

# ADVANCED ENERGY INDUSTRIES INC

## FORM 10-Q (Quarterly Report)

Filed 8/14/2002 For Period Ending 6/30/2002

Address	1625 SHARP POINT DR FT COLLINS, Colorado 80525
Telephone	970-221-4670
CIK	0000927003
Industry	Electronic Instr. & Controls
Sector	Technology
Fiscal Year	12/31



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**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, 2002.

☐ 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: **000-26966**

**ADVANCED ENERGY INDUSTRIES, INC.**

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(Exact name of registrant as specified in its charter)

**Delaware**

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(State or other jurisdiction of incorporation or organization)

**1625 Sharp Point Drive, Fort Collins,**

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(Address of principal executive offices)

**84-0846841**

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(I.R.S. Employer Identification No.)

**CO 80525**

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(Zip Code)

Registrant's telephone number, including area code: **(970) 221-4670**

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 ☐.

As of August 7, 2002, there were 32,079,248 shares of the Registrant's Common Stock, par value \$0.001 per share, outstanding.

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**PART I FINANCIAL INFORMATION**
**ITEM 1. UNAUDITED FINANCIAL STATEMENTS**
**ADVANCED ENERGY INDUSTRIES, INC. AND SUBSIDIARIES**
**CONDENSED CONSOLIDATED BALANCE SHEETS**  
(In thousands)

	June 30, 2002 (Unaudited)	December 31, 2001 (Unaudited)
<b>ASSETS</b>		
<b>CURRENT ASSETS:</b>		
Cash and cash equivalents	\$ 36,143	\$ 81,955
Marketable securities	161,732	190,023
Accounts receivable, net	55,135	30,812
Income tax receivable	18,107	15,862
Inventories	65,001	45,248
Other current assets	3,906	4,178
Deferred income tax assets, net	10,013	11,200
	<hr/>	<hr/>
Total current assets	350,037	379,278
	<hr/>	<hr/>
PROPERTY AND EQUIPMENT, net	44,740	31,095
<b>OTHER ASSETS:</b>		
Deposits and other	7,203	6,482
Goodwill and intangibles, net	92,373	23,072
Demonstration and customer service equipment, net	5,197	4,532
Deferred debt issuance costs, net	5,066	5,736
	<hr/>	<hr/>
Total assets	\$504,616	\$450,195
	<hr/>	<hr/>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
<b>CURRENT LIABILITIES:</b>		
Trade accounts payable	\$ 19,971	\$ 10,231
Accrued payroll and employee benefits	10,423	6,978
Other accrued expenses	13,373	7,285
Customer deposits	101	515
Current portion of capital lease obligations and long-term debt	15,406	1,130
Accrued interest payable on convertible subordinated notes	2,710	2,696
	<hr/>	<hr/>
Total current liabilities	61,984	28,835
	<hr/>	<hr/>
<b>LONG-TERM LIABILITIES:</b>		
Senior borrowings	15,646	—
Capital leases, net of current portion	1,197	—
Deferred income tax liabilities, net	9,811	415
Convertible subordinated notes payable	206,600	206,600
	<hr/>	<hr/>
	233,254	207,015
	<hr/>	<hr/>
Total liabilities	295,238	235,850
	<hr/>	<hr/>
<b>STOCKHOLDERS' EQUITY</b>		
	209,378	214,345
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Total liabilities and stockholders' equity	\$504,616	\$450,195
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The accompanying notes to condensed consolidated financial statements  
are an integral part of these condensed consolidated balance sheets.



**ADVANCED ENERGY INDUSTRIES, INC. AND SUBSIDIARIES**

**CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS**  
(In thousands, except per share amounts)

	Three Months Ended June 30,	
	2002 (Unaudited)	2001 (Unaudited)
SALES	\$67,893	\$ 46,171
COST OF SALES	43,581	38,390
Gross profit	24,312	7,781
OPERATING EXPENSES:		
Research and development	12,587	11,040
Sales and marketing	8,712	5,963
General and administrative	7,030	5,645
Litigation damages and expenses	5,313	—
Goodwill impairment	—	5,446
Restructuring charges	—	614
Total operating expenses	33,642	28,708
LOSS FROM OPERATIONS	(9,330)	(20,927)
OTHER INCOME (EXPENSE):		
Interest income	776	1,347
Interest expense	(3,191)	(1,234)
Foreign currency gain (loss)	4,492	(68)
Other expense, net	(653)	(115)
	1,424	(70)
Net loss before income taxes and minority interest	(7,906)	(20,997)
BENEFIT FOR INCOME TAXES	(2,767)	(6,553)
MINORITY INTEREST IN NET INCOME	—	105
NET LOSS	\$ (5,139)	\$ (14,549)
BASIC AND DILUTED LOSS PER SHARE	\$ (0.16)	\$ (0.46)
BASIC AND DILUTED WEIGHTED-AVERAGE COMMON SHARES OUTSTANDING	32,045	31,698

	Six Months Ended June 30,	
	2002 (Unaudited)	2001 (Unaudited)
SALES	\$110,780	\$120,885
COST OF SALES	73,094	81,881
Gross profit	37,686	39,004
OPERATING EXPENSES:		
Research and development	23,835	23,429
Sales and marketing	15,463	12,592
General and administrative	13,828	11,819
Litigation damages and expenses (recovery)	5,313	(1,500)
Goodwill impairment	—	5,446
Restructuring charges	—	614
Total operating expenses	58,439	52,400



LOSS FROM OPERATIONS	(20,753)	(13,396)
OTHER (EXPENSE) INCOME:		
Interest income	1,716	3,115
Interest expense	(6,488)	(2,522)
Foreign currency gain (loss)	4,607	(51)
Other expense, net	(408)	(425)
	(573)	117
Net loss before income taxes and minority interest	(21,326)	(13,279)
BENEFIT FOR INCOME TAXES	(7,464)	(3,864)
MINORITY INTEREST IN NET INCOME	—	40
NET LOSS	\$ (13,862)	\$ (9,455)
BASIC AND DILUTED LOSS PER SHARE	\$ (0.43)	\$ (0.30)
BASIC AND DILUTED WEIGHTED-AVERAGE COMMON SHARES OUTSTANDING	31,959	31,623

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

## ADVANCED ENERGY INDUSTRIES, INC. AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS  
(In thousands)

	Six Months Ended June 30,	
	2002 (Unaudited)	2001 (Unaudited)
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Net loss	\$(13,862)	\$ (9,455)
Adjustments to reconcile net loss to net cash (used in) provided by operating activities—		
Depreciation of property and equipment	5,942	4,927
Amortization of intangibles and demonstration and customer service equipment	2,499	3,224
Amortization of deferred debt issuance costs	670	246
Amortization of deferred compensation	262	262
Minority interest	—	40
Provision (benefit) for deferred income taxes	602	(713)
Provision for inventory and product-related liabilities	—	7,116
Provision for restructuring	—	614
Impairment of goodwill	—	5,446
Loss on disposal of property and equipment	358	—
Changes in operating assets and liabilities (net of assets and liabilities acquired) —		
Accounts receivable, net	(11,492)	34,613
Inventories	2,450	(5,134)
Other current assets	967	(61)
Deposits and other	395	307
Demonstration and customer service equipment	(1,120)	(1,752)
Accounts payable	(1,036)	(9,932)
Accrued payroll and employee benefits	143	(3,843)
Customer deposits and other accrued expenses	3,026	(1,101)
Income taxes payable/receivable, net	(3,420)	(14,810)
Net cash (used in) provided by operating activities	(13,616)	9,994
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Marketable securities transactions	28,420	29,305
Purchase of property and equipment, net	(4,965)	(9,442)
Investments and advances	(1,997)	(639)
Acquisition of Aera Japan Limited, net of cash acquired	(35,689)	—
Acquisition of Dressler HF Technik GmbH, net of cash acquired	(16,070)	—
Acquisition of minority interest of LITMAS, net of cash acquired	(400)	—
Acquisition of Engineering Measurements Company, net of cash acquired	—	(29,932)
Net cash used in investing activities	(30,701)	(10,708)
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>		
Net change from notes payable and capital lease obligations	(3,704)	(1,934)
Proceeds from common stock transactions	509	2,735
Net cash (used in) provided by financing activities	(3,195)	801
<b>EFFECT OF CURRENCY TRANSLATION ON CASH</b>	<b>1,700</b>	<b>645</b>
<b>(DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS</b>	<b>(45,812)</b>	<b>732</b>
<b>CASH AND CASH EQUIVALENTS, beginning of period</b>	<b>81,955</b>	<b>31,716</b>
<b>CASH AND CASH EQUIVALENTS, end of period</b>	<b>\$ 36,143</b>	<b>\$ 32,448</b>
<b>SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:</b>		
Cash paid for interest	\$ 5,804	\$ 2,282
Cash (received) paid for income taxes, net	\$ (2,838)	\$ 11,524

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

**ADVANCED ENERGY INDUSTRIES, INC. AND SUBSIDIARIES**

**NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)**

**(1) BASIS OF PRESENTATION AND MANAGEMENT OPINION**

In the opinion of management, the accompanying unaudited condensed consolidated balance sheets, statements of operations and cash flows contain all adjustments necessary to present fairly the financial position of Advanced Energy Industries, Inc., a Delaware corporation, and its wholly owned and controlled subsidiaries (the “Company”) at June 30, 2002 and December 31, 2001, and the results of the Company’s operations for the three- and six-month periods ended June 30, 2002 and 2001, and cash flows for the six-month periods ended June 30, 2002 and 2001.

The unaudited financial statements presented herein have been prepared by management in accordance with the instructions to Form 10-Q and do not include all the information and disclosures required by accounting principles generally accepted in the United States. The financial statements should be read in conjunction with the audited financial statements and notes thereto contained in the Company’s Annual Report on Form 10-K for the year ended December 31, 2001, filed March 25, 2002.

The preparation of the Company’s condensed consolidated financial statements requires the Company’s management to make certain estimates and assumptions that affect the amounts reported and disclosed in the condensed consolidated financial statements and accompanying notes. Actual results could differ from those estimates.

**(2) ACQUISITIONS**

*LITMAS* — Prior to April 2, 2002, the Company owned 59.5% of LITMAS, a privately held, North Carolina-based company that designs and manufactures plasma gas abatement systems and high-density plasma sources. On April 2, 2002, the Company completed its acquisition of the 40.5% of LITMAS that it did not previously own, by issuing approximately 120,000 shares of the Company’s common stock valued at approximately \$4.2 million, and approximately \$400,000 of cash. The acquisition of all the minority interest in LITMAS resulted in a preliminary allocation of approximately \$5 million of additional goodwill.

*SYMPHONY* — Symphony Systems, Inc. (“Symphony”), a privately held, early-stage developer of equipment productivity management software, effectively ceased operations in February 2002. The Company had previously obtained a security interest in all of Symphony’s intellectual and proprietary property in connection with certain advances the Company made to Symphony in 2001. The Company has hired Symphony’s key employees, and acquired Symphony’s remaining assets in a foreclosure and liquidation sale of such assets on April 2, 2002. At no time prior to the foreclosure and liquidation sale did the Company’s percentage ownership in the voting stock of Symphony exceed 1.8%, and the Company did not have the ability to exercise significant influence over Symphony.

*DRESSLER* — On March 28, 2002, the Company completed its acquisition of Dressler HF Technik GmbH (“Dressler”), a privately owned Stolberg, Germany-based provider of power supplies and matching networks, for a purchase price of approximately \$17 million in cash. The Company may pay an additional \$3 million if Dressler achieves certain key business objectives by March 30, 2003. In the second quarter of 2002, the Company recognized approximately \$1.4 million of goodwill associated with Dressler, offset by a long-term deferred income tax liability.

The Company believes that Dressler will expand the Company’s product offerings to customers in the semiconductor, data storage, and flat panel equipment markets due to its strong power product portfolio that

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includes a wide range of power levels and RF frequencies. In addition, with inroads already made into the laser and medical markets, Dressler will be used to explore new market opportunities for the Company. Dressler will also strengthen the Company's presence in the European marketplace. Dressler has strong relationships with many European customers, who look to Dressler for strong technical capability, quality products, and highly responsive customer service. The Company also expects to achieve synergies in product technology, production efficiency, logistics and worldwide service.

The acquisition was accounted for using the purchase method of accounting in accordance with SFAS No. 141, "Business Combinations," and the operating results of Dressler are reflected in the accompanying condensed consolidated financial statements prospectively from the date of acquisition. The assets acquired and liabilities assumed were recorded at initial estimated fair values as determined by the Company's management, based on information currently available. The purchase price was tentatively allocated to the net assets of Dressler as summarized below:

	(In thousands) (Unaudited)
Cash and cash equivalents	\$ 680
Accounts receivable	1,715
Inventories	1,055
Other current assets	83
Fixed assets	260
Goodwill and intangibles	14,490
Other assets	19
Accounts payable	(314)
Accrued payroll	(39)
Other accrued expenses	(474)
Income taxes payable	(725)
	<hr/>
	\$16,750

This allocation is subject to adjustment as the Company completes its evaluation of the fair value of the assets acquired and liabilities assumed. The excess purchase price over the estimated fair value of tangible net assets acquired was allocated to goodwill and intangibles. The further allocation to each of these two categories has not yet been determined. The Company will review these assets in the future for impairment.

Prior to the combination, there were material transactions between the Company and Dressler in 2001 and the first three months of 2002. In 2001, the Company purchased approximately \$2 million of inventory from Dressler, and Dressler purchased approximately \$200,000 of inventory from the Company. In the first three months of 2002, the Company purchased approximately \$500,000 of inventory from Dressler. These purchases were made in the normal course of the Company's business.

**AERA** — On January 18, 2002, the Company completed its acquisition of Aera Japan Limited ("Aera"), a privately held Japanese corporation. The acquisition was effected through the Company's wholly owned subsidiary, Advanced Energy Japan K.K. ("AE-Japan"), which purchased all of the outstanding stock of Aera. The aggregate purchase price paid by AE-Japan was 5.73 billion Japanese yen (approximately \$44 million, based upon an exchange rate of 130:1), which was funded from the Company's available cash. In connection with the acquisition, AE-Japan assumed approximately \$34 million of Aera's debt. In the second quarter of 2002, the Company recognized approximately \$8.5 million of additional goodwill associated with Aera, offset by a long-term deferred income tax liability. Aera, which is headquartered in Hachioji, Japan, has manufacturing facilities there and manufacturing, sales and service offices in Austin, Texas; Dresden, Germany; Edinburgh, Scotland; and Bundang, South Korea; and sales and service offices in Kirchheim, Germany; and Hsinchu, Taiwan. Aera supplies the semiconductor capital equipment industry with product lines that include digital mass flow controllers, pressure-based mass flow controllers, liquid mass flow controllers, ultrasonic liquid flow meters and liquid vapor delivery systems.

Aera's products expand the Company's offering of critical sub-system solutions that enable the plasma-based manufacturing process used in the manufacture of semiconductors. The Company's current product offering includes components for power delivery and control, remote plasma clean, temperature sensing,

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temperature management, process instrumentation, and an emerging technology in mass flow control acquired through the purchase of Engineering Measurements Company in January 2001.

The acquisition was accounted for using the purchase method of accounting in accordance with SFAS No. 141, “Business Combinations,” and the operating results of Aera are reflected in the accompanying condensed consolidated financial statements prospectively from the date of acquisition. The assets acquired and liabilities assumed were recorded at initial estimated fair values as determined by the Company’s management based on information currently available. The purchase price was tentatively allocated to the net assets of Aera as summarized below, with the final allocation subject to adjustment:

	(In thousands) (Unaudited)
Cash and cash equivalents	\$ 8,276
Marketable securities	115
Accounts receivable	8,405
Inventories	19,243
Other current assets	530
Fixed assets	13,388
Goodwill and intangibles	32,660
Other assets	427
Accounts payable	(2,385)
Accrued payroll	(2,924)
Other liabilities	(2,164)
Current portions of long-term debt	(12,008)
Long-term debt	(19,598)
	<u>\$ 43,965</u>

There were no transactions between the Company and Aera prior to the combination. The excess purchase price over the estimated fair value of tangible net assets acquired was allocated to goodwill and intangibles. The Company anticipates that approximately 50% of the total amount of acquired intangibles will be allocated to amortizable intangibles, with a weighted-average estimated useful life of seven years. The Company will review these assets in the future for impairment. The Company recognized approximately \$1.3 million of amortization expense related to these amortizable intangibles acquired from Aera through June 2002.

