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

FORM 10-Q

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

For the quarterly period ended June 30, 2021

OR

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

For the transition period from __________ to __________

Commission File Number: 001-36083

Applied Optoelectronics, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**76-0533927**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

13139 Jess Pirtle Blvd.
Sugar Land, TX 77478
(Address of principal executive offices)

(281) 295-1800
(Registrant's telephone number)

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

Title of each class	Trading Symbol(s)	Trading Name of each exchange on which registered
Common Stock, Par value $0.001	AAOI	NASDAQ Global Market

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

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

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

Large accelerated filer	☐	Accelerated filer	☒
Non-accelerated filer	☐	Smaller reporting company	☒
		Emerging growth company	☐

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

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

As of July 30, 2021 there were 27,141,368 shares of the registrant's Common Stock outstanding.

Applied Optoelectronics, Inc.
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Part I. Financial Information

Item 1. Condensed Consolidated Financial Statements

Applied Optoelectronics, Inc. and Subsidiaries
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited, in thousands)

	June 30, 2021	December 31, 2020
ASSETS		
Current Assets		
Cash and cash equivalents	$ 44,013	$ 43,425
Restricted cash	6,486	6,689
Accounts receivable - trade, net of allowance of $62 and $62, respectively	48,404	43,042
Notes receivable	3,819	401
Inventories	100,399	110,397
Prepaid income tax	2	2
Prepaid expenses and other current assets	5,101	5,213
Total current assets	208,224	209,169
Property, plant and equipment, net	246,797	252,984
Land use rights, net	5,846	5,854
Operating right of use asset	7,503	7,729
Financing right of use asset	73	88
Intangible assets, net	3,888	3,999
Other assets, net	813	982
TOTAL ASSETS	$ 473,144	$ 480,805
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Current portion of notes payable and long-term debt	$ 41,876	$ 38,265
Accounts payable	25,593	29,482
Bank acceptance payable	6,469	15,860
Current lease liability - operating	1,020	1,012
Current lease liability - financing	18	18
Accrued liabilities	15,509	18,511
Total current liabilities	90,485	103,148
Notes payable and long-term debt, less current portion	19,360	13,904
Convertible senior notes	78,264	77,854
Non-current lease liability - operating	7,672	7,926
Non-current lease liability - financing	72	82
TOTAL LIABILITIES	195,853	202,914
Stockholders' equity:		
Preferred Stock; 5,000 shares authorized at $0.001 par value; no shares issued and outstanding at June 30, 2021 and December 31, 2020, respectively	-	-
Common Stock; 45,000 shares authorized at $0.001 par value; 26,919 and 25,110 shares issued and outstanding at June 30, 2021 and December 31, 2020, respectively	27	25
Additional paid-in capital	375,312	354,685
Accumulated other comprehensive income	14,286	11,690
Accumulated deficit	(112,334)	(88,509)
TOTAL STOCKHOLDERS' EQUITY	277,291	277,891
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 473,144	$ 480,805

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

Applied Optoelectronics, Inc. and Subsidiaries
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited, in thousands, except share and per share data)

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Revenue, net	$ 54,189	$ 65,222	$ 103,890	$ 105,689
Cost of goods sold	43,411	51,486	82,393	85,615
Gross profit	10,778	13,736	21,497	20,074
Operating expenses				
Research and development	10,914	10,803	21,842	21,361
Sales and marketing	2,832	3,430	5,792	6,366
General and administrative	10,681	10,611	21,550	21,249
Total operating expenses	24,427	24,844	49,184	48,976
Loss from operations	(13,649)	(11,108)	(27,687)	(28,902)
Other income (expense)				
Interest income	16	47	32	194
Interest expense	(1,367)	(1,489)	(2,798)	(2,944)
Other income (expense), net	6,797	974	6,628	1,231
Total other income (expense), net	5,446	(468)	3,862	(1,519)
Loss before income taxes	(8,203)	(11,576)	(23,825)	(30,421)
Income tax expense	-	(7,024)	-	(4,976)
Net loss	$ (8,203)	$ (18,600)	$ (23,825)	$ (35,397)
Net loss per share				
Basic	$ (0.31)	$ (0.89)	$ (0.89)	$ (1.72)
Diluted	$ (0.31)	$ (0.89)	$ (0.89)	$ (1.72)
Weighted average shares used to compute net loss per share:				
Basic	26,850,032	20,858,450	26,636,755	20,533,417
Diluted	26,850,032	20,858,450	26,636,755	20,533,417

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

Applied Optoelectronics, Inc. and Subsidiaries
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(Unaudited, in thousands)

	Three months ended June 30,		Six months ended June 30,	
	2021	**2020**	**2021**	**2020**
Net loss	$ (8,203)	$ (18,600)	$ (23,825)	$ (35,397)
Gain/ (Loss) on foreign currency translation adjustment	3,630	1,454	2,596	(948)
Comprehensive loss	$ (4,573)	$ (17,146)	$ (21,229)	$ (36,345)

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

Applied Optoelectronics, Inc. and Subsidiaries
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
Three and Six Months ended June 30, 2021 and 2020
(Unaudited, in thousands)

	Preferred Stock		Common Stock		Additional	Accumulated other		
	Number of shares	Amount	Number of shares	Amount	paid-in capital	comprehensive gain (loss)	Accumulated deficit	Stockholders' equity
March 31, 2021	—	$ —	26,787	$ 27	$ 371,920	$ 10,656	$ (104,131)	$ 278,472
Public offering of common stock, net	—	—	35	—	262	—	—	262
Issuance of restricted stock, net of shares withheld for employee tax	—	—	97	—	(144)	—	—	(144)
Share-based compensation	—	—	—	—	3,274	—	—	3,274
Foreign currency translation adjustment	—	—	—	—	—	3,630	—	3,630
Net loss	—	—	—	—	—	—	(8,203)	(8,203)
June 30, 2021	—	$ —	26,919	$ 27	$ 375,312	$ 14,286	$ (112,334)	$ 277,291

	Preferred Stock		Common Stock		Additional	Accumulated other		
	Number of shares	Amount	Number of shares	Amount	paid-in capital	comprehensive gain (loss)	Accumulated deficit	Stockholders' equity
March 31, 2020	—	$ —	20,249	$ 20	$ 306,305	$ (1,972)	$ (46,854)	$ 257,499
Public offering of common stock, net	—	—	1,578	2	14,002	—	—	14,004
Stock options exercised, net of shares withheld for employee tax	—	—	—	—	3			3
Issuance of restricted stock, net of shares withheld for employee tax	—	—	113	—	(207)	—	—	(207)
Share-based compensation	—	—	—	—	3,302	—	—	3,302
Foreign currency translation adjustment	—	—	—	—	—	1,454	—	1,454
Net loss	—	—	—	—	—	—	(18,600)	(18,600)
June 30, 2020	—	$ —	21,940	$ 22	$ 323,405	$ (518)	$ (65,454)	$ 257,455

	Preferred Stock		Common Stock		Additional	Accumulated other		
	Number of shares	Amount	Number of shares	Amount	paid-in capital	comprehensive gain (loss)	Accumulated deficit	Stockholders' equity
January 1, 2021	—	$ —	25,110	$ 25	$ 354,685	$ 11,690	$ (88,509)	$ 277,891
Public offering of common stock, net	—	—	1,546	2	15,228		—	15,230
Stock options exercised, net of shares withheld for employee tax	—	—	2	—	8	—	—	8
Issuance of restricted stock, net of shares withheld for employee tax	—	—	261	—	(402)	—	—	(402)
Share-based compensation	—	—	—	—	5,793	—	—	5,793
Foreign currency translation adjustment	—	—	—	—	—	2,596	—	2,596
Net loss	—	—	—	—	—	—	(23,825)	(23,825)
June 30, 2021	—	$ —	26,919	$ 27	$ 375,312	$ 14,286	$ (112,334)	$ 277,291

	Preferred Stock		Common Stock		Additional	Accumulated other		
	Number of shares	Amount	Number of shares	Amount	paid-in capital	comprehensive gain (loss)	Retained earnings	Stockholders' equity
January 1, 2020	—	$ —	20,140	$ 20	$ 303,401	$ 430	$ (30,057)	$ 273,794
Public offering of common stock, net	—	—	1,582	2	13,928	—	—	13,930
Stock options exercised, net of shares withheld for employee tax	—	—	—	—	3	—	—	3
Issuance of restricted stock, net of shares withheld for employee tax	—	—	218	—	(467)	—	—	(467)
Share-based compensation	—	—	—	—	6,540	—	—	6,540
Foreign currency translation adjustment	—	—	—	—	—	(948)	—	(948)
Net loss	—	—	—	—	—	—	(35,397)	(35,397)
June 30, 2020	—	$ —	21,940	$ 22	$ 323,405	$ (518)	$ (65,454)	$ 257,455

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

Applied Optoelectronics, Inc. and Subsidiaries
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited, in thousands)

	Six months ended June 30,	
	2021	**2020**
Operating activities:		
Net loss	$ (23,825)	$ (35,397)
Adjustments to reconcile net income to net cash provided by (used in) operating activities:		
Provision for losses on accounts receivable	-	1
Lower of cost or market reserve adjustment to inventory	2,211	2,924
Depreciation and amortization	12,870	12,154
Amortization of debt issuance costs	434	444
Deferred income taxes, net	-	5,147
Loss on disposal of assets	5	9
Share-based compensation	5,793	6,540
Interest for Extinguishment of Debt	(70)	-
Extinguishment of Debt	(6,229)	-
Unrealized foreign exchange gain	692	(134)
Changes in operating assets and liabilities:		
Accounts receivable, trade	(5,362)	(9,690)
Notes receivable	(3,390)	(49)
Prepaid income tax	-	13
Inventories	8,934	(15,362)
Other current assets	72	(725)
Operating right of use asset	381	300
Accounts payable	(3,889)	12,688
Accrued liabilities	(3,082)	(2,323)
Lease liability	(427)	(309)
Net cash used in operating activities	(14,882)	(23,769)
Investing activities:		
Purchase of property, plant and equipment	(3,582)	(6,759)
Proceeds from disposal of equipment	110	52
Deposits and prepaid for equipment	(272)	(2,304)
Purchase of intangible assets	(188)	(208)
Net cash used in investing activities	(3,932)	(9,219)
Financing activities:		
Proceeds from issuance of notes payable and long-term debt, net of debt issuance costs	-	6,229
Principal payments of long-term debt and notes payable	(2,227)	(2,221)
Proceeds from line of credit borrowings	66,742	52,637
Repayments of line of credit borrowings	(50,119)	(48,689)
Proceeds from bank acceptance payable	10,722	14,080
Repayments of bank acceptance payable	(20,206)	(10,377)
Proceeds from issuance of convertible senior notes, net of debt issuance costs	-	(16)
Principal payments of financing lease	(9)	(8)
Exercise of stock options	8	3
Payments of tax withholding on behalf of employees related to share-based compensation	(402)	(466)
Proceeds from common stock offering, net	15,336	13,929
Net cash provided by financing activities	19,845	25,101
Effect of exchange rate changes on cash	(646)	-232
Net decrease in cash, cash equivalents and restricted cash	385	(8,119)
Cash, cash equivalents and restricted cash at beginning of period	50,114	67,028
Cash, cash equivalents and restricted cash at end of period	$ 50,499	$ 58,909
Supplemental disclosure of cash flow information:		
Cash paid (received) for:		
Interest, net of amounts capitalized	$ 2,394	$ 2,478
Income taxes	1	(192)
Non-cash investing and financing activities:		
Extinguishment of Debt and interest	(6,299)	—
Purchase of property and equipment with line of credit borrowings	—	941
Net change in accounts payable related to property and equipment additions	(2,341)	(785)
Net change in deposits and prepaid for equipment related to property and equipment additions	35	1,327

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

Applied Optoelectronics, Inc. and Subsidiaries
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

Note 1. Description of Business

Business Overview

Applied Optoelectronics, Inc. (“AOI” or the “Company”) is a Delaware corporation. The Company is a leading, vertically integrated provider of fiber-optic networking products, primarily for four networking end-markets: internet data center, cable television ("CATV"), telecommunications ("telecom") and fiber-to-the-home ("FTTH"). The Company designs and manufactures a wide range of optical communications products at varying levels of integration, from components, subassemblies and modules to complete turn-key equipment.

The Company has manufacturing and research and development facilities located in the U.S., Taiwan and China. In the U.S., at its corporate headquarters and manufacturing facilities in Sugar Land, Texas, the Company primarily manufactures lasers and laser components and performs research and development activities for laser component and optical module products. In addition, the Company also has a research and development facility in Duluth, Georgia. The Company operates in Taipei, Taiwan and Ningbo, China through its wholly-owned subsidiary Prime World International Holdings, Ltd. (“Prime World”, incorporated in the British Virgin Islands). Prime World operates a branch in Taipei, Taiwan, which primarily manufactures transceivers and performs research and development activities for the transceiver products. Prime World is also the parent of Global Technology, Inc. (“Global”, incorporated in the People’s Republic of China). Through Global, the Company primarily manufactures certain of its data center transceiver products, including subassemblies, as well as CATV systems and equipment, and performs research and development activities for the CATV products.

Interim Financial Statements

The unaudited condensed consolidated financial statements of the Company as of June 30, 2021 and December 31, 2020 and for the three and six months ended June 30, 2021 and June 30, 2020, have been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”) for interim information and with the instructions on Form 10-Q and Rule 10-01 of Regulation S-X pursuant to the rules and regulations of the Securities and Exchange Commission (“SEC”). In accordance with those rules and regulations, the Company has omitted certain information and notes required by GAAP for annual consolidated financial statements. In the opinion of management, the condensed consolidated financial statements contain all adjustments, except as otherwise noted, necessary for the fair presentation of the Company’s financial position and results of operations for the periods presented. The year-end condensed balance sheet data was derived from audited financial statements. These condensed consolidated financial statements should be read in conjunction with the Consolidated Financial Statements and Notes thereto included in the Company’s Annual Report on Form 10-K (“Annual Report”) for the fiscal year ended December 31, 2020. The results of operations for the three and six months ended June 30, 2021 are not necessarily indicative of the results expected for the entire fiscal year. All significant inter-company accounts and transactions have been eliminated.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported. Actual results could differ from those estimates in the consolidated financial statements and accompanying notes. Significant estimates and assumptions that impact these financial statements and the accompanying notes relate to, among other things, allowance for credit losses, inventory reserve, product warranty costs, share-based compensation expense, estimated useful lives of property and equipment, and taxes.

Note 2. Significant Accounting Policies

There have been no changes in the Company’s significant accounting policies for the three and six months ended June 30, 2021, as compared to the significant accounting policies described in its 2020 Annual Report, except as described below.

Recent Accounting Pronouncements

Recent Accounting Pronouncements Yet to be Adopted

In March 2020, the FASB issued ASU 2020-04, “Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting”, which provides temporary optional expedients and exceptions to the GAAP guidance on contract modifications and hedge accounting to ease the financial reporting burdens related to the expected market transition from the London Interbank Offered Rate (“LIBOR”) and other interbank offered rates to alternative reference rates. ASU 2020-04 was further amended in January 2021 by ASU 2021-01, which clarified the applicability of certain provisions. Both ASU 2020-04 and AUC 2021-01 are currently effective prospectively for all entities through December 31, 2022 when the reference rate replacement activity is expected to have completed. The guidance in ASU 2020-04 and AUC 2021-01 is optional and may be elected over time as reference rate reform activities occur. As of June 30, 2021, the Company is evaluating the impact this standard may have on its consolidated financial statements.

In August 2020, the FASB issued ASU 2020-06, “Debt - Debt with Conversion and Other Options (Subtopic 470-20)” and “Derivatives and Hedging - Contracts in Entities Own Equity” (Subtopic 815-40). This ASU simplifies accounting for convertible instruments by eliminating two of the three models in ASC 470-20 that requires separating embedded conversion features from convertible instruments. The guidance is effective for fiscal years beginning after December 15, 2021. The Company is currently assessing the impact of this pronouncement to its consolidated financial statements.

