503390738 07/14/2015

PATENT ASSIGNMENT COVER SHEET

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

CONVEYING PARTY DATA

| Name | Execution Date |
|--------------|----------------|
| JONGPAL KIM | 06/23/2015 |
| TAKHYUNG LEE | 06/24/2015 |

RECEIVING PARTY DATA

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| City: | SUWON-SI | |
| State/Country: | KOREA, REPUBLIC OF | |

PROPERTY NUMBERS Total: 1

| Property Type | Number | |
|---------------------|----------|--|
| Application Number: | 14798665 | |

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| ATTORNEY DOCKET NUMBER: | R: 012052.1269 | |
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| NAME OF SUBMITTER: | ALICIA M. CHOI | |
| SIGNATURE: | /Alicia M. Choi/ | |
| DATE SIGNED: | 07/14/2015 | |

Total Attachments: 2

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PATENT 503390738 REEL: 036078 FRAME: 0181

Attorney Docket No.: 012052.1269

COMBINED DECLARATION AND ASSIGNMENT UNDER 37 CFR 1.63(e)

DECLARATION

| As a below-named invent | or, I hereby declare | that this declaration | is directed to the application attached |
|---|--|---|--|
| hereto, or to United State | s Application Numb | per or PCT Internation | onal Application Number |
| | filed on | | (if applicable), entitled: |
| APPA | RATUS AND ME | THOD FOR PROC | CESSING SIGNAL |
| The above-identified app | lication was made o | or authorized to be m | ade by me. |
| I believe I am the origina identified application. | l inventor or an orig | ginal joint inventor o | f a claimed invention in the above- |
| I hereby acknowledge that USC 1001 by fine or imp | • | | s declaration is punishable under 18 rs, or both. |
| I have reviewed and under | erstand the contents | of the above-identifi | ed application, including the claims. |
| known to me to be materi | al to patentability a ormation that became | s defined in 37 CFR ne available between | Trademark Office all information 1.56, including for continuation-in-part the filing date of the prior application on-in-part application. |
| | | ASSIGNMENT | |
| For valuable consideration | n, I, as a below-nan | ned assignor, hereby | assign to: |
| Samsung Electron 129, Samsung-ro, Suwon-si, Gyeong Republic of Korea | Yeongtong-gu ggi-do, 443-742 | | |
| and its successors and ass | igns (collectively h | ereinafter called "the | e Assignee"), the entire right, title, and |
| interest throughout the w | orld in the invention | ns and improvements | s that are the subject of the application |
| identified in the above de | claration, which is I | United States Applic | ation Number or PCT International |
| Application Number | 14/798,665 | filed on | July 14, 2015 |
| I authorize and request th | e attorneys appointe | ed in the above-ident | tified application to hereafter complete |

1

this Assignment by inserting above the application number and the filing date of the above-identified

Attorney Docket No.: 012052,1269

application when known, and to correct any typographical errors that may be discovered in this Assignment.

This Assignment includes the above-identified application, any and all United States and foreign patents, utility models, and design registrations granted for any of the inventions and improvements that are the subject of the above-identified application, and the right to claim priority based on the filing date of the above-identified application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and I authorize the Assignee to apply in all countries in my name or in its own name for patents, utility models, design registrations, like rights of exclusion, and inventors' certificates for any of the inventions and improvements that are the subject of the above-identified application; and I agree for myself and my heirs, legal representatives, and assigns without further compensation to perform such lawful acts and to sign such further applications, Assignments, preliminary statements, and other lawful documents as the Assignee may reasonably request to effectuate fully this Assignment.

In witness whereof, I, as a below-named inventor and assignor, intending to be legally bound, have hereunto affixed my signature on the date indicated below next to my signature.

| Inventor's Legal Name | JongPal KIM | | |
|------------------------------|---|--|--|
| Inventor's Signature | 1276 12 Date June 23, 7015 | | |
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| Inventor's Legal Name | TakHyung LEE | | |
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| Inventor's Signature | 1/4/1/2- | Date | June 24 2015 |
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