

**AMENDED AND RESTATED
BYLAWS OF
ZHONE TECHNOLOGIES, INC.**

ARTICLE I

Offices

SECTION 1. Registered Office. The registered office of the Corporation in the State of Delaware shall be located at 1209 Orange Street, Wilmington, Delaware. The name of the Corporation's registered agent at such address shall be Corporation Trust Center. The registered office and/or registered agent of the Corporation may be changed from time to time by action of the Board of Directors.

SECTION 2. Other Offices. The Corporation may have an office or offices other than said registered office at such place or places, either within or without the State of Delaware, as the Board of Directors shall from time to time determine or the business of the Corporation may require.

ARTICLE II

Meetings of Stockholders

SECTION 1. Place of Meetings. All meetings of the stockholders for the election of directors or for any other purpose shall be held at any such place, either within or without the State of Delaware, as shall be designated from time to time by the Board of Directors and stated in the notice of meeting or in a duly executed waiver thereof.

SECTION 2. Annual Meeting. An annual meeting of stockholders shall be held each year and stated in a notice of meeting or in a duly executed waiver thereof. The date, time and place of such meeting shall be determined by the Chief Executive Officer of the Corporation; provided that the Chief Executive Officer does not act, the Board of Directors shall determine the date, time, and place of such meeting. At such annual meeting, the stockholders shall elect, by a plurality vote, a Board of Directors and transact such other business as may properly be brought before the meeting.

SECTION 3. Special Meetings. Special meetings of stockholders may be called for any purpose by the Board of Directors, Chairman or Chief Executive Officer and may be held at such time and place, within or without the State of Delaware, as shall be stated in a notice of meeting or in a duly executed waiver of notice thereof.

SECTION 4. Notice of Meetings. Except as otherwise expressly required by statute, written notice of each annual and special meeting of stockholders stating the date, place and hour of the meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called, shall be given to each stockholder of record entitled to vote thereat not less

than ten (10) nor more than sixty (60) days before the date of the meeting. Business transacted at any special meeting of stockholders shall be limited to the purposes stated in the notice. Notice shall be given personally or by mail and, if by mail, shall be sent in a postage prepaid envelope, addressed to the stockholder at his address as it appears on the records of the Corporation. Notice by mail shall be deemed given at the time when the same shall be deposited in the United States mail, postage prepaid. Notice of any meeting shall not be required to be given to any person who attends such meeting, except when such person attends the meeting in person or by proxy for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened, or who, either before or after the meeting, shall submit a signed written waiver of notice, in person or by proxy. Neither the business to be transacted at, nor the purpose of, an annual or special meeting of stockholders need be specified in any written waiver of notice.

SECTION 5. List of Stockholders. The officer who has charge of the stock ledger of the Corporation shall prepare and make, at least ten (10) days before each meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, showing the address of and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least ten (10) days prior to the meeting: (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (ii) during ordinary business hours, at the principal place of business of the Corporation. If the meeting is to be held at a place, then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present.

SECTION 6. Quorum; Adjournments. The holders of a majority of the voting power of the issued and outstanding stock of the Corporation entitled to vote thereat, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of stockholders, except as otherwise provided by statute or by the Certificate of Incorporation. If, however, such quorum shall not be present or represented by proxy at any meeting of stockholders, the stockholders entitled to vote thereat, present in person or represented by proxy, shall have the power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum shall be present or represented by proxy. At such adjourned meeting at which a quorum shall be present or represented by proxy, any business may be transacted which might have been transacted at the meeting as originally called. If the adjournment is for more than thirty (30) days, or, if after adjournment a new record date is set, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

SECTION 7. Organization. At each meeting of stockholders, the Chairman of the Board, if one shall have been elected, or, in his absence or if one shall not have been elected, the Chief Executive Officer shall act as chairman of the meeting. The Secretary or, in his absence or inability to act, the person whom the chairman of the meeting shall appoint secretary of the meeting shall act as secretary of the meeting and keep the minutes thereof.

SECTION 8. Order of Business. The order of business at all meetings of the stockholders shall be as determined by the chairman of the meeting.

SECTION 9. Voting. Except as otherwise provided by the Certificate of Incorporation or the General Corporation Law of the State of Delaware, each stockholder of the Corporation shall be entitled at each meeting of stockholders to one (1) vote for each share of capital stock of the Corporation standing in his name on the record of stockholders of the Corporation:

(a) on the date fixed pursuant to the provisions of Section 7 of Article V of these Bylaws as the record date for the determination of the stockholders who shall be entitled to notice of and to vote at such meeting; or

(b) if no such record date shall have been so fixed, then at the close of business on the day next preceding the day on which notice thereof shall be given, or, if notice is waived, at the close of business on the date next preceding the day on which the meeting is held.

