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TOTAL NUMBER OF PAGES 18
INDEX TO EXHIBITS AT PAGE 18
UECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-Q
(Mark One)
[ ] Transition report pursuant to Section 13 or $15(d)$ of the Securities Exchange Act of 1934 For the transition period from $\qquad$ to

Commission File No. 0-25826

HARMONIC LIGHTWAVES, INC.
(Exact name of Registrant as specified in its charter)
DELAWARE
77-0201147
(State of incorporation)
(I.R.S. Employer Identification No.)

549 Baltic Way<br>Sunnyvale, CA 94089<br>(408) 542-2500

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

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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 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 [ ]
As of October 2, 1998 there were 11,694,197 shares of the Registrant's Common
Stock outstanding.
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    Condensed Consolidated Balance Sheets at October 2, 1998
    
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PART I - FINANCIAL INFORMATION
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ITEM 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
HARMONIC LIGHTWAVES, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(IN THOUSANDS, EXCEPT SHARE DATA)

| OCTOBER 2, | DECEMBER 31, |
| :---: | :---: |
| 1998 | 1997 |
| ------------------- |  |

## ASSETS

Current assets:

| Cash and cash equivalents | \$ 8,215 | \$ 13,670 |
| :---: | :---: | :---: |
| Accounts receivable, net | 17,343 | 16,458 |
| Inventories | 20,658 | 15,474 |
| Prepaid expenses and other assets | 1,557 | 1,774 |
| Total current assets | 47,773 | 47,376 |
| te receivable | -- | 1,300 |
| roperty and equipment, net | 10,400 | 10,077 |
| tangibles and other assets | 1,390 | 134 |


| $\$ 59,563$ | $\$ 58,887$ |
| :--- | :--- |
| $========$ | $========$ |


| LIABILITIES AND STOCKHOLDERS' EQUITY |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Current liabilities: |  |  |  |  |
| Accounts payable | \$ | 6,392 | \$ | 3,708 |
| Accrued liabilities |  | 9,594 |  | 4,896 |
| Borrowings under short term credit facilities |  | 382 |  | -- |
| Total current liabilities |  | 16,368 |  | 8,604 |
| Other liabilities |  | 462 |  | 352 |
| Stockholders' equity (deficit) : |  |  |  |  |
| Preferred stock, $\$ .001$ par value, $5,000,000$ shares authorized; no shares issued or outstanding |  | -- |  | -- |
| Common Stock, $\$ .001$ par value, $50,000,000$ shares authorized; $11,694,197$ and $10,414,297$ shares issued and outstanding |  | 12 |  | 10 |
| Capital in excess of par value |  | 70,825 |  | 55,917 |
| Accumulated deficit |  | $(28,100)$ |  | $(6,019)$ |
| Currency translation |  | (4) |  | 23 |
| Total stockholders' equity |  | 42,733 |  | 49,931 |
|  |  | 59,563 | \$ | 58,887 |

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

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HARMONIC LIGHTWAVES, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(IN THOUSANDS, EXCEPT PER SHARE DATA) (UNAUDITED)

| Net sales | \$ | 22,382 | \$ | 17,545 | \$ | 56,760 | \$ | 57,092 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cost of sales |  | 13,948 |  | 9,646 |  | 36,574 |  | 30,466 |
| Gross profit |  | 8,434 |  | 7,899 |  | 20,186 |  | 26,626 |
| Operating expenses: |  |  |  |  |  |  |  |  |
| Research and development |  | 3,507 |  | 2,852 |  | 10,173 |  | 8,519 |
| Sales and marketing |  | 4,436 |  | 3,332 |  | 13,305 |  | 9,907 |
| General and administrative |  | 1,535 |  | 1,355 |  | 5,234 |  | 3,597 |
| Acquired in-process technology charge |  | -- |  | -- |  | 14,000 |  | -- |
| Total operating expenses |  | 9,478 |  | 7,539 |  | 42,712 |  | 22,023 |
| Income (loss) from operations |  | (1,044) |  | 360 |  | $(22,526)$ |  | 4,603 |
| Interest and other income, net |  | 213 |  | 126 |  | 445 |  | 514 |



| Effect of exchange rate changes on cash and cash equivalents | 9 |  | 9 |  |
| :---: | :---: | :---: | :---: | :---: |
| Net decrease in cash and cash equivalents |  | $(5,455)$ |  | $(6,472)$ |
| Cash and cash equivalents at beginning of period |  | 13,670 |  | 6,410 |
| Cash and cash equivalents at end of period | \$ | 8,215 | \$ | 9,938 |
| Supplemental schedule of cash flow information: |  |  |  |  |
| Income taxes paid during the period | \$ | 99 | \$ | 288 |
| Interest paid during the period | \$ | 48 | \$ | -- |

