged facts and characterizations set forth in BV Advisory's complaint are false, misleading and intentionally designed to damage the Company's reputation, and the Company categorically rejects those alleged facts and characterizations. The Company further believes that Mr. Barksdale misrepresented his role with QPhoton and his authority to negotiate on behalf of QPhoton in order to arrogate to BV Advisory and related parties a larger share of the QPhoton merger consideration. The Company has filed a motion to dismiss the Lawsuit, and that motion to dismiss is currently under consideration by the court.

On December 30, 2022 the Company, QPhoton and Robert Liscouski (the "Quantum Plaintiffs") filed suit in the Superior Court of New Jersey (the "NJ Court") against Keith Barksdale, Michael Kotlarz, BV Advisory, BGH, Power Analytics Global Corporation ("PAG"), and Inference Ventures (and together with Barksdale, Kotlarz, BV Advisory, BGH, and PAG the "BV Defendants"), alleging fraud, aiding and abetting fraud, defamation, and conspiracy to defraud, seeking monetary and injunctive relief. The Company claims that the BV Defendants have made numerous public statements defaming the Company and its management in furtherance of a plan to manipulate the trading prices of the Company's common stock, and that the BV Defendants misrepresented their ownership in QPhoton and conspired to acquire additional shares of QPhoton at the Company's expense. The BV Defendants filed a motion to dismiss the complaint on March 24, 2023, and on June 5, 2023, the NJ Court largely denied the BV Defendants' motion. On January 31, 2024, the BV Defendants filed a motion for reconsideration of their motion to dismiss. On March 7, 2024, the NJ Court issued an order, granting the BV Defendant's motion dismissing the Company's case on procedural grounds because, according to the NJ Court, the Company can assert its claims. The Company has 45 days in which to file an appeal and is evaluating whether it should file the claims in Delaware or appeal the NJ Court's ruling. The Company does not have sufficient information at this time to assess the potential impact of the action against the BV Defendants.

On July 27, 2023, BV Advisory and its managing member, Keith Barksdale, as alleged stockholders of and claimants against the Company, filed a petition in the Court of Chancery of the State of Delaware to appoint a receiver for the Company based on allegations that the Company is insolvent due to purported poor corporate governance and cash management. The petition also objects to the Company's approach to raising capital. In a related motion, the petitioners also sought expedited treatment of the petition on July 28, 2023, alleging that they face a threat of irreparable harm. The Company strongly disagrees with the allegations in the petition and plans to vigorously defend ourselves against these claims. On August 23, 2023, the Company filed a motion to dismiss the petition and on September 13, 2023, it submitted a brief in opposition to the motion to expedite. The Company intends to vigorously defend itself against the allegations in the petition. The Company's motion to dismiss and BV Advisory's motion for expedited treatment were argued before the Court on October 11, 2023. The Court denied BV Advisory's motion to expedite and took the Company's motion to dismiss under advisement.

## ITEM 4. MINE SAFETY DISCLOSURES.

Not applicable.



# PART II

## ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES.

***Market Information***

Our common stock is listed on the Nasdaq Capital Market under the symbol "QUBT" and commenced trading on July 15, 2021.

***Authorized Capital***

The Company is authorized by its Certificate of Incorporation to issue an aggregate of 250,000,000 shares of common stock, $0.0001 par value per share, and 10,000,000 shares of blank check preferred, of which 1,550,000 shares are designated as Series A Convertible Preferred Stock and 3,079,864 shares are designated as Series B Preferred Stock. As of March 28, 2024, 91,357,640 shares of common stock were issued and outstanding, 1,407,221 shares of Series A Convertible Preferred stock were issued and outstanding and no shares of Series B Preferred Stock are issued and outstanding.

***Holders of Common Equity***

As of March 28, 2024, there were approximately 263 stockholders of record of our common stock. Because shares of our common stock are held by depositaries, brokers and other nominees, the number of beneficial holders of our shares is substantially larger than the number of stockholders of record.

***Dividend Information***

We have not paid any cash dividends to our holders of common stock. The declaration of any future cash dividends is at the discretion of the Board and depends upon our earnings, if any, our capital requirements and financial position, our general economic condition, and other pertinent conditions. It is our present intention not to pay any cash dividends in the foreseeable future, but rather to reinvest earnings, if any, in our business operations.

**Unregistered Sales of Equity Securities and Use of Proceeds**

During the year ended December 31, 2023, we have issued securities that were not registered under the Securities Act, all of which were previously disclosed in a Quarterly Report on Form 10-Q or a Current Report on Form 8-K.

**ITEM 6. [Reserved]**

**ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.**

*The following discussion and analysis of the results of operations and financial condition for the years ended December 31, 2023 and 2022 should be read in conjunction with our consolidated financial statements and the notes to those consolidated financial statements that are included elsewhere in this Annual Report. Our discussion includes forward-looking statements based upon current expectations that involve risks and uncertainties, such as our plans, objectives, expectations and intentions. Actual results and the timing of events could differ materially from those anticipated in these forward-looking statements as a result of a number of factors. See "Forward-Looking Statements."*

*You should read the following discussion and analysis of our financial condition and results of operations together with our audited consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K,*

When we say "we," "us," "our," "Company," or "QCi," we mean Quantum Computing Inc.

**Overview**

QCi is a development stage company with limited operations and revenue. The Company is developing quantum machines for high-performance computing applications based on proprietary photonics technology. QCi's products are designed to operate at room temperature and low power at an affordable cost in the areas of high-performance computing, sensing and imaging, and quantum cybersecurity. The Company has generated some revenue based on sales of products and related services to date and is expanding its sales and marketing efforts. The Company's development team includes optical engineers, mathematicians, physicists, and software developers.



**Results of Operations**

*Years Ended December 31, 2023 vs. December 31, 2022*

*Revenues*

| | For the Twelve Months Ended December 31, 2023 | | For the Twelve Months Ended December 31, 2022 | | |
|---|---|---|---|---|---|
| *(In thousands)* | **Amount** | **Mix** | **Amount** | **Mix** | **Change** |
| Products | 4,500 | 1% | 0 | 0% | 0% |

| | | | | | |
|---|---|---|---|---|---|
| Services | 353,547 | 99% | 135,648 | 100% | % |
| Total | $ 358,047 | 100% | $ 135,648 | 100.0% | % |

Revenues for the year ended December 31, 2023 were $358,047 compared to $135,648 for the year ended December 31, 2022, an increase of $222,399, or 164%. Revenue was derived from sales of hardware products and professional services in 2023, and solely from professional services in 2022, in each case provided to multiple commercial and government customers under multi-month contracts; the year-over-year change was riven by increases in short-term contractual service revenue. In 2023, QCi continued to execute its business strategy to provide quantum-ready solutions for solving real-world problems. While we have made significant progress toward this overarching objective, the generation of revenue from customers has been slow to develop, in part due to the fact that quantum computing is a cutting-edge technology for most potential customers, who are therefore proceeding cautiously with small, exploratory contracts to better understand its applicability to their requirements. Accordingly, the Company has focused on providing professional services to introduce customers to quantum-based solutions to their operating needs, and on customer education and building customer awareness as a means to generating sales. The Company has completed its discovery and research phase and is now transitioning towards commercialization. We have developed and released multiple products and are now in the process of marketing them. We expect revenues to increase meaningfully in 2024 as we continue to emphasize our hardware capability.

*Cost of Revenues*

Cost of revenues, which consists of labor consumed to fulfill our obligations under contractual service agreements as well as the component parts of finished goods sold, was $195,640 for the year ended December 31, 2023 compared to $60,934 for the prior year, an increase of $134,706, or 221%. Cost of revenues for each of the years ending December 31, 2023 and 2022 consists primarily of salary expense. The increase for 2023 was predominantly driven by the execution of new government service contracts. Cost of revenue for these services was contractually structured and limited to the direct salaries and actual hours worked to fulfill the work orders. Rates for these services remained materially unchanged year over year, with contract volume being the driver of growth.

*Gross Margin*

Gross margin for the year ended December 31, 2023 was $162,407 compared to $74,714 for the prior year, an increase of $87,693, or 117%. On a percentage basis, gross margin was 45%, a decrease of 10% year-over-year. The change was nearly entirely the result of the shift to contractual service revenue where the cost of goods sold was defined under the terms of our general professional services obligation. Our lack of a scaled and distributed base of revenue generation by product and sales channel can result in large swings in gross margin between reporting periods.



*Operating Expenses*

Operating expenses for the year ended December 31, 2023 were $27,383,684 compared to $36,654,056 for the year ended December 31, 2022, a decrease of $9,270,372 or 25%. The decrease in operating expenses was almost entirely driven by a $9,038,701 decrease in stock-based compensation expenses, which was driven mainly by higher value stock option awards in 2022 compared to 2023. Decreases of $1,399,208 in selling, general and administrative expenses, primarily as a result of $574,428 through stream-lining of marketing activities and sales roles, and $704,975 in professional services, primarily as a result of non-recurring legal expenses during 2022 related to the QPhoton Merger, also contributed to the decrease in operating expenses during 2023 compared to the prior year. These decreases were partially offset by an increase in research and development spending year-over-year of $1,885,909 driven by increased salary expenses as the Company expanded its capability to deliver commercialized hardware products.

*Net Loss*

Our net loss for the year ended December 31, 2023 was $29,730,672 compared to a net loss of $38,593,700 for the prior year, a decrease of $8,863,029 or 23%. The decrease in net loss is primarily due to the decrease in operating expenses, noted above, partially offset by $513,709 net increase in financing costs driven by amortization of the $750,000 original issue discount included in the principal balance of the unsecured promissory note (the “Streeterville Unsecured Note”) that we issued to Streeterville Capital, LLC in the initial principal amount of $8,250,000 in September 2022, which bears interest at 10% per annum.

**Liquidity and Capital Resources**

We have incurred net losses and experienced negative cash flows from operations since inception. To date, since February 2018, the Company has raised $57,424,924 through private placements of equity and $12,633,000 through private placements of Convertible Promissory Notes and other debt for a total of $70,057,924 through December 31, 2023. The Company has no lines of credit, and $2,496,480 in short-term debt obligations outstanding. We expect to incur additional losses and higher operating expenses for the foreseeable future as we continue to invest in research and development and go-to-market programs. We have determined that additional financing will be required to fund our operations for the next 12 months and our ability to continue as a going concern is dependent upon obtaining additional capital and financing. As of December 31, 2023, the Company had cash and cash equivalents of $2,059,285.

Our primary uses of cash are to fund our operations as we continue to grow our business. We will require a significant amount of cash for expenditures as we invest in ongoing research and development and non-linear quantum optical chips and fund business operations. Until such time as we can generate significant revenue from sales or subscriptions of our hardware offerings, we expect to finance our cash needs through public and/or private equity and/or debt financings or other capital sources, including but not limited to U.S. government grant and loan programs. However, we may be unable to raise sufficient funds or enter into such other arrangements, when needed, on favorable terms, or at all. In particular, uncertain and unfavorable conditions in the United States and global macroeconomic environment, including inflationary pressures, rising interest rates, banking collapses, and financial and credit market fluctuations, could reduce our ability to access capital on favorable terms, or at all. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be, or could be, diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt financing and equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, or substantially reduce our quantum computing development and go-to-market efforts.

The following table summarizes total current assets, liabilities and working capital at December 31, 2023, compared to December 31, 2022:

| | December 31, 2023 | December 31, 2022 | Increase/ (Decrease) |
|---|---|---|---|
| Current Assets | $ 3,181,748 | $ 5,728,536 | $ (2,546,788) |
| Current Liabilities | $ 4,619,637 | $ 5,319,245 | $ (699,608) |
| Working Capital (Deficit) | $ (1,437,889) | $ 409,291 | $ (1,847,180) |



At December 31, 2023, we had a working capital deficit of $2,546,788 as compared to working capital of $409,29 at December 31, 2022, a decrease of $1,847,180. The decrease in working capital is primarily attributable to the use of cash to pay for operating expenses and capital investments in property and equipment, satisfaction of accrued expense liabilities and the Streeterville Unsecured Note becoming a current portion of long-term debt payable.

Our independent registered public accounting firm included an explanatory paragraph in its report on our financial statements as of and for the year ended December 31, 2023, noting the existence of substantial doubt about our ability to continue as a going concern. This uncertainty arose from management's review of our results of operations and financial condition and its conclusion that, based on our operating plans, we did not have sufficient existing working capital to sustain operations for a period of twelve months from the date of the issuance of these financial statements.

Cash Flows

Net cash used in operating activities for the years ended December 31, 2023 and 2022 was $19,940,521 and $17,240,117, respectively, in each case primarily as a result of our net loss in each year offset by noncash adjustments for stock-based compensation, depreciation of property, plant and equipment and amortization of intangibles.

Net cash used in investing activities for the years ended December 31, 2023 and 2022 was $2,617,990 and $2,225,758, respectively. Cash used in investing activities during the year ended December 31, 2023 was attributable to acquisition of laboratory and production equipment for $2,117,990 and our $500,000 loan to millionways, Inc ("millionways"). in June 2023. On June 6, 2023, the Company entered into a Note Purchase Agreement with millionways pursuant to which the Company agreed to purchase from millionways up to three unsecured promissory in an aggregate principal amount of up to $2,000,000, subject to the terms and conditions thereof. On June 6, 2023, the Company purchased the notes from millionways and loaned it an aggregate principal amount of $500,000. This followed the Company's entry into a Summary of Proposed Terms with millionways on May 16, 2023, to provide bridge loans to millionways and enter into due diligence to acquire up to 100% of the AI firm.

Net cash provided by financing activities for the year ended December 31, 2023 was $19,309,330 compared to $8,035,684 during the year ended December 31, 2022. Cash provided by financing activities during the year ended December 31, 2023 was attributable to $25,496,364 received from the sale of shares of our common stock through our At-The-Market (ATM) facility, managed by Ascendiant Capital Markets, LLC (net the 3% fee paid to Ascendiant Capital Markets, LLC), partially offset by repayments of $6,187,034 on the Streeterville Unsecured Note. During the year ended December 31, 2022, cash provided by financing activities was primarily attributable to the funds we received from the issuance of the Streeterville Unsecured Note.

The Company has funded our operations primarily through the sale of our equity (or equity linked) and debt securities. As of March 28, 2024, we had cash on hand of approximately $6,554,651. We have approximately $74,977 in monthly lease and other mandatory payments, not including payroll, employee benefits and ordinary expenses which are due monthly.

On a long-term basis, our liquidity is dependent on continuation and expansion of operations and receipt of revenues. Demand for the products and services will be dependent on, among other things, market acceptance of our products and services, the technology market in general, and general economic conditions, which are cyclical in nature. In as much as a major portion of our activities will be the receipt of revenues from the sales of our products and services, our business operations may be adversely affected by our competitors and prolonged recession periods.



**Critical Accounting Estimates**

Certain of our accounting policies require the application of significant judgment by our management, and such judgments are reflected in the amounts reported in our condensed consolidated financial statements. In applying these policies, our management uses judgment to determine the appropriate assumptions to be used in the determination of estimates. Those estimates are based on our historical experience, terms of existing contracts, our observance of market trends, information provided by our strategic partners and information available from other outside sources, as appropriate. Actual results may differ significantly from the estimates contained in our condensed consolidated financial statements.

Fair Value of Options and Derivatives

The Company uses the Black-Scholes model to calculate the fair value of stock options and derivatives. The Black-Scholes model, developed in 1973, is a differential equation which requires five input variables, the strike price of an option, the current stock price, the time to expiration, the risk-free rate, and the volatility of the Company common stock. The Black-Scholes model is widely used for pricing options but it does rely on certain assumptions about the market which may not be correct over time. Specifically,

- No dividends are paid out during the life of the option.
- Markets are random (i.e., market movements cannot be predicted).
- There are no transaction costs in buying the option.
- The risk-free rate and volatility of the underlying asset are known and constant.
- The returns of the underlying asset are normally distributed.
- The option is European and can only be exercised at the expiration date.

To the extent that any of these assumptions is not correct, that could result in the overpricing or underpricing of the stock options involved. The assumption that the risk-free rate (the Company uses the one-year U.S. Treasury Bill rate as a proxy for the risk-free rate) can vary over time, and if the T-Bill rate varies substantially over the life of the stock option that could affect the pricing. Similarly, the volatility of the Company's common stock, also known as the Beta, has moved within a limited range over the past year, but the volatility of any security can change over time, which would affect the option pricing calculation. Another critical estimate relating to option pricing is the default rate, which means the estimate of granted options that will either expire unexercised, or be forfeited, over the life of the stock options. If the Company's estimate of the default rate turns out to be substantially different from the actual, experienced default rate, that could result in over- or under-estimating the total option expense.

The Black-Scholes model is not the only available approach for pricing stock options, the Company could have used a Binomial pricing model or a Monte Carlo simulation model. However, there is no assurance that either a Binomial or Monte Carlo pricing approach would be more accurate than the Black-Scholes model over time. Moreover, both the Binomial model, which calculates the price of an option at each point in time during the option period, or the Monte Carlo model, which simulates the possible movements in future stock prices and uses them to calculate the option value, rely on critical assumptions. The Binomial model assumes that stock markets are perfectly efficient, which may not hold for all periods of time. The Monte Carlo simulation model assumes changes in stock prices over time cannot be predicted from the historical trends (known as a "random walk"), which also may not hold for all periods.



Fair Market Value and Useful Life of Intangible Assets

Another area of critical accounting estimates involves determining the fair market value and useful life of the intangible assets acquired by the Company through the merger with QPhoton. In the absence of market pricing for the intangible assets, the Company relied on independent third-party appraisal experts and comparison with similar transactions to arrive at estimates of value as well as useful life. The Company will perform periodic assessments of the intangible assets for impairment, but if any of the initial estimates are incorrect, that could result in a calculation of amortization expense that is too high or too low.

Legal and Other Contingencies

The outcomes of legal proceedings and claims brought against us are subject to significant uncertainty. An estimated loss from a loss contingency such as a legal proceeding or claim is accrued by a charge to income if it is probable that an asset has been impaired or a liability has been incurred and the amount of the loss can be reasonably estimated. In determining whether a loss should be accrued we evaluate, among other factors, the degree of probability of an unfavorable outcome and the ability to make a reasonable estimate of the amount of loss. Changes in these factors could materially impact our consolidated financial statements.

## ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Not applicable.

## ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.

Our consolidated financial statements are contained in pages F-1 through F-23 which appear at the end of this Annual Report on Form 10-K.

## ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

None.

## ITEM 9A. CONTROLS AND PROCEDURES.

### Evaluation of Disclosure Controls and Procedures

We maintain "disclosure controls and procedures," as such term is defined in Rule 13a-15(e) under the Exchange Act. In designing and evaluating our disclosure controls and procedures, our management recognized that disclosure controls and procedures, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the objectives of disclosure controls and procedures are met. Additionally, in designing disclosure controls and procedures, our management was necessarily required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. The design of any disclosure controls and procedures also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

As of the end of the period covered by this Annual Report on Form 10-K, we carried out an evaluation, under the supervision and with the participation of our management, including our principal executive officer and our principal financial officer, of the effectiveness of our disclosure controls and procedures. Based on such evaluation, our principal executive officer and principal financial officer concluded that as of December 31, 2023, our disclosure controls and procedures were not effective to provide reasonable assurance that (i) the information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and (ii) such information is accumulated and communicated to our management, including our Chief Executive Officer and President and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures. Specifically, the Company does not have sufficient accounting staff to enable proper segregation of duties.



**Report of Management on Internal Control over Financial Reporting**

We are responsible for establishing and maintaining adequate internal control over financial reporting. The Company's internal control over financial reporting is a process designed by, or under the supervision of, our principal executive and principal financial officers and effected by our board of directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risks that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

*Material Weakness in Internal Control over Financial Reporting*

We have assessed the effectiveness of our internal control over financial reporting as of December 31, 2023. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework (2013).

Based on this assessment, management has determined that the Company's internal control over financial reporting was not effective.

A material weakness, as defined in the standards established by the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

The ineffectiveness of the Company's internal control over financial reporting was due to the following material weaknesses which are indicative of many small companies with small number of staff:

(i) inadequate segregation of duties consistent with control objectives;

(ii) inadequate controls related to revenue recognition;

(iii) insufficient written policies and procedures for accounting and financial reporting with respect to the requirements and application of both U.S. GAAP and SEC Guidelines; and

(iv) inadequate information technology general controls specifically related to security, segregation of duties, user access, restricted access and change management.

***Management's Plan to Remediate the Material Weakness***

The Company has been implementing and continues to implement measures designed to ensure that control deficiencies contributing to the material weaknesses are remediated, such that these controls are designed, implemented, and operating effectively. The Company has formally documented its procedures for many of the significant accounting and financial reporting processes, in addition to identifying and remediating design deficiencies in its processes. The other remediation actions planned include:

(i) implementation of controls to ensure revenue is recognized upon shipment;

(ii) further documentation and implementation of control procedures and the implementation of control monitoring; and

(iii) identify and remedy gaps in our information technology general controls specifically related to the areas of security, segregation of duties, user access, restricted access and change management.

We are committed to maintaining a strong internal control environment and believe that these remediation efforts will represent significant improvements in our control environment. Our management will continue to monitor and evaluate the relevance of our risk-based approach and the effectiveness of our internal controls and procedures over financial reporting on an ongoing basis and is committed to taking further action and implementing additional enhancements or improvements, as necessary and as funds allow.

Management's report on internal control over financial reporting was not subject to attestation by the Company's registered public accounting firm pursuant to rules of the SEC that permit a Smaller Reporting Company to provide only Management's report in this annual report, which may increase the risk that weaknesses or deficiencies in our internal control over financial reporting go undetected.

*Changes in Internal Control over Financial Reporting*

As discussed above, we are implementing certain measures to remediate the material weaknesses identified in the design and operation of our internal control over financial reporting. Other than those measures, there have been no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act) during the fiscal quarter ended December 31, 2023 that materially affected our internal control over financial reporting as of that date.

## ITEM 9B. OTHER INFORMATION.

**Rule 10b5-1 Trading Plans**

During the three months ended December 31, 2023, none of our directors or officers (as defined in Rule 16a-1(f) of the Exchange Act) adopted, terminated or modified the amount, pricing or timing provisions of a "Rule 10b5-1 trading arrangement" or "non-Rule 10b5-1 trading arrangement," as each term is defined in Item 408(c) of Regulation S-K.

## ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS.

Not applicable.



# PART III

## ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

**Directors and Executive Officers**

The following table contains information with respect to our directors and executive officers. To the best of our knowledge, none of our directors or executive officers have an arrangement or understanding with any other person pursuant to which he or she was selected as a director or officer. There are no family relationships between any of our directors or executive officers. Directors serve one-year terms. Our executive officers are appointed by and serve at the pleasure of the Board.

| Name | Current Age | Position |
|---|---|---|
| Dr. William J. McGann (1) | 66 | Chief Executive Officer and President (Principal Executive Officer) |
| Christopher Boehmler | 45 | Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer) |
| Robert Liscouski (2) | 69 | Chairman of the Board of Directors |
| Dr. Yuping Huang | 44 | Chief Quantum Officer and Director |
| Dr. Carl Weimer | 62 | Director |
| Robert Fagenson | 75 | Director |
| Michael Turmelle | 64 | Director |

(1) Dr. McGann was appointed Chief Executive Officer effective February 1, 2024.
(2) Mr. Liscouski was terminated as Chief Executive Officer January 31, 2024.

**Dr. William J. McGann, Chief Executive Officer and President**

Dr. McGann, age 66, is the Company's Chief Executive Officer. He was appointed to this role effective February 1, 2024, having previously served as the Company's Chief Technology Officer and Chief Operations Officer since January 2022 and as a Director of the Company from September 2021 to December 2021. Prior to joining Quantum Computing, Dr. McGann was the Chief Technology Officer for the Security, Detection and Automation business at Leidos Holdings, Inc., a provider of technical services, primarily to the U.S. government, from May 2019 to January 2022. Dr. McGann has a strong, directed passion for transforming credible science into practical technology solutions in solving some of the world's greatest challenges. Prior to joining Leidos, Dr. McGann held numerous business and technology leadership positions and roles including (a) Founder of the first explosives trace detection company, Ion Track Instruments, (b) Chief Technology Officer for GE Security, (c) VP of Engineering for United Technologies Fire and Security business, (d) CEO and board member of Implant Sciences Corp., and (e) Chief Technology Officer at L3Harris Aviation Security and Detection business. Dr. McGann holds a Ph.D. in Chemical Physics from the University of Connecticut and undergraduate degrees in Chemistry and Biology.

**Christopher Boehmler, Chief Financial Officer**

Mr. Chris Boehmler, age 45, has served as the Company's Chief Financial Officer since July 1, 2023. Mr. Boehmler joined the Company as Controller in March 2022. He combines over 15 years of experience in public and private corporate finance in senior management positions for technology-driven and financial institutions, primarily at Bridgewater Associates, LP and Intelsat. During this time, he also led the finance functions for two start-ups where he was instrumental in raising private equity and performing due diligence on acquisition targets. His financial expertise spans capital markets, planning & analysis, accounting operations, management and regulatory reporting, financial systems integrations, and Sarbanes Oxley Act financial risks & controls. He started his career working in the investment banking division of Credit Suisse First Boston, followed by strategic management consulting for Booz Allen Hamilton. Mr. Boehmler has an undergraduate degree in Economics with a minor in Germanic Studies from the University of Chicago.

**Robert Liscouski, Chairman of the Board**

Mr. Liscouski, age 69, is the Chairman of the Board; he has served in this position since February 2018. From March 2018 through January 2024 Mr. Liscouski served as the Company's Chief Executive Officer and President. Prior to that Mr. Liscouski served as Chairman and Founder of Convergent Risk Group LLC, an enterprise security risk management firm specializing in the convergence of physical and cyber risk, from January 2011 through May 2019 and as President of Implant Sciences Corp., a public company that became a leader in the explosive trace detection industry culminating in the sale of the technology to L3 Communications in January 2017. Mr. Liscouski is a proven security professional, thought leader and successful entrepreneur with over 35 years of senior level security operational and company leadership experience in government and public and private companies.

Mr. Liscouski is a recognized security industry leader in assessing, mitigating and managing physical and cybersecurity risk in private sector enterprises and state and federal government agencies. Mr. Liscouski has extensive experience in leading innovative start up and turn around companies as well as building programs for large government organizations and is recognized as a leader in identifying emerging security technologies. He serves as a "Trusted Advisor" to senior officials within government and private sector, providing guidance in areas such as physical and cyber security, crisis management, organizational development and strategic planning. Mr. Liscouski's career has spanned local law enforcement, senior government and private sector positions from operations to senior leadership and Boards of Directors. He served as a senior advisor to the intelligence community and was appointed by President George W. Bush as the first Assistant Secretary for Infrastructure Protection at the Department of Homeland Security. Mr. Liscouski is a founder and Chairman of the Board of the National Child Protection Task Force, a 501(c)(3) charitable organization, and served on the Board of Clean Coal Technologies Inc. (CCTC) from 2019 until December 2020. He received his Bachelor of Science degree in Criminal Justice from John Jay College and his MPA in Public Administration from the Kennedy School of Government, Harvard University. Mr. Liscouski's expertise in cybersecurity and technology innovation, as well as his leadership experience in senior government positions and public and private businesses qualifies him to serve as a member of the Board and chairman of the risk committee.

**Dr. Yuping Huang, Chief Quantum Officer and Director**

Dr. Yuping Huang, age 44, is the Company's Chief Quantum Officer and a Director, and has held these positions since June 14, 2022. Dr. Huang has over 20 years of experience in commercial and academic settings, with pioneering research in a wide spectrum of quantum physics, optics, and technology. Prior to joining the Company, Dr. Yuping founded QPhoton, where he served as Chief Executive Officer from 2020 until its acquisition by the Company in 2022. QPhoton was a development stage company commercializing quantum photonic technology and devices to provide innovative and practical quantum solutions for critical challenges facing big data, cyber, remote sensing, and healthcare industries. Dr. Huang worked as a postdoctoral fellow, a research faculty member, and principal investigator at Northwestern University from 2009-2014. In 2014 he joined the faculty of Stevens Institute of Technology, where he continues to serve. Dr. Huang is the founding director of the Center for Quantum Science and Engineering and Gallagher Associate Professor of Physics at Stevens Institute of Technology. He received a Bachelor of Science in modern physics from the University of Science and Technology of China in 2004 and a PhD in quantum AMO physics in 2009 from Michigan State University. Dr. Huang's expertise in quantum physics and optics and leadership experience in quantum research qualifies him to serve as a member of the Board.

**Dr. Carl Weimer, Director**

Dr. Weimer, age 62, has been a director of the Company since January 14, 2023. Dr. Weimer combines over 25 years of experience in the aerospace industry. Previously, he had been involved in two companies in the aerospace industry, holding positions including Team Leader, Principal Investigator and Chief Technologist. From 1994 through 2000, Dr. Weimer was a Team Leader for Ophir Corporation, an aerospace optics company. From 2000 to 2018, he was a Team Leader for Ball Aerospace & Technologies Corp., a spacecraft company, and in 2008 he was awarded a NASA Distinguished Public Service medal. From 2018 to present, Dr. Weimer has been the Chief Technologist for the Ball Aerospace Civil Business Unit. In addition, from 2008 to present, Dr. Weimer has been the Principal Investigator for the NASA Earth Science Technology Office, and he holds seven U.S. patents in optical systems. Dr. Weimer received a Bachelor of Science degree from Harvey Mudd College (1984) and a Master of Science (1987) and a PhD (1992) from Colorado State University, all in experimental Physics. Dr. Weimer's expertise in advanced optics and leadership experience in the aerospace industry qualifies him to serve as a member of the Board.

**Robert Fagenson, Director**

Mr. Fagenson, age 75, has been a director of the Company since February 2021. Mr. Fagenson has served as a member of the board of directors of National Holdings Corporation ("NHC"), a broker-dealer, since March 2012. He has served as vice chairman of the board of directors of NHC since September 2016. Mr. Fagenson previously served as co-chief executive officer of NHC from January 3, 2017 to January 31, 2017, as chief executive officer and chairman of the board of directors of NHC from December 2014 to September 2016, and as executive vice-chairman of the board of directors of NHC from July 2012 to December 2014. Mr. Fagenson has been a branch owner at National Securities Corp, an operating company of NHC, since 2012, and president of Fagenson & Co., Inc., a family investment company, since 1982. Mr. Fagenson spent the majority of his career at the New York Stock Exchange ("NYSE"), where he was managing partner of one of the exchange's largest specialist firms. While at the NYSE, Mr. Fagenson served as a governor on the trading floor and was elected to the NYSE board of directors in 1993, where he served for six years, eventually becoming vice chairman of the NYSE board of directors from 1998 to 1999 and 2003 to 2004. Mr. Fagenson has served as director of the New York City Police Museum since 2005 and as director of the Federal Law Enforcement Officers Association Foundation since 2009. He has also served on the board of directors of Sigma Alpha Mu Foundation since 2011 and on the board of directors of New York Edge since 2015. In addition, Mr. Fagenson served as the non-executive chairman of Document Security Systems, Inc. from 2012 to 2018 (NYSEMKT: DSS). He is currently a member of the alumni boards of the Whitman School of Business at Syracuse University. Mr. Fagenson received his B.S. in

Transportation Sciences & Finance from Syracuse University in 1970. Mr. Fagenson's experience in the financial services industry and in senior leadership positions qualifies him to serve as a member of the board and as chairman of the audit committee.



**Michael Turmelle, Director**

Mr. Turmelle, age 64, has been a director of the Company since January 2022. Mr. Turmelle has served on the board of directors of Ideal Power Inc. since December 2017, and as chairman of the Ideal Power board since 2021. From January 2018 through January 2024, Mr. Turmelle served as the Managing Director of Hayward Tyler, a United Kingdom private equity-backed manufacturer and service provider of pumps and motors, which he joined in February 2015. Mr. Turmelle also served on the boards of Hayward Tyler and Energy Steel (a Hayward Tyler subsidiary) from 2017 until January 2024. Hayward Tyler designs, manufactures and services performance-critical electric motors and pumps to meet the most demanding of applications for the global energy industry, as both an original equipment manufacturer supplier and trusted partner. Previously, Mr. Turmelle ran his own consulting company working with start-ups and turn-arounds in the areas of renewable energy, medical and other advanced technologies. Mr. Turmelle has served on numerous Board of Directors including the Board of Directors of Implant Sciences Corp., an explosive and narcotic trace detection company, where he served as Chairman of the Board from 2015 to 2017. Mr. Turmelle was Chief Financial Officer and Chief Operating Officer and a member of the Board of Directors of SatCon Technology Corp, a maker of energy management systems, from 1992 to 2005. Mr. Turmelle was also on the Board of Directors of Beacon Power, a SatCon spin-off company dealing in flywheel energy storage, from 1996 to 2000. Mr. Turmelle has a BA in Economics from Amherst College and is a graduate of General Electric's Financial Management Program. Mr. Turmelle's experience as a public company director and executive as well as extensive experience in finance, business operations and technology, qualifies him to serve as a member of the Board and as chairman of the compensation committee.

**Family Relationships.**

There are no family relationships between any of our directors or executive officers.

**Delinquent Section 16(a) Reports**

Section 16(a) of the Exchange Act requires the Company's directors, executive officers and persons who beneficially own 10% or more of a class of securities registered under Section 12 of the Exchange Act to file reports of beneficial ownership and changes in beneficial ownership with the SEC. Directors, executive officers and greater than 10% stockholders are required by the rules and regulations of the SEC to furnish the Company with copies of all reports filed by them in compliance with Section 16(a).

Based solely upon a review of Forms 3 and 4 and amendments thereto furnished to the Company during the fiscal year ended December 31, 2023, including those reports that we have filed on behalf of our directors and Section 16 officers, no director, Section 16 officer, beneficial owner of more than 10% of the outstanding common stock, or any other person subject to Section 16 of the Exchange Act, failed to file with the SEC on a timely basis during the fiscal year ended December 31, 2023, except (i) as previously disclosed by the Company, (ii) Robert Liscouski filed a Form 4 on July 7, 2023, which was delinquent, in connection with his sale of common stock, the earliest of which occurred on November 25, 2022.

**Code of Ethics**

The Company currently maintains a code of ethics that applies to all directors, officers, and employees. A copy of our code of ethics can be found on our website at www.quantumcomputinginc.com. We expect that any amendments to such code, or any waivers of its requirements, will be disclosed on our website.

**Board Composition and Director Independence**

The Board consists of seven members, including two vacant Board seats. The directors will serve until our next annual meeting of stockholders and until their successors are duly elected and qualified. The Company defines "independent director" as that term is defined in Rule 5605(a)(2) of the Nasdaq listing standards.

In making the determination of whether a member of the board is independent, the Board considers, among other things, transactions and relationships between each director and his immediate family and the Company, including those reported under the caption "*Certain Relationships and Related-Party Transactions*." The purpose of this review is to determine whether any such relationships or transactions are material and, therefore, inconsistent with a determination that the directors are independent. On the basis of such review and its understanding of such relationships and transactions, the Board affirmatively determined that Robert Fagenson, Michael Turmelle and Carl Weimer are qualified as independent and that they have no material relationship with us that might interfere with his exercise of independent judgment.

**Board Committees; Audit Committee Financial Expert; Stockholder Nominations**

The Board has established an audit committee, a compensation committee and a nominating and corporate governance committee. Each committee has its own charter, which is available on our website at *www.quantumcomputing.com.* Each of the Board committees has the composition and responsibilities described below.

Members will serve on these committees until their resignation or until otherwise determined by the Board.

Robert Fagenson, Carl Weimer and Michael Turmelle are our independent directors.



The members of each committee are, as follows:

Audit Committee: Robert Fagenson, Michael Turmelle and Carl Weimer, with Mr. Fagenson serving as the Chairman. The Board has determined the Mr. Fagenson is currently qualified as an “audit committee financial expert,” as such term is defined in Item 407(d)(5) of Regulation S-K. Mr. Fagenson satisfies the heightened standards for an independent director for audit committee purposes under Nasdaq’s listing rules.

Compensation Committee: Robert Fagenson and Michael Turmelle. Mr. Turmelle serves as Compensation Committee Chairman.

Nominating and Corporate Governance Committee: Robert Fagenson and Michael Turmelle. Mr. Turmelle serves as the interim Chairman of the Nominating and Corporate Governance Committee.

**Involvement in Certain Legal Proceedings.**

Our Chief Executive Officer, Dr. William McGann, was the Chief Executive Officer of Implant Sciences Corporation, which filed a petition for bankruptcy on October 11, 2016 in the Delaware Bankruptcy Court.

Our Board Chairman, Mr. Robert Liscouski, was President of Implant Sciences Corporation, which filed a petition for bankruptcy on October 11, 2016 in the Delaware Bankruptcy Court.

With the exception of the foregoing, to the best of our knowledge, none of our directors or executive officers has, during the past ten years:

- been convicted in a criminal proceeding or been subject to a pending criminal proceeding (excluding traffic violations and other minor offenses);

- had any bankruptcy petition filed by or against the business or property of the person, or of any partnership, corporation or business association of which he was a general partner or executive officer, either at the time of the bankruptcy filing or within two years prior to that time;

- been subject to any order, judgment, or decree, not subsequently reversed, suspended or vacated, of any court of competent jurisdiction or federal or state authority, permanently or temporarily enjoining, barring, suspending or otherwise limiting, his involvement in any type of business, securities, futures, commodities, investment, banking, savings and loan, or insurance activities, or to be associated with persons engaged in any such activity;

- been found by a court of competent jurisdiction in a civil action or by the Securities and Exchange Commission or the Commodity Futures Trading Commission to have violated a federal or state securities or commodities law, and the judgment has not been reversed, suspended, or vacated;

- been the subject of, or a party to, any federal or state judicial or administrative order, judgment, decree, or finding, not subsequently reversed, suspended or vacated (not including any settlement of a civil proceeding among private litigants), relating to an alleged violation of any federal or state securities or commodities law or regulation, any law or regulation respecting financial institutions or insurance companies including, but not limited to, a temporary or permanent injunction, order of disgorgement or restitution, civil money penalty or temporary or permanent cease-and-desist order, or removal or prohibition order, or any law or regulation prohibiting mail or wire fraud or fraud in connection with any business entity; or

- been the subject of, or a party to, any sanction or order, not subsequently reversed, suspended or vacated, of any self-regulatory organization (as defined in Section 3(a)(26) of the Exchange Act), any registered entity (as defined in Section 1(a)(29) of the Commodity Exchange Act), or any equivalent exchange, association, entity or organization that has disciplinary authority over its members or persons associated with a member.



**ITEM 11. EXECUTIVE COMPENSATION**

**Summary Compensation Table**

The following summary compensation table sets forth all compensation awarded to, earned by, or paid to the named executive officers paid by us during the years ended December 31, 2023 and 2022.

**2023 EXECUTIVE OFFICER COMPENSATION TABLE**

| Name and Principal Position | Year | Salary ($) | Bonus ($) | Stock Awards ($) | Option Awards ($) | All Other Compensation ($) | Total ($) |
|---|---|---|---|---|---|---|---|
| Chris Boehmler (2) | 2023 | 260,246 | 5,000 | 69,738 | 276,000 | 0 | 610,984 |
| Chief Financial Officer (PFO) | 2022 | 168,547 | 250 | 0 | 254,338 | 0 | 423,134 |
| | | — | — | — | — | — | — |
| William J. McGann (1) | 2023 | 403,074 | 0 | 191,278 | 0 | 0 | 594,352 |
| Chief Executive Officer and President (PEO) | 2022 | 403,768 | 250 | 0 | 3,654,000 | 0 | 4,058,018 |
| | | — | — | — | — | — | — |
| Robert Liscouski (3) | 2023 | 403,130 | 0 | 0 | 138,000 | 0 | 541,130 |
| Chairman | 2022 | 402,839 | 180,000 | 0 | 4,510,500 | 0 | 5,093,339 |
| | | — | — | — | — | — | — |

(1) Mr. Boehmler was appointed Chief Financial Officer of the Company on July 1, 2023.

(2) Dr. McGann was appointed Chief Executive Officer and President effective February 1, 2024; prior to that time, he served as the Company's Chief Operating Officer and Chief Technology Officer.

(3) Mr. Liscouski was terminated as Chief Executive Officer and President effective January 31. 2024.



**Employment Agreements and Change-in-Control Provisions**

***Executive Employment Agreements***

*Dr. McGann Employment Agreement*

We entered into an employment agreement with Dr. William J. McGann, our Chief Executive Officer, on January 2, 2022. Dr. McGann's employment agreement is for a term of three years unless terminated earlier pursuant to its terms. Dr. McGann's employment agreement provides for an annual base salary of $400,000, subject to annual review and adjustment as determined by the Board or its compensation committee. Dr. McGann is also eligible to earn an annual cash bonus in an amount of up to 37.5% of his base salary, subject to achieving certain performance milestones established and approved by the Board. Pursuant to the agreement, Dr. McGann was granted options to purchase up to 535,000 shares of the Company's common stock, with one-third of the options vesting immediately upon grant and one-third vesting upon each of the first and second anniversary of the date of grant.

Pursuant to the terms of his employment agreement, the Company may terminate Dr. McGann's employment with or without Cause, as defined in the agreement, and Dr. McGann may terminate his employment with or without Good Reason, as defined in the agreement, upon written notice to the Company as set forth in the agreement. Upon termination of Dr. McGann's employment by the Company without Cause or by Dr. McGann for Good Reason, the Company shall continue to pay Dr. McGann his then current monthly base salary for 12 months from the date of termination. The Company must also continue Dr. McGann's coverage under and its contributions to his health care, dental, and life insurance benefits for six months, unless he is or becomes covered by an equivalent benefit, and pay him a pro rata portion of any bonus he has earned prior to his termination. In addition, if the Company terminates Dr. McGann's employment without Cause or he terminates his employment for Good Reason within 12 months after a Change of Control, as define in the agreement, or an acquisition, then the Company must pay to Dr. McGann an additional sum equal to 12 months of his base salary.

As a full-time employee of the Company, Dr. McGann is eligible to participate in all of the Company's bonus and benefit programs.

*Mr. Boehmler Employment Agreement*

We entered into an employment agreement with Mr. Christopher Boehmler, our Chief Financial Officer, dated as of June 26, 2023, pursuant to which Mr. Boehmler serves as our Chief Financial Officer. The agreement provides for an indefinite term, that Mr. Boehmler's employment is at-will, and that either the Company or Mr. Boehmler can terminate his employment for any reason. Mr. Boehmler's employment agreement provides for an annual base salary of $300,000 per year, subject to annual review and adjustment as determined by the Board or its compensation committee. Under his employment agreement, Mr. Boehmler is also eligible for an annual incentive bonus in the amount of up to 50% of his base salary, subject to Mr. Boehmler achieving certain performance milestones established by the Board or its compensation committee, and, subject to Board approval, an annual grant of options to purchase 125,000 shares of our common stock at an exercise price equal to 110% of the grant date fair market value, one-third of which shall vest on the grant date and the remainder becoming exercisable in equal monthly installments over the following three years. Pursuant to the agreement, Mr. Boehmler was issued options to purchase 300,000 shares of the Company's common stock in 2023, 100,000 of which vested on the grant date and 100,000 of which shall vest on each of the 12- and 24-month anniversary of the grant date.

If the Company terminates Mr. Boehmler's employment without Cause, as defined in the agreement, or Mr. Boehmler terminates his employment for Good Reason, as defined in the agreement, with 90 days prior notice to the Company and subject to his execution of a release in favor of the Company, the Company shall pay Mr. Boehmler an amount equal to his then current monthly base salary for 12 months from the date of termination. The Company must also, subject to his timely election of continuation coverage under COBRA, continue payment or reimbursement of 100% of Mr. Boehmler's premiums for such health insurance coverage for six months following his termination or until he becomes covered by an equivalent benefit, and pay him a pro rata portion of any bonus he has earned prior to his termination. In addition, if the Company terminates Mr. Boehmler's employment without Cause or he terminates his employment for Good Reason within 12 months after a Change of Control, as define in the agreement, then the Company must pay to Mr. Boehmler an additional sum equal to 12 months of his base salary.

As a full-time employee of the Company, Mr. Boehmler is eligible to participate in all of the Company's benefit programs.

*Mr. Liscouski Employment Agreement*

The Company and Mr. Robert Liscouski were parties to an amended and restated employment agreement dated as of April 26, 2021, pursuant to which Mr. Liscouski served as our Chief Executive Officer during the fiscal years ended December 31, 2022 and 2023 (the "Liscouski Employment Agreement"). The Liscouski Employment Agreement provided for an initial term of three years and would be automatically renewed for consecutive one-year terms at the end of the initial term unless terminated or either party provided notice of non-renewal to the other. The agreement provided that Mr. Liscouski would receive an annual base salary of $400,000, subject to review and increases (but not decreases) by the Board or its compensation committee and be eligible to earn a performance bonus of up to 50% of his base salary subject to his achieving certain performance milestones established by the Board. The agreement also provided that, beginning on the first anniversary thereof, Mr. Liscouski would receive an annual grant of options to purchase 150,000 shares of our common stock at an exercise price equal to 110% of the grant date fair market value, with one-third vesting on the date of grant and the remainder vesting in equal monthly installments thereafter. Pursuant to the Liscouski Employment Agreement, Mr. Liscouski also received (i) options to purchase 250,000 shares of common stock of the Company upon execution of the agreement and (ii) 250,000 options to purchase shares of common stock of the Company upon the Company's listing on Nasdaq.



In connection with the termination of Mr. Liscouski employment as our Chief Executive Officer on January 31 2024, the Company and Mr. Liscouski entered into a Separation Agreement and General Release. Pursuant to the separation agreement, the Company agreed to pay Mr. Liscouski $400,000, representing 12 months of his base salary, on the Company's regular payroll dates for 12 months following his termination, to grant him 168,000 shares of Company common stock, and, subject to his timely election of continuation coverage under COBRA, to continue to pay or reimburse 100% of his premiums for such health insurance coverage for 12 months following his termination or until he becomes covered by an equivalent benefit. The separation agreement also provides that Mr. Liscouski's unvested options and restricted stock grants vested as of his termination date.

We also entered into an agreement with Mr. Liscouski, effective as of February 1, 2024, which provides that the Company will pay him a monthly fee of $12,500 for his service as a Director of the Company (including as Chairman of the Board). Such monthly fee will be in lieu of the standard compensation we pay to our directors.

***Outstanding Equity Awards at Fiscal Year End***

The following table sets forth information regarding equity awards held by our named executive officers as of December 31, 2023:

| | **Option Awards** | | | | **Stock Awards** | |
|---|---|---|---|---|---|---|
| **Name** | **Number of securities underlying unexercised options (#) exercisable** | **Number of securities underlying unexercised options (#) unexercisable** | **Option exercise price ($)** | **Option expiration date** | **Number of shares or units of stock that have not vested (#)** | **Market value of shares or units of stock that have not vested ($)** |
| Chris Boehmler [(1)] | 30,417 | 60,833 | 2.56 | March 28, 2027 | 29,550 | 26,891 |
| Chris Boehmler | 2,917 | 5,833 | 2.37 | October 12, 2027 | | |
| Chris Boehmler | 100,000 | 200,000 | 1.18 | December 27, 2028 | | |
| William J. McGann [(2)] | 356,666 | 178,334 | 2.40 | January 24, 2027 | 81,050 | 73,756 |
| William J. McGann | 1,000,000 | 0 | 2.37 | October 17, 2027 | | |
| Robert Liscouski [(3)] | 75,000 | 0 | 1.00 | May 22 2025 | 0 | 0 |
| Robert Liscouski | 250,000 | 0 | 6.85 | April 26, 2026 | | |
| Robert Liscouski | 166,676 | 83,334 | 2.40 | January 24, 2027 | | |
| Robert Liscouski | 1,605,560 | 44,440 | 2.37 | October 17, 2027 | | |
| Robert Liscouski | 72,244 | 77,776 | 1.44 | December 27, 2028 | | |

(1) Mr. Boehmler's stock options expiring March 28, 2027 and October 12, 2027 vest as follows: (i) 33,334 options vested on March 28, 2023, (ii) 33,334 options vest on March 28, 2024, and (iii) 33,332 options vest on March 28, 2025. Mr. Boehmler's stock options expiring on December 27, 2028 vest as follows: (i) 100,000 options vested on July 1, 2023, (ii) 100,000 options vested on July 1, 2024, and (iii) 100,000 options vest on July 1, 2025. Mr. Boehmler's 29,550 shares of stock vest on December 31, 2024.

(2) Dr. McGann's stock options expiring January 24, 2027 vest as follows: (i) 178,333 options vested on January 24, 2022, (ii) 178,333 options vested on January 24, 2023, and (iii) 178,334 options vest on January 24, 2024. Dr. McGann's stock options expiring on October 17, 2022 vested as follows: (i) 750,000 options vested on October 17, 2022, and (ii) 250,000 options vested on December 31, 2022. Dr. McGann's 81,050 shares of stock vest on December 31, 2024.

(3) Mr. Liscouski's stock options expiring May 22, 2025 vested as follows: (i) 25,000 options vested on April 8, 2021, (ii) 25,000 options vested on April 8, 2022, and (iii) 25,000 options vested on April 8, 2023. Mr. Liscouski's stock options expiring April 26, 2026 vested on April 26, 2021. Mr. Liscouski's stock options expiring January 27, 2022 vest as follows: (i) 83,333 options vested on July 15, 2022, (ii) 83,333 options vested on July 15, 2023, and (iii) 83,334 options vest on July 15, 2024. Mr. Liscouski's stock options

expiring October 17, 2027 vest as follows: (i) 1,053,890 options vested on October 17, 2022, (ii) 508,334 options vested in equal monthly increments in 2023 and (iii) the remainder vest in equal monthly increments of 2,778 shares through April 1, 2025, with the final month vesting 2,770 shares. Mr. Liscouski's stock options expiring December 27, 2028 vest as follows: (i) 72,224 vested as of December 31, 2023 and (ii) the remainder vest in equal monthly increments of 2,778 shares through April 1, 2026, with the final month vesting 2,770 shares.

**Director Compensation**

Except as provided below, the Company's independent directors each received compensation of $9,000 per quarter for their services as directors, plus an additional $4,000 per quarter if they also served as a committee Chair, in fiscal year 2023.



**ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.**

The following table sets forth certain information as of March 28, 2024 concerning the beneficial ownership of common stock for: (i) each director and director nominee, (ii) each named executive officer as included in the Summary Compensation Table under "Executive Compensation" above, (iii) all executive officers and directors as a group, and (iv) each person (including any "group" as that term is used in Section 13(d)(3) of the Exchange Act) known by us to be the beneficial owner of 5% or more of our common stock. The address for each of the persons below who are beneficial owners of 5% or more of our common stock is our corporate address at 5 Marine View Plaza, Suite 214, Hoboken, NJ 07030.

Beneficial ownership has been determined in accordance with the rules of the SEC and is calculated based on 91,357,640 shares of our common stock issued and outstanding as of March 28, 2024. Shares of common stock subject to options, warrants, preferred stock or other securities convertible into common stock that are currently exercisable or convertible, or exercisable or convertible within 60 days of March 28, 2024, are deemed outstanding for computing the percentage of the person holding the option, warrant, preferred stock, or convertible security but are not deemed outstanding for computing the percentage of any other person. Under the SEC rules, a person is deemed to be a "beneficial owner" of a security if that person has or shares "voting power," which includes the power to vote or to direct the voting of such security, or "investment power," which includes the power to dispose of or to direct the disposition of such security. A person is also deemed to be a beneficial owner of any securities of which that person has the right to acquire beneficial ownership within 60 days through the exercise of any stock option, warrant or other right. Under these rules, more than one person may be deemed a beneficial owner of the same securities and a person may be deemed to be a beneficial owner of securities as to which such person has no economic interest. Unless otherwise indicated, each of the stockholders named in the table below, or his or her family members, has sole voting and investment power with respect to such shares of our common stock.

Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the persons and entities named in the table below have sole voting and investment power with respect to all shares of common stock that they beneficially own.

| Name and Address of Beneficial Owner | Common Stock Owned Beneficially | Percent of Class |
|---|---|---|
| ***Named Executive Officers and Directors*** | | |
| William J. McGann, Chief Executive Officer (1) | 3,232,100 | 3.29% |
| Chris Boehmler, Chief Financial Officer (2) | 226,978 | 0.23 |
| Robert Liscouski, Chairman (3) | 3,250,173 | 3.31 |
| Robert Fagenson (4) | 650,000 | 0.66 |
| Michael Turmelle (5) | 450,000 | 0.46 |
| Dr. Yuping Huang (6) | 24,336,906 | 24.76 |
| Dr. Carl Weimer (7) | 100,000 | 0.10 |
| **All directors and officers as a group (8 persons)** | 32,246,157 | 32.81 |
| ***5% or greater shareholders (none)*** | 0 | 0 |

| Total | | 32,246,157 | 32.81 |
|---|---|---|---|

(1) Consists of 162,100 shares of common stock owned currently and 3,070,000 shares of common stock underlying vested options to purchase shares of common stock.
(2) Consists of 60,310 shares of common stock owned currently and 166,668 shares of common stock underlying vested options to purchase shares of common stock
(3) Consists of 1,064,055 shares of common stock owned currently and 2,186,118 shares of common stock underlying vested options to purchase shares of common stock.
(4) Consists of 100,000 shares of common stock owned currently and 550,000 shares of common stock underlying vested options to purchase shares of common stock.
(5) Consists of 450,000 shares of common stock underlying vested options to purchase shares of common stock.
(6) Consists of 23,936,906 shares of common stock owned currently and 400,000 shares of common stock underlying vested options to purchase shares of common stock. This does not include any shares that could be purchased upon exercise of unvested warrants received as consideration in the merger with QPhoton that may vest upon the exercise of outstanding options and other warrants held by officers, employees, directors and investors.
(7) Consists of 100,000 shares of common stock underlying vested options to purchase shares of common stock.



**Changes in Control**

We are not aware of any arrangements that may result in “changes in control” as that term is defined by the provisions of Item 403(c) of Regulation S-K.

**Equity Compensation Plan Information**

On July 5, 2022, the Board adopted the 2022 Quantum Computing Inc. Equity and Incentive Plan (the “Plan”), which provides for the issuance of up to 16,000,000 shares of the Company’s common stock. The principal purpose of the Plan is to provide an incentive to designated employees, certain consultants and advisors who perform services for us and non-employee directors to contribute to our growth by continuing to align the interests of participants with the interests of our stockholders. The Plan was approved by a majority of the shareholders in September 2022.

The table below sets forth certain information as of our fiscal year ended December 31, 2023 regarding the shares of our common stock available for grant or granted under our equity compensation plan.

| Plan Category | Number of securities to be issued upon exercise of outstanding options (2) | Weighted-average exercise price of outstanding options | Number of securities available for future issuance under equity compensation plans |
|---|---|---|---|
| Equity compensation plan approved by security holders – 2022 Quantum Computing Inc. Equity Incentive Plan, as amended | 10,376,528 | $ 1.86 | 2,453,128 |
| Equity compensation plan approved by security holders – 2019 Quantum Computing Inc. Equity Incentive Plan, as amended | 1,314,167 | $ 2.43 | 1,350,833 |
| Equity compensation not approved by shareholders (1) | 2,152,804 | $ 6.53 | - |

(1) In addition to the stock options issued pursuant to our equity compensation plans, the Company has issued 2,152,8043 non-qualified stock options to employees and advisors outside of the plans with a weighted average price of $6.53.
(2) The total number of stock options issued and outstanding as of March 28, 2024 is 13,106,728.

**ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.**

The following is a summary of transactions since January 1, 2023 to which we have been or will be a party in which the amount involved exceeded or will exceed $840,143 (one percent of the average of our total assets at year-end for our last two completed fiscal years) and in which

There have been no transactions involving the Company since January 1, 2023, or any currently proposed transactions, in which the Company was or is to be a participant and the amount involved exceeds $120,000, and in which any of our directors, executive officers or beneficial holders of more than 5% of our common stock, or any immediate family member of, or person sharing a household with, any of these individuals, had or will have a direct or indirect material interest, other than compensation arrangements that are described under the section captioned "Executive Compensation."

Please see "Board Composition and Director Independence" under "Item 10, Directors, Executive Officers and Corporate Governance" for a discussion of our independent directors.



### ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

BF Borgers CPA PC served as our independent registered public accountants for the years ended December 31, 2023 and 2022.

**Audit Fees**

For the Company's fiscal years ended December 31, 2023 and 2022, we were billed approximately $132,000 and $119,800, respectively, for professional services rendered by our independent auditors for the audit and review of our financial statements.

**Tax Fees**

For the Company's fiscal years ended December 31, 2023 and 2022, we were billed $9,000 and $9,020, respectively, for professional services rendered by our independent auditors for tax compliance, tax advice, and tax planning.

**All Other Fees**

For the Company's fiscal years ended December 31, 2023 and 2022, we were billed approximately $27,500 and $49,500, respectively, for professional services rendered by our independent auditors related to the Registration Statements on d Form S-3 and amendments thereto filed with the SEC in those years.

**Pre-Approval Policies**

All of the above services and fees were reviewed and approved by the entire Board. No services were performed before or without approval.



## PART IV

### ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

| Exhibit | | Reference | | Filed or Furnished | |
|---|---|---|---|---|---|
| Number | Exhibit Description | Form | Exhibit | Filing Date | Herewith |
| 3.1(i) | Amended and Restated Certificate of Incorporation | 10-K/A | 3.1(i) | 07/10/2023 | |

| | | | | | |
|---|---|---|---|---|---|
| 3.1(ii) | Certificate of Designations of the Series A Convertible Preferred Stock | 8-K | 3.1 | 11/17/2021 | |
| 3.1(iii) | Certificate of Amendment of Certificate of Designations of Series A Convertible Preferred Stock of Quantum Computing Inc., filed with the Delaware Secretary of State on December 16, 2021 | 8-K | 3.1 | 12/17/2021 | |
| 3.2 | Amended and Restated By-laws | 10-K/A | 3.2 | 07/10/2023 | |
| 3.3 | Certificate of Designation with respect to the Series B Preferred Stock, par value $0.0001 per share, dated June 14, 2022 | 8-K | 3.1 | 06/21/2022 | |
| 4.1 | Common Stock Specimen | 10-12(g) | 4.1 | 01/09/2019 | |
| 4.4 | Description of Securities | | | | X |
| 4.5 | Promissory Note in the amount of $8,250,000 issued by Quantum Computing, Inc. to Streeterville Capital, LLC, dated September 23, 2022 | 8-K | 4.1 | 09/28/2022 | |
| 10.1 | ATM Agreement, dated as of December 5, 2022, between Quantum Computing Inc. and Ascendiant Capital Markets, LLC | 8-K | 1.1 | 12/06/2022 | |
| 10.2 | First Amendment to ATM Agreement, dated as of August 17, 2023, between Quantum Computing Inc. and Ascendiant Capital Markets, LLC | 8-K | 1.1 | 08/21/2023 | |
| 10.3 | Employment Agreement between Quantum Computing Inc. and Christopher Boehmler, dated as of June 26, 2023 | 8-K | 10.1 | 06/26/2023 | |
| 10.4* | 2019 Quantum Computing Inc. Equity and Incentive Plan | S-1 | 10.8 | 11/22/2019 | |
| 10.10* | Form Director Agreement | 8-K | 10.1 | 02/23/2021 | |
| 10.11 | Form of Warrant dated November 9, 2021 | 8-K | 10.2 | 11/17/2021 | |
| 10.12 | Form Amendment to Common Stock Purchase Warrant | 8-K | 10.2 | 12/17/2021 | |
| 10.13* | Employment Agreement between William J. McGann and Quantum Computing, Inc., dated as of January 3, 2022 | 8-K | 10.2 | 01/03/2022 | |
| 10.14* | Amended and Restated Employment Agreement, dated as of April 26, 2021, by and between Quantum Computing Inc. and Robert Liscouski | 8-K | 10.1 | 04/30/2021 | |
| 10.15* | Employment Agreement between Christopher Roberts and Quantum Computing, Inc., dated as of April 26, 2021 | 8-K | 10.2 | 04/30/2021 | |
| 10.16 | Note Purchase Agreement, dated as of February 18, 2022, between Quantum Computing Inc. and QPhoton, Inc. | 8-K | 10.1 | 02/23/2022 | |
| 10.17 | Unsecured Promissory Note issued by QPhoton, Inc. to Quantum Computing, Inc., in the amount of $1,250,000, dated February 18, 2022 | 8-K | 10.2 | 02/23/2022 | |
| 10.18 | Agreement and Plan of Merger by and among Quantum Computing Inc., Project Alpha Merger Sub I, Inc., Project Alpha Merger Sub II, LLC, QPhoton, Inc., and Yuping Huang, dated as of May 18, 2022 | 8-K | 10.1 | 05/23/2022 | |
| 10.19 | Escrow Agreement, dated as of June 16, 2022, by and among Quantum Computing Inc., Yuping Huang and Worldwide Stock Transfer, LLC | 8-K | 10.2 | 06/21/2022 | |
| 10.20 | Stockholders Agreement by and among Quantum Computing, Inc. and each of the Stockholders set forth on Exhibit A thereto, dated as of June 16, 2022 | 8-K | 10.3 | 06/21/2022 | |



| | | | | | |
|---|---|---|---|---|---|
| 10.21 | Form Registration Rights Agreement | 8-K | 10.4 | 06/21/2022 | |
| 10.22* | Employment Agreement, dated as of June 15, 2022, by and between Quantum Computing Inc. and Yuping Huang | 8-K | 10.5 | 06/21/2022 | |
| 10.23 | Note Purchase Agreement, dated as of September 23, 2022, by and between Quantum Computing Inc. and Streeterville Capital, LLC | 8-K | 10.1 | 09/28/2022 | |
| 10.24* | Director Agreement between Quantum Computing, Inc. and Dr. Carl Weimer, dated January 6, 2023 | 8-K | 10.1 | 01/09/2023 | |
| 10.25* | Quantum Computing Inc. 2022 Equity and Incentive Plan | 10-K/A | 10.42 | 07/10/2023 | |
| 10.26* | Separation Agreement, dated as of March 15, 2024, by and between Quantum Computing, Inc. and Robert Liscouski | | | | X |
| 10.27* | Director Agreement, dated as of March 8, 2024, by and between Quantum Computing, Inc. and Robert Liscouski | | | | X |
| 10.28* | Separation Agreement, dated as of June 30, 2023, by and between Quantum Computing, Inc. and Christopher Roberts | | | | X |

| | | |
|---|---|---|
| 10.31 | Consulting Services Agreement, dated as of July 1, 2023, by and between Quantum Computing, Inc. and Christopher Roberts | X |
| 10.32 | Modification 1 to Consulting Services Agreement, dated as of January 2, 2024, by and between Quantum Computing, Inc. and Christopher Roberts | X |
| 21.1 | List of Subsidiaries | X |
| 23.1 | Consent of BF Borgers CPA PC | X |
| 31.1 | Principal Executive Officer Certification Pursuant to Item 601(b)(31) of Regulation S-K, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. | X |
| 31.2 | Principal Financial Officer Certification Pursuant to Item 601(b)(31) of Regulation S-K, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. | X |
| 32.1 | Principal Executive Officer Certification Pursuant to Item 601(b)(32) of Regulation S-K, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. | X |
| 32.2 | Principal Financial Officer Certification Pursuant to Item 601(b)(32) of Regulation S-K, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. | X |
| 97 | Policy relating to recovery of erroneously awarded compensation. | X |
| 101.INS | Inline XBRL Instance Document. | X |
| 101.SCH | Inline XBRL Taxonomy Extension Schema Linkbase Document. | X |
| 101.CAL | Inline XBRL Taxonomy Extension Calculation Linkbase Document. | X |
| 101.DEF | Inline XBRL Taxonomy Extension Definition Linkbase Document. | X |
| 101.LAB | Inline XBRL Taxonomy Extension Label Linkbase Document. | X |
| 101.PRE | Inline XBRL Taxonomy Extension Presentation Linkbase Document. | X |
| 104 | Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101). | X |

* Indicates a management contract or compensatory plan or arrangement.



**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: April 1, 2024

Quantum Computing Inc.

By: */s/ Dr. William McGann*

Dr. Willan McGann
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacity and on the dates indicated.

| Name | Capacity | Date |
|---|---|---|
| */s/ Robert Liscouski*<br>Robert Liscouski | Chairman of the Board of Directors<br>(Principal Executive Officer) | April 1, 2024 |
| */s/ Dr. William McGann*<br>Dr. Willan McGann | Chief Executive Officer<br>(Principal Executive Officer) | April 1, 2024 |
| */s/ Christopher Boehmler* | Chief Financial Officer, Treasurer | April 1, 2024 |

| | | |
|---|---|---|
| Christopher Boehmler | (Principal Financial Officer and Principal Accounting Officer) | |
| */s/ Dr. Yuping Huang* | Chief Quantum Officer and Director | April 1, 2024 |
| Dr. Yuping Huang | | |
| */s/ Michael Turmelle* | Director | April 1, 2024 |
| Michael Turmelle | | |
| */s/ Robert Fagenson* | Director | April 1, 2024 |
| Robert Fagenson | | |
| */s/ Dr. Carl Weimer* | Director | April 1, 2024 |
| Dr. Carl Weimer | | |



**QUANTUM COMPUTING INC.**

CONSOLIDATED FINANCIAL STATEMENTS

December 31, 2023 and 2022

**QUANTUM COMPUTING INC.**

Index to the Consolidated Financial Statements





**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

To the Board of Directors and Shareholders of Quantum Computing Inc.:

**Opinion on the Financial Statements**

We have audited the accompanying consolidated balance sheets of Quantum Computing Inc. (the "Company") as of December 31, 2023 and 2022 and the related consolidated statements of operations, shareholders' equity, and cash flows for the two years in the period ended December 31, 2022, and the related notes and schedules (collectively referred to as the financial statements). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for the two years in the period ended December 31, 2023 and 2022, in conformity with accounting principles generally accepted in the United States of America.

**Going Concern Matter**

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the financial statements, the Company has suffered recurring losses from operations that raises substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 2. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

**Basis for Opinion**

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit, we are required to obtain an understanding of internal control over financial reporting, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audit included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audit provides a reasonable basis for our opinion.

**Critical Audit Matter**

Critical audit matters are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments.

We determined that there are no critical audit matters.

**/S/ BF Borgers CPA PC (PCAOB ID 5041)**

We have served as the Company's auditor since 2019

Lakewood, CO
April 1, 2024



**QUANTUM COMPUTING INC.**
Consolidated Balance Sheets

| | December 31, 2023 | December 31, 2022 |
|---|---|---|
| **ASSETS** | | |
| Current assets | | |
| Cash and cash equivalents | $ 2,059,285 | $ 5,308,466 |
| Accounts receivable | 65,000 | 12,774 |
| Prepaid expenses | 138,460 | 224,302 |
| Loans receivable | 557,236 | - |
| Other current assets | 289,117 | 182,994 |
| Inventory | 72,650 | - |
| Total current assets | 3,181,748 | 5,728,536 |
| Fixed assets (net of depreciation) | 2,869,658 | 975,169 |
| Operating lease right-of-use assets | 799,942 | 1,186,857 |
| Security deposits | 129,045 | 60,271 |
| Intangible Assets-net of amortization | 11,388,015 | 22,223,725 |
| Goodwill | 60,359,867 | 59,125,773 |
| Total assets | $ 78,728,275 | $ 89,300,331 |
| **LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)** | | |
| Current liabilities | | |
| Accounts payable | $ 1,461,541 | $ 871,887 |
| Accrued expenses | 195,923 | 3,559,981 |
| Deferred revenue | 458 | - |
| Dividends payable - preferred | 215,119 | 219,844 |
| Current portion of long-term debt | 2,496,480 | 535,684 |
| Other current liabilities | 250,116 | 131,849 |
| Total current liabilities | 4,619,637 | 5,319,245 |
| Long-term debt | - | 7,858,280 |
| Operating lease liabilities | 840,085 | 1,226,075 |
| Total liabilities | 5,459,722 | 14,403,600 |

| | | |
|---|---|---|
| Stockholders' equity | | |
| Preferred stock, $0.0001 par value, 1,550,000 shares Series A Convertible Preferred authorized; 1,490,004 and 1,500,004 shares issued and outstanding as of December 31, 2023 and December 31, 2022, respectively; 3,079,864 shares of Series B Preferred Stock authorized, 0 and 0 shares issued and outstanding as of December 31, 2023 and December 31, 2022, respectively | 149 | 150 |
| Common stock, $0.0001 par value, 250,000,000 shares authorized; 77,451,356 and 55,963,334 shares issued and outstanding as of December 31, 2023 and December 31, 2022, respectively | 7,745 | 5,596 |
| Additional paid-in capital | 167,944,651 | 151,163,909 |
| APIC-Beneficial Conversion Feature in Equity | 4,898,835 | 4,898,835 |
| APIC-Stock Based Compensation | 50,135,626 | 38,816,022 |
| Accumulated deficit | (149,718,453) | (119,987,781) |
| Total stockholders' equity | 73,268,553 | 74,896,731) |
| Total liabilities and stockholders' equity | $ 78,728,275 | $ 89,300,331 |

*The accompanying notes are an integral part of these consolidated financial statements.*



**QUANTUM COMPUTING INC.**

Consolidated Statement of Operations

| | Twelve Months Ended December 31, | |
|---|---|---|
| | **2023** | **2022** |
| Total revenue | $ 358,047 | $ 135,648 |
| Cost of revenue | 195,640 | 60,934 |
| Gross profit | 162,407 | 74,714 |
| Salaries and Benefits | 4,047,910 | 4,326,733 |
| Professional Services | 838,592 | 1,278,170 |
| Research & Development | 6,447,703 | 4,561,794 |
| Stock Based Compensation | 8,722,766 | 17,761,467 |
| Selling General & Administrative | 7,326,713 | 8,725,892 |
| Operating expenses | 27,383,684 | 36,654,056 |
| | | |
| Loss from Operations | (27,221,277) | (36,579,342) |
| | | |
| Other Income and Expense | | |
| Interest Income | 295,478 | 46,891 |
| Interest Expense – Promissory Notes | (602,059) | (225,282) |
| Interest Expense – Preferred dividends | (861,071) | (889,219) |
| Interest Expense – Financing expenses | (1,341,743) | (946,748) |
| Net Other income (expense) | (2,509,395) | (2,014,358) |
| | | |
| Income tax expense | - | - |
| | | |
| Net loss | $ (29,730,672) | $ (38,593,700) |
| | | |
| Weighted average shares – basic | 77,451,356 | 55,963,334 |
| Weighted average shares – diluted | 95,896,430 | 74,340,487 |
| Loss per share – basic | (0.38) | (0.69) |
| Loss per share – diluted | $ (0.31) | $ (0.52) |

*The accompanying notes are an integral part of these consolidated financial statements.*



**QUANTUM COMPUTING INC.**

Consolidated Statement of Stockholders' Equity

For the Twelve Months Ended December 31, 2022

| | Preferred Stock | | Common Stock | | Additional Paid | Accumulated | |
|---|---|---|---|---|---|---|---|
| | Shares | Amount | Shares | Amount | in Capital | Deficit | Total |
| BALANCES, December 31, 2021 | 1,545,459 | 154 | 29,156,815 | $ 2,916 | $ 97,592,909 | $ (81,394,081) | $ 16,201,898 |
| Cancellation of shares | - | - | (11,444) | (1) | - | - | (1) |
| Issuance of shares for services | | | 135,000 | 14 | 319,936 | - | 319,950 |
| Conversion of Preferred | (45,455) | (4) | 47,728 | 4 | - | - | - |
| Shares issued for merger with QPhoton | | | 26,615,235 | 2,662 | 68,722,315 | - | 68,724,976 |
| Warrants issued for merger with QPhoton | - | - | | | 14,358,891 | - | 14,358,891 |
| Preferred OID Amortization | | | | | 318,750 | | 318,750 |
| Stock Options | | | | | 13,518,567 | - | 13,518,567 |
| Stock based compensation | | | 20,000 | 2 | 47,398 | - | 47,400 |
| Net loss | - | - | | | - | (38,593,700) | (38,593,700) |
| BALANCES, December 31, 2022 | 1,500,004 | 150 | 55,963,334 | $ 5,596 | $194,878,766 | $ (119,987,781) | $ 74,896,731 |

*The accompanying notes are an integral part of these consolidated financial statements.*



**QUANTUM COMPUTING INC.**

Consolidated Statement of Stockholders' Equity

For the Twelve Months Ended December 31, 2023

| | Preferred Stock | | Common Stock | | Additional Paid | Accumulated | |
|---|---|---|---|---|---|---|---|
| | Shares | Amount | Shares | Amount | in Capital | Deficit | Total |
| BALANCES, December 31, 2022 | 1,500,004 | 150 | 55,963,334 | $ 5,596 | $194,878,766 | $ (119,987,781) | $ 74,896,731 |
| Issuance of shares for cash | | | 17,571,926 | 1,757 | 25,494,607 | | 25,496,364 |
| Issuance of shares for services | | | 1,575,000 | 158 | 2,413,343 | - | 2,413,500 |
| Conversion of Preferred | (10,000) | (1) | 11,096 | 1 | 596 | - | 596 |
| Merger consideration | | | | | 8,347,126 | - | 8,347,126 |
| Stock Options | | | | | 7,299,278 | - | 7,299,278 |
| Stock based compensation | | | 2,330,000 | 233 | 1,239,648 | - | 1,239,882 |
| Net loss | - | - | | | - | (29,730,672) | (29,730,672) |
| BALANCES, December 31, 2023 | 1,490,004 | 149 | 77,451,356 | $ 7,745 | $222,979,112 | $ (149,718,453) | $ 73,268,553 |

**QUANTUM COMPUTING INC.**
Consolidated Statements of Cash Flows
For the Twelve Months Ended December 31, 2023 and 2022

| | Twelve Months Ended December 31, 2023 | Twelve Months Ended December 31, 2022 |
|---|---|---|
| **CASH FLOWS FROM OPERATING ACTIVITIES** | | |
| **Net loss** | $ (29,730,672) | $ (38,593,700) |
| **Adjustments to reconcile net loss to net cash from operations** | | |
| Depreciation, amortization, and other | 1,957,768 | 3,433,674 |
| Net recognized losses (gains) | 4,448 | - |
| Stock based compensation expense | 8,722,766 | 17,761,467 |
| Changes in operating assets and liabilities | | |
| Accounts receivable | (52,227) | (12,774) |
| Inventories | (70,484) | - |
| Other current assets | (77,515) | 91,813 |
| Other long-term assets | 318,141 | (1,128,166) |
| Accounts payable | 582,854 | 218,574 |
| Unearned revenue | 458 | - |
| Other current liabilities | (984,786) | (462,362) |
| Other long-term liabilities | (611,272) | 1,451,357 |
| **CASH USED IN OPERATING ACTIVITIES** | (19,940,521) | (17,240,117) |
| | | |
| **CASH FLOWS FROM INVESTING ACTIVITIES** | | |
| Property and equipment | (2,117,990) | (869,687) |
| Loan receivable | (500,000) | - |
| Net cash used for QPhoton Inc. merger | - | (1,356,071) |
| **CASH USED IN INVESTING ACTIVITIES** | (2,617,990) | (2,225,758) |
| | | |
| **CASH FLOWS FROM FINANCING ACTIVITIES** | | |
| Notes Payable | (6,187,034) | 8,035,684 |
| Preferred stock conversion | - | - |
| Preferred stock OID accrual | - | - |
| Proceeds from stock issuance (ATM facility) | 25,496,364 | - |
| **CASH PROVIDED BY FINANCING ACTIVITIES** | 19,309,330 | 8,035,684 |
| | | |
| **Net increase (decrease) in cash** | (3,249,181) | (11,430,191) |
| | | |
| **Cash, beginning of period** | 5,308,466 | 16,738,657 |
| | | |
| **Cash, end of period** | $ 2,059,285 | $ 5,308,466 |
| | | |
| **SUPPLEMENTAL DISCLOSURES** | | |
| Cash paid for interest | $ 812,966 | $ - |
| Cash paid for income taxes | $ - | $ - |

**NON-CASH FINANCING ACTIVITIES**

| | | |
|---|---|---|
| Common stock, preferred stock and warrants issued in connection with QPhoton, Inc. merger | - | 83,083,867 |

*The accompanying notes are an integral part of these financial statements.*



**QUANTUM COMPUTING INC.**
Notes to Consolidated Financial Statements
December 31, 2023

Note 1 – Nature of the Organization and Business

Corporate History

Quantum Computing Inc. ("QCi" or the "Company") was formed in the State of Nevada on July 25, 2001, under its prior name, Ticketcart, Inc. The Company redomiciled to Delaware on February 22, 2018 and changed its name to Quantum Computing Inc. Effective July 20, 2018, the trading symbol for the Company's common stock, par value $0.0001, on the OTC Market changed from "IBGH" to "QUBT". On July 15, 2021 the Company uplisted to The Nasdaq Stock Market. On June 16, 2022, the Company merged with QPhoton, Inc. ("QPhoton"), a developer of quantum photonic systems and related technologies and applications.

Nature of Business

QCi is an American company utilizing integrated photonics and non-linear quantum optics to deliver quantum systems for high-performance computing applications. Quantum's products are designed to operate at room temperature and low power. Our core technology enables the execution of a go-to-market strategy which emphasizes accessibility and affordability. Our quantum systems enable subject matter experts (SMEs) and end users to deliver critical business solutions today.

The Company initially focused on providing software tools and applications for several commercially available quantum computers. However, following the June 2022 merger with QPhoton and its associated intellectual property and engineering team, the Company now offers integrated high-performance quantum systems and services.

The core of our quantum information services today is our Entropy Quantum Computing ("EQC") technology. We have built room-temperature, photonic quantum information processing systems underpinned by a series of patented and patent pending technologies. Our technology, supported by professional services through our "Quantum Solutions" offering, helps our clients benefit from the technology today. In addition, our leading-edge photonic technology and engineering teams will enable QCi to continue to enhance quantum LIDAR and sensing systems, imaging systems, quantum-secured network solutions, and photonic quantum chips.

Note 2 – Significant Accounting Policies:

Basis of Presentation and Principles of Consolidation:

The Company prepares its consolidated financial statements in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") as determined by the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC"), including ASC 810, *Consolidation*. The consolidated financial statements include the accounts of the Company and its controlled subsidiaries. All intercompany transactions and balances have been eliminated in consolidation.

The Company's fiscal year end is December 31.

The accompanying financial statements have been prepared in conformity with U.S. GAAP, which contemplate continuation of the Company as a going concern for a period of one year from the issuance of these financial statements. For the year ended December 31, 2023, the Company had $358,047 in revenues, a net loss of $29,730,672 and had net cash used in operations of $19,940,521. Additionally, as of December 31, 2023, the Company had a working capital deficit of $1,437,889 and an accumulated deficit of $149,718,453. It is management's opinion that these conditions raise substantial doubt about the Company's ability to continue as a going concern for a period of twelve months from the date of the issuance of these financial statements.

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The financial statements do not include any adjustments to reflect the possible future effect on the recoverability and classification of assets or the amounts and classifications of liabilities that may result from the outcome of this uncertainty.

Successful completion of the Company's development program and, ultimately, the attainment of profitable operations are dependent upon future events, including obtaining adequate financing to fulfill its development activities, acceptance of the Company's patent applications and ultimately achieving a level of sales adequate to support the Company's cost structure. However, there can be no assurances that the Company will be able to secure additional equity investments or achieve an adequate sales level.

Cash and Cash Equivalents

Highly liquid investments with a maturity of three months or less when purchased are considered to be cash equivalents. As of December 31, 2023 and 2022, there were no cash equivalents. The Company maintains its cash in deposit accounts with high quality financial institutions which, at times, may exceed federally insured limits. The Company has not experienced any losses on these deposits and believes it is not exposed to significant credit risk on cash.

Use of Estimates:

These financial statements have been prepared in accordance with accounting principles generally accepted in the United States which requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Some of the more significant estimates required to be made by management include the determination of reserves for accounts receivable, stockholders' equity-based transactions and liquidity assessment. Actual results may differ from these estimates.

Revenue

The Company recognizes revenue in accordance with ASC 606 – *Revenue from Contracts with Customers*, by analyzing contracts with its customers using a five-step approach:

1. Identify the contract

2. Identify the performance obligations

3. Determine the transaction price

4. Allocate the transaction price to the performance obligations

5. Recognize revenue when performance obligations are satisfied

The Company recognized a small amount of revenue in 2022 and in 2023 the recognized revenue primarily derived from contracts to perform professional services. Revenue from time and materials-based contracts is recognized as the direct hours worked during the period times the contractual hourly rate, plus direct materials and other direct costs as appropriate, plus negotiated materials handling burdens, if any. Revenue from units-based contracts is recognized as the number of units delivered or performed during the period times the contractual unit price. Revenue from fixed price contracts is recognized as work is performed with estimated profits recorded on a percentage of completion basis. The Company has no cost-plus type contracts at this time.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable principally consists of amounts due from customers for work performed on contracts. The Company records accounts receivable at their net realizable value. Periodically the Company evaluates its accounts receivable to establish an allowance for doubtful accounts, when deemed necessary, based on the history of past write-offs, collections and current credit conditions. During 2022 certain accounts receivable, attributable to a single customer, were determined not to be collectible and management recorded an allowance for doubtful accounts and wrote off the uncollectible receivables against that account. The accounts receivable as of December 31, 2023 are considered fully collectible and thus management has not recorded an allowance for doubtful accounts.





Operating Leases - ASC 842

The Company implemented FASB Accounting Standards Codification, or ASC, Topic 842, Leases ("ASC 842"). The Company determines if an arrangement is a lease at inception. Operating lease right-of-use ("ROU") assets are included in right-of-use assets, net on the consolidated balance sheets. The current and long-term components of operating lease liabilities are included in the current operating lease liabilities and noncurrent operating lease liabilities, respectively, on the consolidated balance sheets.

Operating lease ROU assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term. As most of the Company's leases do not provide an implicit rate, the Company uses an incremental borrowing rate based on the information available at the commencement date in determining the present value of future payments. Certain leases may include options to extend or terminate the lease. Lease expense for minimum lease payments is recognized on a straight-line basis over the lease term. Leases with an initial term of 12 months or less are not recorded in the balance sheet. All of our operating leases are comprised of office space leases, and as of December 31, 2023 and 2022, we had no finance leases.

Business Combinations

We account for business combinations under the acquisition method of accounting. This method requires the recording of acquired assets and assumed liabilities at their acquisition date fair values. The excess of the purchase price over the fair value of assets acquired and liabilities assumed is recorded as goodwill. Results of operations related to business combinations are included prospectively beginning with the date of acquisition and transaction costs related to business combinations are recorded withing general and administrative expenses.





Property and Equipment

Property and equipment are stated at cost or contributed value. Depreciation of furniture, software and equipment is calculated using the straight-line method over their estimated useful lives, and leasehold improvements are amortized on a straight-line basis over the shorter of their estimated useful lives or the lease term. The cost and related accumulated depreciation of equipment retired or sold are removed from the accounts and any differences between the undepreciated amount and the proceeds from the sale are recorded as a gain or loss on sale of equipment. Maintenance and repairs are charged against expense as incurred.

Research and Development Costs

Research and development costs include costs directly attributable to the conduct of research and development programs, including the cost of services provided by outside contractors, acquiring work-in-progress intellectual property, development, and mandatory compliance fees and contractual obligations. All costs associated with research and development are expensed as incurred.

Stock Based Compensation

The Company has adopted Accounting Standards Update ("ASU") No. 2018-07, *Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting*. ASU 2018-07 expands the scope of ASC 718, *Share-Based Payment,* to include share-based payment transactions for acquiring goods and services from nonemployees. An entity should apply the requirements of ASC 718 to nonemployee awards except for specific guidance on inputs to an option pricing model and the attribution of cost. ASU 2018-07 specifies that Topic 718 applies to all share-based payment transactions in which a grantor acquires goods or services to be used or consumed in a grantor's own operations by issuing share-based payment awards, and that ASC 718 does not apply to share based payments used to effectively provide (1) financing to the issuer or (2) awards granted in conjunction with selling goods or services to customers as part of a contract accounted for under ASC 606, *Revenue from Contracts with Customers*

Stock-based compensation expense is recorded for all option grants and awards of non-vested stock and recognized in the financial statements based on the grant date fair value of the awards granted. Stock-based compensation is recognized as expense over the requisite service period, which generally represents the vesting period. The Company calculates the fair value of stock options using the Black-Scholes option-pricing model at grant date. The Company estimates a rate of forfeiture when recording stock option expense. The assumptions and estimates involved in the Black-Scholes model require significant judgement and any changes could have a material impact in the determination of stock-based compensation expense

Net Loss Per Share:

Net loss per share is based on the weighted average number of common shares and common share equivalents outstanding during the period.





Note 3 – Business Combinations

*Merger with QPhoton, Inc.*

On May 19, 2022, the Company, QPhoton, and Yuping Huang, the principal stockholder of QPhoton ("Mr. Huang"), entered into an Agreement and Plan of Merger (the "Merger Agreement"), pursuant to which the Company agreed to acquire QPhoton through a series of merger transactions (collectively with the other transactions contemplated by the Merger Agreement, the "Transaction"). On June 16, 2022, all conditions precedent having been met or waived by the Parties, the Company Closed the Transactions with QPhoton. The merger with QPhoton adds to the Company's portfolio of quantum computing products and enables the Company to offer a wider range of quantum information services. The Company accounted for the Transactions using the acquisition method in accordance with ASC 805, Business Combinations, with the purchase price being allocated to tangible and identifiable intangible assets acquired and liabilities assumed based on their respective estimated fair values on the acquisition date. Fair values were determined using management estimates. The results of QPhoton are included within the consolidated financial statements commencing on the acquisition date.

Pursuant to the Merger Agreement, immediately following the closing of the Transactions contemplated by the Merger Agreement (the "Closing"), Merger Sub I (a wholly owned subsidiary of the Company) merged with and into QPhoton, with QPhoton surviving the merger as a wholly-owned subsidiary of the Company, immediately after which the surviving corporation merged with and into Merger Sub II (also a wholly owned subsidiary of the Company), with Merger Sub II surviving the merger as a wholly-owned subsidiary of the Company (the "Surviving Company"). The merger consideration to be paid to the stockholders of QPhoton (the "Merger Consideration") consists of (i) 5,802,206 shares of the Company's common stock, par value $0.0001 per share ("Common Stock"), (ii) 2,377,028 shares of a new series of the Company's preferred stock, par value $0.0001 per share, to be designated Series B convertible preferred stock ("Series B Preferred Stock"), and (iii) warrants to purchase up to 7,028,337 shares of Common Stock (the "Warrants"). Each share of Series B Preferred Stock converts into ten (10) shares of the Company's common stock. The Merger Consideration for stockholders Yuping Huang and Stevens Institute of Technology was issued in 2022 and the remaining Merger Consideration for the other stockholder of QPhoton will be issued upon presentation of certain required documents and surrender of their QPhoton shares.

The purchase price was approximately $83.1 million, consisting of Company Common Stock, Series B Preferred Stock and Warrants. The purchase agreement did not include any contingent consideration. Since the Transactions were structured as an exchange of equity securities, the purchase price was calculated based on the fair market value (in this case the Nasdaq closing price) of the total shares of the Company securities paid to the shareholders of the acquired company, QPhoton. The closing Price of Company Common Stock on June 16, 2022 was $2.27. The total shares of Company Common Stock offered for QPhoton was 36,600,823, which assumes all of the 2,377,028 Series B Convertible Preferred shares are converted to Common Stock at the 10:1 ratio, and that all 7,028,337 warrants to purchase Common Stock are eventually exercised. The warrants were valued using a Black Scholes formula assuming a maturity of five years, a risk-free interest rate of 2.8%, a volatility of 3.54 and an exercise price of $0.00001. That results in a total value for the Transactions of $83,083,868. This amount will be used as the purchase price. Under ASC 805 transaction costs are required to be expensed so legal and accounting fees incurred for the Transactions were not included in the purchase price.

The fair value of the prepaid expenses and security deposits was set at book value, and the fair value of the fixed assets was written up to the purchase cost to reflect the recent purchase dates of the equipment relative to the closing date of the merger. To estimate the fair value of the identifiable intangible assets, the Company recorded an estimate at the time of merger. The Company subsequently engaged a third-party valuation expert in 2023 (the "Third-Party Valuation Expert"), Scalar, LLC, to conduct an independent analysis in line with purchase price accounting standards. The Third-Party Valuation Expert concluded:

- that there was no fair value attributable to management's initial estimate of $10,000,000 for customer relationships based on the lack of current customer contracts;





- a fair value of $2,722,000 attributable to the non-compete agreement with the founder using the with-and-without method, based on a variation of the income approach, an increase of $2,222,000 in intangibles compared with management's initial estimate of $500,000. The with-and-without methodology employed uses two scenarios to value the non-compete asset: (1) the "with scenario" captures the estimated cash flows from the business if all of the existing assets were in place including the non-compete asset, and (2) the "without scenario" captures the estimated cash flows from the business if all of the existing assets were in place except the non-compete asset. The difference between the two scenarios is attributed to the presumed loss of cash flows without the non-compete asset in place and represents the value of the non-compete agreement;

- a fair value of $969,000 attributable to the QPhoton trade name and trademark using the relief from royalty methodology, a decrease of $31,000 in intangibles compared with management's initial estimate of $1,000,000. In the application of the relief from royalty method, the Third-Party Valuation Expert estimated the value of the trade names/trademarks by capitalizing the royalties saved by virtue of the Company owning the trade names/trademarks. In other words, the Company realizes a benefit from owning the intangible asset rather than paying a rent or royalty for the use of the asset;

- a fair value of $12,200,000 attributable to the technology and licensed patents using the relief from royalty methodology, an increase of $477,780 in intangibles compared with management's initial estimate of $11,722,220. In calculating the fair value of the technology and licensed patents, the Third-Party Valuation Expert followed the same approach as the trade name/trademark analysis; and

- that there was no identifiable intangible value attributable to management's initial estimate of $2,250,000 for employee agreements, rather calculated a fair value of $1,912,000 included in goodwill attributable to the assembled workforce using the replacement cost method. The replacement cost method approximates the cost it would take to reconstruct an asset of similar utility (to create a substitute asset). Specifically, this approach considers all of the costs the Company would have incurred to replace the QPhoton workforce with a brand new (but comparable) workforce. The assembled workforce value is added to goodwill per ASC 805-20-55-6, Assembled Workforce and Other Items that Are not Identifiable, and not tracked separately as an amortizing intangible asset.

The Company accepted the Third-Party Valuation Expert's valuation without adjustment.

The following table summarizes the adjusted acquisition date fair values of assets acquired and liabilities assumed by the Company, including the final results of the analysis performed by the Third-Party Valuation Expert for the intangibles:

| | |
|---|---|
| Purchase price, net of cash acquired | $ 81,939,939 |
| Less | |
| Prepaid expenses | 16,109 |
| Fixed assets at cost | 116,315 |
| Security deposits | 97,768 |
| Non-compete agreement with founder | 2,722,000 |
| Website domain, trade name and trademark | 969,000 |
| Technology and licensed patents | 12,200,000 |
| Accounts payable and other current liabilities | (2,888,246) |
| Goodwill | $ 68,706,993 |





The purchase price and purchase price allocation for QPhoton was finalized as of September 30, 2022 with no significant changes to the preliminary amounts. However, after receiving the report of the Third-Party Valuation Expert in July 2023, the Company determined that the purchase price allocation recorded in 2022 was incorrect. The Company corrected the error in the amounts recognized for goodwill and intangible assets and this error correction was reported in the Company's Form 10-Q report for the period ending June 30, 2023, reflecting the amounts noted above. The impact of this error correction was to reduce the Company's net loss for the twelve months ending December 31, 2023 (the "2023 Net Loss") by $1,589,501 due to a reduction in intangible asset amortization expense related to the period for the twelve months ending December 31, 2022. Accordingly, the Company's 2023 Net Loss before the adjustment was $31,320,173. The total goodwill the Company recorded, net of the error correction, was $68.7M for the QPhoton Merger, which is not expected to be deductible for income tax purposes. The amount allocated to goodwill and intangible assets reflected the benefits the Company expected to realize from the growth of the acquisition's operations.

*Note Purchase Agreement – the Company and QPhoton*

On February 18, 2022, the Company entered into a Note Purchase Agreement (the "Note Purchase Agreement") with QPhoton, pursuant to which the Company agreed to loan money to QPhoton using two unsecured promissory notes (each, a "Note"), each in the principal amount of $1,250,000, subject to the terms and conditions of the Note Purchase Agreement. Also on February 18, 2022, pursuant to the terms of the Note Purchase Agreement, the Company loaned the principal amount of $1,250,000 to QPhoton. On April 1, 2022, pursuant to the terms of the Note Purchase Agreement, the Company loaned the principal amount of $1,250,000 to QPhoton, for a total loan under the two Notes of $2,500,000.

The Note Purchase Agreement contains customary representations and warranties by QPhoton and the Company, as well as a "most favored nations" provision for the benefit of the Company. The Notes issued under the Note Purchase Agreement, including the Notes issued on February 18, 2022 and April 1, 2022, provide that the indebtedness evidenced by the applicable Note bears simple interest at the rate of 6% per annum (or 15% per annum during the occurrence of an event of default, as defined in the Notes), and becomes due and payable in full on the earlier of (i) March 1, 2023, subject to extension by one year at the option of QPhoton, (ii) a change of control (as defined in the Notes) of QPhoton or (iii) an event of default. As a result of the merger, the Note and accrued interest is eliminated through consolidation. However, the two Notes were not forgiven or converted to equity.

Note 4 – Intangible Assets and Goodwill

As a result of the merger with QPhoton, the Company has the following amounts related to intangible assets:

| | Intangible Assets as of: | |
|---|---|---|
| | December 31, | Amortizable |

| **Amortizable Intangible Assets** | **2023** | **2022** | **Life** |
|---|---|---|---|
| Customer relationships | $ - | $ 10,000,000 | 3 years |
| Non-compete agreement with founder | 2,722,000 | 500,000 | 3 years |
| Website domain name and trademark | 969,000 | 1,000,000 | 5 years |
| Employment agreements | - | 2,250,000 | 2 years |
| Technology and licensed patents | 12,200,000 | 11,722,220 | 10 years |
| Less: accumulated amortization | (4,502,985) | (3,248,495) | |
| Net intangible assets | $ 11,388,015 | $ 22,223,725 | |

The asset balances as of December 31, 2022 were corrected in the Company's June 2023 financial results, as discussed in Note 3, Business Combinations, Merger with QPhoton, Inc.





The aggregate amortization expense of the Company's intangible assets for the years ended December 31, 2023 and 2022 was $1,254,490and $3,248,495, respectively. The Company expects future amortization expense to be the following:

| | **Amortization** |
|---|---|
| 2024 | $ 2,843,991 |
| 2025 | 2,352,518 |
| 2026 | 1,936,657 |
| 2027 | 1,831,682 |
| 2028 | 1,742,857 |
| Thereafter (2029-2032) | 680,310 |
| Total | $ 11,388,015 |

The Company recorded goodwill resulting from the merger with QPhoton, calculated as the difference between the total purchase price and the value of tangible and intangible assets acquired less the liabilities assumed. The Company recorded goodwill of $59,125,773.38 resulting from the QPhoton merger. The following table provides a summary of the changes in goodwill for the years ended December 31, 2023 and 2022:

| | **December 31,** | |
|---|---|---|
| | **2023** | **2022** |
| Goodwill, at beginning of year | 59,125,773 | $ - |
| Goodwill additions | 9,581,220 | 59,125,773 |
| Goodwill deductions or impairment | 8,347,126 | - |
| Goodwill, at end of year | $ 60,359,867 | $ 59,125,773 |

The Company tested the intangible assets and goodwill for impairment as of December 31, 2023 and concluded there was no impairment of intangible assets or goodwill at that time.

Note 5 – Income Taxes:

The Company has made no provision for income taxes because there has been no taxable income.

The Financial Accounting Standards Board (FASB) has issued Statement of Financial Accounting Standards Number 109 ("SFAS 109"). "Accounting for Income Taxes", which requires a change from the deferred method to the asset and liability method of accounting for income taxes. Under the asset and liability method, deferred income taxes are recognized for the tax consequences of "temporary differences" by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts and the tax basis of existing assets and liabilities.

| | December 31, 2023 | December 31, 2022 |
|---|---|---|
| Net operating loss carry-forwards | $ 14,528,229 | $ 9,703,519 |
| Valuation allowance | (14,528,229) | (9,703,519) |
| Net deferred tax assets | $ - | $ - |

At December 31, 2023, the Company had net operating loss carry forwards of approximately $14,528,229.

Net operating loss carryforwards are subject to limitations under Section 382 of the Internal Revenue Code and the Company anticipates that no more than an insignificant portion of this net operating allowance will ever be used against future taxable income. FASB Codification ASC 740 requires changes in recognition and measurement for uncertain tax positions. The Company has analyzed its tax positions and concluded that it is not aware of any uncertain tax positions. If this conclusion changes, the Company will assess the impact of any such changes on its financial position and the results of operations.





Note 6 – Financial Accounting Developments:

Recently Issued Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies that are adopted by the Company as of the specified effective date. Unless otherwise discussed, we believe that the impact of recently issued standards that are not yet effective will not have a material impact on our financial position or results of operations upon adoption. The Company has evaluated the recently implemented accounting standards and concluded that none currently apply to the Company.

Note 7 – Property and Equipment

| Classification | December 31, 2023 | December 31, 2022 |
|---|---|---|
| Hardware & Equipment | $ 3,092,664 | $ 1,026,829 |
| Software | 49,275 | 18,889 |
| Total cost of property and equipment | 3,141,939 | 1,045,718 |
| Accumulated depreciation | 272,281 | 70,549 |
| Property and equipment, net | $ 2,869,658 | $ 975,169 |

The Company acquired $2,096,221 of property and equipment during the twelve months ended December 31, 2023. It is the Company's policy to capitalize purchases of property and equipment with a cost of $2,500 or more that benefit future periods.

| | Estimated Useful Life (Years) |
|---|---|
| Computer and laboratory equipment | 5 |
| Network equipment | 4 |
| Minor equipment | 3 |
| Furniture and fixtures | 7 |
| Software | 3 |
| Leasehold improvements | 5 |

Maintenance and repairs are charged to operations when incurred. When property and equipment are sold or otherwise disposed, the asset account and related accumulated depreciation and amortization accounts are relieved, and any gain or loss is included in other income or expense.

Note 8 – Loans

*Notes Payable – BV Advisory Partners, LLC*

As part of our business combination with QPhoton in June 2022, we acquired a note payable to BV Advisory Partners, LLC. On March 1, 2021, QPhoton entered into a Note Purchase Agreement with BV Advisory. Under the Note Purchase Agreement, on March 1, 2021, March 23, 2021 and July 9, 2021, BV Advisory, a related party shareholder, purchased convertible promissory notes from QPhoton for $200,592, $150,000, and $150,000, respectively, for a total of $500,592 (the "BV Notes"). The BV Notes all bore interest at a rate of 6% per annum and matured 2 years from the grant date. However, QPhoton only received approximately $375,000 in cash proceeds as $125,041 was paid by BV Advisory directly to The Trustees of the Stevens Institute of Technology ("Stevens Institute") on behalf of QPhoton, to satisfy QPhoton's obligations to reimburse costs incurred under the terms of their patent license agreement with the Stevens Institute.

On June 16, 2022 the Company tendered a cashier's check to BV Advisory in the amount of $535,68.44, representing the full principal balance of the BV Notes and accrued interest through June 16, 2022. On July 14, 2022 BV Advisory returned the cashier's check and disputed the calculation of the amount paid to settle the BV Notes. The BV Notes and accrued interest are recorded as short-term liabilities. On August 15, 2022, BV Advisory Partners, LLC ("BV Advisory") filed a complaint in the Court of Chancery of the State of Delaware naming the Company and certain of its directors and officers (among others) as defendants (the "Lawsuit"). *BV Advisory Partners, LLC v. Quantum Computing Inc.*, et al., C.A. No. 2022-0719-VCG (Del. Ch.). BV Advisory is seeking, among other relief, monetary damages for an alleged breach of the Note Purchase Agreement between BV Advisory and QPhoton, Inc., the predecessor in interest to QPhoton, LLC, a wholly-owned subsidiary of the Company, as well as monetary damages for breach of an alleged binding letter of intent among Barksdale Global Holdings, LLC, Inference Ventures, LLC and QPhoton, Inc. The Company believes that BV Advisory's claims have no merit and intends to defend itself vigorously. The Company filed a motion to dismiss the complaint in December 2022, and in March 2023 Plaintiff filed a second amended complaint. The Company filed a motion to dismiss the second amended complaint, oral argument was held on October 11, 2023 and at this time that motion is pending before the Court. The Company does not believe it is necessary to accrue an amount in addition to the principal and interest on the BV Notes at this time.





*Unsecured Promissory Note*

On September 23, 2022, the Company entered into a note purchase agreement (the "NPA") with Streeterville Capital, LLC (the "Investor"), pursuant to which the Investor purchased an unsecured promissory note (the "Note" or the "Streeterville Unsecured Note") in the initial principal amount of $8,250,000. The Note bears interest at 10% per annum. The maturity date of the Note is 18 months from the date of its issuance (the "Maturity Date"). The Note carries an original issue discount of $750,000, which is included in the principal balance of the Note. If the Company elects to prepay the Note prior to the Maturity Date, it must pay to Investor 120% of the portion of the Outstanding Balance the Company elects to prepay.

Beginning on the date that was six (6) months after the issuance date of the Note, the Investor has the right to redeem up to $750,000 of the outstanding balance of the Note per month ("Redemption Amount") by providing written notice to the Company ("Redemption Notice"). Upon receipt of any Redemption Notice, the Company shall pay the applicable Redemption Amount in cash to the Investor within three (3) trading days of the Company's receipt of such Redemption Notice. No prepayment premium shall be payable in respect of any Redemption Amount. As of December 31, 2023, Streeterville has redeemed $7,000,000 of the outstanding balance of the Note.

Pursuant to the terms of the NPA, the parties provided customary representations and warranties to each other. Also, until amounts due under the Note are paid in full, the Company agreed, among other things, to: (i) timely make all filings under the Securities Exchange Act of 1934, (ii) ensure the Common Stock continues to be listed on the Nasdaq Capital Market ("Nasdaq") (iii) ensure trading in Company's

Common Stock will not be suspended, halted, chilled, frozen, reach zero bid or otherwise cease trading on Company's principal trading market, (iv) ensure Company will not make any Restricted Issuance (as defined in the Note) without Investor's prior written consent, which consent may be granted or withheld in Investor's sole and absolute discretion, (v) ensure Company shall not enter into any agreement or otherwise agree to any covenant, condition, or obligation that locks up, restricts in any way or otherwise prohibits Company from entering into certain additional transactions with the Investor, and (vi) with the exception for Permitted Liens (as defined in the Note) ensure Company will not pledge or grant a security interest in any of its assets without Investor's prior written consent, which consent may be granted on withheld in Investor's sole and absolute discretion.

The Note sets forth certain standard events of default (such event, an "Event of Default") that generally, if uncured within seven (7) trading days, may result in the discretion of the Investor in certain penalties under the terms of the Note. In this regard, upon an Event of Default, Investor may accelerate the Note by written notice to the Company, with the outstanding balance becoming immediately due and payable in cash at the Mandatory Default Amount (as defined in the Note). Additionally, upon written notice given by Investor to the Company, interest shall accrue on the Outstanding Balance beginning on the date the applicable Event of Default occurred at an interest rate equal to the lesser of fifteen percent (15%) per annum simple interest or the maximum rate permitted under applicable law upon an Event of Default.

*Note Purchase Agreement Loan*

On May 16, 2023, the Company entered into a Summary of Proposed Terms (the "Letter of Intent") with millionways, Inc. ("millionways") to provide bridge loans to millionways and enter into due diligence to acquire up to 100% of the AI firm. On June 6, 2023, the Company entered into a Note Purchase Agreement (the "MW Agreement") with millionways, pursuant to which the Company agreed to purchase from millionways up to three unsecured promissory notes (each, a "MW Note"), in an aggregate principal amount of up to $2,000,000, subject to the terms and conditions of the MW Agreement. Also on June 6, 2023, pursuant to the terms of the MW Agreement, the Company purchased the MW Notes from millionways and loaned an aggregate principal amount of $500,000 to millionways.

The MW Agreement contains customary representations and warranties by millionways and the Company, as well as a "most favored nations" provision for the benefit of the Company. The MW Notes issued under the MW Agreement, including the MW Notes issued on June 6, 2023, provide that the indebtedness evidenced by the applicable MW Note bears simple interest at the rate of 10% per annum (or 15% per annum during the occurrence of an event of default, as defined in the MW Notes), and becomes due and payable in full on the earlier of (i) May 16, 2024, (ii) a change of control (as defined in the MW Notes) of millionways, (iii) dollar-for-dollar prepayment for additional capital received through any vehicle from a third party or (iv) an event of default.





Note 9 – Capital Stock:

*Series A Convertible Preferred Offering*

From November 10, 2021 through November 17, 2021, the Company conducted a private placement offering (the "Private Placement") pursuant to securities purchase agreements with 7 accredited investors (the "Series A Investors"), whereby the Series A Investors purchased from the Company an aggregate of 1,545,459 shares of the Company's newly created Series A Convertible Preferred stock, par value $0.0001 per share (the "Series A Preferred Stock") and warrants to purchase 1,545,459 shares of common stock for an aggregate purchase price of $8,500,000. The Private Placement was completed and closed to further investment on November 17, 2021.

The Series A Preferred Stock ranks senior to common stock with respect to the payment of dividends and liquidation rights. Each holder of Series A Preferred Stock is entitled to receive, with respect to each share of Series A Preferred Stock then outstanding and held by such holder, dividends at the rate of ten percent (10%) per annum (the "Preferred Dividends.") The Company is obligated to pay the Preferred Dividends quarterly, in arrears, within fifteen (15) days of the end of each quarter. The Company has the option to pay the Preferred Dividends in cash or in common stock, at a price per share of common stock equal to the average of the closing sale price of the common stock for the five (5) trading days preceding the applicable dividend payment date. The Preferred Dividends are accrued monthly, but not compounded, and are recorded as interest expense, because the Preferred Dividends are mandatory and not declared at the discretion of the Board of Directors.

The number of shares of common stock issuable upon conversion of any share of Series A Preferred Stock shall be determined by dividing (x) the Conversion Amount of such share of Series A Preferred Stock by (y) the Conversion Price. “Conversion Amount” means, with respect to each share of Series A Preferred Stock, as of the applicable date of determination, the sum of (1) the stated value thereof plus (2) any accrued dividends. “Conversion Price” means, with respect to each share of Series A Preferred Stock, as of any optional conversion date, Mandatory Conversion Date or other date of determination, $5.50, subject to adjustment for stock splits, dividends, recapitalizations and similar corporate events.

The Warrants are two-year warrants to purchase shares of common stock at an exercise price of $7.00 per share, subject to adjustment, and are exercisable at any time on or after the date that is six (6) months following the issuance date. The warrants provide for cashless exercise in the event the underlying shares of common stock are not registered. As of December 31, 2023, all of the Warrants had expired unexercised.

In connection with the Purchase Agreement, the Company and the Series A Investors entered into a registration rights agreement (the “Registration Rights Agreement”) pursuant to which the Company agreed to file a registration statement to register the shares of common stock underlying the Series A Preferred Stock and warrants within 180 days. Pursuant to the Registration Rights Agreement, the Series A Investors received certain rights, including but not limited to piggyback registration rights, providing that the holder be given notice of any proposed registration of securities by the Company, and requiring that the Company register all or any portion of the registrable securities that the holders request to be registered, in each case, subject to the terms and conditions of the Registration Rights Agreement.

On April 27, 2022 the Company filed a Resale Form S-3 as required by the Registration Rights Agreement, pursuant to which the Company agreed to file a registration statement to register the shares of common stock underlying the Series A Preferred Stock and warrants within 180 days from the closing of the Private Placement. The Resale Form S-3 went effective on June 2, 2022.

On June 13, 2022, one of the Series A Investors, Falcon Capital Partners, converted 45,455 shares of Series A Convertible Preferred stock into 47,728 shares of common stock.

On February 9, 2023, one of the Series A Investors, Greenfield Children, LLC, converted 10,000 shares of Series A Convertible Preferred stock plus accrued dividends into 11,096 shares of common stock.

As of March 28, 2024, the Board has authorized two classes of preferred stock. The Board has authorized 1,550,000 shares of preferred stock as the Series A Convertible Preferred stock, par value $0.0001 per share, of which 1,490,004 shares are issued and outstanding. The Board has also authorized 3,079,864 shares of preferred stock as the Series B Preferred Stock, par value $0.0001 per share, of which 0 shares are issued and outstanding.





*Other Offerings*

On January 20, 2023 the Company issued 750,000 shares of common stock to Draper, Inc. and 750,000 shares of common stock to Carriage House Capital, Inc. as compensation for services rendered in support of the QPhoton merger.

On May 3, 2023, the Company issued 853,600 shares of common stock to thirty-five (35) employees as payment in lieu of cash for 2022 performance bonuses (the “Bonus Shares”). The Bonus Shares are restricted with the following vesting schedule: one-half vested on December 31, 2023 and one-half vesting on December 31, 2024. As of December 31, 2023, the Company canceled 23,600 of the issued shares that were forfeited by employees no longer with the Company.

On December 19,2023, the Company issued 75,000 shares of common stock to FMW Media Works as compensation for services rendered in support of marketing and communications.

From January 19, 2023 through December 31, 2023, the Company sold 17,571,926 shares of common stock through its At-The-Market (ATM) facility, managed by Ascendiant Capital Markets, LLC, at an average price of $1.45. The Company received gross proceeds of $25,496,364 and paid a fee of three percent (3%) to Ascendiant Capital Markets, LLC.

