

### Starkey Laboratories, Inc.

**Multi-Function Accessory** 

FCC 15.247:2018

Bluetooth LE (DTS) Radio

**Report # STAK0117.1** 







NVLAP LAB CODE: 200881-0

### **CERTIFICATE OF TEST**



Last Date of Test: June 25, 2018 Starkey Laboratories, Inc. Model: Multi-Function Accessory

### **Radio Equipment Testing**

#### **Standards**

| Specification   | Method                       |
|-----------------|------------------------------|
| FCC 15.207:2018 | ANSI C63.10:2013             |
| FCC 15.247:2018 | ANSI C63.10:2013, KDB 558074 |

#### Results

| Method Clause                 | Test Description              | Applied | Results | Comments |
|-------------------------------|-------------------------------|---------|---------|----------|
| 6.2                           | Powerline Conducted Emissions | Yes     | Pass    |          |
| 6.5, 6.6,<br>11.12.1, 11.13.2 | Spurious Radiated Emissions   | Yes     | Pass    |          |
| 11.6                          | Duty Cycle                    | Yes     | Pass    |          |
| 11.8.2                        | Occupied Bandwidth            | Yes     | Pass    |          |
| 11.9.1.1                      | Output Power                  | Yes     | Pass    |          |
| 11.10.2                       | Power Spectral Density        | Yes     | Pass    |          |
| 11.11                         | Band Edge Compliance          | Yes     | Pass    |          |
| 11.11                         | Spurious Conducted Emissions  | Yes     | Pass    |          |

#### **Deviations From Test Standards**

None

Approved By:

Matt Nuernberg, Operations Manager

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information.

## **REVISION HISTORY**



| Revision<br>Number | Description | Date | Page Number |
|--------------------|-------------|------|-------------|
| 00                 | None        |      |             |

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# ACCREDITATIONS AND AUTHORIZATIONS



#### **United States**

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

**A2LA** - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Element to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

#### Canada

**ISED** - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with ISED.

#### **European Union**

European Commission - Within Element, we have a EU Notified Body validated for the EMCD and RED Directives.

#### Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

#### Korea

MSIT / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

#### Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

#### **Taiwan**

BSMI - Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

#### **Singapore**

**IDA** – Recognized by IDA as a CAB for the acceptance of test data.

#### Israel

MOC - Recognized by MOC as a CAB for the acceptance of test data.

#### **Hong Kong**

**OFCA** – Recognized by OFCA as a CAB for the acceptance of test data.

#### **Vietnam**

**MIC** – Recognized by MIC as a CAB for the acceptance of test data.

#### SCOPE

For details on the Scopes of our Accreditations, please visit:

http://portlandcustomer.element.com/ts/scope/scope.htm http://gsi.nist.gov/global/docs/cabs/designations.html

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## **FACILITIES**

US0158





US0175



US0191

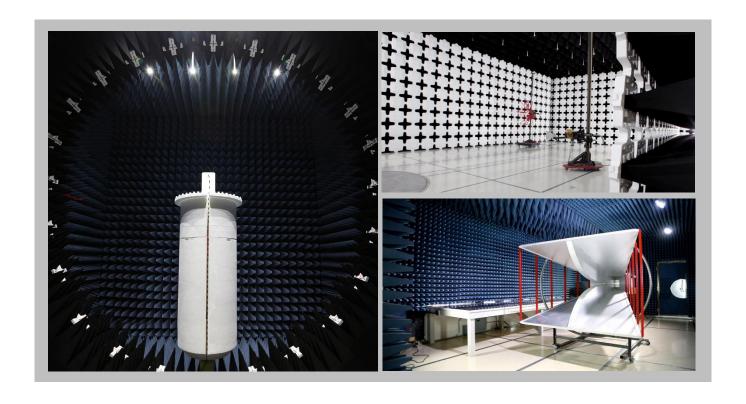
US0157

|     | California  | Minnesota                                 | New York                             | Oregon                                | Texas                             | Washington                         |  |
|-----|---|---|--------------------------------------|---------------------------------------|-----------------------------------|------------------------------------|--|
|     | Labs OC01-17  | Labs MN01-10                              | Labs NY01-04                         | Labs EV01-12                          | Labs TX01-09                      | Labs NC01-05                       |  |
|     | 41 Tesla  | 9349 W Broadway Ave.                      | 4939 Jordan Rd.                      | 6775 NE Evergreen Pkwy #400           | 3801 E Plano Pkwy                 | 19201 120 <sup>th</sup> Ave NE     |  |
|     | Irvine, CA 92618<br>(949) 861-8918                  | Brooklyn Park, MN 55445<br>(612)-638-5136 | Elbridge, NY 13060<br>(315) 554-8214 | Hillsboro, OR 97124<br>(503) 844-4066 | Plano, TX 75074<br>(469) 304-5255 | Bothell, WA 98011<br>(425)984-6600 |  |
| - 1 | (040) 001 0010                                      | (812) 888 8188                            | (010) 004 0214                       | (000) 044 4000                        | (400) 004 0200                    | (420)304 0000                      |  |
|     | NVLAP   |   |                                      |                                       |                                   |                                    |  |
|     | NVLAP Lab Code: 200676-0                            | NVLAP Lab Code: 200881-0                  | NVLAP Lab Code: 200761-0             | NVLAP Lab Code: 200630-0              | NVLAP Lab Code:201049-0           | NVLAP Lab Code: 200629-0           |  |
|     | Innovation, Science and Economic Development Canada |   |                                      |                                       |                                   |                                    |  |
|     | 2834B-1, 2834B-3                                    | 2834E-1, 2834E-3                          | N/A                                  | 2834D-1, 2834D-2                      | 2834G-1                           | 2834F-1                            |  |
|     | BSMI  |   |                                      |                                       |                                   |                                    |  |
|     | SL2-IN-E-1154R                                      | SL2-IN-E-1152R                            | N/A                                  | SL2-IN-E-1017                         | SL2-IN-E-1158R                    | SL2-IN-E-1153R                     |  |
| Ī   |   |   | VC                                   | CI                                    |                                   |                                    |  |
|     | A-0029  | A-0109                                    | N/A                                  | A-0108                                | A-0201                            | A-0110                             |  |

Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA

US0017

N/A



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### MEASUREMENT UNCERTAINTY



#### **Measurement Uncertainty**

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable test description page. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

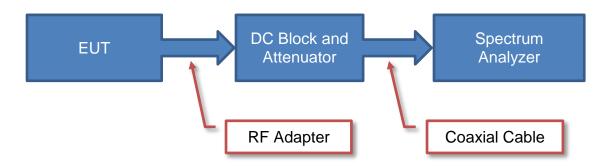
| Test                                  | + MU    | - MU     |
|---------------------------------------|---------|----------|
| Frequency Accuracy (Hz)               | 0.0007% | -0.0007% |
| Amplitude Accuracy (dB)               | 1.2 dB  | -1.2 dB  |
| Conducted Power (dB)                  | 0.3 dB  | -0.3 dB  |
| Radiated Power via Substitution (dB)  | 0.7 dB  | -0.7 dB  |
| Temperature (degrees C)               | 0.7°C   | -0.7°C   |
| Humidity (% RH)                       | 2.5% RH | -2.5% RH |
| Voltage (AC)                          | 1.0%    | -1.0%    |
| Voltage (DC)                          | 0.7%    | -0.7%    |
| Field Strength (dB)                   | 5.2 dB  | -5.2 dB  |
| AC Powerline Conducted Emissions (dB) | 2.4 dB  | -2.4 dB  |

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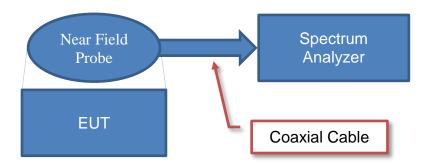
## **Test Setup Block Diagrams**



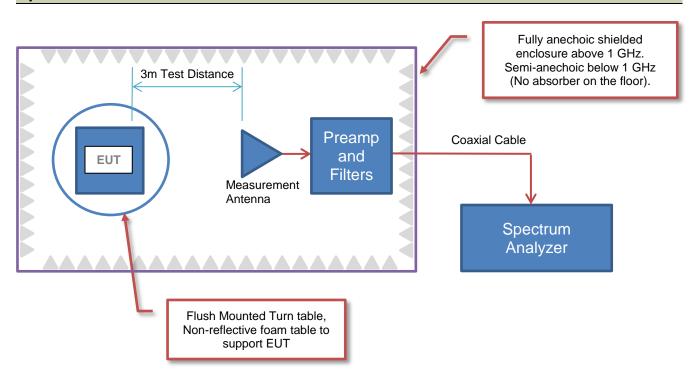
#### **Antenna Port Conducted Measurements**



#### **Near Field Test Fixture Measurements**



#### **Spurious Radiated Emissions**



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## PRODUCT DESCRIPTION



### **Client and Equipment Under Test (EUT) Information**

| Company Name:                  | Starkey Laboratories, Inc. |
|--------------------------------|----------------------------|
| Address:                       | 6600 Washington Ave. SO.   |
| City, State, Zip:              | Eden Prairie, MN 55344     |
| Test Requested By:             | Bill Mitchell              |
| Model:                         | Multi-Function Accessory   |
| First Date of Test:            | June 18, 2018              |
| Last Date of Test:             | June 25, 2018              |
| Receipt Date of Samples:       | June 18, 2018              |
| <b>Equipment Design Stage:</b> | Production                 |
| Equipment Condition:           | No Damage                  |
| Purchase Authorization:        | Verified                   |

### **Information Provided by the Party Requesting the Test**

| Functional Description of the EUT: |
|------------------------------------|
| Remote Microphone Device           |

#### Testing Objective:

To demonstrate compliance of the Bluetooth low energy radio to FCC 15.247 requirements.

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## **CONFIGURATIONS**



### **Configuration STAK0117-1**

| EUT                      |                            |                   |               |  |
|--------------------------|----------------------------|-------------------|---------------|--|
| Description              | Manufacturer               | Model/Part Number | Serial Number |  |
| Multi-function Accessory | Starkey Laboratories, Inc. | 900               | 182010052A    |  |

### **Configuration STAK0117-2**

| EUT                      |                            |                   |               |  |
|--------------------------|----------------------------|-------------------|---------------|--|
| Description              | Manufacturer               | Model/Part Number | Serial Number |  |
| Multi-function Accessory | Starkey Laboratories, Inc. | 900               | 182010052A    |  |

| Peripherals in test setup boundary    |              |                   |               |  |
|---------------------------------------|--------------|-------------------|---------------|--|
| Description                           | Manufacturer | Model/Part Number | Serial Number |  |
| AC Adapter (Multi-function Accessory) | PHIHONG      | PSA05F-050Q       | PD22021832A2  |  |

| Cables             |        |            |         |                             |   |
|--------------------|--------|------------|---------|-----------------------------|---|
| Cable Type         | Shield | Length (m) | Ferrite | Connection 1                | Connection 2                              |
| USB Power<br>Cable | No     | 1.5 m      | No      | Multi-function<br>Accessory | AC Adapter (Multi-<br>function Accessory) |

### Configuration STAK0117- 4

| EUT                      |                            |                   |               |
|--------------------------|----------------------------|-------------------|---------------|
| Description              | Manufacturer               | Model/Part Number | Serial Number |
| Multi-function Accessory | Starkey Laboratories, Inc. | 900               | 182010052A    |

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## **CONFIGURATIONS**



### **Configuration STAK0117-5**

| EUT                      |                            |                   |               |  |  |  |
|--------------------------|----------------------------|-------------------|---------------|--|--|--|
| Description              | Manufacturer               | Model/Part Number | Serial Number |  |  |  |
| Multi-function Accessory | Starkey Laboratories, Inc. | 900               | 182010052A    |  |  |  |

| Peripherals in test setup boundary |              |                     |                        |  |  |
|------------------------------------|--------------|---------------------|------------------------|--|--|
| Description                        | Manufacturer | Model/Part Number   | Serial Number          |  |  |
| Laptop                             | Acer         | Aspire one 53h-2997 | LUSAL0B137014F42B1601  |  |  |
| Laptop AC adapter                  | Safety Mark  | N17908              | AP0400100201108409P101 |  |  |

| Cables            |        |                            |         |                    |                     |  |  |
|-------------------|--------|----------------------------|---------|--------------------|---------------------|--|--|
| Cable Type        | Shield | Length (m)                 | Ferrite | Connection 1       | Connection 2        |  |  |
| USB Power Cable   | No     | No 1.5 m No Multi-function |         | AC Adapter (Multi- |                     |  |  |
| USD Fower Cable   | INO    | 111 G.1                    | INO     | Accessory          | function Accessory) |  |  |
| AC Cable (Laptop) | No     | 1.5 m                      | No      | Laptop             | AC mains            |  |  |
| Ethernet Cable    | No     | 1 m                        | No      | Laptop             | Unterminated        |  |  |
| VGA Cable         | No     | 1 m                        | Yes     | Laptop             | Unterminated        |  |  |
| USB x2            | No     | 1 m                        | No      | Laptop             | Unterminated        |  |  |
| Headphone Cable   | No     | 1 m                        | No      | Laptop             | Unterminated        |  |  |

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## **MODIFICATIONS**



### **Equipment Modifications**

| Item | Date      | Test                                | Modification                           | Note   | Disposition of EUT                          |
|------|-----------|-------------------------------------|--|--|---|
| 1    | 6/18/2018 | Spurious<br>Radiated<br>Emissions   | Modified from delivered configuration. | Per client request, cut<br>channel 39 at 2 Mb due to<br>failing band edge.<br>Modification authorized by<br>Charlie Esch | EUT remained at Element following the test. |
| 2    | 6/22/2018 | Duty Cycle                          | Tested as delivered to Test Station.   | No EMI suppression devices were added or modified during this test.  | EUT remained at Element following the test. |
| 3    | 6/22/2018 | Output Power                        | Tested as delivered to Test Station.   | No EMI suppression devices were added or modified during this test.  | EUT remained at Element following the test. |
| 4    | 6/22/2018 | Band Edge<br>Compliance             | Tested as delivered to Test Station.   | No EMI suppression devices were added or modified during this test.  | EUT remained at Element following the test. |
| 5    | 6/22/2018 | Occupied<br>Bandwidth               | Tested as delivered to Test Station.   | No EMI suppression devices were added or modified during this test.  | EUT remained at Element following the test. |
| 6    | 6/22/2018 | Spurious<br>Conducted<br>Emissions  | Tested as delivered to Test Station.   | No EMI suppression devices were added or modified during this test.  | EUT remained at Element following the test. |
| 7    | 6/22/2018 | Power<br>Spectral<br>Density        | Tested as delivered to Test Station.   | No EMI suppression devices were added or modified during this test.  | EUT remained at Element following the test. |
| 8    | 6/25/2018 | Powerline<br>Conducted<br>Emissions | Tested as delivered to Test Station.   | No EMI suppression devices were added or modified during this test.  | Scheduled testing was completed.            |

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#### **TEST DESCRIPTION**

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Per the standard, an insulating material was also added to ground plane between the EUT's power and remote I/O cables. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

#### **TEST EQUIPMENT**

| Description                      | Manufacturer      | Model            | ID   | Last Cal. | Cal. Due  |
|----------------------------------|-------------------|------------------|------|-----------|-----------|
| Analyzer - Spectrum Analyzer     | Agilent           | E4443A           | AAS  | 2/27/2018 | 2/27/2019 |
| Cable - Conducted Cable Assembly | Northwest EMC     | MNC              | MNCC | 1/24/2018 | 1/24/2019 |
| LISN                             | Solar Electronics | 9252-50-R-24-BNC | LIY  | 3/15/2018 | 3/15/2019 |
| Filter - High Pass               | TTE               | H97-100K-50-720B | HGN  | NCR       | NCR       |

#### **MEASUREMENT UNCERTAINTY**

| Description  |        |         |
|--------------|--------|---------|
| Expanded k=2 | 2.4 dB | -2.4 dB |

#### **CONFIGURATIONS INVESTIGATED**

STAK0117-2 STAK0117-5

#### **MODES INVESTIGATED**

Tx mode, Ch. 20 2442 MHz, 1 MB Tx mode, Ch. 20 2442 MHz, 2 MB

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| EUT:              | Multi-Function Accessory   | Work Order:        | STAK0117   |
|-------------------|----------------------------|--------------------|------------|
| Serial Number:    | 182010052A                 | Date:              | 06/25/2018 |
| Customer:         | Starkey Laboratories, Inc. | Temperature:       | 21.6°C     |
| Attendees:        | Charlie Esch               | Relative Humidity: | 56.2%      |
| Customer Project: | None                       | Bar. Pressure:     | 1022 mb    |
| Tested By:        | Chris Patterson            | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | STAK0117-2 |

#### **TEST SPECIFICATIONS**

| Specification:  | Method:          |
|-----------------|------------------|
| FCC 15.207:2018 | ANSI C63.10:2013 |

#### **TEST PARAMETERS**

| Run #: | 5 | Line: | Neutral | Add. Ext. Attenuation (dB | ·): | 0 |
|--------|---|-------|---------|---------------------------|-----|---|

#### **COMMENTS**

Pairing

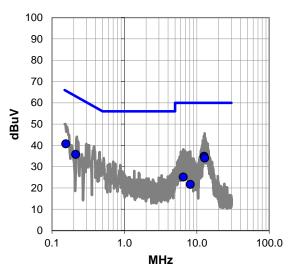
#### **EUT OPERATING MODES**

Tx mode, Ch. 20 2442 MHz, 1 MB

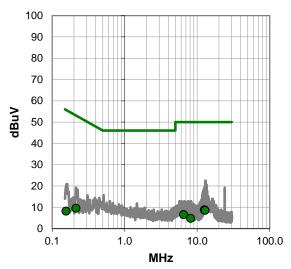
#### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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#### **RESULTS - Run #5**

Quasi Peak Data - vs - Quasi Peak Limit

|               | Quadri dan Para 10 Quadri dan IIII |                |                 |                          |                |  |  |  |
|---------------|------------------------------------|----------------|-----------------|--------------------------|----------------|--|--|--|
| Freq<br>(MHz) | Amp.<br>(dBuV)                     | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |  |  |  |
| 0.155         | 40.5                               | 0.3            | 40.8            | 65.7                     | -24.9          |  |  |  |
| 12.556        | 33.7                               | 1.2            | 34.9            | 60.0                     | -25.1          |  |  |  |
| 12.835        | 32.9                               | 1.2            | 34.1            | 60.0                     | -25.9          |  |  |  |
| 0.212         | 35.5                               | 0.3            | 35.8            | 63.1                     | -27.3          |  |  |  |
| 6.500         | 24.6                               | 0.6            | 25.2            | 60.0                     | -34.8          |  |  |  |
| 8.110         | 20.9                               | 0.8            | 21.7            | 60.0                     | -38.3          |  |  |  |

| Average Data - vs - Average Limit |               |                |                |                 |                          |                |
|-----------------------------------|---------------|----------------|----------------|-----------------|--------------------------|----------------|
|                                   | Freq<br>(MHz) | Amp.<br>(dBuV) | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |
|                                   | 12.556        | 7.6            | 1.2            | 8.8             | 50.0                     | -41.2          |
|                                   | 12.835        | 7.4            | 1.2            | 8.6             | 50.0                     | -41.4          |
|                                   | 6.500         | 6.0            | 0.6            | 6.6             | 50.0                     | -43.4          |
|                                   | 0.212         | 9.3            | 0.3            | 9.6             | 53.1                     | -43.5          |
|                                   | 8.110         | 4.1            | 0.8            | 4.9             | 50.0                     | -45.1          |
|                                   | 0.155         | 7.9            | 0.3            | 8.2             | 55.7                     | -47.5          |

#### **CONCLUSION**

Pass



| EUT:              | Multi-Function Accessory   | Work Order:        | STAK0117   |
|-------------------|----------------------------|--------------------|------------|
| Serial Number:    | 182010052A                 | Date:              | 06/25/2018 |
| Customer:         | Starkey Laboratories, Inc. | Temperature:       | 21.6°C     |
| Attendees:        | Charlie Esch               | Relative Humidity: | 56.2%      |
| Customer Project: | None                       | Bar. Pressure:     | 1022 mb    |
| Tested By:        | Chris Patterson            | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | STAK0117-2 |

#### **TEST SPECIFICATIONS**

| Specification:  | Method:          |
|-----------------|------------------|
| FCC 15.207:2018 | ANSI C63.10:2013 |

#### **TEST PARAMETERS**

| Run #: | 6 | Line: | High Line | Add. Ext. Attenuation (dB): | 0 |
|--------|---|-------|-----------|-----------------------------|---|

#### **COMMENTS**

Pairing

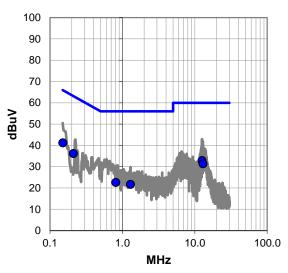
#### **EUT OPERATING MODES**

Tx mode, Ch. 20 2442 MHz, 1 MB

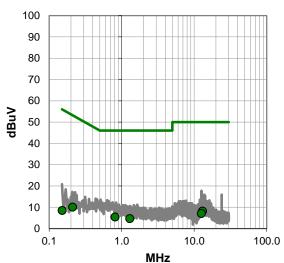
#### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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#### **RESULTS - Run #6**

Quasi Peak Data - vs - Quasi Peak Limit

|               | Quadi : 0 ai: 2 aia : 0 ai: 2 aii: 1 |                |                 |                          |                |  |  |
|---------------|--------------------------------------|----------------|-----------------|--------------------------|----------------|--|--|
| Freq<br>(MHz) | Amp.<br>(dBuV)                       | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |  |  |
| 0.151         | 40.9                                 | 0.3            | 41.2            | 66.0                     | -24.8          |  |  |
| 0.210         | 35.9                                 | 0.3            | 36.2            | 63.2                     | -27.0          |  |  |
| 12.591        | 31.7                                 | 1.2            | 32.9            | 60.0                     | -27.1          |  |  |
| 13.005        | 30.2                                 | 1.2            | 31.4            | 60.0                     | -28.6          |  |  |
| 0.809         | 22.4                                 | 0.2            | 22.6            | 56.0                     | -33.4          |  |  |
| 1.293         | 21.4                                 | 0.3            | 21.7            | 56.0                     | -34.3          |  |  |

|               | Average Data - vs - Average Limit |                |                    |                          |                |  |  |
|---------------|-----------------------------------|----------------|--------------------|--------------------------|----------------|--|--|
| Freq<br>(MHz) | Amp.<br>(dBuV)                    | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |  |  |
| 0.809         | 5.3                               | 0.2            | 5.5                | 46.0                     | -40.5          |  |  |
| 1.293         | 4.4                               | 0.3            | 4.7                | 46.0                     | -41.3          |  |  |
| 13.005        | 7.0                               | 1.2            | 8.2                | 50.0                     | -41.8          |  |  |
| 12.591        | 5.9                               | 1.2            | 7.1                | 50.0                     | -42.9          |  |  |
| 0.210         | 9.8                               | 0.3            | 10.1               | 53.2                     | -43.1          |  |  |
| 0.151         | 8.2                               | 0.3            | 8.5                | 56.0                     | -47.5          |  |  |

