

**FIFTH AMENDED AND RESTATED CERTIFICATE OF INCORPORATION**

**ARCWAVE, INC.**

Arcwave, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Company") hereby certifies as follows:

- A. The original Certificate of Incorporation of the Company was filed with the Secretary of State of the State of Delaware on August 18, 2000 under its original name of Cowave Networks, Inc.; the First Amended and Restated Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on October 5, 2000, the Second Amended and Restated Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on April 24, 2001, the Third Amended and Restated Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on December 11, 2002 and the Fourth Amended and Restated Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on May 8, 2003.
- B. Pursuant to Sections 242 and 245 of the General Corporation Law of the State of Delaware, this Fifth Amended and Restated Certificate of Incorporation restates and amends the provisions of the Fourth Amended and Restated Certificate of Incorporation of the Company.
- C. This Fifth Amended and Restated Certificate of Incorporation has been duly approved by the Board of Directors of the Company.
- D. This Fifth Amended and Restated Certificate of Incorporation has been duly approved by the written consent of the stockholders in accordance with Sections 228, 242 and 245 of the Delaware General Corporation Law.
- E. The Fourth Amended and Restated Certificate of Incorporation of the Company is hereby amended and restated to read as follows:

**ARTICLE I**

The name of the Company is Arcwave, Inc.

**ARTICLE II**

The purpose of the Company is to engage in any lawful act or activity for which a corporation may be organized under the Delaware General Corporation Law as the same exists or may hereafter be amended.

### ARTICLE III

The address of the registered office of the Company in the State of Delaware is Corporation Trust Center, 1209 Orange Street, Wilmington, County of New Castle, Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.

### ARTICLE IV

The Company is authorized to issue two classes of stock to be designated "**Common Stock**" and "**Preferred Stock**." The aggregate number of shares that the Company shall have authority to issue is 198,100,000 divided into 120,000,000 shares of Common Stock, par value \$0.001 per share, and 78,100,000 shares of Preferred Stock, par value \$0.001 per share. The Preferred Stock shall be issued in two series, one of which shall be designated "**Series B Preferred Stock**" which shall consist of 50,600,000 shares and one of which shall be designated "**Series C Preferred Stock**" which shall consist of 27,500,000 shares.

The rights, preferences, privileges and restrictions granted to and imposed upon the series of Preferred Stock are as follows:

1. **Definitions.** For purposes of this Article, the following definitions shall apply:

(a) "**Equity Security Issuance**" shall mean the sale of shares of (i) any Common Stock, Preferred Stock or other equity security of the Company, (ii) any security convertible, with or without consideration, into any Common Stock, Preferred Stock or other equity security (including any option to purchase such a convertible security), (iii) any security carrying any warrant or right to subscribe to or purchase any Common Stock, Preferred Stock or other equity security or (iv) any such warrant or right.

(b) "**Liquidation Preference**" shall mean \$0.25 per share for the Series B Preferred Stock and \$0.20 per share for the Series C Preferred Stock (as appropriately adjusted for any Recapitalization).

(c) "**Nonparticipating Investor**" shall mean any holder of any existing series of Preferred Stock that is not a Participating Investor.

(d) "**Original Issue Date**" shall mean, for the Series B Preferred Stock and Series C Preferred Stock, the date upon which the first share of such series of Preferred Stock have been or will be first issued.

(e) "**Original Issue Price**" shall mean \$0.25 per share for the Series B Preferred Stock and \$0.20 per share for the Series C Preferred Stock (as appropriately adjusted for any Recapitalization).

(f) "**Participating Investor**" shall mean any holder of any existing series of Preferred Stock that (i) purchases at least its Pro Rata Share of an Equity Security Issuance or (ii) has such holder's Pro Rata Share of an Equity Security Issuance purchased on that holder's

behalf by an affiliate of the holder, provided that the holder and the affiliate provide written notice to the Company of such purchase prior to the Equity Security Issuance.

(g) **"Preferred Stock"** shall mean the Series B Preferred Stock and the Series C Preferred Stock.

(h) **"Pro Rata Share"** with respect to each holder of Preferred Stock shall mean that portion of the Equity Security Issuance equal to (i) the amount of the Equity Security Issuance actually offered to all holders of such Preferred Stock by the Board of Directors of the Corporation (which offering and the amount thereof shall have been approved by the holders of a majority of the outstanding shares of Preferred Stock, which approval may be given or withheld in their sole and absolute discretion) (ii) multiplied by a fraction, the numerator of which is the number of shares of Preferred Stock then held by such holder, and the denominator of which is the total number of shares of Preferred Stock then outstanding.

(i) **"Recapitalization"** shall mean any stock split, stock dividend, combination, reclassifications or similar event occurring after the Original Issue Date for such series of Preferred Stock.

## 2. Dividends.

(a) *Dividend Preference.* The holders of outstanding shares of Preferred Stock shall be entitled to receive dividends, out of any assets at the time legally available therefor, prior and in preference to any declaration or payment of any dividend (payable other than in Common Stock of this Company) on the Common Stock of the Company at the rate of 8% of the Original Issue Price per share per annum on each outstanding share of Preferred Stock, when, as and if declared by the Board of Directors of the Company (the **"Board of Directors"**); *provided, however,* that the Board of Directors is under no obligation to pay dividends to such holders, and such dividends, if any, shall be noncumulative. No rights shall accrue to the holders of the Preferred Stock if dividends are not declared in any prior year. Such dividends may be payable quarterly or otherwise as the Board of Directors may from time to time determine.

