U.S. PTO Express Mail Label No. EV930038888US 11/786295 04/10/2007 Form PTO-1595 (Rev. 03/05) U.S. DEPARTMENT OF COMMERCE OMB No. 0651-0027 (exp. 6/30/2005) States Patent and Trademark 05-03-2007 Office RECOI 103401837 To the Director of the U.S. Patent and Traden or the new address(es) below. Name of conveying party(ies) 2. Name and address of receiving party(ies) 1) Tin H. Lai Name: Altera Corporation 2) Wilson Wong 3) Sergey Shumarayev Internal Address: 4) Tim Tri Hoang Additional name(s) of conveying party(les) attached? 
Yes 
No. 3. Nature of conveyance/Execution Date(s): Street Address: 101 Innovation Drive Execution Date(s) 4/05/07; 04/09/07; 04/06/07; 04/06/07 ☐ Merger City: San Jose ☐ Security Agreement ☐ Change of Name ☐ Joint Research Agreement State: CA ☐ Government Interest Assignment Zip: 95134 Country: USA Executive Order 9424, Confirmatory License ☐ Other Additional name(s) & address(es) attached? 
Yes 
No 4. Application or patent number(s): ☐ This document is being filed together with a new application Execution date(s): 4/05/07; 04/09/07; 04/06/07; 04/06/07 A. Patent Application No.(s) B. Patent No.(s) 00000040 Q61075 11786295 05/02/2007 DBYRNE Additional numbers attached? Yes No 01 FC:8021 40.00 DA 5. Name and address to whom correspondence 6. Total number of applications and patents concerning document should be mailed: involved: 1 Name: Fish & Neave IP Group, Ropes & Gray LLP 7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00 Internal Address: Authorized to be charged by credit card Authorized to be charged to deposit account Street Address: 1211 Avenue of the Americas ☐ Enclosed None required (government interest not affecting title) 8. Payment Information City: New York a. Credit Card Last 4 Numbers State: NY Zip: 10036 **Expiration Date** 06-1075, Order No. Phone Number: 212.596.9000 b. Deposit Account Number 000174-0509-101 Fax Number: 212.596.9090 Authorized User Name Fish & Neave IP Group Email Address: robert.jackson@ropesgray.com 9. Signature: April 10, 2007 gnature Date Robert R. Jackson (Reg. No. 26,183) Total number of pages including cover 3 Name Of Person Signing Sheet, attachments, and documents:

Documents to be recorded (including cover sheet) should be faxed to (703) 306-5995, or mailed to: Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

REEL: 019248 FRAME: 0850

## ASSIGNMENT

Whereas we, Tin H. Lai, Wilson Wong, Sergey Shumarayev, and Tim Tri Hoang, respectively residing at 3211 Ruskin Drive., San Jose, California 95132; 21 Talbert Court, San Francisco, CA 94134; 12501 Corbetta Lane, Los Altos Hills, CA 94022; and 5407 Carls Ct., San Jose, California 95123, have made an invention in:

## H-TREE DRIVER CIRCUITRY

and are about to make application for United States Letters
Patent therefor, the same having been executed by us on even
date(s) herewith; and

WHEREAS, ALTERA CORPORATION, a corporation organized and existing under the laws of Delaware and having an office and place of business at 101 Innovation Drive, San Jose, California 95134-1941 is desirous of acquiring the entire interest in said invention, said United States patent application and any Letters Patent which may issue thereon;

NOW, THEREFORE, be it known that for and in consideration of the sum of One Dollar (\$1.00) to each of us paid, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, each of us does hereby sell, assign and transfer unto the said ALTERA CORPORATION, its successors, assigns and legal representatives, all right, title and interest in and to said invention and any improvements thereon for all countries of the world, and in and to said United States patent application, including any continuations and divisions thereof, and any substitute applications therefor, and any patents which may issue thereon, and any reissues of the same, and including the right to claim priority under the International Convention based on said patent application; and all right, title and interest in and to every patent

PATENT REEL: 019248 FRAME: 0851 application filed or to be filed on said invention in any other country, including renewals, revivals, continuations and divisions thereof, and any substitute applications therefor, and any and all patents which may issue thereon, and any reissues and extensions of the same; and each of us hereby authorizes and requests competent authorities to grant and issue any and all patents on said invention to the said ALTERA CORPORATION, as the assignee of the entire interest therein; and each of us further agrees to execute upon request of the assignee such additional documents, if any, as are necessary and proper to secure patent protection on said invention throughout all countries of the world, and to otherwise give full effect to and perfect the rights of the assignee under this Assignment.

IN TESTIMONY WHEREOF, each of us has hereunto signed his name and affixed his seal on the date indicated hereinafter.

04/05/07 Date

4/9/07 Date

04/06/07 Date

04/06/07

Tin H. Lai

Wilson Wong

Sergey Shumarayev

Tim Tri Hoang

**RECORDED: 04/10/2007** 

Form PTO-1595 (Rev. 03/05) OMB No. 0651-0027 (exp. 6/30/2005) Office U.S. DEPARTMENT OF COMMERCE United States Patent and Trademark

RECORDATION FORM COVER SHEET PATENTS ONLY	
To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.	
1. Name of conveying party(ies) 1) Tin H. Lai 2) Wilson Wong 3) Sergey Shumarayev 4) Tim Tri Hoang	2. Name and address of receiving party(ies)  Name: Altera Corporation  Internal Address:
Additional name(s) of conveying party(ies) attached?  Yes  No	
3. Nature of conveyance/Execution Date(s):  Execution Date(s) 4/05/07; 04/09/07; 04/06/07  Assignment Merger	Street Address: 101 Innovation Drive
☐ Security Agreement ☐ Change of Name	City: San Jose
☐ Joint Research Agreement	State: CA
☐ Government Interest Assignment ☐ Executive Order 9424, Confirmatory License	Country: USA Zip: 95134
☐ Other	Additional name(s) & address(es) attached?  Yes  No
A. Patent Application No.(s)	B. Patent No.(s) DUPLICATE  attached? Per Service And Per Serv
5. Name and address to whom correspondence concerning document should be mailed:	6. Total number of applications and patents involved: 1
Name: Fish & Neave IP Group, Ropes & Gray LLP	7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00
Internal Address:	☐ Authorized to be charged by credit card  ☑ Authorized to be charged to deposit account
Street Address: 1211 Avenue of the Americas	☐ Enclosed ☐ None required (government interest not affecting title)
City: New York	8. Payment Information
State: NY Zip: 10036	a. Credit Card Last 4 Numbers  Expiration Date  06-1075, Order No.
Phone Number: 212.596.9000	b. Deposit Account Number <u>000174-0509-101</u>
Fax Number: 212.596.9090 Email Address: robert.jackson@ropesgray.com	Authorized User Name Fish & Neave IP Group
9. Signature: Wort R. Oachon	
Robert R. Jackson (Reg. No. 26,183)	DateTotal number of pages including cover 3
Name Of Person Signing	Sheet, attachments, and documents:

Documents to be recorded (including cover sheet) should be faxed to (703) 306-5995, or mailed to: Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

PATENT

REEL: 019248 FRAME: 0853