Note 10 – Stock Based Compensation

***Incentive Plans and Options***

The Company's 2019 Equity and Incentive Plan, as amended in 2021 (the "2019 Plan") enabled the Company to grant incentive stock options or nonqualified stock options and other equity awards to employees, directors and consultants of the Company up to a total of 3,000,000 shares of common stock. All 3,000,000 shares available for issue under the 2019 Plan have been issued.

On July 5, 2022, the Board of Directors adopted the Company's 2022. Equity and Incentive Plan (the "2022 Plan") which provides for the issuance of up to 16,000,000 shares of the Company's common stock. The 2022 Plan was approved by a majority of the shareholders in September 2022. Per the 2022 Plan, the 2022 Plan reserves increased automatically by 1,000,000 shares on January 1, 2023, providing for a total issuance of up to 17,000,000 shares of common stock. As of December 31, 2023, a total of 13,595,929 shares and options were issued and outstanding under the 2022 Plan.

The following table presents the assumptions used in the Black-Scholes option-pricing model to determine the grant-date fair value of stock options granted:

| | Twelve Months Ended December 31, | |
|---|---|---|
| | **2023** | **2022** |
| Exercise price | $ 0.85 – 1.84 | $ 1.67 – 2.61 |
| Risk-free interest rate | 4.7 – 5.0% | 0.6 – 4.0% |
| Expected volatility | 194 – 214% | 336 – 369% |
| Expected dividend yield | 0% | 0% |
| Expected life of options (in years) | 5.0 | 5.0 |

The following table summarizes the Company's option activity since December 31, 2022:

| | **Weighted Average Number of Shares** | | **Weighted Average Exercise Price** | **Contractual Term (in years)** |
|---|---|---|---|---|
| Outstanding as of December 31, 2022 | 9,601,237 | $ | 3.42 | 4.0 |
| Granted | 5,340,000 | | 1.38 | 5.0 |
| Exercised | - | | - | - |
| Forfeited | (1,097,738) | | 3.32 | - |
| Outstanding as of December 31, 2023 | 13,843,499 | $ | 4.02 | 3.7 |
| Vested as of December 31, 2023 | 7,978,074 | $ | 3.39 | 3.3 |





The following table summarizes the exercise price range as of December 31, 2023:

| **Exercise Price** | | **Outstanding Options** | **Exercisable Options** |
|---|---|---|---|
| $ | 0.85 | 120,000 | - |
| $ | 0.86 | 30,000 | 10,000 |

| | | | |
|---|---|---|---|
| $ | 0.94 | 30,000 | - |
| $ | 1.00 | 138,970 | 138,970 |
| $ | 1.16 | 30,000 | - |
| $ | 1.18 | 300,000 | 100,000 |
| $ | 1.19 | 55,000 | - |
| $ | 1.20 | 87,500 | - |
| $ | 1.28 | 50,000 | - |
| $ | 1.33 | 25,000 | - |
| $ | 1.35 | 3,780,000 | - |
| $ | 1.44 | 150,000 | 72,224 |
| $ | 1.45 | 225,000 | 225,000 |
| $ | 1.51 | 5,000 | - |
| $ | 1.52 | 60,000 | - |
| $ | 1.67 | 16,666 | 16,666 |
| $ | 1.74 | 25,000 | - |
| $ | 1.84 | 567,500 | 377,500 |
| $ | 1.95 | 180,000 | 180,000 |
| $ | 2.37 | 4,911,528 | 4,396,819 |
| $ | 2.40 | 1,010,001 | 720,001 |
| $ | 2.56 | 287,500 | 95,834 |
| $ | 2.61 | 150,000 | 105,560 |
| $ | 3.58 | 65,000 | 65,000 |
| $ | 5.69 | 12,500 | 12,500 |
| $ | 5.70 | 25,000 | 16,666 |
| $ | 6.49 | 38,334 | 33,334 |
| $ | 6.85 | 650,000 | 650,000 |
| $ | 7.00 | 18,000 | 12,000 |
| $ | 8.85 | 100,000 | 66,666 |
| $ | 10.00 | 650,000 | 650,000 |
| $ | 11.51 | 50,000 | 33,334 |
| | | 13,843,499 | 7,978,074 |

The weighted average grant-date fair value of stock options granted during the years ended December 31, 2023 and 2022 was $1.38 per share and $2.38 per share, respectively.

***Stock-based compensation***

The Company recorded stock-based compensation expense related to common stock options and restricted common stock in the following expense categories of its consolidated statements of operations and comprehensive loss:

| | Twelve Months Ended December 31, | |
|---|---|---|
| | **2023** | **2022** |
| Research and development | 3,660,068 | 2,758,465 |
| General and administrative | 5,062,698 | 15,003,002 |
| Total stock-based compensation | $ 8,722,766 | $ 17,761,467 |

As of December 31, 2023, total unrecognized compensation cost related to common stock options was $6.0 million, which is expected to be recognized over a period of 4.0 years.

***Warrants***

In connection with a restricted stock units offering in June 2020, the Company issued warrants in August 2020 to purchase 171,000 shares of the Company's common stock, at an exercise price of $2.00. Those warrants are exercisable for five years from the date of issuance. In connection with an offering of Series A Convertible Preferred stock in November 2021, the Company issued warrants to purchase 1,545,459 shares of the Company's common stock at an exercise price of $7.00. Those warrants were exercisable for two years from the date of issuance and have now expired. In connection with the QPhoton merger on June 16, 2022, the Company issued warrants to purchase 6,325,503 shares of the Company's common stock at an exercise price of $0.0001. Those warrants are exercisable when and if stock options and warrants issued and outstanding as of June 15, 2022, are exercised. The following table summarizes the warrants outstanding at December 31, 2023:

| Issuance Date | Expiration Date | Exercise Price | Issued | Exercised | Forfeited / Canceled | Warrants Outstanding |
|---|---|---|---|---|---|---|
| August 18, 2020 | August 18, 2025 | $ 2.00 | 171,000 | (150,000) | - | 21,000 |
| November 15, 2021 | November 15, 2023 | $ 7.00 | 1,545,459 | | (1,545,459) | - |
| June 16, 2022 | May 9, 2027 | $ 0.0001 | 6,325,503 | - | (3,309,433) | 3,016,070 |

Note 11 – Related Party Transactions

There were no related party transactions during the twelve-month periods ended December 31, 2023 and December 31, 2022.

Note 12 – Operating Leases:

The Company has use of space in five different locations, Hoboken, NJ, Tempe, AZ Leesburg, VA, Arlington, VA, and Minneapolis, MN, under lease or membership agreements, which expire at various dates through October 31, 2028. The Company's leases do not provide an implicit rate, and therefore the Company uses its incremental borrowing rate as the discount rate when measuring operating lease assets and liabilities. The incremental borrowing rate represents an estimate of the interest rate the Company would incur at lease commencement to borrow an amount equal to the lease payments on a collateralized basis over the term of a lease.

The table below reconciles the undiscounted future minimum lease payments under these operating leases to the total operating lease liabilities recognized on the consolidate balance sheet as of December 31, 2023:

| Year | Lease Payments Due |
|---|---|
| 2024 | $ 338,319 |
| 2025 | $ 576,078 |
| 2026 | $ 591,551 |
| 2027 | $ 515,981 |
| 2028 | $ 191,008 |
| Less: imputed Interest | $ (638,740) |
| Present Value of operating lease liabilities | $ 1,619,197 |

Other information related to operating lease liabilities consists of the following:

| | Year Ended December 31, | |
|---|---|---|
| | 2023 | 2022 |
| Cash paid for operating lease liabilities | $ 411,700 | $ 125,238 |
| Weighted average remaining lease term in years | 3.7 | 4.7 |
| Weighted average discount rate | 10% | 10% |

Note 13 – License Agreement – Stevens Institute of Technology

Effective December 17th, 2020, QPhoton signed a License Agreement with the Stevens Institute. The License Agreement enables the Company to commercially use technology such as licensed patents, licensed patent applications and licensed "Know-How". QPhoton is also able to issue sublicenses for the technology under the agreement. The agreement is effective until the later of: (i) the 30-year anniversary of the effective date, or (ii) the expiration of the licensed patent or licensed patent application that is last to expire. As part of the merger of the Company and QPhoton, the Stevens License Agreement was assigned to the Company.

During the term of the agreement and prior to any commercialization or sublicensing of the technology by the Company, the Company shall be required to submit annual reports to the Stevens Institute reporting on all research, development, and efforts toward commercialization and/or sublicensing made during the year. Once any commercialization and/or sublicensing has been initiated, the Company shall deliver quarterly reports to the Stevens Institute reporting on the revenue received by the Company, all sublicenses derived from the sale of licensed products, and the net sales price associated with each transaction. The Company will be responsible for reimbursing Stevens for any costs associated with the prosecution and maintenance of the licensed patents and licensed patent applications moving forward.

*Consideration for the agreement*

As consideration for the license and other rights granted under the agreement, QPhoton agreed to pay the following: (i) $35,000 within 30 days of execution of the agreement, (ii) $28,000 within 30 days of each annual anniversary of the effective date, (iii) equity in the Company equivalent to nine percent of the membership units of the Company within 30 days of the execution of the agreement, and (iv) royalties of 3.5% of the Net Sales Price of each licensed product sold or licensed by the Company during the quarter then-ended, for which it also received payment, concurrent with the delivery of the relevant quarterly report.

As of December 31, 2023 the Company has begun to commercialize some of the licensed technology, though the Company has not recorded any related revenue and hence has not incurred any royalty expenses payable to the Stevens Institute.

Note 14 – Subsequent Events:

Effective January 31, 2024 the Board terminated Mr. Liscouski as CEO and President, without "Cause" as such term is defined in the Liscouski Employment Agreement. Subject to the signing of a separation agreement which will contain a release in favor of the Company, Mr. Liscouski will receive (i) the payments and benefits detailed in Sections 6.2 and 6.4 of the Liscouski Employment Agreement and (ii) 168,000 shares of restricted common stock that are owed to Mr. Liscouski pursuant to his 2022 performance review. Mr. Liscouski will continue to serve the Company in his capacity as Chairman of the Board and Chairman of the Risk Committee. Starting on February 1, 2024, Mr. Liscouski will be paid a cash director fee of $12,500 per month for his service as Chairman.

Chief Executive Officer Appointment

In connection with the succession planning for the role of CEO and President, on the Effective Date, the Board promoted Dr. William J. McGann, the Company's Chief Operating Officer and Chief Technology Officer, to the positions of CEO and President (the "CEO Appointment"), effective February 1, 2024. The terms of the employment agreement entered into between the Company and Dr. McGann, dated January 3, 2022 (the "McGann Employment Agreement"), shall remain the same. The Company plans to amend the McGann Employment Agreement in the coming weeks to indicate the change of title. Dr. McGann will continue to be paid an annual salary of $400,000 per his employment agreement.

On January 18, 2024, the Company announced that two of its engineers, Dr. Yuping Huang, QCi's Chief Quantum Officer and Dr. Lac Thi Thanh Nguyen, the Quantum Technology Lead for QCi's Cybersecurity platform, have received the 44th Edison-Patent Award for their pathbreaking contributions to quantum-secured privacy-preserving computations. This recognition underscores their work in addressing cybersecurity threats through a revolutionary method of quantum authentication and private-data computing that can process and verify information without sharing that information. The patent, which was granted approval in the United States and over 40 other countries during 2023, addresses a method for quantum authentication and zero-knowledge proof for network security that uses fundamental quantum physics to protect passwords, private information, and online assets without ever disclosing private data in process, either with each other or with external parties or computing processes. This unconditional security fills a critical security breach vulnerability by offering a way to effectively secure identity authentication, data mining, and digital assets in an untrusted environment. Designed to be compatible with existing fiber-based communication infrastructure and satellite-based networks, the patent is a broad-use award based on a fundamental methodology for secure networking among multiple parties, uniquely combining quantum authentication and encryption in a single step and thereby safeguarding an entire network at all points of slippage.





On February 14, 2024 the Company announced that it has been awarded a fourth subcontract with NASA to study sun noise reduction in LIDAR images using the EQC. The prime contractor for this award is Analytical Mechanics Associates. This technology would be an effective and affordable method for NASA to measure the unique physical properties of clouds and aerosols to prepare for space missions at any time of day and offers a superior alternative to the traditional noise reduction methodologies that require a larger laser and restrictive bandwidth filtering at greater size, weight, power and cost.

On February 29, 2024, the Company announced the release of the first quantum photonic computing machine, Dirac-3. At a disruptive price starting at $300,000, the Dirac-3 is an EQC that is an optimization machine designed to address complex problems with larger numbers of variables that require unconventional solutions using nonlinear quantum optics. Dirac is the first and only system of its type to natively solve integer problems using quantum digits (qudits), each qudit having a dimension of 200 discrete modes. This unique capability, through all-to-all connectivity, expands the use of quantum technology far beyond the current quantum computing devices on the market that use quantum bits. The Dirac system is designed for on premises installation, is rack mountable, operates at ambient temperature, requires no special infrastructure for daily use, and utilizes less than 80 Watts of energy. The Company's initial sales focus will be across the healthcare, financial services, supply chain, energy management, autonomous vehicle, and molecular modeling industries.

On January 31, 2024, BV Advisory Partners, LLC, and its chief executive officer, Keith Barksdale (the "BV Defendants"), alleged stockholders of and claimants against the Company, filed a motion for reconsideration of his original 2023 motion to dismiss. The motion and our opposition were argued before the Superior Court of New Jersey (the "NJ Court") on February 15, 2024. On March 7, 2024, the NJ Court issued an order, granting the BV Defendant's motion dismissing the Company's case on procedural grounds because, according to the NJ Court, the Company can assert its claims. The Company has 45 days in which to file an appeal and is evaluating whether it should file the claims in Delaware or appeal the NJ Court's ruling.

From January 1, 2024, through March 1, 2024, the Company repaid $2,094,378 of principal and accrued interest on the Streeterville Unsecured Note, for a cumulative redemption amount of $9,094,378. As of March 1, 2024, the Company has fully repaid the Streeterville Unsecured Note.

On March 19, 2024, the "Company entered into a Redemption and Waiver Agreement (the "Redemption Agreement") with the holders (the "Series A Holders") of its Series A Convertible Preferred Stock (the "Preferred Stock"). Pursuant to the Redemption Agreement, the Company agreed to redeem all outstanding shares of the Preferred Stock for an aggregate cash purchase price of $8,195,000.00, or $5.50 per share, at its sole discretion, in eighteen (18) monthly payments (each a "Monthly Redemption Threshold" payment), which may be accelerated at the Company's sole discretion. In addition, the Series A Holders agreed to waive (the "Waivers"), on a month-by-month basis following each monthly payment, certain rights granted to them in (i) the Preferred Stock Certificate of Designation (the "Preferred Stock COD"), including for the accrual and payment of accrued and future dividends; and (ii) the Preferred Stock Securities Purchase Agreement (the "Preferred Stock SPA"). In the event the Company opts to not make a Monthly Redemption Threshold payment, the Waivers are forfeited and the terms revert to those detailed in the Preferred Stock COD and Preferred Stock SPA. As of March 28, 2024, the Company has redeemed 82,783 shares of Preferred Stock for an aggregate $455,307 in cash paid to the Series A Holders. The issued and outstanding balance of Preferred Stock as of March 28, 2024 is 1,407,221.

On March 26, 2024, the Company received a notice from the Listing Qualifications Staff of Nasdaq that the Company had regained compliance with Listing Rule 5550(a)(2) of the Nasdaq Listing Rules, as the closing bid price of the Company's common stock had been at $1.00 per share or greater during the prior 10 consecutive business days.

There are no other events of a subsequent nature that in management's opinion are reportable.

**Exhibit 4.4**

DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934

Set forth below is the description of each class of securities of Quantum Computing Inc. (the "Company") outstanding as of December 31, 2023. The following description summarizes the most important terms of these securities. This summary does not purport to be complete and is qualified in its entirety by the provisions of our Amended and Restated Articles of Incorporation and our Bylaws, copies of which have been previously filed with the Securities and Exchange Commission and are incorporated by reference into the Annual Report on Form 10-K for the year ended December 31, 2023. You should refer to our Articles of Incorporation, Bylaws and the applicable provisions of the Delaware General Corporation Law for a complete description.

Common stock, par value $0.0001 per share (the "Common Stock") is the only class of our securities currently registered under Section 12 of the Securities Exchange Act of 1934 (the "Exchange Act"). Our Common Stock is listed on the Nasdaq Capital Market under the symbol "QUBT."

Authorized Capital Shares

Our authorized capital stock consists of 250,000,000 shares of Common Stock, and 10,000,000 share of blank check preferred stock, par value $0.0001 per share, of which 1,550,000 shares are designated as Series A Convertible Preferred Stock, and 3,079,864 shares are designated as Series B Convertible Preferred Stock.

**Common Stock**

Dividend Rights

Subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of our Common Stock may, receive dividends out of funds legally available if our Board, in its discretion, determines to issue dividends and then only at the times and in the amounts that our Board may determine. We have not paid any dividends on our Common Stock and do not contemplate doing so in the foreseeable future.

Voting Rights

Each stockholder is entitled to one vote for each share of common stock held by such shareholder.

No Preemptive or Similar Rights

Our Common Stock is not entitled to preemptive rights, and is not subject to conversion, redemption or sinking fund provisions.

Right to Receive Liquidation Distributions

Holders of common stock are entitled to dividends when, and if, declared by the Board of Directors out of funds legally available therefore; and then, only after all preferential dividends have been paid on any outstanding Preferred Stock. The Company has not had any earnings and it does not presently contemplate the payment of any cash dividends in the foreseeable future.

Transfer Agent and Registrar

The transfer agent and registrar for our Common Stock is Worldwide Stock Transfer, LLC with an address at One University Plaza, Suite 505, Hackensack, NJ 07601. Their phone number is (201) 820-2008.

**SEPARATION AGREEMENT AND GENERAL RELEASE**

This Separation Agreement and General Release (the "Agreement") is entered into by and between **Quantum Computing Inc.** (referred to throughout this Agreement as "Employer" or "Company") and **Robert Liscouski** ("Employee"). The term "Party" or "Parties" as used herein shall refer to Employer, Employee, or both, as may be appropriate.

1. **Last Day of Employment.** Employee's last day of employment with Employer will be Wednesday, January 31, 2024 ("Separation Date").

2. **Consideration.**

In consideration for signing this Agreement, and complying with its terms, **Employer** agrees:

(a) to pay to Employee four hundred thousand dollars ($400,000), representing twelve (12) months of salary at Employee's base rate of pay, less lawful deductions, which will be paid in equal cash installments on regular Employer payroll dates (no less frequently than monthly) over the twelve (12) month period immediately following the Separation Date; provided, that the first installment payment will be made on the first regular Employer payroll date coinciding with or next following the 30th day after the Separation Date and will include payment of any installment payments that were otherwise due prior thereto.

(b) subject to Employee's timely election of continuation coverage under COBRA, the Employer will continue to pay or reimburse 100% of Employee's premiums for such coverage, in a manner intended to avoid any excise tax under Section 4980D of the Internal Revenue Code of 1986, as amended (the "Code"), and subject to the eligibility requirements and other terms and conditions of such insurance coverage, for the twelve (12) month period following the Separation Date or, if earlier, until Employee first becomes covered by an equivalent benefit (at the same cost to Employee, if any) from another source (and Employee agrees to immediately notify the Employer in writing if Employee becomes so covered).

(c) All of Employee's restricted stock grants are fully vested as of the Separation Date. For avoidance of doubt, all other terms of the restricted stock grant agreements will remain unchanged.

(d) To vest stock option grants made to Employee as follows: the grant dated January 24, 2022 (250,000 shares – vesting over 3 years from July 15, 2021) the grant dated October 17, 2022 (150,000 shares – vesting over 3 years from April 1, 2022) and the grant dated December 27, 2023 (150,000 shares – vesting over 3 years from April 1, 2023) shall be fully vested and exercisable. All of Employee's other restricted stock option grants are fully vested as of the Separation Date. For avoidance of doubt, all other terms of the option grant agreements governing such options will remain unchanged.

(e) To grant Employee 168,000 fully-vested shares of the Company's common stock no later than the 30th day after the Separation Date, which shares will be subject to the Company's shareholders' agreement, equity plan, and any other agreements governing such shares.



3. **Total Consideration**. Employee acknowledges that the consideration referred to above is the total consideration he will receive from Employer and that it exceeds that to which he would otherwise be entitled, and that he is not entitled to, nor will he receive, any additional payments of any kind, including payments under any existing contract, commission plan, policy or practice, pension or retirement savings plan, vacation plan, policy, or practice, severance plan, policy or practice, or payment for bonuses or deferred compensation, with the exception of the payments outlined in Section 1 of the February 1, 2024 QCi Director Agreement ("Director Agreement"), which is hereby incorporated by reference. Breach of this Agreement by Employee results in cessation of any outstanding payments set forth above without impacting Employee's obligations and Employee's release of claims. Employee further acknowledges that, except for the equity awards described in Paragraphs 2(c) through 2(e) above, Employee does not have any rights or entitlements to or with respect to any compensatory equity or equity-based award from, or any other equity ownership interest in the Employer or its affiliates, except for common shares obtained by investment in a financing round by the Company

4. **General Release, Claims Not Released and Related Provisions**.

(a) **Employee Release of All Claims**. Employee, on Employee's own behalf and on behalf of Employee's heirs, executors, administrators, successors, and assigns knowingly and voluntarily release and forever discharge Employer, its direct and indirect parent corporations, affiliates, subsidiaries, divisions, predecessors, insurers, reinsurers, representatives, successors and assigns, and their current and former employees, attorneys, officers, directors and agents thereof, both individually and in their business capacities, and their employee benefit plans and programs and their administrators and fiduciaries, both individually and in their business capacities (collectively referred to throughout the remainder of this Agreement as "Releasees"), of and from any and all claims, known and unknown, asserted or unasserted, which the Employee has or may have against Releasees as of the date of execution of this Agreement, including, but not limited to, any alleged violation of the following, as amended:

- the Age Discrimination in Employment Act of 1967, 29 U.S.C. 6, et seq. ("ADEA");
- the Older Workers Benefit Protection Act, 29 U.S.C. 621 et seq. ("OWBPA")
- Title VII of the Civil Rights Act of 1964, 42 U.S.C. § 2000e, et seq. ("Title VII");
- the Reconstruction Era Civil Rights Act, 42 U.S.C. § 1981, § 1983, et seq. ("Civil Rights Act");
- the Civil Rights Act of 1991, 42 U.S.C. §. 1981a, et seq. ("CRA of 1991");
- the Consolidated Omnibus Budget Reconciliation Act, 29 U.S.C. § 1161, et seq. ("COBRA");
- the Genetic Information Nondiscrimination Act of 2008, 29 U.S.C. § 1635, et seq. ("GINA");
- the Employee Polygraph Protection Act, 20 U.SC. § 2001, et seq. ("EPPA");
- the Americans With Disabilities Act, 42 U.S.C. § 12101, et seq, ("ADA");
- the Family and Medical Leave Act, 29 U.S.C. § 2601, et seq. ("FMLA");



- the Fair Labor Standards Act, 29 U.S.C. § 201, et seq. ("FLSA");
- the Employee Retirement Income Security Act of 1974, as amended, 29 U.S.C. § 1001, et seq. ("ERISA");
- the Equal Pay Act, 29 U.S.C. § 201, et seq. (°'EPA"); the Rehabilitation Act 29 U.S.C. § 701, et seq. ("RA");
- the Pregnancy Discrimination Act, 42 U.S.C. § 2000, et seq. ("PDA");
- the Whistleblower Protection Statutes, 10 U.S.C. § 2409, 12 U.S.C. § 1831j, 31 U.S.C. § 5328, 41 U.S.C. § 265, (collectively as "WPS");
- the Uniformed Services Employment and Reemployment Rights Act, 38 U.S.C.A. 4301, et seq. ("USERRA");
- the Worker Adjustment and Retraining Notification Act, 29 U.S.C. 2101 et seq. ("WARN");
- any other federal, state or local law, rule, regulation, or ordinance
- any public policy, contract, tort, or common law; or
- any basis for recovering costs, fees, or other expenses including attorneys' fees incurred in these matters.

(b) **Release of Unasserted Claims Pursuant to the ADEA.** Exclusively as this Agreement pertains to Employee's release of unasserted claims under the Age Discrimination in Employment Act ("ADEA waiver and release"), Employee, pursuant to and in compliance with the Older Workers Benefit Protection Act: (i) has been advised in writing to consult with an attorney at his own cost prior to executing this Agreement; (ii) has been afforded a period of twenty-one (21) calendar days to consider this ADEA waiver and release; and (iii) may revoke only his ADEA waiver and release during the seven (7) calendar days following the execution of this Agreement. Any revocation of the ADEA waiver and release within the period must be submitted in writing, to Carly Saxton at csaxton@quantumcomputinginc.com. To the extent Employee executes this Agreement prior to the expiration of the twenty-one (21) calendar day period specified above, Employee acknowledges and agrees that he was afforded the opportunity to have at least twenty-one (21) calendar days to consider it before executing it and that his execution of the Agreement prior to the expiration of said period was his voluntary act. Employee also agrees that this Agreement is written in a manner that enables him to fully understand its content and meaning. Employee also agrees he is waiving and releasing claims (including any unasserted ADEA claims) in exchange for valuable consideration identified above that is in addition to anything of value to which he already is entitled. This Agreement, as it pertains to a release of claims under the ADEA, shall become effective and enforceable seven (7) calendar days after its execution. All other provisions of this Agreement or parts thereof shall become effective and enforceable upon execution. In the event Employee revokes his ADEA waiver and release, the revocation will be limited to Employee's ADEA waiver and release only, and all other known and unknown claims remain waived and fully released.

(c) **Claims Not Released**. Employee is not waiving any rights Employee may have to: (i) Employee's own vested or accrued employee benefits under Employer's qualified retirement benefit plans as of the Separation Date; (ii) benefits and/or the right to seek benefits under applicable workers' compensation and/or unemployment compensation statutes; (iii) pursue claims which by law cannot be waived by signing this Agreement; and (iv) enforce this Agreement.



(d) **No Interference with Rights**. Nothing in this Agreement prohibits, prevents, or otherwise limits Employee from filing a charge or complaint with or participating, testifying, or assisting in any investigation, hearing, or other proceeding before any federal, state, or local government agency (e.g., EEOC, NLRB, SEC) or in any legislative or judicial proceeding nor does anything in this Agreement preclude, prohibit or otherwise limit, in any way, Employee's rights and abilities to contact, communicate with or report unlawful conduct, or provide documents, to federal, state, or local officials for investigation or participate in any whistleblower program administered by any such agencies. In addition, nothing in this Agreement, including but not limited to the release of claims nor the confidentiality clauses, prohibits Employee from: (1) reporting possible violations of federal or other law or regulations, including any possible securities laws violations, to any governmental agency or entity, including but not limited to the U.S. Department of Justice, the U.S. Securities and Exchange Commission, the Commodity Futures Trading Commission, the U.S. Congress, or any agency Inspector General; (2) making any other disclosures that are protected under the whistleblower provisions of federal or other law or regulations; or (3) filing a charge or complaint or otherwise fully participating in any governmental whistleblower programs, including but not limited to any such programs managed or administered by the U.S. Securities and Exchange Commission, the Commodity Futures Trading Commission and/or the Occupational Safety and Health Administration. Employee is not required to notify or obtain permission from Employer when filing a governmental whistleblower charge or complaint or engaging or participating in protected whistleblower activity. Moreover, nothing in this Agreement prohibits or prevents Employee from receiving individual monetary awards or other individual relief by virtue of participating in such governmental whistleblower programs. Nothing in this Agreement shall be construed to affect the Equal Employment Opportunity Commission's or any similar state or local commission's or agency's independent right and responsibility to enforce the law. Employee understands, however, that while the Agreement does not impinge on his right to file a charge or participate in an investigation or proceeding conducted by the Commission, the Agreement does bar any claim he might have to receive monetary damages in connection with any Commission proceeding concerning matters covered by this Agreement.

(e) **Indemnification.** The Director indemnification encompassed in the Bylaws Article V, Section 2 is hereby incorporated by reference.

(f) **Employer Release.** In consideration of the covenants and promises set forth in this Agreement, above, Employer does hereby release, acquit, satisfy, and discharge Employee from all manner of actions, causes of action, suits, debts, sums of money, agreements, damages, judgments, and claims and demands whatsoever that Employer ever had, or has against Employee whatsoever (asserted or known) as of the Separation Date; provided this release does not extend to: (i) any obligations of Employee under this Agreement, (ii) any rights to indemnification of Employee against claims by third parties to the extent that such claims are covered by the Company's Directors and Officers Liability Insurance; or (iii) claims asserted against the Company based on the intentional and illegal conduct of Employee.

5. **Collective/Class Action Waiver.** If any claim is not subject to release, to the extent permitted by law, Employee waives any right or ability to be a class or collective action representative or to otherwise participate in any putative or certified class, collective or multi-party action or proceeding based on such a claim in which Employer or any other Releasee identified in this Agreement is a party.



6. **Acknowledgments and Affirmations.**

(a) Employee confirms that prior to the execution of this Agreement, Employee has not revealed its terms to any third parties. Employee agrees not to disclose any information regarding the existence or substance of this Agreement, except to Employee's spouse, tax advisor, an attorney or advisor with whom Employee chooses to consult regarding Employee's consideration of this Agreement, and/or to any federal, state or local government agency. Nothing in this Agreement has the purpose or effect of preventing Employee from making truthful disclosures about alleged unlawful conduct.

(b) Employee affirms that he has not filed, caused to be filed, or presently is a party to any claim against Employer. Nothing in this Agreement or these Affirmations is intended to impair Employee's rights under whistleblower laws or cause Employee to disclose Employee's participation in any governmental whistleblower program or any whistleblowing statute(s) or regulation(s) allowing for anonymity.

(c) Employee also affirms that he has been paid and/or has received all compensation, wages, bonuses, commissions, paid sick leave, predictability pay, and/or benefits which are due and payable as of the date Employee signs this Agreement, except for compensation owed to Employee for the period January 16, 2024, to January 31, 2024, which the Employer will pay to Employee during the Employer's next regularly scheduled semi-monthly payroll on February 15, 2024. Employee affirms that Employee has been reimbursed for all necessary expenses or losses incurred by Employee within the scope of Employee's employment. Employee also affirms that Employee has been granted any leave to which Employee was entitled under the Family and Medical Leave Act and state and local leave and disability accommodation laws.

(d) Employee further affirms that he has no known workplace injuries or occupational diseases.

(e) Employee also affirms that Employee has not divulged any proprietary or confidential information of Employer and will continue to maintain the confidentiality of such information consistent with Employer's policies and Employee's agreement(s) with Employer and/or common law.

(f) Employee and Employer acknowledge Employee's rights to make truthful statements or disclosures required by law, regulation, or legal process and to request or receive confidential legal advice, and nothing in this Agreement shall be deemed to impair those rights.

7. **Return of Property.**

Except for the Company furnished MacBook Pro/13 laptop, tablet computer and a Ubiquiti wifi access point device as provided otherwise in this Agreement or by law, Employee affirms that Employee has returned, without copying or otherwise reproducing, all of Employer's property, including documents, and/or any confidential information in Employee's possession or control. The laptop, tablet and Ubiquiti wifi access point devices issued to Employee will remain in Employee's possession insofar as the Employee's separate Director Agreement, dated February 1, 2024, is in effect.



Employee also affirms that Employee is in possession of all of Employee's property that Employee had at Employer's premises and that Employer is not in possession of any of Employee's property.

8. **Continued Obligations.**

a. Employee affirms and acknowledges that Employee has continuing obligations pursuant to his Employment Agreement dated April 26, 2021 (the "Employment Agreement"). Employee agrees to abide by his obligations under the Employment Agreement, including but not limited to, provisions related to Nondisclosure, Proprietary Information, Inventions, Noncompetition and Non-solicitation.

b. Defend Trade Secrets Act Disclosure. Under the Defend Trade Secrets Act of 2016 ("DTSA"), Employee shall not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that: (a) is made (i) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (b) is made to my attorney in relation to a retaliation lawsuit brought by me for reporting a suspected violation of law; or (c) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Employee do not need the prior authorization of the Employer to make such reports or disclosures, and Employee am not required to notify the Employer that Employee have made such reports or disclosures.

c. Notice of Required Disclosure. If Employee and/or his agent(s) become legally obligated by a court of competent jurisdiction to disclose any of the Proprietary Information, Employee shall first provide Employer with immediate written notice so that Employer may seek a protective order or other appropriate remedy. If such protective order or other remedy is not obtained, Employee and/or his agents will furnish only that portion of the Proprietary Information which they are legally required to disclose and will exercise diligent efforts to obtain reliable assurance, to the extent that such assurance can be obtained, that confidential treatment and compliance with this Agreement will be accorded the Proprietary Information.

9. **Non-defamation, libel and/or slander.** In further consideration of Employer's willingness to pay the consideration provided for above in Paragraph 2, Employee agrees that other than as provided in Paragraph 6, above, neither he nor anyone acting on his behalf shall (i) make any defamatory, libelous, slanderous or untrue statements about the Company and/or any of the Releasees or the business or any of the services or products of the Company or any of the Releasees; or (ii) communicate, directly or indirectly, with the press or other media, or comment on social media, concerning past or present employees, business services or products of the Company or the Releasees. Nothing in this Paragraph 9 shall prohibit either Party from testifying truthfully under oath pursuant to lawful subpoena or court order or from fully and truthfully participating in an investigation or proceeding by any governmental agency.



10. **Neutral Reference**. If any prospective employer makes any inquiry regarding Employee's employment with Employer, Employer agrees that it will respond to such inquiries by stating that it has a policy of not giving references, and by disclosing only Employee's last job title and dates of employment. Employer shall not answer any other questions from future employers, including but not limited to whether they would hire Employee again.

11. **Participation in Other Cases**. To the extent permitted by applicable law, Employee covenants and agrees never to commence or prosecute, or assist in the commencement or prosecution of, or in any way to cause, permit or advise to be commenced, or prosecuted against Employer, in any action or proceeding or to assert against in any action or proceeding, any demands, causes of action, obligations, damages, or liabilities of any nature whatsoever, whether or not now known, suspected, or claimed which Employee ever had, now has, or hereafter has, or claims to have, against, Employer, by reason of any act, transaction, practice, conduct, or omission of Employer that occurred prior to the date of this Agreement. Should any private party or governmental agency contact Employee to provide information regarding Employer, Employee shall immediately advise Employer by telephone and in writing.

Moreover, if such action continues, Employee acknowledges that as a consideration for receipt of money paid pursuant to this Agreement, Employee waives i.e., surrenders his right to, any monetary benefit from such action.

Employee further agrees that he will not solicit or encourage any former or future employee of Employer to pursue claims against Employer.

12. **Cooperation**. In exchange for the consideration contained in Paragraph 2, Employee agrees to cooperate with the Employer and each and every affiliate, parent and subsidiary thereof, as the case may be, and their attorneys, experts and consultants, after the Separation Date, as requested in connection with any litigation, grievance, investigation, or any other proceeding arising out of, or relating to, matters which Employee was involved prior to the Separation Date. Employee's cooperation shall include, without limitation, meeting with, sharing information, and providing assistance to the Employer and each and every affiliate, parent and subsidiary thereof, and

their attorneys, experts and consultants, and providing truthful testimony in pretrial and trial or hearing proceedings. In the event that Employee's cooperation is requested after the Separation Date, the Employer and each and every affiliate, parent and subsidiary thereof, as the case may be, and their attorneys, experts and consultants will seek to minimize interruptions to Employee's schedule to the extent consistent with its interests in the matter, and will reimburse Employee for all reasonable and appropriate out-of-pocket expenses actually incurred by Employee in connection with such cooperation upon reasonable substantiation of such expenses. For the avoidance of doubt, there are four active lawsuits that the Employee is involved in as of the Separation Date:

(1) BV ADVISORY PARTNERS, LLC, Plaintiff, v. QUANTUM COMPUTING INC., QPHOTON, LLC, YUPING HUANG, XIAO PAN, ROBERT LISCOUSKI, WILLIAM McGANN, CHRIS ROBERTS, JOSEPH MICHAEL SALVANI, GREGORY OSBORN, and DAN WALSH, Defendants (C.A. No. 2022-0719-SG);



(2) BV ADVISORY PARTNERS, LLC, a New Jersey limited liability company, Petitioner, v. QPHOTON, LLC, a Delaware limited liability company (the successor to QPhoton, Inc.), Respondent (C.A. No. 2022-0923-SG);

(3) BV ADVISORY PARTNERS, LLC, And KEITH BARKSDALE, Petitioners, v. QUANTUM COMPUTING INC., Respondent (C. A. No. 2023-0768-SG); and

(4) QUANTUM COMPUTING INC., QPHOTON, LLC, and ROBERT LISCOUSKI, Plaintiffs, v. KEITH BARKSDALE, MICHAEL KOTLARZ, BV ADVISORY PARTNERS, LLC, BARKSDALE GLOBAL HOLDINGS, LLC, POWER ANALYTICS GLOBAL CORPORATION, and INFERENCE VENTURES, LLC, Defendants (HUD-L-004259-22).

13. **Governing Law and Interpretation.** This Agreement shall be governed and conformed in accordance with the laws of the Commonwealth of Virginia without regard to its conflict of laws provision. In the event of a breach of any provision of this Agreement, either party may institute an action specifically to enforce any term or terms of this Agreement and/or to seek any damages for breach. Should any provision of this Agreement be declared illegal or unenforceable by any court of competent jurisdiction and cannot be modified to be enforceable, excluding the general release language, such provision shall immediately become null and void, leaving the remainder of this Agreement in full force and effect.

14. **Nonadmission of Wrongdoing.** The Parties agree that neither this Agreement nor the furnishing of the consideration for this Agreement shall be deemed or construed at any time for any purpose as an admission by Releasees or Employee of wrongdoing or evidence of any liability or unlawful conduct of any kind.

15. **Remedies**. Employee acknowledges and agrees that a breach of any of the covenants contained in this Agreement constitutes a material breach of this Agreement that may cause Employer irreparable harm and will entitle Employer to all remedies provided by law, including injunctive relief. Employee agrees to waive any bond that may otherwise be required for injunctive relief to issue. Further, Employee acknowledges that he will be held liable not only for his own breaches of the confidentiality provision, but also for any breaches of confidentiality by any individual with whom he shared such information. Employee shall indemnify, defend and hold harmless Employer from any claims, penalties, damages, expenses (including reasonable attorneys' fees) and any other liability for a breach of this Agreement by Employee and/or his agents. The foregoing provision supplements and does not limit any remedies, available to Employer, in accordance with law.

16. **Severability Not Construed Against the Drafter; Attorneys' Fees**. If any provision of this Agreement or the application thereof is held invalid, such invalidation shall not affect other provisions or applications of this Agreement and, to this end, the provisions of this Agreement are declared to be severable. If any provision of it is found to be unlawful or unenforceable, it shall be deemed narrowed to the extent required to make it lawful and enforceable. The Agreement was negotiated at arms-length and shall not be construed against its drafter as each party participated equally in its drafting. Each party shall be solely responsible for their respective attorneys' fees.

17. **Prior Breach No Defense.** The real or perceived existence of any claim or cause of action of the Employee against Employer, whether predicated on this Agreement or some other basis, shall not relieve Employee of Employee's obligations under this Agreement and shall not constitute a defense to the enforcement by Employer of the restrictions, warranties and covenants contained herein.

18. **Warranty of Capacity to Execute Agreement**. Employee represents and warrants that no other person or entity has or has had any interest in the claims, demands, obligations or causes of action referred to in this Agreement; that he has the sole and exclusive right to receive sums specified in; that he has not sold, assigned, transferred, conveyed or otherwise disposed of any of the claims, demands, obligations or causes of action referred to in this Agreement; and that he has the mental capacity to understand and execute the terms and conditions of the Agreement.

19. **Disclaimer Liability**. Employee agrees to indemnify and hold harmless Employer from any and all claims or liens presently existing against the monies paid in Paragraph 2(a) hereby by any person, entity or corporation, as well as any attorneys' fees and cost incurred in representation of Employer in litigation concerning any claims or liens, including, but not limited to, any claims or liens for attorneys' fees and costs.

20. **Successors-in-Interest**. The Agreement shall be binding upon and inure to the benefit of the executors, administrators, personal representatives, heirs, successors and assigns of each party.

21. **Waiver**. No waiver of any breach or any term or provision of this Agreement shall be construed to be, or shall be, a waiver of any other breach of this Agreement. No waiver shall be binding unless in writing and signed by the party waiving the breach.

22. **Amendment**. This Agreement may not be modified, altered or changed except in writing and signed by both Parties wherein specific reference is made to this Agreement.

23. **Entire Agreement.** This Agreement, the equity documents governing Employee's incentive equity awards referenced in Paragraph 2 above, and Sections 6 and 9 of the Employment Agreement, set forth the entire agreement between the Parties hereto, and fully supersede any prior agreements or understandings between the Parties. Employee acknowledges that Employee has not relied on any representations, promises, or agreements of any kind made to Employee in connection with Employee's decision to accept this Agreement, except for those set forth in this Agreement.

24. **Counterparts and Signatures.** This Agreement may be signed in counterparts, each of which shall be deemed an original, but all of which, taken together shall constitute the same instrument. A signature made on a faxed or electronically mailed copy of the Agreement or a signature transmitted by facsimile or electronic mail will have the same effect as the original signature.



**EMPLOYEE IS ADVISED THAT EMPLOYEE HAS UP TO TWENTY-ONE (21) CALENDAR DAYS TO CONSIDER THIS AGREEMENT. EMPLOYEE ALSO IS ADVISED TO CONSULT WITH AN ATTORNEY PRIOR TO EMPLOYEE'S SIGNING OF THIS AGREEMENT.**

**EMPLOYEE MAY REVOKE/RESCIND THIS AGREEMENT FOR A PERIOD OF SEVEN (7) CALENDAR DAYS FOLLOWING THE DAY ON WHICH EMPLOYEE SIGNS OR ENTERS INTO THIS AGREEMENT AND THE AGREEMENT IS NOT ENFORCEABLE WITH RESPECT TO THE ADEA UNTIL THE REVOCATION PERIOD HAS EXPIRED. ANY REVOCATION WITHIN THIS PERIOD MUST BE SUBMITTED, IN WRITING (EITHER FIRST CLASS MAIL OR BY EMAIL), TO HUMAN RESOURCES DIRECTOR, QUANTUM COMPUTING INC, 5 MARINE VIEW PLAZA, SUITE 214, HOBOKEN, NJ 07030 AND STATE, "I HEREBY REVOKE MY ACCEPTANCE OF OUR AGREEMENT AND GENERAL RELEASE." THE REVOCATION MUST BE POSTMARKED OR IF PERSONALLY DELIVERED RECEIVED BY HUMAN RESOURCES DIRECTOR, QUANTUM COMPUTING INC., LEESBURG, VA 20175 WITHIN SEVEN (7) CALENDAR DAYS AFTER EMPLOYEE SIGNS OR ENTERS INTO THIS AGREEMENT.**

**EMPLOYEE AGREES THAT ANY MODIFICATIONS, MATERIAL OR OTHERWISE, MADE TO THIS AGREEMENT, DO NOT RESTART OR AFFECT IN ANY MANNER THE ORIGINAL UP TO TWENTY-ONE (21) CALENDAR DAY CONSIDERATION PERIOD.**

**EMPLOYEE FREELY AND KNOWINGLY, AND AFTER DUE CONSIDERATION, ENTERS INTO THIS AGREEMENT INTENDING TO WAIVE, SETTLE AND RELEASE ALL CLAIMS EMPLOYEE HAS OR MIGHT HAVE AGAINST RELEASEES.**

The Parties knowingly and voluntarily sign this Agreement as of the date(s) set forth below:

By: /s/ Robert Liscouski
Robert Liscouski

Date: March 15, 2024

Quantum Computing Inc.

By: /s/ Chris Boehmler
Chris Boehmler
Chief Financial Officer

Date: March 15, 2024

**Exhibit 10.27**

**QUANTUM COMPUTING INC.**

**5 Marine View Plaza, Suite 214**
**Hoboken, NJ 07030**

Date: March 8, 2024

Mr. Robert Liscouski
41455 Southpaw Place
Leesburg VA 20175

Dear Mr. Liscouski

This is to confirm the terms of your appointment as a Non-Executive Director of **Quantum Computing Inc.** (the "**Company**"), Chairman of the Board of Directors and Chair of any committees as directed by the Board, and is effective as of February 1, 2024.

Overall, in terms of time commitment, we expect your attendance at all the Board of Directors (the "**Board**") meetings, meetings of the risk, audit, compensation and nominating and governance committees of the Board (as applicable) and the General Meetings. In addition, you will be expected to devote appropriate preparation time ahead of each meeting. Board meetings may be held within or outside Virginia, or telephonically, as the Company may decide. The Board may assign you other duties and responsibilities at their discretion.

By accepting this appointment, you have confirmed that you are able to allocate sufficient time to meet the expectations of this position.

For and in consideration of the services to be performed by you, Company agrees to pay you as follows:

1.1 **Fee**. A monthly fee equal to the amount of $12,500.00 (Twelve Thousand Five Hundred U.S. Dollars), payable on a monthly basis, subject to your continuous service as a member of the Board (the "**Board Fee**").

1.2 The Company agrees to reimburse you for out-of-pocket expenses incurred by you in connection with your service (including out-of-pocket expenses and "Business Class" transportation expenses, provided that such expenses are against original and valid receipts and pre-approved by the Company in writing (the "**Expenses**").

1.3 Payment of the Expenses, as applicable, shall be made against your itemized invoice or expense report (the "Expense Report") following the receipt of the relevant Expense Report, which Expense Report shall be submitted to the Company within five (5) days of the end of each calendar month during the term of this letter of appointment.



1.4 For the avoidance of any doubt, the Board Fee and the aforementioned Expenses constitute the full and final consideration for your appointment, and you shall not be entitled to any additional consideration, of any form, for your appointment and service.

2. Your term as a Non-Executive Director of the Company shall continue until the next Annual Meeting of Stockholders and you, or your successor, is duly elected and qualified, subject to your earlier death, resignation or retirement.

3. You will undertake such travelling as may reasonably be necessary for the performance of your duties, including travelling overseas for Board meetings and site visits, if required.

4. You will undertake such duties and powers relating to the Company, and any subsidiaries or associated companies of the Company (the "**Group**") as the Board may from time-to-time reasonably request. The Board as a whole is collectively responsible for promoting the success of the Company by directing and supervising the Company's affairs, *inter alia*, as follows:

- Providing entrepreneurial leadership of the Group within a framework of prudent and effective controls which enable risk to be assessed and managed; and
- Setting the Group's strategic aims, ensures that the necessary financial and human resources are in place for the Group to meet its objectives and reviews management performance; and
- Setting the Group's values and standards and ensures that its obligations to its shareholders and others are understood and met.

4.1 You will serve as Chairman of the Board and, in such capacity, you shall (i) preside at all meetings of the Board of directors and, unless the Board determines otherwise, each committee thereof, (ii) provide leadership to the Company's executives and other employees, and (iii) oversee and assist in implementing special initiatives as directed by the Board for which additional compensation is provided, as described in Section 1, above.

**5. Confidential Information**

You undertake to the Company that you shall maintain in strict confidentiality all trade, business, technical or other information regarding the Company, the Group, its affiliated entities and their business affairs including, without limitation, all marketing, sales, technical and business know-how, intellectual property, trade secrets, identity and requirements of customers and prospective customers, the Company's methods of doing business and any and all other information relating to the operation of the Company (collectively, the "**Confidential Information**"). You shall at no time disclose any Confidential Information to any person, firm, or entity, for any purpose unless such disclosure is required in order to fulfil your responsibilities as director. You further undertake that you shall not use such Confidential Information for personal gain.



"**Confidential Information**" shall not include information that (i) is or becomes part of the public domain other than as a result of disclosure by you, (ii) becomes available to you on a non-confidential basis from a source other than the Company, provided that the source is not bound with respect to that information by a confidentiality agreement with the Group or is otherwise prohibited from transmitting that information by a contractual legal or fiduciary obligation, or (iii) can be proven by you to have been in your possession prior to disclosure of the information by the Company. In the event that you are requested or required (by oral questions, interrogatories, requests for information or documents, subpoena, civil investigative demand or other process) to disclose any Confidential Information, it is agreed that you, to the extent practicable under the circumstances, will provide the Company with prompt notice of any such request or requirement so that the Company may seek an appropriate protective order or waive compliance with this paragraph 6. If a protective order or the receipt of a waiver hereunder has not been obtained, you may disclose only that portion of the Confidential Information which you are legally compelled to disclose.

**Blackout Period.** You understand that we have a policy pursuant to which no officer, director or key executive may not engage in transactions in our stock during the period commencing two weeks prior to the end of a fiscal quarter and ending the day after the financial information for the quarter and year have been publicly released. As a member of the risk committee, if you have information concerning our financial results or other material non public information at any time, you may not engage in transactions in our securities until the information is publicly disclosed.

**6. Term and Termination**

6.1 Subject to paragraph 6.1 hereunder, this appointment shall terminate immediately and without claim for compensation on the occurrence of any of the following events:

6.1.1 if you resign as a director of the Company for any reason; and/or

6.1.2 if this appointment is cancelled by the holder or the holders of the shares by which you were appointed; and/or

6.1.3 if you were appointed by other directors in order to temporary fill vacancy on the Board and said appointment is cancelled by the Board; and/or

6.1.4 if you are removed or not re-appointed as a director of the Company at a General Meeting of the Company in accordance with the requirements of Section 141 of the DGCL and/or any other applicable law or regulation (the "**Law**") and/or the Company's Articles of Incorporation; and/or

6.1.5 if you have been declared bankrupt or made an arrangement or composition with or for the benefit of your creditors; and/or

6.1.6 if you have been disqualified from acting as a director (including, but not limited to, an event in which you are declared insane or become of unsound mind or become physically incapable of performing your functions as director for a period of at least 60 days); and/or



6.1.7 with your death and if you are a corporation or either entity, with your liquidation.

6.1.8 if an order of a court having jurisdiction over the Company requires you to resign.

6.2 Any termination of this letter of appointment shall be without payment of damages or compensation (except that you shall be entitled to any accrued Fees or Expenses properly incurred under the terms of this letter of appointment prior to the date of such termination).

6.3 On termination of this appointment, you shall return all property belonging to a Group company, together with all documents, papers, disks and information, howsoever stored, relating to a Group company and used by you in connection with this position with the Company.

7. Subject to the proper performance of your obligations to the Company under this letter of appointment and any applicable law, the Company agrees that you will be free to accept other appointments and directorships provided that:

7.1 They do not in any way conflict with the interests of the Company or any member of the Group; and

7.2 They do not restrict you from devoting the necessary time and attention properly to services to be performed under this letter of appointment; and

7.3 In the event that you become aware of any potential conflicts of interest, these must be disclosed to the Chairman of the Audit Committee and/or the Chief Executive Officer (the "**CEO**") of the Company as soon as they become apparent.

7.4 The Company acknowledges that you are currently on the Board of Directors of the following companies: National Child Protection Task Force (a non-profit - NCPTF.org)

8. The Company will make commercially reasonable efforts to maintain directors' and officers' liability insurance for the full term of your appointment.

9. The performance of individual directors and the Board and its committees is evaluated annually. If, in the interim, there are any matters which cause you concern about your position, you should discuss them with the Board and/or the CEO as soon as is appropriate.

10. In addition to any right pursuant to applicable law, occasions may arise when you consider that you need professional advice in the furtherance of your duties as a director. Circumstances may occur when it will be appropriate for you to seek such advice from independent advisors at the Company's expense, to the extent provided under applicable law and subject to the prior written approval of a majority of the independent directors of the Company and the CEO, such consent shall not be unreasonably withheld.

11. This letter refers to your appointment as a director of the Company, Chairman of the Board of Directors and your Chairmanship of any committees as directed by the Board.

12. You shall comply at all times with the Company's inside trading policies as in effect from time to time.

13. You shall discharge your general duties as a director pursuant to the Company's Articles of Association of the Company and applicable law.

14. This letter of appointment shall be governed by and construed in accordance with the law of the State of Delaware.

Please sign the attached copy of this letter and return it to the Company to signify your acceptance of the terms set out above.

Sincerely yours,

QUANTUM COMPUTING INC.

By: /s/ Chris Boehmler
Chris Boehmler
Chief Financial Officer

By: /s/ Robert Liscouski
Robert Liscouski

Address: 41455 Southpaw Place
Leesburg VA 20175

**Exhibit 10.28**

# SEPARATION AGREEMENT AND GENERAL RELEASE

This Separation Agreement and General Release (the "Agreement") is entered into by and between **Quantum Computing Inc.** (referred to throughout this Agreement as "Employer") and **Christopher Roberts** ("Employee"). The term "Party" or "Parties" as used herein shall refer to Employer, Employee, or both, as may be appropriate.

1. **Last Day of Employment.** Employee's last day of employment with Employer will be Friday, June 30, 2023 ("Separation Date").

2. **Consideration.**

In consideration for signing this Agreement, and complying with its terms, **Employer** agrees:

(a) to pay to Employee three hundred thousand dollars ($300,000), representing twelve (12) months of salary at Employee's base rate of pay, less lawful deductions, which will be paid in equal cash installments on regular Employer payroll dates (no less frequently than monthly) over the twelve (12)-month period immediately following the Separation Date; provided, that the first installment payment will be made on the first regular Employer payroll date coinciding with or next following the 30th day after the Separation Date and will include payment of any installment payments that were otherwise due prior thereto.

(b) subject to Employee's timely election of continuation coverage under COBRA, the Employer will continue to pay or reimburse 100% of Employee's premiums for such coverage, in a manner intended to avoid any excise tax under Section 4980D of the Internal Revenue Code of 1986, as amended (the "Code"), and subject to the eligibility requirements and other terms and conditions of such insurance coverage, for the 6-month period following the Separation Date or, if earlier, until Employee first becomes covered by an equivalent benefit (at the same cost to Employee, if any) from another source (and Employee agrees to immediately notify the Employer in writing if Employee becomes so covered).

(c) To fully vest Employee's restricted stock grant made on April 3, 2023 (76,300 shares). For avoidance of doubt, all other terms of the restricted stock grant agreements will remain unchanged.

(d) To vest stock option grants made to Employee as follows: the grant dated May 24, 2021 (400,000 shares – vesting over 3 years from April 26, 2021) shall be fully vested and exercisable. For avoidance of doubt, all other terms of the option grant agreements governing such option will remain unchanged, except that the exercise period for such vested options will be extended through the full duration of the option itself or, if earlier, until the latest date on which such option could have expired by its original terms under any circumstances or the 10th anniversary of the grant date of such option.

(e) Subject to Employee making arrangements satisfactory to the Company to satisfy the applicable tax withholding obligations, to grant Employee 50,000 fully-vested shares of the Company's common stock on the 30th day after the Separation Date, which shares will be subject to the Company's shareholders' agreement, equity plan, and any other agreements governing such shares.



