

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 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 APRIL 30, 1999

OR

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

FOR THE TRANSITION PERIOD FROM.....TO.....

COMMISSION FILE NUMBER: 0-21969

CIENA CORPORATION

(Exact name of registrant as specified in its charter)

DELAWARE

23-2725311

(State or other jurisdiction of
incorporation or organization)

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

1201 WINTERSON ROAD, LINTHICUM, MD

21090

(Address of Principal Executive Offices)

(Zip Code)

(410) 865-8500

(Registrant's telephone number, including area code)

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 (X) NO ()

Indicate the number of shares outstanding of each of the issuer's classes
of common stock, as of the latest practicable date:

CLASS	OUTSTANDING AT MAY 21, 1999
----- Common stock. \$.01 par value	----- 121,375,665

CIENA CORPORATION

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CIENA CORPORATION

CONSOLIDATED STATEMENTS OF OPERATIONS
(IN THOUSANDS, EXCEPT PER SHARE DATA)
(UNAUDITED)

	Quarter Ended		Six Months Ended	
	April 30, 1998	April 30, 1999	April 30, 1998	April 30, 1999
Revenue	\$ 142,718	\$ 111,490	\$ 287,810	\$ 211,907
Cost of goods sold	63,915	71,238	122,895	137,016
Gross profit	78,803	40,252	164,915	74,891
Operating expenses:				
Research and development	16,706	21,167	26,909	40,950
Selling and marketing	11,063	12,427	21,031	25,301
General and administrative	4,519	5,467	8,311	10,229
Merger costs	-	2,253	-	2,253
Purchased research and development	9,503	-	9,503	-
Pirelli litigation	10,000	-	10,000	-
Total operating expenses	51,791	41,314	75,754	78,733
Income (loss) from operations	27,012	(1,062)	89,161	(3,842)
Interest and other income (expense), net	3,433	3,614	7,208	6,876
Interest expense	(81)	(94)	(165)	(168)
Income before income taxes	30,364	2,458	96,204	2,866
Provision for income taxes	15,154	864	41,296	989
Net income	\$ 15,210	\$ 1,594	\$ 54,908	\$ 1,877
Basic net income per common share	\$ 0.14	\$ 0.01	\$ 0.53	\$.02
Diluted net income per common share and dilutive potential common share	\$ 0.14	\$ 0.01	\$ 0.50	\$.01
Weighted average basic common shares outstanding	106,245	121,135	103,443	120,646
Weighted average basic common and dilutive potential dilutive potential common shares outstanding	112,455	128,910	110,045	127,824

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

CIENA CORPORATION

CONSOLIDATED BALANCE SHEETS
(IN THOUSANDS, EXCEPT SHARE DATA)
(UNAUDITED)

	October 31, 1998	April 30, 1999
	-----	-----
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 239,780	\$ 194,920
Marketable debt securities	15,993	100,021
Accounts receivable, net	85,472	96,448
Inventories, net	70,908	54,062
Deferred income taxes	16,421	13,514
Prepaid income taxes	8,558	-
Prepaid expenses and other	4,524	9,615
	-----	-----
Total current assets	441,656	468,580
Equipment, furniture and fixtures, net	124,792	127,085
Goodwill and other intangible assets, net	16,270	14,446
Other assets	4,848	4,737
	-----	-----
Total assets	\$ 587,566	\$ 614,848
	=====	=====
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 25,925	\$ 24,144
Accrued liabilities	34,437	40,773
Income taxes payable	-	9,216
Deferred revenue	1,084	719
Other current obligations	953	1,276
	-----	-----
Total current liabilities	62,399	76,128
Deferred income taxes	34,125	36,580
Other long-term obligations	2,257	3,703
	-----	-----
Total liabilities	98,781	116,411
	-----	-----
Commitments and contingencies	-	-
Stockholders' equity:		
Preferred stock - par value \$.01; 20,000,000 shares authorized; zero shares issued and outstanding	-	-
Common stock - par value \$.01; 360,000,000 shares authorized; 119,817,209 and 121,330,173 shares issued and outstanding	1,198	1,213
Additional paid-in capital	310,888	319,268
Unearned compensation	-	(687)
Notes receivable from stockholders	(568)	(629)
Cumulative translation adjustment	(107)	21
Retained earnings	177,374	179,251
	-----	-----
Total stockholders' equity	488,785	498,437
	-----	-----
Total liabilities and stockholders' equity	\$ 587,566	\$ 614,848
	=====	=====

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

CIENA CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS
(IN THOUSANDS)
(UNAUDITED)

Six Months Ended April 30,

	1998	1999

Cash flows from operating activities:		
Net income	\$ 54,908	\$ 1,877
Adjustments to reconcile net income to net cash provided by operating activities:		
Non-cash charges from equity transactions	20	262
Amortization of premiums on marketable debt securities	164	87
Effect of Translation Adjustments	(24)	128
Purchased research and development	9,503	-
Depreciation and amortization	13,928	23,501
Allowance for doubtful accounts	194	-
Provision for inventory excess and obsolescence	1,683	2,033
Provision for warranty and other contractual obligations	6,400	4,617
Changes in assets and liabilities:		
Increase in accounts receivable	(59,848)	(10,976)
Increase in prepaid expenses and other	(4,565)	(5,178)
Decrease in prepaid income tax	-	8,558
(Increase) decrease in inventories	(29,529)	14,813
(Increase) decrease in deferred income tax asset	(1,247)	2,907
(Increase) decrease in other assets	(3,670)	111
Increase (decrease) in accounts payable and accruals	16,956	(62)
Increase in income taxes payable	1,919	9,216
Increase in deferred income tax liability	1,957	2,455
Increase (decrease) in deferred revenue and other obligations	1,131	(365)
	-----	-----
Net cash provided by operating activities	9,880	53,984

Cash flows from investing activities:		
Additions to equipment, furniture and fixtures	(58,155)	(23,970)
Purchases of marketable debt securities	(88,305)	(118,277)
Maturities of marketable debt securities	36,376	34,249
Net cash paid for business combination	(2,103)	-
	-----	-----
Net cash used in investing activities	(112,187)	(107,998)

Cash flows from financing activities:		
Net (repayment of) proceeds from other obligations	(495)	1,769
Proceeds for issuance of common stock and warrants	10,962	3,497
Tax benefit related to exercise of stock warrants	6,885	3,796
Repayment of notes receivable from stockholders	-	92
	-----	-----
Net cash provided by financing activities	17,352	9,154

Net increase (decrease) in cash and cash equivalents	(84,955)	(44,860)
Cash and cash equivalents at beginning of period	268,588	239,780
	-----	-----
Cash and cash equivalents at end of period	\$ 183,633	\$ 194,920
	=====	=====

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

CIENA CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(UNAUDITED)

(1) SIGNIFICANT ACCOUNTING POLICIES

Interim Financial Statements

The interim financial statements included herein for CIENA Corporation ("CIENA") have been prepared by CIENA, without audit, pursuant to the rules and regulations of the Securities and Exchange Commission. In the opinion of management, financial statements included in this report reflect all normal recurring adjustments which CIENA considers necessary for the fair presentation of the results of operations for the interim periods covered and of the financial position of CIENA at the date of the interim balance sheet. Certain information and footnote disclosures normally included in the annual financial statements prepared in accordance with generally accepted accounting principles have been condensed or omitted pursuant to such rules and regulations. However, CIENA believes that the disclosures are adequate to understand the information presented. The operating results for interim periods are not necessarily indicative of the operating results for the entire year. These financial statements should be read in conjunction with CIENA's October 31, 1998 audited supplemental consolidated financial statements and notes thereto included in CIENA's Form 8-K filed on April 1, 1999 and amended on April 5, 1999.

As more fully described in Note 5, CIENA acquired Lightera Networks Incorporated ("Lightera") in March 1999. The acquisition was accounted for as a pooling of interests, and the historical consolidated financial statements of CIENA for all periods prior to this acquisition have been restated to include the financial position, results of operations and cash flows of Lightera.

Revenue Recognition

CIENA recognizes product revenue in accordance with the shipping terms specified. For transactions where CIENA has yet to obtain customer acceptance, revenue is deferred until the terms of acceptance are satisfied. Revenue for installation services is recognized as the services are performed unless the terms of the supply contract combine product acceptance with installation, in which case revenues for installation services are recognized when the terms of acceptance are satisfied and installation is completed. Revenues from installation service fixed price contracts are recognized on the percentage-of-completion method, measured by the percentage of costs incurred to date compared to estimated total costs for each contract. Amounts received in excess of revenue recognized are included as deferred revenue in the accompanying balance sheets. For distributor sales where risks of ownership have not transferred, CIENA recognizes revenue when the product is shipped through to the end user.

(2) INVENTORIES

Inventories are comprised of the following (in thousands):

	October 31, 1998	April 30, 1999
	-----	-----
Raw materials	\$ 43,268	\$ 30,409
Work-in-process	8,592	13,086
Finished goods	30,202	21,047
	-----	-----
	82,062	64,542
Less reserve for excess and obsolescence	(11,154)	(10,480)
	-----	-----
	\$ 70,908	\$ 54,062
	=====	=====

(3) EARNINGS PER SHARE CALCULATION

The following is a reconciliation of the numerators and denominators of the basic net income per common share ("basic EPS") and diluted net income per common and dilutive potential common share ("diluted EPS"). Basic EPS is computed using the weighted average number of common shares outstanding. Diluted EPS is computed using the weighted average number of common shares outstanding, stock options and warrants using the treasury stock method. (in thousands except per share amounts):

	Quarter ended April 30,	
	1998	1999
Net Income.....	\$ 15,210	\$ 1,594
Weighted average shares-basic.....	106,245	121,135
Effect of dilutive securities:		
Employee stock options.....	6,210	7,775
Weighted average shares-diluted....	112,455	128,910
Basic EPS.....	\$ 0.14	\$ 0.01
Diluted EPS.....	\$ 0.14	\$ 0.01
	Six months ended April 30,	
	1998	1999
Net Income.....	\$ 54,908	\$ 1,877
Weighted average shares-basic.....	103,443	120,646
Effect of dilutive securities:		
Employee stock options.....	6,602	7,178
Weighted average shares-diluted....	110,045	127,824
Basic EPS.....	\$ 0.53	\$ 0.02
Diluted EPS.....	\$ 0.50	\$ 0.01

Stock options to purchase 298,500 and 258,316 shares of common stock were outstanding during the quarter ended and six months ended April 30, 1999, respectively, but were not included in the computation of diluted EPS as the effect would be antidilutive.

(4) COMPREHENSIVE INCOME

In June 1997, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 130 (SFAS No.130), "Comprehensive Income". SFAS No.130 became effective for CIENA's fiscal year 1999. SFAS No. 130 establishes new rules for the reporting and display of comprehensive income and its components: however, the adoption of this statement had no impact on CIENA's net income or shareholders' equity. SFAS No. 130 requires that changes in the amounts of certain items, including foreign currency translation adjustments and gains and losses on certain securities be shown in the financial statements. CIENA's accumulated other comprehensive income is comprised entirely of accumulated foreign currency translation adjustments and is shown as a separate amount on CIENA's Consolidated Balance Sheets. During the second quarter of fiscal 1998 and 1999, total comprehensive income, which includes net income and changes in foreign currency translation adjustments, amounted to \$15,218,000 and \$1,723,000 of comprehensive income, respectively. During the six months ended April 30, 1998 and 1999, total comprehensive income, which includes net income and changes in foreign currency translation adjustments, amounted to \$54,884,000 and \$2,005,000 of comprehensive income, respectively.

(5) ACQUISITION

Lightera

During March 1999, CIENA completed a merger with Lightera, a Delaware Corporation headquartered in Cupertino, California, in a transaction valued at approximately \$463.5 million. Lightera is a developer of carrier class optical core switches for fiberoptic communications networks. Under the terms of the merger agreement with Lightera, CIENA acquired all of the outstanding shares of Lightera in exchange for approximately 17.5 million shares of CIENA common stock. In connection with the transaction CIENA also assumed outstanding stock options and warrants which represent rights to acquire an additional 3.1 million of CIENA stock. As a result of the transaction CIENA recorded a charge of \$2.3 million for merger costs. These costs include fees for legal, accounting, investment banking services and other related expenses. The transaction constituted a tax-free reorganization and has been accounted for as a pooling of interests under Accounting Principles Board Opinion No. 16. Accordingly, all prior period consolidated financial statements presented have been restated to include the combined results of operations, financial position and cash flows of Lightera as though it had been a part of CIENA.

The following table shows the separate historical results of CIENA and Lightera for the periods prior to the consummation of the merger of the two entities. No financial information has been presented for the fiscal years ended 1997 and 1996 as Lightera did not commence operations until April 1998.

(in thousands)

	Year Ended October 31, 1998	Six Months Ended April 30, 1999
	-----	-----
Revenues:		
CIENA	\$ 508,087	\$ 211,907
Lightera	-	-
Intercompany eliminations	-	-
	-----	-----
Consolidated revenues	\$ 508,087	\$ 211,907
	=====	=====
Net Income (loss):		
CIENA	\$ 53,194	\$ 8,046
Lightera	(2,081)	(6,169)
	-----	-----
Consolidated net income	\$ 51,113	\$ 1,877
	=====	=====

Omnia

On March 15, 1999 CIENA signed an Agreement and Plan of Merger with Omnia Communications, Inc. ("Omnia"), a Delaware corporation located in Marlborough, Massachusetts, in a transaction valued at approximately \$429 million. Omnia is a developer of carrier class optical access solutions for fiberoptic communications networks. Under the terms of the agreement, CIENA will acquire all of the outstanding shares of Omnia in exchange for approximately 16 million shares of CIENA common stock. The merger is subject to shareholder approval by Omnia stockholders and other customary conditions. The transaction is intended to constitute a tax-free reorganization and will be accounted for as a pooling of interests under Accounting Principles Board Opinion No. 16. Accordingly, all prior period consolidated financial statements presented will be restated to include the combined results of operations, financial position and cash flows of Omnia as though it had been a part of CIENA once the merger is consummated. For the six months ended April 30, 1998 and 1999, Omnia had no revenues and recorded a net loss of 2,230,000 and 7,246,000, respectively. CIENA expects to incur charges of approximately \$10,600,000 in connection with the merger. Of the \$10,600,000, \$7,900,000 is the estimated non-cash charge that relates to the acceleration of certain Omnia warrants and the remaining \$2,700,000 relates to financial advisory fees, legal and accounting services and other integration costs.

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

This Management's Discussion and Analysis of Financial Condition and Results of Operations contains certain forward-looking statements that involve risks and uncertainties. CIENA has set forth below under the heading "Risk Factors" a further discussion of certain of those risks as they relate to the period covered by this report, CIENA's near term outlook with respect thereto, and the forward-looking statements set forth herein.

OVERVIEW

CIENA Corporation is a market leader of open architecture, optical networking systems leveraging the bandwidth enhancing abilities of dense wavelength division multiplexing ("DWDM") technology. As a leader in the implementation of new technology in a rapidly evolving and often unpredictable industry, CIENA's quarterly operating results have varied and are expected to vary in the future. See "Risk Factors" for a detailed discussion of the many factors that have caused such variation in the past, and may cause similar variations in the future.

On March 15, 1999, CIENA announced agreements to acquire Lightera Networks, Inc. ("Lightera") and Omnia Communications, Inc. ("Omnia"), both privately held entities, in two separate transactions. Lightera is a developer of carrier-class optical core switches for fiberoptic communications networks. Omnia is a developer of carrier-class optical access solutions for fiberoptic communications networks.

