

TRADEMARK ASSIGNMENT

Electronic Version v1.1

Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT		
NATURE OF CONVEYANCE:	Patent and Trademark Security Agreement		
CONVEYING PARTY DATA			
Name	Formerly	Execution Date	Entity Type
Zhone Technologies, Inc.		03/13/2012	CORPORATION: DELAWARE
RECEIVING PARTY DATA			
Name:	Wells Fargo Bank, National Association		
Street Address:	245 S. Los Robles Avenue, Suite 700		
City:	Pasadena		
State/Country:	CALIFORNIA		
Postal Code:	91101		
Entity Type:	National Association: UNITED STATES		
PROPERTY NUMBERS Total: 19			
Property Type	Number	Word Mark	
Registration Number:	3228389	FIBERJACK	
Registration Number:	2725112	MALC	
Registration Number:	3725214	MXK	
Registration Number:	1738931	PREMISYS	
Registration Number:	3133679	RAPTOR	
Registration Number:	2608096	SLMS	
Registration Number:	3895661	SMART OMCI	
Registration Number:	2725113	ZHONE	
Registration Number:	2586521	ZMS	
Registration Number:	3390835	ZNID	
Serial Number:	85030477	BANDWIDTH CHANGES EVERYTHING	
Serial Number:	85295116	IP ZHONE	
Serial Number:	85344417	ZHONE EZ CLOUD	
Serial Number:	85419934	ZHONE EZ FIBERSERVICE	

Serial Number:	85342013	ZHONE EZ SERVICE
Serial Number:	85090183	ZHONE EZ TOUCH PROVISIONING
Serial Number:	85245648	ZHONE FIBERCELL
Serial Number:	85225455	ZHONE FIBERHOME
Serial Number:	85505377	ZHONE FIBERLAN

CORRESPONDENCE DATA

Fax Number: 2027393001

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.

Phone: 202-739-3000

Email: jennifer.evans@morganlewis.com

Correspondent Name: Morgan, Lewis & Bockius LLP

Address Line 1: 1111 Pennsylvania Avenue, NW

Address Line 4: Washington, DISTRICT OF COLUMBIA 20004

ATTORNEY DOCKET NUMBER:	058438-08-0183
NAME OF SUBMITTER:	Jennifer C. Evans
Signature:	/jce/
Date:	04/26/2012

Total Attachments: 15

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PATENT AND TRADEMARK SECURITY AGREEMENT

This Patent and Trademark Security Agreement (the "Agreement"), dated as of March 13, 2012, is made by and between Zhone Technologies, Inc., a Delaware corporation (the "Company"), having a business location at the address set forth below next to its signature, and Wells Fargo Bank, National Association ("Wells Fargo"), having a business location at the address set forth below next to its signature.

Recitals

A. Company, certain Affiliates of the Company, and Wells Fargo are parties to a Credit and Security Agreement, dated on or about the date hereof (as the same may be in effect from time to time, the "Domestic Credit Agreement"), and a Credit and Security Agreement (Ex-Im Subfacility), dated on or about the date hereof (as the same may be in effect from time to time, the "Ex-Im Credit Agreement" and, together with the Domestic Credit Agreement, the "Credit Agreements"), setting forth the terms on which Wells Fargo may now or hereafter extend credit to or for the account of Company and Company's Affiliates.

B. As a condition to extending credit to or for the account of Company, Wells Fargo has required the execution and delivery of this Agreement by Company.

ACCORDINGLY, in consideration of the mutual covenants contained in the Loan Documents and herein, the parties hereby agree as follows:

1. Definitions. All terms defined in the Recitals hereto or in the Credit Agreements that are not otherwise defined herein shall have the meanings given to them in the Credit Agreements. In addition, the following terms have the meanings set forth below:

"Patents" means all of Company's right, title and interest in and to: (i) patents or applications for patents, (ii) licenses, fees or royalties payable to Company with respect to each, and (iii) the right to sue for past infringement and damages therefor, all as presently existing or hereafter arising or acquired, including without limitation the patents listed on Exhibit A.

"Security Interest" has the meaning given in Section 2.

