
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

AMENDMENT NO. 1

to

FORM S-3

REGISTRATION STATEMENT

Under

THE SECURITIES ACT OF 1933

Mattson Technology, Inc.

(Exact name of Registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

77-0208119
(I.R.S. Employer Identification Number)

**47131 Bayside Parkway
Fremont, California 94538
(510) 657-5900**

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

**David Dutton
President and Chief Executive Officer
Mattson Technology, Inc.
47131 Bayside Parkway
Fremont, California 94538
(510) 657-5900**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copy to:

**Tony Jeffries, Esq.
Michael A. Occhiolini, Esq.
Wilson Sonsini Goodrich & Rosati,
Professional Corporation
650 Page Mill Road
Palo Alto, CA 94304
Telephone: (650) 493-9300
Facsimile: (650) 493-6811**

Approximate date of commencement of proposed sale to the public:

From time to time, after the effective date of this Registration Statement.

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, 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 registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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.

Large Accelerated filer

Accelerated filer

Non-accelerated filer (Do not check if smaller reporting company)

Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount To Be Registered(1)	Proposed Maximum Offering Price per Unit or Share (1)(2)	Proposed Maximum Aggregate Offering Price(1)(2)	Amount of Registration Fee (3)(7)
Common Stock, \$0.001 par value per share (4) (5)	—	—	—	—
Preferred Stock, \$0.001 par value per share (4).....	—	—	—	—
Depository Shares.....	—	—	—	—
Warrants	—	—	—	—
Debt Securities.....	—	—	—	—
Units	—	—	—	—
Total (6).....	\$75,000,000	—	\$75,000,000	\$5,347.50

- (1) Pursuant to Rule 457(i) under the Securities Act of 1933 (the "Securities Act"), the securities registered hereunder include such indeterminate number of shares of common stock, preferred stock or depository shares, number of warrants and units and principal amount of debt securities as may be issued upon conversion or exchange of any preferred stock, warrants or debt securities registered hereunder that provide for conversion or exchange, upon exercise of warrants or pursuant to the anti-dilution provisions of any such securities.
- (2) The proposed maximum per unit and aggregate offering prices per class of securities will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered under this registration statement and is not specified as to each class of security pursuant to General Instruction II.D of Form S-3 under the Securities Act.
- (3) Calculated pursuant to Rule 457(o) under the Securities Act.
- (4) Includes an indeterminate number of shares of common stock or preferred stock as may be sold from time to time, at indeterminate prices.
- (5) Includes rights to purchase common stock pursuant to the Registrant's rights plan which, prior to certain events, will not be exercisable or evidenced separately from the common stock.
- (6) Any securities registered hereunder may be sold separately or as units with other securities registered hereunder. The proposed maximum offering price per unit will be determined by us in connection with the issuance of the securities. In no event will the aggregate offering price of all securities issued from time to time pursuant to this Registration Statement exceed \$75,000,000 (or the equivalent thereof in one or more foreign currencies, foreign currency units or composite currencies).
- (7) Previously paid.

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 Commission, acting pursuant to said Section 8(a), may determine.

Explanatory Note

This Amendment No. 1 is being filed for the purpose of filing Exhibits 5.1 and 23.2 to the Registration Statement (Commission File No. 333-168250). No changes or additions are being made hereby to the Prospectus constituting Part I of the Registration Statement (not included herein) or to Items 14, 15 or 17 of Part II of the Registration Statement.

Part II

Information Not Required in the Prospectus

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth the costs and expenses, other than underwriting discounts and commissions, payable by the registrant in connection with the sale of the securities being registered

Securities and Exchange Commission registration fee.....	\$	5,347.50
Nasdaq Global Select Market listing fee.....		*
Accounting fees and expenses.....		*
Legal fees and expenses.....		*
Printing and engraving.....		*
Transfer agent fees and expenses.....		*
Miscellaneous.....		*
Total.....	\$	*

* To be provided by amendment or as an exhibit to a filing with the SEC under Section 13(a), 13(c) or 15(d) of the Securities Exchange Act of 1934, as amended.

Item 15. Indemnification of Directors and Officers

Section 145(a) of the Delaware General Corporation Law provides that a Delaware corporation may indemnify any person 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) by reason of the fact that such person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no cause to believe his or her conduct was unlawful.

Section 145(b) of the Delaware General Corporation Law provides that a Delaware corporation may indemnify any person 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 such person in connection with the defense or settlement of such action or suit if he or she acted under similar standards, except that no indemnification may be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the court in which such action or suit was brought shall determine that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to be indemnified for such expenses which the court shall deem proper.

Section 145 of the Delaware General Corporation Law further provides that: (i) to the extent that a former or present director or officer of a corporation 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, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by him or her in connection therewith; (ii) indemnification provided for by Section 145 shall not be deemed exclusive of any other rights to which the indemnified party may be entitled; and (iii) the corporation may purchase and maintain insurance on behalf of any present or former director, officer, employee or agent of the corporation or any person who at the request of the corporation was serving in such capacity for another entity against any liability asserted against such person and incurred by him or her in any such

capacity or arising out of his or her status as such, whether or not the corporation would have the power to indemnify him or her against such liabilities under Section 145.

Article Eight of our amended and restated certificate of incorporation authorizes us to provide for the indemnification of directors to the fullest extent permissible under Delaware law.