In November 2020, the SEC issued a new rule that modernizes and simplifies various aspects and financial disclosure requirements in Regulation S-K, specifically related to Item 301 “Selected Financial Data”, Item 302 “Supplementary Financial Information” and Item 303 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” (“MD&A”). The intent of this new rule is to (i) eliminate duplicative disclosures, (ii) enhance and promote more principles-based MD&A disclosures with the objective of making them more meaningful for investors, all while (iii) simplifying the compliance requirements and efforts for registrants, by providing them with the flexibility to present management’s perspective on the registrant’s financial condition and results of operations. While most of the changes involve reducing or eliminating previously required information and disclosures, the rule does expand the disclosure requirements surrounding certain aspects of the various items in Regulation S-K discussed above. The final rule was published in the Federal Register on January 11, 2021, is effective thirty days after its publication date, or February 10, 2021, and registrants are required to comply with this final rule in the registrant’s first fiscal year ending on or after the date that is 210 days after the publication date. The Company plans to comply with the new disclosure requirements on schedule and currently does not anticipate any material financial impact in complying with these new requirements.

Note 3. Revenue Recognition

Disaggregation of Revenue

Revenue is classified based on the location where the product is manufactured. For additional information on the disaggregated revenues by geographical region, see Note 17, "Geographic Information.”

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Revenue is also classified by major product category and is presented below (in thousands):

	Three months ended June 30,			
	2021	% of Revenue	2020	% of Revenue
Data Center	$ 22,392	41.3%	$ 52,533	80.5%
CATV	27,599	50.9%	6,141	9.4%
Telecom	3,333	6.2%	6,170	9.5%
FTTH	298	0.5%	1	0.0%
Other	567	1.0%	377	0.6%
Total Revenue	$ 54,189	100.0%	$ 65,222	100.0%

	Six months ended June 30,			
	2021	% of Revenue	2020	% of Revenue
Data Center	$ 48,331	46.5%	$ 85,797	81.2%
CATV	46,238	44.5%	10,364	9.8%
Telecom	7,811	7.5%	8,730	8.3%
FTTH	722	0.7%	1	0.0%
Other	788	0.8%	797	0.8%
Total Revenue	$ 103,890	100.0%	$ 105,689	100.0%

Note 4. Leases

The Company leases space under non-cancellable operating leases for manufacturing facilities, research and development offices and certain storage facilities and apartments. These leases do not contain contingent rent provisions. The Company also leases certain machinery, office equipment and a vehicle. Many of its leases include both lease (e.g. fixed payments including rent, taxes, and insurance costs) and non-lease components (e.g. common-area or other maintenance costs) which are accounted for as a single lease component as the Company has elected the practical expedient to group lease and non-lease components for all leases. Several of the leases include one or more options to renew which have been assessed and either included or excluded from the calculation of the lease liability of the right of use ("ROU") asset based on management’s intentions and individual fact patterns. Several warehouses and apartments have non-cancellable lease terms of less than one-year and therefore, the Company has elected the practical expedient to exclude these short-term leases from its ROU asset and lease liabilities.

As most of the Company’s leases do not provide an implicit rate, the Company uses its incremental borrowing rate, which is the rate incurred to borrow on a collateralized basis over a similar term an amount equal to the lease payments in a similar economic environment. Based on the applicable lease terms and current economic environment, the Company applies a location approach for determining the incremental borrowing rate.

The components of lease expense were as follows for the periods indicated (in thousands):

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Operating lease expense	$ 304	$ 296	$ 606	$ 591
Financing lease expense	8	8	16	16
Short Term lease expense	5	37	14	69
Total lease expense	$ 317	$ 341	$ 636	$ 676

Maturities of lease liabilities are as follows for the future one-year periods ending June 30, 2021 (in thousands):

	Operating	Financing
2022	$ 1,285	$ 22
2023	1,308	22
2024	1,274	54
2025	1,235	—
2026	1,233	—
2027 and thereafter	3,486	—
Total lease payments	$ 9,821	$ 98
Less imputed interest	(1,129)	(8)
Present value	$ 8,692	$ 90

The weighted average remaining lease term and discount rate for operating leases were as follows for the periods indicated:

	Six months ended June 30,	
	2021	2020
Weighted Average Remaining Lease Term (Years) - operating leases	7.84	8.65
Weighted Average Remaining Lease Term (Years) - financing leases	2.33	3.33
Weighted Average Discount Rate - operating leases	3.23%	3.16%
Weighted Average Discount Rate - financing leases	5.00%	5.00%

Supplemental cash flow information related to operating leases was as follows for the periods indicated (in thousands):

	Six months ended June 30,	
	2021	2020
Cash paid for amounts included in the measurement of lease liabilities		
Operating cash flows from operating leases	653	640
Operating cash flows from financing lease	3	3
Financing cash flows from financing lease	9	8
Right-of-use assets obtained in exchange for new operating lease liabilities	109	261

Note 5. Cash, Cash Equivalents and Restricted Cash

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the statement of financial position that sum to the total of the same such amounts in the statement of cash flows (in thousands):

	June 30, 2021	December 31, 2020
Cash and cash equivalents	$ 44,013	$ 43,425
Restricted cash	6,486	6,689
Total cash, cash equivalents and restricted cash shown in the statement of cash flows	$ 50,499	$ 50,114

Restricted cash includes guarantee deposits for customs duties, China government subsidy fund, and compensating balances required for certain credit facilities. As of June 30, 2021 and December 31, 2020, there was $2.2 million and $4.9 million of restricted cash required for bank acceptance notes issued to vendors, respectively. In addition, there was $2.4 million and $0.5 million certificate of deposit associated with credit facilities with a bank in China as of June 30, 2021 and December 31, 2020, respectively. There was $1.8 million and $1.0 million guarantee deposits for customs duties as of June 30, 2021 and December 31, 2020, respectively.

Note 6. Earnings (Loss) Per Share

Basic net loss per share has been computed using the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per share has been computed using the weighted-average number of shares of common stock and dilutive potential common shares from stock options, restricted stock units and senior convertible notes outstanding during the period. In periods with net losses, normally dilutive shares become anti-dilutive. Therefore, basic and diluted loss per share are the same.

The following table sets forth the computation of the basic and diluted net loss per share for the periods indicated (in thousands):

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Numerator:				
Net loss	$ (8,203)	$ (18,600)	$ (23,825)	$ (35,397)
Denominator:				
Weighted average shares used to compute net loss per share				
Basic	26,850	20,858	26,637	20,533
Diluted	26,850	20,858	26,637	20,533
Net loss per share				
Basic	$ (0.31)	$ (0.89)	$ (0.89)	$ (1.72)
Diluted	$ (0.31)	$ (0.89)	$ (0.89)	$ (1.72)

The following potentially dilutive securities were excluded from the diluted net loss per share as their effect would have been antidilutive (in thousands):

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Employee stock options	4	11	8	13
Restricted stock units	9	10	14	13
Shares for convertible senior notes	4,587	4,587	4,587	4,587
Total antidilutive shares	4,600	4,608	4,609	4,613

Note 7. Inventories

Inventories, net of inventory write-downs, consist of the following for the periods indicated (in thousands):

	June 30, 2021	December 31, 2020
Raw materials	$ 29,085	$ 25,555
Work in process and sub-assemblies	46,558	52,544
Finished goods	24,756	32,298
Total inventories	$ 100,399	$ 110,397

The lower of cost or market adjustment expensed for inventory for the three months ended June 30, 2021 and 2020 was each $1.3 million. The lower of cost or market adjustment expensed for inventory for the six months ended June 30, 2021 and 2020 was $2.2 million and $2.9 million, respectively.

For the three months ended June 30, 2021 and 2020, the direct inventory write-offs related to scrap, discontinued products, and damaged inventories were $4.8 million and $3.7 million, respectively. For the six months ended June 30, 2021 and 2020, the direct inventory write-offs related to scrap, discontinued products, and damaged inventories were $10.8 million and $6.2 million, respectively.

Note 8. Property, Plant & Equipment

Property, plant and equipment consisted of the following for the periods indicated (in thousands):

	June 30, 2021	December 31, 2020
Land improvements	$ 806	$ 806
Building and improvements	89,127	88,280
Machinery and equipment	259,651	253,738
Furniture and fixtures	5,607	5,540
Computer equipment and software	12,610	11,912
Transportation equipment	710	699
	368,511	360,975
Less accumulated depreciation and amortization	(155,507)	(142,434)
	213,004	218,541
Construction in progress	32,692	33,342
Land	1,101	1,101
Total property, plant and equipment, net	$ 246,797	$ 252,984

For the three months ended June 30, 2021 and 2020, the depreciation expense of property, plant and equipment was $6.3 million and $6.0 million, respectively. For the six months ended June 30, 2021 and 2020, the depreciation expense of property, plant and equipment was $12.6 million and $11.9 million, respectively. For the three months ended June 30, 2021 and 2020, the capitalized interest was $0.2 million and 0.1 million, respectively. For the six months ended June 30, 2021 and 2020, the capitalized interest was $0.3 million and $0.2 million, respectively.

As of June 30, 2021, the Company concluded that its continued loss history constitutes a triggering event as described in ASC *360-10-35-21,Property, Plant, and Equipment*. The Company performed a recoverability test and concluded that future undiscounted cash flows exceed the carrying amount of the Company's long-lived assets and therefore no impairment charge was recorded.

Note 9. Intangible Assets, net

Intangible assets consisted of the following for the periods indicated (in thousands):

	June 30, 2021		
	Gross Amount	Accumulated amortization	Intangible assets, net
Patents	$ 8,362	$ (4,480)	$ 3,882
Trademarks	22	(16)	6
Total intangible assets	$ 8,384	$ (4,496)	$ 3,888

	December 31, 2020		
	Gross Amount	Accumulated amortization	Intangible assets, net
Patents	$ 8,158	$ (4,165)	$ 3,993
Trademarks	21	(15)	6
Total intangible assets	$ 8,179	$ (4,180)	$ 3,999

For the three and six months ended June 30, 2021 and 2020, amortization expense for intangible assets, included in general and administrative expenses on the income statement, was each $0.1 million. The remaining weighted average amortization period for intangible assets is approximately 6 years.

At June 30, 2021, future amortization expense for intangible assets is estimated to be (in thousands):

2022	$ 609
2023	609
2024	609
2025	609
2026	609
thereafter	843
	$ 3,888

Note 10. Fair Value of Financial Instruments

The following table represents a summary of the Company's financial instruments measured at fair value on a recurring basis for the periods indicated (in thousands):

	As of June 30, 2021				As of December 31, 2020			
	(Level 1)	(Level 2)	(Level 3)	Total	(Level 1)	(Level 2)	(Level 3)	Total
Assets:								
Cash and cash equivalents	$ 44,013	$ —	$ —	$ 44,013	$ 43,425	$ —	$ —	$ 43,425
Restricted cash	6,486	—	—	$ 6,486	6,689	—	—	$ 6,689
Note receivable	—	3,819	—	3,819	-	401	—	401
Total assets	$ 50,499	$ 3,819	$ —	$ 54,318	$ 50,114	$ 401	$ —	$ 50,515
Liabilities:								
Bank acceptance payable	$ —	$ 6,469	$ —	$ 6,469	$ —	$ 15,860	$ —	15,860
Convertible senior notes	—	70,265	—	70,265	—	70,225	—	70,225
Total liabilities	$ —	$ 76,734	$ —	$ 76,734	$ —	$ 86,085	$ —	$ 86,085

The carrying value amounts of accounts receivable, note receivable, prepaid expenses and other current assets, accounts payable, accrued expenses and other current liabilities approximate fair value because of the short-term maturity of these instruments. The carrying value amounts of bank acceptances approximate fair value due to the short-term nature of the debt since it renews frequently at current interest rates. The Company believes that the interest rates in effect at each period end represent the current market rates for similar borrowings.

The fair value of its convertible senior debt is measured for disclosure purpose. The fair value is based on observable market prices for this debt, which is traded in less active markets and are therefore classified as a Level 2 fair value measurement.

Note 11. Notes Payable and Long-Term Debt

Notes payable and long-term debt consisted of the following for the periods indicated (in thousands):

	June 30, 2021	December 31, 2020
Revolving line of credit with a U.S. bank up to $20,000 with interest at 2.25% , maturing October 15, 2022	$ 19,360	$ 18,700
Paycheck Protection Program Term Note with interest at fixed rate 1.0%, maturing April 16, 2022	—	6,229
Revolving line of credit with a Taiwan bank up to $3,436 with 2.2% interest, maturing April 14, 2021	—	1,756
Notes payable to a finance company due in monthly installments with 3.5% interest, maturing January 21, 2022	902	1,941
Notes payable to a finance company due in monthly installments with 3.1% interest, maturing January 21, 2022	1,183	2,149
Revolving line of credit with a China bank up to $8,917 with interest ranging from 4.5%, maturing October 14, 2020	—	2,299
Revolving line of credit with a China bank up to $25,449 with interest from 3.01% to 4.57%, maturing May 24, 2024	16,915	11,603
Credit facility with a China bank up to $14,125 with interest of 3.5%, maturing January 5, 2024	15,482	—
Credit facility with a China bank up to $7,167 with interest of 5.7%, maturing from June 20, 2022	7,430	7,510
Sub-total	61,272	52,187
Less debt issuance costs, net	(36)	(18)
Grand total	61,236	52,169
Less current portion	(41,876)	(38,265)
Non-current portion	$ 19,360	$ 13,904
Bank Acceptance Notes Payable		
Bank acceptance notes issued to vendors with a zero percent interest rate	$ 6,469	$ 15,860

The current portion of long-term debt is the amount payable within one year of the balance sheet date of June 30, 2021.

Maturities of long-term debt are as follows for the future one-year periods ending June 30, (in thousands):

2022	$	41,876
2023		19,360
Total outstanding	$	61,236

On September 28, 2017, the Company entered into a Loan Agreement ("Loan Agreement"), a Promissory Note, an Addendum to the Promissory Note, a Truist Bank Security Agreement, a Trademark Security Agreement, and a Patent Security Agreement (together the "Credit Facility") with Truist Bank (which acquired Branch Banking and Trust Company or BB&T in connection with a merger in December 2019). The Company's obligations under the Credit Facility are secured by the Company's accounts receivable, inventory, intellectual property, and all business assets with the exception of real estate and equipment.

On September 30, 2019, the Company executed a Fourth Amendment to Loan Agreement (the “Fourth Amendment”) with Truist Bank. Under the terms of the Fourth Amendment (i) the maximum commitment under the line of credit was reduced from $25,000,000 to $20,000,000; (ii) the maturity date of the line of credit was extended from September 28, 2020 to April 2, 2021; (iii) pricing of the unused line fee was adjusted to 0.30% per annum; and (iv) created the requirement that if, at any time during any reporting period and pursuant to the most recent loan base report received by Truist Bank, the principal balance outstanding under the line of credit exceeds the lesser of the approved maximum amount of the line of credit commitment amount or the collateral loan value reduced by the reserves, the Company shall immediately prepay the line of credit to the extent necessary to eliminate such excess. Such reserves shall, at any time that the fixed charge coverage ratio for the loan is less than 1.5 to 1.0, tested for the period of twelve months ended on the applicable covenant measurement date, equal to an amount equal to seventy-five percent (75%) of the lesser of the line of credit commitment amount or collateral loan value reduced by the sum of (i) the principal balance outstanding under the line of credit, (ii) the letter of credit exposure reserve, and (iii) the availability reserve as determined by Truist Bank from the most recent loan base report and otherwise in the sole discretion of Truist Bank after consideration of collections.