"Trademarks" means all of Company's right, title and interest in and to: (i) trademarks, service marks, collective membership marks, registrations and applications for registration for each, and the respective goodwill associated with each, (ii) licenses, fees or royalties payable to Company with respect to each, and (iii) the right to sue for past, present and future infringement, dilution and damages therefor, all as presently existing or hereafter arising or acquired, including, without limitation, the marks listed on Exhibit B.

2. Security Interest. Company hereby irrevocably pledges and assigns to, and grants Wells Fargo a security interest (the "Security Interest") with power of sale to the extent permitted by law, in the Patents and in the Trademarks to secure payment of the Obligations. As set forth in

the Credit Agreements, the Security Interest is coupled with a security interest in substantially all of the personal property of Company. This Agreement grants only the Security Interest herein described, is not intended to and does not affect any present transfer of title of any trademark registration or application and makes no assignment and grants no right to assign or perform any other action with respect to any intent to use trademark application, unless such action is permitted under 15 U.S.C. §1060.

3. Representations, Warranties and Agreements. Company represents, warrants and agrees as follows:

3.1 **Existence; Authority.** Company is a corporation duly organized, validly existing and in good standing under the laws of its state of incorporation, and this Agreement has been duly and validly authorized by all necessary corporate action on the part of Company.

3.2 **Patents.** Exhibit A accurately lists all Patents owned or controlled by Company as of the date hereof, or to which Company has a right as of the date hereof to have assigned to it, and accurately reflects the existence and status of applications and letters patent pertaining to the Patents as of the date hereof. If after the date hereof, Company owns, controls or has a right to have assigned to it any Patents not listed on Exhibit A, or if Exhibit A ceases to accurately reflect the existence and status of applications and letters patent pertaining to the Patents, then Company shall from time to time, but no less frequently than quarterly, provide written notice to Wells Fargo with a replacement Exhibit A, which upon acceptance by Wells Fargo shall become part of this Agreement.

3.3 **Trademarks.** Exhibit B accurately lists all Trademarks owned or controlled by Company as of the date hereof and accurately reflects the existence and status of Trademarks and all applications and registrations pertaining thereto as of the date hereof; provided, however, that Exhibit B need not list common law marks (*i.e.*, Trademarks for which there are no applications or registrations) which are not material to Company's business. If after the date hereof, Company owns or controls any Trademarks not listed on Exhibit B (other than common law marks which are not material to Company's business), or if Exhibit B ceases to accurately reflect the existence and status of applications and registrations pertaining to the Trademarks, then Company shall from time to time, but no less frequently than quarterly, provide written notice to Wells Fargo with a replacement Exhibit B, which upon acceptance by Wells Fargo shall become part of this Agreement.

3.4 **Subsidiaries.** If after the date hereof any wholly-owned subsidiary of the Company wholly owns, or obtains a right to have assigned to it the entire ownership interest in any Patents or Trademarks, which are not already subject to a patent and trademark security agreement substantially in the form of this Agreement, then Company shall notify Wells Fargo of such item(s) and cause such wholly-owned subsidiary of Company to execute and deliver to Wells Fargo a patent and trademark security agreement substantially in the form of this Agreement.

3.5 **Title.** Company has absolute title to each Patent and each Trademark listed on Exhibits A and B, free and clear of all Liens except Permitted Liens.

3.6 **No Sale.** Except as permitted under the Credit Agreements, Company will not assign, transfer, encumber or otherwise dispose of the Patents or Trademarks, or any interest therein, without Wells Fargo's prior written consent.

3.7 **Defense.** Except as permitted under the Credit Agreements, Company will at its own expense and using commercially reasonable efforts, protect and defend the Patents and Trademarks (other than Patents or Trademarks that are no longer useful or necessary in Company's business, and which are immaterial in value) against all claims or demands of all Persons other than those holding Permitted Liens.

