

Form PTO-1595 (Rev. 09/04)
OMB No. 0651-0027 (exp. 6/30/2005)

U.S. DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

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)/Execution Date(s):

L. RICHARD CARLEY (01/27/2009),
ANTHONY L. TSANGAROPOULOS
(03/03/2009), AND ESA TARVAINEN
(02/18/2009)

Execution Date(s): in parentheses after inventor name

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of Conveyance:

- ☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Government Interest Assignment
☐ Executive Order 9424, Confirmatory License
☐ Other _____

2. Name and address of receiving party(ies)

Name: RESONANCE SEMICONDUCTOR CORPORATION

Internal Address: _____

Street Address: _____

425 N. CRAIG STREET
SUITE 500

City: PITTSBURGH

State: PENNSYLVANIA

Country: United States of America Zip: 15213

Additional name(s) & address(es) attached: ☐ Yes ☒ No

4. Application or patent number(s):

A. Patent Application No.(s)
12/229,948

☐ This document is being filed together with a new application.

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

5. Name and address to whom correspondence concerning document should be mailed:

Name: Andrew T. Zidel
LERNER, DAVID, LITTENBERG,
KRUMHOLZ & MENTLIK, LLP

Internal Address: Atty. Dkt.: RENWIR 3.0-004

Street Address: 600 South Avenue West

City: Westfield

State: NJ Zip: 07090

Phone Number: (908) 518-6385

Fax Number: (908) 654-0415

Email Address: azidel@1d1km.com

6. Total number of applications and patents involved:

1

7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00

☐ Authorized to be charged by credit card

☒ 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 _____

b. Deposit Account Number 12-1095
Authorized User Name Andrew T. Zidel

9. Signature:



Andrew T. Zidel - 45,256
Name of Person Signing

March 5, 2009
Date

Total number of pages including cover sheet, attachments, and documents:

4

former PTQ/SB/15 (8-00) Modified LDLKAM

ASSIGNMENT OF UTILITY APPLICATION	Docket Number (Optional) RENWIR 3.0-004
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Whereas, I, L. Richard Carley of
1924 Glen Mitchell Road; Sewickley, Pennsylvania 15143
 hereafter referred to as assignor, have with others invented certain new and useful improvements in
DIRECT DIGITAL SYNTHESIZER FOR REFERENCE FREQUENCY GENERATION
☒ for which an application for a United States Letters Patent was filed on August 28, 2008
 Application Number 12/229,948
☐ for which an application for a United States Letters Patent was executed by me on _____
 and _____

Whereas, Resonance Semiconductor Corporation
 a corporation of Delaware herein referred to as "assignee" whose mailing address is
425 N. Craig Street, Suite 500; Pittsburgh, Pennsylvania 15213
 is desirous of acquiring the entire right, title and interest in the same;

NOW, THEREFORE, in consideration of the sum of one dollar (\$ 1.00), the receipt whereof
 is acknowledged, and other good and valuable consideration, I as assignor hereby sell, assign and set over to said
 assignee my entire right, title and interest for the United States of America and all other countries in and to said
 invention and the aforesaid utility patent application and all original, divisional, continuation, continuation-in-part,
 substitute or reissue applications and patents applied for or granted therefor in the United States of America and all
 other countries, for said invention, including without limitation all applications and patents for said invention claiming
 priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including the right to claim such
 priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all
 patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest
 therein; and the undersigned for me and my legal representatives, heirs and assigns do hereby agree and covenant
 without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications
 for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate
 to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever
 requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may
 become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid
 assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the
 expenses incident to said applications to be borne and paid by said assignee.

27 Jan 2009 (Date) [Signature] (Signature)

Commonwealth of Pennsylvania
 County of Allegheny

On this the 31 day of January, 2009, before me, a notary public the
 undersigned officer, personally appeared L. Richard Carley, known to me (or satisfactorily proven) to
 be the person whose name is subscribed to the within instrument and acknowledged
 that he executed the same for the purposes therein contained.

In witness whereof I hereunto set my hand and official seal.

