

Registration No. 333-84707

SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

Amendment No. 1

to  
FORM S-1  
REGISTRATION STATEMENT

Under

The Securities Act of 1933

PC-Tel, Inc.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	3661	77-0364943
(State or other	(Primary Standard	(I.R.S. Employer
jurisdiction of	Industrial Classification	Identification Number)
incorporation or	Code Number)	
organization)		

70 Rio Robles  
San Jose, California 95134  
(408) 965-2100

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

PETER CHEN  
Chief Executive Officer  
PC-Tel, Inc.  
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(408) 965-2100

(Name, address, including zip code, and telephone number, including area code,  
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Approximate date of commencement of proposed sale to the public: As soon as  
practicable after the effective date of this Registration Statement

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 this Form is a post-effective amendment filed pursuant to Rule 462(d)  
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 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to such Section 8(a), may determine.

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+++++The information in this prospectus is not complete and may be changed without +  
 +notice. PC-Tel, Inc. may not sell these securities until the registration +  
 +statement filed with the Securities and Exchange Commission is effective. +  
 +This prospectus is not an offer to sell these securities, and PC-Tel, Inc. is +  
 +not soliciting offers to buy these securities, in any jurisdiction where the +  
 +offer or sale of these securities is not permitted. +  
 +++++PROSPECTUS (Not Complete)

Issued September 17, 1999

4,600,000 Shares

[PCtel LOGO APPEARS HERE]

PC-Tel, Inc.

Common Stock

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PC-Tel, Inc. is offering shares of its common stock in an initial public offering. We estimate that the initial public offering price for our shares will be between \$15.00 and \$17.00.

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We have applied to have our common stock quoted on the Nasdaq National Market under the symbol "PCTI."

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Investing in the common stock involves a high degree of risk. See "Risk Factors" beginning on page 7.

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	Per Share	Total
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Public Offering Price.....	\$	\$
Discounts and Commissions to Underwriters.....	\$	\$
Proceeds to PC-Tel, Inc.....	\$	\$

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

PC-Tel, Inc. has granted the underwriters the right to purchase up to an additional 690,000 shares of common stock to cover any over-allotments. The underwriters can exercise this right at any time within thirty days after the offering. Banc of America Securities LLC expects to deliver the shares of common stock to investors on \_\_\_\_\_, 1999.

Banc of America Securities LLC

Warburg Dillon Read LLC

Needham & Company, Inc.

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The date of this prospectus is \_\_\_\_\_, 1999

Inside front cover

Background of space shot photograph of planet earth and graphic images of telephone, laptop computer, desktop computer, wireless modem, personal digital assistant and set-top box. Text caption "High-Speed Personal Connecting Communications Solutions."

You should only rely on the information contained in this prospectus. We have not authorized anyone to provide you with information different from that contained in this prospectus. We are offering to sell, and seeking offers to buy, shares of common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of our common stock.

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PC-Tel, the PC-Tel logo, HSP Modem, MicroModem, HIDRA and LiteSpeed are trademarks of PC-Tel. Other service marks, trademarks and trade names referred to in this prospectus are the property of their respective owners.

## PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus. You should read the entire prospectus carefully before making an investment decision.

This prospectus contains forward-looking statements, which involve risks and uncertainties. PC-Tel's actual results could differ materially from those anticipated in these forward looking statements as a result of the factors described under "Risk Factors" and elsewhere in this prospectus.

### PC-Tel

We are a leading developer and supplier of cost-effective, software-based connectivity solutions for data transmission in a wide range of communications environments. Our solutions enable internet access and other communications applications through existing analog public telephone networks and through emerging broadband networks, which enhance voice and data capabilities beyond that which is offered by the existing analog public telephone networks. Connectivity solutions refer to any method for connecting one circuit, network or computer to another. We have developed a proprietary software architecture that is easily upgradeable, minimizing the risk of technological obsolescence. Our communications products are designed to enable widespread internet access and other communication applications through desktop PCs, notebook computers, internet appliances such as set-top boxes and webphones, video game consoles and remote monitoring devices.

We are a pioneer in developing host signal processing technology, a proprietary set of algorithms that enables cost-effective, software-based digital signal processing solutions. Host signal processing technology and the software architecture on which it is based utilize the computational and processing resources of a host central processor rather than requiring additional special-purpose hardware. The reduction of hardware components in our host signal processing architecture reduces space requirements by up to 50% and power requirements by up to 70% compared to conventional solutions.

Based on our 1998 unit shipments, we believe we are the largest worldwide producer of soft modems, representing 63% of all soft modems sold that year, as estimated by the Cahners In-Stat Group. Various original equipment manufacturers, including Acer, Dell, emachines, Fujitsu and Sharp, have integrated our soft modems into their products.

In recent years, dramatic increases in business and consumer demand for multimedia information, entertainment and voice and data communication have resulted in a corresponding increase in demand for high-speed remote access. The accelerated growth of content-rich applications, which demand high bandwidth, has changed the nature of information networks. High-speed connectivity is now a commonplace requirement for business, government, academic and home environments. These market trends have resulted in a significant increase in the demand for connectivity devices. International Data Corporation estimates that by 2003, the number of internet connectivity devices in use will grow to over 722 million.

Our host signal processing architecture, which involves running software on a host computer rather than using dedicated processing hardware, allows us to quickly and cost-effectively capitalize on this rapid growth in demand for connectivity devices. We believe that we can use our intellectual property portfolio to readily adapt to the speed and design requirements of additional emerging connectivity technologies. For example, we have developed LiteSpeed, a host signal processing architecture solution, in response to growing market acceptance of G.Lite, a digital subscriber line technology that enables downstream data transmission speeds of up to 1.5 Mbps and upstream data transmission speeds of up to 512 Kbps over existing copper telephone lines. Downstream transmission refers to the transmission of data from the central office to the customer premise, and upstream transmission of data refers to the reverse. By providing connectivity solutions that can be easily adapted to new standards and protocols, we simplify purchasing decisions and accelerate deployment times for original equipment manufacturers.

Our principal executive offices are located at 70 Rio Robles, San Jose, California 95134. Our telephone number is (408) 965-2100.

The Offering

Common stock offered by PC-Tel.....	4,600,000 shares
Common stock to be outstanding after this offering.....	15,602,078 shares
Use of proceeds.....	\$15.7 million of the proceeds from this offering will be used to repay bank debt. The remaining proceeds will be used for general corporate purposes, including working capital, and for potential investments in and acquisitions of complementary products, technologies or businesses.
Proposed Nasdaq National Market symbol.....	PCTI

In addition to the shares of common stock to be outstanding after this offering, we are obligated to issue shares of our common stock upon exercise of outstanding options and warrants. As of June 30, 1999 these additional shares included:

- . a total of 3,815,710 shares of common stock that will be issued upon the exercise of outstanding stock options under our 1995 stock plan and 1997 stock plan at a weighted average exercise price per share of \$5.72, and
- . a total of 202,417 shares of common stock that will be issued upon the exercise of outstanding warrants at an exercise price of \$8.00 per share.

In addition, during the period between July 1 and August 3, 1999, we granted additional stock options under our 1997 stock plan for the purchase of 565,390 shares at a weighted average exercise price per share of \$10.25. This includes options to purchase 400,000 shares of common stock granted to William F. Roach, our President and Chief Operating Officer, who began employment with PC-Tel in August 1999.

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Please also note that, except where otherwise indicated:

- . the information in this prospectus relating to our outstanding shares of common stock or options or warrants to purchase our common stock is based upon information as of June 30, 1999,
- . the information in this prospectus reflects the conversion of all of our outstanding shares of preferred stock into 8,510,748 shares of common stock upon the closing of this offering,
- . the information in this prospectus assumes no exercise of the underwriters' over-allotment option,
- . in this prospectus, "PC-Tel," "we," "us" and "our" refer to PC-Tel, Inc. and its subsidiaries, and
- . all shares referred to in this prospectus reflect a 3 for 2 reverse stock split that we effected on October 4, 1995.

Summary Consolidated Financial Information

You should read the following summary consolidated financial data together with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and notes thereto included elsewhere in this prospectus. The adjusted balance sheet data as of June 30, 1999 reflects the application of the net proceeds from the sale of the 4,600,000 shares of common stock offered by PC-Tel at an assumed offering price of \$16.00 per share, after deducting estimated offering expenses and underwriting discounts and commissions. Had this offering closed on June 30, 1999, \$16.0 million of the proceeds would have been used to repay bank debt. The adjusted balance sheet data as of June 30, 1999 also reflects the write-off of deferred debt issuance costs and the expense of the prepayment penalty related to the bank debt.

	Period From February 10, 1994 (inception) to December 31,				Six Months Ended June 30,	
	Year Ended December 31,					
	1994	1995	1996	1997	1998	1999

(in thousands, except per share data)

Statement of Operations

Data:							
Revenues.....	\$ --	\$ 191	\$16,573	\$24,009	\$33,004	\$ 12,343	\$ 33,046
Gross profit.....	--	85	7,391	11,085	19,126	6,395	16,049
Income (loss) from operations.....	(283)	(1,127)	3,882	2,957	228	732	4,454
Net income (loss).....	(280)	(1,093)	3,004	2,301	495	683	2,704
Basic earnings per share.....	\$ --	\$ --	\$ 4.79	\$ 1.13	\$ 0.21	\$ 0.29	\$ 1.10
Diluted earnings per share.....	\$ --	\$ --	\$ 0.29	\$ 0.20	\$ 0.04	\$ 0.06	\$ 0.21
Shares used in computing basic earnings per share.....	--	--	627	2,032	2,355	2,320	2,461
Shares used in computing diluted earnings per share.....	--	--	10,280	11,645	12,325	12,400	12,638

June 30, 1999	
Actual	Adjusted for the offering

(in thousands)

Balance Sheet Data:

Cash and short-term investments.....	\$23,534	\$74,182
Total assets.....	50,483	99,661
Long-term debt, net of current portion.....	13,630	--
Total stockholders' equity.....	17,861	83,113

See Note 2 of Notes to the Consolidated Financial Statements for an explanation of the shares used in computing basic earnings per share and shares used in computing diluted earnings per share in the above table.



## RISK FACTORS

Before you invest in our common stock, you should carefully consider the various risks, including those described below, together with all of the other information included in this prospectus. Risks and uncertainties not presently known to us or that we currently consider to be immaterial may also impair our business operations. If any of these risks actually occur, our business, financial condition or operating results could be adversely affected. In that case, the trading price of our common stock could decline and you could lose all or part of your investment.

### Risks Related to Our Business

Our sales are concentrated among a limited number of customers and the loss of one or more of these customers could substantially diminish our operating results.

Our sales are concentrated among a limited number of customers. If we were to lose one or more of these customers, or if one or more of these customers were to delay or reduce purchases of our products, our financial performance could be adversely affected. For the six months ended June 30, 1999, approximately 81% of our revenues were generated by five of our customers, and revenues derived from sales to Talent Trade Asia, TriGem and Silicon Application Corporation accounted for 42%, 20% and 10%, respectively, of our product sales. For the year ended December 31, 1998, approximately 60% of our revenues were generated by five of our customers, and revenues derived from sales to Silicon Application Corporation, BTC, Askey Computer and Zoltrix accounted for 15%, 13%, 12% and 12%, respectively, of our product sales. These customers may in the future decide not to purchase our products at all, purchase fewer products than they did in the past or alter their purchasing patterns, because:

- . we do not have any long-term purchase arrangements or contracts with these or any of our other customers,
- . our product sales to date have been made primarily on a purchase order basis, which permit our customers to cancel, change or delay product purchase commitments with little or no notice and without penalty, and
- . many of our customers also have pre-existing relationships with current or potential competitors which may affect our customers' purchasing decisions.

We expect that a small number of customers will continue to account for a substantial portion of our revenues for at least the next 12 to 18 months and that a significant portion of our sales will continue to be made on the basis of purchase orders.

We have been sued by Motorola for patent infringement. If this litigation resolves unfavorably to us, our business is likely to be harmed.

In September 1998, Motorola, Inc. filed a patent infringement lawsuit against PC-Tel and another modem manufacturer in the U.S. District Court for the District of Massachusetts. Substantially all of our revenues to date are attributable to products which Motorola claims as the basis for its infringement suit against us. Further, we anticipate that a substantial proportion of our revenues for the foreseeable future is expected to be dependent upon sales of these and future products incorporating technology that Motorola has alleged infringes its patents. In the event that we do not prevail in litigation, we could be prevented from selling our products or be required to enter into royalty or licensing agreements. We could also be required to pay substantial monetary damages to Motorola, which are subject to trebling in the event of a finding by the court of willful infringement. The grant of a preliminary or permanent injunction could have an adverse effect on our business, including a substantial reduction in our revenues and income, losses for an extended period of time and a substantial depletion of our financial resources. In the event of an injunction, we could attempt to obtain a license from Motorola to enable us to continue to sell products incorporating the technology. However, we may not be able to enter into any royalty or licensing agreements on terms acceptable to us or at all. We could also

attempt to develop a different technology and modify the design of our products in an effort to avoid infringement of Motorola's patents. However, we are not currently engaged in any development efforts in this regard, and we cannot be sure that any efforts would be successful. Even if successful, these efforts would require a substantial period of time to complete and we cannot be sure that these efforts would result in competitive products.

Motorola's complaint alleges that we are, and have been, infringing seven Motorola patents by making, using, offering to sell, selling and/or importing products that embody or use the inventions claimed in its patents. In addition to alleging direct infringement, Motorola's complaint includes allegations of inducing infringement and contributory infringement. Motorola's complaint seeks damages and also asks the court to award a preliminary and permanent injunction to prevent us from continuing acts of direct infringement, inducing infringement and contributory infringement. Motorola's complaint contains a demand for Motorola's costs, expenses and reasonable attorney's fees and treble damages for willful infringement. Six of the seven patents asserted by Motorola relate to communications standards accepted by the International Telecommunications Union. Any patents incorporating communications standards accepted by the International Telecommunications Union are required to be made available for licensing by the holder of the patent on terms that are fair, reasonable and non-discriminatory. The seventh Motorola patent, entitled "Processor Modem," allegedly relates to software modem technology. Motorola subsequently dismissed its Massachusetts lawsuit without prejudice and re-filed its complaint in the U.S. District Court for the District of Delaware.

We answered Motorola's complaint denying infringement of Motorola's seven patents and alleging the patents are invalid and unenforceable. We also asserted counter-claims asserting tort and breach of contract claims and violations of the antitrust and unfair competition laws. Our counter-claims and defenses are based in part on Motorola's refusal to license its International Telecommunications Union-related patents to us at fair, reasonable and non-discriminatory rates, as required by the International Telecommunications Union. Our counter-claims also allege that Motorola intentionally interfered with our actual and potential customer relationships.

In response to Motorola's lawsuit, we filed a patent infringement suit against Motorola in the U.S. District Court for the District of Delaware. We have since amended our first complaint against Motorola to include allegations that Motorola is, and has been, infringing, inducing infringement and contributorily infringing ten of our patents. In our complaint, we have asked the court to award similar relief to that requested by Motorola in its lawsuit, including a preliminary and permanent injunction, damages, costs, expenses, reasonable attorneys' fees and treble damages for willful infringement. Our ten patents asserted against Motorola include patents related to International Telecommunications Union standards, software and other modem technology.

Discovery is underway and trial is set for early 2001 in both Motorola's lawsuit against us and our lawsuit against Motorola.

Due to the nature of litigation generally and because the lawsuit brought by Motorola is at an early stage, we cannot ascertain the outcome of the lawsuit, the availability of injunctive relief or other equitable remedies, or estimate the total expenses, possible damages or settlement value, if any, that we may ultimately incur in connection with our litigation with Motorola. However, we believe, based on our knowledge of the industry, our review of Motorola's six International Telecommunications Union-related patents and our products, our involvement in the International Telecommunications Union standards setting process and our awareness of Motorola's participation in that process, and the advice of our patent counsel, Knobbe, Martens, Olson & Bear, LLP, that Motorola's six International Telecommunications Union-related patents asserted in its lawsuit are not enforceable against us. We also believe, based on our knowledge of the industry, our review of Motorola's patent related to software modem technology and our products, and the advice of our patent counsel, Knobbe, Martens, Olson & Bear, LLP, that Motorola's patent allegedly related to software modem technology asserted by Motorola in its patent lawsuit against us is not infringed by us and is invalid. We are vigorously contesting, and intend to continue to vigorously contest, all of Motorola's claims. Nonetheless, this litigation could be time consuming and costly, and we will not necessarily prevail given the inherent uncertainties of litigation.

In connection with the Motorola litigation, we have incurred and expect to continue to incur substantial legal and other expenses. In addition, the Motorola litigation has diverted and is expected to continue to divert the efforts and attention of our management and technical personnel. Accordingly, whether or not we are ultimately successful on the merits, the expenses and diversion of resources associated with the Motorola litigation could have a material adverse effect on our business and operating results. If the Motorola lawsuit were to be resolved by a settlement, we might be required to make substantial payments to Motorola or to grant a cross-license to Motorola to utilize our technology, which could also hurt our business and operating results.

Our business is exposed to risks because we have significant sales and operations concentrated in Asia.

Our sales to customers located in Asia accounted for 74%, 77% and 76% of our total revenues in the years ended December 31, 1996, 1997 and 1998, respectively, and 77% and 99% of total revenues in the six months ended June 30, 1998 and 1999, respectively. The predominance of our sales are in Asia, mostly in Taiwan and China, because our customers are primarily motherboard or modem manufacturers that are located there. In many cases, our indirect original equipment manufacturer customers specify that our products be included on the modem boards or motherboards, the main printed circuit board containing the central processing unit of a computer system, that they purchase from board manufacturers, and we sell our products directly to the board manufacturers for resale to our indirect original equipment manufacturer customers. Industry statistics indicate that approximately two thirds of modems manufactured in Asia are sold back to original equipment manufacturers located in the United States. Due to the industry-wide concentration of modem manufacturers in Asia, we believe that a high percentage of our future sales will continue to be concentrated with Asian customers. As a result, our future operating results could be uniquely affected by a variety of factors outside of our control, including:

- . political and economic instability, such as the recent political instability in Indonesia and the economic turmoil in Japan,
- . changes in tariffs, quotas, import restrictions and other trade barriers,
- . delays in collecting accounts receivable, which we have experienced from time to time, and
- . fluctuations in the value of Asian currencies relative to the U.S. dollar.

To successfully expand our sales in Asia and internationally, we must strengthen foreign operations, hire additional personnel and recruit additional international distributors and resellers. This will require significant management attention and financial resources. To the extent that we are unable to effect these additions in a timely manner, we may not be able to maintain or increase market demand for our products in Asia and internationally, and our operating results could be hurt.

Continuing decreases in the average selling prices of our products could significantly hurt our operating results.

Product sales in the connectivity industry have been characterized by continuing erosion of average selling prices. Price erosion experienced by any company can cause revenues and gross margins to decline, which may harm our operating results. The average selling price of our products has decreased by approximately 40% from October 1995 to June 30, 1999. We expect this trend to continue.

In addition, we believe that the widespread adoption of industry standards in the soft modem industry is likely to further erode average selling prices, particularly for analog modems. Adoption of industry standards is driven by the market requirement to have interoperable modems. End users need this interoperability to ensure modems from different manufacturers communicate with each other without problems. Historically, users have deferred purchasing modems until these industry standards are adopted. However, once these standards are accepted, it lowers the barriers to entry and price erosion has resulted. Decreasing average selling prices in our products could result in decreased revenues even if the number of units that we sell increases. Therefore, we must continue to develop and introduce next generation products with enhanced functionalities that can be sold at higher gross margins. Our failure to do this could cause our revenues and gross margin to decline.

Our gross margins may vary based on the mix of sales of our products and services, and these variations may hurt our quarterly operating results.

We derive a significant portion of our sales from our software-based connectivity products. We expect margins on newly introduced products generally to be higher than our existing products. However, due in part to the competitive pricing pressures that affect our products and in part to increasing component and manufacturing costs, we expect margins from both existing and future products to decrease over time. In addition, licensing revenues from our products historically have provided higher margins than of our product sales. Changes in the mix of products sold and the percentage of our sales in any quarter attributable to products as compared to licensing revenues will cause our quarterly results to vary and could hurt our operating results.

Our revenues may fluctuate each quarter due to both domestic and international seasonal trends.

We have experienced and expect to continue to experience seasonality in sales of our connectivity products. These seasonal trends materially affect our quarter-to-quarter operating results. Our revenues are higher during the back-to-school and holiday seasons which fall in the third and fourth calendar quarters. Revenue and operating results in our third and fourth quarters are typically higher relative to other quarters because many purchasers of PCs make purchase decisions based on their calendar year-end budgeting requirements. As a result, we generally expect revenue levels and operating results for the first quarter to be less than those for the preceding quarter.

We are currently expanding our sales in international markets, particularly in Asia, Europe and South America. We expect our third quarter to reflect the effects of summer slowing of international business activity and spending activity generally associated with that time of year, particularly in Europe. To the extent that our revenues in Asia, Europe or other parts of the world increase in future periods, we expect our period-to-period revenues to reflect seasonal buying patterns in these markets.

Any delays in our normally lengthy sales cycles could result in customers cancelling purchases of our products.

Sales cycles for our products with major customers are lengthy, often lasting six months or longer. In addition, it can take an additional six months or more before a customer commences volume production of equipment that incorporates our products. Sales cycles with our major customers are lengthy for a number of reasons:

- . our original equipment manufacturer customers usually complete a lengthy technical evaluation of our products, over which we have no control, before placing a purchase order,
- . the commercial integration of our products by an original equipment manufacturer is typically limited during the initial release to evaluate product performance, and
- . the development and commercial introduction of products incorporating new technologies frequently are delayed.

A significant portion of our operating expenses is relatively fixed and is based in large part on our forecasts of volume and timing of orders. The lengthy sales cycles make forecasting the volume and timing of product orders difficult. In addition, the delays inherent in lengthy sales cycles raise additional risks of customer decisions to cancel or change product phases. If customer cancellations or product changes were to occur, this could result in the loss of anticipated sales without sufficient time for us to reduce our operating expenses. If this were to occur, our operating results for the quarter would be hurt.

We expect that our operating expenses will increase substantially in the future and these increased expenses may diminish our ability to remain profitable.

Although we have been profitable in recent years, we may not remain profitable on a quarterly or annual basis in the future. We anticipate that our expenses will increase substantially in the foreseeable future as we:

- . further develop and introduce new applications and functionality for our host signal processing technology,
- . explore emerging product opportunities in digital technologies and wireless and cable communications,
- . expand our distribution channels, both domestically and in our international markets, and
- . pursue strategic relationships and acquisitions.

In order to maintain profitability we will be required to increase our revenues to meet these additional expenses. Any failure to significantly increase our revenues as we implement our product, service, distribution and strategic relationship strategies would hurt our operating results.

To date, we have principally relied upon our distributor sales organization for product sales to smaller accounts. Our direct sales efforts have focused principally on board manufacturers and smaller PC original equipment manufacturers. To increase penetration of our target customer base, including large, tier-one original equipment manufacturers, we must significantly increase the size of our direct sales force and organize and deploy sales teams targeted at specific domestic tier-one original equipment manufacturer accounts. If we are unable to expand our sales to additional original equipment manufacturers, our revenue growth rates may be adversely affected.

We must accurately forecast our customer demand for our modem products. If there is an unexpected fluctuation in demand for our products, we may incur excessive operating costs or lose product revenues.

We must forecast and place purchase orders for specialized semiconductor chips, the application specific integrated circuit, coder/decoder and discrete access array, or data access arrangement, components of our modem products, several months before we receive purchase orders from our own customers. This forecasting and order lead time requirement limits our ability to react to unexpected fluctuations in demand for our products. These fluctuations can be unexpected and may cause us to have excess inventory, or a shortage, of a particular product. In the event that our forecasts are inaccurate, we may need to write down excess inventory. For example, we were required to write down inventory in the second quarter of 1996 in connection with a product transition within our 14.4 Kbps product family. Similarly, if we fail to purchase sufficient supplies on a timely basis, we may incur additional rush charges or we may lose product revenues if we are not able to meet a purchase order. These failures could also adversely affect our customer relations. Significant write-downs of excess inventory or declines in inventory value in the future could hurt our financial results.

We rely heavily on our intellectual property rights which offer only limited protection against potential infringers. If we cannot protect these rights, this could hurt our business.

Our success is heavily dependent upon our proprietary technology. We rely primarily on a combination of patent, copyright and trademark laws, trade secrets, confidentiality procedures and contractual provisions to protect our proprietary rights. These means of protecting our proprietary rights may not be adequate. We hold a total of 32 patents, a number of which cover technology that is considered essential for International Telecommunications Union standard communications solutions, and also have 26 additional patent applications pending or filed. These patents may never be issued. These patents, both issued and pending, may not provide sufficiently broad protection against third party infringement lawsuits or they may not prove enforceable in actions against alleged infringers. Other than the Motorola and ESS lawsuits described elsewhere in this prospectus, to date, no material lawsuits relating to intellectual property have been filed against us.

Despite precautions that we take, it may be possible for unauthorized third parties to copy aspects of our current or future products or to obtain and use information that we regard as proprietary. We may provide our

licensees with access to our proprietary information underlying our licensed applications. Additionally, our competitors may independently develop similar or superior technology. Finally, policing unauthorized use of software is difficult and some foreign laws, including those of various countries in Asia, do not protect our proprietary rights to the same extent as United States laws. Litigation may be necessary in the future to enforce our intellectual property rights, to protect our trade secrets or to determine the validity and scope of the proprietary rights of others. Litigation could result in substantial costs and diversion of resources and could diminish our financial results.

In addition to our ongoing patent litigation with Motorola, we have received, and may receive in the future, communications from third parties asserting that our products infringe on their intellectual property rights. These claims could affect our relationships with existing customers and may prevent potential future customers from purchasing our products or licensing our technology. Because we depend upon a limited number of products, any claims of this kind, whether they are with or without merit, could be time consuming, result in costly litigation, cause product shipment delays or require us to enter into royalty or licensing agreements. In the event that we do not prevail in litigation, we could be prevented from selling our products or be required to enter into royalty or licensing agreements on terms which may not be acceptable to us. We could also be prevented from selling our products or be required to pay substantial monetary damages.

We have received communications from third parties, including Motorola, Lucent and Dr. Brent Townshend, claiming to own patent rights in technologies that are part of communications standards adopted by the International Telecommunications Union, such as v.90, v.34, v.42bis and v.32bis, and other common communications standards. These third parties claim that our products utilize these patented technologies and have requested that we enter into license agreements with them. At various times we have engaged in negotiations with, and are continuing to negotiate with, Lucent to obtain licenses under its patents. Motorola has refused to conduct further negotiations with us to license its patents and we are in litigation with Motorola in connection with its patent infringement claims. To date, we have not obtained any licenses from Lucent, Motorola or Dr. Townshend, because we believe that Lucent, Motorola and Dr. Townshend have requested license fees or cross licenses of our portfolio of intellectual property on terms that are not fair, reasonable and nondiscriminatory as required by the International Telecommunications Union. Should we cross license our intellectual property in order to obtain licenses, we may no longer be able to offer a unique product.

In addition, new patent applications may be currently pending or filed in the future by third parties covering technology that we use currently or may use in the future. Pending U.S. patent applications are confidential until patents are issued, and thus it is impossible to ascertain all possible patent infringement claims against us. We believe that several of our competitors, including Motorola, Lucent and ESS Technology, may have a strategy of protecting their market share by filing intellectual property claims against their competitors and may assert claims against us in the future. The legal and other expenses and diversion of resources associated with any such litigation could materially hurt our business, financial condition and results of operations.

In addition, some of our customer agreements include an indemnity clause that obligates us to defend and pay all damages and costs finally awarded by a court should third parties assert patent and/or copyright claims against our customers. As a result, we may be held responsible for infringement claims asserted against our customers.

We have established and recorded on a monthly basis a financial per-unit reserve for payment of future license fees based upon our estimate as to the likely amount of the licensing fees that we may be required to pay in the event that licenses are obtained. We believe that it is typical for participants in the modem industry to obtain licenses in exchange for grants of cross licenses rather than for payment of fees and we have based our estimates on our understanding of the license fee practices of other segments of our industry. Our reserves may not be adequate because of factors outside of our control and because these license fee practices in the modern industry may not be applicable to our experience.

Competition in the connectivity market is intense, and if we are unable to compete effectively, the demand for, or the prices of, our products may be reduced.

The connectivity device market is intensely competitive. We may not be able to compete successfully against current or potential competitors, and our failure to do so will seriously harm our business, operating results and financial condition. Our current competitors include 3Com, Conexant, ESS Technology, Lucent Technologies and Motorola. Motorola introduced soft modems in the third quarter of 1998 and Conexant introduced soft modems in the fourth quarter of 1998. We expect competition to increase in the future as

current competitors enhance their product offerings, new suppliers enter the connectivity device market, new communication technologies are introduced and additional networks are deployed.

We may in the future also face competition from other suppliers of products based on host signal processing technology or on new or emerging communication technologies, which may render our existing or future products obsolete or otherwise unmarketable. We believe that these competitors may include Alcatel, Analog Devices, Aware, Broadcom, Com21, Efficient Networks, Orckit, Terayon Communications and Texas Instruments.

Compared to us, many of our competitors, including some of those described above, have:

- . longer operating histories than we do with more experience in designing and selling connectivity products and services,
- . greater presence in our connectivity product markets, which can provide an immediate advantage in connection with new product introductions,
- . greater name recognition, which can facilitate customer acceptance of new products and technologies,
- . access to larger customer bases,
- . significantly greater financial resources, which could enable a competitor to significantly reduce the price of new products below prevailing market rates to capture market share,
- . significantly greater research and development and other technical resources, which may enable a competitor to respond more quickly than we can to new or emerging technologies and changes in customer requirements, or to introduce new products that are superior to our products or bundle modem solutions with its other products, and
- . significantly greater sales and marketing resources to devote to the promotion, sale and support of competitive products.

We believe that the principal competitive factors required by users and customers in the connectivity product market include compatibility with industry standards, price, functionality, ease of use and customer service and support. Although we believe that our products currently compete favorably with respect to these factors, we may not be able to maintain our competitive position against current and potential competitors.

In order for us to maintain our profitability and continue to introduce and develop new products for emerging markets, we must attract and retain our executive officers and qualified technical, sales, support and other administrative personnel.

Our past performance has been and our future performance is substantially dependent on the performance of our current executive officers and certain key engineering, sales, marketing, financial, technical and customer support personnel. If we lost the services of one or more of our executives or key employees, a replacement could be difficult to recruit and our business could be adversely affected.

In August 1999, we hired William F. Roach as our new President and Chief Operating Officer. If for any reason Mr. Roach is not successful, our business may be adversely affected.

We maintain "key person" life insurance policies on Peter Chen, our Chairman and Chief Executive Officer, William Wen-Liang Hsu, our Vice President, Engineering, and Han Yeh, our Vice President,

Technology, in the face amount of \$1 million for each individual. However, these insurance policies may not adequately compensate for the loss of services of any of these individuals.

We intend to hire a significant number of additional engineering, sales, support, marketing and finance personnel in the future. Competition for personnel, especially engineers and marketing and sales personnel in Silicon Valley, is intense. We expect competition for qualified personnel to remain intense, and we may not succeed in attracting or retaining personnel. If we do not attract qualified personnel, our business would be hurt.

We are particularly dependent on our ability to identify, attract, motivate and retain qualified engineers with the requisite education, backgrounds and industry experience. As of June 30, 1999, we employed a total of 58 people in our engineering department, over half of whom have advanced degrees. In the past we have experienced difficulty in recruiting qualified engineering personnel, especially developers, on a timely basis. If we are not able to hire at the levels that we plan, our ability to continue to develop products and technologies responsive to our markets will be impaired.

Technical and customer support is also critical to our future success because our products and the related technologies are rapidly evolving and many customers require technical support in implementing our products. If we are unable to provide comprehensive technical support services satisfactory to our existing and prospective customers, our ability to establish and expand our presence in the connectivity markets may be adversely affected.

As we continue to develop new products for the emerging broadband and internet markets, our expanded business focus has also placed greater emphasis on our need for additional sales and marketing personnel. Hiring additional personnel in this area will be important for us to effectively achieve customer acceptance in our targeted markets.

We have experienced significant growth in our business in recent periods and failure to manage our growth could strain our management and other resources.

Our ability to successfully sell our products and implement our business plan in rapidly evolving markets requires an effective management planning process. Future expansion efforts could be expensive and put a strain on our management by significantly increasing the scope of their responsibilities and resources by increasing the number of people using them. We have increased, and plan to continue to increase, the scope of our operations at a rapid rate. Our headcount has grown and will continue to grow substantially. At December 31, 1998, we had a total of 95 employees and at June 30, 1999, we had a total of 125 employees. In addition, we expect to continue to hire a significant number of new employees. To effectively manage our growth, we must maintain and enhance our financial and accounting systems and controls, integrate new personnel and manage expanded operations.

We are subject to risks because we rely on independent companies to manufacture, assemble and test our products. If these companies do not meet their commitments to us, our ability to sell products to our customers would be impaired.

We do not have our own manufacturing, assembling or testing operations. Instead, we rely on independent companies to manufacture, assemble and test the semiconductor chips which are integral components of our products. Most of these companies are located outside of the United States. There are many risks associated with our relationships with these independent companies, including reduced control over:

- . delivery schedules,
- . quality assurance,
- . manufacturing costs,
- . capacity during periods of excess demand, and
- . availability of access to process technologies.



In addition, the location of these independent parties outside of the United States creates additional risks resulting from the foreign regulatory, political and economic environments in which each of these companies exists. While to date we have not experienced any material problems, failures or delays by our manufacturers to provide the semiconductor chips that we require for our products, or any material change in the financial arrangements we have with these companies, could have an adverse impact on our ability to meet our customer product requirements.

We design, market and sell application specific integrated circuits and outsource the manufacturing and assembly of the integrated circuits to a third party fabrication. The majority of our products and related components are manufactured by five principal companies: Taiwan Semiconductor Manufacturing Corporation, ST Microelectronics, Kawasaki/LSI, Silicon Labs and Delta Integration. We expect to continue to rely upon these third parties for these services. Currently, the data access arrangement chips used in our soft modem products are provided by a sole source, Silicon Labs, on a purchase order basis, and we have only a limited guaranteed supply arrangement under a contract with our supplier. We are currently in the process of qualifying a second source for our data access arrangement chips. Although we believe that we would be able to qualify an alternative manufacturing source for data access arrangement chips within a relatively short period of time, this transition, if necessary, could result in loss of purchase orders or customer relationships, which could diminish our operating results.

Undetected software errors or failures found in new products may result in loss of customers or delay in market acceptance of our products.

Our products may contain undetected software errors or failures when first introduced or as new versions are released. To date, we have not been made aware of any significant software errors or failures in our products. However, despite testing by us and by current and potential customers, errors may be found in new products after commencement of commercial shipments, resulting in loss of customers or delay in market acceptance.

If we, our key suppliers or our customers fail to be ready for the year 2000 calendar change, our business may be disrupted and our net revenues may decline.

The Year 2000 issue refers to computer programs which use two digits rather than four to define a given year and which might read a date using "00" as the year 1900 rather than the Year 2000. As a result, many companies' systems and software may need to be upgraded or replaced in order to function correctly after December 31, 1999.

Our Software. Our connectivity products are incorporated into computer products of our customers which may not be Year 2000 compliant, or which may be perceived by their markets as not meeting Year 2000 compliance requirements. As a result, it is likely that any failure of the computer products into which our products may be incorporated to be Year 2000 compliant, or any slowdown in the connectivity markets as a result of Year 2000 compliance concerns, will hurt our product sales. In addition, we believe that the purchasing patterns of customers and potential customers may be affected by Year 2000 issues as companies expend significant resources to correct or upgrade their current software systems for Year 2000 compliance. These expenditures may result in reduced funds available to purchase our products. To the extent Year 2000 issues cause a significant delay in, or cancellation of, decisions to purchase our products or services, our business would suffer. In the ordinary course of our business, we test and evaluate our software modems. We believe that our current products are Year 2000 compliant, meaning that the use or occurrence of dates on or after January 1, 2000 will not materially affect the performance of our software products or the ability of our products to transmit data involving dates.

Third Party Equipment And Software. We use third party equipment and software that may not be Year 2000 compliant. This equipment and software includes our key internal systems such as for our internal accounting systems or controls. If this equipment or software does not operate properly with regard to the Year 2000, we may incur unexpected expenses to remedy any problems. These costs may materially adversely

affect our business. In addition, if our key internal systems fail as a result of Year 2000 problems, we could incur substantial costs and disruption of our business.

Compliance. Despite our current assessment, we may not identify and correct all significant Year 2000 problems on a timely basis. Year 2000 compliance efforts may involve significant time and expense and unremediated problems could harm our business, financial condition and operating results. We currently do not have any estimate of potential costs related to potential Year 2000 problems. We currently have no contingency plans to address the risks associated with unremediated Year 2000 problems. To date, we have not incurred any material costs directly associated with Year 2000 compliance efforts, except for compensation expense associated with salaried employees who have devoted some of their time to Year 2000 assessment and remediation efforts. We do not expect the total cost of Year 2000 problems to be material to our business, financial condition or operating results. However, during the months prior to the century change, we will continue to evaluate new versions of our products, new software and information systems provided by third parties and any new infrastructure systems that we acquire, to determine whether they are Year 2000 compliant.

#### Risks Related to Our Industry

If the market for applications using our host signal processing technology does not grow as we anticipate, or if our products are not accepted in this market, our business will suffer.

Our success depends on the growth of the market for applications using our host signal processing technology. This market has only recently begun to develop and may not develop at the growth rates that have been suggested by industry estimates. Market demand for host signal processing technology depends primarily upon the cost and performance benefits relative to other competing solutions. For example, soft modems have only recently begun to gain acceptance in the modem market. Although we have shipped a significant number of soft modems since we began commercial sales of these products in October 1995, the current level of demand for soft modems may not be sustained or may not grow. If customers do not accept soft modems or the market for soft modems does not grow, our business will be hurt.

Further, we are in the process of developing next generation products and applications which improve and extend upon our host signal processing technology, such as a G.Lite modem solution, an external modem product and a remote access solution. If these products are not accepted in our markets when they are introduced, our revenues and profitability will be adversely affected.

Our industry is characterized by rapidly changing technologies. If we do not adapt to these technologies, our products will become obsolete.

The connectivity product market is characterized by rapidly changing technologies, limited product life cycles and frequent new product introductions. To remain competitive in this market, we have been required to introduce many products over a limited period of time. For example, we introduced a 14.4 Kbps product in 1995, a 28.8 Kbps product in 1996, a 33.6 Kbps product in late 1996, a non-International Telecommunications Union standard 56 Kbps modem in the second half of 1997 and a v.90 International Telecommunications Union standard 56 Kbps modem in early 1998. The market for high speed data transmission is also characterized by several competing technologies that offer alternative broadband solutions which allow for higher modem speeds and faster internet access. These competing broadband technologies include x-digital subscriber line, wireless and cable. However, substantially all of our current product revenue is derived from sales of analog modems, which use a more conventional technology. We must continue to develop and introduce technologically advanced products that support one or more of these competing broadband technologies. If we are not successful in our response, we will not be able to compete effectively and our financial results will suffer.

Our products and those of our customers are subject to government regulations. Changes in laws or regulations, such as FCC regulations affecting the broadband market, could negatively affect our ability to develop new technologies or sell new products.

The jurisdiction of the Federal Communications Commission extends to the entire communications industry, including our customers and their products and services that incorporate our products. Future FCC regulations affecting the broadband access services industry, our customers or our products may harm our business. For example, FCC regulatory policies that affect the availability of data and internet services may impede our customers' penetration into their markets or affect the prices that they are able to charge. In addition, international regulatory bodies are beginning to adopt standards for the communications industry. Although our business has not been hurt by any regulations to date, in the future, delays caused by our compliance with regulatory requirements may result in order cancellations or postponements of product purchases by our customers, which would harm our business and diminish our operating results and financial condition.

#### Risks Related to this Offering

Substantial future sales of our common stock in the public market may depress our stock price.

Our current stockholders hold a substantial number of shares, which they will be able to sell in the public market in the near future. Sales of a substantial number of shares of our common stock after this offering could cause our stock price to fall. In addition, the sale of these shares could impair our ability to raise capital through the sale of additional stock. You should read "Shares Eligible for Future Sale" for a full discussion of shares that may be sold in the public market in the future.

You will experience immediate and substantial dilution in the book value of your shares.

The initial public offering price is substantially higher than the book value per share of our outstanding common stock immediately after the offering. Accordingly, if you purchase common stock in the offering, you will incur immediate dilution of approximately \$11.30 in the book value per share of our common stock from the price you pay for our common stock. For additional information on this calculation, see "Dilution."

Our current officers and directors will retain a significant portion of our stock, which may lead to conflicts with other stockholders over corporate governance.

Upon completion of this offering, our officers, directors and persons or entities directly related to these individuals will together beneficially own approximately 37% of the outstanding shares. In particular, WK Technology Funds owns approximately 17.2% and Peter Chen owns 11.7% of the shares. As a result, WK Technology Funds and our officers and directors, in general, will be able to control most matters requiring stockholder approval. These matters would include the election of our directors and approval of potential mergers, consolidations or sales of all or substantially all of our assets.

Our stock will likely be subject to substantial price and volume fluctuations due to a number of factors, many of which are beyond our control, which may lead to losses by investors.

Stock prices and trading volumes for many communications companies fluctuate widely for a number of reasons, including some reasons that may be unrelated to their businesses or operating results, such as changes in analysts' estimates, the presence or absence of short-selling of common stock and events affecting other companies that the market deems to be comparable. This market volatility, as well as general domestic or international economic, market and political conditions, could negatively affect the market price of our common stock without regard to our operating performance.

Provisions in our charter documents may inhibit a change of control or a change of management which may cause the market price for our common stock to fall and may inhibit a takeover or change in our control that a stockholder may consider favorable.

Provisions in our charter documents could discourage potential acquisition proposals and could delay or prevent a change in control transaction that our stockholders may favor. These provisions could have the effect of discouraging others from making tender offers for our shares, and as a result, these provisions may prevent the market price of our common stock from reflecting the effects of actual or rumored takeover attempts and may prevent stockholders from reselling their shares at or above the price at which they purchased their shares. These provisions may also prevent changes in our management that our stockholders may favor. Our charter documents do not permit stockholders to act by written consent, do not permit stockholders to call a stockholders meeting and provide for a classified board of directors, which means stockholders can only elect, or remove, a limited number of our directors in any given year.

Upon the closing of the offering, our board of directors will have the authority to issue up to 5,000,000 shares of preferred stock in one or more series. The board of directors can fix the price, rights, preferences, privileges and restrictions of this preferred stock without any further vote or action by our stockholders. The rights of the holders of our common stock will be affected by, and may be adversely affected by, the rights of the holders of any preferred stock that may be issued in the future. Further, the issuance of shares of preferred stock may delay or prevent a change in control transaction without further action by the our stockholders. As a result, the market price of the our common stock may drop.

