

# NORTHWEST EMC

## Boston Scientific Corporation

Jaguar, Model 6290

FCC 95I:2015  
FCC 15.207:2015

Report # BSTN0554



NVLAP Lab Code: 200881-0

*This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America. This Report may only be duplicated in its entirety*

# CERTIFICATE OF TEST

**Last Date of Test: March 23, 2015**  
**Boston Scientific Corporation**  
**Model: Jaguar, Model 6290**

## Radio Equipment Testing

### Standards

| Specification   | Method                  |
|-----------------|-------------------------|
| FCC 95.1:2015   | ANSI/TIA/EIA-603-C-2004 |
| FCC 15.207:2015 | ANSI C63.10:2009        |

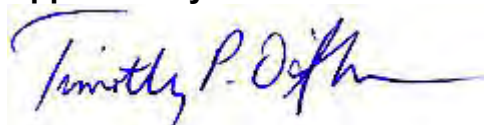
### Results

| Method Clause      | Test Description                 | Applied | Results | Comments                                                                 |
|--------------------|----------------------------------|---------|---------|--------------------------------------------------------------------------|
| FCC 95.627(a)      | Frequency Monitoring             | No      | N/A     | Not requested as the customer is responsible to handle this requirement. |
| FCC 95.633(e)(3)   | Emission Bandwidth               | Yes     | Pass    |                                                                          |
| FCC 95.635(d)(4-5) | Emission Mask                    | Yes     | Pass    |                                                                          |
| FCC 2.2.1          | Output Power                     | Yes     | Pass    |                                                                          |
| FCC 2.2.2          | Frequency Stability              | Yes     | Pass    |                                                                          |
| FCC 2.2.12         | Spurious Radiated Emissions      | Yes     | Pass    |                                                                          |
| FCC 2.2.13         | Spurious Conducted Emissions     | Yes     | Pass    |                                                                          |
| FCC 2.2.17         | Radiated Power (EIRP)            | Yes     | Pass    |                                                                          |
| ANSI C63.10 - 6.2  | AC Powerline Conducted Emissions | Yes     | Pass    |                                                                          |

### Deviations From Test Standards

None

### Approved By:



Tim O'Shea, 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.*

# REVISION HISTORY

| Revision Number |  | Description | Date | Page Number |
|-----------------|--|-------------|------|-------------|
| 00              |  | None        |      |             |

# ACCREDITATIONS AND AUTHORIZATIONS

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## 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 Northwest EMC to certify transmitters to FCC and IC specifications.

**NVLAP** - Each laboratory is accredited by NVLAP to ISO 17025

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## Canada

**IC** - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

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## European Union

**European Commission** – Validated by the European Commission as a Conformity Assessment Body (CAB) under the EMC directive and as a Notified Body under the R&TTE Directive.

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## Australia/New Zealand

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

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## Korea

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

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## Japan

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

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## 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.

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## Singapore

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

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## Israel

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

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## Hong Kong

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

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## Vietnam

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

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## SCOPE

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

<http://www.nwemc.com/accreditations/>  
<http://gsi.nist.gov/global/docs/cabs/designations.html>

# MEASUREMENT UNCERTAINTY

## Measurement Uncertainty

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

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is on each data sheet. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

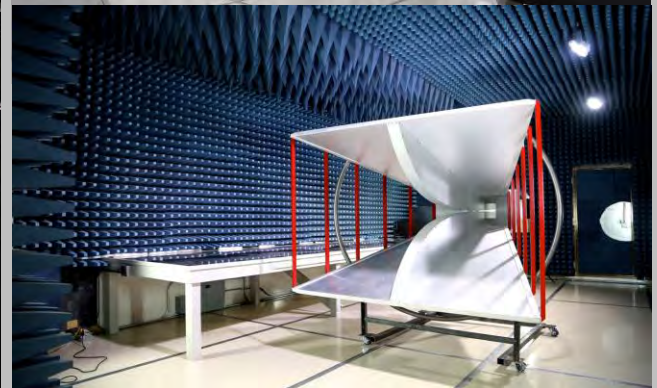
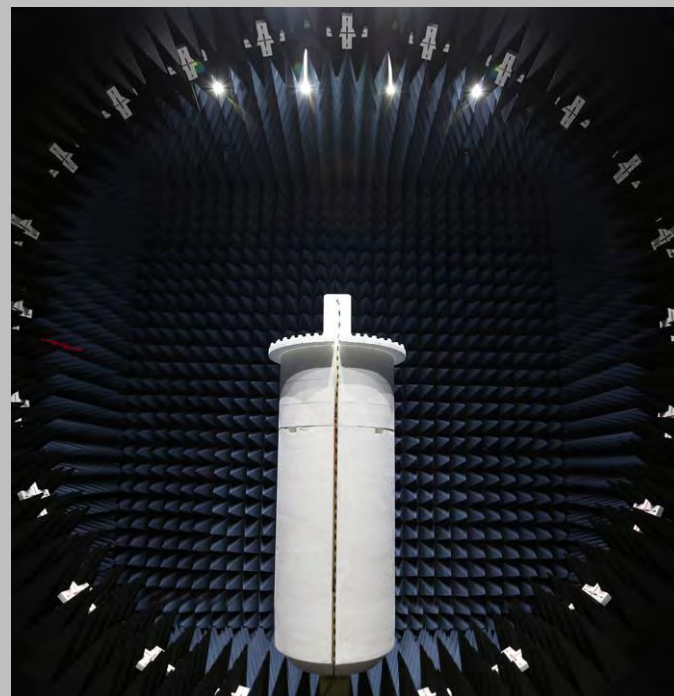
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

| <b>Test</b>                           | <b>+ MU</b> | <b>- MU</b> |
|---------------------------------------|-------------|-------------|
| Frequency Accuracy (Hz)               | 0.0007%     | -0.0007%    |
| Amplitude Accuracy (dB)               | 1.2 dB      | -1.2 dB     |
| Conducted Power (dB)                  | 0.3 dB      | -0.3 dB     |
| Radiated Power via Substitution (dB)  | 0.7 dB      | -0.7 dB     |
| Temperature (degrees C)               | 0.7°C       | -0.7°C      |
| Humidity (% RH)                       | 2.5% RH     | -2.5% RH    |
| Voltage (AC)                          | 1.0%        | -1.0%       |
| Voltage (DC)                          | 0.7%        | -0.7%       |
| Field Strength (dB)                   | 4.7 dB      | -4.7 dB     |
| AC Powerline Conducted Emissions (dB) | 2.9 dB      | -2.9 dB     |

# FACILITIES



|                                                                                     |                                                                                                             |                                                                                            |                                                                                                   |                                                                                        |                                                                                                          |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>California</b><br>Labs OC01-13<br>41 Tesla<br>Irvine, CA 92618<br>(949) 861-8918 | <b>Minnesota</b><br>Labs MN01-08, MN10<br>9349 W Broadway Ave.<br>Brooklyn Park, MN 55445<br>(612)-638-5136 | <b>New York</b><br>Labs NY01-04<br>4939 Jordan Rd.<br>Elbridge, NY 13060<br>(315) 554-8214 | <b>Oregon</b><br>Labs EV01-12<br>22975 NW Evergreen Pkwy<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 | <b>Washington</b><br>Labs NC01-05<br>19201 120 <sup>th</sup> Ave NE<br>Bothell, WA 9801<br>(425)984-6600 |
| <b>NVLAP</b>                                                                        |                                                                                                             |                                                                                            |                                                                                                   |                                                                                        |                                                                                                          |
| 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                                                                                 |
| <b>Industry Canada</b>                                                              |                                                                                                             |                                                                                            |                                                                                                   |                                                                                        |                                                                                                          |
| 2834B-1, 2834B-3                                                                    | 2834E-1                                                                                                     | N/A                                                                                        | 2834D-1, 2834D-2                                                                                  | 2834G-1                                                                                | 2834F-1                                                                                                  |
| <b>BSMI</b>                                                                         |                                                                                                             |                                                                                            |                                                                                                   |                                                                                        |                                                                                                          |
| SL2-IN-E-1154R                                                                      | SL2-IN-E-1152R                                                                                              | N/A                                                                                        | SL2-IN-E-1017                                                                                     | SL2-IN-E-1158R                                                                         | SL2-IN-E-1153R                                                                                           |
| <b>VCCI</b>                                                                         |                                                                                                             |                                                                                            |                                                                                                   |                                                                                        |                                                                                                          |
| A-0029                                                                              | A-0109                                                                                                      | N/A                                                                                        | A-0108                                                                                            | A-0201                                                                                 | A-0110                                                                                                   |
| <b>Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRR, MIC, MOC, NCC, OFCA</b>     |                                                                                                             |                                                                                            |                                                                                                   |                                                                                        |                                                                                                          |
| US0158                                                                              | US0175                                                                                                      | N/A                                                                                        | US0017                                                                                            | US0191                                                                                 | US0157                                                                                                   |



# PRODUCT DESCRIPTION

## Client and Equipment Under Test (EUT) Information

|                                 |                               |
|---------------------------------|-------------------------------|
| <b>Company Name:</b>            | Boston Scientific Corporation |
| <b>Address:</b>                 | 4100 Hamline Avenue North     |
| <b>City, State, Zip:</b>        | St. Paul, MN 55112            |
| <b>Test Requested By:</b>       | Pete Musto                    |
| <b>Model:</b>                   | Jaguar, Model 6290            |
| <b>First Date of Test:</b>      | March 17, 2015                |
| <b>Last Date of Test:</b>       | March 23, 2015                |
| <b>Receipt Date of Samples:</b> | March 17, 2015                |
| <b>Equipment Design Stage:</b>  | Prototype                     |
| <b>Equipment Condition:</b>     | No Damage                     |

## Information Provided by the Party Requesting the Test

|                                                                                                           |
|-----------------------------------------------------------------------------------------------------------|
| <b>Functional Description of the EUT:</b>                                                                 |
| In home monitor that communicates with an implant through MedRadio band communications.                   |
| <b>Testing Objective:</b>                                                                                 |
| Seeking an FCC Class II Permissive Change for a modification to increase the power on the S-ICD channels. |

# CONFIGURATIONS

## Configuration BSTN0554- 1

| EUT                   |                               |                   |               |
|-----------------------|-------------------------------|-------------------|---------------|
| Description           | Manufacturer                  | Model/Part Number | Serial Number |
| Communicator (Jaguar) | Boston Scientific Corporation | 6290              | 601           |
| DC Brick              | GlobTek                       | GTM41061-1512-7.0 | none          |

| Peripherals in test setup boundary |                               |                   |               |
|------------------------------------|-------------------------------|-------------------|---------------|
| Description                        | Manufacturer                  | Model/Part Number | Serial Number |
| US Cellular Adapter                | Boston Scientific Corporation | 6295              | 5             |
| US Bluetooth Adapter               | Delta Mobile Systems          | DM210             | 2E6B          |

| Cables     |        |            |         |                       |                       |
|------------|--------|------------|---------|-----------------------|-----------------------|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1          | Connection 2          |
| DC Power   | No     | 1.80m      | Yes     | DC Brick              | Communicator (Jaguar) |
| RJ11 (x2)  | No     | 1.80m      | No      | Communicator (Jaguar) | Unterminated          |
| USB Cable  | Yes    | 0.20m      | Yes     | Communicator (Jaguar) | US Cellular Modem     |

## Configuration BSTN0554- 2

| EUT                   |                               |                   |               |
|-----------------------|-------------------------------|-------------------|---------------|
| Description           | Manufacturer                  | Model/Part Number | Serial Number |
| Communicator (Jaguar) | Boston Scientific Corporation | 6290              | 601           |
| DC Brick              | GlobTek                       | GTM41061-1512-7.0 | none          |

| Peripherals in test setup boundary |                               |                   |               |
|------------------------------------|-------------------------------|-------------------|---------------|
| Description                        | Manufacturer                  | Model/Part Number | Serial Number |
| US Cellular Adapter                | Boston Scientific Corporation | 6295              | 5             |
| US Bluetooth Adapter               | Delta Mobile Systems          | DM210             | 2E6B          |

| Cables     |        |            |         |                       |                       |
|------------|--------|------------|---------|-----------------------|-----------------------|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1          | Connection 2          |
| DC Power   | No     | 1.80m      | Yes     | DC Brick              | Communicator (Jaguar) |
| RJ11 (x2)  | No     | 1.80m      | No      | Communicator (Jaguar) | Unterminated          |
| USB Cable  | Yes    | 0.20m      | Yes     | Communicator (Jaguar) | US Cellular Modem     |
| AC Power   | No     | 1.80m      | No      | DC Brick              | AC Mains              |