(b) *Priority of Dividends.* The Company shall make no Distribution (as defined below) to the holders of shares of Common Stock in any fiscal year unless and until dividends at the rate set forth in **Subsection (a)** above shall have been paid upon all shares of Preferred Stock.

(c) *Distribution.* As used in this Section, **"Distribution"** means the transfer of cash or property without consideration, whether by way of dividend or otherwise (except a dividend in shares of Common Stock) or the repurchase of shares of the Company (other than (i) repurchases at cost of shares issued to or held by employees, consultants, officers and directors upon termination of their employment or services pursuant to agreements providing for the right of said repurchase or (ii) repurchases pursuant to contractual rights of first refusal that are approved by the Company's Board of Directors) for cash or property.

3. **Liquidation Rights.** In the event of any liquidation, dissolution, or winding up of the Company (or the deemed occurrence of such event pursuant to **Subsection 3(d)** below) (a **"Liquidation Event"**), either voluntary or involuntary, distributions to the stockholders of the Company shall be made in the following manner:

(a) *Amount of Liquidation Preference.*

(i) The holders of the Series C Preferred Stock shall be entitled to receive, prior and in preference to any distribution of any of the assets or surplus funds of the Company to the holders of the Series B Preferred Stock or Common Stock by reason of their ownership of such stock, the Liquidation Preference specified for each share of Series C Preferred Stock then held by them and, in addition, an amount equal to all declared but unpaid dividends on such Series C Preferred Stock.

If the assets and funds thus available for distribution among the holders of the Series C Preferred Stock shall be insufficient to permit the payment to such holders of their full aforesaid preferential amount, then the entire amount of the assets and funds of the Company legally available for distribution shall be distributed ratably among the holders of the Series C Preferred Stock in proportion to the aggregate Liquidation Preference, plus all declared and unpaid dividends on the Series C Preferred Stock, for the shares of such Preferred Stock owned by each such holder.

(ii) After payment has been made to the holders of Series C Preferred Stock of the full preferential amount set forth in Subsection 3(a)(i) above, the holders of the Series B Preferred Stock shall be entitled to receive, prior and in preference to any distribution of any of the assets or surplus funds of the Company to the holders of the Common Stock by reason of their ownership of such stock, the Liquidation Preference specified for each share of Series B Preferred Stock then held by them and, in addition, an amount equal to all declared but unpaid dividends on such Series B Preferred Stock.

If the assets and funds thus available for distribution among the holders of the Series B Preferred Stock shall be insufficient to permit the payment to such holders of their full aforesaid preferential amount, then the entire amount of the assets and funds of the Company legally available for distribution shall be distributed ratably among the holders of the Series B Preferred Stock in proportion to the aggregate Liquidation Preference, plus all declared and unpaid dividends on the Series B Preferred Stock, for the shares of such Preferred Stock owned by each such holder.

(b) *Distribution after Payment of Liquidation Preference.* After payment has been made to the holders of the Preferred Stock of the full preferential amount set forth in Subsection 3(a) above, the entire remaining assets and funds of the Company legally available for distribution, if any, shall be distributed ratably among the holders of Preferred Stock and the holders of Common Stock, subject to the limitations set forth below, in a manner such that the amount distributed to each holder of Common Stock and Preferred Stock shall equal the amount obtained by multiplying the entire assets and funds of the Company legally available for distribution pursuant to this Subsection 3(b) by a fraction, the numerator of which shall be the sum of the number of shares of Common Stock then held by the holder and the number of shares of Common Stock issuable upon conversion of the shares of Preferred Stock then held by the holder, and the denominator of which shall be the sum of the total number of shares of Common Stock then outstanding and the total number of shares of Common Stock issuable upon conversion of the total number of shares of Preferred Stock then outstanding.

(c) *Shares not Treated as both Preferred Stock and Common Stock in any Distribution.* Shares of Preferred Stock shall not be entitled to be converted into shares of Common Stock in order to participate in any distribution, or series of distributions, as shares of Common Stock, without first foregoing participation in the distribution, or series of distributions, as shares of Preferred Stock pursuant to **Subsection (a)** above.

(d) *Deemed Liquidation.* For purposes of this **Section 3**, unless the holders of at least a majority of the Preferred Stock then outstanding shall determine otherwise, a liquidation, dissolution or winding up of the Company shall be deemed to be occasioned by, or to include, (A) the acquisition of the Company by another entity by means of any transaction or series of related transactions (including, without limitation, any reorganization, merger or consolidation) that results in the transfer of more than fifty percent (50%) of the outstanding voting power of the Company; or (B) a sale of all or substantially all of the assets of the Company (each of (A) and (B), an "Acquisition or Asset Transfer").

(e) *Non-Cash Distribution.* Whenever the distribution provided for in this **Section 3** shall be payable in securities or property other than cash, the value of such distribution shall be the fair market value of such securities or other property as determined in good faith by the Board of Directors.