On April 5, 2021, the Company executed a Fifth Amendment to the Loan Agreement (the "Fifth Amendment") and a Fourth Amendment to a Security Agreement, a Note Modification Agreement, and an Addendum to a Promissory Note (together with the Fifth Amendment the “Amended Credit Facility”) with Truist Bank. The Amended Credit Facility renews the $20 million line of credit with Truist bank originally entered into on September 28, 2017. Under the terms of the Amended Credit Facility, the maturity date of the line of credit is extended from April 2, 2021 to October 15, 2022. Borrowings will bear interest at a rate equal to LIBOR plus 1.5%, with a LIBOR floor of 0.75%. As of June 30, 2021, the Company had $19.4 million outstanding and was in compliance with all covenants under the Amended Credit Facility.

On April 17, 2020, the Company entered into a term note ("PPP Term Note") with Truist Bank, with a principal amount of $6.23 million pursuant to the Paycheck Protection Program (“PPP”) under the Coronavirus Aid, Relief, and Economic Security Act (the “CARES Act”). The PPP loan is evidenced by a promissory note. The PPP Term Note bears interest at a fixed annual rate of 1.00%, with the first six months of interest deferred. Beginning in November 2020, the Company is required to make 18 equal monthly payments of principal and interest with the final payment due in April 2022. The PPP Term Note may be accelerated upon the occurrence of an event of default. The PPP Term Note is unsecured and guaranteed by the United States Small Business Administration ("SBA"). On June 14, 2021, the Company received notification from Truist Bank that the SBA approved the Company's application for forgiveness of the entire principle amount of the PPP Term Note, plus all accrued interest. The forgiveness of the PPP Term Note has been recognized as other income during the second quarter ended June 30, 2021.

On September 15, 2020, Prime World entered into an Amendment to the Finance Lease Agreements dated November 29, 2018 and January 21, 2019 (the "Amendment") with Chailease Finance Co., Ltd. ("Chailease"). The Amendment amends the Finance Lease Agreements, dated November 29, 2018 and January 21, 2019 (hereafter collectively referred to as the "Original Finance Agreements"). Pursuant to the Amendment, Prime World agrees to pay Chailease NT$22,311,381, or approximately $0.8 million for certain leased equipment listed in the Amendment (the "Leased Equipment"). This payment will include all outstanding lease payments, costs and expenses; simultaneously, Chailease agrees to transfer title of such Leased Equipment back to Prime World. Regarding all other equipment contemplated in the Original Finance Agreements but not listed in the Amendment, pursuant to the terms and conditions made under the Original Finance Agreements, Prime World is obligated to pay Chailease monthly lease payments which total NT$159,027,448, or approximately $5.5 million (the "Lease Payments"). The Lease Payments will begin on September 21, 2020 with the last Lease Payment due on January 21, 2022, title of all other equipment contemplated under the Original Finance Agreements but not listed in the Amendment will transfer to Prime World upon completion of the Lease Payments and expiration of the Original Finance Agreements. As of June 30, 2021, $0.9 million was outstanding under the November 29, 2018 Finance Lease Agreement and $1.2 million was outstanding under the January 21, 2019 Finance Lease Agreement.

On October 7, 2020, Prime World entered into a revolving credit facility totaling NT$100 million, or approximately $3.44 million (the "NT$100M Credit Line") and a $1 million USD credit line (the " US$1M Credit Line") with Taishin. Borrowing under the NT$100M Credit Line will be used for short-term working capital; borrowing under the US$1M Credit Line will be strictly used for spot transactions in the foreign exchange market. The NT$100M Credit Line and the US$1M Credit Line are collectively referred to as the "Taishin Credit Facility". On January 14, 2021, the NT$100M Credit Line with Taishin was extended for three (3) months until April 14, 2021. Prime World may draw upon the Taishin Credit Facility from October 7, 2020 through April 14, 2021. The term of each draw under the NT$100M Credit Line shall be either 90 or 120 days and will bear interest at a rate of 2.15% for each draw; borrowings under the US$1M Credit Line will bear interest equal to Taishin's foreign exchange rate effective on the day of the applicable draw. At the end of the draw term Prime World will make payment for all principal and accrued interest. Prime World's obligations under the Taishin Credit Facility will be secured by a promissory note between Prime World and Taishin. As of June 30, 2021, the Company has fully repaid the Taishin Credit Facility.

On April 19, 2019, the Company's China subsidiary, Global, entered into a twelve (12) month revolving line of credit agreement, totaling 60,000,000 RMB, or approximately $8.9 million, (the "China Merchants Credit Line"), with China Merchants Bank Co., Ltd., in Ningbo, China ("China Merchants"). The China Merchants Credit Line will be used by Global for general corporate purposes, including the issuance of bank acceptance notes to Global's vendors. On April 14, 2020, Global extended the revolving line of credit agreement with China Merchants by six (6) months. Global may draw upon the China Merchants Credit Line from April 19, 2019 until October 14, 2020 (the "Credit Period"). During the Credit Period, Global may request to draw upon the China Merchants Credit Line on an as-needed basis; however, the amount of available credit under the China Merchants Credit Line and the approval of each draw may be reduced or declined by China Merchants due to changes in Chinese government regulations and/or changes in Global's financial and operational condition at the time of each requested draw. Each draw will bear interest equal to China Merchants' commercial banking interest rate effective on the day of the applicable draw. Global's obligations under the China Merchants Credit Line are unsecured. The China Merchants Credit Line has been replaced by the Replacement China Merchants Credit Line on October 19, 2020.

On May 24, 2019, the Company's China subsidiary, Global, entered into a five-year revolving credit line agreement, totaling 180,000,000 RMB (the "SPD Credit Line"), or approximately $25.4 million, and a mortgage security agreement (the "Security Agreement"), with SPD. Borrowing under the SPD Credit Line will be used for general corporate and capital investment purposes, including the issuance of bank acceptance notes to Global's vendors. The total SPD Credit Line of 180 million RMB is inclusive of all credit facilities previously entered into with SPD including: a 30 million RMB credit facility entered into on May 7, 2019; and a 9.9 million RMB credit facility entered into on April 30, 2019 and $2 million credit facility entered into on May 8, 2019. Global may draw upon the SPD Credit Line on an as-needed basis at any time during the 5-year term; however, draws under the SPD Credit Line may become due and repayable to SPD at SPD's discretion due to changes in Chinese government regulations and/or changes in Global's financial and operational condition. Each draw will bear interest equal to SPD's commercial banking interest rate effective on the day of the applicable draw. Global's obligations under the SPD Credit Line will be secured by real property owned by Global and mortgaged to the Bank under the terms of the Security Agreement. As of June 30, 2021, $16.9 million was outstanding under the SPD Credit Line and the outstanding balance of bank acceptance notes issued to vendors was $3.5 million.

On June 21, 2019, the Company's China subsidiary, Global, entered into an 18 month credit facility totaling 100,000,000 RMB (the "¥100M Credit Facility"), or approximately $14.1 million, with China Zheshang Bank Co., Ltd., in Ningbo City, China ("CZB"). Borrowing under the ¥100M Credit Facility will be used by Global for general corporate purposes. On January 6, 2021, the ¥100M Credit Facility with CZB was extended for three (3) years until January 5, 2024. Global may draw upon the ¥100M Credit Facility from June 21, 2019 until January 5, 2024 (the "¥100M Credit Period"). During the ¥100M Credit Period, Global may request to draw upon the ¥100M Credit Facility on an as-needed basis; however, draws under the ¥100M Credit Facility may become due and repayable to CZB at CZB's discretion due to changes in Chinese government regulations and/or changes in Global's financial and operational condition. Each draw will bear interest equal to CZB's commercial banking interest rate effective on the day of the applicable draw. Global's obligations under the ¥100M Credit Facility will be secured by real property owned by Global and mortgaged to CZB under the terms of the Real Estate Security Agreement. The agreements for the ¥100M Credit Facility and the Real Estate Security Agreement also contain rights and obligations, representations and warranties, and events of default applicable to the Company that are customary for agreements of this type. As of June 30, 2021, $15.5 million was outstanding under the ¥100M Credit Facility and there was no outstanding balance of bank acceptance notes issued to vendors under this facility.

On June 21, 2019, the Company's China subsidiary, Global, entered into a three-year credit facility totaling 50,000,000 RMB (the "¥50M Credit Facility"), or approximately $7.1 million, with CZB. Borrowing under the ¥50M Credit Facility will be used by Global for general corporate purposes. Global may draw upon the ¥50M Credit Facility from June 21, 2019 until June 20, 2022 (the "¥50M Credit Period"). During the ¥50M Credit Period, Global may request to draw upon the ¥50M Credit Facility on an as-needed basis; however, draws under the ¥50M Credit Facility may become due and repayable to CZB at CZB's discretion due to changes in Chinese government regulations and/or changes in Global's financial and operational condition. Each draw will bear interest equal to CZB's commercial banking interest rate effective on the day of the applicable draw. Global's obligations under the ¥50M Credit Facility will be secured by machinery and equipment owned by Global and mortgaged to CZB under the terms of the Machinery and Equipment Security Agreement. As of June 30, 2021, $7.4 million was outstanding under the ¥50M Credit Facility.

On October 19, 2020, the Company's China subsidiary, Global entered into a new twelve (12) month revolving line of credit agreement, totaling 60,000,000 RMB, or approximately $8.9 million (the "Replacement China Merchants Credit Line"), with China Merchants, to replace the original China Merchants Credit Line. The Replacement China Merchants Credit Line will be used by Global for general corporate purposes. Global may draw upon the Replacement China Merchants Credit Line during the period from October 16, 2020 until October 15, 2021. During such period, Global may request to draw upon the Replacement China Merchants Credit Line on an as-needed basis; however, the amount of available credit under the Replacement China Merchants Credit Line and the approval of each draw may be reduced or declined by China Merchants due to changes in Chinese government regulations and/or changes in Global's financial and operational condition at the time of each requested draw. Each draw will bear interest equal to the China Merchants' commercial banking interest rate effective on the day of the applicable draw. Global's obligations under the Replacement China Merchants Credit Line is unsecured. As of June 30, 2021, there was no outstanding amount under the Replacement China Merchants Credit Line and the outstanding balance of bank acceptance notes issued to vendors was $3.0 million.

As of June 30, 2021 and December 31, 2020, the Company had $5.3 million and $28.7 million of unused borrowing capacity, respectively.

As of June 30, 2021 and December 31, 2020, there was $4.6 million and $5.4 million of restricted cash, investments or security deposits associated with the loan facilities, respectively.

Note 12. Convertible Senior Notes

On March 5, 2019, the Company issued $80.5 million of 5% convertible senior notes due 2024 (the “Notes”). The Notes were issued pursuant to an indenture, dated as of March 5, 2019 (the “Indenture”), between the Company and Wells Fargo Bank, National Association, as trustee, paying agent, and conversion agent (the “Trustee”). The Notes bear interest at a rate of 5.00% per year, payable in cash semi-annually in arrears on March 15 and September 15 of each year, beginning on September 15, 2019. The Notes will mature on March 15, 2024, unless earlier repurchased, redeemed or converted in accordance with their terms.

The sale of the Notes generated net proceeds of $76.4 million, after deducting the Initial Purchasers’ discounts and offering expenses payable by the Company. The Company used approximately $37.8 million of the net proceeds from the offering to fully repay the CapEx Loan and Term Loan with Truist Bank and the remainder will be used for general corporate purposes.

The following table presents the carrying value of the Notes for the periods indicated (in thousands):

	June 30, 2021	December 31, 2020
Principal	$ 80,500	$ 80,500
Unamortized debt issuance costs	(2,236)	(2,646)
Net carrying amount	$ 78,264	$ 77,854

The Notes are convertible at the option of holders of the Notes at any time until the close of business on the scheduled trading day immediately preceding the maturity date. Upon conversion, holders of the Notes will receive shares of the Company’s common stock, together, if applicable, with cash in lieu of any fractional share, at the then-applicable conversion rate. The initial conversion rate is 56.9801 shares of the Company’s common stock per $1,000 principal amount of Notes (representing an initial conversion price of approximately $17.55 per share of common stock, which represents an initial conversion premium of approximately 30% above the closing price of $13.50 per share of the Company’s common stock on February 28, 2019), subject to customary adjustments. If a make-whole fundamental change (as defined in the Indenture) occurs, and in connection with certain other conversions before March 15, 2022, the Company will in certain circumstances increase the conversion rate for a specified period of time.

Initially there are no guarantors of the Notes, but the Notes will be fully and unconditionally guaranteed, on a senior, unsecured basis by certain of the Company’s future domestic subsidiaries. The Notes are the Company’s senior, unsecured obligations and are equal in right of payment with existing and future senior, unsecured indebtedness, senior in right of payment to the Company’s existing and future indebtedness that is expressly subordinated to the Notes and effectively subordinated to the Company’s existing and future secured indebtedness, to the extent of the value of the collateral securing that indebtedness. The Note Guarantee (as defined in the Indenture) of each future guarantor, if any, will be such guarantor’s senior, unsecured obligations and are equal in right of payment with existing and future senior, unsecured indebtedness, senior in right of payment to such future guarantor’s existing and future indebtedness that is expressly subordinated to the Notes and effectively subordinated to such future guarantor’s existing and future secured indebtedness, to the extent of the value of the collateral securing that indebtedness.

Holders may require the Company to repurchase their Notes upon the occurrence of a fundamental change (as defined in the Indenture) at a cash purchase price equal to the principal amount thereof plus accrued and unpaid interest, if any.

The Company may not redeem the Notes prior to March 15, 2022. On or after March 15, 2022, the Company may redeem for cash all or part of the Notes if the last reported sale price per share of the Company’s common stock exceeds 130% of the conversion price on (i) each of at least 20 trading days, whether or not consecutive, during the 30 consecutive trading days ending on, and including, the trading day immediately before the date the Company sends the related redemption notice; and (ii) the trading day immediately before the date the Company sends such redemption notice. The redemption price is equal to 100% of the principal amount of the notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. In addition, calling any Note for redemption will constitute a “make-whole fundamental change” with respect to that Note, in which case the conversion rate applicable to the conversion of that Note will be increased in certain circumstances if it is converted after it is called for redemption.

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The Indenture contains covenants that limit the Company's ability and the ability of our subsidiaries to, among other things: (i) incur or guarantee additional indebtedness or issue disqualified stock; and (ii) create or incur liens.

Pursuant to the guidance in ASC *815-40*, *Contracts in Entity's Own Equity*, the Company evaluated whether the conversion feature of the note needed to be bifurcated from the host instrument as a freestanding financial instrument. Under ASC *815-40*, to qualify for equity classification (or non-bifurcation, if embedded) the instrument (or embedded feature) must be both (1) indexed to the issuer's own stock and (2) meet the requirements of the equity classification guidance. Based upon the Company's analysis, it was determined the conversion option is indexed to its own stock and also met all the criteria for equity classification contained in ASC *815-40-25-7* and *815-40-25-10.* Accordingly, the conversion option is not required to be bifurcated from the host instrument as a freestanding financial instrument. Since the conversion feature meets the equity scope exception from derivative accounting, the Company then evaluated whether the conversion feature needed to be separately accounted for as an equity component under ASC *470-20*, *Debt with Conversion and Other Options*. The Company determined that notes should be accounted for in their entirety as a liability.

The Company incurred approximately $4.1 million in transaction costs in connection with the issuance of the Notes. These costs were recognized as a reduction of the carrying amount of the Notes utilizing the effective interest method and are being amortized over the term of the notes.

