SPECTRA7

Spectra7 Microsystems Inc.

Management's Discussion & Analysis

For the Three and Six Months Ended June 30, 2021

August 27, 2021

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 of June 30, 2021. 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, 2020 (the "Annual Financial Statements") and the unaudited condensed interim consolidated financial statements for the three and six months ended June 30, 2021 and 2020 (the "Interim Financial Statements" and, together with the Annual Financial Statements, the "Statements"). In preparing this MD&A, we have taken into account information available to us up to August 27, 2021 unless otherwise stated.

The Interim 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 Interim 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 Audit Committee meets periodically to review all financial reports prior to filing and approved the Interim Financial Statements and MD&A after the completion of its review.

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 in an environment of semiconductor industry supply shortages;
- the degree of competition in the business areas in which we operate;
- our ability to secure orders from a limited number of customers;

- 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 reliance on a limited number of third party manufacturers;
- 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 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;
- 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 the Company's management's discussion and analysis for the year ended December 31, 2020 (the "Annual MD&A"), filed on April 30, 2021 which is available on SEDAR at www.sedar.com.

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 is a high performance analog semiconductor company targeting large, high growth markets in virtual reality ("VR"), augmented reality ("AR"), data centers, and consumer connectivity.

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 Ontario *Business Corporations Act*.

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) ("RedMere"), 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 (the "Qualifying Transaction"). 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 was reduced to 21,130,778 common shares. Due to the consolidation, the Company's common shares are trading on the OTCQB Venture Market temporarily under the ticker symbol "SPVND" and will revert back to "SPVNF" on the twentieth business days following the consolidation.

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 for VR, AR, in data centers, and for consumer connectivity products. The Company holds approximately 55 patents relating to its products.

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.

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 and 50 Gbps PAM-4 enabling new connector standards of 100, 200 and 400 Gbps.

At present, optics are the primary alternative for data centers seeking high speed, at lengths longer than a few meters. GaugeChanger™, however, extends the life of copper with interconnects that are as fast and as thin as fiber, but at dramatically lower cost and power consumption. The length of the GaugeChanger™ enabled cables have a reach up to seven meters to allow for top-of-rack and middle-of-rack applications in data centers.

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 six months ended June 30, 2021 was $2.4 million compared to a net loss of $3.6 million in the same period in the prior year. Revenue for the six month period ended June 30, 2021 increased by 246% compared to the same period in the prior year.

Gross margin percentage for the six month period ended June 30, 2021 increased by 3% from the same period in 2020. Expenditures during the six month period ended June 30, 2021 are approximately $3.9 million representing a decrease of 10% from the same period in 2020, due to employee furloughs and other controllable costs control and expense reductions to offset revenue losses from COVID-19 impacts.

Key Customers

During the three and six month periods ended June 30, 2021, the Company derived approximately 99% and 98% of its revenue from two customers, respectively (three and six months ended June 30, 2020 – 100% and 99% from two customers, respectively).

Selected Financial Information

The table below sets forth certain key financial results for the three month and six period ended June 30, 2021 and 2020.

	Three Months Ended June 30, (In thousands, except for loss per share)				Six Months Ended June 30, (In thousands, except for loss per share)			
	2021	2020	Change		2021	2020	Change	
	$	$	$	%	$	$	$	%
Revenue	733	257	476	185%	1,289	373	916	246%
Cost of sales	304	114	190	167%	543	167	376	225%
Gross profit	429	143	286	200%	746	206	540	262%
Expenses	1,763	1,817	(54)	(3%)	3,179	3,763	(584)	(15%)
Net loss	(1,334)	(1,674)	340	(20%)	(2,433)	(3,557)	1,123	(32%)
Other comprehensive loss	(57)	(316)	259	(82%)	(74)	563	(637)	(113%)
Total comprehensive loss	(1,391)	(1,990)	599	(30%)	(2,506)	(2,994)	486	(16%)
Basic and diluted loss per share	(0.08)	(0.19)			(0.15)	(0.01)		
Weighted average number of shares outstanding	17,141	10,504			16,213	9,548		

	As at (In thousands)			
	June 30, 2021	December 31, 2020	Change	
	$	$	$	%
Total assets	4,088	949	3,139	331%
Total liabilities	8,481	15,226	(6,745)	(44%)
Equity	(4,393)	(14,277)	9,884	(69%)
Total liabilities and equity	4,088	949	3,139	331%

