

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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): **December 12, 2019**

**AKOUSTIS TECHNOLOGIES, INC.**  
(Exact name of registrant as specified in its charter)

**Delaware**  
(State or Other Jurisdiction  
of Incorporation)

**001-38029**  
(Commission File  
Number)

**33-1229046**  
(I.R.S. Employer  
Identification Number)

**9805 Northcross Center Court, Suite A**  
**Huntersville, NC 28078**  
(Address of principal executive offices, including zip code)

**704-997-5735**  
(Registrant's telephone number, including area code)

**Not Applicable**  
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class:	Trading Symbol	Name of each exchange on which registered:
<b>Common Stock, \$0.001 par value</b>	<b>AKTS</b>	<b>The Nasdaq Stock Market LLC (Nasdaq Capital Market)</b>

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter)

Emerging Growth Company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

**Item 1.01 Entry into a Material Definitive Agreement.**

On December 12, 2019, Akoustis Technologies, Inc. (the “Company”) entered into an underwriting agreement (the “Underwriting Agreement”) with Craig-Hallum Capital Group LLC, as representative of the several underwriters named in Schedule I thereto (the “Underwriters”), pursuant to which the Company agreed to issue and sell to the Underwriters 4,800,000 shares of the Company’s common stock, par value \$0.001 per share (the “Common Stock”), in an underwritten public offering (the “Offering”) pursuant to a Registration Statement on Form S-3, which became effective under the Securities Act of 1933, as amended (the “Securities Act”), on October 5, 2018 (File No. 333-227637) (the “Registration Statement”), and a related prospectus, including the related preliminary prospectus supplement filed with the Securities and Exchange Commission (the “SEC”) on December 11, 2019 and the final prospectus supplement filed with the SEC on December 12, 2019. In addition, pursuant to the Underwriting Agreement, the Company granted the Underwriters an option, exercisable for a period of 30 calendar days from December 12, 2019, to purchase up to an additional 720,000 shares of Common Stock solely to cover over-allotments (the “Over-Allotment Option”), which Over-Allotment Option was exercised in full. The net proceeds from the Offering were approximately \$32.0 million, after deducting the underwriting discount and estimated offering expenses payable by the Company. Under the terms of the Underwriting Agreement, the Company has agreed to indemnify the Underwriters against certain liabilities, including liabilities under the Securities Act, or contribute to payments that the Underwriters may be required to make in respect of those liabilities. The representations, warranties and covenants contained in the Underwriting Agreement were made only for purposes of such agreement and as of specific dates, were solely for the benefit of the parties to such agreement and may be subject to limitations agreed upon by the contracting parties. The Offering closed on December 16, 2019.

The Underwriting Agreement is filed as Exhibit 1.1 to this Current Report on Form 8-K, and the foregoing description of the terms of the Underwriting Agreement does not purport to be complete and is qualified in its entirety by reference to such exhibit, which is incorporated herein by reference. A copy of the opinion of K&L Gates LLP relating to the validity of the issuance and sale of the shares of Common Stock in the Offering is attached as Exhibit 5.1 hereto.

**Item 8.01 Other Events.**

On December 11, 2019 and December 12, 2019, the Company issued press releases with respect to the Offering. These press releases are attached as Exhibit 99.1 and Exhibit 99.2 hereto, respectively.

**Item 9.01 Financial Statements and Exhibits.**

(d) Exhibits

<b>Exhibit Number</b>	<b>Description</b>
1.1	<a href="#"><u>Underwriting Agreement, dated December 12, 2019, by and between Akoustis Technologies, Inc. and Craig-Hallum Capital Group LLC, as representative of the several underwriters named in Schedule I thereto</u></a>
5.1	<a href="#"><u>Opinion of K&amp;L Gates LLP</u></a>
23.1	<a href="#"><u>Consent of K&amp;L Gates LLP (contained in Exhibit 5.1)</u></a>
99.1	<a href="#"><u>Press Release, dated December 11, 2019</u></a>
99.2	<a href="#"><u>Press Release, dated December 12, 2019</u></a>

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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.

**AKOUSTIS TECHNOLOGIES, INC.**

Date: December 16, 2019

By: /s/ Kenneth E. Boller  
Name: Kenneth E. Boller  
Title: Interim Chief Financial Officer

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4,800,000 Shares<sup>1</sup>

Akoustis Technologies, Inc.

Common Stock, par value \$0.001 per share

## UNDERWRITING AGREEMENT

December 12, 2019

CRAIG-HALLUM CAPITAL GROUP LLC  
As Representative of the several  
Underwriters named in Schedule I hereto

Craig-Hallum Capital Group LLC  
222 South Ninth Street, Suite 350  
Minneapolis, Minnesota 55402

Ladies and Gentlemen:

Akoustis Technologies, Inc., a Delaware corporation (the "**Company**"), proposes, subject to the terms and conditions stated herein, to sell to the several Underwriters named in Schedule I hereto (the "**Underwriters**") an aggregate of 4,800,000 shares (the "**Firm Shares**") of common stock, par value \$0.001 per share (the "**Common Stock**"), of the Company. The Firm Shares consist of authorized but unissued shares of Common Stock to be issued and sold by the Company. The Company also proposes to grant to the several Underwriters an option to purchase up to 720,000 additional shares of Common Stock on the terms and for the purposes set forth in Section 3 hereof (the "**Option Shares**"). The Firm Shares and any Option Shares purchased pursuant to this Underwriting Agreement (the "**Agreement**") are herein collectively called the "**Securities**."

The Company and the several Underwriters hereby confirm their agreement as follows with respect to the sale of the Securities by the Company to the several Underwriters, for whom Craig-Hallum Capital Group LLC is acting as representative ("**you**" or the "**Representative**").

1. **Registration Statement and Prospectus.** The Company has prepared and filed with the Securities and Exchange Commission (the "**Commission**") a registration statement on Form S-3 (File No. 333-227637) under the Securities Act of 1933, as amended (the "**Securities Act**"), and the rules and regulations (the "**Rules and Regulations**") of the Commission thereunder, and such amendments to such registration statement as may have been required to the date of this Agreement. Such registration statement has been declared effective by the Commission. Each part of such registration statement, including the amendments, exhibits and any schedules thereto, the documents incorporated by reference therein pursuant to Item 12 of Form S-3 under the Securities Act and the documents and information otherwise deemed to be a part thereof or included therein by Rule 430B under the Securities Act (the "**Rule 430B Information**") or otherwise pursuant to the Rules and Regulations, as of the time the registration statement became effective, is herein called the "**Registration Statement**." Any registration statement filed by the Company pursuant to Rule 462(b) under the Securities Act is called the "**Rule 462(b) Registration Statement**" and, from and after the date and time of filing of the Rule 462(b) Registration Statement, the term "Registration Statement" shall include the Rule 462(b) Registration Statement.

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<sup>1</sup> Plus an option to purchase up to 720,000 additional shares.

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The prospectus in the form in which it has most recently been filed with the Commission on or prior to the date of this Agreement is herein called the "**Base Prospectus**." Each preliminary prospectus supplement to the Base Prospectus (including the Base Prospectus as so supplemented), that describes the Securities and the offering thereof, that omitted the Rule 430B Information and that was used prior to the filing of the final prospectus supplement referred to in the following sentence is herein called a "**Preliminary Prospectus**." Promptly after execution and delivery of this Agreement, the Company will prepare and file with the Commission a final prospectus supplement amending or supplementing the Base Prospectus relating to the Securities and the offering thereof in accordance with the provisions of Rule 430B and Rule 424(b) of the Rules and Regulations. Such final supplemental form of prospectus (including the Base Prospectus as so amended or supplemented), in the form filed with the Commission pursuant to Rule 424(b), is herein called the "**Prospectus**." Any reference herein to the Base Prospectus, any Preliminary Prospectus or the Prospectus shall be deemed to include the documents incorporated by reference therein pursuant to Item 12 of Form S-3 under the Securities Act as of the date of such prospectus.

For purposes of this Agreement, all references to the Registration Statement, the Rule 462(b) Registration Statement, the Base Prospectus, any Preliminary Prospectus, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval System or any successor system thereto ("**EDGAR**"). All references in this Agreement to financial statements and schedules and other information which is "described," "contained," "included" or "stated" in the Registration Statement, the Base Prospectus, any Preliminary Prospectus or the Prospectus (or other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information which is incorporated by reference in or otherwise deemed by the Rules and Regulations to be a part of or included in the Registration Statement, the Base Prospectus, any Preliminary Prospectus or the Prospectus, as the case may be; and all references in this Agreement to amendments or supplements to the Registration Statement, the Base Prospectus, any Preliminary Prospectus or the Prospectus shall be deemed to mean and include the subsequent filing of any document under the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), which is deemed to be incorporated by reference therein or otherwise deemed by the Rules and Regulations to be a part thereof.

## 2. Representations and Warranties of the Company.

(a) Representations and Warranties of the Company. The Company represents and warrants to, and agrees with, the several Underwriters as follows:

(i) Registration Statement and Prospectuses. No order preventing or suspending the use of any Preliminary Prospectus or the Prospectus (or any supplement thereto) has been issued by the Commission and no proceeding for that purpose has been initiated or is pending or, to the knowledge of the Company, threatened by the Commission. As of the time each part of the Registration Statement (or any post-effective amendment thereto) became or becomes effective (including each deemed effective date with respect to the Underwriters pursuant to Rule 430B or otherwise under the Securities Act), such part conformed or will conform in all material respects to the requirements of the Securities Act and the Rules and Regulations. Upon the filing or first use within the meaning of the Rules and Regulations, each Preliminary Prospectus and the Prospectus (or any supplement to either) conformed or will conform in all material respects to the requirements of the Securities Act and the Rules and Regulations. The Registration Statement and any post-effective amendment thereto has become effective under the Securities Act. The Company has complied to the Commission's satisfaction with all requests of the Commission for additional or supplemental information. No stop order suspending the effectiveness of the Registration Statement, any post-effective amendment or any part thereof is in effect and no proceedings for the purpose of imposing such stop order have been instituted or are pending or, to the knowledge of the Company, are threatened by the Commission.

(ii) Accurate Disclosure. Each Preliminary Prospectus, at the time of filing thereof or the time of first use within the meaning of the Rules and Regulations, did 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 the statements therein, in the light of the circumstances under which they were made, not misleading. Neither the Registration Statement nor any amendment thereto, at the effective time of each part thereof, at the First Closing Date (as defined in Section 3 below) or at the Second Closing Date (as defined in Section 3 below), contained, contains or will contain an untrue statement of a material fact or omitted, omits or will omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. As of the Time of Sale (as defined below), neither (A) the Time of Sale Disclosure Package (as defined below) nor (B) any issuer free writing prospectus (as defined below), when considered together with the Time of Sale Disclosure Package, included an untrue statement of a material fact or omitted 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. Neither the Prospectus nor any supplement thereto, as of its issue date, at the time of any filing with the Commission pursuant to Rule 424(b) of the Rules and Regulations, at the First Closing Date or at the Second Closing Date, included, includes or will include an untrue statement of a material fact or omitted, omits or will 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. The representations and warranties in this Section 2(a) (ii) shall not apply to statements in or omissions from any Preliminary Prospectus, the Registration Statement (or any amendment thereto), the Time of Sale Disclosure Package or the Prospectus (or any supplement thereto) made in reliance upon, and in conformity with, written information furnished to the Company by you, or by any Underwriter through you, specifically for use in the preparation of such document, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 6(e).

Each reference to an "issuer free writing prospectus" herein means an issuer free writing prospectus as defined in Rule 433 of the Rules and Regulations.

***“Time of Sale Disclosure Package”*** means the Preliminary Prospectus dated December 11, 2019, any free writing prospectus set forth on Schedule II and the information on Schedule III, all considered together.

Each reference to a ***“free writing prospectus”*** herein means a free writing prospectus as defined in Rule 405 of the Rules and Regulations.

***“Time of Sale”*** means 6:00 a.m. (Eastern time) on the date of this Agreement.

(iii) ***Issuer Free Writing Prospectuses.*** (A) Each issuer free writing prospectus, if any, does not include any information that conflicts with the information contained in the Registration Statement, any Preliminary Prospectus or the Prospectus. The foregoing sentence does not apply to statements in or omissions from any issuer free writing prospectus based upon and in conformity with written information furnished to the Company by you, or by any Underwriter through you, specifically for use therein; it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 6(e).

