

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-3

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

TEGAL CORPORATION
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

DELAWARE 2201 SOUTH MCDOWELL BOULEVARD 68-0370244
(STATE OR OTHER PETALUMA, CALIFORNIA 94954 (I.R.S. EMPLOYER
JURISDICTION OF (707) 763-5600 IDENTIFICATION
INCORPORATION OR (ADDRESS, INCLUDING ZIP CODE, AND TELEPHONE NUMBER)
ORGANIZATION) NUMBER, INCLUDING
AREA CODE, OF REGISTRANT'S PRINCIPAL
EXECUTIVE OFFICES)

MICHAEL L. PARODI
CHAIRMAN OF THE BOARD, PRESIDENT & CHIEF EXECUTIVE OFFICER
TEGAL CORPORATION
2201 SOUTH MCDOWELL BOULEVARD
PETALUMA, CALIFORNIA 94954
(707) 763-5600
(NAME, ADDRESS, INCLUDING ZIP CODE, AND TELEPHONE NUMBER, INCLUDING AREA CODE,
OF AGENT FOR SERVICE)

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MENLO PARK, CALIFORNIA 94025
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APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC:
From time to time after this registration statement becomes effective

If the only securities being registered on this form are being offered
pursuant to dividend or interest reinvestment plans, please check the following
box. ☐

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, other than securities offered only in connection with dividend or
interest reinvestment plans, check the following box. ☒

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

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

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

<TABLE>
<CAPTION>

CALCULATION OF REGISTRATION FEE

TITLE OF EACH CLASS OF SECURITIES TO BE REGISTERED	PROPOSED AMOUNT TO BE REGISTERED	PROPOSED MAXIMUM PRICE PER UNIT	AMOUNT OF MAXIMUM OFFERING PRICE	AGGREGATE OFFERING PRICE	REGISTRATION FEE
<S>	<C>	<C>	<C>	<C>	
Common Stock, par value \$0.01 per share, and the associated preferred stock purchase rights (1)	2,385,632 shares (2)	\$1.15 (3)	\$2,743,476.80	\$347.60	

</TABLE>

- (1) Attached to and trading with each share of common stock is a preferred stock purchase right. Each right entitles the holder, under the circumstances set forth in the Rights Agreement dated as of June 11, 1996 between the registrant and Chasemellon Shareholder Services, L.L.C., as amended, to purchase 1/100th of a share of Series A Junior Participating Preferred Stock. Value attributable to such preferred stock purchase rights, if any, is reflected in the market price of the common stock. The preferred stock purchase rights will be issued for no additional consideration. Accordingly, no additional registration fee is required.
- (2) Includes 975,000 shares of common stock issuable upon exercise of warrants held by the selling stockholders.
- (3) Estimated solely for the purpose of computing the registration fee required by Section 6(b) of the Securities Act and computed pursuant to Rule 457(c) under the Securities Act based upon the average (\$1.15) of the high (\$1.18) and low (\$1.12) prices of the common stock on August 25, 2004, as quoted on The Nasdaq SmallCap Market. It is not known how many shares will be purchased under this registration statement or at what price shares will be purchased.

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 THIS REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE SECURITIES AND EXCHANGE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

SUBJECT TO COMPLETION, DATED AUGUST 27, 2004

PROSPECTUS

TEGAL CORPORATION

2,385,632
SHARES OF COMMON STOCK

These shares of common stock are being offered by the selling stockholders identified in this prospectus. Of the 2,385,632 shares offered for sale under this prospectus, 975,000 are reserved for issuance by us in the event certain of the selling stockholders exercise warrants held by them. The shares issuable upon exercise of the warrants will become eligible for sale by the selling stockholders under this prospectus only as these warrants are exercised. The selling stockholders may sell their shares of common stock in a number of different ways and at varying prices. We provide more information about how the selling stockholders may sell their shares in the section entitled "Plan of Distribution" beginning on page 15.

We are not selling any shares of our common stock under this prospectus and will not receive any proceeds from the sale of these shares. We will receive the proceeds from the exercise of warrants entitling the selling stockholders to purchase shares of our common stock.

OUR COMMON STOCK IS QUOTED ON THE NASDAQ SMALLCAP MARKET UNDER THE SYMBOL "TGAL." ON AUGUST 26, 2004, THE LAST REPORTED SALE PRICE FOR OUR COMMON STOCK ON THE NASDAQ SMALLCAP MARKET WAS \$1.21 PER SHARE.

INVESTING IN OUR COMMON STOCK INVOLVES RISKS. SEE "RISK FACTORS" BEGINNING ON PAGE 2.

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.

THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. THE SELLING STOCKHOLDERS 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 THE SELLING STOCKHOLDERS ARE NOT SOLICITING OFFERS TO BUY THESE SECURITIES IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

The date of this prospectus is , 2004

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You should rely only on the information we have provided or incorporated by reference in this prospectus. Neither we nor the selling stockholders have authorized anyone to provide you with additional or different information. The selling stockholders are not making an offer of these securities in any jurisdiction where the offer is not permitted. You should assume that the information in this prospectus is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference. In this prospectus, unless otherwise indicated, "Tegal," "we," "us" or "our" refer to Tegal and its subsidiaries.

SUMMARY

References in this prospectus to "us," "we," the "Company" or "Tegal" shall mean Tegal Corporation and our consolidated subsidiaries, unless the context indicates otherwise.

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission utilizing a "shelf" registration process. Under this shelf process, the selling stockholders may from time to time sell their shares of our common stock in one or more offerings. This prospectus provides you with a general description of the common stock being offered. You

should read this prospectus, including any documents incorporated herein by reference, together with additional information described under the heading "Where You Can Find More Information."

THE REGISTRATION STATEMENT THAT CONTAINS THIS PROSPECTUS, INCLUDING THE EXHIBITS TO THE REGISTRATION STATEMENT, CONTAINS ADDITIONAL INFORMATION ABOUT US AND THE SECURITIES OFFERED UNDER THIS PROSPECTUS. THAT REGISTRATION STATEMENT CAN BE READ AT THE SECURITIES AND EXCHANGE COMMISSION'S OFFICES MENTIONED UNDER THE HEADING "WHERE YOU CAN FIND MORE INFORMATION."

TEGAL CORPORATION

We design, manufacture, market and service plasma etch and deposition systems that enable the production of integrated circuits ("ICs"), memory and related microelectronics devices used in personal computers, wireless voice and data telecommunications, contact-less transaction devices, radio frequency identification devices ("RFID's"), smart cards, data storage and micro-level actuators. Etching and deposition constitute two of the principal IC and related device production process steps and each must be performed numerous times in the production of such devices.

We were formed in December 1989 to acquire the operations of the former Tegal Corporation, a division of Motorola, Inc. ("Motorola"). Our predecessor company was founded in 1972 and acquired by Motorola in 1978. We completed our initial public offering in October 1995.

Our executive offices are located at 2201 South McDowell Boulevard, Petaluma, California 94954, and our telephone number is (707) 763-5600. All service marks, brand names or trademarks appearing in this prospectus that do not belong to us are the property of their respective holders.

SHARES OFFERED

On May 28, 2004, we closed a transaction in which we purchased substantially all of the assets of First Derivative Systems, Inc. ("FDSI"), a California corporation, for 1,410,632 shares of our common stock and approximately \$200,000 in assumed liabilities. All of the shares of common stock are subject to a registration rights agreement in which we have agreed to register the resale of the shares with the Securities and Exchange Commission. The stockholders of FDSI agreed to the transaction as part of a plan of dissolution in which FDSI has liquidated and distributed the shares received in connection with the asset purchase to the stockholders of FDSI.

FDSI, a privately held development stage company based in Goleta, California, had developed a high-throughput, low cost-of-ownership physical vapor deposition ("PVD") system with highly differentiated technology for leading edge memory and logic device production on 200 and 300 millimeter wafers.

We are registering for resale by the selling stockholders an aggregate of 2,385,632 shares of our common stock consisting of: (i) up to 1,410,632 shares of our common stock in connection with this transaction and (ii) up to 975,000 shares of our common stock issuable upon the exercise of warrants to purchase common stock issued to certain of our consultants. As of August 27, 2004, there are approximately 46,557,672 shares of our common stock outstanding. If all the warrants held by the selling stockholders are exercised, there will be 975,000 additional shares of our common stock outstanding, in which case there will be approximately 47,532,672 total shares of our common stock outstanding.

RISK FACTORS

Investing in our common stock involves a significant amount of risk. You should carefully consider the following risk factors, in addition to the other information set forth in this prospectus and incorporated in this prospectus by reference to our Annual Report on Form 10-K for the fiscal year ended March 31, 2004 and our other filings with the SEC before deciding to purchase our common stock.

WE HAVE INCURRED OPERATING LOSSES AND MAY NOT BE PROFITABLE IN THE FUTURE; OUR PLANS TO MAINTAIN AND INCREASE LIQUIDITY MAY NOT BE SUCCESSFUL; THE REPORT OF THE INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM INCLUDES A GOING CONCERN UNCERTAINTY EXPLANATORY PARAGRAPH; THE ACCOUNTING FOR THE 2% CONVERTIBLE DEBENTURES RESULTED IN SIGNIFICANT EXPENSE AMOUNTS.

We incurred net losses of \$6,325,000 and \$1,254,000 for the periods ended June 30, 2004 and 2003, respectively, generated negative cash flows from operations of \$422,000 and \$177,000 in these periods, and have a cash and cash equivalents balance of \$4,657,000 at June 30, 2004. Our past performance raised substantial doubt as to our ability to continue as a going concern, and our former independent registered public accounting firm included a going concern uncertainty explanatory paragraph in their report dated June 25, 2004, which is included in our Form 10-K for the year ended March 31, 2004. Management believes that proceeds from the debenture financing in fiscal year 2004 and additional funds which may be available to the Company through the issuance of stock under the structured secondary financing with Kingsbridge Capital, Ltd., will be adequate to fund operations through fiscal year 2005, including the continued development of recently acquired products. However, projected sales may not materialize and unforeseen costs may be incurred. If the projected sales do not materialize, the Company will need to reduce expenses further and raise additional capital through the issuance of debt or equity securities. If additional funds are raised through the issuance of preferred stock or debt, these securities could have rights, privileges or preferences senior to those of common stock, and debt covenants could impose restrictions on the Company's operations. The sale of equity or debt could result in additional dilution to current stockholders, and such financing may not be available to the Company on acceptable terms, if at all. The consolidated financial statements do not include any adjustments relating to the recoverability and classification of recorded assets or the amount or classification of liabilities or any other adjustments that might be necessary should the Company be unable to continue as a going concern.

THE EXERCISE OF OUTSTANDING WARRANTS, OPTIONS AND OTHER RIGHTS TO OBTAIN ADDITIONAL SHARES WILL DILUTE THE VALUE OF THE SHARES.

As of June 30, 2004, there were debenture holder warrants exercisable for approximately 1,685,682 shares and advisor warrants exercisable into 196,129 shares of our common stock. In addition, we have warrants outstanding from previous offerings for approximately 2,378,840 shares of our common stock.

The exercise of these warrants and the issuance of the common stock will result in dilution in the value of the shares of our outstanding common stock and the voting power represented thereby. In addition, the exercise price of the warrants may be lowered under the price adjustment provisions in the event of a "dilutive issuance," that is, if we issue common stock at any time prior to their maturity at a per share price below such conversion or exercise price, either directly or in connection with the issuance of securities that are convertible into, or exercisable for, shares of our common stock. A reduction in the exercise price may result in the issuance of a significant number of additional shares upon the exercise of the warrants.

