Form OMB	PT( No.	)-159: 0651	(Rev. -0027	. 03-09 (exp.	9) 03/31	/2009)	)
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U.S. DEPARTMENT OF COMMERCE United States Patent and Trademark Office

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Name of conveying party(ies)     Mayank Jain; Jung II Choi; Kannan Srinivasan;     Philip Levis; Sachin Katti; and Siddharth Seth.	2. Name and address of receiving party(ies) The Board of Trustees of the Leland Stanford Junior University Internal Address:			
Additional name(s) of conveying party(ies) attached? Yes No.  3. Nature of conveyance/Execution Date(s):  Execution Date(s) <sub>11/4/11</sub> ; 11/4/11; 11/4/11; 11/8/11; 11/8/11	Street Address: 1705 El Camino Real			
Assignment	City: Palo Alto State: CA			
Executive Order 9424, Confirmatory License Other	Country: USA Zip: 94306-1106  Additional name(s) & address(es) attached? Yes X No			
A. Patent Application No.(s)  13/293,069	document is being filed together with a new application.  B. Patent No.(s)  ached? Yes No.			
5. Name and address to whom correspondence concerning document should be mailed:	6. Total number of applications and patents involved: 1			
Name: Pedro F. Suarez  Internal Address:	7. Total fee (37 CFR 1.21(h) & 3.41) \$40.00  X Authorized to be charged to deposit account			
Street Address: 3580 Carmel Mountain Road, Suite 300	Enclosed  None required (government interest not affecting title)			
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Phone Number: (858) 314-1540	Deposit Account Number 50-0311			
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Email Address: pedarez@mintz.com	Authorized User Name Pedro Suarez			
9. Signature: Signature Pedro F. Suarez, Reg. No. 45,895	Total number of pages including cover			
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**PATENT** 

REEL: 027321 FRAME: 0664

Attorney's Docket No.: 41243-502001US Client Ref. No. S10-405

Customer No.: 64046

## ASSIGNMENT

We, MAYANK JAIN, JUNG IL CHOI, KANNAN SRINIVASAN, PHILIP LEVIS, SACHIN KATTI, and SIDDHARTH SETH the undersigned, for good and valuable consideration, the receipt of which is hereby acknowledged, confirm that we have sold and assigned, and do hereby assign, sell and transfer to The Board of Trustees of the Leland Stanford Junior University, with an office at 1705 El Camino Real, Palo Alto, CA 94306-1106 and to its successors, assigns and legal representatives, collectively hereinafter referred to as the ASSIGNEE: (1) our entire right, title and interest for the United States and in all countries, in and to any and all inventions, discoveries and applications which are disclosed in the application for United States Letters Patent entitled:

## SINGLE CHANNEL FULL DUPLEX WIRELESS COMMUNICATIONS

filed with the U.S. Patent and Trademark Office on November 9, 2011 and assigned Application No. 13/293,069, including any subsequently filed utility applications, which claim priority to Provisional Patent Application No. 61/462,493 filed on February 3, 2011 and Provisional Patent Application No. 61/485,980 filed on May 13, 2011 including any renewals, revivals, reissues, reexaminations, extensions, continuations and divisions thereof and any substitute applications therefor; (2) the full and complete right to file patent applications in the name of the ASSIGNEE, its designee, or in my/our names as the ASSIGNEE, or its designee's election, on the aforesaid inventions, discoveries and applications in all countries of the world; (3) the entire right, title and interest in and to any Letters Patent which may issue thereon in the United States or in any country, and any renewals, revivals, reissues, reexaminations and extensions thereof, and any patents of confirmation, registration and importation of the same; and (4) the entire right, title and interest in all Convention and Treaty Rights of all kinds thereon, including without limitation all rights of priority in any country of the world, in and to the above inventions, discoveries and applications.

We hereby authorize and request the competent authorities to grant and to issue any and all such Letters Patent in the United States and throughout the world to the ASSIGNEE of the entire right, title and interest therein, as fully and entirely as the same would have been held and enjoyed by us had this assignment, sale and transfer not been made.

We agree, at any time, upon the request of the ASSIGNEE, to execute and to deliver to the ASSIGNEE any additional applications for patents for said inventions and discoveries, or any part or parts thereof, and any applications for patents of confirmation, registration and importation based on any Letters Patent issuing on said inventions, discoveries, or applications and divisions, continuations, renewals, revivals, reissues, recxaminations and extensions thereof.