(B) (1) At the earliest time after the filing of the Registration Statement that the Company or another offering participant made *abona fide* offer (within the meaning of Rule 164(h)(2) under the Securities Act) of the Securities and (2) at the date hereof, the Company was not and is not an “ineligible issuer,” as defined in Rule 405 under the Securities Act, including the Company or any subsidiary in the preceding three years not having been convicted of a felony or misdemeanor or having been made the subject of a judicial or administrative decree or order as described in Rule 405 of the Rules and Regulations (without taking account of any determination by the Commission pursuant to Rule 405 of the Rules and Regulations that it is not necessary that the Company be considered an ineligible issuer), nor an “excluded issuer” as defined in Rule 164 under the Securities Act.

(C) Each issuer free writing prospectus satisfied, as of its issue date and at all subsequent times to the Time of Sale, all other conditions to use thereof as set forth in Rules 164 and 433 under the Securities Act.

(iv) ***No Other Offering Materials.*** The Company has not distributed and will not distribute any prospectus or other offering material in connection with the offering and sale of the Securities other than any Preliminary Prospectus, the Time of Sale Disclosure Package or the Prospectus or other materials permitted by the Securities Act to be distributed by the Company; *provided, however*; that, except as set forth on Schedule II, the Company has not made and will not make any offer relating to the Securities that would constitute a free writing prospectus, except in accordance with the provisions of Section 4(a)(xv) of this Agreement.

(v) Financial Statements. The financial statements of the Company, together with the related notes and schedules, set forth or incorporated by reference in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus comply in all material respects with the requirements of the Securities Act and the Exchange Act and fairly present the financial condition of the Company and its consolidated subsidiary as of the dates indicated and the results of operations and changes in cash flows for the periods therein specified in conformity with generally accepted accounting principles in the United States consistently applied throughout the periods involved; the supporting schedules included in or incorporated by reference into the Registration Statement present fairly the information required to be stated therein; all non-GAAP financial information included in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus complies in all material respects with the requirements of Regulation G and Item 10 of Regulation S-K under the Securities Act; and, except as disclosed in the Time of Sale Disclosure Package and the Prospectus, there are no material off-balance sheet arrangements (as defined in Regulation S-K under the Securities Act, Item 303(a)(4)(ii)) or any other relationships with unconsolidated entities or other persons, that may have a material current or, to the Company's knowledge, material future effect on the Company's financial condition, results of operations, liquidity, capital expenditures, capital resources or significant components of revenue or expenses. No other financial statements or schedules are required to be included in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus. To the Company's knowledge, Marcum LLP has expressed its opinion with respect to the audited financial statements and schedules filed as a part of the Registration Statement and included in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, is (x) an independent public accounting firm within the meaning of the Securities Act and the Rules and Regulations, (y) a registered public accounting firm (as defined in Section 2(a)(12) of the Sarbanes-Oxley Act of 2002 (the "**Sarbanes-Oxley Act**")) and (z) not in violation of the auditor independence requirements of the Sarbanes-Oxley Act.

(vi) Organization and Good Standing. Each of the Company and its subsidiary has been duly organized and is validly existing as a corporation in good standing under the laws of its jurisdiction of incorporation. Each of the Company and its subsidiary has full corporate power and authority to own its properties and conduct its business as currently being carried on and as described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, and is duly qualified to do business as a foreign corporation in good standing in each jurisdiction in which it owns or leases real property or in which the conduct of its business makes such qualification necessary and in which the failure to so qualify would have a material adverse effect upon the business, prospects, management, properties, operations, condition (financial or otherwise) or results of operations of the Company and its subsidiary, taken as a whole ("**Material Adverse Effect**").

(vii) Absence of Certain Events. Except as contemplated in the Time of Sale Disclosure Package and in the Prospectus, subsequent to the respective dates as of which information is given in the Time of Sale Disclosure Package and the Prospectus, neither the Company nor its subsidiary has incurred any material liabilities or obligations, direct or contingent, or entered into any material transactions, or declared or paid any dividends or made any distribution of any kind with respect to its capital stock; and there has not been any change in the capital stock (other than a change in the number of outstanding shares of Common Stock due to the issuance of shares upon the exercise of outstanding options or warrants or conversion of convertible securities), or any material change in the short-term or long-term debt (other than as a result of the conversion of convertible securities), or any issuance of options, warrants, convertible securities or other rights to purchase the capital stock of the Company or its subsidiary, or any material adverse change in the general affairs, condition (financial or otherwise), business, prospects, management, properties, operations or results of operations of the Company and its subsidiary, taken as a whole ("**Material Adverse Change**") or any development which could reasonably be expected to result in any Material Adverse Change.



(viii) *Absence of Proceedings.* Except as set forth in the Time of Sale Disclosure Package and in the Prospectus, there is not pending or, to the knowledge of the Company, threatened or contemplated, any action, suit or proceeding (a) to which the Company or its subsidiary is a party or (b) which has as the subject thereof any officer or director of the Company or its subsidiary, any employee benefit plan sponsored by the Company or its subsidiary or any property or assets owned or leased by the Company or its subsidiary before or by any court or Governmental Authority (as defined below), or any arbitrator, which, individually or in the aggregate, would result in any Material Adverse Change, or would materially and adversely affect the ability of the Company to perform its obligations under this Agreement or which are otherwise material in the context of the sale of the Securities. There are no current or, to the knowledge of the Company, pending, legal, governmental or regulatory actions, suits or proceedings (x) to which the Company or its subsidiary is subject or (y) which has as the subject thereof any officer or director of the Company or its subsidiary, any employee plan sponsored by the Company or its subsidiary or any property or assets owned or leased by the Company or its subsidiary, that are required to be described in the Registration Statement, Time of Sale Disclosure Package and Prospectus by the Securities Act or by the Rules and Regulations and that have not been so described.

(ix) *Disclosure of Legal Matters.* There are no statutes, regulations, contracts or documents that are required to be described in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus or required to be filed as exhibits to the Registration Statement by the Securities Act or by the Rules and Regulations that have not been so described or filed.

(x) *Authorization; No Conflicts; Authority.* This Agreement has been duly authorized, executed and delivered by the Company, and constitutes a valid, legal and binding obligation of the Company, enforceable in accordance with its terms, except as rights to indemnity hereunder may be limited by federal or state securities laws and except as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting the rights of creditors generally and subject to general principles of equity. The execution, delivery and performance of this Agreement and the consummation of the transactions herein contemplated will not (A) conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company or its subsidiary pursuant to any indenture, mortgage, deed of trust, loan agreement or other material agreement or instrument to which the Company or its subsidiary is a party or by which the Company or its subsidiary is bound or to which any of the property or assets of the Company or its subsidiary is subject, (B) result in any violation of the provisions of the Company's charter or by-laws or (C) result in the violation of any law or statute or any judgment, order, rule, regulation or decree of any court or arbitrator or federal, state, local or foreign governmental agency or regulatory authority having jurisdiction over the Company or its subsidiary or any of their properties or assets (each, a "**Governmental Authority**"), except in the case of clauses (A) and (C) as would not result in a Material Adverse Effect. No consent, approval, authorization or order of, or registration or filing with any Governmental Authority is required for the execution, delivery and performance of this Agreement or for the consummation of the transactions contemplated hereby, including the issuance or sale of the Securities by the Company, except such as may be required under the Securities Act, the rules of the Financial Industry Regulatory Authority, Inc. ( "**FINRA**"), the Nasdaq Stock Market Rules or state securities or blue sky laws; and the Company has full power and authority to enter into this Agreement and to consummate the transactions contemplated hereby, including the authorization, issuance and sale of the Securities as contemplated by this Agreement.

(xi) Capitalization; the Securities; Registration Rights. All of the issued and outstanding shares of capital stock of the Company, including the outstanding shares of Common Stock, are duly authorized and validly issued, fully paid and nonassessable, have been issued in compliance with all federal and state and foreign securities laws, were not issued in violation of or subject to any preemptive rights or other rights to subscribe for or purchase securities that have not been waived in writing (a copy of which, if any, has been delivered to counsel to the Underwriters), and the holders thereof are not subject to personal liability by reason of being such holders; the Securities which may be sold hereunder by the Company have been duly authorized and, when issued, delivered and paid for in accordance with the terms of this Agreement, will have been validly issued and will be fully paid and nonassessable, and the holders thereof will not be subject to personal liability by reason of being such holders; and the capital stock of the Company, including the Common Stock and the Securities to be purchased pursuant to this Agreement, conforms in all material respects to the description thereof in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus. Except as otherwise stated in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus, (A) there are no preemptive rights or other rights to subscribe for or to purchase, or any restriction upon the voting or transfer of, any shares of Common Stock pursuant to the Company's charter, by-laws or any agreement or other instrument to which the Company or its subsidiary is a party or by which the Company or its subsidiary is bound; (B) neither the filing of the Registration Statement nor the offering or sale of the Securities as contemplated by this Agreement gives rise to any rights for or relating to the registration of any shares of Common Stock or other securities of the Company (collectively "**Registration Rights**") and (C) any person to whom the Company has granted Registration Rights has agreed not to exercise such rights until after expiration of the Lock-Up Period (as defined below). All of the issued and outstanding shares of capital stock of the Company's subsidiary have been duly and validly authorized and issued and are fully paid and nonassessable, and, except as otherwise described in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus, the Company owns of record and beneficially, free and clear of any security interests, claims, liens, proxies, equities or other encumbrances, all of the issued and outstanding shares of such stock. The Company has an authorized and outstanding capitalization as set forth in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus.

(xii) Stock Options. Except as described in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus, there are no options, warrants, agreements, contracts or other rights in existence to purchase or acquire from the Company or its subsidiary any shares of the capital stock of the Company or its subsidiary. The description of the Company's stock option, stock bonus and other stock plans or arrangements (the "**Company Stock Plans**"), and the options or other rights granted thereunder (collectively, the "**Awards**"), set forth in the Time of Sale Disclosure Package and the Prospectus accurately and fairly presents in all material respects the information required to be shown with respect to such plans, arrangements and Awards. Each grant of an Award (A) was duly authorized no later than the date on which the grant of such Award was by its terms to be effective by all necessary corporate action, including, as applicable, approval by the board of directors of the Company (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents, and the award agreement governing such grant (if any) was duly executed and delivered by each party thereto and (B) was made in accordance with the terms of the applicable Company Stock Plan, and all applicable laws and regulatory rules or requirements, including all applicable federal securities laws.

(xiii) Compliance with Laws. The Company and its subsidiary hold, and are operating in compliance in all material respects with, all material franchises, grants, authorizations, licenses, permits, easements, consents, certificates and orders of any Governmental Authority or self-regulatory body required for the conduct of their business as presently conducted and all such material franchises, grants, authorizations, licenses, permits, easements, consents, certifications and orders are valid and in full force and effect; and neither the Company nor its subsidiary has received notice of any revocation or modification of any material franchise, grant, authorization, license, permit, easement, consent, certification or order or has reason to believe that any such material franchise, grant, authorization, license, permit, easement, consent, certification or order will not be renewed in the ordinary course; and the Company and its subsidiary are in compliance in all material respects with all applicable federal, state, local and foreign laws, regulations, orders and decrees.

(xiv) Ownership of Assets. The Company and its subsidiary have good and marketable title to, or have valid rights to lease or otherwise use, all property (whether real or personal) described in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus as being owned, leased or used by them, in each case free and clear of all material liens, claims, security interests, other encumbrances or defects except such as are described in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus. The property held under lease by the Company and its subsidiary is held by them under valid, subsisting and enforceable leases with only such exceptions with respect to any particular lease as do not interfere in any material respect with the conduct of the business of the Company or its subsidiary.

(xv) *Intellectual Property.*

(A) The Company and its subsidiary own or have the right to use pursuant to a valid and enforceable written license or other legally enforceable right, all material Intellectual Property (as defined below) necessary for the conduct of the Company's and its subsidiary's businesses as now conducted and as described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus (the "**Company IP**"). "**Intellectual Property**" means all patents, patent applications, trade and service marks, trade and service mark registrations, trade names, copyrights, licenses, inventions, trade secrets, domain names, technology, know-how and other intellectual property.

