SPECTRA7®

Spectra7 Microsystems Inc.

Management's Discussion & Analysis

For the Year Ended December 31, 2022

April 25, 2023

This management's discussion and analysis ("MD&A") of financial condition and results of operations of Spectra7 Microsystems Inc. ("Spectra7" or the "Company") was prepared by management as at April 25, 2023. Throughout this MD&A, unless otherwise specified, "Spectra7", "the Company", "we", "us" or "our" refer to Spectra7 Microsystems Inc. and its subsidiaries. This MD&A should be read in conjunction with the audited consolidated financial statements of the Company and notes thereto as at December 31, 2022 (the "Financial Statements"). In preparing this MD&A, we have taken into account information available to us up to April 25, 2023 unless otherwise stated.

The Financial Statements have been prepared by management in accordance with International Financial Reporting Standards ("IFRS") issued by the International Accounting Standards Board ("IASB") and interpretations of the International Financial Reporting Interpretations Committee ("IFRIC"). All amounts are expressed in U.S. dollars unless otherwise noted. Other information contained in this document has also been prepared by management and is consistent with information included in the Financial Statements. You will find the Financial Statements on SEDAR at www.sedar.com.

This MD&A contains commentary from the Company's management regarding the Company's strategy, operating results, financial position and outlook. Management is responsible for the accuracy, integrity, and objectivity of the MD&A, and develops, maintains and supports the necessary systems and controls to provide reasonable assurance as to the accuracy of the comments contained herein.

The Audit Committee and the Board of Directors provide an oversight role with respect to all public financial disclosures by the Company. The Board of Directors approves the Financial Statements and MD&A after the completion of its review and recommendation for approval by the Audit Committee, which meets periodically to review all financial reports, prior to filing.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This MD&A contains certain forward-looking information and statements relating, but not limited to, the Company's future financial position and results of operations, strategies, plans, objectives, goals, targets, and future developments in the markets where the Company participates or is seeking to participate. Forward-looking information typically contains statements with words such as "consider", "anticipate", "believe", "expect", "plan", "intend", "may", "likely", or similar words suggesting future outcomes or statements regarding an outlook, or other expectations, beliefs, plans, objectives, assumptions, intentions or statements about future events or performance. Readers should be aware that these statements are subject to known and unknown risks, uncertainties and other factors that could cause actual results, performance or achievements of the Company to differ materially from those suggested by the forward-looking information and statements, some of which may be beyond the control of management.

Although the Company believes that the expectations, estimates, and projections reflected in such forward-looking information and statements are reasonable, such forward-looking information and statements involve known and unknown risks, uncertainties and other factors which may cause actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking information and statements. On this basis, readers are cautioned not to place undue reliance on such forward looking information and statements.

Factors which could cause actual results to differ materially from current expectations include, but are not limited to:

- the adverse impact of COVID-19 on our staffing, revenue, operations, manufacturing supply chain, project development and customer demand;
- availability of adequate product supplies and third party manufacturing in an environment of semiconductor industry supply shortages;
- our reliance on a limited number of third party manufacturers;
- the degree of competition in the business areas in which we operate;

- timing when North America datacenter operators adopt and purchase equipment that could utilize our new products;
- our ability to secure orders from a limited number of customers;
- the absence of long-term supply contracts with any of the Company's third-party vendors and potential disruption in supply of products or materials;
- our ability to make the substantial research and development investments required to remain competitive;
- our ability to charge prices that will result in favorable gross margins;
- our ability to introduce new or enhanced products on a timely basis;
- market demand and penetration of new markets for our products and services;
- our ability to contain and appropriately budget expenses, due to our limited operating history;
- the length of the sales cycle required to establish design wins and bring design wins to production;
- reliance on distributors;
- our ability to deliver our products in the correct product mix required by our customers and ability to control order and shipment uncertainties;
- the substantial quarterly and annual fluctuations in our operating results;
- our dependence on existing members of the senior management team;
- our ability to attract and retain qualified employees and contain payroll costs;
- unforeseen delays, expenses and damage to reputation caused by defects or bugs;
- potential claims of intellectual property infringement;
- our ability to protect our intellectual and intangible properties;
- the use of open source software;
- reliance on third parties to provide services and technology;
- going concern risk;
- impact of negative cash flow from operating activities;
- potential losses to our facilities or distribution system due to catastrophes;
- compliance with various governmental regulations and related costs of compliance;
- cyclicality in the semiconductor industry;
- conformity of the Company's products to industry standards;
- unanticipated changes in our tax rates;
- fluctuation of share price;
- decline in share price due to the absence of, or negative reports, about the business by securities or industry analysts;
- adverse international economic conditions adversely affect consumer spending;
- general political and economic conditions in the countries in which we operate;
- strain on our resources as a result of the requirements of being a public company;
- litigation risk;
- market price volatility and potential impact on share price;
- our potential need for additional financings in order to meet future capital requirements for our operations;
- our potential to breach certain covenants, representations and warranties in our loan arrangements including our 14% Debentures (as defined below);
- our ability to repay our loan arrangements including our 14% Debentures;
- our ability to declare dividends;
- our ability to meet significant research and development milestones; and
- our ability to enter into agreements with CRX Consortium members or the adoption of interconnects that use the Company's active copper cable technology.

We caution that this list is not exhaustive of all possible factors. For a detailed description of risk factors associated with the Company, refer to the "Risks and Uncertainties" section of this MD&A.

The forward-looking information and statements in this MD&A are, unless otherwise indicated, stated as of the date hereof and are presented for the purpose of assisting investors and others in understanding our financial position and results of operations as well as our objectives and strategic priorities, and may not be appropriate for other purposes. The Company does not undertake any obligation to update publicly or to revise any forward-looking information and statements, whether as a result of new information, future events or otherwise, except as required by law.

OVERVIEW OF THE COMPANY

Background

The Company delivers high performance analog semiconductors at unmatched bandwidth, speed and resolution to enable disruptive industrial design for leading electronics targeting large, high growth markets in data centers, virtual reality (“VR”), augmented reality (“AR”), and other connectivity markets.

The Company was incorporated on October 12, 2010 as a capital pool company named “Chrysalis Capital VIII Corporation” (“Chrysalis”) pursuant to the filing of articles of incorporation under the *Canada Business Corporations Act*. The articles of incorporation of the Company were amended by the filing of articles of amendment dated April 19, 2011 to remove certain provisions. On February 5, 2013, the Company consolidated its common shares (the “common shares”) by a ratio of 3.86364:1 and to change its name to “Spectra7 Microsystems Inc.”. On July 16, 2021, the Company continued its corporate existence from the *Canada Business Corporations Act* to the *Business Corporations Act* (Ontario).

On February 5, 2013, the Company, then named Chrysalis Capital VIII Corporation, completed a reverse takeover transaction whereby Chrysalis acquired all of the issued and outstanding shares of Spectra7 Microsystems Corp. (formerly Fresco Microchip Inc.) (“Fresco”), a company incorporated in Ontario, and Spectra7 Microsystems (Ireland) Limited (formerly RedMere Technology Limited), a company incorporated in Ireland. As a result of such transaction, which constituted the Company’s qualifying transaction under the policies of the TSX Venture Exchange (the “TSXV”), the former shareholders of Fresco acquired control of the Company. From February 19, 2013 until July 22, 2015, the common shares of the Company were listed for trading on the TSXV under the symbol “SEV”. From July 23, 2015 to May 21, 2020, the common shares were listed for trading on the Toronto Stock Exchange (the “TSX”) under the symbol “SEV”. As of May 22, 2020, the common shares were again listed for trading on the TSXV under the symbol “SEV”. On June 21, 2021, the Company’s common shares commenced trading on the OTCQB Venture Market under the symbol “SPVNF”.

On August 13, 2021, the Company consolidated its common shares by a ratio of 50:1. As a result of the consolidation, the 1,056,538,784 common shares issued and outstanding prior to the consolidation were reduced to 21,130,778 common shares. The common shares and basic and diluted earning per common share are adjusted retrospectively to all periods presented.

The registered office of the Company is located at 181 Bay Street, Suite 1800, Toronto, Ontario Canada, M5J 2T9 and its head office is in San Jose, California. The Company also has a design center in Cork, Ireland and a sales office in Dongguan, China. The Company is currently a reporting issuer in each of the provinces of Canada, excluding Québec.

Products

The Company’s family of products features a patented signal processing technology used in the design of active cables and specialty interconnects which enable longer, thinner and lighter interconnects in data centers, VR, AR, and other connectivity products. The Company holds approximately 55 U.S. issued patents relating to its products.

Data Centers

GaugeChanger™ is an innovative and disruptive silicon technology that allows copper to extend much longer lengths without the cost and power penalty of optics that are used in data centers today. It works equally well at 25 Gbps NRZ, 56 Gbps PAM-4 and 112 Gbps PAM-4 enabling new connector standards of 100, 200, 400, 800 Gbps and 1.6Tbps.

At present, passive copper cables are struggling to meet the high-speed connectivity demands of new data centers. Fiber optics and active electric cables using a digital signal processor (“DSP”) retimer are the primary alternatives for data centers seeking high speed, at lengths longer than a few meters. GaugeChanger™, however, extends the use of copper with interconnects that are as fast and as thin as fiber optics and active electric cables for the top of the rack installation, but at dramatically lower cost and power consumption using the redriver approach. GaugeChanger™ enabled cables have a reach of up to seven meters to allow for top-of-rack and rack-to-rack applications in data centers for 56 Gbps PAM-4 and four meters for 112 Gbps PAM-4 applications.

Virtual Reality (VR)

The Company's next-generation VR products include the VR7050 which the Company believes to be the industry's first chip capable of enabling lightweight, ultra-thin active interconnects for gesture recognition and motion control backhaul. When used in conjunction with Spectra7's VR7100 high speed video chip, the chipset delivers ultra-high bandwidth data, video, audio and power in a unified, ultra-light, super-thin wearable interconnect while achieving the low latency for a truly immersive VR experience.

Augmented Reality (AR)

The Company has also developed AR products that provide similar benefit to the VR products on thinner, shorter 'wearable' interconnects.

AR-Connect™ is an AR interconnect product line that is powered by the Company's patented wearable network signal processing technology. The Company believes its patented AR-Connect™ is the industry's first integrated cable, connector and embedded chipset product line for AR vision systems and wearable computing devices. AR-Connect™ enables AR glasses to connect to a smart phone, proprietary processing device or a desktop GPU/laptop processing unit, with a single unified and ultra-thin link.

DreamWeVR

DreamWeVR is an extensive product line targeted at next generation 4K Ultra-HD and 5K resolution VR and AR platforms for gaming, health care, architecture and business telepresence applications. The product line includes four new chips (VR8181, VR8050, VR8200 and VR8300) featuring SpectraLinear™ technology, new VR-specific connectors and three new head-mounted display ("HMD") interconnect configurations to support high-bandwidth (up to 50Gbps), near-zero latency VR HMDs and AR glasses with reduced weight and complexity.

USB 3.2 consumer interconnects

The Company's active VR8050 and VR8051 chips are the industry's first for ultra-thin implementations of USB 3.2 consumer interconnects, reducing the conductor cross section by up to 90% compared to passive cable implementations. Applications for this interconnect implemented with the new Type-C connector include ultra-thin laptops, tablets, mobile devices, solid state disks and wearable computing devices. The resulting ultra-thin cable enabled by this new Spectra7 technology allows the cable to transfer data at supercomputer speeds (up to 10 times faster) with a plug shell or over-mold and cable strain relief dimension that is thinner than the mobile device itself, a critical dimension when implementing Type-C connectors in tablets and smart phones, and up to 90% lighter than passive cable conductors that would need to be much larger in diameter.

Overall Financial Performance

Net loss for the three and twelve months ended December 31, 2022 was $1.2 million and $7.0 million, respectively, compared to a net loss of $0.9 million and $5.8 million in the same periods in the prior year. Revenue for the three and twelve months ended December 31, 2022 increased by 3% and 107%, respectively, compared to the same periods in the prior year. The increased revenue was driven primarily by the ramping product demand on our DreamWeVR AR/VR products and our GaugeChanger™ products from hyperscaler data center operators.

Gross margin percentage for the three months ended December 31, 2022 increased from the same period in 2021 by approximately 3%, driven by higher shipments of higher margin data center, VR and consumer products, and increased by approximately 8% in the twelve months ended December 31, 2022 due to higher shipment of data center products. Expenditures during the three and twelve months ended December 31, 2022 were approximately $2.9 million and $13.2 million, respectively, representing an increase of 24% and 37% from the previous reporting periods, due to the costs to support customer's ramp to production for our products in the data center market, discontinuation of employee furloughs associated with the COVID-19 pandemic, and the costs associated with the annual shareholders meeting. This led to increases in research and development, sales and marketing and general and administrative expenditures. In addition, shared-based compensation also increased as more equity awards were issued to existing and new employees.