Had this combination occurred on January 1, 2001, the pro forma, unaudited, combined results of operations for the Company and Aera for the three months ended June 30, 2001 would have generated revenue of approximately \$65 million, net loss of approximately \$19 million and basic and diluted loss per share of \$0.61. The pro forma, unaudited, combined results of operations for the Company and Aera for the six months ended June 30, 2001 would have generated revenue of approximately \$169 million, net loss of approximately \$11 million and basic and diluted loss per share of \$0.35.

*EMCO* — On January 2, 2001, Engineering Measurements Company (“EMCO”), a publicly held, Longmont, Colorado-based manufacturer of electronic and electromechanical precision instruments for measuring and controlling the flow of liquids, steam and gases, was merged with a wholly owned subsidiary of the Company. The Company paid the EMCO shareholders cash in an aggregate amount of approximately \$30 million. In connection with the acquisition, the Company issued stock options to purchase approximately 71,000 shares of its common stock for the assumption of outstanding, fully vested options for EMCO common stock. The fair value of the options granted was estimated by the Company (using the Black-Scholes option pricing model) to be approximately \$1.1 million.

The acquisition was accounted for using the purchase method of accounting, and the operating results of EMCO are reflected in the accompanying condensed consolidated financial statements prospectively from the date of acquisition. The assets acquired and liabilities assumed were recorded, based upon independent appraisals of the fair values of the acquired property, plant and equipment, and identified intangible assets, and the remaining useful lives and goodwill. The purchase price was allocated to the net assets of EMCO as summarized below:

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	(In thousands) (Unaudited)
Cash and cash equivalents	\$ 459
Marketable securities	674
Accounts receivable	1,167
Inventories	1,678
Deferred income tax assets, current	584
Other current assets	88
Fixed assets	4,596
Goodwill	20,878
Other intangibles	3,400
Accounts payable	(355)
Accrued payroll	(405)
Other accrued expenses	(391)
Deferred income tax liability	(856)
	<u>\$31,517</u>

There were no transactions between the Company and EMCO prior to the combination. The excess purchase price over the estimated fair value of tangible net assets acquired was allocated to goodwill and intangibles, which was amortized in 2001 over an average of a seven-year life. In accordance with SFAS Nos. 141 and 142, the Company ceased amortization of goodwill on January 1, 2002, and will continue to review these assets in the future for impairment. The amount of annual goodwill amortization, which will no longer be recorded, is approximately \$3.3 million.

### (3) MARKETABLE SECURITIES

*MARKETABLE SECURITIES* consisted of the following:

	June 30, 2002 (Unaudited)	December 31, 2001 (Unaudited)
	(In thousands)	
Commercial paper	\$131,229	\$172,506
Municipal bonds and notes	28,879	12,622
Institutional money markets	1,624	4,895
Total marketable securities	<u>\$161,732</u>	<u>\$190,023</u>

These marketable securities are stated at period end market value. The commercial paper consists of high credit quality, short-term money market preferreds, short-term bonds and tax-free auction rate securities with maturities or reset dates of 120 days or less.

### (4) ACCOUNTS RECEIVABLE

*ACCOUNTS RECEIVABLE* consisted of the following:

	June 30, 2002 (Unaudited)	December 31, 2001 (Unaudited)
	(In thousands)	
Domestic	\$22,306	\$13,463
Foreign	28,049	14,457
Allowance for doubtful accounts	(1,432)	(1,049)
Trade accounts receivable	48,923	26,871
Related parties	108	23
Other	6,104	3,918
Total accounts receivable	<u>\$55,135</u>	<u>\$30,812</u>





## (5) INVENTORIES

*INVENTORIES* consisted of the following:

	June 30, 2002 (Unaudited)	December 31, 2001 (Unaudited)
	(In thousands)	
Parts and raw materials	\$42,779	\$31,273
Work in process	4,553	2,521
Finished goods	17,669	11,454
Total inventories	\$65,001	\$45,248

Inventories include costs of materials, direct labor and manufacturing overhead. Inventories are valued at the lower of market or cost, computed on a first-in, first-out basis. Inventory is expensed as cost of sales upon shipment of product.

## (6) STOCKHOLDERS' EQUITY

*STOCKHOLDERS' EQUITY* consisted of the following:

	June 30, 2002 (Unaudited)	December 31, 2001 (Unaudited)
	(In thousands, except par value)	
Common stock, \$0.001 par value, 70,000 and 55,000 shares authorized, respectively; 32,072 and 31,848 shares issued and outstanding, respectively	\$ 32	\$ 32
Additional paid-in capital	137,424	131,698
Retained earnings	71,730	85,592
Deferred compensation	(832)	(1,094)
Unrealized holding gains on available-for-sale securities	1,885	1,257
Cumulative translation adjustments	(861)	(3,140)
Total stockholders' equity	\$209,378	\$214,345

## (7) DEFERRED COMPENSATION

During 1999, prior to the Company's acquisition of Sekidenko, Inc. ("Sekidenko"), a shareholder of Sekidenko granted employees options to purchase shares of his common stock already outstanding at exercise prices below fair market value. Under this agreement, 29,700 and 34,250 of such options were exercised in 1999 and 2000, respectively. These options result in the Company recognizing \$109,000 as compensation expense over the four-year vesting period related to the 1999 purchases, and \$1,995,000 as compensation expense over the four-year vesting period related to the 2000 purchases. Compensation expense of approximately \$262,000 related to these purchases was recognized in the first six months of 2002 and the first six months of 2001. These amounts are presented as a reduction of stockholders' equity, and the remaining amount of deferred compensation of \$832,000 as of June 30, 2002 is being amortized over the four-year vesting period of the related stock options.

## (8) ACCOUNTING POLICIES

*COMPREHENSIVE INCOME* — Comprehensive income for the Company consists of net loss, unrealized holding gain (loss) on available-for-sale securities and foreign currency translation adjustments as presented below:

	Six Months Ended June 30, 2002 (Unaudited)	Six Months Ended June 30, 2001 (Unaudited)
	(In thousands)	
Net loss, as reported	\$(13,862)	\$(9,455)
Adjustment to arrive at comprehensive net loss:		
Unrealized holding gain (loss) on available-for-sale marketable securities	628	(3)
Cumulative translation adjustments	2,279	645
Comprehensive net loss	\$(10,955)	\$(8,813)

**SEGMENT REPORTING** — The Company operates in one segment for the manufacture, marketing and servicing of key subsystems, primarily to the semiconductor capital equipment industry. In accordance with SFAS No. 131, “Disclosures About Segments of an Enterprise and Related Information,” the Company’s chief operating decision maker has been identified as the Office of the Chief Executive Officer, which reviews operating results to make decisions about allocating resources and assessing performance for the entire company. SFAS No. 131, which is based on a management approach to segment reporting, establishes requirements to report selected segment information quarterly and to report annually entity-wide disclosures about products and services, major customers, and the countries in which the entity holds material assets and reports revenue. All material operating units qualify for aggregation under SFAS No. 131 due to their similar customer base and similarities in: economic characteristics; nature of products and services; and procurement, manufacturing and distribution processes. To report revenues from external customers for each product and service or group of similar products and services would not be practicable. Since the Company operates in one segment, all financial information required by SFAS No. 131 can be found in the accompanying condensed consolidated financial statements.

**DERIVATIVE INSTRUMENTS** — In June 1998, the FASB issued SFAS No. 133, “Accounting for Derivative Instruments and Hedging Activities.” The Company adopted SFAS No. 133, as amended by SFAS No. 137, on January 1, 2001. SFAS No. 133 establishes accounting and reporting standards for derivative instruments and for hedging activity by requiring all derivatives to be recorded on the balance sheet as either an asset or liability and measured at their fair value. Changes in the derivative’s fair value will be recognized currently in earnings unless specific hedging accounting criteria are met. SFAS No. 133 also establishes uniform hedge accounting criteria for all derivatives. The Company did not seek specific hedge accounting treatment for its foreign currency forward contracts (see below). The adoption of SFAS No. 133 did not have a material impact on the Company’s financial condition or results of operations.

The Company’s subsidiary AE-Japan enters into foreign currency forward contracts to buy U.S. dollars to mitigate currency exposure from its payable position arising from trade purchases and intercompany transactions with its parent. Foreign currency forward contracts reduce the Company’s exposure to the risk that the eventual net cash outflows resulting from the purchase of products denominated in other currencies will be adversely affected by changes in exchange rates. Foreign currency forward contracts are entered into with a major commercial Japanese bank that has a high credit rating, and the Company does not expect the counterparty to fail to meet its obligations under outstanding contracts. Foreign currency gains and losses under the above arrangements are not deferred. The Company generally enters into foreign currency forward contracts with maturities ranging from four to eight months, with contracts outstanding at June 30, 2002 maturing through August 2002. All forward contracts are held until maturity. At June 30, 2002, the Company held foreign forward exchange contracts with notional amounts of \$2.0 million and market settlement amounts of \$2.15 million for an unrealized loss position of \$150,000 that has been included in foreign currency gain (loss) in the accompanying consolidated statements of operations.

As discussed in Note 11, in July 2002 the Company entered into a hedging transaction with its primary bank to address an exposure related to an intercompany Japanese yen-denominated receivable held by the parent company. The Company may enter into other hedging transactions in the future to address other exposures.

**REVENUE RECOGNITION** — The Company recognizes revenue upon shipment of its systems and spare parts, at which time title passes to the customer, as its shipping terms are FOB shipping point.

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The Company has an arrangement with one of its major customers, a semiconductor capital equipment manufacturer, in which completed systems are shipped to the customer and held by them on a consignment basis. The customer draws systems from this inventory as needed, at which time title passes to the customer and the Company recognizes revenue. The customer is subject to the Company's normal warranty policy for repair of defective systems.

In some instances the Company delivers systems to customers for evaluation purposes. In these arrangements, the customer retains the systems for specified periods of time without commitment to purchase. On or before the expiration of the evaluation period, the customer either rejects the system, and returns it to the Company, or accepts the system. Upon acceptance, title passes to the customer, the Company invoices the customer for the system, and revenue is recognized. Pending acceptance by the customer, such systems are reported on the Company's balance sheets at an estimated value based on the lower of cost or market, and are included in the amounts for demonstration and customer service equipment, net of accumulated depreciation.

**GOODWILL AND INTANGIBLES** — In accordance with SFAS No. 142, the Company ceased amortizing goodwill on January 1, 2002, and reassessed its goodwill and other intangible assets. The Company determined that the classifications it made and the useful lives it assigned were appropriate for the goodwill and amortizable intangibles it held as of December 31, 2001. The Company is still evaluating the goodwill and intangible assets it acquired as part of the acquisitions of Aera, which it acquired January 18, 2002, and Dressler, which it acquired March 28, 2002. The Company expects to complete its evaluation of these assets during the fourth quarter of 2002. The Company has determined that the classification and useful life it assigned are appropriate for the intangible asset it acquired as part of the acquisition of the assets of Symphony, which it completed April 2, 2002. The Company assigned to goodwill the intangible asset it acquired as part of its acquisition of the minority interest of LITMAS, which it completed April 2, 2002.

The following is the pro forma effect on net loss and net loss per share had SFAS No. 142 been in effect for the three months and six months ended June 30, 2001:

	Three Months Ended June 30, 2001 (Unaudited)	Six Months Ended June 30, 2001 (Unaudited)
(In thousands)		
Net loss	\$(14,549)	\$(9,455)
Add back: Impact of goodwill amortization, net of taxes	1,172	2,306
Pro forma net loss	\$(13,377)	\$(7,149)
Basic and diluted net loss per share	\$ (0.46)	\$ (0.30)
Add back: Impact of goodwill amortization, net of taxes	\$ 0.04	\$ 0.07
Pro forma basic and diluted net loss per share	\$ (0.42)	\$ (0.23)

**GOODWILL AND INTANGIBLES** consisted of the following as of December 31, 2001:

	Gross Carrying Amount	Accumulated Amortization	Effect of Changes in Exchange Rates	Net Carrying Amount	Weighted- average Useful Life
(In thousands, except weighted-average useful life)					
Amortizable intangibles:					
Technology-based	\$ 2,100	\$ (271)	\$ —	\$ 1,829	7
Contract-based	3,860	(2,164)	—	1,696	6
Other	1,500	(375)	—	1,125	4
Total amortizable intangibles	\$ 7,460	\$(2,810)	—	\$ 4,650	6
Goodwill	21,401	(2,979)	—	18,422	
Total goodwill and intangibles	\$28,861	\$(5,789)	\$ —	\$23,072	

*GOODWILL AND INTANGIBLES* consisted of the following as of June 30, 2002:

	Gross Carrying Amount	Accumulated Amortization	Effect of Changes in Exchange Rates	Net Carrying Amount	Weighted- average Useful Life
(In thousands, except weighted-average useful life)					
Amortizable intangibles:					
Technology-based	\$ 4,102	\$ (535)	\$ —	\$ 3,567	6
Contract-based	3,860	(2,512)	—	1,348	6
Other	25,342	(1,723)	3,803	27,422	7
Total amortizable intangibles	\$33,304	\$(4,770)	3,803	\$32,337	6
Goodwill	59,440	(2,979)	3,575	60,036	
Total goodwill and intangibles	\$92,744	\$(7,749)	\$7,378	\$92,373	

Aggregate amortization expense related to acquired intangibles for the three months ended June 30, 2002 was approximately \$1.2 million, and for the six months ended June 30, 2002 was approximately \$1.9 million. Estimated expense related to acquired intangibles for each of the five years 2002 through 2006 is as follows:

	(In thousands)
2002	\$4,874
2003	4,977
2004	4,977
2005	4,602
2006	4,486

**LONG-LIVED ASSETS** — In August 2001, the FASB issued SFAS No. 144, “Accounting for the Impairment or Disposal of Long-Lived Assets.” SFAS No. 144 supersedes SFAS No. 121, “Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of.” SFAS No. 121 did not address the accounting for a segment of a business accounted for as a discontinued operation, which resulted in two accounting models for long-lived assets to be disposed of. SFAS No. 144 establishes a single accounting model for long-lived assets to be disposed of by sale, and requires that those long-lived assets be measured at the lower of carrying amount or fair value less cost to sell, whether reported in continuing operations or in discontinued operations. SFAS No. 144 is effective for fiscal years beginning after December 15, 2001. The Company adopted SFAS No. 144 on January 1, 2002, which did not impact its financial position or results of operations.

**EARNINGS PER SHARE** — Basic Earnings Per Share (“EPS”) is computed by dividing income available to common stockholders by the weighted-average number of common shares outstanding during the period. The computation of diluted EPS is similar to the computation of basic EPS except that the numerator is increased to include certain charges which would not have been incurred, and the denominator is increased to include the number of additional common shares that would have been outstanding (using the treasury stock and if-converted methods), if securities containing potentially dilutive common shares (convertible notes payable, options and warrants) had been converted to such common shares, and if such assumed conversion is dilutive. Due to the Company’s net loss for the three months and six months ended June 30, 2002 and 2001, basic and diluted EPS are the same, as the assumed conversion of all potentially dilutive securities would be anti-dilutive. Potential shares of common stock issuable under these securities at June 30, 2002 were approximately 2,600,000 shares of common stock issuable under options and warrants for common stock and 5,838,000 shares of common stock issuable upon conversion of subordinated notes payable.