Each stockholder entitled to vote at any meeting of stockholders may authorize another person or persons to act for him by a proxy which is in writing or transmitted as permitted by law, including, without limitation, electronically, via telegram, internet, interactive voice response system, or other means of electronic transmission executed or authorized by such stockholder or his attorney-in-fact, but no proxy shall be voted after (3) three years from its date, unless the proxy provides for a longer period. Any such proxy shall be delivered to the secretary of the meeting at or prior to the time designated in the order of business for so delivering such proxies. Any proxy transmitted electronically shall set forth information from which it can be determined by the secretary of the meeting that such electronic transmission was authorized by the stockholder. When a quorum is present at any meeting, the vote of the holders of a majority of the voting power of the issued and outstanding stock of the Corporation entitled to vote thereon, present and voting, in person or represented by proxy, shall decide any question brought before such meeting, unless the question is one upon which by express provision of statute or of the Certificate of Incorporation or of these Bylaws, a different vote is required, in which case such express provision shall govern and control the decision of such question. Unless required by statute, or determined by the chairman of the meeting to be advisable, the vote on any question need not be by ballot. On a vote by ballot, each ballot shall be signed by the stockholder voting, or by his proxy, if there be such proxy, and shall state the number of shares voted and the number of votes to which each share is entitled.

SECTION 10. Inspectors. The Board of Directors may, in advance of any meeting of stockholders, appoint one or more inspectors to act at such meeting or any adjournment thereof. If any of the inspectors so appointed shall fail to appear or act, the chairman of the meeting shall, or if inspectors shall not have been appointed, the chairman of the meeting may, appoint one or more inspectors. Each inspector, before entering upon the discharge of his duties, shall take and sign an oath faithfully to execute the duties of inspector at such meeting with strict impartiality and according to the best of his ability. The inspectors shall determine the number of shares of capital stock of the Corporation outstanding and the voting power of each, the number of shares represented at the meeting, the existence of a quorum, the validity and effect of proxies, and shall receive votes, ballots or consents, hear and determine all challenges and questions arising in

connection with the right to vote, count and tabulate all votes, ballots or consents, determine the results, and do such acts as are proper to conduct the election or vote with fairness to all stockholders. On request of the chairman of the meeting, the inspectors shall make a report in writing of any challenge, request or matter determined by them and shall execute a certificate of any fact found by them. No director or candidate for the office of director shall act as an inspector of an election of directors. Inspectors need not be stockholders.

SECTION 11. Advance Notice Provisions for Election of Directors. Only persons who are nominated in accordance with the following procedures shall be eligible for election as directors of the Corporation. Nominations of persons for election to the Board of Directors may be made at any annual meeting of stockholders, or at any special meeting of stockholders called for the purpose of electing directors as provided under Section 3 of this Article II, (a) by or at the direction of the Board of Directors (or any duly authorized committee thereof) or (b) by any stockholder of the Corporation (i) who is a stockholder of record on the date of the giving of the notice provided for in this Section 11 and on the record date for the determination of stockholders entitled to vote at such meeting and (ii) who complies with the notice procedures set forth in this Section 11.

In addition to any other applicable requirements, for a nomination to be made by a stockholder such stockholder must have given timely notice thereof in proper written form to the Secretary of the Corporation.

To be timely, a stockholder's notice to the Secretary must be delivered to or mailed and received at the principal executive offices of the Corporation (a) in the case of an annual meeting, not less than ninety (90) days prior to the date of the anniversary of the previous year's annual meeting; provided, however, that in the event the annual meeting is scheduled to be held on a date more than thirty (30) days prior to or delayed by more than sixty (60) days after such anniversary date, notice by the stockholder in order to be timely must be so received not later than the later of the close of business ninety (90) days prior to such annual meeting or the tenth (10th) day following the day on which such notice of the date of the annual meeting was mailed or such public disclosure of the date of the annual meeting was made and (b) in the case of a special meeting of stockholders called for the purpose of electing directors, not later than the close of business on the tenth (10th) day following the day on which notice of the date of the special meeting was mailed or public disclosure of the date of the special meeting was made, whichever first occurs.