Impact of COVID-19 outbreak

The COVID-19 pandemic has negatively impacted the Company and its impact on the data center programs is uncertain. While demand for the Company's new data center products remains strong, Spectra7 continues to experience significant customer disruptions, logistics and supply chain challenges caused by the associated shutdowns due to COVID-19 that are expected to continue to impact overall revenues in the near term.

We rely on third-party suppliers and manufacturers. Currently, the Company's silicon products are manufactured at foundries by companies in Taiwan and the United States, and are packaged and tested in the U.S. and Taiwan. PCBs for certain active cable products are manufactured by a corporation in Hong Kong, China. The Company also uses third-party contractors for assembly of active cable products including contractors in Taiwan. The pandemic has resulted in the extended shutdown of certain businesses in certain jurisdictions, which have resulted in disruptions or delays to our supply chain. These include disruptions from the temporary closure of third-party supplier and manufacturer facilities, interruptions in product supply or restrictions on the export or shipment of our products. As a result of COVID-19, we have been unable to satisfy certain customer orders on a timely basis, with some customers experiencing delays in receiving our products. There is uncertainty around the duration and breadth of the ongoing COVID-19 pandemic, and therefore the ultimate impact on our business, financial condition and operating results cannot be reasonably estimated at this time. The continued spread of COVID-19 may also impact customer demand, the availability of key components sourced from certain jurisdictions, logistics flows and the availability of other resources to support critical operations in the Asia Pacific region.

The Company may incur expenses or delays relating to such events outside of our control, which could have a material adverse impact on our business, operating results and financial condition. The future impact of the pandemic is uncertain and cannot be predicted, and there is no assurance that the pandemic will not have a material adverse impact on the future results of the Company. The extent of the impact will depend on future developments, including actions taken to contain COVID-19.

Key Customers

During the three and twelve months ended December 31, 2022, the Company derived approximately 98% of its revenue from two customers (three months ended December 31, 2021 – 89% from two customers) and 98% from two customers (twelve months ended December 31, 2021 – 94% from two customers), respectively.

Selected Financial Information

The table below sets forth certain key financial results for the three and twelve months ended December 31, 2022 and 2021.

	Three Months Ended December 31,				**Years Ended December 31,**			
	(In thousands, except for loss per share)				***(In thousands, except for loss per share)***			
	2022	**2021**	**Change**		**2022**	**2021**	**Change**	
	$	**$**	**$**	**%**	**$**	**$**	**$**	**%**
Revenue	2,998	2,604	394	15%	11,294	5,461	5,833	107%
Cost of sales	1,236	1,089	147	13%	5,636	2,300	3,336	145%
Gross profit	1,762	1,515	247	16%	5,658	3,161	2,497	79%
Expenses	3,210	2,372	838	35%	13,133	9,686	3,447	36%
Operating loss	(1,448)	(857)	(591)	69%	(7,475)	(6,525)	(950)	15%
Other income	-	-	-	0%	(217)	(739)	522	(71%)
Tax recovery	(216)	-	(216)	0%	(216)	-	(216)	0%
Net loss	(1,232)	(857)	(375)	44%	(7,041)	(5,786)	(1,256)	22%
Other comprehensive loss	630	(245)	875	(357%)	687	(397)	1,084	(273%)
Total comprehensive loss	(602)	(1,102)	500	(45%)	(6,355)	(6,183)	(172)	3%
Basic and diluted loss per share	(0.04)	(0.03)			(0.21)	(0.27)		
Weighted average number of shares outstanding	33,676	29,471			33,464	21,248		

	As at *(In thousands)*			
	December 31, 2022	December 31, 2021	Change	
	$	$	$	%
Total assets	8,307	12,222	(3,915)	(32%)
Total liabilities	7,728	8,667	(939)	(11%)
Equity	579	3,555	(2,976)	(84%)
Total liabilities and equity	8,307	12,222	(3,915)	(32%)

Revenue and Gross Margin

The table below sets forth the details of revenue and gross margin for the three and twelve months ended December 31, 2022 and 2021.

	Three Months Ended December 31, *(In thousands)*				Years Ended December 31, *(In thousands)*			
	2022	2021	Change		2022	2021	Change	
	$	$	$	%	$	$	$	%
Revenue	2,998	2,604	394	15%	11,294	5,461	5,833	107%
Cost of sales	1,236	1,089	147	13%	5,636	2,300	3,336	145%
Gross profit	1,762	1,515	247	16%	5,658	3,161	2,498	79%
Gross margin %	*59%*	*58%*	*1%*		*50%*	*58%*	*(8%)*	

Revenue for the three and twelve months ended December 31, 2022 increased by $394,000 and $5,833,000, respectively, representing an increase of 15% and 107% over the same periods in the previous year as the Company ramped up shipments of AR/VR and data center products.

Gross margin percentage for the three months ended December 31, 2022 increased from the same period in 2021 by approximately 1%. Gross margin percentage for the twelve month period ended December 31, 2022 decreased over the same period in the previous year by approximately 8% due mainly to premiums paid to secure wafers and supply chain availability as well as additional fees to expedite delivery in order to meet customers' demand for data center and AR/VR products.

Gross margin is a non-IFRS measure that does not have a standardized meaning prescribed by IFRS. Gross margin provides additional information to readers of the MD&A and Financial Statements to enhance their understanding of the Company's financial performance. Gross margin is comprised of revenue less cost of sales divided by revenue.

Expenses

The table below sets forth the details of expenses and other income for the three and twelve months ended December 31, 2022 and 2021.

	Three Months Ended December 31, *(In thousands)*				Years Ended December 31, *(In thousands)*			
	2022	**2021**	**Change**		**2022**	**2021**	**Change**	
	$	**$**	**$**	**%**	**$**	**$**	**$**	**%**
Research and development, net of investment tax credits and including amortization of licenses	928	1,126	(198)	(18%)	4,185	3,568	617	17%
Sales and marketing	280	99	181	183%	927	447	480	101%
General and administrative	684	559	125	22%	3,318	2,299	1,019	44%
Depreciation of right-of-use assets	60	60	-	-	294	259	35	14%
Depreciation of property and equipment	8	20	(12)	(60%)	46	153	(107)	(70%)
Share-based compensation	469	957	(488)	(51%)	2,535	1,865	670	36%
Extinguishment of original convertible debt	-	(379)	379	(100%)	-	(379)	379	(100%)
Interest on lease obligation of right-of-use assets	3	8	(5)	(63%)	19	26	(7)	(27%)
Accretion expense	425	4	421	10525%	1,475	1,529	(54)	(4%)
(Gain)/Loss on disposal of capital equipment	-	-	-	-	-	(7)	7	(100%)
Foreign exchange gain (loss)	354	(81)	435	(537%)	334	(75)	409	(545%)
	3,210	2,372	838	35%	13,133	9,686	3,447	36%

Research and Development

Research and development expenses consist of salaries and related expenses, design software tool costs, travel, consumable materials used in product development, such as experimental wafers, non-production tape-out costs, technical services costs and contracted technical personnel.

Research and development expenses for the three months ended December 31, 2022 decreased by 18% from the same period in the previous year due mainly to lower supply expenditures to support customer product ramps. Research and development expenses for the twelve months ended December 31, 2022 increased by 17% from the same period in the previous year driven mainly by the discontinuance of employee furloughs in May 2021, increased non-recurring engineering ("NRE") and supplies expenditure to support customer product ramps.

The Company is eligible for Irish refundable Scientific Research and Experimental Development ("SR&ED") investment tax credits for certain eligible expenditures incurred in Ireland. These tax refunds are netted against the Company's research and development expenses.

Sales and Marketing

Sales and marketing expenses consist primarily of salaries and related expenses, travel and the cost of trade shows, product promotion, customer technical support and market research.

Sales and marketing expenditures for the three and twelve months ended December 31, 2022 increased by 183% and 101%, respectively, from the same periods in previous year, driven by higher personnel costs compared to the prior year in which employees were furloughed until May 2021 and increased headcount to meet customers' interests on the Company's products.

General and Administrative

General and administrative expenses relate to finance and administration and consist of salaries and related expenses, legal and audit fees, insurance, expenses related to public reporting and compliance, travel and other corporate expenses.

General and administrative expenses for the three and twelve months ended December 31, 2022 increased by 22% and 44%, respectively, from the same periods of previous year. The increase is mainly due to higher personnel costs compared to the prior year in which employees were furloughed until May 2021, higher headcount, and increased consulting fees related to IT and investor relations.

Depreciation of Right-of-use Assets

The Company's right-of-use assets recognized on adoption of IFRS 16 on January 1, 2019 are amortized over their remaining lease term. Depreciation of right-of-use assets for the three and twelve months ended December 31, 2022 compared to the same periods in the previous year remained the same and increased 14%, respectively, due to reduced lease amount in 2021.

Depreciation of Property and Equipment

Depreciation of property and equipment for the three and twelve months ended December 31, 2022 compared to the same periods in the previous year decreased by 60% and 70%, respectively. The lower depreciation expense is due to certain property and equipment being fully depreciated.

Share-based Compensation

Share-based compensation recognizes the expense associated with the fair value of stock options and restricted share units granted to employees, officers, directors and consultants which are estimated at the date of grant using the Black Scholes option pricing model and recognized over the period in which the options vest.

Share-based compensation expense for the three and twelve months ended December 31, 2022 decreased by $0.5 million and increased by $0.7 million, respectively, over the same periods in the previous year due to new and catch-up grants under the Company's restricted share unit plan in 2021.

Accretion Expense

Accretion expense represents the change in the stated value of the 7% Debentures (as defined below) and 14% Debentures measured at amortized cost and also includes interest expense for the period. The 7% Debentures are carried at amortized cost at an effective interest rate of 19.7%. The 14% Debentures are carried at amortized cost at an effective interest rate of 25.8%. Under the effective interest rate method, the accretion becomes higher as maturity approaches.

Foreign Exchange Loss

The loss or gain on foreign exchange is caused by changes in the value of the Canadian dollar, Euro and Chinese Yuan relative to the US dollar, the amount of exposed assets and liabilities such as cash and accounts payable and the difference in the exchange rate at the time expenses in Canadian dollars, Euros and Chinese Yuan are booked and paid. Gains occur when the non-US currency strengthens and the Company holds exposed net assets in those funds or when the non-US currency weakens and the Company holds net exposed liabilities. Conversely, losses occur when the non-US currency weakens and the Company holds net exposed assets in those funds or when the non-US currency strengthens and the Company holds net exposed liabilities.

Other Income

Under the terms of the Paycheck Protection Program ("PPP") formed under the U.S. Coronavirus Aid, Relief, and Economic Security Act ("CARES Act"), the Company received approval and a grant from a US based bank and the U.S. Small Business Administration ("SBA") for $776,085 in 2020 and for $739,470 in 2021 at an interest rate of 1.0% per annum and maturing in 24 months, with payments not due by the Company during the initial nine-month period.

Under the CARES Act, the Company is eligible for forgiveness of both the principal and accrued interest to the extent that the grant is used to cover eligible payroll, mortgage interest, rent and utility costs over a 24-week period following receipt of the grant and so long as the Company retains its employees and maintains their levels of compensation. No more than 40% of the funds may be allocated to non-payroll costs.

The Company has used the funds for the purposes set out in the CARES Act and the Paycheck Protection Program Flexibility Act and applied for forgiveness of the grant. On March 21, 2021 and July 28, 2021, the Company received notices of forgiveness of the grants.

In 2022, the Company applied for the Employee Retention Credit ("ERC") which is a refundable tax credit for businesses that continued to pay employees while shut down due to the COVID-19 pandemic or had significant declines in gross receipts from March 13, 2020 to December 31, 2021. The Company was eligible and claimed $217,105 of ERC.

Net Loss and Other Comprehensive Loss

Net loss for three and twelve months ended December 31, 2022 were $1.2 million and $7.0 million compared to a net loss of $0.9 million and $5.8 million, respectively, in the same period in the prior year. The increase in net loss is attributed to higher operating expenses related to personnel costs with the discontinuous of furlough in May 2021, NRE and supplies expenditure to support customer production ramp and higher shared-based compensation, offset by higher revenue and gross profit. The other comprehensive loss relates to the unrealized foreign currency effect of translating the Company, whose functional currency is Canadian dollars, to US dollars for financial reporting purposes.

