504203410 01/30/2017

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
SHIH-LIEN LINUS LU	01/17/2017
KUN-HSI LI	01/19/2017
SAMAN M.I. ADHAM	01/13/2017

RECEIVING PARTY DATA

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.
Street Address:	NO. 8, LI-HSIN RD. 6
Internal Address:	SCIENCE-BASED INDUSTRIAL PARK
City:	HSINCHU
State/Country:	TAIWAN
Postal Code:	300

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15419470

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER:	252028-1530
NAME OF SUBMITTER:	DANIEL R. MCCLURE
SIGNATURE:	/Daniel R. McClure/
DATE SIGNED:	01/30/2017

Total Attachments: 4

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PATENT 504203410 REEL: 041124 FRAME: 0403

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> PATENT REEL: 041124 FRAME: 0404

ASSIGNMENT

This assignment agreement is applicable to an invention entitled (Invention Title)
HAMMING-DISTANCE ANALYZER
The PATENT RIGHTS referred to in this agreement are:
(check one) a patent application for this invention, executed by the ASSIGNOR(S)
concurrently with this assignment.
U.S. patent application Serial No,filed
a U.S. patent application based on PCT International Application
Nofiled on (date)(U.S. patent application
Serial No, if known).
U.S. patent No, issued
The PATENT RIGHTS also include all divisions, reissues, continuations and extensions of
the patents and patent applications identified above.
The PATENT RIGHTS assigned under this agreement are:
(check one) ⊠U.S. patent rights only.
Worldwide patent rights. In this case, the assignee shall have the right to
claim the benefit of the filing date of any U.S. or foreign patent application
for this invention.
The ASSIGNOR(S) referred to in this agreement is (or are) the inventor(s) whose signatures
appear on page 2 of this Assignment and any Supplemental Sheet(s).
The ASSIGNEE referred to in this agreement is:
(Name of Assignee) TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.
(Address) NO.8, LI-HSIN RD.6, SCIENCE-BASED INDUSTRIAL PARK, HSINCHU,
<u>l'Alwan 300, R.O.C.</u>
The ASSIGNEE is:
(check one) An individual.
☐A Partnership.
□ A Corporation of <u>TAIWAN, R.O.C.</u> (specify state or country)
(other)
The ASSIGNOR(S), in consideration of \$10.00 paid by the ASSIGNEE, and other good and

The ASSIGNOR(S), in consideration of \$10.00 paid by the ASSIGNEE, and other good and valuable consideration, receipt of which is acknowledged, hereby assign(s) the following rights to the ASSIGNEE, its successors and assigns:

the full and exclusive right to the invention;

the entire right, title and interest in and to the PATENT RIGHTS;

the right to sue and recover for any past infringement; and

the right to claim priority under 35 USC 119, 35 USC 120, or any other applicable provisions, based on any earlier patent applications for this invention.

THIS IS PAGE 2 OF AN ASSIGNMENT FROM THE INVENTOR(S) TO ASSIGNEE: TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD. INVENTION TITLE: HAMMING-DISTANCE ANALYZER

As to all U.S. patent applications assigned under this agreement, the ASSIGNOR(S) hereby authorize(s) and request(s) the Commissioner of Patents and Trademark to issue all Letters Patent to the ASSIGNEE as the assignee of the entire right, title and interest, for the sole use and enjoyment of said ASSIGNEE, its successors and assigns.

Further, the ASSIGNOR(S) agree(s) to communicate to said ASSIGNEE, or its representatives, any fact known to the ASSIGNOR(S) with respect to said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuation, substitute, renewal, reexamination and reissue applications, execute all necessary assignment papers to cause and all Letter Patent to be issued to said ASSIGNEE, make all rightful oaths and generally do everything necessary or desirable to aid said ASSIGNEE, its successors and assigns, to obtain and enforce proper protection for said invention.

The ASSIGNOR(S) authorize(s) the attorneys and agents who have the power of attorney in this application to check any appropriate boxes and to insert the Serial Number and filing date in this document after it has been executed.

Shih-Lien Linus LU	SubBQ	_ 1/17/2017
Name of sole or first inventor	Signature	Date
Kun-hsi LI		
Name of second inventor, if any	Signature	Date
Saman M.I. ADHAM		
Name of third inventor, if any	Signature	Date

PATENT REEL: 041124 FRAME: 0406 NP-19806-US/P20161129US00

THIS IS PAGE 2 OF AN ASSIGNMENT FROM THE INVENTOR(S) TO ASSIGNEE: <u>TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.</u> INVENTION TITLE: <u>HAMMING-DISTANCE ANALYZER</u>

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Shih-Lien Linus LU		
Name of sole or first inventor	Signature	Date
Kun-hsi Ll	Km-Wa Lo	1/19/20/7
Name of second inventor, if any	Signature	Date
Saman M.I. ADHAM		
Name of third inventor, if any	Signature	Date

PATENT REEL: 041124 FRAME: 0407 NP-19806-US/P20161129US00

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Shih-Lien Linus LU		
Name of sole or first inventor	Signature	Date
Kun-hsi LI		
Name of second inventor, if any	Signature	Date
Saman M.I. ADHAM	-Und	Jan 13,207
Name of third inventor, if any	Signature	Date

PATENT REEL: 041124 FRAME: 0408

RECORDED: 01/30/2017