

APPLIED SIGNAL TECHNOLOGY INC

Form SC 13D

December 29, 2010

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934

Applied Signal Technology, Inc.
(Name of Issuer)

Common Stock
(Title of Class of Securities)

_____038237103_____

(CUSIP Number)

Peter D. Goldstein
GAMCO Investors, Inc.
One Corporate Center
Rye, New York 10580-1435
(914) 921-5000

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

_____ December 20, 2010 _____

(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box .

CUSIP No. 038237103

- 1 Names of reporting persons
I.R.S. identification nos. of above persons (entities only)
Gabelli Funds, LLC I.D. No. 13-4044523
- 2 Check the appropriate box if a member of a group (SEE INSTRUCTIONS) (a)

(b)
- 3 Sec use only
- 4 Source of funds (SEE INSTRUCTIONS)
00-Funds of investment advisory clients
- 5 Check box if disclosure of legal proceedings is required pursuant to items 2 (d) or 2 (e) X

6 Citizenship or place of organization
New York

| | | |
|--------------|-----|--------------------------|
| Number Of | : 7 | Sole voting power |
| | : | |
| Shares | : | 718,000 (Item 5) |
| | : | |
| Beneficially | : 8 | Shared voting power |
| | : | |
| Owned | : | None |
| | : | |
| By Each | : 9 | Sole dispositive power |
| | : | |
| Reporting | : | 718,000 (Item 5) |
| | : | |
| Person | :10 | Shared dispositive power |
| | : | |
| With | : | None |
| | : | |

- 11 Aggregate amount beneficially owned by each reporting person

718,000 (Item 5)
- 12 Check box if the aggregate amount in row (11) excludes certain shares (SEE INSTRUCTIONS)
- 13 Percent of class represented by amount in row (11)

5.36%
- 14 Type of reporting person (SEE INSTRUCTIONS)

IA, CO

2

CUSIP No. 038237103

- 1 Names of reporting persons
 I.R.S. identification nos. of above persons (entities only)
 GAMCO Asset Management Inc. I.D. No. 13-4044521
- 2 Check the appropriate box if a member of a group (SEE INSTRUCTIONS) (a)

(b)

- 3 Sec use only
- 4 Source of funds (SEE INSTRUCTIONS)
 00-Funds of investment advisory clients
- 5 Check box if disclosure of legal proceedings is required pursuant to items 2 (d) or 2 (e)

- 6 Citizenship or place of organization
 New York

| | | |
|--------------|-----|--------------------------|
| Number Of | : 7 | Sole voting power |
| | : | |
| Shares | : | 216,200 (Item 5) |
| | : | |
| Beneficially | : 8 | Shared voting power |
| | : | |
| Owned | : | None |
| | : | |
| By Each | : 9 | Sole dispositive power |
| | : | |
| Reporting | : | 216,200 (Item 5) |
| | : | |
| Person | :10 | Shared dispositive power |
| | : | |
| With | : | None |
| | : | |

- 11 Aggregate amount beneficially owned by each reporting person

216,200 (Item 5)

- 12 Check box if the aggregate amount in row (11) excludes certain shares
 (SEE INSTRUCTIONS)

- 13 Percent of class represented by amount in row (11)

1.61%

- 14 Type of reporting person (SEE INSTRUCTIONS)
 IA, CO

CUSIP No. 038237103

- 1 Names of reporting persons
 I.R.S. identification nos. of above persons (entities only)
 Gabelli Securities, Inc. I.D. No. 13-3379374
- 2 Check the appropriate box if a member of a group (SEE INSTRUCTIONS) (a)

(b)

- 3 Sec use only
- 4 Source of funds (SEE INSTRUCTIONS)
 00 – Client funds
- 5 Check box if disclosure of legal proceedings is required pursuant to items 2 (d) or 2 (e)

- 6 Citizenship or place of organization
 Delaware

| | | |
|--------------|-----|--------------------------|
| Number Of | : 7 | Sole voting power |
| | : | |
| Shares | : | 129,500 (Item 5) |
| | : | |
| Beneficially | : 8 | Shared voting power |
| | : | |
| Owned | : | None |
| | : | |
| By Each | : 9 | Sole dispositive power |
| | : | |
| Reporting | : | 129,500 (Item 5) |
| | : | |
| Person | :10 | Shared dispositive power |
| | : | |
| With | : | None |
| | : | |

- 11 Aggregate amount beneficially owned by each reporting person
 129,500 (Item 5)

- 12 Check box if the aggregate amount in row (11) excludes certain shares
 (SEE INSTRUCTIONS)

- 13 Percent of class represented by amount in row (11)
 0.97%

- 14 Type of reporting person (SEE INSTRUCTIONS)
 HC, CO, IA

CUSIP No. 038237103

- 1 Names of reporting persons
 I.R.S. identification nos. of above persons (entities only)
 Teton Advisors, Inc. I.D. No. 13-4008049
- 2 Check the appropriate box if a member of a group (SEE INSTRUCTIONS) (a)