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

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HARMONIC LIGHTWAVES, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1 - BASIS OF PRESENTATION
The accompanying unaudited condensed consolidated financial statements include all adjustments (consisting only of normal recurring adjustments) which Harmonic Lightwaves, Inc. (the "Company") considers necessary for a fair presentation of the results of operations for the unaudited interim periods covered and the consolidated financial condition of the company at the date of the balance sheets. The quarterly financial information is unaudited. This Quarterly Report on Form 10-Q should be read in conjunction with the company's audited consolidated financial statements contained in the Company's Annual Report on Form 10-K which was filed with the Securities and Exchange Commission on March 31, 1998. The interim results presented herein are not necessarily indicative of the results of operations that may be expected for the full fiscal year ending December 31, 1998, or any other future period.

NOTE 2 - ACQUISITION OF NEW MEDIA COMMUNICATION LTD.
In January 1998, the Company acquired New Media Communication Ltd. ("NMC"), a privately held supplier of broadband, high-speed data delivery software and hardware, in exchange for the issuance of $1,037,911$ shares of Harmonic common stock and the assumption of all outstanding NMC stock options. The acquisition was accounted for using the purchase method of accounting. Accordingly, the results of operations of NMC have been included in the consolidated financial statements of the Company from the date of the acquisition. The purchase price of $\$ 17.6$ million was allocated to the acquired assets, in-process technology and goodwill. A one-time charge of $\$ 14.0$ million was recorded in the first quarter of 1998 for in-process technology acquired. Goodwill of $\$ 1.5$ million is being amortized over the estimated useful life of five years. NMC has been a development stage company since its founding in 1996 and its revenues through October 2, 1998 were not material in relation to those of the Company.

The following table sets forth the pro-forma net sales, net income and net income per share of the Company for the nine month periods ended October 2,1998 and September 26, 1997, giving effect to the acquisition of NMC as if it had occurred on January 1, 1997:
-----------------
OCTOBER 2,
1998
--------

$$
\begin{aligned}
& \text { SEPTEMBER 26, } \\
& 1997 \\
& -------
\end{aligned}
$$

IN THOUSANDS, EXCEPT PER SHARE DATA (UNAUDITED)

| Net sales | \$ | 56,760 | \$ | 57,685 |
| :---: | :---: | :---: | :---: | :---: |
| Net income (loss) | \$(22, 081 ) |  | \$ | 2,678 |
| Net income (loss) per share |  |  |  |  |
| Basic | \$ | (1.91) | \$ | 0.24 |
| Diluted | \$ | (1.91) | \$ | 0.21 |
| Weighted average shares |  |  |  |  |
| Basic |  | 11,573 |  | 11,359 |
| Diluted |  | 11,573 |  | 12,611 |

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NOTE 3 - INVENTORIES

In THOUSANDS
OCTOBER 2,
1998
-------

DECEMBER 31,
1997
-------
(UNAUDITED)

| Raw materials | $\$ 3,657$ | $\$ 4,356$ |
| :--- | ---: | ---: |
| Work-in-process | 3,704 | 3,127 |
| Finished goods | 13,297 | 7,991 |
|  | ------ | ------ |
|  | $\$ 20,658$ | $\$ 15,474$ |
|  | $======$ | $======$ |

NOTE 4 - NET INCOME (LOSS) PER SHARE

During the quarter ended December 31, 1997, the Company adopted and retroactively applied the requirements of Statement of Financial Accounting Standards No. 128, "Earnings Per Share" ("SFAS No. 128") to all periods presented. SFAS No. 128 requires presentation of both Basic EPS and Diluted EPS on the face of the statement of operations. Basic EPS, which replaces primary EPS, is computed by dividing net income available to common stockholders (numerator) by the weighted average number of common shares outstanding
(denominator) during the period. Unlike the computation of primary EPS, Basic EPS excludes the dilutive effect of stock options and warrants. Diluted EPS replaces fully diluted EPS and gives effect to all dilutive potential common shares outstanding during a period. In computing Diluted EPS, the average price for the period is used in determining the number of shares assumed to be purchased from exercise of stock options and warrants rather than the higher of the average or ending price as used in the computation of fully diluted EPS. Net income per share for all prior periods presented has been restated to conform to the provisions of SFAS 128.

