504074676 10/31/2016

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT4121343

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|---------------|----------------|
| JOHN BELSICK | 10/24/2016 |
| RICK MORTON | 10/24/2016 |
| MATTHEW RYDER | 10/25/2016 |

RECEIVING PARTY DATA

| Name: | QORVO US, INC. |
|-----------------|---------------------|
| Street Address: | 7628 THORNDIKE ROAD |
| City: | GREENSBORO |
| State/Country: | NORTH CAROLINA |
| Postal Code: | 27409 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 15334528 |

CORRESPONDENCE DATA

Fax Number: (877)812-1249

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 919-238-2300

Email: lwoodrum@wt-ip.com

WITHROW & TERRANOVA, P.L.L.C. **Correspondent Name:** Address Line 1: 106 PINEDALE SPRINGS WAY Address Line 4: CARY, NORTH CAROLINA 27511

| ATTORNEY DOCKET NUMBER: | 2867-1924 |
|-------------------------|--------------------|
| NAME OF SUBMITTER: | LAURA C. WOODRUM |
| SIGNATURE: | /laura c. woodrum/ |
| DATE SIGNED: | 10/31/2016 |

Total Attachments: 6

source=2867-1924_Declaration_Assignment_Belsick#page1.tif source=2867-1924_Declaration_Assignment_Belsick#page2.tif source=2867-1924_Declaration_Assignment-Morton#page1.tif source=2867-1924 Declaration Assignment-Morton#page2.tif

source=2867-1924_Declaration_Assignment_Ryder#page1.tif source=2867-1924_Declaration_Assignment_Ryder#page2.tif

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE

| Title of | ACOUSTIC RESONATOR DEVICES AND FABRICATION METHODS |
|--|---|
| Invention | PROVIDING HERMETICITY AND SURFACE FUNCTIONALIZATION |
| As the below named | d inventor, I hereby declare that: |
| This declaration is d | lirected to: The attached application; or United States application or PCT international application number, filed on |
| The above-identified | d application is made or authorized to be made by me. |
| I believe that I am that application. | ne original inventor or an original joint inventor of a claimed invention in the |
| | ge that any willful false statement made in this declaration is punishable under 18 or imprisonment of not more than five (5) years, or both. |
| Delaware and havin Carolina, 27409 (he title, and interest in | <u>US, Inc.</u> , a corporation duly organized and existing under the laws of the state of g a principal place of business at 7628 Thorndike Road, Greensboro, North reinafter referred to as "ASSIGNEE"), is desirous of acquiring the entire right, and to said invention as described in the specification executed by me concurrently ad all Letters Patent which shall be granted therefor. |
| consideration, the re sold, assigned, trans right, title and intere all Letters Patent of and all continuations the same to be held and the use and beha | E, To All Whom It May Concern, be it known that for good and valuable ceipt and sufficiency of which is hereby acknowledged, I, the said assignor, have ferred and set over unto the said ASSIGNEE, its successors and assigns, the entire st in and to the above-mentioned application and invention and in and to any and the United States which may hereafter be granted therefor, and in any and to any so, continuations-in-part, substitutions, divisions or reissues of said Letters Patent, and enjoyed by the said ASSIGNEE, for its interest, and for its own use and behalf, alf of its successors and assigns, to the full end of the term for which said Letters and as fully and entirely as the same would have been held and enjoyed by me had sale not been made. |
| | transfer and set over unto the said ASSIGNEE the rights to the priority application, onal application 62/252,402 filed on November 6, 2015. |

successors and assigns, that at the time of the execution and delivery of these presents I am a joint and lawful owner of the entire right, title and interest in and to the invention, application and Letters Patent above-mentioned and that the same are unencumbered, and that I have good right and lawful authority to sell and convey the same in the manner herein set forth.

And for the consideration aforesaid, I hereby covenant and agree to and with the said ASSIGNEE, its

And for the consideration aforesaid, I hereby covenant and agree to and with the said ASSIGNEE, its successors and assigns, that I will, whenever its counsel or the counsel of its successors and assigns, learned in the law, shall advise that an amendment, division, continuation, continuation-in-part, or

substitution of, or any other proceeding in connection with said application, including interference proceedings, is lawful and desirable, sign all papers and drawings, take all rightful oaths, and do all acts necessary or required to be done for the procurement of valid Letters Patent for said invention, or for the reissue of the same without charge to the said ASSIGNEE, its successors or assigns, but at its or their expense.

