

NORTHWEST EMC

Boston Scientific Corporation

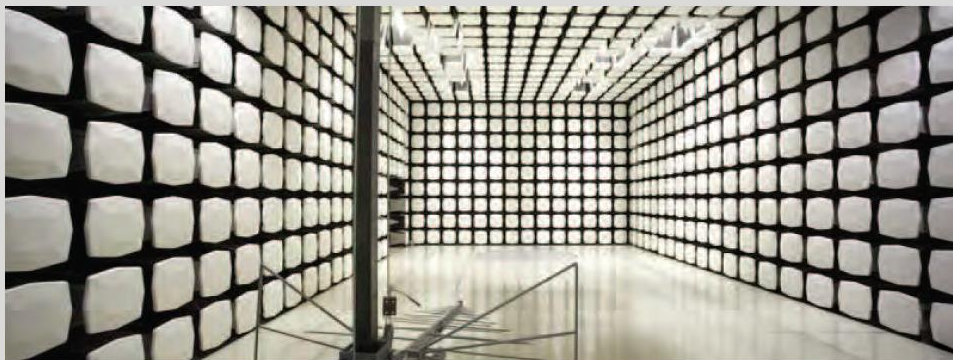
Model 3300

FCC 15.951:2016

FCC 15.207:2016

MICS Radio - 10 Channel

Report # BSTN0663.8 Rev 01



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: August 11, 2016
Boston Scientific Corporation
Model: 3300

Radio Equipment Testing

Standards

Specification	Method
FCC 95.1:2016	ANSI/TIA/EIA-603-D-2010
FCC 15.207:2016	ANSI C63.10:2013

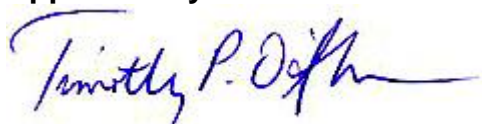
Results

Method Clause	Test Description	Applied	Results	Comments
ANSI C63.10-6.2	Powerline Conducted Emissions	Yes	Pass	
FCC 95.627(a)	Frequency Monitoring	No	N/A	Refer to BSTN0663.22 Report
FCC 95.633(e)(3)	Emission Bandwidth	Yes	Pass	
FCC 95.635(d)(4-5)	Emission Mask	Yes	Pass	
TIA-603-D 2.2.1	Conducted Output Power	Yes	Pass	
TIA-603-D 2.2.2	Frequency Stability	Yes	Pass	
TIA-603-D 2.2.12	Spurious Radiated Emissions	Yes	Pass	
TIA-603-D 2.2.13	Spurious Conducted Emissions	Yes	Pass	
TIA-603-D 2.2.17.2	Radiated Power (EIRP)	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. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information.

REVISION HISTORY

Revision Number	Description	Date	Page Number
01	Corrected Method Clause reference	5/11/17	2
01	Added Test Setup Block Diagrams	5/11/17	7
01	Added Details for Configuration BSTN0663-14	5/11/17	12
01	Corrected Configuration Reference	5/11/17	14,15,17
01	Corrected Test Method References	5/11/17	Various

ACCREDITATIONS AND AUTHORIZATIONS

United States

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

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

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

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

European Union

European Commission – Validated by the European Commission as a Notified Body under the R&TTE Directive.

Australia/New Zealand

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

Korea

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

Japan

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

Taiwan

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

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

Singapore

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

Israel

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

Hong Kong

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

Vietnam

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

SCOPE

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

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

MEASUREMENT UNCERTAINTY

Measurement Uncertainty

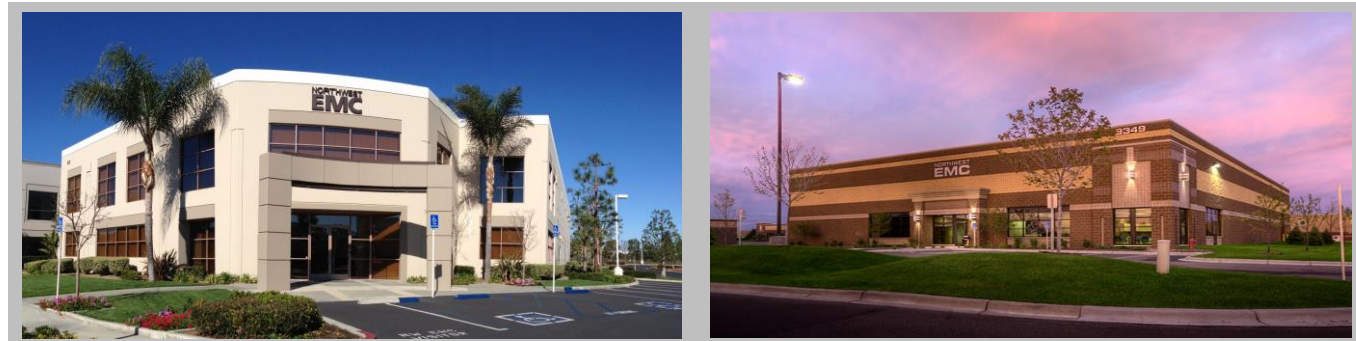
When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement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

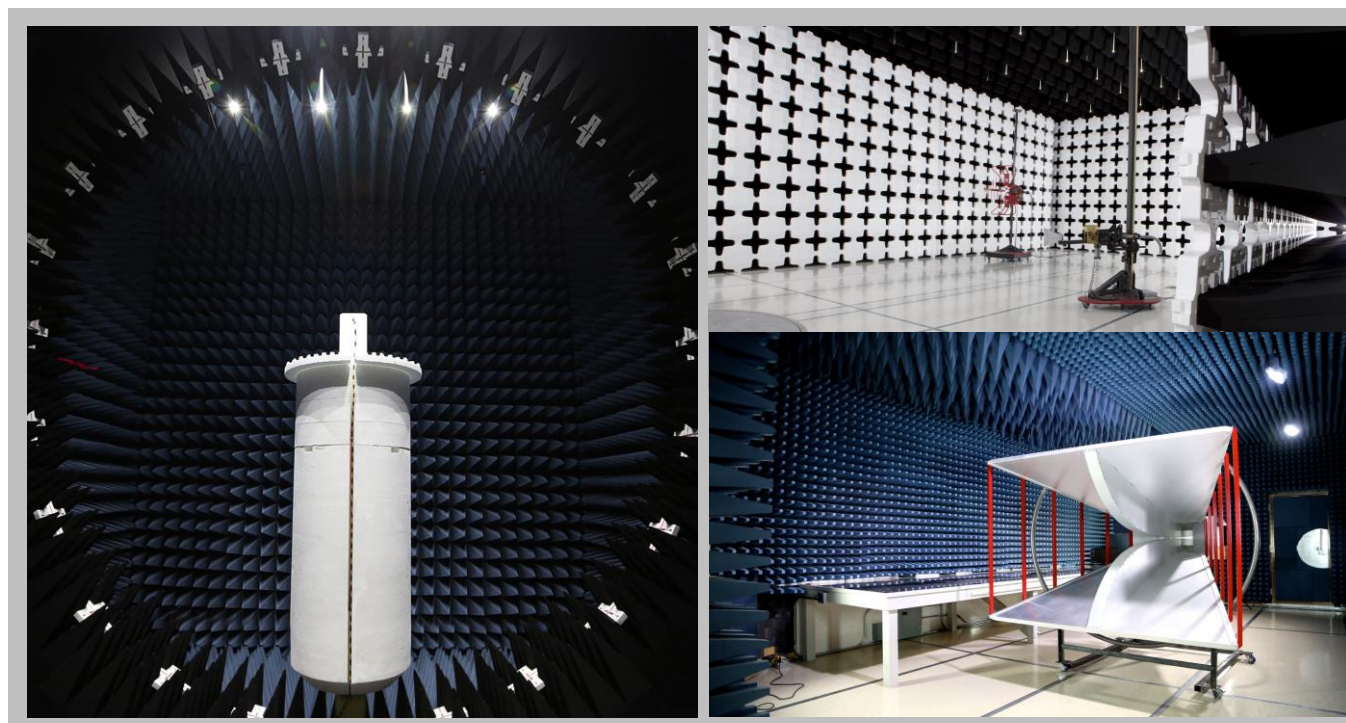
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

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

FACILITIES



California Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	New York Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Oregon Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Washington Labs NC01-05 19201 120 th Ave NE Bothell, WA 98011 (425)984-6600
NVLAP					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
Innovation, Science and Economic Development Canada					
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1
BSMI					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRR, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Boston Scientific Corporation
Address:	4100 Hamline Avenue North
City, State, Zip:	St. Paul, MN 55112-5798
Test Requested By:	Pete Musto
Model:	Model 3300
First Date of Test:	July 14, 2016
Last Date of Test:	August 11, 2016
Receipt Date of Samples:	July 14, 2016
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT:

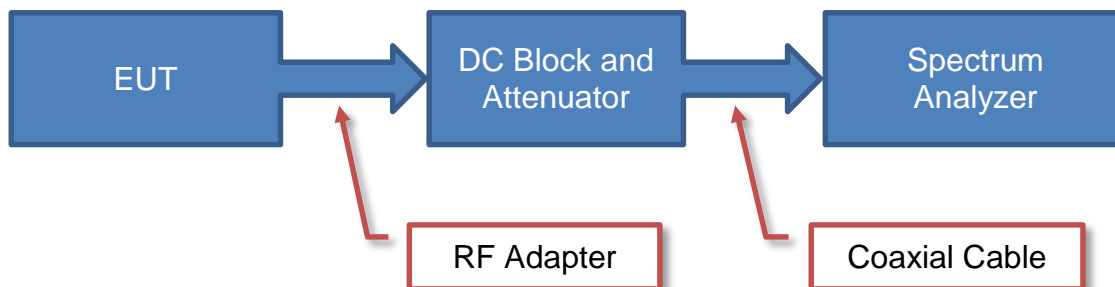
The Boston Scientific Model 3300 Latitude Programmer (PRM) is a device that is used to interrogate and program Boston Scientific PGs and defibrillators. PG specific software applications are loaded into the PRM and communicate with the implanted device. The telemetry communications allow the physician the ability to program the PG or query the PG for historical data or operating parameters. The PRM allows other external instruments or equipment to be connected, including printers, network connections, external display monitors, USB data storage devices, and cellular adapters. The PRM also provides a Pacing Systems Analyzer for implant lead evaluation and diagnostics.