(B) To the knowledge of the Company, there is no infringement, misappropriation or violation by third parties of any Company IP. There is no pending or, to the knowledge of the Company, threatened, action, suit, proceeding or claim by others challenging the Company's or its subsidiary's rights in or to any Company IP, and the Company is unaware of any facts which would form a reasonable basis for any such claim, except as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. The Intellectual Property owned by the Company and its subsidiary, and to the knowledge of the Company, the Intellectual Property licensed to the Company and its subsidiary, has not been adjudged invalid or unenforceable, in whole or in part, and there is no pending or, to the knowledge of the Company, threatened action, suit, proceeding or claim by others challenging the validity or scope of any Company IP, and the Company is unaware of any facts which would form a reasonable basis for any such claim, except as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. There is no pending or, to the knowledge of the Company, threatened action, suit, proceeding or claim by others that the Company or its subsidiary infringes, misappropriates or otherwise violates any Intellectual Property or other proprietary rights of others, and neither the Company nor its subsidiary has received any written notice of such claim, and the Company is unaware of any other fact which would form a reasonable basis for any such claim, except as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(C) To the Company's knowledge, no employee of the Company or any subsidiary is in or has ever been in material violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee's employment with the Company or any subsidiary or actions undertaken by the employee while employed with the Company or any subsidiary.

(D) The Company and its subsidiary have taken commercially reasonable security measures to protect the secrecy, confidentiality and value of all of their material Intellectual Property.

(E) All patent applications owned by the Company or its subsidiary and filed with the U.S. Patent and Trademark Office (the “PTO”) or any foreign or international patent authority that have resulted in patents or currently pending applications that describe inventions necessary to conduct the business of the Company or its subsidiary as now conducted and as described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus (collectively, the “*Company Patent Applications*”) have been or were duly and properly filed.

(F) The Company and its subsidiary have complied with their duty of candor and disclosure to the PTO for the Company Patent Applications. To the Company’s knowledge, there are no facts required to be disclosed to the PTO that were not disclosed to the PTO and which would preclude the grant of a patent for the Company Patent Applications. The Company has no knowledge of any facts which would preclude it or its applicable subsidiary from having clear title to the Company Patent Applications that have been identified by the Company as being exclusively owned by the Company or its subsidiary.

(xvi) *No Violations or Defaults.* Neither the Company nor its subsidiary is in violation of its respective charter, by-laws or other organizational documents, or in breach of or otherwise in default, and no event has occurred which, with notice or lapse of time or both, would constitute such a default in the performance of any obligation, agreement or condition contained in any bond, debenture, note, indenture, loan agreement or any other contract, lease or other instrument to which it is subject or by which any of them may be bound, or to which any of the property or assets of the Company or its subsidiary is subject, in each case except as would not have a Material Adverse Effect.

(xvii) *Taxes.* The Company and its subsidiary have timely filed all federal, state, local and foreign income and franchise tax returns required to be filed and are not in default in the payment of any taxes which were payable pursuant to said returns or any assessments with respect thereto, other than any which the Company or its subsidiary is contesting in good faith. There is no pending dispute with any taxing authority relating to any of such returns, and the Company has no knowledge of any proposed liability for any tax to be imposed upon the properties or assets of the Company for which there is not an adequate reserve reflected in the Company’s financial statements included in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus.

(xviii) *Exchange Listing and Exchange Act Registration.* The Common Stock is registered pursuant to Section 12(b) of the Exchange Act and is included or approved for listing on the Nasdaq Capital Market and the Company has not taken any action designed to, or likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or delisting the Common Stock from the Nasdaq Capital Market, and the Company has not received any notification that the Commission or the Nasdaq Capital Market is contemplating terminating such registration or listing. The Company has complied in all material respects with the applicable requirements of the Nasdaq Capital Market for maintenance of inclusion of the Common Stock thereon. The Company has filed a notification with respect to the inclusion of the Securities on the Nasdaq Capital Market. Except as previously disclosed to counsel for the Underwriters or as set forth in the Time of Sale Disclosure Package and the Prospectus, to the knowledge of the Company, no beneficial owners of the Company’s capital stock who, together with their associated persons and affiliates, hold in the aggregate 10% or more of such capital stock, have any direct or indirect association or affiliate with a FINRA member.

(xix) Ownership of Other Entities. Other than the subsidiary of the Company listed in Exhibit 21 to the Company's Annual Report on Form 10-K for the fiscal year ended June 30, 2019, the Company, directly or indirectly, owns no capital stock or other equity or ownership or proprietary interest in any corporation, partnership, association, trust or other entity.

(xx) Internal Controls. The Company and its subsidiary maintain a system of internal accounting controls sufficient to provide reasonable assurances that (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles in the United States and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Except as disclosed in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus, the Company's internal control over financial reporting is effective and none of the Company, its board of directors or audit committee is aware of any "significant deficiencies" or "material weaknesses" (each as defined by the Public Company Accounting Oversight Board) in its internal control over financial reporting, or any fraud, whether or not material, that involves management or other employees of the Company and its subsidiary who have a significant role in the Company's internal controls; and since the end of the latest audited fiscal year, there has been no change in the Company's internal control over financial reporting (whether or not remediated) that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. The Company's board of directors has, subject to the exceptions, cure periods and the phase in periods specified in the applicable stock exchange rules ("**Exchange Rules**"), validly appointed an audit committee to oversee internal accounting controls whose composition satisfies the applicable requirements of the Exchange Rules and the Company's board of directors and/or the audit committee has adopted a charter that satisfies the requirements of the Exchange Rules.

(xxi) No Brokers or Finders. Other than as contemplated by this Agreement, the Company has not incurred any liability for any finder's or broker's fee or agent's commission in connection with the execution and delivery of this Agreement or the consummation of the transactions contemplated hereby.

(xxii) Insurance. The Company and its subsidiary carry, or are covered by, insurance from reputable insurers in such amounts and covering such risks as is adequate for the conduct of their business and the value of their properties and as is customary for companies engaged in similar businesses in similar industries; all policies of insurance and any fidelity or surety bonds insuring the Company or its subsidiary or its business, assets, employees, officers and directors are in full force and effect; the Company and its subsidiary are in compliance with the terms of such policies and instruments in all material respects; there are no claims by the Company or its subsidiary under any such policy or instrument as to which any insurance company is denying liability or defending under a reservation of rights clause; neither the Company nor its subsidiary has been refused any insurance coverage sought or applied for; and neither the Company nor its subsidiary has reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not have a Material Adverse Effect.

(xxiii) Investment Company Act. The Company is not and, after giving effect to the offering and sale of the Securities, will not be an “investment company,” as such term is defined in the Investment Company Act of 1940, as amended (the “**1940 Act**”), that is registered or required to be registered under the 1940 Act.

(xxiv) Eligibility to Use Form S-3. The conditions for use of Form S-3, in connection with the offer and sale of the Securities, as set forth in the General Instructions thereto, have been satisfied.

(xxv) Incorporated Documents. The documents incorporated by reference in the Time of Sale Disclosure Package and in the Prospectus, when they became effective or were filed with the Commission, as the case may be, conformed in all material respects to the requirements of the Securities Act or the Exchange Act, as applicable, and were filed on a timely basis with the Commission and none of such documents contained an untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; any further documents so filed and incorporated by reference in the Time of Sale Disclosure Package or in the Prospectus, when such documents are filed with the Commission, will conform in all material respects to the requirements of the Exchange Act, and will not contain an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(xxvi) Sarbanes-Oxley Act. The Company is in compliance in all material respects with all applicable provisions of the Sarbanes-Oxley Act and the rules and regulations of the Commission thereunder.

(xxvii) Disclosure Controls. Except as disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, the Company has established and maintains disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act), and such controls and procedures are effective in ensuring that material information relating to the Company, including its subsidiary, is made known to the principal executive officer and the principal financial officer. The Company has utilized such controls and procedures in preparing and evaluating the disclosures in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus. For the avoidance of doubt, the Company’s disclosure controls and procedures not being effective due to those material weaknesses in internal control over financial reporting disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus shall not be deemed a breach of this Section 2(a)(xxvii).

(xxviii) Anti-Bribery and Anti-Money Laundering Laws. Each of the Company, its subsidiaries, its affiliates and any of their respective officers, directors, supervisors, managers, agents or employees has not violated, its participation in the offering will not violate and the Company and its subsidiary have instituted and maintain policies and procedures designed to ensure continued compliance with each of the following laws: anti-bribery laws, including but not limited to, any applicable law, rule, or regulation of any locality, including but not limited to any law, rule, or regulation promulgated to implement the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, signed December 17, 1997, including the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.K. Bribery Act 2010, or any other law, rule or regulation of similar purposes and scope, or anti-money laundering laws, including but not limited to, applicable federal, state, international, foreign or other laws, regulations or government guidance regarding anti-money laundering, including, without limitation, Title 18 U.S. Code Section 1956 and 1957, the USA PATRIOT Act, the Bank Secrecy Act, and international anti-money laundering principles or procedures by an intergovernmental group or organization, such as the Financial Action Task Force on Money Laundering, of which the United States is a member and with which designation the United States representative to the group or organization continues to concur, all as amended, and any executive order, directive, or regulation pursuant to the authority of any of the foregoing, or any orders or licenses issued thereunder.

(xxix) OFAC.

(A) Neither the Company nor its subsidiary, nor any of their directors, officers or employees, nor, to the Company's knowledge, any agent, affiliate or representative of the Company or its subsidiary, is an individual or entity that is, or is owned or controlled by an individual or entity that is:

(1) the subject of any sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control, the United Nations Security Council, the European Union, Her Majesty's Treasury, or other relevant sanctions authority (collectively, "**Sanctions**"), nor

(2) located, organized or resident in a country or territory that is the subject of Sanctions (including, without limitation, the Crimea Region of Ukraine, Cuba, Iran, North Korea, Sudan and Syria).



(B) Neither the Company nor its subsidiary will, directly or indirectly, use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other individual or entity:

(1) to fund or facilitate any activities or business of or with any individual or entity or in any country or territory that, at the time of such funding or facilitation, is the subject of Sanctions; or

(2) in any other manner that will result in a violation of Sanctions by any individual or entity (including any individual or entity participating in the offering, whether as underwriter, advisor, investor or otherwise).

(C) For the past five years, neither the Company nor any subsidiary has knowingly engaged in, and is not now knowingly engaged in, any dealings or transactions with any individual or entity, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

(xxx) Compliance with Environmental Laws. Except as disclosed in the Time of Sale Disclosure Package and the Prospectus, neither the Company nor its subsidiary is in violation of any statute, any rule, regulation, decision or order of any Governmental Authority or any court, domestic or foreign, relating to the use, disposal or release of hazardous or toxic substances or relating to the protection or restoration of the environment or human exposure to hazardous or toxic substances (collectively, "**Environmental Laws**"), owns or operates any real property contaminated with any substance that is subject to any Environmental Laws, is liable for any off-site disposal or contamination pursuant to any Environmental Laws, or is subject to any claim relating to any Environmental Laws, which violation, contamination, liability or claim would, individually or in the aggregate, have a Material Adverse Effect; and the Company is not aware of any pending investigation which might lead to such a claim. Neither the Company nor its subsidiary anticipates incurring any material capital expenditures relating to compliance with Environmental Laws, except in connection with planned improvements to the Company's fabrication facility in Canandaigua, New York.

(xxxi) Compliance with Occupational Laws. The Company and its subsidiary (A) are in compliance, in all material respects, with any and all applicable foreign, federal, state and local laws, rules, regulations, treaties, statutes and codes promulgated by any and all Governmental Authorities (including pursuant to the Occupational Safety and Health Act) relating to the protection of human health and safety in the workplace ("**Occupational Laws**"); (B) have received all material permits, licenses or other approvals required of them under applicable Occupational Laws to conduct their business as currently conducted; and (C) are in compliance, in all material respects, with all terms and conditions of any such permits, licenses or approvals. No action, proceeding, revocation proceeding, writ, injunction or claim is pending or, to the Company's knowledge, threatened against the Company or its subsidiary relating to Occupational Laws, and the Company does not have knowledge of any facts, circumstances or developments relating to its operations or cost accounting practices that could reasonably be expected to form the basis for or give rise to such actions, suits, investigations or proceedings.