(b)

- 3 Sec use only
- 4 Source of funds (SEE INSTRUCTIONS)
 00 – Funds of investment advisory client.
- 5 Check box if disclosure of legal proceedings is required pursuant to items 2 (d) or 2 (e)

- 6 Citizenship or place of organization
 Delaware

| | | |
|--------------|-----|--------------------------|
| Number Of | : 7 | Sole voting power |
| | : | |
| Shares | : | 94,500 (Item 5) |
| | : | |
| Beneficially | : 8 | Shared voting power |
| | : | |
| Owned | : | None |
| | : | |
| By Each | : 9 | Sole dispositive power |
| | : | |
| Reporting | : | 94,500 (Item 5) |
| | : | |
| Person | :10 | Shared dispositive power |
| | : | |
| With | : | None |
| | : | |

- 11 Aggregate amount beneficially owned by each reporting person

94,500 (Item 5)

- 12 Check box if the aggregate amount in row (11) excludes certain shares
 (SEE INSTRUCTIONS)

- 13 Percent of class represented by amount in row (11)

0.71%

- 14 Type of reporting person (SEE
 INSTRUCTIONS)

IA, CO

CUSIP No. 038237103

1 Names of reporting persons
 I.R.S. identification nos. of above persons (entities only)
 GGCP, Inc. I.D.
 No. 13-3056041

2 Check the appropriate box if a member of a group (SEE INSTRUCTIONS) (a)

(b)

3 Sec use only

4 Source of funds (SEE INSTRUCTIONS)
 None

5 Check box if disclosure of legal proceedings is required pursuant to items 2 (d) or 2 (e)

6 Citizenship or place of organization
 Wyoming

| | | |
|--------------|-----|--------------------------|
| Number Of | : 7 | Sole voting power |
| | : | |
| Shares | : | None (Item 5) |
| | : | |
| Beneficially | : 8 | Shared voting power |
| | : | |
| Owned | : | None |
| | : | |
| By Each | : 9 | Sole dispositive power |
| | : | |
| Reporting | : | None (Item 5) |
| | : | |
| Person | :10 | Shared dispositive power |
| | : | |
| With | : | None |
| | : | |

11 Aggregate amount beneficially owned by each reporting person

None (Item 5)

12 Check box if the aggregate amount in row (11) excludes certain shares
 (SEE INSTRUCTIONS) X

13 Percent of class represented by amount in row (11)

0.00%

14 Type of reporting person (SEE INSTRUCTIONS)

HC, CO

CUSIP No. 038237103

1 Names of reporting persons
 I.R.S. identification nos. of above persons (entities only)
 GAMCO Investors, Inc. I.D.
 No. 13-4007862
 Check the appropriate box if a member of a group (SEE INSTRUCTIONS) (a)

(b)

3 Sec use only

4 Source of funds (SEE INSTRUCTIONS)
 None

5 Check box if disclosure of legal proceedings is required pursuant to items 2 (d) or 2 (e)

6 Citizenship or place of organization
 New York

| | | |
|--------------|-----|--------------------------|
| Number Of | : 7 | Sole voting power |
| | : | |
| Shares | : | None (Item 5) |
| | : | |
| Beneficially | : 8 | Shared voting power |
| | : | |
| Owned | : | None |
| | : | |
| By Each | : 9 | Sole dispositive power |
| | : | |
| Reporting | : | None (Item 5) |
| | : | |
| Person | :10 | Shared dispositive power |
| | : | |
| With | : | None |
| | : | |

11 Aggregate amount beneficially owned by each reporting person
 None (Item 5)

12 Check box if the aggregate amount in row (11) excludes certain shares
 (SEE INSTRUCTIONS) X

13 Percent of class represented by amount in row (11)
 0.00%

14 Type of reporting person (SEE INSTRUCTIONS)

HC, CO

7

CUSIP No. 038237103

- 1 Names of reporting persons
I.R.S. identification nos. of above persons (entities only)
Mario J. Gabelli
- 2 Check the appropriate box if a member of a group (SEE INSTRUCTIONS) (a)
- (b)
- 3 Sec use only
- 4 Source of funds (SEE INSTRUCTIONS)
None
- 5 Check box if disclosure of legal proceedings is required pursuant to items 2 (d) or 2 (e)

6 Citizenship or place of organization
USA

| | | |
|--------------|-----|--------------------------|
| Number Of | : 7 | Sole voting power |
| | : | |
| Shares | : | None (Item 5) |
| | : | |
| Beneficially | : 8 | Shared voting power |
| | : | |
| Owned | : | None |
| | : | |
| By Each | : 9 | Sole dispositive power |
| | : | |
| Reporting | : | None (Item 5) |
| | : | |
| Person | :10 | Shared dispositive power |
| | : | |
| With | : | None |
| | : | |

- 11 Aggregate amount beneficially owned by each reporting person
None (Item 5)
- 12 Check box if the aggregate amount in row (11) excludes certain shares
(SEE INSTRUCTIONS) X
- 13 Percent of class represented by amount in row (11)
0.00%
- 14 Type of reporting person (SEE INSTRUCTIONS)
IN

Item 1. Security and Issuer

The class of equity securities to which this statement on Schedule 13D relates is the Common Stock of Applied Signal Technology, Inc. (the "Issuer"), a California corporation with principal offices located at 400 West California Avenue, Sunnyvale, California 94086.

