503001801 10/01/2014

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JIANGRONG CAO	09/30/2014
MICHAEL V. MORELLI	09/22/2014
HONGXING YUAN	09/19/2014
PENG ZHANG	09/18/2014
BRAD V. JOHNSON	09/30/2014
MATTHEW R. GIBBONS	09/29/2014

RECEIVING PARTY DATA

Name:	WESTERN DIGITAL (FREMONT), LLC
Street Address:	44100 OSGOOD ROAD
City:	FREMONT
State/Country:	CALIFORNIA
Postal Code:	94539

PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	14324505
Application Number:	62010057

CORRESPONDENCE DATA

Fax Number: (949)672-6604

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Phone: (949) 672-7871

Email: sandra.jackson@wdc.com

Correspondent Name: WESTERN DIGITAL

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Address Line 2: 3355 MICHELSON DRIVE, SUITE 100

Address Line 4: IRVINE, CALIFORNIA 92612

ATTORNEY DOCKET NUMBER:	F7414
NAME OF SUBMITTER:	SANDRA JACKSON
SIGNATURE:	/Sandra Jackson/
DATE SIGNED:	10/01/2014

503001801 PATENT REEL: 033866 FRAME: 0939

Total Attachments: 7 source=F7414_Assignment_EFS#page1.tif source=F7414_Assignment_EFS#page2.tif source=F7414_Assignment_EFS#page3.tif source=F7414_Assignment_EFS#page4.tif source=F7414_Assignment_EFS#page5.tif source=F7414_Assignment_EFS#page6.tif source=F7414_Assignment_EFS#page7.tif

PATENT REEL: 033866 FRAME: 0940

ASSIGNMENT

Whereas, we, JIANGRONG CAO, a citizen of the United States of America, residing at Fremont, California; MICHAEL V. MORELLI, a citizen of the United States of America, residing at San Jose, California; HONGXING YUAN, a citizen of Singapore, residing at San Ramon, California; PENG ZHANG, a citizen of China, residing at Pleasanton, California; BRAD V. JOHNSON, a citizen of the United States of America, residing at Santa Clara, California; and MATTHEW R. GIBBONS, a citizen of the United States of America, residing at San Jose, California, have invented certain new and useful improvements in NEAR FIELD TRANSDUCER USING DIELECTRIC WAVEGUIDE CORE WITH FINE RIDGE FEATURE (hereafter "Improvements") for which we have executed an application for a United States Patent filed July 7, 2014, Application No. 14/324,505 and a provisional application for a United States Patent filed June 10, 2014, Application No. 62/010,057 (hereafter "Applications"); and

Whereas, Western Digital (Fremont), LLC (hereafter "Assignee"), a Delaware limited liability company, desires to acquire the entire right, title, and interest in and to the Improvements and the Applications.

Now, therefore, that for good and valuable consideration, the receipt of which is hereby acknowledged, I, the inventor, do hereby acknowledge that I have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the Assignee, its successors, legal representatives and assignees, the entire right, title, and interest throughout the world in, to and under the Improvements, and the Applications and all divisions, renewals and continuations thereof, and all applications claiming priority to the Applications, and all Letters Patent of the United States which may be granted thereof and all reissues and extensions thereof, and all rights of priority under International Conventions and applications for Letters Patent which may hereafter be filed for the Improvements in any country or countries foreign to the United States and all extensions, renewals and reissues thereof; and I hereby authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patents for the Improvements to the Assignee, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

We hereby covenant and agree that we will communicate to the Assignee, its successors, legal representatives and assigns, any facts known to us respecting the Improvements, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing and reissue applications, make all rightful oaths and aid the Assignee, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for the Improvements in all countries.