# CONFIGURATIONS

## Configuration BSTN0554- 3

| EUT                   |                               |                   |               |
|-----------------------|-------------------------------|-------------------|---------------|
| Description           | Manufacturer                  | Model/Part Number | Serial Number |
| Communicator (Jaguar) | Boston Scientific Corporation | 6290              | 601           |
| DC Brick              | GlobTek                       | GTM41061-1512-7.0 | None          |

| Peripherals in test setup boundary |                               |                   |                        |
|------------------------------------|-------------------------------|-------------------|------------------------|
| Description                        | Manufacturer                  | Model/Part Number | Serial Number          |
| US Cellular Adapter                | Boston Scientific Corporation | 6295              | 5                      |
| US Bluetooth Adapter               | Delta Mobile Systems          | DM210             | 2E6B                   |
| Laptop                             | Gateway                       | ZE7               | LUWZMOD00120219DD97614 |
| AC Adapter                         | Leader Electronics            | IU40-11190-011S   | AP04007002150069F8PP03 |

| Cables        |        |            |         |                       |                       |
|---------------|--------|------------|---------|-----------------------|-----------------------|
| Cable Type    | Shield | Length (m) | Ferrite | Connection 1          | Connection 2          |
| DC Power      | No     | 1.80m      | Yes     | DC Brick              | Communicator (Jaguar) |
| RJ11 (x2)     | No     | 1.80m      | No      | Communicator (Jaguar) | Unterminated          |
| USB Cable     | Yes    | 0.20m      | Yes     | Communicator (Jaguar) | US Cellular Modem     |
| USB to Ribbon | No     | 1.90m      | No      | Laptop                | Communicator (Jaguar) |
| DC Power      | No     | 2.50m      | Yes     | Laptop                | AC Adapter            |

# MODIFICATIONS

## Equipment Modifications

| Item | Date      | Test                                | Modification                         | Note                                                                | Disposition of EUT                                |
|------|-----------|-------------------------------------|--------------------------------------|---------------------------------------------------------------------|---------------------------------------------------|
| 1    | 3/17/2015 | Equivalent Isotropic Radiated Power | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 2    | 3/20/2015 | AC Powerline Conducted Emissions    | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 3    | 3/20/2015 | Spurious Radiated Emissions         | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 4    | 3/20/2015 | Spurious Conducted Emissions        | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 5    | 3/20/2015 | Conducted Output Power              | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 6    | 3/20/2015 | Emissions Bandwidth                 | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 7    | 3/20/2015 | Emissions Mask                      | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 8    | 3/23/2015 | Frequency Stability                 | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed.                  |

# EMISSIONS BANDWIDTH

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. | Interval (mos) |
|---------------------------|--------------------|-----------------|-----|-----------|----------------|
| Spectrum Analyzer         | Agilent            | E4443A          | AAS | 3/27/2014 | 12             |
| 40 GHz DC Block           | Fairview Microwave | SD3379          | AMI | 10/2/2014 | 12             |
| MN08 Direct Connect Cable | ESM Cable Corp.    | TTBJ141 KMKM-72 | MNU | 10/2/2014 | 12             |
| Attenuator, 20db, 'SMA'   | SM Electronics     | SA26B-20        | RFW | 3/10/2015 | 12             |
| Spectrum Analyzer         | Agilent            | E4440A          | AAX | 4/28/2014 | 12             |

## TEST DESCRIPTION

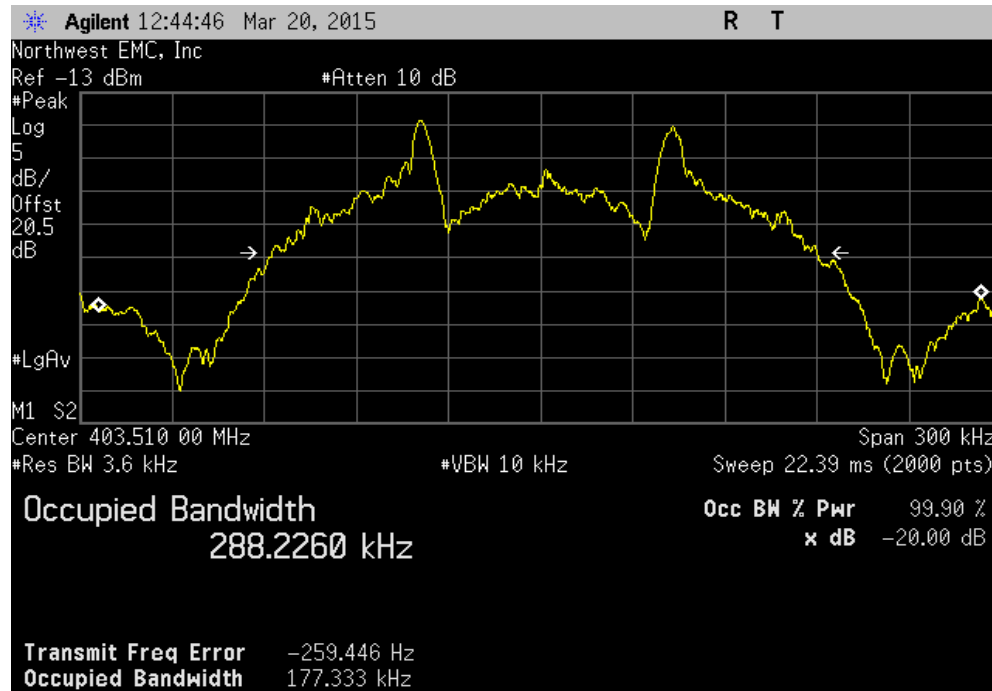
Per 47 CFR 95.633(e)(3), the emission bandwidth was determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 20 dB down relative to the maximum level of the modulated carrier. A spectrum analyzer using 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.

# EMISSIONS BANDWIDTH

|                                                                       |                    |                                      |           |
|-----------------------------------------------------------------------|--------------------|--------------------------------------|-----------|
| EUT: Jaguar, Model 6290                                               |                    | Work Order: BSTN0554                 |           |
| Serial Number: 601                                                    |                    | Date: 03/20/15                       |           |
| Customer: Boston Scientific Corporation                               |                    | Temperature: 22.8°C                  |           |
| Attendees: None                                                       |                    | Humidity: 23%                        |           |
| Project: None                                                         |                    | Barometric Pres.: 1017 mbar          |           |
| Tested by: Jonathan Kiefer                                            | Power: 110VAC/60Hz | Job Site: MN08                       |           |
| TEST SPECIFICATIONS                                                   |                    |                                      |           |
| FCC 951:2015                                                          |                    | Test Method: ANSI/TIA/EIA-603-C-2004 |           |
| COMMENTS                                                              |                    |                                      |           |
| US Power Setting = 51. Transmitting a modulated carrier at 76.8 kbps. |                    |                                      |           |
| DEVIATIONS FROM TEST STANDARD                                         |                    |                                      |           |
| None                                                                  |                    |                                      |           |
| Configuration #                                                       | 3                  | Signature <i>Trevor Buls</i>         |           |
|                                                                       |                    | Value                                | Limit (S) |
| 403.51 MHz                                                            |                    | 177.333 kHz                          | 300 kHz   |
|                                                                       |                    |                                      | Result    |
|                                                                       |                    |                                      | Pass      |

# EMISSIONS BANDWIDTH

| 403.51 MHz |  |  |  |             |           |        |
|------------|--|--|--|-------------|-----------|--------|
|            |  |  |  | Value       | Limit (S) | Result |
|            |  |  |  | 177.333 kHz | 300 kHz   | Pass   |



# EMISSIONS MASK

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. | Interval (mos) |
|---------------------------|--------------------|-----------------|-----|-----------|----------------|
| Spectrum Analyzer         | Agilent            | E4443A          | AAS | 3/27/2014 | 12             |
| 40 GHz DC Block           | Fairview Microwave | SD3379          | AMI | 10/2/2014 | 12             |
| MN08 Direct Connect Cable | ESM Cable Corp.    | TTBJ141 KMKM-72 | MNU | 10/2/2014 | 12             |
| Attenuator, 20db, 'SMA'   | SM Electronics     | SA26B-20        | RFW | 3/10/2015 | 12             |
| Spectrum Analyzer         | Agilent            | E4440A          | AAX | 4/28/2014 | 12             |

## TEST DESCRIPTION

Per 47 CFR 95.635(d)(4) 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 95.633(e)(1). In addition, emissions 250 kHz or less above and below the MedRadio band (402-405 MHz) must be attenuated below the maximum permitted output power by at least 20 dB.

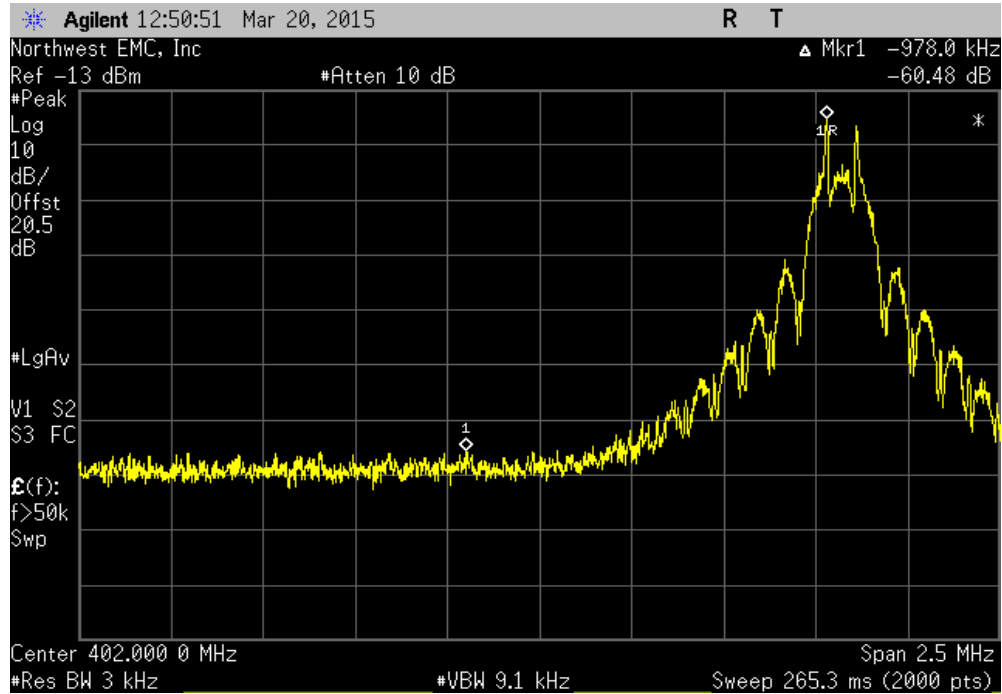
A spectrum analyzer was used to measure the emission mask. A spectrum analyzer using a peak detector with no video filtering was used with a resolution bandwidth equal to approximately 1.0 percent of the emission bandwidth of the EUT. However, various plots were made using different frequency spans and 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.