Item 2. Identity and Background

This statement is being filed by Mario J. Gabelli ("Mario Gabelli") and various entities which he directly or indirectly controls or for which he acts as chief investment officer. These entities engage in various aspects of the securities business, primarily as investment adviser to various institutional and individual clients, including registered investment companies and pension plans, and as general partner or the equivalent of various private investment partnerships or private funds. Certain of these entities may also make investments for their own accounts. The foregoing persons in the aggregate often own beneficially more than 5% of a class of equity securities of a particular issuer. Although several of the foregoing persons are treated as institutional investors for purposes of reporting their beneficial ownership on the short-form Schedule 13G, the holdings of those who do not qualify as institutional investors may exceed the 1% threshold presented for filing on Schedule 13G or implementation of their investment philosophy may from time to time require action which could be viewed as not completely passive. In order to avoid any question as to whether their beneficial ownership is being reported on the proper form and in order to provide greater investment flexibility and administrative uniformity, these persons have decided to file their beneficial ownership reports on the more detailed Schedule 13D form rather than on the short-form Schedule 13G and thereby to provide more expansive disclosure than may be necessary.

(a), (b) and (c) - This statement is being filed by one or more of the following persons: GGCP, Inc. ("GGCP"), GGCP Holdings LLC ("GGCP Holdings"), GAMCO Investors, Inc. ("GBL"), Gabelli Funds, LLC ("Gabelli Funds"), GAMCO Asset Management Inc. ("GAMCO"), Teton Advisors, Inc. ("Teton Advisors"), Gabelli Securities, Inc. ("GSI"), Gabelli & Company, Inc. ("Gabelli & Company"), MJG Associates, Inc. ("MJG Associates"), Gabelli Foundation, Inc. ("Foundation"), MJG-IV Limited Partnership ("MJG-IV"), and Mario Gabelli. Those of the foregoing persons signing this Schedule 13D are hereinafter referred to as the "Reporting Persons".

GGCP makes investments for its own account and is the manager and a member of GGCP Holdings which is the controlling shareholder of GBL. GBL, a public company listed on the New York Stock Exchange, is the parent company for a variety of companies engaged in the securities business, including those named below.

GAMCO, a wholly-owned subsidiary of GBL, is an investment adviser registered under the Investment Advisers Act of 1940, as amended ("Advisers Act"). GAMCO is an investment manager providing discretionary managed account services for employee benefit plans, private investors, endowments, foundations and others.

GSI, a majority-owned subsidiary of GBL, is an investment adviser registered under the Advisers Act and serves as a general partner or investment manager to limited partnerships and offshore investment companies and other accounts. As a part of its business, GSI may purchase or sell securities for its own account. GSI is a general partner or investment manager of a number of funds or partnerships, including Gabelli Associates Fund, L.P., Gabelli Associates Fund II, L.P., Gabelli Associates Limited, Gabelli Associates Limited II E, ALCE Partners, L.P., Gabelli Capital Structure Arbitrage Fund LP, Gabelli Capital Structure Arbitrage Fund Limited, Gabelli Intermediate Credit Fund L.P., Gabelli Japanese Value Partners L.P., GAMA Select Energy + L.P., GAMCO Medical Opportunities L.P., GAMCO Long/Short Equity Fund, L.P., Gabelli Multimedia Partners, L.P., Gabelli International Gold Fund Limited and Gabelli Green Long/Short Fund, L.P.

Gabelli & Company, a wholly-owned subsidiary of GSI, is a broker-dealer registered under the Securities Exchange Act of 1934, as amended ("1934 Act"), which as a part of its business regularly purchases and sells securities for its own account.

Gabelli Funds, a wholly owned subsidiary of GBL, is a limited liability company. Gabelli Funds is an investment adviser registered under the Advisers Act which provides advisory services for The Gabelli Equity Trust Inc., The Gabelli Asset Fund, The GAMCO Growth Fund, The Gabelli Convertible and Income Securities Fund Inc., The Gabelli Value Fund Inc., The Gabelli Small Cap Growth Fund, The Gabelli Equity Income Fund, The Gabelli ABC Fund, The GAMCO Global Telecommunications Fund, GAMCO Gold Fund, Inc., The Gabelli Global Multimedia Trust Inc., The GAMCO Global Convertible Securities Fund, Gabelli Capital Asset Fund, GAMCO International

Growth Fund, Inc., The GAMCO Global Growth Fund, The Gabelli Utility Trust, The GAMCO Global Opportunity Fund, The Gabelli Utilities Fund, The Gabelli Blue Chip Value Fund, The GAMCO Mathers Fund, The Gabelli Woodland Small Cap Value Fund, The Comstock Capital Value Fund, The Gabelli Dividend and Income Trust, The Gabelli Global Utility & Income Trust, The Gabelli Global Gold, Natural Resources, & Income Trust, The Gabelli Global Deal Fund, Gabelli Enterprise Mergers & Acquisitions Fund, The Gabelli SRI Green Fund, Inc., The Gabelli Healthcare & Wellness Rx Trust and the GAMCO International SICAV (sub-fund GAMCO Strategic Value), (collectively, the “Funds”), which are registered investment companies.

