

Risk Factors Comparison 2024-02-15 to 2023-02-15 Form: 10-K

Legend: **New Text** ~~Removed Text~~ Unchanged Text **Moved Text Section**

We are subject to various risks that may harm our business, prospects, financial condition and results of operation or prevent us from achieving our goals. If any of these risks occur, our business, financial condition or results of operation may be materially adversely affected. In such case, the trading price of our common stock could decline and investors could lose all or part of their investment. Risks Related to Our Business We **have generated only recently commenced** limited revenue ~~producing operations to date~~, so it is difficult for potential investors to evaluate our business. To date, our operations have consisted of technology research and development, testing, and joint development work with customers, potential customers and strategic partners. Our business model is to derive our revenue primarily from license fees and royalties, but to date we have only recognized minimal ~~engineering services and licensing~~ revenues. Our limited operating history makes it difficult to evaluate the commercial value of our technology, **the viability of our licensing model** or our prospective operations. As an early-stage company, we are subject to all the risks inherent in the initial organization, financing, expenditures, complications and delays in a new business, including, without limitation: · the timing and success of our plan of commercialization and the fact that we have ~~not~~ entered into **only one full commercial** a ~~royalty-based manufacturing or distribution~~ license with a ~~potential~~ customer, **ST**; · our ability to replicate on a large commercial scale the benefits of our MST technology that we have demonstrated in preliminary testing; · our ability to execute joint development agreements with potential customers; · our ability to structure, negotiate and enforce license agreements that will allow us to operate profitably; · our ability to advance **our license agreement with ST through the qualification phase, complete the distribution license milestone with ST and earn the corresponding license fee and subsequently reach the phase in which ST ships royalty-bearing products, which is core to our business model;** · **our ability to advance** the licensing arrangements ~~with our initial integration licensees, Asahi Kasei Microdevices, STMicroelectronics, our foundry licensee and our RF licensee, to~~ **manufacturing and distribution licenses and to shipment of royalty-bearing products based manufacturing and distribution licenses;** · our success in capitalizing on the achievement of the technical milestones in our first JDA in order to enter into one or more distribution and royalty agreements with business units of that JDA customer as well as our success in meeting technical milestones in the JDA with our second JDA customer; · our ability to **convert licensees of our MSTcad software to licenses of our MST technology under commercial license agreements and to** successfully **utilize MSTcad in both** operate, the epitaxial deposition reactor for processing 300mm wafers, together with supporting equipment, that we recently began using for internal research and development and to support customer activities **evaluations**; · our ability to protect our intellectual property rights; and · our ability to raise additional capital as and when needed. Investors should evaluate an investment in us in light of the uncertainties encountered by developing companies in a competitive environment. There can be no assurance that our efforts will be successful or that we will ultimately be able to attain profitability. We have a history of significant operating losses and anticipate continued operating losses for at least the near term. For the years ended December 31, **2023 and 2022 and 2021**, we have incurred net losses of approximately **\$ 19.8 million and \$ 17.4 million and \$ 15.7 million**, respectively, and our operations have used approximately **\$ 14.6 million and \$ 12.5 million and \$ 12.4 million** of cash, respectively. As of December 31, **2022-2023**, we had an accumulated deficit of approximately **\$ 183-203.3-1** million. We will continue to experience negative cash flows from operations until at least such time as we are able to secure manufacturing and distribution license agreements with one or more foundries, IDMs or fabless semiconductor manufacturers **and such customers ship sufficient volumes of royalty-bearing products and pay upfront license fees to support our cash requirements**. While management will endeavor to generate positive cash flows from the commercialization of our MST technology, there can be no assurance that we will be successful **in** doing so. If we are unable to generate positive cash flow within a reasonable period of time, we may be unable to further pursue our business plan or continue operations. While we have entered into **one commercial license agreement**, four integration license agreements and two joint development agreements, there can be no assurance that any of these relationships will advance to further licensing stages or to royalty-based distribution license agreements. In September and October 2018, respectively, we entered into separate license agreements with AKM and ST, both of which are leading IDMs. In October 2019, we entered into a license agreement with a leading RF semiconductor supplier. In December 2021, we entered into a JDA with a leading semiconductor manufacturer. In February 