CIENA completed the merger with Lightera in a transaction valued at approximately \$463.5 million. Under the terms of the agreement, CIENA acquired all of the outstanding shares of Lightera in exchange for approximately 17.5 million shares of CIENA common stock. In connection with the transaction, CIENA also assumed outstanding stock options and warrants which represents rights to acquire an additional 3.1 million of CIENA stock. The transaction constituted a tax-free reorganization and has been accounted for as a pooling of interests under Accounting Principles Board Opinion No. 16. Accordingly, all prior period consolidated financial statements presented have been restated to include the combined results of operations, financial position and cash flows of Lightera as though it had been a part of CIENA.

The acquisition of Omnia is a transaction valued at approximately \$429 million and is expected to be completed in June or July 1999. Under the terms of the merger agreement with Omnia, CIENA will acquire all of the outstanding shares of Omnia in exchange for approximately 16 million shares of CIENA common stock. The acquisition is subject to shareholder approval by Omnia stockholders and other customary conditions. The transaction is intended to constitute a tax-free reorganization and will be accounted for as a pooling of interests under Accounting Principles Board Opinion No. 16. Accordingly, once the acquisition is completed, all prior period consolidated financial statements presented will be restated to include the combined results of operations, financial position and cash flows of Omnia as though it had been a part of CIENA.

In conjunction with the agreements to acquire Lightera and Omnia, CIENA announced its LightWorks(TM) Initiative, CIENA's vision of how to change the fundamental economics of optical telecommunication service provider networks. The eventual addition of Lightera's and Omnia's products to CIENA's product suite will make it possible for CIENA to offer telecommunications service providers a comprehensive next-generation optical network architecture that dramatically reduces the total number of network elements, thereby lowering network costs. By sweeping the functionality and performance of what are now several network elements into dramatically fewer network elements, without sacrificing network reliability or performance, CIENA LightWorks architecture should lower both a carrier's equipment cost and its operational costs. In addition, LightWorks network architecture may enhance the revenue generating potential of carrier networks by shortening their service delivery intervals and enabling them to offer their customers a wide variety of services from a single network platform.

CIENA has increased the number of its optical transport equipment customers from a total of seven during the six months ended April 30, 1998 to seventeen for the six months ended April 30, 1999. This reflects CIENA's ongoing strategy in the face of aggressive price competition to continue to build market share at the cost of reduced margins.

CIENA intends to preserve and enhance its market leadership and eventually build on its installed base with new and additional products. While this gross margin pressure continues, CIENA believes that its product and service quality, manufacturing experience, and proven track record of delivery will enable it to be successful while it concentrates on efforts to reduce product costs and maximize production efficiencies.

CIENA believes that the need for customer financing assistance is increasingly a factor among the new carriers seeking rapid buildout of their networks. To date CIENA has not recognized revenue from customers with extended payment terms beyond 90 days from customer acceptance. Revenue recognition from future customers who require financing assistance may be deferred until collection is probable.

CIENA is committed to achieving general commercial availability of MultiWave(R) Metro(TM), CIENA's system designed for use in metropolitan ring applications within the next several months, as well as 10 gigabit per second transmission capability for its MultiWave Sentry(TM) line of products in the second half of the year. The general commercial availability of CIENA's next generation long-distance optical transport system, a MultiWave platform capable of 96-channel configuration, is also expected in the second half of the year.

CIENA intends to continue the development of the CoreDirector(TM) product developed by Lightera. CoreDirector is believed to be the world's first intelligent optical core switch and reduces the cost of deploying and operating telecommunication service provider networks with industry-leading capacity and advanced networking software. Because it supports capacities from optical wavelengths down to STS-1s with what CIENA believes is industry-leading scale and density, the CoreDirector allows carriers to deliver a full range of transport services, without costly SONET/SDH multiplexers or inflexible "wavelength only" devices. The general commercial availability of the CoreDirector is expected by the end of the first quarter calendar 2000.

Pursuit of these strategies, in conjunction with increased investments in research and development, selling, marketing, and customer service activities, will likely limit CIENA's operating profitability over the remaining six months of fiscal 1999, and may result in operating losses during the period. CIENA intends to continue to pursue new or complementary technologies either through ongoing internal development or by acquisition in order to further broaden CIENA's product line.

As of April 30, 1999 CIENA employed 1,557 people, which includes 69 persons as a result of CIENA's acquisition of Lightera. This was an increase of 175 persons over the 1,382 employed on October 31, 1998.

RESULTS OF OPERATIONS

THREE MONTHS ENDED APRIL 30, 1998 COMPARED TO THREE MONTHS ENDED APRIL 30, 1999

REVENUE. CIENA recognized \$142.7 million and \$111.5 million in revenue for the second quarters ended April 30, 1998 and 1999, respectively. The approximate \$31.2 million or 21.9% decrease in revenues in the second quarter 1999 compared to the second quarter 1998 was largely the result of reduced selling prices. CIENA recorded an increase in revenues recognized from fourteen optical transport equipment customers in the quarter ended April 30, 1999, as compared to six such customers in the same quarter of the prior year. Additionally, during the quarter ended April 30, 1999, each of three optical transport equipment customers accounted for at least 10% or more of CIENA's quarterly revenue and combined accounted for 72% of CIENA's quarterly revenue. This compares to the quarter ended April 30, 1998 where one customer accounted for at least 10% or more of CIENA's quarterly revenue and in total that same customer accounted for approximately 69% of CIENA's quarterly revenue. Revenues derived from foreign sales accounted for approximately 10.3% and 27.2% of CIENA's revenues during the second quarter ended April 30, 1998 and 1999, respectively. The increase in foreign sales reflects an increase in sales to new customers.

Revenues in CIENA's second quarter 1998 and 1999 were both largely attributed to sales of CIENA's 40 channel MultiWave Sentry(TM) 4000 systems. Revenues derived from engineering, furnishing and installation services increased by less than 10% from second quarter 1998 compared to second quarter 1999. Sales from this activity

increased as a percentage of total revenue from approximately 9.1% to 12.7% of CIENA's revenue from the second quarter 1998 to second quarter 1999, respectively.

CIENA expects revenue in the near term to be largely dependent upon sales to several new customers and to be derived primarily from sales of MultiWave Sentry 4000, new products using a MultiWave platform capable of 96-channel configuration, products using 10 gigabit per second transmission capability, and MultiWave Metro. Some of the new customers from whom CIENA expects to obtain customer acceptance for product shipments and installation services during the third and fourth quarters of fiscal 1999 have extended payment terms. This revenue may be deferred until collection is probable. There are material risks associated with CIENA's dependence on these customers, as well as the successful ramping up of the manufacturing of these products. See "Risk Factors".

GROSS PROFIT. Cost of goods sold consists of component costs, direct compensation costs, warranty and other contractual obligations, royalties, license fees, inventory obsolescence costs and overhead related to CIENA's manufacturing and engineering, furnishing and installation operations. Gross profits were \$78.8 million and \$40.3 million for the second quarters ended April 30, 1998 and 1999, respectively. The approximate \$38.5 million or 48.9% decrease in gross profit in the second quarter 1999 compared to the second quarter 1998 was the result of decreased revenues in the second quarter 1999 compared to second quarter 1998. Gross margin as a percentage of revenues was 55.2% and 36.1% for the second quarters 1998 and 1999, respectively. The decrease in gross margin percentage for the second quarter 1999 compared to the second quarter 1998 was largely attributable to aggressive price competition resulting in significantly lower selling prices for optical transport systems.

CIENA's gross margins may be affected by a number of factors, including continued competitive market pricing, manufacturing volumes and efficiencies, and fluctuations in component costs. During the remainder of fiscal 1999, CIENA expects to face continued pressure on gross margins, primarily as a result of substantial price discounting by competitors seeking to acquire market share. See "Risk Factors."

RESEARCH AND DEVELOPMENT EXPENSES. Research and development expenses were \$16.7 million and \$21.2 million for the second quarters ended April 30, 1998 and 1999, respectively. During the second quarters 1998 and 1999, research and development expenses were 11.7% and 19.0% of revenue, respectively. The approximate \$4.5 million or 26.7% increase in research and development expenses in the second quarter 1999 compared to the second quarter 1998 was the result of increases in staffing levels, utilization of outside consultants, facility costs and depreciation expense. CIENA expects that its research and development expenditures will continue to increase during the remainder of fiscal year 1999 to support the continued development of optical transport products, intelligent optical core switching products, the exploration of new or complementary technologies, and the pursuit of various cost reduction strategies. CIENA expenses research and development costs as incurred.

SELLING AND MARKETING EXPENSES. Selling and marketing expenses were \$11.1 million and \$12.4 million for the second quarters ended April 30, 1998 and 1999, respectively. During the second quarters 1998 and 1999, selling and marketing expenses were 7.8% and 11.1% of revenue, respectively. The approximate \$1.4 million or 12.3% increase in selling and marketing expenses in the second quarter 1999 compared to the second quarter 1998 was primarily the result of increased staffing levels in the areas of sales, technical assistance and field support. Increases in costs for customer demonstration systems and rent expense also contributed the comparable quarter to quarter selling and marketing expense increase. CIENA anticipates that its selling and marketing expenses will increase during the remainder of fiscal year 1999 as additional personnel are hired and offices opened, particularly in support of international market development, to allow CIENA to pursue new market opportunities.

GENERAL AND ADMINISTRATIVE EXPENSES. General and administrative expenses were \$4.5 million and \$5.5 million for the second quarters ended April 30, 1998 and 1999, respectively. During the second quarters 1998 and 1999, general and administrative expenses were 3.2% and 4.9% of revenue, respectively. The approximate \$0.9 million or 21.0% increase in general and administrative expenses from the second quarter 1998 compared to the second quarter 1999 was primarily the result of increased staffing levels, outside consulting services and facility costs. CIENA believes that its general and administrative expenses for the remainder of fiscal 1999 will increase due to the expansion of CIENA's administrative staff required to support its expanding operations in Cupertino, California and London, England.

MERGER COSTS. The merger costs for the second quarter ended April 30, 1999 of \$2.3 million were costs related to the merger between CIENA and Lightera. These costs include fees for legal, accounting, investment banking services and other related expenses.

PURCHASED RESEARCH AND DEVELOPMENT. Purchased research and development costs were \$9.5 million for the second quarter 1998. These costs were for the purchase of technology associated with the acquisition of Terabit during the second quarter 1998.

PIRELLI LITIGATION. The Pirelli litigation expense for the second quarter 1998 was primarily the result of a \$10.0 million charge for actual and estimated legal and related costs associated with the litigation.

INTEREST AND OTHER INCOME (EXPENSE), NET. Interest income and other income (expense), net were \$3.4 million and \$3.6 million for the second quarters ended April 30, 1998 and 1999, respectively. The approximate \$0.2 million or 5.3% increase in interest income and other income (expense), net was attributable to higher invested cash balances.

PROVISION FOR INCOME TAXES. CIENA's provision for income taxes were \$15.2 million and \$0.9 million for the second quarters ended April 30, 1998 and 1999, respectively. During the second quarters 1998 and 1999, the provision for income taxes were 38.0% and 35.0% of income before income taxes, respectively, exclusive of the effect of one-time charges for purchased research and development expenses. The decline in the income tax rate in second quarter 1999 compared to second quarter 1998 was the result of a lower combined effective state income tax expenses, increased benefits derived from the Company's Foreign Sales Corporation, and an increase in expected tax credits derived from research and development activities.

SIX MONTHS ENDED APRIL 30, 1998 COMPARED TO SIX MONTHS ENDED APRIL 30, 1999

REVENUE. CIENA recognized \$287.8 million and \$211.9 million in revenue for the six months ended April 30, 1998 and 1999, respectively. The approximate \$75.9 million or 26.4% decrease in revenues in the six months ended April 30, 1999 compared to the six months ended April 30, 1998 was largely the result of decreased selling prices. CIENA recognized revenues from seventeen different optical transport equipment customers in the six months ended April 30, 1999, as compared to seven such customers in the same six months of the prior year. Additionally, during the six months ended April 30, 1999, each of two optical transport equipment customers accounted for at least 10% or more of CIENA's revenue and combined accounted for 53.2% of CIENA's revenue. This compares to the six months ended April 30, 1998 where two customers accounted for at least 10% or more of CIENA's revenue and combined accounted for approximately 71.5% of CIENA's revenue. Revenues derived from foreign sales accounted for approximately 14.9% and 34.5% of CIENA's revenues during the six months ended April 30, 1998 and 1999, respectively. The increase in foreign sales reflects an increase in sales to new customers.

Revenues during CIENA's six months ended April 30, 1998 were largely attributable to both sales of 16 channel MultiWave Sentry and 40 channel MultiWave Sentry 4000 systems. Revenues during CIENA's six months ended April 30, 1999 were largely attributed to sales of CIENA's MultiWave Sentry 4000 systems. Revenues derived from engineering, furnishing and installation services increased by less than 10% from the six months ended April 30, 1998 compared to the six months ended April 30, 1999. Sales from this activity increased as a percentage of total revenue from approximately 8.3% to 12.2% of CIENA's revenue from the first six months of 1998 to the first six months of 1999, respectively.

GROSS PROFIT. Gross profits were \$164.9 million and \$74.9 million for the six months ended April 30, 1998 and 1999, respectively. The approximate \$90.0 million or 54.6% decrease in gross profit in the first six months of 1999 compared to the first six months of 1998 was the result of decreased revenues for those periods. Gross margin as a percentage of revenues was 57.3% and 35.3% for the first six months of 1998 and 1999, respectively. The decrease in gross margin percentage for the first six months of 1999 compared to the first six months of 1998 was largely attributable to aggressive price competition resulting in lower selling prices for MultiWave optical transport systems.

RESEARCH AND DEVELOPMENT EXPENSES. Research and development expenses were \$26.9 million and \$41.0 million for the six months ended April 30, 1998 and 1999, respectively. During the first six months of 1998 and 1999, research and development expenses were 9.3% and 19.3% of revenue, respectively. The approximate \$14.0 million or 52.2% increase in research and development expenses in the first six months of 1999 compared to the first six months of 1998 was the result of increases in staffing levels, consumption of prototype materials, utilization of outside consultants for certain development efforts and higher costs of test equipment used to develop and test new products and features. CIENA expenses research and development costs as incurred.

SELLING AND MARKETING EXPENSES. Selling and marketing expenses were \$21.0 million and \$25.3 million for the six months ended April 30, 1998 and 1999, respectively. During the first six months of 1998 and 1999, selling and marketing expenses were 7.3% and 11.9% of revenue, respectively. The approximate \$4.3 million or 20.3% increase in selling and marketing expenses in the first six months of 1999 compared to the first six months of 1998 was primarily the result of increased staffing levels in the areas of sales, technical assistance and field support, and increases in commissions earned, trade show participation, promotional costs, travel expenditures and rent expense.

GENERAL AND ADMINISTRATIVE EXPENSES. General and administrative expenses were \$8.3 million and \$10.2 million for the six months ended April 30, 1998 and 1999, respectively. During the first six months of 1998 and 1999, general and administrative expenses were 2.9% and 4.8% of revenue, respectively. The approximate \$1.9 million or 23.1% increase in general and administrative expenses in the first six months of 1999 compared to the first six months of 1998 was primarily due to increases in staffing levels and outside consulting services.

MERGER COSTS. The merger costs for the six months ended April 30, 1999 of \$2.3 million were costs related to the merger between CIENA and Lightera. These costs include fees for legal, accounting, investment banking services and other related expenses.

PURCHASED RESEARCH AND DEVELOPMENT. Purchased research and development costs were \$9.5 million for the six months ended April 30, 1998. These costs were for the purchase of technology associated with the acquisition of Terabit during the second quarter 1998.

PIRELLI LITIGATION. The Pirelli litigation expense for the six months ended 1998 was primarily the result of a \$10.0 million charge for actual and estimated legal and related costs associated with the litigation.

INTEREST AND OTHER INCOME (EXPENSE), NET. Interest income and other income (expense), net were \$7.2 million and \$6.9 million for the six months ended April 30, 1998 and 1999, respectively. The approximate \$0.3 million or 4.6% decrease in interest income and other income (expense), net was attributable to lower invested cash balances.

