Form PTO-1595 (Rev. 07/05) OMB No. 0651-0027 (exp. 6/30/2008)	2007	United States Patent and Tradem	ark Office
ONID 140. 0001-0027 (exp. 0/00/2000)		ET	- '
To the Director of the U.S. Patent a	3001	documents or the new address(es) be	elow.
1. Name of conveying party(ies)	2. Name and ac	ddress of receiving party(ies)	
Tse E. Wong, Samuel D. Tonomura,	Name: Raytheon	n Company	_ <u>F</u> J
Stephen E. Sox, Timothy E. Dearden, Clifton Quan, Polwin C. Chan,	Internal Addres	s:	<u>8,65</u>
Mark S. Hauhe	Office of the Gene	eral Counsel	
Additional name(s) of conveying party(ies) attached? Yes ✓ No 3. Nature of conveyance/Execution Date(s):		•	<u>1</u> 30
Execution Date(s) Jan. 3, 2007; Jan. 8, 2007; Jan. 12, 2007	Olleet Address.	•	-
✓ Assignment Merger	870 Winter Stree	et	
Security Agreement Change of Name	City: Waltham		
Joint Research Agreement	State: MA		
Government Interest Assignment	•		
Executive Order 9424, Confirmatory License	Country: US	Zip: 02451	
Other	Additional name(s	s) & address(es) attached? Yes	 ✓ No
A. Patent Application No.(s)	B. Patent No	0.(3)	
A. Patent Application No.(s) Additional numbers at 5. Name and address to whom correspondence	tached? Yes		
Additional numbers at	tached? Yes	✓ No er of applications and patents	
Additional numbers at 5. Name and address to whom correspondence	tached? Yes 6. Total number involved: one (1	✓ No er of applications and patents	
Additional numbers at 5. Name and address to whom correspondence concerning document should be mailed:	tached? Yes 6. Total number involved: one (1)	✓ No er of applications and patents	
Additional numbers at 5. Name and address to whom correspondence concerning document should be mailed: Name: Raytheon Company	tached? Yes 6. Total number involved: one (17. Total fee (37) Authorized	✓ No er of applications and patents 1) 7 CFR 1.21(h) & 3.41) \$ 40.00	_
Additional numbers at 5. Name and address to whom correspondence concerning document should be mailed: Name: Raytheon Company Internal Address: EO/E04/N119	tached? Yes 6. Total number involved: one (17. Total fee (37) Authorized	✓ No er of applications and patents 1) 7 CFR 1.21(h) & 3.41) \$ 40.00 It to be charged by credit card	_
Additional numbers at 5. Name and address to whom correspondence concerning document should be mailed: Name: Raytheon Company Internal Address: EO/E04/N119 Intellectual Property & Licensing	tached? Yes 6. Total number involved: one (1) 7. Total fee (37) Authorized Authorized Enclosed	✓ No er of applications and patents 1) 7 CFR 1.21(h) & 3.41) \$ 40.00 It to be charged by credit card	nt
Additional numbers at 5. Name and address to whom correspondence concerning document should be mailed: Name: Raytheon Company Internal Address: EO/E04/N119 Intellectual Property & Licensing Street Address: 2000 East El Segundo Boulevard PO Box 902	tached? Yes 6. Total number involved: one (1) 7. Total fee (37) Authorized Authorized Enclosed	Pr of applications and patents 1) 7 CFR 1.21(h) & 3.41) \$ 40.00 1 to be charged by credit card 1 to be charged to deposit accountined (government interest not affect	nt
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Additional numbers at 5. Name and address to whom correspondence concerning document should be mailed: Name: Raytheon Company Internal Address: EO/E04/N119 Intellectual Property & Licensing Street Address: 2000 East El Segundo Boulevard PO Box 902 City: El Segundo	6. Total number involved: one (1) 7. Total fee (37) Authorized Authorized Enclosed None requ 8. Payment Interest	Pr of applications and patents 1) 7 CFR 1.21(h) & 3.41) \$ 40.00 1 to be charged by credit card 2 to be charged to deposit accountined (government interest not affect a formation 1 to Last 4 Numbers Expiration Date	nt
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Additional numbers at 5. Name and address to whom correspondence concerning document should be mailed: Name: Raytheon Company Internal Address: EO/E04/N119 Intellectual Property & Licensing Street Address: 2000 East El Segundo Boulevard PO Box 902 City: El Segundo State: CA Zip: 90245-0902 Phone Number: 310-647-2577	6. Total number involved: one (1) 7. Total fee (37) Authorized Authorized Enclosed None requ 8. Payment Interpretation and Credit Call	Pr of applications and patents 1) 7 CFR 1.21(h) & 3.41) \$ 40.00 1 to be charged by credit card 2 to be charged to deposit accountined (government interest not affect a formation 1 to Last 4 Numbers Expiration Date	nt
Additional numbers at 5. Name and address to whom correspondence concerning document should be mailed: Name: Raytheon Company Internal Address: EO/E04/N119 Intellectual Property & Licensing Street Address: 2000 East El Segundo Boulevard PO Box 902 City: El Segundo State: CA Zip: 90245-0902 Phone Number: 310-647-2577 Fax Number: 310-647-2616	6. Total number involved: one (1) 7. Total fee (37) Authorized Authorized Enclosed None requ 8. Payment Interpretation and Credit Call	Prof applications and patents 1) 7 CFR 1.21(h) & 3.41) \$ 40.00 1 to be charged by credit card 1 to be charged to deposit accountined (government interest not affect a formation 1 to Last 4 Numbers Expiration Date 2 4 Account Number 50-0616	nt ting title
5. Name and address to whom correspondence concerning document should be mailed: Name: Raytheon Company Internal Address: EO/E04/N119 Intellectual Property & Licensing Street Address: 2000 East El Segundo Boulevard PO Box 902 City: El Segundo State: CA Zip: 90245-0902 Phone Number: 310-647-2577 Fax Number: 310-647-2616 Email Address: 4 Addre	6. Total number involved: one (1) 7. Total fee (37 Authorized Authorized None requesting a. Credit Call	Profapplications and patents 1) 7 CFR 1.21(h) & 3.41) \$ 40.00 1 to be charged by credit card 1 to be charged to deposit accounting (government interest not affect afformation 1 to Last 4 Numbers	int ting title
Additional numbers at 5. Name and address to whom correspondence concerning document should be mailed: Name: Raytheon Company Internal Address: EO/E04/N119 Intellectual Property & Licensing Street Address: 2000 East El Segundo Boulevard PO Box 902 City: El Segundo State: CA Zip: 90245-0902 Phone Number: 310-647-2577 Fax Number: 310-647-2616 Email Address: 9. Signature: Address: Signature	6. Total number involved: one (1) 7. Total fee (37) Authorized Authorized Enclosed None requered None requered. B. Payment Inva. Credit Called Authorized Authorized.	Prof applications and patents 1) 7 CFR 1.21(h) & 3.41) \$ 40.00 1 to be charged by credit card 2 to be charged to deposit account interest not affect a sired (government interest not affect a sired Last 4 Numbers Expiration Date Account Number 50-0616 Ed User Name Leonard A. Alkoromation January 25, 267 Date Total number of pages including cover sheet, attachments, and documents	ting title

