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

FORM S-8
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

MICROCHIP TECHNOLOGY INCORPORATED
(Exact Name Of Registrant As Specified In Its Charter)

Delaware 86-0629024
(State or Other Jurisdiction of Incorporation or Organization) (IRS Employer Identification No.)

2355 West Chandler Boulevard
Chandler, Arizona 85224

MICREL, INCORPORATED ("Micrel")
2003 Incentive Award Plan and 2012 Equity Incentive Award Plan

Steve Sanghi
President and Chief Executive Officer
MICROCHIP TECHNOLOGY INCORPORATED
2355 West Chandler Boulevard
Chandler, Arizona 85224
(480) 792-7200

(Telephone Number, Including Area Code, Of Agent For Service)

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer” and smaller reporting company” in Rule 12b-2 of the Exchange Act. (Check one):

Large Accelerated filer ☑ Accelerated filer ☐
Non-accelerated filer ☐ Smaller Reporting Company ☐

(Do not check if a smaller reporting company)
CALCULATION OF REGISTRATION FEE

<table>
<thead>
<tr>
<th>Title of Securities to be Registered</th>
<th>Amount to be Registered (1)</th>
<th>Proposed Maximum Offering Price Per Share</th>
<th>Proposed Maximum Aggregate Offering Price</th>
<th>Amount of Registration Fee (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Stock (par value $0.001 per share) to be issued under option awards granted under the Micrel 2003 Incentive Award Plan</td>
<td>138,070 (2)</td>
<td>$34.8191 (4)</td>
<td>$4,807,473.14</td>
<td>$558.63</td>
</tr>
<tr>
<td>Common Stock (par value $0.001 per share) to be issued under RSU awards granted under the Micrel 2003 Incentive Award Plan</td>
<td>34,480 (2)</td>
<td>$42.12 (5)</td>
<td>$1,452,297.60</td>
<td>$168.76</td>
</tr>
<tr>
<td>Common Stock (par value $0.001 per share) to be issued under option awards granted under the Micrel 2012 Equity Incentive Award Plan</td>
<td>466,830 (2)</td>
<td>$35.0936 (4)</td>
<td>$16,382,745.29</td>
<td>$1,903.68</td>
</tr>
<tr>
<td>Common Stock (par value $0.001 per share) to be issued under RSU awards granted under the Micrel 2012 Equity Incentive Award Plan</td>
<td>490,962 (2)</td>
<td>$42.12 (5)</td>
<td>$20,679,319.44</td>
<td>$2,402.94</td>
</tr>
<tr>
<td>Total</td>
<td>1,130,342</td>
<td></td>
<td></td>
<td>$5,034.01</td>
</tr>
</tbody>
</table>

(1) Pursuant to Rule 416(a) of the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement shall also cover any additional shares of the Registrant’s common stock that become issuable under the Micrel Plans referenced above (the "Micrel Plans"), by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without receipt of consideration that increases the number of the Registrant’s outstanding shares of common stock.

(2) Pursuant to the Agreement and Plan of Merger dated as of May 7, 2015 (the "Merger Agreement") by and among Microchip Technology Incorporated, Mambo Acquisition Corp., Mambo Acquisition LLC and Micrel, upon the closing of the transaction contemplated by the Merger Agreement on August 3, 2015 (the "Merger"), the Registrant assumed certain outstanding options and restricted stock units ("RSUs"), under the Micrel Plans and such options and RSUs, were automatically converted into awards in respect of shares of the Registrant's common stock, subject to appropriate adjustments to the number of shares and the exercise price (if applicable) of each such award.

(3) The amount of the registration fee is calculated pursuant to Section 6(b) of the Securities Act, which currently provides that the filing fee rate shall be "$116.20 per $1 million" of the maximum aggregate price at which such securities are proposed to be offered. The Registration Fee is therefore calculated by multiplying the Proposed Maximum Aggregate Offering Price by 0.0001162.

(4) Estimated solely for purposes of calculating the registration fee in accordance with Rules 457(c) and (h) under the Securities Act of 1933, as amended, on the basis of the weighted average exercise price of options outstanding under the Micrel Plans and assumed by the Registrant.

(5) Estimated solely for purposes of calculating the registration fee in accordance with Rules 457(c) and (h) under the Securities Act of 1933, as amended, based on the average of the reported high and low sales prices for the Registrant's common stock as reported by the Nasdaq Global Market on August 4, 2015.
PART II
INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

There are hereby incorporated by reference in this Registration Statement the following documents and information heretofore filed by Microchip Technology Incorporated (the “Registrant” or the “Company”) with the SEC:

(1) The Registrant’s Annual Report on Form 10-K for the fiscal year ended March 31, 2015 filed with the SEC on May 27, 2015, as amended on June 8, 2015.

(2) The Registrant’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 filed with the SEC on August 6, 2015.

(3) The Registrant's Current Report on Form 8-K filed with the SEC on August 4, 2015.

(4) The description of the Registrant’s Common Stock included in the Registrant’s Registration Statement on Form 8-A filed on February 5, 1993, including any amendment or report updating such description.

All documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14, and 15(d) of the Securities Exchange Act of 1934, as amended, prior to the filing of a post-effective amendment to this Registration Statement that indicates all securities offered hereby have been sold or that de-registers all securities then remaining unsold, shall be deemed to be incorporated by reference in this Registration Statement and to be a part hereof from the date of filing of such documents.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law (“Delaware Law”) authorizes a court to award or a corporation’s Board of Directors to grant indemnification to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities (including reimbursement for expenses incurred) arising by reason of the fact that the person was an officer, director, employee or agent of the corporation, or is or was serving at the request of the corporation or other enterprise (including liabilities arising under the Securities Act. Article VI of the Registrant’s By-Laws provides for mandatory indemnification of its directors and executive officers, to the maximum extent permitted by Delaware Law. Article VI of the Registrant’s By-Laws also provides for permissive indemnification of the Registrant’s employees and agents to the extent, and in the manner, permitted by Delaware Law. The Registrant has entered into indemnification agreements with its directors and selected officers, a form of which was filed on February 5, 1993 as Exhibit 10.1 to Registration Statement No. 33-57960. The indemnification agreements provide the Registrant’s directors and selected officers with further indemnification to the maximum extent permitted by Delaware Law. The Registrant’s directors and officers are insured under policies of insurance maintained by the Registrant, subject to the limits of the policies, against any claims made against them by reason of being or having been such directors or officers.

Item 7. Exemption From Registration Claimed.

Not applicable.
Item 8. Exhibits.

4.1 Micrel, Incorporated 2003 Incentive Award Plan (incorporated by reference to Exhibit 1 to Micrel's Proxy Statement on Schedule 14A dated May 9, 2003)

4.2 Micrel, Incorporated 2012 Equity Incentive Award Plan (incorporated by reference to Appendix A to Micrel's Proxy Statement on Schedule 14A dated April 5, 2012)

4.3 Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2002, as filed with the SEC on November 12, 2002)

4.4 Amended and Restated By-Laws of Registrant, as amended through August 25, 2014 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K, as filed with the SEC on August 27, 2014)

5.1 Opinion and Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation

23.1 Consent of Independent Registered Public Accounting Firm

23.2 Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (contained in Exhibit 5.1)

24.1 Power of Attorney (reference is made to page II-5 of this Registration Statement)

Item 9. 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 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.

(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.

(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) 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 Section 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 Item 6 of Part II of this registration statement, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.
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 Chandler, State of Arizona, on August 7, 2015.

Mikrochip Technology Incorporated

By: /s/ Steve Sanghi

Steve Sanghi, President, Chief Executive Officer and Chairman of the Board

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Steve Sanghi and J. Eric Bjornholt, and each of them, his or her attorneys-in-fact, each with the power of substitution, for the undersigned and in undersigned’s name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and all post-effective amendments thereto, and to file the same, with all exhibits thereto in all 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 and about the premises, as fully to all intents and purposes as the undersigned might or could do in person, hereby ratifying and confirming all that such attorneys-in-fact and agents or any of them, or his or her or their substitute or substitutes, 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 by the following persons in the capacities and on the dates indicated.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Title</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>/s/ Steve Sanghi</td>
<td>Chairman of the Board, President and Chief Executive Officer (Principal Executive Officer)</td>
<td>August 7, 2015</td>
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<tr>
<td>Steve Sanghi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/s/ J. Eric Bjornholt</td>
<td>Vice President, Chief Financial Officer (Principal Financial and Accounting Officer)</td>
<td>August 7, 2015</td>
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<tr>
<td>J. Eric Bjornholt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/s/ Matthew S. Chapman</td>
<td>Director</td>
<td>August 7, 2015</td>
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<tr>
<td>Matthew W. Chapman</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/s/ L.B. Day</td>
<td>Director</td>
<td>August 7, 2015</td>
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<td></td>
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<tr>
<td>/s/ Esther L. Johnson</td>
<td>Director</td>
<td>August 7, 2015</td>
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<td>/s/ Wade F. Meyercord</td>
<td>Director</td>
<td>August 7, 2015</td>
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August 7, 2015

Microchip Technology Incorporated
2355 West Chandler Boulevard
Chandler, AZ 85224

Re: Registration Statement on Form S-8 for Issuance of Common Stock under the Micrel, Incorporated ("Micrel") 2003 Incentive Award Plan, and Micrel 2012 Equity Incentive Award Plan

Ladies and Gentlemen:

We have examined the Registration Statement on Form S-8 to be filed by you with the Securities and Exchange Commission on or about the date hereof (the "Registration Statement") in connection with the registration under the Securities Act of 1933, as amended, of 172,550 shares of your common stock that are subject to currently outstanding options and restricted stock units under the Micrel 2003 Incentive Award Plan, and of 957,792 shares of your common stock that are subject to currently outstanding options and restricted stock units under the Micrel 2012 Equity Incentive Award Plan. Such shares of common stock are referred to herein as the "Shares," and such plans are referred to herein as the "Plans." As your counsel, we have examined the proceedings taken and are familiar with the proceedings proposed to be taken by you in connection with the issuance and sale of the Shares pursuant to the Plans.

It is our opinion that, upon completion of the actions being taken, or contemplated by us as your counsel to be taken by you prior to the issuance of the Shares pursuant to the Registration Statement and the Plans and upon completion of the actions being taken in order to permit such transactions to be carried out in accordance with the securities laws of the various states where required, the Shares, when issued and sold in the manner referred to in the Plans and pursuant to the agreements which accompany the Plans, will be legally and validly issued, fully paid and nonassessable.

We consent to the use of this opinion as an exhibit to said Registration Statement and further consent to the use of our name wherever appearing in said Registration Statement, and any amendments thereto.

Very truly yours,

/s/ Wilson Sonsini Goodrich & Rosati, P.C.

WILSON SONSINI GOODRICH & ROSATI
Professional Corporation
Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the Micrel, Incorporated ("Micrel") 2003 Incentive Award Plan, and Micrel 2012 Equity Incentive Award Plan of our reports dated May 26, 2015, with respect to the consolidated financial statements of Microchip Technology Incorporated and subsidiaries and the effectiveness of internal control over financial reporting of Microchip Technology Incorporated and subsidiaries included in its Annual Report (Form 10-K) for the year ended March 31, 2015, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Phoenix, Arizona
August 7, 2015