503215113 03/12/2015 PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3261728

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| CONVEYING PARTY DA | TA | | | | |
| | | Name | Execution Date | | |
| LILEI WANG | | | 10/29/2014 | | |
| MING XU | | | 11/18/2014 | | |
| MASAYUKI HOSHINO | | | 10/29/2014 | | |
| AKIHIKO NISHIO | | | 10/31/2014 | | |
| RECEIVING PARTY DAT | [A | | | | |
| Name: | | ONIC INTELLECTUAL PROPERTY (| CORPORATION OF AMERICA | | |
| Street Address: | 20000 1 | MARINER AVENUE | | | |
| Internal Address: | SUITE 2 | 200 | | | |
| City: | TORRA | NCE | | | |
| State/Country: | CALIFORNIA | | | | |
| Postal Code: | 90503 | | | | |
| Property Type | | Number | _ | | |
| Application Number: | | 14416174 | | | |
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| CORRESPONDENCE DA | AIA | | | | |
| CORRESPONDENCE DA Fax Number: | AIA | | | | |
| Fax Number: <i>Correspondence will be</i> | e sent to | the e-mail address first; if that is u | | | |
| Fax Number: <i>Correspondence will be</i> <i>using a fax number, if p</i> | e sent to provided | ; if that is unsuccessful, it will be s | | | |
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| Fax Number: <i>Correspondence will be</i> <i>using a fax number, if p</i> | e sent to provided | l ; if that is unsuccessful, it will be s kunou.yoshie@kk.jp.panasonic.com | ent via US Mail. | | |
| Fax Number: <i>Correspondence will be using a fax number, if p</i> Email: Correspondent Name: | e sent to provided | <i>t; if that is unsuccessful, it will be s</i> kunou.yoshie@kk.jp.panasonic.com PANASONIC IP MANAGEMENT CO. | <i>ent via US Mail.</i> , LTD. | | |
| Fax Number: <i>Correspondence will be using a fax number, if p</i> Email: Correspondent Name: Address Line 1: | e sent to provided | <i>; if that is unsuccessful, it will be s</i> kunou.yoshie@kk.jp.panasonic.com PANASONIC IP MANAGEMENT CO. 7F OBP PANASONIC TOWER | <i>ent via US Mail.</i> , LTD. | | |
| Fax Number: <i>Correspondence will be</i> <i>using a fax number, if p</i> Email: Correspondent Name: Address Line 1: Address Line 2: | e sent to provided | <i>I; if that is unsuccessful, it will be s</i> kunou.yoshie@kk.jp.panasonic.com PANASONIC IP MANAGEMENT CO. 7F OBP PANASONIC TOWER 1-61, SHIROMI 2-CHOME, CHUO-KL | <i>ent via US Mail.</i> , LTD. | | |
| Fax Number: <i>Correspondence will be using a fax number, if p</i> Email: Correspondent Name: Address Line 1: Address Line 2: Address Line 4: | e sent to provided | <i>I; if that is unsuccessful, it will be s</i> kunou.yoshie@kk.jp.panasonic.com PANASONIC IP MANAGEMENT CO. 7F OBP PANASONIC TOWER 1-61, SHIROMI 2-CHOME, CHUO-KL OSAKA, JAPAN 540-6207 | <i>ent via US Mail.</i> , LTD. | | |
| Fax Number: Correspondence will be using a fax number, if p Email: Correspondent Name: Address Line 1: Address Line 2: Address Line 4: | e sent to provided | <i>t; if that is unsuccessful, it will be s</i> kunou.yoshie@kk.jp.panasonic.com PANASONIC IP MANAGEMENT CO. 7F OBP PANASONIC TOWER 1-61, SHIROMI 2-CHOME, CHUO-KL OSAKA, JAPAN 540-6207 P636176-02 | <i>ent via US Mail.</i> , LTD. | | |
| Fax Number: <i>Correspondence will be</i> <i>using a fax number, if p</i> Email: Correspondent Name: Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET NU NAME OF SUBMITTER: | e sent to provided | <i>I; if that is unsuccessful, it will be s</i> kunou.yoshie@kk.jp.panasonic.com PANASONIC IP MANAGEMENT CO. 7F OBP PANASONIC TOWER 1-61, SHIROMI 2-CHOME, CHUO-KL OSAKA, JAPAN 540-6207 P636176-02 CHIKA EDA | <i>ent via US Mail.</i> , LTD. | | |
| Fax Number: <i>Correspondence will be</i> <i>using a fax number, if p</i> Email: Correspondent Name: Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET NU NAME OF SUBMITTER: SIGNATURE: | e sent to provided | <i>F; if that is unsuccessful, it will be s</i> kunou.yoshie@kk.jp.panasonic.com PANASONIC IP MANAGEMENT CO. 7F OBP PANASONIC TOWER 1-61, SHIROMI 2-CHOME, CHUO-KL OSAKA, JAPAN 540-6207 P636176-02 CHIKA EDA /Chika EDA/ | <i>ent via US Mail.</i> , LTD. | | |

PATENT REEL: 035145 FRAME: 0074

Assignment Form 3.0 (Oct. 2008)

PATENT REEL: 035145 FRAME: 0075

Panasonic Ref*: P636176-02

Seed IP

Japan Firm Name: WASHIDA & ASSOCIATES

US Firm Name*: (*nuethefilled)

Japan Firm Ref.