Revenue and Gross Margin

The table below sets forth the details of revenue and gross margin for the three month and six month periods ended June 30, 2021 and 2020:

	Three Months Ended June 30, (In thousands)				Six Months Ended June 30, (In thousands)			
	2021	2020	Change		2021	2020	Change	
	$	$	$	%	$	$	$	%
Revenue	733	257	476	185%	1,289	373	916	246%
Cost of sales	304	114	190	167%	543	167	376	225%
Gross profit	429	143	286	200%	746	206	540	262%
Gross margin %	*59%*	*56%*	*3%*		*58%*	*55%*	*3%*	

Revenue for the three and six months ended June 30, 2021 increased by $0.50 million and $0.90 million respectively, representing an increase of 185% and 246% over the same periods in the previous year as the Company ramped up shipments following COVID-19 business impacts.

Gross margin percentage for the three and six months ended June 30, 2021 increased 3% and 3% respectively, compared to the same periods in 2020 due to product mix.

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 Interim 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 and Other Income

The table below set forth the details of expenses and other income for the three month and six month periods ended June 30, 2021 and 2020.

	Three Months Ended June 30, (In thousands)			
	2021	2020	Change	
	$	$	$	%
Research and development, net of investment tax credits and including amortization of licenses	885	1,005	(120)	(12%)
Sales and marketing	49	116	(67)	(58%)
General and administrative	746	454	292	64%
Depreciation of right-of-use assets	65	74	(10)	(13%)
Depreciation of property and equipment	52	77	(25)	(32%)
Share-based compensation	57	107	(50)	(47%)
Interest on lease obligation of right-of-use assets	7	7	-	0%
Accretion expense	410	540	(131)	(24%)
Other Income	(505)	(570)	65	(11%)
Gain on disposal of capital equipment	(7)	-	(7)	100%
Foreign exchange gain (loss)	4	6	(2)	32%
	1,763	1,817	(54)	(3%)

	Six Months Ended June 30, *(In thousands)*			
	2021	**2020**	**Change**	
	$	**$**	**$**	**%**
Research and development, net of investment tax credits and including amortization of licenses	1,436	1,757	(322)	(18%)
Sales and marketing	115	246	(132)	(53%)
General and administrative	1,022	727	295	41%
Depreciation of right-of-use assets	139	160	(21)	(13%)
Depreciation of property and equipment	109	159	(50)	(32%)
Share-based compensation	141	264	(123)	(47%)
Interest on lease obligation of right-of-use assets	9	21	(11)	(56%)
Accretion expense	952	1,040	(88)	(8%)
Other Income	(739)	(570)	(170)	30%
Gain on disposal of capital equipment	(7)	-	(7)	100%
Foreign exchange gain (loss)	3	(42)	45	(101%)
	3,179	3,763	(584)	(16%)

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 and six month periods ended June 30, 2021 decreased by 12% and 18% respectively, compared to the same periods the previous year driven by decreased personnel expenses from employee furloughs as a result of COVID-19 and lower development expenses.

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 six month periods ended June 30, 2021 decreased by 58% and 53% respectively, compared to the same periods the previous year. The decrease for the periods was driven by decreased personnel expenses from employee attrition and furloughs as a result of COVID-19.

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 six month periods ended June 30, 2021 increased by 64% and 41% respectively, as compared to the same periods the previous year. The increase is mainly due to the increased costs related to the annual shareholders meeting and annual audit fee.

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 for the three and six month periods ended June 30, 2021 compared to the same period the previous year decreased by 13% and 13% respectively.

Depreciation of Property and Equipment

Depreciation of property and equipment for the three and six month periods ended June 30, 2021 compared to the same periods the previous year decreased by 32% and 32% respectively. The lower depreciation expense is due to fewer capital investments made in 2020.

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 six months ended June 30, 2021 decreased by 47% and 47% respectively, over the same periods the previous year due to cancellation of options and restricted share units resulting from employee terminations during the first and second quarters of 2021.

Accretion Expense

Accretion expense represents the change in the stated value of the Convertible Debentures (as defined below) measured at amortized cost and also includes interest expense for the period. The Convertible Debentures are carried at amortized cost using an effective rate of interest. 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 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 strengthens and the Company holds net exposed liabilities.