2022, we entered into an integration license agreement with a semiconductor foundry. In April 2022 we entered into a JDA with a major semiconductor foundry. Our integration licensees have paid us licensing fees for the right to build products that integrate MST technology onto their semiconductor wafers, but the agreements do not grant the licensees the right to sell products incorporating MST. Such rights require our integration licensees to enter into additional license agreements that, if executed, would allow each licensee or their foundry to manufacture MST-enabled products and to sell them to their customers. ~~We expect that the manufacturing~~ **Manufacturing** and distribution agreements will **such as our license agreement with ST** provide for substantially larger upfront license fee payments than integration license fees and **such that the agreements will** require the respective licensees to make royalty payments to us based the number and sales price of MST-enabled products they sell to their customers. ~~However, our ability to enter into royalty-based manufacturing and distribution agreements with our current integration licensees or with new customers will depend, in large part, on the performance of devices they build using MST and the successful integration of our MST technology on a high-volume production scale.~~ Our first JDA customer paid us for a manufacturing license in the first quarter of 2021 when we delivered our MST recipe to them. In February 2022, we successfully achieved all the development milestones in the JDA resulting in additional revenue. Nevertheless, neither of our JDAs commits the customers to take MST to production. **ST has successfully installed our MST film recipe and they have**

accepted our film under the license agreement, resulting in the grant of a manufacturing license to them for internal use, but they will now enter a qualification phase and ~~There there~~ can be no assurance that our MST technology will deliver the performance, power or other requirements ~~that ST our~~ or our other customers seek for their products or that the integration of our technology with our customers' manufacturing process will be successful in high volume. In addition, even if our MST technology is successfully integrated into the licensees' products, any or all of our licensees may decide, for reasons unrelated to the price or performance of our MST technology, not to enter the subsequent license ~~phases or execute the additional license agreements required to take MST to commercial production~~. AKM, one of our licensees, suffered a total loss of one of its fabs due to a fire, impacting their production capability and delaying their work with us. On October 20, 2020, a fire broke out in AKM's factory in Nobeoka, Japan which lasted three days, causing substantial damage to the building and equipment. AKM subsequently decided not to resume manufacturing at that site. Although Atomera's work under our integration license agreement with AKM did not involve wafers in commercial production in this fab, the fire substantially disrupted AKM's business and interrupted their integration and testing of MST. We expect that cooperation on integrating MST into AKM's products will continue, but the fire has cast doubt on the timing for moving toward a manufacturing license or commercial distribution as AKM has moved production previously carried out in the Nobeoka fab to an external foundry. We expect that our product qualification and licensing cycle will be lengthy and costly, and our marketing, engineering and sales efforts may be unsuccessful. We have incurred significant engineering, marketing and sales expenses during customer engagements without entering into license agreements, generating a license fee or establishing a royalty stream from the customer and we expect that such investments ahead of license revenue will continue to be necessary in the future. The introduction of any new process technology into semiconductor manufacturing is a lengthy process and we cannot forecast with any degree of assurance the length of time it takes to establish a new licensing relationship. However, based on our engagements with potential customers to date, we believe the time from initial engagement until our customers incorporate our technologies in their semiconductor products ~~can~~ take 18 to 36 months or longer. Our integration license agreements with our current licensees do not commit them to manufacturing or distribution licenses and we expect those licensees to perform additional tests on evaluation wafers under their respective integration licenses before deciding whether to enter the next stages of licensing MST. As such, we will incur additional expenses in our engagements with our licensees before we receive license fees, if any, for manufacturing and distribution and before any subsequent royalty stream begins. Although we have successfully completed the objectives of our first JDA and granted that customer a manufacturing license, the agreement does not commit our customer to a distribution license. While we believe our JDAs and our integration license agreements should accelerate licensing decisions by other customers, the evaluation process for new technologies in the semiconductor industry is inherently long and complex and there can be no assurance that we will successfully convert other customer prospects into paying customers or that any of these customers will generate sufficient revenue to cover our expenses. Qualification of our MST technology requires access to our potential