The following is a reconciliation of the numerators and denominators used in the calculation of basic and diluted EPS for the three months ended June 30, 2002 and 2001:

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	Three Months Ended June 30, 2002			Three Months Ended June 30, 2001		
	Net Loss	Shares	Per Share Amount	Net Loss	Shares	Per Share Amount
(In thousands, except per share data)						
Basic EPS:						
Net loss attributable to common stock and share amounts	\$(5,139)	32,045	\$(0.16)	\$(14,549)	31,698	\$(0.46)
Dilutive securities:						
Stock options	—	—	—	—	—	—
Convertible subordinated debt	—	—	—	—	—	—
Diluted EPS:						
Net loss attributable to common stock and assumed share amounts	\$(5,139)	32,045	\$(0.16)	\$(14,549)	31,698	\$(0.46)

The following is a reconciliation of the numerators and denominators used in the calculation of basic and diluted EPS for the six months ended June 30, 2002 and 2001:

	Six Months Ended June 30, 2002			Six Months Ended June 30, 2001		
	Net Loss	Shares	Per Share Amount	Net Loss	Shares	Per Share Amount
(In thousands, except per share data)						
Basic EPS:						
Net loss attributable to common stock and share amounts	\$(13,862)	31,959	\$(0.43)	\$(9,455)	31,623	\$(0.30)
Dilutive securities:						
Stock options	—	—	—	—	—	—
Convertible subordinated debt	—	—	—	—	—	—
Diluted EPS:						
Net loss attributable to common stock and assumed share amounts	\$(13,862)	31,959	\$(0.43)	\$(9,455)	31,623	\$(0.30)

**RECLASSIFICATIONS** — Certain prior period amounts have been reclassified to conform to the current period presentation.

## (9) RESTRUCTURING

The Company recorded \$614,000 of restructuring charges in the second quarter of 2001, primarily associated with two reductions in force to respond to the downturn in the semiconductor capital equipment industry and the global economy. The Company's restructuring plans consisted of costs to terminate 135 regular employees and 90 temporary employees. These costs were recorded in the Company's consolidated statements of operations as "Restructuring Charges" as a component of operating expenses, and included severance benefits and notice pay. All terminations and termination benefits were communicated to the affected employees prior to June 30, 2001, and severance benefits were paid during the second quarter of 2001. The affected employees were all part of the Company's U.S. operations.

During 2000 and 2001, the Company recorded certain restructuring charges and established related accruals. The following indicates the status of each accrual at June 30, 2001 and 2002 and activity therein:

	Employee Severance and Termination Costs	Facility Closure Costs	Total Restructuring Charges
(In thousands)			
Accrual balance December 31, 2000	\$ 301	\$ 174	\$ 475
Payments in the first six months of 2001	(256)	(71)	(327)
Second quarter 2001 restructuring charge	614	—	614
Accrual balance June 30, 2001	\$ 659	\$ 103	\$ 762

Fourth quarter 2001 restructuring charge	<u>1,510</u>	<u>946</u>	<u>2,456</u>
Payments in the last six months of 2001	<u>(1,204)</u>	<u>(587)</u>	<u>(1,791)</u>
Accrual balance December 31, 2001	\$ 965	\$ 462	\$ 1,427
Payments in the first six months of 2002	<u>(965)</u>	<u>(212)</u>	<u>(1,177)</u>
Accrual balance June 30, 2002	\$ —	\$ 250	\$ 250

**(10) LITIGATION DAMAGES AND EXPENSES (RECOVERY)**

In May 2002, the Company recognized approximately \$5.3 million of litigation damages and related legal expenses pertaining to a judgment entered by a jury against the Company and in favor of MKS Instruments, Inc. ("MKS") in a patent-infringement suit in which the Company was the defendant. The Company currently has an interim royalty agreement with MKS allowing it to sell the infringing product subsequent to the date of the jury award. Under the current interim agreement, royalties payable to MKS from the sales of the related product were not material in the quarter ended June 30, 2002. The Company does not expect the Court's decision to have a material impact on its future operations.

In March 2001, the Company received a \$1.5 million settlement for recovery of legal expenses pertaining to a patent-infringement suit in which the Company was the plaintiff.

**(11) FOREIGN CURRENCY EXCHANGE GAIN**

In the second quarter of 2002, the Company recorded a net foreign currency gain of approximately \$4.6 million, the majority of which was related to an intercompany loan of Japanese yen, expected to be repaid, that Advanced Energy made to its subsidiary AE-Japan (which has a functional currency of yen) for the purpose of effecting the acquisition of Aera. The loan was transacted in the first quarter of 2002, for approximately 5.7 billion yen (approximately \$44 million based upon an exchange rate of approximately 130:1). During the first quarter of 2002, the exchange rate between the U.S. dollar and the yen remained relatively stable, and an immaterial loss was recorded related to this intercompany loan. During the second quarter of 2002, the U.S. dollar weakened significantly against the yen to 119.57, resulting in a gain. In July 2002, the Company entered into a forward contract to sell yen with its primary bank as a hedging strategy related to this loan to mitigate the effect of potential future currency fluctuations between the dollar and the yen until the loan is repaid.

**(12) COMMITMENTS AND CONTINGENCIES**

The Company is involved in disputes and legal actions arising in the normal course of its business. The Company does not believe that the ultimate resolution of such litigation will have a material adverse effect on the Company's financial position, results of operations or cash flows. The Company accrues loss contingencies in connection with its litigation when it is probable that a loss has occurred and the amount of the loss can be reasonably estimated.

**(13) SUBSEQUENT EVENT**

On August 14, 2002, the Company announced changes in operations designed to reduce redundancies and better align the Company's recently acquired Aera mass flow controller business within its operating framework. The plan included manufacturing and facilities consolidations, related headcount reductions of approximately 100 employees, or approximately 7% of the Company's workforce, and stringent discretionary spending restrictions. Included would be the closure within 90 days of the Company's Austin, Texas manufacturing facility for the Aera-brand mass flow controller products, due to the transfer of the manufacturing of these products to Hachioji, Japan, to be co-located with Aera Japan Limited. The Company expects the cost of these changes to be approximately \$3 million, primarily related to severance and lease termination costs.

## ITEM 2. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

### Special Note on Forward-Looking Statements

The following discussion contains, in addition to historical information, 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. Statements that are other than historical information are forward-looking statements. For example, statements relating to our beliefs, expectations and plans are forward-looking statements, as are statements that certain actions, conditions or circumstances will continue. Forward-looking statements involve risks and uncertainties. As a result, our actual results may differ materially from the results discussed in the forward-looking statements. Factors that could cause or contribute to such differences or prove any forward-looking statements, by hindsight, to be overly optimistic or unachievable, include, but are not limited to the following:

- changes or slowdowns in general economic conditions or conditions in the semiconductor and semiconductor capital equipment industries and other industries in which our customers operate;
- the timing and nature of orders placed by major customers;
- changes in customers’ inventory management practices;
- customer cancellations of previously placed orders and shipment delays;
- pricing competition from our competitors;
- component shortages or allocations or other factors that change our levels of inventory or substantially increase our spending on inventory;
- the introduction of new products by us or our competitors;
- costs incurred by responding to specific feature requests by customers;
- declines in macroeconomic conditions;
- timing and challenges of integrating recent and potential future acquisitions and strategic alliances;
- our ability to attract and retain key personnel; and
- our exposure to currency exchange rate fluctuations between the several functional currencies in foreign locations in which we have operations.



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For a discussion of these and other factors that may impact our realization of our forward-looking statements, see our Annual Report on Form 10-K for the year ended December 31, 2001, filed March 25, 2002, Part I “Cautionary Statements — Risk Factors.”

New risk factors emerge from time to time, and it is not possible for management to predict all such risk factors, nor can it assess the impact of all such risk factors on its business, or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Our expectations, beliefs and projections are expressed in good faith and are believed to have a reasonable basis. However, we make no assurance that such expectations, beliefs or projections will be achieved.

Because of the risks and uncertainties, investors should not place undue reliance on forward-looking statements as a prediction of actual results. We have no obligation or intent to release publicly any revisions to any forward-looking statements, whether as a result of new information, future events, or otherwise.

### **Results of Operations for the Three Months Ended June 30, 2002 and 2001**

#### *SALES*

We design, manufacture and support a group of key subsystems used in plasma-based thin-film processing equipment for the manufacture of semiconductors; compact disks, DVDs and other digital storage media; flat-panel computer and television screens; coatings for architectural glass and optics; and power supplies for advanced technology computer workstations. We also sell spare parts and repair services worldwide through our customer service and technical support organization. Our primary subsystems include complex power conversion and control systems, and products that control the flow of gases into the process chambers and thermal control and sensing within the chamber.

We provide solutions to a diversity of markets and geographic regions. However, we are focused on the semiconductor capital equipment industry, which accounted for approximately 69% of our sales in the second quarter of 2002 and 60% in the second quarter of 2001. We expect future sales to the semiconductor capital equipment industry to represent approximately 55% to 70% of our total revenue, depending upon the strength or weakness of industry cycles.

Sales were \$67.9 million in the second quarter of 2002 and \$46.2 million in the second quarter of 2001, representing an increase of 47% from the second quarter of 2001 to the second quarter of 2002. Sales in the second quarter of 2002 included a combined \$14.1 million from Aera Japan Limited, which we acquired on January 18, 2002, and Dressler HF Technik GmbH, which we acquired on March 28, 2002. The second quarter of 2002 was the second consecutive quarter of increased sales, up from

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\$34.0 million in the fourth quarter of 2001 and \$42.9 million in the first quarter of 2002. The revenue increases, excluding Aera and Dressler, came primarily from the semiconductor capital equipment industry, which experienced a recovery in the first six months of 2002 from the most pronounced downturn in industry history. The semiconductor industry is highly cyclical and is impacted by changes in the macroeconomic environment, changes in semiconductor supply and demand, and rapid technological advances in both semiconductor devices and wafer fabrication processes. As a result of the significance of this industry to our business, our revenues are impacted most directly by the state of the semiconductor industry.

The following tables summarize net sales and percentages of net sales by customer type for the three-month periods ended June 30, 2002 and 2001:

	Three Months Ended June 30,	
	2002	2001
	(In thousands)	
Semiconductor capital equipment	\$47,029	\$27,756
Data storage	3,750	2,284
Flat panel display	2,485	3,735
Advanced product applications	9,829	8,319
Customer service technical support	4,800	4,077
	<u>\$67,893</u>	<u>\$46,171</u>

	Three Months Ended June 30,	
	2002	2001
Semiconductor capital equipment	69%	60%
Data storage	6	5
Flat panel display	4	8
Advanced product applications	14	18
Customer service technical support	7	9
	<u>100%</u>	<u>100%</u>

The following table summarizes annual percentage changes in net sales by customer type for us from the three-month period ended June 30, 2001 to the three-month period ended June 30, 2002:

	Second quarter 2002 change from second quarter 2001
Semiconductor capital equipment	69%
Data storage	64%
Flat panel display	(33)%
Advanced product applications	18%
Customer service technical support	18%
Total sales	47%

Excluding Aera and Dressler, the increase in total sales from the second quarter of 2001 to the second quarter of 2002 would have been 16%. The increase in sales specifically to the semiconductor capital equipment industry from the second quarter of 2001 to the second quarter of 2002 would have been 18%.

Applied Materials, Inc. is our largest customer and accounted for 34% of our sales for the three months ended June 30, 2002, and 20% of our sales for the three months ended June 30, 2001. No other customer accounted for more than 10% of our sales during these periods.

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The following tables summarize net sales and percentages of net sales by geographic region for the three-month periods ended June 30, 2002 and 2001:

	Three Months Ended June 30,	
	2002	2001
(In thousands)		
United States and Canada	\$45,986	\$28,563
Europe	8,584	7,007
Asia Pacific	13,163	10,351
Rest of world	160	250
	\$67,893	\$46,171

  

	Three Months Ended June 30,	
	2002	2001
United States and Canada	68%	62%
Europe	13	15
Asia Pacific	19	22
Rest of world	—	1
	100%	100%

### GROSS MARGIN

Our gross margin was 35.8% in the second quarter of 2002 and 16.9% in the second quarter of 2001. The second quarter of 2001 included a \$7.1 million writedown related to the identification of and related reserve for excess and obsolete inventory as well as a warranty provision recorded to reflect current experience and anticipated incremental repairs and retrofits. Excluding this writedown, gross margin in the second quarter of 2001 would have been 32.3%. The increase in gross margin from the second quarter of 2001, excluding the writedown, to the second quarter of 2002, was due to higher absorption of manufacturing overhead and fixed costs resulting from the impact of higher sales.

We provide warranty coverage for our systems ranging from 12 to 36 months, with the majority of our products ranging from 18 to 24 months, and estimate the anticipated costs of repairing our systems under such warranties based on the historical average costs of the repairs. The assumptions we use to estimate warranty accruals are reevaluated periodically in light of actual experience and, when appropriate, the accruals are adjusted. Our determination of the appropriate level of warranty accrual is subjective, and based on estimates, and actual experience can be different than our expectations. We recognized charges for warranty expense of \$1.6 million in the second quarter of 2002 and \$4.3 million in the second quarter of 2001. In 2001, we experienced higher than expected levels of warranty costs on certain new products that had been extensively redesigned. These products had technical problems that we were able to correct, and we took action to repair, rework, and in some cases, replace the products.

Historically, price competition has not had a material effect on margins. However, competitive pressures may produce a decline in average selling prices for certain products. Any decline in average selling prices not offset by reduced costs could result in declines in our gross margins.

As the semiconductor capital equipment industry moves to 300mm equipment and smaller line widths, these technology changes require new products that we have developed or are developing. Typical of products early in their life cycle and at low production levels, these products have lower margins than our established products. Margins on these products should improve over time.

### *RESEARCH AND DEVELOPMENT EXPENSES*

We believe continued investment in the research and development of new systems is critical to our ability to serve new and existing markets, develop new products and improve existing product designs to achieve our vision of convergent technologies. We continue to invest heavily in new product development even during industry downturns, to be advantageously positioned for turnaround in demand for old and new products, which often occurs during sudden and unpredictable industry upturns. Since our inception, all of our research and development costs have been expensed as incurred.

Our research and development expenses were \$12.6 million in the second quarter of 2002 and \$11.0 million in the second quarter of 2001. This represents an increase of 14% from the second quarter of 2001 to the second quarter of 2002, and an 8% increase when excluding Aera and Dressler. As a percentage of sales, research and development expenses decreased from 23.9% in the second quarter of 2001 to 18.5 % in the second quarter of 2002 because of the higher sales base. Research and development expenses in the second quarter of 2002 included approximately \$700,000 due to the acquisitions of Aera on January 18, 2002, and Dressler on March 28, 2002. We intend to maintain our quarterly spending on research and development at approximately \$12 million during each of the last two quarters of 2002.

### *SALES AND MARKETING EXPENSES*

As we continue our worldwide expansion, and expand our product offerings through acquisitions, our sales and marketing efforts have become increasingly complex. We continue to refine our sales and marketing functions as we acquire and integrate new companies. We have begun an effort to market some of our products directly to end users, in addition to our traditional marketing to manufacturers of semiconductor capital equipment and other industries. Our sales and marketing expenses support domestic and international sales and marketing activities that include personnel, trade shows, advertising, and other selling and marketing activities.

Our sales and marketing expenses were \$8.7 million in the second quarter of 2002, including \$2.6 million attributable to Aera and Dressler, and \$6.0 million in the second quarter of 2001. This represents a 46% increase from the second quarter of 2001 to the second quarter of 2002, and a 3% increase without the inclusion of Aera and Dressler. As a percentage of sales, sales and marketing expenses were 12.9% in the second quarter of 2001 and 12.8% in the second quarter of 2002.

