11/17/2017 504648285

PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT4695006

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
YIFAN SUN	11/13/2017
LAYNE PENG	07/25/2017
ROBERT A. LINCOURT JR.	05/30/2017
JOHN CARDENTE	05/31/2017
JUNPING ZHAO	11/17/2017

RECEIVING PARTY DATA

Name:	EMC IP HOLDING COMPANY LLC	
Street Address:	176 SOUTH STREET	
City:	HOPKINTON	
State/Country:	MASSACHUSETTS	
Postal Code:	01748	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15487887

CORRESPONDENCE DATA

Fax Number: (631)393-6271

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.

Phone: 631-393-6270

Email: nyoffice@rml-law.com JOSEPH B. RYAN **Correspondent Name:**

Address Line 1: 48 SOUTH SERVICE ROAD, SUITE 100

Address Line 2: RYAN, MASON & LEWIS, LLP Address Line 4: MELVILLE, NEW YORK 11747

NAME OF SUBMITTER: JC	OSEPH B. RYAN
SIGNATURE: /jos	oseph b. ryan/
DATE SIGNED: 11.	1/17/2017

Total Attachments: 7

PATENT REEL: 044161 FRAME: 0780

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PATENT REEL: 044161 FRAME: 0781

ASSIGNMENT

WHEREAS, we, Yifan Sun, Layne Peng, Robert A. Lincourt, Jr., John Cardente and Junping Zhao, have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled MANAGING ACCESS TO A RESOURCE POOL OF GRAPHICS PROCESSING UNITS UNDER FINE GRAIN CONTROL, the specification of which:

	is being executed on even date herewith and is about to be filed in the United States Patent Office;	
[X]	was filed on April 14, 2017 as U.S. Application No. 15/487,887;	
[]	was patented under U.S. Patent No on	

WHEREAS, EMC IP Holding Company LLC (hereinafter "ASSIGNEE"), a limited liability company organized and existing under the laws of the State of Delaware and having a usual place of business at 176 South Street, Hopkinton, Massachusetts 01748 desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution,

reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals as set forth below:

Date: 13/11/2017	Whensin
	Inventor's Signature
Print full name of first inventor:	Yifan Sun
Residence:	Abington, Massachusetts
Citizenship:	China
Mailing Address:	703 Hampton Way
	Abington, Massachusetts 02351
I Shi Vong	(name) whose residential address is
749 pleasant St	(name) whose residential address is A\-18 \Molden MA 02148
was personally present and did see Yii personally known to me, execute the a	an Sun (name of person signing the assignment) who is
	(signature of first witness)
Signed at \$10 TF / BOSTON .	(location of witness signature)
on this day 11/13	of 20 1 (date of signature)
1 May 6 Mens	(name) whose residential address is
31 Junger Street, Roxli	ry, MA 02119
was personally present and did see Yi personally known to me, execute the	fan Sun (name of person signing the assignment) who is above assignment.
The second second	(signature of second witness)
	/// (location of witness signature)
on this day////3	of 20 <u>}/</u> . (date of signature)

Date: July 25, 2017	好旗	
	Inventor's Signature	
Print full name of second inventor:	Layne Peng	
Residence:	Shanghai, China	
Citizenship:	China	
Mailing Address:	5F Building 1, KIC Plaza No. 252 Songhu Road Shanghai, China 200433	
I Xinyyao Yang	(name) whose residential address is	
was personally present and did see Layne Peng (name of person signing the assignment) who is personally known to me, execute the above assignment.		
一名之刻	_(signature of first witness)	
Signed at KIC Plaza . No xZ . Soughe forthocation of witness signature)		
on this day July 25	of 20 1. (date of signature)	
I (name) whose residential address is The long that the long (name of person signing the assignment) who is personally known to me, execute the above assignment.		
(signature of second witness)		
Signed at (location of witness signature)		
on this day \\ \mathread \	of 20/1. (date of signature)	

Date: <u>5/3/2017</u>	hta hist
and the second of the second o	Inventor's Signature
Print full name of third inventor:	Robert A. Lincourt, Jr.
Residence:	Pawtucket, Rhode Island
Citizenship:	United States of America
Mailing Address:	161 Brookdale Boulevard
	Pawtucket, Rhode Island 02861
I <u>Jeanne He M. Thomas</u>	(name) whose residential address is
was personally present and did see Robe assignment) who is personally known to Signed at 176 South St Hopkinto on this day May 30th	ert A. Lincourt, Jr. (name of person signing the me, execute the above assignment. (signature of first witness) (location of witness signature)
	(name) whose residential address is
was personally present and did see Robe assignment) who is personally known to	modern Scienate, AT 02857 ert A. Lincourt, Jr. (name of person signing the ome, execute the above assignment. (signature of second witness)
, and the second se	いつい パスター (location of witness signature) of 20 / 7 . (date of signature)

Date: 5/4/2017	u a
	Inventor's Signature
Print full name of fourth inventor:	John Cardente
Residence:	Milford, Massachusetts
Citizenship:	United States of America
Mailing Address:	58 Whitewood Road
,	Milford, Massachusetts 01757 (name) whose residential address is
20 old Homestrad Pro	sal westford MA
· · · · · · · · · · · · · · · · · · ·	dente (name of person signing the assignment) who
is personally known to me, execute the abov	e assignment. signature of first witness)
Signed at Hopkinton MA	(location of witness signature)
on this day <u>3\ May</u> of :	20 <u>17</u> . (date of signature)
1 5 Michael Dunbar	
15 Carriage Dr. Brinds	W. MA 01016
was personally present and did see John Car	dente (name of person signing the assignment) who
is personally known to me, execute the above	e assignment.
	signature of second witness)
// 1/11	(location of witness signature)
on this day $\frac{\sqrt{4}\sqrt{3}}{}$ of	20 <u>//</u> . (date of signature)

Date: 2017.11,17	Zhao Junfry
	Inventor's Signature
Print full name of fifth inventor:	Junping Zhao
Residence:	Beijing, China
Citizenship:	China
Mailing Address:	8F, Block D, Tsinghua Science Park One East Zhongguancun Road, Haidian District Beijing, China 100084
1 Wei Cui	(name) whose residential address is
was personally present and the see Junping is personally known to me, execute the above	2hao (name of person signing the assignment) who
Wei Chi	signature of first witness)
Signed at Beigg	(location of witness signature)
on this day Nov 17 of	,
I Guo. Fan Beijing 100084 was personally present and did see Junning	(name) whose residential address is
Beijing 100084	Zhao (name of person signing the assignment) who
was personally present and did see Junping is personally known to me, execute the above	Then (mine or become a Bring
Guo Fan	(signature of second witness)
Signed at 13ei Jing	
on this day Nov17 of	20 1. (date of signature)