The following table sets forth interest expense information related to the Notes (in thousands):

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Contractual interest expense	$ 1,006	$ 1,006	$ 2,013	$ 2,013
Amortization of debt issuance costs	206	205	410	414
Total interest cost	$ 1,212	$ 1,211	$ 2,423	$ 2,427
Effective interest rate	5.1%	5.1%	5.1%	5.1%

Note 13. Accrued Liabilities

Accrued liabilities consisted of the following for the periods indicated (in thousands):

	June 30, 2021	December 31, 2020
Accrued payroll	$ 7,371	$ 10,517
Accrued employee benefits	2,950	3,057
Accrued state and local taxes	1,001	251
Accrued interest	1,355	1,256
Advance payments	267	303
Accrued product warranty	337	703
Accrued commission expenses	1,210	974
Accrued professional fees	253	377
Accrued shipping and tariff expenses	171	526
Accrued other	594	547
Total accrued liabilities	$ 15,509	$ 18,511

Note 14. Other Income and Expense

Other income and (expense) consisted of the following for the periods indicated (in thousands):

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Foreign exchange transaction gain	$ 427	$ 113	$ 218	$ 252
Government subsidy income	115	876	154	981
Other non-operating gain (loss)	31	(6)	32	6
Loan forgiveness	6,229	—	6,229	—
Loss on disposal of assets	(5)	(9)	(5)	(9)
Total other income (expense), net	$ 6,797	$ 974	$ 6,628	$ 1,230

Note 15. Share-Based Compensation

Equity Plans

The Company's board of directors and stockholders approved the following equity plans:

- the 2006 Share Incentive Plan
- the 2013 Equity Incentive Plan ("2013 Plan")
- the 2021 Equity Incentive Plan ("2021 Plan")

The Company issued stock options, restricted stock awards ("RSAs") and restricted stock units ("RSUs") to employees, consultants and non-employee directors. Stock option awards generally vest over a four-year period and have a maximum term of ten years. Stock options under these plans have been granted with an exercise price equal to the fair market value on the date of the grant. Nonqualified and Incentive Stock Options, RSAs and RSUs may be granted from these plans. Prior to the Company's initial public offering in September 2013, the fair market value of the Company's stock had been historically determined by the board of directors and from time to time with the assistance of third-party valuation specialists.

Stock Options

Options have been granted to the Company's employees under the two incentive plans and generally become exercisable as to 25% of the shares on the first anniversary date following the date of grant and 12.5% on a semi-annual basis thereafter. All options expire ten years after the date of grant.

The following is a summary of option activity (in thousands, except per share data):

	Number of shares	Weighted Average Exercise Price	Weighted Average Share Price on Date of Exercise	Weighted Average Fair Value	Weighted Average Remaining Contractual Life	Aggregate Intrinsic Value
			(in thousands, except price data)			
Outstanding at January 1, 2021	276	$ 10.29		$ 5.41	2.67	$ 54
Exercised	(2)	$ 6.00	—	$0.40		7
Forfeited	(3)	$ 10.40		$5.64		1
Outstanding, June 30, 2021	271	$ 10.32		$ 5.44	2.19	46
Exercisable, June 30, 2021	271	$ 10.32			2.19	46
Vested and expected to vest	271	$ 10.33			2.19	46

As of June 30, 2021, there was no unrecognized stock option expense.

Restricted Stock Units/Awards

The following is a summary of RSU/RSA activity (in thousands, except per share data):

	Number of shares	Weighted Average Share Price on Date of Release	Weighted Average Fair Value	Aggregate Intrinsic Value
		(in thousands, except price data)		
Outstanding at January 1, 2021	1,325		$ 14.97	$ 11,279
Granted	1,716		10.14	2,897
Released	(304)	$ 9.39	18.46	2,856
Cancelled/Forfeited	(57)		13.34	485
Outstanding, June 30, 2021	2,680		11.51	22,700
Vested and expected to vest	2,680		11.51	22,700

As of June 30, 2021, there was $27.8 million of unrecognized compensation expense related to these RSUs and RSAs. This expense is expected to be recognized over 2.33 years.

Share-Based Compensation

Employee share-based compensation expenses recognized for the periods indicated (in thousands):

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Share-based compensation - by expense type				
Cost of goods sold	$ 266	$ 237	$ 467	$ 483
Research and development	630	704	1,193	1,392
Sales and marketing	329	295	548	586
General and administrative	2,048	2,066	3,585	4,079
Total share-based compensation expense	$ 3,273	$ 3,302	$ 5,793	$ 6,540

Note 16. Income Taxes

The Company’s effective tax rate for the three months ended June 30, 2021 and 2020 was 0% and 258.2%, respectively. For the three months ended June 30, 2021, the effective tax rate varied from the federal statutory rate of 21% primarily due to the benefit of the nontaxable PPP loan forgiveness, offset by the change of the valuation allowance on federal, state, Taiwan, and China deferred tax assets ("DTA"). For the three months ended June 30, 2020, the effective tax rate varied from the federal statutory rate of 21% primarily due to the level and mix of earnings among tax jurisdictions, and the change of valuation allowance on the US and state deferred tax assets, and the recording of a valuation allowance on Taiwan deferred tax assets.

The Company's effective tax rate for the six months ended June 30, 2021 and 2020 was 0% and (16.25%), respectively. For the six months ended June 30, 2021, the effective tax rate varied from the federal statutory rate of 21% primarily due to the change of the valuation allowance on federal, state, Taiwan and China DTA. For the six months ended June 30, 2020, the effective tax rate varied from the federal statutory rate of 21% primarily due to the level and mix of earnings among tax jurisdictions, the change of the valuation allowance on the US and state deferred tax assets, and the recording of a valuation on Taiwan deferred tax assets.

The Company continually monitors and performs an assessment of the realizability of its DTAs, including an analysis of factors such as future taxable income, reversal of existing taxable temporary differences, and tax planning strategies. In assessing the need for a valuation allowance, the Company considered both positive and negative evidence related to the likelihood of realization of deferred tax assets using a “more likely than not” standard. In making such assessment, more weight was given to evidence that could be objectively verified, including recent cumulative losses. Based on the Company’s review of this evidence, management determined that a full valuation allowance against all of the Company’s net deferred tax assets at June 30, 2021 was appropriate.

In response to the COVID-19 pandemic, the Coronavirus Aid, Relief, and Economic Stability Act (the "CARES Act") was signed into law on March 27, 2020. The CARES Act, among other things, includes tax provisions relating to refundable payroll tax credits, deferment of employer social security payments, net operating loss utilization and carryback periods, modifications to the net interest deduction limitations and technical corrections to tax depreciation methods for qualified improvement property (“QIP”). On December 27, 2020, the Taxpayer Certainty and Disaster Tax Relief Act of 2020 was enacted as part of the Consolidated Appropriations Act, 2021, followed by the American Rescue Plan Act on March 1, 2021. These recent laws, among many other provisions, expand and extend the Paycheck Protection Program (“PPP”), refundable employee retention tax credits previously made available under the CARES Act and allow a full deduction for business meals for the 2021 and 2022 tax years. At this point we do not believe that these changes will have a material impact on our income tax provision for 2021. We will continue to evaluate the impact of new legislation on our financial position, results of operations, and cash flows.

Note 17. Geographic Information

The Company operates in one reportable segment. The Company’s Chief Executive Officer, who is considered to be the chief operating decision maker, manages the Company’s operations as a whole and reviews financial information presented on a consolidated basis, accompanied by information about product revenue, for purposes of evaluating financial performance and allocating resources.

The following tables set forth the Company’s revenue and asset information by geographic region. Revenue is classified based on the location of where the product is manufactured. Long-lived assets in the tables below comprise only property, plant, equipment and intangible assets (in thousands):

	Three months ended June 30,		Six months ended June 30,	
	2021	**2020**	**2021**	**2020**
Revenues:				
United States	$ 3,422	$ 4,735	$ 6,737	$ 8,496
Taiwan	29,493	40,604	55,888	64,486
China	21,274	19,883	41,265	32,707
	$ 54,189	$ 65,222	$ 103,890	$ 105,689

	As of the period ended	
	June 30, 2021	**December 31, 2020**
Long-lived assets:		
United States	$ 89,096	$ 90,999
Taiwan	67,305	71,080
China	107,706	108,575
	$ 264,107	$ 270,654

Note 18. Contingencies

Litigation

Overview

From time to time, the Company may be subject to legal proceedings and litigation arising in the ordinary course of business, including, but not limited to, inquiries, investigations, audits and other regulatory proceedings, such as described below. The Company records a loss provision when it believes it is both probable that a liability has been incurred and the amount can be reasonably estimated. Unless otherwise disclosed, the Company is unable to estimate the possible loss or range of loss for the legal proceeding described below.

Except for the lawsuits described below, the Company believes that there are no claims or actions pending or threatened against it, the ultimate disposition of which would have a material adverse effect on it.

Class Action and Shareholder Derivative Litigation

On August 7, 2018, a derivative lawsuit was filed in the United States District Court for the Southern District of Texas styled *Lei Jin, derivatively on behalf ofApplied Optoelectronics, Inc. v. Chih-Hsiang (“Thompson”) Lin, Stefan J. Murry, William H. Yeh, Alex Ignatiev, Richard B. Black, Min-Chu Chen, Alan Moore, and Che-Wei Lin and Applied Optoelectronics, Inc.*, No. 4:18-cv-02713 alleging breaches of fiduciary duties, unjust enrichment, and violations of Section 14(a) of the Exchange Act based on similar factual allegations as in the securities class action captioned *Mona Abouzied v. Applied Optoelectronics, Inc., Chih-Hsiang (Thompson) Lin, and Stefan J. Murry, et al.*, Case No. 4:17-cv-02399, which had been previously filed against the Company and was dismissed following a settlement in 2020. On December 18, 2018, a second derivative complaint was filed styled *Yiu Kwong Ng v.Chih-Hsiang (“Thompson”) Lin, Stefan J. Murry, William H. Yeh, Alex Ignatiev, Richard B. Black, Min-Chu Chen, Alan Moore, and Che-Wei Lin and Applied Optoelectronics, Inc.*, No. 4:18-cv-4751 alleging the same causes of actions as the *Jin* complaint and additional factual allegations regarding our announcement on September 28, 2018 that we had “identified an issue with a small percentage of 25G lasers within a specific customer environment.” On January 11, 2019, the court consolidated these two derivative actions, and on January 15, 2019, the court entered an order staying the actions pending the resolution of the securities class actions. On June 24, 2020, the plaintiffs filed a notice that the stay of proceedings had been terminated, and on July 2, 2020, the parties filed a Joint Stipulation and Proposed Scheduling Order. The court entered the stipulated scheduling order on the same date, under which Defendants were required to file and serve their response or responsive pleading to the complaint by August 3, 2020. By agreement of the parties, the Court subsequently extended the deadline for Defendants to file and serve their response or responsive pleading to December 2, 2020. On December 2, 2020, Defendants filed their motion to dismiss the consolidated derivative complaint. On December 7, 2020, Plaintiffs filed a notice alerting the Court that they were intending to file an amended complaint, which was subsequently filed by Plaintiffs on January 13, 2021. Defendants filed a motion to dismiss all claims on March 1, 2021. Plaintiffs’ response deadline is May 3, 2021. On June 25, 2021, the parties filed a stipulation indicating that they had reached a settlement-in-principle of the action. On June 28, 2021, the Court stayed all deadlines in the action for 30 days to allow the parties to finalize the settlement. The deadline was extended to August 13, 2021. At this stage, we are not yet able to determine the likelihood of loss, if any, arising from this matter.

Note 19. Subsequent Events

The Company repaid its revolving bank line of credit with Truist Bank in the amount of $19.4 million in July 2021.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with our consolidated financial statements and the accompanying notes appearing elsewhere in this Quarterly Report on Form 10-Q for the period ended June 30, 2021 and the audited consolidated financial statements and notes thereto and management's discussion and analysis of financial condition and results of operations for the fiscal year ended December 31, 2020 included in our Annual Report. References to "Applied Optoelectronics," "we," "our" and "us" are to Applied Optoelectronics, Inc. and its subsidiaries unless otherwise specified or the context otherwise requires.

This Quarterly Report on Form 10-Q contains "forward-looking statements" that involve risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such forward-looking statements. The statements contained in this Quarterly Report that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Terminology such as "believe," "may," "estimate," "continue," "anticipate," "intend," "should," "could," "would," "target," "seek," "aim," "believe," "predicts," "think," "objectives," "optimistic," "new," "goal," "strategy," "potential," "is likely," "will," "expect," "plan," "project," "permit," or by other similar expressions that convey uncertainty of future events or outcomes are intended to identify forward-looking statements.

We have based these forward-looking statements largely on our current expectations and projections about future events and industry and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. Such forward-looking statements are subject to risks, uncertainties and other important factors that could cause actual results and the timing of events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those identified in "Part II —Item 1A. Risk Factors" provided below, and those discussed in other documents we file with the SEC, including our Report on Form 10-K for the year ended December 31, 2020 and subsequent Quarterly Reports on Form 10-Q. Furthermore, such forward-looking statements speak only as of the date of this Quarterly Report. Except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances after the date of this Quarterly Report.

Overview

We are a leading, vertically integrated provider of fiber-optic networking products. We target four networking end-markets: internet data centers, CATV, telecom and FTTH. We design and manufacture a range of optical communications products at varying levels of integration, from components, subassemblies and modules to complete turn-key equipment. In designing products for our customers, we typically begin with the fundamental building blocks of lasers and laser components. From these foundational products, we design and manufacture a wide range of products to meet our customers' needs and specifications, and such products differ from each other by their end market, intended use and level of integration. We are primarily focused on the higher-performance segments within the internet data center, CATV, telecom and FTTH markets which increasingly demand faster connectivity and innovation. Our vertically integrated manufacturing model provides us several advantages, including rapid product development, fast response times to customer requests and control over product quality and manufacturing costs.

The four end markets we target are all driven by significant bandwidth demand fueled by the growth of network-connected devices, video traffic, cloud computing and online social networking. Within the internet data center market, we benefit from the increasing use of higher-capacity optical networking technology as a replacement for copper cables, particularly as speeds reach 100 Gbps and above, as well as the movement to open internet data center architectures and the increasing use of in-house equipment design among leading internet companies. Within the CATV market, we benefit from a number of ongoing trends including the build-out of CATV infrastructure in the US and other countries, the move to higher bandwidth networks among CATV service providers and the outsourcing of system design among CATV networking equipment companies. In the FTTH market, we benefit from continuing PON deployments and system upgrades among telecom service providers. In the telecom market, we benefit from deployment of new high-speed fiber-optic networks by telecom network operators, including 5G networks.

Our vertically integrated manufacturing model provides us several advantages, including rapid product development, fast response times to customer requests and greater control over product quality and manufacturing costs. We design, manufacture and integrate our own analog and digital lasers using a proprietary Molecular Beam Epitaxy, or MBE, and Metal Organic Chemical Vapor Deposition (MOCVD) fabrication process, which we believe is unique in our industry. We manufacture the majority of the laser chips and optical components that are used in our products. The lasers we manufacture are tested extensively to enable reliable operation over time and our devices are often highly tolerant of changes in temperature and humidity, making them well-suited to the CATV, FTTH and 5G telecom markets where networking equipment is often installed outdoors.

We have three manufacturing sites: Sugar Land, Texas, Ningbo, China and Taipei, Taiwan. Our research and development functions are generally partnered with our manufacturing locations, and we have an additional research and development facility in Duluth, Georgia. In our Sugar Land facility, we manufacture laser chips (utilizing our MBE and MOCVD processes), subassemblies and components. The subassemblies are used in the manufacture of components by our other manufacturing facilities or sold to third parties as modules. We manufacture our laser chips only within our Sugar Land facility, where our laser design team is located. In our Taiwan location, we manufacture optical components, such as our butterfly lasers, which incorporate laser chips, subassemblies and components manufactured within our Sugar Land facility. Additionally, in our Taiwan location, we manufacture transceivers for the internet data center, telecom, FTTH and other markets. In our China facility, we take advantage of lower labor costs and manufacture certain more labor intensive components and optical equipment systems, such as optical subassemblies and transceivers for the internet data center market, CATV transmitters (at the headend) and CATV outdoor equipment (at the node). Each manufacturing facility conducts testing on the components, modules or subsystems it manufactures and each facility is certified to ISO 9001:2015. Our facilities in Ningbo, China, Taipei, Taiwan, and Sugar Land, Texas are all certified to ISO 14001:2015.