I hereby request the Commissioner for Patents to issue the Letters Patent in accordance with this instrument.

For the consideration aforesaid, I have sold, assigned, transferred and set over, and by these presents do sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, assigns or nominee, the entire right, title and interest in and to any and all Letters Patent for said invention which may be granted in countries foreign to the United States and in and to any applications for Letters Patent which may be filed for said invention in countries foreign to the United States and in and to the invention described in said application; and I hereby authorize and empower the said ASSIGNEE, its successors, assigns or nominees to apply for Letters Patent or other form of protection on said invention in its own name or in the name of its successor, assignee, or nominee, in any and all countries where it may desire to file such application and where said application may be filed by another than the inventor; and I hereby covenant and agree to sign all papers and drawings, take all rightful oaths, and do all acts necessary or required to be done for procurement of Letters Patent, or other form of protection, for said invention or inventions in countries foreign to the United States, and for further investing or confirming the right and title therein to the ASSIGNEE, its successors, assignee, or nominee, without charge to the said ASSIGNEE, its successor, assignee or nominee, but at its or their expense.

IN WITNESS WHEREOF, I hereunto set my hand and seal.

| LEGAL NAME OF INVENTOR | |
|-------------------------|-------|
| Inventor: John Belsick | Date: |
| Signature: John Belsick | |

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE

| Title of | ACOUSTIC RESONATOR DEVICES AND FABRICATION METHODS |
|---|---|
| Invention | PROVIDING HERMETICITY AND SURFACE FUNCTIONALIZATION |
| As the below named | l inventor, I hereby declare that: |
| This declaration is d | lirected to: The attached application; or United States application or PCT international application number, filed on |
| The above-identifie | d application is made or authorized to be made by me. |
| I believe that I am that application. | ne original inventor or an original joint inventor of a claimed invention in the |
| | ge that any willful false statement made in this declaration is punishable under 18 or imprisonment of not more than five (5) years, or both. |
| Delaware and havin Carolina, 27409 (he title, and interest in | <u>US, Inc.</u> , a corporation duly organized and existing under the laws of the state of g a principal place of business at 7628 Thorndike Road, Greensboro, North reinafter referred to as "ASSIGNEE"), is desirous of acquiring the entire right, and to said invention as described in the specification executed by me concurrently ad all Letters Patent which shall be granted therefor. |
| consideration, the resold, assigned, transright, title and intereall Letters Patent of and all continuations the same to be held and the use and behavior | E, To All Whom It May Concern, be it known that for good and valuable beeipt and sufficiency of which is hereby acknowledged, I, the said assignor, have ferred and set over unto the said ASSIGNEE, its successors and assigns, the entire est in and to the above-mentioned application and invention and in and to any and the United States which may hereafter be granted therefor, and in any and to any so, continuations-in-part, substitutions, divisions or reissues of said Letters Patent, and enjoyed by the said ASSIGNEE, for its interest, and for its own use and behalf, alf of its successors and assigns, to the full end of the term for which said Letters end as fully and entirely as the same would have been held and enjoyed by me had sale not been made. |
| · · | transfer and set over unto the said ASSIGNEE the rights to the priority application, onal application 62/252,402 filed on November, 6, 2015. |
| successors and assig | ration aforesaid, I hereby covenant and agree to and with the said ASSIGNEE, its ms, that at the time of the execution and delivery of these presents I am a joint and entire right, title and interest in and to the invention, application and Letters Patent |

learned in the law, shall advise that an amendment, division, continuation, continuation-in-part, or **PATENT**

to sell and convey the same in the manner herein set forth.

above-mentioned and that the same are unencumbered, and that I have good right and lawful authority

And for the consideration aforesaid, I hereby covenant and agree to and with the said ASSIGNEE, its successors and assigns, that I will, whenever its counsel or the counsel of its successors and assigns,

substitution of, or any other proceeding in connection with said application, including interference proceedings, is lawful and desirable, sign all papers and drawings, take all rightful oaths, and do all acts necessary or required to be done for the procurement of valid Letters Patent for said invention, or for the reissue of the same without charge to the said ASSIGNEE, its successors or assigns, but at its or their expense.

