

## **Boston Scientific Corporation**

Ingenio 2

FCC 95I:2018 MedRadio Report # BSTN0835



TESTING



NVLAP LAB CODE: 200881-0





### Last Date of Test: May 22, 2018 Boston Scientific Corporation Model: Ingenio 2

## **Radio Equipment Testing**

| Standards     |                  |
|---------------|------------------|
| Specification | Method           |
| FCC 95I:2018  | ANSI C63.26:2015 |

Results

| Method                     | Test Description             | Applied | Results | Comments |
|----------------------------|------------------------------|---------|---------|----------|
| ANSI C63.26 5.4.3          | Emission Bandwidth           | Yes     | Pass    |          |
| FCC 95.2579(a)(1)          | Emission Mask                | Yes     | Pass    |          |
| ANSI C63.26 5.2.3.3        | Conducted Output Power       | Yes     | Pass    |          |
| ANSI C63.26 5.6            | Frequency Stability          | Yes     | Pass    |          |
| ANSI C63.26 5.5.4          | Spurious Radiated Emissions  | Yes     | Pass    |          |
| ANSI C63.26 5.7            | Spurious Conducted Emissions | Yes     | Pass    |          |
| ANSI C63.26 5.2.3.3, 5.2.7 | Radiated Power (EIRP)        | 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 | Description Date |  |
|--------------------|-------------|------------------|--|
| 00                 | None        |                  |  |

# 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

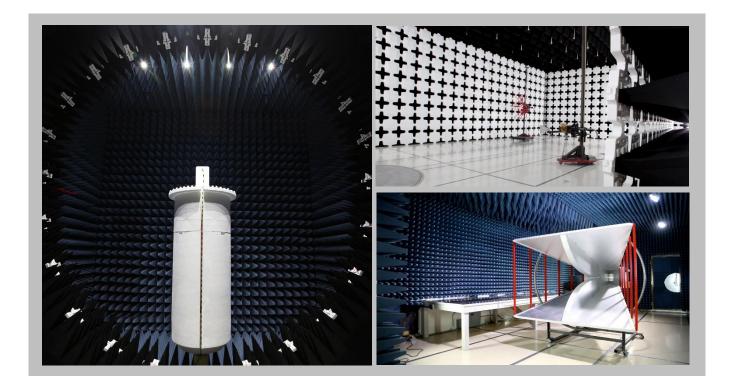
For details on the Scopes of our Accreditations, please visit: <u>http://portlandcustomer.element.com/ts/scope/scope.htm</u> <u>http://gsi.nist.gov/global/docs/cabs/designations.html</u>

## **FACILITIES**





| California<br>Labs OC01-17<br>41 Tesla<br>Irvine, CA 92618<br>(949) 861-8918 | <b>Minnesota</b><br>Labs MN01-10<br>9349 W Broadway Ave.<br>Brooklyn Park, MN 55445<br>(612)-638-5136 | New York<br>Labs NY01-04<br>4939 Jordan Rd.<br>Elbridge, NY 13060<br>(315) 554-8214 | Oregon<br>Labs EV01-12<br>6775 NE Evergreen Pkwy #400<br>Hillsboro, OR 97124<br>(503) 844-4066 | <b>Texas</b><br>Labs TX01-09<br>3801 E Plano Pkwy<br>Plano, TX 75074<br>(469) 304-5255 | Washington<br>Labs NC01-05<br>19201 120 <sup>th</sup> Ave NE<br>Bothell, WA 98011<br>(425)984-6600 |  |  |  |
|--|---|---|--|--|--|--|--|--|
|  | 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  |  |  |  |
|  |   | BSI   | МІ   |  |  |  |  |  |
| SL2-IN-E-1154R   | SL2-IN-E-1152R  | N/A   | SL2-IN-E-1017  | SL2-IN-E-1158R   | SL2-IN-E-1153R   |  |  |  |
|  | VCCI  |   |  |  |  |  |  |  |
| 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     |   |   |  |  |  |  |  |  |
| US0158   | US0175  | N/A   | US0017   | US0191   | US0157   |  |  |  |
| US0158   | US0175  | N/A   | US0017   | US0191   | US0157   |  |  |  |



## **EMISSIONS MEASUREMENTS**



### **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.

### **Measurement Bandwidths**

| Frequency Range<br>(MHz) | Peak Data<br>(kHz) | Quasi-Peak Data<br>(kHz) | Average Data<br>(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                |

Measurements were made using the bandwidths and detectors specified. No video filter was used.

### **Sample Calculations**

### **Radiated Emissions:**

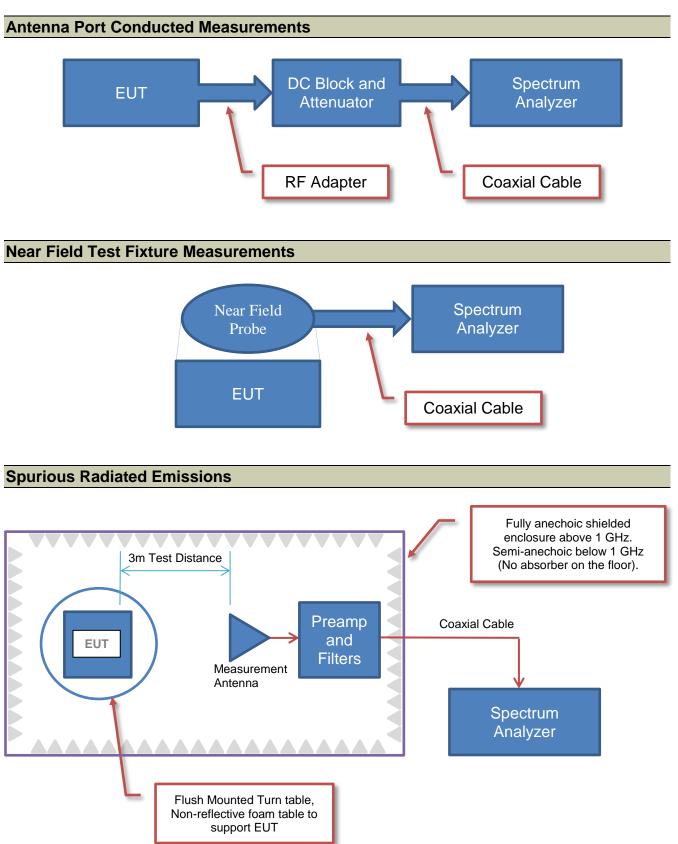
| Field<br>Strength |   | Measured<br>Level |   | Antenna<br>Factor |   | Cable<br>Factor |   | Amplifier<br>Gain |   | Distance<br>Adjustment<br>Factor |   | External<br>Attenuation |
|-------------------|---|-------------------|---|-------------------|---|-----------------|---|-------------------|---|----------------------------------|---|-------------------------|
| 33.5              | = | 42.6              | + | 28.6              | + | 3.1             | - | 40.8              | + | 0.0                              | + | 0.0                     |

### **Conducted Emissions:**

| Adjusted<br>Level |   | Measured<br>Level |   | Transducer<br>Factor |   | Cable<br>Factor |   | External<br>Attenuation |
|-------------------|---|-------------------|---|----------------------|---|-----------------|---|-------------------------|
| 47.1              | = | 26.7              | + | 0.3                  | + | 0.1             | + | 20.0                    |

## **Test Setup Block Diagrams**





## **PRODUCT DESCRIPTION**



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

| Company Name:            | Boston Scientific Corporation |
|--------------------------|-------------------------------|
| Address:                 | 4100 Hamline Avenue North     |
| City, State, Zip:        | St. Paul, MN 55112-5798       |
| Test Requested By:       | Ching Wang                    |
| Model:                   | Ingenio 2                     |
| First Date of Test:      | May 14, 2018                  |
| Last Date of Test:       | May 22, 2018                  |
| Receipt Date of Samples: | May 14, 2018                  |
| Equipment Design Stage:  | Production                    |
| Equipment Condition:     | No Damage                     |
| Purchase Authorization:  | Verified                      |

### Information Provided by the Party Requesting the Test

### Functional Description of the EUT:

MedRadio device with 1 antenna type

### Testing Objective:

Seeking FCC authorization for the MedRadio transmitter to FCC Part 95I.





### Configuration BSTN0835-1

| EUT         |                               |                   |               |  |  |  |
|-------------|-------------------------------|-------------------|---------------|--|--|--|
| Description | Manufacturer                  | Model/Part Number | Serial Number |  |  |  |
| Implant     | Boston Scientific Corporation | U228              | 728066        |  |  |  |

| Peripherals in test setup boundary |                               |                   |               |  |  |  |  |
|------------------------------------|-------------------------------|-------------------|---------------|--|--|--|--|
| Description                        | Manufacturer                  | Model/Part Number | Serial Number |  |  |  |  |
| RA Lead                            | Boston Scientific Corporation | IS-1 B1 GDT4555   | 169728        |  |  |  |  |
| RV Lead                            | Boston Scientific Corporation | IS-1 B1 CPI0013   | 310303        |  |  |  |  |
| LV Lead                            | Boston Scientific Corporation | IS-4 Nav2 19313   | 115705        |  |  |  |  |

| Cables     |        |            |         |              |                 |  |  |  |
|------------|--------|------------|---------|--------------|-----------------|--|--|--|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2    |  |  |  |
| RA Lead    | No     | 0.9m       | No      | Implant      | Tissue Simulant |  |  |  |
| RV Lead    | No     | 1.0m       | No      | Implant      | Tissue Simulant |  |  |  |
| LV Lead    | No     | 1.0m       | No      | Implant      | Tissue Simulant |  |  |  |

| EUT         |                               |                   |               |  |  |  |  |
|-------------|-------------------------------|-------------------|---------------|--|--|--|--|
| Description | Manufacturer                  | Model/Part Number | Serial Number |  |  |  |  |
| Implant     | Boston Scientific Corporation | L331              | 776657        |  |  |  |  |

| Peripherals in test setup boundary |                               |                   |               |  |  |
|------------------------------------|-------------------------------|-------------------|---------------|--|--|
| Description                        | Manufacturer                  | Model/Part Number | Serial Number |  |  |
| RA Lead                            | Boston Scientific Corporation | IS-1 B1 GDT4555   | 169728        |  |  |
| RV Lead                            | Boston Scientific Corporation | IS-1 B1 CPI0013   | 310303        |  |  |

| Cables     |        |            |         |              |                 |  |
|------------|--------|------------|---------|--------------|-----------------|--|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2    |  |
| RA Lead    | No     | 0.9m       | No      | Implant      | Tissue Simulant |  |
| RV Lead    | No     | 1.0m       | No      | Implant      | Tissue Simulant |  |





| EUT         |                               |                   |               |  |  |
|-------------|-------------------------------|-------------------|---------------|--|--|
| Description | Manufacturer                  | Model/Part Number | Serial Number |  |  |
| Implant     | Boston Scientific Corporation | L300              | 720522        |  |  |

| Peripherals in test setup boundary |                               |                   |               |  |
|------------------------------------|-------------------------------|-------------------|---------------|--|
| Description                        | Manufacturer                  | Model/Part Number | Serial Number |  |
| RV Lead                            | Boston Scientific Corporation | IS-1 B1 CPI0013   | 310303        |  |

| Cables     |        |            |         |              |                 |
|------------|--------|------------|---------|--------------|-----------------|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2    |
| RV Lead    | No     | 1.0m       | No      | Implant      | Tissue Simulant |

## **CONFIGURATIONS**



| EUT                  |                               |                      |               |  |  |
|----------------------|-------------------------------|----------------------|---------------|--|--|
| Description          | Manufacturer                  | Model/Part<br>Number | Serial Number |  |  |
| Hybrid Implant Board | Boston Scientific Corporation | E78789-401           | 75602703      |  |  |

| Peripherals in test setup boundary |                               |                      |               |  |
|------------------------------------|-------------------------------|----------------------|---------------|--|
| Description                        | Manufacturer                  | Model/Part<br>Number | Serial Number |  |
| DC Power Supply                    | EZ                            | GP-4303D             | TQK           |  |
| Hybrid Inductive Antenna           | Boston Scientific Corporation | None                 | None          |  |

| Remote Equipment Outside of Test Setup Boundary |                                  |                   |               |  |  |
|---|----------------------------------|-------------------|---------------|--|--|
| Description                                     | Manufacturer                     | Model/Part Number | Serial Number |  |  |
| Telemetry Test Module                           | Boston Scientific<br>Corporation | SE11313-104       | TTM1168       |  |  |
| Telemetry Wand                                  | Boston Scientific<br>Corporation | 6577              | Unknown       |  |  |

| Cables                                       |        |            |         |                       |                             |
|--|--------|------------|---------|-----------------------|-----------------------------|
| Cable Type                                   | Shield | Length (m) | Ferrite | Connection 1          | Connection 2                |
| AC Mains Cable<br>(DC Power<br>Supply)       | No     | 1.8m       | No      | DC Power Supply       | AC Mains                    |
| Banana Cables<br>(x2)                        | No     | 1.0m       | No      | DC Power Supply       | Hybrid Implant<br>Board     |
| AC Mains Cable<br>(Telemetry Test<br>Module) | No     | 1.8m       | No      | Telemetry Test Module | AC Mains                    |
| Telemetry<br>Wand Cable                      | No     | 3.0m       | No      | Telemetry Wand        | Telemetry Test<br>Module    |
| USB Cable                                    | No     | 1.0m       | No      | Laptop                | Telemetry Test<br>Module    |
| Hybrid Inductive<br>Antenna Cable            | No     | 0.45m      | No      | Hybrid Implant Board  | Hybrid Inductive<br>Antenna |

## **CONFIGURATIONS**



| EUT                  |                               |                      |               |
|----------------------|-------------------------------|----------------------|---------------|
| Description          | Manufacturer                  | Model/Part<br>Number | Serial Number |
| Hybrid Implant Board | Boston Scientific Corporation | E78789-401           | 75602706      |

| Peripherals in test setup boundary |                               |          |      |  |
|------------------------------------|-------------------------------|----------|------|--|
| Description                        | Serial Number                 |          |      |  |
| DC Power Supply                    | EZ                            | GP-4303D | TQK  |  |
| Hybrid Inductive Antenna           | Boston Scientific Corporation | None     | None |  |

| Remote Equipment Outside of Test Setup Boundary |                                  |                   |               |  |  |
|---|----------------------------------|-------------------|---------------|--|--|
| Description                                     | Manufacturer                     | Model/Part Number | Serial Number |  |  |
| Telemetry Test Module                           | Boston Scientific<br>Corporation | SE11313-104       | TTM1168       |  |  |
| Telemetry Wand                                  | Boston Scientific<br>Corporation | 6577              | Unknown       |  |  |

| Cables                                       |        |            |         |                       |                             |  |  |  |  |  |
|--|--------|------------|---------|-----------------------|-----------------------------|--|--|--|--|--|
| Cable Type                                   | Shield | Length (m) | Ferrite | Connection 1          | Connection 2                |  |  |  |  |  |
| AC Mains Cable<br>(DC Power<br>Supply)       | No     | 1.8m       | No      | DC Power Supply       | AC Mains                    |  |  |  |  |  |
| Banana Cables<br>(x2)                        | No     | 1.0m       | No      | DC Power Supply       | Hybrid Implant<br>Board     |  |  |  |  |  |
| AC Mains Cable<br>(Telemetry Test<br>Module) | No     | 1.8m       | No      | Telemetry Test Module | AC Mains                    |  |  |  |  |  |
| Telemetry<br>Wand Cable                      | No     | 3.0m       | No      | Telemetry Wand        | Telemetry Test<br>Module    |  |  |  |  |  |
| USB Cable                                    | No     | 1.0m       | No      | Laptop                | Telemetry Test<br>Module    |  |  |  |  |  |
| Hybrid Inductive<br>Antenna Cable            | No     | 0.45m      | No      | Hybrid Implant Board  | Hybrid Inductive<br>Antenna |  |  |  |  |  |





| EUT                  |                               |                   |               |  |  |  |  |
|----------------------|-------------------------------|-------------------|---------------|--|--|--|--|
| Description          | Manufacturer                  | Model/Part Number | Serial Number |  |  |  |  |
| Hybrid Implant Board | Boston Scientific Corporation | E78789-401        | 75602701      |  |  |  |  |