PROVISION FOR INCOME TAXES. CIENA's provision for income taxes were \$41.3 million and \$1.0 million for the six months ended April 30, 1998 and 1999, respectively. During the first six months of 1998 and 1999, the provision for income taxes were 38.4% and 34.5% of income before income taxes, respectively, exclusive of the effect of one-time charges for purchased research and development expenses. The decline in the income tax rate in the first six months of 1999 compared to 1998 was the result of a lower combined effective state income tax expenses, increased benefits derived from the Company's Foreign Sales Corporation, and an increase in expected tax credits derived from research and development activities.

LIQUIDITY AND CAPITAL RESOURCES

At April 30, 1999, CIENA's principal source of liquidity was its cash and cash equivalents of \$194.9 million and its marketable debt securities of \$100.0 million. CIENA's marketable debt securities have maturities no longer than six months.

Cash generated from operations was \$54.0 million for the six months ended April 30, 1999. This amount was principally attributable to the non-cash charges of depreciation, amortization, provisions for inventory obsolescence and warranty, and reductions in inventories, increases in accounts payable, accrued expenses and income tax payable.

This amount was offset by increases in accounts receivable and prepaid expenses due to increased revenue and to the general increase in business activity.

Investment activities in the six months ended April 30, 1999 included the net purchase of \$84.0 million worth of corporate debt securities and \$24.0 million invested in capital expenditures. Of the amount invested in capital expenditures, \$21.6 million was used for additions to capital equipment and furniture and the remaining \$2.4 million was invested in leasehold improvements.

CIENA expects to use an additional \$50.0 million to \$60.0 million of capital during the remainder of fiscal 1999 to complete the construction of leasehold improvements for its facilities and additional investments in capital equipment.

CIENA believes that its existing cash balance and cash flows from future operations will be sufficient to meet CIENA's capital requirement for at least the next 18 to 24 months.

YEAR 2000 READINESS DISCLOSURE

Many computer systems were not designed to handle any dates beyond the year 1999; accordingly, affected hardware and software will need to be modified prior to the year 2000 in order to remain functional. CIENA's operations make use of a variety of computer equipment and software. If the computer equipment and software used in the operation of CIENA and its products do not correctly recognize date information when the year changes to 2000, there could be an adverse impact on CIENA's operations.

CIENA has taken actions to understand the nature and extent of work required, if any, to make its systems, products and infrastructure Year 2000 compliant. Based on internal testing performed to date and completed by CIENA, CIENA currently believes and warrants to its customers that its products are Year 2000 compliant. However, since all customer situations cannot be anticipated, particularly those involving interaction of CIENA's products with third party products, CIENA may experience warranty and other claims as a result of the Year 2000 transition. The impact of customer claims, if broader than anticipated, could have a material adverse impact on CIENA's results of operations or financial condition.

CIENA has concluded a comprehensive inventory and evaluation of both information technology ("IT") or software systems and non-IT systems used to run its systems with the exception of the systems it acquired in its merger with Lightera. Non-IT systems typically include embedded technology such as microcontrollers. Examples of CIENA's Non-IT systems include certain equipment used for production, research, testing and measurement processes and calibration. CIENA has begun the process of upgrading or replacing those identified non-compliant systems and the process is 60% complete. Completion is expected during the third quarter of fiscal 1999. For the Year 2000 non-compliance systems identified to date, the cost of remediation is not considered to be material to CIENA's financial condition or operating results. However, if implementation of replacement systems is delayed, or if significant new noncompliance issues are identified, CIENA's results of operations or financial condition may be materially adversely affected.

CIENA has begun the process of evaluating the systems acquired in the Lightera merger and has not to date evaluated in detail the systems in use by Omnia. CIENA expects to complete the evaluation process concerning the Lightera systems during the third quarter of fiscal 1999. CIENA plans to begin the process of upgrading or replacing those identified non-compliant systems by the end of the third fiscal quarter of 1999 with completion expected by the end of the fourth quarter of fiscal 1999. Depending on the timing of the closing of its merger with Omnia, CIENA expects to evaluate, upgrade and or replace as necessary those systems identified as non-compliant systems by December 1, 1999.

CIENA changed its main financial, manufacturing and information system to a company-wide Year 2000 compliant enterprise resource planning ("ERP") computer-based system during the fourth quarter of fiscal 1998. CIENA estimates that it has spent approximately \$4.0 million on its ERP implementation and during the six months ended April 30, 1999 CIENA has spent approximately \$300,000 to address identified Year 2000 issues. CIENA estimates that it will likely spend an additional \$100,000 to \$200,000 to address remaining identified Year 2000 issues. CIENA expects that

it will use cash from operations for Year 2000 remediation and replacement costs. Approximately less than 2% of the information technology budget is expected to be used for remediation. No other information technology projects have been deferred due to the Year 2000 efforts. CIENA has employed an independent verification consultant to validate CIENA's processes in order to assure the reliability of CIENA's risk and cost estimates.

CIENA has contacted its critical suppliers to determine that suppliers' operations and the products and services they provide are Year 2000 compliant. To date, CIENA's optical suppliers have represented that their products are year 2000 compliant and have represented that they are in the process of becoming fully compliant by December 31, 1999. If these suppliers fail to adequately address the Year 2000 issue for the products they provide to CIENA, this could have a material adverse impact on CIENA's operations and financial results. Contingency plans will be developed if it appears CIENA or its key suppliers will not be Year 2000 compliant, and such noncompliance is expected to have a material adverse impact on CIENA's operations.

The risks to CIENA resulting from the failure of third parties in the public and private sector to attain Year 2000 readiness are generally similar to those faced by other firms in CIENA's industry or other business enterprises generally. The following are representative of the types of risks that could result in the event of one or more major failures of CIENA's information systems, factories or facilities to be Year 2000 ready, or similar major failures by one or more major third party suppliers to CIENA: (1) information systems - could include interruptions or disruptions of business and transaction processing such as customer billing, payroll, accounts payable and other operating and information processes, until systems can be remedied or replaced; (2) factories and facilities - could include interruptions or disruptions of manufacturing processes and facilities with delays in delivery of products, until non-compliant conditions or components can be remedied or replaced; and (3) major suppliers to CIENA - could include interruptions or disruptions of the supply of raw materials, supplies and Year 2000 ready components which could cause interruptions or disruptions of manufacturing and delays in delivery of products, until the third party supplier remedied the problem or contingency measures were implemented. Risks of major failures of CIENA's principal products could include adverse functional impacts experienced by customers, the costs and resources for CIENA to remedy problems or replace products where CIENA is obligated or undertakes to take such action, and delays in delivery of new products.

RISK FACTORS

OUR QUARTERLY AND ANNUAL RESULTS HAVE FLUCTUATED AND WE EXPECT THEM TO CONTINUE TO FLUCTUATE

Our revenue and operating results have varied and are likely to continue to vary significantly from quarter to quarter and from year to year as a result of a number of factors, including the timing of order placement, size of orders, satisfaction of contractual customer acceptance criteria, as well as order delays or deferrals and shipment delays and deferrals. Delays or deferrals in purchasing decisions may increase as competitors introduce new competing products, customers change purchasing practices, and we develop and introduce new products or move to next-generation versions of existing products.

We will base our expense levels in the future partially on our expectations of long term future revenue. Net income for any quarterly period in which material orders are delayed or not forthcoming could vary significantly. Our expense levels to some extent reflect our substantial investment in financial, engineering, manufacturing and logistics support resources to position ourselves for successful commercial relationships with large potential customers, even though there is no assurance as to the volume, duration or timing of any purchases which might ensue from them. As a result of this investment of resources, we have experienced and may continue to experience:

- - increased inventory levels and operating expenses
- - a rise in manufacturing and general overhead and expense structure

These factors are magnified over the near term by the acquisitions of Lightera and Omnia, both of which have ongoing development and operating expenses but are not expected to contribute materially to revenues until calendar 2000.

Accordingly, near term results of operations may be only at break-even levels or may involve operating losses, even if revenues sequentially increase. In general, quarter-to-quarter sequential revenue and operating results over the next 12 months are likely to fluctuate and therefore may not be reliable indicators of annual performance.

INTENSE COMPETITION IN THE TELECOMMUNICATIONS INDUSTRY COULD HURT OUR SALES AND PROFITABILITY

A small number of very large companies have historically dominated the global telecommunications industry. Our competitors include Lucent, Alcatel, Nortel, NEC, Pirelli, Siemens, Ericsson, Fujitsu, and Hitachi. Many of them have substantial economic interests in continuing sales of the legacy equipment that has dominated the historical network architecture designed for voice traffic. New market entrants like us, that sell systems which displace legacy equipment, can represent a specific threat to these established companies. Our completed acquisition of Lightera and our pending acquisition of Omnia are likely to increase this perceived threat. As a result, we expect continued aggressive tactics from many of our competitors. In the past, these tactics have included the following:

- - Substantial and increasing price discounting - Customers are under increasing competitive pressure to deliver bandwidth to their customers at the lowest possible cost. As a result of this pressure, the price of DWDM products is an increasingly important factor in customer decisions. This may favor larger competitors who can spread the effect of price discounts in their DWDM products across an array of products and services, and a larger customer base. This also increases pressure on our gross margins.
- - Early announcements of competing or alternative systems - When competitors make early announcements of competing products, our customers may delay their purchasing decisions, particularly if they believe the claimed performance of the announced product, and the time within which it will be available. Customer orders for our products may also diminish if competitors are able to develop these announced products, if the products perform as advertised, and if competitors can manufacture the products in sufficient volume. If customers delay purchasing our products while they evaluate a competitor's product, we could experience substantial revenue swings and potentially material and adverse effects on our quarterly financial condition and results of operations.
- - Packaged, "one-stop shopping deals" - Most of our competitors provide a full range of telecommunications equipment in addition to systems similar to the ones that we offer.
- - Customer financing assistance - This is becoming an important factor primarily to new carriers that are trying to quickly build their networks. Our competitors are in a better position to offer longer and more attractive financing terms to these customers than we are because our competitors are larger and more heavily capitalized than we are. As a result, we may lose new business opportunities where financing is a key factor.

As competitors are able to manufacture products that are realistic alternatives to ours, our customers may reduce their purchases from us. Sprint has long indicated that it intends to establish a second vendor for our products. We don't know when Sprint will select a second vendor or what impact the selection might have on Sprint's purchases from us. This decision may result in Sprint reducing the amount of products it purchases from us, which could in turn have a material adverse effect on our financial condition and results of operations.

Competitors may also engage in intellectual property disputes with us as part of their effort to reduce our leadership position and limit our ability to achieve greater market share. Some of our competitors are also key suppliers of components for our products, and could harm us through delay, interruption or other failures to supply us with appropriate quality supplies. See "Certain of Our Suppliers are Also Our Competitors".

We have also observed an increase in the funding of new companies intending to develop new products for the rapidly evolving telecom industry. These companies may provide additional competition for our existing products as well as our future products.

DELAYS IN THE DEVELOPMENT OF NEW PRODUCTS COULD HURT OUR NEAR TERM PROSPECTS AND IMPACT OUR ABILITY TO REMAIN A MARKET LEADER

Our ability to remain a market leader, and, to a lesser extent, avoid significant fluctuation in our quarterly results, depends on our ability to:

- - anticipate changes in technology, industry standards, customer requirements, and product offerings, and
- - develop and introduce new and enhanced products in a timely fashion

For us to develop and qualify new suppliers for our products requires extensive planning and can result in unanticipated delays. The software certification process for new telecommunications equipment used in RBOC networks, which is a process traditionally conducted by Telcordia Technologies, has in the past resulted in and may continue to result in unanticipated delays which affect the commercial introduction of our products for the RBOC market. Failure to deliver new and improved products would have a material adverse effect on our competitive position and financial condition. See "Intense Competition in the Telecommunications Industry Could Hurt Our Sales and Profitability".

We have committed to producing one of our new products, MultiWave Metro, within the next few months. We expect that Omnia's complementary "edge services" delivery product will become available at about the same time. We also expect to have 10 gigabit per second transmission, or higher single channel transmission capacity, in our products in the second half of the year. Enhanced optical amplifiers necessary for the long distance operation of our most recent high capacity product, the fully-configured 96-channel system, are also expected to be available in the second half of this year. If we are unable to meet customer expectations with respect to these commitments, our leadership position in our portion of the communications industry will be adversely impacted. In order to meet these commitments, we will need to finalize component sourcing, which we have not yet completed. Any delays in shipment could result in delays in recognizing revenues and, ultimately, could adversely affect our customer relationships.

OUR TRANSITION TO A MIX OF SMALLER CUSTOMERS MAY INCREASE FLUCTUATION IN DEMAND AND IN OUR RESULTS

We are focusing our sales efforts on a greater number of smaller opportunities now that:

- - Sprint has installed our equipment in much of its network
- - MCI WorldCom is purchasing at relatively modest levels, and
- - There is little likelihood of any additional, comparably sized customers.

Smaller opportunities in our business are still in the millions of dollars, and typically represent new or less established carriers trying to break into local, regional or national markets. Such carriers can be even less predictable as to both timing and volume of purchasing than established carriers, due to a variety of factors including their need to build their own customer base, acquire all necessary rights of way and interconnections necessary to sell network service, and build out new capacity sufficient to meet anticipated needs, while working within capital budget constraints. This tends to exacerbate our problem of limited visibility, one with which we regularly struggle in conducting sales forecasting and materials and manufacturing planning, and in communicating with investors. It may also increase fluctuations in quarterly operating results and stock price volatility. See "Our Stock Price May Exhibit Volatility". Newer carriers are also increasingly seeking financing assistance with their purchases, as they seek to leverage their capital and build out their networks as quickly and extensively as possible. It is possible that CIENA's ability to recognize revenue from financed sales to such carriers will be impacted by their financial condition and results of operations at the time of product acceptance.

Unanticipated changes in customer purchasing plans could adversely impact our results relative to investor expectations. Most of our anticipated revenue over the next several quarters is comprised of less than \$25 million orders from each of several customers, some of which have been provided extended payment terms or other financing assistance. Slips in timing of purchases, or changes in the amount of purchases by one or more of these customers, or the customer's slowness or inability to raise capital to properly fund their network buildouts, could have a material adverse effect on our results of operations and relative to investor expectations.

OUR GROWTH DEPENDS ON DEMAND FOR BANDWIDTH WHICH WE CANNOT PREDICT OR CONTROL

We are uncertain whether we can accurately anticipate changes in direction or magnitude of demand for bandwidth. Unanticipated reductions in demand would adversely affect our profitability. Depending on the size of the gap between actual demand, reduced demand, and investor expectation of demand, we could experience changes in our stock price, irrespective of our overall competitive position and long term prospects.

Most of our products enable high capacity transmission over long distance, and some of our products, the MultiWave Firefly and MultiWave Metro, enable high capacity transmission over certain short-haul portions of optical communications networks. Our Core Director switching products are targeted to high capacity applications. Our customers and target customers, however, determine:

- the quantity of bandwidth needed
- the timing of its deployment, and
- the equipment configurations and network architectures they want.

Some carriers believe the deployment of large-scale bandwidth quickly is a competitive advantage. As a result, these carriers engage in prompt and widespread deployment of high capacity systems. Other carriers have adopted a wait-and-see approach, which dictates a more gradual deployment of higher capacity systems. New carriers sometimes try to combine these viewpoints. They favor rapid and widespread installation of the foundational elements of high capacity systems, but employ pricing and other supply agreement features which allow them to delay broader deployment until necessary. Carriers' views in this regard are further influenced by the pace at which the higher bandwidth available over long distance routes is distributed or distributable over "the last mile" of the networks, and carriers' willingness to aggressively lower their charges for services as a means of accelerating consumption of the higher bandwidth. These views are also subject to abrupt change as our customers respond to their own competitive pressures as well as pressures to raise capital and meet financial performance expectations.