Our securities have no prior market. Our stock price may decline after the offering which may lead to losses by investors.

The trading market price of our common stock may decline below the initial public offering price. In addition, an active public market for our common stock may not develop or be sustained after this offering. Before this offering, there has not been a public market for our common stock. The initial public offering price will be determined by negotiations between PC-Tel and the representatives of the underwriters.

#### SPECIAL NOTE REGARDING FORWARD LOOKING STATEMENTS

This prospectus, including the sections entitled "Prospectus Summary," "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations," and "Business," contains forward looking statements. These statements relate to future events or our future financial performance, and involve known and unknown risks, uncertainties, and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward looking statements. These risks and other factors include those listed under "Risk Factors" and elsewhere in this prospectus. In some cases, you can identify forward looking statements by terminology such as "may," "will," "should," "expects," "intends," "plans," "anticipates," "believes," "estimates," "predicts," "potential," "continue," or the negative of these terms or other comparable terminology. These statements are only predictions. Actual events or results may differ materially. In evaluating these statements, you should specifically consider various factors, including the risks outlined under "Risk Factors." These factors may cause our actual results to differ materially from any forward looking statement.

#### USE OF PROCEEDS

We estimate that we will receive net proceeds of \$66,648,000 from the sale of 4,600,000 shares of common stock based on an assumed initial offering price of \$16.00 per share (or \$76,915,000 assuming the underwriters' over-allotment option of 690,000 shares is exercised in full) after deducting estimated offering expenses and underwriting discounts and commissions.

The principal purposes of this offering are to obtain additional capital, create a public market for our common stock and facilitate our future access to public securities markets.

We currently expect to use \$15.7 million of the proceeds of this offering to repay bank debt. Had this offering closed on June 30, 1999, the amount used to repay bank debt would have equaled \$16.0 million. This debt bears interest at the bank's prime interest rate plus 0.5%. Absent the prepayment, this debt is to be repaid in 60 monthly payments ending in January 2004. The prepayment of this debt will result in a 3% penalty of approximately \$455,000, which will be paid through the application of the net proceeds of this offering. The interest savings resulting from the prepayment will more than offset the prepayment penalty. We entered into this debt to fund our acquisition in December 1998 of Communications Systems Division from General DataComm Inc.

We will use the remaining proceeds from this offering for general corporate purposes, including working capital. We also may use a portion of the net proceeds to acquire complementary products, technologies or businesses. However, we currently have no commitments or agreements and are not involved in any negotiations for any of these transactions. Pending use of the net proceeds of this offering, we intend to invest the net proceeds in short-term, interest-bearing securities.

#### DIVIDEND POLICY

We have never declared or paid any dividends on our capital stock. We currently expect to retain future earnings, if any, for use in the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future.

CAPITALIZATION

The following table sets forth our capitalization as of June 30, 1999:

- . on an actual basis, and
- . on a pro forma basis adjusted to give effect to the receipt by us of the estimated net proceeds from the sale of 4,600,000 shares of common stock in this offering at an assumed initial public offering price of \$16.00 per share and the repayment of outstanding bank debt for \$16.0 million as of June 30, 1999.

The adjusted balance sheet data as of June 30, 1999 also reflects the write-off of deferred debt issuance costs and the expense of the prepayment penalty related to the bank debt.

The outstanding share information in the table excludes, as of June 30, 1999, 3,815,710 shares of common stock subject to outstanding stock options under our 1995 and 1997 stock plans, and 202,417 shares of common stock issuable upon exercise of outstanding warrants. The outstanding share information in the table also does not reflect option grants under our 1997 stock plan made during the period between July 1 and August 3, 1999 for the purchase of 565,390 shares, including an option grant to purchase 400,000 shares of common stock to Mr. William F. Roach, who became our President and Chief Operating Officer in August 1999.

	June 30, 1999	
	Actual	Pro Forma After the Offering
	(in thousands, except share and per share data)	
Current portion of long-term debt.....	\$ 1,847	\$ --
Long-term debt, net of current portion.....	13,630	--
Stockholders' equity:		
Preferred stock: par value \$0.001 per share, aggregate liquidation preference of \$10,015, 9,385,548 shares authorized, 8,510,748 issued and outstanding, actual; zero shares issued and outstanding pro forma after the offering..	9	--
Common stock: par value \$0.001 per share, 50,000,000 shares authorized, 2,491,330 issued and outstanding, actual; 15,602,078 shares issued and outstanding, pro forma after the offering.....	2	16
Additional paid-in-capital.....	12,881	79,524
Deferred compensation.....	(2,162)	(2,162)
Retained earnings.....	7,131	5,735
Total stockholders' equity.....	17,861	83,113
Total capitalization.....	\$ 33,338	\$ 83,113

DILUTION

Net tangible book value per share of common stock represents the amount of our total tangible assets less total liabilities, divided by the number of shares of common stock outstanding. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the pro forma as adjusted net tangible book value per share immediately after the completion of this offering.

Our pro forma net tangible book value as of June 30, 1999 was approximately \$6.7 million, or \$0.61 per share of common stock. Pro forma net tangible book value per share represents total tangible assets less total liabilities, divided by the number of outstanding shares of common stock. Our pro forma net tangible book value per share stated here gives effect to the conversion of all outstanding shares of preferred stock into 8,510,748 shares of common stock effective immediately upon the closing of this offering. After giving effect to the sale of the 4,600,000 shares of common stock offered by us at an assumed initial public offering price of \$16.00 per share and after deducting underwriting discounts and estimated offering expenses, the pro forma as adjusted net tangible book value at June 30, 1999 would have been approximately \$73.4 million, or approximately \$4.70 per share of common stock. This represents an immediate increase in net tangible book value of \$4.09 per share to existing stockholders and an immediate dilution in net tangible book value of \$11.30 per share to new investors of common stock in this offering. The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share.....	\$16.00
Pro forma net tangible book value per share at June 30, 1999..	\$0.61
Increase per share attributable to this offering.....	4.09
	-----
Pro forma as adjusted net tangible book value per share after this offering.....	4.70
	-----
Dilution per share to new investors.....	\$11.30
	=====

The table above excludes, as of June 30, 1999, 3,815,710 shares of common stock at a weighted average exercise price of \$5.72 per share subject to outstanding options under our 1995 and 1997 stock plans, and 202,417 shares of common stock at an exercise price of \$8.00 per share issuable upon exercise of outstanding warrants.

The following table sets forth, on a pro forma basis adjusted for the offering as of June 30, 1999, the differences between the number of shares of common stock purchased from us, the total consideration paid and the average price per share paid by existing stockholders and by new investors, before deducting underwriting discounts and commissions and estimated offering expenses, at an assumed initial public offering price of \$16.00 per share.

	Shares Purchased		Total Consideration		Average
	Number	Percent	Amount	Percent	Price
	-----	-----	-----	-----	-----
Existing stockholders.....	11,002,078	70.5%	\$10,156,798	12.1%	\$ 0.92
New investors.....	4,600,000	29.5%	73,600,000	87.9%	\$16.00
	-----	-----	-----	-----	-----
Total.....	15,602,078	100.0%	\$83,756,798	100.0%	
	=====	=====	=====	=====	=====

If the underwriters' over-allotment option is exercised in full, the percentage of shares of common stock held by existing stockholders after this offering would be reduced to approximately 67.5% and the number of shares of common stock held by new investors would increase to 5,290,000 or approximately 32.5% of the total number of shares of common stock outstanding after this offering.

SELECTED CONSOLIDATED FINANCIAL DATA

The following selected consolidated financial data should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations," our Consolidated Financial Statements and related notes and other financial information appearing elsewhere in this prospectus. The statement of operations data for the years ended December 31, 1996, 1997 and 1998 and the balance sheet data as of December 31, 1997 and 1998 are derived from audited financial statements included elsewhere in this prospectus. The statement of operations data for the period from inception to December 31, 1994 and year ended December 31, 1995 and the balance sheet data as of December 31, 1994, 1995 and 1996 are derived from audited financial statements not included in this prospectus. There was no common stock outstanding for the period from inception to December 31, 1994 and for the year ended December 31, 1995. The operating results for the year ended December 31, 1998 includes the \$6.1 million write-off of in-process research and development costs related to PC-Tel's acquisition of CSD in December 1998. The balance sheet data as of June 30, 1999 and the statement of operations data for the six months ended June 30, 1998 and 1999 are unaudited, have been prepared on the same basis as the audited statements and, in the opinion of management, contain all adjustments, consisting only of normal recurring adjustments, necessary for a fair representation of PC-Tel's operating results for these periods and financial condition at this date. The operating results for the six-month period ended June 30, 1999 are not necessarily indicative of the results to be expected for any other interim period or any future fiscal year.

	Period From February 10, 1994 (inception) to December 31, 1994	Year Ended December 31,				Six Months Ended June 30,	
		1995	1996	1997	1998	1998	1999
(in thousands, except per share data)							
<b>Statement of Operations</b>							
Data:							
Revenues.....	\$ --	\$ 191	\$ 16,573	\$ 24,009	\$ 33,004	\$12,343	\$33,046
Cost of revenues.....	--	106	9,182	12,924	13,878	5,948	16,997
Gross profit.....	--	85	7,391	11,085	19,126	6,395	16,049
Operating expenses:							
Research and development.....	198	822	2,152	3,348	4,932	2,455	4,423
Sales and marketing....	42	275	839	3,168	5,624	2,407	4,945
General and administrative.....	43	115	477	1,612	2,169	791	2,063
Acquired in-process research and development.....	--	--	--	--	6,130	--	--
Amortization of deferred compensation expense.....	--	--	41	--	43	10	164
Total operating expenses.....	283	1,212	3,509	8,128	18,898	5,663	11,595
Income (loss) from operations.....	(283)	(1,127)	3,882	2,957	228	732	4,454
Other income (expense), net:							
Interest income.....	4	35	127	299	504	254	303
Interest expense.....	--	--	--	--	(25)	(11)	(895)
Total other income (expense), net.....	4	35	127	299	479	243	(592)
Income (loss) before provision for income taxes.....	(279)	(1,092)	4,009	3,256	707	975	3,862
Provision for income taxes.....	1	1	1,005	955	212	292	1,158
Net income (loss).....	\$(280)	\$(1,093)	\$ 3,004	\$ 2,301	\$ 495	\$ 683	\$ 2,704
Basic earnings per share.....							
Diluted earnings per share.....	\$ --	\$ --	\$ 4.79	\$ 1.13	\$ 0.21	\$ 0.29	\$ 1.10
Shares used in computing basic earnings per share.....							
Shares used in computing diluted earnings per share.....	--	--	627	2,032	2,355	2,320	2,461
Shares used in computing diluted earnings per share.....							
	--	--	10,280	11,645	12,325	12,400	12,638



	As of December 31,					As of June 30,	
	1994	1995	1996	1997	1998	1998	1999

(in thousands)

Balance Sheet Data:

Cash and short-term investments.....	\$ 594	\$ 1,676	\$ 5,585	\$ 6,685	\$12,988	\$12,372	\$23,534
Working capital.....	702	3,068	6,236	12,840	14,011	13,274	16,361
Total assets.....	747	3,980	14,110	23,148	45,996	25,930	50,483
Long term debt, net of current portion.....	--	3	5	38	14,709	21	13,630
Total stockholders' equity.....	746	3,228	6,689	13,610	15,139	14,070	17,861

MANAGEMENT'S DISCUSSION AND ANALYSIS  
OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion in conjunction with our Consolidated Financial Statements and related notes appearing elsewhere in this prospectus. Except for historical information, the following discussion contains forward looking statements that involve risks and uncertainties, including, among other things, statements regarding our anticipated revenues, profits, costs and expenses, revenue mix and plans for addressing Year 2000 issues. These forward looking statements include, among others, those statements including the words, "may," "will," "plans," "seeks," "expects," "anticipates," "intends," "believes" and similar language. Our actual results may differ significantly from those discussed in the forward looking statements. Factors that might cause future results to differ materially from those discussed in the forward looking statements include, but are not limited to, those discussed in "Risk Factors" and elsewhere in this prospectus.

#### Overview

We provide cost-effective software-based connectivity solutions that address internet access and other communications requirements for existing analog and emerging broadband networks. Analog networks use the existing copper infrastructure which provides voice and data services, commonly referred to as the public telephone network. Broadband networks use communication infrastructures that enhance voice and data transmission capacity beyond that which is offered by public telephone networks. Our communications products enable internet access through desktop PCs, notebook computers and non-PC devices. From our inception in February 1994 through the end of 1995, we were a development stage company primarily engaged in product development, product testing and the establishment of strategic relationships with customers and suppliers. From 1996 to 1999, our total headcount increased to support corporate growth from 18 at the end of 1995 to 125 at June 30, 1999. We first recognized revenues on product sales in the fourth quarter of 1995, and became profitable in 1996, our first full year of product shipments. Revenues increased from \$16.6 million in 1996 to \$24.0 million in 1997 to \$33.0 million in 1998. Revenues for the six months ended June 30, 1999 were \$33.0 million.

We sell soft modems to manufacturers and distributors principally in Asia through our sales personnel, independent sales representatives and distributors. Our sales to manufacturers and distributors in Asia were 74.4%, 77.1% and 75.9% of our total sales for the years ended 1996, 1997 and 1998, respectively, and 76.9% and 98.6% for the six months ended June 30, 1998 and 1999, respectively. The predominance of our sales are in Asia because our customers are primarily motherboard and modem manufacturers, and the majority of these manufacturers are located in Asia. In many cases, our indirect original equipment manufacturer customers specify that our products be included on the modem boards or motherboards that they purchase from the board manufacturers, and we sell our products directly to the board manufacturers for resale to our indirect original equipment manufacturer customers. Industry statistics indicate that approximately two-thirds of modems manufactured in Asia are sold back to original equipment manufacturers located in the United States.

We recognize revenues from product sales to customers upon shipment. We provide for estimated sales returns, allowances and discounts related to these sales at the time of shipment. We recognize revenues from product sales to distributors upon a "sell through" basis from the distributor to the end user. We recognize revenues from non-recurring engineering contracts as contract milestones are achieved.

In the fourth quarter of 1998, we acquired substantially all of the assets and selected liabilities of Communications Systems Division of General DataComm, Inc., for a total purchase price of \$17.0 million. We began to recognize revenues in the three months ended June 30, 1999 from licensing the patent portfolio that we acquired in this acquisition. These revenues are recognized based on confirmation from licensees of the royalty payments due to us.

Results of Operations

The following table sets forth the results of our operations expressed as a percentage of total revenues.

	Year Ended December 31,			Six Months Ended June 30,	
	1996	1997	1998	1998	1999
Revenues.....	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of revenues.....	55.4	53.8	42.0	48.2	51.4
Gross profit.....	44.6	46.2	58.0	51.8	48.6
Operating expenses:					
Research and development.....	13.0	13.9	14.9	19.9	13.4
Sales and marketing.....	5.1	13.2	17.0	19.5	15.0
General and administrative....	2.9	6.7	6.6	6.4	6.2
Acquired in-process research and development.....	--	--	18.6	--	--
Amortization of deferred compensation expense.....	0.2	--	0.1	0.1	0.5
Total operating expenses....	21.2	33.8	57.2	45.9	35.1
Operating income.....	23.4	12.4	0.8	5.9	13.5
Other income (expense), net:					
Interest income.....	0.8	1.2	1.5	2.1	0.9
Interest expense.....	--	--	(0.1)	(0.1)	(2.7)
Total other income (expense), net.....	0.8	1.2	1.4	2.0	(1.8)
Income before provision for income taxes.....	24.2	13.6	2.2	7.9	11.7
Provision for income taxes.....	6.1	4.0	0.6	2.4	3.5
Net income.....	18.1%	9.6%	1.6%	5.5%	8.2%

Six Months Ended June 30, 1998 and 1999

(All amounts in tables, other than percentages, are in thousands)

Revenues

	Six Months Ended June 30,	
	1998	1999
Revenues.....	\$12,343	\$33,046
% change from prior period.....	N/A	167.7%

Our historical revenues primarily consisted of product sales of soft modems to board manufacturers and distributors in Asia. Net revenues include estimated sales returns and discounts and allowances for bad debts. License fee revenues during the first six months of 1999 represented less than 1% of total revenues for the six months ended June 30, 1999.

The 167.7% increase in revenues for the six months ended June 30, 1999 over the same period in the previous year was attributable to an increase in unit sales in 1999. We believe that this unit increase was due principally to the general acceptance of our products in the low cost, or sub-\$1,000, PC marketplace, the increase of market share of our MicroModem product and the certification by Microsoft of its Windows 98 logo for our products. The benefit of increased sales volume was partly offset by average selling prices going down by 50% due to the elimination of an additional major hardware component in the MicroModem product and sales discounts to customers of \$600,000.

Gross Profit

	Six Months Ended June 30,	
	1998	1999
Gross profit.....	\$ 6,395	\$ 16,049
Percentage of revenues.....	51.8%	48.6%
% change from prior period.....	N/A	151.0%

Cost of revenues consists primarily of chipsets which we purchase from third party manufacturers and also includes amortization of intangibles related to our acquisition of the Communications Systems Division in December 1998, accrued intellectual property royalties, cost of operations, reserves for inventory obsolescence and distribution costs. The royalties accrued are our best estimate based on royalty agreements already signed, or in negotiation, as well as advice from patent counsel. Upon consummation of the Communications Systems Division acquisition, we reduced our royalty reserves because we believe that we can obtain necessary licenses of the patent portfolio in exchange for grants of cross licenses rather than the payment of fees.

Gross profit increased \$9.7 million, or 151.0%, to \$16.0 million for the six months ended June 30, 1999 from \$6.4 million for the same period the previous year. The increase in gross profit was the direct result of increased revenues. However, as a percentage of revenues, gross profit decreased from 51.8% for the six months ended June 30, 1998 to 48.6% for the same period in 1999. Average selling prices decreased faster than the rate of cost reduction, which adversely affected our gross profit margins. We believe that decreases in the average selling price of our products through volume discounts have resulted in our attaining greater market share.

Research and Development

	Six Months Ended June 30,	
	1998	1999
Research and development.....	\$ 2,455	\$ 4,423
Percentage of revenues.....	19.9%	13.4%
% change from prior period.....	N/A	80.2%

Research and development expenses include compensation costs for software and hardware development, prototyping, certification and pre-production costs. We expense all research and development costs as incurred.

Research and development expenses increased for the six months ended June 30, 1999 due to the addition of personnel for new product development in the G.Lite, Modem Riser Card and HIDRA projects and engineering work related to v.90 modems. HIDRA refers to one of our product names and is also an acronym for High Density Remote Access. As a percentage of revenues, research and development decreased for the six months ended June 30, 1999 because revenues increased proportionally greater than research and development expenses. Approximately 70% of all research and development expenses are payroll related. The headcount in this area increased approximately 87% from the same period in the prior year, which included 18 additional staff members from the Communications Systems Division acquisition in December 1998. We expect that our research and development expenses will increase in absolute dollars due to the anticipated additional headcount and continued efforts in broadband product development.

Sales and Marketing

	Six Months Ended June 30,	
	1998	1999
Sales and marketing.....	\$ 2,407	\$ 4,945
Percentage of revenues.....	19.5%	15.0%
% change from prior period.....	N/A	105.4%

Sales and marketing expenses consist primarily of personnel costs, sales commissions and marketing costs. Marketing costs include promotional goods, trade shows, press tours and advertisements in trade magazines.

Sales and marketing expenses increased \$2.5 million for the six months ended June 30, 1999, but decreased as a percentage of total revenues, compared to the same period in the prior year. The dollar increase reflects the addition of sales and marketing personnel of \$1.5 million to develop new accounts, support customers, and drive new product developments and product launches. We also expanded our sales regions geographically to include Japan and Korea. The increase in sales and marketing expenses is also due to increased governmental telephony certification of our products of \$200,000 in Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom, the production of sales materials of \$300,000, travel costs of \$200,000, trade shows and press tours of \$200,000.

General and Administrative

	Six Months Ended June 30,	
	1998	1999
General and administrative.....	\$ 791	\$ 2,063
Percentage of revenues.....	6.4%	6.2%
% change from prior period.....	N/A	160.8%

General and administrative expenses include costs associated with our general management, human resources and finance functions as well as professional service charges, such as legal, tax and accounting fees. Other general expenses include rent, insurance, utilities, travel and other operating expenses to the extent not otherwise allocated to other functions.

These general and administrative expenses increased \$1.3 million for the six months ended June 30, 1999, over the same period in the prior year but decreased as a percentage of total revenues, compared to the same period in the prior year. This increase reflected additional legal and professional costs of \$800,000 related to contract negotiations, patent submissions, additional tax planning, as well as litigation expenses related to the Motorola lawsuit. We also incurred additional expenses related of \$300,000 to the increase in staff.

Amortization of Deferred Compensation Expense

	Six Months Ended June 30,	
	1998	1999
Amortization of deferred compensation expense.....	\$ 10	\$ 164
Percentage of revenues.....	0.1%	0.5%
% change from prior period.....	N/A	1,540%

In connection with the grant of stock options to employees, we amortized \$164,000 in deferred compensation for the six months ended June 30, 1999. The deferred compensation expense related to the grant of stock options to employees for the six months ended June 30, 1998 was \$10,000. We expect that the deferred compensation expense will increase to approximately \$340,000 per quarter through the third quarter of 2003, based on option grant activity through August 3, 1999.

Other Income (Expense), Net

	Six Months Ended June 30,	
	1998	1999
Other income (expense), net.....	\$ 243	\$ (592)
Percentage of revenues.....	2.0%	(1.8)%
% change from prior period.....	N/A	(343.6)%

Other income (expense), net, consists of interest income, net of interest expense. Interest income is expected to fluctuate over time. Interest expense will continue to consist primarily of interest on capital leases and the \$16.3 million loan issued to acquire Communications Systems Division. Other income (expense), net, decreased \$835,000 for the six months ended June 30, 1999 over the same period for the prior year. The decrease was due primarily to the interest expense related to the bank loan issued to acquire the Communications Systems Division. We intend to repay the bank loan following completion of the offering.

Provision for Income Taxes

	Six Months Ended	
	June 30,	
	1998	1999
Provision for income taxes.....	\$ 292	\$ 1,158
Effective tax rate.....	30.0%	30.0%
% change from prior period.....	N/A	296.6%

Provision for income taxes increased for the six months ended June 30, 1999 over the same period for the prior year due to higher taxable income, while the effective tax rate remained constant at 30%.

Year Ended December 31, 1996, 1997 and 1998

Revenues

	1996	1997	1998
Revenues.....	\$16,573	\$24,009	\$33,004
% change from prior period.....	N/A	44.9%	37.5%

Revenues increased 37.5% for 1998 due to an increase in unit sales over 1997. This unit increase was due principally to acceptance of our products in the marketplace following the certification by Microsoft of its Windows 95 and 98 logos for our products and the launch of our v.90 soft modem products early in 1998. The benefit of increased sales volume was partly offset by downward pressure on prices throughout the industry, where our average selling prices experienced an overall decrease of 28.5%. Our allowance for doubtful accounts has increased by 180% from December 31, 1997 to December 31, 1998. This increase is primarily due to a higher level of sales allowances related to discounts to our distributors.

Revenues for 1997 increased 44.9% reflecting a doubling in unit sales over the same period in 1996. This revenue growth was fueled by the introduction of our K56Flex soft modem in late 1997. The benefit of increased sales volume was partly offset by downward pressure on prices throughout the industry, where our average selling prices experienced an overall decrease of 30.8% in 1997.

Gross Profit

	1996	1997	1998
Gross profit.....	\$ 7,391	\$11,085	\$19,126
Percentage of revenues.....	44.6%	46.2%	58.0%
% change from prior period.....	N/A	50.0%	72.5%

Gross profit increased \$8.0 million, or 72.5%, for 1998 and increased as a percentage of revenues to 58.0% from 46.2% in 1997. The increase was due to the increase in revenues and lower unit costs obtained through volume discounts from our semiconductor vendors, which were partly offset by declining selling prices throughout the industry. The increase was also due in part to a \$3.0 million reversal in royalty reserves in the fourth quarter of 1998. Upon consummation of the Communications Systems Division acquisition in December

1998, we reduced our royalty reserves because we believe that in some instances we can obtain necessary licenses of third party technologies in exchange for grants of cross licenses of our patent portfolio rather than the payment of license fees or royalties. Without considering the \$3.0 million reversal in royalty reserves, gross profit as a percentage of revenues would have been 48.9% in 1998.

The increase in gross profit as a percentage of revenues from 1996 to 1997 reflects the change in the mixture of sales toward higher margin modems, economies of scale and lower reserves required for product obsolescence. The addition of personnel in the operations area enabled us to focus on better managing product cost, improving product transition strategies and reducing inventory levels.

Research and Development

	1996	1997	1998
Research and development.....	\$2,152	\$3,348	\$4,932
Percentage of revenues.....	13.0%	13.9%	14.9%
% change from prior period.....	N/A	55.6%	47.3%

Research and development expenses increased \$1.6 million, or 47.3%, for 1998. The increase was due to the addition of research and development personnel to facilitate new product development for our v.90, G.Lite and Modem Riser products.

Research and development expenses increased \$1.2 million in 1997, reflecting the growth in our software development team to facilitate new product development for our K56Flex and v.90 products.

Sales and Marketing

	1996	1997	1998
Sales and marketing.....	\$ 839	\$3,168	\$5,624
Percentage of revenues.....	5.1%	13.2%	17.0%
% change from prior period.....	N/A	277.6%	77.5%

Sales and marketing expenses increased \$2.5 million for 1998. We continued to develop our sales organization in 1998 to expand into different distribution channels, particularly the original equipment manufacturer channel. Consequently, sales and marketing personnel grew by ten people, or approximately 63% to develop new accounts, support customers and drive new product developments and product launches. Sales and marketing expenses in 1998 also reflected higher sales commissions and increased promotional activity including increased spending in trade shows and press tours.

Sales and marketing expenses increased \$2.3 million for 1997, reflecting the addition of sales and marketing personnel of six people from eight people in 1996 to support customers, develop new accounts and expand our business geographically. Higher sales and marketing expenses in 1997 also included increased commission expenses due to higher revenues, increased promotional activity, the production of sales material and the costs of trade shows and press tours.

General and Administrative

	1996	1997	1998
General and administrative.....	\$ 477	\$1,612	\$2,169
Percentage of revenues.....	2.9%	6.7%	6.6%
% change from prior period.....	N/A	237.9%	34.6%

General and administrative expenses increased \$557,000 for 1998. This increase reflected additional legal costs related to the negotiation and review of an increased number of contracts, an increase in patent submissions, tax planning and litigation expenses related to the Motorola lawsuit.

General and administrative expenses increased \$1.1 million for 1997, reflecting higher costs associated with the expansion of our infrastructure, including increased personnel required to implement and sustain a financial reporting structure and increased expenses resulting from the move to a larger facility.

Acquired In-Process Research and Development

	1996	1997	1998
Acquired in-process research and development.....	--	--	\$6,130
Percentage of revenues.....	--	--	18.6%
% change from prior period.....	N/A	--	--

Upon completion of our acquisition of the Communications Systems Division in December 1998, we immediately expensed \$6.1 million, representing purchased in-process technology that had not yet reached technological feasibility and had no alternative future use. The value assigned to purchased in-process technology, based on a percentage of completion discounted cash flow method, was determined by identifying research projects in areas for which technological feasibility has not been established. Approximately 69% of the in-process research and development value was attributed to the HIDRA project, a high density remote access system that will significantly increase the number of modems within the remote access server by creating multiple ports on each digital signal processor. Approximately 28% was attributed to the x-digital subscriber line project, which will allow more than one digital subscriber line modem per digital signal processing chip. Approximately 3% was attributed to the industrial modem project, a modem design targeted at the industrial market for use in transmitting updated information to and from remote sites.

The value was determined by estimating the costs to develop the purchased in-process technology into commercially viable products, estimating the resulting net cash flows from the projects, and discounting the net cash flows back to their present value. The discount rate includes a risk-adjusted discount rate to take into account the uncertainty surrounding the successful development of the in-process technology. The valuation includes cash inflows from in-process technology through 2002 with revenues commencing in 1999 and increasing significantly in 2000 before declining in 2002. A royalty payment of 3% was assumed from in-process technology to existing technology, based on management's estimate of a patent license rate. At the date of the acquisition, management expected to complete the majority of these projects and commence generating initial revenues in mid-to-late 1999 at an additional research and development cost of approximately \$1.0 million. \$8.67 million, 53% of the purchase price, was attributed to core technology and existing patented technology, related to the portfolio of patents that address the v.34 (33.6 Kbs) and v.90 (56 Kbs) international modem standards set by the International Telecommunications Union. The risk-adjusted discount rate applied to the projects' cash flows was 18% for existing technology and 24% for in-process technology. Management's cash flow and other assumptions utilized at the time of acquisition have not materially changed as of June 30, 1999. The HIDRA and industrial modem projects were approximately 56% complete at the time of the valuation and the expected timeframe for achieving these product releases was assumed to be in the second half of 1999. The x-digital subscriber line project was approximately 56% complete at the time of the valuation and the expected timeframe for achieving this product release is assumed to be in early 2000. Significant remaining development efforts must be completed in the next six to 18 months in order for the projects of the Communications Systems Division to become implemented in a commercially viable timeframe.

Amortization of Deferred Compensation Expense

	1996	1997	1998
Amortization of deferred compensation expense.....	\$41	--	\$43
Percentage of revenues.....	0.2%	--	0.1%
% change from prior period.....	N/A	--	--



In connection with the grant of stock options to employees, we amortized \$43,000 in deferred compensation for the year ended December 31, 1998. There was no deferred compensation expense for the year ended December 31, 1997. The deferred compensation expense related to the grant of stock options to employees for the year ended December 31, 1996 was \$41,000.

Other Income (Expense), Net

	1996	1997	1998
Other income (expense), net.....	\$ 127	\$ 299	\$ 479
Percentage of revenues.....	0.8%	1.2%	1.4%
% change from prior period.....	N/A	135.4%	60.2%

Other income (expense), net, increased \$180,000 for 1998 and \$172,000 for 1997. The increase in both years was due to higher average cash balances.

Provision for Income Taxes

	1996	1997	1998
Provision for income taxes.....	\$1,005	\$ 955	\$ 212
Effective tax rate.....	25.1%	29.3 %	30.0 %
% change from prior period.....	N/A	(5.0)%	(77.8)%

Provision for income taxes decreased \$743,000, or 77.8%, for 1998 due to lower gross profits, while the effective tax rate for 1998 remained at 30.0%.

Income taxes remained relatively constant for 1997 and 1996. The lower effective tax rate for 1996 was due to the benefit realized from net operating losses carried forward from our inception.

We have deferred tax assets on our balance sheet as of December 31, 1998 amounting to \$4.2 million. We believe that our expected effective tax rate will be below the statutory tax rate due to our research and development tax credits and the increase in international sales through our wholly owned subsidiaries.

Quarterly Results of Operations

The following table presents our operating results for each of the six quarters up to and including the period ended June 30, 1999. The information for each of these quarters is unaudited and has been prepared on the same basis as the audited financial statements appearing elsewhere in this prospectus. In the opinion of management, all necessary adjustments consisting only of normal recurring adjustments, have been included to present fairly the unaudited quarterly results when read in conjunction with our audited Consolidated Financial Statements and the related notes appearing elsewhere in this prospectus. These operating results are not necessarily indicative of the results of any future period.

	Quarter Ended					
	Mar. 31, 1998	June 30, 1998	Sept. 30, 1998	Dec. 31, 1998	Mar. 31, 1999	June 30, 1999
Revenues.....	\$5,515	\$6,828	\$9,063	\$11,598	\$15,156	\$17,890
Cost of revenues.....	2,533	3,415	4,902	3,028	7,926	9,071
Gross profit.....	2,982	3,413	4,161	8,570	7,230	8,819
Operating expenses:						
Research and development.....	1,129	1,326	1,283	1,194	2,043	2,380
Sales and marketing....	1,068	1,339	1,713	1,504	2,298	2,647
General and administrative.....	384	407	423	955	815	1,248
Acquired in-process research and development.....	--	--	--	6,130	--	--
Amortization of deferred compensation expense.....	--	10	17	16	16	148
Total operating expenses.....	2,581	3,082	3,436	9,799	5,172	6,423
Operating income (loss).....	401	331	725	(1,229)	2,058	2,396
Other income (expense), net:						
Interest income.....	106	148	140	110	116	187
Interest expense.....	(5)	(6)	(6)	(8)	(453)	(442)
Total other income (expense), net.....	101	142	134	102	(337)	(255)
Income (loss) before provision for income taxes.....	502	473	859	(1,127)	1,721	2,141
Provision (benefit) for income taxes.....	151	141	258	(338)	516	642
Net income (loss).....	\$ 351	\$ 332	\$ 601	\$ (789)	\$ 1,205	\$ 1,499

	Quarter Ended					
	Mar. 31, 1998	June 30, 1998	Sept. 30, 1998	Dec. 31, 1998	Mar. 31, 1999	June 30, 1999
Revenues.....	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of revenues.....	45.9	50.0	54.1	26.1	52.3	50.7
Gross profit.....	54.1	50.0	45.9	73.9	47.7	49.3
Operating expenses:						
Research and development.....	20.5	19.4	14.2	10.3	13.5	13.3
Sales and marketing....	19.4	19.6	18.9	13.0	15.1	14.8
General and administrative.....	7.0	6.0	4.7	8.2	5.4	7.0
Acquired in-process research and development.....	0.0	0.0	0.0	52.9	0.0	0.0
Amortization of deferred compensation expense.....	--	0.1	0.1	0.1	0.1	0.8
Total operating expenses.....	46.9	45.1	37.9	84.5	34.1	35.9
Operating income (loss).....	7.2	4.9	8.0	(10.6)	13.6	13.4

Other income (expense), net:						
Interest income.....	1.9	2.2	1.5	1.0	0.8	1.1
Interest expense.....	(0.1)	(0.1)	--	(0.1)	(3.0)	(2.5)
	-----	-----	-----	-----	-----	-----
Total other income (expense), net.....	1.8	2.1	1.5	0.9	(2.2)	(1.4)
	-----	-----	-----	-----	-----	-----
Income (loss) before provision for income taxes.....	9.0	7.0	9.5	(9.7)	11.4	12.0
Provision (benefit) for income taxes.....	2.7	2.1	2.8	(2.9)	3.4	3.6
	-----	-----	-----	-----	-----	-----
Net income (loss).....	6.3%	4.9%	6.7%	(6.8)%	8.0%	8.4%
	=====	=====	=====	=====	=====	=====

Our quarterly operating results have varied significantly in the past and may vary significantly in the future depending on a number of factors, many of which are beyond our control. Our revenues have been negatively affected by market-wide delays in purchasing activities associated with the anticipated announcement by the International Telecommunications Union of the v.90 standard whereas our revenues have been positively affected by the market acceptance of our soft modems. We have also experienced seasonality in our quarterly operating results. A detailed discussion of these and other factors are described under "Risk Factors" elsewhere in this prospectus. Our gross profit for the fourth quarter ended December 31, 1998 was favorably impacted by the reversal of \$3.0 million in royalty reserves. Without considering the reversal, gross profit as a percentage of revenues would have been 48.0% in the fourth quarter of 1998.

#### Liquidity and Capital Resources

Six Months Ended June 30, 1998 and 1999

	1998	1999
Net cash provided by operating activities.....	\$ 1,080	\$12,262
Net cash used in investing activities.....	(149)	(6,980)
Net cash provided by (used in) financing activities.....	4,756	(1,018)
Cash and short-term investments at end of period.....	12,988	23,534
Working capital.....	N/A	18,778

The increase in net cash provided by operating activities for the six months ended June 30, 1999 compared to 1998 was primarily due to better collection in accounts receivable due to the use of letters of credit and a higher net income in 1999. Net cash used in investing activities for the six months ended June 30, 1999 reflected the purchases of short-term investments, property and equipment, while net cash used in financing activities for the six months ended June 30, 1999 reflected the repayment of principal of the notes payable arrangements associated with the Communications Systems Division acquisition.

As of June 30, 1999, we had \$23.5 million in cash and cash equivalents and short-term investments and working capital of \$18.8 million. As of June 30, 1999, we had outstanding debt of \$15.5 million under notes payable arrangements which we will repay for \$15.7 million, including a prepayment penalty, following the closing of this offering.

Year Ended December 31, 1996, 1997 and 1998

	1996	1997	1998
Net cash provided by operating activities.....	\$ 4,753	\$ 917	\$ 2,719
Net cash provided by (used in) investing activities.....	(1,258)	576	(17,344)
Net cash provided by (used in) financing activities.....	414	(393)	20,928
Cash and equivalents at end of period.....	5,585	6,685	12,988
Working capital.....	6,236	12,840	16,313

Since our inception through December 31, 1998, we have funded our operations primarily through the sale of convertible preferred stock and cash generated from operations. We received \$388,000 and \$5.0 million from the sale of convertible preferred stock in 1996 and 1998, respectively. Net cash provided by operating activities for 1996, 1997 and 1998 were \$4.8 million, \$917,000 and \$2.7 million, respectively. The decrease in net cash provided by operating activities for 1997 compared to 1996 was primarily due to increased working capital requirements associated with higher revenues as well as lower net income in 1997. The increase in net cash provided by operating activities for 1998 compared to 1997 was primarily due to higher net income before considering the write-off of acquired in-process research and development and also increased accruals.

Net cash provided by (used for) investing activities was \$(1.3) million, \$576,000 and \$(17.3) million for 1996, 1997 and 1998, respectively. Net cash provided by investing activities for 1997 reflected proceeds from the sale of short-term investments, net of purchases of property and equipment, while net cash used in investing activities for 1998 represented the Communications Systems Division acquisition, and purchases of property, plant and equipment. The timing and amount of future capital expenditures will depend primarily on our growth. Our principal commitments consist of leases for our office facilities as well as other general obligations under our capital leases. We anticipate that we will relocate to larger office facilities within the next six months and we expect to incur additional capital expenditures of approximately \$500,000 per year. We currently have no other material commitments for capital expenditures.

As of June 30, 1999, we had \$23.5 million in cash and cash equivalents and short-term investments and working capital of \$18.8 million. In December 1998, we became obligated under notes payable in the aggregate principal amount of \$16.3 million in connection with the acquisition of Communications Systems Division. We intend to repay these notes following the closing of this offering. In connection with these notes payable, we issued a warrant to purchase 200,000 shares of Series C preferred stock at an exercise price of \$8.00 per share. The warrants are immediately exercisable and expire ten years from the date of issuance. The fair value of the warrants at the date of the issuance was estimated to be \$1.4 million. We recorded the fair value of the warrants as a deferred charge which will be amortized over the term of the notes.

We believe that the net proceeds from the offering, together with existing sources of liquidity, will be sufficient to meet our working capital and anticipated capital expenditure requirements for at least the next 12 months. Thereafter, we may require additional funds to support our working capital requirements or for other purposes, and may seek, even before that time, to raise additional funds through public or private equity or debt financing or from other sources. Additional financing may not be available at all, and if it is available, the financing may not be obtainable on terms acceptable to us or that are not dilutive to our stockholders.

#### Recent Accounting Pronouncements

In March 1998, the American Institute of Certified Public Accountants issued Statement of Position No. 98-1 "Accounting for the Costs of Computer Software Developed or Obtained for Internal Use," which we adopted in fiscal 1999. SOP No. 98-1 requires entities to capitalize certain costs related to internal-use software once certain criteria has been met. The adoption did not have a material impact on our financial position or results of operations.

In April 1998, the American Institute of Certified Public Accountants issued SOP No. 98-5 "Reporting on the Costs of Start-Up Activities," which we adopted in fiscal 1999. SOP No. 98-5 requires that all start-up costs related to new operations must be expensed as incurred. In addition, all start-up costs that were previously capitalized must be written off when SOP No. 98-5 is adopted. The adoption did not have a material impact on our financial position or results of operations.

In June 1998, the Financial Accounting Standards Board issued SFAS No. 133 "Accounting for Derivative Instruments and Hedging Activities." SFAS No. 133 requires certain accounting and reporting standards for derivative financial instruments and hedging activities. We are subject to SFAS No. 133 for the first quarter beginning January 1, 2001. Because we do not currently hold any derivative instruments and do not engage in hedging activities, we do not believe that the adoption of SFAS No. 133 will have a material impact on our financial position or results of operations.

#### Qualitative and Quantitative Disclosures About Market and Interest Rate Risk

We are exposed to minimal market risks. We manage the sensitivity of our results of operations to these risks by maintaining a conservative investment portfolio, which is comprised solely of highly-rated, short-term investments. We do not hold or issue derivative, derivative commodity instruments or other financial

instruments for trading purposes. We are exposed to currency fluctuations, as we sell our products internationally. We manage the sensitivity of our international sales by denominating all transactions in U.S. dollars.

We may be exposed to interest rate risks, as we may use additional financing to fund additional acquisitions and fund other capital expenditures. The interest rate that we may be able to obtain on financings will depend on market conditions at that time and may differ from the rates we have secured in the past.

#### Year 2000 Compliance

We have completed our initial assessment of the potential overall impact of the impending century change on our business, financial condition and operating results. Based on our current assessment, we believe the current versions of our products are Year 2000 compliant. However, our products operate in complex network environments and directly or indirectly interact with a number of other hardware and software systems that we cannot adequately evaluate for Year 2000 compliance. In a worst case scenario involving the failure of these environments or systems as a result of Year 2000 problems, our products would be inoperative and would have no utility to our customers or the users of these products. Because our products depend upon the communication capabilities of the devices in which they are used, we would not be able to solve Year 2000 problems affecting these devices. As a result, our business would be dependent upon the manufacturers of these devices, including our customers, to correct Year 2000 deficiencies that might arise. The following are summaries of Year 2000 action plans for our material suppliers:

- . Silicon Labs' Year 2000 program consists of comprehensive review and testing of hardware and software used in mission-critical applications, review of Year 2000 readiness of suppliers of critical materials and services, and a contingency plan to ensure uninterrupted product delivery for unforeseen problems that may occur. Their contingency plan involves building an additional product inventory buffer. The buffer will be maintained over the year end and then depleted after Silicon Labs has ascertained that no Year 2000 related supply problems exist. Silicon Labs has also implemented a verification process where they will review internal Year 2000 compliance for server hardware, operating systems, business applications and PC and workstation BIOSes. They will also use representative test platforms to run existing business applications after changing system dates to 1/1/00.
- . ST Microelectronics has had a top priority project underway since the second quarter of 1997. Their definition of Year 2000 Compliance means that the functions, calculations, and other computing processes of each of their projects perform in a consistent manner regardless of the date and time on which the processes are actually performed, whether before, on, or after January 1, 2000, and whether or not the dates are affected by leap years.
- . Taiwan Semiconductor Manufacturing Corporation has completed their Year 2000 compliance testing on their manufacturing equipment, information technology infrastructure, commercial software, and in-house application.
- . Kawasaki/LSI has completed their testing and is Year 2000 compliant.

