

exceeds 150% of the Conversion Price for a period of at least 20 out of 30 consecutive trading days and the Notes are redeemed within 60 days after such trading period.

Upon a Change of Control (as defined), the Company will offer to repurchase each holder's Notes at a purchase price equal to 150% of the principal amount thereof, plus accrued and unpaid interest to the date of repurchase.

The Notes have been accepted for inclusion in the Private Offerings, Resales and Trading through Automated Linkages ("PORTAL") Market. Pursuant to a Registration Rights Agreement dated as of March 26, 1997, the Company has agreed to file a Shelf Registration Statement (as defined) relating to the Notes and the shares of Common Stock issuable upon conversion of the Notes.

ITEM 7. EXHIBITS

1. Purchase Agreement dated as of March 26, 1997 between Forum Capital Markets L.P. ("Forum") and the Company.
4. Indenture dated as of March 26, 1997 between State Street Bank and Trust Company and the Company.
- 10.1 Registration Rights Agreement dated as of March 26, 1997 between Forum and the Company.

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- 10.2 Warrant Agreement dated as of March 26, 1997 between Forum and the Company.
- 99.1 Press release dated March 27, 1997.
- 99.2 Press release dated April 2, 1997.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: April 9, 1997 HYBRIDON, INC.

/s/ E. Andrews Grinstead, III

E. Andrews Grinstead, III
Chairman, President and Chief Executive
Officer

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INDEX TO EXHIBITS

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\$60,000,000
9% CONVERTIBLE SUBORDINATED NOTES DUE 2004

HYBRIDON, INC.

PURCHASE AGREEMENT

New York, New York
March 26, 1997

Forum Capital Markets L.P.
53 Forest Avenue
Old Greenwich, Connecticut 06870

Ladies and Gentlemen:

Hybridon, Inc., a Delaware corporation (the "Company"), proposes to issue and sell to Forum Capital Markets L.P. (the "Initial Purchaser") \$50,000,000 aggregate principal amount of its 9% Convertible Subordinated Notes due 2004 (the "Notes") to be issued pursuant to the provisions of an indenture dated as of the date hereof (the "Indenture") between the Company and State Street Bank and Trust Company, as trustee (the "Trustee"). Such \$50,000,000 aggregate principal amount of Notes are hereafter referred to as the "Firm Notes." Upon the request of the Initial Purchaser, as provided in Section 2(b) of this Agreement, the Company shall also issue and sell to the Initial Purchaser up to an additional \$10,000,000 aggregate principal amount of Notes for the purpose of covering over-allotments, if any. Such \$10,000,000 aggregate principal amount of Notes are hereinafter referred to as the "Option Notes." The Firm Notes and the Option Notes collectively constitute all of the Notes. The shares of the Company's common stock, par value \$.001 per share (the "Common Stock"), issuable upon conversion of the Notes are hereinafter referred to as the "Conversion Shares."

The Company also proposes to sell to the Initial Purchaser, for nominal consideration, warrants (the "Warrants") pursuant to a warrant agreement (the "Warrant Agreement") for the purchase of an aggregate of up to 427,807 shares of Common Stock (the "Warrant Shares") at an exercise price per share of \$7.0125, subject to adjustment as provided in the Warrant Agreement. The Notes, the Conversion Shares, the Warrants and the Warrant Shares are hereinafter referred to collectively as the "Securities."

The Notes will be offered and sold to the Initial Purchaser without being registered under the Securities Act of 1933, as amended (the "Securities Act"), in reliance on an exemption therefrom. The Company has prepared a preliminary offering circular dated March 12, 1997 (the "Preliminary Offering Circular"), and a final offering circular dated March 26, 1997 (the "Offering Circular"), setting forth information regarding the Company and the Securities. The Company hereby confirms that it has authorized the use of the Preliminary Offering Circular and the Offering Circular in connection with the offering and sale of the Notes (the "Offering").

Holder (including subsequent transferees) of the Notes and Conversion Shares will have the registration rights set forth in the Registration Rights Agreement (the "Registration Rights Agreement") between the Initial Purchaser and the Company, dated concurrently herewith. Pursuant to the Registration Rights Agreement, the Company has agreed to file with the Securities and Exchange Commission (the "Commission") a shelf registration statement pursuant to Rule 415 under the Securities Act (the "Shelf Registration Statement") to cover public resales of the Notes and the Conversion Shares by the holders thereof.

Capitalized terms used herein without definition have the respective meanings specified therefor in the Offering Circular. For purposes hereof, "Rules and Regulations" means the rules and regulations adopted by the Commission under the Securities Act, the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or the Trust Indenture Act of 1939, as amended (the "Trust Indenture Act"), as applicable.

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1. REPRESENTATIONS AND WARRANTIES OF THE COMPANY. The Company represents and warrants to, and agrees with, the Initial Purchaser as of the date hereof, and as of the Closing Date and each Option Closing Date (as defined in Section 2(b) hereof), if any, as follows:

(a) The Offering Circular does not, and at the Closing Date and any Option Closing Date will not, and any amendment or supplement thereto, if any, as of its date, will not, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. The preceding sentence does not apply to information contained in or omitted from the Preliminary Offering Circular or the Offering Circular (or any supplement or amendment thereto) in reliance upon and in conformity with written information furnished to the Company by or on behalf of the Initial Purchaser specifically for use therein (the "Initial Purchaser's Information"). The parties acknowledge and agree that the Initial Purchaser's Information consists solely of the last paragraph at the bottom of the front cover page concerning the terms of the offering by the Initial Purchaser, the legends concerning over-allotment and trading activities of the Initial Purchaser and its affiliates on page 3 and the paragraphs under the caption "Plan of Distribution" in the Offering Circular. No order suspending or preventing the sale of the Securities in any jurisdiction has been issued or threatened or, to the knowledge of the Company, is contemplated.

(b) The Company is subject to Section 13 or 15(d) of the Exchange Act. The documents incorporated by reference into the Offering Circular (the "Incorporated Documents"), when they were filed with the Commission (or, if any amendment with respect to any such document was filed, when such amendment was filed), complied in all material respects with the applicable requirements of the Exchange Act and when read together with the Incorporated Documents and the Offering Circular did not, as of such date, contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading; and any Incorporated Documents filed subsequent to the date of the Offering Circular shall, when filed with the Commission, conform in all material respects to the applicable requirements of the Securities Act, the Rules and Regulations and the Exchange Act, as applicable. All reports and statements required to be filed by the Company under the Securities Act and the Exchange Act have been filed, together with all exhibits required to be filed therewith. The documents and agreements so filed which are described in the Offering Circular are in full force and effect on the date hereof (unless noted otherwise in the Offering Circular) and neither the Company nor any of its direct and indirect subsidiaries identified on Annex I hereto (collectively, the "Subsidiaries"), nor, to the knowledge of the Company, any other party thereto is in breach of or default under a material provision of any such document or agreement, which breach or default, if left uncured, would have a material adverse effect on the condition, financial or otherwise, results of operations, business or prospects of the Company and the Subsidiaries, taken as a whole (a "Material Adverse Effect"). The descriptions in the Offering Circular of agreements, contracts and other documents to which the Company or any of the Subsidiaries is a party or by which any of them is bound fairly present in all material respects the information that would be required to be presented with respect thereto under United States federal securities laws.

(c) The Company and each of the Subsidiaries has been duly organized and is validly existing as a corporation in good standing under the laws of the

jurisdiction of its incorporation, except to the extent such concept is inapplicable in such jurisdiction. Each of the Company and the Subsidiaries is duly qualified and licensed and in good standing as a foreign corporation in each jurisdiction in which its ownership or leasing of any properties or the character of its operations require such qualification or licensing (each of which jurisdictions is designated on Annex I hereto), except where the failure to be so qualified or licensed would not have a Material Adverse Effect or where such concept is inapplicable in such jurisdiction. Each Subsidiary which accounted for more than 5% of the Company's consolidated assets at December 31, 1996 or more than 10% of the Company's consolidated revenues during the 12 months then ended or which is reasonably expected to exceed such percentages with respect to the Company's next four fiscal quarters ending after the date hereof are indicated on Annex I hereto, and all such Subsidiaries are hereinafter referred to collectively as the "Significant Subsidiaries." The Company does not own or control, directly or indirectly, any corporation, association or other

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entity. Except as set forth on Annex I, the Company owns, either directly or through other Subsidiaries, all of the outstanding capital stock of each Subsidiary, in each case free and clear of all liens, charges, claims, encumbrances, pledges, security interests, defects or other restrictions or equities of any kind whatsoever; and all outstanding capital stock of the Subsidiaries has been duly authorized and validly issued and is fully paid and non-assessable and not issued in violation of any preemptive rights or applicable securities laws. Each of the Company and the Subsidiaries has all requisite power and authority (corporate and other), and has obtained any and all requisite authorizations, approvals, orders, licenses, certificates, franchises and permits of and from all governmental or regulatory officials and bodies, to own or lease its properties and conduct its business as described in the Offering Circular, except where the failure to have any such power, authority, authorization, approval, order license, certificate, franchise or permit would not have a Material Adverse Effect; each of the Company and the Subsidiaries is and has been doing business in compliance with all such authorizations, approvals, orders, licenses, certificates, franchises and permits and all federal, foreign, state and local laws, rules and regulations, except where the failure to be in compliance would not have a Material Adverse Effect; and neither the Company nor any of the Subsidiaries has received any notice of proceedings relating to the revocation or modification of any such authorization, approval, order, license, certificate, franchise or permit which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would have a Material Adverse Effect.

(d) The Company has an authorized capitalization as set forth in the Offering Circular and will have the adjusted capitalization as of the period indicated therein, based upon the assumptions set forth therein. Neither the Company nor any of the Subsidiaries is a party to or bound by any instrument, agreement or other arrangement, including, but not limited to, any voting trust agreement, stockholders' agreement or other agreement or instrument, affecting the securities or rights or obligations of securityholders of the Company or any of the Subsidiaries or providing for any of them to issue, sell, transfer or acquire any capital stock, rights, warrants, options or other securities of the Company or any of the Subsidiaries, except for this Agreement, the Indenture, the Warrant Agreement and as set forth in the Offering Circular (including the notes to the financial statements set forth therein). The Company's capital stock and the Securities conform in all material respects to all statements with respect thereto contained in the Offering Circular. All issued and outstanding equity securities of the Company have been duly authorized and validly issued and are fully paid and non-assessable, as applicable; the holders thereof have no rights of rescission with respect thereto and are not subject to personal liability by reason of being such holders; and none of such securities were

issued in violation of the preemptive rights of any securityholder of the Company or any of the Subsidiaries or similar contractual rights granted by the Company or any of the Subsidiaries.

(e) The Notes will be issued pursuant to the terms and conditions of the Indenture, and the Indenture and the Registration Rights Agreement each conform to the description thereof contained in the Offering Circular. At the Closing Date, the Indenture will conform in all material respects to the requirements of the Trust Indenture Act and the Rules and Regulations applicable to an indenture which is qualified thereunder. The Notes have been duly authorized and, when validly authenticated, issued, delivered and paid for in the manner contemplated by the Indenture, will be duly authorized, validly issued and outstanding obligations of the Company entitled to the benefits of the Indenture. The Warrant Agreement will conform in all material respects to the description thereof set forth in the Offering Circular. The Warrants have been duly authorized and when validly issued, delivered and paid for in the manner contemplated by the Warrant Agreement, will be duly authorized, validly issued and outstanding obligations of the Company entitled to the benefits of the Warrant Agreement. The Conversion Shares issuable upon conversion of the Notes and the Warrant Shares issuable upon exercise of the Warrants will, upon payment and issuance in accordance with the terms of the Warrant Agreement, be duly authorized, fully-paid and non-assessable, and the Company has duly authorized and reserved the Conversion Shares for issuance upon conversion of the Notes and the Warrant Shares for issuance upon exercise of the Warrants. The Securities are not and will not be subject to any preemptive or other similar rights of any securityholder of the Company or any of the Subsidiaries; all corporate action required to be taken on behalf of the Company for the authorization, issue and sale of the Securities has been duly and validly taken; and the certificates representing the any Conversion Shares or Warrant Shares will comply with the requirements of the Delaware General Corporation Law. Upon the issuance and delivery pursuant to the terms of this Agreement, the Indenture and the Warrant Agreement of the Notes and the Warrants, the Initial Purchaser will acquire good and marketable title thereto

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(subject to restrictions imposed by applicable federal and state securities laws) free and clear of any lien, charge, claim, encumbrance, pledge, security interest, defect or other restriction or equity of any kind whatsoever (other than restrictions created by the Initial Purchaser).

(f) The consolidated financial statements of the Company and the Subsidiaries together with the related notes thereto included in the Preliminary Offering Circular and the Offering Circular fairly present the financial position, income, changes in stockholders' equity, cash flow and results of operations of the Company and the Subsidiaries at the respective dates and for the respective periods to which they apply and such financial statements have been prepared in conformity with generally accepted accounting principles and the Rules and Regulations, consistently applied throughout the periods involved. Except as described in or contemplated by the Offering Circular, (i) there has been no material adverse change or development involving a prospective material change in the condition, financial or otherwise, or in the earnings, business, prospects or results of operations of the Company and the Subsidiaries, taken as a whole, whether or not arising in the ordinary course of business, since the date of the latest financial statements included in the Offering Circular (other than the continued incurrence of losses by the Company in the ordinary course of business) and (ii) the outstanding debt, the property, both tangible and intangible, and the businesses of each of the Company and the Subsidiaries conform in all material respects to the descriptions thereof contained in the Offering Circular. Financial information set forth in the Offering Circular under the headings "Summary Consolidated Financial Data," "Selected Consolidated Financial Data," "Capitalization" and "Management's Discussion and Analysis of

Financial Condition and Results of Operations" fairly present, on the basis stated in the Offering Circular, the information set forth therein and have been derived from or compiled on a basis consistent with that of the audited financial statements included in the Offering Circular.

(g) Each of the Company and the Subsidiaries has filed all income and franchise tax returns required to be filed (after giving effect to all permissible extensions) through the date hereof by it in any jurisdiction, and has paid all taxes shown to be due on such returns or claimed to be due from such entities, other than those being contested in good faith, except where the failure to so file or pay would not have a Material Adverse Effect. All tax liabilities, including those being contested by the Company or the Subsidiaries are adequately reserved for in the Company's financial statements (in accordance with generally accepted accounting principles). No tax deficiency has been asserted and no tax proceedings are pending or, to the knowledge of the Company, is threatened against the Company or any of the Subsidiaries which, if adversely determined would have a Material Adverse Effect, and to the knowledge of the Company, no such deficiency or proceeding is contemplated.

(h) No transfer tax, stamp duty or other similar tax is payable by or on behalf of the Initial Purchaser in connection with (i) the issuance by the Company of the Securities, (ii) the purchase by the Initial Purchaser of the Notes or the Warrants from the Company or (iii) the consummation by the Company of any of its obligations under this Agreement, the Indenture or the Warrant Agreement.

(i) Each of the Company and the Subsidiaries maintains liability, casualty and other insurance (subject to customary deductions and retentions) against such risk of the types and in the amounts customarily maintained by companies of comparable size to the Company engaged in similar businesses in similar industries, all of which insurance is in full force and effect.

(j) There is no action, suit, proceeding, litigation or governmental proceeding pending or, to the knowledge of the Company, threatened or contemplated against (or circumstances that are reasonably likely to give rise to the same), or involving the properties or businesses of, the Company or any of the Subsidiaries which (i) questions the validity of the capital stock of the Company or any of the Subsidiaries, this Agreement, the Indenture, the Warrant Agreement, the Registration Rights Agreement or of any action taken or to be taken by the Company or any of the Subsidiaries pursuant to or in connection with this Agreement, the Indenture, the Warrant Agreement or the Registration Rights Agreement or (ii) except as disclosed in or contemplated by the Offering Circular, would have a Material Adverse Effect.

(k) The Company has the legal right and corporate power and authority to authorize, issue, deliver and sell the Securities, to enter into this Agreement, the Indenture, the Warrant Agreement and the Registration Rights Agreement and to consummate the transactions provided for in such agreements; and this Agreement has been duly and properly authorized, executed and delivered by the Company and when the Company has duly executed and delivered the Warrant Agreement and the Registration Rights Agreement (assuming the due execution and delivery thereof by the Initial Purchaser) and the Indenture (assuming the due execution and delivery thereof by the Trustee), this Agreement, the Warrant Agreement, the Registration Rights Agreement and the Indenture each will constitute a legal, valid and binding agreement of the Company enforceable against the Company in accordance with its terms, except as rights to indemnification may be limited by federal or state securities laws and except for the effect of bankruptcy, insolvency, reorganization, moratorium and other similar laws relating to or affecting the rights of creditors generally. None of the Company's issue and sale of the Securities, the execution or delivery of

this Agreement, the Indenture, the Warrant Agreement and the Registration Rights Agreement, its performance hereunder and thereunder or its consummation of the transactions contemplated herein and therein conflicts or will conflict with or results or will result in any breach or violation of any of the terms or provisions of, or constitutes or will constitute a default under, or results or will result in the creation or imposition of any lien, charge, claim, encumbrance, pledge, security interest, defect or other restriction or equity of any kind whatsoever upon any property or assets of the Company or any of the Subsidiaries pursuant to the terms of, (i) the certificate of incorporation or by-laws of the Company or any of the Subsidiaries, (ii) any license, contract, indenture, mortgage, deed of trust, voting trust agreement, stockholders' agreement, note, loan or credit agreement or other agreement or instrument to which the Company or any of the Subsidiaries is a party or by which it or any Subsidiary is or may be bound or to which its or any of the Subsidiaries' properties or assets is or may be subject, or any indebtedness, or (iii) any statute, judgment, decree, order, rule or regulation directly applicable to the Company or any of the Subsidiaries of any arbitrator, court, regulatory body or administrative agency or other governmental agency or body, having jurisdiction over the Company or any of the Subsidiaries or any of their respective activities or properties, which, with respect to the foregoing clauses (ii) and (iii) only, breach, violation or default would have a Material Adverse Effect.

(l) Neither the Company nor any of the Subsidiaries (i) is in violation of its certificate of incorporation or by-laws, (ii) is in default in the performance of any obligation, agreement or condition contained in any license, contract, indenture, mortgage, installment sale agreement, lease, deed of trust, voting trust agreement, stockholders' agreement, note, loan or credit agreement, purchase order, agreement or instrument evidencing an obligation for borrowed money or other material agreement or instrument to which the Company or any of the Subsidiaries is a party or by which the Company or any of the Subsidiaries may be bound or to which the property or assets of the Company or any of the Subsidiaries is subject or affected or (iii) is in violation in any respect of any law, ordinance, governmental rule, regulation or court decree to which it or its property or assets may be subject, except any violation or default under the foregoing clauses (ii) or (iii) as would not have a Material Adverse Effect.

(m) No consent, approval, authorization or order of, and no filing with, any court, arbitrator, regulatory body, government agency or other body, domestic or foreign, is required for the execution, delivery or performance of this Agreement, the Indenture, the Warrant Agreement, the Registration Rights Agreement or the transactions contemplated hereby or thereby, except such as have been or may be obtained under the Securities Act (including the filing of registration statements and filings to list the Notes on the Private Offerings, Resale and Trading through Automated Linkages Market ("Portal") and the Conversion Shares on the Nasdaq National Market) or may be required under state securities or Blue Sky laws.

(n) Subsequent to the respective dates as of which information is set forth in the Offering Circular, and except as may otherwise be indicated or contemplated herein or therein, neither the Company nor any of the Subsidiaries has (i) issued any securities (other than upon the issuance or exercise of options pursuant to the Company's Stock Option Plan and Stock Purchase Plan or the exercise of warrants outstanding on such respective dates, or incurred any material liability or obligation, direct or contingent, for borrowed money not in the ordinary course of business, (ii) entered into any material transaction other than in the ordinary course of business or

(iii) declared or paid any dividend or made any other distribution on or in respect of its capital stock of any class and there has not been any change in

the capital stock (excluding changes contemplated by clause (i) hereof) or long term debt of the Company and the Subsidiaries taken as a whole.

(o) The Company and the Subsidiaries are in compliance in all material respects with all applicable federal, state, local and foreign laws and regulations respecting employment and employment practices, terms and conditions of employment and wages and hours. To the knowledge of the Company, there are no pending investigations involving the Company or any of the Subsidiaries by the U.S. Department of Labor or any other governmental agency responsible for the enforcement of such federal, state, local or foreign laws and regulations. To the knowledge of the Company, there is no unfair labor practice charge or complaint against the Company or any of the Subsidiaries pending before the National Labor Relations Board or any strike, picketing, boycott, dispute, slowdown or stoppage pending or threatened against or involving the Company or any of the Subsidiaries. Neither the Company nor any of the Subsidiaries is or ever have been a party to any collective bargaining agreement, and no collective bargaining agreement is currently being negotiated by the Company or any of the Subsidiaries. No material labor dispute with the employees of the Company or any of the Subsidiaries exists or, to the knowledge of the Company, is imminent.

(p) No "employee pension benefit plan," "employee welfare benefit plan" or "multi- employer plan" of the Company ("ERISA Plans") as such terms are defined in Sections 3(2), 3(1) and 3(37), respectively, of the Employee Retirement Income Security Act of 1974, as amended ("ERISA"), or any trust created thereunder has engaged in a "prohibited transaction" within the meaning of Section 406 of ERISA or Section 4975 of the Internal Revenue Code of 1986, as amended (the "Code") which could subject the Company to any material tax penalty on prohibited transactions and which has not adequately been corrected. No "accumulated funding deficiency" (as defined in Section 302 of ERISA) or any of the events set forth in Section 4043(b) of ERISA (other than events with respect to which the 30-day notice under Section 4043 of ERISA has been waived) has occurred with respect to any employee benefit plan which might reasonably be expected to have a Material Adverse Effect.

(q) Neither the Company or any of the Subsidiaries, nor any of its affiliates has taken or will take, directly or indirectly, any action designed to or which has constituted or which might be expected to cause or result in, under the Exchange Act or otherwise, stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Securities or otherwise.

(r) Except as described in or contemplated by the Offering Circular, each of the Company and the Subsidiaries (i) owns or has the right to use all patents, trademarks, service marks, trade names, copyrights, technology, and all licenses and rights with respect to the foregoing, used in the conduct of its business without, to the knowledge of the Company and the Subsidiaries, infringing upon the right of any person, corporation or other entity, except where the failure to so own or have such right would not, in the aggregate, have a Material Adverse Effect and (ii) has no reason to believe, and has not received any written notice, that the conduct of their respective businesses infringe or conflict with any such rights of others with respect to any of the foregoing.

(s) Each of the Company and the Subsidiaries has good and marketable title to, or valid and enforceable leasehold estates in, all items of real and personal property which are material to its business and/or reflected as owned by it in the financial statements included in the Offering Circular, in each case free and clear of all liens, charges, claims, encumbrances, pledges, security interests, defects and other restrictions except those disclosed in the Offering Circular or those which are not material in amount and do not materially adversely affect the use made or proposed to be made of such property.

(t) Arthur Andersen LLP are independent certified public accountants of the Company as required by the Securities Act and the Rules and Regulations.

(u) The Notes satisfy the eligibility requirements of Rule 144A(d)(3) under the Securities Act. The Common Stock is registered pursuant to Section

12(g) of the Exchange Act, and is approved for listing

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on the Nasdaq National Market under the symbol "HYBN." The Company has taken no action that was designed to terminate, or that is likely to have the affect of terminating, trading of the Common Stock on the Nasdaq National Market, nor has the Company received any notification that the Commission or the Nasdaq National Market is contemplating terminating such trading.

(v) Neither the Company nor any of the Subsidiaries has, nor, to the knowledge of the Company, has any officer, director or employee of the Company or any of the Subsidiaries or any other person acting on behalf of the Company or any of the Subsidiaries, for the benefit of the Company or any such Subsidiaries at any time during the last five years, (i) made any unlawful gift or contribution to any candidate for federal, state, local or foreign political office, or failed to disclose fully any such gift or contribution in violation of law, or (ii) made any payment to any federal, state, local or foreign governmental officer or official, which would be reasonably likely to subject the Company or any of the Subsidiaries to any damage or penalty in any civil, criminal or governmental litigation or proceeding (domestic or foreign). Each of the Company's and the Subsidiaries' internal accounting controls are sufficient to cause the Company and the Subsidiaries to comply in all material respects with the Foreign Corrupt Practices Act of 1977, as amended.

(w) [Intentionally omitted]

(x) The minute books of each of the Company and the Subsidiaries have been made available to the Initial Purchaser, summarize in all material respects all meetings and actions of the directors and stockholders of each of the Company and the Subsidiaries since the time of their respective incorporation.

(y) Neither the Company nor any of the Subsidiaries has been notified in writing that it is liable with respect to obligations under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, or any similar law ("Environmental Laws"), except for any liability as would not have a Material Adverse Effect, and it is not aware of any facts or circumstances which could reasonably be expected to result in any such liability. The Company and the Subsidiaries are in substantial compliance with all applicable existing Environmental Laws, except for such instances of non-compliance which would not have a Material Adverse Effect. The term "Hazardous Material" means (i) any "hazardous substance" as defined by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, (ii) any "hazardous waste" as defined by the Resource Conservation and Recovery Act, as amended, (iii) any petroleum or petroleum product, (iv) any polychlorinated biphenyl and (v) any pollutant or contaminant or hazardous, dangerous or toxic chemical, material, waste or substance regulation under or within the meaning of any other Environmental Law. To the Company's knowledge, no disposal, release or discharge of "Hazardous Material" has occurred on, in, at or about any of the facilities or properties of the Company or any of the Subsidiaries, except for any such disposal, release or discharge which is in compliance with Environmental Laws or which would not have a Material Adverse Effect. Except as described in the Offering Circular, to the Company's knowledge: (i) there has been no storage, disposal, generation, transportation, handling or treatment of hazardous substances or solid wastes by the Company or any of the Subsidiaries (or to the knowledge of the Company, any of its predecessors in interest) at, upon or from any of the property now or previously owned or leased by the Company or any of the Subsidiaries in violation of any applicable law, ordinance, rule, regulation, order, judgment, decree or permit or which would require remedial action which has not been taken, under any applicable law, ordinance, rule, regulation, order, judgment, decree or permit, except for such violations and failures to take remedial action which would not

result in, singularly or in the aggregate, a Material Adverse Effect; and (ii) there has been no material spill, discharge, leak, emission, injection, escape, dumping or release of any kind onto such property or into the environment surrounding such property by the Company or any of the Subsidiaries of any solid waste or Hazardous Materials, except for such spills, discharges, leaks, emissions, injections, escapes, dumping or releases which would not result in, singularly or in the aggregate, a Material Adverse Effect.

(z) The Company is not an "investment company" or a company controlled by an "investment company" or, to the Company's knowledge, an "affiliated person" of, or "promoter" or "principal

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underwriter" for, an "investment company" as such terms are defined in the Investment Company Act of 1940, as amended.

(aa) Neither the Company nor any affiliate (as such term is defined in Rule 501(b) under the Securities Act) of the Company has, directly or through any agent, sold, offered for sale, solicited offers to buy or otherwise negotiated in respect of, any "security" (as defined in the Securities Act), which is or will be integrated with the sale of the Notes in a manner that would require the registration of the Notes under the Securities Act.

(bb) None of the Company, any affiliate (as such term is defined in Rule 501(b) under the Securities Act) of the Company and any other person acting on its or their behalf has engaged, in connection with the Offering, in any form of general solicitation or general advertising within the meaning of Rule 502(c) under the Securities Act.

(cc) Assuming (A) the accuracy of the representations, warranties and agreements of the Initial Purchaser contained in Section 2 hereof and those contained in any Purchase Letter, (B) the due performance by the Initial Purchaser of the agreements set forth in Section 3 of this Agreement, (C) compliance by the Initial Purchaser with the offering and transfer procedures and restrictions described in the Offering Circular, (D) the accuracy of the representations and warranties made in accordance with this Agreement and the Offering Circular by purchasers to whom the Initial Purchaser initially resells Notes and (E) that purchasers to whom the Initial Purchaser initially resells Notes receive a copy of the Offering Circular prior to such sale, it is not necessary, in connection with the issuance and sale of the Notes and the offer, resale and delivery of the Notes in the manner contemplated by this Agreement and the Offering Circular, to register the Notes or the Conversion Shares under the Securities Act or to qualify the Indenture under the Trust Indenture Act.

2. Purchase by the Initial Purchaser.

(a) On the basis of the representations, warranties and agreements contained herein, and subject to the terms and conditions set forth herein, the Company agrees to issue and sell to the Initial Purchaser, and the Initial Purchaser agrees to purchase from the Company, the Firm Notes at a purchase price equal to 95% of the principal amount thereof.

(b) In addition, on the basis of the representations, warranties and agreements contained herein, and subject to the terms and conditions set forth herein, the Company hereby grants an option to the Initial Purchaser to purchase any or all of the Option Notes at a price equal to 95% of the principal amount thereof plus accrued interest from the Closing Date to the applicable Option Closing Date. Such option will expire 60 days after the date hereof, and may be exercised in whole or in part from time to time only for the purpose of covering over-allotments which may be made in connection with the offering and

distribution of the Firm Notes upon written notice by the Initial Purchaser to the Company setting forth the aggregate principal amount of Option Notes as to which the Initial Purchaser is then exercising the option and the time and date of delivery and payment therefor. Any such time and date of delivery and payment (an "Option Closing Date") shall be determined by the Initial Purchaser, but shall not be later than five full business days after the exercise of such option unless otherwise agreed by the Company and the Initial Purchaser; provided that the Option Closing Date may not occur prior to the Closing Date.

(c) The Initial Purchaser has advised the Company that it intends, as promptly as it deems appropriate after the Company shall have furnished the Initial Purchaser with copies of the Offering Circular, to resell the Notes pursuant to the procedures and upon the terms set forth in the Offering Circular and in compliance with applicable securities laws, including not to solicit any offer to buy or offer to sell the Notes by means of any form of general solicitation or general advertising (within the meaning of Regulation D under the Securities Act) or in any manner involving a public offering within the meaning of Section 4(2) of the Securities Act. The Initial Purchaser warrants and agrees with the Company that it has solicited and will solicit offers (the "Exempt Resales") for Notes only in compliance with applicable securities laws and only from, and will offer Notes only to, persons

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that it reasonably believes to be (i) "qualified institutional buyers" (as defined in Rule 144A under the Securities Act ("QIBs")) in transactions that meet the requirements for an exemption from the registration requirements of the Securities Act under Rule 144A or (ii) to a limited number of "institutional accredited investors" (as defined in Regulation D under the Securities Act and of the types described in the Offering Circular ("Institutional Accredited Investors")) that execute and deliver a letter containing certain representations and agreements in the form attached as Annex A of the Offering Circular. The QIBs and the Institutional Accredited Investors are referred to herein as "Eligible Purchasers." The Initial Purchaser represents and warrants that it is an Institutional Accredited Investor with such knowledge and experience in financial and business matters as are necessary to evaluate the merits and risks of an investment in the Notes, and is acquiring its interest in the Notes not with a view to the distribution or resale thereof, except resales in compliance with the registration requirements or exemption provisions of the Securities Act and that neither it, nor anyone acting on its behalf, will offer the Notes so as to bring the issuance and sale of the Notes within the provisions of Section 5 of the Securities Act. The Company acknowledges and agrees that the Initial Purchaser may sell Notes to any of its affiliates and any such affiliate may sell Notes purchased by it to the Initial Purchaser. The Initial Purchaser agrees that, prior to or simultaneously with the confirmation of sale by it to any purchaser of any of the Notes purchased from the Company pursuant hereto, such Initial Purchaser shall furnish to that purchaser a copy of the Offering Circular (and any amendment thereof or supplement thereto that the Company shall have furnished to the Initial Purchaser prior to the date of such confirmation of sale).

(d) On the Closing Date, the Company shall in consideration of the payment to it by the Initial Purchaser of \$.0001 per Warrant, issue to the Initial Purchaser the Warrants pursuant to the Warrant Agreement.

3. DELIVERY OF AND PAYMENT FOR THE NOTES. Delivery of, and payment for, the Firm Notes shall be made at 10:00 a.m., New York City time, on April 2, 1997, or at such other date or time as shall be agreed by the Initial Purchaser and the Company (such date and time being referred to herein as the "Closing Date"). Delivery of, and payment for, the Firm Notes and the Option Notes shall be made at the offices of Hale and Dorr LLP, 60 State Street, Boston, Massachusetts, or any such other place as shall be agreed by the Initial Purchaser and the

Company. On the Closing Date, the Company shall deliver or cause to be delivered to the Initial Purchaser certificates for the Firm Notes against payment to or upon the order of the Company of the purchase price by wire or book-entry transfer of immediately available funds. On each Option Closing Date, the Company shall deliver or cause to be delivered to the Initial Purchaser certificates for the Option Notes purchased thereat against payment to or upon the order of the Company of the purchase price by wire or book-entry transfer of immediately available funds. Upon delivery, the Notes shall be in global form, in such denominations and registered in such names, or otherwise, as the Initial Purchaser shall have requested in writing not less than two full business days prior to the Closing Date. The Company shall make the certificates for the Notes available for inspection by the Initial Purchaser in New York, New York, not later than one full business day prior to the Closing Date.

4. COVENANTS AND AGREEMENTS OF THE COMPANY. The Company covenants and agrees with the Initial Purchaser as follows:

(a) During the period ending upon the completion of the distribution of the Securities to advise the Initial Purchaser promptly and, if requested, confirm such advice in writing, of the happening of any event of which the Company is aware which makes any statement of a material fact made in the Offering Circular untrue or that requires the making of any additions to or changes in the Offering Circular (as amended or supplemented from time to time) in order to make the statements therein, in light of the circumstances under which they were made, not misleading; to advise the Initial Purchaser promptly upon learning of any order preventing or suspending the use of the Preliminary Offering Circular or the Offering Circular, of the suspension of the qualification of the Notes for offering or sale in any jurisdiction and of learning of the initiation or threatening of any proceeding for any such purpose; and to use its reasonable best efforts to prevent the issuance of any such order preventing or suspending the use of the Preliminary Offering Circular or of the Offering Circular or suspending any

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such qualification and, if any such suspension is issued, to use its reasonable best efforts to obtain the lifting thereof at the earliest possible time.

(b) To furnish promptly to the Initial Purchaser and counsel for the Initial Purchaser, without charge, as many copies of the Preliminary Offering Circular and the Offering Circular (and of any amendments or supplements thereto) as may be reasonably requested; to furnish to the Initial Purchaser on the date hereof a copy of the independent accountants' report included in the Offering Circular signed by the accountants rendering such report; and the Company hereby consents to the use of the Preliminary Offering Circular and the Offering Circular, and any amendments and supplements thereto, in connection with Exempt Resales of the Notes.

(c) If the delivery of the Offering Circular is required at any time in connection with the sale of the Notes and if at such time the Company becomes aware of any events that have occurred as a result of which the Offering Circular as then amended or supplemented would include an untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made when the Offering Circular is delivered, not misleading, or if for any other reason it shall be necessary at such time to amend or supplement the Offering Circular in order to comply with any law, to notify the Initial Purchaser immediately after learning thereof, and to promptly prepare and furnish to the Initial Purchaser an amended Offering Circular or a supplement to the Offering Circular so that statements in the Offering Circular, as so amended or supplemented, will not, in light of the circumstances under which they were made when it is so delivered, be misleading, or so that the Offering Circular will

comply with applicable law. The Initial Purchaser's delivery of any such amendment or supplement shall not constitute a waiver of any of the conditions set forth in Section 6 hereof.

(d) During the five-year period following the Closing Date, provided any of the Notes remain outstanding, to furnish to the Initial Purchaser all reports, documents, information and financial statements filed by the Company with the Commission pursuant to the Trust Indenture Act, the Exchange Act or the Rules and Regulations.

(e) During the two-year period following the Closing Date or the last Option Closing Date, if any, for so long as and at any time that it is not subject to Section 13 or 15(d) of the Exchange Act, upon request of any holder of the Notes, to furnish to such holder, and to any prospective purchaser or purchasers of the Notes designated by such holder, information satisfying the requirements of subsection (d)(4) of Rule 144(A) under the Securities Act. This covenant is intended to be for the benefit of the holders from time to time of the Notes, and prospective purchasers of the Notes designated by such holders.

(f) To use the proceeds from the sale of the Notes in the manner described in the Offering Circular under the caption "Use of Proceeds."

(g) [intentionally omitted]

(h) To use reasonable efforts to do and perform all things required to be done and performed under this Agreement by it that are within its control prior to or after the Closing Date and to use reasonable efforts to satisfy all conditions precedent on its part to the delivery of the Securities.

(i) Except following the effectiveness of the Shelf Registration Statement, to not authorize or knowingly permit any person acting on its behalf to solicit any offer to buy or offer to sell the Notes by means of any form of general solicitation or general advertising (as such terms are used in Regulation D under the Securities Act) or in any manner involving a public offering within the meaning of Section 4(2) of the Securities Act; provided, however, that nothing in this Section 4(i) shall impute any liability on the Company for any actions of the Initial Purchaser.

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(j) To not, and to use reasonable efforts to ensure that no affiliate (as such term is defined in Rule 501(b) under the Securities Act) of the Company will, offer, sell or solicit offers to buy or otherwise negotiate in respect of any "security" (as defined in the Securities Act) which could be integrated with the sale of the Notes in a manner that would require the registration of the Notes under the Securities Act.

(k) To not, so long as the Notes are outstanding, be or become (and use its best efforts not to be or become owned by) an open-end investment company, unit investment trust or face-amount certificate company that is or is required to be registered under Section 8 of the Investment Company Act, and to not be or become (and use its best efforts not to be or become owned by) a closed-end investment company required to be registered, but not registered thereunder.

(l) To cooperate with the Initial Purchaser and counsel for the Initial Purchaser to qualify the Notes for offering and sale under the securities laws of such jurisdictions as the Initial Purchaser may reasonably request and to comply with such laws so as to permit the continuance of sales and dealings therein in such jurisdictions for as long as may be necessary to complete the distribution of the Notes; provided, however, that in connection therewith the Company shall not be required to qualify as a foreign corporation

or to file a general consent to service of process or to subject it to taxation in any jurisdiction where it is not so qualified or so subject.

(m) To comply with the Registration Rights Agreement and all agreements set forth in the representation letters of the Company to The Depository Trust Company relating to the approval of the Notes for "book-entry" transfers.

(n) In connection with the Offering, until the Initial Purchaser shall have notified the Company of the completion of the resale of the Notes, to not and use reasonable efforts to not permit any affiliated purchasers (as defined in Rule 10b-6 under the Exchange Act), either alone or with one or more other persons, to bid for or purchase, for any account in which it or any of its affiliated purchasers has a beneficial interest, any Notes or Common Stock, or attempt to induce any person to purchase any Notes; and to not and use reasonable efforts to not permit any of its affiliated purchasers to make bids or purchases for the purpose of creating actual, or apparent, active trading in or of raising the price of the Notes.

(o) Prior to the Closing Date, to not issue any press release or other communication directly or indirectly or hold any press conference with respect to the Company, its condition, financial or otherwise, or earnings, business affairs or business prospects, without prior consultation with the Initial Purchaser, unless in the judgment of the Company and its counsel, and after notification to the Initial Purchaser, such press release or communication is required by law.

(p) To not take any action after the date hereof and prior to the execution and delivery of the Indenture which, if taken after such execution and delivery, would have violated any of the covenants contained in the Indenture.

(q) To not take any action prior to the Closing Date which in the Company's reasonable judgment would require the Offering Circular to be amended or supplemented pursuant to Section 4(c) hereof.

(r) Until April 1, 2005, to maintain a transfer agent and, if necessary under the laws of the jurisdiction of incorporation of the Company, a registrar (which may be the same entity as the transfer agent) for the Common Stock.

(s) For a period ending on the earlier of five (5) years from the date hereof or the date on which the aggregate principal amount of Notes outstanding is less than \$1,000,000, to use its best efforts to maintain the Portal (or after the Shelf Registration Statement, Nasdaq Stock Market (or another national securities exchange listing, if the Company is then listed thereon) listing of the Notes, to the extent outstanding, and the

Nasdaq National Market (or another national securities exchange or other Nasdaq Stock Market, if the Common Stock is then listed thereon) listing of the Common Stock.

(t) For three years from the date of issuance of the Notes, to not issue any security that is directly or indirectly convertible into or exchangeable for equity securities of the Company (or any security itself convertible into or exchangeable for equity securities of the Company) which provides for a conversion or exchange price which is calculated based upon the future market value of the Common Stock unless at the time of the issuance of the security an initial conversion or exchange price is established and the formula for calculating an adjusted conversion or exchange price expressly provides that such conversion or exchange price shall not be less than the

initial conversion or exchange price other than as a result of anti-dilution adjustments to the conversion or the exchange price resulting from issuance of equity securities by the Company.

5. Payment of Expenses.

(a) The Company hereby agrees to pay all of the following expenses and fees incident to the performance of the obligations of the Company under this Agreement, the Indenture, the Warrant Agreement and the Registration Rights Agreement, including, regardless of whether any sale of the Notes to the Initial Purchaser is consummated: (i) the fees and expenses of accountants and counsel for the Company, (ii) all costs and expenses incurred in connection with the preparation, duplication, printing (including mailing and handling charges), delivery and mailing (including the payment of postage with respect thereto) of each Preliminary Offering Circular and the Offering Circular and any amendments and supplements thereto, in quantities as hereinabove stated, (iii) the printing, engraving, issuance and delivery of the certificates representing the Notes, (iv) costs and expenses of travel, food and lodging of Company personnel in connection with the "road show," information meetings and presentations, (v) fees and expenses of the transfer agent and registrar, (vi) fees and expenses of the Trustee, including the Trustee's counsel, in connection with the Indenture and the Notes, (vii) the fees payable to the NASD, CUSIP Service Bureau and DTC incurred in connection with the listing of the Notes and the Conversion Shares for trading in the PORTAL Market, (viii) the fees payable to the Commission and the Nasdaq National Market in connection with the filing of a registration statement with respect to the Notes and the Conversion Shares and the listing of the Conversion Shares on the Nasdaq National Market, (ix) all costs of placing tombstone advertisements in The New York Times, The Wall Street Journal and The Investment Dealers Digest and (x) all other costs and expenses incident to the performance of its obligations hereunder which are not specifically otherwise provided for in this Section. In addition, at the Closing, the Company will pay or reimburse the Initial Purchaser for its reasonable and accountable out-of-pocket expenses in connection with the Offering of up to \$200,000, provided, the Initial Purchaser will not incur any such expenses in excess of \$15,000 (other than legal fees and expenses) without the Company's prior consent.

(b) If this Agreement is terminated for any reason, the Company shall reimburse and indemnify the Initial Purchaser for its actual accountable out-of-pocket expenses, up to the limits and subject to the conditions set forth in the preceding paragraph.

6. CONDITIONS OF THE INITIAL PURCHASER'S OBLIGATIONS. The obligations of the Initial Purchaser hereunder shall be subject to the continuing accuracy of the representations and warranties of the Company herein as of the date hereof and as of the Closing Date and each Option Closing Date, if any, as if they had been made on and as of the Closing Date or each Option Closing Date, as the case may be; and the performance by the Company on and as of the Closing Date and each Option Closing Date, if any, of its covenants and obligations hereunder and to the following further conditions:

(a) The Initial Purchaser shall not have advised the Company that the Offering Circular, or any supplement or amendment thereto, contains an untrue statement of fact which, in the opinion of Kelley Drye & Warren LLP, counsel for the Initial Purchaser, is material, or omits to state a fact which, in the opinion of Kelley Drye & Warren LLP, counsel for the Initial Purchaser, is material and is required to be stated therein or is

necessary to make the statements, in light of the circumstances under which they

were made, not misleading. No order suspending the sale of the Securities in any jurisdiction shall have been issued on either the Closing Date or the relevant Option Closing Date, if any, and no proceedings for that purpose shall have been instituted or shall be contemplated.

(b) On or prior to the Closing Date and each Option Closing Date, if any, the Initial Purchaser shall have received from Kelley Drye & Warren LLP such opinion or opinions with respect to the organization of the Company, the validity of the Securities, the Offering Circular and other related matters as the Initial Purchaser may request and Kelley Drye & Warren LLP shall have received such papers and information as they may reasonably request to enable it to pass upon such matters.