3. **Total Consideration**. Employee acknowledges that the consideration referred to above is the total consideration he will receive from Employer and that it exceeds that to which he would otherwise be entitled, and that he is not entitled to, nor will he receive, any additional payments of any kind, including payments under any contract, commission plan, policy or practice, pension or retirement savings plan, vacation plan, policy, or practice, severance plan, policy or practice, or payment for bonuses or deferred compensation. Breach of this Agreement by Employee results in cessation of any outstanding payments set forth above without impacting Employee's obligations and Employee's release of claims. Employee further acknowledges that, except for the equity awards described in Paragraphs 2(c) through 2(e) above, Employee does not have any rights or entitlements to or with respect to any compensatory equity or equity-based award from, or any other equity ownership interest in the Employer or its affiliates.

4. **General Release, Claims Not Released and Related Provisions.**

(a) **General Release of All Claims**. Employee, on Employee's own behalf and on behalf of Employee's heirs, executors, administrators, successors, and assigns knowingly and voluntarily release and forever discharge Employer, its direct and indirect parent corporations, affiliates, subsidiaries, divisions, predecessors, insurers, reinsurers, representatives, successors and assigns, and their current and former employees, attorneys, officers, directors and agents thereof, both individually and in their business capacities, and their employee benefit plans and programs and their administrators and fiduciaries, both individually and in their business capacities (collectively referred to throughout the remainder of this Agreement as "Releasees"), of and from any and all claims, known and unknown, asserted or unasserted, which the Employee has or may have against Releasees as of the date of execution of this Agreement, including, but not limited to, any alleged violation of the following, as amended:

- the Age Discrimination in Employment Act of 1967, 29 U.S.C. 6, et seq. ("ADEA");
- the Older Workers Benefit Protection Act, 29 U.S.C. 621 et seq. ("OWBPA")
- Title VII of the Civil Rights Act of 1964, 42 U.S.C. § 2000e, et seq. ("Title VII");
- the Reconstruction Era Civil Rights Act, 42 U.S.C. § 1981, § 1983, et seq. ("Civil Rights Act");
- the Civil Rights Act of 1991, 42 U.S.C. §. 1981a, et seq. ("CRA of 1991");
- the Consolidated Omnibus Budget Reconciliation Act, 29 U.S.C. § 1161, et seq. ("COBRA");
- the Genetic Information Nondiscrimination Act of 2008, 29 U.S.C. § 1635, et seq. ("GINA");
- the Employee Polygraph Protection Act, 20 U.SC. § 2001, et seq. ("EPPA");
- the Americans With Disabilities Act, 42 U.S.C. § 12101, et seq, ("ADA");
- the Family and Medical Leave Act, 29 U.S.C. § 2601, et seq. ("FMLA");
- the Fair Labor Standards Act, 29 U.S.C. § 201, et seq. ("FLSA");
- the Employee Retirement Income Security Act of 1974, as amended, 29 U.S.C. § 1001, et seq. ("ERISA");
- the Equal Pay Act, 29 U.S.C. § 201, et seq. (°'EPA"); the Rehabilitation Act 29 U.S.C. § 701, et seq. ("RA");



- the Pregnancy Discrimination Act, 42 U.S.C. § 2000, et seq. ("PDA");
- the Whistleblower Protection Statutes, 10 U.S.C. § 2409, 12 U.S.C. § 1831j, 31 U.S.C. § 5328, 41 U.S.C. § 265, (collectively as "WPS");
- the Uniformed Services Employment and Reemployment Rights Act, 38 U.S.C.A. 4301, et seq. ("USERRA");
- the Worker Adjustment and Retraining Notification Act, 29 U.S.C. 2101 et seq. ("WARN");
- any other federal, state or local law, rule, regulation, or ordinance
- any public policy, contract, tort, or common law; or
- any basis for recovering costs, fees, or other expenses including attorneys' fees incurred in these matters.

(b) **Release of Unasserted Claims Pursuant to the ADEA.** Exclusively as this Agreement pertains to Employee's release of unasserted claims under the Age Discrimination in Employment Act ("ADEA waiver and release"), Employee, pursuant to and in compliance with the Older Workers Benefit Protection Act: (i) has been advised in writing to consult with an attorney at his own cost prior to executing this Agreement; (ii) has been afforded a period of twenty-one (21) calendar days to consider this ADEA waiver and release; and (iii) may revoke only his ADEA waiver and release during the seven (7) calendar days following the execution of this Agreement. Any revocation of the ADEA waiver and release within the period must be submitted in writing, to Carly Saxton at csaxton@quantumcomputinginc.com. To the extent Employee executes this Agreement prior to the expiration of the twenty-one (21) calendar day period specified above, Employee acknowledges and agrees he was afforded the opportunity to have at least twenty-one (21) calendar days to consider it before executing it and that his execution of the Agreement prior to the expiration of said period was his voluntary act. Employee also agrees that this Agreement is written in a manner that enables him to fully understand its content and meaning. Employee also agrees he is waiving and releasing claims (including any unasserted ADEA claims) in exchange for valuable consideration identified above that is in addition to anything of value to which he already is entitled. This Agreement, as it pertains to a release of claims under the ADEA, shall become effective and enforceable seven (7) calendar days after its execution. All other provisions of this Agreement or parts thereof shall become effective and enforceable upon execution. In the event Employee revokes his ADEA waiver and release, the revocation will be limited to Employee ADEA waiver and release only, and all other known and unknown claims remain waived and fully released.

(c) **Claims Not Released**. Employee is not waiving any rights Employee may have to: (i) Employee's own vested or accrued employee benefits under Employer's qualified retirement benefit plans as of the Separation Date; (ii) benefits and/or the right to seek benefits under applicable workers' compensation and/or unemployment compensation statutes; (iii) pursue claims which by law cannot be waived by signing this Agreement; and (iv) enforce this Agreement.



(d) **Governmental Agencies**. Nothing in this Agreement prohibits, prevents, or otherwise limits Employee from filing a charge or complaint with or participating, testifying, or assisting in any investigation, hearing, or other proceeding before any federal, state, or local government agency (e.g., EEOC, NLRB, SEC) or in any legislative or judicial proceeding nor does anything in this Agreement preclude, prohibit or otherwise limit, in any way, Employee's rights and abilities to contact, communicate with or report unlawful conduct, or provide documents, to federal, state, or local officials for investigation or participate in any whistleblower program administered by any such agencies. In addition, nothing in this Agreement, including but not limited to the release of claims nor the confidentiality clauses, prohibits Employee from: (1) reporting possible violations of federal or other law or regulations, including any possible securities laws violations, to any governmental agency or entity, including but not limited to the U.S. Department of Justice, the U.S. Securities and Exchange Commission, the Commodity Futures Trading Commission, the U.S. Congress, or any agency Inspector General; (2) making any other disclosures that are protected under the whistleblower provisions of federal or other law or regulations; or (3) filing a charge or complaint or otherwise fully participating in any governmental whistleblower programs, including but not limited to any such programs managed or administered by the U.S. Securities and Exchange Commission, the Commodity Futures Trading Commission and/or the Occupational Safety and Health Administration. Employee is not required to notify or obtain permission from Employer when filing a governmental whistleblower charge or complaint or engaging or participating in protected whistleblower activity. Moreover, nothing in this Agreement prohibits or prevents Employee from receiving individual monetary awards or other individual relief by virtue of participating in such governmental whistleblower programs. Nothing in this Agreement shall be construed to affect the Equal Employment Opportunity Commission's or any similar state or local commission's or agency's independent right and responsibility to enforce the law. Employee understands, however, that while the Agreement does not impinge on his right to file a charge or participate in an investigation or proceeding conducted by the Commission, the Agreement does bar any claim he might have to receive monetary damages in connection with any Commission proceeding concerning matters covered by this Agreement.

(e) **Collective/Class Action Waiver**. If any claim is not subject to release, to the extent permitted by law, Employee waives any right or ability to be a class or collective action representative or to otherwise participate in any putative or certified class, collective or multi-party action or proceeding based on such a claim in which Employer or any other Releasee identified in this Agreement is a party.

5. **Acknowledgments and Affirmations.**

(a) Employee confirms that prior to the execution of this Agreement, Employee has not revealed its terms to any third parties. Employee agrees not to disclose any information regarding the existence or substance of this Agreement, except to Employee's spouse, tax advisor, an attorney with whom Employee chooses to consult regarding Employee's consideration of this Agreement and/or to any federal, state or local government agency. Nothing in this Agreement has the purpose or effect of preventing Employee from making truthful disclosures about alleged unlawful conduct.

(b) Employee affirms that Employee has not filed, caused to be filed, or presently is a party to any claim against Employer. Nothing in this Agreement or these Affirmations is intended to impair Employee's rights under whistleblower laws or cause Employee to disclose Employee's participation in any governmental whistleblower program or any whistleblowing statute(s) or regulation(s) allowing for anonymity.



(c) Employee also affirms that Employee has been paid and/or has received all compensation, wages, bonuses, commissions, paid sick leave, predictability pay, and/or benefits which are due and payable as of the date Employee signs this Agreement and Employee has been reimbursed for all necessary expenses or losses incurred by Employee within the scope of Employee's employment. Employee affirms that Employee has been granted any leave to which Employee was entitled under the Family and Medical Leave Act and state and local leave and disability accommodation laws.

(d) Employee further affirms that Employee has no known workplace injuries or occupational diseases.

(e) Employee also affirms that Employee has not divulged any proprietary or confidential information of Employer and will continue to maintain the confidentiality of such information consistent with Employer's policies and Employee's agreement(s) with Employer and/or common law.

(f) Employee and Employer acknowledge Employee's rights to make truthful statements or disclosures required by law, regulation, or legal process and to request or receive confidential legal advice, and nothing in this Agreement shall be deemed to impair those rights.

6. **Return of Property**.

Except as provided otherwise in this Agreement or by law, Employee affirms that Employee has returned, without copying or otherwise reproducing, all of Employer's property, including the laptop issued to Employee, documents, and/or any confidential information in Employee's possession or control.

Employee also affirms that Employee is in possession of all of Employee's property that Employee had at Employer's premises and that Employer is not in possession of any of Employee's property.

7. **Continued Obligations.**

Employee affirms and acknowledges that Employee has continuing obligations pursuant to his Employment Agreement dated April 1, 2021 (the "Employment Agreement"). Employee agrees to abide by his obligations under the Employment Agreement, including but not limited to, provisions related to Nondisclosure, Proprietary Information, Inventions, Noncompetition and Non-solicitation.

Defend Trade Secrets Act Disclosure. Under the Defend Trade Secrets Act of 2016 ("DTSA"), Employee shall not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that: (a) is made (i) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (b) is made to my attorney in relation to a retaliation lawsuit brought by me for reporting a suspected violation of law; or (c) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Employee do not need the prior authorization of the Employer to make such reports or disclosures, and Employee am not required to notify the Employer that Employee have made such reports or disclosures.



Notice of Required Disclosure. If Employee and/or his agent(s) become legally obligated by a court of competent jurisdiction to disclose any of the Proprietary Information, Employee shall first provide Employer with immediate written notice so that

Employer may seek a protective order or other appropriate remedy. If such protective order or other remedy is not obtained, Employee and/or his agents will furnish only that portion of the Proprietary Information which they are legally required to disclose and will exercise diligent efforts to obtain reliable assurance, to the extent that such assurance can be obtained, that confidential treatment and compliance with this Agreement will be accorded the Proprietary Information.

8. **Non-Disparagement, Indemnity, No Rehire and Neutral Reference**.

In further consideration of Employer's willingness to pay the consideration provided for above in Paragraph 2:

Employee agrees that he will not make any critical, disparaging or defamatory statements in any manner about Employer or any of its related entities, its owners, officers or employees, whether verbal or written. This includes, but is not limited to, electronic mail, internet and social media postings and/or any other method of communication. By executing this Agreement, Employee acknowledges this is a material provision of this Agreement.

Employee further agrees not to allege that the ending of his employment relationship with Employer suggests any violation of law.

Employer will provide Employee with a neutral reference only including the dates Employee worked for Employer and his title. Any request for a reference must be in writing, signed by Employee, and submitted to Human Resources.

9. **Participation in Other Cases**. To the extent permitted by applicable law, Employee covenants and agrees never to commence or prosecute, or assist in the commencement or prosecution of, or in any way to cause, permit or advise to be commenced, or prosecuted against Employer, in any action or proceeding or to assert against in any action or proceeding, any demands, causes of action, obligations, damages, or liabilities of any nature whatsoever, whether or not now known, suspected, or claimed which Employee ever had, now has, or hereafter has, or claims to have, against, Employer, by reason of any act, transaction, practice, conduct, or omission of Employer that occurred prior to the date of this Agreement. Should any private party or governmental agency contact Employee to provide information regarding Employer, Employee shall immediately advise Employer by telephone and in writing.

Moreover, if such action continues Employee acknowledges that as a consideration for receipt of money paid pursuant to this Agreement, Employee waives i.e., surrenders his right to, any monetary benefit from such action.

Employee further agrees that he will not solicit or encourage any former or future employee of Employer to pursue claims against Employer.



10. **Cooperation**. In exchange for the consideration contained in Paragraph 2, Employee agrees to cooperate with the Employer and each and every affiliate, parent and subsidiary thereof, as the case may be, and their attorneys, experts and consultants, after the Separation Date, as requested in connection with any litigation, grievance, investigation, or any other proceeding arising out of, or relating to, matters which Employee was involved prior to the Separation Date. Employee's cooperation shall include, without limitation, meeting with, sharing information, and providing assistance to the Employer and each and every affiliate, parent and subsidiary thereof, and their attorneys, experts and consultants, and providing truthful testimony in pretrial and trial or hearing proceedings. In the event that Employee's cooperation is requested after the Separation Date, the Employer and each and every affiliate, parent and subsidiary thereof, as the case may be, and their attorneys, experts and consultants will seek to minimize interruptions to Employee's schedule to the extent consistent with its interests in the matter, and will reimburse Employee for all reasonable and appropriate out-of-pocket expenses actually incurred by Employee in connection with such cooperation upon reasonable substantiation of such expenses.

11. **Governing Law and Interpretation**. This Agreement shall be governed and conformed in accordance with the laws of the Commonwealth of Virginia without regard to its conflict of laws provision. In the event of a breach of any provision of this Agreement, either party may institute an action specifically to enforce any term or terms of this Agreement and/or to seek any damages for breach. Should any provision of this Agreement be declared illegal or unenforceable by any court of competent jurisdiction and cannot be modified to be enforceable, excluding the general release language, such provision shall immediately become null and void, leaving the remainder of this Agreement in full force and effect.

12. **Nonadmission of Wrongdoing**. The Parties agree that neither this Agreement nor the furnishing of the consideration for this Agreement shall be deemed or construed at any time for any purpose as an admission by Releasees of wrongdoing or evidence of any liability or unlawful conduct of any kind.

13. **Remedies**. Employee acknowledges and agrees that a breach of any of the covenants contained in this Agreement constitutes a material breach of this Agreement that may cause Employer irreparable harm and will entitle Employer to all remedies provided by law, including injunctive relief. Employee agrees to waive any bond that may otherwise be required for injunctive relief to issue. Further, Employee acknowledges that he will be held liable not only for his own breaches of the confidentiality provision, but also for any breaches of confidentiality by any individual with whom he shared such information. Employee shall indemnify, defend and hold harmless Employer from any claims, penalties, damages, expenses (including reasonable attorneys' fees) and any other liability for a breach of this Agreement by Employee and/or his agents. The foregoing provision supplements and does not limit any remedies, available to Employer, in accordance with law.

14. **Consulting Agreement**. The Parties hereby agree to in good faith negotiate an arrangement pursuant to which Employee will provide consulting services to the Employer as an independent contractor for at least 6 months following the Separation Date.



15. **Severability Not Construed Against the Drafter; Attorneys' Fees**. If any provision of this Agreement or the application thereof is held invalid, such invalidation shall not affect other provisions or applications of this Agreement and, to this end, the provisions of this Agreement are declared to be severable. If any provision of it is found to be unlawful or unenforceable, it shall be deemed narrowed to the extent required to make it lawful and enforceable. The Agreement was negotiated at arms-length and shall not be construed against its drafter as each party participated equally in its drafting. Each party shall be solely responsible for their respective attorneys' fees.

16. **Prior Breach No Defense.** The real or perceived existence of any claim or cause of action of the Employee against Employer, whether predicated on this Agreement or some other basis, shall not relieve Employee of Employee's obligations under this Agreement and shall not constitute a defense to the enforcement by Employer of the restrictions, warranties and covenants contained herein.

17. **Warranty of Capacity to Execute Agreement**. Employee represents and warrants that no other person or entity has or has had any interest in the claims, demands, obligations or causes of action referred to in this Agreement; that he has the sole and exclusive right to receive sums specified in; that he has not sold, assigned, transferred, conveyed or otherwise disposed of any of the claims, demands, obligations or causes of action referred to in this Agreement; and that he has the mental capacity to understand and execute the terms and conditions of the Agreement.

18. **Disclaimer Liability**. Employee agrees to indemnify and hold harmless Employer from any and all claims or liens presently existing against the proceeds hereby by any person, entity or corporation, as well as any attorneys' fees and cost incurred in representation of Employer in litigation concerning any claims or liens, including, but not limited to, any claims or liens for attorneys' fees and costs.

19. **Successors-in-Interest**. The Agreement shall be binding upon and inure to the benefit of the executors, administrators, personal representatives, heirs, successors and assigns of each party.

20. **Waiver**. No waiver of any breach or any term or provision of this Agreement shall be construed to be, or shall be, a waiver of any other breach of this Agreement. No waiver shall be binding unless in writing and signed by the party waiving the breach.

21. Amendment. This Agreement may not be modified, altered or changed except in writing and signed by both Parties wherein specific reference is made to this Agreement.

22. Entire Agreement. This Agreement, the equity documents governing Employee's incentive equity awards referenced in Paragraph 2 above, and Sections 6 and 9 of the Employment Agreement, set forth the entire agreement between the Parties hereto, and fully supersede any prior agreements or understandings between the Parties. Employee acknowledges that Employee has not

relied on any representations, promises, or agreements of any kind made to Employee in connection with Employee's decision to accept this Agreement, except for those set forth in this Agreement.



23. Counterparts and Signatures. This Agreement may be signed in counterparts, each of which shall be deemed an original, but all of which, taken together shall constitute the same instrument. A signature made on a faxed or electronically mailed copy of the Agreement or a signature transmitted by facsimile or electronic mail will have the same effect as the original signature.

**EMPLOYEE IS ADVISED THAT EMPLOYEE HAS UP TO TWENTY-ONE (21) CALENDAR DAYS TO CONSIDER THIS AGREEMENT. EMPLOYEE ALSO IS ADVISED TO CONSULT WITH AN ATTORNEY PRIOR TO EMPLOYEE'S SIGNING OF THIS AGREEMENT.**

**EMPLOYEE MAY REVOKE/RESCIND THIS AGREEMENT FOR A PERIOD OF SEVEN (7) CALENDAR DAYS FOLLOWING THE DAY ON WHICH EMPLOYEE SIGNS OR ENTERS INTO THIS AGREEMENT AND THE AGREEMENT IS NOT ENFORCEABLE WITH RESPECT TO THE ADEA UNTIL THE REVOCATION PERIOD HAS EXPIRED. ANY REVOCATION WITHIN THIS PERIOD MUST BE SUBMITTED, IN WRITING, TO CARLY SAXTON, HUMAN RESOURCES DIRECTOR, QUANTUM COMPUTING INC, 215 DEPOT COURT SE, LEESBURG, VA 20175 AND STATE, "I HEREBY REVOKE MY ACCEPTANCE OF OUR AGREEMENT AND GENERAL RELEASE." THE REVOCATION MUST BE POSTMARKED OR IF PERSONALLY DELIVERED RECEIVED BY CARLY SAXTON, HUMAN RESOURCES DIRECTOR, QUANTUM COMPUTING INC., LEESBURG, VA 20175 OR HIS DESIGNEE WITHIN SEVEN (7) CALENDAR DAYS AFTER EMPLOYEE SIGNS OR ENTERS INTO THIS AGREEMENT.**

**EMPLOYEE AGREES THAT ANY MODIFICATIONS, MATERIAL OR OTHERWISE, MADE TO THIS AGREEMENT, DO NOT RESTART OR AFFECT IN ANY MANNER THE ORIGINAL UP TO TWENTY-ONE (21) CALENDAR DAY CONSIDERATION PERIOD.**

**EMPLOYEE FREELY AND KNOWINGLY, AND AFTER DUE CONSIDERATION, ENTERS INTO THIS AGREEMENT INTENDING TO WAIVE, SETTLE AND RELEASE ALL CLAIMS EMPLOYEE HAS OR MIGHT HAVE AGAINST RELEASEES.**

The Parties knowingly and voluntarily sign this Agreement as of the date(s) set forth below:

Quantum Computing Inc.

By: ______________________________
Robert Liscouski
Chief Executive Officer

Date: ______________________________

By: ______________________________
Christopher Roberts

Date: June 30, 2023

**Exhibit 10.31**

July 1, 2023

Mr. Christopher Roberts
1014 Priory Place
McLean, VA 22101

Re: Consulting Services Agreement

Dear Mr. Roberts:

This letter agreement (this "***Agreement***") sets forth the terms and conditions whereby Chris Roberts ("***You***" or "***Your***") agree to provide certain services to Quantum Computing Inc., a Delaware corporation (the "***Company***").

1. SERVICES.

(a) The Company hereby engages You, and You hereby accept such engagement, as an independent contractor to provide certain services to the Company and its subsidiaries on the terms and conditions set forth in this Agreement. Specifically, You will provide the services as set forth on the attached Statement of Work ("SOW") (hereinafter referred to as "***Services***").

(b) The Company shall not control the manner or means by which You perform the Services, including the time and place You perform the Services. You shall furnish, at Your own expense, the equipment, supplies, and other materials used to perform the Services. The Company shall provide you with access to its premises and equipment to the extent necessary for the performance of the Services.

(c) Your primary contact for the Services and other matters under this Agreement will be the Company's CFO, Chris Boehmler, who will have authority on behalf of the Company to make all determinations and take all actions on behalf of the Company under this Agreement.

2. TERMINATION. The Effective Date of this Agreement shall be July 1, 2023 and shall continue for six (6) months and terminate on December 31, 2023 (the "***Term***"), unless terminated sooner as provided for in this Agreement. The Parties may extend this Agreement by mutual agreement. The Company may terminate this Agreement at any time if You: a) breach this Agreement; b) breach the terms of Your Separation Agreement and General Release dated June 30, 2023; or c) engage in any misconduct which involves dishonesty, fraud or any other conduct injurious to the Company. Your obligations under this Agreement, including the obligations under Your Separation Agreement and General Release dated June 30, 2023, shall survive the termination of this Agreement, regardless of the manner or nature of such termination, and shall be binding upon You and Your heirs, executors, administrators and successors. The termination of this Agreement and the expiration of any restricted periods under this Agreement that apply thereafter will not relieve You of any obligation or liability arising from any breach of this Agreement.

3. FEES AND EXPENSES. As full compensation for the Services, the Company shall pay You fees of One Hundred Fifty U.S. Dollars ($175.00) per hour (the "***Fees***"). You acknowledge that You will receive an IRS Form 1099-MISC from the Company, and that You shall be solely responsible for all federal, state, and local taxes on all fees paid under this Agreement. The Company agrees to reimburse You for Your reasonable documented out-of-pocket travel and meal expenses incurred in connection with the provision of the Services hereunder and that are approved in advance by the Company (the "***Expenses***"). The Company shall pay all undisputed Fees and Expenses within twenty (20) days after the Company's receipt of an invoice submitted by You.



4. RELATIONSHIP OF THE PARTIES. You are an independent contractor of the Company, and this Agreement shall not be construed to create any association, partnership, joint venture, employee, or agency relationship between You and the Company for any purpose. You have no authority (and shall not hold yourself out as having authority) to bind the Company unless specifically authorized to do so in writing, and You shall not make any agreements or representations on the Company's behalf without the Company's prior written consent. In connection with the performance of the Services, except for the Fees, You will not be entitled to any fees, compensation,

benefits or coverages provided or offered by the Company to its employees, and, to the fullest extent permitted by law, You expressly waive and disclaim your eligibility for any and all claims and/or rights You may have or may later accrue to any such fees, compensation, benefits or coverages, even if a court or governmental agency subsequently determines that You are an employee of the Company (provided that this shall not affect your entitlement to any compensation or benefits under the "Separation Agreement", as defined below). The Company will not be responsible for withholding or paying any income, payroll, Social Security, or other federal, state, or local taxes, making any insurance contributions, including for unemployment or disability, or obtaining worker's compensation insurance on Your behalf. You shall be solely responsible for, and shall indemnify the Company and its affiliates and their respective officers, directors, employees, agents, successors, and assigns against, all such taxes or contributions, including penalties and interest. Any persons employed or engaged by You in connection with the performance of the Services shall be Your employees or contractors and You shall be fully responsible for them and indemnify the Company and its affiliates and their respective officers, directors, employees, agents, successors, and assigns against any claims made by or on behalf of any such employee or contractor.

5. CONTINUING OBLIGATIONS.

(a) You affirm and acknowledge that You have continuing obligations pursuant to Your Separation Agreement and General Release dated June 30, 2023 (the "Separation Agreement"). You agree to abide by Your obligations under the Separation Agreement, including but not limited to, provisions related to Confidentiality, Nondisclosure, Proprietary Information, Inventions, Noncompetition and Non-solicitation.

6. NOTICE OF IMMUNITY UNDER THE ECONOMIC ESPIONAGE ACT OF 1996, AS AMENDED BY THE DEFEND TRADE SECRETS ACT OF 2016. Notwithstanding any other provision of this Agreement, You will not be held criminally or civilly liable under any federal or state trade secret law for any disclosure of a trade secret that is made: (i) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney, and solely for the purpose of reporting or investigating a suspected violation of law; or (ii) in a complaint or other document that is filed under seal in a lawsuit or other proceeding. If You file a lawsuit for retaliation by the Company for reporting a suspected violation of law, You may disclose the Company's trade secrets to Your attorney and use the trade secret information in the court proceeding if You file any document containing the trade secret under seal and do not disclose the trade secret, except pursuant to court order.



7. REPRESENTATIONS AND WARRANTIES.

(a) You represent, warrant and covenant to the Company that: (i) You have the right to enter into this Agreement and to perform fully all of your obligations in this Agreement; (ii) Your entering into this Agreement with the Company and Your performance of the Services do not and will not conflict with or result in any breach or default under any other agreement to which you are subject; (iii) You have the required skill, experience, and qualifications to perform the Services; (iv) You shall perform the Services in a professional and workmanlike manner in accordance with generally recognized industry standards for similar services and you shall devote sufficient resources and Your best efforts to ensure that the Services are performed in a timely, professional and reliable manner; (v) You shall perform the Services in compliance with all applicable federal, state, local and foreign laws and regulations; and (vi) You shall not export, directly or indirectly, any technical data acquired from the Company, or any products utilizing any such data, to any country in violation of any applicable export laws or regulations.

(b) The Company hereby represents and warrants to You that: (i) it has the full right, power, and authority to enter into this Agreement and to perform its obligations hereunder; and (ii) the execution of this Agreement by its representative whose signature is set forth at the end hereof has been duly authorized by all necessary corporate action.

8. INDEMNIFICATION.

(a) The Company shall defend, indemnify, and hold harmless You from and against all losses, damages, liabilities, deficiencies, actions, judgments, interest, awards, penalties, fines, costs, or expenses of whatever kind (including reasonable attorneys' fees and costs) ("***Losses***") paid, suffered or incurred by You to the extent caused by, arising out of or resulting from a breach or violation of this Agreement by the Company.

(b) In addition to, and not in limitation of, Section 4 above, You shall defend, indemnify, and hold harmless the Company and its affiliates and their respective officers, directors, employees, agents, successors, and assigns from and against all Losses paid, suffered or incurred by any of them to the extent caused by, arising out of or resulting from: (i) negligent acts or omissions, willful misconduct or malfeasance in the performance of the Services hereunder, (ii) a breach or violation of this Agreement by You or (iii) any national, federal, state, provincial, municipal or other governmental authority challenging your classification as an independent contractor of the Company rather than an employee or that all or any portion of the amounts paid to You by the Company are subject to income taxes or any other employment-related taxes.

9. OTHER BUSINESS ACTIVITIES. You may be engaged or employed in any other business, trade, profession, or other activity which does not place You in a conflict of interest with the Company or otherwise violate the provisions of this Agreement, including any of Your obligations under Sections 5, 7 or 8(a).

10. ASSIGNMENT. You shall not assign any rights, or delegate or subcontract any obligations, under this Agreement without the Company's prior written consent. Any assignment in violation of the foregoing shall be deemed null and void ab initio. The Company may freely assign its rights and obligations under this Agreement at any time. Subject to the limits on assignment stated above, this Agreement will inure to the benefit of, be binding on, and be enforceable against each of the parties hereto and their respective successors and assigns.

11. MISCELLANEOUS.

(a) All notices, requests, consents, claims, demands, waivers, and other communications hereunder (each, a "***Notice***") shall be in writing and addressed to the parties at the addresses set forth on the first page of this Agreement (or to such other address that may be designated by the receiving party from time to time in accordance with this Section). All Notices shall be delivered by personal delivery, nationally recognized overnight courier (with all fees prepaid), facsimile or email (with affirmative confirmation of receipt), or certified or registered mail (in each case, return receipt requested, postage prepaid). Except as otherwise provided in this Agreement, a Notice is effective only if (i) the receiving party has received the Notice and (ii) the party giving the Notice has complied with the requirements of this Section.



(b) This Agreement, and the Separation Agreement and General Release dated June 30, 2023, constitutes the sole and entire agreement of the parties to this Agreement with respect to the subject matter contained herein, and supersedes all prior and contemporaneous understandings, agreements, representations, and warranties, both written and oral, with respect to such subject matter.

(c) Except as otherwise provided herein or by applicable law, this Agreement may not be amended or changed in any respect, except by a written agreement executed by both parties hereto. No waiver will be effective unless it is expressly set forth in a written instrument executed by the waiving party and any such waiver will have no effect except in the specific instance in which it is given. Any delay or omission by a party (including any third party beneficiary) in exercising its rights under this Agreement, or failure to insist upon strict compliance with any term, covenant, or condition of this Agreement will not be deemed a waiver of such term, covenant, condition or right, nor will any waiver or relinquishment of any right or power under this Agreement at any time or times be deemed a waiver or relinquishment of such right or power at any other time or times.

(d) This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia without giving effect to any choice or conflict of law provision or rule. Each party irrevocably submits to the exclusive jurisdiction and venue of the federal and state courts located in Fairfax or Alexandria County, Commonwealth of Virginia (or any appellate courts thereof) in any legal suit, action, or proceeding arising out of or based upon this Agreement or the Services provided hereunder, and hereby waives, and agrees not to assert, as a defense in any action, suit or proceeding in which any such claim is made that it is not subject thereto or that such action, suit or proceeding may not be brought or is not maintainable in such courts or that the venue thereof may not be appropriate or that this Agreement may not be enforced in or by such courts. EACH PARTY HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY IRREVOCABLY WAIVES THE RIGHT TO A TRIAL BY JURY IN RESPECT TO ANY LITIGATION BASED HEREON, OR ARISING OUT OF, UNDER, OR IN CONNECTION WITH THIS AGREEMENT.

(e) If any term or provision of this Agreement is invalid, illegal, or unenforceable in any jurisdiction, such invalidity, illegality, or unenforceability shall not affect any other term or provision of this Agreement or invalidate or render unenforceable such term or provision in any other jurisdiction. In lieu of any such invalid, illegal or unenforceable provision, the parties hereto intend that there shall be added as part of this Agreement a provision as similar in terms to such invalid, illegal or unenforceable provision as may be possible and be valid, legal and enforceable.

(f) You acknowledge and agree that irreparable injury may result to the Company or its affiliates if you breach any of the terms of this Agreement, including Sections 5 and 7 hereof, and that the Company and its affiliates may have no adequate remedy at law. You accordingly agree that in the event of any actual or threatened breach or non-performance by You of this Agreement, including Sections 5 and 7 hereof, the Company and its affiliates will be entitled to injunctive and other equitable relief from any court of competent jurisdiction, without the necessity of showing actual monetary damages or the posting of a bond or other security. All remedies provided for in this Agreement are cumulative of all other remedies existing at law or in equity, and nothing contained herein shall be construed as prohibiting the Company or its affiliates from pursuing any other remedies available to it for any breach or threatened breach by You, including the recovery of damages. The non-prevailing party to any litigation, action or other legal proceeding that is determined under this Agreement will pay its own expenses and the reasonable documented out-of-pocket expenses, including reasonable attorneys' fees and costs, reasonably incurred by the prevailing party.



(g) The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement. The use in this Agreement of a masculine, feminine or neither pronoun shall be deemed to include a reference to the others. In this Agreement, the singular includes the plural and the plural the singular. In this Agreement: (i) the words "include," "includes" and "including" when used herein shall be deemed in each case to be followed by the words "without limitation"; and (ii) the words "herein," "hereto," and "hereby" and other words of similar import shall be deemed in each case to refer to this Agreement as a whole and not to any particular Section or other subdivision of this Agreement.

(h) The parties hereto agree that each party has participated in the drafting and preparation of this Agreement, and, accordingly, in any construction or interpretation of this Agreement, the same shall not be construed against any party by reason of the source of drafting.

(i) This Agreement may be executed in multiple counterparts and by facsimile signature (including via pdf or other electronic document transmission), each of which shall be deemed an original and all of which together shall constitute one instrument.

If this letter accurately sets forth our understanding, kindly execute the enclosed copy of this letter and return it to the undersigned.

Very truly yours,

**QUANTUM COMPUTING INC.**

By: ______________________________
Name: Chris Boehmler
Title: CFO

Accepted and agreed effective as of the date first set forth above.

______________________________
**Christopher Roberts**



**STATEMENT OF WORK**

**The Services to be provided include, but are not limited to the following:**

1. **You will be responsible for completing the following deliverables:**

    a. **Legal matters including litigation management and intellectual property issues.**

    b. **Finance including preparing closing documents.**

    c. **Contracts including proposal support and negotiation and maintenance of vendor contracts.**

2. **You will be accountable for delegating and reviewing the following deliverables:**

    a. **Review and maintenance of Customer contracts and reporting.**

    b. **Review and maintenance of license agreements and non-disclosure agreements.**

    c. **Legal matters including non-financial SEC filings, corporate governance, and acting as the Board of Director's Secretary.**

    d. **Investor relations including attending the annual meeting.**

    e. **Risk management including maintenance of applicable insurance coverage.**

3. **You will be asked to consult on the following deliverables in order provide input:**

    a. **Finance reporting including financial SEC filings.**

    b. **Agreements including employment agreements and business protection agreements.**

**The Company reserves the right to change or modify the Services at any time at their sole discretion. In addition, You agree to perform other duties as assigned by the Company.**

**Exhibit 10.32**

QUANTUM COMPUTING INC.

**MODIFICATION 1 TO CONSULTING SERVICES AGREEMENT**

**Between**

**QUANTUM COMPUTING INC. and CHRISTOPHER ROBERTS**

This First Modification to the Consulting Services Agreement dated July 1, 2023 (the “First Modification”), is made as of the 29th day of December, 2023 (the “Effective Date”) and amends the Consulting Services Agreement dated July 1, 2023 (the “Consulting Agreement”), between Christopher Roberts (the “Consultant”), and Quantum Computing Inc (the “Company”).

The Consulting Agreement is amended in part to extend the Consultancy Term in paragraph 2 for an additional six (6) month term. For avoidance of doubt, the termination date of the Consulting Agreement has been changed to June 30, 2024.

All other provisions of the Consulting Agreement will remain unchanged.

Agreed to between the parties:

**Consultant: CHRISTOPHER ROBERTS**

Signature: /s/ Chris Roberts

Typed Name: Chris Roberts

Title: *Consultant*

Date: 1/2/2024

**Quantum Computing Inc.**

Signature: /s/ Chris Boehmler

Typed Name: Chris Boehmler

Title: Chief Financial Officer

Date: 1/2/2024

**Exhibit 21.1**

SUBSIDIARIES OF THE REGISTRANT

| Name of Subsidiary | Jurisdiction of Incorporation or Organization |
|---|---|
| Qubittech, Inc. | Delaware |
| Qubittech International, Inc. | Delaware |
| Qubittech Federal, Inc. | Delaware |
| QI Solutions, Inc. | Delaware |
| QPhoton, LLC | Delaware |

**Exhibit 23.1**

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We hereby consent to the incorporation by reference in the Registration Statements of Quantum Computing Inc. on Form S-3 [File Numbers: 333-269063, 333-268064, and 333-264518] of our report dated April 1, 2024, relating to the audited financial statements of Quantum Computing, Inc. as of December 31, 2023 and 2022 appearing in the Annual Report on Form 10-K of Quantum Computing Inc., and to all references to our firm included in this Registration Statement.

B F Borgers CPA PC

Certified Public Accountants
Lakewood, CO
April 1, 2024

**Exhibit 31.1**

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002**

I, Dr. William McGann, certify that:

1. I have reviewed this Form 10-K of Quantum Computing, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared; (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 1, 2024

By: /s/ *Dr. William McGann*
Dr. William McGann
Principal Executive Officer
Quantum Computing, Inc.

**Exhibit 31.2**

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002**

I, Christopher Boehmler, certify that:

1. I have reviewed this Form 10-K of Quantum Computing, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared; (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 1, 2024

By: /s/ *Christopher Boehmler*
Christopher Boehmler
Principal Financial Officer
Quantum Computing, Inc.

**Exhibit 32.1**

**CERTIFICATION PURSUANT TO**
**18 U.S.C. SECTION 1350,**
**AS ADOPTED PURSUANT TO SECTION 906 OF**
**THE SARBANES-OXLEY ACT OF 2002**

In connection with this Annual Report of Quantum Computing, Inc. (the "Company"), on Form 10-K for the period ended December 31, 2023, as filed with the U.S. Securities and Exchange Commission on the date hereof, I, Dr. William McGann, Principal Executive Officer of the Company, certify to the best of my knowledge, pursuant to 18 U.S.C. Sec. 1350, as adopted pursuant to Sec. 906 of the Sarbanes-Oxley Act of 2002, that:

(1) Such Annual Report on Form 10-K for the period ended December 31, 2023, fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in such Annual Report on Form 10-K for the period ended December 31, 2023, fairly presents, in all material respects, the financial condition and results of operations of the Company.

| | |
|---|---|
| Date: April 1, 2024 | By: */s/ Dr. William McGann* |
| | Dr. William McGann<br>Principal Executive Officer<br>Quantum Computing, Inc. |

**Exhibit 32.2**

**CERTIFICATION PURSUANT TO**
**18 U.S.C. SECTION 1350,**
**AS ADOPTED PURSUANT TO SECTION 906 OF**
**THE SARBANES-OXLEY ACT OF 2002**

In connection with this Annual Report of Quantum Computing, Inc. (the "Company"), on Form 10-K for the period ended December 31, 2023, as filed with the U.S. Securities and Exchange Commission on the date hereof, I, Christopher Boehmler, Principal Financial Officer of the Company, certify to the best of my knowledge, pursuant to 18 U.S.C. Sec. 1350, as adopted pursuant to Sec. 906 of the Sarbanes-Oxley Act of 2002, that:

(1) Such Annual Report on Form 10-K for the period ended December 31, 2023, fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in such Annual Report on Form 10-K for the period ended December 31, 2023, fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: April 1, 2024

By: */s/ Christopher Boehmler*
Christopher Boehmler
Principal Financial Officer
Quantum Computing, Inc.

**Exhibit 97.1**

**Quantum Computing Inc. Compensation Recovery Policy**

**1. Purpose.** The purpose of this Compensation Recovery Policy of Quantum Computing Inc. (the "Company") (as amended from time to time, the "Policy"), dated as of November 30, 2023 is to describe the circumstances in which current and former Executive Officers will be required to repay or return Erroneously Awarded Compensation to the Company Group. The Company has adopted this Policy to comply with Section 954 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, as codified by Section 10D of the Exchange Act, Exchange Act Rule 10D-1 promulgated thereunder, and the rules and requirements of Nasdaq (including Nasdaq Listing Rule 5608) (such legal requirements, and rules and requirements of Nasdaq, collectively, the "SEC/Nasdaq Clawback Rules"). Each Executive Officer shall be required to sign and return to the Company the form of acknowledgment to this Policy in the form attached hereto as Exhibit A pursuant to which such Executive Officer will agree to be bound by the terms and comply with this Policy.

**2. Administration.** This Policy shall be administered by the Committee. The Committee is authorized to interpret and construe this Policy and to make all determinations necessary, appropriate, or advisable for the administration of this Policy, and any such determinations made by the Committee shall be in the Committee's sole discretion and shall be final and binding on all affected individuals. Except as otherwise required by applicable legal requirements or the rules and requirements of Nasdaq, any determinations of the Committee hereunder need not be uniform with respect to one or more Executive Officers (whether current and/or former).

**3. Definitions.** For purposes of this Policy, the following capitalized terms shall have the meanings set forth below:

(a) "Accounting Restatement" shall mean an accounting restatement due to the material noncompliance of the Company with any financial reporting requirement under the securities laws, including any required accounting restatement (i) to correct an error in previously issued financial statements (a "Big R" restatement) that is material to the previously issued financial statements, or (ii) that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period (a "little r" restatement).

(b) "Board" shall mean the Board of Directors of the Company.

(c) "Clawback Eligible Incentive Compensation" shall mean all Incentive-Based Compensation Received by any current or former Executive Officer on or after the Nasdaq Effective Date, provided that:

(i) such Incentive-Based Compensation is Received after such individual began serving as an Executive Officer;

(ii) such individual served as an Executive Officer at any time during the performance period for such Incentive-Based Compensation;

(iii) such Incentive-Based Compensation is Received while the Company has a class of securities listed on Nasdaq; and

(iv) such Incentive-Based Compensation is Received during the applicable Clawback Period.

(d) "Clawback Period" shall mean, with respect to any Accounting Restatement, the three completed fiscal years of the Company immediately preceding the Restatement Date and any transition period (that results from a change in the Company's fiscal year) of less than nine months within or immediately following those three completed fiscal years.

(e) "Committee" shall mean the Compensation Committee of the Board.

(f) "Common Stock" shall mean the common stock, par value $0.0001 per share, of the Company.

(g) "Company" shall mean Quantum Computing Inc., a Delaware corporation.

(h) "Company Group" shall mean the Company, together with each of its direct and indirect subsidiaries.

(i) "Erroneously Awarded Compensation" shall mean, with respect to any current or former Executive Officer in connection with any Accounting Restatement, the amount of Clawback Eligible Incentive Compensation Received by such current or former Executive Officer that exceeds the amount of Clawback Eligible Incentive Compensation that otherwise would have been Received by such current or former Executive Officer had such Clawback Eligible Incentive Compensation been determined based on the restated amounts as reflected in connection with such Accounting Restatement, taking into account any discretion that the Committee had applied to determine the amount of Clawback Eligible Incentive Compensation originally Received and computed without regard to any taxes paid.

(j) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(k) "Executive Officer" shall mean any officer as defined in Rule 10D-1(d) (or any successor provision thereof) under the Exchange Act.

(l) "Financial Reporting Measures" shall mean measures that are determined and presented in accordance with the accounting principles used in preparing the Company's financial statements, and any other measures that are derived wholly or in part from such measures. For purposes of this Policy, stock price and total shareholder return (and any measures that are derived wholly or in part from stock price or total shareholder return) shall be considered Financial Reporting Measures. For the avoidance of doubt, a Financial Reporting Measure need not be presented within the Company's financial statements or included in a filing with the SEC.

(m) "Incentive-Based Compensation" shall mean any compensation that is granted, earned or vested based wholly or in part upon the attainment of a Financial Reporting Measure.

(n) "Nasdaq" shall mean the Nasdaq Stock Market.

(o) "Nasdaq Effective Date" shall mean October 2, 2023 (which is the effective date of the final Nasdaq listing standards).

(p) "Received" shall mean when Incentive-Based Compensation is received, and Incentive-Based Compensation shall be deemed received in the Company's fiscal period during which the Financial Reporting Measure specified in the Incentive-Based Compensation award is attained, even if payment or grant of the Incentive-Based Compensation occurs after the end of that period.

(q) "Restatement Date" shall mean the earlier to occur of (i) the date the Board, a committee of the Board or the officers of the Company authorized to take such action if Board action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare an Accounting Restatement, or (ii) the date a court, regulator or other legally authorized body directs the Company to prepare an Accounting Restatement.

(r) "SEC" shall mean the U.S. Securities and Exchange Commission.

**4. Recovery of Erroneously Awarded Compensation.**

(a) In the event that the Company is required to prepare an Accounting Restatement, (i) the Committee shall determine the amount of any Erroneously Awarded Compensation for each applicable current or former Executive Officer (whether or not such individual is serving as an Executive Officer at such time) (the "Applicable Executives") in connection with such Accounting Restatement, and (ii) the Company will reasonably promptly require the recovery of such Erroneously Awarded Compensation from any such Applicable Executive, and any such Applicable Executive shall surrender such Erroneously Awarded Compensation to the Company, at such time(s), and via such method(s), as determined by the Committee in accordance with the terms of this Policy.

(b) For Incentive-Based Compensation based on (or derived from) stock price or total shareholder return where the amount of Erroneously Awarded Compensation is not subject to mathematical recalculation directly from the information in the applicable Accounting Restatement, (i) such amount shall be determined by the Committee based on a reasonable estimate of the effect of the Accounting Restatement on the stock price or total shareholder return upon which the Incentive-Based Compensation was Received, and (ii) the Company will maintain documentation of the determination of that reasonable estimate and provide such documentation to Nasdaq.



(c) The Committee shall determine, in its sole discretion, the method(s) for recovering any Erroneously Awarded Compensation from any Applicable Executive, which may include one or more of the following:

(i) requiring one or more cash payments to the Company Group from such Applicable Executive, including, but not limited to, the repayment of cash Incentive-Based Compensation previously paid by the Company Group to such Applicable Executive;

(ii) seeking recovery of any gain realized on the vesting, exercise, settlement, sale, transfer or other disposition of any equity-based awards previously made by the Company to such Applicable Executive and/or, subject to applicable legal requirements, otherwise requiring the delivery to the Company of shares of Common Stock held by such Applicable Executive;

(iii) withholding, reducing or eliminating future cash compensation (including cash incentive payments), future equity awards and/or other benefits or amounts otherwise to be paid or awarded by the Company Group to such Applicable Executive;

(iv) offsetting amounts against compensation or other amounts otherwise payable by the Company Group to any Applicable Executive;

(v) cancelling, adjusting or offsetting against some or all outstanding vested or unvested equity awards of the Company held by such Applicable Executive; and/or

(vi) taking any other remedial and recovery actions with respect to such Applicable Executive permitted by applicable legal requirements and the rules and regulations of Nasdaq, as determined by the Committee.

(d) Notwithstanding anything herein to the contrary, the Company shall not be required to recover Erroneously Awarded Compensation from any Applicable Executive pursuant to the terms of this Policy if both (1) the Committee determines that such recovery would be impracticable, and (2) any of the following conditions is met:

(i) the direct expenses paid to a third party to assist in enforcing the Policy would exceed the amount to be recovered, provided that, before concluding that it would be impracticable to recover any amount of Erroneously Awarded Compensation based on expense of enforcement pursuant to this clause (i), the Company has (x) made a reasonable attempt to recover such Erroneously Awarded Compensation, (y) documented such reasonable attempt(s) to recover, and (z) provided such documentation to Nasdaq;

(ii) recovery would violate home country law where that law was adopted prior to November 28, 2022, provided that, before determining that it would be impracticable to recover any amount of Erroneously Awarded Compensation based on violation of home country law, the Company has obtained an opinion of home country counsel, acceptable to Nasdaq, that recovery would result in such a violation, has provided copy of the opinion is provided to Nasdaq; or

(iii) recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company Group, to fail to meet the requirements of 26 U.S.C. 401(a)(13) or 26 U.S.C. 411(a) and regulations thereunder.

**5. No Indemnification, Etc.** The Company Group shall not (x) indemnify any current or former Executive Officer against (i) the loss of any Erroneously Awarded Compensation that is repaid, returned or recovered pursuant to the terms of this Policy, or (ii) any claims relating to the Company Group's enforcement of its rights under this Policy, or (y) pay or reimburse any current or former Executive Officers for insurance premiums to recover losses incurred under this Policy.



**6. Supersedure.** This Policy will supersede any provisions in (x) any agreement, plan or other arrangement applicable to any member of the Company Group, and (y) any organizational documents of any entity that is part of Company Group that, in any such case, (a) exempt any Incentive-Based Compensation from the application of this Policy, (b) waive or otherwise prohibit or restricts the Company Group's right to recover any Erroneously Awarded Compensation, including, without limitation, in connection with exercising any right of setoff as provided herein, and/or (c) require or provide for indemnification to the extent that such indemnification is prohibited under Section 5 above.

**7. Amendment; Termination; Interpretation.** The Committee may amend or terminate this Policy at any time, subject to compliance with all applicable legal requirements and the rules and requirements of Nasdaq. It is intended that this Policy be interpreted in a manner that is consistent with the SEC/Nasdaq Clawback Rules. This Policy is separate from, and in addition to, any other compensation recovery or recoupment policy of the Company or any applicable provisions of plans, agreements, awards or other arrangements of the Company that provide for the recoupment or recovery of compensation from Executive Officers that is voluntarily adopted by the Company and intended to provide for discretionary recoupment beyond the scope of this Policy and the SEC/Nasdaq Clawback Rules.

**8. Other Recoupment Rights; No Additional Payments.**

(a) Subject to Section 8(b) of this Policy below, any right of recoupment under this Policy is in addition to, and not in lieu of, any other remedies or rights of recoupment that may be available to the Company Group pursuant to (i) the terms of any recoupment provisions in any employment agreement, incentive or equity compensation plan or award or other agreement, (ii) any other legal requirements, including, but not limited to, Section 304 of Sarbanes-Oxley Act of 2002, and (iii) any other legal rights or remedies available to the Company.

(b) Notwithstanding anything herein to the contrary, to prevent duplicative recovery:

(i) to the extent that the amount of any Erroneously Awarded Compensation is recovered from any current or former Executive Officers under this Policy, the Company will not be entitled to recover any such amounts under any other compensation recovery or recoupment policy of the Company or any applicable provisions of plans, agreements, awards or other arrangements of the Company that provide for the recoupment or recovery of compensation from Executive Officers; and

(ii) to the extent that any Erroneously Awarded Compensation includes any amounts that have been actually reimbursed to the Company Group from any Applicable Executive pursuant to Section 304 of the Sarbanes-Oxley Act (any such amounts that have been reimbursed to the Company Group, the "Applicable SOX Recoupment Amount"), the amount of any Erroneously Awarded Compensation to be recovered from any such Applicable Executive shall be reduced by the Applicable SOX Recoupment Amount.

**9. Successors.** This Policy shall be binding and enforceable against all current and former Executive Officers and their beneficiaries, heirs, executors, administrators or other legal representatives.



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**EXHIBIT A**

**Form of Acknowledgement**

By signing below, the undersigned acknowledges and confirms that the undersigned has received and reviewed a copy of the Quantum Computing Inc. Compensation Recovery Policy (such policy, as amended from time to time, the "Policy"). Capitalized terms used but not otherwise defined in this acknowledgement shall have the meanings ascribed to such terms in the Policy.

By signing this acknowledgement, the undersigned acknowledges and agrees that the undersigned is and will continue to be subject to the Policy and that the Policy will apply both during and after the undersigned's employment with the Company Group. Further, by signing below, the undersigned agrees to abide by the terms of the Policy, including, without limitation, by returning any Erroneously Awarded Compensation to the Company group to the extent required by the Policy.