We may face claims based on Year 2000 problems in other companies' products, or issues arising from the integration of multiple products within an overall system. We have not been a party to any litigation or arbitration proceeding involving our products or services related to Year 2000 compliance issues. We may in the future be required to defend our products or services in such proceedings, or to negotiate resolutions of claims based on Year 2000 issues.

We have reviewed our internal management information and other critical business systems to identify any Year 2000 problems. We also have communicated with the external vendors that supply us with material software and information systems and with significant suppliers to determine their Year 2000 readiness. Based on a review of vendor representations made in letters provided to us by our vendors and a review of representations made by our vendors at their individual web sites, we believe that the third-party hardware and software we use is Year 2000 compliant.

To date, we have not incurred any material costs directly associated with Year 2000 compliance efforts, except for compensation expense associated with salaried employees who have devoted some of their time to Year 2000 assessment and remediation efforts. We do not expect the total cost of Year 2000 problems to be material to our business, financial condition or operating results. However, during the months prior to the century change, we will continue to evaluate new versions of our products, new software and information systems provided by third parties and any new infrastructure systems that we acquire, to determine whether they are Year 2000 compliant. Despite our current assessment, we may not identify and correct all significant Year 2000 problems on a timely basis. Year 2000 compliance efforts may involve significant time and expense and unremediated problems could harm our business, financial condition and operating results. We currently do not have any estimate of potential costs related to potential Year 2000 problems. We currently have no contingency plans to address the risks associated with unremediated Year 2000 problems.

## Overview

We are a leading developer and supplier of cost-effective software-based connectivity solutions. Our solutions enable internet access and other communications applications through existing analog and emerging broadband networks. We have developed a proprietary software architecture that substantially reduces the hardware, space and power requirements of conventional hardware-based connectivity devices. Our software architecture is also easily upgradeable, minimizing the risk of technological obsolescence. Our communications products are designed to enable widespread internet access and other communication applications through desktop PCs, notebook computers and non-PC devices.

We are a pioneer in developing host signal processing technology, a proprietary set of algorithms that enables cost-effective software-based digital signal processing solutions. Host signal processing technology utilizes the computational and processing resources of a host central processing unit rather than requiring additional special-purpose hardware. The reduction of hardware components in our architecture reduces space requirements by 50% and power requirements by 70% compared to conventional solutions. The first implementation of our host signal processing technology was in a software modem, or soft modem, in 1995. Through June 1999, we have shipped 11.3 million soft modems. Based on our unit shipments in 1998, we believe we are the largest worldwide producer of soft modems, representing 63% of all soft modems sold that year, as estimated by the Cahners In-Stat Group. We also believe that in 1998 we sold 6% of all analog modems estimated by Dataquest to have been 59.1 million units. Various original equipment manufacturers, including Acer, Dell, emachines, Fujitsu and Sharp, have integrated our soft modems into their products.

We continue to innovate and expand upon our successful host signal processing architecture so that we can provide high speed connectivity solutions for broadband communications, including digital subscriber line, cable and wireless communications. Broadband communications generally refers to all communications that have more available communications frequencies than traditional voice band. The range of frequencies in which each communications technology operates is called a "band." All data communications on voice band is banded by 300 Hz on the low end and 3,000 Hz on the high end. Communications taking place at higher frequencies, with broader bands would be a broadband communications technology. For example, asynchronous digital subscriber line uses the same copper wire as base band modems but operates in a frequency band between 30 KHz and 1.104 Mhz. Not only are the frequencies higher, but the operating band is much wider (over 1 Mhz compared to 2700 Hz for voice band). These emerging opportunities include connectivity solutions for client-side applications, enterprise servers, service providers and industrial markets. We have extended our host signal processing architecture and have developed a G.Lite solution, LiteSpeed, that enables downstream broadband data transmission speeds of up to 1.5 Mbps and upstream broadband data transmission speeds of 512 Kbps over existing copper telephone lines. Downstream broadband data transmission involves high speed data transmissions from the central office to the customer's premises. Upstream broadband data transmission involves high speed data transmissions from the customer's premises to the central office. We expect to begin shipments of this product in the first half of 2000.

We also have developed an embedded solution for non-PC devices that either do not use a central processing unit or lack the excess processing capacity necessary to support our host signal processing solution. These devices include internet appliances, such as set-top boxes and webphones, video game consoles and remote monitoring devices. By offering reductions in size, cost and power consumption, we also believe that this solution is ideal for service providers and server-side applications such as single and multi-port remote access servers and concentrators. Server-side applications and devices involve communication systems or components which affect data transmission services from the internet service provider or central office.

We enhanced our position as an intellectual property leader with the acquisition of our Communications Systems Division from General DataComm, Inc. in the fourth quarter of 1998. As a result of this acquisition and our own intellectual property development efforts, we hold 32 patents, a number of which cover technology



that is considered essential for International Telecommunication Union standard communications solutions. We also have 26 additional patent applications pending or filed.

#### Industry Overview

In recent years, dramatic increases in business and consumer demand for multimedia information, entertainment and voice and data communication have resulted in a corresponding increase in demand for high speed remote access. The accelerated growth of content-rich applications, which require high bandwidth, has changed the nature of information networks. High-speed connectivity is now a requirement for business, government, academic and home environments. Businesses, ranging from large and small corporate enterprises to home offices, are increasingly dependent upon data networks, not only for communication within the office, but also to exchange information among corporate sites, remote locations, telecommuters, business partners, suppliers and customers. Consumers are also increasingly accessing data networks such as the internet to communicate, collect and publish information and conduct retail purchases.

These market trends have resulted in a significant increase in the demand for connectivity devices. International Data Corporation estimates that by 2003, the number of internet connectivity devices will grow to over 722 million.

#### Analog Connectivity Solutions

Although there has been significant publicity given to broadband connectivity, the majority of internet access is still through dial-up, or analog, connections. Analog technology converts digital data into an analog signal for transmission over telephone networks, and executes the reverse analog-to-digital signal conversion to enable the host device to receive the transmitted data. Analog modems, which, according to Dataquest, comprised 90% of the modem market in 1998, are primarily utilized by PC devices. Dataquest estimates that 59.1 million analog modems were sold in 1998, and expects this number to reach 74.8 million units in 2001. Although the number of analog modems is expected to grow in the near future, new technologies have emerged to address the volume of bandwidth intensive data and demand for enhanced multimedia capabilities.

#### Broadband Connectivity Solutions

The data transmission constraints of copper telephone wires have led the communications industry to focus on broadband communications. In order to address the demand for high-speed connectivity, telecommunications service providers have developed and deployed cost-effective technologies in their networks. However, the lack of ubiquitous low-cost, high-bandwidth connectivity from the backbone network to the customer premises has been the underlying issue preventing the majority of the market from taking advantage of the array of high-bandwidth network services. Although the broadband access market is underdeveloped, its potential size has attracted a high level of attention. Telephone, cable and satellite companies each have different strategies and capabilities for providing this broadband connectivity to the internet. Each has its advantages based on price, performance and availability.

Digital Subscriber Line. Digital subscriber lines utilize the ubiquitous, existing public switched telephone network infrastructure, without the need for expensive additions and upgrades. Digital subscriber line technologies dramatically increase the data transmission capacity of standard telephone lines and are expected to enable a wide range of new services including high speed internet access and digital television. Most of the businesses and homes today are connected to the public telephone network by twisted-pair copper wire. It is estimated that there are nearly 700 million copper wire access lines in existence today worldwide, and that more than 95% consist of a single twisted-pair copper wire.

A wide array of digital subscriber line technologies known as x-digital subscriber line products are rapidly emerging. The "x" in x-digital subscriber line represents the various kinds of digital subscriber line technologies. Each type of digital subscriber line technology has distinguishing advantages and disadvantages,

depending on a variety of bandwidth and deployment features suitable for different applications. Digital subscriber line technologies are either symmetric, which deliver the same data rate both downstream and upstream, or asymmetric, which deliver faster data rates downstream than upstream. The other distinguishing feature is the data rate itself. Digital subscriber line technologies allow for the transmission of data at speeds ranging from 128 Kbps to 52 Mbps depending on the distance between the central office and the subscriber. Common types of digital subscriber line technologies include:

**Asynchronous Digital Subscriber Line.** Asymmetric digital subscriber line allows more bandwidth downstream than upstream. This asymmetry, combined with "always-on" access, makes asynchronous digital subscriber line ideal for internet surfing, video-on-demand and remote local area network access. Users of these applications typically download much more information than they send. In order to implement an asynchronous digital subscriber line solution, a splitter, which is a device that separates the voice signal from the data signal, must be installed both at the head-end and at the customer's premises. This process of installing splitters for each subscriber means a service truck needs to be sent to each customer site in order to initiate service. This process is expensive and time consuming and ultimately slows the overall service deployment. Asynchronous digital subscriber line provides speeds up to 8 Mbps downstream and up to 1 Mbps upstream, depending on the line conditions and the length of the loop.

**G.Lite.** G.Lite is a lower-speed version of asynchronous digital subscriber line that will eliminate the need for the service provider to install a splitter at the customer's premises. G.Lite allows for a downstream data transmission rate of up to 1.5 Mbps and an upstream data transmission rate of up to 512 Kbps, and is expected to be as simple as the "plug-and-play" nature of traditional, analog dial-up modems.

**Single-Pair High Speed Digital Subscriber Line.** Single-pair high speed digital subscriber line, or synchronous high speed digital subscriber line, requires only a single copper twisted-pair and has a maximum loop length of 10,000 feet from the telephone company's central office. Synchronous high speed digital subscriber line can offer symmetrical data transmission rates of up to 1.544 Mbps. Since synchronous high speed digital subscriber line uses only one copper twisted-pair, the capacity of existing infrastructure is greatly increased.

**Very-High-Bit-Rate Digital Subscriber Line.** Very-high-bit-rate digital subscriber line, or very high speed digital subscriber line, technology is the fastest digital subscriber line technology, supporting a maximum downstream rate of 52 Mbps and an upstream rate of 10 Mbps over a single copper twisted-pair wire. The one limitation of very high speed digital subscriber line is that the maximum loop length is only between 1,000 and 4,500 feet from the telephone company's central office.

**Wireless.** The main alternatives in wireless broadband access are wireless and broadband satellite. Wireless provides advantages over wireline, the primary benefits being speed and ease of installation. The strength of wireless is that it can quickly provide high-speed internet access within a 10, 20 or 35 mile radius depending on the frequency band used. In the next several years, wireless is expected to help unlock broadband competition thereby enabling new operators to bypass existing wireline networks and deliver local and long distance telephone service and internet access services.

**Cable Modems.** Designed to provide broadband internet access, cable modems are targeted primarily at the consumer market. Cable lines pass by more than 100 million North American homes, but only 20% of those homes can now get cable modem service. Cable lines offer downstream transmission speeds of up to 36 Mbps and upstream transmission speeds of up to 10 Mbps. In order to fully realize the benefits of two way communications, cable operators must upgrade their networks to improve the provisioning of existing cable services and to support high-speed data and other new services.

#### Non-PC Connectivity

While existing internet connectivity devices are primarily PC-based, development of enabling technologies and the growth in consumer dependence are spurring the deployment of non-PC devices. These devices include internet appliances such as set-top boxes and webphones, video game consoles and remote monitoring devices.

International Data Corporation predicts that as many as 42% of all Internet access devices will be in the form of non-PC devices by 2001. However, it is difficult to integrate modem functionality into these compact devices due to the limited availability of power and space.

#### Server-Side

As the number of connectivity devices increases, service providers will be required to increase the number of server-side access ports to ensure reliability and quality service for their customers. Presently, communications equipment providers are limited to using either expensive multiport chips or a single modem port per chip. Internet service providers and other service providers who locate their server-side equipment at the telephone companies' central offices do not have the space or power available to accommodate the expected growth in demand for client-side access. Service providers are demanding connectivity solutions that increase the density of modem ports per chip while reducing cost, space and power requirements.

#### Evolution from Hardware to Software-based Connectivity Solutions

The rapid development of emerging technologies for broadband access combined with changing industry standards and protocols is driving manufacturers to turn towards software-based connectivity solutions as opposed to conventional hardware connectivity solutions. Further, trends such as the acceptance of alternative access devices, the significant increase in available processing power, cost reduction pressures and space and power constraints have permitted software-based products to emerge as viable and cost-effective alternatives.

One of the primary reasons that PC manufacturers have been better able to utilize software-based solutions has been the dramatic increase in central processing unit processing power. Prior to the introduction of Intel's 266 MHz Pentium II processor, most PCs lacked the processing power required to effectively utilize software-based connectivity solutions. By 1998, a majority of the PCs shipped were equipped with CPUs equivalent to or exceeding the processing power of Intel's 350 MHz Pentium II. This significant increase in processing power is expected to continue into the future as demonstrated by Intel's announcement of its intention to deliver 1.0 GHz processors by 2001. With microprocessor performance continuing to rapidly increase, technologies that support software algorithms running off the central processing unit, rather than on extraneous hardware, will become increasingly valuable and feasible.

Another significant trend driving the growth of software-based solutions is the increasing pressure on original equipment manufacturers to reduce costs. With the market acceptance of low-cost, or sub-\$1,000, PCs and a general decline in PC selling prices, original equipment manufacturers are demanding further price reductions, from suppliers of central processing units and motherboard manufacturers. As a result, central processing unit suppliers and motherboard manufacturers are increasingly employing software-based solutions as a cost-effective way to meet these demands. This response eliminates additional, special purpose hardware and replaces it with integrated software. As a result, Cahners In-Stat estimates analog soft-modem annual sales will grow from six million units in 1998 to over 40 million units by 2001.

Software-based solutions are also increasingly utilized to address the power and space requirements of non-PC devices. The limited availability of power and space in these devices has hindered the successful integration of hardware-based modem functionality. Because soft modems shift processing capacity into software and, thus, significantly reduce power and space constraints, they are increasingly integrated as a critical part in the development of the non-PC device market.

#### PC-Tel Solution

We are a leading developer and supplier of cost-effective software-based connectivity solutions that address internet access and other communications through existing analog and emerging broadband networks. These solutions are based on our proprietary software algorithms which enable the movement of core signal processing capabilities out of hardware and into software. Our host signal processing architecture allows us to

develop connectivity solutions that provide significant benefits over traditional hardware-based solutions, including:

**Extensibility and Scaleability.** Our host signal processing architecture allows us to quickly and cost-effectively develop new products to capitalize on rapidly growing market segments. We believe that we can use our intellectual property portfolio to readily adapt to the speed and design requirements of additional emerging connectivity technologies. For example, in response to growing market acceptance, we have developed a host signal processing architecture solution for G.Lite, which we call LiteSpeed, that enables downstream data transmission speeds of up to 1.5 Mbps and upstream data transmission speeds of up to 512 Kbps over existing copper telephone lines. As the broadband market develops, we believe we can capitalize on our proprietary technology to continue the cost-effective migration from hardware into software.

**Cost Effectiveness.** By shifting the composition of connectivity devices from hardware into software, we are able to significantly reduce the hardware required in conventional connectivity solutions. Our proprietary software-based solution eliminates extraneous hardware and reduces our customers' manufacturing costs, while still offering superior or comparable performance. For example, our host signal processing technology eliminates as much as 40% of the hardware used in conventional connectivity solutions.

**Upgradeability, Adaptability and Flexibility.** The software component of our architecture is upgradeable, minimizing the risk of technological obsolescence. By embedding core functionality in software, performance upgrades and the adaptation to new standards and protocols can be accomplished quickly and easily through software downloads rather than through costly replacements of existing hardware. For example, customers who purchased our 33.6K modems are able to easily upgrade the product to an International Telecommunications Union-compliant 56K modem through a simple software download. Ease of upgradeability is of considerable value in the rapidly changing communications marketplace and a substantial competitive advantage over conventional connectivity solutions. In addition, our LiteSpeed digital subscriber line technology will also provide a similar capability in offering an end-user the ability to easily upgrade to higher bandwidth services. Further, our G.Lite technology is completely compatible with analog transmission networks, offering the user complete flexibility in choosing access technology and transmission speed. By providing connectivity solutions that can be easily adapted to new standards and protocols, we reduce interoperability obstacles, which simplifies purchasing decisions and accelerates deployment times for original equipment manufacturers. Interoperability obstacles exist because different manufacturers use different protocols and interfaces for their products. This variance among manufacturer protocols and interfaces prevents different manufacturers' products from talking to one another which creates obstacles to interoperability.

**Reduced Space and Power Requirements.** The reduction of hardware components enabled by our host signal processing architecture provides the dual benefits of 50% reduced space and 70% lower power requirements compared to conventional solutions. These benefits enable connectivity capabilities in non-PC devices that are difficult to implement with conventional hardware-based solutions. In addition, the efficiency of our proprietary algorithms increases the modem port density per chip in server-side devices, reducing power requirements and heat generation. Modem port density per chip is the number of distinct modem processes which can be managed on a single integrated circuit.

#### PC-Tel Strategy

PC-Tel's goal is to be the leading provider of cost-effective software-based connectivity solutions that enable internet access and other communication applications through existing analog and emerging broadband networks. Key elements of our strategy include:

**Target Emerging High-Growth Communications Technologies.** We identify emerging high-growth communications technologies and develop innovative software-based connectivity solutions to capitalize on

these new market opportunities as they gain acceptance. Our software-based technology is extensible, allowing us to quickly and cost-effectively develop new applications. We have recently leveraged our core technologies to design and develop a fully functional software-based G.Lite solution, LiteSpeed. In addition, we are currently developing implementation options for extending host signal processing technology into the emerging wireless data network market, which includes devices that offer high speed access to internet connections as well as wireless connections to computing on internet devices within homes and businesses. We believe that our communications technology will enable us to develop significant applications in the broadband modem markets.

Continue To Enhance Software-Based Solutions. We are committed to enhancing the scope of our host signal processing technology to further reduce the number of hardware components in our software-based solutions. We believe that our success in minimizing the hardware content of our soft modems will continue to enhance our ability to address emerging markets in non-PC devices that require smaller designs and reduced power consumption. This reduction of hardware content provides numerous benefits for our original equipment manufacturer customers, including:

- . reducing costs,
- . decreasing board space,
- . decreasing inventory,
- . minimizing technological obsolescence,
- . accelerating time to market, and
- . streamlining production flow.

In addition, because of the software-based functionality of our products, we have developed a core expertise in ensuring the compatibility of our host signal processing products with multiple operating systems including Linux, OS/2, Windows 3.1, 95, 98, 2000, NT and CE, and VXWorks.

Enable Migration to Emerging Communications Technologies. We aim to develop innovative products based on our host signal processing architecture that enable existing platforms to migrate to emerging broadband communications technologies. The current level of processing power available in PCs and non-PC devices does not support the amount of signal processing calculations required for higher speed broadband applications without overloading the central processing unit. For these applications, we have developed an accelerated host signal processing architecture that adds low-cost, application-specific hardware to efficiently handle a portion of the signal processing load. Accelerated host signal processing architecture enables us to deliver an ideal platform from which to migrate to a full host signal processing solution for next generation devices.

Extend Our Intellectual Property Leadership Position and Establish Industry Standards. We are actively extending our intellectual property position through rapid internal development, strategic acquisitions and licensing of innovative communications technology. We hold 32 patents, with an additional 26 patents pending. We are actively pursuing the filing of additional patent applications to cover our intellectual property advancements. We believe that these intellectual property advancements will optimize the performance, efficiency and cost of our software-based connectivity solutions. Our intellectual property leadership position allows us to establish industry standards so that we can be well positioned to implement leading-edge second generation connectivity solutions in technologies in advance of our competitors.

License Proprietary Digital Signal Processing Solutions. We are developing and intend to license reference designs for digital signal processing communications applications in non-PC devices. By using low cost digital signal processing chips coupled with our software-based technology, we are providing enhanced throughput and capacity per chip. In addition, because our digital signal processing algorithms are highly efficient, we can enable cost savings by reducing space requirements, lowering power consumption and port density for remote access.

## Products

### Current Products

In the fourth quarter of 1998, we began shipping our newest product, the MicroModem. This product integrates our host signal processing technology with a micro form-factor data access arrangement. Our patented MicroModem features reduce power and size requirements and replace approximately 90 discrete hardware components with two mini data access arrangement chips. The MicroModem has recently been certified as being compatible with the telecommunications standards of most industrialized countries, allowing original equipment manufacturers to accomplish seamless global interoperability.

As illustrated in Figure 1, in contrast to the conventional hardware modem, our host signal processing soft architecture replaces the memory chip, digital signal processing chip, universal asynchronous receiver and transmitter, and controller chip with customized software that draws upon the excess capacity of the host central processing unit. The universal asynchronous receiver and transmitter is a device that provides control logic and program registers required to implement a serial interface to a computer system. A single proprietary application specific integrated circuit acts as interface between the analog and digital data. We have further reduced the cost, size and design effort required for standardized worldwide PC modem use by using an integrated data access arrangement and a coder/decoder. This integration reduces the number of components in a conventional data access arrangement by approximately 40%.

FIGURE 1--CONVENTIONAL HARDWARE vs. SOFT MODEM ARCHITECTURE

Schematic with two boxes. Caption is "Modem Evolution". First box describes a traditional hardware modem, second box describes Pctel's soft modem. Bottom text caption "CODEC--performs analog-to-digital and digital-to-analog signal conversions", "DAA--Data Access Arrangement interfaces and protects the modem with the telecommunications network.", "CONTROLLER--controls data and error compression function.", "DATAPUMP--performs modulation and demodulation calculations.", "Memory--handles the data buffering.", "UART--Universal Asynchronous Receive Transmit synchronizes incoming and outgoing data.", "INTEGRATED SILICON DAA and CODEC--Direct Access Arrangement interfaces and protects the modem with the telecommunications network while the coder/decoder performs analog-to-digital and digital-to-analog conversion."

Next Generation Products

We are currently focusing our design and development efforts in the following application areas:

Next Generation Technology	Product Description
G.Lite	We have developed a G.Lite solution, LiteSpeed, to address the demand for digital subscriber line connectivity. LiteSpeed uses less space and costs less than conventional solutions for G.Lite. We expect to commercially release this product in the first half of 2000.
USB External Modem	We have developed our first external modem, which connects through the Universal Serial Bus, or USB, interface. The USB is an open specification developed to advance the use of peripheral devices with personal computers. Major PC manufacturers now ship machines with USB enabled hardware predominantly to Europe due to the continent's differing telephony standards. We believe that our external modem will allow us to capture significant revenue opportunities in the peripheral device market.
Home Networking	The number of private homes with multiple PCs or multiple devices, such as printers, scanners and notebook computers, has reached a critical mass, driving consumer demand for home networking and shared internet access. In order to capitalize on this emerging market opportunity, we are working with a silicon supplier to include our soft modem on a processor which will deliver home networking functionality.
Industrial Modem	We are developing a small hardware platform for the non-PC market. This platform uses one low cost digital signal processor and our software performs both the controller and the digital signal processing functions. The v.34 version of our industrial modem is currently being tested.
Remote Access Solution	We are developing a reference design to deliver the functionality of six modem ports per digital signal processing chip in a server-side modem solution. Our innovative design would reduce power, cost and space requirements to nearly one-sixth of those used today by providing alternatives to expensive chips or a single modem port per chip. We intend to license our design to the leading companies in the growing remote access solution marketplace, the first version which will support three modems per DSP and is currently being tested.



## Emerging Product Opportunities

In addition to our products currently under development, we continue to explore emerging opportunities in the area of broadband communications.

Emerging Opportunities	Product Description
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Wireless	
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Wireless Protocols	Our host signal processing technology can be applied to various wireless standards. We expect that the wireless solutions which can take advantage of host signal processing architecture are optimal for customers with capacity requirements between 19.2 Kbps today, and up to 10 Mbps in the near future. We are currently developing software enhancements to our products in order to enable their use in wireless environments with speeds of up to 384 Kbps by the end of 2000.
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xDSL	
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ADSL (G.DMT)	We expect to begin developing a International Telecommunications Union Standard for asynchronous digital subscriber line using discrete multitone modem in 2000 which will provide downstream transmission speeds of up to 8 Mbps and upstream transmission speeds of up to 1 Mbps. International Telecommunications Union Standard for asynchronous digital subscriber line using discrete multitone, known as DMT, is a full-rate asynchronous digital subscriber line standard and is being endorsed by the International Telecommunications Union as a worldwide standard.
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G.SHDSL	Proposed International Telecommunications Union Standard for synchronous high speed, digital subscriber line modems will offer both downstream and upstream transmission speeds of up to 1.5 Mbps. We have initiated design and simulation studies for this product. These efforts will position us to pursue the proposed International Telecommunications Union Standard for synchronous high speed, digital subscriber line opportunity as it becomes widely adopted.
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VDSL	We intend to develop a very high speed digital subscriber line modem once very high speed digital subscriber line technologies become more fully deployed. We expect that this technology will provide downstream transmission speeds of up to 52 Mbps and upstream transmission speeds of up to 10 Mbps.
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Server Side	
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VPN Controller	Our virtual private network controller project is expected to enhance HIDRA by integrating additional functionality to support virtual private networks, or virtual private network. The key to maximizing the value of a virtual private network is the ability for companies to upgrade their virtual private network as their business needs change.
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VOIP	The Voice Over Internet Protocol project is expected to enhance the HIDRA solution by integrating voice capability into the HIDRA infrastructure such that HIDRA will be able to provide voice over internet protocol gateway functionality. HIDRA will implement voice compression and packetization along with the signaling and addressing gateway functions required for a complete voice over internet protocol solution.
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Cable	
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Cable Modem	Cable modems connect PCs to the cable network and offer downstream transmission speeds of up to 36 Mbps and upstream transmission speeds of up to 10 Mbps. We are researching cable technology to follow advancements and will undertake a host signal processing cable modem development if and when our studies show a significant advantage over existing technologies.

Intellectual Property Licensing

We also offer our software-based solutions through intellectual property licensing and product royalty arrangements. Current licensees of our intellectual property, principally International Telecommunications Union-standard technology, include modem and semiconductor manufacturers, such as Conexant, Texas Instruments and U.S. Robotics, and RISC processor manufacturers including Hitachi, Intel and NEC.

Customers

We sell our products directly and indirectly to a number of distributors and customers. The following is a list of our principal distributors and our representative customers, all of which have either purchased more than \$100,000 of our products during fiscal year 1999 or are currently incorporating our modem products into their product lines. The companies listed in the table other than those identified as distributors are representative of the various distribution channels in which we sell our products. Each of the companies designated with an asterisk is an indirect customer of ours.

Distributors	Modem Board Manufacturers	Motherboard Manufacturers	PC OEM Companies	Systems Integrators	Embedded Systems Integrators
Golden Way	Amigo	Asus	Acer*	Everex*	Casio
InnoMicro	Askey Computer	FIC	Dell*	MicroCenter*	Intel
Silicon Application Corporation	Aztech BTC E-Tech* Zoltrix	Talent Trade Asia	emachines* Fujitsu* Mitac* Sharp* TriGem TwinHead*	Mitsuba* Tiny*	NEC Yamaha

For the six months ended June 30, 1999, revenues derived from sales to customers Talent Trade Asia, TriGem and Silicon Application Corporation accounted for approximately 42%, 20%, and 10%, respectively, of product sales. For the year ended December 31, 1998, revenues derived from sales to customers Silicon Application Corporation, BTC, Askey Computer and Zoltrix accounted for 15%, 13%, 12% and 12%, respectively, of our product sales. No other customers represented more than 10% of our product sales for these periods.

Sales, Marketing and Support

We sell our products directly to modem board and motherboard manufacturers who assemble and distribute the end product both directly to original equipment manufacturers and systems integrators and indirectly through distributors. In the United States, we primarily sell our products through direct sales. In Taiwan, we sell our products through distributors such as Golden Way and Silicon Application Corporation, and in Japan, through distributors such as InnoMicro. In many cases, modems are manufactured by third parties on behalf of the final brand name original equipment manufacturer. We focus on developing long-term customer relationships with our direct and indirect customers. In many cases, our indirect original equipment manufacturer customers specify that our products be included on the modem boards or motherboards that they purchase from board manufacturers.

We employ a direct sales force with a thorough level of technical expertise, product background and industry knowledge. Our sales force includes a highly trained team of application engineers to assist customers in designing, testing and qualifying system designs that incorporate our products. Our sales force also supports the sales efforts of our distributors. We believe the depth and quality of our sales support team is critical to:

- . achieving design wins,
- . improving customers' time to market,

- . maintaining a high level of customer satisfaction, and
- . engendering customer loyalty for our next generation of products.

Our marketing strategy is focused on further building market awareness and acceptance of our new products. We market our products directly to both prospective and existing customers. Additionally, we undertake broad scale marketing programs in conjunction with key local and global partners. Our marketing organization also provides a wide range of programs, materials and events to support the sales organization.

As of June 30, 1999, we employed 54 individuals in sales, marketing and support and maintained regional sales support operations in Tokyo, Japan, Taipei, Taiwan and Paris, France.

#### Research and Development

We recognize that a strong technical base is essential to our long term success and have made a substantial investment in research and development. We will continue to devote substantial resources to product development and patent submissions. We monitor changing customer needs and work closely with our customers, partners and market research organizations to track changes in the marketplace, including emerging industry standards. As an example of our commitment to technical leadership, we have developed expertise in the following major areas:

- . Digital Signal Processing Algorithms. This expertise enables us to recognize ongoing revenue from the licensing of our reference designs, as well as further optimization for our software digital signal processing implementations.
- . Software Digital Signal Processing. This expertise has allowed us to provide the modem data pump functionality in the form of software. An expensive and power consuming digital signal processing chip is no longer needed.
- . Modem Protocol. This expertise has enabled us to develop software containing the necessary error correction and data compression protocols such as v.42, v.42bis, MNP 2-5, Soft ATM and SAR.
- . Telecommunications Infrastructure Interface. This expertise has allowed us to develop the software connection to the public telephone network through relays and the data access arrangement. This portion of the software also performs the functionality of the universal asynchronous receiver, transmitter, controller and memory while eliminating significant amounts of hardware.
- . Microsoft Windows Device Drivers. We have developed software expertise in working within the Windows environment. The interrupt-driven architecture of Windows operating systems presents many difficulties for software-based connectivity solutions, including latency and other technical issues. We have patented these solutions.
- . Central Processing Units and Operating Systems. We have demonstrated our expertise in porting our soft modem solution to all Windows operating systems, including Windows NT and Windows CE, in addition to other operating systems, such as OS/2, VXWorks and Linux. We have also ported our technology to various high performance processor platforms, such as those from Advanced Micro Devices, ARM, Cyrix, Intel/StrongARM and MIPS. Expertise in these systems, which are utilized in embedded systems applications, allows us to integrate our technology into devices such as internet appliances.
- . Host Signal Processing Architecture. We have leveraged our leadership in host signal processing and extended the architecture to include innovations such as accelerated host signal processing, which will be used in our future G.Lite product. This modification delivers maximum software content along with any required application-specific hardware to deliver the most cost-effective solution in the market.

These multiple areas of expertise represent distinct disciplines which are combined in one unique cross-functional development team. Communications Systems Division, which we acquired in December 1998, provides us with additional areas of expertise, including the experience of successfully introducing intellectual property for inclusion into International Telecommunications Union standards. We believe these technical and

organizational skills provide us significant competitive advantages. As of June 30, 1999, we employed 58 employees in research and development, 36 of whom have advanced degrees, including nine who have earned PhDs.

#### Manufacturing

We outsource the manufacturing of our application specific integrated circuit, coder/decoder and data access arrangement chips to independent foundries in order to avoid significant fixed overhead, staffing and capital requirements associated with semiconductor fabrication.

Our primary chipset suppliers are Delta Integration, Kawasaki/LSI, ST Microelectronics, Silicon Labs and Taiwan Semiconductor Manufacturing Corporation. The major operations of each of these manufacturers meet ISO-9001 international manufacturing standards. Our data access arrangement chips are currently purchased from Silicon Labs on a purchase order basis. We have a limited guaranteed supply of data access arrangement chips through a long-term contract arrangement with Silicon Labs. We have no guaranteed supply or long-term contract agreements with any other of our suppliers.

#### Licenses, Patents and Trademarks

We seek to protect our technology through a combination of patents, copyrights, trade secret laws, trademark registrations, confidentiality procedures and licensing arrangements. We hold a total of 32 patents and also have 26 additional patent applications pending or filed. The following table describes our most important patents and their expiration dates:

Patent No.	Expiration Date	Effect
5,931,950	6/17/2017	This patent relates to circuits and methods for allowing a computer to enter a power conserving mode while executing a host signal processing modem.
5,787,305	7/28/2015	This patent relates to a software emulation of a universal asynchronous receiver transmitter.
5,721,830	9/12/2015	This patent relates to circuits and methods for maintaining a communication link.
5,822,371	10/13/2017	This patent relates to a type of mapper known as a PAM mapper used in a modem which is compliant with the v.90 modem standard.
5,048,056	6/8/2000	This patent relates to a particular mapping technique used by a modem which is compliant with the v.34 modem standard.
5,291,520	1/13/2002	This patent relates to apparatus and methods for modem equalization which are used in a modem compliant with the v.34 modem standard.
5,465,273	6/24/2004	This patent relates to a type of encoder known as a trellis encoder which is used in a modem compliant with the v.34 modem standard.
5,265,151	7/26/2001	This patent relates to methods and apparatus for improving the performance of a modem which is compliant with the v.34 modem standard.
5,260,971	2/6/2011	This patent relates to apparatus and methods for modem equalization which are used in a modem compliant with the v.34 modem standard.
4,841,561	12/8/1997	This patent relates to methods and apparatus that allow data communication equipment such as modems to be used in different countries.

We believe that our patent portfolio is one of the largest in the analog modem market. To supplement our proprietary technology, we have licensed rights to use patents held by third parties.

Our industry is characterized by frequent litigation regarding patent and other intellectual property rights. We have been sued by Motorola, Inc. and by ESS Technology on patent related claims. See "Business--Legal Proceedings" and "Risk Factors--We have been sued by Motorola for patent infringement. If this litigation resolves unfavorably to us, our business is likely to be harmed."

In addition, there are numerous risks that result from our reliance on our proprietary technology in the conduct of our business. See "Risk Factors--We rely heavily on our intellectual property rights which offer only limited protection against potential infringers. If we cannot protect these rights, this could hurt our business."

#### Competition

The connectivity device market is intensely competitive. Our current competitors include 3Com, Conexant, ESS Technology, Lucent Technologies and Motorola. Motorola introduced soft modems in the third quarter of 1998 and Conexant introduced soft modems in the fourth quarter of 1998. We expect competition to increase in the future as current competitors enhance their product offerings, new suppliers enter the connectivity device market, new communication technologies are introduced and additional networks are deployed.

We may in the future also face competition from other suppliers of products based on host signal processing technology or new or emerging communication technologies, which may render our existing or future products obsolete or otherwise unmarketable. We believe that these competitors may include Alcatel, Analog Devices, Aware, Broadcom, Com21, Efficient Networks, Orckit, Terayon Communications and Texas Instruments.

Compared to us, many of our competitors, including those described above, have:

- . longer operating histories with more experience in designing and selling connectivity device products and services,
- . greater presence in our connectivity device markets, which can provide an immediate advantage in marketing new product introductions,
- . greater name recognition, which can facilitate customer acceptance of new products and technologies,
- . access to a larger customer base,
- . substantially greater financial resources, which could enable a competitor to significantly reduce the price of new products below prevailing market rates to capture market share,
- . significantly greater research and development and other technical resources, which may enable a competitor to respond more quickly to new or emerging technologies and changes in customer requirements, or to introduce new products that are superior to our products, and
- . significantly greater sales and marketing resources to devote to the promotion, sale and support of competitive products which could be deployed to overcome business challenges.

We believe that the principal competitive factors required by users and customers in the connectivity device market include compatibility with industry standards, price, functionality, ease of use and customer service and support. We believe that our products currently compete favorably with respect to these factors.

#### Employees

As of June 30, 1999, we employed 125 people full-time, including 54 in sales and marketing, 58 in research and development, and 13 in general and administrative functions. Over 50% of our employees have advanced degrees, with 10 having earned doctoral level degrees. None of our employees is represented by a labor union. We consider our employee relations to be good.

## Properties

Our administrative offices are located in San Jose, California, where we currently lease approximately 32,000 square feet under a lease that expires in 2001. We anticipate that we will relocate our administrative offices to larger office facilities within the next six months. Our Communications System Division is located in Waterbury, Connecticut, where we currently lease approximately 6,000 square feet under a lease that expires in 2001. We also have a sales support office in Taipei, Taiwan, where we lease approximately 3,000 square feet under a lease which expires in 2002. We also have a sales support office in Tokyo, Japan, where we lease approximately 700 square feet under a lease on a month to month basis.

## Legal Proceedings

We have been sued by Motorola, Inc., for patent infringement in an action filed in the fall of 1998. See "Risk Factors--We have been sued by Motorola for patent infringement. If this litigation resolves unfavorably to us, our business is likely to be harmed."

In April 1999, ESS Technology Inc. filed a complaint against us in the U.S. District Court for the Northern District of California, alleging that we failed to grant licenses for some of our International Telecommunications Union-related patents to ESS on fair, reasonable and non-discriminatory terms. ESS's complaint includes claims based on antitrust law, patent misuse, equitable estoppel, breach of contract mandating specific performance and unfair competition. In its complaint, ESS also seeks a declaration that some of our International Telecommunications Union-related patents are unenforceable and that we should be ordered by the court to grant a license to ESS on fair, reasonable and non-discriminatory terms.

Due to the nature of litigation generally and because the lawsuit brought by ESS is at an early stage, we cannot ascertain the outcome of the final resolution of the lawsuit, the availability of injunctive relief or other equitable remedies, or estimate the total expenses, possible damages or settlement value, if any, that we may ultimately incur in connection with ESS's suit. This litigation could be time consuming and costly, and we will not necessarily prevail given the inherent uncertainties of litigation. However, we believe that we have valid defenses to this litigation, including the fact that other companies license these International Telecommunications Union-related patents from us on the same terms that are being challenged by ESS. We believe that it is unlikely this litigation will have a material adverse effect on our financial condition or results of operations. We are vigorously contesting, and intend to continue to vigorously contest, all of ESS's claims. See "Risk Factors--We rely heavily on our intellectual property rights which offer only limited protection against potential infringers. If we cannot protect these rights, this could hurt our business."

MANAGEMENT

Executive Officers and Directors

The following table sets forth information with respect to the executive officers and directors of PC-Tel as of August 2, 1999.

Name	Age	Position
Peter Chen.....	44	Chief Executive Officer, Chairman of the Board
William F. Roach.....	55	President and Chief Operating Officer
Andrew D. Wahl.....	50	Vice President, Finance, Chief Financial Officer
Steve Manuel.....	34	Vice President, Marketing
Frank Reo.....	54	Vice President, Business Development
William Wen-Liang Hsu....	44	Vice President, Engineering, Director
Han Yeh.....	45	Vice President, Technology, Director
Derek S. Obata.....	41	Vice President, Sales
Richard C. Alberding(1)(2).....	68	Director
Martin H. Singer(2).....	48	Director
Wen C. Ko.....	50	Director
Giacomo Marini(1).....	47	Director
Mike Min-Chu Chen.....	50	Director

- (1)Member of audit committee
- (2)Member of compensation committee

Mr. Peter Chen co-founded PC-Tel in March 1994 and has served as Chief Executive Officer and Chairman of the Board, since PC-Tel's inception. Mr. Chen is also the cousin of one of our directors, Dr. Mike Min-Chu Chen. Mr. Chen has over 14 years experience in data communications and modem development at Digicom Systems, Inc. (a company which he co-founded), Cermetek, Inc., and Anderson-Jacobson, Inc., all data communications companies. Mr. Chen has a Bachelor of Science in Control Engineering from National Chiao-Tung University, Taiwan, and holds a Master of Science in Electrical Engineering from Arizona State University.

Mr. William F. Roach has been the President and the Chief Operations Officer of PC-Tel since August 1999. From January 1997 until joining PC-Tel, Mr. Roach served as a Senior Vice President, Worldwide Sales and Marketing for Maxtor Corporation, a data storage company, from November 1996 to January 1997 as Executive Vice President for Worldwide Marketing for Wyle Electronics, an electronic component distribution company, and from September 1989 to December 1996, as Executive Vice President, Worldwide Sales, for Quantum Corporation, a data storage company. Mr. Roach received a Bachelor of Science in Industrial Economics from Purdue University.

Mr. Andrew D. Wahl has been the Vice President of Finance and Chief Financial Officer of PC-Tel since January 1997. From March 1995 to April 1996, Mr. Wahl served as Chief Financial Officer and, from April 1996 to January 1997, as President and Chief Executive Officer for Designs for Education, Inc., an apparel company. From April 1993 to March 1995, Mr. Wahl served as Chief Financial and Operations Officer for StarBase Corporation, an object-oriented database developer. Prior to that, Mr. Wahl held various senior positions in general management, finance and management consulting. Mr. Wahl received a Bachelor of Arts in Political Science from Villanova University and a Master in Business Administration in Accounting from Rutgers University.

Mr. Steve Manuel has been Vice President of Marketing of PC-Tel since September 1997. Prior to that, Mr. Manuel served as Vice President of Sales between January 1997 and September 1997. From March 1992 to June 1995, he worked at Logitech, Inc., a computer input devices company, where he served as the Strategic Original Equipment Manufacturer Account Development Manager and the Director of Original Equipment

Manufacturer Sales and Marketing for the Imaging Division from June 1995 to January 1997. At Logitech, Inc., Mr. Manuel was initially responsible for worldwide account management for numerous original equipment manufacturer customers, and later worldwide sales and sales strategy development and implementation. Mr. Manuel received an Associate of Science from Control Data Institute.

Mr. Frank V. Reo has been PC-Tel's Vice President of Business Development since February 1998. From February 1993 to February 1998, Mr. Reo served initially as Manager and later as Director of Business Development for the modem group at Cirrus Logic, a semiconductor company. In this position, he was responsible for product marketing, business development and applications engineering. Mr. Reo is a graduate in electronic engineering from Philco Technical Institute, Philadelphia.

Mr. William Wen-Liang Hsu co-founded PC-Tel and has served as the Vice President of Engineering and a director since its inception in March 1994. From August 1988 to March 1994, Mr. Hsu served in various positions with Sierra Semiconductor, a semiconductor company, including Engineering Director. At Sierra Semiconductor, Mr. Hsu managed a development group, and was responsible for digital signal processing firmware development for modem products with data, fax and voice features. Mr. Hsu received a Bachelor of Science in Communication Engineering from National Chiao-Tung University, Taiwan, and a Master of Science in Computer Engineering from Oregon State University.