The operating results of Spectra7 Microsystems Inc. and its wholly owned subsidiary, Si Bai Ke Te (Dongguan) Electronics Trading Co. Ltd, are translated from their functional currencies of Canadian Dollars (CDN) and Chinese Yuan Renminbi (CNY), respectively, into the Company's presentation currency of US dollars at the end of each reporting period, with the difference being recorded in other comprehensive income. During the three and twelve months ended December 31, 2022, the Company recorded an other comprehensive gain of $0.6 million and $0.7 million, respectively (December 31, 2021: loss of $0.2 million and $0.4 million, respectively) related to unrealized foreign currency translation, which arose to the significant change in the USD exchange rate to CDN and CNY.

Loss per Share

Basic loss per share is calculated by dividing the profit and loss attributable to common shares by the weighted average number of common shares outstanding during the period. Diluted earnings and loss per share is calculated by adjusting the earnings and number of common shares for the effects of dilutive options and other potentially dilutive securities. The weighted average number of common shares used as the denominator in calculating diluted loss per common share excludes un-issued common shares related to warrants, restricted share units and employee stock options, as they are anti-dilutive.

Basic and diluted loss per share for the three and twelve months ended December 31, 2022 was $0.04 and $0.21, respectively, compared to $0.03 and $0.29 respectively, for the three and twelve months ended December 31, 2021.

Selected Annual Information

	As at and for the year ended		
	December 31,		
	2022	**2021**	**2020**
	$	**$**	**$**
		(in thousand)	
Revenue	11,294	5,461	1,032
Basic and diluted loss per share	(0.21)	(0.29)	(0.59)
Total comprehensive loss	(6,355)	(6,182)	(6,241)
Total assets	8,307	12,221	949
Total non-current liabilities	5,640	87	9,827
Distributions or dividend declared	-	-	-

Summary of Quarterly Data

The table below sets forth selected financial data for the most recent eight quarters ended December 31, 2022.

(in thousands, except per share)

	Fiscal 2021				Fiscal 2022			
	Mar 31	**Jun 30**	**Sept 30**	**Dec 31**	**Mar 31**	**Jun 30**	**Sep 30**	**Dec 31**
	$	**$**	**$**	**$**	**$**	**$**	**$**	**$**
Revenue	556	733	1,568	2,604	2,084	3,532	2,680	2,998
Cost of sales	239	304	668	1,089	1,191	2,004	1,205	1,236
Gross profit	317	429	900	1,515	893	1,528	1,475	1,762
Expenses	1,651	2,268	3,395	2,372	3,655	3,331	2,936	3,210
Other income	235	504	-	-	-	217	-	-
Income tax recovery	-	-	-	-	-	-	-	(216)
Net loss	(1,099)	(1,335)	(2,496)	(856)	(2,762)	(1,587)	(1,461)	(1,232)
Other comprehensive (loss) gain	(27)	(47)	(78)	(245)	19	(48)	85	630
Total comprehensive loss	(1,126)	(1,382)	(2,574)	(1,101)	(2,743)	(1,635)	(1,376)	(602)
Loss per share - Basic and Dilutive	(0.07)	(0.08)	(0.12)	(0.04)	(0.08)	(0.05)	(0.04)	(0.04)
Shares - Basic and Dilutive	15,275	17,141	21,151	29,471	33,082	33,452	33,636	33,676

Revenues in the semiconductor industry are subject to seasonality driven by purchasing cycles and manufacturers' unique product development cycles.

Historically, the Company's operating results have fluctuated on a quarterly basis and management believes they will continue to fluctuate. If anticipated sales and shipments in any quarter do not occur as and when expected, expenses and inventory levels can be disproportionately high and operating results for that quarter and future quarters may be adversely affected. In addition, because of historical variations in the operating results, the limited operating history of the Company and the rapid evolving nature of the business, period to period comparisons of the Company's operating results, including gross margin and operating expenses as a percentage of total revenue, are not necessarily meaningful and should not be relied upon as indication of future performance.

Non-GAAP Measures

In addition to IFRS reporting, the Company provides non-GAAP financial measures excluding the income statement effects of share-based compensation, interest, depreciation and taxes. These non-GAAP measures help analyze the Company's financial results, establish budgets and operating goals for managing its business and to evaluate performance. The Company also believes that these non-GAAP financial measures provide an additional tool for investors to use in comparing our core business and results of operations over multiple periods with other companies in the industry, many of which present similar non-GAAP financial measures to investors. However, the non-GAAP financial measures presented may not be comparable to similarly titled measures reported by other companies due to differences in the way that these measures are calculated. The non-GAAP financial measures presented should not be considered as the sole measure of the Company's performance and should not be considered in isolation from, or a substitute for, comparable financial measures calculated in accordance with IFRS.

(i) Non-IFRS Operating Expenses

Non-IFRS operating expenses is a non-GAAP measure which includes research and development, sales and marketing, general and administrative expenses and depreciation and amortization for capital equipment and right-of-use assets and excludes share-based compensation expense, non-recurring termination costs, interest and related financing costs, change in fair value of warrant liabilities, foreign exchange gain/loss and gain/loss from property and equipment disposal.

Below is a reconciliation of total IFRS expenses to non-IFRS operating expenses:

	(In thousands)							
	Fiscal 2021				Fiscal 2022			
	Mar 31	Jun 30	Sep 30	Dec 31	Mar 31	Jun 30	Sep 30	Dec 31
	$	$	$	$	$	$	$	$
Total expenses - IFRS	1,651	2,268	3,395	2,372	3,655	3,331	2,936	3,210
Share-based compensation	83	57	767	957	853	646	567	469
Interest on lease obligation of right-of-use assets	2	7	9	8	7	5	4	3
Accretion expense	542	410	574	4	355	232	463	425
(Gain)/Loss on disposal of capital equipment	-	(7)	-	-	-	-	-	-
Foreign exchange gain (loss)	(1)	4	3	(81)	(45)	34	(9)	354
Extingushment of original convertible debt	-	-	-	(379)	-	-	-	-
Non-IFRS operating expenses	**1,025**	**1,797**	**2,042**	**1,864**	**2,485**	**2,414**	**1,911**	**1,959**

	(In thousands)							
	Fiscal 2021				Fiscal 2022			
	Mar 31	Jun 30	Sep 30	Dec 31	Mar 31	Jun 30	Sep 30	Dec 31
	$	$	$	$	$	$	$	$
Research and development, net of investment tax credits and including amortization of licenses	551	885	1,006	1,126	1,115	1,158	985	928
Sales and marketing	66	49	234	99	165	258	224	280
General and administrative	277	746	718	559	1,124	875	635	684
Depreciation of right-of-use assets	74	65	60	60	60	113	60	60
Depreciation of property and equipment	57	52	24	20	21	10	7	8
Non-IFRS operating expenses	**1,025**	**1,797**	**2,042**	**1,864**	**2,485**	**2,414**	**1,911**	**1,959**

(ii) EBITDA

EBITDA or earnings before interest, tax, depreciation, and amortization is a non-GAAP measure. EBITDA excludes share-based compensation, amortization, depreciation, interest, and tax expenses.

Below is a reconciliation of net loss to EBIDTA:

	(In thousands)							
	Fiscal 2021				Fiscal 2022			
	Mar 31	Jun 30	Sep 30	Dec 31	Mar 31	Jun 30	Sep 30	Dec 31
	$	$	$	$	$	$	$	$
Net loss	(1,099)	(1,335)	(2,495)	(858)	(2,762)	(1,586)	(1,461)	(1,231)
Depreciation of right-of-use assets	74	65	60	60	60	113	60	60
Depreciation of property and equipment	57	52	24	24	21	10	7	8
Depreciation expense - COGS	9	9	13	13	7	18	31	35
Amortization - intangible assets	-	85	104	104	162	145	137	55
Share-based compensation	83	57	767	957	853	646	567	469
Interest on lease obligation of right-of-use assets	2	7	9	8	7	5	4	3
Accretion expense	542	410	574	4	355	232	463	425
(Gain)/Loss on disposal of capital equipment	-	(7)	-	-	-	-	-	-
Foreign Tax	-	-	-	-	-	-	-	(216)
Foreign exchange gain (loss)	(1)	4	3	(81)	(45)	34	(9)	354
Extingushment of original convertible debt	-	-	-	(379)	-	-	-	-
Other income	(235)	(504)	-	-	-	(217)	-	-
EBITDA	**(568)**	**(1,157)**	**(940)**	**(147)**	**(1,342)**	**(600)**	**(201)**	**(38)**

Issued and Outstanding Share Capital

The Company's authorized capital consists of an unlimited number of common shares. 33,689,934 common shares were issued and outstanding as of December 31, 2022. As of the date of this MD&A, 39,827,304 common shares were issued and outstanding.

Stock Options and Restricted Share Units

At the annual and special meeting of shareholders held on June 9, 2022, the shareholders approved amendments to both the Company's stock option plan ("Stock Option Plan") and the restricted share unit plan (the "RSU Plan") to provide that the combined maximum number of common shares reserved for issuance under both the Stock Option Plan and the RSU Plan, inclusive of existing stock options and restricted share units ("RSUs"), shall not exceed 6,710,018 common shares, representing 20% of the issued and outstanding common shares as of June 9, 2022.

As at December 31, 2022, 4,328,217 RSUs and options to purchase an aggregate of up to 259,768 common shares were outstanding. As of the date of this MD&A, 5,258,807 RSUs and options to purchase an aggregate of up to 257,768 common shares were outstanding.

Warrants

As of the date of this MD&A, the Company has outstanding warrants to purchase common shares or units:

Expiry Date	Number of warrants outstanding	Exercise Price
May 14, 2023[1]	242,489	CDN $1.50
July 6, 2023	293,306	CDN $7.875
October 26, 2023	411,028	CDN $1.32
October 30, 2023	353,063	CDN $11.25
July 26, 2024	118,055	CDN $1.02
August 21, 2024	1,584,316	CDN $4.00
August 21, 2024	251,310	CDN $2.50
August 25, 2024	283,548	CDN $1.02
July 15, 2025	210,469	CDN $2.50
September 25, 2025	166,779	CDN $2.50
January 15, 2026	1,140,138	CDN $2.50
February 12, 2026	478,665	CDN $2.50
May 14, 2026	4,223,141	CDN $2.50
March 15, 2028	5,990,000	CDN $1.18
March 15, 2028	229,504	CDN $1.10
Total	**15,975,811**	

Note:

[1] Broker warrants are convertible into Spring 2021 Units. See description under the heading "Equity Financings".

Convertible Debt

In January 2018, the Company issued 7.0% senior unsecured convertible debentures of the Company (each, a "7% Debenture") in the principal amount of CDN $15.567 million. The principal amount of each 7% Debenture was convertible into common shares at the option of the holder at any time prior to the close of business on the last business day immediately preceding the maturity date of January 9, 2021, at a conversion price of CDN $17.50 per common share, subject to adjustment upon certain customary events. Holders converting their 7% Debentures received accrued and unpaid interest thereon for the period from and including the date of the latest interest payment date to, but excluding, the date of conversion.

On December 23, 2020, the Company entered into a first supplemental debenture indenture (the "First Supplemental Indenture") which amended certain terms of the Company's existing 7% Debentures which were due to mature in January 2021. Pursuant to the First Supplemental Indenture, the maturity date of the 7% Debentures was extended 18 months from January 9, 2021 to July 9, 2022, and the conversion price of the principal amount of the 7% Debentures was reduced from CDN $17.50 per common share to CDN $2.50 per common share until January 9, 2022 and to CDN $5.00 per common share until July 9, 2022. In consideration for the amendments, the Company increased the outstanding principal obligations of the 7% Debentures by 10%. The additional 10% of principal obligations was not convertible into common shares.

On December 9, 2021, the Company entered into a second supplemental convertible debenture indenture (the "Second Supplemental Indenture") to amend the terms and conditions for the above debentures to reduce the conversion price of the 7% Debentures from CDN $5.00 per common share to CDN $2.50 per common share from January 10, 2022 to July 9, 2022.

During the twelve months ended December 31, 2021, the Company prepaid CDN $1,995,000 of principal of the 7% Debentures and the holders of the 7% Debentures converted an aggregate of CDN $4,125,000 of principal at a conversion price of CDN $2.50 per common share, resulting in the issuance of 1,650,000 common shares. The Company issued an additional 242,477 common shares and CDN $38,834 in payment of the make-whole interest amount owing pursuant to the converted 7% Debentures.

The Company treated the modifications as an extinguishment of the existing instrument and recorded a gain of $379,140.

The Second Supplemental Indenture was recorded as a new compound financial instrument with a debt component of $6,354,099 determined using present value of future cash flows and a discount rate of 18.0%. The debt component is being amortized using effective interest rate of approximately 23.6% over its remaining term.

