

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5448809

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
JEONGHO YEO	03/12/2019
JINYOUNG OH	03/12/2019
SUNGJIN PARK	03/12/2019
HOONDONG NOH	03/12/2019
TAEHYOUNG KIM	03/13/2019
YONGJUN KWAK	03/13/2019
YOUNSUN KIM	03/12/2019
YOUNGWOON KWAK	03/07/2019
DONGHAN KIM	03/14/2019
YOUNGBUM KIM	03/12/2019
CHEOLKYU SHIN	03/12/2019
SEUNGHOON CHOI	03/12/2019
HEEDON GHA	03/13/2019
TAEHAN BAE	03/13/2019
RECEIVING PARTY DATA	
Name:	SAMSUNG ELECTRONICS CO., LTD.
Street Address:	129, SAMSUNG-RO, YEONGTONG-GU
City:	SUWON-SI, GYEONGGI-DO
State/Country:	KOREA, REPUBLIC OF
Postal Code:	16677
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16338211
CORRESPONDENCE DATA	
Fax Number:	
<i>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.</i>	
Phone:	202-293-0804
Email:	usdocketing@jeffersonip.com

Correspondent Name: JEFFERSON IP LAW, LLP
Address Line 1: 1130 CONNECTICUT AVE., NW, SUITE 420
Address Line 4: WASHINGTON, D.C. 20036

ATTORNEY DOCKET NUMBER: 0203-2377

NAME OF SUBMITTER: JORGE I. NEGRON-GARCIA

SIGNATURE: /Jorge I. NEGRON-GARCIA/

DATE SIGNED: 03/29/2019

Total Attachments: 17

source=0203-2377 Assignment As Filed#page1.tif
source=0203-2377 Assignment As Filed#page2.tif
source=0203-2377 Assignment As Filed#page3.tif
source=0203-2377 Assignment As Filed#page4.tif
source=0203-2377 Assignment As Filed#page5.tif
source=0203-2377 Assignment As Filed#page6.tif
source=0203-2377 Assignment As Filed#page7.tif
source=0203-2377 Assignment As Filed#page8.tif
source=0203-2377 Assignment As Filed#page9.tif
source=0203-2377 Assignment As Filed#page10.tif
source=0203-2377 Assignment As Filed#page11.tif
source=0203-2377 Assignment As Filed#page12.tif
source=0203-2377 Assignment As Filed#page13.tif
source=0203-2377 Assignment As Filed#page14.tif
source=0203-2377 Assignment As Filed#page15.tif
source=0203-2377 Assignment As Filed#page16.tif
source=0203-2377 Assignment As Filed#page17.tif

RECORDATION FORM COVER SHEET PATENTS ONLY

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

1. Name of conveying party(ies)

1) Jeongho YEO; 2) Jinyoung OH; 3) Sungjin PARK;
4) Hoondong NOH; 5) Taehyoung KIM; 6) Yongjun KWAK;
7) Younsun KIM; 8) Youngwoo KWAK; 9) Donghan KIM;
10) Youngbum KIM; 11) Cheolkyu SHIN

Additional name(s) of conveying party(ies) attached? ☒ Yes ☒ No

3. Nature of conveyance/Execution Date(s):

Execution Date(s) March 7, 12, 13, 14, 2019

- ☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Joint Research Agreement
☐ Government Interest Assignment
☐ Executive Order 9424, Confirmatory License
☐ Other _____

2. Name and address of receiving party(ies)

Name: Samsung Electronics Co., Ltd.

Internal Address: _____

Street Address: 129, Samsung-ro, Yeongtong-gu

City: Suwon-si, Gyeonggi-do

State: _____

Country: Republic of Korea Zip: _____

Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application or patent number(s):

☐ This document is being filed together with a new application.