### *GENERAL AND ADMINISTRATIVE EXPENSES*

Our general and administrative expenses support our worldwide corporate legal, patent, tax, financial, administrative, information systems and human resources functions in addition to our general management and integration costs related to acquisitions. General and administrative expenses were \$7.0 million in the second quarter of 2002, including \$2.1 million attributable to Aera and Dressler, and \$5.6 million in the second quarter of 2001. As a percentage of sales, general and administrative expenses decreased from 12.2% in the second quarter of 2001 to 10.4% in the second quarter of 2002 primarily because of the higher sales base. The lower year-over-year spending excluding Aera and Dressler is due to expense reductions we implemented in 2001.

### *LITIGATION DAMAGES AND EXPENSES*

During the second quarter of 2002, we recorded a charge of \$5.3 million pertaining to damages awarded by a jury in a patent infringement case in which we were the defendant, and legal expenses related to the judgment. The Applied Science and Technology, or ASTeX, division of MKS Instruments, Inc., or MKS, was the plaintiff in the case, which was tried in a Delaware court. Sales of the product in question have accounted for less than five percent of total sales since the product's introduction. We currently have an interim royalty agreement with MKS allowing us to sell the infringing product to our customer subsequent to the date of the jury award. Under the current interim agreement, royalties payable to MKS from the sales of the related product were not material in the quarter ended June 30, 2002. We are also pursuing several possibilities to minimize the future impact of this decision, including negotiation of a definitive settlement with MKS, appealing the Court's decision and the development of a new product. We do not expect the Court's decision to have a material impact on our future operations.

### *GOODWILL IMPAIRMENT*

During the second quarter of 2001, we terminated the operations of our Tower Electronics, Inc. subsidiary and our Fourth State Technology, or FST, product line, due to significant softening in the projected demand for these products. Revenue contributed by Tower and FST operations for 2001, 2000 and 1999 represented less than five percent of our total revenue in each of these years. As a result of these actions, estimated related future cash flows no longer supported the carrying amounts of related goodwill, and we recorded goodwill impairment charges of \$5.4 million in 2001 related to Tower and FST.

### *RESTRUCTURING CHARGES*

During the second quarter of 2001, in response to the downturn in the semiconductor capital equipment industry, we implemented two reductions in force totaling approximately 135 regular employees and 90 temporary employees and recorded a charge of \$614,000 for restructuring and severance costs, including fringe benefits. We paid cash to the affected employees in this amount during the second quarter of 2001.

*OTHER INCOME (EXPENSE)*

Other income (expense) consists primarily of interest income and expense, foreign exchange gains and losses and other miscellaneous gains, losses, income and expense items.

Interest income was approximately \$800,000 in the second quarter of 2002 and \$1.3 million in the second quarter of 2001. The decrease was due to lower interest rates in 2002 resulting from the Federal Reserve's lowering of interest rates throughout 2001, and due to a lower level of investment in marketable securities resulting from our use of a portion of our cash reserves to acquire Aera in January 2002 and Dressler in March 2002.

Interest expense consists principally of interest on our convertible subordinated notes, on borrowings under our bank credit and capital lease facilities and debt assumed with our acquisition of Aera. We also had a state government loan, which we repaid in December 2001. Interest expense was approximately \$3.2 million in the second quarter of 2002 and \$1.2 million in the second quarter of 2001. The increase of interest expense was primarily due to the higher level of debt resulting from our issuance of \$125 million of convertible subordinated notes in August 2001, as well as debt assumed in the acquisition of Aera.

In January 2002, Advanced Energy purchased 5.7 billion Japanese yen, which it loaned to its subsidiary, Advanced Energy Japan K.K., or AE-Japan, which has the functional currency of the yen, to transact the latter's acquisition of Aera. This created a yen-denominated intercompany receivable on the books of Advanced Energy, which has the functional currency of the U.S. dollar. From the time of these transactions, which occurred in January 2002, until March 31, 2002, there was very little change in the exchange rate of the U.S. dollar to the Japanese yen. During the three months ended June 30, 2002, there was significant movement in the exchange rate as the dollar weakened relative to the yen. In accordance with Statement of Financial Accounting Standards No. 52, "Foreign Currency Translation," we recorded a gain on this yen-denominated intercompany receivable of \$4.6 million in the quarter ended June 30, 2002. In July 2002, we entered into a forward sale of 5.7 billion yen with our primary bank to address this exposure. From time to time, we may enter into other hedging transactions to address other exposures as they arise. We expect that this intercompany balance will be repaid in the foreseeable future.

Our foreign subsidiaries' sales are primarily denominated in currencies other than the U.S. dollar. Other than the transaction described above, we recorded net foreign currency losses of \$98,000 in the second quarter of 2002 and losses of \$68,000 in the second quarter of 2001. Since 1997, we have entered into various forward foreign exchange contracts to mitigate currency fluctuations in the Japanese yen. We continue to evaluate various policies to minimize the effect of foreign currency fluctuations. At June 30, 2002, we had \$2.0 million of foreign currency forward contracts outstanding.

Miscellaneous expense was \$653,000 in the second quarter of 2002, and \$115,000 in the second quarter of 2001.

***BENEFIT FOR INCOME TAXES***

The income tax benefit for the second quarter of 2002 was \$2.8 million and represented an effective rate of 35%. The income tax benefit for the second quarter of 2001 was \$6.6 million and represented an effective rate of 31%. Changes in our relative earnings and the earnings of our foreign subsidiaries affect our consolidated effective tax rate. We adjust our income taxes periodically based upon the anticipated tax status of all foreign and domestic entities, and have adopted income tax planning strategies to reduce our worldwide income tax expense.

**Results of Operations for the Six Months Ended June 30, 2002 and 2001**

***SALES***

Sales were \$110.8 million in the first six months of 2002 and \$120.9 million in the first six months of 2001, representing a decrease of 8% from the first six months of 2001 to the first six months of 2002. Sales in the first six months of 2002 included \$20.9 million from Aera and Dressler. The revenue decrease came primarily from the semiconductor capital equipment industry. The flat panel display industry also showed a 57% decrease from the first six months of 2001 to the first six months of 2002, due to macroeconomic conditions.

The following tables summarize net sales and percentages of net sales by customer type for the six-month periods ended June 30, 2002 and 2001:

	<b>Six Months Ended June 30,</b>	
	<b>2002</b>	<b>2001</b>
	<b>(In thousands)</b>	
Semiconductor capital equipment	\$ 74,589	\$ 78,803
Data storage	5,933	4,483
Flat panel display	4,532	10,445
Advanced product applications	16,867	19,293
Customer service technical support	8,859	7,861
	<b>\$110,780</b>	<b>\$120,885</b>
	<b>Six Months Ended June 30,</b>	
	<b>2002</b>	<b>2001</b>
Semiconductor capital equipment	67%	65%
Data storage	5	4
Flat panel display	5	9
Advanced product applications	15	16
Customer service technical support	8	6
	<b>100%</b>	<b>100%</b>

Excluding Aera and Dressler, the decrease in total sales from the first six months of 2001 to the first six months of 2002 would have been 26%. The decrease in sales specifically to the semiconductor capital equipment industry from the first six months of 2001 to the first six months of 2002 would have been 32%.

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Applied Materials, Inc. is our largest customer and accounted for 30% of our sales for the six months ended June 30, 2002, and 25% of our sales for the six months ended June 30, 2001. No other customer accounted for more than 10% during these periods.

The following tables summarize net sales and percentages of net sales by geographic region for the six-month periods ended June 30, 2002 and 2001:

	Six Months Ended June 30,	
	2002	2001
(In thousands)		
United States and Canada	\$ 72,737	\$ 81,361
Europe	14,176	15,620
Asia Pacific	23,636	23,443
Rest of world	231	461
	<u>\$110,780</u>	<u>\$120,885</u>

	Six Months Ended June 30,	
	2002	2001
United States and Canada	66%	67%
Europe	13	13
Asia Pacific	21	20
Rest of world	—	—
	<u>100%</u>	<u>100%</u>

### GROSS MARGIN

Our gross margin was 34.0% in the first six months of 2002 and 32.3% in the first six months of 2001. The year-over-year increase in gross margin was due to the inclusion in the 2001 period of a \$7.1 million writedown related to the identification and future disposal of excess and obsolete inventory and additional warranty provision recorded to reflect experience and anticipated incremental repairs and retrofits. Excluding the writedown, gross margin in the first six months of 2001 would have been 38.2%. The decrease from 38.2% in the first six months of 2001, excluding the writedown, to 34.0% in the first six months of 2002, was due to lower absorption of higher manufacturing overhead and fixed costs due to the impact of lower sales.

We recognized charges for warranty expense of \$3.9 million in the first six months of 2002 and \$5.4 million in the first six months of 2001. In 2001, we experienced higher than expected levels of warranty costs on certain new products that had been extensively redesigned. These products had technical problems that we were able to correct, and we took action to repair, rework, and in some cases, replace the products.

### RESEARCH AND DEVELOPMENT EXPENSES

Our research and development expenses were \$23.8 million in the first six months of 2002 and \$23.4 million in the first six months of 2001. As a percentage of sales, research and development expenses increased from 19.4% in the first six months of 2001 to 21.5% in the first six months of 2002. Research and development expenses in the first six months of 2002 included approximately \$1.2 million due to the acquisitions of Aera on



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January 18, 2002, and Dressler on March 28, 2002. The lower year-over-year spending excluding Aera and Dressler is due to expense reductions we implemented in 2001.

### *SALES AND MARKETING EXPENSES*

Our sales and marketing expenses were \$15.5 million in the first six months of 2002 and \$12.6 million in the first six months of 2001. As a percentage of sales, sales and marketing expenses increased from 10.4% in the first six months of 2001 to 14.0% in the first six months of 2002. Sales and marketing expenses in the first six months of 2002 included approximately \$4.1 million from Aera and Dressler. The lower year-over-year spending excluding Aera and Dressler is due to expense reductions we implemented in 2001.

### *GENERAL AND ADMINISTRATIVE EXPENSES*

Our general and administrative expenses were \$13.8 million in the first six months of 2002 and \$11.8 million in the first six months of 2001. As a percentage of sales, general and administrative expenses increased from 9.8% in the first six months of 2001 to 12.5% in the first six months of 2002. General and administrative expenses in the first six months of 2002 included approximately \$4.3 million from Aera and Dressler. The lower year-over-year spending excluding Aera and Dressler is due to expense reductions we implemented in 2001.

### *LITIGATION DAMAGES AND EXPENSES (RECOVERY)*

During the second quarter of 2002, we recorded a charge of \$5.3 million pertaining to damages awarded by a jury in a patent infringement case in which we were the defendant, and legal expenses related to the judgment. The Applied Science and Technology, or ASTeX, division of MKS Instruments, Inc., or MKS, was the plaintiff in the case, which was tried in a Delaware court. Sales of the product in question have accounted for less than five percent of total sales since the product's introduction. We currently have an interim royalty agreement with MKS allowing us to sell the infringing product to our customer subsequent to the date of the jury award. Under the current interim agreement, royalties payable to MKS from the sales of the related product were not material in the quarter ended June 30, 2002. We are also pursuing several possibilities to minimize the future impact of this decision, including negotiation of a definitive settlement with MKS, appealing the Court's decision and the development of a new product. We do not expect the Court's decision to have a material impact on our future operations. In the first quarter of 2001, we received a \$1.5 million settlement for recovery of legal expenses pertaining to a patent infringement suit in which we were the plaintiff.

### *GOODWILL IMPAIRMENT*

During the second quarter of 2001, we terminated the operations of our Tower Electronics, Inc. subsidiary and our Fourth State Technology, or FST, product line, due to significant softening in the projected demand for these products. Revenue contributed by

Tower and FST operations for 2001, 2000 and 1999 represented less than five percent of our total revenue in each of these years. As a result of these actions, estimated related future cash flows no longer supported the carrying amounts of related goodwill, and we recorded goodwill impairment charges of \$5.4 million in 2001 related to Tower and FST.

### *RESTRUCTURING CHARGES*

During the second quarter of 2001, in response to the downturn in the semiconductor capital equipment industry, we implemented two reductions in force totaling approximately 135 regular employees and 90 temporary employees and recorded a charge of \$614,000 for restructuring and severance costs, including fringe benefits. We paid cash to the affected employees in this amount during the second quarter of 2001.

### *OTHER (EXPENSE) INCOME*

Interest income was \$1.7 million in the first six months of 2002 and \$3.1 million in the first six months of 2001. The decrease was due to lower interest rates in 2002 resulting from the Federal Reserve's lowering of interest rates throughout 2001, and due to a lower level of investment in marketable securities resulting from our use of a portion of our cash reserves to acquire Aera in January 2002.

Interest expense was \$6.5 million in the first six months of 2002 and \$2.5 million in the first six months of 2001. The increase of interest expense was primarily due to the higher level of debt resulting from our issuance of \$125 million of convertible subordinated notes in August 2001, as well as debt assumed in the acquisition of Aera.

We recorded net foreign currency gains of \$4.6 million in the first six months of 2002, essentially all of which was related to a gain we recorded on the Japanese-yen denominated intercompany receivable discussed above. We recorded net foreign currency losses of \$51,000 in the first six months of 2001.

Miscellaneous expense was approximately \$400,000 in the first six months of 2002 and in the first six months of 2001.

### *BENEFIT FOR INCOME TAXES*

The income tax benefit for the first six months of 2002 was \$7.5 million and represented an effective rate of 35%. The income tax benefit for the first six months of 2001 was \$3.9 million and represented an effective rate of 29%.

## **Liquidity and Capital Resources**

Our financing strategy has been to raise capital from debt and equity markets to provide liquidity to enable our investments in acquisitions and alliances, which support

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our strategic vision of being a single source provider of higher valued subsystems and integrated solutions. We maintain substantial levels of cash and marketable securities to have funding readily available for such investment opportunities when they arise. Since 1995, to better enable such strategic investments, we have attained this liquidity with proceeds from underwritten public offerings of our common stock and, since 1999, two offerings of convertible subordinated debt.

Operating activities used cash of \$13.6 million in the first six months of 2002, primarily reflecting the impact of net loss and increases in working capital as our level of revenue and operations have increased. As part of this net cash used of \$13.6 million, increases in accounts receivable and decreases in accounts payable used cash of \$12.5 million, and decreases in inventories and other current assets provided cash of \$3.4 million. Operating activities provided cash of \$10.0 million in the first six months of 2001, primarily reflecting the impact on net loss of non-cash items and impairments and decreases in accounts receivable and accounts payable and increases in inventories of \$19.5 million. We expect future receivable and inventory balances to fluctuate with net sales. Any increase in our inventory levels may require the use of cash to finance the inventory. Additionally, we may experience changes in our ability to timely collect payments from our customers because most of our customers experience the same volatility of the semiconductor capital equipment industry as we.

Investing activities used cash of \$30.7 million in the first six months of 2002, and consisted of the acquisition of Aera for \$35.7 million net of \$8.3 million of cash acquired, the acquisition of Dressler for \$16.1 million net of \$680,000 of cash acquired, the acquisition of the minority interest of LITMAS of \$400,000 in addition to stock of Advanced Energy valued at approximately \$4.2 million, the purchase of property and equipment of \$5.0 million and the purchase of other investments of \$1.7 million, offset by the net sale of marketable securities of \$28.4 million. Investing activities used cash of \$10.7 million in the first six months of 2001, and consisted of the acquisition of EMCO for \$29.9 million net of \$459,000 of cash acquired, the purchase of property and equipment of \$9.4 million and the purchase of other investments of \$639,000, offset by the net sale of marketable securities of \$29.3 million. Investing cash flows experience significant fluctuations from year to year as we buy and sell marketable securities, which we convert to cash to fund strategic investments, and as we transfer cash into marketable securities when we attain levels of cash that are greater than needed for current operations.

Financing activities used cash of \$3.2 million in the first six months of 2002, and consisted primarily of net repayment of notes payable and capital lease obligations of \$3.7 million, partially offset by proceeds from the exercise of employee stock options and sale of common stock through our employee stock purchase plan, or ESPP, of \$509,000. Financing activities provided cash of \$801,000 in the first six months of 2001, and consisted primarily of proceeds from the exercise of employee stock options and sale of common stock through our ESPP of \$2.7 million, partially offset by net repayment of notes payable and capital lease obligations of \$1.9 million.

