PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4176952

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|------------------|----------------|
| SUNDAR NARAYANAN | 12/06/2016 |
| SUNG HYUN JO | 12/05/2016 |
| LIANG ZHAO | 12/05/2016 |

RECEIVING PARTY DATA

| Name: | CROSSBAR, INC. |
|-------------------|--------------------------|
| Street Address: | 3200 PATRICK HENRY DRIVE |
| Internal Address: | SUITE 110 |
| City: | SANTA CLARA |
| State/Country: | CALIFORNIA |
| Postal Code: | 95054 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 15370561 |

CORRESPONDENCE DATA

Fax Number: (216)696-8731

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

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 2166968730

Email: epas@thepatentattorneys.com AMIN, TUROCY & WATSON, LLP **Correspondent Name:**

Address Line 1: 127 PUBLIC SQUARE

Address Line 2: 57TH FLOOR, KEY TOWER Address Line 4: CLEVELAND, OHIO 44114

| ATTORNEY DOCKET NUMBER: | A936SP-015100US/CROSP255A | |
|-------------------------|---------------------------|--|
| NAME OF SUBMITTER: | MATTHEW F. CLAPPER | |
| SIGNATURE: | /Matthew F. Clapper/ | |
| DATE SIGNED: | 12/08/2016 | |

Total Attachments: 3

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PATENT ASSIGNMENT

| | un Jo, and Liang Zhao ("ASSIGNORS"), | | | |
|--|--|--|--|--|
| have invented subject matter ("INVENTION") disclosed and/or claimed in a patent | | | | |
| application entitled "REGULATING INTERFACE | LAYER FORMATION FOR TWO-TERMINAL | | | |
| MEMORY" ("APPLICATION"), which: | DITTIES ACCIONIST ACCIONO | | | |
| will be filed without this executed | | | | |
| hereby authorize, and request, ASSIGNEE'S legal representatives, of | | | | |
| • | Public Square, 57th Floor, Key Tower, | | | |
| · | ssociated with customer number 23623, | | | |
| to insert here in parenthesis (U.S. S | | | | |
| | ATION'S U.S. Serial Number and filing | | | |
| date, when known; | | | | |
| was filed on and was given | U.S. Serial No; | | | |
| is filed concurrently herewith; | | | | |
| | oration, on behalf of itself and its | | | |
| successors and assigns ("ASSIGNEE"), is entitle | | | | |
| entire and exclusive rights, title and interest i | | | | |
| (and all other applications and patents derived | —————————————————————————————————————— | | | |
| applications, in and for the United States, its t | erritories, and all foreign countries | | | |
| ("APPLICATION DERIVATIVES"); | | | | |
| | tion, the receipt of which is hereby | | | |
| acknowledged by the ASSIGNORS, the ASSIGNORS hereby sell, assign and transfer to | | | | |
| the ASSIGNEE, the entire and exclusive rights, | · | | | |
| the APPLICATION (and APPLICATION DERIVATI | | | | |
| ASSIGNORS agree to execute all instruments and documents required for | | | | |
| the making and prosecution of the APPLICATION (and APPLICATION DERIVATIVES), for | | | | |
| litigation regarding letters patent derived therefrom, and for the purpose of protecting | | | | |
| and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES). | | | | |
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| 12-6-16 | \sim | | | |
| DATE | Fundar Navayanan | | | |
| DATE | Sundar Narayanan | | | |
| | | | | |
| DATE | Sung Hyun Jo | | | |
| | . | | | |
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| DATE. | Liang Zhao | | | |

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| WE, Sundar Narayanan, Sung Hyur | ı Jo, and Liang Zhao ("ASSIGNORS"), | |
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| will be filed without this executed Pa | ATENT ASSIGNMENT. ASSIGNORS | |
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| Amin, Turocy & Watson, LLP, 127 Pu | • | |
| • | sociated with customer number 23623, | |
| to insert here in parenthesis (U.S. Se | | |
| filed <u>06-DEC-2016</u>) this APPLICAT | | |
| date, when known; | j | |
| was filed on and was given l | J.S. Serial No. ; | |
| is filed concurrently herewith; | | |
| Crossbar, Inc., a California Corpor | ation, on behalf of itself and its | |
| successors and assigns ("ASSIGNEE"), is entitled | to, and is desirous of acquiring, the | |
| entire and exclusive rights, title and interest in | the INVENTION and the APPLICATION | |
| (and all other applications and patents derived | therefrom, such as continuing | |
| applications, in and for the United States, its te | rritories, and all foreign countries | |
| ("APPLICATION DERIVATIVES"); | | |
| For good and valuable considerati | on, the receipt of which is hereby | |
| acknowledged by the ASSIGNORS, the ASSIGNO | RS hereby sell, assign and transfer to | |
| the ASSIGNEE, the entire and exclusive rights, title and interest in the INVENTION and | | |
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| the making and prosecution of the APPLICATIO | N (and APPLICATION DERIVATIVES), for | |
| litigation regarding letters patent derived there | from, and for the purpose of protecting | |
| and perfecting title to the APPLICATION (and AF | PPLICATION DERIVATIVES). | |
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| DATE | Sundar Narayanan | |
| 12/05/2016 | Singhopoto | |
| DATE | Sung Hyun Jo | |
| | | |
| DATE | Liang Zhao | |

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| was filed on and was give | n U.S. Serial No. | | | |
| is filed concurrently herewith; | | | | |
| • | poration, on behalf of itself and its | | | |
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| the making and prosecution of the APPLICAT | | | | |
| litigation regarding letters patent derived the | —————————————————————————————————————— | | | |
| and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES). | | | | |
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| DATE | Cundar Narayanan | | | |
| | Sundar Narayanan | | | |
| | | | | |
| DATE | Sung Hyun Jo | | | |
| <i>(</i> -) | / \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | | | |
| 12/5/2016 | Letter. | | | |
| DATE | Liang Zhao | | | |

RECORDED: 12/08/2016