To be in proper written form, a stockholder's notice to the Secretary must set forth (a) as to each person whom the stockholder proposes to nominate for election as a director (i) the name, age, business address and residence address of the person, (ii) the principal occupation or employment of the person, (iii) the class or series and number of shares of capital stock of the Corporation which are owned beneficially or of record by the person and (iv) any other information relating to the person that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for election of directors pursuant to Section 14 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the rules and regulations promulgated thereunder; and (b) as to the stockholder giving the notice (i) the name and record address of such stockholder, (ii) the class

or series and number of shares of capital stock of the Corporation which are owned beneficially or of record by such stockholder, (iii) a description of all arrangements or understandings between such stockholder and each proposed nominee and any other person or persons (including their names) pursuant to which the nomination(s) are to be made by such stockholder, (iv) a representation that such stockholder intends to appear in person or by proxy at the meeting to nominate the persons named in its notice and (v) any other information relating to such stockholder that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for election of directors pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder. Such notice must be accompanied by a written consent of each proposed nominee to being named as a nominee and to serve as a director if elected.

No person shall be eligible for election as a director of the Corporation unless nominated in accordance with the procedures set forth in this Section 11. If the chairman of the meeting determines that a nomination was not made in accordance with the foregoing procedures, the chairman shall declare to the meeting that the nomination was defective and such defective nomination shall be disregarded.

SECTION 12. Advance Notice Provisions for Business to be Transacted at Annual Meeting. No business may be transacted at an annual meeting of stockholders, other than business that is either (a) specified in the notice of meeting (or any supplement thereto) given by or at the direction of the Board of Directors (or any duly authorized committee thereof), (b) otherwise properly brought before the annual meeting by or at the direction of the Board of Directors (or any duly authorized committee thereof) or (c) otherwise properly brought before the annual meeting by any stockholder of the Corporation (i) who is a stockholder of record on the date of the giving of the notice provided for in this Section 12 and on the record date for the determination of stockholders entitled to vote at such annual meeting and (ii) who complies with the notice procedures set forth in this Section 12.

In addition to any other applicable requirements, for business to be properly brought before an annual meeting by a stockholder, such stockholder must have given timely notice thereof in proper written form to the Secretary of the Corporation.

To be timely, a stockholder's notice to the Secretary must be delivered to or mailed and received at the principal executive offices of the Corporation not less than ninety (90) days prior to the date of the anniversary of the previous year's annual meeting; provided, however, that in the event the annual meeting is scheduled to be held on a date more than thirty (30) days prior to or delayed by more than sixty (60) days after such anniversary date, notice by the stockholder in order to be timely must be so received not later than the later of the close of business ninety (90) days prior to such annual meeting or the tenth (10th) day following the day on which such notice of the date of the annual meeting was mailed or such public disclosure of the date of the annual meeting was made.

To be in proper written form, a stockholder's notice to the Secretary must set forth as to each matter such stockholder proposes to bring before the annual meeting (i) a brief description of the business desired to be brought before the annual meeting and the reasons for conducting

such business at the annual meeting, (ii) the name and record address of such stockholder, (iii) the class or series and number of shares of capital stock of the Corporation which are owned beneficially or of record by such stockholder, (iv) a description of all arrangements or understandings between such stockholder and any other person or persons (including their names) in connection with the proposal of such business by such stockholder and any material interest of such stockholder in such business and (v) a representation that such stockholder intends to appear in person or by proxy at the annual meeting to bring such business before the meeting.

No business shall be conducted at the annual meeting of stockholders except business brought before the annual meeting in accordance with the procedures set forth in this Section 12; provided, however, that, once business has been properly brought before the annual meeting in accordance with such procedures, nothing in this Section 12 shall be deemed to preclude discussion by any stockholder of any such business. If the chairman of an annual meeting determines that business was not properly brought before the annual meeting in accordance with the foregoing procedures, the chairman shall declare to the meeting that the business was not properly brought before the meeting and such business shall not be transacted.

ARTICLE III

Board of Directors

SECTION 1. General Powers. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors. The Board of Directors may exercise all such authority and powers of the Corporation and do all such lawful acts and things as are not by statute or the Certificate of Incorporation directed or required to be exercised or done by the stockholders.

SECTION 2. Number and Election. The number of directors which shall constitute the Board of Directors shall initially be seven (7) but may be increased or decreased from time to time by the Board of Directors; provided, however, that (i) the number of directors shall not be fewer than three (3) or greater than eleven (11), and (ii) no decrease in the number of directors shall shorten the term of any incumbent director. Except as otherwise provided by the Bylaws, the directors shall be elected at the annual meeting of stockholders.

SECTION 3. Place of Meetings. Meetings of the Board of Directors shall be held at such place or places, within or without the State of Delaware, as the Board of Directors may from time to time determine or as shall be specified in the notice of any such meeting.

SECTION 4. Annual Meetings. The Board of Directors shall meet for the purpose of organization, the election of officers and the transaction of other business, as soon as practicable after each annual meeting of stockholders, on the same day and at the same place where such annual meeting shall be held. In the event such annual meeting is not so held, the annual meeting of the Board of Directors may be held at such other time or place (within or without the State of Delaware) as shall be specified in a notice thereof given as hereinafter provided in Section 7 of this Article III.