| Peripherals in test setu    | Peripherals in test setup boundary |                   |               |  |  |  |  |  |  |
|-----------------------------|------------------------------------|-------------------|---------------|--|--|--|--|--|--|
| Description                 | Manufacturer                       | Model/Part Number | Serial Number |  |  |  |  |  |  |
| DC Power Supply             | EZ                                 | GP-4303D          | TQK           |  |  |  |  |  |  |
| Hybrid Inductive<br>Antenna | Boston Scientific Corporation      | None              | None          |  |  |  |  |  |  |

| Remote Equipment Outside                                 | Remote Equipment Outside of Test Setup Boundary |             |         |  |  |  |  |  |  |
|--|---|-------------|---------|--|--|--|--|--|--|
| Description Manufacturer Model/Part Number Serial Number |   |             |         |  |  |  |  |  |  |
| Telemetry Test Module                                    | Boston Scientific<br>Corporation                | SE11313-104 | TTM1168 |  |  |  |  |  |  |
| Telemetry Wand   | Boston Scientific<br>Corporation                | 6577        | Unknown |  |  |  |  |  |  |

| Cables                                       |        |            |         |                       |                             |  |  |  |  |  |  |
|--|--------|------------|---------|-----------------------|-----------------------------|--|--|--|--|--|--|
| Cable Type                                   | Shield | Length (m) | Ferrite | Connection 1          | Connection 2                |  |  |  |  |  |  |
| AC Mains Cable<br>(DC Power<br>Supply)       | No     | 1.8m       | No      | DC Power Supply       | AC Mains                    |  |  |  |  |  |  |
| Banana Cables<br>(x2)                        | No     | 1.0m       | No      | DC Power Supply       | Hybrid Implant<br>Board     |  |  |  |  |  |  |
| AC Mains Cable<br>(Telemetry Test<br>Module) | No     | 1.8m       | No      | Telemetry Test Module | AC Mains                    |  |  |  |  |  |  |
| Telemetry<br>Wand Cable                      | No     | 3.0m       | No      | Telemetry Wand        | Telemetry Test<br>Module    |  |  |  |  |  |  |
| USB Cable                                    | No     | 1.0m       | No      | Laptop                | Telemetry Test<br>Module    |  |  |  |  |  |  |
| Hybrid Inductive<br>Antenna Cable            | No     | 0.45m      | No      | Hybrid Implant Board  | Hybrid Inductive<br>Antenna |  |  |  |  |  |  |

## **MODIFICATIONS**



## **Equipment Modifications**

| Item | Date      | Test                               | Modification                               | Note  | Disposition of EUT                                |
|------|-----------|------------------------------------|--|---|---|
| 1    | 5/14/2018 | Spurious<br>Radiated<br>Emissions  | Tested as<br>delivered to<br>Test Station. | No EMI suppression<br>devices were added or<br>modified during this test. | EUT remained at<br>Element following the<br>test. |
| 2    | 5/16/2018 | Radiated<br>Power (EIRP)           | Tested as<br>delivered to<br>Test Station. | No EMI suppression<br>devices were added or<br>modified during this test. | EUT remained at<br>Element following the<br>test. |
| 3    | 5/21/2018 | Frequency<br>Stability             | Tested as<br>delivered to<br>Test Station. | No EMI suppression<br>devices were added or<br>modified during this test. | EUT remained at<br>Element following the test.    |
| 4    | 5/22/2018 | Emission Mask                      | Tested as<br>delivered to<br>Test Station. | No EMI suppression<br>devices were added or<br>modified during this test. | EUT remained at<br>Element following the<br>test. |
| 5    | 5/22/2018 | Emission<br>Bandwidth              | Tested as<br>delivered to<br>Test Station. | No EMI suppression<br>devices were added or<br>modified during this test. | EUT remained at<br>Element following the test.    |
| 6    | 5/22/2018 | Conducted<br>Output Power          | Tested as<br>delivered to<br>Test Station. | No EMI suppression<br>devices were added or<br>modified during this test. | EUT remained at<br>Element following the<br>test. |
| 7    | 5/22/2018 | Spurious<br>Conducted<br>Emissions | Tested as<br>delivered to<br>Test Station. | No EMI suppression<br>devices were added or<br>modified during this test. | Scheduled testing was completed.                  |



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  |
|------------------------------|----------------------|-----------------|-----|-----------|-----------|
| Meter - Multimeter           | Fluke                | 114             | MMU | 18-Jul-17 | 18-Jul-20 |
| Power Supply - DC            | EZ Digital Co., Ltd. | GP-4030D        | TQK | NCR       | NCR       |
| 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 (EXA)    | AFQ | 19-Dec-17 | 19-Dec-18 |
| Analyzer - Spectrum Analyzer | Agilent              | E4440A          | AFD | 2-Aug-17  | 2-Aug-18  |

#### TEST DESCRIPTION

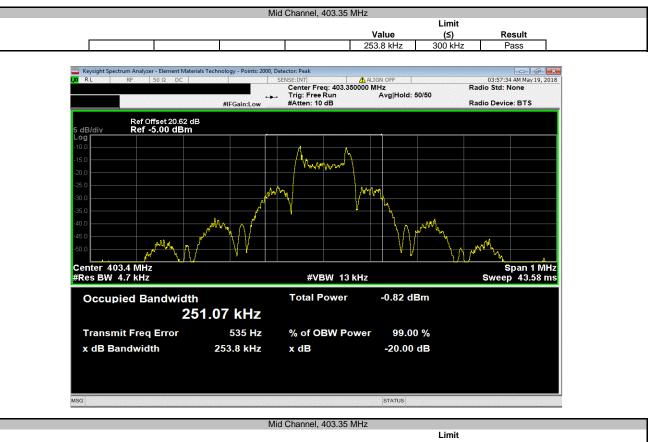
The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Per 47 CFR 95.2573(a), the emission bandwidth was determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 20 dB down relative to the maximum level of the modulated carrier. A spectrum analyzer using a peak detector with no video filtering was used with a resolution bandwidth equal to approximately 1.0 percent of the emission bandwidth of the EUT.

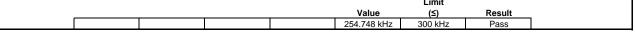


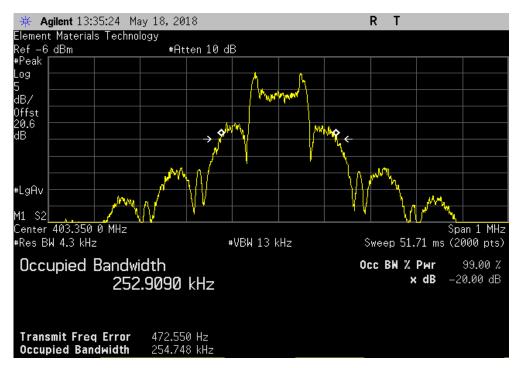
|                        |                          |                                       |                                   |     |                   | TbtTx 2017.12.14 | XMit 2017.12.13 |
|------------------------|--------------------------|---------------------------------------|-----------------------------------|-----|-------------------|------------------|-----------------|
| EUT:                   | Ingenio 2                |                                       |                                   |     | Work Order:       | BSTN0835         |                 |
| Serial Number:         | See Comments             |                                       |                                   |     |                   | 22-May-18        |                 |
| Customer:              | Boston Scientific Corpor | ation                                 |                                   |     | Temperature:      | 23.2 °C          |                 |
| Attendees:             | Ching Wang               |                                       |                                   |     |                   | 46.2% RH         |                 |
| Project:               |                          |                                       |                                   |     | Barometric Pres.: |                  |                 |
|                        | Dustin Sparks            |                                       | Power: 3.2VDC                     |     | Job Site:         | MN08             |                 |
| TEST SPECIFICATI       | IONS                     |                                       | Test Method                       |     |                   |                  |                 |
| FCC 95I:2018           |                          |                                       | ANSI C63.26:2                     | 015 |                   |                  |                 |
|                        |                          |                                       |                                   |     |                   |                  |                 |
| COMMENTS               |                          |                                       |                                   |     |                   |                  |                 |
|                        |                          | ole 1 (SN 75602703), sample 2 (SN 756 | 602706), and sample 3 (SN 7560270 | 1). |                   |                  |                 |
| DEVIATIONS FROM        | I TEST STANDARD          |                                       |                                   |     |                   |                  |                 |
| None                   |                          |                                       |                                   |     |                   |                  |                 |
| Configuration #        | 4, 5, 6                  | Signature                             | Justin & parts                    | >   |                   |                  |                 |
|                        |                          |                                       |                                   |     |                   | Limit            |                 |
|                        |                          |                                       |                                   |     | Value             | (≤)              | Result          |
|                        |                          |                                       |                                   |     |                   |                  |                 |
| Mid Channel, 403.35    | 5 MHz                    |                                       |                                   |     | 253.8 kHz         | 300 kHz          | Pass            |
| Mid Channel, 403.35    | 5 MHz                    |                                       |                                   |     | 254.748 kHz       | 300 kHz          | Pass            |
| Mid Channel, 403.35    | 5 MHz                    |                                       |                                   |     | 249.804 kHz       | 300 kHz          | Pass            |
| Mild Charlinel, 400.00 | / 1011 12                |                                       |                                   |     | 243.004 KHZ       | 000 1112         | 1 433           |

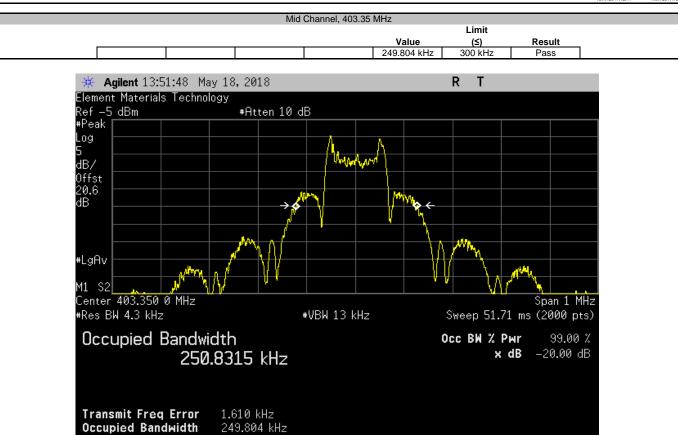


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Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual 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** ID Description Manufacturer Model Last Cal. Cal. Due Analyzer - Spectrum Analyzer N9010A (EXA) AFQ 19-Dec-17 19-Dec-18 Keysight Power Supply - DC EZ Digital Co., Ltd. GP-4030D TQK NCR NCR Meter - Multimeter Fluke 114 MMU 18-Jul-17 18-Jul-20 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 AMI 12-Sep-17 Fairview Microwave SD3379 12-Sep-18 Analyzer - Spectrum Analyzer AFD 2-Aug-17 Agilent E4440A 2-Aug-18

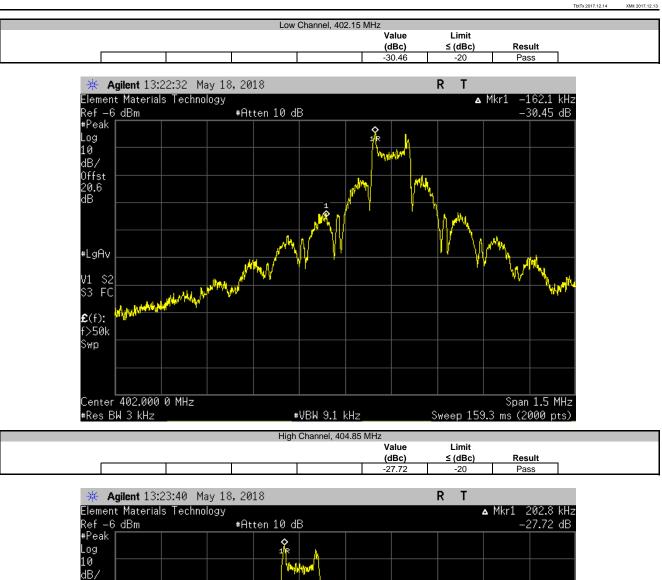
#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Per 47 CFR 95.2579(a)(1) the emission mask was measured. Emissions more than 150 kHz away from the center frequency must be attenuated below the transmitter output power by at least 20 dB. This was evaluated by the Occupied Bandwidth measurement according to 47 CFR 95.2573(a). In addition, emissions 250 kHz or less above and below the MICS band (402-405 MHz) must be attenuated below the maximum permitted output power by at least 20 dB.

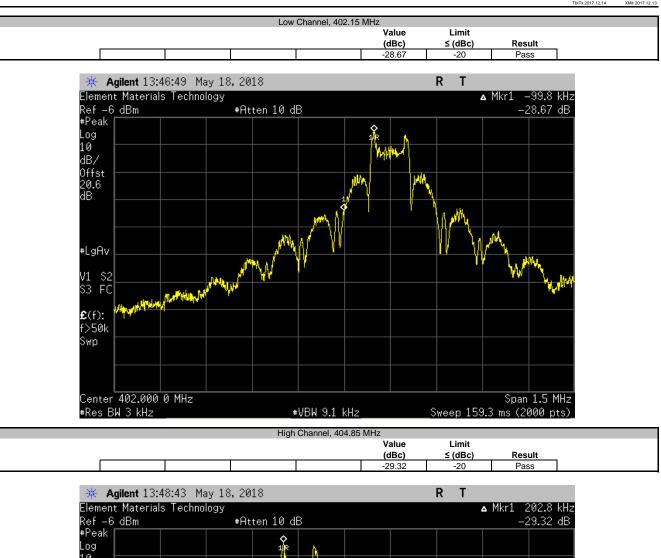
A spectrum analyzer was used to measure the emission mask. A spectrum analyzer using a peak detector with no video filtering was used with a resolution bandwidth equal to approximately 1.0 percent of the emission bandwidth of the EUT. However, various plots were made using different frequency spans and resolution bandwidths in an attempt to not only satisfy the measurement criteria, but to also show that all emissions outside of the occupied band are greatly attenuated.



| EUT: Ing  | genio 2                             |                      |            |                    |                  | Work Order:                         | BSTN0835                     |                      |
|---|-------------------------------------|----------------------|------------|--------------------|------------------|-------------------------------------|------------------------------|----------------------|
| Serial Number: Se   |                                     |                      |            |                    |                  |                                     | 22-May-18                    |                      |
| Customer: Bo  | oston Scientific Corporation        |                      |            |                    |                  | Temperature:                        |                              |                      |
| Attendees: Ch   |                                     |                      |            |                    |                  | Humidity:                           |                              |                      |
| Project: No   |                                     |                      |            |                    |                  | Barometric Pres.:                   |                              |                      |
| Tested by: Du   |                                     |                      |            |                    | 3.2VDC           | Job Site:                           | MN08                         |                      |
| TEST SPECIFICATION  | IS                                  |                      |            |                    | Test Method      |                                     |                              |                      |
| FCC 95I:2018  |                                     |                      |            |                    | ANSI C63.26:2015 |                                     |                              |                      |
|   |                                     |                      |            |                    |                  |                                     |                              |                      |
| COMMENTS  |                                     |                      |            |                    |                  |                                     |                              |                      |
| hree samples tested   | simultaneously - sample 1 (S        | SN 75602703), sample | 2 (SN 7560 | 02706), and sample | 3 (SN 75602701). |                                     |                              |                      |
|   |                                     |                      |            |                    |                  |                                     |                              |                      |
|   |                                     |                      |            |                    |                  |                                     |                              |                      |
| EVIATIONS FROM T  | EST STANDARD                        |                      |            |                    |                  |                                     |                              |                      |
| DEVIATIONS FROM TE  | EST STANDARD                        |                      |            |                    |                  |                                     |                              |                      |
|   | EST STANDARD<br>4, 5, 6             | Sianature            | Ľ          | Fusting            | Sparls           |                                     |                              |                      |
| None  |                                     | Signature            | Ľ          | Justin             | Sparls           | Value<br>(dBc)                      | Limit<br>≤ (dBc)             | Result               |
| None<br>Configuration #   | 4, 5, 6                             | Signature            | Ľ          | Justin             | Sparls           | (dBc)                               | ≤ (dBc)                      |                      |
| Configuration #   | 4, 5, 6                             | Signature            | Ľ          | Justin             | Sparlo           | ( <b>dBc</b> )<br>-30.46            | <b>≤ (dBc)</b><br>-20        | Pass                 |
| Configuration #   | 4, 5, 6                             | Signature            | Ľ          | Tustin             | Sparlo           | (dBc)                               | ≤ (dBc)                      |                      |
| Configuration #<br>Configuration #<br>Low Channel, 402.15 M<br>digh Channel, 404.85 M             | 4, 5, 6<br>IHz<br>IHz               | Signature            | Ľ          | Justin             | Sparlo           | <br>( <b>dBc</b> )<br>-30.46        | <b>≤ (dBc)</b><br>-20        | Pass                 |
| tone<br>Configuration #<br>ow Channel, 402.15 M<br>ligh Channel, 404.85 M<br>ow Channel, 402.15 M | <b>4, 5, 6</b><br>IHz<br>IHz<br>IHz | Signature            | Ľ          | Tusting            | Sparlo           | (dBc)<br>-30.46<br>-27.72           | <b>≤ (dBc)</b><br>-20<br>-20 | Pass<br>Pass         |
| tone<br>Configuration #<br>ow Channel, 402.15 M<br>ligh Channel, 404.85 M<br>ow Channel, 402.15 M | <b>4, 5, 6</b><br>IHz<br>IHz<br>IHz | Signature            | Ľ          | Tustin             | Sparlo           | (dBc)<br>-30.46<br>-27.72<br>-28.67 | ≤ (dBc)<br>-20<br>-20<br>-20 | Pass<br>Pass<br>Pass |
| None  | 4, 5, 6<br>IHz<br>IHz<br>IHz        | Signature            | Ľ          | Justin             | Sparlo           | (dBc)<br>-30.46<br>-27.72<br>-28.67 | ≤ (dBc)<br>-20<br>-20<br>-20 | Pass<br>Pass<br>Pass |