Our business depends on winning competitive bid selection processes to develop components, systems and equipment for use in our customers' products. These selection processes are typically lengthy, and as a result our sales cycles will vary based on the level of customization required, market served, whether the design win is with an existing or new customer and whether our solution being designed in our customers' product is our first generation or subsequent generation product. We do not have any long-term purchase commitments (in excess of one year) with any of our customers, most of whom purchase our products on a purchase order basis. However, once one of our solutions is incorporated into a customer's design, we believe that our solution is likely to continue to be purchased for that design throughout that product's life cycle because of the time and expense associated with redesigning the product or substituting an alternative solution.

Our principal executive offices are located at 13139 Jess Pirtle Blvd., Sugar Land, TX 77478, and our telephone number is (281) 295-1800.

COVID-19 Pandemic

We are subject to risks and uncertainties as a result of the COVID-19 pandemic. The extent of the impact of the COVID-19 pandemic on our business is highly uncertain and difficult to predict as coronavirus continues to spread around the world. In March 2020, we instituted travel restrictions and implemented sanitation and disinfection procedures to safeguard the health and safety of our employees which continue today. Recently, we began allowing certain employee travel, but continue strict sanitation procedures in our facilities. With increased vaccinations and the potential significant reduction of infections, we have implemented procedures for a safe return to the office environment for all of our employees. However, the spread of COVID-19 may still impact our supply chain operations through restrictions, reduced capacity and shutdown of business activities by suppliers whom we rely on for sourcing components and materials and third-party partners whom we rely on for manufacturing, warehousing and logistics services. Although demand for many of our products has been strong in the short-term as subscribers seek more bandwidth, customers' purchasing decisions over the long-term may be impacted by the pandemic and its impact on the economy, which could in turn impact our revenue and results of operations. The extent to which the COVID-19 pandemic may materially impact our financial condition, liquidity or results of operations is therefore uncertain.

Results of Operations

The following table set forth our consolidated results of operations for the periods presented and as a percentage of our revenue for those periods (in thousands, except percentages):

	Three months ended June 30, 2021		Three months ended June 30, 2020		Six months ended June 30, 2021		Six months ended June 30, 2020	
Revenue, net	$ 54,189	100.0%	$ 65,222	100.0%	$ 103,890	100.0%	$ 105,689	100.0%
Cost of goods sold	43,411	80.1%	51,486	78.9%	82,393	79.3%	85,615	81.0%
Gross profit	10,778	19.9%	13,736	21.1%	21,497	20.7%	20,074	19.0%
Operating expenses								
Research and development	10,914	20.1%	10,803	16.6%	21,842	21.0%	21,361	20.2%
Sales and marketing	2,832	5.2%	3,430	5.3%	5,792	5.6%	6,366	6.0%
General and administrative	10,681	19.7%	10,611	16.3%	21,550	20.7%	21,249	20.1%
Total operating expenses	24,427	45.1%	24,844	38.1%	49,184	47.3%	48,976	46.3%
Loss from operations	(13,649)	(25.2)%	(11,108)	(17.0)%	(27,687)	(26.7)%	(28,902)	(27.3)%
Other income (expense)								
Interest income	16	0.0%	47	0.1%	32	0.0%	194	0.2%
Interest expense	(1,367)	(2.5)%	(1,489)	(2.3)%	(2,798)	(2.7)%	(2,944)	(2.8)%
Other income, net	6,797	12.5%	974	1.5%	6,628	6.4%	1,231	1.2%
Total other income (expense), net	5,446	10.1%	(468)	(0.7)%	3,862	3.7%	(1,519)	(1.4)%
Loss before income taxes	(8,203)	(15.1)%	(11,576)	(17.7)%	(23,825)	(22.9)%	(30,421)	(28.8)%
Income tax expense	-	(0.0)%	(7,024)	(10.8)%	-	(0.0)%	(4,976)	(4.7)%
Net loss	$ (8,203)	(15.1)%	$ (18,600)	(28.5)%	$ (23,825)	(22.9)%	$ (35,397)	(33.5)%

Comparison of Financial Results

Revenue

We generate revenue through the sale of our products to equipment providers and network operators for the internet data center, CATV, telecom and FTTH markets. We derive a significant portion of our revenue from our top ten customers, and we anticipate that we will continue to do so for the foreseeable future. The following charts provide the revenue contribution from each of the markets we served for the three and six months ended June 30, 2021 and 2020 (in thousands, except percentages):

	Three months ended June 30,				Change	
	2021	% of Revenue	2020	% of Revenue	Amount	%
Data Center	$ 22,392	41.3%	$ 52,533	80.5%	$ (30,141)	(57.4)%
CATV	27,599	50.9%	6,141	9.4%	21,458	349.4%
Telecom	3,333	6.2%	6,170	9.5%	(2,837)	(46.0)%
FTTH	298	0.0%	1.00	0.0%	297	0.0%
Other	567	1.0%	377	0.6%	190	50.4%
Total Revenue	$ 54,189	100.0%	$ 65,222	100.0%	$ (11,033)	(16.9)%

	Six months ended June 30,				Change	
	2021	% of Revenue	2020	% of Revenue	Amount	%
Data Center	$ 48,331	46.5%	$ 85,797	81.2%	$ (37,466)	(71.3)%
CATV	46,238	44.5%	10,364	9.8%	35,874	346.1%
Telecom	7,811	7.5%	8,730	8.3%	(919)	(10.5)%
FTTH	722	0.0%	1	0.0%	721	0.0%
Other	788	0.8%	797	0.8%	(9)	(1.1)%
Total Revenue	$ 103,890	100.0%	$ 105,689	100.0%	$ (1,799)	(1.7)%

The decrease in revenue during the three and six months ended June 30, 2021 was driven primarily by decrease demand for datacenter segment; this slowdown was related to inventory normalization following the surge in demand that was driven by the shift to working from home early last year. We believe datacenter demand will improve in the second half and beyond. The decreased demand in the datacenter segment was offset by increased demand for CATV products from several existing customers. The increase in demand from CATV multiple-system operators ("MSOs") resulted in strong demand for our CATV products, especially those products that are related to architecture improvements to enable delivery of additional bandwidth to consumers. This increase in bandwidth demand is particularly acute in the upstream direction, and sales of products associated with increased return-path bandwidth were notably strong in the quarter. Based on forecasts and current order bookings, we believe that this CATV demand will likely continue through 2021.

For the three months ended June 30, 2021 and 2020, our top ten customers represented 86.8% and 86.9% of our revenue, respectively. For the six months ended June 30, 2021 and 2020, our top ten customers represented 88.0% and 86.0% of our revenue, respectively. We believe that diversifying our customer base is critical for our future success, since reliance on a small number of key customers makes our ability to forecast future results dependent upon the accuracy of the forecasts we receive from those key customers. The growth in revenue from our top ten customers in the six months ended June 30, 2021 is primarily due to growth in our CATV segment. We continue to prioritize new customer acquisition and growth of diverse revenue streams.

Cost of goods sold and gross margin

	Three months ended June 30,					
	2021		2020		Change	
	Amount	% of Revenue	Amount	% of Revenue	Amount	%
	(in thousands, except percentages)					
Cost of goods sold	$ 43,411	80.1%	$ 51,486	78.9%	$ (8,075)	(15.7)%
Gross margin	10,778	19.9%	13,736	21.1%		

	Six months ended June 30,					
	2021		2020		Change	
	Amount	% of Revenue	Amount	% of Revenue	Amount	%
	(in thousands, except percentages)					
Cost of goods sold	$ 82,393	79.3%	$ 85,615	81.0%	$ (3,222)	(3.8)%
Gross margin	21,497	20.7%	20,074	19.0%		

Cost of goods sold decreased by $8.1 million, or 15.7%, for the three months ended June 30, 2021 as compared to the three months ended June 30, 2020, primarily due to 16.9% decrease in sales over the prior year. Cost of goods sold decreased by $3.2 million, or 3.8%, for the six months ended June 30, 2021 as compared to six months ended June 30, 2021, primarily due to 1.7% decrease in sales over the prior year.

Gross margin decreased for the three months ended June 30, 2021 as compared to the three months ended June 30, 2020 primarily as a result of changes in the mix of products in our datacenter and CATV segment. In particular, we saw an increase in sales of certain CATV products relative to sales of transceivers. This product mix resulted in overall changes in gross margin. Gross margin increased for the six months ended June 30, 2021 as compared to the six months ended June 30, 2020 primarily due to production inefficiencies, higher costs of certain raw materials in prior year at the beginning of the COVID-19 pandemic.

Operating expenses

	Three months ended June 30,				Change	
	2021		2020			
	Amount	% of revenue	Amount	% of revenue	Amount	%
	(in thousands, except percentages)					
Research and development	$ 10,914	20.1%	$ 10,803	16.6%	$ 111	1.0%
Sales and marketing	2,832	5.2%	3,430	5.3%	(598)	(17.4)%
General and administrative	10,681	19.7%	10,611	16.3%	70	0.7%
Total operating expenses	$ 24,427	45.1%	$ 24,844	38.1%	$ (417)	(1.7)%

	Six months ended June 30,				Change	
	2021		2020			
	Amount	% of revenue	Amount	% of revenue	Amount	%
	(in thousands, except percentages)					
Research and development	$ 21,842	21.0%	$ 21,361	20.2%	$ 481	2.3%
Sales and marketing	5,792	5.6%	6,366	6.0%	(574)	(9.0)%
General and administrative	21,550	20.7%	21,249	20.1%	301	1.4%
Total operating expenses	$ 49,184	47.3%	$ 48,976	46.3%	$ 208	0.4%

Research and development expense

Research and development expense slightly increased for the three months ended June 30, 2021 as compared to the three months ended June 30, 2020. Research and development expense increased by $0.5 million, or 2.3% for the six months ended June 30, 2021 as compared to the six months ended June 30, 2020. Research and development costs consist of R&D work orders, R&D material usage and other project related costs related to 100 Gbps, 200/400 Gbps data center products, DOCSIS 3.1 capable CATV products and other new product development, and depreciation expense resulting from R&D equipment investments. These increases were primarily due to an increase in costs from R&D work orders and repair and maintenance as a result of winter storm Uri.

Sales and marketing expense

Sales and marketing expense decreased by $0.6 million, or 17.4% for the three months ended June 30, 2021 as compared to the three months ended June 30, 2020. Selling and marketing expense decreased by 0.6 million, or 9.0% for the six months ended June 30, 2021 as compared to the six months ended June 30, 2020. These decreases were primarily due to decrease in commission expenses and shipping and handling charges.

General and administrative expense

General and administrative expense slightly increased for the three months ended June 30, 2021 compared to the three months ended June 30, 2020. General and administrative expense increased by $0.3 million, or 1.4% for the six months ended June 30, 2021 compared to the six months ended June 30, 2020. These increases were primarily due to expense related to winter storm Uri. These increases were partially offset by a decrease in personnel-related costs, share-based compensation expense and professional service fees.

Other income (expense), net

	Three months ended June 30,					
	2021		2020		Change	
	Amount	% of revenue	Amount	% of revenue	Amount	%
	(in thousands, except percentages)					
Interest income	$ 16	(0.0)%	$ 47	0.1%	$ (31)	(66.0)%
Interest expense	(1,367)	(2.5)%	(1,489)	(2.3)%	122	(8.2)%
Other income (expense), net	6,797	(12.5)%	974	1.5%	5,823	597.8%
Total other income (expense), net	$ 5,446	(10.1)%	$ (468)	(0.7)%	$ 5,914	(1263.7)%

	Six months ended June 30,					
	2021		2020		Change	
	Amount	% of revenue	Amount	% of revenue	Amount	%
	(in thousands, except percentages)					
Interest income	$ 32	0.0%	$ 194	0.2%	$ (162)	(83.5)%
Interest expense	(2,798)	(2.7)%	(2,944)	(2.8)%	146	(5.0)%
Other income (expense), net	6,628	6.4%	1,231	1.2%	5,397	438.4%
Total other income (expense), net	$ 3,862	(3.7)%	$ (1,519)	(1.4)%	$ 5,381	(354.2)%

Interest income decreased slightly for the three and six months ended June 30, 2021 compared to the three and six months ended June 30, 2020. The changes are similar to expected rates of fluctuation with the interest rates and cash balances.

Interest expense decreased slightly for the three and six months ended June 30, 2021 compared to the three and six months ended June 30, 2020. This decrease was due to lower average debt balances during the period.

Other income (expense), net increased by $5.8 million or 597.8% for the three months ended June 30, 2021 as compared to the three months ended June 30, 2020. Other income (expense), net increased by $5.4 million, or 438.4% for the six months ended June 30, 2021 as compared to the six months ended June 30, 2020. The increase in other income during the quarter is primarily due to forgiveness by the SBA of the Company's PPP Loan forgiveness application for the entire PPP Loan balance of $6.23 million.

Benefit (provision) for income taxes

	Three months ended June 30,			
	2021	2020	Change	
	(in thousands, except percentages)			
Benefit (provision) for income taxes	$ -	$ (7,024)	7,024	(100.0)%

	Six months ended June 30,			
	2021	2020	Change	
	(in thousands, except percentages)			
Benefit (provision) for income taxes	$ -	$ (4,976)	4,976	(100.0)%

The Company’s effective tax rate for the three months ended June 30, 2021 and 2020 wa s 0% and 258.2%, respectively. For the three months ended June 30, 2021, the effective tax rate varied from the federal statutory rate of 21% primarily due to the benefit of the nontaxable PPP loan forgiveness, offset by the change of the valuation allowance on federal, state, Taiwan, and China deferred tax assets ("DTA"). For the three months ended June 30, 2020, the effective tax rate varies from the federal statutory rate of 21% primarily due to the level and mix of earnings amount tax jurisdictions, and the change of the valuation allowance on the US and state DTA, and the recording of a valuation allowance on Taiwan deferred tax assets.

The Company’s effective tax rate for the six months ended June 30, 2021 and 2020 was 0% and (16.25%), respectively. For the six months ended June 30, 2021, the effective tax rate varied from the federal statutory rate of 21% primarily due to the change of the valuation allowance on federal, state, Taiwan, and China DTA. For the six months ended June 30, 2020, the effective tax rate varied from the federal statutory rate of 21% primarily due to the level and mix of earnings among tax jurisdictions, the change of the valuation allowance on the US and state deferred tax assets, and the recording of a valuation on Taiwan deferred tax assets.

Liquidity and Capital Resources

As of June 30, 2021, we had $5.3 million of unused borrowing capacity from all of our loan agreements. As of June 30, 2021, our cash, cash equivalents and restricted cash totaled $50.5 million. Cash and cash equivalents are held for working capital purposes and are invested primarily in money market or time deposit funds. We do not enter into investments for trading or speculative purposes.

On October 24, 2019, we filed a Registration Statement on Form S-3 with the Securities and Exchange Commission, which was declared effective on January 9, 2020, providing for the public offer and sale of certain securities of the Company from time to time, at our discretion, up to an aggregate amount of $250 million.

On February 28, 2020, we entered into an Equity Distribution Agreement with Raymond James & Associates, Inc. (the "Sales Agent") pursuant to which the Company may issue and sell shares of the Company's common stock having an aggregate offering price of up to $55 million (the "Initial ATM Offering"), from time to time through the Sales Agent. In January 2021, the Company completed its Initial ATM Offering and sold 5.9 million shares at a weighted average price of $9.12 per share, providing proceeds of $53.9 million, net of expenses and underwriting discounts and commissions.