3.8 **Maintenance.** Except as permitted under the Credit Agreements, Company will at its own expense maintain the Patents and the Trademarks to the extent commercially and reasonably advisable in its business including, but not limited to, filing all applications to obtain letters patent or trademark registrations and all necessary affidavits, maintenance fees, annuities, and renewals with respect to letters patent, trademark registrations and applications therefor. Except as permitted under the Credit Agreements, Company covenants that it will not abandon nor fail to pay any maintenance fee or annuity due and payable on any Patent or Trademark that is material to the business of the Company, nor fail to file any required affidavit or renewal in support thereof, without first providing Wells Fargo: (i) 30 days written notice to allow Wells Fargo to timely pay any such maintenance fees or annuities which may become due on any Patents or Trademarks, or to file any affidavit or renewal with respect thereto, and (ii) a separate written power of attorney or other authorization to pay such maintenance fees or annuities, or to file such affidavit or renewal, should such authorization be necessary or desirable.

3.9 **Wells Fargo's Right to Take Action.** If Company fails to perform or observe any of its covenants or agreements set forth in this Section 3, and if such failure continues for a period of ten (10) calendar days after Wells Fargo gives Company written notice thereof (or, in the case of the agreements contained in Section 3.8, immediately upon the occurrence of such failure, without notice or lapse of time), or if Company notifies Wells Fargo that it intends to abandon a Patent or Trademark, Wells Fargo may (but need not) perform or observe such covenant or agreement or take steps to prevent such intended abandonment on behalf and in the name, place and stead of Company (or, at Wells Fargo's option, in Wells Fargo's own name) and may (but need not) take any and all other actions which Wells Fargo may reasonably deem necessary to cure or correct such failure or prevent such intended abandonment.

3.10 **Costs and Expenses.** Except to the extent that the effect of such payment would be to render any loan or forbearance of money usurious or otherwise illegal under any applicable law, Company shall pay Wells Fargo on demand the amount of all moneys expended and all costs and expenses (including reasonable attorneys' fees and disbursements) incurred by Wells Fargo in connection with or as a result of Wells Fargo's taking action under Section 3.9 or exercising its rights under Section 6, together with interest thereon from the date expended or incurred by Wells Fargo at the Default Rate.

3.11 **Power of Attorney.** To facilitate Wells Fargo's taking action under Section 3.9 and exercising its rights under Section 6, Company hereby irrevocably appoints (which appointment is coupled with an interest) Wells Fargo, or its delegate, as the attorney-in-fact of

Company with the right (but not the duty) from time to time to create, prepare, complete, execute, deliver, endorse or file, in the name and on behalf of Company, any and all instruments, documents, applications, financing statements, and other agreements and writings required to be obtained, executed, delivered or endorsed by Company under this Section 3, or, necessary for Wells Fargo, upon the occurrence of an Event of Default and during the Default Period commenced thereby, to enforce or use the Patents or Trademarks or to grant or issue any exclusive or non-exclusive license under the Patents or Trademarks to any third party, or to sell, assign, transfer, pledge, encumber or otherwise transfer title in or dispose of the Patents or Trademarks to any third party. Company hereby ratifies all that such attorney shall lawfully do or cause to be done by virtue hereof. The power of attorney granted herein shall terminate upon the termination of the Credit Agreements as provided therein and the payment and performance of all Obligations.

4. Company's Use of the Patents and Trademarks. Company shall be permitted to control and manage the Patents and Trademarks, including the right to exclude others from making, using or selling items covered by the Patents and Trademarks and any licenses thereunder, in the same manner and with the same effect as if this Agreement had not been entered into, so long as no Event of Default occurs and remains uncured.

5. Events of Default. Each of the following occurrences shall constitute an event of default under this Agreement (herein called "Event of Default"): (a) an Event of Default, as defined in the either of the Credit Agreements, shall occur; or (b) Company shall fail promptly to observe or perform any covenant or agreement in this Agreement binding on Company, and such failure continues for a period of 30 days after the earlier of (i) the date on which such failure shall first become known to or should have been known by any officer of Company or (ii) the date on which written notice thereof is given to Company by Wells Fargo; or (c) any of the representations or warranties contained in Section 3 shall prove to have been incorrect in any material respect when made.