Net Loss and Other Comprehensive Loss

Net loss for the three and six months ended June 30, 2021 was $1.3 million and $2.4 million compared to a net loss of $1.7 million and $3.6 million respectively, in the same periods in the prior year. The decrease in net loss is attributed to higher revenue, offset by lower operating costs during the three and six months ended June 30, 2021. 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 Corp., and Si Bai Ke Te (Dongguan) Electronics Trading Co. Ltd, both wholly-owned subsidiaries of the Company, are translated from their functional currencies of Canadian Dollars (CDN) and Chinese Yuan Renminbi (CNY), respectively, into the Company's presentation currency of USD at the end of each reporting period, with the difference being recorded in other comprehensive income.

Loss per Share

Basic earnings and loss per share is calculated by dividing the profit and loss attributable to common shares of the Company 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.

On August 13, 2021, the Company consolidated its issued and outstanding common shares on the basis of one new common share for every fifty existing common shares. Accordingly, the common shares and basic and diluted earnings per common share are adjusted retrospectively to all periods presented. Basic and diluted loss per common share for the three and six month periods ended June, 2021 was $0.08 and $0.15 per common share as compared to $0.19 and $0.31 respectively per common share for the same period in 2020.

Summary of Quarterly Data

The table below sets forth selected financial data for the most recent eight quarters ended June 30, 2021.

(In thousands)

	Fiscal 2019		Fiscal 2020				Fiscal 2021	
	Sept 30	Dec 31	Mar 31	Jun 30	Sept 30	Dec 31	Mar 31	Jun 30
	$	$	$	$	$	$	$	$
Revenue	1,370	928	116	257	282	377	556	733
Cost of sales	555	457	53	114	126	211	239	304
Gross profit	815	471	63	143	156	166	317	429
Expenses and other income	3,561	3,178	1,944	1,817	1,404	1,519	1,416	1,763
Net loss	(2,746)	(2,707)	(1,881)	(1,674)	(1,248)	(1,353)	(1,099)	(1,334)
Other comprehensive (loss) gain	143	(171)	879	(316)	(188)	(458)	(27)	(57)
Total comprehensive loss	(2,603)	(2,878)	(2,978)	(1,990)	(1,436)	(1,811)	(1,126)	(1,391)

Revenues in the consumer semiconductor industry are subject to seasonality driven by consumer 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, interests, 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 our 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 2019		Fiscal 2020				Fiscal 2021	
	Sept 30	Dec 31	Mar 31	Jun 30	Sept 30	Dec 31	Mar 31	Jun 30
	$	$	$	$	$	$	$	$
Expenses and other income	3,561	3,178	1,945	1,817	1,404	1,519	1,416	1,763
Other income	-	-	-	570	207	-	235	505
Total expenses - IFRS	**3,561**	**3,178**	**1,945**	**2,387**	**1,611**	**1,519**	**1,651**	**2,268**
Share-based compensation	237	184	158	107	(12)	240	83	57
Interest on lease obligation of right-of-use assets	25	(12)	13	7	5	3	2	7
Accretion expense	472	511	499	540	548	557	542	410
Gain on disposal of capital equipment	-	3	-	-	-	13	-	(7)
Foreign exchange gain (loss)	(33)	(11)	(48)	6	(5)	(6)	(1)	4
Extinguishment of original convertible debt	-	-	-	-	-	(228)	-	-
Termination costs	323	-	-	-	-	-	-	-
Non-IFRS operating expenses	**2,537**	**2,503**	**1,323**	**1,727**	**1,075**	**940**	**1,025**	**1,797**