A. Patent Application No.(s)

16/338,211

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

5. Name and address to whom correspondence concerning document should be mailed:

Name: Jefferson IP Law, LLP

Internal Address: Jorge I. Negron-Garcia

Street Address: 1130 Connecticut Ave., NW, Suite 420

City: Washington

State: DC Zip: 20036

Phone Number: 202-293-0804

Fax Number: 202-403-3587

Email Address: usdocketing@jeffersonip.com

6. Total number of applications and patents involved: One

7. Total fee (37 CFR 1.21(h) & 3.41) \$ _____
☐ Authorized to be charged by credit card
☐ Authorized to be charged to deposit account
☐ Enclosed
☐ None required (government interest not affecting title)

8. Payment Information

a. Credit Card Last 4 Numbers _____
Expiration Date _____

b. Deposit Account Number _____

Authorized User Name _____

9. Signature:

/Jorge I. NEGRON-GARCIA/ Reg. No. 66,618

Signature

March 29, 2019

Date

Jorge I. Negron-Garcia

Name of Person Signing

Total number of pages including cover sheet, attachments, and documents:

16

12) Seunghoon CHOI,

13) Heedon GHA, and

14) Taehan BAE

Assignment

WHEREAS, the following inventors, namely 1) Jeongho YEO, 2) Jinyoung OH, 3) Sungjin PARK, 4) Hoondong NOH, 5) Taehyoung KIM, 6) Yongjun KWAK, 7) Younsun KIM, 8) Youngwoo KWAK, 9) Donghan KIM, 10) Youngbum KIM, 11) Cheolkyu SHIN, 12) Seungboon CHOI, 13) Heedon GHA, and 14) Taehan BAE (hereinafter called "Assignors"), having made or discovered certain new, useful and non-obvious improvements in an invention having a working title of:

METHOD AND APPARATUS FOR TRANSMITTING UPLINK CONTROL SIGNAL IN WIRELESS CELLULAR COMMUNICATION SYSTEM,

for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on March 29, 2019, and assigned Serial No. 16/338,211; and,

WHEREAS, **Samsung Electronics Co., Ltd.**, a corporation duly organized under the laws of the Republic of Korea, located and doing business at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, 16677 (hereinafter called "Assignee"), is desirous of acquiring the entire right, title and interest therein;

NOW, THEREFORE, BE IT KNOWN that for and in good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors do hereby sell, assign and transfer unto said Assignee the entire and exclusive worldwide right, title and interest in and to all said inventions and discoveries disclosed in said application, and in and to said application, any and all substitutions, divisions, provisionals, conversions of provisionals and continuations thereof, and in and to all Letters Patent, United States and all other foreign countries, that may be granted for said inventions and discoveries, and in and to all extensions, renewals and reissues thereof; and the right to file any other foreign country application and/or claim priority under the provisions of any international treaty or convention arising from this application or any divisional, continuing, substitute or reissue application therefrom. The aforesaid assignment includes the right in and to all income, royalties, damages and payments, now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale, assignment and transfer had not been made.

Assignors covenant and agree, without further compensation to said Assignors but at Assignee's expense:

- a. to execute:
 - i. all papers to be used in connection with this application and any divisional, continuing, substitute or reissue application thereof, as the Assignee may deem necessary or expedient, and
 - ii. all papers in connection with any interference, litigation, mediation, arbitration or other proceeding relating to this application or any divisional,

- continuing, substitute or reissue application thereof, as may be necessary or expedient;
- b. to cooperate with the Assignee in every way possible in obtaining evidence and going forward in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof;
 - c. to communicate to the Assignee any facts relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof, including evidence for any interference, litigation, mediation, arbitration or other proceeding relating to said invention, whenever requested;
 - d. to testify in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof whenever requested; and
 - e. to perform all other affirmative acts which may be necessary or desirable to secure full and complete protection of the inventions and discoveries or that may be necessary or desirable to vest in Assignee the complete title to the inventions and discoveries and Letters Patent hereby conveyed and to enable Assignee to record title.

Assignors hereby authorize and request the United States Patent and Trademark Office or any other issuing authority to issue any and all Letters Patent that may be granted upon this invention and/or this application or any divisional, continuing, substitute or reissue application thereof to the Assignee, its legal representatives, successors and assigns.