Testing Objective:

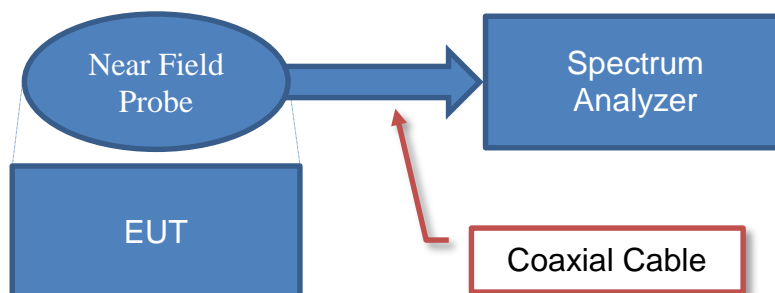
Seeking FCC authorization for the 10 Channel MICS transmitter to FCC Part 95I.

Test Setup Block Diagrams

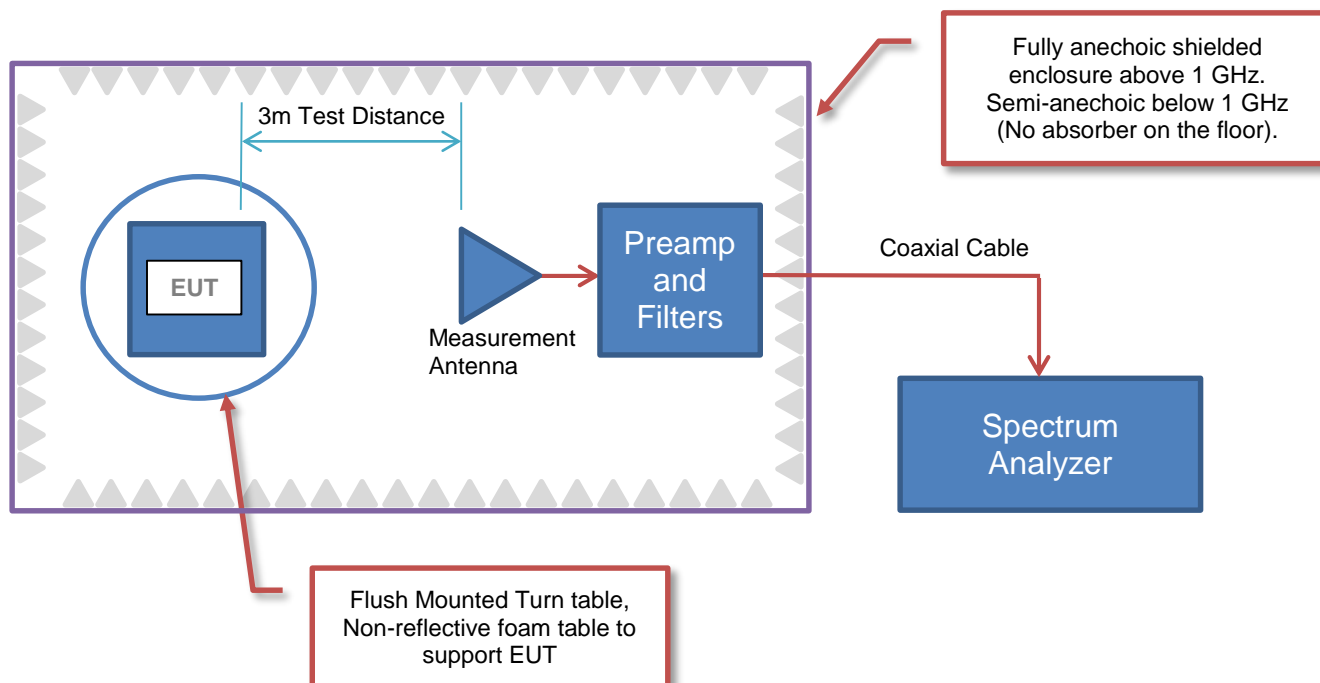
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions



CONFIGURATIONS

Configuration BSTN0663- 2

Software/Firmware Running during test	
Description	Version
MTI	1.3-1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Latitude Vision Programmer	Boston Scientific Corporation	3300	097