SECTION 5. Regular Meetings. Regular meetings of the Board of Directors shall be held at such time and place as the Board of Directors may fix. If any day fixed for a regular meeting shall be a legal holiday at the place where the meeting is to be held, then the meeting which would otherwise be held on that day shall be held at the same hour on the next succeeding business day.

SECTION 6. Special Meetings. Special meetings of the Board of Directors may be called by the Chairman of the Board, if one shall have been elected, or by two or more directors of the Corporation or by the Chief Executive Officer.

SECTION 7. Notice of Meetings. Notice of regular meetings of the Board of Directors need not be given except as otherwise required by law or these Bylaws. Notice of each special meeting of the Board of Directors, and of each regular and annual meeting of the Board of Directors for which notice shall be required, shall be given by the Secretary as hereinafter provided in this Section 7, in which notice shall be stated the time and place of the meeting. Except as otherwise required by these Bylaws, such notice need not state the purposes of such meeting. Notice of any special meeting, and of any regular or annual meeting for which notice is required, shall be given to each director at least (a) twenty-four (24) hours before the meeting if by telephone or by being personally delivered or sent by telex, telecopy, or similar means or (b) five (5) days before the meeting if delivered by mail to the director's residence or usual place of business. Such notice shall be deemed to be delivered when deposited in the United States mail so addressed, with postage prepaid, or when transmitted if sent by telex, telecopy, or similar means. Neither the business to be transacted at, nor the purpose of, any special meeting of the Board of Directors need be specified in the notice or waiver of notice of such meeting. Any director may waive notice of any meeting by a writing signed by the director entitled to the notice and filed with the minutes or corporate records.

SECTION 8. Waiver of Notice and Presumption of Assent. Any member of the Board of Directors or any committee thereof who is present at a meeting shall be conclusively presumed to have waived notice of such meeting except when such member attends for the express purpose of objecting at the beginning of the meeting to the transaction of any business because the meeting is not lawfully called or convened. Such member shall be conclusively presumed to have assented to any action taken unless his or her dissent shall be entered in the minutes of the meeting or unless his or her written dissent to such action shall be filed with the person acting as the secretary of the meeting before the adjournment thereof or shall be forwarded by registered mail to the Secretary of the Corporation immediately after the adjournment of the meeting. Such right to dissent shall not apply to any member who voted in favor of such action.

SECTION 9. Quorum and Manner of Acting. A majority of the entire Board of Directors shall constitute a quorum for the transaction of business at any meeting of the Board of Directors, and, except as otherwise expressly required by statute or the Certificate of Incorporation or these Bylaws, the act of a majority of the directors present at any meeting at which a quorum is present shall be the act of the Board of Directors. In the absence of a quorum at any meeting of the Board of Directors, a majority of the directors present thereat may adjourn such meeting to another time and place. Notice of the time and place of any such adjourned

meeting shall be given to all of the directors unless such time and place were announced at the meeting at which the adjournment was taken, in which case such notice shall only be given to the directors who were not present thereat. At any adjourned meeting at which a quorum is present, any business may be transacted which might have been transacted at the meeting as originally called. The directors shall act only as a Board and the individual directors shall have no power as such.

SECTION 10. Organization. At each meeting of the Board of Directors, the Chairman of the Board, if one shall have been elected, or, in the absence of the Chairman of the Board or if one shall not have been elected, the Chief Executive Officer (or, in his absence, another director chosen by a majority of the directors present) shall act as chairman of the meeting and preside thereat. The Secretary or, in his absence, any person appointed by the chairman, shall act as secretary of the meeting and keep the minutes thereof.

SECTION 11. Resignations; Newly Created Directorships; Vacancies; and Removals. Any director of the Corporation may resign at any time by giving notice in writing or by electronic transmission of his resignation to the Corporation. Any such resignation shall take effect at the time specified therein or, if the time when it shall become effective shall not be specified therein, immediately upon its receipt. Unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective. Newly created directorships resulting from any increase in the number of directors or any vacancies in the Board of Directors resulting from death, resignation, retirement, disqualification, removal or any other cause shall be filled as provided in the Certificate of Incorporation. Any director may be removed as provided in the Certificate of Incorporation.

SECTION 12. Compensation. The Board of Directors shall have authority to fix the compensation, including fees and reimbursement of expenses, of directors for services to the Corporation in any capacity.