We further agree at any time to execute and to deliver upon request of the ASSIGNEE such additional documents, if any, as are necessary or desirable to secure patent protection on said inventions, discoveries and applications throughout all countries of the world, and otherwise to do the necessary to give full effect to and to perfect the rights of the ASSIGNEE under this Assignment, including the execution, delivery and procurement of any and all further documents evidencing this assignment, transfer and sale as may be necessary or desirable.

We hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

PATENT REEL: 027321 FRAME: 0665 First Inventor : MAYANK JAIN et al. Application No. : Not Yet Assigned

Page 2 of 7

We further agree at any time to execute and to deliver upon request of the ASSIGNEE such additional documents, if any, as are necessary or desirable to secure patent protection on said inventions, discoveries and applications throughout all countries of the world, and otherwise to do the necessary to give full effect to and to perfect the rights of the ASSIGNEE under this Assignment, including the execution, delivery and procurement of any and all further documents evidencing this assignment, transfer and sale as may be necessary or desirable.

We hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

We further covenant that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

Date:	Signature of: MAYANK JAIN		
Date:	Signature of: MAYANK JAIN		
IN WITNESS THEREOF,			
State of			
On this day of, appeared, which was	2011, before me, the undersigned notary public, personally proved to me through satisfactory evidence of identification, to be the person whose name is signed on this document that the contents of the document are truthful and accurate to the		
Notary Public My Commission Expires:	·		
Jaeyoung Kim	<del></del>		
Witness #1 (Print Name)  Witness #1 (Signature)	1) /04 / 20 //		
Witness #2 (Print Name) Witness #3 (Signature)	11/04/2011 Date		

PATENT REEL: 027321 FRAME: 0666

First Inventor : MAYANK JAIN et al. Application No.: Not Yet Assigned Page 3 of 7
Date: Signature of: JUNG IL CHOI
IN WITNESS THEREOF,
State of County of
On this day of, 2011, before me, the undersigned notary public, personally appeared, proved to me through satisfactory evidence of identification which was, to be the person whose name is signed on this document and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.
Notary Public My Commission Expires:
-OR-
Tae Young Kim. Witness #1/Priest Name)
Witness #1 (Signature)  Date
Witness #2 (Print Name)  Witness #2 (Signature)  Date

11/30/2011 09:05 FAX 8583141501 MINTZ\_LEVIN

**2**004/008

First Inventor : MAYANK JAIN et al.

> PATENT REEL: 027321 FRAME: 0668

First Inventor: MAYANK JAIN et al. Application No.: Not Yet Assigned Page 5 of 7  Date: 11 5 11	Signature of: PHILIP LEVIS
IN WITNESS THEREOF,	
State of CALIFORN IA County of SANTA CIFTIA	
appeared, proved which was, to 1	to me through satisfactory evidence of identification be the person whose name is signed on this document ontents of the document are truthful and accurate to the
Notary Public My Commission Expires:	
OR-	
Alexis A. Wing Witness #1 (Print Name)	118/11
Witness #1 (Signature)	Date
Sumalee Kiattinant	
Watracse #2 (Print Name)	11/8/11
Witness #2 (Signature)	Date

11/30/2011 09:05 FAX 8583141501 MINTZ\_LEVIN

**2**1006/008

First Inventor : MAYANK JAIN et al. Application No.: Not Yet Assigned Page 6 of 7  Date: 11 5   1
IN WITNESS THEREOF,
State of County of
On this, day of, 2011, before me, the undersigned notary public, personally appeared, proved to me through satisfactory evidence of identification which was, to be the person whose name is signed on this document and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.
Notary Public My Commission Expires:
Witness #1 (Print Name)  Witness #1 (Signature)  ADITYA GUDIPATI
Witness #2 (Print Name)    Main   1   8   11     Witness #2 (Signature)   Date

11/30/2011 09:05 FAX 8583141501 MINTZ\_LEVIN

**2**007/008

First Inventor : MAYANK JAIN et al. Application No. : Not Yet Assigned

Page 7 of 7

**RECORDED: 11/30/2011** 

05 - NOV - 2011

Date: 03-1100-2011	
	Signature of: SIDDHARTH SETH
IN WITNESS THEREOF,	er.
State of	35.
County of	. •
appeared, proved which was, to	11, before me, the undersigned notary public, personally to me through satisfactory evidence of identification be the person whose name is signed on this document
best of his/her knowledge and belief.	contents of the document are truthful and accurate to the
Notary Public My Commission Expires:	
-OR-	
KANUPRIYA BHARDWAT	
Witness #1 (Ptint Name)	
Kami	11/05/2011
Witness #1 (Signature)	Date
Witness #2 (Print Name)	
Witness #2 (Signature)	<del>Date</del>

PATENT

REEL: 027321 FRAME: 0671