Assignors each hereby represents, covenants and warrants that he or she has the full right to convey the entire right, title and interest by this instrument, free of any encumbrances and that no other agreement has been or will be executed in conflict herewith.

The provisions of this Assignment are binding upon Assignors' heirs, legal representatives and/or administrators and assigns.

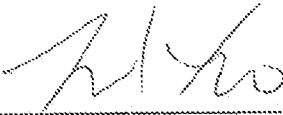
Assignors hereby grant to the law firm of Jefferson IP Law, LLP of Washington, DC and its attorneys and agents as associated with **Customer No. 68103** the authority and power to insert on this instrument any further identification which may be necessary or desirable for purposes of recordation in the United States Patent and Trademark Office or a Patent Office of any foreign country.

DOCKET NO.: 0203-2377

CLIENT REF.: YPF201708-0044/US-PCT_DMC

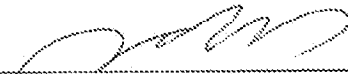
SAMSUNG REF.: MJ-201707-025-1-US0

Signature of Inventor:


Jeongho YEO

Mar. 12, 2019
Date

Signature of Inventor:


Jihyoung OH


Mar. 12, 2019
Date

Signature of Inventor:


Sungjin PARK

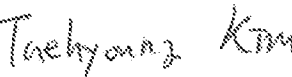
Mar. 12, 2019
Date

Signature of Inventor:


Hoondong NOH

Mar. 12, 2019
Date

Signature of Inventor:


Tachyoung KIM

Mar. 13, 2019
Date

Signature of Inventor:

Yongjun KWAK

Date

Signature of Inventor:


Yoonsun KIM

Mar. 12, 2019
Date

Signature of Inventor:

Youngwoo KWAK

Date

Signature of Inventor:

Donghan KIM

Date

Assignment

WHEREAS, the following inventors, namely 1) Jeongho YEO, 2) Jinyoung OH, 3) Sungjin PARK, 4) Hoondong NOH, 5) Taehyoung KIM, 6) Yongjun KWAK, 7) Younsun KIM, 8) Youngwoo KWAK, 9) Donghan KIM, 10) Youngbum KIM, 11) Cheolkyu SHIN, 12) Seunghoon CHOI, 13) Heedon GHA, and 14) Taehan BAE (hereinafter called "Assignors"), having made or discovered certain new, useful and non-obvious improvements in an invention having a working title of:

METHOD AND APPARATUS FOR TRANSMITTING UPLINK CONTROL SIGNAL IN WIRELESS CELLULAR COMMUNICATION SYSTEM,

for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on March 29, 2019, and assigned Serial No. 16/338,211; and,

WHEREAS, **Samsung Electronics Co., Ltd.**, a corporation duly organized under the laws of the Republic of Korea, located and doing business at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, 16677 (hereinafter called "Assignee"), is desirous of acquiring the entire right, title and interest therein;

NOW, THEREFORE, BE IT KNOWN that for and in good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors do hereby sell, assign and transfer unto said Assignee the entire and exclusive worldwide right, title and interest in and to all said inventions and discoveries disclosed in said application, and in and to said application, any and all substitutions, divisions, provisionals, conversions of provisionals and continuations thereof, and in and to all Letters Patent, United States and all other foreign countries, that may be granted for said inventions and discoveries, and in and to all extensions, renewals and reissues thereof; and the right to file any other foreign country application and/or claim priority under the provisions of any international treaty or convention arising from this application or any divisional, continuing, substitute or reissue application therefrom. The aforesaid assignment includes the right in and to all income, royalties, damages and payments, now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale, assignment and transfer had not been made.