Teton Advisors, an investment adviser registered under the Advisers Act, provides discretionary advisory services to The GAMCO Westwood Mighty Mitessm Fund, The GAMCO Westwood Income Fund and The GAMCO Westwood SmallCap Equity Fund.

MJG Associates provides advisory services to private investment partnerships and offshore funds. Mario Gabelli is the sole shareholder, director and employee of MJG Associates. MJG Associates is the Investment Manager of Gabelli International Limited and Gabelli Fund, LDC. Mario J. Gabelli is the general partner of Gabelli Performance Partnership, LP.

The Foundation is a private foundation. Mario Gabelli is the Chairman, a Trustee and the Investment Manager of the Foundation. Elisa M. Wilson is the President of the Foundation.

Mario Gabelli is the controlling stockholder, Chief Executive Officer and a director of GGCP and Chairman and Chief Executive Officer of GBL. Mario Gabelli is also a member of GGCP Holdings. Mario Gabelli is the controlling shareholder of Teton.

MJG-IV is a family partnership in which Mario Gabelli is the general partner. Mario Gabelli has less than a 100% interest in MJG-IV. MJG-IV makes investments for its own account. Mario Gabelli disclaims ownership of the securities held by MJG-IV beyond his pecuniary interest.

The Reporting Persons do not admit that they constitute a group.

GBL, GAMCO, and Gabelli & Company are New York corporations and GSI and Teton Advisors are Delaware corporations, each having its principal business office at One Corporate Center, Rye, New York 10580. GGCP is a Wyoming corporation having its principal business office at 140 Greenwich Avenue, Greenwich, CT 06830. GGCP Holdings is a Delaware limited liability corporation having its principal business office at 140 Greenwich Avenue, Greenwich, CT 06830. Gabelli Funds is a New York limited liability company having its principal business office at One Corporate Center, Rye, New York 10580. MJG Associates is a Connecticut corporation having its principal business office at 140 Greenwich Avenue, Greenwich, CT 06830. The Foundation is a Nevada corporation having its principal offices at 165 West Liberty Street, Reno, Nevada 89501.

For information required by instruction C to Schedule 13D with respect to the executive officers and directors of the foregoing entities and other related persons (collectively, “Covered Persons”), reference is made to Schedule I annexed hereto and incorporated herein by reference.

(d) – Not applicable.

(e) – On April 24, 2008, Gabelli Funds settled an administrative proceeding with the Securities and Exchange Commission (“Commission”) regarding frequent trading in shares of a mutual fund it advises, without admitting or denying the findings or allegations of the Commission. The inquiry involved Gabelli Funds’ treatment of one investor who had engaged in frequent trading in one fund (the prospectus of which did not at that time impose limits on frequent trading), and who had subsequently made an investment in a hedge fund managed by an affiliate of Gabelli Funds. The investor was banned from the fund in August 2002, only after certain other investors were banned. The principal terms of the settlement include an administrative cease and desist order from violating Section 206(2) of the Investment Advisers Act of 1940, Section 17(d) of the Investment Company Act of 1940 (“Company Act”), and Rule 17d-1 thereunder, and Section 12(d)(1)(B)(1) of the Company Act, and the payment of \$11 million in disgorgement and prejudgment interest and \$5 million in a civil monetary penalty. Gabelli Funds was also required to retain an independent distribution consultant to develop a plan and oversee distribution to shareholders of the monies paid to the Commission, and to make certain other undertakings.

On January 12, 2009, Gabelli Funds settled an administrative proceeding with the Commission without admitting or denying the findings or allegations of the Commission, regarding Section 19(a) of the Company Act and Rule 19a-1 thereunder by two closed-end funds. Section 19(a) and Rule 19a-1 require registered investment companies, when making a distribution in the nature of a dividend from sources other than net investment income, to

contemporaneously provide written statements to shareholders that adequately disclose the source or sources of such distribution. While the two funds sent annual statements and provided other materials containing this information, the shareholders did not receive the notices required by Rule 19a-1 with any of the distributions that were made for 2002 and 2003. As part of the settlement Gabelli Funds agreed to pay a civil monetary penalty of \$450,000 and to cease and desist from causing violations of Section 19(a) and Rule 19a-1. In connection with the settlement, the Commission noted the remedial actions previously undertaken by Gabelli Funds.

(f) – Reference is made to Schedule I hereto.