OUR SUCCESS LARGELY DEPENDS ON OUR ABILITY TO RETAIN KEY PERSONNEL

Our success has always depended in large part on our ability to attract and retain highly-skilled technical, managerial, sales and marketing personnel, particularly those skilled and experienced with optical communications equipment. As CIENA has grown and matured, competitors' efforts to entice our employees to leave have intensified, particularly among competitive startups and other early stage companies seeking to replicate CIENA's experience. CIENA and its employees are parties to agreements that limit the employee's ability to work for a competitor following termination of employment. We expect our competitors will respect these agreements and not interfere with them. But we can make no assurances of that, or that we will be able to retain all of our key contributors or attract new personnel to add to or replace them. The loss of key personnel would likely have a material adverse effect on our business, financial condition and results of operations.

WE DEPEND ON AN UNUSUALLY SMALL NUMBER OF SUPPLIERS FOR KEY COMPONENTS FOR OUR PRODUCTS

We depend on a small number of suppliers for key components of our products, as well as equipment used to manufacture our products. Our highest capacity product, the MultiWave Sentry which is capable of 96-channel configurations, includes several higher performance components for which reliable, high volume suppliers are particularly limited. On occasion, we have experienced delays in receipt of key components. Any future difficulty in obtaining sufficient and timely delivery of them could result in delays or reductions in product shipments which, in turn, could have a material adverse effect on our business, financial condition and results of operations. Uniphase Corporation and JDS FIBEL, Inc., both of which are significant suppliers to CIENA, recently announced a planned merger. If this merger and related integration activities result in delayed deliveries of key components from either of these sources, those delays could have a material adverse effect on CIENA's near-term results of operations.

OUR NEW PRODUCTS COULD EXPERIENCE OCCASIONAL PROBLEMS AS THEIR TECHNOLOGY AND MANUFACTURING METHODS MATURE

The production of new fiberoptic systems with high technology content involves occasional problems as the technology and manufacturing methods mature.

We are aware of instances domestically and internationally, of delayed installation and activation of some of our products due to faulty components. If recurring or material reliability, quality or network monitoring problems should develop, a number of material and adverse effects could result. Those effects include:

- - manufacturing rework costs
- - high service and warranty expense
- - high levels of product returns
- - delays in collecting accounts receivable
- - reduced orders from existing customers, and
- - declining level of interest from potential customers

Although we maintain accruals for product warranties, we cannot make any assurances that actual costs will not exceed these amounts. The pace at which the customer requires upgrades from 16 to 40 to higher channel count products can further complicate our assessment of appropriate product warranty reserves.

From time to time, we expect to experience interruptions or delays in the activation of our products and the addition of channels, particularly because we do not control all aspects of the installation and activation activities. In the event we experience significant interruptions or delays that we can not promptly identify, diagnose and resolve, confidence in our products could be undermined. Undermined confidence in our products would have a material adverse effect on our customer relationships, business, financial condition and results of operations.

TECHNOLOGICAL CHANGE, NEW PRODUCTS AND NEW COMPANIES COULD RESULT IN MORE COMPETITION

New technologies will emerge, and existing technologies will rapidly evolve, as competition in the telecommunications industry increases and the need for higher and more cost efficient bandwidth expands. Our ability to anticipate changes in technology, industry standards, customer requirements and product offerings, and to develop and introduce new and enhanced products will impact our ability to remain the leader in the deployment of open architecture DWDM products and other high-capacity solutions. We cannot make any assurances that we will succeed in doing so.

The accelerating pace of deregulation in the telecommunications industry will likely intensify the competition for improved technology. Many of our competitors have substantially greater financial, technical and marketing resources and manufacturing capacity with which to develop or acquire new technologies. We have also observed an increase in the funding of new companies intending to develop new products for the rapidly evolving telecom industry. The business and product plans for these companies are not always publicly known, but they are recognized as having the potential for time-to-market advantages due to the narrow and exclusive focus of their efforts. New companies may provide additional competition as to CIENA's existing product lines as well as potential future products. The introduction of new products embodying new technologies or the emergence of new industry standards could render our existing products uncompetitive from a pricing standpoint, obsolete or unmarketable. Any of these outcomes would have a material adverse effect on our business, financial condition and results of operations.

OUR STOCK PRICE MAY EXHIBIT VOLATILITY

Our common stock price has experienced substantial volatility in the past, and is likely to remain volatile in the future. Volatility can arise as a result of the activities of short sellers and risk arbitrageurs, and may have little relationship to our financial results or prospects. Volatility can also result from any divergence between our actual or anticipated financial results and published expectations of analysts, and announcements we may make. This occurred in 1998. We attempt to address this possible divergence through our public announcements and reports; however, the degree of specificity we can offer in such announcements, and the likelihood that any forward-looking statements we make will prove correct in actual results, can and will vary. This is due primarily to:

- - the uncertainties associated with our dependence on a small number of existing and potential customers
- - the impact of changes in the customer mix
- - the actions of competitors
- - long and unpredictable sales cycles and customer purchasing programs
- - the absence of unconditional minimum purchase commitments from any customer
- - a lack of visibility into our customers' deployment plans over the course of the capital equipment procurement year, and
- - the lack of reliable data on which to anticipate core demand for high bandwidth transmission capacity

Divergence will likely occur from time to time in the future, with resulting stock price volatility, irrespective of our overall year-to-year performance or long-term prospects. As long as we continue to depend on relatively few customers, and particularly when a substantial majority of their purchases consist of newly-introduced products such as the 96-channel MultiWave Sentry and MultiWave Metro, there is substantial risk of widely varying quarterly results, including the so-called "missed quarter" relative to investor expectations. See "Our Growth Depends on Demand for Bandwidth which We Cannot Predict or Control".

LEGAL PROCEEDINGS COULD HAVE AN ADVERSE EFFECT ON OUR BUSINESS

In August 1998, shareholder class action lawsuits were filed against us and certain of our officers and directors. We believe the lawsuits, now consolidated into one, are without merit and are defending vigorously against them. However, because the consolidated lawsuit is at an early stage, it is not possible to predict the outcome at this time. If decided adversely to CIENA, however, it could have a material adverse effect on our financial condition and results of operations. See Part II, "Legal Proceedings" for a description of the lawsuit and current state of the proceedings.

CERTAIN OF OUR SUPPLIERS ARE ALSO OUR COMPETITORS

Certain of our component suppliers are both primary sources for such components and major competitors in the market for system equipment. For example, we buy certain key components from:

- - Lucent
- - Alcatel
- - Nortel
- - NEC, and
- - Siemens.

Each of these companies offers optical communications systems and equipment which are competitive with our products. Also, Lucent is the sole source of two components and is one of two suppliers of two others. Alcatel and Nortel are suppliers of lasers used in our products and NEC is a supplier of an important piece of testing equipment. A decline in reliability or other adverse change in these supply relationships could materially and adversely affect our business, financial condition and results of operations.

LIGHTERA AND OMNIA ACQUISITION RISK FACTORS

WE MAY NOT BE ABLE TO MANUFACTURE LIGHTERA AND OMNIA PRODUCTS SUCCESSFULLY

Both Lightera and Omnia's products are in the laboratory testing phase but the products have not matured into commercially manufacturable units suitable for field deployment. We expect that field deployable units of Omnia's products will be available in the second half of calendar 1999, and Lightera's products by the end of the first quarter of calendar 2000. The maturing process from laboratory prototype to manufacturable units involves a number of steps, including:

- - the qualification and multiple sourcing of critical components, including application-specific integrated circuits ("ASIC's") which are not yet finalized
- - validation of manufacturing methods
- - extensive quality assurance and reliability testing, and staffing of testing infrastructure
- - software validation, and
- - establishment of systems integration and burn in requirements

Each of these steps in turn presents serious risks of failure, rework or delay, any one of which could materially and adversely affect the speed and scope of product introduction and marketplace acceptance of the products. Specialized ASIC's, in particular, are key to the timely introduction of Lightera's and Omnia's products, and schedule delays are common in the final testing and manufacture of such components. In addition, unexpected intellectual property disputes, failure of critical design elements, and a host of other execution risks may delay or even prevent the introduction of these products.

WE MAY NOT BE ABLE TO RETAIN KEY EMPLOYEES OF LIGHTERA AND OMNIA

Because of the high valuation we placed on Lightera and Omnia, their key founders and employees have received or will receive a substantial number of CIENA shares and can sell these shares at substantial gains. In many cases, these individuals could become financially independent through these sales, before the products of either company have fully matured into commercially deliverable products commanding reasonable market share. Additionally, startup and other companies will seek out these individuals due to the financial result they have achieved for their investors. Under the circumstances, we face a difficult and significant task of retaining and motivating the key personnel of both companies to stay committed to us. We do not have employment contracts with these personnel. We may not be successful in retaining them.

THE SUCCESS OF OUR ACQUISITIONS DEPENDS ON OUR ABILITY TO SUCCESSFULLY INTEGRATE LIGHTERA, OMNIA, AND CIENA

Lightera is based in Cupertino, California and has approximately 69 employees; Omnia is based in Marlborough, Massachusetts and has approximately 70 employees; and CIENA is based in Linthicum, Maryland and has approximately 1,000 employees in Maryland (1,557 employees overall). We face the significant task of efficiently integrating the people at these sites operationally and culturally, while preserving the focus and momentum of their individual efforts. Our ability to do so will be a key determiner of the success or failure of the acquisitions. We have limited experience with this type of integration, and can make no assurances that we will succeed in so doing.

WE MAY FACE GREATER COMPETITION AS A RESULT OF OUR ACQUISITIONS OF LIGHTERA AND OMNIA

We expect the competitive response to our acquisitions to be intense and wide-ranging, and more intensive than the competition we faced when we were more narrowly focused on the DWDM transport sector of the market. Competitive responses may include, among other things:

- - early announcement of new or different competing products
- - substantial price discounting
- - customer financing assistance
- - intellectual property disputes, and
- - packaged, "one-stop-shopping" deals combining next generation equipment with legacy equipment and supplies

We can make no assurances that we will succeed against the kind of tactics large competitors may employ.

WE EXPECT THAT OUR ACQUISITIONS OF LIGHTERA AND OMNIA WILL MAKE OUR STOCK PRICE MORE VOLATILE

We have historically experienced substantial stock price volatility. The range of stock prices has not tracked with valuations based on traditional price/earnings multiples, and takeover speculation appears to have been an influence on the stock price at various times. However, both Lightera and Omnia are still completing their respective development stages, and we do not expect either of them to generate any revenue or earnings for at least several months. As a result, we expect to report approximately breakeven results of operations, and may report operating losses, for the balance of the fiscal year. Under these circumstances, we can expect significant volatility over the next several quarters as investors make judgments as to our relative progress in:

- - bringing the Lightera and Omnia products to market
- - integrating the two companies
- - managing retention issues, and
- - generally executing on the strategic vision.

Additionally, the shares issued to Lightera shareholders are likely to become eligible for sale without restriction in June 1999 and the vast majority of shares issued to Omnia shareholders are likely to become eligible for sale without restriction in late August 1999. Together, these shares will account for approximately 25% of the outstanding shares of CIENA. If a large portion of these shares are sold immediately or soon after they are eligible for sale, the stock price may experience further volatility and may decline.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISKS

The following discussion about the Company's market risk disclosures involves forward-looking statements. Actual results could differ materially from those projected in the forward-looking statements. The Company is exposed to market risk related to changes in interest rates and foreign currency exchange rates. The Company does not use derivative financial instruments for speculative or trading purposes.

INTEREST RATE SENSITIVITY. The Company maintains a short-term investment portfolio consisting mainly of corporate debt securities and U.S. government agency discount notes with an average maturity of less than six months. These held-to-maturity securities are subject to interest rate risk and will fall in value if market interest rates increase. If market interest rates were to increase immediately and uniformly by 10 percent from levels at April 30, 1999, the fair value of the portfolio would decline by an immaterial amount. The Company has the ability to hold its fixed income investments until maturity, and therefore the Company would not expect its operating results or cash flows to be affected to any significant degree by the effect of a sudden change in market interest rates on its securities portfolio.

FOREIGN CURRENCY EXCHANGE RISK. As a global concern, the Company faces exposure to adverse movements in foreign currency exchange rates. These exposures may change over time as business practices evolve and could have a material adverse impact on the Company's financial results. Historically the Company's primary exposures have been related to nondollar-denominated operating expenses in Canada, Europe and Asia where the Company sells primarily in U.S. dollars. The introduction of the Euro as a common currency for members of the European Monetary Union has not had a material impact on the CIENA's foreign exchange exposure. The Company is prepared to hedge against fluctuations in the Euro if this exposure becomes material. As of April 30, 1999 the assets and liabilities of the Company related to nondollar-denominated currencies was not material.

PART II. - OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

CLASS ACTION LITIGATION

A class action complaint was filed on August 26, 1998 in U.S. District Court for the District of Maryland entitled Witkin et.al v. CIENA Corporation et. al (Case No. Y-98-2946). Several other complaints, substantially similar in content were consolidated by court order on November 30, 1998. An amended, consolidated complaint was filed on February 16, 1999. The complaint alleges that CIENA and certain officers and directors violated certain provisions of the federal securities laws, including Section 10(b) and Rule 10b-5 under the Securities Exchange Act of 1934, by making false statements, failing to disclose material information and taking other actions intending to artificially inflate and maintain the market price of CIENA's common stock during the Class Period of May 21, 1998 to September 14, 1998, inclusive. The plaintiffs seek designation of the suit as a class action on behalf of all persons who purchased shares of CIENA's common stock during the Class Period and the awarding of compensatory damages in an amount to be determined at trial and attorneys' fees. The proceedings remain at an early stage. No discovery has been taken, and CIENA moved on April 15, 1999 to dismiss the case in its entirety. No prediction can be made as to the outcome of this motion or the case as a whole. CIENA believes the suit is without merit and intends to defend itself vigorously. CIENA filed a motion to dismiss the consolidated complaint on April 16, 1999. A hearing on the motion is currently scheduled for July 16, 1999. There is no assurance the motion will be successful.

ITEM 2. CHANGES IN SECURITIES AND USE OF PROCEEDS

During the quarter ended April 30, 1999, CIENA issued an aggregate of 17,546,016 shares of Common Stock to the shareholders of Lightera in exchange for all of the outstanding shares of Lightera stock. These shares were not registered in reliance on the exemption provided under Section 4(2) of the Securities Act of 1933, as amended, and Registration D promulgated thereunder.

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

The annual meeting of stockholders of the Registrant was held on March 10, 1999. At the annual meeting, the stockholders voted on the following matters:

	Votes For	Votes Against	Votes Abstained	Non-Votes
	-----	-----	-----	-----
Election of two Class 2 Directors				
Harvey B. Cash	83,389,344	656,854		
Michael J. Zak	83,345,376	700,822		
To ratify the selection of PricewaterhouseCoopers LLP as independent public accounts for the corporation	83,707,936	228,830	113,432	-

ITEM 6. EXHIBITS AND REPORTS ON FORM 8-K

- | (a) | Exhibit | Description |
|-----|---------|--|
| | 10.19 | Lightera 1998 stock option plan and form of stock option agreement |
| | 27.0 | Financial Data Schedule (filed only electronically with the SEC) |
- (b) Reports on Form 8-K : Form 8-K filed April 1, 1999, April 5, 1999 and Form 8-K/A filed April 5, 1999

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.

CIENA CORPORATION

Date: May 21, 1998

By: /s/ Patrick H. Nettles

Patrick H. Nettles
President, Chief Executive Officer
and Director
(Duly Authorized Officer)

Date: May 21, 1998

By: /s/ Joseph R. Chinnici

Joseph R. Chinnici
Senior Vice President, Finance and
Chief Financial Officer
(Principal Financial Officer)

LIGHTERA NETWORKS, INC.