customers' manufacturing tools and facilities, as well as to leased tools and facilities, which may not be available on a timely basis or at all. The qualification of a new process technology like MST entails the integration of our MST film into the complex manufacturing processes employed by our potential customers. In order to validate the benefits of MST, our customer engagement process involves fabrication of wafers that incorporate MST deposited by us using our epitaxial deposition tools and then completing the manufacturing of the wafers in our customers' facilities using their tools. The semiconductor industry in ~~2022~~ 2023 exceeded \$ ~~550~~ 530 billion in sales, and over the past three years the industry has been characterized by product shortages as strong demand has outstripped supply, resulting in tight capacity among our potential customers. Although these supply / demand imbalances and tight capacity conditions have eased ~~throughout 2023 in recent months~~, we have experienced delays in completing the processing of evaluation wafers by our customers as those customers prioritize utilization of their equipment for production use. If our customers do not dedicate their equipment and facilities to testing our products in a timely fashion, we may experience delays that will increase our expenses and delay our customers' decisions on entering into a commercial ~~license licenses~~ with us. Additionally, we conduct our ongoing research and development and portions of our customer evaluation activities using a leased epitaxial (epi) deposition ~~tool tools~~ that we believe will accelerate internal development work and customer engagements. However, epi tools require ongoing, complex maintenance and they have been and will continue to be subject to both planned and unplanned downtime. Any interruption in our epi tool availability may negatively impact the progress of customer work as well as our internal research and development and accordingly could delay or prevent customers from entering into commercial licenses. The long- term success of our business is dependent on a royalty-based business model, which is inherently risky. The long- term success of our business is dependent on future royalties paid to us by licensee- customers, whose business requires them to market products to their end customers. Royalty payments under our licenses are generally expected to be based on a percentage (i) in the case of foundries, the selling price of wafers made using MST and (ii) in the case of IDMs and fabless vendors, the selling price of MST- enabled semiconductor die sold. We will depend upon our ability to structure, negotiate and enforce agreements for the determination and payment of royalties, as well as upon our licensees' compliance with their agreements. We face risks inherent in a royalty- based business model, many of which are outside of our control, such as the following: · the rate of adoption and incorporation of our technology by semiconductor designers and manufacturers and the manufacturers of semiconductor fabrication equipment; · customers' willingness to agree to an ongoing royalty model, which may impact their wafer or chip costs and margins; · our licensee customers' ability to successfully market MST- enabled products to their end customers; · the length of the design cycle and the ability to successfully integrate our MST technology into integrated circuits; · the demand for products incorporating semiconductors that use our licensed technology; · the cyclical nature of supply and demand for products using our licensed technology; · the impact of economic downturns; and · the timing of receipt of royalty reports and the applicable revenue recognition criteria, which may result in fluctuation in our results of operations. We may need additional financing to execute our business plan and fund operations, which additional financing may not be available on reasonable terms or at all. As of December 31, ~~2022~~ 2023, we

had total assets of approximately \$ 26-24.7-0 million, cash and cash-equivalents and short-term investments of approximately \$ 21-19.2-5 million and working capital of approximately \$ 18-16.7-6 million. We believe that we have sufficient capital to fund our current business plans and obligations over, at least, the 12 months following the date of this Annual Report. However, even after installation of MST in a customer's fab under a manufacturing license, the full production qualification of a new technology like MST can take more than an additional year, and we have limited ability to influence our customers' testing and qualification processes. Accordingly, we may require additional capital prior to obtaining a royalty-based license or prior to such a license generating sufficient royalty income to cover our ongoing operating expenses. In the event we require additional capital over and above the amount of our presently available working capital, we will endeavor to seek additional funds through various financing sources, including the sale of our equity and debt securities, licensing fees for our technology and joint ventures with industry partners. In addition, we will consider alternatives to our current business plan that may enable us to achieve material revenue with a smaller amount of capital. However, there can be no guarantees that such funds will be available on commercially reasonable terms, if at all. If such financing is not available on satisfactory terms, we may be unable to further pursue our business plan and we may be unable to continue operations.