4. **Conversion.** The holders of the Preferred Stock shall have conversion rights as follows (the "**Conversion Rights**"):

(a) *Right to Convert.* Each share of Preferred Stock shall be convertible, at the option of the holder thereof, at any time at the office of the Company or any transfer agent for the Preferred Stock, into that number of fully-paid and nonassessable shares of Common Stock that is equal to the Original Issue Price divided by the appropriate "**Conversion Price**." The initial Conversion Price per share of each series of Preferred Stock shall be the Original Issue Price of such series and shall be subject to adjustment as provided herein. The number of shares of Common Stock into which each share of a series of Preferred Stock may be converted is hereinafter referred to as the "**Conversion Rate**" for each such series. Upon any decrease or increase in the Conversion Price or the Conversion Rate for a series, as described in this **Section 4**, the corresponding Conversion Rate or Conversion Price for such series, as the case may be, shall be appropriately increased or decreased.

(b) *Automatic Conversion.* Each share of Preferred Stock shall automatically be converted into shares of Common Stock at the then effective Conversion Rate for such share immediately upon the earlier of (i) the consummation of a public offering of Common Stock registered under the Securities Act of 1933, as amended, which is either the subject of a firm underwriting commitment or an on-line offering pursuant to the Dutch-auction process; *provided that* the aggregate gross proceeds to the Company are not less than \$20,000,000 (before deducting underwriting discounts, commissions or fees) (a "**Qualifying Public Offering**") and (ii) with respect to all shares of Preferred Stock of a particular series, the date of written consent of agreement of the holders of at least a majority of the outstanding shares of such series of Preferred Stock, voting together on an as-converted basis.

(c) *Mechanics of Conversion.* No fractional shares of Common Stock shall be issued upon conversion of Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Company shall pay cash equal to such fraction multiplied by the then fair market value of such fractional shares as determined by the Board of Directors of the Company. Before any holder of Preferred Stock shall be entitled to convert the same into full shares of Common Stock, and to receive certificates therefor, he shall surrender the certificate or certificates therefor, duly endorsed, at the office of the Company or of any transfer agent for the Preferred Stock, and shall give written notice to the Company at such office that he elects to convert the same; *provided, however*, that in the event of an automatic conversion pursuant to **Subsection 4(b)** above, the outstanding shares of Preferred Stock shall be converted automatically without any further action by the holders of such shares and whether or not the certificates representing such shares are surrendered to the Company or its transfer agent; *provided, further*, that the Company shall not be obligated to issue certificates evidencing the shares of Common Stock issuable upon such automatic conversion unless either the certificates evidencing such shares of Preferred Stock are delivered to the Company or its transfer agent as provided above, or the holder notifies the Company or its transfer agent that such certificates have been lost, stolen or destroyed and executes an agreement satisfactory to the Company to indemnify the Company from any loss incurred by it in connection with such certificates.

The Company shall, as soon as practicable after such delivery, or after such agreement and indemnification, issue and deliver at such office to such holder of Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which he shall be entitled as aforesaid and a check payable to the holder in the amount of any cash amounts payable as the result of a conversion into fractional shares of Common Stock, plus any declared and unpaid dividends on the converted Preferred Stock. Such conversion shall be deemed to have been made immediately prior to the close of business on the date of such surrender of the shares of Preferred Stock to be converted, and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock on such date; *provided, however*, that if the conversion is in connection with a public offering or a Liquidation Event, the conversion may, at the option of any holder tendering Preferred Stock for conversion, be conditioned upon the closing of the sale of securities pursuant to such public offering or Liquidation Event, in which event the person(s) entitled to receive the Common Stock issuable upon such conversion of the Preferred Stock shall not be deemed to have converted such Preferred Stock until immediately prior to the closing or consummation of the public offering or Liquidation Event, subject to the Conversion Price adjustment, if any, pursuant to **Subsection 4(e)(iv)** below.

(d) *Conversion Price Adjustments for Sales of Shares Below Conversion Prices.* The Conversion Prices of the Preferred Stock shall be subject to adjustment from time to time as follows:

(i) (A) (1) Except with respect to issuances for which an adjustment is made pursuant to **Subsection 4(d)(i)(A)(2)** below, if the Company shall issue, after the Original Issue Date of any series of Preferred Stock, any Additional Stock (as defined below) without consideration or for a consideration per share less than the Conversion Price for any series of Preferred Stock in effect immediately prior to the issuance of such Additional Stock, the Conversion Price in effect immediately prior to each such issuance for such series of Preferred

Stock shall automatically (except as otherwise provided in this **Subsection 4(d)(i)**) be adjusted to a price determined by multiplying such Conversion Price by a fraction, (x) the numerator of which shall be the number of shares of Common Stock outstanding immediately prior to such issuance (the "**Outstanding Common**") plus the number of shares of Common Stock that the aggregate consideration received by the Company for such issuance would purchase at such Conversion Price; and (y) the denominator of which shall be the number of shares of Outstanding Common plus the number of shares of such Additional Stock. For purposes of the foregoing calculation, the term "**Outstanding Common**" shall include shares of Common Stock deemed issued pursuant to **Subsection 4(d)(i)(E)**. Notwithstanding the above, no adjustment shall be made to the Conversion Price of any Nonparticipating Shares following their classification of the holder of such shares as a Nonparticipating Investor pursuant to **Subsection 4(f)(i)**.

