SECURITIES AND EXCHANGE COMMISSION
WASHINGTON，D．C． 20549
$\qquad$

AMENDMENT NO． 1
TO

FORM S－1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

AWARE，INC．
（EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER）

| MASSACHUSETTS | 7373 |  |
| :---: | :---: | :---: |
| （STATE OR OTHER JURISDICTION | （PRIMARY STANDARD INDUSTRIAL | 04－2911026 |
| OF INCORPORATION） | CLASSIFICATION CODE NUMBER） | IDENTIFICATION NUMBER） |

ONE OAK PARK
BEDFORD，MASSACHUSETTS 01730
（617）276－4000
（ADDRESS，INCLUDING ZIP CODE，AND TELEPHONE NUMBER，INCLUDING AREA CODE，OF REGISTRANT＇S PRINCIPAL EXECUTIVE OFFICES）

JAMES C．BENDER
PRESIDENT AND CHIEF EXECUTIVE OFFICER
AWARE，INC．
ONE OAK PARK
BEDFORD，MASSACHUSETTS 01730
（617）276－4000
（NAME，ADDRESS，INCLUDING ZIP CODE AND TELEPHONE NUMBER，INCLUDING AREA CODE，OF AGENT FOR SERVICE）

COPIES TO：

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| :---: | :---: |
| WILLIAM R．KOLB，ESQ． | TESTA，HURWITZ \＆THIBEAULT，LLP |
| FOLEY，HOAG \＆ELIOT LLP | HIGH STREET TOWER |
| ONE POST OFFICE SQUARE | 125 HIGH STREET |
| BOSTON，MASSACHUSETTS 02109 | BOSTON，MASSACHUSETTS 02109 |
| $(617) 832-1000$ | $(617) 248-7000$ |

APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC：As soon as practicable after the Registration Statement becomes effective．

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933，check the following box．／／

If this Form is filed to register additional securities for an offering pursuant to Rule $462(b)$ under the Securities Act，please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering．／／

If this Form is a post－effective amendment filed pursuant to Rule 462（c） under the Securities Act，check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering．／／

If delivery of the prospectus is expected to be made pursuant to Rule 434， please check the following box．／／

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(a) OF THE SECURITIES ACT OF 1933, AS AMENDED, OR UNTIL THIS REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE SECURITIES AND EXCHANGE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

## CROSS-REFERENCE SHEET SHOWING LOCATION IN PROSPECTUS

 OF INFORMATION REQUIRED BY ITEMS IN PART I OF FORM S-1
## FORM S-1 ITEM NUMBER AND HEADING

1. Forepart of the Registration Statement and Outside Front Cover Page of Prospectus.......................................
2. Inside Front and Outside Back Cover Pages of Prospectus
3. Summary Information, Risk Factors and Ratio of Earnings to Fixed Charges......
4. Use of Proceeds.
5. Determination of Offering Price
6. Dilution
7. Selling Security Holders
8. Plan of Distribution
9. Description of Securities to be Registered.
10. Interests of Named Experts and Counsel....
11. Information with Respect to the Registrant
12. Disclosure of Commission Position on Indemnification for Securities Act Liabilities

## LOCATION IN PROSPECTUS

Outside Front Cover Page of Prospectus
Inside Front Cover Page of Prospectus
Summary; Risk Factors
Summary; Use of Proceeds; Management's Discussion and Analysis of Financial Condition and Results of Operations
Outside Front Cover Page of Prospectus; Underwriting
Dilution
Not Applicable
Outside Front Cover Page of Prospectus; Underwriting

Summary; Capitalization; Description of Capital Stock
Legal Matters; Experts
Outside Front Cover Page of Prospectus; Summary; Risk Factors; Dividend Policy Capitalization; Selected Financial Data; Management's Discussion and Analysis of Financial Condition and Results of Operations; Business; Management; Certain Transactions; Principal Stockholders; Description of Capital Stock; Shares Eligible for Future Sale; Financial Statements

INFORMATION CONTAINED HEREIN IS SUBJECT TO COMPLETION OR AMENDMENT. A REGISTRATION STATEMENT RELATING TO THESE SECURITIES HAS BEEN FILED WITH THE SECURITIES AND EXCHANGE COMMISSION. THESE SECURITIES MAY NOT BE SOLD NOR MAY OFFERS TO BUY BE ACCEPTED PRIOR TO THE TIME THE REGISTRATION STATEMENT BECOMES EFFECTIVE. THIS PROSPECTUS SHALL NOT CONSTITUTE AN OFFER TO SELL OR THE SOLICITATION OF AN OFFER TO BUY NOR SHALL THERE BE ANY SALE OF THESE SECURITIES IN ANY STATE IN WHICH SUCH OFFER, SOLICITATION OR SALE WOULD BE UNLAWFUL PRIOR TO REGISTRATION OR QUALIFICATION UNDER THE SECURITIES LAWS OF ANY SUCH STATE.

SUBJECT TO COMPLETION, DATED JULY 30, 1996

LOGO

LOGO

3,400,000 SHARES

## COMMON STOCK

All of the $3,400,000$ shares of Common Stock offered hereby are being sold by Aware, Inc. ("Aware" or the "Company"). Prior to this offering, there has been no public market for the Common Stock of the Company. It is currently estimated that the initial public offering price of the Common Stock will be between $\$ 10.00$ and $\$ 12.00$ per share. See "Underwriting" for information relating to the method of determining the initial public offering price. DSC Communications Corporation, a customer of the Company, has expressed an interest in purchasing $\$ 2,000,000$ of Common Stock in this offering at the initial public offering price per share. See "Business -- Strategic Relationship and Customers" and "Underwriting."
the common stock offered hereby involves a high degree of risk. SEE "RISK FACTORS" AT PAGE 6.

THESE SECURITIES HAVE NOT BEEN APPROVED OR DISAPPROVED BY THE SECURITIES AND EXCHANGE COMMISSION OR ANY STATE SECURITIES COMMISSION NOR HAS THE SECURITIES AND EXCHANGE COMMISSION OR ANY STATE SECURITIES COMMISSION PASSED UPON THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

|  | PRICE TO PUBLIC | UNDERWRITING DISCOUNTS AND COMMISSIONS | PROCEEDS TO COMPANY (1) |
| :---: | :---: | :---: | :---: |
| Per Share | \$ | \$ | \$ |
| Total(2). | \$ | \$ | \$ |

(1) Before deducting expenses payable by the Company, estimated at $\$ 800,000$.
(2) The Company has granted to the Underwriters a 30-day option to purchase up to an additional 510,000 shares of Common Stock solely to cover over-allotments, if any. See "Underwriting." If such option is exercised in full, the total Price to Public, Underwriting Discounts and Commissions, and Proceeds to Company will be $\$$, \$ and \$ respectively.

The Common Stock is offered by the Underwriters as stated herein, subject to receipt and acceptance by them and subject to their right to reject any order in whole or in part. It is expected that delivery of such shares will be made through the offices of Robertson, Stephens \& Company LLC ("Robertson, Stephens \& Company"), San Francisco, California, on or about , 1996.

## - - ADSL = Asymmetric Digital Subscriber Line

-     - Works over existing twisted-pair copper phone lines
-     - Provides data downstream at up to 8 Mbps and upstream at up to 640 Kbps , depending upon the configuration chosen and the distance of the local loop
-     - Allows for simultaneous data and voice service
[Diagram showing link between telephone company central office and home or business using Aware ADSL Modem]

The Company believes that the ADSL Internet Access Modem provides the highest performance/distance combination available today.

Potential ADSL Applications
[Photograph showing person at computer]
Internet Access
[Photograph showing two persons at computer] Telecommuting
[Diagram showing a local area network] LAN Interconnect
[Photograph showing computer]
Video on Demand

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY OVER-ALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE COMMON STOCK OF THE COMPANY AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

NO DEALER, SALES REPRESENTATIVE OR ANY OTHER PERSON HAS BEEN AUTHORIZED TO GIVE ANY INFORMATION OR TO MAKE ANY REPRESENTATIONS IN CONNECTION WITH THIS OFFERING OTHER THAN THOSE CONTAINED IN THIS PROSPECTUS, AND, IF GIVEN OR MADE, SUCH INFORMATION OR REPRESENTATIONS MUST NOT BE RELIED UPON AS HAVING BEEN AUTHORIZED BY THE COMPANY OR ANY UNDERWRITER. THIS PROSPECTUS DOES NOT CONSTITUTE AN OFFER TO SELL, OR A SOLICITATION OF AN OFFER TO BUY, ANY SECURITIES OTHER THAN THE REGISTERED SECURITIES TO WHICH IT RELATES OR AN OFFER TO, OR A SOLICITATION OF, ANY PERSON IN ANY JURISDICTION WHERE SUCH AN OFFER OR SOLICITATION WOULD BE UNLAWFUL. NEITHER THE DELIVERY OF THIS PROSPECTUS NOR ANY SALE MADE HEREUNDER SHALL, UNDER ANY CIRCUMSTANCES, CREATE ANY IMPLICATION THAT there has been no change in the affairs of the company since the date hereof or THAT THE INFORMATION CONTAINED HEREIN IS CORRECT AS OF ANY TIME SUBSEQUENT TO THE DATE HEREOF.

UNTIL
, 1996 ( 25 DAYS AFTER THE DATE OF THIS PROSPECTUS), ALL DEALERS EFFECTING TRANSACTIONS IN THE COMMON STOCK, WHETHER OR NOT PARTICIPATING IN THIS DISTRIBUTION, MAY BE REQUIRED TO DELIVER A PROSPECTUS. THIS IS IN ADDITION TO THE OBLIGATION OF DEALERS TO DELIVER A PROSPECTUS WHEN ACTING AS UNDERWRITERS AND WITH RESPECT TO THEIR UNSOLD ALLOTMENTS OR SUBSCRIPTIONS.

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The Company intends to distribute to its stockholders annual reports containing financial statements examined by its independent public accounting firm and make available to its stockholders quarterly reports for the first three quarters of each fiscal year containing unaudited financial information.

AccuPress is a registered trademark of the Company. Aware, DWMT, SeisPact, WaveTel HFC and WSQ by Aware are trademarks of the Company. This Prospectus also includes tradenames, trademarks and registered trademarks of other companies.

## SUMMARY

This Prospectus contains certain statements of a forward-looking nature relating to future events or the future financial performance of the Company. Prospective investors are cautioned that such statements are only predictions and that actual events or results may differ materially. In evaluating such statements, prospective investors should specifically consider the various factors identified in this Prospectus, including the matters set forth under the caption "Risk Factors," which could cause actual results to differ materially from those indicated in such forward-looking statements. The following summary is qualified in its entirety by the more detailed information, including "Risk Factors," and Financial Statements and Notes thereto, appearing elsewhere in this Prospectus.

## THE COMPANY

Aware designs, develops and markets telecommunications software, chipsets and modems which incorporate ADSL technology and increase the speed of data communications over conventional copper telephone lines. The Company's products and services are designed to allow telephone companies to utilize their installed bases of dedicated copper lines to provide both residential and business customers with interactive data transmission at speeds much higher than currently available.

The Company's products include software and hardware interfaces that integrate ADSL chipsets into modems and other communications devices, and high speed ADSL Internet Access Modems that incorporate the Company's proprietary technology and software. The Company also develops ADSL chipsets with Analog Devices, Inc. ("ADI"). ADI has an exclusive license to manufacture and sell the chipsets for which the Company receives royalty payments and therefore the Company is substantially dependent on ADI to achieve its business objectives. Several large telcos, including GTE Corporation and BellSouth Corporation, and a number of OEMs that supply telcos, including DSC Communications Corporation and RelTec Corporation, are testing the Company's products. The Company has only recently introduced products incorporating ADSL technology and had approximately $\$ 140,000$ in revenue from the sale of these products as of June 30, 1996.

Telecommunications service providers are experiencing a fundamental shift in the type of communications traffic transmitted over their networks. Existing infrastructures of twisted-pair copper wiring, originally designed to provide analog voice service ("Plain Old Telephone Service" or "POTS"), are increasingly required to carry the data-intensive, digital communications produced by computers. This communications traffic has increased dramatically in recent years with the rapid expansion of computer-based communication on the Internet and elsewhere. Telcos are faced with the challenge of providing high-speed data communications at reasonable costs, while preserving their large existing investments in copper wire networks. Current technologies for high speed data transmission, including ISDN, T-1 or E-1, and HDSL, increase the transmission speed of data over copper lines but share certain limitations, including an inability to accommodate simultaneous data transmission and POTS on the same line. In a typical configuration, the Company's ADSL Internet Access Modem, which uses digital signal processing to expand the useable bandwidth of copper telephone wire, allows transmission of data at a distance of 12,000 feet at a rate of 4.4 Mbps downstream to the customer and 440 Kbps upstream from the customer while allowing simultaneous POTS on the same telephone line.

Aware designs and develops products that incorporate proprietary software and algorithms based on digital signal processing technology as well as ASICs. In contrast to the approach taken by some competing developers of ADSL technology, Aware's approach is to maintain a high level of functionality in the software component of the product as opposed to the ASIC. The Company believes that this approach allows it to engineer improvements in its technology quickly and efficiently, rather than having to design and produce a new ASIC each time an improvement is made.

Aware was incorporated in Massachusetts in 1986. The Company's executive offices are located at One Oak Park, Bedford, Massachusetts 01730 and its telephone number is (617) 276-4000.


## SUMMARY FINANCIAL DATA <br> (In thousands, except per share data)

|  | YEAR EN | DED DECEMB | R 31, | $\begin{aligned} & \text { THREE } \\ & \text { ENDED } \end{aligned}$ | $\begin{aligned} & \text { THS } \\ & \text { H 31, } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1993 | 1994 | 1995 | 1995 | 1996 |
| STATEMENT OF OPERATIONS DATA: |  |  |  |  |  |
| Total revenue. | \$ 3,172 | \$ 3,827 | \$ 3,260 | \$ 950 | \$ 962 |
| Income (loss) from operations | $(1,028)$ | $(1,095)$ | (454) | (116) | 18 |
| Net income (loss) | (992) | $(1,012)$ | (343) | (87) | 41 |
| Pro forma net income (loss) per common share(2) |  |  | \$ (0.17) | \$(0.04) | \$0.00 |
| Pro forma weighted average number of common shares outstanding(2). |  |  | 2,045 | 2,032 | 15,109 |


| Cash and cash equivalents. | \$2,047 | \$ 36,029 |
| :---: | :---: | :---: |
| Working capital. | 2,617 | 36,599 |
| Total assets. | 3,351 | 37,333 |
| Total liabilities | 382 | 382 |
| Total stockholders' equity | 2,969 | 36,951 |

(1) Based on shares outstanding at June 30, 1996 and excludes (i) $3,175,158$ shares of Common Stock issuable upon exercise of options outstanding under the Company's stock option plans at a weighted average exercise price of $\$ 4.48$ per share, (ii) $1,642,287$ shares of Common Stock reserved for future issuance pursuant to such plans and (iii) 100,000 shares of Common Stock reserved for future issuance pursuant to the Company's employee stock purchase plan.
(2) See Note 1 of Notes to Financial Statements for an explanation of the method of calculation of the pro forma weighted average number of common shares outstanding.
(3) Adjusted to reflect the sale of $3,400,000$ shares of Common Stock offered hereby at an assumed initial public offering price of $\$ 11.00$ per share and the application of the net proceeds therefrom. Does not reflect the receipt subsequent to March 31, 1996 of aggregate consideration of approximately $\$ 1.0$ million from the exercise of options to purchase an aggregate of $1,019,252$ shares of Common Stock.

Unless otherwise indicated, all information contained in this Prospectus assumes (i) no exercise of the Underwriters' over-allotment option and (ii) the conversion of all outstanding shares of Preferred Stock of the Company into Common Stock on or before the closing of this offering. See "Description of Capital Stock" and "Underwriting."

In addition to the other information in this Prospectus, the following risk factors should be considered carefully in evaluating the Company's business before purchasing shares of the Common Stock offered hereby.

HISTORY OF OPERATING LOSSES; ACCUMULATED DEFICIT

The Company has incurred net losses in every fiscal year since inception. In fiscal 1993, 1994 and 1995, the Company sustained net losses of approximately $\$ 992,000, \$ 1,012,000$ and $\$ 343,000$, respectively and had total revenue in each of those years of $\$ 3.2$ million, $\$ 3.8$ million and $\$ 3.3$ million, respectively. At March 31, 1996, the Company had an accumulated deficit of approximately $\$ 10.5$ million and stockholders' equity of approximately $\$ 3.0$ million. Since inception, the Company has made significant expenditures for research and development. Substantial additional research and development expenses to enhance the performance and reduce the manufacturing costs of the Company's products will be required before market acceptance can be determined. In addition, significant expenditures will be necessary to develop, market and sell the Company's ADSL products. As a result, the Company may continue to incur losses in the future. There can be no assurance that the Company will achieve profitable operations in any future period. See "Management's Discussion and Analysis of Financial Condition and Results of Operations."

## dependence on acceptance of adsl technology

The Company's future success, financial condition and results of operations are substantially dependent upon whether Asymmetric Digital Subscriber Line ("ADSL") technology, a new technology that increases the efficiency of digital transmission over copper wire, gains widespread commercial acceptance by telephone companies ("telcos") and end users of telco services. The Company has invested substantial resources in the development of ADSL technology implemented through the Discrete Multi-Tone ("DMT") modulation technique and expects for the foreseeable future to invest substantial resources in the development, marketing and sale of products incorporating such technology. Because telcos have only recently begun to consider implementing DMT-based ADSL technology in their networks, the market for products using DMT-based ADSL technology has not yet developed. Many factors may delay or preclude the development of such a market, including the existence of other technologies that increase the efficiency of digital transmission over copper wire, such as ADSL technology implemented through the Carrierless Amplitude Phase ("CAP") modulation technique, Integrated Service Digital Network ("ISDN"), T-1 and High bit-rate Digital Subscriber Line ("HDSL"), as well as technologies that increase digital transmission speeds over other media, such as hybrid fiber coaxial cable ("HFC"), coaxial cable, fiber optic cable, digital broadcast satellite and other wireless technologies. Many of these competing technologies, including CAP-based ADSL technology, are already available and may soon gain widespread commercial acceptance, a result which could materially limit acceptance of DMT-based ADSL technology. Moreover, many telcos have adopted policies that favor the deployment of fiber optic technologies. The failure of DMT-based ADSL technology to gain widespread commercial acceptance by telcos and end users of telco services would have a material adverse effect on the Company's business, financial condition and results of operations. See "Business -- Last Mile Technology."

In order to achieve widespread commercial acceptance, DMT-based ADSL technology must first undergo the rigorous approval processes that telcos impose on new products before deploying them on a broad basis. The approval process usually involves a number of different phases, including (i) laboratory evaluation, in which the product is tested against relevant industry standards; (ii) technical trials, in which the product is tested in the field with a small number of users; (iii) marketing trials, in which the product is tested in the field with a larger number of users and telcos begin to train their personnel to install and maintain the product; (iv) initial commercial deployment, in which telcos make the product available to selected customers for selected applications; and (v) full commercial deployment, in which telcos make the product available to a substantial
number of customers. See "Business -- ADSL Evaluations and Trials." To date, telcos have deployed ADSL systems primarily for technical trials and have begun very limited marketing trials and commercial deployment of ADSL systems. Although certain of the Company's products have been selected for participation in such technical trials, the Company is unable to predict when such trials will be concluded, whether such trials will be successful or whether the Company's products will be reviewed favorably by the telcos. As of June 30, 1996, revenue from the sale of the Company's ADSL Internet Access Modem was approximately $\$ 140,000$, substantially all of which was derived in the three months ended June 30, 1996. The Company's revenue from the ADSL market has been derived principally from research and development payments and prepaid royalties relating to potential future sales of its ADSL products. There can be no assurance that telcos will pursue the deployment of ADSL systems of the type sold by the Company or that, if deployment occurs, telcos or others will purchase the Company's ADSL products in quantities and at a rate sufficient for the Company to operate profitably.

## RELIANCE ON TELCOS

The Company's future success, financial condition and results of operations will depend to a significant degree upon purchasing decisions by telcos and other prospective customers of the Company and its current and future OEMs. All of these customers have significantly greater resources than the Company, and the Company has little, if any, ability to influence or control decisions made by these customers. Before purchasing products such as those of the Company, telcos subject such products to lengthy approval processes, which can take several years or more for complex products based on new technologies such as ADSL. The Company expects to be required to submit each successive generation of its products as well as new products to its customers for approval. The length f the approval process will depend upon a number of factors, including the complexity of the product involved, priorities of telcos, telcos' budgets and regulatory issues affecting telcos. Moreover, the need for approval from the Federal Communications Commission (the "FCC") for certain new telco services prior to their implementation may delay the approval process. Any such delay would have a material adverse effect on the Company's business, financial condition and results of operations.

Historically, telcos have been cautious in implementing new technologies Telcos' deployment of ADSL technology may be prevented or delayed by a number of factors, including telcos' lengthy product approval and purchase processes; cost; regulatory barriers that may prevent or restrict telcos from providing interactive multimedia services; the lack of demand for Internet access and other interactive multimedia services; the lack of sufficient programming content for interactive multimedia services; the availability of alternative technologies, such as CAP-based ADSL, ISDN, HFC, coaxial cable, fiber optic cable and wireless technologies; and telcos' policies that favor the use of such alternative technologies over ADSL technology. Moreover, certain competing technologies, such as HFC, coaxial cable, fiber optic cable and certain wireless technologies, have greater transmission speeds than that of the ADSL products being developed by the Company. In addition, telcos are generally reluctant to deploy new technologies available only from a single source, especially when the supplier is as small as the Company, and often require alternative sources before deploying a new technology. This reluctance may put the Company at a competitive disadvantage relative to some of its competitors. Even if telcos adopt policies favoring full-scale implementation of ADSL technology, there can be no assurance that sales of the Company's ADSL products will become significant or that the Company will be able successfully to introduce its ADSL products on a timely basis or to sell those products in material quantities. The failure of telcos to deploy the Company's ADSL systems would have a material adverse effect on the Company's business, financial condition and results of operations. Even if demand for the Company's products is high, telcos may have sufficient bargaining power to demand low prices and other terms and conditions which may have a material adverse effect on the Company's business, financial condition and results of operations. See "Business -- Last Mile Technology."

The Company is substantially dependent on Analog Devices, Inc. ("ADI") and will not achieve its business objectives without the support and cooperation of ADI. In September 1993, the Company and ADI entered into an agreement to develop an integrated ADSL chipset that is based on system designs, algorithms and software developed by the Company and that incorporates application specific integrated circuits ("ASICs") and digital signal processors developed by ADI (the "ADSL Chipset"). In connection with this development agreement, the Company granted ADI a perpetual, worldwide, exclusive license to make, use and sell ADSL Chipsets and other products that incorporate the Company's proprietary ADSL software. In June 1994 and September 1995, the Company entered into similar arrangements with ADI with respect to certain other technology, including HFC and Very high speed Digital Subscriber Line ("VDSL"). The Company has also agreed that, if it develops and sells ADSL technology that implements the Company's Discrete Wavelet Multi-Tone ("DWMT") transform technology, it would license such technology to ADI on substantially the same terms as those for the Company's ADSL technology. Accordingly, the Company is entirely dependent on ADI for the manufacture and sale of chipsets based on the Company's ADSL, HFC and VDSL technology. The inability or refusal of ADI to manufacture, market and sell such chipsets in substantial quantities would prevent telcos from adopting the Company's technology and would have a material adverse effect on the Company's business, financial condition and results of operations. ADI is not obligated to manufacture, market or sell any chipsets that incorporate the Company's technology, and accordingly, there can be no assurance that ADI will continue to manufacture, market or sell such chipsets. Even if the Company were permitted to license its technology to other parties, the Company has agreed that it will not grant licenses to other parties under terms more favorable than those given to ADI. Because of the limited period during which ADI has manufactured the ADSL Chipset, the Company has not had sufficient opportunity to evaluate ADI's responsiveness or performance or the extent to which manufacturing problems may be encountered. In the past, ADI has experienced certain delays associated with the manufacture of the ADSL Chipsets. On occasion, such delays have been substantial. There can be no assurance that ADI will succeed in producing ADSL Chipsets that satisfy the Company's quality requirements on a timely basis, if at all. Any failure by ADI to produce ADSL Chipsets of a quality and a quantity to meet demand may have a material adverse effect on the Company's business, financial condition and results of operations. In the event of such a failure, there can be no assurance that the Company would be able to find a substitute manufacturer for ADSL Chipsets or that, if a substitute is found, shifting production to such substitute would not involve significant delays, start-up costs and other unforeseeable difficulties, the occurrence of any of which would have a material adverse effect on the Company's business, financial condition and results of operations. In 1993, 1994, 1995 and the three months ended March 31, 1996, the Company derived approximately $12 \%, 10 \%, 23 \%$ and $8 \%$, respectively, of its total revenue from ADI. The Company has agreed with ADI that if ADI can show that the royalty paid to the Company does not allow ADI to compete in the marketplace, the Company will engage in good faith negotiations to reduce the royalty. Any such reduction could have a material adverse effect on the Company's business, financial condition and results of operations. The Company has also agreed with ADI that if the Company's HFC or VDSL technology becomes an industry standard, the Company will license such technology on fair, equitable and nondiscriminatory terms. See "Business -- Relationship with ADI."

PROPRIETARY TECHNOLOGY; RISK OF THIRD-PARTY CLAIMS OF INFRINGEMENT

The Company's ability to compete effectively will depend to a significant extent on its ability to protect its proprietary information and to operate without infringing the intellectual property rights of others. Although the Company regards its technology as proprietary and has a number of patents and pending patent applications, none of such issued patents relates to technology embodied in the Company's current ADSL products. The Company relies on a combination of trade secrets, copyright and trademark law and nondisclosure agreements to protect its unpatented proprietary know-how. Despite these precautions, it may be possible for a third party to copy or otherwise obtain and use the Company's technology or products without authorization. Although the Company intends to defend its
intellectual property, there can be no assurance that the steps taken by the Company to protect its proprietary information will be adequate to prevent misappropriation of its technology. Moreover, there can be no assurance that the Company's competitors will not independently develop technologies substantially equivalent or superior to the Company's technology or that such competitive technology will not have a material adverse effect on the Company's business, financial condition and results of operations. In addition, many participants in the telecommunications industry have an increasing number of patents and have frequently demonstrated a readiness to commence litigation based on allegations of patent and other intellectual property infringement. Third parties may assert exclusive patent, copyright and other intellectual property rights to technologies that are important to the Company. The Company has received letters from two companies, Amati Communications Corporation ("Amati") and Telebit Corporation ("Telebit"), each asserting that it owns certain U.S. and foreign patents that are necessary for products that comply with the American National Standards Institute ("ANSI") standard for ADSL, claiming that the Company's ADSL technology would infringe such patents, and offering the Company the opportunity to enter into a license agreement with respect to such patents. The Company has been informed that ADI has received similar letters. The Company has reviewed the Amati and Telebit patents and has received an opinion of its patent counsel, Cesari and McKenna, based upon the Company's oral description of its technology, to the effect that the Company's ADSL Internet Access Modem which it intends to sell does not infringe any valid claim of any of the Amati and Telebit patents. Based upon this opinion, the Company believes that it does not require a license under the Amati or Telebit patents in order to conduct its proposed business.

Despite this opinion, there can be no assurance that a court to which the issue is submitted would not find that the Company's products infringe the Amati or Telebit patents, nor that Amati or Telebit will not continue to assert infringement. If the Company is found to have infringed any of such patents, the Company could be subject to substantial damages and/or an injunction preventing it from conducting its proposed business, and the Company's business could be materially and adversely affected. The Company has also received notice from Amati of the pendency of various patent applications which Amati considers to be pertinent to the design and operation of ADSL modems. Unless and until a patent actually issues, there can be no infringement, and the Company has not examined any such patent applications or received an opinion of patent counsel with respect thereto. Although Amati and Telebit have offered to license their patents and their patent applications to the Company, there can be no assurance that any license would be available on acceptable terms should the Company choose to pursue such license or be found to infringe such patents. In addition, there can be no assurance that other third parties will not assert infringement claims against the Company in the future, that these assertions or those of Amati and Telebit, will not result in protracted and costly litigation, or that the Company would prevail in any such litigation or be able to license any valid patents from third parties on commercially reasonable terms. Further, such litigation, regardless of its outcome, could result in substantial costs to and diversion of effort by the Company. Litigation may also be necessary to enforce the Company's intellectual property rights. Any infringement claim or other litigation against or by the Company could have a material adverse effect on the Company's business, financial condition and results of operations. See "Business -- Intellectual Property."

## RAPID TECHNOLOGICAL CHANGE; DEPENDENCE ON NEW PRODUCTS

The markets for the Company's products are characterized by rapid technological advances, evolving industry standards, changes in end-user equirements, frequent new product introductions and enhancements, and evolving telco service offerings, all of which are outside the control of the Company. If technologies or standards applicable to the Company's products or telco services based on the Company's products become obsolete or fail to gain widespread commercial acceptance, the Company's business, financial condition and results of operations will be materially adversely affected. Moreover, the introduction of products embodying new technology, the emergence of new industry standards or changes in telco services could render the Company's existing products, as well as products under development, obsolete and unmarketable. ANSI, an organization that establishes certain industry standards for the markets in which the Company competes, has not yet established
standards for certain of the Company's existing products and products under development. There can be no assurance that, upon ANSI's adoption of any new industry standard, the Company's products will comply with such standard, that the Company will not encounter substantial financial, technological and other obstacles in modifying its existing products or developing new products to comply with such standard, or that the Company will be able to obtain rights necessary to comply with such standard on commercially acceptable terms. The failure of the Company's products to comply with any industry standard may have a material adverse effect on the market acceptance of such products and on the Company's business, financial condition and results of operations. The Company's future success will also depend upon its ability to enhance its existing products, to develop new products that address the increasingly sophisticated needs of its customers and to respond to technological advances and emerging industry standards and practices. Although certain of the Company's ADSL products are presently being tested by certain of its customers, these products are not being generally distributed at this time. There can be no assurance that the Company will be successful in developing, introducing and marketing new versions of its existing products or any product enhancements or new products, or will not experience difficulties that could delay or prevent the successful development, introduction or marketing of these products, or that its new products and product enhancements will adequately address the needs of the marketplace and achieve market acceptance. Delays in the introduction of new products and enhancements will result in customer dissatisfaction and delay or loss of revenues. Any inability of the Company to develop and introduce new products or enhancements of existing products in a timely manner in response to changing market conditions or customer requirements will have a material adverse effect on the Company's business, financial condition and results of operations. See "Business -- Telecommunications Products."

## RISKS ASSOCIATED WITH MANAGING A CHANGING BUSINESS

In order to achieve its business objectives, the Company must undergo substantial changes in its operations to transition from a company primarily involved in sponsored research and development to a company which develops, manufactures, markets, and supports products and services for the commercial telecommunications marketplace. These changes have placed, and are expected to continue to place, a significant strain on the Company's limited administrative, operational and financial resources. The Company has only recently begun the process of developing the management and operational capabilities and financial and accounting systems and controls necessary for this transition. For example, the Company hired its current Chief Financial Officer, Richard P. Moberg, on June 14, 1996. From January 1995 to June 1996, the Company did not have a Chief Financial Officer and had a financial and accounting staff consisting of a single individual. The Company believes that, without additional personnel and other resources, its financial and accounting systems and controls will not be adequate to conduct the commercial telecommunications business which the Company proposes to conduct. Mr. Moberg will be responsible for hiring sufficient accounting personnel and establishing financial and accounting systems and controls adequate to conduct the Company's proposed business as described in this Prospectus. There can be no assurance that the Company will be successful in achieving these objectives. Similarly, the head of the Company's manufacturing operations joined the Company in May 1996 , and is responsible for building a manufacturing capability within the Company. The ability of the Company to achieve its business objectives will depend in large part on its ability to build effective financial and accounting systems, to build or subcontract efficient manufacturing operations, to generally improve and expand its operational and sales and marketing capabilities and its financial and management information systems, to develop the management skills of its managers and supervisors, and to train, motivate and manage both its existing employees and the additional employees that will be required if the Company is to achieve its business objectives. There can be no assurance that the Company will succeed in developing all or any of these capabilities, and any failure to do so would have a material adverse effect on the Company's business, financial condition and results of operations. See "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Management."

A significant portion of the Company's senior management team has been in place for only a relatively short period of time. James C. Bender, David C Hunter and Richard P. Moberg, the Company's President and Chief Executive Officer, Senior Vice President, Product Development, and Treasurer and Chief Financial Officer, respectively, joined the Company in October 1994, May 1996 and June 1996, respectively. Accordingly, each of these individuals has been involved with only the most recent operating activity of the company. The Company's success will depend to a significant extent on the ability of its new executive officers to integrate themselves into the Company's daily operations, to gain the trust and confidence of the Company's other employees and to work effectively as a team. The Company's future success will also depend to a significant extent on its executive officers, including Mr. Bender and Michael A. Tzannes, Ph.D., its Senior Vice President, Telecommunications, and other technical, managerial and marketing personnel. The loss of the services of any of these individuals would have a material adverse effect on the Company's business, financial condition and results of operations. The Company does not currently have employment agreements with any of its key employees other than Mr. Bender. The Company does not have, and is not contemplating securing, key man life insurance on any of its executive officers or other key personnel. There can be no assurance that any of these individuals or any other key employee will not voluntarily terminate his or her employment with the Company. The Company believes that its future success will also depend significantly on its ability to attract, motivate and retain additional highly skilled technical, managerial and marketing personnel. Competition for such personnel is intense, and there can be no assurance that the Company will be successful in attracting assimilating and retaining the personnel required to grow and operate profitably. See "Business -- Employees," "Management -- Executive Officers and Directors" and "-- Employment Agreement."

## DEPENDENCE ON DISTRIBUTION AND MARKETING RELATIONSHIPS

Until recently, the Company was primarily engaged in research and development and, accordingly, did not devote substantial resources to marketing and sales. At June 30, 1996, the Company's sales force was comprised of six employees. Consequently, the Company is, and for the foreseeable future will continue to be, substantially dependent on other companies for the marketing, sale and distribution of the Company's products. The Company is currently negotiating OEM and other agreements with a number of such companies and expects that these agreements will be nonexclusive and that many of the companies with which the Company is negotiating will have similar agreements with its competitors or potential competitors. The Company believes that its success in penetrating markets for its ADSL telecommunications products will depend to a significant degree on its ability to establish these relationships and to cultivate additional relationships. There can be no assurance that the Company's future distributors and OEM partners, most of which will have significantly greater financial and marketing resources than the Company, will not develop and market products in competition with the Company or form additional competing arrangements with the Company's competitors. See "Business -- Strategic Relationships and Customers," "-- Sales and Marketing " and "-- Competition."

## COMPETITION

The markets for the Company's products are intensely competitive and the Company expects competition to increase in the immediate future, especially in the emerging ADSL market. The Company intends to compete on the basis of technology, price, the timing of product delivery, product features, quality, reliability and customer satisfaction. The Company currently competes, or expects to compete in the future, with the following categories of companies: (i) other vendors of DMT-based ADSL technology, such as Amati and Orckit Communications Limited; (ii) vendors of alternative ADSL technologies, such as AT\&T Paradyne Corp., which is currently marketing its CAP-based ADSL technology; (iii) the Regional Bell Operating Companies ("RBOCs"), which as a result of the Telecommunications Act of 1996 are no longer prohibited from manufacturing telecommunications
equipment; and (iv) OEMs and other systems integrators, such as U.S. Robotics Corporation, Ericsson, Inc., Motorola, Inc. and Alcatel Network Systems, Inc

In the HFC market, the Company is attempting to sell its products to system ntegrators such as Tellabs, Inc., Northern Telecom Ltd., Scientific-Atlanta Inc. and General Instrument Corporation. The Company believes that these companies have developed or are developing proprietary modulation schemes using in-house technology that may be competitive with the Company's technology. Although the Company believes that its DWMT technology will offer more robust communications than these proprietary modulation schemes, the company has not manufactured any marketable products based on its DWMT technology and there can be no assurance that the Company will be able to do so or that a market for such products will develop. The markets for the Company's wavelet image compression technology are competitive, and are expected to become increasingly so in the near future. In addition, the Company's WSQ product is an implementation of an open standard and is therefore subject to competition.

Many of the Company's competitors and potential competitors, including AT\&T Paradyne Corp. and the RBOCs, have significantly greater financial, technological, manufacturing, marketing and personnel resources than the Company. There can be no assurance that the Company will be able to compete successfully or that competition will not have a material adverse effect on the Company's business, financial condition and results of operations. See "Business -- Competition."

## DEPENDENCE ON LIMITED NUMBER OF CUSTOMERS

The Company expects to derive a substantial portion of its revenues through OEMs from the RBOCs and other telcos, both of which are relatively few in number. Consequently, the Company's future success will depend to a large extent upon the timing and size of future purchase orders for the Company's products from the RBOCs, the financial and operating success of the RBOCs, and the success of the RBOCs' services that use the Company's products. Any attempt by the Company's OEMs or by an RBOC or other telco to seek out additional or alternative suppliers or to undertake the internal development and sale of products comparable to those of the Company could have a material adverse effect on the Company's business, financial condition and results of operations. The Company derived approximately $23 \%, 18 \%, 12 \%$ and $10 \%$ of its total revenue in 1995 from ADI, General Instrument Corporation, the United States government and GSS/Array Technology, respectively, and derived approximately $38 \%$ and $10 \%$ of its total revenue in 1994 from the United States government and ADI, respectively. These revenues consisted of contract and consulting fees from technology development agreements and government research contracts. See "Management's Discussion and Analysis of Financial Condition and Results of Operations."

## MANUFACTURING RISKS

The Company has limited experience in manufacturing or in supervising the manufacture of its products, including its ADSL Internet Access Modem. To date, the Company has manufactured only extremely limited quantities of a technical evaluation model of its ADSL Internet Access Modem and has shipped such models to a limited number of customers for technical trials. As a result of the Company's limited manufacturing capabilities, the Company has encountered capacity constraints and has been unable to supply all orders for the technical evaluation model, which was designed solely to demonstrate technological feasibility and will not be suitable for mass production without additional redesign to reduce the power requirements, size and cost of the model. The Company relies, and expects to continue to rely, on ADI for the manufacture of chipsets incorporating the Company's ADSL technology. In order to meet any demand for its ADSL Internet Access Modem and other board and system level products, the Company may be required to manage successfully and in a relatively short period the transition to high volume manufacturing, including the establishment of adequate facilities, the control of overhead expenses and inventories and the management and training of its employee base. There can be no assurance that the Company will be successful in these respects, that the Company will not encounter significant difficulties in manufacturing or controlling the quality of
its products, or that its products will be reliable in the field. The Company may use a portion of the proceeds of this offering to acquire and equip manufacturing facilities. If such expansion is required and cannot be
implemented in a timely manner, the Company may experience capacity constraints that may cause production and shipping delays. Any such constraints or delays could have a material adverse effect on the Company's business, financial condition and results of operations. Alternatively, the Company may continue to subcontract its manufacturing operations to independent third party manufacturers and may become substantially dependent on them. There are additional risks associated with the use of independent manufacturers, including the lack of availability of or delays in obtaining adequate supplies of products and reduced control of manufacturing quality and production costs. There can be no assurance that the Company's third-party manufacturers will provide adequate supplies of quality products on a timely basis. The inability to obtain such products on a timely basis would have a material adverse effect on the Company's business, financial condition, and results of operations. See
"Business -- Manufacturing."

## DEPENDENCE ON SOLE OR LIMITED SOURCE SUPPLIERS

Certain key components used in the Company's ADSL Internet Access Modem such as the ADSL Chipset and ADI's digital signal processors, are currently available from only one source or a limited number of suppliers. There can be no assurance that the Company will be able to obtain sufficient quantities of ADSL Chipsets or other electronic components as required, or that such components, if obtained, will be available to the Company on commercially reasonable terms. In addition, the Company anticipates that the production capacity for ADSL Chipsets and the availability of certain other electronic components from its suppliers may be insufficient to meet demand in the future. ADSL Chipsets and other electronic components are fundamental to the Company's business strategy of developing new and succeeding generations of products at reduced unit costs without compromising functionality. There can be no assurance that delays in product deliveries will not occur in the future due to shortages resulting from the limited number of suppliers, the financial or other difficulties of such suppliers, or the possible limitations in production capacity or component availability because of significant worldwide demand for those components. The inability to obtain sufficient key components or to develop alternative sources for such components, if and as required in the future, could limit or delay product shipments, which in turn could have a material adverse effect on the Company's customer relationships and its business, financial condition and results of operations. See "Business -- Telecommunications Products."

## CAPITAL REQUIREMENTS

Expansion of the Company's business, including the development and marketing of its ADSL products, will require significant additional expenditures for research and development, capital equipment and working capital. The Company has experienced extended periods during which cash flows from operations were negative, and there can be no assurance that the Company will not have negative cash flows from operations in the future. The Company expects that the net proceeds from this offering and its current cash balances will be sufficient to fund its operations for at least the next twelve months. The Company's capital requirements will depend on many factors, including the progress of its research and development efforts, the receipt of software license fees and other product revenue, the timely acceptance of its ADSL technology, the need to devote resources to manufacturing operations, and the demand for the Company's products. There can be no assurance that the Company will not need to raise additional funds through public or private financings or that, if needed, such funds will be available on acceptable terms. If adequate funds are not available, the Company may be required to delay, scale back or eliminate one or more of its research and development or manufacturing programs or to obtain funds through arrangements that may require the Company to relinquish rights to certain of its technologies or potential products or other assets that the Company would not otherwise relinquish. The inability of the Company to raise needed funds would have a material adverse effect on the Company's business, financial condition and results of operations. See "Management's Discussion and Analysis of Financial Condition and Results of Operations -- Liquidity and Capital Resources."