On July 26, 2022, the Company entered into a third supplemental debenture indenture (the "Third Supplemental Indenture") to amend certain terms and conditions of the 7% Debentures. Pursuant to the Third Supplemental Indenture, the maturity date of the 7% Debentures was extended to September 9, 2022. The Company repaid 20% of the outstanding principal amount together with the 10% bonus principal outstanding on the 7% Debentures on August 2, 2022, including accrued and unpaid interest, totaling CDN $2,600,704. The principal outstanding after the payment was CDN $5,422,400. As consideration for the extension, the Company agreed to pay non-convertible extension bonuses at maturity of an aggregate of approximately CDN $199,978. As at September 2, 2022, the Company repaid the remaining balance of the 7% Debentures in full. The total amount repaid was $6,470,672 (CDN $8,350,018), which includes CDN $8,067,800 principal amount and CDN $80,802 of accrued and unpaid interest thereon, as well as CDN $199,978 of the extension bonus and CDN $1,438 of associated interest.

On July 26, 2022, the Company announced a non-brokered private placement (the "Debenture Offering") of 14% convertible unsecured debentures (the "14% Debentures") and completed the first tranche of the Debenture Offering through the issuance of $2,940,739 (CDN $3,809,000) principal amount of 14% Debentures for gross proceeds of $2,881,924 (CDN $3,732,820). On August 25, 2022, the Company entered into a first supplemental convertible debenture indenture to increase the size of the Debenture Offering and completed the second tranche of the Debenture Offering through the issuance of $3,927,162 (CDN $5,064,000) principal amount of 14% Debentures for gross proceeds of $3,848,619 (CDN $4,962,720). In aggregate, the Debenture Offering consisted of the issuance of $6,867,901 (CDN $8,873,000) principal amount of 14% Debentures for gross proceeds of $6,730,543 (CDN $8,695,540). Proceeds from the Debenture Offering were primarily used to repay the 7% Debentures.

Each CDN $1,000 principal amount of 14% Debentures was sold at a subscription price of CDN $980. The 14% Debentures mature on December 31, 2024 and the principal amount is convertible into common shares at the option of the holder at any time prior to the close of business on the last business day immediately preceding maturity, at a conversion price of CDN $1.02 per common share, subject to adjustment upon certain customary events. Holders converting their 14% Debentures will receive accrued and unpaid interest thereon for the period from and including the date of the latest interest payment date to, and including, the date of conversion. In connection with the Debenture Offering, the Company paid $387,761 (CDN $500,968) in finder's fees and issued an aggregate of 401,603 finder's warrants, with each finder's warrant entitling the holder thereof to purchase one common share at a price of $1.02 for a period of two years from the date of issuance.

As of the date of this MD&A, CDN $8,873,000 principal amount of 14% Debentures remain outstanding.

Equity Financings

On January 15, 2021, the Company completed the first tranche of a non-brokered private placement (the “January 2021 Private Placement”) of 2,280,275 units of the Company (“January 2021 Units”) at a price of CDN $1.50 per January 2021 Unit for gross proceeds of approximately $2,682,466 (CDN $3,420,413). On February 12, 2021, the Company completed the second tranche of the January 2021 Private Placement, which consisted of the issuance of 759,917 January 2021 Units for gross proceeds of $893,951 (CDN $1,139,876) and the issuance 197,413 January 2021 Units to settled $232,232 (CDN $296,119) owing to an arm's length party. Each January 2021 Unit consists of one common share and one-half of one common share purchase warrant (each whole warrant, a "January 2021 Warrant") with each January 2021 Warrant being exercisable into one common share at an exercise price of CDN $2.50 for a period of five years from the date of issuance, subject to adjustment upon certain customary events. The expiry date of the January 2021 Warrants can be accelerated by the Company at any time following the date that is 4 month and one day after closing of the January 2021 Private Placement and prior to the expiry date of the January 2021 Warrants if the closing price of the common shares on the TSXV is greater than CDN $0.08 for any 10 non-consecutive trading days.

On May 14, 2021, the Company completed the first tranche of a brokered private placement (the “Spring 2021 Private Placement”) of 3,413,791 units (the "Spring 2021 Units"). The Company also completed a concurrent non-brokered offering of 254,016 Spring 2021 Units. On June 11, 2021, the Company completed the second tranche of the Spring 2021 Private Placement through the issuance of 555,333 Spring 2021 Units. The price per Spring 2021 Unit for both tranches was CDN $1.50. In the aggregate, the Company has issued a total of 4,223,142 Spring 2021 Units for gross proceeds of $5,229,389 (CDN $6,334,711). Each Spring 2021 Unit consists of one common share in the capital of the Company and one common share purchase warrant (each, a "Spring 2021 Warrant") with each Spring 2021 Warrant being exercisable into one common share at an exercise price of CDN $2.50 until May 14, 2026, subject to adjustment upon certain customary events. The expiry date of the Spring 2021 Warrants can be accelerated by the Company to the date that is thirty (30) days following the delivery of the acceleration notice to the holders of the Spring 2021 Warrants if, at any time following the date that is four months and one day following the closing date of the Spring 2021 Private Placement, the closing price of the common shares is greater than CDN $4.00 for a period of 10 non-consecutive trading days on the TSXV.

In connection with the first tranche of the Spring 2021 Private Placement, the Company paid a commission of $280,664 (CDN $340,948) and issued 227,299 broker warrants, with each broker warrant being exercisable into a Spring 2021 Unit at a price of CDN $1.50 for a period of two years. In connection with the second tranche of the Spring 2021 Private Placement, the Company paid finder's fees in cash totaling $26,165 (CDN $31,785) and issued 15,190 finder's warrants, with each finder’s warrant entitling the holder to purchase one Spring 2021 Unit at a price of CDN $1.50 until May 14, 2023.

On October 26, 2021, the Company completed a brokered private placement (the “October 2021 Private Placement”) of 11,183,990 common shares at a price of CDN $1.32 per common share for gross proceeds of $11,810,293 (CDN $14,762,866). In connection with the October 2021 Private Placement, the Company paid a commission of $434,046 (CDN $542,558) and issued 411,028 broker warrants. Each broker warrant is exercisable into one common share at an exercise price of CDN $1.32 for a period of two years from the date of issuance, subject to adjustment upon certain customary events.

On March 15, 2023, the Company completed a brokered private placement (the “March 2023 Private Placement”) of 5,990,000 units (the "March 2023 Units"). The price per March 2023 Unit was CDN $1.00 for gross proceeds of $4,342,750 (CDN $5,990,000). Each March 2023 Unit consists of one common share and one common share purchase warrant (each, a "March 2023 Warrant") with each March 2023 Warrant being exercisable into one common share at an exercise price of CDN $1.18 until March 15, 2028, subject to adjustment upon certain customary events. The expiry date of the March 2023 Warrants can be accelerated by the Company to the date that is thirty (30) days following the delivery of an acceleration notice to the holders of the March 2023 Warrants if, at any time following the closing date of the March 2023 Private Placement, the closing price of the common shares is greater than CDN $4.00 for a period of 10 non-consecutive trading days on the TSXV.

In connection with the March 2023 Private Placement, the Company paid a commission of $291,183 (CDN $401,632) and issued 229,504 broker warrants, with each broker warrant being exercisable into one common share at a price of CDN $1.10 for the period commencing on the date that is six months after the closing date until the fifth anniversary of the closing date.

Liquidity and Capital Resources

Historically, the Company has funded its operations from the sale of equity securities and from debt financing.

The Company's objectives are to grow revenue by expanding its product lines and entering new markets, to finance investment in research and development and to ensure that capital resources are readily available to meet obligations as they become due. Liquidity risk arises when the Company is challenged to fund its on-going operations through working capital or either the sale of equity or bank loans.

The Company may face challenges in generating sufficient amounts of cash and cash equivalents in the short-term and potentially beyond due to such factors as:

- challenges in the supply chain whereby lead times to secure components can run between 8-20 weeks and often require the Company to prepay or make deposits to secure the components;
- delays in the development of new products which can delay market entry dates;
- acceptance of new products in the market and sales volatility as a result of transitions to new product lines;
- lower than expected adoption of the products of our end customers in newer markets could impact the orders received by the Company and its revenue outlook;
- payments of accrued interest due on the conversions by the holders of 14% Debentures to common shares; and
- repayment of outstanding 14% Debentures due on December 31, 2024.

The following table summarizes the working capital and cash as at December 31, 2022 and December 31, 2021:

	As at			
	(In thousands)			
	December 31, 2022	**December 31, 2021**	**Change**	
	$	**$**	**$**	**%**
Current assets	7,748	10,957	(3,209)	(29%)
Current liabilities	2,088	8,579	(6,491)	(76%)
Working capital	5,660	2,378	3,282	138%
Cash	772	5,944	(5,172)	(87%)

As at December 31, 2022, the Company had a working capital of $5.7 million, compared to a working capital of $2.4 million as at December 31, 2021 mainly due to increases in account receivable and inventory balances and repayment of the 7% Debentures.

The Company is dependent on growth in revenue in the next year to fund future operations. Should expected revenues not materialize, the Company may require further sale of debt or equity securities, additional bank financing or other sources of funds in order to meet its obligations. See the section "Risks Factors" section of the Company's most recent Annual Information Form.

The Company is actively considering different financing options to provide additional capital for the Company to meet its business objectives. Although the Company has, in the past, been successful in obtaining financing including the March 2023 Private Placement which raised $4.3 million (CDN $6.0 million), there are inherent risks related to the Company's ability to raise capital in the future and there is no assurance that the Company will be able to continue to do so in the future on similar terms as past financings, or at all.

The following table summarizes the cash inflows and outflows by activity for the periods indicated:

	Three Months Ended December 31, *(in thousnds)*				Twelve Months Ended December 31, *(in thousnds)*			
	2022	2021	Change		2022	2021	Change	
	$	$	$	%	$	$	$	%
Cash generated by (used in)								
Operating activities	(1,679)	(1,137)	(542)	48%	(4,947)	(10,317)	5,370	(52%)
Financing activities	15	(42)	57	(136%)	(246)	17,341	(17,587)	(101%)
Investing activities	20	(110)	130	(118%)	(167)	(718)	551	(77%)
Effect of exchange rate changes	(1)	(21)	20	(95%)	189	(397)	586	(147%)
Increase (decrease) in cash	(1,645)	(1,310)	(335)	26%	(5,172)	5,909	(11,081)	(188%)

Operating Activities

Cash used in operating activities for the year ended December 31, 2022 of $4.9 million, compared to the same period in 2021 of $10.3 million, decreased by $5.4 million, as the Company prepaid for inventory, supplies and increased accounts receivable balance as revenue increases. Without external sources of financing, the viability of the Company as an operating business is dependent on its ability to generate positive cash flows from operating activities in the short and long-term.

Financing Activities

Net cash flow from financing activities decreased by $17.6 million during the twelve months ended December 31, 2022 compared to the same period in 2021. The decrease is a result of the cash received in the twelve months ended December 31, 2021 from the January 2021 Private Placement, the Spring 2021 Private Placement and the October 2021 Private Placement.

Investing Activities

Cash used in investing activities in the twelve months ended December 31, 2022 compared to the same period in 2021 decreased by $0.6 million due to lower payments for licenses and laboratory equipment.

Off-Balance Sheet Arrangements

The Company currently has no off-balance sheet arrangements.

Transactions Between Related Parties

The Company transacts with key individuals from management and its directors who have authority and responsibility to plan, direct and control the activities of the Company. The nature of these dealings was in the form of payments for services rendered in their capacity as employees and as directors of the Company.

The Company's key management personnel consists of the Board of Directors and current and former members of the executive team of the Company.

Key management personnel compensation consists of the following:

	Three Months Ended December 31		**Twelve Months Ended December 31,**	
	2022	2021	**2022**	2021
	$	$	**$**	$
Salaries, fees and short-term benefits	**244,489**	90,679	**867,614**	695,372
Share-based benefits	**329,845**	1,084,772	**1,283,048**	1,691,293
Total	**574,334**	1,175,451	**2,150,662**	2,386,665

Insiders of the Company purchased an aggregated of $2,037,000 principal amount of 14% Debentures pursuant to the Debenture Offering and 404,800 March 2023 Units, each of which constituted a “related party transaction” pursuant to Multilateral Instrument 61-101 Protection of Minority Security Holders in Special Transactions (“MI 61-101”).The Company relied on exemptions from the formal valuation and minority shareholder approval requirements of MI 61-101, as neither the fair market value of the 14% Debentures or March 2023 Units purchased by insiders, nor the consideration paid, exceeded 25% of the Company’s market capitalization at the time of closing the applicable transaction.