Judith A. Bando (SEAL)
 (Signature of Notary Public)
Notary
 Title of Officer

My commission expires: Oct. 18, 2012

COMMONWEALTH OF PENNSYLVANIA
 Notarial Seal
 Judith A. Bando, Notary Public
 Drainsburg Boro, Allegheny County
 My Commission Expires Oct. 18, 2012
 Member, Pennsylvania Association of Notaries

☒ *Total of 3 forms are submitted.


former PTO/SB/15 (B-00) Modified LDUKAM

ASSIGNMENT OF UTILITY APPLICATION	Docket Number (Optional) RENWIR 3.0-004
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Whereas, I, Anthony L. Tsangaropoulos of
321 Clifton Avenue; San Carlos, California 94070
hereafter referred to as assignor, have with others invented certain new and useful improvements in
DIRECT DIGITAL SYNTHESIZER FOR REFERENCE FREQUENCY GENERATION
☒ for which an application for a United States Letters Patent was filed on August 28, 2008
Application Number 12/229,948
☐ for which an application for a United States Letters Patent was executed by me on _____
and _____

Whereas, Resonance Semiconductor Corporation
a corporation of Delaware herein referred to as "assignee" whose mailing address is
425 N. Craig Street, Suite 500; Pittsburgh, Pennsylvania 15213
is desirous of acquiring the entire right, title and interest in the same;

NOW, THEREFORE, in consideration of the sum of one dollar (\$ 1.00), the receipt whereof
is acknowledged, and other good and valuable consideration, I as assignor hereby sell, assign and set over to said
assignee my entire right, title and interest for the United States of America and all other countries in and to said
invention and the aforesaid utility patent application and all original, divisional, continuation, continuation-in-part,
substitute or reissue applications and patents applied for or granted therefor in the United States of America and all
other countries, for said invention, including without limitation all applications and patents for said invention claiming
priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including the right to claim such
priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all
patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest
therein; and the undersigned for me and my legal representatives, heirs and assigns do hereby agree and covenant
without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications
for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate
to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever
requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may
become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid
assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the
expenses incident to said applications to be borne and paid by said assignee.

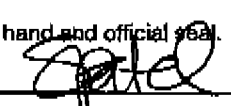

March 3rd 2009 (Date)  (Signature)

State of California)
County of San Mateo)


On March 3, 2009 (date) before me, Shital Patel, Notary Public (here insert
name and title of the notarizing officer), personally appeared Anthony L. Tsangaropoulos who proved
to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within
instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and
that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s)
acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true
and correct.

WITNESS my hand and official seal.

Signature  (NOTARY SEAL) 

☒ *Total of 3 forms are submitted.



Form PTO/SB/15 (8-00) Modified LOKALM

ASSIGNMENT OF UTILITY APPLICATION	Docket Number (Optional) RENWIR 3.0-004
<p>Whereas, I, <u>Esa Tarvalnen</u> of <u>Steyrergasse 9; 8010 Graz; AUSTRIA</u></p> <p>hereafter referred to as assignor, have with others invented certain new and useful improvements in <u>DIRECT DIGITAL SYNTHESIZER FOR REFERENCE FREQUENCY GENERATION</u></p> <p><input checked="" type="checkbox"/> for which an application for a United States Letters Patent was filed on <u>August 28, 2008</u> Application Number <u>12/229,948</u></p> <p><input type="checkbox"/> for which an application for a United States Letters Patent was executed by me on _____ and _____</p> <p>Whereas, <u>Resonance Semiconductor Corporation</u> a corporation of <u>Delaware</u> herein referred to as "assignee" whose mailing address is <u>425 N. Craig Street; Suite 500; Pittsburgh, Pennsylvania 15213</u> is desirous of acquiring the entire right, title and interest in the same;</p> <p>NOW, THEREFORE, in consideration of the sum of <u>one</u> dollar (\$ <u>1.00</u>), the receipt whereof is acknowledged, and other good and valuable consideration, I as assignor hereby sell, assign and set over to said assignee my entire right, title and interest for the United States of America and all other countries in and to said invention and the aforesaid utility patent application and all original, divisional, continuation, continuation-in-part, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries, for said invention, including without limitation all applications and patents for said invention claiming priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including the right to claim such priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest therein; and the undersigned for me and my legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by said assignee.</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p style="text-align: center;"><u>18TH FEB 2009</u></p> <p style="text-align: center;">Date</p> <p style="text-align: center;"><u>Karin Auer-Tarvalnen</u></p> <p style="text-align: center;">Witness</p> <p style="text-align: center;"><u>KARIN AUER-TARVALNEN</u></p> <p style="text-align: center;">Printed Name of Witness</p> </div> <div style="width: 45%; text-align: center;"> <p><u>Esa Tarvalnen</u></p> <p>Esa Tarvalnen</p> </div> </div>	

☒ Total of 3 forms are submitted.

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