(i) (A) (2) If this Company, at any time on or before the ninetieth day following the Original Issue Date for the Series C Preferred Stock, shall issue any Additional Stock (or deemed to have been issued pursuant to **Section 4(d)(i)(E)**) without consideration or for a consideration per share less than the Conversion Price for Series C Preferred Stock in effect on the date of and immediately prior to such issue, then, and in such event, the Conversion Price for the Series C Preferred Stock shall be reduced, concurrently with such issue, to a price equal to the price paid per share for such Additional Stock. Notwithstanding the above, no adjustment shall be made to the Conversion Price of any Nonparticipating Shares following their classification of the holder of such shares as a Nonparticipating Investor pursuant to **Subsection 4(f)(i)**.

(B) No adjustment of the Conversion Price for any series of Preferred Stock shall be made in an amount less than one cent per share; *provided that* any adjustments which are not required to be made by reason of this sentence shall be carried forward and shall be either taken into account in any subsequent adjustment made prior to three years from the date of the event giving rise to the adjustment being carried forward, or shall be made at the end of three years from the date of the event giving rise to the adjustment being carried forward. Except to the limited extent provided for in **Subsections 4(d)(i)(E)(3)** and **4(d)(i)(E)(4)**, no adjustment of such Conversion Price pursuant to this **Subsection 4(d)(i)** shall have the effect of increasing the Conversion Price above the Conversion Price for such series of Preferred Stock in effect immediately prior to such adjustment.

(C) In the case of the issuance of Additional Stock for cash, the consideration shall be deemed to be the amount of cash paid therefor before deducting any reasonable discounts, commissions or other expenses allowed, paid or incurred by the Company for any underwriting or otherwise in connection with the issuance and sale thereof.

(D) In the case of the issuance of the Additional Stock for a consideration in whole or in part other than cash, the consideration other than cash shall be deemed to be the fair value thereof as determined by the Board of Directors irrespective of any accounting treatment.

(E) In the case of the issuance (whether before, on or after the applicable Original Issue Date) of options to purchase or rights to subscribe for Common Stock, securities by their terms convertible into or exchangeable for Common Stock or options to purchase

or rights to subscribe for such convertible or exchangeable securities, the following provisions shall apply for all purposes of this Subsections 4(d)(i) and 4(d)(ii):

(1) The aggregate maximum number of shares of Common Stock deliverable upon exercise (assuming the satisfaction of any conditions to exercisability, including without limitation, the passage of time, but without taking into account potential antidilution adjustments) of such options to purchase or rights to subscribe for Common Stock shall be deemed to have been issued at the time such options or rights were issued and for a consideration equal to the consideration (determined in the manner provided in Subsections 4(d)(i)(C) and 4(d)(i)(D) hereof), if any, received by the Company upon the issuance of such options or rights plus the minimum exercise price provided in such options or rights (without taking into account potential antidilution adjustments) for the Common Stock covered thereby.

(2) The aggregate maximum number of shares of Common Stock deliverable upon conversion of or in exchange (assuming the satisfaction of any conditions to convertibility or exchangeability, including, without limitation, the passage of time, but without taking into account potential antidilution adjustments) for any such convertible or exchangeable securities or upon the exercise of options to purchase or rights to subscribe for such convertible or exchangeable securities and subsequent conversion or exchange thereof shall be deemed to have been issued at the time such securities were issued or such options or rights were issued and for a consideration equal to the consideration, if any, received by the Company for any such securities and related options or rights (excluding any cash received on account of accrued interest or accrued dividends), plus the minimum additional consideration, if any, to be received by the Company (without taking into account potential antidilution adjustments) upon the conversion or exchange of such securities or the exercise of any related options or rights (the consideration in each case to be determined in the manner provided in Subsections 4(d)(i)(C) and 4(d)(i)(D) hereof).

(3) In the event of any change in the number of shares of Common Stock deliverable or in the consideration payable to the Company upon exercise of such options or rights or upon conversion of or in exchange for such convertible or exchangeable securities (excluding a change resulting from any antidilution provisions contained in such options, rights or securities), the Conversion Price of any series of Preferred Stock, to the extent in any way affected by or computed using such options, rights or securities, shall be recomputed to reflect such change, but no further adjustment shall be made for the actual issuance of Common Stock or any payment of such consideration upon the exercise of any such options or rights or the conversion or exchange of such securities.

(4) Upon the expiration of any such options or rights, the termination of any such rights to convert or exchange or the expiration of any options or rights related to such convertible or exchangeable securities, the Conversion Price of any series of Preferred Stock, to the extent in any way affected by or computed using such options, rights or securities or options or rights related to such securities, shall be recomputed to reflect the issuance of only the number of shares of Common Stock (and convertible or exchangeable securities which remain in effect) actually issued upon the exercise of such options or rights, upon the conversion or exchange of such securities or upon the exercise of the options or rights related to such securities.



(5) The number of shares of Common Stock deemed issued and the consideration deemed paid therefor pursuant to Subsections 4(d)(i)(E)(1) and (2) shall be appropriately adjusted to reflect any change, termination or expiration of the type described in either Subsection 4(d)(i)(E)(3) or (4).