SECTION 13. Committees. The Board of Directors may, by resolution passed by a majority of the entire Board of Directors, designate one or more committees, including an executive committee, each committee to consist of one or more of the directors of the Corporation. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. Except to the extent restricted by statute or the Certificate of Incorporation, each such committee, to the extent provided in the resolution creating it, shall have and may exercise all the powers and authority of the Board of Directors and may authorize the seal of the Corporation to be affixed to all papers which require it. Each such committee shall serve at the pleasure of the Board of Directors and have such name as may be determined from time to time by resolution adopted by the Board of Directors. Each committee shall keep regular minutes of its meetings and report the same to the Board of Directors.

SECTION 14. Committee Rules. Each committee of the Board of Directors may fix its own rules of procedure and shall hold its meetings as provided by such rules, except as may otherwise be provided by a resolution of the Board of Directors designating such committee. Unless otherwise provided in such a resolution, the presence of at least a majority of the

members of the committee shall be necessary to constitute a quorum. In the event that a member and that member's alternate, if alternates are designated by the Board of Directors as provided in Section 13 of this Article III, of such committee is or are absent or disqualified, the member or members thereof present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in place of any such absent or disqualified member.

SECTION 15. Action by Written Consent. Unless restricted by the Certificate of Incorporation, any action required or permitted to be taken by the Board of Directors or any committee thereof may be taken without a meeting if all members of the Board of Directors or such committee, as the case may be, consent thereto in writing or by electronic transmission, and the writing or writings are filed with the minutes of the proceedings of the Board of Directors or such committee, as the case may be. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

SECTION 16. Telephonic and Other Meetings. Unless restricted by the Certificate of Incorporation, any one or more members of the Board of Directors or any committee thereof may participate in a meeting of the Board of Directors or such committee by means of a conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other. Participation by such means shall constitute presence in person at a meeting.

ARTICLE IV

Officers

SECTION 1. Number and Qualifications. The officers of the Corporation shall be elected by the Board of Directors and shall include the Chief Executive Officer, the President, the Chief Financial Officer, the Chief Technology Officer and the Secretary. The Corporation may also have, at the discretion of the Board of Directors, such other officers as are desired, including a Chairman of the Board, one or more Vice Presidents, one or more Assistant Treasurers, one or more Assistant Secretaries, and such other officers as may be necessary or desirable for the business of the Corporation. In the event there are two or more Vice Presidents, then one or more may be designated as Executive Vice President, Senior Vice President, or other similar or dissimilar title. As the time of the election of officers, the directors may by resolution determine the order of their rank. Any number of offices may be held by the same person, and no officer except the Chairman of the Board, if any, need be a director. In its discretion, the Board of Directors may choose not to fill any office for any period as it may deem advisable, except that the offices of Chief Executive Officer and Secretary shall be filled as expeditiously as possible.

SECTION 2. Election and Term of Office. The officers of the Corporation shall be elected annually by the Board of Directors at its first meeting held after each annual meeting of stockholders or as soon thereafter as conveniently may be. The Chairman of the Board, if any, and Chief Executive Officer shall be elected annually by the Board of Directors at the first meeting of the Board of Directors held after each annual meeting of stockholders or as soon

thereafter as is convenient. Vacancies may be filled or new offices created and filled at any meeting of the Board of Directors. Each officer shall hold office until his successor shall have been duly elected and shall have qualified, or until his death, or until he shall have resigned or have been removed, as hereinafter provided in these Bylaws.

SECTION 3. Resignations. Any officer of the Corporation may resign at any time by giving written notice of his resignation to the Corporation. Any such resignation shall take effect at the time specified therein or, if the time when it shall become effective shall not be specified therein, immediately upon receipt. Unless otherwise specified therein, the acceptance of any such resignation shall not be necessary to make it effective.

SECTION 4. Removal. Any officer of the Corporation may be removed, either with or without cause, at any time, by the Board of Directors at any meeting thereof.

SECTION 5. Vacancies. Any vacancy occurring in any office because of death, resignation, removal, disqualification or otherwise, may be filled by the Board of Directors for the unexpired portion of the term by the Board of Directors then in office.

SECTION 6. Compensation. The compensation of the officers of the Corporation for their services as such officers shall be fixed from time to time by the Board of Directors. An officer of the Corporation shall not be prevented from receiving compensation by reason of the fact that he is also a director of the Corporation.

SECTION 7. Chairman of the Board. The Chairman of the Board, if such an officer be elected, shall, if present, preside at all meetings of the Board of Directors and exercise and perform such other powers and duties as may be from time to time assigned to him by the Board of Directors or prescribed by these Bylaws. If there is no Chief Executive Officer, the Chairman of the Board shall in addition be the Chief Executive Officer of the Corporation and shall have the powers and duties prescribed in Section 8 of this Article IV.