## FLUCTUATIONS IN QUARTERLY RESULTS; LACK OF BACKLOG

The Company has experienced, and expects to continue to experience, significant fluctuations in its quarterly results of operations. Factors that have contributed or may contribute to future fluctuations in the Company's quarterly results of operations include the size and timing of customer orders and subsequent shipments, customer order deferrals in anticipation of new products, timing of product introductions or enhancements by the Company or its competitors, market acceptance of new products, technological changes in the telecommunications industry, competitive pricing pressures, accuracy of customer forecasts of end-user demand, changes in the Company's operating expenses, personnel changes, changes in the mix of product sales and contract and consulting fees, quality control of products sold, disruption in sources of supply, regulatory changes, capital spending, delays of payments by customers and general economic conditions. The timing and volume of customer orders are difficult to forecast. The Company does not have a material backlog of orders for its products.

The Company intends to continue to make significant ongoing research and development expenditures for new products and technologies, which may have a material adverse effect on the Company's quarterly results of operations. The Company's expense levels are based in part on expectations of future revenues and are relatively fixed in the short term. The Company intends to increase operating expenditures as the Company expands its operations to develop and market the ADSL Internet Access Modem and other products based upon ADSL technology. Consequently, a shortfall in quarterly revenues due to a lack of sales of ADSL products or otherwise would adversely impact the Company's business, financial condition and results of operations in a given quarter due to the Company's inability to adjust expenses or inventory to match revenues for that quarter. In addition, there can be no assurance that, as the Company increases sales of ADSL products, warranty returns will not become significant or that warranty returns, if significant, will not have a material adverse effect on the Company's business, financial condition and results of operations. See "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business -- Telecommunications Products."

## GOVERNMENT REGULATION

Although the extensive regulation of telcos by Federal, state and foreign regulatory agencies, including the FCC and various state public utility and service commissions, does not directly affect the Company, the effects of such regulation on the Company's customers may have a material adverse effect on the Company's business, financial condition and results of operations. For example, FCC regulatory policies affecting the availability of telco services, and other terms on which telcos conduct their business, may impede the Company's penetration of certain markets. Although the Telecommunications Act of 1996 eliminated or modified many FCC restrictions on telcos' ability to provide interactive multimedia services, the remaining or any future restrictions may have a material adverse effect on telcos' demand for products based upon ADSL technology. Cable operators, which may become another market for the Company's products, are also subject to extensive governmental regulations that may discourage them from deploying the Company's HFC technology. In addition, rates for telecommunications services are generally governed by tariffs of licensed carriers that are subject to regulatory approval. These tariffs could have a material adverse effect on the demand for the Company's products. The imposition of certain tariffs, duties and other import restrictions on components which the Company intends to obtain from non-domestic suppliers, the imposition of export restrictions on products which the Company intends to sell internationally or other changes in laws or regulations in the United States or elsewhere could also have a material adverse effect on the Company's business, financial condition and results of operations. See "Business -- Government Regulation."

## POTENTIAL PRODUCT LIABILITIES

One or more of the Company's products may contain undetected component, hardware, software or mechanical defects or failures when first introduced or may develop defects or failures after
commencement of commercial production or shipments. Any such defects or failures could cause loss of goodwill, if any, with distributors and with customers, prevent or delay market acceptance of the company's products, result in cancellations or rescheduling of orders or shipments or product recalls or returns and expose the company to claims from customers. The Company could also incur unexpected and significant costs, including product redesign costs and costs associated with customer support. The Company expects to sell its products with a limited warranty against defects in materials and workmanship. If any of the Company's products are found within the warranty period to contain such defects, the Company could be required to repair or replace the defective products or refund the purchase price. The occurrence of any such defect or failure could have a material adverse effect on the Company's business, financial condition and results of operations. The Company does not maintain insurance to protect against claims associated with the use of its products and there can be no assurance that the Company will be able to satisfy claims that may be asserted against the Company.

## CONTROL BY EXISTING STOCKHOLDERS

Upon completion of this offering, the Company's directors and officers will beneficially own approximately $24.1 \%$ of the Company's outstanding Common Stock. As a result, these stockholders, if acting together, will have the ability to influence the election of the Company's directors and the outcome of corporate actions requiring stockholder approval. See "Management" and "Principal Stockholders."

## BROAD MANAGEMENT DISCRETION IN USE OF PROCEEDS

The Company intends to use the net proceeds of this offering for working capital and general corporate purposes, including possible acquisitions of businesses, technologies or products. Accordingly, the Company will have broad discretion in the application of such net proceeds. Purchasers of Common Stock in this offering will not have the opportunity to evaluate the economic, financial or other information which the Company will use to determine the application of such proceeds. See "Use of Proceeds."

## NO PRIOR PUBLIC MARKET; POSSIBLE VOLATILITY OF STOCK PRICE

Prior to this offering, there has been no public market for the Common Stock. There can be no assurance that an active public market for the Common Stock will develop or be sustained after the offering. The initial public offering price will be determined by negotiations between the Company and the representatives of the Underwriters based upon several factors and may not be indicative of future market prices. The market price of the Common Stock could be subject to wide fluctuations in response to the announcement of operating results below those of financial analysts' projections, changes in such projections, quarterly variations in operating results, announcements of technological innovations or new products by the Company or its competitors, trends or changes in the telecommunications industry, and other events or factors. In addition, the stock market has experienced extreme price and volume fluctuations that have particularly affected the market prices for many high technology companies. This market volatility has had a substantial effect on the market prices of securities issued by companies for reasons unrelated to the operating performance of such companies. These broad market fluctuations may have a material adverse effect on the market price of the Common Stock. See "Underwriting."

SHARES ELIGIBLE FOR FUTURE SALE

Sales of substantial amounts of shares in the public market or the prospect of such sales could adversely affect the market price of the Company's Common Stock. The number of shares of Common Stock available for sale in the public market is limited by restrictions under the Securities Act of 1933, as amended (the "Securities Act"), and lock-up agreements under which the holders of $13,657,310$ shares of Common Stock have agreed that they will not, directly or indirectly, without the prior written consent of Robertson, Stephens \& Company LLC, sell, offer, contract to sell, pledge, grant any option to purchase or otherwise dispose of any shares of Common Stock or any securities convertible into or exchangeable for, or any rights to purchase or acquire, shares of Common Stock beneficially
owned by them for a period of 180 days from the effective date of the registration statement of which this Prospectus forms a part (the "Effective Date"). In its sole discretion and at any time without notice, Robertson, Stephens \& Company LLC may release all or any portion of the securities subject to lock-up agreements. Robertson, Stephens \& Company LLC has no present intention to release any of the securities from the lock-up agreements. It has been the practice of Robertson, Stephens \& Company LLC to consider releasing securities from the lock-up agreements based on a variety of factors, including the market price of the Common Stock, the volume of shares traded and other market conditions. To the extent any of the securities are released from the lock-up agreements, it could have an adverse effect on the market price of the Common Stock. As a result of these restrictions, based on the shares outstanding as of June 30, 1996, the following shares of Common Stock will be eligible for future sale: the 3,400,000 shares offered hereby will be eligible for immediate sale without restriction in the public market; 360,158 shares will be eligible for immediate sale on the Effective Date under Rule 144(k) promulgated under the Securities Act; an additional 969,609 shares will first become eligible for sale 90 days after the Effective Date under Rule 144 or Rule 701 promulgated under the Securities Act; and an additional 13,538,968 shares will first become eligible for sale 180 days after the Effective Date. In addition, 90 days after the Effective Date, the Company intends to register 5,774,715 shares issued or reserved for issuance under its stock option plans and 100,000 shares reserved for issuance under its employee stock purchase plan. As of June 30, 1996, options to purchase a total of $3,175,158$ shares were outstanding under the Company's stock option plans and no shares were outstanding under the Company's employee stock purchase plan. See "Management -- Stock Option Plans," "-- 1996 Employee Stock Purchase Plan" and "Shares Eligible for Future Sale."

## EFFECT OF CERTAIN CHARTER AND BY-LAW PROVISIONS AND ANTI-TAKEOVER PROVISIONS

 POSSIBLE ISSUANCES OF PREFERRED STOCKThe Company's Articles of Organization, its By-Laws and certain Massachusetts laws contain provisions that may discourage acquisition bids for the Company and that may reduce temporary fluctuations in the trading price of the Company's Common Stock which may be caused by accumulations of stock, thereby depriving stockholders of certain opportunities to sell their stock at temporarily higher prices. The Company's Articles of Organization provide for a classified Board of Directors and directors who are so classified may be removed by the stockholders only for cause. The Company's Articles of Organization also permit the issuance of $1,000,000$ shares of Preferred Stock without stockholder approval and upon such terms as the Board of Directors may determine. The rights of the holders of Common Stock will be subject to, and may be adversely affected by, the rights of the holders of any Preferred Stock that may be issued in the future. The issuance of Preferred Stock, while providing desirable flexibility in connection with possible acquisitions and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from acquiring, a majority of the outstanding stock of the Company. The Company has no present plans to issue any shares of Preferred Stock. See "Description of Capital Stock -- Preferred Stock" and "-- Massachusetts Law and Certain Provisions of the Company's Articles of Organization and By-Laws."

## IMMEDIATE AND SUBSTANTIAL DILUTION TO NEW INVESTORS

The initial public offering price is substantially higher than the net tangible book value per share of the Common Stock. Investors purchasing shares of Common Stock in this offering will therefore incur immediate and substantial net tangible book value dilution, in the amount of $\$ 8.87$ per share. To the extent that outstanding options to purchase shares of Common Stock are exercised, there will be further dilution. See "Dilution."

## ABSENCE OF DIVIDENDS

The Company intends to retain future earnings, if any, for use in the development of its business and does not anticipate paying any cash dividends on the Common Stock in the foreseeable future. See "Dividend Policy."

The net proceeds from the sale of the $3,400,000$ shares of Common Stock offered hereby are estimated to be approximately $\$ 34.0$ million ( $\$ 39.2$ million if the Underwriters' over-allotment option is exercised in full), assuming an initial public offering price of $\$ 11.00$ per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by the Company.

The Company intends to use the net proceeds of the offering to continue to develop and market its ADSL products and for other general corporate purposes, including working capital, research and development, and the hiring of additional personnel. In the normal course of business, the Company evaluates potential acquisitions of businesses, technologies and products that could complement or expand the Company's business. A portion of the net proceeds of the offering may be used for one or more such transactions, although the Company has no present understandings, commitments or agreements, nor is it currently engaged in any negotiations, with respect to any such transaction. Pending such uses, the Company intends to invest the net proceeds in short-term, interest-bearing, investment-grade securities, including government obligations and money market instruments. The Company has no other specific uses for the proceeds of this offering, and the exact use of such proceeds will be subject to the discretion of management.

## DIVIDEND POLICY

The Company has never declared or paid cash dividends on its Common Stock. The Company currently intends to retain any earnings to fund its business and therefore does not anticipate paying cash dividends in the foreseeable future. See "Management's Discussion and Analysis of Financial Condition and Results of Operations -- Liquidity and Capital Resources."

The following table sets forth the capitalization of the Company as of March 31, 1996 (i) on an actual basis, (ii) on a pro forma basis to give effect to (A) the amendment and restatement of the Company's Articles of Organization on July 1, 1996, which increased the authorized capital stock of the Company by $11,350,000$ shares of Common Stock and 1,000,000 shares of undesignated Preferred Stock and (B) the conversion of all outstanding shares of Preferred Stock of the Company into Common Stock on or before the closing of this offering, and (iii) on a pro forma basis as adjusted to reflect the sale of the Common Stock offered hereby at an assumed initial public offering price of $\$ 11.00$ per share and after deducting estimated underwriting discounts and commissions and offering expenses payable by the Company.

MARCH 31, 1996

(IN THOUSANDS, EXCEPT SHARE DATA)
Stockholders' Equity:
Preferred Stock, $\$ 1.00$ par value; no shares authorized, actual; 1,000,000 shares authorized and no shares outstanding, pro forma and as adjusted...................
Series B Convertible Preferred Stock, \$1.00 par value (aggregate liquidation preference of $\$ 1,587,500$ ); 15,875 shares authorized; 15,875 shares outstanding, actual; no shares outstanding, pro forma and as

Series C Convertible Preferred Stock, $\$ 1.00$ par valu (aggregate liquidation preference of $\$ 1,352,500)$;
13,525 shares authorized; 13,525 shares outstanding, actual; no shares outstanding, pro forma and as
adjusted...................................................... 14
Series D Convertible Preferred Stock, \$1.00 par value (aggregate liquidation preference of $\$ 6,916,575$ ); 74,800 shares authorized; $69,165.75$ shares outstanding, actual; no shares outstanding, pro forma and as adjusted............................................... Series E Convertible Preferred Stock, \$1.00 par value (aggregate liquidation preference of $\$ 3,826,160$ ); 45,000 shares authorized; 29,432 shares outstanding, actual; no shares outstanding, pro forma and as adjusted............................................................
Common Stock, $\$ 0.01$ par value; $18,650,000$ shares
authorized, actual; $30,000,000$ shares authorized, pro
forma and as adjusted; 1,173,370 shares outstanding,
actual; 13,973,145 shares outstanding, pro forma; 17,373,145 shares outstanding, as adjusted(1).........
Additional paid-in capital................................................... 13,816
Accumulated deficit................................................ (10, 534$)$
Treasury stock, at cost
(453)

13, 816
$(10,534)$
(453)

174
47,764 $(10,534)$
(453)

36,951
\$ 36, 951
Total capitalization............................ \$ 2,969 \$ 2,969
========
(1) Excludes 2,741,500 shares of Common Stock issuable upon exercise of options outstanding at March 31, 1996. Between March 31, 1996 and June 30, 1996, options to purchase $1,019,252$ shares of Common Stock were exercised for aggregate consideration of approximately $\$ 1.0$ million, options to purchase an additional 1,456,000 shares of Common Stock were granted at an exercise price of $\$ 8.25$ per share, and $1,742,287$ shares of Common Stock were reserved for issuance upon the grant of options in the future pursuant to the Company's stock option and stock purchase plans. See "Management -- Stock Option Plans" and "-- 1996 Employee Stock Purchase Plan."

The pro forma net tangible book value of the Common Stock as of March 31, 1996 was approximately $\$ 3.0$ million or $\$ 0.21$ per share. Pro forma net tangible book value per share represents the amount of total tangible assets less total liabilities, divided by the pro forma number of shares of Common Stock outstanding. As of March 31, 1996, the Company had no intangible assets. After giving effect to the sale by the Company of the $3,400,000$ shares of Common Stock offered hereby (at an assumed initial public offering price of $\$ 11.00$ per share and after deducting estimated underwriting discounts and commissions and offering expenses payable by the Company), the pro forma as adjusted net tangible book value of the Company as of March 31, 1996 would have been approximately $\$ 37.0$ million or $\$ 2.13$ per share. This represents an immediate increase in net tangible book value of $\$ 1.92$ per share to existing stockholders and an immediate dilution in net tangible book value of $\$ 8.87$ per share to new investors purchasing shares in this offering. The following table illustrates this per share dilution:



Dilution to new investors

The following table sets forth, on a pro forma basis as of March 31, 1996, the number of shares of Common Stock purchased from the Company, the total consideration paid to the Company and the average price per share paid by existing stockholders and to be paid by new investors (at an assumed initial public offering price of $\$ 11.00$ per share and before deducting estimated underwriting discounts and commissions and offering expenses payable by the Company):

|  | SHARES PURCHASED |  | TOTAL CONSIDERATION |  | AVERAGE PRICE PER SHARE |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | NUMBER | PERCENT | AMOUNT | PERCENT |  |
| Existing stockholders. | 13, 973,145 | 80.4\% | \$13,502,984 | 26.5\% | \$ 0.97 |
| New investors. | 3,400,000 | 19.6 | 37,400, 000 | 73.5 | 11.00 |
| Total. | 17,373,145 | 100.0\% | \$50, 902, 984 | 100.0\% |  |

The calculation of pro forma net tangible book value and the other computations above assume no exercise of options outstanding at March 31, 1996 to purchase an aggregate of 2,741,500 shares of Common Stock. Between March 31, 1996 and June 30, 1996, options to purchase 1,019, 252 shares of Common Stock were exercised for aggregate consideration of approximately $\$ 1.0$ million and options to purchase an additional $1,456,000$ shares of Common Stock were granted at an exercise price of $\$ 8.25$ per share. To the extent that any of the options outstanding at June 30, 1996 are exercised or that any of the remaining $1,742,287$ shares of Common Stock currently reserved for issuance under the Company's stock option and stock purchase plans are issued, there may be additional dilution to new investors. See "Capitalization," "Management -- Stock Option Plans" and "-- 1996 Employee Stock Purchase Plan."

The following selected financial data for the years ended December 31, 1994 and 1995 have been derived from, and are qualified by reference to, the financial statements of the Company audited by Deloitte \& Touche LLP, independent accountants, included elsewhere in this Prospectus, and should be read in conjunction with those financial statements and notes thereto and Management's Discussion and Analysis of Financial Condition and Results of Operations. The following selected financial data for the year ended December 31, 1993 have been derived from, and are qualified by reference to, the financial statements of the Company audited by Price Waterhouse LLP, independent accountants, included elsewhere in this Prospectus, and should be read in conjunction with those financial statements and notes thereto and Management's Discussion and Analysis of Financial Condition and Results of Operations. The following selected financial data for the years ended December 31, 1991 and 1992 have been derived from audited financial statements not included in this Prospectus. The following selected financial data for the three months ended March 31, 1995 and 1996 have been derived from, and are qualified by reference to, the unaudited financial statements of the Company included elsewhere in this Prospectus, and should be read in conjunction with those financial statements and Management's Discussion and Analysis of Financial Condition and Results of Operations. In the opinion of management of the Company, such unaudited financial statements have been prepared on the same basis as the audited financial statements and include all adjustments, consisting only of normal recurring adjustments and accruals, that the Company considers necessary for a fair presentation. The results of operations for the three-month period ended March 31, 1996 are not necessarily indicative of the results which may be expected for the full year.


|  | DECEMBER 31, |  |  |  |  | MARCH |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1991 | 1992 | 1993 | 1994 | 1995 | $\begin{gathered} 31, \\ 1996 \end{gathered}$ |
| BALANCE SHEET DATA: |  |  |  |  |  |  |
| Cash and cash equivalents. | \$ 335 | \$ 813 | \$186 | \$2,566 | \$2,154 | \$2, 047 |
| Working capital. | 765 | 1,114 | 281 | 2,877 | 2,516 | 2,617 |
| Total assets. | 2,158 | 1,902 | 978 | 3,930 | 3,228 | 3,351 |
| Total liabilities. | 738 | 405 | 493 | 684 | 309 | 382 |
| Total stockholders' equity | 1,419 | 1,497 | 485 | 3,246 | 2,920 | 2,969 |

(1) See Note 1 of Notes to Financial Statements for an explanation of the method of calculation of the pro forma weighted average number of common shares outstanding.

This Prospectus contains certain statements of a forward-looking nature relating to future events or the future financial performance of the Company. Prospective investors are cautioned that such statements are only predictions and that actual events or results may differ materially. In evaluating such statements, prospective investors should specifically consider the various factors identified in this Prospectus, including the matters set forth under the caption "Risk Factors," which could cause actual results to differ materially from those indicated in such forward-looking statements.

## OVERVIEW

Aware was founded in March 1986. During its first seven years, the Company was engaged primarily in research, specializing in wavelet mathematics applications, digital compression, and telecommunications and channel modulation and coding. The Company holds thirteen patents in areas related to wavelet mathematics, digital compression and similar technologies. The Company's revenue during this period consisted largely of research grants from agencies of the U.S. government and certain commercial companies. As the Company has moved from research to commercialization, the percentage of funding from the U.S. government has declined significantly and is expected to decline further. Most of the Company's recent work for the U.S. government has been done pursuant to contracts on a time and materials basis, as and when requested by the government.

In 1993, the Company shifted its business from contract research toward development of ADSL and other broadband technologies and data and video compression products. The Company now offers software and modems incorporating its ADSL technology and software-based compression products and will receive royalties on the sale, if any, of ADSL Chipsets by ADI.

Most of the Company's revenue to date related to ADSL and other broadband technologies has come from ADI and certain telco suppliers as fees for development work and as nonrefundable prepaid royalties. The Company has only recently introduced products incorporating ADSL technology and had not received any revenue from sale of these products as of March 31, 1996. Accordingly, the comparisons for the years 1994 and 1995 and for the three months ended March 31, 1995 and 1996 may not be indicative of future performance because the Company was changing its management team, strategic direction, customer base, revenue sources and product offerings.

The Company has sustained annual losses since its inception and the effort needed to bring products to commercialization will require the Company to increase significantly the amount of its expenditures in technical development, sales and marketing and manufacturing. While the Company achieved modest profitability in the third and fourth quarters of 1995, and the first quarter of 1996, there can be no assurance that this will continue. The Company's product revenue has increased in each of the last three years as the Company has begun to obtain revenue from sales of its compression products.

The Company's operating expenses are based in part on its expectations of future sales, and the Company's expense levels are generally committed in advance of sales. The Company currently plans to continue to expand and increase its operating expenses in an effort to generate and support additional future revenue. If sales for any quarter do not materialize as expected, the company's results of operations for that quarter would be adversely affected. Net income may be disproportionately affected by a reduction of revenues because only a small portion of the Company's expenses vary in proportion to its revenue. See "Risk Factors -- Fluctuations in Quarterly Results; Lack of Backlog."

The Company has only recently begun the process of developing the management and operational capabilities and financial and accounting systems and controls necessary for the transition from its historic business of research and development to a business that develops, manufactures, markets and supports products and services for the commercial telecommunications marketplace. The Company hired its current Chief Financial Officer on June 14, 1996. From January 1995 to June 1996, the

Company did not have a Chief Financial Officer and had a financial and accounting staff consisting of a single individual. The Company believes that, without additional personnel and other resources, its financial and accounting systems and controls will not be adequate to conduct the commercial
telecommunications business which the Company proposes to conduct. The Company will be responsible for hiring sufficient accounting personnel and establishing financial and accounting systems and controls adequate to conduct the Company's proposed business as described in this Prospectus. There can be no assurance that the Company will be successful in achieving these objectives. See "Risk Factors -- Risks Associated with Managing a Changing Business."

## RESULTS OF OPERATIONS

The following table sets forth, for the periods indicated, certain statement of operations data as a percentage of total revenue:


THREE MONTHS ENDED MARCH 31, 1996 AND 1995

Product Revenue. Product revenue consists primarily of revenue from the sale of tangible products, such as ADSL modems and video editing chipset products, which are manufactured by the Company or third party suppliers. Product revenue decreased by $98 \%$ from $\$ 202,000$ in the first three months of 1995 to $\$ 5,000$ in the first three months of 1996. As a percentage of total revenue, product revenue decreased from $21 \%$ in the first three months of 1995 to $1 \%$ in the first three months of 1996. The decline is primarily attributable to the Company having no revenue in the first quarter of 1996 from the sale of video editing chipset products, which the Company discontinued in the fourth quarter of 1995. Revenue in the first quarter of 1996 included a nominal amount of revenue from the sale of ADSL modems.

License and Royalty Revenue. License and royalty revenue consists primarily of revenue from the sale of intellectual property, such as hardware and software technology licenses, compression software licenses, and royalties from the sale of chipsets by customers who have licensed the Company's technology. As such revenue has only a nominal cost associated with it, the Company does not report a separate cost of license and royalty revenue line in its Statements of Operations.
revenue increased from 36\% in the first three months of 1995 to $67 \%$ in the first three months of 1996. The increase is primarily attributable to a significant technology license sale to DSC Telecom L.P. in the first quarter of 1996.

Research and Development Revenue. Research and development revenue consists primarily of revenue from commercial contract engineering and development, and government research contracts. Research and development revenue decreased by 25\%, from $\$ 411,000$ in the first three months of 1995 to $\$ 309,000$ in the first three months of 1996. As a percentage of total revenue, research and development revenue decreased from $43 \%$ in the first three months of 1995 to $32 \%$ in the first three months of 1996. This decrease in dollar amount and as a percentage of total revenue is due to the Company's shift away from contract research activities toward the development of commercial products.

Cost of Product Revenue. Cost of product revenue consists primarily of direct material, direct labor and overhead costs to produce the Company's products, and cost of goods for purchases of finished goods inventory from third party suppliers. Cost of product revenue decreased by $95 \%$ from $\$ 84,000$ in the first three months of 1995 to $\$ 4,000$ in the first three months of 1996 . The dollar decrease in cost of product revenue and the percentage increase in cost of product revenue is primarily related to the discontinuance of the sale of video editing chipset products in the fourth quarter of 1995, and the commencement of ADSL modem shipments in the first quarter of 1996.

Cost of Research and Development Revenue. Cost of research and development revenue consists primarily of direct labor, direct material and travel expenses associated with commercial contract engineering and development, and government research contracts. Costs of research and development revenue decreased by $32 \%$, from $\$ 364,000$ in the first three months of 1995 to $\$ 248,000$ in the first three months of 1996. As a percentage of research and development revenue, related costs decreased from $89 \%$ in the first three months of 1995 to $80 \%$ in the first three months of 1996. The decrease in dollar amount is due to lower revenue from research contracts in the first quarter of 1996 as compared to the first quarter of 1995. The decrease as a percentage of research and development revenue is a result of higher margin contracts in the first quarter of 1996.

Research and Development Expense. Research and development expense
consists primarily of employee and consultant costs and supplies necessary to
develop and enhance the Company's products, as well as a portion of the Company's operating expenses, including rent, attributable to its research and development activities. These expenses increased from \$346,000 in the first three months of 1995 to $\$ 352,000$ in the first three months of 1996 . As a percentage of total revenue, research and development expense remained consistent at $36 \%$. Higher research and development spending in the first three months of 1996 was driven by increased spending on research and development efforts related to ADSL and HFC projects. These expense increases were largely offset by lower spending as a result of the discontinuance of research involving audio compression technology and lower facilities cost as a result of the relocation of the Company's facilities in June 1995.

Selling and Marketing Expense. Selling and marketing expense consists primarily of salaries for sales and marketing personnel and travel and product advertising expenses. These expenses increased by $57 \%$ from $\$ 90,000$ in the first three months of 1995 to $\$ 141,000$ in the first three months of 1996. As a percentage of total revenue, selling and marketing expense increased from $10 \%$ in the first three months of 1995 to $15 \%$ in the first three months of 1996 . This increase in dollar amount and as a percentage of total revenue is due primarily to increased product advertising.

General and Administrative Expense. General and administrative expense consists of salary and benefits for administrative officers and support personnel, allocated rent expense and professional services, such as legal and audit expenses. These expenses increased by 10\%, from \$182,000 in the first three months of 1995 to $\$ 199,000$ in the first three months of 1996 . As a percentage of total revenue, general and administrative expense increased from $19 \%$ in the first three months of 1995 to $21 \%$ in the first three months of 1996. This increase in dollar amount and as a percentage of total revenue is due primarily to additions to the Company's management team.

Interest Income. Interest income is generated primarily from the Company's investment of proceeds from sales of its capital stock. Interest income decreased by $21 \%$, from $\$ 29,000$ in the first three months of 1995 to $\$ 23,000$ in the first three months of 1996. This decrease is due primarily to lower average cash balances and lower average interest rates during the first three months of 1996 as compared to the first three months of 1995.

YEARS ENDED DECEMBER 31, 1995 AND 1994

Product Revenue. Product revenue increased by 124\% from \$181,000 in 1994 oo $\$ 406,000$ in 1995. As a percentage of total revenue, product revenue increased from 5\% in 1994 to $13 \%$ in 1995. Product revenue in 1995 and 1994 was comprised of sales of video editing chipset products. The increase in video editing chipset product revenue was due primarily to significant orders from a customer purchasing large quantities in 1995 before the Company discontinued that product line.

License and Royalty Revenue. License and royalty revenue increased by $3 \%$ from \$1,009,000 in 1994 to \$1,037,000 in 1995. As a percentage of total revenue, license and royalty revenue increased from $26 \%$ in 1994 to $32 \%$ in 1995. The increase in dollar amount and as a percentage of total revenue is due primarily to increased sales of compression software products and royalty revenue in 1995, offset by a decline in revenue from sales of technology licenses.

Research and Development Revenue. Research and development revenue decreased by $31 \%$, from $\$ 2,637,000$ in 1994 to $\$ 1,817,000$ in 1995. As a percentage of total revenue, research and development revenue decreased from $69 \%$ in 1994 to 56\% in 1995. This decrease in dollar amount and as a percentage of total revenue is due primarily to a significant decrease in U.S. government research revenue as a result of the Company's decision in 1995 to reduce its government research activities. The decrease in government research revenue was partially offset by an increase in commercial contract engineering revenue.

Cost of Product Revenue. Cost of product revenue increased by $115 \%$ from $\$ 113,000$ in 1994 to $\$ 243,000$ in 1995. As a percentage of product revenue, cost of product revenue decreased from 62\% in 1994 to 60\% in 1995. The slight improvement in cost as a percentage of product revenue is due primarily to marginally lower pricing from the third party supplier of video editing chipset products as a result of higher volumes in 1995.

Cost of Research and Development Revenue. Cost of research and development revenue decreased by $43 \%$, from $\$ 2,054,000$ in 1994 to $\$ 1,178,000$ in 1995. As a percentage of research and development revenue, related costs decreased from $78 \%$ in 1994 to $65 \%$ in 1995. This decrease in dollar amount and as a percentage of research and development revenue is due primarily to a decrease in expenses associated with the reduction in U.S. government research activity.

Research and Development Expense. Research and development expense decreased by $20 \%$, from $\$ 1,438,000$ in 1994 to $\$ 1,155,000$ in 1995. As a percentage of total revenue, research and development expense decreased from $38 \%$ in 1994 to $35 \%$ in 1995. This decrease in dollar amount and as a percentage of total revenue is due primarily to the discontinuance, in January 1995, of research and development efforts associated with audio compression technology, and lower facilities costs as a result of the relocation of the Company's facilities in June 1995. The Company anticipates that research and development spending will increase in 1996 as the Company continues to develop and enhance its telecommunications products.

Selling and Marketing Expense. Selling and marketing expense increased by $25 \%$, from $\$ 329,000$ in 1994 to $\$ 412,000$ in 1995. As a percentage of total revenue, selling and marketing expense increased from 9\% in 1994 to 13\% in 1995. This increase in dollar amount and as a percentage of total revenue is due primarily to increases in the Company's sales force and product advertising.

General and Administrative Expense. General and administrative expense decreased by $27 \%$, from $\$ 988,000$ in 1994 to $\$ 726,000$ in 1995. As a percentage of total revenue, general and administrative
expense decreased from $26 \%$ in 1994 to $22 \%$ in 1995. This decrease in dollar amount and as a percentage of total revenue is due primarily to management and support staff reductions in January 1995.

Interest Income. Interest income increased by 34\%, from \$83,000 in 1994 to $\$ 111,000$ in 1995. This increase is due primarily to higher average cash balances in 1995 as compared to 1994.

YEARS ENDED DECEMBER 31, 1994 AND 1993

Product Revenue. Product revenue decreased by 17\% from \$219,000 in 1993 to $\$ 181,000$ in 1994. As a percentage of total revenue, product revenue decreased from 7\% in 1993 to $5 \%$ in 1994. Product revenue in 1994 and 1993 was comprised of sales of video editing chipset products. The decrease in dollars and as a percentage of revenue was attributable to lower video editing chipset sales in 1994.

License and Royalty Revenue. License and royalty revenue increased by $66 \%$ from $\$ 608,000$ in 1993 to $\$ 1,009,000$ in 1994. As a percentage of total revenue, license and royalty revenue increased from 19\% in 1993 to $26 \%$ in 1994. The increase in dollar amount and as a percentage of total revenue is due primarily to increased sales of compression software products and revenue from a significant technology licensing sale in 1994.

Research and Development Revenue. Research and development revenue increased by $12 \%$, from $\$ 2,345,000$ in 1993 to $\$ 2,637,000$ in 1994. As a percentage of total revenue, research and development revenue decreased from $74 \%$ in 1993 to $69 \%$ in 1994. This increase in dollar amount is due primarily to revenue from a new U.S. government research contract and increased commercial research and engineering business in 1994. The decrease as a percentage of total revenue is attributable to the $44 \%$ increase in product revenue.

Cost of Product Revenue. Cost of product revenue decreased by $8 \%$ from $\$ 122,000$ in 1993 to $\$ 113,000$ in 1994. As a percentage of product revenue, cost of product revenue increased from $56 \%$ in 1993 to $62 \%$ in 1994. The increase in cost as a percentage of product revenue is due primarily to marginally higher pricing from the third party supplier of video editing chipset products as a result of lower volumes in 1994 as compared to 1993.

Cost of Research and Development Revenue. Cost of research and development revenue increased by $21 \%$, from $\$ 1,701,000$ in 1993 to $\$ 2,054,000$ in 1994 . As a percentage of research and development revenue, related costs increased from 73\% in 1993 to $78 \%$ in 1994. This increase in dollar amount is due primarily to increased direct material and labor costs associated with research and development revenue growth in 1994

Research and Development Expense. Research and development expense increased by 7\%, from $\$ 1,341,000$ in 1993 to $\$ 1,438,000$ in 1994, but decreased as a percentage of total revenue from $42 \%$ in 1993 to $38 \%$ in 1994. This increase in dollar amount is due primarily to increased spending related to the development of the commercial product business. The decrease as a percentage of total revenue is due to revenue growth which exceeded the rate of growth of research and development spending.

Selling and Marketing Expense. Selling and marketing expense increased by $49 \%$, from $\$ 221,000$ in 1993 to $\$ 329,000$ in 1994. As a percentage of total revenue, selling and marketing expense increased from 7\% in 1993 to 9\% in 1994. This increase in dollar amount and as a percentage of total revenue is due primarily to increases in the Company's sales force and product advertising.

General and Administrative Expense. General and administrative expense increased by $22 \%$, from $\$ 815,000$ in 1993 to $\$ 988,000$ in 1994. As a percentage of total revenue, general and administrative expense remained consistent at $26 \%$ in 1993 and 1994. This increase in dollar amount is due primarily to additions to the Company's management team.

Interest Income. Interest income increased by 131\%, from \$36,000 in 1993 to $\$ 83,000$ in 1994 . This increase is due primarily to higher average cash balances in 1994 as compared to 1993.

Information with respect to the three months ended June 30, 1996 is based upon the Company's preliminary and unaudited financial statements, which remain subject to change. Interim periods are not necessarily indicative of results to be expected for the entire fiscal year.

Total revenue for the second quarter of 1996 increased $213 \%$ from $\$ 361,000$ in the second quarter of 1995 to approximately $\$ 1,129,000$ in the second quarter of 1996. The growth in total revenue was principally attributable to increases in product revenue and license and royalty revenue, which was partially offset by a decrease in research and development revenue. Product revenue increased 534\% from \$23,000 in the second quarter of 1995 to approximately $\$ 146,000$ in the second quarter of 1996. The increase in product revenue in the second quarter of 1996 is primarily due to the sale of ADSL modems to telcos and others who are evaluating the Company's products. License and royalty revenue increased from 555,000 in the second quarter of 1995 to approximately $\$ 792,000$ in the second quarter of 1996. The increase in license and royalty revenue in the second quarter of 1996 is primarily due to an increase in the sale of compression software licenses, and sales of ADSL and other broadband technology licenses Research and development revenue declined by $33 \%$ from $\$ 283,000$ in the second quarter of 1995 to approximately $\$ 191,000$ in the second quarter of 1996 . The decrease is primarily the result of lower revenue from commercial research and development contracts partially offset by a modest increase in revenue from U.S. government research and development contracts.

Income or loss from operations improved from a loss of $\$ 562,000$ in the second quarter of 1995 to a profit of approximately $\$ 18,000$ during the second quarter of 1996. Net income in the second quarter of 1996 was approximately $\$ 48,000$ as compared to a net loss of $\$ 530,000$ in the second quarter of 1995 . The improvement in profitability was principally driven by a $213 \%$ increase in revenue. Total costs and expenses increased by $20 \%$ from $\$ 923,000$ in the second quarter of 1995 to approximately $\$ 1,111,000$ in the second quarter of 1996 . The lower rate of spending increase than that for revenue growth is primarily the result of cost containment efforts initiated by the Company in 1995

## QUARTERLY RESULTS OF OPERATIONS

The following table sets forth certain unaudited quarterly financial data for the eight quarters ended March 31, 1996. In the opinion of management, this information has been presented on the same basis as the audited financial statements appearing elsewhere in this Prospectus, and includes all adjustments consisting only of normal recurring adjustments and accruals, that the Company considers necessary for a fair presentation. Such quarterly results are not necessarily indicative of future results of operations and should be read in conjunction with the financial statements and notes thereto.

|  | THREE MONTHS ENDED |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{array}{r} \text { JUN. } \\ 30, \\ 1994 \end{array}$ |  | $\begin{array}{r} \text { SEP. } \\ 30, \\ 1994 \end{array}$ |  | $\begin{array}{r} \text { DEC. } \\ 31, \\ 1994 \end{array}$ |  | $\begin{array}{r} \text { MAR. } \\ 31, \\ 1995 \end{array}$ |  | $\begin{gathered} \text { JUN. 30, } \\ 1995 \end{gathered}$ |  | $\begin{gathered} \text { SEP. 30, } \\ 1995 \end{gathered}$ |  | $\begin{gathered} \text { DEC. 31, } \\ 1995 \end{gathered}$ |  | $\begin{gathered} \text { MAR. } 31, \\ 1996 \end{gathered}$ |  |
|  |  |  |  |  |  |  |  | (IN | US | DS) |  |  |  |  |  |  |
| Revenue: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Product. |  | \$ 26 | \$ | 37 | \$ | 61 | \$ | 202 | \$ | 23 | \$ | 100 | \$ | 82 | \$ | 5 |
| License and royalty. |  | 133 |  | 375 |  | 426 |  | 337 |  | 55 |  | 350 |  | 294 |  | 648 |
| Research and development. |  | 582 |  | 749 |  | 784 |  | 411 |  | 283 |  | 513 |  | 610 |  | 309 |
| Total revenue. |  | 741 |  | 1,161 |  | 1,271 |  | 950 |  | 361 |  | 963 |  | 986 |  | 962 |
| Costs and expenses: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Cost of product revenue. |  | 25 |  | 24 |  | 31 |  | 84 |  | 62 |  | 46 |  | 50 |  | 4 |
| Cost of research and development revenue. $\qquad$ |  | 476 |  | 525 |  | 631 |  | 364 |  | 242 |  | 259 |  | 312 |  | 248 |
| Research and development. |  | 320 |  | 328 |  | 486 |  | 346 |  | 313 |  | 237 |  | 260 |  | 352 |
| Selling and marketing... |  | 71 |  | 84 |  | 114 |  | 90 |  | 112 |  | 101 |  | 109 |  | 141 |
| General and administrative. |  | 216 |  | 274 |  | 306 |  | 182 |  | 194 |  | 165 |  | 186 |  | 199 |
| Total costs and expenses. |  | 1,108 |  | 1,235 |  | 1,568 |  | 1,066 |  | 923 |  | 808 |  | 917 |  | 944 |
| Income (loss) from operations. |  | (367) |  | (74) |  | (297) |  | (116) |  | (562) |  | 155 |  | 69 |  | 18 |
| Interest income...... |  | 7 |  | 24 |  | 45 |  | 29 |  | 32 |  | 25 |  | 25 |  | 23 |
| Net income (loss). |  | \$ (360) | \$ | (50) | \$ | (252) | \$ | (87) | \$ | (530) | \$ | 180 | \$ | 94 | \$ |  |

The following table sets forth certain unaudited quarterly financial data for the eight quarters ended March 31, 1996 as a percentage of total revenue.

|  | THREE MONTHS ENDED |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { JUN. 30, } \\ 1994 \end{gathered}$ | $\begin{gathered} \text { SEP. 30, } \\ 1994 \end{gathered}$ | $\begin{gathered} \text { DEC. 31, } \\ 1994 \end{gathered}$ | MAR. 31, 1995 | $\begin{gathered} \text { JUN. 30, } \\ 1995 \end{gathered}$ | $\begin{gathered} \text { SEP. 30, } \\ 1995 \end{gathered}$ | $\begin{gathered} \text { DEC. 31, } \\ 1995 \end{gathered}$ | $\begin{gathered} \text { MAR. } 31, \\ 1996 \end{gathered}$ |
| Revenue: |  |  |  |  |  |  |  |  |
| Product | 3.5\% | 3.2\% | 4.8\% | 21.3\% | 6.4\% | 10.4\% | 8.3\% | . $5 \%$ |
| License and royalty. | 18.0 | 32.3 | 33.5 | 35.5 | 15.2 | 36.3 | 29.8 | 67.3 |
| Research and development. | 78.5 | 64.5 | 61.7 | 43.2 | 78.4 | 53.3 | 61.9 | 32.2 |
| Total revenue. | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Costs and expenses: |  |  |  |  |  |  |  |  |
| Cost of product revenue. | 3.4 | 2.1 | 2.5 | 8.9 | 17.2 | 4.8 | 5.1 | 5 |
| Cost of research and development |  |  |  |  |  |  |  |  |
| Research and development | 43.2 | 28.3 | 38.2 | 36.4 | 86.7 | 24.6 | 26.3 | 36.5 |
| Selling and marketing. | 9.6 | 7.2 | 9.0 | 9.5 | 31.0 | 10.5 | 11.1 | 14.7 |
| General and administrative. | 29.1 | 23.6 | 24.0 | 19.1 | 53.8 | 17.1 | 18.9 | 20.7 |
| Total costs and expenses. | 149.5 | 106.4 | 123.3 | 112.2 | 255.7 | 83.9 | 93.0 | 98.2 |
| Income (loss) from operations. | (49.5) | (6.4) | (23.3) | (12.2) | (155.7) | 16.1 | 7.0 | 1.8 |
| Interest income....... | 0.9 | 2.1 | 3.5 | 3.0 | 8.9 | 2.6 | 2.5 | 2.4 |
| Net income (loss). | (48.6)\% | (4.3)\% | (19.8)\% | (9.2)\% | (146.8)\% | 18.7\% | 9.5\% | 4.2\% |
|  | ===== | $====$ | ===== | $=====$ | ===== | $====$ | ==== | ==== |

## LIQUIDITY AND CAPITAL RESOURCES

Since its inception in March 1986, the Company has financed its operations primarily through private sales of equity securities, raising a total of approximately $\$ 14,000,000$ through March 31, 1996. In 1994, the Company raised $\$ 3,789,000$ from the sale of its Series E Preferred Stock. In 1995 and the three months ended March 31, 1996, the Company received $\$ 16,000$ and $\$ 8,000$, respectively, from the exercise of employee stock options.