(c) On the Closing Date and each Option Closing Date, if any, the Initial Purchaser shall have received an opinion of Hale and Dorr LLP, counsel to the Company, dated the Closing Date, or such Option Closing Date, as the case may be, addressed to the Initial Purchaser and in form and substance satisfactory to the Initial Purchaser and Kelley Drye & Warren LLP, to the effect that:

i) (A) the Company has been duly incorporated and is validly existing as a corporation in corporate and tax good standing under the laws of its jurisdiction of incorporation, (B) the Company is duly qualified to do business and in good standing as a foreign corporation in the Commonwealth of Massachusetts and (C) the Company has all requisite corporate power and authority necessary to own or lease its properties and conduct its business as described in the Offering Circular;

ii) the Company's authorized capital stock as of December 31, 1996 is as set forth under the heading "Capitalization" in the Offering Circular;

iii) the Securities and all other securities issued or issuable by the Company which are described in the Offering Circular conform or, when issued and paid for, will conform in all material respects to the descriptions thereof contained in the Offering Circular; all issued and outstanding capital stock of the Company has been duly authorized and validly issued and is fully paid and non-assessable; to such counsel's knowledge, none of such securities were issued in violation of the preemptive rights of any securityholder of the Company or similar contractual rights granted by the Company or applicable securities laws; the Notes have been duly authorized and, when validly issued, delivered and paid for by the Initial Purchaser in the manner contemplated by this Agreement, will be duly authorized and outstanding obligations of the Company and enforceable against the Company in accordance with their terms, except to the extent that enforceability thereof may be limited by (1) bankruptcy, insolvency, reorganization, fraudulent transfer, moratorium or similar laws now or hereafter in effect relating to creditors' rights generally; or (2) general principles of equity (regardless of whether enforceability is considered in a proceeding at law or in equity); the Warrants have been duly authorized and, when validly issued, delivered and paid for in the manner contemplated by the Warrant Agreement, will be duly authorized, validly issued and outstanding obligations of the Company; the shares of Common Stock issuable upon conversion of the Notes and exercise of the Warrants have been duly authorized and reserved for issuance upon conversion of the Notes and exercise of the Warrants, as the case may be, and, when issued, delivered and paid for, will be validly issued, fully paid and nonassessable; and the holders of outstanding securities of the Company are not entitled to any preemptive rights with respect to the Securities pursuant to the Company's Certificate of Incorporation or By-laws, as amended, or any other instrument known to such counsel; all corporate action required to be taken for the authorization, issue and sale of the Securities has been duly and validly taken;

iv) to such counsel's knowledge, there is no action, arbitration, suit, or other proceeding pending or threatened in writing or any judgments outstanding against the Company or involving the properties or business of the Company which (A) questions the validity of the capital stock of the Company or of this Agreement, the Indenture, the Warrant Agreement, the Registration Rights Agreement or of any action taken or to be taken by the Company pursuant to or in connection with any of the foregoing or (B) is not disclosed in the Offering Circular;

v) the Company has the corporate power and authority to execute, deliver and perform each of this Agreement, the Indenture, the Warrant Agreement and the Registration Rights Agreement and to consummate the transactions provided for herein and therein; the execution and delivery of this Agreement, the Indenture, the Warrant Agreement and the Registration Rights Agreement have been duly authorized by all requisite corporate action on the part of the Company and each of this Agreement, the Indenture, the Warrant Agreement and the Registration Rights Agreement has been duly executed and delivered by the Company;

vi) the execution and delivery by the Company of this Agreement, the Indenture, the Warrant Agreement and the Registration Rights Agreement, the performance by the Company hereunder or thereunder, the compliance by the Company with the provisions thereof and the consummation by the Company of the transactions contemplated hereby and thereby, do not and will not conflict with or result in any breach or violation of, constitute a default under or result in the creation or imposition of any lien, charge, claim, pledge, security interest or other encumbrance upon any property or assets of the Company pursuant to the terms of (A) the charter or by-laws of the Company, (B) any license, contract, indenture, mortgage, deed of trust, voting trust agreement, stockholders' agreement, note, loan or credit agreement or other agreement or instrument listed as an exhibit to any of the Incorporated Documents or (C) any statute, rule or regulation (other than federal or state securities laws) or, to the best of such counsel's knowledge, any judgment, decree or order specifically naming the Company of any arbitrator, court, regulatory body or administrative agency or other governmental agency or body having jurisdiction over the Company or any of its activities or properties. Such counsel need express no opinion in this paragraph (vi) as to (A) state securities or Blue Sky laws or (B) with respect to matters of fact relating to compliance with any financial covenants, ratios or tests or any aspect of the financial condition or results of operations of the Company;

vii) to the knowledge of such counsel, based solely upon a review of the exhibits to the Incorporated Documents and a certificate of the Chief Executive Officer of the Company, the Company is not a party to or bound by any instrument, agreement or other arrangement providing for it to issue any capital stock, rights, warrants, options or other securities of the Company, except for this Agreement and as described in or contemplated by the Offering Circular, the Indenture and the Warrant Agreement;

viii) Based in so far as factual matters are concerned solely up on a certificate of the Company, no consent, approval, authorization or order of, and no filing with, any court, regulatory body, government agency or other body (other than such as have been or may be made or obtained under the Securities Act (including the filing of registration statements) and such as may be required under state securities or Blue Sky laws and such as may be required in order to list the Notes on Portal or the Conversion Shares on the Nasdaq

National Market, as to which no opinion need be rendered) is required in connection with the issuance of the Securities as contemplated by the Offering Circular or in connection with the performance of this Agreement, the Indenture, the Warrant Agreement and the Registration Rights Agreement, and the transactions contemplated hereby and thereby;

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ix) the statements in the Offering Circular under the captions "Description of Capital Stock" and "Certain United States Federal Income Tax Considerations" have been reviewed by such counsel, and insofar as they refer to statements of law, or descriptions of statutes, licenses, rules or regulations or legal conclusions, are correct in all material respects;

x) assuming the (A) accuracy of the representations, warranties and agreements of the Company contained in Sections 1(x) and (y) of this Agreement and of the Initial Purchaser in Section 2 of this Agreement and those contained in any Purchase Letter, (B) the due performance by the Company of the agreements set forth in Section 4 of this Agreement and of the Initial Purchaser in Section 3 this Agreement, (C) compliance by the Initial Purchaser with the offering and transfer procedures and restrictions described in the Offering Circular, (D) the accuracy of the representations and warranties made in accordance with this Agreement and the Offering Circular by purchasers to whom the Initial Purchaser initially resells Notes and (E) that purchasers to whom the Initial Purchaser initially resells Notes receive a copy of the Offering Circular prior to such sale, the offer and sale of the Notes to the Initial Purchaser and the initial resale of the Notes by the Initial Purchaser to Eligible Purchasers in the manner contemplated by this Agreement and the Offering Circular, are exempt from the registration requirements of the Securities Act, it being understood that such counsel need express no opinion as to any subsequent resale of any of the Securities, and the Indenture need not be qualified under the Trust Indenture Act with respect to such offer and sale; and

xi) the Company is not an "investment company," within the meaning of, is not registered or otherwise required to be registered under, and is not "controlled" by a company which is required to be registered under, the Investment Company Act of 1940, as amended.

In rendering such opinion, such counsel may: (A) state that its opinion is limited to matters governed by the federal laws of the United States of America, the state laws of the Commonwealth of Massachusetts and General Corporation Law Statute of the State of Delaware and (B) rely as to matters of fact solely on certificates and written statements of officers of the Company and certificates or other written statements of officers of departments of various jurisdictions having custody of documents respecting the corporate existence or good standing of the Company, provided, that copies of any such statements or certificates shall be delivered to the Initial Purchaser and Kelley Drye & Warren LLP, if requested.

(d) Hale and Dorr shall state in the opinion letter contemplated by Section 6(c) that such counsel has participated in conferences with officers and other representatives of the Company, representatives of the independent public accountants for the Company and representatives of Initial Purchaser, at which conferences the contents of the Offering Circular and related matters were discussed, and, although such counsel is not passing upon, and does not assume any responsibility for, the accuracy, completeness or fairness of the statements contained in the Offering Circular, subject to the foregoing and based on such

participation, inquiries and discussions, no facts have come to the attention of such counsel which has caused them to believe that the Offering Circular, as of its date, contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary to make the statements therein not misleading, except that such counsel need express no opinion or belief with respect to the financial statements and related notes, the pro forma financial information, or any other financial, statistical or accounting data, or any information relating to the Initial Purchaser or the method of distribution of the Notes by the Initial Purchaser included in the Offering Circular or excluded therefrom or the matters in the Offering Circular relating to intellectual property to which McDonnell, Boehman, Hulbert & Berghoff has provided to you a separate legal opinion);

(e) On or prior to the Closing Date and each Option Closing Date, if any, Kelley Drye & Warren LLP shall have been furnished such documents and certificates as they may reasonably require for the purpose of enabling them to review or pass upon the matters referred to in subsection (c) of this Section 6 or in

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order to evidence the accuracy, completeness or satisfaction of any of the representations, warranties or conditions of the Company herein contained.

(f) On and as of the Closing Date and each Option Closing Date, if any: (i) there shall have been no material adverse change involving a prospective change in the condition, financial or otherwise, prospects, stockholders' equity or the business activities of the Company and the Subsidiaries taken as a whole, whether or not in the ordinary course of business, from the latest dates as of which such condition is set forth in the Offering Circular, other than the continued incurrence of losses by the Company in the ordinary course of business; (ii) there shall have been no transaction, not in the ordinary course of business, entered into by the Company or any of the Subsidiaries, from the latest date as of which the financial condition of the Company and the Subsidiaries is set forth in the Offering Circular which is materially adverse to the Company and the Subsidiaries taken as a whole; (iii) neither the Company nor any of the Subsidiaries shall be in default under any provision of any instrument relating to any material outstanding indebtedness; (iv) no material amount of the assets of the Company or any of the Subsidiaries shall have been pledged or mortgaged, except as set forth in the Offering Circular; (v) no action, suit or proceeding, at law or in equity, shall have been pending or, to the knowledge of the Company, threatened or contemplated against the Company or any of the Subsidiaries, or affecting any of their respective properties or businesses, before or by any court or federal, state or foreign commission, board or other administrative agency wherein an unfavorable decision, ruling or finding may have a Material Adverse Effect, except as set forth in the Offering Circular; and (vi) no order suspending or preventing the sale of the Securities shall have been issued under the Securities Act and no proceedings therefor shall have been initiated or threatened or, to the knowledge of the Company, contemplated by the Commission or any state regulatory authority.

(g) On the Closing Date and each Option Closing Date, if any, the Initial Purchaser shall have received a certificate of the Company signed on behalf of the Company by the principal executive officer and by the chief financial or chief accounting officer of the Company, in their capacities as such, dated the Closing Date or such Option Closing Date, as the case may be, to the effect that each of such persons has carefully examined the Offering Circular, this Agreement, the Indenture and the Registration Rights Agreement, and that:

i) the representations and warranties of the Company in this

Agreement, the Indenture, the Warrant Agreement and the Registration Rights Agreement are true and correct, as if made on and as of the Closing Date or such Option Closing Date, as the case may be, and the Company has complied with all agreements and covenants and satisfied all conditions contained in this Agreement, the Indenture, the Warrant Agreement and the Registration Rights Agreement on its part to be performed or satisfied at or prior to the Closing Date or Option Closing Date, as the case may be;

ii) no stop order suspending the qualification or exemption from qualification of the Securities shall have been issued and no proceedings for that purpose shall have been commenced or, to the knowledge of the Company, be contemplated;

iii) since the date of the most recent financial statements included in the Offering Circular, there has been no material adverse change in the condition, financial or otherwise, business, prospects or results of operation of the Company and the Subsidiaries, taken as a whole, except as set forth in the Offering Circular;

iv) none of the Offering Circular or any amendment or supplement thereto includes any untrue statement of a material fact or omits to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading; and

v) subsequent to the respective dates as of which information is given in the Offering Circular: (a) neither the Company nor any of the Subsidiaries has incurred up to and including

the Closing Date or the Option Closing Date, as the case may be, other than in the ordinary course of its business, any material liabilities or obligations, direct or contingent, except as disclosed in the Offering Circular; (b) neither the Company nor any of the Subsidiaries has paid or declared any dividends or other distributions on its capital stock; (c) neither the Company nor any of the Subsidiaries has entered into any material transactions not in the ordinary course of business, except as disclosed in the Offering Circular; (d) there has not been any change in the capital stock (other than pursuant to the Company's stock option plan or stock purchase plan or the exercise of warrants outstanding on such respective dates) or the long term debt of the Company or any of the Subsidiaries; (e) neither the Company nor any of the Subsidiaries has sustained any material loss or damage to its property or assets, whether or not insured; (f) there is no litigation which is pending or, to the Company's knowledge, threatened or contemplated against the Company, any of the Subsidiaries or any affiliated party of any of the foregoing which would, if decided adversely, have a Material Adverse Effect and which is required to be set forth in an amended or supplemented Offering Circular which has not been set forth; and (g) there has occurred no event which would be required to be set forth in an amended or supplemented prospectus if the Offering Circular were a prospectus included in a registration statement on Form S-3, which has not been set forth in an amendment or supplement to the Offering Circular.

(h) On or before the date hereof the Initial Purchaser shall have received a letter, dated such date, addressed to the Initial Purchaser in form and substance satisfactory in all respects to the Initial Purchaser and Kelley Drye & Warren LLP, from Arthur Andersen LLP:

i) confirming that they are independent certified public accountants with respect to the Company within the meaning of the Securities Act and the Exchange Act and the applicable Rules and Regulations;

ii) stating that it is their opinion that the consolidated financial statements and supporting schedules of the Company and the Subsidiaries included in the Offering Circular or incorporated by reference therein comply as to form in all material respects with the applicable accounting requirements of the Securities Act;

iii) stating that, on the basis of procedures which included a reading of the latest available unaudited interim consolidated financial statements of the Company and the Subsidiaries (with an indication of the date of the latest available unaudited interim consolidated financial statements of the Company and the Subsidiaries), a reading of the latest available minutes of the stockholders and board of directors and the various committees of the board of directors of each of the Company and the Subsidiaries, consultations with officers and other employees of each of the Company and the Subsidiaries responsible for financial and accounting matters and other procedures specified by the American Institute of Certified Public Accountants for a review of interim financial information as described in SAS No. 71, Interim Financial Information, nothing has come to their attention which would lead them to believe that (A) at February 28, 1997, there has been any change in the stockholder's equity or long-term debt of the Company, or any decrease in the stockholders' equity or net current assets or net assets of the Company, as compared with amounts shown in the December 31, 1996 balance sheet included in the Offering Circular, other than as set forth in or contemplated by the Offering Circular, or, if there was any change or decrease, setting forth the amount of such change or decrease, (B) during the period from January 1, 1997 to February 28, 1997, there was any decrease in net revenues or net earnings, or net earnings per common share of the Company, in each case as compared with the corresponding period beginning January 1, 1996, other than as set forth in or contemplated by the Offering Circular, or, if there was any such decrease, setting forth the amount of such decrease, (C) at a specified date not more than five (5) days prior to the later of the date of this Agreement or the Offering Circular, there has been any change in the stockholders' equity or long-term debt

of the Company, or any decrease in the stockholders' equity or net current assets or net assets of the Company, as compared with amounts shown in the December 31, 1996 balance sheet included in the Offering Circular, other than as set forth in or contemplated by the Offering Circular, or, if there was any change or decrease, setting forth the amount of such change or decrease, and (D) during the period from January 1, 1997 to a specified date not more than five (5) days prior to the later of the date of this Agreement, there was any decrease in net revenues or net earnings or net earnings per common share of the Company, in each case as compared with the corresponding period beginning January 1, 1996, other than as set forth in or contemplated by the Offering Circular, or, if there was any such decrease, setting forth the amount of such decrease;

iv) stating that they have compared specific dollar amounts, numbers of shares, percentages of revenues and earnings, statements and/or other financial information pertaining to the Company and the Subsidiaries set forth in the Offering Circular in each case to the

extent that such amounts, numbers, percentages, statements and information may be derived from the general accounting records, including work sheets, of the Company and/or the Subsidiaries and excluding any questions requiring an interpretation by legal counsel, with the results obtained from the application of specified readings, inquiries and other appropriate procedures (which procedures need not constitute an examination in accordance with generally accepted auditing standards) set forth in the letter and found them to be in agreement; and

v) statements as to such other matters incident to the transaction contemplated hereby as the Initial Purchaser may reasonably request.

(i) On the Closing Date and each Option Closing Date, if any, the Initial Purchaser shall have received from Arthur Andersen LLP a letter, dated as of the Closing Date or such Option Closing Date, as the case may be, to the effect that they reaffirm that statements made in the letter furnished pursuant to subsection (h) of this Section 6, except that the specified date referred to shall be a date not more than five (5) days prior to the Closing Date or such Option Closing Date, as the case may be, to the further effect that they have carried out procedures as specified in clause (iii) of subsection (h) of this Section 6 with respect to certain amounts, percentages and financial information as specified by the Initial Purchaser and deemed to be a part of the Offering Circular and have found such amounts, percentages and financial information to be in agreement with the records specified in such clause (iii). If there is more than one Option Closing, the obligations of the Company pursuant to this Section 6(i) shall be conditioned upon the payment by the Initial Purchaser of the fees and expenses of Arthur Andersen LLP incurred to provide the foregoing letter at any Option Closing after the initial Option Closing.

(j) On the Closing Date and each Option Closing Date, if any, there shall have been duly tendered to the Initial Purchaser the appropriate principal amount of Notes.

(k) The Notes shall have been approved by the National Association of Securities Dealers, Inc. for trading in the PORTAL market.

(l) Trading in the Common Stock shall not have been suspended by the Nasdaq National Market at any time after February 28, 1996 (other than for a period not in excess of one hour as a result of announcing the transaction contemplated by this Agreement).

(m) Subsequent to the execution and delivery of this Agreement there shall not have occurred any of the following: (i) trading in securities generally on the New York Stock Exchange, the American Stock Exchange or the over-the-counter market shall have been suspended, or minimum prices shall have been established on either of such exchanges or such market by the Commission, by such exchange or by any other regulatory body or governmental authority having jurisdiction, or trading in securities of the Company on any exchange or in the over-the-counter market shall have been suspended or (ii) any moratorium on commercial banking activities shall have been declared by Federal or New York State authorities or (iii) an outbreak or

escalation of hostilities or a declaration by the United States of a national emergency or war or such a material adverse change in general economic, political or financial conditions (or the effect of international conditions on the financial markets in the United States shall be such) as to make it, in the judgment of the Initial Purchaser, impracticable or inadvisable to proceed with the offering or the delivery of the Notes on the terms and in the manner

contemplated in the Offering Circular.

(n) The Company and the Initial Purchaser shall have executed and delivered the Warrant Agreement and the Registration Rights Agreement on the date of this Agreement.

(o) The Indenture shall have been duly executed and delivered by the Company and the Trustee, and the Notes shall have been duly executed and delivered by the Company and authenticated by the Trustee.

(p) If any event shall have occurred that requires the Company under Section 4(c) hereof to prepare an amendment or supplement to the Offering Circular, such amendment or supplement shall have been prepared, the Initial Purchaser shall have been given a reasonable opportunity to comment thereon, and copies thereof delivered to the Initial Purchaser.

(q) There shall not have occurred any invalidation of Rule 144A under the Securities Act by any court or any withdrawal or proposed withdrawal of any rule or regulation under the Securities Act or the Exchange Act by the Commission or any amendment or proposed amendment thereof by the Commission which in the reasonable and good faith judgment of the Initial Purchaser would materially impair the ability of the Initial Purchaser to purchase, hold or effect resales of the Notes as contemplated hereby.

(r) On or prior to the Closing Date and each Option Closing Date, if any, the Initial Purchaser shall have received a certificate signed on behalf of the Company by the secretary of the Company, in his capacity as such, dated the Closing Date or such Option Closing Date, as the case may be, as to:

i) the absence of any contemplated proceeding for the merger, consolidation, liquidation or dissolution of the Company or any Subsidiary, as the case may be, or the sale of all or substantially all of its assets;

ii) the due adoption and full force and effect of the By-laws of the Company (with a copy of the By-laws attached);

iii) resolutions adopted by the Board of Directors of the Company and/or a committee thereof authorizing the Offering and the consummation of the transactions contemplated by this Agreement, the Indenture, the Warrant Agreement and the Registration Rights Agreement (with copies of such resolutions attached); and

iv) the incumbency, authorization and signatures of those officers of the company signing this Agreement, the Indenture, the Warrant Agreement, the Registration Rights Agreement and/or any certificate delivered at Closing.

(s) On the Closing Date and each Option Closing Date, if any, the Initial Purchaser shall have received an opinion of McDonnell, Boehman, Hulbert & Berghoff, United States patent counsel for the Company, dated the Closing Date or such Option Closing Date, as the case may be, addressed to the Initial Purchaser and in form and substance satisfactory to the Initial Purchaser and Kelley Drye & Warren LLP to the effect that:

i) Such counsel has reviewed the statements in the Offering Circular, set forth in the penultimate paragraph under the caption "Offering Circular Summary--The Company," in the

Trade Secrets and Licenses" (other than the statements set forth in paragraphs 12 and 13 thereof), and insofar as such statements concern patents, patent applications or other intellectual property, such counsel does not believe that, the above-referenced paragraphs contain any untrue statement of a material fact or omit to state any material fact necessary to make the statements therein, in light of the circumstances in which they were made, not misleading. Further, insofar as such statements constitute summaries of matters of law, those statements are accurate statements or summaries of the matters set forth therein in all material respects.

ii) Such counsel has no knowledge of any facts that would form a basis for the belief that the Company or any of the Subsidiaries lack any rights or licenses to use all patents and know-how necessary to conduct the business as proposed to be conducted in the United States by the Company and the Subsidiaries as described in the Offering Circular.

iii) No facts have come to the attention of such counsel that would form a basis for the belief that any of the United States patents owned by the Company or any of the Subsidiaries is unenforceable or invalid. Such counsel is not aware of any patents of others which are or would be infringed by specific, current or proposed products or processes referred to in the Offering Circular in such manner as to materially and adversely affect the Company or any of the Subsidiaries; such counsel has no knowledge of any pending or threatened action, suit, proceeding or claim by others that the Company or any of the Subsidiaries is infringing any patent, trade secret or other intellectual property which could result in a Material Adverse Effect.

iv) Other than as described in the Offering Circular, such counsel has no knowledge of any legal or governmental proceedings pending relating to the United States patent rights of the Company, other than U.S. Patent and Trademark Office ("PTO") review of pending applications for patents, including appeal proceedings, and no such proceedings are threatened or contemplated by United States governmental authorities or others, except that Hybridon has received a co-exclusive license from the NIH under NIH's patents related to certain oligonucleotide phosphorothioates, and pre-existing licensees have appealed NIH's decision to grant this license.

v) Prior to filing the patent applications referred to in the Offering Circular, such counsel conducted investigations of the published prior art relating to the inventions claimed in such applications. Based on the information obtained in such investigations, such patent applications disclosed all pertinent prior art references known to such counsel. To the best of such counsel's knowledge, all information submitted to the PTO in such patent applications, and in connection with the prosecution thereof, was complete and accurate. Each of the patents and patent applications referred to in the Offering Circular as being owned by the Company has been assigned to the Company by the inventors named therein; each of such patent applications has been filed with the PTO in accordance with the rules and regulations of the PTO, except for such failures as will not individually or in the aggregate result in a Material Adverse Effect, and substantially all of such applications have been awarded a filing date by the PTO.

In rendering such opinion, such counsel shall state the it has no reason to believe that the Company's pending patent applications will not eventuate in issued patents or that the patents issued to the Company or any patents to be issued in respect of the pending patent applications of the Company will not be valid or will not afford the Company reasonable patent protection relative to the subject matter thereof.

(t) On the Closing Date, Arthur Andersen LLP shall have delivered to the Initial Purchaser an unqualified Report of Independent Public Accountants

with respect to the Company's December 31, 1996 financial statements, which shall contain no reference to the Company's ability to continue as a going concern.

(u) On the Closing Date and each Option Closing Date, if any, the Initial Purchaser shall have received an opinion of Brobeck, Phleger & Harrison LLP, counsel to the Company, dated the Closing Date, or such Option Closing Date, as the case may be, addressed to the Initial Purchaser and in form and substance satisfactory to the Initial Purchaser and Kelley Drye & Warren LLP, to the effect that assuming each of this Agreement, the Indenture, the Warrant Agreement and the Registration Rights Agreement has been duly authorized, executed and delivered by the Company and by each other party thereto, the same constitutes a legal, valid and binding agreement of the Company enforceable against the Company in accordance with its terms; except as enforceability thereof may be limited by applicable bankruptcy, insolvency, reorganization, fraudulent transfer, moratorium or other similar laws now or hereafter in effect relating to or affecting creditors' rights generally or by general equitable principles and except that such counsel need express no opinion as to the enforceability of any rights to indemnification, contribution or liquidated damages, or any provisions relating to consent to jurisdiction or choice of forum contained in this Agreement, the Indenture, the Warrant Agreement or the Registration Rights Agreement.

All opinions, letters, evidence and certificates mentioned above or elsewhere in this Agreement shall be deemed to be in compliance with the provisions hereof only if they are in form and substance reasonably satisfactory to the Initial Purchaser.

If any condition to the Initial Purchaser's obligations hereunder to be fulfilled prior to or at the Closing Date or the relevant Option Closing Date, as the case may be, is not so fulfilled, the Initial Purchaser may terminate its obligations pursuant to Section 9 or, if the Initial Purchaser so elects, it may waive any such conditions which have not been fulfilled or extend the time for their fulfillment.

7. Indemnification.

(a) The Company agrees to indemnify and hold harmless the Initial Purchaser (for purposes of this Section 7, "Initial Purchaser" shall include the officers, directors, partners, employees and agents, and each person, if any, who controls the Initial Purchaser ("controlling person") within the meaning of Section 15 of the Securities Act or Section 20(a) of the Exchange Act, from and against any and all losses, claims, damages, expenses or liabilities, joint or several (and actions, proceedings, suits and litigation in respect thereof), whatsoever, as the same are incurred, to which the Initial Purchaser or any such controlling person may become subject, under the Securities Act, the Exchange Act or any other statute or at common law or otherwise insofar as such losses, claims, damages, expenses or liabilities arise out of or are based upon any untrue statement or alleged untrue statement of a material fact contained in any Preliminary Offering Circular or the Offering Circular (as from time to time amended and supplemented) or arise out of or are based upon the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein in the light of the circumstances under which they were made, not misleading; provided, however, that the Company shall not be liable in any such case to the extent that any such loss, claim, damage, expense or liability arises out of or is based upon any untrue statement or alleged untrue statement or omission or alleged omission made in any Preliminary Offering Circular or the Offering Circular or any such amendment or supplement in reliance upon and in conformity with Initial Purchaser's Information and provided, further, that the Company shall not be liable to the Initial Purchaser

under the indemnity agreement in this subsection (a) (i) with respect to any Preliminary Offering Circular to the extent that any such loss, liability, claim, damage or expense of the Initial Purchaser arises out of a sale of the Notes by the Initial Purchaser to a person to whom there was not sent or given, at or prior to the written confirmation of such sale, a copy of the Offering Circular (or of the Offering Circular as then amended or supplemented) if the Company has previously furnished copies thereof to the Initial Purchaser a reasonable time in advance and the loss, liability, claim, damage or expense of the Initial Purchaser results from an untrue statement or alleged untrue statement or omission or alleged omission of a material fact contained in the Preliminary Offering Circular which was corrected in the Offering Circular (or the Offering Circular as amended or supplemented) or (ii) to the extent that any such loss, claim, damage, expense or liability arises out of or is based upon any action or failure to act by the Initial Purchaser that is found in a final judicial determination (or a settlement tantamount thereto) to constitute

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bad faith, willful misconduct or gross negligence on the part of the Initial Purchaser. The indemnity agreement in this subsection (a) shall be in addition to any liability which the Company may have at common law or otherwise.

(b) The Initial Purchaser agrees to indemnify and hold harmless the Company, each of its directors, each of its officers and each other person, if any, who controls the Company within the meaning of the Securities Act, to the same extent as the foregoing indemnity from the Company to the Initial Purchaser, but only with respect to statements or omissions, if any, made in conformity with the Initial Purchaser's Information in any Preliminary Offering Circular or the Offering Circular or any amendment thereof or supplement thereto.

(c) Promptly after receipt by an indemnified party under this Section 7 of notice of the commencement of any action, suit or proceeding, such indemnified party shall, if a claim in respect thereof is to be made against one or more indemnifying parties under this Section 7, notify each party against whom indemnification is to be sought in writing of the commencement thereof (but the failure to notify an indemnifying party shall not relieve it from any liability which it may have under Sections 7(a) or (b) unless and to the extent that it has been prejudiced in a material respect by such failure or from the forfeiture of substantial rights and defenses). In case any such action, suit or proceeding is brought against any indemnified party, and it notifies an indemnifying party or parties of the commencement thereof, the indemnifying party or parties will be entitled to participate therein, and to the extent it may elect by written notice delivered to the indemnified party promptly after receiving the aforesaid notice from such indemnified party, to assume the defense thereof with counsel reasonably satisfactory to such indemnified party, which may be the same counsel as counsel to the indemnifying party. Notwithstanding the foregoing, the indemnified party or parties shall have the right to employ its or their own counsel in any such case but the fees and expenses of such counsel shall be at the expense of such indemnified party or parties unless (i) the employment of such counsel shall have been authorized in writing by the indemnifying parties in connection with the defense of such action at the expense of the indemnifying party, (ii) the indemnifying parties shall not have employed counsel reasonably satisfactory to such indemnified party to take charge of the defense of such action within a reasonable time after notice of commencement of the action or (iii) such indemnified party or parties shall have reasonably concluded, after consultation with counsel to such indemnified party or parties, that a conflict of interest exists which makes representation by counsel chosen by the indemnifying party not advisable (in which case the indemnifying parties shall not have the right to direct the defense of such action on behalf of the indemnified party or parties), in any of which events such fees and expenses of one additional counsel shall be borne by the indemnifying parties. In no event shall the indemnifying parties be liable

for fees and expenses of more than one counsel (in addition to any local counsel) separate from their own counsel for all indemnified parties in connection with any one action or separate but similar or related actions in the same jurisdiction arising out of the same general allegations or circumstances. Anything in this Section 7 to the contrary notwithstanding, an indemnifying party shall not be liable for any settlement of any claim or action effected without its written consent.

(d) In order to provide for just and equitable contribution in any case in which (i) an indemnified party makes claim for indemnification pursuant to this Section 7, but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case notwithstanding the fact that the express provisions of this Section 7 provide for indemnification in such case, or (ii) contribution under the Securities Act may be required, then each indemnifying party, in lieu of indemnifying such indemnified party, shall contribute to the amount paid as a result of such losses, claims, damages, expenses or liabilities (or actions, suits, proceedings or litigation in respect thereof) (A) in such proportion as is appropriate to reflect the relative benefits received by each of the contributing parties, on the one hand, and the party to be indemnified on the other hand, from the offering of the Notes or (B) if the allocation provided by clause (A) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of each of the contributing parties, on the one hand, and the party to be indemnified, on the other hand, in connection with the statements or omissions that resulted in such losses, claims, damages, expenses or liabilities, as well as any other relevant equitable considerations. The relative benefits received by the Company, on the one hand, and the Initial Purchaser, on the other, shall be deemed to be in the same proportion as the total net proceeds from the offering of the Notes (before deducting expenses) bear to the total discounts

received by the Initial Purchaser hereunder, in each case as set forth in the table on the Cover Page of the Offering Circular. Relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company or by the Initial Purchaser, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such untrue statement or omission. The amount paid or payable by an indemnified party as a result of the losses, claims, damages, expenses or liabilities (or actions, suits, proceedings or litigation in respect thereof) referred to above in this subsection (d) shall be deemed to include any legal or other expenses reasonably incurred by such indemnified party in connection with investigating, preparing or defending any such action, claim, suit, proceeding or litigation. Notwithstanding the provisions of this subsection (d), the Initial Purchaser shall not be required to contribute any amount in excess of the discount applicable to the Notes purchased by the Initial Purchaser hereunder. No person guilty of fraudulent misrepresentation (within the meaning of Section 12(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 7, each person, if any, who controls the Company within the meaning of the Securities Act, each executive officer of the Company and each director of the Company shall have the same rights to contribution as the Company, subject in each case to this subsection (d). Any party entitled to contribution will, promptly after receipt of notice of commencement of any action, suit, proceeding or litigation against such party in respect to which a claim for contribution may be made against another party or parties under this subsection (d), notify such party or parties from whom contribution may be sought, but the omission so to notify such party

or parties shall not relieve the party or parties from whom contribution may be sought from any obligation it or they may have hereunder or otherwise than under this subsection (d), or to the extent that such party or parties were not adversely affected by such omission. The contribution agreement set forth above shall be in addition to any liabilities which any indemnifying party may have at common law or otherwise.

8. REPRESENTATIONS AND AGREEMENTS TO SURVIVE DELIVERY. All representations, warranties and agreements contained in this Agreement or contained in certificates of officers of the Company submitted pursuant hereto shall be deemed to be representations, warranties and agreements at the Closing Date and each Option Closing Date, as the case may be, and the agreements of the Company and the provisions with respect to the payment of expenses contained in Sections 5 and 9 and the respective indemnity agreements contained in Section 7 hereof shall remain operative and in full force and effect regardless of any investigation made by or on behalf of the Initial Purchaser, the Company, any of the Subsidiaries or any controlling person, and shall survive termination of this Agreement or the issuance and delivery of the Notes to the Initial Purchaser.

9. Termination.

(a) Subject to subsection (b) of this Section 9, the Initial Purchaser shall have the right to terminate this Agreement (i) if any domestic or international event or act or occurrence has disrupted, or in the Initial Purchaser's reasonable and good faith opinion will in the immediate future disrupt the United States financial markets; or (ii) if any material adverse change in the United States financial markets shall have occurred; or (iii) if trading on the New York Stock Exchange, the American Stock Exchange or in the over-the-counter market shall have been suspended, or minimum or maximum prices for trading shall have been fixed, or maximum ranges for prices for securities shall have been required on the over-the-counter market by the NASD or by order of the Commission or any other government authority having jurisdiction; or (iv) if the United States shall have become involved in a war or major hostilities, or there shall have been an escalation in an existing war or major hostilities, or a national emergency shall have been declared in the United States; or (v) if a banking moratorium has been declared by a state or federal authority; or (vi) if a moratorium in foreign exchange trading has been declared; or (vii) if the Company shall have sustained a loss material to the Company by fire, flood, accident, hurricane, earthquake, theft, sabotage or other calamity or malicious act which, whether or not such loss shall have been insured, will, in the Initial Purchaser's reasonable and good faith opinion, make it inadvisable to proceed with the delivery of the Securities; or (viii) if there shall have been such a material adverse change in the general market, political or economic conditions in the United States or elsewhere, as in the Initial Purchaser's reasonable and good faith judgment would make it inadvisable to proceed with the offering, sale and/or delivery of the Notes.

(b) If this Agreement is terminated by the Initial Purchaser in accordance with the provisions of Section 9(a) or 10 hereof or if this Agreement shall not be carried out within the time specified herein, or any extension thereof granted to the Initial Purchaser, by reason of any failure on the part of the Company to perform any undertaking or satisfy any condition of this Agreement by it to be performed or satisfied (including, without limitation, pursuant to Section 6, 9 or 10 hereof), then the Company shall promptly reimburse and indemnify the Initial Purchaser for all of its out-of-pocket expenses, including the fees and disbursements of counsel for the Initial Purchaser (less amounts previously paid pursuant to Section 5), up to \$200,000. Notwithstanding any contrary provision contained in this Agreement, any election

hereunder or any termination of this Agreement (including, without limitation, pursuant to Sections 6, 9 and 10 hereof), and whether or not this Agreement is otherwise carried out, the provisions of Section 5 and Section 7 shall not be in any way affected by such election or termination or failure to carry out the terms of this Agreement or any part hereof.

10. DEFAULT BY THE COMPANY. If the Company shall fail at the Closing Date or any Option Closing Date, as applicable, to sell and deliver the number of Securities which it is obligated to sell hereunder on such date, then the obligations of the Initial Purchaser under this Agreement shall terminate (or, if such default shall occur with respect to any Option Securities to be purchased on an Option Closing Date, the Initial Purchaser may, at its option, by notice from the Initial Purchaser to the Company, terminate the Initial Purchaser's obligation to purchase Option Notes from the Company on such date) without any liability on the part of any non-defaulting party other than pursuant to Sections 5, 7 and 9 hereof. No action taken pursuant to this Section 10 shall relieve the Company from liability, if any, in respect of such default.

11. NOTICES. All notices and communications hereunder, except as herein otherwise specifically provided, shall be given in writing and shall be deemed to have been duly given if mailed or transmitted by any standard form of telecommunication and shall be effective upon actual receipt. Notices to the Initial Purchaser shall be directed to it at Forum Capital Markets L.P., 53 Forest Avenue, Old Greenwich, Connecticut 06870, Attention: Mr. C. Keith Hartley, with a copy to Kelley Drye & Warren LLP, Two Stamford Plaza, 281 Tresser Boulevard, Stamford, Connecticut 06901, Attention: Jay R. Schifferli, Esq. Notices to the Company shall be directed to the Company at 620 Memorial Drive, Cambridge, Massachusetts 02139, Attention: President, with a copy to Hale and Dorr LLP, 60 State Street, Boston, Massachusetts 02109, Attention: David E. Redlick, Esq.

12. PARTIES. This Agreement shall inure solely to the benefit of and shall be binding upon the Initial Purchaser, the Company and the controlling persons, directors and officers referred to in Section 7 hereof, and their respective successors, legal representatives and assigns, and no other person shall have or be construed to have any legal or equitable right, remedy or claim under or in respect of or by virtue of this Agreement or any provisions herein contained. No purchaser of Notes from the Initial Purchaser shall be deemed to be a successor by reason merely of such purchase.

13. CONSTRUCTION. This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of New York without giving effect to choice of law or conflict of laws principles.

14. COUNTERPARTS. This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, and all of which taken together shall be deemed to be one and the same instrument.

15. ENTIRE AGREEMENT; AMENDMENTS. This Agreement constitutes the entire agreement of the parties hereto and supersedes all prior written or oral agreements, understandings and negotiations with respect to the subject matter hereof, including, without limitation, the Letter of Intent between the parties dated March 13, 1997. This Agreement may not be amended except in a writing signed by the Initial Purchaser and the Company.

If the foregoing correctly sets forth the understanding between the Initial Purchaser and the Company, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement among us.

Very truly yours,

HYBRIDON, INC.

By: /s/ E. Andrews Grinstead, III

Name: E. Andrews Grinstead, III
Title: Chairman, President and Chief
Executive Officer

Confirmed and accepted as of
the date first above written.

FORUM CAPITAL MARKETS L.P.

By: /s/ C. Keith Hartley

Name: C. Keith Hartley
Title: Senior Managing Director

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ANNEX I

Subsidiaries

Name	Jurisdiction Of Incorporation	Ownership Percentage	Jurisdictions in which Qualified to Conduct Business
-----	-----	-----	-----

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HYBRIDON, INC.,

Company

and

STATE STREET BANK AND TRUST COMPANY

Trustee

INDENTURE

Dated as of March 26, 1997

=====

\$60,000,000

9% Convertible Subordinated Notes Due 2004

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INDENTURE dated as of March 26, 1997 between Hybridon, Inc., a Delaware corporation, and State Street Bank and Trust Company, as trustee.

Each party agrees as follows for the benefit of the other party and for the equal and ratable benefit of the registered holders of the Company's 9% Convertible Subordinated Notes due April 1, 2004 (the "Notes"):

ARTICLE 1.

DEFINITIONS AND INCORPORATION BY REFERENCE

SECTION 1.1 DEFINITIONS.

- - - - -

"AFFILIATE" of a Person means (i) any other Person which, directly or indirectly, is in control of, is controlled by or is under common control with such specified Person. For the purpose of this definition, "control" of a Person means the power, directly or indirectly, to direct or cause the direction of the management and policies of such Person, whether by ownership of voting securities, by contract or otherwise, and "CONTROLLING" or "CONTROLLED" have corresponding meanings.

"AGENT" means any Registrar, Paying Agent or Conversion Agent.

"BOARD OF DIRECTORS" means the Board of Directors of the Company or any duly authorized committee thereof, except that, for purposes of the definitions of "CHANGE OF CONTROL" and "CONTINUING DIRECTORS," "BOARD OF DIRECTORS" means only the Board of Directors of the Company.

"BUSINESS DAY" means any day other than a Saturday, Sunday or other day on which banking institutions in the city of New York, New York or Boston, Massachusetts are required or authorized by law or other governmental action to be closed.

"CAPITAL STOCK" of any Person means the Common Stock or Preferred Stock of such Person. Unless otherwise stated herein or the context otherwise requires, "CAPITAL STOCK" means Capital Stock of the Company.

"CHANGE OF CONTROL" means the occurrence of any of the following events after the date of this Indenture: (i) any Person (including, without limitation, any "person" or "group" within the meaning of Section 13(d) or 14(d) of the Exchange Act) becomes the direct or indirect beneficial owner of shares of Capital Stock representing greater than 50% of the combined voting power of all outstanding shares of Capital Stock entitled to vote in the election of directors under ordinary circumstances; (ii) the Company consolidates with or merges into any other Person and the outstanding Common Stock is changed or exchanged as a result (except for any merger or consolidation in which the stockholders of the Company shall continue to hold

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shares of Capital Stock representing greater than 50% of the combined voting power of the Capital Stock of the surviving entity and members of the Board of Directors immediately prior to such merger or consolidation comprise a majority of the board of directors of the surviving entity immediately after such merger or consolidation), (iii) sale, transfer or other disposition of all or substantially all of the collective assets of the Company and its Subsidiaries in a single transaction or series of related transactions, (iv) at any time Continuing Directors cease to constitute a majority of the Board of Directors then in office; or (v) on any day the Company makes any distribution or distributions of cash, Property or securities (other than regular quarterly dividends, Common Stock, Preferred Stock which is substantially equivalent to Common Stock or rights to acquire Common Stock or Preferred Stock which is substantially equivalent to the Common Stock) to holders of Common Stock, or the Company or any of its Subsidiaries purchases or otherwise acquires Common Stock, and the sum of the Fair Market Value of such distribution or purchase on the date the same is made, plus the Fair Market Value, when made, of all other such distributions and purchases which have occurred during the 12-month period ending on such date, in each case expressed as a percentage of the aggregate Current Market Price of all the shares of Common Stock outstanding at the close of business on the last Trading Day prior to the date of each such distribution or purchase, exceeds 50%.

"COMMON STOCK" of any Person other than the Company means the common equity (however designated), including, without limitation, common stock or partnership or membership interests of, or participations or interests in such Person (or equivalents thereof). "COMMON STOCK" of the Company means the Common Stock, par value \$.001 per share, of the Company, any successor class or classes of common equity (however designated) of the Company into or for which such Common Stock may hereafter be converted, exchanged or reclassified and any class or classes of common equity (however designated) of the Company which may be distributed or issued with respect to such Common Stock or successor class of classes to holders thereof generally. Unless otherwise stated herein or the context requires otherwise, "COMMON STOCK" means Common Stock of the Company.

"COMPANY" means Hybridon, Inc., a Delaware corporation, until a successor replaces it in accordance with the applicable provisions of this Indenture and, thereafter, "COMPANY" shall mean such successor.

"CONTINUING DIRECTORS" means any member of the Board of Directors who (i) is a member of the Board of Directors on the date hereof or (ii) was nominated for election or elected to the Board of Directors with the affirmative vote of at least two-thirds of such members and members of the Board of Directors who were previously so nominated or elected.

"CORPORATE TRUST OFFICE" of the Trustee means the principal office at which the Trustee conducts its corporate business, initially at Two International Place, 4th Floor, Boston, Massachusetts 02110.

"CURRENT MARKET PRICE" means, when used with respect to any security as of any date, the last sale price, regular way, or, in case no such sale takes place on such date, the average of the closing bid and asked prices, regular way, of such security in either case as reported for

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consolidated transactions on the New York Stock Exchange or, if such security is not listed or admitted to trading on the New York Stock Exchange, as reported for consolidated transactions with respect to securities listed on the principal national securities exchange on which such security is listed or admitted to trading or, if such security is not listed or admitted to trading on any national securities exchange, as reported on the Nasdaq National Market, or, if such security is not listed or admitted to trading on the Nasdaq National Market, as reported on the Nasdaq SmallCap Market, or if such security is not listed or admitted to trading on any national securities exchange or the Nasdaq National Market or the Nasdaq SmallCap Market, the average of the high bid and low asked prices of such security in the over-the-counter market as reported by the National Association of Securities Dealers, Inc. Automated Quotations System or such other system then in use or, if such security is not quoted by any such organization, the average of the closing bid and asked prices of such security furnished by a New York Stock Exchange member firm selected by the Company. If such security is not quoted by any such organization and no such New York Stock Exchange member firm is able to provide such prices, the Current Market Price of such security shall be the Fair Market Value thereof.

"DEFAULT" means any event which is, or with the passage of time or the giving of notice or both would be, an Event of Default.

"DEPOSITARY" means, with respect to the Notes issued in global form, the Trustee and any successor entity thereto or such other Person as appointed by the Company from time to time in accordance with the provisions of this Indenture.

"DESIGNATED TRANSACTIONS" means those transactions identified by the Company as related party transactions in filings with the Commission made prior to the date of this Indenture; provided, however, the amendment or modification of the terms of any such transaction by the Company after the date of the most recent filing by the Company with the Commission prior to the date of this Indenture shall be deemed to be new transactions for purposes of this Indenture.

"EXCHANGE ACT" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

"FAIR MARKET VALUE" means, at any date as to any asset, Property or right (including, without limitation, Capital Stock of any Person, evidences of indebtedness or other securities, but excluding cash), the fair market value of

such item as determined in good faith by the Board of Directors, whose determination shall be conclusive; provided, however, that such determination is described in an Officers' Certificate filed with the Trustee and that, if there is a Current Market Price for such item on such date, "FAIR MARKET VALUE" means such Current Market Price (without giving effect to the last sentence of the definition thereof).

"GAAP" means, as of any date, generally accepted accounting principles in the United States and does not include any interpretations or regulations that have been proposed but that have not become effective.