US Firm Ref.

2F12210-US-P

Application Serial No. 14/416174

ASSIGNMENT

| WHEREAS, the undersigned has (have) invented the invention entitled: | | |
|---|---|------------------------|
| Box 1 | | |
| Title of Invention: | | |
| COMMUNICATION METHOD, BASE STATION AND USER EQUIP | PMENT | |
| | | |
| 1. For use when signing Declaration prior to fi | ing U.S. patent application (check only one box b | elow) |
| (a) \square for which an application for U.S. patent has been executed by th | e undersigned concurrently herewith, | or |
| (b) for which an application for U.S. patent has been executed on the (Delation & Assignmentan signal and the same dip check (a) and index to any induction of the Declaration was a | | die Declamaioni |
| (C)■ for which an International Application has been filed as: for the PCT-US nutrical and checkely (c) and an erPCT application methods to the right) | PCT Application No. | PCT/CN2012/080560 and, |
| 2. For use when signing Deck | aration after filing U.S. patent application | |
| (d) for which an application for U.S. patent has been filed on: | Application Filing Date | and, |

WHEREAS, Panasonic Intellectual Property Corporation of America of 20000 Mariner Avenue, Suite 200, Torrance, CA 90503 U.S.A, its/their heirs, successors, legal representatives and assigns (hereinafter designated as "Assignee(s)") is/are desirous of acquiring the entire right, title, and interest in and to said invention and in and to any Letters Patent(s) that may be granted therefor.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged and intended to be legally bound hereby, the undersigned, by these presents, does sell, assign and transfer unto said Assignee(s) the entire and exclusive right, title and interest in and to; (i) said invention in the United States of America, its territories, dependencies and possessions (hereinafter designated as the United States) and in all countries foreign to the United States; and (ii) this patent application and any and all related patent application(s) disclosing said invention, including provisionals, non-provisionals, conversions, divisions, continuations, continuations-in-part and reissues thereof in the United States and all countries foreign to the United States (hereinafter designated as "Related Applications"), along with all rights of priority created by this patent application under any treaty relating thereto; and (iii) any and all Letters Patent(s), including all renewals, extensions, reissues and recemination certificates which may be granted therefore, and all rights to sue for past and future infringement thereunder, in the United States and in all countries foreign to the United States for the full term or terms thereof.

The undersigned agree(s) to execute all papers necessary in connection with this application and any and all Related Applications thereof, all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements, all papers necessary in connection with any interference which may be declared concerning this application or any and all Related Applications thereof and to cooperate with the Assignee(s) in every way possible in obtaining and producing evidence and proceeding with such interference, and for any and all litigations regarding, or for the purpose of protecting the right, title and interest in and to said invention, this application and any and all Related Application ... or Letters Patent(s) therefore, and to testify in any legal proceeding relating thereto and in support thereof, for the benefit of Assignee(s), and also to execute separate assignments in connection with such applications as the Assignee(s) may deem necessary or expedient. The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States and any foreign patent(s) to the

Assignee(s) and to vest all rights hereby conveyed to the Assignee(s) as fully and entirely as the same would have been held by the undersigned if this Assignment had not been made.

The undersigned hereby authorize(s) and request(s) the Commissioner of Patents, and officials of all foreign countries, whose duty is to issue patents, to issue any and all Letters Patent(s) resulting from said application or any and all Related Applications thereof to said Assignee(s) and hereby covenants that the undersigned has (have) full right to convey the entire interest herein assigned, and that the undersigned has (have) not executed, and will not execute, any assignment, sale, agreement or encumbrances in conflict herewith.

The undersigned hereby does seli, assign and transfer unto said Assignee(s) the full and exclusive authority for revoking power of attorney(s) executed by the undersigned in connection with this application and for appointing a new power of attorney in place thereof.

The undersigned hereby grant(s) the Assignee(s) and the appointed U.S. patent attorneys and agents the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent Office for recordation of this document.

The undersigned hereby agree(s) that the above obligations shall apply to the undersigned both individually and collectively.