The Company's operating activities used net cash of $\$ 1,022,000, \$ 194,000$ and \$109,000 in 1994, 1995 and the three months ended March 31, 1996, respectively. The reduction in cash used is primarily attributable to improved cost management.

On March 31, 1996, the Company had working capital of $\$ 2,617,000$ as compared to $\$ 2,516,000$ on December 31, 1995. Working capital on March 31, 1996 included $\$ 2,047,000$ in cash and cash equivalents, $\$ 803,000$ in accounts receivable, $\$ 41,000$ in unbilled accounts receivable, \$97,000 in inventories and $\$ 11,000$ in prepaid expenses. From December 31, 1995 to March 31, 1996, the Company's accounts receivable increased $\$ 302,000$ primarily due to license sales in March 1996. The Company's inventories increased \$57,000 from December 31, 1995 to March 31, 1996 in anticipation of increased product sales by the Company in the second quarter of 1996. The Company had no debt outstanding on March 31, 1996 or December 31, 1995.

The Company's investing activities in 1994, 1995 and the three months ended March 31, 1996 consisted primarily of purchases of engineering, manufacturing, computer and phone equipment. The substantially depreciated base of property and equipment results from capital purchases approximating depreciation and amortization expense in the past three years. Capital purchases were $\$ 6,000$ in the three months ended March 31, 1996 primarily as a result of the timing of such purchases. The Company expects that capital purchases will equal or exceed historical levels during the remainder of 1996. The Company does not currently have significant commitments outstanding to acquire additional property or equipment.

The Company intends to use the net proceeds from this offering to continue to develop and market its products and for other general corporate purposes, including working capital, research and development, capital expenditures, and hiring of additional personnel. See "Use of Proceeds." The Company believes that cash generated from operations and the net proceeds to the Company of this
offering will be sufficient, based on the Company's presently anticipated needs, to fund necessary capital expenditures, to provide adequate working capital and to finance the Company's planned expansion for at least the next twelve months. There can be no assurance, however, that the Company will not require additional financing prior to such date to fund operations. In addition, the Company may require additional financing after such date to fund its operations. There can be no assurance that any additional financing will be available to the Company on acceptable terms, or at all, when required by the Company. If additional funds are raised by issuing equity securities, further dilution to the existing stockholders will result. If adequate funds are not available, the Company may be required to delay, scale back or eliminate one or more of its research and development or manufacturing programs or to obtain funds through arrangements that may require the Company to relinquish rights to certain of its technologies or potential products or other assets that the Company would not otherwise relinquish. Accordingly, the inability to obtain such financing could have a material adverse effect on the Company's business, financial condition and results of operations. See "Risk Factors -- Capital Requirements."

## INCOME TAXES

The Company has a history of net losses and therefore has not paid any material amount of federal or state income taxes. As of December 31, 1995, the Company had net operating loss carryforwards of approximately $\$ 9,664,000$ and approximately $\$ 576,000$ of research and development tax credit carryforwards to offset future federal taxable income and liabilities. To the extent not utilized, the net operating loss and tax credit carryforwards expire between 2003 and 2010.

## OTHER INFORMATION

The Financial Accounting Standards Board ("FASB") has issued Statement of Financial Accounting Standards ("SFAS") No. 121, "Accounting for the Impairment of Long-Lived Assets to Be Disposed Of." The Company adopted this standard on January 1, 1996. This statement establishes accounting standards for the impairment of long-lived assets, certain identifiable intangibles, and goodwill related to those assets to be held and used for long-lived assets and certain identifiable intangibles to be disposed of. Adoption did not have a material effect on the Company's financial position or results of operations.

In November 1995, FASB issued SFAS No. 123, "Accounting for Stock-Based Compensation." The Company adopted this standard on January 1, 1996. As permitted by SFAS 123, the Company intends to continue to apply Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees," and will make the pro forma disclosures required by SFAS No. 123. The adoption of SFAS No. 123 did not have a material impact on the Company's financial condition or results of operations.

## BUSINESS

This Prospectus contains certain statements of a forward-looking nature relating to future events or the future financial performance of the Company. Prospective investors are cautioned that such statements are only predictions and that actual events or results may differ materially. In evaluating such statements, prospective investors should specifically consider the various factors identified in this Prospectus, including the matters set forth under the caption "Risk Factors," which could cause actual results to differ materially from those indicated in such forward-looking statements.

## OVERVIEW

Aware, Inc. ("Aware" or the "Company") designs, develops and markets telecommunications software, chipsets and modems which incorporate ADSL technology and increase the speed of data communications over conventional copper telephone lines. The Company's products and services are designed to allow telephone companies ("telcos") to utilize their installed bases of dedicated copper lines to provide both residential and business customers with interactive data transmission at speeds much higher than currently available.

The Company's products include software and hardware interfaces that integrate ADSL chipsets into modems and other communications devices, and high speed ADSL Internet Access Modems that incorporate the Company's proprietary technology and software. The Company has developed chipsets incorporating the Company's ADSL technology (the "ADSL Chipset") with Analog Devices, Inc. ("ADI"), a leading supplier of integrated circuits. ADI has an exclusive license to manufacture and sell the chipsets for which the Company receives royalty payments and therefore the company is substantially dependent on ADI to achieve its business objectives. Several large telcos, including GTE Corporation and BellSouth Corporation, and a number of OEMs that supply telcos, including DSC Communications Corporation and RelTec Corporation, are testing the Company's products. The Company has only recently introduced products incorporating ADSL technology and had approximately $\$ 140,000$ in revenue from sale of these products as of June 30, 1996.

## BACKGROUND

Telecommunications service providers are experiencing a fundamental shift in the type of communications traffic transmitted over their networks. Existing infrastructures of twisted-pair copper wiring, originally designed to provide analog voice communication ("Plain Old Telephone Service" or "POTS"), are increasingly required to carry the data-intensive, digital communications produced by computers. This communications traffic has increased dramatically in recent years with the rapid expansion of computer-based communication on the Internet and elsewhere. Telcos are faced with the challenge of providing high-speed data communications at reasonable costs, while preserving their large existing investments in copper wire networks.

Copper wire networks, developed and installed over decades to provide POTS to customers worldwide, are estimated to include over 150 million lines in the United States and over 550 million lines worldwide, according to industry sources. These networks represent an undepreciated capital investment of approximately $\$ 100$ billion.

To date, telcos' copper wire infrastructures have not proven adequate for the increasing volume of traffic generated by computers remotely connected to each other and the Internet. Digital information requires more bandwidth than traditional analog voice communication if it is to be transmitted at a speed that is satisfactory to the computer user. Currently, the fastest transmission rate readily available to typical home or remote office computer users over existing copper wire is achieved through the use of a 28.8 kilobits per second ("Kbps") modem, although many users still employ modems with speeds ranging from 2.4 Kbps to 14.4 Kbps . Even at 28.8 Kbps , the transmission of a typical one megabyte data file requires three to four minutes. For the over 56 million estimated Internet users in 1995 and the over 199 million estimated to be using the Internet by 1999, this transmission rate is one of the chief
frustrations of using the World Wide Web, which is the fastest growing and most data intensive part of the Internet.

Increasingly, telcos are seeking to upgrade their networks by replacing copper wire with fiber optic cable which permits high speed data transmission particularly throughout the backbone of the network that links their central offices to one another. However, installing fiber optic cable all the way into the home or business is, in most cases, prohibitively expensive, with fiber-to-the-curb only marginally less so. Therefore, the Company believes that, for the foreseeable future, the "last mile" of the phone network will continue to consist of existing copper wire.

In addition to increasing demands for greater bandwidth from consumers, telcos are facing new competition brought about by recent telecommunications deregulation. The enactment of the Telecommunications Act of 1996 (the "Telecommunications Act") has reduced barriers to entry to the telecommunications market and has eliminated many restrictions on the provision of a wide range of telecommunications services by telcos and other service providers. For example, cable companies and alternative access providers are now able to offer phone service to customers. Cable companies are exploring ways to use new technologies to compete with telcos in order to satisfy their customers' need for greater bandwidth. Some cable companies are testing cable modems, which permit a customer to effect two-way data transmission over the customer's existing cable connection. The increased competition, together with the opportunity to fulfill their customers' demands for more services, have caused telcos to accelerate their efforts to provide their customers with faster and higher quality data transmission.

## Technologies for Increased Bandwidth

Telcos are seeking cost-effective technology to accommodate high speed data transmission over copper wires. Some of these technologies are described below:

ISDN. In the early 1980s, telcos introduced Integrated Service Digital Network ("ISDN") technology, which provides digital transmission over copper wire typically at basic rates up to 144 Kbps . Telcos have only recently begun to offer ISDN technology on a broad basis. Using ISDN technology, a customer can download a one megabyte file in approximately one minute. Although this is several times faster than a voiceband modem, the market penetration of existing ISDN technology has been limited because its equipment and installation costs are relatively high, and it does not allow simultaneous POTS and data transmission on those wires.

T-1. T-1 (E-1 in countries outside the U.S.) is a multiplexing format that allows digital conversion of an analog line. Once converted, a T-1 digital line can deliver data at speeds up to 1.544 megabits per second ("Mbps") (2.048 Mbps for E-1). A customer can download a one megabyte file using a T-1 line in approximately 5 seconds. However, T-1 service cannot use the existing copper wire networks without expensive and time consuming modifications, including installation of repeaters every 3,000 to 5,000 feet to regenerate the signal as it passes along the line. T-1 also requires two sets of twisted-pair copper wires and does not allow simultaneous POTS and data transmission on those wires.

HDSL. In 1992, telcos introduced High bit-rate Digital Subscriber Line ("HDSL") technology, which reduces the costs of installing T-1 service. HDSL increases the distance of T-1 transmission over copper wires to approximately 12,000 feet, which reduces the need for repeaters. As a result, some telcos are deploying HDSL technology in their local access networks. However, HDSL still requires two sets of twisted-pair copper wires and does not allow simultaneous POTS and data transmission on those wires.

ADSL. Telcos are currently considering deployment of Asymmetric Digital Subscriber Line ("ADSL") technology, which uses digital signal processing technology to expand the useable bandwidth of copper telephone wire. ADSL was initially created in the late 1980s by Bellcore, the research entity jointly created and funded by the Regional Bell Operating Companies ("RBOCs"). ADSL technology allows non-repeated transmission of data at a distance of up to 18,000 feet over
telcos existing copper networks at a rate of up to 8 Mbps downstream to the customer and at a rate of up to 640 Kbps upstream from the customer, with the speed of transmission decreasing as distance increases. A typical ADSL application is expected to allow a customer to download a one megabyte file in approximately two seconds. In addition, ADSL allows simultaneous POTS and high speed digital data transmission on a single set of twisted-pair copper wires.

## THE AWARE SOLUTION

Aware is developing software, chipsets and modems incorporating ADSL technology that will provide high speed data transmission over telcos' extensive installed bases of copper wire networks. The Company's technology and products are intended to permit telcos to upgrade the last mile of their networks in a flexible and cost-effective way, compared to more costly alternatives such as complete replacement of copper wires with fiber optic cable into customers' premises. The Company's initial ADSL product, the ADSL Internet Access Modem, is designed to enable telcos to achieve much higher transmission speeds using the existing copper wires that make the final connection between their central offices and their customers.

The Company designs and develops products utilizing its proprietary software to implement ADSL that it believes have advantages over its competitors' ADSL products. The ADSL products developed by Aware incorporate proprietary software and algorithms based on digital signal processing technology as well as application specific integrated circuits ("ASICs"). In contrast to the approach taken by some competing developers of ADSL technology, Aware's approach is to maintain a high level of functionality in the software component of the product as opposed to the ASIC. The Company believes that this approach allows it to engineer improvements in its technology quickly and efficiently, rather than having to design and produce a new ASIC each time an improvement is made. The Company's ADSL technology enables data communications protocols, such as Frame Relay, TCP/IP and ATM, to operate at higher transmission rates. The Company has chosen to use the multi-carrier Discrete Multi-Tone ("DMT") modulation technique for ADSL, rather than the single-carrier Carrierless Amplitude Phase ("CAP") modulation technique. The Company believes that its ADSL/DMT technology allows it to offer software and products that transmit data at a higher rate and with greater reliability than software and products using the CAP technique. As a result of its collaboration with ADI, a chipset incorporating the Company's ADSL technology is currently available for testing by telcos.

STRATEGY

The Company's objective is to be the leading supplier of last mile technologies for high speed, interactive networks. The Company's strategy to achieve this objective encompasses the following elements:

Encourage Adoption of the Company's ADSL Technology. The Company has entered into development agreements with leading OEMs of telecommunications infrastructure equipment to permit incorporation of the Company's ADSL technology into OEMs' systems. The Company intends to partner with these and other OEMs to encourage telcos to adopt the Company's ADSL technology. The Company plans to introduce its technology to the marketplace by selling its ADSL products to telcos and telco suppliers, including GTE Corporation ("GTE") and the RBOCs, for evaluation purposes. By participating in trials of ADSL technology conducted by telcos and their suppliers, the Company hopes to demonstrate the superiority of its ADSL technology and to encourage broad deployment of systems using the Company's products.

Offer Products Throughout the Distribution Chain. The Company intends to incorporate its core ADSL technology into multiple product offerings. The Company currently offers a high speed ADSL Internet Access Modem and separately licenses software and hardware interfaces for ADSL systems. The Company developed the ADSL Chipset with ADI and will receive royalty payments from ADI upon the sale, if any, of the ADSL Chipset. The Company also intends to offer board and system level
products that incorporate the Company's ADSL technology and the ADSL Chipset. The Company believes that, by offering multiple products, it can participate at various points of sale in the distribution chain and offer solutions for a wide range of customers, including OEMs, telcos, businesses and home users.

Leverage DMT Technology Leadership in ADSL. The Company believes that, as a result of its significant investment in telecommunications technologies over the last decade, it has a lead over its competitors in the development of products and services incorporating ADSL technology. The Company has developed expertise in its ADSL applications using DMT multi-carrier technology. The Company intends to continue to use its experience in digital communications systems and software design to develop additional solutions for last mile communications. The Company believes that its expertise in this area gives it a competitive advantage by reducing product development costs and shortening the time-to-market of its products and services and those of its OEM customers.

Continue to Emphasize Software Solutions. Telecommunications chipsets today are built using a combination of ASICs and programmable devices, a development made possible using digital signal processing technology. The Company has expertise in digital signal processing technology, which allows it to develop software that efficiently implements complex mathematical algorithms. The Company intends to continue to maintain a high level of functionality in the software component of products it develops. By adopting an approach in which many critical functions are contained in the software and programmable devices rather than in the ASIC, the Company believes it can respond more rapidly to changes in the marketplace and offer OEMs and telcos products that are customized for their specific needs.

Develop Technologies Using DWMT. The Company intends to continue to develop new technologies that increase the speed of data transmission over copper wires. The Company has invented and patented its own core technology in multi-carrier modulation, called Discrete Wavelet Multi-Tone ("DWMT"), which the Company believes will allow it to develop products that transmit data at higher speeds than products using DMT technology. The Company is applying its DWMT technology to develop new products addressing emerging technologies, such as Symmetrical Digital Subscriber Line ("SDSL") and Very high speed Digital Subscriber Line ("VDSL").

Develop Solutions for Cable Networks. With the deregulation of the telecommunications industry, cable companies have started testing upgrades to their hybrid fiber coaxial cable ("HFC") networks to provide two-way communications. While existing cable networks are not well suited for two-way communication, the Company believes that, using its DWMT technology, it may be able to offer cable companies and telcos products that provide cost-effective, high speed, two-way communications on HFC networks. The Company has an agreement with a subsidiary of DSC Communications Corporation ("DSC") to develop telephony modems for HFC networks.

## TELECOMMUNICATIONS PRODUCTS

Existing ADSL Products

Modems. The Company developed and markets the ADSL Internet Access Modem, which contains the ADSL Chipset and software and hardware interfaces developed by the Company. In a typical configuration, the Company's ADSL Internet Access Modem is designed to receive data at speeds of up to 4.4 Mbps and send it at speeds of up to 440 Kbps at a distance of up to 12,000 feet over standard copper wire. Through June 30, 1996, the Company had manufactured and sold only 28 technical evaluation models of the ADSL Internet Access Modem for trial use by OEMs and telcos. This technical evaluation model was designed to demonstrate technical feasibility and will not be suitable for mass production without additional redesign to reduce the power requirements, size and cost of the model.

Chipsets. The Company and ADI developed the ADSL Chipset, which ADI markets. The Company will receive a royalty from ADI on any sales of the ADSL Chipset. The ADSL Chipset uses a
combination of ASICs, digital signal processors and proprietary software developed by the Company to provide all the functions necessary in a modem. The ADSL Chipset meets the performance objectives of the DMT multi-carrier modulation technique chosen by the American National Standards Institute ("ANSI") as the standard for ADSL.

Software and Hardware Interfaces. The Company develops software and hardware interfaces for the ADSL Chipset which can be used to connect the chipset with PCs, network and central office equipment and other telephony and data communications devices. The interfaces are custom developed by the Company for OEMs' systems to incorporate ADSL technology.

Telecommunications Product Development
In addition to modems, chipsets, and software and hardware interfaces, the Company intends to continue to develop products that it plans to market and sell throughout the product development and distribution chain.

Board-Level Products. Aware plans to manufacture board-level products for installation into ADSL systems offered by OEMs. The Company's board-level products will combine the ADSL Chipset with appropriate software and hardware interfaces developed by the Company. At the present time, the Company has no agreements to manufacture board-level products, except in connection with equipment trials, and has not manufactured any products in any substantial quantity.

System-Level Products. The Company intends to continue development of its ADSL Internet Access Modem and other system-level products and offer them directly to telcos and through OEMs. The Company's system-level products will consist of a complete turnkey system designed to integrate ADSL technology with data communications technology to enable customers to use ADSL throughout their network. At present, the Company does not have the manufacturing capability to provide system-level products, if such products were developed, in any substantial quantity. See "-- Manufacturing."

Advanced ADSL, SDSL, VDSL and HFC. The Company plans to offer new generations of advanced ADSL products, as well as chipsets, interfaces, modems, boards and systems incorporating SDSL, VDSL and HFC technology. The Company is currently in the process of developing an SDSL product with RelTec Corporation, a leading telco supplier. The Company has entered into an agreement with ADI under which the Company granted ADI a perpetual, worldwide, exclusive license to make, use and sell chipsets that incorporate VDSL and HFC software that the Company may develop. The Company has also agreed that, if it develops and sells ADSL technology that implements DWMT, it would license such technology to ADI on substantially the same terms as those for the Company's ADSL technology. See "-- Relationship with ADI."

## ADSL EVALUATIONS AND TRIALS

Telcos typically put new products through a rigorous approval process before deploying them on a broad basis. The approval process usually involves a number of different phases, including (i) laboratory evaluation, in which the product is tested against relevant industry standards; (ii) technical trial, in which the product is tested in the field with a small number of users; (iii) marketing trial, in which the product is tested in the field with a larger number of users and telcos begin to train their personnel to install and maintain the product; (iv) initial commercial deployment, in which telcos make the product available to selected customers for selected applications; and (v) commercial deployment, in which telcos make the product available to a substantial number of customers.

A number of telcos are evaluating and testing the Company's ADSL products as part of their approval process. For example, GTE started a trial of the Company's products earlier this year in its laboratories. Several other telcos have also begun laboratory evaluations of the Company's ADSL products. Although the Company believes that its ADSL technology is competitive, there can be no assurance that it will be reviewed favorably by any of these telcos, or that ADSL will emerge as a
technology in which the telcos wish to invest. Moreover, neither GTE nor any other telco has given the Company information as to the possible timing of its approval process. See "Risk Factors -- Dependence on Acceptance of ADSL Technology" and "-- Reliance on Telcos."

## RELATIONSHIP WITH ADI

ADI produces broadband chipsets incorporating the Company's ADSL technology pursuant to an agreement entered into between ADI and the Company in 1993. The Company's relationship with ADI enables the Company to take advantage of ADI's ASIC and digital signal processor and analog integrated circuit manufacturing capabilities. Pursuant to its agreement with ADI, the Company received development funding from ADI to create software, which it licensed to ADI for ADI's digital signal processors. The Company receives a royalty from ADI for every ADSL Chipset sold by ADI. In 1994 and 1995, the Company and ADI entered into additional agreements to expand their relationship to include the development and marketing of chipsets for HFC and VDSL data communications. In 1995, development funding from ADI accounted for approximately $23 \%$ of the Company's total revenue. As of June 30, 1996, the Company had not received any revenue from sales of ADSL Chipsets.

The relationship between ADI and the Company is an exclusive arrangement, under which neither party may enter into competing agreements with third parties. In order to maintain the exclusivity provisions of the ADI agreement, ADI is obligated to make certain minimum royalty payments to the Company. The Company has agreed with ADI that if ADI can show that the royalty paid to the Company does not allow ADI to compete in the marketplace, the Company will engage in good faith negotiations to reduce the royalty. Any such reduction could have a material adverse effect on the Company's business, financial condition and results of operations. Even if the Company were permitted to license its technology to other parties, the Company has agreed that it will not grant licenses to other parties under terms more favorable than those given to ADI. The Company has also agreed that, if it develops and sells ADSL technology hat implements DWMT technology, it would license such technology to ADI on substantially the same terms as those for the Company's ADSL technology. In addition, the Company has agreed with ADI that if the Company's HFC or VDSL technology becomes an industry standard, the Company will license such technology on fair, equitable and non-discriminatory terms.

Chipsets manufactured pursuant to the agreements with ADI, including the ADSL Chipset, will be sold by ADI. Therefore, the Company's ability to achieve its business objectives will depend on ADI's ability and desire to deliver chipsets to the marketplace. See "Risk Factors -- Substantial Dependence on Analog Devices, Inc." Jerald G. Fishman, ADI's President and Chief Operating Officer, is a director of the Company. See "Management."

## STRATEGIC RELATIONSHIPS AND CUSTOMERS

In an effort to facilitate the deployment of its products and technology, the company has entered into the strategic development relationships described below.

DSC. Pursuant to a development agreement with the Company, DSC is developing a product called Mediaspan, which incorporates the Company's proprietary DWMT technology to permit telephony over an HFC network. A prototype of this product was publicly demonstrated at a trade show by the Company and DSC in May 1996. The Company is licensing certain software and board-level designs to DSC for Mediaspan in return for software license and royalty fees. DSC has exclusive marketing and sales responsibility for Mediaspan, including setting the price at which Mediaspan may be sold. The Company is responsible for providing DSC with support for software licensed by the Company to DSC at no extra charge. DSC may call upon the Company to provide consulting services to DSC's customers, in which case the Company is permitted to charge for its services. DSC has expressed an interest in purchasing \$2,000,000 of Common Stock in this offering at the initial public offering price per share. See "Underwriting."

RelTec Corporation. RelTec Corporation ("RelTec") and the Company are negotiating an agreement pursuant to which they plan to develop an SDSL product incorporating chipsets from ADI and custom software from the Company that is based upon the Company's proprietary DWMT technology. The Company expects to receive from RelTec development funding to create the software and software license fees when RelTec sells the SDSL product. The Company also plans to develop ADSL board-level products with RelTec. There can be no assurance, however, that the Company and RelTec will reach an agreement or that, if an agreement is reached, they will be successful in their development efforts.

Broadband Technologies, Inc. The Company has an agreement with Broadband Technologies, Inc. ("BBT") to develop a prototype for upstream VDSL transmissions, based upon the Company's DWMT technology. The Company and ADI are developing a VDSL chipset for BBT to use in its fiber-to-the-curb systems. The Company received a one time payment from BBT upon signing of the agreement and will receive a further payment from BBT upon acceptance by BBT of prototypes that the Company delivers on time to BBT. The Company is required to make payments to BBT in the event the Company performs services or provides prototypes to other companies that are similar to those provided or performed by the Company for BBT under the agreement. BBT may terminate the agreement at any time.

The Company's strategy is to maintain and strengthen its existing relationships with OEMs that supply telcos and to establish new relationships with additional OEMs of this type and with leading LAN and WAN data and telecommunications systems manufacturers and equipment providers. Through existing and future relationships, the Company's strategy is to encourage OEMs to integrate the Company's technology into their systems and assist the Company in obtaining market share for its technology. However, there can be no assurance that the Company will successfully maintain its existing relationships or develop new relationships, and the failure by the Company to maintain and develop successful relationships with a sufficient number of OEMs could have a material adverse effect on the Company's business, financial condition and results of operations.

In addition to partnering with OEMs, the Company intends to sell its products directly to telcos such as GTE and the RBOCs and through telecommunications providers such as Westell Technologies, Inc. The Company typically provides technical support services to its OEM and telco customers, often without charge, as part of its strategy to encourage testing and deployment of its products.

## LAST MILE TECHNOLOGY

Telcos' copper wire networks have several limitations that make high speed data transmission difficult. A significant portion of these networks is old and has been implemented and repaired over many years. Consequently, these networks consist of several different grades of wire. Telco wiring is also unshielded, making data transmission susceptible to interference from noise, including sources such as motors, lightning, broadcast radio and POTS. In addition, telco wiring has a basic transmission property that causes the signal quality to degrade rapidly as the frequency increases or the distance travelled by the signal increases.

## ADSL Technology

ADSL is a method for expanding the useable bandwidth of copper wire.
Typically, ADSL systems divide a one megahertz (MHz) bandwidth on copper wire into three segments: (i) the 0 to 4 kilohertz (KHz) range is used for POTS, (ii) the 25 KHz to 100 KHz range is used to transmit data upstream and (iii) the 100 KHz to 1 MHz range is used to transmit information downstream (see Figure 1). The ANSI specification for ADSL calls for operation rates of 1.5 to 8 Mbps downstream and 64 to 640 Kbps upstream when operating over existing copper wires at a distance of up to 18,000 feet.

## [GRAPHIC]

FIGURE 1. ADSL systems divide a 1 MHz bandwidth on copper wire into three segments.

DMT versus CAP

There are two primary modulation techniques for transmitting the data signals involved in ADSL: DMT, which the Company uses, and CAP. DMT is a multi-carrier modulation technique that was chosen by ANSI as the telecommunications industry standard for ADSL. CAP is a single-carrier modulation technique developed by AT\&T Paradyne Corp. The fundamental difference between CAP and DMT is that CAP treats each of the upstream and downstream frequency ranges as a single element over which as many information bits as possible are transmitted. In contrast, DMT divides the upstream and downstream bands into groups of different smaller subchannel frequency ranges (approximately 4 KHz each) into which a much smaller number of bits are coded and transmitted simultaneously (see Figure 2).

The Company believes that DMT technology is better able than CAP technology to address the inherent problems of the telcos' copper wire networks. Because of its multiple small frequency bands, DMT is able to adjust and adapt the movement of information to both extract more throughput from a wire and to avoid sending information into frequency ranges that are not useable. Since CAP treats the entire frequency range as a single element, it does not have the ability to balance as easily the use of the frequency spectrum to match efficiently the performance of a given wire. DMT-based systems have greater flexibility than CAP-based systems because even if a system is unable to achieve the full rated speed, DMT-based modems can adapt and operate at a speed where information can move reliably.

FIGURE 2. CAP treats each of the upstream and downstream frequency ranges as a single element, while DMT divides the upstream and downstream bands into a number of smaller subchannels.

## DWMT Technology

In addition to its DMT technology, the Company has invented a proprietary technology based on wavelet mathematics called DWMT. The Company believes that, as a result of its research and development of DWMT technology, it is a leader in commercialization of wavelets for signal processing and telecommunications applications.

Multi-carrier systems divide a frequency range into the desired number of subchannels by using a mathematical numerical process. Because of basic limits of the form of mathematics and the limits of time and computerization speeds, the process of creating isolated subchannels is imperfect. These imperfections inhibit modems from achieving theoretical performance limits. The subchannelization method used in creating DMT modems utilizes a technique called a Fourier transform. This technique has been used in the telecommunications industry since the 1960s, but has become more practical for high speed, high volume use as digital signal processors have improved. The wavelet transform yields significantly better subchannelization than the Fourier transform. Because this technique more closely approximates ideal subchannelization, the performance of a wavelet-based DWMT system can produce performance superior to a non-wavelet DMT system operating in a noisy environment.

DWMT Application to SDSL, VDSL, HFC
Although Aware's ADSL Internet Access Modem uses DMT technology, the Company intends to apply DWMT technology to new products using SDSL, VDSL and HFC applications. The Company is seeking to incorporate DWMT techniques into industry standards body recommendations. The following is a brief description of possible applications using SDSL, VDSL and HFC:

SDSL. Symmetric Digital Subscriber Line technology is similar to ADSL but allows two-way data transmission at the same rates. The Company is developing an SDSL application using its DWMT technology. SDSL provides up to 2 Mbps of data in both directions on single twisted-pair copper wire at distances up to 18,000 feet while allowing simultaneous POTS. The Company expects that this SDSL application can be used for LAN interconnecting and enhanced telephony applications.

VDSL. The Company believes that Very high-speed Digital Subscriber Line technology will be the next generation of high-speed user access, critical to the implementation of fiber-to-the-neighborhood and fiber-to-the-curb architectures. These architectures involve the deployment of an access node that utilizes fiber optic cable from a telco's central office to the access node, thus bringing fiber closer to the user. The final connection to the user is new or existing copper wire or new coaxial cable.

VDSL is being designed with the objective of providing performance up to six times faster than ADSL but over a shorter distance. The goal of VDSL is to enable telcos to provide a combination of digital TV, data dial-tone and regular telephony service on a single twisted-pair of copper wire. The Company is using DWMT to develop the upstream portion of a VDSL system.

HFC. By using the frequency band from 5 to 40 MHz for upstream transmission and the frequency band from 450 to 750 MHz for downstream transmission, it is possible to provide two-way services such as telephony and data communications on existing HFC networks. Each of these frequency bands is typically divided into smaller bands, 1 to 2 MHz wide. The Company's HFC technology, called WaveTel HFC, is based upon DWMT and will provide up to 8 Mbps transmission over a 2 MHz band. HFC telephony and cable modem technology enables cable companies to re-use their existing network to provide two-way services. New HFC networks are also being installed by telcos so that they can offer television services as well as telephone and data services.

## HFC MARKET

Cable companies are also seeking to meet customers' demands for higher speed data transmission. Like telcos, cable companies possess substantial installed infrastructures. Ninety percent of homes in the U.S. now have access to cable and sixty-five percent of homes in the U.S. subscribe to the services offered by cable companies. The cable companies' HFC networks are capable of carrying more data downstream than existing copper wire networks but have limitations with upstream transmissions. Rather than establishing a dedicated link to each home or office, customers on a cable network share a portion of the bandwidth. Consequently, this architecture causes bottlenecks when multiple end-users attempt simultaneously to use available upstream bandwidth. As a result, the cable companies' networks require new technologies to meet customer demand for high speed two-way data transmission.

In an effort to address this problem, cable company suppliers are working to improve HFC technology, which would permit two-way broadband digital communications over typical cable networks. HFC technology uses digital signal processing to allow efficient sharing of the upstream bandwidth so that a cable line can be used for two-way transmissions. New HFC networks are also being installed by telcos so that they can offer television service as well as telephone and data dial-tone services.

The Company is using its expertise in digital communications and digital signal processing technology to develop products for use on HFC networks that increase the speed and reliability of data communications over these networks. In particular, the Company is developing a product using its proprietary DWMT technology designed to work with DSC's equipment to enable data and telephone service over HFC networks.

## OTHER PRODUCTS AND TECHNOLOGY

The Company also develops data and video compression products. Since 1988, the Company has developed expertise, trade secrets and intellectual property in the field of wavelet transform-based data compression and has obtained several patents in this area. The Company's wavelet compression technology enables digital image, video and certain types of data to be compressed to between $1 \%$ and $10 \%$ of their original size. Using wavelet compression, the decompressed data are not bit for bit identical to the original data. A risk with this technique is that, as the original data get smaller, a larger amount of error is introduced into the decompressed data. However, compressed data can be transmitted across networks faster and storage costs are reduced. The Company's wavelet compression technology uses progressive transmission, which allows a user to begin displaying immediately a low resolution version of an image as it is being transmitted across a network.

In 1993, the Company began an effort to produce commercially marketable wavelet data compression software products. The Company currently offers five software-based compression products and has an agreement with ADI to produce a wavelet video compression ASIC. The

Company's compression products include the following: AccuPress for Multimedia (which is a general purpose compression product); AccuPress for Remote Sensing (which is designed for compression of satellite-based remote sensing imagery); Accupress for Radiology (which is used to compress digital radiographs and other types of medical imagery); SeisPact (which companies in the oil and gas industry can use to store and handle large amounts of seismic data); and WSQ by Aware (which compresses digital fingerprint data for use by law enforcement agencies such as the FBI)

## SALES AND MARKETING

The Company's telecommunications products are complex, requiring the Company's sales people to have a high degree of technical sophistication in order to market the products effectively. The Company believes that technology selections involving the Company's products are frequently made at senior levels within a prospective customer's organization. Consequently, the Company has implemented a sales and marketing strategy that relies primarily on presentations by senior management to key employees of telcos and OEMs. As ADSL technologies are adopted more broadly, the Company expects to hire additional employees in sales and marketing to support the efforts of senior management.

## COMPETITION

The markets for the Company's products are intensely competitive and the Company expects competition to increase in the immediate future, especially in the emerging ADSL market. The Company intends to compete on the basis of technology, price, the timing of product delivery, product features, quality, reliability and customer satisfaction. The Company currently competes, or expects to compete in the future, with the following categories of companies: (i) other vendors of DMT-based ADSL technology, such as Amati Communications Corporation ("Amati") and Orckit Communications Limited ("Orckit"); (ii) vendors of alternative ADSL technologies, such as AT\&T Paradyne Corp., which is currently marketing its CAP-based ADSL technology; (iii) the RBOCs, which as a result of the Telecommunications Act are no longer prohibited from manufacturing telecommunications equipment; and (iv) OEMs and other systems integrators, such as U.S. Robotics Corporation, Ericsson, Inc., Motorola, Inc. and Alcatel Network Systems, Inc.

The Company's success will depend on telcos' willingness to invest in broadband digital services based on its ADSL technology. The Company expects that its ADSL products will compete not only with other products that increase the efficiency of digital transmission over copper wire, such as ISDN for Internet Access, but also with other broadband transmission technologies, such as HFC, coaxial cable, fiber optic cable, digital broadcast satellite and other wireless technologies. The Company believes its current and future broadband products will permit telcos to upgrade their networks in a flexible and cost-effective way, but telcos may choose to deploy products using better established technologies to upgrade their networks including fiber optic cable, which many telcos favor. To the extent that telcos choose to install fiber, optic and other transmission media between central offices and end users, the Company's business, financial condition and results of operations will be materially adversely affected.

The Company believes that, in the ADSL market, its DMT-based products will ransmit data at a higher rate and with greater reliability than products using the CAP technique. However, AT\&T Paradyne Corp., which has significantly greater financial resources than the Company, offers CAP-based ADSL products that were introduced prior to the Company's products and are more readily available than the Company's products.

To date there has been only limited commercial deployment of the Company's competitors' DMT-based ADSL products and therefore the Company is uncertain how its products will compare with products sold by Amati and Orckit, each of which manufactures DMT-based ADSL products. Each of Amati and Orckit has made claims in its sales literature suggesting that its products provide data transmission at rates that are equal to or faster than the transmission rate provided by the Company's
products. However, there is no independent means by which the Company can corroborate these claims.

In the HFC market, the Company is attempting to sell its products to system ntegrators such as Tellabs, Inc., Northern Telecom Ltd., Scientific-Atlanta Inc. and General Instrument Corporation. The Company believes that these companies have developed or are developing proprietary modulation schemes using in-house technology that may be competitive with the Company's technology. Although the Company believes that its DWMT technology will offer more robust communications than these proprietary modulation schemes, the company has not manufactured any marketable products based on its DWMT technology and there can be no assurance that the Company will be able to do so or that a market for such products will develop.

The markets for the Company's wavelet image compression technology are competitive, and are expected to become increasingly so in the near future. In addition, the Company's WSQ product is an implementation of an open standard and is therefore subject to competition.

Many of the Company's competitors and potential competitors, including AT\&T Paradyne Corp. and the RBOCs, have significantly greater financial, technological, manufacturing, marketing and personnel resources than the Company. There can be no assurance that the Company will be able to compete successfully or that competition will not have a material adverse effect on the Company's business, financial condition and results of operations. See "Risk Factors -- Dependence on Acceptance of ADSL Technology," "-- Reliance on Telcos," "-- Rapid Technological Change; Dependence on New Products," "-- Competition" and "Business -- Last Mile Technology."

## INTELLECTUAL PROPERTY

In the field of telecommunications technology, the Company holds three patents for applying wavelet mathematics to communications systems. The Company has five pending patent applications that pertain to the application of multi-carrier technology to broadband communications. The Company also holds six patents for image compression and processing, three patents for video compression, one patent for audio compression and one patent for certain optical applications.

Although the Company has patented certain of its technology, the Company relies primarily on know-how and trade secrets to protect its intellectual property. The Company attempts to protect its trade secrets and other proprietary information through agreements with its customers, suppliers, employees and consultants, and through other security measures. Each of the Company's employees is required to sign a nondisclosure and noncompetition agreement. Although the Company intends to protect its rights vigorously, there can be no assurance that these measures will be successful. In addition, the laws of certain countries in which products incorporating the company's technology may be developed, manufactured or sold may not protect the Company's products and intellectual property rights to the same extent as the laws of the United States

While the Company's ability to compete may be affected by its ability to protect its intellectual property, the Company believes that, because of the rapid pace of technological change in the telecommunications industry, its technical expertise and ability to introduce new products on a timely basis will be more important in maintaining its competitive position than protection of its existing intellectual property and that patent, trade secret and copyright protections are important but must be supported by other factors such as the expanding knowledge, ability and experience of the Company's personnel, new technology and products and product enhancements. Although the Company continues to implement protective measures and intends to defend vigorously its intellectual property rights, there can be no assurance that these measures will be successful.

Many participants in the telecommunications industry have an increasing number of patents and have frequently demonstrated a readiness to commence litigation based on allegations of patent and other intellectual property infringement. Third parties may assert exclusive patent, copyright and other intellectual property rights to technologies that are important to the Company. The Company
has received letters from two companies, Amati and Telebit Corporation
("Telebit"), each asserting that it owns certain U.S. and foreign patents that are necessary for products that comply with the ANSI standard for ADSL, claiming that the Company's ADSL technology would infringe such patents, and offering the Company the opportunity to enter into a license agreement with respect to such patents. The Company has been informed that ADI has received similar letters the company has reviewed the Amati and Telebit patents and has received an opinion of its patent counsel, Cesari and McKenna, based upon the Company's oral description of its technology, to the effect that the Company's ADSL Internet Access Modem which it intends to sell does not infringe any valid claim of any of the Amati and Telebit patents. Based upon this opinion, the Company believes that it does not require a license under the Amati or Telebit patents in order to conduct its proposed business.

Despite this opinion, there can be no assurance that a court to which the ssue is submitted would not find that the Company's products infringe the Amati or Telebit patents, nor that Amati or Telebit will not continue to assert infringement. If the Company is found to have infringed any of such patents, the Company could be subject to substantial damages and/or an injunction preventing it from conducting its proposed business, and the company's business could be materially and adversely affected. The Company has also received notice from Amati of the pendency of various patent applications which Amati considers to be pertinent to the design and operation of ADSL modems. Unless and until a patent actually issues, there can be no infringement, and the Company has not examined any such patent applications or received an opinion of patent counsel with respect thereto. Although Amati and Telebit have offered to license their patents and their patent applications to the Company, there can be no assurance that any license would be available on acceptable terms should the Company choose to pursue such license or be found to infringe such patents. In addition, there can be no assurance that other third parties will not assert infringement claims against the Company in the future, that these assertions or those of Amati and Telebit, will not result in protracted and costly litigation, or that the Company would prevail in any such litigation or be able to license any valid patents from third parties on commercially reasonable terms. Further, such litigation, regardless of its outcome, could result in substantial costs to and diversion of effort by the Company. Litigation may also be necessary to enforce the Company's intellectual property rights. Any infringement claim or other litigation against or by the Company could have a material adverse effect on the Company's business, financial condition and results of operations. See "Risk Factors -- Proprietary Technology; Risk of Third-Party Claims of Infringement."

## MANUFACTURING

The Company does its own assembly and testing of its ADSL products, of which only a limited number have been manufactured to date. The Company obtains ADSL Chipsets directly from ADI and other parts needed for its ADSL products from a variety of suppliers. The Company's manufacturing capacity is very limited and the Company intends to use a combination of its internal manufacturing capacity and third party manufacturers to assemble and test its products. The Company expects that third party manufacturers will obtain product parts directly from the Company and from suppliers chosen by the Company. Other than the ADSL Chipset, which is available through ADI, the Company believes that other parts necessary for its ADSL products are available from a large number of suppliers and that there exist many qualified manufacturers to assemble and test the Company's products

## GOVERNMENT REGULATION

The telecommunications industry, including most of the Company's customers, is subject to regulation by federal and state agencies, including the Federal Communications Commission ("FCC") and various state public utility and service commissions. While such regulation does not necessarily affect the Company directly, the effects of such regulations on the Company's customers may, in turn, adversely affect the Company's business and results of operations. For example, FCC regulatory policies affecting the availability of telco services and other terms on which telcos conduct their business may impede the Company's plans for deployment of its technology.