"HOLDER" means a Person in whose name a Note is registered on the Register.

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"INDEPENDENT DIRECTORS" means directors that (i) are not 5% or greater stockholders of the Company or the designees of any such stockholder; (ii) are not officers or employees of the Company, any of its Subsidiaries or of a stockholder referred to above in clause (i); (iii) are not Related Persons; and (iv) do not have relationships that, in the opinion of the Board of Directors, would interfere with their exercise of independent judgment in carrying out the responsibilities of the directors.

"INDENTURE" means this Indenture, as amended or supplemented from time to time.

"INTEREST PAYMENT DATE" means April 1 and October 1 of each year, commencing October 1, 1997.

"INVESTMENT" means, with respect to any Person, all investments by such Person in other Persons (including Affiliates) in the form of direct or indirect loans (including guarantees of indebtedness or other obligations), advances or capital contributions, purchases or other acquisitions for consideration of indebtedness, equity interests or other securities, together with all other items that are or would be classified as investments on a balance sheet prepared in accordance with GAAP.

"JUNIOR SECURITIES" means (a) shares of any and all classes of Capital Stock of the Company and (b) securities of the Company which are subordinated in right of payment to Senior Indebtedness at the time of issuance or delivery of such securities to substantially the same extent as, or to a greater extent than, the Notes are so subordinated as provided in Article 11.

"OFFICER" means, with respect to any Person, the Chairman of the Board, the Chief Executive Officer, the President, the Chief Operating Officer, the Chief Financial Officer, the Treasurer, any Assistant Treasurer, the Controller, the Secretary, any Assistant Secretary or any Vice President of such Person.

"OFFICERS' CERTIFICATE" means a certificate signed on behalf of the Company by two Officers, one of whom must be the Chairman of the Board, the President, the Treasurer or a Vice-President of the Company, that meets the requirements of Sections 13.3 and 13.4; provided, however, that for purposes of Section 4.11, "Officers' Certificate" means a certificate signed on behalf of the Company by the principal executive officer, principal financial officer or principal accounting officer of the Company.

"OPINION OF COUNSEL" means a written opinion from legal counsel who is reasonably acceptable to the Trustee and that meets the requirements of Sections 13.3 and 13.4. The counsel may be an employee of or counsel to the Company or to

the Trustee.

"PERSON" means any individual, corporation, partnership, association, trust or any other entity or organization, including a government or political subdivision or any agency or instrumentality thereof.

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"PREFERRED STOCK" of any Person means the class or classes of equity, ownership or participation interests (however designated) in such Person, including, without limitation, stock, share, partnership and membership interests, which are preferred as to the payment of dividends or distributions by, or as to the distribution of assets upon any voluntary or involuntary liquidation or dissolution of, such Person (or equivalents thereof) over interests of any other class of interests of such Person. Unless otherwise stated herein or the context otherwise requires, "PREFERRED STOCK" means Preferred Stock of the Company.

"PRINCIPAL" of a debt security means the principal of the security plus the premium, if any, on the security. "PRINCIPAL" shall include, with respect to the Notes, the redemption price, if any, payable thereon.

"PROPERTY" of any Person means any and all types of real, personal, tangible, intangible or mixed property owned by such Person whether or not included on the most recent consolidated balance sheet of such Person in accordance with GAAP.

"QUALIFIED STOCK" means Capital Stock of the Company which is not, and which is not convertible into or exercisable or exchangeable for Capital Stock which is, subject to repurchase or redemption at the option of the holder or mandatorily by the Company prior to December 31, 2004 or exchangeable or convertible into debt securities of the Company or any of its Subsidiaries at the option of the holder or mandatorily prior to December 31, 2004.

"RELATED PERSON" means an individual related to an officer, director or, to the Company's knowledge, employee of the Company or any of its Affiliates which relation is by blood, marriage or adoption and not more remote than first cousin.

"REPRESENTATIVE" means the indenture trustee or other trustee, agent or representative for an issue of Senior Indebtedness.

"SEC" means the Securities and Exchange Commission.

"SECURITIES ACT" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

"SENIOR INDEBTEDNESS" means the principal of (and premium, if any) and accrued interest on (including all interest accruing subsequent to the commencement of any bankruptcy or similar proceeding, whether or not a claim for post-petition interest is allowable as a claim in any such proceeding) (a) indebtedness of the Company (including indebtedness of other Persons guaranteed by the Company), other than the Notes, outstanding on the date of this Indenture which is (i) for money borrowed or (ii) evidenced by a note, debenture or similar instrument given in connection with the acquisition of any business, Property or assets, (b) obligations of the Company, whether outstanding on the date of this Indenture or hereafter created, incurred or assumed, as lessee under leases required to be capitalized on the balance sheet of the lessee under GAAP and leases of Property or assets made as part of any sale and leaseback transaction to which the Company is a party, (c) all reimbursement obligations

(contingent or otherwise) with respect to letters of credit, bank guarantees or bankers' acceptances, (d) amendments, renewals, extensions, modifications and refundings of any such indebtedness or obligation and (e) indebtedness of the Company (including indebtedness of other Persons guaranteed by the Company) created, incurred or assumed after the date of this Indenture which is (i) for money borrowed or (ii) evidenced by a note, debenture or similar instrument given in connection with the acquisition of any business, Property or assets and amendments, renewals, extensions, modifications and refundings thereof, if the instrument creating or evidencing such indebtedness provides by its terms that such indebtedness or obligation is senior in right of payment to the Notes (all of which indebtedness will have the benefit of the subordination provisions of Article 11); provided, however, that indebtedness of the Company (including indebtedness of other Persons guaranteed by the Company) created, incurred or assumed after the date of this Indenture which is (i) for money borrowed or (ii) evidenced by a note, debenture or similar instrument and which, in either case, by its terms is convertible or exchangeable into Capital Stock, and amendments, renewals, extensions, modifications and refundings thereof, will rank pari passu with the Notes, unless the instruments creating or evidencing such indebtedness provide by their terms that such indebtedness is junior in right of payment to the Notes. "SENIOR INDEBTEDNESS" shall not include indebtedness or amounts owed (except to banks or other financial institutions) for compensation to employees, or for goods or materials purchased or services utilized, in the ordinary course of business of the Company or of any other Person from whom such indebtedness or amount was assumed or for whom such indebtedness was guaranteed.

"SUBSIDIARY" of a Person on any date means any other Person of whom such Person owns, directly or indirectly through a Subsidiary or Subsidiaries of such Person, Capital Stock with voting power, acting independently and under ordinary circumstances, entitling such Person to elect a majority of the board of directors or other governing body of such other Person. Unless otherwise stated herein or the context otherwise requires, "SUBSIDIARY" means a Subsidiary of the Company.

"TIA" or "TRUST INDENTURE ACT OF 1939" means the Trust Indenture Act of 1939 (U.S. Code ss.ss. 77aaa-77bbb) as amended and as in effect on the date of this Indenture; provided, however, that if the TIA is amended after such date, "TIA" or "TRUST INDENTURE ACT OF 1939" means, to the extent required by any such amendments, the TIA as so amended.

"TRADING DAY" means (i) if the applicable security is listed or admitted for trading on a national security exchange, a day on which such exchange is open for business, (ii) if the applicable security is quoted on the Nasdaq Stock Market, a day on which trades may be made thereon or (iii) if the applicable security is not so listed, admitted for trading or quoted, any Business Day.

"TRANSFER RESTRICTED SECURITIES" means Notes that bear or are required to bear the legend set forth in Section 2.6(g) hereof.

"TRUSTEE" means the party identified in the title of this Indenture as trustee until a successor replaces it in accordance with the applicable provisions of this Indenture and, thereafter, "TRUSTEE" means such successor.

"TRUST OFFICER" means any officer or corporate trust officer or assistant corporate trust officer of the Trustee assigned by the Trustee to administer its corporate trust matters.

"UNRESTRICTED SUBSIDIARIES" means any Subsidiaries of the Company which (i) are not wholly-owned by the Company, (ii) are designated as Unrestricted Subsidiaries by the Board of Directors (as evidenced by minutes of a meeting or written consent of directors) and (iii) at the time of any Investment by the Company in any such Subsidiary, in the aggregate hold or comprise less than 20% of the Company's assets as shown on the Company's consolidated balance sheet prepared in accordance with GAAP as at the time of such Investment.

"U.S. GOVERNMENT OBLIGATIONS" means non-callable (i) direct obligations (or certificates representing an ownership interest in such obligations) of the United States for which its full faith and credit are pledged and (ii) obligations of a Person controlled or supervised by, and acting as an agency or instrumentality of, the United States, the payment of which is unconditionally guaranteed as a full faith and credit obligation of the United States.

SECTION 1.2 OTHER DEFINITIONS.

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TERM ----	DEFINED IN SECTION -----
"Agent Members".....	2.1
"Aggregate Consideration".....	10.4
"Bankruptcy Law".....	6.1
"Change of Control Date".....	4.6
"Change of Control Notice".....	4.6
"Change of Control Offer".....	4.6
"Change of Control Payment".....	4.6
"Change of Control Payment Date".....	4.6
"Code".....	10.4
"Conversion Agent".....	2.3
"Conversion Price".....	10.1
"Custodian".....	6.1
"Definitive Securities".....	2.1
"DTC".....	10.4
"Equity Securities".....	10.4
"Event of Default".....	6.1
"Expiration Time".....	10.4
"Global Security".....	2.1
"Notice of Default".....	6.1
"Paying Agent".....	2.3

"Purchase Agreement".....	2.1
"Purchased Shares".....	10.4
"Register".....	2.3
"Registrar".....	2.3
"Restricted Payment".....	4.9
"Rule 144A".....	2.1

"Significant Subsidiary".....6.1
"Trigger Event".....10.4

SECTION 1.3 INCORPORATION BY REFERENCE OF TRUST INDENTURE ACT.

This Indenture is subject to the mandatory provisions of the TIA, which are incorporated by reference in and made a part of this Indenture. Such provisions shall apply to this Indenture at all times, notwithstanding that at any time or from time to time this Indenture is not required to be qualified under the TIA.

The following TIA terms used in this Indenture have the following meanings:

- "Commission" means the SEC;
- "indenture securities" means the Notes;
- "indenture security holder" means a Holder;
- "indenture to be qualified" means this Indenture;
- "indenture trustee" or "institutional trustee" means the Trustee; and
- "obligor" on the Notes means the Company and any successor obligor on the Notes.

All other terms used in this Indenture that are defined by the TIA, defined by TIA reference to another statute or defined by SEC rule under the TIA and not otherwise defined herein have the meanings so assigned to them.

SECTION 1.4 RULES OF CONSTRUCTION.

Unless the context otherwise requires or unless otherwise stated herein:

- (1) a term has the meaning assigned to it;
- (2) an accounting term not otherwise defined has the meaning assigned to it in accordance with GAAP;

- (3) "or" is not exclusive;
- (4) words in the singular include the plural, and in the plural include the singular;
- (5) references to sections of or rules under the Securities Act, the Exchange Act or the TIA shall be deemed to include substitute, replacement or successor sections or rules;
- (6) references to Sections or Articles mean Sections or Articles of this Indenture; and
- (7) solely for purposes of this Indenture and the Notes, a

determination, approval or other action by the Board of Directors shall not be deemed to have been made, given or taken unless it is set forth in a written resolution or resolutions (or comparable written instrument) duly adopted thereby.

ARTICLE 2.

THE NOTES

SECTION 2.1 FORM AND DATING.

The Notes and the Trustee's certificate of authentication shall be substantially in the form of Exhibit A which is hereby incorporated in and expressly made a part of this Indenture. The Notes may have notations, legends or endorsements required by law, stock exchange rule, agreements to which the Company is subject, if any, or usage (provided that any such notation, legend or endorsement is in a form acceptable to the Company). Each Note shall be dated the date of its authentication. The terms of the Notes set forth in Exhibit A are part of the terms of this Indenture. The Notes are general unsecured obligations of the Company limited to \$60,000,000 in the aggregate principal amount, subject to Section 2.7.

(a) GLOBAL SECURITIES. The Notes are being offered and sold by the Company pursuant to a Purchase Agreement, dated concurrently herewith, between the Company and Forum Capital Markets L.P. (the "Purchase Agreement").

Notes offered and sold to a "qualified institutional buyer" (as defined in Rule 144A under the Securities Act ("Rule 144A")) in reliance on Rule 144A as provided in the Purchase Agreement, shall be issued initially in the form of one or more permanent global securities in definitive, fully registered form without interest coupons and with the Global Securities Legend and, unless removed in accordance with Section 2.6(g), the Restricted Securities Legend set forth in Exhibit A hereto (each, a "Global Security"), which shall be deposited on behalf of the

purchasers of the Notes represented thereby with the Trustee, at its Corporate Trust Office, as custodian for the Depository, and registered in the name of the Depository or a nominee of the Depository, duly executed by the Company and authenticated by the Trustee as hereinafter provided. The aggregate principal amount of the Global Securities may from time to time be increased or decreased by adjustments made on the records of the Trustee and the Depository or its nominee as hereinafter provided.

(b) BOOK-ENTRY PROVISIONS. This Section 2.1(b) shall apply only to any Global Security deposited with or on behalf of the Depository.

The Company shall execute and the Trustee shall, in accordance with this Section 2.1(b), authenticate and deliver initially one or more Global Securities that (i) shall be registered in the name of the Depository for such Global Security or Global Securities or the nominee of the Depository and (ii) shall be delivered by the Trustee to the Depository or pursuant to the Depository's instructions or held by the Trustee as custodian for the Depository.

Members of, or participants in, the Depository ("Agent Members") shall have

no rights under this Indenture with respect to any Global Security held on their behalf by the Depositary or by the Trustee as the custodian of the Depositary or under such Global Security, and the Depositary may be treated by the Company, the Trustee and any agent of the Company or the Trustee as the absolute owner of such Global Security for all purposes whatsoever. Notwithstanding the foregoing, nothing herein shall prevent the Company, the Trustee or any agent of the Company or the Trustee from giving effect to any written certification, proxy or other authorization furnished by the Depositary or impair, as between the Depositary and its Agent Members, the operation of customary practices of the Depositary governing the exercise of the rights of a holder of a beneficial interest in any Global Security.

(c) CERTIFICATED SECURITIES. Except as provided in Section 2.10, owners of beneficial interests in Global Securities will not be entitled to receive physical delivery of certificated Notes. Notes offered and sold to Persons who are not "qualified institutional buyers" shall be issued in certificated Notes in definitive, fully registered form without interest coupons, with the Restricted Securities Legend and, if such Person is an institutional "accredited investor" (as defined in Rule 501(a)(1), (2), (3) or (7) under the Securities Act), the Institutional Accredited Investor Legend, but without the Schedule of Exchanges of Global Security for Definitive Securities, set forth in Exhibit A hereto ("Definitive Securities"); provided, however, that upon transfer of such Definitive Securities to a "qualified institutional buyer," such Definitive Securities will, unless the Global Security has previously been exchanged, be exchanged for an interest in a Global Security pursuant to the provisions of Section 2.6 and provided that any such certificate may be initially issued in a temporary global form, to be promptly re-registered as provided in this Section 2.1(c).

After a transfer of any Notes pursuant to an effective registration statement under the Securities Act with respect to the Notes, all requirements pertaining to legends on such Notes will cease to apply, the requirements requiring any such Notes issued to certain Holders to be issued in global form will cease to apply, and a certificated Note without legends will be

available to the transferee of the Holder of such Notes upon exchange of such transferring Holder's certificated Notes or directions to transfer such Holder's interest in the Global Security, as applicable.

SECTION 2.2 EXECUTION AND AUTHENTICATION.

Two Officers shall sign the Notes for the Company by manual or facsimile signature. The Company's seal shall be reproduced on the Notes and may be in facsimile form.

Any Note bearing the manual or facsimile signature of an individual shall be valid notwithstanding that such individual ceased to be an Officer prior to authentication of the Note or ceased to hold the office of Company ascribed to such individual on the Note.

A Note shall not be valid until authenticated by the manual signature of the Trustee. The signature shall be conclusive evidence, and the only evidence, that the Note has been authenticated under this Indenture.

The Trustee shall authenticate Notes for original issue up to the aggregate principal amount stated in Paragraph 4 of the Notes, upon delivery of (i) a written order of the Company signed by an Officer directing the Trustee to

authenticate the Notes and (ii) an Officers' Certificate certifying that all conditions precedent to the issuance of the Notes contained herein have been complied with. The aggregate principal amount of Notes outstanding at any time may not exceed such amount, except as provided in Section 2.7.

The Trustee may appoint an authenticating agent upon the approval and at the expense of the Company to authenticate Notes. Unless limited by the terms of such appointment, an authenticating agent shall be authorized to authenticate Notes at such times and upon such conditions as the Trustee is so authorized. Each reference in this Indenture to authentication by the Trustee includes authentication by such agent.

SECTION 2.3 REGISTRAR, PAYING AGENT AND CONVERSION AGENT.

The Company shall maintain in the City of New York, New York or the City of Boston, Massachusetts an office or agency where Notes may be presented for registration of transfer or for exchange (the "REGISTRAR"), an office or agency where Notes may be presented for payment (the "PAYING AGENT") and an office or agency where the Notes may be presented for conversion (the "CONVERSION AGENT"). The Registrar shall keep a register of the Notes (the "REGISTER") and of their transfer and exchange. The Company may appoint one or more co-registrars and one or more additional paying agents upon the reasonable approval of the other Registrar or Registrars or Paying Agent or Paying Agents, as the case may be, and at the expense of the Company. The term "REGISTRAR" includes any co-registrar or co-registrars and the term "PAYING AGENT" includes any additional paying agent or paying agents. The Company may change any Paying Agent, Conversion Agent or Registrar without notice to any Holder. The Company shall

promptly notify the Trustee in writing of the name and address of any Agent not a party to this Indenture. The Company or any Subsidiary may act as Paying Agent (except for purposes specified in Sections 2.8 and 4.1), Conversion Agent or Registrar. If the Company fails to appoint or maintain itself or another Person as Registrar, Conversion Agent or Paying Agent, the Trustee shall act as such and shall be entitled to appropriate compensation therefor pursuant to Section 7.7.

The Company shall enter into an appropriate agency agreement with any Agent not a party to this Indenture, which shall incorporate the terms of the TIA. The agreement shall implement the provisions of this Indenture that relate to such Agent. The Company shall notify the Trustee of the name and address of any such Agent.

The Company initially appoints the office of the Trustee at the Corporate Trust Office, and through it the offices of its agent, State Street Bank and Trust Company, N.A., 61 Broadway, Concourse Level, New York, New York 10006, as the offices or agencies for each of the purposes designated in this Section 2.3 to act as Registrar, Paying Agent and Conversion Agent with respect to the Notes.

SECTION 2.4 PAYING AGENT TO HOLD MONEY IN TRUST.

The Company shall require each Paying Agent (other than the Trustee) to agree in writing that the Paying Agent will hold in trust for the benefit of Holders or the Trustee all money held by the Paying Agent for the payment of

Principal or repurchase price, if any, of or interest on the Notes, and will notify the Trustee of any default by the Company in making any such payment. While any such default continues, the Trustee may require a Paying Agent to pay all money held by it to the Trustee and account for any money disbursed by it. The Company at any time may require a Paying Agent to pay all money held by it to the Trustee and account for any money disbursed by it. Upon payment over to the Trustee, the Paying Agent (if other than the Company or a Subsidiary of the Company) shall have no further liability for the money delivered to the Trustee. If the Company or an Affiliate of the Company acts as Paying Agent, it shall segregate and hold in a separate trust fund for the benefit of the Holders all money held by it as Paying Agent. Upon any bankruptcy or reorganization proceedings relating to the Company, the Trustee shall serve as Paying Agent for the Notes.

SECTION 2.5 HOLDER LISTS.
- -----

The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of Holders. If the Trustee is not the Registrar, the Company shall furnish or the Company shall cause the Registrar to furnish to the Trustee at least ten Business Days before each Interest Payment Date, and at such other times as the Trustee may request in writing within five Business Days after such request, a list in such form and as of such date as the Trustee may reasonably require, and upon which the Trustee

may conclusively rely, of the names and addresses of, and principal amount of Notes held by, the Holders.

SECTION 2.6 TRANSFER AND EXCHANGE.
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(a) TRANSFER AND EXCHANGE OF DEFINITIVE SECURITIES. When Definitive Securities are presented to the Registrar with the request:

- (x) to register the transfer of the Definitive Securities; or
- (y) to exchange such Definitive Securities for an equal principal amount of Definitive Securities of other authorized denominations,

the Registrar shall register the transfer or make the exchange as requested if its requirements for such transactions are met and subject to compliance with applicable securities laws; provided, however, that the Definitive Securities presented or surrendered for register of transfer or exchange:

- i) shall be duly endorsed or accompanied by a written instruction of transfer in form and substance satisfactory to the Registrar duly executed by the Holder thereof or by his or her attorney, duly authorized in writing; and
- ii) in the case of Transfer Restricted Securities that are Definitive Securities, shall be accompanied by the following additional information and documents, as applicable:
 - (A) if such Transfer Restricted Security is being delivered to the Registrar by a Holder for registration in the

name of such Holder, without transfer, a certification from such Holder to that effect (in the form set forth on the reverse of the Notes); or

- (B) if such Transfer Restricted Security is being transferred to the Company or a "qualified institutional buyer" (as defined in Rule 144A) in accordance with Rule 144A, a certification to that effect (in the form set forth on the reverse of the Notes); or
- (C) if such Transfer Restricted Securities are being transferred (w) pursuant to an exemption from registration in accordance with Rule 144 or Regulation S under the Securities Act; or (x) to an institutional "accredited investor" within the meaning of Rule 501(a)(1), (2), (3) or

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(7) under the Securities Act that is acquiring the security for its own account, or for the account of such an institutional accredited investor, in each case in a minimum principal amount of Notes of \$100,000 for investment purposes and not with a view to, or for offer or sale in connection with, any distribution in violation of the Securities Act; or (y) in reliance on another exemption from the registration requirements of the Securities Act: (i) a certification to that effect (in the form set forth on the reverse of the Notes), (ii) if the Company, Trustee or Registrar so requests, an Opinion of Counsel reasonably acceptable to the Company, Trustee and Registrar to the effect that such transfer is in compliance with the Securities Act and (iii) in the case of clause (x), a signed letter in substantially the form of Exhibit B hereto.

(b) RESTRICTIONS ON TRANSFER OF A DEFINITIVE SECURITY FOR A BENEFICIAL INTEREST IN A GLOBAL SECURITY. A Definitive Security may not be exchanged for a beneficial interest in a Global Security except upon satisfaction of the requirements set forth below and subject to compliance with applicable securities laws. Upon receipt by the Trustee of a Definitive Security, duly endorsed or accompanied by appropriate instruments of transfer, in form satisfactory to the Trustee, together with:

- i) if such Definitive Security is a Transfer Restricted Security, certification, substantially in the form of Exhibit B hereto, that such Definitive Security is being transferred to a "qualified institutional buyer" (as defined in Rule 144A) in accordance with Rule 144A; and
- ii) whether or not such Definitive Security is a Transfer Restricted Security, written instructions directing the Trustee to make, or to direct the Notes Custodian to make, an endorsement on the Global Security to reflect an increase in the aggregate principal amount of the Notes represented by the Global Security,

then the Trustee shall cancel such Definitive Security in accordance with Section 2.11 hereof and cause, or direct the Notes Custodian to cause, in accordance with the standing instructions and procedures existing between the

Depository and the Notes Custodian, the aggregate principal amount of Notes represented by the Global Security to be increased accordingly. If no Global Security is then outstanding, the Company shall arrange for the execution and delivery of an agreement with the Depository upon customary terms reasonably satisfactory to the Trustee, and shall issue and the Trustee shall authenticate a new Global Security in the appropriate principal amount.

(c) TRANSFER AND EXCHANGE OF GLOBAL SECURITY. The transfer and exchange of a Global Security or beneficial interests therein shall be effected through the Depository in

accordance with this Indenture (including the restrictions on transfer set forth herein) and the procedures of the Depository therefor and subject to compliance with applicable securities laws.

(d) TRANSFER OF A BENEFICIAL INTEREST IN A GLOBAL SECURITY FOR A DEFINITIVE SECURITY.

i) Any Person having a beneficial interest in a Global Security that is being exchanged or transferred pursuant to an effective registration statement under the Securities Act or pursuant to clause (A), (B) or (C) below may upon request, and if accompanied by the information specified below, exchange such beneficial interest for a Definitive Security of the same aggregate principal amount subject to compliance with applicable securities laws. Upon receipt by the Trustee of written instructions or such other form of instructions as is customary for the Depository, from the Depository, or its nominee on behalf of any Person having a beneficial interest in a Global Security, and upon receipt by the Trustee of a written order or such other form of instructions, and, in the case of a Transfer Restricted Security only, the following additional information and documents (all of which may be submitted by facsimile):

(A) if such beneficial interest is being transferred to the Person designated by the Depository as being the beneficial owner, a certification from such Person to that effect (in the form set forth on the reverse of the Notes); or

(B) if such beneficial interest is being transferred to a "qualified institutional buyer" (as defined in Rule 144A) in accordance with Rule 144A, a certification to that effect from the transferor (in the form set forth on the reverse of the Notes); or

(C) if such beneficial interest is being transferred (w) pursuant to an exemption from registration in accordance with Rule 144 or Regulation S under the Securities Act; or (x) to an institutional "accredited investor" within the meaning of Rule 501(a)(1), (2), (3) or (7) under the Securities Act that is acquiring the security for its own account, or for the account of such an institutional accredited investor, in each case in a minimum principal amount of Notes of \$100,000 for investment purposes and not with a view to, or for offer or sale in connection with, any distribution in

violation of the Securities Act; or (y) in reliance on another exemption from the registration requirements of the Securities Act: (i) a certification to that effect from the transferee or transferor (in the form set forth on the reverse of the Notes), (ii) if the Company, Trustee or Registrar so requests, an Opinion of Counsel from the transferee or transferor reasonably acceptable to the Company and to the Registrar to the effect that such transfer is in

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compliance with the Securities Act, and (iii) in the case of clause (x), a signed letter in substantially the form of Exhibit B hereto,

then the Trustee or the Notes Custodian, at the direction of the Trustee, will cause, in accordance with the standing instructions and procedures existing between the Depositary and the Notes Custodian, the aggregate principal amount of the Global Security to be reduced on its books and records and, following such reduction, the Company will execute and, upon receipt of written instructions from the Company, the Trustee will authenticate and deliver to the transferee a Definitive Security in the appropriate principal amount.

- ii) Definitive Notes issued in exchange for a beneficial interest in a Global Security pursuant to this Section 2.6(d) shall be registered in such names and in such authorized denominations as the Depositary, pursuant to instructions from the Agent Members or otherwise, shall instruct the Trustee. The Trustee shall deliver such Definitive Securities to the Persons in whose names such Notes are so registered.

(e) RESTRICTIONS ON TRANSFER AND EXCHANGE OF GLOBAL SECURITY.

Notwithstanding any other provisions of this Indenture (other than the provisions set forth in Section 2.6(f)), a Global Security may not be transferred as a whole or in part except by the Depositary to a nominee of the Depositary or by a nominee of the Depositary to the Depositary or another nominee of the Depositary or by the Depositary or any such nominee to a successor Depositary or a nominee of such successor Depositary.

(f) AUTHENTICATION OF DEFINITIVE SECURITIES IN ABSENCE OF DEPOSITARY.

If at any time:

- i) the Depositary notifies the Company that the Depositary is unwilling or unable to continue as Depositary for the Global Securities and a successor Depositary for the Global Securities is not appointed by the Company within 90 days after delivery of such notice; or
- ii) the Company, at its sole discretion, notifies the Trustee in writing that it elects to cause the issuance of Definitive Securities under this Indenture,

then the Company will execute, and the Trustee, upon receipt of an Officers' Certificate, in accordance with Section 2.2, requesting the authentication and delivery of Definitive Securities, will authenticate and deliver Definitive Securities, in an aggregate principal amount equal to the principal amount of

the Global Securities, in exchange for such Global Securities.

(g) LEGENDS.

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- i) Except as permitted by the following paragraph (ii), each Note certificate evidencing the Global Securities and the Definitive Securities (and all Notes issued in exchange therefor or in substitution thereof and all Common Stock issued upon conversion thereof) shall bear a legend in substantially the following form:

"THIS NOTE (OR ITS PREDECESSOR) HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 (THE "SECURITIES ACT"), OR ANY STATE SECURITIES LAWS. NEITHER THIS NOTE NOR ANY INTEREST OR PARTICIPATION HEREIN MAY BE OFFERED, SOLD, PLEDGED, HYPOTHECATED OR OTHERWISE TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR UNLESS SUCH TRANSACTION IS EXEMPT FROM, OR NOT SUBJECT TO, REGISTRATION. EACH PURCHASER OF THIS NOTE IS HEREBY NOTIFIED THAT THE SELLER OF THIS NOTE MAY BE RELYING ON THE EXEMPTION FROM THE PROVISIONS OF SECTION 5 OF THE SECURITIES ACT PROVIDED BY RULE 144A THEREUNDER.

"THE HOLDER OF THIS NOTE AGREES FOR THE BENEFIT OF THE COMPANY THAT (A) THIS NOTE MAY BE OFFERED, RESOLD, PLEDGED OR OTHERWISE TRANSFERRED, ONLY (I) TO A PERSON WHOM THE SELLER REASONABLY BELIEVES IS A QUALIFIED INSTITUTIONAL BUYER (AS DEFINED IN RULE 144A UNDER THE SECURITIES ACT) IN A TRANSACTION MEETING THE REQUIREMENTS OF RULE 144A, (II) IN AN OFFSHORE TRANSACTION IN ACCORDANCE WITH REGULATION S UNDER THE SECURITIES ACT, (III) PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT, (IV) TO THE COMPANY OR (V) PURSUANT TO ANY OTHER AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT, IN EACH OF CASES (I) THROUGH (V) IN ACCORDANCE WITH ANY APPLICABLE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES AND (B) THE HOLDER WILL, AND EACH SUBSEQUENT HOLDER IS REQUIRED TO, NOTIFY ANY PURCHASER OF THIS NOTE FROM IT OF THE RESALE RESTRICTIONS REFERRED TO IN (A) ABOVE."

- ii) Upon any sale or transfer of a Transfer Restricted Security (including any Transfer Restricted Security represented by a Global Security) pursuant to Rule 144 under the Securities Act or an effective registration statement under the Securities Act:

(A) in the case of any Transfer Restricted Security that is a Definitive Security, the Registrar shall permit the Holder thereof (unless such Holder is an Affiliate of the Company) to exchange such Transfer

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Restricted Security for a Definitive Security that does not bear the legends set forth above and rescind any restriction on the transfer of such Transfer Restricted Security; and

- (B) any such Transfer Restricted Security represented by a Global Security shall not be subject to the provisions set forth in (i) above (such sales or transfers being subject only to the provisions of Section 2.6(e)); provided, however, that with respect to any request for an exchange of a Transfer Restricted Security that is represented by a Global Security for a Definitive Security that does not bear a legend, which request is made in reliance upon Rule 144 under the Securities Act, the Holder thereof shall certify in writing to the Registrar that such request is being made pursuant to Rule 144 under the Securities Act (such certification to be in the form set forth on the reverse of the Notes).
- (h) CANCELLATION AND/OR ADJUSTMENT OF GLOBAL SECURITY. At such time as all beneficial interests in a Global Security have either been exchanged for Definitive Securities, redeemed, repurchased or cancelled, such Global Security shall be returned to or retained and cancelled by the Trustee in accordance with Section 2.11. At any time prior to such cancellation, if any beneficial interest in a Global Security is exchanged for Definitive Securities, redeemed, repurchased or cancelled, the principal amount of Notes represented by such Global Security shall be reduced accordingly and the books and records of the Trustee or the Notes Custodian shall be marked, by the Trustee or the Notes Custodian, at the direction of the Trustee, to reflect such reduction.
- (i) OBLIGATIONS WITH RESPECT TO TRANSFERS AND EXCHANGES OF DEFINITIVE SECURITIES.
 - i) To permit registrations of transfers and exchanges, the Company shall execute and the Trustee shall authenticate Definitive Securities and a Global Security at the Registrar's request.
 - (ii) No service charge shall be made for any registration of transfer or exchange, but the Company may require payment of a sum sufficient to cover any transfer tax, assessments or similar governmental charge payable in connection therewith.
 - (iii) The Registrar or co-registrar shall not be required to register the transfer of or exchange of (a) any Definitive Security selected for redemption in whole or in part pursuant to Article 3, except the unredeemed portion of any Definitive Security being redeemed in part, or (b) any Note during the 15 day period preceding the mailing of a notice of redemption or an offer to repurchase or redeem Notes or the 15 day period preceding an Interest Payment Date.
 - (iv) Prior to the due presentation for registration of transfer of any Note, the Company, the Trustee, the Paying Agent,

the Registrar or any co-registrar may deem and treat the Person in whose name a Note is registered as the absolute owner of such Note for the purpose of receiving payment of Principal of and interest on such Note and for all other purposes whatsoever, whether or not such Note is overdue, and none of the Company, the Trustee, the Paying Agent, the Registrar or any co-registrar shall be affected by notice to the contrary.

(v) All Notes issued upon any transfer or exchange pursuant to the terms of this Indenture shall evidence the same debt and shall be entitled to the same benefits under this Indenture as the Notes surrendered upon such transfer or exchange.

(j) NO OBLIGATION OF THE TRUSTEE.

(i) The Trustee shall have no responsibility or obligation to any beneficial owner of a Global Security, a member of, or a participant in the Depositary or other Person with respect to the accuracy of the records of the Depositary or its nominee or of any participant or member thereof, with respect to any ownership interest in the Notes or with respect to the delivery to any participant, member, beneficial owner or other Person (other than the Depositary) of any notice (including any notice of redemption) or the payment of any amount, under or with respect to such Notes. All notices and communications to be given to the Holders and all payments to be made to Holders under the Notes shall be given or made only to or upon the order of the registered Holders (which shall be the Depositary or its nominee in the case of a Global Security). The rights of beneficial owners in any Global Security shall be exercised only through the Depositary subject to the applicable rules and procedures of the Depositary. The Trustee may rely and shall be fully protected in relying upon information furnished by the Depositary with respect to its members, participants and any beneficial owners.

(ii) The Trustee shall have no obligation or duty to monitor, determine or inquire as to compliance with any restrictions on transfer imposed under this Indenture or under applicable law with respect to any transfer of any interest in any Note (including any transfers between or among the Agent Members or beneficial owners in any Global Security) other than to require delivery of such certificates and other documentation or evidence as are expressly required by, and to do so if and when expressly required by, the terms of this Indenture, and to examine the same to determine substantial compliance as to form with the express requirements hereof.

Upon surrender of a mutilated Note at the office or agency of the Registrar, the Company shall execute, and the Trustee shall authenticate and deliver, a replacement Note in the name of the Holder of such mutilated Note, of like principal amount and dated the date of such mutilated Note.

Upon surrender of written notice by a Holder or a Holder's attorney duly authorized in writing at the office or agency of the Registrar that a Note has been lost, destroyed or wrongfully taken, the Company shall execute, and the Trustee shall authenticate and deliver, a replacement Note in the name of such Holder, of like principal amount and dated the date of such lost, destroyed or wrongfully taken Note; provided, however, that, unless such requirement is waived by the Company, such notice shall be accompanied by an indemnity or indemnity bond from an acceptable issuer that is sufficient in the judgment of the Trustee and the Company to protect the Company, the Trustee, any Agent and any authenticating agent from any loss which any of them may suffer by reason of such Note's replacement.

The Company may charge the Holder for its expenses in replacing a Note.

Every replacement Note shall be an obligation of the Company and shall be entitled to all benefits of this Indenture equally and proportionately with all other Notes duly issued hereunder.

SECTION 2.8 OUTSTANDING NOTES.
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The Notes outstanding at any time are all the Notes authenticated by the Trustee except for those cancelled by it, those delivered to it for cancellation, those reductions in the interest in the Global Security effected by the Trustee hereunder and those described in this Section 2.8 as not outstanding. Except as set forth in Section 2.9, a Note does not cease to be outstanding because the Company or an Affiliate of the Company holds the Note.

If a Note is replaced pursuant to Section 2.7, it ceases to be outstanding unless the Trustee receives proof satisfactory to it that the replaced Note is held by a holder in due course.

If the principal amount of any Note is considered paid under Section 4.1, it ceases to be outstanding and interest on it ceases to accrue.

If the Paying Agent (other than the Company, any Subsidiary or an Affiliate of any thereof) segregates and holds in trust, in accordance with this Indenture, on a redemption date or maturity date money sufficient to redeem or pay Notes payable on that date, and is not prohibited from paying such money to the Holders thereof pursuant to the terms of this Indenture, then on and after such redemption date or maturity date such Notes shall be deemed to be no longer outstanding and shall cease to accrue interest.

SECTION 2.9 TREASURY NOTES.
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In determining whether the Holders of the required aggregate principal amount of Notes have concurred in any direction, waiver or consent, Notes owned by the Company or by any Affiliate of the Company shall be considered as though not outstanding, except that for the purposes of determining whether the Trustee shall be protected in relying on any such direction, waiver or consent, only

Notes as to which a Trust Officer of the Trustee knows are so owned shall be so disregarded.

SECTION 2.10 TEMPORARY NOTES.

(a) Until definitive Notes are ready for delivery, the Company may prepare and execute and the Trustee shall authenticate and deliver temporary Notes upon a written order of the Company signed by an Officer and delivered to a Trust Officer. Temporary Notes shall be substantially in the form of definitive Notes but may have variations that the Company considers appropriate for temporary Notes. If temporary Notes are issued, the Company shall, without unreasonable delay, prepare definitive Notes which may be exchanged for temporary Notes.

After the preparation of definitive Notes, the temporary Notes shall be exchangeable for definitive Notes upon surrender of the temporary Notes at the office or agency of the Registrar, without charge to Holders. Upon surrender for cancellation of one or more temporary Notes, the Company shall execute and the Trustee upon a written order of the Company signed by an Officer shall authenticate and deliver in exchange therefor a like principal amount of definitive Notes of authorized denominations. Until so exchanged, the temporary Notes shall in all respects be entitled to the same benefits under this Indenture as definitive Notes.

(b) A Global Security deposited with the Depositary or with the Trustee as custodian for the Depositary pursuant to Section 2.1 shall be transferred to the beneficial owners thereof only if such transfer complies with Section 2.6 and (i) the Depositary notifies the Company that it is unwilling or unable to continue as Depositary for such Global Security or if at any time such Depositary ceases to be a "clearing agency" registered under the Exchange Act and a successor Depositary is not appointed by the Company within 90 days after such notice or (ii) an Event of Default has occurred and is continuing.

(c) Any Global Security that is transferable to the beneficial owners thereof pursuant to this Section 2.10 shall be surrendered by the Depositary to the Trustee, to be so transferred, in whole or from time to time in part, without charge, and the Trustee shall authenticate and deliver, upon such transfer of each portion of such Global Security, an equal aggregate principal amount of Notes of authorized denominations. Any portion of a Global Security transferred pursuant to this Section shall be executed, authenticated and delivered only in denominations of \$1,000 and any integral multiple thereof and registered in such names as the Depositary shall direct. Any Note delivered in exchange for an interest in the Global Security shall, except as otherwise provided by Section 2.6(b), bear the restricted securities legend set forth in Exhibit A hereto.

(d) Subject to the provisions of Section 2.10(c), the registered Holder of a Global Security may grant proxies and otherwise authorize any Person, including Agent Members and Persons that may hold interests through Agent Members, to take any action which a Holder is entitled to take under this Indenture or the Notes.

(e) In the event of the occurrence of either of the events specified in Section 2.10(b), the Company will promptly make available to the Trustee, at the Company's expense, a reasonable supply of certificated Notes in definitive, fully registered form without interest coupons.

SECTION 2.11 CANCELLATION.

The Company at any time may deliver Notes to the Trustee for cancellation. The Registrar, Conversion Agent and Paying Agent shall forward to the Trustee any Notes surrendered to them for registration of transfer, exchange, conversion or payment. The Trustee shall promptly cancel and destroy (in accordance with the standard document destruction policies of the Trustee) all Notes so delivered and certify to the Company their destruction unless by a written order signed by an Officer, the Company shall direct that cancelled Notes be returned to it. The Company may not issue new Notes to replace Notes that have matured or been converted or redeemed.

SECTION 2.12 DEFAULTED INTEREST.

If the Company defaults in a payment of interest on the Notes, the Company shall pay defaulted interest (plus interest on such defaulted interest, to the extent lawful, at the rate borne by this Note) in any lawful manner. The Company shall pay the defaulted interest to the Persons who are Holders on a subsequent special record date. The Company shall fix or cause to be fixed (or upon the Company's failure to do so the Trustee shall fix) any such special record date and payment date to the reasonable satisfaction of the Trustee, which specified record date shall not be less than 10 days prior to the payment date for such defaulted interest, and shall promptly mail or cause to be mailed to each Holder a notice that states the special record date, the payment date and the amount of defaulted interest to be paid. The Company shall notify the Trustee in writing of the amount of defaulted interest proposed to be paid and the date of the proposed payment, and at the same time the Company shall deposit with the Trustee an amount of money equal to the aggregate amount proposed to be paid with respect to such defaulted interest or shall make arrangements reasonably satisfactory to the Trustee for such deposit prior to the date of the proposed payment, which money when so deposited shall be held in trust for the benefit of the Person entitled to such defaulted interest as provided in this Section 2.12.

SECTION 2.13 DEPOSIT OF MONEYS.

Prior to 10:00 a.m., New York City time, on each Interest Payment Date and the maturity date, the Company shall deposit with the Paying Agent in immediately available funds money sufficient to make cash payments, if any, due on such Interest Payment Date or maturity date, as the case may be, in a timely manner which permits the Paying Agent to remit payment to the Holders on such Interest Payment Date or maturity date, as the case may be.

ARTICLE 3.

REDEMPTION

SECTION 3.1 NOTICES TO TRUSTEE.

If the Company elects to redeem Notes pursuant to the optional redemption provisions of Paragraph 5 of the Notes, it shall notify the Trustee in writing of the redemption date, the principal amount of Notes to be redeemed and the redemption price at least 15 days prior to mailing any notice of redemption to the Holders (unless the Trustee consents to a shorter period). Such notice shall be in the form of an Officers' Certificate from the Company and will state that such redemption will comply with the conditions herein.

If less than all the Notes are to be redeemed, the record date relating to such redemption shall be selected by the Company and given to the Trustee, which record date shall be not less than 15 days after the date of notice to the Trustee.

SECTION 3.2 SELECTION OF NOTES TO BE REDEEMED.

If less than all the Notes are to be redeemed, the Trustee shall select the Notes to be redeemed in compliance with the requirements of the principal national securities exchange, if any, on which the Notes are quoted or listed or admitted to trading or, if the Notes are not so quoted or listed or admitted to trading, on a pro rata basis, by lot or by such other method that complies with applicable legal requirements and that the Trustee considers fair and appropriate. The Trustee shall make the selection not more than 60 days and not less than 30 days before the redemption date from Notes outstanding and not previously called for redemption. The Trustee may select for redemption portions of the principal amount of Notes that have denominations larger than \$1,000. The Trustee will make the selection from Notes outstanding and not previously called for redemption. Notes and portions thereof selected by the Trustee shall be in amounts of \$1,000 or integral multiples of \$1,000. If less than all of the Notes are to be redeemed and a Note is converted in accordance with Article 10 after the date on which notice of redemption is given pursuant to Section 3.3 and prior to the time and date specified in Section 3.5, such Note shall, for purposes of determining the amount of such Notes which have been redeemed, be deemed to have been redeemed. Provisions of this Indenture that apply to Notes

called for redemption also apply to portions of Notes called for redemption. The Trustee shall notify the Company promptly of the Notes or portions of Notes to be called for redemption.

SECTION 3.3 NOTICE OF REDEMPTION.

At least 30 days but not more than 60 days before a redemption date, the Company or, upon written notice to the Trustee by the Company, the Trustee shall give a notice of redemption to the Holders.

The notice shall identify the Notes to be redeemed and shall state:

- (a) the redemption date;
- (b) the redemption price;
- (c) the Conversion Price;
- (d) the name and address of the Paying Agent and Conversion Agent;

(e) that Notes called for redemption may be converted at any time before the close of business on the Business Day immediately preceding the redemption date in accordance with Article 10;

(f) that Holders who want to convert Notes must satisfy the requirements in Paragraph 8 of the Notes;

(g) that Notes called for redemption must be surrendered to the Paying Agent to collect the redemption price;

(h) the CUSIP number of the Notes;

(i) if fewer than all of the outstanding Notes are to be redeemed, the certificate numbers and principal amounts of the particular Notes to be redeemed;

(j) if any Note is being redeemed in part, that, after the redemption date, upon surrender of such Note, a new Note or Notes in principal amount equal to the unredeemed portion will be issued; and

(k) that unless the Company defaults in making such redemption payment or the Paying Agent is prohibited from making such redemption payment pursuant to the terms of this Indenture, interest on Notes called for redemption ceases to accrue on and after the redemption date.

If the Trustee gives such notice of redemption, it shall do so in the Company's name and at the Company's expense and the Company shall provide the Trustee with the information required to give such notice of redemption.

SECTION 3.4 EFFECT OF NOTICE OF REDEMPTION; DEFINITION OF REDEMPTION PRICE.