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We plan to spend approximately \$10 million to \$11 million in 2002 for the acquisition of equipment, leasehold improvements and furnishings, with depreciation expense for 2002 projected to be \$12 million. Our planned level of capital expenditures is subject to frequent revisions because our business experiences sudden changes as we move into industry upturns and downturns and expected sales levels change.

As of June 30, 2002, we had working capital of \$288 million, a decrease of \$62 million from December 31, 2001. Our principal sources of liquidity consisted of \$36 million of cash and cash equivalents and \$162 million of marketable securities. We also have a \$25 million revolving line of credit. Advances under the line of credit bear interest at the prime rate (4.75% at August 2, 2002) minus 1%. Any advances under this revolving line of credit will be due and payable May 2003. In July 2002, we reduced our borrowing base by \$4.9 million in connection with a foreign exchange forward contract entered into by Advanced Energy, providing us with net borrowing availability of approximately \$20 million. We are subject to covenants on our line of credit that provide certain restrictions related to working capital, net worth, acquisitions and payment and declaration of dividends, and we are in compliance with all such covenants at June 30, 2002. As a result of our acquisition of Aera, we now have additional credit lines from several Japanese banks amounting to total availability of approximately \$34 million. At June 30, 2002, we had approximately \$30 million outstanding under these borrowings, up from approximately \$27 million at March 31, 2002, of which the increase was due to changes in the exchange rate of the U.S. dollar and the Japanese yen, offset by approximately \$400,000 of repayments. These senior borrowings have interest rates ranging from 1.23% to 3.2%, and repayment dates ranging from the present through May 2007.

We lease our executive offices and manufacturing facilities in Fort Collins, Colorado from two limited liability partnerships, which include two of our directors, one of whom is an officer. The leases relating to these spaces expire in 2011, 2013 and 2016. Annual lease payments under these leases are approximately \$2.2 million.

We believe that our cash and cash equivalents, marketable securities, cash flow from operations and available borrowings, will be sufficient to meet our working capital needs for at least the next twelve months. After that time, we may require additional equity or debt financing to address our working capital, capital equipment or expansion needs. In addition, any significant acquisitions we make may require additional equity or debt financing to fund the purchase price, if paid in cash. There can be no assurance that additional funding will be available when required or that it will be available on terms acceptable to us. In 2006, when our convertible subordinated notes become due, it is possible we may need substantial funds to repay such debt, which was \$206.6 million at June 30, 2002. Our 5.00% convertible subordinated notes of \$125 million are due September 1, 2006, and our 5.25% convertible subordinated notes of \$81.6 million are due November 15, 2006. Payment could occur if our stock price remains at low levels throughout this period, the prices at which we can effect conversion are not met in the market in which our stock is traded, and the holders of our notes choose not to otherwise

convert. In such a situation there can be no assurance that we will be able to refinance the debt.

On August 14, 2002, we announced changes in operations designed to reduce redundancies and better align our recently acquired Aera mass flow controller business within our operating framework. The plan included manufacturing and facilities consolidations, related headcount reductions of approximately 100 employees, or approximately 7% of our workforce, and stringent discretionary spending restrictions. Included would be the closure within 90 days of our Austin, Texas manufacturing facility for the Aera-brand mass flow controller products, due to the transfer of the manufacturing of these products to Hachioji, Japan, to be co-located with Aera Japan Limited. We expect the cost of these changes to be approximately \$3 million, primarily related to severance and lease termination costs.

### **ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

#### **Interest Rate Risk**

Our exposure to market risk, for changes in interest rates, relates primarily to our investment portfolio and long-term debt obligations. We generally place our investments with high credit quality issuers and by policy are averse to principal loss and seek to protect and preserve our invested funds by limiting default risk, market risk and reinvestment risk. As of June 30, 2002, our investments in marketable securities consisted primarily of commercial paper, municipal bonds and notes and institutional money markets. Our commercial paper consists of high credit quality, short-term money market preferreds, short-term bonds and tax-free auction rate securities with maturities or reset dates of 120 days or less. These securities are highly liquid and have short maturities. Earnings on our marketable securities are typically invested into similar securities. In the second quarter of 2002, the rates we earned on our marketable securities earned approximately two percent on a before tax equivalent basis. Because the Federal Reserve repeatedly lowered interest rates throughout 2001, the interest rates we earned on our investments during the second quarter of 2002 were substantially lower when compared to the second quarter of 2001. This, in conjunction with using our available cash and cash reserves for acquisitions, including the Aera and Dressler acquisitions in early 2002, has greatly reduced our recent and anticipated interest income.

The interest rates on our subordinated debt are at fixed rates, specifically, at 5.25% for the \$81.6 million of our debt due November 2006, and at 5.00% for the \$125 million of our debt that is due September 2006. Our offerings of subordinated debt in 1999 and 2001 increased our fixed interest expense upon each issuance, though interest expense was partially reduced by the repurchase of a portion of the first offering in 2000. Because these rates are fixed, we believe there is no risk of increased interest expense.

#### **Foreign Currency Exchange Rate Risk**

We transact business in various foreign countries. Our primary foreign currency cash flows are generated in countries in Asia and Europe. During the second quarter of 2002, the U.S. dollar weakened 10% against the Japanese yen and 12% against the euro. It is highly uncertain how currency exchange rates will fluctuate in the future. We have entered into various forward foreign-exchange contracts to mitigate against currency fluctuations in the Japanese yen. We will continue to evaluate various methods to minimize the effects of currency fluctuations for when we translate the financial statements of our foreign subsidiaries into U.S. dollars. At June 30, 2002, we held

foreign forward exchange contracts in Japan with notional amounts of \$2.0 million and market settlement amounts of approximately \$2.15 million for an unrealized loss position of approximately \$150,000. In July 2002, we entered into a foreign exchange forward contract to mitigate the impact of future foreign currency fluctuations to our 5.7 billion yen intercompany receivable due from our subsidiary, AE-Japan.

### Other Risk

We have invested in start-up and early-stage companies and strategic alliances and may in the future make additional investments in such companies that develop products that we believe may provide future benefits. We have written down the majority of the cost of one such investment in 2001, related to a strategic alliance we started in 2000. Such current investments and any future investments will be subject to all of the risks inherent in investing in companies that are not established, or in which, due to our level of investment, we do not exercise significant management control.

## **PART II OTHER INFORMATION**

### **ITEM 1. LEGAL PROCEEDINGS**

From time to time, we are party to various legal proceedings relating to our business. We are not currently party to any material litigation, other than the litigation disclosed in our 2001 Annual Report on Form 10-K, filed March 25, 2002. There have not been any material developments in such litigation, except as follows:

The patent infringement case against us, in which the Applied Science and Technology, or ASTeX, division of MKS Instruments, Inc., or MKS, was the plaintiff, was tried in May 2002. The Federal court jury found that we had infringed MKS's patent by manufacturing and selling our RAPID product. The jury awarded MKS damages of \$4.2 million and affirmed the validity of the MKS patent, which is related to devices that disassociate gases for use in semiconductor processing applications. The RAPID product has represented less than five percent of our consolidated sales since the product's introduction in late 2000 and approximately two percent of our consolidated sales for the six months ended June 30, 2002. We currently have an interim royalty agreement with MKS allowing us to sell the infringing product to our customer subsequent to the date of the jury award. Under the current interim agreement, royalties payable to MKS from the sales of the related product were not material in the quarter ended June 30, 2002. We are also pursuing several possibilities to minimize the future impact of this decision, including negotiation of a definitive settlement with MKS, appealing the Court's decision and the development of a new product. We do not expect the Court's decision to have a material impact on our future operations.

### **ITEM 2. CHANGES IN SECURITIES AND USE OF PROCEEDS**

Not applicable.

### **ITEM 3. DEFAULTS UPON SENIOR SECURITIES**

Not applicable.

### **ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS**

We held our 2002 Annual Meeting of Stockholders on Wednesday, May 8, 2002, to vote on two proposals. Proxy statements were sent to all shareholders. The first proposal was for the election of the following eight people as directors: Douglas S. Schatz, G. Brent Backman, Richard P. Beck, Trung T. Doan, Arthur A. Noeth, Elwood Spedden,

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Gerald M. Starek and Arthur W. Zafiropoulo. All eight directors were elected with the following votes tabulated:

Name of Director	Total Vote for Each Director	Total Vote Withheld From Each Director
Mr. Schatz	27,788,648	132,429
Mr. Backman	27,804,775	116,312
Mr. Beck	27,804,775	116,312
Mr. Doan	27,788,648	132,439
Mr. Noeth	27,807,745	113,342
Mr. Spedden	27,868,216	52,871
Mr. Starek	27,804,775	116,312
Mr. Zafiropoulo	27,804,775	116,312

The second proposal was to increase the number of authorized shares of our common stock from 55,000,000 shares to 70,000,000 shares. The increase was ratified, with the following votes tabulated:

For	Against	Abstain
26,494,148	570,971	855,968

## ITEM 5. OTHER INFORMATION

None.

## ITEM 6. EXHIBITS AND REPORTS ON FORM 8-K

(a) Exhibits:

- 3.1 Restated Certificate of Incorporation, as amended(1)
- 3.2 By-laws(2)
- 10.1 Loan and Security Agreement dated May 10, 2002, by and among Silicon Valley Bank, as a bank, and Advanced Energy Industries, Inc., as borrower



- (1) Incorporated by reference to our Quarterly Report on Form 10-Q for the quarter ended June 30, 2001 (File No. 000-26966), filed August 13, 2001.
- (2) Incorporated by reference to our Registration Statement on Form S-1 (File No. 33-97188), filed September 20, 1995, as amended.

(b) Reports on Form 8-K

We filed the following reports on Form 8-K during the second quarter of 2002:

- (i) Report on Form 8-K/A filed on April 2, 2002, amending our report on Form 8-K filed on February 1, 2002 relating to our acquisition of Aera Japan Ltd. The amendment sets forth under Item 7 audited consolidated financial statements of Aera Japan Ltd. as of June 30, 2001, unaudited condensed consolidated financial statements of Aera Japan Ltd. as of December 31, 2001 and 2000, and pro forma financial information.
- (ii) Report on Form 8-K filed on May 2, 2002, as amended on Form 8-K/A filed on May 3, 2002. The report summarizes in Item 5 our financial results for the first quarter of 2002. The press release relating to such results is attached under Item 7.
- (iii) Report on Form 8-K filed on May 21, 2002. The report provides under Item 5 information relating to the Federal court jury verdict finding that we had infringed a U.S. patent held by MKS Instruments, Inc. and awarding damages to MKS of \$4.2 million. The press release relating to the verdict is attached under Item 7.

**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.

ADVANCED ENERGY INDUSTRIES, INC.

/s/ Michael El-Hillow

Michael El-Hillow  
Senior Vice President, Chief Financial  
Officer (Principal Financial Officer)

August 14, 2002

## INDEX TO EXHIBITS

EXHIBIT NUMBER	DESCRIPTION
3.1	Restated Certificate of Incorporation, as amended(1)
3.2	By-laws(2)
10.1	Loan and Security Agreement dated May 10, 2002, by and among Silicon Valley Bank, as a bank, and Advanced Energy Industries, Inc., as borrower

- (1) Incorporated by reference to our Quarterly Report on Form 10-Q for the quarter ended June 30, 2001 (File No. 000-26966), filed August 13, 2001.
- (2) Incorporated by reference to our Registration Statement on Form S-1 (File No. 33-97188), filed September 20, 1995, as amended.

## EXHIBIT 10.1

THIS LOAN AND SECURITY AGREEMENT dated May 10, 2002, between SILICON VALLEY BANK ("Bank"), whose address is 3003 Tasman Drive, Santa Clara, California 95054 with a loan production office at 4410 Arapahoe Avenue, Suite 200, Boulder, CO 80303 and ADVANCED ENERGY INDUSTRIES, INC. ("Borrower"), whose address is 1625 Sharp Point Drive, Fort Collins, CO 80525 provides the terms on which Bank will lend to Borrower and Borrower will repay Bank. The parties agree as follows:

## 1 ACCOUNTING AND OTHER TERMS

Accounting terms not defined in this Agreement will be construed following GAAP. Calculations and determinations must be made following GAAP. The term "financial statements" includes the notes and schedules. The terms "including" and "includes" always mean "including (or includes) without limitation," in this or any Loan Document. Capitalized terms in this Agreement shall have the meanings set forth in Section 13.

2	LOAN AND TERMS OF PAYMENT
2.1	PROMISE TO PAY.
	Borrower promises to pay Bank the unpaid principal amount of all Credit

Extensions and interest on the unpaid principal amount of the Credit Extensions.

## 2.1.1 REVOLVING ADVANCES.

(a) Bank will make Advances not exceeding (i) the lesser of (A) the Committed Revolving Line or (B) the Borrowing Base, if applicable, minus (ii) the FX Reserve and all amounts for services utilized under the Cash Management Services Sublimit. Amounts borrowed under this Section may be repaid and reborrowed during the term of this Agreement. Notwithstanding the foregoing, the Borrowing Base shall not be applied at any time that the aggregate amount of Credit Extensions outstanding, or that would be outstanding immediately following a requested Advance, are equal to or less than \$10,000,000.

(b) To obtain an Advance, Borrower must notify Bank by facsimile or telephone by 3:00 p.m. Pacific time on the Business Day the Advance is to be made. Borrower must promptly confirm the notification by delivering to Bank the Payment/Advance Form attached as Exhibit B. Bank will credit Advances to Borrower's deposit account. Bank may make Advances under this Agreement based on instructions from a Responsible Officer or his or her designee or without instructions if the Advances are necessary to meet Obligations which have become due. Bank may rely on any telephone notice given by a person whom Bank believes is a Responsible Officer or designee. Borrower will indemnify Bank for any loss Bank suffers due to such reliance.

(c) The Committed Revolving Line terminates on the Revolving Maturity Date, when all Advances are immediately payable.

## 2.1.2 FOREIGN EXCHANGE SUBLIMIT.

If there is availability under the Committed Revolving Line and the Borrowing Base (if applicable), then Borrower may enter in foreign

exchange forward contracts with the Bank under which Borrower commits to purchase from or sell to Bank a set amount of foreign currency more than one business day after the contract date (the "FX Forward Contract"). Bank will subtract 10% of each outstanding FX Forward Contract from the foreign exchange sublimit, which is a maximum of \$10,000,000 (the "FX Reserve"). The total FX Forward Contracts at any one time may not exceed 10 times the amount of the FX Reserve. Bank may terminate the FX Forward Contracts if an Event of Default occurs.

### 2.1.3 CASH MANAGEMENT SERVICES SUBLIMIT.

Borrower may use up to \$5,000,000 (the "Cash Management Services Sublimit") for Bank's Cash Management Services, which may include merchant services, direct deposit of payroll, business credit card, and check cashing services identified in various cash management services agreements related to such services (the "Cash Management Services"). Such aggregate amounts utilized under the Cash

Management Services Sublimit will at all times reduce the amount otherwise available to be borrowed under the Committed Revolving Line. Any amounts Bank pays on behalf of Borrower or any amounts that are not paid by Borrower for any Cash Management Services will be treated as Advances under the Committed Revolving Line and will accrue interest at the rate for Advances.

2.2 OVERADVANCES.

If Borrower's Obligations under Section 2.1.1 and Section 2.1.2 exceed the lesser of either (i) the Committed Revolving Line or (ii) the Borrowing Base (if applicable), Borrower must immediately pay Bank the excess.