The warrants do not establish a "floor" that would limit reductions in such conversion price or exercise price. The downward adjustment of the exercise price of these warrants could result in further dilution in the value of the shares of our outstanding common stock and the voting power represented thereby.

SALES OF SUBSTANTIAL AMOUNTS OF OUR SHARES OF COMMON STOCK COULD CAUSE THE PRICE OF OUR COMMON STOCK TO GO DOWN.

To the extent the holders of our convertible securities and warrants convert or exercise such securities and then sell the shares of our common stock they receive upon conversion or exercise, our stock price may decrease due to the additional amount of shares available in the market. The subsequent sales of these shares could encourage short sales by our stockholders and others which could place further downward pressure on our stock price. Moreover, holders of these convertible securities and warrants may hedge their positions in our common stock by shorting our common stock, which could further adversely affect our stock price. The effect of these activities on our stock price could increase the number of shares issuable upon future conversions of our

convertible securities or exercises of our warrants.

We received stockholder approval to increase the number of authorized shares of common stock to 100,000,000 shares. We may issue additional capital stock, convertible securities and/or warrants to raise capital in the future. In addition, to attract and retain key personnel, we may issue additional securities, including stock options. All of the above could result in additional dilution of the value of our common stock and the voting power represented thereby. No prediction can be made as to the effect, if any, that future sales of shares of our common stock, or the availability of shares for future sale, will have on the market price of our common stock prevailing from time to time. Sales of substantial amounts of shares of our common stock in the public market, or the perception that such sales could occur, may adversely affect the market price of our common stock and may make it more difficult for us to sell our equity securities in the future at a time and price which we deem appropriate. Public or private sales of substantial amounts of shares of our common stock by persons or entities that have exercised options and/or warrants could adversely affect the prevailing market price of the shares of our common stock.

THE SEMICONDUCTOR INDUSTRY IS CYCLICAL AND MAY EXPERIENCE PERIODIC DOWNTURNS THAT MAY NEGATIVELY AFFECT CUSTOMER DEMAND FOR OUR PRODUCTS AND RESULT IN LOSSES SUCH AS THOSE EXPERIENCED IN THE PAST.

Our business depends upon the capital expenditures of semiconductor manufacturers, which in turn depend on the current and anticipated market demand for integrated circuits. The semiconductor industry is highly cyclical and historically has experienced periodic downturns, which often have had a detrimental effect on the semiconductor industry's demand for semiconductor capital equipment, including etch and deposition systems manufactured by us. During periods of a prolonged industry slow-down, we would have to initiate a substantial cost containment program and complete a corporate-wide restructuring to preserve our cash. However, the need for continued investment in research and development, possible capital equipment requirements and extensive ongoing customer service and support requirements worldwide will continue to limit our ability to reduce expenses in response to the any downturn.

OUR COMPETITORS HAVE GREATER FINANCIAL RESOURCES AND GREATER NAME RECOGNITION THAN WE DO AND THEREFORE MAY COMPETE MORE SUCCESSFULLY IN THE SEMICONDUCTOR CAPITAL EQUIPMENT INDUSTRY THAN WE CAN.

We believe that to be competitive, we will require significant financial resources in order to offer a broad range of systems, to maintain customer service and support centers worldwide and to invest in research and development. Many of our existing and potential competitors, including, among others, Applied Materials, Inc., Lam Research Corporation, Novellus and Tokyo Electron Limited, have substantially greater financial resources, more extensive engineering, manufacturing, marketing and customer service and support capabilities, larger installed bases of current generation etch, deposition and other production equipment and broader process equipment offerings, as well as greater name recognition than we do. We cannot assure you that we will be able to compete successfully against these companies in the United States or worldwide.

IF WE FAIL TO MEET THE CONTINUED LISTING REQUIREMENTS OF THE NASDAQ STOCK MARKET, OUR STOCK COULD BE DELISTED.

Our stock is currently listed on The Nasdaq SmallCap Market. The Nasdaq Stock Market's Marketplace Rules impose certain minimum financial requirements on us for the continued listing of our stock. One such requirement is the minimum bid price on our stock of \$1.00 per share. Beginning in 2002, there have been periods of time during which we have been out of compliance with the \$1.00 minimum bid requirements of The Nasdaq SmallCap Market.

On September 6, 2002, we received notification from Nasdaq that for the 30 days prior to the notice, the price of our common stock had closed below the minimum \$1.00 per share bid price requirement for continued inclusion under

Marketplace Rule 4450(a)(5) (the "Rule"), and were provided 90 calendar days, or until December 5, 2002, to regain compliance. Our bid price did not close above the minimum during that period. On December 6, 2002, we received notification from Nasdaq that our securities would be delisted from The Nasdaq National Market, the exchange on which our stock was listed prior to May 6, 2003, on

December 16, 2002 unless we either (i) applied to transfer our securities to The Nasdaq SmallCap Market, in which case we would be afforded additional time to come into compliance with the minimum \$1.00 bid price requirement; or (ii) appealed the Nasdaq staff's determination to the Nasdaq's Listing Qualifications Panel (the "Panel"). On December 12, 2002 we requested an oral hearing before the Panel and such hearing took place on January 16, 2003 in Washington, D.C. Our appeal was based, among other things, on our intention to seek stockholder approval for a reverse split of our outstanding common stock. On April 28, 2003 at a special meeting of our stockholders, our board of directors was granted the authority to effect a reverse split of our common stock within a range of two-for-one to fifteen-for-one. This authority was reaffirmed by our stockholders at the Annual Meeting on September 8, 2003. The timing and ratio of a reverse split, if any, was at the sole discretion of our board of directors, but it must have been completed on or before December 2, 2003. On May 6, 2003, we transferred the listing of our common stock to The Nasdaq SmallCap Market. In connection with this transfer, and by additional notice, Nasdaq granted us an extension until December 31, 2003, to regain compliance with the Rule's minimum \$1.00 per share bid price requirement for continued inclusion on The Nasdaq SmallCap Market. On September 16, 2003, the bid price for our stock had closed at \$1.00 or above for ten consecutive days. On September 17, 2003, we received a letter from Nasdaq confirming that Tegal had regained compliance with the minimum bid price requirement and that the question of its continued listing on The SmallCap Market had been closed.

If we are out of compliance in the future with Nasdaq listing requirements, we may take actions in order to achieve compliance, which actions may include a reverse split of our common stock, which would require stockholder approval. If an initial delisting decision is made by the Nasdaq's staff, we may appeal the decision as permitted by Nasdaq rules. If we are delisted and cannot obtain listing on another major market or exchange, our stock's liquidity would suffer, and we would likely experience reduced investor interest. Such factors may result in a decrease in our stock's trading price. Delisting also may restrict us from issuing additional securities or securing additional financing.

WE DEPEND ON SALES OF OUR ADVANCED PRODUCTS TO CUSTOMERS THAT MAY NOT FULLY ADOPT OUR PRODUCT FOR PRODUCTION USE.

We have designed our advanced etch and deposition products for customer applications in emerging new films, polysilicon and metal which we believe to be the leading edge of critical applications for the production of advanced semiconductor and other microelectronic devices. Revenues from the sale of our advanced etch and deposition systems accounted for 40%, 25% and 36% of total revenues in fiscal 2004, 2003 and 2002, respectively. Our advanced systems are currently being used primarily for research and development activities or low volume production. For our advanced systems to achieve full market adoption, our customers must utilize these systems for volume production. There can be no assurance that the market for devices incorporating emerging films, polysilicon or metal will develop as quickly or to the degree we expect.

If our advanced systems do not achieve significant sales or volume production due to a lack of full customer adoption, our business, financial condition, results of operations and cash flows will be materially adversely affected.

OUR POTENTIAL CUSTOMERS MAY NOT ADOPT OUR PRODUCTS BECAUSE OF THEIR SIGNIFICANT COST OR BECAUSE OUR POTENTIAL CUSTOMERS ARE ALREADY USING A COMPETITOR'S TOOL.

A substantial investment is required to install and integrate capital equipment into a semiconductor production line. Additionally, we believe that once a device manufacturer has selected a particular vendor's capital equipment, that manufacturer generally relies upon that vendor's equipment for that specific production line application and, to the extent possible, subsequent generations of that vendor's systems. Accordingly, it may be extremely difficult to achieve significant sales to a particular customer once that customer has selected another vendor's capital equipment unless there are compelling reasons to do so, such as significant performance or cost advantages. Any failure to gain access and achieve sales to new customers will adversely affect the successful commercial adoption of our products and could have a detrimental effect on us.

OUR QUARTERLY OPERATING RESULTS MAY CONTINUE TO FLUCTUATE.

Our revenue and operating results have fluctuated and are likely to continue to fluctuate significantly from quarter to quarter, and there can be no assurance as to future profitability.

Our 900 series etch systems typically sell for prices ranging between \$250,000 and \$600,000, while prices of our 6500 series critical etch systems and our Endeavor deposition system typically range between \$1.8 million and \$3.0 million. To the extent we are successful in selling our 6500 and Endeavor series systems, the sale of a small number of these systems will probably account for a substantial portion of revenue in future quarters, and a transaction for a single system could have a substantial impact on revenue and gross margin for a given quarter.

Other factors that could affect our quarterly operating results include:

- o our timing of new systems and technology announcements and releases and ability to transition between product versions;
- o seasonal fluctuations in sales;
- o changes in the mix of our revenues represented by our various products and customers;
- o adverse changes in the level of economic activity in the United States or other major economies in which we do business;
- o foreign currency exchange rate fluctuations;
- o expenses related to, and the financial impact of, possible acquisitions of other businesses; and
- o changes in the timing of product orders due to unexpected delays in the introduction of our customers' products, due to lifecycles of our customers' products ending earlier than expected or due to market acceptance of our customers' products.

BECAUSE TECHNOLOGY CHANGES RAPIDLY, WE MAY NOT BE ABLE TO INTRODUCE OUR PRODUCTS IN A TIMELY ENOUGH FASHION.

The semiconductor manufacturing industry is subject to rapid technological change and new system introductions and enhancements. We believe that our future success depends on our ability to continue to enhance our existing systems and their process capabilities, and to develop and manufacture in a timely manner new systems with improved process capabilities. We may incur substantial unanticipated costs to ensure product functionality and reliability early in our products' life cycles. There can be no assurance that we will be successful in the introduction and volume manufacture of new systems or that we will be able to develop and introduce, in a timely manner, new systems or enhancements to our existing systems and processes which satisfy customer needs or achieve market adoption.

SOME OF OUR SALES CYCLES ARE LENGTHY, EXPOSING US TO THE RISKS OF INVENTORY OBSOLESCENCE AND FLUCTUATIONS IN OPERATING RESULTS.

Sales of our systems depend, in significant part, upon the decision of a prospective customer to add new manufacturing capacity or to expand existing manufacturing capacity, both of which typically involve a significant capital commitment. We often experience delays in finalizing system sales following initial system qualification while the customer evaluates and receives approvals for the purchase of our systems and completes a new or expanded facility. Due to these and other factors, our systems typically have a lengthy sales cycle (often 12 to 18 months in the case of critical etch and deposition systems) during which we may expend substantial funds and management effort. Lengthy sales cycles subject us to a number of significant risks, including inventory obsolescence and fluctuations in operating results over which we have little or no control.

