504357751 05/09/2017

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ALAN ROTH	06/01/2015
ERIC SOENEN	06/01/2015
RUSSELL KINDER	06/01/2015

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:	15590249

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.

Phone: 7036841111 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: T5057-1082UA NAME OF SUBMITTER: RANDY A. NORANBROCK SIGNATURE: /Randy A. Noranbrock/ **DATE SIGNED:** 05/09/2017

Total Attachments: 1

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PATENT REEL: 042295 FRAME: 0311 504357751

ASSIGNMENT

In consideration of the premises and oth	er good and	valuable	consideration	in hand pa	aid, the receip	et and s	sufficiency	of
which is hereby acknowledged, the undersigned,				_				

1) Alan ROTH

3) Russell KINDER

2) Eric SOENEN

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

as dem	ned in 35 U.S.C. 100 in the invention entitled		
REG	ULATOR CIRCUIT AND METHOD OF OPERATIN	G REGULAT	OR CIRCUIT
(a)	for which an application for United States Letters Patent was filed or United States Patent Application No14/729,114	2015-06-03 ; or	, and identified by
(b)	for which an application for United States Letters Patent was execute	ed on	,
all Uni continu Propert agrees applica ASSIG applica	e undersigned hereby authorizes and requests the United States Committed States Letters Patent which may be granted therefore and any and nations-in-part thereof, and the right to all benefits under the Interruy to the said ASSIGNEE, for its interest as ASSIGNEE, its successor that the attorneys of record in said application shall hereafter act on beland hereby agrees to transfer a like interest, tion for and obtaining original, divisional, reissued or extended Letters NEE, its successors, assigns and legal representatives, and without furtions for patent based thereon, growing out of or related to the said NEE, its successors, assigns and legal representatives, deemed essent	I all extensions, di- national Conventions, assigns and leg- nalf of said ASSIG and to render all Patent of the Uni- rither remuneration d invention; and t	ivisions, reissues, continuations, of for the Protection of Industrial representatives; the undersigned RNEE; Il necessary assistance in making ted States, upon request of the said, in and to any improvements, and to execute any papers by the said to the protection of the protec
the inve	ention hereby transferred. D on the date indicated aside my signeture:		
1)		ate:	2015
2)	e: Eric SOENEN	ate: 6/1	12015
1	1 10 /0 /	111	/-

PATENT

REEL: 042295 FRAME: 0312

RECORDED: 05/09/2017