The following table presents a reconciliation of the numerators and denominators of the Basic and Diluted EPS computations for the three and nine month periods ended October 2, 1998 and September 26, 1997:



IN THOUSANDS, EXCEPT PER SHARE DATA
(UNAUDITED)
\$ (831) \$ 413 \$ $(22,081)$ \$
$\qquad$

Shares calculation (denominator):
Average shares outstanding - basic
Effect of Dilutive Securities:
Potential Common Stock relating
to stock options and warrants

Average shares outstanding - diluted

Net income (loss) per share - basic

Net income (loss) per share - diluted

|  | 1,674 |  | 1,588 |  | 1,573 |  | 1,573 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ | (0.07) | \$ | 0.04 | \$ | (1.91) | \$ | 0.42 |
| \$ | (0.07) | \$ | 0.04 | \$ | (1.91) | \$ | 0.38 |

Options and warrants to purchase approximately 3.0 million shares of Common Stock at prices ranging from $\$ 0.30$ to $\$ 22.75$ per share were outstanding during the three and nine month periods ended October 2, 1998, but were not

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included in the computation of diluted EPS as a result of the loss incurred by the Company or because the option's exercise price was greater than the average market price of the Common Shares.

NOTE 5 - COMPREHENSIVE INCOME
Effective January 1, 1998, the Company adopted Statement of Financial Accounting Standards No. 130, "Reporting Comprehensive Income" ("SFAS 130") SFAS No. 130 requires that all items recognized under accounting standards as components of comprehensive income be reported in an annual financial statement that is displayed with the same prominence as other annual financial statements. This Statement also requires that an entity classify items of other comprehensive income by their nature in an annual financial statement. For example, other comprehensive income may include foreign currency translation adjustments, minimum pension liability adjustments, and unrealized gains and losses on marketable securities classified as available-for-sale. Annual financial statements for prior periods will be reclassified, as required. The Company's total comprehensive income was as follows:


IN THOUSANDS (UNAUDITED)
Net income (loss)
Other comprehensive income (loss)

Total comprehensive income (loss)

| \$ | $\begin{array}{r} (831) \\ (29) \end{array}$ | \$ | $\begin{array}{r} 413 \\ 29 \end{array}$ | $\begin{array}{r} (22,081) \\ (27) \end{array}$ | \$ | $\begin{array}{r} 4,349 \\ 9 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | --- |  |  |
| \$ | (860) | \$ | 442 | \$ $(22,108)$ | \$ | 4,358 |

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

OVERVIEW

Harmonic Lightwaves, Inc. ("Harmonic" or the "Company") designs, manufactures and markets digital and lightwave based communications systems that deliver
video, audio and data over hybrid fiber/coax ("HFC"), satellite and wireless networks. The Company's advanced solutions enable cable television and other network operators to provide a range of broadcast and interactive broadband services that include high-speed Internet access and video-on-demand. The Company offers a broad range of fiber optic transmission and digital headend products for HFC networks, and through its acquisition of New Media Communication Ltd. ("NMC") in January 1998, expanded its product offerings to include high-speed data delivery software and hardware.

This Quarterly Report on Form $10-Q$ contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, including statements regarding future revenue and expense levels, future capital expenditures, future cash flows, and future borrowing capability. Actual results could differ materially from those projected in the forward-looking statements as a result of a number of factors, including those set forth under "Factors That May Affect Future Results of Operations" below and elsewhere in this Form 10-Q.

RESULTS OF OPERATIONS
Net Sales
The Company's net sales increased $28 \%$ from $\$ 17.5$ million in the third quarter of 1997 to $\$ 22.4$ million in the third quarter of 1998 . Net sales decreased from $\$ 57.1$ million in the first nine months of 1997 to $\$ 56.8$ million in the first nine months of 1998. The growth in net sales in the third quarter of 1998 compared to the third quarter of 1997 was attributable to the sale of new products which began shipment during the second quarter of 1998 including the TRANsend digital headend products, MetroLink DWDM systems and PWRBlazer Scaleable Node, and an increase in domestic cable industry spending. Domestic and international sales increased $48 \%$ and $10 \%$, respectively, in the third quarter of 1998 compared to the third quarter of 1997. International sales represented $46 \%$ of net sales in the third quarter of 1998 compared to $54 \%$ in the third quarter of 1997. The decrease in sales for the nine month period of 1998 compared to the nine month period of 1997 was due to lower international sales particularly in Canada, Latin America and Asia, partially offset by increased domestic sales.

Gross Profit
Gross profit increased from $\$ 7.9$ million in the third quarter of 1997 to $\$ 8.4$ million in the third quarter of 1998 due primarily to an increase in net sales but decreased as a percentage of net sales from 45\% in the third quarter of 1997 to $38 \%$ in the third quarter of 1998. However, gross profit decreased from $\$ 26.6$ million (47\% of net sales) in the first nine months of 1997 to $\$ 20.2$ million ( $36 \%$ of net sales) in the first nine months of 1998. The decreases in gross profit as a percentage of net sales ("gross margins") were principally due to less favorable geographic and product mix and pricing pressure for certain products. In addition, gross margins were negatively impacted by continuing start-up costs associated with new product introductions and an increase in inventory reserves for existing products following the introduction of new products. The Company expects gross margins to continue to be below 1997 levels for the foreseeable future due to new product introductions, continuing softness in certain international markets and pricing pressures in some markets.