1998 STOCK PLAN
(Adopted March 17, 1998)
(Amended May 11, 1998)
(Amended August 27, 1998)

1. PURPOSES OF THE PLAN. The purposes of this 1998 Stock Plan are to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentive to Employees and Consultants of the Company and its Subsidiaries and to promote the success of the Company's business. Options granted under the Plan may be Incentive Stock Options (as defined under Section 422 of the Code) or Nonstatutory Stock Options, as determined by the Administrator at the time of grant of an option and subject to the applicable provisions of Section 422 of the Code, as amended, and the regulations promulgated thereunder. Stock purchase rights may also be granted under the Plan.

2. DEFINITIONS. As used herein, the following definitions shall apply:

(a) "ADMINISTRATOR" means the Board or any of its Committees appointed pursuant to Section 4 of the Plan.

(b) "BOARD" means the Board of Directors of the Company.

(c) "CODE" means the Internal Revenue Code of 1986, as amended.

(d) "COMMITTEE" means the Committee appointed by the Board of Directors in accordance with Section 4(a) and (b) of the Plan.

(e) "COMMON STOCK" means the Common Stock of the Company.

(f) "COMPANY" means Lightera Networks, Inc., a Delaware corporation.

(g) "CONSULTANT" means any person, including an advisor, who is engaged by the Company or any Parent or Subsidiary to render services and is compensated for such services, and any director of the Company whether compensated for such services or not.

(h) "CONTINUOUS STATUS AS AN EMPLOYEE OR CONSULTANT" means the absence of any interruption or termination of service as an Employee or Consultant. Continuous Status as an Employee or Consultant shall not be considered interrupted in the case of: (i) sick leave; (ii) military leave; (iii) any other leave of absence approved by the Administrator, provided that such leave is for a period of not more than 90 days, unless reemployment upon the expiration of such leave is guaranteed by contract or statute, or unless provided otherwise pursuant to Company policy adopted from time to time; or (iv) in the case of transfers between locations of the Company or between the Company, its

Subsidiaries or their respective successors. For purposes of this Plan, a change in status from an Employee to a Consultant or from a Consultant to an Employee will not constitute an interruption of Continuous Status as an Employee or Consultant.

(i) "EMPLOYEE" means any person, including officers and directors, employed by the Company or any Parent or Subsidiary of the Company, with the status of employment determined based upon such minimum number of hours or periods worked as shall be determined by the Administrator in its discretion, subject to any requirements of the Code. The payment by the Company of a director's fee to a director shall not be sufficient to constitute "employment" of such director by the Company.

(j) "EXCHANGE ACT" means the Securities Exchange Act of 1934, as amended.

(k) "FAIR MARKET VALUE" means, as of any date, the fair market value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or a national market system including without limitation the National Market of the National Association of Securities Dealers, Inc. Automated Quotation ("Nasdaq") System, its Fair Market Value shall be the closing sales price for such stock (or the closing bid, if no sales were reported), as quoted on such system or exchange, or the exchange with the greatest volume of trading in Common Stock for the last market trading day prior to the time of determination, as reported in The Wall Street Journal or such other source as the Administrator deems reliable;

(ii) If the Common Stock is quoted on the Nasdaq System (but not on the National Market thereof) or regularly quoted by a recognized securities dealer but selling prices are not reported, its Fair Market Value shall be the mean between the high bid and low asked prices for the Common Stock for the last market trading day prior to the time of determination, as reported in The Wall Street Journal or such other source as the Administrator deems reliable; or

(iii) In the absence of an established market for the Common Stock, the Fair Market Value thereof shall be determined in good faith by the Administrator.

(l) "INCENTIVE STOCK OPTION" means an Option intended to qualify as an incentive stock option within the meaning of Section 422 of the Code, as designated in the applicable written Option Agreement.

(m) "NONSTATUTORY STOCK OPTION" means an Option not intended to qualify as an Incentive Stock Option, as designated in the applicable written Option Agreement.

(n) "OPTION" means a stock option granted pursuant to the Plan.

(o) "OPTION AGREEMENT" means a written agreement between an Optionee and the Company reflecting the terms of an Option granted under the Plan and includes any documents attached to such Option Agreement, including, but not limited to, a notice of stock option grant and a form of exercise notice.

(p) "OPTIONED STOCK" means the Common Stock subject to an Option or a Stock Purchase Right.

(q) "OPTIONEE" means an Employee or Consultant who receives an Option or a Stock Purchase Right.

(r) "PARENT" means a "parent corporation," whether now or hereafter existing, as defined in Section 424(e) of the Code, or any successor provision.

(s) "PLAN" means this 1998 Stock Plan.

(t) "REPORTING PERSON" means an officer, director, or greater than 10% stockholder of the Company within the meaning of Rule 16a-2 under the Exchange Act, who is required to file reports pursuant to Rule 16a-3 under the Exchange Act.

(u) "RESTRICTED STOCK" means shares of Common Stock acquired pursuant to a grant of a Stock Purchase Right under Section 10 below.

(v) "RESTRICTED STOCK PURCHASE AGREEMENT" means a written agreement between a holder of a Stock Purchase Right and the Company reflecting the terms of a Stock Purchase Right granted under the Plan and includes any documents attached to such agreement.

(w) "RULE 16b-3" means Rule 16b-3 promulgated under the Exchange Act, as the same may be amended from time to time, or any successor provision.

(x) "SHARE" means a share of the Common Stock, as adjusted in accordance with Section 12 of the Plan.

(y) "STOCK EXCHANGE" means any stock exchange or consolidated stock price reporting system on which prices for the Common Stock are quoted at any given time.

(z) "STOCK PURCHASE RIGHT" means the right to purchase Common Stock pursuant to Section 10 below.

(aa) "SUBSIDIARY" means a "subsidiary corporation," whether now or hereafter existing, as defined in Section 424(f) of the Code, or any successor provision.

3. STOCK SUBJECT TO THE PLAN. Subject to the provisions of Section 12 of the Plan, the maximum aggregate number of Shares that may be optioned and sold under the Plan is 5,648,251 shares of Common Stock. The Shares may be authorized, but unissued, or reacquired Common Stock. If an Option should expire or become unexercisable for any

reason without having been exercised in full, the unpurchased Shares that were subject thereto shall, unless the Plan shall have been terminated, become available for future grant under the Plan. In addition, any Shares of Common Stock which are retained by the Company upon exercise of an Option or Stock Purchase Right in order to satisfy the exercise or purchase price for such Option or Stock Purchase Right or any withholding taxes due with respect to such exercise shall be treated as not issued and shall continue to be available under the Plan. Shares repurchased by the Company pursuant to any repurchase right which the Company may have shall not be available for future grant under the Plan.

4. ADMINISTRATION OF THE PLAN.

(a) INITIAL PLAN PROCEDURE. Prior to the date, if any, upon which the Company becomes subject to the Exchange Act, the Plan shall be administered by the Board or a Committee appointed by the Board.

(b) PLAN PROCEDURE AFTER THE DATE, IF ANY, UPON WHICH THE COMPANY BECOMES SUBJECT TO THE EXCHANGE ACT.

(i) MULTIPLE ADMINISTRATIVE BODIES. If permitted by Rule 16b-3, grants under the Plan may be made by different bodies with respect to directors, non-director officers and Employees or Consultants who are not Reporting Persons.

(ii) ADMINISTRATION WITH RESPECT TO REPORTING PERSONS. With respect to grants of Options or Stock Purchase Rights to Employees who are Reporting Persons, such grants shall be made by (A) the Board if the Board may make grants to Reporting Persons under the Plan in compliance with Rule 16b-3, or (B) a Committee designated by the Board to make grants to Reporting Persons under the Plan, which Committee shall be constituted in such a manner as to permit grants under the Plan to comply with Rule 16b-3. Once appointed, such Committee shall continue to serve in its designated capacity until otherwise directed by the Board. From time to time the Board may increase the size of the Committee and appoint additional members thereof, remove members (with or without cause) and appoint new members in substitution therefor, fill vacancies, however caused, and remove all members of the Committee and thereafter directly make grants to Reporting Persons under the Plan, all to the extent permitted by Rule 16b-3.

(iii) ADMINISTRATION WITH RESPECT TO CONSULTANTS AND OTHER EMPLOYEES. With respect to grants of Options or Stock Purchase Rights to Employees or Consultants who are not Reporting Persons, the Plan shall be administered by (A) the Board or (B) a Committee designated by the Board, which Committee shall be constituted in such a manner as to satisfy the legal requirements relating to the administration of Incentive Stock Option plans, if any, of applicable corporate and securities laws, of the Code and of any applicable Stock Exchange (the "Applicable Laws"). Once appointed, such Committee shall continue to serve in its designated capacity until otherwise directed by the Board. From time to time the Board may increase the size of the Committee and appoint additional members thereof, remove members (with or without cause) and appoint new members in substitution

therefor, fill vacancies, however caused, and remove all members of the Committee and thereafter directly administer the Plan, all to the extent permitted by the Applicable Laws.

(c) POWERS OF THE ADMINISTRATOR. Subject to the provisions of the Plan and in the case of a Committee, the specific duties delegated by the Board to such Committee, and subject to the approval of any relevant authorities, including the approval, if required, of any Stock Exchange, the Administrator shall have the authority, in its discretion:

(i) to determine the Fair Market Value of the Common Stock, in accordance with Section 2(k) of the Plan;

(ii) to select the Consultants and Employees to whom Options and Stock Purchase Rights or any combination thereof may from time to time be granted hereunder;

(iii) to determine whether and to what extent Options and Stock Purchase Rights or any combination thereof are granted hereunder;

(iv) to determine the number of shares of Common Stock to be covered by each such award granted hereunder;

(v) to approve forms of agreement for use under the Plan;

(vi) to determine the terms and conditions, not inconsistent with the terms of the Plan, of any award granted hereunder;

(vii) to determine whether and under what circumstances an Option may be settled in cash under Section 9(f) instead of Common Stock;

(viii) to reduce the exercise price of any Option to the then current Fair Market Value if the Fair Market Value of the Common Stock covered by such Option shall have declined since the date the Option was granted;

(ix) to determine the terms and restrictions applicable to Stock Purchase Rights and the Restricted Stock purchased by exercising such Stock Purchase Rights; and

(x) to construe and interpret the terms of the Plan and awards granted pursuant to the Plan; and

(xi) in order to fulfill the purposes of the Plan and without amending the Plan, to modify grants of Options or Stock Purchase Rights to participants who are foreign nationals or employed outside of the United States in order to recognize differences in local law, tax policies or customs.

(d) EFFECT OF ADMINISTRATOR'S DECISION. All decisions, determinations and interpretations of the Administrator shall be final and binding on all holders of Options or Stock Purchase Rights.

5. ELIGIBILITY.

(a) RECIPIENTS OF GRANTS. Nonstatutory Stock Options and Stock Purchase Rights may be granted to Employees and Consultants. Incentive Stock Options may be granted only to Employees. An Employee or Consultant who has been granted an Option or Stock Purchase Right may, if he or she is otherwise eligible, be granted additional Options or Stock Purchase Rights.

(b) TYPE OF OPTION. Each Option shall be designated in the Option Agreement as either an Incentive Stock Option or a Nonstatutory Stock Option. However, notwithstanding such designations, to the extent that the aggregate Fair Market Value of Shares with respect to which Options designated as Incentive Stock Options are exercisable for the first time by any Optionee during any calendar year (under all plans of the Company or any Parent or Subsidiary) exceeds \$100,000, such excess Options shall be treated as Nonstatutory Stock Options. For purposes of this Section 5(b), Incentive Stock Options shall be taken into account in the order in which they were granted, and the Fair Market Value of the Shares subject to an Incentive Stock Option shall be determined as of the date of the grant of such Option.

(c) The Plan shall not confer upon the holder of any Option or Stock Purchase Right any right with respect to continuation of employment or consulting relationship with the Company, nor shall it interfere in any way with such holder's right or the Company's right to terminate his or her employment or consulting relationship at any time, with or without cause.

6. TERM OF PLAN. The Plan shall become effective upon the earlier to occur of its adoption by the Board of Directors or its approval by the stockholders of the Company as described in Section 19 of the Plan. It shall continue in effect for a term of ten years unless sooner terminated under Section 15 of the Plan.

7. TERM OF OPTION. The term of each Option shall be the term stated in the Option Agreement; provided, however, that the term shall be no more than ten years from the date of grant thereof or such shorter term as may be provided in the Option Agreement and provided further that, in the case of an Incentive Stock Option granted to an Optionee who, at the time the Option is granted, owns stock representing more than 10% of the total combined voting power of all classes of stock of the Company or any Parent or Subsidiary, the term of the Option shall be five years from the date of grant thereof or such shorter term as may be provided in the Option Agreement.

8. OPTION EXERCISE PRICE AND CONSIDERATION.

(a) The per share exercise price for the Shares to be issued pursuant to exercise of an Option shall be such price as is determined by the Board and set forth in the applicable agreement, but shall be subject to the following:

(i) In the case of an Incentive Stock Option that is:

(A) granted to an Employee who, at the time of the grant of such Incentive Stock Option, owns stock representing more than 10% of the total combined voting power of all classes of stock of the Company or any Parent or Subsidiary, the per Share exercise price shall be no less than 110% of the Fair Market Value per Share on the date of grant.

(B) granted to any other Employee, the per Share exercise price shall be no less than 100% of the Fair Market Value per Share on the date of grant.

(ii) In the case of a Nonstatutory Stock Option that is:

(A) granted to a person who, at the time of the grant of such Option, owns stock representing more than 10% of the total combined voting power of all classes of stock of the Company or any Parent or Subsidiary, the per Share exercise price shall be no less than 110% of the Fair Market Value per Share on the date of the grant.

(B) granted to any person, the per Share exercise price shall be no less than 85% of the Fair Market Value per Share on the date of grant.

(b) The consideration to be paid for the Shares to be issued upon exercise of an Option, including the method of payment, shall be determined by the Administrator (and, in the case of an Incentive Stock Option, shall be determined at the time of grant) and may consist entirely of (1) cash, (2) check, (3) promissory note (subject to the provisions of Section 153 of the Delaware General Corporation Law), (4) other Shares that (x) in the case of Shares acquired upon exercise of an Option, have been owned by the Optionee for more than six months on the date of surrender or such other period as may be required to avoid a charge to the Company's earnings, and (y) have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which such Option shall be exercised, (5) authorization for the Company to retain from the total number of Shares as to which the Option is exercised that number of Shares having a Fair Market Value on the date of exercise equal to the exercise price for the total number of Shares as to which the Option is exercised, (6) delivery of a properly executed exercise notice together with such other documentation as the Administrator and the broker, if applicable, shall require to effect an exercise of the Option and delivery to the Company of the sale or loan proceeds required to pay the exercise price and any applicable income or employment taxes, (7) delivery of an irrevocable subscription agreement for the Shares that irrevocably obligates the option holder to take and pay for the Shares not more than twelve months after the date of delivery of the subscription agreement, (8) any combination of the foregoing methods of payment, or (9) such other consideration and method of payment for the issuance of Shares to the extent permitted under

the Applicable Laws. In making its determination as to the type of consideration to accept, the Administrator shall consider if acceptance of such consideration may be reasonably expected to benefit the Company.

9. EXERCISE OF OPTION.

(a) PROCEDURE FOR EXERCISE; RIGHTS AS A STOCKHOLDER. Any Option granted hereunder shall be exercisable at such times and under such conditions as determined by the Administrator and reflected in the Option Agreement, which may include vesting requirements and/or performance criteria with respect to the Company and/or the Optionee; provided, however, that such Option shall become exercisable at the rate of at least 20% per year over five years from the date the Option is granted. In the event that any of the Shares issued upon exercise of an Option should be subject to a right of repurchase in the Company's favor, such repurchase right shall lapse at the rate of at least 20% per year over five years from the date the Option is granted. Notwithstanding the above, in the case of an Option granted to an officer, director or Consultant of the Company or any Parent or Subsidiary of the Company, the Option may become fully exercisable, and a repurchase right, if any, in favor of the Company shall lapse, at any time or during any period established by the Administrator.