PATENT REEL: 018845 FRAME: 0089



ASSIGNMENT

PATENT

Page 1 of 8 Attorney Docket No. **05W223**

WHEREAS, I, as below named sole inventor (if only one name is listed below) or joint inventor (if plural names are listed below) of the city and state as stated below next to my name, have invented a (an)

STACKED INTEGRATED CIRCUIT ASSEMBLY

for which application for Letters Patent o	of the United States has bee	en executed by me, or	(if the following is
${\it completed}$) was filed as Application No. $_$	on	, and	

WHEREAS, RAYTHEON COMPANY (hereinafter referred to as RAYTHEON), a Delaware corporation, having its principal place of business in Waltham, Massachusetts, is desirous of acquiring the entire and exclusive right, title and interest in, to and under said invention, said application and any and all Letters Patent that may be granted therefore in the United States and throughout the world;

NOW, THEREFORE, in consideration of the obligations voluntarily assumed by me and set forth in an invention agreement between me and my employer, effective the date as stated below next to my name, and other good and valuable consideration, receipt of which is hereby acknowledged, I do hereby sell, assign and transfer to RAYTHEON, its successors, assigns or other legal representatives, the entire and exclusive right, title and interest in and to said invention invented by me, to said application and any and all applications which are continuations, continuations-in-part, divisions or substitutes of said application and any and all Letters Patent that may be granted therefore in the United States and throughout the world on any of said applications and to any and all reexaminations, reissues, renewals or extensions of said Letters Patent in the United States and throughout the world for the full term or terms for which said Letters patent may be granted in the United States and throughout the world; authorize and request the Director of the United States Patent and Trademark Office and all foreign countries to issue all such Letters Patent to said RAYTHEON, its successors, assigns or other legal representatives; covenant that no assignment, sale, agreement, transfer or encumbrance has been, or will be, made or entered into which would conflict with this assignment, sale and transfer; and agree to communicate to RAYTHEON, its successors, assigns or other legal representatives, upon request and at no cost or expense to me, any facts known by me respecting said invention, do all lawful acts, including the execution and delivery of all papers and proper oaths and giving of testimony that is deemed necessary or desirable by RAYTHEON, its successors, assigns or other legal representatives with regard to said invention for protecting, obtaining, maintaining and enforcing any and all of said Letters Patent in the United States and throughout the world for said invention and for perfecting, affirming, recording and maintaining the title of RAYTHEON, its successors, assigns or other legal representatives, and generally cooperate to the fullest extent in all matters pertaining to said invention, and any and all of said Letters Patent and the title thereto in RAYTHEON, its successors, assigns or other legal representatives.