Notice of redemption given in accordance with Sections 3.3 and 13.2 to each Holder shall be deemed to have been duly given, whether or not any particular Holder receives such notice. Once notice of redemption is so mailed, Notes called for redemption become due and payable on the redemption date at the redemption price set forth in the Notes. A notice of redemption may not be conditional. Upon surrender to the Trustee or the Paying Agent, such Notes called for redemption shall be paid at the redemption price. References in this Indenture to the "redemption price" mean the redemption price set forth in the Notes plus the interest payable as provided in the Notes on Notes called for redemption.

SECTION 3.5 DEPOSIT OF REDEMPTION PRICE.

On or before 10:00 a.m., New York City time, on any redemption date, the Company shall deposit with the Trustee or with the Paying Agent immediately available funds sufficient to pay the redemption price of all Notes to be redeemed on that date other than Notes or portions of Notes called for redemption which prior thereto have been delivered by the Company to the Trustee for cancellation or have been converted; provided, however, that any such deposit shall be a payment with respect to the Notes on such date and shall be subject to the provisions of Article 11 and shall be permitted on such date only

if payment would be permitted on such date under Article 11. The Trustee or the Paying Agent shall return to the Company any money not required for the purpose of paying such redemption price.

SECTION 3.6 NOTES REDEEMED IN PART.

Upon surrender of a Note that is redeemed in part, the Company shall issue and the Trustee shall authenticate for the Holder at the expense of the Company a new Note equal in principal amount to the unredeemed portion of the Note surrendered.

ARTICLE 4.

COVENANTS

SECTION 4.1 PAYMENT OF NOTES.

The Company shall pay the Principal and repurchase price, if any, of and interest on the Notes on the dates and in the manner provided in the Notes and this Indenture. Principal and interest shall be considered paid on the date due if the Paying Agent (other than the Company or a Subsidiary) on that date holds money in accordance with this Indenture designated for and sufficient to pay in cash all Principal and interest then due and the Paying Agent is not prohibited from paying such money to Holders on that date pursuant to the terms of this Indenture.

To the extent lawful, the Company shall pay interest (including post-petition interest in any proceeding under any Bankruptcy Law) on (i) overdue Principal and repurchase price, if any, of the Notes at the rate borne by the Notes and (ii) overdue installments of interest at the same rate.

SECTION 4.2 STAY, EXTENSION AND USURY LAWS.

The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, plead, or in any manner whatsoever claim or take the benefit or advantage of, any stay, extension or usury law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture; and the Company (to the extent it may lawfully do so) hereby expressly waives all benefit or advantage of any such law, and covenants that it will not, by resort to any such law, hinder, delay or impede the execution of any power herein granted to the Trustee, but will suffer and permit the execution of every such power as though no such law has been enacted.

SECTION 4.3 CONTINUED EXISTENCE.

Subject to Article 5, the Company will do or cause to be done all things necessary to preserve and keep in full force and effect its existence as a corporation and the corporate existence of the Subsidiaries and will refrain or cause the Subsidiaries to refrain from taking any action that would cause its

corporate existence or the corporate existence of any of the Subsidiaries to cease, including without limitation any action that would result in the liquidation, winding up or dissolution of it or any of the Subsidiaries; provided, however, that the Company shall not be required to preserve the existence of any Subsidiary if the Board of Directors shall determine that the preservation thereof is no longer desirable in the conduct of the business of the Company and the Subsidiaries and that the loss thereof to the Company taken as a whole is not disadvantageous in any material respect to the Holders.

SECTION 4.4 REPORTS.
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(a) The Company shall file with the Trustee copies of all reports and other information and documents that the Company is required to file with the SEC pursuant to the Exchange Act. Each such report or other information or document shall be filed with the Trustee within 15 days after filing of such report or other information or document with the SEC. The Company will mail or cause to be mailed to all Holders copies of all of (a) its annual reports to stockholders and (b) quarterly reports to stockholders which are mailed to its institutional stockholders.

(b) If the Company is at any time no longer subject to the reporting requirements of Section 13 or 15(d) of the Exchange Act, the Company will prepare (i) for the first three quarters of each fiscal year of the Company, quarterly financial statements substantially equivalent to the financial statements required to be included in a report on Form 10-Q under the Exchange Act, and (ii) annually, complete audited consolidated financial statements, including, but not limited to, a balance sheet, a statement of operations, a statement of stockholders' equity and all appropriate notes. All such financial statements will be prepared in accordance with GAAP, except for changes with which the Company's independent accountants concur and except that quarterly financial statements may be subject to year-end adjustments. The Company will file or cause to be filed with the Trustee and will mail or cause to be mailed to the Holders a copy of such financial statements within 50 days after the end of each of the first three quarters of each fiscal year of the Company and within 95 days after the close of each fiscal year of the Company, respectively. Notwithstanding the foregoing, if the Company is no longer subject to such reporting requirements by reason of the acquisition of Capital Stock by, or merger or consolidation of the Company with, a Person which is subject to such reporting requirements or a Subsidiary of such a Person and such Person has unconditionally and irrevocably guaranteed payment in full when due of all amounts payable with respect to the Notes, then the Company need not prepare, file or mail the financial statements described in this Section 4.4(b); provided, however, that such Person complies with Section 4.4(a) as if references therein to the Company were references to such Person.

SECTION 4.5 TAXES.
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The Company shall, and shall cause each of the Subsidiaries to, pay or discharge prior to delinquency all taxes, assessments and governmental levies, except as contested in good faith and by appropriate proceedings.

SECTION 4.6 CHANGE OF CONTROL.
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(a) In the event of a Change of Control, the Company shall give or cause to be given written notice in the form of an Officers' Certificate (the "CHANGE OF CONTROL NOTICE") to all Holders, the Trustee and the Paying Agent of such event and shall make an offer to purchase (as the same may be extended in accordance with applicable law, the "CHANGE OF CONTROL OFFER")

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all then outstanding Notes at a purchase price equal to 150% of the principal amount thereof plus accrued and unpaid interest thereon to the Change of Control Payment Date. The Change of Control Notice shall be given in accordance with Section 13.2 and the Change of Control Offer shall be made not more than 30 days following the date of the Change of Control (the "CHANGE OF CONTROL DATE"), unless the Company has previously given a notice of optional redemption by the Company of all of the Notes in accordance with this Indenture. The Change of Control Notice shall set forth:

(i) a statement that a Change of Control has occurred and, unless the Notes are subject to a notice of optional redemption described above, that the Company is offering to repurchase all of the outstanding Notes;

(ii) a brief description of such Change of Control and, to the extent readily available to the Company, information with respect to pro forma historical consolidated income, cash flow and capitalization of the Company after giving effect to such Change of Control and such other financial information relating to the Company with respect to such Change of Control as the Company may, in its sole discretion, deem relevant to a decision whether to convert or hold Notes or tender Notes in connection with such Change of Control Offer;

(iii) the repurchase price (the "CHANGE OF CONTROL PAYMENT");

(iv) the expiration date of the Change of Control Offer, which shall be no earlier than 30 days nor later than 60 days from the date the Change of Control Notice is mailed;

(v) the date such purchase shall be effected, which shall be no later than 30 days after the expiration date of the Change of Control Offer (the "CHANGE OF CONTROL PAYMENT DATE");

(vi) a statement that any Notes not accepted for payment pursuant to the Change of Control Offer shall continue to accrue interest;

(vii) a statement that unless the Company defaults in the payment of the Change of Control Payment, all Notes or portions thereof accepted for payment pursuant to the Change of Control Offer shall cease to accrue interest on and after the Change of Control Payment Date;

(viii) the Conversion Price as then in effect;

(ix) the name and address of the Paying Agent and the Conversion Agent;

(x) a statement that Notes (duly endorsed for transfer to the Company), together with the form of "Option of Holder to Elect Repurchase" thereon completed and signed, must be surrendered to the Paying Agent prior to the

expiration of the Change of Control Offer to collect the Change of Control Payment; and

(xi) any other information required by applicable law to be included therein and any other procedures that a Holder must follow in order to have Notes repurchased.

(b) The Change of Control Offer shall remain open until the close of business on the expiration date of the Change of Control Offer. Each Holder shall have the right to withdraw his tender in accordance with applicable rules promulgated by the SEC under the Exchange Act.

(c) In the event that the Company is required to make a Change of Control Offer, the Company will comply with any applicable securities laws and regulations, including, to the extent applicable, Section 14(e) of, and Rule 14e-1 and any other tender offer rules under, the Exchange Act which may then be applicable in connection with any offer by the Company to purchase Notes at the option of the Holders; provided that in event such laws and regulations conflict with any of the provisions hereof, such laws and regulations shall supersede such provisions.

(d) On the Change of Control Payment Date, the Company shall, to the extent lawful:

(i) accept for payment Notes or portions thereof tendered pursuant to the Change of Control Offer;

(ii) deposit with the Paying Agent in immediately available funds an amount equal to the Change of Control Payment with respect to all Notes or portions thereof so accepted; and

(iii) deliver or cause to be delivered to the Trustee the Notes so accepted together with an Officers' Certificate stating the Notes or portions thereof tendered to the Company.

(e) The Paying Agent shall promptly (but in any case not later than five Business Days after the Change of Control Payment Date) mail to each Holder of Notes so accepted payment in an amount equal to the Change of Control Payment for such Notes, and the Trustee shall promptly authenticate and mail to each Holder a new Note equal in principal amount to any unpurchased portion of the Notes surrendered by such Holder, if any; provided, that each such new Note shall be in principal amount of \$1,000 or an integral multiple thereof. The Company shall publicly announce the results of all repurchases pursuant to this Section 4.6 on or as soon as practicable after the Change of Control Payment Date.

SECTION 4.7 LIMITATION ON DIVIDEND RESTRICTIONS AFFECTING SUBSIDIARIES.

The Company shall not, and shall not permit any of its Subsidiaries to, create or otherwise cause or suffer to exist or become effective any encumbrance or restriction of any kind on the ability of any Subsidiary other than Unrestricted Subsidiaries to (a) pay to the Company dividends or make to the Company any other distribution on its Capital Stock, (b) pay any debt owed to the Company or any of the Subsidiaries, (c) make loans or advances to the Company or any of the Subsidiaries or (d) transfer any of its property or assets to the Company or any of the Subsidiaries, other than such encumbrances or restrictions existing or created under or by reason of (i) applicable law, (ii) this Indenture, (iii) covenants or restrictions contained in any instrument governing debt of the Company or any of the Subsidiaries existing on the date of this Indenture or hereafter, provided that in the absence of a default under any such loan documents, no such restriction shall prevent a Subsidiary from paying dividends or otherwise distributing funds to the Company in amounts sufficient to enable the Company to make interest and principal payments on the Notes as and when due, (including pursuant to any Change of Control Offer), (iv) customary provisions restricting subletting, assignment and transfer of any lease governing a leasehold interest of the Company or any of the Subsidiaries or in any license or other agreement entered into in the ordinary course of business, (v) any agreement governing debt of a Person acquired by the Company or any of the Subsidiaries in existence at the time of such acquisition (but not created in connection with or in contemplation thereof), which encumbrances or restrictions are not applicable to any Person, or the property or assets of any Person, other than the Person, or the property or assets of the Person, so acquired, or (vi) any restriction with respect to a Subsidiary imposed pursuant to an agreement entered into in accordance with the terms of this Indenture for the sale or disposition of Capital Stock or property or assets of such Subsidiary, pending the closing of such sale or disposition.

SECTION 4.8 LIMITATION ON LINE OF BUSINESS.

For so long as the Notes are outstanding, the Company and its Subsidiaries will engage solely in the manufacturing, marketing, research, development and sale of products or services in or related to the pharmaceutical or biotechnology industries.

SECTION 4.9 LIMITATION ON RESTRICTED PAYMENTS.

The Company shall not, and shall not permit any of its Subsidiaries to, directly or indirectly, (i) declare or pay any distribution or dividend on or in respect of any class or series of its Capital Stock (except dividends or distributions payable by wholly-owned Subsidiaries of the Company and dividends and distributions payable in Qualified Stock of the Company or in options, warrants or other rights to purchase Qualified Stock of the Company); or (ii) purchase, repurchase, prepay, redeem, defease or otherwise acquire or retire for value (other than in Qualified Stock of the Company or in options, warrants or other rights to purchase Qualified Stock of the Company) any Capital Stock of the Company or any of its Subsidiaries (other than a wholly-owned Subsidiary of the Company), except for the repurchase by the Company of any

shares of Common Stock held by employees, directors or officers of, or consultants or advisors to, the Company or any of its Subsidiaries pursuant to the terms of any stock restrictions, stock repurchase or similar agreement at a price per share that is less than 95% of the then Current Market Price of the Common Stock (any such prohibited declaration, payment, distribution, purchase, repurchase, prepayment, redemption, defeasance or other acquisition or retirement or investment referred to in clauses (i) or (ii) above being hereinafter referred to as a "Restricted Payment"), unless at the time of and after giving effect to such proposed Restricted Payment (the value of such payment, if other than cash, as determined by the Board of Directors, including the affirmative vote of a majority of the Independent Directors, whose determination shall be conclusive and evidenced by a resolution of the Board of Directors) (A) no Event of Default (and no event that, after notice or lapse of time or both, would become an Event of Default) shall have occurred and be continuing and (B) (I) the value of such Restricted Payment, together with all other Restricted Payments made during the fiscal year in which such Restricted Payment is to be made, does not exceed 50% of the Company's consolidated net income with respect to the immediately preceding fiscal year or (II) the Current Market Price of the Common Stock is at least \$14.025 for each of the 10 Trading Days preceding the approval by the Board of Directors of such Restricted Payment and the Company's market capitalization at the time of such approval (defined as the average Current Market Price of the Common Stock for the ten Trading Day period preceding such approval multiplied by the number of outstanding shares of Common Stock at such time) is at least 400% of the Company's outstanding debt (as shown on the Company's consolidated balance sheet) immediately prior to and immediately after such Restricted Payment and all Restricted Payments under this clause (II) do not exceed \$5.0 million in any fiscal year of the Company.

Not later than the date of making any Restricted Payment, the Company shall deliver to the Trustee an Officers' Certificate stating that such Restricted Payment is permitted and setting forth the basis upon which the calculations required by this Section 4.9 were computed, which calculations may be based upon the Company's latest available financial statements.

SECTION 4.10 LIMITATION ON TRANSACTIONS WITH RELATED PERSONS.

The Company shall not, and shall not permit any of its Subsidiaries to, directly or indirectly, enter into any transaction or series of related transactions (including, without limitation, the sale, purchase, exchange or lease of assets, property or services) with (a) any beneficial owner of 5% or more of the outstanding voting securities of the Company (determined in accordance with Section 13(d) of the Exchange Act) at the time of such transaction, (b) any officer, director or employee of the Company, or any of its Subsidiaries or any such beneficial owner of 5% or more of the outstanding voting securities of the Company as described in clause (a) above or (c) any Related Person, unless such transaction or series of related transactions (A) is on terms that are no less favorable to the Company or any such Subsidiary, as the case may be, than would be available in a comparable transaction with an unrelated third party or (B) (x) if such transaction or series of related transactions involve aggregate payments in excess of \$60,000, the Company delivers an Officers' Certificate to the Trustee certifying that such transaction complies with clause (A) above and such transaction or series of related transactions

is approved by a majority of the Independent Directors or (y) if such transaction or series of related transactions involve aggregate payments in

excess of \$1.0 million, the Company obtains an opinion as to the fairness to the Company or such Subsidiary from a financial point of view issued by an investment banking firm, appraisal firm or accounting firm, in each case of national standing. Notwithstanding the foregoing, the provisions of this Section 4.9 shall not apply to (i) any transaction entered into between the Company and its Subsidiaries (but excluding transactions with any Subsidiary of which more than 5% of the outstanding voting securities (as determined in accordance with Section 13(d) under the Exchange Act) are beneficially owned by Persons who are (a) officers, directors or employees of the Company or any of its Subsidiaries or any beneficial owner of 5% or more of the outstanding voting securities of the Company (as determined in accordance with Section 13(d) under the Exchange Act) at the time of such transaction, (b) a beneficial owner of 5% or more of the outstanding voting securities of the Company (as determined in accordance with Section 13(d) under the Exchange Act) or (c) Related Persons), (ii) the payment of compensation and provision of benefits to officers and employees of the Company and loans and advances made in the ordinary course of business, or any issuance of securities, or other payments, awards or grants in cash, securities or otherwise (including the grant of stock options or similar rights to officers, employees and directors of the Company or any Subsidiary) pursuant to, or the funding of, employment arrangements, stock options and stock ownership plans or other benefit plans approved by a majority of the Independent Directors; any Designated Transactions and (iv) transactions with any Person who is a Director of the Company or any of its Subsidiaries and who is not (a) the beneficial owner of 5% or more of the outstanding voting securities of the Company (as determined in accordance with Section 13(d) under the Exchange Act) or (b) an officer or employee of the Company or any of its Subsidiaries or any such beneficial owner of 5% or more of the outstanding voting securities of the Company at the time of such transaction.

SECTION 4.11 COMPLIANCE CERTIFICATE.

The Company shall deliver to the Trustee, within 120 days after the end of each fiscal year of the Company, an Officers' Certificate stating that a review of the activities of the Company and the Subsidiaries during the preceding fiscal year has been made under the supervision of the signing Officer with a view to determining whether the Company has kept, observed, performed and fulfilled its obligations under this Indenture and further stating, as to such Officer, that to the best of his or her knowledge the Company has kept, observed, performed and fulfilled each and every covenant and condition contained in this Indenture and is not in default in the performance or observance of any of the terms, provisions and conditions hereof (or, if a Default or Event of Default shall have occurred, describing all such Defaults or Event of Default of which he or she may have knowledge and what action the Company is taking or proposes to take with respect thereto), and that, to the best of his or her knowledge, no event has occurred and remains in existence by reason of which payments on account of the Principal of or interest on the Notes are prohibited.

SECTION 4.12 FURTHER ASSURANCE TO THE TRUSTEE.

The Company shall, upon reasonable request of the Trustee, execute and deliver such further instruments and do such further acts as may be reasonably necessary or proper to carry out more effectively the provisions of this Indenture.

ARTICLE 5.

SUCCESSORS

SECTION 5.1 WHEN COMPANY MAY MERGE OR SELL ASSETS.

The Company shall not consolidate with or merge into, or sell, lease, convey or otherwise dispose of all or substantially all of its assets to, any Person in a single transaction or series of related transactions, without the consent of Holders of the majority in aggregate principal amount of Notes then outstanding, unless:

(a) the Company is the continuing corporation or the Person formed by or surviving any such consolidation or merger (if other than the Company), or to which such sale, lease, conveyance or other disposition of assets shall have been made, is organized and existing under the laws of the United States, any state thereof or the District of Columbia and such Person (if other than the Company) expressly assumes by supplemental indenture executed and delivered to the Trustee and in a form reasonably satisfactory to the Trustee, all the obligations of the Company under the Notes and this Indenture, including, without limitation, conversion rights in accordance with Article 10;

(b) immediately before and immediately after giving effect to the transaction no Event of Default, and no event which, after notice or lapse of time, or both, would become an Event of Default, shall have occurred and be continuing;

(c) immediately after giving effect to such transaction, the Notes and this Indenture (as supplemented by any such supplemental indenture) will be valid and enforceable obligations of the Company or such successor; and

(d) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that such proposed transaction and such supplemental indenture do not conflict with the applicable provisions of this Indenture and, with respect to such Officers' Certificate only, that all conditions precedent herein provided for relating to such transaction have been satisfied.

SECTION 5.2 SUCCESSOR SUBSTITUTED.

Upon any consolidation or merger, or any sale, lease, conveyance or other disposition of all or substantially all of the assets of the Company in accordance with Section 5.1, the Person formed by such consolidation or into or with which the Company is merged or to which such sale, lease, conveyance or other disposition is made shall succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such successor Person has been named as the Company herein; provided, however that in the case of a sale, lease, conveyance or other disposition the Company shall not be released from the obligation to pay the Principal of and interest on the Notes.

ARTICLE 6.

DEFAULTS AND REMEDIES

SECTION 6.1 EVENTS OF DEFAULT.

The following shall constitute an "EVENT OF DEFAULT":

(a) failure to pay any Principal or repurchase price, if any, of any Note when due and payable, whether at maturity, upon redemption, upon a Change of Control Offer or otherwise, whether or not such payment is prohibited by the subordination provisions of this Indenture;

(b) failure to pay any interest on any Note when due and payable, which failure continues for ten days, whether or not such payment is prohibited by the subordination provisions of this Indenture;

(c) failure to perform the other covenants of the Company in this Indenture, which failure continues for 60 days after written notice as provided in the last paragraph of this Section 6.1;

(d) a default occurs (after giving effect to any applicable grace periods or any extension of any maturity date) in the payment when due of Principal of, or an acceleration of, any indebtedness for money borrowed by the Company or any of its Subsidiaries (other than an Unrestricted Subsidiary which is not a Significant Subsidiary and provided there is no recourse against the Company or any other Subsidiary with respect to the obligations of such Unrestricted Subsidiary arising as a result of such default) in excess of \$2 million, individually or in the aggregate, if such indebtedness is not discharged, or such acceleration is not annulled, within 30 days after written notice as provided in the last paragraph of this Section 6.1;

(e) the Company or any of its Significant Subsidiaries, pursuant to or within the meaning of any Bankruptcy Law:

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(i) commences a voluntary case,

(ii) consents to the entry of an order for relief against it in an involuntary case,

(iii) consents to the appointment of a Custodian of it or for all or substantially all of its property, and such Custodian is not discharged within 30 days,

(iv) makes a general assignment for the benefit of its creditors, or

(v) admits in writing that it is generally unable to pay its debts as the same become due;

(f) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that:

(i) is for relief in an involuntary case against the Company or any Significant Subsidiary,

(ii) appoints a Custodian of the Company or any Significant Subsidiary or for all or substantially all of the property of the Company or any Significant Subsidiary, or

(iii) orders the liquidation of the Company or any Significant Subsidiary,

and, in each case, the order or decree remains unstayed and in effect for 60 consecutive days.

The term "BANKRUPTCY LAW" means Title 11 of the U.S. Code or any similar federal, foreign or state law for the relief of debtors. The term "CUSTODIAN" means any receiver, trustee, assignee, liquidator, examiner or similar official under any Bankruptcy Law. The term "SIGNIFICANT SUBSIDIARY" has the same meaning as significant subsidiary has under Regulation S- X under the Securities Act as in effect on the date hereof.

A Default under clause (c) of this Section 6.1 (other than a Default under Section 5.1, which Default shall be an Event of Default with the notice but without the passage of time specified in clause (c) of this Section 6.1) or clause (d) of this Section 6.1 shall not be an Event of Default until (i) the Trustee shall have notified the Company, or the Holders of at least 25% in aggregate principal amount of the Notes then outstanding shall have notified the Company and the Trustee, of the Default and (ii) the Company shall have failed to cure the Default under such clause (c) within 60 days after receipt of the notice or under such clause (d) within 10 days after receipt of the notice, respectively. Any such notice must specify the Default, demand that it be remedied and state that the notice is a "NOTICE OF DEFAULT."

SECTION 6.2 ACCELERATION.

If an Event of Default (other than an Event of Default specified in clauses (e) and (f) of Section 6.1) occurs and is continuing, the Trustee (by notice to the Company), or the Holders of at least 25% in aggregate principal amount of the Notes then outstanding (by notice to the Company and the Trustee), may declare the unpaid Principal of and accrued interest on all the Notes then outstanding to be due and payable. Upon any such declaration, such Principal and accrued interest shall be due and payable immediately. If an Event of Default specified in clause (e) or (f) of Section 6.1 occurs, such an amount shall ipso facto become and be immediately due and payable without any declaration or other act on the part of the Trustee or any Holder. The Holders of a majority in aggregate principal amount of the Notes then outstanding by written notice to the Trustee may rescind an acceleration and its consequences if (a) the Company has paid or deposited with the Trustee a sum sufficient to pay (i) all overdue interest on all Notes then outstanding and (ii) the Principal or repurchase price, if any, of the Notes then outstanding which have become due otherwise than by such declaration of acceleration and accrued interest thereon at a rate borne by the Notes and (b) the rescission would not conflict with any judgment or decree and if all existing Events of Default have been cured or waived except nonpayment of Principal or interest that has become due solely because of the acceleration. No such rescission shall affect any subsequent Default or impair any

right consequent thereto.

SECTION 6.3 OTHER REMEDIES.

If an Event of Default occurs and is continuing, the Trustee may pursue any remedy available under applicable law to collect the payment of Principal or repurchase price, if any, of or interest on the Notes or to enforce the performance of any provision of the Notes or this Indenture.

The Trustee may maintain a proceeding even if it does not possess any of the Notes or does not produce any of them in the proceeding. A delay or omission by the Trustee or any Holder in exercising any right or remedy accruing upon an Event of Default shall not impair the right or remedy or constitute a waiver of or acquiescence in the Event of Default. All remedies are cumulative to the extent permitted by law.

SECTION 6.4 WAIVER OF EXISTING AND PAST DEFAULTS.

The Holders of a majority in aggregate principal amount of the Notes then outstanding held by Persons who are not Affiliates of the Company by written notice to the Trustee may waive an existing Default or Event of Default and its consequences, except (i) a continuing Default or Event of Default in the payment of the Principal of or the interest on any Note or (ii) a Default or Event of Default with respect to a provision that under Section 9.2 cannot be amended without the consent of each Holder affected. Upon any such waiver, such Default shall cease to exist and any Event of Default arising therefrom shall be deemed to have been cured

for every purpose of this Indenture; but no such waiver shall extend to any subsequent or other Default or impair any right consequent thereon.

SECTION 6.5 CONTROL BY MAJORITY.

Notwithstanding anything contained in Section 6.3 to the contrary, the Holders of a majority in aggregate principal amount of the Notes then outstanding may direct the time, method and place of conducting any proceeding for any remedy available to the Trustee or exercising any trust or power conferred on it; provided, however, that the Trustee may refuse to follow any direction that conflicts with applicable law or this Indenture or that the Trustee determines is unduly prejudicial to the rights of other Holders or would involve the Trustee in personal liability; provided further, however, that the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction.

Prior to taking any action or following any direction pursuant to this Article 6, the Trustee shall be entitled to request indemnification from the requesting Holders satisfactory to it in its sole discretion against any loss or expense caused by taking such action or following such direction. If the Trustee makes such request, it shall be entitled to delay taking such action or following such direction until it has received such indemnification.

SECTION 6.6 LIMITATION ON SUITS.

A Holder may pursue a remedy with respect to this Indenture or the Notes only if:

(a) the Holder gives to the Trustee notice of a continuing Event of Default;

(b) the Holders of at least 25% in aggregate principal amount of the Notes then outstanding make a written request to the Trustee to pursue the remedy;

(c) such Holder or Holders offer to the Trustee indemnity satisfactory to the Trustee against any loss, liability or expense;

(d) the Trustee does not comply with the request within 60 days after receipt of the request and the offer of indemnity; and

(e) during such 60-day period the Holders of a majority in aggregate principal amount of the Notes then outstanding do not give the Trustee a direction inconsistent with the request.

A Holder may not use this Indenture to prejudice the rights of another Holder or to obtain a preference or priority over another Holder.

SECTION 6.7 RIGHTS OF HOLDERS TO RECEIVE PAYMENT.

Notwithstanding any other provision of this Indenture, the right of any Holder of a Note to receive payment of Principal or repurchase price, if any, of and interest on such Note, on or after the respective due dates expressed in the Note, or to bring suit for the enforcement of any such payment on or after such respective dates, shall not be impaired or affected without the consent of such Holder.

Notwithstanding any other provision of this Indenture, the right of any Holder of a Note to bring suit for the enforcement of the right to convert such Note shall not be impaired or affected without the consent of such Holder.

SECTION 6.8 COLLECTION SUIT BY TRUSTEE.

If an Event of Default specified in Section 6.1(a) or 6.1(b) occurs and is continuing, the Trustee may recover judgment in its own name and as trustee of an express trust against the Company for the whole amount of Principal or repurchase price, if any, of and interest accrued on the Notes and interest on overdue Principal or repurchase price, if any, of and accrued interest on the Notes and for such further amount as shall be sufficient to cover the costs and, to the extent lawful, expenses of collection, including the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and its counsel.

SECTION 6.9 TRUSTEE MAY FILE PROOFS OF CLAIM.

The Trustee may file such proofs of claim and other papers or documents as may be necessary or advisable in order to have the claims of the Trustee and the Holders allowed in any judicial proceedings relative to the Company, its creditors or its property. Except as provided in this Indenture, nothing contained herein shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder any plan of reorganization, arrangement, adjustment or composition affecting the Notes or the rights of any Holder or to authorize the Trustee to vote with respect to the claim of any Holder in any such proceeding.

SECTION 6.10 PRIORITIES.
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If the Trustee collects any money pursuant to this Article 6, it shall pay out the money in the following order:

- First: to the Trustee for amounts due under Section 6.8 or 7.7;
- Second: to holders of Senior Indebtedness to the extent required by Article 11;

- Third: to Holders for amounts due and unpaid on the Notes for Principal and interest, ratably, without preference or priority of any kind, according to the amounts due and payable on the Notes for Principal and interest, respectively; and
- Fourth: to the Company or to such party as a court of competent jurisdiction shall direct.

The Trustee may fix a record date and payment date for any payment to Holders and, if it does so, will give prompt prior written notice thereof to the Registrar.

At least 15 days before any such record date, the Trustee shall give or cause to be given to each Holder a notice that states such record date, such payment date and the amount to be paid.

SECTION 6.11 UNDERTAKING FOR COSTS.
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In any suit for the enforcement of any right or remedy under this Indenture or in any suit against the Trustee for any action taken or omitted by it as a Trustee, a court in its discretion may require the filing by any party litigant in the suit of an undertaking to pay the costs of the suit, and the court in its discretion may assess reasonable costs, including reasonable attorneys' fees, against any party litigant in the suit, having due regard to the merits and good faith of the claims or defenses made by the party litigant. This Section 6.11 does not apply to a suit by the Trustee, a suit by a Holder pursuant to Section 6.7, or a suit by Holders of more than 10% in aggregate principal amount of the then outstanding Notes or any suit for the enforcement of the right to convert any Note in accordance with Article 10.

TRUSTEE

SECTION 7.1 DUTIES OF TRUSTEE.

(a) If an Event of Default has occurred and is continuing, the Trustee shall exercise such of the rights and powers vested in it by this Indenture, and use the same degree of care and skill in their exercise, as a prudent person would exercise or use under the circumstances in the conduct of such person's own affairs.

(b) Except during the continuance of an Event of Default:

(i) The Trustee need perform only those duties that are specifically set forth in this Indenture or the TIA and no others; and

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(ii) in the absence of negligence, willful misconduct or bad faith on its part, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture. However, the Trustee shall examine the certificates and opinions to determine whether or not they conform to the requirements of this Indenture, but the Trustee need not verify the contents thereof.

(c) The Trustee may not be relieved from liability for its own negligent action, its own negligent failure to act, or its own willful misconduct, except that:

(i) this Section 7.1(c) does not limit the effect of Section 7.1(b);

(ii) the Trustee shall not be liable for any error of judgment made in good faith by a Trust Officer, unless it is proved that the Trustee was negligent in ascertaining the pertinent facts; and

(iii) the Trustee shall not be liable with respect to any action it takes or omits to take in good faith in accordance with a direction received by it pursuant to Section 6.5.

(d) Every provision of this Indenture that in any way relates to the Trustee is subject to the provisions of the TIA and Sections 7.1(a), 7.1(b), 7.1(c) and 7.1(e).

(e) The Trustee may refuse to perform any duty or exercise any right or power hereunder unless it receives indemnity satisfactory to it against any loss, liability or expense.

(f) The Trustee shall not be liable for interest on any money received by it hereunder, except as the Trustee may agree in writing with the Company. Money held by the Trustee in trust hereunder need not be segregated from other funds, except to the extent required by law.

SECTION 7.2 RIGHTS OF TRUSTEE.

(a) The Trustee may conclusively rely on any document believed by it to be genuine and to have been signed or presented by the proper Person. The Trustee need not investigate any fact or matter stated in the document, but the Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters to the extent reasonably deemed necessary by it.

(b) Before the Trustee acts or refrains from acting pursuant to the terms of this Indenture or otherwise, it may require an Officers' Certificate or an Opinion of Counsel, or both. The Trustee shall not be liable for any action it takes or omits to take in good faith in reliance on such Officers' Certificate or Opinion of Counsel.

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(c) The Trustee may act through agents and attorneys and shall not be responsible for the willful misconduct or gross negligence of any agents and attorneys appointed with due care.

(d) Subject to the provisions of Section 7.1(c), the Trustee shall not be liable for any action it takes or omits to take in good faith which it believes to be authorized or within its rights or powers conferred by this Indenture.

SECTION 7.3 INDIVIDUAL RIGHTS OF TRUSTEE.

The Trustee in its individual or any other capacity may become the owner or pledgee of Notes and may otherwise deal with the Company or any Affiliate of the Company with the same rights it would have if it were not Trustee. Any Agent may do the same with like rights. However, the Trustee is subject to and must comply with Sections 7.10 and 7.11.

SECTION 7.4 TRUSTEE'S DISCLAIMER.

The Trustee makes no representation as to the validity or adequacy of this Indenture or the Notes, it shall not be accountable for the Company's use of the proceeds from the Notes, and it shall not be responsible for any statement of the Company in this Indenture or any statement in the Notes other than its authentication.

SECTION 7.5 NOTICE OF DEFAULTS.

If a Default or Event of Default occurs and is continuing and if it is actually known to the Trustee, the Trustee shall mail to the Company and each Holder a notice of the Default or Event of Default within 90 days after it occurs, unless such Default or Event of Default shall have been cured or waived. Except in the case of a Default or Event of Default in payment on any Note under Section 6.1(a) or 6.1(b), the Trustee may withhold the notice if and so long as a committee of its Trust Officers in good faith determines that withholding the notice is in the best interests of Holders.

SECTION 7.6 REPORTS BY TRUSTEE TO HOLDERS.

Within 60 days after each May 15, commencing, May 15, 1997, the Trustee shall mail to the Company and each Holder, at the Company's expense, a brief report dated as of such reporting date that complies with TIA [Section]313(a) (but if no event described in TIA [Section]313(a) has occurred within the 12 months preceding the reporting date, no report need be transmitted). The Trustee also shall comply with TIA [Section]313(b)(2) to the extent applicable. The Trustee shall also transmit by mail all reports as required by TIA [Section]313(c).

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Provided that this Indenture shall have been qualified under the TIA, a copy of each report at the time of its mailing to Holders shall be filed with the SEC and each stock exchange or market on which the Notes are listed or admitted to trading. The Company shall promptly notify the Trustee when the Notes are listed on any stock exchange or admitted to trading on any market and of any delisting thereof.

SECTION 7.7 COMPENSATION AND INDEMNITY.

The Company shall pay to the Trustee (in its capacities as Trustee, Conversion Agent, Paying Agent and Registrar) from time to time such compensation as may be agreed in writing between the Company and the Trustee for its services hereunder. The Trustee's compensation shall not be (to the extent permitted by law) limited by any law on compensation of a trustee of an express trust. The Company shall reimburse the Trustee upon request for all reasonable out-of-pocket expenses incurred by it in accordance with any provision of this Indenture. Such expenses may include the reasonable compensation and out-of-pocket expenses of the Trustee's agents and counsel, except such disbursements, advances and expenses as may be attributable to its negligence, willful misconduct or bad faith. Any "float" earned on any money disbursed hereunder shall be considered additional compensation to the Trustee.

The Company shall indemnify the Trustee (in its capacity as Trustee, Conversion Agent, Paying Agent and Registrar) and each of its officers, directors, employees, attorneys-in-fact and agents for, and hold each of such Persons harmless against, any claim, demand, expense (including, but not limited to, reasonable disbursements and expenses of the Trustee's agents and counsel), loss or liability incurred by any of them without negligence, willful misconduct or bad faith on such Person's part, arising out of or in connection with the administration of this trust and the rights or duties of the Trustee hereunder, including the reasonable costs and expenses of such Person's defense against any claim or liability in connection with the exercise or performance of any of the Trustee's powers or duties hereunder. The Trustee shall notify the Company promptly of any claim asserted against the Trustee for which it may seek indemnity. The Company shall defend the claim and the Trustee shall provide reasonable cooperation at the Company's expense in the defense. The Trustee may engage separate counsel at its own expense and participate in the defense, provided that the Company shall bear the reasonable expenses of such separate counsel which is reasonably acceptable to the Company if the defendants regarding such claim include both the Trustee and the Company and the Company and the Trustee shall have been advised in writing by the Trustee's separate counsel that representation of the Trustee and the Company would be inappropriate under applicable standards of professional responsibility due to actual or potential differing interests between them. The Company need not reimburse any expense or indemnify against any loss or liability to the extent

incurred by the Trustee through its negligence, bad faith or willful misconduct. The Company need not pay for any settlement made without its consent, which consent shall not be unreasonable withheld.

The Company's payment obligations pursuant to this Section 7.7 shall survive the discharge of this Indenture. When the Trustee incurs expenses or renders services after an Event

of Default specified in Section 6.1(e) or 6.1(f) occurs, the expenses and the compensation for the services are intended to constitute expenses of administration under any Bankruptcy Law.

SECTION 7.8 REPLACEMENT OF TRUSTEE.

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A resignation or removal of the Trustee and appointment of a successor Trustee shall become effective only upon the successor Trustee's acceptance of appointment as provided in this Section 7.8.

The Trustee may resign by so notifying the Company in writing at least 30 days prior to the date of the proposed resignation; provided, however, that no such resignation shall be effective until a successor Trustee has accepted its appointment pursuant to this Section 7.8. The Holders of a majority in aggregate principal amount of the then outstanding Notes may remove the Trustee by so notifying the Trustee and the Company. The Company shall remove the Trustee if:

- (a) the Trustee fails to comply with Section 7.10;
- (b) the Trustee is adjudged a bankrupt or an insolvent or an order for relief is entered with respect to the Trustee under any Bankruptcy Law;
- (c) a Custodian or public officer takes charge of the Trustee or its property; or
- (d) the Trustee otherwise becomes incapable of acting.

If the Trustee resigns or is removed or if a vacancy exists in the office of Trustee for any reason, the Company shall promptly appoint a successor Trustee.

If a successor Trustee is not appointed or does not take office within 30 days after the retiring Trustee resigns or is removed, the retiring Trustee, the Company or the Holders of at least 10% in aggregate principal amount of the then outstanding Notes may petition any court of competent jurisdiction for the appointment of a successor Trustee.

If the Trustee fails to comply with Section 7.10, any Holder may petition any court of competent jurisdiction for the removal of the Trustee and the appointment of a successor Trustee.

A successor Trustee shall deliver a written acceptance of its appointment to the retiring Trustee and to the Company. Thereupon the resignation or removal of the retiring Trustee shall become effective, and the successor Trustee shall have all the rights, powers and duties of the Trustee under this Indenture. The successor Trustee shall mail a notice of its succession to the Holders. The retiring Trustee shall promptly transfer all property held by it as Trustee to

the successor Trustee upon payment of all amounts due it hereunder.
Notwithstanding the

replacement of the Trustee pursuant to this Section 7.8, the Company's obligations under Section 7.7 shall continue for the benefit of the retiring Trustee with respect to expenses and liabilities incurred by it prior to such replacement.

SECTION 7.9 SUCCESSION TRUSTEE BY MERGER.

Except as otherwise provided in Section 7.8(a) or 7.8(d), if the Trustee consolidates, merges or converts into, or transfers all or substantially all of its corporate trust business to, another corporation, the successor corporation without any further act shall be the successor Trustee.

SECTION 7.10 ELIGIBILITY; DISQUALIFICATION.

This Indenture shall always have a Trustee who satisfies the requirements of TIA ss. 310(a). The Trustee shall always have a combined capital and surplus as stated in its most recent published annual report of condition of at least \$100 million. The Trustee shall comply with TIA ss. 310(b). In the event the Trustee shall cease to be eligible in accordance with this Section 7.10, the Trustee shall resign immediately in the manner and with the effect specified in Section 7.8.

SECTION 7.11 PREFERENTIAL COLLECTION OF CLAIMS AGAINST COMPANY.

The Trustee shall comply with TIA ss. 311(a), excluding any creditor relationship listed in TIA ss. 311(b). A Trustee who has resigned or been removed shall be subject to TIA ss. 311(a) to the extent indicated therein.

ARTICLE 8.

DISCHARGE OF INDENTURE

SECTION 8.1 TERMINATION OF COMPANY'S OBLIGATIONS.

This Indenture shall cease to be of further effect (except that the Company's obligations under Section 7.7 and 8.3 shall survive) when all outstanding Notes theretofore authenticated and issued (other than destroyed, lost or stolen Notes which have been replaced or paid) have been delivered to the Trustee for cancellation and the Company has paid all sums payable hereunder. In addition, the Company shall be discharged from all of its obligations under Section 2.13 and Sections 4.3 through 4.12 while the Notes remain outstanding if all outstanding Notes will become due and payable at their scheduled maturity within one year and the following conditions have been satisfied:

(a) the Company has deposited, or caused to be deposited, irrevocably with the Trustee as trust funds specifically pledged as security for, and dedicated solely for, such purpose, (i) money in an amount, (ii) non-callable U.S. Government Obligations which through the payment of Principal and interest in accordance with their terms (without the reinvestment of such interest or Principal) will provide not later than one day before the due date of any payment money in an amount, or (iii) a combination thereof, sufficient with respect to clauses (ii) and (iii) in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee at or prior to the time of such deposit, to pay the Principal and discharge each installment of interest on the outstanding Notes.

(b) no Default or Event of Default with respect to the Notes has occurred and is continuing on the date of such deposit or shall occur as a result of such deposit or at any time during the period ending on the 91st day after the date of such deposit, as evidenced to the Trustee by an Officer's Certificate delivered to the Trustee concurrently with such deposit.

(c) such defeasance does not result in a breach or violation of, or constitute a default under, any other agreement or instrument to which the Company is a party or by which it is bound, and is not prohibited by Article 11, as evidenced to the Trustee by an Officers' Certificate delivered to the Trustee concurrently with such deposit.

(d) the Company has delivered to the Trustee a private Internal Revenue Service ruling or an Opinion of Counsel that Holders will not recognize income, gain or loss for federal income tax purposes as a result of such deposit, defeasance and discharge and will be subject to federal income tax on the same amount, in the same manner, and at the same times, as would have been the case if such deposit, defeasance and discharge had not occurred.

(e) the Company has delivered to the Trustee an Opinion of Counsel to the effect that the deposit shall not result in the Company, the Trustee or the trust being deemed to be an "investment company" under the Investment Company Act of 1940, as amended.

(f) 91 days pass after the deposit is made and during such 91 day period no event of Default specified in Section 6.1(e) or (f) shall occur and be continuing at the end of such period.

(g) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that such deposit, defeasance and discharge does not conflict with the applicable provisions of this Indenture.

(h) the Company has delivered to the Trustee an Officers' Certificate stating that all conditions precedent under this Indenture relating to such deposit, defeasance and discharge have been complied with.

Notwithstanding the foregoing, the Company's obligations to pay Principal and interest on the Notes shall continue until the Internal Revenue Service ruling or Opinion of Counsel referred to in clause (d) above is provided. If the Company exercises such option to discharge such

provisions of the Indenture, payment of the Notes may not be accelerated because of an event of default specified in Sections 6.1(c) with respect to the failure to perform any of the covenants set forth in Section 2.13 and Section 4.3 through 4.12, or Section 6.1(d).

After a deposit made pursuant to this Section 8.1, the Trustee upon request shall acknowledge in writing the discharge of the Company's obligations specified above under this Indenture.

SECTION 8.2 APPLICATION OF TRUST MONEY.
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The Trustee shall hold in trust money or U.S. Government Obligations deposited with it pursuant to Section 8.1. It shall apply the deposited money and the money from U.S. Government Obligations through the Paying Agent and in accordance with this Indenture to the payment of Principal and interest on the Notes. Money and securities so held in trust are not subject to Article 11.

SECTION 8.3 REPAYMENT TO COMPANY.
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The Trustee and the Paying Agent shall promptly pay to the Company upon request any excess money or securities held by them at any time.

The Trustee and the Paying Agent shall pay to the Company upon written request by the Company any money held by them for the payment of Principal, repurchase price or interest that remains unclaimed for one year after the date upon which such payment shall have become due; provided, however, that the Company shall have first caused notice of such payment to the Company to be mailed to each Holder entitled thereto no less than 30 days prior to such payment. After payment to the Company, Holders entitled to the money must look to the Company for payment as general creditors unless an applicable abandoned property law designates another Person.

SECTION 8.4 REINSTATEMENT.
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If the Trustee or Paying Agent is unable to apply any money in accordance with Section 8.2 by reason of any order or judgment of any court or governmental authority enjoining, restraining or otherwise prohibiting such application, the Company's obligations under this Indenture and the Notes shall be revived and reinstated as though no deposit had occurred pursuant to Section 8.1 until such time as the Trustee or Paying Agent is permitted to apply all such money in accordance with Section 8.2; provided, however that if the Company makes any payment of interest on or Principal of any Note following the reinstatement of its obligations, the Company shall be subrogated to the rights of the Holders of such Notes to receive such payment from the money held by the Trustee or Paying Agent.

AMENDMENTS

SECTION 9.1 WITHOUT CONSENT OF HOLDERS.