#### **CONCLUSION**

Pass



| EUT:              | Multi-Function Accessory   | Work Order:        | STAK0117   |
|-------------------|----------------------------|--------------------|------------|
| Serial Number:    | 182010052A                 | Date:              | 06/25/2018 |
| Customer:         | Starkey Laboratories, Inc. | Temperature:       | 21.6°C     |
| Attendees:        | Charlie Esch               | Relative Humidity: | 56.2%      |
| Customer Project: | None                       | Bar. Pressure:     | 1022 mb    |
| Tested By:        | Chris Patterson            | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | STAK0117-2 |

#### **TEST SPECIFICATIONS**

| Specification:  | Method:          |
|-----------------|------------------|
| FCC 15.207:2018 | ANSI C63.10:2013 |

#### **TEST PARAMETERS**

| Run #: | 7 | Line: | High Line | Add. Ext. Attenuation (dB) | : 0 |
|--------|---|-------|-----------|----------------------------|-----|

#### **COMMENTS**

Streaming

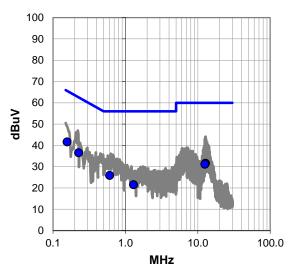
#### **EUT OPERATING MODES**

Tx mode, Ch. 20 2442 MHz, 2 MB

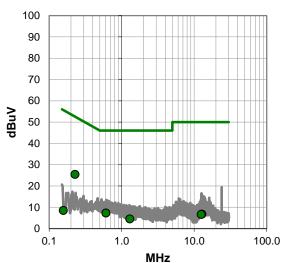
#### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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#### **RESULTS - Run #7**

Quasi Peak Data - vs - Quasi Peak Limit

|               | Quadri dan Bata vo Quadri dan Eirin |                |                 |                          |                |  |  |
|---------------|-------------------------------------|----------------|-----------------|--------------------------|----------------|--|--|
| Freq<br>(MHz) | Amp.<br>(dBuV)                      | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |  |  |
| 0.157         | 41.4                                | 0.3            | 41.7            | 65.6                     | -23.9          |  |  |
| 0.226         | 36.3                                | 0.3            | 36.6            | 62.6                     | -26.0          |  |  |
| 12.792        | 30.4                                | 1.2            | 31.6            | 60.0                     | -28.4          |  |  |
| 12.510        | 30.0                                | 1.2            | 31.2            | 60.0                     | -28.8          |  |  |
| 0.606         | 25.7                                | 0.2            | 25.9            | 56.0                     | -30.1          |  |  |
| 1.292         | 21.3                                | 0.3            | 21.6            | 56.0                     | -34.4          |  |  |

|  | Average Data - vs - Average Limit |                |                |                 |                          |                |  |
|--|-----------------------------------|----------------|----------------|-----------------|--------------------------|----------------|--|
|  | Freq<br>(MHz)                     | Amp.<br>(dBuV) | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |  |
|  | 0.226                             | 25.2           | 0.3            | 25.5            | 52.6                     | -27.1          |  |
|  | 0.606                             | 7.1            | 0.2            | 7.3             | 46.0                     | -38.7          |  |
|  | 1.292                             | 4.3            | 0.3            | 4.6             | 46.0                     | -41.4          |  |
|  | 12.792                            | 5.6            | 1.2            | 6.8             | 50.0                     | -43.2          |  |
|  | 12.510                            | 5.5            | 1.2            | 6.7             | 50.0                     | -43.3          |  |
|  | 0.157                             | 8.2            | 0.3            | 8.5             | 55.6                     | -47.1          |  |

#### **CONCLUSION**

Pass



| EUT:              | Multi-Function Accessory   | Work Order:        | STAK0117   |
|-------------------|----------------------------|--------------------|------------|
| Serial Number:    | 182010052A                 | Date:              | 06/25/2018 |
| Customer:         | Starkey Laboratories, Inc. | Temperature:       | 21.6°C     |
| Attendees:        | Charlie Esch               | Relative Humidity: | 56.2%      |
| Customer Project: | None                       | Bar. Pressure:     | 1022 mb    |
| Tested By:        | Chris Patterson            | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | STAK0117-2 |

#### **TEST SPECIFICATIONS**

| Specification:  | Method:          |
|-----------------|------------------|
| FCC 15.207:2018 | ANSI C63.10:2013 |

#### **TEST PARAMETERS**

| Run #: | 8 | Line: | Neutral | Add. Ext. Attenuation (dl | 3): | 0 |
|--------|---|-------|---------|---------------------------|-----|---|

#### **COMMENTS**

Streaming

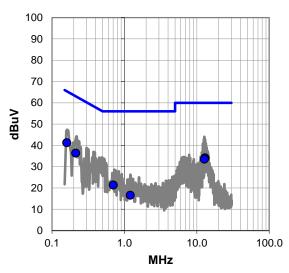
#### **EUT OPERATING MODES**

Tx mode, Ch. 20 2442 MHz, 2 MB

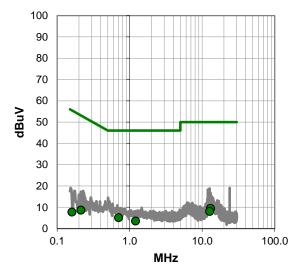
#### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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#### **RESULTS - Run #8**

Quasi Peak Data - vs - Quasi Peak Limit

|               | Cado: Can Para 10 Cado: Can Inn |                |                 |                          |                |  |  |  |
|---------------|---------------------------------|----------------|-----------------|--------------------------|----------------|--|--|--|
| Freq<br>(MHz) | Amp.<br>(dBuV)                  | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |  |  |  |
| 0.160         | 41.0                            | 0.3            | 41.3            | 65.5                     | -24.2          |  |  |  |
| 13.000        | 33.0                            | 1.2            | 34.2            | 60.0                     | -25.8          |  |  |  |
| 12.697        | 32.4                            | 1.2            | 33.6            | 60.0                     | -26.4          |  |  |  |
| 0.213         | 36.1                            | 0.3            | 36.4            | 63.1                     | -26.7          |  |  |  |
| 0.702         | 21.2                            | 0.2            | 21.4            | 56.0                     | -34.6          |  |  |  |
| 1.205         | 16.3                            | 0.3            | 16.6            | 56.0                     | -39.4          |  |  |  |

| Average Data - vs - Average Limit |                |                |                    |                          |                |
|-----------------------------------|----------------|----------------|--------------------|--------------------------|----------------|
| Freq<br>(MHz)                     | Amp.<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |
| 13.000                            | 8.3            | 1.2            | 9.5                | 50.0                     | -40.5          |
| 0.702                             | 5.0            | 0.2            | 5.2                | 46.0                     | -40.8          |
| 12.697                            | 6.9            | 1.2            | 8.1                | 50.0                     | -41.9          |
| 1.205                             | 3.3            | 0.3            | 3.6                | 46.0                     | -42.4          |
| 0.213                             | 8.4            | 0.3            | 8.7                | 53.1                     | -44.4          |
| 0.160                             | 7.5            | 0.3            | 7.8                | 55.5                     | -47.7          |

#### **CONCLUSION**

Pass



| EUT:              | Multi-Function Accessory   | Work Order:        | STAK0117   |
|-------------------|----------------------------|--------------------|------------|
| Serial Number:    | 182010052A                 | Date:              | 06/25/2018 |
| Customer:         | Starkey Laboratories, Inc. | Temperature:       | 21.5°C     |
| Attendees:        | Charlie Esch               | Relative Humidity: | 56.7%      |
| Customer Project: | None                       | Bar. Pressure:     | 1022 mb    |
| Tested By:        | Chris Patterson            | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | STAK0117-5 |

#### **TEST SPECIFICATIONS**

| Specification:  | Method:          |
|-----------------|------------------|
| FCC 15.207:2018 | ANSI C63.10:2013 |

#### **TEST PARAMETERS**

| Run #: | 13 | Line: | Neutral | Add. Ext. Attenuation ( | dB): | 0 |
|--------|----|-------|---------|-------------------------|------|---|

#### **COMMENTS**

Pairing

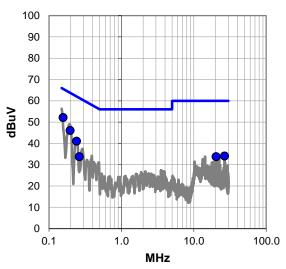
#### **EUT OPERATING MODES**

Tx mode, Ch. 20 2442 MHz, 1 MB

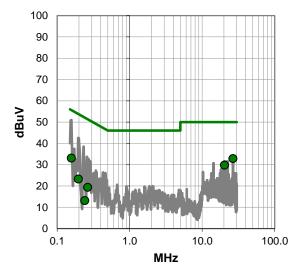
#### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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#### **RESULTS - Run #13**

Quasi Peak Data - vs - Quasi Peak Limit

|               | our Emili      |                |                 |                          |                |
|---------------|----------------|----------------|-----------------|--------------------------|----------------|
| Freq<br>(MHz) | Amp.<br>(dBuV) | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |
| 0.157         | 51.9           | 0.3            | 52.2            | 65.6                     | -13.4          |
| 0.196         | 45.8           | 0.3            | 46.1            | 63.8                     | -17.7          |
| 0.240         | 40.8           | 0.3            | 41.1            | 62.1                     | -21.0          |
| 26.623        | 31.1           | 3.0            | 34.1            | 60.0                     | -25.9          |
| 20.259        | 31.6           | 2.2            | 33.8            | 60.0                     | -26.2          |
| 0.262         | 33.6           | 0.2            | 33.8            | 61.4                     | -27.6          |

| Average Data - vs - Average Limit |               |                |                |                    |                          |                |
|-----------------------------------|---------------|----------------|----------------|--------------------|--------------------------|----------------|
|                                   | Freq<br>(MHz) | Amp.<br>(dBuV) | Factor<br>(dB) | Adjusted<br>(dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |
|                                   | 26.623        | 29.9           | 3.0            | 32.9               | 50.0                     | -17.1          |
|                                   | 20.259        | 27.6           | 2.2            | 29.8               | 50.0                     | -20.2          |
|                                   | 0.157         | 32.8           | 0.3            | 33.1               | 55.6                     | -22.5          |
|                                   | 0.196         | 23.0           | 0.3            | 23.3               | 53.8                     | -30.5          |
|                                   | 0.262         | 19.2           | 0.2            | 19.4               | 51.4                     | -32.0          |
|                                   | 0.240         | 12.9           | 0.3            | 13.2               | 52.1                     | -38 0          |

#### **CONCLUSION**

Pass



| EUT:              | Multi-Function Accessory   | Work Order:        | STAK0117   |
|-------------------|----------------------------|--------------------|------------|
| Serial Number:    | 182010052A                 | Date:              | 06/25/2018 |
| Customer:         | Starkey Laboratories, Inc. | Temperature:       | 21.5°C     |
| Attendees:        | Charlie Esch               | Relative Humidity: | 56.7%      |
| Customer Project: | None                       | Bar. Pressure:     | 1022 mb    |
| Tested By:        | Chris Patterson            | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | STAK0117-5 |

#### **TEST SPECIFICATIONS**

| Specification:  | Method:          |
|-----------------|------------------|
| FCC 15.207:2018 | ANSI C63.10:2013 |

#### **TEST PARAMETERS**

| Run #: | 14 | Line: | High Line | Add. Ext. Attenuation (dB): | 0 |
|--------|----|-------|-----------|-----------------------------|---|

#### **COMMENTS**

Pairing

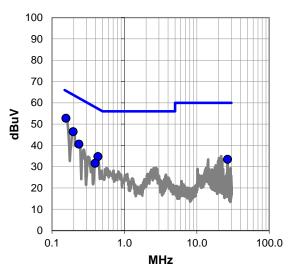
#### **EUT OPERATING MODES**

Tx mode, Ch. 20 2442 MHz, 1 MB

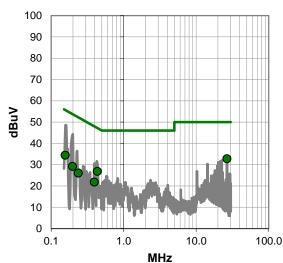
#### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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#### **RESULTS - Run #14**

Quasi Peak Data - vs - Quasi Peak Limit

| Freq<br>(MHz) | Amp.<br>(dBuV) | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |  |  |  |
|---------------|----------------|----------------|-----------------|--------------------------|----------------|--|--|--|
| 0.156         | 52.5           | 0.3            | 52.8            | 65.7                     | -12.9          |  |  |  |
| 0.196         | 46.2           | 0.3            | 46.5            | 63.8                     | -17.3          |  |  |  |
| 0.236         | 40.3           | 0.3            | 40.6            | 62.2                     | -21.6          |  |  |  |
| 0.432         | 34.6           | 0.2            | 34.8            | 57.2                     | -22.4          |  |  |  |
| 0.393         | 31.4           | 0.2            | 31.6            | 58.0                     | -26.4          |  |  |  |
| 26.623        | 30.5           | 3.0            | 33.5            | 60.0                     | -26.5          |  |  |  |

| Average Data - vs - Average Limit |                |                |                 |                          |                |  |  |
|-----------------------------------|----------------|----------------|-----------------|--------------------------|----------------|--|--|
| Freq<br>(MHz)                     | Amp.<br>(dBuV) | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |  |  |
| 26.623                            | 29.8           | 3.0            | 32.8            | 50.0                     | -17.2          |  |  |
| 0.432                             | 26.7           | 0.2            | 26.9            | 47.2                     | -20.3          |  |  |
| 0.156                             | 34.2           | 0.3            | 34.5            | 55.7                     | -21.2          |  |  |
| 0.196                             | 28.9           | 0.3            | 29.2            | 53.8                     | -24.6          |  |  |
| 0.393                             | 21.7           | 0.2            | 21.9            | 48.0                     | -26.1          |  |  |
| 0.236                             | 25.8           | 0.3            | 26.1            | 52.2                     | -26.1          |  |  |

#### **CONCLUSION**

Pass



| EUT:              | Multi-Function Accessory   | Work Order:        | STAK0117   |
|-------------------|----------------------------|--------------------|------------|
| Serial Number:    | 182010052A                 | Date:              | 06/25/2018 |
| Customer:         | Starkey Laboratories, Inc. | Temperature:       | 21.5°C     |
| Attendees:        | Charlie Esch               | Relative Humidity: | 56.7%      |
| Customer Project: | None                       | Bar. Pressure:     | 1022 mb    |
| Tested By:        | Chris Patterson            | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | STAK0117-5 |

#### **TEST SPECIFICATIONS**

| Specification:  | Method:          |
|-----------------|------------------|
| FCC 15.207:2018 | ANSI C63.10:2013 |

#### **TEST PARAMETERS**

| _      |    |       |           |                          |      |   |
|--------|----|-------|-----------|--------------------------|------|---|
| Run #: | 15 | Line: | High Line | Add. Ext. Attenuation (d | dB): | 0 |

#### **COMMENTS**

Streaming

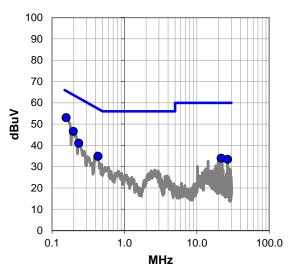
#### **EUT OPERATING MODES**

Tx mode, Ch. 20 2442 MHz, 2 MB

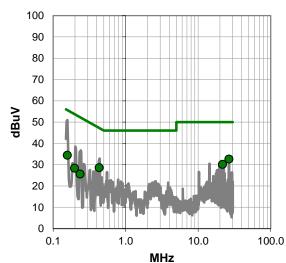
#### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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#### **RESULTS - Run #15**

Quasi Peak Data - vs - Quasi Peak Limit

|               | Cado: Can Paid 10 Cado: Can IIII |                |                 |                          |                |  |  |
|---------------|----------------------------------|----------------|-----------------|--------------------------|----------------|--|--|
| Freq<br>(MHz) | Amp.<br>(dBuV)                   | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |  |  |
| 0.157         | 52.8                             | 0.3            | 53.1            | 65.6                     | -12.5          |  |  |
| 0.197         | 46.3                             | 0.3            | 46.6            | 63.7                     | -17.1          |  |  |
| 0.235         | 40.8                             | 0.3            | 41.1            | 62.3                     | -21.2          |  |  |
| 0.430         | 34.7                             | 0.2            | 34.9            | 57.2                     | -22.3          |  |  |
| 21.664        | 31.7                             | 2.3            | 34.0            | 60.0                     | -26.0          |  |  |
| 26.623        | 30.5                             | 3.0            | 33.5            | 60.0                     | -26.5          |  |  |

| Average Data - vs - Average Limit |                |                |                 |                          |                |  |
|-----------------------------------|----------------|----------------|-----------------|--------------------------|----------------|--|
| Freq<br>(MHz)                     | Amp.<br>(dBuV) | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |  |
| 26.623                            | 29.7           | 3.0            | 32.7            | 50.0                     | -17.3          |  |
| 0.430                             | 28.4           | 0.2            | 28.6            | 47.2                     | -18.6          |  |
| 21.664                            | 27.9           | 2.3            | 30.2            | 50.0                     | -19.8          |  |
| 0.157                             | 34.2           | 0.3            | 34.5            | 55.6                     | -21.1          |  |
| 0.197                             | 28.1           | 0.3            | 28.4            | 53.7                     | -25.3          |  |
| 0.235                             | 25.3           | 0.3            | 25.6            | 52.3                     | -26.7          |  |

#### **CONCLUSION**

Pass



| EUT:              | Multi-Function Accessory   | Work Order:        | STAK0117   |
|-------------------|----------------------------|--------------------|------------|
| Serial Number:    | 182010052A                 | Date:              | 06/25/2018 |
| Customer:         | Starkey Laboratories, Inc. | Temperature:       | 21.5°C     |
| Attendees:        | Charlie Esch               | Relative Humidity: | 56.7%      |
| Customer Project: | None                       | Bar. Pressure:     | 1022 mb    |
| Tested By:        | Chris Patterson            | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | STAK0117-5 |

#### **TEST SPECIFICATIONS**

| Specification:  | Method:          |
|-----------------|------------------|
| FCC 15.207:2018 | ANSI C63.10:2013 |

#### **TEST PARAMETERS**

| Run #: | 16 | Line: | Neutral | Add. Ext. Attenuation ( | dB): | 0 |
|--------|----|-------|---------|-------------------------|------|---|

#### **COMMENTS**

Streaming

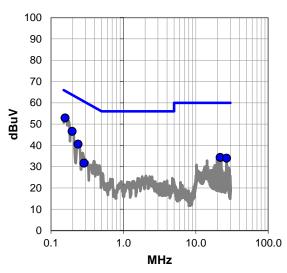
#### **EUT OPERATING MODES**

Tx mode, Ch. 20 2442 MHz, 2 MB

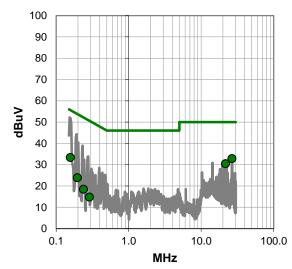
#### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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#### **RESULTS - Run #16**

Quasi Peak Data - vs - Quasi Peak Limit

|               | Quadri dan Data ve Quadri dan Elilik |                |                 |                          |                |  |  |  |
|---------------|--------------------------------------|----------------|-----------------|--------------------------|----------------|--|--|--|
| Freq<br>(MHz) | Amp.<br>(dBuV)                       | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |  |  |  |
| 0.156         | 52.6                                 | 0.3            | 52.9            | 65.7                     | -12.8          |  |  |  |
| 0.196         | 46.3                                 | 0.3            | 46.6            | 63.8                     | -17.2          |  |  |  |
| 0.237         | 40.3                                 | 0.3            | 40.6            | 62.2                     | -21.6          |  |  |  |
| 21.664        | 32.1                                 | 2.3            | 34.4            | 60.0                     | -25.6          |  |  |  |
| 26.623        | 31.0                                 | 3.0            | 34.0            | 60.0                     | -26.0          |  |  |  |
| 0.286         | 31.5                                 | 0.2            | 31.7            | 60.6                     | -28.9          |  |  |  |

| Average Data - vs - Average Limit |                |                |                 |                          |                |  |  |
|-----------------------------------|----------------|----------------|-----------------|--------------------------|----------------|--|--|
| Freq<br>(MHz)                     | Amp.<br>(dBuV) | Factor<br>(dB) | Adjusted (dBuV) | Spec.<br>Limit<br>(dBuV) | Margin<br>(dB) |  |  |
| 26.623                            | 29.9           | 3.0            | 32.9            | 50.0                     | -17.1          |  |  |
| 21.664                            | 28.2           | 2.3            | 30.5            | 50.0                     | -19.5          |  |  |
| 0.156                             | 33.1           | 0.3            | 33.4            | 55.7                     | -22.3          |  |  |
| 0.196                             | 23.6           | 0.3            | 23.9            | 53.8                     | -29.9          |  |  |
| 0.237                             | 18.2           | 0.3            | 18.5            | 52.2                     | -33.7          |  |  |
| 0.286                             | 14.6           | 0.2            | 14.8            | 50.6                     | -35.8          |  |  |

#### **CONCLUSION**

Pass

### SPURIOUS RADIATED EMISSIONS



DSA-ESCI 2018 05 04

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

#### MODES OF OPERATION

Tx on Ch. 0, 2402 MHz; Ch. 20, 2442 MHz; Ch. 37, 2477 MHz (2 Mb only); Ch. 39, 2480 MHz (1 Mb only), and 1 Mb, and 2 Mb data rate. Channel 37 will be the highest channel available for 2 Mb data rate per client request.