Item 3. Source and Amount of Funds or Other Consideration

The Reporting Persons used an aggregate of approximately \$43,458,203 to purchase the Securities reported as beneficially owned in Item 5. GAMCO and Gabelli Funds used approximately \$8,173,610 and \$27,140,037, respectively, of funds that were provided through the accounts of certain of their investment advisory clients (and, in the case of some of such accounts at GAMCO, may be through borrowings from client margin accounts) in order to purchase the Securities for such clients. Teton Advisors used approximately \$3,249,866 of funds of investment advisory clients to purchase the Securities reported by it. GSI used approximately \$4,894,690 of client funds to purchase the Securities reported by it.

Item 4. Purpose of Transaction

Each of the Reporting Persons has purchased and holds the Securities reported by it for investment for one or more accounts over which it has shared, sole, or both investment and/or voting power, for its own account, or both. The Reporting Persons are engaged in the business of securities analysis and investment. The Reporting Persons analyze the operations, capital structure and markets of companies in which they invest, including the Issuer, on a continuous basis through analysis of documentation and discussions with knowledgeable industry and market observers and with representatives of such companies (often at the invitation of management). As a result of these analytical activities one or more of the Reporting Persons may issue analysts reports, participate in interviews or hold discussions with third parties or with management in which the Reporting Person may suggest or take a position with respect to potential changes in the operations, management or capital structure of such companies as a means of enhancing shareholder values. Such suggestions or positions may relate to one or more of the transactions specified in clauses (a) through (j) of Item 4 of Schedule 13D including, without limitation, such matters as disposing of one or more businesses, selling the company or acquiring another company or business, changing operating or marketing strategies, adopting or not adopting, certain types of anti-takeover measures and restructuring the company's capitalization or dividend policy.

Each of the Reporting Persons intends to adhere to the foregoing investment philosophy with respect to the Issuer. However, none of the Reporting Persons intends to seek control of the Issuer or participate in the management of the Issuer, and any Reporting Person that is registered as an investment company under the Company Act will participate in such a transaction only following receipt of an exemption from the SEC under Rule 17d-1 under the Company Act, if required, and in accordance with other applicable law. In pursuing this investment philosophy, each Reporting Person will continuously assess the Issuer's business, financial condition, results of operations and prospects, general economic conditions, the securities markets in general and those for the Issuer's securities in particular, other developments and other investment opportunities, as well as the investment objectives and diversification requirements of its shareholders or clients and its fiduciary duties to such shareholders or clients. Depending on such assessments, one or more of the Reporting Persons may acquire additional Securities or may determine to sell or otherwise dispose of all or some of its holdings of Securities. Although the Reporting Persons share the same basic investment philosophy and although most portfolio decisions are made by or under the supervision of Mario Gabelli, the investment objectives and diversification requirements of various clients differ from those of other clients so that one or more Reporting Persons may be acquiring Securities while others are disposing of Securities.

With respect to voting of the Securities, the Reporting Persons have adopted general voting policies relating to voting on specified issues affecting corporate governance and shareholder values. Under these policies, the Reporting Persons generally vote all securities over which they have voting power in favor of cumulative voting, financially reasonable golden parachutes, one share one vote, management cash incentives and pre-emptive rights and against

greenmail, poison pills, supermajority voting, blank check preferred stock and super-dilutive stock options. Exceptions may be made when management otherwise demonstrates superior sensitivity to the needs of shareholders. In the event that the aggregate voting position of all Reporting Persons exceeds 25% of the total voting position of the Issuer, one or more of the filing persons may transfer voting and/or dispositive power over shares to independent committees of directors or the owners of such shares. Such committees vote and/or consider disposition of such shares independently of the Reporting Persons.

Each of the Covered Persons who is not a Reporting Person has purchased the Securities reported herein as beneficially owned by him for investment for his own account or that of one or more members of his immediate family. Each such person may acquire additional Securities or dispose of some or all of the Securities reported herein with respect to him.

Other than as described above, none of the Reporting Persons and none of the Covered Persons who is not a Reporting Person has any present plans or proposals which relate to or would result in any transaction, change or event specified in clauses (a) through (j) of Item 4 of Schedule 13D.

Item 5. Interest In Securities Of The Issuer

(a) The aggregate number of Securities to which this Schedule 13D relates is 1,158,200 shares, representing 8.65% of the 13,396,161 shares outstanding as reported in the Issuer's most recent Form 10-Q for the quarterly period ended July 30, 2010. The Reporting Persons beneficially own those Securities as follows:

| Name | Shares of Common Stock | % of Class of Common |
|----------------|---------------------------|-------------------------|
| GAMCO | 216,200 | 1.61% |
| Gabelli Funds | 718,000 | 5.36% |
| GSI | 129,500 | 0.97% |
| Teton Advisors | 94,500 | 0.71% |

Mario Gabelli is deemed to have beneficial ownership of the Securities owned beneficially by each of the foregoing persons. GSI is deemed to have beneficial ownership of the Securities owned beneficially by Gabelli & Company. GBL and GGCP are deemed to have beneficial ownership of the Securities owned beneficially by each of the foregoing persons other than Mario Gabelli and the Foundation.