Assignors covenant and agree, without further compensation to said Assignors but at Assignee's expense:

- a. to execute:
 - i. all papers to be used in connection with this application and any divisional, continuing, substitute or reissue application thereof, as the Assignee may deem necessary or expedient, and
 - ii. all papers in connection with any interference, litigation, mediation, arbitration or other proceeding relating to this application or any divisional,

- continuing, substitute or reissue application thereof, as may be necessary or expedient;
- b. to cooperate with the Assignee in every way possible in obtaining evidence and going forward in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof;
 - c. to communicate to the Assignee any facts relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof, including evidence for any interference, litigation, mediation, arbitration or other proceeding relating to said invention, whenever requested;
 - d. to testify in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof whenever requested; and
 - e. to perform all other affirmative acts which may be necessary or desirable to secure full and complete protection of the inventions and discoveries or that may be necessary or desirable to vest in Assignee the complete title to the inventions and discoveries and Letters Patent hereby conveyed and to enable Assignee to record title.

Assignors hereby authorize and request the United States Patent and Trademark Office or any other issuing authority to issue any and all Letters Patent that may be granted upon this invention and/or this application or any divisional, continuing, substitute or reissue application thereof to the Assignee, its legal representatives, successors and assigns.

Assignors each hereby represents, covenants and warrants that he or she has the full right to convey the entire right, title and interest by this instrument, free of any encumbrances and that no other agreement has been or will be executed in conflict herewith.

The provisions of this Assignment are binding upon Assignors' heirs, legal representatives and/or administrators and assigns.

Assignors hereby grant to the law firm of Jefferson IP Law, LLP of Washington, DC and its attorneys and agents as associated with **Customer No. 68103** the authority and power to insert on this instrument any further identification which may be necessary or desirable for purposes of recordation in the United States Patent and Trademark Office or a Patent Office of any foreign country.

DOCKET NO.: 0203-2377

CLIENT REF.: YPF201708-0044/US-PCT_DMC

SAMSUNG REF.: MJ-201707-025-1-US0

Signature of Inventor:

Jeongho YEO

Date

Signature of Inventor:

Jinyoung OH

Date

Signature of Inventor:

Sungjin PARK

Date

Signature of Inventor:

Hoondong NOH

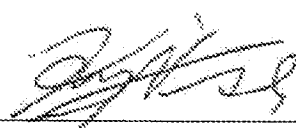
Date

Signature of Inventor:

Tachyoung KIM

Date

Signature of Inventor:


Yongjun KWAK

2019-03-13

Date

Signature of Inventor:

Younsun KIM

Date

Signature of Inventor:

Youngwoo KWAK

Date

Signature of Inventor:

Donghan KIM

Date

Assignment

WHEREAS, the following inventors, namely 1) Jeongho YEO, 2) Jinyoung OH, 3) Sungjin PARK, 4) Hoondong NOH, 5) Taehyoung KIM, 6) Yongjun KWAK, 7) Younsun KIM, 8) Youngwoo KWAK, 9) Donghan KIM, 10) Youngbum KIM, 11) Cheolkyu SHIN, 12) Seunghoon CHOI, 13) Heedon GHA, and 14) Taehan BAE (hereinafter called "Assignors"), having made or discovered certain new, useful and non-obvious improvements in an invention having a working title of:

METHOD AND APPARATUS FOR TRANSMITTING UPLINK CONTROL SIGNAL IN WIRELESS CELLULAR COMMUNICATION SYSTEM,

for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on March 29, 2019, and assigned Serial No. 16/338,211; and,

WHEREAS, Samsung Electronics Co., Ltd., a corporation duly organized under the laws of the Republic of Korea, located and doing business at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, 16677 (hereinafter called "Assignee"), is desirous of acquiring the entire right, title and interest therein;

NOW, THEREFORE, BE IT KNOWN that for and in good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors do hereby sell, assign and transfer unto said Assignee the entire and exclusive worldwide right, title and interest in and to all said inventions and discoveries disclosed in said application, and in and to said application, any and all substitutions, divisions, provisionals, conversions of provisionals and continuations thereof, and in and to all Letters Patent, United States and all other foreign countries, that may be granted for said inventions and discoveries, and in and to all extensions, renewals and reissues thereof; and the right to file any other foreign country application and/or claim priority under the provisions of any international treaty or convention arising from this application or any divisional, continuing, substitute or reissue application therefrom. The aforesaid assignment includes the right in and to all income, royalties, damages and payments, now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale, assignment and transfer had not been made.