Risks and Uncertainties

The Company is subject to various business, financial and operational risks that could materially adversely affect the Company’s future business, operations and financial condition and could cause such future business, operations and financial condition to differ materially from the forward-looking statements and information contained in this MD&A. The risks and uncertainties described herein are not the only ones the Company faces. Additional risks and uncertainties, including those that the Company does not know about now or that it currently deems immaterial, may also adversely affect the Company’s business.

The Company’s results of operations have been and may continue to be negatively impacted by the COVID-19 outbreak.

In March of 2020, the World Health Organization declared an outbreak of COVID-19 to be a global pandemic. COVID-19 and the restrictions put in place in response to the pandemic by many governments internationally, including those restricting travel and business operations and mandating isolations and quarantines impacted a vast array of businesses. The COVID-19 pandemic has resulted in the extended shutdown of certain businesses in certain jurisdictions, which may in turn result in disruptions or delays to our supply chain. These may include disruptions from the temporary closure of third-party supplier and manufacturer facilities, interruptions in product supply or restrictions on the export or shipment of our products. As a result of COVID-19, we have been unable to satisfy certain customer orders for our products and our customers have experienced delays in receiving our products. The outbreak of COVID-19 may also impact customer demand, the availability of key components sourced from certain jurisdictions, logistics flows and the availability of other resources to support critical operations in the Asia Pacific region.

The Company may incur expenses or delays relating to such events outside of our control, which could have a material adverse impact on our business, operating results and financial condition. The future impact of the pandemic is highly uncertain and cannot be predicted, and there is no assurance that the pandemic will not have a material adverse impact on the future results of the Company.

A local, regional, national or international outbreak of a contagious disease, including, but not limited to, COVID-19, Middle East Respiratory Syndrome, Severe Acute Respiratory Syndrome, H1N1 influenza virus, avian flu or any other similar illness, or a fear of any of the foregoing, could adversely impact us by causing operating, manufacturing supply chain, and project development delays and disruptions, labour shortages, travel and shipping disruption and shutdowns (including as a result of government regulation and prevention measures). It is unknown whether and how the Company may be affected if such an outbreak occurs and persists for an extended period of time. A widespread health crisis could adversely affect the global economy, resulting in an economic downturn that could impact demand for our products.

The Company relies on a limited number of third parties to manufacture, assemble and test its products, and the failure to manage relationships with third-party contractors successfully could adversely affect the Company's ability to market and sell its products.

The Company does not have its own manufacturing facilities. The Company operates an outsourced manufacturing business model that utilizes third-party foundry and assembly and test capabilities. As a result, the Company relies on third-party foundry wafer fabrication and assembly and test capacity, including sole sourcing for many components or products. Currently, the Company's silicon products are manufactured at foundries by companies in Taiwan and the United States, and are packaged and tested in Taiwan and the United States. Printed circuit boards for certain active cable products are manufactured by a Company in Hong Kong, China. The Company also uses third-party contractors for assembly of active cable products including contractors in China and Taiwan.

Relying on third party manufacturing, assembly and testing presents significant risks to the Company, including the following:

- failure by the Company, its customers, or their end customers to qualify a selected supplier;
- capacity shortages during periods of high demand;
- reduced control over delivery schedules and quality;
- shortages of materials;
- misappropriation of intellectual property;
- limited warranties on wafers or products supplied to the Company; and
- potential increases in prices.

The ability and willingness of the Company's third-party contractors to perform is largely outside its control. If one or more of the Company's contract manufacturers or other outsourcers fails to perform its obligations in a timely manner or at satisfactory quality levels, the Company's ability to bring products to market and its reputation could suffer. For example, in the event that manufacturing capacity is reduced or eliminated at one or more facilities the Company could have difficulties fulfilling the Company's customer orders and its net revenue could decline. In addition, if these third parties fail to deliver quality products and components on time and at reasonable prices, the Company could have difficulties fulfilling its customer orders, revenue could decline and business, financial condition and results of operations would be adversely affected.

Additionally, the Company's manufacturing capacity may be similarly reduced or eliminated at one or more facilities due to the fact that its fabrication and assembly and test contractors will be concentrated in the Pacific Rim region, principally in Taiwan and China. The risk of earthquakes in these geographies is significant due to the proximity of major earthquake fault lines, and Taiwan in particular is also subject to typhoons and other Pacific storms. Earthquakes, fire, flooding, or other natural disasters in Taiwan or the Pacific Rim region, or political unrest, war, labor strikes, work stoppages or public health crises in countries where the Company's contractors' facilities are located could result in the disruption of its foundry, assembly or test capacity. Any disruption resulting from these events could cause significant delays in shipments of products until the Company is able to shift manufacturing, assembly or test from the affected contractor to another third-party vendor. There can be no assurance that alternative capacity could be obtained on favorable terms, if at all.

The Company relies on our manufacturing partners for the manufacture, assembly and testing of our products, and the failure of any of these third-party vendors to deliver products or otherwise perform as requested or to be able to fulfill our orders could damage our relationships with our customers, decrease our sales and limit our ability to grow our business.

We rely on several third-party manufacturing partners and several third-party assembly and test subcontractors to produce and test our products. The ability of each our manufacturing partners to provide us with materials and services is limited by its available capacity and existing obligations. When demand is strong, availability of our partners' capacity may be constrained or not available, and with certain exceptions, our vendors are not obligated to perform services or supply products to us for any specific period, in any specific quantities, or at any specific price, except as may be provided in a particular purchase order. We place our orders on the basis of our customers' purchase orders or our forecast of customer demand, and most of our manufacturing partners can allocate capacity to the production of other companies' products and reduce deliveries to us on short notice. It is possible that their customers that are larger and better financed than we are or that have long-term agreements with our main foundries may induce them to reallocate capacity to those customers. Most of our manufacturing partners may reallocate capacity to their customers offering them a better margin or rate of return than provided by the Company. This reallocation could impair our ability to secure the supply of components that we need. In addition, our manufacturing partners may be supply constrained or may charge premiums, which may harm our business or results of operations. Moreover, if any of our third-party manufacturing partners or other suppliers are unable to secure the necessary raw materials from their suppliers, lose benefits under material agreements, experience power outages or labor shortages, or lack sufficient capacity to manufacture our products, encounter financial difficulties or suffer any other disruption or reduction in efficiency, we may encounter supply delays or disruptions, which could limit our ability to fulfill customer orders and damage our relationships with our customers, decrease our sales, and harm our business or results of operations.

The Company faces intense competition and expects competition to increase in the future, which could have an adverse effect on the Company's revenue, revenue growth rate, if any, and market share.

The Company competes in different target markets to various degrees on the basis of a number of principal competitive factors, including the Company's product performance, features and functionality, energy efficiency, size, ease of system design, customer support, product roadmap, breadth of complementary product offerings, reputation, reliability and price, as well as on the basis of the Company's customer support. The Company expects competition to increase and intensify as more and larger semiconductor companies as well as the internal resources of large, integrated original equipment manufacturers enter the Company's markets. Increased competition could result in price pressure, reduced profitability and loss of market share, any of which could materially and adversely affect the Company's business, revenue, revenue growth rates, operating results, and the ability of the Company to make payments on the 14% Debentures.

The Company's competitors range from large, international companies offering a wide range of semiconductor products to smaller companies specializing in narrow markets and internal engineering groups within manufacturers of consumer products, some of which may be the Company's customers. It is quite likely that competition in the markets in which the Company participates will increase in the future as existing competitors improve or expand their product offerings. In addition, it is quite likely that a number of other public and private companies are in the process of developing competing products. The Company's ability to compete successfully depends on elements both within and outside of the Company's control, including industry and general economic trends. Many of the Company's competitors have substantially greater financial and other resources with which to withstand adverse economic or market conditions in the future. Moreover, the competitive landscape is changing as a result of consolidation within the Company's industry as some of the Company's competitors have merged with or been acquired by other competitors, and other competitors have begun to collaborate with each other. These developments may materially and adversely affect the Company's current and future target markets and the Company's ability to compete successfully in those markets.

It is uncertain when North American datacenter operators will adopt and purchase equipment that could utilize the Company's new products.

The Company's GaugeChanger™ line of products is an innovative and disruptive silicon technology that allows copper to extend much longer lengths without the cost and power penalty of optics that are used in data centers today. It works equally well at 25 Gbps NRZ, 56 Gbps PAM-4 and 112 Gbps PAM-4 enabling new connector standards of 100, 200, 400, 800 Gbps and 1.6Tbps.

On the basis of independent industry reports and research, the Company believes that North American datacenter operators are evaluating and testing equipment, including switches and network interface cards, that require higher density and faster processing, and thereby, require the transmission speed of our GaugeChanger™ line of products. While these reports and research have shown that North American datacenter operators are expected to adopt and purchase equipment that would require transmission speeds supported by the Company's GaugeChanger™ line of products, the timing of such adoption and purchasers is uncertain. If the adoption and purchases by North American datacenter operators of this equipment is delayed for any substantial period of time or if North American datacenter operators do not adopt or purchase such equipment or our products, the Company's business, financial condition and results of operations could be materially and adversely affected.

The Company depends on a limited number of customers for a substantial portion of its revenue, and the inability to secure orders from one or more of major customers could have a material adverse effect on the Company's planned revenue and operating results.

The Company's operating results for the near future will continue to depend on sales to a relatively small number of customers and on the ability of these customers to sell products to end-consumers that incorporate the Company's products. In the future, these customers may decide not to purchase the Company's products at all, may purchase fewer products than they did in the past, or may defer or cancel purchases or otherwise alter their purchasing patterns. Substantially all of the Company's current sales have been made on a purchase order basis, which permits its customers to cancel, change or delay product purchase commitments with little or no notice and without penalty, which could adversely affect the Company's revenue from these large customers.

In addition, delays in development could impair the Company's relationships with its strategic customers and negatively impact sales of the products under development. Moreover, it is possible that the Company's customers may develop their own product or adopt a competitor's solution for products that they currently buy from the Company. If that happens, the Company's sales would fail to increase or decline and its business, financial condition and results of operations could be materially and adversely affected.

The Company's relationships with some customers may deter other potential customers who compete with these customers from buying its products. To attract new customers or retain existing customers, the Company may offer these customers favorable prices on its products. In that event, the Company's average selling prices and gross margin would decline. The loss of a key customer, a reduction in sales to any key customer or the Company's inability to attract new significant customers could seriously impact its revenue and materially and adversely affect results of operations and the ability of the Company to make payments on the 14% Debentures.

The Company does not have any long-term supply contracts with its contract manufacturers or suppliers, and any disruption in supply of products or materials could have a material adverse effect on business, revenue and operating results.

The Company does not have long-term supply contracts with any of its third-party vendors. The Company makes substantially all of its purchases on a purchase order basis, and none of its contract manufacturers are required to supply products for any specific period or in any specific quantity. As a result, foundry capacity may not be available when the Company needs it or at reasonable prices. Availability of foundry capacity has in the past been reduced from time to time due to strong demand. Foundries can allocate capacity to the production of other companies' products and reduce deliveries to the Company on short notice. It is possible that foundry customers that are larger and better financed than the Company, or that have long-term agreements with the Company's foundry, may induce the foundry to reallocate capacity to them. This reallocation could impair the Company's ability to secure the supply of components that is needed. It is expected that the Company would take approximately nine to twelve months to transition performance of its foundry or assembly services to new providers. Such a transition would likely require a qualification process by the Company's customers or their end customers. Orders are generally placed for products with some suppliers approximately three to five months prior to the anticipated delivery date, with order volumes based on forecasts of demand from customers. Accordingly, if the Company inaccurately forecasts demand for products, the Company may be unable to obtain adequate and cost-effective foundry or assembly capacity from third-party contractors to meet customers' delivery requirements, or the Company may accumulate excess inventories. On occasion, the Company has been unable to adequately respond to unexpected increases in customer purchase orders and therefore was unable to benefit from this incremental demand. None of the Company's third-party contractors have previously provided any assurance that adequate capacity will be available within the time required to meet additional product demand.

The Company may be unable to make the substantial and productive research and development investments which are required to remain competitive in its business.

The semiconductor industry requires substantial investment in research and development in order to develop and bring to market new and enhanced technologies and products. The Company's products originated with research and development efforts and have provided the Company with a significant competitive advantage. The Company is committed to investing in new product development internally in order to stay competitive in its markets and intends to maintain research and development and design capabilities for new solutions. It is uncertain whether the Company will have sufficient resources to maintain the level of investment in research and development required to remain competitive. In addition, it is uncertain that the technologies which are the focus of the Company's research and development expenditures will become commercially successful.

Average selling prices of the Company's products could decrease rapidly, which could have a material adverse effect on its revenue and gross margin.