Mr. Han Yeh co-founded PC-Tel and has served as the Vice President of Technology and a director since its inception in March 1994. Mr. Yeh was a staff engineer at Sierra Semiconductor, a semiconductor company, from September 1993 to March 1994. Mr. Yeh holds a Bachelor of Science in Control Engineering from National Chiao-Tung University, Taiwan, and a Master of Science in Electrical Engineering from New York State University at Stony Brook.

Mr. Derek S. Obata has been Vice President of Sales for PC-Tel since April 1998. From August 1997 until joining PC-Tel, Mr. Obata was an independent consultant providing strategic planning, business development, marketing and sales support to emerging high technology companies. Mr. Obata served from February 1996 to July 1997 as Vice President, Worldwide Sales for Network Peripherals Incorporated, a networking company, and from September 1992 to September 1995 as Vice President, Worldwide Sales at Ministor Peripherals Corporation, a data storage company. Prior to this period, Mr. Obata served in a number of sales and sales management positions with Conner Peripherals and Seagate Technologies, which are data storage companies. Mr. Obata holds a Bachelor of Science in Engineering Sciences from the University of California, Berkeley.

Mr. Richard C. Alberding has been a director of PC-Tel since August 1999. Mr. Alberding retired from the Hewlett-Packard Company, a computer, peripherals and measurement products company, in June 1991, serving at that time as an Executive Vice President with responsibility for worldwide company sales, support and administration activities for measurement and computation products, as well as all corporate level marketing activities. Mr. Alberding is a director of Digital Link Corporation, Digital Microwave Corporation (which included a nine month period as interim Chairman/CEO), JLK Direct Distribution Inc., Paging Network, Inc., Sybase Inc. and Walker Interactive Systems. Mr. Alberding holds a Bachelor of Arts in Business Administration/Marketing from Augusta College in Rock Island, Illinois, and an Associate of Science in Electrical Engineering from DeVry Technical Institute in Chicago.

Dr. Martin H. Singer has been a director of PC-Tel since August 1999. Since December 1998, Dr. Singer has been President and CEO of SAFCO Technologies, Inc., a wireless communications company. From November 1994 to December 1997, Dr. Singer served as Vice-President and General Manager of the Wireless Access Business Development Division for Motorola, Inc., a communications equipment company. Prior to this period, Dr. Singer held senior management and technical positions in Motorola, Inc., Tellabs, Inc., AT&T and Bell Labs. Dr. Singer holds a Bachelor of Arts in Psychology from the University of Michigan, and a Master of Arts and a Ph.D. in Experimental Psychology from Vanderbilt University.



Mr. Wen C. Ko has been a director for PC-Tel since May 1999. Since 1990, Mr. Ko has served as Chairman of seven WK Investment Funds, which are high-tech venture capital investment companies, and during April 1992 to April 1995 as Chairman of Taipei Venture Capital Association. Prior to this, Mr. Ko served in a number of positions including Chairman & President and Computer Country Manager at Hewlett Packard Taiwan Ltd., a computation and communication system manufacturer and Research & Development Manager at International Business Machines, an information system technology company. Mr. Ko holds a Bachelor of Science in Electrical Engineering from National Cheng Kung University, Taiwan, and a Master of Science in System Science from Michigan State University.

Mr. Giacomo Marini has been a director of PC-Tel since October 1996. Since March 1995 Mr. Marini has served as President of MK Group LLC, a private investment and management consulting company that invests in and advises high technology companies, and from February 1998 to February 1999 as Interim Chief Executive Officer at FutureTel, Inc., a digital video company. From August 1993 to February 1995, Mr. Marini served as President and Chief Executive Officer of No Hands Software, Inc., an electronic publishing software company. He is currently on the board of various private companies. He holds a Computer Science Laureate Degree from the University of Pisa, Italy.

Dr. Mike Min-Chu Chen has been a director of PC-Tel since February 1994 and is the cousin of our Chief Executive Officer and Chairman of the Board, Peter Chen. From May 1985 to August 1998, Dr. Chen served as the Executive Vice President, Chief Executive Officer and Director of C & C International Services, Inc., an engineering and procurement service company. From March 1987 to August 1998, Dr. Chen served as Executive Vice President, Chief Executive Officer and Director of Act Engineering, Inc., an engineering design and trading company. From December 1996 to February 1997, Dr. Chen served as director of ERT Holding, Inc., a company engaged in the environmental rubber recycling manufacturing business, and served as President of International Operations from December 1996 to February 1997 and then as Chairman from February 1997 to October 1997. He is currently on the board of various private companies. Dr. Chen holds a Bachelor of Science in Naval Architecture from National Taiwan Ocean University, a Master in Science in Mechanical Engineering and Naval Architecture from National Taiwan University, Taiwan, and a Doctorate in Ocean Engineering from Oregon State University.

#### Board Composition

Our board of directors currently consists of eight members. Upon completion of this offering, our bylaws will provide for a classified board of directors consisting of three classes of directors, each serving staggered three-year terms. As a result, a portion of our board of directors will be elected each year. Class I directors' terms will expire at the annual meeting of stockholders to be held in 2000, Class II directors' terms will expire at the annual meeting of stockholders to be held in 2001 and Class III directors' terms will expire at the annual meeting of stockholders to be held in 2002. The Class I directors will be Peter Chen and Han Yeh, the Class II directors will be Wen C. Ko, Richard C. Alberding and William Wen-Liang Hsu, and the Class III directors will be Mike Min-Chu Chen, Giacomo Marini and Martin H. Singer. At each annual meeting of stockholders held after the initial classification, the successors to directors whose terms will then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. In addition, our bylaws provide that the authorized number of directors may be changed by an amendment to the bylaws, duly adopted by the board of directors or by the stockholders or by a duly adopted amendment to the certificate of incorporation. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the total number of directors. This classification of the board of directors may delay or prevent a change in control of our company or in our management.

Executive officers are appointed by the board of directors in accordance with our bylaws, and the rights, if any, of an officer under any contract of employment.

#### Board Committees

We established an audit committee and a compensation committee in August 1999. The audit committee consists of Giacomo Marini and Richard C. Alberding. The audit committee reviews our internal accounting

procedures and consults with and reviews the services provided by our independent accountants. The compensation committee consists of Richard C. Alberding and Martin H. Singer. The compensation committee reviews and recommends to the board of directors the compensation and benefits of all our officers and directors, including stock compensation and loans, and establishes and reviews general policies relating to the compensation and benefits of our employees.

#### Compensation Committee Interlocks and Insider Participation

Prior to establishing the compensation committee, the board of directors as a whole performed the functions delegated to the compensation committee. No member of the board of directors or the compensation committee serves as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving as a member of our board of directors or compensation committee.

#### Director Compensation

We do not pay our directors cash compensation for their service as members of the board of directors, although they are reimbursed for expenses in connection with attendance at board and committee meetings. Under our 1998 director option plan, non employee directors automatically receive stock option grants subject to the terms and conditions.

#### Limitations On Directors' Liability And Indemnification

Our certificate of incorporation limits the liability of directors to the maximum extent permitted by Delaware law. Delaware law provides that directors of a corporation will not be personally liable for monetary damages for breach of their fiduciary duties as directors, except liability for:

- . any breach of their duty of loyalty to the corporation or its stockholders,
- . acts of omissions not in good faith or which involve intentional misconduct or a knowing violation of law,
- . unlawful payments of dividends or unlawful stock repurchases or redemptions, or
- . any transaction from which the director derived an improper personal benefit.

The limitations of liability do not apply to liabilities arising under the federal securities laws and do not affect the availability of equitable remedies such as injunctive relief or rescission.

Our certificate of incorporation and bylaws provide that we will indemnify our directors and officers and may indemnify our employees and other agents to the fullest extent permitted by law. We believe that indemnification under our bylaws covers at least negligence and gross negligence on the part of indemnified parties. Our bylaws also permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in their capacity as an officer, director, employee or other agent, regardless of whether the bylaws would permit indemnification.

We have entered into agreements to indemnify our directors, executive officers and controller, in addition to the indemnification provided for in our bylaws. These agreements, among other things, provide for indemnification of our directors, executive officers and controller for judgment, fines, settlement amounts and expenses, including attorneys' fees incurred by the director, executive officer or controller in any action or proceeding, including any action by or in the right of PC-Tel, arising out of the person's services as a director, executive officer or controller of us, any of our subsidiaries or any other company or enterprise to which the person provides services at our request. We believe that these provisions and agreements are necessary to attract and retain qualified persons as directors and executive officers.

The limited liability and indemnification provisions in our certificate of incorporation and bylaws may discourage stockholders from bringing a lawsuit against our directors for breach of their fiduciary duty and may

reduce the likelihood of derivative litigation against our directors and officers, even though a derivative action, if successful, might otherwise benefit us and our stockholders. A stockholder's investment in us may be adversely affected to the extent we pay the costs of settlement or damage awards against our directors and officers under these indemnification provisions.

At present, there is no pending litigation or proceeding involving any of our directors, officers or employees in which indemnification is sought, nor are we aware of any threatened litigation that may result in claims for indemnification.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of us under the foregoing provisions or otherwise, we have been advised that in the opinion of the Securities and Exchange Commission this indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

#### Executive Compensation

The following table sets forth the compensation earned, awarded or paid for services rendered to us in all capacities for the fiscal year ended December 31, 1998, by our Chief Executive Officer and our four next most highly compensated executive officers who earned more than \$100,000 in salary and bonus during the fiscal year ended December 31, 1998 whom we refer to in this prospectus collectively as the named executive officers:

Summary Compensation Table

	Annual Compensation			Long-Term Compensation Awards	All Other Compensation (\$)
	Salary (\$)	Bonus (\$)	All Other Annual Compensation (\$)	Securities Underlying Options (#)	
Peter Chen..... Chief Executive Officer and Chairman	\$173,750	\$56,316	--	125,000	\$102 (1)
Andrew D. Wahl..... Vice President, Finance and Chief Financial Officer	136,500	31,833	--	15,000	288 (1)
William Wen-Liang Hsu... Vice President, Engineering	136,876	31,244	--	90,000	102 (1)
Han Yeh..... Vice President, Technology	136,876	31,244	--	90,000	174 (1)
Derek S. Obata..... Vice President, Sales	105,192	68,641	--	195,000	72 (1)

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(1) Consists of premiums paid by us for term life insurance.

OPTION GRANTS DURING LAST FISCAL YEAR

The following table shows information regarding stock options granted to the named executive officers during the fiscal year ended December 31, 1998. The potential realizable value is based on the assumption that our common stock appreciates at the annual rate shown, compounded annually, from the date of grant until the expiration of the ten-year term. These numbers are calculated based on Securities and Exchange Commission requirements and do not reflect projections or estimates of future stock price growth. Potential realizable values are computed by:

- . Multiplying the number of shares of common stock subject to a given option by the exercise price,
- . Assuming that the total stock value derived from that calculation compounds at the annual 5% or 10% rate shown in the table for the entire ten-year term of the option, and
- . Subtracting from that result the total option exercise price.

Actual gains, if any, on stock option exercises will be dependent on the future performance of the common stock. The percentage of total options is based on an aggregate of 1,393,900 options granted by us during the fiscal year ended December 31, 1998, to our employees, directors and consultants, including the named executive officers. Options were granted with an exercise price equal to the fair market value of our common stock, as determined in good faith by our board of directors.

Individual Grants

Name	Number of Securities Underlying Options Granted (#)	% of Total Options Granted to Employees During Period	Exercise Price Per Share*	Expiration Date	Potential Realizable Value at Assumed Annual Rates of Stock Appreciation for Option Term	
					5% (\$)	10% (\$)
Peter Chen.....	125,000(1)	8.97%	\$7.45	1/30/08	585,658	1,484,173
Andrew D. Wahl.....	15,000(2)	1.08%	\$7.45	2/27/08	70,279	178,101
William Wen-Liang Hsu...	90,000(3)	6.46%	\$7.45	1/30/08	421,674	1,068,604
Han Yeh.....	90,000(4)	6.46%	\$7.45	1/30/08	421,674	1,068,604
Derek S. Obata.....	130,000(5)	9.33%	\$7.45	3/31/08	609,084	1,543,540
	65,000(6)	4.66%	\$4.85+	4/30/08	198,259	502,427

\* Unless otherwise noted, the per share exercise price of stock option grants is the fair market value of our common stock on the date of grant. In determining the fair market value of our common stock for the purpose of establishing the exercise price of stock option grants, the board of directors in each case took into consideration a number of factors, including principally our operating results and financial condition at the time of stock option grant, key developments affecting our business and, where relevant, the most recent price of our preferred stock in connection with financing transactions with independent investors.

+ The fair market value of our common stock on the date of grant was \$7.45; however, our board of directors granted these options with an exercise price per share of \$4.85. We have taken a compensation charge for the difference between the fair market value and the exercise price per share for these options which will be expensed ratably over the life of the option.

- (1) As of June 30, 1999, 44,271 shares of the option to purchase 125,000 shares of common stock have vested. The options for Mr. Chen vested as to 25% on January 2, 1999, and the balance vests in a series of monthly installments over the next three years of service.
- (2) As of June 30, 1999, 5,000 shares of the option to purchase 15,000 shares of common stock have vested. The options for Mr. Wahl vested as to 25% on February 1, 1999, and the balance vests in a series of monthly installments over the next three years of service.
- (3) As of June 30, 1999, 31,875 shares of the option to purchase 90,000 shares of common stock have vested. The options for Mr. Hsu vested as to 25% on January 2, 1999, and the balance vests in a series of monthly installments over the next three years of service.
- (4) As of June 30, 1999, 31,875 shares of the option to purchase 90,000 shares of common stock have vested. The options for Mr. Yeh vested as to 25% on January 2, 1999, and the balance vests in a series of monthly installments over the next three years of service.
- (5) As of June 30, 1999, 32,500 shares of the option to purchase 130,000 shares of common stock have vested. The options for Mr. Obata vested as to 25% on April 20, 1999, and the balance vests in a series of yearly installments over the next three years of service.
- (6) As of June 30, 1999, 18,958 shares of the non-qualified option to purchase 65,000 shares of common stock have vested. The shares for Mr. Obata under this option vests five years from the anniversary date of the grant (April 20, 2003) or vesting may accelerate for a portion of the options based on a performance based vesting schedule.



AGGREGATE OPTION EXERCISES DURING LAST FISCAL YEAR  
AND FISCAL YEAR-END OPTION VALUES

The following table sets forth information with respect to the named executive officers concerning option exercises for the year ended December 31, 1998 and exercisable and unexercisable options held as of December 31, 1998. The value of unexercised in-the-money options is based on a price of \$9.25 per share, the fair market value of our stock on December 31, 1998 as determined by our board of directors, minus the per share exercise price, multiplied by the number of shares underlying the option. As of June 30, 1999, no options to purchase our common stock granted since January 1, 1998 have been exercised by the named executive officers.

	Number of Securities Underlying Options at December 31, 1998		Value of Unexercised In-the-Money Options at December 31, 1998	
	Exercisable	Unexercisable	Exercisable	Unexercisable
Peter Chen.....	87,502	162,498	\$767,830	\$554,045
Derek S. Obata.....	--	195,000	--	520,000
Andrew D. Wahl.....	62,292	82,708	498,336	568,664
Han Yeh.....	45,000	135,000	394,875	556,875
William Wen-Liang Hsu...	45,000	135,000	394,875	556,875

Incentive Stock Plans

1995 Stock Plan

Our 1995 stock plan provides for the granting to employees of incentive stock options within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended, or the Code, and for the granting to employees and consultants of nonstatutory stock options. The maximum aggregate number of shares which may be optioned and sold under the 1995 stock plan is 3,200,000 shares of common stock. As of December 31, 1998, options to purchase an aggregate of 662,753 shares of common stock were outstanding under the 1995 stock plan, with a weighted average exercise price of \$0.234. The board of directors has determined that no further options will be granted under the 1995 stock plan after this offering. The 1995 stock plan provides that in the event of a merger of our company with or into another corporation, or the sale of substantially all of our assets, each outstanding option will be assumed or substituted for by the successor corporation. If the successor corporation refuses to assume or substitute for the options, the options will terminate as of the closing of the merger or sale of assets.

1997 Stock Plan

Our 1997 stock plan, which we amended and restated on August 3, 1999, provides for the granting to employees of incentive stock options within the meaning of Section 422 of the Code, and for the granting to employees and consultants of nonstatutory stock options and stock purchase rights. The 1997 stock plan was originally approved by the board of directors and stockholders in November 1996 and was amended by our board of directors and stockholders in August 1999. As of December 31, 1998, options to purchase an aggregate of 2,422,555 shares of common stock were outstanding under the 1997 stock plan with a weighted price of \$5.575. Unless terminated sooner, the 1997 stock plan will terminate automatically in 2007. A total of 5,500,000 shares of common stock are currently reserved for issuance pursuant to the 1997 stock plan, plus annual increases equal of the lesser of:

- . 700,000 shares,
- . 4% of the outstanding shares on such date, or
- . a lesser amount determined by the board.

The 1997 stock plan may be administered by the board of directors or a committee of the board. The board of directors or committee of the board has the power to determine the terms of the options or stock purchase rights granted, including the exercise price, the number of shares for each option or stock purchase

right, the exercisability of the options or stock purchase rights granted, and the form of consideration payable upon the exercise. In addition, the board of directors or committee of the board has the authority to amend, suspend or terminate the 1997 stock plan, provided that this action may not affect any share of common stock previously issued and sold or any option previously granted under the 1997 stock plan.

Options and stock purchase rights granted under the 1997 stock plan are not generally transferable by the optionee, and each option and stock purchase right is exercisable during the lifetime of the optionee only by the optionee. Options granted under the 1997 stock plan must generally be exercised within three months of the end of optionee's status as an employee or consultant of our company, or within twelve months after the optionee's termination by death or disability, but in no event later than the expiration of the option's ten year term. The exercise price of all incentive stock options granted under the 1997 stock plan must be at least equal to 100% of the fair market value of the common stock on the date of grant. The exercise price of nonstatutory stock options and stock purchase rights granted under the 1997 stock plan is determined by the board of directors or a committee of the board, but with respect to nonstatutory stock options intended to qualify as "performance based compensation" within the meaning of Section 162(m) of the Code, the exercise price must at least be equal to 100% of the fair market value of the common stock on the date of grant. For any participant who owns stock possessing more than 10% of the voting power of all classes of our outstanding capital stock, the exercise price of any incentive stock option granted must equal at least 110% of the fair market value on the grant date and the term of the incentive stock option must not exceed five years. The term of all other options granted under the 1997 stock plan may not exceed ten years.

The 1997 stock plan provides that in the event of a merger of our company with or into another corporation, a sale of substantially all of our assets, each option or right shall be assumed or an equivalent option or right substituted by the successor corporation. If the outstanding options or rights are not assumed or substituted as described in the preceding sentence, the board of directors or a committee of the board shall provide for the optionee to have the right to exercise the option or stock purchase right as to all of the optioned stock, including shares as to which it would not otherwise be exercisable for a period of fifteen days from the date of the notice, and the option or stock purchase right will terminate upon the expiration of the period.

#### 1998 Employee Stock Purchase Plan

Our 1998 employee stock purchase plan was adopted by the board of directors in May 1998 but will not become effective until the closing date of this offering. A total of 800,000 shares of common stock has been reserved for issuance under the 1998 employee stock purchase plan, plus annual increases equal to the lesser of:

- . 350,000 shares,
- . 2% of the outstanding stock on such date, or
- . a lesser amount determined by the board of directors.

The 1998 employee stock purchase plan, which is intended to qualify under Section 423 of the Code, contains successive six-month offering periods. The offering periods generally start on the first trading day on or after February 15 and August 15 of each year, except for the first offering period which commences on the first trading day on or after the effective date of this offering and ends on the last trading day on or before February 14, 2000.

Employees are eligible to participate if they are customarily employed by us or any participating subsidiary for at least 20 hours per week and more than five months in any calendar year. However any employee who:

- . immediately after grant owns stock possessing 5% or more of the total combined voting power or value of all classes of our capital stock, or
- . whose rights to purchase stock under all employee stock purchase plans of our company accrues at a rate which exceeds \$25,000 worth of stock for each calendar year

may not be granted an option to purchase stock under the 1998 employee stock purchase plan.

The 1998 employee stock purchase plan permits participants to purchase common stock through payroll deductions of up to 15% of the participant's compensation. The maximum number of shares a participant may purchase during a single offering period is 2,000 shares.

Amounts deducted and accumulated by the participant are used to purchase shares of common stock at the end of each offering period. The price of stock purchased under the 1998 employee stock purchase plan is 85% of either the fair market value of the common stock at the beginning or end of the offering period whichever is lower. Participants may end their participation at any time during an offering period, and they will be paid their payroll deductions to date. Participation ends automatically upon termination of employment with us.

Rights granted under the 1998 employee stock purchase plan are not transferable by a participant other than by will, the laws of descent and distribution, or as otherwise provided under the 1998 employee stock purchase plan. The 1998 employee stock purchase plan provides that, in the event of a merger of our company with or into another corporation or a sale of substantially all of our assets, each outstanding option may be assumed or substituted for by the successor corporation. If the successor corporation refuses to assume or substitute for the outstanding options, the offering period then in progress will be shortened and a new exercise date, before the date of the proposed sale or merger, will be set. The 1998 employee stock purchase plan will terminate in 2008. The board of directors has the authority to amend or terminate the 1998 employee stock purchase plan, except that this action may not adversely affect any outstanding rights to purchase stock under the 1998 employee stock purchase plan.

#### 1998 Director Option Plan

Non employee directors are entitled to participate in the 1998 director option plan. The 1998 director option plan was adopted by the board of directors in May 1998, but it will not become effective until the closing date of this offering. The 1998 director option plan has a term of ten years, unless terminated sooner by the board of directors. A total of 200,000 shares of common stock have been reserved for issuance under the 1998 director option plan.

The 1998 director option plan provides for the automatic grant of options to purchase 15,000 shares of common stock to each new non employee director upon election to the board of directors. Options to purchase 15,000 shares will vest one-third on each anniversary of its date of grant until the option is fully vested, provided that the optionee continues to serve as a director on these dates. After the initial 15,000 share option is granted to the non employee director, he or she shall automatically be granted an option to purchase 7,500 shares on January 1 of each year, if on this date he or she shall have served on the board of directors for at least six months. The 7,500 share options shall vest completely on the anniversary of their date of grant, provided that the optionee continues to serve as a director on these dates. All of the options granted under the 1998 director option plan shall have a term of 10 years. The exercise price of all options shall be 100% of the fair market value per share of the common stock, generally determined with reference to the closing price of the common stock as reported on the Nasdaq National Market on the date of grant.

The 1998 director option plan provides that in the event of a merger of our company with or into another corporation, a sale of substantially all of our assets, each option or right shall be assumed or an equivalent option or right substituted by the successor corporation. If the outstanding options or rights are not assumed or substituted as described in the preceding sentence, the board of directors or a committee of the board shall provide for the optionee to have the right to exercise the option or stock purchase right as to all of the optioned stock, including shares as to which it would not otherwise be exercisable for a period of thirty days from the date of the notice, and the option or stock purchase right will terminate upon the expiration of the period. Options granted under the 1998 director option plan must be exercised within three months of the end of the optionee's tenure as a director of our company, or within twelve months after the director's termination by death or disability, but in no event later than the expiration of the option's ten year term. No option granted under the 1998 director option plan is transferable by the optionee other than by will or the laws of descent and distribution, and each option is exercisable, during the lifetime of the optionee, only by the optionee.



#### 401(k) Plan

Our 401(k) plan covers all of our employees beginning the first of the month following the month of their employment. Pursuant to this plan, employees may elect to contribute up to 15% of their current compensation to the 401(k) plan up to the statutorily prescribed annual limit, which was \$10,000 in 1998. Contributions by employees to the 401(k) plan, and income earned on plan contributions, are not taxable to employees until withdrawn. Further, contributions by PC-Tel, if any, will be deductible by PC-Tel, when made. Participating employees vest in employer contributions over five years at a rate of 20% for each year of service. There have been no employer contributions to the 401(k) plan during the year.

#### Employment Agreements and Change of Control Arrangements

We require each of our employees to enter into confidentiality agreements prohibiting the employee from disclosing any of our confidential or proprietary information. In addition, the agreements generally provide that upon termination the employee will not solicit our employees. At the time of commencement of employment, our employees also generally sign offer letters specifying basic terms and conditions of employment. In general, our employees do not have any written employment agreements with us.

We entered into an agreement on March 31, 1998 with Derek S. Obata which provides that his employment is at-will, he will receive an annual salary of \$150,000, plus commissions, and that in the event of a change in control of our company, he will be entitled to one year severance pay.

We entered into an agreement on July 20, 1999 with William F. Roach. The agreement provides that his employment will be at-will and his annual salary will be initially set at \$250,000 per year with an annual bonus of \$150,000 payable upon our achieving quarterly net income targets.

In addition, the agreement provides for Mr. Roach to be granted an option to purchase 400,000 shares of our common stock which vests according to the following schedule: 30% at the end of his first year of employment, 25% in years two and three and 20% in year four. Vesting after the twelfth month of employment is on a monthly basis. If this offering should take place within the first year of his employment, 50% of his first year's options will vest at the time of the offering, and the remaining 50% of his first year's options will vest upon reaching the completion of his twelfth month of employment. In addition, if his employment is terminated for any reason, other than for cause, he will be entitled to one year of severance. If the termination occurs within the first year of employment, he will be entitled to exercise his entire first year stock options.

TRANSACTIONS WITH RELATED PARTIES AND INSIDERS

Since January 1, 1995, there has not been, nor is there currently proposed, any transaction or series of similar transactions to which we were or are to be a party in which the amount exceeds \$60,000, and in which any director, executive officer, holder of more than 5% of our common stock or any member of the immediate family of any of the foregoing persons had or will have a direct or indirect material interest other than compensation agreements and other agreements, which are described under "Management," and the transactions described below.

Transactions with Directors, Executive Officers and 5% Stockholders

Series A preferred stock. Between February 10, 1994 and March 14, 1995, we sold 4,413,333 shares of our common stock at a price per share between \$0.10 and \$0.30. On May 9, 1995, we effected a recapitalization of our outstanding stock converting each share of common stock into one share of Series A preferred stock. On June 29, 1995, we sold 222,222 shares of our Series A preferred stock at a price per share of \$0.30. The following table lists the number of shares of Series A preferred stock sold to our directors, executive officers or 5% stockholders (and any members of the immediate family of these persons):

Purchaser -----	Shares of Series A preferred stock purchased -----
Peter & Sophia Chen.....	666,666
Han Yeh.....	280,000
I-Chung Yeh.....	133,333
Der-Chin Yeh.....	66,666
Yan-Chiou Yeh.....	26,666
Mike Min-Chu Chen.....	666,666
Wen-Liang Hsu.....	200,000
Steel Su.....	800,000
Ming-Hsiung Michael Ho.....	106,666

Series B preferred stock. Between October 18, 1995 and January 10, 1996, we sold 3,250,000 shares of our Series B preferred stock at a price per share of \$1.20. The following table lists the number of shares of Series B preferred stock sold to our directors, executive officers or 5% stockholders (and any members of the immediate family of these persons):

Purchaser -----	Shares of Series B preferred stock purchased -----
WK Technology Fund.....	555,800
WK Technology Fund II.....	402,500
WK Technology Fund III.....	958,366

Series C preferred stock. On February 4, 1998, we sold 625,200 shares of our Series C preferred stock at a price per share of \$8.00. The sale of Series C preferred stock included the sale of 125,000 shares of Series C preferred stock to WK Technology Funds, which is a holder of more than 5% of our common stock. In addition, Wen C. Ko, one of our directors, is Chairman of WK Technology Fund, WK Technology Fund II and WK Technology Fund III.

Employment Agreements with Executive Officers

We entered into an agreement on March 31, 1998 with Derek S. Obata which provides that his employment is at-will and he will receive an annual salary of \$150,000, plus commissions.

We entered into an agreement on July 20, 1999 with William F. Roach. The agreement provides that his employment will be at-will and his annual salary will be initially set at \$250,000 per year with an annual bonus of \$150,000 payable upon our achieving quarterly net income targets.

In addition, the agreement provides for Mr. Roach to be granted an option to purchase 400,000 shares at an exercise price of \$10.25 per share of our common stock which vests according to the following schedule: 30% at the end of his first year of employment, 25% in years two and three and 20% in year four. Vesting after the twelfth month of employment is on a monthly basis. If this offering should take place within the first year of his employment, 50% of his first year's options will vest at the time of the offering, and the remaining 50% of his first year's options will vest upon reaching the completion of his twelfth month of employment. In addition, if his employment is terminated for any reason, other than for cause, he will be entitled to one year of severance. If the termination occurs within the first year of employment, he will be entitled to exercise his entire first year stock options.

#### Loan to Executive Officer

On August 3, 1999, our board authorized an unsecured loan to William F. Roach, our President and Chief Operating Officer, pursuant to a full-recourse promissory note, for a principal amount of \$54,000 with a per annum interest rate of 8%. The promissory note shall become immediately due and payable upon the earlier of:

- .one year from the date the promissory note is executed, or
- . the termination of Mr. Roach's employment with us.

#### Other Transactions

Steel Su, a holder of more than 5% of our common stock and a member of our board of directors from March 1995 until November 1997, served as the President of BTC, a significant customer. For the years ended December 31, 1995, 1996, 1997 and 1998, the revenues generated from BTC were approximately \$99,000, \$1,660,000, \$2,153,000 and \$4,953,000, respectively.

#### Indemnification

We have entered into indemnification agreements with each of our directors, officers and controller. These indemnification agreements will require us to indemnify our officers to the fullest extent permitted by Delaware law.

All future transactions, including any loans from us to our officers, directors, principal stockholders or affiliates, will be approved by a majority of the board of directors or, if required by law, a majority of disinterested stockholders, and will be on terms no less favorable to us than could be obtained from unaffiliated third parties.

PRINCIPAL STOCKHOLDERS

The following table sets forth certain information regarding the beneficial ownership of our common stock as of June 30, 1999, and as adjusted to reflect the sale of our common stock offered by this prospectus, by:

- . each of the individuals listed on the "Summary Compensation Table" above,
- . each of our directors,
- . each person (or group of affiliated persons) who is known by us to own beneficially 5% or more of our common stock, and
- . all current directors and executive officers as a group.

Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, shares of common stock subject to options held by that person that are currently exercisable or exercisable within 60 days of June 30, 1999 are considered outstanding. These shares, however, are not considered outstanding for the purposes of computing the percentage ownership of each other person.

Except as indicated in the footnotes to this table and pursuant to applicable community property laws, each stockholder named in the table has sole voting and investment power with respect to the shares shown as beneficially owned by them. Percentage of ownership is based on 11,002,078 shares of common stock outstanding on June 30, 1999 and 15,602,078 shares of common stock outstanding after completion of this offering. This table assumes no exercise of the underwriters' over-allotment option. Unless otherwise indicated, the address of each of the individuals named below is: c/o PC-Tel, Inc., 70 Rio Robles, San Jose, California 95134.

Name and Address of Beneficial Owner	Beneficial Ownership Prior to Offering		Percent Beneficially Owned	
	Number of Shares Beneficially Owned	Shares Issuable pursuant to Options Exercisable within 60 days of June 30, 1999	Before Offering	After Offering
<b>5% Stockholders</b>				
Entities affiliated with the WK Technology Funds(1)				
10th Floor, 115, Sec. 3 Ming Sheng East Road Taipei, Taiwan 23136	1,916,666	16,146	17.5%	12.4%
Steel Su	583,333	16,146	5.4	3.8
Directors and Executive Officers				
Peter Chen(2)	589,999	136,981	6.5	4.6
Andrew D. Wahl	--	89,583	*	*
Steve Manuel	--	55,417	*	*
William Wen-Liang Hsu(3)	453,333	95,625	5.0	3.5
Han Yeh(4)	593,333	95,625	6.2	4.4
Derek S. Obata	--	54,167	*	*
Frank Reo	--	32,500	*	*
Mike Min-Chu Chen(5)	216,666	16,146	2.1	1.5
Giacomo Marini	12,800	13,346	*	*
Richard C. Alberding	--	--	*	*
William F. Roach	--	--	*	*
Martin H. Singer	--	--	*	*
Wen C. Ko(1)	1,916,666	16,146	17.5	12.4
All directors and executive officers as a group (13 persons)	3,782,797	605,536	37.8	27.1

\*Less than 1% of the outstanding shares of common stock.

- (1) Includes 555,800 shares held by WK Technology Fund, 402,500 shares held by WK Technology Fund II, and 958,366 shares held by WK Technology Fund III. Wen C. Ko is one of our directors and is Chairman of the WK Technology Funds. Mr. Ko disclaims beneficial ownership of the shares held by WK Technology Fund, WK Technology Fund II, and WK Technology Fund III, except to the extent of his pecuniary interest therein.
- (2) Includes 240,666 shares held by Mr. Chen with his wife as community property, 333,333 shares owned by himself individually, and 8,000 shares held by each of his minor children living at home, Robert and Michael Chen. Mr. Chen disclaims beneficial ownership of the shares held by his children, except to the extent of his pecuniary interest therein.
- (3) Includes 285,300 shares held by the William Wen-Liang Hsu and Rai-Yun Lee Family Trust, a revocable trust, over which shares Mr. Hsu has joint dispositive power, 123,700 shares held by himself personally, 20,830 held by each of his children living at home, Frederick and Joanne Hsu and 2,673 shares held by Hui-Ju Wang, Mr. Hsu's mother. Mr. Hsu disclaims the beneficial ownership of the shares held by his children and mother, except to the extent of his pecuniary interest therein.
- (4) Includes 577,333 shares owned by Mr. Yeh individually. Additionally includes 16,000 shares held by Emily C. Yeh, a minor daughter who lives in Mr. Yeh's home. Mr. Yeh disclaims beneficial ownership of the shares held by Emily G. Yeh, except to the extent of his pecuniary interest therein.
- (5) Includes 193,966 shares owned by Mr. Chen individually. Additionally includes 11,350 shares held by each of his children living at home. Mr. Chen disclaims beneficial ownership of the shares held by his children, except to the extent of his pecuniary interest therein.

## DESCRIPTION OF CAPITAL STOCK

### General

Upon completion of the offering we will be authorized to issue 50,000,000 shares of common stock, \$0.001 par value, and 5,000,000 shares of undesignated preferred stock, \$0.001 par value. The following is a summary description of our capital stock.

### Common Stock

As of June 30, 1999, there were 2,491,330 shares of common stock outstanding which were held of record by 163 stockholders, as adjusted to reflect the conversion of all outstanding shares of preferred stock upon closing of this offering.

The holders of common stock are entitled to one vote per share on all matters to be voted upon by the stockholders. The holders of common stock are entitled to receive their proportionate share of the dividends, if any, as may be declared from time to time by the board of directors out of funds legally available for that purpose. See "Dividend Policy." In the event of a liquidation, dissolution or winding up of PC-Tel, the holders of common stock are entitled to their proportionate share of all assets remaining after payment of liabilities, after taking into consideration the prior distribution rights of preferred stock, if any, then outstanding. The common stock has no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are fully paid and nonassessable, and the shares of common stock to be issued upon the closing of this offering will be fully paid and nonassessable.

### Preferred Stock

Immediately prior to this offering, our certificate of incorporation provided for three series of preferred stock, Series A preferred stock of which 4,635,548 shares were issued and outstanding, Series B preferred stock, of which 3,250,000 shares were issued and outstanding, and Series C preferred stock, of which 625,200 shares were issued and outstanding. Upon the closing of this offering, each outstanding share of Series A preferred stock, Series B preferred stock, and Series C preferred stock will automatically convert into one share of common stock.

Upon the closing of this offering, the board of directors will be authorized, without stockholder approval, from time to time to issue up to an aggregate of 5,000,000 shares of preferred stock, \$0.001 par value per share, in one or more series, each of the series to have such rights and preferences, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, as shall be determined by the board of directors. The rights of the holders of common stock will be affected by, and may be adversely affected by, the rights of holders of any preferred stock that may be issued in the future. 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 others to acquire, or of discouraging others from attempting to acquire, a majority of the outstanding voting stock of PC-Tel. We have no present plans to issue any shares of preferred stock.

### Warrants

At June 30, 1999, there were warrants outstanding to purchase a total of 200,000 shares of Series C preferred stock and 2,417 shares of common stock. Upon the closing of this offering, the warrants to purchase 200,000 shares of Series C preferred stock will become exercisable for an aggregate of 200,000 shares of common stock and will expire on December 31, 2008, unless earlier exercised. The warrants to purchase 2,417 shares of common stock will expire on February 4, 2001, unless earlier exercised. All warrants may be exercised on a "net" basis. If a warrant is exercisable on a "net" basis, instead of paying the exercise price in cash, the holder may instruct us to retain a number of shares that has a fair market value at the time of exercise equal to the aggregate exercise price.

## Registration Rights

The holders of 3,875,200 shares of common stock, and the holders of warrants to purchase 200,000 shares of common stock or their permitted transferees, are entitled to rights to register their shares under the Securities Act at any time after 180 days following the closing of this offering. These rights are provided under the terms of an agreement between us and the holders of registrable securities. The holders of at least 30% of the registrable securities then outstanding may require, on two occasions beginning after the date of this prospectus, that we use our best efforts to register the registrable securities for public resale. If we register any of our securities either for our own account or for the account of other security holders, the holders of registrable securities are entitled to include their shares of common stock in the registration, subject to the ability of the underwriters to limit the number of shares included in the offering. The holders of registrable securities may also require us to register all or a portion of their registrable securities on Form S-3 when use of the form becomes available to us, provided that the proposed aggregate selling price (net of any underwriters' discounts and expenses of sale) is at least \$1.0 million. All registration expenses must be borne by us and all selling expenses relating to registrable securities must be borne by the holders of the securities being registered.

## Delaware Anti-Takeover Law and Charter and Bylaw Provisions

Provisions of Delaware law and our certificate of incorporation and bylaws could make it more difficult to acquire us by means of a tender offer, a proxy contest or otherwise and the removal of incumbent officers and directors. These provisions, summarized below, are expected to discourage types of coercive takeover practices and inadequate takeover bids and to encourage persons seeking to acquire control of us to first negotiate with us. We believe that the benefits of increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposed to acquire or restructure us outweigh the disadvantages of discouraging takeover or acquisition proposals because negotiation of these proposals could result in an improvement of their terms.

We must comply with Section 203 of the Delaware General Corporation Law, an anti-takeover law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years following the date the person became an interested stockholder, unless the "business combination" or the transaction in which the person became an interested stockholder is approved in a prescribed manner. Generally, a "business combination" would include a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An "interested stockholder" would include a person who, together with affiliates and associates, owns (or within three years prior to the determination of interested stockholder status, did own) 15% or more of a corporation's voting stock. The existence of this provision would be expected to have an anti-takeover effect for transactions not approved in advance by the board of directors, including discouraging attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

Upon the closing of this offering, our certificate of incorporation and bylaws will require that any action required or permitted to be taken by our stockholders must be effected at a duly called annual or special meeting of the stockholders and may not be effected by a consent in writing. In addition, upon the close of this offering, special meetings of our stockholders may be called only by the board of directors or some of our officers. Our certificate of incorporation and bylaws also provide that, effective upon the closing of this offering, our board of directors will be divided into three classes, with each class serving staggered three-year terms. These provisions may have the effect of deterring hostile takeovers or delaying changes in control or management of PC-Tel.

## Transfer Agent and Registrar

The transfer agent and registrar for the common stock is Norwest Bank Minnesota, N.A. Its address is 161 North Concord Exchange, St. Paul, Minnesota, 55075 and its telephone number at this location is (615) 450-4189.

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no market for our common stock, and a significant public market for the common stock may not develop or be sustained after this offering. Future sales of substantial amounts of common stock (including shares issued upon exercise of outstanding options and warrants) in the public market following this offering could adversely affect market prices prevailing from time to time and could impair our ability to raise capital through sale of our equity securities. As described below, no shares currently outstanding will be available for sale immediately after this offering because of contractual restrictions on resale. Sales of substantial amounts of our common stock in the public market after the restrictions lapse could adversely affect the prevailing market price and our ability to raise equity capital in the future.

Upon completion of this offering we will have outstanding 15,602,078 shares of common stock (based upon shares outstanding as of June 30, 1999), assuming no exercise of the underwriters' over-allotment option and no exercise of outstanding options or warrants that do not expire prior to completion of this offering. Of these shares, the 4,600,000 shares sold in this offering will be freely tradable without restriction under the Securities Act except for any shares purchased by "affiliates" of PC-Tel as that term is defined in Rule 144 under the Securities Act.

The remaining 11,002,078 shares of common stock, and common stock equivalents of 202,417 shares, held by existing stockholders were issued and sold by us in reliance on exemptions from the registration requirements of the Securities Act. 10,256,807 shares eligible for sale under Rule 144 are subject to lock-up agreements with the underwriters that provide that we and those holders of stock and options may not dispose of or hedge any common stock or securities convertible into or exchangeable for shares of common stock. These restrictions will be in effect for a period of 180 days after the date of this prospectus. At any time and without notice, Banc of America Securities LLC may, in its sole discretion, release all or some of the securities from these lock-up agreements. In addition, holders of stock options could exercise these options and sell some of the shares issued upon exercise as described below:

Relevant Dates	Approximate Shares Eligible for Future Sale	Comment
On effective date(1).....	585,549	Shares sold in this offering and eligible for sale under Rule 144(k)
90 days after effective date(2).....	159,722	Additional shares eligible for sale under Rules 144 and 701
180 days after effective date(2).....	9,686,807	All shares subject to lock-up released; additional shares eligible for sale under Rules 144 and 701
More than 181 days after effective date(2).....	570,000	Additional shares becoming eligible for sale under Rule 144 more than 180 days after the effective date

(1) Assumes no exercise of the underwriters' over-allotment option.  
 (2) Assumes an effective date of September 30, 1999.

In addition, as of June 30, 1999, there were outstanding options and warrants to purchase 4,018,127 shares of common stock. All these options and warrants are subject to lock-up agreements.

Rule 144

In general, under Rule 144, an affiliate of PC-Tel, or person (or persons whose shares are aggregated) who has beneficially owned restricted shares for at least one year, will be entitled to sell in any three-month period a number of shares that does not exceed the greater of:

- . 1% of the then outstanding shares of common stock (approximately 15,804 shares immediately after this offering), or



. the average weekly trading volume during the four calendar weeks preceding the date on which notice of the sale is filed with the SEC.

Sales under Rule 144 must also comply with certain manner of sale provisions and notice requirements and to the availability of current public information about PC-Tel.