2.3 INTEREST RATE AND PAYMENTS ON COMMITTED REVOLVING LINE.

- (a) Interest Rate. Advances accrue interest on the outstanding principal balance at a per annum rate of 1.00 percentage point below the Prime Rate. After an Event of Default, Obligations accrue interest at 5 percent above the rate effective immediately before the Event of Default. The interest rate increases or decreases when the Prime Rate changes. Interest is computed on a 360 day year for the actual number of days elapsed.
- (b) Payments. Interest due on the Committed Revolving Line is payable on the same date of each month as the date of the month this Agreement is dated. Payments received after 12:00 noon Pacific time are considered received at the opening of business on the next Business Day. When a payment is due on a day that is not a Business Day, the payment is due the next Business Day and additional fees or interest accrue.

2.4 AUTHORIZATION TO DEBIT ACCOUNTS.

Borrower authorizes Bank to debit any of Borrower's deposit accounts with Bank including Account Number \_\_\_\_\_ for principal and interest payments currently owing to Bank or any other amounts Borrower owes Bank. Bank will promptly notify Borrower when it debits Borrower's accounts. These debits are not a set-off.

2.3 FEES.

- (a) Commitment Fee. Borrower will pay to Bank a fully earned, non-refundable commitment fee of \$2,500.00 in connection with the Committed Revolving Line, payable on the Closing Date.
- (b) Non-usage Fee. No later than the 20th calendar day following the end of each calendar quarter, Borrower shall pay to Bank a non-usage fee equal to One Fourth of One Percent (0.25%) of the difference between the Committed Revolving Line and the average daily outstanding balance during the prior calendar quarter.
- (c) Bank Expenses. Borrower will pay to Bank all Bank Expenses (including reasonable attorneys' fees and reasonable expenses), as defined in this Agreement, incurred through and after the date of this Agreement, are payable when due.

3	CONDITIONS OF LOANS
3.1	CONDITIONS PRECEDENT TO INITIAL CREDIT EXTENSION.
	Bank's obligation to make the initial Credit Extension is subject to

the condition precedent that it receive the agreements, documents and fees it requires.

3.2 CONDITIONS PRECEDENT TO ALL CREDIT EXTENSIONS.

Bank's obligations to make each Credit Extension, including the initial Credit Extension, is subject to the following:

(a) timely receipt of any Payment/Advance Form; and

(b) the representations and warranties in Section 5 must be materially true on the date of the Payment/Advance Form and on the effective date of each Credit Extension and no Event of Default may have occurred and be continuing, or result from the Credit Extension. Each Credit Extension is Borrower's representation and warranty on that date that the representations and warranties of Section 5 remain true.

4 CREATION OF SECURITY INTEREST

4.1 GRANT OF SECURITY INTEREST.

Borrower grants Bank a continuing security interest in all presently

existing and later acquired Collateral to secure all Obligations and performance of each of Borrower's duties under the Loan Documents. Except for Permitted Liens, any security interest will be a first priority security interest in the Collateral. Bank may place a "hold" on any deposit account pledged as Collateral. If this Agreement is terminated, Bank's lien and security interest in the Collateral will continue until Borrower fully satisfies its Obligations.

4.2 AUTHORIZATION TO FILE.

Borrower authorizes Bank to file financing statements without notice to Borrower, with all appropriate jurisdictions, as Bank deems appropriate, in order to perfect or protect Bank's interest in the Collateral.

5 REPRESENTATIONS AND WARRANTIES

Borrower represents and warrants as follows:

5.1 DUE ORGANIZATION AND AUTHORIZATION.

Borrower and each Subsidiary is duly existing and in good standing in

its state of formation and qualified and licensed to do business in, and in good standing in, any state in which the conduct of its business or its ownership of property requires that it be qualified, except where the failure to do so could not reasonably be expected to cause a Material Adverse Change.

The execution, delivery and performance of the Loan Documents have been duly authorized, and do not conflict with Borrower's formation documents, nor constitute an event of default under any material agreement by which Borrower is bound. Borrower is not in default under any agreement to which or by which it is bound in which the default could reasonably be expected to cause a Material Adverse Change.

5.2 COLLATERAL.

Borrower has good title to the Collateral, free of Liens except Permitted Liens. Borrower has no other deposit account, other than the deposit accounts described in the Schedule. The Accounts are bona fide, existing obligations, and the service or property has been performed or delivered to the account debtor or its agent for immediate shipment to and unconditional acceptance by the account debtor. The Collateral is not in the possession of any third party bailee (such as at a warehouse). In the event that Borrower, after the date hereof, intends to store or otherwise deliver the Collateral to such a bailee, then Borrower will receive the prior written consent of Bank and such bailee must acknowledge in writing that the bailee is holding such Collateral for the benefit of Bank. Borrower has no notice of any actual or imminent Insolvency Proceeding of any account debtor whose accounts are an Eligible Account in any Borrowing Base Certificate. To the knowledge of Borrower, Inventory is in all material respects of good and marketable quality, free from material defects. Borrower is the sole owner of the Intellectual Property, except for non-exclusive licenses granted to its customers in the ordinary course of business. Each Patent is valid and enforceable and no part of the Intellectual Property has been judged invalid or

unenforceable, in whole or in part, and no legal proceeding has been initiated against Borrower claiming that any part of the Intellectual Property violates the rights of any third party.

### 5.3 LITIGATION.

Except as shown in the Schedule or in Borrower's reports filed with the Securities and Exchange Commission, copies of which have been provided to Bank, there are no actions or proceedings pending or, to the knowledge of Borrower's Responsible Officers, threatened by or against Borrower or any Subsidiary in which a likely adverse decision could reasonably be expected to cause a Material Adverse Change.

### 5.4 NO MATERIAL ADVERSE CHANGE IN FINANCIAL STATEMENTS.

All consolidated financial statements for Borrower, and any Subsidiary, delivered to Bank fairly present in all material respects Borrower's consolidated financial condition and Borrower's consolidated results of operations. There has not been any material deterioration in Borrower's consolidated financial condition since the date of the most recent financial statements submitted to Bank.

### 5.5 SOLVENCY.

Borrower is able to pay its debts (including trade debts) as they become due.

### 5.6 REGULATORY COMPLIANCE.

Borrower is not an "investment company" or a company "controlled" by an "investment company" under the Investment Company Act. Borrower is not engaged as one of its important activities in extending credit for margin stock (under Regulations T and U of the Federal Reserve Board of Governors). Borrower has complied in all material respects with the Federal Fair Labor Standards Act. Borrower has not violated any laws, ordinances or rules, the violation of which could reasonably be expected to cause a Material Adverse Change. None of Borrower's or any Subsidiary's properties or assets has been used by Borrower or any Subsidiary or, to the best of Borrower's knowledge, by previous Persons, in disposing, producing, storing, treating, or transporting any hazardous substance other than legally. Borrower and each Subsidiary has timely filed all required tax returns and extensions and paid, or made adequate provision to pay, all material taxes, except those being contested in good faith with adequate reserves under GAAP. Borrower and each Subsidiary has obtained all consents, approvals and authorizations of, made all declarations or filings with, and given all notices to, all government authorities that are necessary to continue its business as currently conducted, except where the failure to do so could not reasonably be expected to cause a Material Adverse Change.

### 5.7 SUBSIDIARIES.

Borrower does not own any stock, partnership interest or other equity securities except for Permitted Investments.

### 5.8 FULL DISCLOSURE.

No written representation, warranty or other statement of Borrower in any certificate or written statement given to Bank (taken together with all such written certificates and written statements to Bank) contains any untrue statement of a material fact or omits to state a material fact necessary to make the statements contained in the certificates or statements not misleading. It being recognized by Bank that the projections and forecasts provided by Borrower in good faith and based upon reasonable assumptions are not viewed as facts and that actual results during the period or periods covered by such projections and forecasts may differ and could differ from the projected and forecasted results.

Borrower will do all of the following for so long as Bank has an obligation to lend, or there are outstanding Obligations:

6.1 GOVERNMENT COMPLIANCE.

Borrower will maintain its and all Subsidiaries' legal existence and

good standing in its jurisdiction of formation and maintain qualification in each jurisdiction in which the failure to so qualify would reasonably be expected to cause a material adverse effect on Borrower's business or operations. Borrower will comply, and have each Subsidiary comply, with all laws, ordinances and regulations to which it is subject, noncompliance with which could have a material adverse effect on Borrower's business or operations or would reasonably be expected to cause a Material Adverse Change.

6.2 FINANCIAL STATEMENTS, REPORTS, CERTIFICATES.

(a) Borrower will deliver to Bank: (i) within 5 days of filing with the Securities and Exchange Commission, but no later than 90 days after the end of Borrower's fiscal year, an annual report on Form 10-K together with an unqualified opinion on the financial statements (ii) within 5 days of filing, but no later than 45 days after the end of each of Borrower's first three quarters of each fiscal year, copies of all reports on Form 10-Q filed with the Securities and Exchange Commission, (iii) within 5 days of filing, copies of all statements, reports and notices made available to Borrower's security holders or to any holders of Subordinated Debt and all reports on Form 8-K, filed with the Securities and Exchange Commission; (iv) a prompt report of any legal actions pending or threatened against Borrower or any Subsidiary that could result in damages or costs to Borrower or any Subsidiary of \$500,000 or more; (v) prompt notice of any material change in the composition of the Intellectual Property or knowledge of an event that materially adversely affects the value of the Intellectual Property; and (vi) budgets, sales projections, operating plans or other financial information Bank requests.

(b) Within 30 days after the last day of each month if during such month the aggregate amount of all Credit Extensions outstanding at any time during such month exceed \$10,000,000, Borrower will deliver to Bank a Borrowing Base Certificate signed by a Responsible Officer in the form of EXHIBIT C, with aged listings of accounts receivable and accounts payable.

(c) With the quarterly reports on Form 10-Q as required by this Section 6.2, Borrower will deliver to Bank a Compliance Certificate signed by a Responsible Officer in the form of EXHIBIT D.

(d) At any time that the aggregate amount of outstanding Credit Extensions, exclusive of interest thereon, exceeds \$10,000,000 and remains outstanding for 30 consecutive days, Borrower will allow Bank to conduct and initial audit Borrower's Collateral at Borrower's expense. Such audits will be conducted no more often than once every year after the initial audit, unless an Event of Default has occurred and is continuing.

6.3 INVENTORY; RETURNS.

Borrower will keep all Inventory, if any, in good and marketable condition, free from material defects. Returns and allowances between Borrower and its account debtors will follow Borrower's customary practices as they exist at execution of this Agreement. Borrower must promptly notify Bank of all returns, recoveries, disputes and claims that involve more than 10% of Borrower's gross sales for any month.

6.4 TAXES.

Borrower will make, and cause each Subsidiary to make, timely payment of all material federal, state, and local taxes or assessments (other than taxes and assessments which Borrower is contesting in good faith, with adequate reserves maintained in accordance with GAAP) and will deliver to Bank, on demand, appropriate certificates attesting to the payment.



## 6.5 INSURANCE.

Borrower will keep its business and the Collateral insured for risks and in amounts standard for Borrower's industry, and as Bank may reasonably request. Insurance policies will be in a form, with companies, and in amounts that are reasonably satisfactory to Bank in Bank's reasonable discretion. All property policies will have a lender's loss payable endorsement showing Bank as an additional loss payee and all liability policies will show the Bank as an additional insured and provide that the insurer must give Bank at least 20 days notice before canceling its policy. At Bank's request, Borrower will deliver certified copies of policies and evidence of all premium payments. Proceeds payable under any policy will, at Bank's option, be payable to Bank on account of the Obligations.

## 6.6 PRIMARY ACCOUNTS.

Borrower will maintain its primary depository and operating accounts with Bank.

## 6.7 FINANCIAL COVENANTS.

Borrower will maintain on a consolidated basis as of the last day of each fiscal quarter of Borrower unless otherwise noted:

(i) QUICK RATIO. A ratio of Quick Assets to Current Liabilities of at least 2.00 to 1.0.

(ii) TANGIBLE NET WORTH. A Tangible Net Worth plus Subordinated Debt of at least the sum of \$100,000,000 plus 50% of the net profit for such quarter.

(iii) PROFITABILITY/(LOSS). A minimum net profit (and maximum net loss) calculated as earnings before depreciation, amortization and other one-time, non-cash charges, on a per share basis and measured on a rolling 6-month basis as follows: as of 3/31/02: (\$1.00); as of 6/30/02: (\$0.75); as of 9/30/02: (\$0.34); and as of 12/31/02 and thereafter: \$0.01.

## 6.8 REGISTRATION OF INTELLECTUAL PROPERTY RIGHTS.

At such time as Borrower determines that it is appropriate to do so, Borrower will register with the United States Patent and Trademark Office or the United States Copyright Office Borrower's Intellectual Property that is determined by Borrower to be material to Borrower's business and additional Intellectual Property rights developed or acquired including significant revisions or additions to or with any product before the sale or licensing of the product to any third party.

Borrower will (i) protect, defend and maintain the validity and enforceability of Borrower's Intellectual Property and promptly advise Bank in writing of any legal proceeding against Borrower for material infringements and

(ii) not allow any Intellectual Property that is determined by Borrower to be material to Borrower's business to be abandoned, forfeited or dedicated to the public without Bank's written consent, which consent shall not be unreasonably withheld.

## 6.9 FURTHER ASSURANCES.

Borrower will execute any further instruments and take further action as Bank reasonably requests to perfect or continue Bank's security interest in the Collateral or to effect the purposes of this Agreement.

## 7 NEGATIVE COVENANTS

Borrower will not do any of the following without Bank's prior written consent, which will not be unreasonably withheld, for so long as Bank has an obligation to lend or there are any outstanding Obligations:

### 7.1 DISPOSITIONS.

Convey, sell, lease, transfer or otherwise dispose of (collectively a "Transfer"), or permit any of its Subsidiaries to Transfer, all or any part of its business or property, except for Transfers (i) of Inventory in the ordinary course of business; (ii) of non-exclusive licenses and similar arrangements for the use of the property of Borrower or its Subsidiaries in the ordinary course of business; (iii) of worn-out, damaged, or obsolete Equipment; or (iv) other Transfers which constitute liquidation of Investments as permitted in Section 7.6(i).

### 7.2 CHANGES IN BUSINESS, OWNERSHIP, MANAGEMENT OR BUSINESS LOCATIONS.

Engage in or permit any of its Subsidiaries to engage in any business other than the businesses currently engaged in by Borrower or reasonably related thereto or have a material change in its ownership of greater than 25% (other than by the sale of Borrower's equity securities in a public offering) or have a change in its management. Borrower will not, without at least 30 days prior written notice, relocate its chief executive office or add any new offices or business locations in which Borrower maintains or stores over \$25,000 in Borrower's assets or property.

### 7.3 MERGERS OR ACQUISITIONS.

Merge or consolidate, or permit any of its Subsidiaries to merge or consolidate, with any other Person, or acquire, or permit any of its Subsidiaries to acquire, all or substantially all of the capital stock or property of another Person, except a Permitted Acquisition where no Event of Default has occurred and is continuing or would exist after giving effect to such Permitted Acquisition. Bank shall respond to Borrower's request for consent to any transaction contemplated by this Section 7.3 other than a Permitted Acquisition within 10 days of the receipt of a written request for such consent, which request shall be accompanied by such materials as are reasonably requested by Bank for the purpose of making a decision regarding such consent. A Subsidiary may merge or consolidate into another Subsidiary or into Borrower.

### 7.4 INDEBTEDNESS.

Create, incur, assume, or be liable for any Indebtedness, or permit any Subsidiary to do so, other than Permitted Indebtedness.

### 7.5 ENCUMBRANCE.

Create, incur, or allow any Lien on any of its property, particularly any of its Intellectual Property, or assign or convey any right to receive income, including the sale of any Accounts, or permit any of its Subsidiaries to do so, except for Permitted Liens, or permit any Collateral not to be subject to the first priority security interest granted hereby, subject to Permitted Liens.