In February 1996, the Telecommunications Act was enacted. A primary factor in passage of the Telecommunications Act was the desire to deregulate and foster competition in the telecommunications markets. While the Company believes deregulation and increased competition, in general, will be favorable to its operations and business plan, the effect of the Telecommunications Act on the telecommunications industry is unclear. The Company's strategy depends, in part, on the RBOCs and other leading telcos remaining in a dominant position as consumers of ADSL equipment from the Company or its OEMs. If the product market for ADSL equipment or other such products becomes more fragmented as a result of deregulation, then the Company could experience a material adverse effect on its business, financial condition or results of operations.

In addition, the Company's business and operating results may also be adversely affected by the imposition of certain tariffs, duties and other import restrictions on components that the Company or its OEM customers obtains from non-domestic suppliers or by the imposition of export restrictions on products sold internationally and incorporating the Company's technology. Internationally, governments of the United Kingdom, Canada, Australia and numerous other countries actively promote and create competition in the telecommunications industry. Changes in current or future laws or regulations, in the U.S. or elsewhere, could materially and adversely affect the Company's business, financial condition or results of operations.

## RESEARCH AND DEVELOPMENT

The Company believes that its future success depends on its ability to adapt to the rapidly changing telecommunications environment and to meet its customers' needs. The timely development and introduction of new products is essential to maintain the Company's competitive position. The Company develops most of its products in-house and, at June 30, 1996, had a research and development staff of 19 employees, including nine employees holding doctorate degrees in areas related to digital signal processing and digital communications theory. The Company is focusing its current development efforts primarily on improvements of its ADSL technology as well as on products incorporating DWMT technology for SDSL, VDSL and HFC applications. See "-- Telecommunications Products -- Telecommunications Product Development."

## EMPLOYEES

As of June 30, 1996, Aware had a total of 35 employees, including 19 in research and development, 6 in sales and marketing, 8 in administration and 2 in manufacturing. The Company believes that its future success will depend in large part on the continued service of its technical and senior management personnel and upon the Company's continuing ability to attract and retain highly qualified technical and managerial personnel. Competition for highly qualified personnel is intense, and there can be no assurance that the Company will be able to retain its key managerial and technical employees or that it will be able to attract and retain additional highly qualified technical and managerial personnel in the future. None of the Company's employees is represented by a labor union. The Company considers its employee relations to be good.

## FACILITIES

The Company is located in an 11,000 square foot leased facility in Bedford, Massachusetts under a lease that expires in 1998. Aware believes that its existing facilities are adequate to meet its current requirements and that suitable space will be available as needed.

## LITIGATION

There are no pending legal proceedings to which the Company is a party or to which any of its properties are subject which, either individually or in the aggregate, are expected by the Company to have a material adverse effect on its business, financial position or results of operations.

The following table sets forth certain information with respect to the executive officers and directors of the Company as of June 30, 1996:

| NAME | AGE | POSITION |
| :---: | :---: | :---: |
| Charles K. Stewart(1)(2). | 49 | Chairman of the Board of Directors |
| James C. Bender(1) | 43 | President, Chief Executive Officer and Director |
| Michael A. Tzannes, Ph.D. | 35 | Senior Vice President, Telecommunications |
| David C. Hunter | 40 | Senior Vice President, Product Development |
| Richard P. Moberg, C.P.A. | 41 | Chief Financial Officer and Treasurer |
| Edmund C. Reiter, Ph.D. | 32 | Vice President, Advanced Products |
| John K. Kerr(1)(2)(3) | 58 | Director |
| Jerald G. Fishman.. | 51 | Director |
| John S. Stafford, Jr.(3). | 58 | Director |

(1) Member of the Executive Committee
(2) Member of the Audit Committee
(3) Member of the Compensation Committee

Charles K. Stewart has been a director of the Company since 1988 and Chairman of the Board of Directors since April 1995. Mr. Stewart previously served as Chairman of the Board of Directors from 1988 to 1990 and from March 1994 to November 1994. From 1975 to December 1993, he traded options, futures and securities on the Chicago Board of Options Exchange and has been involved in private venture capital transactions since 1984. Mr. Stewart received an M.B.A. from Northwestern University and a B.A. from Yale University.

James C. Bender has been President, Chief Executive Officer and a director of the Company since October 1994. From April 1992 to February 1994, Mr. Bender served as President and Chief Executive Officer of Logicraft, Inc., a network server company. From 1986 to April 1992, Mr. Bender served as Logicraft's President and Chief Operating Officer. Mr. Bender received an M.B.A. from the Harvard Graduate School of Business Administration and a B.S. from Lowell Technological Institute.

Michael A. Tzannes, Ph.D. has been the Company's Senior Vice President, Telecommunications since April 1996. Dr. Tzannes served as the Company's Vice President, Telecommunications from December 1992 to April 1996, as a Senior Member of the Company's Technical Staff from January 1991 to November 1992 and as a consultant to the Company from October 1990 to December 1990. From 1986 to 1990, he was a Staff Engineer at Signatron, Inc., a telecommunications technology and systems developer. Dr. Tzannes received a Ph.D. in electrical engineering from Tufts University, an M.S. from the University of Michigan at Ann Arbor and a B.S. from the University of Patras, Greece.

David C. Hunter joined the Company in May 1996 as Senior Vice President, Product Development. From 1982 to April 1996, Mr. Hunter served as Vice President, Research and Development of I.D.E. Corporation ("IDEA"), a manufacturer of data communications equipment. Mr. Hunter was a founder and a director of IDEA. Mr. Hunter received an M.B.A. with high distinction from the Harvard Graduate School of Business Administration and a B.S. with distinction from Cornell University.

Richard P. Moberg, C.P.A. joined the Company in June 1996 as Chief Financial Officer and Treasurer. From December 1990 to June 1996, Mr. Moberg held a number of positions at Lotus Development Corporation, a computer software developer, including Corporate Controller from June 1995 to June 1996, Assistant Corporate Controller from May 1993 to June 1995 and Director of Financial Services from December 1990 to May 1993. Mr. Moberg received an M.B.A. from Bentley College and a B.B.A. in accounting from the University of Massachusetts at Amherst.

Edmund C. Reiter, Ph.D. has been the Company's Vice President, Advanced Products since August 1995. Prior to that, he served as the Company's Manager of Product Development for still image compression products from June 1994 to August 1995, as a Senior Member of the Company's Technical Staff from November 1993 to June 1994, and as a Member of the Technical Staff from December 1992 to November 1993. Dr. Reiter served as Senior Scientist at New England Research, Inc. from January 1991 to October 1992. Dr. Reiter received a B.S. from Boston College and a Ph.D. from the Massachusetts Institute of Technology.

John K. Kerr has been a director of the Company since 1990. Mr. Kerr previously served as a director of the Company from 1988 to 1989 and as the Chairman of the Board of Directors from November 1992 to March 1994. From June 1992 to November 1994, Mr. Kerr served as the Company's Assistant Vice President of Marketing. Mr. Kerr has been General Partner of Grove Investment Partners, a private investment partnership, since 1990. Mr. Kerr received an M.A. and a B.A. from Baylor University.

Jerald G. Fishman has been a director of the Company since May 1996 and President, Chief Operating Officer and a director of ADI since November 1991. Mr. Fishman joined ADI in 1971 and held a variety of management positions in marketing, operations and strategic planning, including Group Vice President from 1982 to 1988 and Executive Vice President from 1988 to November 1991. Mr. Fishman received a B.S. in electrical engineering from the City College of New York, an M.S. in electrical engineering from Northeastern University, an M.B.A. from Boston University and a J.D. from Suffolk Law School.

John S. Stafford, Jr. has been a director of the Company since 1988. Mr. Stafford has been a Member of the Chicago Board of Options Exchange since 1975, where he trades financial futures, options and equity instruments. Mr. Stafford received an M.B.A. from the University of North Carolina and a B.A. from Davidson College.

The Board of Directors is divided into three classes, one class of which is elected each year at the annual meeting of stockholders to hold office for a term of three years. Each director holds office until his successor has been duly elected and qualified. Messrs. Bender and Fishman serve in the class whose terms expire in 1997; Mr. Kerr serves in the class whose terms expire in 1998; and Messrs. Stafford and Stewart serve in the class whose terms expire in 1999. The Company has agreed to use its best efforts to cause Mr. Bender to be elected to the Company's Board of Directors. See "-- Employment Agreement." Executive officers are elected annually by the Board of Directors and serve at the discretion of the Board or until their respective successors have been duly elected and qualified. Except for Mr. Bender, no executive officer of the Company has an employment agreement with the Company. There are no family relationships among the directors and executive officers of the Company.

The Board of Directors has established an Executive Committee, which has all of the powers of the Board of Directors except the power to: (i) change the number of directors or fill vacancies on the Board of Directors; (ii) elect or fill vacancies in the offices of President, Treasurer or Clerk; (iii) remove any officer or director; (iv) amend the By-Laws of the Company; (v) change the principal office of the Company; (vi) authorize the payment of any dividend or distribution to shareholders of the Company; (vii) authorize the reacquisition of capital stock for value; and (viii) authorize a merger. The Board of Directors has established a Compensation Committee, which provides recommendations concerning salaries and incentive compensation for senior management of the Company and administers the Company's stock option plans. See "- Stock Option Plans." The Board of Directors has also established an Audit Committee, which reviews the results and scope of the annual audit of the Company's financial statements conducted by the Company's independent accountants, the scope of other services provided by the Company's independent accountants, proposed changes in the Company's financial and accounting standards and principles, and the Company's policies and procedures with respect to its internal accounting, auditing and financial controls. The Audit Committee also makes recommendations to the Board of Directors on the engagement of the independent accountants, as well as other matters which may come before the Audit Committee or at the direction of the Board of Directors.

## COMPENSATION COMMITTEE INTERLOCKS AND INSIDER PARTICIPATION

The Company's Compensation Committee is currently composed of Messrs. Kerr and Stafford. In fiscal 1995, the Company did not have a Compensation Committee and the compensation of the Company's executive officers was determined by the Board of Directors. William N. Sick, Jr. served on the Board of Directors throughout 1995. Howard L. Resnikoff, Ph.D., a director of the Company from inception to April 1995, served as Chairman of the Board of Directors from November 1994 to April 1995 and as President from inception to October 1994. Mr. Bender, the Company's President and Chief Executive Officer, served on the Board of Directors throughout 1995 and participated in the deliberations of the Board of Directors concerning the compensation of the Company's executive officers other than himself. In 1995, no other officer or employee of the Company participated in any such deliberations. No interlocking relationship has existed between the Company's Board of Directors or Compensation Committee and the board of directors or compensation committee of any other company since January 1, 1995.

In June 1994, Mr. Sick purchased 770 shares of Series E Preferred Stock for $\$ 100,100$. In December 1992, in connection with the issuance of its Series D Convertible Preferred Stock ("Series D Stock") the Company entered into a Secured Non-Recourse Adjustable Rate Promissory Note and Pledge Agreement with Dr. Resnikoff in the principal amount of $\$ 344,000$. The note was issued to permit Dr. Resnikoff to acquire shares of Series D Stock and was secured by a pledge of the 3,440 shares so acquired and additional collateral. In March 1995, the Company accepted the shares of Series $D$ Stock as payment for the principal and accrued interest on the note, and cancelled the note. See "Certain Transactions."

DIRECTOR COMPENSATION

Each non-employee director of the Company is reimbursed for expenses incurred in attending meetings of the Board of Directors. Directors of the Company are not paid any separate fees for serving as directors. On May 23, 1996, the Company granted Messrs. Stewart and Fishman nonstatutory options under the 1996 Option Plan to purchase 330,000 and 150,000 shares of Common Stock, respectively, at an exercise price of $\$ 8.25$ per share. The options vest in equal monthly installments over a period of three years, commencing June 1, 1996, except that 30,000 of Mr . Stewart's options were fully vested as of the date they were granted. For information concerning certain options granted to Mr. Bender, see "-- Stock Option Plans -- Option Grants During 1995" and "-- Employment Agreement."

## EXECUTIVE COMPENSATION

## SUMMARY OF CASH AND OTHER COMPENSATION

The following table provides certain summary information concerning compensation earned for services rendered in all capacities to the Company in the fiscal year ended December 31, 1995 by the Company's President and Chief Executive Officer and the other executive officer whose salary during such fiscal year was in excess of \$100,000 (collectively, the "Named Executive Officers").

## SUMMARY COMPENSATION TABLE

LONG-TERM
COMPENSATION
AWARDS(1)
NAME AND PRINCIPAL POSITION

Senior Vice President, Telecommunications
(1) Represents stock options granted under the Company's 1990 Incentive and Nonstatutory Stock Option Plan. In fiscal 1995, the Company did not make any restricted stock awards, grant any stock appreciation rights or make any long-term incentive plan payouts. Other compensation in the form of perquisites and other personal benefits has been omitted because the aggregate amount of such perquisites and other personal benefits constituted less than $\$ 50,000$ or $10 \%$ of the executive's total annual salary.

1990 INCENTIVE AND NONSTATUTORY STOCK OPTION PLAN

In January 1990, the Board of Directors adopted, and the stockholders approved, the 1990 Incentive and Nonstatutory Stock Option Plan (as amended to date, the "1990 Option Plan"). The 1990 Option Plan authorizes the issuance of options to purchase an aggregate of $2,873,002$ shares of Common Stock. As of June 30, 1996, options to purchase $1,055,557$ shares of Common Stock had been exercised, options to purchase 1,719,158 shares of Common Stock were outstanding under the 1990 Option Plan at a weighted average exercise price of $\$ 1.29$ per share and 98,287 shares of Common Stock were available for future option grants The Board of Directors does not intend to grant further options under the 1990 Option Plan. The 1990 Option Plan will terminate in January 2000 unless earlier terminated by the Board of Directors. Under the 1990 Option Plan, the Board of Directors has granted (i) options to purchase Common Stock intended to qualify as incentive stock options ("Incentive Options"), as defined in Section 422 of the Internal Revenue Code of 1986, as amended (the "Code") and (ii) options that do not so qualify ("Nonstatutory Options").

1996 STOCK OPTION PLAN

In May 1996, the Board of Directors adopted, and the stockholders approved, the Aware, Inc. 1996 Stock Option Plan (the "1996 Option Plan"), authorizing the issuance of options to purchase an aggregate of 3,000,000 shares of Common Stock. As of June 30, 1996, options to purchase 1,456,000 shares of Common Stock at an exercise price of $\$ 8.25$ per share were outstanding under the 1996 Option Plan and $1,544,000$ shares of Common Stock were available for future option grants. The 1996 Option Plan is administered by the Compensation Committee (the "Committee"), none of the members of which is an officer or employee of the Company. All members of the Committee are "disinterested persons" as that term is defined under rules promulgated by the Securities and Exchange Commission. he Committee selects the individuals to whom options will be granted and determines the option exercise price and other terms of each option, subject to the provisions of the 1996 Option Plan. The 1996 Option Plan authorizes the grant of both Incentive Options and Nonstatutory Options. Incentive Options and Nonstatutory Options may be granted under the 1996 Option Plan to employees of the Company or a subsidiary, including directors and officers who are employees of the Company or a subsidiary. Nonstatutory Options may also be granted under the 1996 Option Plan to directors of the Company or a subsidiary who are not employees of the Company or a subsidiary and to consultants and other persons who render services to the Company or a subsidiary.

Under the terms of the 1996 Option Plan, each director of the Company who is not an employee of the Company or any subsidiary (a "Non-Employee Director") shall, at the first meeting of the Board of Directors following each annual meeting of stockholders, commencing with the first meeting of the Board of Directors following the Company's annual meeting of stockholders in 1997, be automatically granted a Nonstatutory Option (a "Director Option") to purchase that number of shares of Common Stock determined by dividing $\$ 100,000$ by the fair market value of the Common Stock on the date of grant. No Director Option shall be granted prior to the first meeting of the Board of Directors following the annual meeting of stockholders in 1999 to any individual who was or became a director of the Company, and was granted an option to purchase Common Stock of the Company, after December 31, 1995 and before the first meeting of the Board of Directors following the annual meeting of stockholders in 1997. Each Director Option shall have a term of six years and shall vest in 12 equal consecutive quarterly installments, the first to vest on the last day of the month following the month in which the grant occurs. Each Director Option will become fully exercisable upon the occurrence of a sale or merger with a change in control (as defined in the 1996 Option Plan). In the event that a director's position as such terminates or is terminated by reason of his death, disability, resignation (other than resignation at the request of the Board of Directors) or removal as director, or his refusal to accept the Company's nomination for reelection, any Director Option held by such director shall cease to vest upon such director's termination and shall expire 60 days after termination. In all other cases, Director Options shall continue to vest and shall expire on the sixth anniversary of the date of
grant. The provisions of the 1996 Option Plan relating to Director Options may be modified or abrogated at any time if the Board of Directors determines that such provisions are unnecessary for compliance or are in conflict with Rule 16b-3 under the Exchange Act.

Shares of Common Stock issuable upon exercise of options granted under the 1996 Option Plan to executive officers, directors and beneficial owners of more than ten percent of the Common Stock may not be sold or transferred by such officer, director or beneficial owner for a period of six months following the date of grant.

OPTION GRANTS DURING 1995

The following table sets forth for each of the Named Executive Officers certain information concerning stock options granted during fiscal 1995.

|  | INDIVIDUAL GRANTS |  |  |  | POTENTIAL REALIZABLE VALUE AT ASSUMED |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | PERCENT OF |  |  |  | ANNUAL RATE OF STOCK PRICE |  |
|  | UNDERLYING | OPTIONS GRANTED | EXERCISE OR |  | FOR OPTIO | TERM(1) |
|  | OPTIONS GRANTED | TO EMPLOYEES IN | BASE PRICE | EXPIRATION |  |  |
| NAME | (\#)(2) | FISCAL YEAR | (\$/SHARE) (3) | DATE | 5\%(\$) | 10\%(\$) |
| James C. Bender. | 300,000(4) | 26.3\% | \$1.30 | November 1, 2002 | \$158, 769 | \$370, 000 |
|  | 200,000 | 17.5 | 1.30 | August 9, 2003 | 124,138 | 297,333 |
| Michael A. Tzannes, |  |  |  |  |  |  |
| Ph.D............. | 90,000 | 7.9 | 1.30 | February 1, 2005 | 73,581 | 186,467 |
|  | 100,000 | 8.8 | 1.30 | August 9, 2005 | 81, 756 | 207,187 |
|  | 30,000 | 2.6 | 1.30 | December 11, 2005 | 24,527 | 62,156 |

(1) Amounts reported in this column represent hypothetical values that may be realized upon exercise of the options immediately prior to the expiration of their term, assuming the specified compounded rates of appreciation of the Company's Common Stock over the term of the options. These numbers are calculated based on rules promulgated by the Securities and Exchange Commission and do not represent the Company's estimate of future stock price growth. Actual gains, if any, on stock option exercises and Common Stock holdings are dependent on the timing of such exercise and the future performance of the Company's Common Stock. There can be no assurance that the rates of appreciation assumed in this table can be achieved or that the amounts reflected will be received by the Named Executive Officers. This table does not take into account any appreciation in the price of the Common Stock from the date of grant to the current date. The values shown are net of the option exercise price, but do not include deductions for taxes or other expenses associated with the exercise.
(2) Generally, the options vest in equal monthly installments over periods of three years, commencing on the first day of the month following the month in which the options were granted. The option granted to Mr. Bender to purchase 300, 000 shares of Common Stock was exercisable for 74,997 shares of Common Stock on August 1, 1995; the remaining 225,003 shares vest in equal monthly installments over a period of 27 months, commencing on September 1, 1995. This option becomes exercisable in full upon a change in control of the Company.
(3) All options were granted at fair market value as determined by the Board of Directors of the Company on the date of grant. The Board of Directors determined the market value of the Common Stock based on various factors, including the illiquid nature of an investment in the Company's Common Stock, the Company's historical financial performance and the Company's future prospects.
(4) Represents an option granted in 1995 upon surrender of an option granted in 1994 to purchase 300,000 shares of Common Stock. See "-- Employment Agreement."

In May 1996, the Company granted Mr. Bender, Dr. Tzannes and Mr. Hunter Nonstatutory Options under the 1996 Option Plan to purchase 110,000, 50,000 and 284,000 shares of Common Stock, respectively, at an exercise price of $\$ 8.25$ per share. The Company also granted Messrs. Hunter and Reiter Incentive Options under the 1996 Option Plan to purchase 36,000 and 20,000 shares of Common Stock, respectively, at an exercise price of $\$ 8.25$ per share. In June 1996, the Company granted Mr. Moberg Nonstatutory Options and Incentive Options under the 1996 Option Plan to purchase 39,000 and 36,000 shares of Common Stock, respectively, at an exercise price of $\$ 8.25$ per share. In general, the options vest in equal monthly installments over periods of three years. The options held by Messrs. Hunter and Moberg provide that they shall become exercisable in full upon a change in control of the Company. See "-- Employment Agreement."

## FISCAL YEAR-END OPTION VALUES

The following table sets forth certain information with respect to (i) the number of unexercised options held by the Named Executive Officers as of December 31, 1995, and (ii) the value of unexercised in-the-money options (options for which the fair market value of the Common Stock exceeds the exercise price) as of December 31, 1995. Neither Named Executive Officer exercised any options during the fiscal year ended December 31, 1995.

FISCAL YEAR-END OPTION VALUES

|  | NUMBER OF SHARES OF <br> COMMON STOCK UNDERLYING <br> UNEXERCISED OPTIONS | VALUE OF UNEXERCISED |
| :---: | :---: | :---: |

(1) There was no public trading market for the Common Stock on December 31, 1995. Accordingly, solely for purposes of this table, the values in this column have been calculated on the basis of an assumed initial public offering price of $\$ 11.00$ (rather than a determination of the fair market value of the Common Stock on December 31, 1995), less the aggregate exercise price of the options.

## 1996 EMPLOYEE STOCK PURCHASE PLAN

In May 1996, the Company adopted the Aware, Inc. Employee Stock Purchase Plan (the "Stock Purchase Plan"), under which options to purchase up to 100,000 shares of Common Stock may be granted to employees of the Company. The Stock Purchase Plan is administered by the Compensation Committee. During each six month offering period under the Stock Purchase Plan, participating employees will be entitled to purchase shares through payroll deductions of up to six percent of the employees' respective base pay. The maximum number of shares which an employee may purchase in an offering period is twice the number obtained by dividing the amount of the employee's compensation withheld during the offering period (plus any amounts carried over from earlier offering periods) by $85 \%$ of the fair market value of the Common Stock on the first day of the offering period. During each offering period, the price at which employees will be able to purchase shares of Common Stock will be $85 \%$ of the last trading price of the Common Stock as reported on the Nasdaq National Market on the date that the offering period commences or the date the offering period concludes, whichever is lower.

Each employee of the Company is eligible to participate in the Stock Purchase Plan on the first day of the offering period commencing after the employee completes six months of continuous service with the Company, except that no employee will be granted an option under the Stock Purchase Plan if (i) immediately after the grant, the employee owns or has options to purchase stock possessing five percent or more of the total combined voting power or value of all classes of stock of the Company or
any subsidiary, (ii) the option would permit the employee to purchase more than $\$ 25,000$ (determined in accordance with the fair market value of such stock at the time the option is granted) of Common Stock in a calendar year, or (iii) the employee is an officer of the Company who is a "highly compensated employee" under Section 414(q) of the Code. Upon termination of employment for any reason other than death, the employee is no longer eligible to purchase shares of Common Stock under the Stock Purchase Plan. Upon the death of an employee, the employee's beneficiary may elect to use the employee's accumulated payroll deductions to purchase shares of Common Stock under the Stock Purchase Plan at the end of the offering period.

A participant who is an officer or director of the Company and who elects either to withdraw from participation or not to exercise an option will not be eligible for the grant any options under the Stock Purchase Plan for a period of six months. Officers and directors and their beneficiaries may not transfer shares of Common Stock purchased under the Stock Purchase Plan for a period of six months following the end of the offering period; other employees and their beneficiaries may not transfer such shares for a period of three months following the end of the offering period.

401(K) PLAN

The Company maintains the Aware Employee 401(k) Savings Plan (the "401(k) Plan"), qualified under Section 401(k) of the Code. All employees of the Company who have attained the age of twenty-one and have completed six consecutive months of service are eligible to participate in the $401(k)$ Plan. The $401(k)$ Plan provides that each participant may contribute to the 401(k) Plan up to $15 \%$ of the participant's annual pre-tax compensation, but not more than an annual limit prescribed by law, which limit is $\$ 9,500$ in 1996. The percentage elected by certain highly compensated participants may be required to be lower. The Company may, but is not required to, elect to make contributions to the 401(k) Plan for the benefit of the participants. Any amounts contributed to the 401(k) Plan by the Company and earnings on the Company's contributions would vest $20 \%$ after two years of service to the Company and an additional $20 \%$ each year thereafter until contributions are fully vested.

## EMPLOYMENT AGREEMENT

On October 27, 1994, Mr. Bender entered into an employment agreement with the Company, pursuant to which he agreed to serve as the President and Chief Executive Officer of the Company for a term expiring December 31, 1997. Under the agreement, the term of Mr. Bender's employment will be extended for up to ten one-year periods, the first to commence on January 1, 1998, until the Company gives Mr. Bender one year's notice of non-renewal. The Company also agreed to use its best efforts to cause Mr. Bender to be elected to the Board of Directors. The agreement provides that Mr. Bender shall receive an annual salary of $\$ 180,000$ and bonuses at the discretion of the Board of Directors. Mr. Bender is entitled to participate in the Company's insurance and other employee benefit programs on the same basis as all other employees. Mr. Bender agreed to be bound by the terms of the Company's standard employee agreement concerning inventions, confidentiality and non-competition. In the event of termination as a result of death or disability, the Company will continue Mr. Bender's compensation and benefits for a period of six months thereafter. The Company may terminate Mr . Bender's employment for cause upon ten days' notice and an opportunity to be heard at a meeting of the Board of Directors or the Executive Committee; for purposes of the agreement, "cause" means negligent acts or omissions that have been or will be the sole or primary cause of material harm to the Company, conviction of a crime involving moral turpitude or conviction of a crime the principal victim of which is the Company. In the event that the Company terminates Mr. Bender's employment without cause or in the event of a change in control of the Company (as defined in the agreement), the Company will pay Mr. Bender a severance payment upon such termination equal to the salary he would have earned through the expiration of his employment, such payment not to be less than $\$ 180,000$ nor more than $\$ 270,000$.

The Company agreed to grant Mr. Bender on November 1, 1994 an incentive option to purchase 230,769 shares of Common Stock at an exercise price of $\$ 1.30$ per share and nonstatutory options to
purchase 269,231 and 300,000 shares of Common Stock at exercise prices of $\$ 1.30$ and $\$ 2.00$ per share, respectively. The first two options vest in equal monthly installments over periods of three years ending October 1997. The third option (the "Performance Option") vested at the rate of 50 shares for each $\$ 1,000$ of pre-tax profit realized by the Company during the period from January 1, 1995 to December 31, 1997. Each option expires on the eighth anniversary of the date of grant.

On February 13, 1995, the Board of Directors of the Company voted to reduce the exercise price of the Performance Option option from $\$ 2.00$ per share to $\$ 1.30$ per share, a price which the Board determined to be the fair market value of the Common Stock at that time. The Board also voted to amend the Performance Option to provide that fifty percent of the shares subject to the Performance Option would vest regardless of profit earned if Mr. Bender were still employed by the Company on January 15, 1998. On July 24, 1995, the Board voted that upon Mr. Bender's surrender of the Performance Option, the Company would cancel the Performance Option and issue a new nonstatutory option to purchase 300,000 shares of Common Stock at an exercise price of $\$ 1.30$ per share, which option would vest in equal monthly installments over a period of three years, commencing December 1, 1994. Mr. Bender thereafter surrendered the Performance Option and the Company issued the replacement option

## ADI AGREEMENTS

In 1993, the Company entered into a Development Contract and a License Agreement with ADI to produce broadband chipsets. The Development Contract was amended in June 1994 and September 1995. In 1995, the Company received $\$ 250,000$ from ADI in development funding to implement software for ADI's digital signal processors, and $\$ 125,000$ in advance royalties for ADSL Chipsets sold by ADI. In 1994 and 1993, the Company received $\$ 300,000$ and $\$ 250,000$, respectively, in development funding from ADI. Jerald G. Fishman, ADI's President and Chief Operating Officer, is a director of the Company. See "Risk Factors -Substantial Dependence on Analog Devices, Inc."

## LOANS FROM STOCKHOLDERS

In 1994, the Company borrowed $\$ 90,000$ from Novon, L.P., then the holder of more than five percent of the Company's outstanding voting stock, and \$20,000 from Charles K. Stewart, then a director of the Company and the general partner of Novon, L.P., each at an interest rate of $10 \%$ per year. The Company repaid the loans in 1994, together with interest in the amounts of approximately $\$ 1,550$ and $\$ 750$ to Novon, L.P. and Mr. Stewart, respectively.

SALES OF SERIES E PREFERRED STOCK

In June and July 1994, Richard J. Naegele, James S. Stafford and John S. Stafford III, each a holder of more than five percent of the Company's outstanding voting stock, purchased 4,420, 3,500 and 3,500 shares of Series E Preferred Stock, respectively, for consideration of \$574,000, \$455,000 and \$455, 000, respectively.

## REPURCHASE OF SERIES D SHARES

In December 1992, in connection with the issuance of its Series D Convertible Preferred Stock ("Series D Stock") the Company entered into Secured Non-Recourse Adjustable Rate Promissory Note and Pledge Agreements with each of Howard L. Resnikoff and John Huffman, then an officer of the Company, in the respective principal amounts of $\$ 344,000$ and $\$ 66,000$. The notes were issued to permit Dr. Resnikoff and Mr. Huffman to acquire 3,440 and 660 shares of Series D Stock, respectively, and were secured, in the case of Dr. Resnikoff, by a pledge of the 3,440 shares so acquired and additional collateral, and, in the case of Mr. Huffman, the 660 shares so acquired. In March 1995, the Company accepted the shares of Series D Stock as payment for the principal and accrued interest on the notes, and cancelled the notes.

The Company believes that all of the foregoing transactions were made on terms no less favorable to the Company than would have been obtained from unaffiliated third parties. On or before the closing of this offering, the Company intends to adopt a policy whereby all future transactions between the Company and its directors, officers and affiliates will be on terms no less favorable to the Company than could be obtained from unaffiliated third parties and will be approved by a majority of the disinterested members of the Company's Board of Directors.

The following table sets forth certain information with respect to beneficial ownership of the Common Stock as of June 30, 1996, and as adjusted to reflect the sale of the Common Stock offered hereby, by (i) each person known by the Company to be the beneficial owner of more than five percent of the Common Stock; (ii) each of the Company's directors; (iii) each of the Named Executive Officers; and (iv) the Company's directors and executive officers as a group

|  |  | PERCENT BENEFIC | SHARES OWNED(2) |
| :---: | :---: | :---: | :---: |
|  | SHARES BENEFICIALLY | PRIOR TO THIS | AFTER <br> THIS |
| NAME AND ADDRESS OF BENEFICIAL OWNER | OWNED(1) | OFFERING | OFFERING |
| Richard J. Naegele. | 2,084,695 | 13.9\% | 11.3\% |
| 401 S. LaSalle Street |  |  |  |
| Suite 1502 |  |  |  |
| Chicago, Illinois 60605 |  |  |  |
| John S. Stafford, Jr.. | 1,748,783 | 11.7 | 9.5 |
| 440 S. LaSalle Street |  |  |  |
| Suite 3904 |  |  |  |
| Chicago, Illinois 60605 |  |  |  |
| Charles K. Stewart(3). | 1,193,693 | 7.9 | 6.5 |
| 401 S. LaSalle Street |  |  |  |
| Suite 1502 |  |  |  |
| Chicago, Illinois 60605 |  |  |  |
| Howard L. Resnikoff. | 1,036,261 | 6.9 | 5.6 |
| P.O. Box 812127 |  |  |  |
| Wellesley, Massachusetts 02181 |  |  |  |
| John K. Kerr(4). | 896,293 | 6.0 | 4.9 |
| 336 Essex Road |  |  |  |
| Kenilworth, Illinois 60043 |  |  |  |
| James Stafford(5). | 874,391 | 5.8 | 4.8 |
| 440 S. LaSalle Street |  |  |  |
| Suite 3904 |  |  |  |
| Chicago, Illinois 60605 |  |  |  |
| John S. Stafford III(6). | 874,391 | 5.8 | 4.8 |
| 440 S. LaSalle Street |  |  |  |
| Suite 3904 |  |  |  |
| Chicago, Illinois 60605 |  |  |  |
| James C. Bender(7) | 554,176 | 3.6 | 2.9 |
| Michael A. Tzannes(8) | 147,368 | * | * |
| Jerald G. Fishman(9). | 12,510 | * | * |
| All directors and executive |  |  |  |
| officers as a group (9 persons)(10). | 4,632,008 | 29.3 | 24.1 |

* Less than one percent.
(1) The number of shares beneficially owned by each stockholder is determined in accordance with the rules promulgated by the Securities and Exchange Commission, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership includes any shares as to which the person has sole or shared voting power or investment power and also any shares which the person has the right to acquire within 60 days after June 30, 1996 through the exercise of any stock option or other right. The inclusion herein of such shares, however, does not constitute an admission that the named stockholder is a direct or indirect beneficial owner of such shares. To the Company's knowledge, each person named in the table has sole voting power and investment power (or shares such power with his or her spouse) with respect to all shares of Common Stock shown as beneficially owned by such person, except as otherwise indicated. Solely for purposes of computing the percentage of shares
beneficially owned by a person, shares of Common Stock which the person has the right to acquire within 60 days of June 30, 1996 are deemed outstanding.
(2) Percentage ownership is based on (i) 14,992,397 shares of Common Stock outstanding before this offering, and (ii) 18,392,397 shares of Common Stock outstanding after this offering.
(3) Includes 71,688 shares subject to options exercisable within 60 days of June 30, 1996; 242,431 shares held in trust for Mr. Stewart's children; and 80,575 shares held as trustee of the Dawson Family Trust. Does not include 299,970 shares subject to options not exercisable within 60 days of June 30, 1996.
(4) Includes 324,193 shares held by Grove Investment Partners, of which Mr. Kerr is a general partner.
(5) Includes 202,052 shares held in a trust for the benefit of James Stafford.
(6) Includes 202,052 shares held in a trust for the benefit of John S. Stafford III.
(7) Includes 544,176 shares subject to stock options exercisable within 60 days of June 30, 1996. Does not include 555,824 shares subject to options not exercisable within 60 days of June 30, 1996.
(8) Represents shares subject to stock options exercisable within 60 days of June 30, 1996. Does not include 180,132 shares subject to options not exercisable within 60 days of June 30, 1996.
(9) Represents shares subject to stock options exercisable within 60 days of June 30, 1996. Does not include 137,490 shares subject to options not exercisable within 60 days of June 30, 1996.
(10) Includes 839,785 shares subject to options exercisable within 60 days of June 30, 1996. Does not include 1,571,873 shares subject to options not exercisable within 60 days of June 30, 1996.

Following the closing of the sale of the shares of Common Stock offered hereby, the authorized capital stock of the Company will consist of $30,000,000$ shares of common stock, \$0.01 par value per share ("Common Stock"), and $1,000,000$ shares of preferred stock, $\$ 1.00$ par value per share ("Preferred Stock"). Pursuant to the provisions of the Company's Articles of Organization, as of the closing of this offering, each issued and outstanding share of Series C Convertible Preferred Stock, Series D Convertible Preferred Stock and Series E Convertible Preferred Stock will automatically convert into 100 shares of Common Stock.

COMMON STOCK

As of June 30, 1996, assuming conversion into shares of Common Stock of all of the issued and outstanding shares of Series C Convertible Preferred Stock, Series D Convertible Preferred Stock and Series E Convertible Preferred Stock, there were outstanding 14,992,397 shares of Common Stock held of record by 103 persons. Upon the closing of this offering, there will be outstanding 18, 392,397 shares of Common Stock, assuming no exercise of the Underwriters' over-allotment option and no exercise of options to purchase an aggregate of $3,175,158$ shares of Common Stock outstanding as of June 30, 1996.

Holders of Common Stock are entitled to one vote per share held of record on all matters submitted to a vote by the stockholders of the Company. Subject to preferences that may be applicable to the holders of outstanding shares of Preferred Stock, if any, the holders of Common Stock are entitled to receive such dividends when and as declared by the Board of Directors out of funds legally available therefor. In the event of any liquidation, dissolution or winding up of the affairs of the Company, and subject to the rights of the holders of outstanding shares of Preferred Stock, if any, the remaining assets of the Company available to stockholders shall be distributed equally per share to the holders of shares of Common Stock irrespective of class. Holders of shares of Common Stock have no cumulative voting rights nor any preemptive, subscription, redemption or conversion rights. There are no redemption or sinking fund provisions applicable to the Common Stock. All outstanding shares of Common Stock are validly issued, fully paid and nonassessable, and the shares of Common Stock offered hereby will be, when issued and paid for, validly issued, fully paid and nonassessable. The rights, preferences and privileges of holders of Common Stock are subject to, and may be adversely affected by, the rights of holders of shares of Preferred Stock which the Company may designate and issue in the future.

## PREFERRED STOCK

The Company's Articles of Organization authorize the issuance of 1,000,000 shares of undesignated Preferred Stock, $\$ 1.00$ par value per share. The Board of Directors will be authorized, subject to any limitations prescribed by Massachusetts law, to issue shares of Preferred Stock in one or more series, to establish from time to time the number of shares to be included in each such series, to establish or alter the voting powers, designations, preferences and relative, participating, optional or other rights, or the qualifications, limitations or restrictions thereof, and to increase (but not above the total number of authorized shares of the class) or decrease (but not below the number of shares of such series then outstanding) the number of shares of any such series without any further vote or action by the stockholders. The Board of Directors will be authorized to issue Preferred Stock with voting, conversion and other rights and preferences that could adversely affect the voting power or other rights of the holders of Common Stock. Although the Company has no current plans to issue any such shares, the issuance of Preferred Stock or of rights to purchase Preferred Stock could have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from attempting to acquire, a majority of the outstanding voting stock of the Company. See "Risk Factors -- Effect of Certain Charter and By-Law Provisions and Anti-Takeover Provisions; Possible Issuances of Preferred Stock."

Certain Anti-takeover Provisions. After the closing of this offering, the Company will be subject to the provisions of Chapter 110F of the Massachusetts General Laws, an anti-takeover law. In general, this statute prohibits a Massachusetts corporation with more than 200 stockholders of record from engaging in a "business combination" with "interested stockholders" for a period of three years after the date of the transaction in which the person becomes an interested stockholder, unless (i) prior to such date, the board of directors approves either the business combination or the transaction which results in the stockholder becoming an interested stockholder, (ii) the interested stockholder acquires $90 \%$ of the outstanding voting stock of the corporation (excluding shares held by certain affiliates of the corporation) at the time the stockholder becomes an interested stockholder or (iii) the business combination is approved by both the board of directors and holders of two-thirds of the outstanding voting stock of the corporation (excluding shares held by the interested stockholder). A "business combination" includes a merger, consolidation, certain stock or asset sales, and certain other specified transactions involving the corporation or any direct or indirect majority-owned subsidiary of the corporation resulting in a financial benefit to the interested stockholder. Generally, an "interested stockholder" is (i) a person who, alone or together with affiliates and associates, owns five percent or more of the corporation's voting stock, (ii) an affiliate or associate of the corporation who at any time within the three year period preceding the date of the transaction owned five percent or more of the corporation's voting stock, or (iii) the affiliates and associates of any such affiliate or associate of the corporation. A person is not an "interested stockholder" if its ownership of shares in excess of the five percent limitation is the result of action taken solely by the Company, provided, however, that such a person will become an "interested stockholder" if the person thereafter acquires additional shares of voting stock, except as a result of further corporate action not caused, directly or indirectly, by such person. The Company may at any time elect not to be governed by Chapter 110F by amending its Articles of Organization and By-Laws by a vote of a majority of the stockholders entitled to vote, but such an amendment would not be effective for 12 months and would not apply to a business combination with any person who became an interested stockholder prior to the adoption of the amendment.

In addition, Massachusetts General Laws Chapter 110D, entitled "Regulation of Control Share Acquisitions," provides, in general, that any stockholder of a Massachusetts corporation with more than 200 stockholders of record who acquires voting stock of such corporation in a "control share acquisition" may not vote the shares so acquired (or shares acquired within 90 days before or after the "control share acquisition") unless a majority of the other stockholders of such corporation entitled to vote so authorize. In general, a "control share acquisition" includes the acquisition by any person of beneficial ownership of shares which, when added to all other shares of such corporation beneficially owned by such person, would entitle such person to vote (i) between $20 \%$ and 33 1/3\%, (ii) between $331 / 3 \%$ and $50 \%$ or (iii) more than $50 \%$ of the outstanding voting stock of such corporation. A "control share acquisition" generally does not include, among other transactions, the acquisition of shares directly from the issuing corporation. On or before the closing of this offering, the Company intends to amend its By-Laws to opt out of the provisions of Chapter 110D.

Massachusetts General Laws Chapter 156B, Section 50A, requires that publicly held Massachusetts corporations that have not "opted out" of Section 50A have a classified board of directors consisting of three classes as nearly equal in size as possible. Section 50 A also provides that directors who are so classified shall be subject to removal by the stockholders only for cause. The Company's Articles of Organization reflect the requirements of Section 50A.

The Company's Articles of Organization authorize the issuance of 1,000,000 shares of undesignated Preferred Stock, the terms of which may be fixed from time to time by the Board of Directors, without further stockholder approval.

