505223879 12/06/2018

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5270648

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

CONVEYING PARTY DATA

| Name | Execution Date | |
|----------------|----------------|--|
| HOE SEUNG JUNG | 11/27/2018 | |
| JOO YOUNG LEE | 11/27/2018 | |

RECEIVING PARTY DATA

| Name: | SK HYNIX INC. |
|-----------------|---|
| Street Address: | 2091, GYEONGCHUNG-DAERO, BUBAL-EUB, ICHEON-SI |
| City: | GYEONGGI-DO |
| State/Country: | KOREA, REPUBLIC OF |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 16212331 |

CORRESPONDENCE DATA

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

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| ATTORNEY DOCKET NUMBER: | PO180425HD |
|-------------------------|--|
| NAME OF SUBMITTER: | MYUNG SOO KIM |
| SIGNATURE: | /Myung Soo KIM/ |
| DATE SIGNED: | 12/06/2018 |
| | This document serves as an Oath/Declaration (37 CFR 1.63). |

Total Attachments: 2

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PATENT 505223879 REEL: 047698 FRAME: 0022

| | [세종, PTP | US201800601] |
|----------|-------------|--------------|
| Attorney | Docket No.: | |

ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS, Hoe Seung JUNG and Joo Young LEE

hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to

| neremaner referred to concentrely as the assigns and in the | | | |
|---|--|--|--|
| MEMORY CONTROLLER, MEMORY SYSTEM AND OPERATING METHO | D THER | EOF | |
| IOI said application being attached hereto; | | | |
| I lead application having been filed in the United States Patent and Trademark Office on | and of | Yes | amended |
| as Ambication Serial No. | , and | was | amenaca |
| on (if applicable); [] the specification of which was filed under the Patent Cooperation Treaty on | | | |
| Serial No, the United States of America being designated. | | | |
| AND WHEREAS, SK hynix Inc. of 2091, Gyeongchung-daero, Bubal-eub, Icheon-si, Gy Korea, hereinafter referred to as the assignee or applicant, is desirous of acquiring the entire right, said application, including any and all divisions and continuations thereof, and in and to said invertigations which may be granted therefor, including any and all renewals, reissues and prolongations | tion and | ***** | |
| NOW THIS WITNESSETH, that for and in consideration of One Dollar (\$1.00), an consideration paid by said assignee to said assignor, the receipt of which is hereby acknowle assigns, sells and transfers to said assignee, and said assignee's successors and assigns, the full a interest in and to said application, including any and all divisions and continuations thereof, and any and all patents which may be granted therefor, including any and all renewals, reissues and assignee, and said assignee's successors and assigns, to have, hold, exercise and enjoy the said ap all divisions and continuations thereof, and the said invention and any and all patents which including any and all renewals, reissues and prolongations thereof, with all the rights, powers, panywise arising from or appertaining thereto, for and during the term or terms of any and all including any and all renewals, reissues and prolongations thereof, for the use and benefit assignee's successors and assigns, in as ample and beneficial a manner as the said assignor mit enjoyed the same, if this assignment had not been made. | nd excluse n and to prolongation, n may be rivileges such pate of said | said in tions the include grante and adents whe assigne | ht, title and vention and hereof; said ing any and ed therefor, lyantages in hen granted, he, and said we held and |
| AND said assignor hereby agrees to perform, upon the request of said assignee, or sassigns, any and all acts relating to the obtaining or to the asserting of said patents, including an and prolongations thereof. | iy ana an | 1011071 | ment annum |
| AND said assignor authorizes and requests the Commissioner of Patents and Trademar said application, and on any and all divisions and continuations thereof, to said assignee, and sa assigns, in accordance herewith. | ks to issu id assign | e Lette ee's suc | rs Patent or cessors and |
| As an above-named inventor, I hereby declare that the above-identified application wanted by me, and that I am the original inventor or an original joint inventor of a claimed invention | is made in the i | or auth applica | orized to be |
| I hereby acknowledge that any willful false statement made in this declaration is punis by fine or imprisonment of not more than five (5) years, or both. | hable un | der 18 | U.S.C. 100 |
| ASSIGNOR (INVENTOR): | | | |
| Signature: Hoe second Jung Date: 2018. 11. 21 | <u>L</u> | | |
| Printed or Typed Name: Hoe Seung JUNG | | | |

Page 1 of 2

ASSIGNOR (INVENTOR):

Signature: Joo Young LEE Date: 2018 11 2/)

Printed or Typed Name: Joo Young LEE