(xxxii) *ERISA and Employee Benefits Matters.* (A) To the knowledge of the Company, no “prohibited transaction” as defined under Section 406 of ERISA (as defined below) or Section 4975 of the Code (as defined below) and not exempt under ERISA Section 408 and the regulations and published interpretations thereunder has occurred with respect to any Employee Benefit Plan (as defined below); (B) at no time has the Company or, to the knowledge of the Company, any ERISA Affiliate (as defined below), maintained, sponsored, participated in, contributed to or has or had any liability or obligation in respect of any Employee Benefit Plan subject to Part 3 of Subtitle B of Title I of ERISA, Title IV of ERISA, or Section 412 of the Code or any “multiemployer plan” as defined in Section 3(37) of ERISA or any multiple employer plan for which the Company has incurred or could incur liability under Section 4063 or 4064 of ERISA; (C) no Employee Benefit Plan that is not a PEO Plan and, to the knowledge of the Company, no PEO Plan, provides or promises retiree health, retiree life insurance, or other retiree welfare benefits except as may be required by the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended, or similar state law, and except for continued broad-based benefit plan participation for a specified period following a qualifying termination of employment; (D) with respect to each Employee Benefit Plan that is not a PEO Plan and, to the knowledge of the Company, each PEO Plan, is and has been operated in material compliance with its terms and all applicable laws, including but not limited to ERISA and the Code and, to the knowledge of the Company, no event has occurred (including a “reportable event” as such term is defined in Section 4043 of ERISA) and no condition exists that would subject the Company to any material tax, fine, lien, penalty or liability imposed by ERISA, the Code or other applicable law; (E) with respect to each Employee Benefit Plan that is not a PEO Plan and, to the knowledge of the Company, each PEO Plan, intended to be qualified under Code Section 401(a) is so qualified and has a favorable determination or opinion letter from the Internal Revenue Service upon which it can rely, and any such determination or opinion letter remains in effect and has not been revoked and, to the knowledge of the Company, nothing has occurred since the date of any such determination or opinion letter that is reasonably likely to adversely affect such qualification; (F) with respect to each Foreign Benefit Plan (as defined below), such Foreign Benefit Plan (1) if intended to qualify for special tax treatment, meets, in all material respects, the requirements for such treatment, and (2) if required to be funded, is funded to the extent required by applicable law, and with respect to all other Foreign Benefit Plans, adequate reserves therefor have been established on the accounting statements of the applicable Company or subsidiary; and (G) neither the Company nor any of its subsidiaries has any obligations under any collective bargaining agreement with any union and, to the knowledge of the Company, no organization efforts are underway with respect to employees of the Company or any of its subsidiaries. As used in this Agreement, “*Code*” means the Internal Revenue Code of 1986, as amended; “*Employee Benefit Plan*” means any “employee benefit plan” within the meaning of Section 3(3) of ERISA, including, without limitation, all stock purchase, stock option, stock-based severance, employment, change-in-control, medical, disability, fringe benefit, bonus, incentive, deferred compensation, employee loan and all other employee benefit plans, agreements, programs, policies or other arrangements, whether or not subject to ERISA, under which (1) any current or former employee, director or independent contractor of the Company or its subsidiaries has any present or future right to benefits and which are contributed to, sponsored by or maintained by the Company or any of its subsidiaries or (2) the Company or any of its subsidiaries has had or has any present or future obligation or liability; “*ERISA*” means the Employee Retirement Income Security Act of 1974, as amended; “*ERISA Affiliate*” means any member of the Company’s controlled group as defined in Code Section 414(b), (c), (m) or (o); “*Foreign Benefit Plan*” means any Employee Benefit Plan established, maintained or contributed to outside of the United States of America or which covers any employee working or residing outside of the United States; and “*PEO Plan*” means an Employee Benefit Plan sponsored and maintained by TriNet Group, Inc.

(xxxiii) Business Arrangements. Neither the Company nor its subsidiary has granted exclusive rights to develop, manufacture, produce, assemble, distribute, license, market or sell its products to any other person and is not bound by any agreement that affects the exclusive right of the Company or such subsidiary to develop, manufacture, produce, assemble, distribute, license, market or sell its products that are required to be described in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus or required to be filed as exhibits to the Registration Statement by the Securities Act or by the Rules and Regulations that have not been so described or filed.

(xxxiv) Labor Matters. No labor problem or dispute with the employees of the Company or its subsidiary exists or, to the knowledge of the Company, is threatened or imminent, and the Company is not aware of any existing or imminent labor disturbance by the employees of any of its or its subsidiary's principal suppliers, contractors or customers, that could have a Material Adverse Effect.

(xxxv) Restrictions on Subsidiary Payments to the Company. No subsidiary of the Company is currently prohibited, directly or indirectly, from paying any dividends to the Company, from making any other distribution on such subsidiary's capital stock, from repaying to the Company any loans or advances to such subsidiary from the Company or from transferring any of such subsidiary's property or assets to the Company or any other subsidiary of the Company, except (A) as provided by applicable state law, (B) as described in or contemplated by the Time of Sale Disclosure Package and the Prospectus or (C) under the indentures governing the Company's 6.5% Convertible Senior Notes due 2023 and the Company's 6.5% Convertible Senior Secured Notes due 2023.

(xxxvi) Statistical Information. Any third-party statistical and market-related data included in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus are based on or derived from sources that the Company believes to be reasonably current and reliable and accurate in all material respects.

(xxxvii) Forward-looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) contained in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

(xxxviii) Cybersecurity Data Protection. To the Company's knowledge, its and its subsidiary's information technology assets and equipment, computers, systems, networks, hardware, software, websites, applications and databases (collectively, "**IT Systems**") are adequate in all material respects for, and operate and perform in all material respects as required in connection with the operation of the business of the Company and its subsidiary as currently conducted, and to the knowledge of the Company, free and clear of all material bugs, errors, defects, Trojan horses, time bombs, malware and other corruptants. The Company has implemented and maintains commercially reasonable controls, policies, procedures and safeguards to maintain and protect its material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and data (including all personal, personally identifiable, sensitive, confidential or regulated data ("**Personal Data**")) used in connection with its businesses, and to the knowledge of the Company, there have been no material breaches, violations, outages or unauthorized uses of or accesses to the same, except for those that have been remedied without material cost or liability or the duty to notify any other person, nor are there any material incidents under internal review or investigations relating to the same. The Company is presently in compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Personal Data and to the protection of such IT Systems and Personal Data from unauthorized use, access, misappropriation or modification, except as would not reasonably be expected to have a Material Adverse Effect.

(b) Effect of Certificates. Any certificate signed by any officer of the Company and delivered to you or to counsel for the Underwriters shall be deemed a representation and warranty by the Company to each Underwriter as to the matters covered thereby.

### 3. Purchase, Sale and Delivery of Securities.

(a) Firm Shares. On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, the Company agrees to issue and sell the Firm Shares to the several Underwriters, and each Underwriter agrees, severally and not jointly, to purchase from the Company the number of Firm Shares set forth opposite the name of such Underwriter in Schedule I hereto. The purchase price for each Firm Share shall be \$5.875 per share. In making this agreement, each Underwriter is contracting severally and not jointly; except as provided in paragraph (d) of this Section 3, the agreement of each Underwriter is to purchase only the respective number of Firm Shares specified in Schedule I.

The Firm Shares will be delivered by the Company to you for the accounts of the several Underwriters against payment of the purchase price therefor by wire transfer of same day funds payable to the order of the Company at the offices of Craig-Hallum Capital Group LLC, 222 South Ninth Street, Suite 350, Minneapolis, Minnesota 55402, or such other location as may be mutually acceptable, at 9:00 a.m. Central time on the second (or if the Securities are priced, as contemplated by Rule 15c6-1(c) under the Exchange Act, after 4:30 p.m. Eastern time, the third) full business day following the date hereof, or at such other time and date as you and the Company determine pursuant to Rule 15c6-1(a) under the Exchange Act, such time and date of delivery being herein referred to as the "**First Closing Date**."

(b) Option Shares. On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, the Company hereby grants to the several Underwriters an option to purchase all or any portion of the Option Shares at the same purchase price as the Firm Shares, for use solely in covering any over-allotments made by the Underwriters in the sale and distribution of the Firm Shares. The option granted hereunder may be exercised in whole or in part at any time (but not more than once) within 30 days after the effective date of this Agreement upon notice (confirmed in writing) by the Representative to the Company setting forth the aggregate number of Option Shares as to which the several Underwriters are exercising the option, the names and denominations in which the certificates for the Option Shares are to be registered and the date and time, as determined by you, when the Option Shares are to be delivered, such time and date being herein referred to as the “**Second Closing**” and “**Second Closing Date**,” respectively; provided, however, that the Second Closing Date shall not be earlier than the First Closing Date nor, unless otherwise agreed by the parties, earlier than the second business day after the date on which the option shall have been exercised. The number of Option Shares to be purchased by each Underwriter shall be the same percentage of the total number of Option Shares to be purchased by the several Underwriters as the number of Firm Shares to be purchased by such Underwriter is of the total number of Firm Shares to be purchased by the several Underwriters, as adjusted by the Representatives in such manner as the Representative deems advisable to avoid fractional shares. No Option Shares shall be sold and delivered unless the Firm Shares previously have been, or simultaneously are, sold and delivered.

The Option Shares will be delivered by the Company to you for the accounts of the several Underwriters against payment of the purchase price therefor by wire transfer of same day funds payable to the order of the Company at the offices of Craig-Hallum Capital Group LLC, 222 South Ninth Street, Suite 350, Minneapolis, Minnesota 55402, or such other location as may be mutually acceptable at 9:00 a.m., Central time, on the Second Closing Date.

(c) Delivery. If the Representative so elects, delivery of the Firm Shares or the Option Shares may be made by credit through full fast transfer to the accounts at The Depository Trust Company designated by the Representative. Certificates representing the Firm Shares and the Option Shares in definitive form and in such denominations and registered in such names as you have set forth in your notice of option exercise, or evidence of their issuance, will be made available for checking at a reasonable time preceding the First Closing Date or the Second Closing Date, as applicable, at the office of Craig-Hallum Capital Group LLC, 222 South Ninth Street, Suite 350, Minneapolis, Minnesota 55402, or such other location as may be mutually acceptable.

(d) Purchases by Representative on Behalf of Underwriters. It is understood that each Underwriter has authorized the Representative, for such Underwriter’s account, to accept delivery of, receipt for, and make payment of the purchase price for, the Firm Shares and the Option Shares, if any, which such Underwriter has agreed to purchase. It is understood that the Representative, individually and not in its capacity as Representative of the several Underwriters, may (but shall not be obligated to) make payment of the purchase price to the Company on behalf of any Underwriter for the Firm Shares and Option Shares, if any, to be purchased by such Underwriter. Any such payment by the Representative shall not relieve any such Underwriter from any of its obligations hereunder. Nothing contained herein shall constitute any of the Underwriters as an unincorporated association or partner with the Company.

#### 4. *Covenants.*

(a) *Covenants of the Company.* The Company covenants and agrees with the several Underwriters as follows:

(i) *Required Filings.* During the period beginning on the date hereof and ending on the later of the Second Closing Date or such date, as in the opinion of counsel for the Underwriters, the Prospectus is no longer required by law to be delivered (assuming the absence of Rule 172 under the Securities Act), in connection with sales by an Underwriter or a dealer (the "*Prospectus Delivery Period*"), prior to amending or supplementing the Registration Statement (including any Rule 462(b) Registration Statement), the Time of Sale Disclosure Package or the Prospectus, the Company shall furnish to the Representative for review a copy of each such proposed amendment or supplement, and the Company shall not file any such proposed amendment or supplement to which the Representative or counsel to the Representative reasonably objects. Subject to this Section 4(a)(i), immediately following execution of this Agreement, the Company will prepare the Prospectus containing the Rule 430B Information and other selling terms of the Securities, the plan of distribution thereof and such other information as may be required by the Securities Act or the Rules and Regulations or as the Representative and the Company may deem appropriate, and if reasonably requested by the Representative, an issuer free writing prospectus containing the selling terms of the Securities and such other information as the Company and the Representative may deem appropriate, and will file or transmit for filing with the Commission, in accordance with Rule 424(b) or Rule 433, as the case may be, copies of the Prospectus and each issuer free writing prospectus.