An Option may not be exercised for a fraction of a Share.

An Option shall be deemed to be exercised when written notice of such exercise has been given to the Company in accordance with the terms of the Option by the person entitled to exercise the Option and the Company has received full payment for the Shares with respect to which the Option is exercised. Full payment may, as authorized by the Board, consist of any consideration and method of payment allowable under Section 8(b) of the Plan. Until the issuance (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company) of the stock certificate evidencing such Shares, no right to vote or receive dividends or any other rights as a stockholder shall exist with respect to the Optioned Stock, notwithstanding the exercise of the Option. The Company shall issue (or cause to be issued) such stock certificate promptly upon exercise of the Option. No adjustment will be made for a dividend or other right for which the record date is prior to the date the stock certificate is issued, except as provided in Section 12 of the Plan.

Exercise of an Option in any manner shall result in a decrease in the number of Shares that thereafter may be available, both for purposes of the Plan and for sale under the Option, by the number of Shares as to which the Option is exercised.

(b) TERMINATION OF EMPLOYMENT OR CONSULTING RELATIONSHIP.

Subject to Section 9(c) below, in the event of termination of an Optionee's Continuous Status as an Employee or Consultant with the Company, such Optionee may, but only within three months (or such other period of time not less than 30 days as is determined by the Administrator, with such determination in the case of an Incentive Stock Option being made at the time of grant of the Option and not exceeding three months) after the date of such

termination (but in no event later than the expiration date of the term of such Option as set forth in the Option Agreement), exercise his or her Option to the extent that the Optionee was entitled to exercise it at the date of such termination. To the extent that the Optionee was not entitled to exercise the Option at the date of such termination, or if the Optionee does not exercise such Option to the extent so entitled within the time specified herein, the Option shall terminate. No termination shall be deemed to occur and this Section 9(b) shall not apply if (i) the Optionee is a Consultant who becomes an Employee, or (ii) the Optionee is an Employee who becomes a Consultant.

(c) DISABILITY OF OPTIONEE.

(i) Notwithstanding Section 9(b) above, in the event of termination of an Optionee's Continuous Status as an Employee or Consultant as a result of his or her total and permanent disability (within the meaning of Section 22(e)(3) of the Code), such Optionee may, but only within twelve months from the date of such termination (but in no event later than the expiration date of the term of such Option as set forth in the Option Agreement), exercise the Option to the extent otherwise entitled to exercise it at the date of such termination. To the extent that the Optionee was not entitled to exercise the Option at the date of termination, or if the Optionee does not exercise such Option to the extent so entitled within the time specified herein, the Option shall terminate.

(ii) In the event of termination of an Optionee's Continuous Status as an Employee or Consultant as a result of a disability which does not fall within the meaning of total and permanent disability (as set forth in Section 22(e)(3) of the Code), such Optionee may, but only within six months from the date of such termination (but in no event later than the expiration date of the term of such Option as set forth in the Option Agreement), exercise the Option to the extent otherwise entitled to exercise it at the date of such termination. However, to the extent that such Optionee fails to exercise an Option which is an Incentive Stock Option ("ISO") (within the meaning of Section 422 of the Code) within three months of the date of such termination, the Option will not qualify for ISO treatment under the Code. To the extent that the Optionee was not entitled to exercise the Option at the date of termination, or if the Optionee does not exercise such Option to the extent so entitled within six months from the date of termination, the Option shall terminate.

(d) DEATH OF OPTIONEE. In the event of the death of an Optionee during the period of Continuous Status as an Employee or Consultant since the date of grant of the Option, or within 30 days following termination of the Optionee's Continuous Status as an Employee or Consultant, the Option may be exercised, at any time within six months following the date of death (but in no event later than the expiration date of the term of such Option as set forth in the Option Agreement), by such Optionee's estate or by a person who acquired the right to exercise the Option by bequest or inheritance, but only to the extent of the right to exercise that had accrued at the date of death or, if earlier, the date of termination of the Optionee's Continuous Status as an Employee or Consultant. To the extent that the Optionee was not entitled to exercise the Option at the date of death or termination, as the case may be, or if the Optionee does not exercise such Option to the extent so entitled within the time specified herein, the Option shall terminate.

(e) RULE 16b-3. Options granted to Reporting Persons shall comply with Rule 16b-3 and shall contain such additional conditions or restrictions as may be required thereunder to qualify for the maximum exemption for Plan transactions.

10. STOCK PURCHASE RIGHTS.

(a) RIGHTS TO PURCHASE. Stock Purchase Rights may be issued either alone, in addition to, or in tandem with other awards granted under the Plan and/or cash awards made outside of the Plan. After the Administrator determines that it will offer Stock Purchase Rights under the Plan, it shall advise the offeree in writing of the terms, conditions and restrictions related to the offer, including the number of Shares that such person shall be entitled to purchase, the price to be paid (which price shall not be less than 85% of the Fair Market Value of the Shares as of the date of the offer, or, in the case of a person owning stock representing more than 10% of the total combined voting power of all classes of stock of the Company or any Parent or Subsidiary, the price shall not be less than 100% of the Fair Market Value of the Shares as of the date of the offer), and the time within which such person must accept such offer, which shall in no event exceed 30 days from the date upon which the Administrator made the determination to grant the Stock Purchase Right. The offer shall be accepted by execution of a Restricted Stock Purchase Agreement in the form determined by the Administrator.

(b) REPURCHASE OPTION. Unless the Administrator determines otherwise, the Restricted Stock Purchase Agreement shall grant the Company a repurchase option exercisable upon the voluntary or involuntary termination of the purchaser's employment with the Company for any reason (including death or disability). The purchase price for Shares repurchased pursuant to the Restricted Stock Purchase Agreement shall be the original purchase price paid by the purchaser and may be paid by cancellation of any indebtedness of the purchaser to the Company. The repurchase option shall lapse at such rate as the Administrator may determine; provided, however, that with respect to an Optionee who is not an officer, director or Consultant of the Company or of any Parent or Subsidiary of the Company, it shall lapse at a minimum rate of 20% per year.

(c) OTHER PROVISIONS. The Restricted Stock Purchase Agreement shall contain such other terms, provisions and conditions not inconsistent with the Plan as may be determined by the Administrator in its sole discretion. In addition, the provisions of Restricted Stock Purchase Agreements need not be the same with respect to each purchaser.

(d) RIGHTS AS A STOCKHOLDER. Once the Stock Purchase Right is exercised, the purchaser shall have the rights equivalent to those of a stockholder, and shall be a stockholder when his or her purchase is entered upon the records of the duly authorized transfer agent of the Company. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Stock Purchase Right is exercised, except as provided in Section 12 of the Plan.

11. STOCK WITHHOLDING TO SATISFY WITHHOLDING TAX OBLIGATIONS. At the discretion of the Administrator, Optionees may satisfy withholding obligations as provided in

this paragraph. When an Optionee incurs tax liability in connection with an Option or Stock Purchase Right, which tax liability is subject to tax withholding under applicable tax laws, and the Optionee is obligated to pay the Company an amount required to be withheld under applicable tax laws, the Optionee may satisfy the withholding tax obligation by one or some combination of the following methods: (a) by cash or check payment, or (b) out of the Optionee's current compensation, (c) if permitted by the Administrator, in its discretion, by surrendering to the Company Shares that (i) in the case of Shares previously acquired from the Company, have been owned by the Optionee for more than six months on the date of surrender, and (ii) have a fair market value on the date of surrender equal to or less than the Optionee's marginal tax rate times the ordinary income recognized, or (d) by electing to have the Company withhold from the Shares to be issued upon exercise of the Option, or the Shares to be issued in connection with the Stock Purchase Right, if any, that number of Shares having a fair market value equal to the amount required to be withheld. For this purpose, the fair market value of the Shares to be withheld shall be determined on the date that the amount of tax to be withheld is to be determined (the "Tax Date").

Any surrender by a Reporting Person of previously owned Shares to satisfy tax withholding obligations arising upon exercise of this Option must comply with the applicable provisions of Rule 16b-3.

All elections by an Optionee to have Shares withheld to satisfy tax withholding obligations shall be made in writing in a form acceptable to the Administrator and shall be subject to the following restrictions:

- (a) the election must be made on or prior to the applicable Tax Date;
- (b) once made, the election shall be irrevocable as to the particular Shares of the Option or Stock Purchase Right as to which the election is made; and
- (c) all elections shall be subject to the consent or disapproval of the Administrator.

In the event the election to have Shares withheld is made by an Optionee and the Tax Date is deferred under Section 83 of the Code because no election is filed under Section 83(b) of the Code, the Optionee shall receive the full number of Shares with respect to which the Option or Stock Purchase Right is exercised but such Optionee shall be unconditionally obligated to tender back to the Company the proper number of Shares on the Tax Date.

12. ADJUSTMENTS UPON CHANGES IN CAPITALIZATION, MERGER OR CERTAIN OTHER TRANSACTIONS.

(a) CHANGES IN CAPITALIZATION. Subject to any required action by the stockholders of the Company, the number of shares of Common Stock covered by each outstanding Option or Stock Purchase Right, and the number of shares of Common Stock that have been authorized for issuance under the Plan but as to which no Options or Stock Purchase Rights have yet been granted or that have been returned to the Plan upon

cancellation or expiration of an Option or Stock Purchase Right, as well as the price per share of Common Stock covered by each such outstanding Option or Stock Purchase Right, shall be proportionately adjusted for any increase or decrease in the number of issued shares of Common Stock resulting from a stock split, reverse stock split, stock dividend, combination, recapitalization or reclassification of the Common Stock, or any other increase or decrease in the number of issued shares of Common Stock effected without receipt of consideration by the Company; provided, however, that conversion of any convertible securities of the Company shall not be deemed to have been "effected without receipt of consideration." Such adjustment shall be made by the Board, whose determination in that respect shall be final, binding and conclusive. Except as expressly provided herein, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of shares of Common Stock subject to an Option or Stock Purchase Right.

(b) DISSOLUTION OR LIQUIDATION. In the event of the proposed dissolution or liquidation of the Company, the Board shall notify the Optionee at least 15 days prior to such proposed action. To the extent it has not been previously exercised, the Option or Stock Purchase Right will terminate immediately prior to the consummation of such proposed action.

(c) MERGER OR SALE OF ASSETS. In the event of a proposed sale of all or substantially all of the Company's assets or a merger of the Company with or into another corporation where the successor corporation issues its securities to the Company's stockholders, each outstanding Option or Stock Purchase Right shall be assumed or an equivalent option or right shall be substituted by such successor corporation or a parent or subsidiary of such successor corporation, unless the successor corporation does not agree to assume the Option or Stock Purchase Right or to substitute an equivalent option or right, in which case such Option or Stock Purchase Right shall terminate upon the consummation of the merger or sale of assets. For purposes of this Section 12(c), an Option or a Stock Purchase Right shall be considered assumed, without limitation, if, at the time of issuance of the stock or other consideration upon such merger or sale of assets, each holder of an Option or a Stock Purchase Right would be entitled to receive upon exercise of the Option or Stock Purchase Right the same number and kind of shares of stock or the same amount of property, cash or securities as such holder would have been entitled to receive upon the occurrence of such transaction if the holder had been, immediately prior to such transaction, the holder of the number of Shares of Common Stock covered by the Option or the Stock Purchase Right at such time (after giving effect to any adjustments in the number of Shares covered by the Option or Stock Purchase Right as provided for in this Section 12).

(d) CERTAIN DISTRIBUTIONS. In the event of any distribution to the Company's stockholders of securities of any other entity or other assets (other than dividends payable in cash or stock of the Company) without receipt of consideration by the Company, the Administrator may, in its discretion, appropriately adjust the price per share of Common Stock covered by each outstanding Option or Stock Purchase Right to reflect the effect of such distribution.

13. NON-TRANSFERABILITY OF OPTIONS AND STOCK PURCHASE RIGHTS. Options and Stock Purchase Rights may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution and may be exercised or purchased during the lifetime of the Optionee or Stock Purchase Rights Holder only by the Optionee or Stock Purchase Rights Holder.

14. TIME OF GRANTING OPTIONS AND STOCK PURCHASE RIGHTS. The date of grant of an Option or Stock Purchase Right shall, for all purposes, be the date on which the Administrator makes the determination granting such Option or Stock Purchase Right, or such other date as is determined by the Board; provided, however, that in the case of any Incentive Stock Option, the grant date shall be the later of the date on which the Administrator makes the determination granting such Incentive Stock Option or the date of commencement of the Optionee's employment relationship with the Company. Notice of the determination shall be given to each Employee or Consultant to whom an Option or Stock Purchase Right is so granted within a reasonable time after the date of such grant.

15. AMENDMENT AND TERMINATION OF THE PLAN.

(a) AUTHORITY TO AMEND OR TERMINATE. The Board may at any time amend, alter, suspend or discontinue the Plan, but no amendment, alteration, suspension or discontinuation shall be made that would impair the rights of any Optionee under any grant theretofore made, without his or her consent. In addition, to the extent necessary and desirable to comply with Rule 16b-3 or with Section 422 of the Code (or any other applicable law or regulation, including the requirements of any Stock Exchange), the Company shall obtain stockholder approval of any Plan amendment in such a manner and to such a degree as required.

(b) EFFECT OF AMENDMENT OR TERMINATION. No amendment or termination of the Plan shall adversely affect Options already granted, unless mutually agreed otherwise between the Optionee and the Board, which agreement must be in writing and signed by the Optionee and the Company.

16. CONDITIONS UPON ISSUANCE OF SHARES. Shares shall not be issued pursuant to the exercise of an Option or Stock Purchase Right unless the exercise of such Option or Stock Purchase Right and the issuance and delivery of such Shares pursuant thereto shall comply with all relevant provisions of law, including, without limitation, the Securities Act of 1933, as amended, the Exchange Act, the rules and regulations promulgated thereunder, and the requirements of any Stock Exchange.

As a condition to the exercise of an Option, the Company may require the person exercising such Option to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required by law.

17. RESERVATION OF SHARES. The Company, during the term of this Plan, will at all times reserve and keep available such number of Shares as shall be sufficient to satisfy the requirements of the Plan. The inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is deemed by the Company's counsel to be necessary to the lawful issuance and sale of any Shares hereunder, shall relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which such requisite authority shall not have been obtained.

18. AGREEMENTS. Options and Stock Purchase Rights shall be evidenced by written Option Agreements and Restricted Stock Purchase Agreements, respectively, in such form(s) as the Administrator shall approve from time to time.

19. STOCKHOLDER APPROVAL. Continuance of the Plan shall be subject to approval by the stockholders of the Company within twelve months before or after the date the Plan is adopted. Such stockholder approval shall be obtained in the degree and manner required under applicable state and federal law and the rules of any Stock Exchange upon which the Common Stock is listed. All Options and Stock Purchase Rights issued under the Plan shall become void in the event such approval is not obtained.

20. INFORMATION AND DOCUMENTS TO OPTIONEES AND PURCHASERS. The Company shall provide financial statements at least annually to each Optionee and to each individual who acquired Shares Pursuant to the Plan, during the period such Optionee or purchaser has one or more Options or Stock Purchase Rights outstanding, and in the case of an individual who acquired Shares pursuant to the Plan, during the period such individual owns such Shares. The Company shall not be required to provide such information if the issuance of Options or Stock Purchase Rights under the Plan is limited to key employees whose duties in connection with the Company assure their access to equivalent information. In addition, at the time of issuance of any securities under the Plan, the Company shall provide to the Optionee or the Purchaser a copy of the Plan and any agreement(s) pursuant to which securities granted under the Plan are issued.