The Company's By-Laws provide that, after the Company has a class of voting stock registered under the Exchange Act, a special meeting of stockholders may be called by the President, the Board
of Directors or by the holders of $35 \%$ or more of the outstanding voting stock of the Company. Certain other provisions of the Company's By-Laws, its Articles of Organization and Massachusetts law may also make more difficult or discourage a proxy contest or the acquisition of control by a holder of a substantial block of the Company's Common Stock or the removal of the incumbent Board of Directors and could also have the effect of discouraging a third party from making a tender offer or otherwise attempting to obtain control of the Company, even though such an attempt might be beneficial to the Company and its stockholders. In addition, because such provisions also have the effect of discouraging accumulations of large blocks of Common Stock by purchasers whose objective is to have such Common Stock repurchased by the Company at a premium, such provisions could tend to reduce the temporary fluctuations in the market price of the Company's Common Stock that are caused by such accumulations. Accordingly, stockholders could be deprived of certain opportunities to sell their Common Stock at a temporarily higher market price.

Reference is made to the full text of the foregoing statutes, the Company's Articles of Organization and its By-Laws for their entire terms. The partial summary contained in this Prospectus is not intended to be complete. See "Risk Factors -- Effect of Certain Charter and By-Law Provisions and Anti-Takeover Provisions; Possible Issuances of Preferred Stock."

Elimination of Monetary Liability for Officers and Directors. The Company's Articles of Organization also incorporate certain provisions permitted under the Massachusetts General Laws relating to the liability of directors. The provisions eliminate to the maximum extent permitted by Chapter 156B of the Massachusetts General Laws a director's personal liability to the Company for monetary damages arising out of a breach of the director's fiduciary duty as a director of the Company, except in circumstances involving certain wrongful acts, such as the breach of a director's duty of loyalty or acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law or authorization of distributions in violation of the Articles of Organization or in violation of Chapter 156B or of loans to officers or directors of the Company or any transaction from which the director derived an improper personal benefit. These provisions do not prevent recourse against directors through equitable remedies such as injunctive relief.

Indemnification of Officers and Directors. The Company's By-Laws contain provisions to indemnify each of the directors and officers of the Company (as well as the former directors and officers) to the fullest extent permitted by Massachusetts law against any and all claims and liabilities to which he may be or become subject by reason of his being or having been an officer or director of the Company, or by reason of his alleged acts or omissions as an officer or director of the Company, except in relation to such matters as to which such officer or director shall have been guilty of wilful malfeasance, bad faith, gross negligence or reckless disregard of his duties in the conduct of his office. The By-Laws further provide that the Company shall indemnify and reimburse each such officer and director against and for any and all legal and other expenses reasonably incurred by him in connection with any such claims and liabilities, actual or threatened, whether or not, at or prior to the time when so indemnified, held harmless and reimbursed, he had ceased being an officer or director of the Company, except in relation to such matters as to which such officer or director shall have been guilty of wilful malfeasance, bad faith, gross negligence or reckless disregard of his duties in the conduct of his office; provided that the Company prior to such final adjudication may compromise and settle any such claims and liabilities and pay such expenses, if such settlement or payment or both appears, in the judgment of a majority of the Board of Directors, to be for the best interest of the Company, evidenced by a resolution to that effect after receipt by the Company of a written opinion of counsel for the Company that such officer or director has not been guilty of wilful malfeasance, bad faith, gross negligence or reckless disregard of his duties in the conduct of his office in connection with the matters involved in such compromise, settlement and payment.

The Company has entered into separate indemnification agreements with each current director and a former director of the Company. Pursuant to these agreements, the Company has agreed to indemnify each director to the fullest extent permitted by law from claims to which he may become subject by reason of his service or actions as a director or officer of the Company, except as to matters
as to which he shall have been guilty of wilful malfeasance, bad faith, gross negligence or reckless disregard of his duties in the conduct of his office. The agreements also contain provisions regarding reimbursement of expenses incurred in connection with such claims.

These agreements and the indemnification provisions of the Company's By-Laws may have the practical effect in certain cases of eliminating the ability of stockholders to collect monetary damages from directors. The Company believes that these indemnification provisions will assist the Company in attracting and retaining qualified individuals to serve as directors or officers. At present, the Company is not aware of any pending or threatened litigation or proceeding involving any director, officer or person serving at the request of the Company in any capacity that might result in a claim for such indemnification.

TRANSFER AGENT AND REGISTRAR
The Transfer Agent and Registrar for the Company's Common Stock is State Street Bank and Trust Company.

Upon the closing of this offering, the Company will have 18,392,397 shares of Common Stock outstanding, assuming no exercise of the Underwriters' over-allotment option or of options outstanding as of June 30, 1996. Of these shares, the $3,400,000$ shares sold in this offering will be freely tradable without restriction or further registration under the Act, except that any shares purchased by "affiliates" of the Company, as that term is defined in Rule 144 under the Securities Act ("Affiliates"), may generally only be sold in compliance with the limitations of Rule 144 described below.

## SALES OF RESTRICTED SECURITIES

The remaining $14,992,397$ shares of Common Shares outstanding upon the closing of this offering are deemed "Restricted Securities" under Rule 144, of which $13,657,310$ shares are subject to the lock-up agreements described below (the "Lock-up Agreements"). On the effective date of the Registration Statement of which this Prospectus forms a part (the "Effective Date"), 360, 158 shares of Common Stock will be eligible for immediate sale under Rule 144(k) promulgated under the Securities Act. Beginning 90 days after the Effective Date, an additional 969,609 Restricted Securities will first become eligible for sale in the public market pursuant to Rule 144 or Rule 701 under the Securities Act. Beginning 180 days after the Effective Date, 13,538,968 shares will first become eligible for sale in the public market.

In general, under Rule 144 as currently in effect, beginning 90 days after the date of this Prospectus, a person (or persons whose shares are aggregated), including an Affiliate, who has beneficially owned Restricted Securities for at least two years, is entitled to sell within any three month period a number of shares that does not exceed the greater of (i) one percent of the then outstanding shares of Common Stock (approximately 183,924 shares immediately after this offering) or (ii) the average weekly trading volume of the Common Stock on the Nasdaq National Market during the four calendar weeks preceding the date on which notice of the sale is filed under Rule 144, provided certain requirements concerning availability of public information, manner of sale and notice of sale are satisfied. In addition, Affiliates must comply with the restrictions and requirements of Rule 144, other than the two-year holding period requirement, in order to sell shares of Common Stock which are not Restricted Securities. Under Rule 144(k), a person who is not an Affiliate and has not been an Affiliate for at least three months prior to the sale and who has beneficially owned Restricted Securities for at least three years may resell such shares without compliance with the foregoing requirements. In meeting the two-year and three-year holding periods described above, a holder of Restricted Securities may under certain circumstances include the holding period of a prior owner. The two-year and three-year periods described above do not begin until the full purchase price or other consideration is paid by the person acquiring the Restricted Securities from the Company or an Affiliate

The Securities and Exchange Commission has proposed certain amendments to Rule 144 that would reduce by one year the holding period for shares subject to Rule 144 to become eligible for sale in the public market. This proposal, if adopted, would substantially increase the number of shares of Common Stock eligible for immediate resale following the expiration of the Lock-up Agreements. No assurance can be given concerning whether or when the proposal will be adopted by the Securities and Exchange Commission.

OPTIONS

As of June 30, 1996, there were outstanding options to purchase $3,175,158$ shares of Common Stock. The holders of outstanding options to purchase 2,441,658 shares of Common Stock have entered into Lock-up Agreements, the terms of which are described below.

Any director, officer or employee of or consultant to the Company who has been granted options to purchase shares or who has purchased shares pursuant to a written compensatory benefit plan or written contract relating to the compensation of such person prior to the Effective Date pursuant to

Rule 701 may be entitled to rely on the resale provisions of Rule 701, which permit non-Affiliates to sell their Rule 701 shares under Rule 144 without having to comply with the public information, holding period, volume limitation or notice provisions of Rule 144 and permits Affiliates to sell their Rule 701 shares under Rule 144 without having to comply with the Rule 144 holding period restrictions, in each case commencing 90 days after the Effective Date.

The Company intends to file, approximately 90 days after the Effective Date, registration statements on Form S-8 under the Securities Act to register approximately $5,774,715$ shares of Common Stock issued pursuant to the exercise of options granted under the Company's stock option plans (including certain shares for which an exemption under Rule 144 or Rule 701 would also be available) or issuable upon the exercise of outstanding stock options and options that may be granted pursuant to the Company's stock option plans and 100,000 shares issuable pursuant to the Company's employee stock purchase plan. The Company has agreed with the Underwriters that it will not file any registration statements on Form S-8 until 90 days after the Effective Date. Shares covered by such registration statements will thereupon be eligible for sale in the public market to the extent applicable.

LOCK-UP AGREEMENTS

All directors and executive officers of the Company and certain stockholders of the Company, which in the aggregate hold $13,657,310$ shares of Common Stock and options to purchase 2,411,658 shares of Common Stock, have agreed, pursuant to the Lock-up Agreements, that they will not, directly or indirectly, without the prior written consent of Robertson, Stephens \& Company LLC, sell, offer, contract to sell, pledge, grant any option to purchase or otherwise dispose of any of shares of Common Stock or any securities convertible into or exchangeable for, or any rights to purchase or acquire, shares of Common Stock beneficially owned by them for a period of 180 days from the Effective Date, otherwise than (a) as a bona fide gift or gifts or (b) as a distribution to such person's limited partners or shareholders, provided that any such transferee agrees to be bound by the Lock-up Agreement. Robertson, Stephens \& Company LLC, in its discretion, may waive the foregoing restrictions in whole or in part, with or without a public announcement of such action. Robertson, Stephens \& Company LLC has no present intention to release any of the securities from the Lock-up Agreements. It has been the practice of Robertson, Stephens \& Company LLC to consider releasing securities from the Lock-up Agreements based on a variety of factors, including the market price of the Common Stock, the volume of shares traded and other market conditions. To the extent any of the securities are released from the Lock-up Agreements, it could have an adverse effect on the market price of the Common Stock.

Prior to this offering, there has been no public market for the Common Stock of the Company. Future sales of substantial amounts of Common Stock in the public market could adversely affect the market price of the Common Stock. See "Risk Factors -- Shares Eligible for Future Sale."

## UNDERWRITING

The Underwriters named below, acting through their representatives, Robertson, Stephens \& Company LLC and Furman Selz LLC (the "Representatives"), have severally agreed with the Company, subject to the terms and conditions of the Underwriting Agreement, to purchase from the Company the numbers of shares of Common Stock set forth opposite their respective names below. The Underwriters are committed to purchase and pay for all of such shares if any are purchased.

Robertson, Stephens \& Company LLC
Furman Selz LLC.

Total
-ー・ー・
,400,000
=========

The Representatives have advised the Company that the Underwriters propose to offer the shares of Common Stock to the public at the initial public offering price set forth on the cover page of this Prospectus and to certain dealers at such price less a concession of not in excess of $\$$ per share, of which may be reallowed to other dealers. After the initial public offering the public offering price, concession and reallowance to dealers may be reduced by the Representatives. No such reduction shall change the amount of proceeds to be received by the Company as set forth on the cover page of this Prospectus.

The Company has granted to the Underwriters an option, exercisable during the 30 -day period after the date of this Prospectus, to purchase up to 510,000 additional shares of Common Stock, at the same price per share as the Company will receive for the $3,400,000$ shares that the Underwriters have agreed to purchase. To the extent that the Underwriters exercise such option, each of the Underwriters will have a firm commitment to purchase approximately the same percentage of such additional shares that the number of shares of Common Stock to be purchased by it shown in the above table represents as a percentage of the $3,400,000$ shares offered hereby. If purchased, such additional shares will be sold by the Underwriters on the same terms as those on which the 3,400,000 shares are being sold.

DSC, a customer of the Company, has expressed an interest in purchasing $\$ 2,000,000$ of Common Stock in this offering at the initial public offering price per share. Any such sale to DSC will be made on the same terms as sales to other investors in this offering. There can be no assurance that DSC will in fact make such purchase.

The Underwriting Agreement contains covenants of indemnity between the Underwriters and the Company against certain civil liabilities, including liabilities under the Securities Act.

Pursuant to the terms of lock-up agreements, all executive officers and directors and certain other securityholders of the Company have agreed that, for a period of 180 days from the Effective Date, they will not, directly or indirectly, sell, offer, contract to sell, pledge, grant any option to purchase or otherwise dispose of any shares of Common Stock or any securities convertible into or exchangeable for, or any rights to purchase or acquire, shares of Common Stock beneficially owned by them, without the prior written consent of Robertson, Stephens \& Company LLC, which may, in its sole discretion and at any time without notice, release all or any portion of the securities subject to lock-up agreements. See "Shares Eligible for Future Sale." The Company has also agreed not to offer, sell, contract to sell or otherwise dispose of any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock, or any options or warrants to purchase Common Stock other than options issued under the Company's Option Plans and Stock Purchase Plan for a
period of 180 days from the Effective Date, except with the prior written consent of Robertson, Stephens \& Company LLC.

The Underwriters will not make sales to accounts over which they exercise discretionary authority (i) in excess of $5 \%$ of the number of shares of Common Stock offered hereby and (ii) unless they obtain specific written consent from the customer.

Robert J. Nowlin, a stockholder of the Company, is a Managing Director of Robertson, Stephens \& Company LLC, one of the Representatives of the Underwriters. Robertson, Stephens \& Company LLC is a subsidiary of Robertson, Stephens \& Company Group, L.L.C., which is the managing member of both Robertson, Stephens \& Company LLC and Robertson, Stephens \& Company Private Equity Group, L.L.C. Robertson, Stephens \& Company Private Equity Group, L.L.C. is the sole general partner of Bayview Investors, Ltd., another stockholder of the Company. Mr. Nowlin and Bayview Investors, Ltd. own 192,199 and 342,400 shares of Common Stock of the Company, respectively.

Prior to this offering, there has been no public market for the Common Stock of the Company. Consequently, the initial public offering price for the Common Stock will be determined through negotiations between the Company and the Representatives. Among the factors to be considered in such negotiations will be the history of, and the prospects for, the Company's business and the industry in which it competes, an assessment of the Company's management, its past and present operations, the prospects for earnings of the Company, the present state of the Company's development, the general condition of the securities market at the time of the offering, the market prices and earnings of similar securities of comparable companies at the time of the offering, the current state of the economy as a whole and other factors deemed relevant.

The validity of the Common Stock offered hereby will be passed upon for the Company by Foley, Hoag \& Eliot LLP, Boston, Massachusetts. The statements in this Prospectus under the captions "Risk Factors -- Proprietary Technology; Risk of Third-Party Claims of Infringement" and "Business -- Intellectual Property" and other references herein to patent matters have been reviewed and will be passed upon by Cesari and McKenna, Boston, Massachusetts, special patent counsel to the Company. Certain legal matters in connection with this offering will be passed upon for the Underwriters by Testa, Hurwitz \& Thibeault, LLP, Boston, Massachusetts.

## EXPERTS

The balance sheets as of December 31, 1994 and 1995 and the statements of operations, stockholders' equity and cash flows for the years ended December 31 , 1994 and December 31, 1995, included in this Prospectus, have been audited by Deloitte \& Touche LLP, independent auditors, as stated in their report appearing herein and are included in reliance upon the report of such firm given upon their authority as experts in accounting and auditing. The statements of operations, stockholders' equity and cash flows for the year ended December 31, 1993, included in this Prospectus, have been so included in reliance on the report of Price Waterhouse LLP, independent accountants, given on the authority of said firm as experts in auditing and accounting.

## CHANGES IN INDEPENDENT ACCOUNTANTS

In April 1996, the Company's Board of Directors authorized the Company to retain Deloitte \& Touche LLP as its independent accountants and dismissed DiBenedetto \& Company, P.A. The financial statements for December 31, 1994 and 1995 were audited by Deloitte \& Touche LLP. DiBenedetto \& Company, P.A. had been retained to audit the Company's financial statements as of and for the year ended December 31, 1994. The report of DiBenedetto \& Company, P.A. for the year ended December 31, 1994, which is not included herein, contained no adverse opinion or disclaimer of opinion and was not qualified or modified as to uncertainty, audit scope or application of accounting principles. During the year ended December 31, 1994 and through the date of replacement, there were no disagreements with DiBenedetto \& Company, P.A. on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure or "reportable events" as described in Item 304 of Regulation S-K.

Price Waterhouse LLP was retained to audit the Company's financial statements for the year ended December 31, 1993. On January 10, 1995, Price Waterhouse LLP resigned and the Company replaced them with DiBenedetto \& Company, P.A. The report of Price Waterhouse LLP for the year ended December 31, 1993, which is included herein, contained no adverse opinion or disclaimer of opinion and was not qualified or modified as to uncertainty, audit scope or application of accounting principles. During the year ended December 31, 1993 and through the date of replacement, there were no disagreements with Price Waterhouse LLP on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure or "reportable events" as described in Item 304 of Regulation S-K.

## ADDITIONAL INFORMATION

The Company has filed with the Securities and Exchange Commission, Washington, D.C. 20549 a Registration Statement on Form S-1 under the Securities Act with respect to the Common Stock offered hereby. This Prospectus does not contain all of the information set forth in the Registration Statement and the exhibits and schedules to the Registration Statement. For further information with respect to the Company and the Common Stock offered hereby, reference is made to the Registration Statement and the exhibits and schedules filed as a part of the Registration Statement. Statements contained in this Prospectus concerning the contents of any contract or any other document referred to are not necessarily complete; reference is made in each instance to the copy of such contract or document filed as an exhibit to the Registration Statement. Each such statement is qualified in all respects by such reference to such exhibit. The Registration Statement, including the exhibits and
schedules thereto, may be inspected and copied at the public reference facilities maintained by the Securities and Exchange Commission at Room 1024 Judiciary Plaza, 450 Fifth Street, N.W., Washington, D.C. 20549 and at the Regional Offices of the Securities and Exchange Commission at Suite 1400, 500 West Madison Street, Chicago, Illinois 60661 and 7 World Trade Center, Thirteenth Floor, New York, New York 10048. Copies also may be obtained from the Public Reference Section of the Commission at Room 1024, Judiciary Plaza, 450 Fifth Street, N.W., Washington D.C. 20549, at prescribed rates. The Commission maintains a Web site (http://www.sec.gov.) that contains reports, proxy and information statements and other information regarding issuers that file electronically with the Commission.

ADSL (ASYMMETRIC DIGITAL SUBSCRIBER LINE): A modulation technique using digital signal processing technology to expand the useable bandwidth of copper telephone wire.

ASIC (APPLICATION SPECIFIC INTEGRATED CIRCUIT): An integrated circuit that is custom designed to execute specified functions.

BANDWIDTH: A measure of the frequency range in which a signal can be transmitted through a specific medium, such as copper telephone wire.

CAP (CARRIERLESS AMPLITUDE PHASE): a "single-carrier" modulation technique that, in contrast to DMT (discrete multitone), treats the entire available upstream and downstream frequency ranges as a single medium through which bits of information are transmitted.

DMT (DISCRETE MULTI-TONE): a "multi-carrier" modulation technique that splits up the available upstream and downstream frequency ranges into numerous sections, through each of which bits of information are coded and simultaneously transmitted.

DWMT (DISCRETE WAVELET MULTI-TONE): a multicarrier modulation technique based on wavelet mathematics, intended to better partition the band into sections than DMT and enable data transmission at rates greater than those achievable with DMT technology.

HFC (HYBRID FIBER COAX): A tree-and-branch architecture consisting of a combination of fiber and coaxial cable connecting cable company terminals to residences, designed to implement two-way transmission of data over existing cable television networks.

ISDN (INTEGRATED SERVICE DIGITAL NETWORK): a digital transmission technology for transmission of data over copper wire at rates greater than those achievable by analog voiceband modems.

MODEM: A modulator/demodulator circuit pair that transmits and receives digital information over communications links, e.g., the public switched telephone network.

OEM (ORIGINAL EQUIPMENT MANUFACTURER): The producer of a product.

RBOC (REGIONAL BELL OPERATING COMPANY): A telephone company resulting from the breakup of AT\&T.

SDSL (SYMMETRIC DIGITAL SUBSCRIBER LINE): A modulation technique similar to ADSL, but which allows two-way data transmission at identical transmission rates.

TELCO: A telephone company.

VDSL (VERY HIGH-SPEED DIGITAL SUBSCRIBER LINE): A modulation technique intended to permit data transmission at rates faster than ADSL or SDSL, over shorter distances of copper wire.

## INDEX TO FINANCIAL STATEMENTS

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Price Waterhouse LLP Report of Independent Accountants ..... F-3
Balance Sheets as of December 31, 1994 and 1995 and March 31, 1996 (Unaudited) ..... F-4
Statements of Operations for the Years Ended December 31, 1993, 1994 and 1995 and the Three Months Ended March 31, 1995 and 1996 (Unaudited). ..... F-5
Statements of Changes in Stockholders' Equity for the Years Ended December 31, 1993, 1994 and 1995 and the Three Months Ended March 31, 1996 (Unaudited) ..... F-6
Statements of Cash Flows for the Years Ended December 31, 1993, 1994 and 1995 and the Three Months ended March 31, 1995 and 1996 (Unaudited) ..... F-7
Notes to Financial Statements ..... F-8

To the Board of Directors and Stockholders
Aware, Inc.
We have audited the accompanying balance sheets of Aware, Inc. as of December 31,1995 and 1994 and the related statements of operations, changes in stockholders' equity, and cash flows for the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such financial statements present fairly, in all material respects, the financial position of Aware, Inc. as of December 31, 1995 and 1994, and the results of its operations and its cash flows for the years then ended in conformity with generally accepted accounting principles.
/s/ Deloitte \& Touche LLP

Boston, Massachusetts
April 26, 1996
(June 6, 1996 as to Note 9)

To the Board of Directors and
Stockholders of Aware, Inc.
In our opinion, the accompanying statements of operations, of stockholders' equity and of cash flows for the year ended December 31, 1993 present fairly, in all material respects, the results of operations and cash flows of Aware, Inc. for the year ended December 31, 1993, in conformity with generally accepted accounting principles. These financial statements are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit of these statements in accordance with generally accepted auditing standards which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for the opinion expressed above. We have not audited the financial statements of Aware, Inc. for any period subsequent to December 31 1993.
/s/ PRICE WATERHOUSE LLP
Price Waterhouse LLP
Boston, Massachusetts
February 1, 1994

## BALANCE SHEETS

| December 31, |  |  | Pro Forma <br> March 31, |
| :---: | :---: | :---: | :---: |
| 1994 | 1995 | March 31, | 1996 |

## ASSETS

CURRENT ASSETS:
Cash and cash equivalents................................................ \$0, \$5,300 and \$10,300 in 1994, 1995 and 1996, respectively)
Unbilled accounts receivable
Inventories.....
Prepaid expenses
Total current assets.
\$ 2
$2,566,128$
\$ 2,

| 594,996 |
| ---: |
| 304,101 |
| 21,669 |
| 73,542 |
| ------- |
| $3,560,436$ |
| 369,975 |
| --------1 |

LIABILITIES AND STOCKHOLDERS' EQUITY
CURRENT LIABILITIES:
Accounts payable.
Accounts payable.
Accrued expenses......
Accrued professional fees.
Accrued rent.
Deferred revenue
Total current liabilities
\$

| $\$$ | 96,762 |
| :--- | ---: |
| 84,667 |  |
| 199,901 |  |
| 19,894 |  |
| 192,979 |  |
| 89,720 |  |
|  | --------1 |
|  | 683,923 |

COMMITMENTS AND CONTINGENCIES (Note 5)
STOCKHOLDERS' EQUITY:
Preferred stock, \$1.00 par value; no shares authorized; $1,000,000$ shares authorized and no shares outstanding pro forma.
Preferred stock, \$1.00 par value:
Series B convertible preferred stock, 15, 875 shares authorized, issued, and outstanding in 1994, 1995 and 1996 (none outstanding pro forma in 1996); liquidation
preference of \$1,587,500
Series C convertible preferred stock, 13,525 shares authorized, issued, and outstanding in 1994, 1995 and 1996 (none outstanding pro forma in 1996); liquidation preference of \$1,352,500
Series $D$ convertible preferred stock, 74,800 shares authorized, 73,266 issued in 1994, 69,166 in 1995 and 1996 (none outstanding pro forma in 1996); liquidation preference of \$6,916,600.
Series E convertible preferred stock, 45,000 shares authorized, 29,432 shares issued and outstanding in 1994, 1995 and 1996 (none outstanding pro forma in 1996); liquidation preference of $\$ 3,826,160$.
Common stock, $\$ .01$ par value; 30,000,000 shares authorized;
issued and outstanding, 1,150,093, 1,166,960 and 1,173,370 in 1994, 1995 and 1996, respectively $(13,973,145$ shares pro forma in 1996)
Additional paid-in capital
Accumulated deficit

Notes receivable for issued stock.
Treasury stock at cost
Total stockholders' equity
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY

15,875

73,266

29,432
11,501
13, 792, 091
$(10,232,140)$
$3,703,550$
$(457,062)$
-----------
3, 246,488
$\$ 3,930,411$
===========

15,875

13, 525

69,166

|  | 11,670 |
| :---: | :---: |
| $\begin{gathered} 13,807,945 \\ (10,575,102) \end{gathered}$ |  |
|  |  |
| 3,372,511 |  |
| $(452,962)$ |  |
|  |  |
| 2,919,549 |  |
| \$ | 3,228,359 |

\$ 111

| \$ | 102,877 |
| :---: | :---: |
|  | 83,972 |
|  | 113,209 |
|  | 31, 594 |
|  | -- |
|  | 50,000 |
|  | 381,652 |
|  |  |
|  |  |
|  |  |
|  |  |
|  | -- |
|  |  |
|  |  |
|  |  |
|  | 15,875 |

13,525

69,166

29,432


## STATEMENTS OF OPERATIONS

| YEAR ENDED DECEMBER 31, |  |  |
| :---: | :---: | :---: |
| 1993 | 1994 | 1995 |

REVENUE:

| Product |
| :---: |
| License and royalty. |
| Research and development. |
| Total revenue. |
| COSTS AND EXPENSES: |
| Cost of product revenue. |
| Cost of research and development revenue. |
| Research and development |
| Selling and marketing. |
| General and administrative. |
| Total costs and expenses. |

INCOME (LOSS) FROM OPERATIONS. . . . . . . . . . .
INTEREST INCOME............................ . .
NET INCOME (LOSS)................................

PRO FORMA INCOME (LOSS) PER COMMON SHARE

PRO FORMA WEIGHTED AVERAGE NUMBER OF
COMMON AND COMMON EQUIVALENT SHARES
OUTSTANDING

| \$ 219,349 | \$ 181,217 | \$ 406,459 |
| :---: | :---: | :---: |
| 607,625 | 1, 008, 434 | 1,036,615 |
| 2,345,150 | 2,637,199 | 1,816,820 |
| 3,172,124 | 3,826,850 | 3,259,894 |
| 122,684 | 112,925 | 242,983 |
| 1,700,934 | 2,054,265 | 1,177,790 |
| 1,341,286 | 1,437,984 | 1,155,410 |
| 220,812 | 329,068 | 411, 777 |
| 814,623 | 987,640 | 725,511 |
| 4,200,339 | 4,921,882 | 3,713,471 |
| $(1,028,215)$ | $(1,095,032)$ | $(453,577)$ |
| 36,048 | 82,683 | 110,615 |
| \$ $(992,167)$ | \$(1, 012, 349) | \$ (342, 962) |
|  |  | \$ (0.17) |

$=========$

2,045,006
==========

THREE MONTHS ENDED MARCH 31,

| THREE MONTHS ENDED MARCH 31, |  |
| :---: | :---: |
| 1995 | 1996 |

(UNAUDITED)

| \$ 202,179 | \$ | 5,125 |
| :---: | :---: | :---: |
| 337,160 |  | 647,436 |
| 411, 037 |  | 309,442 |
| 950,376 |  | 962,003 |
| 84,184 |  | 4,120 |
| 363,601 |  | 247,614 |
| 346,572 |  | 351, 625 |
| 90,260 |  | 141, 691 |
| 181,596 |  | 199,302 |
| 1, 066, 213 |  | 944, 352 |
| $(115,837)$ |  | 17,651 |
| 28,624 |  | 23,500 |
| \$ $(87,213)$ | \$ | 41,151 |
| \$ (0.04) | \$ | 0.00 |
| 2,032,416 |  | 108,599 |



See notes to financial statements.

|  | YE | ENDED DECEMBER |  | THREE MONTHS |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1993 | 1994 | 1995 |  | 1995 |  | 1996 |
|  |  |  |  | (UNAUDITED) |  |  |  |
| CASH FLOWS FROM OPERATING ACTIVITIES: |  |  |  |  |  |  |  |
| Net income (loss). | \$(992, 167) | \$(1, 012, 349) | \$ (342, 962) | \$ | $(87,213)$ | \$ | 41, 151 |
| Adjustments to reconcile net income (loss) to net |  |  |  |  |  |  |  |
| cash provided by (used in) operating activities: |  |  |  |  |  |  |  |
| Depreciation and amortization................... | 263,614 | 206,140 | 200,701 |  | 60,000 |  | 57,457 |
| Increase (decrease) in cash from: |  |  |  |  |  |  |  |
| Short-term investments. | 201, 642 | -- | -- |  | -- |  | -- |
| Accounts receivable. | $(135,047)$ | $(326,756)$ | 94,168 |  | 282,773 |  | $(302,239)$ |
| Unbilled accounts receivable | 19,493 | $(55,603)$ | 187,840 |  | 131,730 |  | 75,740 |
| Inventories | $(46,740)$ | 25, 071 | $(18,044)$ |  | (259) |  | $(57,038)$ |
| Prepaid expenses | 53,934 | $(49,385)$ | 59, 071 |  | 29,221 |  | 3,212 |
| Accounts payable | 40, 256 | $(115,045)$ | 14,757 |  | $(31,790)$ |  | $(8,642)$ |
| Accrued expenses | $(24,339)$ | 314,595 | $(350,150)$ |  | $(137,195)$ |  | 81,484 |
| Deferred revenue. | 98, 128 | $(8,408)$ | $(39,720)$ |  | $(39,720)$ |  | , |
| Notes receivable from officers | $(21,649)$ | ( | (39,720) |  | , |  | -- |
| Net cash provided by (used in) operating activities. | $(542,875)$ | $(1,021,740)$ | $(194,339)$ |  | 207,547 |  | $(108,875)$ |
| CASH FLOWS FROM INVESTING ACTIVITIES |  |  |  |  |  |  |  |
| -- Purchases of property and equipment. | $(85,158)$ | ( 371,658 ) | $(234,131)$ |  | $(12,271)$ |  | $(6,101)$ |
| CASH FLOWS FROM FINANCING ACTIVITIES: |  |  |  |  |  |  |  |
| Proceeds from stockholders' loans | -- | 150, 000 | -- |  | -- |  | -- |
| Repayment of stockholders' loans. | -- | (150, 000) | -- |  | -- |  | -- |
| Proceeds from issuance of preferred stock, net of issuance costs. | -- | 3, 764, 058 | -- |  | -- |  | -- |
| Proceeds from issuance of common stock. | 2,375 | 9,500 | 16, 023 |  | 95 |  | 8,333 |
| Repayment of capital lease obligations. | $(1,339)$ | , | 16, |  | -- |  | 8, |
| Net cash provided by financing activities................... | 1,036 | 3,773,558 | 16,023 |  | 95 |  | 8,333 |
| INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS. | $(626,997)$ | 2,380,160 | $(412,447)$ |  | 195,371 |  | $(106,643)$ |
| CASH AND CASH EQUIVALENTS, BEGINNING OF PERIOD.. | 812,965 | 185, 968 | 2,566,128 |  | , 566, 128 |  | ,153,681 |
| CASH AND CASH EQUIVALENTS, END OF PERIOD. | \$ 185,968 | \$ 2, 566, 128 | \$2, 153, 681 |  | , 761,499 |  | , 047, 038 |
| SUPPLEMENTAL DISCLOSURES OF CASH FLOW |  |  |  |  |  |  |  |
| INFORMATION -- Cash paid for interest. | \$ 127 | \$ 4,359 | \$ 877 | \$ | -- | \$ | - |
| SUPPLEMENTAL NONCASH DISCLOSURES: |  |  |  |  |  |  |  |
| Increase in notes receivable for accrued interest. | \$ -- | \$ 25,413 | \$ -- | Increase in notes receivable for accrued |  |  | -- |
| Repurchase of Series D preferred shares for |  |  |  |  |  |  |  |
| cancelation of notes...................... | \$ -- | \$ -- | \$ 457, 062 | \$ | -- | \$ | -- |

## 1. NATURE OF BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Aware, Inc. (the "Company") designs, develops and markets
telecommunications software, chipsets and modems which incorporate ADSL technology and increase the speed of data communications over conventional copper telephone lines. The Company's products and services are designed to allow telephone companies to utilize their installed bases of dedicated copper lines to provide both residential and business customers with interactive data transmission at speeds much higher than currently available. The Company also offers video compression products. The Company was in the development stage at December 31, 1994; during the year ended December 31, 1995 the Company completed its development activities and commenced its planned principal operations.

The Company is dependent on Analog Devices, Inc. ("ADI") for the manufacture and sale of chipsets based on the Company's broadband technology. The relationship between ADI and the Company is an exclusive arrangement, under which neither party may enter into competing agreements with third parties.

Use of Estimates -- The preparation of the Company's financial statements in conformity with generally accepted accounting principles necessarily requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the balance sheet date. Estimates include reserves for doubtful accounts, useful lives of fixed assets and accrued liabilities. Actual results may differ from these estimates.

Fair Value of Financial Instruments -- Statement of Financial Accounting Standards ("SFAS") No. 107, "Disclosures About Fair Value of Financial Instruments," requires disclosure of the fair value of certain financial instruments. The carrying amounts of cash and cash equivalents, accounts receivable, accounts payable and accrued expenses approximate fair value because of their short-term nature.

Cash and Cash Equivalents -- Cash equivalents consist primarily of investments in a bank money market fund.

Allowance for Doubtful Accounts -- Accounts are charged to bad debt expense as they are deemed uncollectible based on a review of the accounts at each balance sheet date. Bad debt expense was \$0, \$5,300 and \$5,000 for 1994, 1995 and the three months ended March 31, 1996, respectively.

Inventories -- Inventories are stated at the lower of cost or market with cost being determined by the first-in, first-out ("FIFO") method.

Property and Equipment -- Property and equipment are stated at cost. Depreciation and amortization of property and equipment is provided using the straight-line method over the estimated useful lives of the assets ( 3 to 5 years)

Revenue Recognition -- Product revenue consists primarily of revenue from the sale of tangible products, such as modems and compression chipsets. Revenue is recognized upon shipment.

License and royalty revenue consists primarily of revenue from the sale of intellectual property, such as hardware and software technology licenses, compression software licenses, and royalties from the sale of chipsets by customers who have licensed the Company's technology. Revenue from the sale of technology licenses for the initial transfer of hardware and software designs is recognized when a definitive agreement is reached, the transfer has been effected, and no contingent factors are present. Revenue from the sale of compression software licenses is recognized upon shipment. Royalty revenue

AWARE, INC.
NOTES TO FINANCIAL STATEMENTS
(INFORMATION PERTAINING TO THE PERIODS ENDED
MARCH 31, 1996 AND MARCH 31, 1995 IS UNAUDITED) -- (CONTINUED)
is recognized based upon billing schedules when no right to return exists or upon sales reports from customers.

Research and development revenue is comprised of revenue from government and commercial research and development contracts. Revenue on government contracts is generally recognized when services are performed. Certain long-term contracts are accounted for using the percentage-of-completion method, whereby revenue and profit are recognized throughout the performance period of the contract based on the ratio that incurred costs bear to estimated total costs to complete. Losses, if any, on contracts are provided for in the period in which the losses are first identified. Revenue on commercial contracts is generally recognized as research is performed under the terms of the respective agreements.

Unbilled accounts receivable are stated at estimated realizable value. These amounts will be billable to customers based on the terms of contracts which include achievement of milestones or completion of the contract.

Deferred revenue consists of customer prepayments which will be recorded as revenue as earned.

Income Taxes -- The Company accounts for income taxes under SFAS No. 109, "Accounting for Income Taxes." This Statement requires the Company to compute deferred income taxes based on the differences between the financial statement and tax basis of assets and liabilities using enacted rates in effect in the years in which the differences are expected to reverse.

Capitalization of Software Costs -- The Company capitalizes certain internally generated software development costs after technological feasibility of the product has been established. Technological feasibility is established upon the completion of a detail program design, or in its absence, a working model. Capitalized software costs also include amounts paid for purchased software which has reached technological feasibility. Such costs are amortized, on a product-by-product basis, on a straight-line basis over their useful economic lives (generally two to four years), or the ratio of current gross revenue to total gross current and future revenue, whichever is greater. There were no capitalized software costs at December 31, 1994 and 1995 or March 31, 1996, because such costs incurred subsequent to the establishment of technological feasibility, but prior to commercial availability, were immaterial.

Concentration of Risk -- At December 31, 1994 and 1995, the Company had bank cash balances, including money market investments, in excess of federally insured deposit limits of approximately $\$ 2,582,000$ and $\$ 2,079,000$, respectively.

Concentration of credit risk with respect to accounts receivable is limited to $\$ 250,000$ with one customer at December 31, 1995 and $\$ 177,000, \$ 125,000$ and $\$ 112,000$ with three customers at December 31, 1994.

Recently Issued Accounting Standards -- The Financial Accounting Standards Board ("FASB") has issued SFAS No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of." The Company adopted this standard on January 1, 1996. This Statement establishes accounting standards for the impairment of long-lived assets, certain identifiable intangibles, and goodwill related to those assets to be held and used and for long-lived assets and certain identifiable intangibles to be disposed of. Adoption did not have a material effect on the Company's financial position or results of operations.

Recently Issued Accounting Standards (Continued) -- In November 1995, the FASB issued SFAS No. 123, "Accounting for Stock-Based Compensation." The Company adopted this standard on

AWARE, INC.
NOTES TO FINANCIAL STATEMENTS
(INFORMATION PERTAINING TO THE PERIODS ENDED
MARCH 31, 1996 AND MARCH 31, 1995 IS UNAUDITED) -- (CONTINUED)
January 1, 1996. As permitted by SFAS No. 123, the Company intends to continue to apply Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees," and will make the pro forma disclosures required by SFAS No. 123. Adoption did not have a material effect on the Company's financial position or results of operations.

Pro Forma Income Per Common Share -- Pro forma net income (loss) per common share is based on the weighted average number of common and dilutive common equivalent shares (common stock options and convertible preferred stock) outstanding (see Note 4). Common equivalent shares are not included in the per share calculations where the effect of their inclusion would be antidilutive, except in accordance with Securities and Exchange Commission Staff Accounting Bulletin No. 83. The Bulletin requires all common shares issued and options to purchase shares of common stock granted by the Company during the twelve-month period prior to the filing of a proposed initial public offering be included in the calculation as if they were outstanding for all periods.

Pro Forma Balance Sheet Information -- The unaudited pro forma balance sheet information is adjusted to give effect to the conversion of all outstanding convertible preferred stock (see Note 4) that would happen immediately prior to the effectiveness of a registration statement.

Interim Results (Unaudited) -- The accompanying balance sheet at March 31, 1996, the statement of stockholders' equity for the three months ended March 31, 1996 and the statements of operations and cash flows for the three months ended March 31, 1995 and 1996 are unaudited. In the opinion of management, these statements have been prepared on the same basis as the audited financial statements and include all adjustments, consisting only of normal recurring adjustments, necessary for the fair statement of financial data for such periods.

## 2. PROPERTY AND EQUIPMENT

Property and equipment consisted of the following at December 31:


Deferred income tax assets are attributable to the following:

|  | DECEMBER 31, |  |  |  | $\begin{gathered} \text { MARCH 31, } \\ 1996 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1994 |  | 1995 |  |  |
| Depreciation. | \$ | 133,000 | \$ | 75,000 | \$ | 77,000 |
| Accrued expenses |  | 67,000 |  | 28,000 |  | 31,000 |
| Deferred revenues |  | 37,000 |  | 21,000 |  | 21,000 |
| Federal net operating loss carryforwards. |  | 3,130,000 |  | 3,383, 000 |  | , 383, 000 |
| State net operating loss carryforwards. |  | 643,000 |  | 587,000 |  | 590,000 |
| Research and development tax credit carryforwards. |  | 561,000 |  | 576,000 |  | 576,000 |
| Total. |  | 4,571,000 |  | 4,670, 000 |  | 4,678,000 |
| Valuation allowance |  | (4,571,000) |  | $(4,670,000)$ |  | (4,678,000) |
|  | \$ | -- | \$ | -- | \$ | -- |

A valuation allowance is provided against temporary deductible differences, net operating loss carryforwards and tax credits which are not likely to be realized. During 1994, 1995 and through March 31, 1996, the net valuation allowance was changed to fully reserve gross deferred tax assets.

At December 31, 1995, the Company had available federal net operating loss carryforwards of approximately \$9,664,000 which expire in 2003 through 2010, and research and development tax credit carryforwards of approximately $\$ 576,000$ which expire in 2003 through 2010.

## 4. STOCKHOLDERS' EQUITY

Common Stock -- In May 1994, the Company increased its authorized common stock to $18,650,000$ shares from $13,650,000$ shares.

Convertible Preferred Stock -- At the option of the holder at any time, or at the discretion of the Board of Directors at any time after the Company has earned a cumulative profit of at least $\$ 5,000,000$, each share of Series B, C, D, and E preferred stock shall be automatically converted into common stock. The Company has reserved $13,209,775$ shares of common stock for possible conversion of preferred stock.

Each preferred stockholder is entitled to 100 votes for each share of preferred stock held.

If common stock dividends are declared, the preferred stockholders shall receive dividends at 100 times the amount paid on each common share.

The Series E preferred stockholders have liquidation preference and are entitled to receive a distribution of $\$ 130$ per share prior to any distributions to the Series B, C, and D preferred stockholders and the common stockholders. In order of preference, the Series D, C, and B preferred stockholders, as separate groups, are entitled to receive a distribution of $\$ 100$ per share prior to any distributions to the common stockholders.

In the event of a public offering, pursuant to an effective registration under the Securities Act of 1933, covering the offer and sale of common stock for the account of the Company to the public for not less than $\$ 1.00$ per share with an aggregate offering price of not less than $\$ 7,500,000$, each share of Series B, C, D and E preferred stock shall automatically be converted into shares of common stock.