(b) Each of the Reporting Persons and Covered Persons has the sole power to vote or direct the vote and sole power to dispose or to direct the disposition of the Securities reported for it, either for its own benefit or for the benefit of its investment clients or its partners, as the case may be, except that (i) Gabelli Funds has sole dispositive and voting power with respect to the shares of the Issuer held by the Funds so long as the aggregate voting interest of all joint filers does not exceed 25% of their total voting interest in the Issuer and, in that event, the Proxy Voting Committee of each Fund shall respectively vote that Fund's shares, (ii) at any time, the Proxy Voting Committee of each such Fund may take and exercise in its sole discretion the entire voting power with respect to the shares held by such fund under special circumstances such as regulatory considerations, and (iii) the power of Mario Gabelli, GBL, and GGCP is indirect with respect to Securities beneficially owned directly by other Reporting Persons.

(c) Information with respect to all transactions in the Securities which were effected during the past sixty days or since the most recent filing on Schedule 13D, whichever is less, by each of the Reporting Persons and Covered Persons is set forth on Schedule II annexed hereto and incorporated herein by reference.

(d) The investment advisory clients of, or partnerships managed by, GAMCO, Gabelli Funds, Teton Advisors and MJG Associates have the sole right to receive and, subject to the notice, withdrawal and/or termination provisions of such advisory contracts and partnership arrangements, the sole power to direct the receipt of dividends from, and the proceeds of sale of, any of the Securities beneficially owned by such Reporting Persons on behalf of such clients or partnerships. Except as noted, no such client or partnership has an interest by virtue of such relationship that relates to more than 5% of the Securities.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer

The powers of disposition and voting of Gabelli Funds, Teton Advisors, GAMCO, GSI and MJG Associates with respect to Securities owned beneficially by them on behalf of their investment advisory clients, and of MJG Associates and GSI with respect to Securities owned beneficially by them on behalf of the partnerships or corporations which they directly or indirectly manage, are held pursuant to written agreements with such clients, partnerships and funds.

Item 7. Material to be Filed as an Exhibit

The following Exhibit A is attached hereto. The following Exhibit B is incorporated by reference to Exhibit A in the Amendment No. 2 to Schedule 13D of the Reporting Persons with respect to Lifecore Biomedical, Inc.

Exhibit A: Joint Filing Agreement

Exhibit B: Powers of Attorney to Peter D. Goldstein, Christopher J. Michailoff, and Douglas R. Jamieson from Mario J. Gabelli individually and/or as an executive officer or director of any entity of which Mr. Gabelli serves.

Signature

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: December 29, 2010

GGCP, INC.
MARIO J. GABELLI

By:/s/ Douglas R. Jamieson
Douglas R. Jamieson
Attorney-in-Fact

GABELLI FUNDS, LLC
TETON ADVISORS, INC.

By:/s/ Bruce N. Alpert
Bruce N. Alpert
Chief Operating Officer – Gabelli Funds, LLC
Director – Teton Advisors, Inc.

GAMCO ASSET MANAGEMENT INC.
GAMCO INVESTORS, INC.
GABELLI SECURITIES, INC.

By:/s/ Douglas R. Jamieson
Douglas R. Jamieson
President & Chief Operating Officer – GAMCO Investors, Inc.
President – GAMCO Asset Management Inc.
President – Gabelli Securities, Inc.

Schedule I

Information with Respect to Executive
Officers and Directors of the Undersigned

Schedule I to Schedule 13D is amended, in pertinent part, as follows:

The following sets forth as to each of the executive officers and directors of the undersigned: his name; his business address; his present principal occupation or employment and the name, principal business and address of any corporation or other organization in which such employment is conducted. Unless otherwise specified, the principal employer of each such individual is GAMCO Asset Management Inc., Gabelli Funds, LLC, Gabelli Securities, Inc., Gabelli & Company, Inc., Teton Advisors, Inc., or GAMCO Investors, Inc., the business address of each of which is One Corporate Center, Rye, New York 10580, and each such individual identified below is a citizen of the United States. To the knowledge of the undersigned, during the last five years, no such person has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors), and no such person was a party to a civil proceeding of a judicial or administrative body of competent jurisdiction as a result of which he was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities law or finding any violation with respect to such laws except as reported in Item 2(d) and (e) of this Schedule 13D.

GGCP, Inc.

Directors:

Mario J. Gabelli Chief Executive Officer of GGCP, Inc., and Chairman & Chief Executive Officer of GAMCO Investors, Inc.; Director/Trustee of all registered investment companies advised by Gabelli Funds, LLC.