(ii) "Additional Stock" shall mean any shares of Common Stock issued (or deemed to have been issued pursuant to Section 4(d)(i)(E)) by the Company after the Original Issue Date of a series of Preferred Stock) other than:

(A) shares issued pursuant to a transaction described in Subsection 4(e) hereof;

(B) shares of Common Stock issued or authorized to be issued to employees, officers or directors of, or consultants or advisors to the Company or any subsidiary, pursuant to the Company's stock option plan in effect as of the date of the filing of this Fifth Amended and Restated Certificate of Incorporation or such greater number of shares as are approved by the Series B Preferred Directors and Series C Preferred Director elected pursuant to Subsection 5(b) and Subsection 5(c) hereof;

(C) shares issued pursuant to any rights, rights of conversion, agreements, options and warrants outstanding or issued as of October 5, 2000 (the date of the date of the filing of the Company's First Amended and Restated Certificate of Incorporation);

(D) shares issued for consideration other than cash pursuant to a merger, consolidation, acquisition or similar business combination that are approved by the Series B Preferred Directors and Series C Preferred Director elected pursuant to Subsection 5(b) and Subsection 5(c) hereof;

(E) shares issued (i) pursuant to any equipment leasing arrangement or commercial credit arrangement from a bank or similar financial institution, (ii) pursuant to any real estate transaction, (iii) to any person or entity providing recruitment services to the Company or (iv) any shares issued as part of a unit including debt of the Company or its subsidiaries; *provided that* such issuances are approved by the Series B Preferred Directors and Series C Preferred Director elected pursuant to Subsection 5(b) and Subsection 5(c) hereof;

(F) shares of Common Stock issued or issuable upon (i) conversion of Preferred Stock; (ii) declaration and payment of any dividend on the Preferred Stock; or (iii) distribution to the holders of the Preferred Stock;

(G) shares that are issued by the Company pursuant to a registration statement filed under the Securities Act of 1933, as amended, which is either the subject of a firm underwriting commitment or an on-line offering pursuant to the Dutch-auction process;

(H) shares issued in connection with strategic transactions that include a commercial relationship involving the Company and other entities, including (i) joint ventures, manufacturing, marketing or distribution arrangements or (ii) technology transfer or development arrangements; *provided that* such strategic transactions and the issuance of such

shares pursuant thereto has been approved by the Series B Preferred Directors and the Series C Preferred Director elected pursuant to **Subsection 5(b) and Subsection 5(c)** hereof; and

(I) up to 400,000 shares of Series B Preferred Stock issued pursuant to pursuant to Section 5.4 of the Agreement and Plan of Reorganization by and among the Company, Cowave Merger Corporation and Advanced Radio Cells Incorporated, dated April 8, 2003, as amended.

(e) *Adjustments to Conversion Prices for Certain Combinations, Distributions, Reclassifications and Reorganizations.* The Conversion Prices of the Preferred Stock shall be subject to adjustment from time to time as follows:

(i) *Adjustments for Subdivisions, Combinations or Consolidations of Common Stock.* If the outstanding shares of Common Stock shall be subdivided (by stock split, stock dividend, or otherwise) into a greater number of shares of Common Stock, the Conversion Prices in effect immediately prior to such subdivision shall, concurrently with the effectiveness of such subdivision, be proportionately decreased. If the outstanding shares of Common Stock shall be combined or consolidated (by reclassification, reverse stock split or otherwise) into a lesser number of shares of Common Stock, the Conversion Prices in effect immediately prior to such combination or consolidation shall, concurrently with the effectiveness of such combination or consolidation, be proportionately increased.

(ii) *Adjustments for Other Distributions.* If the Company at any time or from time to time makes or fixes a record date for the determination of holders of Common Stock entitled to receive any distribution payable in securities of the Company other than shares of Common Stock and other than as otherwise adjusted in this Section 4, then and in each such event provision shall be made so that the holders of Preferred Stock shall receive upon such distribution the amount of securities of the Company which they would have received had their Preferred Stock converted into Common Stock on the date of such event and had they thereafter, during the period from the date of such event to and including the date of conversion, retained such securities receivable by them as aforesaid during such period, subject to all other adjustments called for during such period under this Section 4 with respect to the rights of the holders of the Preferred Stock.

(iii) *Adjustments for Reclassification, Exchange and Substitution.* If the Common Stock issuable upon conversion of the Preferred Stock shall be changed into the same or a different number of shares of any other class or classes of stock, whether by capital reorganization, reclassification or otherwise (other than a subdivision or combination of shares provided for above), the Conversion Prices then in effect shall, concurrently with the effectiveness of such reorganization or reclassification, be proportionately adjusted such that the Preferred Stock shall be convertible into, in lieu of the number of shares of Common Stock which the holders would otherwise have been entitled to receive, a number of shares of such other class or classes of stock equivalent to the number of shares of Common Stock that would have been subject to receipt by the holders upon conversion of the Preferred Stock immediately before that change.

(iv) *Reorganizations, Mergers or Consolidations.* If at any time or from time to time, there is a capital reorganization of the Common Stock or the merger or consolidation

of the Company with or into another corporation or another entity or person (other than an Acquisition or Asset Transfer as defined in Subsection 3(d) or a recapitalization, subdivision, combination, reclassification, exchange or substitution of shares provided for elsewhere in this Section 4), as a part of such capital reorganization, merger or consolidation, provision shall be made so that the holders of the Preferred Stock shall thereafter be entitled to receive upon conversion of the Preferred Stock held by them the number of shares of stock or other securities or property of the Company to which a holder of the number of shares of Common Stock deliverable upon conversion would have been entitled on such capital reorganization, merger or consolidation. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 4 with respect to the rights of the holders of Preferred Stock after the capital reorganization, merger or consolidation to the end that the provisions of this Section 4 (including adjustment of the Conversion Price then in effect and the number of shares issuable upon conversion of the Preferred Stock) shall be applicable after that event and be as nearly equivalent as practicable.