The Company and the Trustee may amend this Indenture or the Notes without the consent of any Holder:

(a) to cure any ambiguity, defect or inconsistency; provided such amendment does not adversely affect the rights of any Holder;

(b) to comply with Section 5.1 or 10.5;

(c) to provide for uncertificated Notes in addition to or in lieu of certificated Notes;

(d) to add to the covenants of the Company such further covenants, restrictions, conditions or provisions for the protection of the Holders, and to make the occurrence, or the occurrence and continuance, of a default in any such additional covenants, restrictions, conditions or provisions an Event of Default permitting the enforcement of all or any of the several remedies provided in this Indenture or in the Notes as herein set forth;

(e) to make any change that does not adversely affect the rights hereunder of any Holder; or

(f) to comply with requirements of the SEC in order to effect or maintain the qualification of this Indenture under the TIA;

provided, however, that, in each case, the Company has delivered to the Trustee an Officers' Certificate stating that such amendment complies with the provisions of this Section 9.1 and an Opinion of Counsel stating that adoption of such amendment does not conflict with the provisions of this Section 9.1.

SECTION 9.2 WITH CONSENT OF HOLDERS.

Subject to the provisions of Sections 6.4 and 6.7, the Company and the Trustee may amend or modify this Indenture or the Notes with the written consent of the Holders of at least a majority in aggregate principal amount of the then outstanding Notes, and the Holders of a majority in aggregate principal amount of the Notes then outstanding may waive compliance in a particular instance by the Company with any provision of this Indenture or the Notes; provided, however, that, without the consent of each Holder affected, an amendment,

modification or waiver under this Section 9.2 may not (with respect to any Notes held by a nonconsenting Holder):

(a) change the stated maturity of, or any installment of interest on, or waive a default in the payment of Principal or repurchase price, if any, of or interest on any Note;

(b) reduce the principal amount of any Note or reduce the rate or extend the time of payment of interest on any Note;

(c) increase the Conversion Price (other than in connection with a combination described in Section 10.4(a)(iii));

(d) change the place or currency of payment of Principal or repurchase price, if any, of or interest on any Note;

(e) impair the right to institute suit for the enforcement of any payment on or with respect to any Note;

(f) adversely affect the right to exchange or convert Notes;

(g) reduce the percentage of the aggregate principal amount of outstanding Notes, the consent of the Holders of which is necessary to amend this Section 9.2, consent to a merger, consolidation or conveyance, sale, transfer or lease of assets as described in Section 5.1 or modify or amend any other provision of this Indenture;

(h) reduce the percentage of the aggregate principal amount of outstanding Notes, the consent of the Holders of which is necessary for waiver of compliance with certain provisions of this Indenture or for waiver of certain defaults;

(i) modify the provisions of this Indenture with respect to the subordination of the Notes in a manner adverse to the Holders;

(j) except as otherwise permitted under Article 5, consent to the assignment or transfer by the Company of any of its rights and obligations under this Indenture; or

(k) modify the provisions of this Indenture with respect to the obligation of the Company to repurchase Notes in a manner adverse to the Holders.

To secure a consent of the Holders under this Section 9.2, it shall not be necessary for the Holders to approve the particular form of any proposed amendment or waiver, but it shall be sufficient if such consent approves the substance thereof.

After an amendment or waiver under this Section 9.2 becomes effective, the Company shall mail to Holders a notice briefly describing the amendment or waiver. Any failure of the

Company to mail such notices, or any defect therein, shall not, however, in any way, impair or affect the validity of any such amendment or waiver.

SECTION 9.3 COMPLIANCE WITH TRUST INDENTURE ACT.

Every amendment to this Indenture or the Notes shall be set forth in a supplemental indenture that complies with the TIA as then in effect.

SECTION 9.4 REVOCATION AND EFFECT OF CONSENTS.

Until an amendment, supplemental indenture or waiver becomes effective, a

consent to it by a Holder of a Note is a continuing consent by such Holder and every subsequent Holder of a Note or portion of a Note that evidences the same debt as such consenting Holder's Note, even if notation of the consent is not made on any Note. However, prior to becoming effective, any such Holder or subsequent Holder may revoke the consent as to its Notes or a portion thereof if the Trustee receives written notice of revocation before the consent of Holders of the requisite aggregate principal amount of Notes then outstanding has been obtained and not revoked.

The Company may, but shall not be obligated to, fix a record date pursuant to Section 12.1 for the purpose of determining the Holders entitled to consent to any amendment or waiver. If a record date is fixed, then notwithstanding the provisions of the immediately preceding paragraph, those Persons who were Holders at such record date (or their duly designated proxies), and only those Persons, shall be entitled to consent to such amendment or waiver or to revoke any consent previously given, whether or not such Persons continue to be Holders after such record date. No consent shall be valid or effective for more than 90 days after such record date unless consents from Holders of the principal amount of Notes required hereunder for such amendment or waiver to be effective shall have also been given and not revoked within such 90-day period.

After an amendment or waiver becomes effective it shall bind every Holder, unless it is of the type described in any of clauses (a) through (k) of Section 9.2. In such case, the amendment or waiver shall bind each Holder of a Note who has consented to it and every subsequent Holder of a Note that evidences the same debt as the consenting Holder's Note.

SECTION 9.5 NOTATION ON OR EXCHANGE OF NOTES.

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The Trustee (in accordance with the written direction of the Company) may (at the Company's expense) place an appropriate notation about an amendment, supplement or waiver on any Note thereafter authenticated. The Company in exchange for all Notes may issue and the Trustee shall authenticate new Notes that reflect the amendment or waiver. Failure to make

the appropriate notation or issue a new Note shall not affect the validity and effect of such amendment, supplement or waiver.

SECTION 9.6 TRUSTEE PROTECTED.

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The Trustee shall sign all supplemental indentures authorized by this Indenture, except that the Trustee need not sign any supplemental indenture that adversely affects its rights. In signing or refusing to sign such supplemental indenture, the Trustee shall be entitled to receive an Officers' Certificate and Opinion of Counsel to the effect that such supplemental indenture is authorized or permitted by this Indenture and will be valid and binding on the Company in accordance with its terms.

ARTICLE 10.

CONVERSION

SECTION 10.1 CONVERSION PRIVILEGE.

Each Holder may, at such Holder's option, at any time prior to the close of business on April 1, 2004, unless earlier redeemed or repurchased, convert such Holder's Notes, in whole or in part (in denominations of \$1,000 or multiples thereof), at 100% of the principal amount so converted, into shares of Common Stock at a conversion price per share equal to \$7.0125, as such conversion price may be adjusted from time to time in accordance with this Article 10 (the "CONVERSION PRICE").

SECTION 10.2 CONVERSION PROCEDURE.

To convert a Note, the Holder thereof must (1) complete and sign the "Form of Election to Convert" thereon (unless such Holder is The Depository Trust Company ("DTC") or its nominee, in which case the customary procedures of DTC will apply), (2) surrender such Note to the Conversion Agent, (3) furnish appropriate endorsements and transfer documents if required by the Registrar or the Conversion Agent and (4) pay any transfer or similar tax if required by Section 10.6. The Company's delivery to the Holder of a fixed number of shares of Common Stock (and any cash in lieu of fractional shares of Common Stock into which such Note is converted) shall be deemed to satisfy the Company's obligation to pay the principal amount of such Note and, except as provided in the next two sentences, all accrued interest on such Note. Prior to April 1, 2000, a Holder who surrenders such Note for conversion (including a Note which has been called for redemption and even if a Change of Control Offer has been made) will be paid promptly after such conversion interest accrued but not paid from the most recent date on which interest has been paid or, if no interest has been paid, from the date of original issuance of such Note through the date of such conversion. In addition, if such Note (including a Note which has been called for redemption and even if a Change of Control

Offer has been made) is converted after a regular interest payment record date and prior to the related Interest Payment Date (regardless of whether such conversion occurs before or after April 1, 2000), the full interest installment on such Note scheduled to be paid on such Interest Payment Date shall be payable on such Interest Payment Date to the Holder of record at the close of business on such record date.

As promptly as practicable after the surrender of a Note in compliance with this Section 10.2, the Company shall issue and deliver at the office or agency of the Registrar or the Conversion Agent to such Holder, or on such Holder's written order, a certificate or certificates for the full number of whole shares of Common Stock issuable upon the conversion of such Note in accordance with the provisions of this Article 10 and a check or cash with respect to any fractional share of Common Stock arising upon such conversion as provided in Section 10.3. In case any Note of a denomination greater than \$1,000 shall be surrendered for partial conversion, then, subject to Article 2, the Company shall execute and the Trustee shall authenticate and deliver to the Holder of the Note so surrendered, without charge to such Holder, a new Note or Notes in authorized denominations in an aggregate principal amount equal to the unconverted portion of the surrendered Note.

Each conversion shall be deemed to have been effected on the date on which such Note shall have been surrendered in compliance with this Section

10.2, and the Person in whose name any certificate or certificates for shares of Common Stock shall be issuable upon such conversion shall be deemed to have become on said date the holder of record of the shares of Common Stock represented thereby for all purposes; provided, however, that no surrender of a Note on any date when the stock transfer books of the Company shall be closed shall be effective to constitute the Person or Persons entitled to receive such shares upon such conversion as the record holder or holders of such shares on such date, but such surrender shall be effective to constitute the Person or Persons entitled to receive such shares as the record holder or holders thereof for all purposes at the close of business on the next succeeding day on which such stock transfer books are open and, in any such case, such conversion shall be at the Conversion Price in effect on the date on which such Note shall have been surrendered.

If the last day on which a Note may be converted is not a Business Day, the Note may be surrendered to that Conversion Agent on the next succeeding Business Day.

Provisions of this Indenture that apply to conversion of all of a Note also apply to conversion of a portion of such Note.

SECTION 10.3 CASH PAYMENTS IN LIEU OF FRACTIONAL SHARES.

No fractional shares of Common Stock or scrip representing fractional shares of Common Stock shall be issued upon conversion of Notes. If more than one Note shall be surrendered for conversion at one time by the same Holder, the full number of whole shares of Common Stock which shall be issuable upon conversion shall be computed on the basis of the aggregate principal amount of Notes (or specified portions thereof to the extent permitted hereby) so

surrendered. If any fractional share of Common Stock would be issuable upon the conversion of any Note or Notes, the Company shall make an adjustment therefor in cash at the Current Market Price of the Common Stock as of the close of business on the Business Day prior to such conversion.

SECTION 10.4 ADJUSTMENT OF CONVERSION PRICE.

(a) If the Company shall (i) pay a dividend or other distribution, in Common Stock, on any class of Capital Stock of the Company, (ii) subdivide the outstanding Common Stock into a greater number of shares by any means or (iii) combine the outstanding Common Stock into a smaller number of shares by any means (including, without limitation, a reverse stock split), then in each such case the Conversion Price in effect immediately prior thereto shall be adjusted so that the Holder of any Note thereafter surrendered for conversion shall be entitled to receive the number of shares of Common Stock that such Holder would have owned or have been entitled to receive upon the happening of such event had such Note been converted immediately prior to the relevant record date or, if there is no such record date, the effective date of such event. An adjustment made pursuant to this Section 10.4(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date of such subdivision or combination, as the case may be.

(b) If the Company shall (i) issue or distribute (at a price per share

less than the Current Market Price per share of such Capital Stock on the date of such issuance or distribution) Capital Stock generally to holders of Common Stock or to holders of any class or series of Capital Stock which is convertible into or exchangeable or exercisable for Common Stock (excluding an issuance or distribution of Common Stock described in Section 10.4(a)) or (ii) issue or distribute generally to such holders rights, warrants, options or convertible or exchangeable securities entitling the holder thereof to subscribe for, purchase, convert into or exchange for Capital Stock at a price per share less than the Current Market Price per share of such Capital Stock on the date of issuance or distribution, then, in each such case, at the earliest of (A) the date the Company enters into a firm contract for such issuance or distribution, (B) the record date for the determination of stockholders entitled to receive any such Capital Stock or any such rights, warrants, options or convertible or exchangeable securities or (C) the date of actual issuance or distribution of any such Capital Stock or any such rights, warrants, options or convertible or exchangeable securities, the Conversion Price shall be reduced by multiplying the Conversion Price in effect immediately prior to such earliest date by:

(x) if such Capital Stock is Common Stock, a fraction the numerator of which is the number of shares of Common Stock outstanding on such earliest date plus the number of shares of Common Stock which could be purchased at the Current Market Price per share of Common Stock on the date of such issuance or distribution with the aggregate consideration (based on the Fair Market Value thereof) received or receivable by the Company either (A) in connection with such issuance or distribution or (B) upon the conversion, exchange, purchase or subscription of all such rights, warrants, options or

convertible or exchangeable securities (the "AGGREGATE CONSIDERATION"), and the denominator of which is the number of shares of Common Stock outstanding on such earliest date plus the number of shares of Common Stock to be so issued or distributed or to be issued upon the conversion, exchange, purchase or subscription of all such rights, warrants, options or convertible or exchangeable securities; or

(y) if such Capital Stock is other than Common Stock, a fraction the numerator of which is the Current Market Price per share of Common Stock on such earliest date minus an amount equal to (A) the difference between (1) the Current Market Price per share of such Capital Stock multiplied by the number of shares of such Capital Stock to be so issued and (2) the Aggregate Consideration, divided by (B) the number of shares of Common Stock outstanding on such date, and the denominator of which is the Current Market Price per share of Common Stock on such earliest date.

Such adjustment shall be made successively whenever any such Capital Stock, rights, warrants, options or convertible or exchangeable securities are so issued or distributed. In determining whether any rights, warrants, options or convertible or exchangeable securities entitle the holders thereof to subscribe for, purchase, convert into or exchange for shares of such Capital Stock at less than such Current Market Price, there shall be taken into account the Fair Market Value of any consideration received or receivable by the Company for such rights, warrants, options or convertible or exchangeable securities. If any right, warrant, option or convertible or exchangeable securities, the issuance of which resulted in an adjustment in the Conversion Price pursuant to this Section 10.4(b), shall expire and shall not have been exercised, the Conversion Price shall immediately upon such expiration be recomputed to the Conversion Price which would have been in effect if such right, warrant, option or

convertible or exchangeable securities had never been distributed or issued. Notwithstanding anything contained in this paragraph to the contrary, (i) the issuance of Capital Stock upon the exercise of such rights, warrants or options or the conversion or exchange of such convertible or exchangeable securities will not cause an adjustment in the Conversion Price if no such adjustment would have been required at the time such right, warrant, option or convertible or exchangeable security was issued or distributed; provided, however, that, if the consideration payable upon such exercise, conversion or exchange and/or the Capital Stock receivable thereupon are changed after the time of the issuance or distribution of such right, warrant, option or convertible or exchangeable security, then such change shall be deemed to be the expiration thereof without having been exercised and the issuance or distribution of new options, rights, warrants or convertible or exchangeable securities and (ii) the issuance of convertible preferred stock of the Company as a dividend on convertible preferred stock of the Company will not cause an adjustment in the Conversion Price if no such adjustment would have been required at the time such underlying convertible preferred stock was issued (or as a result of any subsequent modification to the terms thereof) and the conversion provisions of such convertible stock so issued as a dividend are the same as in such underlying convertible preferred stock.

Notwithstanding anything contained in this Indenture to the contrary, options, rights or warrants issued or distributed by the Company, including options, rights or warrants distributed prior to the date of this Indenture, to holders of Common Stock generally which, until the

occurrence of a specified event or events (a "TRIGGER EVENT"), (i) are deemed to be transferred with Common Stock, (ii) are not exercisable and (iii) are also issued on a pro rata basis with respect to future issuances of Common Stock, shall be deemed not to have been issued or distributed for purposes of this Section 10.4 (and no adjustment to the Conversion Price under this Section 10.4 will be required) until the occurrence of the earliest Trigger Event. Upon the occurrence of a Trigger Event, such options, rights or warrants shall continue to be deemed not to have been issued or distributed for purposes of this Section 10.4 (and no adjustment to the Conversion Price under this Section 10.4 will be required) if and for so long as each Holder who thereafter converts such Holder's Notes shall be entitled to receive upon such conversion, in addition to the shares of Common Stock issuable upon such conversion, a number of such options, rights or warrants, as the case may be, equal to the number of options, rights or warrants to which a holder of the number of shares of Common Stock equal to the number of shares of Common Stock issuable upon conversion of such Holder's Notes is entitled to receive at the time of such conversion in accordance with the terms and provisions of and applicable to such options, rights or warrants. Upon the expiration of any such options, rights or warrants or at such time, if any, as a Holder is not entitled to receive such options, rights or warrants upon conversion of such Holder's Notes, an adjustment (if any is required) to the Conversion Price shall be made in accordance with this Section 10.4(b) with respect to the issuance of all such options, rights and warrants as of the date of issuance thereof, but subject to the provisions of the preceding paragraph. If any such option, right or warrant, including any such options, rights or warrants distributed prior to the date of this Indenture, are subject to events, upon the occurrence of which such options, rights or warrants become exercisable to purchase different securities, evidences of indebtedness, cash, Properties or other assets or different amounts thereof, then, subject to the preceding provisions of this paragraph, the date of the occurrence of any and each such event shall be deemed to be the date of distribution and record date with respect to new options, rights or warrants with such new purchase rights (and a termination or expiration of the existing

options, rights or warrants without exercise thereof). In addition, in the event of any distribution (or deemed distribution) of options, rights or warrants, or any Trigger Event or other event of the type described in the preceding sentence, that required (or would have required but for the provisions of Section 10.4(e) or this paragraph) an adjustment to the Conversion Price under this Section 10.4 and such options, rights or warrants shall thereafter have been redeemed or repurchased without having been exercised, then the Conversion Price shall be adjusted upon such redemption or repurchase to give effect to such distribution, Trigger Event or other event, as the case may be, as though it had instead been a cash distribution, equal on a per share basis to the result of the aggregate redemption or repurchase price received by holders of such options, rights or warrants divided by the number of shares of Common Stock outstanding as of the date of such repurchase or redemption, made to holders of Common Stock generally as of the date of such redemption or repurchase.

Notwithstanding anything contained in this Section 10.4(b) to the contrary, no adjustment shall be made in the Conversion Price pursuant to this Section 10.4(b) with respect to the issuance of Common Stock or options or other rights to purchase Common Stock pursuant to any employee stock purchase, bonus, award, grant, option or ownership plan (including, without limitation, an employee stock ownership plan which is part of an employee benefit plan qualified under Section 401 of the Internal Revenue Code of 1986, as amended (the "CODE"), an employee

stock option or incentive stock option plan qualified under Section 422 of the Code and a restricted stock plan), including the issuance of Common Stock upon the exercise of such options; provided, that, for purposes of this paragraph, the term "employee" includes directors, consultants and advisors and the term "plan" means a plan, program or arrangement in which 5 or more Persons are eligible to participate (or, if only directors or outside directors of the Company are eligible to participate and there are fewer than 5 such directors or outside directors, as the case may be, in which all of such directors or outside directors, as the case may be, are eligible to participate).

(c) If the Company shall pay or distribute, as a dividend or otherwise, generally to holders of Common Stock or any class or series of Capital Stock which is convertible into or exercisable or exchangeable for Common Stock any assets, Properties or rights (including, without limitation, evidences of indebtedness of the Company, any Subsidiary or any other Person, cash or Capital Stock or other securities of the Company, any Subsidiary or any other Person, but excluding payments and distributions as described in Section 10.4(a) or 10.4(b), dividends and distributions in connection with the liquidation, dissolution or winding up of the Company in its entirety and distributions consisting solely of cash described in Section 10.4(d)), then in each such case the Conversion Price shall be reduced by multiplying the Conversion Price in effect immediately prior to the date of such payment or distribution by a fraction, the numerator of which is the Current Market Price per share of Common Stock on the record date for the determination of stockholders entitled to receive such payment or distribution less the Fair Market Value per share on such record date of the assets, Properties or rights so paid or distributed, and the denominator of which is the Current Market Price per share of Common Stock on such record date. Such adjustment shall become effective immediately after such record date. For purposes of this Section 10.4(c), such Fair Market Value per share shall equal the aggregate Fair Market Value on such record date of the assets, Properties or rights so paid or distributed divided by the number of shares of Common Stock outstanding on such record date.

(d) If the Company shall, by dividend or otherwise, make a distribution (other than in connection with the liquidation, dissolution or winding up of the Company in its entirety), generally to holders of Common Stock or any class or series of Capital Stock which is convertible into or exercisable or exchangeable for Common Stock, consisting solely of cash where (x) the sum of (i) the aggregate amount of such cash plus (ii) the aggregate amount of all cash so distributed (by dividend or otherwise) to such holders within the 12-month period ending on the record date for determining stockholders entitled to receive such distribution with respect to which no adjustment has been made to the Conversion Price pursuant to this Section 10.4(d) exceeds (y) 10% of the result of the multiplication of (1) the Current Market Price per share of Common Stock on such record date times (2) the number of shares of Common Stock outstanding on such record date, then the Conversion Price shall be reduced, effective immediately prior to the opening of business on the day following such record date, by multiplying the Conversion Price in effect immediately prior to the close of business on the day prior to such record date by a fraction, the numerator of which is the Current Market Price per share of Common Stock on such record date less the aggregate amount of cash per share so distributed and the denominator of which is such Current Market Price; provided, however, that,

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if the aggregate amount of cash per share is equal to or greater than such Current Market Price, then, in lieu of the foregoing adjustment, adequate provision shall be made so that each Holder shall have the right to receive upon conversion (with respect to each share of Common Stock issued upon such conversion and in addition to the Common Stock issuable upon conversion) the aggregate amount of cash per share such Holder would have received had such Holder's Note been converted immediately prior to such record date. In no event shall the Conversion Price be increased pursuant to this Section 10.4(d); provided, however, that if such distribution is not so made, the Conversion Price shall be adjusted to be the Conversion Price which would have been in effect if such distribution had not been declared. For purposes of this paragraph of this Section 10.4(d), such aggregate amount of cash per share shall equal such sum divided by the number of shares of Common Stock outstanding on such record date.

(e) The provisions of this Section 10.4 shall similarly apply to all successive events of the type described in this Section 10.4. Notwithstanding anything contained herein to the contrary, no adjustment in the Conversion Price shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price then in effect; provided, however, that any adjustments which by reason of this Section 10.4(e) are not required to be made shall be carried forward and taken into account in any subsequent adjustment. All calculations under this Article 10 shall be made by the Company and shall be made to the nearest cent or to the nearest one hundredth of a share, as the case may be, and the Trustee shall be entitled to rely conclusively thereon. Notwithstanding anything contained in this Section 10.4 to the contrary, the Company shall be entitled to make such reductions in the Conversion Price, in addition to those required by this Section 10.4, as it in its discretion shall determine to be advisable in order that any stock dividends, subdivision of shares, distribution of rights to purchase stock or securities, or distribution of securities convertible into or exchangeable for stock hereafter made by the Company to its stockholders shall not be taxable. Except as provided in this Article 10, no adjustment in the Conversion Price will be made for the issuance of Common Stock or any securities convertible into or exchangeable for Common Stock or carrying the right to purchase Common Stock or any securities so convertible or exchangeable.

(f) Whenever the Conversion Price is adjusted as provided herein, the Company shall promptly file with the Trustee and any Conversion Agent other than

the Trustee an Officers' Certificate setting forth the Conversion Price in effect after such adjustment and setting forth a brief statement of the facts requiring such adjustment. Promptly after delivery of such Officers' Certificate, the Company shall give or cause to be given to each Holder a notice of such adjustment of the Conversion Price setting forth the adjusted Conversion Price and the date on which such adjustment becomes effective.

(g) Notwithstanding anything contained herein to the contrary, in any case in which this Section 10.4 provides that an adjustment in the Conversion Price shall become effective immediately after a record date for an event, the Company may defer until the occurrence of such event (i) issuing to the Holder of any Note converted after such record date and before the occurrence of such event the additional shares of Common Stock issuable upon such conversion by reason of the adjustment required by such event over and above the number of shares of Common Stock issuable upon such conversion before giving effect to such adjustment and (ii)

paying to such Holder any amount in cash in lieu of any fractional share of Common Stock pursuant to Section 10.3.

SECTION 10.5 EFFECT OF RECLASSIFICATION, CONSOLIDATION, MERGER OR SALE.

In the event of (i) any reclassification (including, without limitation, a reclassification effected by means of an exchange or tender offer by the Company or any Subsidiary) or change of outstanding Common Stock (other than a change in par value, or from par value to no par value, or from no par value to par value, or as a result of a subdivision or combination), (ii) any consolidation, merger or combination of the Company with another corporation as a result of which holders of Common Stock shall be entitled to receive securities or other Property (including cash) with respect to or in exchange for Common Stock or (iii) any sale or conveyance of the Property of the Company as, or substantially as, an entirety to any other corporation as a result of which holders of Common Stock shall be entitled to receive securities or other Property (including cash) with respect to or in exchange for Common Stock, then the Company or the successor or purchasing corporation, as the case may be, shall enter into a supplemental indenture providing that each Note shall be convertible into the kind and amount of securities or other Property (including cash) receivable upon such reclassification, change, consolidation, merger, combination, sale or conveyance which the Holder of such Note would have received if such Note had been converted immediately prior to such reclassification, change, consolidation, merger, combination, sale or conveyance. Such supplemental indenture shall provide for adjustments which shall be as nearly equivalent as may be practicable to the adjustments provided for in this Article 10.

Whenever a supplemental indenture is entered into as provided herein, the Company shall promptly file with the Trustee and any Conversion Agent other than the Trustee an Officers' Certificate setting forth a brief statement of the facts requiring such supplemental indenture. Promptly after delivery of such Officers' Certificate, the Company shall give or cause to be given to each Holder a notice of the execution of such supplemental indenture.

The provisions of this Section 10.5 shall similarly apply to all successive events of the type described in this Section 10.5.

SECTION 10.6 TAXES ON SHARES ISSUED.

The issuance of a certificate or certificates on conversions of Notes shall be made without charge to the Holders of such Notes for any tax or charge with respect to the issuance thereof. The Company shall not, however, be required to pay any tax or charge which may be payable with respect to any transfer involved in the issuance and delivery of a certificate or certificates in any name other than that of the Holders of such Notes, and the Company shall not be required to issue or deliver any such certificate or certificates unless and until the Person or Persons requesting the issuance thereof shall have paid to the Company the amount of such tax or charge

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or shall have established to the satisfaction of the Company that such tax or charge has been paid.

SECTION 10.7 RESERVATION OF SHARES; SHARES TO BE FULLY PAID; COMPLIANCE WITH
GOVERNMENT REQUIREMENTS; LISTING OF COMMON STOCK.

The Company shall reserve, out of its authorized but unissued Common Stock or its Common Stock held in treasury, sufficient shares of Common Stock to provide for the conversion of all of the Notes that are outstanding from time to time.

Before taking any action which would cause an adjustment reducing the Conversion Price below the then par value, if any, of the Common Stock issuable upon conversion of Notes, the Company will take all corporate action which may, in the opinion of its counsel, be necessary in order that the Company may validly and legally issue Common Stock at such adjusted Conversion Price.

The Company covenants that all Common Stock which may be issued upon conversion of Notes will, upon issuance, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges with respect to the Company's issuance and delivery thereof.

The Company covenants that if any Common Stock issued or delivered upon conversion of Notes hereunder require registration with or approval of any governmental authority under any applicable federal or state law (excluding federal or state securities laws) before such Common Stock may be lawfully issued, the Company will in good faith and as expeditiously as possible endeavor to secure such registration or approval, as the case may be.

The Company covenants that it will not take any action which would cause the exemption from the registration requirement of Section 5 of the Securities Act afforded by Section 3(a)(9) of the Securities Act to be unavailable with respect to the issuance and delivery of Common Stock upon the conversion of Notes in accordance with this Indenture.

SECTION 10.8 RESPONSIBILITY OF TRUSTEE REQUIREMENTS.

The Trustee and any other Conversion Agent shall not at any time be under any duty or responsibility to any Holder to determine whether any fact exists

which may require any adjustment of the Conversion Price or other adjustment, or with respect to the nature, extent or calculation of any such adjustment when made, or with respect to the method employed, or herein or in any supplemental indenture provided to be employed, in making any such adjustment, or with respect to the correctness thereof. The Trustee and any other Conversion Agent shall not be accountable with respect to the validity, value, kind or amount of any item at any time issued or delivered upon the conversion of any Note, and neither the Trustee nor any other Conversion Agent makes any representations with respect thereto. Subject to Section 7.1,

neither the Trustee nor any Conversion Agent shall be responsible for any failure of the Company to issue, transfer or deliver any item upon the surrender of any Note for conversion or to comply with any of the duties, responsibilities or covenants of the Company contained in this Article 10. Without limiting the generality of the foregoing, neither the Trustee nor any Conversion Agent shall be under any responsibility to determine the correctness of any provisions contained in any supplemental indenture entered into pursuant to Section 10.5, but, subject to the provisions of Section 7.1, may accept as conclusive evidence of the correctness of any such provisions, and shall be protected in relying upon, the Officers' Certificate with respect thereto.

SECTION 10.9 NOTICE TO HOLDERS PRIOR TO CERTAIN ACTIONS.

In the event that:

(a) the Company shall declare or authorize any event which could reasonably be anticipated to result in an adjustment in the Conversion Price under Section 10.4 or require the execution of a supplemental indenture under Section 10.5; or

(b) the Company shall authorize the granting to the holders of Common Stock generally of rights, options or warrants to subscribe for or purchase any shares of any class or series of Capital Stock of the Company or any Subsidiary or any other rights, options or warrants, the reclassification of Common Stock (other than a subdivision or combination of outstanding Common Stock, or a change in par value, or from par value to no par value, or from no par value to par value), the combination, consolidation or merger of the Company for which approval of any stockholders of the Company is required, the sale or transfer of all or substantially all of the assets of the Company or the voluntary or involuntary dissolution, liquidation or winding-up of the Company in whole or in part;

then, in each such case, the Company shall file or cause to be filed with the Trustee and shall give or cause to be given to each Holder, as promptly as possible but in any event at least 15 days prior to the applicable date hereinafter specified, a notice stating the date on which a record is to be taken for the purpose of determining the holders of outstanding Common Stock entitled to participate in such event, the date on which such event is expected to become effective or occur and the date on which it is expected that holders of outstanding Common Stock of record shall be entitled to surrender their shares, or receive any items, in connection with such event. Failure to give such notice, or any defect therein, shall not affect the legality or validity of such event.

ARTICLE 11.

SUBORDINATION

SECTION 11.1 AGREEMENT TO SUBORDINATE.

The Company covenants and agrees, and each Holder, by such Holder's acceptance of a Note, likewise covenants and agrees, that, to the extent and in the manner hereinafter set forth in this Article 11, the indebtedness represented by the Notes and the payment of the Principal and repurchase price, if any, of and interest on each and all of the Notes are hereby expressly made subordinate and subject in right of payment to the prior payment in full of all Senior Indebtedness.

No provision of this Article 11 shall prevent the occurrence of any Default or Event of Default hereunder.

SECTION 11.2 PAYMENT OVER OF PROCEEDS UPON DISSOLUTION, ETC.

In the event of (a) any insolvency or bankruptcy case or proceeding, or any receivership, liquidation, reorganization or other similar case or proceeding in connection therewith, relative to the Company or to its creditors, as such, or to its assets, or (b) any liquidation, dissolution or other winding-up of the Company, whether voluntary or involuntary and whether or not involving insolvency or bankruptcy, or (c) any assignment for the benefit of creditors or any other marshalling of assets and liabilities of the Company, then and in any such event the holders of Senior Indebtedness shall be entitled to receive payment in full of all amounts due or to become due on or with respect to all Senior Indebtedness, or provision shall be made for such payment in money or money's worth, before the Holders are entitled to receive any payment on account of Principal or repurchase price, if any, of or interest on the Notes, and to that end the holders of Senior Indebtedness shall be entitled to receive, for application to the payment thereof, any payment or distribution of any kind or character, whether in cash, property or securities, which may be payable or deliverable with respect to the Notes in any such case, proceeding, liquidation, dissolution or other winding up or event.

In the event that, notwithstanding the foregoing provisions of this Section 11.2, the Trustee or any Holder shall have received any payment or distribution of assets of the Company of any kind or character, whether in cash, property or securities, before all Senior Indebtedness is paid in full or payment thereof provided for, then and in such event such payment or distribution shall be held in trust by such recipient and shall be paid over or delivered forthwith to the trustee in bankruptcy, receiver, liquidating trustee, custodian, assignee, agent or other Person making payment or distribution of assets of the Company for application in the form received to the payment of all Senior Indebtedness remaining unpaid, to the extent necessary to pay all Senior Indebtedness in full, after giving effect to any concurrent payment or distribution to or for the holders of Senior Indebtedness.

The consolidation of the Company with, or the merger of the Company into, another Person or the liquidation or dissolution of the Company following the conveyance or transfer of its properties and assets substantially as an entirety to another Person upon the terms and conditions set forth in Article 5 shall not be deemed a dissolution, winding-up, liquidation, reorganization, assignment for the benefit of creditors or marshalling of assets and liabilities of the Company for the purposes of this Section 11.2 if the Person formed by such consolidation or into which the Company is merged or the Person which acquires by conveyance or transfer such properties and assets substantially as an entirety, as the case may be, shall, as a part of such consolidation, merger, conveyance or transfer, comply with the conditions set forth in Article 5.

SECTION 11.3 PRIOR PAYMENT TO SENIOR INDEBTEDNESS UPON ACCELERATION OF NOTES.

In the event that any Notes are declared due and payable before their stated maturity, then and in such event the holders of Senior Indebtedness outstanding at the time such Notes so become due and payable shall be entitled to receive payment in full of all amounts due or to become due on or with respect to such Senior Indebtedness, or provision shall be made for such payment in money or money's worth, before the Holders are entitled to receive any payment by the Company on account of the Principal or repurchase price, if any, of or interest on the Notes or on account of the purchase or other acquisition of Notes.

In the event that, notwithstanding the foregoing, the Company shall make any payment to the Trustee or to any Holder prohibited by the foregoing provision of this Section 11.3, then and in such event such payment shall be held in trust by such recipient and shall be paid over and delivered forthwith to the Company in the form received.

The provisions of this Section 11.3 shall not apply to any payment with respect to which Section 11.2 would be applicable.

SECTION 11.4 NO PAYMENT WHEN SENIOR INDEBTEDNESS IN DEFAULT.

(a) In the event and during the continuation of any default in the payment of principal of or interest on any Senior Indebtedness beyond any applicable grace period with respect thereto, or in the event that any event of default with respect to any Senior Indebtedness shall have occurred and be continuing (or would arise by reason of a payment required hereunder by the Company with respect to the Principal or repurchase price, if any, of or interest on the Notes) permitting the holders of such Senior Indebtedness (or a trustee on behalf of the holders thereof) to declare such Senior Indebtedness due and payable prior to the date on which it would otherwise have become due and payable, unless and until such event of default shall have been cured or waived or shall have ceased to exist or the Company and the Trustee shall have received written notice from the Representative of the Senior Indebtedness with respect to which such event of default relates approving payment on the Notes, then no payment shall be made by the Company with respect to the Principal or repurchase price, if any, of or

interest on the Notes or to acquire any of the Notes; provided that no such default will prevent any payment on, or with respect to, the Notes for more than 120 days unless the maturity of such Senior Indebtedness has been accelerated. Not more than one such 120 day delay may be made in any consecutive 360 day period with respect to a covenant default, irrespective of the number of defaults with respect to Senior Indebtedness during such period.

In the event that, notwithstanding the foregoing, the Company shall make any payment to the Trustee or to any Holder prohibited by the foregoing provision of this Section 11.4, then and in such event such payment shall be held in trust by such recipient and shall be paid over and delivered forthwith to the Company in the form received.

The provisions of this Section 11.4 shall not apply to any payment with respect to which Section 11.2 would be applicable.

SECTION 11.5 PAYMENT PERMITTED IF NO DEFAULT.
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Nothing contained in this Article 11 or elsewhere in this Indenture or in any of the Notes shall prevent (a) the Company, at any time except when any of the conditions described in Section 11.2, 11.3 or 11.4 exist, from making payments at any time of Principal or repurchase price, if any, of or interest on the Notes or (b) the application by the Trustee of any money deposited with it hereunder to the payment of or on account of the Principal or repurchase price, if any, of or interest on the Notes or the retention of any such payment by the Holders, except if, at the time of the application by the Trustee, any of the conditions described in Section 11.2, 11.3 or 11.4 exist; provided that the Trustee shall have no responsibility to refrain from so applying such money unless it shall have actual knowledge of the existence of such condition.

SECTION 11.6 SUBROGATION TO RIGHTS OF HOLDERS OF SENIOR INDEBTEDNESS.
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Subject to the payment in full of all Senior Indebtedness, the Holders shall be subrogated to the extent of the payments or distributions made to the holders of such Senior Indebtedness pursuant to the provisions of this Article 11 (equally and ratably with the holders of all indebtedness of the Company which is not Senior Indebtedness and which is entitled to like rights of subrogation) to the rights of the holders of such Senior Indebtedness to receive payments and distributions of cash, property and securities applicable to the Senior Indebtedness until the Principal or repurchase price, if any, of and interest on the Notes shall be paid in full. For purposes of such subrogation, no payments or distributions to the holders of Senior Indebtedness of any cash, property or securities to which the Holders or the Trustee would be entitled except for the provisions of this Article, and no payments over pursuant to the provisions of this Article to the holders of Senior Indebtedness by Holders or the Trustee, shall, as among the Company, its creditors other than holders of Senior Indebtedness and the Holders be deemed to be a payment or distribution by the Company to or on account of Senior Indebtedness.

SECTION 11.7 PROVISIONS SOLELY TO DEFINE RELATIVE RIGHTS.
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The provisions of this Article 11 are and are intended solely for the purpose of defining the relative rights of the Holders on the one hand and the holders of Senior Indebtedness on the other hand. Nothing contained in this Article 11 or elsewhere in this Indenture or in the Notes is intended to or shall: (a) impair, as among the Company, its creditors other than holders of Senior Indebtedness and the Holders, the obligation of the Company, which is absolute and unconditional (and which, subject to the rights under this Article 11 of the holders of Senior Indebtedness, is intended to rank equally with all other general obligations of the Company), to pay to the Holders the Principal or repurchase price, if any, of and interest on the Notes as and when the same shall become due and payable in accordance with their terms; or (b) affect the relative rights against the Company of the Holders and creditors of the Company other than the holders of Senior Indebtedness; or (c) prevent the Trustee or any Holder from exercising all remedies otherwise permitted by applicable law upon default under this Indenture, subject to the rights, if any, under this Article 11 of the holders of Senior Indebtedness to receive cash, property and securities otherwise payable or deliverable to the Trustee or such Holder.

SECTION 11.8 TRUSTEE TO EFFECTUATE SUBORDINATION.

Each Holder of a Note by acceptance thereof authorizes and directs the Trustee on such Holder's behalf to take such action as may be necessary or appropriate to effectuate the subordination provided in this Article 11 and appoints the Trustee as such Holder's attorney-in-fact for any and all such purposes.

SECTION 11.9 NO WAIVER OF SUBORDINATION PROVISIONS.

No right of any present or future holder of any Senior Indebtedness to enforce subordination as herein provided shall at any time in any way be prejudiced or impaired by any act or failure to act by the Company or by any act or failure to act, in good faith, by any such holder, or by any non-compliance by the Company with the terms, provisions and covenants of this Indenture, regardless of any knowledge thereof any such holder may have or be otherwise charged with.

Without in any way limiting the generality of the foregoing paragraph, the holders of Senior Indebtedness may, at any time and from time to time, without the consent of or notice to the Trustee or the Holders, without incurring responsibility to the Holders and without impairing or releasing the subordination provided in this Article 11 or the obligations hereunder of the Holders to the holders of Senior Indebtedness, do any one or more of the following: (i) change the manner, place or terms of payment or extend the time of payment of, or renew or alter, Senior Indebtedness, or otherwise amend or supplement in any manner Senior Indebtedness or any instrument evidencing the same or any agreement under which Senior Indebtedness is outstanding; (ii) sell, exchange, release or otherwise deal with any property pledged, mortgaged or otherwise securing Senior Indebtedness; (iii) release any Person liable in any manner for the

collection of Senior Indebtedness; and (iv) exercise or refrain from exercising any rights against the Company and any other Person.

SECTION 11.10 NOTICE TO TRUSTEE.

The Company shall give prompt written notice to the Trustee of any fact known to the Company which would prohibit the making of any payment to or by the Trustee with respect to the Notes. Notwithstanding the provisions of this Article 11 or any other provision of this Indenture, the Trustee shall not be charged with knowledge of the existence of any facts which would prohibit the making of any payment to or by the Trustee with respect to the Notes, unless and until the Trustee shall have received written notice thereof from the Company or a holder of Senior Indebtedness or from any Representative therefor, and, prior to the receipt of any such written notice, the Trustee, subject to the provisions of Section 7.1, shall be entitled in all respects to assume that no such facts exist; the fact that the Trustee may so rely does not relieve the Holders of their obligations under Section 11.3 to hold in trust any payments received in contravention of Sections 11.2, 11.3 or 11.4.

Subject to the provisions of Section 7.1, the Trustee shall be entitled to rely on the delivery to it of a written notice by a Person representing himself to be a holder of Senior Indebtedness (or a Representative therefor) to establish that such notice has been given by a holder of Senior Indebtedness (or a Representative therefor). In the event that the Trustee determines in good faith that further evidence is required with respect to the right of any Person as a holder of Senior Indebtedness to participate in any payment or distribution pursuant to this Article 11, the Trustee may request such Person to furnish evidence to the reasonable satisfaction of the Trustee as to the amount of Senior Indebtedness held by such Person, the extent to which such Person is entitled to participate in such payment or distribution and any other facts pertinent to the rights of such Person under this Article 11, and if such evidence is not furnished, the Trustee may defer any payment to such Person pending judicial determination as to the right of such Person to receive such payment.

SECTION 11.11 RELIANCE ON JUDICIAL ORDER OR CERTIFICATE OF LIQUIDATING AGENT.

Upon any payment or distribution of assets of the Company referred to in this Article 11, the Trustee, subject to the provisions of Section 7.1, and the Holders shall be entitled to rely upon any order or decree entered by any court of competent jurisdiction in which such insolvency, bankruptcy, receivership, liquidation, reorganization, dissolution, winding-up or similar case or proceeding is pending, or a certificate of the trustee in bankruptcy, receiver, liquidating trustee, custodian, assignee for the benefit of creditors, agent or other Person making such payment or distribution, delivered to the Trustee or to the Holders, for the purpose of ascertaining the Persons entitled to participate in such payment or distribution, the holders of the Senior Indebtedness and other indebtedness of the Company, the amount thereof or payable thereon, the amount or amounts paid or distributed thereon and all other facts pertinent thereto or to this Article 11.

SECTION 11.12 TRUSTEE NOT FIDUCIARY FOR HOLDERS OF SENIOR INDEBTEDNESS.

The Trustee shall not be deemed to owe any fiduciary duty to, or be subject to any implied covenants or obligations in favor of, the holders of Senior Indebtedness and shall not be liable to any such holders if it shall in

consent or waiver or the taking of any other action), the fact that at the time of taking any such action, the Holders of such specified percentage have joined therein may be evidenced (a) by any instrument or any number of instruments of similar tenor executed by Holders in person or by proxy appointed in writing or (b) by the record of the Holders voting in favor thereof at any meeting of Holders called and held in accordance with the provisions of this Article 12. Whenever the Company or the Trustee solicits the taking of action by the Holders, the Company or the Trustee may fix in advance of such solicitation a date as the record date for determining Holders entitled to take such action. If a record date is fixed, those and only those Persons who are Holders at the record date so fixed, or their proxies, shall be entitled to take such action regardless of whether they are Holders at the time of such action.

SECTION 12.2 PURPOSES FOR WHICH MEETINGS MAY BE CALLED.

A meeting of Holders may be called at any time and from time to time pursuant to the provisions of this Article 12 for any of the following purposes:

- (a) to give any notice to the Company, or the Trustee, or to give any directions to the Trustee, or to waive or to consent to the waiving of any Default hereunder and its consequences, or to take any other action authorized to be taken by Holders pursuant to any of the provisions of Article 6;
- (b) to remove the Trustee or to appoint a successor Trustee pursuant to the provisions of Article 7;
- (c) to consent to the execution of an indenture or indentures supplemental hereto pursuant to Section 9.2; or
- (d) to take any other action (i) authorized to be taken by or on behalf of the Holders of any specified aggregate principal amount of the Notes under any other provision of this Indenture, or authorized or permitted by law or (ii) which the Trustee deems necessary or appropriate in connection with the administration of this Indenture.

SECTION 12.3 MANNER OF CALLING MEETINGS.

The Trustee may at any time call a meeting of Holders to take any action specified in Section 12.2, to be held at such time and at such place in the City of New York, New York or such other place as the Trustee shall determine. Notice of every meeting of Holders, setting forth the time and place of such meeting and in general terms the action proposed to be taken at such meeting, shall be given by the Trustee, to the Company and to each Holder not less than 10 nor more than 60 days prior to the date fixed for such meeting.

Any meeting of Holders shall be valid without notice if the Holders of all Notes then outstanding are present in person or by proxy, or if notice is waived before or after the meeting by all of the Holders and if the Company and the Trustee are either present by duly authorized representatives or have, before or after the meeting, waived notice.