WE MAY NOT BE ABLE TO PROTECT OUR INTELLECTUAL PROPERTY OR OBTAIN LICENSES FOR THIRD PARTIES' INTELLECTUAL PROPERTY AND THEREFORE WE MAY BE EXPOSED TO LIABILITY FOR INFRINGEMENT OR THE RISK THAT OUR OPERATIONS MAY BE ADVERSELY

AFFECTED.

Although we attempt to protect our intellectual property rights through patents, copyrights, trade secrets and other measures, we may not be able to protect our technology adequately and competitors may be able to develop similar technology independently. Additionally, patent applications that we may file may not be issued and foreign intellectual property laws may not protect our intellectual property rights. There is also a risk that patents licensed by or issued to us will be challenged, invalidated or circumvented and that the rights granted thereunder will not provide competitive advantages to us. Furthermore, others may independently develop similar systems, duplicate our systems or design around the patents licensed by or issued to us.

Litigation could result in substantial cost and diversion of effort by us, which by itself could have a detrimental effect on our financial condition, operating results and cash flows. Further, adverse determinations in such litigation could result in our loss of proprietary rights, subject us to significant liabilities to third parties, require us to seek licenses from third parties or prevent us from manufacturing or selling our systems. In addition, licenses under third parties' intellectual property rights may not be available on reasonable terms, if at all.

OUR CUSTOMERS ARE CONCENTRATED AND THEREFORE THE LOSS OF A SIGNIFICANT CUSTOMER MAY HARM OUR BUSINESS.

Our top five customers accounted for 85%, 88% and 54% of our systems revenues in fiscal 2004, 2003 and 2002, respectively. Three customers each accounted for more than 10% of net systems sales in fiscal 2004. Although the composition of the group comprising our largest customers may vary from year to year, the loss of a significant customer or any reduction in orders by any significant customer, including reductions due to market, economic or competitive conditions in the semiconductor manufacturing industry, may have a detrimental effect on our business, financial condition, results of operations and cash flows. Our ability to increase our sales in the future will depend, in part, upon our ability to obtain orders from new customers, as well as the financial condition and success of our existing customers and the general economy, which is largely beyond our ability to control.

WE ARE EXPOSED TO ADDITIONAL RISKS ASSOCIATED WITH INTERNATIONAL SALES AND OPERATIONS.

International sales accounted for 67%, 66% and 67% of total revenue for fiscal 2004, 2003 and 2002, respectively. International sales are subject to certain risks, including the imposition of government controls, fluctuations in the U.S. dollar (which could increase the sales price in local currencies of our systems in foreign markets), changes in export license and other regulatory requirements, tariffs and other market barriers, political and economic instability, potential hostilities, restrictions on the export or import of technology, difficulties in accounts receivable collection, difficulties in managing representatives, difficulties in staffing and managing international operations and potentially adverse tax consequences. There can be no assurance that any of these factors will not have a detrimental effect on our operations, financial results and cash flows.

We generally attempt to offset a portion of our U.S. dollar denominated balance sheet exposures subject to foreign exchange rate remeasurement by purchasing forward currency contracts for future delivery. There can be no assurance that our future results of operations and cash flows will not be adversely affected by foreign currency fluctuations. In addition, the laws of certain countries in which our products are sold may not provide our products and intellectual property rights with the same degree of protection as the laws of the United States.

EVOLVING REGULATION OF CORPORATE GOVERNANCE AND PUBLIC DISCLOSURE MAY RESULT IN ADDITIONAL EXPENSES AND CONTINUING UNCERTAINTY.

Changing laws, regulations and standard relating to corporate governance and public disclosure, including the Sarbanes-Oxley Act of 2002, new SEC regulations and Nasdaq National Market rules are creating uncertainty for public companies. We continually evaluate and monitor developments with respect to new and proposed rules and cannot predict or estimate the amount of the additional

costs we may incur or the timing of such costs. These new or changed laws, regulations and standards are subject to varying interpretations, in many cases due to their lack of specificity, and as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We are committed to maintaining high standards of corporate governance and public disclosure. As a result, we have invested resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management time and attention from revenue-generating activities to compliance activities. If our efforts comply with new or changed laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to practice, regulatory authorities may initiate legal proceedings against us and we may be harmed.

WE MUST INTEGRATE OUR ACQUISITIONS OF SIMPLUS SYSTEMS CORPORATION AND FIRST DERIVATIVE SYSTEMS, INC., AND WE MAY NEED TO MAKE ADDITIONAL FUTURE ACQUISITIONS TO REMAIN COMPETITIVE. THE PROCESS OF IDENTIFYING, ACQUIRING AND INTEGRATING FUTURE ACQUISITIONS MAY CONSTRAIN VALUABLE MANAGEMENT RESOURCES, AND OUR FAILURE TO EFFECTIVELY INTEGRATE FUTURE ACQUISITIONS MAY RESULT IN THE LOSS OF KEY EMPLOYEES AND THE DILUTION OF STOCKHOLDER VALUE AND HAVE AN ADVERSE EFFECT ON OUR OPERATING RESULTS.

On November 11, 2003, we acquired substantially all of the assets of Simplus Systems Corporation, and on May 28, 2004, we acquired substantially all of the assets of First Derivative Systems, Inc. We may in the future seek to acquire or invest in additional businesses, products or technologies that we believe could complement or expand our business, augment our market coverage, enhance our technical capabilities or that may otherwise offer growth opportunities. We may encounter problems with the assimilation of Simplus or businesses, products or technologies acquired in the future including:

- o difficulties in assimilation of acquired personnel, operations, technologies or products;
- o unanticipated costs associated with acquisitions;
- o diversion of management's attention from other business concerns and potential disruption of our ongoing business;
- o adverse effects on our existing business relationships with our customers;
- o potential patent or trademark infringement from acquired technologies;
- o adverse effects on our current employees and the inability to retain employees of acquired companies;
- o use of substantial portions of our available cash as all or a portion of the purchase price;
- o dilution of our current stockholders due to the issuance of additional securities as consideration for acquisitions; and
- o inability to complete acquired research and development projects.

If we are unable to successfully integrate our acquired companies or to create new or enhanced products and services, we may not achieve the anticipated benefits from our acquisitions. If we fail to achieve the anticipated benefits from the acquisitions, we may incur increased expenses and experience a shortfall in our anticipated revenues and we may not obtain a satisfactory return on our investment. In addition, if a significant number of employees of acquired companies fail to remain employed with us, we may experience difficulties in achieving the expected benefits of the acquisitions.

Completing any potential future acquisitions could cause significant diversions of management time and resources. Financing for future acquisitions may not be available on favorable terms, or at all. If we identify an appropriate acquisition candidate for any of our businesses, we may not be able to negotiate the terms of the acquisition successfully, finance the acquisition

or integrate the acquired business, products, technologies or employees into our existing business and operations. Future acquisitions may not be well-received by the investment community, which may cause our stock price to fall. We have not entered into any agreements or understanding regarding any future acquisitions and cannot ensure that we will be able to identify or complete any acquisition in the future.

If we acquire businesses, new products or technologies in the future, we may be required to amortize significant amounts of identifiable intangible assets and we may record significant amounts of goodwill that will be subject to annual testing for impairment. If we consummate one or more significant future acquisitions in which the consideration consists of stock or other securities, our existing stockholders' ownership could be significantly diluted. If we were to proceed with one or more significant future acquisitions in which the consideration included cash, we could be required to use a substantial portion of our available cash.

OUR FINANCIAL PERFORMANCE MAY ADVERSELY AFFECT THE MORALE AND PERFORMANCE OF OUR PERSONNEL AND OUR ABILITY TO HIRE NEW PERSONNEL.

Our common stock has declined in value below the exercise price of many options granted to employees pursuant to our stock option plans. Thus, the intended benefits of the stock options granted to our employees, the creation of performance and retention incentives, may not be realized. As a result, we may lose employees whom we would prefer to retain. As a result of these factors, our remaining personnel may seek employment with larger, more established companies or companies perceived as having less volatile stock prices.

PROVISIONS IN OUR AGREEMENTS, CHARTER DOCUMENTS, STOCKHOLDER RIGHTS PLAN AND DELAWARE LAW MAY DETER TAKEOVER ATTEMPTS, WHICH COULD DECREASE THE VALUE OF YOUR SHARES.

Our certificate of incorporation and bylaws and Delaware law contain provisions that could make it more difficult for a third party to acquire us without the consent of our board of directors. Our board of directors has the right to issue preferred stock without stockholder approval, which could be used to dilute the stock ownership of a potential hostile acquirer. Delaware law imposes some restrictions on mergers and other business combinations between us and any holder of 15% or more of our outstanding common stock. In addition, we have adopted a stockholder rights plan that makes it more difficult for a third party to acquire us without the approval of our board of directors. These provisions apply even if the offer may be considered beneficial by some stockholders.

OUR STOCK PRICE IS VOLATILE AND COULD RESULT IN A MATERIAL DECLINE IN THE VALUE OF YOUR INVESTMENT IN TEGAL.

We believe that factors such as announcements of developments related to our business, fluctuations in our operating results, sales of our common stock into the marketplace, failure to meet or changes in analysts' expectations, general conditions in the semiconductor industry or the worldwide economy, announcements of technological innovations or new products or enhancements by us or our competitors, developments in patents or other intellectual property rights, developments in our relationships with our customers and suppliers, natural disasters and outbreaks of hostilities could cause the price of our common stock to fluctuate substantially. In addition, in recent years the stock market in general, and the market for shares of small capitalization stocks in particular, have experienced extreme price fluctuations, which have often been unrelated to the operating performance of affected companies. There can be no assurance that the market price of our common stock will not experience significant fluctuations in the future, including fluctuations that are unrelated to our performance.

POTENTIAL DISRUPTION OF OUR SUPPLY OF MATERIALS REQUIRED TO BUILD OUR SYSTEMS COULD HAVE A NEGATIVE EFFECT ON OUR OPERATIONS AND DAMAGE OUR CUSTOMER RELATIONSHIPS.

Materials delays have not been significant in recent years. Nevertheless, we procure certain components and sub-assemblies included in our systems from a limited group of suppliers, and occasionally from a single source supplier. For

example, we depend on MECS Corporation, a robotic equipment supplier, as the sole source for the robotic arm used in all of our 6500 series systems. We currently have no existing supply contract with MECS Corporation, and we currently purchase all robotic assemblies from MECS Corporation on a purchase order basis. Disruption or termination of certain of these sources, including our robotic sub-assembly source, could have an adverse effect on our operations and damage our relationship with our customers.

ANY FAILURE BY US TO COMPLY WITH ENVIRONMENTAL REGULATIONS IMPOSED ON US COULD SUBJECT US TO FUTURE LIABILITIES.

We are subject to a variety of governmental regulations related to the use, storage, handling, discharge or disposal of toxic, volatile or otherwise hazardous chemicals used in our manufacturing process. We believe that we are currently in compliance in all material respects with these regulations and that we have obtained all necessary environmental permits generally relating to the discharge of hazardous wastes to conduct our business. Nevertheless, our failure to comply with present or future regulations could result in additional or corrective operating costs, suspension of production, alteration of our manufacturing processes or cessation of our operations.

THE STRUCTURED SECONDARY OFFERING FACILITY WE ENTERED INTO IN FEBRUARY 2004 AND AMENDED IN MAY 2004 MAY HAVE A DILUTIVE IMPACT ON OUR STOCKHOLDERS, AND THE POTENTIAL UNAVAILABILITY OF THIS FACILITY WOULD NEGATIVELY IMPACT OUR FINANCING ACTIVITIES.