On February 26, 2021, we entered into another Equity Distribution Agreement (the "Agreement") with the Sale Agent pursuant to which the Company may issue and sell shares of the Company's common stock, par value $0.001 per share (the "Shares") having an aggregate offering price of up to $35 million (the "Second ATM Offering"), respectively, from time to time through the Sales Agent. Upon delivery of a placement notice and subject to the terms and conditions of the Agreement, sales, if any, of the Shares will be made through the Sales Agent in transactions that are deemed to be "at the market" offerings as defined in Rule 415 of the Securities Act of 1933, as amended (the "Securities Act"), including sales made through the facilities of the Nasdaq Global Market, the principal trading market for the Company's common stock, on any other existing trading market for the Company's common stock, to or through a market maker or as otherwise agreed by the Company and the Sales Agent. In the placement notice, the Company will designate the maximum number of Shares to be sold through the Sales Agent, the time period during which sales are requested to be made, the minimum price for the Shares to be sold, and any limitation on the number of Shares that may be sold in any one day. Subject to the terms and conditions of the Agreement, the Sales Agent will use its commercially reasonable efforts to sell Shares on the Company's behalf up to the designated amount specified in the placement notice. The Company has no obligation to sell any Shares under the Agreement and may at any time suspend offers and sales of the Shares under the Agreement.

The Agreement provides that the Sales Agent will be entitled to compensation of up to 2% of the gross sales price of the Shares sold through the Sales Agent from time to time. The Company has also agreed to reimburse the Sales Agent for certain specified expenses in connection with the registration of Shares under state blue sky laws and any filing with, and clearance of the offering by, the Financial Industry Regulatory Authority Inc., not to exceed $10,000 in the aggregate, and any associated application fees incurred. Additionally, if the Agreement is terminated under certain circumstances, and the Company fails to sell a minimum amount of the Shares as set forth in the Agreement, then the Company has agreed to reimburse the Sales Agent for reasonable out-of-pocket expenses, including the reasonable fees and disbursements of counsel incurred by the Sales Agent, up to a maximum of $30,000 in the aggregate. The Company agreed to indemnify the Sales Agent against certain liabilities, including liabilities under the Securities Act, or to contribute to payments that the Sales Agent may be required to make because of any of those liabilities.

In March 2021, we commenced sales of common stock through the Second ATM Offering. The details of the shares of common stock sold through the Second ATM Offering through June 30, 2021 are as follows (in thousands, except shares and weighted average per share price):

Distribution Agent	Month	Weighted Average Per Share Price	Number of Shares Sold	Net Proceeds	Compensation to Distribution Agent
Raymond James & Associates, Inc.	March 2021	$ 9.0622	65,748	$ 584	$ 12
Raymond James & Associates, Inc.	June 2021	$ 9.1115	34,686	$ 310	$ 6

As of June 30, 2021, the total gross sales were $0.9 million and thus remaining amount of common stock we have available to sell under the ATM Offering is $34.1 million.

On March 5, 2019, the Company issued $80.5 million of 5% convertible senior notes due 2024, bearing interest at a rate of 5% per year maturing on March 15, 2024, unless earlier repurchased, redeemed or converted in accordance with their terms. The sale of the Notes generated net proceeds of $76.4 million, after expenses. Also refer to Note 12 "Convertible Senior Notes" to the consolidated financial statements for further discussion of the Notes.

The table below sets forth selected cash flow data for the periods presented (in thousands):

	Six months ended June 30, 2021	Six months ended June 30, 2020
Net cash used in operating activities	$ (14,882)	$ (23,769)
Net cash used in investing activities	(3,932)	(9,219)
Net cash provided by financing activities	19,845	25,101
Effect of exchange rates on cash and cash equivalents	(646)	(232)
Net decrease in cash and cash equivalents	$ 385	$ (8,119)

Operating activities

For the six months ended June 30, 2021, net cash used in operating activities was $14.9 million. Net cash used in operating activities consisted of our net loss of $23.8 million after exclusion of non-cash items of $21.9 million. Cash decreased due to an increase in accounts receivable and trade receivables from our customers of $5.4 million and $3.4 million, respectively, a decrease in accrued liabilities of $3.1 million, a decrease in accounts payable to our vendors of $3.9 million, offset by a decrease in inventory of $8.9 million.

For the six months ended June 30, 2020, net cash used in operating activities was $23.8 million. Net cash used in operating activities consisted of our net loss of $35.4 million after exclusion of non-cash items of $27.1 million. Cash decreased due to an increase in inventory of $15.4 million and accounts receivable from our customers of $9.7 million, offset by an increase in accounts payable to our vendors of $12.7 million.

Investing activities

For the six months ended June 30, 2021, net cash used in investing activities was $3.9 million, mainly from the purchase of additional plant, machinery and equipment.

For the six months ended June 30, 2020, net cash used in investing activities was $9.2 million, mainly from the purchase of additional plant, machinery and equipment.

Financing activities

For the six months ended June 30, 2021, our financing activities provided $19.8 million in cash. This increase in cash was due to $15.3 million of net proceeds from our At The Market (ATM) Offerings, $16.6 million proceeds from line of credit, offset by repayment of loan and bank acceptance of $2.2 million and $9.5 million, respectively.

For the six months ended June 30, 2020, our financing activities provided $25.1 million in cash. This increase in cash was due to $13.9 million of net proceeds from our At The Market (ATM) Offering, $6.2 million proceeds from PPP term loan, $1.7 million net proceeds from lines of credit and $3.7 million net proceeds from acceptances payable.

Loans and commitments

We have lending arrangements with several financial institutions. In the US, we have a revolving line of credit with Truist Bank. The line of credit contains financial covenants that may limit the amount and types of debt that we may incur. As of June 30, 2021, we were in compliance with these covenants.

In Taiwan, we have a revolving credit facility with Taishin International Bank and equipment finance agreements with Chailease Finance Co., Ltd. for Prime World's Taiwan Branch. In China, we have revolving lines of credit with China Merchants Bank Co., Ltd. and Shanghai Pudong Development Bank Co., Ltd. and credit facilities with China Zheshang Bank Co., Ltd. for our China Subsidiary, Global.

As of June 30, 2021, we had $5.3 million of unused borrowing capacity.

On March 5, 2019, we issued $80.5 million of 5% convertible senior notes due 2024. The Notes will mature on March 15, 2024, unless earlier repurchased, redeemed or converted in accordance with their terms.

See Note 11 "Notes Payable and Long-term Debt" and Note 12 "Convertible Senior Notes" of our Condensed Consolidated Financial Statements for a description of our notes payable and long-term debt and convertible senior notes.

China factory construction

On February 8, 2018, we entered into a construction contract with Zhejiang Xinyu Construction Group Co., Ltd. for the construction of a new factory and other facilities at our Ningbo, China location. Construction costs for these facilities under this contract are estimated to total approximately $27.5 million. As of June 30, 2021, construction of the building is complete, and approximately $27.4 million of this total cost has been paid and the remaining portion will be paid in yearly installments for three years after final inspection. We anticipate additional expenses for building improvements to the factory and we are in the process of evaluating the timing of these expenditures and obtaining bids for any such work.

Future liquidity needs

We believe that our existing cash and cash equivalents, cash flows from our operating activities, and available credit will be sufficient to meet our anticipated cash needs for the next 12 months. Our future capital requirements will depend on many factors including our growth rate, the timing and extent of spending to support our research and development efforts, the expansion of our sales and marketing activities, the introduction of new and enhanced products, the building improvement of a new factory and other facilities at our Ningbo, China location, changes in our manufacturing capacity and the continuing market acceptance of our products. In the event we need additional liquidity, we will explore additional sources of liquidity. These additional sources of liquidity could include one, or a combination, of the following: (i) issuing equity or debt securities, (ii) incurring indebtedness secured by our assets and (iii) selling product lines, other assets and/or portions of our business. There can be no guarantee that we will be able to raise additional funds on terms acceptable to us, or at all.

Contractual Obligations and Commitments

The following summarizes our contractual obligations as of June 30, 2021 (in thousands):

	Payments due by period				
	Total	**Less than 1 Year**	**1-3 Years**	**3-5 Years**	**More than 5 Years**
Notes payable and long-term debt(1)	$ 61,236	$ 41,876	$ 19,360	$ —	$ —
Convertible senior notes(2)	90,673	4,025	86,648	—	—
Operating leases(3)	9,821	1,285	2,582	2,468	3,486
Financing leases(3)	98	22	76	—	—
Total commitments	$ 161,828	$ 47,208	$ 108,666	$ 2,468	$ 3,486

(1) We have several loan and security agreements in China, Taiwan and the U.S. that provide various credit facilities, including lines of credit, bank acceptance payable and term loans. The amount presented in the table represents the principal portion and estimated interest expense for the obligations.
(2) We issued convertible senior notes due 2024. The amount present in the table represents the principal portion and estimated interest expense for the obligations.
(3) We have entered into various non-cancellable lease agreements for our offices in Taiwan and in the U.S.

Inflation

We believe that the relatively low rate of inflation in the U.S. over the past few years has not had a significant impact on our net sales and revenues or on income from continuing operations or on the prices of raw materials. To the extent we expand our operations in China and Taiwan, such actions may result in inflation having a more significant impact on our operating results in the future.

Off-Balance Sheet Arrangements

For the six months ended June 30, 2021, we did not, and do not currently, have any off-balance sheet arrangements.

Critical Accounting Policies and Estimates

In our Annual Report for the year ended December 31, 2020 and in the Notes to the Financial Statements herein, we identify our most critical accounting policies. In preparing the financial statements, we make assumptions, estimates and judgments that affect the amounts reported. We periodically evaluate our estimates and judgments that are most critical in nature which are related to revenue recognition, allowance for credit losses, inventory reserves, impairment of long-lived assets (excluding goodwill and other indefinite-lived intangible assets), goodwill and other indefinite-lived intangible assets, purchase price allocation of acquisitions, service and product warranties, and income taxes. Our estimates are based on historical experience and on our future expectations that we believe are reasonable. The combination of these factors forms the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results are likely to differ from our current estimates and those differences may be material.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

For quantitative and qualitative disclosures about market risk affecting the Company, see Item 7A – Quantitative and Qualitative Disclosures about Market Risk in our Annual Report for the fiscal year ended December 31, 2020. We do not believe the Company's exposure to market risk has changed materially since December 31, 2020.

Item 4. Controls and Procedures

The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Our disclosure controls and procedures are designed to provide reasonable assurance of achieving their control objectives.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of June 30, 2021. Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of the end of the period covered by this report, our disclosure controls and procedures were effective.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the three month period covered by this Quarterly Report on Form 10-Q, which were identified in connection with management's evaluation required by the Rules 13a-15(d) and 15d-15(d) under the Exchange Act that occurred during our last fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Part II. Other Information

Item 1. Legal Proceedings

Information with respect to legal proceedings can be found under the heading "Contingencies" in Note 18 to the Condensed Consolidated Financial Statements contained in Part 1, Item 1 of this report.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. See Part I, Item 1A, Risk Factors, of our Annual Report on Form 10-K for the year ended December 31, 2020 for a detailed discussion of the risk factors affecting our Company. As of June 30, 2021, there have been no material changes to those risk factors.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

None.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

See Exhibit Index.

EXHIBIT INDEX

Number	Description
3.1*	Amended and Restated Certificate of Incorporation, as currently in effect (filed as Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on November 14, 2013).
3.2*	Amended and Restated Bylaws, as currently in effect (filed as Exhibit 3.2 to the Registrant's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on November 14, 2013).
4.1*	Common Stock Specimen (filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on July 15, 2015).
4.2*	Indenture, dated as of March 5, 2019 between Applied Optoelectronics, Inc. and Wells Fargo Bank, National Association, as trustee, paying agent, and conversion agent (filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on March 5, 2019).
4.3*	Form of Note representing the Company's 5.00% Convertible Senior Notes due 2024 (included as Exhibit A to the Indenture filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on March 5, 2019).
10.1*	Fifth Amendment to Loan Agreement and Fourth Amendment to Security Agreement, dated April 5, 2021, between Applied Optoelectronics, Inc. and Truist Bank (included as Exhibit 10.1 to the Registrants Current Report on Form 8-K filed with the Securities and Exchange Commission on April 9, 2021).
10.2*	Note Modification Agreement, dated April 5, 2021, between Applied Optoelectronics, Inc. and Truist Bank (included as Exhibit 10.2 to the Registrants Current Report on Form 8-K filed with the Securities and Exchange Commission on April 9, 2021).
10.3*	Addendum to Promissory Note, dated April 5, 2021, between Applied Optoelectronics, Inc. and Truist Bank (included as Exhibit 10.3 to the Registrants Current Report on Form 8-K filed with the Securities and Exchange Commission on April 9, 2021).
10.4†*	2021 Stock Incentive Plan (included as Exhibit 10.1 to the Registrants Current Report on Form 8-K filed with the Securities and Exchange Commission on June 3, 2021).
10.4.1†**	Form of Restricted Stock Unit Award Agreement under 2021 Equity Incentive Plan.
10.4.2†**	Form of Performance Restricted Stock Unit Award Agreement under 2021 Equity Incentive Plan.
31.1**	Certification of Chief Executive Officer pursuant to Exchange Act Rule, 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2**	Certification of Chief Financial Officer pursuant to Exchange Act Rule, 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1**	Certification pursuant to 18 U.S.C. 1350, adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, by Chief Executive Officer and Chief Financial Officer.
101.INS**	Inline XBRL Instance – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH**	Inline XBRL Taxonomy Extension Schema Document.
101.CAL**	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF**	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB**	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.PRE**	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104**	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

* Incorporated herein by reference to the indicated filing.
** Filed herewith.
† Management contract, compensatory plan or arrangement.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

APPLIED OPTOELECTRONICS, INC.

Date: August 5, 2021

By: /s/ STEFAN J. MURRY
Stefan J. Murry
Chief Financial Officer
(principal financial officer and principal accounting officer)

Exhibit 10.4.1

APPLIED OPTOELECTRONICS, INC.

2021 EQUITY INCENTIVE PLAN

NOTICE OF RESTRICTED STOCK UNIT AWARD

Subject to the terms and conditions of this Notice of Restricted Stock Unit Award (this "Notice"), the Restricted Stock Unit Award Agreement attached hereto (the "Award Agreement"), and the Applied Optoelectronics, Inc. 2021 Equity Incentive Plan (the "Plan"), the below individual (the "Participant") is hereby granted the below number of Restricted Stock Units (the "RSUs") in the Common Stock of Applied Optoelectronics, Inc. (the "Company"). Unless otherwise specifically indicated, all terms used in this Notice shall have the meaning as set forth in the Award Agreement or the Plan.

Identifying Information:

Participant Name:
and Address:
Employee ID / Participant Code:
Grant Number:
Number of RSUs:
Date of Grant:
Vesting Commencement Date:

Vesting Schedule:
Subject to the Participant's continuous status as a Service Provider, and the terms of the Plan and this Award Agreement, the RSUs shall vest over a [ ]-year period in accordance with the following vesting schedule (the "Vesting Schedule"):

Vesting Date	Nonforfeitable Proportion

Notwithstanding the above, the RSUs shall automatically become fully vested upon the earlier of: (i) the Participant's Disability (as determined in the sole discretion of the Company) and (ii) the Participant's death.

[SIGNATURES ON NEXT PAGE]

By your signature and the signature of the Company's representative below, the Participant and the Company agree that the RSUs granted are governed by the terms and conditions of this Notice, the Award Agreement and the Plan.

APPLIED OPTOELECTRONICS, INC.

By:

Its:

Date:

PARTICIPANT ACKNOWLEDGMENT

The Participant acknowledges receipt of a copy of this Notice, the Award Agreement and the Plan, and represents that he or she is familiar with the provisions thereof, and hereby accepts the RSUs subject to all of the terms and provisions hereof and thereof. The Participant has reviewed this Notice, the Award Agreement and the Plan in their entirety, has had an opportunity to obtain the advice of legal counsel prior to executing this Notice, the Award Agreement, and fully understands all provisions of this Notice, the Award Agreement and the Plan. The Participant hereby agrees that all questions of interpretation and administration relating to this Notice, the Award Agreement and the Plan shall be resolved by the Committee.