AWARE, INC.
NOTES TO FINANCIAL STATEMENTS
(INFORMATION PERTAINING TO THE PERIODS ENDED
MARCH 31, 1996 AND MARCH 31, 1995 IS UNAUDITED) -- (CONTINUED)
Notes Receivable for Stock Issuances -- In December 1992, the Company issued 4,100 shares of Series D preferred stock to two officers of the Company in exchange for notes receivable totaling $\$ 410,000$. Interest was payable quarterly at the applicable federal rate (approximately $5.3 \%$ at December 31, 1994). At December 31, 1994, unpaid interest on the notes amounted to $\$ 47,062$. The notes were secured by the related Series D preferred stock. Upon the resignation of the two officers from the Company in March 1995, the Company accepted the Series D preferred stock in payment of the notes and unpaid interest thereon.

Stock Option Plan -- In January 1990, the Company adopted an Incentive and Nonstatutory Stock Option Plan (the "Plan"). At the discretion of the Board of Directors, options granted may be either incentive stock options or nonqualified stock options. Under the Plan, the Company may grant options to purchase up to $2,873,002$ shares of common stock.

The stock options are exercisable over a period determined by the Board of Directors, not to exceed ten years from the date of grant, except for stock options granted to directors, which must be exercised within eight years from the date of grant. Unexercised incentive stock options lapse upon termination of employment. The exercise price shall be determined by the Board of Directors, except that the exercise price of any incentive stock option shall not be less than the fair market value of the shares, as determined by the Board of Directors at the date of grant (not less than $110 \%$ of such value in the case of holders of $10 \%$ or more of the total combined voting power of all classes of the Company's stock).

In 1994, upon resolution by the Board of Directors and by agreement of the option holders, the Company canceled incentive stock options and nonqualified options previously issued at $\$ 2.00$ per share and reissued replacement options with the same terms and vesting schedule at $\$ 1.30$ per share.
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AWARE, INC.
NOTES TO FINANCIAL STATEMENTS
(INFORMATION PERTAINING TO THE PERIODS ENDED
MARCH 31, 1996 AND MARCH 31, 1995 IS UNAUDITED) -- (CONTINUED)

A summary of activity of the Plan is as follows:

|  | INCENTIVE STOCK OPTIONS |  |  | NONQUALIFIED STOCK OPTIONS |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | NUMBER OF SHARES |  | OPTION PRICE | NUMBER OF SHARES |  | OPTION PRICE |
| Options outstanding at January 1, 1993. | 459,261 | \$ | . 95 | 977,687 | \$ | . 95 |
| Options granted. | 169,500 | \$ | . $95-\$ 2.00$ | -- | \$ | -- |
| Options canceled. | $(70,500)$ | \$ | . 95 |  |  |  |
| Options exercised | $(2,500)$ | \$ | . 95 | -- |  |  |
| Options outstanding at December 31, 1993. | 555,761 | \$ | . $95-\$ 2.00$ | 977,687 | \$ | . 95 |
| Options granted. | 418,769 |  | 1.30-\$2.00 | 719,231 |  | .30-\$2.00 |
| Options canceled. | $(174,500)$ | \$ | . $95-\$ 2.00$ | $(5,000)$ | \$ | . 95 |
| Options exercised | $(10,000)$ | \$ | . 95 | -- |  | -- |
| Options outstanding at December 31, 1994. | 790,030 | \$ | .95-\$1.30 | 1,691,918 | \$ | . 95-\$2.00 |
| Options granted. | 619,750 | \$ | 1.30 | 520,000 | \$ | 1.30 |
| Options canceled. | (491, 311) | \$ | . $95-\$ 1.30$ | $(356,020)$ | \$ | . $95-\$ 2.00$ |
| Options exercised | (200) | \$ | . 95 | $(16,667)$ | \$ | . 95 |
| Options outstanding at December 31, 1995. | 918,269 | \$ | . $95-\$ 1.30$ | 1,839,231 | \$ | . $95-\$ 1.43$ |
| Options granted. | -- |  |  | -- |  |  |
| Options canceled. | $(9,590)$ | \$ | 1.30 | -- |  |  |
| Options exercised. | $(6,410)$ | \$ | 1.30 | -- |  |  |
| Options outstanding at March 31, 1996. | 902,269 | \$ | . $95-\$ 1.30$ | 1,839,231 | \$ | . $95-\$ 1.43$ |
| Options exercisable at March 31, 1996. | 346,474 | \$ | .95-\$1.30 | 1,336,325 | \$ | . $95-\$ 1.43$ |

At March 31, 1996, 95,197 shares of common stock were available for future grant under the Plan, and 2,836,697 shares of common stock remained reserved for the exercise of options under the Plan.

## 5. COMMITMENTS AND CONTINGENCIES

Lease Commitments -- During December 1994, management of the Company decided to relocate its office and research facilities and initiated negotiations to terminate its lease. In March 1995, the Company completed negotiations to terminate the lease effective May 31, 1995. The Company's cost to terminate the lease of approximately $\$ 180,000$ was included in rent expense in 1994.

The Company entered into a new three-year noncancelable operating lease for its office and research facilities commencing June 1, 1995. The new lease provides that the Company pay a base monthly rental of $\$ 10,500$ plus, as additional rent, a proportionate annual share of the building common expenses and real estate taxes in excess of a specified amount.

Rental expense approximated \$312,000, \$494,000 and \$283,000 in 1993, 1994 and 1995, respectively, and $\$ 120,000$ and $\$ 31,000$ for the three months ended March 31, 1995 and 1996, respectively.

AWARE, INC.
NOTES TO FINANCIAL STATEMENTS
(INFORMATION PERTAINING TO THE PERIODS ENDED
MARCH 31, 1996 AND MARCH 31, 1995 IS UNAUDITED) -- (CONTINUED)
Future annual minimum lease payments under the leases are as follows:

| 1996 | \$ 94,100 |
| :---: | :---: |
| 1997 | 125,500 |
| 1998 | 52,300 |

Litigation -- There are no pending legal proceedings to which the Company is a party or to which any of its properties are subject which, either individually or in the aggregate, are expected by the Company to have a material adverse effect on its business, financial position or results of operations.

## 6. TRANSACTIONS WITH RELATED PARTIES

Consulting Agreements -- The Company pays consulting fees for scientific research and development services provided by certain stockholders. The total charges from related parties approximated $\$ 26,000, \$ 27,000$ and $\$ 66,000$ in 1993, 1994 and 1995, respectively, and $\$ 11,000$ and $\$ 4,000$ for the three months ended March 31, 1995 and 1996, respectively. There were no amounts due to related parties at December 31, 1995 and 1994 or March 31, 1996.

Loans from Stockholders -- During 1994, certain stockholders made short-term loans totaling $\$ 150,000$ to the Company, at an interest rate of $10 \%$. The Company repaid the loans in 1994. No such loans were made during 1995.

## 7. MAJOR CUSTOMERS

The portion of total revenue that was derived from major customers was as follows:


## 8. EMPLOYEE BENEFIT PLAN

In 1994, the Company established a qualified 401(k) Retirement Plan (the "Plan") under which employees are allowed to contribute certain percentages of their pay, up to the maximum allowed under Section 401(k) of the Internal Revenue Code. Company contributions to the Plan are at the discretion of the Board of Directors. There were no Company contributions in 1995 and 1994.

## 9. SUBSEQUENT EVENTS

On May 23, 1996, the Company adopted a new 1996 Stock Option Plan with 3,000,000 shares authorized. Additionally, the Company adopted an Employee Stock Purchase Plan with 100,000 shares authorized. The Company granted options for $1,378,000$ shares at $\$ 8.25$ per share under the new 1996 Stock Option Plan.

On June 6, 1996, the stockholders of the Company approved the filing of amended and restated articles of organization that authorize an additional $11,350,000$ shares of $\$ .01$ par value common stock and $1,000,000$ shares of $\$ 1.00$ par value preferred stock.

Aware designs, develops and markets telecommunications software, chipsets and modems which incorporate ADSL technology and increase the speed of data communications over conventional copper telephone lines. The Company's products and services are designed to allow telephone companies to utilize their installed bases of dedicated copper lines to provide both residential and business customers with interactive data transmission at speeds much higher than currently available.

## 3 SECONDS DOWNLOAD TIME

28.8 KBPS
[Picture showing computer screen with incomplete image]

## 3 SECONDS DOWNLOAD TIME

4.4 MBPS
[Picture showing computer screen with image]

The Aware ADSL Internet Access Modem is designed to download data at a rate of up to 4.4 Mbps over a distance of 12,000 feet. The screen simulations above illustrate the difference in performance between this data rate and the data
rate available from a conventional 28.8 modem.
[ AWARE'S LOGO ]
A W A RE

## ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.

The following table sets forth the various expenses in connection with the issuance and distribution of the securities being registered, other than underwriting discounts and commissions. All amounts shown are estimates except the Securities and Exchange Commission registration fee, the Nasdaq Stock Market, Inc. listing fee and the National Association of Securities Dealers, Inc. filing fee.

| Registration fee (Securities and Exchange Commission). | \$ 16,179 |
| :---: | :---: |
| Nasdaq listing fee. | 50,000 |
| NASD filing fee. | 5,192 |
| Printing and engraving expenses | 70,000 |
| Transfer agent fees. | 5,000 |
| Accounting fees and expenses | 160, 000 |
| Legal fees and expenses. | 300, 000 |
| Excess director and officer insurance premium. | 160, 000 |
| Blue Sky fees and expenses (including related legal fees) | 20, 000 |
| Miscellaneous. | 13,629 |
| Total. | \$800, 000. |

ITEM 14. INDEMNIFICATION OF DIRECTORS AND OFFICERS.
Section 13(b)(1 1/2) of Chapter 156B of the of the Massachusetts General Laws provides that the articles of organization of a Massachusetts corporation may state a provision eliminating or limiting the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director notwithstanding any provision of law imposing such liability, provided, however, that such a provision shall not eliminate or limit the liability of a director (i) for any breach of a director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 61 or 62 of Chapter 156B of the Massachusetts General Laws, relating to liability for unauthorized distributions and loans to insiders, respectively, or (iv) for any transaction from which the director derived an improper personal benefit. Article 6 of the Company's Articles of Organization, as amended to date (the "Articles of Organization"), provides that the personal liability of the Company's directors is eliminated to the fullest extent permitted by law, including without limitation the provisions of Chapter 156B, Section 13(b)(1 1/2) of the General Laws.

Section 67 of Chapter 156B of the Massachusetts General Laws authorizes Massachusetts corporations to indemnify directors, officers, employees and agents of the corporation, and persons serving at the request of the corporation as directors, officers, employees and agents of another organization, or who serve at its request in any capacity with respect to an employee benefit plan, to whatever extent shall be specified in or authorized by the articles of organization, a by-law adopted by the stockholders or a vote adopted by a majority of the shares of stock entitled to vote on the election of directors, provided that no indemnification may be provided for any person with respect to any matter as to which he or she shall have been adjudicated in any proceeding not to have acted in good faith in the reasonable belief that his or her action was in the best interests of the corporation or, to the extent that such matter relates to service with respect to an employee benefit plan, in the best interests of the participants or beneficiaries of such employee benefit plan.

Section 5.8 of the Company's By-Laws, as amended to date (the "By-Laws"), provides that the Company shall indemnify each of its directors and officers (as well as any former director or officer) to the fullest extent permitted by law against any and all claims and liabilities to which he may be or
become subject by reason of his being or having been an officer or director of the Company or by reason of his alleged acts or omissions as an officer or director of the Company, except in relation to such matters as to which such officer or director shall have been guilty of wilful malfeasance, bad faith, gross negligence or reckless disregard of his duties in the conduct of his office. Section 5.8 further provides that the Company shall indemnify and reimburse each such officer and director against and for any and all legal and other expenses reasonably incurred by him in connection with any such claims and liabilities, actual or threatened, whether or not, at or prior to the time when so indemnified, held harmless and reimbursed, he had ceased being an officer or director of the Company, except in relation to such matters as to which such officer or director shall have been guilty of wilful malfeasance, bad faith, gross negligence or reckless disregard of his duties in the conduct of his office; provided that the Company prior to such final adjudication may compromise and settle any such claims and liabilities and pay such expenses, if such settlement or payment or both appears, in the judgment of a majority of the Board of Directors, to be for the best interest of the Company, evidenced by a resolution to that effect after receipt by the Company of a written opinion of counsel for the Company that such officer or director has not been guilty of wilful malfeasance, bad faith, gross negligence or reckless disregard of his duties in the conduct of his office in connection with the matters involved in such compromise, settlement and payment.

Section 5.8 of the By-Laws further provides that the right of indemnification provided thereby shall not be exclusive of any rights to which any officer or director may otherwise be lawfully entitled, and may be incorporated into individual indemnification agreements between the Company and any officer or director.

The Company has entered into separate indemnification agreements with each current director and a former director of the Company. Pursuant to these agreements, the Company has agreed to indemnify each director to the fullest extent permitted by law from claims to which he may become subject by reason of his service or actions as a director or officer of the Company, except as to matters as to which he shall have been guilty of wilful malfeasance, bad faith, gross negligence or reckless disregard of his duties in the conduct of his office. The agreements also contain provisions regarding reimbursement of expenses incurred in connection with such claims.

Section 8 of the Underwriting Agreement provides that, under certain circumstances, the Underwriters are obligated to indemnify the directors and officers of the Company against certain liabilities, including liabilities under the Securities Act. Reference is made to the form of Underwriting Agreement filed as Exhibit 1.1 hereto.

The effect of these provisions would be to permit indemnification by the Company for, among other liabilities, liabilities arising out of the Securities Act of 1933 (the "Securities Act").

Section 67 of Chapter 156B of the Massachusetts General Laws also authorizes Massachusetts corporations to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or other agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or other agent of another organization, or with respect to an employee benefit plan, against any liability incurred by him or her in any such capacity, or arising out of his or her status as such, whether or not the corporation would have the power to indemnify him or her against such liability. The Company intends to purchase a general liability insurance policy which covers certain liabilities of directors and officers of the Company arising out of claims based on acts or omissions in their capacities as directors or officers.

## ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES.

The following information is furnished with regard to all securities issued by the Company within the past three years which were not registered under the Securities Act.
(a) Between November 30, 1994 and June 26, 1996, the Company issued and sold a total of $1,052,529$ shares of Common Stock pursuant to the exercise of options under the Company's 1990 Incentive and Non-Statutory Stock Option Plan, for an aggregate consideration of \$1,057,969.
(b) Between June 14, 1994 and October 26, 1994, the Company issued and sold a total of 29,432 shares of Series $E$ Convertible Preferred Stock, $\$ 1.00$ par value per share, for an aggregate consideration of $\$ 3,826,160$.

The issuances described above were made in reliance upon the exemption from registration set forth in Section $4(2)$ of the Securities Act relating to sales by an issuer not involving any public offering. None of the foregoing transactions involved a distribution or public offering. No underwriters were engaged in connection with the foregoing issuances of securities, and no underwriting discounts or commissions were paid.

ITEM 16. EXHIBITS AND FINANCIAL SCHEDULES.
(a) EXHIBITS

| +1.1 | Form of Underwriting Agreement |
| :---: | :---: |
| +3.1 | Amended and Restated Articles of Organization |
| 3.2 | Form of Amended and Restated Articles of Organization (to be filed with the Secretary of State of the Commonwealth of Massachusetts after the closing of this offering) |
| +3.3 | Amended and Restated By-Laws |
| 4.1 | Specimen certificate for the Common Stock |
| 5.1 | Opinion of Foley, Hoag \& Eliot LLP |
| +10.1 | Form of Lock-Up Agreement, with schedule of substantially identical documents |
| +10.2 | 1990 Incentive and Non-Statutory Stock Option Plan |
| +10.3 | 1996 Stock Option Plan |
| +10.4 | 1996 Employee Stock Purchase Plan |
| *10.5 | License Agreement with Analog Devices, Inc., dated September 25, 1993, together with appendices thereto |
| +10.6 | Development Contract with Analog Devices, Inc., dated September 25, 1993, together with amendments thereto |
| *10.7 | Agreement with DSC Telecom L.P., dated March 6, 1996 |
| *10.8 | License Agreement and Development Contract with Westell, Inc., dated as of September 5, 1994 |
| +10.9 | Development Agreement -- Low Cost DMT ADSL, among Aware, Inc., Analog Devices, Inc., Westell International Inc. and Westell, Inc., dated as of May 12, 1995 |
| +10.10 | Technology Agreement with Broadband Technologies, Inc., dated June 10, 1996 |
| +10.11 | Lease Agreement dated April 3, 1995, with respect to real property located at One Oak Park, Bedford, Massachusetts, between R.W. Connelly as lessor and the Company as lessee |
| +10.12 | Employment Agreement of James C. Bender |
| +10.13 | Form of Director Indemnification Agreement |
| +11.1 | Computation of Pro Forma Net Income Per Common Share |
| 23.1 | Consent of Deloitte \& Touche LLP |
| 23.2 | Consent of Price Waterhouse LLP |

23.3 Consent of Foley, Hoag \& Eliot LLP (included in Exhibit 5.1)
23.4 Consent of Cesari and McKenna
+24.1 Power of Attorney (contained on the signature page of this Registration Statement)
99.1 Letter from Price Waterhouse LLP as to change in independent accountants
99.2 Letter from DiBenedetto \& Company, P.A. as to change in independent accountants

* Filed under application for confidential treatment.
+ Previously filed.


## (b) FINANCIAL STATEMENT SCHEDULES

All schedules are omitted because they are not applicable or the required information is shown in the consolidated financial statements or notes thereto.

ITEM 17. UNDERTAKINGS.
Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended (the "Securities Act") may be permitted to directors, officers and controlling persons of the registrant pursuant to the provisions contained in the Articles of Organization and By-Laws of the registrant and the laws of the Commonwealth of Massachusetts, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

The undersigned registrant hereby undertakes that:
(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule $424(\mathrm{~b})(1)$ or (4) or $497(\mathrm{~h})$ under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective; and
(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

PURSUANT TO THE REQUIREMENTS OF THE SECURITIES ACT OF 1933, THE COMPANY HAS DULY CAUSED THIS AMENDMENT NO. 1 TO REGISTRATION STATEMENT TO BE SIGNED ON ITS BEHALF BY THE UNDERSIGNED, THEREUNTO DULY AUTHORIZED, IN THE CITY OF BOSTON, MASSACHUSETTS ON JULY 28, 1996.

AWARE, INC

$$
\begin{aligned}
& \text { By /s/ JAMES C. BENDER } \\
& \text {------------------------ } \\
& \text { James C. Bender } \\
& \text { President and Chief Executive } \\
& \text { Officer }
\end{aligned}
$$

PURSUANT TO THE REQUIREMENTS OF THE SECURITIES ACT OF 1933, THIS AMENDMENT TO REGISTRATION STATEMENT HAS BEEN SIGNED BY THE FOLLOWING PERSONS IN THE CAPACITIES AND ON THE DATES INDICATED.

| SIGNATURE | TITLE | DATE |
| :---: | :---: | :---: |
| /s/ JAMES C. BENDER James C. Bender | President, Chief Executive Officer and Director <br> (Principal Executive Officer) | July 28, 1996 |
| /S/ RICHARD P. MOBERG Richard P. Moberg | Treasurer and Chief Financial Officer (Principal Financial and Accounting Officer) | July 28, 1996 |
| * | Chairman of the Board | July 28, 1996 |
| Charles K. Stewart |  |  |
| * | Director | July 28, 1996 |
| Jerald G. Fishman |  |  |
| * | Director | July 28, 1996 |
| John K. Kerr |  |  |
| * | Director | July 28, 1996 |
| John S. Stafford, Jr. |  |  |
| *By /s/ JAMES C. BENDER |  |  |
| James C. Bender, as Attorney-in-Fact |  |  |

## EXHIBIT INDEX

| EXHIBIT |  | SEQUENTIALLY NUMBERED |
| :---: | :---: | :---: |
| NUMBER | DESCRIPTION | PAGE |
| +1.1 | Form of Underwriting Agreement |  |
| +3.1 | Amended and Restated Articles of Organization |  |
| 3.2 | Form of Amended and Restated Articles of Organization (to be filed with the Secretary of State of the Commonwealth of Massachusetts after the closing of this offering) |  |
| +3.3 | Amended and Restated By-Laws |  |
| 4.1 | Specimen certificate for the Common Stock |  |
| 5.1 | Opinion of Foley, Hoag \& Eliot LLP |  |
| +10.1 | Form of Lock-Up Agreement, with schedule of substantially identical documents |  |
| +10.2 | 1990 Incentive and Non-Statutory Stock Option Plan |  |
| +10.3 | 1996 Stock Option Plan |  |
| +10.4 | 1996 Employee Stock Purchase Plan |  |
| *10.5 | License Agreement with Analog Devices, Inc., dated September 25, 1993, together with appendices thereto |  |
| +10.6 | Development Contract with Analog Devices, Inc., dated September 25, 1993, together with amendments thereto |  |
| *10.7 | Agreement with DSC Telecom L.P., dated March 6, 1996 |  |
| *10.8 | License Agreement and Development Contract with Westell, Inc., dated as of September 5, 1994 |  |
| +10.9 | Development Agreement -- Low Cost DMT ADSL, among Aware, Inc., Analog Devices, Inc., Westell International Inc. and Westell, Inc., dated as of May 12, 1995 |  |
| +10.10 | Technology Agreement with Broadband Technologies, Inc., dated June 10, 1996 |  |
| +10.11 | Lease Agreement dated April 3, 1995, with respect to real property located at One Oak Park, Bedford, Massachusetts, between R.W. Connelly as lessor and the Company as lessee |  |
| +10.12 | Employment Agreement of James C. Bender |  |
| +10.13 | Form of Director Indemnification Agreement |  |
| +11.1 | Computation of Pro Forma Net Income Per Common Share |  |
| 23.1 | Consent of Deloitte \& Touche LLP |  |
| 23.2 | Consent of Price Waterhouse LLP |  |
| 23.3 | Consent of Foley, Hoag \& Eliot LLP (included in Exhibit 5.1) |  |
| 23.4 | Consent of Cesari and McKenna |  |
| +24.1 | Power of Attorney (contained on the signature page of this Registration Statement) |  |
| 99.1 | Letter from Price Waterhouse LLP as to change in independent accountants |  |
| 99.2 | Letter from DiBenedetto \& Company, P.A. as to change in independent accountants |  |

[^0]
## THE COMMONWEALTH OF MASSACHUSETTS

## WILLIAM FRANCIS GALVIN

Secretary of the Commonwealth
One Ashburton Place, Boston, Massachusetts 02108-1512
RESTATED ARTICLES OF ORGANIZATION
(GENERAL LAWS, CHAPTER 156B, SECTION 74)

**being at least a majority of each type, class or series outstanding and entitled to vote thereon:/**being at least two-thirds of each type, class or series outstanding and entitled to vote thereon and of each type, class or series of stock whose rights are adversely affected thereby:

ARTICLE I
The name of the corporation is:
AWARE, INC.

## ARTICLE II

The purpose of the corporation is to engage in the following business activities:

To research, develop, manufacture and market computer software, hardware, systems and electronic components, equipment and other products utilizing computers and other information processing technologies.

In general, to carry on any lawful business whatsoever in connection with the foregoing, or which is calculated directly or indirectly to promote the interest of the corporation or to enhance the value of its properties and which is not contrary to Chapter 156 B of the General Laws of the Commonwealth of Massachusetts, and to do or cause to have done any and all such acts and things as may be necessary, desirable, convenient, or incidental to the consummation or accomplishment of any or all of the foregoing purposes.
[FN]

* Delete the inapplicable words. ** Delete the inapplicable clause.

NOTE: IF THE SPACE PROVIDED UNDER ANY ARTICLE OR ITEM ON THIS FORM IS
INSUFFICIENT, ADDITIONS SHALL BE SET FORTH ON SEPARATE $81 / 2 \times 11$ SHEETS OF PAPER WITH A LEFT MARGIN OF AT LEAST 1 INCH. ADDITIONS TO MORE THAN ONE ARTICLE MAY BE MADE ON A SINGLE SHEET SO LONG AS EACH ARTICLE REQUIRING EACH ADDITION IS CLEARLY INDICATED.

State the total number of shares and par value, if any, of each class of stock which the corporation is authorized to issue:


Undesignated 1,000,000

## ARTICLE IV

If more than one class of stock is authorized, state a distinguishing designation for each class. Prior to the issuance of any shares of a class, if shares of another class are outstanding, the corporation must provide a description of the preferences, voting powers, qualifications, and special or relative rights or privileges of that class and of each other class of which shares are outstanding and of each series then established within any class.

## I. PROVISIONS GENERALLY APPLICABLE TO PREFERRED SHARES

## The description of the Preferred Stock is as follows:

1. CERTIFICATE OF DESIGNATION. The Board of Directors is authorized, subject to limitations described by law and the provisions of this Article 4, to provide for the issuance of shares of Preferred Stock with or without series, and, by filing a certificate pursuant to the applicable law of The Commonwealth of Massachusetts (the "Certificate of Designation"), to establish from time to time the number of shares to be included in each such series and to fix the designation, preferences, voting powers, qualifications and special or relative rights or privileges of the shares of each such series. In the event that at any time the Board of Directors shall have established and designated one or more shares of Preferred Stock consisting of a number of shares less than all of the authorized number of shares of Preferred Stock, the remaining authorized shares of Preferred Stock shall be deemed to be shares of an undesignated series of Preferred Stock until designated by the Board of Directors as being a part of a series previously established or a new series then being established by the Board of Directors. Notwithstanding the fixing of the number of shares constituting a particular series, the Board of Directors may at any time thereafter authorize the issuance of additional shares of the same series except as set forth in the Certificate of Designation.
2. AUTHORITY OF BOARD. The authority of the Board of Directors with respect to each series of Preferred Stock shall include, but not be limited to determination of the following:
(a) the number of shares constituting that series, which number may be increased or decreased (but not below the number of shares of such series then outstanding) from time to time by the Board of Directors, and the distinctive designation of that series;
(b) whether any dividend shall be paid on shares of that series, and, if so, the dividend rate on the shares of that series; whether dividends shall be cumulative and, if so, from which date or dates, and the relative rights of priority, if any, of payment of dividends on shares of that series;
(c) whether shares of that series shall have voting rights in addition to the voting rights provided by law and, if so, the terms of such voting rights;
(d) whether shares of that series shall be convertible into shares of Common Stock or another security and, if so, the terms and conditions of such conversion, including provisions for adjustment of the conversion rate in such events as the Board of Directors shall determine;
(e) whether or not the shares of that series shall be redeemable and, if so, the terms and conditions of such redemption, including the date or dates upon or after which they shall be redeemable and the amount per share payable in case of redemption, which amount may vary under different conditions and at different redemption dates; and whether that series shall have a sinking fund for the redemption or purchase of shares of that series and, if so, the terms and amount of such sinking fund;
(f) whether, in the event of purchase or redemption of the shares of that series, any shares of that series shall be restored to the status of authorized but unissued shares or shall have such other status as shall be set forth in the Certificate of Designation;
(g) the rights of the shares of that series in the event of the sale, conveyance, exchange or transfer of all or substantially all of the property and assets of the Corporation, or the merger or consolidation of the corporation into or with any other corporation, or the merger of any other corporation into it, or the voluntary or involuntary liquidation, dissolution or winding up of the Corporation, and the relative rights of priority, if any, of shares of that series to payment in any such event;
(h) whether the shares of that series shall carry any preemptive right in or preemptive right to subscribe to any additional shares of Preferred Stock or any shares of any other class of stock which may at any time be authorized or issued, or any bonds, debentures or other securities convertible into shares of stock of any class of the Corporation, or options or warrants carrying rights to purchase such shares or securities; and
(i) any other designation, preferences, voting powers, qualifications, and special or relative rights or privileges of the shares of that series.

## IV. PROVISIONS APPLICABLE TO COMMON SHARES

1. NO PREFERENCE. None of the Common Shares shall be entitled to any preference, and each Common Share shall be equal to every other such share in every respect. Each Common Share shall be entitled to one vote.
2. DIVIDEND RIGHTS. Subject to the provisions with respect to the Preferred Shares, and not otherwise, such dividends, payable in cash, shares or otherwise, as may be determined by the Board of Directors may be declared and paid on the Common Shares from time to time out of any funds lawfully available therefor, and except as specified by the Board of Directors, the Preferred Shares shall not be entitled to participate, as such, in any such dividend.
III. PROVISIONS APPLICABLE TO SERIES A THROUGH SERIES E PREFERRED SHARES.

All Series A Preferred Shares, all Series B Preferred Shares, all Series C Preferred Shares, all Series D Preferred Shares and all Series E Preferred Shares have been canceled.

ARTICLE V

The restrictions, if any, imposed by the Articles of Organization upon the transfer of shares of stock of any class are:
"Other lawful provisions, if any, for the conduct and regulation of the business and affairs of the corporation, for its voluntary dissolution, or for limiting, defining, or regulating the powers of the corporation, or of its directors or stockholders, or of any class of stockholders:

## 6A. LIMITATION OF DIRECTORS LIABILITY

The personal liability of the corporation's directors is hereby eliminated to the fullest extent permitted by law, including, without limitation, by the provisions of Chapter 156B, Section 13(b) (1 1/2) of the General Laws.

## 6B. BY-LAW AMENDMENTS

The By-laws at any time may be amended by vote of the stockholders, provided that notice of the substance of the proposed amendment is stated in the notice of the meeting, or may be amended by vote of a majority of the Directors then in office, except that no amendment may be made by the Directors which alters the provisions of the By-laws with respect to matters which by law or the Articles of Organization require action by the stockholders. No later than the time of giving notice of the meeting of stockholders next following the making, amending or repealing by the Directors of any By-laws, notice thereof stating the substance of such change shall be given to all stockholders entitled to vote on amending the By-laws.

## 6C. TERM OF OFFICE FOR THE BOARD OF DIRECTORS

The directors shall be classified with respect to the time for which they shall severally hold office by dividing them into three classes, each consisting of one-third of the whole number of the board of directors, and all directors shall hold office until their successors are chosen and qualified, or until their earlier death, resignation, or removal. At the first meeting held for election of the board of directors following adoption of these Restated Articles, directors of the first class (Class I Directors) shall be elected for a term of one year; directors of the second class (Class II Directors) shall be elected for a term of two years; directors of the third class (Class III Directors) shall be elected for a term of three years. At each annual meeting thereafter, the successors to the class of directors whose term expires at that meeting shall be elected to hold office for a term continuing until the annual meeting held in the third year following the year of their election and until their successors are duly elected and qualified.

## 6D. CERTAIN TRANSACTIONS APPROVED BY THE BOARD OF DIRECTORS

Except as otherwise provided in these Articles of Organization, the Corporation may authorize, by a vote of a majority of the shares of each class of stock outstanding and entitled to vote thereon, (a) the sale, lease or exchange of all or substantially all of its property and assets, including its goodwill, upon such terms and conditions as it deems expedient, and (b) the merger or consolidation of the Corporation into any other corporation, provided, however, that such sale, lease, exchange, merger or consolidation shall have been approved by a majority of the members of the Board of Directors.

6E. PLACES OF MEETING OF STOCKHOLDERS
Meetings of the stockholders may be held anywhere in the United States.

## 6F. PARTNERSHIP IN ANY BUSINESS ENTERPRISE

The Corporation may be a partner in any business enterprise it would have power to conduct by itself.

The effective date of the restated Articles of Organization of the corporation shall be the date approved and filed by the Secretary of the Commonwealth. If a LATER effective date is desired, specify such date which shall not be more than THIRTY DAYS after the date of filing.

## ARTICLE VIII

the Information contained in article viil is not a permanent part of the ARTICLES OF ORGANIZATION.
a. The street address (post office boxes are not acceptable) of the principal office of the corporation IN MASSACHUSETTS is:

One Oak Park, Bedford, MA 01730
b. The name, residential address and post office address of each director and officer of the corporation is as follows:

## NAME

President: James C. Bender
Treasurer: Richard P. Moberg
RESIDENTIAL ADDRESS POST OFFICE ADDRESS

Clerk: Valerie L. Pawson
272 Farley Rd., Hollis, NH 03049
19 Hidden Brick Road, Hopkinton, MA 01748

Directors: James C. Bender
196 Eliot St., Natick, MA 01760

John Kerr
272 Farley Rd., Hollis, NH 03049
336 Essex Road, Kenilworth, IL 60043
John Stafford
Charles Stewart
Gerald Fishman
60 Strawberry Hill Road, Dover, MA 02030
7 Bristol Road, Northbrook, IL 60093
169 Hickory Road, Weston, MA
c. The fiscal year (i.e., tax year) of the corporation shall end on the last day of the month of:
d. The name and business address of the resident agent, if any, of the corporation is:

One Oak Park, Bedford, MA 01730
**We further certify that the foregoing Restated Articles of Organization affect no amendments to the Articles of Organization of the corporation as heretofore amended, except amendments to the following articles. Briefly describe amendments below:

Article 3-- Decrease preferred stock
Article 4-- Reflect decreased preferred stock

SIGNED UNDER THE PENALTIES OF PERJURY, this $\qquad$ day of $\qquad$ _,
$\qquad$ *President
*Delete the inapplicable words. **If there are no amendments, state "None".

RESTATED ARTICLES OF ORGANIZATION
(General Laws, Chapter 156B, Section 74)

I hereby approve the within Restated Articles of Organization and, the filing fee in the amount of \$ having been paid, said articles are deemed to have been filed with me this $\qquad$ day of , 19 $\qquad$

Effective Date: $\qquad$

WILLIAM FRANCIS GALVIN
Secretary of the Commonwealth

TO BE FILLED IN BY CORPORATION Photocopy of document to be sent to:

> Valerie L. Pawson, Esq.
> Lawson \& Weitzen
> 425 Summer Street
> Boston, MA 02210-1736
> Telephone: (617) 439-4990
$\qquad$
NUMBER

COMMON STOCK
THIS CERTIFICATE IS TRANSFERABLE
IN BOSTON, MA OR NEW YORK, NY
INCORPORATION UNDER THE LAWS OF THE COMMONWEALTH OF MASSACHUSETTS
CUSIP 05453N 100

FULLY PAID AND NON-ASSESABLE SHARES OF COMMON STOCK, \$.01 PAR VALUE PER SHARE, OF AWARE, INC.
transferable on the books of the Company by the holder hereof in person by duly authorized attorney upon surrender of this certificate properly endorsed or assigned. This certificate and the shares represented hereby are issued and shall be held subject to the laws of the Commonwealth of Massachusetts and the provisions of the Articles of Organization and the Bylaws of the Company as amended from time to time, to which the holder by acceptance hereof assents. This certificate is not valid unless countersigned and registered by the Transfer Agent and Registrar.

Witness the facsimile seal of the Company and the facsimile signatures of its duly authorized officers.

DATED: $\qquad$ [SEAL] AWARE, INC.
INCORPORATED 1986
/s/ James C. Bender
---------
MASSACHUSETTS
PRESIDENT

COUNTERSIGNED AND REGISTERED
STATE STREET BANK AND TRUST COMPANY

| TRANSFER AGENT | /s/ Richard P. Moberg |
| :---: | :---: |
| AND REGISTRAR |  |
|  | TREASURER |

$B Y$

## TREASURER

AUTHORIZED SIGNATURE

The Company is authorized to issue more than one class or series of stock. Upon written request the Company will furnish without charge to each stockholder a copy of the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights

The following abbreviations, when used in the inscription on the face of this certificate, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM - as tenants in common
UNIF GIFT MIN ACT - $\qquad$ Custodian (Cust) (Minor)
TEN ENT - as tenants by the entireties under Uniform Gifts to Minors

JT TEN - as joint tenants with right of survivorship and not as tenants in common

Additional abbreviations may also be used though not in the above list.

For value received $\qquad$ hereby sell, assign and transfer unto

PLEASE INSERT SOCIAL SECURITY OR OTHER
IDENTIFYING NUMBER OF ASSIGNEE

PLEASE PRINT OR TYPEWRITE NAME AND ADDRESS OF ASSIGNEE
of the common stock represented by the within Certificate, and do hereby irrevocably
constitute and appoint
to transfer the said stock on the books of the within-named company with full power of
substitution in the premises.

Dated, $\qquad$

NOTICE: THE SIGNATURE TO THE ASSIGNMENT MUST CORRESPOND WITH THE NAME AS WRITTEN UPON THE FACE OF THE CERTIFICATE IN EVERY PARTICULAR WITHOUT ALTERATION OR ENLARGEMENT, OR ANY CHANGE WHATEVER.

Signature(s) Guaranteed:

[^1]Aware, Inc.
One Oak Park
Bedford, Massachusetts 01730
Ladies and Gentlemen:

We are familiar with the Registration Statement on Form S-l, Registration No. 333-6807 filed by Aware, Inc., a Massachusetts corporation (the "Company"), with the Securities and Exchange Commission under the Securities Act of 1933, as amended (the "Registration Statement"). The Registration Statement relates to the proposed public offering by the Company of 3,910,000 shares (the "Shares") of its Common Stock, \$0.01 par value per share ("Common Stock"), to be issued by the Company. (The foregoing number of Shares assumes exercise in full of the over-allotment option described in the Registration Statement.)

We are familiar with the Company's Articles of Organization and all
amendments thereto, its By-Laws and all amendments thereto, records of meetings and consents of its Board of Directors and of its stockholders provided to us by the Company, and its stock records. In addition, we have examined and relied on the originals or copies certified or otherwise identified to our satisfaction of all such corporate records of the Company and such other instruments and other certificates of public officials, officers and representatives of the Company and such other persons, and we have made such investigations of law, as we have deemed appropriate as a basis for the opinions expressed below.

Based on the foregoing, it is our opinion that the Company has corporate power adequate for the issuance of the Shares in accordance with the Registration Statement. The Company has taken all necessary corporate action required to authorize the issuance and sale of the Shares. When certificates for the Shares have been duly executed and countersigned, and delivered against due receipt of consideration therefor as described in the Registration Statement, the Shares will be legally issued, fully paid and non-assessable.

We consent to the filing of this opinion as an exhibit to the Registration Statement and to the incorporated reference to us under the heading "Legal Matters" in the prospectus forming part of the Registration Statement.

Very truly yours,
FOLEY, HOAG \& ELIOT LLP

By: /s/ Robert L. Birnbaum A Partner

LICENSE AGREEMENT
BETWEEN
AWARE, INC.
AND
ANALOG DEVICES, INC.
This Agreement is made and entered into this 25 day of September 1993, (the "Effective Date") by and between Aware, Inc. (hereinafter referred to as AWARE), a corporation duly organized under the laws of the Commonwealth of Massachusetts and having its principal office at One Memorial Drive, Cambridge, MA 02142, and Analog Devices, Inc. (hereinafter referred to as ADI), a corporation duly organized under the laws of Massachusetts and having a place of business at 181 Ballardvale Street, Wilmington, MA 01887-1024 (hereinafter referred to as "LICENSEE" or "ADI").

## WITNESSETH

WHEREAS, AWARE is the owner of certain rights, title and interest in the PROGRAM (as later defined herein) and the TRADEMARK (as later defined herein) and has the right to grant licenses thereunder;

WHEREAS, ADI desires to obtain a license to manufacture and sell digital signal processing hardware incorporating the PROGRAM; and

WHEREAS, ADI and AWARE have entered into a separate DEVELOPMENT AGREEMENT, a copy of which is attached hereto as Appendix A and incorporated herein,

NOW, THEREFORE, in consideration of the premises and the mutual covenants contained herein, the parties hereto agree as follows:

## 1 - DEFINITIONS

For the purposes of this Agreement, the following words and phrases shall have the following meanings:
1.1 "PROGRAM(s)" shall mean the software developed by AWARE (and all associated documentation) pursuant to the DEVELOPMENT AGREEMENT with exception of the software described in Section 17 of the DEVELOPMENT AGREEMENT.
1.2 "LICENSED PRODUCT(s)" shall mean any product(s) of LICENSEE that incorporate the PROGRAM(s) or any part thereof, including the AWARE-ADI chipset developed under the DEVELOPMENT CONTRACT between ADI and AWARE of even date.
1.3 "COPYRIGHT(s)" shall mean AWARE's copyrights in the PROGRAM(s).
1.4 "INTELLECTUAL PROPERTY RIGHTS" shall mean any and all rights associated with the PROGRAMS, including the COPYRIGHTS, and any rights associated with the TRADEMARKS.
1.5 "TERRITORY" shall mean the world.
1.6 "TRADEMARK(s)" shall mean the AWARE trademark(s).
1.7 "FIELD OF USE" shall mean Asymmetric Digital Subscriber Loop
transceiver which support the data rates and functions mandated in the T1E1.4 or successor standard as of August 2, 1993 a copy of which is attached hereto as Appendix $B$ and incorporated herein.

2 - GRANT
2.1 AWARE hereby grants, unless changed sooner pursuant to Section 3.2, to ADI a perpetual, exclusive license under the INTELLECTUAL PROPERTY RIGHTS in the TERRITORY to:
a. make, use, sell, and distribute LICENSED PRODUCT(s),
b. use the TRADEMARK in conjunction with the manufacture, use, sale and distribution of the LICENSED PRODUCT(s), and
c. use and reproduce the PROGRAM(s) in conjunction with (a) and (b) above.
2.2 The license granted hereunder shall not be construed to confer any rights upon LICENSEE by implication, estoppel or otherwise, as to any intellectual property not specifically included herein.
2.3 Within thirty (30) days of the development of any PROGRAMS under the Development Contract executed simultaneously herewith, AWARE shall deposit with an escrow agent, acceptable to ADI all source code for such PROGRAMS. ADI shall have access to such source code of the PROGRAMS upon the bankruptcy or breach of AWARE of any terms of this LICENSE AGREEMENT. This LICENSE AGREEMENT shall not take effect until such time as a mutually agreeable escrow agent has been identified and a form of escrow agreement agreed to among all the parties.