Assignors covenant and agree, without further compensation to said Assignors but at Assignee's expense:

- a. to execute:
 - i. all papers to be used in connection with this application and any divisional, continuing, substitute or reissue application thereof, as the Assignee may deem necessary or expedient, and
 - ii. all papers in connection with any interference, litigation, mediation, arbitration or other proceeding relating to this application or any divisional,

- continuing, substitute or reissue application thereof, as may be necessary or expedient;
- b. to cooperate with the Assignee in every way possible in obtaining evidence and going forward in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof;
 - c. to communicate to the Assignee any facts relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof, including evidence for any interference, litigation, mediation, arbitration or other proceeding relating to said invention, whenever requested;
 - d. to testify in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof whenever requested; and
 - e. to perform all other affirmative acts which may be necessary or desirable to secure full and complete protection of the inventions and discoveries or that may be necessary or desirable to vest in Assignee the complete title to the inventions and discoveries and Letters Patent hereby conveyed and to enable Assignee to record title.

Assignors hereby authorize and request the United States Patent and Trademark Office or any other issuing authority to issue any and all Letters Patent that may be granted upon this invention and/or this application or any divisional, continuing, substitute or reissue application thereof to the Assignee, its legal representatives, successors and assigns.

Assignors each hereby represents, covenants and warrants that he or she has the full right to convey the entire right, title and interest by this instrument, free of any encumbrances and that no other agreement has been or will be executed in conflict herewith.

The provisions of this Assignment are binding upon Assignors' heirs, legal representatives and/or administrators and assigns.

Assignors hereby grant to the law firm of Jefferson IP Law, LLP of Washington, DC and its attorneys and agents as associated with **Customer No. 68103** the authority and power to insert on this instrument any further identification which may be necessary or desirable for purposes of recordation in the United States Patent and Trademark Office or a Patent Office of any foreign country.

DOCKET NO.: 0203-2377

CLIENT REF.: YPF201708-0044/US-PCT_DMC

SAMSUNG REF.: MJ-201707-025-1-US0

Signature of Inventor:

Jeongho YEO

Date

Signature of Inventor:

Jinyoung OH

Date

Signature of Inventor:

Sungjin PARK

Date

Signature of Inventor:

Hoondong NOH

Date

Signature of Inventor:

Tachyoung KIM

Date

Signature of Inventor:

Yongjun KWAK

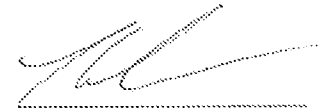
Date

Signature of Inventor:

Younsun KIM

Date

Signature of Inventor:



Youngwoo KWAK

03/07/2019

Date

Signature of Inventor:

Donghan KIM

Date

Assignment

WHEREAS, the following inventors, namely 1) Jeongho YEO, 2) Jinyoung OH, 3) Sungjin PARK, 4) Hoondong NOH, 5) Taehyoung KIM, 6) Yongjun KWAK, 7) Younsun KIM, 8) Youngwoo KWAK, 9) Donghan KIM, 10) Youngbum KIM, 11) Cheolkyu SHIN, 12) Seungboon CHOI, 13) Heedon GHA, and 14) Taehan BAE (hereinafter called "Assignors"), having made or discovered certain new, useful and non-obvious improvements in an invention having a working title of:

METHOD AND APPARATUS FOR TRANSMITTING UPLINK CONTROL SIGNAL IN WIRELESS CELLULAR COMMUNICATION SYSTEM,

for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on March 29, 2019, and assigned Serial No. 16/338,211; and,

WHEREAS, **Samsung Electronics Co., Ltd.**, a corporation duly organized under the laws of the Republic of Korea, located and doing business at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, 16677 (hereinafter called "Assignee"), is desirous of acquiring the entire right, title and interest therein;

NOW, THEREFORE, BE IT KNOWN that for and in good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors do hereby sell, assign and transfer unto said Assignee the entire and exclusive worldwide right, title and interest in and to all said inventions and discoveries disclosed in said application, and in and to said application, any and all substitutions, divisions, provisionals, conversions of provisionals and continuations thereof, and in and to all Letters Patent, United States and all other foreign countries, that may be granted for said inventions and discoveries, and in and to all extensions, renewals and reissues thereof; and the right to file any other foreign country application and/or claim priority under the provisions of any international treaty or convention arising from this application or any divisional, continuing, substitute or reissue application therefrom. The aforesaid assignment includes the right in and to all income, royalties, damages and payments, now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale, assignment and transfer had not been made.

Assignors covenant and agree, without further compensation to said Assignors but at Assignee's expense:

- a. to execute:
 - i. all papers to be used in connection with this application and any divisional, continuing, substitute or reissue application thereof, as the Assignee may deem necessary or expedient, and
 - ii. all papers in connection with any interference, litigation, mediation, arbitration or other proceeding relating to this application or any divisional,

- continuing, substitute or reissue application thereof, as may be necessary or expedient;
- b. to cooperate with the Assignee in every way possible in obtaining evidence and going forward in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof;
 - c. to communicate to the Assignee any facts relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof, including evidence for any interference, litigation, mediation, arbitration or other proceeding relating to said invention, whenever requested;
 - d. to testify in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof whenever requested; and
 - e. to perform all other affirmative acts which may be necessary or desirable to secure full and complete protection of the inventions and discoveries or that may be necessary or desirable to vest in Assignee the complete title to the inventions and discoveries and Letters Patent hereby conveyed and to enable Assignee to record title.

Assignors hereby authorize and request the United States Patent and Trademark Office or any other issuing authority to issue any and all Letters Patent that may be granted upon this invention and/or this application or any divisional, continuing, substitute or reissue application thereof to the Assignee, its legal representatives, successors and assigns.

Assignors each hereby represents, covenants and warrants that he or she has the full right to convey the entire right, title and interest by this instrument, free of any encumbrances and that no other agreement has been or will be executed in conflict herewith.

The provisions of this Assignment are binding upon Assignors' heirs, legal representatives and/or administrators and assigns.

Assignors hereby grant to the law firm of Jefferson IP Law, LLP of Washington, DC and its attorneys and agents as associated with **Customer No. 68103** the authority and power to insert on this instrument any further identification which may be necessary or desirable for purposes of recordation in the United States Patent and Trademark Office or a Patent Office of any foreign country.

DOCKET NO.: 0203-2377
CLIENT REF.: YPF201708-0044/US-PCT_DMC
SAMSUNG REF.: MJ-201707-025-1-US0

Signature of Inventor:

Jeongho YEO

Date

Signature of Inventor:

Jinyoung OH

Date

Signature of Inventor:

Sungjin PARK

Date

Signature of Inventor:

Hoondong NOH

Date

Signature of Inventor:

Tachyoung KIM

Date

Signature of Inventor:

Yongjun KWAK

Date

Signature of Inventor:

Younsun KIM

Date

Signature of Inventor:

Youngwoo KWAK

Date

Signature of Inventor:

김 동 한
Donghan KIM

Mar. 14 2019
Date

Assignment

WHEREAS, the following inventors, namely 1) Jeongho YEO, 2) Jinyoung OH, 3) Sungjin PARK, 4) Hoondong NOH, 5) Taehyoung KIM, 6) Yongjun KWAK, 7) Younsun KIM, 8) Youngwoo KWAK, 9) Donghan KIM, 10) Youngbum KIM, 11) Cheolkyu SHIN, 12) Seunghoon CHOI, 13) Heedon GHA, and 14) Taehan BAE (hereinafter called "Assignors"), having made or discovered certain new, useful and non-obvious improvements in an invention having a working title of:

