a PTO-1595 (Rev. 09/ 04)	U.S. DEPARTMENT OF COMMERCE United States Patent and Trademark Office
No. 0651-0027 (exp. 6/30/2005) RECORDATION FOR	M COVER SHEET
PATENTS	
o the Director of the U.S. Patent and Trademark Office: Please	a record the attached documents or the new address(es) below.
Name of conveying party(ies)/Execution Date(s): RICHARD CARLEY (01/27/2009), ANTHONY L. TSANGAROPOULOS 03/03/2009), AND ESA TARVAINEN 02/18/2009)	2. Name and address of receiving party(ies)     RESONANCE SEMICONDUCTOR     Name:
Execution Date(s): in parentheses after Inventor name Additional name(s) of conveying party(les) attached? Yes X No 3. Nature of Conveyance: X Assignment Merger	- 425 N. CRAIG STREET SUITE 500
Security Agreement Change of Name	City: PITTSBURGH
Government Interest Assignment	State: PENNSYLVANIA
Executive Order 9424, Confirmatory License	Country:       United States of America       Zip:       15213         Additional name(s) & address(es)       Yes       X       No
Other	attached:
Additional numbers attache	6. Total number of applications and
<ol> <li>Name and address to whom correspondence concerning document should be mailed:</li> </ol>	patents involved:
Name: Andrew T. Zidel LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK, LLP	7. Total fee (37 CFR 1.21(h) & 3.41) \$40.00
Internal Address: Atty. Dkt.: RENWIR 3.0-004	
	Authorized to be charged by credit card
Street Address: 600 South Avenue West	Authorized to be charged by credit card          X       Authorized to be charged to deposit account         Enclosed       None required (government interest not affecting title)
Street Address: 600 South Avenue West	Authorized to be charged to deposit account     Enclosed
Street Address: 600 South Avenue West City:	Authorized to be charged to deposit account     Enclosed     None required (government interest not affecting title     8. Payment Information     a. Credit Card Last 4 Numbers
Street Address: 600 South Avenue West           City:	Authorized to be charged to deposit account     Enclosed     None required (government interest not affecting title     8. Payment Information     a. Credit Card Last 4 Numbers     Expiration Date
Street Address: 600 South Avenue West           City:	Authorized to be charged to deposit account     Enclosed     None required (government interest not affecting titt      B. Payment Information     a. Credit Card Last 4 Numbers     Expiration Date     b. Deposit Account Number 12-1095
Street Address: 600 South Avenue West           City:	Authorized to be charged to deposit account     Enclosed     None required (government interest not affecting title      8. Payment Information     a. Credit Card Last 4 Numbers     Expiration Date
Street Address: 600 South Avenue West           City:	X       Authorized to be charged to deposit account         Enclosed       Enclosed         None required (government interest not affecting titherest not affecting title.
Street Address: 600 South Avenue West City:	Authorized to be charged to deposit account     Enclosed     None required (government interest not affecting title <b>8. Payment Information</b> a. Credit Card Last 4 Numbers     Expiration Date     b. Deposit Account Number 12-1095
Street Address:         600 South Avenue West           City:	Authorized to be charged to deposit account     Enclosed     None required (government interest not affecting title <b>8. Payment Information</b> a. Credit Card Last 4 Numbers     Expiration Date     b. Deposit Account Number 12-1095     Authorized User Name Andrew T. Zidel     March 5, 2009

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## PATENT REEL: 022361 FRAME: 0355