On February 11, 2004, we entered into a structured secondary offering facility (the "Structured Secondary") with Kingsbridge Capital Limited ("Kingsbridge"), which was amended on May 19, 2004. Under the terms of an Amended and Restated Common Stock Purchase Agreement (the "Purchase Agreement") entered into by the Company and Kingsbridge on May 19, 2004 with respect to the Structured Secondary, we may, at our sole discretion, sell to Kingsbridge, and Kingsbridge would be obligated to purchase, up to \$25 million of shares of our common stock, par value \$0.01 per share. The price at which we may sell shares of common stock under the Purchase Agreement is based on a discount to the volume weighted average market price of the common stock for a specified number of trading days following each of our respective elections to sell shares thereunder. The lowest threshold price at which our stock may be sold is at the sole discretion of the Company, but in no case may be lower than \$1.00 per share, and in the event the price of our common stock falls below this \$1.00 threshold, the Structured Secondary will not be an available source of financing. We may utilize the Structured Secondary through July 7, 2006 from time to time in our sole discretion, subject to various conditions and terms contained in the Purchase Agreement. Among the terms of the Purchase Agreement is a "Material Adverse Effect" clause which permits Kingsbridge to terminate the Structured Secondary if Kingsbridge determines that an event has occurred that results in any effect on the business, operations, properties or financial condition of the Company and its subsidiaries that is material and adverse to the Company and such subsidiaries, taken as a whole, and/or any condition, circumstance, or situation that would prohibit or otherwise interfere with our ability to perform any of our obligations under the Purchase Agreement.

In connection with our entering into the Structured Secondary, we issued to Kingsbridge a warrant (the "Warrant") to purchase 300,000 shares of common stock at an exercise price of \$4.11 per share. The Warrant will not be exercisable until August 11, 2004, and will expire on August 11, 2009.

On August 5, 2004, we sold 2,372,689 shares of our common stock to Kingsbridge pursuant to the Structured Secondary at an average price of \$1.119 per share for \$2,600,000 in net proceeds. There are 6,778,972 shares of our common stock that remain reserved for issuance under the Structured Secondary with Kingsbridge, 300,000 of which are issuable under the Warrant we granted to Kingsbridge. The issuance of shares under the Structured Secondary and upon exercise of the Warrant will have a dilutive impact on other stockholders and the issuance or even potential issuance of such shares could have a negative effect on the market price of our common stock. In addition, if we draw down the Structured Secondary, we will issue shares to Kingsbridge at a discount of 10% of the daily volume weighted average prices of our common stock during a specified period of trading days after initiation of each respective draw down. Issuing shares at such a discount will further dilute the interests of other stockholders.

To the extent that Kingsbridge sells shares of our common stock issued under the Structured Secondary to third parties, our stock price may decrease due to the additional selling pressure in the market. The perceived risk of dilution from sales of stock to or by Kingsbridge may cause holders of our common stock to sell their shares, or it may encourage short sales. This could contribute to a decline in our stock price.

THE STRUCTURED SECONDARY IMPOSES CERTAIN LIMITATIONS ON OUR ABILITY TO ISSUE EQUITY OR EQUITY-LINKED SECURITIES.

During the two-year term of the Structured Secondary, we may not engage in certain equity or equity-linked financings without the prior written consent of Kingsbridge, which consent will not be unreasonably withheld, conditioned or delayed. However, we may engage in the following capital raising transactions without Kingsbridge's consent: (1) establish stock option or award plans or agreements (for directors, employees, consultants and/or advisors) and amend such plans or agreements, including increasing the number of shares available thereunder, (2) use equity securities to finance the acquisition of other companies, equipment, technologies or lines of business, (3) issue shares of common stock and/or preferred stock in connection with our option or award plans, stock purchase plans, rights plans, warrants or options, (4) issue shares of common stock and/or preferred stock in connection with the acquisition of products, licenses, equipment or other assets and strategic partnerships or joint ventures (the primary purpose of which is not to raise equity capital); (5) issue shares of common and/or preferred stock to consultants and/or advisors as consideration for services rendered, (6) issue and sell shares in an underwritten public offering of common stock, and (7) issue shares of common stock to Kingsbridge under any other agreement entered into between our company and Kingsbridge.

In addition, we may not issue securities that are, or may become, convertible or exchangeable into shares of common stock where the purchase, conversion or exchange price for such common stock is determined using a floating or otherwise adjustable discount to the market price of the common stock (including pursuant to an equity line or other financing that is substantially similar to an equity line with an investor other than Kingsbridge) during the two-year term of our agreement with Kingsbridge.

WE MAY ISSUE ADDITIONAL SHARES AND DILUTE YOUR OWNERSHIP PERCENTAGE.

Certain events over which you have no control could result in the issuance of additional shares of our common stock, which would dilute your ownership percentage in our company. As of June 30, 2004, there were 44,183,297 shares of our common stock issued and outstanding and there were 31,094 shares of common stock reserved for issuance under our equity incentive and stock purchase plans. In addition, as of June 30, 2004, there were outstanding options, warrants and other rights to acquire up to approximately 12,115,046 (7,854,395 in equity compensation plans and 4,260,651 in warrants) shares of common stock. We may also issue additional shares of common stock or preferred stock:

- o to raise additional funds for working capital, commercialization, production and marketing activities;
- o upon the exercise or conversion of additional outstanding options and warrants; and
- o in lieu of cash payment of dividends.

Moreover, although the issuance of our common stock under the Structured Secondary will have no effect on the rights or privileges of existing holders of common stock, the economic and voting interests of each stockholder will be diluted as a result of such issuance. Although the number of shares of common stock that stockholders presently own will not decrease, such shares will represent a smaller percentage of our total shares that will be outstanding after such events. If we satisfy the conditions that allow us to draw down the entire \$25 million available under the Structured Secondary, and we choose to do so, then generally, as the market price of our common stock decreases, the number of shares we will have to issue upon each draw down on the Structured Secondary increases, to a maximum of 8,851,661 shares. Therefore drawing down upon the Structured Secondary when the price of our common stock is decreasing

will have an additional dilutive effect to your ownership percentage and may result in additional downward pressure on the price of our common stock.

FORWARD-LOOKING STATEMENTS

This prospectus includes or incorporates by reference forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. Forward-looking statements, which are based on assumptions and describe our future plans, strategies and expectations, are generally identifiable by the use of the words "anticipate," "believe," "estimate," "expect," "intend," "project," or similar expressions. These forward-looking statements are subject to risks, uncertainties and assumptions about us. Important factors that could cause actual results to differ materially from the forward-looking statements we make in this prospectus are set forth under the caption "Risk Factors" and elsewhere in this prospectus and the documents incorporated by reference in this prospectus. If one or more of these risks or uncertainties materialize, or if any underlying assumptions prove incorrect, our actual results, performance or achievements may vary materially from any future results, performance or achievements expressed or implied by these forward-looking statements. All forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by the cautionary statements in this paragraph.

USE OF PROCEEDS

The selling stockholders will receive all of the proceeds from the sale under this prospectus of the common stock. We will not receive any proceeds from these sales. We will receive the proceeds from the exercise of warrants entitling the selling stockholders to purchase shares of our common stock.

SELLING STOCKHOLDERS

The shares of common stock offered by the selling stockholders were originally issued, or will be issued upon the exercise of outstanding warrants, pursuant to transactions exempt from the registration requirements of the Securities Act. The shares are being registered to permit public secondary trading of the shares, and the selling stockholders, including their transferees, pledges, donees or their successors, may offer the shares for resale from time to time. See "Plan of Distribution." In accordance with registration rights granted to the selling stockholders, we have filed with the Securities and Exchange Commission, under the Securities Act, a registration statement on Form S-3, of which this prospectus forms a part, with respect to the resales of the shares from time to time on The Nasdaq SmallCap Market, in privately-negotiated transactions, or otherwise, and have agreed to prepare and file such amendments and supplements to the registration statement as may be necessary to keep such registration statement effective until the shares are no longer required to be registered for the sale thereof by the selling stockholders.

The following table sets forth information as of August 24, 2004 the shares of common stock beneficially owned by each selling stockholder that may be offered pursuant to this prospectus. The information is based on information provided by or on behalf of the selling stockholders. The selling stockholders may offer all, some or none of the common stock. Because the selling stockholders may offer all or some portion of the common stock, we cannot estimate the amount of the common stock that will be held by the selling stockholders upon termination of any of these sales. In addition, the selling stockholders identified below may have sold, transferred or otherwise disposed of all or a portion of their common stock since the date on which they provided the information regarding their common stock in transactions exempt from the registration requirements of the Securities Act.

Information concerning other selling stockholders will be set forth in prospectus supplements or post-effective amendments to this prospectus from time to time, if required. Information concerning the stockholders may change from time to time and any changed information will be set forth in prospectus supplements or post-effective amendments to this prospectus if and when necessary. Except as disclosed in the footnotes to the selling stockholder table, Tegal has no relationship with the selling stockholders prior to the issuance of the common stock.

<TABLE>
<CAPTION>

NAME OF SELLING STOCKHOLDER	SHARES OF COMMON STOCK BENEFICIALLY OWNED AND OFFERED FOR RESALE UNDER THIS PROSPECTUS	TOTAL SHARES OF COMMON STOCK BENEFICIALLY OWNED AS OF 8/24/04	PERCENTAGE OF OUTSTANDING STOCK BENEFICIALLY OWNED PRIOR TO THIS OFFERING (1)
<S>	<C>	<C>	<C>
FDSI Shareholder Trust	66,029	66,029	*
Steve Bernhardt	2,963	2,963	*
Tony Bernhardt	31,863	31,863	*
Bigelow Asset Management	5,928	5,928	*
Tim Bigelow	4,445	4,445	*
David Boydston	5,895	5,895	*
Chris Brown	24,302	24,302	*
Tan Bui	303	303	*
Don Burkman	8,150	8,150	*
James Cameron	17,041	17,041	*
CDE ResMap	11,202	11,202	*
Alain Chardon	22,227	22,227	*
Andy Clarke (2)	235,580	235,580	*
Benjamin Clarke	606	606	*
Carole Clarke	2,582	1,455,174 (3)	3.13%
Jean - Francois Daviet	303	303	*
Ray Degner	1,515	1,515	*
James Diller	16,152	16,152	*
Harald Durr	6,224	6,224	*
Jeff Farni	53,346	53,346	*
Paul Franzon	303	303	*
Rob Furst	69,794	69,794	*
Elie Galimidi	140,582	140,582	*
Garage Securities, Inc.	7,409	7,409	*
Bob Gehlen	2,963	2,963	*
Jerry Giles Living Trust	6,149	6,149	*
Birger Gneuss (4)	509,637	509,637	1.08%
Joachim Gneuss	14,818	14,818	*
Oliver Gneuss	5,928	5,928	*
Adam Haron	681	681	*
Jack Harris	38,107	38,107	*

Karl Heiman	7,409	7,409	*
Tom Jacobs	4,445	4,445	*
Robert Johnson	2,963	2,963	*
Sam Kano	18,671	18,671	*
Gaal Karp	7,409	7,409	*
Tony Kazmakites	7,409	7,409	*
Brian Kelly	7,409	7,409	*
Shin Kimura	7,409	7,409	*
Michael Lachaise	3,705	3,705	*
Mitch Lashman	303	303	*
ICOM Technology International Pte Ltd (MAC LOH)	7,409	7,409	*
Noel MacDonald	17,776	17,776	*
Kurt Myataki	303	303	*
Jeff Myers	703	703	*
John Newman	6,149	6,149	*
Nida & Maloney LLP	2,008	2,008	*