#### Rule 144(k)

Under Rule 144(k), a person who is not considered to have been one of our "affiliates" at any time during the 90 days preceding a sale, and who has beneficially owned the shares proposed to be sold for at least two years, including the holding period of any prior owner other than an "affiliate," is entitled to sell these shares without complying with the manner of sale, notice filing, volume limitation or notice provisions of Rule 144. Therefore, unless otherwise restricted, "144(k) shares" may be sold immediately upon the completion of this offering.

#### Rule 701

Rule 701 permits resale of shares in reliance upon Rule 144 but without compliance with the holding period requirement, of Rule 144. Any employee, officer or director of or consultant to PC-Tel who purchased shares pursuant to a written compensatory plan or contract may be entitled to rely on the resale provision of Rule 701. Rule 701 permits affiliates to sell their Rule 701 shares under Rule 144 without complying with the holding period requirements of Rule 144. Rule 701 further provides that non-affiliates may sell these shares in reliance on Rule 144 without having to comply with the holding period, public information, volume limitation or notice provisions of Rule 144. All holders of Rule 701 shares are required to wait until 90 days after the date of this Prospectus before selling such shares. However, all Rule 701 shares are subject to lock-up agreements and will only become eligible for sale at the earlier of the expiration of the 180-day lock-up agreements or no sooner than 90 days after the offering upon obtaining the prior written consent of Banc of America Securities LLC.

We are unable to estimate the number of shares that will be sold under Rule 144, as this will depend on the market price for the common stock, the personal circumstances of the sellers and other factors.

180 days following the date of this prospectus, we intend to file a registration statement on Form S-8 under the Securities Act covering, among other things, shares of common stock covered by outstanding options under the 1995 stock plan, the 1997 stock plan, the 1998 director option plan and the 1998 employee stock purchase plan. Based on the number of shares covered by outstanding options as of September 30, 1999 and currently reserved for issuance under the incentive plans, the registration statement would cover approximately 9,700,000 shares. The registration statement will automatically become effective upon filing. Accordingly, shares registered under the registration statement will, after complying with Rule 144 volume limitations applicable to affiliates of PC-Tel, be available for sale in the open market immediately after the 180-day lock-up agreements expire.

#### Registration Rights

Also beginning six months after the date of this offering, holders of 3,875,200 shares of common stock, as converted, and the holders of warrants to purchase 200,000 shares of common stock, as converted, or their permitted transferees will be entitled to specific rights to register these shares for sale in the public market. See "Description of Capital Stock--Registration Rights." Registration of these shares under the Securities Act would result in these shares becoming freely tradable without restriction under the Securities Act (except for shares purchase by affiliates) immediately upon the effectiveness of the registration.

UNDERWRITING

We are offering the shares of common stock described in this prospectus through a number of underwriters. Banc of America Securities LLC, Warburg Dillon Read LLC and Needham & Company, Inc., are the representatives of the underwriters. We have entered into an underwriting agreement with the representatives. According to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each of the underwriters has agreed to purchase, the number of shares of common stock listed next to its name in the following table:

Underwriter -----	Number of Shares -----
Banc of America Securities LLC.....	
Warburg Dillon Read LLC.....	
Needham & Company, Inc.....	
Total.....	4,600,000

The underwriters initially will offer shares to the public at the price specified on the cover page of this prospectus. The underwriters may allow to some dealers a concession of not more than \$ per share. The underwriters also may allow, and any other dealers may reallow, a concession of not more than \$ per share to some other dealers. If all the shares are not sold at the initial public offering price, the underwriters may change the offering price and the other selling terms. The common stock is offered subject to a number of conditions, including:

- . receipt and acceptance of our common stock by the underwriters, and
- . the right to reject orders in whole or in part.

We have granted an option to the underwriters to buy up to 690,000 additional shares of common stock. These additional shares would cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters have 30 days to exercise this option. If the underwriters exercise this option, they will each purchase additional shares approximately in proportion to the amounts specified in the table above.

We, all our stockholders and all of our officers and directors have entered into lock-up agreements with the underwriters. Under those agreements, we and those holders of stock and options may not dispose of or hedge any common stock or securities convertible into or exchangeable for shares of common stock. These restrictions will be in effect for a period of 180 days after the date of this prospectus. At any time and without notice, Banc of America Securities LLC may, in its sole discretion, release all or some of the securities from these lock-up agreements.

We will indemnify the underwriters against some liabilities, including some liabilities under the Securities Act. If we are unable to provide this indemnification, we will contribute to payments the underwriters may be required to make in respect of those liabilities.

The shares of common stock have been approved for listing on the Nasdaq National Market under the symbol "PCTI."

In connection with this offering, the underwriters may purchase and sell shares of common stock in the open market. These transactions may include:

- . short sales,
- . stabilizing transactions, and
- . purchase to cover positions created by short sales.

Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in this offering. Stabilizing transactions consist of bids or purchases made for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress.

The underwriters also may impose a penalty bid. This means that if the representatives purchase shares in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

The underwriters may engage in activities that stabilize, maintain or otherwise affect the price of the common stock, including:

- . over-allotment,
- . stabilization,
- . syndicate covering transactions, and
- . imposition of penalty bids.

As a result of these activities, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on the Nasdaq National Market, in the over-the-counter market or otherwise.

The underwriters do not expect sales to discretionary accounts to exceed 5% of the total number of shares of common stock offered by this prospectus.

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be negotiated between us and the underwriters. Among the factors to be considered in the negotiations are:

- . our history and prospects, and the history and prospectus of the industry in which we compete,
- . our past and present financial performance,
- . an assessment of our management,
- . the present state of our development,
- . our prospects for future earnings,
- . the prevailing market conditions of the applicable U.S. securities market at the time of this offer,
- . market valuations of publicly traded companies that we and the underwriters believe to be comparable to us, and
- . other factors deemed relevant by us and the underwriters.

The underwriters have reserved up to 200,000 shares of the common stock to be sold in this offering for sale to some of our employees, directors and their associates, and to other individuals or companies who have commercial arrangements or personal relationships with us. Through this directed share program, we intend to ensure that those individuals and companies that have supported us, or who are in a position to support us in the future, have the opportunity to purchase our common stock at the same price that we are offering our shares to the general public. We do not currently expect that more than approximately 750 individuals (including our employees, directors and their associates) and companies will participate in the directed share program. Prospective participants will not receive any investment materials other than a copy of this prospectus, and will be permitted to participate in this offering at the initial public offering price set forth on the cover page of this prospectus. No commitment to purchase shares by any participant in the directed share program will be accepted until after the registration statement of which this prospectus is a part is effective and an initial public offering price has been established. The number of shares available for sale to the general public will be reduced by the number of shares sold through the directed share program.

## LEGAL MATTERS

The validity of the common stock offered hereby will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California. Certain legal matters will be passed upon for the underwriters by Brobeck, Phleger & Harrison LLP, San Francisco, California. Certain legal matters related to intellectual property will be passed on for PC-Tel by Knobbe, Martens, Olson & Bear, LLP, Newport Beach, California.

## EXPERTS

The consolidated financial statements and schedules of PC-Tel, Inc. included in this prospectus and elsewhere in the registration statement have been audited by Arthur Andersen LLP, independent public accountants, as indicated in their reports with respect thereto, and are included herein in reliance upon the authority of said firm as experts in giving said reports.

The financial statements of the Communications Systems Division, a division of General DataComm, Inc. included in this prospectus and elsewhere in the registration statement have been audited by PricewaterhouseCoopers LLP, independent public accountants, as indicated in their report with respect thereto, and are included herein, in reliance upon the authority of said firm as experts in giving said report.

## WHERE YOU CAN FIND ADDITIONAL INFORMATION

We filed with the Securities and Exchange Commission, Washington, D.C., a registration statement on Form S-1 under the Securities Act with respect to the shares of common stock sold in this offering. This prospectus does not contain all the information in the registration statement and the exhibits and schedules thereto. For further information with respect to PC-Tel and our common stock, we refer you to the registration statement and to the exhibits and schedules that were filed with the registration statement. Statements contained in this prospectus as to the contents of any contract or other document that is filed as an exhibit to the registration statement are not necessarily complete, and we refer you to the full text of the contract or other document filed as an exhibit to the registration statement. A copy of the registration statement may be inspected by anyone without charge at the Public Reference Section of the Securities and Exchange Commission at Room 1024, Judiciary Plaza, 450 Fifth Street, N.W., Washington, D.C. 20549. Copies of all or any portion of the registration statement may be obtained from the Public Reference Section of the Securities and Exchange Commission, 450 Fifth Street, N.W., Washington, D.C. 20549, upon payment of prescribed fees. The Securities and Exchange Commission maintains a World Wide Web site that contains reports, proxy and information statements and other information regarding registrants that file electronically with the Securities and Exchange Commission. The address of the site is <http://www.sec.gov>.

Upon completion of this offering, PC-Tel must comply with the information and periodic reporting requirements of the Securities Exchange Act of 1934, and, in accordance with the requirements of the Securities Exchange Act of 1934, will file periodic reports, proxy statements and other information with the Securities and Exchange Commission. These periodic reports, proxy statements and other information will be available for inspection and copying at the regional offices, public reference facilities and web site of the Securities and Exchange Commission referred to above.

PC-TEL, INC.

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REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS

To PC-Tel, Inc.:

We have audited the accompanying consolidated balance sheets of PC-Tel, Inc. (a Delaware corporation) and subsidiaries as of December 31, 1997 and 1998 and the related consolidated statements of operations, stockholders' equity and cash flows for each of the three years in the period ended December 31, 1998. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated 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 consolidated 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, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of PC-Tel, Inc. and subsidiaries as of December 31, 1997 and 1998, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 1998 in conformity with generally accepted accounting principles.

ARTHUR ANDERSEN LLP

San Jose, California  
March 4, 1999

## PC-TEL, INC.

CONSOLIDATED BALANCE SHEETS  
(in thousands, except share and per share data)

	December 31,		June 30, 1999	
	1997	1998	June 30, 1999	Pro Forma Stockholders' Equity (Note 8)
	(unaudited)			
ASSETS				
CURRENT ASSETS:				
Cash and cash equivalents.....	\$ 6,685	\$12,988	\$17,252	
Short-term investments.....	--	--	6,282	
Accounts receivable, net of allowance for doubtful accounts of \$604, \$1,689 and \$3,382, respectively....	6,058	12,931	5,516	
Subscriptions receivable.....	5,002	--	--	
Inventories.....	989	2,073	3,590	
Prepaid expenses and other assets....	926	264	472	
Deferred tax asset.....	2,680	1,903	2,241	
	22,340	30,159	35,353	
PROPERTY AND EQUIPMENT, net.....	713	1,042	1,475	
GOODWILL AND OTHER INTANGIBLE ASSETS, net.....	--	10,812	9,730	
DEFERRED TAX ASSET.....	--	2,302	2,417	
OTHER ASSETS.....	95	1,681	1,508	
	\$23,148	\$45,996	\$50,483	
LIABILITIES AND STOCKHOLDERS' EQUITY				
CURRENT LIABILITIES:				
Current portion of long-term debt....	\$ --	\$ 1,640	\$ 1,847	
Accounts payable.....	1,577	5,155	3,564	
Accrued royalties.....	6,505	5,144	6,516	
Income taxes payable.....	--	1,207	2,044	
Accrued liabilities.....	1,418	3,002	5,021	
	9,500	16,148	18,992	
LONG-TERM DEBT, net of current portion.....	38	14,709	13,630	
COMMITMENTS AND CONTINGENCIES (Note 6)				
STOCKHOLDERS' EQUITY:				
Preferred stock, \$0.001 par value; aggregate liquidation preference of \$10,015 as of December 31, 1998 and June 30, 1999 Authorized--9,385,548 Outstanding--7,885,548, 8,510,748, 8,510,748 and 0 shares pro forma, respectively; subscribed--625,200, 0, 0 and 0 shares pro forma, respectively.....	9	9	9	\$ --
Common stock, \$0.001 par value Authorized--50,000,000 Outstanding--2,208,990, 2,412,247, 2,491,330 and 11,002,078 shares pro forma, respectively.....	2	2	2	11
Additional paid-in capital.....	9,667	10,915	12,881	12,881
Deferred compensation.....	--	(214)	(2,162)	(2,162)
Retained earnings.....	3,932	4,427	7,131	7,131
	13,610	15,139	17,861	17,861
	\$23,148	\$45,996	\$50,483	\$50,483

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

PC-TEL, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS  
(in thousands, except per share amounts)

	Year Ended December 31,			Six Months Ended June 30,	
	1996	1997	1998	1998	1999
					(unaudited)
REVENUES.....	\$16,573	\$24,009	\$33,004	\$12,343	\$33,046
COST OF REVENUES.....	9,182	12,924	13,878	5,948	16,997
GROSS PROFIT.....	7,391	11,085	19,126	6,395	16,049
OPERATING EXPENSES:					
Research and development.....	2,152	3,348	4,932	2,455	4,423
Sales and marketing.....	839	3,168	5,624	2,407	4,945
General and administrative.....	477	1,612	2,169	791	2,063
Acquired in-process research and development (Note 4).....	--	--	6,130	--	--
Amortization of deferred compensation.....	41	--	43	10	164
Total operating expenses.....	3,509	8,128	18,898	5,663	11,595
INCOME FROM OPERATIONS.....	3,882	2,957	228	732	4,454
OTHER INCOME (EXPENSE), NET:					
Interest income.....	127	299	504	254	303
Interest expense.....	--	--	(25)	(11)	(895)
Total other income (expense), net.....	127	299	479	243	(592)
INCOME BEFORE PROVISION FOR INCOME TAXES.....	4,009	3,256	707	975	3,862
PROVISION FOR INCOME TAXES.....	1,005	955	212	292	1,158
NET INCOME.....	\$ 3,004	\$ 2,301	\$ 495	\$ 683	\$ 2,704
Basic earnings per share.....	\$ 4.79	\$ 1.13	\$ 0.21	\$ 0.29	\$ 1.10
Diluted earnings per share.....	\$ 0.29	\$ 0.20	\$ 0.04	\$ 0.06	\$ 0.21
Shares used in computing basic earnings per share.....	627	2,032	2,355	2,320	2,461
Shares used in computing diluted earnings per share.....	10,280	11,645	12,325	12,400	12,638

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



PC-TEL, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY  
(in thousands, except share and per share amounts)

	Preferred Stock		Common Stock		Additional Paid-In Capital	Deferred Compensation	(Accumulated Deficit)/ Retained Earnings	Total
	Shares	Amount	Shares	Amount				
BALANCE, DECEMBER 31, 1995.....	7,562,208	\$ 8	--	\$--	\$ 4,593	\$ --	\$(1,373)	\$ 3,228
Issuance of Series B convertible preferred stock for cash at \$1.20 per share.....	323,340	--	--	--	388	--	--	388
Issuance of common stock on exercise of stock options.....	--	--	1,454,999	1	27	--	--	28
Stock compensation expense for stock option grants.....	--	--	--	--	41	--	--	41
Net income.....	--	--	--	--	--	--	3,004	3,004
BALANCE, DECEMBER 31, 1996.....	7,885,548	8	1,454,999	1	5,049	--	1,631	6,689
Subscription for Series C convertible preferred stock for cash at \$8.00 per share, net of issuance costs of \$406.....	625,200	1	--	--	4,595	--	--	4,596
Issuance of common stock on exercise of stock options.....	--	--	753,991	1	23	--	--	24
Net income.....	--	--	--	--	--	--	2,301	2,301
BALANCE, DECEMBER 31, 1997.....	8,510,748	9	2,208,990	2	9,667	--	3,932	13,610
Issuance costs for Series C convertible preferred stock.....	--	--	--	--	(44)	--	--	(44)
Deferred compensation expense for stock option grants.....	--	--	--	--	257	(257)	--	--
Stock compensation expense for stock option grants.....	--	--	--	--	--	43	--	43
Issuance of common stock on exercise of stock options.....	--	--	203,257	--	34	--	--	34
Issuance of Series C convertible stock warrants in conjunction with notes payable.....	--	--	--	--	1,350	--	--	1,350
Costs incurred related to initial public offering.....	--	--	--	--	(349)	--	--	(349)
Net income.....	--	--	--	--	--	--	495	495
BALANCE, DECEMBER 31, 1998.....	8,510,748	9	2,412,247	2	10,915	(214)	4,427	15,139
Deferred compensation expense for stock option grants (unaudited).....	--	--	--	--	2,112	(2,112)	--	--
Stock compensation expense for option grants (unaudited)....	--	--	--	--	--	164	--	164
Issuance of common stock on exercise of stock options (unaudited).....	--	--	79,083	--	10	--	--	10
Costs incurred related to initial public offering (unaudited)..	--	--	--	--	(156)	--	--	(156)
Net income (unaudited).....	--	--	--	--	--	--	2,704	2,704
BALANCE, JUNE 30, 1999 (unaudited).....	8,510,748	\$ 9	2,491,330	\$ 2	\$12,881	\$(2,162)	\$ 7,131	\$17,861

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



Net increase in cash and cash equivalents.....	3,909	1,100	6,303	5,687	4,264
CASH AND CASH EQUIVALENTS, beginning of period.....	1,676	5,585	6,685	6,685	12,988
	-----	-----	-----	-----	-----
CASH AND CASH EQUIVALENTS, end of period.....	\$ 5,585	\$ 6,685	\$ 12,988	\$ 12,372	\$ 17,252
	=====	=====	=====	=====	=====
SUPPLEMENTAL CASH FLOW INFORMATION:					
Cash paid for interest.....	\$ --	\$ --	\$ 25	\$ 11	\$ 895
Cash paid for income taxes....	\$ 961	\$ 4,372	\$ 462	\$ 317	\$ 775
Property and equipment acquired under capital leases.....	\$ 7	\$ 67	\$ --	\$ --	\$ --
Issuance of warrants for preferred and common stock...	\$ --	\$ --	\$ 1,400	\$ 50	\$ --
Increases to deferred compensation.....	\$ --	\$ --	\$ 257	\$ --	\$ 2,112

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

(Information relating to the six months ended June 30, 1998 and June 30, 1999 is unaudited)

DECEMBER 31, 1998

1. ORGANIZATION AND OPERATIONS OF THE COMPANY:

PC-Tel, Inc. ("the Company") is a corporation that was originally incorporated in California in February 1994. In July 1998, the Company reincorporated in Delaware and this reincorporation has been reflected retroactively in the accompanying consolidated financial statements. The Company is a leading provider of software based connectivity solutions to individuals and businesses worldwide. The Company designs, develops, produces and markets advanced software-based high performance, low cost modems that are flexible and upgradeable, with functionality that can include data/fax transmission at various speeds, video conferencing and telephony features. The Company's host signal processing software architecture utilizes the host PC's central processing unit to perform digital signal processing and other operations typically handled by dedicated hardware found in conventional hardware-based modems. The Company's host signal processing technology allows the elimination of this dedicated hardware, lowering costs and enhancing capabilities.

The Company is subject to certain risks including, but not limited to, competition from larger, more established companies, reliance on a limited number of customers, dependence on new product introductions, short product life cycles, the Company's ability to develop and bring to market new products on a timely basis, volatility of the industry including technical obsolescence, dependence on key employees and the ability to attract and retain additional qualified personnel to manage the anticipated growth of the Company.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles 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 date of the financial statements and the reported amounts of revenues and expenses during the period. Actual results could differ from those estimates.

Consolidation and Foreign Currency Translation

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries after elimination of intercompany accounts and transactions. The functional currency of the Company's subsidiaries is the United States dollar, accordingly, all translation gains and losses resulting from transactions denominated in currencies other than United States dollars are included in net income. As of December 31, 1998, the Company has subsidiaries in the Cayman Islands and Japan.

Cash and Cash Equivalents

For the purposes of the consolidated balance sheets and the consolidated statements of cash flows, the Company considers all highly liquid debt instruments or money-market type funds with an original maturity of three months or less to be cash equivalents.

Short-Term Investments

At June 30, 1999, short-term investments consist of U.S. Government investments with an original maturity of approximately four months and a certificate of deposit with an original maturity in excess of three months. These short-term investments are classified as available-for-sale and are recorded at their fair value. If

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

material, any unrealized gains or losses would be classified as Other Comprehensive Income in the accompanying statement of stockholders' equity. As of June 30, 1999, the cost and fair value of the short-term investments were not materially different.

## Concentrations of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash investments and trade receivables. The Company has cash investment policies that limit its investments to short-term, low-risk investments. With respect to trade receivables, the Company's customers are concentrated in the personal computer industry and modem board manufacturer industry segment and in certain geographic locations. The Company actively markets and sells products in Asia. The Company performs ongoing evaluations of its customers' financial conditions and generally requires no collateral. As of December 31, 1997, approximately 55% of gross accounts receivable was concentrated with three customers. As of December 31, 1998, approximately 54% of gross accounts receivable was concentrated with three customers. As of June 30, 1999, approximately 48% of gross accounts receivable was concentrated with three customers.

## Inventories

Inventories are stated at the lower of cost or market and include material, labor and overhead costs. Inventories at December 31, 1997 and 1998 and June 30, 1999 were composed of finished goods only. Inventories included certain finished goods that were in excess of the Company's expected requirements and the excess amounts were fully reserved as of December 31, 1997, 1998 and June 30, 1999. Due to competitive pressures and technological innovation, it is possible these estimates could change in the near term.

## Property and Equipment

Property and equipment are stated at cost and are depreciated using the straight-line method over the estimated useful lives (three to seven years) of the assets. Assets acquired under capital leases are recorded at the present value of the related lease obligations and are depreciated on a straight-line basis over the shorter of the estimated useful life or lease term. Included in property and equipment are assets acquired under capital lease obligations with an original cost of approximately \$74,000. Accumulated amortization on the leased assets was approximately \$6,000 and \$22,000 as of December 31, 1997 and 1998, respectively. Leasehold improvements are amortized over the corresponding lease term.

Property and equipment consists of the following (in thousands):

	December 31,		June 30, 1999
	1997	1998	
			(unaudited)
Computer and office equipment.....	\$ 868	\$1,296	\$1,962
Furniture and fixtures.....	119	264	271
Leasehold improvements.....	6	55	72
	-----	-----	-----
Total property and equipment.....	993	1,615	2,305
Less: Accumulated depreciation and amortization.....	(280)	(573)	(830)
	-----	-----	-----
Property and equipment, net.....	\$ 713	\$1,042	\$1,475
	=====	=====	=====

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

## Accounting for Impairment of Long-Lived Assets

The Company assesses the need to record impairment losses on long-lived assets used in operations when indicators of impairment are present. On an on-going basis, management reviews the value and period of amortization or depreciation of long-lived assets, including costs in excess of net assets of businesses acquired. During this review, the significant assumptions used in determining the original cost of long-lived assets are reevaluated. Although the assumptions may vary from transaction to transaction, they generally include revenue growth, operating results, cash flows and other indicators of value. Management then determines whether there has been a permanent impairment of the value of long-lived assets by comparing future estimated undiscounted cash flows to the asset's carrying value. If the estimated future undiscounted cash flows exceed the carrying value of the asset, a loss is recorded as the excess of the asset's carrying value over fair value. To date, the Company has not needed to record any impairment losses on long-lived assets.

## Software Development Costs

The Company accounts for software development costs in accordance with Statement of Financial Accounting Standards ("SFAS") No. 86, "Accounting for the Costs of Computer Software to be Sold, Leased or Otherwise Marketed." The Company's products include a software component. The Company has expensed all software development costs to date, and substantially all development costs have been incurred prior to the Company's products attaining technological feasibility.

## Revenue Recognition

Revenues consist primarily of sales of products to original equipment manufacturers ("OEMs") and distributors. Revenues from sales to OEMs are recognized upon shipment. The Company provides for estimated sales returns and allowances related to sales to OEMs at the time of shipment. Revenues from sales to distributors are made under agreements allowing price protection and rights of return on unsold products. In the fourth quarter of 1998, the Company began to record revenue relating to sales to distributors upon sell-through from the distributor to the end customer. Prior to this change, the Company recognized revenues upon shipment to distributors, net of reserves for estimated returns and price protection arrangements. While the Company's previous method of accounting was in accordance with generally accepted accounting principles, the Company believes that the new method is preferable. In the opinion of management, the new revenue recognition method better reflects the economics of the transaction and provides a better measure of operating results. In accordance with Accounting Principles Board Opinion No. 20, "Accounting Changes", ("APB No. 20"), the cumulative effect of changing the Company's revenue recognition policies related to sales to distributors was not material to the Company's financial statements.

The Company has also generated revenues from engineering contracts. Revenues from engineering contracts are recognized as contract milestones are achieved. Royalty revenue is recognized when confirmation of royalties due to the Company is received from licensees.

## Stock-Based Compensation

The Company accounts for stock based compensation in accordance with SFAS No. 123 "Accounting for Stock-Based Compensation." SFAS No. 123 permits the use of either a fair value based method or the method defined in Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees", ("APB No. 25"), to account for stock-based compensation arrangements. Companies that elect to employ the valuation method provided in APB No. 25 are required to disclose the pro forma net income (loss) that would have resulted from the use of the fair value based method. Under APB 25, if the exercise price of the Company's

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

employee stock options equals or exceeds the fair value of the underlying stock on the date of grant as determined by Company's board of directors, no compensation expense is recognized. The Company has elected to continue to determine the value of stock-based compensation arrangements under the provisions of APB No. 25 and, accordingly, it has included the pro forma disclosures required under SFAS No. 123 in Note 8.

## Earnings Per Share

The Company computes earnings per share in accordance with SFAS No. 128, "Earnings Per Share". SFAS No. 128 requires companies to compute net income per share under two different methods, basic and diluted, and present per share data for all periods in which a statement of operations is presented. Basic earnings per share is computed by dividing net income per share by the weighted average number of shares of common stock outstanding.

Diluted earnings per share is computed using the weighted average number of common stock and common stock equivalents outstanding during the period. Common stock equivalents consist of preferred stock using the "if converted" method and stock options and warrants using the treasury stock method. Preferred stock, common stock options and warrants are excluded from the computation of diluted earnings per share if their effect is anti-dilutive.

Pursuant to the Securities and Exchange Commission Staff Accounting Bulletin No. 98, convertible preferred stock and common stock issued or granted for nominal consideration prior to the anticipated effective date of the proposed initial public offering must be included in the calculation of basic and diluted net income per common share as if they had been outstanding for all periods presented. To date, the Company has not had any issuances or grants for nominal consideration.

The following table provides a reconciliation of the numerators and denominators used in calculating basic and diluted earnings per share for the three years ended December 31, 1998 and for the six months ended June 30, 1998 and June 30, 1999, respectively (in thousands, except per share data):

	Year Ended December 31,			Six Months Ended June 30,	
	1996	1997	1998	1998	1999
	-----				
	(unaudited)				
Net income.....	\$ 3,004	\$ 2,301	\$ 495	\$ 683	\$ 2,704
	=====				
Basic earnings per share:					
Weighted average common shares outstanding.....	627	2,032	2,355	2,320	2,461
	-----				
Basic earnings per share.....	\$ 4.79	\$ 1.13	\$ 0.21	\$ 0.29	\$ 1.10
	=====				
Diluted earnings per share:					
Weighted average common shares outstanding.....	627	2,032	2,355	2,320	2,461
common stock option grants and outstanding warrants.....	1,848	1,727	1,518	1,687	1,666
Weighted average preferred stock outstanding.....	7,805	7,886	8,452	8,393	8,511
	-----				
Total weighted average common shares and common stock equivalents.....	10,280	11,645	12,325	12,400	12,638
	-----				
Diluted earnings per share.....	\$ 0.29	\$ 0.20	\$ 0.04	\$ 0.06	\$ 0.21
	=====				

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

Comprehensive Income

Effective January 1, 1998, the Company adopted SFAS No. 130 "Reporting Comprehensive Income." Comprehensive income is to include amounts which have been previously excluded from net income and reflected instead in stockholders' equity. For all periods presented, comprehensive income is the same as reported net income.

The Cost of Computer Software Developed or Obtained for Internal Use

In March 1998, the American Institute of Certified Public Accountants issued Statement of Position ("SOP") No. 98-1 "Accounting for the Costs of Computer Software Developed or Obtained for Internal Use," which the Company adopted in fiscal 1999. SOP No. 98-1 requires entities to capitalize certain costs related to internal-use software once certain criteria has been met. The adoption did not have a material impact on the Company's financial position or results of operations.

Costs of Start-Up Activities

In April 1998, the American Institute of Certified Public Accountants issued SOP No. 98-5 "Reporting on the Costs of Start-Up Activities," which the Company adopted in fiscal 1999. SOP No. 98-5 requires that all start-up costs related to new operations must be expensed as incurred. In addition, all start-up costs that were previously capitalized must be written off when SOP No. 98-5 is adopted. The adoption did not have a material impact on the Company's financial position or results of operations.

Proposed Initial Public Offering

The Board of Directors has approved a plan to file a registration statement with the Securities and Exchange Commission to register shares of its common stock in connection with a proposed initial public offering ("IPO"). Costs incurred by the Company related to the IPO have been recorded within the consolidated statements of stockholders' equity. If the Company is not able to complete the IPO, these capitalized costs would be expensed in the consolidated statements of operations.

Recent Accounting Pronouncements

In June 1998, the Financial Accounting Standards Board issued SFAS No. 133 "Accounting for Derivative Instruments and Hedging Activities." SFAS No. 133 requires certain accounting and reporting standards for derivative financial instruments and hedging activities. The Company becomes subject to SFAS No. 133 for the first quarter beginning after January 1, 2001. Because the Company does not currently hold any derivative instruments and does not engage in hedging activities, the adoption of SFAS No. 133 is not expected to have a material impact on the financial position or results of operations of the Company.

3. RISKS AND UNCERTAINTIES:

For the year ended December 31, 1998, the Company's purchases of integrated circuits were primarily concentrated with a limited number of vendors. If these vendors were unable to provide integrated circuits in a timely manner and the Company was unable to find alternative vendors, the Company's business, operating results and financial condition could be adversely affected.

The majority of the Company's revenues are derived from a limited number of products utilizing host signal processing technology. The market for these products is characterized by frequent transitions in which products rapidly incorporate new features and performance standards. A failure to develop products with required feature sets or performance standards or a delay in bringing a new product to market could adversely affect the Company's operating results.



## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

## 4. ACQUISITIONS:

## Communications Systems Division

On December 22, 1998, the Company acquired substantially all of the assets and certain of the liabilities of Communications Systems Division ("CSD"), a division of General DataComm, Inc., for a total purchase price of approximately \$17 million. The acquisition, which was accounted for as a purchase, was paid for in cash and financed primarily with notes payable. In conjunction with the acquisition, the Company and one of its wholly owned subsidiaries entered into Notes Payable arrangements for approximately \$16.3 million (Note 5). The consolidated statement of operations for the year ended December 31, 1998, includes the results of operations of CSD from the date of acquisition. The excess purchase price over the net tangible assets acquired was \$16.8 million of which \$6.1 million was allocated to in-process research and development and \$10.7 million was allocated to other intangible assets. Amounts allocated to other intangible assets (classified as Goodwill and Other Intangible Assets, net in the accompanying consolidated balance sheets) include patents and intellectual property of \$8.7 million, work force of \$1.3 million and goodwill of \$671,000, all of which are being amortized over their useful lives which was five years on a weighted average basis. The allocation of purchase price is a preliminary estimate by management and is subject to further adjustment.

Upon completion of the CSD acquisition, the Company immediately expensed \$6.1 million representing purchased in-process technology that had not yet reached technological feasibility and had no alternative future use. The \$6.1 million expensed as in-process research and development represented 37% of the purchase price and was attributed and supported by a discounted probable cash flow analysis that identified revenue on a project by project basis. The following three in-process projects existed at CSD as of the acquisition date: HIDRA (High Density Remote Access System), Industrial Modems, and xDSL (Digital Subscriber Line) project. The value assigned to purchased in-process technology, based on a percentage of completion discounted cash flow method, was determined by identifying research projects in areas for which technological feasibility has not been established.

Approximately \$8.7 million, 53% of the purchase price, was attributed to core technology and existing patented technology, related to the portfolio of patents that address the v.34 (33.6 Kbs) and v.90 (56 Kbs) international modem standards set by the International Telecommunications Union ("ITU"). The portfolio is comprised of over 36 patents and filings, including four v.34 patents and two v.90 patents, which are required by the ITU standard, and three v.90 patents considered very important in the manufacture of the v.90 modem.

The value was determined by estimating the costs to develop the purchased in-process technology into commercially viable products, estimating the resulting net cash flows from such projects and discounting the net cash flows back to their present value. Approximately 69% of the in-process research and development value was attributed to the HIDRA project, which is focused on increasing the number of modems within the RAS (Remote Access Server). This technology will represent a migration of the single and dual DSP (Digital Signal Processing) platforms to enable higher density modems for central site applications. Specifically, CSD is working to create three modem ports on each DSP through the use of software. The xDSL (Digital Subscriber Line), which represents 28% of the in-process research and development value, will encompass a variety of DSL systems covering speeds from 53 Mbps down to 128 Kbps. Similar to the HIDRA concept, CSD was working on an xDSL product technology that will allow more than one DSL modem per DSP chip, thus attempting to optimize transmission speeds. Industrial Modems, which represents approximately 3% of the in-process research and development value, is an offshoot of the HIDRA project. Based on the same architectural foundation as the HIDRA, Industrial Modems are targeted at the industrial market for use in transmitting updated information to and from remote sites.

The discount rate includes a risk adjusted discount rate to take into account the uncertainty surrounding the successful development of the purchased in-process technology. The risk-adjusted discount rate applied to the projects' cash flows was 18% for existing technology and 24% for the in-process technology. Based upon

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

assessment of each in-process project's development stage, including relative difficulty of remaining development milestones, it was determined that application of a 24% discount rate was appropriate for all three acquired in-process projects. The valuation includes cash inflows from in-process technology through 2002 with revenues commencing in 1999 and increasing significantly in 2000 before declining in 2002. A royalty payment of 3% was assumed from in-process technology to existing technology, based on management's estimate of a patent license rate. The High Density Remote Access System and industrial modem projects were approximately 56% complete at the time of the valuation and the expected timeframe for achieving these product releases was assumed to be in the second half of 1999. The DSL project was approximately 56% complete at the time of the valuation and the expected time frame for achieving this product release is assumed to be in early 2000. The percentage complete calculations for all projects were estimated based on research and development expenses incurred to date and management estimates of remaining development costs. Significant remaining development efforts must be completed in the next 6 to 18 months in order for CSD's projects to become implemented in a commercially viable timeframe. Management's cash flow and other assumptions utilized at the time of acquisition do not materially differ from historical pricing/licensing, margin, and expense levels of the CSD group prior to acquisition.

If these projects are not successfully developed, the Company's future revenue and profitability may be adversely affected. Additionally, the value of other intangible assets acquired may become impaired.

The unaudited pro forma financial information for the years ended December 31, 1997 and 1998 is presented below as if CSD had been acquired on January 1, 1997. Pro forma net income excludes the write-off of acquired in-process research and development of \$6.1 million.

	Year Ended December 31,	
	1997	1998

Revenues.....	\$28,573	\$35,632
Net income.....	\$ 2,272	\$ 2,978
Diluted net income per share.....	\$ 0.20	\$ 0.24

## 5. NOTES PAYABLE:

On December 22, 1998, the Company and one of its wholly owned subsidiaries, each entered into a note payable arrangement ("the Notes Payable") with a bank. The Notes Payable are for a total amount of \$16.3 million. The Notes Payable bear interest at the bank's prime interest rate plus 0.5% (8.25% at December 31, 1998) and are subject to certain financial and non-financial covenants. In addition, the bank received a primary security interest in all assets, including intellectual property, of the Company. The Notes Payable are to be repaid in 59 equal monthly installments of approximately \$258,000 and a final payment of approximately \$5.9 million in January 2004. The Company will be required to pay a 3% penalty if the Notes Payable are paid prior to maturity. No payments on the Notes Payable were required to be made by December 31, 1998.

As of December 31, 1998, the aggregate principal maturities of the Notes Payable are as follows (in thousands):

1999.....	\$1,614
2000.....	1,936
2001.....	2,111
2002.....	2,291
2003.....	2,489
2004.....	5,882

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

In connection with the Notes Payable, the Company issued a warrant to purchase 200,000 shares of Series C preferred stock at an exercise price of \$8.00 per share. The warrants are immediately exercisable and expire ten years from the date of issuance. The fair value of the warrants at the date of the issuance was estimated to be approximately \$1.4 million using the Black-Scholes option pricing model. The Company has recorded the fair value of the warrants as a deferred charge which will be amortized over the term of the Notes Payable.

## 6. COMMITMENTS AND CONTINGENCIES:

The Company leases its facilities under operating leases which expire through September 2001. In addition, the Company leases certain of its equipment under capital leases. As of December 31, 1998, the future minimum lease commitments under all leases were as follows (in thousands):

	Capital Leases	Operating Leases
	-----	-----
1999.....	\$29	\$ 647
2000.....	4	517
2001.....	4	62
2002.....	3	--
	---	-----
Total minimum lease payments.....	40	\$1,226
		=====
Less: Amounts representing interest.....	(4)	
	---	
Present value of minimum lease payments.....	\$36	
	===	

Rent expense under operating leases for the years ended December 31, 1996, 1997 and 1998 was approximately \$139,000, \$248,000 and \$364,000, respectively.

In June 1998, the Company entered into a two year volume purchase agreement with Silicon Labs, which included a minimum purchase amount of 600,000 chipsets for the year ended December 31, 1998. For the year ended December 31, 1998, the Company exceeded the minimum purchase amount from Silicon Labs. There was no minimum purchase amount for the year ended December 31, 1999.

As of December 31, 1997 and 1998, the Company has accrued royalties of approximately \$6.5 million and \$5.1 million, respectively. The Company has entered into royalty agreements in fiscal 1998 and continues to negotiate royalty agreements with several other third parties. Accordingly, the Company has accrued its best estimate of the amount of royalties payable based on royalty agreements already signed or in negotiation, as well as advice from patent counsel. Should the final agreements result in royalty rates significantly different from these assumptions, the Company's business, operating results and financial condition could be materially and adversely affected. During 1998, the Company reversed \$3.0 million of accrued royalties. Upon consummation of the Communications Systems Division acquisition in December 1998, the Company reduced their royalty reserves because they believe that in some instances they can obtain necessary licenses of third party technologies in exchange for grants of cross licenses of their patent portfolio rather than the payment of license fees or royalties.

During 1998, Motorola, Inc. ("Motorola") filed an action for patent infringement against the Company (and one other defendant) of seven Motorola patents. In its complaint, Motorola seeks damages for the Company's alleged infringement, including treble damages for the Company's alleged willful infringement and an injunction against the Company. Motorola is also seeking attorney's fees and costs.

The Company filed an answer to Motorola's complaint denying infringement of the seven asserted Motorola patents and asserted that each patent is invalid or unenforceable. In addition, the Company asserted

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

counterclaims and declaratory relief for invalidity and/or unenforceability and noninfringements of each of the seven asserted Motorola patents. By its counterclaims, the Company seeks compensatory and punitive damages, an injunction against Motorola, and an award of treble damages for Motorola's violation of the Federal and state antitrust laws, and for violation of Massachusetts General Law. The Company also seeks its costs and attorney's fees in this action. An initial conference with the Court under Delaware local rule was held in April 1999 and discovery started in June 1999.

Due to the nature of litigation generally and because the lawsuit brought by Motorola is at an early stage, management cannot ascertain the availability of injunctive relief or other equitable remedies or estimate the total expenses, possible damages or settlement value, if any, that may ultimately be incurred in connection with Motorola's suit. However, management believes, based on the advice of legal counsel, that the Company has meritorious defenses to the allegations contained in Motorola's complaint. This litigation could be time consuming and costly, and the Company will not necessarily prevail given the inherent uncertainties of litigation. In the event that the Company does not prevail in litigation, the Company could be prevented from selling soft modem products or be required to enter into royalty or licensing agreements or pay monetary damages. Such royalty or licensing agreements, if required, may not be available on terms acceptable to the Company or at all. In the event of a successful claim against the Company, the Company's financial position and results of operations could be materially adversely affected.

7. PREFERRED STOCK:

Series A convertible preferred stock ("Series A"), Series B convertible preferred stock ("Series B") and Series C convertible preferred stock ("Series C") consist of the following, net of issuance costs (dollars in thousands):

	December 31,		
	1997	1998	June 30, 1999
	-----	-----	-----
			(unaudited)
Series A:			
\$0.001 par value; Authorized--4,635,548			
Outstanding--4,635,548 shares; liquidation preference of \$1,113.....	\$ 5	\$ 5	\$ 5
Series B:			
\$0.001 par value; Authorized--3,250,000			
Outstanding--3,250,000 shares; liquidation preference of \$3,900.....	3	3	3
Series C:			
\$0.001 par value; Authorized--1,500,000			
Outstanding or subscribed--625,200 shares; liquidation preference of \$5,002.....	1	1	1
	-----	-----	---
	\$ 9	\$ 9	\$ 9
	=====	=====	===

The Series C preferred stock was subscribed as of December 31, 1997 and was subsequently issued, and payment was received, in February 1998. Accordingly, a subscription receivable of approximately \$5.0 million was recorded as a current asset at December 31, 1997 in the accompanying consolidated balance sheets.

The rights, restrictions and preferences of the Series A, Series B and Series C (collectively "convertible preferred stock") are as follows:

- . In the event of any liquidation, dissolution or winding up of the Company, either voluntary or involuntary, the holders of Series C shares shall be entitled to receive \$8.00 per share, prior and in preference to any distribution of the assets or surplus funds to the holders of Series A, Series B and common stock, plus all declared but unpaid dividends on each share of Series C. After payment of the full amount due to the holders of Series C, the holders of Series A and Series B shall be entitled to receive, prior to any distribution of the Company's assets or property to the holders of common stock, the amount of \$0.24 and \$1.20 per share, respectively, plus all declared but unpaid dividends on each share of Series A and Series B. The Series A and Series B shall rank on parity as to the receipt of any

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

respective preferential amount for Series A and Series B shares. After payment of the full amount to Series A, Series B and Series C shareholders, the holders of common stock shall be entitled to receive an amount per share equal to \$82,000 divided by the number of common shares outstanding at the time of distribution (excluding shares of common then issuable upon conversion of the convertible preferred stock). Any remaining assets shall be distributed ratably to the holders of convertible preferred stock and common stock, each share of preferred being treated as the number of shares of common into which it could then be converted.