Article Seven of our third amended and restated bylaws provides for the indemnification of officers, directors and other parties acting on our behalf to the fullest extent permissible under Delaware law.

We have entered into indemnification agreements with our directors, executive officers and others, in addition to indemnification provided for in our third amended and restated bylaws, and intend to enter into indemnification agreements with any new directors and executive officers in the future.

We have purchased and intend to maintain insurance on behalf of any person who is or was a director or officer against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

See also the undertakings set out in response to Item 17 herein.

Item 16. Exhibits

A list of exhibits filed herewith is contained in the exhibit index that immediately precedes such exhibits and is incorporated herein by reference.

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 end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC 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; and
 - (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) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of 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.
- (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
 - (i) If the registrant is relying on Rule 430B,
 - (A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however,* that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to the effective date; or
 - (ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however,* that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.
- (5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer and sell such securities to such purchaser:
 - (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
 - (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
 - (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (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 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.
- (d) The undersigned registrant hereby undertakes that:
- (1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.
 - (2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (e) The undersigned registrant hereby undertakes to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the SEC under Section 305(b)(2) of the Trust Indenture Act.

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 on Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized, in Fremont, California, on September 30, 2010.

Mattson Technology, Inc.

By: /s/ DAVID DUTTON
 David Dutton
 President and Chief Executive Officer and Director

Pursuant to the requirements of the Securities Act of 1933, as amended, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ DAVID DUTTON</u> David Dutton	President, Chief Executive Officer and Director (Principal Executive Officer)	September 30, 2010
<u>/s/ ANDY MORING</u> Andy Moring	Chief Financial Officer and Executive Vice President — Finance (Principal Financial and Accounting Officer)	September 30, 2010
<u>*</u> Kenneth Kannappan	Chairman of the Board of Directors	September 30, 2010
<u>*</u> Hans-Georg Betz	Director	September 30, 2010
<u>*</u> John Bolger	Director	September 30, 2010
<u>*</u> Richard E. Dyck	Director	September 30, 2010

Signature	Title	Date
* Shigeru Nakayama	Director	September 30, 2010
* Kenneth Smith	Director	September 30, 2010

*By: <u> /s/ DAVID DUTTON </u> David Dutton President and Chief Executive Officer and Director	September 30, 2010
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Exhibit Index

Exhibit Number	Exhibit Title
1.1	Form of Underwriting Agreement*
1.2	Form of Subscription Agreement#
3.1(1)	Amended and Restated Certificate of Incorporation of Mattson Technology, Inc.
3.2(2)	Third Amended and Restated Bylaws of Mattson Technology, Inc.
4.1	Specimen Common Stock Certificate#
4.2(3)	Form of Rights Agreement between the Company and Mellon Investor Services, LLC as Rights Agent (including as Exhibit A the form of Certificate of Designation, Preferences and Rights of the Terms of the Series A Preferred Stock, as Exhibit B the form of Right Certificate, and as Exhibit C the Summary of Terms of Rights Agreement)
4.3(4)	Amendment No. 1 to Rights Agreement between the Company and Mellon Investor Services, LLC as Rights Agent
4.4(5)	Amendment No. 2 to Rights Agreement between the Company and Mellon Investor Services, LLC as Rights Agent
4.5	Form of senior indenture, to be entered into between the Registrant and the trustee designated therein#
4.6	Form of senior note with respect to each particular series of senior notes issued hereunder (included in the indenture set forth in Exhibit 4.5)#
4.7	Form of subordinated indenture to be entered into between the Registrant and the trustee designated therein#
4.8	Form of subordinated note with respect to each particular series of subordinated notes issued hereunder (included in the indenture set forth in Exhibit 4.7)#
4.9	Form of Warrant with respect to each warrant issued hereunder*
4.10	Certificate of designation, preferences and rights with respect to any preferred stock issued hereunder*
4.11	Form of Depositary Agreement with respect to the depositary shares*
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation
12.1	Statement re Computation of Ratio of Earnings to Fixed Charges#
23.1	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm#
23.2	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in Exhibit 5.1)
24.1	Power of Attorney (see page II-5 of the original filing of this Form S-3)#
25.1	Form T-1 Statement of Eligibility under the Trust Indenture Act of 1939, as amended, of designated trustee under the senior indenture*
25.2	Form T-1 Statement of Eligibility under the Trust Indenture Act of 1939, as amended, of designated trustee under the subordinated indenture*

* To be filed by amendment or as an exhibit to a report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and incorporated herein by reference.

Previously Filed.

- (1) Incorporated by reference to corresponding exhibit to Mattson Technology, Inc. current report on Form 8-K/A filed on January 30, 2001.
- (2) Incorporated by reference to corresponding exhibit to Mattson Technology, Inc. quarterly report on Form 10-Q filed on August 14, 2002.
- (3) Incorporated by reference to corresponding exhibit to Mattson Technology, Inc. current report on Form 8-A12G filed on August 22, 2005.
- (4) Incorporated by reference to corresponding exhibit to Mattson Technology, Inc. annual report on Form 10-K filed on March 2, 2007.
- (5) Incorporated by reference to corresponding exhibit to Mattson Technology, Inc. current report on Form 8-K filed on July 14, 2008.