## 3 - ROYALTIES

3.1 For the rights, privileges and license granted hereunder, ADI shall pay a license fee and royalties to AWARE in the manner hereinafter provided or until this Agreement shall be terminated:
a. A license fee of [redact] and an advance against royalties payment of [redact] payable as follows:
[redact] upon execution of this Agreement and [redact] within one week of the acceptance by LICENSEE of each of Milestones 1 through 4 as provided in Section 9 of the DEVELOPMENT CONTRACT. The final payment of [redact] shall be credited as an advance against royalties and shall be due on or before December 31, 1993.
b. Royalty payments shall be based on the net selling price of LICENSED PRODUCTS and shall be calculated as follows:
i. If the net selling price is less than or equal to [redact], the royalty shall be [redact] of the net selling price.
ii. If the net selling price is between [redact] and [redact], the royalty shall be [redact] of the net selling price plus ([redact] $x$ the net selling price minus [redact]) \% of the net selling price. For example, if the net selling price is [redact], then the royalty shall be: [redact] + [redact] equals [redact] and the total royalty shall be [redact] of the net selling price or [redact].
iii. If the net selling price is greater than [redact], the royalty shall be [redact] of the net selling price.

If ADI can show that a royalty of [redact] does not allow it to compete in the marketplace, then the royalty shall be reduced. ADI and AWARE will engage in good faith negotiations to determine a new royalty rate.

The net selling price of a LICENSED PRODUCT in the price paid by an unaffiliated ADI customer, minus transportation costs, taxes, duties and commissions.
3.2 To maintain the exclusive license, ADI shall make minimum calendar royalty payments equal to the royalties due on [redact] of the available market for TiE1.4 standard-compliant DMT ADSL Transceivers in said calendar year.

The balance of the minimum royalty payments shall be due on the 30 th of September each year and shall be credited against the sums due under Section 3.1 in the year in which said minimum royalty payments are due. Should ADI fail to make any such minimum royalty payment on the 30th of September each year, AWARE or ADI may convert the exclusive license granted under Section 2.1 to a non-exclusive license. In the event the exclusive license is changed to a non-exclusive license, AWARE will not license any other party under terms more favorable than those given to ADI.
3.3 Royalty payments shall be paid in United States dollars in Cambridge, Massachusetts, or at such other place as AWARE may reasonably designate. If any currency conversion shall be required
in connection with the payment of royalties hereunder, such conversion shall be made pursuant to ADI's standard accounting procedures for booking foreign sourced revenue. A copy of such procedures are attached hereto as SCHEDULE 3.3.

## 4 - AWARE REPRESENTATIONS AND WARRANTIES

4.1 AWARE represents and warrants that it shall be the legal owner of the PROGRAMS and all COPYRIGHTS associated therewith.
4.2 AWARE represents and warrants that the INTELLECTUAL PROPERTY RIGHTS shall not be subject to any liens, claims or entitlements on the part of any third party. AWARE represents and warrants that its employees are, and shall be the original authors of the PROGRAMS and that AWARE shall acquire all such employees rights and title to such PROGRAMS.
4.3 AWARE represents and warrants that it does not know of any patents, copyrights or trade secrets or other proprietary rights which belong to third parties which will be infringed by the PROGRAMS after development by AWARE, which are not available for license under the provisions of ANSI standard practices.
4.4 AWARE represents and warrants that it will provide full support for its PROGRAM(s) including bug fixes consistent with standard software industry practices for four years.

## 5 - REPORTS AND RECORDS

5.1 ADI shall keep full, true and accurate books of account containing all particulars that may be necessary for the purpose of showing the amounts payable to AWARE hereunder. Said books of account shall be kept at ADI's principal place of business or the principal place of business or the appropriate division of ADI to which this Agreement relates. Said books and the supporting data shall be open at all reasonable times for three (3) years following the end of the calendar year to which they pertain, to the inspection of AWARE or its agents for the purpose of verifying ADI's royalty statement or compliance in other respects with this Agreement.

Should such inspection lead to the discovery of a greater than ten percent (10\%) discrepancy in reporting, LICENSEE agrees to pay the full cost of such inspection.
5.2 ADI, within sixty (60) days after March 31, June 30, September 30 and December 31 of each year, shall deliver to AWARE true and accurate reports, giving such particulars of the business conducted by ADI during the preceding three-month period under this Agreement as shall be pertinent to a royalty accounting hereunder. These shall include at least the following:
a. descriptions of LICENSED PRODUCTS;
b. number of LICENSED PRODUCTS manufactured, distributed or sold by ADI;
c. total royalties due
5.3 With each such report submitted, ADI shall pay to AWARE the royalties due and payable under this Agreement. If no royalties shall be due, ADI shall so report.
5.4 The royalty payments set forth in this Agreement and amounts due under Paragraph 4 shall, if overdue, bear interest until payment at a per annum rate two percent (2\%) above the prime rate in effect at the Chase Manhattan Bank (N.A.) on the due date. The payment of such interest shall not foreclose AWARE from exercising any other rights it may have as a consequence of the lateness of any payment.

$$
6 \text { - COPYRIGHT }
$$

ADI acknowledges that title to the PROGRAM(s) (including copyright) shall remain with AWARE and that any copies of the LICENSED PRODUCTS and related documentation, or portions thereof, made by ADI shall include an AWARE copyright notice thereon the following form: "Copyright 199__, Aware, Inc. All Rights Reserved". The notice shall be affixed to all copies or portions thereof in such manner and location as to give reasonable notice of AWARE's claim of
copyright. ADI shall at all times hereafter protect the PROGRAM, and all related technical information, data and materials supplied by AWARE, from transfer using measures at least as strong as those used by ADI in protecting its own proprietary data.

## 7 - TRADEMARK

7.1 ADI acknowledges that AWARE asserts that it is critical that the goodwill associated with the $\operatorname{TRADEMARK}(s)$ be protected and enhanced and, toward this end, ADI shall not during the terms of this Agreement or thereafter intentionally:
a. attach the title or any rights of AWARE in or to the TRADEMARK(s);
b. apply to register or maintain any application or registration of the TRADEMARK(s) or any other mark confusingly similar thereto in any jurisdiction, domestic or foreign.
c. use any colorable imitation of any of the $\operatorname{TRADEMARK}(\mathrm{s})$, or any variant form including variant design forms, logos, colors, or typestyles of the TRADEMARK(s) not specifically approved by AWARE.
d. misuse the TRADEMARK;
e. take any action that would bring the TRADEMARK(s) into public disrepute;
f. use the TRADEMARK(s), or any mark or name confusingly similar thereto, in its corporate or trade name; or
g. take any action that would tend to destroy or diminish the goodwill in the TRADEMARK(s)
7.2 All use by ADI of the TRADEMARK(s) shall inure to the benefit of AWARE.
7.3 ADI agrees to cooperate fully with AWARE in securing and maintaining the goodwill of AWARE in the TRADEMARK(s).
7.4 ADI agrees that it shall mark the LICENSED PRODUCTS or the containers of such LICENSED PRODUCTS to indicate the rights of AWARE in the TRADEMARK(s), including registration status of the TRADEMARK(s) and that the products are manufactured pursuant to license.

## 8 - INFRINGEMENT

8.1 AWARE shall defend and indemnify ADI against all claims or suits against ADI for infringements of patents, copyrights, or trade secrets of third parties as a result of the use by ADI of the PROGRAMS and shall be liable for all awards against ADI, whether by judgment or settlement, as a result of such claims and suits, provided that AWARE is given prompt notice of any such claims or suits and has sole control over the defense and settlement of any such claims or suits, and provided further that no such claims or suits for infringement is based upon developments or changes made by ADI.
8.2 Each of AWARE and ADI agrees to notify the other promptly in writing when it learns of any patents, copyrights, or other proprietary rights which belong to third parties and which are allegedly being infringed by ADI's sale of the LICENSED PRODUCTS.
8.3 In the event AWARE does not provide the indemnity set forth in 8.1 above, then in the event that any third party shall claim or sue ADI for infringement of patents, copyrights, trade secrets, or any other proprietary rights, as a result of the manufacture, use or sale of LICENSED PRODUCTS by ADI, and shall allege in such claim or suit that the LICENSED PRODUCTS made, used or sold by ADI infringe such patents, copyrights, trade secrets or proprietary rights of such third party because of the inclusion of the PROGRAMS or parts thereof in the LICENSED PRODUCTS, ADI shall have the right to deduct from the royalties payable by ADI to AWARE, any amounts paid by ADI to such third party, whether by judgment or settlement, relating to such allegation.
8.4 Notwithstanding Paragraphs 8.1 and 8.3 above, AWARE shall have no liability for royalties paid pursuant to licenses required to practice the ANSI T1E1.4 ADSL standard.

## 9 - PRODUCT LIABILITY

9.1 ADI shall at all times during the term of this Agreement and thereafter, indemnify, defend and hold AWARE, its officers, employees and affiliates, harmless against all claims and expenses, including legal expenses and reasonable attorney's fees, arising out of the death of or injury to any person or persons or out of any damage to property resulting from the production, manufacture, sale, use, lease, consumption or advertisement of the LICENSED PRODUCT(s), provided ADI is given prompt notice of any such claim and has sole control of any defense or settlement negotiations and provided further that such indemnity shall be limited to the extent of the amounts payable from ADI's product liability insurance carrier.

## 10 - ASSIGNMENT

This Agreement is non-assignable and any attempt to do so shall be void.

## 11 - TERMINATION

11.1 AWARE represents that it will take all steps necessary to register the COPYRIGHT(s) immediately in the Common Market, Japan, Canada, Korea, Taiwan, and any other country requested by ADI.
11.2 Should ADI fail to make any payment whatsoever due and payable to AWARE hereunder, this Agreement shall terminate effective on thirty (30) days' notice, unless ADI shall make all such payments to AWARE within said thirty (30) day period. Upon the expiration of the thirty (30) day period, If ADI shall not have made all such payments to AWARE, the rights, privileges and license granted hereunder shall automatically terminate.
11.3 Upon any material breach, breach or default of this Agreement by ADI, other than that set out in Paragraph 11.2, this

Agreement shall terminate and the rights, privileges and license granted hereunder effective on ninety (90) days' notice to ADI. Such termination shall become automatically effective unless ADI shall have cured any such material breach or default prior to the expiration of the ninety (90) day period.
11.4 Upon any material breach or default of this Agreement by AWARE, and such breach or default is not cured by AWARE within ninety (90) days after notice by ADI to AWARE, then any costs incurred by ADI as a direct result of such breach may be deducted from the amounts due to AWARE under this Agreement.
11.5 Upon termination of this agreement for any reason, nothing herein shall be construed to release either party from any obligation that matured prior to the effective date of such termination.

12 - PAYMENTS, NOTICES AND OTHER COMMUNICATIONS

Any payments, notice or other communication pursuant to this Agreement shall be sufficiently made or given on the date of mailing if sent to such party be certified first class mail, postage prepaid, addressed to it at its address below or as it shall designate by written notice to the other party:

In the case of Aware

Robert P Mosher
Chief Financial Officer
Aware, Inc.
One Memorial Drive
Cambridge, MA 02142
In the case of $A D I$

Analog Devices, Inc
Three Technology Way P.O. Box 9106 Norwood, MA 02062-9106
Attn: President
13.1 This Agreement shall be construed, governed, interpreted and applied in accordance with the laws of the Commonwealth of Massachusetts, USA, except that questions affecting the construction and effect of any patent shall be determined by the law of the country in which the patent was granted.
13.2 The parties hereto acknowledge that this Agreement and the Development Contract executed simultaneously herewith sets forth the entire Agreement and understanding of the parties hereto as to the subject matter hereof, and shall not be subject to any change or modification except by the execution of a written instrument subscribed to by the parties hereto.
13.3 No provision of this Agreement is intended to conflict with any law, and the provisions should be construed in a manner that will uphold their validity. In the event that any provision is found to be contrary to any law, it shall be deemed unenforceable, and the parties or the court shall substitute a lawful provision in its place which is equitable and which, to the extent possible, reflects the original intent of the parties. Unless it would be inequitable to do so, all other provisions of the Agreement shall remain in full force and effect.
13.4 The failure of either party to assert a right hereunder or to insist upon compliance with any term or condition of this agreement shall not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition by the other party.
13.5 In no event shall either party be liable for special, incidental or consequential damages due to any cause whatsoever. No suit or action shall be brought against one party by the other more than one year after the related cause of action has accrued. In no event shall the accrued total liability of a party from any lawsuit, claim, warranty or indemnity exceed the aggregate sum paid hereunder by ADI to AWARE.

IN WITNESS WHEREOF, the parties duly execute this Agreement the day and year set forth below.

## /s/ Howard L. Resnikoff

Howard L. Resnikoff
Chief Executive Officer
/s/ Robert P. McAdam
Analog Devices, Inc
Vice President

Dated: 9/24/93
Dated: 25 September, 93
-----------------------------

$\qquad$

Appendix 1 to License Agreement Between Aware and Analog Devices dated 25 September 1993, and effective as of this 10TH day of June 1994

This Appendix 1 is intended to express the license rights and responsibilities of the parties to intellectual property described and to be developed under a certain Amendment To Development Contract dated as of the date of this Appendix 1. The following provisions are not in substitution of any similarly numbered provisions of the License Agreement but shall be deemed specific to the intellectual property produced pursuant to the terms of the Amendment to Development Contract.
1.8 PROGRAMS shall mean the SOFTWARE developed by AWARE (and all associated documentation) pursuant to the AMENDMENT TO THE DEVELOPMENT CONTRACT.
1.9 "LICENSED PRODUCTS" shall mean any product(s) of LICENSEE that incorporate the PROGRAM(S) or any part thereof, including the ADI/AWARE chipset developed under the AMENDMENT TO THE DEVELOPMENT AGREEMENT between ADI and AWARE of even date. This chipset includes digital and analog (baseband and RF) subsections.
1.10 "FIELD OF USE" shall mean "products and technology for data and voice services over fiber, coax and hybrid fiber/coax networks" (HEREINAFTER REFERRED TO AS "HFC").

In the ROYALTIES Section:
3.4 For the HFC rights, privileges and license granted hereunder, ADI shall pay a license fee and royalties to AWARE in the manner hereinafter provided or until this Amendment is terminated:
a. A license fee of [redact] payable as follows:
[redact] on June 1, 1994 to support Aware's on-going efforts on the system design. [redact] within one week of acceptance by LICENSEE of Milestone 2 as provided in Section 26 of the AMENDMENT TO DEVELOPMENT CONTRACT. [redact] within one week of acceptance by LICENSEE of Milestones 3 and 4 as provided in Section 26 of the AMENDMENT TO THE DEVELOPMENT CONTRACT.
b. Royalty payment shall be based on the net selling price of the HFC LICENSED PRODUCTS and shall be calculated as follows:
i. The royalty shall be [redact] of the net selling price.

If ADI can show that a royalty of [redact] does not allow it to compete in the marketplace, then the royalty rate shall be reduced. ADI and AWARE will engage in good faith negotiations to determine a new royalty rate.

In the event that the intellectual property owned by Aware becomes a de facto HFC standard or is licensed for HFC to other parties, Aware will pay [redact] of any royalties collected from third parties to ADI.
3.5 To maintain the exclusive license, ADI shall make minimum calendar royalty payments equal to royalties due on [redact] of the available market for HFC in said calendar year.

The balance of the minimum royalty payments shall be due on the 31 December each year and shall be credited against the sum due under Section 3.4 in the year in which said minimum royalty payments are due. Should ADI fail to make any such minimum royalty payment on 31 December of each year, AWARE or ADI may convert the exclusive license granted for HFC under section 2.1 to a non-exclusive license. In the event that the exclusive license is changed to a non-exclusive license, AWARE will not license any other party under terms more favorable than those given to ADI.

In witness whereof, the parties duly execute this agreement the day and year set forth below.
/s/ Howard L. Resnikoff

Howard L. Resnikoff
Aware, Inc.

Dated: 10 June 1994
--------------------

Dated: June 28, 1994

Russell Johnsen
Analog Devices, Inc

Appendix 2 to License Agreement Between Aware and Analog Devices, Inc.
dated September 1993 and effective as of this 26th Day of September 1995.

This Appendix 2 is intended to express the license rights and responsibilities of the parties to intellectual property described and to be developed under a certain SECOND AMENDMENT TO DEVELOPMENT CONTRACT dated as of the date of this Appendix 2. The following provisions are not in substitution of any similarly numbered provisions of the License Agreement but shall be deemed specific to the intellectual property produced pursuant to the terms of the SECOND AMENDMENT TO DEVELOPMENT CONTRACT.
1.11 "PROGRAMS" shall mean the SOFTWARE developed by Aware (and all associated documentation) pursuant to the SECOND AMENDMENT TO THE DEVELOPMENT CONTRACT.
1.12 The term "LICENSED PRODUCTS" is amended to include all ADI products for the FIELDS OF USE (ADSL or VDSL) being developed by the ADI Division responsible for broadband communications (currently this is the responsibility of the Communications Division), including digital and analog chips for ADSL or VDSL (whether or not such chips incorporate the PROGRAMS or any part thereof.)
1.13 "FIELD OF USE" shall mean "products and technology for data, voice and video services over copper VDSL, VADSL, BDSL or other copper technologies used in Fiber to the Curb, Switched Digital Video, Fiber to the Building and Fiber to the Home architectures" (HEREINAFTER REFERRED TO AS "VDSL").

In the ROYALTY Section:
3.5 For the VDSL rights, privileges and license granted hereunder, ADI shall pay a license fee and royalties to Aware in the manner hereinafter provided or until this agreement is terminated.
a. A license fee of [redact] payable as follows:
[redact] upon execution of this agreement.
[redact] upon completion of the system design and chip
set specification (MILESTONES I, 2 and 4 in SECOND
AMENDMENT TO DEVELOPMENT AGREEMENT).
b. Royalty payment shall be based on the net selling price of the VDSL LICENSED PRODUCTS and shall be calculated as follows:
c. [redact] of the net selling price. Net selling price is defined as the selling price less any license fees paid to any other valid patent holder. Chips included in the calculation are all chips developed by and sold by ADI for this application.

To maintain the exclusive license, for Calendar years 1996 (CY1996) and 1997 (CY1997), ADI shall make prepaid royalty payments as follows:
[redact] payable by 12/31/95. [redact] of this payment applies towards VDSL LICENSED PRODUCTS sold by ADI in CY 1996. The remaining [redact] applies toward VDSL LICENSED PRODUCT sold by ADI in CY 1997.

For CY1997:
[redact] payable as follows:
[redact] by 3/31/96. [redact] of this payment applies towards VDSL LICENSED PRODUCTS sold by ADI through 3/31/97. The remaining
[redact] applies towards VDSL LICENSED PRODUCTS sold by ADI
through 3/31/98. [redact] by 6/30/96. [redact] of this payment applies towards VDSL LICENSED PRODUCTS sold by ADI through 6/30/97. The remaining [redact] applies towards VDSL LICENSED PRODUCTS sold by ADI through 6/30/98. [redact] by 11/4/96. [redact] of this payment applies towards VDSL LICENSED PRODUCTS sold by ADI through 11/4/97. The remaining [redact] applies towards VDSL LICENSED PRODUCTS sold by ADI through 11/4/98. [redact] by 12/31/96. [redact] of this payment applies towards VDSL LICENSED PRODUCTS sold by ADI through 12/31/97. The remaining [redact] applies towards VDSL LICENSED PRODUCTS sold by ADI through 12/31/98.
[redact] payable by 12/31/1997.

AGREEMENT
BETWEEN
AWARE, INC.
ONE OAK PARK
BEDFORD, MA 01734
AND
DSC TELECOM L.P.
1000 COlT ROAD
PLANO, TX 75075
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This Agreement is entered into as of the sixth day of March, 1996 by and between AWARE, Inc. (hereinafter referred to as "AWARE") a corporation organized and existing under the laws of Massachusetts, with offices in Bedford, MA and DSC TELECOM L.P. (hereinafter referred to as "DSC"), a Texas limited partnership, with offices in Plano, Texas. Collectively, DSC and AWARE are hereinafter referred to as the "Parties."

WITNESSETH:
WHEREAS, DSC is engaged in the business of providing products and systems for Hybrid Fiber Coax (HFC) telephony and related areas in which telephone and cable television service providers will be supplied with system solutions;

WHEREAS, AWARE is engaged in the business of providing technology, systems designs, hardware designs, software algorithms and implementations for HFC telephony and related areas;

WHEREAS, AWARE agrees to develop proprietary computer software and hardware designs, together with associated documentation, (the "Licensed Product") based on AWARE'S proprietary discrete wavelet multitone (DWMT) modulation technology that will permit integration of DSC's "Mediaspan" next generation digital loop carrier hybrid fiber coax telephony product line (the "DSC Product"), which will be based on DSC's current "Litespan" product line (as hereinafter defined), with certain third party chipsets; and

WHEREAS, Aware wishes to grant, and DSC wishes to obtain a license to manufacture and sell DSC Products that incorporate the Licensed Products;

NOW, THEREFORE, in consideration of the mutual covenants herein expressed and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound hereby:, the Parties agree as follows:
A. STATEMENT OF GENERAL PURPOSE

The purpose of this Agreement is to establish a framework for a working relationship between DSC and AWARE to jointly develop DSC's proposed Mediaspan Hybrid Fiber Coax telephony extension of the Litespan product line.

For the purposes of this Agreement, each of the following words and phrases shall have the meanings; set forth in the adjacent column'

| TERM | DEFINITION |
| :---: | :---: |
| AWARE Bus | The portion of the coax bank backplane that interconnects the AWARE designed components: RF between CLUH and CST; timing / control between CLUH and CST. |
| CBIU | DSC's Coax Bank Interface Unit. This unit is the interface between Litespan common control and the CLUHs in a coax bank. |
| CBPS | DSC's Coax Bank Power Supply. This unit produces all the voltages necessary for coax bank operation. |
| CBPT | DSC's Coax Bandwidth management, Processor, Timing. This unit distributes the Litespan signal from the CLUR to the channel cards in a CNU-24. |
| CLUH | DSC's Coax Line Unit, Head end. This unit is installed in a coax bank and converts the CBIU Litespan signal into an RF signal. |
| CLUR | DSC's Coax Line Unit, Remote. This unit is installed in a CNU-24 and converts the RF signal from the HFC network into a CBPT Litespan signal. |
| CNUPS | DSC's Coax Network Unit Power Supply. This unit powers the CNU-24. |
| CNU-24 | DSC's Coax Network Unit, 24 lines. This unit has six slots for standard Litespan channel cards, the 24 assumes using quad line units. |
| Coax Bank | DSC's Litespan bank assembly that interfaces with Litespan common control and provides RF modem services. The coax bank houses four types of PCB assemblies: CBIUs, CLUHs, CSTs, CBPSs. |
| Chipset | A group of integrated circuits that form the core of the DWMT RF modem. This group of integrated circuits is used one per modem. 1 chipset is used per modem. |
| Chipset for CLUH | The DWMT chipsets and associated software utilized in the Coax Bank plug-in modem units (CLUH) |
| Chipset for CLUR | The DWMT chipsets and associated software utilized in the CNU-24 plug-in modem unit (CLUR) |
| Chipset for CTU | The DWMT chipsets and associated software utilized in the CTU-x units |


| CST | DSC's Combiner / Splitter and Timing reference. This unit <br>  <br> serves two separate functions. (1) It combines the outputs <br>  <br> from all the CLUHs into a single bank output signal and |
| :--- | :--- |
|  |  |
| splits the received RF signal for distribution to the |  |
|  | CLUHR (2) It produces the clock references necessary for |


| RF Modem | A combination of hardware and software that transports  <br>  digital data across a coax or HFC network within Radio |
| :--- | :--- |
|  | Frequency (RF) channels. Different modems use different RF <br> channels (frequency division multiplexing) on a shared coax |
| media. |  |

C. MARKETING AND SALES

DSC will have exclusive marketing and sales responsibility for the DSC Product. AWARE will support DSC in its sales and marketing efforts, as reasonably requested, to assist in the successful application of the product in the marketplace. Customer pricing for the DSC Product will be set by DSC. Order
entry, manufacturing, and customer service (including technical support) will be provided by DSC.

## D. MANUFACTURING

DSC will perform the assembly, test, and shipping of the assemblies developed as a result of this Agreement. AWARE will provide expertise during the development of the assemblies. Quality functions regarding the manufactured product, including but not limited to repair and return, will reside with DSC.
E. PROCUREMENT OF COMPONENTS

This agreement does not provide for the actual procurement of the modem chipset components. Such procurement will be negotiated separately and may be procured by DSC directly from the chip set manufacturer. AWARE will direct the chipset manufacturer to permit direct acquisition of the chipsets.
F. DESIGN AND DEVELOPMENT OF PRODUCTS:

1. Pre-production Hardware

AWARE agrees to provide DSC with hardware pre-production assemblies for the coax bank subsystem, CNU-24 and CTU-2 of the DSC Product for the purpose of finalizing the systems level design. Aware expects to provide limited quantities of these pre-production units. Pricing will be determined as requirements are better specified. These assemblies will contain software and chipsets previously developed by AWARE to implement DWMT for HFC telephony and new software to interface AWARE designed DWMT chipsets to DSC's hardware. These assemblies are detailed in Attachment D "Specifications" which will be attached when agreed by the parties.
2. Production-level Hardware

AWARE and DSC agree to jointly develop production quality printed circuit board (PCB) assemblies

In performing the design and development, both hardware and software/firmware, of ASICs and Printed Wiring Board Assemblies AWARE shall use commercially reasonable efforts to comply with any necessary quality requirements including the following if applicable:

- Bellcore TR-NWT-000078 (Generic Physical Design Requirements for Telecommunications Products and Equipment),
- Bellcore TR-NWT-000357 (Generic Requirements for Assuring the Reliability of Components Used in Telecommunications Equipment),
- Bellcore TR-NWT-000179 (Quality System Generic Requirements for Software),
- ISO 9001 (Quality Systems-Model for quality assurance in design/development, production, installation and servicing),
- ISO 9000-3 (Quality Management and Quality Assurance Standards Part 3: Guidelines for the Application of ISO 9000 to the Development, Supply and Maintenance of Software),
- DSC procedure 003-4000-005 (PWB Design Rules and Guidelines).

In addition, AWARE is to select parts for design from the DSC Approved Vendor List (AVL). DSC approval must be obtained prior to use of parts that are neither "Q" (qualified) or "S" (Ship-to-Stock) status on the DSC AVL.

## 3. Reference designs

AWARE agrees to provide DSC with hardware reference designs and requisite software for the coax bank, CNU-24 and CTU-2 of the DSC Products. These assemblies contain software and chipsets previously developed by AWARE to implement DWMT for HFC telephony and new software to interface AWARE designed DWMT chipsets to DSC hardware. These assemblies are detailed in Attachment $A$ of this Agreement.
4. DSC equipment for use by aware

DSC will install and configure (at DSC's cost) a full Litespan Host Digital Terminal (HDT) with engineering debug capability at AWARE by March 15, 1996. The equipment will be subject to the terms of a Equipment Loan Agreement attached hereto as Attachment $F$.
5. System development and integration

System development and integration will occur in both Petaluma, CA and Bedford, MA. AWARE's development contribution will concentrate on RF modem coax performance and DSC's development contribution will concentrate on telephony system performance. A staged integration plan will be developed mutually by AWARE and DSC.
6. AWARE support for DSC manufacturing test programs

AWARE will provide engineering expertise reasonably sufficient for DSC to produce a complete manufacturing test in a timely manner.
Commercially reasonable efforts to adhere to design for testability,
timely completion of FDS, and participation in design reviews (FDR),
LR, and PDR (as specified in Attachment B) will be required of AWARE.
7. Timetable

Both parties acknowledge that the milestones set forth in this Agreement and on Attachment B will be attempted on a "commercially reasonable efforts" basis. Failure to meet the milestones on the dates set forth shall not be deemed a breach of this Agreement unless it is the result of substantial abandonment, or redirection of a significant amount of the resources, of the effort by one of the parties. The timetable for the performance of the obligations of the parties hereunder is as shown in Attachment B.
8. Project milestones

Major planned project milestones are detailed in Attachment B.
9. AWARE support activities

## a. Technical Support

AWARE will provide full support for software developed under this Agreement, including problem corrections consistent with standard telephony equipment industry practices, for four years. Support thus rendered will be limited to incidents directly associated with the maintenance, troubleshooting, diagnostics, and "patching" (software fixes) of DSC Product and LICENSED PRODUCT. Technical Support via telephone will be provided to DSC from Aware 24 hours a day, 7 days a week. Aware will provide, on a regular basis, current after hour technical assistance information to include on-call assignments and a comprehensive escalation list with contact instructions. Such information will be used by DSC CTAC for direct contact with Aware designated employees in the event that any 3rd party answering service or other Aware call out procedures fails to meet DSC response requirements.
b. Integretion and Manufacturing Support

During system integration and after DSC's release to manufacture, AWARE will provide system integration support in the form of consulting services. These will be billed as time and materials (plus reasonable expenses). Reimbursable, travel expenses will be per DSC's corporate travel policy. Senior engineers will be billed at \$800/day, engineers at \$500/day and engineering technicians at \$350/day. Senior engineers have an understanding of system level hardware and software issues. Engineers have an understanding of card level hardware and software issues. Engineering technicians are utilized for card level hardware modifications. Customer support requests at Aware will initially be directed to engineers and, if necessary, re-directed to senior engineers.
c. Upgrades and Enhancements

Subject to DSC's approval, upgrades and enhancements to the LICENSED PRODUCTS will be jointly considered by AWARE and DSC as the need arises. Examples of these include a CNU-24 capable of more than one T1 transport as well as POTS transport, or use of a CLUR-like card in ONU-96 or other upgrades to the CNU-24. Prices and other terms and conditions for such upgrades shall be as mutually agreed by the parties.
d. Change Notice

AWARE will inform DSC in a timely manner of any product hardware or software defects which are reported to AWARE regarding the DSC Product or LICENSED PRODUCTS, or are discovered by AWARE, to enable DSC to perform timely resolution. AWARE will notify DSC of hardware and software changes in the LICENSED PRODUCT initiated by Aware prior to implementation and deployment. Such proposed changes require DSC's approval to the extent that the LICENSED PRODUCT's fit, form, function, performance, safety or reliability will be affected by the change. Aware will provide compatibility, dependency, and user impact analysis for all such changes.

Aware will provide with all software changes, including patches, a software Icad description document ("release notes") that includes, as appropriate: a list and description of the major features of the release, description of changes to system software and related hardware, man-machine interface information, list of deliverables, resolved and open problems, and installation procedures.

Aware will provide DSC all documentation regarding user impact of design changes (software/hardware) that affect the operation and maintenance of the LICENSED PRODUCT.
10. Customer visits

AWARE will be available for customer visits as reasonably required to assist in technical marketing of the product and to gain a first hand understanding of the customer requirements.
11. Intellectual property
a. Right, Title and Interest

All right, title and interest in and to all copyrights, patents, trade secrets, trademarks, or other proprietary rights in and to the Licensed Products is and shall remain the sole property of AWARE. DSC shall be the sole owner of the DSC Product subject to Aware's rights in the LICENSED PRODUCTS. In
general, intellectual property developed by AWARE or DSC shall be the property of the company that developed it. Each party shall continue to retain sole title to and ownership of all Prior Materials. Each party shall continue to retain sole title to and ownership of all designs, documentation, methods, processes, inventions, works and other design, development and manufacturing materials information which, regardless of creation date, are not related to the development effort which is the subject matter of this Agreement (collectively the "Unrelated Materials"). Except as required for the operation of the Agreement or as authorized by the party owning the same, in writing, all such Prior Materials and all copies thereof shall be returned to the owner upon the termination of this Agreement. Aware will deposit Confidential Materials relating to its Background Materials and all INTELLECTUAL PROPERTY (in the form of, including but not limited to, schematics, bills of material, prototype cards, and source code) developed pursuant to this Agreement with an escrow agent, the terms of the release of the materials to DSC is described in Section 1lb, prior to payment at each Milestone. The parties shall promptly negotiate, in good faith, such escrow agreement, substantially similar to Attachment E: Escrow Agreement, provided however, that DSC shall be the only "Participating User", as defined therein, with respect to the LICENSED PRODUCTS. If no such escrow agreement is negotiated, then the terms and conditions of Attachment $E$ shall apply, with the following modifications - (i) the terms and conditions stated in this Paragraph shall control any conflicting terms and condition in Attachment E, (ii) DSC shall be the only Participating User unless otherwise agreed by DSC, (iii) an "Event of Release" includes any event expressly stated in this Agreement, and AWARE's failure to support the product which would otherwise entitle DSC to terminate this Agreement, (iv) AWARE shall be required to appoint a substitute escrow agent under Section 10 of Attachment $E$, and (v)in Section 11 of Appendix C of Attachment $E$, the requirement that DSC obtain AWARE's prior written consent is deleted, provided that such export or re-export is in compliance with all United States laws.

## b. Escrow of AWARE Background Materials

In the event of a proper release of any Confidential Materials under the Escrow Agreement, AWARE grants to DSC, effective upon such release of Confidential Materials, a limited, nontransferable, nonexclusive, worldwide license to use such Confidential Materials to perform AWARE's obligations under this Agreement as if AWARE were still required to perform them, but only as the obligations relate. to customers to whom DSC sells Product under the terms of this Agreement which protect the intellectual property of AWARE. DSC may set-off against its obligation to make royalty payments, expenses incurred to remedy the breach by Aware that caused the release under the Escrow Agreement.

Purchaser will use all such Confidential Materials released under this Section 1lb solely for the purposes contemplated under this Agreement, and Purchaser acknowledges and agrees that title to all such Confidential Materials shall remain with Supplier at all times, and that all such Confidential Materials shall remain confidential and proprietary to AWARE and shall be treated in accordance with Section G.1lb of this Agreement entitled "Confidentiality".

## c. Ownership

Except as otherwise provided in this Agreement, intellectual property jointly developed by the Parties will be jointly owned by the Parties, each party owning an undivided one half interest therein. Each party shall have the right to practice the jointly owned intellectual property in any field and to grant rights, licenses and other privileges as the party deems appropriate or necessary. Except as set forth in Paragraph (a) above, neither party shall have any duty to account to the other party with respect to the proceeds of any intellectual property jointly owned by them. Each party shall have such other rights with respect to such jointly owned intellectual property as may be prescribed by applicable law.
d. Manufacturing Rights

In consideration of the funding by DSC to assist in the design and development of the hardware and software necessary for the pre-production units (for assemblies CLUH, CLUR, CTU-2 and CST, as defined in Attachment $A$ ), the manufacturing rights for assemblies CLUH, CLUR, CTU-2, and CST shall be owned exclusively by DSC.

## e. Software Specific to Mediaspan

Tone management software implemented specifically for the DSC Product, and tone management hardware designs for the CLUH, CTU-2, CLUR and CST will be exclusively owned by DSC.

## f. DSC Prior Material

The following, without limiting the generality of subparagraph (a) above, shall be considered DSC Prior Material:

- CTU-2 line circuit, power supply and mechanical design
- Litespan system architecture and design
- CNU-24 backplane and mechanical design
- Coax bank backplane, CBIU, CBPS and mechanics

The following, without limiting the generality of subparagraph (a)
above, shall be considered AWARE Prior Material:
Analog front-end and RF circuit designs for DWMT modems
Digital designs for DWMT modems
DWMT modem software and all other DWMT technology Generic tone management software for DWMT modems
12. CAD Agreements

All AWARE bills of material (BOM) will be screened and approved by DSC component engineering and loaded into the DSC component database by DSC. All designs will use DSC part numbers or APR numbers.

AWARE will do the initial layout of the CLUH, CST, CTU-2 and CLUR due to the critical placement and routing requirements of these designs. These initial prototype designs will be fabricated and manufactured either by AWARE or DSC (whichever is more expedient). As the schematics, placement and layouts are created, they will be transferred to DSC CAD by DSC CAD personnel.
13. Product Validation

Full PQA and HQA product validation of the designs transferred to DSC CAD, will be performed by DSC. This includes all software functionality, hardware performance and modem RF operation.

In order for DSC to properly test the complete system, AWARE will provide functional design specifications on all assemblies in a timely manner.
14. Manufacturing Support Agreement

AWARE wilt provide engineering expertise sufficient for DSC to produce a complete manufacturing test solution.

## G.LICENSE:

1. License Grant
a. AWARE hereby grants to DSC the royalty-bearing, non-exclusive licenses:
1) to make, have made, use, demonstrate, distribute, and sell LICENSED PRODUCTS as integrated into the DSC Products in the FIELD OF USE; and
2) to use the TRADEMARKS in connection with the marketing and sale of the LICENSED PRODUCTS as integrated into the DSC Products in the FIELD OF USE; and
3) to copy the computer software, hardware designs and documentation included in the LICENSED PRODUCTS solely for the purpose of the license set forth in sub-paragraph 1) above.
b. The license granted hereunder shall not be construed to confer any rights upon DSC by implication, estoppel or otherwise, as to any intellectual property not specifically included herein.
2. FEES and ROYALTIES

For the rights, privileges and license granted hereunder, DSC shall pay AWARE non-recurring engineering fees, license fees and royalties as follows:
a. Non-Recurring Engineering Fee

A non-recurring engineering fee of [redact] shall be payable upon the completion of each milestone as shown in the table in section G.2b and in the table in Attachment B
b. License Fees

License fees for the license set forth in Section G.1 shall be payable upon execution of this Agreement and upon completion of Milestones 1, 2 and 4, as shown below. Any invoice dated during 1996 and paid prior to execution of this Agreement will be offset against the License fees.

Milestone
Amount
Expected Date
Agreement Execution
M1
M2
M3
M4
The earlier of M5 or
90 days after M4
The earlier of M6 or
180 days after M4

| NRE | License |  |
| :---: | :---: | :---: |
|  | [redact] | 1Q96 |
|  | [redact] |  |
|  | [redact] | 2Q96 |
| [redact] |  |  |
| [redact] | [redact] | 3Q96 |
| [redact] |  | 4Q96 |
| [redact] |  | 1Q97 |

Royalty payments shall be based upon the quantity of chipsets purchased by DSC or its affiliates, sublicensees, or distributors for use in production of DSC Products and will be calculated as follows:

For each Chipset utilized by DSC for use in DSC Products, royalties will be paid to AWARE when DSC Products are transferred to DSC Finished Goods or sold (whichever comes first), as shown in the following schedule, continuing for the length of time in which the Chipsets are used in DSC Products:

| Item | Royalties per Chipset purchased <br> $($ by year $)$ <br> $1997-1998 ~$ | 1999 | 2000 | 2001 | Thereafter |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | [redact] | [redact] | [redact] | [redact] | [redact] |
| Chipsets for CLUH | [redact] | [redact] | [redact] <br> Chipsets for CLUR | [redact] | [redact] |
| Chipsets for CTU | [redact] | [redact] | [redact] | [redact] |  |

The royalties will be reported on a monthly basis to AWARE and payments will be made net thirty (30) days following the end of the month for which royalties are due.
d. Payments

Except as otherwise provided herein, all DSC payments must be invoiced by AWARE in US dollars. DSC will pay AWARE in US dollars no later than thirty (30) days from the invoice date.
e. Reports and Accounting

DSC shall keep full, true and accurate books of account containing all particulars that may be necessary for the purpose of showing the amounts payable to AWARE hereunder. Said books of account shall be kept at DSC's principal place of business or the principal place of business of the appropriated division of DSC to which this Agreement relates. Said books and the supporting data shall be open at all reasonable times for one (1) year following the end of the calendar year to which they pertain to the inspection of AWARE or its agents of the purpose of verifying DSC's royalty statement or compliance in other respects with this Agreement. Records of any year may be inspected given reasonable notice and only once. The results of such inspection shall be provided promptly to DSC. If the agreed results of such inspection show that DSC has under paid AWARE by ten percent (10\%) or more, then DSC shall pay AWARE such underpayment and pay the reasonable cost of such audit, and to allow an
inspection of the records of the prior three (3) years. If the agreed results of such inspection show that DSC has over paid AWARE by ten percent (10\%) or more, then Aware shall reimburse DSC such overpayment. All records to be inspected shall be kept confidential pursuant to the NDA.

1) DSC, within sixty (60) days after March 31, June 30, September 30 and December 31, of each year, shall deliver to AWARE true and accurate reports, giving such particulars of the business conducted by DSC during the preceding three-month period under this Agreement as shall be pertinent to a royalty accounting hereunder. These shall include at least the following:
a. descriptions of DSC Products integrating LICENSED PRODUCTS;
b. number of DSC Products integrating LICENSED PRODUCTS sold by or for DSC;
c. total royalties due.
2) With each such report submitted, DSC shall pay to AWARE the royalties due and payable under this Agreement. If no royalties shall be due, DSC shall so report.
f. Late Payments

The royalty payments set forth in this Agreement on amounts due under Paragraph G2 shall, if overdue, bear interest until payment at a per annum rate two percent (2\%) above the prime rate in effect at the Chase Manhattan Bank (N.A.) on the due date. The payment of such interest shall not foreclose AWARE from exercising any other rights it may have as a consequence of the lateness of any payment.

