

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT																
NATURE OF CONVEYANCE:	ASSIGNMENT																
CONVEYING PARTY DATA																	
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Feng Wei Kuo</td> <td>02/25/2013</td> </tr> <tr> <td>Kuang-Kai Yen</td> <td>02/25/2013</td> </tr> <tr> <td>Huan-Neng Chen</td> <td>02/25/2013</td> </tr> <tr> <td>Hsien-Yuan Liao</td> <td>02/24/2013</td> </tr> <tr> <td>Lee Tsung Hsiung</td> <td>02/25/2013</td> </tr> <tr> <td>Chewn-Pu Jou</td> <td>02/25/2013</td> </tr> <tr> <td>Robert Bogdan Staszewski</td> <td>02/24/2013</td> </tr> </tbody> </table>		Name	Execution Date	Feng Wei Kuo	02/25/2013	Kuang-Kai Yen	02/25/2013	Huan-Neng Chen	02/25/2013	Hsien-Yuan Liao	02/24/2013	Lee Tsung Hsiung	02/25/2013	Chewn-Pu Jou	02/25/2013	Robert Bogdan Staszewski	02/24/2013
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<table border="1"> <tr> <td>Name:</td> <td>Taiwan Semiconductor Manufacturing Co., Ltd.</td> </tr> <tr> <td>Street Address:</td> <td>No. 8, Li-Hsin Rd. 6</td> </tr> <tr> <td>Internal Address:</td> <td>Hsin-Chu Science Park</td> </tr> <tr> <td>City:</td> <td>Hsin-Chu</td> </tr> <tr> <td>State/Country:</td> <td>TAIWAN</td> </tr> <tr> <td>Postal Code:</td> <td>300-77</td> </tr> </table>		Name:	Taiwan Semiconductor Manufacturing Co., Ltd.	Street Address:	No. 8, Li-Hsin Rd. 6	Internal Address:	Hsin-Chu Science Park	City:	Hsin-Chu	State/Country:	TAIWAN	Postal Code:	300-77				
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CORRESPONDENCE DATA																	
Fax Number:	2165020601																
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>																	
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ATTORNEY DOCKET NUMBER:	TSMCP235US
NAME OF SUBMITTER:	Thomas G. Eschweiler
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U.S. Patent Appln. No.

Filing Date

PATENT ASSIGNMENT

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AGREEMENT

WHEREAS, ASSIGNOR(S) (listed above) are inventor(s) of an invention entitled
"PVT-FREE CALIBRATION CIRCUIT FOR TDC RESOLUTION IN ADPLL" for
which:

a non-provisional application for United States Letters Patent:

☒ was executed on even date preparatory to filing (each inventor should sign this
Assignment on the same day as he/she signs the Declaration and Power of
Attorney); or

☐ was filed on _____ and accorded U.S. Serial No. _____; or

☐ I hereby authorize and request my attorney associated with Customer No.
107476, to insert on the designated lines below the filing date and application
number of said application when known:

U.S. Serial No. _____,

filed on _____.

WHEREAS, ASSIGNEE (listed above), a corporation of the Republic of China is
desirous of acquiring the entire right, title and interest in and to the invention and in and to

U.S. Patent Appln. No.

Docket No. TSMCP235US

Filing Date

any letters patent that may be granted therefore in the United States and in any and all foreign countries;

NOW, THEREFORE, in exchange for good and valuable consideration, the receipt of which is hereby acknowledged, ASSIGNOR(S) hereby sell, assign and transfer unto ASSIGNEE its successors and assigns, the entire right, title and interest in and to said invention and improvements, said application and any and all letters patent which may be granted for said invention in the United States of America and its territorial possessions and in any and all foreign countries, and in any and all divisions, reissues, re-examinations and continuations thereof, including the right to file foreign applications directly in the name of ASSIGNEE and to claim priority rights deriving from said United States application to which said foreign applications are entitled by virtue of international convention, treaty or otherwise, said invention, application and all letters patent on said invention to be held and enjoyed by ASSIGNEE and its successors and assigns for their use and benefit and of their successors and assigns as fully and entirely as the same would have been held and enjoyed by ASSIGNOR(S) had this assignment, transfer and sale not been made. ASSIGNOR(S) hereby authorize and request the Commissioner of Patents and Trademarks to issue all letters patent on said invention to ASSIGNEE. ASSIGNOR(S) agree to execute all instruments and documents required for the making and prosecution of applications for United States and foreign letters patent on said invention, for litigation regarding said letters patent, or for the purpose of protecting title to said invention or letters patent therefore.

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TSMC Docket No. TSMC2012-1235

Docket No. TSMCP235US

2013.02.25
Date

Feng Wei Kuo
Name 1st Inventor Feng Wei Kuo

U.S. Patent App'n. No.
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TSMC Docket No. TSMC2012-1235

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2013.02.25
Date

Kuang-Kai Yen
Name 2nd Inventor Kuang-Kai Yen

TSMC Docket No. TSMC2012-1235

U.S. Patent Appln. No.

Docket No. TSMCP235US

Filing Date

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Huan Neng Chen
Name 3rd Inventor Huan-Neng Chen

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Docket No. TSMCP235US

2013.02.24
Date

Hsien-Yuan Liao
Name 4th Inventor Hsien-Yuan Liao

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Docket No. TSMCP235US

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Filing Date

2017. 7. 16
Date

Lee Tsung Hsiung
Name 5th Inventor Lee Tsung Hsiung

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2013 Feb 25
Date


Name 6th Inventor Chewn-Pu Jou

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Date



Name 7th Inventor Robert Bogdan Staszewski