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Signature

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Print Name

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Date

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| Cover - USD ($) | 12 Months Ended Dec. 31, 2023 | Mar. 28, 2024 | Jun. 30, 2023 |
|---|---|---|---|
| **Document Information [Line Items]** | | | |
| Document Type | 10-K | | |
| Document Annual Report | true | | |
| Document Transition Report | false | | |
| Document Financial Statement Error Correction [Flag] | false | | |
| Entity Interactive Data Current | Yes | | |
| ICFR Auditor Attestation Flag | false | | |
| Amendment Flag | false | | |
| Document Period End Date | Dec. 31, 2023 | | |
| Document Fiscal Year Focus | 2023 | | |
| Document Fiscal Period Focus | FY | | |
| Documents Incorporated by Reference [Text Block] | None | | |
| **Entity Information [Line Items]** | | | |
| Entity Registrant Name | QUANTUM COMPUTING INC. | | |
| Entity Central Index Key | 0001758009 | | |
| Entity File Number | 001-40615 | | |
| Entity Tax Identification Number | 82-4533053 | | |
| Entity Incorporation, State or Country Code | DE | | |
| Current Fiscal Year End Date | --12-31 | | |
| Entity Well-known Seasoned Issuer | No | | |
| Entity Voluntary Filers | No | | |
| Entity Current Reporting Status | Yes | | |
| Entity Shell Company | false | | |
| Entity Filer Category | Non-accelerated Filer | | |
| Entity Small Business | true | | |
| Entity Emerging Growth Company | false | | |
| Entity Public Float | | | $ 46,073,808 |
| **Entity Contact Personnel [Line Items]** | | | |
| Entity Address, Address Line One | 5 Marine View Plaza | | |
| Entity Address, Address Line Two | Suite 214 | | |
| Entity Address, City or Town | Hoboken | | |
| Entity Address, State or Province | NJ | | |
| Entity Address, Postal Zip Code | 07030 | | |
| **Entity Phone Fax Numbers [Line Items]** | | | |
| City Area Code | (703) | | |
| Local Phone Number | 436-2121 | | |
| **Entity Listings [Line Items]** | | | |
| Title of 12(b) Security | Common Stock, par value $.0001 | | |

| | | |
|---|---|---|
| Trading Symbol | QUBT | |
| Security Exchange Name | NASDAQ | |
| Entity Common Stock, Shares Outstanding | | 91,357,640 |

| Audit Information | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Auditor [Table]** | |
| Auditor Name | BF Borgers CPA PC |
| Auditor Firm ID | 5041 |
| Auditor Location | Lakewood, CO |

| Consolidated Balance Sheets - USD ($) | Dec. 31, 2023 | Dec. 31, 2022 |
|---|---|---|
| **Current assets** | | |
| Cash and cash equivalents | $ 2,059,285 | $ 5,308,466 |
| Accounts receivable | 65,000 | 12,774 |
| Prepaid expenses | 138,460 | 224,302 |
| Loans receivable | 557,236 | |
| Other current assets | 289,117 | 182,994 |
| Inventory | 72,650 | |
| Total current assets | 3,181,748 | 5,728,536 |
| Fixed assets (net of depreciation) | 2,869,658 | 975,169 |
| Operating lease right-of-use assets | 799,942 | 1,186,857 |
| Security deposits | 129,045 | 60,271 |
| Intangible Assets-net of amortization | 11,388,015 | 22,223,725 |
| Goodwill | 60,359,867 | 59,125,773 |
| Total assets | 78,728,275 | 89,300,331 |
| **Current liabilities** | | |
| Accounts payable | 1,461,541 | 871,887 |
| Accrued expenses | 195,923 | 3,559,981 |
| Deferred revenue | 458 | |
| Dividends payable - preferred | 215,119 | 219,844 |
| Current portion of long-term debt | 2,496,480 | 535,684 |
| Other current liabilities | 250,116 | 131,849 |
| Total current liabilities | 4,619,637 | 5,319,245 |
| Long-term debt | | 7,858,280 |
| Operating lease liabilities | 840,085 | 1,226,075 |
| Total liabilities | 5,459,722 | 14,403,600 |
| **Stockholders' equity** | | |
| Preferred stock, $0.0001 par value, 1,550,000 shares Series A Convertible Preferred authorized; 1,490,004 and 1,500,004 shares issued and outstanding as of December 31, 2023 and December 31, 2022, respectively; 3,079,864 shares of Series B Preferred Stock authorized, 0 and 0 shares issued and outstanding as of December 31, 2023 and December 31, 2022, respectively | 149 | 150 |
| Common stock, $0.0001 par value, 250,000,000 shares authorized; 77,451,356 and 55,963,334 shares issued and outstanding as of December 31, 2023 and December 31, 2022, respectively | 7,745 | 5,596 |
| Additional paid-in capital | 167,944,651 | 151,163,909 |
| APIC-Beneficial Conversion Feature in Equity | 4,898,835 | 4,898,835 |
| APIC-Stock Based Compensation | 50,135,626 | 38,816,022 |
| Accumulated deficit | (149,718,453) | (119,987,781) |
| Total stockholders' equity | 73,268,553 | 74,896,731 |
| Total liabilities and stockholders' equity | $ 78,728,275 | $ 89,300,331 |

| Consolidated Balance Sheets (Parentheticals) - $ / shares | Dec. 31, 2023 | Dec. 31, 2022 |
|---|---|---|
| Common stock, par value (in Dollars per share) | $ 0.0001 | $ 0.0001 |
| Common stock, shares authorized | 250,000,000 | 250,000,000 |
| Common stock, shares issued | 77,451,356 | 55,963,334 |
| Common stock, shares outstanding | 77,451,356 | 55,963,334 |
| Series A Convertible Preferred Stock | | |
| Preferred stock par value (in Dollars per share) | $ 0.0001 | $ 0.0001 |
| Preferred stock, shares authorized | 1,550,000 | 1,550,000 |
| Preferred stock, shares issued | 1,490,004 | 1,500,004 |
| Preferred stock, shares outstanding | 1,490,004 | 1,500,004 |
| Series B Convertible Preferred Stock | | |
| Preferred stock, shares authorized | 3,079,864 | 3,079,864 |
| Preferred stock, shares issued | 0 | 0 |
| Preferred stock, shares outstanding | 0 | 0 |

| Consolidated Statement of Operations - USD ($) | 12 Months Ended Dec. 31, 2023 | Dec. 31, 2022 |
|---|---|---|
| **Income Statement [Abstract]** | | |
| Total revenue | $ 358,047 | $ 135,648 |
| Cost of revenue | 195,640 | 60,934 |
| Gross profit | 162,407 | 74,714 |
| Salaries and Benefits | 4,047,910 | 4,326,733 |
| Professional Services | 838,592 | 1,278,170 |
| Research & Development | 6,447,703 | 4,561,794 |
| Stock Based Compensation | 8,722,766 | 17,761,467 |
| Selling General & Administrative | 7,326,713 | 8,725,892 |
| Operating expenses | 27,383,684 | 36,654,056 |
| Loss from Operations | (27,221,277) | (36,579,342) |
| **Other Income and Expense** | | |
| Interest Income | 295,478 | 46,891 |
| Interest Expense – Promissory Notes | (602,059) | (225,282) |
| Interest Expense – Preferred dividends | (861,071) | (889,219) |
| Interest Expense – Financing expenses | (1,341,743) | (946,748) |
| Net Other income (expense) | (2,509,395) | (2,014,358) |
| Income tax expense | | |
| Net loss | $ (29,730,672) | $ (38,593,700) |
| Weighted average shares – basic (in Shares) | 77,451,356 | 55,963,334 |
| Weighted average shares – diluted (in Shares) | 95,896,430 | 74,340,487 |
| Loss per share – basic (in Dollars per share) | $ (0.38) | $ (0.69) |
| Loss per share – diluted (in Dollars per share) | $ (0.31) | $ (0.52) |

| Consolidated Statement of Stockholders' Equity (Unaudited) - USD ($) | Preferred Stock | Common Stock | Additional Paid in Capital | Accumulated Deficit | Total |
|---|---|---|---|---|---|
| Balances at Dec. 31, 2021 | $ 154 | $ 2,916 | $ 97,592,909 | $ (81,394,081) | $ 16,201,898 |
| Balances (in Shares) at Dec. 31, 2021 | 1,545,459 | 29,156,815 | | | |
| Cancellation of shares | | $ (1) | | | (1) |
| Cancellation of shares (in Shares) | | (11,444) | | | |
| Issuance of shares for services | | $ 14 | 319,936 | | 319,950 |
| Issuance of shares for services (in Shares) | | 135,000 | | | |
| Conversion of Preferred | $ (4) | $ 4 | | | |
| Conversion of Preferred (in Shares) | (45,455) | 47,728 | | | |
| Shares issued for merger with QPhoton | | $ 2,662 | 68,722,315 | | 68,724,976 |
| Shares issued for merger with QPhoton (in Shares) | | 26,615,235 | | | |
| Warrants issued for merger with QPhoton | | | 14,358,891 | | 14,358,891 |
| Preferred OID Amortization | | | 318,750 | | 318,750 |
| Stock Options | | | 13,518,567 | | 13,518,567 |
| Stock based compensation | | $ 2 | 47,398 | | 47,400 |
| Stock based compensation (in Shares) | | 20,000 | | | |
| Net loss | | | | (38,593,700) | (38,593,700) |
| Balances at Dec. 31, 2022 | $ 150 | $ 5,596 | 194,878,766 | (119,987,781) | 74,896,731 |
| Balances (in Shares) at Dec. 31, 2022 | 1,500,004 | 55,963,334 | | | |
| Issuance of shares for services | | $ 158 | 2,413,343 | | 2,413,500 |
| Issuance of shares for services (in Shares) | | 1,575,000 | | | |
| Issuance of shares for cash | | $ 1,757 | 25,494,607 | | 25,496,364 |
| Issuance of shares for cash (in Shares) | | 17,571,926 | | | |
| Conversion of Preferred | $ (1) | $ 1 | 596 | | 596 |
| Conversion of Preferred (in Shares) | (10,000) | 11,096 | | | |
| Merger consideration | | | 8,347,126 | | 8,347,126 |
| Stock Options | | | 7,299,278 | | 7,299,278 |
| Stock based compensation | | $ 233 | 1,239,648 | | 1,239,882 |
| Stock based compensation (in Shares) | | 2,330,000 | | | |
| Net loss | | | | (29,730,672) | (29,730,672) |
| Balances at Dec. 31, 2023 | $ 149 | $ 7,745 | $ 222,979,112 | $ (149,718,453) | $ 73,268,553 |

| | | |
|---|---|---|
| Balances (in Shares) at Dec. 31, 2023 | 1,490,004 | 77,451,356 |

| Consolidated Statements of Cash Flows - USD ($) | 12 Months Ended | |
|---|---|---|
| | Dec. 31, 2023 | Dec. 31, 2022 |
| **CASH FLOWS FROM OPERATING ACTIVITIES** | | |
| Net loss | $ (29,730,672) | $ (38,593,700) |
| **Adjustments to reconcile net loss to net cash from operations** | | |
| Depreciation, amortization, and other | 1,957,768 | 3,433,674 |
| Net recognized losses (gains) | 4,448 | |
| Stock based compensation expense | 8,722,766 | 17,761,467 |
| **Changes in operating assets and liabilities** | | |
| Accounts receivable | (52,227) | (12,774) |
| Inventories | (70,484) | |
| Other current assets | (77,515) | 91,813 |
| Other long-term assets | 318,141 | (1,128,166) |
| Accounts payable | 582,854 | 218,574 |
| Unearned revenue | 458 | |
| Other current liabilities | (984,786) | (462,362) |
| Other long-term liabilities | (611,272) | 1,451,357 |
| CASH USED IN OPERATING ACTIVITIES | (19,940,521) | (17,240,117) |
| **CASH FLOWS FROM INVESTING ACTIVITIES** | | |
| Property and equipment | (2,117,990) | (869,687) |
| Loan receivable | (500,000) | |
| Net cash used for QPhoton Inc. merger | | (1,356,071) |
| CASH USED IN INVESTING ACTIVITIES | (2,617,990) | (2,225,758) |
| **CASH FLOWS FROM FINANCING ACTIVITIES** | | |
| Notes Payable | (6,187,034) | 8,035,684 |
| Preferred stock conversion | | |
| Preferred stock OID accrual | | |
| Proceeds from stock issuance (ATM facility) | 25,496,364 | |
| CASH PROVIDED BY FINANCING ACTIVITIES | 19,309,330 | 8,035,684 |
| Net increase (decrease) in cash | (3,249,181) | (11,430,191) |
| Cash, beginning of period | 5,308,466 | 16,738,657 |
| Cash, end of period | 2,059,285 | 5,308,466 |
| **SUPPLEMENTAL DISCLOSURES** | | |
| Cash paid for interest | 812,966 | |
| Cash paid for income taxes | | |
| **NON-CASH FINANCING ACTIVITIES** | | |
| Common stock, preferred stock and warrants issued in connection with QPhoton, Inc. merger | | $ 83,083,867 |

| Nature of the Organization and Business | 12 Months Ended Dec. 31, 2023 |
| --- | --- |
| **Nature of the Organization and Business [Abstract]** | |
| Nature of the Organization and Business | Note 1 – Nature of the Organization and Business |

Corporate History

Quantum Computing Inc. ("QCi" or the "Company") was formed in the State of Nevada on July 25, 2001, under its prior name, Ticketcart, Inc. The Company redomiciled to Delaware on February 22, 2018 and changed its name to Quantum Computing Inc. Effective July 20, 2018, the trading symbol for the Company's common stock, par value $0.0001, on the OTC Market changed from "IBGH" to "QUBT". On July 15, 2021 the Company uplisted to The Nasdaq Stock Market. On June 16, 2022, the Company merged with QPhoton, Inc. ("QPhoton"), a developer of quantum photonic systems and related technologies and applications.

Nature of Business

QCi is an American company utilizing integrated photonics and non-linear quantum optics to deliver quantum systems for high-performance computing applications. Quantum's products are designed to operate at room temperature and low power. Our core technology enables the execution of a go-to-market strategy which emphasizes accessibility and affordability. Our quantum systems enable subject matter experts (SMEs) and end users to deliver critical business solutions today.

The Company initially focused on providing software tools and applications for several commercially available quantum computers. However, following the June 2022 merger with QPhoton and its associated intellectual property and engineering team, the Company now offers integrated high-performance quantum systems and services.

The core of our quantum information services today is our Entropy Quantum Computing ("EQC") technology. We have built room-temperature, photonic quantum information processing systems underpinned by a series of patented and patent pending technologies. Our technology, supported by professional services through our "Quantum Solutions" offering, helps our clients benefit from the technology today. In addition, our leading-edge photonic technology and engineering teams will enable QCi to continue to enhance quantum LIDAR and sensing systems, imaging systems, quantum-secured network solutions, and photonic quantum chips.

| Significant Accounting Policies | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Significant Accounting Policies [Abstract]** | |
| Significant Accounting Policies | Note 2 – Significant Accounting Policies: |

Basis of Presentation and Principles of Consolidation:

The Company prepares its consolidated financial statements in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") as determined by the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC"), including ASC 810, *Consolidation*. The consolidated financial statements include the accounts of the Company and its controlled subsidiaries. All intercompany transactions and balances have been eliminated in consolidation.

The Company's fiscal year end is December 31.

The accompanying financial statements have been prepared in conformity with U.S. GAAP, which contemplate continuation of the Company as a going concern for a period of one year from the issuance of these financial statements. For the year ended December 31, 2023, the Company had $358,047 in revenues, a net loss of $29,730,672 and had net cash used in operations of $19,940,521. Additionally, as of December 31, 2023, the Company had a working capital deficit of $1,437,889 and an accumulated deficit of $149,718,453. It is management's opinion that these conditions raise substantial doubt about the Company's ability to continue as a going concern for a period of twelve months from the date of the issuance of these financial statements.

The financial statements do not include any adjustments to reflect the possible future effect on the recoverability and classification of assets or the amounts and classifications of liabilities that may result from the outcome of this uncertainty.

Successful completion of the Company's development program and, ultimately, the attainment of profitable operations are dependent upon future events, including obtaining adequate financing to fulfill its development activities, acceptance of the Company's patent applications and ultimately achieving a level of sales adequate to support the Company's cost structure. However, there can be no assurances that the Company will be able to secure additional equity investments or achieve an adequate sales level.

Cash and Cash Equivalents

Highly liquid investments with a maturity of three months or less when purchased are considered to be cash equivalents. As of December 31, 2023 and 2022, there were no cash equivalents. The Company maintains its cash in deposit accounts with high quality financial institutions which, at times, may exceed federally insured limits. The Company has not experienced any losses on these deposits and believes it is not exposed to significant credit risk on cash.

Use of Estimates:

These financial statements have been prepared in accordance with accounting principles generally accepted in the United States which requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Some of the more significant estimates required to be made by management include the determination of reserves for accounts receivable, stockholders' equity-based transactions and liquidity assessment. Actual results may differ from these estimates.

Revenue

The Company recognizes revenue in accordance with ASC 606 – *Revenue from Contracts with Customers*, by analyzing contracts with its customers using a five-step approach:

1. Identify the contract

2. Identify the performance obligations

3. Determine the transaction price

4. Allocate the transaction price to the performance obligations

5. Recognize revenue when performance obligations are satisfied

The Company recognized a small amount of revenue in 2022 and in 2023 the recognized revenue primarily derived from contracts to perform professional services. Revenue from time and materials-based contracts is recognized as the direct hours worked during the period times the contractual hourly rate, plus direct materials and other direct costs as appropriate, plus negotiated materials handling burdens, if any. Revenue from units-based contracts is recognized as the number of units delivered or performed during the period times the contractual unit price. Revenue from fixed price contracts is recognized as work is performed with estimated profits recorded on a percentage of completion basis. The Company has no cost-plus type contracts at this time.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable principally consists of amounts due from customers for work performed on contracts. The Company records accounts receivable at their net realizable value. Periodically the Company evaluates its accounts receivable to establish an allowance for doubtful accounts, when deemed necessary, based on the history of past write-offs, collections and current credit conditions. During 2022 certain accounts receivable, attributable to a single customer, were determined not to be collectible and management recorded an allowance for doubtful accounts and wrote off the uncollectible receivables against that account. The accounts receivable as of December 31, 2023 are considered fully collectible and thus management has not recorded an allowance for doubtful accounts.

Operating Leases - ASC 842

The Company implemented FASB Accounting Standards Codification, or ASC, Topic 842, Leases ("ASC 842"). The Company determines if an arrangement is a lease at inception. Operating lease right-of-use ("ROU") assets are included in right-of-use assets, net on the consolidated balance sheets. The current and long-term components of operating lease liabilities are included in the current operating lease liabilities and noncurrent operating lease liabilities, respectively, on the consolidated balance sheets.

Operating lease ROU assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term. As most of the Company's leases do not provide an implicit rate, the Company uses an incremental borrowing rate based on the information available at the commencement date in determining the present value of future payments. Certain leases may include options to extend or terminate the lease. Lease expense for minimum lease payments is recognized on a straight-line basis over the lease term. Leases with an initial term of 12 months or less are not recorded in the balance sheet. All of our operating leases are comprised of office space leases, and as of December 31, 2023 and 2022, we had no finance leases.

Business Combinations

We account for business combinations under the acquisition method of accounting. This method requires the recording of acquired assets and assumed liabilities at their acquisition date fair values. The excess of the purchase price over the fair value of assets acquired and liabilities assumed is recorded as goodwill. Results of operations related to business combinations are included prospectively beginning with the date of acquisition and transaction costs related to business combinations are recorded withing general and administrative expenses.

Property and Equipment

Property and equipment are stated at cost or contributed value. Depreciation of furniture, software and equipment is calculated using the straight-line method over their estimated useful lives, and leasehold improvements are amortized on a straight-line basis over the shorter of their estimated useful lives or the lease term. The cost and related accumulated depreciation of equipment retired or sold are removed from the accounts and any differences between the undepreciated amount and the proceeds from the sale are recorded as a gain or loss on sale of equipment. Maintenance and repairs are charged against expense as incurred.

Research and Development Costs

Research and development costs include costs directly attributable to the conduct of research and development programs, including the cost of services provided by outside contractors, acquiring work-in-progress intellectual property, development, and mandatory compliance fees and contractual obligations. All costs associated with research and development are expensed as incurred.

Stock Based Compensation

The Company has adopted Accounting Standards Update ("ASU") No. 2018-07, *Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting*. ASU 2018-07 expands the scope of ASC 718, *Share-Based Payment,* to include share-based payment transactions for acquiring goods and services from nonemployees. An entity should apply the requirements of ASC 718 to nonemployee awards except for specific guidance on inputs to an option pricing model and the attribution of cost. ASU 2018-07 specifies that Topic 718 applies to all share-based payment transactions in which a grantor acquires goods or services to be used or consumed in a grantor's own operations by issuing share-based payment awards, and that ASC 718 does not apply to share based payments used to effectively provide (1) financing to the issuer or (2) awards granted in conjunction with selling goods or services to customers as part of a contract accounted for under ASC 606, *Revenue from Contracts with Customers*

Stock-based compensation expense is recorded for all option grants and awards of non-vested stock and recognized in the financial statements based on the grant date fair value of the awards granted. Stock-based compensation is recognized as expense over the requisite service period, which generally represents the vesting period. The Company calculates the fair value of stock options using the Black-Scholes option-pricing model at grant date. The Company estimates a rate of forfeiture when recording stock option expense. The assumptions and estimates involved in the Black-Scholes model require significant judgement and any changes could have a material impact in the determination of stock-based compensation expense

Net Loss Per Share:

Net loss per share is based on the weighted average number of common shares and common share equivalents outstanding during the period.

| Business Combinations | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Business Combinations [Abstract]** | |
| Business Combinations | Note 3 – Business Combinations |

Note 3 – Business Combinations

*Merger with QPhoton, Inc.*

On May 19, 2022, the Company, QPhoton, and Yuping Huang, the principal stockholder of QPhoton ("Mr. Huang"), entered into an Agreement and Plan of Merger (the "Merger Agreement"), pursuant to which the Company agreed to acquire QPhoton through a series of merger transactions (collectively with the other transactions contemplated by the Merger Agreement, the "Transaction"). On June 16, 2022, all conditions precedent having been met or waived by the Parties, the Company Closed the Transactions with QPhoton. The merger with QPhoton adds to the Company's portfolio of quantum computing products and enables the Company to offer a wider range of quantum information services. The Company accounted for the Transactions using the acquisition method in accordance with ASC 805, Business Combinations, with the purchase price being allocated to tangible and identifiable intangible assets acquired and liabilities assumed based on their respective estimated fair values on the acquisition date. Fair values were determined using management estimates. The results of QPhoton are included within the consolidated financial statements commencing on the acquisition date.

Pursuant to the Merger Agreement, immediately following the closing of the Transactions contemplated by the Merger Agreement (the "Closing"), Merger Sub I (a wholly owned subsidiary of the Company) merged with and into QPhoton, with QPhoton surviving the merger as a wholly-owned subsidiary of the Company, immediately after which the surviving corporation merged with and into Merger Sub II (also a wholly owned subsidiary of the Company), with Merger Sub II surviving the merger as a wholly-owned subsidiary of the Company (the "Surviving Company"). The merger consideration to be paid to the stockholders of QPhoton (the "Merger Consideration") consists of (i) 5,802,206 shares of the Company's common stock, par value $0.0001 per share ("Common Stock"), (ii) 2,377,028 shares of a new series of the Company's preferred stock, par value $0.0001 per share, to be designated Series B convertible preferred stock ("Series B Preferred Stock"), and (iii) warrants to purchase up to 7,028,337 shares of Common Stock (the "Warrants"). Each share of Series B Preferred Stock converts into ten (10) shares of the Company's common stock. The Merger Consideration for stockholders Yuping Huang and Stevens Institute of Technology was issued in 2022 and the remaining Merger Consideration for the other stockholder of QPhoton will be issued upon presentation of certain required documents and surrender of their QPhoton shares.

The purchase price was approximately $83.1 million, consisting of Company Common Stock, Series B Preferred Stock and Warrants. The purchase agreement did not include any contingent consideration. Since the Transactions were structured as an exchange of equity securities, the purchase price was calculated based on the fair market value (in this case the Nasdaq closing price) of the total shares of the Company securities paid to the shareholders of the acquired company, QPhoton. The closing Price of Company Common Stock on June 16, 2022 was $2.27. The total shares of Company Common Stock offered for QPhoton was 36,600,823, which assumes all of the 2,377,028 Series B Convertible Preferred shares are converted to Common Stock at the 10:1 ratio, and that all 7,028,337 warrants to purchase Common Stock are eventually exercised. The warrants were valued using a Black Scholes formula assuming a maturity of five years, a risk-free interest rate of 2.8%, a volatility of 3.54 and an exercise price of $0.00001. That results in a total value for the Transactions of $83,083,868. This amount will be used as the purchase price. Under ASC 805 transaction costs are required to be expensed so legal and accounting fees incurred for the Transactions were not included in the purchase price.

The fair value of the prepaid expenses and security deposits was set at book value, and the fair value of the fixed assets was written up to the purchase cost to reflect the recent purchase dates of the equipment relative to the closing date of the merger. To estimate the fair value of the identifiable intangible assets, the Company recorded an estimate at the time of merger. The Company subsequently engaged a third-party valuation expert in 2023 (the "Third-Party Valuation Expert"), Scalar, LLC, to conduct an independent analysis in line with purchase price accounting standards. The Third-Party Valuation Expert concluded:

- that there was no fair value attributable to management's initial estimate of $10,000,000 for customer relationships based on the lack of current customer contracts;

- a fair value of $2,722,000 attributable to the non-compete agreement with the founder using the with-and-without method, based on a variation of the income approach, an increase of $2,222,000 in intangibles compared with management's initial estimate of $500,000. The with-and-without methodology employed uses two scenarios to value the non-compete asset: (1) the "with scenario" captures the estimated cash flows from the business if all of the existing assets were in place including the non-compete asset, and (2) the "without scenario" captures the estimated cash flows from the business if all of the existing assets were in place except the non-compete asset. The difference between the two scenarios is attributed to the presumed loss of cash flows without the non-compete asset in place and represents the value of the non-compete agreement;

- a fair value of $969,000 attributable to the QPhoton trade name and trademark using the relief from royalty methodology, a decrease of $31,000 in intangibles compared with management's initial estimate of $1,000,000. In the application of the relief from royalty method, the Third-Party Valuation Expert estimated the value of the trade names/trademarks by capitalizing the royalties saved by virtue of the Company owning the trade names/trademarks. In other words, the Company realizes a benefit from owning the intangible asset rather than paying a rent or royalty for the use of the asset;

- a fair value of $12,200,000 attributable to the technology and licensed patents using the relief from royalty methodology, an increase of $477,780 in intangibles compared with management's initial estimate of $11,722,220. In calculating the fair value of the technology and licensed patents, the Third-Party Valuation Expert followed the same approach as the trade name/trademark analysis; and

- that there was no identifiable intangible value attributable to management's initial estimate of $2,250,000 for employee agreements, rather calculated a fair value of $1,912,000 included in goodwill attributable to the assembled workforce using the replacement cost method. The replacement cost method approximates the cost it would take to reconstruct an asset of similar utility (to create a substitute asset). Specifically, this approach considers all of the costs the Company would have incurred to replace the QPhoton workforce with a brand new (but comparable) workforce. The assembled workforce value is added to goodwill per ASC 805-20-55-6, Assembled Workforce and Other Items that Are not Identifiable, and not tracked separately as an amortizing intangible asset.

The Company accepted the Third-Party Valuation Expert's valuation without adjustment.

The following table summarizes the adjusted acquisition date fair values of assets acquired and liabilities assumed by the Company, including the final results of the analysis performed by the Third-Party Valuation Expert for the intangibles:

| | |
|---|---|
| Purchase price, net of cash acquired | $81,939,939 |
| Less | |
| Prepaid expenses | 16,109 |
| Fixed assets at cost | 116,315 |
| Security deposits | 97,768 |
| Non-compete agreement with founder | 2,722,000 |
| Website domain, trade name and trademark | 969,000 |

| | |
|---|---|
| Technology and licensed patents | 12,200,000 |
| Accounts payable and other current liabilities | (2,888,246) |
| Goodwill | $68,706,993 |

The purchase price and purchase price allocation for QPhoton was finalized as of September 30, 2022 with no significant changes to the preliminary amounts. However, after receiving the report of the Third-Party Valuation Expert in July 2023, the Company determined that the purchase price allocation recorded in 2022 was incorrect. The Company corrected the error in the amounts recognized for goodwill and intangible assets and this error correction was reported in the Company's Form 10-Q report for the period ending June 30, 2023, reflecting the amounts noted above. The impact of this error correction was to reduce the Company's net loss for the twelve months ending December 31, 2023 (the "2023 Net Loss") by $1,589,501 due to a reduction in intangible asset amortization expense related to the period for the twelve months ending December 31, 2022. Accordingly, the Company's 2023 Net Loss before the adjustment was $31,320,173. The total goodwill the Company recorded, net of the error correction, was $68.7M for the QPhoton Merger, which is not expected to be deductible for income tax purposes. The amount allocated to goodwill and intangible assets reflected the benefits the Company expected to realize from the growth of the acquisition's operations.

*Note Purchase Agreement – the Company and QPhoton*

On February 18, 2022, the Company entered into a Note Purchase Agreement (the "Note Purchase Agreement") with QPhoton, pursuant to which the Company agreed to loan money to QPhoton using two unsecured promissory notes (each, a "Note"), each in the principal amount of $1,250,000, subject to the terms and conditions of the Note Purchase Agreement. Also on February 18, 2022, pursuant to the terms of the Note Purchase Agreement, the Company loaned the principal amount of $1,250,000 to QPhoton. On April 1, 2022, pursuant to the terms of the Note Purchase Agreement, the Company loaned the principal amount of $1,250,000 to QPhoton, for a total loan under the two Notes of $2,500,000.

The Note Purchase Agreement contains customary representations and warranties by QPhoton and the Company, as well as a "most favored nations" provision for the benefit of the Company. The Notes issued under the Note Purchase Agreement, including the Notes issued on February 18, 2022 and April 1, 2022, provide that the indebtedness evidenced by the applicable Note bears simple interest at the rate of 6% per annum (or 15% per annum during the occurrence of an event of default, as defined in the Notes), and becomes due and payable in full on the earlier of (i) March 1, 2023, subject to extension by one year at the option of QPhoton, (ii) a change of control (as defined in the Notes) of QPhoton or (iii) an event of default. As a result of the merger, the Note and accrued interest is eliminated through consolidation. However, the two Notes were not forgiven or converted to equity.

| Intangible Assets and Goodwill | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Intangible Assets and Goodwill [Abstract]** | |
| Intangible Assets and Goodwill | (see below) |

Note 4 – Intangible Assets and Goodwill

As a result of the merger with QPhoton, the Company has the following amounts related to intangible assets:

| Amortizable Intangible Assets | Intangible Assets as of: December 31, 2023 | Intangible Assets as of: December 31, 2022 | Amortizable Life |
|---|---|---|---|
| Customer relationships | $ - | $10,000,000 | 3 years |
| Non-compete agreement with founder | 2,722,000 | 500,000 | 3 years |
| Website domain name and trademark | 969,000 | 1,000,000 | 5 years |
| Employment agreements | - | 2,250,000 | 2 years |
| Technology and licensed patents | 12,200,000 | 11,722,220 | 10 years |
| Less: accumulated amortization | (4,502,985) | (3,248,495) | |
| Net intangible assets | $11,388,015 | $22,223,725 | |

The asset balances as of December 31, 2022 were corrected in the Company's June 2023 financial results, as discussed in Note 3, Business Combinations, Merger with QPhoton, Inc.

The aggregate amortization expense of the Company's intangible assets for the years ended December 31, 2023 and 2022 was $1,254,490and $3,248,495, respectively. The Company expects future amortization expense to be the following:

| | Amortization |
|---|---|
| 2024 | $ 2,843,991 |
| 2025 | 2,352,518 |
| 2026 | 1,936,657 |
| 2027 | 1,831,682 |
| 2028 | 1,742,857 |
| Thereafter (2029-2032) | 680,310 |
| Total | $ 11,388,015 |

The Company recorded goodwill resulting from the merger with QPhoton, calculated as the difference between the total purchase price and the value of tangible and intangible assets acquired less the liabilities assumed. The Company recorded goodwill of $59,125,773.38 resulting from the QPhoton merger. The following table provides a summary of the changes in goodwill for the years ended December 31, 2023 and 2022:

| | December 31, 2023 | December 31, 2022 |
|---|---|---|
| Goodwill, at beginning of year | 59,125,773 | $ - |
| Goodwill additions | 9,581,220 | 59,125,773 |
| Goodwill deductions or impairment | 8,347,126 | - |
| Goodwill, at end of year | $60,359,867 | $59,125,773 |

The Company tested the intangible assets and goodwill for impairment as of December 31, 2023 and concluded there was no impairment of intangible assets or goodwill at that time.

| Income Taxes | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Income Taxes [Abstract]** | |
| Income Taxes | (see note below) |

Note 5 – Income Taxes:

The Company has made no provision for income taxes because there has been no taxable income.

The Financial Accounting Standards Board (FASB) has issued Statement of Financial Accounting Standards Number 109 ("SFAS 109"). "Accounting for Income Taxes", which requires a change from the deferred method to the asset and liability method of accounting for income taxes. Under the asset and liability method, deferred income taxes are recognized for the tax consequences of "temporary differences" by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts and the tax basis of existing assets and liabilities.

| | December 31, | |
|---|---|---|
| | **2023** | **2022** |
| Net operating loss carry-forwards | $ 14,528,229 | $ 9,703,519 |
| Valuation allowance | (14,528,229) | (9,703,519) |
| Net deferred tax assets | $ - | $ - |

At December 31, 2023, the Company had net operating loss carry forwards of approximately $14,528,229.

Net operating loss carryforwards are subject to limitations under Section 382 of the Internal Revenue Code and the Company anticipates that no more than an insignificant portion of this net operating allowance will ever be used against future taxable income. FASB Codification ASC 740 requires changes in recognition and measurement for uncertain tax positions. The Company has analyzed its tax positions and concluded that it is not aware of any uncertain tax positions. If this conclusion changes, the Company will assess the impact of any such changes on its financial position and the results of operations.

| Financial Accounting Developments | 12 Months Ended Dec. 31, 2023 |
| --- | --- |
| **Financial Accounting Developments [Abstract]** | |
| Financial Accounting Developments | Note 6 – Financial Accounting Developments:<br><br>Recently Issued Accounting Pronouncements<br><br>From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies that are adopted by the Company as of the specified effective date. Unless otherwise discussed, we believe that the impact of recently issued standards that are not yet effective will not have a material impact on our financial position or results of operations upon adoption. The Company has evaluated the recently implemented accounting standards and concluded that none currently apply to the Company. |

| Property and Equipment | 12 Months Ended Dec. 31, 2023 |
|---|---|

**Property and Equipment [Abstract]**

Property and Equipment

Note 7 – Property and Equipment

| Classification | December 31, 2023 | December 31, 2022 |
|---|---|---|
| Hardware & Equipment | $ 3,092,664 | $ 1,026,829 |
| Software | 49,275 | 18,889 |
| Total cost of property and equipment | 3,141,939 | 1,045,718 |
| Accumulated depreciation | 272,281 | 70,549 |
| Property and equipment, net | $ 2,869,658 | $ 975,169 |

The Company acquired $2,096,221 of property and equipment during the twelve months ended December 31, 2023. It is the Company's policy to capitalize purchases of property and equipment with a cost of $2,500 or more that benefit future periods.

| | Estimated Useful Life (Years) |
|---|---|
| Computer and laboratory equipment | 5 |
| Network equipment | 4 |
| Minor equipment | 3 |
| Furniture and fixtures | 7 |
| Software | 3 |
| Leasehold improvements | 5 |

Maintenance and repairs are charged to operations when incurred. When property and equipment are sold or otherwise disposed, the asset account and related accumulated depreciation and amortization accounts are relieved, and any gain or loss is included in other income or expense.

| Loans | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Loans [Abstract]** | |
| Loans | Note 8 – Loans<br><br>*Notes Payable – BV Advisory Partners, LLC*<br><br>As part of our business combination with QPhoton in June 2022, we acquired a note payable to BV Advisory Partners, LLC. On March 1, 2021, QPhoton entered into a Note Purchase Agreement with BV Advisory. Under the Note Purchase Agreement, on March 1, 2021, March 23, 2021 and July 9, 2021, BV Advisory, a related party shareholder, purchased convertible promissory notes from QPhoton for $200,592, $150,000, and $150,000, respectively, for a total of $500,592 (the “BV Notes”). The BV Notes all bore interest at a rate of 6% per annum and matured 2 years from the grant date. However, QPhoton only received approximately $375,000 in cash proceeds as $125,041 was paid by BV Advisory directly to The Trustees of the Stevens Institute of Technology (“Stevens Institute”) on behalf of QPhoton, to satisfy QPhoton’s obligations to reimburse costs incurred under the terms of their patent license agreement with the Stevens Institute.<br><br>On June 16, 2022 the Company tendered a cashier’s check to BV Advisory in the amount of $535,68.44, representing the full principal balance of the BV Notes and accrued interest through June 16, 2022. On July 14, 2022 BV Advisory returned the cashier’s check and disputed the calculation of the amount paid to settle the BV Notes. The BV Notes and accrued interest are recorded as short-term liabilities. On August 15, 2022, BV Advisory Partners, LLC (“BV Advisory”) filed a complaint in the Court of Chancery of the State of Delaware naming the Company and certain of its directors and officers (among others) as defendants (the “Lawsuit”). *BV Advisory Partners, LLC v. Quantum Computing Inc.*, et al., C.A. No. 2022-0719-VCG (Del. Ch.). BV Advisory is seeking, among other relief, monetary damages for an alleged breach of the Note Purchase Agreement between BV Advisory and QPhoton, Inc., the predecessor in interest to QPhoton, LLC, a wholly-owned subsidiary of the Company, as well as monetary damages for breach of an alleged binding letter of intent among Barksdale Global Holdings, LLC, Inference Ventures, LLC and QPhoton, Inc. The Company believes that BV Advisory’s claims have no merit and intends to defend itself vigorously. The Company filed a motion to dismiss the complaint in December 2022, and in March 2023 Plaintiff filed a second amended complaint. The Company filed a motion to dismiss the second amended complaint, oral argument was held on October 11, 2023 and at this time that motion is pending before the Court. The Company does not believe it is necessary to accrue an amount in addition to the principal and interest on the BV Notes at this time.<br><br>*Unsecured Promissory Note*<br><br>On September 23, 2022, the Company entered into a note purchase agreement (the “NPA”) with Streeterville Capital, LLC (the “Investor”), pursuant to which the Investor purchased an unsecured promissory note (the “Note” or the “Streeterville Unsecured Note”) in the initial principal amount of $8,250,000. The Note bears interest at 10% per annum. The maturity date of the Note is 18 months from the date of its issuance (the “Maturity Date”). The Note carries an original issue discount of $750,000, which is included in the principal balance of the Note. If the Company elects to prepay the Note prior to the Maturity Date, it must pay to Investor 120% of the portion of the Outstanding Balance the Company elects to prepay.<br><br>Beginning on the date that was six (6) months after the issuance date of the Note, the Investor has the right to redeem up to $750,000 of the outstanding balance of the Note per month (“Redemption Amount”) by providing written notice to the Company (“Redemption Notice”). Upon receipt of any Redemption Notice, the Company shall pay the applicable Redemption Amount in cash to the Investor within three (3) trading days of the Company’s receipt of such Redemption Notice. No prepayment premium shall be payable in respect of any Redemption Amount. As of December 31, 2023, Streeterville has redeemed $7,000,000 of the outstanding balance of the Note. |

Pursuant to the terms of the NPA, the parties provided customary representations and warranties to each other. Also, until amounts due under the Note are paid in full, the Company agreed, among other things, to: (i) timely make all filings under the Securities Exchange Act of 1934, (ii) ensure the Common Stock continues to be listed on the Nasdaq Capital Market ("Nasdaq") (iii) ensure trading in Company's Common Stock will not be suspended, halted, chilled, frozen, reach zero bid or otherwise cease trading on Company's principal trading market, (iv) ensure Company will not make any Restricted Issuance (as defined in the Note) without Investor's prior written consent, which consent may be granted or withheld in Investor's sole and absolute discretion, (v) ensure Company shall not enter into any agreement or otherwise agree to any covenant, condition, or obligation that locks up, restricts in any way or otherwise prohibits Company from entering into certain additional transactions with the Investor, and (vi) with the exception for Permitted Liens (as defined in the Note) ensure Company will not pledge or grant a security interest in any of its assets without Investor's prior written consent, which consent may be granted on withheld in Investor's sole and absolute discretion.

The Note sets forth certain standard events of default (such event, an "Event of Default") that generally, if uncured within seven (7) trading days, may result in the discretion of the Investor in certain penalties under the terms of the Note. In this regard, upon an Event of Default, Investor may accelerate the Note by written notice to the Company, with the outstanding balance becoming immediately due and payable in cash at the Mandatory Default Amount (as defined in the Note). Additionally, upon written notice given by Investor to the Company, interest shall accrue on the Outstanding Balance beginning on the date the applicable Event of Default occurred at an interest rate equal to the lesser of fifteen percent (15%) per annum simple interest or the maximum rate permitted under applicable law upon an Event of Default.

*Note Purchase Agreement Loan*

On May 16, 2023, the Company entered into a Summary of Proposed Terms (the "Letter of Intent") with millionways, Inc. ("millionways") to provide bridge loans to millionways and enter into due diligence to acquire up to 100% of the AI firm. On June 6, 2023, the Company entered into a Note Purchase Agreement (the "MW Agreement") with millionways, pursuant to which the Company agreed to purchase from millionways up to three unsecured promissory notes (each, a "MW Note"), in an aggregate principal amount of up to $2,000,000, subject to the terms and conditions of the MW Agreement. Also on June 6, 2023, pursuant to the terms of the MW Agreement, the Company purchased the MW Notes from millionways and loaned an aggregate principal amount of $500,000 to millionways.

The MW Agreement contains customary representations and warranties by millionways and the Company, as well as a "most favored nations" provision for the benefit of the Company. The MW Notes issued under the MW Agreement, including the MW Notes issued on June 6, 2023, provide that the indebtedness evidenced by the applicable MW Note bears simple interest at the rate of 10% per annum (or 15% per annum during the occurrence of an event of default, as defined in the MW Notes), and becomes due and payable in full on the earlier of (i) May 16, 2024, (ii) a change of control (as defined in the MW Notes) of millionways, (iii) dollar-for-dollar prepayment for additional capital received through any vehicle from a third party or (iv) an event of default.

| Capital Stock | 12 Months Ended Dec. 31, 2023 |
| --- | --- |
| **Capital Stock [Abstract]** | |
| Capital Stock | Note 9 – Capital Stock: |

Note 9 – Capital Stock:

*Series A Convertible Preferred Offering*

From November 10, 2021 through November 17, 2021, the Company conducted a private placement offering (the "Private Placement") pursuant to securities purchase agreements with 7 accredited investors (the "Series A Investors"), whereby the Series A Investors purchased from the Company an aggregate of 1,545,459 shares of the Company's newly created Series A Convertible Preferred stock, par value $0.0001 per share (the "Series A Preferred Stock") and warrants to purchase 1,545,459 shares of common stock for an aggregate purchase price of $8,500,000. The Private Placement was completed and closed to further investment on November 17, 2021.

The Series A Preferred Stock ranks senior to common stock with respect to the payment of dividends and liquidation rights. Each holder of Series A Preferred Stock is entitled to receive, with respect to each share of Series A Preferred Stock then outstanding and held by such holder, dividends at the rate of ten percent (10%) per annum (the "Preferred Dividends.") The Company is obligated to pay the Preferred Dividends quarterly, in arrears, within fifteen (15) days of the end of each quarter. The Company has the option to pay the Preferred Dividends in cash or in common stock, at a price per share of common stock equal to the average of the closing sale price of the common stock for the five (5) trading days preceding the applicable dividend payment date. The Preferred Dividends are accrued monthly, but not compounded, and are recorded as interest expense, because the Preferred Dividends are mandatory and not declared at the discretion of the Board of Directors.

The number of shares of common stock issuable upon conversion of any share of Series A Preferred Stock shall be determined by dividing (x) the Conversion Amount of such share of Series A Preferred Stock by (y) the Conversion Price. "Conversion Amount" means, with respect to each share of Series A Preferred Stock, as of the applicable date of determination, the sum of (1) the stated value thereof plus (2) any accrued dividends. "Conversion Price" means, with respect to each share of Series A Preferred Stock, as of any optional conversion date, Mandatory Conversion Date or other date of determination, $5.50, subject to adjustment for stock splits, dividends, recapitalizations and similar corporate events.

The Warrants are two-year warrants to purchase shares of common stock at an exercise price of $7.00 per share, subject to adjustment, and are exercisable at any time on or after the date that is six (6) months following the issuance date. The warrants provide for cashless exercise in the event the underlying shares of common stock are not registered. As of December 31, 2023, all of the Warrants had expired unexercised.

In connection with the Purchase Agreement, the Company and the Series A Investors entered into a registration rights agreement (the "Registration Rights Agreement") pursuant to which the Company agreed to file a registration statement to register the shares of common stock underlying the Series A Preferred Stock and warrants within 180 days. Pursuant to the Registration Rights Agreement, the Series A Investors received certain rights, including but not limited to piggyback registration rights, providing that the holder be given notice of any proposed registration of securities by the Company, and requiring that the Company register all or any portion of the registrable securities that the holders request to be registered, in each case, subject to the terms and conditions of the Registration Rights Agreement.

On April 27, 2022 the Company filed a Resale Form S-3 as required by the Registration Rights Agreement, pursuant to which the Company agreed to file a registration statement to register the shares of common stock underlying the Series A Preferred Stock and warrants within 180 days from the closing of the Private Placement. The Resale Form S-3 went effective on June 2, 2022.

On June 13, 2022, one of the Series A Investors, Falcon Capital Partners, converted 45,455 shares of Series A Convertible Preferred stock into 47,728 shares of common stock.

On February 9, 2023, one of the Series A Investors, Greenfield Children, LLC, converted 10,000 shares of Series A Convertible Preferred stock plus accrued dividends into 11,096 shares of common stock.

As of March 28, 2024, the Board has authorized two classes of preferred stock. The Board has authorized 1,550,000 shares of preferred stock as the Series A Convertible Preferred stock, par value $0.0001 per share, of which 1,490,004 shares are issued and outstanding. The Board has also authorized 3,079,864 shares of preferred stock as the Series B Preferred Stock, par value $0.0001 per share, of which 0 shares are issued and outstanding.

*Other Offerings*

On January 20, 2023 the Company issued 750,000 shares of common stock to Draper, Inc. and 750,000 shares of common stock to Carriage House Capital, Inc. as compensation for services rendered in support of the QPhoton merger.

On May 3, 2023, the Company issued 853,600 shares of common stock to thirty-five (35) employees as payment in lieu of cash for 2022 performance bonuses (the “Bonus Shares”). The Bonus Shares are restricted with the following vesting schedule: one-half vested on December 31, 2023 and one-half vesting on December 31, 2024. As of December 31, 2023, the Company canceled 23,600 of the issued shares that were forfeited by employees no longer with the Company.

On December 19,2023, the Company issued 75,000 shares of common stock to FMW Media Works as compensation for services rendered in support of marketing and communications.

From January 19, 2023 through December 31, 2023, the Company sold 17,571,926 shares of common stock through its At-The-Market (ATM) facility, managed by Ascendiant Capital Markets, LLC, at an average price of $1.45. The Company received gross proceeds of $25,496,364 and paid a fee of three percent (3%) to Ascendiant Capital Markets, LLC.

| Stock Based Compensation | 12 Months Ended Dec. 31, 2023 |
| --- | --- |
| **Stock Based Compensation [Abstract]** | |
| Stock Based Compensation | Note 10 – Stock Based Compensation |

***Incentive Plans and Options***

The Company's 2019 Equity and Incentive Plan, as amended in 2021 (the "2019 Plan") enabled the Company to grant incentive stock options or nonqualified stock options and other equity awards to employees, directors and consultants of the Company up to a total of 3,000,000 shares of common stock. All 3,000,000 shares available for issue under the 2019 Plan have been issued.

On July 5, 2022, the Board of Directors adopted the Company's 2022. Equity and Incentive Plan (the "2022 Plan") which provides for the issuance of up to 16,000,000 shares of the Company's common stock. The 2022 Plan was approved by a majority of the shareholders in September 2022. Per the 2022 Plan, the 2022 Plan reserves increased automatically by 1,000,000 shares on January 1, 2023, providing for a total issuance of up to 17,000,000 shares of common stock. As of December 31, 2023, a total of 13,595,929 shares and options were issued and outstanding under the 2022 Plan.

The following table presents the assumptions used in the Black-Scholes option-pricing model to determine the grant-date fair value of stock options granted:

| | Twelve Months Ended December 31, 2023 | Twelve Months Ended December 31, 2022 |
| --- | --- | --- |
| Exercise price | $ 0.85 – 1.84 | $ 1.67 – 2.61 |
| Risk-free interest rate | 4.7 – 5.0% | 0.6 – 4.0% |
| Expected volatility | 194 – 214% | 336 – 369% |
| Expected dividend yield | 0% | 0% |
| Expected life of options (in years) | 5.0 | 5.0 |

The following table summarizes the Company's option activity since December 31, 2022:

| | Weighted Average Number of Shares | Weighted Average Exercise Price | Contractual Term (in years) |
| --- | --- | --- | --- |
| Outstanding as of December 31, 2022 | 9,601,237 | $ 3.42 | 4.0 |
| Granted | 5,340,000 | 1.38 | 5.0 |
| Exercised | - | - | - |
| Forfeited | (1,097,738) | 3.32 | - |
| Outstanding as of December 31, 2023 | 13,843,499 | $ 4.02 | 3.7 |
| Vested as of December 31, 2023 | 7,978,074 | $ 3.39 | 3.3 |

The following table summarizes the exercise price range as of December 31, 2023:

| Exercise Price | Outstanding Options | Exercisable Options |
| --- | --- | --- |
| $ 0.85 | 120,000 | - |
| $ 0.86 | 30,000 | 10,000 |
| $ 0.94 | 30,000 | - |
| $ 1.00 | 138,970 | 138,970 |
| $ 1.16 | 30,000 | - |

| | | | |
|---|---|---|---|
| $ | 1.18 | 300,000 | 100,000 |
| $ | 1.19 | 55,000 | - |
| $ | 1.20 | 87,500 | - |
| $ | 1.28 | 50,000 | - |
| $ | 1.33 | 25,000 | - |
| $ | 1.35 | 3,780,000 | - |
| $ | 1.44 | 150,000 | 72,224 |
| $ | 1.45 | 225,000 | 225,000 |
| $ | 1.51 | 5,000 | - |
| $ | 1.52 | 60,000 | - |
| $ | 1.67 | 16,666 | 16,666 |
| $ | 1.74 | 25,000 | - |
| $ | 1.84 | 567,500 | 377,500 |
| $ | 1.95 | 180,000 | 180,000 |
| $ | 2.37 | 4,911,528 | 4,396,819 |
| $ | 2.40 | 1,010,001 | 720,001 |
| $ | 2.56 | 287,500 | 95,834 |
| $ | 2.61 | 150,000 | 105,560 |
| $ | 3.58 | 65,000 | 65,000 |
| $ | 5.69 | 12,500 | 12,500 |
| $ | 5.70 | 25,000 | 16,666 |
| $ | 6.49 | 38,334 | 33,334 |
| $ | 6.85 | 650,000 | 650,000 |
| $ | 7.00 | 18,000 | 12,000 |
| $ | 8.85 | 100,000 | 66,666 |
| $ | 10.00 | 650,000 | 650,000 |
| $ | 11.51 | 50,000 | 33,334 |
| | | 13,843,499 | 7,978,074 |

The weighted average grant-date fair value of stock options granted during the years ended December 31, 2023 and 2022 was $1.38 per share and $2.38 per share, respectively.

***Stock-based compensation***

The Company recorded stock-based compensation expense related to common stock options and restricted common stock in the following expense categories of its consolidated statements of operations and comprehensive loss:

| | Twelve Months Ended December 31, | |
|---|---|---|
| | **2023** | **2022** |
| Research and development | 3,660,068 | 2,758,465 |
| General and administrative | 5,062,698 | 15,003,002 |
| Total stock-based compensation | $8,722,766 | $17,761,467 |

As of December 31, 2023, total unrecognized compensation cost related to common stock options was $6.0 million, which is expected to be recognized over a period of 4.0 years.

***Warrants***

In connection with a restricted stock units offering in June 2020, the Company issued warrants in August 2020 to purchase 171,000 shares of the Company's common stock, at an exercise price of $2.00. Those warrants are exercisable for five years from the date of issuance. In connection with an offering of Series A Convertible Preferred stock in November 2021, the Company issued warrants to purchase 1,545,459 shares of the Company's common stock at an exercise price of $7.00. Those warrants were exercisable for two years from the date of issuance and have now expired. In connection with the QPhoton merger on June 16, 2022, the Company issued warrants to purchase 6,325,503 shares of the Company's common stock at an exercise price of $0.0001. Those warrants are exercisable when and if stock options and warrants issued and outstanding as of June 15, 2022, are exercised. The following table summarizes the warrants outstanding at December 31, 2023:

| Issuance Date | Expiration Date | Exercise Price | Issued | Exercised | Forfeited / Canceled | Warrants Outstanding |
|---|---|---|---|---|---|---|
| August 18, 2020 | August 18, 2025 | $ 2.00 | 171,000 | (150,000) | - | 21,000 |
| November 15, 2021 | November 15, 2023 | $ 7.00 | 1,545,459 | | (1,545,459) | - |
| June 16, 2022 | May 9, 2027 | $ 0.0001 | 6,325,503 | - | (3,309,433) | 3,016,070 |

| Related Party Transactions | 12 Months Ended Dec. 31, 2023 |
| --- | --- |
| **Related Party Transactions [Abstract]** | |
| Related Party Transactions | Note 11 – Related Party Transactions<br><br>There were no related party transactions during the twelve-month periods ended December 31, 2023 and December 31, 2022. |

| Operating Leases | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Operating Leases [Abstract]** | |
| Operating Leases | Note 12 – Operating Leases: |

Note 12 – Operating Leases:

The Company has use of space in five different locations, Hoboken, NJ, Tempe, AZ Leesburg, VA, Arlington, VA, and Minneapolis, MN, under lease or membership agreements, which expire at various dates through October 31, 2028. The Company's leases do not provide an implicit rate, and therefore the Company uses its incremental borrowing rate as the discount rate when measuring operating lease assets and liabilities. The incremental borrowing rate represents an estimate of the interest rate the Company would incur at lease commencement to borrow an amount equal to the lease payments on a collateralized basis over the term of a lease.

The table below reconciles the undiscounted future minimum lease payments under these operating leases to the total operating lease liabilities recognized on the consolidate balance sheet as of December 31, 2023:

| Year | Lease Payments Due |
|---|---|
| 2024 | $ 338,319 |
| 2025 | $ 576,078 |
| 2026 | $ 591,551 |
| 2027 | $ 515,981 |
| 2028 | $ 191,008 |
| Less: imputed Interest | $ (638,740) |
| Present Value of operating lease liabilities | $1,619,197 |

Other information related to operating lease liabilities consists of the following:

| | Year Ended December 31, | |
|---|---|---|
| | 2023 | 2022 |
| Cash paid for operating lease liabilities | $ 411,700 | $ 125,238 |
| Weighted average remaining lease term in years | 3.7 | 4.7 |
| Weighted average discount rate | 10% | 10% |

| License Agreement – Stevens Institute of Technology | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **License Agreement – Stevens Institute of Technology [Abstract]** | |
| License Agreement – Stevens Institute of Technology | Note 13 – License Agreement – Stevens Institute of Technology<br><br>Effective December 17th, 2020, QPhoton signed a License Agreement with the Stevens Institute. The License Agreement enables the Company to commercially use technology such as licensed patents, licensed patent applications and licensed "Know-How". QPhoton is also able to issue sublicenses for the technology under the agreement. The agreement is effective until the later of: (i) the 30-year anniversary of the effective date, or (ii) the expiration of the licensed patent or licensed patent application that is last to expire. As part of the merger of the Company and QPhoton, the Stevens License Agreement was assigned to the Company.<br><br>During the term of the agreement and prior to any commercialization or sublicensing of the technology by the Company, the Company shall be required to submit annual reports to the Stevens Institute reporting on all research, development, and efforts toward commercialization and/or sublicensing made during the year. Once any commercialization and/or sublicensing has been initiated, the Company shall deliver quarterly reports to the Stevens Institute reporting on the revenue received by the Company, all sublicenses derived from the sale of licensed products, and the net sales price associated with each transaction. The Company will be responsible for reimbursing Stevens for any costs associated with the prosecution and maintenance of the licensed patents and licensed patent applications moving forward.<br><br>*Consideration for the agreement*<br><br>As consideration for the license and other rights granted under the agreement, QPhoton agreed to pay the following: (i) $35,000 within 30 days of execution of the agreement, (ii) $28,000 within 30 days of each annual anniversary of the effective date, (iii) equity in the Company equivalent to nine percent of the membership units of the Company within 30 days of the execution of the agreement, and (iv) royalties of 3.5% of the Net Sales Price of each licensed product sold or licensed by the Company during the quarter then-ended, for which it also received payment, concurrent with the delivery of the relevant quarterly report.<br><br>As of December 31, 2023 the Company has begun to commercialize some of the licensed technology, though the Company has not recorded any related revenue and hence has not incurred any royalty expenses payable to the Stevens Institute. |

| Subsequent Events | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Subsequent Events [Abstract]** | |
| Subsequent Events | Note 14 – Subsequent Events: |

Effective January 31, 2024 the Board terminated Mr. Liscouski as CEO and President, without "Cause" as such term is defined in the Liscouski Employment Agreement. Subject to the signing of a separation agreement which will contain a release in favor of the Company, Mr. Liscouski will receive (i) the payments and benefits detailed in Sections 6.2 and 6.4 of the Liscouski Employment Agreement and (ii) 168,000 shares of restricted common stock that are owed to Mr. Liscouski pursuant to his 2022 performance review. Mr. Liscouski will continue to serve the Company in his capacity as Chairman of the Board and Chairman of the Risk Committee. Starting on February 1, 2024, Mr. Liscouski will be paid a cash director fee of $12,500 per month for his service as Chairman.