### 7.6 DISTRIBUTIONS; INVESTMENTS.

(i) Directly or indirectly acquire or own any Person, or make any Investment in any Person, other than Permitted Investments, or permit any of its Subsidiaries to do so; (ii) pay any dividends or make any distribution or payment or redeem, retire or purchase any capital stock; or (iii) make any loans or other extensions of credit, other than trade accounts created in the ordinary course of business and in customary amounts consistent with Borrower's past practices, or permit any of its Subsidiaries to do so.

## 7.7 TRANSACTIONS WITH AFFILIATES.

Directly or indirectly enter into or permit to exist any material transaction with any Affiliate of Borrower except for transactions that are in the ordinary course of Borrower's business, upon fair and reasonable terms that are no less favorable to Borrower than would be obtained in an arm's length transaction with a nonaffiliated Person.

## 7.8 SUBORDINATED DEBT.

Make or permit any payment on any Subordinated Debt, except under the terms of the Subordinated Debt, or amend any provision in any document relating to the Subordinated Debt without Bank's prior written consent.

## 7.9 COMPLIANCE.

Become an "investment company" or a company controlled by an "investment company," under the Investment Company Act of 1940 or undertake as one of its important activities extending credit to purchase or carry margin stock, or use the proceeds of any Advance for that purpose; fail to meet the minimum funding requirements of ERISA, permit a Reportable Event or Prohibited Transaction, as defined in ERISA, to occur; fail to comply with the Federal Fair Labor Standards Act or violate any other law or regulation, if the violation could reasonably be expected to have a material adverse effect on Borrower's business or operations or would reasonably be expected to cause a Material Adverse Change, or permit any of its Subsidiaries to do so.

### 8 EVENTS OF DEFAULT

Any one of the following is an Event of Default:

#### 8.1 PAYMENT DEFAULT.

If Borrower fails to pay any of the Obligations within 5 days after

their due date. During any such 5 day period the failure to cure the default is not an Event of Default (but no Credit Extension will be made during the cure period);

#### 8.2 COVENANT DEFAULT.

If Borrower does not perform any obligation in Section 6 or violates any covenant in Section 7 or does not perform or observe any other material term, condition or covenant in this Agreement, any Loan Documents, or in any agreement between Borrower and Bank and as to any default under a term, condition or covenant that can be cured, has not cured the default within 20 days after it occurs, or if the default cannot be cured within 20 days or cannot be cured after Borrower's attempts within the 20 day period, and the default may be cured within a reasonable time, then Borrower has an additional period (of not more than 30 days) to attempt to cure the default. During the additional time, the failure to cure the default is not an Event of Default (but no Credit Extensions will be made during the cure period);

#### 8.3 MATERIAL ADVERSE CHANGE.

If there (i) occurs a material adverse change in the business, operations, or condition (financial or otherwise) of the Borrower, or (ii) is a material impairment of the prospect of repayment of any portion of the Obligations, or (iii) is a material impairment of the value of the Collateral or a negative change in the priority of Bank's security interests in the Collateral; and the occurrence of any one of which shall, for purposes of this Agreement, constitute a "Material Adverse Change";

#### 8.4 ATTACHMENT.

(i) If any material portion of Borrower's assets is attached, seized, levied on, or comes into possession of a trustee or receiver and the attachment, seizure or levy is not removed in 30 days, or (ii) if Borrower is enjoined, restrained, or prevented by court order from conducting a material part of its business, or (iii) if a judgment or other claim becomes a Lien on a material portion of Borrower's assets, or (iv) if a notice of lien, levy, or assessment is filed against any of Borrower's assets by any government agency and not paid within 30 days after Borrower receives notice. These are not Events of Default if stayed or if a bond is posted pending contest by Borrower (but no Credit Extensions will be made during the cure period);

#### 8.5 INSOLVENCY.

(i) If Borrower becomes insolvent or (ii) if Borrower begins an Insolvency Proceeding or (iii) an Insolvency Proceeding is begun against Borrower and not dismissed or stayed within 30 days (but no Credit Extensions will be made before any Insolvency Proceeding is dismissed);

#### 8.6 OTHER AGREEMENTS.

If there is a default in any agreement between Borrower and a third party that gives the third party the right to accelerate any Indebtedness exceeding \$500,000 or that could cause a Material Adverse Change;

#### 8.7 JUDGMENTS.

If a money judgment(s) in the aggregate of at least \$500,000 is rendered against Borrower and is unsatisfied and unstayed for 30 days (but no Credit Extensions will be made before the judgment is stayed or satisfied); or

#### 8.8 MISREPRESENTATIONS.

If Borrower or any Person acting for Borrower makes any material misrepresentation or material misstatement now or later in any warranty or representation in this Agreement or in any writing delivered to Bank or to induce Bank to enter this Agreement or any Loan Document.

#### 9 BANK'S RIGHTS AND REMEDIES

##### 9.1 RIGHTS AND REMEDIES.

When an Event of Default occurs and continues Bank may, without notice

or demand, do any or all of the following:

(a) Declare all Obligations immediately due and payable (but if an Event of Default described in Section 8.5 occurs all Obligations are immediately due and payable without any action by Bank);

(b) Stop advancing money or extending credit for Borrower's benefit under this Agreement or under any other agreement between Borrower and Bank;

(c) Settle or adjust disputes and claims directly with account debtors for amounts, on terms and in any order that Bank considers advisable;

(d) Make any payments and do any acts it considers necessary or reasonable to protect its security interest in the Collateral. Borrower will assemble the Collateral if Bank requires and make it available as Bank designates. Bank may enter premises where the Collateral is located, take and maintain possession of any part of the Collateral, and pay, purchase, contest, or compromise any Lien which appears to be prior or superior to its security interest and pay all expenses incurred. Borrower

grants Bank a license to enter and occupy any of its premises, without charge, to exercise any of Bank's rights or remedies;

(e) Apply to the Obligations any (i) balances and deposits of Borrower it holds, or (ii) any amount held by Bank owing to or for the credit or the account of Borrower;

(f) Ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale, and sell the Collateral. Bank is granted a non-exclusive, royalty-free license or other right to use, without charge, Borrower's labels, Patents, Copyrights, Mask Works, rights of use of any name, trade secrets, trade names, Trademarks, service marks, and advertising matter, or any similar property as it pertains to the Collateral, in completing production of, advertising for sale, and selling any Collateral and, in connection with Bank's exercise of its rights under this Section, Borrower's rights under all licenses and all franchise agreements inure to Bank's benefit; and

(g) Dispose of the Collateral according to the Code.

## 9.2 POWER OF ATTORNEY.

Effective only when an Event of Default occurs and continues, Borrower irrevocably appoints Bank as its lawful attorney to: (i) endorse Borrower's name on any checks or other forms of payment or security; (ii) sign Borrower's name on any invoice or bill of lading for any Account or drafts against account debtors, (iii) make, settle, and adjust all claims under Borrower's insurance policies; (iv) settle and adjust disputes and claims about the Accounts directly with account debtors, for amounts and on terms Bank determines reasonable; and (v) transfer the Collateral into the name of Bank or a third party as the Code permits. Bank may exercise the power of attorney to sign Borrower's name on any documents necessary to perfect or continue the perfection of any security interest regardless of whether an Event of Default has occurred. Bank's appointment as Borrower's attorney in fact, and all of Bank's rights and powers, coupled with an interest, are irrevocable until all Obligations have been fully repaid and performed and Bank's obligation to provide Credit Extensions terminates.

## 9.3 ACCOUNTS COLLECTION.

When an Event of Default occurs and continues, Bank may notify any Person owing Borrower money of Bank's security interest in the funds and verify the amount of the Account. Borrower must collect all payments in trust for Bank and, if requested by Bank, immediately deliver the payments to Bank in the form received from the account debtor, with proper endorsements for deposit.

## 9.4 BANK EXPENSES.

If Borrower fails to pay any amount or furnish any required proof of payment to third persons, Bank may make all or part of the payment or obtain insurance policies required in Section 6.5, and take any action under the policies Bank deems prudent. Any amounts paid by Bank are Bank Expenses and immediately due and payable, bearing interest at the then applicable rate and secured by the Collateral. No payments by Bank are deemed an agreement to make similar payments in the future or Bank's waiver of any Event of Default.

## 9.5 BANK'S LIABILITY FOR COLLATERAL.

If Bank complies with reasonable banking practices and the Code, it is not liable for: (a) the safekeeping of the Collateral; (b) any loss or damage to the Collateral; (c) any diminution in the value of the Collateral; or (d) any act or default of any carrier, warehouseman, bailee, or other person. Borrower bears all risk of loss, damage or destruction of the Collateral.

## 9.6 REMEDIES CUMULATIVE.

Bank's rights and remedies under this Agreement, the Loan Documents, and all other agreements are cumulative. Bank has all rights and remedies provided under the Code, by law, or in

equity. Bank's exercise of one right or remedy is not an election, and Bank's waiver of any Event of Default is not a continuing waiver. Bank's delay is not a waiver, election, or acquiescence. No waiver is effective unless signed by Bank and then is only effective for the specific instance and purpose for which it was given.

## 9.7 DEMAND WAIVER.

Borrower waives demand, notice of default or dishonor, notice of payment and nonpayment, notice of any default, nonpayment at maturity, release, compromise, settlement, extension, or renewal of accounts, documents, instruments, chattel paper, and guarantees held by Bank on which Borrower is liable.

## 10 NOTICES

All notices or demands by any party about this Agreement or any other related agreement must be in writing and be personally delivered or sent by an overnight delivery service, by certified mail, postage prepaid, return receipt requested, or by telefacsimile to the addresses set forth at the beginning of this Agreement. A party may change its notice address by giving the other party written notice.

## 11 CHOICE OF LAW, VENUE

Colorado law governs the Loan Documents without regard to principles of conflicts of law. Borrower and Bank each submit to the exclusive jurisdiction of the State and Federal courts in the City and County of Denver, Colorado.

### 12 GENERAL PROVISIONS

#### 12.1 SUCCESSORS AND ASSIGNS.

This Agreement binds and is for the benefit of the successors and

permitted assigns of each party. Borrower may not assign this Agreement or any rights under it without Bank's prior written consent which may be granted or withheld in Bank's discretion. Bank has the right, without the consent of or notice to Borrower, to sell, transfer, negotiate, or grant participation in all or any part of, or any interest in, Bank's obligations, rights and benefits under this Agreement.

#### 12.2 INDEMNIFICATION.

Borrower will indemnify, defend and hold harmless Bank and its officers, employees, and agents against: (a) all obligations, demands, claims, and liabilities asserted by any other party in connection with the transactions contemplated by the Loan Documents; and (b) all losses or Bank Expenses incurred, or paid by Bank from, following, or consequential to transactions between Bank and Borrower (including reasonable attorneys fees and expenses), except for losses caused by Bank's gross negligence or willful misconduct.

#### 12.3 TIME OF ESSENCE.

Time is of the essence for the performance of all obligations in this Agreement.

#### 12.4 SEVERABILITY OF PROVISION.

Each provision of this Agreement is severable from every other provision in determining the enforceability of any provision.

#### 12.5 AMENDMENTS IN WRITING, INTEGRATION.

All amendments to this Agreement must be in writing and signed by Borrower and Bank. This Agreement represents the entire agreement about this subject matter, and supersedes prior or

contemporaneous negotiations or agreements. All prior or contemporaneous agreements, understandings, representations, warranties, and negotiations between the parties about the subject matter of this Agreement and the Loan Documents merge into this Agreement and the Loan Documents.

## 12.6 COUNTERPARTS.

This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, are an original, and all taken together, constitute one Agreement.

## 12.7 SURVIVAL.

All covenants, representations and warranties made in this Agreement continue in full force while any Obligations remain outstanding. The obligations of Borrower in Section 12.2 to indemnify Bank will survive until all statutes of limitations for actions that may be brought against Bank have run.

## 12.8 CONFIDENTIALITY.

In handling any confidential information, Bank will exercise the same degree of care that it exercises for its own proprietary information, but disclosure of information may be made (i) to Bank's subsidiaries or affiliates in connection with their business with Borrower, (ii) to prospective transferees or purchasers of any interest in the loans (provided, however, Bank shall use commercially reasonable efforts in obtaining such prospective transferee or purchasers agreement of the terms of this provision), (iii) as required by law, regulation, subpoena, or other order, (iv) as required in connection with Bank's examination or audit and (v) as Bank considers appropriate exercising remedies under this Agreement. Confidential information does not include information that either: (a) is in the public domain or in Bank's possession when disclosed to Bank, or becomes part of the public domain after disclosure to Bank; or (b) is disclosed to Bank by a third party, if Bank does not know that the third party is prohibited from disclosing the information.

## 12.9 ATTORNEYS' FEES, COSTS AND EXPENSES.

In any action or proceeding between Borrower and Bank arising out of the Loan Documents, the prevailing party will be awarded its reasonable attorneys' fees and other reasonable costs and expenses incurred, in addition to any other relief to which it may be entitled.

13           DEFINITIONS

13.1        DEFINITIONS.

In this Agreement:

"ACCOUNTS" are all existing and later arising accounts, contract

rights, and other obligations owed Borrower in connection with its sale or lease of goods (including licensing software and other technology) or provision of services, all credit insurance, guaranties, other security and all merchandise returned or reclaimed by Borrower and Borrower's Books relating to any of the foregoing.

"ADVANCE" or "ADVANCES" is a loan advance (or advances) made in U.S. Dollars under the Committed Revolving Line.

"AEI JAPAN" is Advanced Energy Japan K.K. Ltd.

"AFFILIATE" of a Person is a Person that owns or controls directly or indirectly the Person, any Person that controls or is controlled by or is under common control with the Person, and each of that Person's senior executive officers, directors, partners and, for any Person that is a limited liability company, that Person's managers and members.

"BANK EXPENSES" are all audit fees and expenses and reasonable costs and expenses (including reasonable attorneys' fees and expenses) for preparing, negotiating, administering, defending and enforcing the Loan Documents (including appeals or Insolvency Proceedings).

"BORROWER'S BOOKS" are all Borrower's books and records including ledgers, records regarding Borrower's assets or liabilities, the Collateral, business operations or financial condition and all computer programs or discs or any equipment containing the information.

"BORROWING BASE" is (i) 80% of Eligible Accounts plus (ii) the lesser of 20% of the value of Borrower's Eligible Inventory (valued at the lower of cost or wholesale fair market value) or \$5,000,000, as determined by Bank from Borrower's most recent Borrowing Base Certificate.

"BUSINESS DAY" is any day that is not a Saturday, Sunday or a day on which the Bank is closed.

"CASH ACQUISITION" is any acquisition by the Borrower of the assets or capital stock of another entity, the consideration for which consists solely of cash and/or marketable securities.

"CASH MANAGEMENT SERVICES" are defined in Section 2.1.3.

"CLOSING DATE" is the date of this Agreement.

"CODE" is the Uniform Commercial Code, as applicable.

"COLLATERAL" is the property described on EXHIBIT A.

"COMMITTED REVOLVING LINE" is a Credit Extension of up to \$25,000,000.

"CONTINGENT OBLIGATION" is, for any Person, any direct or indirect liability, contingent or not, of that Person for (i) any indebtedness, lease, dividend, letter of credit or other obligation of another such as an obligation directly or indirectly guaranteed, endorsed, co-made, discounted or sold with recourse by that Person, or for which that Person is directly or indirectly liable; (ii) any obligations for undrawn letters of credit for the account of that Person; and (iii) all obligations from any interest rate, currency or commodity swap agreement, interest rate cap or collar agreement, or other agreement or arrangement designated to protect a Person against fluctuation in interest rates, currency exchange rates or commodity prices; but "Contingent Obligation" does not include endorsements in the ordinary course of business. The amount of a Contingent Obligation is the stated or determined amount of the primary obligation for which the Contingent Obligation is made or, if not determinable, the maximum reasonably anticipated liability for it determined by the Person in good faith; but the amount may not exceed the maximum of the obligations under the guarantee or other support arrangement.

"COPYRIGHTS" are all copyright rights, applications or registrations and like protections in each work or authorship or derivative work, whether published or not (whether or not it is a trade secret) now or later existing, created, acquired or held.