6. Remedies. Upon the occurrence of an Event of Default and during the Default Period commenced thereby, Wells Fargo may, at its option, take any or all of the following actions:

6.1 Wells Fargo may exercise any or all remedies available under the Credit Agreements.

6.2 Wells Fargo may sell, assign, transfer, pledge, encumber or otherwise dispose of the Patents and Trademarks.

6.3 Wells Fargo may enforce the Patents and Trademarks and any licenses thereunder, and if Wells Fargo shall commence any suit for such enforcement, Company shall, at the request of Wells Fargo, do any and all lawful acts and execute any and all proper documents required by Wells Fargo in aid of such enforcement.

7. Miscellaneous. This Agreement can be waived, modified, amended, terminated or discharged, and the Security Interest can be released, only explicitly in a writing signed by Wells Fargo. A waiver signed by Wells Fargo shall be effective only in the specific instance and for the

specific purpose given. Mere delay or failure to act shall not preclude the exercise or enforcement of any of Wells Fargo's rights or remedies. All rights and remedies of Wells Fargo shall be cumulative and may be exercised singularly or concurrently, at Wells Fargo's option, and the exercise or enforcement of any one such right or remedy shall neither be a condition to nor bar the exercise or enforcement of any other. All notices to be given to Company or Wells Fargo under this Agreement shall be given in the manner and with the effect provided in the Credit Agreements. Wells Fargo shall not be obligated to preserve any rights Company may have against prior parties, to realize on the Patents and Trademarks at all or in any particular manner or order, or to apply any cash proceeds of Patents and Trademarks in any particular order of application. This Agreement shall be binding upon and inure to the benefit of Company and Wells Fargo and their respective participants, successors and assigns and shall take effect when signed by Company and delivered to Wells Fargo, and Company waives notice of Wells Fargo's acceptance hereof. Wells Fargo may execute this Agreement if appropriate for the purpose of filing, but the failure of Wells Fargo to execute this Agreement shall not affect or impair the validity or effectiveness of this Agreement. A carbon, photographic or other reproduction of this Agreement or of any financing statement signed by Company shall have the same force and effect as the original for all purposes of a financing statement. If any provision or application of this Agreement is held unlawful or unenforceable in any respect, such illegality or unenforceability shall not affect other provisions or applications which can be given effect and this Agreement shall be construed as if the unlawful or unenforceable provision or application had never been contained herein or prescribed hereby. All representations and warranties contained in this Agreement shall survive the execution, delivery and performance of this Agreement and the creation and payment of the Obligations.

8. CHOICE OF LAW AND VENUE; JURY TRIAL WAIVER.

8.1 THE VALIDITY OF THIS AGREEMENT, THE CONSTRUCTION, INTERPRETATION, AND ENFORCEMENT HEREOF, AND THE RIGHTS OF THE PARTIES HERETO WITH RESPECT TO ALL MATTERS ARISING HEREUNDER OR RELATED HERETO AS WELL AS ALL CLAIMS, CONTROVERSIES OR DISPUTES ARISING UNDER OR RELATED TO THIS AGREEMENT SHALL BE DETERMINED UNDER, GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF CALIFORNIA.

8.2 THE PARTIES AGREE THAT ALL ACTIONS OR PROCEEDINGS ARISING IN CONNECTION WITH THIS AGREEMENT MAY BE TRIED AND LITIGATED IN THE STATE AND, TO THE EXTENT PERMITTED BY APPLICABLE LAW, FEDERAL COURTS LOCATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA; PROVIDED, THAT ANY SUIT SEEKING ENFORCEMENT AGAINST ANY COLLATERAL OR OTHER PROPERTY MAY BE BROUGHT, AT WELLS FARGO'S OPTION, IN THE COURTS OF ANY JURISDICTION WHERE WELLS FARGO ELECTS TO BRING SUCH ACTION OR WHERE SUCH COLLATERAL OR OTHER PROPERTY MAY BE FOUND. COMPANY AND WELLS FARGO WAIVE, TO THE EXTENT PERMITTED UNDER APPLICABLE LAW, ANY RIGHT EACH MAY HAVE TO ASSERT THE DOCTRINE OF FORUM NON

CONVENIENS OR TO OBJECT TO VENUE TO THE EXTENT ANY PROCEEDING IS BROUGHT IN ACCORDANCE WITH THIS SECTION 8.2.