# EMISSIONS MASK

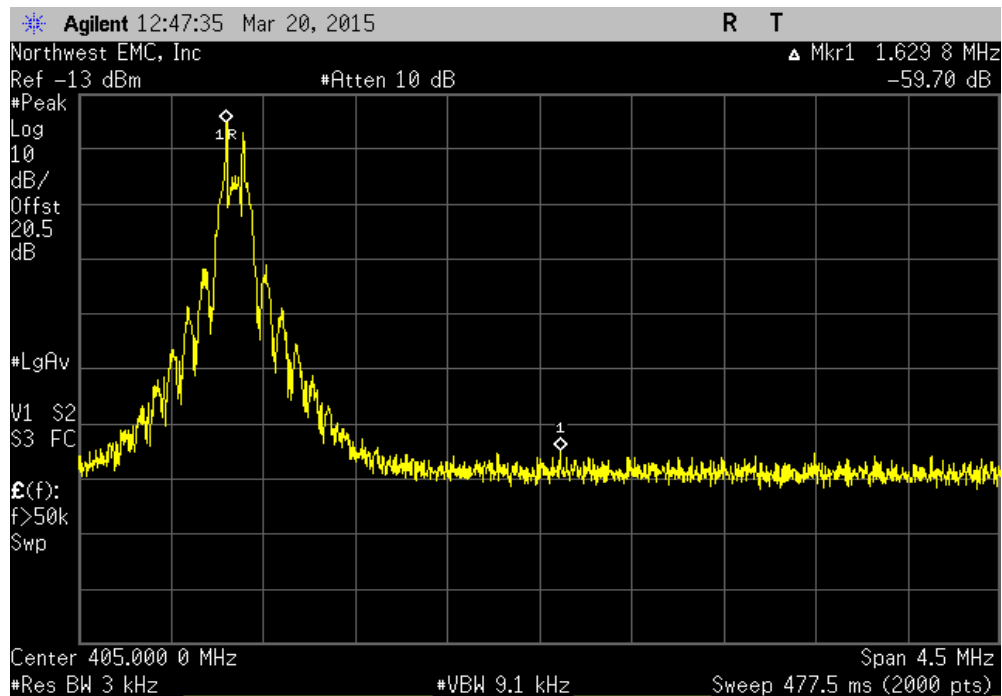
|                                                                       |                    |                                      |                      |
|-----------------------------------------------------------------------|--------------------|--------------------------------------|----------------------|
| EUT: Jaguar, Model 6290                                               |                    | Work Order: BSTN0554                 |                      |
| Serial Number: 601                                                    |                    | Date: 03/20/15                       |                      |
| Customer: Boston Scientific Corporation                               |                    | Temperature: 22.8°C                  |                      |
| Attendees: None                                                       |                    | Humidity: 23%                        |                      |
| Project: None                                                         |                    | Barometric Pres.: 1017 mbar          |                      |
| Tested by: Jonathan Kiefer                                            | Power: 110VAC/60Hz | Job Site: MN08                       |                      |
| TEST SPECIFICATIONS                                                   |                    |                                      |                      |
| FCC 951:2015                                                          |                    | Test Method: ANSI/TIA/EIA-603-C-2004 |                      |
| COMMENTS                                                              |                    |                                      |                      |
| US Power Setting = 51. Transmitting a modulated carrier at 76.8 kbps. |                    |                                      |                      |
| DEVIATIONS FROM TEST STANDARD                                         |                    |                                      |                      |
| None                                                                  |                    |                                      |                      |
| Configuration #                                                       | 3                  | Signature: <i>Trevor Buls</i>        |                      |
|                                                                       |                    | Value (dBc)                          | Limit ≤ (dBc) Result |
| Lower Channel, 402.81 MHz                                             |                    | -60.48                               | -20 Pass             |
| Higher Channel, 403.51 MHz                                            |                    | -59.7                                | -20 Pass             |

# EMISSIONS MASK

| Lower Channel, 402.81 MHz |  |  |  |                |                  |        |
|---------------------------|--|--|--|----------------|------------------|--------|
|                           |  |  |  | Value<br>(dBc) | Limit<br>≤ (dBc) | Result |
|                           |  |  |  | -60.48         | -20              | Pass   |



| Higher Channel, 403.51 MHz |  |  |  |                |                  |        |
|----------------------------|--|--|--|----------------|------------------|--------|
|                            |  |  |  | Value<br>(dBc) | Limit<br>≤ (dBc) | Result |
|                            |  |  |  | -59.7          | -20              | Pass   |



# CONDUCTED OUTPUT POWER

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. | Interval (mos) |
|---------------------------|--------------------|-----------------|-----|-----------|----------------|
| Spectrum Analyzer         | Agilent            | E4443A          | AAS | 3/27/2014 | 12             |
| 40 GHz DC Block           | Fairview Microwave | SD3379          | AMI | 10/2/2014 | 12             |
| MN08 Direct Connect Cable | ESM Cable Corp.    | TTBJ141 KMKM-72 | MNU | 10/2/2014 | 12             |
| Attenuator, 20db, 'SMA'   | SM Electronics     | SA26B-20        | RFW | 3/10/2015 | 12             |
| Spectrum Analyzer         | Agilent            | E4440A          | AAX | 4/28/2014 | 12             |

## TEST DESCRIPTION

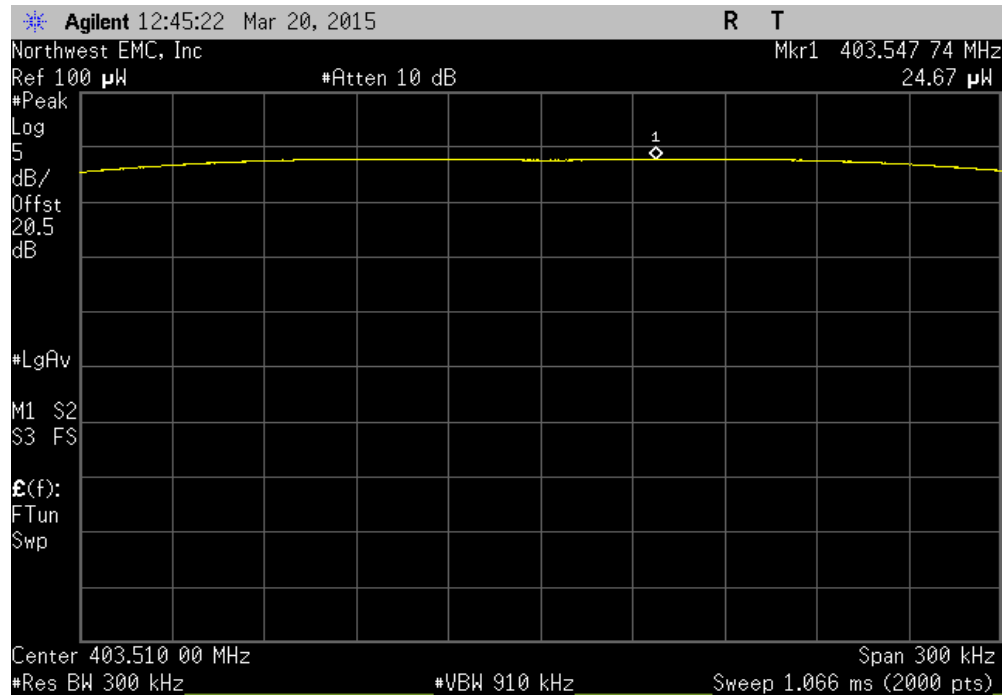
Per FCC Part 2.1046, RSS-GEN, the output power shall be measured at the RF terminal. The peak output power was measured with the EUT configured in the modes listed in the datasheet. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was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

# CONDUCTED OUTPUT POWER

|                                                                       |                    |                                      |        |
|-----------------------------------------------------------------------|--------------------|--------------------------------------|--------|
| EUT: Jaguar, Model 6290                                               |                    | Work Order: BSTN0554                 |        |
| Serial Number: 601                                                    |                    | Date: 03/20/15                       |        |
| Customer: Boston Scientific Corporation                               |                    | Temperature: 22.8°C                  |        |
| Attendees: None                                                       |                    | Humidity: 23%                        |        |
| Project: None                                                         |                    | Barometric Pres.: 1017 mbar          |        |
| Tested by: Jonathan Kiefer                                            | Power: 110VAC/60Hz | Job Site: MN08                       |        |
| TEST SPECIFICATIONS                                                   |                    |                                      |        |
| FCC 951:2015                                                          |                    | Test Method: ANSI/TIA/EIA-603-C-2004 |        |
| COMMENTS                                                              |                    |                                      |        |
| US Power Setting = 51. Transmitting a modulated carrier at 76.8 kbps. |                    |                                      |        |
| DEVIATIONS FROM TEST STANDARD                                         |                    |                                      |        |
| None                                                                  |                    |                                      |        |
| Configuration #                                                       | 3                  | Signature: <i>Trevor Bule</i>        |        |
|                                                                       |                    | Value                                | Limit  |
| 403.51 MHz                                                            |                    | 24.672 uW                            | N/A    |
|                                                                       |                    |                                      | Result |
|                                                                       |                    |                                      | N/A    |

# CONDUCTED OUTPUT POWER

| 403.51 MHz |  |  |  |           |       |        |
|------------|--|--|--|-----------|-------|--------|
|            |  |  |  | Value     | Limit | Result |
|            |  |  |  | 24.672 uW | N/A   | N/A    |



# FREQUENCY STABILITY

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. | Interval (mos) |
|------------------------------|---------------------------|-------------------|-----|-----------|----------------|
| 40 GHz DC Block              | Fairview Microwave        | SD3379            | AMI | 10/2/2014 | 12             |
| MN08 Direct Connect Cable    | ESM Cable Corp.           | TTBJ141 KMKM-72   | MNU | 10/2/2014 | 12             |
| Attenuator, 20db, 'SMA'      | SM Electronics            | SA26B-20          | RFW | 3/10/2015 | 12             |
| Spectrum Analyzer            | Agilent                   | E4440A            | AAX | 4/28/2014 | 12             |
| Variable Transformer         | Powerstat                 | 246               | XFR | NCR       | 0              |
| Multimeter                   | Fluke                     | 117               | MLS | 1/20/2014 | 36             |
| Thermometer                  | Omega Engineering, Inc.   | HH311             | DUB | 11/3/2014 | 36             |
| Humidity Temperature Chamber | Cincinnati Sub Zero (CSZ) | ZPH-32-3.5-SCT/AC | TBF | NCR       | 0              |

## TEST DESCRIPTION

### 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).

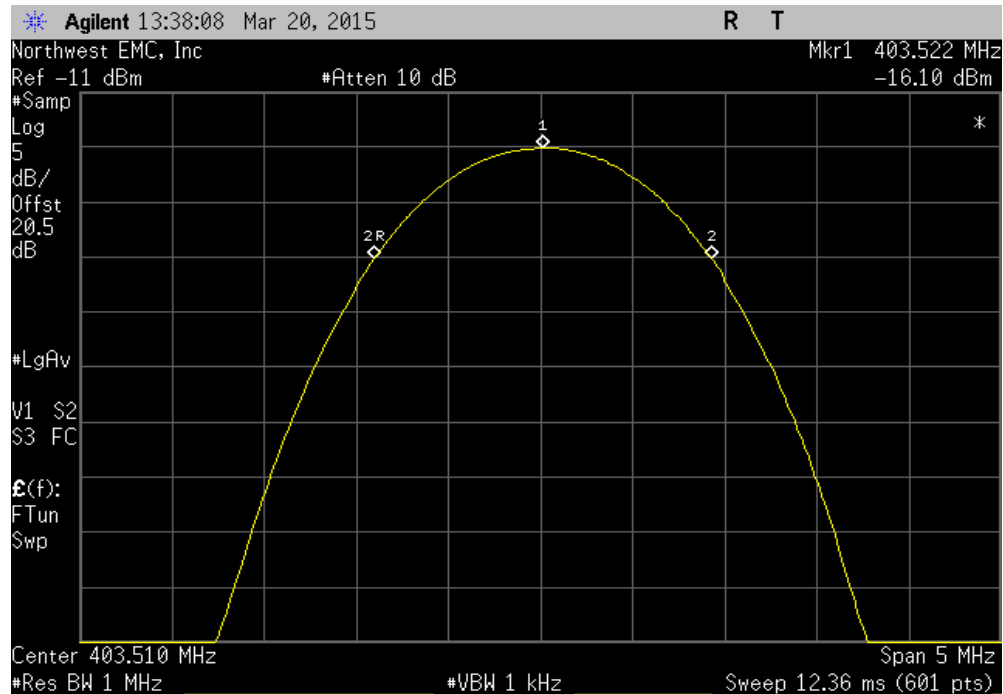
The Frequency Stability was measured using a near-field probe and a spectrum analyzer. The spectrum analyzer is configured with a precision frequency reference that exceeds the stability requirement of the transmitter. The EUT was placed inside a temperature / humidity chamber. The near-field probe was placed near the transmitter. A low-loss coaxial cable connected the near-field probe to the spectrum analyzer outside of the chamber.