I hereby request the Commissioner for Patents to issue the Letters Patent in accordance with this instrument.

For the consideration aforesaid, I have sold, assigned, transferred and set over, and by these presents do sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, assigns or nominee, the entire right, title and interest in and to any and all Letters Patent for said invention which may be granted in countries foreign to the United States and in and to any applications for Letters Patent which may be filed for said invention in countries foreign to the United States and in and to the invention described in said application; and I hereby authorize and empower the said ASSIGNEE, its successors, assigns or nominees to apply for Letters Patent or other form of protection on said invention in its own name or in the name of its successor, assignee, or nominee, in any and all countries where it may desire to file such application and where said application may be filed by another than the inventor; and I hereby covenant and agree to sign all papers and drawings, take all rightful oaths, and do all acts necessary or required to be done for procurement of Letters Patent, or other form of protection, for said invention or inventions in countries foreign to the United States, and for further investing or confirming the right and title therein to the ASSIGNEE, its successors, assignee, or nominee, without charge to the said ASSIGNEE, its successor, assignee or nominee, but at its or their expense.

IN WITNESS WHEREOF, I hereunto set my hand and seal.

LECAL NAME OF INVENTOR

| AND STRAIGHT ON ALL VALUE OF | | , / |
|------------------------------|-------|------------|
| Inventor: Rick Morton | Date: | 10/24/2016 |
| Signature: Luhard Morkon | | , |

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE

| **** | |
|---|--|
| Title of Invention | ACOUSTIC RESONATOR DEVICES AND FABRICATION METHODS PROVIDING HERMETICITY AND SURFACE FUNCTIONALIZATION |
| As the below named | l inventor, I hereby declare that: |
| This declaration is o | lirected to: |
| The above-identifie | d application is made or authorized to be made by me. |
| I believe that I am that I am that I am the application. | ne original inventor or an original joint inventor of a claimed invention in the |
| | ge that any willful false statement made in this declaration is punishable under 18 or imprisonment of not more than five (5) years, or both. |
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| consideration, the re sold, assigned, trans right, title and intere all Letters Patent of and all continuations the same to be held and the use and beha | E, To All Whom It May Concern, be it known that for good and valuable beeipt and sufficiency of which is hereby acknowledged, I, the said assignor, have ferred and set over unto the said ASSIGNEE, its successors and assigns, the entire est in and to the above-mentioned application and invention and in and to any and the United States which may hereafter be granted therefor, and in any and to any so, continuations-in-part, substitutions, divisions or reissues of said Letters Patent, and enjoyed by the said ASSIGNEE, for its interest, and for its own use and behalf, alf of its successors and assigns, to the full end of the term for which said Letters ed as fully and entirely as the same would have been held and enjoyed by me had sale not been made. |
| I, the said assignor, | transfer and set over unto the said ASSIGNEE the rights to the priority application. |

namely U.S. provisional application 62/252,402 filed on November 6, 2015.

And for the consideration aforesaid, I hereby covenant and agree to and with the said ASSIGNEE, its successors and assigns, that at the time of the execution and delivery of these presents I am a joint and

successors and assigns, that at the time of the execution and delivery of these presents I am a joint and lawful owner of the entire right, title and interest in and to the invention, application and Letters Patent above-mentioned and that the same are unencumbered, and that I have good right and lawful authority to sell and convey the same in the manner herein set forth.

And for the consideration aforesaid, I hereby covenant and agree to and with the said ASSIGNEE, its successors and assigns, that I will, whenever its counsel or the counsel of its successors and assigns, learned in the law, shall advise that an amendment, division, continuation, continuation-in-part, or

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IN WITNESS WHEREOF, I hereunto set my hand and seal.

LEGAL NAME OF INVENTOR

Inventor: Matthew Ryder

Date: Oct 25, 2016

Signature: