

PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT4659331

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	JONGMOO LEE	10/13/2017
	SEUNGMIN CHOI	10/16/2017
	DAEHYUN KIM	10/16/2017
	SOYOUNG KIM	10/13/2017
	MINSIK KIM	10/13/2017
	GEONSOO KIM	10/13/2017
	JINWAN AN	10/13/2017
	JIWOO LEE	10/13/2017
	HYUNSUK CHOI	10/13/2017
RECEIVING PARTY DATA		
Name:	SAMSUNG ELECTRONICS CO., LTD.	
Street Address:	129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI	
City:	GYEONGGI-DO	
State/Country:	KOREA, REPUBLIC OF	
PROPERTY NUMBERS Total: 1		
	Property Type	Number
	Application Number:	15794234
CORRESPONDENCE DATA		
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ATTORNEY DOCKET NUMBER:	5004-1-728	
NAME OF SUBMITTER:	STEVE CHA	
SIGNATURE:	/Steve Cha/	

PATENT

DATE SIGNED:	10/26/2017
Total Attachments: 8 source=5004-1-728_Assignment#page1.tif source=5004-1-728_Assignment#page2.tif source=5004-1-728_Assignment#page3.tif source=5004-1-728_Assignment#page4.tif source=5004-1-728_Assignment#page5.tif source=5004-1-728_Assignment#page6.tif source=5004-1-728_Assignment#page7.tif source=5004-1-728_Assignment#page8.tif	

Assignment of Invention and Patent Application

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN, be it known that for good and valuable consideration,

- 1) Jongmoo LEE of No. C-1107, 60, Hannam-daero, Yongsan-gu, Seoul,
Republic of Korea
- 2) Seungmin CHOI of No. B, 393, Seongnam-daero, Bundang-gu, Seongnam-si,
Gyeonggi-do, Republic of Korea
- 3) Daehyun KIM of No. 906-2602, 21-12, Dongtangongwon-ro, Hwaseong-si,
Gyeonggi-do, Republic of Korea
- 4) Soyoung KIM of No. 201-1304, 45, Taejang-ro, Yeongtong-gu, Suwon-si,
Gyeonggi-do, Republic of Korea
- 5) Minsik KIM of No. 506-1306, 16, Gwangok-ro, Giheung-gu, Yongin-si,
Gyeonggi-do, Republic of Korea
- 6) Geonsoo KIM of No. 222-701, 24, Dongsuwon-ro 145beon-gil, Gwonseon-gu,
Suwon-si, Gyeonggi-do, Republic of Korea
- 7) Jinwan AN of No. 107-807, 101, Chilseongnam-ro, Buk-gu, Daegu,
Republic of Korea
- 8) Jiwoo LEE of No. 105-602, 80, Haemarugongwon-ro, Gumi-si,
Gyeongsangbuk-do, Republic of Korea
- 9) Hyunsuk CHOI of No. 501-805, 132, Daecheon-ro, Buk-gu, Daegu,
Republic of Korea

(hereinafter **Assignor**) hereby sells, assigns, transfers, and sets over unto:

SAMSUNG ELECTRONICS CO., LTD. of
129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677
REPUBLIC OF KOREA

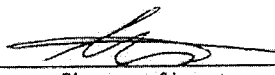
(hereinafter **Assignee**) the entire right, title and interest for the United States Of America and all

**ELECTRONIC DEVICE HAVING HOLE AREA AND METHOD OF CONTROLLING
HOLE AREA THEREOF**

invented by **Assignor**; the application for United States patent and all other countries, invented by **Assignor**; any patent or reissues of any patent that may be granted thereon; and any applications which are continuations, continuation-in-part, substitutes, or divisions of said application. **Assignor** authorizes **Assignee** to enter the date of signature and/or Serial Number and Filing Date in the above. **Assignor** also authorizes and requests the Commissioner of Patents and Trademarks to issue any resulting patent(s) to the said **Assignee**, for its interests as **Assignee**, its successors, assigns and legal representatives. The undersigned agrees that the attorney of record in said application shall hereafter act on behalf of said **Assignee**; and **Assignor** further conveys to **Assignee** all priority rights resulting from the above-identified application for United States Patent and all other countries. **Assignor** agrees to execute all papers, give any required testimony and perform other lawful acts, as deemed essential by **Assignee** to perfect **Assignee's** interest in any resulting patent of the United States and all other countries, and to acquire, hold, enforce, convey, and uphold the validity of said patent and reissues and extensions thereof, and **Assignee's** interest therein.