The undersigned hereby agree(s) that this Assignment shall be construed in accordance with the law of the appropriate jurisdiction within the United States. IN WITNESS WHEREOF, executed by the undersigned on the date(s) following the undersigned name(s) and signature(s).

| Box2 | (Each Inventor, please Sign and Date below) | | |
|------|---|---------------|------------------------------------|
| | (e) First Name, Last Name | (f) Signature | (g) Date signed |
| (1) | Lilei WANG | Lilei Mang | Month, Dave, Year Oct. 29, 2014 |
| (2) | Ming XU | Ming Xa | North, Dae, Year Nov. 18, 2014 |
| (3) | Masayuki HOSHINO | | Month, Dale, Year |
| (4) | Akihiko NISHIO | | Month, Date, Year |

Check if additional paper(s) is/are attached. Total of _____ pages are submitted.

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Assignment Form 3.0 (Oct. 2008)

| Panasonic Ref*: | P636176-02 | Application Serial No. | 14/416174 |
|--------------------|----------------------|------------------------|--------------|
| Japan Firm Name: _ | WASHIDA & ASSOCIATES | Japan Firm Ref. | 2F12210-US-P |
| US Firm Name*: | Seed IP | US Firm Ref. | |

ASSIGNMENT

| WHEREAS | the undersigned | has (have) | invented. | the invention | entitled: |
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| y U.S. patent application (check only one box be | skow) |
| undersigned concurrently herewith, | or |
| following date(s): albufare his Assignment, over the date(s) any hid syan signed i | , Or he Declaration) |
| PCT Application No. | PCT/CN2012/080560 and, |
| tion after filing U.S. patent application | |
| Application Filing Date | and, |
| | undersigned concurrently herewith, ollowing date(s): <u>defere lite Assignment</u> are the dat(s) analiticity an signal defere lite Assignment are the dat(s) and the literation PCT Application No. |

WHEREAS, <u>Panasonic Intellectual Property Corporation of America</u> of 20000 Mariner Avenue, Suite 200, Torrance, CA 90503 U.S.A, its/their heirs, successors, legal representatives and assigns (hereinafter designated as "Assignee(s)") is/are desirous of acquiring the entire right, title, and interest in and to said invention and in and to any Letters Patent(s) that may be granted therefor.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged and intended to be legally bound hereby, the undersigned, by these presents, does sell, assign and transfer unto said Assignee(s) the entire and exclusive right, title and interest in and to; (i) said invention in the United States of America, its territories, dependencies and possessions (hereinafter designated as the United States) and in all countries foreign to the United States; and (ii) this patent application and any and all related patent application(s) disclosing said invention, including provisionals, non-provisionals, conversions, divisions, continuations-in-part and reissues thereof in the United States and all countries (hereinafter designated as "Related Applications"), along with all rights of priority created by this patent application under any treaty relating thereto; and (ii) any and all Letters which may be granted therefore, and all rights to sue for past and future infringement thereunder, in the United States and in all countries foreign to the United States and (iii) any and all Letters which may be granted therefore, and all rights to sue for past and future infringement thereunder, in the United States and in all countries foreign to the United States for the full term or terms thereof.

The undersigned agree(s) to execute all papers necessary in connection with this application and any and all Related Applications thereof, all papers and documents and perform any act which may be necessary in connection with daims or provisions of the International Convention for Protection of Industrial Property or similar agreements, all papers necessary in connection with any interference which may be declared concerning this application or any and all Related Applications thereof and to cooperate with the Assignee(s) in every way possible in obtaining and producing evidence and proceeding with such interference, and for any and all related Applications or Letters in additions regarding, or for the purpose of protecting the right, title and interest in and to said invention, this application and any and all Related Applications or Letters assignments in connection with such applications as the Assignee(s) may deem necessary or expedient.

The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States and any foreign patent(s) to the Assignee(s) and to vest all rights hereby conveyed to the Assignee(s) as fully and entirely as the same would have been held by the undersigned if this Assignment had not been made.

The undersigned hereby authorize(s) and request(s) the Commissioner of Patents, and officials of all foreign countries, whose duty is to issue patents, to issue any and all Letters Patent(s) resulting from said application or any and all Related Applications thereof to said Assignee(s) and hereby covenants that the undersigned has (have) full right to convey the entire interest herein assigned, and that the undersigned has (have) not executed, and will not execute, any assignment, sale, agreement or encumbrances in conflict herewith.

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| Box2 | (Each Inventor, please Sign and Date below) | | |
|------|---|-----------------|-------------------------------------|
| | (e) First Name, Last Name | (f) Signature | (g) Date signed |
| (1) | Lilei WANG | | Month, Date, Year |
| (2) | Ming XU | | Month, Date, Year |
| (3) | Masayuki HOSHINO | masayti Hostine | Month, Date, Year Doct. 29, 2014 |
| (4) | Akihiko NISHIO | abilitie tistio | Morith, Date, Year Oct. 31, 2014 |

Check if additional paper(s) is/are attached. Total of _____ pages are submitted.

PATENT REEL: 035145 FRAME: 0076

RECORDED: 03/12/2015

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