(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 2019		Fiscal 2020				Fiscal 2021	
	Sept 30	Dec 31	Mar 31	Jun 30	Sept 30	Dec 31	Mar 31	Jun 30
	$	$	$	$	$	$	$	$
Net loss	(2,746)	(2,707)	(1,881)	(1,674)	(1,248)	(1,353)	(1,099)	(1,334)
Depreciation of right-of-use assets	80	74	85	74	74	102	74	65
Depreciation of property and equipment	96	61	82	77	69	85	57	52
Depreciation expense - COGS	162	210	150	149	57	(41)	9	9
Amortization - intangible assets	-	-	-	-	-	-	-	85
Share-based compensation	237	184	158	107	(12)	240	83	57
Interest on lease obligation of right-of-use assets	25	(12)	13	7	5	3	2	7
Accretion expense	472	511	499	540	548	557	542	410
Gain on disposal of capital equipment	-	3	-	-	-	13	-	(7)
Foreign exchange gain (loss)	(33)	(11)	(48)	6	(5)	(6)	(1)	4
Extinguishment of original convertible debt	-	-	-	-	-	(228)	-	-
Termination costs	323	-	-	-	-	-	-	-
Other income	-	-	-	(570)	(207)	-	(235)	(505)
EBITDA	**(1,384)**	**(1,687)**	**(942)**	**(1,284)**	**(719)**	**(628)**	**(568)**	**(1,157)**

Issued and Outstanding Share Capital

The Company's authorized capital consists of an unlimited number of common shares, of which 21,130,778, common shares are issued and outstanding as of the date of this MD&A.

On August 13, 2021, the Company consolidated its issued and outstanding common shares on the basis of one new common share for every fifty existing common shares. Accordingly, the common shares and basic and diluted earnings per common share are adjusted retrospectively to all periods presented.

At the annual and special meeting of shareholders held on June 18, 2021, the shareholders approved amendments to both the Company's stock option plan (the "Stock Option Plan") and the RSU 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 RSUs, shall not exceed 4,226,155 common shares, representing 20% of the issued and outstanding common shares as of the date of this MD&A.

At June 30 2021, 1,739,077 common shares were reserved under the Stock Option Plan and the RSU Plan (December 31, 2020 – 874,661 common shares).

Since June 30, 2021, no RSUs and no Options have been issued, exercised or cancelled. As of the date of this MD&A, options to purchase an aggregate of up to 278,932 common shares and 627,614 RSUs are outstanding. As of the date of this MD&A, the Company has outstanding warrants to purchase common shares:

Expiry Date	Number of warrants outstanding	Exercise Price
February 24, 2022	44,100	CDN $15.00
May 14, 2023[1]	242,489	CDN $1.50
July 6, 2023	293,306	CDN $7.875
October 30, 2023	353,063	CDN $11.25
August 21, 2024	1,835,627	CDN $4.00
July 15, 2025	210,469	CDN $2.50
September 25, 2025	166,779	CDN $2.50
January 15, 2026	1,618,803	CDN $2.50
May 14, 2026	4,223,141	CDN $2.50
Total	**8,987,777**	

Note:
[1] 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 "Convertible Debenture") in the principal amount of CDN $15.567 million. The principal amount of each Convertible 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 $0.35 per common share, subject to adjustment upon certain customary events. Holders converting their Convertible Debentures will receive 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 "Supplemental Indenture") which amended certain terms of the Company's existing Convertible Debentures which were due to mature in January 2021. Pursuant to the Supplemental Indenture, the maturity date of the Convertible Debentures was extended 18 months from January 9, 2021 to July 9, 2022, subject to acceleration to January 9, 2022 by a resolution of a majority of debentureholders in certain circumstances described in the Supplemental Indenture, and the conversion price of the principal amount of the Convertible Debentures was reduced from CDN $0.35 per common share to CDN $0.05 per common share until January 9, 2022 and to CDN $0.10 per common share until July 9, 2022. In consideration for the amendments, the Company increased the outstanding principal obligations of the Convertible Debentures by 10%. The additional 10% of principal obligations is not convertible into common shares (the "Bonus Principal").

During the six month period ended June 30, 2021, the Company prepaid CDN $1,995,000 of principal of the Convertible Debentures and the holders of the Convertible Debentures converted an aggregate of CDN $3,928,000 of principal at a conversion price of CDN $2.50 per common share, resulting in the issuance of 1,571,200 common shares. The Company issued an additional 242,476 common shares in payment of the make-whole interest amount owing pursuant to the converted Convertible Debentures and the Company paid a total of CDN $28,724 in accrued interest on the converted Convertible Debentures.

As of the date of this MD&A, CDN $6,975,000 of principal amount of Convertible Debenture and CDN

$1,289,800 of Bonus Principal remains 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 159,917 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 TSX Venture Exchange 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 non-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 Private Placement of 555,333 Spring 2021 Units. The price per Spring 2021 Unit for both tranches was CDN $1.50. Together, the Company has issued a total of 4,223,141 Spring 2021Units for gross proceeds of $5,229,389 (CDN $6,334,711). Each 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 (each, a "Finder's Warrant"), 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.