(ii) *Notification of Certain Commission Actions.* After the date of this Agreement, the Company shall promptly advise the Representative in writing (A) of the receipt of any comments of, or requests for additional or supplemental information from, the Commission, (B) of the time and date of any filing of any post-effective amendment to the Registration Statement or any amendment or supplement to any Preliminary Prospectus, the Time of Sale Disclosure Package or the Prospectus, (C) of the time and date that any post-effective amendment to the Registration Statement becomes effective, (D) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto or of any order preventing or suspending its use or the use of any Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus or any issuer free writing prospectus, or (E) of any proceedings to remove, suspend or terminate from listing or quotation the Common Stock from any securities exchange upon which it is listed for trading or included or designated for quotation, or of the threatening or initiation of any proceedings for any of such purposes. If the Commission shall enter any such stop order at any time, the Company will use its commercially reasonable efforts to obtain the lifting of such order at the earliest possible moment. Additionally, the Company agrees that it shall comply with the provisions of Rules 424(b) and 430B, as applicable, under the Securities Act and will use its reasonable efforts to confirm that any filings made by the Company under Rule 424(b), Rule 433 or Rule 462 were received in a timely manner by the Commission (without reliance on Rule 424(b)(8) or Rule 164(b)).

(iii) Continued Compliance with Securities Laws (A) During the Prospectus Delivery Period, the Company will comply with all requirements imposed upon it by the Securities Act, as now and hereafter amended, and by the Rules and Regulations, as from time to time in force, and by the Exchange Act so far as necessary to permit the continuance of sales of or dealings in the Securities as contemplated by the provisions hereof, the Time of Sale Disclosure Package and the Prospectus. If during such period any event occurs as a result of which the Prospectus (or if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary or appropriate in the opinion of the Company or its counsel or the Representative or counsel to the Underwriters to amend the Registration Statement or supplement the Prospectus (or, if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) to comply with the Securities Act or to file under the Exchange Act any document which would be deemed to be incorporated by reference in the Prospectus (or if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) in order to comply with the Securities Act or the Exchange Act, the Company promptly will (x) notify you of such untrue statement or omission, (y) amend the Registration Statement or supplement the Prospectus (or, if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) or file such document (at the expense of the Company) so as to correct such statement or omission or effect such compliance, and (z) notify you when any amendment to the Registration Statement is filed or becomes effective or when any supplement to the Prospectus (or, if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) is filed.

(B) If at any time following issuance of an issuer free writing prospectus there occurred or occurs an event or development as a result of which such issuer free writing prospectus conflicted or would conflict with the information contained in the Registration Statement, the Preliminary Prospectus or the Prospectus or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at that subsequent time, not misleading, the Company (x) has promptly notified or promptly will notify the Representative of such conflict, untrue statement or omission, (y) has promptly amended or will promptly amend or supplement, at its own expense, such issuer free writing prospectus to eliminate or correct such conflict, untrue statement or omission, and (z) has notified or promptly will notify you when such amendment or supplement was or is filed with the Commission where so required to be filed.

(iv) Blue Sky Qualifications. The Company shall take or cause to be taken all necessary action required by law to qualify the Securities for sale under the securities laws of such jurisdictions as you reasonably designate and to continue such qualifications in effect so long as required for the distribution of the Securities, except that the Company shall not be required in connection therewith to qualify as a foreign corporation or to execute a general consent to service of process in any state.

(v) Provision of Documents. The Company will furnish, at its own expense, to the Underwriters and counsel for the Underwriters copies of the Registration Statement, and to the Underwriters and any dealer each Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus, any issuer free writing prospectus, and all amendments and supplements to such documents, in each case as soon as available and in such quantities as you may from time to time reasonably request.

(vi) Rule 158. The Company will make generally available to its security holders as soon as practicable, but in no event later than 15 months after the end of the Company's current fiscal quarter, an earnings statement (which need not be audited) covering a 12-month period that shall satisfy the provisions of Section 11(a) of the Securities Act and Rule 158 of the Rules and Regulations.

(vii) Payment and Reimbursement of Expenses. The Company, whether or not the transactions contemplated hereunder are consummated or this Agreement is terminated, will pay or cause to be paid (A) all reasonable expenses (including transfer taxes allocated to the respective transferees) incurred by the Company in connection with the delivery to the Underwriters of the Securities, (B) all expenses and fees (including, without limitation, fees and expenses of the Company's accountants and counsel) in connection with the preparation, printing, filing, delivery, and shipping of the Registration Statement (including the financial statements therein and all amendments, schedules, and exhibits thereto), the Securities, each Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus, any issuer free writing prospectus and any amendment thereof or supplement thereto, (C) all filing fees incurred in connection with the qualification of the Securities for offering and sale by the Underwriters or by dealers under the securities or blue sky laws of the states and other jurisdictions which you shall designate, (D) the fees and expenses of the transfer agent or registrar, (E) the filing fees incident to any required review and approval by FINRA of the terms of the sale of the Securities, (F) listing fees, if any, (G) the costs and expenses of the Company relating to investor presentations or any "roadshow" undertaken in connection with marketing of the Securities, (H) all reasonable, out-of-pocket expenses of the Underwriters (including, but not limited to, reasonable fees and disbursements of the Underwriters' counsel and the Underwriters' reasonable travel, database, printing, postage, facsimile and telephone expenses) incurred in connection with the Underwriters' investigation of the Company, preparing to market and marketing the Securities, sale of the Securities or in contemplation of performing its obligations hereunder, which amount will not exceed \$125,000 in the aggregate, and (I) all other reasonable costs and expenses of the Company incident to the performance of its obligations hereunder that are not otherwise specifically provided for herein.



(viii) Use of Proceeds. The Company will apply the net proceeds from the sale of the Securities to be sold by it hereunder substantially for the purposes set forth in the Time of Sale Disclosure Package and in the Prospectus.

(ix) Company Lock-Up. The Company will not, without the prior written consent of the Representative, from the date of execution of this Agreement and continuing to and including the date 90 days after the date of the Prospectus (the "**Lock-Up Period**"), (A) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock or (B) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Common Stock, whether any such transaction described in clause (A) or (B) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise, except, in each case, for (i) the sale of the Securities as contemplated by this Agreement, (ii) issuances of securities upon the exercise or conversion of options, warrants or convertible securities disclosed as outstanding in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, (iii) the issuance of employee stock options not exercisable during the Lock-Up Period pursuant to the Company's stock option, stock bonus and other stock plans or arrangements, as in effect on the date hereof in the ordinary course of business consistent with past practices and (iv) the sale of securities to a strategic investor in a private placement. The Company agrees not to accelerate the vesting of any option or warrant or the lapse of any repurchase right prior to the expiration of the Lock-Up Period.

(x) Stockholder Lock-Ups. The Company has caused to be delivered to you prior to the date of this Agreement a letter, in the form of Exhibit A hereto (the "**Lock-Up Agreement**"), from each individual or entity listed on Schedule IV. The Company will enforce the terms of each Lock-Up Agreement and issue stop-transfer instructions to the transfer agent for the Common Stock with respect to any transaction or contemplated transaction that would constitute a breach of or default under the applicable Lock-Up Agreement.

(xi) No Market Stabilization or Manipulation. The Company has not taken and will not take, directly or indirectly, any action designed to or which might reasonably be expected to cause or result in, or which has constituted, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Securities.

(xii) SEC Reports. During the Prospectus Delivery Period, the Company will file on a timely basis with the Commission such periodic and special reports as required by the Rules and Regulations.

(xiii) Internal Controls. During the Prospectus Delivery Period, the Company and its subsidiary will maintain such controls and other procedures, including without limitation those required by Sections 302 and 906 of the Sarbanes-Oxley Act and the applicable regulations thereunder, that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Commission's rules and forms, including without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive officer and its principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure, to ensure that material information relating to the Company, including its subsidiary, is made known to them by others within those entities. Notwithstanding the foregoing, the continued existence during the Prospectus Delivery Period of those material weaknesses in internal control over financial reporting disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus shall not violate this Section 4(a)(xiii).

(xiv) Sarbanes-Oxley. During the Prospectus Delivery Period, the Company and its subsidiary will comply with all applicable provisions of the Sarbanes-Oxley Act and rules and regulations adopted thereunder.

(xv) Free Writing Prospectuses. The Company represents and agrees that, unless it obtains the prior written consent of the Representative, it has not made and will not make any offer relating to the Securities that would constitute an issuer free writing prospectus or that would otherwise constitute a free writing prospectus required to be filed with the Commission; provided that the prior written consent of the Representative shall be deemed to have been given in respect of the free writing prospectuses included in Schedule II. Any such free writing prospectus consented to by the Representative is hereinafter referred to as a "**Permitted Free Writing Prospectus**." The Company represents that it has treated or agrees that it will treat each Permitted Free Writing Prospectus as an issuer free writing prospectus and has complied and will comply with the requirements of Rule 164 and Rule 433 applicable to any Permitted Free Writing Prospectus.

5. Conditions of Underwriters' Obligations. The obligations of the several Underwriters hereunder are subject to the accuracy, as of the date hereof and at each of the First Closing Date and the Second Closing Date (as if made at such Closing Date), of and compliance with all representations, warranties and agreements of the Company contained herein, to the performance by the Company of its obligations hereunder and to the following additional conditions:

(a) Required Filings: Absence of Certain Commission Actions. If filing of the Prospectus, or any amendment or supplement thereto, or any issuer free writing prospectus, is required under the Securities Act or the Rules and Regulations, the Company shall have filed the Prospectus (or such amendment or supplement) or such issuer free writing prospectus with the Commission in the manner and within the time period so required (without reliance on Rule 424(b)(8) or Rule 164(b)); the Registration Statement shall remain effective; no stop order suspending the effectiveness of the Registration Statement or any part thereof, any Rule 462(b) Registration Statement, or any amendment thereof, nor suspending or preventing the use of the Time of Sale Disclosure Package, the Prospectus or any issuer free writing prospectus shall have been issued; no proceedings for the issuance of such an order shall have been initiated or threatened; and any request of the Commission for additional information (to be included in the Registration Statement, the Time of Sale Disclosure Package, the Prospectus, any issuer free writing prospectus or otherwise) shall have been complied with to your satisfaction.

(b) Continued Compliance with Securities Laws. No Underwriter shall have advised the Company that (i) the Registration Statement or any amendment thereof or supplement thereto contains an untrue statement of a material fact which, in your opinion, is material or omits to state a material fact which, in your opinion, is required to be stated therein or necessary to make the statements therein not misleading, or (ii) the Time of Sale Disclosure Package or the Prospectus, or any amendment thereof or supplement thereto, or any issuer free writing prospectus contains an untrue statement of fact which, in your opinion, is material, or omits to state a fact which, in your opinion, is material and is required to be stated therein, or necessary to make the statements therein, in light of the circumstances under which they are made, not misleading.

(c) Absence of Certain Events. Except as contemplated in the Time of Sale Disclosure Package and in the Prospectus, subsequent to the respective dates as of which information is given in the Time of Sale Disclosure Package, neither the Company nor its subsidiary shall have incurred any material liabilities or obligations, direct or contingent, or entered into any material transactions, or declared or paid any dividends or made any distribution of any kind with respect to its capital stock; and there shall not have been any change in the capital stock (other than a change in the number of outstanding shares of Common Stock due to the issuance of shares upon the exercise of outstanding options or warrants or conversion of convertible securities), or any material change in the short-term or long-term debt of the Company (other than as a result of standard drawdowns or repayments of debt consistent with past practices), or any issuance of options, warrants, convertible securities or other rights to purchase the capital stock of the Company or its subsidiary except for the issuance of employee stock options not exercisable during the Lock-Up Period pursuant to the Company's stock option, stock bonus and other stock plans or arrangements, as in effect on the date hereof in the ordinary course of business consistent with past practices, or any Material Adverse Change or any development involving a prospective Material Adverse Change (whether or not arising in the ordinary course of business), or any loss by strike, fire, flood, earthquake, accident or other calamity, whether or not covered by insurance, incurred by the Company or its subsidiary, the effect of which, in any such case described above, in your judgment, makes it impractical or inadvisable to offer or deliver the Securities on the terms and in the manner contemplated in the Time of Sale Disclosure Package and in the Prospectus.