SECTION 8. Chief Executive Officer. The Chief Executive Officer shall be the chief executive officer of the Corporation and shall have the powers and perform the duties incident to that position. He shall, in the absence of the Chairman of the Board, or if a Chairman of the Board shall not have been elected, preside at each meeting of the Board of Directors or the stockholders. He shall be an ex-officio member of all committees. Subject to the powers of the Board of Directors, he shall be in the general and active charge of the entire business and affairs of the Corporation, including authority over its officers, agents and employees, and shall have such other duties as may from time to time be assigned to him by the Board of Directors. The Chief Executive Officer shall see that all orders and resolutions of the Board of Directors are carried into effect, and execute bonds, mortgages and other contracts requiring a seal under the seal of the Corporation, except where required or permitted by law to be otherwise signed and executed and except where the signing and execution thereof shall be expressly delegated by the Board of Directors to some other officer or agent of the Corporation.

SECTION 9. President. The President shall be the chief operating officer of the Corporation. He shall perform all duties incident to the office of President, and be responsible for

the general direction of the operations of the business, reporting to the Chief Executive Officer, and shall have such other duties as may from time to time be assigned to him by the Board of Directors or as may be provided in these Bylaws. At the written request of the Chief Executive Officer, or in his absence or in the event of his inability to act, the President shall perform the duties of the Chief Executive Officer, and, when so acting, shall have the powers of and be subject to the restrictions placed upon the Chief Executive Officer in respect of the performance of such duties.

SECTION 10. Vice President. Each Vice President shall perform all such duties as from time to time may be assigned to him by the Board of Directors. At the written request of the President, or in the absence or disability of the President, the Vice Presidents, in order of their rank as fixed by the Board of Directors, or if not ranked, the Vice President designated by the Board of Directors, shall perform the duties of the President, and when so acting shall have all the powers of and be subject to all the restrictions placed upon the President in respect of the performance of such duties.

SECTION 11. Chief Financial Officer. The Chief Financial Officer shall

(a) have charge and custody of, and be responsible for, all the funds and securities of the Corporation;

(b) keep full and accurate accounts of receipts and disbursements in books belonging to the Corporation;

(c) deposit all moneys and other valuables to the credit of the Corporation in such depositories as may be designated by the Board of Directors or pursuant to its direction;

(d) receive, and give receipts for, moneys due and payable to the Corporation from any source whatsoever;

(e) disburse the funds of the Corporation and supervise the investments of its funds, taking proper vouchers therefore;

(f) render to the Board of Directors, whenever the Board of Directors may require, an account of the financial condition of the Corporation; and

(g) in general, perform all duties incident to the office of Chief Financial Officer and such other duties as from time to time may be assigned to him by the Board of Directors.

The Chief Financial Officer may also be the Treasurer if so determined by the Board of Directors.

SECTION 12. Chief Technology Officer. The Chief Technology Officer, if one shall have been elected, shall perform the duties, undertake the responsibilities and exercise the authority customarily performed, undertaken and exercised by persons situated in a similar executive capacity, including, but not limited to, technology development, product performance

and reliability, and all aspects for maintaining the technological excellence of the Corporation's products and services.

SECTION 13. Secretary. The Secretary shall

(a) keep or cause to be kept in one or more books provided for the purpose, the minutes of all meetings of the Board of Directors, the committees of the Board of Directors and the stockholders;

(b) see that all notices are duly given in accordance with the provisions of these By-laws and as required by law;

(c) be custodian of the records and the seal of the Corporation and affix and attest the seal to all certificates for shares of the Corporation (unless the seal of the Corporation on such certificates shall be a facsimile, as hereinafter provided) and affix and attest the seal to all other documents to be executed on behalf of the Corporation under its seal;

(d) see that the books, reports, statements, certificates and other documents and records required by law to be kept and filed are properly kept and filed; and

(e) in general, perform all duties incident to the office of Secretary and such other duties as from time to time may be assigned to him by the Board of Directors.

SECTION 14. The Assistant Treasurer. The Assistant Treasurer, or if there shall be more than one, the Assistant Treasurers in the order determined by the Board of Directors (or, if there be no such determination, then in the order of their election), shall, in the absence of the Treasurer or in the event of his inability to act or his failure to act (in violation of a duty to act or in contravention of direction to act by the Board of Directors), perform the duties and exercise the powers of the Treasurer and shall perform such other duties as from time to time may be assigned by the Board of Directors.

SECTION 15. The Assistant Secretary. The Assistant Secretary, or if there be more than one, the Assistant Secretaries in the order determined by the Board of Directors (or if there be no such determination, then in the order of their election), shall, in the absence of the Secretary or in the event of his inability to act or his failure to act (in violation of a duty to act or in contravention of direction to act by the Board of Directors), perform the duties and exercise the powers of the Secretary and shall perform such other duties as from time to time may be assigned by the Board of Directors.