8.3 TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, COMPANY AND WELLS FARGO HEREBY WAIVE THEIR RESPECTIVE RIGHTS, IF ANY, TO A JURY TRIAL OF ANY CLAIM, CONTROVERSY, DISPUTE, OR CAUSE OF ACTION DIRECTLY OR INDIRECTLY BASED UPON OR ARISING OUT OF THIS AGREEMENT OR ANY OF THE TRANSACTIONS CONTEMPLATED HEREIN, INCLUDING CONTRACT CLAIMS, TORT CLAIMS, BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW OR STATUTORY CLAIMS (EACH, A "CLAIM"). COMPANY AND WELLS FARGO REPRESENT THAT EACH HAS REVIEWED THIS WAIVER AND EACH KNOWINGLY AND VOLUNTARILY WAIVES ITS JURY TRIAL RIGHTS FOLLOWING CONSULTATION WITH LEGAL COUNSEL. IN THE EVENT OF LITIGATION, A COPY OF THIS AGREEMENT MAY BE FILED AS A WRITTEN CONSENT TO A TRIAL BY THE COURT.

8.4 NO CLAIM MAY BE MADE BY COMPANY AGAINST WELLS FARGO, OR ANY AFFILIATE, DIRECTOR, OFFICER, EMPLOYEE, COUNSEL, REPRESENTATIVE, AGENT, OR ATTORNEY-IN-FACT OF ANY OF THEM FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL, OR PUNITIVE DAMAGES IN RESPECT OF ANY CLAIM FOR BREACH OF CONTRACT OR ANY OTHER THEORY OF LIABILITY ARISING OUT OF OR RELATED TO THE TRANSACTIONS CONTEMPLATED BY THIS AGREEMENT, OR ANY ACT, OMISSION, OR EVENT OCCURRING IN CONNECTION HERewith, AND COMPANY HEREBY WAIVES, RELEASES, AND AGREES NOT TO SUE UPON ANY CLAIM FOR SUCH DAMAGES, WHETHER OR NOT ACCRUED AND WHETHER OR NOT KNOWN OR SUSPECTED TO EXIST IN ITS FAVOR.

8.5 IN THE EVENT ANY LEGAL PROCEEDING IS FILED IN A COURT OF THE STATE OF CALIFORNIA (THE "COURT") BY OR AGAINST ANY PARTY HERETO IN CONNECTION WITH ANY CLAIM AND THE WAIVER SET FORTH IN SECTION 8.3 ABOVE IS NOT ENFORCEABLE IN SUCH PROCEEDING, THE PARTIES HERETO AGREE AS FOLLOWS:

(a) WITH THE EXCEPTION OF THE MATTERS SPECIFIED IN SUBCLAUSE (b) BELOW, ANY CLAIM SHALL BE DETERMINED BY A GENERAL REFERENCE PROCEEDING IN ACCORDANCE WITH THE PROVISIONS OF CALIFORNIA CODE OF CIVIL PROCEDURE SECTIONS 638 THROUGH 645.1. THE PARTIES INTEND THIS GENERAL REFERENCE AGREEMENT TO BE SPECIFICALLY ENFORCEABLE. VENUE FOR THE REFERENCE PROCEEDING SHALL BE IN THE COUNTY OF LOS ANGELES, CALIFORNIA.