(d) Opinion and 10b-5 Statement of Company Counsel. On each Closing Date, there shall have been furnished to you, as Representative of the several Underwriters, the opinion and negative assurance statement of K&L Gates LLP, counsel for the Company, dated such Closing Date and addressed to you in form and substance reasonably satisfactory to you.

(e) Opinion and 10b-5 Statement of Underwriters' Counsel. On each Closing Date, there shall have been furnished to you, as Representative of the several Underwriters, such opinion or opinions and negative assurance statement from Faegre Baker Daniels LLP, counsel for the several Underwriters, dated such Closing Date and addressed to you, with respect to such matters as you reasonably may request, and such counsel shall have received such papers and information as they request to enable them to pass upon such matters.

(f) Opinion of Company's Intellectual Property Counsel. On the date hereof and on each Closing Date, there shall have been furnished to you, as Representative of the several Underwriters, the opinion of Ogawa Professional Corporation, intellectual property counsel for the Company, dated as of such Closing Date and addressed to the Representative, in form and substance reasonably satisfactory to you.

(g) Comfort Letter of Marcum LLP. On the date hereof, on the effective date of any post-effective amendment to the Registration Statement filed after the date hereof and on each Closing Date you, as Representative of the several Underwriters, shall have received an accountant's "comfort" letter of Marcum LLP, dated such date and addressed to you, in form and substance reasonably satisfactory to you.

(h) Officers' Certificate. On each Closing Date, there shall have been furnished to you, as Representative of the several Underwriters, a certificate, dated such Closing Date and addressed to you, signed by the chief executive officer and by the chief financial officer of the Company, to the effect that:

(i) The representations and warranties of the Company in this Agreement are true and correct as if made at and as of such Closing Date, and the Company has complied with all the agreements and satisfied all the conditions on its part to be performed or satisfied at or prior to such Closing Date;

(ii) No stop order or other order suspending the effectiveness of the Registration Statement or any part thereof or any amendment thereof or the qualification of the Securities for offering or sale nor suspending or preventing the use of the Time of Sale Disclosure Package, the Prospectus or any issuer free writing prospectus, has been issued, and no proceeding for that purpose has been instituted or, to the best of their knowledge, is contemplated by the Commission or any state or regulatory body; and

(iii) Affirms the accuracy of the matters set forth in subsection (c) of this Section 5.

(i) Lock-Up Agreement. The Representative shall have received all of the Lock-Up Agreements referenced in Section 4 and the Lock-Up Agreements shall remain in full force and effect.

(j) FINRA No Objections. FINRA shall have raised no objection to the fairness and reasonableness of the underwriting terms and arrangements.

(k) Other Documents. The Company shall have furnished to you, as Representative for the several Underwriters, and counsel for the Underwriters, such additional documents, certificates and evidence as you or they may have reasonably requested.

(l) Exchange Listing. The Securities to be delivered on such Closing Date have been approved for listing on the Nasdaq Capital Market, subject to official notice of issuance.

All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof only if they are satisfactory in form and substance to you, as Representative for the several Underwriters, and counsel for the Underwriters. The Company will furnish you with such conformed copies of such opinions, certificates, letters and other documents as you shall reasonably request.

**6. Indemnification and Contribution.**

(a) Indemnification by the Company. The Company agrees to indemnify and hold harmless each Underwriter, its affiliates, directors and officers and each person, if any, who controls such Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, from and against any losses, claims, damages or liabilities, joint or several, to which such Underwriter may become subject, under the Securities Act or otherwise (including in settlement of any litigation if such settlement is effected with the written consent of the Company), insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, including the Rule 430B Information and any other information deemed to be a part of the Registration Statement at the time of effectiveness and at any subsequent time pursuant to the Rules and Regulations, if applicable, any Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus, or any amendment or supplement thereto, any issuer free writing prospectus, any roadshow or investor presentations made to investors by the Company (whether in person or electronically) or any issuer information that the Company has filed or is required to file pursuant to Rule 433(d) of the Rules and Regulations, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, and will reimburse each Underwriter for any legal or other expenses reasonably incurred by it in connection with investigating or defending against such loss, claim, damage, liability or action as such expenses are incurred; *provided, however*, that the Company will not be liable in any such case to the extent that any such loss, claim, damage, liability or action arises out of or is based upon an untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with written information furnished to the Company by you, or by any Underwriter through you, specifically for use in the preparation thereof; it being understood and agreed that the only such information furnished by an Underwriter consists of the information described as such in Section 6(e).

(b) Indemnification by the Underwriters. Each Underwriter will, severally and not jointly, indemnify and hold harmless the Company, its affiliates, directors and officers and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act, from and against any losses, claims, damages or liabilities, to which the Company may become subject, under the Securities Act or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of such Underwriter), insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, including the Rule 430B Information and any other information deemed to be a part of the Registration Statement at the time of effectiveness and at any subsequent time pursuant to the Rules and Regulations, if applicable, any Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus, or any amendment or supplement thereto, or any issuer free writing prospectus, any roadshow or investor presentations made to investors by the Company (whether in person or electronically) or any issuer information that the Company has filed or is required to file pursuant to Rule 433(d) of the Rules and Regulations, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in reliance upon and in conformity with written information furnished to the Company by you, or by such Underwriter through you, specifically for use in the preparation thereof (it being understood and agreed that the only such information furnished by an Underwriter consists of the information described as such in Section 6(e)), and will reimburse the Company for any legal or other expenses reasonably incurred by the Company in connection with investigating or defending against any such loss, claim, damage, liability or action as such expenses are incurred to the extent, but only to the extent, that such loss, claim, damage, liability or action is based on an untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with written information furnished to the Company by you, or by such Underwriter through you, specifically for use in the preparation thereof (it being understood and agreed that the only such information furnished by an Underwriter consists of the information described as such in Section 6(e)).

(c) Notice and Procedures. Promptly after receipt by an indemnified party under subsection (a) or (b) above of notice of the commencement of any action, such indemnified party shall, if a claim in respect thereof is to be made against the indemnifying party under such subsection, notify the indemnifying party in writing of the commencement thereof; but the omission so to notify the indemnifying party shall not relieve the indemnifying party from any liability that it may have to any indemnified party except to the extent such indemnifying party has been materially prejudiced by such failure (through the forfeiture of substantive rights or defenses). In case any such action shall be brought against any indemnified party, and it shall notify the indemnifying party of the commencement thereof, the indemnifying party shall be entitled to participate in, and, to the extent that it shall wish, jointly with any other indemnifying party similarly notified, to assume the defense thereof, with counsel satisfactory to such indemnified party, and after notice from the indemnifying party to such indemnified party of the indemnifying party's election so to assume the defense thereof, the indemnifying party shall not be liable to such indemnified party under such subsection for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof other than reasonable costs of investigation; *provided, however*, that if, in the reasonable judgment of the Representative (upon advice received from its outside counsel), it is advisable for the Underwriters to be represented as a group by separate counsel, the Representative shall have the right to employ a single counsel (in addition to local counsel) to represent the Representative and all Underwriters who may be subject to liability arising from any claim in respect of which indemnity may be sought by the Underwriters under subsection (a) of this Section 6, in which event the reasonable fees and expenses of such separate counsel (and local counsel) shall be borne by the indemnifying party or parties and reimbursed to the Underwriters as incurred. An indemnifying party shall not be obligated under any settlement agreement, consent to judgment or other compromise relating to any action under this Section 6 to which it has not agreed in writing. In addition, no indemnifying party shall, without the prior written consent of the indemnified party (which consent shall not be unreasonably withheld or delayed), effect any settlement of any pending or threatened proceeding unless such settlement includes an unconditional release of such indemnified party for all liability on claims that are the subject matter of such proceeding and does not include a statement as to, or an admission of, fault, culpability or a failure to act by or on behalf of an indemnified party. Notwithstanding the foregoing, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for reasonable fees and expenses of counsel pursuant to this Section 6(c), such indemnifying party agrees that it shall be liable for any settlement effected without its written consent if (i) such settlement is entered into more than 45 days after receipt by such indemnifying party of the aforesaid request and (ii) such indemnifying party shall not have reimbursed such indemnified party in accordance with such request prior to the date of such settlement.

(d) Contribution; Limitations on Liability; Non-Exclusive Remedy. If the indemnification provided for in this Section 6 is unavailable or insufficient to hold harmless an indemnified party under subsection (a) or (b) above, then each indemnifying party shall contribute to the amount paid or payable by such indemnified party as a result of the losses, claims, damages or liabilities referred to in subsection (a) or (b) above, (i) in such proportion as is appropriate to reflect the relative benefits received by the Company on the one hand and the Underwriters on the other from the offering of the Securities or (ii) if the allocation provided by clause (i) 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 the Company on the one hand and the Underwriters on the other in connection with the statements or omissions that resulted in such losses, claims, damages or liabilities, as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the Underwriters on the other shall be deemed to be in the same proportion as the total net proceeds from the offering (before deducting expenses) received by the Company bear to the total underwriting discounts and commissions received by the Underwriters, in each case as set forth in the table on the cover page of the Prospectus. The 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 the Underwriters and the parties' relevant intent, knowledge, access to information and opportunity to correct or prevent such untrue statement or omission. The Company and the Underwriters agree that it would not be just and equitable if contributions pursuant to this subsection (d) were to be determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to in the first sentence of this subsection (d). The amount paid by an indemnified party as a result of the losses, claims, damages or liabilities referred to in the first sentence of this subsection (d) shall be deemed to include any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending against any action or claim which is the subject of this subsection (d). Notwithstanding the provisions of this subsection (d), no Underwriter shall be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter with respect to the Securities purchased by it hereunder exceeds the amount of any damages that such Underwriter 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 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. The Underwriters' obligations in this subsection (d) to contribute are several in proportion to their respective underwriting obligations and not joint. The remedies provided for in this Section 6 are not exclusive and shall not limit any rights or remedies that might otherwise be available to any indemnified party at law or in equity.

(e) *Information Provided by the Underwriters.* The Underwriters severally confirm and the Company acknowledges and agrees that the statements with respect to the public offering of the Securities by the Underwriters set forth in the second, ninth, tenth, eleventh, thirteenth and fifteenth paragraphs under the caption "Underwriting" in the Time of Sale Disclosure Package and in the Prospectus are correct and constitute the only information concerning such Underwriters furnished in writing to the Company by or on behalf of the Underwriters specifically for use or inclusion in the Registration Statement, any Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus or any issuer free writing prospectus.

**7. Representations and Agreements to Survive Delivery.** All representations, warranties, and agreements of the Company and the several Underwriters herein or in certificates delivered pursuant hereto, including but not limited to the agreement of the Company and the several Underwriters contained in Section 6 hereof, shall remain operative and in full force and effect regardless of any investigation made by or on behalf of any Underwriter or any controlling person thereof, or the Company or any of its officers, directors, or controlling persons, and shall survive delivery of, and payment for, the Securities to and by the several Underwriters hereunder and any termination of this Agreement.

**8. Termination of this Agreement.**

(a) *Right to Terminate.* You, as Representative of the several Underwriters, shall have the right to terminate this Agreement by giving notice to the Company as hereinafter specified at any time at or prior to the First Closing Date, and the option referred to in Section 3(b), if exercised, may be cancelled at any time prior to the Second Closing Date, if (i) the Company shall have failed, refused or been unable, at or prior to such Closing Date, to perform any agreement on its part to be performed hereunder, (ii) any condition of the Underwriters' obligations hereunder is not fulfilled, (iii) trading in the Company's Common Stock shall have been suspended by the Commission or the Nasdaq Capital Market or trading in securities generally on the NYSE American, Nasdaq Stock Market or New York Stock Exchange shall have been suspended, (iv) minimum or maximum prices for trading shall have been fixed, or maximum ranges for prices for securities shall have been required, on the NYSE American, Nasdaq Stock Market or New York Stock Exchange, by such exchange or by order of the Commission or any other Governmental Authority having jurisdiction, (v) a banking moratorium shall have been declared by federal or New York state authorities or a material disruption in commercial banking or securities settlement or clearance services in the United States, or (vi) there shall have occurred any attack on, outbreak or escalation of hostilities or act of terrorism involving the United States, any declaration by the United States of a national emergency or war, any material adverse change in financial markets, any substantial change or development involving a prospective substantial change in United States or international political, financial or economic conditions, or any other calamity or crisis that, in your reasonable judgment, is material and adverse and makes it impractical or inadvisable to proceed with the completion of the sale of and payment for the Securities.