The Participant hereby acknowledges that he or she has had the opportunity to review with his or her own tax advisors the tax consequences of receiving this Notice, the Award Agreement and the Plan, and the transactions contemplated thereby, including any U.S. federal, state and local tax laws, and any other applicable taxing jurisdiction, prior to executing this Notice. The Participant attests that he or she is relying solely on such advisors and not on any statements or representations of the Company or any of its agents or affiliates. Further, the Participant hereby acknowledges and understands that he or she (and not the Company) shall be solely responsible for his or her tax liability that may arise as a result of receiving this Notice and the Award Agreement.

PARTICIPANT:

Signed:

Print Name:

Date:

APPLIED OPTOELECTRONICS, INC.

2021 EQUITY INCENTIVE PLAN

RESTRICTED STOCK UNIT AWARD AGREEMENT

Subject to the terms and conditions of the Notice of Restricted Stock Unit Award (the "Notice"), this Restricted Stock Unit Award Agreement (this "Award Agreement"), and the Applied Optoelectronics, Inc. 2021 Equity Incentive Plan (the "Plan"), the individual set forth in the Notice (the "Participant") is hereby granted Restricted Stock Units (the "RSUs") in the Common Stock of Applied Optoelectronics, Inc. (the "Company"). Unless otherwise specifically indicated, all terms used in this Award Agreement shall have the meaning as set forth in the Notice or the Plan.

1. Vesting Schedule and Risk of Forfeiture.

(a) Vesting Schedule. Subject to the Participant's continuous service with the Company as a Service Provider and any other limitations set forth in the Notice, the Plan or this Award Agreement, the RSUs shall vest in accordance with the Vesting Schedule provided in the Notice.

(b) Risk of Forfeiture. The RSUs shall be subject to a risk of forfeiture until such time that the risk of forfeiture lapses in accordance with the Vesting Schedule. All or any portion of the RSUs subject to a risk of forfeiture shall automatically be forfeited and immediately returned to the Company if the Participant's continuous status as a Service Provider is interrupted or terminated for any reason, unless otherwise provided by the Administrator. The Company shall implement any forfeiture under this Section 1 in a unilateral manner, without the Participant's consent, and with no payment to the Participant, cash or otherwise, for any unvested RSUs that are forfeited. Additionally, all of the RSUs subject to this Award Agreement shall immediately become forfeited if the Participant fails to fully satisfy Section 3(b) of this Award Agreement, as determined by the Committee.

2. Settlement of RSUs into Shares. Subject to the terms of this Award Agreement, and only to the extent all or any portion of the RSUs become nonforfeitable pursuant to the Vesting Schedule, each RSU that becomes nonforfeitable shall be converted into one Share of the Company's Common Stock on the Vesting Date (as defined in the Vesting Schedule); and at such time the Shares shall be distributed to the Participant as soon as administratively possible after such event, but in no event later than two-and-one-half (2.5) months after the end of the year in which such event occurred.

3. Taxes. The Participant hereby acknowledges and understands that he or she may suffer adverse tax consequences as a result of the Participant's receipt of, vesting in, or disposition of, the RSUs.

(a) Representations. The Participant has reviewed with his or her own tax advisors the tax consequences of this Award Agreement and the RSUs granted hereunder, including any U.S. federal, state and local tax laws, and any other applicable taxing jurisdiction. The Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents. The Participant hereby acknowledges and understands that he or she (and not the Company) shall be responsible for his or her own tax liability that may arise as a result of his or her receiving this Award Agreement and the RSUs granted hereunder.

(b) Payment of Withholding Taxes. The Participant shall make appropriate arrangements with the Company for the satisfaction of all U.S. federal, state, local and non-U.S. income and employment tax withholding requirements applicable to any RSUs that settle in Shares of Common Stock in accordance with Section 2.

The Company may satisfy its withholding obligation in its discretion by (i) withholding the balance of all applicable amounts legally payable by the Participant through wages or other cash compensation paid to the Participant by the Company and/or (ii) withholding in Shares, provided that the Company does not withhold an amount of Shares in excess of the amount necessary to satisfy the applicable withholding amount based on the maximum statutory tax rates in the Participant's applicable jurisdiction. The Participant hereby agrees that a breach of this Section 3(b) shall be deemed to be a material breach of this Award Agreement.

The Participant hereby acknowledges his or her understanding that the Company's obligations under this Award Agreement are fully contingent on the Participant first satisfying this Section 3(b). Therefore, a failure of the Participant to reasonably satisfy this Section 3 in accordance with the Committee's sole and absolute discretion shall result in the automatic termination and expiration of this Award Agreement and the Company's obligations hereunder.

(c) No Application of Section 409A. The RSUs and this Award Agreement are intended to avoid the application of Section 409A of the Code ("Section 409A") because either (i) there is no deferral arrangement or (ii) the Award Agreement satisfies an exemption available under Section 409A such as the short-term deferral rule. Notwithstanding any other provision in the Plan or this Award Agreement to the contrary, the Committee shall have the right, in its sole discretion, to adopt such amendments to the Plan or this Award Agreement or take such other actions (including amendments and actions with retroactive effect) as the Committee determines are necessary or appropriate for the RSUs to comply with Section 409A.

4. Transferability of RSUs. The RSUs may not be transferred in any manner other than by will or by the laws of descent and distribution. Any purported transfer of RSUs in breach of this Award Agreement shall be void and ineffective and shall not operate to transfer any interest or title in the purported transferee. Notwithstanding the foregoing, the Participant may designate one or more beneficiaries of the Participant's RSUs in the event of the Participant's death on a beneficiary designation form provided by the Committee. The terms of this Award Agreement shall be binding upon the executors, administrators, heirs, successors and transferees of the Participant.

5. Rights as a Shareholder of the Company. The Participant's receipt of the grant of RSUs pursuant to this Award Agreement shall provide and confer no rights or status as a shareholder of the Company until such time the RSUs are converted in accordance with Section 2 of this Award Agreement.

6. Legality of Initial Issuance. No Shares shall be issued in accordance with Section 2 of this Award Agreement unless and until the Committee has determined that: (i) the Company and the Participant have taken all actions required to register the Shares of Common Stock under the Securities Act or to perfect an exemption from the registration requirements thereof, if applicable; (ii) all applicable listing requirements of any stock exchange or other securities market on which the Shares of Common Stock are listed has been satisfied; and (iii) any other applicable provision of state or U.S. federal law or other Applicable Law has been satisfied.

7. Notice. Any notice required by the terms of this Award Agreement shall be given in writing and shall be deemed effective upon personal delivery or upon deposit with the U.S. Postal Service, by registered or certified mail, with postage and fees prepaid. Notice shall be addressed to the Company at its principal executive office and to the Participant at the address that he or she most recently provided to the Company.

8. Successors and Assigns. Except as provided herein to the contrary, this Award Agreement shall be binding upon and inure to the benefit of the parties to this Award Agreement, their respective successors and permitted assigns.

9. No Assignment. Except as otherwise provided in this Award Agreement, the Participant shall not assign any of his or her rights under the Notice or this Award Agreement without the prior written consent of the Company, which consent may be withheld in its sole discretion. The Company shall be permitted to assign its rights or obligations under the Notice or this Award Agreement, but no such assignment shall release the Company of its obligations pursuant to the Notice or this Award Agreement.

10. Severability. It is the desire of the parties hereto that this Award Agreement be enforced to the maximum extent permitted by law, and should any provision contained herein be held unenforceable by a court of competent jurisdiction, the parties hereby agree and consent that such provision shall be reformed to create a valid and enforceable provision to the maximum extent permitted by law; provided, however, if such provision cannot be reformed, the validity, legality or enforceability of the remainder of this Award Agreement shall not be affected even if one or more of the provisions of this Award Agreement shall be held to be invalid, illegal or unenforceable in any respect.

11. Amendment. Any provision of this Award Agreement may be amended and the observance thereof may be waived (either generally or in a particular instance and either retroactively or prospectively) only by a written instrument signed by the parties hereto. Notwithstanding the foregoing or any other provision in the Plan or this Award Agreement to the contrary, the Committee shall have the right, in its sole discretion, to unilaterally adopt amendments to this Award Agreement or the Plan to the minimum extent necessary or appropriate (as determined by the Committee in its sole discretion) for RSUs to comply with Section 409A.

12. Administration and Interpretation. Any determination by the Committee in connection with any question or issue arising under the Notice, the Plan or this Award Agreement shall be final, conclusive and binding on the Participant, the Company and all other persons. Any question or dispute regarding the interpretation of this Award Agreement or the receipt of the RSUs hereunder shall be submitted by the Participant to the Committee. The resolution of such question or dispute by the Committee shall be final and binding on all parties.

13. Headings. The section headings in this Award Agreement are inserted only as a matter of convenience, and in no way define, limit or interpret the scope of this Award Agreement or of any particular section.

14. Counterparts. This Award Agreement may be executed in any number of counterparts, any of which may be executed and transmitted by facsimile, electronic or digital means, and each of which shall be deemed to be an original, but all of which together shall be deemed to be one and the same instrument. Any counterpart or other signature delivered by facsimile shall be deemed for all purposes as being a good and valid execution and delivery of this Award Agreement by that party.

15. Entire Agreement. The provisions of the Plan and the Notice are incorporated herein by reference. Except as otherwise provided herein, the Plan, the Notice and this Award Agreement constitute the entire agreement of the parties with respect to the subject matter hereof and supersede in their entirety all prior undertakings and agreements of the Company and the Participant with respect to the subject matter hereof, and may not be modified adversely to the Participant's interest except by means of a writing signed by the Company and the Participant.

16. Choice of Law and Forum. This Award Agreement shall be governed by, and construed and interpreted in accordance with, the laws of the State of Texas as applicable to contracts executed in and performed in Texas, except to the extent preempted by controlling federal law, but without regard to the principles of conflict of laws under Texas law that might direct the application of the law of another forum. Any action to enforce the provisions of this Award Agreement, or any Dispute relating to this Agreement, must be brought in any federal or state court of competent jurisdiction in Harris or Fort Bend County, Texas, and the Parties hereby waive any objection to such exclusive venue including, without limitation, that it is inconvenient. For all purposes of this Agreement, the term "Dispute" means any dispute, disagreement, controversy, claim, or cause of action arising in connection with, or relating to, this Award Agreement.

17. Waiver of Jury Trial. THE PARTIES HERETO WAIVE ANY RIGHT TO TRIAL BY JURY IN ANY PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT, WHETHER NOW EXISTING OR HEREAFTER ARISING, AND WHETHER SOUNDING IN CONTRACT, TORT OR OTHERWISE. THE PARTIES AGREE THAT ANY OF THEM MAY FILE A COPY OF THIS PARAGRAPH WITH ANY COURT AS WRITTEN EVIDENCE OF THE KNOWING, VOLUNTARY AND BARGAINED-FOR AGREEMENT AMONG THE PARTIES TO IRREVOCABLY WAIVE TRIAL BY JURY, AND THAT ANY PROCEEDING WHATSOEVER BETWEEN THEM RELATING TO THIS AGREEMENT SHALL INSTEAD BE TRIED IN A COURT OF COMPETENT JURISDICTION BY A JUDGE SITTING WITHOUT A JURY.

18. No Guarantee of Service Provider Status. THE PARTICIPANT ACKNOWLEDGES AND AGREES THAT THE VESTING OF RSUs PURSUANT TO THE VESTING SCHEDULE HEREOF IS EARNED ONLY BY CONTINUOUS SERVICE AS A SERVICE PROVIDER AND AT THE WILL OF THE COMPANY (NOT THROUGH THE ACT OF BEING HIRED, BEING GRANTED RSUs OR ACQUIRING COMMON STOCK HEREUNDER). THE PARTICIPANT FURTHER ACKNOWLEDGES AND AGREES THAT THIS AWARD AGREEMENT, THE RIGHT GRANTED HEREUNDER, THE TRANSACTIONS CONTEMPLATED HEREUNDER AND THE VESTING SCHEDULE SET FORTH IN THIS AWARD AGREEMENT DO NOT CONSTITUTE AN EXPRESS OR IMPLIED PROMISE OF CONTINUED ENGAGEMENT AS A SERVICE PROVIDER FOR THE VESTING PERIOD, FOR ANY PERIOD, OR AT ALL, AND SHALL NOT INTERFERE IN ANY WAY WITH THE PARTICIPANT'S RIGHT OR THE COMPANY'S/AFFILIATE'S RIGHT TO TERMINATE THE PARTICIPANT'S RELATIONSHIP AS A SERVICE PROVIDER AT ANY TIME, WITH OR WITHOUT CAUSE.

19. Waiver. Failure to insist upon strict compliance with any of the terms, covenants, or conditions hereof will not be deemed a waiver of such term, covenant, or condition, nor will any waiver or relinquishment of, or failure to insist upon strict compliance with, any right or power hereunder at any one or more times be deemed a waiver or relinquishment of such right or power at any other time or times. Any waiver of the terms or conditions hereof shall be made only by a written instrument executed and delivered by the party waiving compliance. Any waiver granted by the Company shall be effective only if executed and delivered by a duly authorized executive officer of the Company other than Participant.

Exhibit 10.4.2

APPLIED OPTOELECTRONICS, INC.

2021 EQUITY INCENTIVE PLAN

NOTICE OF PERFORMANCE RESTRICTED STOCK UNIT AWARD

Subject to the terms and conditions of this Notice of Performance Restricted Stock Unit Award (this "Notice"), the Performance Restricted Stock Unit Award Agreement attached hereto (the "Award Agreement"), and the Applied Optoelectronics, Inc. 2021 Equity Incentive Plan (the "Plan"), the below individual (the "Participant") is hereby granted the below number of Performance Restricted Stock Units (the "PSUs") in the Common Stock of Applied Optoelectronics, Inc. (the "Company"). Unless otherwise specifically indicated, all terms used in this Notice shall have the meaning as set forth in the Award Agreement or the Plan.

Identifying Information:

Participant Name:
and Address:
Employee ID / Participant Code:
Grant Number:
Target Number of PSUs:
Date of Grant:

Vesting Schedule:

The Award will vest and become payable based on the determination by the Administrator regarding achievement performance goals for the Performance Period as described on **Appendix A**, subject to the Participant's continuous status as a Service Provider through the applicable payment date, and the terms of the Plan and this Award Agreement. Achievement of the performance goals for the Performance Period and vesting of the Award will be determined by the Administrator following the end of the Performance Period and will be effective as of the date on which the Committee makes such determination.

Notwithstanding the above, in the event of the Participant's Termination of Service due to Participant’s Retirement, Disability or death, or without Cause in connection with a Change of Control, the Award will vest and become payable as described on **Appendix A**.

By your signature and the signature of the Company's representative below, the Participant and the Company agree that the PSUs granted are governed by the terms and conditions of this Notice, the Award Agreement and the Plan.

APPLIED OPTOELECTRONICS, INC.

By:

Its:

Date:

PARTICIPANT ACKNOWLEDGMENT

The Participant acknowledges receipt of a copy of this Notice, the Award Agreement and the Plan, and represents that he or she is familiar with the provisions thereof, and hereby accepts the PSUs subject to all of the terms and provisions hereof and thereof. The Participant has reviewed this Notice, the Award Agreement and the Plan in their entirety, has had an opportunity to obtain the advice of legal counsel prior to executing this Notice, the Award Agreement, and fully understands all provisions of this Notice, the Award Agreement and the Plan. The Participant hereby agrees that all questions of interpretation and administration relating to this Notice, the Award Agreement and the Plan shall be resolved by the Committee.

The Participant hereby acknowledges that he or she has had the opportunity to review with his or her own tax advisors the tax consequences of receiving this Notice, the Award Agreement and the Plan, and the transactions contemplated thereby, including any U.S. federal, state and local tax laws, and any other applicable taxing jurisdiction, prior to executing this Notice. The Participant attests that he or she is relying solely on such advisors and not on any statements or representations of the Company or any of its agents or affiliates. Further, the Participant hereby acknowledges and understands that he or she (and not the Company) shall be solely responsible for his or her tax liability that may arise as a result of receiving this Notice and the Award Agreement.