Unfavorable geopolitical and macroeconomic developments could adversely affect our business, financial condition or results of operations. Our business could be adversely affected by conditions in the U. S. and global economies, the United States and global financial markets and adverse geopolitical and macroeconomic developments, including inflation rates, the COVID- 19 pandemic, the Ukrainian / Russian and Israeli / Palestinian conflicts and related sanctions, bank failures, and economic uncertainties related to these conditions. For example, increased inflation may result in increases in our operating costs (including our labor costs), reduced liquidity and limits on our ability to access credit or otherwise raise capital on acceptable terms, if at all. In response to rising inflation, the U. S. Federal Reserve has raised interest rates, which, coupled with reduced government spending and volatility in financial markets, may have the effect of further increasing economic uncertainty and heightening these risks. Additionally, financial markets around the world experienced volatility following the invasion of Ukraine by Russia in February 2022 and the eruption of the Israeli / Palestinian conflict in October 2023, including as a result of economic sanctions and export controls against Russia and countermeasures taken by Russia. The full economic and social impact of these sanctions and countermeasures, in addition to the ongoing military conflicts in Ukraine and Gaza, which could conceivably expand, remains uncertain; however, both the conflicts and related sanctions have resulted and could continue to result in disruptions to trade, commerce, pricing stability, credit availability, and / or supply chain continuity, in both Europe and globally, and has introduced significant uncertainty into global markets. While we do not currently operate in Russia, Ukraine or the Middle East, as the adverse effects of these conflicts continue to develop our business and results of operations may be adversely affected. Recent efforts to create national self-sufficiency of the semiconductor supply chain by various countries around the world creates new competitive and economic dynamics that are difficult to predict and may lead to semiconductor industry instability. Increased restrictions on the availability and use of critical semiconductor IP and equipment by various foreign entities may limit Atomera's ability to license our IP in some parts of the world. Our internal computer systems, or those of our collaborators or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our development programs. Our internal computer systems and those of our current and any future collaborators and other contractors or consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such material system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a disruption of our development programs and our business operations, whether due to a loss of our or our customers' trade secrets or other proprietary information or other similar disruptions. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, our competitive position could be harmed and the further development and commercialization of our technology could be delayed. We could be subject to risks caused by misappropriation, misuse, leakage, falsification or intentional or accidental release or loss of information maintained in the information systems and networks of our company and our vendors, including personal or confidential information of our employees, customers and vendors. In addition, outside parties may attempt to penetrate our systems or those of our customers or vendors or fraudulently induce our personnel or the personnel of our customers or vendors to disclose sensitive information in order to gain access to our data and / or systems. We may experience threats to our data and systems, including malicious codes and viruses, phishing and other cyberattacks. The number and complexity of these threats continue to increase over time. If a material breach of, or accidental or intentional loss of data from, our information technology systems or those of our customers or vendors occurs, the market perception of the effectiveness of our security measures could be harmed and our reputation and credibility could be damaged. We could be required to expend significant amounts of money and other resources to repair or replace information systems or networks. In addition, we could be subject to regulatory actions and / or claims made by individuals and groups in private litigation involving privacy issues related to data collection and use practices and other data privacy laws and regulations, including claims for misuse or inappropriate disclosure of data, as well as unfair or deceptive practices. Although we develop and maintain systems and controls designed to prevent these events from occurring, and we have a process to identify and mitigate threats, the development and maintenance of these systems, controls and processes is costly and requires ongoing monitoring and updating as technologies change and efforts to overcome security measures become increasingly sophisticated. Moreover, despite our efforts, the possibility of these events occurring cannot be eliminated entirely. As we outsource more of our information systems to vendors, engage in more electronic transactions with customers and vendors, and rely more on cloud-based information systems,

