504513675 08/22/2017

PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT4560380

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	

CONVEYING PARTY DATA

Name	Execution Date
HONG-LIN CHU	07/02/2017
HSIEH-HUNG HSIEH	06/05/2017
TZU-JIN YEH	06/05/2017

RECEIVING PARTY DATA

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.
Street Address:	NO. 8, LI-HSIN RD. VI, HSINCHU SCIENCE PARK
City:	HSINCHU
State/Country:	TAIWAN
Postal Code:	300

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15682918

CORRESPONDENCE DATA

Fax Number: (703)518-5499

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.

7036841111 Phone: Email: tsmc@ipfirm.com

HAUPTMAN HAM, LLP (TSMC) **Correspondent Name:**

Address Line 1: 2318 MILL ROAD Address Line 2: **SUITE 1400**

Address Line 4: ALEXANDRIA, VIRGINIA 22314

ATTORNEY DOCKET NUMBER: T5057-1237U NAME OF SUBMITTER: RANDY A. NORANBROCK SIGNATURE: /Randy A. Noranbrock/ **DATE SIGNED:** 08/22/2017

Total Attachments: 2

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> **PATENT REEL: 043354 FRAME: 0909** 504513675

ASSIGNMENT

In consideration of the premises and other good and valuable consideration in hand paid, the receipt and sufficiency of which is hereby acknowledged, the undersigned,

1) Hong-Lin CHU 3) Tzu-Jin YEH

2) Hsieh-Hung HSIEH

who has made a certain new and useful invention, hereby sells, assigns and transfers unto TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD., having a place of business at No. 8. Li-Hsin Rd. VI. Hsinchu Science Park, Hsinchu 300, Taiwan R.O.C.

its successors and assigns (hereinafter designated "ASSIGNEE") the entire right, title and interest for the United States of America as defined in 35 U.S.C. 100 in the invention entitled

TRANSMITTER POWER DETECTION CIRCUIT AND METHOD

(a)	for which an application for United States Letters Patent was filed on	2017-08-22	and	identified	ь
	United States Patent Application No. 15/682,918	; or			

(b) for which an application for United States Letters Patent was executed on _______,

and the undersigned hereby authorizes and requests the United States Commissioner of Patents and Trademarks to issue any and all United States Letters Patent which may be granted therefore and any and all extensions, divisions, reissues, continuations, or continuations-in-part thereof, and the right to all benefits under the International Convention for the Protection of Industrial Property to the said ASSIGNEE, for its interest as ASSIGNEE, its successors, assigns and legal representatives; the undersigned agrees that the attorneys of record in said application shall hereafter act on behalf of said ASSIGNEE;

AND the undersigned hereby agrees to transfer a like interest, and to render all necessary assistance in making application for and obtaining original, divisional, reissued or extended Letters Patent of the United States, upon request of the said ASSIGNEE, its successors, assigns and legal representatives, and without further remuneration, in and to any improvements, and applications for patent based thereon, growing out of or related to the said invention; and to execute any papers by the said ASSIGNEE, its successors, assigns and legal representatives, deemed essential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

Docket No. P20160575US00 T5057-1237U

ASSIGNMENT

In consideration of the premises and	other good and v	aluable consideration in	n hand paid,	the receipt and	sufficiency of	f
which is hereby acknowledged, the undersigned	1,		* 1	•		

1) Hong-Lin CHU

3) Tzu-Jin YEH

2) Hsieh-Hung HSIEH

SIGNED on the date indicated aside my signature:

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TRANSMITTER POWER DETECTION CIRCUIT AND METHOD

(a)	for which an application for United States Letters Patent was filed on 2017-08-22 , and identified by United States Patent Application No. 15/682,918 ; or
(b)	for which an application for United States Letters Patent was executed on,
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AND the undersigned hereby agrees to transfer a like interest, and to render all necessary assistance in making application for and obtaining original, divisional, reissued or extended Letters Patent of the United States, upon request of the said ASSIGNEE, its successors, assigns and legal representatives, and without further remuneration, in and to any improvements, and applications for patent based thereon, growing out of or related to the said invention; and to execute any papers by the said ASSIGNEE, its successors, assigns and legal representatives, deemed essential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

1)
Name: Hong-Lin CHU

Date:

2) Africh Ary Arich
Name: Hsich-Hung HSIEM

3) [24-Jih Yeh
Name: Tzu-Jin YEH

Date:

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PATENT REEL: 043354 FRAME: 0911