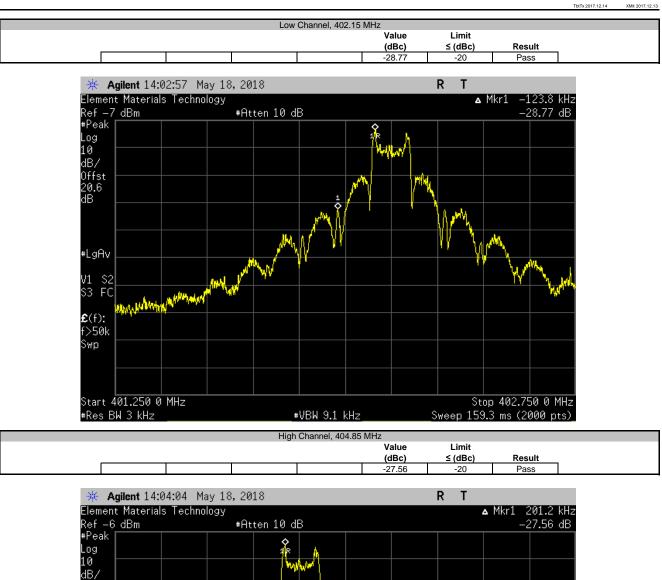


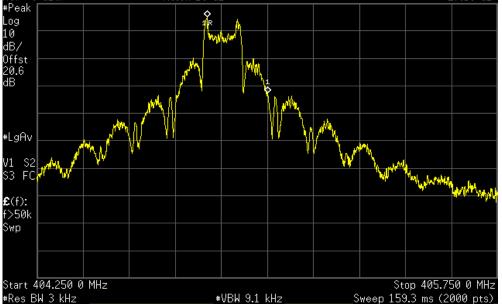














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#### **TEST EQUIPMENT**

| Description                  | Manufacturer         | Model           | ID  | Last Cal. | Cal. Due  |
|------------------------------|----------------------|-----------------|-----|-----------|-----------|
| Power Supply - DC            | EZ Digital Co., Ltd. | GP-4030D        | TQK | NCR       | NCR       |
| Meter - Multimeter           | Fluke                | 114             | MMU | 18-Jul-17 | 18-Jul-20 |
| 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 (EXA)    | AFQ | 19-Dec-17 | 19-Dec-18 |
| Analyzer - Spectrum Analyzer | Agilent              | E4440A          | AFD | 2-Aug-17  | 2-Aug-18  |

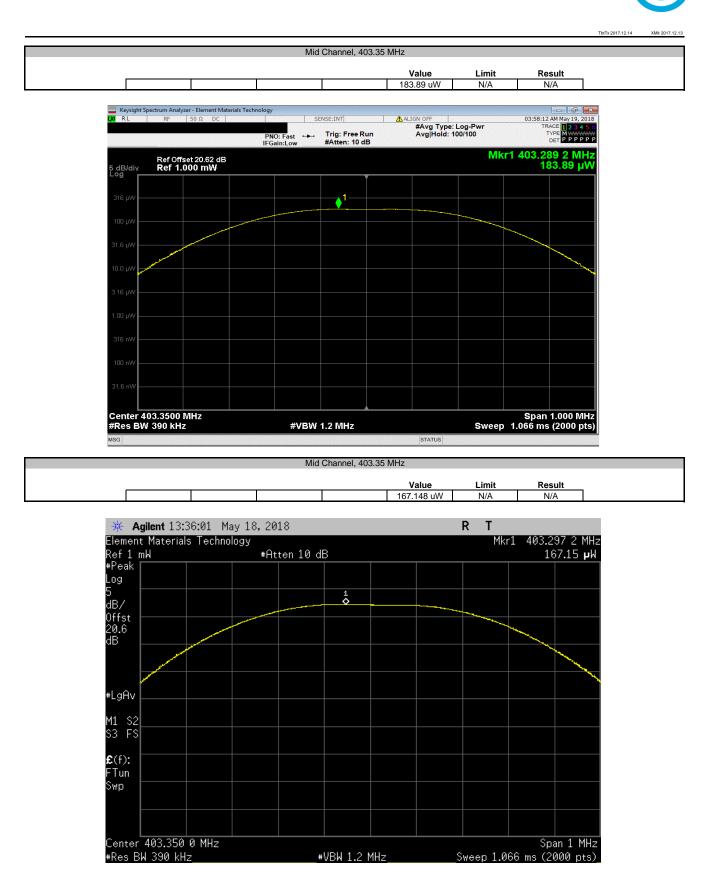
#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Per FCC Part 2.1046, RSS-GEN, the output power shall be measured at the RF terminal. The peak output power was measured with the EUT configured in the modes listed in the datasheet. The EUT was transmitting at its maximum data rate.

FCC Part 95 and RSS-243 have no conducted output power limit. It is a requirement to characterize this information and that data is contained within this datasheet.



|                     |                          |  |                    |                  |                  | TbtTx 2017.12.14 | XMit 2017.12.13 |
|---------------------|--------------------------|--|--------------------|------------------|------------------|------------------|-----------------|
| EUT:                | Ingenio 2                |  |                    |                  | Work Order       | BSTN0835         |                 |
| Serial Number:      | See Comments             |  |                    |                  | Date             | 22-May-18        |                 |
| Customer:           | Boston Scientific Corpor | ation                                  |                    |                  | Temperature      | 23.4 °C          |                 |
| Attendees:          | Ching Wang               |  |                    |                  | Humidity         | 46.9% RH         |                 |
| Project:            | None                     |  |                    |                  | Barometric Pres. | 1021 mbar        |                 |
| Tested by:          | Dustin Sparks            |  | Power:             | 3.2VDC           | Job Site         | MN08             |                 |
| TEST SPECIFICATI    | ONS                      |  |                    | Test Method      |                  |                  |                 |
| FCC 95I:2018        |                          |  |                    | ANSI C63.26:2015 |                  |                  |                 |
|                     |                          |  |                    |                  |                  |                  |                 |
| COMMENTS            |                          |  |                    |                  |                  |                  |                 |
| Three samples test  | ed simultaneously - samp | ble 1 (SN 75602703), sample 2 (SN 7560 | 02706), and sample | 3 (SN 75602701). |                  |                  |                 |
| DEVIATIONS FROM     | I TEST STANDARD          |  |                    |                  |                  |                  |                 |
| None                |                          |  |                    |                  |                  |                  |                 |
| Configuration #     | 4, 5, 6                  | Signature                              | Tusting            | sparts           |                  |                  |                 |
|                     |                          |  |                    |                  | Value            | Limit            | Result          |
| Mid Channel, 403.35 | MHz                      |  |                    |                  | 183.89 uW        | N/A              | N/A             |
| Mid Channel, 403.35 | MHz                      |  |                    |                  | 167.148 uW       | N/A              | N/A             |
| Mid Channel, 403.35 | MHz                      |  |                    |                  | 191.514 uW       | N/A              | N/A             |





Mid Channel, 403.35 MHz **Value** 191.514 uW Limit N/A Result N/A 🔆 Agilent 13:52:32 May 18, 2018 R Т Element Materials Technology Ref 1 mW #Peak Mkr1 403.278 2 MHz 191.51 µW #Atten 10 dB Log \_1-♦ 5 dB/ Offst 20.6 dB #LgAv M1 S2 S3 FS **£**(f): FTun Swp Center 403.350 0 MHz #Res BW 390 kHz Span 1 MHz #VBW 1.2 MHz Sweep 1.066 ms (2000 pts)



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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  |
|--------------------------------|---------------------------|-------------------|-----|-----------|-----------|
| Meter - Multimeter             | Fluke                     | 114               | MMU | 18-Jul-17 | 18-Jul-20 |
| Chamber - Temperature/Humidity | Cincinnati Sub Zero (CSZ) | ZPH-32-3.5-SCT/AC | TBF | NCR       | NCR       |
| Thermometer                    | Omega Engineering, Inc.   | HH311             | DUB | 10-Nov-17 | 10-Nov-20 |
| 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   | Agilent                   | E4440A            | AFD | 2-Aug-17  | 2-Aug-18  |

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spectrum analyzer is configured with a precision frequency reference that exceeds the stability requirement of the transmitter. The EUT was placed inside a temperature / humidity chamber.

#### Variation of Supply Voltage

The primary supply voltage was varied from 85% to 115% of the nominal voltage. A DC lab supply was used to vary the supply voltage.

#### Variation of Ambient Temperature

Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range (+25°, 37°C and +45° C).



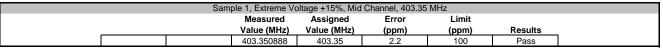
|                   |                             |                               |                  |                           |                                       |             |             |                             | TbtTx 2017.12.14 | XMit 201 |  |
|-------------------|-----------------------------|-------------------------------|------------------|---------------------------|---------------------------------------|-------------|-------------|-----------------------------|------------------|----------|--|
|                   | Ingenio 2                   |                               |                  |                           |                                       |             |             | Work Order:                 |                  |          |  |
| Serial Number:    | See Comments                |                               |                  |                           |                                       |             |             |                             | 21-May-18        |          |  |
|                   |                             | Boston Scientific Corporation |                  |                           |                                       |             |             | Temperature:                |                  |          |  |
|                   | : Ching Wang                |                               |                  |                           |                                       |             |             |                             | 39.5% RH         |          |  |
| Project:          |                             |                               |                  |                           |                                       |             |             | Barometric Pres.: 1019 mbar |                  |          |  |
|                   | Dustin Sparks Power: 3.2VDC |                               |                  |                           |                                       |             |             | Job Site:                   | MN08             |          |  |
| EST SPECIFICAT    | IONS                        |                               |                  |                           | Test Method                           |             |             |                             |                  |          |  |
| CC 95I:2018       |                             |                               |                  |                           | ANSI C63.26:2015                      |             |             |                             |                  |          |  |
|                   |                             |                               |                  |                           |                                       |             |             |                             |                  |          |  |
| COMMENTS          |                             |                               |                  |                           |                                       |             |             |                             |                  |          |  |
| Three samples tes | ted simultaneously          | - sample 1 (SN 756            | 02703), sample 2 | (SN 75602706), and sample | e 3 (SN 75602701).                    |             |             |                             |                  |          |  |
|                   |                             |                               |                  |                           |                                       |             |             |                             |                  |          |  |
| EVIATIONS FROM    | M TEST STANDARD             | 1                             |                  |                           |                                       |             |             |                             |                  |          |  |
| lone              |                             | •                             |                  |                           |                                       |             |             |                             |                  |          |  |
|                   |                             |                               |                  | 6                         | 0                                     |             |             |                             |                  |          |  |
| Configuration #   | 4, 5, 6                     |                               |                  | X Justin S                | 2. 0.                                 |             |             |                             |                  |          |  |
| -                 |                             |                               | Signature        | Justin                    | praco                                 |             |             |                             |                  |          |  |
|                   |                             |                               |                  |                           |                                       | Measured    | Assigned    | Error                       | Limit            |          |  |
|                   |                             |                               |                  |                           |                                       | alue (MHz)  | Value (MHz) | (ppm)                       | (ppm)            | Results  |  |
| Sample 1          |                             |                               |                  |                           |                                       |             |             |                             |                  |          |  |
|                   | Normal Voltage              |                               |                  |                           |                                       |             |             |                             |                  |          |  |
|                   | Mid C                       | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.350938  | 403.35      | 2.3                         | 100              | Pass     |  |
|                   | Extreme Voltage +1          |                               |                  |                           |                                       |             |             |                             |                  |          |  |
|                   | Mid C                       | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.350888  | 403.35      | 2.2                         | 100              | Pass     |  |
|                   | Extreme Voltage -1          |                               |                  |                           |                                       |             |             |                             |                  |          |  |
|                   |                             | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.350871  | 403.35      | 2.2                         | 100              | Pass     |  |
|                   | 25°C                        |                               |                  |                           |                                       |             |             |                             |                  |          |  |
|                   |                             | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.350587  | 403.35      | 1.5                         | 100              | Pass     |  |
|                   | 35°C                        |                               |                  |                           |                                       |             |             |                             |                  |          |  |
|                   |                             | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.349952  | 403.35      | 0.1                         | 100              | Pass     |  |
|                   | 45°C                        |                               |                  |                           |                                       |             |             |                             |                  |          |  |
|                   | Mid C                       | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.349185  | 403.35      | 2                           | 100              | Pass     |  |
| Sample 2          |                             |                               |                  |                           |                                       |             |             |                             |                  |          |  |
|                   | Normal Voltage              |                               |                  |                           |                                       | 00 050054   | 400.05      | 0.4                         | 400              | Dees     |  |
|                   |                             | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.350854  | 403.35      | 2.1                         | 100              | Pass     |  |
|                   | Extreme Voltage +1          |                               |                  |                           |                                       | 102 25085 4 | 402.25      | 2.4                         | 100              | Derr     |  |
|                   |                             | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.350854  | 403.35      | 2.1                         | 100              | Pass     |  |
|                   | Extreme Voltage -1          | 5%<br>hannel, 403.35 MHz      |                  |                           |                                       | 403.350871  | 403.35      | 2.2                         | 100              | Pass     |  |
|                   | 25°C                        | namel, 403.35 IVITZ           |                  |                           | 4                                     | 103.330071  | 403.33      | 2.2                         | 100              | F d\$\$  |  |
|                   |                             | hannel, 403.35 MHz            |                  |                           |                                       | 103.350704  | 403.35      | 1.8                         | 100              | Pass     |  |
|                   | 35°C                        | 1011101, 400.00 WINZ          |                  |                           | 4                                     | 100.000704  | 400.00      | 1.0                         | 100              | 1 455    |  |
|                   |                             | hannel, 403.35 MHz            |                  |                           |                                       | 103.349685  | 403.35      | 0.8                         | 100              | Pass     |  |
|                   | 45°C                        |                               |                  |                           | -                                     |             | 400.00      | 0.0                         | 100              | 1 433    |  |
|                   |                             | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.348918  | 403.35      | 2.7                         | 100              | Pass     |  |
| ample 3           |                             |                               |                  |                           | · · · · · · · · · · · · · · · · · · · |             |             |                             |                  |          |  |
|                   | Normal Voltage              |                               |                  |                           |                                       |             |             |                             |                  |          |  |
|                   |                             | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.351187  | 403.35      | 2.9                         | 100              | Pass     |  |
|                   | Extreme Voltage +1          | 5%                            |                  |                           |                                       |             |             |                             |                  |          |  |
|                   | Mid C                       | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.351187  | 403.35      | 2.9                         | 100              | Pass     |  |
|                   | Extreme Voltage -1          | 5%                            |                  |                           |                                       |             |             |                             |                  |          |  |
|                   |                             | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.351171  | 403.35      | 2.9                         | 100              | Pass     |  |
|                   | 25°C                        |                               |                  |                           |                                       |             |             |                             |                  |          |  |
|                   |                             | hannel, 403.35 MHz            |                  |                           | 4                                     | 403.351022  | 403.35      | 2.5                         | 100              | Pass     |  |
|                   | 35°C                        |                               |                  |                           |                                       |             |             |                             |                  |          |  |
|                   |                             | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.350103  | 403.35      | 0.3                         | 100              | Pass     |  |
|                   | 45°C                        |                               |                  |                           |                                       |             |             |                             |                  |          |  |
|                   | Mid C                       | hannel, 403.35 MHz            |                  |                           | 4                                     | 103.349185  | 403.35      | 2                           | 100              | Pass     |  |
|                   |                             |                               |                  |                           |                                       |             |             |                             |                  |          |  |