</TABLE>

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<TABLE>

<CAPTION>

NAME OF SELLING STOCKHOLDER	SHARES OF COMMON STOCK BENEFICIALLY OWNED AND OFFERED FOR RESALE UNDER THIS PROSPECTUS	PERCENTAGE OF TOTAL SHARES OF COMMON STOCK BENEFICIALLY OWNED AS OF 8/24/04	OUTSTANDING STOCK BENEFICIALLY OWNED PRIOR TO THIS OFFERING (1)
<S>	<C>	<C>	<C>
Joe Nida	6,421	6,421	*
Craig Olroyd (5)	1,971	1,971	*
Richard Ortale	3,030	3,030	*
Rod Palmborg	2,963	2,963	*
Tom Parks	371	371	*
Lou Perrone	13,160	13,160	*
Dan Petersen	3,409	3,409	*
Paul Poenisch	2,963	2,963	*
Richard Powers	34,082	34,082	*
Simon Rack	5,928	5,928	*
Oliver Radl	2,223	2,223	*
Robert Rumsey	2,963	2,963	*
Isabel Salinas (5)	606	606	*

Markus Seitz	4,149	4,149	*
Mike Sohn	7,409	7,409	*
Tim Stultz	9,090	9,090	*
Bob Sutton (5)	13,635	13,635	*
Timberline Opportunity Partners, L.P.	17,041	17,041	*
Drew Traver	502	502	*
Trust Automation (6)	14,818	14,818	*
Allen Vexler	7,409	7,409	*
Tom Voehl	69,690	69,690	*
Richard Vogt	6,018	6,018	*
Gordon Whitlock	2,963	2,963	*
Richard Wideman	83,486	83,486	*
Lorance Wilson	12,431	12,431	*
Edward Yoon	14,818	14,818	*
Larry Yoshida	14,818	14,818	*
Shoji Yoshii	7,409	7,409	*
Zohar Ziv	4,545	4,545	*
M.S. Howells & Co. (7)	105,797	105,797	*
Ferdinand Seemann (8)	15,000	21,000	*
Se2quel Partners, LLC (9)	480,000	480,000	1.02%
TOTAL (10)	<u>2,385,632</u>	<u>3,844,224</u>	<u>8.09%</u>

</TABLE>

* Represents beneficial ownership of less than 1%.

(1) Based on Rule 13d-3(d)(i) under the Securities Exchange Act of 1934 using 46,557,672 shares of common stock outstanding on August 24, 2004. The number of shares of common stock outstanding used in calculating the percentage for each selling stockholder includes common stock underlying a warrant held by the selling stockholder, but excludes common stock underlying warrants held by any other selling stockholder.

(2) Andy Clarke is our Director of 300-mm PVD Technology.

(3) Carole Clarke is the trustee for the Clarke Decedents Trust (726,296 shares), Clarke Marital Trust (458,712 shares) and Clarke Survivors Trust (267,584 shares).

(4) Under a consulting arrangement, Birger Gneuss acts as Country Manager for Tegal Europe. Shares include 480,000 shares of common stock issuable upon exercise of warrants at an exercise price of \$1.64 per share.

(5) Employee of Tegal.

(6) Contractors to Tegal.

(7) M.S. Howells & Co. acted as financial advisors to FDSI in our acquisition of

FDSI's assets.

(8) Shares are issuable upon exercise of warrants at an exercise price of \$1.32 per share.

(9) Ferdinand Seemann and Ed Chan are principals of Se2quel Partners, LLC. 240,000 shares are issuable upon exercise of warrants at an exercise price of \$1.60 per share and 240,000 shares are issuable upon exercise of warrants at an exercise price of \$1.08 per share.

(10) Assumes the exercise of all warrants held by the selling stockholders.

PLAN OF DISTRIBUTION

The selling stockholders, which term includes their transferees, pledgees or donees or their successors, may sell the common stock directly to purchasers or through underwriters, broker-dealers or agents, who may receive compensation in the form of discounts, concessions or commissions from the selling stockholders or the purchasers. These discounts, concessions or commissions as to any particular underwriter, broker-dealer or agent may be in excess of those customary in the types of transactions involved.

The common stock may be sold in one or more transactions at:

- o fixed prices;
- o prevailing market prices at the time of sale;
- o prices related to the prevailing market prices;
- o varying prices determined at the time of sale; or
- o negotiated prices.

These sales may be effected in transactions:

- o on any national securities exchange or quotation service on which our common stock may be listed or quoted at the time of sale, including The Nasdaq SmallCap Market;
- o in the over-the-counter market;
- o otherwise than on such exchanges or services or in the over-the-counter market;
- o through the writing of options, whether the options are listed on an options exchange or otherwise; or
- o through the settlement of short sales.

These transactions may include block transactions or crosses. Crosses are transactions in which the same broker acts as agent on both sides of the trade.

In connection with the sale of the common stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions. These broker-dealers or financial institutions may in turn engage in short sales of the common stock in the course of hedging the positions they assume with selling stockholders. The selling stockholders may also sell the common stock short and deliver these securities to close out such short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities.

The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them hereby will be the purchase price of the common stock less discounts and commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

Our outstanding common stock is listed for trading on The Nasdaq SmallCap Market.

In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in certain jurisdictions, the common stock may not be offered or sold unless they have been registered or qualified for sale or an exemption is available and complied with.

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Broker-dealers or agents that participate in the sale of the common stock may be deemed to be "underwriters" within the meaning of Section 2(11) of the Securities Act. Selling stockholders that participate in the sale of the common stock may also be deemed to be "underwriters" within the meaning of Section 2(11) of the Securities Act. Profits on the sale of the common stock by selling stockholders and any discounts, commissions or concessions received by any broker-dealers or agents might be deemed to be underwriting discounts and commissions under the Securities Act. Selling stockholders who are deemed to be "underwriters" within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act. To the extent the selling stockholders may be deemed to be "underwriters," they may be subject to statutory liabilities, including, but not limited to, Sections 11, 12 and 17 of the Securities Act.

The selling stockholders and any other person participating in a distribution will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder. Regulation M of the Exchange Act may limit the timing of purchases and sales of any of the securities by the selling stockholders and any other person. In addition, Regulation M may restrict the ability of any person engaged in the distribution of the securities to engage in market-making activities with respect to the particular securities being distributed for a period of up to five business days before the distribution. The selling stockholders have acknowledged that they understand their obligations to comply with the provisions of the Exchange Act and the rules thereunder relating to stock manipulation, particularly Regulation M, and have agreed that they will not engage in any transaction in violation of such provisions.

To our knowledge, there are currently no plans, arrangements or understandings between any selling stockholder and any underwriter, broker-dealer or agent regarding the sale of the common stock by the selling stockholders.

A selling stockholder may decide not to sell any common stock described in this prospectus. We cannot assure holders that any selling stockholder will use this prospectus to sell any or all of the common stock. Any securities covered by this prospectus which qualify for sale pursuant to Rule 144 or Rule 144A of the Securities Act may be sold under Rule 144 or Rule 144A rather than pursuant to this prospectus. In addition, a selling stockholder may transfer, devise or gift the common stock by other means not described in this prospectus.

With respect to a particular offering of the common stock, to the extent required, an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement of which this prospectus is a part will be prepared and will set forth the following information:

- o the specific common stock to be offered and sold;
- o the names of the selling stockholders;
- o the respective purchase prices and public offering prices and other material terms of the offering;
- o the names of any participating agents, broker-dealers or underwriters; and
- o any applicable commissions, discounts, concessions and other items constituting compensation from the selling stockholders.

We entered into a registration rights agreement for the benefit of holders of our common stock to register their common stock under applicable federal and

state securities laws under certain circumstances and at certain times. The registration rights agreement provides that the selling stockholders and Tegal will indemnify each other and their respective directors, officers and controlling persons against specific liabilities in connection with the offer and sale of the common stock, including liabilities under the Securities Act, or will be entitled to contribution in connection with those liabilities. We will pay all of our expenses and specified expenses incurred by the selling

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stockholders incidental to the registration, offering and sale of the common stock to the public, but each selling stockholder will be responsible for payment of commissions, concessions, fees and discounts of underwriters, broker-dealers and agents.

LEGAL MATTERS

Certain legal matters relating to the offering will be passed upon for Tegal by Latham & Watkins LLP, San Francisco, California. Certain legal matters will be passed upon for any agents or underwriters by counsel for such agents or underwriters identified in the applicable prospectus supplement.

EXPERTS

The financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended March 31, 2004 have been so incorporated in reliance on the report (which contains an explanatory paragraph relating to the ability of Tegal Corporation to continue as a going concern, as described in Note 1 to the financial statements) of PricewaterhouseCoopers LLP, our former independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the information requirements of the Securities Exchange Act of 1934, as amended. Accordingly, we file annual, quarterly and periodic reports, proxy statements and other information with the SEC relating to our business, financial statements and other matters. You may read and copy any documents we have filed with the SEC at prescribed rates at the SEC's Public Reference Room at 450 Fifth Street, N.W., Washington, DC 20549. You can obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. Our SEC filings are also available to you free of charge at the SEC's web site at <http://www.sec.gov> and at our web site at <http://www.tegal.com>. Information contained in our web site is not part of this prospectus.

This prospectus is only part of a registration statement on Form S-3 that we have filed with the SEC under the Securities Act, and therefore omits certain information contained in the registration statement. We have also filed exhibits with the registration statement that are not included in this prospectus, and you should refer to the applicable exhibit for a complete description of any statement referring to any contract or other document. A copy of the registration statement, including the exhibits thereto, may be inspected without charge at the Public Reference Room of the SEC described above, and copies of such material may be obtained from such office upon payment of the fees prescribed by the SEC.

We have elected to "incorporate by reference" certain information into this prospectus. By incorporating by reference, we can disclose important information to you by referring you to another document we have filed with the SEC. The information incorporated by reference is deemed to be part of this prospectus, except for information incorporated by reference that is superseded by information contained in this prospectus. This prospectus incorporates by reference the documents set forth below that we have previously filed with the SEC:

TEGAL CORPORATION SEC FILINGS

PERIOD ENDED

Annual Report on Form 10-K (including information
specifically incorporated by reference into our
Form 10-K from our 2004 Annual Report to
Stockholders and Proxy Statement for our 2004
Annual Meeting of Stockholders).....

March 31, 2004

Quarterly Report on Form 10-Q..... June 30, 2004
Current Report on Form 8-K..... filed on July 14, 2004
The description of our common stock as set forth
in our Registration Statement on Form 8-A..... filed on September 21, 1995

All documents that we file with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act from the date of this prospectus to the end of the offering of the common stock under this prospectus shall also be deemed to be incorporated in this prospectus by reference.

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You may obtain copies of these documents from us without charge (other than exhibits to such documents, unless such exhibits are specifically incorporated by reference into such documents) by writing to us at Tegal Corporation, 2201 South McDowell Boulevard, Petaluma, California 94954 or calling us at (707) 763-5600.