The Company may experience substantial period-to-period fluctuations in future operating results due to the erosion of its average selling prices. From time to time, the Company may reduce the average unit price of its products due to competitive pricing pressures, new product introductions, and for other reasons. If the Company is unable to offset any reductions in its average selling prices by increasing sales volumes or introducing new products with higher margins, the Company's revenue and gross margin will suffer. To support its gross margin, the Company must develop and introduce new products and product enhancements on a timely basis and continually reduce costs. Failure to do so would cause revenue and gross margin to decline and would materially and adversely affect the ability of the Company to make payments on the 14% Debentures.

If the Company fails to develop and introduce new or enhanced products on a timely basis, its ability to attract and retain customers could be impaired and its competitive position could be harmed.

The Company operates in a dynamic environment characterized by rapidly changing technologies and industry standards and technological obsolescence. To compete successfully, the Company must design, develop, market and sell new or enhanced products that meet the cost and performance expectations of customers. The introduction of new products by competitors, the market acceptance of products based on new or alternative technologies, or the emergence of new industry standards could render the Company's existing or future products obsolete. The Company's failure to anticipate or timely develop new or enhanced products or technologies in response to technological shifts could result in decreased revenue and its competitors winning more competitive bid processes, known as "design wins". In particular, the Company may experience difficulties with product design, manufacturing, marketing or certification that could delay or prevent development, introduction or marketing of new or enhanced products. If the Company fails to introduce new or enhanced products that meet the needs of customers or penetrate new markets in a timely fashion, it will lose market share and operating results will be adversely affected.

If the Company fails to penetrate new markets, its revenue, revenue growth rate, if any, and financial condition could be materially and adversely affected.

Currently, the Company sells most of its products to manufacturers of active cables for sale in various markets worldwide. Future revenue growth, if any, will depend in part on the Company's ability to expand beyond these markets. Each of these new markets presents distinct and substantial risks. If any of these markets does not develop as currently anticipated, or if the Company is unable to penetrate them successfully, it could materially and adversely affect the Company's revenue and revenue growth rate, if any, and the ability of the Company to make payments on the 14% Debentures.

The Company may have difficulty accurately predicting future revenue and appropriately budgeting expenses.

As a result of the rapidly evolving nature of the markets in which the Company will sell products, substantial uncertainty concerning how these markets may develop and other factors beyond its control, reduces the Company's ability to accurately forecast quarterly or annual revenue. The Company may expand staffing and increase expense levels in anticipation of future revenue growth. If revenue does not increase as anticipated, the Company could incur significant losses due to higher expense levels if it is not able to decrease expenses in a timely manner to offset any shortfall in future revenue.

The Company continues to sustain operating losses and may sustain operating losses in the future. There is no assurance that the Company will ever be profitable. The Company has limited financial resources, limited sources of operating cash flow and no assurance that additional financing will be available for further development of its products. There is no assurance that the Company will succeed in arranging all necessary financing in the future or on terms satisfactory to the Company.

Winning business is subject to lengthy competitive selection processes that will require the Company to incur significant expenditures. Even if the Company begins a product design, a customer may decide to cancel or change its product plans, which could cause the Company to generate no revenue from a product and adversely affect its results of operations.

The Company focuses on securing design wins to develop products for use in its customers' products. These selection processes typically are lengthy and can require the Company to incur significant design and development expenditures and dedicate scarce engineering resources in pursuit of a single customer opportunity. The Company may not win the competitive selection process and may never generate any revenue despite incurring significant design and development expenditures. These risks are exacerbated by the fact that some of the Company's customers' products likely will have short life cycles. Failure to obtain a design win could prevent the Company from offering an entire generation of a product, even though this has not occurred to date. This could cause the Company to lose revenue and require it to write off obsolete inventory and could weaken the Company's position in future competitive selection processes.

The Company is subject to risks associated with its distributors' product inventories and product sell-through. Should any distributors cease or be forced to stop distributing the Company's products, business would suffer.

The Company sells a majority of its products to customers through distributors, some of whom maintain inventories of their products. If the Company's distributors are unable to sell an adequate amount of their inventories of the Company's products to manufacturers and end users or if they decide to decrease their inventories of the Company's products for any reason, the Company's sales to these distributors and its revenue may decline. In addition, if some distributors decide to purchase more of the Company's products than are required to satisfy end customer demand, inventories at these distributors would grow. These distributors likely would reduce future orders until inventory levels realign with end customer demand, which could adversely affect subsequent product revenue.

The Company is subject to order and shipment uncertainties, and differences between its estimates of customer demand and product mix and its actual results could negatively affect inventory levels, sales and operating results.

The Company's revenue is generated on the basis of purchase orders with the Company's customers rather than long-term purchase commitments. Even though the Company's customers are not contractually able to cancel purchase orders, they may defer the shipments of products under certain circumstances. The Company's products are manufactured using a silicon foundry according to estimates of customer demand, which require separate demand forecast assumptions for every customer, each of which may introduce significant variability into aggregate estimates. The Company has limited visibility into future customer demand and the product mix that customers will require, which could adversely affect revenue forecasts and operating margins. Moreover, because target markets are relatively new, many of the Company's customers have difficulty accurately forecasting their product requirements and estimating the timing of their new product introductions, which ultimately affects their demand for the Company's products. Historically, because of this limited visibility, actual results have been different from forecasts of customer demand. Some of these differences have been material, leading to excess inventory or product shortages and revenue and margin forecasts above those that were actually achieved. These differences may occur in the future, and the adverse impact of these differences between forecasts and actual results could grow if the Company is successful in selling more products to some customers. In addition, the rapid pace of innovation in the Company's industry could render significant portions of the Company's inventory obsolete. Excess or obsolete inventory levels could result in unexpected expenses or increases in reserves that could adversely affect the Company's business, operating results and financial condition. Conversely, if the Company underestimates customer demand or if sufficient manufacturing capacity is unavailable, the Company could forego revenue opportunities, potentially lose market share and damage customer relationships. In addition, any significant future cancellations or deferrals of product orders or the return of previously sold products due to manufacturing defects could materially and adversely impact its profit margins, increase its write-offs due to product obsolescence and restrict its ability to fund operations.

After securing a design win, the Company may experience delays in generating revenue from its products as a result of the lengthy development cycle typically required. The Company's customers as well may have a lengthy product evaluation period. The typical time from early engagement by its sales force to actual product introduction runs from six to twelve months for the consumer market. The delays inherent in these lengthy sales cycles increase the risk that a customer will decide to cancel, curtail, reduce or delay its product plans, and could cause the Company to lose anticipated sales. In addition, any delay or cancellation of a customer's plans could materially and adversely affect financial results, as the Company may have incurred significant expense and generated no revenue. Finally, the Company's customers' failure to successfully market and sell their own products could reduce demand for the Company's products and materially and adversely affect the Company's business, financial condition and results of operations. If the Company is unable to generate revenue after incurring substantial expenses to develop any of its products, the Company's business would suffer.

The Company currently sells some of its products through distributors and these distributors maintain inventories of their products. If the Company's distributors are unable to sell an adequate amount of their inventories of the

Company's products to manufacturers and end users or if they decide to decrease their inventories of the Company's products for any reason, the Company's sales to these distributors and its revenue may decline. In addition, if some distributors decide to purchase more of the Company's products than are required to satisfy end customer demand, inventories at these distributors would grow. These distributors likely would reduce future orders until inventory levels realign with end customer demand, which could adversely affect subsequent product revenue.

The Company's operating results are subject to substantial quarterly and annual fluctuations and may fluctuate significantly due to a number of factors that could adversely affect its business and share price.

The Company's revenue and operating results have fluctuated in the past and are likely to fluctuate in the future. These fluctuations may occur on a quarterly and on an annual basis and are due to a number of factors, many of which are beyond its control. These factors include, among others:

- changes in end-user demand for the products manufactured and sold by customers;
- the receipt, reduction or cancellation of significant orders by customers;
- fluctuations in the levels of component inventories held by customers;
- the gain or loss of significant customers;
- market acceptance of its products and its customers' products;
- the ability to develop, introduce and market new products and technologies on a timely basis;
- the timing and extent of product development costs;
- new product announcements and introductions by it or its competitors;
- incurrence of research and development and related new product expenditures;
- seasonality or cyclical fluctuations in its markets;
- currency fluctuations;
- fluctuations in IC manufacturing yields;
- significant warranty claims, including those not covered by suppliers;
- changes in product mix or customer mix;
- intellectual property disputes;
- loss of key personnel or the shortage of available skilled workers; and
- the effects of competitive pricing pressures, including decreases in average selling prices of its products.

The foregoing factors are difficult to forecast, and these, as well as other factors, could materially adversely affect the Company's quarterly or annual operating results. The Company will be required to incur substantial development costs in advance of a prospective sale with no certainty that it will ever recover these costs. A substantial amount of time may pass between a design win and the generation of revenue related to the expenses previously incurred, which can potentially cause operating results to fluctuate significantly from period to period. In addition, a significant amount of operating expenses is relatively fixed in nature due to significant sales, research and development costs. Any failure to adjust spending quickly enough to compensate for a revenue shortfall could magnify its adverse impact on the Company's results of operations.

The Company's business would be adversely affected by the departure of existing members of its senior management team.

The Company's success depends, in large part, on the continued contributions of its senior management team. The loss of any member of the senior management team could harm the Company's ability to implement its business strategy and respond to the rapidly changing market conditions in which it operates.

If the Company is unable to attract, train and retain qualified personnel, especially design and technical personnel, it may not be able to execute its business strategy effectively.

The Company's future success depends on its ability to retain, attract and motivate qualified personnel, including its management, sales and marketing and finance, and especially design and technical personnel. The Company may not be able to retain all of these personnel as it continues to pursue its business strategy. Competition for personnel is intense in the semiconductor industry. As the source of the Company's technological and product innovations, its design and technical personnel will represent a significant asset. The loss of the services of one or more of its key employees, especially key design and technical personnel, or its inability to retain, attract and motivate qualified design and technical personnel, could have a material adverse effect on the Company's business, financial condition and results of operations.

The complexity of the Company's products could result in unforeseen delays or expenses caused by undetected defects or bugs, which could reduce the market acceptance of new products, damage its reputation with current or prospective customers and adversely affect operating costs.

Highly complex products may contain defects and bugs when they are first introduced or as new versions are released. If any of the Company's products contains defects or bugs, or has reliability, quality or compatibility problems, the Company may not be able to successfully correct these problems. Consequently, the Company's reputation may be damaged and customers may be reluctant to buy its products, which could materially and adversely affect the Company's ability to retain existing customers and attract new customers, and it financial results. In addition, these defects or bugs could interrupt or delay sales to customers. If any of these problems are not found until after the Company have commenced commercial production of a new product, the Company may be required to incur additional development costs and product recall, repair or replacement costs, and operating costs could be adversely affected. These problems may also result in warranty or product liability claims against the Company by its customers or others that may require the Company to make significant expenditures to defend these claims or pay damage awards. In the event of a warranty claim, the Company may also incur costs if it compensates the affected customer. The Company maintains product liability insurance, but this insurance is limited in amount and subject to significant deductibles. There is no guarantee that insurance will be available or adequate to protect against all claims. The Company also may incur costs and expenses relating to a recall of one of its customers' products containing one of the Company's devices. The process of identifying a recalled product in devices that have been widely distributed may be lengthy and require significant resources, and the Company may incur significant replacement costs, contract damage claims from its customers and reputational harm. Costs or payments made in connection with warranty and product liability claims and product recalls could materially affect the Company's financial condition and results of operations.

The Company may face claims of intellectual property infringement, which could be time-consuming, costly to defend or settle and result in the loss of significant rights.

The semiconductor industry is characterized by companies that hold large numbers of patents and other intellectual property rights and that vigorously pursue, protect and enforce intellectual property rights. From time to time, third parties may assert against the Company and its customers and distributors their patent and other intellectual property rights to technologies.

Claims that the Company's products, processes or technology infringe third-party intellectual property rights, regardless of their merit or resolution, could be costly to defend or settle and could divert the efforts and attention of management and technical personnel of the Company. In addition, many of the Company's customer and distributor agreements will require the Company to indemnify and defend its customers or distributors from third-party infringement claims and pay damages in the case of adverse rulings. Claims of this sort also could harm the Company's relationships with customers or distributors and might deter future customers from doing business with the Company. It is uncertain if the Company would be successful in these proceedings given the complex technical issues and inherent uncertainties in intellectual property litigation. If any pending or future proceedings result in an adverse outcome, the Company could be required to:

- cease the manufacture, use or sale of the infringing products, processes or technology;
- pay substantial damages for infringement;
- expend significant resources to develop non-infringing products, processes or technology;
- license technology from the third-party claiming infringement, which license may not be available on commercially reasonable terms, or at all;
- cross-license technology to a competitor to resolve an infringement claim, which could weaken the Company's ability to compete with that competitor; or
- pay substantial damages to customers or end users to discontinue use of or to replace infringing technology sold to them with non-infringing technology.