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC/DC Adapter	GlobTek, Inc	GTM41133-9016-1.0-T3A	None
External Antenna	Boston Scientific Corporation	3203	None
USB Cellular Adapter	Boston Scientific Corporation	6295	085
USB Memory Feature Key	Boston Scientific Corporation	None	043
USB Memory MTI	Kingston	DTSE9 G2	None
Inductive Telemetry Wand	Boston Scientific Corporation	6395	117
Latitude Vision Stand	Boston Scientific Corporation	6755	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Cable	Yes	2.5m	No	AC/DC Adapter	AC Mains
DC Cable	No	2m	Yes	AC/DC Adapter	Programmer
2.3/1.0 External Ant Cable	Yes	3m	No	External Antenna	Programmer
USB Cable	Yes	15 cm	Yes	USB Cellular Adapter	Programmer
Inductive Telemetry Wand Cable	Yes	3m	No	Inductive Telemetry Wand	Programmer
Display Port	Yes	2m	Yes	Programmer	Not Terminated
USB Cable	Yes	2m	Yes	Programmer	Not Terminated
Ethernet Cable	No	3m	No	Programmer	Terminated
Non Disposable PSA x2	Yes	2.5m	Yes	Programmer	Not Terminated
ECG Cable	Yes	3.5m	No	Programmer	Not Terminated
Conducted Telemetry Cable	Yes	2.5m	Yes	Programmer	Not Terminated

CONFIGURATIONS

Configuration BSTN0663- 3

Software/Firmware Running during test	
Description	Version
MTI	2.0-7

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Latitude Vision Programmer	Boston Scientific Corporation	3300	097

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC/DC Adapter	GlobTek, Inc	GTM41133-9016-1.0-T3A	None
External Antenna	Boston Scientific Corporation	3203	None
USB Cellular Adapter	Boston Scientific Corporation	6295	085
USB Memory Feature Key	Boston Scientific Corporation	None	043
USB Memory MTI	Kingston	DTSE9 G2	None
Inductive Telemetry Wand	Boston Scientific Corporation	6395	117
Latitude Vision Stand	Boston Scientific Corporation	6755	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Cable	Yes	2.5m	No	AC/DC Adapter	AC Mains
DC Cable	No	2m	Yes	AC/DC Adapter	Programmer
2.3/1.0 External Ant Cable	Yes	3m	No	External Antenna	Programmer
USB Cable	Yes	15 cm	Yes	USB Cellular Adapter	Programmer
Inductive Telemetry Wand Cable	Yes	3m	No	Inductive Telemetry Wand	Programmer
Display Port	Yes	2m	Yes	Programmer	Not Terminated
USB Cable	Yes	2m	Yes	Programmer	Not Terminated
Ethernet Cable	No	3m	No	Programmer	Terminated
Non Disposable PSA x2	Yes	2.5m	Yes	Programmer	Not Terminated
ECG Cable	Yes	3.5m	No	Programmer	Not Terminated
Conducted Telemetry Cable	Yes	2.5m	Yes	Programmer	Not Terminated

CONFIGURATIONS

Configuration BSTN0663- 5

Software/Firmware Running during test					
Description				Version	
MTI				2.0-7	

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Latitude Vision Programmer	Boston Scientific Corporation	3300	058

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC/DC Adapter	GlobTek, Inc	GTM41133-9016-1.0-T3A	None
USB Memory Feature Key	Boston Scientific Corporation	None	043
USB Memory MTI	Kingston	DTSE9 G2	None
Keyboard	Lenovo	KU-0989	1S54Y94890909725E

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Cable	Yes	2.5m	No	AC/DC Adapter	AC Mains
DC Cable	No	2m	Yes	AC/DC Adapter	Programmer
USB Cable (Keyboard)	Yes	1.8m	No	Keyboard	Programmer

CONFIGURATIONS

Configuration BSTN0663- 6

Software/Firmware Running during test	
Description	Version
MTI	2.0-7

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Latitude Vision Programmer	Boston Scientific Corporation	3300	058

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC/DC Adapter	GlobTek, Inc	GTM41133-9016-1.0-T3A	None
USB Memory Feature Key	Boston Scientific Corporation	None	043
USB Memory MTI	Kingston	DTSE9 G2	None
Keyboard	Lenovo	KU-0989	1S54Y94890909725E
Mouse	Dynex	DX-WMSE	9D15A010642
Monitor	Lenovo	2572-HD6	V8-M8573

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Cable	Yes	2.5m	No	AC/DC Adapter	AC Mains
DC Cable	No	2m	Yes	AC/DC Adapter	Programmer
USB Cable (Keyboard)	Yes	1.8m	No	Keyboard	Programmer
USB Cable (Mouse)	Yes	1.8m	Yes	Mouse	Programmer
DisplayPort Cable	Yes	2m	Yes	Monitor	Programmer
AC Cable (Monitor)	No	1.8m	No	Monitor	AC Mains

CONFIGURATIONS

Configuration BSTN0663- 14

Software/Firmware Running during test	
Description	Version
MTI	1.3-1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Latitude Vision Programmer	Boston Scientific Corporation	3300	097