Chief Executive Officer Appointment

In connection with the succession planning for the role of CEO and President, on the Effective Date, the Board promoted Dr. William J. McGann, the Company's Chief Operating Officer and Chief Technology Officer, to the positions of CEO and President (the "CEO Appointment"), effective February 1, 2024. The terms of the employment agreement entered into between the Company and Dr. McGann, dated January 3, 2022 (the "McGann Employment Agreement"), shall remain the same. The Company plans to amend the McGann Employment Agreement in the coming weeks to indicate the change of title. Dr. McGann will continue to be paid an annual salary of $400,000 per his employment agreement.

On January 18, 2024, the Company announced that two of its engineers, Dr. Yuping Huang, QCi's Chief Quantum Officer and Dr. Lac Thi Thanh Nguyen, the Quantum Technology Lead for QCi's Cybersecurity platform, have received the 44th Edison-Patent Award for their pathbreaking contributions to quantum-secured privacy-preserving computations. This recognition underscores their work in addressing cybersecurity threats through a revolutionary method of quantum authentication and private-data computing that can process and verify information without sharing that information. The patent, which was granted approval in the United States and over 40 other countries during 2023, addresses a method for quantum authentication and zero-knowledge proof for network security that uses fundamental quantum physics to protect passwords, private information, and online assets without ever disclosing private data in process, either with each other or with external parties or computing processes. This unconditional security fills a critical security breach vulnerability by offering a way to effectively secure identity authentication, data mining, and digital assets in an untrusted environment. Designed to be compatible with existing fiber-based communication infrastructure and satellite-based networks, the patent is a broad-use award based on a fundamental methodology for secure networking among multiple parties, uniquely combining quantum authentication and encryption in a single step and thereby safeguarding an entire network at all points of slippage.

On February 14, 2024 the Company announced that it has been awarded a fourth subcontract with NASA to study sun noise reduction in LIDAR images using the EQC. The prime contractor for this award is Analytical Mechanics Associates. This technology would be an effective and affordable method for NASA to measure the unique physical properties of clouds and aerosols to prepare for space missions at any time of day and offers a superior alternative to the traditional noise reduction methodologies that require a larger laser and restrictive bandwidth filtering at greater size, weight, power and cost.

On February 29, 2024, the Company announced the release of the first quantum photonic computing machine, Dirac-3. At a disruptive price starting at $300,000, the Dirac-3 is an EQC that is an optimization machine designed to address complex problems with larger numbers of variables that require unconventional solutions using nonlinear quantum optics. Dirac is the first and only system of its type to natively solve integer problems using quantum digits (qudits), each qudit having a dimension of 200 discrete modes. This unique capability, through all-to-all connectivity, expands the use of quantum technology far beyond the current quantum computing devices on the market that use quantum bits. The Dirac system is designed for on premises installation, is rack mountable, operates at ambient temperature, requires no special infrastructure for daily use, and utilizes less than 80 Watts of energy. The Company's initial sales focus will be across the healthcare, financial services, supply chain, energy management, autonomous vehicle, and molecular modeling industries.

On January 31, 2024, BV Advisory Partners, LLC, and its chief executive officer, Keith Barksdale (the "BV Defendants"), alleged stockholders of and claimants against the Company, filed a motion for reconsideration of his original 2023 motion to dismiss. The motion and our opposition were argued before the Superior Court of New Jersey (the "NJ Court") on February 15, 2024. On March 7, 2024, the NJ Court issued an order, granting the BV Defendant's motion dismissing the Company's case on procedural grounds because, according to the NJ Court, the Company can assert its claims. The Company has 45 days in which to file an appeal and is evaluating whether it should file the claims in Delaware or appeal the NJ Court's ruling.

From January 1, 2024, through March 1, 2024, the Company repaid $2,094,378 of principal and accrued interest on the Streeterville Unsecured Note, for a cumulative redemption amount of $9,094,378. As of March 1, 2024, the Company has fully repaid the Streeterville Unsecured Note.

On March 19, 2024, the "Company entered into a Redemption and Waiver Agreement (the "Redemption Agreement") with the holders (the "Series A Holders") of its Series A Convertible Preferred Stock (the "Preferred Stock"). Pursuant to the Redemption Agreement, the Company agreed to redeem all outstanding shares of the Preferred Stock for an aggregate cash purchase price of $8,195,000.00, or $5.50 per share, at its sole discretion, in eighteen (18) monthly payments (each a "Monthly Redemption Threshold" payment), which may be accelerated at the Company's sole discretion. In addition, the Series A Holders agreed to waive (the "Waivers"), on a month-by-month basis following each monthly payment, certain rights granted to them in (i) the Preferred Stock Certificate of Designation (the "Preferred Stock COD"), including for the accrual and payment of accrued and future dividends; and (ii) the Preferred Stock Securities Purchase Agreement (the "Preferred Stock SPA"). In the event the Company opts to not make a Monthly Redemption Threshold payment, the Waivers are forfeited and the terms revert to those detailed in the Preferred Stock COD and Preferred Stock SPA. As of March 28, 2024, the Company has redeemed 82,783 shares of Preferred Stock for an aggregate $455,307 in cash paid to the Series A Holders. The issued and outstanding balance of Preferred Stock as of March 28, 2024 is 1,407,221.

On March 26, 2024, the Company received a notice from the Listing Qualifications Staff of Nasdaq that the Company had regained compliance with Listing Rule 5550(a)(2) of the Nasdaq Listing Rules, as the closing bid price of the Company's common stock had been at $1.00 per share or greater during the prior 10 consecutive business days.

There are no other events of a subsequent nature that in management's opinion are reportable.

| Pay vs Performance Disclosure - USD ($) | 12 Months Ended Dec. 31, 2023 | Dec. 31, 2022 |
|---|---|---|
| **Pay vs Performance Disclosure** | | |
| Net Income (Loss) | $ (29,730,672) | $ (38,593,700) |

| Insider Trading Arrangements | 3 Months Ended Dec. 31, 2023 |
|---|---|
| **Trading Arrangements, by Individual** | |
| Rule 10b5-1 Arrangement Adopted | false |
| Non-Rule 10b5-1 Arrangement Adopted | false |
| Rule 10b5-1 Arrangement Terminated | false |
| Non-Rule 10b5-1 Arrangement Terminated | false |

| Accounting Policies, by Policy (Policies) | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Significant Accounting Policies [Abstract]** | |
| Basis of Presentation and Principles of Consolidation | Basis of Presentation and Principles of Consolidation:<br>The Company prepares its consolidated financial statements in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") as determined by the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC"), including ASC 810, *Consolidation*. The consolidated financial statements include the accounts of the Company and its controlled subsidiaries. All intercompany transactions and balances have been eliminated in consolidation.<br>The Company's fiscal year end is December 31.<br>The accompanying financial statements have been prepared in conformity with U.S. GAAP, which contemplate continuation of the Company as a going concern for a period of one year from the issuance of these financial statements. For the year ended December 31, 2023, the Company had $358,047 in revenues, a net loss of $29,730,672 and had net cash used in operations of $19,940,521. Additionally, as of December 31, 2023, the Company had a working capital deficit of $1,437,889 and an accumulated deficit of $149,718,453. It is management's opinion that these conditions raise substantial doubt about the Company's ability to continue as a going concern for a period of twelve months from the date of the issuance of these financial statements.<br><br>The financial statements do not include any adjustments to reflect the possible future effect on the recoverability and classification of assets or the amounts and classifications of liabilities that may result from the outcome of this uncertainty.<br>Successful completion of the Company's development program and, ultimately, the attainment of profitable operations are dependent upon future events, including obtaining adequate financing to fulfill its development activities, acceptance of the Company's patent applications and ultimately achieving a level of sales adequate to support the Company's cost structure. However, there can be no assurances that the Company will be able to secure additional equity investments or achieve an adequate sales level. |
| Cash and Cash Equivalents | Cash and Cash Equivalents<br>Highly liquid investments with a maturity of three months or less when purchased are considered to be cash equivalents. As of December 31, 2023 and 2022, there were no cash equivalents. The Company maintains its cash in deposit accounts with high quality financial institutions which, at times, may exceed federally insured limits. The Company has not experienced any losses on these deposits and believes it is not exposed to significant credit risk on cash. |
| Use of Estimates | Use of Estimates:<br>These financial statements have been prepared in accordance with accounting principles generally accepted in the United States which requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Some of the more significant estimates required to be made by management include the determination of reserves for accounts receivable, stockholders' equity-based transactions and liquidity assessment. Actual results may differ from these estimates. |
| Revenue | Revenue<br>The Company recognizes revenue in accordance with ASC 606 – *Revenue from Contracts with Customers*, by analyzing contracts with its customers using a five-step approach:<br>1. Identify the contract<br>2. Identify the performance obligations<br>3. Determine the transaction price<br>4. Allocate the transaction price to the performance obligations<br>5. Recognize revenue when performance obligations are satisfied |

The Company recognized a small amount of revenue in 2022 and in 2023 the recognized revenue primarily derived from contracts to perform professional services. Revenue from time and materials-based contracts is recognized as the direct hours worked during the period times the contractual hourly rate, plus direct materials and other direct costs as appropriate, plus negotiated materials handling burdens, if any. Revenue from units-based contracts is recognized as the number of units delivered or performed during the period times the contractual unit price. Revenue from fixed price contracts is recognized as work is performed with estimated profits recorded on a percentage of completion basis. The Company has no cost-plus type contracts at this time.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable principally consists of amounts due from customers for work performed on contracts. The Company records accounts receivable at their net realizable value. Periodically the Company evaluates its accounts receivable to establish an allowance for doubtful accounts, when deemed necessary, based on the history of past write-offs, collections and current credit conditions. During 2022 certain accounts receivable, attributable to a single customer, were determined not to be collectible and management recorded an allowance for doubtful accounts and wrote off the uncollectible receivables against that account. The accounts receivable as of December 31, 2023 are considered fully collectible and thus management has not recorded an allowance for doubtful accounts.

Operating Leases - ASC 842

Operating Leases - ASC 842

The Company implemented FASB Accounting Standards Codification, or ASC, Topic 842, Leases ("ASC 842"). The Company determines if an arrangement is a lease at inception. Operating lease right-of-use ("ROU") assets are included in right-of-use assets, net on the consolidated balance sheets. The current and long-term components of operating lease liabilities are included in the current operating lease liabilities and noncurrent operating lease liabilities, respectively, on the consolidated balance sheets.

Operating lease ROU assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term. As most of the Company's leases do not provide an implicit rate, the Company uses an incremental borrowing rate based on the information available at the commencement date in determining the present value of future payments. Certain leases may include options to extend or terminate the lease. Lease expense for minimum lease payments is recognized on a straight-line basis over the lease term. Leases with an initial term of 12 months or less are not recorded in the balance sheet. All of our operating leases are comprised of office space leases, and as of December 31, 2023 and 2022, we had no finance leases.

Business Combinations

Business Combinations

We account for business combinations under the acquisition method of accounting. This method requires the recording of acquired assets and assumed liabilities at their acquisition date fair values. The excess of the purchase price over the fair value of assets acquired and liabilities assumed is recorded as goodwill. Results of operations related to business combinations are included prospectively beginning with the date of acquisition and transaction costs related to business combinations are recorded withing general and administrative expenses.

Property and Equipment

Property and Equipment

Property and equipment are stated at cost or contributed value. Depreciation of furniture, software and equipment is calculated using the straight-line method over their estimated useful lives, and leasehold improvements are amortized on a straight-line basis over the shorter of their estimated useful lives or the lease term. The cost and related accumulated depreciation of equipment retired or sold are removed from the accounts and any differences between the undepreciated amount and the proceeds from the sale are recorded as a gain or loss on sale of equipment. Maintenance and repairs are charged against expense as incurred.

Research and Development Costs

Research and Development Costs

Research and development costs include costs directly attributable to the conduct of research and development programs, including the cost of services provided by outside contractors, acquiring work-in-progress intellectual property, development, and mandatory compliance fees and contractual obligations. All costs associated with research and development are expensed as incurred.

Stock Based Compensation

Stock Based Compensation

The Company has adopted Accounting Standards Update ("ASU") No. 2018-07, *Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting*. ASU 2018-07 expands the scope of ASC 718, *Share-Based Payment,* to include share-based payment transactions for acquiring goods and services from nonemployees. An entity should apply the requirements of ASC 718 to nonemployee awards except for specific guidance on inputs to an option pricing model and the attribution of cost. ASU 2018-07 specifies that Topic 718 applies to all share-based payment transactions in which a grantor acquires goods or services to be used or consumed in a grantor's own operations by issuing share-based payment awards, and that ASC 718 does not apply to share based payments used to effectively provide (1) financing to the issuer or (2) awards granted in conjunction with selling goods or services to customers as part of a contract accounted for under ASC 606, *Revenue from Contracts with Customers*

Stock-based compensation expense is recorded for all option grants and awards of non-vested stock and recognized in the financial statements based on the grant date fair value of the awards granted. Stock-based compensation is recognized as expense over the requisite service period, which generally represents the vesting period. The Company calculates the fair value of stock options using the Black-Scholes option-pricing model at grant date. The Company estimates a rate of forfeiture when recording stock option expense. The assumptions and estimates involved in the Black-Scholes model require significant judgement and any changes could have a material impact in the determination of stock-based compensation expense

Net Loss Per Share

Net Loss Per Share:

Net loss per share is based on the weighted average number of common shares and common share equivalents outstanding during the period.

| Business Combinations (Tables) | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Business Combinations [Abstract]** | |
| Schedule of Adjusted Acquisition Date Fair Values of Assets Acquired and Liabilities Assumed By the Company | The following table summarizes the adjusted acquisition date fair values of assets acquired and liabilities assumed by the Company, including the final results of the analysis performed by the Third-Party Valuation Expert for the intangibles: |

| | |
|---|---|
| Purchase price, net of cash acquired | $81,939,939 |
| Less | |
| Prepaid expenses | 16,109 |
| Fixed assets at cost | 116,315 |
| Security deposits | 97,768 |
| Non-compete agreement with founder | 2,722,000 |
| Website domain, trade name and trademark | 969,000 |
| Technology and licensed patents | 12,200,000 |
| Accounts payable and other current liabilities | (2,888,246) |
| Goodwill | $68,706,993 |

| Intangible Assets and Goodwill (Tables) | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Intangible Assets and Goodwill [Abstract]** | |
| Schedule of Amounts Related to Intangible Assets | As a result of the merger with QPhoton, the Company has the following amounts related to intangible assets: |

| Amortizable Intangible Assets | Intangible Assets as of: December 31, 2023 | Intangible Assets as of: December 31, 2022 | Amortizable Life |
|---|---|---|---|
| Customer relationships | $ - | $10,000,000 | 3 years |
| Non-compete agreement with founder | 2,722,000 | 500,000 | 3 years |
| Website domain name and trademark | 969,000 | 1,000,000 | 5 years |
| Employment agreements | - | 2,250,000 | 2 years |
| Technology and licensed patents | 12,200,000 | 11,722,220 | 10 years |
| Less: accumulated amortization | (4,502,985) | (3,248,495) | |
| Net intangible assets | $11,388,015 | $22,223,725 | |

Schedule of Future Amortization Expense

The Company expects future amortization expense to be the following:

| | Amortization |
|---|---|
| 2024 | $ 2,843,991 |
| 2025 | 2,352,518 |
| 2026 | 1,936,657 |
| 2027 | 1,831,682 |
| 2028 | 1,742,857 |
| Thereafter (2029-2032) | 680,310 |
| Total | $ 11,388,015 |

Schedule of Changes in Goodwill

The following table provides a summary of the changes in goodwill for the years ended December 31, 2023 and 2022:

| | December 31, 2023 | December 31, 2022 |
|---|---|---|
| Goodwill, at beginning of year | 59,125,773 | $ - |
| Goodwill additions | 9,581,220 | 59,125,773 |
| Goodwill deductions or impairment | 8,347,126 | - |
| Goodwill, at end of year | $60,359,867 | $59,125,773 |

| Income Taxes (Tables) | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Income Taxes [Abstract]** | |
| Schedule of Tax Basis of Existing Assets and Liabilities | Under the asset and liability method, deferred income taxes are recognized for the tax consequences of "temporary differences" by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts and the tax basis of existing assets and liabilities. |

| | December 31, | |
|---|---|---|
| | 2023 | 2022 |
| Net operating loss carry-forwards | $ 14,528,229 | $ 9,703,519 |
| Valuation allowance | (14,528,229) | (9,703,519) |
| Net deferred tax assets | $ - | $ - |

| Property and Equipment (Tables) | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Property and Equipment [Abstract]** | |
| Schedule of Property and Equipment | (table below) |
| Schedule of Estimated Useful Life | (text and table below) |

**Schedule of Property and Equipment**

| Classification | December 31, 2023 | December 31, 2022 |
|---|---|---|
| Hardware & Equipment | $ 3,092,664 | $ 1,026,829 |
| Software | 49,275 | 18,889 |
| Total cost of property and equipment | 3,141,939 | 1,045,718 |
| Accumulated depreciation | 272,281 | 70,549 |
| Property and equipment, net | $ 2,869,658 | $ 975,169 |

**Schedule of Estimated Useful Life**

The Company acquired $2,096,221 of property and equipment during the twelve months ended December 31, 2023. It is the Company's policy to capitalize purchases of property and equipment with a cost of $2,500 or more that benefit future periods.

| | Estimated Useful Life (Years) |
|---|---|
| Computer and laboratory equipment | 5 |
| Network equipment | 4 |
| Minor equipment | 3 |
| Furniture and fixtures | 7 |
| Software | 3 |
| Leasehold improvements | 5 |

| Stock Based Compensation (Tables) | 12 Months Ended Dec. 31, 2023 |
|---|---|
| **Stock Based Compensation [Abstract]** | |
| Schedule of Grant-Date Fair Value of Stock Options Granted | The following table presents the assumptions used in the Black-Scholes option-pricing model to determine the grant-date fair value of stock options granted: |
| Schedule of Option Activity | The following table summarizes the Company's option activity since December 31, 2022: |
| Schedule of Exercise Price Range | The following table summarizes the exercise price range as of December 31, 2023: |

The following table presents the assumptions used in the Black-Scholes option-pricing model to determine the grant-date fair value of stock options granted:

| | Twelve Months Ended December 31, | |
|---|---|---|
| | 2023 | 2022 |
| Exercise price | $ 0.85 – 1.84 | $ 1.67 – 2.61 |
| Risk-free interest rate | 4.7 – 5.0% | 0.6 – 4.0% |
| Expected volatility | 194 – 214% | 336 – 369% |
| Expected dividend yield | 0% | 0% |
| Expected life of options (in years) | 5.0 | 5.0 |

The following table summarizes the Company's option activity since December 31, 2022:

| | Weighted Average Number of Shares | Weighted Average Exercise Price | Contractual Term (in years) |
|---|---|---|---|
| Outstanding as of December 31, 2022 | 9,601,237 | $ 3.42 | 4.0 |
| Granted | 5,340,000 | 1.38 | 5.0 |
| Exercised | - | - | - |
| Forfeited | (1,097,738) | 3.32 | - |
| Outstanding as of December 31, 2023 | 13,843,499 | $ 4.02 | 3.7 |
| Vested as of December 31, 2023 | 7,978,074 | $ 3.39 | 3.3 |

The following table summarizes the exercise price range as of December 31, 2023:

| Exercise Price | Outstanding Options | Exercisable Options |
|---|---|---|
| $ 0.85 | 120,000 | - |
| $ 0.86 | 30,000 | 10,000 |
| $ 0.94 | 30,000 | - |
| $ 1.00 | 138,970 | 138,970 |
| $ 1.16 | 30,000 | - |
| $ 1.18 | 300,000 | 100,000 |
| $ 1.19 | 55,000 | - |
| $ 1.20 | 87,500 | - |
| $ 1.28 | 50,000 | - |
| $ 1.33 | 25,000 | - |
| $ 1.35 | 3,780,000 | - |
| $ 1.44 | 150,000 | 72,224 |
| $ 1.45 | 225,000 | 225,000 |
| $ 1.51 | 5,000 | - |
| $ 1.52 | 60,000 | - |
| $ 1.67 | 16,666 | 16,666 |
| $ 1.74 | 25,000 | - |
| $ 1.84 | 567,500 | 377,500 |
| $ 1.95 | 180,000 | 180,000 |
| $ 2.37 | 4,911,528 | 4,396,819 |
| $ 2.40 | 1,010,001 | 720,001 |
| $ 2.56 | 287,500 | 95,834 |
| $ 2.61 | 150,000 | 105,560 |
| $ 3.58 | 65,000 | 65,000 |
| $ 5.69 | 12,500 | 12,500 |

| | | | |
|---|---|---|---|
| $ | 5.70 | 25,000 | 16,666 |
| $ | 6.49 | 38,334 | 33,334 |
| $ | 6.85 | 650,000 | 650,000 |
| $ | 7.00 | 18,000 | 12,000 |
| $ | 8.85 | 100,000 | 66,666 |
| $ | 10.00 | 650,000 | 650,000 |
| $ | 11.51 | 50,000 | 33,334 |
| | | 13,843,499 | 7,978,074 |

Schedule of Stock-based Compensation Expense

The Company recorded stock-based compensation expense related to common stock options and restricted common stock in the following expense categories of its consolidated statements of operations and comprehensive loss:

| | Twelve Months Ended December 31, | |
|---|---|---|
| | 2023 | 2022 |
| Research and development | 3,660,068 | 2,758,465 |
| General and administrative | 5,062,698 | 15,003,002 |
| Total stock-based compensation | $8,722,766 | $17,761,467 |

Schedule of Warrants Outstanding

The following table summarizes the warrants outstanding at December 31, 2023:

| Issuance Date | Expiration Date | Exercise Price | Issued | Exercised | Forfeited / Canceled | Warrants Outstanding |
|---|---|---|---|---|---|---|
| August 18, 2020 | August 18, 2025 | $ 2.00 | 171,000 | (150,000) | - | 21,000 |
| November 15, 2021 | November 15, 2023 | $ 7.00 | 1,545,459 | | (1,545,459) | - |
| June 16, 2022 | May 9, 2027 | $ 0.0001 | 6,325,503 | - | (3,309,433) | 3,016,070 |

## Operating Leases (Tables)

**12 Months Ended Dec. 31, 2023**

**Operating Leases [Abstract]**

Schedule of Undiscounted Future Minimum Lease Payments under these Operating Lease

The table below reconciles the undiscounted future minimum lease payments under these operating leases to the total operating lease liabilities recognized on the consolidate balance sheet as of December 31, 2023:

| Year | Lease Payments Due |
|---|---|
| 2024 | $ 338,319 |
| 2025 | $ 576,078 |
| 2026 | $ 591,551 |
| 2027 | $ 515,981 |
| 2028 | $ 191,008 |
| Less: imputed Interest | $ (638,740) |
| Present Value of operating lease liabilities | $1,619,197 |

Schedule of Other Information Related to Operating Lease Liabilities

Other information related to operating lease liabilities consists of the following:

| | Year Ended December 31, | |
|---|---|---|
| | 2023 | 2022 |
| Cash paid for operating lease liabilities | $411,700 | $125,238 |
| Weighted average remaining lease term in years | 3.7 | 4.7 |
| Weighted average discount rate | 10% | 10% |

| Nature of the Organization and Business (Details) | Jul. 20, 2018 $ / shares |
|---|---|
| Corporate History [Member] | |
| **Nature of the Organization and Business [Line Items]** | |
| Common stock, par value | $ 0.0001 |

| Significant Accounting Policies (Details) - USD ($) | 12 Months Ended | |
|---|---|---|
| | Dec. 31, 2023 | Dec. 31, 2022 |
| **Significant Accounting Policies [Line Items]** | | |
| Revenues | $ 358,047 | $ 135,648 |
| Net loss | (29,730,672) | (38,593,700) |
| Net cash used in operations | (19,940,521) | (17,240,117) |
| Working capital deficit | 1,437,889 | |
| Accumulated deficit | $ (149,718,453) | $ (119,987,781) |
| Initial term | 12 months | |

| Business Combinations (Details) | Apr. 01, 2022 USD ($) | 12 Months Ended Dec. 31, 2023 USD ($) $ / shares shares | Dec. 31, 2022 USD ($) $ / shares | Jun. 06, 2023 | Mar. 01, 2023 | Jun. 16, 2022 $ / shares | Feb. 18, 2022 USD ($) |
|---|---|---|---|---|---|---|---|
| **Business Combinations [Line Items]** | | | | | | | |
| Common stock par value (in Dollars per share) \| $ / shares | | $ 0.0001 | $ 0.0001 | | | | |
| Warrants purchased (in Shares) \| shares | | 7,028,337 | | | | | |
| Transaction amount | | $ 83,083,868 | | | | | |
| Goodwill attributable to the assembled | | 68,706,993 | | | | | |
| Intangible asset amortization expense | | 1,254,490 | $ 3,248,495 | | | | |
| Net Loss before the adjustment | | 31,320,173 | | | | | |
| Net of error correction | | $ 68,700,000 | | | | | |
| Principal balance | $ 1,250,000 | | | | | | |
| Loans assumed | $ 2,500,000 | | | | | | |
| Percentage of interest rate | 15.00% | | | | | | 6.00% |
| Extension year | | | | | 1 year | | |
| Measurement Input, Maturity [Member] | | | | | | | |
| **Business Combinations [Line Items]** | | | | | | | |
| Warrants measurement | | 5 | | | | | |
| Measurement Input, Risk Free Interest Rate [Member] | | | | | | | |
| **Business Combinations [Line Items]** | | | | | | | |
| Warrants measurement | | 2.8 | | | | | |
| Measurement Input, Price Volatility [Member] | | | | | | | |
| **Business Combinations [Line Items]** | | | | | | | |
| Warrants measurement | | 3.54 | | | | | |
| Measurement Input, Exercise Price [Member] | | | | | | | |
| **Business Combinations [Line Items]** | | | | | | | |
| Warrants measurement | | 0.00001 | | | | | |
| Replacement cost method | | | | | | | |
| **Business Combinations [Line Items]** | | | | | | | |
| Identifiable intangible value | | $ 2,250,000 | | | | | |
| Goodwill attributable to the assembled | | 1,912,000 | | | | | |
| Non-Compete Agreement [Member] | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Business Combinations [Line Items]** | | | | | |
| Fair value | 2,722,000 | | | | |
| Intangible assets | 2,222,000 | | | | |
| Estimate of intangible assets | $ 500,000 | | | | |
| Warrant [Member] | | | | | |
| **Business Combinations [Line Items]** | | | | | |
| Warrants purchased (in Shares) \| shares | 7,028,337 | | | | |
| Customer Relationships [Member] | | | | | |
| **Business Combinations [Line Items]** | | | | | |
| Customer relationships | $ 10,000,000 | | | | |
| Estimate of intangible assets | | 10,000,000 | | | |
| Patented Technology [Member] | | | | | |
| **Business Combinations [Line Items]** | | | | | |
| Intangible assets | 477,780 | | | | |
| Estimate of intangible assets | 11,722,220 | | | | |
| Fair value of attributable to technology and licensed patents | 12,200,000 | | | | |
| QPhoton [Member] | | | | | |
| **Business Combinations [Line Items]** | | | | | |
| Intangible assets | 31,000 | | | | |
| Estimate of intangible assets | 1,000,000 | | | | |
| Fair value of attributable to trade name and trademark | $ 969,000 | | | | |
| Series of Individually Immaterial Business Acquisitions [Member] | | | | | |
| **Business Combinations [Line Items]** | | | | | |
| Share price (in Dollars per share) \| $ / shares | | | | $ 2.27 | |
| Intangible asset amortization expense | | $ 1,589,501 | | | |
| Maximum [Member] | | | | | |
| **Business Combinations [Line Items]** | | | | | |
| Stock conversion ratio | 10 | | | | |
| Percentage of interest rate | | | 15.00% | | |
| Minimum [Member] | | | | | |
| **Business Combinations [Line Items]** | | | | | |
| Stock conversion ratio | 1 | | | | |
| Percentage of interest rate | | | 10.00% | | |
| Purchase Agreement [Member] | | | | | |
| **Business Combinations [Line Items]** | | | | | |
| Promissory note principal amount | | | | | $ 1,250,000 |
| Series B Convertible Preferred [Member] | | | | | |
| **Business Combinations [Line Items]** | | | | | |
| Converted shares (in Shares) \| shares | 2,377,028 | | | | |

| | | |
|---|---|---|
| Purchase price approximately | $ 83,100,000 | |
| Series B Convertible Preferred [Member] \| Common Stock [Member] | | |
| **Business Combinations [Line Items]** | | |
| Converted shares (in Shares) \| shares | (10) | |
| Merger with QPhoton, Inc. [Member] \| Common Stock [Member] | | |
| **Business Combinations [Line Items]** | | |
| Consideration of common shares (in Shares) \| shares | 5,802,206 | |
| Common stock par value (in Dollars per share) \| $ / shares | $ 0.0001 | |
| Merger with QPhoton, Inc. [Member] \| Series B Convertible Preferred [Member] | | |
| **Business Combinations [Line Items]** | | |
| Preferred stock shares issued (in Shares) \| shares | 2,377,028 | |
| Preferred stock, par value (in Dollars per share) \| $ / shares | $ 0.0001 | |
| QPhoton [Member] | | |
| **Business Combinations [Line Items]** | | |
| Converted shares (in Shares) \| shares | 36,600,823 | |
| Principal balance | | $ 1,250,000 |

| Business Combinations (Details) - Schedule of Adjusted Acquisition Date Fair Values of Assets Acquired and Liabilities Assumed By the Company | 12 Months Ended<br>Dec. 31, 2023<br>USD ($) |
|---|---|
| **Schedule of Adjusted Acquisition Date Fair Values of Assets Acquired and Liabilities Assumed By the Company [Abstract]** | |
| Purchase price, net of cash acquired | $ 81,939,939 |
| **Less** | |
| Prepaid expenses | 16,109 |
| Fixed assets at cost | 116,315 |
| Security deposits | 97,768 |
| Non-compete agreement with founder | 2,722,000 |
| Website domain, trade name and trademark | 969,000 |
| Technology and licensed patents | 12,200,000 |
| Accounts payable and other current liabilities | (2,888,246) |
| Goodwill | $ 68,706,993 |

| Intangible Assets and Goodwill (Details) - USD ($) | 12 Months Ended | |
|---|---|---|
| | Dec. 31, 2023 | Dec. 31, 2022 |
| **Intangible Assets and Goodwill [Abstract]** | | |
| Amortization expense of intangible assets | $ 1,254,490 | $ 3,248,495 |
| Goodwill | $ 59,125,773.38 | |

| Intangible Assets and Goodwill (Details) - Schedule of Amounts Related to Intangible Assets - USD ($) | Dec. 31, 2023 | Dec. 31, 2022 |
|---|---|---|
| **Schedule of Amounts Related to Intangible Assets [Line Items]** | | |
| Less: accumulated amortization | $ (4,502,985) | $ (3,248,495) |
| Net intangible assets | 11,388,015 | 22,223,725 |
| Customer relationships [Member] | | |
| **Schedule of Amounts Related to Intangible Assets [Line Items]** | | |
| Intangible Assets | | 10,000,000 |
| Amortizable Life | 3 years | |
| Non-compete agreement with founder [Member] | | |
| **Schedule of Amounts Related to Intangible Assets [Line Items]** | | |
| Intangible Assets | $ 2,722,000 | 500,000 |
| Amortizable Life | 3 years | |
| Website domain name and trademark [Member] | | |
| **Schedule of Amounts Related to Intangible Assets [Line Items]** | | |
| Intangible Assets | $ 969,000 | 1,000,000 |
| Amortizable Life | 5 years | |
| Employment agreements [Member] | | |
| **Schedule of Amounts Related to Intangible Assets [Line Items]** | | |
| Intangible Assets | | 2,250,000 |
| Amortizable Life | 2 years | |
| Technology and licensed patents [Member] | | |
| **Schedule of Amounts Related to Intangible Assets [Line Items]** | | |
| Intangible Assets | $ 12,200,000 | $ 11,722,220 |
| Amortizable Life | 10 years | |

| Intangible Assets and Goodwill (Details) - Schedule of Future Amortization Expense - USD ($) | Dec. 31, 2023 | Dec. 31, 2022 |
|---|---|---|
| **Schedule of Future Amortization Expense [Abstract]** | | |
| 2024 | $ 2,843,991 | |
| 2025 | 2,352,518 | |
| 2026 | 1,936,657 | |
| 2027 | 1,831,682 | |
| 2028 | 1,742,857 | |
| Thereafter (2029-2032) | 680,310 | |
| Total | $ 11,388,015 | $ 22,223,725 |

| Intangible Assets and Goodwill (Details) - Schedule of Changes in Goodwill - USD ($) | 12 Months Ended | |
|---|---|---|
| | Dec. 31, 2023 | Dec. 31, 2022 |
| **Schedule of Changes in Goodwill [Abstract]** | | |
| Goodwill, at beginning of year | $ 59,125,773 | |
| Goodwill additions | 9,581,220 | 59,125,773 |
| Goodwill deductions or impairment | 8,347,126 | |
| Goodwill, at end of year | $ 60,359,867 | $ 59,125,773 |

| Income Taxes (Details) | Dec. 31, 2023 USD ($) |
| --- | --- |
| **Income Taxes [Abstract]** | |
| Net operating loss carry forwards | $ 14,528,229 |

| Income Taxes (Details) - Schedule of Tax Basis of Existing Assets and Liabilities - USD ($) | Dec. 31, 2023 | Dec. 31, 2022 |
|---|---|---|
| **Schedule of tax basis of existing assets and liabilities [Abstract]** | | |
| Net operating loss carry-forwards | $ 14,528,229 | $ 9,703,519 |
| Valuation allowance | (14,528,229) | (9,703,519) |
| Net deferred tax assets | | |

| Property and Equipment (Details) | 12 Months Ended Dec. 31, 2023 USD ($) |
|---|---|
| **Property and Equipment [Abstract]** | |
| Property and equipment acquisitions | $ 2,096,221 |
| Property and equipment cost | $ 2,500 |

| Property and Equipment (Details) - Schedule of Property and Equipment - USD ($) | Dec. 31, 2023 | Dec. 31, 2022 |
|---|---|---|
| **Schedule of property and equipment [Line Items]** | | |
| Total cost of property and equipment | $ 3,141,939 | $ 1,045,718 |
| Accumulated depreciation | 272,281 | 70,549 |
| Property and equipment, net | 2,869,658 | 975,169 |
| Hardware & Equipment [Member] | | |
| **Schedule of property and equipment [Line Items]** | | |
| Total cost of property and equipment | 3,092,664 | 1,026,829 |
| Software [Member] | | |
| **Schedule of property and equipment [Line Items]** | | |
| Total cost of property and equipment | $ 49,275 | $ 18,889 |

| Property and Equipment (Details) - Schedule of Estimated Useful Life | Dec. 31, 2023 |
|---|---|
| Computer and laboratory equipment [Member] | |
| **Schedule of Estimated Useful Life [Line Items]** | |
| Estimated Useful Life | 5 years |
| Network equipment [Member] | |
| **Schedule of Estimated Useful Life [Line Items]** | |
| Estimated Useful Life | 4 years |
| Minor equipment [Member] | |
| **Schedule of Estimated Useful Life [Line Items]** | |
| Estimated Useful Life | 3 years |
| Furniture and fixtures [Member] | |
| **Schedule of Estimated Useful Life [Line Items]** | |
| Estimated Useful Life | 7 years |
| Software [Member] | |
| **Schedule of Estimated Useful Life [Line Items]** | |
| Estimated Useful Life | 3 years |
| Leasehold improvements [Member] | |
| **Schedule of Estimated Useful Life [Line Items]** | |
| Estimated Useful Life | 5 years |

| Loans (Details) - USD ($) | | 12 Months Ended | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sep. 22, 2022 | Dec. 31, 2023 | Jun. 06, 2023 | May 16, 2023 | Jun. 16, 2022 | Apr. 01, 2022 | Feb. 18, 2022 | Jul. 09, 2021 | Mar. 23, 2021 | Mar. 01, 2021 |
| **Loans [Line Items]** | | | | | | | | | | |
| Convertible promissory notes | | | | | | | | $ 150,000 | $ 150,000 | $ 200,592 |
| Notes payable | | | | | | | | $ 500,592 | $ 500,592 | $ 500,592 |
| Interest rate | | | | | | 15.00% | 6.00% | | | |
| Cash proceeds | | $ 375,000 | | | | | | | | |
| Principal balance | | | $ 500,000 | $ 2,000,000 | $ 53,568.44 | | | | | |
| Original issue discount | $ 750,000 | | | | | | | | | |
| Percentage of outstanding balance | 120.00% | | | | | | | | | |
| Redemption amount | | 750,000 | | | | | | | | |
| Outstanding balance | | $ 7,000,000 | | | | | | | | |
| Interest rate | | 15.00% | | | | | | | | |
| Minimum [Member] | | | | | | | | | | |
| **Loans [Line Items]** | | | | | | | | | | |
| Interest rate | | | 10.00% | | | | | | | |
| Maximum [Member] | | | | | | | | | | |
| **Loans [Line Items]** | | | | | | | | | | |
| Interest rate | | | 15.00% | | | | | | | |
| BV Notes [Member] | | | | | | | | | | |
| **Loans [Line Items]** | | | | | | | | | | |
| Maturity term | | 2 years | | | | | | | | |
| Millionways [Member] | | | | | | | | | | |
| **Loans [Line Items]** | | | | | | | | | | |
| Acquire percentage | | | | 100.00% | | | | | | |
| BV Advisory Partners, LLC [Member] | | | | | | | | | | |
| **Loans [Line Items]** | | | | | | | | | | |
| Interest rate | | 6.00% | | | | | | | | |
| Cash proceeds | | $ 125,041 | | | | | | | | |
| Streeterville Capital, LLC [Member] | | | | | | | | | | |
| **Loans [Line Items]** | | | | | | | | | | |
| Interest rate | 10.00% | | | | | | | | | |
| Maturity term | 18 months | | | | | | | | | |
| Principal balance | $ 8,250,000 | | | | | | | | | |

| Capital Stock (Details) - USD ($) | | | | | 1 Months Ended | | 12 Months Ended | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Feb. 09, 2023 | Jun. 16, 2022 | Jun. 13, 2022 | Nov. 17, 2021 | Nov. 30, 2021 | Aug. 31, 2020 | Dec. 31, 2023 | Mar. 28, 2024 | Dec. 19, 2023 | May 03, 2023 | Jan. 20, 2023 | Jan. 19, 2023 | Dec. 31, 2022 |
| **Capital Stock [Line Items]** | | | | | | | | | | | | | |
| Purchase warrants | | 6,325,503 | | | 1,545,459 | 171,000 | | | | | | | |
| Percent rate | | | | | | | 10.00% | | | | | | |
| Conversion price per share (in Dollars per share) | | | | | | | $ 5.5 | | | | | | |
| Exercise price per share (in Dollars per share) | | | | | | | $ 7 | | | | | | |
| Shares of common stock | | | | | | | | | 75,000 | | | | |
| Common stock , issued shares | | | | | | | 23,600 | | | 853,600 | | | |
| Series A Convertible Preferred Stock [Member] | | | | | | | | | | | | | |
| **Capital Stock [Line Items]** | | | | | | | | | | | | | |
| Purchased shares | | | | 1,545,459 | | | | | | | | | |
| Convertible Preferred stock, par value (in Dollars per share) | | | | $ 0.0001 | | | $ 0.0001 | | | | | | $ 0.0001 |
| Purchase warrants | | | | 1,545,459 | | | | | | | | | |
| Aggregate purchase price (in Dollars) | | | | $ 8,500,000 | | | | | | | | | |
| Authorized shares of preferred stock | | | | | | | 1,550,000 | | | | | | 1,550,000 |
| Preferred stock shares issued | | | | | | | 1,490,004 | | | | | | 1,500,004 |
| Preferred stock shares issued | | | | | | | 1,490,004 | | | | | | 1,500,004 |
| Series B Preferred Stock [Member] | | | | | | | | | | | | | |
| **Capital Stock [Line Items]** | | | | | | | | | | | | | |
| Authorized shares of preferred stock | | | | | | | 3,079,864 | | | | | | 3,079,864 |
| Preferred stock shares issued | | | | | | | 0 | | | | | | 0 |
| Preferred stock shares issued | | | | | | | 0 | | | | | | 0 |
| Subsequent Event [Member] \| Series A Convertible Preferred Stock [Member] | | | | | | | | | | | | | |
| **Capital Stock [Line Items]** | | | | | | | | | | | | | |
| Convertible Preferred stock, par value (in Dollars per share) | | | | | | | | $ 0.0001 | | | | | |
| Authorized shares of preferred stock | | | | | | | | 1,550,000 | | | | | |
| Preferred stock shares issued | | | | | | | | 1,490,004 | | | | | |
| Preferred stock shares issued | | | | | | | | 1,490,004 | | | | | |
| Subsequent Event [Member] \| Series B Preferred Stock [Member] | | | | | | | | | | | | | |
| **Capital Stock [Line Items]** | | | | | | | | | | | | | |
| Convertible Preferred stock, par value (in Dollars per share) | | | | | | | | $ 0.0001 | | | | | |
| Authorized shares of preferred stock | | | | | | | | 3,079,864 | | | | | |
| Preferred stock shares issued | | | | | | | | 0 | | | | | |
| Preferred stock shares issued | | | | | | | | 0 | | | | | |
| Falcon Capital Partners [Member] \| Series A Convertible Preferred Stock [Member] | | | | | | | | | | | | | |
| **Capital Stock [Line Items]** | | | | | | | | | | | | | |
| Shares of common stock | | | 45,455 | | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Accrued dividend shares | | 47,728 | | | |
| Greenfield Children, LLC, [Member] \| Series A Convertible Preferred Stock [Member] | | | | | |
| **Capital Stock [Line Items]** | | | | | |
| Accrued dividend shares | 11,096 | | | | |
| Converted shares | 10,000 | | | | |
| Draper, Inc [Member] | | | | | |
| **Capital Stock [Line Items]** | | | | | |
| Shares of common stock | | | | 750,000 | |
| Carriage House Capital, Inc [Member] | | | | | |
| **Capital Stock [Line Items]** | | | | | |
| Shares of common stock | | | | 750,000 | |
| Ascendiant Capital [Member] | | | | | |
| **Capital Stock [Line Items]** | | | | | |
| Shares of common stock | | | | | 17,571,926 |
| Average price per share (in Dollars per share) | | | | | $ 1.45 |
| Issuance of gross proceeds (in Dollars) | | | $ 25,496,364 | | |
| Fee percentage | | | 3.00% | | |

| Stock Based Compensation (Details) - USD ($)<br>$ / shares in Units, $ in Millions | 1 Months Ended | | | 12 Months Ended | | | |
|---|---|---|---|---|---|---|---|
| | Jun. 16, 2022 | Nov. 30, 2021 | Aug. 31, 2020 | Dec. 31, 2023 | Dec. 31, 2022 | Jan. 01, 2023 | Jul. 05, 2022 |
| **Stock Based Compensation [Line Items]** | | | | | | | |
| Shares of common stock | | | | | | | 16,000,000 |
| Shares issuance | | | | | | 1,000,000 | |
| Weighted average grant-date fair value of stock options granted (in Dollars per share) | | | | $ 1.38 | $ 2.38 | | |
| Common stock options (in Dollars) | | | | $ 6.0 | | | |
| Recognized over a period | | | | 4 years | | | |
| Issued warrants shares | 6,325,503 | 1,545,459 | 171,000 | | | | |
| Exercise price per share (in Dollars per share) | $ 0.0001 | $ 7 | $ 2 | | | | |
| Common Stock [Member] | | | | | | | |
| **Stock Based Compensation [Line Items]** | | | | | | | |
| Shares issuance | | | | | | 17,000,000 | |
| Options 2019 [Member] | | | | | | | |
| **Stock Based Compensation [Line Items]** | | | | | | | |
| Shares of common stock | | | | 3,000,000 | | | |
| Shares issued | | | | 3,000,000 | | | |
| Options 2022 [Member] | | | | | | | |
| **Stock Based Compensation [Line Items]** | | | | | | | |
| Shares of common stock | | | | 13,595,929 | | | |
| Warrant [Member] | | | | | | | |
| **Stock Based Compensation [Line Items]** | | | | | | | |
| Exercisable term | | 2 years | 5 years | | | | |

| Stock Based Compensation (Details) - Schedule of Grant-Date Fair Value of Stock Options Granted - $ / shares | 12 Months Ended | |
|---|---|---|
| | Dec. 31, 2023 | Dec. 31, 2022 |
| **Schedule of Grant-Date Fair Value of Stock Options Granted [Line Items]** | | |
| Expected dividend yield | 0.00% | 0.00% |
| Expected life of options (in years) | 5 years | 5 years |
| Minimum [Member] | | |
| **Schedule of Grant-Date Fair Value of Stock Options Granted [Line Items]** | | |
| Exercise price (in Dollars per share) | $ 0.85 | $ 1.67 |
| Risk-free interest rate | 4.70% | 0.60% |
| Expected volatility | 194.00% | 336.00% |
| Maximum [Member] | | |
| **Schedule of Grant-Date Fair Value of Stock Options Granted [Line Items]** | | |
| Exercise price (in Dollars per share) | $ 1.84 | $ 2.61 |
| Risk-free interest rate | 5.00% | 4.00% |
| Expected volatility | 214.00% | 369.00% |

| Stock Based Compensation (Details) - Schedule of Option Activity - $ / shares | | 12 Months Ended | |
| --- | --- | --- | --- |
| | Dec. 31, 2022 | Dec. 31, 2023 | Dec. 31, 2022 |
| Schedule of Option Activity [Abstract] | | | |
| Weighted Average Number of Shares, Outstanding Ending balance | 9,601,237 | 13,843,499 | 9,601,237 |
| Weighted Average Exercise Price, Outstanding Ending balance | $ 3.42 | $ 4.02 | $ 3.42 |
| Contractual Term, Outstanding Ending balance | 4 years | 3 years 8 months 12 days | |
| Weighted Average Number of Shares, Vested | | 7,978,074 | |
| Weighted Average Exercise Price, Vested | | $ 3.39 | |
| Contractual Term, Vested | | 3 years 3 months 18 days | |
| Weighted Average Number of Shares, Granted | | 5,340,000 | |
| Weighted Average Exercise Price, Granted | | $ 1.38 | $ 2.38 |
| Contractual Term, Granted | | 5 years | |
| Weighted Average Number of Shares, Exercised | | | |
| Weighted Average Exercise Price, Exercised | | | |
| Contractual Term, Exercised | | | |
| Weighted Average Number of Shares, Forfeited | | (1,097,738) | |
| Weighted Average Exercise Price, Forfeited | | $ 3.32 | |
| Contractual Term, Forfeited | | | |

| Stock Based Compensation (Details) - Schedule of Exercise Price Range | 12 Months Ended Dec. 31, 2023 $ / shares shares |
|---|---|
| **Schedule of Exercise Price Range [Line Items]** | |
| Outstanding Options | 13,843,499 |
| Exercisable Options | 7,978,074 |
| Exercise Price 0.85 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 0.85 |
| Outstanding Options | 120,000 |
| Exercisable Options | |
| Exercise Price 0.86 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 0.86 |
| Outstanding Options | 30,000 |
| Exercisable Options | 10,000 |
| Exercise Price 0.94 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 0.94 |
| Outstanding Options | 30,000 |
| Exercisable Options | |
| Exercise Price 1.00 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1 |
| Outstanding Options | 138,970 |
| Exercisable Options | 138,970 |
| Exercise Price 1.16 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.16 |
| Outstanding Options | 30,000 |
| Exercisable Options | |
| Exercise Price 1.18 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.18 |
| Outstanding Options | 300,000 |
| Exercisable Options | 100,000 |
| Exercise Price 1.19 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.19 |
| Outstanding Options | 55,000 |
| Exercisable Options | |
| Exercise Price 1.20 [Member] | |

| | |
|---|---|
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.2 |
| Outstanding Options | 87,500 |
| Exercisable Options | |
| Exercise Price 1.28 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.28 |
| Outstanding Options | 50,000 |
| Exercisable Options | |
| Exercise Price 1.33 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.33 |
| Outstanding Options | 25,000 |
| Exercisable Options | |
| Exercise Price 1.35 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.35 |
| Outstanding Options | 3,780,000 |
| Exercisable Options | |
| Exercise Price 1.44 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.44 |
| Outstanding Options | 150,000 |
| Exercisable Options | 72,224 |
| Exercise Price 1.45 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.45 |
| Outstanding Options | 225,000 |
| Exercisable Options | 225,000 |
| Exercise Price 1.51 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.51 |
| Outstanding Options | 5,000 |
| Exercisable Options | |
| Exercise Price 1.52 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.52 |
| Outstanding Options | 60,000 |
| Exercisable Options | |
| Exercise Price 1.67 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.67 |
| Outstanding Options | 16,666 |
| Exercisable Options | 16,666 |

| | |
|---|---|
| Exercise Price 1.74 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.74 |
| Outstanding Options | 25,000 |
| Exercisable Options | |
| Exercise Price 1.84 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.84 |
| Outstanding Options | 567,500 |
| Exercisable Options | 377,500 |
| Exercise Price 1.95 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 1.95 |
| Outstanding Options | 180,000 |
| Exercisable Options | 180,000 |
| Exercise Price 2.37 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 2.37 |
| Outstanding Options | 4,911,528 |
| Exercisable Options | 4,396,819 |
| Exercise Price 2.40 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 2.4 |
| Outstanding Options | 1,010,001 |
| Exercisable Options | 720,001 |
| Exercise Price 2.56 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 2.56 |
| Outstanding Options | 287,500 |
| Exercisable Options | 95,834 |
| Exercise Price 2.61 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 2.61 |
| Outstanding Options | 150,000 |
| Exercisable Options | 105,560 |
| Exercise Price 3.58 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 3.58 |
| Outstanding Options | 65,000 |
| Exercisable Options | 65,000 |
| Exercise Price 5.69 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 5.69 |
| Outstanding Options | 12,500 |

| | |
|---|---|
| Exercisable Options | 12,500 |
| Exercise Price 5.70 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 5.7 |
| Outstanding Options | 25,000 |
| Exercisable Options | 16,666 |
| Exercise Price 6.49 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 6.49 |
| Outstanding Options | 38,334 |
| Exercisable Options | 33,334 |
| Exercise Price 6.85 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 6.85 |
| Outstanding Options | 650,000 |
| Exercisable Options | 650,000 |
| Exercise Price 7.00 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 7 |
| Outstanding Options | 18,000 |
| Exercisable Options | 12,000 |
| Exercise Price 8.85 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 8.85 |
| Outstanding Options | 100,000 |
| Exercisable Options | 66,666 |
| Exercise Price 10.00 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 10 |
| Outstanding Options | 650,000 |
| Exercisable Options | 650,000 |
| Exercise Price 11.51 [Member] | |
| **Schedule of Exercise Price Range [Line Items]** | |
| Exercise Price (in Dollars per share) \| $ / shares | $ 11.51 |
| Outstanding Options | 50,000 |
| Exercisable Options | 33,334 |

| Stock Based Compensation (Details) - Schedule of Stock-based Compensation Expense - USD ($) | 12 Months Ended | |
|---|---|---|
| | Dec. 31, 2023 | Dec. 31, 2022 |
| **Share-Based Payment Arrangement, Expensed and Capitalized, Amount [Line Items]** | | |
| Total stock-based compensation | $ 8,722,766 | $ 17,761,467 |
| Research and development [Member] | | |
| **Share-Based Payment Arrangement, Expensed and Capitalized, Amount [Line Items]** | | |
| Total stock-based compensation | 3,660,068 | 2,758,465 |
| General and administrative [Member] | | |
| **Share-Based Payment Arrangement, Expensed and Capitalized, Amount [Line Items]** | | |
| Total stock-based compensation | $ 5,062,698 | $ 15,003,002 |

| Stock Based Compensation (Details) - Schedule of Warrants Outstanding - Warrant [Member] | 12 Months Ended Dec. 31, 2023 $ / shares shares |
|---|---|
| Exercise Price 2.00 [Member] | |
| **Schedule of Warrants Outstanding [Line Items]** | |
| Issuance Date | Aug. 18, 2020 |
| Expiration Date | Aug. 18, 2025 |
| Exercise Price (in Dollars per share) \| $ / shares | $ 2 |
| Issued | 171,000 |
| Exercised | (150,000) |
| Forfeited / Canceled | |
| Warrants Outstanding | 21,000 |
| Exercise Price 7.00 [Member] | |
| **Schedule of Warrants Outstanding [Line Items]** | |
| Issuance Date | Nov. 15, 2021 |
| Expiration Date | Nov. 15, 2023 |
| Exercise Price (in Dollars per share) \| $ / shares | $ 7 |
| Issued | 1,545,459 |
| Exercised | |
| Forfeited / Canceled | (1,545,459) |
| Warrants Outstanding | |
| Exercise Price 0.0001 [Member] | |
| **Schedule of Warrants Outstanding [Line Items]** | |
| Issuance Date | Jun. 16, 2022 |
| Expiration Date | May 09, 2027 |
| Exercise Price (in Dollars per share) \| $ / shares | $ 0.0001 |
| Issued | 6,325,503 |
| Exercised | |
| Forfeited / Canceled | (3,309,433) |
| Warrants Outstanding | 3,016,070 |

| Operating Leases (Details) - Schedule of Undiscounted Future Minimum Lease Payments Under these Operating Lease | Dec. 31, 2023 USD ($) |
|---|---|
| **Schedule of Undiscounted Future Minimum Lease Payments under these Operating Lease [Abstract]** | |
| 2024 | $ 338,319 |
| 2025 | 576,078 |
| 2026 | 591,551 |
| 2027 | 515,981 |
| 2028 | 191,008 |
| Less: imputed Interest | (638,740) |
| Present Value of operating lease liabilities | $ 1,619,197 |

| Operating Leases (Details) - Schedule of Other Information Related to Operating Lease Liabilities - USD ($) | 12 Months Ended | |
|---|---|---|
| | Dec. 31, 2023 | Dec. 31, 2022 |
| **Schedule of Other Information Related to Operating Lease Liabilities [Abstract]** | | |
| Cash paid for operating lease liabilities | $ 411,700 | $ 125,238 |
| Weighted average remaining lease term in years | 3 years 8 months 12 days | 4 years 8 months 12 days |
| Weighted average discount rate | 10.00% | 10.00% |

| License Agreement – Stevens Institute of Technology (Details) | 12 Months Ended Dec. 31, 2023 |
| --- | --- |
| **License Agreement – Stevens Institute of Technology [Abstract]** | |
| Consideration agreement, description | As consideration for the license and other rights granted under the agreement, QPhoton agreed to pay the following: (i) $35,000 within 30 days of execution of the agreement, (ii) $28,000 within 30 days of each annual anniversary of the effective date, (iii) equity in the Company equivalent to nine percent of the membership units of the Company within 30 days of the execution of the agreement, and (iv) royalties of 3.5% of the Net Sales Price of each licensed product sold or licensed by the Company during the quarter then-ended, for which it also received payment, concurrent with the delivery of the relevant quarterly report. |

| Subsequent Events (Details) - USD ($) | Mar. 28, 2024 | Mar. 19, 2024 | Feb. 29, 2024 | Jan. 31, 2024 | 2 Months Ended Mar. 01, 2024 | 12 Months Ended Dec. 31, 2023 | Mar. 26, 2024 | Feb. 01, 2024 | Jan. 01, 2023 |
|---|---|---|---|---|---|---|---|---|---|
| **Subsequent Events [Line Items]** | | | | | | | | | |
| Salary amount | | | | | | $ 400,000 | | | |
| Shares of Preferred Stock (in Shares) | | | | | | | | | 1,000,000 |
| Subsequent Event [Member] | | | | | | | | | |
| **Subsequent Events [Line Items]** | | | | | | | | | |
| Shares of restricted common stock (in Shares) | | | | 168,000 | | | | | |
| Paid a cash | | | | | | | | $ 12,500 | |
| Disruptive price | | | $ 300,000 | | | | | | |
| Cumulative redemption amount | | | | | $ 9,094,378 | | | | |
| Purchase price | | $ 8,195,000 | | | | | | | |
| Purchase price per share (in Dollars per share) | | $ 5.5 | | | | | | | |
| Shares of Preferred Stock (in Shares) | 82,783 | | | | | | | | |
| Cash paid | $ 455,307 | | | | | | | | |
| Subsequent Event [Member] \| Preferred Stock [Member] | | | | | | | | | |
| **Subsequent Events [Line Items]** | | | | | | | | | |
| Preferred stock issued (in Shares) | 1,407,221 | | | | | | | | |
| Preferred stock outstanding (in Shares) | 1,407,221 | | | | | | | | |
| Streeterville [Member] \| Subsequent Event [Member] | | | | | | | | | |
| **Subsequent Events [Line Items]** | | | | | | | | | |
| Repaid of principal amount | | | | | 2,094,378 | | | | |
| Accrued interest | | | | | $ 2,094,378 | | | | |

| | |
|---|---|
| Forecast [Member] | |
| **Subsequent Events [Line Items]** | |
| Price per share (in Dollars per share) | $ 1 |