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	tormer PTO/SB/15 (6-00) Modified LDLKA Docket Number (Oplional)
ASSIGNMENT OF UTILITY APPLICATION	
	RENWIR 3.0-004
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Vhereas, I, <u>L. Richard Carley</u>	of
1924 Glen Mitchell Road; Sewickley, Pennsylvania 15143	
nereafter referred to as assignor, have with others invented certain	
	Clast as August 28, 2008
for which an application for a United States Letters Patent	was filed off
Application Number <u>12/229,948</u> for which an application for a United States Letters Patent w	
and	
Whereas, Resonance Semiconductor Corporation	
a corporation of <u>Delaware</u> herein referred to as "assignce" whose r	nailing address is
425 N. Craig Street; Suite 500; Pittsburgh, Pennsylvania 1 s desirous of acquiring the entire right, title and interest in the same	94.19
NOW, THEREFORE, in consideration of the sum of one do	llar (\$ <u>1.00</u> ), the receipt where
s acknowledged, and other good and valuable consideration, I as assignee my entire right, title and interest for the United States	of America and all other countries in and to sa
	alasi alvisional continuation. Continuativu-timea
	ad therefor in the United States of America and i
-4	
priority or benefit of the aforesaid utility application pursuant to any priority or benefit and the Commissioner of Patents and Tradema	V ISW OF TREATY, MILL INCIULING THE HEIN TO MENT 201
	<b>ESIGNAA NATEIN. 88 ASSIGNEE OF THE EPIDE INTER</b>
waveley and the understand for me and my lengt (ADIABADISIVAS	L heirs and assigns do hereby agree and coverie
the state of the second s	<u>Asional continuation, reissue allo ullei applicativi</u>
for Letters Patent on said improvements and all assignments there to said assignee or its representatives all facts known to the und	18660080 respecting said inplyyonging, where
$i \rightarrow i \rightarrow$	ne in which any of said additutions of datament in
the same lawalized to shap all lowful papage, make all fightful dath	a and to do denerally everything necessary to a
perinnee its successors, assigns and nominees to obtain patent p	plotection for sale implovements in an eventnes, e
expenses incident to said applications to be borne and paid by said $27$ $Jax$ $2037$	
	(Signatura)
(Date)	(organization)
Commonwealth of Pennsylvania County of	
On this the T day of Jan 1997 200	before me, a notan contrit
understand officer personally appeared by Revised 5	Ax -14:44, known to me (or satisfactorily proven)
bo the person whose name	scribed to the within instrument and acknowledg
thatexecuted the same for the pu	rposes therein contained.
In witness whereof I hereunto set my hand and official seal.	
	COMMONWEALTH OF PENNISYI VANIA
(), CHAR (LEAN)	COMMONWEALTH OF PENNSYLVANIA Notastal Seel
(SEAL)	Notarial Seel Judith A. Bandola, Notary Public
(SEAL) (Signature of Notary Public)	Notarial Seel Judith A. Bendola, Notary Public Dravoaburg Boro, Alleghamy County My Commission Expires Oct. 18, 2012
(Signature of Notary Public)	Notastal Seel Judith A. Bendele, Notary Public Dateasburg Boro, Allegharry County
(Signature of Notary Public)	Notarial Seel Judith A. Bendela, Notary Public Draveaburg Bore, Alleghamy County My Commission Expires Oct. 18, 2012
(Signature of Notary Public)	Notarial Seel Judith A. Bendela, Notary Public Draveaburg Bore, Alleghamy County My Commission Expires Oct. 18, 2012

PATENT REEL: 022361 FRAME: 0356

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ACCIONMENT OF LITHITY ADDITIONTION	former PTO/SB/15 (B-00) Modified LDUKAM Docket Number (Optional)	
ASSIGNMENT OF UTILITY APPLICATION	RENWIR 3.0-004	
Whereas, I, <u>Anthony L. Tsangaropoulos</u>	of	
321 Clifton Avenue; San Carlos, California 94070		
hereafter referred to as assignor, have with others invented certa	·	
DIRECT DIGITAL SYNTHESIZER FOR REFERENCE		
X for which an application for a United States Letters Pate	ant was filed on <u>August 28, 2008</u>	
Application Number <u>12/229,948</u>		
for which an application for a United States Letters Pater and	it was executed by me on ,	
Whereas, <u>Resonance Semiconductor Corporation</u> a corporation of <u>Delaware</u> herein referred to as "assignee" whos	se mailing address is	
425 N. Craig Street, Sulte 500; Pittsburgh, Pennsylvania	-	
s desirous of acquiring the entire right, title and interest in the sa		
is acknowledged, and other good and valuable consideration, I assignee my entire right, title and interest for the United State nvention and the aforesald utility patent application and all substitute or reissue applications and patents applied for or gra- other countries, for said invention, including without limitation a priority or benefit of the aforesald utility application pursuant to a priority or benefit and the Commissioner of Patents and Treden patents on said improvements or resulting therefrom to said therein; and the undersigned for me and my legal representative without further remuneration, to execute and deliver all original, of for Letters Patent on said improvements all facts known to the u- requested, to testify in any interferences or other legal proceed become involved, to sign all lawful papers, make all rightful oa assignee, its successors, assigns and nominees to obtain paten expenses incident to said applications to be borne and paid by si	es of America and all other countries in and to said original, divisional, continuation, continuation-in-part, anted therefor in the United States of America and all all applications and patents for said invention claiming any law or treaty, and including the right to claim such marks is hereby authorized and requested to issue all assignee herein, as assignee of the entire interest res, heirs and assigns do hereby agree and covenant divisional, continuation, reissue and other applications bereof to said assignee or its assigns, to communicate indersigned respecting said improvements, whenever lings in which any of said applications or patents may aths, and to do generally everything necessary to aid at protection for said improvements in all countries, the	
March 3rd 2009		
(Date)	(Signature)	
State of California) County of <u>SAN MACO</u> )		
On <u>MARCH</u> 3, 2009 (date) before a name and title of the notarizing officer), personally appeared <u>An</u> to me on the basis of satisfactory evidence to be the person instrument and acknowledged to me that he/sho/they executed to that by his/heraheir signature(s) on the instrument the person acted, executed the instrument.	<b>NONY L. ISAVAAVALOU (So</b> no proved n(s) whose name(c) is/are-subscribed to the within the same in his/h <del>en/heir</del> -authorized capacity(ide), and	
certify under PENALTY OF PERJURY under the laws of the S and correct.	State of California that the foregoing paragraph is true	
WITNESS my hand and official seal.	SHITAL PAYEL	
	SEAN STATE COMM #1970167	
	SAN WATER (ADDINTY ANY COMMULEXON MARY 26, 2011	
X *Total of 3 forms are submitted.		
	SHITAL PATEL COMM #1670367 Notary Putate California BAN WATED COUNTY My Comma EPAPTE NOT F REEL: 022361 FRAME: 03	