# FREQUENCY STABILITY

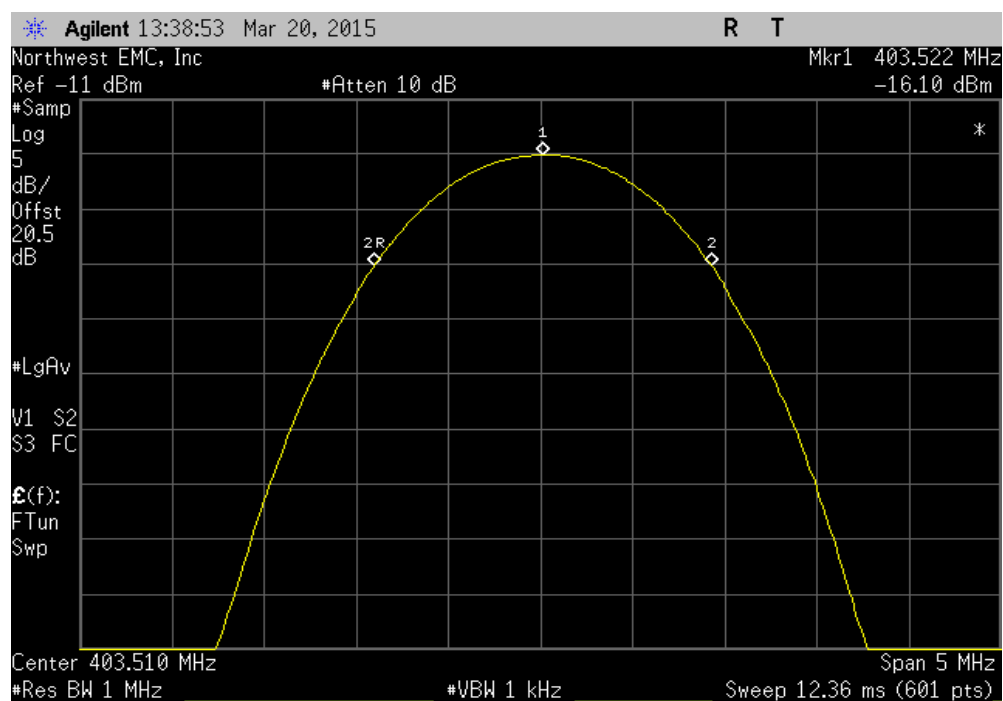
|                                                                       |                    |                                                                                             |                      |             |             |         |
|-----------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------|----------------------|-------------|-------------|---------|
| EUT: Jaguar, Model 6290                                               |                    | Work Order: BSTN0554                                                                        |                      |             |             |         |
| Serial Number: 601                                                    |                    | Date: 03/23/15                                                                              |                      |             |             |         |
| Customer: Boston Scientific Corporation                               |                    | Temperature: 22.6°C                                                                         |                      |             |             |         |
| Attendees: None                                                       |                    | Humidity: 19%                                                                               |                      |             |             |         |
| Project: None                                                         |                    | Barometric Pres.: 1025.1                                                                    |                      |             |             |         |
| Tested by: Johnathan Lee                                              | Power: 110VAC/60Hz | Job Site: MN05                                                                              |                      |             |             |         |
| TEST SPECIFICATIONS                                                   |                    |                                                                                             |                      |             |             |         |
| FCC 951:2015                                                          |                    | Test Method: ANSI/TIA/EIA-603-C-2004                                                        |                      |             |             |         |
| COMMENTS                                                              |                    |                                                                                             |                      |             |             |         |
| US Power Setting = 51. Transmitting a modulated carrier at 76.8 kbps. |                    |                                                                                             |                      |             |             |         |
| DEVIATIONS FROM TEST STANDARD                                         |                    |                                                                                             |                      |             |             |         |
| None                                                                  |                    |                                                                                             |                      |             |             |         |
| Configuration #                                                       | 3                  | Signature  |                      |             |             |         |
|                                                                       |                    | Measured Value (MHz)                                                                        | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| Normal Voltage                                                        |                    |                                                                                             |                      |             |             |         |
|                                                                       | 403.51 MHz         | 403.522                                                                                     | 403.51               | 29.7        | 100         | Pass    |
| Extreme Voltage +15%                                                  |                    |                                                                                             |                      |             |             |         |
|                                                                       | 403.51 MHz         | 403.522                                                                                     | 403.51               | 29.7        | 100         | Pass    |
| Extreme Voltage -15%                                                  |                    |                                                                                             |                      |             |             |         |
|                                                                       | 403.51 MHz         | 403.522                                                                                     | 403.51               | 29.7        | 100         | Pass    |
| Extreme Temperature +55°C                                             |                    |                                                                                             |                      |             |             |         |
|                                                                       | 403.51 MHz         | 403.522                                                                                     | 403.51               | 29.7        | 100         | Pass    |
| Extreme Temperature +50°C                                             |                    |                                                                                             |                      |             |             |         |
|                                                                       | 403.51 MHz         | 403.526                                                                                     | 403.51               | 39.7        | 100         | Pass    |
| Extreme Temperature +40°C                                             |                    |                                                                                             |                      |             |             |         |
|                                                                       | 403.51 MHz         | 403.522                                                                                     | 403.51               | 29.7        | 100         | Pass    |
| Extreme Temperature +30°C                                             |                    |                                                                                             |                      |             |             |         |
|                                                                       | 403.51 MHz         | 403.526                                                                                     | 403.51               | 39.7        | 100         | Pass    |
| Extreme Temperature +20°C                                             |                    |                                                                                             |                      |             |             |         |
|                                                                       | 403.51 MHz         | 403.522                                                                                     | 403.51               | 29.7        | 100         | Pass    |
| Extreme Temperature +10°C                                             |                    |                                                                                             |                      |             |             |         |
|                                                                       | 403.51 MHz         | 403.522                                                                                     | 403.51               | 29.7        | 100         | Pass    |
| Extreme Temperature 0°C                                               |                    |                                                                                             |                      |             |             |         |
|                                                                       | 403.51 MHz         | 403.526                                                                                     | 403.51               | 39.7        | 100         | Pass    |

# FREQUENCY STABILITY

| Normal Voltage, 403.51 MHz |                      |                      |             |             |         |  |
|----------------------------|----------------------|----------------------|-------------|-------------|---------|--|
|                            | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |  |
|                            | 403.522              | 403.51               | 29.7        | 100         | Pass    |  |

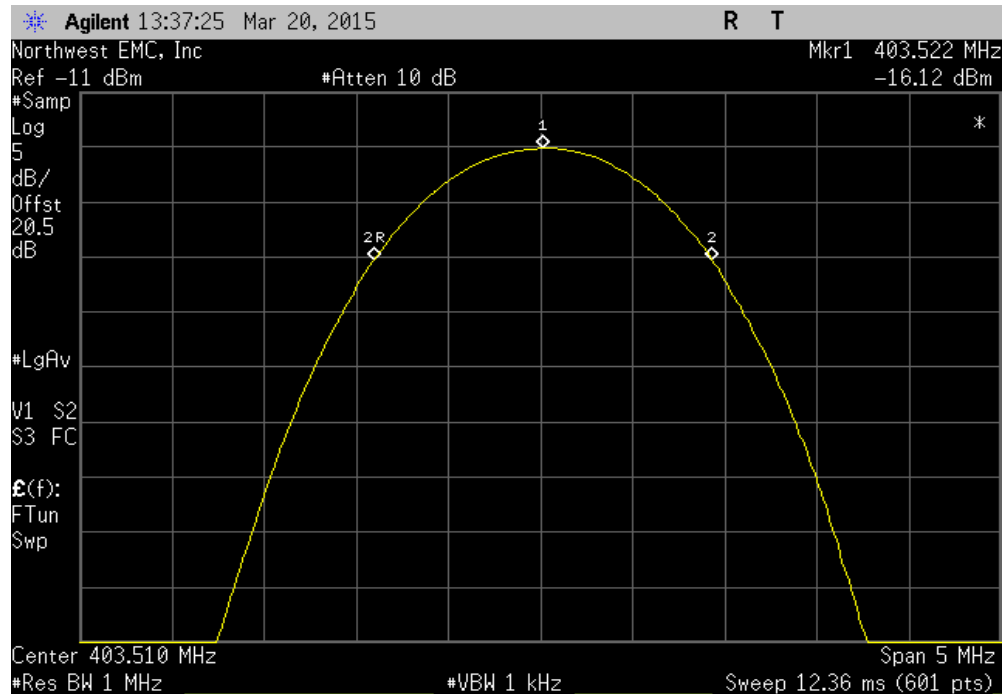


| Extreme Voltage +15%, 403.51 MHz |                      |                      |             |             |         |  |
|----------------------------------|----------------------|----------------------|-------------|-------------|---------|--|
|                                  | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |  |
|                                  | 403.522              | 403.51               | 29.7        | 100         | Pass    |  |

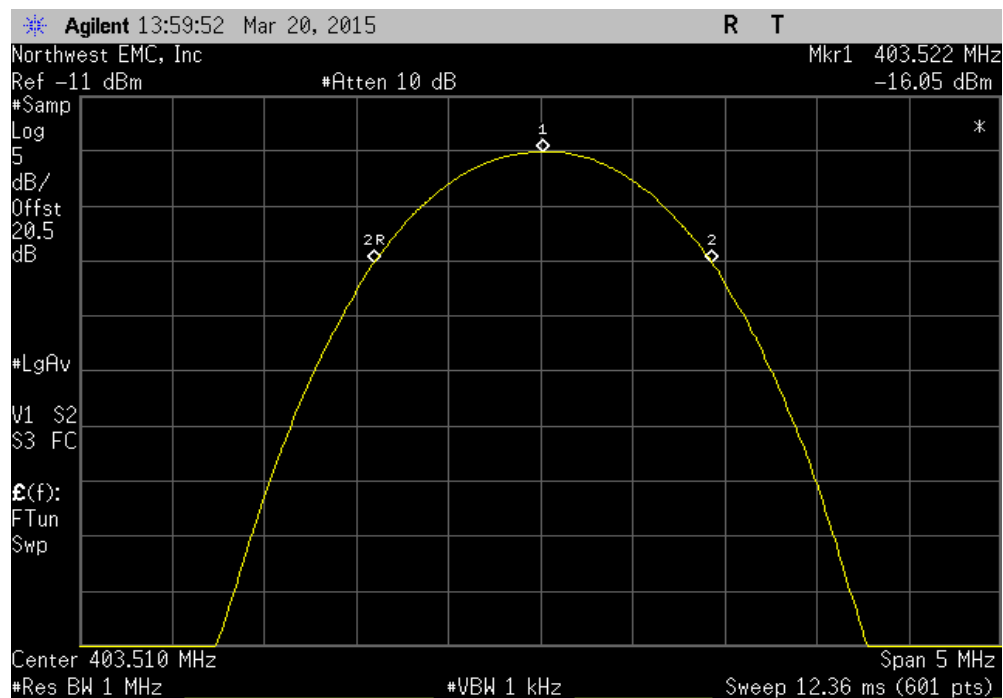


# FREQUENCY STABILITY

| Extreme Voltage -15%, 403.51 MHz |                      |                      |             |             |         |  |
|----------------------------------|----------------------|----------------------|-------------|-------------|---------|--|
|                                  | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |  |
|                                  | 403.522              | 403.51               | 29.7        | 100         | Pass    |  |