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 "R13": {
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  "longName": "995311 - Disclosure - Financial Accounting Developments",
  "shortName": "Financial Accounting Developments",
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  "groupType": "disclosure",
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 "R14": {
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  "longName": "995312 - Disclosure - Property and Equipment",
  "shortName": "Property and Equipment",
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  "groupType": "disclosure",
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  "longName": "995313 - Disclosure - Loans",
  "shortName": "Loans",
  "isDefault": "false",
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 "R16": {
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  "longName": "995314 - Disclosure - Capital Stock",
  "shortName": "Capital Stock",
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 "R17": {
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  "longName": "995315 - Disclosure - Stock Based Compensation",
  "shortName": "Stock Based Compensation",
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  "role": "http://www.quantumcomputinginc.com/role/RelatedPartyTransactions",
  "longName": "995316 - Disclosure - Related Party Transactions",
  "shortName": "Related Party Transactions",
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  "shortName": "License Agreement \u2013 Stevens Institute of Technology",
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  "shortName": "Subsequent Events",
  "isDefault": "false",
  "groupType": "disclosure",
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 "R23": {
  "role": "http://xbrl.sec.gov/ecd/role/InsiderTradingArrangements",
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  "shortName": "Insider Trading Arrangements",
  "isDefault": "false",
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 "R24": {
  "role": "http://www.quantumcomputinginc.com/role/AccountingPoliciesByPolicy",
  "longName": "996000 - Disclosure - Accounting Policies, by Policy (Policies)",
  "shortName": "Accounting Policies, by Policy (Policies)",
  "isDefault": "false",
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 "R25": {
  "role": "http://www.quantumcomputinginc.com/role/BusinessCombinationsTables",
  "longName": "996001 - Disclosure - Business Combinations (Tables)",
  "shortName": "Business Combinations (Tables)",
  "isDefault": "false",
  "groupType": "disclosure",
  "subGroupType": "tables",
  "menuCat": "Tables",
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 },
 "R26": {
  "role": "http://www.quantumcomputinginc.com/role/IntangibleAssetsandGoodwillTables",
  "longName": "996002 - Disclosure - Intangible Assets and Goodwill (Tables)",
  "shortName": "Intangible Assets and Goodwill (Tables)",
  "isDefault": "false",
  "groupType": "disclosure",
  "subGroupType": "tables",
  "menuCat": "Tables",
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 "R27": {
  "role": "http://www.quantumcomputinginc.com/role/IncomeTaxesTables",
  "longName": "996003 - Disclosure - Income Taxes (Tables)",
  "shortName": "Income Taxes (Tables)",
  "isDefault": "false",
  "groupType": "disclosure",
  "subGroupType": "tables",
  "menuCat": "Tables",
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 "R28": {
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  "longName": "996004 - Disclosure - Property and Equipment (Tables)",
  "shortName": "Property and Equipment (Tables)",
  "isDefault": "false",
  "groupType": "disclosure",
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 "R29": {
  "role": "http://www.quantumcomputinginc.com/role/StockBasedCompensationTables",
  "longName": "996005 - Disclosure - Stock Based Compensation (Tables)",
  "shortName": "Stock Based Compensation (Tables)",
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  "groupType": "disclosure",
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 "R30": {
  "role": "http://www.quantumcomputinginc.com/role/OperatingLeasesTables",
  "longName": "996006 - Disclosure - Operating Leases (Tables)",
  "shortName": "Operating Leases (Tables)",
  "isDefault": "false",
  "groupType": "disclosure",
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  "menuCat": "Tables",
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 "R31": {
  "role": "http://www.quantumcomputinginc.com/role/NatureoftheOrganizationandBusinessDetails",
  "longName": "996007 - Disclosure - Nature of the Organization and Business (Details)",
  "shortName": "Nature of the Organization and Business (Details)",
  "isDefault": "false",
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 "R32": {
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  "shortName": "Significant Accounting Policies (Details)",
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 "R33": {
  "role": "http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails",
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  "shortName": "Business Combinations (Details)",
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 "R36": {
  "role": "http://www.quantumcomputinginc.com/role/ScheduleofAmountsRelatedtoIntangibleAssetsTable",
  "longName": "996012 - Disclosure - Intangible Assets and Goodwill (Details) - Schedule of Amounts Related to Intangible Assets",
  "shortName": "Intangible Assets and Goodwill (Details) - Schedule of Amounts Related to Intangible Assets",
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  "subGroupType": "details",
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 "R37": {
  "role": "http://www.quantumcomputinginc.com/role/ScheduleofFutureAmortizationExpenseTable",
  "longName": "996013 - Disclosure - Intangible Assets and Goodwill (Details) - Schedule of Future Amortization Expense",
  "shortName": "Intangible Assets and Goodwill (Details) - Schedule of Future Amortization Expense",
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  "subGroupType": "details",
  "menuCat": "Details",
  "order": "37",
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 "R38": {
  "role": "http://www.quantumcomputinginc.com/role/ScheduleofChangesinGoodwillTable",
  "longName": "996014 - Disclosure - Intangible Assets and Goodwill (Details) - Schedule of Changes in Goodwill",
  "shortName": "Intangible Assets and Goodwill (Details) - Schedule of Changes in Goodwill",
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  "subGroupType": "details",
  "menuCat": "Details",
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   "lang": null,
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 "R39": {
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  "longName": "996015 - Disclosure - Income Taxes (Details)",
  "shortName": "Income Taxes (Details)",
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  "groupType": "disclosure",
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 "R40": {
  "role": "http://www.quantumcomputinginc.com/role/ScheduleofTaxBasisofExistingAssetsandLiabilitiesTable",
  "longName": "996016 - Disclosure - Income Taxes (Details) - Schedule of Tax Basis of Existing Assets and Liabilities",
  "shortName": "Income Taxes (Details) - Schedule of Tax Basis of Existing Assets and Liabilities",
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 "R41": {
  "role": "http://www.quantumcomputinginc.com/role/PropertyandEquipmentDetails",
  "longName": "996017 - Disclosure - Property and Equipment (Details)",
  "shortName": "Property and Equipment (Details)",
  "isDefault": "false",
  "groupType": "disclosure",
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 "R42": {
  "role": "http://www.quantumcomputinginc.com/role/ScheduleofPropertyandEquipmentTable",
  "longName": "996018 - Disclosure - Property and Equipment (Details) - Schedule of Property and Equipment",
  "shortName": "Property and Equipment (Details) - Schedule of Property and Equipment",
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  "role": "http://www.quantumcomputinginc.com/role/ScheduleofEstimatedUsefulLifeTable",
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  "shortName": "Property and Equipment (Details) - Schedule of Estimated Useful Life",
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 "R44": {
  "role": "http://www.quantumcomputinginc.com/role/LoansDetails",
  "longName": "996020 - Disclosure - Loans (Details)",
  "shortName": "Loans (Details)",
  "isDefault": "false",
  "groupType": "disclosure",
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 "R45": {
  "role": "http://www.quantumcomputinginc.com/role/CapitalStockDetails",
  "longName": "996021 - Disclosure - Capital Stock (Details)",
  "shortName": "Capital Stock (Details)",
  "isDefault": "false",
  "groupType": "disclosure",
  "subGroupType": "details",
  "menuCat": "Details",
  "order": "45",
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   "lang": null,
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 "R46": {
  "role": "http://www.quantumcomputinginc.com/role/StockBasedCompensationDetails",
  "longName": "996022 - Disclosure - Stock Based Compensation (Details)",
  "shortName": "Stock Based Compensation (Details)",
  "isDefault": "false",
  "groupType": "disclosure",
  "subGroupType": "details",
  "menuCat": "Details",
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   "unique": true
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 },
 "R47": {
  "role": "http://www.quantumcomputinginc.com/role/ScheduleofGrantDateFairValueofStockOptionsGrantedTable",
  "longName": "996023 - Disclosure - Stock Based Compensation (Details) - Schedule of Grant-Date Fair Value of Stock Options Granted",
  "shortName": "Stock Based Compensation (Details) - Schedule of Grant-Date Fair Value of Stock Options Granted",
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 "R48": {
  "role": "http://www.quantumcomputinginc.com/role/ScheduleofOptionActivityTable",
  "longName": "996024 - Disclosure - Stock Based Compensation (Details) - Schedule of Option Activity",
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    }
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    }
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  },
  "auth_ref": [
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    }
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  "en-us": {
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    "label": "Adjustments to Additional Paid in Capital, Other",
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  }
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  "http://xbrl.sec.gov/ecd/role/ErrCompDisclosure",
  "http://xbrl.sec.gov/ecd/role/InsiderTradingArrangements",
  "http://xbrl.sec.gov/ecd/role/PvpDisclosure"
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 "localname": "AllocatedShareBasedCompensationExpense",
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 "lang": {
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    "label": "Share-Based Payment Arrangement, Expense",
    "documentation": "Amount of expense for award under share-based payment arrangement. Excludes amount capitalized."
   }
  }
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  "r375"
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   "role": {
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   }
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 "crdr": "debit",
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  "http://www.quantumcomputinginc.com/role/IntangibleAssetsandGoodwillDetails"
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    "verboseLabel": "Amortization expense of intangible assets",
    "label": "Amortization of Intangible Assets",
    "documentation": "The aggregate expense charged against earnings to allocate the cost of intangible assets (nonphysical assets not used in production) in a systematic and rational manner to the periods expected to benefit from such assets. As a noncash expense, this element is added back to net income when calculating cash provided by or used in operations using the indirect method."
   }
  }
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  "r48"
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   }
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   }
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   }
  }
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      "role": {
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      }
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     "http://www.quantumcomputinginc.com/role/LoansDetails"
    ],
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      }
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       "documentation": "Information by business combination or series of individually immaterial business combinations."
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   "us-gaap_BusinessAcquisitionPercentageOfVotingInterestsAcquired": {
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       "label": "Business Acquisition, Percentage of Voting Interests Acquired",
       "documentation": "Percentage of voting equity interests acquired at the acquisition date in the business combination."
      }
     }
    },
    "auth_ref": [
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   },
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    "presentation": [
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"documentation": "The amount of financial assets (as defined) recognized as of the acquisition date."
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"role": {
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"qubt_BusinessCombinationRecognizedIdentifiableAssetsAcquiredAndLiabilitiesAssumedTechnologyAndLicensedPatents": {
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"nsuri": "http://www.quantumcomputinginc.com/20231231",
"localname": "BusinessCombinationRecognizedIdentifiableAssetsAcquiredAndLiabilitiesAssumedTechnologyAndLicensedPatents",
"crdr": "debit",
"presentation": [
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],
"lang": {
"en-us": {
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"terseLabel": "Technology and licensed patents",
"documentation": "Amount of technology and licensed patents.",
"label": "Business Combination Recognized Identifiable Assets Acquired And Liabilities Assumed Technology And Licensed Patents"
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"auth_ref": []
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"qubt_BusinessCombinationRecognizedIdentifiableAssetsAcquiredAndLiabilitiesAssumedWebsiteDomainTradeNameAndTrademark": {
"xbrltype": "monetaryItemType",
"nsuri": "http://www.quantumcomputinginc.com/20231231",
"localname": "BusinessCombinationRecognizedIdentifiableAssetsAcquiredAndLiabilitiesAssumedWebsiteDomainTradeNameAndTrademark",
"crdr": "debit",
"presentation": [
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],
"lang": {
"en-us": {
"role": {
"terseLabel": "Website domain, trade name and trademark",
"documentation": "Amount of website domain, trade name and trademark.",
"label": "Business Combination Recognized Identifiable Assets Acquired And Liabilities Assumed Website Domain Trade Name And Trademark"
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"auth_ref": []
},
"us-gaap_BusinessCombinationRecognizedIdentifiableAssetsAcquiredGoodwillAndLiabilitiesAssumedNet": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "BusinessCombinationRecognizedIdentifiableAssetsAcquiredGoodwillAndLiabilitiesAssumedNet",
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"presentation": [
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"http://www.quantumcomputinginc.com/role/ScheduleofAdjustedAcquisitionDateFairValuesofAssetsAcquiredandLiabilitiesAssumedbytheCompanyTable"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Goodwill",
"verboseLabel": "Goodwill attributable to the assembled",
"label": "Business Combination, Recognized Identifiable Assets Acquired, Goodwill, and Liabilities Assumed, Net",
"documentation": "Amount recognized for assets, including goodwill, in excess of (less than) the aggregate liabilities assumed."
}
}
},
"auth_ref": [
"r70"
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"us-gaap_BusinessCombinationSegmentAllocationLineItems": {
"xbrltype": "stringItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
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"en-us": {
"role": {
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"documentation": "Line items represent financial concepts included in a table. These concepts are used to disclose reportable information associated with domain members defined in one or many axes to the table."
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"auth_ref": []
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"us-gaap_BusinessCombinationsAbstract": {
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"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "BusinessCombinationsAbstract",
"lang": {
"en-us": {
"role": {
"label": "Business Combinations [Abstract]"
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"localname": "ChangeInAccountingEstimateLineItems",
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"lang": {
"en-us": {
"role": {
"label": "Significant Accounting Policies [Line Items]",
"documentation": "Line items represent financial concepts included in a table. These concepts are used to disclose reportable information associated with domain members defined in one or many axes to the table."
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"auth_ref": [
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"localname": "ChangedPeerGroupFnTextBlock",
"presentation": [
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"lang": {
"en-us": {
"role": {
"label": "Changed Peer Group, Footnote [Text Block]",
"terseLabel": "Changed Peer Group, Footnote"
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"auth_ref": [
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"dei_CityAreaCode": {
"xbrltype": "normalizedStringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "CityAreaCode",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "City Area Code",
"documentation": "Area code of city"
}
}
},
"auth_ref": []
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"us-gaap_ClassOfStockDomain": {
"xbrltype": "domainItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "ClassOfStockDomain",
"presentation": [
"http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails",
"http://www.quantumcomputinginc.com/role/CapitalStockDetails",
"http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet_Parentheticals"
],
"lang": {
"en-us": {
"role": {
"label": "Class of Stock [Domain]",
"documentation": "Share of stock differentiated by the voting rights the holder receives. Examples include, but are not limited to, common stock, redeemable preferred stock, nonredeemable preferred stock, and convertible stock."
}
}
},
"auth_ref": [
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"http://www.quantumcomputinginc.com/role/CapitalStockDetails"
],
"lang": {
"en-us": {
"role": {
"label": "Capital Stock [Line Items]",
"documentation": "Line items represent financial concepts included in a table. These concepts are used to disclose reportable information associated with domain members defined in one or many axes to the table."
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"r780",
"r800"
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"us-gaap_ClassOfWarrantOrRightAxis": {
"xbrltype": "stringItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "ClassOfWarrantOrRightAxis",
"presentation": [
"http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails",
"http://www.quantumcomputinginc.com/role/ScheduleofWarrantsOutstandingTable",
"http://www.quantumcomputinginc.com/role/StockBasedCompensationDetails"
],
"lang": {
"en-us": {
"role": {
"label": "Class of Warrant or Right [Axis]",
"documentation": "Information by type of warrant or right issued."
}
}
},
"auth_ref": [
"r54"
]
},
"us-gaap_ClassOfWarrantOrRightDomain": {
"xbrltype": "domainItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "ClassOfWarrantOrRightDomain",
"presentation": [
"http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails",
"http://www.quantumcomputinginc.com/role/StockBasedCompensationDetails"
],
"lang": {
"en-us": {
"role": {
"label": "Class of Warrant or Right [Domain]",
"documentation": "Name of the class or type of warrant or right outstanding. Warrants and rights represent derivative securities that give the holder the right to purchase securities (usually equity) from the issuer at a specific price within a certain time frame. Warrants are often included in a new debt issue to entice investors by a higher return potential. The main difference between warrants and call options is that warrants are issued and guaranteed by the company, whereas options are exchange instruments and are [illegible]
}
}
},
"auth_ref": []
},
"us-gaap_ClassOfWarrantOrRightExercisePriceOfWarrantsOrRights1": {
"xbrltype": "perShareItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "ClassOfWarrantOrRightExercisePriceOfWarrantsOrRights1",
"presentation": [
"http://www.quantumcomputinginc.com/role/ScheduleofWarrantsOutstandingTable"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Exercise Price\t(in Dollars per share)",
"label": "Class of Warrant or Right, Exercise Price of Warrants or Rights",
"documentation": "Exercise price per share or per unit of warrants or rights outstanding."
}
}
},
"auth_ref": [
"r327"
]
},
"us-gaap_ClassOfWarrantOrRightNumberOfSecuritiesCalledByWarrantsOrRights": {
"xbrltype": "sharesItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "ClassOfWarrantOrRightNumberOfSecuritiesCalledByWarrantsOrRights",
"presentation": [
"http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Warrants purchased (in Shares)",
"label": "Class of Warrant or Right, Number of Securities Called by Warrants or Rights",
"documentation": "Number of securities into which the class of warrant or right may be converted. For example, but not limited to, 500,000 warrants may be converted into 1,000,000 shares."
}
}
},