LIGHTERA NETWORKS, INC.

1998 STOCK PLAN

NOTICE OF STOCK OPTION GRANT

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You have been granted an option to purchase Common Stock "Common Stock" of Lightera Networks, Inc. (the "Company") as follows:

Board Approval Date:	February 22, 1999
Date of Grant:	February 22, 1999
Vesting Commencement Date:	<>
Exercise Price per Share:	\$13.75
Total Number of Shares Granted:	<>
Total Exercise Price:	\$<>
Type of Option:	Nonstatutory Stock Option
Term/Expiration Date:	February 22, 2009
Vesting Schedule:	This Option may be exercised, in whole or in part, in accordance with the following schedule: 1/4th of the Shares subject to the Option shall vest on the one year anniversary of the Vesting Commencement Date (the "VCD") and 1/48th of the total number of Shares subject to the Option shall vest on the each monthly anniversary of the VCD thereafter as long as the Optionee remains an employee of, or consultant to, the Company.

Termination Period:

This Option may be exercised for 60 days after termination of employment or consulting relationship except as set out in Sections 6 and 7 of the Stock Option Agreement (but in no event later than the Expiration Date).

By your signature and the signature of the Company's representative below, you and the Company agree that this Option is granted under and governed by the terms and conditions of the 1998 Stock Plan and the Stock Option Agreement, both of which are attached and made a part of this document.

<>: LIGHTERA NETWORKS, INC.

Signature By: -----

Print Name Print Name and Title

LIGHTERA NETWORKS, INC.

1998 STOCK PLAN

STOCK OPTION AGREEMENT

1. GRANT OF OPTION. Lightera Networks, Inc., a Delaware corporation (the "Company"), hereby grants to <> ("Optionee"), an option (the "Option") to purchase a total number of shares of Common Stock (the "Shares") set forth in the Notice of Stock Option Grant, at the exercise price per share set forth in the Notice of Stock Option Grant (the "Exercise Price") subject to the terms, definitions and provisions of the Lightera Networks, Inc. 1998 Stock Plan (the "Plan") adopted by the Company, which is incorporated herein by reference. Unless otherwise defined herein, the terms defined in the Plan shall have the same defined meanings in this Option.

If designated an Incentive Stock Option, this Option is intended to qualify as an Incentive Stock Option as defined in Section 422 of the Code.

2. EXERCISE OF OPTION. This Option shall be exercisable during its Term in accordance with the Vesting Schedule set out in the Notice of Stock Option Grant and with the provisions of Section 9 of the Plan as follows:

(a) RIGHT TO EXERCISE.

(i) This Option may not be exercised for a fraction of a share.

(ii) In the event of Optionee's death, disability or other termination of employment, the exercisability of the Option is governed by Sections 5, 6 and 7 below, subject to the limitation contained in Section 2(a)(i).

(iii) In no event may this Option be exercised after the Expiration Date of this Option as set forth in the Notice of Stock Option Grant.

(b) METHOD OF EXERCISE. This Option shall be exercisable by execution and delivery of the Exercise Notice and Restricted Stock Purchase Agreement attached hereto as Exhibit A (the "Exercise Agreement") or of any other form of written notice approved for such purpose by the Company which shall state the election to exercise the Option, the number of Shares in respect of which the Option is being exercised, and such other representations and agreements as to the holder's investment intent with respect to such shares of Common Stock as may be required by the Company pursuant to the provisions of the Plan. Such written notice shall be signed by Optionee and shall be delivered in person or by certified mail to the Secretary of the Company. The written notice shall be accompanied by payment of the Exercise Price. This Option shall be deemed to be exercised upon receipt by the Company of such written notice accompanied by the Exercise Price.

No Shares will be issued pursuant to the exercise of an Option unless such issuance and such exercise shall comply with all relevant provisions of applicable law and the requirements of any stock exchange upon which the Shares may then be listed. Assuming such compliance, for income tax purposes the Shares shall be considered transferred to Optionee on the date on which the Option is exercised with respect to such Shares.

3. METHOD OF PAYMENT. Payment of the Exercise Price shall be by any of the following, or a combination thereof, at the election of Optionee:

(a) cash;

(b) check;

(c) surrender of other shares of Common Stock of the Company which (i) in the case of Shares acquired pursuant to the exercise of a Company option, have been owned by Optionee for more than six months on the date of surrender, and (ii) have a Fair Market Value on the date of surrender equal to the Exercise Price of the Shares as to which the Option is being exercised; or

(d) if there is a public market for the Shares and they are registered under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), delivery of a properly executed exercise notice together with irrevocable instructions to a broker to deliver promptly to the Company the amount of sale or loan proceeds required to pay the Exercise Price.

4. RESTRICTIONS ON EXERCISE. This Option may not be exercised until such time as the Plan has been approved by the stockholders of the Company, or if the issuance of such Shares upon such exercise or the method of payment of consideration for such shares would constitute a violation of any applicable federal or state securities or other law or regulation, including any rule under Part 207 of Title 12 of the Code of Federal Regulations as promulgated by the Federal Reserve Board. As a condition to the exercise of this Option, the Company may require Optionee to make any representation and warranty to the Company as may be required by any applicable law or regulation.

5. TERMINATION OF RELATIONSHIP. In the event of termination of Optionee's Continuous Status as an Employee or Consultant, Optionee may, to the extent otherwise so entitled at the date of such termination (the "Termination Date"), exercise this Option during the Termination Period set forth in the Notice of Stock Option Grant. To the extent that Optionee was not entitled to exercise this Option at such Termination Date, or if Optionee does not exercise this Option within the Termination Period, the Option shall terminate.

6. DISABILITY OF OPTIONEE.

(a) Notwithstanding the provisions of Section 5 above, in the event of termination of Optionee's Continuous Status as an Employee or Consultant as a result of Optionee's total and permanent disability (as defined in Section 22(e)(3) of the Code), Optionee may, but only within twelve months from the Termination Date (but in no event

later than the Expiration Date set forth in the Notice of Stock Option Grant), exercise this Option to the extent Optionee was entitled to exercise it as of such Termination Date. To the extent that Optionee was not entitled to exercise the Option as of the Termination Date, or if Optionee does not exercise such Option (to the extent so entitled) within the time specified in this Section 6(a), the Option shall terminate.

(b) Notwithstanding the provisions of Section 5 above, in the event of termination of Optionee's consulting relationship or Continuous Status as an Employee as a result of disability not constituting a total and permanent disability (as set forth in Section 22(e)(3) of the Code), Optionee may, but only within six months from the Termination Date (but in no event later than the Expiration Date set forth in the Notice of Stock Option Grant), exercise the Option to the extent Optionee was entitled to exercise it as of such Termination Date; provided, however, that if this is an Incentive Stock Option and Optionee fails to exercise this Incentive Stock Option within three months from the Termination Date, this Option will cease to qualify as an Incentive Stock Option (as defined in Section 422 of the Code) and Optionee will be treated for federal income tax purposes as having received ordinary income at the time of such exercise in an amount generally measured by the difference between the Exercise Price for the Shares and the Fair Market Value of the Shares on the date of exercise. To the extent that Optionee was not entitled to exercise the Option at the Termination Date, or if Optionee does not exercise such Option to the extent so entitled within the time specified in this Section 6(b), the Option shall terminate.

7. DEATH OF OPTIONEE. In the event of the death of Optionee (a) during the Term of this Option and while an Employee or Consultant of the Company and having been in Continuous Status as an Employee or Consultant since the date of grant of the Option, or (b) within 30 days after Optionee's Termination Date, the Option may be exercised at any time within six months following the date of death (but in no event later than the Expiration Date set forth in the Notice of Stock Option Grant), by Optionee's estate or by a person who acquired the right to exercise the Option by bequest or inheritance, but only to the extent of the right to exercise that had accrued at the Termination Date.

8. NON-TRANSFERABILITY OF OPTION. This Option may not be transferred in any manner otherwise than by will or by the laws of descent or distribution and may be exercised during the lifetime of Optionee only by him or her. The terms of this Option shall be binding upon the executors, administrators, heirs, successors and assigns of Optionee.

9. TERM OF OPTION. This Option may be exercised only within the Term set forth in the Notice of Stock Option Grant, subject to the limitations set forth in Section 7 of the Plan.

10. TAX CONSEQUENCES. Set forth below is a brief summary as of the date of this Option of certain of the federal and California tax consequences of exercise of this Option and disposition of the Shares under the laws in effect as of the Date of Grant. THIS SUMMARY IS NECESSARILY INCOMPLETE, AND THE TAX LAWS AND REGULATIONS ARE SUBJECT TO CHANGE. OPTIONEE SHOULD CONSULT A

TAX ADVISER BEFORE EXERCISING THIS OPTION OR DISPOSING OF THE SHARES.

(a) EXERCISE OF INCENTIVE STOCK OPTION. If this Option qualifies as an Incentive Stock Option, there will be no regular federal or California income tax liability upon the exercise of the Option, although the excess, if any, of the Fair Market Value of the Shares on the date of exercise over the Exercise Price will be treated as an adjustment to the alternative minimum tax for federal tax purposes and may subject Optionee to the alternative minimum tax in the year of exercise.

(b) EXERCISE OF NONSTATUTORY STOCK OPTION. If this Option does not qualify as an Incentive Stock Option, there may be a regular federal income tax liability and a California income tax liability upon the exercise of the Option. Optionee will be treated as having received compensation income (taxable at ordinary income tax rates) equal to the excess, if any, of the Fair Market Value of the Shares on the date of exercise over the Exercise Price. If Optionee is an employee, the Company will be required to withhold from Optionee's compensation or collect from Optionee and pay to the applicable taxing authorities an amount equal to a percentage of this compensation income at the time of exercise.

(c) DISPOSITION OF SHARES. In the case of a Nonstatutory Stock Option, if Shares are held for at least one year, any gain realized on disposition of the Shares will be treated as long-term capital gain for federal and California income tax purposes. In the case of an Incentive Stock Option, if Shares transferred pursuant to the Option are held for at least one year after exercise and are disposed of at least two years after the Date of Grant, any gain realized on disposition of the Shares will also be treated as long-term capital gain for federal and California income tax purposes. In either case, the long-term capital gain will be taxed for federal income tax and alternative minimum tax purposes at a maximum rate of 28% if the Shares are held more than one year but less than 18 months after exercise and at 20% if the Shares are held more than 18 months after exercise. If Shares purchased under an Incentive Stock Option are disposed of within one year after exercise or within two years after the Date of Grant, any gain realized on such disposition will be treated as compensation income (taxable at ordinary income rates) to the extent of the difference between the Exercise Price and the lesser of (i) the fair market value of the Shares on the date of exercise, or (ii) the sale price of the Shares.

(d) NOTICE OF DISQUALIFYING DISPOSITION OF INCENTIVE STOCK OPTION SHARES. If the Option granted to Optionee herein is an Incentive Stock Option, and if Optionee sells or otherwise disposes of any of the Shares acquired pursuant to the Incentive Stock Option on or before the later of (i) the date two years after the Date of Grant, or (ii) the date one year after the date of exercise, Optionee shall immediately notify the Company in writing of such disposition. Optionee acknowledges and agrees that he or she may be subject to income tax withholding by the Company on the compensation income recognized by Optionee from the early disposition by payment in cash or out of the current earnings paid to Optionee.

11. WITHHOLDING TAX OBLIGATIONS. Optionee understands that, upon exercising a Nonstatutory Stock Option, he or she will recognize income for tax purposes in an amount equal to the excess of the then Fair Market Value of the Shares over the Exercise Price. However, the timing of this income recognition may be deferred for up to six months if Optionee is subject to Section 16 of the Exchange Act. If Optionee is an employee, the Company will be required to withhold from Optionee's compensation, or collect from Optionee and pay to the applicable taxing authorities an amount equal to a percentage of this compensation income. Additionally, Optionee may at some point be required to satisfy tax withholding obligations with respect to the disqualifying disposition of an Incentive Stock Option. Optionee shall satisfy his or her tax withholding obligation arising upon the exercise of this Option by one or some combination of the following methods: (a) by cash payment, (b) out of Optionee's current compensation, (c) if permitted by the Administrator, in its discretion, by surrendering to the Company Shares which (i) in the case of Shares previously acquired from the Company, have been owned by Optionee for more than six months on the date of surrender, and (ii) have a Fair Market Value on the date of surrender equal to or greater than Optionee's marginal tax rate times the ordinary income recognized, or (d) by electing to have the Company withhold from the Shares to be issued upon exercise of the Option that number of Shares having a Fair Market Value equal to the amount required to be withheld. For this purpose, the Fair Market Value of the Shares to be withheld shall be determined on the date that the amount of tax to be withheld is to be determined (the "Tax Date").

If Optionee is subject to Section 16 of the Exchange Act (an "Insider"), any surrender of previously owned Shares to satisfy tax withholding obligations arising upon exercise of this Option must comply with the applicable provisions of Rule 16b-3 promulgated under the Exchange Act ("Rule 16b-3").

All elections by Optionee to have Shares withheld to satisfy tax withholding obligations shall be made in writing in a form acceptable to the Administrator and shall be subject to the following restrictions:

(a) the election must be made on or prior to the applicable Tax Date;

(b) once made, the election shall be irrevocable as to the particular Shares of the Option as to which the election is made; and

(c) all elections shall be subject to the consent or disapproval of the Administrator.

12. MARKET STANDOFF AGREEMENT. In connection with the initial public offering of the Company's securities and upon request of the Company or the underwriters managing such underwritten offering of the Company's securities, Optionee hereby agrees not to sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any Shares (other than those included in the registration) without the prior written consent of the Company or such underwriters, as the case may be, for such period of time (not to exceed 180 days) from the effective date of such registration as may be requested by the Company or such managing underwriters and to execute an agreement reflecting the foregoing as may be requested by the underwriters at the time of the Company's initial public offering.

[Signature Page Follows]

This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which together shall constitute one document.

LIGHTERA NETWORKS, INC.

By: _____

(Print name and title)

OPTIONEE ACKNOWLEDGES AND AGREES THAT THE VESTING OF SHARES PURSUANT TO THE OPTION HEREOF IS EARNED ONLY BY CONTINUING EMPLOYMENT OR CONSULTANCY AT THE WILL OF THE COMPANY (NOT THROUGH THE ACT OF BEING HIRED, BEING GRANTED THIS OPTION OR ACQUIRING SHARES HEREUNDER). OPTIONEE FURTHER ACKNOWLEDGES AND AGREES THAT NOTHING IN THIS AGREEMENT, NOR IN THE COMPANY'S STOCK PLAN WHICH IS INCORPORATED HEREIN BY REFERENCE, SHALL CONFER UPON OPTIONEE ANY RIGHT WITH RESPECT TO CONTINUATION OF EMPLOYMENT OR CONSULTANCY BY THE COMPANY, NOR SHALL IT INTERFERE IN ANY WAY WITH OPTIONEE'S RIGHT OR THE COMPANY'S RIGHT TO TERMINATE OPTIONEE'S EMPLOYMENT OR CONSULTANCY AT ANY TIME, WITH OR WITHOUT CAUSE.

Optionee acknowledges receipt of a copy of the Plan and represents that he or she is familiar with the terms and provisions thereof, and hereby accepts this Option subject to all of the terms and provisions thereof. Optionee has reviewed the Plan and this Option in their entirety, has had an opportunity to obtain the advice of counsel prior to executing this Option and fully understands all provisions of the Option. Optionee hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Administrator upon any questions arising under the Plan or this Option.

Dated: _____

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EXHIBIT A

LIGHTERA NETWORKS, INC.

1998 STOCK PLAN

EXERCISE NOTICE AND RESTRICTED STOCK PURCHASE AGREEMENT

This Agreement ("Agreement") is made as of _____, by and between Lightera Networks, Inc., a Delaware corporation (the "Company"), and <> ("Purchaser"). To the extent any capitalized terms used in this Agreement are not defined, they shall have the meaning ascribed to them in the Lightera Networks, Inc. 1998 Stock Plan.