(b) Notice of Termination. If you elect to terminate this Agreement as provided in this Section, the Company shall be notified promptly by you by telephone, confirmed by letter.

(c) Effect of Termination. No party shall be relieved of any liability under this Agreement arising from any breach of its obligations hereunder occurring prior to termination of this Agreement as a result of the termination of this Agreement.

9. **Notices**. Except as otherwise provided herein, all communications hereunder shall be in writing and, if to the Underwriters, shall be mailed via overnight delivery service or hand delivered via courier to the Representative, c/o Craig-Hallum Capital Group LLC, 222 South Ninth Street, Suite 350, Minneapolis, Minnesota 55402, Attention: General Counsel, with a copy (which shall not constitute notice) to Faegre Baker Daniels LLP, 2200 Wells Fargo Center, 90 South Seventh Street, Minneapolis, Minnesota 55402, Attention: Jonathan Zimmerman; if to the Company, shall be mailed via overnight delivery service or hand delivered to it at 9805 Northcross Center Court, Suite A, Huntersville, North Carolina 28078, Attention: General Counsel, with a copy (which shall not constitute notice) to K&L Gates LLP, Hearst Tower, 47<sup>th</sup> Floor, 214 North Tryon Street, Charlotte, North Carolina 28202, Attention: Sean Jones; or in each case to such other address as the person to be notified may have requested in writing. Any party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose.

10. **Persons Entitled to Benefit of Agreement**. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns and the controlling persons, officers and directors referred to in Section 6. Nothing in this Agreement is intended or shall be construed to give to any other person, firm or corporation any legal or equitable remedy or claim under or in respect of this Agreement or any provision herein contained. The term "successors and assigns" as herein used shall not include any purchaser, as such purchaser, of any of the Securities from any of the several Underwriters.

11. **Absence of Fiduciary Relationship**. The Company acknowledges and agrees that: (a) the Underwriters have been retained solely to act as underwriters in connection with the sale of the Securities and that no fiduciary, advisory or agency relationship between the Company and the Underwriters has been created in respect of any of the transactions contemplated by this Agreement, irrespective of whether the Underwriters have advised or are advising the Company on other matters; (b) the price and other terms of the Securities set forth in this Agreement were established by the Company following discussions and arms-length negotiations with the Underwriters and the Company is capable of evaluating and understanding and understands and accepts the terms, risks and conditions of the transactions contemplated by this Agreement; (c) it has been advised that the Underwriters and their affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and that the Underwriters have no obligation to disclose such interest and transactions to the Company by virtue of any fiduciary, advisory or agency relationship; (d) it has been advised that the Underwriters are acting, in respect of the transactions contemplated by this Agreement, solely for the benefit of the Underwriters, and not on behalf of the Company; and (e) it waives to the fullest extent permitted by law, any claims it may have against the Underwriters for breach of fiduciary duty or alleged breach of fiduciary duty in respect of any of the transactions contemplated by this Agreement and agrees that the Underwriters shall have no liability (whether direct or indirect) to the Company in respect of such a fiduciary duty claim on behalf of or in right of the Company, including stockholders, employees or creditors of the Company.

12. **Governing Law; Waiver of Jury Trial.** This Agreement shall be governed by and construed in accordance with the laws of the State of New York. The Company (on its behalf and, to the extent permitted by applicable law, on behalf of its stockholders and affiliates) and the several Underwriters hereby irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

13. **Counterparts.** This Agreement may be executed and delivered (including by electronic mail attaching a portable document file (.pdf)) in one or more counterparts and, if executed in more than one counterpart, the executed counterparts shall each be deemed to be an original and all such counterparts shall together constitute one and the same instrument.

14. **General Provisions.** This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof, including that certain engagement letter (other than Sections 5, 11, 16 and 17 thereof), dated November 27, 2019, by and between the Company and the Representative. This Agreement may not be amended or modified unless in writing by all of the parties hereto, and no condition herein (express or implied) may be waived unless waived in writing by each party whom the condition is meant to benefit. The Section headings herein are for the convenience of the parties only and shall not affect the construction or interpretation of this Agreement. The invalidity or unenforceability of any Section, paragraph or provision of this Agreement shall not affect the validity or enforceability of any other Section, paragraph or provision hereof. If any Section, paragraph or provision of this Agreement is for any reason determined to be invalid or unenforceable, there shall be deemed to be made such minor changes (and only such minor changes) as are necessary to make it valid and enforceable.

[Signature Page Follows]

Please sign and return to the Company the enclosed duplicates of this letter whereupon this letter will become a binding agreement between the Company and the several Underwriters in accordance with its terms.

Very truly yours,

**Akoustis Technologies, Inc.**

By /s/ Jeffrey B. Shealy

Name: Jeffrey B. Shealy

Its: Chief Executive Officer

Confirmed as of the date first  
above mentioned, on behalf of itself  
and the several Underwriters named  
in Schedule I hereto.

**Craig-Hallum Capital Group LLC**

By /s/ Rick Hartfiel

Name Rick Hartfiel

Its Director of Investment Banking

*[Signature Page to Underwriting Agreement]*

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**SCHEDULE I**

**Underwriters**

<u>Underwriter</u>	<u>Number of Firm Shares (1)</u>
Craig-Hallum Capital Group LLC	3,120,000
Roth Capital Partners, LLC	1,200,000
Loop Capital Markets LLC	480,000
Total	<u>4,800,000</u>

- (1) The Underwriters may purchase up to an additional 720,000 Option Shares, to the extent the option described in Section 3(b) of the Agreement is exercised, in the proportions and in the manner described in the Agreement.
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**SCHEDULE II**

**Certain Permitted Free Writing Prospectuses**

None.

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**SCHEDULE III**

**Pricing Information**

Firm Shares: 4,800,000 shares

Option Shares: 720,000 shares

Price to the public: \$6.25 per share

Price to the Underwriter: \$5.875 per share

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**SCHEDULE IV**

**List of Individuals and Entities Executing Lock-Up Agreements**

Jeffrey B. Shealy  
Kenneth E. Boller  
Rohan Houlden  
David M. Aichele  
Steven P. DenBaars  
Arthur E. Geiss  
Jeffrey K. McMahon  
Jerry D. Neal  
Suzanne B. Rudy

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**EXHIBIT A**

**Form of Common Stock Lock-Up Agreement**

Date: \_\_\_\_\_

Craig-Hallum Capital Group LLC  
222 South Ninth Street, Suite 350  
Minneapolis, Minnesota 55402

Ladies and Gentlemen:

As an inducement to Craig-Hallum Capital Group LLC (the "**Underwriter**") to execute a purchase agreement (the "**Purchase Agreement**") providing for a public offering (the "**Offering**") of common stock, par value \$0.001 per share (the "**Common Stock**"), or other securities, of Akoustis Technologies, Inc., a Delaware corporation, and any successor (by merger or otherwise) thereto (the "**Company**"), the undersigned hereby agrees that without, in each case, the prior written consent of the Underwriter during the period specified in the second succeeding paragraph (the "**Lock-Up Period**"), the undersigned will not: (1) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, make any short sale or otherwise transfer or dispose of, directly or indirectly, any shares of the Company's Common Stock or any securities convertible into, exercisable or exchangeable for or that represent the right to receive Common Stock (including without limitation, Common Stock which may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations of the Securities and Exchange Commission and securities which may be issued upon exercise of a stock option or warrant) whether now owned or hereafter acquired (the "**Undersigned's Securities**"); (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Undersigned's Securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise; (3) make any demand for or exercise any right with respect to, the registration of any Common Stock or any security convertible into or exercisable or exchangeable for Common Stock; or (4) publicly disclose the intention to do any of the foregoing.

The undersigned agrees that the foregoing restrictions preclude the undersigned from engaging in any hedging or other transaction which is designed to or which reasonably could be expected to lead to or result in a sale or disposition of the Undersigned's Securities even if such Securities would be disposed of by someone other than the undersigned. Such prohibited hedging or other transactions would include without limitation any short sale or any purchase, sale or grant of any right (including without limitation any put or call option) with respect to any of the Undersigned's Securities or with respect to any security that includes, relates to, or derives any significant part of its value from such Securities.

The initial Lock-Up Period will commence on the date of this Common Stock Lock-Up Agreement (this "**Agreement**") and continue and include the date ninety (90) days after the date of the final prospectus used to sell Common Stock in the Offering pursuant to the Purchase Agreement.



Notwithstanding the foregoing, the undersigned may transfer the Undersigned's Securities (i) as a *bona fide* gift or gifts, (ii) to any trust for the direct or indirect benefit of the undersigned or the immediate family of the undersigned, (iii) if the undersigned is a corporation, partnership, limited liability company, trust or other business entity (1) to another corporation, partnership, limited liability company, trust or other business entity that is a direct or indirect affiliate (as defined in Rule 405 promulgated under the Securities Act of 1933, as amended) of the undersigned or (2) by distributions of shares of Common Stock or any security convertible into or exercisable for Common Stock to limited partners, limited liability company members or stockholders of the undersigned, (iv) if the undersigned is a trust, to the beneficiary of such trust, (v) by testate succession or intestate succession, or (vi) pursuant to the Purchase Agreement; *provided*, in the case of clauses (i) through (v), that (x) such transfer shall not involve a disposition for value, (y) the transferee agrees in writing with the Underwriter to be bound by the terms of this Agreement, and (z) no filing by any party under Section 16(a) of the Securities Exchange Act of 1934, as amended (the "*Exchange Act*"), shall be required or shall be made voluntarily in connection with such transfer. For purposes of this Agreement, "immediate family" shall mean any relationship by blood, marriage or adoption, nor more remote than first cousin.

In addition, the foregoing restrictions shall not apply to (i) the exercise of stock options granted pursuant to the Company's equity incentive plans; *provided* that such restrictions shall apply to any of the Undersigned's Securities issued upon such exercise, (ii) the establishment of any contract, instruction or plan that satisfies all of the requirements of Rule 10b5-1(c)(1)(i)(B) under the Exchange Act (a "*Plan*"), or (iii) the transfer of the Undersigned's Securities pursuant to any Plan established prior to the date hereof; *provided* such Plan is described in reasonable detail in the prospectus supplement relating to the Offering; *provided* further that, with respect to any Plan established on or after the date hereof, no sales of the Undersigned's Securities shall be made pursuant to such a Plan prior to the expiration of the Lock-Up Period, and such a Plan may only be established if no public announcement of the establishment or existence thereof and no filing with the Securities and Exchange Commission or other regulatory authority in respect thereof or transactions thereunder or contemplated thereby, by the undersigned, the Company or any other person, shall be required, and no such announcement or filing is made voluntarily, by the undersigned, the Company or any other person, prior to the expiration of the Lock-Up Period.

In furtherance of the foregoing, the Company and its transfer agent and registrar are hereby authorized to decline to make any transfer of shares of Common Stock if such transfer would constitute a violation or breach of this Agreement.

The undersigned hereby represents and warrants that the undersigned has full power and authority to enter into this Agreement and that upon request, the undersigned will execute any additional documents necessary to ensure the validity or enforcement of this Agreement. All authority herein conferred or agreed to be conferred and any obligations of the undersigned shall be binding upon the successors, assigns, heirs or personal representatives of the undersigned.

The undersigned understands that the undersigned shall be released from all obligations under this Agreement if (i) the Company notifies the Underwriter that it does not intend to proceed with the Offering, (ii) the Purchase Agreement does not become effective, or if the Purchase Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to payment for and delivery of the Common Stock to be sold thereunder, or (iii) the Offering is not completed by January 31, 2020.

The undersigned understands that the Underwriter is entering into the Purchase Agreement and proceeding with the Offering in reliance upon this Agreement.

This Agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

Very truly yours,

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Printed Name of Holder

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Signature

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Printed Name and Title of Person Signing  
*(if signing as custodian, trustee, or on behalf of an entity)*

The logo for K&L GATES, featuring the company name in white, uppercase letters on a dark blue rectangular background.

December 16, 2019

Akoustis Technologies, Inc.  
9805 Northcross Center Court, Suite A  
Huntersville, NC 28078

Ladies and Gentlemen:

We have acted as your counsel in connection with the issuance and sale of 5,520,000 shares (the “Shares”) of common stock, par value \$0.001 per share (“Common Stock”), of Akoustis Technologies, Inc., a Delaware corporation (the “Company”), pursuant to the Underwriting Agreement dated December 12, 2019 (the “Underwriting Agreement”) by and between the Company and Craig-Hallum Capital Group LLC, as representative of the several underwriters named therein. In accordance with the Securities Act of 1933, as amended (the “Securities Act”), and the rules and regulations promulgated thereunder, the Company has prepared and filed with the Securities and Exchange Commission (the “SEC”) on October 1, 2018 a Registration Statement on Form S-3 (Registration No. 333-227637), declared effective by the SEC on October 5, 2018 (the “Registration Statement”), including a base prospectus dated October 5, 2018 (the “Base Prospectus”), a preliminary prospectus supplement dated December 11, 2019 (the “Preliminary Prospectus Supplement”) and a final prospectus supplement dated December 12, 2019 (the “Final Prospectus Supplement”).

You have requested our opinion as to the matters set forth below in connection with the issuance of the Shares. For purposes of rendering that opinion, we have examined (i) the Registration Statement, (ii) the Base Prospectus, insofar as it pertains to the offering of the Shares, as supplemented by the Preliminary Prospectus Supplement and Final Prospectus Supplement, (iii) the Underwriting Agreement, (iv) the Company’s Certificate of Incorporation, as amended through the date hereof, (v) the stock ledger of Common Stock and (vi) the corporate action of the Company’s Board of Directors which provides for the issuance of the Shares, and we also have made such investigation of law as we have deemed appropriate. We have examined and relied upon certificates of public officials and, as to certain matters of fact that are material to our opinion, we have also relied on a certificate of an officer of the Company. Other than our review of the documents listed in (i) through (vii) above, we have not reviewed any other documents or made any independent investigation for the purpose of rendering this opinion. For the purposes of this opinion letter, we have made assumptions that are customary in opinion letters of this kind, including the assumptions that each document submitted to us is accurate and complete, that each such document that is an original is authentic, that each such document that is a copy conforms to an authentic original, that all signatures on each such document are genuine and that the Company is and shall remain at all times a corporation duly incorporated, validly existing and in good standing under the laws of the State of Delaware. We have further assumed the legal capacity of natural persons, and we have assumed that the Underwriting Agreement is enforceable against each of the parties thereto. We have not verified any of those assumptions.

K&L GATES LLP  
HEARST TOWER 47TH FLOOR 214 NORTH TRYON STREET CHARLOTTE NC 28202  
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Our opinion set forth below is limited to the Delaware General Corporation Law (the "DGCL"), including reported judicial decisions interpreting the DGCL.

Based upon and subject to the foregoing, it is our opinion that the Shares are duly authorized for issuance by the Company and, when issued and paid for as described in the Final Prospectus Supplement and pursuant to the Underwriting Agreement, will be validly issued, fully paid, and nonassessable.

We hereby consent to the filing of this opinion letter with the SEC as Exhibit 5.1 to the Company's Current Report on Form 8-K dated December 16, 2019 and its incorporation by reference in the Registration Statement. We also consent to the reference to our Firm in the Preliminary Prospectus Supplement and the Final Prospectus Supplement under the caption "Legal Matters." In giving this consent, we do not thereby admit that we are experts with respect to any part of the Registration Statement, Preliminary Prospectus Supplement or Final Prospectus Supplement within the meaning of the term "expert" as used in Section 11 of the Securities Act or the rules and regulations promulgated thereunder by the SEC, nor do we admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the SEC promulgated thereunder.

Very truly yours,

/s/ K&L Gates LLP

K&L Gates LLP

**Akoustis Announces Proposed Public Offering of Common Stock**

Charlotte, NC, December 11, 2019 (GLOBE NEWSWIRE) - Akoustis Technologies, Inc. (Nasdaq: AKTS) (“Akoustis” or the “Company”), an integrated device manufacturer of patented bulk acoustic wave (“BAW”) high-band radio frequency (“RF”) filters for mobile and other wireless applications, announced today that it intends to offer and sell shares of its common stock in an underwritten public offering.

Akoustis expects to grant the underwriter a 30-day option to purchase additional shares of common stock sold in the offering solely to cover over-allotments. The offering is subject to market and other conditions, and there can be no assurance as to whether or when such offering may be completed, or as to the actual size or terms of such offering.

Akoustis intends to use the net proceeds from the proposed offering to fund operations and the growth of its business, including for capital expenditures, working capital, research and development, the commercialization of its technology and other general corporate purposes.

Craig-Hallum Capital Group LLC is acting as sole book-running manager for the offering.

A shelf registration statement relating to the shares of common stock to be issued in the proposed offering was filed with the Securities and Exchange Commission (the “SEC”) and is effective. A preliminary prospectus supplement and accompanying prospectus describing the terms of the proposed offering will be filed with the SEC. The shares of common stock may be offered only by means of a prospectus, including a prospectus supplement, forming a part of the effective registration statement. Copies of the preliminary prospectus supplement and the accompanying prospectus relating to the securities being offered may be obtained, when available, from Craig-Hallum Capital Group LLC, 222 South Ninth Street, Suite 350, Minneapolis, Minnesota 55402, by telephone at 612-334-6300 or by email at [prospectus@chlm.com](mailto:prospectus@chlm.com). Electronic copies of the preliminary prospectus supplement and accompanying prospectus will also be available on the SEC’s website at <http://www.sec.gov>.

This press release does not constitute an offer to sell, or the solicitation of an offer to buy, the shares of common stock, nor will there be any sale of the shares of common stock in any state or other jurisdiction in which such offer, solicitation or sale is not permitted.

**About Akoustis Technologies, Inc.**

Akoustis® (<http://www.akoustis.com>) is a high-tech BAW RF filter solutions company that is pioneering next-generation materials science and microelectromechanical systems (“MEMS”) wafer manufacturing to address the market requirements for improved RF filters - targeting higher bandwidth, higher operating frequencies and higher output power compared to incumbent polycrystalline BAW technology deployed today. The Company utilizes its proprietary XBAW manufacturing process to produce bulk acoustic wave RF filters for mobile and other wireless markets, which facilitate signal acquisition and accelerate band performance between the antenna and digital back end. Superior performance is driven by the significant advances of high-purity, single-crystal and associated piezoelectric materials and the resonator-filter process technology which drives electro-mechanical coupling and translates to wide filter bandwidth.

Akoustis plans to service the fast growing multi-billion-dollar RF filter market using its integrated device manufacturer (IDM) business model. The Company owns and operates a 120,000 sq. ft. ISO-9001:2015 certified commercial wafer-manufacturing facility located in Canandaigua, NY, which includes a class 100 / class 1000 cleanroom facility - tooled for 150-mm diameter wafers - for the design, development, fabrication and packaging of RF filters, MEMS and other semiconductor devices. Akoustis Technologies, Inc. is headquartered in the Piedmont technology corridor near Charlotte, North Carolina.

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## Forward-Looking Statements

This press release includes “forward-looking statements” within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, that are intended to be covered by the “safe harbor” created by those sections. These forward-looking statements include, but are not limited to, statements regarding the proposed public offering of common stock and the intended use of the net proceeds of such public offering. Forward-looking statements include all statements that are not historical facts and typically are identified by use of terms such as “may,” “will,” “should,” “could,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “intend,” “forecast,” “seek,” “potential,” “continue” and similar words, although some forward-looking statements are expressed differently. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, these forward-looking statements are based on management’s current beliefs, expectations and assumptions and are subject to risks and uncertainties. Factors that could cause actual results to differ materially from those currently anticipated include, without limitation, risks relating to whether the Company will consummate the proposed offering; market and other general economic conditions; whether the Company will be able to satisfy the conditions required to close any sale of common stock in the proposed offering; the fact that Company’s management will have broad discretion in the use of the proceeds from any sale of the common stock in the proposed offering; the results of the Company’s research and development activities, including uncertainties relating to semiconductor process manufacturing; the development of the Company’s XBAW™ technology and products presently under development and the anticipated timing of such development; the Company’s ability to protect its intellectual property rights that are valuable to its business, including patent and other intellectual property rights; the Company’s ability to successfully manufacture, market and sell products based on the Company’s technologies; the Company’s ability to achieve qualification of its products for commercial manufacturing in a timely manner and the size and growth of the potential markets for any products so qualified; the rate and degree of market acceptance of any of the Company’s products; the Company’s ability to raise funding to support operations and the continued development and qualification of its products and the technologies underlying them; and the Company’s ability to service its outstanding indebtedness. These and other risks and uncertainties are described in more detail in the Risk Factors and Management’s Discussion and Analysis of Financial Condition and Results of Operations sections of the Company’s most recent Annual Report on Form 10-K and in subsequently filed Quarterly Reports on Form 10-Q and the Risk Factors sections of the preliminary prospectus supplement describing the terms of the proposed offering that will be filed with the SEC. Considering these risks, uncertainties and assumptions, the forward-looking statements regarding future events and circumstances discussed in this document may not occur, and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. You should not rely upon forward-looking statements as predictions of future events. The forward-looking statements included in this document speak only as of the date hereof and, except as required by law, we undertake no obligation to update publicly or privately any forward-looking statements, whether written or oral, for any reason after the date of this document to conform these statements to new information, actual results or to changes in our expectations.

### Contact:

COMPANY:  
Tom Sepenzis  
Akoustis Technologies  
VP of Corporate Development & IR  
(980) 689-4961  
tsepenzis@akoustis.com

The Del Mar Consulting Group, Inc.  
Robert B. Prag, President  
858-794-9500  
bprag@delmarconsulting.com

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**Akoustis Announces Pricing of Public Offering of Common Stock**

Charlotte, NC, December 12, 2019 (GLOBE NEWSWIRE) - Akoustis Technologies, Inc. (Nasdaq: AKTS) (“Akoustis” or the “Company”), an integrated device manufacturer (“IDM”) of patented bulk acoustic wave (“BAW”) high-band radio frequency (“RF”) filters for mobile and other wireless applications, announced today that it has priced its underwritten public offering of 4,800,000 shares of its common stock at a public offering price of \$6.25 per share.

Akoustis expects the gross proceeds from the offering to be approximately \$30.0 million, before deducting the underwriting discount and other estimated offering expenses payable by Akoustis. Net proceeds, after the underwriting discount, but before estimated expenses of the offering payable by Akoustis, are expected to be approximately \$28.2 million.

Akoustis intends to use the net proceeds from the offering to fund operations and the growth of its business, including for capital expenditures, working capital, research and development, the commercialization of its technology and other general corporate purposes.

Akoustis has granted the underwriters in the offering a 30-day option to purchase up to 720,000 additional shares of common stock solely to cover over-allotments. Akoustis expects to close the offering, subject to market and other conditions, on or about December 16, 2019.

Craig-Hallum Capital Group LLC is acting as sole book-running manager for the offering, and Roth Capital Partners and Loop Capital Markets are acting as co-managers for the offering.

A shelf registration statement relating to the shares of common stock to be issued in the offering was filed with the Securities and Exchange Commission (the “SEC”) and is effective. A preliminary prospectus supplement and accompanying prospectus describing the terms of the offering have been filed with the SEC and a final prospectus supplement and accompanying prospectus with respect to the offering will be filed with the SEC. Copies of the final prospectus supplement and the accompanying prospectus relating to the securities being offered may be obtained, when available, from Craig-Hallum Capital Group LLC, 222 South Ninth Street, Suite 350, Minneapolis, Minnesota 55402, by telephone at 612-334-6300 or by email at [prospectus@chlm.com](mailto:prospectus@chlm.com). Electronic copies of the final prospectus supplement and accompanying prospectus will also be available on the SEC’s website at <http://www.sec.gov>.

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## Contact:

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