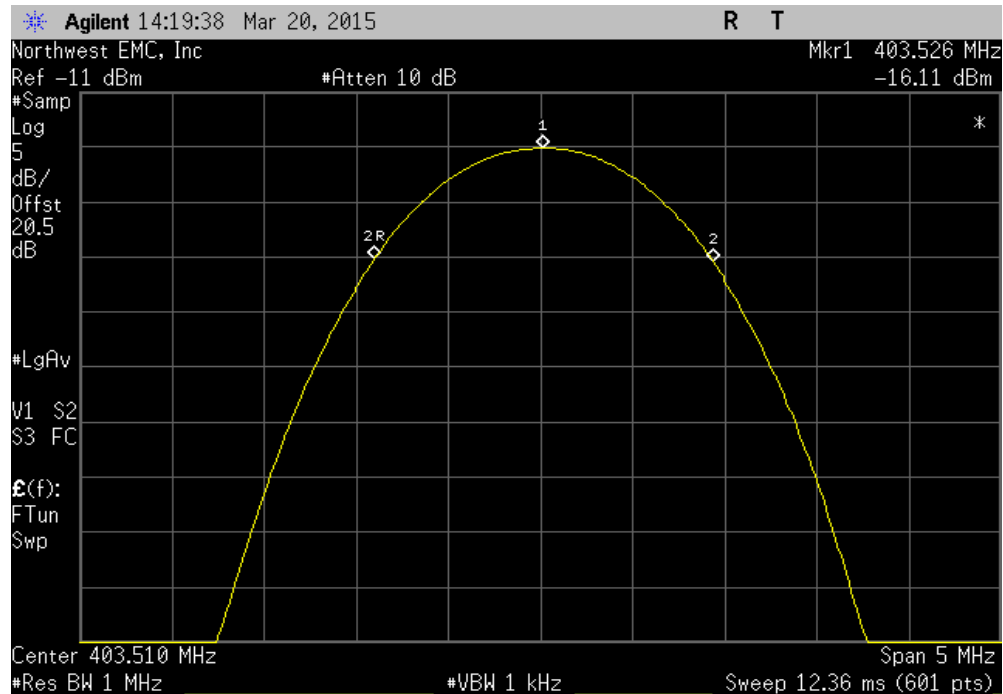


| Extreme Temperature +55°C, 403.51 MHz |                      |                      |             |             |         |  |
|---------------------------------------|----------------------|----------------------|-------------|-------------|---------|--|
|                                       | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |  |
|                                       | 403.522              | 403.51               | 29.7        | 100         | Pass    |  |

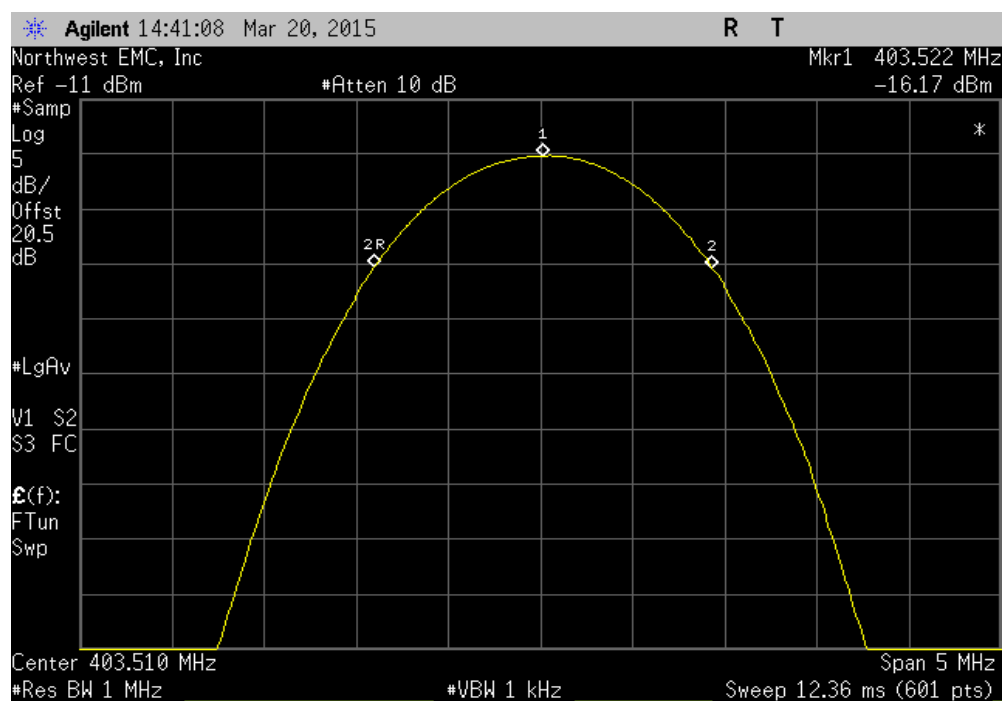


# FREQUENCY STABILITY

| Extreme Temperature +50°C, 403.51 MHz |                      |                      |             |             |         |  |
|---------------------------------------|----------------------|----------------------|-------------|-------------|---------|--|
|                                       | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |  |
|                                       | 403.526              | 403.51               | 39.7        | 100         | Pass    |  |

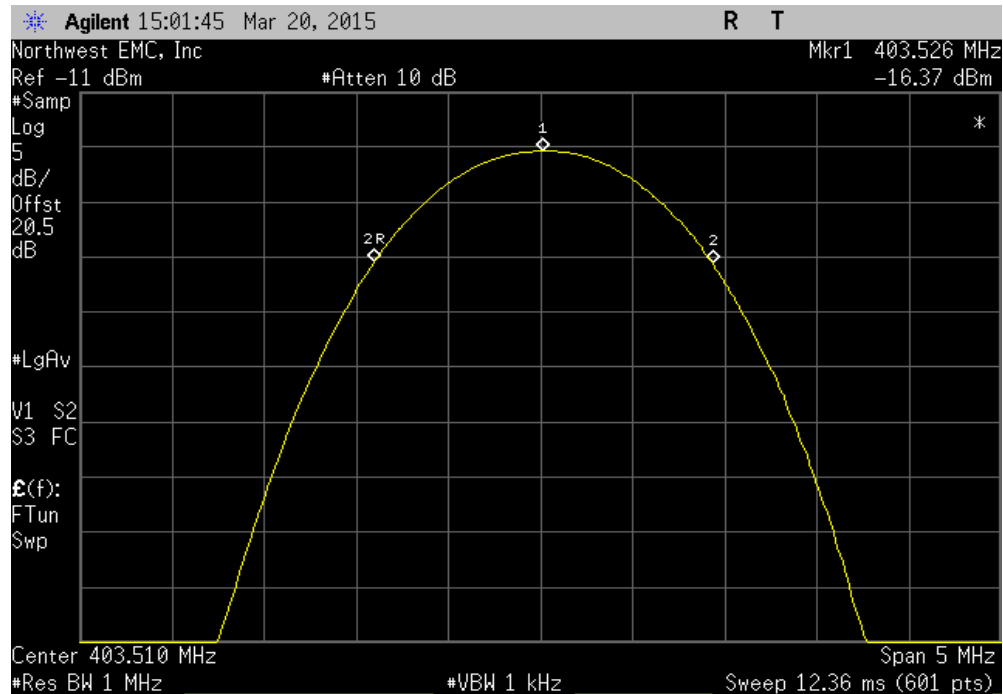


| Extreme Temperature +40°C, 403.51 MHz |                      |                      |             |             |         |  |
|---------------------------------------|----------------------|----------------------|-------------|-------------|---------|--|
|                                       | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |  |
|                                       | 403.522              | 403.51               | 29.7        | 100         | Pass    |  |

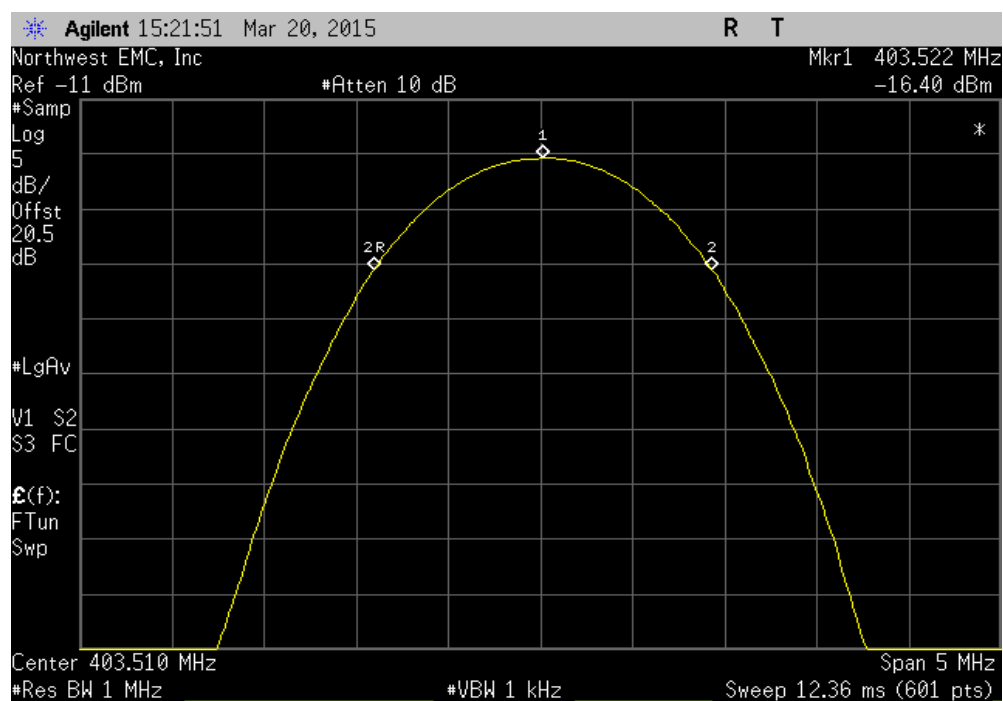


# FREQUENCY STABILITY

| Extreme Temperature +30°C, 403.51 MHz |                      |                      |             |             |         |  |
|---------------------------------------|----------------------|----------------------|-------------|-------------|---------|--|
|                                       | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |  |
|                                       | 403.526              | 403.51               | 39.7        | 100         | Pass    |  |

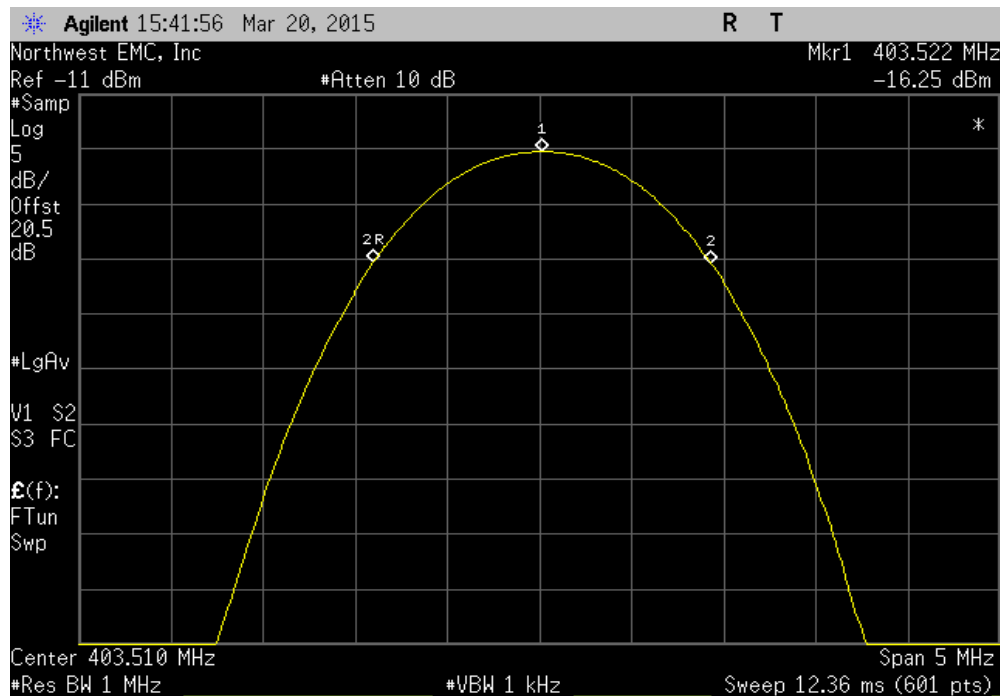


| Extreme Temperature +20°C, 403.51 MHz |                      |                      |             |             |         |  |
|---------------------------------------|----------------------|----------------------|-------------|-------------|---------|--|
|                                       | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |  |
|                                       | 403.522              | 403.51               | 29.7        | 100         | Pass    |  |