Page 2 of 8

Attorney Docket No. 05W223

FULL NAME OF SOLE OR JOINT INVENTOR	INVENTOR'S SIGNATURE	DATE SIGNED
Tse E. Wong	Te Z. Wby	Jan. 88h, 2007
RESIDENCE (CITY AND STATE)		INVENTION AGREEMENT
Los Alamitos, California 90720		DATE June 27, 1994
STATE OF <u>CALIFORNIA</u>))	
COUNTY OF LOS ANGELES		
On January 8 , 20	007. before me. Susan Val	erie Antrillo . a
Notary Public in and for said State, persona	ally appearedTse E. Wong	,
☐ personally known to me or ☐ proved to		to be the person whose
name is subscribed to the within instrumen		
authorized capacity, and that by his signatu	ire on the instrument the person, execute	ed the instrument.
WITNESS my hand and official seal.	Notary Public Susan V	<u>Uleva (Intulto</u>
[seal]	Gudan V	
SUSAN VALERIE ANTRIL Commission # 16662 Notary Public - Califor	34 [nkg 2	
Los Angeles County My Comm. Expires May 12.	2010	

Page 3 of 8

Attorney Docket No. 05W223

FULL NAME OF SOLE OR JOINT	INVENTOR'S SIGNA	ATURE DATE SIGNE	D
INVENTOR Samuel D. Tonomura	S. Day To	mom 1/3/2	∞7
RESIDENCE (CITY AND STATE)		INVENTION A	AGREEMENT
Rancho Palos Verdes, California	90275-3931	DATE February 2, 19	987
STATE OFCALIFORN COUNTY OFLOS ANGE	IA)	SS:	
COUNTY OF LOS ANGE	LES)		
. t 7			
on January 3	, 2007, before me,	Susan Valerie Antrillo	, a
Notary Public in and for said State, p	ersonally appeared	Samuel D. Tonomura	_
🗖 personally known to me or 🗹 pro	ved to me on the basis of sa	itisfactory evidence to be the perso	n whose
name is subscribed to the within ins			
authorized capacity, and that by his	signature on the instrument	the person, executed the instrumen	it.
WITNESS my hand and official seal	Notary Pu	blic <u>Jusan Valerie</u> (A) Susan Valerie Antrillo	rtillo
\		Susan Valene Antinio	
Commission Notary Publi	RIE ANTRILLO n # 1666234 c - California Ž les County		

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Attorney Docket No. 05W223

FULL NAME OF SOLE OR JOINT INVENTOR	INVENTOR'S SIGNATURE	DATE SIGNED
Stephen E. Sox	Atole E. box	1/12/2007
RESIDENCE (CITY AND STATE)		INVENTION AGREEMENT
La Canada, California 91011-2727		DATE October 31, 1988
STATE OF CALIFORNIA COUNTY OF LOS ANGELES	`	
STATE OFCALIFORNIA		
COUNTY OF LOS ANGELES)	
	<i>,</i>	
On January 12 ,2	007 hefore me Susan Va	lerie Antrillo . a
Notary Public in and for said State, person		
personally known to me or proved to	me on the basis of satisfactory evidence	e to be the person whose
name is subscribed to the within instrumer	it and acknowledged to me that he exec	uted the same in his
authorized capacity, and that by his signati	ire on the instrument the person, execut	ed the instrument
authorized supusity, and that by the signati	are on the mediament the person, except	Sa the metament.
WITNESS my hand and official seal.		1/1. A. t.//
	Notary Public Sugar	Vallue (NAVUCEO
[seal]	Susan v	/alerie Antrillo
Commission # 144	MILO 1	
Notary Public - Call	Mornia 2	
Los Angeles Cou	my E	