## Research and Development

Research and development expenses increased from $\$ 2.9$ million ( $16 \%$ of net sales) in the third quarter of 1997 to $\$ 3.5$ million ( $16 \%$ of net sales) in the third quarter of 1998. For the nine month periods, research and development expenses increased from $\$ 8.5$ million in 1997 ( $15 \%$ of net sales) to $\$ 10.2$ million in 1998 (18\% of net sales). The
increases in spending in both periods were principally attributable to increased headcount, particularly at the Company's subsidiary in Caesarea, Israel which is developing Harmonic's TRANsend digital headend products, and to the inclusion of NMC's research and development expenses starting in January 1998. The Company anticipates that research and development expenses will continue to increase in
absolute dollars, although such expenses may vary as a percentage of net sales.

## Sales and Marketing

Sales and marketing expenses increased from $\$ 3.3$ million ( $19 \%$ of net sales) in the third quarter of 1997 to $\$ 4.4$ million ( $20 \%$ of net sales) in the third quarter of 1998. For the nine month periods, sales and marketing expenses increased from $\$ 9.9$ million in 1997 (17\% of net sales) to $\$ 13.3$ million in 1998 (23\% of net sales). The increases in expenses were primarily due to higher headcount and costs associated with expansion of the direct sales force, technical support and marketing organizations, including expenses incurred in connection with the opening of new international sales and technical support centers, as well as higher promotional expenses. In addition, the inclusion of NMC's sales and marketing expenses starting in January 1998 contributed to the increases. The Company anticipates that sales and marketing expenses will continue to increase in absolute dollars, although such expenses may vary as a percentage of net sales.

General and Administrative
General and administrative expenses increased from $\$ 1.4$ million in the third quarter of 1997 to $\$ 1.5$ million in the third quarter of 1998 , but decreased as a percentage of net sales from $8 \%$ in the third quarter of 1997 to $7 \%$ in the third quarter of 1998. For the nine month periods, general and administrative expenses increased from $\$ 3.6$ million in 1997 ( $6 \%$ of net sales) to $\$ 5.2$ million in 1998 (9\% of net sales). The increases in expenses were attributable to costs of supporting the Company's growth in headcount, establishment of international sales and support offices, and the inclusion of NMC's expenses starting in January 1998. In addition, for the nine month period the increase also was due to adjustments to accounts receivable reserve levels as a result of the financial situation in Asia, which adversely affected certain of the Company's distributors. The Company expects general and administrative costs will continue to increase in the future, although such expenses may vary as a percentage of net sales.

Interest and Other Income
Interest and other income, consisting principally of interest income, increased from $\$ 0.1$ million in the third quarter of 1997 to $\$ 0.2$ million in the third quarter of 1998 and decreased from $\$ 0.5$ million for the nine month period of 1997 to $\$ 0.4$ million for the nine month period of 1998 . The increase in the third quarter of 1998 was due to higher other income partially offset by lower interest income while the decrease for the nine month period of 1998 was primarily due to lower interest income.

Income Taxes

No provision for income taxes was recorded for the three and nine month periods of 1998 due to the net losses incurred. The provisions for income taxes for the three and nine month periods of 1997 were based on an effective annual tax rate of $15 \%$.

## LIQUIDITY AND CAPITAL RESOURCES

Cash used in operations was approximately $\$ 3.6$ million for the nine months ended September 26, 1997 compared to $\$ 3.0$ million for the nine months ended October 2, 1998. The decrease in cash used by operations was primarily due to higher inventory levels and a net loss in the first nine months of 1998 compared to net income in the comparable period of 1997, partially offset by improved customer collections and higher accounts payable and accrued liabilities.

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Additions to property, plant and equipment were approximately $\$ 4.2$ million and $\$ 3.3$ million in the first nine months of 1997 and 1998, respectively. The decrease in 1998 compared to 1997 was principally due to expenditures incurred in the first quarter of 1997 for leasehold improvements and furniture and fixtures for the Company's research and development facility in Caesarea, Israel.