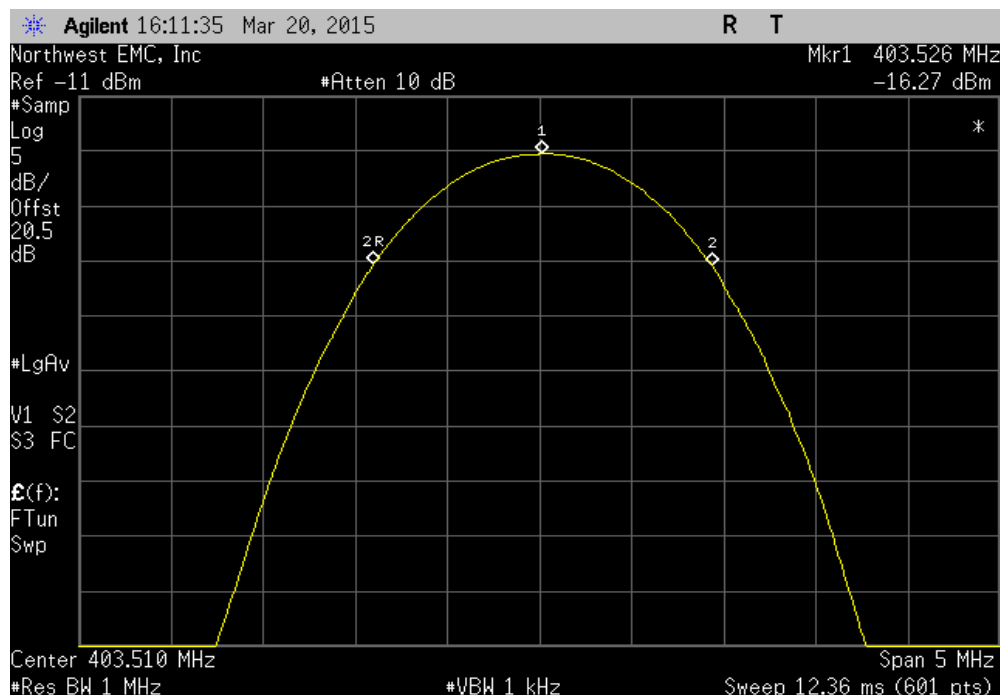


# FREQUENCY STABILITY

| Extreme Temperature +10°C, 403.51 MHz |                      |                      |             |             |         |  |
|---------------------------------------|----------------------|----------------------|-------------|-------------|---------|--|
|                                       | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |  |
|                                       | 403.522              | 403.51               | 29.7        | 100         | Pass    |  |



| Extreme Temperature 0°C, 403.51 MHz |                      |                      |             |             |         |  |
|-------------------------------------|----------------------|----------------------|-------------|-------------|---------|--|
|                                     | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |  |
|                                     | 403.526              | 403.51               | 39.7        | 100         | Pass    |  |



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 at 403.51 MHz, 76.8 kbps (high baud rate)

## POWER SETTINGS INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

BSTN0554 - 1

## FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz Stop Frequency 5 GHz

## 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 |
|--------------------|-----------------|-----------------------------|-----|------------|----------|
| Pre-Amplifier      | Miteq           | AMF-3D-00100800-32-13P      | AVX | 3/2/2015   | 12 mo    |
| MN05 Cables        | ESM Cable Corp. | Double Ridge Guide Horn Cab | MNI | 3/2/2015   | 12 mo    |
| Antenna, Horn      | ETS             | 3115                        | AJA | 6/3/2014   | 24 mo    |
| Pre-Amplifier      | Miteq           | AM-1616-1000                | PAD | 3/2/2015   | 12 mo    |
| Antenna, Biconilog | Teseq           | CBL 6141B                   | AYD | 12/17/2013 | 24 mo    |
| MN05 Cables        | ESM Cable Corp. | Bilog Cables                | MNH | 3/2/2015   | 12 mo    |
| Spectrum Analyzer  | Agilent         | N9010A                      | AFI | 1/27/2015  | 12 mo    |

## MEASUREMENT BANDWIDTHS

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

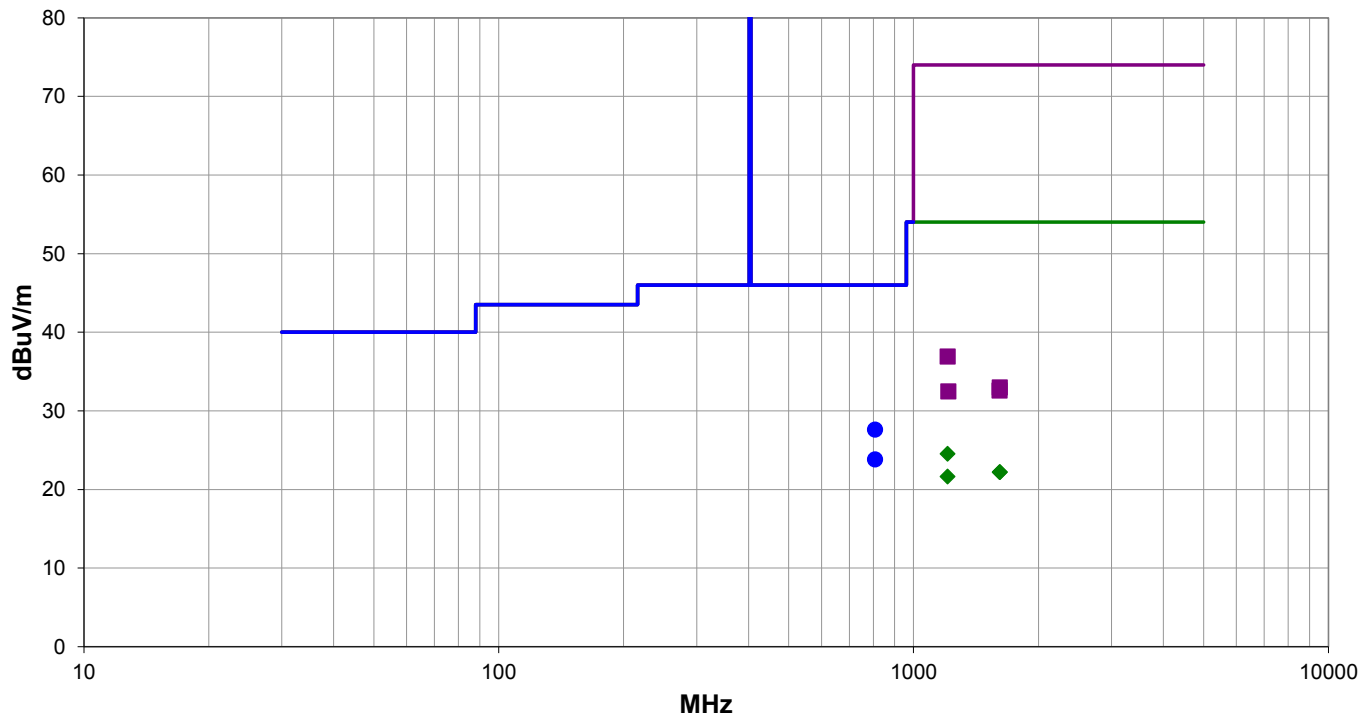
The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured in the modes listed in the datasheet. For each configuration, the spectrum was scanned throughout the specified range. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, 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 C63.10:2009). A preamp was used for this test in order to provide sufficient measurement sensitivity.

## SPURIOUS RADIATED EMISSIONS

|                 |                                                                                                                                                                                               |                   |           |                    |                 |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|--------------------|-----------------|
| Work Order:     | BSTN0554                                                                                                                                                                                      | Date:             | 03/20/15  | <i>Trevor Buls</i> |                 |
| Project:        | None                                                                                                                                                                                          | Temperature:      | 22.5 °C   |                    |                 |
| Job Site:       | MN05                                                                                                                                                                                          | Humidity:         | 21.8% RH  |                    |                 |
| Serial Number:  | 601                                                                                                                                                                                           | Barometric Pres.: | 1017 mbar | Tested by:         | Jonathan Kiefer |
| EUT:            | Jaguar, Model 6290                                                                                                                                                                            |                   |           |                    |                 |
| Configuration:  | 1                                                                                                                                                                                             |                   |           |                    |                 |
| Customer:       | Boston Scientific Corporation                                                                                                                                                                 |                   |           |                    |                 |
| Attendees:      | None                                                                                                                                                                                          |                   |           |                    |                 |
| EUT Power:      | 110VAC/60Hz                                                                                                                                                                                   |                   |           |                    |                 |
| Operating Mode: | Transmitting at 403.51 MHz, 76.8 kbps (high baud rate)                                                                                                                                        |                   |           |                    |                 |
| Deviations:     | None                                                                                                                                                                                          |                   |           |                    |                 |
| Comments:       | US Power Setting = 51. EUT was tested in Horizontal position per the manufacturer because the device will always be operated in this position. Transmitting a modulated carrier at 76.8 kbps. |                   |           |                    |                 |

|                     |                         |
|---------------------|-------------------------|
| Test Specifications | Test Method             |
| FCC 951:2015        | ANSI/TIA/EIA-603-C:2004 |

|       |   |                   |   |                   |           |         |      |
|-------|---|-------------------|---|-------------------|-----------|---------|------|
| Run # | 4 | Test Distance (m) | 3 | Antenna Height(s) | 1 to 4(m) | Results | Pass |
|-------|---|-------------------|---|-------------------|-----------|---------|------|



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|
| 807.113    | 18.9             | 8.7         | 1.0                     | 337.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 27.6              | 46.0                 | -18.4                  |
| 807.128    | 15.1             | 8.7         | 1.0                     | 133.0             | 3.0                    | 0.0                       | Vert                      | QP       | 0.0                      | 23.8              | 46.0                 | -22.2                  |
| 1208.117   | 31.5             | -7.0        | 1.0                     | 196.1             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 24.5              | 54.0                 | -29.5                  |
| 1616.167   | 28.1             | -5.9        | 1.0                     | 257.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 22.2              | 54.0                 | -31.8                  |
| 1614.250   | 28.1             | -5.9        | 3.3                     | 231.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 22.2              | 54.0                 | -31.8                  |
| 1208.067   | 28.6             | -7.0        | 1.0                     | 235.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 21.6              | 54.0                 | -32.4                  |
| 1208.133   | 43.9             | -7.0        | 1.0                     | 196.1             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 36.9              | 74.0                 | -37.1                  |
| 1612.358   | 38.9             | -5.9        | 3.3                     | 231.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 33.0              | 74.0                 | -41.0                  |
| 1612.108   | 38.5             | -5.9        | 1.0                     | 257.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 32.6              | 74.0                 | -41.4                  |
| 1213.000   | 39.4             | -6.9        | 1.0                     | 235.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 32.5              | 74.0                 | -41.5                  |

# SPURIOUS CONDUCTED EMISSIONS

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. | Interval (mos) |
|---------------------------|--------------------|-----------------|-----|-----------|----------------|
| Spectrum Analyzer         | Agilent            | E4443A          | AAS | 3/27/2014 | 12             |
| 40 GHz DC Block           | Fairview Microwave | SD3379          | AMI | 10/2/2014 | 12             |
| MN08 Direct Connect Cable | ESM Cable Corp.    | TTBJ141 KMKM-72 | MNU | 10/2/2014 | 12             |
| Attenuator, 20db, 'SMA'   | SM Electronics     | SA26B-20        | RFW | 3/10/2015 | 12             |
| Spectrum Analyzer         | Agilent            | E4440A          | AAX | 4/28/2014 | 12             |