the related security risks will increase and we will need to expend additional resources to protect our technology and information systems. In addition, there can be no assurance that our internal information technology systems or those of our third- party contractors, or our consultants' efforts to implement adequate security and control measures, will be sufficient to protect us against breakdowns, service disruption, data deterioration or loss in the event of a system malfunction, or prevent data from being stolen or corrupted in the event of a cyberattack, security breach, industrial espionage attacks or insider threat attacks which could result in financial, legal, business or reputational harm. Our revenues may be concentrated in a few customers and if we lose any of these customers, or these customers do not pay us, our revenues could be materially adversely affected. If we are able to secure the adoption of our MST by one or more foundries, IDMs or fabless semiconductor manufacturers, we expect that for at least the first few years substantially all of our revenue will be generated from license fees and engineering services before customers commence royalty- bearing shipments. Due to the concentration and ongoing consolidation within the semiconductor industry, we may also find that over the longer term our royalty- based revenues are dependent on a relatively few customers. If we lose any of these customers, or these customers do not pay us, our revenues could be materially adversely affected. If we are unable to manage future expansion effectively, our business, operations and financial condition may suffer significantly, resulting in decreased productivity. If our MST proves to be commercially valuable, it is likely that we will experience a rapid growth phase that could place a significant strain on our managerial, administrative, technical, operational and financial resources. Our organization, procedures and management may not be adequate to fully support the expansion of our operations or the efficient execution of our business strategy. If we are unable to manage future expansion effectively, our business, operations and financial condition may suffer significantly, resulting in decreased productivity. It may be difficult for us to verify royalty amounts owed to us under our licensing agreements, and this may cause us to lose revenues. We will endeavor to provide that the terms of our license agreements require our licensees to document their use of our technology and report related data to us on a regular basis. We will endeavor to provide that the terms of our license agreements give us the right to audit books and records of our licensees to verify this information, however audits can be expensive, time consuming, and may not be cost justified based on our understanding of our licensees' businesses. We will endeavor to audit certain licensees to review the accuracy of the information contained in their royalty reports in an effort to decrease the likelihood that we will not receive the royalty revenues to which we are entitled under the terms of our license agreements, but we cannot give assurances that such audits will be effective to that end. Our business operations could suffer in the event of information technology systems' failures or security breaches. While we believe that we have implemented adequate security measures within our internal information technology and networking systems, our information technology systems may be subject to security breaches, damages from computer viruses, natural disasters, terrorism, and telecommunication failures. Any system failure or security breach could cause interruptions in our operations, including but not limited to our technology computer- aided design, or TCAD, modeling using Synopsys software, in addition to the possibility of losing proprietary information and trade secrets. To the extent that any disruption or security breach results in inappropriate disclosure of our confidential information, our competitive position may be adversely affected, and we may incur liability or additional costs to remedy the damages caused by these disruptions or security breaches. If integrated circuits incorporating our technologies are used in defective products, we may be subject to product liability or other claims. If our MST technology is used in defective or malfunctioning products, we could be sued for damages, especially if the defect or malfunction causes physical harm to people. While we will endeavor to carry product liability insurance, contractually limit our liability and obtain indemnities from our customers, there can be no assurance that we will be able to obtain insurance at satisfactory rates or