Title of Invention: NEAR FIELD TRANSDUCE WITH FINE RIDGE FEATURE	R USING DIELECTRIC WAVEGUIDE CORE
JIANGWONG CAO	9/30/14 Date
State of California) ss. County of ALAMEDA) On O9/30/14, before me, MAP10 appeared JIANGRONG CAO who proved to me on whose name(s) is/are subscribed to the within inst executed the same in his/her/their authorized capacitinstrument the person(s), or the entity upon behalf of the same in his/her/their authorized capacitinstrument the person(s), or the entity upon behalf of the same in his/her/their authorized capacitinstrument the person(s), or the entity upon behalf of the same in his/her/their authorized capacitinstrument the person(s), or the entity upon behalf of the same in his/her/their authorized capacitinstrument the person(s), or the entity upon behalf of the same in his/her/their authorized capacitinstrument the person(s).	rument and acknowledged to me that he/she/they by (ies), and that by his/her/their signature(s) on the
I certify under PENALTY OF PERJURY under the paragraph is true and correct.	laws of the State of California that the foregoing
WITNESS my hand and official seal. Signature: Signature of Notary Public	MARIO RIBEIRO Commission # 2031934 Notary Public - California Santa Clara County My Comm. Exphas Jul 28, 2017

WITH FINE RIDGE FEATURE	£

MICHAEL V. MORELLI Date	
State of California)) ss. County of ALAHEDH)	
County of ALAHEDA) On	e et ir
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoin paragraph is true and correct.	g
WITNESS my hand and official seal. MARIO RISEIRO Commission # 2031834 Notary Public - California Santa Clara County My Comm. Expires Jul 28, 2017	r v v skyregonggog

Title of Invention: NEAR FIELD TRANSDUCE WITH FINE RIDGE FEATURE	R USING DIELECTRIC WAVEGUIDE CORE
5 9	<u>09/19/2014</u> ate
ssouscawnisch i Owis	ac ·
State of California)	
State of California)) ss. County of ALAMEDA)	
On, before me,	he basis of satisfactory evidence to be the person(s) ument and acknowledged to me that he/she/they y(ies), and that by his/her/their signature(s) on the
I certify under PENALTY OF PERJURY under the paragraph is true and correct.	laws of the State of California that the foregoing
WITNESS my hand and official seal.	
Signature: Signature of Notary Public	MARIO RISERIO Commission # 2031834 Notary Public - California Santa Clara County My Comm. Expires Jul 28, 2017

PATENT Atty. Docket No.: F7414

Title of Invention: NEAR FIELD TRANSDUCER USING DIELECTRIC WAVEGUIDE CORE WITH FINE RIDGE FEATURE
PENG ZHANG 09/18/2014
State of California) ss. County of ALAMEDA) On 19/19/14 before me MARIO 7213-51-54 Notary Public personally
On ON / 19 / 19 before me, MARIO 1213-213-0. Notary Public, personally appeared PENG ZHANG who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.
I certify under PENALTY OF PERIURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal. Signature: Signature: Signature of Notary Public Signature of Notary Public Santa Clara County My Comm. Expires Jul 26, 2017

Title of Invention: NEAR FIELD TRANSDUC WITH FINE RIDGE FEATURE	ER USING DIELECTRIC WAVEGUIDE CORE
BRAD V. JOHNSON	305692614 Date
person(s) whose name(s) is/are subscribed to the he/she/they executed the same in his/her/their a	Notary Public, personally ne on the basis of satisfactory evidence to be the within instrument and acknowledged to me that authorized capacity(ies), and that by his/her/their e entity upon behalf of which the person(s) acted,
I certify under PENALTY OF PERJURY under the paragraph is true and correct.	e laws of the State of California that the foregoing
WITNESS my hand and official seal. Signature: Signature of Notary Public	MARIO RIBERO Commission # 2031934 Notary Public - California Santa Clara County My Comm. Expires Jul 28, 2017

RECORDED: 10/01/2014

PATENT

Title of Invention: NEAR FIELD TRANSDUCER USING DIELECTRIC WAVEGUIDE CORE WITH FINE RIDGE FEATURE
ZNAMA CALIFORNA CA /27/2014 Date
State of California)) ss. County of AZAMEDA)
On 09/29/14 before me, MALIO 273616 Notary Public, personally appeared MATTHEW R. GIBBONS who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.
Signature: Signature: Signature of Notury Public Signature of Notury Public Sams Clara County My Comm. Expires Jul 28, 2017