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC/DC Adapter	GlobTek, Inc	GTM41133-9016-1.0-T3A	None
External Antenna	Boston Scientific Corporation	3203	None
USB Cellular Adapter	Boston Scientific Corporation	6295	085
USB Memory Feature Key	Boston Scientific Corporation	None	043
USB Memory MTI	Kingston	DTSE9 G2	None
Inductive Telemetry Wand	Boston Scientific Corporation	6395	117
Latitude Vision Stand	Boston Scientific Corporation	6755	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Cable	Yes	2.5m	No	AC/DC Adapter	AC Mains
DC Cable	No	2m	Yes	AC/DC Adapter	Programmer
2.3/1.0 External Ant Cable	Yes	3m	No	External Antenna	Programmer
USB Cable	Yes	15 cm	Yes	USB Cellular Adapter	Programmer
Inductive Telemetry Wand Cable	Yes	3m	No	Inductive Telemetry Wand	Programmer
Display Port	Yes	2m	Yes	Programmer	Not Terminated
USB Cable	Yes	2m	Yes	Programmer	Not Terminated
Non Disposable PSA x2	Yes	2.5m	Yes	Programmer	Not Terminated
ECG Cable	Yes	3.5m	No	Programmer	Not Terminated
Conducted Telemetry Cable	Yes	2.5m	Yes	Programmer	Not Terminated

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	7/14/2016	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	7/22/2016	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.
3	8/2/2016	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.
4	8/2/2016	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.
5	8/2/2016	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.
6	8/2/2016	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.
7	8/10/2016	Frequency Stability	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	8/11/2016	Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

POWERLINE CONDUCTED EMISSIONS

TEST DESCRIPTION

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
LISN	Solar Electronics	9252-50-R-24-BNC	LIY	3/21/2016	3/21/2017
Cable - Conducted Cable Assembly	Northwest EMC	MNC, HGN, TYK	MNCA	1/29/2016	1/29/2017
Receiver	Rohde & Schwarz	ESR7	ARI	6/14/2016	6/14/2017

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	2.4 dB	-2.4 dB

CONFIGURATIONS INVESTIGATED

BSTN0663-14

MODES INVESTIGATED

Transmitting MICS mid channel (403.35 MHz)

POWERLINE CONDUCTED EMISSIONS

EUT:	Model 3300	Work Order:	BSTN0663
Serial Number:	097	Date:	08/11/2016
Customer:	Boston Scientific Corporation	Temperature:	23.6°C
Attendees:	None	Relative Humidity:	57%
Customer Project:	Laramie Vision	Bar. Pressure:	1012 mb
Tested By:	Dustin Sparks	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	BSTN0663-14

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2016	ANSI C63.10:2013

TEST PARAMETERS

Run #:	3	Line:	High Line	Add. Ext. Attenuation (dB):	0
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COMMENTS

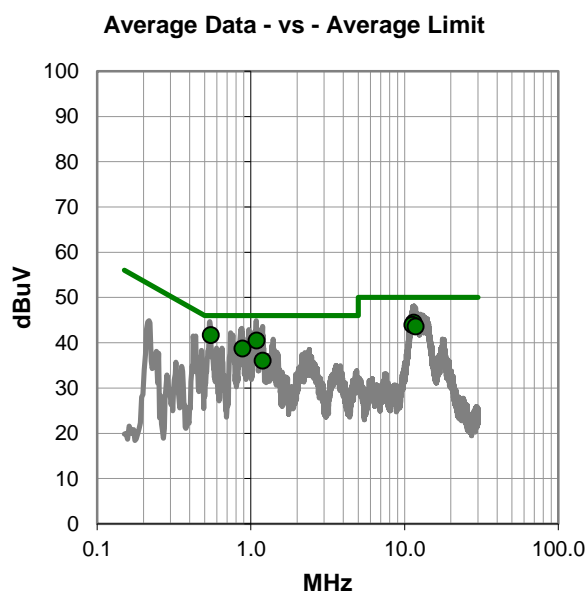
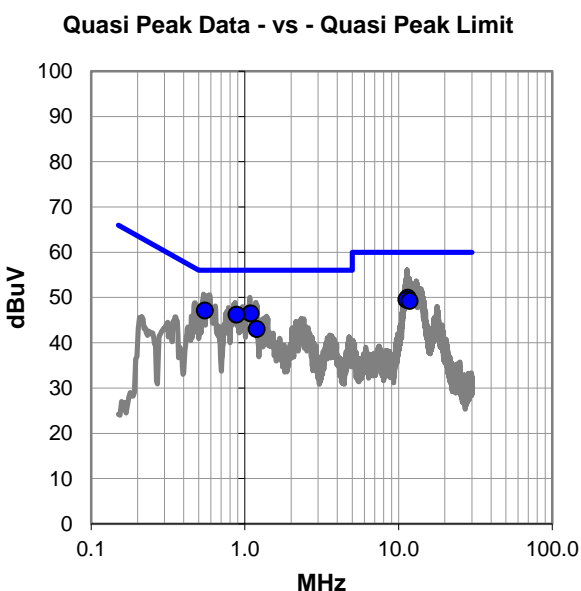
Antenna Port A