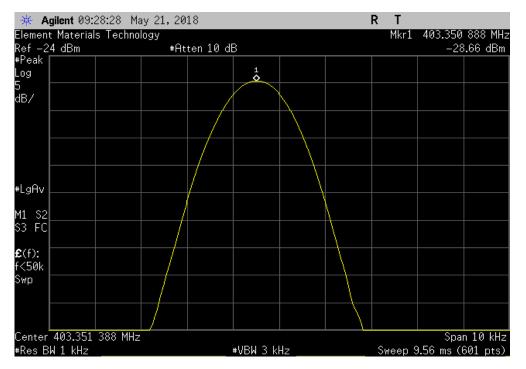


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Sample 1, Normal Voltage, Mid Channel, 403.35 MHz Measured Assigned Error Limit Value (MHz) Value (MHz) (ppm) (ppm) Results 403.350938 403.35 100 Pass 2.3 Agilent 09:27:48 May 21, 2018 R Т \*\* Element Materials Technology Mkr1 403.350 938 MHz Ref -24 dBm #Peak #Atten 10 dB -28.64 dBm Log 1 5 dB/ #LgAv M1 S2 S3 FC £(f): f<50k Swp Center 403.351 388 MHz Span 10 kHz #Res BW 1 kHz ₩VBW 3 kHz Sweep 9.56 ms (601 pts)



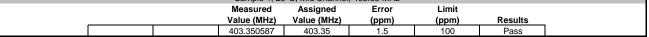


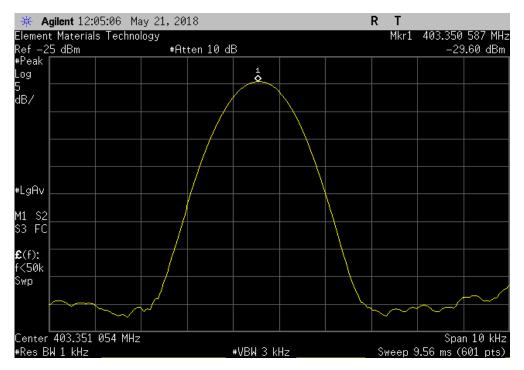


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Sample 1, Extreme Voltage -15%, Mid Channel, 403.35 MHz Measured Assigned Error Limit Value (MHz) Value (MHz) (ppm) (ppm) Results 403.350871 403.35 100 Pass 2.2 Agilent 09:29:08 May 21, 2018 R Т \* Element Materials Technology Mkr1 403.350 871 MHz Ref -24 dBm #Peak #Atten 10 dB -28.65 dBm Log 1 5 dB/ #LgAv M1 S2 S3 FC £(f): f<50k Swp Center 403.351 388 MHz Span 10 kHz #Res BW 1 kHz ₩VBW 3 kHz Sweep 9.56 ms (601 pts) Sample 1, 25°C, Mid Channel, 403.35 MHz



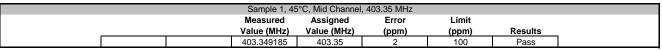


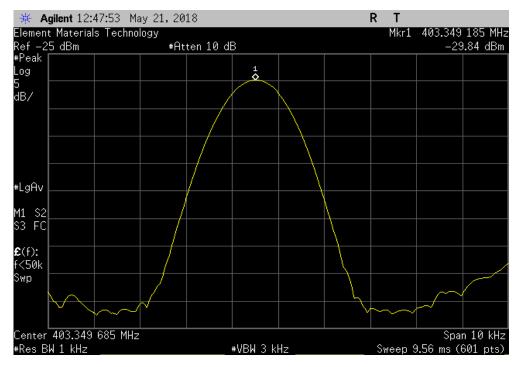


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Sample 1, 35°C, Mid Channel, 403.35 MHz Measured Assigned Error Limit Value (MHz) Value (MHz) (ppm) (ppm) Results 403.349952 403.35 0.1 100 Pass Agilent 12:27:43 May 21, 2018 R Т \*\* Element Materials Technology Mkr1 403.349 952 MHz Ref —25 dBm #Peak #Atten 10 dB -29.83 dBm Log 1 5 dB/ #LgAv M1 S2 S3 FC £(f): f<50k Swp Center 403.350 369 MHz Span 10 kHz #Res BW 1 kHz ₩VBW 3 kHz Sweep 9.56 ms (601 pts)



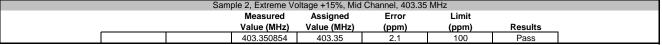


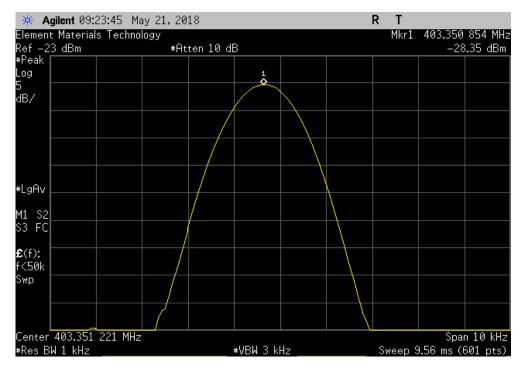


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Sample 2, Normal Voltage, Mid Channel, 403.35 MHz Measured Assigned Error Limit Value (MHz) Value (MHz) (ppm) (ppm) Results 403.350854 403.35 100 Pass 2.1 Agilent 09:22:59 May 21, 2018 R Т \* Element Materials Technology Mkr1 403.350 854 MHz Ref —23 dBm #Peak #Atten 10 dB -28.34 dBm Log 5 dB/ #LgAv M1 S2 S3 FC £(f): f<50k Swp Center 403.351 204 MHz Span 10 kHz #Res BW 1 kHz ₩VBW 3 kHz Sweep 9.56 ms (601 pts) Sample 2, Extreme Voltage +15%, Mid Channel, 403.35 MHz



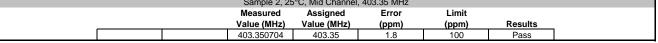


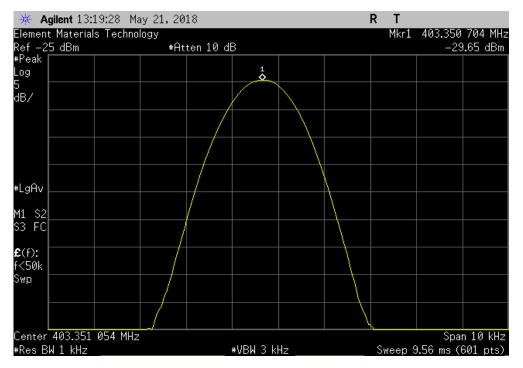


XMit 2017.12.13

TbtTx 2017.12.14

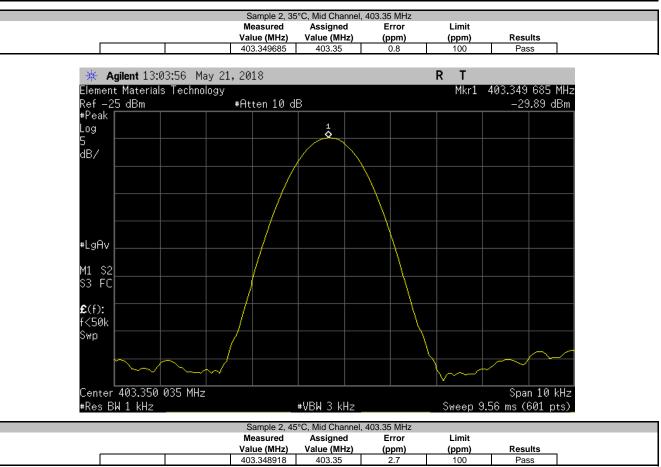
Sample 2, Extreme Voltage -15%, Mid Channel, 403.35 MHz Measured Assigned Error Limit Value (MHz) Value (MHz) (ppm) (ppm) Results 403.350871 403.35 100 Pass 2.2 Agilent 09:24:31 May 21, 2018 R Т \* Element Materials Technology Mkr1 403.350 871 MHz Ref —23 dBm #Peak #Atten 10 dB -28.35 dBm Log 5 dB/ #LgAv M1 S2 S3 FC £(f): f<50k Swp Center 403.351 371 MHz Span 10 kHz #Res BW 1 kHz ₩VBW 3 kHz Sweep 9.56 ms (601 pts) Sample 2, 25°C, Mid Channel, 403.35 MHz

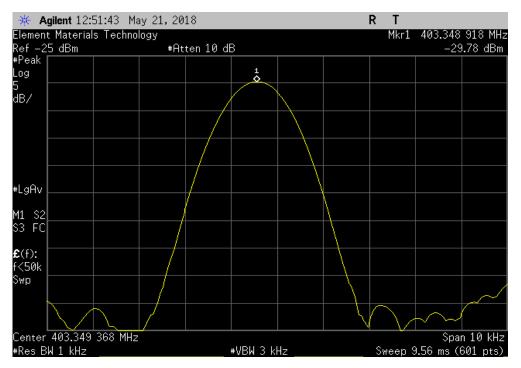






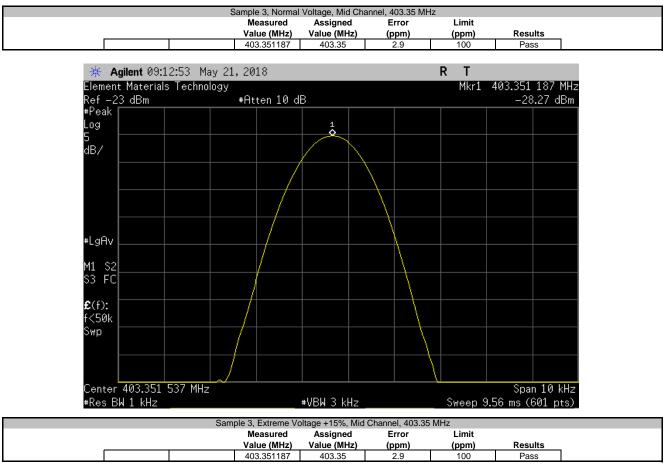
TbtTx 2017.12.14 XMit 2017.12.13

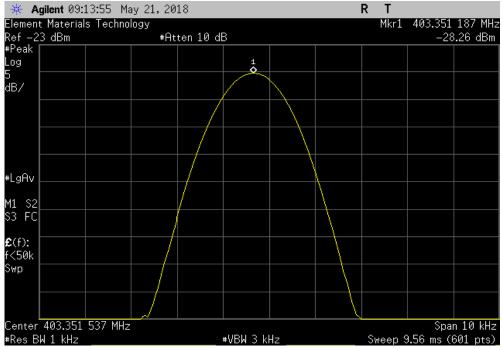






TbtTx 2017.12.14 XMit 2017.12.13



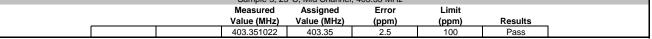


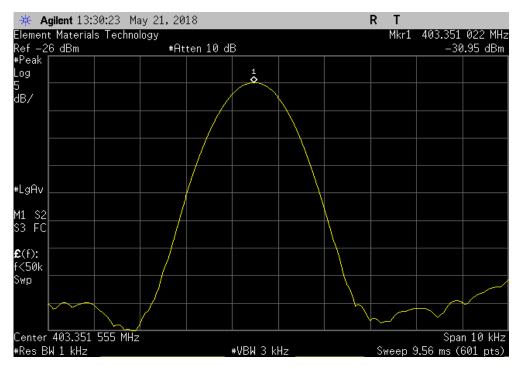
### **FREQUENCY STABILITY**



XMit 2017.12.13

TbtTx 2017.12.14 Sample 3, Extreme Voltage -15%, Mid Channel, 403.35 MHz Measured Assigned Error Limit Value (MHz) Value (MHz) (ppm) (ppm) Results 403.351171 403.35 2.9 100 Pass Agilent 09:15:21 May 21, 2018 R Т \* Element Materials Technology Mkr1 403.351 171 MHz Ref —23 dBm #Peak #Atten 10 dB -28.27 dBm Log 5 dB/ #LgAv M1 S2 S3 FC £(f): f<50k Swp Center 403.351 704 MHz Span 10 kHz #Res BW 1 kHz ₩VBW 3 kHz Sweep 9.56 ms (601 pts) Sample 3, 25°C, Mid Channel, 403.35 MHz





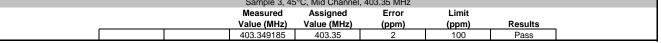
### FREQUENCY STABILITY

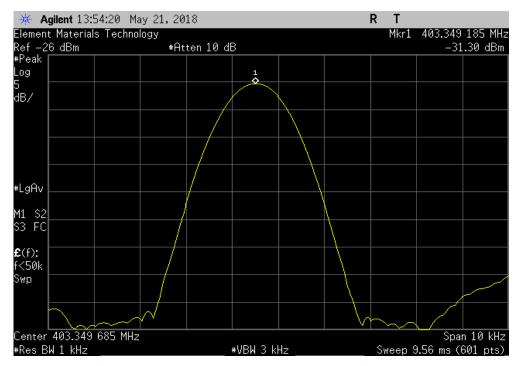


XMit 2017.12.13

TbtTx 2017.12.14

Sample 3, 35°C, Mid Channel, 403.35 MHz Measured Assigned Error Limit Value (MHz) Value (MHz) (ppm) (ppm) Results 403.350103 403.35 0.3 100 Pass Agilent 13:41:21 May 21, 2018 R Т \*\* Element Materials Technology Mkr1 403.350 103 MHz Ref —26 dBm #Peak #Atten 10 dB -31.22 dBm Log 5 dB/ #LgAv M1 S2 S3 FC £(f): f<50k Swp Center 403.350 536 MHz Span 10 kHz #Res BW 1 kHz ₩VBW 3 kHz Sweep 9.56 ms (601 pts) Sample 3, 45°C, Mid Channel, 403.35 MHz







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

Transmitting MICS - low channel (402.15 MHz), mid channel (403.35 MHz), and high channel (404.85 MHz) modulated

#### POWER SETTINGS INVESTIGATED

Battery

#### **CONFIGURATIONS INVESTIGATED**

| BSTN0835 - 1 |  |  |
|--------------|--|--|
| BSTN0835 - 2 |  |  |
| BSTN0835 - 3 |  |  |

### FREQUENCY RANGE INVESTIGATED

| Start Frequency | 30 MHz |
|-----------------|--------|
|-----------------|--------|

Stop Frequency 5000 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 |
|------------------------------|-----------------|--------------------------------|-----|-------------|----------|
| Amplifier - Pre-Amplifier    | Miteq           | AMF-3D-00100800-32-13P         | AVT | 13-Feb-2018 | 12 mo    |
| Cable                        | ESM Cable Corp. | Double Ridge Guide Horn Cables | MNI | 21-Nov-2017 | 12 mo    |
| Antenna - Double Ridge       | ETS Lindgren    | 3115                           | AJA | 23-Jun-2016 | 24 mo    |
| Amplifier - Pre-Amplifier    | Miteq           | AM-1616-1000                   | AVO | 9-Nov-2017  | 12 mo    |
| Cable                        | ESM Cable Corp. | Bilog Cables                   | MNH | 9-Nov-2017  | 12 mo    |
| Antenna - Biconilog          | Teseq           | CBL 6141B                      | AYD | 25-Jan-2018 | 24 mo    |
| Analyzer - Spectrum Analyzer | Agilent         | E4440A                         | AFD | 2-Aug-2017  | 12 mo    |

#### **MEASUREMENT BANDWIDTHS**

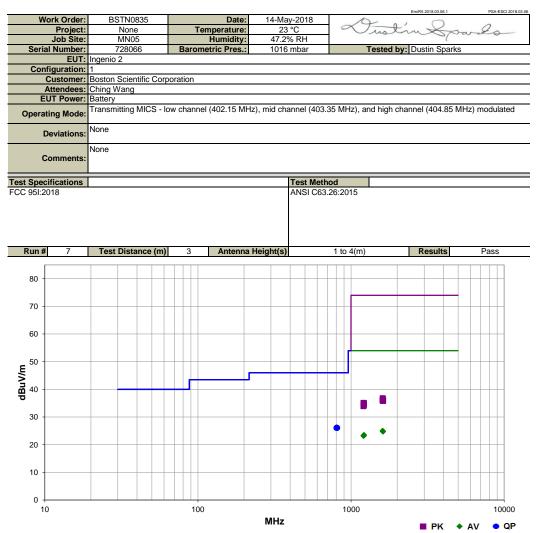
| Frequency Range<br>(MHz) | Peak Data<br>(kHz) | Quasi-Peak Data<br>(kHz) | Average Data<br>(kHz) |
|--------------------------|--------------------|--------------------------|-----------------------|
| 0.01 - 0.15              | 1.0                | 0.2                      | 0.2                   |
| 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                |

### **TEST DESCRIPTION**

The highest gain of each type of antenna to be used with the EUT was tested. For each configuration, the spectrum was scanned throughout the specified range. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.26). A preamp was used for this test in order to provide sufficient measurement sensitivity.