Tx on Ch. 39 at 2480 MHz on the RSL Radio

#### **POWER SETTINGS INVESTIGATED**

110VAC/60Hz

Battery

#### **CONFIGURATIONS INVESTIGATED**

STAK0117 - 1

#### FREQUENCY RANGE INVESTIGATED

Start Frequency | 30 MHz | Stop Frequency | 26000 MHz

#### **SAMPLE CALCULATIONS**

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

#### **TEST EQUIPMENT**

| Description                  | Manufacturer                  | Model                      | ID  | Last Cal.   | Interval |
|------------------------------|-------------------------------|----------------------------|-----|-------------|----------|
| Attenuator                   | Attenuator Fairview Microwave |                            | TWZ | 20-Sep-2017 | 12 mo    |
| Cable                        | ESM Cable Corp.               | Standard Gain Horn Cables  | MNJ | 12-Jul-2017 | 12 mo    |
| Cable                        | ESM Cable Corp.               | uble Ridge Guide Horn Cabl | MNI | 21-Nov-2017 | 12 mo    |
| Cable                        | ESM Cable Corp.               | Bilog Cables               | MNH | 9-Nov-2017  | 12 mo    |
| Filter - High Pass           | Micro-Tronics                 | HPM50111                   | LFN | 20-Sep-2017 | 12 mo    |
| Filter - Low Pass            | Micro-Tronics                 | LPM50004                   | LFK | 20-Sep-2017 | 12 mo    |
| Antenna - Biconilog          | Teseq                         | CBL 6141B                  | AYD | 25-Jan-2018 | 24 mo    |
| Antenna - Standard Gain      | ETS Lindgren                  | 3160-07                    | AXP | NCR         | 0 mo     |
| Amplifier - Pre-Amplifier    | Miteq                         | AM-1616-1000               | AVO | 9-Nov-2017  | 12 mo    |
| Amplifier - Pre-Amplifier    | Miteq                         | AMF-6F-08001200-30-10P     | AVV | 13-Feb-2018 | 12 mo    |
| Antenna - Standard Gain      | ETS Lindgren                  | 3160-08                    | AIQ | NCR         | 0 mo     |
| Antenna - Double Ridge       | ETS Lindgren                  | 3115                       | AIB | 25-Aug-2016 | 24 mo    |
| Analyzer - Spectrum Analyzer | Agilent                       | E4440A                     | AFD | 2-Aug-2017  | 12 mo    |
| Amplifier - Pre-Amplifier    | Miteq                         | AMF-3D-00100800-32-13P     | AVT | 13-Feb-2018 | 12 mo    |
| Amplifier - Pre-Amplifier    | Miteq                         | JSD4-18002600-26-8P        | APU | 12-Sep-2017 | 12 mo    |
| Cable                        | ESM Cable Corp                | TTBJ141 KMKM-72            | MNP | 12-Sep-2017 | 12 mo    |
| Antenna - Standard Gain      | ETS Lindgren                  | 3160-09                    | AHG | NCR         | 0 mo     |
| Amplifier - Pre-Amplifier    | Miteq                         | AMF-6F-12001800-30-10P     | AVW | 13-Feb-2018 | 12 mo    |

#### **MEASUREMENT BANDWIDTHS**

| Frequency Range | Peak Data | Quasi-Peak Data | Average Data |
|-----------------|-----------|-----------------|--------------|
| (MHz)           | (kHz)     | (kHz)           | (kHz)        |
| 0.01 - 0.15     | 1.0       | 0.2             | 0.2          |
| 0.15 - 30.0     | 10.0      | 9.0             | 9.0          |
| 30.0 - 1000     | 100.0     | 120.0           | 120.0        |
| Above 1000      | 1000.0    | N/A             | 1000.0       |

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#### **TEST DESCRIPTION**

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These "pre-scans" are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector

PK = Peak Detector

AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements at the edges of the allowable band may be presented in an alternative method as provided for in the ANSI C63.10 Marker-Delta method. This method involves performing an in-band fundamental measurement followed by a screen capture of the fundamental and out-of-band emission using reduced measurement instrumentation bandwidths. The amplitude delta measured on this screen capture is applied to the fundamental emission value to show the out-of-band emission level as applied to the limit.

### **SPURIOUS RADIATED EMISSIONS**

4883.208

4959.858 4960.017 4951.550

12208.850

2483.907

39.5

38.8

38.8 38.7

46.6



|                      |                     |                |                            |                      |                    |                     |              |              |                    | EmiR5 2018.05.07     |                         | PSA-ESCI 2018.05.04  | -  |
|----------------------|---------------------|----------------|----------------------------|----------------------|--------------------|---------------------|--------------|--------------|--------------------|----------------------|-------------------------|----------------------|--|
| W                    | ork Order:          |                | K0117                      |                      | Date:              |                     | n-2018       |              | 1                  |                      | 711                     |                      |  |
|                      | Project:            | N              | one                        | Temp                 | perature:          |                     | 6 °C         |              | 0                  | 1                    | M                       |                      |  |
|                      | Job Site:           |                | N05                        | Н                    | lumidity:          | 63.79               | % RH         |              |                    |                      |                         |                      |  |
| Seria                | al Number:          | 18201          | 10052A                     | Barometr             | ric Pres.:         | 1017                | mbar         | 7            | Tested by:         | Chris Patte          | erson                   |                      | •  |
|                      |                     |                | ction Access               | ory                  |                    |                     |              |              |                    |                      |                         |                      | _  |
|                      | figuration:         |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      | _  |
|                      | <b>Customer:</b>    | Starkey L      | aboratories,               | Inc.                 |                    |                     |              |              |                    |                      |                         |                      |  |
|                      | Attendees:          | Charlie Es     | sch                        |                      |                    |                     |              |              |                    |                      |                         |                      |  |
| E                    | UT Power:           | Battery        |                            |                      |                    |                     |              |              |                    |                      |                         |                      | -  |
| 0                    | 41 Mada.            | Tx on Ch.      | 0, 2402 MH                 | z; Ch. 20, 24        | 42 MHz; (          | Ch. 37, 247         | 7 MHz (2 N   | Nb only); Ch | n. 39, 2480 l      | MHz (1 Mb            | only), and              | 1 Mb, and            | ='   |
| Opera                | ting Mode:          |                |                            | nel 37 will be       |                    |                     | •            | • , .        |                    | •                    |                         | *                    |  |
| _                    |                     | None           |                            |                      |                    |                     |              |              |                    |                      |                         |                      | -  |
| L                    | Deviations:         |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
|                      |                     | None           |                            |                      |                    |                     |              |              |                    |                      |                         |                      | -  |
| C                    | Comments:           |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
|                      |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
|                      | 101 .1              |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      | I  |
|                      | cifications         |                |                            |                      |                    |                     | Test Meth    |              |                    |                      |                         |                      | _  |
| FCC 15.24            | 47:2018             |                |                            |                      |                    |                     | ANSI C63.    | 10:2013      |                    |                      |                         |                      |  |
|                      |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      | _  |
| Run #                | 18                  | Test Di        | istance (m)                | 3                    | Antenna            | Height(s)           |              | 1 to 4(m)    |                    | Results              | Pa                      | ass                  | -  |
| 80 -                 |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         | Ш                    |  |
|                      |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
| 70 -                 |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
|                      |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
| 60 -                 |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
|                      |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
| _ 50 -               |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
| ے "                  |                     |                |                            |                      |                    |                     |              | <b>  1</b>   |                    |                      |                         |                      |  |
| - ≥                  |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
| w//n <b>g</b> p      |                     |                |                            |                      |                    |                     |              | -            |                    |                      |                         |                      |  |
|                      |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
| 30 -                 |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
|                      |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
|                      |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
| 20 -                 |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
|                      |                     |                |                            |                      |                    |                     | •            |              |                    |                      |                         |                      |  |
|                      |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
| 10 -                 |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         | +++                  |  |
|                      |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
| _                    |                     |                |                            |                      |                    |                     |              |              |                    |                      |                         |                      |  |
| 0 +                  | -                   |                |                            |                      |                    |                     |              |              |                    |                      |                         | <del></del>          |  |
| 10                   | 0                   |                | 100                        |                      |                    | 1000                |              |              | 10000              |                      |                         | 100000               |  |
|                      |                     |                |                            |                      |                    | MHz                 |              |              |                    | ■ PK                 | ◆ AV                    | <ul><li>QP</li></ul> |  |
|                      |                     |                |                            |                      | Duty Cycle         |                     | Polarity/    |              |                    |                      |                         |                      |  |
| E                    | Americals           | Ferre          | Antonna Hairta             | A minor other        | Correction         | External            | Transducer   | Det :        | Distance           | Adimeteral           | Spec. Limit             | Compared to          |  |
| Freq<br>(MHz)        | Amplitude<br>(dBuV) | Factor<br>(dB) | Antenna Height<br>(meters) | Azimuth<br>(degrees) | Factor<br>(meters) | Attenuation<br>(dB) | Туре         | Detector     | Adjustment<br>(dB) | Adjusted<br>(dBuV/m) | Spec. Limit<br>(dBuV/m) | Spec.<br>(dB)        |  |
| (IVITIZ)             | (3201)              | (30)           | (51013)                    | (409.565)            | (                  | (GD)                |              |              | (32)               | (4547111)            | (45347111)              | (45)                 | Comments   |
| 2483.533             | 56.4                | -4.2           | 1.0                        | 189.0                |                    | 20.0                | Vert         | PK           | 0.0                | 72.2                 | 74.0                    | -1.8                 | EUT Vert, Ch. 39, 1 Mb                           |
| 2483.540             | 55.8                | -4.2           | 1.0                        | 282.9                |                    | 20.0                | Horz         | PK           | 0.0                | 71.6                 | 74.0                    | -2.4                 | EUT Horz, Ch. 39, 1 Mb                           |
| 2483.600             | 33.8                | -4.2           | 1.0                        | 77.1                 |                    | 20.0                | Horz         | AV           | 0.0                | 49.6                 | 54.0                    | -4.4                 | EUT Horz, Ch. 37, 2 Mb                           |
| 2483.707             | 33.1                | -4.2           | 1.0                        | 29.1                 |                    | 20.0                | Vert         | AV           | 0.0                | 48.9                 | 54.0                    | -5.1                 | EUT Vert, Ch. 37, 2 Mb                           |
| 2389.380             | 32.1                | -4.4           | 1.0                        | 106.1                |                    | 20.0                | Vert         | AV           | 0.0                | 47.7                 | 54.0                    | -6.3                 | EUT Vert, Ch. 0, 2 Mb                            |
| 2389.853             | 32.1                | -4.4           | 1.0                        | 91.1                 |                    | 20.0                | Horz         | AV           | 0.0                | 47.7                 | 54.0                    | -6.3                 | EUT Horz, Ch. 0, 2 Mb                            |
| 4883.800             | 42.1                | 5.4<br>5.7     | 2.3                        | 300.0                |                    | 0.0                 | Horz         | AV           | 0.0                | 47.5                 | 54.0<br>54.0            | -6.5<br>-7.2         | EUT Horz, Ch. 20, 1 Mb<br>EUT Horz, Ch. 39, 1 Mb |
| 4959.875<br>2388.050 | 41.1<br>30.6        | 5.7<br>-4.0    | 2.1<br>1.0                 | 133.0<br>286.9       |                    | 0.0<br>20.0         | Horz<br>Horz | AV<br>AV     | 0.0<br>0.0         | 46.8<br>46.6         | 54.0<br>54.0            | -7.2<br>-7.4         | EUT Horz, Ch. 0, 1 Mb                            |
| 4883.950             | 30.6<br>40.4        | -4.0<br>5.4    | 1.0                        | 286.9<br>108.0       |                    | 0.0                 | Vert         | AV           | 0.0                | 46.6<br>45.8         | 54.0<br>54.0            | -7.4<br>-8.2         | EUT Vert, Ch. 20, 1 Mb                           |
| 4803.858             | 40.4                | 5.4            | 2.1                        | 318.0                |                    | 0.0                 | Horz         | AV           | 0.0                | 45.6<br>45.7         | 54.0                    | -8.3                 | EUT Horz, Ch. 0, 1 Mb                            |
| 2389.250             | 29.6                | -4.0           | 1.0                        | 169.0                |                    | 20.0                | Vert         | AV           | 0.0                | 45.6                 | 54.0                    | -8.4                 | EUT Vert, Ch. 0, 1 Mb                            |
| 4959.833             | 39.8                | 5.7            | 1.0                        | 60.0                 |                    | 0.0                 | Vert         | AV           | 0.0                | 45.5                 | 54.0                    | -8.5                 | EUT Vert, Ch. 39, 1 Mb                           |
| 4959.925             | 39.7                | 5.7            | 1.3                        | 0.0                  |                    | 0.0                 | Horz         | AV           | 0.0                | 45.4                 | 54.0                    | -8.6                 | EUT On Side, Ch. 39                              |
| 4883.208             | 39.5                | 5.4            | 1.0                        | 129.0                |                    | 0.0                 | Vert         | AV           | 0.0                | 44.9                 | 54.0                    | -9.1                 | EUT Vert, Ch. 20, 2 Mb                           |