As of October 2, 1998, the Company's principal sources of liquidity included cash and cash equivalents of $\$ 8.2$ million and a bank line of credit which provides for up to $\$ 12.0$ million in borrowings and expires in December 1998. The line of credit bears interest at the bank's prime rate or LIBOR plus $2.0 \%$. The Company has guaranteed certain borrowings of its subsidiaries totaling $\$ 2.2$ million via letters of credit and has total letters of credit issued under this credit facility of $\$ 3.2$ million. The Company also has a $\$ 3.0$ million term loan facility to be used for the purchase of capital equipment. This loan facility expires in December 1998 and bears interest at the bank's prime rate plus $0.5 \%$. Outstanding borrowings under credit facilities were $\$ 0.4$ million as of October 2, 1998. The Company expects that it will be able to renew or replace the line of credit upon its expiration on terms acceptable to the Company.

The Company believes that its existing liquidity sources and anticipated funds from operations will satisfy its cash requirements for at least the next twelve months.

YEAR 2000
Many currently installed computer systems and software products are coded to accept only two digit entries in the date code field. These date code fields will need to accept four digit entries to distinguish twenty-first century dates from twentieth century dates. As a result, many companies' software and computer systems may need to be upgraded or replaced in order to comply with such "Year 2000" or "Y2K" requirements.

The Company has established a corporate-wide program to address the Y 2 K issue. This program encompasses product, internal systems and supplier and business partner compliance. The project is comprised of identification of risks, assessment of risks, development of remediation or contingency plans and implementation and testing.

Based upon the assessments to date, all hardware products currently under development or released, and all software products currently under development are Y2K compliant. Certain software products currently installed at customer sites are not Y2K compliant and the Company is working with its customers to provide migration paths for each product. The Company's significant internal systems have been purchased from outside vendors and are already Y2K compliant. The Company is in the process of upgrading internal systems that are not currently Y2K compliant, and expects to have this process completed by mid-1999. The Company currently does not have a contingency plan to address y2k issues related to its products and internal systems, but will develop a contingency plan by mid-1999 if its products and internal systems are not yet Y2K compliant. In addition, the Company is working with its suppliers and business partners to identify at what stage they are in the process of identifying and addressing the Y2K issue and to assess the resulting risks and develop appropriate contingency plans. The Company will continue to perform compliance reviews and tests to ensure compliance on an ongoing basis. The Company currently does not anticipate that the cost of its Y2K program will be material to its financial condition and results of operations.

Although the Company has established and commenced its program to address Y2K issues, the failure of the Company's products to operate properly with regard to the Year 2000 requirements could (i) cause the Company to incur unanticipated expenses to remedy any problems, (ii) cause a reduction in sales and (iii) expose the Company to related litigation by its customers, each of which could have a material adverse effect on the Company's business, operating results and financial condition. In addition, the Company and third parties with whom it conducts business may utilize equipment or software that may not be Y2k compliant. Failure of the Company's or any such third party's equipment or software to operate properly with regard to the Year 2000 requirements could cause, among other things, the Company or any such third party to incur unanticipated expenses or efforts to remedy any problems, which could have a material adverse effect on its or their respective business, operating results and financial condition. Furthermore, the purchasing patterns of customers or potential customers may be affected by Year 2000 issues as companies expend significant resources to evaluate and to correct their equipment or software for Y2K compliance and as they simultaneously evaluate the preparedness of the third parties with whom they deal. These expenditures may result in reduced funds available to purchase
products and services such as those offered by the Company, which could have a material adverse effect on the Company's business, operating results and financial condition.

## FACTORS THAT MAY AFFECT FUTURE RESULTS OF OPERATIONS

Potential Fluctuations in Future Operating Results

The Company's operating results have fluctuated and may continue to fluctuate in the future, on an annual and a quarterly basis, as a result of a number of factors, many of which are outside of the Company's control, including the level of capital spending in the cable television industry, both in the U.S. and in foreign markets, changes in the regulatory environment, changes in market demand, the timing of customer orders, competitive market conditions, lengthy sales cycles, new product introductions by the Company or its competitors, market acceptance of new or existing products, the cost and availability of components, the mix of the Company's customer base and sales channels, the mix of products sold, development of custom products, the level of international sales and general economic conditions. In addition, in each quarter of 1997 and the first three quarters of 1998, the Company recognized a substantial portion of its revenues in the last month of the quarter. The Company establishes its expenditure levels for product development and other operating expenses based on projected sales levels, and expenses are relatively fixed in the short term. Accordingly, variations in timing of sales can cause significant fluctuations in operating results. In addition, because a significant portion of the Company's business is derived from orders placed by a limited number of large customers, the timing of such orders can also cause significant fluctuations in the Company's operating results. If sales are below expectations in any given quarter, the adverse impact of the shortfall on the Company's operating results may be magnified by the Company's inability to adjust spending to compensate for the shortfall.