## g. Most Favored Prices

AWARE agrees that if, during the term of this Agreement, the prices, discounts, non-recurring engineering fees, license fees, and/or royalty rates for the same or substantially similar services, licenses, or products, or other terms offered by AWARE to DSC are or become less favorable than those given by AWARE to any other customer purchasing the same or substantially similar services, licenses, and or products in the FIELD OF USE in similar or lesser quantities and under similar terms, AWARE shall immediately provide such prices, discounts and other terms to DSC.
3. AWARE REPRESENTATIONS AND WARRANTIES
a. Rights

AWARE represents and warrants that it owns the LICENSED PRODUCTS or otherwise has the right to grant the LICENSES granted hereunder.
b. Warranty

AWARE warrants that the designs developed by AWARE under this Agreement will perform substantially in accordance with jointly written and agreed performance specifications, as developed pursuant to Attachment B. AWARE warrants that it will perform all services under this Agreement in a skillful and workmanlike manner.
c. LIMITATIONS OF WARRANTY

EXCEPT AS EXPRESSLY SET FORTH ABOVE, AWARE MAKES NO WARRANTY WITH RESPECT TO THE LICENSED PRODUCTS, THE PERFORMANCE OF SERVICES HEREUNDER, OR OTHERWISE IN CONNECTION WITH THIS AGREEMENT. EXCEPT AS EXPRESSLY SET FORTH ABOVE, THE LICENSED PRODUCTS ARE PROVIDED TO DSC "AS IS." AWARE MAKES NO OTHER WARRANTIES WHETHER EXPRESS, IMPLIED OR ARISING BY CUSTOM OR TRADE USAGE, AND SPECIFICALLY DISCLAIMS OTHER WARRANTIES OF TITLE, NON INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
4. COPYRIGHT

DSC acknowledges that title to the LICENSED PRODUCTS (including copyright) shall remain with AWARE and that any copies of the LICENSED PRODUCTS and related documentation, or portions thereof, made by DSC shall include an AWARE copyright notice thereon the following form: "Copyright 199-, AWARE, Inc. All Rights Reserved". DSC shall also affix such other notices as AWARE may reasonably require from time to time, including trademark, patent, and government restricted rights notices. All notices shall be affixed to all copies or portions thereof in such manner and location as to give reasonable notice of AWARE's claim of copyright. DSC shall at all times hereafter protect the LICENSED PRODUCTS, and all related technical information, data and materials supplied by AWARE, from transfer using measures at least as strong as those used by DSC in protecting its own proprietary software.
5. TRADEMARK and GOODWILL

DSC agrees that it is critical that the goodwill associated with the TRADEMARK(s) be protected and, toward this end, DSC shall not during the
term of this Agreement or thereafter: apply to register or maintain any application or registration of the TRADEMARK(s) or any other mark confusingly similar thereto in any jurisdiction, domestic or foreign; use any colorable imitation of any of the TRADEMARK(s). or any variant form including variant design forms, logos, colors, or type styles of the TRADEMARK(s) not specifically approved by AWARE; misuse the TRADEMARK(s); take any action that would bring the TRADEMARKS(s) into public disrepute; use the TRADEMARK(s), or any mark or name confusingly similar thereto, in its corporate or trade name; or take any action that would tend to destroy or diminish the goodwill in the TRADEMARK(s). All use by DSC of the TRADEMARK(s) shall inure to the benefit of AWARE.

DSC agrees to reasonably cooperate with AWARE in securing and maintaining the goodwill of AWARE in the TRADEMARK(s).

All LICENSED PRODUCTS shall be designed and manufactured to the quality standard inherent in DSC's product portfolio.

DSC agrees that it shall mark the LICENSED PRODUCTS to indicate the rights of AWARE in the TRADEMARK(s), including registration status of the
TRADEMARK(s) and that the products are manufactured pursuant to a license.
AWARE agrees to maintain the goodwill of DSC.
Neither party will take any action which may destroy or diminish the goodwill of the other.
6. INFRINGEMENT AND INDEMNITIES

## a. Indemnity

AWARE will defend, at its own expense, and hold DSC harmless from any action brought against DSC to the extent that it is based on a claim that any PROGRAMS, DESIGNS, COPYRIGHTS, PATENTS, or TRADEMARKS supplied by AWARE pursuant to this Agreement constitutes a direct infringement of a patent issued prior to the execution of this Agreement, copyright or trademark, or intellectual property right of a third party. AWARE will pay all damages and costs finally awarded against DSC in such action which are attributable to such actions provided that AWARE is promptly informed in writing and furnished a copy of each communication, notice, or any other action and provided that DSC does not make any admissions against AWARE's interest relating to the alleged infringement and is given authority, information, and assistance at AWARE's expense necessary to defend or settle such claim. AWARE shall have sole control of the defense of any such action and all negotiations for its settlement or
compromise. DSC shall cooperate fully with AWARE in the defense, settlement or compromise of any such action. Prior to DSC's requesting that AWARE honor its defense and hold harmless obligations described above, DSC shall make a reasonable, good-faith effort, with AWARE's advice and consultation, to determine the actual basis of the claim, that is, whether or not AWARE has liability under this Paragraph, subject to the limitations in this Paragraph. DSC shall bear its own costs prior to making such determination. If DSC determines that the actual basis of the claim is not substantially based upon matters for which AWARE is required to defend and hold harmless DSC, then DSC shall have sole control of the defense of any such action and all negotiations for its settlement or compromise, and AWARE shall cooperate fully with DSC in the defense, settlement or compromise of any such action. DSC and AWARE shall bear damages and costs in proportion to their respective liability for such claims. Should the PROGRAMS, DESIGNS, COPYRIGHTS, PATENTS, or TRADEMARKS become, or in AWARE's opinion be likely to become, the subject of a claim of infringement of a patent, copyright or trademark, or intellectual property right of a third party, then AWARE may, at its sole option, either procure for DSC the right to use such PROGRAMS, DESIGNS, COPYRIGHTS, PATENTS, or TRADEMARKS free of any liability for infringement; or replace or modify such PROGRAMS, DESIGNS, COPYRIGHTS, PATENTS, or TRADEMARKS so that they become noninfringing, but functionally and cost equivalent. Notwithstanding any language to the contrary in this Paragraph, AWARE shall have no liability to DSC under this Paragraph to the extent that any infringement or claim thereof is based upon AWARE's compliance with designs, specifications or instructions provided by DSC.
the foregoing states the sole and exclusive liability of aware and the sole AND EXCLUSIVE REMEDIES OF DSC TO THIS AGREEMENT FOR PATENT, COPYRIGHT, TRADEMARK INFRINGEMENT OR INTELLECTUAL PROPERTY RIGHT INFRINGEMENT, AND IS IN LIEU OF ALL CONDITIONS OR WARRANTIES, EXPRESSED, IMPLIED, OR STATUTORY, IN REGARD THERETO.

## b. Notification

Each of AWARE and DSC agrees to notify the other promptly in writing when it learns of any patents, copyrights or other proprietary rights belonging to third parties which are allegedly being infringed by the manufacture, use, sale or other disposition of products licensed under this Agreement.

## c. Rights

In the event AWARE is unable or unwilling to provide the indemnity indicated in Paragraph(a) above, DSC shall have the right to offset royalties otherwise
payable under this Agreement against costs incurred by DSC in defending any claim or suit of the type specified in (a) and/or in the settlement thereof or the payment of any judgment or award or royalty arrangement to a third party resulting therefrom. Any funds remaining in such escrow on the completion of all claims and action and the payments of all expenses, award and the like resulting therefrom shall be promptly paid to AWARE. To the extent DSC is at any time obligated to pay royalties for the continued right to sell products licensed under this Agreement as a result of infringement of third party intellectual property rights based on the manufacture, use or sale by DSC of hardware or software developed and/or provided by AWARE under this Agreement, DSC shall have the right to deduct from the royalties payable by DSC to AWARE under this Agreement any amounts so paid by DSC.

## d. Indemnification

Each Party ("Indemnifying Party") hereby indemnifies and holds the other Party ("Indemnified Party"), its directors, of-ricers, agents, and employees harmless against any and all claims, actions, damages, liabilities, or expenses, including reasonable attorney's fees and other legal costs for injury to or death of any person, and for loss of or damage to any and all property arising out of the negligent or willful wrongful acts or omissions of the Indemnifying Party, its employees, agents, subcontractors, or representatives.
e. Limitation of Liability

IN NO EVENT SHALL EITHER PARTY OR ITS THIRD PARTY LICENSORS OR SUPPLIERS BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LEGAL FEES, LOSS OF DATA, LOSS OF USE, LOSS OF PROFITS OR LOSS RESULTING FROM BUSINESS DISRUPTION, EVEN IF SUCH PARTY OR ITS THIRD PARTY LICENSORS OR SUPPLIERS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. NO SUIT OR ACTION SHALL BE BROUGHT AGAINST ONE PARTY BY THE OTHER MORE THAN ONE YEAR AFTER THE RELATED CAUSE OF ACTION HAS ACCRUED, OR IN THE CASE OF AN INDEMNIFIABLE CLAIM MORE THAN ONE YEAR AFTER RECEIPT OF NOTICE OF THE CLAIM. EXCEPT FOR INDEMNIFIED MATTERS, IN NO EVENT SHALL THE LIABILITY OF AWARE TO DSC, WHETHER ARISING IN TORT, CONTRACT, OR OTHERWISE, FOR ANY CLAIM, ACTION, SUIT OR PROCEEDING ARISING OUT OF OR RELATING TO THE LICENSED PRODUCTS OR THIS AGREEMENT, EXCEED THE FEES AND ROYALTIES PAID BY DSC TO AWARE UNDER THIS AGREEMENT.

Subject to the indemnity stated in Paragraph G6, DSC shall at all times during the term of this Agreement and thereafter, indemnify, defend and hold AWARE, its officers, employees and affiliates, harmless against all claims and expenses, including legal expenses and reasonable attorneys' fees, arising out of the death of or injury to any person or persons or out of any damage to property and against any other claim, proceeding, demand, expense and liability of any kind whatsoever resulting from the production, manufacture, sale use, lease, consumption or advertisement of the LICENSED PRODUCT(s) by DSC.
8. ASSIGNMENT

This Agreement shall not be assignable by either party without the prior written consent of the other party and any attempt to do so shall be void. Notwithstanding the preceding sentence, DSC may market and/or distribute the LICENSED PRODUCTS utilizing affiliated companies and other distributors, and may sublicense DSC's rights hereunder which are reasonably required for such marketing and distribution to such affiliated companies or distributors, without the requirement for such consent. Not withstanding the foregoing, AWARE or DSC may assign the Agreement, to a wholly owned affiliate, and AWARE may assign this Agreement without restriction after completion of development of the LICENSED PRODUCTS, provided that AWARE shall not transfer any proprietary information of DSC to any competitor of DSC in connection with such assignment.
9. TERMINATION
a. DSC Failure to make payment

Should DSC fail to make any payment whatsoever due and payable to AWARE hereunder unless contested in good faith, this Agreement shall terminate effective on thirty (30) days' notice, unless DSC shall make all such payments to AWARE within said thirty (30) day period. Upon the expiration of the thirty (30) day period, if DSC shall not have made all such payments to AWARE, the rights, privileges and license granted hereunder shall automatically terminate.

## b. Material Breach

Upon any material breach or default of this Agreement by Aware or DSC, other than that set out in Paragraph (a) above, this Agreement and the rights, privileges and license granted hereunder shall terminate effective ninety (90) days after notice from one party to the other, unless the other shall have cured any such material breach or default prior to the expiration of the ninety (90) day
period. A termination by DSC for convenience as described by paragraph 10c below shall not be considered a Material breach under this paragraph 10b
c. Termination by DSC for Convenience

If DSC substantially abandons or redirects a significant amount of its resources and such abandonment or redirection causes a delay in the milestone schedule set forth on Attachment B, DSC shall pay Aware the NRE and license payments that would have been due for the current Milestone in process and all subsequent Milestones in complete satisfaction of its obligations to Aware.
d. Change of Control

Prior to completion of the development of the LICENSED PRODUCTS, DSC may terminate this Agreement without liability in the event that AWARE is acquired by, merged into, or sells more than $25 \%$ of any class of its stock to an entity that competes with DSC or could materially harm DSC through the inside information gained through the acquisition of AWARE. Prior to the completion of any such merger or acquisition, AWARE agrees to return all information, material, and DSC furnished or owned equipment. Upon such termination the license granted pursuant to Section $G$ of this Agreement shall terminate, and DSC shall have no further right to make, have made, use, sell, copy, market or distribute DSC Products that integrate the LICENSED PRODUCTS. DSC's obligation to pay royalties shall survive any such termination.

## e. Effect of Termination

Upon termination of this Agreement for any reason, nothing herein shall be construed to release either party from any obligation that matured prior to the effective date of such termination, nor shall such termination affect the rights of DSC customers of the LICENSED PRODUCTS who have purchased such LICENSED PRODUCTS prior to such termination nor shall such termination effect the rights of DSC to provide service and support to DSC customers who had purchased such LICENSED PRODUCTS prior to such termination. Upon such termination the license granted pursuant to Section $G$ of this Agreement shall terminate, and DSC shall have no further right to make, have made, use, sell, copy, market or distribute DSC Products that integrate the LICENSED PRODUCTS. DSC's obligation to pay royalties shall survive any such termination.
10. PAYMENT, NOTICES, AND OTHER COMMUNICATIONS

Any payments, notice or other communication pursuant to this Agreement shall be sufficiently made or given on the date of mailing if sent to such party by certified first class mail, postage prepaid, addressed to it at its address below or as it shall designated by written notice given to the other party;

In the case of AWARE:
AWARE, Inc
One Oak Park
Bedford, MA 01730-1413
Attn: James C. Bender

In the case of DSC:

## Invoices:

DSC Communications Corporation
Corporation
1000 Coit Road
Plano, TX 75075
Attn: Accounts Payable

Other matters:

DSC Communications
1000 Coit Road
Plano, TX 75075
Attn: Legal Department

## 11.MISCELLANEOUS PROVISIONS

## a. Applicable Laws

This Agreement shall be construed, governed, interpreted and applied in accordance with the laws of the State of Texas, without regard to its choice of laws rules, except that questions affecting the construction and effect of any patent shall be determined by the law of the country in which the patent was granted.
b. Confidentiality

All information exchanged between the parties under this Agreement, whether pre-existing or developed under this Agreement, shall come under, and shall be treated in accordance with, the terms and conditions of the Proprietary Information Agreement between DSC Communications Corporation and AWARE, dated March 17, 1995, and such Proprietary Information Agreement may, from time to time, be amended or extended. A copy of the Proprietary Information Agreement forms Attachment D to this Agreement. Notwithstanding the foregoing, or any language in such Proprietary Information Agreement to the contrary, for the purpose of exchanging information under this Agreement, (i) termination of such Proprietary Information Agreement shall only be coterminous with this Agreement, but termination of such Proprietary Information Agreement for other purposes shall be pursuant to such Proprietary Information Agreement, (ii) Proprietary Information (as defined in the Proprietary Information Agreement) exchanged in connection with the present Agreement or the discussion
associated with this Agreement, may be used by the Recipient thereof for, and only for, Recipient's performance under the present Agreement or such discussion, and (iii) the period of years in Section 5 of the Proprietary Information Agreement shall be five (5) years as applied to the Proprietary Information exchanged in connection with the present Agreement or such associated discussions. The source code component of the LICENSED PRODUCTS is and shall remain a proprietary trade secret of AWARE. DSC shall hold any such source code in its possession in strict confidence, notwithstanding the expiration or termination of this Agreement or the Proprietary Information Agreement.
c. No Publicity

Neither party shall use the name of the other party in any news release, public announcement, advertisement, or general publicity without the prior, written consent of such other party. Notwithstanding the foregoing, AWARE may use the name of DSC in connection with any offering of the securities of AWARE or, as may be required by law or regulation or for the purpose of borrowing capital from a financial institution.
d. Entire Agreement

The parties hereto acknowledge that this Agreement, and the Attachments hereto, set forth the entire Agreement and understanding of the parties hereto as to the subject matter hereof, and shall not be subject to any change or modification except by the execution of a written instrument subscribed to by the parties hereto.
e. Validity

No provision of the Agreement is intended to conflict with any law, and the provisions should be construed in a manner that will uphold their validity. In the event that any provision is found to be contrary to any law, it shall be deemed unenforceable, and the parties or the court shall substitute a lawful provision in its place which is equitable and which, to the extent possible, reflects the original intent of the parties. Unless it would be inequitable to so, all other provisions of the Agreement shall remain in full force and effect.
f. Waiver of Rights

The failure of either party to assert a right hereunder or to insist upon compliance with any term or condition of this Agreement shall not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition by the other party.
g. Relationship of the Parties

It is expressly understood that, except as otherwise provided herein, DSC, on the one hand, and AWARE, on the other hand, do not intend to undertake the relationship of principal and agent, or to create a joint venture or partnership between them or their respective successors in interests, but are and remain independent contractors. Except as otherwise provided herein, neither DSC, on the one hand, nor AWARE, on the other hand, shall have any authority to create or assume, in the name of or on behalf of the other party, any obligation, express or implied, nor to act or purport to act as the agent or the legally empowered representative of the other party hereto for any purpose whatsoever.

## h. Expenses

Except as stated in this Agreement, any and all costs, expenses, or
liability to either AWARE or DSC caused by or arising out of this Agreement shall be borne by such party separately and individually, and neither party shall be liable or obligated to the other for any such costs, expenses, or liability, except to the extent that such costs, expenses, or liability are reimbursed, paid, or provided for under a subcontract, if any, entered into between the parties.
i. Source Code Escrow

The parties agree to negotiate in good faith to establish a source code escrow agreement with respect to the LICENSED PRODUCTS within a reasonable time after execution of this Agreement.

In WITNESS WHEREOF, the parties duly execute this Agreement the day and year set forth below.

DSC TELECOM L.P.

By: /s/ Scott Smith
for
Name: Dave Ehreth
Title: VP of Finance
Date: 3/6/96

AWARE, INC.

By: /s/ James C. Bender

Name: James C. Bender
Title: Chief Executive Officer
Date: March 6, 1996

## LICENSE AGREEMENT

BETWEEN
AWARE, INC.
AND
WESTELL, INC
This Agreement is made and entered into this 5th day of September 1994, (the "Effective Date") by and between Aware, Inc. (hereinafter referred to as "AWARE") a corporation duly organized under the laws of the Commonwealth of Massachusetts with offices at One Memorial Drive, Cambridge MA and Westell, Inc. (hereinafter referred to as "WESTELL") a corporation duly organized under the laws of Illinois, with offices at 75 Executive Drive, Aurora, IL 60504 (hereinafter referred to as "LICENSEE" or "WESTELL").

## WITNESSETH

WHEREAS, AWARE is the owner of certain rights, title and interest in the PROGRAM (as later defined herein) and the TRADEMARK (as later defined herein) and has the right to grant licenses thereunder;

WHEREAS, WESTELL desires to obtain a license to sell hardware incorporating the PROGRAM, and

WHEREAS, WESTELL and AWARE have entered into a separate DEVELOPMENT AGREEMENT, a copy of which is attached here to as Appendix A and incorporated herein.

NOW, THEREFORE, in consideration of the premises and the mutual covenants contained herein, the parties hereto agree as follows:

## 1 - DEFINITIONS

For the purposes of this Agreement, the following words and phrases shall have the following meanings;
1.1 "PROGRAM(s)" shall mean the software developed by AWARE (and all associated documentation) pursuant to the DEVELOPMENT AGREEMENT.
1.2 "LICENSED PRODUCT(s)" shall mean any product(s) that incorporate the PROGRAM(s) or any part thereof.
1.3 "COPYRIGHT(s)" shall mean AWARE's copyrights in the PROGRAM(s).
1.4 "INTELLECTUAL PROPERTY RIGHTS" shall mean any and all rights associated with the PROGRAMS including the COPYRIGHTS and any rights associated with the TRADEMARKS.
1.5 "TERRITORY" shall mean the world.
1.6 "TRADEMARK(s)" shall mean the AWARE trademark(s).
1.7 Asymmetric Digital Subscriber Line (ADSL) transceiver systems shall mean devices that are capable of transmitting and receiving high speed data over copper telephone lines.
1.8 "FIELD OF USE" shall mean Asymmetric Digital Subscriber Line transceivers
1.9 "GROSS PROFIT" shall mean the Gross Sales price of the LICENSED PRODUCTS less discounts, less direct labor, less labor overhead, less direct material and less material overhead costs. All such costs and discounts to be calculated in conformity with generally accepted accounting principles.

## 2 - GRANT

2.1 AWARE hereby grants to WESTELL an exclusive license for one year and two weeks from Milestone 4 as described in Paragraph 4 of the Development Contract and a perpetual non-exclusive license thereafter to the INTELLECTUAL PROPERTY RIGHTS in the TERRITORY to:
a. make, use, sell, have made and distribute LICENSED PRODUCT(s)
b. use, at WESTELL's option the TRADEMARK in conjunction with the manufacture, use, sale and distribution of the LICENSED PRODUCT(s), and
c. use and reproduce the PROGRAM(s) in conjunction with (a) and (b) above.
2.2 The license granted hereunder shall not be construed to confer any rights upon LICENSEE by implication, estoppel or otherwise, as to any intellectual property not specifically included in COPYRIGHT(s).

$$
3 \text { - ROYALTIES }
$$

3.1 For the rights, privileges and license granted hereunder, WESTELL shall pay a license fee and royalties to AWARE in the manner herinafter provided to the end of the term of the COPYRIGHT(s) or until this Agreement shall be terminated:
a. A license fee of (redact) payable as follows:
[redact] which was paid to Aware on August 3, 1994.
[redact] upon execution of this agreement.
[redact] upon completion of Milestone 2 .
[redact] upon completion of Milestone 3 .
[redact] upon completion of Milestone 5.
3.2 Royalty payments shall be paid in United States dollars in Cambridge, Massachusetts, or at such other place as AWARE may reasonably designate. If any currency conversion shall be required in connection with the payment of royalties hereunder, such
conversion shall be made by using the exchange rate prevailing at the Chase Manhattan Bank (N.A.) on the last business day of the calendar quarterly reporting period to which such royalty payments relate.
a. Royalty payments on the first [redact] of GROSS PROFIT shall be [redact]. Thereafter royalty payments shall be [redact] of the GROSS PROFIT on LICENSED PRODUCTS. If WESTELL can show that a royalty of [redact] does not allow it to compete in the marketplace, Aware agrees to consider renegotiating royalty rates. Payments willl be made within fifteen (15) days of the end of each quarter based on sales net of returns for which credits were issued for the calendar quarter.

## 4 - AWARE REPRESENTATIONS AND WARRANTIES

4.1 AWARE represents and warrants that it shall be the legal owner of the PROGRAMS and all COPYRIGHTS associated therewith.
4.2 AWARE represents and warrants that the INTELLECTUAL PROPERTY RIGHTS shall not be subject to any liens, claims or entitlements on the part of any third party. AWARE represents and warrants that its employees are, and shall be, the original authors of the PROGRAMS.
4.3 AWARE represents and warrants that it does not know of any patents, copyrights or trade secrets or other proprietary rights which belong to third parties which will be infringed by the PROGRAMS after development by AWARE.
4.4 AWARE represents and warrants that it will provide full support for its software at AWARE's cost including bug fixes consistent with standard software industry practices for three years from date of each release.

## 5- REPORTS AND RECORDS

5.1 WESTELL shall keep full, true and accurate books of account containing all particulars that may be necessary for the purpose of showing the amounts payable to AWARE hereunder. Said books of account shall be kept at WESTELL's principal place of business or the principal place of business of the appropriated division of WESTELL to which this Agreement relates. Said books and the supporting data shall be open at all reasonable times for one (1) year following the end of the calendar year to which they pertain, to the inspection of AWARE or its agents of the purpose of verifying WESTELL's royalty statement or compliance in other respects with this Agreement. Records of any year may be inspected only once. However, should such inspection lead to the discovery of a greater than ten percent (10\%) discrepancy in reporting, LICENSEE agrees to pay the full cost of such inspection and to allow a re-inspection of the records of the prior three(3) years. All records to be inspected shall be kept confidential pursuant to the AWARE/WESTELL Confidentiality Agreement of 25 June, 1993.
5.2 WESTELL, within sixty (60) days after March 31, June 30, September 30 and December 31, of each year, shall deliver to AWARE true and accurate reports giving such particulars of the business conducted by WESTELL during the preceding three-month period under
this Agreement as shall be pertinent to a royalty accounting hereunder. These shall include at least the following:
a. descriptions of LICENSED PRODUCTS;
b. number of LICENSED PRODUCTS sold by or for LICENSEE:
c. total royalties due.
5.3 With each such report submitted, WESTELL shall pay to AWARE the royalties due and payable under this Agreement. If no royalties shall be due, WESTELL shall so report.
5.4 The royalty payments set forth in this Agreement and amounts due under Paragraph 3 shall, if overdue, bear interest until payment at a per annum rate thrice percent (2\%) above the prime rate in effect at the Chase Manhattan BAnk (N.A.) on the due date. The payment of such interest shall not foreclose AWARE from exercising any other rights it may have as a consequence of the lateness of any payment.

## 6 - COPYRIGHT

6.1 WESTELL acknowledges that title to the PROGRAM(s) (including copyright) shall remain with AWARE and that any copies of the LICENSED PRODUCTS and related documentation, or portions thereof, made by WESTELL shall include an AWARE copyright notice thereon the following form: "Copyright 199-, Aware, Inc. All Rights Reserved". The notice shall be affixed to all copies or portions thereof in such manner and location as to give reasonable notice of AWARE's claim of copyright. WESTELL shall at all times hereafter protect the PROGRAM, and all related technical information, data and materials supplied by AWARE, from transfer using measures at least as strong as those used by WESTELL in protecting its own proprietary software.

## 7 - TRADEMARK

7.1 WESTELL agrees that it is critical that the goodwill associated with the TRADEMARK(s) be protected and enhanced and, toward this end, WESTELL shall not during the term of this Agreement or thereafter intentionally:
a. attach the title or any rights of AWARE in or to the TRADEMARK(s);
b. apply to register or maintain any application or registration of the TRADEMARK(s) or any other mark confusingly similar thereto in any jurisdiction, domestic or foreign;
c. use any colorable imitation of any of the TRADEMARK(s), or any variant form including variant design forms, logos, colors, or type styles of the TRADEMARK(s) not specifically approved by AWARE;
d. misuse the TRADEMARK(s):
e. take any action that would bring the TRADEMARK(s) into public disrepute
f. use the TRADEMARK(s), or any mark or name confusingly similar thereto, in its corporate or trade name; or
g. take any action that would tend to destroy or diminish the goodwill in the TRADEMARK(s).
7.2 All use by WESTELL of the TRADEMARK(S) shall inure to the benefit of AWARE.
7.3 WESTELL agrees to cooperate fully with AWARE in securing and maintaining the goodwill of AWARE in the TRADEMARK(s).
7.4 All LICENSED PRODUCTS shall be designed and manufactured to the quality standards inherent in WESTELL's product portfolio
7.5 WESTELL agrees that it shall mark the LICENSED PRODUCTS to indicate the rights of AWARE in the TRADEMARK(s), including registration status of the TRADEMARK(s) and that the products are manufactured pursuant to license.

## 8 - INFRINGEMENT AND INDEMINITIES

8.1 Subject to the limitations in Paragraph 8.5 below Aware agrees to indemnify and defend WESTELL against all claims or suits against WESTELL for infringement of third party intellectual property rights based on the manufacture, use or sale by WESTELL of hardware or software incorporating INTELLECTUAL PROPERTY RIGHTS licensed under this Agreement, such indemnity to include payment of all expenses and of any award against WESTELL, whether by judgment or settlement, as a result of such claim or suit. The indemnity of this section shall be conditioned on WESTELL giving Aware prompt notice of any such claim or suit, on Aware having sole control over the defense and settlement of any such claim or suit and on such claim or suit not being based primarily on changes or enhancements made by WESTELL or WESTELL customers. Any settlement made by Aware shall not, without WESTELL's prior written consent, interfere with the right of WESTELL and its customers to continue to make, use and sell or otherwise dispose of products licensed under this Agreement. To the extent an injunction may issue against WESTELL or an WESTELL customer preventing the making, using or selling of any product licensed hereunder, Aware agrees to use its best efforts to develop an alternative, noninfringing product which is equivalent to the enjoined product both functionally and in terms of costs.
8.2 Each of Aware and WESTELL agrees to notify the other promptly in writing when it learns of any patents, copyrights or other proprietary rights belonging to third parties which are allegedly being infringed by the manufacture, use, sale or other disposition of products licensed under this Agreement.
8.3 In the event Aware is unable or unwilling to provide the indemnity indicated in Section 8.1a above, WESTELL shall have the right to escrow royalties otherwise payable under this Agreement and to apply such escrowed royalties against costs incurred by WESTELL in defending any claim or suit of the type specified in Section 8.1 and/or in the settlement thereof or the payment of any judgment or award resulting therefrom. Any funds remaining in such escrow
on the completion of all claims and action and the payments of all expenses, award and the like resulting therefrom shall be promptly paid to Aware. To the extent WESTELL is at any time obligated to pay royalties for the continued right to sell products licensed under this Agreement as a result of infringement of third party intellectual property rights based on the manufacture, use or sale by WESTELL of hardware or software developed and/or provided by Aware under this agreement, WESTELL shall have the right to deduct from the royalties payable by WESTELL to Aware under this Agreement any amounts so paid by WESTELL.
8.4 Aware's liability under this Section 8 shall be limited to the fees and royalties paid and payable by WESTELL under the agreement and subject to escrow.

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9 - PRODUCT LIABILITY
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9.1 WESTELL shall at all times during the term of this Agreement and thereafter, indemnify, defend an hold AWARE, its officers, employees and affiliates, harmless against all claims and expenses, including legal expenses and reasonable attorneys' fees, arising out of the death of or injury to any person or persons or out of any damage to property and against any other claim, proceeding, demand, expense and liability of any kind whatsoever resulting from the production, manufacture, sale, use, lease, consumption or advertisement of the LICENSED PRODUCT(s) and/or LICENSED PROCESS(s) arising from any obligation of LICENSEE hereunder.

## 10- ASSIGNMENT

10.1 This agreement is not assignable and any attempt to do so shall be void.

## 11 - TERMINATION

11.1 Should WESTELL fail to make any payment whatsoever due and payable to AWARE hereunder unless contested in good faith, this Agreement shall terminate effective on thirty(30) days' notice, unless WESTELL shall make all such payments to AWARE within said thirty(30) day period. Upon the expiration of the thirty (30) day period, if WESTELL shall not have made all such payments to AWARE, the rights, privileges and license granted hereunder shall automatically terminate.
11.2 Upon any material breach, breach or default of this Agreement by WESTELL, other than that set out in Paragraph 11.1, this Agreement shall terminate and the rights, privileges and license granted hereunder effective on ninety (90) days' notice to WESTELL. Such termination shall become automatically effective unless WESTELL shall have cured any such material breach or default prior to the expiration of the ninety (90) day period.
11.3 Upon a material breach, defined as a breach of Paragraph 4.4 of this agreement or a violation by AWARE of the exclusivity section of paragraph 7 of the Development Contract, and such breach or default is not cured by AWARE within ninety (90) days after notice by WESTELL to AWARE, then all fees paid by WESTELL are due back from AWARE.
11.4 Upon violation of the exclusivity section of paragraph 7 of the Development Contract by WESTELL, WESTELL is still obligated for payment to AWARE of the next milestone as defined in section 4 of the Development Agreement.
11.5 Upon termination of this Agreement for any reason, nothing herein shall be construed to release either party from any obligation that matured prior to the effective date of such termination.

## 12 - PAYMENT, NOTICES AND OTHER COMMUNICATIONS

12.1 Any payments, notice or other communication pursuant to this Agreement shall be sufficiently made or given on the date of mailing if sent to such party by certified first class mail, postage prepaid, addressed to it at its address below or as it shall designate by written notice given to the other party:

In the case of AWARE
Robert P. Mosher
Chief Financial Officer
Aware, Inc.
One Memorial Drive
Cambridge, MA 02142
In the case of WESTELL

## 13 - MISCELLANEOUS PROVISIONS

13.1 This Agreement shall be construed, governed, interpreted and applied in accordance with the laws of the Commonwealth of Massachusetts, U.S.A., except that questions affecting the construction and effect of any patent shall be determined by the law of the country in which the patent was granted.
13.2 The parties hereto acknowledge that this Agreement and Development Contract executed simultaneously herewith sets forth the entire Agreement and understanding of the parties hereto as to the subject matter hereof, and shall not be subject to any change or modification except by the execution of a written instrument subscribed to by the parties hereto.
13.3 No provision of the Agreement is intended to conflict with any law, and the provisions should be construed in a manner that will uphold their validity. In the event that any provision is found to be contrary to any law, it shall be deemed unenforceable, and the parties or the court shall substitute a lawful provision in its place which is equitable and which, to the extent possible, reflects the original intent of the parties. Unless it would be inequitable to do so, all other
13.4 The failure of either party to assert a right hereunder or to insist upon compliance with any term or condition of this agreement shall not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition by the other party.
13.5 In no event shall either party be liable for special, incidental or consequential damages due to any cause whatsoever. No suit or action shall be brought against one party by the other more than one year after the related cause of action has accrued, or in the case of an indemnifiable claim, more than one year after receipt of notice of the claim. In no event shall the accrued total liability of any party from any lawsuit, claim, warranty or indemnity exceed the aggregate sum paid hereunder by WESTELL to AWARE.

IN WITNESS WHEREOF, the parties duly execute this Agreement the day and year set forth below.

## s/ Howard L. Resnikoff

Howard L. Resnikoff
Chief Executive Officer
Aware, Inc.
/s/ William V. Rodey

## William V. Rodey

Westell, Incorporated

Dated: 14 October 94


Dated: 10/7/94
$\qquad$

# DEVELOPMENT CONTRACT 

BETWEEN
AWARE, INC.
ONE MEMORIAL DRIVE
CAMBRIDGE, MA 02142

## AND

## WESTELL

101 KENDALL POINT DRIVE OSWEGO, IL 60543

This contract is entered into as of the 5th day of September, 1994 by and between Aware, Inc. (hereinafter referred to as "AWARE") a corporation organized and existing under the laws of the Commonwealth of Massachusetts, with offices in Cambridge, Massachusetts and WESTELL, Incorporated (hereinafter referred to as "WESTELL") a corporation organized and existing under the laws of Illinois, with offices in Oswego, Illinois.

WHEREAS WESTELL is engaged in the business of providing products and technology for Asymmetric Digital Subscriber Line (ADSL) and related areas in which equipment vendors will be provided with transceiver solutions, and

WHEREAS AWARE is engaged in the business of providing system designs, algorithms and software implementations for ADSL and related areas, and

WHEREAS AWARE desires to grant to WESTELL a license to certain of its proprietary software, a copy of which is attached hereto and incorporated herein (hereinafter referred to as the "LICENSE AGREEMENT")

WHEREAS, WESTELL desires that AWARE demonstrate the integration of its system designs, algorithms and software on the Analog Devices (ADI) digital signal processing (DSP) chips, applicable ASICs, and

WHEREAS WESTELL wishes to enable the building of a standard compliant discrete multitone (DMT) ADSL transceiver that also includes a nonstandard discrete wavelet multitone (DWMT) feature.

NOW THEREFORE, the parties agree as follows:

1. WESTELL will pay a license fee and royalties to AWARE as set forth in the License Agreement which is attached hereto and which is being executed simultaneously herewith.
2. AWARE agrees to provide WESTELL with software that will operate ADI DSPs and will implement DWMT in Westell's FlexCap[Trademark] ADSL system.
3. WESTELL and AWARE will use their best efforts to publicize DWMT and to create and expand the market for the LICENSED PRODUCTS as defined in the License Agreement.
4. The timetable for the performance of the obligations of the parties hereunder is as follows: Both parties acknowledge that the following milestones will be attempted on a "best efforts basis". Failure by WESTELL or AWARE to meet the milestones shall not be deemed a breach of this Agreement

## PROJECT MILESTONES

Goal:
DWMT unit by April 14, 1995
PROJECT KICKOFF: August 3, 1994
MILESTONE 1: OCTOBER 7, 1994
Contract Negotiations complete and contract executed.
MILESTONE 2: OCTOBER 31, 1994
Demonstration of DWMT code.
MILESTONE 3: December 30, 1994
Provide working model of DWMT on 2106x platform
MILESTONE 4: April 14, 1995
Provide 2106x DWMT firmware that integrates with Aware/ADI DMT DSP system.

MILESTONE 5: April 30, 1995
Testing by Westell of Milestone 4 deliverable is complete
5. AWARE will provide full support for its software including bug fixes consistent with standard software industry practices for three years from date of each release at Aware's cost. Any upgrades and enhancements of the software will be jointly considered by AWARE and WESTELL as the need for them arises. In addition, AWARE agrees to use its best efforts to identify a second source of integrated circuits for DMT and DWMT.
6. The parties will jointly visit ADSL customers as reasonably required.
7. The parties agree that this is a teaming arrangement joining AWARE system designs, algorithms and software and WESTELL platforms for a DWMT ADSL transceiver. In addition, the parties agree that there exists an exclusivity period for this teaming arrangement granted under the LICENSE AGREEMENT. Neither party shall enter into competing agreements with third parties unless:
a. the other party had defaulted in its obligations hereunder or missed a milestone by more than 12 months;
b. a third party joins the teaming arrangement under the terms of paragraph 9; or
c. the exclusivity period granted under the LICENSE AGREEMENT has lapsed.
8. Intellectual property created by AWARE or WESTELL shall be the property of the company that created it. Intellectual property developed jointly by AWARE and WESTELL shall
be owned jointly by AWARE and WESTELL. Each party owning an undivided one-half interest therein. Each party shall have the right to practise the joint owned intellectual property in any field and to grant rights, licenses and other priveleges as the party deems appropriate or necessary. It is understood and agreed that system designs, algorithms and software developed by AWARE will be owned by AWARE.
9. Two openings exist in the AWARE/ADI ADSL alliance. AWARE and WESTELL agree that they will consider allowing the unidentified members to participate in the DWMT teaming arrangement. If terms agreeable to both AWARE and WESTELL are negotiated with one or both of the new members, the fees set forth in section 3 of the LICENSE AGREEMENT, will be pro rated and the exclusivity period will be shared with the new member(s) of the teaming arrangement. Westell reserves the right to approve new members for the teaming arrangement.
10. The parties hereto acknowledge that this Agreement and the LICENSE AGREEMENT which is being executed simultaneously herewith sets forth the entire Agreement and understanding of the parties as to the subject matter hereof, and shall not be subject to any change or modification except by the execution of a written instrument subscribed to by the parties hereto.
11. No provision of the Agreement is intended to conflict with any law, and the provisions should be construed in a manner that will uphold their validity. In the event that any provision is found to be contrary to any law, it shall be deemed unenforceable, and the parties or the court shall substitute a lawful provision in its place which is equitable and which, to the extent possible, reflects the original intent of the parties. Unless it would be inequitable to do so, all other provisions of the Agreement shall remain in full force and effect.
12. The failure of either party to assert a right hereunder or to insist upon compliance with any term or condition of this agreement shall not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition by the other party.
13. In no event shall either party be liable for special, incidental or consequential damages due to any cause whatsoever. No suit or action shall be brought against one party by the other more than one year after the related cause of action has accrued. In no event shall the accrued total liability of any party from any lawsuit, claim, warranty or indemnity exceed the aggregate sum paid by WESTELL to AWARE under the License Agreement by and between AWARE and WESTELL of even date.

IN WITNESS WHEREOF, the parties duly execute this Agreement the day and year set forth below.

## s/ Howard L. Resnikoff

Howard L. Resnikoff
Chief Executive Officer
Aware, Inc.
s/ William V. Rodey
Dated: 10/7/94
William V. Rodey
Westell, Incorporated

## INDEPENDENT AUDITORS' CONSENT

To the Board of Directors and Stockholders
Aware, Inc.
Bedford, Massachusetts

We consent to the use in this Amendment No. 1 to Registration Statement No. 333-6807 of Aware, Inc. on Form S-1 of our report dated April 26, 1996 (June 6, 1996 as to Note 9) appearing in the Prospectus, which is part of this Registration Statement.

We also consent to the reference to us under the headings "Selected Financial Data" and "Experts" in such Prospectus.
/s/ Deloitte \& Touche LLP

Boston, Massachusetts
July 29, 1996

We hereby consent to the incorporation by reference in the Prospectus constituting part of this Registration Statement on Form S-1 of our report dated February 1, 1994, relating to the financial statements of Aware, Inc., for the year ended December 31, 1993 which appears in such Prospectus. We also consent to the references to us under the headings "Experts" and "Selected Financial Data" in such Prospectus. However, it should be noted that Price Waterhouse LLP has not prepared or certified such "Selected Financial Data."
/s/ Price Waterhouse LLP
Price Waterhouse LLP
Boston, Massachusetts
July 29, 1996
[Cesari and McKenna Letterhead]
July 30, 1996
Aware, Inc.
One Oak Park
Bedford, Massachusetts 01730

Ladies and Gentlemen:
We are familiar with the Registration Statement on Form S-1 (the "Registration Statement") filed by Aware, Inc., a Massachusetts corporation, with the Securities and Exchange Commission under the Securities Act of 1933, as amended. We consent to the reference to our firm under the headings "Risk Factors," "Business," and "Legal Matters" in the prospectus forming part of the Registration Statement.

Very truly yours,
Cesari \& McKenna
By: /s/ Martin J. O'Donnell

July 29, 1996
Securities and Exchange Commission
450 Fifth Street
Washington, DC 20549

Dear Ladies and Gentlemen:
We have read the second paragraph in "Changes in Independent Accountants" included in the Registration Statement of Aware, Inc. on Form S-1 to be filed with the Securities and Exchange Commission and are in agreement with the statements contained therein except that we make no comment as to the statement regarding the replacement of Price Waterhouse LLP with DiBenedetto \& Company P.A.

Yours very truly,
/s/ Price Waterhouse LLP

July 30, 1996
Securities and Exchange Commission
450 Fifth Street
Washington, DC 20549
Dear Ladies and Gentlemen:
We have read the disclosures in "Changes in Independent Accountants" included in the Registration Statement of Aware, Inc. on Amendment No. 1 of Form S-1 to be filed with the Securities and Exchange Commission and are in agreement with the statements contained therein.

Yours very truly,
/s/ DiBenedetto \& Company, P.A.


[^0]:    * Filed under application for confidential treatment
    + Previously filed.

[^1]:    THE SIGNATURE(S) SHOULD BE GUARANTEED BY AN ELIGIBLE GUARANTOR INSTITUTION (BANKS, STOCKBROKERS, SAVINGS AND LOAN ASSOCIATIONS AND CREDIT UNIONS WITH MEMBERSHIP IN AN APPROVED SIGNATURE GUARANTEE MEDALLION PROGRAM), PURSUANT TO S.E.C. RULE 17Ad-15.