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Horz

Vert

Horz

Vert

Horz

ΑV

AV AV

0.0

0.0

54.0

54.0 54.0

54.0

74.0

44.9

44.5

44.5 44.3

43.1

62.4

-9.1

-9.5

-9.5 -9.7

-10.9

EUT Vert, Ch. 20, 2 Mb EUT Vert, Ch. 39, 1 Mb EUT On Side, Ch. 39, 1 Mb

EUT Horz, Ch. 37, 2 Mb

EUT Hoz, Ch. 20, 1 Mb

EUT Horz, Ch. 37, 2 Mb

0.0

0.0

0.0

0.0

20.0

129.0

206.1

145.1 113.1

121.0

1.0 1.4 1.0 2.7

1.8

5.7

5.7 5.6

-1.1

| Princy   P                        |           |      |      |     |       |       |      | 51.57 |          |     |      |      |       |                         |
|---|-----------|------|------|-----|-------|-------|------|-------|----------|-----|------|------|-------|-------------------------|
|   | <b>-</b>  |      | - ·  |     |       |       |      |       |          |     |      |      |       |                         |
| 1985   10   10   10   10   10   10   10   1   |           |      |      | -   |       |       |      | Type  | Detector |     |      |      |       |                         |
| 7499.40    31.4   10.9   2.9   81.0   0.0   Vert   AV   0.0   42.3   54.0   1.17   EUT Vert. Co. 77. 2Mb   747.00   74                        | , ,       | 04.4 | 40.0 | 1.0 | 000.0 |       | 0.0  | No.   | A)/      | 0.0 | 40.0 | 540  | 44.7  |                         |
| 7383_233 313 103 103 10 205.0 0.0 horz AV 0.0 422 54.0 -11.0 EUT Proc. Ch. 38.1 Mb 74.7 54.0 AP 1.0                       |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12400500 37.1 4.9 18 120.1 0.0 Vert AV 0.0 42.0 54.0 -12.0 EUT West, Ci. 32.1 Mb. 20.2 84.0 1.0 40.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 2883.96   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| Taylor   T                        |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 7325.088 31.1 10.6 10 322.0 0.0 Horz AV 0.0 41.7 54.9 1.23 EUT Horz, Ch. 20.2 Mb 1.27 2.75 1.29 1.0 10.6 3.5 288.0 0.0 Horz AV 0.0 41.8 54.0 1.23 EUT Horz, Ch. 20.1 Mb 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 7327-377 310 10 10 6 30 2350 0.0 Vert AV 0.0 416 540 -124 EUTVert, Ch. 2.7 Mb 12008-760 424 -1.4 13 140.0 0.0 Vert AV 0.0 Vert AV 0.0 416 540 -124 EUTVert, Ch. 2.7 Mb 12008-760 424 -1.4 13 322 0.0 0.0 Vert AV 0.0 415 540 -1.4 EUTVert, Ch. 2.7 Mb 1408-883 444 -1.4 13 322 0.0 0.0 Vert AV 0.0 350 540 -1.4 EUTVert, Ch. 2.7 Mb 1408-883 49 5.0 1.0 2210 0.0 Vert AV 0.0 350 540 -1.4 EUTVert, Ch. 2.7 Mb 1408-883 540 -1.5 EUTVert, Ch. 3.7 Mb 1408-883 540 -                      |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12002-700 42.8  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12008.800 42.7  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12388.850 40.4  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 4885.075   34.2   5.4   2.4   300.0   0.0   Horz   AV   0.0   39.6   54.0   -14.4   EUT Florz, Ch. 20.2   Mb   2007.560   AO   -14.5   EUT Florz, Ch. 20.2   Mb   2007.560   AO   -14.6   EUT Florz, Ch. 20.2   Mb   2007.560   AO   -14.6   EUT Florz, Ch. 20.3                           |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12007-560 40 7  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12208.404   40.3  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 2986 700   43.5   -4.4   1.0   91.1   20.0   Horz   PK   0.0   59.1   74.0   -14.9   EUT Horz, Ch. 0, 2 Mb   4986 732   33.2   5.7   1.0   30.9   9.0   0.0   Vert   AV   0.0   38.8   54.0   -15.2   EUT Horz, Ch. 0.3   Mb   44.4   1.0   10.1   1.0   20.0   Vert   AV   0.0   38.8   54.0   -15.2   EUT Horz, Ch. 0.3   Mb   44.4   1.0   10.1   1.0   20.0   Vert   AV   0.0   38.8   54.0   -15.2   EUT Horz, Ch. 0.3   Mb   44.4   40.0   4                        |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 4851600 33.2 5.6 1.0 282.0 0.0 Vert AV 0.0 38.8 5.4 0.152 EUT Vert, Ch. 3.7 2 Mb 2289.047 A30 -4.4 1.0 106.1 200 Vert PK 0.0 38.6 74.0 -15.6 EUT Vert, Ch. 0.2 Mb 12207.520 39.5 -1.1 1.0 117.0 0.0 Vert AV 0.0 38.4 5.4 0.15.6 EUT Vert, Ch. 0.2 Mb 12207.520 39.5 -1.1 1.0 117.0 0.0 Vert AV 0.0 38.4 5.4 0.15.6 EUT Vert, Ch. 3.7 2 Mb 12207.530 39.1 -1.1 1.0 19.0 0.0 Vert AV 0.0 38.3 5.4 0.15.6 EUT Vert, Ch. 3.7 2 Mb 12207.530 39.1 -1.1 1.0 19.0 0.0 Vert AV 0.0 38.0 5.4 0.1 10.0 EUT Vert, Ch. 2.0 2 Mb 12207.530 39.1 -1.1 1.0 19.0 0.0 Vert AV 0.0 38.0 5.4 0.1 10.0 EUT Vert, Ch. 2.0 Mb 1400.100 39.4 -1.4 1.0 115.0 0.0 Vert AV 0.0 38.0 5.4 0.1 10.0 EUT Vert, Ch. 2.0 Mb 1400.100 39.7 5.0 2.1 121.0 0.0 Horz AV 0.0 37.7 5.4 0.1 16.3 EUT Horz, Ch. 0.2 Mb 1400.100 39.7 5.0 2.1 121.0 0.0 Horz AV 0.0 37.7 5.4 0.1 16.3 EUT Horz, Ch. 0.2 Mb 1400.100 39.7 5.4 0.1 16.3 EUT Horz, Ch. 0.2 Mb 1400.100 39.7 5.4 0.1 16.3 EUT Horz, Ch. 0.2 Mb 1400.100 39.7 5.4 0.1 16.3 EUT Horz, Ch. 0.2 Mb 1400.100 39.7 5.4 0.1 16.3 EUT Horz, Ch. 0.2 Mb 1400.100 39.7 5.4 0.1 16.3 EUT Horz, Ch. 0.2 Mb 1400.100 39.7 5.4 0.1 16.3 EUT Horz, Ch. 0.2 Mb 1400.100 39.7 5.4 0.1 16.3 EUT Horz, Ch. 0.2 Mb 1400.100 39.7 5.4 0.1 16.3 EUT Horz, Ch. 0.2 Mb 1400.100 39.7 5.4 0.1 16.3 EUT Horz, Ch. 0.2 Mb 1400.100 39.7 5.4 0.1 16.3 EUT Horz, Ch. 0.2 Mb 1400.100 39.0 5.4 0.1 10.0 EUT Wert, Ch. 0.2 Mb 1400.100 39.0 5.4 0.1 10.0 EUT Wert, Ch. 0.2 Mb 1400.100 39.0 5.4 0.1 10.0 EUT Wert, Ch. 0.2 Mb 1400.100 39.0 5.4 0.1 10.0 EUT Wert, Ch. 0.2 Mb 1400.100 39.0 5.4 0.1 10.0 EUT Wert, Ch. 0.2 Mb 1400.100 39.0 5.4 0.1 10.0 EUT Wert, Ch. 0.2 Mb 1400.100 39.0 5.4 0.1 10.0 EUT Wert, Ch. 0.2 Mb 1400.100 39.0 5.4 0.1 10.0 EUT Wert, Ch. 0.2 Mb 1400.100 39.0 5.4 0.0 0.0 Wert PK 0.0 52.8 74.0 2.1 EUT Horz, Ch. 0.2 Mb 1400.100 39.0 5.4 0.0 0.0 Wert PK 0.0 52.5 74.0 2.1 EUT Horz, Ch. 0.2 Mb 1400.100 39.0 5.4 0.0 0.0 Wert PK 0.0 52.5 74.0 2.1 EUT Horz, Ch. 0.3 Mb 1400.100 39.0 5.4 0.0 0.0 Wert PK 0.0 52.5 74.0 2.1 EUT Wert, Ch. 0.2 Mb 1400.100 39.0 5.4 0.0 0.0 Wert PK 0.0 50.5 74.0 2.1 EUT                       |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 2389.07   |           |      |      |     |       |       |      | Vert  |          |     |      |      |       |                         |
| 12207.5203 39.5 -1.1 1.0 17.0 0.0 Vert AV 0.0 39.4 54.0 -15.6 EUT Vert, Ch. 27.2 Mb 4803.075 33.2 5.0 1.0 283.0 0.0 Vert AV 0.0 38.2 54.0 -15.7 EUT Vert, Ch. 27.2 Mb 4803.075 33.2 5.0 1.0 283.0 0.0 Vert AV 0.0 38.2 54.0 -15.8 EUT Vert, Ch. 0.2 Mb 12207.530 39.1 -1.1 19 9.0 0.0 0.0 Vert AV 0.0 38.0 54.0 -16.0 EUT Vert, Ch. 0.2 Mb 12207.530 39.1 -1.1 19 19.0 0.0 Vert AV 0.0 38.0 54.0 -16.0 EUT Vert, Ch. 0.2 Mb 12207.530 39.1 -1.4 19.1 15.0 10.0 Vert AV 0.0 38.0 54.0 -16.0 EUT Vert, Ch. 0.2 Mb 12207.530 39.4 -1.4 18.0 20.9 0.0 Vert AV 0.0 38.0 54.0 -16.0 EUT Vert, Ch. 0.2 Mb 12207.530 39.4 -1.4 18.0 20.9 0.0 Vert AV 0.0 38.0 54.0 -16.0 EUT Vert, Ch. 0.2 Mb 12207.530 39.4 -1.4 18.0 20.9 0.0 Vert AV 0.0 38.0 54.0 -16.0 EUT Vert, Ch. 0.2 Mb 12207.530 39.4 -1.4 18.0 20.9 0.0 Vert AV 0.0 36.6 54.0 -16.0 EUT Vert, Ch. 0.2 Mb 12207.530 39.5 -1.4 18.0 19.4 0.0 0.0 Vert AV 0.0 36.6 54.0 -16.0 EUT Vert, Ch. 0.2 Mb 12207.530 39.5 -1.4 19.4 0.0 0.0 Vert AV 0.0 36.6 54.0 -17.6 EUT Vert, Ch. 0.2 Mb 12207.530 39.5 -1.4 19.4 19.4 0.0 0.0 Vert AV 0.0 36.6 54.0 -17.6 EUT Vert, Ch. 37.2 Mb 12308.200 37.1 -0.5 18.0 19.4 17.7 29.9 9.0 0.0 Vert PK 0.0 53.4 74.0 -20.6 EUT Vert, Ch. 37.2 Mb 7323.758 42.8 10.6 3.0 235.0 0.0 Vert PK 0.0 53.4 74.0 -20.6 EUT Vert, Ch. 37.2 Mb 7323.758 42.8 10.6 3.0 25.0 0.0 Vert PK 0.0 53.4 74.0 -20.6 EUT Vert, Ch. 37.2 Mb 7429.183 42.1 10.9 1.0 20.5 0.0 0.0 Vert PK 0.0 53.4 74.0 -20.6 EUT Vert, Ch. 37.2 Mb 7429.183 42.1 10.9 1.0 20.5 0.0 0.0 Vert PK 0.0 53.4 74.0 -20.6 EUT Vert, Ch. 37.2 Mb 7429.183 42.1 10.9 1.0 20.5 0.0 0.0 Vert PK 0.0 52.8 74.0 -21.5 EUT Vert, Ch. 37.2 Mb 7429.750 41.7 10.2 10.0 0.0 Vert PK 0.0 52.8 74.0 -21.5 EUT Vert, Ch. 37.2 Mb 7429.750 41.7 10.5 10.0 0.0 Vert PK 0.0 52.5 74.0 -21.5 EUT Vert, Ch. 37.2 Mb 7429.750 41.7 10.5 10.0 0.0 Vert PK 0.0 52.5 74.0 -21.5 EUT Vert, Ch. 39.1 Mb 7427.750 41.7 10.0 0.0 Vert PK 0.0 52.5 74.0 -21.6 EUT Vert, Ch. 30.2 Mb 4904.17 46.7 5.7 10.0 0.0 Vert PK 0.0 50.7 74.0 -21.8 EUT Vert, Ch. 30.2 Mb 4904.17 46.7 5.7 10.0 0.0 Vert PK 0.0 50.7 74.0 -21.8 EUT                      |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12392530 38.8   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 4803.075   33.2   5.0   1.0   263.0   0.0   Vert   AV   0.0   38.2   54.0   -15.8   EUT Vert, Ch. 0, 2 Mb   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12007.530 93.4 1.4 1.0 115.0 0.0 Vert AV 0.0 38.0 54.0 16.0 EUT Vert, Ch. 0, 2 Mb 12388.200 37.7 54.0 16.3 EUT Horz, Ch. 0, 2 Mb 12388.200 37.9 0.4 1.8 290.9 0.0 Horz AV 0.0 37.5 54.0 16.5 EUT Horz, Ch. 0, 2 Mb 12388.200 37.1 0.5 1.8 194.0 0.0 Horz AV 0.0 37.5 54.0 116.5 EUT Horz, Ch. 0, 2 Mb 12389.200 37.1 0.5 1.8 194.0 0.0 Horz AV 0.0 36.6 54.0 117.6 EUT Horz, Ch. 39.1 Mb 12401.000 31.5 4.9 1.7 290.9 0.0 Horz AV 0.0 36.6 54.0 117.6 EUT Horz, Ch. 39.1 Mb 12401.000 31.5 4.9 1.7 290.9 0.0 Horz AV 0.0 36.4 54.0 117.6 EUT Horz, Ch. 39.1 Mb 12401.000 31.5 4.9 1.7 290.9 0.0 Horz AV 0.0 36.4 54.0 117.6 EUT Horz, Ch. 39.1 Mb 12401.000 31.5 4.9 1.7 290.9 10.0 Horz AV 0.0 36.4 54.0 117.6 EUT Horz, Ch. 39.1 Mb 12401.000 31.5 4.9 11.7 290.9 10.0 Horz AV 0.0 36.4 54.0 117.6 EUT Horz, Ch. 39.1 Mb 12401.000 31.5 4.9 11.7 290.9 11.0 EUT Horz, Ch. 39.1 Mb 12401.000 31.5 4.7 40.0 11.0 EUT Horz, Ch. 39.1 Mb 12401.000 31.5 4.7 40.0 11.0 EUT Horz, Ch. 39.1 Mb 12401.000 31.5 4.7 40.0 11.0 EUT Horz, Ch. 39.1 Mb 12401.000 31.0 EUT Horz, Ch. 39.1 Mb 12401.0 EUT HORZ,                       |           |      | 5.0  |     |       |       |      | Vert  |          |     |      |      |       |                         |
| #803.100   32.7   5.0   2.1   121.0   0.0   Horz   AV   0.0   37.7   54.0   -16.3   EUT Horz, Ch. 0.2 Mb   12398.200   37.9   -0.4   1.8   290.9   0.0   Horz   AV   0.0   36.6   54.0   -16.5   EUT Horz, Ch. 37.2 Mb   12398.200   37.1   -0.5   1.8   194.0   0.0   Horz   AV   0.0   36.6   54.0   -17.4   EUT Horz, Ch. 37.2 Mb   12401.080   37.5   54.0   -16.5   EUT Horz, Ch. 37.2 Mb   12401.080   37.5   54.0   -17.4   EUT Horz, Ch. 37.2 Mb   12401.080   37.5   54.0   -17.4   EUT Horz, Ch. 37.2 Mb   12401.080   37.5   54.0   -17.4   EUT Horz, Ch. 37.2 Mb   12401.080   42.2   10.9   2.9   81.0   0.0   Vert   PK   0.0   53.4   74.0   -20.6   EUT Vert, Ch. 37.2 Mb   12491.833   42.1   10.9   2.9   81.0   0.0   Horz   PK   0.0   53.1   74.0   -20.6   EUT Vert, Ch. 37.2 Mb   12401.080   42.1   42                        |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12382,500 37.9 -0.4 1.8 290.9 0.0 Horz AV 0.0 37.5 \$4.0 -16.5 EUT Horz, Ch. 39.1 Mb 12382,500 37.1 -0.5 1.8 194.0 0.0 Horz AV 0.0 36.6 \$4.0 17.8 EUT Horz, Ch. 39.1 Mb 12401,080 31.5 4.9 1.7 290.9 0.0 Horz AV 0.0 36.4 \$4.0 17.8 EUT Horz, Ch. 39.1 Mb 7323,758 4.2 10.6 3.0 235.0 0.0 Vert PK 0.0 53.4 74.0 20.6 EUT Vert, Ch. 20.1 Mb 7429,183 42.2 10.9 1.0 205.0 0.0 Horz PK 0.0 53.1 74.0 20.9 EUT Vert, Ch. 37.2 Mb 7429,833 42.1 10.9 1.0 205.0 0.0 Horz PK 0.0 53.1 74.0 20.9 EUT Vert, Ch. 37.2 Mb 7429,833 42.1 10.9 1.0 309.0 0.0 Horz PK 0.0 52.8 74.0 21.2 EUT Horz, Ch. 39.1 Mb 7437.750 41.5 10.9 1.0 339.0 0.0 Horz PK 0.0 52.6 74.0 21.4 EUT Horz, Ch. 20.1 Mb 7437.750 41.5 10.9 1.0 339.0 0.0 Horz PK 0.0 \$2.5 74.0 21.5 EUT Vert, Ch. 39.1 Mb 7437.750 41.9 10.6 1.0 322.0 0.0 Horz PK 0.0 \$2.5 74.0 21.5 EUT Vert, Ch. 39.1 Mb 7437.750 41.7 10.5 2.7 80.1 133.0 0.0 Horz PK 0.0 \$2.5 74.0 21.5 EUT Vert, Ch. 20.1 Mb 4990.417 45.7 5.7 2.1 133.0 0.0 Horz PK 0.0 \$2.5 74.0 21.5 EUT Horz, Ch. 20.1 Mb 4990.417 45.7 5.7 2.1 133.0 0.0 Horz PK 0.0 \$2.5 74.0 21.5 EUT Horz, Ch. 20.1 Mb 4990.417 45.7 5.7 2.1 133.0 0.0 Horz PK 0.0 \$2.5 74.0 21.5 EUT Horz, Ch. 20.1 Mb 4990.417 45.7 5.7 2.1 133.0 0.0 Horz PK 0.0 \$2.2 74.0 21.8 EUT Wert, Ch. 20.1 Mb 4990.417 45.7 5.7 2.1 133.0 0.0 Horz PK 0.0 \$2.2 74.0 21.8 EUT Wert, Ch. 20.2 Mb 4990.42 41.5 10.6 8.2 7 13.1 10.0 Horz PK 0.0 \$2.2 74.0 21.8 EUT Wert, Ch. 20.2 Mb 4990.62 41.5 10.6 8.2 7 13.1 10.0 Horz PK 0.0 \$2.2 74.0 21.8 EUT Wert, Ch. 20.1 Mb 4990.62 41.5 10.6 8.2 7 13.1 10.0 Horz PK 0.0 \$2.2 74.0 21.8 EUT Wert, Ch. 20.1 Mb 4990.62 45.8 4.1 10.0 Horz PK 0.0 \$2.2 74.0 21.8 EUT Wert, Ch. 20.1 Mb 4990.62 45.8 4.1 10.0 Horz PK 0.0 \$1.7 74.0 22.3 EUT Wert, Ch. 20.1 Mb 4990.62 45.8 4.1 10.0 Horz PK 0.0 \$1.7 74.0 22.3 EUT Wert, Ch. 20.1 Mb 4990.62 45.8 4.1 10.0 Horz PK 0.0 \$1.7 74.0 22.3 EUT Wert, Ch. 20.1 Mb 4990.62 45.8 5.7 1.0 60.0 Horz PK 0.0 \$1.7 74.0 22.3 EUT Wert, Ch. 20.1 Mb 4990.62 45.8 5.7 1.0 60.0 Horz PK 0.0 \$1.7 74.0 22.3 EUT Wert, Ch. 20.1 Mb 4990.67 45.8 5.7 1.0 60.0 Horz PK 0.0 \$1.7 74.0 2 |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12401.080 31.5 4.9 1.7 200.9 0.0 Horz AV 0.0 38.4 54.0 17.8 EUT Horz, Ch. 39.1 Mb 7323.758 42.8 10.9 2.9 81.0 0.0 Vert PK 0.0 53.1 74.0 20.6 EUT Vert, Ch. 20.1 Mb 7429.833 42.2 10.9 1.0 205.0 0.0 Horz PK 0.0 53.1 74.0 20.9 EUT Vert, Ch. 37.2 Mb 7429.833 42.1 10.9 1.0 205.0 0.0 Horz PK 0.0 53.0 74.0 2-1.0 EUT Horz, Ch. 37.2 Mb 7439.834 42.1 10.9 1.0 309.0 0.0 Horz PK 0.0 52.8 74.0 2-1.2 EUT Horz, Ch. 20.1 Mb 7437.750 41.6 10.9 1.0 339.0 0.0 Horz PK 0.0 52.6 74.0 2-1.5 EUT Horz, Ch. 20.1 Mb 7437.750 41.6 10.9 1.0 339.0 0.0 Horz PK 0.0 52.5 74.0 2-1.5 EUT Horz, Ch. 20.1 Mb 7437.750 41.9 10.6 1.0 322.0 0.0 Horz PK 0.0 52.5 74.0 2-1.5 EUT Horz, Ch. 20.1 Mb 7437.736 41.9 10.6 1.0 322.0 0.0 Horz PK 0.0 52.5 74.0 2-1.5 EUT Horz, Ch. 20.1 Mb 7437.736 41.7 10.5 2.7 80.1 10.0 Horz PK 0.0 52.5 74.0 2-1.5 EUT Horz, Ch. 20.1 Mb 7436.2 Horz, PK 0.0 52.5 74.0 2-1.5 EUT Horz, Ch. 20.1 Mb 7436.2 Horz, PK 0.0 52.5 74.0 2-1.5 EUT Horz, Ch. 20.1 Mb 7436.2 Horz, PK 0.0 52.5 74.0 2-1.5 EUT Horz, Ch. 20.1 Mb 7436.2 Horz, PK 0.0 52.5 74.0 2-1.5 EUT Horz, Ch. 20.1 Mb 7436.2 Horz, PK 0.0 52.5 74.0 2-1.5 EUT Horz, Ch. 20.1 Mb 7436.2 Horz, PK 0.0 52.4 74.0 2-1.8 EUT Wert, Ch. 30.1 Mb 7436.2 Horz, PK 0.0 52.4 74.0 2-1.8 EUT Wert, Ch. 30.1 Mb 7436.2 Horz, PK 0.0 52.4 74.0 2-1.8 EUT Wert, Ch. 20.2 Mb 7436.2 Horz, PK 0.0 52.1 74.0 2-1.8 EUT Wert, Ch. 20.2 Mb 7436.2 Horz, PK 0.0 52.1 74.0 2-1.8 EUT Wert, Ch. 20.2 Mb 7436.2 Horz, PK 0.0 52.1 74.0 2-1.8 EUT Wert, Ch. 20.2 Mb 7436.2 Horz, PK 0.0 52.1 74.0 2-2.2 EUT Horz, Ch. 20.2 Mb 7436.2 Horz, PK 0.0 52.1 74.0 2-2.2 EUT Horz, Ch. 20.1 Mb 7436.2 Horz, PK 0.0 52.1 74.0 2-2.3 EUT Horz, Ch. 20.1 Mb 7436.2 Horz, PK 0.0 52.1 74.0 2-2.3 EUT Horz, Ch. 20.1 Mb 7436.2 Horz, PK 0.0 52.1 74.0 2-2.3 EUT Horz, Ch. 20.1 Mb 7436.2 Horz, PK 0.0 52.1 74.0 2-2.3 EUT Horz, Ch. 30.1 Mb 7436.2 Horz, PK 0.0 52.1 FW 0.0 52.1 FW 0.0 52.1 EUT Horz, Ch. 31.1 Mb 7436.2 Horz, PK 0.0 52.1 FW 0.0 52.1 EUT Horz, Ch. 31.1 Mb 7436.2 Horz, PK 0.0 52.1 EUT Horz, Ch. 31.1 Mb 7436.2 Horz, PK 0.0 52.1 EUT Horz, Ch. 31.1 Mb 7436.2 Hor                      |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 1732,758   42.8   10.6   3.0   235.0   0.0   Vert   |           |      |      |     |       |       |      | Horz  |          |     |      |      |       |                         |
| 7429,183         42,2         10,9         2,9         81,0         0,0         Vert         PK         0,0         53,1         74,0         -20,9         EUT Vert, Ch. 37,2 Mb           7429,583         42,1         10,9         1,0         205,0         0,0         Horz         PK         0,0         52,8         74,0         21,0         EUT Horz, Ch. 37,2 Mb           7441,025         41,7         10,9         1,0         208,0         0,0         Horz         PK         0,0         52,6         74,0         -21,4         EUT Horz, Ch. 29,1 Mb           7437,750         41,6         10,9         1,0         332,0         0         O         Vert         PK         0,0         52,5         74,0         -21,5         EUT Horz, Ch. 29,2 Mb           4960,417         46,7         5,7         2,1         133,0         0         0         Horz         PK         0,0         52,4         74,0         -21,5         EUT Horz, Ch. 29, 22 Mb           7325,708         41,7         10,6         3,5         288,0         0         0         Horz         PK         0,0         52,4         74,0         -21,5         EUT Horz, Ch. 20, 22         20,2         20,4         40,2  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 7429.8583         42.1         10.9         205.0         0.0         Horz         PK         0.0         53.0         74.0         22.12         EUT Horz, Ch. 37.2 Mb           4883.400         47.4         54.4         10.9         1.0         208.0         0.0         Horz         PK         0.0         52.6         74.0         -21.2         EUT Horz, Ch. 20.1 Mb           7437.750         41.6         10.9         1.0         339.0         0.0         Horz         PK         0.0         52.5         74.0         -21.5         EUT Vert, Ch. 39.1 Mb           7326.672         41.9         10.6         1.0         322.0         0.0         Horz         PK         0.0         52.5         74.0         -21.5         EUT Vert, Ch. 20.2 Mb           4960.417         10.5         2.7         80.1         0.0         Horz         PK         0.0         52.2         74.0         -21.8         EUT Vert, Ch. 20.2 Mb           7326.642         41.5         10.6         3.5         288.0         0.0         Horz         PK         0.0         52.1         74.0         -22.2         EUT Horz, Ch. 20.2 Mb           4882.238         46.1         5.4         1.0         108.0   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| ABB3.400   47.4   5.4   2.3   300.0   0.0   Horz   PK   0.0   52.8   74.0   2-12   EUT Horz, Ch. 20.1 Mb  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 7437.750  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 17326,675   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 4960.417  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 7325,708  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 4882.888         46.4         5.4         2.4         300.0         0.0         Horz         PK         0.0         51.8         7.40         -22.2         EUT Horz, Ch. 20, 2 Mb         4884.23         46.1         5.6         2.7         113.1         0.0         Horz         PK         0.0         51.7         7.40         -22.3         EUT Vert, Ch. 20, 2 Mb         4885.325         46.3         5.4         1.0         129.0         0.0         Vert         PK         0.0         51.7         7.40         -22.3         EUT Vert, Ch. 37, 2 Mb         4895.50.2         48.5         5.7         1.0         60.0         0.0         Vert         PK         0.0         51.6         74.0         -22.3         EUT Vert, Ch. 39, 1 Mb         4959.50.8         45.8         5.7         1.3         0.0         0.0         Horz         PK         0.0         51.5         74.0         -22.5         EUT On Side, Ch. 39, 1 Mb         4959.50.8         45.2         5.7         1.0         145.1         0.0         Horz         PK         0.0         51.5         74.0         -22.1         EUT On Side, Ch. 39, 1 Mb         4952.4         42.1         EUT On Side, Ch. 39, 1 Mb         4952.4         42.1         20.0         50.9         74.0   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 4884.233         46.3         5.4         1.0         108.0         0.0         Vert         PK         0.0         51.7         74.0         -22.3         EUT Vert, Ch. 20, 1 Mb           4853.025         46.3         5.4         1.0         129.0         0.0         Vert         PK         0.0         51.7         74.0         -22.3         EUT Vert, Ch. 20, 2 Mb           4858.325         46.3         5.4         1.0         129.0         0.0         Vert         PK         0.0         51.7         74.0         -22.3         EUT Vert, Ch. 20, 2 Mb           4858.500         45.9         5.7         1.0         60.0         0.0         Vert         PK         0.0         51.5         74.0         -22.3         EUT Vert, Ch. 20, 2 Mb           4895.808         45.0         5.7         1.0         145.1         0.0         Vert         PK         0.0         50.9         74.0         -22.1         EUT Vert, Ch. 20, 2 Mb           4804.833         45.9         5.0         2.1         318.0         0.0         Vert         PK         0.0         50.9         74.0         -23.1         EUT Vert, Ch. 20, 2 Mb           4895.948.9         45.0         5.0         1.0  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 4953.025         46.1         5.6         2.7         113.1         0.0         Horz         PK         0.0         51.7         74.0         -22.3         EUT Horz, Ch. 37, 2 Mb         4885.325         46.3         5.4         1.0         129.0         0.0         Vert         PK         0.0         51.6         74.0         -22.3         EUT Vert, Ch. 20, 2 Mb         4989.508         45.8         5.7         1.3         0.0         0.0         Horz         PK         0.0         51.5         74.0         -22.4         EUT Vert, Ch. 39, 1 Mb         4989.508         45.8         5.7         1.0         145.1         0.0         Vert         PK         0.0         51.5         74.0         -22.3         EUT Vert, Ch. 39, 1 Mb         4989.508         45.2         5.7         1.0         145.1         0.0         Vert         PK         0.0         50.9         74.0         -23.1         EUT Vert, Ch. 39, 1 Mb         490.0         50.9         74.0         -23.1         EUT Vert, Ch. 0, 1 Mb         4959.408         45.0         5.7         1.4         206.1         0.0         Horz         PK         0.0         50.9         74.0         -23.1         EUT Vert, Ch. 0, 17.2 Mb         4959.404         49.1         24.1  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 4858.325 46.3 5.4 1.0 129.0 0.0 Vert PK 0.0 51.6 74.0 -22.3 EUT Vert, Ch. 20, 2 Mb 4959.500 45.9 5.7 1.0 60.0 0.0 Vert PK 0.0 51.6 74.0 -22.4 EUT Vert, Ch. 39, 1 Mb 4960.267 45.2 5.7 1.0 145.1 0.0 Vert PK 0.0 50.9 74.0 -23.1 EUT On Side, Ch. 39, 1 Mb 4960.267 45.2 5.7 1.0 145.1 0.0 Vert PK 0.0 50.9 74.0 -23.1 EUT On Side, Ch. 39, 1 Mb 2388.050 34.9 4.0 1.0 286.9 20.0 Horz PK 0.0 50.9 74.0 -23.1 EUT On Side, Ch. 39, 1 Mb 4960.483 45.9 5.0 2.1 318.0 0.0 Horz PK 0.0 50.9 74.0 -23.1 EUT Horz, Ch. 0, 1 Mb 2388.050 34.9 4.0 1.0 286.9 20.0 Horz PK 0.0 50.9 74.0 -23.1 EUT Horz, Ch. 0, 1 Mb 4951.4 45.6 5.0 1.0 286.9 0.0 Vert PK 0.0 50.7 74.0 -23.1 EUT Horz, Ch. 0, 1 Mb 4952.842 44.7 5.6 1.0 292.0 0.0 Vert PK 0.0 50.6 74.0 -23.4 EUT Vert, Ch. 39, 1 Mb 4962.842 44.7 5.6 1.0 292.0 0.0 Vert PK 0.0 50.6 74.0 -23.4 EUT Vert, Ch. 0, 2 Mb 4804.508 45.0 5.0 1.0 263.0 0.0 Vert PK 0.0 50.3 74.0 -23.7 EUT Vert, Ch. 37, 2 Mb 4804.508 45.0 5.0 1.0 292.0 0.0 Vert PK 0.0 50.0 74.0 -24.0 EUT Vert, Ch. 0, 1 Mb 12401.110 45.1 4.9 1.8 120.1 0.0 Vert PK 0.0 50.0 74.0 -24.0 EUT Vert, Ch. 0, 1 Mb 4804.908 45.0 5.0 1.0 21.0 0.0 Vert PK 0.0 50.0 74.0 -24.0 EUT Vert, Ch. 0, 1 Mb 4804.908 45.0 5.0 1.0 1.0 169.0 20.0 Vert PK 0.0 49.8 74.0 -24.0 EUT Vert, Ch. 0, 2 Mb 4804.908 45.0 5.0 1.0 1.0 169.0 20.0 Vert PK 0.0 49.8 74.0 -24.2 EUT Vert, Ch. 0, 1 Mb 4804.975 44.6 5.0 2.1 121.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 EUT Vert, Ch. 0, 1 Mb 4804.975 44.6 5.0 2.1 121.0 0.0 Vert PK 0.0 49.8 74.0 -24.2 EUT Vert, Ch. 0, 1 Mb 12008.870 49.9 1.1 1.8 121.0 0.0 Vert PK 0.0 48.6 74.0 -24.9 EUT Horz, Ch. 0, 2 Mb 495.9 75.0 43.4 5.7 1.0 304.9 0.0 Vert PK 0.0 48.6 74.0 -24.9 EUT Horz, Ch. 0, 2 Mb 12008.870 49.9 1.1 1.8 121.0 0.0 Vert PK 0.0 48.8 74.0 -25.2 EUT Horz, Ch. 0, 2 Mb 12008.870 49.9 1.1 1.8 24.0 0.0 Horz PK 0.0 48.8 74.0 -26.6 EUT Horz, Ch. 0, 1 Mb 12008.870 49.9 1.1 1.8 24.0 0.0 Horz PK 0.0 45.9 74.0 -28.8 EUT Horz, Ch. 0, 2 Mb 12008.870 47.3 0.4 2.0 312.9 0.0 Horz PK 0.0 45.9 74.0 -28.1 EUT Vert, Ch. 0, 2 Mb 12208.870 47.0 0.4 2.5 310.0 0.0 Horz PK 0.0 45.                      |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 4959.508         45.8         5.7         1.3         0.0         0.0         Horz         PK         0.0         51.5         74.0         -22.5         EUT On Side, Ch. 39, 1 Mb           4960.267         45.2         5.7         1.0         145.1         0.0         Vert         PK         0.0         50.9         74.0         -23.1         EUT On Side, Ch. 39, 1 Mb           4804.833         45.9         5.0         2.1         318.0         0.0         Horz         PK         0.0         50.9         74.0         -23.1         EUT Horz, Ch. 0, 1 Mb           4895.408         45.0         1.0         286.9         20.0         Horz         PK         0.0         50.9         74.0         -23.1         EUT Horz, Ch. 0, 1 Mb           4805.142         45.6         5.0         1.0         263.0         0.0         Vert         PK         0.0         50.6         74.0         -23.4         EUT Vert, Ch. 0, 2 Mb           4952.842         44.7         5.6         1.0         292.0         0.0         Vert         PK         0.0         50.0         74.0         -24.0         EUT Vert, Ch. 0, 2 Mb           12401.110         45.1         4.9         1.8         120.1   |           |      |      |     |       |       |      |       |          |     |      |      |       | EUT Vert, Ch. 20, 2 Mb  |
| 4960_267         45.2         5.7         1.0         145.1         0.0         Vert         PK         0.0         50.9         74.0         -23.1         EUT On Side, Ch. 39, 1 Mb           4804.833         45.9         5.0         2.1         318.0         0.0         Horz         PK         0.0         50.9         74.0         -23.1         EUT Horz, Ch. 0, 1 Mb           4895.9408         45.0         5.7         1.4         206.1         0.0         Horz         PK         0.0         50.9         74.0         -23.1         EUT Horz, Ch. 0, 1 Mb           4805.142         45.6         5.0         1.0         263.0         0.0         Vert         PK         0.0         50.6         74.0         -23.3         EUT Vert, Ch. 0, 2 Mb           4805.142         45.6         5.0         1.0         292.0         0.0         Vert         PK         0.0         50.3         74.0         -23.7         EUT Vert, Ch. 0, 1 Mb           4804.508         45.0         5.0         1.0         21.0         0.0         Vert         PK         0.0         50.0         74.0         -24.0         EUT Vert, Ch. 0, 1 Mb           12401.110         45.1         48.1         49.1  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 480.4.833   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 2388.050 34.9   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 4805.142  |           |      |      |     |       |       | 20.0 | Horz  | PK       |     |      | 74.0 |       |                         |
| 4952.842         44.7         5.6         1.0         292.0         0.0         Vert         PK         0.0         50.3         74.0         -23.7         EUT Vert, Ch. 37, 2 Mb         4804.508         45.0         5.0         1.0         22.0         Uvert         PK         0.0         50.0         74.0         -24.0         EUT Vert, Ch. 0, 1 Mb         2389.250         33.8         -4.0         1.0         169.0         20.0         Vert         PK         0.0         49.8         74.0         -24.2         EUT Vert, Ch. 0, 1 Mb         2389.250         33.8         -4.0         1.0         169.0         20.0         Vert         PK         0.0         49.8         74.0         -24.2         EUT Vert, Ch. 0, 1 Mb         240.4         480.4         5.0         2.1         121.0         0.0         Horz         PK         0.0         49.8         74.0         -24.2         EUT Vert, Ch. 0, 1 Mb         12211.300         49.9         -1.1         1.8         121.0         0.0         Vert         PK         0.0         49.1         74.0         -24.2         EUT Horz, Ch. 20, 1 Mb         12201.300         49.9         -1.1         1.8         121.0         0.0         Vert         PK         0.0         48.8 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 4804.508         45.0         5.0         1.0         21.0         0.0         Vert         PK         0.0         50.0         74.0         -24.0         EUT Vert, Ch. 0, 1 Mb           12401.110         45.1         4.9         1.8         120.1         0.0         Vert         PK         0.0         50.0         74.0         -24.0         EUT Vert, Ch. 0, 1 Mb           4804.975         44.6         5.0         2.1         121.0         0.0         Horz         PK         0.0         49.6         74.0         -24.2         EUT Vert, Ch. 0, 2 Mb           4959.975         43.4         5.7         1.0         304.9         0.0         Vert         PK         0.0         49.1         74.0         -24.9         EUT Horz, Ch. 0, 2 Mb           4959.975         43.4         5.7         1.0         304.9         0.0         Vert         PK         0.0         49.1         74.0         -24.9         EUT Horz, Ch. 0, 2 Mb           122013.780         49.5         -1.4         1.8         140.0         0.0         Vert         PK         0.0         48.8         74.0         -25.2         EUT Horz, Ch. 0, 1 Mb           12401.490         42.9         4.9         1.7         <   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12401.110   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 4804.975         44.6         5.0         2.1         121.0         0.0         Horz         PK         0.0         49.6         74.0         -24.4         EUT Horz, Ch. 0, 2 Mb           4959.975         43.4         5.7         1.0         304.9         0.0         Vert         PK         0.0         49.1         74.0         -24.9         EUT Horz, Ch. 0, 2 Mb           12211.300         49.9         -1.1         1.8         121.0         0.0         Vert         PK         0.0         48.8         74.0         -24.9         EUT Horz, Ch. 0, 2 Mb           12008.780         49.5         -1.4         1.8         140.0         0.0         Vert         PK         0.0         48.8         74.0         -25.2         EUT Horz, Ch. 0, 1 Mb           12401.490         42.9         4.9         1.7         290.9         0.0         Horz         PK         0.0         47.8         74.0         -26.2         EUT Horz, Ch. 0, 1 Mb           12008.810         48.8         -1.4         1.8         32.0         0.0         Horz         PK         0.0         47.4         74.0         -26.2         EUT Horz, Ch. 0, 1 Mb           12398.780         47.3         -0.4         2.0   |           | 45.1 | 4.9  | 1.8 | 120.1 |       | 0.0  |       | PK       | 0.0 | 50.0 | 74.0 | -24.0 | EUT Vert, Ch. 39, 1 Mb  |
| 4959.975         43.4         5.7         1.0         304.9         0.0         Vert         PK         0.0         49.1         74.0         -24.9         EUT Horz, Ch. 39, 1 Mb           12211.300         49.9         -1.1         1.8         121.0         0.0         Vert         PK         0.0         48.8         74.0         -25.2         EUT Horz, Ch. 39, 1 Mb           12008.780         49.5         -1.4         1.8         140.0         0.0         Vert         PK         0.0         48.8         74.0         -25.2         EUT Horz, Ch. 39, 1 Mb           12401.490         42.9         4.9         1.7         290.9         0.0         Horz         PK         0.0         47.8         74.0         -26.2         EUT Horz, Ch. 39, 1 Mb           12008.810         48.8         -1.4         1.8         32.0         0.0         Horz         PK         0.0         47.4         74.0         -26.6         EUT Horz, Ch. 39, 1 Mb           12398.870         47.3         -0.4         2.0         312.9         0.0         Vert         PK         0.0         46.9         74.0         -27.1         EUT Vert, Ch. 37, 2 Mb           12208.8370         47.0         -1.1         1.8 </td <td></td>   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12211.300   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12008.780   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12401.490   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12398.780   | 12401.490 |      | 4.9  | 1.7 | 290.9 |       |      |       | PK       |     |      | 74.0 |       |                         |
| 12009.830       48.0       -1.4       1.9       196.1       0.0       Horz       PK       0.0       46.6       74.0       -27.4       EUT Horz, Ch. 0, 2 Mb         12208.470       47.0       -1.1       1.8       24.0       0.0       Horz       PK       0.0       45.9       74.0       -28.1       EUT Vert, Ch. 20, 2 Mb         12382.700       46.3       -0.4       2.5       310.0       0.0       Vert       PK       0.0       45.9       74.0       -28.1       EUT Vert, Ch. 37, 2 Mb         12207.580       46.6       -1.1       1.9       9.0       0.0       Horz       PK       0.0       45.5       74.0       -28.5       EUT Vert, Ch. 20, 2 Mb         12007.510       46.8       -1.4       1.0       115.0       0.0       Vert       PK       0.0       45.4       74.0       -28.6       EUT Vert, Ch. 0, 2 Mb         12307.570       46.3       -0.4       1.8       290.9       0.0       Horz       PK       0.0       45.2       74.0       -28.8       EUT Horz, Ch. 39, 1 Mb         12382.540       44.6       -0.5       1.8       194.0       0.0       Horz       PK       0.0       44.1       74.0       -28.8  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12208.470 47.0 -1.1 1.8 24.0 0.0 Horz PK 0.0 45.9 74.0 -28.1 EUT Vert, Ch. 20, 1 Mb 12382.700 46.3 -0.4 2.5 310.0 0.0 Vert PK 0.0 45.9 74.0 -28.1 EUT Vert, Ch. 20, 2 Mb 12207.580 46.6 -1.1 1.9 9.0 0.0 Horz PK 0.0 45.5 74.0 -28.5 EUT Horz, Ch. 20, 2 Mb 12007.510 46.8 -1.4 1.0 115.0 0.0 Vert PK 0.0 45.4 74.0 -28.5 EUT Vert, Ch. 0, 2 Mb 12398.890 45.6 -0.4 1.8 290.9 0.0 Horz PK 0.0 45.2 74.0 -28.8 EUT Horz, Ch. 39, 1 Mb 12207.570 46.3 -1.1 1.0 117.0 0.0 Vert PK 0.0 45.2 74.0 -28.8 EUT Vert, Ch. 20, 2 Mb 12382.540 44.6 -0.5 1.8 194.0 0.0 Horz PK 0.0 44.1 74.0 -29.9 EUT Horz, Ch. 37, 2 Mb 2483.507 39.2 -4.2 1.0 282.9 -35.5 20.0 Horz AV 0.0 19.5 54.0 -34.5 EUT Horz, Ch. 39, 1 Mb   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12382.700 46.3 -0.4 2.5 310.0 0.0 Vert PK 0.0 45.9 74.0 -28.1 EUT Vert, Ch. 37, 2 Mb 12207.580 46.6 -1.1 1.9 9.0 0.0 Horz PK 0.0 45.5 74.0 -28.5 EUT Horz, Ch. 20, 2 Mb 12207.510 46.8 -1.4 1.0 115.0 0.0 Vert PK 0.0 45.4 74.0 -28.6 EUT Vert, Ch. 0, 2 Mb 12398.890 45.6 -0.4 1.8 290.9 0.0 Horz PK 0.0 45.2 74.0 -28.8 EUT Horz, Ch. 39, 1 Mb 12207.570 46.3 -1.1 1.0 117.0 0.0 Vert PK 0.0 45.2 74.0 -28.8 EUT Vert, Ch. 20, 2 Mb 12382.540 44.6 -0.5 1.8 194.0 0.0 Horz PK 0.0 44.1 74.0 -29.9 EUT Horz, Ch. 39, 1 Mb 2483.507 39.2 -4.2 1.0 282.9 -35.5 20.0 Horz AV 0.0 19.5 54.0 -34.5 EUT Horz, Ch. 39, 1 Mb   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12007.510     46.8     -1.4     1.0     115.0     0.0     Vert     PK     0.0     45.4     74.0     -28.6     EUT Vert, Ch. 0, 2 Mb       12398.890     45.6     -0.4     1.8     290.9     0.0     Horz     PK     0.0     45.2     74.0     -28.8     EUT Horz, Ch. 39, 1 Mb       12207.570     46.3     -1.1     1.0     117.0     0.0     Vert     PK     0.0     45.2     74.0     -28.8     EUT Vert, Ch. 20, 2 Mb       12382.540     44.6     -0.5     1.8     194.0     0.0     Horz     PK     0.0     44.1     74.0     -29.9     EUT Horz, Ch. 37, 2 Mb       2483.507     39.2     -4.2     1.0     282.9     -35.5     20.0     Horz     AV     0.0     19.5     54.0     -34.5     EUT Horz, Ch. 39, 1 Mb   | 12382.700 | 46.3 | -0.4 | 2.5 | 310.0 |       | 0.0  | Vert  | PK       | 0.0 | 45.9 | 74.0 | -28.1 | EUT Vert, Ch. 37, 2 Mb  |
| 12398.890 45.6 -0.4 1.8 290.9 0.0 Horz PK 0.0 45.2 74.0 -28.8 EUT Horz, Ch. 39, 1 Mb<br>12207.570 46.3 -1.1 1.0 117.0 0.0 Vert PK 0.0 45.2 74.0 -28.8 EUT Vert, Ch. 20, 2 Mb<br>12382.540 44.6 -0.5 1.8 194.0 0.0 Horz PK 0.0 44.1 74.0 -29.9 EUT Horz, Ch. 37, 2 Mb<br>2483.507 39.2 -4.2 1.0 282.9 -35.5 20.0 Horz AV 0.0 19.5 54.0 -34.5 EUT Horz, Ch. 39, 1 Mb  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12207.570     46.3     -1.1     1.0     117.0     0.0     Vert     PK     0.0     45.2     74.0     -28.8     EUT Vert, Ch. 20, 2 Mb       12382.540     44.6     -0.5     1.8     194.0     0.0     Horz     PK     0.0     44.1     74.0     -29.9     EUT Horz, Ch. 37, 2 Mb       2483.507     39.2     -4.2     1.0     282.9     -35.5     20.0     Horz     AV     0.0     19.5     54.0     -34.5     EUT Horz, Ch. 39, 1 Mb  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
| 12382.540 44.6 -0.5 1.8 194.0 0.0 Horz PK 0.0 44.1 74.0 -29.9 EUT Horz, Ch. 37, 2 Mb 2483.507 39.2 -4.2 1.0 282.9 -35.5 20.0 Horz AV 0.0 19.5 54.0 -34.5 EUT Horz, Ch. 39, 1 Mb   |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
|   | 12382.540 | 44.6 | -0.5 | 1.8 |       |       | 0.0  |       | PK       |     | 44.1 |      | -29.9 | EUT Horz, Ch. 37, 2 Mb  |
| 2483.500 38.9 -4.2 1.0 189.0 -35.5 20.0 Vert AV 0.0 19.2 54.0 -34.8 EUT Vert, Ch. 39, 1 Mb  |           |      |      |     |       |       |      |       |          |     |      |      |       |                         |
|   | 2483.500  | 38.9 | -4.2 | 1.0 | 189.0 | -35.5 | 20.0 | vert  | AV       | 0.0 | 19.2 | 54.0 | -34.8 | EUT Vert, Cri. 39, T MD |