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 the Convertible Debentures to common shares;
- semi-annual interest payments which commenced on June 30, 2018 and end on January 22, 2022, including a semi-annual interest payment due on June 30, 2021 anticipated to be approximately $0.3 million; and
- repayment of outstanding Convertible Debentures on July 9, 2022.

The following table summarizes the working capital and cash as at June 30, 2021 and December 31, 2020:

	As at *(In thousands)*			
	June 30, 2021	**December 31, 2020**	**Change**	
	$	**$**	**$**	**%**
Current assets	3,317	574	2,743	478%
Current liabilities	3,817	5,399	(1,582)	(29%)
Working capital deficiency	(500)	(4,825)	4,325	(90%)
Cash	1,483	35	1,448	4137%

As of June 30, 2021, the Company had a working capital deficiency of $0.5 million, compared to a working capital deficiency of $4.8 million as at December 31, 2020. Current assets at June 30, 2021 were higher with an increase in cash balance. Current liabilities decreased from the convertible debt payment and paying down on payables.

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 and Uncertainties” section of the Company’s Annual MD&A.

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, 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 June 30, 2021 *(In thousands)*				**Six Months Ended June 30, 2021** *(In thousands)*			
	2021	**2020**	**Change**		**2021**	**2020**	**Change**	
	$	**$**	**$**	**%**	**$**	**$**	**$**	**%**
Cash generated by (used in)								
Operating activities	(3,096)	207	(3,303)	(1596%)	(4,276)	(350)	(3,926)	(1122%)
Financing activities	4,332	(32)	4,364	(13638%)	6,039	386	5,653	1465%
Investing activities	(253)	(3)	(250)	8333%	(260)	(2)	(258)	12900%
Effect of exchange rate changes	(34)	(9)	(24)	267%	(55)	79	(134)	(170%)

Increase in cash	950	163	787	483%	1,448	113	1,335	1181%

Operating Activities

Cash used in operating activities in the three and six month periods ended June 30, 2021 compared to the same periods in 2020 increased by $3.3 million and $3.9 million, respectively as the Company prepaid for inventory, supplies and increased accounts receivable balance as revenue ramp, offset by lower net loss. 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 inflow increased by $4.3 million and $5.7 million, respectively, during the three and six months ended June 30, 2021 as compared to the same periods in 2020. The increase consisted of the cash received on the January 2021 Private Placement and the Spring 2021 Private Placement.

Investing Activities

Cash used in investing activities in the three and six month periods ended June 30, 2021 compared to the same periods in 2020 increased by $0.3 million and $0.3 million due to 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 are comprised of the Board of Directors and current and former members of the executive team of the Company.

Key management personnel compensation is comprised of the following:

	Three Months Ended June 30		**Six Months Ended June 30,**	
	2021	2020	**2021**	2020
	$	$	**$**	$
Salaries, fees and short-term benefits	**177,746**	114,505	**258,745**	1,303,543
Share-based benefits	**284,731**	110,804	**679,205**	251,126
Total	**462,477**	225,309	**937,950**	1,554,669

The issuance of January 2021 Units and Spring 2021 Units to insiders of the Company in the January 2021 Private Placement and the Spring 2021 Private Placement are considered to be “related party transactions” as defined in MI 61-101, however, the Company relied on exemptions from the formal valuation and minority shareholder approval requirements provided under MI 61-101 on the basis that the aggregate value of the common shares issued to insiders did not exceed 25% of the fair market value of the Company's market capitalization.

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. The Company adopted and implemented IFRS 16 Leases on January 1, 2019. There were no changes in accounting policies for the three and six months ended June 30, 2021 and no new accounting standards.

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:

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.

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 term loan and Loan Facility were in United States 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 Company's Convertible Debentures arises from fluctuations in interest rates and the degree of volatility of these rates. The Convertible Debentures provides for an annual rate of 7%. 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.

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 March 1, 2021, the Company's internal control over financial reporting was effective.

During the three and six months ended June 30, 2021, the Company did not make any significant changes to its internal controls over financial reporting that would have materially affected, or 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 Audit Committee of the Company has approved the disclosure contained in this MD&A.