## TEST DESCRIPTION

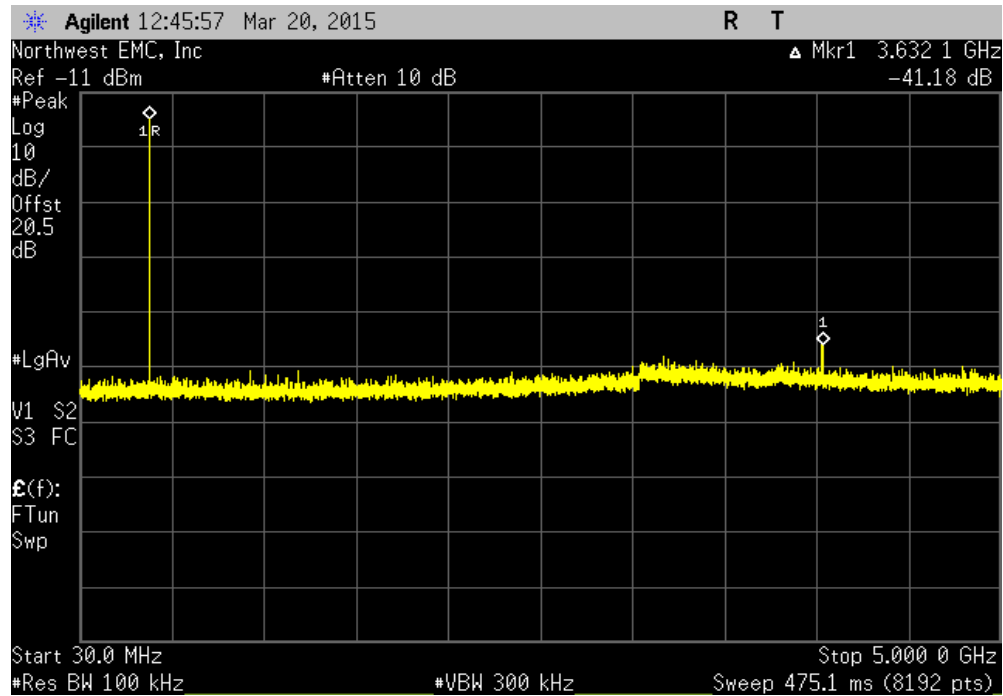
Per FCC Part 2.1052, RSS-GEN, the output power shall be measured at the RF terminal. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was transmitting at its maximum data rate. FCC Part 95 and RSS-243 have no conducted spurious limit. It is a requirement to characterize this information and that data is contained within this datasheet.

# SPURIOUS CONDUCTED EMISSIONS

|                                                                       |                    |                                      |                                |
|-----------------------------------------------------------------------|--------------------|--------------------------------------|--------------------------------|
| EUT: Jaguar, Model 6290                                               |                    | Work Order: BSTN0554                 |                                |
| Serial Number: 601                                                    |                    | Date: 03/20/15                       |                                |
| Customer: Boston Scientific Corporation                               |                    | Temperature: 22.8°C                  |                                |
| Attendees: None                                                       |                    | Humidity: 23%                        |                                |
| Project: None                                                         |                    | Barometric Pres.: 1017 mbar          |                                |
| Tested by: Jonathan Kiefer                                            | Power: 110VAC/60Hz | Job Site: MN08                       |                                |
| TEST SPECIFICATIONS                                                   |                    |                                      |                                |
| FCC 951:2015                                                          |                    | Test Method: ANSI/TIA/EIA-603-C-2004 |                                |
| COMMENTS                                                              |                    |                                      |                                |
| US Power Setting = 51. Transmitting a modulated carrier at 76.8 kbps. |                    |                                      |                                |
| DEVIATIONS FROM TEST STANDARD                                         |                    |                                      |                                |
| None                                                                  |                    |                                      |                                |
| Configuration #                                                       | 3                  | Signature: <i>Trevor Buls</i>        |                                |
|                                                                       |                    | Frequency Range                      | Value (dBc) Limit (dBc) Result |
| 403.51 MHz                                                            |                    | 30 MHz - 5 GHz                       | -41.18 N/A N/A                 |

# SPURIOUS CONDUCTED EMISSIONS

| 403.51 MHz      |  |             |             |        |
|-----------------|--|-------------|-------------|--------|
| Frequency Range |  | Value (dBc) | Limit (dBc) | Result |
| 30 MHz - 5 GHz  |  | -41.18      | N/A         | N/A    |



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 Low, High channels: 402.8183, 403.5108 MHz

## POWER SETTINGS INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

BSTN0554 - 1

## FREQUENCY RANGE INVESTIGATED

|                 |        |                |          |
|-----------------|--------|----------------|----------|
| Start Frequency | 30 MHz | Stop Frequency | 1000 MHz |
|-----------------|--------|----------------|----------|

## SAMPLE CALCULATIONS

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

## TEST EQUIPMENT

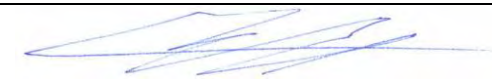
| Description                   | Manufacturer    | Model        | ID  | Last Cal.  | Interval |
|-------------------------------|-----------------|--------------|-----|------------|----------|
| Signal Generator MXG          | Agilent         | N5183A       | TIK | 10/17/2014 | 36 mo    |
| Power Sensor                  | Agilent         | N8481A       | SQN | 8/22/2014  | 12 mo    |
| Power Meter                   | Agilent         | N1913A       | SQL | 8/22/2014  | 12 mo    |
| Antenna, Dipole               | EMCO            | 3121C-DB4    | ADI | 12/21/2012 | 36 mo    |
| Low Pass Filter, 0 - 1000 MHz | Micro-Tronics   | LPM50004     | HGK | 3/2/2015   | 12 mo    |
| Pre-Amplifier                 | Miteq           | AM-1616-1000 | PAD | 3/2/2015   | 12 mo    |
| MN05 Cables                   | ESM Cable Corp. | Bilog Cables | MNH | 3/2/2015   | 12 mo    |
| Antenna, Biconilog            | Teseq           | CBL 6141B    | AYD | 12/17/2013 | 24 mo    |
| Spectrum Analyzer             | Agilent         | N9010A       | AFI | 1/27/2015  | 12 mo    |

## TEST DESCRIPTION

Per 95.627(g)(3), 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  $EIRP = W$ .

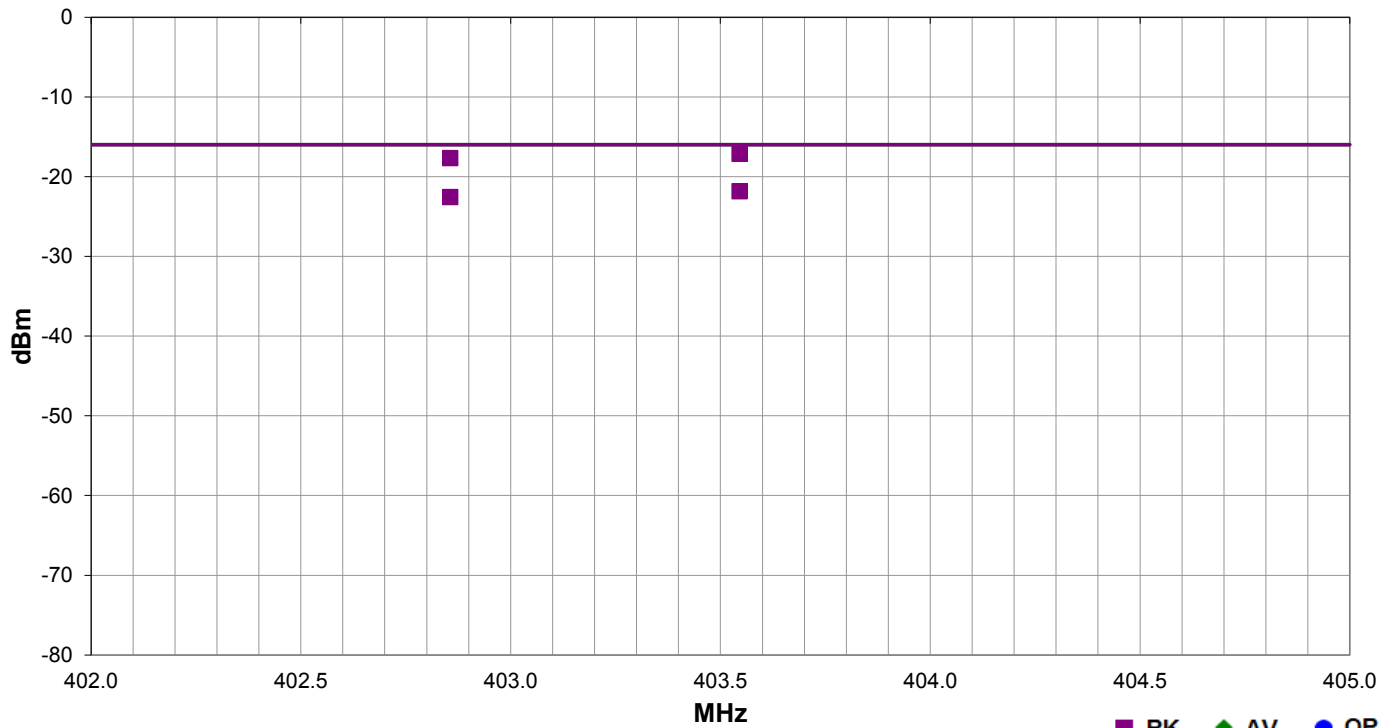
The Field Strength of the Fundamental was measured in the far-field at an FCC Listed Semi-anechoic Chamber. Spectrum analyzer and linearly polarized antennas were used to measure the radiated field strength of the fundamental.

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.

|                 |                                                                                                                                                                                     |                   |           |                                                                                    |               |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|------------------------------------------------------------------------------------|---------------|
| Work Order:     | BSTN0554                                                                                                                                                                            | Date:             | 03/17/15  |  |               |
| Project:        | None                                                                                                                                                                                | Temperature:      | 22.2 °C   |                                                                                    |               |
| Job Site:       | MN05                                                                                                                                                                                | Humidity:         | 24.2% RH  |                                                                                    |               |
| Serial Number:  | 000601                                                                                                                                                                              | Barometric Pres.: | 1032 mbar | Tested by:                                                                         | Johnathan Lee |
| EUT:            | Model 6290 Jaguar Communicator                                                                                                                                                      |                   |           |                                                                                    |               |
| Configuration:  | 1                                                                                                                                                                                   |                   |           |                                                                                    |               |
| Customer:       | Boston Scientific Corporation                                                                                                                                                       |                   |           |                                                                                    |               |
| Attendees:      | Pete Musto                                                                                                                                                                          |                   |           |                                                                                    |               |
| EUT Power:      | 110VAC/60Hz                                                                                                                                                                         |                   |           |                                                                                    |               |
| Operating Mode: | Transmitting Channel 10 = 403.5108 MHz and Channel 11 = 402.8183 MHz.                                                                                                               |                   |           |                                                                                    |               |
| Deviations:     | None                                                                                                                                                                                |                   |           |                                                                                    |               |
| Comments:       | US Power Setting = 51. EUT was tested in Horizontal position per the manufacturer because the device will always be operated in this position. Transmitting an unmodulated carrier. |                   |           |                                                                                    |               |

|                     |                         |
|---------------------|-------------------------|
| Test Specifications | Test Method             |
| FCC 95I:2015        | ANSI/TIA/EIA-603-C:2004 |

|       |   |                   |   |                   |           |         |            |
|-------|---|-------------------|---|-------------------|-----------|---------|------------|
| Run # | 8 | Test Distance (m) | 3 | Antenna Height(s) | 1 to 4(m) | Results | Evaluation |
|-------|---|-------------------|---|-------------------|-----------|---------|------------|



| Freq (MHz) | Antenna Height (meters) | Azimuth (degrees) | Polarity/Transducer Type | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) | Comments                      |
|------------|-------------------------|-------------------|--------------------------|----------|--------------|------------|-------------------|------------------------|-------------------------------|
| 403.546    | 1.0                     | 354.0             | Horz                     | PK       | 1.93E-05     | -17.1      | -16.0             | -1.1                   | EUT Horizontal, Ch 10, Pwr 51 |
| 402.856    | 1.0                     | 353.0             | Horz                     | PK       | 1.72E-05     | -17.7      | -16.0             | -1.7                   | EUT Horizontal, Ch 11, Pwr 51 |
| 403.546    | 1.0                     | 184.1             | Vert                     | PK       | 6.55E-06     | -21.8      | -16.0             | -5.8                   | EUT Horizontal, Ch 10, Pwr 51 |
| 402.856    | 1.0                     | 184.1             | Vert                     | PK       | 5.55E-06     | -22.6      | -16.0             | -6.6                   | EUT Horizontal, Ch 11, Pwr 51 |

# AC POWERLINE CONDUCTED EMISSIONS

## TEST DESCRIPTION

The EUT will be powered either directly or indirectly from the AC power line. Therefore, conducted emissions measurements were made on the AC input of the EUT, or on the AC input of the device used to power the EUT. The AC power line conducted emissions were measured with the EUT operating at the lowest, the highest, and a middle channel in the operational band. The EUT was transmitting at its maximum data rate. For each mode, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.10-2009.