EUT OPERATING MODES

Transmitting MICS mid channel (403.35 MHz)

DEVIATIONS FROM TEST STANDARD

None



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)
0.550	27.0	20.1	47.1	56.0	-8.9
1.092	26.4	20.1	46.5	56.0	-9.5
0.884	26.1	20.1	46.2	56.0	-9.8
11.485	29.2	20.7	49.9	60.0	-10.1
11.287	28.8	20.7	49.5	60.0	-10.5
11.827	28.4	20.8	49.2	60.0	-10.8
1.194	22.9	20.1	43.0	56.0	-13.0

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.550	21.6	20.1	41.7	46.0	-4.3
1.092	20.4	20.1	40.5	46.0	-5.5
11.485	23.7	20.7	44.4	50.0	-5.6
11.287	23.2	20.7	43.9	50.0	-6.1
11.827	22.8	20.8	43.6	50.0	-6.4
0.884	18.6	20.1	38.7	46.0	-7.3
1.194	15.9	20.1	36.0	46.0	-10.0

CONCLUSION

Pass



Tested By

POWERLINE CONDUCTED EMISSIONS

EUT:	Model 3300	Work Order:	BSTN0663
Serial Number:	097	Date:	08/11/2016
Customer:	Boston Scientific Corporation	Temperature:	23.6°C
Attendees:	None	Relative Humidity:	57%
Customer Project:	Laramie Vision	Bar. Pressure:	1012 mb
Tested By:	Dustin Sparks	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	BSTN0663-14

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2016	ANSI C63.10:2013

TEST PARAMETERS

Run #:	4	Line:	Neutral	Add. Ext. Attenuation (dB):	0
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COMMENTS

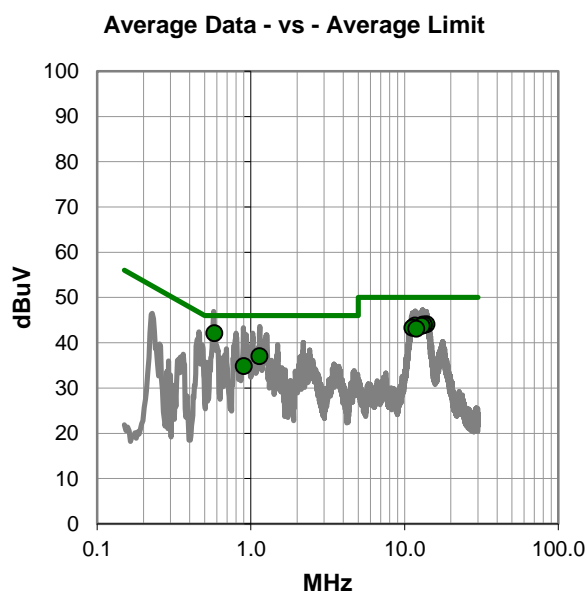
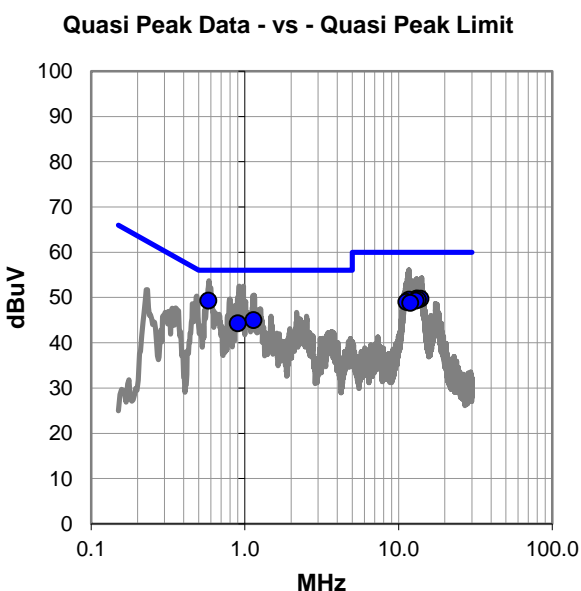
Antenna Port A

EUT OPERATING MODES

Transmitting MICS mid channel (403.35 MHz)

DEVIATIONS FROM TEST STANDARD

None



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)
0.579	29.2	20.1	49.3	56.0	-6.7
13.125	28.8	20.9	49.7	60.0	-10.3
13.211	28.8	20.9	49.7	60.0	-10.3
13.882	28.7	21.0	49.7	60.0	-10.3
11.732	28.7	20.8	49.5	60.0	-10.5
13.412	28.6	20.9	49.5	60.0	-10.5
12.978	28.4	20.9	49.3	60.0	-10.7
1.142	24.9	20.1	45.0	56.0	-11.0
11.248	28.3	20.7	49.0	60.0	-11.0
11.944	28.0	20.8	48.8	60.0	-11.2
0.900	24.2	20.1	44.3	56.0	-11.7