in adequate amounts or that any insurance and customer indemnities will be adequate to defend against or satisfy any claims made against us. The costs associated with legal proceedings are typically high, relatively unpredictable and not completely within our control. Even if we consider any such claim to be without merit, significant contingencies may exist, similar to those summarized in the above risk factor concerning intellectual property litigation, which could lead us to settle the claim rather than incur the cost of defense and the possibility of an adverse judgment. Product liability claims in the future, regardless of their ultimate outcome, could have a material adverse effect on our business, financial condition and reputation, and on our ability to attract and retain licensees and customers . **Effective as of January 31, 2024, we lost access to certain semiconductor manufacturing and engineering services which may be difficult and / or costly to replace. From April 2016 through January 2024, we worked with TSI Technology Development & Commercialization Services LLC, or TSI under a Master R & D Services Agreement and a Manufacturing Agreement. Under these agreements, TSI provided us with foundry services, consisting of engineering and manufacturing services. In August 2023, TSI was acquired by Robert Bosch Semiconductor LLC, or Bosch. In October 2023, Bosch advised us that on January 31, 2024 it would cease providing engineering and manufacturing services to third parties, including Atomera, in order to commence the conversion of the TSI fab to production of Silicon Carbide semiconductor products, As of the date of this Annual Report we are no longer working with TSI. We are in active discussions with potential replacement providers of foundry services. However, there are few foundries that offer R & D services that are comparable to those provided by TSI, so we may face difficulty in replacing the services that TSI had provided. We have utilized TSI' s services for a portion of our internal R & D which required complete semiconductor device fabrication. No wafers sold or licensed to any customer have been fabricated at TSI. Accordingly, we do not believe that the loss of TSI' s services will have a meaningful impact on any of our ongoing client engagements. However, our access to foundry services was interrupted while we were working to reach an agreement with a replacement foundry and adapt our R & D processes to those used at our replacement foundry. This transition may cause us to incur meaningful startup costs, may divert engineering resources from ongoing R & D activities and may increase our ongoing spending on outsourced engineering services. The potential inability to replace the TSI services in a timely manner may have a material adverse effect on the timing and cost of continuing to develop example applications and devices which exhibit the advantages of our MST technology**

. Risks Related to Intellectual Property If we fail to protect and enforce our intellectual property rights and our confidential information, our business will suffer. We rely primarily on a combination of nondisclosure agreements and other contractual provisions and patent, trade secret and copyright laws to protect our technology and intellectual property. If we fail to protect our technology and intellectual property, our licensees and others may seek to use our technology and intellectual property without the payment of license fees and royalties, which could weaken our competitive position, reduce our operating results and increase the likelihood of costly litigation. The growth of our business depends in large part on our ability to secure intellectual property rights in a timely manner, our ability to convince third parties of the applicability of our intellectual property rights to their products, and our ability to enforce our intellectual property rights. In certain instances, we attempt to obtain patent protection for portions of our technology, and our license agreements typically include both issued patents and pending patent applications as well as our proprietary know-how. If we fail to obtain patents in a timely manner or if the patents issued to us do not cover all of the inventions disclosed in our patent applications, others could use portions of our technology and intellectual property without the payment of license fees and royalties. We also rely on trade secret laws rather than patent laws to protect other portions of our proprietary technology. However, trade secrets can be difficult to protect. The misappropriation of our trade secrets or other proprietary information could seriously harm our business. We protect our proprietary technology and processes, in part, through confidentiality agreements with our employees, consultants, suppliers and customers. We cannot be certain that these contracts have not been and will not be breached, that we will be able to timely detect unauthorized use or transfer of our technology and intellectual property, that we will have adequate remedies for any breach, or that