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	Designed Management (April N	
ASSIGNMENT OF UTILITY APPLICATION	Docket Number (Optional)	
	RENWIR 3.0-004	
Vhereas, I, Esa Tarvalnen	la	
Steyrergasse 9; 8010 Graz; AUSTRIA		
ereafter referred to as assignor, have with others invented certain		
DIRECT DIGITAL SYNTHESIZER FOR REFERENCE F		
X         for which an application for a United States Letters Petent           Application Number         12/229,948		
for which an application for a United States Letters Patent w and	as executed by me on ,	
Vhereas, <u>Resonance Semiconductor Corporation</u>	·····	
corporation of <u>Delaware</u> herein referred to as "assignee" whose n 425 N. Craig Street; Suite 500; Pittsburgh, Pennsylvenia 13		
425 N. Chaig Street Suite 500; Prosburgh, Pennsylvenia :: a desirous of acquiring the entire right, title and interest in the same		
	ar (\$ 1.00 ), the receipt when	
ssignce my entire right, title and interest for the United States invention and the aforestid utility patent application and all origubativitie or reissue applications and patents applied for or grante the countries, for said invention, including without ilmitation all all a	ginal, divisional, continuation, continuation-in-p ed therefor in the United States of America and	
riority or benefit of the aforesaid utility application pursuant to any riority or benefit and the Commissioner of Patents and Trademar latents on seld improvements or resulting therefrom to said as herein; and the undersigned for me and my legal representatives, without further remuneration, to execute and deliver all original, divided by the seld assignments there to said assignee or its representatives all facts known to the under equested, to testify in any interferences or other legal proceeding recome involved, to sign all lawful papers, make all rightful oaths resionee, its successors, assigns and nominees to obtain patent pi	Haw or treaty, and including the right to claim at its is hereby authorized and requested to issue signed herein, as assignee of the entire inter heirs and assigns do hereby agree and coven islonal, continuation, relissue and other applicatik of to said assignee or its assigns, to communic ersigned respecting said improvements, whene is in which any of said applications or patents in s, and to do generally everything necessary to rotection for said improvements in all countries,	
monty or benefit of the aforesaid utility application pursuant to any monty or benefit and the Commissioner of Patanta and Trademan valents on said improvements or resulting therefrom to said as herein; and the undersigned for me and my legal representatives, without further remuneration, to execute and deliver all original, divided assignee or lis representatives all facts known to the under equested, to testify in any interferances or other legal proceeding recome involved, to sign all lawful papers, make all rightful caths reageness incident to said applications to be borne and paid by said expenses incident to said applications to be borne and paid by said expenses incident to said applications to be borne and paid by said	I law or treaty, and including the right to daim at its is hereby authorized and requested to issue signes herein, as assignee of the entire inter heirs and assigne do hereby agree and coven islonal, continuation, relissue and other application of to said assignee or its assigns, to communic trisioned respecting said improvements, where is in which any of said applications or patents in and to do generally everything necessary to rotection for said improvements in all countries, assignee.	
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RECORDED: 03/06/2009

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