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.579	22.0	20.1	42.1	46.0	-3.9
13.882	23.1	21.0	44.1	50.0	-5.9
13.211	23.1	20.9	44.0	50.0	-6.0
13.125	23.0	20.9	43.9	50.0	-6.1
13.412	23.0	20.9	43.9	50.0	-6.1
11.732	23.0	20.8	43.8	50.0	-6.2
12.978	22.8	20.9	43.7	50.0	-6.3
11.248	22.6	20.7	43.3	50.0	-6.7
11.944	22.3	20.8	43.1	50.0	-6.9
1.142	16.9	20.1	37.0	46.0	-9.0
0.900	14.7	20.1	34.8	46.0	-11.2

CONCLUSION

Pass



Tested By

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.

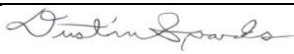
TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	10/17/2017
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	9/18/2016
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	2/26/2017
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	9/18/2016
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	3/24/2017

TEST DESCRIPTION

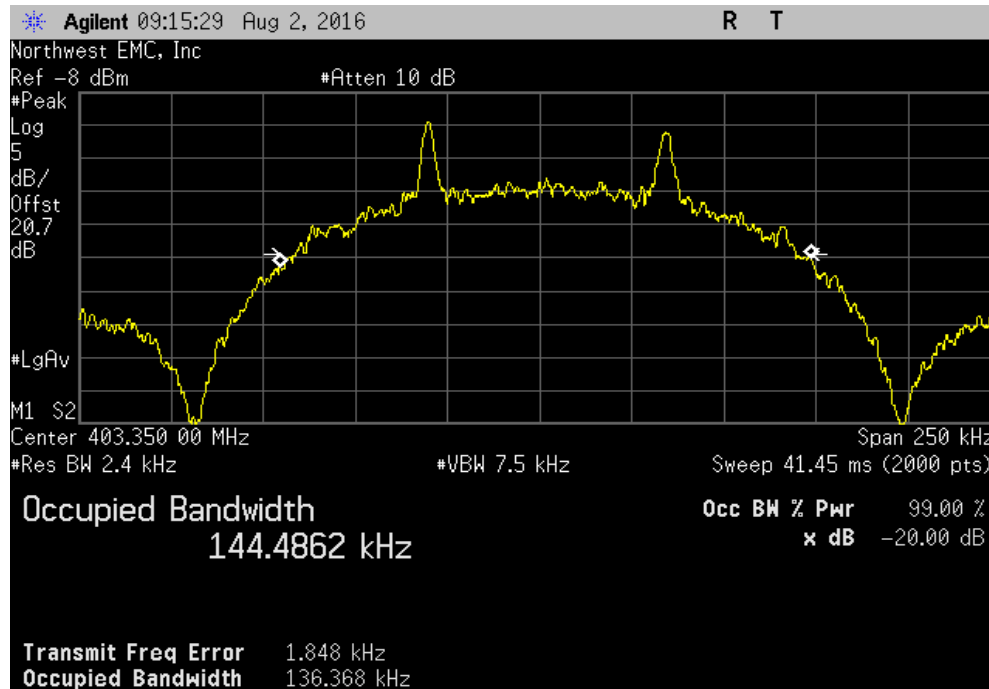
The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Per 47 CFR 95.633(e)(3), the emission bandwidth was determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center 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

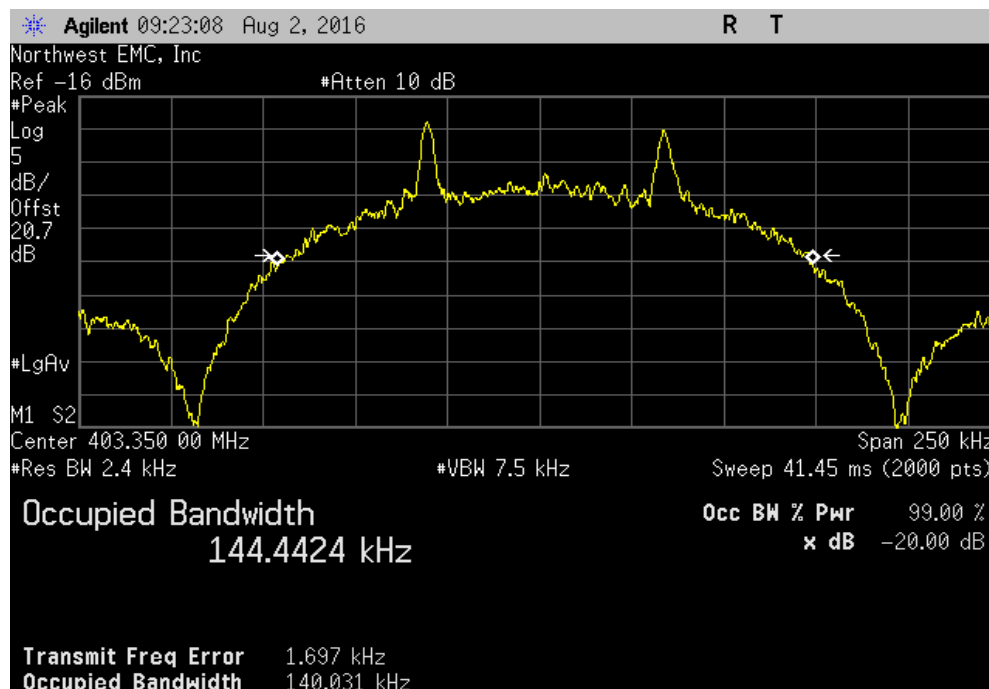
EUT: Model 3300		Work Order: BSTN0663	
Serial Number: 058		Date: 08/02/16	
Customer: Boston Scientific Corporation		Temperature: 23.4 °C	
Attendees: None		Humidity: 59.3% RH	
Project: Laramie Vision		Barometric Pres.: 1020 mbar	
Tested by: Dustin Sparks	Power: 110VAC/60Hz	Job Site: MN08	
TEST SPECIFICATIONS			
FCC 951:2016		Test Method	
		FCC 95.633(e)(3)	
COMMENTS			
10 Channel			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	5	Signature 	
		Value	Limit (S) Result
Antenna Port A	Mid Channel, 403.35 MHz (Legacy)	136.368 kHz	300 kHz Pass
Antenna Port B	Mid Channel, 403.35 MHz (Legacy)	140.031 kHz	300 kHz Pass
Antenna Port C	Mid Channel, 403.35 MHz (Legacy)	141.173 kHz	300 kHz Pass