- . Each share of convertible preferred stock is convertible, at the option of the shareholder, into one share of common stock, subject to adjustments to prevent dilution as provided in the respective stock agreements.
- . The holders of convertible preferred stock are entitled to the number of votes equal to the number of shares of common stock into which each share of convertible preferred stock could be converted.
- . Each share of convertible preferred stock will automatically convert into common stock in the event of the closing of an underwritten public offering of the Company's common stock from which the Company receives gross proceeds in excess of \$15,000,000 and for which the offering price is not less than \$16.00 per share.
- . Each convertible preferred stock shareholder is entitled to receive annual dividends at a rate of \$0.019 per Series A share, \$0.096 per Series B share and \$0.64 per Series C share when, and if, declared by the Board of Directors. No dividends shall be paid on shares of Series A or Series B or common stock until total dividends have been paid, declared or set apart for Series C shareholders. Series A, Series B and Series C shareholders shall receive dividends prior to payment of dividends on common stock. Dividends are non-cumulative. No dividends have been declared to date.

8. COMMON STOCK:

As of June 30, 1999, the Company had reserved shares of its common stock for future issuance as follows (unaudited):

Conversion of Series A preferred stock.....	4,635,548
Conversion of Series B preferred stock.....	3,250,000
Conversion of Series C preferred stock.....	625,200
Conversion of Series C and common stock warrants.....	202,417
1995 and 1997 Stock Option Plans.....	4,208,670
Director Option Plan and Employee Stock Purchase Plan.....	1,000,000
	-----
	13,921,835
	=====

Unaudited Pro Forma Stockholders' Equity

The Board of Directors have authorized the filing of a registration statement with the Securities and Exchange commission to register shares of its common stock in connection with a proposed initial public offering ("IPO"). If the IPO is consummated under the terms presently anticipated, all of the currently outstanding preferred stock will be converted into 8,510,748 shares of common stock upon the closing of the IPO. The effect of the conversion has been reflected as unaudited pro forma stockholders' equity in the accompanying balance sheet as of June 30, 1999.

Stock Option Plans

The Company has two stock option plans, the 1995 Stock Option Plan ("1995 Plan") and the 1997 Stock Option Plan ("1997 Plan"). Under the 1995 Plan and the 1997 Plan, the Board of Directors may grant to

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

employees and consultants options and/or purchase rights to purchase the Company's common stock at terms and prices determined by the Board of Directors. The number of authorized shares available for issuance under the 1995 Plan was 3,200,000. As of December 31, 1998, the number of shares that remain available to be granted under the 1995 Plan is 152,673. The number of authorized shares available for issuance under the 1997 Plan is 3,500,000. As of December 31, 1998, the number of shares that remain available to be granted under the 1997 Plan is 1,049,772.

In May 1998, the Board of Directors approved an increase in the number of authorized shares available for issuance under the 1997 Plan to 4,500,000 shares of common stock. The increase to 4,500,000 shares was approved by the stockholders in June 1998. In August 1999, the Board of Directors and the stockholders approved the amendment and restatement of the 1997 Plan and approved an additional increase in the number of authorized shares available for issuance under the 1997 Plan to 5,500,000 shares of common stock. The number of authorized shares under the 1997 Plan will increase annually by an amount equal to the lesser of (i) 700,000 shares, (ii) 4% of the outstanding shares on such date or (iii) a lesser amount determined by the Board of Directors. The exercise price and vesting of all grants are to be determined by the Board of Directors. The exercise price of incentive stock options cannot be less than the fair market value of the common stock on the grant date, as determined by the Board of Directors. The fair market value of the common stock is determined by the Company's Stock Plan Committee, a committee within the Board of Directors. Options granted under the 1997 Plan expire 10 years from the date of grant. The 1997 Plan will terminate in 2007.

## 1998 Director Option Plan ("Directors Plan")

The Directors Plan will not become effective until the effectiveness of the proposed initial public offering. A total of 200,000 shares of common stock have been reserved for issuance under the Directors Plan. The 1998 Director's Plan provides for the automatic grant of 15,000 shares of common stock to each new non-employee director upon election to the Board of Directors. The 15,000 share options will vest one-third as of each anniversary of its date of grant until the option is fully vested, provided that the optionee continues to serve as a director on such dates. After the initial 15,000 share option is granted to the non-employee director, he or she shall automatically be granted an option to purchase 7,500 shares each year on January 1, if on such date he or she shall have served on the Board of Directors for at least six months. The 7,500 share options shall vest completely on the anniversary of their date of grant, provided that the optionee continues to serve as a director on such dates. All of the options granted under the 1998 Director's Plan shall have a term of 10 years. The exercise price of all options shall be 100% of the fair market value per share of the common stock, generally determined with reference to the closing price of the common stock as reported on the Nasdaq National Market on the date of grant.

## Employee Stock Purchase Plan ("Purchase Plan")

In May 1998, a total of 800,000 shares of common stock were reserved for future issuance under the Purchase Plan, plus annual increases equal to the lesser of (i) 350,000 shares (ii) 2% of the outstanding shares on such date or (iii) a lesser amount determined by the Board of Directors. The Purchase Plan will enable eligible employees to purchase common stock at the lower of 85% of the fair market value of the Company's common stock on the first or last day of each six-month offering period. The first offering period will begin upon the closing date of the proposed initial public offering. The Purchase Plan will terminate in 2008.

Nonqualified options granted under the 1995 Plan and 1997 Plan must be issued at a price equal to at least 85% of the fair market value of the Company's common stock at the date of grant. The options may be exercised at any time within ten years of the date of grant or within ninety days of termination of employment, or such shorter time as may be provided in the stock option agreement, and vest over a vesting schedule

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

determined by the Board of Directors. Options issued to consultants and non-employees are expensed in the period in which the services were provided.

## Deferred Compensation

In connection with the grant of certain stock options to employees during fiscal 1998 and the six months ended June 30, 1999, the Company recorded deferred compensation of \$257,000 and \$2.1 million, respectively, representing the difference between the estimated fair value of the common stock for accounting purposes and the option exercise price of such options at the date of grant. Such amount is presented as a reduction of stockholders' equity and is amortized ratably over the vesting period of the applicable options. The fair value of options issued to consultants and other non-employees are expensed in the period in which the services are provided. During 1996, the Company granted options to purchase shares of common stock at an exercise price below the fair value of the Company's common stock at the date of grant. Compensation expense of \$41,000 was recognized in relation to those grants in the year ended December 31, 1996. The amortization expense relates to options awarded to employees in all operating expense categories. The amortization of deferred compensation has not been separately allocated to these categories. The amount of deferred compensation expense to be recorded in future periods could decrease if options for which accrued but unvested compensation has been recorded are forfeited.

## Valuation of Stock Options

Pro forma information regarding net income and net income per share is required by SFAS No. 123 and has been determined as if the Company had accounted for its stock options under the fair value method of SFAS No. 123. The fair value for the stock options was estimated at the date of grant using the Black-Scholes option pricing model with the following assumptions for fiscal years 1996, 1997 and 1998: risk-free interest rates in the range of 5.2% to 6.5%; dividend yields of zero; an estimated volatility factor of the market price of the Company's common stock in the range of 40% to 55%; and an expected life of the option of six months after vest date. The weighted-average estimated fair value of options granted during fiscal 1996, 1997 and 1998 was \$0.37, \$2.32 and \$3.43 per share, respectively.

The Black-Scholes option valuation model was developed for use in estimating the fair value of traded options which have no vesting restrictions and are fully transferable. In addition, option valuation models require the input of highly subjective assumptions including the expected stock price volatility and expected option life. Because the Company's employee stock options have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in management's opinion, the existing models do not necessarily provide a reliable single measure of the fair value of its employee stock options.

For purposes of pro forma disclosures, the estimated fair value of the options is amortized to expense over the option vesting periods. The Company's pro forma net income (loss) would have been approximately \$3.0 million, \$2.0 million and \$(984,000) for fiscal years 1996, 1997 and 1998, respectively. Pro forma diluted net income (loss) per share would have been \$0.29, \$0.17 and (\$0.42) for fiscal years 1996, 1997 and 1998, respectively.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

The following table summarizes stock option activity under the 1995 Plan and 1997 Plan:

	Options Outstanding		
	Options Available	Shares	Weighted Average Exercise Price
Balance, December 31, 1995.....	437,003	2,762,997	\$0.02
Granted.....	(674,670)	674,670	\$0.26
Exercised.....	--	(1,454,999)	\$0.02
Forfeited.....	237,667	(237,667)	\$0.05
Balance, December 31, 1996.....	--	1,745,001	\$0.12
Authorized.....	1,500,000	--	--
Granted.....	(1,172,830)	1,172,830	\$2.32
Exercised.....	--	(753,991)	\$0.03
Forfeited.....	95,590	(95,590)	\$0.91
Balance, December 31, 1997.....	422,760	2,068,250	\$1.36
Authorized.....	2,000,000	--	--
Granted.....	(1,393,900)	1,393,900	\$8.13
Exercised.....	--	(203,257)	\$0.17
Forfeited.....	173,585	(173,585)	\$2.52
Balance, December 31, 1998.....	1,202,445	3,085,308	\$4.43
Granted (unaudited).....	(893,193)	893,193	\$9.83
Exercised (unaudited).....	--	(79,083)	\$0.12
Forfeited (unaudited).....	83,708	(83,708)	\$7.18
Balance, June 30, 1999 (unaudited).....	392,960	3,815,710	\$5.72

Range of Exercise Prices	Options Outstanding			Options Exercisable	
	Number Outstanding at December 31, 1998	Weighted-Average Remaining Contractual Life (Years)	Weighted-Average Exercise Price	Number Exercisable December 31, 1998	Weighted-Average Exercise Price
\$0.02-\$0.12	389,583	7.09	\$0.07	307,832	\$0.05
\$0.48-\$0.48	528,000	8.00	\$0.48	283,190	\$0.48
\$1.25-\$2.00	423,200	8.10	\$1.40	197,721	\$1.39
\$2.35-\$3.50	244,000	8.33	\$3.01	99,968	\$3.00
\$4.50-\$4.85	87,500	9.12	\$4.76	8,438	\$4.50
\$7.45-\$9.25	1,413,025	9.32	\$8.24	30,355	\$7.45
	3,085,308		\$4.43	927,504	

## Warrants

In connection with the issuance of the Series C preferred stock, the Company issued warrants to a Company advisor to acquire 31,260 shares of common stock at \$6.96 per share. The warrants expired unexercised in February 1999. The fair value of this warrant at the date of issuance was \$50,000 and this amount has been included as an issuance cost of the Series C preferred stock. The Company also issued warrants to acquire 2,417 shares of common stock at \$8.00 in February 1998. The warrants expire in February 2001 and the fair value at the date of issuance was not material. See Note 5 for warrants to purchase 200,000 shares of Series C preferred stock issued in conjunction with the Company's Notes Payable arrangements.



## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

## 9. INCOME TAXES:

The Company accounts for income taxes in accordance with SFAS No. 109, "Accounting for Income Taxes". SFAS No. 109 requires that deferred taxes be calculated using an asset and liability approach under which deferred income taxes are provided based upon enacted tax laws and rates applicable to the periods in which the taxes become payable.

The domestic and foreign components of income before provision for income taxes were as follows (in thousands):

	Year Ended December 31,		
	1996	1997	1998
Domestic.....	\$ 4,009	\$ 2,438	(\$1,390)
Foreign.....	--	818	2,097
	<u>\$ 4,009</u>	<u>\$ 3,256</u>	<u>\$ 707</u>

The provision for income taxes consisted of the following (in thousands):

	Year Ended December 31,		
	1996	1997	1998
Current:			
Federal.....	\$ 2,848	\$ 827	\$ 1,188
State.....	646	237	482
Foreign.....	--	82	67
	<u>3,494</u>	<u>1,146</u>	<u>1,737</u>
Deferred:			
Federal.....	(2,152)	(240)	(942)
State.....	(337)	49	(583)
	<u>(2,489)</u>	<u>(191)</u>	<u>(1,525)</u>
	<u>\$ 1,005</u>	<u>\$ 955</u>	<u>\$ 212</u>

The provision for income taxes differs from the amount computed by applying the Federal statutory income tax rate as follows (in thousands):

	Year Ended December 31,		
	1996	1997	1998
Provision at Federal statutory rate.....	\$ 1,403	\$ 1,140	\$ 247
State income tax, net of Federal benefit.....	241	95	25
Change in valuation allowance.....	(577)	--	--
Foreign taxes in excess of statutory rate.....	--	82	67
R & D credit.....	--	(224)	(310)
Other.....	(62)	(138)	183
	<u>\$ 1,005</u>	<u>\$ 955</u>	<u>\$ 212</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

The net deferred tax asset consists of the following (in thousands):

	December 31,	
	1997	1998
Accrued royalties.....	\$2,070	\$1,152
Inventory reserve.....	58	262
California income tax payable.....	82	--
Other cumulative temporary differences.....	470	489
Deferred amortization of purchased assets.....	--	2,302
	-----	-----
	\$2,680	\$4,205
	=====	=====

Other cumulative temporary differences consist of items currently deductible for financial reporting purposes, but not for tax purposes. These items are primarily estimated reserves and accruals. The realization of the deferred tax asset is dependent on generating sufficient taxable income in future years. Although realization is not assured, management believes it is more likely than not that the deferred tax asset will be realized. The amount of the deferred tax asset considered realizable, however, could be reduced in the near term if estimates of future taxable income during future years is reduced.

10. RELATED PARTY TRANSACTIONS:

The President of a significant customer of the Company was a member of the Company's Board of Directors from inception to November 1, 1997. For the years ended December 31, 1996 and 1997, revenues generated from sales to this related party customer were approximately \$1.7 million and \$2.2 million, respectively.

11. INDUSTRY SEGMENT, CUSTOMER AND GEOGRAPHIC INFORMATION:

Effective January 1, 1998, the Company adopted SFAS No. 131, ("SFAS 131") "Disclosures About Segments of an Enterprise and Related Information." SFAS No. 131 establishes standards for business segments of a company and related disclosures. The Company is organized based upon the nature of the products it offers. Under this organizational structure, the Company operates in one segment, that segment being software-based modems using host signal processing technology. The Company markets its products worldwide through its sales personnel, independent sales representatives and distributors.

The Company's sales to customers outside of the United States, as a percent of total revenues, are as follows:

	Year Ended December 31,			Six Months Ended	
	1996	1997	1998	June 30,	1999
	-----	-----	-----	-----	-----
				(unaudited)	
Taiwan.....	37%	46%	48%	62%	21%
China (Hong Kong).....	15%	20%	--	--	47%
Singapore.....	19%	9%	--	--	2%
Rest of Asia.....	3%	2%	28%	15%	29%
Other.....	9%	2%	1%	3%	--
	-----	-----	-----	-----	-----
	83%	79%	77%	80%	99%
	=====	=====	=====	=====	=====

PC-TEL, INC.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS--(Continued)

Sales to major customers representing greater than 10% of total revenues are as follows:

Customer	Year Ended December 31,			Six Months Ended June 30,	
	1996	1997	1998	1998	1999
				(unaudited)	
A, related party (See Note 10).....	10%	9%	13%	5%	--
B.....	16%	4%	12%	21%	6%
C.....	5%	6%	15%	11%	10%
D.....	22%	20%	4%	15%	1%
E.....	13%	--	--	--	--
F.....	--	18%	12%	12%	3%
G.....	--	--	8%	--	20%
H.....	--	--	3%	--	42%

As of December 31, 1997, the Company's long-lived assets were primarily located in the United States. The Company's long-lived assets, comprising primarily intangible assets, by geographic region as of December 31, 1998 and June 30, 1999 are as follows:

	December 31, 1998	June 30, 1999
		(unaudited)
United States.....	\$5,357	\$5,314
Cayman Islands.....	\$8,178	\$7,399

REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS

To the Management of  
General DataComm, Inc.:

In our opinion, the accompanying balance sheets and the related statements of income and divisional equity and of cash flows present fairly, in all material respects, the financial position of the Communications Systems Division, a division of General DataComm, Inc., at September 30, 1998 and 1997, and the results of its operations and its cash flows for each of the years then ended, 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 audits. We conducted our audits 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 audits provide a reasonable basis for the opinion expressed above.

PricewaterhouseCoopers LLP

Stamford, Connecticut  
December 15, 1998

COMMUNICATIONS SYSTEMS DIVISION

BALANCE SHEETS

	September 30,	
	1998	1997
	(in thousands)	
ASSETS		
Assets:		
Fixed assets, net.....	\$ 119	\$ 117
Capitalized software.....	1,993	1,359
Security deposit and accrued interest.....	8	--
Patents.....	--	--
	-----	-----
Total assets.....	\$2,120	\$1,476
	=====	=====
LIABILITIES		
Liabilities:		
Income taxes payable.....	\$ 568	\$ 940
Deferred income tax liabilities.....	251	535
	-----	-----
Total liabilities.....	819	1,475
	-----	-----
Divisional Equity.....	1,301	1
	-----	-----
Total liabilities and divisional equity.....	\$2,120	\$1,476
	=====	=====

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

COMMUNICATIONS SYSTEMS DIVISION  
STATEMENTS OF INCOME AND DIVISIONAL EQUITY

	For the years ended September 30,	
	1998	1997
	----- (in thousands) -----	
Licensing revenues.....	\$3,531	\$ 4,564
Operating expenses:		
General and administrative.....	135	83
Selling and marketing.....	174	146
Research and development.....	1,209	685
	-----	-----
Net income before income taxes.....	1,518	914
Income tax provision.....	2,013	3,650
	-----	-----
	819	1,475
	-----	-----
Net income.....	1,194	2,175
Divisional equity at beginning of year.....	1	133
Cash transfer from (to) parent.....	106	(2,307)
	-----	-----
Divisional equity at end of year.....	\$1,301	\$ 1
	=====	=====

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

COMMUNICATIONS SYSTEMS DIVISION

STATEMENTS OF CASH FLOWS

	For the years ended September 30,	
	1998	1997
	(in thousands)	
Cash flows from operating activities:		
Net income.....	\$1,194	\$ 2,175
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation expense.....	78	62
Increase in security deposit.....	(8)	--
(Decrease) increase in income taxes payable.....	(372)	940
(Decrease) increase in deferred income taxes.....	(284)	526
	-----	-----
Net cash provided by operating activities.....	608	3,703
	-----	-----
Cash flows from investing activities:		
Acquisition of property, plant and equipment.....	(80)	(37)
Capitalized software development costs.....	(634)	(1,359)
	-----	-----
Net cash used in investing activities.....	(714)	(1,396)
Net cash borrowed from (transferred to) GDC.....	106	(2,307)
	-----	-----
Net increase in cash and cash equivalents.....	--	--
Cash and cash equivalents at beginning of year.....	--	--
	-----	-----
Cash and cash equivalents at end of year.....	\$ --	\$ --
	=====	=====

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

COMMUNICATIONS SYSTEMS DIVISION

NOTES TO FINANCIAL STATEMENTS

1. Description of Business and Summary of Significant Accounting Policies

Description of Business

Communications Systems Division (the "Company") is a division of General DataComm, Inc., which is a subsidiary of General DataComm Industries, Inc. ("GDC"). The Company, which is principally comprised of scientists and engineers, develops, patents and licenses advanced modem and access technologies.

Basis of Presentation

The Company's balance sheets and statements of operations include assets, liabilities, revenues and expenses that are specifically identifiable to the Company. In addition, GDC provides certain services, as discussed in Note 6, which are allocated to the Company.

Cash

All cash balances are transferred to GDC as they arise.

Property, Plant and Equipment

Property, plant and equipment are stated at cost and depreciated or amortized using the straight-line method over their estimated useful lives.

Capitalized Software Development Costs

Software development costs are capitalized for those products that have met the requirements of technological feasibility. When the products under development begin to be sold, such capitalized costs will be amortized on a product-by-product basis over the estimated economic life of the product. No amortization was recorded in either fiscal 1998 or fiscal 1997 as the products in development had reached the technological feasibility stage but had not reached the marketability stage. Unamortized costs are reviewed for recoverability and, if necessary, are adjusted so as not to exceed estimated net realizable value.

Patents

The Company holds various technology patents. The third party cost of these patents has been fully amortized. Registration costs are expensed as incurred.

Revenue Recognition

The Company has entered into numerous technology licensing agreements whereby licensees pay the Company fees for the use or sale of specific patented technology. Technology licensing fee revenue is recognized in the period received, or alternatively, may be accrued when readily determinable.

Income Taxes

Income taxes are calculated in accordance with Statement of Financial Accounting Standards (SFAS) No. 109, "Accounting for Income Taxes." This statement requires that deferred income taxes reflect the impact of temporary differences in bases of assets and liabilities recognized for financial reporting purposes and amounts recognized for tax purposes. As a division, the Company is included in the consolidated income tax returns of GDC, however, the Company's provision for income taxes has been calculated on a separate return basis.



COMMUNICATIONS SYSTEMS DIVISION

NOTES TO FINANCIAL STATEMENTS--(Continued)

Employee Benefits and Incentive Plans

The Company's employees participate in plans for post-retirement benefits, post-employment benefits, stock option plans, and retirement savings and deferred profit sharing plans, which are sponsored by GDC. No assets, liabilities or expenses have been reflected in the balance sheets and statements of operations related to the post-retirement and post-employment plans, as it is not practical to segregate these amounts.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles 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 date of the financial statements and the reported amounts of revenues and expenses during the reporting periods presented. Actual results could differ from those estimates. For example, the markets the Company is involved in are characterized by intense competition, rapid technological development and frequent new product introductions, all of which could impact the future value of the Company's capitalized software.

2. Property, Plant and Equipment

Property, plant and equipment consists of:

	September 30,		Estimated
	1998	1997	Useful Life
	-----	-----	-----
Test equipment and fixtures, office equipment.....	\$651	\$578	2 to 10 years
Less: accumulated depreciation.....	532	461	
	----	----	
	\$119	\$117	
	====	====	

Depreciation expense amounted to \$78 and \$62 in fiscal 1998 and 1997, respectively.

3. Income Taxes

For purposes of the financial statements, income taxes are provided on a stand-alone basis as if the Company is a separate entity.

The provision for income taxes consists of the following amounts:

	September 30,	
	1998	1997
	-----	-----
Current:		
State.....	\$146	\$ 246
Federal.....	422	694
	----	-----
	568	940
Deferred:		
State.....	\$ 66	\$ 144
Federal.....	185	391
	----	-----
	251	535
	----	-----
Total provision.....	\$819	\$1,475
	====	=====

COMMUNICATIONS SYSTEMS DIVISION

NOTES TO FINANCIAL STATEMENTS--(Continued)

The tax effects of temporary differences which give rise to deferred income tax assets and liabilities consisted of the following:

	September 30,	
	----- 1998	1997 -----
Deferred income tax assets:		
Property, plant and equipment.....	\$ 3	\$ 8
Deferred income tax liabilities:		
Capitalized software.....	(254)	(543)
	-----	-----
Net deferred income tax liabilities.....	\$ (251)	\$ (535)
	=====	=====

4. Operating Leases

GDC entered into an operating lease on June 1, 1998 to provide separate facilities for the operation of the Company. Such lease expires in May 2001. The lease contains renewal options and provisions for payment by the lessee of executory costs (taxes, maintenance and insurance).

The following is a schedule of the future minimum payments under the lease as of September 30, 1998:

Year	Amount
----	-----
1999	\$50
2000	50
2001	33

Rent expense under the lease was \$17 for the year ended September 30, 1998. Prior to June 1, 1998, the operations of the Company were conducted in facilities shared with other GDC operations. The amounts allocated by GDC, which are included in the statements of income, were \$74 and \$100 for September 30, 1998 and 1997, respectively.

5. Employment Incentive Plans

Stock Option Plans

Officers and key employees of GDC may be granted incentive stock options at an exercisable price equal to or greater than the market price on the date of grant and non-incentive stock options at an exercisable price equal to or less than the market price on the date of grant. While individual options can be issued under various provisions, most options, once granted, generally vest in increments of 25% per year over a four-year period and expire within ten years.

COMMUNICATIONS SYSTEMS DIVISION

NOTES TO FINANCIAL STATEMENTS--(Continued)

The following summarizes activity related to the Company in fiscal 1997 and 1998 under these stock option plans:

	Shares	Weighted Average Exercise Price
	-----	-----
Options outstanding, September 30, 1996 (10,497 exercisable).....	79,747	\$6.49
Options granted.....	86,530	7.44
Options exercised.....	--	--
Options cancelled or expired.....	(53,890)	6.50
	-----	-----
Options outstanding, September 30, 1997 (20,097 exercisable).....	112,387	6.60
Options granted.....	85,750	4.32
Options exercised.....	--	--
Options cancelled or expired.....	(11,450)	7.14
	-----	-----
Options outstanding, September 30, 1998 (30,632 exercisable).....	186,687	\$6.96
	=====	=====

The following summarizes additional information related to the Company regarding options outstanding and exercisable options as of September 30, 1998:

Options Outstanding at September 30, 1998			Options Exercisable at September 30, 1998		
Exercise Prices	Number of Shares	Weighted Average Exercise Price	Weighted Average Contractual Life (Years)	Number of Shares	Weighted Average Contractual Price
-----	-----	-----	-----	-----	-----
\$ 3.38-\$ 4.81	65,947	\$ 3.81	9.47	197	\$ 4.81
\$ 5.25-\$ 6.75	89,540	6.34	7.98	19,035	5.63
\$ 7.31-\$ 9.63	25,700	8.95	7.46	9,900	6.83
\$10.00-\$15.50	5,500	10.92	7.69	1,500	11.83
	-----	-----	-----	-----	-----
	186,687	\$ 6.96	8.43	30,632	\$ 6.96

The weighted average option price of exercisable options was \$6.96 and \$6.60 at September 30, 1998 and 1997, respectively. All options granted during the two fiscal years ended September 30, 1998 were granted at an option price equal to fair market value at date of grant.

Employee Retirement Savings and Deferred Profit Sharing Plan

Under the retirement savings provisions of GDC's retirement plan established under Section 401(k) of the Internal Revenue Code, employees are generally eligible to contribute to the plan after three months of continuous service, in amounts determined by the plan. GDC contributes an additional 50 percent of the employee contribution up to certain limits (not to exceed 2 percent of total eligible compensation). Employees become fully vested in GDC's contributions after three years of continuous service, death, disability or upon reaching age 65. The amounts contributed related to the Company's employees for the years ended September 30, 1998 and 1997 were \$28 and \$33, respectively.

The deferred profit sharing provisions of the plan include retirement and other related benefits for substantially all of GDC's full-time employees. Contributions under the plan are funded annually and are based, at a minimum, upon a formula measuring profitability in relation to revenues. Additional amounts may be contributed at the discretion of GDC. There were no such contributions for fiscal 1998 or 1997.

## 6. Related Party Transactions and Net Equity

The Company is comprised of intellectual property and property, plant and equipment and certain employees that GDC has contributed to the business. All of the Company's cash transactions are managed by GDC. All intercompany accounts which represent all contributed property and the net amounts funded by GDC to date are included in divisional equity.

In addition, in fiscal 1998 and fiscal 1997, the Company performed product development work on behalf of GDC. The cost of such work, estimated to be \$434 and \$480, respectively in fiscal 1998 and fiscal 1997, has been excluded from the operating costs included in the Company's statements of income, as these costs have been fully reimbursed by GDC.

GDC provides accounting, treasury, tax and audit, legal, medical and risk insurance services and various other services to the Company. An allocation related to these costs has been made and is included in the statements of income.

General and Administrative expenses of \$110 and \$58 at September 30, 1998 and September 30, 1997, respectively, and selling and marketing expenses of \$174 and \$146 at September 30, 1998 and September 30, 1997, respectively, were allocated to the Company based on the actual salaries and benefits for corporate administrative, sales and marketing, and legal employees as well as an administrative assistant. These actual expenses were adjusted for the employees' percent of time dedicated to the Company.

Certain research and development costs included in expenses and capitalized software were allocated from GDC. These consist of the allocated time of one corporate employee and administrative assistant adjusted for the percent of time each dedicated to managing the Company. This allocation amounted to \$91 and \$66 at September 30, 1998 and September 30, 1997, respectively. In addition, rent and utility costs of \$73 and \$80 at September 30, 1998 and September 30, 1997, respectively, were allocated based on actual cost for a GDC facility similar in size and geographic location. Other technology support costs were allocated based on headcount and amounted to \$107 and \$124 at September 30, 1998 and September 30, 1997, respectively.

PC-TEL, INC. AND COMMUNICATIONS SYSTEMS DIVISION

PRO FORMA CONDENSED COMBINED STATEMENT OF OPERATIONS  
(unaudited)

In December 1998, PC-Tel, Inc. (the "Company" or "PC-Tel") completed the acquisition of substantially all the assets and certain liabilities of Communications Systems Division, a division of General DataComm, Inc., a Delaware corporation ("CSD"). CSD develops patents and licenses advanced modem and access technologies. The acquisition of CSD has been accounted for as a purchase.

The accompanying pro forma condensed combined statement of operations for PC-Tel's fiscal year ended December 31, 1998 assumes that the acquisition took place as of January 1, 1998, and combines PC-Tel's statement of operations for the year ended December 31, 1998 and CSD's statement of operations for its fiscal year ended September 30, 1998. No pro forma condensed balance sheet is required as the acquisition of CSD took place in December 1998 and is already reflected in PC-Tel's consolidated balance sheet as of December 31, 1998, included elsewhere in this Prospectus. The pro forma condensed combined statement of operations for the year ended December 31, 1998 does not include the effect of any nonrecurring charges directly attributable to the acquisition.

The purchase price allocation reflected in the accompanying pro forma condensed combined statement of operations has been prepared on an estimated basis. The effects resulting from any differences in the final allocation of the purchase price are not expected to have a material effect on the Company's financial statements.

The accompanying pro forma condensed combined statement of operations should be read in conjunction with the historical financial statements and related notes thereto for both PC-Tel and CSD, which are included in this Prospectus.

PC-TEL, INC. AND COMMUNICATIONS SYSTEMS DIVISION

PRO FORMA CONDENSED COMBINED STATEMENT OF OPERATIONS  
(in thousands, except per share data)

	Year Ended December 31, 1998			
	Historical PC-Tel	Historical CSD(a)	Pro Forma Adjustments	Pro Forma Combined
	(unaudited)			
REVENUES.....	\$33,004	\$3,531	\$ (903) (b)	\$35,632
COST OF REVENUES.....	13,878	--	(2,162) (c)	16,040
GROSS PROFIT.....	19,126	3,531		19,592
OPERATING EXPENSES:				
Research and development.....	4,932	1,209		6,141
Sales and marketing.....	5,624	174		5,798
General and administrative....	2,169	135		2,304
Acquired in-process research and development.....	6,130	--	(6,130) (d)	--
Amortization of deferred compensation.....	43	--		43
Total operating expenses....	18,898	1,518		14,286
INCOME FROM OPERATIONS.....	228	2,013		5,306
OTHER INCOME (EXPENSE), net:				
Interest income.....	504	--		504
Interest expense.....	(25)	--	(1,530) (e)	(1,555)
Total other income (expense), net.....	479	--		(1,051)
INCOME BEFORE PROVISION FOR INCOME TAXES.....	707	2,013		4,255
PROVISION FOR INCOME TAXES.....	212	819	246 (f)	1,277
NET INCOME.....	\$ 495	\$1,194		\$ 2,978
BASIC NET INCOME PER SHARE.....	\$ 0.21			\$ 1.26
DILUTED NET INCOME PER SHARE....	\$ 0.04			\$ 0.24
SHARES USED IN COMPUTING BASIC EARNINGS PER SHARE.....	2,355			2,355
SHARES USED IN COMPUTING DILUTED EARNINGS PER SHARE.....	12,325			12,325

Note 1. Pro Forma Adjustments

Certain pro forma adjustments have been made to the accompanying pro forma condensed combined statement of operations as described below:

- (a) Includes CSD's historical condensed statement of operations for the year ended September 30, 1998.
- (b) Reflects the elimination of revenues from licensing arrangements between the Company and CSD.
- (c) Reflects the amortization of goodwill and other intangibles acquired of \$10.8 million for CSD which will be amortized on a straight line basis over their estimated weighted average useful lives of five years.
- (d) Eliminates the acquired in-process research and development expense of approximately \$6.1 million, as the charge is a non-recurring expense that arises from the acquisition of CSD.
- (e) Reflects the interest expense and amortization of deferred finance charges on the debt incurred for the CSD acquisition.
- (f) Reflects adjustment to record a provision for income taxes in accordance with PC-Tel's effective tax rate for fiscal 1998.

Inside back cover

Background of space shot of planet earth. Text captions "PCTel Technology for connectivity," "Broadband," "Wireless," "Remote Access," "Analog," and "solutions"



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-----  
4,600,000 Shares

[ PCTel Logo appears here ]

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Prospectus

, 1999  
-----

Banc of America Securities LLC

Warburg Dillon Read LLC

Needham & Company, Inc.

Until , 1999, all dealers that buy, sell or trade the common stock may be required to deliver a prospectus, regardless of whether they are participating in this offering. This is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

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PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the costs and expenses, other than underwriting discounts and commissions, payable by PC-Tel in connection with the sale of common stock being registered. All amounts are estimates except the SEC registration fee and the NASD filing fee.

SEC registration fee.....	\$	23,530
NASD filing fee.....		9,000
Nasdaq National Market listing fee.....		90,000
Printing and engraving costs.....		150,000
Legal fees and expenses.....		790,000
Accounting fees and expenses.....		300,000
Blue sky fees and expenses.....		15,000
Transfer agent and registrar fees.....		17,000
Directors and officers insurance.....		300,000
Miscellaneous expenses.....		105,470
		-----
Total.....	\$	\$1,800,000
		=====

Item 14. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law permits a corporation to include in its charter documents, and in agreements between the corporation and its directors, officers and controller provisions expanding the scope of indemnification beyond that specifically provided by the current law.

Article Ninth of our amended and restated certificate of incorporation provides for the indemnification of directors and officers to the fullest extent permissible under Delaware law.

Article VI of our bylaws provides for the indemnification of officers, directors and third parties acting on behalf of PC-Tel if the person acted in good faith and in a manner reasonably believed to be in and not opposed to our best interest, and, with respect to any criminal action or proceeding, the indemnified party had no reason to believe his or her conduct was unlawful.

We have entered into indemnification agreements with our directors and executive officers, in addition to indemnification provided for in our bylaws, and intended to enter into indemnification agreements with any new directors and executive officers in the future. The indemnification agreements may require us, among other things, to indemnify our directors and officers against certain liability that may arise by reason of their status or service as directors and officers (other than liabilities arising from willful misconduct of culpable nature), to advance their expenses incurred as a result of any proceeding against them as to which they could be indemnified, and to obtain directors and officers' insurance, if available on reasonable terms.

Reference is also made to Section 8 of the Underwriting Agreement contained in Exhibit 1.1 hereto, indemnifying officers and directors of PC-Tel against certain liabilities.

Item 15. Recent Sales of Unregistered Securities

Since inception, we have issued unregistered securities to a limited number of persons, as described below. None of these transactions involved any underwriters, underwriting discounts or commissions, or any public offering, and we believe that each transaction was exempt from the registration requirements of the Securities Act by virtue of Section 4(2) thereof, Regulation D promulgated thereunder or Rule 701 pursuant to

compensatory benefit plans and contracts relating to compensation as provided under Rule 701. The recipients of securities in each transaction represented their intention to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were affixed to the share certificates and instruments issued in the transactions. All recipients had adequate access, through their relationships with us, to information about us.

1. On or about February 10, 1994, we issued 2,800,000 shares of our common stock at a per share price of \$0.15 for an aggregate purchase price of \$420,000 to our founders and certain individuals with whom we had a pre-existing business or personal relationship.

2. On or about November 4, 1994, we issued 1,613,333 shares of our common stock at a per share price of \$0.375 for an aggregate purchase price of \$605,000 to certain individuals with whom we had a pre-existing business or personal relationship.

3. On May 9, 1995, we effected a recapitalization of our outstanding stock with our then current stockholders by which each share of our common stock was converted into one (1) share of Series A preferred stock and through which we received no consideration.

4. On June 29, 1995, we sold 222,222 shares of our Series A preferred stock at a per share price of \$0.45 for an aggregate purchase price of \$100,000 to certain individuals with whom we had a pre-existing business or personal relationship.

5. Between October 18, 1995 and on or about January 10th of 1996, we sold 3,250,000 shares of our Series B preferred stock at a per share price of \$1.20 to certain individuals with whom we had a pre-existing business or personal relationship.

6. On October 4, 1995, we effected, by amendment to our articles of incorporation, a 3 for 2 reverse stock split of our then outstanding capital stock.

7. On February 4, 1998 we sold 625,200 shares of our Series C preferred stock at a per share price of \$8.00 for an aggregate purchase price of \$5,001,600 to certain accredited investors, as that term is defined under Rule 501 of the Securities Act. State Street Securities, Needham & Company, Inc. and Beckman White & Reed acted as placement agents for us and, as partial consideration for services performed, Beckman White & Reed received a one-year warrant to purchase 31,260 shares of our common stock at an exercise price of \$6.96 per share and State Street Securities, Edward Gibstein, Mitchell Segal, and Irving Minnaker each received three-year warrants to purchase an aggregate of 2,417 shares of our common stock at an exercise price of \$8.00.

8. On December 31, 1998 we issued ten (10) year warrants to purchase an aggregate of 200,000 shares of our Series C preferred stock at an exercise price of \$8.00 to Pentech Financial Services, Inc. and PFF Bank & Trust, Inc. in connection with the Communications Systems Division acquisition from General DataCom, Inc.

9. From inception to December 31, 1998, we issued and sold an aggregate of 2,412,247 shares of our common stock to employees, consultants, and directors for an aggregate consideration of \$83,421 pursuant to exercise of options granted under our 1995 stock plan, 1997 stock plan, and our 1997 stock plan as amended August 3, 1999.

#### Item 16. Exhibits and Financial Statement Schedules

##### (a) Exhibits

- 1.1 Form of Underwriting Agreement.
- +3.1 Amended and Restated Certificate of Incorporation of the Registrant, as currently in effect.
- 3.2 Form of Amended and Restated Certificate of Incorporation of the Registrant to be filed after the closing of the offering made under this Registration Statement.
- +3.3 Amended and Restated Bylaws of the Registrant.

- \*4.1 Specimen common stock certificate.
- +4.2 Warrant to purchase shares of Series C preferred stock of the Registrant issued to Pentech Financial Services, Inc.
- +4.3 Warrant to purchase shares of Series C preferred stock of the Registrant issued to PFF Bank and Trust, Inc.
- +4.4 Warrant to purchase shares of common stock of the Registrant issued to Edward Gibstein.
- +4.5 Warrant to purchase shares of common stock of the Registrant issued to Irving Minnaker.
- +4.6 Warrant to purchase shares of common stock of the Registrant issued to Mitchell Segal.
- +4.7 Warrant to purchase shares of common stock of the Registrant issued to State Street Securities, Inc.
- +4.8 Amended and Restated Rights Agreement dated December 31, 1997.
- +4.9 Addendum to the Amended and Restated Rights Agreement by and between the Registrant and PFF Bank and Trust, Inc. dated February 1, 1999.
- +4.10 Addendum to the Amended and Restated Rights Agreement by and between the Registrant and Pentech Financial Services, Inc. dated February 1, 1999.
- 5.1 Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation.
- +10.1 Form of Indemnification Agreement between PC-Tel and each of its directors and officers.
- +10.2 1995 Stock Option Plan and form of agreements thereunder.
- +10.3 1997 Stock Option Plan, as amended and restated, August 3, 1999, and form of agreements thereunder.
- +10.4 1998 director option plan and form of agreements thereunder.
- +10.5 1998 employee stock purchase plan and form of agreements thereunder.
- +10.6 Employment offer letter between Derek S. Obata and the Registrant dated March 31, 1998.
- +10.7 Employment offer letter between William F. Roach and the Registrant dated July 19, 1999.
- +10.8 Sublease between KLA-Tencor Corporation and the Registrant dated September 24, 1998.
- +10.9 Commercial Security Agreement by and between the Registrant and PPF Bank and Trust and related documents.
- +10.10 Asset Purchase Agreement by and among PC-Tel, Inc., PC-Tel Global Technologies, Ltd. And General DataComm, Inc. dated as of December 22, 1998.
- +10.11 Escrow Agreement by and between the Registrant and General DataComm, Inc. dated December 22, 1998.
- +10.12 Bonus Pool Disbursement Agreement by and between the Registrant and General DataComm, Inc. dated December 22, 1998.
- +10.13 Form of Acquisition Bonus Agreement by and between the Registrant and General DataComm, Inc. dated on December 22, 1998.
- +10.14 Direct Sales Agreement by and between PC-Tel Global Technologies, Ltd. and Kawasaki LSI U.S.A. dated December 4, 1998.
- +10.15 Volume Purchase Agreement dated June 1, 1998 by and between Silicon Laboratories, Inc. and the Registrant.
- +21.1 List of Subsidiaries of the Registrant.
- 23.1 Consent of Arthur Andersen LLP, Independent Public Accountants.
- 23.2 Consent of PricewaterhouseCoopers, Independent Accountants.

23.3 Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation  
(included in Exhibit 5.1).

23.4 Consent of Knobbe, Martens, Olson & Bear, LLP.

+24.1 Power of Attorney (see Pages II-5 and II-6).

+27.1 Financial Data Schedule.

- -----  
\* To be filed by amendment.

+ Previously filed.

(b) Financial Statement Schedules

Schedule II Valuation and Qualifying Accounts and Reserves (included on  
pages S-1 and S-2 of this registration statement).

Schedules not listed above have been omitted because the information  
required to be set forth therein is not applicable or is shown in the  
financial statements or notes thereto.

#### Item 17. Undertakings

We hereby undertake to provide to the Underwriters at the closing specified  
in the Underwriting Agreement certificates in the denominations and registered  
in the names as required by the Underwriters to permit prompt delivery to each  
purchaser.

Insofar as indemnification by the Registrant for liabilities arising under  
the Securities Act may be permitted to directors, officers and controlling  
persons of the Registrant pursuant to the provisions referenced in Item 14 of  
this Registration Statement or otherwise, the Registrant has been advised that  
in the opinion of the Securities and Exchange Commission this indemnification  
is against public policy as expressed in the Securities Act, and is,  
therefore, unenforceable. In the event that a claim for indemnification  
against these 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 director, officer or controlling person in connection with the  
securities being registered hereunder, 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 the  
indemnification by it is against public policy as expressed in the Securities  
Act and will be governed by the final adjudication of the issue.

We hereby undertake 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(b)(1) or (4) or  
497(h) under the Securities Act shall be deemed to be part of this  
Registration Statement as of the time it was declared effective.

(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 the securities at that time shall be  
deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act, the Registrant has duly caused this Amendment to the Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Santa Clara, State of California, on the 17th day of September, 1999.

PC-Tel, Inc.