"auth_ref": [
 "r327"
]
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"us-gaap_ClassOfWarrantOrRightOutstanding": {
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    "label": "Class of Warrant or Right, Outstanding",
    "documentation": "Number of warrants or rights outstanding."
   }
  }
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 "auth_ref": []
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"us-gaap_ClassOfWarrantOrRightTable": {
 "xbrltype": "stringItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "ClassOfWarrantOrRightTable",
 "presentation": [
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 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Class of Warrant or Right [Table]",
    "documentation": "Disclosure for warrants or rights issued, which includes the title of issue of securities called for by warrants and rights outstanding, the aggregate amount of securities called for by warrants and rights outstanding, the date from which the warrants or rights are exercisable, and the price at which the warrant or right is exercisable."
   }
  }
 },
 "auth_ref": [
  "r58"
 ]
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"ecd_CoSelectedMeasureAmt": {
 "xbrltype": "decimalItemType",
 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "CoSelectedMeasureAmt",
 "presentation": [
  "http://xbrl.sec.gov/ecd/role/PvpDisclosure"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Company Selected Measure Amount",
    "terseLabel": "Company Selected Measure Amount"
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 "auth_ref": [
  "r732"
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"ecd_CoSelectedMeasureName": {
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 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "CoSelectedMeasureName",
 "presentation": [
  "http://xbrl.sec.gov/ecd/role/PvpDisclosure"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Company Selected Measure Name",
    "terseLabel": "Company Selected Measure Name"
   }
  }
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 "auth_ref": [
  "r732"
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"us-gaap_CommonStockCapitalSharesReservedForFutureIssuance": {
 "xbrltype": "sharesItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "CommonStockCapitalSharesReservedForFutureIssuance",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/CapitalStockDetails"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Shares of common stock",
    "label": "Common Stock, Capital Shares Reserved for Future Issuance",
    "documentation": "Aggregate number of common shares reserved for future issuance."
   }
  }
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 "auth_ref": [
  "r18"
 ]
},
"us-gaap_CommonStockDividendsPerShareDeclared": {
 "xbrltype": "perShareItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "CommonStockDividendsPerShareDeclared",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/CapitalStockDetails"
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 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Exercise price per share (in Dollars per share)",
    "label": "Common Stock, Dividends, Per Share, Declared",
    "documentation": "Aggregate dividends declared during the period for each share of common stock outstanding."
   }
  }
 },
 "auth_ref": [
  "r112"
 ]
},
"us-gaap_CommonStockMember": {
 "xbrltype": "domainItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "CommonStockMember",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails",
  "http://www.quantumcomputinginc.com/role/ShareholdersEquityTypeOrl",
  "http://www.quantumcomputinginc.com/role/StockBasedCompensationDetails"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Common Stock",
    "verboseLabel": "Common Stock [Member]",
    "label": "Common Stock [Member]",
    "documentation": "Stock that is subordinate to all other stock of the issuer."
   }
  }
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 "auth_ref": [
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  "r459",
  "r460",
  "r462",
  "r464",
  "r465",
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  "r661",
  "r678",
  "r682"
 ]
},
"qubt_CommonStockOptions": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://www.quantumcomputinginc.com/20231231",
 "localname": "CommonStockOptions",
 "crdr": "debit",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/StockBasedCompensationDetails"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Common stock options (in Dollars)",
    "documentation": "Common stock options.",
    "label": "Common Stock Options"
   }
  }
 },
 "auth_ref": []
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"us-gaap_CommonStockParOrStatedValuePerShare": {
 "xbrltype": "perShareItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "CommonStockParOrStatedValuePerShare",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails",
  "http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet_Parenthetical",
  "http://www.quantumcomputinginc.com/role/NatureOfTheOrganizationAndBusinessDetails"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Common stock, par value (in Dollars per share)",
    "verboseLabel": "Common stock, par value",
    "netLabel": "Common stock par value (in Dollars per share)",
    "label": "Common Stock, Par or Stated Value Per Share",
    "documentation": "Face amount or stated value per share of common stock."
   }
  }
 },
 "auth_ref": [
  "r82"
 ]
},
"us-gaap_CommonStockSharesAuthorized": {
 "xbrltype": "sharesItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "CommonStockSharesAuthorized",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet_Parenthetical"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Common stock, shares authorized",
    "label": "Common Stock, Shares Authorized",
    "documentation": "The maximum number of common shares permitted to be issued by an entity's charter and bylaws."
   }
  }
 },
 "auth_ref": [
  "r82",
  "r564"
 ]
},
"us-gaap_CommonStockSharesHeldInEmployeeTrustShares": {
 "xbrltype": "sharesItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "CommonStockSharesHeldInEmployeeTrustShares",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/CapitalStockDetails"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Common stock , issued shares",
    "label": "Common Stock, Shares Held in Employee Trust, Shares",
    "documentation": "Number of common stock held in a trust that has been set up specifically to accumulate stock for the sole purpose of distribution to participating employees but not yet earned."
   }
  }
 },
 "auth_ref": [
  "r42"
 ]
},
"us-gaap_CommonStockSharesIssued": {
 "xbrltype": "sharesItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "CommonStockSharesIssued",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet_Parenthetical"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Common stock, shares issued",
    "label": "Common Stock, Shares, Issued",
    "documentation": "Total number of common shares of an entity that have been sold or granted to shareholders (includes common shares that were issued, repurchased and remain in the treasury). These shares represent capital invested by the firm's shareholders and owners,
   }
  }
 },
 "auth_ref": [
  "r82"
 ]
},
"us-gaap_CommonStockSharesOutstanding": {
 "xbrltype": "sharesItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "CommonStockSharesOutstanding",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet_Parenthetical"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Common stock, shares outstanding",
    "label": "Common Stock, Shares, Outstanding",
    "documentation": "Number of shares of common stock outstanding. Common stock represent the ownership interest in a corporation."
   }
  }
 },
 "auth_ref": [
  "r9",
  "r82",
  "r564",
  "r583",
  "r682",
  "r683"
 ]
},
"us-gaap_CommonStockValue": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "CommonStockValue",
 "crdr": "credit",
 "calculation": {
  "http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet": {
   "parentTag": "us-gaap_StockholdersEquity",
   "weight": 1.0,
   "order": 2.0
  }
 },
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Common stock, $0.0001 par value, 250,000,000 shares authorized; 77,851,094 and 55,943,330 shares issued and outstanding as of December 31, 2023 and December 31, 2022, respectively",
    "label": "Common Stock, Value, Issued",
    "documentation": "Aggregate par or stated value of issued nonredeemable common stock (or common stock redeemable solely at the option of the issuer). This item includes treasury stock repurchased by the entity. Note: elements for number of nonredeemable common shares, p
   }
  }
 },
 "auth_ref": [
  "r82",
  "r519",
  "r564"
 ]
},
"us-gaap_CommonUnitIssued": {
 "xbrltype": "sharesItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "CommonUnitIssued",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/StockBasedCompensationDetails"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Shares issued",
    "label": "Common Unit, Issued",
    "documentation": "Number of common units issued of limited liability company (LLC)."
   }
  }
 },
 "auth_ref": [
  "r110"
 ]
},
"ecd_CompActuallyPaidVsCoSelectedMeasureTextBlock": {
 "xbrltype": "textBlockItemType",
 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "CompActuallyPaidVsCoSelectedMeasureTextBlock",
 "presentation": [
  "http://xbrl.sec.gov/ecd/role/PvpDisclosure"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Compensation Actually Paid vs. Company Selected Measure [Text Block]",
    "terseLabel": "Compensation Actually Paid vs. Company Selected Measure"
   }
  }
 },
 "auth_ref": [
  "r737"
 ]
},
"ecd_CompActuallyPaidVsNetIncomeTextBlock": {
 "xbrltype": "textBlockItemType",
 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "CompActuallyPaidVsNetIncomeTextBlock",
 "presentation": [
  "http://xbrl.sec.gov/ecd/role/PvpDisclosure"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Compensation Actually Paid vs. Net Income [Text Block]",
    "terseLabel": "Compensation Actually Paid vs. Net Income"
   }
  }
 },
 "auth_ref": [
  "r736"
 ]
},
"ecd_CompActuallyPaidVsOtherMeasureTextBlock": {
 "xbrltype": "textBlockItemType",
 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "CompActuallyPaidVsOtherMeasureTextBlock",
 "presentation": [
  "http://xbrl.sec.gov/ecd/role/PvpDisclosure"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Compensation Actually Paid vs. Other Measure [Text Block]",
    "terseLabel": "Compensation Actually Paid vs. Other Measure"
   }
  }
 },
 "auth_ref": [
  "r738"
 ]
},
"ecd_CompActuallyPaidVsTotalShareholderRtnTextBlock": {
 "xbrltype": "textBlockItemType",
 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "CompActuallyPaidVsTotalShareholderRtnTextBlock",
 "presentation": [
  "http://xbrl.sec.gov/ecd/role/PvpDisclosure"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Compensation Actually Paid vs. Total Shareholder Return [Text Block]",
    "terseLabel": "Compensation Actually Paid vs. Total Shareholder Return"
   }
  }
 },
 "auth_ref": [
  "r735"
 ]
},
"us-gaap_ComponentsOfDeferredTaxAssetsAndLiabilitiesAbstract": {
 "xbrltype": "stringItemType",
 ...
  "http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Concentration Risk Benchmark [Axis]",
    "documentation": "Information by benchmark of concentration risk."
   }
  }
 },
 "auth_ref": [
  "r36",
  "r37",
  "r74",
  "r75",
  "r223",
  "r529",
  "r631"
 ]
},
"qubt_ConsiderationAgreementDescription": {
 "xbrltype": "stringItemType",
 "nsuri": "http://www.quantumcomputinginc.com/20231231",
 "localname": "ConsiderationAgreementDescription",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/LicenseAgreementStevensInstituteofTechnologyDetails"
 ],
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    "documentation": "Fax Number of contact personnel."
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  }
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    "documentation": "Name of contact personnel"
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    "documentation": "The name of the contained file."
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    "documentation": "The SEC Document Number of the contained file."
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  "http://www.quantumcomputinginc.com/role/LoansDetails",
  "http://www.quantumcomputinginc.com/role/SubsequentEventsDetails"
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   }
  }
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 "localname": "DebtInstrumentIncreaseAccruedInterest",
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    "label": "Debt Instrument, Increase, Accrued Interest",
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   }
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   }
  }
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  "http://www.quantumcomputinginc.com/role/LoansDetails",
  "http://www.quantumcomputinginc.com/role/SubsequentEventsDetails"
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   }
  }
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  }
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    "label": "Deferred Tax Assets, Operating Loss Carryforwards",
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   }
  }
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 "auth_ref": [
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  "r859"
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"us-gaap_DeferredTaxAssetsValuationAllowance": {
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 "localname": "DeferredTaxAssetsValuationAllowance",
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    "label": "Deferred Tax Assets, Valuation Allowance",
    "documentation": "Amount of deferred tax assets for which it is more likely than not that a tax benefit will not be realized."
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  }
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 "auth_ref": [
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    "label": "Depreciation, Depletion and Amortization, Nonproduction",
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   }
  }
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 "auth_ref": [
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  "r49"
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    "label": "Derivative, Variable Interest Rate",
    "documentation": "Variable interest rate in effect as of the balance sheet date related to the interest rate derivative."
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    "label": "Share-Based Payment Arrangement [Text Block]",
    "documentation": "The entire disclosure for share-based payment arrangement."
   }
  }
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    "label": "Stock Based Compensation [Abstract]"
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  }
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 "crdr": "credit",
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  }
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   "role": {
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   }
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  "r710",
  "r724"
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"us-gaap_DividendsPayableCurrent": {
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 "localname": "DividendsPayableCurrent",
 "crdr": "credit",
 "calculation": {
  "http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet": {
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   "order": 4.0
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   }
  }
 },
 "auth_ref": [
  "r19"
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   "role": {
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    "documentation": "The basis of accounting the registrant has used to prepare the financial statements included in this filing This can either be 'U.S. GAAP', 'International Financial Reporting Standards', or 'Other'."
   }
  }
 },
 "auth_ref": [
  "r684"
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 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Annual Report",
    "documentation": "Boolean flag that is true only for a form used as an annual report."
   }
  }
 },
 "auth_ref": [
  "r681",
  "r684",
  "r697"
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   }
  }
 },
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  "en-us": {
   "role": {
    "label": "Document Description",
    "documentation": "The description of the document."
   }
  }
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 ],
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  "en-us": {
   "role": {
    "label": "Document [Domain]",
    "documentation": "Type of the document as assigned by the filer, corresponding to SEC document naming convention standards."
   }
  }
 },
 "auth_ref": []
},
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 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Effective Date",
    "documentation": "The date when a document, upon receipt and acceptance, becomes officially effective, in YYYY-MM-DD format. Usually it is a system-assigned date time value, but it may be declared by the submitter in some cases."
   }
  }
 },
 "auth_ref": []
},
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 "localname": "DocumentFinStmtErrorCorrectionFlag",
 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Financial Statement Error Correction [Flag]",
    "documentation": "Indicates whether any of the financial statement period in the filing include a restatement due to error correction."
   }
  }
 },
 "auth_ref": [
  "r681",
  "r684",
  "r697",
  "r761"
 ]
},
"dei_DocumentFinStmtRestatementRecoveryAnalysisFlag": {
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 "localname": "DocumentFinStmtRestatementRecoveryAnalysisFlag",
 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Financial Statement Restatement Recovery Analysis [Flag]",
    "documentation": "Indicates whether any of the financial statement periods include restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to \u00a7240.10D-1(b)."
   }
  }
 },
 "auth_ref": [
  "r681",
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  "r697",
  "r761"
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"dei_DocumentFiscalPeriodFocus": {
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  "en-us": {
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   }
  }
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 "presentation": [
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   }
  }
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 "auth_ref": []
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  "en-us": {
   "role": {
    "label": "Document Information, Document [Axis]",
    "documentation": "The axis of a table defines the relationship between the domain members or categories in the table and the line items or concepts that complete the table."
   }
  }
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 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Information [Line Items]",
    "documentation": "Line items represent financial concepts included in a table. These concepts are used to disclose reportable information associated with domain members defined in one or many axes to the table."
   }
  }
 },
 "auth_ref": []
},
"dei_DocumentInformationTable": {
 "xbrltype": "stringItemType",
 "nsuri": "http://xbrl.sec.gov/dei/2023",
 "localname": "DocumentInformationTable",
 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Information [Table]",
    "documentation": "Container to support the formal attachment of each official or unofficial, public or private document as part of a submission package."
   }
  }
 },
 "auth_ref": []
},
"dei_DocumentInformationTextBlock": {
 "xbrltype": "textBlockItemType",
 "nsuri": "http://xbrl.sec.gov/dei/2023",
 "localname": "DocumentInformationTextBlock",
 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Information [Text Block]",
    "documentation": "Container to support the formal attachment of each official or unofficial, public or private document as part of a submission package."
   }
  }
 },
 "auth_ref": []
},
"dei_DocumentName": {
 "xbrltype": "normalizedStringItemType",
 "nsuri": "http://xbrl.sec.gov/dei/2023",
 "localname": "DocumentName",
 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Name",
    "documentation": "Name of the document as assigned by the filer, corresponding to SEC document naming convention standards. Examples appear in the &lt;FILENAME&gt; field of EDGAR filings, such as 'htm_25911.htm', 'exhibit1.htm', 'v105727_8k.txt'."
   }
  }
 },
 "auth_ref": []
},
"dei_DocumentPeriodEndDate": {
 "xbrltype": "dateItemType",
 "nsuri": "http://xbrl.sec.gov/dei/2023",
 "localname": "DocumentPeriodEndDate",
 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Period End Date",
    "documentation": "For the EDGAR submission types of Form 8-K: the date of the report, the date of the earliest event reported; for the EDGAR submission types of Form N-1A: the filing date; for all other submission types: the end of the reporting or transition period.  The format of the date is YYYY-MM-DD."
   }
  }
 },
 "auth_ref": []
},
"dei_DocumentPeriodStartDate": {
 "xbrltype": "dateItemType",
 "nsuri": "http://xbrl.sec.gov/dei/2023",
 "localname": "DocumentPeriodStartDate",
 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Period Start Date",
    "documentation": "The start date of the period covered in the document, in YYYY-MM-DD format."
   }
  }
 },
 "auth_ref": []
},
"dei_DocumentQuarterlyReport": {
 "xbrltype": "booleanItemType",
 "nsuri": "http://xbrl.sec.gov/dei/2023",
 "localname": "DocumentQuarterlyReport",
 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Quarterly Report",
    "documentation": "Boolean flag that is true only for a form used as an quarterly report."
   }
  }
 },
 "auth_ref": [
  "r682"
 ]
},
"dei_DocumentRegistrationStatement": {
 "xbrltype": "booleanItemType",
 "nsuri": "http://xbrl.sec.gov/dei/2023",
 "localname": "DocumentRegistrationStatement",
 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Registration Statement",
    "documentation": "Boolean flag that is true only for a form used as a registration statement."
   }
  }
 },
 "auth_ref": [
  "r670"
 ]
},
"dei_DocumentShellCompanyEventDate": {
 "xbrltype": "dateItemType",
 "nsuri": "http://xbrl.sec.gov/dei/2023",
 "localname": "DocumentShellCompanyEventDate",
 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Document Shell Company Event Date",
    "documentation": "Date of event requiring a shell company report."
   }
```

"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Effective on Date, 486(b)"
}
}
},
"auth_ref": [
"r776"
]
},
"dei_EffectiveOnSetDate486a": {
"xbrltype": "booleanItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EffectiveOnSetDate486a",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Effective on Set Date, 486(a)"
}
}
},
"auth_ref": [
"r775"
]
},
"dei_EffectiveOnSetDate486b": {
"xbrltype": "booleanItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EffectiveOnSetDate486b",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Effective on Set Date, 486(b)"
}
}
},
"auth_ref": [
"r776"
]
},
"dei_EffectiveUponFiling462e": {
"xbrltype": "booleanItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EffectiveUponFiling462e",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Effective Upon Filing, 462(e)"
}
}
},
"auth_ref": [
"r774"
]
},
"dei_EffectiveUponFiling486b": {
"xbrltype": "booleanItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EffectiveUponFiling486b",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Effective upon Filing, 486(b)"
}
}
},
"auth_ref": [
"r776"
]
},
"dei_EffectiveWhenDeclaredSection8c": {
"xbrltype": "booleanItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EffectiveWhenDeclaredSection8c",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Effective when Declared, Section 8(c)"
}
}
},
"auth_ref": [
"r778"
]
},
"us-gaap_EmployeeServiceShareBasedCompensationAllocationOfRecognizedPeriodCostsLineItems": {
"xbrltype": "stringItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "EmployeeServiceShareBasedCompensationAllocationOfRecognizedPeriodCostsLineItems",
"presentation": [
"http://www.quantumcomputinginc.com/role/ScheduleofStockbasedCompensationExpenseTable"
],
"lang": {
"en-us": {
"role": {
"label": "Share-Based Payment Arrangement, Expensed and Capitalized, Amount [Line Items]",
"documentation": "Line items represent financial concepts included in a table. These concepts are used to disclose reportable information associated with domain members defined in one or many axes to the table."
}
}
},
"auth_ref": []
},
"us-gaap_EmployeeStockOptionMember": {
"xbrltype": "domainItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "EmployeeStockOptionMember",
"presentation": [
"http://xbrl.sec.gov/ecd/role/AwardTimingDisclosure"
],
"lang": {
"en-us": {
"role": {
"label": "Employee Stock Option [Member]",
"terseLabel": "Employee Stock Option",
"documentation": "Share-based payment arrangement granting right, subject to vesting and other restrictions, to purchase or sell certain number of shares at predetermined price for specified period of time."
}
}
},
"auth_ref": []
},
"qubt_EmploymentAgreementsMember": {
"xbrltype": "domainItemType",
"nsuri": "http://www.quantumcomputinginc.com/20231231",
"localname": "EmploymentAgreementsMember",
"presentation": [
"http://www.quantumcomputinginc.com/role/ScheduleofAmountsRelatedtoIntangibleAssetsTable"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Employment agreements [Member]",
"label": "Employment Agreements Member"
}
}
},
"auth_ref": []
},
"us-gaap_EntertainmentLicenseAgreementForProgramMaterialAbstract": {
"xbrltype": "stringItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "EntertainmentLicenseAgreementForProgramMaterialAbstract",
"lang": {
"en-us": {
"role": {
"label": "License Agreement \u2013 Stevens Institute of Technology [Abstract]"
}
}
},
"auth_ref": []
},
"dei_EntitiesTable": {
"xbrltype": "stringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntitiesTable",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entities [Table]",
"documentation": "Container to assemble all relevant information about each entity associated with the document instance"
}
}
},
"auth_ref": []
},
"dei_EntityAccountingStandard": {
"xbrltype": "stringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityAccountingStandard",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Accounting Standard",
"documentation": "The standardized abbreviation of the accounting standard used by the entity. This can either be US GAAP as promulgated by the FASB or IFRS as promulgated by the IASB. Example: "US GAAP", "IFRS".  This is distinct from the Document Accounting Standard element."
}
}
},
"auth_ref": []
},
"dei_EntityAddressAddressDescription": {
"xbrltype": "stringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityAddressAddressDescription",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Address, Address Description",
"documentation": "Description of the kind of address for the entity, if needed to distinguish more finely among mailing, principal, legal, accounting, contact or other addresses."
}
}
},
"auth_ref": []
},
"dei_EntityAddressAddressLine1": {
"xbrltype": "normalizedStringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityAddressAddressLine1",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Address, Address Line One",
"documentation": "Address Line 1 such as Attn, Building Name, Street Name"
}
}
},
"auth_ref": []
},
"dei_EntityAddressAddressLine2": {
"xbrltype": "normalizedStringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityAddressAddressLine2",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Address, Address Line Two",
"documentation": "Address Line 2 such as Street or Suite number"
}
}
},
"auth_ref": []
},
"dei_EntityAddressAddressLine3": {
"xbrltype": "normalizedStringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityAddressAddressLine3",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Address, Address Line Three",
"documentation": "Address Line 3 such as an Office Park"
}
}
},
"auth_ref": []
},
"dei_EntityAddressCityOrTown": {
"xbrltype": "normalizedStringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityAddressCityOrTown",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Address, City or Town",
"documentation": "Name of the City or Town"
}
}
},
"auth_ref": []
},
"dei_EntityAddressCountry": {
"xbrltype": "countryCodeItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityAddressCountry",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Address, Country",
"documentation": "ISO 3166-1 alpha-2 country code."
}
}
},
"auth_ref": []
},
"dei_EntityAddressPostalZipCode": {
"xbrltype": "normalizedStringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityAddressPostalZipCode",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Address, Postal Zip Code",
"documentation": "Code for the postal or zip code"
}
}
},
"auth_ref": []
},
"dei_EntityAddressStateOrProvince": {
"xbrltype": "stateOrProvinceItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityAddressStateOrProvince",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Address, State or Province",
"documentation": "Name of the state or province."
}
}
},
"auth_ref": []
},
"dei_EntityAddressesAddressTypeAxis": {
"xbrltype": "stringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityAddressesAddressTypeAxis",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Addresses, Address Type [Axis]",
"documentation": "The axis of a table defines the relationship between the domain members or categories in the table and the line items or concepts that complete the table."
}
}
},
"auth_ref": []
},
"dei_EntityAddressesLineItems": {
"xbrltype": "stringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityAddressesLineItems",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {

"role": {
"label": "Entity Addresses [Line Items]",
"documentation": "Line items represent financial concepts included in a table. These concepts are used to disclose reportable information associated with domain members defined in one or many axes to the table."
}
}
},
"auth_ref": []
},
"dei_EntityAddressesTable": {
"xbrltype": "stringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityAddressesTable",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Addresses [Table]",
"documentation": "Container of address information for the entity"
}
}
},
"auth_ref": [
"r672"
]
},
"dei_EntityBankruptcyProceedingsReportingCurrent": {
"xbrltype": "booleanItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityBankruptcyProceedingsReportingCurrent",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Bankruptcy Proceedings, Reporting Current",
"documentation": "For registrants involved in bankruptcy proceedings during the preceding five years, the value Yes indicates that the registrant has filed all documents and reports required to be filed by Section 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court; the value No indicates the registrant has not.  Registrants not involved in bankruptcy proceedings during the pr
}
}
},
"auth_ref": [
"r676"
]
},
"dei_EntityCentralIndexKey": {
"xbrltype": "centralIndexKeyItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityCentralIndexKey",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Central Index Key",
"documentation": "A unique 10-digit SEC-issued value to identify entities that have filed disclosures with the SEC. It is commonly abbreviated as CIK."
}
}
},
"auth_ref": [
"r672"
]
},
"dei_EntityCommonStockSharesOutstanding": {
"xbrltype": "sharesItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityCommonStockSharesOutstanding",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Common Stock, Shares Outstanding",
"documentation": "Indicate number of shares or other units outstanding of each of registrant's classes of capital or common stock or other ownership interests, if and as stated on cover of related periodic report. Where multiple classes or units exist define each class/interest by adding class of stock items such as Common Class A [Member], Common Class B [Member] or Partnership Interest [Member] onto the Instrument [Domain] of the Entity Listings, Instrum
}
}
},
"auth_ref": []
},
"dei_EntityContactPersonnelLineItems": {
"xbrltype": "stringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityContactPersonnelLineItems",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Contact Personnel [Line Items]",
"documentation": "Line items represent financial concepts included in a table. These concepts are used to disclose reportable information associated with domain members defined in one or many axes to the table."
}
}
},
"auth_ref": []
},
"dei_EntityCurrentReportingStatus": {
"xbrltype": "yesNoItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityCurrentReportingStatus",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Current Reporting Status",
"documentation": "Indicate 'Yes' or 'No' whether registrants (1) have filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that registrants were required to file such reports), and (2) have been subject to such filing requirements for the past 90 days. This information should be based on the registrant's current or most recent filing containing the rel
}
}
},
"auth_ref": []
},
"dei_EntityDomain": {
"xbrltype": "domainItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityDomain",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/AuditInformation",
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity [Domain]",
"documentation": "All the names of the entities being reported upon in a document. Any legal structure used to conduct activities or to hold assets. Some examples of such structures are corporations, partnerships, limited liability companies, grantor trusts, and other trusts. This item does not include business and geographical segments which are included in the geographical or business segments domains."
}
}
},
"auth_ref": []
},
"dei_EntityEmergingGrowthCompany": {
"xbrltype": "booleanItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityEmergingGrowthCompany",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Emerging Growth Company",
"documentation": "Indicate if registrant meets the emerging growth company criteria."
}
}
},
"auth_ref": [
"r672"
]
},
"dei_EntityExTransitionPeriod": {
"xbrltype": "booleanItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityExTransitionPeriod",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Ex Transition Period",
"documentation": "Indicate if an emerging growth company has elected not to use the extended transition period for complying with any new or revised financial accounting standards."
}
}
},
"auth_ref": [
"r777"
]
},
"dei_EntityFileNumber": {
"xbrltype": "fileNumberItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityFileNumber",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity File Number",
"documentation": "Commission file number. The field allows up to 17 characters. The prefix may contain 1-3 digits, the sequence number may contain 1-8 digits, the optional suffix may contain 1-4 characters, and the fields are separated with a hyphen."
}
}
},
"auth_ref": []
},
"dei_EntityFilerCategory": {
"xbrltype": "filerCategoryItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityFilerCategory",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Filer Category",
"documentation": "Indicate whether the registrant is one of the following: Large Accelerated Filer, Accelerated Filer, Non-accelerated Filer. Definitions of these categories are stated in Rule 12b-2 of the Exchange Act. This information should be based on the registrant's current or most recent filing containing the related disclosure."
}
}
},
"auth_ref": [
"r672"
]
},
"dei_EntityHomeCountryISOCode": {
"xbrltype": "countryCodeItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityHomeCountryISOCode",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Home Country ISO Code",
"documentation": "ISO 3166-1 alpha-2 country code for the Entity's home country. If home country is different from country of legal incorporation, then also provide country of legal incorporation in the 'Entity Incorporation, State Country Code' element."
}
}
},
"auth_ref": []
},
"dei_EntityIncorporationDateOfIncorporation": {
"xbrltype": "dateItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityIncorporationDateOfIncorporation",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Incorporation, Date of Incorporation",
"documentation": "Date when an entity was incorporated"
}
}
},
"auth_ref": []
},
"dei_EntityIncorporationStateCountryCode": {
"xbrltype": "edgarStateCountryItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityIncorporationStateCountryCode",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Incorporation, State or Country Code",
"documentation": "Two-character EDGAR code representing the state or country of incorporation."
}
}
},
"auth_ref": []
},
"dei_EntityInformationFormerLegalOrRegisteredName": {
"xbrltype": "normalizedStringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityInformationFormerLegalOrRegisteredName",
"presentation": [
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],
"lang": {
"en-us": {
"role": {
"label": "Entity Information, Former Legal or Registered Name",
"documentation": "Former Legal or Registered Name of an entity"
}
}
},
"auth_ref": []
},
"dei_EntityInformationLineItems": {
"xbrltype": "stringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityInformationLineItems",
"presentation": [
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"lang": {
"en-us": {
"role": {
"label": "Entity Information [Line Items]",
"documentation": "Line items represent financial concepts included in a table. These concepts are used to disclose reportable information associated with domain members defined in one or many axes to the table."
}
}
},
"auth_ref": []
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"dei_EntityInteractiveDataCurrent": {
"xbrltype": "yesNoItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityInteractiveDataCurrent",
"presentation": [
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"lang": {
"en-us": {
"role": {
"label": "Entity Interactive Data Current",
"documentation": "Boolean flag that is true when the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files)."
}
}
},
"auth_ref": [
"r767"
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"dei_EntityInvCompanyType": {
"xbrltype": "invCompanyType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
[illegible]
"en-us": {
"role": {
"label": "Entity Listings, Exchange [Axis]",
"documentation": "The axis of a table defines the relationship between the domain members or categories in the table and the line items or concepts that complete the table."
}
}
},
"auth_ref": []
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"dei_EntityListingsLineItems": {
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"en-us": {
"role": {
"label": "Entity Listings [Line Items]",
"documentation": "Line items represent financial concepts included in a table. These concepts are used to disclose reportable information associated with domain members defined in one or many axes to the table."
}
}
},
"auth_ref": []
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"dei_EntityListingsTable": {
"xbrltype": "stringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityListingsTable",
"presentation": [
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"lang": {
"en-us": {
"role": {
"label": "Entity Listings [Table]",
"documentation": "Container for exchange listing information for an entity"
}
}
},
"auth_ref": []
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"dei_EntityNumberOfEmployees": {
"xbrltype": "decimalItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityNumberOfEmployees",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Number of Employees",
"documentation": "Number of persons employed by the Entity"
}
}
},
"auth_ref": []
},
"dei_EntityPhoneFaxNumbersLineItems": {
"xbrltype": "stringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityPhoneFaxNumbersLineItems",
"presentation": [
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"en-us": {
"role": {
"label": "Entity Phone Fax Numbers [Line Items]",
"documentation": "Line items represent financial concepts included in a table. These concepts are used to disclose reportable information associated with domain members defined in one or many axes to the table."
}
}
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"dei_EntityPrimarySicNumber": {
"xbrltype": "sicNumberItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityPrimarySicNumber",
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"lang": {
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"role": {
"label": "Entity Primary SIC Number",
"documentation": "Primary Standard Industrial Classification (SIC) Number for the Entity."
}
}
},
"auth_ref": [
"r697"
]
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"dei_EntityPublicFloat": {
"xbrltype": "monetaryItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityPublicFloat",
"crdr": "credit",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
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"lang": {
"en-us": {
"role": {
"label": "Entity Public Float",
"documentation": "The aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal qu
}
}
},
"auth_ref": []
},
"dei_EntityRegistrantName": {
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"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityRegistrantName",
"presentation": [
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],
"lang": {
"en-us": {
"role": {
"label": "Entity Registrant Name",
"documentation": "The exact name of the entity filing the report as specified in its charter, which is required by forms filed with the SEC."
}
}
},
"auth_ref": [
"r672"
]
},
"dei_EntityReportingCurrencyISOCode": {
"xbrltype": "currencyItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "EntityReportingCurrencyISOCode",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Reporting Currency ISO Code",
"documentation": "The three character ISO 4217 code for the currency used for reporting purposes. Example: 'USD'."
}
}
},
"auth_ref": []
},
"dei_EntityShellCompany": {
"xbrltype": "booleanItemType",
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"localname": "EntityShellCompany",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Entity Shell Company",
"documentation": "Boolean flag that is true when the registrant is a shell company as defined in Rule 12b-2 of the Exchange Act."
}
}
},
"auth_ref": [
"r672"
]
},
"dei_EntitySmallBusiness": {
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"nsuri": "http://xbrl.sec.gov/dei/2023",

"us-gaap_EquipmentMember": {
 "xbrltype": "domainItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "EquipmentMember",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ScheduleofEstimatedUsefulLifeTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Minor equipment [Member]",
    "label": "Equipment [Member]",
    "documentation": "Tangible personal property used to produce goods and services."
   }
  }
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 "auth_ref": []
},
"us-gaap_EquityComponentDomain": {
 "xbrltype": "domainItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "EquityComponentDomain",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ShareholdersEquityType2or3",
  "http://www.quantumcomputinginc.com/role/StockBasedCompensationDetails",
  "http://www.quantumcomputinginc.com/role/SubsequentEventsDetails"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Equity Component [Domain]",
    "documentation": "Components of equity are the parts of the total Equity balance including that which is allocated to common, preferred, treasury stock, retained earnings, etc."
   }
  }
 },
 "auth_ref": [
  "r8",
  "r141",
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 "localname": "EquityValuationAssumptionDifferenceFnTextBlock",
 "presentation": [
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 ],
 "lang": {
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   "role": {
    "label": "Equity Valuation Assumption Difference, Footnote [Text Block]",
    "terseLabel": "Equity Valuation Assumption Difference, Footnote"
   }
  }
 },
 "auth_ref": [
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"ecd_ErrCompAnalysisTextBlock": {
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 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "ErrCompAnalysisTextBlock",
 "presentation": [
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 ],
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   "role": {
    "label": "Erroneous Compensation Analysis [Text Block]",
    "terseLabel": "Erroneous Compensation Analysis"
   }
  }
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  "r717",
  "r765"
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"ecd_ErrCompRecoveryTable": {
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 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "ErrCompRecoveryTable",
 "presentation": [
  "http://xbrl.sec.gov/ecd/role/ErrCompDisclosure"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Erroneously Awarded Compensation Recovery [Table]",
    "terseLabel": "Erroneously Awarded Compensation Recovery"
   }
  }
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 "auth_ref": [
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  "r714",
  "r742"
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"us-gaap_ExcessStockSharesIssued": {
 "xbrltype": "sharesItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "ExcessStockSharesIssued",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/StockBasedCompensationDetails"
 ],
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  "en-us": {
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    "terseLabel": "Shares of common stock",
    "label": "Excess Stock, Shares Issued",
    "documentation": "Number of excess stock shares of an entity that have been sold or granted to shareholders."
   }
  }
 },
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},
"dei_ExchangeDomain": {
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 "localname": "ExchangeDomain",
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 ],
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  "en-us": {
   "role": {
    "label": "Exchange [Domain]",
    "documentation": "The set of all exchanges. MIC exchange codes are drawn from ISO 10383."
   }
  }
 },
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},
"ecd_ExecutiveCategoryAxis": {
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 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "ExecutiveCategoryAxis",
 "presentation": [
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 ],
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    "terseLabel": "Executive Category:"
   }
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"qubt_ExercisePriceEightPointEightFiveMember": {
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 "nsuri": "http://www.quantumcomputinginc.com/20231231",
 "localname": "ExercisePriceEightPointEightFiveMember",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ScheduleofExercisePriceRangeTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Exercise Price 8.85 [Member]",
    "label": "Exercise Price Eight Point Eight Five Member"
   }
  }
 },
 "auth_ref": []
},
"qubt_ExercisePriceElevenPointFiveOneMember": {
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 "localname": "ExercisePriceElevenPointFiveOneMember",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ScheduleofExercisePriceRangeTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Exercise Price 11.51 [Member]",
    "label": "Exercise Price Eleven Point Five One Member"
   }
  }
 },
 "auth_ref": []
},
"qubt_ExercisePriceFivePointSevenZeroMember": {
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 "nsuri": "http://www.quantumcomputinginc.com/20231231",
 "localname": "ExercisePriceFivePointSevenZeroMember",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ScheduleofExercisePriceRangeTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Exercise Price 5.70 [Member]",
    "label": "Exercise Price Five Point Seven Zero Member"
   }
  }
 },
 "auth_ref": []
},
"qubt_ExercisePriceFivePointSixNineMember": {
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 "nsuri": "http://www.quantumcomputinginc.com/20231231",
 "localname": "ExercisePriceFivePointSixNineMember",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ScheduleofExercisePriceRangeTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Exercise Price 5.69 [Member]",
    "label": "Exercise Price Five Point Six Nine Member"
   }
  }
 },
 "auth_ref": []
},
"qubt_ExercisePriceOnePointEightFourMember": {
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 "localname": "ExercisePriceOnePointEightFourMember",
 "presentation": [
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 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Exercise Price 1.84 [Member]",
    "label": "Exercise Price One Point Eight Four Member"
   }
  }
 },
 "auth_ref": []
},
"qubt_ExercisePriceOnePointNineFiveMember": {
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 "nsuri": "http://www.quantumcomputinginc.com/20231231",
 "localname": "ExercisePriceOnePointNineFiveMember",
 "presentation": [
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 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Exercise Price 1.95 [Member]",
    "label": "Exercise Price One Point Nine Five Member"
   }
  }
 },
 "auth_ref": []
},
"qubt_ExercisePriceOnePointFiveOneMember": {
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 "localname": "ExercisePriceOnePointFiveOneMember",
 "presentation": [
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 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Exercise Price 1.51 [Member]",
    "label": "Exercise Price One Point Five One Member"
   }
  }
 },
 "auth_ref": []
},
"qubt_ExercisePriceOnePointFiveTwoMember": {
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 "nsuri": "http://www.quantumcomputinginc.com/20231231",
 "localname": "ExercisePriceOnePointFiveTwoMember",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ScheduleofExercisePriceRangeTable"
 ],
 "lang": {
  "en-us": {

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"e813",
"e814"
]
},
"us-gaap_FinancingInterestExpense": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "FinancingInterestExpense",
"crdr": "debit",
"calculation": {
"http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement": {
"parentTag": "us-gaap_NonoperatingIncomeExpense",
"weight": -1.0,
"order": 4.0
}
},
"presentation": [
"http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement"
],
"lang": {
"en-us": {
"role": {
"negatedLabel": "Interest Expense \u2013 Financing expenses",
"label": "Financing Interest Expense",
"documentation": "This element represents interest incurred for borrowed money which was used to produce goods or render services."
}
}
},
"auth_ref": [
"r92"
]
},
"us-gaap_FiniteLivedCustomerRelationshipsGross": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "FiniteLivedCustomerRelationshipsGross",
"crdr": "debit",
"presentation": [
"http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Customer relationships",
"label": "Finite-Lived Customer Relationships, Gross",
"documentation": "Gross carrying amount before accumulated amortization as of the balance sheet date to an asset acquired in a business combination representing a favorable existing relationship with customers having a finite beneficial life."
}
}
},
"auth_ref": [
"r122"
]
},
"us-gaap_FiniteLivedIntangibleAssetUsefulLife": {
"xbrltype": "durationItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "FiniteLivedIntangibleAssetUsefulLife",
"presentation": [
"http://www.quantumcomputinginc.com/role/ScheduleofAmountsRelatedtoIntangibleAssetsTable"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Amortizable Life",
"label": "Finite-Lived Intangible Asset, Useful Life",
"documentation": "Useful life of finite-lived intangible assets, in 'PnYnMnDTnHnMnS' format, for example, 'P1Y5M13D' represents the reported fact of one year, five months, and thirteen days."
}
}
},
"auth_ref": []
},
"us-gaap_FiniteLivedIntangibleAssetsAccumulatedAmortization": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "FiniteLivedIntangibleAssetsAccumulatedAmortization",
"crdr": "credit",
"presentation": [
"http://www.quantumcomputinginc.com/role/ScheduleofAmountsRelatedtoIntangibleAssetsTable"
],
"lang": {
"en-us": {
"role": {
"negatedLabel": "Less: accumulated amortization",
"label": "Finite-Lived Intangible Assets, Accumulated Amortization",
"documentation": "Accumulated amount of amortization of assets, excluding financial assets and goodwill, lacking physical substance with a finite life."
}
}
},
"auth_ref": [
"r150",
"r282"
]
},
"us-gaap_FiniteLivedIntangibleAssetsAmortizationExpenseAfterYearFive": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "FiniteLivedIntangibleAssetsAmortizationExpenseAfterYearFive",
"crdr": "debit",
"calculation": {
"http://www.quantumcomputinginc.com/role/ScheduleofFutureAmortizationExpenseTable": {
"parentTag": "us-gaap_FiniteLivedIntangibleAssetsNet",
"weight": 1.0,
"order": 6.0
}
},
"presentation": [
"http://www.quantumcomputinginc.com/role/ScheduleofFutureAmortizationExpenseTable"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Thereafter (2029-2032)",
"label": "Finite-Lived Intangible Asset, Expected Amortization, after Year Five",
"documentation": "Amount of amortization for asset, excluding financial asset and goodwill, lacking physical substance with finite life expected to be recognized after fifth fiscal year following current fiscal year. Excludes interim and annual periods when interim periods are reported from current statement of financial position date (rolling approach)."
}
}
},
"auth_ref": []
},
"us-gaap_FiniteLivedIntangibleAssetsAmortizationExpenseNextTwelveMonths": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "FiniteLivedIntangibleAssetsAmortizationExpenseNextTwelveMonths",
"crdr": "debit",
"calculation": {
"http://www.quantumcomputinginc.com/role/ScheduleofFutureAmortizationExpenseTable": {
"parentTag": "us-gaap_FiniteLivedIntangibleAssetsNet",
"weight": 1.0,
"order": 1.0
}
},
"presentation": [
"http://www.quantumcomputinginc.com/role/ScheduleofFutureAmortizationExpenseTable"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "2024",

 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "FiniteLivedIntangibleAssetsAmortizationExpenseTableTextBlock",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/IntangibleAssetsandGoodwillTables"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Schedule of Amounts Related to Intangible Assets",
    "label": "Finite-Lived Intangible Assets Amortization Expense [Table Text Block]",
    "documentation": "Tabular disclosure of amortization expense of assets, excluding financial assets, that lack physical substance, having a limited useful life."
   }
  }
 },
 "auth_ref": []
},
"us-gaap_FiniteLivedIntangibleAssetsAmortizationExpenseYearFive": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "FiniteLivedIntangibleAssetsAmortizationExpenseYearFive",
 "crdr": "debit",
 "calculation": {
  "http://www.quantumcomputinginc.com/role/ScheduleofFutureAmortizationExpenseTable": {
   "parentTag": "us-gaap_FiniteLivedIntangibleAssetsNet",
   "weight": 1.0,
   "order": 5.0
  }
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 "presentation": [
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 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "2028",
    "label": "Finite-Lived Intangible Asset, Expected Amortization, Year Five",
    "documentation": "Amount of amortization for assets, excluding financial assets and goodwill, lacking physical substance with finite life expected to be recognized in fifth fiscal year following current fiscal year. Excludes interim and annual periods when interim periods are reported from current statement of financial position date (rolling approach)."
   }
  }
 },
 "auth_ref": [
  "r106"
 ]
},
"us-gaap_FiniteLivedIntangibleAssetsAmortizationExpenseYearFour": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "FiniteLivedIntangibleAssetsAmortizationExpenseYearFour",
 "crdr": "debit",
 "calculation": {
  "http://www.quantumcomputinginc.com/role/ScheduleofFutureAmortizationExpenseTable": {
   "parentTag": "us-gaap_FiniteLivedIntangibleAssetsNet",
   "weight": 1.0,
   "order": 4.0
  }
 },
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ScheduleofFutureAmortizationExpenseTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "2027",
    "label": "Finite-Lived Intangible Asset, Expected Amortization, Year Four",
    "documentation": "Amount of amortization for assets, excluding financial assets and goodwill, lacking physical substance with finite life expected to be recognized in fourth fiscal year following current fiscal year. Excludes interim and annual periods when interim periods are reported from current statement of financial position date (rolling approach)."
   }
  }
 },
 "auth_ref": [
  "r106"
 ]
},
"us-gaap_FiniteLivedIntangibleAssetsAmortizationExpenseYearThree": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "FiniteLivedIntangibleAssetsAmortizationExpenseYearThree",
 "crdr": "debit",
 "calculation": {
  "http://www.quantumcomputinginc.com/role/ScheduleofFutureAmortizationExpenseTable": {
   "parentTag": "us-gaap_FiniteLivedIntangibleAssetsNet",
   "weight": 1.0,
   "order": 3.0
  }
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 "presentation": [
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 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "2026",
    "label": "Finite-Lived Intangible Asset, Expected Amortization, Year Three",
    "documentation": "Amount of amortization for assets, excluding financial assets and goodwill, lacking physical substance with finite life expected to be recognized in third fiscal year following current fiscal year. Excludes interim and annual periods when interim periods are reported from current statement of financial position date (rolling approach)."
   }
  }
 },
 "auth_ref": [
  "r106"
 ]
},
"us-gaap_FiniteLivedIntangibleAssetsAmortizationExpenseYearTwo": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "FiniteLivedIntangibleAssetsAmortizationExpenseYearTwo",
 "crdr": "debit",
 "calculation": {
  "http://www.quantumcomputinginc.com/role/ScheduleofFutureAmortizationExpenseTable": {
   "parentTag": "us-gaap_FiniteLivedIntangibleAssetsNet",
   "weight": 1.0,
   "order": 2.0
  }
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 "presentation": [
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 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "2025",
    "label": "Finite-Lived Intangible Asset, Expected Amortization, Year Two",
    "documentation": "Amount of amortization for assets, excluding financial assets and goodwill, lacking physical substance with finite life expected to be recognized in second fiscal year following current fiscal year. Excludes interim and annual periods when interim periods are reported from current statement of financial position date (rolling approach)."
   }
  }
 },
 "auth_ref": [
  "r106"
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},
"us-gaap_FiniteLivedIntangibleAssetsByMajorClassAxis": {
 "xbrltype": "stringItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "FiniteLivedIntangibleAssetsByMajorClassAxis",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails",
  "http://www.quantumcomputinginc.com/role/ScheduleofAmountsRelatedtoIntangibleAssetsTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Finite-Lived Intangible Assets by Major Class [Axis]",
    "documentation": "Information by major type or class of finite-lived intangible assets."
   }
  }
 },
 "auth_ref": [
  "r279",
  "r281",
  "r282",
  "r284",
  "r485",
  "r489"
 ]
},
"us-gaap_FiniteLivedIntangibleAssetsFutureAmortizationExpenseAbstract": {
 "xbrltype": "stringItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "FiniteLivedIntangibleAssetsFutureAmortizationExpenseAbstract",
 "lang": {
  "en-us": {
   "role": {
    "label": "Schedule of Future Amortization Expense [Abstract]"
   }
  }
 },
 "auth_ref": []
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"us-gaap_FiniteLivedIntangibleAssetsGross": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "FiniteLivedIntangibleAssetsGross",
 "crdr": "debit",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails",
  "http://www.quantumcomputinginc.com/role/ScheduleofAmountsRelatedtoIntangibleAssetsTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Intangible Assets",
    "verboseLabel": "Estimate of intangible assets",
    "label": "Finite-Lived Intangible Assets, Gross",
    "documentation": "Amount before amortization of assets, excluding financial assets and goodwill, lacking physical substance with a finite life."
   }
  }
 },
 "auth_ref": [
  "r103",
  "r489"
 ]
},
"us-gaap_FiniteLivedIntangibleAssetsMajorClassNameDomain": {
 "xbrltype": "domainItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "FiniteLivedIntangibleAssetsMajorClassNameDomain",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails",
  "http://www.quantumcomputinginc.com/role/ScheduleofAmountsRelatedtoIntangibleAssetsTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Finite-Lived Intangible Assets, Major Class Name [Domain]",
    "documentation": "The major class of finite-lived intangible asset (for example, patents, trademarks, copyrights, etc.) A major class is composed of intangible assets that can be grouped together because they are similar, either by their nature or by their use in the operations of a company."
   }
  }
 },
 "auth_ref": [
  "r46",
  "r47"
 ]
},
"us-gaap_FiniteLivedIntangibleAssetsNet": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "FiniteLivedIntangibleAssetsNet",
 "crdr": "debit",
 "calculation": {
  "http://www.quantumcomputinginc.com/role/ScheduleofFutureAmortizationExpenseTable": {
   "parentTag": null,
   "weight": null,
   "order": null,
   "root": true
  }
 },
 "presentation": [
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  "http://www.quantumcomputinginc.com/role/ScheduleofFutureAmortizationExpenseTable"
 ],
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  "en-us": {
   "role": {
    "totalLabel": "Total",
    "terseLabel": "Net intangible assets",
    "label": "Finite-Lived Intangible Assets, Net",
    "documentation": "Amount after amortization of assets, excluding financial assets and goodwill, lacking physical substance with a finite life."
   }
  }
 },
 "auth_ref": [
  "r103",
  "r485"
 ]
},
"ecd_ForgoneRecoveryDueToDisqualificationOfTaxBenefitsAmt": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "ForgoneRecoveryDueToDisqualificationOfTaxBenefitsAmt",
 "presentation": [
  "http://xbrl.sec.gov/ecd/role/ErrCompDisclosure"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Forgone Recovery due to Disqualification of Tax Benefits, Amount",
    "terseLabel": "Forgone Recovery due to Disqualification of Tax Benefits, Amount"
   }
  }
 },
 "auth_ref": [
  "r693",
  "r705",
  "r721",
  "r749"
 ]
},
"ecd_ForgoneRecoveryDueToExpenseOfEnforcementAmt": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "ForgoneRecoveryDueToExpenseOfEnforcementAmt",
 "presentation": [
  "http://xbrl.sec.gov/ecd/role/ErrCompDisclosure"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Forgone Recovery due to Expense of Enforcement, Amount",
    "terseLabel": "Forgone Recovery due to Expense of Enforcement, Amount"
   }
  }
 },
 "auth_ref": [
  "r693",
  "r705",
  "r721",
  "r749"
 ]
},
"ecd_ForgoneRecoveryDueToViolationOfHomeCountryLawAmt": {
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 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "ForgoneRecoveryDueToViolationOfHomeCountryLawAmt",
 "presentation": [
  "http://xbrl.sec.gov/ecd/role/ErrCompDisclosure"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Forgone Recovery due to Violation of Home Country Law, Amount",
    "terseLabel": "Forgone Recovery due to Violation of Home Country Law, Amount"
   }
  }
 },
 "auth_ref": [
  "r693",
  "r705",
  "r721",
  "r749"
 ]
},
"ecd_ForgoneRecoveryExplanationOfImpracticabilityTextBlock": {
 "xbrltype": "textBlockItemType",
 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "ForgoneRecoveryExplanationOfImpracticabilityTextBlock",
 "presentation": [
  "http://xbrl.sec.gov/ecd/role/ErrCompDisclosure"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Forgone Recovery, Explanation of Impracticability [Text Block]",
    "terseLabel": "Forgone Recovery, Explanation of Impracticability"
   }
  }
 },
 "auth_ref": [
  "r693",
  "r705",
  "r721",
  "r749"
 ]
},
"ecd_ForgoneRecoveryIndName": {
 "xbrltype": "stringItemType",
 "nsuri": "http://xbrl.sec.gov/ecd/2023",
 "localname": "ForgoneRecoveryIndName",
 "presentation": [
  "http://xbrl.sec.gov/ecd/role/ErrCompDisclosure"
 ],
 "lang": {
    "documentation": "Former Address for Entity"
   }
  }
 },
 "auth_ref": [
  "r683",
  "r708"
 ]
},
"dei_FormerFiscalYearEndDate": {
 "xbrltype": "gMonthDayItemType",
 "nsuri": "http://xbrl.sec.gov/dei/2023",
 "localname": "FormerFiscalYearEndDate",
 "presentation": [
  "http://xbrl.sec.gov/dei/role/document/Cover"
 ],
 "lang": {
  "en-us": {
   "role": {
    "label": "Former Fiscal Year End Date",
    "documentation": "Former end date of previous fiscal years"
   }
  }
 },
 "auth_ref": []
},
"us-gaap_FurnitureAndFixturesMember": {
 "xbrltype": "domainItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "FurnitureAndFixturesMember",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ScheduleofEstimatedUsefulLifeTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Furniture and fixtures [Member]",
    "label": "Furniture and Fixtures [Member]",
    "documentation": "Equipment commonly used in offices and stores that have no permanent connection to the structure of a building or utilities. Examples include, but are not limited to, desks, chairs, tables, and bookcases."
   }
  }
 },
 "auth_ref": []
},
"us-gaap_GainLossOnInvestments": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "GainLossOnInvestments",
 "crdr": "credit",
 "calculation": {
  "http://www.quantumcomputinginc.com/role/ConsolidatedCashFlow": {
   "parentTag": "us-gaap_NetCashProvidedByUsedInOperatingActivities",
   "weight": -1.0,
   "order": 8.0
  }
 },
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ConsolidatedCashFlow"
 ],
 "lang": {
  "en-us": {
   "role": {
    "negatedLabel": "Net recognized losses (gains)",
    "label": "Gain (Loss) on Investments",
    "documentation": "Amount of realized and unrealized gain (loss) on investment."
   }
  }
 },
 "auth_ref": [
  "r93",
  "r779"
 ]
},
"us-gaap_GeneralAndAdministrativeExpenseMember": {
 "xbrltype": "domainItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "GeneralAndAdministrativeExpenseMember",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ScheduleofStockbasedCompensationExpenseTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "General and administrative [Member]",
    "label": "General and Administrative Expense [Member]",
    "documentation": "Primary financial statement caption encompassing general and administrative expense."
   }
  }
 },
 "auth_ref": [
  "r88"
 ]
},
"us-gaap_Goodwill": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "Goodwill",
 "crdr": "debit",
 "calculation": {
  "http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet": {
   "parentTag": "us-gaap_Assets",
   "weight": 1.0,
   "order": 6.0
  }
 },
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet",
  "http://www.quantumcomputinginc.com/role/ScheduleofChangesinGoodwillTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "periodStartLabel": "Goodwill, at beginning of year",
    "periodEndLabel": "Goodwill, at end of year",
    "terseLabel": "Goodwill",
    "label": "Goodwill",
    "documentation": "Amount after accumulated impairment loss of an asset representing future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized."
   }
  }
 },
 "auth_ref": [
  "r149",
  "r274",
  "r502",
  "r644",
  "r656",
  "r817",
  "r824"
 ]
},
"us-gaap_GoodwillAcquiredDuringPeriod": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "GoodwillAcquiredDuringPeriod",
 "crdr": "debit",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ScheduleofChangesinGoodwillTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Goodwill additions",
    "label": "Goodwill, Acquired During Period",
    "documentation": "Amount of increase in asset representing future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized resulting from a business combination."
   }
  }
 },
 "auth_ref": [
  "r276",
  "r644"
 ]
},
"us-gaap_GoodwillAndIntangibleAssetsDisclosureAbstract": {
 "xbrltype": "stringItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "GoodwillAndIntangibleAssetsDisclosureAbstract",
 "lang": {
  "en-us": {
   "role": {
    "label": "Intangible Assets and Goodwill [Abstract]"
   }
  }
 },
 "auth_ref": []
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"us-gaap_GoodwillAndIntangibleAssetsDisclosureTextBlock": {
 "xbrltype": "textBlockItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "GoodwillAndIntangibleAssetsDisclosureTextBlock",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/IntangibleAssetsandGoodwill"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Intangible Assets and Goodwill",
    "label": "Goodwill and Intangible Assets Disclosure [Text Block]",
    "documentation": "The entire disclosure for goodwill and intangible assets."
   }
  }
 },
 "auth_ref": [
  "r102"
 ]
},
"us-gaap_GoodwillImpairmentLoss": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "GoodwillImpairmentLoss",
 "crdr": "debit",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ScheduleofChangesinGoodwillTable"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Goodwill deductions or impairment",
    "label": "Goodwill, Impairment Loss",
    "documentation": "Amount of loss from the write-down of an asset representing the future economic benefit arising from other assets acquired in a business combination that are not individually identified and separately recognized."
   }
  }
 },
 "auth_ref": [
  "r5",
  "r275",
  "r277",
  "r278",
  "r644"
 ]
},
"qubt_GreenfieldChildrenLLCMember": {
 "xbrltype": "domainItemType",
 "nsuri": "http://www.quantumcomputinginc.com/20231231",
 "localname": "GreenfieldChildrenLLCMember",
 "presentation": [
  "http://www.quantumcomputinginc.com/role/CapitalStockDetails"
 ],
 "lang": {
  "en-us": {
   "role": {
    "terseLabel": "Greenfield Children, LLC, [Member]",
    "label": "Greenfield Children LLCMember"
   }
  }
 },
 "auth_ref": []
},
"us-gaap_GrossProfit": {
 "xbrltype": "monetaryItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "GrossProfit",
 "crdr": "credit",
 "calculation": {
  "http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement": {
   "parentTag": "us-gaap_OperatingIncomeLoss",
   "weight": 1.0,
   "order": 1.0
  }
 },
 "presentation": [
  "http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement"
 ],
 "lang": {
  "en-us": {
   "role": {
    "totalLabel": "Gross profit",
    "label": "Gross Profit",
    "documentation": "Aggregate revenue less cost of goods and services sold or operating expenses directly attributable to the revenue generation activity."
   }
  }
 },
 "auth_ref": [
  "r89",
  "r174",
  "r208",

[illegible]
"x286",
"x591"
]
},
"us-gaap_IncomeTaxDisclosureAbstract": {
"xbrltype": "stringItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IncomeTaxDisclosureAbstract",
"lang": {
"en-us": {
"role": {
"label": "Income Taxes [Abstract]"
}
}
},
"auth_ref": []
},
"us-gaap_IncomeTaxDisclosureTextBlock": {
"xbrltype": "textBlockItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IncomeTaxDisclosureTextBlock",
"presentation": [
"http://www.quantumcomputinginc.com/role/IncomeTaxes"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Income Taxes",
"label": "Income Tax Disclosure [Text Block]",
"documentation": "The entire disclosure for income taxes. Disclosures may include net deferred tax liability or asset recognized in an enterprise's statement of financial position, net change during the year in the total valuation allowance, approximate tax effect of each type of temporary difference and carryforward that gives rise to a significant portion of deferred tax liabilities and deferred tax assets, utilization of a tax carryback, and tax uncertainties information."
}
}
},
"auth_ref": [
"x175",
"x378",
"x380",
"x381",
"x383",
"x389",
"x391",
"x392",
"x393",
"x536"
]
},
"us-gaap_IncomeTaxEffectsAllocatedDirectlyToEquityPriorPeriodAdjustment": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IncomeTaxEffectsAllocatedDirectlyToEquityPriorPeriodAdjustment",
"crdr": "debit",
"presentation": [
"http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Net of error correction",
"label": "Income Tax Effects Allocated Directly to Equity, Prior Period Adjustment",
"documentation": "The tax effect of correction of an error charged or credited directly to the opening balance of retained earnings."
}
}
},
"auth_ref": [
"x860"
]
},
"us-gaap_IncomeTaxExpenseBenefit": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IncomeTaxExpenseBenefit",
"crdr": "debit",
"calculation": {
"http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement": {
"parentTag": "us-gaap_NetIncomeLoss",
"weight": -1.0,
"order": 3.0
}
},
"presentation": [
"http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Income tax expense",
"label": "Income Tax Expense (Benefit)",
"documentation": "Amount of current income tax expense (benefit) and deferred income tax expense (benefit) pertaining to continuing operations."
}
}
},
"auth_ref": [
"x125",
"x137",
"x192",
"x193",
"x212",
"x379",
"x390",
"x519"
]
},
"us-gaap_IncomeTaxesPaidNet": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IncomeTaxesPaidNet",
"crdr": "credit",
"presentation": [
"http://www.quantumcomputinginc.com/role/ConsolidatedCashFlow"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Cash paid for income taxes",
"label": "Income Taxes Paid, Net",
"documentation": "The amount of cash paid during the current period to foreign, federal, state, and local authorities as taxes on income, net of any cash received during the current period as refunds for the overpayment of taxes."
}
}
},
"auth_ref": [
"x30"
]
},
"us-gaap_IncreaseDecreaseInAccountsPayable": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IncreaseDecreaseInAccountsPayable",
"crdr": "debit",
"calculation": {
"http://www.quantumcomputinginc.com/role/ConsolidatedCashFlow": {
"parentTag": "us-gaap_NetCashProvidedByUsedInOperatingActivities",
"weight": 1.0,
"order": 4.0
}
},
"presentation": [
"http://www.quantumcomputinginc.com/role/ConsolidatedCashFlow"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Accounts payable",
"label": "Increase (Decrease) in Accounts Payable",
"documentation": "The increase (decrease) during the reporting period in the aggregate amount of liabilities incurred (and for which invoices have typically been received) and payable to vendors for goods and services received that are used in an entity's business."
}
}
},
"auth_ref": [
"x4"
]
},
"us-gaap_IncreaseDecreaseInAccountsReceivable": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IncreaseDecreaseInAccountsReceivable",
"crdr": "credit",
"calculation": {
"http://www.quantumcomputinginc.com/role/ConsolidatedCashFlow": {
"parentTag": "us-gaap_NetCashProvidedByUsedInOperatingActivities",
"weight": -1.0,
"order": 9.0
}
},
"presentation": [
"http://www.quantumcomputinginc.com/role/ConsolidatedCashFlow"
],
"lang": {
"en-us": {
"role": {
"negatedLabel": "Accounts receivable",
"label": "Increase (Decrease) in Accounts Receivable",
"documentation": "The increase (decrease) during the reporting period in amount due within one year (or one business cycle) from customers for the credit sale of goods and services."
}
}
},
"auth_ref": [
"x4"
]
},
"us-gaap_IncreaseDecreaseInInventories": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IncreaseDecreaseInInventories",
"crdr": "credit",
"calculation": {
"http://www.quantumcomputinginc.com/role/ConsolidatedCashFlow": {
"parentTag": "us-gaap_NetCashProvidedByUsedInOperatingActivities",
"weight": -1.0,
"order": 10.0
}
},
"presentation": [
"http://www.quantumcomputinginc.com/role/ConsolidatedCashFlow"
],
"lang": {
"en-us": {
"role": {
"negatedLabel": "Inventories",
"label": "Increase (Decrease) in Inventories",
"documentation": "The increase (decrease) during the reporting period in the aggregate value of all inventory held by the reporting entity, associated with underlying transactions that are classified as operating activities."
}
}
},
"auth_ref": [
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]
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"us-gaap_IncreaseDecreaseInOperatingCapitalAbstract": {
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"localname": "IncreaseDecreaseInOperatingCapitalAbstract",
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],
"lang": {
"en-us": {
"role": {
"terseLabel": "Changes in operating assets and liabilities",
"label": "Increase (Decrease) in Operating Capital [Abstract]"
}
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"auth_ref": []
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"us-gaap_IncreaseDecreaseInOtherCurrentAssets": {
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"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IncreaseDecreaseInOtherCurrentAssets",
"crdr": "credit",
"calculation": {
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"weight": -1.0,
"order": 11.0
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"presentation": [
"http://www.quantumcomputinginc.com/role/ConsolidatedCashFlow"
],
"lang": {
"en-us": {
"role": {
"negatedLabel": "Other current assets",
"label": "Increase (Decrease) in Other Current Assets",
"documentation": "Amount of increase (decrease) in current assets classified as other."
}
}
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"auth_ref": [
"x799"
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"us-gaap_IncreaseDecreaseInOtherCurrentLiabilities": {
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"localname": "IncreaseDecreaseInOtherCurrentLiabilities",
"crdr": "debit",
"calculation": {
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"parentTag": "us-gaap_NetCashProvidedByUsedInOperatingActivities",
"weight": 1.0,
"order": 6.0
}
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"presentation": [
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"lang": {
"en-us": {
"role": {
"terseLabel": "Other current liabilities",
"label": "Increase (Decrease) in Other Current Liabilities",
"documentation": "Amount of increase (decrease) in current liabilities classified as other."
}
}
},
"auth_ref": [
"x799"
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},
"us-gaap_IncreaseDecreaseInOtherNoncurrentAssets": {
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"localname": "IncreaseDecreaseInOtherNoncurrentAssets",
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"http://www.quantumcomputinginc.com/role/ConsolidatedCashFlow": {
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"weight": -1.0,
"order": 12.0
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"presentation": [
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"lang": {
"en-us": {
"role": {
"terseLabel": "Unearned revenue",
"label": "Increase (Decrease) in Unearned Premiums",
"documentation": "Amount of increase (decrease) unearned premiums written. Excludes portion of unearned premiums amortized into income."
}
}
},
"auth_ref": [
"x4"
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},
"us-gaap_IndefiniteLivedIntangibleAssetsByMajorClassAxis": {
"xbrltype": "stringItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IndefiniteLivedIntangibleAssetsByMajorClassAxis",
"presentation": [
"http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails"
],
"lang": {
"en-us": {
"role": {
"label": "Indefinite-Lived Intangible Assets [Axis]",
"documentation": "Information by type or class of assets, excluding financial assets and goodwill, lacking physical substance and having a projected indefinite period of benefit."
}
}
},
"auth_ref": [
"x280",
"x283"
]
},
"us-gaap_IndefiniteLivedIntangibleAssetsMajorClassNameDomain": {
"xbrltype": "domainItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IndefiniteLivedIntangibleAssetsMajorClassNameDomain",
"presentation": [
"http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails"
],
"lang": {
"en-us": {
"role": {
"label": "Indefinite-Lived Intangible Assets, Major Class Name [Domain]",
"documentation": "The major class of indefinite-lived intangible asset (for example, trade names, etc. but not all-inclusive), excluding goodwill. A major class is composed of intangible assets that can be grouped together because they are similar, either by their nature or by their use in the operations of the company."
}
}
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"x105"
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"nsuri": "http://xbrl.sec.gov/ecd/2023",
"localname": "IndividualAxis",
"presentation": [
"http://xbrl.sec.gov/ecd/role/AwardTimingDisclosure",
"http://xbrl.sec.gov/ecd/role/ErrCompDisclosure",
"http://xbrl.sec.gov/ecd/role/InsiderTradingArrangements",
"http://xbrl.sec.gov/ecd/role/PvpDisclosure"
],
"lang": {
"en-us": {
"role": {
"label": "Individual [Axis]",
"terseLabel": "Individual:"
}
}
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"auth_ref": [
"x696",
"x705",
"x721",
"x740",
"x749",
"x753",
"x761"
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"ecd_InsiderTradingArrLineItems": {
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"nsuri": "http://xbrl.sec.gov/ecd/2023",
"localname": "InsiderTradingArrLineItems",
"lang": {
"en-us": {
"role": {
"label": "Insider Trading Arrangements [Line Items]",
"terseLabel": "Insider Trading Arrangements:"
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"ecd_InsiderTradingPoliciesProcLineItems": {
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"localname": "InsiderTradingPoliciesProcLineItems",
"lang": {
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"role": {
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"terseLabel": "Insider Trading Policies and Procedures:"
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}
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"x765"
]
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"ecd_InsiderTrdPoliciesProcAdoptedFlag": {
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"presentation": [
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"lang": {
"en-us": {
"role": {
"label": "Insider Trading Policies and Procedures Adopted [Flag]",
"terseLabel": "Insider Trading Policies and Procedures Adopted"
}
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},
"auth_ref": [
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"x765"
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},
"ecd_InsiderTrdPoliciesProcNotAdoptedTextBlock": {
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"nsuri": "http://xbrl.sec.gov/ecd/2023",
"localname": "InsiderTrdPoliciesProcNotAdoptedTextBlock",
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],
"lang": {
"en-us": {
"role": {
"label": "Insider Trading Policies and Procedures Not Adopted [Text Block]",
"terseLabel": "Insider Trading Policies and Procedures Not Adopted"
}
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"auth_ref": [
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"x765"
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"us-gaap_IntangibleAssetsNetExcludingGoodwill": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IntangibleAssetsNetExcludingGoodwill",
"crdr": "debit",
"calculation": {

"label": "Intangible Assets, Net (Including Goodwill)",
"documentation": "Carrying amount of finite-lived intangible assets, indefinite-lived intangible assets and goodwill. Goodwill is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized. Intangible assets are assets, not including financial assets, lacking physical substance."
}
}
},
"auth_ref": []
},
"us-gaap_IntangibleAssetsNetIncludingGoodwillAbstract": {
"xbrltype": "stringItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "IntangibleAssetsNetIncludingGoodwillAbstract",
"lang": {
"en-us": {
"role": {
"label": "Schedule of Changes in Goodwill [Abstract]"
}
}
},
"auth_ref": []
},
"qubt_IntangibleAssetsandGoodwillDetailsScheduleofAmountsRelatedtoIntangibleAssetsTable": {
"xbrltype": "stringItemType",
"nsuri": "http://www.quantumcomputinginc.com/20231231",
"localname": "IntangibleAssetsandGoodwillDetailsScheduleofAmountsRelatedtoIntangibleAssetsTable",
"presentation": [
"http://www.quantumcomputinginc.com/role/ScheduleofAmountsRelatedtoIntangibleAssetsTable"
],
"lang": {
"en-us": {
"role": {
"label": "Intangible Assets and Goodwill (Details) - Schedule of Amounts Related to Intangible Assets [Table]"
}
}
},
"auth_ref": []
},
"us-gaap_InterestExpenseDebt": {
"xbrltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "InterestExpenseDebt",
"crdr": "debit",
"calculation": {
"http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement": {
"parentTag": "us-gaap_NonoperatingIncomeExpense",
"weight": -1.0,
"order": 2.0
}
},
"presentation": [
"http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement"
],
"lang": {
"en-us": {
"role": {
"negatedLabel": "Interest Expense \u2013 Promissory Notes",
"label": "Interest Expense, Debt",
"documentation": "Amount of the cost of borrowed funds accounted for as interest expense for debt."
}
}
},
"auth_ref": [
"r95",
"r313",
"r317",
"r648",
"r649"
]
},
"qubt_InterestExpensePreferredDividends": {
"xbrltype": "monetaryItemType",
"nsuri": "http://www.quantumcomputinginc.com/20231231",
"localname": "InterestExpensePreferredDividends",
"crdr": "debit",
"calculation": {
"http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement": {
"parentTag": "us-gaap_NonoperatingIncomeExpense",
"weight": -1.0,
"order": 3.0
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"http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement"
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"lang": {
"en-us": {
"role": {
"negatedLabel": "Interest Expense \u2013 Preferred dividends",
"documentation": "The amount of interest expense preferred dividends.",
"label": "Interest Expense Preferred Dividends"
}
}
},
"auth_ref": []
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"us-gaap_InterestIncomeOperatingPaidInCash": {
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"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "InterestIncomeOperatingPaidInCash",
"crdr": "credit",
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"http://www.quantumcomputinginc.com/role/SubsequentEventsDetails"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Cash paid",
"label": "Interest Income, Operating, Paid in Cash",
"documentation": "Amount of interest income from investment paid in cash, classified as operating."
}
}
},
"auth_ref": [
"r587",
"r624",
"r625"
]
},
"us-gaap_InterestPaidNet": {
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"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "InterestPaidNet",
"crdr": "credit",
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"http://www.quantumcomputinginc.com/role/ConsolidatedCashFlow"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Cash paid for interest",
"label": "Interest Paid, Excluding Capitalized Interest, Operating Activities",
"documentation": "Amount of cash paid for interest, excluding capitalized interest, classified as operating activity. Includes, but is not limited to, payment to settle zero-coupon bond for accreted interest of debt discount and debt instrument with insignificant coupon interest rate in relation to effective interest rate of borrowing attributable to accreted interest of debt discount."
}
}
},
"auth_ref": [
"r168",
"r170",
"r171"
]
},
"us-gaap_InventoryNet": {
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"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "InventoryNet",
"crdr": "debit",
"calculation": {
"http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet": {
"parentTag": "us-gaap_AssetsCurrent",
"weight": 1.0,
"order": 6.0
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"http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Inventory",
"label": "Inventory, Net",
"documentation": "Amount after valuation and LIFO reserves of inventory expected to be sold, or consumed within one year or operating cycle, if longer."
}
}
},
"auth_ref": [
"r157",
"r636",
"r656"
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"localname": "InvestmentCompanyActFileNumber",
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],
"lang": {
"en-us": {
"role": {
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}
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"auth_ref": [
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"r711",
"r712",
"r713"
]
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"dei_InvestmentCompanyActRegistration": {
"xbrltype": "booleanItemType",
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"presentation": [
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"en-us": {
"role": {
"label": "Investment Company Act Registration"
}
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},
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"lang": {
"en-us": {
"role": {
"label": "Investment Company Registration Amendment"
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"presentation": [
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"lang": {
"en-us": {
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"label": "Investment Company Registration Amendment Number"
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}
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"http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement": {
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"weight": 1.0,
"order": 1.0
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},
"presentation": [
"http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Interest Income",
"label": "Investment Income, Interest",
"documentation": "Amount before accretion (amortization) of purchase discount (premium) of interest income on nonoperating securities."
}
}
},
"auth_ref": [
"r92",
"r211"
]
},
"us-gaap_InvestmentInterestRate": {
"xbrltype": "percentItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "InvestmentInterestRate",
"presentation": [
"http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails",
"http://www.quantumcomputinginc.com/role/LoansDetails"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Percentage of interest rate",

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"x291",
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"x299",
"x398",
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"x400",
"x418",
"x563",
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"x828",
"x868",
"x869"
]
},
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"localname": "LiabilitiesAndStockholdersEquity",
"crdr": "credit",
"calculation": {
"http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet": {
"parentTag": null,
"weight": null,
"order": null,
"root": true
}
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"presentation": [
"http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet"
],
"lang": {
"en-us": {
"role": {
"totalLabel": "Total liabilities and stockholders\u2019 equity",
"label": "Liabilities and Equity",
"documentation": "Amount of liabilities and equity items, including the portion of equity attributable to noncontrolling interests, if any."
}
}
},
"auth_ref": [
"x86",
"x120",
"x512",
"x656",
"x802",
"x815",
"x863"
]
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"us-gaap_LiabilitiesAndStockholdersEquityAbstract": {
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"lang": {
"en-us": {
"role": {
"terseLabel": "LIABILITIES AND STOCKHOLDERS\u2019 EQUITY (DEFICIT)",
"label": "Liabilities and Equity [Abstract]"
}
}
},
"auth_ref": []
},
"us-gaap_LiabilitiesCurrent": {
"xbltype": "monetaryItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "LiabilitiesCurrent",
"crdr": "credit",
"calculation": {
"http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet": {
"parentTag": "us-gaap_Liabilities",
"weight": 1.0,
"order": 1.0
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},
"presentation": [
"http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet"
],
"lang": {
"en-us": {
"role": {
"totalLabel": "Total current liabilities",
"label": "Liabilities, Current",
"documentation": "Total obligations incurred as part of normal operations that are expected to be paid during the following twelve months or within one business cycle, if longer."
}
}
},
"auth_ref": [
"x20",
"x145",
"x174",
"x259",
"x291",
"x292",
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"x294",
"x295",
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"x398",
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"x828",
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"x869"
]
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"us-gaap_LiabilitiesCurrentAbstract": {
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"http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Current liabilities",
"label": "Liabilities, Current [Abstract]"
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}
},
"auth_ref": []
},
"qubt_LicenseAgreementStevensInstituteOfTechnologyTextBlock": {
"xbltype": "textBlockItemType",
"nsuri": "http://www.quantumcomputinginc.com/20231231",
"localname": "LicenseAgreementStevensInstituteOfTechnologyTextBlock",
"presentation": [
"http://www.quantumcomputinginc.com/role/LicenseAgreementStevensInstituteofTechnology"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "License Agreement \u2013 Stevens Institute of Technology",
"documentation": "The entire disclosure of license agreement Institute of technology.",
"label": "License Agreement Stevens Institute Of Technology Text Block"
}
}
},
"auth_ref": []
},
"us-gaap_LineOfCreditFacilityCommitmentFeePercentage": {
"xbltype": "percentItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
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"http://www.quantumcomputinginc.com/role/CapitalStockDetails"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Fee percentage",
"label": "Line of Credit Facility, Commitment Fee Percentage",
"documentation": "The fee, expressed as a percentage of the line of credit facility, for the line of credit facility regardless of whether the facility has been used."
}
}
},
"auth_ref": []
},
"us-gaap_LoansAssumed1": {
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"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "LoansAssumed1",
"crdr": "credit",
"presentation": [
"http://www.quantumcomputinginc.com/role/BusinessCombinationsDetails"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Loans assumed",
"label": "Loans Assumed",
"documentation": "The fair value of loans assumed in noncash investing or financing activities."
}
}
},
"auth_ref": [
"x31",
"x32",
"x33"
]
},
"qubt_LoansDetailsTable": {
"xbltype": "stringItemType",
"nsuri": "http://www.quantumcomputinginc.com/20231231",
"localname": "LoansDetailsTable",
"presentation": [
"http://www.quantumcomputinginc.com/role/LoansDetails"
],
"lang": {
"en-us": {
"role": {
"label": "Loans (Details) [Table]"
}
}
},
"auth_ref": []
},
"us-gaap_LoansNotesTradeAndOtherReceivablesDisclosureTextBlock": {
"xbltype": "textBlockItemType",
"nsuri": "http://fasb.org/us-gaap/2023",
"localname": "LoansNotesTradeAndOtherReceivablesDisclosureTextBlock",
"presentation": [
"http://www.quantumcomputinginc.com/role/Loans"
],
"lang": {
"en-us": {
"role": {
"terseLabel": "Loans",
"label": "Loans, Notes, Trade and Other Receivables Disclosure [Text Block]",
"documentation": "The entire disclosure for claims held for amounts due a entity, excluding financing receivables. Examples include, but are not limited to, trade accounts receivables, notes receivables, loans receivables. Includes disclosure for allowance for credit losses."
}
}
},
"auth_ref": [
"x808"
]
},
"dei_LocalPhoneNumber": {
"xbltype": "normalizedStringItemType",
"nsuri": "http://xbrl.sec.gov/dei/2023",
"localname": "LocalPhoneNumber",
"presentation": [
"http://xbrl.sec.gov/dei/role/document/Cover"
],
"lang": {
"en-us": {
"role": {
"label": "Local Phone Number",
"documentation": "Local phone number for entity."
}

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 ]
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"us-gaap_MeasurementInputTypeAxis": {
 "xbrltype": "stringItemType",
 "nsuri": "http://fasb.org/us-gaap/2023",
 "localname": "MeasurementInputTypeAxis",
 "presentation": [
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 ],
 "lang": {
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   "role": {
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  "http://www.quantumcomputinginc.com/role/ScheduleofGrantDateFairValueofStockOptionsGrantedTable"
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  }
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    "documentation": "Line items represent concepts included in a table. Name change event line item concepts are used for information qualified by domain members of axes in the Name Change Event table."
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   }
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   }
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    "label": "Net Cash Provided by (Used in) Financing Activities",
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   }
  }
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    "documentation": "Amount of cash inflow (outflow) from investing activities, including discontinued operations. Investing activity cash flows include making and collecting loans and acquiring and disposing of debt or equity instruments and property, plant, and equipment and other productive assets."
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    "documentation": "Amount of cash inflow (outflow) from operating activities, including discontinued operations. Operating activity cash flows include transactions, adjustments, and changes in value not defined as investing or financing activities."
   }
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  "http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement": {
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   "weight": null,
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  }
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  "http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement",
  "http://www.quantumcomputinginc.com/role/ShareholdersEquityType2or3",
  "http://www.quantumcomputinginc.com/role/SignificantAccountingPoliciesDetails",
  "http://xbrl.sec.gov/ecd/role/PvpDisclosure"
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  }
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  "en-us": {
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    "label": "Accounting Standards Update and Change in Accounting Principle [Text Block]",
    "documentation": "The entire disclosure for change in accounting principle. Includes, but is not limited to, nature, reason, and method of adopting amendment to accounting standards or other change in accounting principle."
   }
  }
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     "terseLabel": "Non-NEOs"
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      "label": "Operating Income (Loss)",
      "documentation": "The net result for the period of deducting operating expenses from operating revenues."
     }
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   },
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    }
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   "calculation": {
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      "label": "Operating Lease, Liability, Noncurrent",
      "documentation": "Present value of lessee's discounted obligation for lease payments from operating lease, classified as noncurrent."
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      "label": "Operating Lease, Payments, Use",
      "documentation": "Amount of cash outflow from operating lease to bring another asset to condition and location necessary for its intended use."
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    }
   },
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 "label": "Property, Plant and Equipment, Net",
 "documentation": "Amount after accumulated depreciation, depletion and amortization of physical assets used in the normal conduct of business to produce goods and services and not intended for resale. Examples include, but are not limited to, land, buildings, machinery and equipment, office equipment, and furniture and fixtures."
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"label": "Property, Plant and Equipment, Policy [Policy Text Block]",
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"documentation": "Tabular disclosure of physical assets used in the normal conduct of business and not intended for resale. Includes, but is not limited to, balances by class of assets, depreciation and depletion expense and method used, including composite depreciation, and accumulated deprecation."
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"documentation": "Listing of long-lived, physical assets that are used in the normal conduct of business to produce goods and services and not intended for resale. Examples include land, buildings, machinery and equipment, and other types of furniture and equipment including, but not limited to, office equipment, furniture and fixtu
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"http://www.quantumcomputinginc.com/role/LoansDetails",
"http://www.quantumcomputinginc.com/role/ScheduleofGrantDateFairValueofStockOptionsGrantedTable"
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}
}
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"http://www.quantumcomputinginc.com/role/LoansDetails"
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"role": {
"label": "Related Party Transaction [Axis]",
"documentation": "Information by type of related party transaction."
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"role": {
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"en-us": {
"role": {
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"documentation": "Information by type of related party. Related parties include, but not limited to, affiliates; other entities for which investments are accounted for by the equity method by the entity; trusts for benefit of employees; and principal owners, management, and members of immediate families. It also may include other pa
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"role": {
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"label": "Related Party Transactions Disclosure [Text Block]",
"documentation": "The entire disclosure for related party transactions. Examples of related party transactions include transactions between (a) a parent company and its subsidiary; (b) subsidiaries of a common parent; (c) and entity and its principal owners; and (d) affiliates."
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"weight": 1.0,
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"lang": {
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"role": {
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"label": "Research and Development Expense [Member]",
"documentation": "Primary financial statement caption in which the reported facts about research and development expense have been included."
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"terseLabel": "Restatement does not require Recovery"
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"role": {
"terseLabel": "Shares of restricted common stock (in Shares)",
"label": "Restricted Stock, Shares Issued Net of Shares for Tax Withholdings",
"documentation": "Number, after shares used to satisfy grantee's tax withholding obligation for award under share-based payment arrangement, of restricted shares issued. Excludes cash used to satisfy grantee's tax withholding obligation."
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"weight": 1.0,
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"http://www.quantumcomputinginc.com/role/SignificantAccountingPoliciesDetails"
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"en-us": {
"role": {
"terseLabel": "Accumulated deficit",
"label": "Retained Earnings (Accumulated Deficit)",
"documentation": "Amount of accumulated undistributed earnings (deficit)."
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"lang": {
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"role": {
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"documentation": "Accumulated undistributed earnings (deficit)."
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"en-us": {
"role": {
"terseLabel": "Revenue",
"label": "Revenue [Policy Text Block]",
"documentation": "Disclosure of accounting policy for revenue. Includes revenue from contract with customer and from other sources."
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"lang": {
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"localname": "ScheduleOfGoodwillTextBlock",
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"en-us": {
"role": {
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"label": "Schedule of Goodwill [Table Text Block]",
"documentation": "Tabular disclosure of goodwill by reportable segment and in total which includes a rollforward schedule."
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"lang": {
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"lang": {
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"role": {
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"lang": {
"en-us": {
"role": {
"label": "Property, Plant and Equipment [Table]",
"documentation": "Disclosure of information about physical assets used in the normal conduct of business and not intended for resale. Includes, but is not limited to, balances by class of assets, depreciation and depletion expense and method used, including composite depreciation, and accumulated depreciation."
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"documentation": "Tabular disclosure of public utility physical assets used in the normal conduct of business and not intended for resale. Includes, but is not limited to, balances by class of assets, depreciation expense and method used, including composite depreciation, and accumulated depreciation."
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"label": "Schedule of Recognized Identified Assets Acquired and Liabilities Assumed [Table Text Block]",
"documentation": "Tabular disclosure of the amounts recognized as of the acquisition date for each major class of assets acquired and liabilities assumed. May include but not limited to the following: (a) acquired receivables; (b) contingencies recognized at the acquisition date; and (c) the fair value of noncontrolling interests in the acquiree."
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"documentation": "Tabular disclosure for stock option plans. Includes, but is not limited to, outstanding awards at beginning and end of year, grants, exercises, forfeitures, and weighted-average grant date fair value."
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"label": "Schedule of Share-Based Payment Award, Stock Options, Valuation Assumptions [Table Text Block]",
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"documentation": "Tabular disclosure of the amount of amortization expense expected to be recorded in succeeding fiscal years for finite-lived intangible assets."
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"label": "Security Deposit",
"documentation": "The amount of an asset, typically cash, provided to a counterparty to provide certain assurance of performance by the entity pursuant to the terms of a written or oral agreement, such as a lease."
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"weight": 1.0,
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"http://www.quantumcomputinginc.com/role/ConsolidatedBalanceSheet_Parentheticals"
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"http://www.quantumcomputinginc.com/role/ConsolidatedIncomeStatement": {
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"role": {
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"label": "Share-Based Compensation Arrangement by Share-Based Payment Award, Expiration Date",
"documentation": "Date the equity-based award expires, in YYYY-MM-DD format."
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"us-gaap_ShareBasedCompensationArrangementByShareBasedPaymentAwardFairValueAssumptionsExercisePrice": {
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"label": "Share-Based Compensation Arrangement by Share-Based Payment Award, Fair Value Assumptions, Exercise Price",
"documentation": "Agreed-upon price for the exchange of the underlying asset relating to the share-based payment award."
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"label": "Share-Based Compensation Arrangement by Share-Based Payment Award, Fair Value Assumptions, Expected Dividend Rate",
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"documentation": "The estimated measure of the percentage by which a share price is expected to fluctuate during a period. Volatility also may be defined as a probability-weighted measure of the dispersion of returns about the mean. The volatility of a share price is th
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"label": "Share-Based Compensation Arrangement by Share-Based Payment Award, Fair Value Assumptions, Risk Free Interest Rate",
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"documentation": "Date the equity-based issuance date, in YYYY-MM-DD format.",
"label": "Share Based Compensation Arrangement By Share Based Payment Award Issuance Date"
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"label": "Share-Based Compensation Arrangement by Share-Based Payment Award, Options, Forfeitures in Period",
"documentation": "The number of shares under options that were cancelled during the reporting period as a result of occurrence of a terminating event specified in contractual agreements pertaining to the stock option plan."
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"us-gaap_ShareBasedCompensationArrangementByShareBasedPaymentAwardOptionsGrantsInPeriodGross": {
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"label": "Share-Based Compensation Arrangement by Share-Based Payment Award, Options, Grants in Period, Gross",
"documentation": "Gross number of share options (or share units) granted during the period."
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"us-gaap_ShareBasedCompensationArrangementByShareBasedPaymentAwardOptionsOutstandingNumber": {
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"documentation": "Number of options outstanding, including both vested and non-vested options."
}
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"auth_ref": [
"r339",
"r340"
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"us-gaap_ShareBasedCompensationArrangementByShareBasedPaymentAwardOptionsOutstandingWeightedAverageExercisePrice": {
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"label": "Share-Based Compensation Arrangement by Share-Based Payment Award, Options, Outstanding, Weighted Average Exercise Price",
"documentation": "Weighted average price at which grantees can acquire the shares reserved for issuance under the stock option plan."
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"label": "Share-Based Compensation Arrangement by Share-Based Payment Award, Per Share Weighted Average Price of Shares Purchased",
"documentation": "Per share weighted-average price paid for shares purchased on open market for issuance under share-based payment arrangement."
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"us-gaap_ShareBasedCompensationArrangementByShareBasedPaymentAwardSharesIssuedInPeriod": {
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   "lang": {
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      "label": "Stock Issued During Period, Value, Issued for Services",
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     }
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      "label": "Stock Issued During Period, Value, New Issues",
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     }
    }
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  ],
  "lang": {
   "en-us": {
    "role": {
     "terseLabel": "Network equipment [Member]",
     "label": "Technology Equipment [Member]",
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    }
   }
  },
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     "terseLabel": "Accounts Receivable and Allowance for Doubtful Accounts",
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    }
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  },
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   "http://www.quantumcomputinginc.com/role/ScheduleofAmountsRelatedtoIntangibleAssetsTable"
  ],
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     "verboseLabel": "QPhoton [Member]",
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     "documentation": "Rights acquired through registration of a trademark to gain or protect exclusive use of a business name, symbol or other device or style, or rights either acquired through registration of a business name to gain or protect exclusive use thereof."
    }
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  },
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    }
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     "label": "Warrant, Exercise Price, Increase",
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   }
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   "http://www.quantumcomputinginc.com/role/ScheduleofWarrantsOutstandingTable",
   "http://www.quantumcomputinginc.com/role/StockBasedCompensationDetails"
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    }
   }
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    }
   }
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     "documentation": "Number of [basic] shares or units, after adjustment for contingently issuable shares or units and other shares or units not deemed outstanding, determined by relating the portion of time within a reporting period that common shares or units have been outstanding to the total time in that period."
    }
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  "localname": "WorkforceSubjectToCollectiveBargainingArrangementsMember",
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     "label": "Workforce Subject to Collective-Bargaining Arrangements [Member]",
     "documentation": "The number of employees covered by a collective bargaining agreement as of the balance sheet date, when it serves as a benchmark in a concentration of risk calculation."
    }
   }
  },
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  "crdr": "debit",
  "presentation": [
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     "documentation": "Boolean flag that is true when the Form 8-K filing is intended to satisfy the filing obligation of the registrant as written communications pursuant to Rule 425 under the Securities Act."
    }
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  "URI": "https://asc.fasb.org//1943274/2147479637/805-30-30-7"
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"r376": {
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"r378": {
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"r380": {
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 "URI": "https://asc.fasb.org//1943274/2147481694/830-30-45-20"
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"r427": {
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 "URI": "https://asc.fasb.org//1943274/2147481676/830-30-50-1"
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"r429": {
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 "Name": "Accounting Standards Codification",
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"r430": {
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 "URI": "https://asc.fasb.org//1943274/2147479832/842-10-65-5"
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 "URI": "https://asc.fasb.org//1943274/2147479832/842-10-65-5"
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"r432": {
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 "URI": "https://asc.fasb.org//1943274/2147478041/842-20-45-1"
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