Page 5 of 8

Attorney Docket No. 05W223

FULL NAME OF SOLE OR JOINT INVENTOR'S SIGNATURE	DATE SIGNED
INVENTOR)	/ /
	1/3/2007
Timothy E. Dearden	INVENTION AGREEMENT
RESIDENCE (CITY AND STATE)	DATE
Torrance, California 90505-6202	July 19, 1982
Torrance, Camorna Cooc Case	
OTATE OF CALIFORNIA	
STATE OF CALIFORNIA) SS:	
STATE OF CALIFORNIA) COUNTY OF LOS ANGELES)	
On <u>January 3</u> , 2007, before me, <u>Susan Vale</u>	erie Antrillo . a
Notary Public in and for said State, personally appeared	
personally known to me or proved to me on the basis of satisfactory evidence	to be the person whose
name is subscribed to the within instrument and acknowledged to me that he execu	ted the same in his
authorized capacity, and that by his signature on the instrument the person, execute	ed the instrument.
dution25d bapasity, and that by the signature of the manner of	
WITNESS my hand and official seal.	
χ	/ // ///
Notary Public	alle unnillo
SUSAN VAI FDIF ANITOH LO	alerie Antrillo
Commission # 1666234	
差明 Notary Public - California Z	
My Comm. Expires May 12, 2010	
12,2010	

Page 6 of 8 Attorney Docket No. **05W223**

FULL NAME OF SOLE OR JOINT INVENTOR	INVENTOR'S SIGNATU	DATE SIGNED 1-8-06	
Clifton Quan	_ Chiff for	_ 1-8-06	
RESIDENCE (CITY AND STATE)	70	INVENTION AGREEMENT	
Arcadia, California 91006-5615		DATE June 19, 1978	
STATE OF CALLEOPN	10		
STATE OF CALIFORN) S	S:	
STATE OF CALIFORN COUNTY OF LOS ANGE	LES)		
		Susan Valerie Antrillo, a	
Notary Public in and for said State,	personally appeared	Clifton Quan	
personally known to me or d pro	oved to me on the basis of satisf	actory evidence to be the person whose	
name is subscribed to the within instrument and acknowledged to me that he executed the same in his			
authorized capacity, and that by his	signature on the instrument the	person, executed the instrument.	
WITNESS my hand and official sea	l. Notary Public	Susan Valerie Intrible	
and w	AMERIC I	Susan Valerie Antrillo	
[seal] Commission Notary Put	on # 1664234 C		

Page 7 of 8

Attorney Docket No. 05W223

FULL NAME OF SOLE OR JOINT	INVENTOR'S SIGNATURE	DATE SIGNED
INVENTOR Polwin C. Chan	folim Chan	1/8/2007
RESIDENCE (CITY AND STATE)		INVENTION AGREEMENT
·		DATE
Monterey Park, California 91755-2923		February 27, 1995
		· · · · · · · · · · · · · · · · · · ·
STATE OF <u>CALIFORNIA</u>)	
) SS:	
COUNTY OF LOS ANGELES		
On January 8, 2	007, before me, Susan Vale	rie Antrillo, a
ک Notary Public in and for said State, persona		
personally known to me or proved to	me on the basis of satisfactory evidence	to be the person whose
name is subscribed to the within instrumen	t and acknowledged to me that he execut	ed the same in his
authorized capacity, and that by his signatu	are on the instrument the person, execute	d the instrument.
	\bigcap	
WITNESS my hand and official seal.	/ 1/	/
	Notary Public AUSUN /	leve Intulto
	Susan Va	llerie Antrillo
[seal] SURAN VALERIE AND	NO I	
Commission # 166	4234	
Los Angeles Cou	romia z nty ir	
TITE LETTER Examples as a	·	

Page 8 of 8

Attorney Docket No. 05W223

IN WITNESS WHEREOF, I have executed this instrument.

FULL NAME OF SOLE OR JOINT	INVENTOR'S SIGNATURE	DATE SIGNED	
INVENTOR			
	Mad I let	03 T 2017	
Mark S. Hauhe	Man 1 fraul	03 Jan 2007	
RESIDENCE (CITY AND STATE)		INVENTION AGREEMENT	
		DATE	
Hermosa Beach, California 90254		June 17, 1981	
	WANT -		
STATE OF <u>CALIFORNIA</u> COUNTY OF <u>LOS ANGELES</u>	,		
STATE OFCALIFORNIA			
COUNTY OF LOS ANGELES) 33.		
	· ,		
7 7			
on January 3, 2	2007, before me,Susan Vale	erie Antrillo, a	
Notary Public in and for said State, person	ally appeared <u>Mark S. Hauhe</u>		
personally known to me or proved to me on the basis of satisfactory evidence to be the person whose			
name is subscribed to the within instrument and acknowledged to me that he executed the same in his			
authorized capacity, and that by his signature on the instrument the person, executed the instrument.			
WITNESS my hand and official seal.	1 ,		
,	$\int \int $	1. · Matille	
	Notary Public Jusan Va	live annuele	
	Susan Val	erie Antrillo	



RECORDED: 01/25/2007