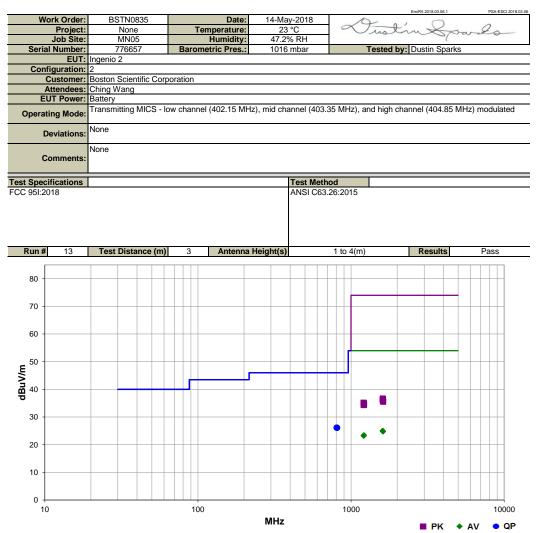
Per CFR 47 95.2579(a), field strength measurements were performed and compared to the specified limits.





| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Antenna Height<br>(meters) | Azimuth<br>(degrees) | Test Distance<br>(meters) | External<br>Attenuation<br>(dB) | Polarity/<br>Transducer<br>Type | Detector | Distance<br>Adjustment<br>(dB) | Adjusted<br>(dBuV/m) | Spec. Limit<br>(dBuV/m) | Compared to<br>Spec.<br>(dB) | Comments               |
|---------------|---------------------|----------------|----------------------------|----------------------|---------------------------|---------------------------------|---------------------------------|----------|--------------------------------|----------------------|-------------------------|------------------------------|------------------------|
| 804.536       | 15.7                | 10.4           | 1.0                        | 250.9                | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Low ch, EUT vertical   |
| 804.461       | 15.7                | 10.4           | 1.0                        | 258.9                | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Low ch, EUT vertical   |
| 803.971       | 15.7                | 10.4           | 1.0                        | 149.1                | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Low ch, EUT on side    |
| 803.501       | 15.7                | 10.4           | 1.0                        | 23.1                 | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Low ch, EUT on side    |
| 804.526       | 15.7                | 10.4           | 1.0                        | 231.0                | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Low ch, EUT horizontal |
| 805.227       | 15.7                | 10.4           | 1.0                        | 163.1                | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Low ch, EUT horizontal |
| 806.487       | 15.7                | 10.4           | 2.3                        | 145.1                | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Mid ch, EUT vertical   |
| 806.713       | 15.7                | 10.4           | 1.0                        | 339.0                | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Mid ch, EUT vertical   |
| 811.011       | 15.7                | 10.4           | 1.0                        | 120.1                | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | High ch, EUT vertical  |
| 810.500       | 15.7                | 10.4           | 1.1                        | 235.9                | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | High ch, EUT vertical  |
| 1609.225      | 31.0                | -6.0           | 1.0                        | 194.0                | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 25.0                 | 54.0                    | -29.0                        | Low ch, EUT vertical   |
| 1608.208      | 31.0                | -6.0           | 1.0                        | 55.1                 | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 25.0                 | 54.0                    | -29.0                        | Low ch, EUT vertical   |
| 1611.692      | 30.9                | -6.0           | 3.1                        | 137.1                | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 24.9                 | 54.0                    | -29.1                        | Mid ch, EUT vertical   |
| 1611.925      | 30.8                | -6.0           | 1.0                        | 246.9                | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 24.8                 | 54.0                    | -29.2                        | Mid ch, EUT vertical   |
| 1617.833      | 30.6                | -5.9           | 1.0                        | 96.0                 | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 24.7                 | 54.0                    | -29.3                        | High ch, EUT vertical  |
| 1617.608      | 30.6                | -5.9           | 1.0                        | 24.0                 | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 24.7                 | 54.0                    | -29.3                        | High ch, EUT vertical  |
| 1214.983      | 31.6                | -8.1           | 1.3                        | 118.0                | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 23.5                 | 54.0                    | -30.5                        | High ch, EUT vertical  |
| 1214.258      | 31.6                | -8.1           | 1.6                        | 66.1                 | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 23.5                 | 54.0                    | -30.5                        | High ch, EUT vertical  |
| 1211.725      | 31.5                | -8.3           | 1.0                        | 185.1                | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 23.2                 | 54.0                    | -30.8                        | Mid ch, EUT vertical   |
| 1209.808      | 31.5                | -8.3           | 2.4                        | 44.1                 | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 23.2                 | 54.0                    | -30.8                        | Mid ch, EUT vertical   |
| 1207.908      | 31.5                | -8.3           | 1.0                        | 275.9                | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 23.2                 | 54.0                    | -30.8                        | Low ch, EUT vertical   |
| 1204.300      | 31.5                | -8.3           | 1.0                        | 335.0                | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 23.2                 | 54.0                    | -30.8                        | Low ch, EUT vertical   |
| 1610.017      | 42.8                | -6.0           | 1.0                        | 55.1                 | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 36.8                 | 74.0                    | -37.2                        | Low ch, EUT vertical   |
| 1612.942      | 42.3                | -6.0           | 3.1                        | 137.1                | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 36.3                 | 74.0                    | -37.7                        | Mid ch, EUT vertical   |
| 1619.317      | 42.0                | -5.9           | 1.0                        | 24.0                 | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 36.1                 | 74.0                    | -37.9                        | High ch, EUT vertical  |
| 1606.825      | 42.1                | -6.0           | 1.0                        | 194.0                | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 36.1                 | 74.0                    | -37.9                        | Low ch, EUT vertical   |
| 1611.942      | 42.0                | -6.0           | 1.0                        | 246.9                | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 36.0                 | 74.0                    | -38.0                        | Mid ch, EUT vertical   |
| 1618.633      | 41.7                | -5.9           | 1.0                        | 96.0                 | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 35.8                 | 74.0                    | -38.2                        | High ch, EUT vertical  |
| 1207.950      | 43.4                | -8.3           | 1.0                        | 185.1                | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 35.1                 | 74.0                    | -38.9                        | Mid ch, EUT vertical   |
| 1213.067      | 43.1                | -8.1           | 1.3                        | 118.0                | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 35.0                 | 74.0                    | -39.0                        | High ch, EUT vertical  |
| 1205.225      | 43.2                | -8.3           | 1.0                        | 275.9                | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 34.9                 | 74.0                    | -39.1                        | Low ch, EUT vertical   |
| 1212.492      | 42.7                | -8.2           | 1.6                        | 66.1                 | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 34.5                 | 74.0                    | -39.5                        | High ch, EUT vertical  |
| 1212.533      | 42.5                | -8.1           | 2.4                        | 44.1                 | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 34.4                 | 74.0                    | -39.6                        | Mid ch, EUT vertical   |
| 1205.858      | 42.2                | -8.3           | 1.0                        | 335.0                | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 33.9                 | 74.0                    | -40.1                        | Low ch, EUT vertical   |





| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Antenna Height<br>(meters) | Azimuth<br>(degrees) | Test Distance<br>(meters) | External<br>Attenuation<br>(dB) | Polarity/<br>Transducer<br>Type | Detector | Distance<br>Adjustment<br>(dB) | Adjusted<br>(dBuV/m) | Spec. Limit<br>(dBuV/m) | Compared to<br>Spec.<br>(dB) | Comments                |
|---------------|---------------------|----------------|----------------------------|----------------------|---------------------------|---------------------------------|---------------------------------|----------|--------------------------------|----------------------|-------------------------|------------------------------|-------------------------|
| 809.335       | 15.7                | 10.5           | 1.0                        | 63.0                 | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.2                 | 46.0                    | -19.8                        | High ch, EUT vertical   |
| 802.843       | 15.7                | 10.5           | 1.7                        | 154.0                | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.2                 | 46.0                    | -19.8                        | Low ch, EUT vertical    |
| 810.692       | 15.7                | 10.4           | 1.0                        | 199.1                | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | High ch, EUT vertical   |
| 810.741       | 15.7                | 10.4           | 1.0                        | 310.0                | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | High ch, EUT on side    |
| 810.744       | 15.7                | 10.4           | 1.0                        | 281.0                | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | High ch, EUT on side    |
| 810.320       | 15.7                | 10.4           | 3.9                        | 325.9                | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | High ch, EUT horizontal |
| 809.757       | 15.7                | 10.4           | 1.0                        | 10.0                 | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | High ch, EUT horizontal |
| 806.385       | 15.7                | 10.4           | 1.0                        | 61.0                 | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Mid ch, EUT vertical    |
| 806.037       | 15.7                | 10.4           | 2.2                        | 229.0                | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Mid ch, EUT vertical    |
| 804.503       | 15.7                | 10.4           | 1.0                        | 184.1                | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Low ch, EUT vertical    |
| 1609.275      | 31.0                | -6.0           | 1.0                        | 110.0                | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 25.0                 | 54.0                    | -29.0                        | Low ch, EUT vertical    |
| 1607.050      | 31.0                | -6.0           | 1.0                        | 61.0                 | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 25.0                 | 54.0                    | -29.0                        | Low ch, EUT vertical    |
| 1612.292      | 31.0                | -6.0           | 1.0                        | 31.0                 | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 25.0                 | 54.0                    | -29.0                        | Mid ch, EUT vertical    |
| 1611.983      | 30.9                | -6.0           | 3.3                        | 294.9                | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 24.9                 | 54.0                    | -29.1                        | Mid ch, EUT vertical    |
| 1617.275      | 30.6                | -5.9           | 1.0                        | 275.0                | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 24.7                 | 54.0                    | -29.3                        | High ch, EUT vertical   |
| 1617.617      | 30.6                | -5.9           | 1.0                        | 330.9                | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 24.7                 | 54.0                    | -29.3                        | High ch, EUT vertical   |
| 1212.383      | 31.6                | -8.2           | 1.0                        | 91.1                 | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 23.4                 | 54.0                    | -30.6                        | High ch, EUT vertical   |
| 1214.933      | 31.5                | -8.1           | 1.0                        | 33.1                 | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 23.4                 | 54.0                    | -30.6                        | High ch, EUT vertical   |
| 1211.542      | 31.6                | -8.3           | 1.0                        | 235.9                | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 23.3                 | 54.0                    | -30.7                        | Mid ch, EUT vertical    |
| 1208.367      | 31.5                | -8.3           | 1.0                        | 303.0                | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 23.2                 | 54.0                    | -30.8                        | Low ch, EUT vertical    |
| 1208.625      | 31.5                | -8.3           | 1.0                        | 300.0                | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 23.2                 | 54.0                    | -30.8                        | Low ch, EUT vertical    |
| 1209.417      | 31.5                | -8.3           | 1.0                        | 160.1                | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 23.2                 | 54.0                    | -30.8                        | Mid ch, EUT vertical    |
| 1610.550      | 42.7                | -6.0           | 1.0                        | 61.0                 | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 36.7                 | 74.0                    | -37.3                        | Low ch, EUT vertical    |
| 1614.942      | 42.5                | -6.0           | 1.0                        | 31.0                 | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 36.5                 | 74.0                    | -37.5                        | Mid ch, EUT vertical    |
| 1606.442      | 42.3                | -6.0           | 1.0                        | 110.0                | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 36.3                 | 74.0                    | -37.7                        | Low ch, EUT vertical    |
| 1620.150      | 42.1                | -5.9           | 1.0                        | 330.9                | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 36.2                 | 74.0                    | -37.8                        | High ch, EUT vertical   |
| 1614.067      | 41.8                | -6.0           | 3.3                        | 294.9                | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 35.8                 | 74.0                    | -38.2                        | Mid ch, EUT vertical    |
| 1621.417      | 41.4                | -5.9           | 1.0                        | 275.0                | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 35.5                 | 74.0                    | -38.5                        | High ch, EUT vertical   |
| 1204.867      | 43.5                | -8.3           | 1.0                        | 303.0                | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 35.2                 | 74.0                    | -38.8                        | Low ch, EUT vertical    |
| 1216.067      | 43.1                | -8.1           | 1.0                        | 91.1                 | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 35.0                 | 74.0                    | -39.0                        | High ch, EUT vertical   |
| 1217.025      | 42.6                | -8.1           | 1.0                        | 33.1                 | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 34.5                 | 74.0                    | -39.5                        | High ch, EUT vertical   |
| 1208.908      | 42.7                | -8.3           | 1.0                        | 300.0                | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 34.4                 | 74.0                    | -39.6                        | Low ch, EUT vertical    |
| 1210.242      | 42.7                | -8.3           | 1.0                        | 160.1                | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 34.4                 | 74.0                    | -39.6                        | Mid ch, EUT vertical    |
| 1210.775      | 42.6                | -8.3           | 1.0                        | 235.9                | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 34.3                 | 74.0                    | -39.7                        | Mid ch, EUT vertical    |