Dependence on Cable Television Industry Capital Spending
To date, substantially all of the Company's sales have been derived, directly or indirectly, from sales to cable television operators. Demand for the Company's products depends to a significant extent upon the magnitude and timing of capital spending by cable television operators for constructing, rebuilding or upgrading their systems. The capital spending patterns of cable television operators are dependent on a variety of factors, including access to financing, cable television operators' annual budget cycles, the status of federal, local and foreign government regulation of telecommunications and television broadcasting, overall demand for cable television services, and advanced broadband services, competitive pressures (including the availability of alternative video delivery technologies such as satellite broadcasting), discretionary customer spending patterns and general economic conditions. The Company's net sales in the second half of 1997 and the first quarter of 1998 were adversely affected by a slow-down in spending by cable television operators in the U.S. and in foreign markets. The factors contributing to this slow capital spending include consolidation and system exchanges by domestic cable customers, which generally has had the effect of delaying certain system upgrades, uncertainty related to development of industry standards for digital transmission, evaluation by many cable customers of which advanced services and system architectures to provide and use, and emphasis on marketing and customer service strategies by certain international customers rather than continued construction of networks. While the Company's net sales increased in the second and third quarters of 1998 from the levels achieved in the first quarter of 1998 due to improved U.S. cable spending, spending by international cable television operators remained weak. The Company is unable to predict when international cable television spending will increase and whether U.S. cable television spending will continue to grow. In addition, cable television capital spending can be subject to the effects of seasonality, with fewer construction and upgrade projects typically occurring in winter months and otherwise being affected by inclement weather.

Dependence on Key Customers and End Users

Historically, a substantial majority of the Company's sales have been to relatively few customers. Sales to the Company's ten largest customers in 1996, 1997 and the first nine months of 1998 accounted for approximately $72 \%$, $56 \%$ and $63 \%$, respectively, of its net sales. Due in part to the consolidation of ownership of domestic
cable television systems, the Company expects that sales to relatively few customers will continue to account for a significant percentage of net sales for the foreseeable future. In this regard, sales to Tele-Communications, Inc. (TCI) represented approximately $22 \%$ of the Company's net sales in the third quarter of 1998. Substantially all of the Company's sales are made on a purchase order basis, and none of the Company's customers has entered into a long-term agreement requiring it to purchase the Company's products. The loss of, or any reduction in orders from, a significant customer would have a material adverse effect on the Company's business and operating results.

## Highly Competitive Industry

The market for cable television transmission equipment is extremely competitive and has been characterized by rapid technological change. Most of the Company's competitors are substantially larger and have greater financial, technical, marketing and other resources than the Company. Many of such large competitors are in a better position to withstand any significant reduction in capital spending by cable television operators. In addition, many of the Company's competitors have more long standing and established relationships with domestic and foreign cable television operators than does the Company. There can be no assurance that the Company will be able to compete successfully in the future or that competition will not have a material adverse effect on the company's business and operating results.

## Rapid Technological Change

The market for the Company's products is relatively new, making it difficult to accurately predict the market's future growth rate, size and technological direction. In view of the evolving nature of this market, there can be no assurance that cable television operators, telephone companies or other suppliers of broadband services will not decide to adopt alternative architectures or technologies that are incompatible with the Company's products, which would have a material adverse effect on the Company's business and operating results.

The broadband communications markets are characterized by continuing technological advancement. To compete successfully, the Company must design, develop, manufacture and sell new products that provide increasingly higher levels of performance and reliability. As new markets for broadband communications equipment continue to develop, the Company must successfully develop new products for these markets in order to remain competitive. For example, to compete successfully in the future, the Company believes that it must successfully develop and introduce in a timely manner, products that will facilitate the processing and transmission of digital signals over optical networks. While the Company began volume shipments of its digital headend products during the second quarter of 1998 , there can be no assurance that these products will achieve commercial acceptance or that the Company will
successfully complete development of, or successfully introduce other products for digital headend applications, or that such products will achieve commercial acceptance. In addition, in order to successfully develop and market its planned products for digital applications, the Company may be required to enter into technology development or licensing agreements with third parties. Although many companies are often willing to enter into such technology development or licensing agreements, there can be no assurance that such agreements will be negotiated on terms acceptable to the Company, or at all. The failure to enter into technology development or licensing agreements, when necessary, could limit the Company's ability to develop and market new products and could have a material adverse effect on the Company's business and operating results.

The failure of the Company to successfully develop and introduce new products that address the changing needs of the broadband communications market could have a material adverse effect on the Company's business and operating results. There can be no assurance that the successful introduction by the Company of new products will not have an adverse effect on the sales of the Company's existing products. Further, newly introduced products may have lower gross margins than the Company's other products, which would have an adverse effect on the Company's historic margin levels.