SECTION 12.4 CALL OF MEETINGS BY THE COMPANY OR HOLDERS.

In case at any time the Company or the Holders of not less than 10% in aggregate principal amount of the Notes then outstanding, shall have requested the Trustee to call a meeting of Holders to take any action specified in Section 12.2, by written request setting forth in reasonable detail the action proposed to be taken at the meeting, and the Trustee shall not have given the notice of such meeting within 20 days after receipt of such request, then the Company or the Holders of Notes in the amount above specified may determine the time and place in the City of New York, New York or the City of Boston, Massachusetts for such meeting and may call such meeting for the purpose of taking such action, by giving or causing to be given notice thereof as provided in Section 12.3.

SECTION 12.5 WHO MAY ATTEND AND VOTE AT MEETINGS.

To be entitled to vote at any meeting of Holders, a person shall be (a) a Holder on the record date for such meeting or, if there is no such record date, on the date of such meeting or (b) a Person appointed by an instrument in writing as proxy for one or more of such Holders. The only Persons who shall be entitled to be present or to speak at any meeting of Holders shall be the Persons entitled to vote at such meeting and their counsel and any representatives of the Trustee and its counsel and any representatives of the Company and its counsel.

SECTION 12.6 REGULATIONS MAY BE MADE BY TRUSTEE; CONDUCT OF THE MEETING;

VOTING RIGHTS; ADJOURNMENT.

Notwithstanding any other provision of this Indenture, the Trustee may make such reasonable regulations as it may deem advisable for any meeting of Holders, in regard to proof of the holding of Notes and of the appointment of proxies, and in regard to the appointment and duties of inspectors of votes, the submission and examination of proxies, certificates and other

evidence of the right to vote, and such other matters concerning the conduct of the meeting as it shall deem appropriate.

The Trustee shall, by an instrument in writing, appoint a temporary chairman of the meeting, unless the meeting shall have been called by the Company or by Holders as provided in Section 12.4, in which case the Company or the Holders calling the meeting, as the case may be, shall in like manner appoint a temporary chairman. A permanent chairman and a permanent secretary of the meeting shall be elected by vote of the Holders of a majority in principal amount of the Notes represented at the meeting and entitled to vote.

At any meeting each Holder or proxy shall be entitled to one vote for each \$1,000 principal amount of Notes held or represented by such Holder or proxy, as the case may be; provided, however, that no vote shall be cast or counted at any meeting with respect to any Notes challenged as not outstanding and ruled by the chairman of the meeting to be not outstanding. The chairman of the meeting shall have no right to vote other than by virtue of Notes held by such chairman or instruments in writing as aforesaid duly designating such chairman as the proxy to vote on behalf of other Holders. At any meeting of Holders, the presence (in person or by proxy) of Persons holding or representing

a majority in aggregate principal amount of the Notes then outstanding shall be sufficient for a quorum. Any meeting of Holders duly called pursuant to the provisions of Section 12.3 or 12.4 may be adjourned from time to time by vote of the Holders of a majority in aggregate principal amount of the Notes represented at the meeting and entitled to vote, and the meeting may be held as so adjourned without further notice.

SECTION 12.7 VOTING AT THE MEETING AND RECORD TO BE KEPT.

The vote upon any resolution submitted to any meeting of Holders shall be by written ballots on which shall be subscribed the signatures of the Holders or of their representatives by proxy and the principal amount of the Notes voted by the ballot. The permanent chairman of the meeting shall appoint two inspectors of votes, who shall count all votes cast at the meeting for or against any resolution and who shall make and file with the secretary of the meeting their verified written reports in duplicate of all votes cast at the meeting. A record in duplicate of the proceedings of each meeting of Holders shall be prepared by the secretary of the meeting and there shall be attached to such record the original reports of the inspectors of votes on any vote by ballot taken thereat and affidavits by one or more Persons having knowledge of the facts, setting forth a copy of the notice of the meeting and showing that such notice was given as provided in Section 12.3 or 12.4. The record shall be signed and verified by the affidavits of the permanent chairman and the secretary of the meeting and one of the duplicates shall be delivered to the Company and the other to the Trustee to be preserved by the Trustee, the latter to have attached thereto the ballots voted at the meeting.

Any record so signed and verified shall be conclusive evidence of the matters therein stated.

SECTION 12.8 EXERCISE OF RIGHTS OF TRUSTEE OR HOLDERS MAY NOT BE HINDERED OR DELAYED BY CALL OF MEETING.

Nothing contained in this Article 12 shall be deemed or construed to authorize or permit, by reason of any call of a meeting of Holders or any rights expressly or impliedly conferred hereunder to make such call, any hindrance or delay in the exercise of any right or rights conferred upon or reserved to the Trustee or to the Holders under any of the provisions of this Indenture or of the Notes.

SECTION 12.9 COMMUNICATION BY HOLDERS WITH OTHER HOLDERS.

Holders may communicate pursuant to TIA ss. 312(b) with other Holders with respect to their rights under this Indenture or the Notes. The Company, the Trustee, the Registrar and anyone else shall have the protection of TIA ss. 312(c).

ARTICLE 13.

MISCELLANEOUS

SECTION 13.1 TRUST INDENTURE ACT CONTROLS.

If any provision of this Indenture limits, qualifies or conflicts with another provision which is required or deemed to be included in this Indenture by the TIA, the required or deemed provision shall control.

SECTION 13.2 NOTICES.

Any notice or communication by the Company or the Trustee to the other shall be deemed to have been duly given if given in writing and delivered in person or mailed by first-class mail (registered or certified, return receipt requested), telecopier or overnight air courier guaranteeing next day delivery addressed as follows:

if to the Company:

Hybridon, Inc.
620 Memorial Drive
Cambridge, Massachusetts 02139
Fax No.: (617) 528-7113
Attention: President

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with a copy to:

David E. Redlick, Esq.
Hale & Dorr LLP
60 State Street
Boston, Massachusetts 02109
Fax No.: (617) 526-5000

if to the Trustee:

State Street Bank and Trust Company
Corporate Trust Department
Two International Place - 4th Floor
Boston, Massachusetts 02110
Fax No. (617) 644-5365:
Attention: Eric Donaghey

with a copy to:

Ripley E. Hastings, Esq.
Peabody and Arnold
50 Rowes Wharf
Boston, Massachusetts 02110
Fax No.: (617) 951-2125

The Company or the Trustee by notice to the other may designate additional or different addresses for subsequent notices or communications.

All notices and communications (other than those sent to Holders) shall be deemed to have been duly given: at the time delivered by hand, if personally

delivered; five Business Days after being deposited in the mail, postage prepaid, if mailed; when receipt acknowledged, if telecopied; and the next Business Day after timely delivery to the courier, if sent by overnight air courier guaranteeing next day delivery.

Any notice or communication to a Holder shall be in writing and shall be mailed by first class mail, certified or registered, return receipt requested, or by overnight air courier guaranteeing next day delivery to its last address shown on the Register. Any notice or communication shall also be so mailed to any Person described in TIA ss. 313(c), to the extent required by the TIA. Failure to mail a notice or communication to a Holder or any defect in it shall not affect its sufficiency with respect to other Holders.

If a notice or communication is given in the manner provided above within the time prescribed, it shall be deemed to have been duly given, whether or not received by the addressee.

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If the Company mails a notice or communication to Holders, it shall mail a copy to the Trustee and each Agent at the same time.

SECTION 13.3 CERTIFICATE AND OPINION AS TO CONDITIONS PRECEDENT.

Upon any request or application by the Company to the Trustee to take any action under this Indenture, the Company shall furnish to the Trustee:

- (a) an Officers' Certificate stating that, in the opinion of the signers, all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with; and
- (b) at the Trustee's request, an Opinion of Counsel stating that, in the opinion of such counsel, the proposed action does not conflict with this Indenture.

SECTION 13.4 STATEMENTS REQUIRED IN CERTIFICATE OR OPINION OF COUNSEL.

Each Officers' Certificate or Opinion of Counsel with respect to compliance or conflicts with a condition or covenant in this Indenture shall include:

- (a) a statement that each Person executing such Officers' Certificate or Opinion of Counsel has read such covenant or condition;
- (b) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such Officers' Certificate or Opinion of Counsel are based;
- (c) a statement that, in the opinion of each such Person, such examination or investigation has been made as is necessary to enable it to express an informed opinion as to whether or not such covenant or condition has been complied with or whether the proposed action is not in conflict with this Indenture, as the case may be; and
- (d) a statement as to whether or not, in the opinion of such Person, such condition or covenant has been complied with or such action

does not conflict with this Indenture, as the case may be; provided, however, that an Opinion of Counsel may be based, insofar as it relates to factual matters, on a certificate or certificates of public officials, a legal opinion of counsel employed by the Company or a Subsidiary or a certificate of or representations by an Officer or Officers unless counsel rendering such Opinion of Counsel actually knows that such certificate, legal opinion or representation is erroneous.

SECTION 13.5 RULES BY TRUSTEE AND AGENTS.

The Trustee may make reasonable rules for action by or at a meeting of Holders. The Registrar, Paying Agent or Conversion Agent may make reasonable rules and set reasonable requirements for its functions.

SECTION 13.6 LEGAL HOLIDAYS.

If a payment date is not a Business Day at a place of payment, payment may be made at such place of payment on the next succeeding Business Day, and no additional interest shall accrue for the intervening period.

SECTION 13.7 NO RECOURSE AGAINST OTHERS.

A director, officer, employee or stockholder, as such, of the Company shall not have any liability for any obligations of the Company under the Notes or this Indenture or for any claim based on, with respect to or by reason of such obligations or their creation including with respect to any certificate delivered thereunder or hereunder. Each Holder by accepting a Note waives and releases all such liability. The waiver and release contained in this Section 13.7 are part of the consideration for the Company's issuance of the Notes.

SECTION 13.8 COUNTERPARTS.

This Indenture may be executed in any number of counterparts and by the parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement.

SECTION 13.9 GOVERNING LAW.

THE INTERNAL LAWS OF THE STATE OF NEW YORK SHALL GOVERN THIS INDENTURE AND THE NOTES, WITHOUT REGARD TO THE CONFLICT OF LAWS PROVISIONS THEREOF.

SECTION 13.10 NO ADVERSE INTERPRETATION OF OTHER AGREEMENTS.

This Indenture may not be used to interpret another indenture, loan or

debt agreement of the Company or a Subsidiary. Any such indenture, loan or debt agreement may not be used to interpret this Indenture.

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SECTION 13.11 SUCCESSORS.
- -----

All agreements of the Company in this Indenture and the Notes shall bind its successors. All agreements of the Trustee in this Indenture shall bind its successors.

SECTION 13.12 SEVERABILITY.
- -----

In case any provision of this Indenture or in the Notes shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

SECTION 13.13 TABLE OF CONTENTS, HEADINGS, ETC.
- -----

The Table of Contents and headings of the Articles and Sections have been inserted for convenience of reference only, are not to be considered a part hereof and shall in no way modify or restrict any of the terms or provisions hereof.

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be executed as of the day and year first above written.

HYBRIDON, INC.

By: /s/ E. Andrews Grinstead, III

Name: E. Andrews Grinstead, III
Title: Chairman, President and Chief
Executive Officer

STATE STREET BANK AND TRUST COMPANY

By: /s/ Eric J. Donaghey

Name: Eric J. Donaghey
Title: Assistant Vice President

EXHIBIT A

[Face of Note]

HYBRIDON, INC.

9% CONVERTIBLE SUBORDINATED NOTES DUE 2004

[Global Securities Legend]

UNLESS THIS CERTIFICATE IS PRESENTED BY AN AUTHORIZED REPRESENTATIVE OF THE DEPOSITORY TRUST COMPANY, A NEW YORK CORPORATION ("DTC"), TO THE COMPANY OR ITS AGENT FOR REGISTRATION OF TRANSFER, EXCHANGE OR PAYMENT, AND ANY CERTIFICATE ISSUED IS REGISTERED IN THE NAME OF CEDE & CO. OR SUCH OTHER NAME AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC (AND ANY PAYMENT IS MADE TO CEDE & CO., OR TO SUCH OTHER ENTITY AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC) ANY TRANSFER, PLEDGE OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL INASMUCH AS THE REGISTERED OWNER HEREOF, CEDE & CO., HAS AN INTEREST HEREIN.

TRANSFERS OF THIS GLOBAL SECURITY SHALL BE LIMITED TO TRANSFERS IN WHOLE, BUT NOT IN PART, TO NOMINEES OF DTC OR TO A SUCCESSOR THEREOF OR SUCH SUCCESSOR'S NOMINEE AND TRANSFERS OF PORTIONS OF THIS GLOBAL SECURITY SHALL BE LIMITED TO TRANSFERS MADE IN ACCORDANCE WITH THE RESTRICTIONS SET FORTH IN THE INDENTURE REFERRED TO ON THE REVERSE HEREOF.

[Restricted Securities Legend]

THIS NOTE (OR ITS PREDECESSOR) HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 (THE "SECURITIES ACT"), OR ANY STATE SECURITIES LAWS. NEITHER THIS NOTE NOR ANY INTEREST OR PARTICIPATION HEREIN MAY BE OFFERED, SOLD, PLEDGED, HYPOTHECATED OR OTHERWISE TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR UNLESS SUCH TRANSACTION IS EXEMPT FROM, OR NOT SUBJECT TO, REGISTRATION. EACH PURCHASER OF THIS NOTE IS HEREBY NOTIFIED THAT THE SELLER OF THIS NOTE MAY BE RELYING ON THE EXEMPTION FROM THE PROVISIONS OF SECTION 5 OF THE SECURITIES ACT PROVIDED BY RULE 144A THEREUNDER.

THE HOLDER OF THIS NOTE AGREES FOR THE BENEFIT OF THE COMPANY THAT (A) THIS NOTE MAY BE OFFERED, RESOLD, PLEDGED OR OTHERWISE TRANSFERRED, ONLY (I) TO A PERSON WHOM THE SELLER REASONABLY BELIEVES IS A QUALIFIED INSTITUTIONAL BUYER (AS DEFINED IN RULE 144A UNDER THE SECURITIES ACT) IN A TRANSACTION MEETING THE REQUIREMENTS OF RULE 144A, (II) IN AN OFFSHORE TRANSACTION IN ACCORDANCE WITH REGULATION S UNDER THE SECURITIES ACT, (III) PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT, (IV) TO THE COMPANY OR (V) PURSUANT TO ANY OTHER AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT, IN EACH OF CASES (I) THROUGH (V) IN ACCORDANCE WITH ANY APPLICABLE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES AND (B) THE HOLDER WILL, AND EACH SUBSEQUENT HOLDER IS REQUIRED TO, NOTIFY ANY PURCHASER OF THIS NOTE FROM IT OF THE RESALE RESTRICTIONS REFERRED TO IN (A) ABOVE.

[Institutional Accredited Investor Legend]

IN CONNECTION WITH ANY TRANSFER OF THIS NOTE, THE HOLDER WILL DELIVER TO THE REGISTRAR AND TRANSFER AGENT SUCH CERTIFICATES AND OTHER INFORMATION AS SUCH TRANSFER AGENT MAY REASONABLY REQUIRE TO CONFIRM THAT THE TRANSFER COMPLIES WITH THE FOREGOING RESTRICTIONS.

CUSIP No. _____

No. _____

\$ _____

Hybridon, Inc. promises to pay to _____ or registered assigns, the principal sum of _____ Dollars on April 1, 2004.

Interest Payment Dates: April 1 and October 1, commencing October 1, 1997.

Record Dates: March 15 and September 15.

Reference is made to the further provisions of this Note set forth on the reverse hereof, which further provisions shall for all purposes have the same effect as if set forth at this place.

HYBRIDON, INC.

By: _____
President

(SEAL)

ATTEST:

By: _____
Secretary

Authentication:

This is one of the Notes referred to in the within-mentioned Indenture:

STATE STREET BANK AND TRUST COMPANY,
as Trustee

By: _____
Authorized Signature

Dated: _____

[Reverse Side]

Capitalized terms used herein without definition shall have the meanings ascribed to them in the Indenture dated as of March 26, 1997 between Hybridon, Inc., a Delaware corporation, and State Street Bank and Trust Company, as trustee, as amended from time to time in accordance with its terms (the "Indenture").

1. INTEREST.

(a) The Company shall pay interest on the outstanding principal amount of this Note at the rate of 9% per annum from the date of original issuance of any Notes under the Indenture until maturity. The Company will pay interest semi-annually on April 1 and October 1 of each year commencing October 1, 1997, or if any such day is not a Business Day, on the next succeeding Business Day. Interest on the Notes will accrue from the most recent date on which interest has been paid or, if no interest has been paid, from the date of original issuance of any Notes under the Indenture; provided, however, that if there is no existing Default in the payment of interest and this Note is authenticated between a record date shown on the face hereof and the next succeeding Interest Payment Date, interest shall accrue from such next succeeding Interest Payment Date. Interest will be computed on the basis of a 360-day year of twelve 30-day months.

(b) To the extent lawful, the Company shall pay interest (including post-petition interest in any proceeding under any Bankruptcy Law) on (i) overdue Principal or repurchase price, if any, of the Notes at the rate borne by the Notes and (ii) overdue installments of interest on the Notes at the rate borne by the Notes.

2. METHOD OF PAYMENT. The Company will pay interest (except defaulted interest) on the Notes to those persons who are Holders at the close of business on the record date shown on the face hereof next preceding the applicable Interest Payment Date (even if such Notes are cancelled after such record date and on or before such Interest Payment Date), except as provided in Section 10.2 of the Indenture. Defaulted interest shall be paid to Holders as of a special record date established for purposes of determining the Holders entitled thereto. The Notes will be payable as to Principal, repurchase price, if any, and interest at the office or agency of the Company maintained for such purpose within or without the City and State of New York, as set forth in the Indenture, or, at the option of the Company, payment of interest may be made by check mailed to the Holders at their addresses set forth in the Register, and provided that payment by wire transfer of immediately available funds will be required with respect to Principal of and interest on the Global Security. Such payment shall be in the currency of the United States of America which at the time of payment is legal tender for payment of public and private debts.

3. PAYING AGENT, REGISTRAR AND CONVERSION AGENT. Initially, the Trustee will act as Paying Agent, Registrar and Conversion Agent. The Company may change any Paying Agent, Registrar or Conversion Agent without notice to any Holder. The Company or any Subsidiary may act in any such capacity.

4. INDENTURE. The Company issued the Notes under the Indenture. The terms of the Notes include those stated in the Indenture and those made part of

the Indenture by reference to the Trust Indenture Act of 1939. The Notes are subject to all such terms, and Holders are referred to the Indenture and the Trust Indenture Act of 1939 for a statement of such terms. The Notes are general unsecured obligations of the Company limited to \$60,000,000 in aggregate principal amount, subject to Section 2.7 of the Indenture.

5. OPTIONAL REDEMPTION BY THE COMPANY. The Notes are not subject to redemption at the option of the Company prior to April 1, 2000. Thereafter, the Notes will be redeemable at any time prior to maturity at the option of the Company, in whole or in part from time to time, upon not less than 30 days' nor more than 60 days' prior notice to the Holders at the redemption prices (expressed as percentages of principal amount) set forth below, in each case together with accrued but unpaid interest, if any, up to but not including the redemption date:

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AFTER APRIL 1, -----	PERCENTAGE -----
2000	104.5
2001	103.0
2002	101.5
2003	100.0

provided that from April 1, 2000 to March 31, 2001 the Notes may not be redeemed unless the Current Market Price of the Common Stock equals or exceeds 150% of the Conversion Price for a period of at least 20 out of 30 consecutive trading days and the Notes are redeemed within 60 days after any such trading period.

6. MANDATORY REDEMPTION. Except as set forth in paragraph 7 below, the Company shall not be required to make mandatory redemptions with respect to the Notes.

7. REPURCHASE AT THE OPTION OF HOLDER. Upon a Change of Control, the Company shall offer to repurchase all then outstanding Notes at a repurchase price equal to 150% of the principal amount thereof, plus accrued and unpaid interest to the Change of Control Payment Date, if any. Within 30 days after a Change of Control, the Company shall mail a notice to each Holder setting forth the procedures governing the Change of Control Offer as required by the Indenture. A Holder may tender or refrain from tendering all or any portion of such Holder's Notes, at such Holder's discretion, by completing and signing the form entitled "Option of Holder to Elect Repurchase" below and delivering such form, together with the Notes with respect to which the repurchase right is being exercised, duly endorsed for transfer to the Company, to the Paying Agent. Any partial tender of Notes must be made in an integral multiple of \$1,000.

8. CONVERSION. To convert a Note, the Holder thereof must (i) complete and sign the "Form of Election to Convert" below (unless such Holder is DTC, in which case the customary procedures of DTC will apply), (ii) surrender such Note to the Conversion Agent, (iii) furnish appropriate endorsements and transfer documents if required by the Registrar or the Conversion Agent and (iv) pay any transfer or similar tax if required by Section 10.6 of the Indenture. Prior to April 1, 2000, a Holder who surrenders this Note for conversion (even if this Note has been called for redemption or a Change of Control Offer has been made) will be paid promptly after such conversion interest accrued but not

paid from the most recent date on which interest has been paid or, if no interest has been paid, from the date of original issuance of this Note through the date of such conversion. In addition, if this Note (even if this Note has been called for redemption or a Change of Control Offer has been made) is converted after a regular interest payment record date and prior to the related Interest Payment Date (regardless of whether such conversion occurs before or after April 1, 2000), the full interest installment on this Note scheduled to be paid on such Interest Payment Date shall be payable on such Interest Payment Date to the Holder of this Note at the close of business on such record date. No fractional shares of Common Stock will be issued upon conversion, but an adjustment in cash will be made, as provided in the Indenture, with respect to any fractional share which would otherwise be issuable upon conversion. A Holder is not entitled to any rights of a holder of Common Stock until such Holder has converted its Notes into Common Stock as provided in the Indenture.

9. SUBORDINATION. The Notes are subordinated to Senior Indebtedness. To the extent provided in the Indenture, Senior Indebtedness must be paid before the Notes may be paid. The Company agrees, and each Holder by accepting a Note agrees, to the subordination provisions contained in the Indenture and authorizes the Trustee to give effect to such provisions, and each Holder appoints the Trustee its attorney-in-fact for any and all such purposes.

10. DENOMINATIONS, TRANSFER, EXCHANGE. The Notes are in registered form without coupons in denominations of \$1,000 and integral multiples of \$1,000. A Holder may transfer or exchange Notes as provided in the Indenture. The Registrar may require a Holder, among other things, to furnish appropriate endorsements and transfer documents and to pay any taxes and fees required by law or permitted by the Indenture. The Registrar need not register the exchange or transfer of any Notes (or portion thereof) during the 15 day period (or shorter) preceding the mailing of a notice of redemption or any Notes (or portion thereof) with respect to which a repurchase

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election has been tendered and not withdrawn by the Holder thereof in accordance with Section 4.6 of the Indenture.

11. PERSONS DEEMED OWNERS. The registered Holder of a Note may be treated as its owner for all purposes.

12. AMENDMENTS AND WAIVERS. Subject to certain exceptions for which the consent of each Holder is required, the Indenture or the Notes may be amended with the consent of the Holders of at least a majority in aggregate principal amount of the Notes then outstanding and any existing Default (except a payment default) may be waived with the consent of the Holders of at least a majority in aggregate principal amount of the Notes then outstanding. Without the consent of any Holder, the Company and the Trustee may amend or supplement the Indenture or the Notes to (i) cure any ambiguity, defect or inconsistency, provided that such amendment does not in the opinion of the Trustee adversely affect the rights of any Holder, (ii) provide for uncertificated Notes in addition to or in lieu of certificated Notes, (iii) comply with Sections 5.1 and 10.5 of the Indenture, (iv) make any change that does not adversely affect the rights of any Holder, (v) comply with requirements of the SEC in order to effect or maintain the qualification of the Indenture under the TIA and (vi) add to the covenants of the Company.

13. DEFAULTS AND REMEDIES. Events of Default include: (a) failure to pay any Principal or repurchase price, if any, of any Note when due and payable, whether at maturity, upon redemption, upon a Change of Control Offer or otherwise, whether or not such payment is prohibited by the subordination

provisions of the Indenture; (b) failure to pay any interest on any Note when due and payable, which failure continues for ten days, whether or not such payment is prohibited by the subordination provisions of the Indenture; (c) failure to perform the other covenants of the Company in the Indenture, which failure continues for 60 days after written notice as provided in the Indenture; (d) default in payment when due of Principal of, or acceleration of, any indebtedness for money borrowed by the Company or any Subsidiary (other than an Unrestricted Subsidiary which is not a Significant Subsidiary and provided there is no recourse against the Company or any other Subsidiary with respect to the obligations of such Unrestricted Subsidiary arising as a result of such default) in excess of \$2 million, individually or in the aggregate, if such indebtedness is not discharged, or such acceleration is not annulled, within 30 days after written notice as provided in the Indenture; and (e) certain events of bankruptcy, insolvency or reorganization of the Company or any Significant Subsidiary. If an Event of Default shall occur and be continuing, the Trustee or the Holders of at least 25% in aggregate principal amount of the then outstanding Notes may accelerate the maturity of all Notes, except that in the case of an Event of Default arising from certain events of bankruptcy or insolvency, all outstanding Notes shall immediately so accelerate. The Trustee may require indemnity satisfactory to it before it enforces the Indenture or the Notes at the request or direction of any of the Holders. Subject to certain limitations, the Holders of a majority in aggregate principal amount of the outstanding Notes will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the Trustee or exercising any trust or power conferred on the Trustee. The Company must furnish an annual compliance certificate to the Trustee.

14. TRUSTEE DEALINGS WITH COMPANY. The Trustee, in its individual or any other capacity, may make loans to, accept deposits from and perform services for the Company or its Affiliates, and may otherwise deal with the Company or its Affiliates, as if were not Trustee; provided, however, that if the Trustee acquires any conflicting interest as described in the Trust Indenture Act of 1939, it must eliminate such conflict or resign.

15. NO RECOURSE AGAINST OTHERS. A director, officer, employee, incorporator or stockholder of the Company, as such, shall not have any liability for any obligations of the Company under the Notes or the Indenture or for any claim based on, with respect to, or by reason of, such obligations or their creation. Each Holder by accepting a Note waives and releases all such liability. The waiver and release contained in Article 13 of the Indenture are part of the consideration for the Company's issuance of the Notes.

16. AUTHENTICATION. This Note shall not be valid until authenticated by the manual signature of the Trustee or an authenticating agent.

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17. ABBREVIATIONS. Customary abbreviations may be used in the name of a Holder or an assignee, such as: TEN COM (=tenants in common), TEN ENT (=tenants by the entireties), JT TEN (=joint tenants with right of survivorship and not as tenants in common), CUST (=Custodian), and U/G/M/A (=Uniform Gifts to Minors Act).

18. ADDITIONAL RIGHTS OF HOLDERS OF TRANSFER RESTRICTED SECURITIES. In addition to the rights provided to Holders of Notes under the Indenture, Holders of Transfer Restricted Securities shall have all the rights set forth in the Registration Rights Agreement dated as of the date hereof between the Company and Forum Capital Markets L.P. as representative of the Holders of Notes.

The Company will furnish to any Holder upon written request and without charge a copy of the Indenture and such Registration Rights Agreement. Requests may be made to:

Hybridon, Inc.
620 Memorial Drive
Cambridge, Massachusetts 02139
Attn: President

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SCHEDULE OF EXCHANGES OF GLOBAL SECURITY
FOR DEFINITIVE SECURITIES

The following exchanges of this Global Security for Definitive Securities have been made:

Date of Exchange	Amount of decrease in Principal Amount of this Global Security	Amount of increase in Principal Amount of this Global Security	Principal Amount of this Global Security following such decrease or increase)	Signature of authorized officer of Trustee or Notes Custodian

FORM OF ELECTION TO CONVERT

I (we) hereby irrevocably exercise the option to convert this Note, or the portion below designated, into shares of Common Stock in accordance with the terms of the Indenture referred to in this Note, and direct that the shares issuable and deliverable upon conversion, together with any check in payment for fractional shares, be issued in the name of and delivered to the undersigned registered Holder hereof, unless a different name has been indicated below. If shares are to be issued in the name of a Person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto.

Portion of this Note to be converted (if partial conversion, \$1,000 or an integral multiple thereof): \$ _____

Signature: _____
(exactly as your name appears on the face of this Note)

Name: _____

Title: _____

Address: _____

Phone No.: _____

Date: _____

If shares are to be issued and registered in the name of a Person other than the undersigned, please print the name and address, including zip code, and social security or other taxpayer identification number of such Person below.

Name: _____

Address: _____

TIN/Social Security No: _____

Signature Guaranteed (if Common Stock to be issued to other than registered holders):

By: _____

This signature shall be guaranteed by an eligible guarantor institution (a bank or trust company having an office or correspondent in the United States or a broker or dealer which is a member of a registered securities exchange or the National Association of Securities Dealers, Inc.) with membership in an approved signature guaranty medallion program pursuant to SEC Rule 17Ad-15.

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ASSIGNMENT FORM

(I) or (we) assign and transfer this Note to

(Insert assignee's social security or tax I.D. no.)

(Print or type assignee's name, address and zip code)
and irrevocably appoint _____ agent
to transfer this Note on the Register. The agent may substitute another to act
for him.

Date: _____

Signature: _____
(exactly as your name appears on
the face of this Note)

Name: _____

Title: _____

Address: _____

Phone No.: _____

Date: _____

Signature Guaranteed:

By: _____

This signature shall be guaranteed by an eligible guarantor institution (a bank or trust company having an office or correspondent in the United States or a broker or dealer which is a member of a registered securities exchange or the National Association of Securities

Dealers, Inc.) with membership in an approved signature guaranty medallion program pursuant to SEC Rule 17Ad-15.

=====

[THE FOLLOWING IS APPLICABLE ONLY IF A RESTRICTED SECURITIES LEGEND APPEARS ON THE FACT OF THIS NOTE]

In connection with any transfer or exchange of any of the Notes evidenced by this certificate occurring prior to the date that is two years after the later of the date of original issuance of such Notes and the last date, if any, on which such Notes were owned by the Company or any Affiliate of the Company, the undersigned confirms that such Notes are being:

[CONTINUED ON NEXT PAGE]

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CHECK ONE BOX BELOW:

- (1) acquired for the undersigned's own account, without transfer (in satisfaction of Section 2.6(a)(ii)(A) or Section 2.6(d)(i)(A) of the Indenture; or
- (2) transferred to the Company; or
- (3) transferred pursuant to and in compliance with Rule 144A under the Securities Act of 1933; or
- (4) transferred pursuant to and in compliance with Regulation S under the Securities Act of 1933; or
- (5) transferred to an institutional "accredited investor" (as defined in Rule 501(a)(1), (2), (3) or (7) under the Securities Act of 1933), that has furnished to the Company and the Trustee a signed letter containing certain representations and agreements (the form of which letter appears as Exhibit C to the Indenture); or
- (6) transferred pursuant to another available exemption from the registration requirements of the Securities Act of 1933.

Unless one of the boxes is checked, the Trustee will refuse to register any of the Notes evidenced by this certificate in the name of any Person other than the registered holder thereof; provided, however, that if box (4), (5) or (6) is checked, the Company, Trustee or Registrar may require, prior to registering any such transfer of the Notes, in their sole discretion, such legal opinions, certifications and other information as the Company, Trustee or Registrar has reasonably requested to confirm that such transfer is being made pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act of 1933, including but not limited to the exemption provided by Rule 144 under such Act.

Your Name: _____
(exactly as your name appears
on the face of this Note)

By: _____

Title: _____

Date: _____

Signature Guaranteed:

By: _____

This signature shall be guaranteed by an eligible guarantor institution (a bank or trust company having an office or correspondent in the United States or a broker or dealer which is a member of a registered securities exchange or the National Association of Securities Dealers, Inc.) with membership in an approved signature guaranty medallion program pursuant to SEC Rule 17Ad-15.

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OPTION OF HOLDER TO ELECT REPURCHASE

To elect to have all or part of this Note repurchased by the Company pursuant to Section 4.6 of the Indenture in connection with a Change of Control Offer, state the amount you elect to have repurchased (if all, write "ALL"):
\$ _____.

Your Name: _____

(exactly as your name appears
on the face of this Note)

By: _____

Title: _____

Date: _____

Signature Guaranteed:

By: _____

This signature shall be guaranteed by an eligible guarantor institution (a bank or trust company having an office or correspondent in the United States or a broker or dealer which is a member of a registered securities exchange or the National Association of Securities Dealers, Inc.) with membership in an approved signature guaranty medallion program pursuant to SEC Rule 17Ad-15.

EXHIBIT B

TRANSFEE LETTER OF REPRESENTATION

Hybridon, Inc.
c/o State Street Bank and Trust Company
Corporate Trust Department
Two International Place - 4th Floor
Boston, Massachusetts 02110
Attention: Eric Donoghy

Dear Sirs:

This Certificate is delivered to request a transfer of \$ _____ principal amount of the 9% Convertible Subordinated Notes due 2004 (the "Notes") of Hybridon, Inc. (the "Company").

Upon transfer, the Notes would be registered in the name of the new beneficial owner as follows:

Name: _____

Address: _____

Taxpayer ID Number: _____

The undersigned represents and warrant to you that:

1. We are an institutional "accredited investor" (as defined in Rule 501(a)(1), (2), (3) or (7) under the Securities Act of 1933, as amended (the "Securities Act")) purchasing for our own account or for the account of such an institutional "accredited investor," and we are acquiring the Notes not with a view to, or for offer or sale in connection with, any distribution in violation of the Securities Act. We have such knowledge and experience in financial business matters as to be capable of evaluating the merits and risk of our investment in the Notes and invest in or purchase securities similar to the Notes in the normal course of our business. We and any accounts for which we are acting are each able to bear the economic risk of our or its investment.

2. We understand that the Notes have not been registered under the Securities Act and, unless so registered, may not be sold except as permitted in the following sentence. We agree on our own behalf and on behalf of any investor account for which we are purchasing Notes to offer, sell or otherwise transfer such Notes prior to the date which is two years after the later of the date of original issue and the last date on which the Company or any affiliate of the Company was the owner of such Notes (or any predecessor thereto) (the "Resale Restriction Termination Date"), unless as of such date we are an affiliate of the Company in which case the Resale Restriction Termination Date shall be the date three months after we cease to be an affiliate of the Company, only (a) so long as the Notes are eligible for resale pursuant to Rule 144A under the Securities Act, to a person we reasonably believe is a qualified institutional buyer, as defined in Rule 144A under the Securities Act (a "QIB") in a transaction complying with the requirements of Rule 144A, (b) in an offshore transaction in accordance with Regulation S under the Securities Act, (c) pursuant to a registration statement which has been declared effective under the

Securities Act, (d) to the Company, (e) to an institutional "accredited investor" within the meaning of Rule 501(a)(1), (2), (3) or (7) under the Securities Act that is purchasing for its own account or for the account of such an institutional "accredited investor," in each case in a minimum principal amount of Notes of \$250,000 or (f) pursuant to any other available exemption from the registration requirements of the Securities Act, subject in each of the foregoing cases to any requirement of law that the disposition of our property or the property of such investor

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account or accounts be at all times within our or their control and in compliance with any applicable state securities laws. The foregoing restrictions on resale will not apply subsequent to the Resale Restriction Termination Date. If any resale or other transfer of the Notes is proposed to be made pursuant to clause (e) above prior to the Resale Restriction Termination Date, the transferor shall deliver a letter from the transferee substantially in the form of this letter to the Company and the Trustee, which shall provide, among other things, that the transferee is an institutional "accredited investor" within the meaning of Rule 501(a)(1), (2), (3) or (7) under the Securities Act and that it is acquiring such Notes for investment purposes and not for distribution in violation of the Securities Act. Each purchaser acknowledges that the Company and the Trustee reserve the right prior to any offer, sale or other transfer prior to the Resale Termination Date of the Notes pursuant to clause (b), (e) or (f) above, to require the delivery of an opinion of counsel, certifications and/or other information satisfactory to the Company and the Trustee.

TRANSFeree: _____

BY: _____

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HYBRIDON, INC.

AND

FORUM CAPITAL MARKETS L.P.

REGISTRATION RIGHTS AGREEMENT

Dated as of March 26, 1997

REGISTRATION RIGHTS AGREEMENT

THIS AGREEMENT is made as of March 26, 1997, by and between Hybridon, Inc., a Delaware corporation (the "Company"), and Forum Capital Markets L.P., (the "Initial Purchaser"). The Company proposes to issue and sell to the Initial Purchaser, upon the terms set forth in a purchase agreement dated concurrently herewith (the "Purchase Agreement"), up to \$60,000,000 aggregate principal amount of its 9% Convertible Subordinated Notes due 2004 (the "Notes"). The Notes are convertible into Common Stock (as defined herein) as provided in the Notes and the Indenture (as defined herein). As an inducement to the Initial Purchaser to enter into the Purchase Agreement and in satisfaction of a condition to the Initial Purchaser's obligations thereunder, the Company agrees with the Initial Purchaser, for the benefit of the Initial Purchaser and the other Holders (as defined herein), as follows:

1. Definitions.

As used in this Agreement, the following capitalized terms shall have the following meanings:

"ACT" means the Securities Act of 1933, as amended from time to time.

"CLOSING DATE" has the meaning set forth in the Purchase Agreement.

"COMMON STOCK" means the Common Stock, par value \$.001 per share, of the Company, or any successor class thereto, issuable upon conversion of the Notes.

"COMMISSION" means the Securities and Exchange Commission.

"DAMAGES PAYMENT DATE" means April 1 and October 1 in each year.

"EFFECTIVENESS PERIOD" has the meaning set forth in Section 2 hereof.

"EXCHANGE ACT" means the Securities Exchange Act of 1934, as amended from time to time.

"HOLDERS" means Persons owning Transfer Restricted Securities.

"INDENTURE" means the Indenture, to be dated the date hereof, between the Company and State Street Bank and Trust Company or other comparable entity selected by the Company, as trustee (the "TRUSTEE"), pursuant to which the Notes are to be issued, as such Indenture is amended or supplemented from time to time in accordance with the terms thereof.

"LIQUIDATED DAMAGES" has the meaning set forth in Section 4 hereof.

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"OPTION CLOSING DATE" has the meaning set forth in the Purchase Agreement.

"PERSON" means an individual, partnership, corporation, limited liability company, trust or unincorporated organization, or a government or agency or political subdivision thereof.

"PROSPECTUS" means the prospectus included in the Shelf Registration Statement, as amended or supplemented by any prospectus supplement and by all other amendments thereto, including post-effective amendments, and all material incorporated by reference into such Prospectus.

"RECORD HOLDER" means with respect to any Damages Payment Date relating to the Notes, each Person who is a holder of Notes on the record date with respect to the interest payment on the Notes due on such date and with respect to any Damages Payment Date relating to the Common Stock, each Person who is a holder of Common Stock on March 15 with respect to an April 1 Damages Payment Date and on September 15 with respect to an October 1 Damages Payment Date.

"REGISTRATION DEFAULT" has the meaning set forth in Section 4 hereof.

"SHELF REGISTRATION STATEMENT" has the meaning set forth in Section 2 hereof.

"TIA" means the Trust Indenture Act of 1939 (15 U.S.C. Section 77aaa-77bbb) as in effect on the date of the Indenture.

"TRANSFER RESTRICTED SECURITIES" means each Note and, if such Note has been converted, each share of Common Stock issued in connection with such conversion, until the earlier of (a) the date on which such Note or share of Common Stock, as applicable, has been effectively registered under the Act and disposed of pursuant to and in accordance with an effective Shelf Registration Statement, (b) the date on which such Note or share of Common Stock, as applicable, is distributed to the public pursuant to Rule 144 or any other applicable exemption under the Act without additional restriction upon public resale or (c) at such time as such Note or share of Common Stock, as applicable, may be sold by a Holder under Rule 144(k).

"UNDERWRITTEN OFFERING" means a registration in which securities of the Company are sold to an underwriter for re-offering to the public.

2. SHELF REGISTRATION. The Company shall use its reasonable best efforts to file a registration statement with the Commission within 60 days after the Closing Date relating to the offer and sale of the Transfer Restricted Securities by Holders from time to time pursuant to Rule 415 under the Act and in accordance with the methods of distribution set forth therein, which registration statement may be substituted for by one or more subsequent

registration statements each relating to the offer and sale of the Transfer Restricted Securities by Holders from time to time (as in effect from time to time, the "Shelf Registration Statement"), and the Company shall use its reasonable best efforts to cause such Shelf Registration Statement to be declared effective by the Commission within 120 days after the

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Closing Date, provided, however, that the Company may delay such filing or effectiveness under the circumstances and during the periods described in Section 3 hereof. In addition, the Company shall use its reasonable best efforts to keep the Shelf Registration Statement continuously effective, supplemented and amended for a period (the "Effectiveness Period") of not less than two years following the later of the Closing Date or any Option Closing Date or such shorter period that will terminate when all the Notes and shares of Common Stock covered by the Shelf Registration Statement cease to be Transfer Restricted Securities.

3. Delay Periods; Suspension of Sales.

(a) If at any time prior to the expiration of the Effectiveness Period, counsel to the Company (which counsel shall be experienced in securities laws matters) has determined in good faith that it is reasonable to conclude that the filing of the Shelf Registration Statement or the compliance by the Company with its disclosure obligations in connection with the Shelf Registration Statement may require the disclosure of information which the Board of Directors of the Company has identified as material and which the Board of Directors has determined that the Company has a bona fide business purpose for preserving as confidential, then the Company may delay the filing or the effectiveness of the Shelf Registration Statement (if not then filed or effective, as applicable) and shall not be required to maintain the effectiveness thereof or amend or supplement the Shelf Registration Statement for a period (an "Information Delay Period") expiring three business days after the earlier to occur of (A) the date on which such material information is disclosed to the public or ceases to be material or the Company is able to so comply with its disclosure obligations and Commission requirements or (B) 45 days after the Company notifies the Holders of such good faith determination. There shall not be more than four Information Delay Periods during the Effectiveness Period, and there shall not be two Information Delay Periods during any contiguous 135 day period.

(b) If at any time prior to the expiration of the Effectiveness Period, the Company is advised by a nationally recognized investment banking firm selected by the Company that, in such firm's written reasonable opinion addressed to the Company (a copy of which shall be delivered to each Holder of Transfer Restricted Securities registered under the Shelf Registration Statement), sales of Common Stock pursuant to the Shelf Registration Statement at such time would materially adversely affect any immediately planned underwritten public equity financing by the Company of at least \$5 million, the Company shall not be required to maintain the effectiveness of the Shelf Registration Statement or amend or supplement the Shelf Registration Statement for a period (a "Transaction Delay Period") commencing on the date of pricing of such equity financing and expiring three business days after the earliest to occur of (i) the abandonment of such financing or (ii) 90 days after the completion of such financing. There shall not be more than two Transaction Delay Periods during the Effectiveness Period.

(c) A Transaction Delay Period and an Information Delay Period are hereinafter collectively referred to as "Delay Periods" or a "Delay Period." The Company will give prompt written notice, in the manner prescribed by Section 10(b) hereof, to each Holder of each Delay Period. Such notice shall be given

(i) in the case of a Transaction Delay Period, at least 20 days in advance of the commencement of such Delay Period and

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(ii) in the case of an Information Delay Period, as soon as practicable after the Board of Directors makes the determination referenced in Section 3(a). Such notice shall state to the extent, if any, as is practicable, an estimate of the duration of such Delay Period. Each Holder, by his acceptance of any Transfer Restricted Securities, agrees that (i) upon receipt of such notice of an Information Delay Period it will forthwith discontinue disposition of Transfer Restricted Securities pursuant to the Shelf Registration Statement, (ii) upon receipt of such notice of a Transaction Delay Period it will forthwith discontinue disposition of the Common Stock pursuant to the Shelf Registration Statement and (iii) in either such case, will not deliver any prospectus forming a part of the Shelf Registration Statement in connection with any sale of Transfer Restricted Securities or Common Stock, as applicable until the expiration of such Delay Period.

4. LIQUIDATED DAMAGES. Except as may be permitted by Section 3, if (i) the Shelf Registration Statement is not filed with the Commission within 60 days after the Closing Date, (ii) the Shelf Registration Statement has not been declared effective by the Commission within 120 days after the Closing Date (the "Effectiveness Target Date"), or (iii) at any time prior to the second anniversary of the later of the Closing Date or any Option Closing Date, the Shelf Registration Statement is filed and declared effective but shall thereafter cease to be effective (other than as a result of the effectiveness of a successor registration statement) and such effectiveness is not restored within 75 days thereafter (each such event referred to in clauses (i) through (iii), a "Registration Default"), the Company will pay liquidated damages ("Liquidated Damages") to each Holder who has complied with its obligations under this Agreement. During the first 90-day period immediately following the occurrence of such Registration Default, the amount of such Liquidated Damages shall equal \$.05 per week per \$1,000 principal amount of Notes and, if applicable, \$.0005 per week per share of Common Stock constituting Transfer Restricted Securities registered under the Shelf Registration Statement (subject to adjustment in the event of stock splits, stock consolidations, stock dividends and the like). Upon each subsequent 90-day period following the occurrence of such Registration Default, the amount of the Liquidated Damages shall increase by an additional \$.05 per week per \$1,000 principal amount of Notes and \$.0005 per week per share of Common Stock constituting Transfer Restricted Securities registered under the Shelf Registration Statement (subject to adjustment as set forth above); provided, however, the maximum amount of the Liquidated Damages shall be \$.20 per week per \$1,000 principal amount of Notes and \$.002 per week per share of Common Stock constituting Transfer Restricted Securities registered under the Shelf Registration Statement (subject to adjustment as set forth above). All accrued Liquidated Damages shall be paid by the Company to Record Holders entitled thereto on the next succeeding Damages Payment Date by wire transfer of immediately available funds or by federal funds check. Following the cure of all Registration Defaults, the accrual of Liquidated Damages will cease, but any Liquidated Damages accrued through the date of cure shall be paid to Record Holders on the next succeeding Damages Payment Date. If the Registration Defaults described in either of clauses (i) or (ii) above arose solely because the applicable Holder or Holders failed to provide the Company with certain information within 20 business days after request therefor pursuant to Section 5(m), Liquidated Damages in respect thereof will not begin to accrue until five business days after such information has been provided to the Company.