our trade secrets will not otherwise become known or be independently discovered by competitors. If we fail to use these mechanisms to protect our technology and intellectual property, or if a court fails to enforce our intellectual property rights, our business will suffer. We cannot be certain that these protection mechanisms can be successfully asserted in the future or will not be invalidated or challenged. Further, the laws and enforcement regimes of certain countries do not protect our technology and intellectual property to the same extent as do the laws and enforcement regimes of the U. S. In certain jurisdictions, we may be unable to protect our technology and intellectual property adequately against unauthorized use, which could adversely affect our business. A court invalidation or limitation of our key patents could significantly harm our business. Our patent portfolio contains some patents that are particularly significant to our MST technology. If any of these key patents are invalidated, or if a court limits the scope of the claims in any of these key patents, the likelihood that companies will take new licenses and that any current licensees will continue to agree to pay under their existing licenses could be significantly reduced. The resulting loss in license fees and royalties could significantly harm our business. Moreover, our stock price may fluctuate based on developments in the course of ongoing litigation. We may become involved in material legal proceedings in the future to enforce or protect our intellectual property rights, which could harm our business. From time to time, we may identify products that we believe infringe on our patents. In that event, we expect to initially seek to license the manufacturer of the infringing products, however if the manufacturer is unwilling to enter into a license agreement, we may have to initiate litigation to enforce our patent rights against those products. Litigation stemming from such disputes could harm our ability to gain new customers, who may postpone licensing decisions pending the outcome of the litigation or who may, as a result of such litigation, choose not to adopt our technologies. Such litigation may also harm our relationships with existing licensees, who may, because of such litigation, cease making royalty or other payments to us or challenge the validity and enforceability of our patents or the scope of our license agreements. In addition, the costs associated with legal proceedings are typically high, relatively unpredictable and not completely within our control. These costs may be materially higher than expected, which could adversely impair our working capital, affect our operating results and lead to volatility in the price of our common stock. Whether or not determined in our favor or ultimately settled, litigation would divert our managerial, technical, legal and financial resources from our business operations. Furthermore, an adverse decision in any of these legal actions could result in a loss of our proprietary rights, subject us to significant liabilities, require us to seek licenses from others, limit the value of our licensed technology or otherwise negatively impact our stock price or our business and financial position, results of operations and cash flows. Even if we prevail in our legal actions, significant contingencies may exist to their settlement and final resolution, including the scope of the liability of each party, our ability to enforce judgments against the parties, the ability and willingness of the parties to make any payments owed or agreed upon and the dismissal of the legal action by the relevant court, none of which are completely within our control. Parties that may be obligated to pay us royalties could be insolvent or decide to alter their business activities or corporate structure, which could affect our ability to collect royalties from such parties. Our technologies may infringe on the intellectual property rights of others, which could lead to costly disputes or disruptions. The semiconductor industry is characterized by frequent allegations of intellectual property infringement. Any allegation of infringement could be time consuming and expensive to defend or resolve, result in substantial diversion of management resources, cause suspension of operations or force us to enter into royalty, license, or other agreements rather than dispute the merits of such allegation. Furthermore, third parties making such claims may be able to obtain injunctive or other equitable relief that could block our ability to further develop or commercialize some or all of our technologies, and the ability of our customers to develop or commercialize their products incorporating our technologies, in the U. S. and abroad. If patent holders or other holders of intellectual property initiate legal proceedings, we may be forced into protracted and costly litigation. We may not be successful in defending such litigation and may not be able to procure any required royalty or license agreements on acceptable terms or at all.