|                                       | ork Order: | BS        | TN0835     |         | _        | Date:           | 14-Ma       | y-2018      | 6                  |              | miR5 2018.03.06.1 |           | PSA-ESCI 20 |
|---------------------------------------|------------|-----------|------------|---------|----------|-----------------|-------------|-------------|--------------------|--------------|-------------------|-----------|-------------|
|                                       | Project:   |           | None       |         |          | Temperature:    |             | °C          | $\sim \mathcal{I}$ | inti         | n ×               | Sard      | 2           |
|                                       | Job Site:  | Ν         | MN05       |         |          | Humidity:       | 47.2        | % RH        |                    |              | (                 |           |             |
|                                       | Number:    |           | 20522      |         | Bar      | ometric Pres.:  |             | mbar        | Т                  | ested by:    | Dustin Spa        | rks       |             |
|                                       |            | Ingenio 2 | 2          |         |          |                 |             |             |                    |              | 1                 |           |             |
| Confi                                 | iguration: | 3         |            |         |          |                 |             |             |                    |              |                   |           |             |
| C                                     | ustomer:   | Boston S  | Scientific | c Corp  | oratior  | 1               |             |             |                    |              |                   |           |             |
| A                                     | ttendees:  | Ching W   | ang        |         |          |                 |             |             |                    |              |                   |           |             |
| EU                                    | JT Power:  | Battery   |            |         |          |                 |             |             |                    |              |                   |           |             |
| Operati                               | ng Mode:   | Transmit  | iting MIC  | CS - lo | w cha    | nnel (402.15 Mł | Hz), mid ch | annel (403. | 35 MHz), ar        | nd high chai | nnel (404.8       | 35 MHz) m | odulate     |
| De                                    | eviations: | None      |            |         |          |                 |             |             |                    |              |                   |           |             |
| Co                                    | omments:   | None      |            |         |          |                 |             |             |                    |              |                   |           |             |
| est Speci                             | fications  |           |            |         |          |                 |             | Test Meth   | od                 |              |                   |           |             |
| CC 951:20                             |            | 1         |            |         |          |                 |             | ANSI C63.   |                    |              |                   |           |             |
| Run #                                 | 20         | Test D    | Distance   | e (m)   | 3        | Antenna         | Height(s)   |             | 1 to 4(m)          |              | Results           | Р         | ass         |
| Г                                     |            |           |            |         |          |                 |             |             |                    |              |                   |           |             |
| 80 -                                  |            |           |            |         |          |                 |             |             |                    |              |                   |           |             |
|                                       |            |           |            |         |          |                 |             |             |                    |              |                   |           |             |
|                                       |            |           |            |         |          |                 |             |             |                    |              |                   | -         |             |
|                                       |            |           |            |         |          |                 |             |             |                    |              |                   |           |             |
| 70 +                                  |            |           |            |         |          |                 |             |             |                    |              |                   |           |             |
| 70 -                                  |            |           |            |         |          |                 |             |             |                    |              |                   |           |             |
|                                       |            |           |            |         |          |                 |             |             |                    |              |                   |           |             |
| 70 —<br>60 —                          |            |           |            |         |          |                 |             |             |                    |              |                   |           |             |
|                                       |            |           |            |         |          |                 |             |             |                    |              |                   |           |             |
| 60                                    |            |           |            |         |          |                 |             |             |                    |              |                   |           |             |
| 60                                    |            |           |            |         |          |                 |             |             |                    |              |                   | _         |             |
| 60                                    |            |           |            |         |          |                 |             |             |                    |              |                   |           |             |
| 60                                    |            |           |            |         |          |                 |             |             |                    |              |                   | -         |             |
| 60 -                                  |            |           |            |         |          |                 |             |             |                    |              |                   |           |             |
| 60<br>50<br><b>m//ngp</b>             |            |           |            |         | <b>F</b> |                 |             |             |                    | •            |                   | -         |             |
| 60                                    |            |           |            |         | ſ        |                 |             |             |                    | •            |                   | -         |             |
| 60<br>50<br><b>m//ngp</b>             |            |           |            |         | ſ        |                 |             |             | •                  | •            |                   |           |             |
| 60<br>50<br>40<br>30                  |            |           |            |         | ſ        |                 |             |             | •                  | •            |                   |           |             |
| 60<br>50<br><b>m//ngp</b>             |            |           |            |         |          |                 | P           |             | • •                | •            |                   |           |             |
| 60<br>50<br>40<br>30                  |            |           |            |         |          |                 | <b></b>     |             | • •                | •            |                   |           |             |
| 60<br>50<br>40<br>30                  |            |           |            |         |          |                 |             |             | •                  | •            |                   |           |             |
| 60<br>50<br>40<br>30<br>20            |            |           |            |         |          |                 |             |             | •                  | •            |                   | -         |             |
| 60<br>50<br>40<br>30<br>20<br>10      |            |           |            |         |          |                 |             |             |                    | •            |                   |           |             |
| 60<br>50<br>40<br>30<br>20<br>10<br>0 |            |           |            |         |          |                 |             |             |                    | •            |                   |           |             |
| 60<br>50<br>40<br>30<br>20<br>10      |            |           |            |         |          | 00              | MHz         |             | 1000               | •            |                   |           | 10000       |

| Freq<br>(MHz) | Amplitude<br>(dBuV) | Factor<br>(dB) | Antenna Height<br>(meters) | Azimuth<br>(degrees) | Test Distance<br>(meters) | External<br>Attenuation<br>(dB) | Polarity/<br>Transducer<br>Type | Detector | Distance<br>Adjustment<br>(dB) | Adjusted<br>(dBuV/m) | Spec. Limit<br>(dBuV/m) | Compared to<br>Spec.<br>(dB) | Comments                |
|---------------|---------------------|----------------|----------------------------|----------------------|---------------------------|---------------------------------|---------------------------------|----------|--------------------------------|----------------------|-------------------------|------------------------------|-------------------------|
| 809.125       | 15.7                | 10.5           | 1.0                        | 15.1                 | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.2                 | 46.0                    | -19.8                        | High ch, EUT on side    |
| 809.496       | 15.7                | 10.5           | 1.7                        | 328.0                | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.2                 | 46.0                    | -19.8                        | High ch, EUT on side    |
| 809.975       | 15.7                | 10.4           | 1.0                        | 344.9                | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | High ch, EUT vertical   |
| 810.405       | 15.7                | 10.4           | 1.0                        | 264.9                | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | High ch, EUT vertical   |
| 810.728       | 15.7                | 10.4           | 1.0                        | 290.9                | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | High ch, EUT horizontal |
| 809.926       | 15.7                | 10.4           | 1.0                        | 40.1                 | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | High ch, EUT horizontal |
| 805.302       | 15.7                | 10.4           | 1.0                        | 56.0                 | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Mid ch, EUT vertical    |
| 805.150       | 15.7                | 10.4           | 1.0                        | 34.1                 | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Mid ch, EUT vertical    |
| 805.360       | 15.7                | 10.4           | 1.0                        | 108.0                | 3.0                       | 0.0                             | Horz                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Low ch, EUT vertical    |
| 805.188       | 15.7                | 10.4           | 1.0                        | 243.9                | 3.0                       | 0.0                             | Vert                            | QP       | 0.0                            | 26.1                 | 46.0                    | -19.9                        | Low ch, EUT vertical    |
| 1611.125      | 30.9                | -6.0           | 3.0                        | 49.0                 | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 24.9                 | 54.0                    | -29.1                        | Mid ch, EUT vertical    |
| 1612.425      | 30.9                | -6.0           | 1.0                        | 325.0                | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 24.9                 | 54.0                    | -29.1                        | Mid ch, EUT vertical    |
| 1209.542      | 31.6                | -8.3           | 3.5                        | 119.1                | 3.0                       | 0.0                             | Horz                            | AV       | 0.0                            | 23.3                 | 54.0                    | -30.7                        | Mid ch, EUT vertical    |
| 1211.650      | 31.6                | -8.3           | 1.0                        | 260.0                | 3.0                       | 0.0                             | Vert                            | AV       | 0.0                            | 23.3                 | 54.0                    | -30.7                        | Mid ch, EUT vertical    |
| 1606.117      | 42.2                | -6.0           | 1.0                        | 346.0                | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 36.2                 | 74.0                    | -37.8                        | Low ch, EUT vertical    |
| 1614.717      | 42.1                | -6.0           | 3.0                        | 49.0                 | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 36.1                 | 74.0                    | -37.9                        | Mid ch, EUT vertical    |
| 1606.233      | 42.0                | -6.0           | 1.0                        | 271.9                | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 36.0                 | 74.0                    | -38.0                        | Low ch, EUT vertical    |
| 1611.967      | 41.9                | -6.0           | 1.0                        | 325.0                | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 35.9                 | 74.0                    | -38.1                        | Mid ch, EUT vertical    |
| 1210.950      | 42.8                | -8.3           | 3.5                        | 119.1                | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 34.5                 | 74.0                    | -39.5                        | Mid ch, EUT vertical    |
| 1207.233      | 42.7                | -8.3           | 2.8                        | 342.0                | 3.0                       | 0.0                             | Horz                            | PK       | 0.0                            | 34.4                 | 74.0                    | -39.6                        | Low ch, EUT vertical    |
| 1212.217      | 42.4                | -8.2           | 1.0                        | 260.0                | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 34.2                 | 74.0                    | -39.8                        | Mid ch, EUT vertical    |
| 1204.225      | 42.5                | -8.3           | 3.9                        | 105.1                | 3.0                       | 0.0                             | Vert                            | PK       | 0.0                            | 34.2                 | 74.0                    | -39.8                        | Low ch, EUT vertical    |



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  |
|------------------------------|----------------------|-----------------|-----|-----------|-----------|
| Power Supply - DC            | EZ Digital Co., Ltd. | GP-4030D        | TQK | NCR       | NCR       |
| Meter - Multimeter           | Fluke                | 114             | MMU | 18-Jul-17 | 18-Jul-20 |
| 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 |
| Generator - Signal           | Agilent              | E4422B          | TGQ | 15-Mar-18 | 15-Mar-21 |
| Analyzer - Spectrum Analyzer | Agilent              | E4440A          | AFD | 2-Aug-17  | 2-Aug-18  |

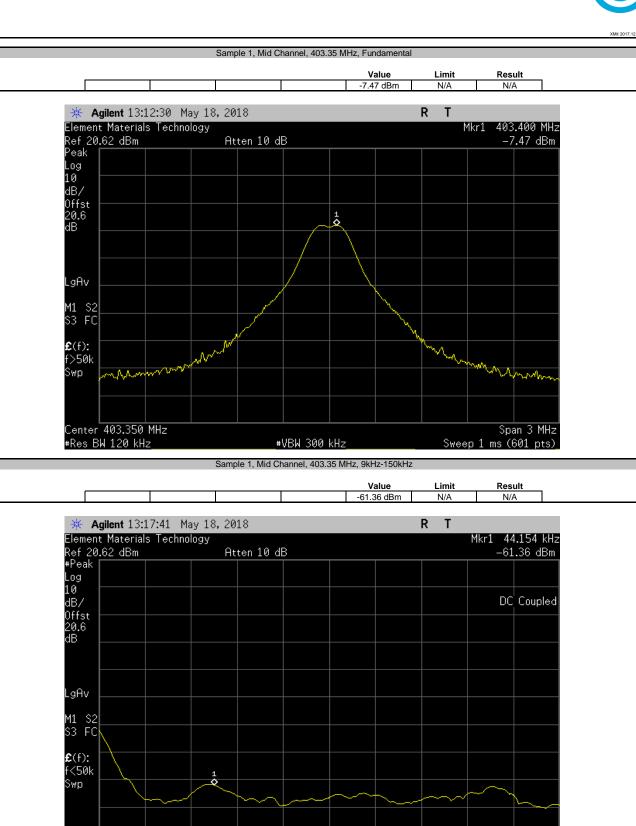
#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Per FCC Part 2.1051, RSS-GEN, the spurious emissions shall be measured at the RF terminal. The peak spurious emissions were measured with the EUT configured to the modes listed in the datasheet. The EUT was transmitting at its maximum data rate.

FCC Part 95 and RSS-243 have no conducted spurious emissions limit. It is a requirement to characterize this information and that data is contained within this datasheet.



|                        | In nonla Ó   |  |               | Work Order:  | DOTMODOC  | XMit 2  |
|------------------------|--|--|---------------|--|---|---|
|                        | Ingenio 2<br>See Comments  |  |               |  |   |   |
|                        |  |  |               | Temperature:   | 22-May-18   |   |
|                        | Boston Scientific Corporation Ching Wang   |  |               | Humidity:  |   |   |
| Attendees:<br>Project: |  |  |               | Barometric Pres.:  |   |   |
|                        | Dustin Sparks  | Power: 3.2V                            | P6            | Job Site:  |   |   |
| TEST SPECIFICATI       |  |  | Method        | Job Site:  | MINUO   |   |
| CC 951:2018            | 000  |  | I C63.26:2015 |  |   |   |
| -00 931.2018           |  | ANG                                    | 1 C03.20.2015 |  |   |   |
| COMMENTS               |  |  |               |  |   |   |
|                        | ed simultaneously - sample 1 (SN 75602703), sar  |  | 175000704)    |  |   |   |
| nree samples test      | ed simultaneously - sample 1 (SN 75602703), sar  | npie 2 (SN 75602706), and sample 3 (Si | N 75602701).  |  |   |   |
|                        |  |  |               |  |   |   |
| FVIATIONS FROM         | I TEST STANDARD  |  |               |  |   | _   |
| None                   |  |  |               |  |   |   |
|                        |  | <b>A</b> -                             |               |  |   |   |
| Configuration #        | 4, 5, 6  | Justing                                | 2             |  |   |   |
| g                      | Signature  | month                                  | raves         |  |   |   |
|                        | I  |  |               |  |   |   |
|                        |  |  |               | Value  | Limit   | Result  |
| Sample 1               |  |  |               |  |   |   |
|                        | Mid Channel, 403.35 MHz  |  |               |  |   |   |
|                        | Fundamental  |  |               | -7.47 dBm  | N/A   | N/A   |
|                        |  |  |               |  |   |   |
|                        | 9kHz-150kHz  |  |               | -61.36 dBm   | N/A   | N/A   |
|                        | 9kHz-150kHz<br>150kHz-30MHz  |  |               |  |   |   |
|                        |  |  |               | -61.36 dBm   | N/A   | N/A   |
|                        | 150kHz-30MHz   |  |               | -61.36 dBm<br>-38.49 dBm   | N/A<br>N/A  | N/A<br>N/A  |
| Sample 2               | 150kHz-30MHz<br>30MHz-1GHz   |  |               | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm   | N/A<br>N/A<br>N/A   | N/A<br>N/A<br>N/A   |
|                        | 150kHz-30MHz<br>30MHz-1GHz   | _                                      |               | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm   | N/A<br>N/A<br>N/A   | N/A<br>N/A<br>N/A   |
|                        | 150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz  | _                                      | _             | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm   | N/A<br>N/A<br>N/A   | N/A<br>N/A<br>N/A   |
|                        | 150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz   |  |               | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm<br>-49.35 dBm   | N/A<br>N/A<br>N/A<br>N/A                                    | N/A<br>N/A<br>N/A<br>N/A                                    |
|                        | 150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz<br>Fundamental  |  |               | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm<br>-49.35 dBm<br>-7.86 dBm  | N/A<br>N/A<br>N/A<br>N/A                                    | N/A<br>N/A<br>N/A<br>N/A                                    |
|                        | 150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz<br>Fundamental<br>9kHz-150kHz   |  | -             | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm<br>-49.35 dBm<br>-7.86 dBm<br>-60.69 dBm  | N/A<br>N/A<br>N/A<br>N/A<br>N/A                             | N/A<br>N/A<br>N/A<br>N/A<br>N/A                             |
|                        | 150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz<br>Fundamental<br>9kHz-150kHz<br>150kHz-30MHz   |  |               | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm<br>-49.35 dBm<br>-7.86 dBm<br>-60.69 dBm<br>-39.95 dBm  | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A                      | N/A<br>N/A<br>N/A<br>N/A<br>N/A                             |
| Sample 3               | 150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz<br>Fundamental<br>9kHz-150kHz<br>150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz  |  |               | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm<br>-49.35 dBm<br>-7.86 dBm<br>-60.69 dBm<br>-39.95 dBm<br>-54.90 dBm  | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A                      | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A               |
| Sample 3               | 150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz<br>Fundamental<br>9kHz-150kHz<br>150kHz<br>30MHz-16Hz   |  |               | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm<br>-49.35 dBm<br>-77.86 dBm<br>-60.69 dBm<br>-39.95 dBm<br>-54.90 dBm   | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A                      | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A               |
| Sample 3               | 150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz<br>Fundamental<br>9kHz-150kHz<br>150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz<br>Fundamental                |  |               | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm<br>-49.35 dBm<br>-60.69 dBm<br>-60.69 dBm<br>-39.95 dBm<br>-54.90 dBm<br>-49.74 dBm<br>-49.74 dBm             | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A                      | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A               |
| Sample 3               | 150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz<br>Fundamental<br>9kHz-150kHz<br>150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz                               |  |               | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm<br>-49.35 dBm<br>-77.86 dBm<br>-60.69 dBm<br>-39.95 dBm<br>-54.90 dBm<br>-49.74 dBm                           | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A               | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A               |
| Sample 3               | 150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz<br>Fundamental<br>9kHz-150kHz<br>150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz<br>Fundamental                |  |               | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm<br>-49.35 dBm<br>-60.69 dBm<br>-60.69 dBm<br>-39.95 dBm<br>-54.90 dBm<br>-49.74 dBm<br>-49.74 dBm             | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A               | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A        |
| Sample 3               | 150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz<br>Fundamental<br>9kHz-150kHz<br>150kHz-30MHz<br>30MHz-1GHz<br>1GHz-5GHz<br>Mid Channel, 403.35 MHz<br>Fundamental<br>9kHz-150kHz |  |               | -61.36 dBm<br>-38.49 dBm<br>-52.37 dBm<br>-49.35 dBm<br>-7.86 dBm<br>-60.69 dBm<br>-39.95 dBm<br>-54.90 dBm<br>-49.74 dBm<br>-7.30 dBm<br>-63.05 dBm | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A | N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A |