SECTION 16. Other Officers, Assistant Officers and Agents. Officers, assistant officers and agents, if any, other than those whose duties are provided for in these Bylaws, shall have such authority and perform such duties as may from time to time be prescribed by resolution of the Board of Directors.

SECTION 17. Officers' Bonds or Other Security. If required by the Board of Directors, any officer of the Corporation shall give a bond or other security for the faithful performance of his duties, in such amount and with such surety as the Board of Directors may require.

SECTION 18. Absence or Disability of Officers. In the case of the absence or disability of any officer of the Corporation and of any person hereby authorized to act in such officer's place during such officer's absence or disability, the Board of Directors may by resolution delegate the powers and duties of such officer to any other officer or to any director, or to any other person whom it may select.

ARTICLE V

Stock Certificates and Their Transfer

SECTION 1. Stock Certificates. The Board of Directors may issue stock certificates, or may provide by resolution or resolutions that some or all of any or all classes or series of stock of the Corporation shall be uncertificated shares of stock. Notwithstanding the adoption of such a resolution by the Board of Directors, every holder of stock represented by a certificate and, upon request, every holder of uncertificated shares shall be entitled to have a certificate, signed by, or in the name of the Corporation by, the Chairman of the Board or, the Chief Executive Officer, the President or a Vice-President and by the Chief Financial Officer or an Assistant Treasurer or the Secretary or an Assistant Secretary of the Corporation, certifying the number of shares owned by him or her in the Corporation. A certificate representing shares issued by the Corporation shall, if the Corporation is authorized to issue more than one class or series of stock, set forth upon the face or back of the certificate, or shall state that the Corporation will furnish to any stockholder upon request and without charge, a full statement of the designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. The Corporation shall furnish to any holder of uncertificated shares, upon request and without charge, a full statement of the designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Any request by a holder for a certificate shall be in writing and directed to the Secretary of the Corporation.

SECTION 2. Facsimile Signatures. Any or all of the signatures on a certificate may be a facsimile, engraved or printed. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if he or she were such officer, transfer agent or registrar at the date of issue.

SECTION 3. Lost Certificates. The Board of Directors may direct a new certificate or certificates to be issued in place of any certificate or certificates theretofore issued by the Corporation alleged to have been lost, stolen, or destroyed. When authorizing such issue of a new certificate or certificates, the Board of Directors may, in its discretion and as a condition precedent to the issuance thereof, require the owner of such lost, stolen, or destroyed certificate

or certificates, or his legal representative, to give the Corporation a bond in such sum as it may direct sufficient to indemnify it against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate.

SECTION 4. Transfers of Stock. Upon surrender to the Corporation or the transfer agent of the Corporation of a certificate for shares duly endorsed or accompanied by proper evidence of succession, assignment or authority to transfer, it shall be the duty of the Corporation to issue a new certificate to the person entitled thereto, cancel the old certificate and record the transaction upon its records; provided, however, that the Corporation shall be entitled to recognize and enforce any lawful restriction on transfer. Whenever any transfer of stock shall be made for collateral security, and not absolutely, it shall be so expressed in the entry of transfer if, when the certificates are presented to the Corporation for transfer, both the transferor and the transferee request the Corporation to do so.

SECTION 5. Transfer Agents and Registrars. The Board of Directors may appoint, or authorize any officer or officers to appoint, one or more transfer agents and one or more registrars.

SECTION 6. Regulations. The Board of Directors may make such additional rules and regulations, not inconsistent with these Bylaws, as it may deem expedient concerning the issue, transfer and registration of certificates for shares of stock of the Corporation.

SECTION 7. Fixing the Record Date. In order that the Corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board of Directors may fix, in advance, a record date, which shall not be more than sixty (60) nor less than ten (10) days before the date of such meeting, nor more than sixty (60) days prior to any other action. If no record date is fixed by the Board of Directors, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be the close of business on the day next preceding the day on which notice is given, or if notice is waived, at the close of business on the day next preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the adjourned meeting.

SECTION 8. Registered Stockholders. The Corporation shall be entitled to recognize the exclusive right of a person registered on its records as the owner of shares of stock to receive dividends and to vote as such owner, shall be entitled to hold liable for calls and assessments a person registered on its records as the owner of shares of stock, and shall not be bound to recognize any equitable or other claim to or interest in such share or shares of stock on the part of any other person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VI

General Provisions

SECTION 1. Dividends. Subject to the provisions of statutes and the Certificate of Incorporation, dividends upon the shares of capital stock of the Corporation may be declared by the Board of Directors at any regular or special meeting. Dividends may be paid in cash, in property or in shares of stock of the Corporation, unless otherwise provided by statute or the Certificate of Incorporation.