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All of the Company's obligations set forth in the preceding paragraph which are outstanding with respect to any Transfer Restricted Security at the time such security ceases to be a Transfer Restricted Security shall survive until such time as all such obligations with respect to such security shall have been satisfied in full.

5. Registration Procedures.

In connection with the Shelf Registration Statement and any Prospectus required by this Agreement to permit the sale or resale of Transfer Restricted Securities, the following provisions shall apply:

(a) The Company shall furnish to each Holder, promptly after filing thereof with the Commission, a copy of the Shelf Registration Statement and each amendment thereto or each amendment or supplement to the Prospectus included therein.

(b) The Company shall take such action as may be reasonably necessary so that (i) the Shelf Registration Statement and any amendment thereto and any Prospectus forming a part thereof and any supplement or amendment thereto complies in all material respects with the Act and the rules and regulations thereunder, (ii) the Shelf Registration and any amendment thereto (in either case, other than with respect to written information furnished to the Company by or on behalf of any Holder specifically for inclusion therein) does not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make any statement therein not misleading and (iii) the Prospectus and any supplement thereto (in either case, other than with respect to such information from Holders), does not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading.

(c) The Company shall promptly advise the Holders of Transfer Restricted Securities registered under the Shelf Registration Statement (which advice pursuant to clauses (ii) - (iv) shall be accompanied by an instruction to suspend the use of the Prospectus until the requisite changes have been made) and, if requested by such Persons, shall confirm such advice in writing:

(i) when the Shelf Registration Statement and any amendment thereto has been filed with the Commission and when the Shelf Registration Statement or any post-effective amendment thereto has become effective;

(ii) of any request by the Commission for amendments to the Shelf Registration Statement or amendments or supplements to the Prospectus or for additional information relating thereto;

(iii) of the issuance by the Commission of any stop order suspending the effectiveness of the Shelf Registration Statement or of the suspension by any state securities commission of the qualification of the Transfer Restricted Securities for offering or sale in any jurisdiction, or the initiation of any proceeding for any of the preceding purposes; and

(iv) of the happening of any event that requires the making of

any changes in the Shelf Registration Statement or the Prospectus so that, as of such date, the Shelf Registration Statement and the Prospectus do not contain an untrue statement of a material fact and do not omit to state a material fact required to be stated therein or necessary to make the statements therein (in the case of the Prospectus, in light of the circumstances under which they were made) not misleading.

(d) If at any time the Commission shall issue any stop order suspending the effectiveness of the Shelf Registration Statement, or any state securities commission or other regulatory authority shall issue an order suspending the qualification or exemption from qualification of the Transfer Restricted Securities under state securities or Blue Sky laws, the Company shall use its reasonable best efforts to obtain the withdrawal or lifting of such order at the earliest possible time.

(e) The Company shall furnish to each Holder of Transfer Restricted Securities included under the Shelf Registration Statement, without charge, at least one copy of the Shelf Registration Statement and each post-effective amendment thereto, including all financial statements and schedules, documents incorporated by reference therein and, if the Holder so requests in writing, all exhibits (including exhibits incorporated therein by reference).

(f) The Company shall, during the Effectiveness Period, deliver to each Holder of Transfer Restricted Securities included under the Shelf Registration Statement, without charge, such reasonable number of copies of the Prospectus (including each preliminary prospectus) included in the Shelf Registration Statement and any amendment or supplement thereto as such Holder may reasonably request to facilitate the public sale or other disposition of the Transfer Restricted Securities by the selling Holder.

(g) Prior to any public offering pursuant to the Shelf Registration Statement, the Company shall use its reasonable best efforts to register or qualify or cooperate with the Holders of Transfer Restricted Securities registered thereunder, the underwriter(s), if any, and their respective counsel in connection with the registration and qualification of such Transfer Restricted Securities under the securities or Blue Sky laws of such jurisdictions as such Holders or underwriters reasonably request in writing and do any and all other acts or things reasonably necessary or advisable to enable the offer and sale in such jurisdictions of such Transfer Restricted Securities; provided, however, that the Company will not be required to qualify generally to do business in any jurisdiction where it is not then so qualified or to take any action that would subject it to general service of process or to taxation in any jurisdiction where it is not then so subject.

(h) The Company shall cooperate with the Holders and the underwriter(s), if any, to facilitate the timely preparation and delivery of certificates representing Transfer Restricted Securities to be sold under the Shelf Registration Statement, free of any restrictive legends and in such denominations and registered in such names as the Holders or the underwriter(s), if any, may reasonably request in connection with the sales of Transfer Restricted Securities pursuant to the Shelf Registration Statement.

(i) Upon the occurrence of any event contemplated by Section 5(c)(ii) - - (iv), and subject to the provisions of Section 3, the Company shall file (and use its reasonable best efforts to have declared effective as soon as possible) a post-effective amendment to the Shelf Registration Statement or an amendment or supplement to the Prospectus or file any other required document so that, as

thereafter delivered to the purchasers of Transfer Restricted Securities registered under the Shelf Registration Statement, the Prospectus will not contain an untrue statement of a material fact or omit to state any material fact necessary to make the statements therein in light of the circumstances under which they were made not misleading. Each Holder of Transfer Restricted Securities registered under the Shelf Registration Statement agrees by acquisition of such Transfer Restricted Securities that, upon receipt of any notice from the Company of the existence of any fact of the kind described in Section 5(c) (ii) - (iv) hereof, such Holder will forthwith discontinue disposition of Transfer Restricted Securities pursuant to the Shelf Registration Statement until such Holder receives copies of the supplemented or amended Prospectus contemplated by this Section 5(i), or until such Holder is advised in writing by the Company that the use of the Prospectus may be resumed, and such Holder has received copies of any additional or supplemental filings which are incorporated by reference in the Prospectus. If so directed by the Company, each Holder will deliver to the Company (at the Company's expense) all copies, other than permanent file copies then in such Holder's possession, of the Prospectus covering such Transfer Restricted Securities current at the time of receipt of such notice.

(j) The Company shall provide CUSIP numbers for all Transfer Restricted Securities registered under the Shelf Registration Statement, in the event of and at the time of any distribution thereof to Holders, not later than the effective date of the Shelf Registration Statement and provide the Trustee and the transfer agent for the Common Stock with printed certificates for such Transfer Restricted Securities which are in a form eligible for deposit with The Depository Trust Company.

(k) The Company shall use its reasonable best efforts to comply with all applicable rules and regulations of the Commission, and make generally available to its security holders or otherwise provide in accordance with Section 11(a) of the Act, as soon as practicable after the effective date of the Shelf Registration Statement an earnings statement satisfying the provisions of Section 11(a) of the Act.

(l) The Company shall cause the Indenture to be qualified under the TIA in a timely manner not later than the effective date of the Shelf Registration Statement, and, in connection therewith, cooperate with the Trustee and the Holders of Notes to effect such changes to the Indenture as may be required for such Indenture to be so qualified in accordance with the terms of the TIA.

(m) The Company may require each Holder of Transfer Restricted Securities to be registered under the Shelf Registration Statement to furnish to the Company such information regarding such Holder and the distribution of such Holder's securities thereunder as the Company may from time to time reasonably require for inclusion in the Shelf Registration Statement and the Company may exclude from such registration the

Transfer Restricted Securities of any Holder that fails to furnish such information within a reasonable time after receiving such request.

(n) The Company shall, if requested by the Holders of Transfer Restricted Securities being sold in an Underwritten Offering or the underwriter(s) thereof, promptly incorporate in the Shelf Registration Statement or Prospectus, pursuant to a supplement or post-effective amendment, if necessary, such information relating to the plan of distribution of the Transfer Restricted Securities, information with respect to the principal amount of

Transfer Restricted Securities being sold to such underwriter(s), the purchase price being paid therefor and with respect to any other terms of the offering of the Transfer Restricted Securities to be sold in such offering as such underwriters and Holders reasonably agree should be included therein and to which the Company does not reasonably object; and shall make all required filings of such Prospectus supplement or post-effective amendment as soon as practicable after the Company is notified of the matters to be incorporated in such Prospectus supplement or post-effective amendment. Notwithstanding the foregoing, any Delay Period resulting from such supplement or amendment shall not constitute a Delay Period under Section 3, and the Company shall not be liable under Section 4, in connection with such delay or amendment.

(o) The Company shall enter into such customary agreements (including an underwriting agreement in customary form, if applicable) and take all such other reasonable and appropriate actions in order to expedite or facilitate the disposition in an Underwritten Offering of the Transfer Restricted Securities pursuant to the Shelf Registration Statement, and in connection therewith, the Company shall (1) make such representations and warranties to the underwriter(s) in form, substance and scope as are customarily made by issuers to underwriters in comparable underwritten offerings; (2) obtain opinions of counsel to the Company and updates thereof (which counsel and opinions (in form, scope and substance) shall be reasonably satisfactory to such underwriters) addressed to each such underwriter covering such matters as are customarily covered in opinions requested in underwritten offerings; (3) if and to the extent permitted by Statement of Auditing Standards No. 72, obtain comfort letters and updates thereof from the Company's independent certified public accountants addressed to the underwriters requesting the same, such letters to be in customary form and covering matters of the type customarily covered in comfort letters in connection with comparable underwritten offerings; (4) set forth in full or incorporate by reference in the underwriting agreement the indemnification provisions and procedures of Section 6 hereof with respect to all parties to be indemnified pursuant to said Section; and (5) deliver such documents and certificates as may be reasonably requested by such underwriters to evidence compliance with Section 5(i) and with any customary conditions contained in the underwriting agreement or other agreement entered into by the Company pursuant to this Section 5(o). The foregoing actions set forth in clauses (1), (2), (3) and (5) of this Section 5(o) shall be performed at each closing under any underwriting or similar agreement as and to the extent required thereunder.

(p) The Company shall make available at reasonable times for inspection by the Holders of the Transfer Restricted Securities, any underwriter participating in any disposition pursuant to the Shelf Registration Statement, and any attorney or accountant retained by any such Holders or underwriters, all financial and other records, pertinent

corporate documents and properties of the Company and its subsidiaries; and cause the Company's officers, directors and employees to supply all information reasonably requested by any such Holder, underwriter, attorney or accountant in connection with the Shelf Registration Statement subsequent to the filing thereof as is customary for similar due diligence examinations; provided, however, that any information that is designated in writing by the Company, in good faith, as confidential at the time of delivery of such information shall be kept confidential by such Holders or any such underwriter, attorney or accountant, unless (i) such disclosure is required to be made in connection with a court proceeding or required by law (provided that the disclosing party provides prior written notice to the Company and cooperates with the Company, at the Company's expense, to take reasonable and lawful actions to avoid and/or minimize the extent of such disclosure) or (ii) such information becomes

available to the public other than through a wrongful act by such Person; and provided, further that the foregoing inspection and information gathering shall, to the greatest extent possible, be coordinated on behalf of the Holders and the other parties entitled thereto by one counsel designated by and on behalf of such Holders and other parties.

(q) The Company shall use its reasonable best efforts, subject to any applicable rules thereto, to cause all Common Stock included among the Transfer Restricted Securities to be listed on each securities exchange on which the Common Stock is listed and, if requested by the Holders of a majority of in aggregate principal amount of Notes, and if the Common Stock is then listed on the American Stock Exchange or the New York Stock Exchange, to also list the Notes registered under the Shelf Registration Statement on such exchange.

6. Registration Expenses.

(a) Except as otherwise provided in Section 7, the Company shall bear all expenses incurred in connection with the performance of or compliance with its obligations under Sections 2, 4 and 5 hereof, including without limitation all registration and filing fees, fees and expenses of compliance with securities or blue sky laws, printing expenses, messenger and delivery expenses and fees and disbursements of counsel for the Company and all independent certified public accountants, and other persons retained by the Company (all such expenses being herein called "Registration Expenses"). Registration Expenses shall also include the Company's internal expenses (including, without limitation, all salaries and expenses of its officers and employees performing legal or accounting duties), the expense of any annual audit or quarterly review, the expense of any liability insurance and the expenses and fees for listing the securities to be registered on each securities exchange on which similar securities issued by the Company are then listed or on the Nasdaq Stock Market. The Company will reimburse the Holders for the reasonable fees and disbursements (not to exceed \$15,000 in the aggregate) of one firm of attorneys chosen by the Holders of a majority in aggregate principal amount of the Notes to be sold pursuant to the Shelf Registration Statement to act as counsel therefor in connection therewith.

(b) Each Holder will pay any discounts and commissions incurred upon the sale of securities by it under the Shelf Registration Statement.

7. Indemnification and Contribution.

(a) The Company agrees to indemnify and hold harmless each Holder (for purposes of this Section 7, "Holder" shall include the officers, directors, partners, employees and agents, and each Person, if any, who controls any Holder ("controlling person") within the meaning of Section 15 of the Securities Act or Section 20(a) of the Exchange Act, from and against any and all losses, claims, damages, expenses or liabilities, joint or several (and actions, proceedings, suits and litigation in respect thereof), whatsoever, as the same are incurred, to which such Holder or any such controlling Person may become subject, under the Securities Act, the Exchange Act or any other statute or at common law or otherwise insofar as such losses, claims, damages, expenses or liabilities arise out of or are based upon any untrue statement or alleged untrue statement of a material fact contained in the Shelf Registration Statement, or any preliminary Prospectus or Prospectus (as from time to time amended and supplemented) or arise out of or are based upon the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein (with respect to any preliminary Prospectus or Prospectus, in the light

of the circumstances under which they were made), not misleading; provided, however, that the Company shall not be liable in any such case to the extent that any such loss, claim, damage, expense or liability arises out of or is based upon any untrue statement or alleged untrue statement or omission or alleged omission made in the Registration Statement, or any preliminary Prospectus or Prospectus or any such amendment or supplement in reliance upon and in conformity with written information furnished to the Company by or on behalf of any such Holder specifically for inclusion therein and provided, further, that the Company shall not be liable to any such Holder under the indemnity agreement in this subsection (a) (i) with respect to any preliminary Prospectus or Prospectus (if such Prospectus has then been amended or supplemented) to the extent that any such loss, liability, claim, damage or expense of such Holder arises out of a sale of Transfer Restricted Securities by such Holder to a Person to whom there was not sent or given, at or prior to the written confirmation of such sale, a copy of the Prospectus (or of the Prospectus as then amended or supplemented) if the Company has previously furnished copies thereof to such Holder a reasonable time in advance and the loss, liability, claim, damage or expense of such Holder results from an untrue statement or alleged untrue statement or omission or alleged omission of a material fact contained in the preliminary Prospectus (or the Prospectus) which was corrected in the Prospectus (or the Prospectus as amended or supplemented) or (ii) to the extent that any such loss, claim, damage, expense or liability arises out of or is based upon any action or failure to act by such Holder that is found in a final judicial determination (or a settlement tantamount thereto) to constitute bad faith, willful misconduct or gross negligence on the part of such Holder. The indemnity agreement in this subsection (a) shall be in addition to any liability which the Company may have at common law or otherwise.

The Company also agrees to indemnify or contribute to losses of, as provided in Section 7(d), any underwriters of Transfer Restricted Securities registered under the Shelf Registration Statement, their officers and directors and each Person, if any, who controls any such underwriter (within the meaning of the Act) on substantially the same basis as that of the indemnification of the Holders provided in this Section 7(a) and shall, if requested by any Holder, enter into an underwriting agreement reflecting such agreement, as provided in Section 5(o) hereof.

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(b) Each Holder agrees to indemnify and hold harmless the Company, each of its directors, each of its officers and each other Person, if any, who controls the Company within the meaning of the Securities Act, to the same extent as the foregoing indemnity from the Company to the Holders, but only with respect to statements or omissions, if any, made in conformity with information relating to such Holder furnished in writing by such Holder specifically for use in the Shelf Registration Statement in the Registration Statement, or any preliminary Prospectus or the Prospectus or any amendment thereof or supplement thereto; provided, however, that the obligation to indemnify will be individual to each Holder and will be limited to the amount of net proceeds received by such Holder from the sale of Transfer Restricted Securities pursuant to the Shelf Registration Statement.

(c) Promptly after receipt by an indemnified party under this Section 7 of notice of the commencement of any action, suit or proceeding, such indemnified party shall, if a claim in respect thereof is to be made against one or more indemnifying parties under this Section 7, notify each party against whom indemnification is to be sought in writing of the commencement thereof (but the failure to notify an indemnifying party shall not relieve it from any liability which it may have under Sections 7(a) or (b) unless and to the extent that it has been prejudiced in a material respect by such failure or from the forfeiture of substantial rights and defenses). In case any such action, suit or

proceeding is brought against any indemnified party, and it notifies an indemnifying party or parties of the commencement thereof, the indemnifying party or parties will be entitled to participate therein, and to the extent it may elect by written notice delivered to the indemnified party promptly after receiving the aforesaid notice from such indemnified party, to assume the defense thereof with counsel reasonably satisfactory to such indemnified party, which may be the same counsel as counsel to the indemnifying party. Notwithstanding the foregoing, the indemnified party or parties shall have the right to employ its or their own counsel in any such case but the fees and expenses of such counsel shall be at the expense of such indemnified party or parties unless (i) the employment of such counsel shall have been authorized in writing by the indemnifying parties in connection with the defense of such action at the expense of the indemnifying party, (ii) the indemnifying parties shall not have employed counsel reasonably satisfactory to such indemnified party to take charge of the defense of such action within a reasonable time after notice of commencement of the action or (iii) such indemnified party or parties shall have reasonably concluded, after consultation with counsel to such indemnified party or parties, that a conflict of interest exists which makes representation by counsel chosen by the indemnifying party not advisable (in which case the indemnifying parties shall not have the right to direct the defense of such action on behalf of the indemnified party or parties), in any of which events such fees and expenses of one additional counsel shall be borne by the indemnifying parties. In no event shall the indemnifying parties be liable for fees and expenses of more than one counsel (in addition to any local counsel) separate from their own counsel for all indemnified parties in connection with any one action or separate but similar or related actions in the same jurisdiction arising out of the same general allegations or circumstances. Anything in this Section 7 to the contrary notwithstanding, an indemnifying party shall not be liable for any settlement of any claim or action effected without its written consent.

(d) In order to provide for just and equitable contribution in any case in which (i) an indemnified party makes claim for indemnification pursuant to this Section 7,

but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case notwithstanding the fact that the express provisions of this Section 7 provide for indemnification in such case, or (ii) contribution under the Securities Act may be required, then each indemnifying party, in lieu of indemnifying such indemnified party, shall contribute to the amount paid as a result of such losses, claims, damages, expenses or liabilities (or actions, suits, proceedings or litigation in respect thereof) in such proportion as is appropriate to reflect the relative fault of each of the contributing parties, on the one hand, and the party to be indemnified, on the other hand, in connection with the statements or omissions that resulted in such losses, claims, damages, expenses or liabilities, as well as any other relevant equitable considerations. Relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company or by a Holder, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such untrue statement or omission. The amount paid or payable by an indemnified party as a result of the losses, claims, damages, expenses or liabilities (or actions, suits, proceedings or litigation in respect thereof) referred to above in this subsection (d) shall be deemed to include any legal or other expenses reasonably incurred by such indemnified party in connection with investigating, preparing or defending any such action, claim, suit, proceeding or litigation.

Notwithstanding the provisions of this subsection (d), no Holder shall be required to contribute any amount in excess of the amount by which the total price at which the Transfer Restricted Securities sold by such indemnifying party and distributed to the public were offered to the public exceeds the amount of any damages that such indemnifying party has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. No Person guilty of fraudulent misrepresentation (within the meaning of Section 12(f) of the Securities Act) shall be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 7, each Person, if any, who controls the Company within the meaning of the Securities Act, each executive officer of the Company and each director of the Company shall have the same rights to contribution as the Company, subject in each case to this subsection (d). Any party entitled to contribution will, promptly after receipt of notice of commencement of any action, suit, proceeding or litigation against such party in respect to which a claim for contribution may be made against another party or parties under this subsection (d), notify such party or parties from whom contribution may be sought, but the omission so to notify such party or parties shall not relieve the party or parties from whom contribution may be sought from any obligation it or they may have hereunder or otherwise than under this subsection (d), or to the extent that such party or parties were not adversely affected by such omission. The contribution agreement set forth above shall be in addition to any liabilities which any indemnifying party may have at common law or otherwise.

8. RULES 144 AND 144A. The Company shall use commercially reasonable efforts to file the reports required to be filed by it under the Act and the Exchange Act in a timely manner and, if at any time the Company is not required to file such reports, it will, upon the written request of any Holder of Transfer Restricted Securities, make publicly available other information so long as necessary to permit sales of such Holder's securities pursuant to Rules

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144 and 144A. The Company covenants that it will take such further action as any Holder of Transfer Restricted Securities may reasonably request, all to the extent required from time to time, to enable such Holder to sell securities without registration under the Act within the limitation of the exemptions provided by Rules 144 and 144A (including the requirements of Rule 144A(d)(4)).

9. UNDERWRITTEN REGISTRATIONS. If any of the Transfer Restricted Securities included under the Shelf Registration Statement are to be sold in an underwritten offering, the investment banker or investment bankers and manager or managers that will administer the offering will be selected by the Holders of a majority of the shares of Common Stock included among such Transfer Restricted Securities (calculated as if all of the then outstanding Notes were converted into Common Stock at the time of such selection), provided, however, that such managing underwriters shall be reasonably satisfactory to the Company and the Company shall not be obligated to arrange for more than one underwritten offering during the Effectiveness Period.

No Person may participate in any underwritten registration hereunder unless such Person (i) agrees to sell such Person's Transfer Restricted Securities on the basis reasonably provided in any underwriting arrangements approved by the Persons entitled hereunder to approve such arrangements, (ii) completes and executes all questionnaires, powers of attorney, indemnities, underwriting agreements, lock-up letters and other documents reasonably required under the terms of such underwriting arrangements and (iii) at least 20% of the outstanding Transfer Restricted Securities are included in such underwritten offering. The Holders participating in any underwritten offering shall be responsible for any expenses customarily borne by selling securityholders, including underwriting discounts and commissions and fees and expenses of

counsel to the selling securityholders.

10. Miscellaneous.

(a) AMENDMENTS AND WAIVERS. The provisions of this Agreement may not be amended, modified or supplemented, and waivers or consents to departures from the provisions hereof may not be given, unless the Company has obtained the written consent of Holders of a majority of the Common Stock issued or issuable upon conversion of the Notes (calculated as if all of the then outstanding Notes were converted into Common Stock at the time of such consent). Notwithstanding the foregoing, a waiver or consent to depart from the provisions hereof with respect to a matter that relates exclusively to the rights of the Holders of Transfer Restricted Securities being sold pursuant to the Shelf Registration Statement and that does not directly or indirectly affect the rights of other Holders may be given by Holders of a majority of the shares of Common Stock included among such Transfer Restricted Securities.

(b) NOTICES. All notices and other communications provided for or permitted hereunder shall be made in writing by hand-delivery, first-class mail, telex, telecopier, or air courier guaranteeing overnight delivery:

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(1) if to a Holder, at the address of such Holder maintained by the Registrar under the Indenture;

(2) if to the Initial Purchaser, at the address set forth in the Purchase Agreement;

(3) if to the Company, at its address set forth in the Purchase Agreement;

or to such other addresses as the recipient party has specified to the sending party by prior written notice to the sending party.

All such notices and communications shall be deemed to have been duly given: when delivered by hand, if personally delivered; one business day after being delivered to a next-day air courier; five business days after being deposited in the mail; when answered back, if faxed; and when receipt is acknowledged by the recipient's telecopier machine, if telecopied.

(c) REMEDIES. In the event of a breach by the Company or by a Holder of any of their respective obligations under this Agreement, each Holder or the Company, as the case may be, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Agreement. The Company and each Holder agree that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of any of the provisions of this Agreement and hereby further agrees that, in the event of any action for specific performance in respect of such breach, it shall waive the defense that a remedy at law would be adequate.

(d) SEVERABILITY. The remedies provided herein are cumulative and not exclusive of any remedies provided by law. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction to be invalid, illegal, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions set forth herein shall remain in full force and effect and shall in no way be affected, impaired or invalidated and the parties hereto shall use their reasonable efforts to find and employ an alternative means to achieve the same or substantially the same result as that contemplated by such term, provision, covenant or restriction. It is hereby stipulated and

declared to be the intention of the parties that they would have executed the remaining terms, provisions, covenants and restrictions without including any of such that may be hereafter declared invalid, illegal, void or unenforceable.

(e) NO INCONSISTENT AGREEMENTS. The Company will not hereafter enter into any agreement with respect to its securities which is inconsistent with or violates the rights granted to the Holders in this Agreement.

(f) SUCCESSORS AND ASSIGNS. All covenants and agreements in this Agreement by or on behalf of any of the parties hereto will bind and inure to the benefit of their respective heirs, executors, administrators, successors, legal representatives and assigns.

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In addition, whether or not any express assignment has been made, the provisions of this Agreement which are for the benefit of Holders are also for the benefit of, and enforceable by, any subsequent Holder.

(g) COUNTERPARTS. This Agreement may be executed simultaneously in two or more counterparts, any one of which need not contain the signatures of more than one party, but all such counterparts taken together will constitute one and the same Agreement.

(h) DESCRIPTIVE HEADINGS. The descriptive headings of this Agreement are inserted for convenience only and do not constitute a part of this Agreement.

(i) GOVERNING LAW. All questions concerning the construction, validity and interpretation of this Agreement shall be governed by and construed in accordance with the domestic laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdiction) that would cause the application of the laws of any jurisdiction other than the State of New York.

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

HYBRIDON, INC.

By: /s/ E. Andrews Grinstead, III

Its: Chairman, President and Chief Executive Officer

Acting on behalf of itself and as the representative
of the Holders:

FORUM CAPITAL MARKETS L.P.

By: /s/ C. Keith Hartley

Name: C. Keith Hartley
Title: Senior Managing Director

HYBRIDON, INC.

AND

FORUM CAPITAL MARKETS L.P.

INITIAL PURCHASER'S
WARRANT AGREEMENT

Dated as of March 26, 1997

INITIAL PURCHASER'S WARRANT AGREEMENT, dated as of March 26, 1997 by and between HYBRIDON, INC., a Delaware corporation (the "Company"), and FORUM CAPITAL MARKETS L.P. (the "Initial Purchaser").

W I T N E S S E T H:
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WHEREAS, the Company proposes to issue to the Initial Purchaser warrants ("Warrants") to purchase up to 427,807 shares of Common Stock, par value \$.001 per share, of the Company (the "Common Stock"); and

WHEREAS, the Initial Purchaser has agreed, pursuant to the purchase agreement dated March 26, 1997 between the Initial Purchaser and the Company (the "Purchase Agreement"), to act as the Initial Purchaser in connection with the Company's proposed offering (the "Offering") of up to \$60,000,000 aggregate principal amount of 9% Convertible Subordinated Notes due 2004 (the "Notes"); and

WHEREAS, the Warrants to be issued pursuant to this Agreement will be issued on the Closing Date (as such term is defined in the Purchase Agreement) by the Company to the Initial Purchaser in consideration for, and as part of the Initial Purchaser's compensation in connection with, the Initial Purchaser acting as such pursuant to the Purchase Agreement;

NOW, THEREFORE, in consideration of the premises hereof, the payment by the

Initial Purchaser to the Company of an aggregate of \$42.78, the agreements herein set forth and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Grant.

(a) The Initial Purchaser is hereby granted the right pursuant to the Warrants to purchase, at any time from April 2, 1998 until 5:30 p.m., New York time, on April 2, 2002 (the "Expiration Date"), up to 427,807 shares of Common Stock (subject to adjustment as provided in Section 8 hereof and cancellation pursuant to Sections 1(b) and 1(c) hereof) at an exercise price (subject to adjustment as provided in Section 8 hereof), of \$7.0125 per share subject to the terms and conditions of this Agreement. Any Warrant that is not exercised on or prior to the Expiration Date shall be void, and all rights hereunder shall cease.

(b) Notwithstanding the provisions of Section 1(a) hereof, the Company shall hold in escrow Warrant Certificates (as defined below) with respect to Warrants to purchase up to 71,301 shares of Common Stock, which Warrant Certificates shall be released to the Initial Purchaser at each Option Closing (as such term is defined in the Purchase Agreement), if any. At each Option Closing there shall be released to the Initial Purchaser Warrant Certificates representing that portion of such Warrants equivalent to the ratio which the aggregate principal amount of Notes purchased at such Option Closing bears to \$10,000,000. Any Warrants held in escrow on June 9, 1997 pursuant to this Section 1(b) shall be cancelled and terminated.

(c) Notwithstanding the provisions of Section 1(a) hereof, if during the effectiveness of a registration statement filed pursuant to Section 7.2(a) hereof any Warrant Securities are sold under such registration statement, then, within 10 days after learning of such sale, the Company will give notice of such sale to each Holder of then outstanding Warrants. If such notice is given, all Warrants outstanding on the date such registration statement is terminated or withdrawn in accordance with Section 7.3 hereof shall be cancelled and terminated on such date.

2. WARRANT CERTIFICATES. The warrant certificates delivered and to be delivered pursuant to this Agreement (the "Warrant Certificates") shall be in the form set forth in Exhibit A attached hereto and made a part hereof, with such appropriate insertions, omissions, substitutions and other variations as required or permitted by this Agreement. Notwithstanding the foregoing, in the event that any provision of the Warrant Certificates conflicts with or are inconsistent with the terms of this Agreement, the terms of this Agreement shall supersede the provisions in the Warrant Certificates.

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3. EXERCISE OF WARRANT. The Warrants initially are exercisable at an initial exercise price per share of Common Stock set forth in Section 6 hereof (subject to adjustment as provided in Section 8 hereof) payable by certified or official bank check. Upon surrender of a Warrant Certificate with a duly executed Election to Purchase (in the form of Annex A to the Warrant Certificate) together with payment of the Exercise Price (as hereinafter defined) for the Common Stock purchased at the Company's principal offices (presently located at 620 Memorial Drive, Cambridge, Massachusetts 02139), the registered holder of a Warrant Certificate ("Holder") shall be entitled to receive a certificate or certificates for the Common Stock so purchased. The purchase rights represented by each Warrant Certificate are exercisable at the option of the Holder thereof, in whole or in part (but not as to fractional shares of Common Stock underlying the Warrants). In the case of the purchase of less than all the Common Stock purchasable under any Warrant Certificate, the Company shall cancel said Warrant Certificate upon the surrender thereof and shall execute and deliver a new Warrant Certificate of like tenor for the

balance of the Common Stock purchasable thereunder.

4. ISSUANCE OF CERTIFICATES. Upon the exercise of the Warrants, the issuance of certificates for the total number of whole shares of Common Stock for which such Warrants were exercised shall be made forthwith (and in any event within five business days thereafter) without charge to the Holder thereof including, without limitation, any stock transfer or similar tax which may be payable in respect of the issuance thereof, and such certificates shall (subject to the provisions of Sections 5 and 7 hereof) be issued in the name of, or in such names as may be directed by, the Holder thereof; provided, however, that the Company shall not be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of any such certificates in a name other than that of the Holder, and the Company shall not be required to issue or deliver such certificates unless or until the person or persons requesting the issuance thereof shall have paid to the Company the amount of such tax or shall have established to the satisfaction of the Company that such tax has been paid.

The Warrant Certificates shall be executed on behalf of the Company, by the manual or facsimile signature of the then present Chairman or Vice Chairman of the Board of Directors or President or Vice President of the Company under its corporate seal reproduced thereon and by the manual or facsimile signature of the then present Treasurer or Assistant Treasurer or Secretary or Assistant Secretary of the Company. Warrant Certificates shall be dated the date of execution by the Company upon initial issuance, division, exchange, substitution or transfer. Certificates representing the Common Stock issuable upon exercise of the Warrants (and/or other securities, property or rights issuable upon exercise of Warrants) shall be dated the date on which the Company receives the Election to Purchase, Warrant Certificate and payment of the Exercise Price (regardless of when executed).

5. RESTRICTION ON TRANSFER OF WARRANTS. The Holder of a Warrant Certificate, by acceptance thereof, covenants and agrees that (a) the Warrants represented by such Warrant Certificate and the shares of Common Stock issuable upon exercise of such Warrants (the "Warrant Securities") are being acquired as an investment and not with a view to, nor for sale in connection with, the distribution thereof; nor with any present intention of distributing or selling the same, except as may be permitted under applicable securities laws. The Warrants and the Warrant Shares have not been registered under the Securities Act of 1933, as amended (the "Securities Act"), or any state securities law and any transfer of the Warrants and the Warrant Shares may only be made upon such registration or pursuant to an exemption from registration thereunder and, if required by the Company in connection with any transfer pursuant to such an exemption from registration, conditioned upon receipt by the Company of an opinion of counsel, reasonably satisfactory to counsel to the issuer, that such an exemption is available for such transfer. Upon exercise, in part or in whole, of the Warrants, certificates representing the Common Stock issuable upon exercise of the Warrants (and/or other securities, property or rights issuable upon exercise of Warrants) shall bear the following legend:

The securities represented by this certificate have not been registered under the Securities Act of 1933, as amended (the "Securities Act"), and may not be offered or sold except pursuant to (i) an effective registration statement under the Securities Act or (ii) an exemption from registration under the Securities Act, of an opinion of counsel, reasonably satisfactory to counsel to the issuer, is delivered that such an exemption is available for such transfer.

this Section 5 and Section 9 hereof.

6. EXERCISE PRICE. The initial exercise price of each Warrant shall be \$7.0125 per share of Common Stock. The adjusted exercise price of each Warrant shall be the price which shall result from time to time from any and all adjustments of the initial exercise price in accordance with the provisions of Section 8 hereof. The term "Exercise Price" herein shall mean the initial exercise price or, after the first adjustment hereunder, the adjusted exercise price.

7. Registration Rights.

7.1 PIGGYBACK REGISTRATION. The Company shall use its reasonable best efforts to include the Common Stock issued or issuable upon exercise of the Warrants (the "Warrant Securities") in the shelf registration statement (the "Shelf Registration Statement") to be filed under the Securities Act pursuant to the Registration Rights Agreement between the Company and the Initial Purchaser dated concurrently herewith. If, at any time commencing after the date on which the Shelf Registration Statement is terminated or withdrawn and expiring seven years after the date hereof, the Company proposes to register any of its securities under the Securities Act (other than pursuant to Form S-4, Form S-8 or any successor form of limited purpose and other than any registration statement covering only securities proposed to be issued in exchange for securities or assets of another corporation), it will give written notice by registered mail, at least 20 days prior to the filing of each such registration statement, to the Holders of the Warrants or Warrant Securities of its intention to do so. If the Holders of the Warrants and/or Warrant Securities notify the Company within 20 days after receipt of any such notice of its or their desire to include any of their respective Warrant Securities in such proposed registration statement, the Company shall afford each of such Holders the opportunity to have such Warrant Securities registered under such registration statement. In connection with any offering under this Section 7.1 involving a firm commitment underwriting of Common Stock, the Company shall not be required to include any Warrant Securities in such underwriting unless the Holders thereof accept the terms of the underwriting agreement related thereto as agreed upon between the Company and/or the holders of securities of the Company who have initiated such offering pursuant to demand registration rights held by them and the underwriter(s) of such offering. If such offering is an underwritten offering and in the opinion of the managing underwriter(s) of such offering the registration of all, or part of, shares of Common Stock ("Incidental Shares") which the Holders have requested to be included pursuant to this Section 7.1 and/or which other holders of shares of Common Stock or other securities of the Company entitled to include shares of Common Stock in such registration (other than, if such registration is initiated by the demand of holders of specified securities of the Company, for securities of such holders ("Initiating Stockholders"), have requested to be included would materially and adversely affect such public offering, then the Company shall be required to include in the underwriting only that number of such shares, if any, which the managing underwriter(s) believe(s) may be sold without causing such adverse effect. If the number of Warrant Securities to be included in the underwriting in accordance with the foregoing is less than the total number of shares which the Holders have requested to be included, then (i) the party or parties initiating the registration (i.e., the Company or the Initiating Stockholders) shall be entitled to include all shares that they have requested to be registered and (ii) the Holders who have requested registration and other holders of shares of Common Stock or other securities of the Company entitled to include shares of Common Stock in such registration on a parity with the Holders (i.e., all holders of such securities other than the Initiating Stockholders, who shall be entitled to include the total number of shares they have requested as provided in clause (i), or those persons who have registration rights expressly subordinated to the Holders) shall participate in the underwriting pro rata based upon their total ownership of shares of Common Stock of the Company.

Notwithstanding the provisions of this Section 7.1, the Company shall have the right at any time after it shall have given written notice pursuant to this Section 7.1 (irrespective of whether a written request for inclusion of any such Warrant Securities shall have been made) to elect not to file any such proposed

registration statement or to withdraw the same after the filing but prior to the effective date thereof.

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7.2 Demand Registration.

(a) At any time commencing on the date the Shelf Registration Statement is terminated or withdrawn and expiring seven years after the date hereof, the Holders of the Warrants and/or Warrant Securities representing a Majority (as hereinafter defined) of such securities shall have the right (which right is in addition to the registration rights under Section 7.1 hereof), exercisable by written notice to the Company, to require the Company to use its best efforts to prepare and file with the Securities and Exchange Commission (the "Commission"), on one occasion only, a registration statement on such form selected by the Company as it is then eligible to use and such other documents, including a prospectus, as may be necessary in the opinion of both counsel for the Company and counsel for the Holders, in order to comply with the provisions of the Securities Act, so as to permit a public offering and sale of their Warrant Securities for six consecutive months (subject to the provisions of Section 7.2(d) below) by any such Holders and any other Holders of the Warrants and/or Warrant Securities who notify the Company of their decision to join therein within 10 days after receiving notice from the Company pursuant to Section 7.2(b) below.

(b) The Company covenants and agrees to give written notice of any registration request under this Section 7.2 to all Holders of the Warrants and/or the Warrant Securities within 10 days from the date of the receipt of any such registration request.

(c) [Intentionally omitted]

(d) Notwithstanding the provisions of Sections 7.2(a) and (c), if at any time during which the Company is obligated to maintain the effectiveness of a registration statement pursuant to such Sections counsel to the Company (which counsel shall be experienced in securities matters) has determined in good faith it is reasonable to conclude that the filing of such registration statement or the compliance by the Company with its disclosure obligations thereunder may require the disclosure of material information which the Board of Directors of the Company has identified as material and which the Board of Directors has determined the Company has a bona fide business purpose for preserving as confidential, then the Company may delay the filing or the effectiveness of such registration statement (if not then filed or effective, as appropriate) and shall not be required to maintain the effectiveness thereof or amend or supplement the registration statement for a period expiring three business days after the earlier to occur of (i) the date on which such information is disclosed to the public or ceases to be material or the Company is so able to comply with its disclosure obligations or (ii) 45 days after the Company notifies the Holders of such good faith determination. There shall not be more than two such delay periods with respect to any registration pursuant to Section 7.2(a), and the period such registration statement is required to be kept effective by the Company shall be increased by the period of any such delay period. Notice of any such delay period and of the termination thereof will be promptly delivered by the Company to each Holder and shall be maintained in confidence by each such Holder.

7.3 COVENANTS WITH RESPECT TO REGISTRATION. In connection with any registration under Section 7.1 or 7.2 hereof, as applicable, the Company covenants and agrees as follows:

(a) In connection with any registration under Section 7.2, the Company

shall use its best efforts to file a registration statement as soon as practicable, but in any event within 90 days after receipt of any demand therefor, shall use its best efforts to have such registration statement declared effective at the earliest possible time and shall furnish each Holder desiring to sell Warrant Securities such number of prospectuses as shall reasonably be requested; provided, however, that the Company shall not be obligated to effect such registration under the Securities Act except in accordance with the following provisions:

(i) the Company shall not be obligated to use its best efforts to file and cause to become effective any registration statement for a period of up to 90 days if at the time of such request any other registration statement pursuant to which shares of Common Stock of the Company are to be or were sold has been filed with the Commission and not withdrawn or has been declared effective within the prior 60 days; and

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(ii) the Company may delay the filing or effectiveness of the registration statement for a period of up to 90 days after the date of a request for registration if at the time of such request the Company is engaged in a firm commitment underwritten public offering of Common Stock in which the Holders may include their Warrant Securities pursuant to Section 7.1 hereof.

(b) The Company shall pay all costs, fees and expenses in connection with all registration statements filed pursuant to Sections 7.1 and 7.2(a) hereof (excluding fees and expenses of Holders' counsel and any underwriting or selling commissions), including, without limitation, the Company's legal and accounting fees, printing expenses and blue sky fees and expenses. If the Company shall fail to comply with the provisions of Section 7.3(a) hereof, the Company shall, in addition to any other equitable or other relief available to such Holders, extend the Exercise Period by such number of days as shall equal the delay caused by the Company's failure and be liable for any or all incidental, special and consequential damages sustained by such Holders.

(c) The Company shall furnish to each Holder, promptly after filing thereof with the Commission, a copy of the registration statement filed pursuant to Section 7.1 or 7.2 (a "Registration Statement") and each amendment thereto or each amendment or supplement to the prospectus included therein (the "Prospectus").

(d) The Company shall take such action as may be reasonably necessary so that (i) the Registration Statement and any amendment thereto and any Prospectus forming a part thereof and any supplement or amendment thereto complies in all material respects with the Securities Act and the rules and regulations thereunder, (ii) the Registration Statement and any amendment thereto (in either case, other than with respect to written information furnished to the Company by or on behalf of any Holder specifically for inclusion therein) does not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make any statement therein not misleading and (iii) the Prospectus and any supplement thereto (in either case, other than with respect to such information from Holders), does not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading.

(e) The Company shall promptly advise the Holders of Warrant Securities registered under the Registration Statement (which advice pursuant to clauses (ii) - (iv) shall be accompanied by an instruction to suspend the use of the Prospectus until the requisite changes have been made) and, if requested by such persons, shall confirm such advice in writing:

(i) when the Registration Statement and any amendment thereto has been filed with the Commission and when the Registration Statement or any post-effective amendment thereto has become effective;

(ii) of any request by the Commission for amendments to the Registration Statement or amendments or supplements to the Prospectus or for additional information relating thereto;

(iii) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or of the suspension by any state securities commission of the qualification of the Warrant Securities for offering or sale in any jurisdiction, or the initiation of any proceeding for any of the preceding purposes; and

(iv) of the happening of any event that requires the making of any changes in the Registration Statement or the Prospectus so that, as of such date, the Registration Statement and the Prospectus do not contain an untrue statement of a material fact and do not omit to state a material fact required to be stated therein or necessary to make the statements therein (in the case of the Prospectus, in light of the circumstances under which they were made) not misleading.

(f) If at any time the Commission shall issue any stop order suspending the effectiveness of the Registration Statement, or any state securities commission or other regulatory authority shall issue an order

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suspending the qualification or exemption from qualification of the Warrant Securities under state securities or Blue Sky laws, the Company shall use its reasonable best efforts to obtain the withdrawal or lifting of such order at the earliest possible time.

(g) The Company shall furnish to each Holder of Warrant Securities included under the Registration Statement, without charge, at least one copy of the Registration Statement and each post-effective amendment thereto, including all financial statements and schedules, documents incorporated by reference therein and, if the Holder so requests in writing, all exhibits (including exhibits incorporated therein by reference).

(h) The Company shall, during the period the Company is obligated to maintain the effectiveness of a Registration Statement under Section 7.2 hereof, deliver to each Holder of Warrant Securities included under the Registration Statement, without charge, such reasonable number of copies of the Prospectus (including each preliminary prospectus) included in the Registration Statement and any amendment or supplement thereto as such Holder may reasonably request to facilitate the public sale or other disposition of the Warrant Securities by the selling Holder.

(i) Prior to any public offering pursuant to the Registration Statement, the Company shall use its reasonable best efforts to register or qualify or cooperate with the Holders of Warrant Securities registered thereunder, the underwriter(s), if any, and their respective counsel in connection with the registration and qualification of such Warrant Securities under the securities or Blue Sky laws of such jurisdictions as such Holders or underwriters reasonably request in writing and do any and all other acts or things reasonably necessary or advisable to enable the offer and sale in such jurisdictions of such Warrant Securities; provided, however, that the Company will not be required to qualify generally to do business in any jurisdiction where it is not then so qualified or to take any action that would subject it to general service of process or to taxation in any jurisdiction where it is not then so subject.

(j) The Company shall cooperate with the Holders and the underwriter(s), if any, to facilitate the timely preparation and delivery of certificates representing Warrant Securities to be sold under the Registration Statement, free of any restrictive legends and in such denominations and registered in such names as the Holders or the underwriter(s), if any, may reasonably request in connection with the sales of Warrant Securities pursuant to the Registration Statement.