(f) *Conversion of Non Participating Preferred Stock to Common Stock.*

(i) In the event the Company proposes to undertake an Equity Security Issuance after the date of filing of this Fifth Amended and Restated Certificate of Incorporation, it shall give (or have given prior to the date of filing of this Fifth Amended and Restated Certificate of Incorporation) each holder of Preferred Stock written notice (the "Issuance Notice") of its intention, describing the type of new securities, the price and number of shares and the general terms upon which the Company proposes to issue such new securities, at least ten (10) days prior to the date of such Equity Security Issuance, or such other period of time agreed to by a majority-in-interest of the holders of Preferred Stock. Each holder of Preferred Stock may within five (5) days from the date of receipt of the Issuance Notice, or such other period of time agreed to by a majority-in-interest of the holders of Preferred Stock (the "Response Period") provide written notice to the Company that such holder agrees to become a Participating Investor for the price and upon the terms specified in the Issuance Notice. In the event that such holder (taking into account commitments or purchases made by an affiliate of such holder on such holders' behalf where prior written notice is provided to the Company) fails to give such notice within the five (5) day period (or other agreed upon Response Period), or fails to actually purchase its Pro Rata Share of the Equity Security Issuance (other than as a result of the Company refusing to allow such holder to so purchase its Pro Rata Share), such holder shall be deemed to be a Nonparticipating Investor.

(ii) With respect to each series of Preferred Stock, to the extent of the percentage of the Pro Rata Share of such series of Preferred Stock not purchased (the "Preferred Stock Refused Percentage") by each Nonparticipating Investor (taking into account purchases made by an affiliate of such Nonparticipating Investor on such Nonparticipating Investor's behalf where prior written notice is provided to the Company), the product of (x) the number of shares of each series of Preferred Stock held by the Nonparticipating Investor times (y) the Preferred Stock Refused Percentage for such series (the "Nonparticipating Shares") shall be converted automatically ninety days following the Original Issue Date for the Series C Preferred Stock or such other date agreed upon by a majority-in-interest of the holders of Preferred Stock (the "Conversion Date"), with the result being rounded down, if necessary, so as to eliminate any fraction of a share, of the applicable Equity Security Issuance (provided that the Company gave the Issuance Notice to such holder of Preferred Stock) into fully-paid and nonassessable shares of

Common Stock at the Conversion Rate in effect for such series of Preferred Stock immediately prior to the Equity Security Issuance referred to in the Issuance Notice (not taking into account any adjustments in the Conversion Rate of such Preferred Stock that would take place as a result of a dilutive issuance).

(iii) Upon the conversion of shares of such Preferred Stock held by a Nonparticipating Investor into shares of Common Stock, such shares of Preferred Stock shall no longer be outstanding on the books of the Company and may not be reissued, and the Nonparticipating Investor shall be treated for all purposes as the record holder of such shares of Common Stock on the date of the closing of the applicable Equity Security Issuance.

(iv) Any and all provisions of clauses (i), (ii) or (iii) above may be waived or deemed inapplicable as to any or all holders of Preferred Stock if so determined by the holders of at least a majority of the voting power of the Preferred Stock then outstanding.

(g) *No Impairment.* The Company will not, by amendment of its Certificate of Incorporation or through any reorganization, recapitalization, transfer of assets, merger, consolidation, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Company but will at all times in good faith assist in the carrying out of all the provisions of this Section 4 and in the taking of all such action as may be necessary or appropriate in order to protect the Conversion Rights of the holders of the Preferred Stock against impairment.

(h) *Certificate as to Adjustments.* Upon the occurrence of each adjustment or readjustment of any Conversion Price pursuant to this Section 4, the Company at its expense shall promptly compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of Preferred Stock a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. The Company shall, upon the written request at any time of any holder of Preferred Stock, furnish or cause to be furnished to such holder a like certificate setting forth (i) such adjustments and readjustments, (ii) the Conversion Prices at the time in effect, and (iii) the number of shares of Common Stock and the amount, if any, of other property which at the time would be received upon the conversion of Preferred Stock.

(i) *Reservation of Stock Issuable Upon Conversion.* The Company shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock solely for the purpose of effecting the conversion of the shares of the Preferred Stock, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all then outstanding shares of the Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Preferred Stock, the Company will take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purpose, including without limitation using its best efforts to obtain the requisite stockholder approval for any necessary amendment to this Certificate of Incorporation.