Report No. STAK0117.1 32/71

### **SPURIOUS RADIATED EMISSIONS**



|                |                     |                |                         |                   |                  |                  |              |             |                    | EmiR5 2018.05.07     |                         | PSA-ESCI 2018.05.0   | 04           |
|----------------|---------------------|----------------|-------------------------|-------------------|------------------|------------------|--------------|-------------|--------------------|----------------------|-------------------------|----------------------|--------------|
| Wo             | ork Order:          |                | K0117                   |                   | Date:            |                  | n-2018       |             | 1                  |                      | 711                     |                      |              |
|                | Project:            |                | lone                    |                   | nperature:       |                  | 8 °C         | //          | $\mathcal{C}$      | /                    | M                       |                      |              |
|                | Job Site:           |                | 1N05                    |                   | <b>Humidity:</b> |                  | % RH         |             |                    |                      |                         |                      |              |
| Seria          | I Number:           |                | 10052A                  |                   | etric Pres.:     | 1016             | mbar         |             | Tested by:         | Chris Patte          | erson, Kyle             | McMullan             | _            |
|                |                     | Multi-Fun      | ction Access            | ory               |                  |                  |              |             |                    |                      |                         |                      | _            |
|                | figuration:         | 2              |                         |                   |                  |                  |              |             |                    |                      |                         |                      | _            |
|                | Customer:           | Starkey L      | aboratories,            | Inc.              |                  |                  |              |             |                    |                      |                         |                      | _            |
| Α              | Attendees:          | Charlie E      | sch                     |                   |                  |                  |              |             |                    |                      |                         |                      | <del>_</del> |
| EU             | UT Power:           | 110VAC/        | 60Hz                    |                   |                  |                  |              |             |                    |                      |                         |                      | <del>_</del> |
| Operati        | ing Mode:           | Tx on Ch       | . 39 at 2480            | MHz on the        | RSL Radio        | 0                |              |             |                    |                      |                         |                      | _            |
| D              | eviations:          | None           |                         |                   |                  |                  |              |             |                    |                      |                         |                      | _            |
| C              | omments:            | AC Powe        | red spot che            | ck of highe       | st emission      | . Output po      | ower of radi | o lowered f | rom max po         | wer to 1 dE          | 3 below ma              | x power.             | _            |
| Toot Speci     | ifications          |                |                         |                   |                  |                  | Test Meth    | od          | 1                  |                      |                         |                      |              |
| FCC 15.24      |                     | L              |                         |                   |                  |                  | ANSI C63.    |             | L                  |                      |                         |                      | =            |
|                |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      | _            |
| Run #          | 74                  | Test D         | istance (m)             | 3                 | Antenna          | a Height(s)      |              | 1 to 4(m)   |                    | Results              | Pa                      | ass                  | _            |
| _              |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| 00             |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| 80 +           |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
|                |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| 70             |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| 70             |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
|                |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| 60             |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| 60 T           |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
|                |                     |                |                         |                   |                  |                  |              |             |                    |                      | _                       |                      |              |
| <b>-</b> 50    |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| <b>E</b> 00    |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| ⋝              |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| w//n <b>gp</b> |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| ₩ "            |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
|                |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| 30 +           |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
|                |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
|                |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| 20 +           |                     |                |                         |                   |                  |                  | •            |             |                    |                      |                         |                      |              |
|                |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
|                |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| 10 +           |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
|                |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
|                |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| 0 +            |                     |                |                         |                   |                  |                  |              |             |                    |                      |                         |                      |              |
| 10             | )                   |                | 100                     |                   |                  | 1000             |              |             | 10000              |                      |                         | 100000               |              |
|                |                     |                |                         |                   |                  | MHz              |              |             |                    | ■ DI                 | A 417                   | • OB                 |              |
|                |                     |                |                         |                   |                  |                  |              |             |                    | ■ PK                 | ◆ AV                    | <ul><li>QP</li></ul> |              |
|                |                     |                |                         |                   | Duty Cycle       |                  | Polarity/    |             |                    |                      |                         |                      |              |
|                |                     |                |                         |                   | Correction       | External         | Transducer   |             | Distance           |                      |                         | Compared to          |              |
| Ferm           | A 1''               | F              | A-4 11 :                | A : :             |                  | Att C            |              |             | A dissert          | A discort            | 0                       |                      |              |
| Freq           | Amplitude           | Factor (dB)    | Antenna Height          | Azimuth           | Factor           | Attenuation      | Туре         | Detector    | Adjustment         | Adjusted (dBu\//m)   | Spec. Limit             | Spec.                |              |
| Freq<br>(MHz)  | Amplitude<br>(dBuV) | Factor<br>(dB) | Antenna Height (meters) | Azimuth (degrees) |                  | Attenuation (dB) |              | Detector    | Adjustment<br>(dB) | Adjusted<br>(dBuV/m) | Spec. Limit<br>(dBuV/m) |                      |              |
| (MHz)          | (dBuV)              | (dB)           | (meters)                | (degrees)         | Factor           | Attenuation (dB) | Туре         |             | Adjustment<br>(dB) | (dBuV/m)             | (dBuV/m)                | Spec.<br>(dB)        | Comments     |
|                |                     |                |                         |                   | Factor           | Attenuation      |              | PK<br>AV    | Adjustment         |                      |                         | Spec.                |              |

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### **DUTY CYCLE**



XMit 2017.12.13

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

#### **TEST EQUIPMENT**

| Description                  | Manufacturer       | Model           | ID  | Last Cal. | Cal. Due  |
|------------------------------|--------------------|-----------------|-----|-----------|-----------|
| Generator - Signal           | Agilent            | E4422B          | TGQ | 15-Mar-18 | 15-Mar-21 |
| Cable                        | ESM Cable Corp.    | TTBJ141 KMKM-72 | MNU | 15-Mar-18 | 15-Mar-19 |
| Attenuator                   | S.M. Electronics   | SA26B-20        | RFW | 13-Feb-18 | 13-Feb-19 |
| Block - DC                   | Fairview Microwave | SD3379          | AMI | 12-Sep-17 | 12-Sep-18 |
| Analyzer - Spectrum Analyzer | Keysight           | N9010A          | AFN | 27-Apr-18 | 27-Apr-19 |

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

There is no compliance requirement to be met by this test, so therefore no Pass / Fail criteria.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum.

