

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT3473902

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| SUBMISSION TYPE: | CORRECTIVE ASSIGNMENT |
| NATURE OF CONVEYANCE: | Corrective Assignment to correct the ASSIGNEE SECTION - TO ADD ADDITIONAL ASSIGNEE previously recorded on Reel 025216 Frame 0638. Assignor(s) hereby confirms the ASSIGNMENT. |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| FENG WEI KUO | 10/27/2010 |
| TSUNG-HSIEN TSAI | 10/27/2010 |
| JIA-LIANG CHEN | 10/25/2010 |
| RECEIVING PARTY DATA | |
| Name: | TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD. |
| Street Address: | NO. 8, LI-HSIN ROAD 6 |
| Internal Address: | SCIENCE-BASED INDUSTRIAL PARK |
| City: | HSIN-CHU |
| State/Country: | TAIWAN |
| Postal Code: | 300-77 |
| Name: | GLOBAL UNICHIP CORPORATION |
| Street Address: | NO. 10, LI-HSIN 6TH ROAD |
| Internal Address: | HSINCHU SCIENCE PARK |
| City: | HSINCHU CITY |
| State/Country: | TAIWAN |
| Postal Code: | 300 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 12777293 |
| CORRESPONDENCE DATA | |
| Fax Number: | (215)689-4905 |
| <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: | 215-979-1000 |
| Email: | jsjiulianti@duanemorris.com |
| Correspondent Name: | DUANE MORRIS LLP |
| Address Line 1: | 30 SOUTH 17TH STREET |
| Address Line 4: | PHILADELPHIA, PENNSYLVANIA 19103 |

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| ATTORNEY DOCKET NUMBER: | 2010.0123/N1085.667 |
| NAME OF SUBMITTER: | STEVEN E. KOFFS |
| SIGNATURE: | /Steven E. Koffs/ |
| DATE SIGNED: | 08/07/2015 |
| Total Attachments: 4 source=CorrectiveAssignmentforRecordation#page1.tif source=CorrectiveAssignmentforRecordation#page2.tif source=CorrectiveAssignmentforRecordation#page3.tif source=CorrectiveAssignmentforRecordation#page4.tif | |

PATENT ASSIGNMENT

Electronic Version v1.1
 Stylesheet Version v1.1

10/29/2010
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| SUBMISSION TYPE: | NEW ASSIGNMENT |
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| NATURE OF CONVEYANCE: | ASSIGNMENT |
|-----------------------|------------|

CONVEYING PARTY DATA

| Name | Execution Date |
|------------------|----------------|
| Feng Wei KUO | 10/27/2010 |
| Tsung-Hsien TSAI | 10/27/2010 |
| Jia-Liang CHEN | 10/25/2010 |

RECEIVING PARTY DATA

| | |
|-------------------|--|
| Name: | Taiwan Semiconductor Manufacturing Co., Ltd. |
| Street Address: | No. 8, Li-Hsin Road 6 |
| Internal Address: | Science-Based Industrial Park |
| City: | Hsin-Chu |
| State/Country: | TAIWAN |
| Postal Code: | 300-77 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 12777293 |

CORRESPONDENCE DATA

Fax Number: (215)689-4905
Correspondence will be sent via US Mail when the fax attempt is unsuccessful.
 Phone: 215-979-1250
 Email: jsjulianti@duanemorris.com
 Correspondent Name: Duane Morris LLP
 Address Line 1: 30 South 17th Street
 Address Line 4: Philadelphia, PENNSYLVANIA 19103-4196

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|-------------------------|-------------|
| ATTORNEY DOCKET NUMBER: | N1085-00667 |
|-------------------------|-------------|

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|--------------------|---------------|
| NAME OF SUBMITTER: | Arvind Jairam |
|--------------------|---------------|

Total Attachments: 2
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PATENT
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Serial No. 12/777,293
filed May 11, 2010

ATTORNEY DOCKET NO.: 2010.0123/1085.667

ASSIGNMENT AND AGREEMENT

For value received, we, **Feng Wei Kuo, Tsung-Hsien Tsai and Jia-Liang Chen**, hereby transfer to **Taiwan Semiconductor Manufacturing Co., Ltd.**, with its principal place of business located at No. 8, Li-Hsin Road 6, Science-Based Industrial Park, Hsin-Chu, Taiwan 300-77, Republic of China, and **Global Unichip Corporation**, with its principal place of business located at No. 10, Li-Hsin 6th Road, Hsinchu Science Park, Hsinchu City 300, Taiwan, (R.O.C.) (collectively referred to as "ASSIGNEES") and their successors, assigns and legal representatives, the entire right, title and interest, for the United States of America, in and to certain inventions related to **SYSTEM AND METHOD FOR RC CALIBRATION USING PHASE AND FREQUENCY** described in a non-provisional application and under any and all Letters Patent and any divisions, continuations, continuations-in-part, reexamination certificates, reissues, and extensions thereof, or claiming priority therefrom that may be granted in the United States for said inventions; and we also concurrently hereby sell, assign and transfer to the ASSIGNEES the entire right, title and interest in and to said inventions for all countries foreign to the United States, including all rights of priority arising from the application aforesaid, and all the rights and privileges under any and all forms of protection, including Letters Patent, that may be granted in said countries foreign to the United States for said inventions.

We authorize the ASSIGNEES to make application for such protection in their own name and maintain such protection in any and all countries foreign to the United States, and to invoke and claim for any application for patent or other form of protection for said inventions, without further authorization from us, any and all benefits, including the right of priority provided by any and all treaties, conventions, or agreements.

We hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any document which may be required in any country in proof of the right of the ASSIGNEES to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

We request that any and all patents for said inventions be issued to the ASSIGNEES in the United States and in all countries foreign to the United States, or to such nominees as the ASSIGNEES may designate.

ATTORNEY DOCKET NO.: 2010.0123/1085.667

We agree that, when requested, we shall, without charge to the ASSIGNEES, but at their expense, sign all papers, and do all acts which may be necessary, desirable or convenient in connection with said applications, patents, or other forms of protection.

Inventor No. 1

Dated: 2010/10/27

Feng-Wei Kuo
Feng Wei Kuo

Residence:

No. 12, Alley 10, Lane 289, Xuefu E. Road, Zhudong Township, Hsinchu County 310, Taiwan, R.O.C.

Inventor No. 2

Dated: 2010/10/27

Tsung-Hsien Tsai
Tsung-Hsien Tsai

Residence:

No. 7, Lane 172, Yumin Street, Gushan District, Kaohsiung City 804, Taiwan, R.O.C.

Inventor No. 3

Dated: 2010.10.25

Jia-Liang Chen
Jia-Liang Chen

Residence:

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