

## PATENT ASSIGNMENT COVER SHEET

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Stylesheet Version v1.2

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
CHUN-LIN LOUIS CHANG	10/02/2018
HENRY TONG YEE SHIAN	10/08/2018
ALAN TU	10/02/2018
HAN-LUNG CHANG	10/03/2018
TZUNG-CHI FU	10/02/2018
BO-TSUN LIU	10/03/2018
LI-JUI CHEN	10/02/2018
PO-CHUNG CHENG	10/02/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.
<b>Street Address:</b>	8, LI-HSIN RD. 6
<b>Internal Address:</b>	HSINCHU SCIENCE PARK
<b>City:</b>	HSINCHU
<b>State/Country:</b>	TAIWAN
<b>Postal Code:</b>	300-78
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	18171609
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(214)200-0853
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<b>ATTORNEY DOCKET NUMBER:</b>	2017-2096/24061.3650US02
<b>NAME OF SUBMITTER:</b>	MARIA TEDESCO

PATENT

<b>SIGNATURE:</b>	/Maria Tedesco/
<b>DATE SIGNED:</b>	01/31/2024
<b>Total Attachments: 3</b> source=Assignment#page1.tif source=Assignment#page2.tif source=Assignment#page3.tif	

Docket No.: P20172096US00/ 24061.3650US01  
 Customer No.: 000042717

**ASSIGNMENT**

WHEREAS, we,

- (1) Chun-Lin Louis Chang of Hsinchu County, Taiwan (R.O.C.)
- (2) Henry Tong Yee Shian of Hsin-Chu, Taiwan (R.O.C.)
- (3) Alan Tu of New Taipei City, Taiwan (R.O.C.)
- (4) Han-Lung Chang of Kaohsiung City, Taiwan (R.O.C.)
- (5) Tzung-Chi Fu of Miaoli County, Taiwan (R.O.C.)
- (6) Bo-Tsun Liu of Taipei City, Taiwan (R.O.C.)
- (5) Li-Jui Chen of Hsinchu City, Taiwan (R.O.C.)
- (6) Po-Chung Cheng of Chiayi County, Taiwan (R.O.C.)

have invented certain improvements in

**METHODS AND SYSTEMS FOR ALIGNING  
 MASTER OSCILLATOR POWER AMPLIFIER SYSTEMS**

for which we have executed an application for Letters Patent of the United States of America,

  X   of even date filed herewith; and  
  X   filed on October 19, 2018 and assigned application number 16/165,022; and

WHEREAS, we authorize the attorney of record to update this document to include Patent Office information as deemed necessary (i.e., filing date, serial number, etc.);

WHEREAS, Taiwan Semiconductor Manufacturing Co., Ltd., ("TSMC"), 8, Li-Hsin Rd. 6, Hsinchu Science Park, Hsinchu, Taiwan 300-78, Republic of China, is desirous of obtaining the entire right, title, and interest in, to and under the said invention and the said application in the United States of America and in any and all countries foreign thereto;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and other good and valuable consideration, we have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said TSMC, its successors, legal representatives, and assigns, the entire right, title, and interest in, to and under the said invention, and the said application, and all divisional, renewal, substitutional, and continuing applications thereof, and all Letters Patent of the United States of America which may be granted thereon and all reissues and extensions thereof, and all applications for Letters Patent which may be filed for said invention in any country or countries foreign to the United States of America, and all extensions, renewals, and reissues thereof, and all prior patents and patent applications from which a filing priority of the above-described patent application may be obtained, including the right to collect past damages; and we hereby authorize and request the Commissioner of Patents of the United States of America, and any official of any country or countries foreign to

Docket No.: P20172096US00/ 24061.3650US01

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the United States of America, whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for said invention to the said TSMC, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

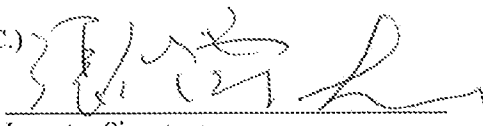
AND WE HEREBY covenant that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to said TSMC, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceedings, sign all lawful papers, execute all divisional, renewal, substitutional, continuing, and reissue applications, make all rightful declarations and/or oaths and generally do everything possible to aid the said TSMC, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for said invention in all countries.

Inventor Name: Chun-Lin Louis Chang

Residence Address: Hsinchu County, Taiwan (R.O.C.)

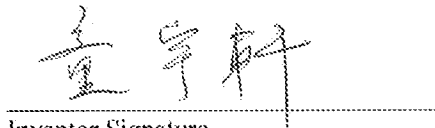
Dated: 2018.10.2

  
Inventor Signature

Inventor Name: Henry Tong Yee Shian

Residence Address: Hsin-Chu, Taiwan (R.O.C.)

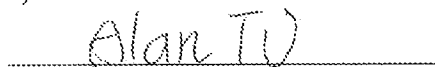
Dated: 2018.10.8

  
Inventor Signature

Inventor Name: Alan Tu

Residence Address: New Taipei City, Taiwan (R.O.C.)

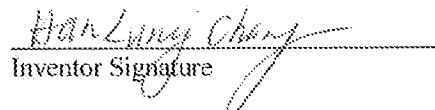
Dated: 2018.10.2

  
Inventor Signature

Inventor Name: Han-Lung Chang

Residence Address: Kaohsiung City, Taiwan (R.O.C.)

Dated: 2018.10.03

  
Inventor Signature

Docket No.: P20172096US00/ 24061.3650US01  
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Inventor Name: Tzung-Chi Fu

Residence Address: Miaoli County, Taiwan (R.O.C.)

Dated: 2018.10.2

*Tzung-Chi Fu*  
Inventor Signature

Inventor Name: Bo-Tsun Liu

Residence Address: Taipei City, Taiwan (R.O.C.)

Dated: 2018.10.3

*Liu Bo-Tsun*  
Inventor Signature

Inventor Name: Li-Jui Chen

Residence Address: Hsinchu City, Taiwan (R.O.C.)

Dated: 2018/10/2

*Li-Jui Chen*  
Inventor Signature

Inventor Name: Po-Chung Cheng

Residence Address: Chiayi County, Taiwan (R.O.C.)

Dated: 10/2/2018

*Po-Chung Cheng*  
Inventor Signature