(b) THE FOLLOWING MATTERS SHALL NOT BE SUBJECT TO A GENERAL REFERENCE PROCEEDING: (A) FORECLOSURE OR ANY SIMILAR REMEDY OF ANY SECURITY INTERESTS IN REAL OR PERSONAL PROPERTY,

(B) EXERCISE OF SELF-HELP REMEDIES (INCLUDING SET-OFF OR RECOUPMENT), (C) APPOINTMENT OF A RECEIVER, AND (D) TEMPORARY, PROVISIONAL, OR ANCILLARY REMEDIES (INCLUDING WRITS OF ATTACHMENT, WRITS OF POSSESSION, TEMPORARY RESTRAINING ORDERS, OR PRELIMINARY INJUNCTIONS). THIS AGREEMENT DOES NOT LIMIT THE RIGHT OF ANY PARTY TO EXERCISE OR OPPOSE ANY OF THE RIGHTS AND REMEDIES DESCRIBED IN CLAUSES (A) - (D) AND ANY SUCH EXERCISE OR OPPOSITION DOES NOT WAIVE THE RIGHT OF ANY PARTY TO PARTICIPATE IN A REFERENCE PROCEEDING PURSUANT TO THIS AGREEMENT WITH RESPECT TO ANY OTHER MATTER.

(c) UPON THE WRITTEN REQUEST OF ANY PARTY, THE PARTIES SHALL SELECT A SINGLE REFEREE, WHO SHALL BE A RETIRED JUDGE OR JUSTICE. IF THE PARTIES DO NOT AGREE UPON A REFEREE WITHIN 10 DAYS OF SUCH WRITTEN REQUEST, THEN, ANY PARTY SHALL HAVE THE RIGHT TO REQUEST THE COURT TO APPOINT A REFEREE PURSUANT TO CALIFORNIA CODE OF CIVIL PROCEDURE SECTION 640(b). THE REFEREE SHALL BE APPOINTED TO SIT WITH ALL OF THE POWERS PROVIDED BY LAW. PENDING APPOINTMENT OF THE REFEREE, THE COURT SHALL HAVE THE POWER TO ISSUE TEMPORARY OR PROVISIONAL REMEDIES.

(d) EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE REFEREE SHALL DETERMINE THE MANNER IN WHICH THE REFERENCE PROCEEDING IS CONDUCTED INCLUDING THE TIME AND PLACE OF HEARINGS, THE ORDER OF PRESENTATION OF EVIDENCE, AND ALL OTHER QUESTIONS THAT ARISE WITH RESPECT TO THE COURSE OF THE REFERENCE PROCEEDING. ALL PROCEEDINGS AND HEARINGS CONDUCTED BEFORE THE REFEREE, EXCEPT FOR TRIAL, SHALL BE CONDUCTED WITHOUT A COURT REPORTER, EXCEPT WHEN ANY PARTY SO REQUESTS A COURT REPORTER AND A TRANSCRIPT IS ORDERED, A COURT REPORTER SHALL BE USED AND THE REFEREE SHALL BE PROVIDED A COURTESY COPY OF THE TRANSCRIPT. THE PARTY MAKING SUCH REQUEST SHALL HAVE THE OBLIGATION TO ARRANGE FOR AND PAY THE COSTS OF THE COURT REPORTER, PROVIDED THAT SUCH COSTS, ALONG WITH THE REFEREE'S FEES, SHALL ULTIMATELY BE BORNE BY THE PARTY WHO DOES NOT PREVAIL, AS DETERMINED BY THE REFEREE.

(e) THE REFEREE MAY REQUIRE ONE OR MORE PREHEARING CONFERENCES. THE PARTIES HERETO SHALL BE ENTITLED TO DISCOVERY, AND THE REFEREE SHALL OVERSEE DISCOVERY IN ACCORDANCE WITH THE RULES OF DISCOVERY, AND SHALL ENFORCE ALL DISCOVERY ORDERS IN THE SAME MANNER AS ANY TRIAL COURT JUDGE IN PROCEEDINGS AT LAW IN THE STATE OF CALIFORNIA.

(f) THE REFEREE SHALL APPLY THE RULES OF EVIDENCE APPLICABLE TO PROCEEDINGS AT LAW IN THE STATE OF CALIFORNIA AND SHALL DETERMINE ALL ISSUES IN ACCORDANCE WITH CALIFORNIA SUBSTANTIVE AND PROCEDURAL LAW. THE REFEREE SHALL BE EMPOWERED TO ENTER EQUITABLE AS WELL AS LEGAL RELIEF AND RULE ON ANY MOTION WHICH WOULD BE AUTHORIZED IN A TRIAL, INCLUDING MOTIONS FOR DEFAULT JUDGMENT OR SUMMARY JUDGMENT. THE REFEREE SHALL REPORT HIS OR HER DECISION, WHICH REPORT SHALL ALSO INCLUDE FINDINGS OF FACT AND CONCLUSIONS OF LAW. THE REFEREE SHALL ISSUE A DECISION AND PURSUANT TO CALIFORNIA CODE OF CIVIL PROCEDURE, SECTION 644, THE REFEREE'S DECISION SHALL BE ENTERED BY THE COURT AS A JUDGMENT IN THE SAME MANNER AS IF THE ACTION HAD BEEN TRIED BY THE COURT. THE FINAL JUDGMENT OR ORDER FROM ANY APPEALABLE DECISION OR ORDER ENTERED BY THE REFEREE SHALL BE FULLY APPEALABLE AS IF IT HAS BEEN ENTERED BY THE COURT.

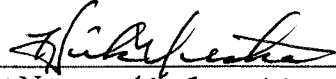
(g) THE PARTIES RECOGNIZE AND AGREE THAT ALL CLAIMS RESOLVED IN A GENERAL REFERENCE PROCEEDING PURSUANT HERETO WILL BE DECIDED BY A REFEREE AND NOT BY A JURY. AFTER CONSULTING (OR HAVING HAD THE OPPORTUNITY TO CONSULT) WITH COUNSEL OF THEIR OWN CHOICE, EACH PARTY HERETO KNOWINGLY AND VOLUNTARILY AND FOR THEIR MUTUAL BENEFIT AGREES THAT THIS REFERENCE PROVISION SHALL APPLY TO ANY DISPUTE BETWEEN THEM THAT ARISES OUT OF OR IS RELATED TO THIS AGREEMENT.

[Signatures on next page]

IN WITNESS WHEREOF, the parties have executed this Patent and Trademark Security Agreement as of the date written above.

Zhone Technologies, Inc.
7195 Oakport Street
Oakland, California 94621
Attn: Chief Financial Officer

ZHONE TECHNOLOGIES, INC.

By: 
Print Name: KIRK MISAKA
Its: CFO

Wells Fargo Bank, National Association
245 S. Los Robles Avenue, Suite 700
Pasadena, California 91101
Attn: Relationship Manager – Zhone
Technologies, Inc.

WELLS FARGO BANK, NATIONAL
ASSOCIATION

By: _____
Print Name:
Its: Authorized Signatory

IN WITNESS WHEREOF, the parties have executed this Patent and Trademark Security Agreement as of the date written above.

Zhone Technologies, Inc.
7195 Oakport Street
Oakland, California 94621
Attn: Chief Financial Officer

ZHONE TECHNOLOGIES, INC.

By: _____
Print Name:
Its:

Wells Fargo Bank, National Association
245 S. Los Robles Avenue, Suite 700
Pasadena, California 91101
Attn: Relationship Manager – Zhone
Technologies, Inc.

WELLS FARGO BANK, NATIONAL
ASSOCIATION

By: 
Print Name: Josephine Camalia
Its: Authorized Signatory

EXHIBIT A

UNITED STATES ISSUED PATENTS

Zhone Technologies, Inc. Patents

Patent Number	Utility Number	Title
5165091	07/672,707	Firmware download from a remote terminal to an optical network terminal in a digital loop carrier system
7197010	09/885,373	System for Real Time Voice Quality Measurement in Voice Over Packet Network