₩VBW 30 kHz

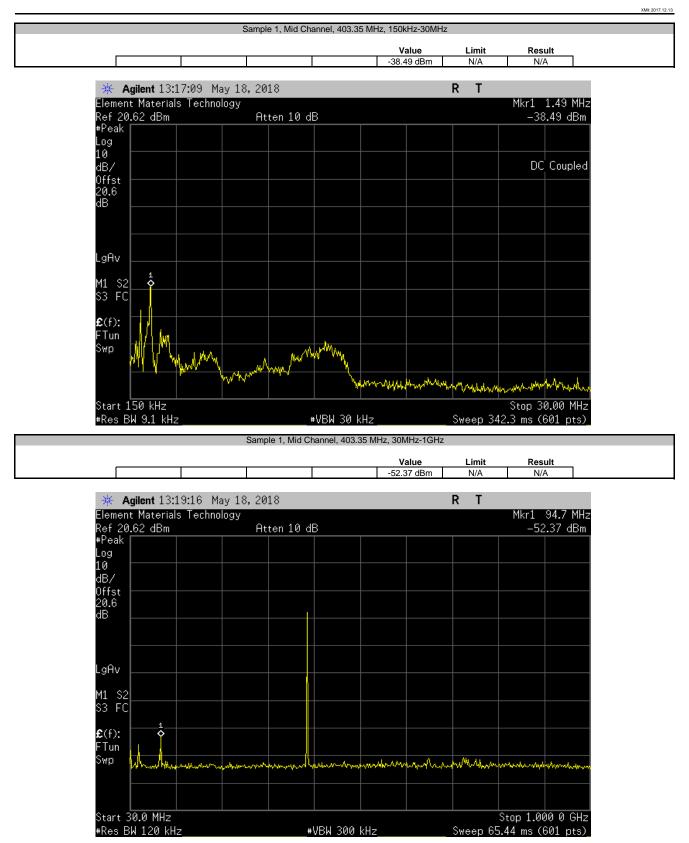
Start 9.000 kHz

#Res BW 9.1 kHz

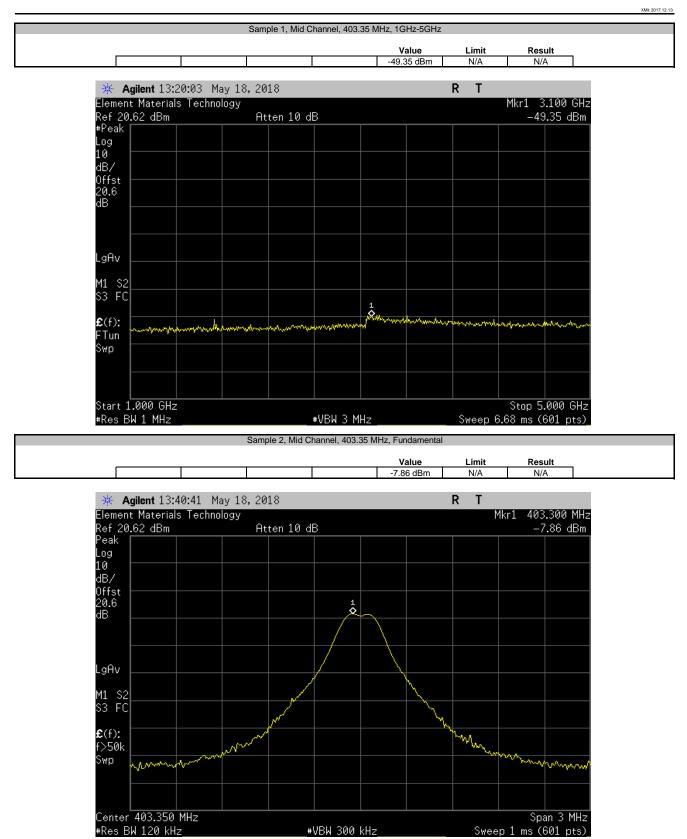
Stop 150.000 kHz

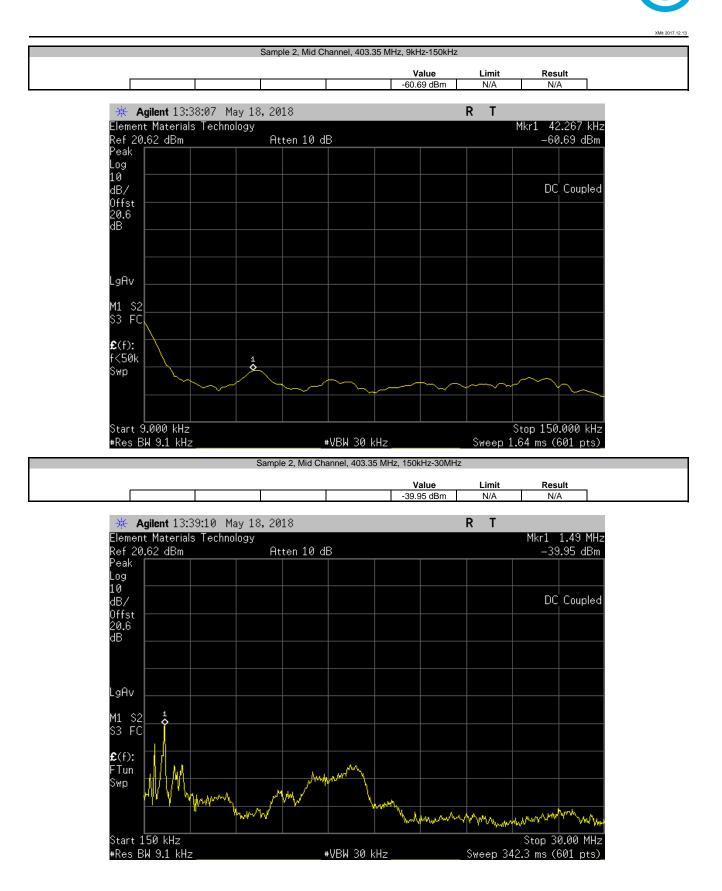
Sweep 1.64 ms (601 pts)



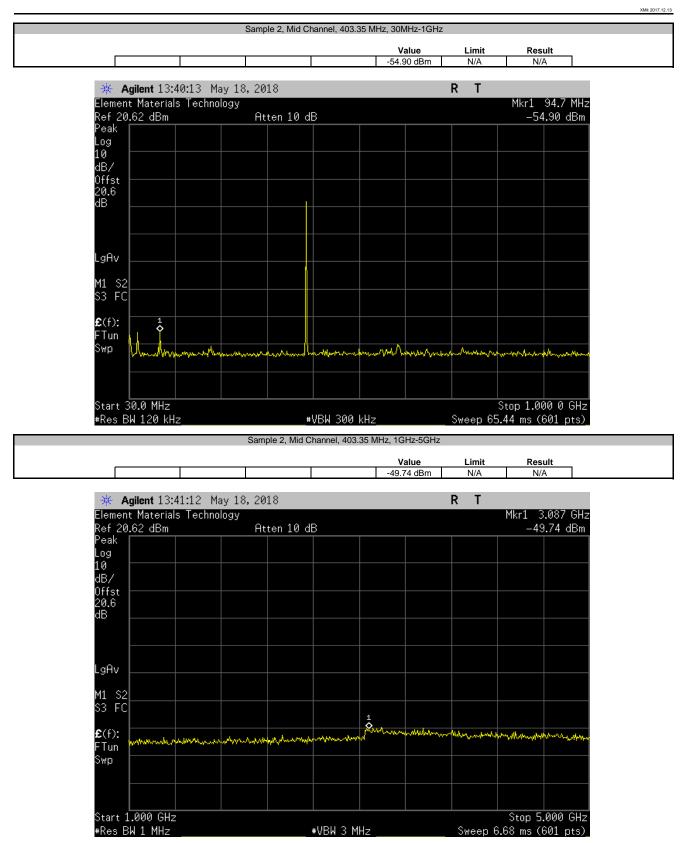


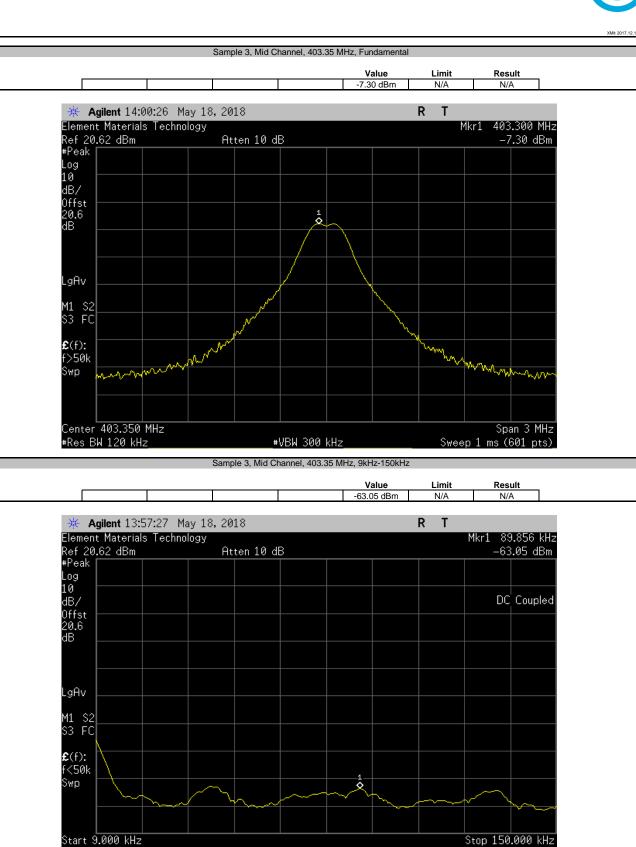










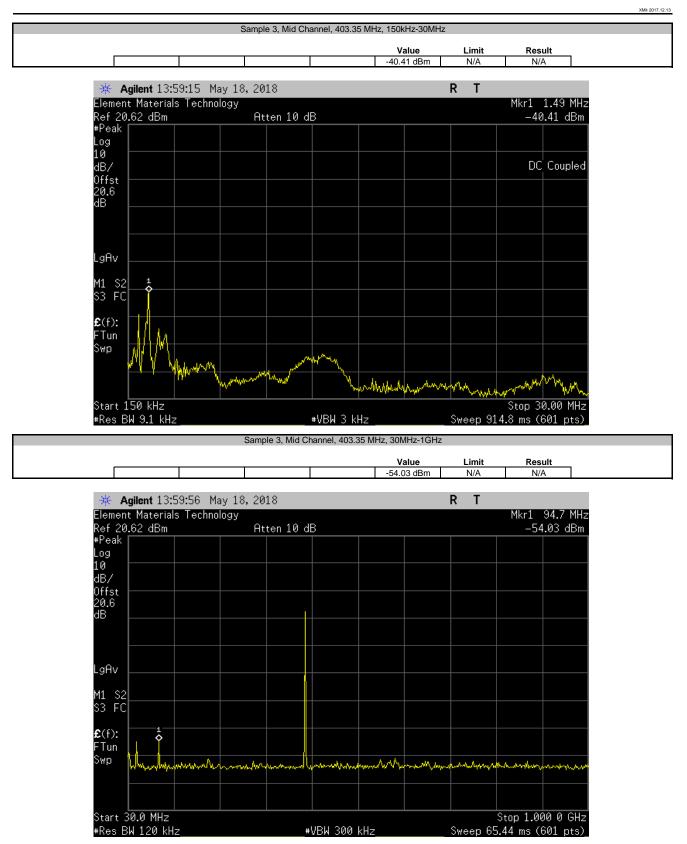


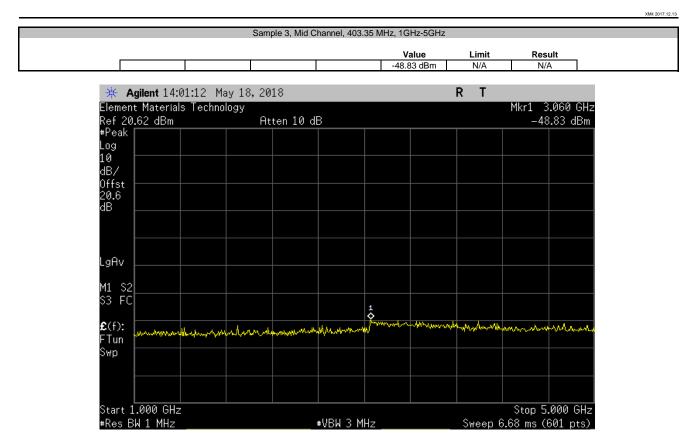
₩VBW 3 kHz

#Res BW 9.1 kHz

Sweep 4.36 ms (601 pts)











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 CW on Low, Mid, or High Ch at 402.15, 403.35, or 404.85 MHz.

#### **POWER SETTINGS INVESTIGATED**

Battery

#### **CONFIGURATIONS INVESTIGATED**

BSTN0835 - 1 BSTN0835 - 2 BSTN0835 - 3

#### FREQUENCY RANGE INVESTIGATED

Start Frequency 402 MHz Stop Frequency 405 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 |
|------------------------------|-----------------|--------------|-----|-------------|----------|
| Tank, Torso Simulator        | None            | None         | PCN | NCR         | 0 mo     |
| Amplifier - Pre-Amplifier    | Miteq           | AM-1616-1000 | AVO | 9-Nov-2017  | 12 mo    |
| Cable                        | ESM Cable Corp. | Bilog Cables | MNH | 9-Nov-2017  | 12 mo    |
| Antenna - Biconilog          | Teseq           | CBL 6141B    | AYD | 25-Jan-2018 | 24 mo    |
| Analyzer - Spectrum Analyzer | Agilent         | E4440A       | AFD | 2-Aug-2017  | 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       |

#### **TEST DESCRIPTION**

Per 95.2567(a)(2), the maximum radiated field strength for a MICS transmitter is 25uW EIRP. The Field Strength of the Fundamental data was converted to EIRP with the formula based upon the Friis transmission equation with 6 dB removed due to reflections from the ground plane: EIRP =  $((E/2)^*d)^2/30$  where E is V/m and d = distance = 3m, and EIRP = W (Reference 95.2569(a)).

The Field Strength of the Fundamental was measured in the far-field at an FCC Listed Semi-anechoic Chamber. Spectrum analyzer and linearly polarized antennas were used to measure the radiated field strength of the fundamental.

The orientation of the EUT and measurement antenna were manipulated to maximize the level of emissions. The turntable azimuth was varied to maximize the level of radiated emissions. The height of the measurement antenna was also varied from 1 to 4 meters. The amplitude and frequency of the emissions were noted.