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2,385,632 SHARES OF COMMON STOCK

TEGAL CORPORATION

PROSPECTUS

WE HAVE NOT AUTHORIZED ANY DEALER, SALESMAN OR OTHER PERSON TO GIVE ANY INFORMATION OR TO MAKE ANY REPRESENTATION OTHER THAN THOSE CONTAINED OR INCORPORATED BY REFERENCE IN THIS PROSPECTUS AND ANY APPLICABLE SUPPLEMENT TO THIS PROSPECTUS. YOU MUST NOT RELY UPON ANY INFORMATION OR REPRESENTATION NOT CONTAINED OR INCORPORATED BY REFERENCE IN THIS PROSPECTUS OR ANY APPLICABLE SUPPLEMENT TO THIS PROSPECTUS. NEITHER THIS PROSPECTUS NOR ANY APPLICABLE SUPPLEMENT TO THIS PROSPECTUS CONSTITUTES AN OFFER TO SELL OR THE SOLICITATION OF AN OFFER TO BUY ANY SECURITIES OTHER THAN THE REGISTERED COMMON STOCK TO WHICH IT RELATES, NOR DOES THIS PROSPECTUS OR ANY SUPPLEMENT TO THIS PROSPECTUS CONSTITUTE AN OFFER TO SELL OR THE SOLICITATION OF AN OFFER TO BUY SECURITIES IN ANY JURISDICTION TO ANY PERSON TO WHOM IT IS UNLAWFUL TO MAKE SUCH OFFER OR SOLICITATION IN SUCH JURISDICTION. YOU SHOULD NOT ASSUME THAT THE INFORMATION CONTAINED IN THIS PROSPECTUS OR ANY SUPPLEMENT TO THIS PROSPECTUS IS ACCURATE ON ANY DATE SUBSEQUENT TO THE DATE SET FORTH ON THE FRONT OF THIS PROSPECTUS OR ANY SUPPLEMENT TO THIS PROSPECTUS OR THAT ANY INFORMATION WE HAVE INCORPORATED BY REFERENCE IS CORRECT ON ANY DATE SUBSEQUENT TO THE DATE OF THE DOCUMENT INCORPORATED BY REFERENCE, EVEN THOUGH THIS PROSPECTUS AND ANY APPLICABLE SUPPLEMENT TO THIS PROSPECTUS IS DELIVERED OR SECURITIES ISSUED ON A LATER DATE.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.

The following table sets forth the costs and expenses payable by the registrant in connection with the registration for resale of our common stock. All of the amounts shown are estimates except the Securities and Exchange Commission (the "Commission") registration fee.

	AMOUNT

Commission Registration Fee.....	\$ 347.60
*Costs of Printing.....	10,000.00
*Legal Fees and Expenses.....	50,000.00
*Accounting Fees and Expenses.....	30,000.00
*Miscellaneous Expenses.....	10,000.00

*Total.....	\$ 100,347.60

*Estimated

ITEM 15. LIABILITY AND INDEMNIFICATION OF DIRECTORS AND OFFICERS.

We are a Delaware corporation. Subsection (b)(7) of Section 102 of the Delaware General Corporation Law (the "DGCL"), enables a corporation in its original certificate of incorporation or an amendment thereto to eliminate or limit the personal liability of a director to the corporation or its stockholders for monetary damages for breach of the director's fiduciary duty, except (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) pursuant to Section 174 of the DGCL (providing for liability of directors for unlawful payment of dividends or unlawful stock purchases or redemptions) or (iv) for any transaction from which the director derived an improper personal benefit.

Subsection (a) of Section 145 of the DGCL empowers a corporation to indemnify any present or former director, officer, employee or agent of the corporation, or any individual serving at the corporation's request as a director, officer, employee or agent of another organization, who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation), against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding provided that such director, officer, employee or agent acted in good faith and in a manner he reasonably believed to be in, or not opposed to, the best interests of the corporation, and, with respect to any criminal action or proceeding, provided further that such director, officer, employee or agent had no reasonable cause to believe his conduct was unlawful.

Subsection (b) of Section 145 empowers a corporation to indemnify any present or former director, officer, employee or agent who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person acted in any of the capacities set forth above, against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit provided that such director, officer, employee or agent acted in good faith and in a manner reasonably believed to be in, or not opposed to, the best interests of the corporation, except that no indemnification may be made in respect to any claim, issue or matter as to which such director, officer, employee or agent shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all of the circumstances of the case, such director or officer is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

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Section 145 further provides that to the extent a director, officer, employee or agent has been successful in the defense of any action, suit or proceeding referred to in subsections (a) and (b) or in the defense of any claim, issue or matter therein, he shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by him in connection therewith; that indemnification and advancement of expenses provided for, by, or granted pursuant to, Section 145 shall not be deemed exclusive of any other rights to which the indemnified party may be entitled; and empowers the corporation to purchase and maintain insurance on behalf of a present or former director, officer, employee or agent of the corporation, or any individual serving at the corporation's request as a director, officer or employee of another organization, against any liability asserted against him or incurred by him in any such capacity, or arising out of his status as such, whether or not the corporation would have the power to indemnify him against such liabilities under Section 145.

Our Certificate of Incorporation provides that to the fullest extent permitted by the Delaware General Corporation Law ("DGCL"), a director of Tegal shall not be liable to Tegal or its stockholders for monetary damages for breach of fiduciary duty as a director.

ITEM 16. INDEX TO EXHIBITS.

-
- 2.1 Asset Acquisition Agreement by and between Tegal Corporation and First Derivative Systems, Inc., dated as of April 28, 2004, filed as Exhibit 2.1 to Tegal's Quarterly Report on Form 10-Q for the period ended June 30, 2004 (SEC File No. 000-26824) filed on August 16, 2004 and incorporated herein by reference.
 - 4.1 Tegal's Certificate of Incorporation, as amended, filed as Exhibits 3(i)1 and 3(i)2 to Tegal's Registration Statement on Form S-1 (SEC File No. 033-84702) filed on October 3, 1994 and incorporated herein by reference.
 - 4.2 Tegal's Certificate of Amendment to the Certificate of Incorporation, filed as Exhibit 4.2 to Tegal's Registration Statement on Form S-3 (SEC File No. 333-108921), filed on September 18, 2003 and incorporated herein by reference.
 - 4.3 Tegal's By-Laws, as amended, filed as Exhibit 3(ii) to Tegal's Registration Statement on Form S-1 (SEC File No. 033-84702) filed on October 3, 1994 and incorporated herein by reference.
 - 4.4 Rights Agreement between Tegal and ChaseMellon Shareholder Services, LLC, as Rights Agent, dated as of June 11, 1996, filed as Exhibit 4.1 to Tegal's Current Report on Form 8-K (SEC File No. 000-26824) filed on June 28, 1996 and incorporated herein by reference.
 - 4.5 First Amendment to Rights Agreement between Tegal and ChaseMellon Shareholder Services, LLC, as Rights Agent, dated as of January 15, 1999, filed as Exhibit 99.1 to Tegal's Current Report on Form 8-K (SEC File No. 000-26824) filed on January 15, 1999 and incorporated herein by reference.
 - 4.6 Registration Rights Agreement by and among Tegal Corporation, First Derivative Systems, Inc. and Andy Clarke, as representative of the stockholders and creditors of First Derivative Systems, Inc., dated as of May 28, 2004.*
 - 4.7 Form of Certificate for Common Stock filed as Exhibit 4.1 to Tegal's Registration Statement on Form S-1 (SEC File No. 033-84702), filed on October 3, 1994 and incorporated herein by reference.
 - 5.1 Opinion of Latham & Watkins LLP.*
 - 23.1 Consent of Latham & Watkins LLP (included in Exhibit 5.1).*
 - 23.2 Consent of PricewaterhouseCoopers LLP, former Independent Registered Public Accounting Firm.*
 - 24.1 Power of Attorney (included on signature page).*

* Filed herewith.

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ITEM 17. UNDERTAKINGS.

A. The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of

securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (A)(1)(i) and (A)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof; and

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

B. The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

C. Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent,

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submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Petaluma, state of California, on this 27th day of August, 2004.

TEGAL CORPORATION

By /s/ Michael L. Parodi

Michael L. Parodi
Chairman of the Board, President &
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Michael L. Parodi, and Thomas R. Mika, and each or either of them, his true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed below by the following persons in the capacities and on the 27th day of August, 2004.

SIGNATURE	TITLE
-----	-----
/s/ Michael L. Parodi	Chairman of the Board, President & Chief Executive Officer (Principal Executive Officer)

Michael L. Parodi	
/s/ Thomas R. Mika	Executive Vice President & Chief Financial Officer (Principal Financial and Accounting Officer)

Thomas R. Mika	
/s/ Edward A. Dohring	

Edward A. Dohring	Director
/s/ Jeffrey M. Krauss	

Jeffrey M. Krauss	Director
/s/ H. Duane Wadsworth	

H. Duane Wadsworth	Director

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EXHIBIT INDEX

Number Exhibit

- 2.1 Asset Acquisition Agreement by and between Tegal Corporation and First Derivative Systems, Inc., dated as of April 28, 2004, filed as Exhibit 2.1 to Tegal's Quarterly Report on Form 10-Q for the period ended June 30, 2004 (SEC File No. 000-26824) filed on August 16, 2004 and incorporated herein by reference.
- 4.1 Tegal's Certificate of Incorporation, as amended, filed as Exhibits 3(i)1 and 3(i)2 to Tegal's Registration Statement on Form S-1 (SEC File No. 033-84702) filed on October 3, 1994 and incorporated herein by reference.
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(SEC File No. 333-108921), filed on September 18, 2003 and incorporated herein by reference.

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- 4.4 Rights Agreement between Tegal and ChaseMellon Shareholder Services, LLC, as Rights Agent, dated as of June 11, 1996, filed as Exhibit 4.1 to Tegal's Current Report on Form 8-K (SEC File No. 000-26824) filed on June 28, 1996 and incorporated herein by reference.
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- 5.1 Opinion of Latham & Watkins LLP.*
- 23.1 Consent of Latham & Watkins LLP (included in Exhibit 5.1).*
- 23.2 Consent of PricewaterhouseCoopers LLP, former Independent Registered Public Accounting Firm.*
- 24.1 Power of Attorney (included on signature page).*

* Filed herewith.

REGISTRATION RIGHTS AGREEMENT

THIS REGISTRATION RIGHTS AGREEMENT (the "Agreement") is made and entered into this 28th day of May, 2004 by and among (i) Tegal Corporation, a Delaware corporation ("Tegal"), (ii) First Derivative Systems, Inc., a California corporation ("FDSI"), and (iii) Andy Clarke, in his capacity as the representative (the "Shareholders' Representative") of all of the shareholders and creditors of FDSI who will receive shares of common stock of Tegal upon execution of FDSI's Plan of Dissolution.

R E C I T A L S

A. On April 28, 2004 Tegal and FDSI entered into an Asset Acquisition Agreement (the "Asset Acquisition Agreement") pursuant to which Tegal has agreed to purchase substantially all of the assets, and certain liabilities, of FDSI in exchange of One Million Four Hundred Ten Thousand Six Hundred and Forty-two (1,410,632) shares (the "Tegal Shares") of Common Stock (as defined in Section 1 below).

B. In accordance with Section 9 of the Asset Acquisition Agreement, Tegal has agreed to grant certain registration rights to holders of the Tegal Shares and other Registrable Securities (as defined in Section 1 below).