The growth in the Company's business has placed, and is expected to continue to place, a significant strain on the Company's limited personnel, management and other resources. The Company's ability to manage any future growth effectively will require it to attract, train, motivate and manage new employees successfully, to integrate new employees into its overall operations, to retain key employees and to continue to improve its operational, financial and management systems. Any failure by the Company to manage its future growth effectively could have an adverse effect on the company's business and operating results.

In addition, the success of the Company will depend to a significant extent upon a number of key technical and management employees. While employees are required to sign standard agreements concerning confidentiality and ownership of inventions, Company employees are generally not otherwise subject to employment agreements or to noncompetition covenants. The loss of services of any key employees could have a material adverse effect on the Company's business, financial condition and results of operations.

Risks Associated with the Acquisition of NMC
Through its acquisition of NMC in January 1998, the Company increased the scope of its product line to include broadband, high-speed data delivery software and hardware and increased the scope of its international operations in Israel. The acquisition of NMC involves numerous risks and challenges, including:
difficulties in the assimilation of operations, research and development
efforts, products, personnel and cultures of Harmonic Lightwaves and NMC; the potential adverse effects of the acquisition on relationships with customers, distributors, suppliers and other business partners of the two companies; the dependence on the evolution and growth of the market for wireless and satellite broadband services; regulatory developments; rapid technological change; the highly competitive nature of the telecommunications industry; the company's ability to successfully develop, manufacture and gain market acceptance of the products of NMC; the ability to manage geographically remote units; the integration of NMC's management information systems with those of the Company; potential adverse short-term effects on the Company's operating results; the amortization of acquired intangible assets; the risk of entering emerging markets in which the Company has limited or no direct experience; and the potential loss of key employees of NMC. The Company's future operating results will be significantly affected by its ability to successfully integrate NMC, to implement operating, manufacturing and financial procedures and controls, to improve coordination among different operating functions, to strengthen management information and telecommunications systems and to continue to attract, train and motivate additional qualified personnel in all areas. There can be no assurance that the Company will be able to manage these activities and implement these additional systems and controls successfully, and any failure to do so could have a materially adverse effect upon the Company's operating results. The acquisition of $N M C$ has resulted in significant additional working capital requirements. While the Company believes that it currently has sufficient funds to finance its operations for at least the next twelve months, to the extent that such funds are insufficient to fund the Company's activities, including any potential acquisitions, the Company may need to raise additional funds through public or private equity or debt financing from other sources. The sale of additional equity or convertible debt may result in additional dilution to the Company's stockholders and such securities may have rights, preferences or privileges senior to those of the Common Stock. There can be no assurance that additional equity or debt financing will be available or that if available it can be obtained on terms favorable to the Company or its stockholders.

Sole or Limited Sources of Supply
Certain components and subassemblies necessary for the manufacture of the Company's products are obtained from a sole supplier or a limited group of suppliers. The reliance on sole or limited suppliers, particularly foreign suppliers, and the Company's increasing reliance on subcontractors involve several risks, including a potential inability to obtain an adequate supply of required components or subassemblies and reduced control over pricing, quality and timely delivery of components or subassemblies. Certain key elements of the

Company's digital headend products are expected to be provided initially by a sole foreign supplier. The Company does not maintain long-term agreements with any of its suppliers or subcontractors. An inability to obtain adequate deliveries or any other circumstance that would require the Company to seek alternative sources of supply could affect the Company's ability to ship its products on a timely basis, which could damage
relationships with current and prospective customers and could have a material adverse effect on the Company's business and operating results. The Company believes that investment in inventories will constitute a significant portion of its working capital in the future. As a result of such investment in inventories, the Company may be subject to an increasing risk of inventory obsolescence in the future, which would materially and adversely affect its business and operating results.

Risks of International Operations
Sales to customers outside of the United States in 1996, 1997 and the first nine months of 1998 represented $57 \%$, $59 \%$ and $44 \%$ of net sales, respectively, and the Company expects that international sales will continue to represent a substantial portion of its net sales for the foreseeable future. International operations are subject to a number of risks, including changes in foreign government regulations and telecommunications standards, export license requirements, tariffs and taxes, other trade barriers, fluctuations in currency exchange rates, difficulty in collecting accounts receivable, difficulty in staffing and managing foreign operations and political and economic instability. While international sales are typically denominated in U.S. dollars, fluctuations in currency exchange rates could cause the Company's products to become relatively more expensive to customers in a particular country, leading to a reduction in sales or profitability in that country. Payment cycles for international customers are typically longer than those for customers in the United States. There can be no assurance that foreign markets will continue to develop or that the Company will receive additional orders to supply its products for use in foreign broadband systems. In recent quarters, certain Asian currencies have devalued significantly in relation to the U.S. dollar. The Company believes that financial developments in Asia in recent quarters were a major factor contributing to the Company's lower net sales in Asia in the first nine months of 1998 than in the first nine months of 1997. In addition, the uncertain financial situation in Asia has put financial pressure on some of the Company's distributors. In response, the Company increased its accounts receivable reserves in the first quarter of 1998. In addition, the Company has received purchase orders from customers in China which represent a significant percentage of the Company's backlog at October 2, 1998. Given the current economic uncertainties in China and throughout Asia, there can be no assurance that shipment of these orders will be made as scheduled, or at all. The Company is continuing to evaluate the effect of recent financial developments in Asia, including efforts to stabilize economic conditions, on the Company's business. There can be no assurance that the Company's sales and payment cycles in Asia will not continue to be materially adversely affected by the uncertain financial climate.