\*

By: \_\_\_\_\_  
 Peter Chen, Chief Executive  
 Officer and Chairman

Pursuant to the requirements of the Securities Act of 1933, as amended, this Amendment to the Registration Statement has been signed by the following persons in the capacities and on the dates indicated:

Signature -----	Title -----	Date ----
* _____ (Peter Chen)	Chief Executive Officer and Chairman of the Board (Principal Executive Officer)	September 17, 1999
* _____ (William F. Roach)	President and Chief Operating Officer	September 17, 1999
/s/ Andrew D. Wahl _____ (Andrew D. Wahl)	Vice President, Finance and Chief Financial Officer (Principal Financial Officer)	September 17, 1999
* _____ (William Wen-Liang Hsu)	Vice President, Engineering Director	September 17, 1999
* _____ (Han Yeh)	Vice President, Technology Director	September 17, 1999
* _____ (Richard C. Alberding)	Director	September 17, 1999
* _____ (Martin H. Singer)	Director	September 17, 1999
* _____ (Wen C. Ko)	Director	September 17, 1999
* _____ (Mike Min-Chu Chen)	Director	September 17, 1999
* _____ (Giacomo Marini)	Director	September 17, 1999

/s/ Andrew D. Wahl

\*By:

\_\_\_\_\_  
 (Andrew D. Wahl)

Attorney-In-Fact

REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS ON SCHEDULE

To PC-Tel, Inc.:

We have audited, in accordance with generally accepted auditing standards, the financial statements of PC-Tel, Inc. (a Delaware corporation) included in this Registration Statement and have issued our report thereon dated March 4, 1999. Our audits were made for the purpose of forming an opinion on the basic financial statements taken as a whole. The accompanying schedule is the responsibility of the Company's management and is presented for the purpose of complying with the Securities and Exchange Commission's rules and is not part of the basic financial statements. This schedule has been subjected to the auditing procedures applied in the audit of the basic financial statements and, in our opinion, fairly states in all material respects the financial data required to be set forth herein in relation to the basic financial statements taken as a whole.

Arthur Andersen LLP

San Jose, California

March 4, 1999

S-1

PC-TEL, INC.

SCHEDULE II--VALUATION AND QUALIFYING ACCOUNTS

Description -----	Balance at Beginning of Period -----	Charged to Costs and Expenses -----	Charged Against Revenues -----	Charged Deductions -----	Balance at End of Period -----
Year Ended December 31, 1996:					
Allowance for doubtful accounts.....	\$ --	\$ 70	\$ --	\$ --	\$ 70
Inventory reserves....	\$ --	\$1,514	\$ --	\$ --	\$1,514
Accrued royalties.....	\$ --	\$2,531	\$ --	\$ --	\$2,531
Year Ended December 31, 1997:					
Allowance for doubtful accounts.....	\$ 70	\$ --	\$ 534	\$ --	\$ 604
Inventory reserves....	\$1,514	\$ 488	\$ --	\$ --	\$2,002
Accrued royalties.....	\$2,531	\$3,974	\$ --	\$ --	\$6,505
Year Ended December 31, 1998:					
Allowance for doubtful accounts.....	\$ 604	\$ --	\$3,356	\$(2,271)	\$1,689
Inventory reserves....	\$2,002	\$ 330	\$ --	\$ --	\$2,332
Accrued royalties.....	\$6,505	\$1,639	\$ --	\$(3,000) (a)	\$5,144

- - - - -

(a) Represents a reversal of \$3.0 million in accrued royalties in the fourth quarter of 1998, upon consummation of the acquisition of Communications Systems Division. The Company believes that in some instances they can obtain necessary licenses of third party technologies in exchange for grants of cross licenses of their patent portfolio rather than payment of license fees or royalties.



EXHIBIT INDEX

Number Description  
-----

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- +24.1 Power of Attorney (see Pages II-5 and II-6).
- +27.1 Financial Data Schedule.

- -----  
\* To be filed by amendment

+ Previously filed

\_\_\_\_\_ Shares

PC-Tel, Inc.

Common Stock

Underwriting Agreement

dated \_\_\_\_\_, 1999

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Underwriting Agreement

\_\_\_\_\_, 1999

BANC OF AMERICA SECURITIES LLC  
WARBURG DILLON READ LLC  
NEEDHAM & COMPANY, INC.  
As Representatives of the several Underwriters  
c/o BANC OF AMERICA SECURITIES LLC  
600 Montgomery Street  
San Francisco, California 94111

Ladies and Gentlemen:

Introductory. PC-Tel, Inc., a Delaware corporation (the "Company"), proposes to issue and sell to the several underwriters named in Schedule A (the

-----  
"Underwriters") an aggregate of [ ] shares (the "Firm Common Shares") of its Common Stock, par value \$0.001 per share (the "Common Stock"). In addition, the Company has granted to the Underwriters an option to purchase up to an additional [ ] shares (the "Optional Common Shares") of Common Stock, as provided in Section 2. The Firm Common Shares and, if and to the extent such option is exercised, the Optional Common Shares are collectively called the "Common Shares". Banc of America Securities LLC, Warburg Dillon Read LLC, and Needham & Company, Inc., have agreed to act as representatives of the several Underwriters (in such capacity, the "Representatives") in connection with the offering and sale of the Common Shares.

The Company has prepared and filed with the Securities and Exchange Commission (the "Commission") a registration statement on Form S-1 (File No. 333-[ ]), which contains a form of prospectus to be used in connection with the public offering and sale of the Common Shares. Such registration statement, as amended, including the financial statements, exhibits and schedules thereto, in the form in which it was declared effective by the Commission under the Securities Act of 1933 and the rules and regulations promulgated thereunder (collectively, the "Securities Act"), including any information deemed to be a part thereof at the time of effectiveness pursuant to Rule 430A or Rule 434 under the Securities Act, is called the "Registration Statement". Any registration statement filed by the Company pursuant to Rule 462(b) under the Securities Act is called the "Rule 462(b) Registration Statement", and from and after the date and time of filing of the Rule 462(b) Registration Statement the term "Registration Statement" shall include the Rule 462(b) Registration Statement. Such prospectus, in the form first used by the Underwriters to confirm sales of the Common Shares, is called the "Prospectus"; provided, however, if the Company has, with the consent of Banc of America Securities LLC, elected to rely upon Rule 434 under the Securities Act, the term "Prospectus" shall mean the Company's prospectus subject to completion (each, a "preliminary prospectus") dated [ ] (such preliminary prospectus is called the "Rule 434 preliminary prospectus"), together with the applicable term sheet (the "Term Sheet") prepared

and filed by the Company with the Commission under Rules 434 and 424(b) under the Securities Act and all references in this Agreement to the date of the Prospectus shall mean the date of the Term Sheet. All references in this Agreement to the Registration Statement, the Rule 462(b) Registration Statement, a preliminary prospectus, the Prospectus or the Term Sheet, or any amendments or supplements to any of the foregoing, shall include any copy thereof filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval System ("EDGAR").

The Company hereby confirms its agreements with the Underwriters as follows:

Section 1. Representations and Warranties of the Company. The Company hereby represents, warrants and covenants to each Underwriter as follows:

(a) Compliance with Registration Requirements. The Registration Statement and any Rule 462(b) Registration Statement have been declared effective by the Commission under the Securities Act. The Company has complied to the Commission's satisfaction with all requests of the Commission for additional or supplemental information. No stop order suspending the effectiveness of the Registration Statement or any Rule 462(b) Registration Statement is in effect and no proceedings for such purpose have been instituted or are pending or, to the best knowledge of the Company, are contemplated or threatened by the Commission.

Each preliminary prospectus and the Prospectus when filed complied in all material respects with the Securities Act and, if filed by electronic transmission pursuant to EDGAR (except as may be permitted by Regulation S-T under the Securities Act), was identical to the copy thereof delivered to the Underwriters for use in connection with the offer and sale of the Common Shares. Each of the Registration Statement, any Rule 462(b) Registration Statement and any post-effective amendment thereto, at the time it became effective and at all subsequent times, complied and will comply in all material respects with the Securities Act and did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus, as amended or supplemented, as of its date and at all subsequent times, did not and will not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The representations and warranties set forth in the two immediately preceding sentences do not apply to statements in or omissions from the Registration Statement, any Rule 462(b) Registration Statement, or any post-effective amendment thereto, or the Prospectus, or any amendments or supplements thereto, made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by the Representatives expressly for use therein. There are no contracts or other documents required to be described in the Prospectus or to be filed as exhibits to the Registration Statement which have not been described or filed as required.

(b) Offering Materials Furnished to Underwriters. The Company has delivered to the Representatives three complete manually signed copy of the Registration



Statement and of each consent and certificate of experts filed as a part thereof, and conformed copies of the Registration Statement (without exhibits) and preliminary prospectuses and the Prospectus, as amended or supplemented, in such quantities and at such places as the Representatives have reasonably requested for each of the Underwriters.

(c) Distribution of Offering Material By the Company. The Company has not distributed and will not distribute, prior to the later of the Second Closing Date (as defined below) and the completion of the Underwriters' distribution of the Common Shares, any offering material in connection with the offering and sale of the Common Shares other than a preliminary prospectus, the Prospectus or the Registration Statement.

(d) The Underwriting Agreement. This Agreement has been duly authorized, executed and delivered by, and is a valid and binding agreement of, the Company, enforceable in accordance with its terms, except as rights to indemnification hereunder may be limited by applicable law or public policy applicable thereto and except as the enforcement hereof may be limited by bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium or other similar laws relating to or affecting the rights and remedies of creditors or by general equitable principles.

(e) Authorization of the Common Shares. The Common Shares to be purchased by the Underwriters from the Company have been duly authorized for issuance and sale pursuant to this Agreement and, when issued and delivered by the Company pursuant to this Agreement, will be validly issued, fully paid and nonassessable.

(f) No Applicable Registration or Other Similar Rights. There are no persons with registration or other similar rights to have any equity or debt securities registered for sale under the Registration Statement or included in the offering contemplated by this Agreement, except for such rights as have been duly waived.

(g) No Material Adverse Change. Except as otherwise disclosed in the Prospectus, subsequent to the respective dates as of which information is given in the Prospectus: (i) there has been no material adverse change, or any development that could reasonably be expected to result in a material adverse change, in the condition, financial or otherwise, or in the earnings, business, operations or prospects, whether or not arising from transactions in the ordinary course of business, of the Company and its subsidiaries, considered as one entity (any such change is called a "Material Adverse Change"); (ii) the Company and its subsidiaries, considered as one entity, have not incurred any material liability or obligation, indirect, direct or contingent, not in the ordinary course of business nor entered into any material transaction or agreement not in the ordinary course of business; and (iii) there has been no dividend or distribution of any kind declared, paid or made by the Company or, except for dividends paid to the Company or other subsidiaries, any of its subsidiaries on any class of capital stock or repurchase or redemption by the Company or any of its subsidiaries of any class of capital stock.

(h) Independent Accountants. Arthur Andersen LLP, who have expressed their opinion with respect to the financial statements (which term as used in this

Agreement includes the related notes thereto) filed with the Commission as a part of the Registration Statement and included in the Prospectus, are independent public or certified public accountants as required by the Securities Act.

(i) Preparation of the Financial Statements. The financial statements filed with the Commission as a part of the Registration Statement and included in the Prospectus present fairly the consolidated financial position of the Company and its subsidiaries, and the financial position of the Communications Systems Division of General DataComm, Inc. ("CSD"), in each case as of and at the dates indicated and the results of their respective operations and cash flows for the periods specified. Such financial statements have been prepared in conformity with generally accepted accounting principles as applied in the United States applied on a consistent basis throughout the periods involved, except as may be expressly stated in the related notes thereto. No other financial statements or supporting schedules are required to be included in the Registration Statement. The financial data set forth in the Prospectus under the captions "Prospectus Summary--Summary Consolidated Financial Data", "Selected Consolidated Financial Data" and "Capitalization" fairly present the information set forth therein on a basis consistent with that of the audited financial statements contained in the Registration Statement. The pro forma consolidated financial statements of the Company and its subsidiaries and the related notes thereto included under the caption "Pro Forma Consolidated Financial Statements" and elsewhere in the Prospectus and in the Registration Statement present fairly the information contained therein, have been prepared in accordance with the Commission's rules and guidelines with respect to pro forma financial statements and have been properly presented on the bases described therein, and the assumptions used in the preparation thereof are reasonable and the adjustments used therein are appropriate to give effect to the transactions and circumstances referred to therein.

(j) Incorporation and Good Standing of the Company and its Subsidiaries. Each of the Company and its subsidiaries has been duly incorporated and is validly existing as a corporation in good standing under the laws of the jurisdiction of its incorporation and has corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Prospectus and, in the case of the Company, to enter into and perform its obligations under this Agreement. Each of the Company and each subsidiary is duly qualified as a foreign corporation to transact business and is in good standing in the State of California and each other jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except for such jurisdictions (other than the State of California) where the failure to so qualify or to be in good standing would not, individually or in the aggregate, result in a Material Adverse Change. All of the issued and outstanding capital stock of each subsidiary has been duly authorized and validly issued, is fully paid and nonassessable and is owned by the Company, directly or through subsidiaries, free and clear of any security interest, mortgage, pledge, lien, encumbrance or claim. The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Exhibit 21.1 to the Registration Statement.

(k) Capitalization and Other Capital Stock Matters. The authorized, issued and outstanding capital stock of the Company is as set forth in the Prospectus under the caption "Capitalization" (other than for subsequent issuances, if any, pursuant to employee benefit plans described in the Prospectus or upon exercise of outstanding options described in the Prospectus). The Common Stock (including the Common Shares) conforms in all material respects to the description thereof contained in the Prospectus. All of the issued and outstanding shares of Common Stock have been duly authorized and validly issued, are fully paid and nonassessable and have been issued in compliance with federal and state securities laws. None of the outstanding shares of Common Stock were issued in violation of any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase securities of the Company. There are no authorized or outstanding options, warrants, preemptive rights, rights of first refusal or other rights to purchase, or equity or debt securities convertible into or exchangeable or exercisable for, any capital stock of the Company or any of its subsidiaries other than those accurately described in the Prospectus. The description of the Company's stock option, stock bonus and other stock plans or arrangements, and the options or other rights granted thereunder, set forth in the Prospectus accurately and fairly presents the information required to be shown with respect to such plans, arrangements, options and rights.

(l) Stock Exchange Listing. The Common Shares have been approved for inclusion on the Nasdaq National Market, subject only to official notice of issuance.

(m) Non-Contravention of Existing Instruments; No Further Authorizations or Approvals Required. Neither the Company nor any of its subsidiaries is in violation of its charter or by-laws or is in default (or, with the giving of notice or lapse of time, would be in default) ("Default") under any indenture, mortgage, loan or credit agreement, note, contract, franchise, lease or other instrument to which the Company or any of its subsidiaries is a party or by which it or any of them may be bound, or to which any of the property or assets of the Company or any of its subsidiaries is subject (each, an "Existing Instrument"), except for such Defaults as would not, individually or in the aggregate, result in a Material Adverse Change. The Company's execution, delivery and performance of this Agreement and consummation of the transactions contemplated hereby and by the Prospectus (i) have been duly authorized by all necessary corporate action and will not result in any violation of the provisions of the charter or by-laws of the Company or any subsidiary, (ii) will not conflict with or constitute a breach of, or Default under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company or any of its subsidiaries pursuant to, or require the consent of any other party to, any Existing Instrument, except for such conflicts, breaches, Defaults, liens, charges or encumbrances as would not, individually or in the aggregate, result in a Material Adverse Change and (iii) will not result in any violation of any law, administrative regulation or administrative or court decree applicable to the Company or any subsidiary. No consent, approval, authorization or other order of, or registration or filing with, any court or other governmental or regulatory authority or agency, is required for the Company's execution, delivery and performance of this Agreement and consummation of the transactions contemplated hereby and by the Prospectus, except such as have been obtained or made by the Company and are in full

force and effect under the Securities Act, applicable state securities or blue sky laws and from the National Association of Securities Dealers, Inc. (the "NASD").

(n) No Material Actions or Proceedings. Except as otherwise disclosed in the Prospectus, there are no legal or governmental actions, suits or proceedings pending or, to the best of the Company's knowledge, threatened (i) against or affecting the Company or any of its subsidiaries, (ii) which has as the subject thereof any officer or director of, or property owned or leased by, the Company or any of its subsidiaries or (iii) relating to environmental or discrimination matters, where in any such case (A) there is a reasonable possibility that such action, suit or proceeding might be determined adversely to the Company or such subsidiary and (B) any such action, suit or proceeding, if so determined adversely, would reasonably be expected to result in a Material Adverse Change or adversely affect the consummation of the transactions contemplated by this Agreement. No material labor dispute with the employees of the Company or any of its subsidiaries, or with the employees of any principal supplier of the Company, exists or, to the best of the Company's knowledge, is threatened or imminent.

(o) Intellectual Property Rights. Except as otherwise disclosed in the Prospectus, the Company and its subsidiaries own or possess sufficient trademarks, trade names, patent rights, copyrights, licenses, approvals, trade secrets and other similar rights (collectively, "Intellectual Property Rights") reasonably necessary to conduct their businesses as now conducted; and the expected expiration of any of such Intellectual Property Rights would not result in a Material Adverse Change. Except as otherwise disclosed in the Prospectus, neither the Company nor any of its subsidiaries has received any notice of infringement or conflict with asserted Intellectual Property Rights of others, which infringement or conflict, if the subject of an unfavorable decision, would result in a Material Adverse Change.

(p) All Necessary Permits, etc. The Company and each subsidiary possess such valid and current certificates, authorizations or permits issued by the appropriate state, federal or foreign regulatory agencies or bodies necessary to conduct their respective businesses, except where the failure to possess such certificates, authorizations or permits would not, individually or in the aggregate, result in a Material Adverse Change, and neither the Company nor any subsidiary has received any notice of proceedings relating to the revocation or modification of, or non-compliance with, any such certificate, authorization or permit which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, could result in a Material Adverse Change.

(q) Title to Properties. The Company and each of its subsidiaries has good and marketable title to all the properties and assets reflected as owned in the financial statements referred to in Section 1(i) above (or elsewhere in the Prospectus), in each case free and clear of any security interests, mortgages, liens, encumbrances, equities, claims and other defects, except those, if any, reflected in the financial statements or elsewhere in the Prospectus or such as, individually or in the aggregate, do not materially and adversely affect the value of such property and do not materially interfere with the use made or proposed to be made of such property by the Company or such subsidiary. The real property, improvements, equipment and personal property held under lease by the

Company or any subsidiary are held under valid and enforceable leases, with such exceptions as are not material and do not materially interfere with the use made or proposed to be made of such real property, improvements, equipment or personal property by the Company or such subsidiary.

(r) Tax Law Compliance. The Company and its subsidiaries have filed all necessary federal, state and foreign income and franchise tax returns and have paid all taxes required to be paid by any of them and, if due and payable, any related or similar assessment, fine or penalty levied against any of them, except where the failure to file such returns or to pay such taxes, assessments, fines or penalties would not, individually or in the aggregate, result in a Material Adverse Change. The Company has made adequate charges, accruals and reserves in the applicable financial statements referred to in Section 1(i) above in respect of all federal, state and foreign income and franchise taxes for all periods as to which the tax liability of the Company or any of its subsidiaries has not been finally determined.

(s) Company Not an "Investment Company". The Company has been advised of the rules and requirements under the Investment Company Act of 1940, as amended (the "Investment Company Act"). The Company is not, and after receipt of payment for the Common Shares will not be, an "investment company" within the meaning of Investment Company Act and will conduct its business in a manner so that it will not become subject to the Investment Company Act.

(t) Insurance. Each of the Company and its subsidiaries are insured by recognized, financially sound and reputable institutions with policies in such amounts and with such deductibles and covering such risks as are generally deemed adequate and customary for their businesses including, but not limited to, policies covering real and personal property owned or leased by the Company and its subsidiaries against theft, damage, destruction, acts of vandalism and earthquakes. The Company has no reason to believe that it or any subsidiary will not be able (i) to renew its existing insurance coverage as and when such policies expire or (ii) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not result in a Material Adverse Change. Neither of the Company nor any subsidiary has been denied any insurance coverage which it has sought or for which it has applied.

(u) No Price Stabilization or Manipulation. The Company has not taken and will not take, directly or indirectly, any action designed to or that might be reasonably expected to cause or result in stabilization or manipulation of the price of the Common Stock or any security of the Company to facilitate the sale or resale of the Common Shares.

(v) Related Party Transactions. There are no business relationships or related-party transactions involving the Company or any subsidiary or any other person required to be described in the Prospectus which have not been described as required.

(w) No Unlawful Contributions or Other Payments. Neither the Company nor any of its subsidiaries nor, to the best of the Company's knowledge, any employee or agent of the Company or any subsidiary, has made any contribution or other payment to any official of, or candidate for, any federal, state or foreign office in violation of any law or of the character required to be disclosed in the Prospectus.

(x) Company's Accounting System. The Company maintains a system of accounting controls sufficient to provide reasonable assurances that (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles as applied in the United States and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

(y) Compliance with Environmental Laws. Except as would not, individually or in the aggregate, result in a Material Adverse Change (i) neither the Company nor any of its subsidiaries is in violation of any federal, state, local or foreign law or regulation relating to pollution or protection of human health or the environment (including, without limitation, ambient air, surface water, groundwater, land surface or subsurface strata) or wildlife, including without limitation, laws and regulations relating to emissions, discharges, releases or threatened releases of chemicals, pollutants, contaminants, wastes, toxic substances, hazardous substances, petroleum and petroleum products (collectively, "Materials of Environmental Concern"), or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Materials of Environment Concern (collectively, "Environmental Laws"), which violation includes, but is not limited to, noncompliance with any permits or other governmental authorizations required for the operation of the business of the Company or its subsidiaries under applicable Environmental Laws, or noncompliance with the terms and conditions thereof, nor has the Company or any of its subsidiaries received any written communication, whether from a governmental authority, citizens group, employee or otherwise, that alleges that the Company or any of its subsidiaries is in violation of any Environmental Law; (ii) there is no claim, action or cause of action filed with a court or governmental authority, no investigation with respect to which the Company has received written notice, and no written notice by any person or entity alleging potential liability for investigatory costs, cleanup costs, governmental responses costs, natural resources damages, property damages, personal injuries, attorneys' fees or penalties arising out of, based on or resulting from the presence, or release into the environment, of any Material of Environmental Concern at any location owned, leased or operated by the Company or any of its subsidiaries, now or in the past (collectively, "Environmental Claims"), pending or, to the best of the Company's knowledge, threatened against the Company or any of its subsidiaries or any person or entity whose liability for any Environmental Claim the Company or any of its subsidiaries has retained or assumed either contractually or by operation of law; and (iii) to the best of the Company's knowledge, there are no past or present actions, activities, circumstances, conditions, events or incidents, including, without limitation, the release, emission,

discharge, presence or disposal of any Material of Environmental Concern, that reasonably could result in a violation of any Environmental Law or form the basis of a potential Environmental Claim against the Company or any of its subsidiaries or against any person or entity whose liability for any Environmental Claim the Company or any of its subsidiaries has retained or assumed either contractually or by operation of law.

(z) Periodic Review of Costs of Environmental Compliance. In the ordinary course of its business, the Company conducts a periodic review of the effect of Environmental Laws on the business, operations and properties of the Company and its subsidiaries, in the course of which it identifies and evaluates associated costs and liabilities (including, without limitation, any capital or operating expenditures required for clean-up, closure of properties or compliance with Environmental Laws or any permit, license or approval, any related constraints on operating activities and any potential liabilities to third parties). On the basis of such review and the amount of its established reserves, the Company has reasonably concluded that such associated costs and liabilities would not, individually or in the aggregate, result in a Material Adverse Change.

(aa) ERISA Compliance. The Company and its subsidiaries and any "employee benefit plan" (as defined under the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder (collectively, "ERISA")) established or maintained by the Company, its subsidiaries or their "ERISA Affiliates" (as defined below) are in compliance in all material respects with ERISA. "ERISA Affiliate" means, with respect to the Company or a subsidiary, any member of any group of organizations described in Sections 414(b), (c), (m) or (o) of the Internal Revenue Code of 1986, as amended, and the regulations and published interpretations thereunder (the "Code") of which the Company or such subsidiary is a member. No "reportable event" (as defined under ERISA) has occurred or is reasonably expected to occur with respect to any "employee benefit plan" established or maintained by the Company, its subsidiaries or any of their ERISA Affiliates. No "employee benefit plan" established or maintained by the Company, its subsidiaries or any of their ERISA Affiliates, if such "employee benefit plan" were terminated, would have any "amount of unfunded benefit liabilities" (as defined under ERISA). Neither the Company, its subsidiaries nor any of their ERISA Affiliates has incurred or reasonably expects to incur any liability under (i) Title IV of ERISA with respect to termination of, or withdrawal from, any "employee benefit plan" or (ii) Sections 412, 4971, 4975 or 4980B of the Code. Each "employee benefit plan" established or maintained by the Company, its subsidiaries or any of their ERISA Affiliates that is intended to be qualified under Section 401(a) of the Code is so qualified and nothing has occurred, whether by action or failure to act, which would cause the loss of such qualification.

(bb) Year 2000. All disclosure regarding year 2000 compliance that is required to be described under the Securities Act (including disclosures required by Staff Legal Bulletin No. 5) has been included in the Prospectus. The Company will not incur significant operating expenses or costs to ensure that its information systems will be year 2000 compliant, other than as disclosed in the Prospectus.

Any certificate signed by an officer of the Company and delivered to the Representatives or to counsel for the Underwriters shall be deemed to be a representation and warranty by the Company to each Underwriter as to the matters set forth therein.

## Section 2. Purchase, Sale and Delivery of the Common Shares.

The Firm Common Shares. The Company agrees to issue and sell to the several Underwriters the Firm Common Shares upon the terms herein set forth. On the basis of the representations, warranties and agreements herein contained, and upon the terms but subject to the conditions herein set forth, the Underwriters agree, severally and not jointly, to purchase from the Company the respective number of Firm Common Shares set forth opposite their names on Schedule A. The purchase price per Firm Common Share to be paid by the several

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Underwriters to the Company shall be \$[ ] per share.

The First Closing Date. Delivery of certificates for the Firm Common Shares to be purchased by the Underwriters and payment therefor shall be made at the offices of Banc of America Securities LLC, 600 Montgomery Street, San Francisco, California (or such other place as may be agreed to by the Company and the Representatives) at 6:00 a.m. San Francisco time, on [ ], 1999 or such other time and date not later than 10:30 a.m. San Francisco time, on [ ], 1999 as the Representatives shall designate by notice to the Company (the time and date of such closing are called the "First Closing Date"). The Company hereby acknowledges that circumstances under which the Representatives may provide notice to postpone the First Closing Date as originally scheduled include, but are in no way limited to, any determination by the Company or the Representatives to recirculate to the public copies of an amended or supplemented Prospectus or a delay as contemplated by the provisions of Section 10.

The Optional Common Shares; the Second Closing Date. In addition, on the basis of the representations, warranties and agreements herein contained, and upon the terms but subject to the conditions herein set forth, the Company hereby grants an option to the several Underwriters to purchase, severally and not jointly, up to an aggregate of [ ] Optional Common Shares from the Company at the purchase price per share to be paid by the Underwriters for the Firm Common Shares. The option granted hereunder is for use by the Underwriters solely in covering any over-allotments in connection with the sale and distribution of the Firm Common Shares. The option granted hereunder may be exercised at any time (but not more than once) upon notice by the Representatives to the Company, which notice may be given at any time within 30 days from the date of this Agreement. Such notice shall set forth (i) the aggregate number of Optional Common Shares as to which the Underwriters are exercising the option, (ii) the names and denominations in which the certificates for the Optional Common Shares are to be registered and (iii) the time, date and place at which such certificates will be delivered (which time and date may be simultaneous with, but not earlier than, the First Closing Date; and in such case the term "First Closing Date" shall refer to the time and date of delivery of certificates for the Firm Common Shares and the Optional Common Shares). Such time and date of delivery, if subsequent to the First Closing Date, is called the "Second Closing Date" and shall be determined by the Representatives and shall not be earlier than three nor later than five full business days after delivery of such notice of exercise. If any Optional Common Shares are to be purchased, each Underwriter agrees, severally and not jointly, to purchase the number of Optional Common Shares (subject to such adjustments to eliminate fractional shares



as the Representatives may determine) that bears the same proportion to the total number of Optional Common Shares to be purchased as the number of Firm Common Shares set forth on Schedule A opposite the name of such Underwriter

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bears to the total number of Firm Common Shares. The Representatives may cancel the option at any time prior to its expiration by giving written notice of such cancellation to the Company.

Public Offering of the Common Shares. The Representatives hereby advise the Company that the Underwriters intend to offer for sale to the public, as described in the Prospectus, their respective portions of the Common Shares as soon after this Agreement has been executed and the Registration Statement has been declared effective as the Representatives, in their sole judgment, have determined is advisable and practicable.

Payment for the Common Shares. Payment for the Common Shares shall be made at the First Closing Date (and, if applicable, at the Second Closing Date) by wire transfer of immediately available funds to the order of the Company.

It is understood that the Representatives have been authorized, for their own accounts and the accounts of the several Underwriters, to accept delivery of and receipt for, and make payment of the purchase price for, the Firm Common Shares and any Optional Common Shares the Underwriters have agreed to purchase. Banc of America Securities LLC, individually and not as a Representative of the Underwriters, may (but shall not be obligated to) make payment for any Common Shares to be purchased by any Underwriter whose funds shall not have been received by the Representatives by the First Closing Date or the Second Closing Date, as the case may be, for the account of such Underwriter, but any such payment shall not relieve such Underwriter from any of its obligations under this Agreement.

Delivery of the Common Shares. The Company shall deliver, or cause to be delivered, to the Representatives for the accounts of the several Underwriters certificates for the Firm Common Shares at the First Closing Date, against the irrevocable release of a wire transfer of immediately available funds for the amount of the purchase price therefor. The Company shall also deliver, or cause to be delivered, to the Representatives for the accounts of the several Underwriters, certificates for the Optional Common Shares the Underwriters have agreed to purchase at the First Closing Date or the Second Closing Date, as the case may be, against the irrevocable release of a wire transfer of immediately available funds for the amount of the purchase price therefor. The certificates for the Common Shares shall be in definitive form and registered in such names and denominations as the Representatives shall have requested at least two full business days prior to the First Closing Date (or the Second Closing Date, as the case may be) and shall be made available for inspection on the business day preceding the First Closing Date (or the Second Closing Date, as the case may be) at a location in New York City as the Representatives may designate. Time shall be of the essence, and delivery at the time and place specified in this Agreement is a further condition to the obligations of the Underwriters.

Delivery of Prospectus to the Underwriters. Not later than 12:00 p.m. on the second business day following the date the Common Shares are first released by the Underwriters for sale to the public, the Company shall deliver or cause to be delivered, copies of the Prospectus in such quantities and at such places as the Representatives shall request.

Section 3. Additional Covenants of the Company. The Company further covenants and agrees with each Underwriter as follows:

(a) Representatives' Review of Proposed Amendments and Supplements. During such period beginning on the date hereof and ending on the later of the First Closing Date or such date, as in the opinion of counsel for the Underwriters, the Prospectus is no longer required by law to be delivered in connection with sales by an Underwriter or dealer (the "Prospectus Delivery Period"), prior to amending or supplementing the Registration Statement (including any registration statement filed under Rule 462(b) under the Securities Act) or the Prospectus, the Company shall furnish to the Representatives for review a copy of each such proposed amendment or supplement, and the Company shall not file any such proposed amendment or supplement to which the Representatives reasonably object.

(b) Securities Act Compliance. After the date of this Agreement, the Company shall promptly advise the Representatives in writing (i) of the receipt of any comments of, or requests for additional or supplemental information from, the Commission, (ii) of the time and date of any filing of any post-effective amendment to the Registration Statement or any amendment or supplement to any preliminary prospectus or the Prospectus, (iii) of the time and date that any post-effective amendment to the Registration Statement becomes effective and (iv) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto or of any order preventing or suspending the use of any preliminary prospectus or the Prospectus, or of any proceedings to remove, suspend or terminate from listing or quotation the Common Stock from any securities exchange upon which it is listed for trading or included or designated for quotation, or of the threatening or initiation of any proceedings for any of such purposes. If the Commission shall enter any such stop order at any time, the Company will use its best efforts to obtain the lifting of such order at the earliest possible moment. Additionally, the Company agrees that it shall comply with the provisions of Rules 424(b), 430A and 434, as applicable, under the Securities Act and will use its reasonable efforts to confirm that any filings made by the Company under such Rule 424(b) were received in a timely manner by the Commission.

(c) Amendments and Supplements to the Prospectus and Other Securities Act Matters. If, during the Prospectus Delivery Period, any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Prospectus in order to make the statements therein, in the light of the circumstances when the Prospectus is delivered to a purchaser, not misleading, or if in the opinion of the Representatives or counsel for the Underwriters it is otherwise necessary to amend or supplement the Prospectus to comply with law, the Company agrees to promptly prepare (subject to Section 3(a) hereof), file with the Commission and furnish at its own expense to the Underwriters and to dealers, amendments or supplements to the Prospectus so that the statements in the Prospectus as so amended or supplemented will not, in the light of the circumstances when the Prospectus is delivered to a purchaser, be misleading or so that the Prospectus, as amended or supplemented, will comply with law.

(d) Copies of any Amendments and Supplements to the Prospectus. The Company agrees to furnish the Representatives, without charge, during the Prospectus Delivery Period, as many copies of the Prospectus and any amendments and supplements thereto as the Representatives may request.

(e) Blue Sky Compliance. The Company shall cooperate with the Representatives and counsel for the Underwriters to qualify or register the Common Shares for sale under (or obtain exemptions from the application of) the state securities or blue sky laws or Canadian provincial Securities laws of those jurisdictions designated by the Representatives, shall comply with such laws and shall continue such qualifications, registrations and exemptions in effect so long as required for the distribution of the Common Shares. The Company shall not be required to qualify as a foreign corporation or to take any action that would subject it to general service of process in any such jurisdiction where it is not presently qualified or where it would be subject to taxation as a foreign corporation. The Company will advise the Representatives promptly of the suspension of the qualification or registration of (or any such exemption relating to) the Common Shares for offering, sale or trading in any jurisdiction or any initiation or threat of any proceeding for any such purpose, and in the event of the issuance of any order suspending such qualification, registration or exemption, the Company shall use its best efforts to obtain the withdrawal thereof at the earliest possible moment.

(f) Use of Proceeds. The Company shall apply the net proceeds from the sale of the Common Shares sold by it in the manner described under the caption "Use of Proceeds" in the Prospectus.

(g) Transfer Agent. The Company shall engage and maintain, at its expense, a registrar and transfer agent for the Common Stock.

(h) Earnings Statement. As soon as practicable, the Company will make generally available to its security holders and to the Representatives an earnings statement (which need not be audited) covering the twelve-month period ending December 31, 2000 that satisfies the provisions of Section 11(a) of the Securities Act.

(i) Periodic Reporting Obligations. During the Prospectus Delivery Period the Company shall file, on a timely basis, with the Commission and the Nasdaq National Market all reports and documents required to be filed under the Exchange Act. Additionally, the Company shall report the use of proceeds from the issuance of the Common Shares as may be required under Rule 463 under the Securities Act.

(j) Agreement Not To Offer or Sell Additional Securities. During the period of 180 days following the date of the Prospectus, the Company will not, without the prior written consent of Banc of America Securities LLC (which consent may be withheld at the sole discretion of Banc of America Securities LLC), directly or indirectly, sell, offer, contract or grant any option to sell, pledge, transfer or establish an open "put equivalent position" within the meaning of Rule 16a-1(h) under the Exchange Act, or otherwise dispose of or transfer, or announce the offering of, or file any registration statement under the Securities Act in respect of, any shares of Common Stock, options or warrants to

acquire shares of the Common Stock or securities exchangeable or exercisable for or convertible into shares of Common Stock (other than as contemplated by this Agreement with respect to the Common Shares); provided, however, that the Company may issue shares of its Common Stock or options to purchase its Common Stock, or Common Stock upon exercise of options or warrants, pursuant to any stock option, stock bonus or other stock plan or other arrangement described in the Prospectus, but only if the holders of such shares, options, or shares issued upon exercise of such options, agree in writing not to sell, offer, dispose of or otherwise transfer any such shares or options during such 180 day period without the prior written consent of Banc of America Securities LLC (which consent may be withheld at the sole discretion of the Banc of America Securities LLC).

(k) Future Reports to the Representatives. During the period of five years hereafter the Company will furnish to Banc of America Securities LLC at 600 Montgomery Street, San Francisco, CA 94111, Attention: \_\_\_\_\_, Warburg Dillon Read LLC at [\_\_\_\_\_], Attention: \_\_\_\_\_, and Needham & Company, Inc at [\_\_\_\_\_], Attention: \_\_\_\_\_: (i) as soon as practicable after the end of each fiscal year, copies of the Annual Report of the Company containing the balance sheet of the Company as of the close of such fiscal year and statements of income, stockholders' equity and cash flows for the year then ended and the opinion thereon of the Company's independent public or certified public accountants; (ii) as soon as practicable after the filing thereof, copies of each proxy statement, Annual Report on Form 10-K, Quarterly Report on Form 10-Q, Current Report on Form 8-K or other report filed by the Company with the Commission, the NASD or any securities exchange; and (iii) as soon as available, copies of any report or communication of the Company mailed generally to holders of its capital stock.

Banc of America Securities LLC, on behalf of the several Underwriters, may, in its sole discretion, waive in writing the performance by the Company of any one or more of the foregoing covenants or extend the time for their performance.

Section 4. Payment of Expenses. The Company agrees to pay all costs, fees and expenses incurred in connection with the performance of its obligations hereunder and in connection with the transactions contemplated hereby, including without limitation (i) all expenses incident to the issuance and delivery of the Common Shares (including all printing and engraving costs), (ii) all fees and expenses of the registrar and transfer agent of the Common Stock, (iii) all necessary issue, transfer and other stamp taxes in connection with the issuance and sale of the Common Shares to the Underwriters, (iv) all fees and expenses of the Company's counsel, independent public or certified public accountants and other advisors, (v) all costs and expenses incurred in connection with the preparation, printing, filing, shipping and distribution of the Registration Statement (including financial statements, exhibits, schedules, consents and certificates of experts), each preliminary prospectus and the Prospectus, and all amendments and supplements thereto, and this Agreement, (vi) all filing fees, attorneys' fees and expenses incurred by the Company or the Underwriters in connection with qualifying or registering (or obtaining exemptions from the qualification or registration of) all or any part of the Common Shares for offer and sale under the state securities or blue sky laws or the provincial securities laws of Canada, and, if requested by the Representatives, preparing and printing a "Blue Sky Survey" or memorandum, and any supplements thereto, advising the Underwriters of such

qualifications, registrations and exemptions, (vii) the filing fees incident to, and the reasonable fees and expenses of counsel for the Underwriters in connection with, the NASD's review and approval of the Underwriters' participation in the offering and distribution of the Common Shares, (viii) the fees and expenses associated with including the Common Stock on the Nasdaq National Market, and (ix) all other fees, costs and expenses referred to in Item 13 of Part II of the Registration Statement. Except as provided in this Section 4, Section 6, Section 8 and Section 9 hereof, the Underwriters shall pay their own expenses, including the fees and disbursements of their counsel.

Section 5. Conditions of the Obligations of the Underwriters. The obligations of the several Underwriters to purchase and pay for the Common Shares as provided herein on the First Closing Date and, with respect to the Optional Common Shares, the Second Closing Date, shall be subject to the accuracy of the representations and warranties on the part of the Company set forth in Section 1 hereof as of the date hereof and as of the First Closing Date as though then made and, with respect to the Optional Common Shares, as of the Second Closing Date as though then made, to the timely performance by the Company of its covenants and other obligations hereunder, and to each of the following additional conditions:

(a) Accountants' Comfort Letter. On the date hereof, the Representatives shall have received from Arthur Andersen LLP, independent public or certified public accountants for the Company, a letter dated the date hereof addressed to the Underwriters, in form and substance satisfactory to the Representatives, containing statements and information of the type ordinarily included in accountant's "comfort letters" to underwriters, delivered according to Statement of Auditing Standards No. 72 (or any successor bulletin), with respect to the audited and unaudited financial statements and certain financial information contained in the Registration Statement and the Prospectus (and the Representatives shall have received an additional [ ] conformed copies of such accountants' letter for each of the several Underwriters).

(b) Compliance with Registration Requirements; No Stop Order; No Objection from NASD. For the period from and after effectiveness of this Agreement and prior to the First Closing Date and, with respect to the Optional Common Shares, the Second Closing Date:

(i) the Company shall have filed the Prospectus with the Commission (including the information required by Rule 430A under the Securities Act) in the manner and within the time period required by Rule 424(b) under the Securities Act; or the Company shall have filed a post-effective amendment to the Registration Statement containing the information required by such Rule 430A, and such post-effective amendment shall have become effective; or, if the Company elected to rely upon Rule 434 under the Securities Act and obtained the Representatives' consent thereto, the Company shall have filed a Term Sheet with the Commission in the manner and within the time period required by such Rule 424(b);

(ii) no stop order suspending the effectiveness of the Registration Statement, any Rule 462(b) Registration Statement, or any post-effective

amendment to the Registration Statement, shall be in effect and no proceedings for such purpose shall have been instituted or threatened by the Commission; and

(iii) the NASD shall have raised no objection to the fairness and reasonableness of the underwriting terms and arrangements.

(c) No Material Adverse Change. For the period from and after the date of this Agreement and prior to the First Closing Date and, with respect to the Optional Common Shares, the Second Closing Date, in the judgment of the Representatives there shall not have occurred any Material Adverse Change.

(d) Opinions of Counsel for the Company. On each of the First Closing Date and the Second Closing Date the Representatives shall have received the favorable opinions of Wilson, Sonsini, Goodrich & Rosati, counsel for the Company, and Knobbe, Martens, Olson & Bear LLP, patent counsel for the Company, dated as of such Closing Date, the forms of which are attached as Exhibit A and Exhibit B, respectively, (and the  
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Representatives shall have received an additional [\_\_\_] conformed copies of such counsels' legal opinions for each of the several Underwriters).

(e) Opinion of Counsel for the Underwriters. On each of the First Closing Date and the Second Closing Date the Representatives shall have received the favorable opinion of Brobeck, Phleger & Harrison LLP, counsel for the Underwriters, dated as of such Closing Date, with respect to the matters set forth in paragraphs (vii) (with respect to subparagraph (i) only), (viii), (ix), (x) (xi) and (xiii) (with respect to the captions "Description of Capital Stock" and "Underwriting" under subparagraph (i) only), and the next-to-last paragraph of Exhibit A (and the Representatives  
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shall have received an additional [\_\_\_] conformed copies of such counsel's legal opinion for each of the several Underwriters).