C. Tegal and FDSI enter into this Agreement to memorialize such registration rights.

D. Shareholders' Representative joins this Agreement as a party in accordance with Section 14 of the Shareholder Representation Agreement by and between Tegal and each of the shareholders and creditors of FDSI (all of whom are listed on Exhibit A to this Agreement) as FDSI intends to dissolve and distribute the Tegal Shares to certain of its shareholders and creditors soon after the closing of the transactions contemplated in the Asset Acquisition Agreement.

AGREEMENTS

NOW, THEREFORE, in consideration of the premises, and of the mutual covenants and agreements contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

1. Definitions. In addition to capitalized terms defined elsewhere in this Agreement, the following capitalized terms shall have the following meaning when used in this Agreement. Defined terms used, but not defined, herein shall have the meanings ascribed to them as set forth in the Asset Acquisition Agreement.

1.1 "Common Stock" means the common stock, par value \$0.01 per share, of Tegal.

1.2 "Exchange Act" means the Securities Exchange Act of 1934, as amended.

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1.3 "Person" means any person or entity, whether an individual, whether in their capacity as a trustee, executor, administrator or other legal representative, sole proprietorship, corporation, limited liability company, general partnership, limited partnership, trust, unincorporated organization, syndicate, business association, firm, joint venture, governmental agency or authority or any similar entity.

1.4 "Public Offering" means any offering by Tegal of its equity securities to the public pursuant to an effective registration statement under the Securities Act or any comparable statement under any comparable federal statute then in effect.

1.5 "Registrable Shares" means at any time (i) the Tegal Shares; (ii) any shares of Common Stock then outstanding which were issued directly or indirectly as a dividend or other distribution with respect to or in replacement of the Tegal Shares; and (iii) any shares of Common Stock then issuable directly or indirectly upon the conversion or exercise of other securities which were issued as a dividend or other distribution with respect to or in replacement of the

Tegal Shares or the shares referred to in (ii); provided, however, that Registrable Shares shall not include any shares which have been registered pursuant to the Securities Act or which have been sold pursuant to Rule 144 of the Securities Act. For purposes of this Agreement, a Person will be deemed to be a holder of Registrable Shares whenever such Person has the right to acquire such Registrable Shares, whether or not such acquisition actually has been effected.

1.6 "SEC" means the Securities and Exchange Commission.

1.7 "Securities Act" means the Securities Act of 1933, as amended.

2. Registration Rights.

2.1 Registration. Within ninety (90) days of the Closing, Tegal will file a single Form S-3 with the SEC to register the resale of the Registrable Shares by the holders thereof.

2.2 Payment of Expenses for the Registration. Registration Expenses (as defined in Section 5 below) shall be paid by Tegal.

2.3 Restrictions. Tegal may postpone for up to forty-five (45) days the filing or the effectiveness of a registration statement for the Demand Registration if the Board of Directors of Tegal reasonably and in good faith determines that such filing would be materially detrimental to Tegal or require a disclosure of a material fact that might reasonably be expected to have a material adverse effect on Tegal or any plan or proposal by Tegal or any of its subsidiaries to engage in any acquisition of assets (other than in the ordinary course of business) or any merger, consolidation, tender offer or other significant transaction.

2.4 No Underwritten Offering. The holders of the Registrable Shares hereby agree that they shall not sell the Registrable Shares in an underwritten offering.

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3. Registration Procedures. Tegal will use its reasonable best efforts to effect the registration and sale of such Registrable Shares in accordance with the intended method of disposition thereof and, pursuant thereto, Tegal will as expeditiously as possible:

- a. prepare and file with the SEC a registration statement with respect to such Registrable Shares and use its reasonable best efforts to cause such registration statement to become effective (provided that before filing a registration statement or prospectus, or any amendments or supplements thereto, Tegal will furnish upon request copies of all such documents proposed to be filed to the counsel or counsels for the sellers of the Registrable Shares covered by such registration statement);
- b. prepare and file with the SEC such amendments and supplements to such registration statement and the prospectus(es) used in connection therewith as may be necessary to keep such registration statement effective for a period of not less than one (1) year or such shorter period until such Registrable Shares are no longer Registrable Shares and comply with the provisions of the Securities Act with respect to the disposition of all securities covered by such registration statement during such period in accordance with the intended methods of disposition by the sellers thereof set forth in such registration statement;
- c. furnish to each seller of Registrable Shares such number of copies of such registration statement, each amendment and supplement thereto, the prospectus(es) included in such registration statement (including each preliminary prospectus) and such other documents as such seller may reasonably request in order to facilitate the disposition of the Registrable Shares owned by such seller;
- d. use its reasonable best efforts to register or qualify such Registrable Shares under such other securities or blue sky laws of such jurisdictions as any seller reasonably requests and do any and all other acts and things which may be reasonably necessary or advisable to enable such seller to consummate the disposition in such jurisdictions of the Registrable Shares

owned by such seller (provided that Tegal will not be required to (i) qualify generally to do business in any jurisdiction where it would not otherwise be required to qualify but for this subparagraph or (ii) consent to general service of process in any such jurisdiction);

e. notify each seller of such Registrable Shares, at any time when a prospectus relating thereto is required to be delivered under the Securities Act, of the happening of any event as a result of which the prospectus included in such registration statement contains an untrue statement of a material fact or omits any fact necessary to make the statements therein not misleading, and, at the request of any such seller, Tegal will prepare a supplement or amendment to such prospectus so that, as thereafter delivered to the purchasers of such Registrable Shares, such prospectus will not contain any untrue statement of a material fact or omit to state any fact necessary to make the statements therein not misleading;

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f. cause all such Registrable Shares to be listed on each securities exchange on which similar securities issued by Tegal are then listed or if no such securities are then listed, such securities exchange as the holders of a majority of the Registrable Shares included in such registration may reasonably request;

g. make available for inspection by any seller of Registrable Shares and any attorney, accountant or other agent retained by any such seller, all financial and other records, pertinent corporate documents and properties of Tegal, and cause Tegal's officers, directors, employees and independent accountants to supply all information reasonably requested by any such seller, attorney, accountant or agent in connection with such registration statement; and

h. advise each seller of such Registrable Shares, promptly after it shall receive notice or obtain knowledge thereof, of the issuance of any stop order by the SEC suspending the effectiveness of such registration statement or the initiation or threatening of any proceeding for such purpose and promptly use all reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such stop order should be issued.

4. **Registration Expenses.** All expenses incident to Tegal's performance of or compliance with this Agreement, including, but not limited to, all registration and filing fees, fees and expenses of compliance with securities or blue sky laws, printing expenses, messenger and delivery expenses, and fees and disbursements of counsel for Tegal and all independent certified public accountants and other Persons retained by Tegal (all such expenses being herein called "Registration Expenses"), will be borne by Tegal, provided that Tegal shall not be required to pay sales commissions, discounts or transfer taxes. In addition, Tegal will pay its internal expenses (including, but not limited to, all salaries and expenses of its officers and employees performing legal or accounting duties), the expense of any annual audit or quarterly review, the expense of any liability insurance obtained by Tegal and the expenses and fees for listing the securities to be registered on each securities exchange.

5. Indemnification.

5.1 By Tegal. Tegal agrees to indemnify, to the extent permitted by law, each holder of Registrable Shares, its officers, employees and directors and each Person who controls such holder (within the meaning of the Securities Act) against all losses, claims, damages, liabilities and expenses (including, but not limited to, attorneys' fees and expenses) caused by any untrue or alleged untrue statement of material fact contained in any registration statement, prospectus or preliminary prospectus, or any amendment thereof or supplement thereto, or any omission or alleged omission of a material fact required to be stated therein or necessary to make the statements therein not misleading, except insofar as the same are caused by or contained in any information furnished in writing to Tegal by such holder expressly for use therein or by such holder's failure to deliver a copy of the prospectus or any amendments or supplements thereto after Tegal has furnished such holder with a sufficient number of copies of the same. The payments required by

this Section 5.1 will be made periodically during the course of the investigation or defense, as and when bills are received or expenses incurred.

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5.2 By Each Holder. In connection with any registration statement in which a holder of Registrable Shares is participating, each such holder will furnish to Tegal in writing such information as Tegal reasonably requests for use in connection with any such registration statement or prospectus and, to the extent permitted by law, will indemnify Tegal, its directors, employees and officers and each Person who controls Tegal (within the meaning of the Securities Act) against any losses, claims, damages, liabilities and expenses resulting from any untrue or alleged untrue statement of material fact contained in the registration statement, prospectus or preliminary prospectus, or any amendment thereof or supplement thereto, or any omission or alleged omission of a material fact required to be stated therein or necessary to make the statements therein not misleading, but only to the extent that such untrue statement or omission is contained in or omitted from any information so furnished in writing by such holder for the acknowledged purpose of inclusion in such registration statement, prospectus or preliminary prospectus; provided that the obligation to indemnify will be several, not joint and several, among such holders of Registrable Shares and the liability of each such holder of Registrable Shares will be in proportion to and limited in all events to the net amount received by such holder from the sale of Registrable Shares pursuant to such registration statement.

5.3 Procedure. Any Person entitled to indemnification hereunder will (a) give prompt written notice to the indemnifying Person of any claim with respect to which it seeks indemnification and (b) unless in such indemnified Person's reasonable judgment a conflict of interest between such indemnified and indemnifying parties may exist with respect to such claim, permit such indemnifying Person to assume the defense of such claim with counsel reasonably satisfactory to the indemnified Person. If such defense is assumed, the indemnifying Person will not be subject to any liability for any settlement made by the indemnified Person without its consent (but such consent will not be unreasonably withheld). An indemnifying Person who is not entitled to, or elects not to, assume the defense of a claim will not be obligated to pay the fees and expenses of more than one counsel for all parties indemnified by such indemnifying Person with respect to such claim, unless in the reasonable judgment of any indemnified Person a conflict of interest may exist between such indemnified Person and any other of such indemnified parties with respect to such claim.

5.4 Survival. The indemnification provided for under this Agreement will remain in full force and effect regardless of any investigation made by or on behalf of the indemnified Person or any officer, director or controlling Person of such indemnified Person and will survive the transfer of securities. Tegal also agrees to make such provisions as are reasonably requested by any indemnified Person for contribution to such Person in the event Tegal's indemnification is unavailable for any reason.

6. Compliance with Rule 144 and Rule 144A. So long as Tegal files reports under Section 13 or 15(d) of the Exchange Act, then at the request of any holder of Registrable Shares who proposes to sell securities in compliance with Rule 144 of the Securities Act, Tegal will (a) forthwith furnish to such holder a written statement of compliance with the filing requirements of the Securities Act as set forth in Rule 144, as such rule may be amended from time to time and (b) make available to the public and such holders such information as will enable the holders of Registrable Shares to make sales pursuant to Rule 144. At any time that Tegal is not subject to Section 13 or 15(d) of the Exchange Act, Tegal will provide to the holder of Registrable Shares and to any prospective purchaser of Registrable Shares under Rule 144A of the Securities Act, the information described in Rule 144A(d)(4) of the Securities Act.

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7. Miscellaneous.

7.1 No Inconsistent Agreements. Tegal will not hereafter enter into any agreement with respect to its securities which is inconsistent with or which otherwise materially limits, restricts or interferes with the rights granted to the holders of Registrable Shares in this Agreement.