Risks Related to Owning Our Common Stock The market price of our shares may be subject to fluctuation and volatility. You could lose all or part of your investment. The market price of our common stock is subject to wide fluctuations in response to various factors, some of which are beyond our control. Between January 1, 2022-2023 and February 8-1, 2023-2024, the reported high and low sales prices of our common stock have ranged from \$ 5-4 . 75-96 to \$ 21-10 . 28-72 . The market price of our shares on the NASDAQ Capital Market may fluctuate as a result of a number of factors, some of which are beyond our control, including, but not limited to: · actual or anticipated variations in our results of operations and financial condition; ·

market acceptance of our MST technology; · success or failure of our research and development projects; · announcements of technological innovations by us; · failure by us to achieve a publicly announced milestone; · failure by us to meet expectations of investors, some of which may not be within our control or **be** related to our public announcements; · delays between our expenditures to develop and market new or enhanced technological innovations and the generation of licensing revenue from those innovations; · developments concerning intellectual property rights, including our involvement in litigation brought by or against us; · changes in the amounts that we spend to develop, acquire or license new technologies or businesses; · our sale or proposed sale, or the sale by our significant stockholders, of our shares or other securities in the future; · changes in our key personnel; · changes in earnings estimates or recommendations by securities analysts, if we continue to be covered by analysts; · the trading volume of our shares; and · general economic and financial market conditions and other factors, including factors unrelated to our operating performance. These factors and any corresponding price fluctuations may materially and adversely affect the market price of our shares and result in substantial losses being incurred by our investors. In the past, following periods of market volatility, public company stockholders have often instituted securities class action litigation. If we were involved in securities litigation, it could impose a substantial cost upon us and divert the resources and attention of our management from our business. We have not paid dividends in the past and have no immediate plans to pay dividends. We plan to reinvest all of our earnings, to the extent we have earnings, to cover operating costs and otherwise become and remain competitive. We do not plan to pay any cash dividends with respect to our securities in the foreseeable future. We cannot assure you that we would, at any time, generate sufficient surplus cash that would be available for distribution to the holders of our common stock as a dividend. Therefore, you should not expect to receive cash dividends on our common stock. We expect to continue to incur significant increased costs as a result of being a public company that reports to the Securities and Exchange Commission and our management will be required to devote substantial time to meet compliance obligations. As a public company reporting to the Securities and Exchange Commission, we incur significant legal, accounting and other expenses that we did not incur as a private company. We are subject to reporting requirements of the Exchange Act and the Sarbanes- Oxley Act of 2002, as well as rules subsequently implemented by the Securities and Exchange Commission that impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. In addition, on July 21, 2010, the Dodd- Frank Wall Street Reform and Protection Act was enacted. There are significant corporate governance and executive compensation- related provisions in the Dodd- Frank Act that increased our legal and financial compliance costs, make some activities more difficult, time- consuming or costly and may also place undue strain on our personnel, systems and resources. Our management and other personnel devote a substantial amount of time to these compliance initiatives. Our charter documents and Delaware law may inhibit a takeover that stockholders consider favorable. Provisions of our certificate of incorporation and bylaws and applicable provisions of Delaware law may delay or discourage transactions involving an actual or potential change in control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares, or transactions that our stockholders might otherwise deem to be in their best interests. The provisions in our certificate of incorporation and bylaws: · limit who may call stockholder meetings; · do not permit stockholders to act by written consent; · allow us to issue blank check preferred stock without stockholder approval; · do not provide for cumulative voting rights; and · provide that all vacancies may be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum. In addition, Section 203 of the Delaware General Corporation Law may limit our ability to engage in any business combination with a person who beneficially owns 15 % or more of our outstanding voting stock unless certain conditions are satisfied. This restriction lasts for a period of three years following the share acquisition. These provisions may have the effect of entrenching our management team and may deprive you of the opportunity to sell your shares to potential acquirers at a premium over prevailing prices. This potential inability to obtain a control premium could reduce the price of our common stock. Our bylaws designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain litigation that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with the Company. Our bylaws provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (iii) any action asserting a claim against us or any our directors, officers or other employees arising pursuant to any provision of the Delaware General Corporation Law or our certificate of incorporation or bylaws, or (iv) any action asserting a claim against us or any our directors, officers or other employees governed by the internal affairs doctrine. This forum selection provision in our bylaws may limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or any **of** our directors, officers or other employees. Our board of directors may issue blank check preferred stock, which may affect the voting rights of our holders and could deter or delay an attempt to obtain control of us. Our board of directors is authorized, without stockholder approval, to issue preferred stock in series and to fix and state the voting rights and powers, designation, preferences and relative, participating, optional or other special rights of the shares of each such series and the qualifications, limitations and restrictions thereof. Preferred stock may rank prior to our common stock with respect to dividends rights, liquidation preferences, or both, and may have full or limited voting rights. If issued, such preferred stock would increase the number of outstanding shares of our capital stock, adversely affect the voting power of holders of our common stock and could have the effect of deterring or delaying an attempt to obtain control of us. Item 1B. Unresolved Staff Comments