METHOD AND APPARATUS FOR TRANSMITTING UPLINK CONTROL SIGNAL IN WIRELESS CELLULAR COMMUNICATION SYSTEM,

for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on March 29, 2019, and assigned Serial No. 16/338,211; and,

WHEREAS, Samsung Electronics Co., Ltd., a corporation duly organized under the laws of the Republic of Korea, located and doing business at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, 16677 (hereinafter called "Assignee"), is desirous of acquiring the entire right, title and interest therein;

NOW, THEREFORE, BE IT KNOWN that for and in good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors do hereby sell, assign and transfer unto said Assignee the entire and exclusive worldwide right, title and interest in and to all said inventions and discoveries disclosed in said application, and in and to said application, any and all substitutions, divisions, provisionals, conversions of provisionals and continuations thereof, and in and to all Letters Patent, United States and all other foreign countries, that may be granted for said inventions and discoveries, and in and to all extensions, renewals and reissues thereof; and the right to file any other foreign country application and/or claim priority under the provisions of any international treaty or convention arising from this application or any divisional, continuing, substitute or reissue application therefrom. The aforesaid assignment includes the right in and to all income, royalties, damages and payments, now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale, assignment and transfer had not been made.

Assignors covenant and agree, without further compensation to said Assignors but at Assignee's expense:

- a. to execute:
 - i. all papers to be used in connection with this application and any divisional, continuing, substitute or reissue application thereof, as the Assignee may deem necessary or expedient, and
 - ii. all papers in connection with any interference, litigation, mediation, arbitration or other proceeding relating to this application or any divisional,

- continuing, substitute or reissue application thereof, as may be necessary or expedient;
- b. to cooperate with the Assignee in every way possible in obtaining evidence and going forward in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof;
 - c. to communicate to the Assignee any facts relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof, including evidence for any interference, litigation, mediation, arbitration or other proceeding relating to said invention, whenever requested;
 - d. to testify in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof whenever requested; and
 - e. to perform all other affirmative acts which may be necessary or desirable to secure full and complete protection of the inventions and discoveries or that may be necessary or desirable to vest in Assignee the complete title to the inventions and discoveries and Letters Patent hereby conveyed and to enable Assignee to record title.

Assignors hereby authorize and request the United States Patent and Trademark Office or any other issuing authority to issue any and all Letters Patent that may be granted upon this invention and/or this application or any divisional, continuing, substitute or reissue application thereof to the Assignee, its legal representatives, successors and assigns.


Assignors each hereby represents, covenants and warrants that he or she has the full right to convey the entire right, title and interest by this instrument, free of any encumbrances and that no other agreement has been or will be executed in conflict herewith.

The provisions of this Assignment are binding upon Assignors' heirs, legal representatives and/or administrators and assigns.

Assignors hereby grant to the law firm of Jefferson IP Law, LLP of Washington, DC and its attorneys and agents as associated with **Customer No. 68103** the authority and power to insert on this instrument any further identification which may be necessary or desirable for purposes of recordation in the United States Patent and Trademark Office or a Patent Office of any foreign country.

DOCKET NO.: 0203-2377
CLIENT REF.: YPF201708-0044/US-PCT_DMC
SAMSUNG REF.: MJ-201707-025-1-US0

Signature of Inventor:



Youngbum KIM

Mar. 12, 2019

Date

Signature of Inventor:



Cheolkyu SHIN

Mar. 12, 2019

Date

Signature of Inventor:

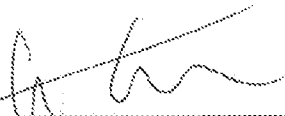


Seunghoon CHOI

MAR 12, 2019

Date

Signature of Inventor:



Heedon CHA

MAR 12, 2019

Date

Signature of Inventor:



Taehan BAE

2019. 3. 13

Date