## **5. Voting.**

(a) *Generally.* Except as otherwise required by law, each holder of any shares of Common Stock issued and outstanding shall have one vote for each outstanding share of Common Stock held. Except as set forth in **Subsection 5(d)** hereof, and otherwise as required by law, each holder of any shares of Preferred Stock issued and outstanding shall be entitled to the number of votes equal to the number of shares of Common Stock into which such respective shares of Preferred Stock could be converted, as adjusted from time to time in accordance with **Section 2** hereof, at the record date for determination of the stockholders entitled to vote on such matters, or, if no such record date is established, at the date such vote is taken or any written consent of stockholders is solicited, such votes to be counted together with all other shares of stock of this Company having general voting power and not separately as a class. Fractional votes shall not however, be permitted and any fractional voting rights resulting from the above formula (after aggregating all shares into which shares of Preferred Stock held by each holder could be converted) shall be rounded to the nearest whole number (one-half and greater being rounded upward). Holders of Common Stock and Preferred Stock shall be entitled to notice of any stockholders' meeting in accordance with the Bylaws of this Company. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares of Common Stock then outstanding) by an affirmative vote of the holders of a majority of the outstanding stock of the Corporation, voting as a single class. All holders of Preferred Stock shall be entitled to vote with the holders of Common Stock on all matters submitted to a vote of the stockholders, except those required hereunder or by law to be submitted to a class vote.

(b) *Election of Series B Preferred Directors by Series B Preferred Stockholders.* For so long as at least 10,000,000 shares of Series B Preferred Stock (as adjusted for any stock splits, stock dividends, recapitalizations, reverse stock splits, combinations or the like) remain outstanding, the holders of Series B Preferred Stock (voting together as a separate series, and on an as-converted basis) shall be entitled to elect three (3) directors of the Company (the "**Series B Preferred Directors**") at each annual or special election of directors.

(c) *Election of Series C Preferred Director by Series C Preferred Stockholders.* For so long as at least 5,000,000 shares of Series C Preferred Stock (as adjusted for any stock splits, stock dividends, recapitalizations, reverse stock splits, combinations or the like) remain outstanding, the holders of Series C Preferred Stock (voting together as a separate series, and on an as-converted basis) shall be entitled to elect one (1) director of the Company (the "**Series C Preferred Director**") at each annual or special election of directors.

(d) *Election of Common Directors by Common Stockholders.* The holders of the outstanding Common Stock (voting separately as a class) shall be entitled to elect two (2) directors of the Company (the "**Common Directors**") at each annual or special meeting of the stockholders for the purpose of electing directors or pursuant to each consent of this Company's stockholders for the election of directors; *provided that* one (1) Common Director shall be whomever is elected by the Board of Directors from time to time to the office of Chief Executive Officer of the Company, duly elected in accordance with the Bylaws of the Company and the other Common Director shall be mutually acceptable to a majority of the members of the Board of Directors.

(e) *Election of Joint Director by Stockholders.* The holders of the outstanding Common Stock and Preferred Stock (voting together as a single class on an as converted to common stock basis) shall be entitled to elect one (1) director of the Company (the "**Joint**

**Director")** at each annual or special meeting of the stockholders for the purpose of electing directors or pursuant to each consent of this Company's stockholders for the election of directors; *provided that* such director is independent.

(f) *Vacancy.* In the case of any vacancy in the office of a director occurring among the directors so elected by the holders of a class of stock pursuant to **Subsection 5(b), (c), (d) or (e)** hereof, the remaining directors so elected by that class may, by affirmative vote (or the remaining director so elected if there be but one, or if there are no such directors remaining, by vote of the holders of a majority of the shares of that class or series), elect a successor or successors to hold office for the unexpired term of the director or directors whose place or places shall be vacant.

(g) *Removal.* Any director who was elected by a specified class or classes of stock or series thereof may be removed during his or her term of office, either for or without cause, by, and only by, the affirmative vote of a majority of the holders of the shares of the class or classes of stock or series thereof that initially elected such director. Such vote may be given at a special meeting of such stockholders duly called or by an action by written consent for that purpose.

## **6. Protective Provisions.**

(a) *No Series Voting.* Other than as provided herein or by law, there shall be no voting by a series of the Preferred Stock as a separate class.

(b) *Approval by Series of Preferred.* For so long as 10,000,000 shares (subject to appropriate adjustment for any Recapitalization) of the Preferred Stock shall be issued and outstanding, the Company shall not, without first obtaining the approval (by vote or written consent as provided by law) of (i) the holders of not less than a majority of the voting power of the shares of the Series B Preferred Stock then outstanding and (ii) the holders of not less than a majority of the voting power of the shares of the Series C Preferred Stock then outstanding:

(i) amend or repeal any provision of, or add any provision to, the Company's Fifth Amended and Restated Certificate of Incorporation or Bylaws if such action would adversely alter or change the preferences, rights, privileges, or powers of, or the restrictions provided for the benefit of, either series of Preferred Stock;

(ii) sell, convey, or otherwise dispose of all or substantially all of the property or business of the Company or any subsidiary of the Company; or merge itself or any subsidiary of the Company into or consolidate itself or any subsidiary of the Company with any other corporation (other than a wholly-owned subsidiary corporation); or effect any transaction or series of related transactions in which more than fifty percent (50%) of the voting power of the Company is disposed of; or cause any subsidiary of the Company to be less than wholly-owned by the Company;

(iii) liquidate, dissolve or wind-up the Company;

(iv) declare or pay any dividend with respect to Common Stock;

(v) redeem, repurchase or otherwise reacquire any shares of Common Stock or Preferred Stock, other than in connection with agreements providing for such repurchase approved by the Board of Directors;

(vi) increase or decrease (other than by redemption or conversion) the authorized number of shares of Preferred Stock of the Company;

(vii) sell shares of Series C Preferred Stock (other than pursuant to the terms and conditions of the Series C Preferred Stock Purchase Agreement, as it may hereafter be amended from time to time);

(viii) authorize or designate, whether by classification or otherwise, any new class or series of stock or any other securities convertible into equity securities of the Company ranking senior to or *pari passu* with the Preferred Stock in right of redemption, liquidation preference, voting or dividends;

(ix) sell equity interests in any subsidiary of the Company;

(x) change the number of directors that will constitute the whole Board of Directors of the Company to a number other than seven (7); or

(xi) amend this Subsection 6(b).