PARTICIPANT:

Signed:

Print Name:

Date:

APPLIED OPTOELECTRONICS, INC.

2021 EQUITY INCENTIVE PLAN

PERFORMANCE RESTRICTED STOCK UNIT AWARD AGREEMENT

Subject to the terms and conditions of the Notice of Performance Restricted Stock Unit Award (the "Notice"), this Performance Restricted Stock Unit Award Agreement (this "Award Agreement"), and the Applied Optoelectronics, Inc. 2021 Equity Incentive Plan (the "Plan"), the individual set forth in the Notice (the "Participant") is hereby granted Performance Restricted Stock Units (the "PSUs") in the Common Stock of Applied Optoelectronics, Inc. (the "Company"). Unless otherwise specifically indicated, all terms used in this Award Agreement shall have the meaning as set forth in the Notice or the Plan.

1. Vesting Schedule and Risk of Forfeiture.

(a) Vesting Schedule. Subject to the Participant's continuous service with the Company as a Service Provider and any other limitations set forth in the Notice, the Plan or this Award Agreement, the PSUs shall vest in accordance with the Vesting Schedule provided in the Notice.

(b) Risk of Forfeiture. The PSUs shall be subject to a risk of forfeiture until such time that the risk of forfeiture lapses in accordance with the Vesting Schedule. All or any portion of the PSUs subject to a risk of forfeiture shall automatically be forfeited and immediately returned to the Company if the Participant's continuous status as a Service Provider is interrupted or terminated for any reason, except as described on **Appendix A**, unless otherwise provided by the Administrator. The Company shall implement any forfeiture under this Section 1 in a unilateral manner, without the Participant's consent, and with no payment to the Participant, cash or otherwise, for any unvested PSUs that are forfeited. Additionally, all of the PSUs subject to this Award Agreement shall immediately become forfeited if the Participant fails to fully satisfy Section 3(b) of this Award Agreement, as determined by the Committee.

2. Settlement of PSUs into Shares. Subject to the terms of this Award Agreement, and only to the extent all or any portion of the PSUs become nonforfeitable pursuant to the Vesting Schedule, each PSU that becomes nonforfeitable shall be converted into one Share of the Company's Common Stock on the Vesting Date (as defined in the Vesting Schedule); and at such time the Shares shall be distributed to the Participant as soon as administratively possible after such event, but in no event later than two-and-one-half (2.5) months after the end of the year in which such event occurred.

3. Taxes. The Participant hereby acknowledges and understands that he or she may suffer adverse tax consequences as a result of the Participant's receipt of, vesting in, or disposition of, the PSUs.

(a) Representations. The Participant has reviewed with his or her own tax advisors the tax consequences of this Award Agreement and the PSUs granted hereunder, including any U.S. federal, state and local tax laws, and any other applicable taxing jurisdiction. The Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents. The Participant hereby acknowledges and understands that he or she (and not the Company) shall be responsible for his or her own tax liability that may arise as a result of his or her receiving this Award Agreement and the PSUs granted hereunder.

(b) Payment of Withholding Taxes. The Participant shall make appropriate arrangements with the Company for the satisfaction of all U.S. federal, state, local and non-U.S. income and employment tax withholding requirements applicable to any PSUs that settle in Shares of Common Stock in accordance with Section 2.

The Company may satisfy its withholding obligation in its discretion by (i) withholding the balance of all applicable amounts legally payable by the Participant through wages or other cash compensation paid to the Participant by the Company and/or (ii) withholding in Shares, provided that the Company does not withhold an amount of Shares in excess of the amount necessary to satisfy the applicable withholding amount based on the maximum statutory tax rates in the Participant's applicable jurisdiction. The Participant hereby agrees that a breach of this Section 3(b) shall be deemed to be a material breach of this Award Agreement.

The Participant hereby acknowledges his or her understanding that the Company's obligations under this Award Agreement are fully contingent on the Participant first satisfying this Section 3(b). Therefore, a failure of the Participant to reasonably satisfy this Section 3 in accordance with the Committee's sole and absolute discretion shall result in the automatic termination and expiration of this Award Agreement and the Company's obligations hereunder.

(c) No Application of Section 409A. The PSUs and this Award Agreement are intended to avoid the application of Section 409A of the Code ("Section 409A") because either (i) there is no deferral arrangement or (ii) the Award Agreement satisfies an exemption available under Section 409A such as the short-term deferral rule. Notwithstanding any other provision in the Plan or this Award Agreement to the contrary, the Committee shall have the right, in its sole discretion, to adopt such amendments to the Plan or this Award Agreement or take such other actions (including amendments and actions with retroactive effect) as the Committee determines are necessary or appropriate for the PSUs to comply with Section 409A.

4. Transferability of PSUs. The PSUs may not be transferred in any manner other than by will or by the laws of descent and distribution. Any purported transfer of PSUs in breach of this Award Agreement shall be void and ineffective and shall not operate to transfer any interest or title in the purported transferee. Notwithstanding the foregoing, the Participant may designate one or more beneficiaries of the Participant's PSUs in the event of the Participant's death on a beneficiary designation form provided by the Committee. The terms of this Award Agreement shall be binding upon the executors, administrators, heirs, successors and transferees of the Participant.

5. Rights as a Shareholder of the Company. The Participant's receipt of the grant of PSUs pursuant to this Award Agreement shall provide and confer no rights or status as a shareholder of the Company until such time the PSUs are converted in accordance with Section 2 of this Award Agreement.

6. Legality of Initial Issuance. No Shares shall be issued in accordance with Section 2 of this Award Agreement unless and until the Committee has determined that: (i) the Company and the Participant have taken all actions required to register the Shares of Common Stock under the Securities Act or to perfect an exemption from the registration requirements thereof, if applicable; (ii) all applicable listing requirements of any stock exchange or other securities market on which the Shares of Common Stock are listed has been satisfied; and (iii) any other applicable provision of state or U.S. federal law or other Applicable Law has been satisfied.

7. Notice. Any notice required by the terms of this Award Agreement shall be given in writing and shall be deemed effective upon personal delivery or upon deposit with the U.S. Postal Service, by registered or certified mail, with postage and fees prepaid. Notice shall be addressed to the Company at its principal executive office and to the Participant at the address that he or she most recently provided to the Company.

8. Successors and Assigns. Except as provided herein to the contrary, this Award Agreement shall be binding upon and inure to the benefit of the parties to this Award Agreement, their respective successors and permitted assigns.

9. No Assignment. Except as otherwise provided in this Award Agreement, the Participant shall not assign any of his or her rights under the Notice or this Award Agreement without the prior written consent of the Company, which consent may be withheld in its sole discretion. The Company shall be permitted to assign its rights or obligations under the Notice or this Award Agreement, but no such assignment shall release the Company of its obligations pursuant to the Notice or this Award Agreement.

10. Severability. It is the desire of the parties hereto that this Award Agreement be enforced to the maximum extent permitted by law, and should any provision contained herein be held unenforceable by a court of competent jurisdiction, the parties hereby agree and consent that such provision shall be reformed to create a valid and enforceable provision to the maximum extent permitted by law; provided, however, if such provision cannot be reformed, the validity, legality or enforceability of the remainder of this Award Agreement shall not be affected even if one or more of the provisions of this Award Agreement shall be held to be invalid, illegal or unenforceable in any respect.

11. Amendment. Any provision of this Award Agreement may be amended and the observance thereof may be waived (either generally or in a particular instance and either retroactively or prospectively) only by a written instrument signed by the parties hereto. Notwithstanding the foregoing or any other provision in the Plan or this Award Agreement to the contrary, the Committee shall have the right, in its sole discretion, to unilaterally adopt amendments to this Award Agreement or the Plan to the minimum extent necessary or appropriate (as determined by the Committee in its sole discretion) for PSUs to comply with Section 409A.

12. Administration and Interpretation. Any determination by the Committee in connection with any question or issue arising under the Notice, the Plan or this Award Agreement shall be final, conclusive and binding on the Participant, the Company and all other persons. Any question or dispute regarding the interpretation of this Award Agreement or the receipt of the PSUs hereunder shall be submitted by the Participant to the Committee. The resolution of such question or dispute by the Committee shall be final and binding on all parties.

13. Headings. The section headings in this Award Agreement are inserted only as a matter of convenience, and in no way define, limit or interpret the scope of this Award Agreement or of any particular section.

14. Counterparts. This Award Agreement may be executed in any number of counterparts, any of which may be executed and transmitted by facsimile, electronic or digital means, and each of which shall be deemed to be an original, but all of which together shall be deemed to be one and the same instrument. Any counterpart or other signature delivered by facsimile shall be deemed for all purposes as being a good and valid execution and delivery of this Award Agreement by that party.

15. Entire Agreement. The provisions of the Plan and the Notice are incorporated herein by reference. Except as otherwise provided herein, the Plan, the Notice and this Award Agreement constitute the entire agreement of the parties with respect to the subject matter hereof and supersede in their entirety all prior undertakings and agreements of the Company and the Participant with respect to the subject matter hereof, and may not be modified adversely to the Participant's interest except by means of a writing signed by the Company and the Participant.

16. Choice of Law and Forum. This Award Agreement shall be governed by, and construed and interpreted in accordance with, the laws of the State of Texas as applicable to contracts executed in and performed in Texas, except to the extent preempted by controlling federal law, but without regard to the principles of conflict of laws under Texas law that might direct the application of the law of another forum. Any action to enforce the provisions of this Award Agreement, or any Dispute relating to this Agreement, must be brought in any federal or state court of competent jurisdiction in Harris or Fort Bend County, Texas, and the Parties hereby waive any objection to such exclusive venue including, without limitation, that it is inconvenient. For all purposes of this Agreement, the term "Dispute" means any dispute, disagreement, controversy, claim, or cause of action arising in connection with, or relating to, this Award Agreement.

17. Waiver of Jury Trial. THE PARTIES HERETO WAIVE ANY RIGHT TO TRIAL BY JURY IN ANY PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT, WHETHER NOW EXISTING OR HEREAFTER ARISING, AND WHETHER SOUNDING IN CONTRACT, TORT OR OTHERWISE. THE PARTIES AGREE THAT ANY OF THEM MAY FILE A COPY OF THIS PARAGRAPH WITH ANY COURT AS WRITTEN EVIDENCE OF THE KNOWING, VOLUNTARY AND BARGAINED-FOR AGREEMENT AMONG THE PARTIES TO IRREVOCABLY WAIVE TRIAL BY JURY, AND THAT ANY PROCEEDING WHATSOEVER BETWEEN THEM RELATING TO THIS AGREEMENT SHALL INSTEAD BE TRIED IN A COURT OF COMPETENT JURISDICTION BY A JUDGE SITTING WITHOUT A JURY.

18. No Guarantee of Service Provider Status. THE PARTICIPANT ACKNOWLEDGES AND AGREES THAT THE VESTING OF PSUs PURSUANT TO THE VESTING SCHEDULE HEREOF IS EARNED ONLY BY CONTINUOUS SERVICE AS A SERVICE PROVIDER AND AT THE WILL OF THE COMPANY (NOT THROUGH THE ACT OF BEING HIRED, BEING GRANTED PSUs OR ACQUIRING COMMON STOCK HEREUNDER). THE PARTICIPANT FURTHER ACKNOWLEDGES AND AGREES THAT THIS AWARD AGREEMENT, THE RIGHT GRANTED HEREUNDER, THE TRANSACTIONS CONTEMPLATED HEREUNDER AND THE VESTING SCHEDULE SET FORTH IN THIS AWARD AGREEMENT DO NOT CONSTITUTE AN EXPRESS OR IMPLIED PROMISE OF CONTINUED ENGAGEMENT AS A SERVICE PROVIDER FOR THE VESTING PERIOD, FOR ANY PERIOD, OR AT ALL, AND SHALL NOT INTERFERE IN ANY WAY WITH THE PARTICIPANT'S RIGHT OR THE COMPANY'S/AFFILIATE'S RIGHT TO TERMINATE THE PARTICIPANT'S RELATIONSHIP AS A SERVICE PROVIDER AT ANY TIME, WITH OR WITHOUT CAUSE.

19. Waiver. Failure to insist upon strict compliance with any of the terms, covenants, or conditions hereof will not be deemed a waiver of such term, covenant, or condition, nor will any waiver or relinquishment of, or failure to insist upon strict compliance with, any right or power hereunder at any one or more times be deemed a waiver or relinquishment of such right or power at any other time or times. Any waiver of the terms or conditions hereof shall be made only by a written instrument executed and delivered by the party waiving compliance. Any waiver granted by the Company shall be effective only if executed and delivered by a duly authorized executive officer of the Company other than Participant.

APPENDIX A

APPLIED OPTOELECTRONICS, INC.

2021 EQUITY INCENTIVE PLAN

PERFORMANCE RESTRICTED STOCK UNIT AWARD

VESTING SCHEDULE

Performance Period:

Performance Goals:

Treatment on Termination of Service:

Termination Event	Relative TSR Goal	Stock Price Hurdle Goal (1)
Termination in Connection with a Change in Control	● Payable at the end of the Performance Period with respect to the greater of PSUs earned based on actual performance and Target PSUs ● Actual performance determined based on unreduced performance goals	● Earned Awards: PSUs vest and become payable immediately ● Unearned Awards: Vest and become payable at the end of the Performance Period with respect to PSUs earned based on actual performance
Death and Disability	● Target PSUs vest effective as of termination date	● Earned Awards: PSUs vest and become payable immediately ● Unearned: Forfeited
Not for Cause Termination (No Change in Control)	● Unvested Awards forfeited	● Earned and Unearned Awards: Awards forfeited
Retirement	● Pro-rated PSUs vested at the end of the performance period based on actual performance	● Earned Awards: Awards vest and become payable at the end of the performance period ● Unearned Awards: Forfeited

(1) Earned Awards represent PSUs where the Administrator determines that stock price hurdle goal has been achieved as of the termination date; Unearned Awards represent PSUs where the stock price hurdle goal has not yet been attained as of the termination date.

Exhibit 31.1

Certification

I, Chih-Hsiang (Thompson) Lin, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Applied Optoelectronics, Inc.;

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

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

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

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

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

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

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

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

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

Date: August 5, 2021

/s/ CHIH-HSIANG (THOMPSON) LIN
CHIH-HSIANG (THOMPSON) LIN
President and Chief Executive Officer

Exhibit 31.2

Certification

I, Stefan J. Murry, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Applied Optoelectronics, Inc.;

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

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

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

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

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

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

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

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

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

Date: August 5, 2021

/s/ STEFAN J. MURRY
STEFAN J. MURRY
Chief Financial Officer

Exhibit 32.1

Certification

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and Section 1350 of Chapter 63 of Title 18 of the U.S. Code (18 U.S.C. § 1350), Chih-Hsiang (Thompson) Lin, President and Chief Executive Officer of Applied Optoelectronics, Inc. (the “Company”), and Stefan J. Murry, Chief Financial Officer and Senior Vice President of the Company, each hereby certifies that, to the best of his knowledge:

1. The Company’s Quarterly Report on Form 10-Q for the period ended June 30, 2021, to which this Certification is attached as Exhibit 32.1 (the “Quarterly Report”) fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

2. The information contained in the Quarterly Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned have set their hands hereto as of the 5th day of August, 2021.

/s/ CHIH-HSIANG (THOMPSON) LIN	/s/ STEFAN J. MURRY
CHIH-HSIANG (THOMPSON) LIN	STEFAN J. MURRY
President and Chief Executive Officer	Chief Financial Officer

This certification accompanies the Quarterly Report to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Applied Optoelectronics, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Quarterly Report), irrespective of any general incorporation language contained in such filing.