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating may have been used during some of the other tests in this report to only take the measurement during the burst duration.

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#### **DUTY CYCLE**



Work Order: STAK0117 **EUT:** Multi-Function Accessory Serial Number: 182010052A Date: 22-Jun-18 Temperature: 22.1 °C Customer: Starkey Laboratories, Inc. Attendees: Charlie Esch
Project: None
Tested by: Dustin Sparks
TEST SPECIFICATIONS Humidity: 53.9% RH
Barometric Pres.: 1015 mbar
Job Site: MN08 Power: Battery
Test Method FCC 15.247:2018 COMMENTS None DEVIATIONS FROM TEST STANDARD None sals Configuration # 4 Signature Number of Value Limit Pulse Width Period Pulses Results (%) (%) BLE/GFSK, 1 Mbps N/A N/A N/A BLE/GFSK Low Channel, 2402 MHz BLE/GFSK Low Channel, 2402 MHz 216.2 us 625.1 us 34.6 N/A N/A N/A 34.5 N/A N/A 5 1 BLE/GFSK Mid Channel, 2442 MHz 215.9 us 624.9 us N/A BLE/GFSK Mid Channel, 2442 MHz BLE/GFSK High Channel, 2480 MHz N/A 216.8 us N/A 34.7 N/A N/A N/A 5 N/A 624.9 us N/A BLE/GFSK High Channel, 2480 MHz N/A N/A N/A N/A BLE/GFSK, 2 Mbps BLE/GFSK Low Channel, 2402 MHz 112 us 625.2 us 17.9 N/A N/A BLE/GFSK Low Channel, 2402 MHz BLE/GFSK Mid Channel, 2442 MHz N/A 17.9 N/A N/A N/A N/A 625.2 us 112.2 us N/A N/A BLE/GFSK Mid Channel, 2442 MHz N/A N/A N/A N/A N/A BLE/GFSK High Channel, 2480 MHz BLE/GFSK High Channel, 2480 MHz 112.5 us N/A 625 us N/A 18 N/A N/A N/A N/A N/A

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#### **DUTY CYCLE**



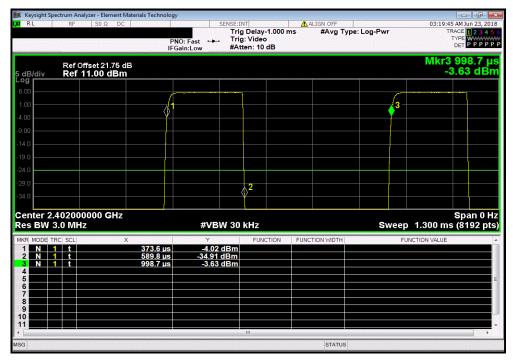
TbtTx 2017.12.14

BLE/GFSK, 1 Mbps, BLE/GFSK Low Channel, 2402 MHz

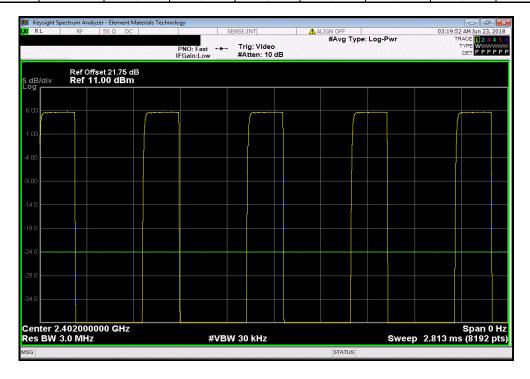
Number of Value Limit

Pulse Width Period Pulses (%) (%) Results

216.2 us 625.1 us 1 34.6 N/A N/A



|   | BL              | E/GFSK, 1 Mbps | , BLE/GFSK Low | Channel, 2402 M | 1Hz   |         |
|---|-----------------|----------------|----------------|-----------------|-------|---------|
|   |                 |                | Number of      | Value           | Limit |         |
|   | <br>Pulse Width | Period         | Pulses         | (%)             | (%)   | Results |
| i | N/A             | N/A            | 5              | N/A             | N/A   | N/A     |

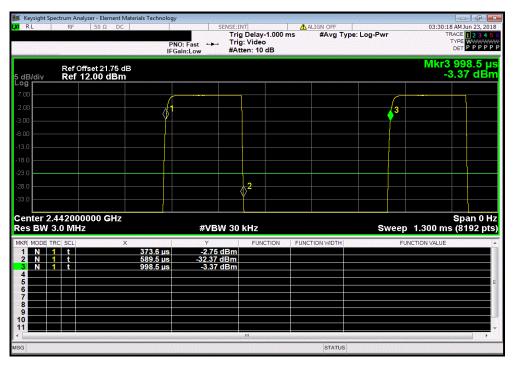


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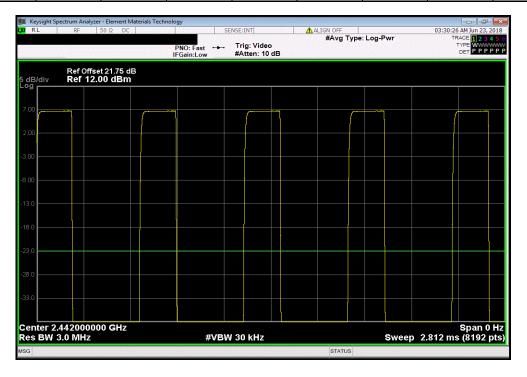


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| BLE/GFSK, 1 Mbps, BLE/GFSK Mid Channel, 2442 MHz |  |             |          |        |       |     |         |  |
|--|--|-------------|----------|--------|-------|-----|---------|--|
| Number of Value                                  |  |             |          |        | Limit |     |         |  |
|  |  | Pulse Width | Period   | Pulses | (%)   | (%) | Results |  |
|  |  | 215.9 us    | 624.9 us | 1      | 34.5  | N/A | N/A     |  |



|   | BLE/GFSK, 1 Mbps, BLE/GFSK Mid Channel, 2442 MHz |             |        |           |       |       |         |
|---|--|-------------|--------|-----------|-------|-------|---------|
|   |  |             |        | Number of | Value | Limit |         |
|   |  | Pulse Width | Period | Pulses    | (%)   | (%)   | Results |
| l |  | N/A         | N/A    | 5         | N/A   | N/A   | N/A     |



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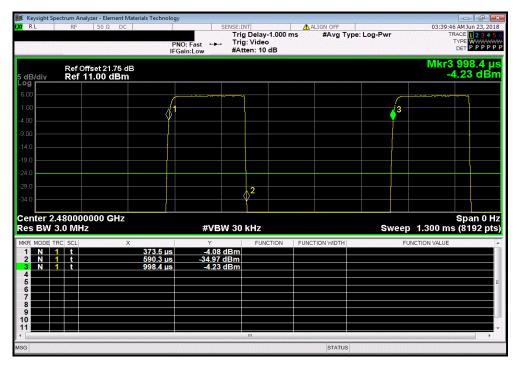
TbtTx 2017.12.14

BLE/GFSK, 1 Mbps, BLE/GFSK High Channel, 2480 MHz

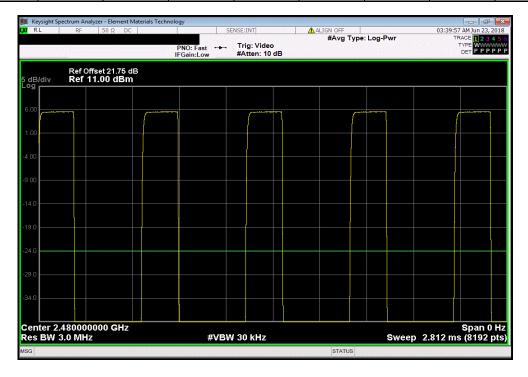
Number of Value Limit

Pulse Width Period Pulses (%) (%) Results

216.8 us 624.9 us 1 34.7 N/A N/A



| BLE/GFSK, 1 Mbps, BLE/GFSK High Channel, 2480 MHz |             |        |           |       |       |         |
|---|-------------|--------|-----------|-------|-------|---------|
|   |             |        | Number of | Value | Limit |         |
|   | Pulse Width | Period | Pulses    | (%)   | (%)   | Results |
|   | N/A         | N/A    | 5         | N/A   | N/A   | N/A     |

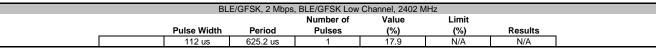


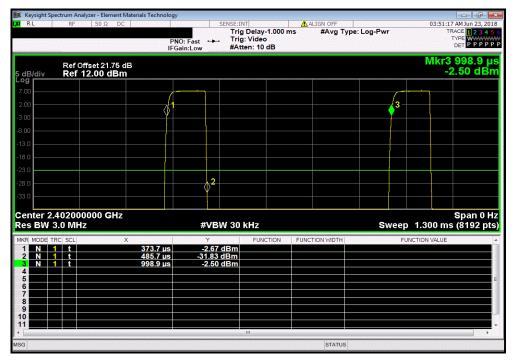
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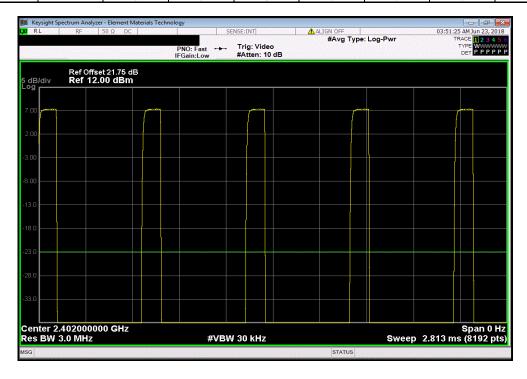
TbtTx 2017.12.14

BLE/GFSK, 2 Mbps, BLE/GFSK Low Channel, 2402 MHz Number of Value Limit





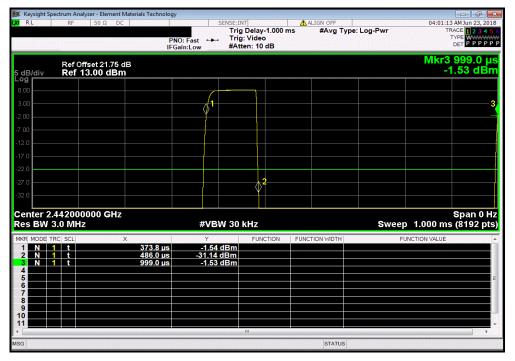
| BLE/GFSK, 2 Mbps, BLE/GFSK Low Channel, 2402 MHz |             |        |           |       |       |         |
|--|-------------|--------|-----------|-------|-------|---------|
|  |             |        | Number of | Value | Limit |         |
|  | Pulse Width | Period | Pulses    | (%)   | (%)   | Results |
|  | N/A         | N/A    | 5         | N/A   | N/A   | N/A     |



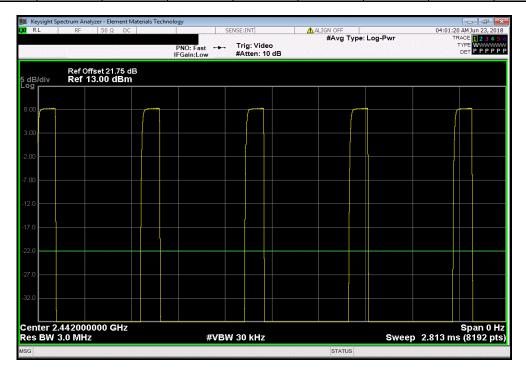
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| BLE/GFSK, 2 Mbps, BLE/GFSK Mid Channel, 2442 MHz |                       |             |          |        |      |     |         |  |
|--|-----------------------|-------------|----------|--------|------|-----|---------|--|
|  | Number of Value Limit |             |          |        |      |     |         |  |
|  |                       | Pulse Width | Period   | Pulses | (%)  | (%) | Results |  |
|  |                       | 112.2 us    | 625.2 us | 1      | 17.9 | N/A | N/A     |  |



|   | BLE/GFSK, 2 Mbps, BLE/GFSK Mid Channel, 2442 MHz |             |        |           |       |       |         |
|---|--|-------------|--------|-----------|-------|-------|---------|
|   |  |             |        | Number of | Value | Limit |         |
|   |  | Pulse Width | Period | Pulses    | (%)   | (%)   | Results |
| l |  | N/A         | N/A    | 5         | N/A   | N/A   | N/A     |



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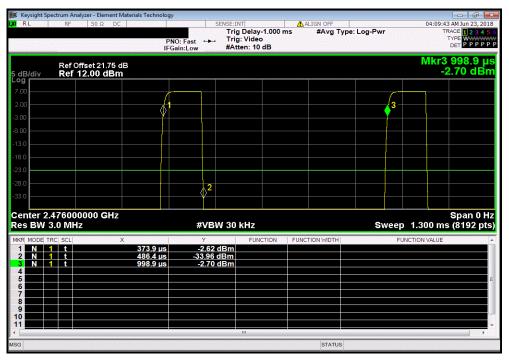
TbtTx 2017.12.14

BLE/GFSK, 2 Mbps, BLE/GFSK High Channel, 2480 MHz

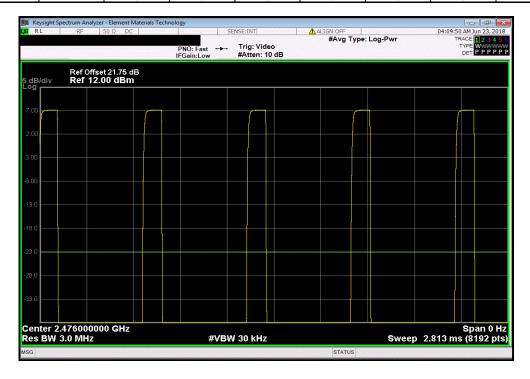
Number of Value Limit

Pulse Width Period Pulses (%) (%) Results

112.5 us 625 us 1 18 N/A N/A



|   | BLE/GFSK, 2 Mbps, BLE/GFSK High Channel, 2480 MHz |        |           |       |       |         |  |
|---|---|--------|-----------|-------|-------|---------|--|
|   |   |        | Number of | Value | Limit |         |  |
|   | <br>Pulse Width                                   | Period | Pulses    | (%)   | (%)   | Results |  |
| İ | N/A   | N/A    | 5         | N/A   | N/A   | N/A     |  |



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Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

#### **TEST EQUIPMENT**

| Description                  | Manufacturer       | Model           | ID  | Last Cal. | Cal. Due  |
|------------------------------|--------------------|-----------------|-----|-----------|-----------|
| Generator - Signal           | Agilent            | E4422B          | TGQ | 15-Mar-18 | 15-Mar-21 |
| Cable                        | ESM Cable Corp.    | TTBJ141 KMKM-72 | MNU | 15-Mar-18 | 15-Mar-19 |
| Attenuator                   | S.M. Electronics   | SA26B-20        | RFW | 13-Feb-18 | 13-Feb-19 |
| Block - DC                   | Fairview Microwave | SD3379          | AMI | 12-Sep-17 | 12-Sep-18 |
| Analyzer - Spectrum Analyzer | Keysight           | N9010A          | AFN | 27-Apr-18 | 27-Apr-19 |

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was set to the channels and modes listed in the datasheet.

The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.0% occupied bandwidth was also measured at the same time which can be needed during Output Power depending on the applicable method.

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|                 |                              |              |         |                  |                   | TbtTx 2017.12.14 | XMit 2017.12.13 |
|-----------------|------------------------------|--------------|---------|------------------|-------------------|------------------|-----------------|
| EU1             | : Multi-Function Accessor    | У            |         |                  | Work Order:       | STAK0117         |                 |
| Serial Numbe    | r: 182010052A                |              |         |                  |                   | 22-Jun-18        |                 |
| Custome         | r: Starkey Laboratories, Inc | c.           |         |                  | Temperature:      | 22.1 °C          |                 |
| Attendees       | : Charlie Esch               |              |         |                  | Humidity:         | 53.9% RH         |                 |
| Projec          | t: None                      |              |         |                  | Barometric Pres.: | 1015 mbar        |                 |
| Tested by       | /: Dustin Sparks             |              | Power:  | Battery          | Job Site:         | MN08             |                 |
| TEST SPECIFICA  | TIONS                        |              |         | Test Method      |                   |                  |                 |
| FCC 15.247:2018 |                              |              |         | ANSI C63.10:2013 |                   |                  |                 |
|                 |                              |              |         |                  |                   |                  |                 |
| COMMENTS        |                              |              |         |                  |                   |                  |                 |
| None            |                              |              |         |                  |                   |                  |                 |
|                 |                              |              |         |                  |                   |                  |                 |
|                 |                              |              |         |                  |                   |                  |                 |
| DEVIATIONS FRO  | OM TEST STANDARD             |              |         |                  |                   |                  |                 |
| None            |                              |              |         |                  |                   |                  |                 |
|                 |                              |              | 0 11    | ) -              |                   |                  |                 |
| Configuration # | 4                            |              | Dustins | Dards            |                   |                  |                 |
|                 |                              | Signature    |         | 9/               |                   |                  |                 |
|                 |                              |              |         |                  |                   | Limit            |                 |
|                 |                              |              |         |                  | Value             | (≥)              | Result          |
| BLE/GFSK, 1 Mbp | S                            |              |         |                  |                   |                  |                 |
|                 | BLE/GFSK Low Channel, 2      | 2402 MHz     |         |                  | 705.017 kHz       | 500 kHz          | Pass            |
|                 | BLE/GFSK Mid Channel, 2      | 2442 MHz     |         |                  | 669.049 kHz       | 500 kHz          | Pass            |
|                 | BLE/GFSK High Channel,       |              |         |                  | 682.649 kHz       | 500 kHz          | Pass            |
| BLE/GFSK, 2 Mbp |                              |              |         |                  |                   |                  |                 |
| . , .,          | BLE/GFSK Low Channel, 2      | 2402 MHz     |         |                  | 1,224 MHz         | 500 kHz          | Pass            |
|                 | BLE/GFSK Mid Channel, 2      |              |         |                  | 1.218 MHz         | 500 kHz          | Pass            |
|                 | BLE/GFSK High Channel,       |              |         |                  | 1.222 MHz         | 500 kHz          | Pass            |
|                 | bee/or ore riight channel,   | 2400 IVII IZ |         |                  | 1.222 WII IZ      | 300 KI IZ        | 1 433           |

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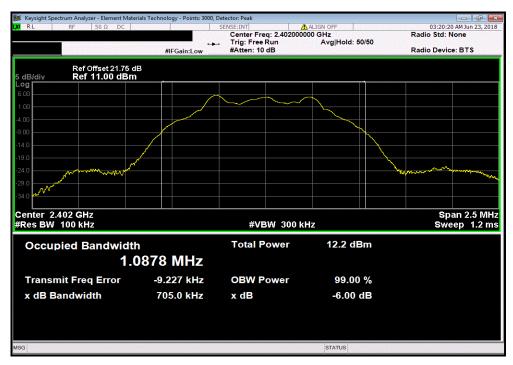
TbtTx 2017.12.14

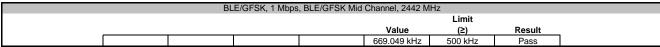
BLE/GFSK, 1 Mbps, BLE/GFSK Low Channel, 2402 MHz

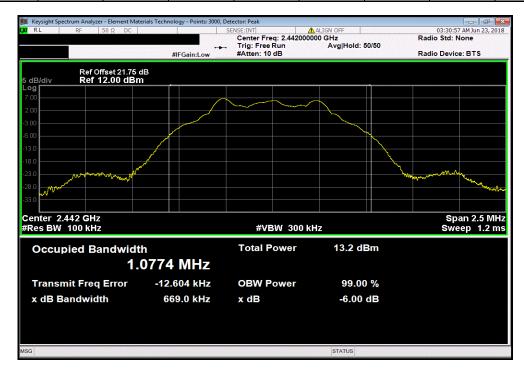
Limit

Value
(2) Result

705.017 kHz 500 kHz Pass







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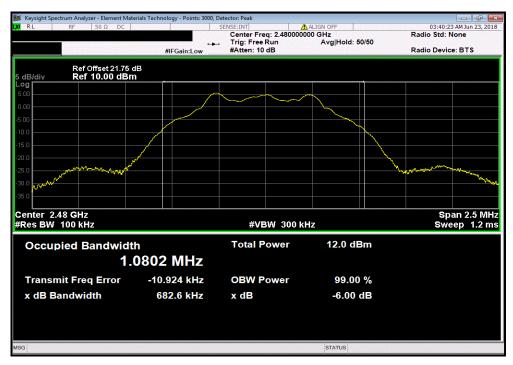


BLE/GFSK, 1 Mbps, BLE/GFSK High Channel, 2480 MHz

Limit

Value (2) Result

682.649 kHz 500 kHz Pass







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BLE/GFSK, 2 Mbps, BLE/GFSK Mid Channel, 2442 MHz

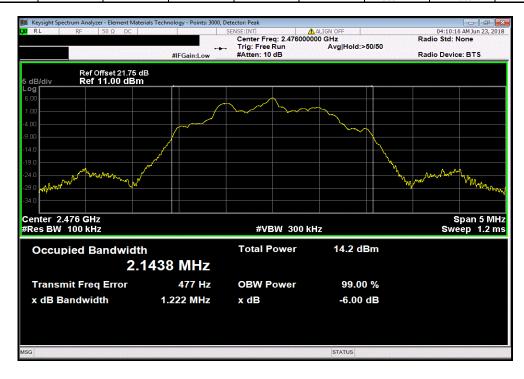
Limit

Value (2) Result

1.218 MHz 500 kHz Pass







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Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

#### **TEST EQUIPMENT**

| Description                  | Manufacturer       | Model           | ID  | Last Cal. | Cal. Due  |
|------------------------------|--------------------|-----------------|-----|-----------|-----------|
| Generator - Signal           | Agilent            | E4422B          | TGQ | 15-Mar-18 | 15-Mar-21 |
| Cable                        | ESM Cable Corp.    | TTBJ141 KMKM-72 | MNU | 15-Mar-18 | 15-Mar-19 |
| Attenuator                   | S.M. Electronics   | SA26B-20        | RFW | 13-Feb-18 | 13-Feb-19 |
| Block - DC                   | Fairview Microwave | SD3379          | AMI | 12-Sep-17 | 12-Sep-18 |
| Analyzer - Spectrum Analyzer | Keysight           | N9010A          | AFN | 27-Apr-18 | 27-Apr-19 |

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum.