7. **Notices.** Any notice, demand, offer, request or other communication required or permitted to be given by the Company to the holders of Preferred Stock pursuant to this Article IV shall be in writing and shall be deemed effectively given the earlier of (i) when received, (ii) when delivered personally, (iii) one (1) business day after being delivered by facsimile or electronic mail (with receipt of appropriate confirmation), (iv) one (1) business day after being deposited with an overnight courier service or (v) four (4) days after being deposited in the U.S. mail, First Class with postage prepaid, and addressed to each holder of record at such holder's address appearing on the books of the Company.

8. **Status of Converted Stock.** In case any shares of Preferred Stock shall be converted pursuant to Section 4 hereof, the shares so converted shall resume the status of authorized but undesignated and unissued shares of Preferred Stock.

9. **Redemption.** The Preferred Stock is not redeemable.

10. **Residual Rights.** All rights accruing to the outstanding shares of this Company not expressly provided for to the contrary herein shall be vested in the Common Stock.

## ARTICLE V

In furtherance and not in limitation of the powers conferred by statute, the Board of Directors of the Company is expressly authorized to make, alter, amend or repeal the Bylaws of the Company, but the stockholders may make additional Bylaws and may alter or repeal any Bylaw whether adopted by them or otherwise.

## **ARTICLE VI**

The election of directors need not be by written ballot unless the Bylaws of the Company shall so provide.

## **ARTICLE VII**

The number of directors that will constitute the whole Board of Directors of the Company shall be determined in the manner and set forth in the Bylaws of the Company, subject, however to the provisions of Article IV, Section 5 above.

## **ARTICLE VIII**

Meetings of stockholders may be held within or without the State of Delaware, as the Bylaws may provide. The books of the Company may be kept (subject to any provisions contained in the statutes) outside the State of Delaware at such place or places as may be designated from time to time by the Board of Directors or in the Bylaws of the Company.

## **ARTICLE IX**

To the fullest extent permitted by the Delaware General Corporation Law or any other applicable law as now in effect or as it may hereafter be amended, a director of the Company shall not be personally liable to the Company or its stockholders for monetary damages for any action taken, or any failure to take any action, as a director.

The Company shall indemnify to the fullest extent permitted by law any person made or threatened to be made a party to an action or proceeding, whether criminal, civil, administrative or investigative, by reason of the fact that he or she or his or her testator or intestate is or was a director or officer of the Company or any predecessor of the Company or serves or served any other enterprise as a director, officer, employee or agent at the request of the Company or any predecessor to the Company.

Neither any amendment nor repeal of this Article, nor the adoption of any provision of this Company's Fifth Amended and Restated Certificate of Incorporation inconsistent with this Article, shall eliminate or reduce the effect of this Article in respect of any matter occurring, or any cause of action, suit or claim accruing or arising or that, but for this Article, would accrue or arise, prior to such amendment, repeal or adoption of an inconsistent provision.

## **ARTICLE X**

Except as provided in Article IX above, the Company reserves the right to amend, alter, change or repeal any provision contained in this Fifth Amended and Restated Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation.

## **ARTICLE XI**

The Company is to have perpetual existence.



## ARTICLE XII

Whenever a compromise or arrangement is proposed between this Company and its creditors or any class of them and/or between this Company and its stockholders or any class of them, any court of equitable jurisdiction within the State of Delaware may, on the application in a summary way of this Company or of any creditor or stockholder thereof or on the application of any receiver or receivers appointed for this Company under the provisions of Section 291 of Title 8 of the Delaware Code or on the application of trustees in dissolution or of any receiver or receivers appointed for this Company under the provisions of Section 279 of Title 8 of the Delaware Code, order a meeting of the creditors or class of creditors, and/or of the stockholders or class of stockholders of this Company, as the case may be, to be summoned in such manner as the said court directs. If a majority in number representing three-fourths (3/4) in value of the creditors or class of creditors, and/or of the stockholders or class of stockholders of this Company, as the case may be, agree to any compromise or arrangement and to any reorganization of this Company as consequence of such compromise or arrangement, the said compromise or arrangement and the said reorganization shall, if sanctioned by the court to which the said application has been made, be binding on all the creditors or class of creditors, and/or on all the stockholders or class of stockholders, of this Company, as the case may be, and also on this Company.

*[Remainder of this page intentionally left blank]*

IN WITNESS WHEREOF, Arcwave, Inc. has caused this Fifth Amended and Restated Certificate of Incorporation to be signed by the Chief Executive Officer of the Company on January 26, 2004.

**ARCWAVE, INC.**

By: /s/ Steve Goldberg  
Steve Goldberg  
Chief Executive Officer