(k) Upon the occurrence of any event contemplated by Section 7(e)(ii) - (iv) hereof, the Company shall file (and use its reasonable best efforts to have declared effective as soon as possible) a post-effective amendment to the Registration Statement or an amendment or supplement to the Prospectus or file any other required document so that, as thereafter delivered to the purchasers of Warrant Securities registered under the Registration Statement, the Prospectus will not contain an untrue statement of a material fact or omit to state any material fact necessary to make the statements therein in light of the circumstances under which they were made not misleading. Each Holder of Warrant Securities registered under the Registration Statement agrees by acquisition of such Warrant Securities that, upon receipt of any notice from the Company of the existence of any fact of the kind described in Section 7(e)(ii) - (iv) hereof, such Holder will forthwith discontinue disposition of Warrant Securities pursuant to the Registration Statement until such Holder receives copies of the supplemented or amended Prospectus contemplated by this Section 7(k), or until such Holder is advised in writing by the Company that the use of the Prospectus may be resumed, and such Holder has received copies of any additional or supplemental filings which are incorporated by reference in the Prospectus. If so directed by the Company, each Holder will deliver to the Company (at the Company's expense) all copies, other than permanent file copies then in such Holder's possession, of the Prospectus covering such Warrant Securities current at the time of receipt of such notice.

(l) The Company shall use its reasonable best efforts to comply with all applicable rules and regulations of the Commission, and make generally available to its security holders or otherwise provide in accordance with Section 11(a) of the Act, as soon as practicable after the effective date of the Registration Statement an earnings statement satisfying the provisions of Section 11(a) of the Act.

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(m) The Company may require each Holder of Warrant Securities to be registered under the Registration Statement to furnish to the Company such information regarding such Holder and the distribution of such Holder's securities thereunder as the Company may from time to time reasonably require for inclusion in the Registration Statement and the Company may exclude from such registration the Warrant Securities of any Holder that fails to furnish such information within a reasonable time after receiving such request.

(n) With respect an offering pursuant to Section 7.2 only, the Company shall, if requested by the Holders of Warrant Securities being sold in an underwritten offering or the underwriter(s) thereof, promptly incorporate in the Registration Statement or Prospectus, pursuant to a supplement or post-effective amendment, if necessary, such information relating to the plan of distribution of the Warrant Securities, information with respect to the principal amount of Warrant Securities being sold to such underwriter(s), the purchase price being paid therefor and with respect to any other terms of the offering of the Warrant Securities to be sold in such offering as such underwriters and Holders reasonably agree should be included therein and to which the Company does not reasonably object; and shall make all required filings of such Prospectus supplement or post-effective amendment as soon as practicable after the Company is notified of the matters to be incorporated in such Prospectus supplement or

post-effective amendment. Notwithstanding the foregoing, any delay period resulting from such supplement or amendment shall not constitute a delay period under Section 7.2(d) hereof.

(o) With respect an offering pursuant to Section 7.2 only, the Company shall enter into such customary agreements (including an underwriting agreement in customary form, if applicable) and take all such other reasonable and appropriate actions in order to expedite or facilitate the disposition of the Warrant Securities in an underwritten offering pursuant to the Registration Statement, and in connection therewith, the Company shall (1) make such representations and warranties to the underwriter(s), if any, in form, substance and scope as are customarily made by issuers to underwriters in comparable underwritten offerings; (2) obtain opinions of counsel to the Company and updates thereof (which counsel and opinions (in form, scope and substance) shall be reasonably satisfactory to such underwriters) addressed to each such underwriter covering such matters as are customarily covered in opinions requested in underwritten offerings; (3) if and to the extent permitted by Statement of Auditing Standards No. 72, obtain comfort letters and updates thereof from the Company's independent certified public accountants addressed to the underwriters requesting the same, such letters to be in customary form and covering matters of the type customarily covered in comfort letters in connection with primary underwritten offerings; (4) set forth in full or incorporate by reference in the underwriting agreement the indemnification provisions and procedures of Section 6 hereof with respect to all parties to be indemnified pursuant to said Section; and (5) deliver such documents and certificates as may be reasonably requested by such underwriters to evidence compliance with Section 5(i) and with any customary conditions contained in the underwriting agreement or other agreement entered into by the Company pursuant to this Section 7(o). The foregoing actions set forth in clauses (1), (2), (3) and (5) of this Section 5(o) shall be performed at each closing under any underwriting or similar agreement as and to the extent required thereunder.

(p) With respect an offering pursuant to Section 7.2 only, the Company shall make available at reasonable times for inspection by the Holders of the Warrant Securities, any underwriter participating in any disposition pursuant to the Registration Statement, and any attorney or accountant retained by any such Holders or underwriters, all financial and other records, pertinent corporate documents and properties of the Company and its subsidiaries; and cause the Company's officers, directors and employees to supply all information reasonably requested by any such Holder, underwriter, attorney or accountant in connection with the Registration Statement subsequent to the filing thereof as is customary for similar due diligence examinations; provided, however, that any information that is designated in writing by the Company, in good faith, as confidential at the time of delivery of such information shall be kept confidential by such Holders or any such underwriter, attorney or accountant, unless (i) such disclosure is required to be in connection with a court proceeding or required by law (provided that the disclosing party provides prior written notice to the Company and cooperates with the Company, at the Company's expense, to take reasonable and lawful actions to avoid and/or minimize the extent of such disclosure) or (ii) such information becomes available to the public other than through a wrongful act by such Person; and provided, further that the foregoing inspection and information gathering shall, to the greatest extent possible, be coordinated on behalf of the Holders and the other parties entitled thereto by one counsel designated by and on behalf of such Holders and other parties.

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(q) The Company shall use its reasonable best efforts, subject to any applicable rules thereto, to cause all Common Stock included among the Warrant Securities to be listed on each securities exchange on which the Common Stock is listed.

(r) Nothing contained in this Agreement shall be construed as requiring the

Holder to exercise their Warrants prior to the initial filing of any Registration Statement or the effectiveness thereof; provided, however, no Holder of Warrants with respect to which the underlying Warrant Securities are registered under an effective registration statement filed pursuant to Section 7.2 hereof may exercise such Holder's Warrants in part instead of in whole.

(s) The Company may permit the inclusion of any securities other than Warrant Securities to be included in any Registration Statement filed pursuant to Section 7.2(a) hereof provided that viz. a viz. the Holders, the holders of such other securities shall have no greater right to include their shares in such registration statement than Holders have to include their shares in an offering by Initiating Stockholders pursuant to Section 7.1 hereof and provided further that, viz. a viz. such other holders, the Holders have rights no less than Initiating Stockholders have in relation to the Holders to include all of their shares in such a registration statement pursuant to Section 7.1 hereof.

(t) For purposes of this Agreement, the term "Majority" in reference to the Holders of Warrants and/or Warrant Securities shall mean the Holders of Warrants and/or Warrant Securities who, assuming the immediate exercise of all of the outstanding Warrants for Common Stock, would hold in excess of fifty percent (50%) of the Common Stock then issued or issuable pursuant to Warrants that (i) are not held by the Company, an affiliate or officer thereof or any of their respective affiliates, members of their family or persons acting as their nominees or in conjunction therewith or (ii) have not been resold to the public pursuant to a Registration Statement filed with the Commission under the Securities Act.

(u) Indemnification and Contribution.

(1) The Company agrees to indemnify and hold harmless each Holder (for purposes of this Section 7(u), "Holder" shall include the officers, directors, partners, employees and agents, and each person, if any, who controls any Holder ("controlling person") within the meaning of Section 15 of the Securities Act or Section 20(a) of the Exchange Act, from and against any and all losses, claims, damages, expenses or liabilities, joint or several (and actions, proceedings, suits and litigation in respect thereof), whatsoever, as the same are incurred, to which such Holder or any such controlling person may become subject, under the Securities Act, the Exchange Act or any other statute or at common law or otherwise insofar as such losses, claims, damages, expenses or liabilities arise out of or are based upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, or any preliminary Prospectus or Prospectus (as from time to time amended and supplemented) or arise out of or are based upon the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein (with respect to any preliminary Prospectus or Prospectus, in the light of the circumstances under which they were made), not misleading; provided, however, that the Company shall not be liable in any such case to the extent that any such loss, claim, damage, expense or liability arises out of or is based upon any untrue statement or alleged untrue statement or omission or alleged omission made in the Registration Statement, or any preliminary Prospectus or Prospectus or any such amendment or supplement in reliance upon and in conformity with written information furnished to the Company by or on behalf of any such Holder specifically for inclusion therein and provided, further, that the Company shall not be liable to any such Holder under the indemnity agreement in this subsection (1) (i) with respect to any preliminary Prospectus or Prospectus (if such Prospectus has then been amended or supplemented) to the extent that any such loss, liability, claim, damage or expense of such Holder arises out of a sale of Warrant Securities by such Holder to a person to whom there was not sent or given, at or prior to the written confirmation of such sale, a copy of the Prospectus (or of the Prospectus as then amended or supplemented) if the Company has previously furnished copies thereof to such Holder a reasonable time in advance and the loss, liability, claim, damage or expense of such Holder results from an untrue statement or alleged untrue statement or omission or alleged omission of a material fact contained in the preliminary Prospectus (or the Prospectus) which was corrected in the Prospectus (or the Prospectus as amended or supplemented) or (ii) to the extent that any such loss, claim, damage, expense or liability arises out of

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or is based upon any action or failure to act by such Holder that is found in a final judicial determination (or a settlement tantamount thereto) to constitute bad faith, willful misconduct or gross negligence on the part of such Holder. The indemnity agreement in this subsection (1) shall be in addition to any liability which the Company may have at common law or otherwise.

The Company also agrees to indemnify or contribute to losses of, as provided in Section 7(u)(4), any underwriters of Warrant Securities registered under the Registration Statement, their officers and directors and each person, if any, who controls any such underwriter (within the meaning of the Act) on substantially the same basis as that of the indemnification of the Holders provided in this Section 7(u)(1) and shall, if requested by any Holder, enter into an underwriting agreement reflecting such agreement, as provided in Section 7(o) hereof.

(2) Each Holder agrees to indemnify and hold harmless the Company, each of its directors, each of its officers and each other person, if any, who controls the Company within the meaning of the Securities Act, to the same extent as the foregoing indemnity from the Company to the Holders, but only with respect to statements or omissions, if any, made in conformity with information relating to such Holder furnished in writing by such Holder specifically for use in the Registration Statement in the Registration Statement, or any preliminary Prospectus or the Prospectus or any amendment thereof or supplement thereto; provided, however, that the obligation to indemnify will be individual to each Holder and will be limited to the amount of net proceeds received by such Holder from the sale of Warrant Securities pursuant to the Registration Statement.

(3) Promptly after receipt by an indemnified party under this Section 7(u) of notice of the commencement of any action, suit or proceeding, such indemnified party shall, if a claim in respect thereof is to be made against one or more indemnifying parties under this Section 7(u), notify each party against whom indemnification is to be sought in writing of the commencement thereof (but the failure to notify an indemnifying party shall not relieve it from any liability which it may have under Sections 7(u)(1) or (2) unless and to the extent that it has been prejudiced in a material respect by such failure or from the forfeiture of substantial rights and defenses). In case any such action, suit or proceeding is brought against any indemnified party, and it notifies an indemnifying party or parties of the commencement thereof, the indemnifying party or parties will be entitled to participate therein, and to the extent it may elect by written notice delivered to the indemnified party promptly after receiving the aforesaid notice from such indemnified party, to assume the defense thereof with counsel reasonably satisfactory to such indemnified party, which may be the same counsel as counsel to the indemnifying party. Notwithstanding the foregoing, the indemnified party or parties shall have the right to employ its or their own counsel in any such case but the fees and expenses of such counsel shall be at the expense of such indemnified party or parties unless (i) the employment of such counsel shall have been authorized in writing by the indemnifying parties in connection with the defense of such action at the expense of the indemnifying party, (ii) the indemnifying parties shall not have employed counsel reasonably satisfactory to such indemnified party to take charge of the defense of such action within a reasonable time after notice of commencement of the action or (iii) such indemnified party or parties shall have reasonably concluded, after consultation with counsel to such indemnified party or parties, that a conflict of interest exists which makes representation by counsel chosen by the indemnifying party not advisable (in which case the indemnifying parties shall not have the right to direct the defense of such action on behalf of the indemnified party or parties), in any of which events such fees and expenses of one additional counsel shall be borne by the indemnifying parties. In no event shall the indemnifying parties be liable for fees and expenses of more than one counsel (in addition to any local counsel) separate from their own counsel for all indemnified parties in

connection with any one action or separate but similar or related actions in the same jurisdiction arising out of the same general allegations or circumstances. Anything in this Section 7 to the contrary notwithstanding, an indemnifying party shall not be liable for any settlement of any claim or action effected without its written consent.

(4) In order to provide for just and equitable contribution in any case in which (i) an indemnified party makes claim for indemnification pursuant to this Section 7(u), but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case notwithstanding the fact that the express provisions of this Section 7(u) provide for indemnification in such case, or (ii) contribution under the Securities Act may be required, then each indemnifying party, in lieu of indemnifying such indemnified

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party, shall contribute to the amount paid as a result of such losses, claims, damages, expenses or liabilities (or actions, suits, proceedings or litigation in respect thereof) in such proportion as is appropriate to reflect the relative fault of each of the contributing parties, on the one hand, and the party to be indemnified, on the other hand, in connection with the statements or omissions that resulted in such losses, claims, damages, expenses or liabilities, as well as any other relevant equitable considerations. Relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company or by a Holder, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such untrue statement or omission. The amount paid or payable by an indemnified party as a result of the losses, claims, damages, expenses or liabilities (or actions, suits, proceedings or litigation in respect thereof) referred to above in this subsection (4) shall be deemed to include any legal or other expenses reasonably incurred by such indemnified party in connection with investigating, preparing or defending any such action, claim, suit, proceeding or litigation. Notwithstanding the provisions of this subsection (4), no Holder shall be required to contribute any amount in excess of the amount by which the total price at which the Warrant Securities sold by such indemnifying party and distributed to the public were offered to the public exceeds the amount of any damages that such indemnifying party has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. No person guilty of fraudulent misrepresentation (within the meaning of Section 12(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 7, each person, if any, who controls the Company within the meaning of the Securities Act, each executive officer of the Company and each director of the Company shall have the same rights to contribution as the Company, subject in each case to this subsection (4). Any party entitled to contribution will, promptly after receipt of notice of commencement of any action, suit, proceeding or litigation against such party in respect to which a claim for contribution may be made against another party or parties under this subsection (4), notify such party or parties from whom contribution may be sought, but the omission so to notify such party or parties shall not relieve the party or parties from whom contribution may be sought from any obligation it or they may have hereunder or otherwise than under this subsection (4), or to the extent that such party or parties were not adversely affected by such omission. The contribution agreement set forth above shall be in addition to any liabilities which any indemnifying party may have at common law or otherwise.

(v) Notwithstanding the foregoing provisions of this Section 7.3, no registration rights shall be extended pursuant to this Section 7 with respect to

any Warrant Securities (i) which have been sold pursuant to and in accordance with an effective Registration Statement, (ii) sold in accordance with Rule 144 under the Securities Act or (iii) eligible for sale under Rule 144(k) under the Securities Act.

8. Adjustments to Exercise Price and Number of Securities.

8.1 Adjustments.

(a) In the event that the Company shall subdivide its outstanding shares of Common Stock into a greater number of shares or combine its outstanding shares of Common Stock into a smaller number of shares, the Exercise Price in effect immediately prior thereto shall be forthwith proportionately decreased in the case of a subdivision or increased in the case of a combination. An adjustment made pursuant to this Section 8.1(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the date of such subdivision or combination, as the case may be.

(b) In the event that the Company shall (i) issue or distribute (for no consideration or at a price per share less than the Current Market Price (as defined below) per share on the date of such issuance or distribution shares of any class of capital stock of the Company (such shares being hereafter referred to as "Capital Stock") generally to holders of Common Stock or to holders of any class or series of Capital Stock which is convertible into or exchangeable or exercisable for Common Stock (excluding an issuance or distribution of Common Stock described in Section 8.1(a)) or (ii) issue or distribute generally to such holders rights, warrants, options or convertible or exchangeable securities entitling the holder thereof to subscribe for, purchase, convert into or exchange for Capital Stock at a price per share less than the Current Market Price per share of such Capital Stock

on the date of such issuance or distribution, then, in each such case, at the earliest of (A) the date the Company enters into a firm contract for such issuance or distribution, (B) the record date for the determination of stockholders entitled to receive any such Capital Stock or any such rights, warrants, options or convertible or exchangeable securities or (C) the date of actual issuance or distribution of any such Capital Stock or any such rights, warrants, options or convertible or exchangeable securities, the Exercise Price shall be reduced by multiplying the Exercise Price in effect immediately prior to such earliest date by:

(x) if such Capital Stock is Common Stock, a fraction the numerator of which is the number of shares of Common Stock outstanding on such earliest date plus the number of shares of Common Stock which could be purchased at the Current Market Price per share of Common Stock on the date of such issuance or distribution with the aggregate consideration (based on the fair market value thereof as determined by the Board of Directors, whose determination shall be conclusive and described in a certificate provided to each Holder) received or receivable by the Company either (A) in connection with such issuance or distribution or (B) upon the conversion, exchange, purchase or subscription of all such rights, warrants, options or convertible or exchangeable securities (the "Aggregate Consideration"), and the denominator of which is the number of shares of Common Stock outstanding on such earliest date plus the number of shares of Common Stock to be so issued or distributed or to be issued upon the conversion, exchange, purchase or subscription of all such rights, warrants, options or

convertible or exchangeable securities; or

(y) if such Capital Stock is other than Common Stock, a fraction the numerator of which is the Current Market Price per share of Common Stock on such earliest date minus an amount equal to (A) the sum of (1) the Current Market Price per share of such Capital Stock multiplied by the number of shares of such Capital Stock to be so issued minus (2) the Aggregate Consideration, divided by (B) the number of shares of Common Stock outstanding on such date, and the denominator of which is the Current Market Price per share of Common Stock on such earliest date.

Such adjustment shall be made successively whenever any such Capital Stock, rights, warrants, options or convertible or exchangeable securities are so issued or distributed. In determining whether any rights, warrants, options or convertible or exchangeable securities entitle the holders thereof to subscribe for, purchase, convert into or exchange for shares of such Capital Stock at less than such Current Market Price, there shall be taken into account the fair market value (as determined by the Board of Directors, whose determination shall be conclusive and described in a certificate provided to each Holder) of any consideration received or receivable by the Company for such rights, warrants, options or convertible or exchangeable securities. If any right, warrant, option or convertible or exchangeable securities, the issuance of which resulted in an adjustment in the Exercise Price pursuant to this Section 8.1(b), shall expire and shall not have been exercised, the Exercise Price shall immediately upon such expiration be recomputed to the Exercise Price which would have been in effect if such right, warrant, option or convertible or exchangeable securities had never been distributed or issued. Notwithstanding anything contained in this paragraph to the contrary, the issuance of Capital Stock upon the exercise of such rights, warrants or options or the conversion or exchange of such convertible or exchangeable securities will not cause an adjustment in the Exercise Price if no such adjustment would have been required at the time such right, warrant, option or convertible or exchangeable security was issued or distributed; provided, however, that, if the consideration payable upon such exercise, conversion or exchange and/or the Capital Stock receivable thereupon are changed after the time of the issuance or distribution of such right, warrant, option or convertible or exchangeable security, then such change shall be deemed to be the expiration thereof without having been exercised and the issuance or distribution of new options, rights, warrants or convertible or exchangeable securities.

Notwithstanding anything contained in this Agreement to the contrary, options, rights or warrants issued or distributed by the Company, including options, rights or warrants distributed prior to the date of this Agreement, to holders of Common Stock generally which, until the occurrence of a specified event or events (a "Trigger Event"), (i) are deemed to be transferred with Common Stock, (ii) are not exercisable and (iii) are also issued on a pro rata basis with respect to future issuances of Common Stock, shall be deemed not to have been issued or distributed for purposes of this Section 8.1(b) (and no adjustment to the Exercise Price under this Section

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8.1(b) will be required) until the occurrence of the earliest Trigger Event. Upon the occurrence of a Trigger Event, such options, rights or warrants shall continue to be deemed not to have been issued or distributed for purposes of this Section 8.1(b) (and no adjustment to the Conversion Price under this Section 8.1(b) will be required) if and for so long as each Holder who thereafter exercises such Holder's Warrants shall be entitled to receive upon such exercise, in addition to the shares of Common Stock issuable upon such conversion, a number of such options, rights or warrants, as the case may be, equal to the number of options, rights or warrants to which a holder of the

number of shares of Common Stock equal to the number of shares of Common Stock issuable upon exercise of such Holder's Warrants is entitled to receive at the time of such exercise in accordance with the terms and provisions of and applicable to such options, rights or warrants. Upon the expiration of any such options, rights or warrants or at such time, if any, as a Holder is not entitled to receive such options, rights or warrants upon exercise of such Holder's Warrants, an adjustment (if any is required) to the Conversion Price shall be made in accordance with this Section 8.1(b) with respect to the issuance of all such options, rights and warrants as of the date of issuance thereof, but subject to the provisions of the preceding paragraph. If any such option, right or warrant, including any such options, rights or warrants distributed prior to the date of this Agreement, are subject to events, upon the occurrence of which such options, rights or warrants become exercisable to purchase different securities, evidences of indebtedness, cash, properties or other assets or different amounts thereof, then, subject to the preceding provisions of this paragraph, the date of the occurrence of any and each such event shall be deemed to be the date of distribution and record date with respect to new options, rights or warrants with such new purchase rights (and a termination or expiration of the existing options, rights or warrants without exercise thereof). In addition, in the event of any distribution (or deemed distribution) of options, rights or warrants, or any Trigger Event or other event of the type described in the preceding sentence, that required (or would have required but for the provisions of Section 8.3 or this paragraph) an adjustment to the Exercise Price under this Section 8.1(b) and such options, rights or warrants shall thereafter have been redeemed or repurchased without having been exercised, then the Exercise Price shall be adjusted upon such redemption or repurchase to give effect to such distribution, Trigger Event or other event, as the case may be, as though it had instead been a cash distribution, equal on a per share basis to the result of the aggregate redemption or repurchase price received by holders of such options, rights or warrants divided by the number of shares of Common Stock outstanding as of the date of such repurchase or redemption, made to holders of Common Stock generally as of the date of such redemption or repurchase.

Notwithstanding anything contained in this Section 8.1(b) to the contrary, no adjustment shall be made in the Exercise Price pursuant to this Section 8.1(b) with respect to the issuance of Common Stock or options or other rights to purchase Common Stock pursuant to any employee stock purchase, bonus, award, grant, option or ownership plan (including, without limitation, an employee stock ownership plan which is part of an employee benefit plan qualified under Section 401 of the Internal Revenue Code of 1986, as amended (the "Code"), an employee stock option or incentive stock option plan qualified under Section 422 of the Code and a restricted stock plan), including the issuance of Common Stock upon the exercise of such options; provided, that, for purposes of this paragraph, the term "employee" includes directors, consultants and advisors and the term "plan" means a plan, program or arrangement in which 5 or more persons are eligible to participate (or, if only directors of the Company are eligible to participate and there are fewer than 5 such directors, in which all of such directors are eligible to participate).

(c) If the Company shall pay or distribute, as a dividend or otherwise, generally to holders of Common Stock or any class or series of Capital Stock which is convertible into or exercisable or exchangeable for Common Stock any assets, properties or rights (including, without limitation, evidences of indebtedness of the Company, any subsidiary or any other person or entity, cash or Capital Stock or other securities of the Company, any subsidiary or any other person or entity, but excluding payments and distributions as described in Section 8.1(a) or 8.1(b), dividends and distributions in connection with the liquidation, dissolution or winding up of the Company in its entirety and distributions consisting solely of cash described in Section 8.1(d)), then in each such case the Exercise Price shall be reduced by multiplying the Exercise Price in effect immediately prior to the date of such payment or distribution by a fraction, the numerator of which is the Current Market Price per share of Common Stock on the record date for the determination of stockholders entitled to receive such payment or distribution less the fair market value (as determined by the Board of Directors, whose determination shall be conclusive and described in a certificate provided to each Holder) on such record date of the assets or evidences of indebtedness so distributed attributable to one share

of Common Stock (the amount so attributable equaling the aggregate fair

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market value of such indebtedness or assets, as so determined by the Board of Directors, divided by the number of shares of Common Stock outstanding on such record date), and the denominator shall be the Current Market Price per share of Common Stock on such record date. Such adjustment shall become effective immediately after the record date for the determination of shareholders entitled to receive such distribution.

(d) If the Company shall, by dividend or otherwise, make a distribution (other than in connection with the liquidation, dissolution or winding up of the Company in its entirety), generally to holders of Common Stock or any class or series of Capital Stock which is convertible into or exercisable or exchangeable for Common Stock, consisting solely of cash where (x) the sum of (i) the aggregate amount of such cash plus (ii) the aggregate amount of all cash so distributed (by dividend or otherwise) to such holders within the 12-month period ending on the record date for determining stockholders entitled to receive such distribution with respect to which no adjustment has been made to the Exercise Price pursuant to this Section 8.1(d) exceeds (y) 10% of the result of the multiplication of (1) the Current Market Price per share of Common Stock on such record date times (2) the number of shares of Common Stock outstanding on such record date, then the Exercise Price shall be reduced, effective immediately prior to the opening of business on the day following such record date, by multiplying the Exercise Price in effect immediately prior to the close of business on the day prior to such record date by a fraction, the numerator of which is the Current Market Price per share of Common Stock on such record date less the aggregate amount of cash per share so distributed and the denominator of which is such Current Market Price; provided, however, that, if the aggregate amount of cash per share is equal to or greater than such Current Market Price, then, in lieu of the foregoing adjustment, adequate provision shall be made so that each Holder shall have the right to receive upon conversion (with respect to each share of Common Stock issued upon such conversion and in addition to the Common Stock issuable upon conversion) the aggregate amount of cash per share such Holder would have received had such Holder's Warrants been exercised immediately prior to such record date. In no event shall the Exercise Price be increased pursuant to this Section 8.1(d); provided, however, that if such distribution is not so made, the Exercise Price shall be adjusted to be the Exercise Price which would have been in effect if such distribution had not been declared. For purposes of this paragraph of this Section 8.1(d), such aggregate amount of cash per share shall equal such sum divided by the number of shares of Common Stock outstanding on such record date.

(e) Anything in this Section 8 to the contrary notwithstanding, the Company shall be entitled to make such reductions in the Exercise Price, in addition to those required by this Section 8.1, as it in its discretion shall determine to be advisable.

(f) For purposes of this Agreement, "Current Market Price" means, when used with respect to any security as of any date, the last sale price, regular way, or, in case no such sale takes place on such date, the average of the closing bid and asked prices, regular way, in either case as reported for consolidated transactions on the Nasdaq National Market system or, if the security is not listed or admitted to trading on the Nasdaq National Market system, as reported for consolidated transactions with respect to such security listed on the principal national securities exchange on which such security is listed or admitted to trading or, if the security is not listed or admitted to trading on any national securities exchange, the last quoted price or, if not so quoted, the average of the high bid and low asked prices in the over-the-counter market, as reported by the National Association of Securities Dealers, Inc. Automated Quotations System or such other system then in use or, if the security is not

quoted by any such organization, the average of the closing bid and asked prices furnished by a New York Stock Exchange member firm selected by the Company. "Current Market Price" means, when used with respect to a security as to which none of the above-mentioned prices are available and with respect to any property other than a security, as of any date, the market value of such security or property on such date as determined by the Board of Directors of the Company in good faith, which shall be entitled to rely for such purposes on the advice of any firm of investment bankers or appraisers having familiarity with such property.

8.2 MERGER OR CONSOLIDATION. In the event of (i) any reclassification (including, without limitation, a reclassification effected by means of an exchange or tender offer by the Company or any Subsidiary) or change of outstanding Common Stock (other than a change in par value, or from par value to no par value, or from no par value to par value, or as a result of a subdivision or combination), (ii) any consolidation, merger or combination of the Company with another corporation as a result of which holders of Common Stock shall be

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entitled to receive securities or other assets (including cash) with respect to or in exchange for Common Stock or (iii) any sale or conveyance of the assets of the Company as, or substantially as, an entirety to any other corporation as a result of which holders of Common Stock shall be entitled to receive securities or other assets (including cash) with respect to or in exchange for Common Stock, then the Company or the successor or purchasing corporation, as the case may be, shall execute and deliver to the Holder upon surrender of the Warrant Certificate held by such Holder a supplemental warrant agreement providing that the holder of each Warrant then outstanding or to be outstanding shall have the right thereafter (until the expiration of such Warrant) to receive, upon full exercise of such Warrant, the kind and amount of shares of stock and/or other securities and/or property receivable upon such consolidation or merger, by a holder of the number of shares of Common Stock for which such Warrant might have been exercised immediately prior to such consolidation or merger. Such supplemental warrant agreement shall provide for adjustments which shall be as nearly equivalent as practicable to the adjustments provided for in this Section 8. The above provision of this subsection shall similarly apply to successive consolidations or mergers.

8.3 NO ADJUSTMENT OF EXERCISE PRICE IN CERTAIN CASES. No adjustment of the Exercise Price shall be made if the amount of said adjustment shall be less than two cents (2(cents)) per Warrant Security, provided, however, that in such case any adjustment that would otherwise be required then to be made shall be carried forward and shall be made at the time of and together with the next subsequent adjustment which, together with any adjustment so carried forward, shall amount to at least two cents (2(cents)) per Warrant Security.

8.4 ADJUSTMENT IN NUMBER OF SECURITIES. Upon each adjustment of the Exercise Price pursuant to the provisions of Section 8.1(a) or (b), the number of shares of Common Stock issuable upon exercise at the adjusted Exercise Price of each Warrant shall be adjusted to the nearest full amount by multiplying a number equal to the Exercise Price in effect immediately prior to such adjustment by the number of shares of Common Stock issuable upon exercise of Warrants immediately prior to such adjustment and dividing the product so obtained by the adjusted Exercise Price.

8.5 CERTIFICATE OF ADJUSTMENT. After each adjustment of the Exercise Price or the amount of Warrant Securities purchasable upon exercise of Warrants pursuant to this Section 8, the Company will promptly prepare a certificate signed by the Chairman or President, and by the Treasurer or an Assistant Treasurer or the Secretary or an Assistant Secretary, of the Company setting forth: (i) the Exercise Price, as so adjusted; (ii) the amount of Warrant

Securities purchasable upon exercise of each Warrant after such adjustment; and (iii) a brief statement of the facts accounting for such adjustment. The Company will promptly file such certificate with its records and cause a brief summary thereof to be sent by ordinary first class mail to each Holder at his or her last address as it shall appear on the registry books of the Company.

8.6 VALIDITY OF WARRANT CERTIFICATE. Irrespective of any adjustments or changes in the Exercise Price or the amount of Warrant Securities purchasable upon exercise of Warrants, Warrant Certificates theretofore and thereafter issued shall continue to express the Exercise Price per share and the amount of Warrant Securities purchasable thereunder as of the date such Warrant Certificates were originally issued; provided, the Holders shall be entitled to exercise Warrants represented by such Warrant Certificates after giving effect to each such adjustment and change, and such Warrant Certificate shall be deemed to incorporate each such adjustment and change as if new Warrant Certificates reflecting each such adjustment and change had been issued to the Holders.

9. Exchange, Replacement and Transfer of Warrant Certificates.

(a) Each Warrant Certificate is exchangeable, without expense, and subject to the provisions of Section 5 and 9(c), upon the surrender thereof by the Holder at the principal executive office of the Company, for a new Warrant Certificate of like tenor and date representing in the aggregate the right to purchase the same number of Warrant Securities in such denominations as shall be designated by the Holder thereof at the time of such surrender.

(b) Upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of any Warrant Certificate, and, in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it, and reimbursement to the Company of all reasonable expenses incidental

thereto, and upon surrender and cancellation of such Warrant Certificates, if mutilated, the Company will make and deliver a new Warrant Certificate of like tenor in lieu thereof.

(c) The Company will maintain a register containing the name and address of the Holder of each Warrant Certificate. Any Holder may change its or his address as shown on the warrant register by written notice to the Company requesting such change. Subject to the provisions of Section 5 hereof, the Warrants and all rights thereunder are transferrable, in whole and not in part, upon surrender of the Warrant Certificates representing such Warrants with a properly executed assignment (in the form of Exhibit B hereto) at the principal office of the Company. Until any transfer of the Warrants is made in the warrant register, the Company may treat the Holder of such Warrants as the absolute owner thereof for all purposes; provided, however, that if and when the Warrant Certificate representing such Warrants is properly assigned in blank, the Company may (but shall not be obligated to) treat the bearer thereof as the absolute owner thereof for all purposes, notwithstanding any notice to the contrary.

10. ELIMINATION OF FRACTIONAL INTERESTS. The Company shall not be required to issue certificates representing fractions of shares of Common Stock upon the exercise of the Warrants to purchase Common Stock, nor shall it be required to issue scrip or pay cash in lieu of fractional interests, it being the intent of the parties that all fractional interests shall be eliminated by rounding any fraction up to the nearest whole number of shares of Common Stock or other securities, properties or rights.

11. RESERVATION AND LISTING OF SECURITIES. The Company shall at all times

reserve and keep available out of its authorized capital stock, solely for the purpose of issuance upon the exercise of the Warrants, such number of shares of Common Stock or other securities, property or rights as shall be issuable upon exercise thereof. The Company covenants and agrees that, upon exercise of the Warrants and payment of the Exercise Price therefor, all shares of Common Stock and other securities issued by the Company upon such exercise shall be duly and validly issued, fully paid, non-assessable and not subject to the preemptive rights of any security holder of the Company. As long as the Warrants shall be outstanding, the Company shall use its reasonable best efforts to cause the Common Stock issuable upon the exercise of the Warrants to be listed (subject to official notice of issuance) on all securities exchanges on which the Common Stock may then be listed and/or quoted on the Nasdaq Stock Market if the Common Stock issued to the public is so quoted.

12. NOTICES TO HOLDERS. Nothing contained in this Agreement shall be construed as conferring upon the Holders the right to receive dividends or to vote or to consent or to receive notice as a stockholder in respect of any meetings of stockholders for the election of directors or any other matter or as having any rights whatsoever as a stockholder of the Company. If, however, at any time prior to the expiration of the Warrants and their exercise, any of the following events shall occur:

(a) the Company shall set a record date for the purpose of entitling them to receive a dividend or distribution payable otherwise than in cash, or a cash dividend or distribution payable otherwise than out of current or retained earnings, as indicated by the accounting treatment of such dividend or distribution on the books of the Company; or

(b) the Company shall offer to all the holders of shares of Common Stock any additional shares of capital stock of the Company or securities convertible into or exchangeable for shares of capital stock of the Company, or any option, right or warrant to subscribe therefor; or

(c) a dissolution, liquidation or winding up of the Company (other than in connection with a consolidation or merger) or a sale of all or substantially all of its property, assets and business as an entirety shall be proposed;

then, in any one or more of said events, the Company shall give written notice of such event to each Holder at least 10 days prior to the date fixed as a record date or the date of closing the transfer books for the determination of the stockholders entitled to such dividend, distribution or offer, or entitled to vote on such proposed dissolution, liquidation, winding up or sale. Such notice shall specify such record date or the date of closing the transfer books,

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as the case may be. Failure to give such notice or any defect therein shall not affect the validity of any action taken in connection with any of the events described in this Section 12.

13. Notices.

All notices, requests, consents and other communications hereunder shall be in writing and shall be deemed to have been duly made and sent when delivered, or mailed by registered or certified mail, return receipt requested:

(a) If to a Holder, to the address of such Holder as shown on the books of the Company; or

(b) If to the Company, to the address set forth in Section 3 hereof or to such other address as the Company may designate by notice to the Holders.

14. SUPPLEMENTS AND AMENDMENTS. The Company and the Initial Purchaser may from time to time supplement or amend this Agreement without the approval of any Holders (other than the Initial Purchaser) in order to cure any ambiguity, to correct or supplement any provision contained herein which may be defective or inconsistent with any provisions herein, or to make any other provisions in regard to matters or questions arising hereunder which the Company and the Initial Purchaser may deem necessary or desirable and which the Company and the Initial Purchaser deem shall not adversely affect the interests of the Holders in any material respect.

15. SUCCESSORS. All the covenants and provisions of this Agreement shall be binding upon and inure to the benefit of the Company, the Holders and their respective successors and assigns hereunder.

16. TERMINATION. This Agreement shall terminate at the close of business on April 2, 2004. Notwithstanding the foregoing, the indemnification provisions of Section 7 shall survive such termination until the close of business on April 2, 2009.

17. GOVERNING LAW. This Agreement and each Warrant Certificate issued hereunder shall be deemed to be a contract made under the laws of the State of New York and for all purposes shall be construed in accordance with the laws of said State without giving effect to the rules of said State governing the conflicts of laws.

18. ENTIRE AGREEMENT; MODIFICATION. This Agreement (including the Purchase Agreement to the extent portions thereof are referred to herein) contains the entire understanding between the parties hereto with respect to the subject matter hereof. Except as set forth in Section 14 hereof, this Agreement may not be modified or amended except by a writing duly signed by the party against whom enforcement of the modification or amendment is sought.

19. SEVERABILITY. If any provision of this Agreement shall be held to be invalid or unenforceable, such invalidity or unenforceability shall not affect any other provision of this Agreement.

20. CAPTIONS. The caption headings of the Sections of this Agreement are for convenience of reference only, and are not intended, nor should they be construed as, a part of this Agreement and shall be given no substantive effect.

21. BENEFITS OF THIS AGREEMENT. Nothing in this Agreement shall be construed to give to any person, corporation or entity other than the Company and the Initial Purchaser and any other Holders of Warrants and/or Warrant Securities any legal or equitable right, remedy or claim under this Agreement; and this Agreement shall be for the sole and exclusive benefit of the Company and the Initial Purchaser and any other Holders of Warrants and/or Warrant Securities.

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22. COUNTERPARTS. This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original and such counterparts shall together constitute but one and the same instrument.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the day and year first above written.

[SEAL]

HYBRIDON, INC.

By: /s/ E. Andrews Grinstead, III

Name: E. Andrews Grinstead, III
Title: Chairman, President and Chief
Executive Officer

Attest:

/s/ Anthony J. Payne

Name: Anthony J. Payne
Title: Chief Financial Officer

FORUM CAPITAL MARKETS L. P.

By: /s/ C. Keith Hartley

Name: C. Keith Hartley
Title: Senior Managing Director

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EXHIBIT A

[FORM OF WARRANT CERTIFICATE]

THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO (i) AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR (ii) AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT, IF AN OPINION OF COUNSEL, REASONABLY SATISFACTORY TO COUNSEL FOR THE ISSUER, IS DELIVERED THAT SUCH AN EXEMPTION IS AVAILABLE FOR SUCH TRANSFER.

THE TRANSFER OR EXCHANGE OF THE WARRANTS REPRESENTED BY THIS CERTIFICATE IS RESTRICTED IN ACCORDANCE WITH THE WARRANT AGREEMENT REFERRED TO HEREIN.

EXERCISABLE ON OR BEFORE
5:30 P.M., NEW YORK TIME, APRIL 2, 2002

No. W-

Warrants

WARRANT CERTIFICATE

This Warrant Certificate certifies that _____, or registered assigns, is the registered holder of _____ Warrants to purchase initially, at any time from March _____, 1998 until 5:30 p.m. New York time on April 2, 2002 (the "Expiration Date"), up to _____ fully-paid and non-assessable shares of Common Stock, par value \$.001 per share (the "Common Stock"), of HYBRIDON, INC. (the "Company"), at the initial exercise price, subject to adjustment in certain events (the "Exercise Price"), of \$7.0125 per share upon surrender of this Warrant Certificate and payment of the Exercise Price, at an office or agency of the Company, but subject to the conditions set forth herein and in the warrant agreement dated as of March 26, 1997 between the Company and Forum Capital

Markets L.P. (the "Warrant Agreement"). Payment of the Exercise Price, shall be made by certified or official bank check in New York Clearing House funds payable to the order of the Company and upon surrender of this Warrant Certificate.

No Warrant may be exercised after 5:30 p.m., New York time, on the Expiration Date, at which time all Warrants evidenced hereby, unless exercised prior thereto, shall thereafter be void.

The Warrants evidenced by this Warrant Certificate are part of a duly authorized issue of Warrants issued pursuant to the Warrant Agreement, which Warrant Agreement is hereby incorporated by reference in and made a part of this instrument and is hereby referred to for a description of the rights, limitation of rights, obligations, duties and immunities thereunder of the Company and the holders (the words "holders" or "holder" meaning the registered holders or registered holder) of the Warrants. In the event that any provision of this Warrant Certificate conflicts with or is inconsistent with the terms of the Warrant Agreement, the terms of the Warrant Agreement shall supersede the provisions of this Warrant Certificate.

The Warrant Agreement provides that upon the occurrence of certain events the Exercise Price and the amount the type and/or number of the Company's securities issuable hereunder may, subject to certain conditions, be adjusted. Subject to Section 8.6 of the Warrant Agreement, in such event, the Company will, at the request of the holder, issue a new Warrant Certificate evidencing the adjustment in the Exercise Price and the number and/or type of securities issuable upon the exercise of the Warrants; provided, however, that the failure of the Company to issue such new Warrant Certificates shall not in any way change, alter or otherwise impair the rights of the holder as set forth in the Warrant Agreement.

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Upon due presentment for registration of transfer of this Warrant Certificate at an office or agency of the Company and subject to compliance with the terms of the Warrant Agreement, a new Warrant Certificate or Warrant Certificates of like tenor and evidencing in the aggregate a like number of Warrants shall be issued to the transferee(s) in exchange for this Warrant Certificate, subject to the limitations provided herein and in the Warrant Agreement, without any charge except for any tax or other governmental charge imposed in connection with such transfer.

Upon the exercise of less than all of the Warrants evidenced by this Certificate, the Company shall forthwith issue to the holder hereof a new Warrant Certificate representing such number of unexercised Warrants.

The Company may deem and treat the registered holder(s) hereof as the absolute owner(s) of this Warrant Certificate (notwithstanding any notation of ownership or other writing hereon made by anyone), for the purpose of any exercise hereof, and of any distribution to the holder(s) hereof, and for all other purposes, and the Company shall not be affected by any notice to the contrary.

All terms used in this Warrant Certificate which are defined in the Warrant Agreement shall have the meanings assigned to them in the Warrant Agreement.

IN WITNESS WHEREOF, the Company has caused this Warrant Certificate to be duly executed under its corporate seal.

Dated as of _____, 199
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[SEAL]

By: _____
Name:
Title:

Attest:

Name:
Title:

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[FORM OF ELECTION TO PURCHASE PURSUANT TO SECTION 3]

The undersigned hereby irrevocably elects to exercise the right, represented by this Warrant Certificate, to purchase _____ shares of Common Stock and herewith tenders in payment for such securities a certified or official bank check payable in New York Clearing House Funds to the order of Hybridon, Inc. in the amount of \$ _____, all in accordance with the terms of Section 3 of the Initial Purchaser's Warrant Agreement dated as of March 26, 1997 between Hybridon, Inc., and Forum Capital Markets L.P. The undersigned requests that a certificate for such securities be registered in the name of _____ whose address is _____ and that such certificate be delivered to _____ whose address is _____.

Dated: _____

Signature _____
(Signature must conform in all respects to name of holder as specified on the face of the Warrant Certificate.)

(Insert Social Security or Other Identifying Number of Holder)

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[LOGO:HYBRIDON]

[LOGO:NEWS RELEASE]

FOR IMMEDIATE RELEASE Hybridon, Inc. TEL: 617.528.7000 Fax: 617.528.7001
620 Memorial Drive www.hybridon.com
Cambridge, MA 02139

Contact: Robin Hogen
Vice President, Corporate Communications
and Public Affairs
617.528.7504

HYBRIDON ENTERS INTO AGREEMENT FOR THE SALE OF
\$50 MILLION OF CONVERTIBLE SUBORDINATED NOTES

CAMBRIDGE, MA., March 27, 1997 - Hybridon, Inc. (Nasdaq: HYBN), announced today that it has entered into an agreement for the sale of 9% convertible subordinated notes due 2004 in the original purchase amount of \$50,000,000. The closing is expected to occur on April 2, 1997, and is subject to the satisfaction of certain conditions. The notes will be convertible into shares of common stock at a price of \$ 7.0125 per share.

Hybridon, a biopharmaceutical company headquartered in Cambridge, Massachusetts, is a leader in the discovery and development of novel genetic medicines based primarily on antisense technology. Antisense involves the use of synthetic segments of nucleic acid, called oligonucleotides, constructed through rational drug design to modulate protein expression by interacting at the genetic level with target messenger RNA.

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NOTE: THESE SECURITIES HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED. ACCORDINGLY, SUBJECT TO REGISTRATION OR CERTAIN EXEMPTIONS THEREFROM, THESE SECURITIES MAY NOT BE OFFERED OR SOLD DIRECTLY OR INDIRECTLY IN THE UNITED STATES OF AMERICA, ITS TERRITORIES OR POSSESSIONS.

Leadership in Genetic Antisense Medicine