Any of the foregoing results could have a material adverse effect on the Company's business, financial condition and results of operations.

The Company utilizes a significant amount of intellectual property in its business. If the Company is unable to protect its intellectual property, the business could be adversely affected.

The Company's success depends in part upon its ability to protect its intellectual property. To accomplish this, the Company relies on a combination of intellectual property rights, including patents, copyrights, trademarks and trade secrets in Canada, Ireland and the United States and in selected foreign countries where it believes filing for such protection is appropriate. Effective patent, copyright, trademark and trade secret protection may be unavailable, limited or not applied for in some countries. Some of the Company's products and technologies are not covered by any patent or patent application. There is no guarantee that:

- any of the Company's present patents or patent claims will not lapse or be invalidated, circumvented, challenged or abandoned;
- the Company's intellectual property rights will provide competitive advantages to it; its ability to assert intellectual property rights against potential competitors or to settle current or future disputes will not be limited by its agreements with third parties;
- any of the Company's pending or future, patent applications will be issued or have the coverage originally sought;
- the Company's intellectual property rights will be enforced in jurisdictions where competition may be intense or where legal protection may be weak;
- any of the trademarks, copyrights, trade secrets or other intellectual property rights that the Company presently employ in its business will not lapse or be invalidated, circumvented, challenged or abandoned; or
- the Company will not lose the ability to assert its intellectual property rights against or to license its technology to others and collect royalties or other payments.

In addition, the Company's competitors or others may design around its protected patents or technologies. Effective intellectual property protection may be unavailable or more limited in one or more relevant jurisdictions relative to those protections available in Canada, Ireland or the United States, or may not be applied for in one or more relevant jurisdictions. If the Company pursues litigation to assert its intellectual property rights, an adverse decision in any of these legal actions could limit the Company's ability to assert its intellectual property rights, limit the value of its technology or otherwise negatively impact its business, financial condition and results of operations.

Monitoring unauthorized use of the Company's intellectual property is difficult and costly. Unauthorized use of the Company's intellectual property may have occurred or may occur in the future. Although the Company has taken steps to minimize the risk of this occurring, any such failure to identify unauthorized use and otherwise adequately protect the Company's intellectual property would adversely affect its business. Moreover, if the Company is required to commence litigation, whether as a plaintiff or defendant, not only would this be time-consuming, but it would also be forced to incur significant costs and divert attention and efforts of its employees and management, which could, in turn, result in lower revenue and higher expenses.

The Company also relies on customary contractual protections with its customers, suppliers, distributors, employees and consultants, and will implement security measures to protect trade secrets. There is no assurance that these contractual protections and security measures will not be breached, that the Company will have adequate remedies for any such breach or that its suppliers, employees or consultants will not assert rights to intellectual property arising out of such contracts.

In addition, the Company has a number of third-party patent and intellectual property license agreements. Some of these license agreements will require one-time payments or ongoing royalty payments. There is no guarantee that the third-party patents and technology licensed will not be licensed to the Company's competitors or others in the semiconductor industry. In the future, the Company may need to obtain additional licenses, renew existing license agreements or otherwise replace existing technology. There is no assurance that these license agreements can be obtained or renewed or the technology can be replaced on acceptable terms, or at all.

The use of open source software in the Company's products, processes and technology may expose it to additional risks and harm its intellectual property.

The Company's products, processes and technology sometimes utilize and incorporate software that is subject to an open source license. Open source software is typically freely accessible, usable and modifiable. Certain open source software licenses require a user who intends to distribute the open source software as a component of the user's software to disclose publicly part or all of the source code to the user's software. In addition, certain open source software licenses require the user of such software to make any derivative works of the open source code available to others on unfavorable terms or at no cost. This can subject previously proprietary software to open source license terms.

While the Company monitors the use of all open source software in its products, processes and technology and tries to ensure that no open source software is used in such a way as to require disclosing of the source code to the related product, processes or technology, such use could inadvertently occur. Additionally, if a third party software provider has incorporated certain types of open source software into software the Company will license from such third party for its products, processes or technology, the Company could, under certain circumstances, be required to disclose the source code to its products, processes or technology. This could harm the Company's intellectual property position and have a material adverse effect on its business, results of operations and financial condition.

The Company relies on third parties to provide services and technology necessary for the operation of its business. Any failure of one or more of the Company's partners, vendors, suppliers or licensors to provide these services or technology could have a material adverse effect on its business.

The Company relies on third-party vendors to provide critical services, including, among other things, services related to accounting, engineering services, human resources, information technology, network development, network monitoring, and intellectual property that the Company cannot create or provide. The Company depends on these vendors to ensure that its corporate infrastructure will consistently meet business requirements. The ability of these third-party vendors to successfully provide reliable and high quality services is subject to technical and operational uncertainties that are beyond the Company's control. While the Company may be entitled to damages if its vendors fail to perform under their agreements, the Company's agreements with these vendors will limit the amount of damages that may be received. In addition, the Company may be unable to collect any award of damages, or such damages may be insufficient to cover the actual costs incurred as a result of any vendor's failure to perform under its agreement. Any failure of the Company's corporate infrastructure could have a material adverse effect on its business, financial condition and results of operations. Upon expiration or termination of any of the Company's agreements with third-party vendors, the Company may not be able to replace the services provided in a timely manner or on terms and conditions, including service levels and cost, that are favorable and a transition from one vendor to another vendor could subject the Company to operational delays and inefficiencies until the transition is complete.

Additionally, the Company incorporates third-party technology into and with some of its products, and the Company may do so in future products. The operation of the Company's products could be impaired if errors occur in the third-party technology used. It may be more difficult for the Company to correct any errors in a timely manner if at all because the development and maintenance of the technology is not within its control. There can be no assurance that these third parties will continue to make their technology, or improvements to the technology, available to the Company, or that they will continue to support and maintain their technology. Further, due to the limited number of vendors of some types of technology, it may be difficult to obtain new licenses or replace existing technology. Any impairment of the technology or the Company's relationship with these third parties could have a material adverse effect on its business.

Going Concern Risk

The ability of the Company to continue as a going concern is dependent upon the Company's ability to generate revenues and expand its product line. The Company incurred a net loss of US$7.0 million in the twelve months ended December 31, 2022 and had a deficit of US$179.8 million as at December 31, 2022, up from US$172.8 million as at December 31, 2021.

To date, the Company has funded operations through equity and debt financings. The ability of the Company to continue as a going concern is also dependent on its ability to obtain additional financing and/or achieve profitable operations in the future. While the Company has successfully completed various equity offerings and private placements over the past few years, there can be no assurance that the Company will be able to do so in the future. The Company continues to experience negative operating cash flow. Absent any significant increase of revenue of the Company's products, the Company anticipates continuing to experience negative cash flow.

Negative Operating Cash Flow

The Company has made significant up-front investments in research and development, sales and marketing, and general and administrative expenses in order to rapidly develop and expand its business. The Company is currently incurring expenditures related to the Company's operations that have generated a negative operating cash flow. Operating cash flow may decline in certain circumstances, many of which are beyond the Company's control. There is no assurance that sufficient revenues will be generated in the near future. Because the Company continues to incur such significant future expenditures for research and development, sales and marketing, and general and administrative expenses, the Company may continue to experience negative cash flow until it reaches a sufficient level of sales with positive gross margins to cover operating expenses. An inability to generate positive cash flow until the Company reaches a sufficient level of sales with positive gross margins to cover operating expenses or raise additional capital on reasonable terms will adversely affect the Company's viability as an operating business.

If the Company suffers losses to its facilities or distribution system due to catastrophe, its operations could be seriously harmed.

The Company's facilities and distribution system, and those of its third-party contractors, are subject to risk of catastrophic loss due to fire, flood or other natural or man-made disasters. A number of the Company facilities and those of its contract manufacturers are located in areas with above average seismic activity. The foundries that manufacture all of the Company's silicon wafers are located in Taiwan, China and the United States, and all of the third-party contractors who assemble and test the Company's products also are located in Asia. The risk of an earthquake in the Pacific Rim region is significant due to the proximity of major earthquake fault lines. Any catastrophic loss to any of these facilities would likely disrupt the Company's operations, delay production, shipments and revenue and result in significant expenses to repair or replace the facility.

The Company's business is subject to various governmental regulations, and compliance with these regulations may cause the Company to incur significant expenses.

The Company's business is subject to various international laws, including packaging, product content, labour and import/export regulations. These regulations are complex, subject to change and have generally become more stringent over time. The Company may be required to incur significant costs to comply with these regulations or to remedy violations. Any failure to comply with applicable government regulations could result in cessation of the Company's operations or portions of its operations, product recalls or impositions of fines and restrictions on its ability to conduct its operations. In addition, because many of the Company's products are regulated or sold into regulated industries, the Company must comply with additional regulations in marketing its products.

The Company is subject to the cyclical nature of the semiconductor industry.

The semiconductor industry is cyclical and is characterized by constant and rapid technological change, rapid product obsolescence and price erosion, evolving standards, short product life cycles and wide fluctuations in product supply and demand. The industry has experienced significant downturns in the past. These downturns have been characterized by diminished product demand, production overcapacity, high inventory levels and accelerated erosion of average selling prices. Any future downturns could have a material adverse effect on the Company's business and operating results. Furthermore, any upturn in the semiconductor industry could result in increased competition for access to third-party foundry and assembly capacity. The Company is dependent on the availability of this capacity to manufacture and assemble its integrated circuits and modules. None of the Company's third-party foundry or assembly contractors has provided assurances that adequate capacity will be available in the future.

The Company's products must conform to industry standards in order to be accepted by end users.

Generally, the Company's products comprise only a part of a communications device. All components of these devices must uniformly comply with industry standards in order to operate together. The Company depends on companies that provide other components of the devices to support prevailing industry standards. Many of these companies are significantly larger and more influential in driving industry standards. Some industry standards may not be widely adopted or implemented uniformly, and competing standards may emerge that may be preferred by the Company's customers or end users. If larger companies do not support the same industry standards as the Company, or if competing standards emerge, market acceptance of the Company's products could be adversely affected, which would harm the Company's business.

Products for communications applications are based on industry standards that are continually evolving. The Company's ability to compete in the future will depend on its ability to identify and ensure compliance with these evolving industry standards. The emergence of new industry standards could render the Company's products incompatible with products developed by other suppliers. As a result, the Company could be required to invest significant time and effort and to incur significant expense to redesign products to ensure compliance with relevant standards. If the Company's products are not in compliance with prevailing industry standards for a significant period of time, it could miss opportunities to achieve crucial design wins. The Company may not be successful in developing or using new technologies or in developing new products or product enhancements that achieve market acceptance. The Company's pursuit of necessary technological advances may require substantial time and expense.

Unanticipated changes in the Company's tax rates could affect its future results.

Since the Company operates in different countries and is subject to taxation in different jurisdictions, its future effective tax rates could be impacted by changes in such countries' tax laws or their interpretations. Both domestic and international tax laws are subject to change as a result of changes in fiscal policy, changes in legislation, evolution of regulation and court rulings. The application of these tax laws and related regulations is subject to legal and factual interpretation, judgment and uncertainty.

The Company's share price will fluctuate.

The trading price of the common shares is subject to change and could in the future fluctuate significantly. The fluctuations could be in response to numerous factors beyond the Company's control, including: quarterly variations in results of operations; announcements of technological innovations or new products by the Company, its customers or competitors; changes in securities analysts' recommendations; announcements of acquisitions; changes in earnings estimates made by independent analysts; general fluctuations in the stock market; or revenue and results of operations below the expectations of public market securities analysts or investors. Any of these could result in a sharp decline in the market price of the common shares.

The Internet offers various avenues for the dissemination of information. The Company has no control over the information that is distributed and discussed on electronic bulletin boards and investment chat rooms. The intention of the people or organizations that distribute such information may not be in the Company's best interest and the best interests of its shareholders. This, in addition to other forms of investment information including newsletters and research publications, could result in a sharp decline in the market price of the common shares.

In addition, stock markets have occasionally experienced extreme price and volume fluctuations. The market prices for high-technology companies have been particularly affected by these market fluctuations and such effects have often been unrelated to the operating performance of such companies. These broad market fluctuations may cause a decline in the market price of the common shares.

The Company's future effective tax rate could be unfavorably affected by unanticipated changes in the valuation of its deferred tax assets and liabilities. Changes in the Company's effective tax rate could have a material adverse impact on it results of operations.