(f) Officers' Certificate. On each of the First Closing Date and the Second Closing Date the Representatives shall have received a written certificate executed by the Chief Executive Officer or President of the Company and the Chief Financial Officer or Chief Accounting Officer of the Company, dated as of such Closing Date, to the effect set forth in subsection (b) (ii) of this Section 5, and further to the effect that:

(i) for the period from and after the date of this Agreement and prior to such Closing Date, there has not occurred any Material Adverse Change;

(ii) the representations, warranties and covenants of the Company set forth in Section 1 of this Agreement are true and correct with the same force and effect as though expressly made on and as of such Closing Date; and

(iii) the Company has complied with all the agreements hereunder and satisfied all the conditions on its part to be performed or satisfied hereunder at or prior to such Closing Date.

(g) Bring-down Comfort Letter. On each of the First Closing Date and the Second Closing Date the Representatives shall have received from Arthur Andersen LLP,

independent public or certified public accountants for the Company, a letter dated such date, in form and substance satisfactory to the Representatives, to the effect that they reaffirm the statements made in the letter furnished by them pursuant to subsection (a) of this Section 5, except that the specified date referred to therein for the carrying out of procedures shall be no more than three business days prior to the First Closing Date or Second Closing Date, as the case may be (and the Representatives shall have received an additional [ ] conformed copies of such accountants' letter for each of the several Underwriters).

(h) Lock-Up Agreement from Securityholders of the Company. On the date hereof, the Company shall have furnished to the Representatives an agreement in the form of Exhibit C hereto from each director, officer and

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each beneficial owner (other than such owners which the Representatives have expressly agreed need not provide such agreement) of Common Stock (as defined and determined according to Rule 13d-3 under the Exchange Act, except that a one hundred eighty day period shall be used rather than the sixty day period set forth therein), and such agreement shall be in full force and effect on each of the First Closing Date and the Second Closing Date.

(i) Additional Documents. On or before each of the First Closing Date and the Second Closing Date, the Representatives and counsel for the Underwriters shall have received such information, documents and opinions as they may reasonably require for the purposes of enabling them to pass upon the issuance and sale of the Common Shares as contemplated herein, or in order to evidence the accuracy of any of the representations and warranties, or the satisfaction of any of the conditions or agreements, herein contained.

If any condition specified in this Section 5 is not satisfied when and as required to be satisfied, this Agreement may be terminated by the Representatives by notice to the Company at any time on or prior to the First Closing Date and, with respect to the Optional Common Shares, at any time prior to the Second Closing Date, which termination shall be without liability on the part of any party to any other party, except that Section 4, Section 6, Section 8 and Section 9 shall at all times be effective and shall survive such termination.

Section 6. Reimbursement of Underwriters' Expenses. If this Agreement is terminated by the Representatives pursuant to Section 5, Section 7, Section 10 or Section 11, or if the sale to the Underwriters of the Common Shares on the First Closing Date is not consummated because of any refusal, inability or failure on the part of the Company to perform any agreement herein or to comply with any provision hereof, the Company agrees to reimburse the Representatives and the other Underwriters (or such Underwriters as have terminated this Agreement with respect to themselves), severally, upon demand for all out-of-pocket expenses that shall have been reasonably incurred by the Representatives and the Underwriters in connection with the proposed purchase and the offering and sale of the Common Shares, including but not limited to fees and disbursements of counsel, printing expenses, travel expenses, postage, facsimile and telephone charges.

Section 7. Effectiveness of this Agreement. This Agreement shall not become effective until the later of (i) the execution of this Agreement by the parties hereto and

(ii) notification by the Commission to the Company and the Representatives of the effectiveness of the Registration Statement under the Securities Act.

Prior to such effectiveness, this Agreement may be terminated by any party by notice to each of the other parties hereto, and any such termination shall be without liability on the part of (a) the Company to any Underwriter, except that the Company shall be obligated to reimburse the expenses of the Representatives and the Underwriters pursuant to Sections 4 and 6 hereof, (b) of any Underwriter to the Company, or (c) of any party hereto to any other party except that the provisions of Section 8 and Section 9 shall at all times be effective and shall survive such termination.

#### Section 8. Indemnification

(a) Indemnification of the Underwriter. The Company agrees to indemnify and hold harmless each Underwriter, its officers and employees, and each person, if any, who controls any Underwriter within the meaning of the Securities Act and the Exchange Act against any loss, claim, damage, liability or expense, as incurred, to which such Underwriter or such controlling person may become subject, under the Securities Act, the Exchange Act or other federal or state statutory law or regulation, or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of the Company), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based (i) upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, including any information deemed to be a part thereof pursuant to Rule 430A or Rule 434 under the Securities Act, or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading; or (ii) upon any untrue statement or alleged untrue statement of a material fact contained in any preliminary prospectus or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; or (iii) in whole or in part upon any inaccuracy in the representations and warranties of the Company contained herein; or (iv) in whole or in part upon any failure of the Company to perform its obligations hereunder or under law; or (v) any act or failure to act or any alleged act or failure to act by any Underwriter in connection with, or relating in any manner to, the Common Stock or the offering contemplated hereby, and which is included as part of or referred to in any loss, claim, damage, liability or action arising out of or based upon any matter covered by clause (i) or (ii) above, provided that the Company shall not be liable under this clause (v) to the extent that a court of competent jurisdiction shall have determined by a final judgment that such loss, claim, damage, liability or action resulted directly from any such acts or failures to act undertaken or omitted to be taken by such Underwriter through its bad faith or willful misconduct; and to reimburse each Underwriter and each such controlling person for any and all expenses (including the fees and disbursements of counsel chosen by Banc of America Securities LLC) as such expenses are reasonably incurred by such Underwriter or such controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action; provided, however, that the



Company shall not be liable for any loss, claim, damage, liability or expense to the extent, but only to the extent, arising out of or based upon any untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with written information furnished to the Company by the Representatives expressly for use in the Registration Statement, any preliminary prospectus or the Prospectus (or any amendment or supplement thereto); and provided, further, that with respect to any preliminary prospectus, the foregoing indemnity agreement shall not inure to the benefit of any Underwriter from whom the person asserting any loss, claim, damage, liability or expense purchased Common Shares, or any person controlling such Underwriter, if copies of the Prospectus were timely delivered to the Underwriter pursuant to Section 2 and a copy of the Prospectus (as then amended or supplemented if the Company shall have furnished any amendments or supplements thereto) was not sent or given by or on behalf of such Underwriter to such person, if required by law so to have been delivered, at or prior to the written confirmation of the sale of the Common Shares to such person, and if the Prospectus (as so amended or supplemented) would have cured the defect giving rise to such loss, claim, damage, liability or expense. The indemnity agreement set forth in this Section 8(a) shall be in addition to any liabilities that the Company may otherwise have.

(b) Indemnification of the Company, its Directors and Officers. Each Underwriter agrees, severally and not jointly, to indemnify and hold harmless the Company, each of its directors, each of its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of the Securities Act or the Exchange Act, against any loss, claim, damage, liability or expense, as incurred, to which the Company, or any such director, officer or controlling person may become subject, under the Securities Act, the Exchange Act, or other federal or state statutory law or regulation, or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of such Underwriter), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based upon any untrue or alleged untrue statement of a material fact contained in the Registration Statement, any preliminary prospectus or the Prospectus (or any amendment or supplement thereto), or arises out of or is based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in the Registration Statement, any preliminary prospectus, the Prospectus (or any amendment or supplement thereto), in reliance upon and in conformity with written information furnished to the Company by the Representatives expressly for use therein; and to reimburse the Company, or any such director, officer or controlling person for any legal and other expense reasonably incurred by the Company, or any such director, officer or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action. The Company hereby acknowledges that the only information that the Underwriters have furnished to the Company expressly for use in the Registration Statement, any preliminary prospectus or the Prospectus (or any amendment or supplement thereto) are the statements set forth in the table in the first paragraph and the second, seventh, ninth, tenth, twelfth and

fourteenth paragraphs under the caption "Underwriting" in the Prospectus; and the Underwriters confirm that such statements are correct. The indemnity agreement set forth in this Section 8(b) shall be in addition to any liabilities that each Underwriter may otherwise have.

(c) Notifications and Other Indemnification Procedures. Promptly after receipt by an indemnified party under this Section 8 of notice of the commencement of any action, such indemnified party will, if a claim in respect thereof is to be made against an indemnifying party under this Section 8, notify the indemnifying party in writing of the commencement thereof, but the omission so to notify the indemnifying party will not relieve it from any liability which it may have to any indemnified party for contribution or otherwise than under the indemnity agreement contained in this Section 8 or to the extent it is not prejudiced as a proximate result of such failure. In case any such action is brought against any indemnified party and such indemnified party seeks or intends to seek indemnity from an indemnifying party, the indemnifying party will be entitled to participate in, and, to the extent that it shall elect, jointly with all other indemnifying parties similarly notified, by written notice delivered to the indemnified party promptly after receiving the aforesaid notice from such indemnified party, to assume the defense thereof with counsel reasonably satisfactory to such indemnified party; provided, however, if the defendants in any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that a conflict may arise between the positions of the indemnifying party and the indemnified party in conducting the defense of any such action or that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, the indemnified party or parties shall have the right to select separate counsel to assume such legal defenses and to otherwise participate in the defense of such action on behalf of such indemnified party or parties. Upon receipt of notice from the indemnifying party to such indemnified party of such indemnifying party's election so to assume the defense of such action and approval by the indemnified party of counsel, the indemnifying party will not be liable to such indemnified party under this Section 8 for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof unless (i) the indemnified party shall have employed separate counsel in accordance with the proviso to the next preceding sentence (it being understood, however, that the indemnifying party shall not be liable for the expenses of more than one separate counsel (together with local counsel), approved by the indemnifying party (Banc of America Securities LLC in the case of Section 8(b) and Section 9), representing the indemnified parties who are parties to such action) or (ii) the indemnifying party shall not have employed counsel satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of commencement of the action, in each of which cases the fees and expenses of counsel shall be at the expense of the indemnifying party.

(d) Settlements. The indemnifying party under this Section 8 shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party against any loss, claim, damage, liability or expense by reason of such settlement or judgment. Notwithstanding the foregoing

sentence, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel as contemplated by Section 8(c) hereof, the indemnifying party agrees that it shall be liable for any settlement of any proceeding effected without its written consent if (i) such settlement is entered into more than 30 days after receipt by such indemnifying party of the aforesaid request and (ii) such indemnifying party shall not have reimbursed the indemnified party in accordance with such request prior to the date of such settlement. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any indemnified party is or could have been a party and indemnity was or could have been sought hereunder by such indemnified party, unless such settlement, compromise or consent includes an unconditional release of such indemnified party from all liability on claims that are the subject matter of such action, suit or proceeding.

#### Section 9. Contribution.

If the indemnification provided for in Section 8 is for any reason held to be unavailable to or otherwise insufficient to hold harmless an indemnified party in respect of any losses, claims, damages, liabilities or expenses referred to therein, then each indemnifying party shall contribute to the aggregate amount paid or payable by such indemnified party, as incurred, as a result of any losses, claims, damages, liabilities or expenses referred to therein (i) in such proportion as is appropriate to reflect the relative benefits received by the Company, on the one hand, and the Underwriters, on the other hand, from the offering of the Common Shares pursuant to this Agreement or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and the Underwriters, on the other hand, in connection with the statements or omissions or inaccuracies in the representations and warranties herein which resulted in such losses, claims, damages, liabilities or expenses, as well as any other relevant equitable considerations. The relative benefits received by the Company, on the one hand, and the Underwriters, on the other hand, in connection with the offering of the Common Shares pursuant to this Agreement shall be deemed to be in the same respective proportions as the total net proceeds from the offering of the Common Shares pursuant to this Agreement (before deducting expenses) received by the Company, and the total underwriting discount received by the Underwriters, in each case as set forth on the front cover page of the Prospectus (or, if Rule 434 under the Securities Act is used, the corresponding location on the Term Sheet) bear to the aggregate initial public offering price of the Common Shares as set forth on such cover. The relative fault of the Company, on the one hand, and the Underwriters, on the other hand, shall be determined by reference to, among other things, whether any such untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact or any such inaccurate or alleged inaccurate representation or warranty relates to information supplied by the Company, on the one hand, or the Underwriters, on the other hand, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

The amount paid or payable by a party as a result of the losses, claims, damages, liabilities and expenses referred to above shall be deemed to include, subject to the limitations set

forth in Section 8(c), any legal or other fees or expenses reasonably incurred by such party in connection with investigating or defending any action or claim. The provisions set forth in Section 8(c) with respect to notice of commencement of any action shall apply if a claim for contribution is to be made under this Section 9; provided, however, that no additional notice shall be required with respect to any action for which notice has been given under Section 8(c) for purposes of indemnification.

The Company and the Underwriters agree that it would not be just and equitable if contribution pursuant to this Section 9 were determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to in this Section 9.

Notwithstanding the provisions of this Section 9, no Underwriter shall be required to contribute any amount in excess of the underwriting commissions received by such Underwriter in connection with the Common Shares underwritten by it and distributed to the public. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. The Underwriters' obligations to contribute pursuant to this Section 9 are several, and not joint, in proportion to their respective underwriting commitments as set forth opposite their names in Schedule A. For purposes of this Section 9, each officer and employee of an

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Underwriter and each person, if any, who controls an Underwriter within the meaning of the Securities Act and the Exchange Act shall have the same rights to contribution as such Underwriter, and each director of the Company, each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company with the meaning of the Securities Act and the Exchange Act shall have the same rights to contribution as the Company.

Section 10. Default of One or More of the Several Underwriters. If, on the First Closing Date or the Second Closing Date, as the case may be, any one or more of the several Underwriters shall fail or refuse to purchase Common Shares that it or they have agreed to purchase hereunder on such date, and the aggregate number of Common Shares which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase does not exceed 10% of the aggregate number of the Common Shares to be purchased on such date, the other Underwriters shall be obligated, severally, in the proportions that the number of Firm Common Shares set forth opposite their respective names on Schedule A

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bears to the aggregate number of Firm Common Shares set forth opposite the names of all such non-defaulting Underwriters, or in such other proportions as may be specified by the Representatives with the consent of the non-defaulting Underwriters, to purchase the Common Shares which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase on such date. If, on the First Closing Date or the Second Closing Date, as the case may be, any one or more of the Underwriters shall fail or refuse to purchase Common Shares and the aggregate number of Common Shares with respect to which such default occurs exceeds 10% of the aggregate number of Common Shares to be purchased on such date, and arrangements satisfactory to the Representatives and the Company for the purchase of such Common Shares are not made within 48 hours after such default, this Agreement shall terminate without liability of any party to any other party except that the provisions of Section 4, Section 6, Section 8 and Section 9 shall at all times be effective and shall survive such termination. In any such case either the Representatives or the Company shall have

the right to postpone the First Closing Date or the Second Closing Date, as the case may be, but in no event for longer than seven days in order that the required changes, if any, to the Registration Statement and the Prospectus or any other documents or arrangements may be effected.

As used in this Agreement, the term "Underwriter" shall be deemed to include any person substituted for a defaulting Underwriter under this Section 10. Any action taken under this Section 10 shall not relieve any defaulting Underwriter from liability in respect of any default of such Underwriter under this Agreement.

Section 11. Termination of this Agreement. Prior to the First Closing Date this Agreement may be terminated by the Representatives by notice given to the Company if at any time (i) trading or quotation in any of the Company's securities shall have been suspended or limited by the Commission or by the Nasdaq National Market, or trading in securities generally on either the Nasdaq Stock Market or the New York Stock Exchange shall have been suspended or limited, or minimum or maximum prices shall have been generally established on any of such stock exchanges by the Commission or the NASD; (ii) a general banking moratorium shall have been declared by any of federal, New York, Delaware or California authorities; (iii) there shall have occurred any outbreak or escalation of national or international hostilities or any crisis or calamity, or any change in the United States or international financial markets, or any substantial change or development involving a prospective substantial change in United States' or international political, financial or economic conditions, as in the judgment of the Representatives is material and adverse and makes it impracticable to market the Common Shares in the manner and on the terms described in the Prospectus or to enforce contracts for the sale of securities; (iv) in the judgment of the Representatives there shall have occurred any Material Adverse Change; or (v) the Company shall have sustained a loss by strike, fire, flood, earthquake, accident or other calamity of such character as in the judgment of the Representatives may interfere materially with the conduct of the business and operations of the Company regardless of whether or not such loss shall have been insured. Any termination pursuant to this Section 11 shall be without liability on the part of (a) the Company to any Underwriter, except that the Company shall be obligated to reimburse the expenses of the Representatives and the Underwriters pursuant to Sections 4 and 6 hereof, (b) any Underwriter to the Company, or (c) of any party hereto to any other party except that the provisions of Section 8 and Section 9 shall at all times be effective and shall survive such termination.

Section 12. Representations and Indemnities to Survive Delivery. The respective indemnities, agreements, representations, warranties and other statements of the Company, of its officers and of the several Underwriters set forth in or made pursuant to this Agreement will remain in full force and effect, regardless of any investigation made by or on behalf of any Underwriter or the Company or any of its or their partners, officers or directors or any controlling person, as the case may be, and will survive delivery of and payment for the Common Shares sold hereunder and any termination of this Agreement.

Section 13. Notices. All communications hereunder shall be in writing and shall be mailed, hand delivered or telecopied and confirmed to the parties hereto as follows:

If to the Representatives:

Banc of America Securities LLC  
600 Montgomery Street  
San Francisco, California 94111  
Facsimile: (415) 913-5558  
Attention: Richard A. Smith

with copies to:

Banc of America Securities LLC  
600 Montgomery Street  
San Francisco, California 94111  
Facsimile: (415) 913-5553  
Attention: Jeffrey R. Lopic, Esq.

Brobeck, Phleger & Harrison LLP  
One Market  
Spear Street Tower  
San Francisco, California 94105  
Facsimile: (415) 442-1010  
Attention: Nora L. Gibson, Esq.

If to the Company:

PC-Tel, Inc.  
70 Rio Robles  
San Jose, California 95134  
Facsimile: (408) 383-0455  
Attention: William F. Roach

with a copy to:

Wilson, Sonsini, Goodrich & Rosati  
650 Page Mill Road  
Palo Alto, California 94304  
Facsimile: (650) 493-6811  
Attention: Douglas H. Collom, Esq.

Any party hereto may change the address for receipt of communications by giving written notice to the others.

Section 14. Successors. This Agreement will inure to the benefit of and be binding upon the parties hereto, including any substitute Underwriters pursuant to Section 10 hereof, and to the benefit of the employees, officers and directors and controlling persons referred to in Section 8 and Section 9, and in each case their respective successors, and no other person will have any right or obligation hereunder. The term "successors" shall not include any

purchaser of the Common Shares as such from any of the Underwriters merely by reason of such purchase.

Section 15. Partial Unenforceability. The invalidity or unenforceability of any Section, paragraph or provision of this Agreement shall not affect the validity or enforceability of any other Section, paragraph or provision hereof. If any Section, paragraph or provision of this Agreement is for any reason determined to be invalid or unenforceable, there shall be deemed to be made such minor changes (and only such minor changes) as are necessary to make it valid and enforceable.

Section 16. Governing Law Provisions. (a) THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE INTERNAL LAWS OF THE STATE OF NEW YORK APPLICABLE TO AGREEMENTS MADE AND TO BE PERFORMED IN SUCH STATE.

(b) Consent to Jurisdiction. Any legal suit, action or proceeding arising out of or based upon this Agreement or the transactions contemplated hereby ("Related Proceedings") may be instituted in the federal courts of the United States of America located in the City and County of San Francisco or the courts of the State of California in each case located in the City and County of San Francisco (collectively, the "Specified Courts"), and each party irrevocably submits to the exclusive jurisdiction (except for proceedings instituted in regard to the enforcement of a judgment of any such court (a "Related Judgment"), as to which such jurisdiction is non-exclusive) of such courts in any such suit, action or proceeding. Service of any process, summons, notice or document by mail to such party's address set forth above shall be effective service of process for any suit, action or other proceeding brought in any such court. The parties irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the Specified Courts and irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such suit, action or other proceeding brought in any such court has been brought in an inconvenient forum.

Section 17. General Provisions. This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof. This Agreement may be executed in two or more counterparts, each one of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement may not be amended or modified unless in writing by all of the parties hereto, and no condition herein (express or implied) may be waived unless waived in writing by each party whom the condition is meant to benefit. The Table of Contents and the Section headings herein are for the convenience of the parties only and shall not affect the construction or interpretation of this Agreement.

Each of the parties hereto acknowledges that it is a sophisticated business person who was adequately represented by counsel during negotiations regarding the provisions hereof, including, without limitation, the indemnification provisions of Section 8 and the contribution provisions of Section 9, and is fully informed regarding said provisions. Each of the parties hereto further acknowledges that the provisions of Sections 8 and 9 hereto fairly allocate the risks in light of the ability of the parties to investigate the Company, its affairs and its business in

order to assure that adequate disclosure has been made in the Registration Statement, any preliminary prospectus and the Prospectus (and any amendments and supplements thereto), as required by the Securities Act and the Exchange Act.



If the foregoing is in accordance with your understanding of our agreement, kindly sign and return to the Company the enclosed copies hereof, whereupon this instrument, along with all counterparts hereof, shall become a binding agreement in accordance with its terms.

Very truly yours,

PC-TEL, INC.

By: \_\_\_\_\_  
Peter Chen  
Chief Executive Officer

The foregoing Underwriting Agreement is hereby confirmed and accepted by the Representatives in San Francisco, California as of the date first above written.

BANC OF AMERICA SECURITIES LLC  
WARBURG DILLON READ LLC  
NEEDHAM & COMPANY, INC.

Acting as Representatives of the  
several Underwriters named in  
the attached Schedule A.

By BANC OF AMERICA SECURITIES LLC

By: \_\_\_\_\_  
[Name]  
[Title]

SCHEDULE A

Underwriters	Number of Firm Common Shares to be Purchased
Banc of America Securities LLC.....	—
Warburg Dillon Read LLC.....	—
Needham & Company, Inc.....	—
[ ].....	—
[ ].....	—
[ ].....	—
[ ].....	—
Total.....	—

The final opinion in draft form should be attached as Exhibit A at the time this Agreement is executed.

Opinion of Wilson, Sonsini, Goodrich & Rosati, counsel for the Company, to be delivered pursuant to Section 5(d) of the Underwriting Agreement.

References to the Prospectus in this Exhibit A include any supplements  
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thereto at the Closing Date.

(i) The Company has been duly incorporated and is validly existing as a corporation in good standing under the laws of the State of Delaware.

(ii) The Company has corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Prospectus and to enter into and perform its obligations under the Underwriting Agreement.

(iii) The Company is duly qualified as a foreign corporation to transact business and is in good standing in the State of California and in each other jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except for such jurisdictions (other than the State of California) where the failure to so qualify or to be in good standing would not, individually or in the aggregate, result in a Material Adverse Change.

(iv) Each significant subsidiary of the Company (as defined in Rule 405 under the Securities Act) has been duly incorporated and is validly existing as a corporation in good standing under the laws of the jurisdiction of its incorporation, has corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Prospectus and, to the knowledge of such counsel, is duly qualified as a foreign corporation to transact business and is in good standing in each jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except for such jurisdictions where the failure to so qualify or to be in good standing would not, individually or in the aggregate, result in a Material Adverse Change.

(v) All of the issued and outstanding capital stock of each such significant subsidiary of the Company has been duly authorized and validly issued, is fully paid and non-assessable and is owned by the Company, directly or through subsidiaries, and to the knowledge of such counsel, such capital stock is free and clear of any security interest, mortgage, pledge, lien, encumbrance or any pending or threatened claim.

(vi) The authorized, issued and outstanding capital stock of the Company (including the Common Stock) conform to the descriptions thereof set forth in the Prospectus. All of the outstanding shares of Common Stock have been duly authorized and are validly issued, fully paid and nonassessable. The form of certificate used to evidence the Common Stock is in due and proper form and complies with all applicable

requirements of the charter and by-laws of the Company and the General Corporation Law of the State of Delaware. The description of the Company's stock option, stock bonus and other stock plans or arrangements, and the options or other rights granted and exercised thereunder, set forth in the Prospectus accurately and fairly presents in all material respects the information required to be shown with respect to such plans, arrangements, options and rights.

(vii) No stockholder of the Company or any other person has any preemptive right, right of first refusal or other similar right to subscribe for or purchase securities of the Company arising (i) by operation of the charter or by-laws of the Company or the General Corporation Law of the State of Delaware or (ii) to the knowledge of such counsel under any agreement to which the Company is a party.

(viii) The Underwriting Agreement has been duly authorized, executed and delivered by the Company.

(ix) The Common Shares to be purchased by the Underwriters from the Company have been duly authorized for issuance and sale pursuant to the Underwriting Agreement and, when issued and delivered by the Company pursuant to the Underwriting Agreement against payment of the consideration set forth therein, will be validly issued, fully paid and nonassessable.

(x) The Registration Statement and the Rule 462(b) Registration Statement, if any, has been declared effective by the Commission under the Securities Act. To our knowledge, no stop order suspending the effectiveness of either of the Registration Statement or the Rule 462(b) Registration Statement, if any, has been issued under the Securities Act and no proceedings for such purpose have been instituted or are pending or are contemplated or threatened by the Commission. Any required filing of the Prospectus and any supplement thereto pursuant to Rule 424(b) under the Securities Act has been made in the manner and within the time period required by such Rule 424(b).

(xi) The Registration Statement, including any Rule 462(b) Registration Statement, the Prospectus, and each amendment or supplement to the Registration Statement and the Prospectus, as of their respective effective or issue dates (other than the financial statements and supporting schedules or other financial or statistical data included therein or in exhibits to or excluded from the Registration Statement, as to which no opinion need be rendered) comply as to form in all material respects with the applicable requirements of the Securities Act.

(xii) The Common Shares have been approved for inclusion on the Nasdaq National Market.

(xiii) The statements (i) in the Prospectus under the captions "Risk Factors--Shares eligible for sale in the near future may adversely affect the market price for our common stock," "Risk Factors--Provisions in our charter documents may inhibit a change of control or change of management which may adversely affect the market price for our common stock," "Management--Incentive Stock Plans," "Management--Employment Agreements," "Certain Transactions," "Description of Capital Stock,"

"Shares Eligible for Future Sale," and, except for the exclusions as set forth in the Underwriting Agreement, "Underwriting" and (ii) in Item 14 and Item 15 of the Registration Statement, insofar as such statements constitute matters of law, summaries of legal matters, the Company's charter or by-law provisions, documents or legal proceedings, or legal conclusions, has been reviewed by such counsel and fairly present and summarize, in all material respects, the matters referred to therein.

(xiv) To the knowledge of such counsel, there are no legal or governmental actions, suits or proceedings pending or threatened which are required to be disclosed in the Registration Statement, other than those disclosed therein.

(xv) To the knowledge of such counsel, there are no Existing Instruments required to be described or referred to in the Registration Statement or to be filed as exhibits thereto other than those described or referred to therein or filed as exhibits thereto; and the descriptions thereof and references thereto are correct in all material respects.

(xvi) No consent, approval, authorization or other order of, or registration or filing with, any court or other governmental authority or agency, is required for the Company's execution, delivery and performance of the Underwriting Agreement and consummation of the transactions contemplated thereby and by the Prospectus, except as required under the Securities Act, applicable state securities or blue sky laws and from the NASD.

(xvii) The execution and delivery of the Underwriting Agreement by the Company and the performance by the Company of its obligations thereunder (other than performance by the Company of its obligations under the indemnification section of the Underwriting Agreement, as to which no opinion need be rendered) (i) have been duly authorized by all necessary corporate action on the part of the Company; (ii) will not result in any violation of the provisions of the charter or by-laws of the Company or any subsidiary; (iii) will not constitute a breach of, or Default under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company or any of its subsidiaries pursuant to any material contract which is filed as an exhibit to the Registration Statement, or (iv) to the knowledge of such counsel, will not result in any violation of any administrative or court decree applicable to the Company or any subsidiary.

(xviii) The Company is not, and after receipt of payment for the Common Shares will not be, an "investment company" within the meaning of Investment Company Act.

(xix) Except as disclosed in the Prospectus under the caption "Shares Eligible for Future Sale", to the knowledge of such counsel, there are no persons with registration or other similar rights to have any equity or debt securities registered for sale under the Registration Statement or included in the offering contemplated by the Underwriting Agreement.

In addition, such counsel shall state that they have participated in conferences with officers and other representatives of the Company, representatives of the independent public or certified public accountants for the Company and with

representatives of the Underwriters at which the contents of the Registration Statement and the Prospectus, and any supplements or amendments thereto, and related matters were discussed and, although such counsel is not passing upon and does not assume any responsibility for the accuracy, completeness or fairness of the statements contained in the Registration Statement or the Prospectus (other than as specified above), and any supplements or amendments thereto, on the basis of the foregoing, nothing has come to their attention which would lead them to believe that either the Registration Statement or any amendments thereto, at the time the Registration Statement or such amendments became effective, contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary to make the statements therein not misleading or that the Prospectus, as of its date or at the First Closing Date or the Second Closing Date, as the case may be, contained an untrue statement of a material fact or omitted to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading (it being understood that such counsel need express no belief as to the financial statements or schedules or other financial or statistical data, included in the Registration Statement or the Prospectus or any amendments or supplements thereto).

In rendering such opinion, such counsel may rely (A) as to matters involving the application of laws of any jurisdiction other than the General Corporation Law of the State of Delaware, the General Corporation Law of the State of California or the federal law of the United States, to the extent they deem proper and specified in such opinion, upon the opinion (which shall be dated the First Closing Date or the Second Closing Date, as the case may be, shall be satisfactory in form and substance to the Underwriters, shall expressly state that the Underwriters may rely on such opinion as if it were addressed to them and shall be furnished to the Representatives) of other counsel of good standing whom they believe to be reliable and who are satisfactory to counsel for the Underwriters; provided, however, that such counsel shall further state that they believe that they and the Underwriters are justified in relying upon such opinion of other counsel, and (B) as to matters of fact, to the extent they deem proper, on certificates of responsible officers of the Company and public officials.

EXHIBIT B

The final opinion in draft form should be attached as Exhibit B at the time this Agreement is executed.

Opinion of Knobbe, Martens, Olson & Bear LLP, patent counsel for the Company, to be delivered pursuant to Section 5(d) of the Underwriting Agreement.

References to the Prospectus in this Exhibit B include any supplements  
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thereto at the Closing Date.

[OPINION TO BE PROVIDED SEPARATELY]

July \_\_, 1999

Banc of America Securities LLC  
Needham & Company, Inc.  
Warburg Dillon Read LLC  
As Representatives of the Several Underwriters  
c/o Banc of America Securities LLC  
600 Montgomery Street  
San Francisco, California 94111

Re: PC-Tel, Inc. (the "Company")

Ladies & Gentlemen:

The undersigned is an owner of record or beneficially of certain shares of Common Stock of the Company ("Common Stock") or securities convertible into or exchangeable or exercisable for Common Stock. The Company proposes to carry out a public offering of Common Stock (the "Offering") for which you will act as the representatives of the underwriters. The undersigned recognizes that the Offering will be of benefit to the undersigned and will benefit the Company by, among other things, raising additional capital for its operations. The undersigned acknowledges that you and the other underwriters are relying on the representations and agreements of the undersigned contained in this letter in carrying out the Offering and in entering into underwriting arrangements with the Company with respect to the Offering.

In consideration of the foregoing, the undersigned hereby agrees that the undersigned will not, without the prior written consent of Banc of America Securities LLC (which consent may be withheld in its sole discretion), directly or indirectly, sell, offer, contract or grant any option to sell (including without limitation any short sale), pledge, transfer, establish an open "put equivalent position" within the meaning of Rule 16a-1(h) under the Securities Exchange Act of 1934, or otherwise dispose of any shares of Common Stock, options or warrants to acquire shares of Common Stock, or securities exchangeable or exercisable for or convertible into shares of Common Stock currently or hereafter owned either of record or beneficially (as defined in Rule 13d-3 under Securities Exchange Act of 1934, as amended) by the undersigned, or publicly announce the undersigned's intention to do any of the foregoing, for a period commencing on the date hereof and continuing through the close of trading on the date 180 days after the date of the Prospectus. The undersigned also agrees and consents to the entry of stop transfer instructions with the Company's transfer agent and registrar against the transfer of shares of Common Stock or securities convertible into or exchangeable or exercisable for Common Stock held by the undersigned except in compliance with the foregoing restrictions.

With respect to the Offering only, the undersigned waives any registration rights relating to registration under the Securities Act of any Common Stock owned either of record or beneficially by the undersigned, including any rights to receive notice of the Offering.



This agreement is irrevocable and will be binding on the undersigned and the respective successors, heirs, personal representatives, and assigns of the undersigned.

-----  
Printed Name of Holder

By: -----  
Signature

-----  
Printed Name of Person Signing  
(and indicate capacity of person signing if signing as custodian, trustee, or on behalf of an entity)

AMENDED AND RESTATED CERTIFICATE OF INCORPORATION

OF

PC-TEL, INC.

PC-Tel, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), hereby certifies that:

A. The name of this Corporation is PC-Tel, Inc.

B. The date of filing of this Corporation's original Certificate of Incorporation with the Secretary of State of Delaware was July 6, 1998.

C. Pursuant to Sections 242 and 245 of the Delaware General Corporation law, this Restated Certificate of Incorporation restates, integrates and amends the provisions of the Corporation's Amended and Restated Certificate of Incorporation in its entirety as follows:

FIRST: The name of this Corporation is PC-Tel, Inc.

SECOND: The address of the Corporation's registered office in the State of Delaware is 1209 Orange Street, Wilmington, County of New Castle, Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.

THIRD: The purpose of this Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of Delaware.

FOURTH: This Corporation is authorized to issue two classes of shares to be designated, respectively, Common Stock and Preferred Stock. The total number of shares of Common Stock which this corporation is authorized to issue is 100,000,000, with a par value of \$0.001, and the total number of shares of Preferred Stock which this corporation is authorized to issue is 5,000,000, with a par value of \$0.001.

The Preferred Stock may be issued from time to time in one or more series pursuant to a resolution or resolutions providing for such issue duly adopted by the Board of Directors (authority to do so being hereby expressly vested in the Board). The Board of Directors is further authorized to determine or alter the rights, preferences, privileges and restrictions granted to or imposed upon any wholly unissued series of Preferred Stock and, to fix the number of shares of any such series of Preferred Stock and the designation of any such series of Preferred Stock. The Board of Directors is authorized, within the limits and restrictions stated in any resolution or resolutions of the Board of Directors originally fixing the number of shares constituting any series, to increase or decrease (but not below the number of shares thereof then outstanding) the number of shares of any such series subsequent to the issue of shares of that series, to determine the designation of any series, and to fix the number of shares of any series.

FIFTH: The Corporation is to have perpetual existence.

SIXTH: Elections of directors need not be by written ballot unless a stockholder demands election by written ballot at the meeting and before voting begins or unless the Bylaws of the Corporation shall so provide.

SEVENTH: The management of the business and the conduct of the affairs of the Corporation shall be vested in its Board of Directors. The number of directors which shall constitute the whole Board of Directors shall be designated in the Bylaws of the Corporation.

The Board of Directors shall be divided into three classes designated as Class I, Class II, and Class III, respectively. Directors shall be assigned to each class in accordance with a resolution or resolutions adopted by the Board of Directors. At the first annual meeting of stockholders following the date hereof, the term of office of the Class I directors shall expire, and Class I directors shall be elected for a full term of three years. At the second annual meeting of stockholders following the date hereof, the term of office of the Class II directors shall expire, and Class II directors shall be elected for a full term of three years. At the third annual meeting of stockholders following the date hereof, the term of office of the Class III directors shall expire, and Class III directors shall be elected for a full term of three years. At each succeeding annual meeting of stockholders, directors shall be elected for a full term of three years to succeed the directors of the class whose terms expire at such annual meeting.

Notwithstanding the foregoing provisions of this Article, each director shall serve until his or her successor is duly elected and qualified or until his or her death, resignation, or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

Any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal, or other causes shall be filled by either (i) the affirmative vote of the holders of a majority of the voting power of the then-outstanding shares of voting stock of the Corporation entitled to vote generally in the election of directors (the "Voting Stock") voting together as a single class; or (ii) by the affirmative vote of a majority of the remaining directors then in office, even though less than a quorum of the Board of Directors. Newly created directorships resulting from any increase in the number of directors shall, unless the Board of Directors determines by resolution that any such newly created directorship shall be filled by the stockholders, be filled only by the affirmative vote of the directors then in office, even though less than a quorum of the Board of Directors. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the class of directors in which the new directorship was created or the vacancy occurred and until such director's successor shall have been elected and qualified.

The affirmative vote of sixty-six and two-thirds percent (66-2/3%) of the voting power of the then outstanding shares of Voting Stock, voting together as a single class, shall be required for the adoption, amendment or repeal of the following sections of the Corporation's Bylaws by the stockholders of the Corporation: 2.2 (Annual Meeting) and 2.3 (Special Meeting).

No action shall be taken by the stockholders of the Corporation except at an annual or special meeting of the stockholders called in accordance with the Bylaws.

EIGHTH: A. To the fullest extent permitted by the Delaware General Corporation Law as the same exists or as may hereafter be amended, a director of the Corporation or any subsidiary of the Corporation shall not be personally liable to the Corporation or its stockholders and shall otherwise be indemnified by the Corporation for monetary damages for breach of fiduciary duty as a director of the Corporation, any predecessor of the Corporation or any subsidiary of the Corporation.

B. The Corporation shall indemnify to the fullest extent permitted by law any person made or threatened to be made a party to an action or proceeding, whether criminal, civil, administrative or investigative, by reason of the fact that he, his testator or intestate is or was a director or officer of the Corporation, any predecessor of the Corporation or any subsidiary of the Corporation or serves or served at

any other enterprise as a director or officer at the request of the Corporation, any predecessor to the Corporation or any subsidiary of the Corporation.

C. Neither any amendment nor repeal of this Article EIGHTH, nor the adoption of any provision of the Corporation's Certificate of Incorporation inconsistent with this Article EIGHTH, shall eliminate or reduce the effect of this Article EIGHTH, in respect of any matter occurring, or any action or proceeding accruing or arising or that, but for this Article EIGHTH, would accrue or arise, prior to such amendment, repeal, or adoption of an inconsistent provision.

NINTH: Notwithstanding any other provisions of this Certificate of Incorporation or any provision of law which might otherwise permit a lesser vote or no vote, but in addition to any affirmative vote of the holders of any particular class or series of the Voting Stock required by law, this Certificate of Incorporation or any rights of designation of Preferred Stock conferred on the Board of Directors pursuant to Article FOURTH, the affirmative vote of the holders of at least sixty-six and two-thirds percent (66-2/3%) of the voting power of all of the then-outstanding shares of the Voting Stock, voting together as a single class, shall be required to alter, amend or repeal Article SEVENTH or this Article NINTH.

TENTH: The Corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, except as provided in Article NINTH of this Certificate, and all rights conferred upon the stockholders herein are granted subject to this right.

ELEVENTH: In furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to make, alter, amend or repeal the Bylaws of the Corporation.

TWELFTH: Meetings of stockholders may be held within or without the State of Delaware, as the Bylaws may provide. The books of the Corporation may be kept (subject to any provision contained in the statutes) outside of the State of Delaware at such place or places as may be designated from time to time by the Board of Directors or in the Bylaws of the Corporation.

THIRTEENTH: Advance written notice of new business and stockholder nominations for the election of directors shall be given in the manner and to the extent provided in the Bylaws of the Corporation.

FOURTEENTH: Stockholders shall not be entitled to cumulative voting rights for the election of directors, except as may be required by applicable law.

This Amended and Restated Certificate of Incorporation has been duly adopted by the stockholders of the Corporation in accordance with the provisions of Sections 242 and 245 of the General Corporation Law of the State of Delaware, as amended.

IN WITNESS WHEREOF, PC-Tel, Inc. has caused this Amended and Restated Certificate of Incorporation to be signed by Peter Chen, its Chief Executive Officer, and attested by Andrew Wahl, its Chief Financial Officer, this \_\_\_\_ day of \_\_\_\_\_, 1999.

PC-TEL, INC.

\_\_\_\_\_  
Peter Chen, Chief Executive Officer

Attested:

\_\_\_\_\_  
Andrew Wahl, Chief Financial Officer

OPINION OF WILSON SONSINI GOODRICH & ROSATI

September 17, 1999

PC-Tel, Inc.  
70 Rio Robles  
San Jose, California 95134

RE: REGISTRATION STATEMENT ON FORM S-1

Ladies and Gentlemen:

We have examined the Registration Statement on Form S-1 filed by you with the Securities and Exchange Commission on August 6, 1999 (Registration No. 333-84707), as amended (the "Registration Statement"), in connection with the registration under the Securities Act of 1933, as amended, of up to 4,600,000 shares of your Common Stock, \$0.001 par value per share (the "Shares"). The Shares include an over-allotment option granted to the underwriters of the offering to purchase up to 690,000 shares. We understand that the Shares are to be sold to the underwriters of the offering for resale to the public as described in the Registration Statement. As your legal counsel, we have examined the proceedings taken, and are familiar with the proceedings proposed to be taken, by you in connection with the sale and issuance of the Shares to be sold by you.

It is our opinion that upon completion of the proceedings being taken or contemplated by us, as your counsel, to be taken prior to the issuance of the Shares, including the proceedings being taken in order to permit such transaction to be carried out in accordance with applicable state securities laws, the Shares, when issued and sold in the manner described in the Registration Statement, will be legally issued, fully paid and non-assessable.

We are members of the Bar of the State of California only and express no opinion as to any matter relating to the laws of any jurisdiction other than the laws of the State of California and the federal laws of the United States. Without limiting the foregoing, we express no opinion as to the securities laws of the State of Delaware.

We consent to the use of this opinion as an exhibit to the Registration Statement and further consent to the use of our name wherever appearing in the Registration Statement, including the Prospectus constituting a part thereof, and any amendments thereto.

Very truly yours,

/s/ WILSON SONSINI GOODRICH & ROSATI

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WILSON SONSINI GOODRICH & ROSATI  
Professional Corporation

CONSENT OF INDEPENDENT PUBLIC ACCOUNTANTS

As independent public accountants, we hereby consent to the use of our reports and to all references to our firm included in or made a part of this registration statement.

/s/ Arthur Andersen LLP

San Jose, California

September 16, 1999

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the use in this Registration Statement on Form S-1 of our report dated December 15, 1998, relating to the financial statements and financial statement schedules of the Technology Alliance Group Division of General DataComm, Inc., which appear in such Registration Statement. We also consent to the reference to us under the heading "Experts" and "Selected Financial Data" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP  
PricewaterhouseCoopers LLP

Stamford, CT

September 16, 1999



CONSENT OF KNOBBE, MARTENS, OLSON & BEAR, LLP

As intellectual property counsel, we hereby consent to the use of all references to our firm included in or made a part of this registration statement.

/s/ Knobbe, Martens, Olson & Bear, LLP

Newport Beach, California  
September 14, 1999

\_\_\_\_\_  
Knobbe, Martens, Olson & Bear, LLP