"CREDIT EXTENSION" is each Advance, FX Forward Contract or any other extension of credit by Bank for Borrower's benefit.

"CURRENT ASSETS" are amounts that under GAAP should be included on that date as current assets on Borrower's consolidated balance sheet.

"CURRENT LIABILITIES" are the aggregate amount of Borrower's Total Liabilities which mature within one (1) year.

"ELIGIBLE ACCOUNTS" are Accounts in the ordinary course of Borrower's business that meet all Borrower's representations and warranties in Section 5; but Bank may change eligibility standards by



giving Borrower 30 days prior notice. Unless Bank agrees otherwise in writing, Eligible Accounts will not include:

- (a) Accounts that the account debtor has not paid within 90 days of invoice date;
- (b) Accounts for an account debtor, 50% or more of whose Accounts have not been paid within 90 days of invoice date;
- (c) Credit balances over 90 days from invoice date;
- (d) Accounts for an account debtor, including Affiliates, whose total obligations to Borrower exceed 25% of all Accounts, unless Bank approves in writing in advance;
- (e) Accounts for which the account debtor does not have its principal place of business in the United States, unless approved by Bank on a case by case basis;
- (f) Accounts for which the account debtor is a federal, state or local government entity or any department, agency, or instrumentality of any such entity;
- (g) Accounts for which Borrower owes the account debtor, but only up to the amount owed (sometimes called "contra" accounts, accounts payable, customer deposits or credit accounts);
- (h) Accounts for demonstration or promotional equipment, or in which goods are consigned, sales guaranteed, sale or return, sale on approval, bill and hold, retainage, or other terms if account debtor's payment may be conditional;
- (i) Accounts for which the account debtor is Borrower's Affiliate, officer, employee, or agent;
- (j) Accounts in which the account debtor disputes liability or makes any claim and Bank reasonably believes there may be a basis for dispute (but only up to the disputed or claimed amount), or if the Account Debtor is subject to an Insolvency Proceeding, or becomes insolvent, or goes out of business;
- (k) Accounts for which Bank reasonably determines collection to be doubtful; and
- (l) Accounts owed to AEI Japan as long as such Accounts are subject to Liens in favor of other financial institutions.

"ELIGIBLE INVENTORY" is Borrower's Inventory, including raw materials, located at its principal place of business (or any location permitted under Section 7.2) that is in all material respects of good and marketable quality, free from material defects, but does not include used, returned, obsolete, consigned, work in progress, demonstrative or custom inventory, supplies, packing or shipping materials.

"EQUIPMENT" is all present and future machinery, equipment, tenant improvements, furniture, fixtures, vehicles, tools, parts and attachments in which Borrower has any interest.

"ERISA" is the Employment Retirement Income Security Act of 1974, and its regulations.

"FX FORWARD CONTRACT" is defined in Section 2.1.2.

"FX RESERVE" is defined in Section 2.1.2.

"GAAP" is generally accepted accounting principles.

"INDEBTEDNESS" is (a) indebtedness for borrowed money or the deferred price of property or services, such as reimbursement and other obligations for surety bonds and letters of credit,

- (b) obligations evidenced by notes, bonds, debentures or similar instruments,
- (c) capital lease obligations and (d) Contingent Obligations.

"INSOLVENCY PROCEEDING" is a proceeding by or against any Person under the United States Bankruptcy Code, or any other bankruptcy or insolvency law, including assignments for the benefit of creditors, compositions, extensions generally with its creditors, or proceedings seeking reorganization, arrangement, or other relief.

**"INTELLECTUAL PROPERTY" is:**

- (a) Copyrights (whether published or not), Trademarks, Patents, and Mask Works including amendments, renewals, extensions, and all licenses or other rights to use and all license fees and royalties from the use;
- (b) Any trade secrets and any intellectual property rights in computer software and computer software products now or later existing, created, acquired or held;
- (c) All design rights which may be available to Borrower now or later created, acquired or held;
- (d) Any claims for damages (past, present or future) for infringement of any of the rights above, with the right, but not the obligation, to sue and collect damages for use or infringement of the intellectual property rights above; and

All proceeds and products of the foregoing, including all insurance, indemnity or warranty payments.

"INVENTORY" is present and future inventory in which Borrower has any interest, including merchandise, raw materials, parts, supplies, packing and shipping materials, work in process of a tangible nature and finished products intended for sale or lease or to be furnished under a contract of service, of every kind and description now or later owned by or in the custody or possession, actual or constructive, of Borrower, including inventory temporarily out of its custody or possession or in transit and including returns on any accounts or other proceeds (including insurance proceeds) from the sale or disposition of any of the foregoing and any documents of title.

"INVESTMENT" is any beneficial ownership of (including stock, partnership interest or other securities) any Person, or any loan, advance or capital contribution to any Person.

"LIEN" is a mortgage, lien, deed of trust, charge, pledge, security interest or other encumbrance.

"LOAN DOCUMENTS" are, collectively, this Agreement, any note, or notes or guaranties executed by Borrower, and any other present or future agreement between Borrower and/or for the benefit of Bank in connection with this Agreement, all as amended, extended or restated.

"MASK WORKS" are all mask works or similar rights available for the protection of semiconductor chips, now owned or later acquired.

"MATERIAL ADVERSE CHANGE" is described in Section 8.3.

"MATURITY DATE" is the Revolving Maturity Date.

"OBLIGATIONS" are debts, principal, interest, Bank Expenses and other amounts Borrower owes Bank now or later, including cash management services, letters of credit and foreign exchange contracts, if any and including interest accruing after Insolvency Proceedings begin and debts, liabilities, or obligations of Borrower assigned to Bank.

"PATENTS" are patents, patent applications and like protections, including improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same.

"PERMITTED ACQUISITION" is (i) any Cash Acquisition in which the aggregate consideration paid, directly or indirectly, by the Borrower does not exceed the lesser of 15% of Borrower's Tangible Net Worth or 50% of Borrower's aggregate cash and marketable securities immediately prior to such Cash Acquisition, or (ii) any Stock Acquisition that does not result in a change in ownership of more than 25% of the aggregate voting control of the Borrower outstanding immediately prior to such Stock Acquisition and the consideration paid, directly or indirectly, will not in the aggregate exceed 50% of Borrower's Tangible Net Worth, or (iii) any transaction consisting in part of a Stock Acquisition and in part of a Cash Acquisition, provided that each such portion does not exceed a pro rata portion of the applicable threshold set forth in the preceding clauses (i) and (ii) as is equal to the percentage of the aggregate consideration paid in such transaction.

**"PERMITTED INDEBTEDNESS" is:**

- (a) Borrower's indebtedness to Bank under this Agreement or any other Loan Document;
- (b) Indebtedness existing on the Closing Date and shown on the Schedule;
- (c) Subordinated Debt;
- (d) Indebtedness to trade creditors and with respect to surety bonds and similar obligations incurred in the ordinary course of business;
- (e) Indebtedness secured by Permitted Liens;
- (f) Indebtedness in the form of convertible notes (similar to those due September 4, 2004 and November 15, 2006) or other debt securities up to an aggregate principal amount not exceeding 25% of Borrower's Tangible Net Worth; and
- (g) Indebtedness of AEI Japan up to an aggregate principal amount of \$36,093,000.

**"PERMITTED INVESTMENTS" are:**

- (a) Investments shown on the Schedule and existing on the Closing Date;
- (b) (i) marketable direct obligations issued or unconditionally guaranteed by the United States or its agency or any State maturing within 1 year from its acquisition, (ii) commercial paper maturing no more than 1 year after its creation and having the highest rating from either Standard & Poor's Corporation or Moody's Investors Service, Inc., and (iii) Bank's certificates of deposit issued maturing no more than 1 year after issue;
- (c) Investments accepted in connection with Transfers permitted by Section 7.1; and
- (d) Investments of Subsidiaries in or to other Subsidiaries or Borrower and Investments by Borrower in Subsidiaries not to exceed \$32,000,000, of which no more than \$2,000,000 (less any distributions by way of loans or advances to AEI Japan) shall be invested in AEI Japan, no more than \$10,000,000 shall be invested in AE Voorhees and Tower Energy, taken together, and no more than \$10,000,000 shall be invested in all other Subsidiaries other than AE Voorhees and Tower Energy and AEI Japan, or their respective successors-in-interest, in the aggregate in any fiscal year in each case;

**"PERMITTED LIENS" are:**

- (a) Liens existing on the Closing Date and shown on the Schedule or arising under this Agreement or other Loan Documents;

(b) Liens for taxes, fees, assessments or other government charges or levies, either not delinquent or being contested in good faith and for which Borrower maintains adequate reserves on its Books, if they have no priority over any of Bank's security interests;

(c) Purchase money Liens (i) on Equipment acquired or held by Borrower or its Subsidiaries incurred for financing the acquisition of the Equipment, or

(ii) existing on equipment when acquired, if the Lien is confined to the property and improvements and the proceeds of the equipment;

(d) Leases or subleases and licenses or sublicenses granted in the ordinary course of Borrower's business, if the leases, subleases, licenses and sublicenses permit granting Bank a security interest;

(d) Liens incurred in the extension, renewal or refinancing of the indebtedness secured by Liens described in (a) through (c), but any extension, renewal or replacement Lien must be limited to the property encumbered by the existing Lien and the principal amount of the indebtedness may not increase; and

(e) Liens on assets of AEI Japan granted or assumed in connection with the acquisition of Aera Japan Ltd. by AEI Japan.

"PERSON" is any individual, sole proprietorship, partnership, limited liability company, joint venture, company association, trust, unincorporated organization, association, corporation, institution, public benefit corporation, firm, joint stock company, estate, entity or government agency.

"PRIME RATE" is Bank's most recently announced "prime rate," even if it is not Bank's lowest rate.

"QUICK ASSETS" is, on any date, the Borrower's consolidated, unrestricted cash, cash equivalents, net billed accounts receivable and investments with maturities of less than 12 months determined according to GAAP.

"RESPONSIBLE OFFICER" is each of the Chief Executive Officer, the President, the Chief Financial Officer and the, Controller of Borrower.

"REVOLVING MATURITY DATE" is May \_\_, 2003, the date 364 days from the date of this Agreement.

"SCHEDULE" is any attached schedule of exceptions.

"STOCK ACQUISITION" is any acquisition by the Borrower of the assets or capital stock of another entity, the consideration for which consists solely of capital stock of the Borrower.

"SUBORDINATED DEBT" is debt incurred by Borrower subordinated to Borrower's indebtedness owed to Bank and which is reflected in a written agreement in a manner and form acceptable to Bank and approved by Bank in writing.

"SUBSIDIARY" is for any Person, or any other business entity of which more than 50% of the voting stock or other equity interests is owned or controlled, directly or indirectly, by the Person or one or more Affiliates of the Person.

"TANGIBLE NET WORTH" is, on any date, the consolidated total assets of Borrower and its Subsidiaries minus, (i) any amounts attributable to (a) goodwill, (b) intangible items such as unamortized debt discount and expense, Patents, trade and service marks and names, Copyrights and research and development expenses except prepaid expenses, and (c) reserves not already deducted from assets, and minus (ii) Total Liabilities; plus Subordinated Debt.

"TOTAL LIABILITIES" is on any day, obligations that should, under GAAP, be classified as liabilities on Borrower's consolidated balance sheet, including all Indebtedness, and the current portion of Subordinated Debt allowed to be paid, but excluding all other Subordinated Debt.

"TRADEMARKS" are trademark and servicemark rights, registered or not, applications to register and registrations and like protections, and the entire goodwill of the business of Assignor connected with the trademarks.

BORROWER AND BANK EACH WAIVE THEIR RIGHT TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AGREEMENT, ANY OTHER LOAN DOCUMENT OR ANY CONTEMPLATED TRANSACTION, INCLUDING CONTRACT, TORT, BREACH OF DUTY AND ALL OTHER CLAIMS. THIS WAIVER IS A MATERIAL INDUCEMENT FOR BOTH PARTIES TO ENTER INTO THIS AGREEMENT. EACH PARTY HAS REVIEWED THIS WAIVER WITH ITS COUNSEL.

**BORROWER:**

**ADVANCED ENERGY INDUSTRIES, INC.**

By:

Title:

**BANK:**

**SILICON VALLEY BANK**

By:

Title:

## EXHIBIT A

The Collateral consists of all of Borrower's right, title and interest in and to the following whether owned now or hereafter arising:

All goods and equipment now owned or hereafter acquired, including, without limitation, all machinery, fixtures, vehicles (including motor vehicles and trailers), and any interest in any of the foregoing, and all attachments, accessories, accessions, replacements, substitutions, additions, and improvements to any of the foregoing, wherever located;

All inventory, now owned or hereafter acquired, including, without limitation, all merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products including such inventory as is temporarily out of Borrower's custody or possession or in transit and including any returns upon any accounts or other proceeds, including insurance proceeds, resulting from the sale or disposition of any of the foregoing and any documents of title representing any of the above;

All contract rights and general intangibles (as such definitions may be amended from time to time according to the Code), now owned or hereafter acquired, including, without limitation, goodwill, trademarks, servicemarks, trade styles, trade names, patents, patent applications, leases, license agreements, franchise agreements, blueprints, drawings, purchase orders, customer lists, route lists, infringements, claims, computer programs, computer discs, computer tapes, literature, reports, catalogs, design rights, income tax refunds, payments of insurance and rights to payment of any kind;

All now existing and hereafter arising accounts, contract rights, royalties, license rights and all other forms of obligations owing to Borrower arising out of the sale or lease of goods, the licensing of technology or the rendering of services by Borrower (as such definitions may be amended from time to time according to the Code) whether or not earned by performance, and any and all credit insurance, insurance (including refund) claims and proceeds, guaranties, and other security therefor, as well as all merchandise returned to or reclaimed by Borrower;

All documents, cash, deposit accounts, securities, securities entitlements, securities accounts, investment property, financial assets, letters of credit, letter of credit rights, certificates of deposit, instruments and chattel paper and electronic chattel paper now owned or hereafter acquired and Borrower's Books relating to the foregoing;

All copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work thereof, whether published or unpublished, now owned or hereafter acquired; all trade secret rights, including all rights to unpatented inventions, know-how, operating manuals, license rights and agreements and confidential information, now owned or hereafter acquired; all mask work or similar rights available for the protection of semiconductor chips, now owned or hereafter acquired; all claims for damages by way of any past, present and future infringement of any of the foregoing; and

All Borrower's Books relating to the foregoing and any and all claims, rights and interests in any of the above and all substitutions for, additions and accessions to and proceeds thereof.

Notwithstanding the foregoing, the Collateral shall not be deemed to include any copyrights, copyright applications, copyright registration and like protection in each work of authorship and derivative work thereof, whether published or unpublished, now owned or hereafter acquired; any patents, patent applications and like protections including without limitation improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same, trademarks, servicemarks and applications therefor, whether registered or not, and the goodwill of the business of Borrower connected with and symbolized by such trademarks, any trade secret rights, software, software code, algorithms, technology, designs, discoveries, processes, improvements, formulas, derivative works, including any rights

to unpatented inventions, know-how, operating manuals, license rights and agreements and confidential information, now owned or hereafter acquired; or any claims for damage by way of any past, present and future infringement of any of the foregoing (collectively, the "Intellectual Property"), except that the Collateral shall include the proceeds of all the Intellectual Property that are accounts, (i.e. accounts receivable) of Borrower, or general intangibles consisting of rights to payment, if a judicial authority (including a U.S. Bankruptcy Court) holds that a security interest in the underlying Intellectual Property is necessary to have a security interest in such accounts and general intangibles of Borrower that are proceeds of the Intellectual Property, then the Collateral shall automatically, and effective as of the Closing Date, include the Intellectual Property to the extent necessary to permit perfection of Bank's security interest in such accounts and general intangibles of Borrower that are proceeds of the Intellectual Property.

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**End of Filing**

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