SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549

POST EFFECTIVE AMENDMENT NO. 2 TO FORM S-8
REGISTRATION STATEMENT UNDER
THE SECURITIES ACT OF 1933

TEGAL CORPORATION

(Exact Name of Registrant as Specified in Its Charter)

Delaware

68-0370244

(State of Incorporation)

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

2201 S. McDowell Boulevard Petaluma, CA 94954

(Address of Principal Executive Offices including Zip Code)

THE EIGHTH AMENDED AND RESTATED 1998 EQUITY PARTICIPATION PLAN THE FIFTH AMENDED AND RESTATED STOCK OPTION PLAN FOR OUTSIDE DIRECTORS (Full Title of the Plan)

Thomas R. Mika
President and Chief Executive Officer
TEGAL CORPORATION
2201 S. McDowell Boulevard
Petaluma, CA 94954
(707) 763-5600

(Name, Address and Telephone Number, Including Area Code for Agent for Service)

Copy to:

Robert W. Phillips Latham & Watkins LLP 140 Scott Drive Menlo Park, California 94025 (650) 328-4600

PARTIAL DEREGISTRATION OF SECURITIES

Tegal Corporation (the "Registrant"), is filing this post-effective amendment to deregister certain securities originally registered for sale under the Registrant's Eighth Amended and Restated 1998 Equity Participation Plan of Tegal Corporation and Fifth Amended and Restated Option Plan for Outside Directors of Tegal Corporation (together, the "Prior Plans") pursuant to the Registration Statement on Form S-8 (File 333-128953) filed with the Securities and Exchange Commission (the "SEC") on October 12, 2005 (the "Original Registration Statement").

On September 18, 2007, the Registrant adopted the Tegal Corporation 2007 Incentive Award Plan (the "2007 Plan"). According to the terms of the 2007 Plan, shares of Common Stock, par value \$0.01 per share (the "Common Stock") that had not been made subject to awards issued under the Prior Plans or that were subject to awards under the Prior Plans that have since terminated, expired or lapsed, will be available for issuance under the 2007 Plan (collectively, the "Carried Forward Shares"). Since November 21, 2007, no awards have been made under the Prior Plans.

A total of 2,000,000 shares of Common Stock (on a post-1-to-12 reverse stock split basis) were registered for issuance under Registrant's Prior Plans, of which 816,704 was previously deregistered pursuant to a Post-Effective Amendment to the Registration Statement on Form S-8 filed with the SEC on November 21, 2007. An additional 515,753 Carried Forward Shares are hereby deregistered.

Contemporaneously with the filing of this Post Effective Amendment to the Original Registration Statement, the Registrant is filing a Registration Statement on Form S-8 to register these additional Carried Forward Shares under the 2007 Plan (the "New Registration Statement"). In accordance with Instruction E to the General Instructions to Form S-8 and other guidance promulgated by the SEC, this post-effective amendment to the Original Registration Statement is hereby filed (i) to reallocate these additional Carried Forward Shares from the Prior Plans to the 2007 Plan, and (ii) to carry over the registration fees paid for these additional Carried Forward Shares from the Original Registration Statement to the New Registration Statement.

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-8 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 29th day of September, 2010.

TEGAL CORPORATION

By: /s/Christine T. Hergenrother
Christine T. Hergenrother
Vice President and Chief Financial Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Thomas R. Mika and Christine T. Hergenrother, 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 SEC, 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 substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities indicated and on the dates indicated.

Signature	Title	Date
Thomas R. Mika	President, Chief Executive Officer and Chairman of the Board of Directors (Principal Executive Officer) Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	
Christine T. Hergenrother	(1 Thielpai 1 manetar and 7 tecounting Officer)	
Gilbert Bellini	Director	
Jeffrey M. Krauss	Director	
Carl Muscari	Director	
	2	