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

SUPERTEX, INC.
2009 Equity Incentive 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 (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Stock (par value $0.001 per share) to be issued under the Supertex, Inc. 2009 Equity Incentive Plan</td>
<td>548,762 (2)</td>
<td>$32.5543 (3)</td>
<td>$17,864,562.78</td>
<td>$2,300.96</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>$2,300.96</td>
</tr>
</tbody>
</table>

(1) Pursuant to Rule 416(a) of the Securities Act of 1933, as amended, this Registration Statement shall also cover any additional shares of the Registrant's common stock that become issuable under the Supertex, Inc. ("Supertex") plan referenced above (the "Supertex Plan") 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 February 9, 2014 (the "Merger Agreement") by and among the Registrant, Supertex and Orchid Acquisition Corporation, upon the closing of the transaction contemplated by the Merger Agreement on April 1, 2014 (the "Merger"), the Registrant assumed certain outstanding options (each in respect of Supertex common stock) under the Supertex Plan and such options 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) 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 awards outstanding under the Supertex Plan and assumed by the Registrant.

(4) The Amount of the Registration Fee is calculated pursuant to Section 6(b) of the Securities Act, which currently provides that the adjusted fee rate for fiscal 2014 shall be "$128.80 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 0.00012880.
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:

(2) The Registrant's Current Report on Form 8-K filed on April 1, 2014.
(4) The description of the Registrant's Common Stock included in the Registrant's Registration Statement on Form S-8 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 (the "Exchange Act"), 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 of 1933, as amended (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  Supertex, Inc. 2009 Equity Incentive Plan (incorporated by reference to Appendix 1 of Supertex's Proxy Statement on Schedule 14A, as filed with the Securities and Exchange Commission on July 2, 2009, and Exhibit 10.11 to Supertex's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on February 7, 2014)

4.2  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 Securities and Exchange Commission on November 12, 2002)

4.3  Amended and Restated Bylaws of Registrant, as amended through October 1, 2013 (incorporated by reference to Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2013, as filed with the Securities and Exchange Commission on November 8, 2013)

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-4 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:

(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 end of the estimated maximum of 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 a 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 Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this 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)  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 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 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, 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 July 3, 2014.

MICROCHIP 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 him or her and in his or her 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 he or she 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>
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<tbody>
<tr>
<td>/s/ Steve Sanghi</td>
<td>Chairman of the Board, President and</td>
<td>July 3, 2014</td>
</tr>
<tr>
<td>Steve Sanghi</td>
<td>Chief Executive Officer (Principal Executive Officer)</td>
<td></td>
</tr>
<tr>
<td>/s/ J. Eric Bjornholt</td>
<td>Vice President, Chief Financial Officer</td>
<td>July 3, 2014</td>
</tr>
<tr>
<td>J. Eric Bjornholt</td>
<td>(Principal Financial and Accounting Officer)</td>
<td></td>
</tr>
<tr>
<td>/s/ Matthew W. Chapman</td>
<td>Director</td>
<td>July 3, 2014</td>
</tr>
<tr>
<td>Matthew W. Chapman</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/s/ Albert J. Hugo-Martinez</td>
<td>Director</td>
<td>July 3, 2014</td>
</tr>
<tr>
<td>Albert J. Hugo-Martinez</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/s/ L.B. Day</td>
<td>Director</td>
<td>July 3, 2014</td>
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<tr>
<td>L.B. Day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/s/ Wade F. Meyercord</td>
<td>Director</td>
<td>July 3, 2014</td>
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<tr>
<td>Wade F. Meyercord</td>
<td></td>
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</tr>
<tr>
<td>/s/ Esther L. Johnson</td>
<td>Director</td>
<td>July 3, 2014</td>
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<tr>
<td>Esther L. Johnson</td>
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Exhibit 5.1

(Wilson Sonsini Goodrich & Rosati, P.C. Letterhead)

July 1, 2014

Microchip Technology Incorporated
2355 West Chandler Boulevard
Chandler, AZ 85224

Re: Registration Statement on Form S-8 for Issuance of Common Stock under the Supertex, Inc. 2009 Equity Incentive 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 548,762 shares of your Common Stock that are subject to currently outstanding options under the Supertex, Inc. 2009 Equity Incentive Plan. Such shares of Common Stock are referred to herein as the "Shares," and such plans are referred to herein as the "Plan." 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 Plan.

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 Plan 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 Plan and pursuant to the agreements which accompany the Plan, 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
Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement on Form S-8 pertaining to the Supertex, Inc. 2009 Equity Incentive Plan of our reports dated May 30, 2014, with respect to the consolidated financial statements of Microchip Technology Incorporated and the effectiveness of internal control over financial reporting of Microchip Technology Incorporated included in its Annual Report (Form 10-K) for the year ended March 31, 2014, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Phoenix, Arizona
July 1, 2014