EXHIBIT B

UNITED STATES ISSUED TRADEMARKS, SERVICE MARKS

AND COLLECTIVE MEMBERSHIP MARKS

Trademarks - United States

United States Trademark	Application Number	Registration Number	Registration Date	Expiration Date
BANDWIDTH CHANGES EVERYTHING	85/030,477			
FIBERJACK	78/279,513	3228389	10-Apr-2007	10-Apr-2017
IP ZONE	85/295,116			
MALC	76/175,453	2725112	10-Jun-2003	10-Jun-2013
MXK	77/739,166	3725214	15-Dec-2009	15-Dec-2019
PREMISYS	74/093,219	1738931	08-Dec-1992	08-Dec-2012
RAPTOR	78/216,279	3133679	22-Aug-2006	22-Aug-2016
SLMS	76/110,937	2608096	13-Aug-2002	13-Aug-2012
SMART OMCI	77/739,120	3895661	21-Dec-2010	21-Dec-2020
ZHONE	76/175,462	2725113	10-Jun-2003	10-Jun-2013
ZHONE EZ CLOUD	85/344,417			
ZHONE EZ FIBERSERVICE	85/419,934			
ZHONE EZ SERVICE	85/342,013			
ZHONE EZ TOUCH PROVISIONING	85/090,183			
ZHONE FIBERCELL	85/245,648			
ZHONE FIBERHOME	85/225,455			
ZHONE FIBERLAN	85/505,377			

ZMS	76/174,513	2586521	25-Jun-2002	25-Jun-2012
Znid	77/067,082	3390835	04-Mar-2008	04-Mar-2018

Trademarks - Canada

Canada Trademark	Registration Number	Registration Date	Expiration Date
Z and design	TMA574,17 7	05-Jun-2007	04-Jun-2017
ZHONE	TMA574,17 6	22-Jan-2003	22-Jan-2018

Trademarks – Other Jurisdictions

Trademark	Jurisdiction	Registration Number	Registration Date	Expiration Date
Z and design	Australia	833161	30-Mar-2001	28-Apr-2020
ZHONE	Australia	833160	30-Mar-2001	28-Apr-2020
Z ZHONE	Brazil	822905132	05-Jun-2007	04-Jun-2017
Z and design	Chile	587.381	10-Jan-2001	10-Jan-2021
ZHONE	Chile	587.379	10-Jan-2001	10-Jan-2021
Z and design	China (People's Republic)	1606365	21-Jul-2001	20-Jul-2021

Z ZHONE	China (People's Republic)	1606363	21-Jul-2001	20-Jul-2021
MXK	European Community	8338394	23-Dec-2009	03-Jun-2019
Z ZHONE	European Community	1683705	03-Aug- 2001	31-May-2020
Z and design	Hong Kong	2000B15914	05-Dec-2000	03-May-2017
Z ZHONE	Hong Kong	200015555	24-Nov- 2000	03-May-2017
Z and design	India	928855	21-Apr-2005	31-May-2020
Z ZHONE	India	928854	31-May- 2000	31-May-2020
Z and design	Indonesia	477919	25-May- 2001	31-May-2020
Z ZHONE	Indonesia	477920	25-May- 2001	31-May-2020
Z and design	Israel	138375	03-Jul-2001	29-May-2017
Z ZHONE	Israel	138374	05-Sep-2001	29-May-2017
Z and design	Japan	4468117	20-Apr-2001	20-Apr-2021
Z ZHONE	Japan	4466214	13-Apr-2001	13-Apr-2021
Z and design	Korea, Republic of	511689	01-Feb-2002	01-Feb-2022
Z ZHONE	Korea, Republic of	511688	01-Feb-2002	01-Feb-2022
Z and design	Mexico	454566	25-Oct-2000	25-Oct-2020
Z ZHONE	Mexico	750581	14-Jun-2002	25-Oct-2020
Z and design	New Zealand	615692	30-Nov- 2000	29-May-2017
Z ZHONE	New Zealand	615691	08-Mar- 2001	29-May-2017
Z and design	Russian Federation	210339	02-Apr-2002	30-May-2020

ZHONE	Russian Federation	210414	04-Apr-2002	30-May-2020
Z and design	Singapore	T00/07160C	29-Apr-2000	29-Apr-2020
Z ZHONE	Singapore	T00/07159Z	29-Apr-2000	29-Apr-2020
Z and design	South Africa	2000/10767	19-Dec-2003	30-May-2020
Z ZHONE	South Africa	2000/10766	19-Dec-2003	30-May-2020
Z ZHONE	Switzerland	478.136	07-Nov-2000	30-May-2020

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