Prior to measuring peak transmit power the DTS bandwidth (B) was measured.

The method found in ANSI C63.10:2013 Section 11.9.1.1 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio.

De Facto EIRP Limit: The EUT meets the de facto EIRP limit of +36 dBm.



| COMMENTS None  DEVIATIONS FROM TEST STANDARD   |                       |                        |             |        |                  |                   | TbtTx 2017.12.1 | 4 XMit 2017.12.13 |
|--|-----------------------|------------------------|-------------|--------|------------------|-------------------|-----------------|-------------------|
| Customer   Starkey Laboratories, Inc.   Temperature:   2.1 °C     Attendess   Charlie Esch   Humidity:   53.9 % RH     Project:   None   Battery   Barometric Press:   1015 mbar     Tested by:   Dustin Sparks   Power:   Battery   Job Site:   MN08     Test SPECIFICATIONS   Test Method     FCC 15.247:2018   ANSI C63.10:2013     COMMENTS   None   |                       |                        | ry          |        |                  |                   |                 |                   |
| Attendees: Charlie Esch   Humidity:  | Serial Number:        | 182010052A             |             |        |                  |                   |                 |                   |
| Project:   None  |                       |                        | c.          |        |                  |                   |                 |                   |
| Tested by:   Dustin Sparks   Power:   Battery   Job Site:   MN08   |                       |                        |             |        |                  |                   |                 |                   |
| Test Method   ANSI C63.10:2013   | Project:              | None                   |             |        |                  | Barometric Pres.: | 1015 mbar       |                   |
| ANSI C63.10:2013   COMMENTS  |                       |                        |             | Power: | Battery          | Job Site:         | MN08            |                   |
| COMMENTS   None  | TEST SPECIFICAT       | IONS                   |             |        | Test Method      |                   |                 |                   |
| None   Signature   | FCC 15.247:2018       |                        |             |        | ANSI C63.10:2013 |                   |                 |                   |
| None   Signature   |                       |                        |             |        |                  |                   |                 |                   |
| DEVIATIONS FROM TEST STANDARD  | COMMENTS              |                        |             |        |                  |                   |                 |                   |
| None   Configuration #   4   Signature   Value   Configuration #   Configurati   | None                  |                        |             |        |                  |                   |                 |                   |
| None   Configuration #   4   Signature   Value   Configuration #   Configurati   |                       |                        |             |        |                  |                   |                 |                   |
| None   Configuration #   4   Signature   Value   Configuration #   Configurati   |                       |                        |             |        |                  |                   |                 |                   |
| Configuration #   4   Signature   Value   Color   Result   | <b>DEVIATIONS FRO</b> | M TEST STANDARD        |             |        |                  |                   |                 |                   |
| Signature   Limit   Value   C,   Result  | None                  |                        |             |        |                  |                   |                 |                   |
| Signature   Limit   Value   C,   Result  | 0                     |                        |             | 22'    | ) 1              |                   |                 |                   |
| Limit   Value   Cr.   Result   | Configuration #       | 4                      |             | Justin | Spares           |                   |                 |                   |
| Nation   N   |                       |                        | Signature   |        | (                |                   |                 |                   |
| BLE/GFSK, 1 Mbps  BLE/GFSK Low Channel, 2402 MHz BLE/GFSK Mid Channel, 2442 MHz BLE/GFSK Mid Channel, 2442 MHz BLE/GFSK High Channel, 2480 MHz BLE/GFSK, 2 Mbps  BLE/GFSK, 2 Mbps BLE/GFSK Low Channel, 2402 MHz BLE/GFSK Mid Channel, 2402 MHz At the control of the |                       |                        |             |        |                  |                   |                 |                   |
| BLE/GFSK Low Channel, 2402 MHz       3.811 mW       1 W       Pass         BLE/GFSK Mid Channel, 2442 MHz       4.797 mW       1 W       Pass         BLE/GFSK High Channel, 2480 MHz       3.651 mW       1 W       Pass         BLE/GFSK, 2 Mbps       8       BLE/GFSK Low Channel, 2402 MHz       5.927 mW       1 W       Pass         BLE/GFSK Mid Channel, 2442 MHz       7.344 mW       1 W       Pass   | DI EKSESIK A MI       |                        |             |        |                  | Value             | (<)             | Result            |
| BLE/GFSK Mid Channel, 2442 MHz       4.797 mW       1 W       Pass         BLE/GFSK High Channel, 2480 MHz       3.651 mW       1 W       Pass         BLE/GFSK, 2 Mbps         BLE/GFSK Low Channel, 2402 MHz       5.927 mW       1 W       Pass         BLE/GFSK Mid Channel, 2442 MHz       7.344 mW       1 W       Pass  | BLE/GFSK, 1 Mbps      |                        | 0.400.141.1 |        |                  | 0.014             | 4.147           | D                 |
| BLE/GFSK High Channel, 2480 MHz         3.651 mW         1 W         Pass           BLE/GFSK, 2 Mbps         8         5.927 mW         1 W         Pass           BLE/GFSK Low Channel, 2402 MHz         5.927 mW         1 W         Pass           BLE/GFSK Mid Channel, 2442 MHz         7.344 mW         1 W         Pass   |                       |                        |             |        |                  |                   |                 |                   |
| BLE/GFSK, 2 Mbps           BLE/GFSK Low Channel, 2402 MHz         5.927 mW         1 W         Pass           BLE/GFSK Mid Channel, 2442 MHz         7.344 mW         1 W         Pass   |                       |                        |             |        |                  |                   |                 |                   |
| BLE/GFSK Low Channel, 2402 MHz         5.927 mW         1 W         Pass           BLE/GFSK Mid Channel, 2442 MHz         7.344 mW         1 W         Pass  | DI E/0E0// 4.1/       |                        | 2480 MHz    |        |                  | 3.651 mW          | 1 W             | Pass              |
| BLE/GFSK Mid Channel, 2442 MHz 7.344 mW 1 W Pass   | BLE/GFSK, 2 Mbps      |                        |             |        |                  |                   |                 | _                 |
|  |                       |                        |             |        |                  |                   |                 |                   |
| BLE/GFSK High Channel, 2480 MHz 5.66 mW 1 W Pass   |                       |                        |             |        |                  |                   |                 |                   |
|  |                       | BLE/GFSK High Channel, | 2480 MHz    |        |                  | 5.66 mW           | 1 W             | Pass              |

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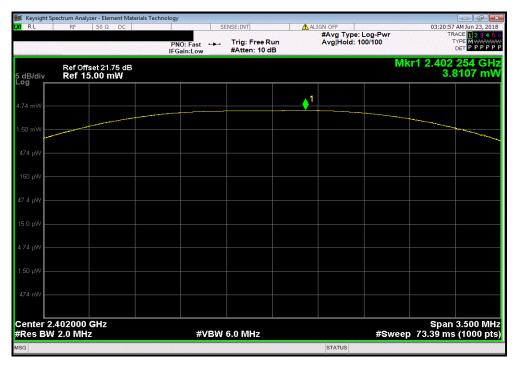


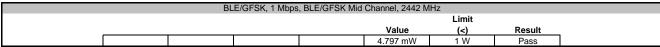
BLE/GFSK, 1 Mbps, BLE/GFSK Low Channel, 2402 MHz

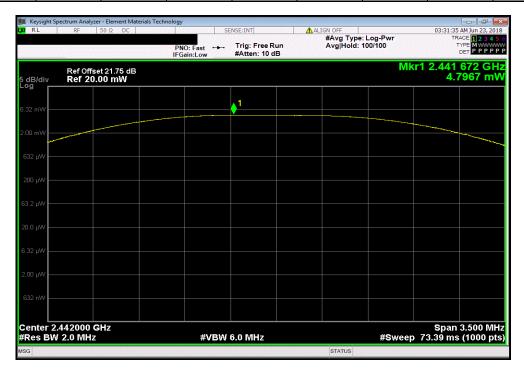
Limit

Value (<) Result

3.811 mW 1 W Pass







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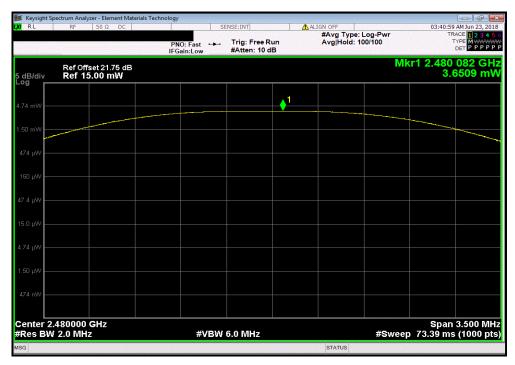
TbtTx 2017.12.14

BLE/GFSK, 1 Mbps, BLE/GFSK High Channel, 2480 MHz

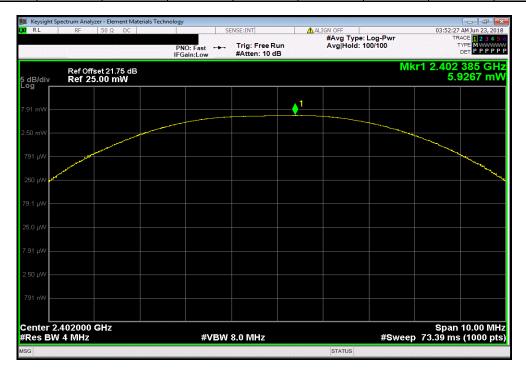
Limit

Value (-) Result

3.651 mW 1 W Pass







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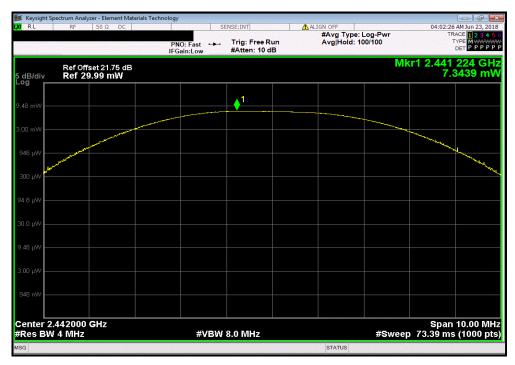


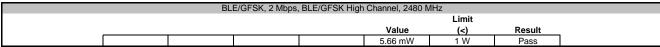
BLE/GFSK, 2 Mbps, BLE/GFSK Mid Channel, 2442 MHz

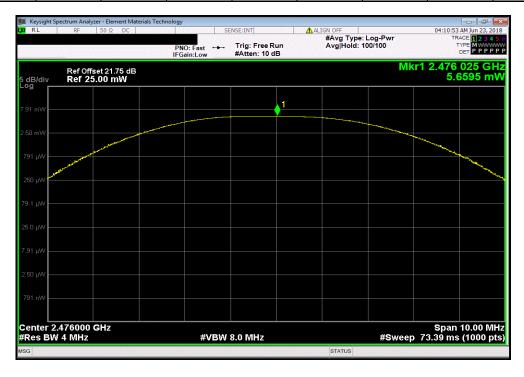
Limit

Value (<) Result

7.344 mW 1 W Pass







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Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

#### **TEST EQUIPMENT**

| Description                  | Manufacturer       | Model           | ID  | Last Cal. | Cal. Due  |
|------------------------------|--------------------|-----------------|-----|-----------|-----------|
| Generator - Signal           | Agilent            | E4422B          | TGQ | 15-Mar-18 | 15-Mar-21 |
| Cable                        | ESM Cable Corp.    | TTBJ141 KMKM-72 | MNU | 15-Mar-18 | 15-Mar-19 |
| Attenuator                   | S.M. Electronics   | SA26B-20        | RFW | 13-Feb-18 | 13-Feb-19 |
| Block - DC                   | Fairview Microwave | SD3379          | AMI | 12-Sep-17 | 12-Sep-18 |
| Analyzer - Spectrum Analyzer | Keysight           | N9010A          | AFN | 27-Apr-18 | 27-Apr-19 |

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

Per the procedure outlined in ANSI C63.10 the peak power spectral density was measured in a 3 kHz RBW.



|                       |                             |            |         |                  |                   | TbtTx 2017.12.14 | XMit 2017.12.13 |
|-----------------------|-----------------------------|------------|---------|------------------|-------------------|------------------|-----------------|
| EUT                   | : Multi-Function Accessor   | ry         |         |                  | Work Order:       | STAK0117         |                 |
|                       | : 182010052A                |            |         |                  |                   | 22-Jun-18        |                 |
| Customer              | : Starkey Laboratories, Inc | c.         |         |                  | Temperature:      | 22.2 °C          |                 |
| Attendees             | : Charlie Esch              |            |         |                  | Humidity:         | 54% RH           |                 |
| Project               | :: None                     |            |         |                  | Barometric Pres.: | 1015 mbar        |                 |
| Tested by             | : Dustin Sparks             |            | Power:  | Battery          | Job Site:         | MN08             |                 |
| TEST SPECIFICA        | TIONS                       |            |         | Test Method      |                   |                  |                 |
| FCC 15.247:2018       |                             |            |         | ANSI C63.10:2013 |                   |                  |                 |
|                       |                             |            |         |                  |                   |                  |                 |
| COMMENTS              |                             |            |         |                  |                   |                  |                 |
| None                  |                             |            |         |                  |                   |                  |                 |
|                       |                             |            |         |                  |                   |                  |                 |
|                       |                             |            |         |                  |                   |                  |                 |
| <b>DEVIATIONS FRO</b> | M TEST STANDARD             |            |         |                  |                   |                  |                 |
| None                  |                             |            |         |                  |                   |                  |                 |
| 0                     |                             |            | 2       | ) 1              |                   |                  |                 |
| Configuration #       | 4                           |            | Dustins | Spares           |                   |                  |                 |
|                       |                             | Signature  |         | (                |                   |                  |                 |
|                       |                             |            |         |                  | Value             | Limit            |                 |
|                       |                             |            |         |                  | dBm/3kHz          | < dBm/3kHz       | Results         |
| BLE/GFSK, 1 Mbp       |                             |            |         |                  |                   |                  |                 |
|                       | BLE/GFSK Low Channel,       |            |         |                  | -9.828            | 8                | Pass            |
|                       | BLE/GFSK Mid Channel, 2     |            |         |                  | -8.684            | 8                | Pass            |
|                       | BLE/GFSK High Channel,      | , 2480 MHz |         |                  | -9.88             | 8                | Pass            |
| BLE/GFSK, 2 Mbp       |                             |            |         |                  |                   |                  |                 |
|                       | BLE/GFSK Low Channel,       |            |         |                  | -11.91            | 8                | Pass            |
|                       | BLE/GFSK Mid Channel, 2     | 2442 MHz   |         |                  | -10.994           | 8                | Pass            |
|                       | BLE/GFSK High Channel,      | , 2480 MHz |         |                  | -12.12            | 8                | Pass            |
|                       |                             |            |         |                  |                   |                  |                 |

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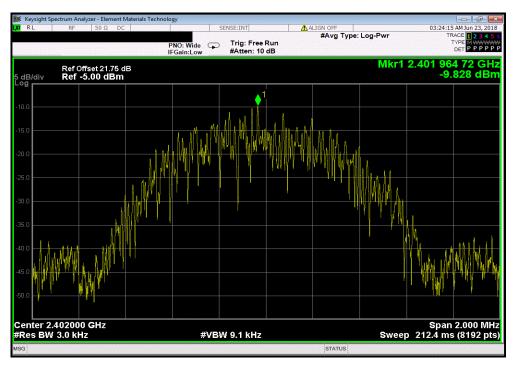
TbtTx 2017.12.14

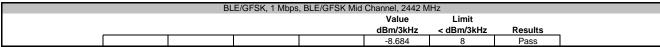
BLE/GFSK, 1 Mbps, BLE/GFSK Low Channel, 2402 MHz

Value Limit

dBm/3kHz < dBm/3kHz Results

-9.828 8 Pass







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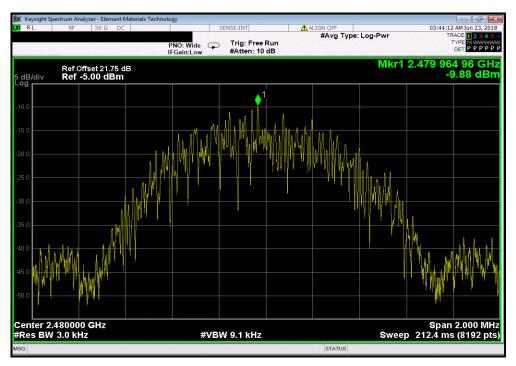


BLE/GFSK, 1 Mbps, BLE/GFSK High Channel, 2480 MHz

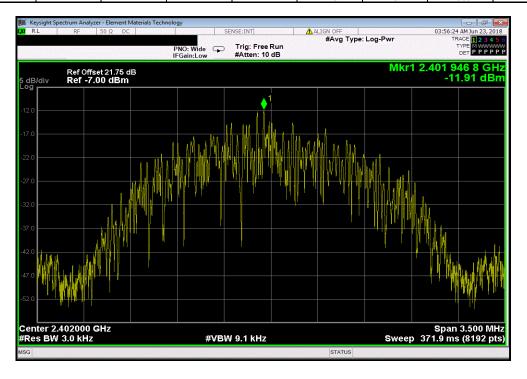
Value Limit

dBm/3kHz < dBm/3kHz Results

-9.88 8 Pass







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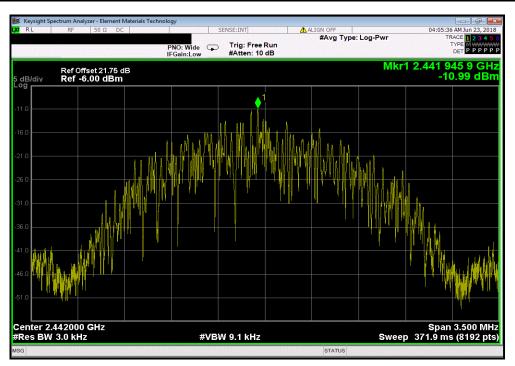


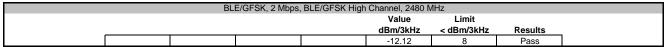
BLE/GFSK, 2 Mbps, BLE/GFSK Mid Channel, 2442 MHz

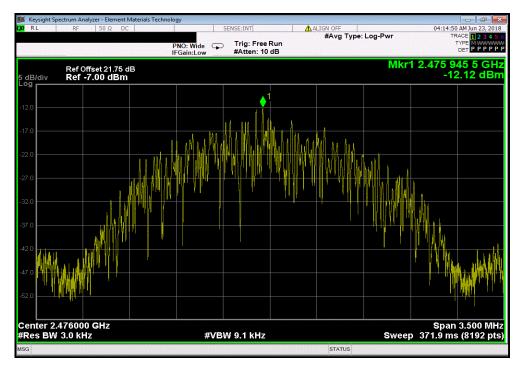
Value Limit

dBm/3kHz < dBm/3kHz Results

-10.994 8 Pass







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Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

#### **TEST EQUIPMENT**

| Description                  | Manufacturer       | Model           | ID  | Last Cal. | Cal. Due  |
|------------------------------|--------------------|-----------------|-----|-----------|-----------|
| Generator - Signal           | Agilent            | E4422B          | TGQ | 15-Mar-18 | 15-Mar-21 |
| Cable                        | ESM Cable Corp.    | TTBJ141 KMKM-72 | MNU | 15-Mar-18 | 15-Mar-19 |
| Attenuator                   | S.M. Electronics   | SA26B-20        | RFW | 13-Feb-18 | 13-Feb-19 |
| Block - DC                   | Fairview Microwave | SD3379          | AMI | 12-Sep-17 | 12-Sep-18 |
| Analyzer - Spectrum Analyzer | Keysight           | N9010A          | AFN | 27-Apr-18 | 27-Apr-19 |

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.



|                       |                            |            |          |                 |                   | TbtTx 2017.12.14 | XMit 2017.12. |
|-----------------------|----------------------------|------------|----------|-----------------|-------------------|------------------|---------------|
| EUT                   | : Multi-Function Accesso   | ry         |          |                 | Work Order:       | STAK0117         | ,             |
| Serial Number         | : 182010052A               |            |          |                 | Date:             | 22-Jun-18        |               |
| Customer              | : Starkey Laboratories, In | ic.        |          |                 | Temperature:      | 22.1 °C          |               |
| Attendees             | : Charlie Esch             |            |          |                 | Humidity:         | 54% RH           |               |
| Project               | :: None                    |            |          |                 | Barometric Pres.: | 1015 mbar        |               |
| Tested by             | : Dustin Sparks            |            | Power: E | Battery         | Job Site:         | MN08             |               |
| TEST SPECIFICA        | TIONS                      |            | T        | est Method      |                   |                  |               |
| FCC 15.247:2018       |                            |            | P        | NSI C63.10:2013 |                   |                  |               |
|                       |                            |            |          |                 |                   |                  |               |
| COMMENTS              |                            |            |          |                 |                   |                  |               |
| None                  |                            |            |          |                 |                   |                  |               |
|                       |                            |            |          |                 |                   |                  |               |
|                       |                            |            |          |                 |                   |                  |               |
| <b>DEVIATIONS FRO</b> | M TEST STANDARD            |            |          |                 |                   |                  |               |
| None                  |                            |            |          |                 |                   |                  |               |
|                       |                            |            | -0 01 0  |                 |                   |                  |               |
| Configuration #       | 4                          |            | Dustin   | pares           |                   |                  |               |
|                       |                            | Signature  |          | 7               |                   |                  |               |
|                       |                            |            |          |                 | Value             | Limit            |               |
|                       |                            |            |          |                 | (dBc)             | ≤ (dBc)          | Result        |
| BLE/GFSK, 1 Mbp       |                            |            |          |                 |                   |                  |               |
|                       | BLE/GFSK Low Channel,      | 2402 MHz   |          |                 | -38.18            | -20              | Pass          |
|                       | BLE/GFSK High Channel      | , 2480 MHz |          |                 | -45.05            | -20              | Pass          |
| BLE/GFSK, 2 Mbp       | s -                        |            |          |                 |                   |                  |               |
|                       | BLE/GFSK Low Channel,      | 2402 MHz   |          |                 | -27.3             | -20              | Pass          |
|                       | BLE/GFSK High Channel      | . 2480 MHz |          |                 | -48.85            | -20              | Pass          |