7.2 Amendments and Waivers. Except as otherwise expressly provided herein, the provisions of this Agreement may be amended or waived at any time only by the written agreement of Tegal, FDSI and the Shareholders' Representative (unless FDSI has distributed the Tegal Shares to its creditors and shareholders, in which case FDSI need not approve the amendment or waiver); provided, however, that the provisions of this Agreement may not be amended or waived without the consent of the holders of all the Registrable Shares adversely affected by such amendment or waiver if such amendment or waiver adversely affects a portion of the Registrable Shares but does not so adversely affect all of the Registrable Shares. Any waiver, permit, consent or approval of any kind or character on the part of any such holders of any provision or condition of this Agreement must be made in writing and shall be effective only to the extent specifically set forth in writing. Any amendment or waiver effected in accordance with this paragraph shall be binding upon each holder of Registrable Shares and Tegal.

7.3 Successors and Assigns. Except as otherwise expressly provided herein, all covenants and agreements contained in this Agreement by or on behalf of any of the parties hereto will bind and inure to the benefit of the respective successors and assigns of the parties hereto, whether so expressed or not. In addition, and whether or not any express assignment has been made, the provisions of this Agreement which are for the benefit of FDSI, the shareholders of FDSI or holders of Registrable Shares are also for the benefit of, and enforceable by, any subsequent holders of such Registrable Shares.

7.4 Descriptive Headings. The descriptive headings of this Agreement are inserted for convenience of reference only and do not constitute a part of and shall not be utilized in interpreting this Agreement.

7.5 Notices. Any notices required or permitted to be sent hereunder shall be delivered personally or mailed, certified mail, return receipt requested, or delivered by overnight courier service to the following addresses, or such other address as any party hereto designates by written notice to Tegal, and shall be deemed to have been given upon delivery, if delivered personally, three (3) days after mailing, if mailed, or one (1) business day after delivery to the courier, if delivered by overnight courier service.

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If to FDSI:	With a copy to:
Andy Clarke	Richard I. Wideman, Esq.
Chairman & CEO	1216 State Street, #602
First Derivative Systems, Inc.	Santa Barbara, CA 93101
700-C Becknell Road	Fax: 805-884-9531
Goleta, CA 93117	email: riw@firstdsystems.com
Fax: (805) 692-2382	
email: andy@firstdsystems.com	

If to Stockholders' Representative:

Andy Clarke
Chairman & CEO
First Derivative Systems, Inc.
700-C Becknell Road
Goleta, CA 93117
Fax: (805) 692-2382
email: andy@firstdsystems.com

If to Tegal:	With a copy to:
Thomas R. Mika	Scott Willoughby
Chief Financial Officer	Latham & Watkins LLP
Tegal Corporation	505 Montgomery Street, Suite 1900
2201 South McDowell Blvd.	San Francisco, CA 94111-2562
Petaluma, CA 94954-6903	Fax: (415) 395-8095

If to holders of the Registrable Shares other than FDSI or the shareholders of FDSI, to the addresses set forth on the stock record books of Tegal.

7.6 Execution in Counterparts. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be deemed an original, and such counterparts together shall constitute one instrument.

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7.7 Governing Law. This Agreement and the transactions contemplated hereby shall be construed in accordance with, and governed by, the laws of the State of California; provided, however, that matters of Delaware corporate law shall be governed by the Delaware General Corporation Law.

7.8 Consent to Jurisdiction. Each of the parties hereto (a) consents to submit itself to the personal jurisdiction of the federal and state courts located in Petaluma, California in the event any dispute arises out of this Agreement or any of the transactions contemplated hereby, (b) agrees that it will not attempt to deny or defeat such personal jurisdiction by motion or other request for leave from any such court, and (c) agrees that it will not bring any action relating to this Agreement in any court other than a federal or state court located in Petaluma, California.

7.9 WAIVER OF JURY TRIAL. EACH OF THE PARTIES HERETO HEREBY WAIVES ITS RESPECTIVE RIGHT TO A JURY TRIAL OF ANY PERMITTED CLAIM OR CAUSE OF ACTION ARISING OUT OF THIS AGREEMENT, ANY OF THE TRANSACTIONS CONTEMPLATED HEREBY, OR ANY DEALINGS BETWEEN ANY OF THE PARTIES HERETO RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT OR ANY OF THE TRANSACTIONS CONTEMPLATED HEREBY. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT AND THAT RELATE THE SUBJECT MATTER OF THIS AGREEMENT OR ANY OF THE TRANSACTIONS CONTEMPLATED HEREBY, INCLUDING, WITHOUT LIMITATION, CONTRACT CLAIMS, TORT CLAIMS, AND ALL OTHER COMMON LAW AND STATUTORY CLAIMS. THIS WAIVER IS IRREVOCABLE, MEANING THAT IT MAY NOT BE MODIFIED EITHER ORALLY OR IN WRITING, AND THIS WAIVER SHALL APPLY TO ANY SUBSEQUENT AMENDMENTS, SUPPLEMENTS OR OTHER MODIFICATIONS TO THIS AGREEMENT, ANY OF THE TRANSACTIONS CONTEMPLATED HEREBY OR TO ANY OTHER DOCUMENT OR AGREEMENT RELATING TO THE TRANSACTIONS CONTEMPLATED HEREBY.

7.10 Service of Process. Each of the parties hereto irrevocably consents to the service of any process, pleading, notices or other papers by the mailing of copies thereof by registered, certified or first class mail, postage prepaid, to such party at such party's address set forth herein, or by any other method provided or permitted under California law.

7.11 Reproduction of Documents. This Agreement and all documents relating hereto, including, but not limited to, (a) consents, waivers, amendments and modifications which may hereafter be executed and (b) certificates and other information previously or hereafter furnished, may be reproduced by any photographic, photostatic, microfilm, optical disk, micro-card, miniature photographic or other similar process. The parties agree that any such reproduction shall be admissible in evidence as the original itself in any judicial or administrative proceeding, whether or not the original is in existence and whether or not such reproduction was made by a party in the regular course of business, and that any enlargement, facsimile or further reproduction of such reproduction shall likewise be admissible in evidence.

7.12 Remedies. Each of the parties to this Agreement will be entitled to enforce its rights under this Agreement specifically, to recover damages by reason of any breach of any provision of this Agreement and to exercise all other rights existing in its favor. The parties hereto agree and acknowledge that money damages may not be an adequate remedy for any breach of the provisions of this Agreement and that any party shall be entitled to immediate injunctive relief or specific performance without bond or the necessity of showing actual monetary damages in order to enforce or prevent any violations of the provisions of this Agreement.

7.13 Severability. Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be prohibited by or invalid under applicable law, such provision will be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of this Agreement.

7.14 Final Agreement. This Agreement, together with the Asset Acquisition Agreement and all other agreements entered into by the parties hereto pursuant to the Asset Acquisition Agreement, constitutes the complete and final agreement of the parties concerning the matters referred to herein, and supersedes all prior agreements and understandings.

7.15 No Strict Construction. The language used in this Agreement will be deemed to be the language chosen by the parties hereto to express their mutual intent, and no rule of strict construction will be used against any Person.

The parties hereto have executed this Registration Rights Agreement as of the date first set forth above.

TEGAL CORPORATION

By: /s/ Michael L. Parodi

Michael L. Parodi
Chairman, President & CEO

FIRST DERIVATIVE SYSTEMS, INC.

By: /s/ Andy Clarke

Andy Clarke
Chairman & CEO

SHAREHOLDERS' REPRESENTATIVE

By: /s/ Andy Clarke

Andy Clarke

SIGNATURE PAGE TO THE
REGISTRATION RIGHTS AGREEMENT

SCHEDULE A

SHAREHOLDERS AND CREDITORS OF FDSI

FDSI Shareholder Trust
Steve Bernhardt
Tony Bernhardt
Bigelow Asset Management
Tim Bigelow
David Boydston
Chris Brown
Tan Bui
Don Burkman
James Cameron
CDE ResMap
Alain Chardon
Andy Clarke

Benjamin Clarke
Carole Clarke
Jean-Francois Daviet
Ray Degner
James Diller
Harald Durr
Jeff Farni
Paul Franzon
Rob Furst
Elie Galimidi
Garage Securities, Inc.
Bob Gehlen
Jerry Giles Living Trust
Birger Gneuss
Joachim Gneuss
Oliver Gneuss
Adam Haron
Jack Harris
Karl Heiman
Tom Jacobs
Robert Johnson
Sam Kano
Gaal Karp
Tony Kazmakites
Brian Kelly
Shin Kimura
Michael Lachaise
Mitch Lashman
ICOM Technology International Pte Ltd (MAC LOH)
Noel MacDonald
Kurt Myataki
Jeff Myers

John Newman
Nida & Maloney LLP
Joe Nida
Craig Olroyd
Richard Ortale
Rod Palmborg
Tom Parks
Lou Perrone
Dan Petersen
Paul Poenisch
Richard Powers
Simon Rack
Oliver Radl
Robert Rumsey
Isabel Salinas
Markus Seitz
Mike Sohn
Tim Stultz
Bob Sutton
Timberline Opportunity Partners, L.P.
Drew Traver
Trust Automation
Allen Vexler
Tom Voehl
Richard Vogt
Gordon Whitlock
Richard Wideman
Lorance Wilson
Edward Yoon
Larry Yoshida
Shoji Yoshii
Zohar Ziv

EXHIBIT 5.1

OPINION OF LATHAM & WATKINS LLP

Latham & Watkins LLP
505 Montgomery Street, Suite 1900
San Francisco, California 94111-2562

August 27, 2004

Tegal Corporation
2201 South McDowell Blvd.
Petaluma, California 94954

Re: Registration Statement on Form S-3
2,385,632 shares of Common Stock, par value \$0.01 per share

Ladies and Gentlemen:

In connection with the registration by Tegal Corporation, a Delaware corporation (the "Company"), of the resale of 1,410,632 shares of common stock (the "Shares"), par value \$ 0.01 per share, and 975,000 shares of common stock (the "Warrant Shares") issuable upon the exercise of warrants to purchase common stock by the Company (the "Warrants"), under the Securities Act of 1933, as amended, on Form S-3 filed with the Securities and Exchange Commission on August 27, 2004, (the "Registration Statement"), you have requested our opinion set forth below.

In our capacity as your special counsel in connection with such registration, we are familiar with the proceedings taken and proposed to be taken by the Company in connection with the authorization, issuance and sale of the Shares and Warrant Shares, and for the purposes of this opinion, have assumed such proceedings will be timely completed in the manner presently proposed. In addition, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter.

We are opining herein as to the effect on the subject transaction only of the General Corporation Law of the State of Delaware, and we express no opinion with respect to the applicability thereto, or the effect thereon, of any other laws.

Subject to the foregoing, it is our opinion that as of the date hereof, (1) the Shares have been duly authorized by all necessary corporate action of the Company, have been validly issued and are fully paid and nonassessable and (2) the Warrant Shares have been duly authorized by all necessary corporate action of the Company and upon issuance, delivery and payment therefor in accordance with and in the manner contemplated by the terms of the Warrants and the Registration Statement, will be validly issued, fully paid and nonassessable.

We consent to your filing this opinion as an exhibit to the Registration Statement and to the reference to our firm contained under the heading "Legal Matters" in the prospectus included in the Registration Statement.

Very truly yours,

/s/ Latham & Watkins LLP

EXHIBIT 23.2

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-3 of our report dated June 25, 2004, relating to the consolidated financial statements and the financial statement schedule, which appears in Tegal Corporation's Annual Report on Form 10-K for the year ended March 31, 2004. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

San Jose, California

August 26, 2004