If securities or industry analysts do not publish research or reports about the business, or publish negative reports about the business, the Company's share price and trading volume could decline.

The market for the common shares will depend in part on the research and reports that securities or industry analysts publish about the Company or its business. If one or more analysts downgrade the common shares, the share price would likely decline. If one or more analysts cease coverage of the Company or fail to regularly publish reports on the Company, it could lose visibility in the financial markets, which could cause its share price or trading volume to decline.

Adverse international economic conditions, including factors that adversely affect consumer spending for the products that incorporate the Company's integrated circuits, could adversely affect its revenues, margins, and operating results.

The Company's products are incorporated in numerous active cables and demand for the Company's products will ultimately be driven by consumer demand for products that utilize the Company's active cable technology. Many of these purchases are discretionary. Adverse economic conditions facing the broader economy and, in particular, the semiconductor and communications industries may adversely affect the Company's business, particularly to the extent that consumers decrease their discretionary spending for devices deploying the Company's technology.

The Company's business, financial condition and results of operations could be adversely affected by the political and economic conditions of the countries in which it conducts business and other factors related to its international operations.

The Company sells its products throughout the world with a high percentage of its sales being to customers in Asia. In addition, the Company has employees located outside of Canada, including the United States, Ireland, and Asia. Most of the Company's products will be manufactured, assembled and tested in Asia, and all of the Company's major distributors and customers are in Asia. Multiple factors relating to the Company's international operations and to particular countries in which it will operate could have a material adverse effect on its business, financial condition and results of operations. These factors include:

- changes in political, regulatory, legal or economic conditions; restrictive governmental actions, such as restrictions on the transfer or repatriation of funds and foreign investments and trade protection measures, including export duties and quotas and customs duties and tariffs;
- disruptions of capital and trading markets;
- changes in import or export licensing requirements;
- transportation delays;
- civil disturbances or political instability;
- geopolitical turmoil, including terrorism, war or political or military coups;
- public health emergencies;
- differing employment practices and labor standards;
- limitations on the Company's ability under local laws to protect its intellectual property;
- local business and cultural factors that differ from its customary standards and practices;
- nationalization and expropriation;
- changes in tax laws;
- currency fluctuations relating to international operating activities; and
- difficulty in obtaining distribution and support.

In addition to a significant portion of the Company's silicon wafer supply coming from Taiwan, China and the United States, substantially all of the Company's products will undergo packaging and final test in Taiwan and China. Any conflict or uncertainty in these countries, including due to natural disaster or public health or safety concerns (such as COVID-19), could have a material adverse effect on the Company's business, financial condition and results of operations. In addition, if the government of any country in which the Company's products are manufactured or sold sets technical standards for products manufactured in or imported into their country that are not widely shared, it may lead some of the Company's customers to suspend imports of their products into that country, require manufacturers in that country to manufacture products with different technical standards and disrupt cross-border manufacturing relationships which, in each case, could have a material adverse effect on its business, financial condition and results of operations.

The requirements of being a public company may strain the Company's resources, divert management's attention and affect its ability to attract and retain qualified board members.

As a public company, the Company is subject to the reporting requirements of Canadian securities regulators, the listing requirements of the TSXV and other applicable securities rules and regulations. Compliance with these rules and regulations may increase the Company's legal and financial compliance costs, may make some activities more difficult, time-consuming or costly and may increase the demand on the Company's systems and resources. Being a public company requires that the Company file continuous disclosure documents, including, among other things, annual and quarterly financial statements. Management's attention may be diverted from other business concerns, which could have a material adverse effect on the Company's business, financial condition and results of operations. The Company may need to hire more employees in the future, which will increase its costs and expenses.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure create uncertainty for public companies, increasing legal and financial compliance costs and making some activities more time consuming. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. The Company may invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If the Company's efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory authorities, legal proceedings may be initiated against the Company and its business may be harmed.

The Company is subject to the risk of litigation, the causes and costs of which cannot be known.

The Company may be involved in disputes with other parties in the future which may result in litigation. The causes of potential future litigation cannot be known and may arise from, among other things, business activities, environmental laws, volatility in stock price or failure to comply with disclosure obligations. The results of litigation cannot be predicted with certainty. If the Company is unable to resolve these disputes favorably, it may have a material adverse impact on the Company's financial performance, cash flow and results of operations.

In the event of a dispute involving the foreign operations of the Company, the Company may be subject to the exclusive jurisdiction of foreign courts or may not be successful in subjecting foreign persons to the jurisdiction of courts in Canada. The Company's ability to enforce its rights could have an adverse effect on its future cash flows, earnings, results of operations and financial condition.

The Common Shares are Subject to Market Price Volatility

The market price of the common shares may be adversely affected by a variety of factors relating to the Company's business, including fluctuations in the Company's operating and financial results, the results of any public announcements made by the Company and the Company's failure to meet analysts' expectations. In addition, from time to time, the stock market experiences significant price and volume volatility that may affect the market price of the common shares for reasons unrelated to the Company's performance. Additionally, the value of the common shares is subject to market value fluctuations based upon factors that influence the Company's operations, such as legislative or regulatory developments, competition, technological change, global capital market activity and changes in interest and currency rates. There can be no assurance that the market price of the common shares will not experience significant fluctuations in the future, including fluctuations that are unrelated to the Company's performance.

Ability to Meet Future Capital Requirements

The development of the business of the Company may depend upon additional financing. Failure to obtain sufficient financing may result in delaying, scaling back, eliminating or indefinitely postponing the development of additional products and the business of the Company's current or future operations, or may result in the Company being required to relinquish rights to or sell certain of its products or intellectual property that it would otherwise not relinquish or sell. There can be no assurance that additional capital or other types of financing would be available if needed or that, if available, the terms of such financing will be acceptable. Loans may be obtained from Canadian financial institutions or the public debt markets. There is no assurance that the business of the Company will generate sufficient cash flow from operations in the future to service any debt and to make necessary capital expenditures, in which case the Company may seek additional financing, dispose of certain assets or seek to refinance some or all of its debt.

Future capital requirements would depend on many factors including, without limitation:

- the number of product development programs pursued and the pace at which each such program is pursued;
- the scope, rate of progress, results and costs of research and development;
- the time and costs associated with launching new products;
- the ability to establish collaborative arrangements with others and the terms of any such arrangements;
- the ability to meet milestones under any collaborative arrangements;
- the time and expense required to prosecute, enforce and/or challenge patent and other intellectual property rights;
- competing technological and market developments;
- costs for recruiting and retaining employees and consultants; and
- unexpected legal, accounting and other costs and liabilities related to the business of the Company

Borrowing Risks and Risk of Default

The indenture governing the 14% Debentures imposes covenants and obligations on the part of the Company. In particular, the indenture contains certain covenants and representations and warranties, the breach of which could result in a default and the acceleration of maturity of the 14% Debentures.

Inability to Satisfy Payments

The 14% Debentures mature in 2024. There is no guarantee that the Company will have sufficient cash available to make interest payments or to repay the principal outstanding on the 14% Debentures on a timely basis or at all.

Dividends

The Company does not currently intend to pay any cash dividends on its common shares in the foreseeable future and therefore its shareholders may not be able to receive a return on their shares unless they sell them. The Company's current policy is to retain earnings to finance the development of new lines of products and to otherwise reinvest in the Company. Therefore, the Company does not anticipate paying cash dividends in the foreseeable future. The Company's dividend policy will be reviewed from time to time by the board of directors of the Company in the context of its earnings, financial condition and other relevant factors. Until the Company pays dividends, which it may never do, its shareholders will not be able to receive a return on its common shares unless they sell them.

Risks relating to Research and Development Milestones

The ability of the Company to meet its anticipated milestones, or to meet them in the time period contemplated, may be impacted by a number of factors, including technical challenges that would delay bringing the product to market, competitive products entering the market, a failure to meet customer specifications, or changes in customers' design, development or product plans. There is no assurance that the Company's anticipated milestones, including these significant milestones, will be achieved within the time periods specified, or at all. The failure to achieve these significant milestones could negatively impact the Company's ability to raise additional funds required for operations and research and development activities, and could, in turn, impact the financial viability of the Company. There is also no assurance that the Company's research and development activities will result in commercially viable products.

Risks Related to CRX Consortium.

As indicated under the heading "General Development of the Business – Other Developments", the Company announced in June of 2019 that the Company, Tencent and six other founding members have launched the CRX Consortium to accelerate the adoption of active copper cable products using technology from the Company. The CRX Consortium's mission is to promote and accelerate the adoption of interconnects that use the Company's active copper cable technology. As of the date of this MD&A, negotiations are underway among CRX Consortium members, however no agreements have been executed. There is no assurance that the Company and the CRX Consortium members shall be successful into entering into such agreements or that the adoption of active copper cable products shall be accelerated. The failure to execute such agreements or to achieve such acceleration could have a negative effect on the Company's business, financial condition, results or financial outlook.

Critical Accounting Estimates

The Company's significant accounting policies and accounting estimates under IFRS are contained in the Financial Statements (see Note 3 to the Annual Financial Statements). Certain of these policies involve critical accounting estimates as they require us to make particularly subjective or complex judgments about matters that are inherently uncertain and because of the likelihood that materially different amounts could be reported under different conditions or using different assumptions.

Changes in Accounting Policies

The Statements are prepared in accordance with IFRS. There were no changes in accounting policies for the three and twelve months ended December 31, 2022 and no adoption in new accounting standards resulting in significant impact to the financials.

Financial Instruments and Risk Management

The Company may be exposed to risks of varying degrees of significance that affect its ability to achieve its strategic objectives. The main objectives of the Company's risk processes are to ensure that the risks are properly identified and that the capital base is adequate in relation to those risks. The principal risks to which the Company is exposed to are as follows:

Foreign currency risk

The Company's revenues and cost of sales are denominated in United States dollars. The Company incurs expenses in United States dollars, Euros, Canadian dollars and Chinese Yuan. The Company has historically raised capital denominated in Canadian dollars. The Company is therefore exposed to gains or losses due to fluctuations in foreign currency exchange rates. Management actively monitors the movement in foreign exchange rates and their potential impact on the Company's financial results but does not actively hedge its foreign currency risk.

Interest rate risk

Interest rate risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate due to changes in market interest rates. Interest rate risk associated with the 14% Debentures arises from fluctuations in interest rates and the degree of volatility of these rates. The 14% Debentures provide for an annual rate of 14%. The Company does not use derivative financial instruments to reduce its exposure to interest rate risk.

Credit risk

Credit risk is the risk of loss associated with counterparty's inability to fulfill its payment obligations. The Company's credit risk is primarily attributable to trade and other receivables and money held in the Company's bank accounts. The Company mitigates this risk by monitoring the credit worthiness of its customers and only dealing with creditworthy counterparties.

Liquidity risk

The Company's objective in managing liquidity risk is to maintain sufficient readily available reserves in order to meet its liquidity requirements at any point in time. The Company achieves this by maintaining sufficient cash, managing cash from operations and if required through financing activities.

Fair value

The fair value of cash and cash equivalents, trade and other receivables, investment tax credits, trade and other payables, obligations under finance lease, lease obligations, promissory notes to related parties, and license liabilities approximate their carrying values due to their immediate or short-term maturity.

Internal Control over Financial Reporting

Internal control over financial reporting ("ICFR") is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with applicable IFRS. Internal control over financial reporting should include those policies and procedures that establish the following:

- maintenance of records in reasonable detail, that accurately and fairly reflect the transactions and dispositions of assets;
- reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with applicable IFRS;

- receipts and expenditures are only being made in accordance with authorizations of management or the Board of Directors; and
- reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the financial instruments.

The Company's management, with the participation of the CEO and CFO, assessed the effectiveness of the Company's internal controls over financial reporting and concluded that as at December 31, 2021, the Company's internal control over financial reporting was effective.

During the year ended December 31, 2022, the Company did not make any significant changes to its internal controls over financial reporting that would have materially affected, or be reasonably likely to materially affect, its internal controls over financial reporting.

Limitations of Disclosure Controls and Procedures and Internal Control over Financial Reporting

The Company's management, including the CEO and CFO, believe that due to inherent limitations, any disclosure controls and procedures or internal control over financial reporting, no matter how well designed and operated, can provide only reasonable, not absolute, assurance of achieving the desired control objectives. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that any design will not succeed in achieving its stated goals under all potential future conditions. Accordingly, because of the inherent limitations in a cost effective control system, misstatements due to error or fraud may occur and not be detected. Additionally, management is required to use judgment in evaluating controls and procedures.

Additional Information

Additional information relating to the Company can be found on SEDAR at www.sedar.com.

Approval

The Board of Directors has approved the disclosure contained in this MD&A.