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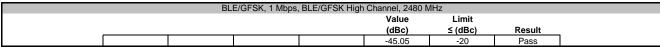


BLE/GFSK, 1 Mbps, BLE/GFSK Low Channel, 2402 MHz

Value Limit
(dBc) ≤ (dBc) Result

-38.18 -20 Pass







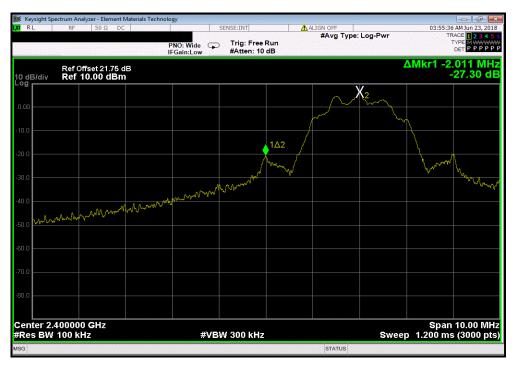
Report No. STAK0117.1 59/71

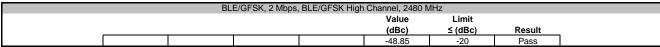


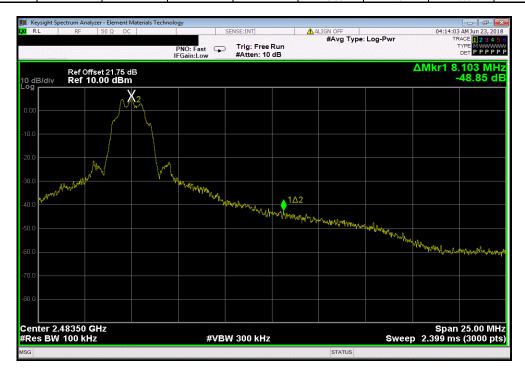
BLE/GFSK, 2 Mbps, BLE/GFSK Low Channel, 2402 MHz

Value Limit
(dBc) ≤ (dBc) Result

-27.3 -20 Pass







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XMit 2017.12.13

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

#### **TEST EQUIPMENT**

| Description                  | Manufacturer       | Model           | ID  | Last Cal. | Cal. Due  |
|------------------------------|--------------------|-----------------|-----|-----------|-----------|
| Generator - Signal           | Agilent            | E4422B          | TGQ | 15-Mar-18 | 15-Mar-21 |
| Cable                        | ESM Cable Corp.    | TTBJ141 KMKM-72 | MNU | 15-Mar-18 | 15-Mar-19 |
| Attenuator                   | S.M. Electronics   | SA26B-20        | RFW | 13-Feb-18 | 13-Feb-19 |
| Block - DC                   | Fairview Microwave | SD3379          | AMI | 12-Sep-17 | 12-Sep-18 |
| Analyzer - Spectrum Analyzer | Keysight           | N9010A          | AFN | 27-Apr-18 | 27-Apr-19 |

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

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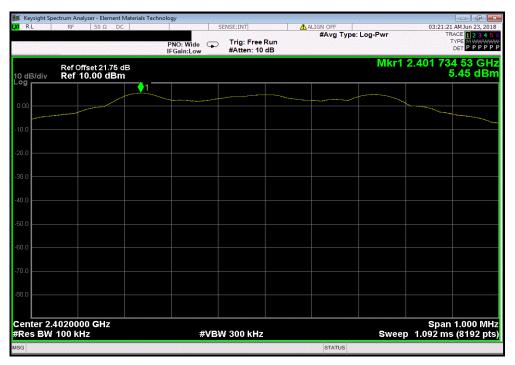


|                  |   |  |   | TbtTx 2017.12.14   | XMit 2017.12.  |
|------------------|---|--|---|--|--|
| EUT:             | Multi-Function Accessory  |  | Work Order:   | STAK0117   |  |
| Serial Number:   | 182010052A  |  | Date:   | 22-Jun-18  |  |
| Customer:        | Starkey Laboratories, Inc.  |  | Temperature:  | 22.2 °C  |  |
| Attendees:       | Charlie Esch  |  | Humidity:   | 54% RH   |  |
| Project:         | None  |  | Barometric Pres.:   | 1015 mbar  |  |
| Tested by:       | Dustin Sparks   | Power: Battery   | Job Site:   | MN08   |  |
| TEST SPECIFICAT  | TONS  | Test Method  |   |  |  |
| FCC 15.247:2018  |   | ANSI C63.10:   | 2013  |  |  |
|                  |   |  |   |  |  |
| COMMENTS         |   |  |   |  |  |
| None             |   |  |   |  |  |
|                  |   |  |   |  |  |
| DEVIATIONS FROM  | M TEST STANDARD   |  |   |  |  |
| None             | 1201 0174127412   |  |   |  |  |
|                  |   | A 11 0 2   |   |  |  |
| Configuration #  | 4   | Dustin Sparl   | <b>♦</b>  |  |  |
|                  |   | Signature  |   | Limit  |  |
|                  |   | Frequenc<br>Range  | (dBc)   | Limit<br>≤ (dBc)   | Result   |
| BLE/GFSK, 1 Mbps |   | rungo  | (dD0)   | _ (ubc)  | resure   |
|                  | BLE/GFSK Low Channel, 2402 MHz  | Fundamen   | tal N/A   | N1/A   | N/A  |
|                  |   |  |   | N/A  | IN/A   |
|                  | BLE/GFSK Low Channel, 2402 MHz  | 30 MHz - 12.5  |   |  | Pass   |
|                  | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz  |  | 5 GHz -50.48  | N/A<br>-20<br>-20  |  |
|                  |   | 30 MHz - 12.5  | 6 GHz -50.48<br>6 GHz -56.76  | -20  | Pass   |
|                  | BLE/GFSK Low Channel, 2402 MHz  | 30 MHz - 12.5<br>12.5 GHz - 25   | GHz -50.48<br>GHz -56.76<br>tal N/A   | -20<br>-20   | Pass<br>Pass   |
|                  | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz  | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen   | 6 GHz -50.48<br>6 GHz -56.76<br>tal N/A<br>6 GHz -59.12   | -20<br>-20<br>N/A  | Pass<br>Pass<br>N/A  |
|                  | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz  | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5  | 6 GHz -50.48<br>6 GHz -56.76<br>tal N/A<br>6 GHz -59.12<br>6 GHz -57.78   | -20<br>-20<br>N/A<br>-20   | Pass<br>Pass<br>N/A<br>Pass  |
|                  | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz  | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>12.5 GHz - 26   | 6 GHz -50.48<br>6 GHz -56.76<br>tal N/A<br>6 GHz -59.12<br>6 GHz -57.78<br>tal N/A  | -20<br>-20<br>N/A<br>-20<br>-20  | Pass<br>Pass<br>N/A<br>Pass<br>Pass  |
|                  | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK High Channel, 2480 MHz   | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen   | 6 GHz -50.48<br>GHz -56.76<br>tal N/A<br>6 GHz -59.12<br>GHz -57.78<br>tal N/A<br>6 GHz -53.45  | -20<br>-20<br>N/A<br>-20<br>-20<br>N/A   | Pass<br>Pass<br>N/A<br>Pass<br>Pass<br>N/A   |
| BLE/GFSK, 2 Mbps | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz   | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5  | 6 GHz -50.48<br>GHz -56.76<br>tal N/A<br>6 GHz -59.12<br>GHz -57.78<br>tal N/A<br>6 GHz -53.45  | -20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20  | Pass<br>Pass<br>N/A<br>Pass<br>Pass<br>N/A<br>Pass                                   |
| BLE/GFSK, 2 Mbps | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz   | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5  | 6 GHz -50.48<br>6 GHz -56.76<br>tal N/A<br>6 GHz -59.12<br>6 GHz -57.78<br>tal N/A<br>6 GHz -53.45<br>6 GHz -53.45<br>6 GHz -56.44  | -20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20  | Pass<br>Pass<br>N/A<br>Pass<br>Pass<br>N/A<br>Pass                                   |
| BLE/GFSK, 2 Mbps | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz   | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>12.5 GHz - 25   | 6 GHz -50.48 6 GHz -56.76 tal N/A 6 GHz -59.12 6 GHz -57.78 tal N/A 6 GHz -53.45 6 GHz -53.45 6 GHz -56.44 tal N/A  | -20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20<br>-20   | Pass<br>Pass<br>N/A<br>Pass<br>Pass<br>N/A<br>Pass<br>Pass                           |
| BLE/GFSK, 2 Mbps | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK Low Channel, 2402 MHz   | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen   | 6 GHz -50.48<br>6 GHz -56.76<br>tal N/A<br>6 GHz -59.12<br>6 GHz -57.78<br>tal N/A<br>6 GHz -53.45<br>6 GHz -56.44<br>tal N/A   | -20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20<br>-20   | Pass<br>Pass<br>N/A<br>Pass<br>Pass<br>N/A<br>Pass<br>Pass                           |
| BLE/GFSK, 2 Mbps | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2440 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2400 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz   | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5  | 6 GHz -50.48  | -20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20<br>-20   | Pass<br>Pass<br>N/A<br>Pass<br>Pass<br>N/A<br>Pass<br>Pass                           |
| BLE/GFSK, 2 Mbps | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2400 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz   | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>Fundamen<br>30 MHz - 12.5<br>GHz - 25   | 6 GHz -50.48  | -20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20                             | Pass Pass N/A Pass Pass N/A Pass Pass N/A Pass Pass Pass                             |
| BLE/GFSK, 2 Mbps | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2440 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2400 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz   | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>Tundamen<br>30 MHz - 12.5<br>GHz - 25<br>Fundamen<br>30 GHz - 12.5<br>12.5 GHz - 25<br>Fundamen                       | 6 GHz -50.48 6 GHz -56.76 tal N/A 6 GHz -59.12 6 GHz -57.78 tal N/A 6 GHz -53.45 6 GHz -56.44 tal N/A 6 GHz -56.44 tal N/A 6 GHz -56.44 tal N/A 6 GHz -46.68 6 GHz -57.18 tal N/A                   | -20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20<br>-20<br>N/A               | Pass Pass N/A Pass Pass N/A Pass N/A Pass Pass N/A Pass N/A Pass Pass                |
| BLE/GFSK, 2 Mbps | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz   | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5                              | 6 GHz -50.48 6 GHz -56.76 tal N/A 6 GHz -59.12 6 GHz -57.78 tal N/A 6 GHz -53.45 6 GHz -53.45 6 GHz -53.45 6 GHz -56.44 tal N/A 6 GHz -46.68 6 GHz -57.18 tal N/A 6 GHz -57.18 tal N/A 6 GHz -58.49 | -20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20<br>-20 | Pass Pass N/A Pass           |
| BLE/GFSK, 2 Mbps | BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK High Channel, 2480 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Low Channel, 2402 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz<br>BLE/GFSK Mid Channel, 2442 MHz | 30 MHz - 12.5<br>12.5 GHz - 25<br>Fundamen<br>30 MHz - 12.5<br>Fundamen<br>30 MHz - 12.5 | 6 GHz -50.48 6 GHz -56.76 tal N/A 6 GHz -59.12 6 GHz -57.78 tal N/A 6 GHz -53.45 6 GHz -53.45 6 GHz -56.44 tal N/A 6 GHz -46.68 6 GHz -46.68 6 GHz -57.18 tal N/A 6 GHz -58.49 6 GHz -58.76 tal N/A | -20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20<br>-20<br>N/A<br>-20<br>-20 | Pass Pass N/A Pass Pass N/A Pass Pass N/A Pass Pass N/A Pass Pass Pass N/A Pass Pass |

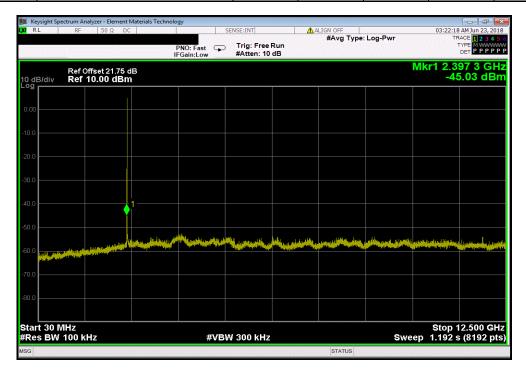
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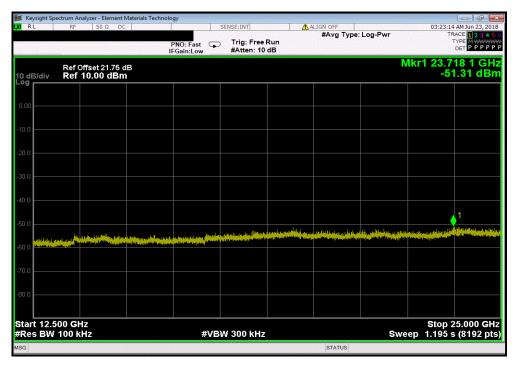
|   | BLE/GFSK, 1 Mbps, | BLE/GFSK Low | Channel, 2402 M | lHz     |        |
|---|-------------------|--------------|-----------------|---------|--------|
|   | Frequency         |              | Max Value       | Limit   |        |
| _ | Range             |              | (dBc)           | ≤ (dBc) | Result |
|   | 30 MHz - 12.5 GHz |              | -50.48          | -20     | Pass   |



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| BLE/GFSK, 1 Mb | s, BLE/GFSK Mid | Channel, 2442 M | Hz      |        |
|----------------|-----------------|-----------------|---------|--------|
| Frequency      |                 | Max Value       | Limit   |        |
| Range          |                 | (dBc)           | ≤ (dBc) | Result |
| Fundamental    |                 | N/A             | N/A     | N/A    |

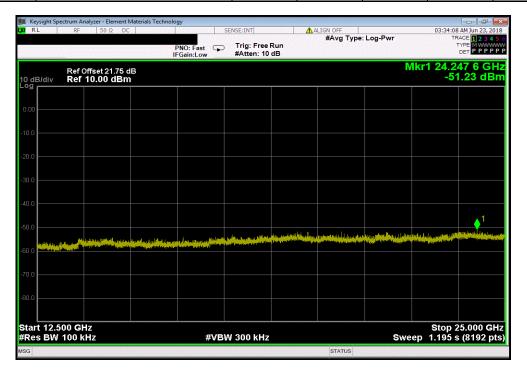


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|   | BLE/GFSK, 1 Mbps  | , BLE/GFSK Mid | Channel, 2442 M | Hz      |        |
|---|-------------------|----------------|-----------------|---------|--------|
|   | Frequency         |                | Max Value       | Limit   |        |
| _ | Range             |                | (dBc)           | ≤ (dBc) | Result |
| ĺ | 12.5 GHz - 25 GHz |                | -57.78          | -20     | Pass   |



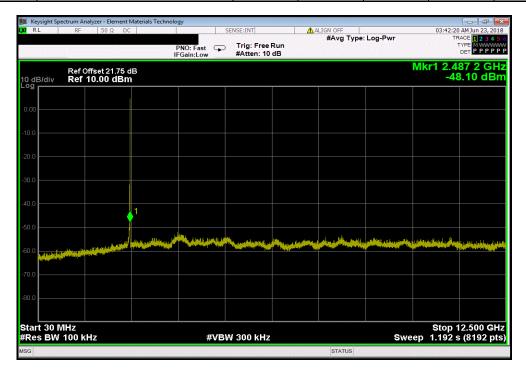
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| BLE/GFSK, 1 Mbps, | BLE/GFSK High | Channel, 2480 M | lHz     |        |
|-------------------|---------------|-----------------|---------|--------|
| Frequency         |               | Max Value       | Limit   |        |
| Range             |               | (dBc)           | ≤ (dBc) | Result |
| 30 MHz - 12.5 GHz |               | -53.45          | -20     | Pass   |



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 BLE/GFSK, 1 Mbps, BLE/GFSK High Channel, 2480 MHz

 Frequency
 Max Value
 Limit
 Result

 Range
 (dBc)
 ≤ (dBc)
 Result

 12.5 GHz - 25 GHz
 -56.44
 -20
 Pass

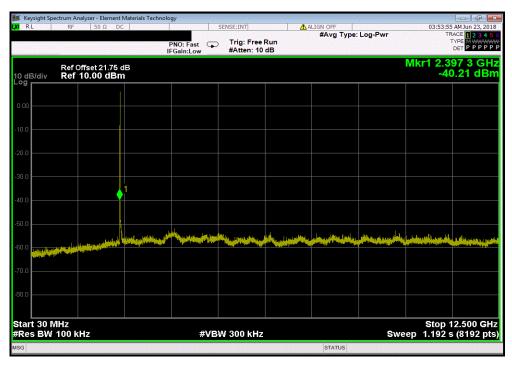




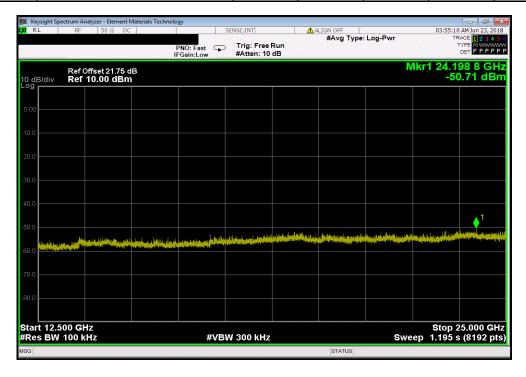


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|   | BLE/GFSK, 2 Mbps  | BLE/GFSK Low | Channel, 2402 M | lHz     |        |
|---|-------------------|--------------|-----------------|---------|--------|
|   | Frequency         |              | Max Value       | Limit   |        |
| _ | Range             |              | (dBc)           | ≤ (dBc) | Result |
| ĺ | 12.5 GHz - 25 GHz |              | -57.18          | -20     | Pass   |



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BLE/GFSK, 2 Mbps, BLE/GFSK Mid Channel, 2442 MHz

Frequency

Range

(dBc)

Fundamental

N/A

N/A

N/A

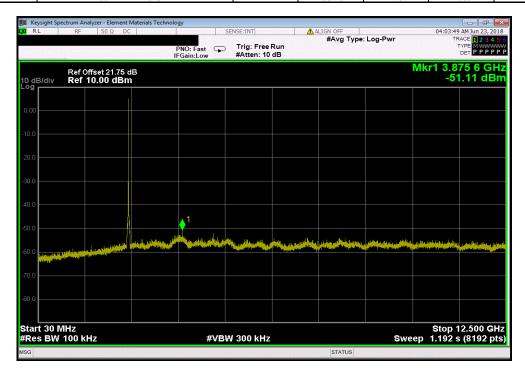
N/A

N/A

N/A

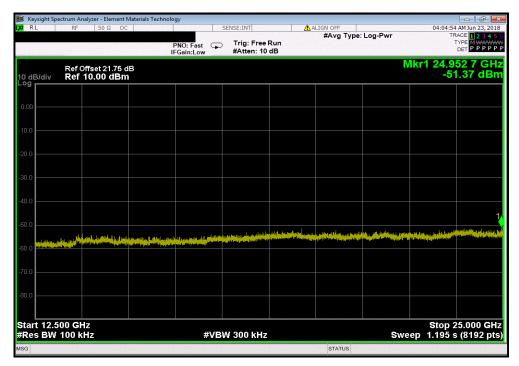


| BLE/GFSK, 2 Mk    | ps, BLE/GFSK Mid | Channel, 2442 M | Hz      |        |
|-------------------|------------------|-----------------|---------|--------|
| Frequency         |                  | Max Value       | Limit   |        |
| Range             |                  | (dBc)           | ≤ (dBc) | Result |
| 30 MHz - 12.5 GHz |                  | -58.49          | -20     | Pass   |



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| BLE/GFSK, 2 Mbps, BI | LE/GFSK High Channel, 2480 M | ИHz     |        |
|----------------------|------------------------------|---------|--------|
| Frequency            | Max Value                    | Limit   |        |
| Range                | (dBc)                        | ≤ (dBc) | Result |
| Fundamental          | N/A                          | N/A     | N/A    |



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BLE/GFSK, 2 Mbps, BLE/GFSK High Channel, 2480 MHz

Frequency

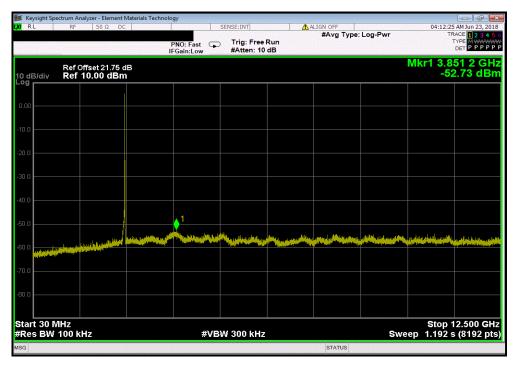
Max Value

Limit

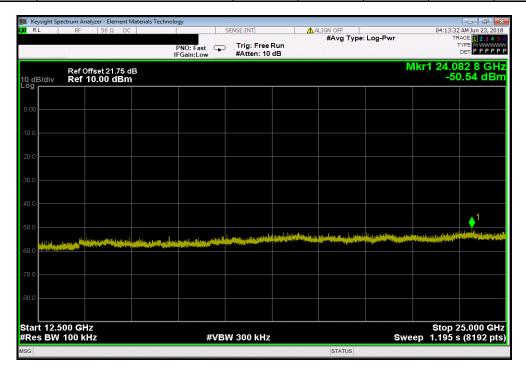
Range
(dBc) ≤ (dBc)

Result

30 MHz - 12.5 GHz
-58.97
-20
Pass



| BLE/GFSK, 2 Mbps, BLE/GFSK High Channel, 2480 MHz |                   |  |           |         |        |
|---|-------------------|--|-----------|---------|--------|
|   | Frequency         |  | Max Value | Limit   |        |
| _   | Range             |  | (dBc)     | ≤ (dBc) | Result |
| ĺ   | 12.5 GHz - 25 GHz |  | -56.78    | -20     | Pass   |



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