SIGNED ON THE DATES(S) INDICATED BESIDE MY/OUR SIGNATURE(S):

Name of First Inventor: Jongmoo LEE



Signature of inventor

Dated: 13 / Oct / 2017

WITNESSED: Jihyun KIM

Name of Second Inventor: Seungmin CHOI

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Third Inventor: Daehyun KIM

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Fourth Inventor: Soyoung KIM

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HOLE AREA THEREOF**

invented by Assignor; the application for United States patent and all other countries, invented by Assignor; any patent or reissues of any patent that may be granted thereon; and any applications which are continuations, continuation-in-part, substitutes, or divisions of said application. Assignor authorizes Assignee to enter the date of signature and/or Serial Number and Filing Date in the above. Assignor also authorizes and requests the Commissioner of Patents and Trademarks to issue any resulting patent(s) to the said Assignee, for its interests as Assignee, its successors, assigns and legal representatives. The undersigned agrees that the attorney of record in said application shall hereafter act on behalf of said Assignee; and Assignor further conveys to Assignee all priority rights resulting from the above-identified application for United States Patent and all other countries. Assignor agrees to execute all papers, give any required testimony and perform other lawful acts, as deemed essential by Assignee to perfect Assignee's interest in any resulting patent of the United States and all other countries, and to acquire, hold, enforce, convey, and uphold the validity of said patent and reissues and extensions thereof, and Assignee's interest therein.

SIGNED ON THE DATES(S) INDICATED BESIDE MY/OUR SIGNATURE(S):

Name of First Inventor: Jongmoo LEE

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Second Inventor: Seungmin CHOI



Signature of inventor

Dated: 16 / Oct / 2017

WITNESSED: Jihyun KIM

Name of Third Inventor: Daehyun KIM

Signature of inventor

Dated: _____

WITNESSED: _____

PATENT

REEL: 043956 FRAME: 0480

**ELECTRONIC DEVICE HAVING HOLE AREA AND METHOD OF CONTROLLING
HOLE AREA THEREOF**

invented by **Assignor**; the application for United States patent and all other countries, invented by **Assignor**; any patent or reissues of any patent that may be granted thereon; and any applications which are continuations, continuation-in-part, substitutes, or divisions of said application. **Assignor** authorizes **Assignee** to enter the date of signature and/or Serial Number and Filing Date in the above. **Assignor** also authorizes and requests the Commissioner of Patents and Trademarks to issue any resulting patent(s) to the said **Assignee**, for its interests as **Assignee**, its successors, assigns and legal representatives. The undersigned agrees that the attorney of record in said application shall hereafter act on behalf of said **Assignee**; and **Assignor** further conveys to **Assignee** all priority rights resulting from the above-identified application for United States Patent and all other countries. **Assignor** agrees to execute all papers, give any required testimony and perform other lawful acts, as deemed essential by **Assignee** to perfect **Assignee's** interest in any resulting patent of the United States and all other countries, and to acquire, hold, enforce, convey, and uphold the validity of said patent and reissues and extensions thereof, and **Assignee's** interest therein.

SIGNED ON THE DATES(S) INDICATED BESIDE MY/OUR SIGNATURE(S):

Name of First Inventor: Jongmoo LEE

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Second Inventor: Seungmin CHOI

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Third Inventor: Daehyun KIM

Daehyun KIM
Signature of inventor

Dated: 16. Oct. 2017

WITNESSED: Daehyun KIM

Name of Fourth Inventor: Soyoung KIM

Soyoung Kim
Signature of inventor

Dated: 13. Oct. 2019

WITNESSED: Jihyun KIM

Name of Fifth Inventor: Minsik KIM

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Sixth Inventor: Geonsoo KIM

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Seventh Inventor: Jinwan AN

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Eighth Inventor: Jiwoo LEE

Signature of inventor

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WITNESSED: _____

Name of Ninth Inventor: Hyunsuk CHOI

Signature of inventor

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Name of Fourth Inventor: Soyoung KIM

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Name of Fifth Inventor: Minsik KIM

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Dated: 13. OCT. 2017

WITNESSED: Jinyun KIM

Name of Sixth Inventor: Geonsoo KIM

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Name of Seventh Inventor: Jinwan AN

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Name of Eighth Inventor: Jiwoo LEE

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Ninth Inventor: Hyunsuk CHOI

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Fourth Inventor: Soyoung KIM

Signature of inventor

Dated: _____

WITNESSED: _____

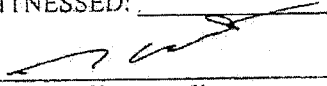
Name of Fifth Inventor: Minsik KIM

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Sixth Inventor: Geonsoo KIM



Signature of inventor

Dated: 13. Oct. 2011

WITNESSED: Jihyun KIM

Name of Seventh Inventor: Jinwan AN

Signature of inventor

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Name of Eighth Inventor: Jiwoo LEE

Signature of inventor

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Name of Ninth Inventor: Hyunsuk CHOI

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WITNESSED: _____

Name of Fourth Inventor: Soyoung KIM

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Fifth Inventor: Minsik KIM

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Sixth Inventor: Geonsoo KIM

Signature of inventor

Dated: _____

WITNESSED: _____

Name of Seventh Inventor: Jinwan AN

Jinwan An
Signature of inventor

Dated: 2017.10.13

WITNESSED: Jihyun KIM

Name of Eighth Inventor: Jiwoo LEE

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Signature of inventor

Dated: 2017.10.13

WITNESSED: Jihyun KIM

Name of Ninth Inventor: Hyunsuk CHOI

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Signature of inventor

Dated: 2017.10.13

WITNESSED: Jihyun KIM