SECTION 2. Reserves. Before payment of any dividend, there may be set aside out of any funds of the Corporation available for dividends such sum or sums as the Board of Directors may, from time to time, in its absolute discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the Corporation or for such other purpose as the Board of Directors may think conducive to the interests of the Corporation. The Board of Directors may modify or abolish any such reserves in the manner in which it was created.

SECTION 3. Seal. The seal of the Corporation shall be in such form as shall be approved by the Board of Directors, which form may be changed by resolution of the Board of Directors.

SECTION 4. Fiscal Year. The fiscal year of the Corporation shall end on December 31 of each fiscal year and may thereafter be changed by resolution of the Board of Directors.

SECTION 5. Checks, Notes, Drafts, Etc. All checks, notes, drafts or other orders for the payment of money of the Corporation shall be signed, endorsed or accepted in the name of the Corporation by such officer, officers, person or persons as from time to time may be designated by the Board of Directors or by an officer or officers authorized by the Board of Directors to make such designation.

SECTION 6. Execution of Contracts, Deeds, Etc. The Board of Directors may authorize any officer or officers, agent or agents, in the name and on behalf of the Corporation to enter into or execute and deliver any and all deeds, bonds, mortgages, contracts and other obligations or instruments, and such authority may be general or confined to specific instances.

SECTION 7. Loans. The Corporation may lend money to, or guarantee any obligation of, or otherwise assist any officer or other employee of the Corporation or of its subsidiary, including any officer or employee who is a director of the Corporation or its subsidiary, whenever, in the judgment of the directors, such loan, guaranty or assistance may reasonably be expected to benefit the Corporation. The loan, guaranty or other assistance may be with or without interest, and may be unsecured, or secured in such manner as the board of Directors shall approve, including, without limitation, a pledge of shares of stock of the Corporation. Nothing in this section contained shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the Corporation at common law or under any statute.

SECTION 8. Voting of Stock in Other Corporations. Unless otherwise provided by resolution of the Board of Directors, the Chairman of the Board, or the Chief Executive Officer, from time to time, may (or may appoint one or more attorneys or agents to) cast the votes which the Corporation may be entitled to cast as a shareholder or otherwise in any other corporation, any of whose shares or securities may be held by the Corporation, at meetings of the holders of the shares or other securities of such other corporation. In the event one or more attorneys or agents are appointed, the Chairman of the Board, or the Chief Executive Officer may instruct the person or persons so appointed as to the manner of casting such votes or giving such consent. The Chairman of the Board, or the Chief Executive Officer may, or may instruct the attorneys or agents appointed to, execute or cause to be executed in the name and on behalf of the Corporation and under its seal or otherwise, such written proxies, consents, waivers or other instruments as may be necessary or proper in the circumstances.

SECTION 9. Inspection of Books and Records. Any stockholder of record, in person or by attorney or other agent, shall, upon written demand under oath stating the purpose thereof, have the right during the usual hours for business to inspect for any proper purpose the Corporation's stock ledger, a list of its stockholders, and its other books and records, and to make copies or extracts therefrom. A proper purpose shall mean any purpose reasonably related to such person's interest as a stockholder. In every instance where an attorney or other agent shall be the person who seeks the right of inspection, the demand under oath shall be accompanied by a power of attorney or such other writing which authorizes the attorney or other agent to so act on behalf of the stockholder. The demand under oath shall be directed to the Corporation at its registered office in the State of Delaware or at its principal place of business.

SECTION 10. Inconsistency Provisions. In the event that any provision of these Bylaws is or becomes inconsistent with any provision of the Certificate of Incorporation, the General Corporation Law of the State of Delaware or any other applicable law, the provision of these Bylaws shall not be given any effect to the extent of such inconsistency but shall otherwise be given full force and effect.

ARTICLE VII

Amendments

These Bylaws may be amended or repealed or new Bylaws adopted only in accordance with Article V of the Certificate of Incorporation.

CERTIFICATE OF SECRETARY

I, the undersigned, do hereby certify:

(1) That I am the duly elected and acting Secretary of Zhone Technologies, Inc., a Delaware corporation (the "Corporation"); and

(2) That the foregoing Amended and Restated Bylaws constitute the Amended and Restated Bylaws of the Corporation as duly adopted by the Board of Directors of the Corporation on July 25, 2003.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 16th day of February, 2005.

/s/ Kirk Misaka
Kirk Misaka, Secretary