The EUT was configured to transmit in a fixture that simulates the human torso. The dimensions of the test fixture and the characteristics of the tissue substitute material met the requirements 95.2569(c) and FCC KDB 617965. The height of the transmitter was 1.5-meter above the reference ground plane.



|   | ork Or | der:  |   | BSTI       | N08   | 35      |      |                        |                         |      | Date    | :        | 16-1   | /Jay- | 2018  |       |                |       |   |                    |   | 5 2018.03     |     |     |   | PSA-ESCI 20   |  |  |
|---|--------|-------|---|------------|-------|---------|------|------------------------|-------------------------|------|---------|----------|--------|-------|-------|-------|----------------|-------|---|--------------------|---|---------------|-----|-----|---|---------------|--|--|
|   |        | ject: |   |            | one   |         |      |                        | Те                      | mper | ature   |          |        | 2.9   |       |       | Kugle Mathener |       |   |                    |   |               |     | Can |   |               |  |  |
|   | Job    | Site: | MN05  |            |       |         |      | Humidity:              |                         |      |         | 37.5% RH |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| Serial  | l Num  | ber:  |   | 728        | 8066  | 6       |      | Barometric Pres.: 1018 |                         |      |         |          |        | 18 m  |       |       |                |       |   |                    |   | Kyle McMullan |     |     |   |               |  |  |
|   | E      | EUT:  | ngen  | io 2       |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| Confi   | igurat | tion: |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| C   | Sustor | mer:  | Bosto   | on Sc      | cient | tific ( | Corp | oratio                 | on                      |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| A   | ttend  | ees:  | Tracy   | / Sep      | pelt  |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| EU  | JT Po  | wer:  | Batte   | ry         |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| Operati   | ing M  | ode:  | Tx CW on Low, Mid, or High Ch at 402.15, 403.35, or 404.85 MHz. |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| De  | eviati | ons:  | None  |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
|   |        |       | None  |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| Co  | omme   | ents: |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| st Speci  | ficati | ons   |   |            |       |         |      |                        |                         |      |         |          |        | Т     | est I | /leth | od             |       |   |                    |   |               |     |     |   |               |  |  |
| C 951:20  |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       | 26:20          | 15    |   |                    |   |               |     |     |   |               |  |  |
|   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| Run #   | 3      | 1     | Tes   | st Di      | star  | nce     | (m)  |                        | 3                       | A    | ntenn   | a He     | eight( | s)    |       |       | 1 to           | 4(m)  |   |                    | F | Resu          | lts |     | P | ass           |  |  |
| Γ   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -5 -  |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       | -     | -     |                |       |   |                    |   |               | -   |     |   |               |  |  |
|   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| 45  |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
|   |        |       |   |            |       |         |      | _                      | -                       |      | -       |          |        | -     | -     |       |                |       |   |                    | - |               | -   |     |   |               |  |  |
| -15 -   |        | _     |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -15 -   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
|   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -15 -   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
|   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    | _ |               |     |     |   |               |  |  |
|   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -  |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -  |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -  |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -<br>Egg -45 -                                   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -  |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -<br>Egg -45 -                                   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -<br>Egg -45 -                                   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -<br><b>Egg</b><br>-45 -<br>-55 -                |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -<br><b>Egg</b> -45 -<br>-55 -<br>-65 -          |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -<br>Egg<br>-45 -<br>-55 -                       |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -<br><b>Egg</b> -45 -<br>-55 -<br>-65 -          |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -<br><b>Egg</b> -45 -<br>-55 -<br>-65 -<br>-75 - |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -<br>-35 -<br>-55 -<br>-65 -<br>-75 -<br>-85 -   |        |       |   |            |       |         |      |                        |                         |      |         |          |        |       |       |       |                |       |   |                    |   |               |     |     |   |               |  |  |
| -25 -<br>-35 -<br><b>Ego</b> -45 -<br>-55 -<br>-65 -<br>-75 - |        |       |   | 402        | 2.5   |         |      |                        | 403                     | .0   |         |          | 403    |       |       |       | 40             | 04.0  |   |                    |   | 404.5         |     |     |   |               |  |  |
| -25 -<br>-35 -<br>-35 -<br>-55 -<br>-65 -<br>-75 -<br>-85 -   |        |       |   | 402        | 2.5   |         |      |                        | 403                     | .0   |         |          | 403    |       |       |       | 4(             | 04.0  |   |                    |   |               |     |     |   | 405.0         |  |  |
| -25 -<br>-35 -<br>-35 -<br>-55 -<br>-65 -<br>-75 -<br>-85 -   |        |       |   | 402        | 2.5   |         |      |                        | 403                     | 0    |         |          |        |       |       |       | 4(             | 04.0  |   |                    |   | 404.5         |     |     |   |               |  |  |
| -25 -<br>-35 -<br>-35 -<br>-55 -<br>-65 -<br>-75 -<br>-85 -   |        |       | Ante  | nna<br>ght |       | Azimut  |      | Trans                  | 403<br>arity/<br>sducer |      | etector |          |        |       | EIRR  |       | 4(             | Limit | 5 | pared ti<br>bapec. |   |               |     |     |   | 405.0<br>• QF |  |  |

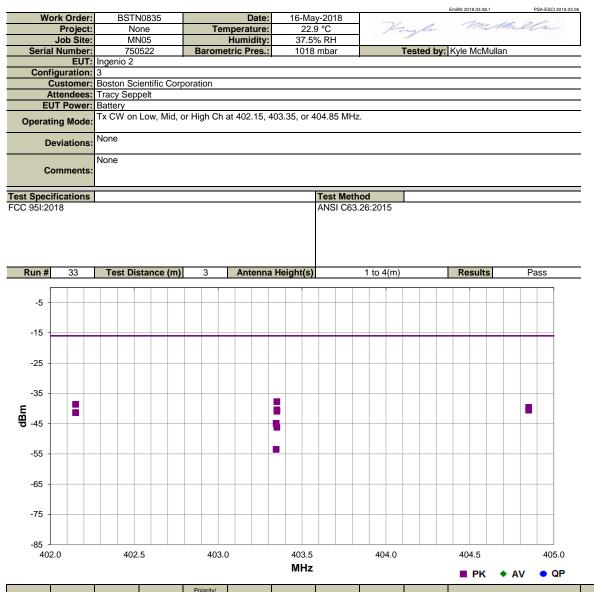
| (MHz)   | (meters) | (degrees) |      |    | (Watts)  | (dBm) | (dBm) | (dB)  |                     |
|---------|----------|-----------|------|----|----------|-------|-------|-------|---------------------|
| 402.150 | 1.6      | 308.9     | Vert | PK | 1.94E-07 | -37.1 | -16.0 | -21.1 | Low Ch, EUT Vert    |
| 404.850 | 1.6      | 315.0     | Vert | PK | 1.94E-07 | -37.1 | -16.0 | -21.1 | High Ch, EUT Vert   |
| 403.350 | 1.6      | 336.9     | Vert | PK | 1.73E-07 | -37.6 | -16.0 | -21.6 | Mid Ch, EUT Vert    |
| 403.345 | 1.1      | 265.9     | Horz | PK | 8.46E-08 | -40.7 | -16.0 | -24.7 | Mid Ch, EUT Vert    |
| 404.850 | 1.1      | 235.9     | Horz | PK | 7.89E-08 | -41.0 | -16.0 | -25.0 | High Ch, EUT Vert   |
| 403.345 | 1.2      | 50.0      | Horz | PK | 7.54E-08 | -41.2 | -16.0 | -25.2 | Mid Ch, EUT On Side |
| 402.150 | 1.1      | 235.9     | Horz | PK | 7.03E-08 | -41.5 | -16.0 | -25.5 | Low Ch, EUT Vert    |
| 403.345 | 1.2      | 351.0     | Horz | PK | 1.98E-08 | -47.0 | -16.0 | -31.0 | Mid Ch, EUT Horz    |
| 403.350 | 1.5      | 315.0     | Vert | PK | 1.57E-08 | -48.0 | -16.0 | -32.0 | Mid Ch, EUT On Side |
| 403.350 | 1.6      | 307.9     | Vert | PK | 5.46E-09 | -52.6 | -16.0 | -36.6 | Mid Ch, EUT Horz    |



|           |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       | Er  | niR5 20' | 18.03.06 | .1  |    | PS   | A-ESCI 20 |
|-----------|----------|-------|------------------------------------|-------|-------|--------|--------|--------|------|--------|------|-------|----------|--------|-----------------|------|-----|-----|------|------|------|-------|-----|----------|----------|-----|----|------|-----------|
| Wo        |          |       | <sup>-</sup> N08                   |       |       |        |        |        |      | Date:  |      |       |          | -201   | 8               |      | _   |     |      | - 12 |      | -     | 200 |          | -        | 20  | -  |      |           |
| Project   |          |       |                                    |       | lone  |        |        |        | Te   |        |      | ture: |          |        | 2.9             |      |     |     | -    | 12   | y    | h     |     | 1        | 12       | 110 | he | 0    | n         |
|           | Job      |       | te: IVINUS Humidity: 37.5% KH      |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| Serial    |          |       |                                    |       | 6657  | 7      |        | Ba     |      |        |      |       |          | 18 I   | mbar Tested by: |      |     |     |      |      | y: K | yle l | McM | ullar    | 1        |     |    |      |           |
|           |          |       | Inge                               | nio 2 |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| Confi     | igura    | tion: | 2                                  |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| С         | usto     | mer:  | Bost                               | ton S | cient | ific ( | Corpo  | oratio | on   |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| A         | ttend    | lees: | Trac                               | v Se  | ppelt |        |        |        | -    |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| EU        | IT Po    | wer   | Batte                              | erv   |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| Operati   |          |       | T O                                |       | n Lov | w, M   | id, or | Hig    | h Cł | n at 4 | 402. | 15, 4 | 403.:    | 35, or | 40              | 4.85 | MH  | z.  |      |      |      |       |     |          |          |     |    |      |           |
| De        | eviati   | ions  | Non                                | None  |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| Co        | omme     | ents: | Non                                | e     |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| st Specif | ficati   | ons   |                                    |       |       |        |        |        |      |        |      |       |          |        | -               | Test | Met | hod |      |      |      |       |     |          |          |     |    |      |           |
| C 951:20  |          | 0113  | ANSI C63.26:2015                   |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| Run #     | 3        | 2     | T                                  | est D | lista | nce    | (m)    |        | 3    |        | Ant  | enn   | a He     | eight( | s)              |      |     | 1   | to 4 | .(m) |      |       |     | Re       | sults    | 5   |    | Pas  | s         |
| Ittair #  |          |       |                                    | 001 0 | iotai |        | ()     |        | 0    |        | /    |       |          | -igin( | <b>~</b> /      |      |     |     | 10 1 | ()   |      |       |     |          | June     | -   |    | 1 40 | 0         |
| Γ         |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| -5 -      |          | _     |                                    | -     |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      | _         |
|           |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| 4.5       |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| -15       |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
|           |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| -25 -     |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| 20        |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
|           |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| -35 -     |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      | _         |
| _         |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| -45 -     | <b>`</b> | -     |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    | -    |           |
| -45 +     |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        | _               |      |     |     |      |      |      |       |     |          |          |     |    |      | _         |
|           |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
|           |          |       |                                    |       |       |        |        |        |      |        |      |       | _        |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| -55 -     |          | -     |                                    | -     |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
|           |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| CE.       |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| -65       |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
|           |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| -75 -     |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| -/5       |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
|           |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
| -85       |          |       |                                    |       |       |        |        |        |      |        |      |       |          |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |
|           | 0        |       |                                    | 40    | 25    |        |        |        | 400  | 2 0    |      |       |          | 402    | 5               |      |     |     | 40   | 4.0  |      |       |     | 40.      | 1 5      |     |    |      | 405.0     |
| 402       |          |       |                                    | 40    | 2.0   |        |        |        | 403  | 5.0    |      |       |          |        |                 |      |     |     | 404  | +.0  |      |       |     | 404      | t.0      |     |    |      | 405.0     |
| 402       | .0       |       | 402.5 403.0 403.5 404.0 <b>MHz</b> |       |       |        |        |        |      |        |      |       | 404.5 40 |        |                 |      |     |     |      |      |      |       |     |          |          |     |    |      |           |

| Freq<br>(MHz) | -     | Azimuth<br>(degrees) | Polarity/<br>Transducer<br>Type | Detector | EIRP<br>(Watts) | EIRP<br>(dBm) | Spec. Limit<br>(dBm) | Compared to<br>Spec.<br>(dB) | Comments            |  |
|---------------|-------|----------------------|---------------------------------|----------|-----------------|---------------|----------------------|------------------------------|---------------------|--|
| <br>403.35    | 0 1.6 | 329.9                | Vert                            | PK       | 1.73E-07        | -37.6         | -16.0                | -21.6                        | Mid Ch, EUT Vert    |  |
| 404.84        | 5 1.6 | 328.0                | Vert                            | PK       | 1.28E-07        | -38.9         | -16.0                | -22.9                        | High Ch, EUT Vert   |  |
| 402.14        | 5 1.6 | 311.0                | Vert                            | PK       | 1.14E-07        | -39.4         | -16.0                | -23.4                        | Low Ch, EUT Vert    |  |
| 404.85        | 0 1.1 | 253.9                | Horz                            | PK       | 1.11E-07        | -39.5         | -16.0                | -23.5                        | High Ch, EUT Vert   |  |
| 402.15        | 0 1.1 | 243.0                | Horz                            | PK       | 1.06E-07        | -39.7         | -16.0                | -23.7                        | Low Ch, EUT Vert    |  |
| 403.35        | 0 1.1 | 247.9                | Horz                            | PK       | 8.07E-08        | -40.9         | -16.0                | -24.9                        | Mid Ch, EUT Vert    |  |
| 403.35        | 0 1.2 | 37.1                 | Horz                            | PK       | 5.46E-08        | -42.6         | -16.0                | -26.6                        | Mid Ch, EUT On Side |  |
| 403.35        | 0 1.2 | 311.9                | Horz                            | PK       | 4.34E-08        | -43.6         | -16.0                | -27.6                        | Mid Ch, EUT Horz    |  |
| 403.35        | 0 1.6 | 303.0                | Vert                            | PK       | 1.40E-08        | -48.5         | -16.0                | -32.5                        | Mid Ch, EUT On Side |  |
| 403.34        | 5 1.7 | 324.0                | Vert                            | PK       | 3.07E-09        | -55.1         | -16.0                | -39.1                        | Mid Ch, EUT Horz    |  |





|   | Freq<br>(MHz) | Antenna<br>Height<br>(meters) | Azimuth<br>(degrees) | Polarity/<br>Transducer<br>Type | Detector | EIRP<br>(Watts) | EIRP<br>(dBm) | Spec. Limit<br>(dBm) | Compared to<br>Spec.<br>(dB) | Comments            |
|---|---------------|-------------------------------|----------------------|---------------------------------|----------|-----------------|---------------|----------------------|------------------------------|---------------------|
| - | 403.350       | 1.6                           | 326.9                | Vert                            | PK       | 1.69E-07        | -37.7         | -16.0                | -21.7                        | Mid Ch, EUT Vert    |
|   | 402.150       | 1.6                           | 308.9                | Vert                            | PK       | 1.37E-07        | -38.6         | -16.0                | -22.6                        | Low Ch, EUT Vert    |
|   | 404.850       | 1.6                           | 310.0                | Vert                            | PK       | 1.09E-07        | -39.6         | -16.0                | -23.6                        | High Ch, EUT Vert   |
|   | 403.350       | 1.1                           | 250.9                | Horz                            | PK       | 9.06E-08        | -40.4         | -16.0                | -24.4                        | Mid Ch, EUT Vert    |
|   | 404.850       | 1.1                           | 245.0                | Horz                            | PK       | 8.85E-08        | -40.5         | -16.0                | -24.5                        | High Ch, EUT Vert   |
|   | 403.350       | 1.2                           | 20.0                 | Horz                            | PK       | 8.07E-08        | -40.9         | -16.0                | -24.9                        | Mid Ch, EUT On Side |
|   | 402.150       | 1.1                           | 250.9                | Horz                            | PK       | 7.36E-08        | -41.3         | -16.0                | -25.3                        | Low Ch, EUT Vert    |
|   | 403.345       | 1.6                           | 301.9                | Vert                            | PK       | 3.21E-08        | -44.9         | -16.0                | -28.9                        | Mid Ch, EUT On Side |
|   | 403.350       | 1.2                           | 311.0                | Horz                            | PK       | 2.38E-08        | -46.2         | -16.0                | -30.2                        | Mid Ch, EUT Horz    |
|   | 403.345       | 1.6                           | 71.0                 | Vert                            | PK       | 4.44E-09        | -53.5         | -16.0                | -37.5                        | Mid Ch, EUT Horz    |