1. EXERCISE OF OPTION. Subject to the terms and conditions hereof, Purchaser hereby elects to exercise his or her option to purchase _____ shares of the Common Stock (the "Shares") of the Company under and pursuant to the Company's 1998 Stock Plan (the "Plan") and the Stock Option Agreement dated _____, (the "Option Agreement"). The total purchase price of the Shares shall be \$ _____. The term "Shares" refers to the purchased Shares and all securities received in replacement of the Shares or as stock dividends or splits, all securities received in replacement of the Shares in a recapitalization, merger, reorganization, exchange or the like, and all new, substituted or additional securities or other properties to which Purchaser is entitled by reason of Purchaser's ownership of the Shares.

2. TIME AND PLACE OF EXERCISE. The purchase and sale of the Shares under this Agreement shall occur at the principal office of the Company simultaneously with the execution and delivery of this Agreement in accordance with the provisions of Section 2(b) of the Option Agreement. On such date, the Company will deliver to Purchaser a certificate representing the Shares to be purchased by Purchaser (which shall be issued in Purchaser's name) against payment of the exercise price therefor by Purchaser by (a) check made payable to the Company, (b) cancellation of indebtedness of the Company to Purchaser, (c) delivery of shares of the Common Stock of the Company in accordance with Section 3 of the Option Agreement, or (d) a combination of the foregoing.

3. LIMITATIONS ON TRANSFER. In addition to any other limitation on transfer created by applicable securities laws, Purchaser shall not assign, encumber or dispose of any interest in the Shares except in compliance with the provisions below and applicable securities laws.

(a) RIGHT OF FIRST REFUSAL. Before any Shares held by Purchaser or any transferee of Purchaser (either being sometimes referred to herein as the "Holder") may be sold or otherwise transferred (including transfer by gift or operation of law), the Company or its assignee(s) shall have a right of first refusal to purchase the Shares on the terms and conditions set forth in this Section 3(a) (the "Right of First Refusal").

(i) NOTICE OF PROPOSED TRANSFER. The Holder of the Shares shall deliver to the Company a written notice (the "Notice") stating: (i) the Holder's bona fide intention to sell or otherwise transfer such Shares; (ii) the name of each proposed purchaser or other transferee ("Proposed Transferee"); (iii) the number of Shares to be transferred to each Proposed Transferee; and (iv) the terms and conditions of each proposed sale or transfer. The

Holder shall offer the Shares at the same price (the "Offered Price") and upon the same terms (or terms as similar as reasonably possible) to the Company or its assignee(s).

(ii) EXERCISE OF RIGHT OF FIRST REFUSAL. At any time within 30 days after receipt of the Notice, the Company and/or its assignee(s) may, by giving written notice to the Holder, elect to purchase all, but not less than all, of the Shares proposed to be transferred to any one or more of the Proposed Transferees, at the purchase price determined in accordance with subsection (iii) below.

(iii) PURCHASE PRICE. The purchase price ("Purchase Price") for the Shares purchased by the Company or its assignee(s) under this Section 3(a) shall be the Offered Price. If the Offered Price includes consideration other than cash, the cash equivalent value of the non-cash consideration shall be determined by the Board of Directors of the Company in good faith.

(iv) PAYMENT. Payment of the Purchase Price shall be made, at the option of the Company or its assignee(s), in cash (by check), by cancellation of all or a portion of any outstanding indebtedness of the Holder to the Company (or, in the case of repurchase by an assignee, to the assignee), or by any combination thereof within 30 days after receipt of the Notice or in the manner and at the times set forth in the Notice.

(v) HOLDER'S RIGHT TO TRANSFER. If all of the Shares proposed in the Notice to be transferred to a given Proposed Transferee are not purchased by the Company and/or its assignee(s) as provided in this Section 3(a), then the Holder may sell or otherwise transfer such Shares to that Proposed Transferee at the Offered Price or at a higher price, provided that such sale or other transfer is consummated within 60 days after the date of the Notice and provided further that any such sale or other transfer is effected in accordance with any applicable securities laws and the Proposed Transferee agrees in writing that the provisions of this Section 3 shall continue to apply to the Shares in the hands of such Proposed Transferee. If the Shares described in the Notice are not transferred to the Proposed Transferee within such period, or if the Holder proposes to change the price or other terms to make them more favorable to the Proposed Transferee, a new Notice shall be given to the Company, and the Company and/or its assignees shall again be offered the Right of First Refusal before any Shares held by the Holder may be sold or otherwise transferred.

(vi) EXCEPTION FOR CERTAIN FAMILY TRANSFERS. Anything to the contrary contained in this Section 3(a) notwithstanding, the transfer of any or all of the Shares during Purchaser's lifetime or on Purchaser's death by will or intestacy to Purchaser's Immediate Family (as defined below) or a trust for the benefit of Purchaser's Immediate Family shall be exempt from the provisions of this Section 3(a). "Immediate Family" as used herein shall mean spouse, lineal descendant or antecedent, father, mother, brother or sister. In such case, the transferee or other recipient shall receive and hold the Shares so transferred subject to the provisions of this Section, and there shall be no further transfer of such Shares except in accordance with the terms of this Section 3.

(b) INVOLUNTARY TRANSFER.

(i) COMPANY'S RIGHT TO PURCHASE UPON INVOLUNTARY TRANSFER. In the event, at any time after the date of this Agreement, of any transfer by operation of law or other involuntary transfer (including death or divorce, but excluding a transfer to Immediate Family as set forth in Section 3(a) (vi) above) of all or a portion of the Shares by the record holder thereof, the Company shall have an option to purchase all of the Shares transferred at the greater of the purchase price paid by Purchaser pursuant to this Agreement or the Fair Market Value of the Shares on the date of transfer. Upon such a transfer, the person acquiring the Shares shall promptly notify the Secretary of the Company of such transfer. The right to purchase such Shares shall be provided to the Company for a period of 30 days following receipt by the Company of written notice by the person acquiring the Shares.

(ii) PRICE FOR INVOLUNTARY TRANSFER. With respect to any stock to be transferred pursuant to Section 3(b) (i), the price per Share shall be a price set by the Board of Directors of the Company that will reflect the current value of the stock in terms of present earnings and future prospects of the Company. The Company shall notify Purchaser or his or her executor of the price so determined within 30 days after receipt by it of written notice of the transfer or proposed transfer of Shares. However, if the Purchaser does not agree with the valuation as determined by the Board of Directors of the Company, the Purchaser shall be entitled to have the valuation determined by an independent appraiser to be mutually agreed upon by the Company and the Purchaser and whose fees shall be borne equally by the Company and the Purchaser.

(c) ASSIGNMENT. The right of the Company to purchase any part of the Shares may be assigned in whole or in part to any stockholder or stockholders of the Company or other persons or organizations; provided, however, that an assignee, other than a corporation that is the Parent or a 100% owned Subsidiary of the Company, must pay the Company, upon assignment of such right, cash equal to the difference between the original purchase price and Fair Market Value, if the original purchase price is less than the Fair Market Value of the Shares subject to the assignment.

(d) RESTRICTIONS BINDING ON TRANSFEREES. All transferees of Shares or any interest therein will receive and hold such Shares or interest subject to the provisions of this Agreement. Any sale or transfer of the Company's Shares shall be void unless the provisions of this Agreement are satisfied.

(e) TERMINATION OF RIGHTS. The Right of First Refusal granted the Company by Section 3(a) above and the option to repurchase the Shares in the event of an involuntary transfer granted the Company by Section 3(b) above shall terminate upon the first sale of Common Stock of the Company to the general public pursuant to a registration statement filed with and declared effective by the Securities and Exchange Commission under the Securities Act of 1933, as amended (the "Securities Act"). Upon termination of the Right of First Refusal described in Section 3(a) above, a new certificate or certificates representing the Shares not repurchased shall be issued, on request, without the legend referred to in Section 6(a) (ii) herein and delivered to Purchaser.

4. INVESTMENT AND TAXATION REPRESENTATIONS. In connection with the purchase of the Shares, Purchaser represents to the Company the following:

(a) Purchaser is aware of the Company's business affairs and financial condition and has acquired sufficient information about the Company to reach an informed and knowledgeable decision to acquire the securities. Purchaser is purchasing these securities for investment for his or her own account only and not with a view to, or for resale in connection with, any "distribution" thereof within the meaning of the Securities Act.

(b) Purchaser understands that the securities have not been registered under the Securities Act by reason of a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of Purchaser's investment intent as expressed herein.

(c) Purchaser understands that the Shares are "restricted securities" under applicable U.S. federal and state securities laws and that, pursuant to these laws, Purchaser must hold the Shares indefinitely unless they are registered with the Securities and Exchange Commission and qualified by state authorities, or an exemption from such registration and qualification requirements is available. Purchaser acknowledges that the Company has no obligation to register or qualify the Shares for resale. Purchaser further acknowledges that if an exemption from registration or qualification is available, it may be conditioned on various requirements including, but not limited to, the time and manner of sale, the holding period for the Shares, and requirements relating to the Company which are outside of the Purchaser's control, and which the Company is under no obligation and may not be able to satisfy.

(d) Purchaser understands that Purchaser may suffer adverse tax consequences as a result of Purchaser's purchase or disposition of the Shares. Purchaser represents that Purchaser has consulted any tax consultants Purchaser deems advisable in connection with the purchase or disposition of the Shares and that Purchaser is not relying on the Company for any tax advice.

5. RESTRICTIVE LEGENDS AND STOP-TRANSFER ORDERS.

(a) LEGENDS. The certificate or certificates representing the Shares shall bear the following legends (as well as any legends required by applicable state and federal corporate and securities laws):

- (i) THE SHARES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE SALE OR DISTRIBUTION THEREOF. NO SUCH SALE, DISTRIBUTION OR OTHER DISPOSITION MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL IN A FORM SATISFACTORY TO FOR THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE SECURITIES ACT OF 1933.
- (ii) THE SHARES REPRESENTED BY THIS CERTIFICATE MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE

TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.

(b) STOP-TRANSFER NOTICES. Purchaser agrees that, in order to ensure compliance with the restrictions referred to herein, the Company may issue appropriate "stop transfer" instructions to its transfer agent, if any, and that, if the Company transfers its own securities, it may make appropriate notations to the same effect in its own records.

(c) REFUSAL TO TRANSFER. The Company shall not be required (i) to transfer on its books any Shares that have been sold or otherwise transferred in violation of any of the provisions of this Agreement or (ii) to treat as owner of such Shares or to accord the right to vote or pay dividends to any purchaser or other transferee to whom such Shares shall have been so transferred.

6. NO EMPLOYMENT RIGHTS. Nothing in this Agreement shall affect in any manner whatsoever the right or power of the Company, or a Parent or Subsidiary of the Company, to terminate Purchaser's employment or consulting relationship, for any reason, with or without cause.

7. MARKET STAND-OFF AGREEMENT. In connection with the initial public offering of the Company's securities and upon request of the Company or the underwriters managing such underwritten offering of the Company's securities, Purchaser agrees not to sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any Shares (other than those included in the registration) without the prior written consent of the Company or such underwriters, as the case may be, for such period of time (not to exceed 180 days) from the effective date of such registration as may be requested by the Company or such managing underwriters and to execute an agreement reflecting the foregoing as may be requested by the underwriters at the time of the Company's initial public offering.

8. MISCELLANEOUS.

(a) GOVERNING LAW. This Agreement and all acts and transactions pursuant hereto and the rights and obligations of the parties hereto shall be governed, construed and interpreted in accordance with the laws of the State of California, without giving effect to principles of conflicts of law.

(b) ENTIRE AGREEMENT; ENFORCEMENT OF RIGHTS. This Agreement sets forth the entire agreement and understanding of the parties relating to the subject matter herein and merges all prior discussions between them. No modification or amendment to this Agreement, nor any waiver of any rights under this Agreement, shall be effective unless in writing signed by the parties to this Agreement. The failure by either party to enforce any rights under this Agreement shall not be construed as a waiver of any rights of such party.

(c) SEVERABILITY. If one or more provisions of this Agreement are held to be unenforceable under applicable law, the parties agree to renegotiate such provision in good faith. In the event that the parties cannot reach a mutually agreeable and enforceable replacement for such provision, then (i) such provision shall be excluded from this Agreement,

(ii) the balance of the Agreement shall be interpreted as if such provision were so excluded and (iii) the balance of the Agreement shall be enforceable in accordance with its terms.

(d) CONSTRUCTION. This Agreement is the result of negotiations between and has been reviewed by each of the parties hereto and their respective counsel, if any; accordingly, this Agreement shall be deemed to be the product of all of the parties hereto, and no ambiguity shall be construed in favor of or against any one of the parties hereto.

(e) NOTICES. Any notice required or permitted by this Agreement shall be in writing and shall be deemed sufficient when delivered personally or sent by telegram or fax or 48 hours after being deposited in the U.S. mail, as certified or registered mail, with postage prepaid, and addressed to the party to be notified at such party's address as set forth below or as subsequently modified by written notice.

(f) COUNTERPARTS. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which together shall constitute one instrument.

(g) SUCCESSORS AND ASSIGNS. The rights and benefits of this Agreement shall inure to the benefit of, and be enforceable by the Company's successors and assigns. The rights and obligations of Purchaser under this Agreement may only be assigned with the prior written consent of the Company.

(h) California Corporate Securities Law. THE SALE OF THE SECURITIES WHICH ARE THE SUBJECT OF THIS AGREEMENT HAS NOT BEEN QUALIFIED WITH THE COMMISSIONER OF CORPORATIONS OF THE STATE OF CALIFORNIA AND THE ISSUANCE OF THE SECURITIES OR THE PAYMENT OR RECEIPT OF ANY PART OF THE CONSIDERATION THEREFOR PRIOR TO THE QUALIFICATION IS UNLAWFUL, UNLESS THE SALE OF SECURITIES IS EXEMPT FROM QUALIFICATION BY SECTION 25100, 25102 OR 25105 OF THE CALIFORNIA CORPORATIONS CODE. THE RIGHTS OF ALL PARTIES TO THIS AGREEMENT ARE EXPRESSLY CONDITIONED UPON THE QUALIFICATION BEING OBTAINED, UNLESS THE SALE IS SO EXEMPT.

The parties have executed this Exercise Notice and Restricted Stock Purchase Agreement as of the date first set forth above.

COMPANY:

LIGHTERA NETWORKS, INC.

By: _____

Name: _____

(print)

Title: _____

Address:

10201 Bubb Road
Cupertino CA 95014

PURCHASER:

<>

(Signature)

(Print Name)

Address:

I, _____, spouse of <>, have read and hereby approve the foregoing Agreement. In consideration of the Company's granting my spouse the right to purchase the Shares as set forth in the Agreement, I hereby agree to be bound irrevocably by the Agreement and further agree that any community property or similar interest that I may have in the Shares shall hereby be similarly bound by the Agreement. I hereby appoint my spouse as my attorney-in-fact with respect to any amendment or exercise of any rights under the Agreement.

Spouse of <>

This schedule contains Summary Financial Information extracted from The Balance Sheet, Statement of Operation and Statement of Cash Flows included in CIENA's Form 10-Q for the period ending April 30, 1999, and is qualified in its entirety by reference to such financial statements.

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3-MOS		
	OCT-31-1999	
	FEB-01-1999	
	APR-30-1999	
		194,920
		100,021
		97,648
		1,200
		54,062
	468,580	
		189,984
		62,899
	614,848	
76,128		
		0
0		
		0
		1,213
	497,224	
614,848		
		111,490
	111,490	
		71,238
		71,238
	41,314	
		0
	94	
	2,458	
		864
1,594		
		0
		0
		0
		1,594
		.01
		.01