Marc J. Gabelli Chairman of The LGL Group, Inc.
2525 Shader Road
Orlando, FL 32804

Matthew R. Gabelli Vice President – Trading
Gabelli & Company, Inc.
One Corporate Center
Rye, NY 10580

Charles C. Baum Secretary & Treasurer
United Holdings Co., Inc.
2545 Wilkens Avenue
Baltimore, MD 21223

Fredric V. Salerno Chairman; Former Vice Chairman and Chief Financial Officer
Verizon Communications

Officers:

Mario J. Gabelli Chief Executive Officer and Chief Investment Officer

Marc J. Gabelli President
Michael G. Chieco Vice President, Chief Financial Officer, Secretary

Silvio A. Berni Vice President, Assistant Secretary and Controller

GGCP Holdings LLC

Members:

GGCP, Inc. Manager and Member

Mario J. Gabelli Member

GAMCO Investors, Inc.

Directors:

Edwin L. Artzt Former Chairman and Chief Executive Officer
Procter & Gamble Company
900 Adams Crossing
Cincinnati, OH 45202

| | |
|-----------------------------|--|
| Raymond C. Avansino | Chairman & Chief Executive Officer E.L. Wiegand Foundation 165 West Liberty Street Reno, NV 89501 |
| Richard L. Bready | Chairman and Chief Executive Officer Nortek, Inc. 50 Kennedy Plaza Providence, RI 02903 |
| Mario J. Gabelli | See above |
| Elisa M. Wilson | Director c/o GAMCO Investors, Inc. One Corporate Center Rye, NY 10580 |
| Eugene R. McGrath | Former Chairman and Chief Executive Officer Consolidated Edison, Inc. 4 Irving Place New York, NY 10003 |
| Robert S. Prather | President & Chief Operating Officer Gray Television, Inc. 4370 Peachtree Road, NE Atlanta, GA 30319 |
| Officers: | |
| Mario J. Gabelli | Chairman and Chief Executive Officer |
| Douglas R. Jamieson | President and Chief Operating Officer |
| Henry G. Van der Eb | Senior Vice President |
| Bruce N. Alpert | Senior Vice President |
| Jeffrey M. Farber | Executive Vice President and Chief Financial Officer |
| Christopher Michailoff | Acting Secretary |
| GAMCO Asset Management Inc. | |
| Directors: | |
| Douglas R. Jamieson | |
| Regina M. Pitaro | |
| William S. Selby | |
| Officers: | |
| Mario J. Gabelli | Chief Investment Officer – Value Portfolios |

Douglas R. Jamieson President

Jeffrey M. Farber Chief Financial Officer

Christopher J. Michailoff General Counsel and Secretary

Gabelli Funds, LLC
Officers:

Mario J. Gabelli Chief Investment Officer – Value Portfolios

Bruce N. Alpert Executive Vice President and Chief Operating Officer

Agnes Mullady President and Chief Operating Officer – Open End Fund Division

Teton Advisors, Inc.
Directors:

Howard F. Ward Chairman

Bruce N. Alpert See above

Nicholas F. Galluccio Chief Executive Officer and President

Robert S. Zuccaro Commonwealth Management Partners, LLLP
140 Greenwich Avenue
Greenwich, CT 06430

Officers:

Howard F. Ward See above

Nicholas F. Galluccio See above

Jeffrey M. Farber Chief Financial Officer

Christopher J. Michailoff Acting Secretary

Gabelli Securities, Inc.

Directors:

Robert W. Blake President of W. R. Blake & Sons, Inc.
196-20 Northern Boulevard
Flushing, NY 11358

Douglas G. DeVivo General Partner of ALCE Partners, L.P.
One First Street, Suite 16
Los Altos, CA 94022

Douglas R. Jamieson President

Officers:

Douglas R. Jamieson See above
Christopher J. Michailoff Secretary
Jeffrey M. Farber Chief Financial Officer

Gabelli & Company, Inc.

Directors:

James G. Webster, III Chairman & Interim President

Irene Smolicz Senior Trader
Gabelli & Company, Inc.

Officers:

James G. Webster, III See Above
Bruce N. Alpert Vice President - Mutual Funds
Diane M. LaPointe Treasurer
Douglas R. Jamieson Secretary

Gabelli Foundation, Inc.

Officers:

Mario J. Gabelli Chairman, Trustee & Chief Investment Officer
Elisa M. Wilson President

MJG-IV Limited Partnership

Officers:

Mario J. Gabelli General Partner

SCHEDULE II
 INFORMATION WITH RESPECT TO
 TRANSACTIONS EFFECTED DURING THE PAST SIXTY DAYS OR
 SINCE THE MOST RECENT FILING ON SCHEDULE 13D (1)

| DATE | SHARES PURCHASED SOLD(-) | AVERAGE PRICE(2) |
|------|-----------------------------|---------------------|
|------|-----------------------------|---------------------|

COMMON STOCK-APPLIED SIGNAL TECHNOLOGY, INC.