## TEST EQUIPMENT

| Description          | Manufacturer       | Model            | ID  | Last Cal.  | Interval |
|----------------------|--------------------|------------------|-----|------------|----------|
| Receiver             | Rohde & Schwarz    | ESR7             | ARI | 05/06/2014 | 12 mo    |
| LISN                 | Solar Electronics  | 9252-50-R-24-BNC | LIY | 05/15/2014 | 12 mo    |
| MN03 Cables          | ESM Cable Corp.    | Conducted Cables | MNC | 11/20/2014 | 12 mo    |
| Attenuator 20dB, BNC | Fairview Microwave | SA01B-20         | AQP | 07/22/2014 | 12 mo    |
| High Pass Filter     | TTE                | H97-100K-50-720B | HGN | 05/23/2014 | 12 mo    |

## MEASUREMENT UNCERTAINTY

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

## CONFIGURATIONS INVESTIGATED

BSTN0554-2

## MODES INVESTIGATED

Transmitting at 403.51 MHz, 76.8 kbps (high baud rate)

# AC POWERLINE CONDUCTED EMISSIONS

|                   |                               |                    |            |
|-------------------|-------------------------------|--------------------|------------|
| EUT:              | Jaguar, Model 6290            | Work Order:        | BSTN0554   |
| Serial Number:    | 601                           | Date:              | 03/20/2015 |
| Customer:         | Boston Scientific Corporation | Temperature:       | 22.2°C     |
| Attendees:        | None                          | Relative Humidity: | 22.6%      |
| Customer Project: | None                          | Bar. Pressure:     | 1017 mb    |
| Tested By:        | Jonathan Kiefer               | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                   | Configuration:     | BSTN0554-2 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.207:2015 | ANSI C63.10:2009 |

## TEST PARAMETERS

|        |   |       |           |                        |    |
|--------|---|-------|-----------|------------------------|----|
| Run #: | 3 | Line: | High Line | Ext. Attenuation (dB): | 20 |
|--------|---|-------|-----------|------------------------|----|

## COMMENTS

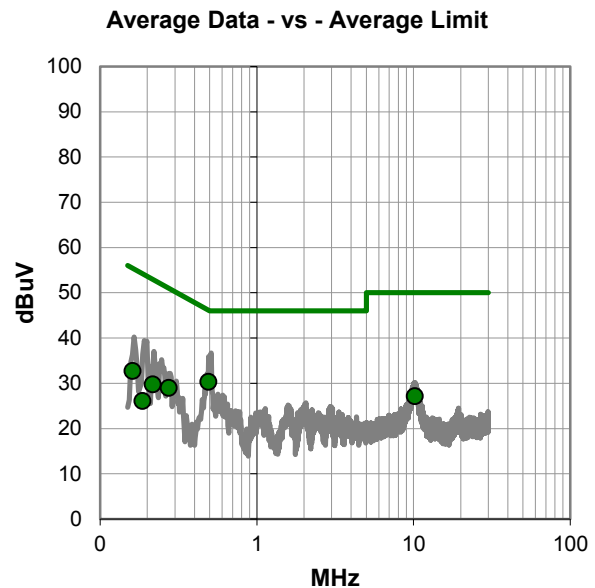
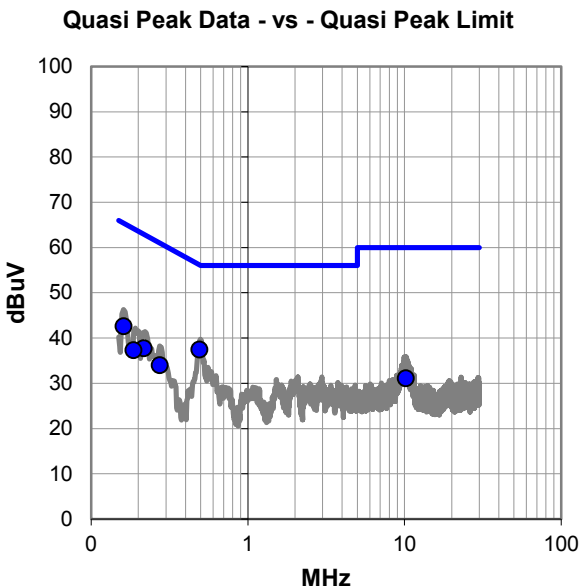
US Power Setting = 51. Transmitting a modulated carrier at 76.8 kbps.

## EUT OPERATING MODES

Transmitting at 403.51 MHz, 76.8 kbps (high baud rate).

## DEVIATIONS FROM TEST STANDARD

None



# AC POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #3

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 0.491      | 17.2        | 20.2        | 37.4            | 56.1               | -18.7       |
| 0.161      | 22.4        | 20.2        | 42.6            | 65.4               | -22.8       |
| 0.217      | 17.6        | 20.1        | 37.7            | 62.9               | -25.2       |
| 0.186      | 17.1        | 20.2        | 37.3            | 64.2               | -26.9       |
| 0.275      | 13.8        | 20.1        | 33.9            | 61.0               | -27.0       |
| 10.219     | 10.3        | 20.8        | 31.1            | 60.0               | -28.9       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 0.491      | 10.1        | 20.2        | 30.3            | 46.1               | -15.8       |
| 0.275      | 8.8         | 20.1        | 28.9            | 51.0               | -22.0       |
| 0.161      | 12.5        | 20.2        | 32.7            | 55.4               | -22.7       |
| 10.219     | 6.4         | 20.8        | 27.2            | 50.0               | -22.8       |
| 0.217      | 9.6         | 20.1        | 29.7            | 52.9               | -23.2       |
| 0.186      | 5.9         | 20.2        | 26.1            | 54.2               | -28.1       |

## CONCLUSION

Pass

*Trevor Buls*

Tested By

# AC POWERLINE CONDUCTED EMISSIONS

|                   |                               |                    |            |
|-------------------|-------------------------------|--------------------|------------|
| EUT:              | Jaguar, Model 6290            | Work Order:        | BSTN0554   |
| Serial Number:    | 601                           | Date:              | 03/20/2015 |
| Customer:         | Boston Scientific Corporation | Temperature:       | 22.2°C     |
| Attendees:        | None                          | Relative Humidity: | 22.6%      |
| Customer Project: | None                          | Bar. Pressure:     | 1017 mb    |
| Tested By:        | Jonathan Kiefer               | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                   | Configuration:     | BSTN0554-2 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.207:2015 | ANSI C63.10:2009 |

## TEST PARAMETERS

|        |   |       |         |                        |    |
|--------|---|-------|---------|------------------------|----|
| Run #: | 4 | Line: | Neutral | Ext. Attenuation (dB): | 20 |
|--------|---|-------|---------|------------------------|----|

## COMMENTS

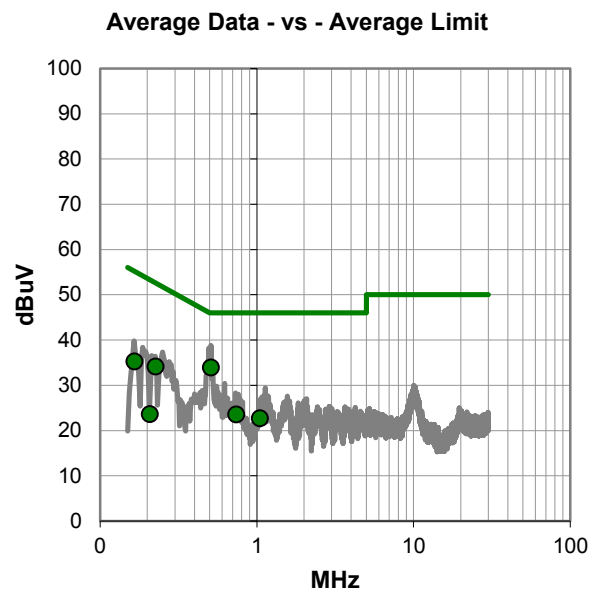
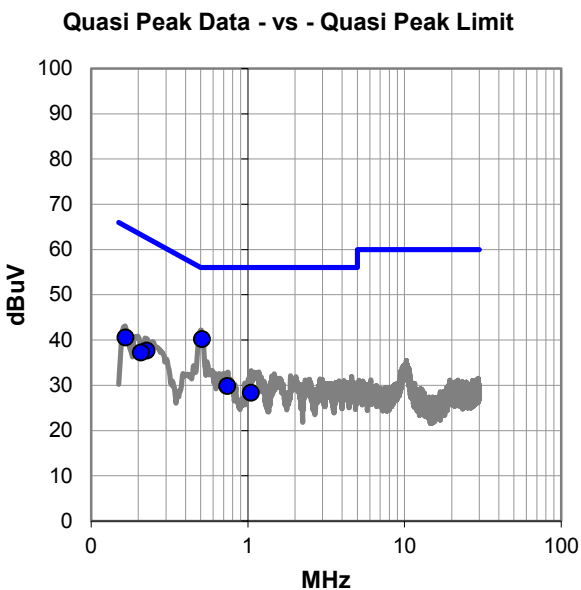
US Power Setting = 51. Transmitting a modulated carrier at 76.8 kbps.

## EUT OPERATING MODES

Transmitting at 403.51 MHz, 76.8 kbps (high baud rate)

## DEVIATIONS FROM TEST STANDARD

None



# AC POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #4

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 0.510      | 20.0        | 20.2        | 40.2            | 56.0               | -15.8       |
| 0.166      | 20.3        | 20.2        | 40.5            | 65.2               | -24.7       |
| 0.226      | 17.5        | 20.1        | 37.6            | 62.6               | -25.0       |
| 0.208      | 17.1        | 20.1        | 37.2            | 63.3               | -26.1       |
| 0.738      | 9.6         | 20.2        | 29.8            | 56.0               | -26.2       |
| 1.049      | 8.1         | 20.2        | 28.3            | 56.0               | -27.7       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 0.510      | 13.7        | 20.2        | 33.9            | 46.0               | -12.1       |
| 0.226      | 14.0        | 20.1        | 34.1            | 52.6               | -18.5       |
| 0.166      | 15.0        | 20.2        | 35.2            | 55.2               | -20.0       |
| 0.738      | 3.3         | 20.2        | 23.5            | 46.0               | -22.5       |
| 1.049      | 2.5         | 20.2        | 22.7            | 46.0               | -23.3       |
| 0.208      | 3.5         | 20.1        | 23.6            | 53.3               | -29.7       |

## CONCLUSION

Pass

*Trevor Buls*

Tested By