Year 2000

Many currently installed computer systems and software products are coded to accept only two digit entries in the date code field. These date code fields will need to accept four digit entries to distinguish twenty-first century dates from twentieth century dates. As a result, many companies' software and computer systems may need to be upgraded or replaced in order to comply with such "Year 2000" or "Y2K" requirements.

The Company has established a corporate-wide program to address the Y 2 K issue. This program encompasses product, internal systems and supplier and business partner compliance. The project is comprised of identification of risks, assessment of risks, development of remediation or contingency plans and implementation and testing.

Based upon the assessments to date, all hardware products currently under development or released, and all software products currently under development are $Y 2 \mathrm{~K}$ compliant. Certain software products currently installed at customer
sites are not Y2K compliant and the Company is working with its customers to provide migration paths for each product. The Company's significant internal systems have been purchased from outside vendors and are already Y2K compliant. The Company is in the process of upgrading internal systems that are not currently Y2K compliant, and expects to have this process completed by mid-1999. The Company currently does not have a contingency plan to address Y 2 K issues related to its products and internal systems, but will develop a contingency plan by mid-1999 if its products and internal systems are not yet Y2K compliant. In addition, the Company is working with its suppliers and business partners to identify at what stage they are in the process of identifying and addressing the Y2K issue and to assess the resulting risks and develop appropriate contingency plans. The Company will continue to perform compliance reviews and tests to ensure compliance on an ongoing basis. The Company currently does not anticipate that the cost of its Y2K program will be material to its financial condition and results of operations.

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Although the Company has established and commenced its program to address Y2K issues, the failure of the Company's products to operate properly with regard to the Year 2000 requirements could (i) cause the Company to incur unanticipated expenses to remedy any problems, (ii) cause a reduction in sales and (iii) expose the Company to related litigation by its customers, each of which could have a material adverse effect on the Company's business, operating results and financial condition. In addition, the Company and third parties with whom it conducts business may utilize equipment or software that may not be Y2K compliant. Failure of the Company's or any such third party's equipment or software to operate properly with regard to the Year 2000 requirements could cause, among other things, the Company or any such third party to incur unanticipated expenses or efforts to remedy any problems, which could have a material adverse effect on its or their respective business, operating results and financial condition. Furthermore, the purchasing patterns of customers or potential customers may be affected by Year 2000 issues as companies expend significant resources to evaluate and to correct their equipment or software for Y2K compliance and as they simultaneously evaluate the preparedness of the third parties with whom they deal. These expenditures may result in reduced funds available to purchase products and services such as those offered by the Company, which could have a material adverse effect on the Company's business, operating results and financial condition.

PART II
ITEM 5. OTHER INFORMATION
Pursuant to Rule 14a-4(c) (1) under the Securities Exchange Act of 1934, the proxies provided to management shall confer on management discretionary authority to vote with respect to any non Rule $14 a-8$ stockholder proposals raised at the Company's annual meeting of stockholders, without any discussion of the matter in the proxy statement, unless a stockholder has notified the Company of such a proposal at least 45 days prior to the month and day on which the Company mailed its prior year's proxy statement. Since the Company mailed its proxy statement for the 1998 annual meeting of stockholders on March 27, 1998, the deadline for receipt of any such stockholder proposal for the 1999 annual meeting of stockholders is February 10, 1999.

ITEM 6. EXHIBITS AND REPORTS ON FORM 8-K
A. Exhibits

| Exhibit\# | Description of Document |
| :---: | :--- |
| 27.1 | Financial Data Schedule |

B. Reports on Form 8-K

None

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## SIGNATURE

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.

Dated: November 13, 1998

HARMONIC LIGHTWAVES, INC.
(Registrant)

By: /s/ Robin N. Dickson
Robin N. Dickson
Chief Financial Officer
(Principal Financial and Accounting Officer)

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HARMONIC LIGHTWAVES, INC.

Index to Exhibits

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EXHIBIT NO. DESCRIPTION OF DOCUMENT
27.1
Financial Data Schedule
```

<ARTICLE> 5

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