GAMCO ASSET MANAGEMENT INC.

| | | |
|----------|---------|---------|
| 12/21/10 | 30,800 | 37.7781 |
| 12/21/10 | 15,400- | 37.7781 |
| 12/21/10 | 18,400- | 37.7892 |
| 12/21/10 | 36,800 | 37.7892 |
| 12/20/10 | 29,500 | 37.8399 |
| 12/20/10 | 500 | 37.8499 |
| 12/20/10 | 128,400 | 37.8002 |
| 12/20/10 | 5,000 | 37.8159 |
| 12/20/10 | 4,500 | 37.8177 |
| 12/20/10 | 8,000 | 37.8199 |
| 12/20/10 | 2,500 | 37.8319 |
| 12/20/10 | 4,000 | 37.8400 |

GABELLI SECURITIES, INC.

| | | |
|----------|--------|---------|
| 12/27/10 | 1,000- | 37.9000 |
| 12/27/10 | 3,000- | 37.8300 |
| 12/20/10 | 10,000 | 37.8050 |
| 12/20/10 | 1,500 | 37.8009 |

GABELLI ASSOCIATES LIMITED II E

| | | |
|----------|--------|---------|
| 12/22/10 | 500 | 37.7950 |
| 12/21/10 | 3,500 | 37.7825 |
| 12/20/10 | 18,000 | 37.8009 |

GABELLI ASSOCIATES LIMITED

| | | |
|----------|--------|---------|
| 12/23/10 | 500 | 37.8000 |
| 12/22/10 | 500 | 37.7950 |
| 12/21/10 | 4,000 | 37.7825 |
| 12/20/10 | 21,000 | 37.8009 |

GABELLI ASSOCIATES FUND II

| | | |
|----------|--------|---------|
| 12/21/10 | 3,000 | 37.7825 |
| 12/20/10 | 14,000 | 37.8009 |

GABELLI ASSOCIATES FUND

| | | |
|----------|--------|---------|
| 12/23/10 | 1,000 | 37.8000 |
| 12/22/10 | 1,000 | 37.7950 |
| 12/21/10 | 9,500 | 37.7825 |
| 12/20/10 | 45,500 | 37.8009 |

TETON ADVISORS, INC.

| | | |
|----------|--------|---------|
| 12/22/10 | 45,000 | 37.7994 |
| 12/21/10 | 25,000 | 37.7879 |
| 12/20/10 | 6,000 | 37.8002 |

GABELLI FUNDS, LLC.

GABELLI MATHERS FUND

| | | |
|----------|-------|---------|
| 12/20/10 | 1,000 | 37.8100 |
|----------|-------|---------|

GABELLI SMALL CAP GROWTH FUND

| | | |
|----------|--------|---------|
| 12/20/10 | 50,000 | 37.8002 |
|----------|--------|---------|

THE GABELLI GLOBAL DEAL FUND

| | | |
|----------|--------|---------|
| 12/21/10 | 30,000 | 37.7892 |
|----------|--------|---------|

| | | |
|----------|---------|---------|
| 12/20/10 | 220,000 | 37.8002 |
|----------|---------|---------|

GABELLI ENTERPRISE M&A FUND

| | | |
|----------|--------|---------|
| 12/21/10 | 17,000 | 37.7892 |
|----------|--------|---------|

| | | |
|----------|---------|---------|
| 12/20/10 | 128,000 | 37.8002 |
|----------|---------|---------|

GABELLI ABC FUND

| | | |
|----------|---------|---------|
| 12/20/10 | 272,000 | 37.8002 |
|----------|---------|---------|

(1) UNLESS OTHERWISE INDICATED, ALL TRANSACTIONS WERE EFFECTED ON THE NASDAQ GLOBAL SELECT MARKET.

(2) PRICE EXCLUDES COMMISSION.

JOINT FILING AGREEMENT

In accordance with Rule 13d-1(f) under the securities Exchange Act of 1934, as amended, the undersigned hereby agree to the joint filing with all other Reporting Entities (as such term is defined in the Schedule 13D referred to below) on behalf of each of them of a statement on Schedule 13D (including amendments thereto) with respect to the Common Stock of Applied Signal Technology, Inc., and that this Agreement be included as an Exhibit to such joint filing. This Agreement may be executed in any number of counterparts all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the undersigned hereby execute this Agreement this December 29, 2010.

MARIO J. GABELLI
GGCP, INC.
MJG ASSOCIATES, INC.
GABELLI FOUNDATION, INC.
MJG-IV LIMITED PARTNERSHIP

By: /s/ Douglas R.
Jamieson
Douglas R. Jamieson
Attorney-in-Fact

GABELLI FUNDS, LLC
TETON ADVISORS, INC.
GABELLI & COMPANY, INC.

By: /s/ Bruce N. Alpert
Bruce N. Alpert
Chief Operating Officer – Gabelli Funds, LLC
Director – Teton Advisors, Inc.
Vice President – Gabelli & Company, Inc.

GAMCO ASSET MANAGEMENT INC.
GAMCO INVESTORS, INC.
GABELLI SECURITIES, INC.

By: /s/ Douglas R. Jamieson
Douglas R. Jamieson
President & Chief Operating Officer – GAMCO
Investors, Inc.
President – GAMCO Asset Management Inc.
Vice President – Gabelli Securities, Inc.