EMISSIONS BANDWIDTH

Antenna Port A, Mid Channel, 403.35 MHz (Legacy)						
				Value	Limit (S)	Result
				136.368 kHz	300 kHz	Pass

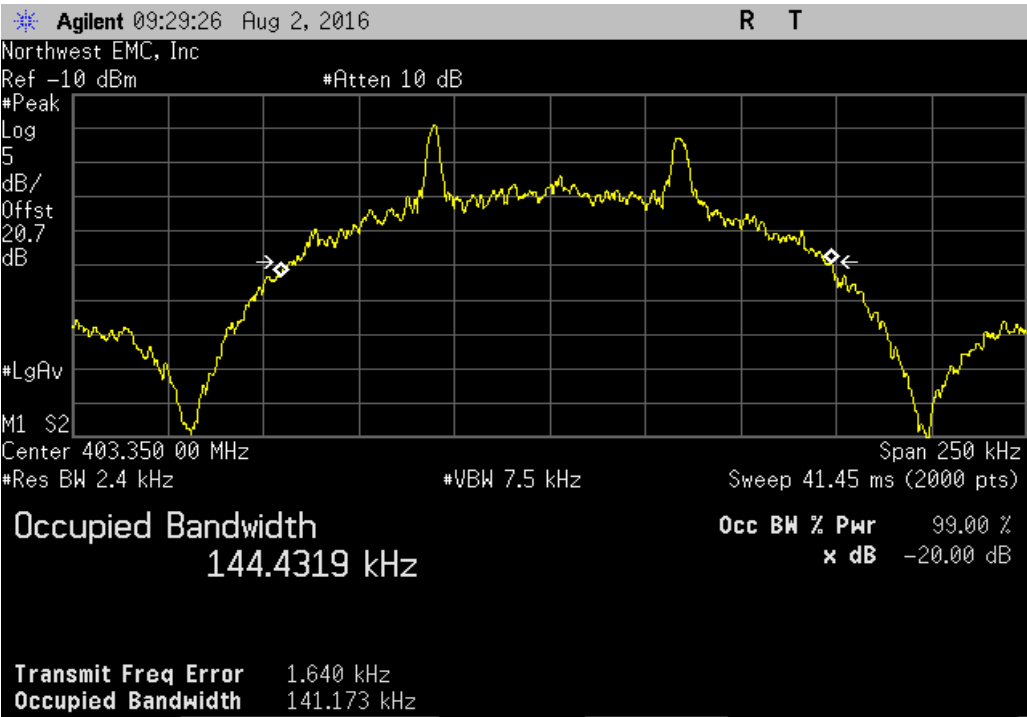


Antenna Port B, Mid Channel, 403.35 MHz (Legacy)						
				Value	Limit (S)	Result
				140.031 kHz	300 kHz	Pass



EMISSIONS BANDWIDTH

Antenna Port C, Mid Channel, 403.35 MHz (Legacy)						
Value				Limit (S)	Result	
141.173 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.	Cal. Due
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	10/17/2017
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	9/18/2016
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	2/26/2017
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	9/18/2016
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	3/24/2017

TEST DESCRIPTION

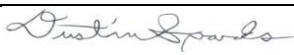
The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Per 47 CFR 95.635(d)(4) the emission mask was measured. Emissions more than 150 kHz away from the center frequency must be attenuated below the transmitter output power by at least 20 dB. This 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 MICS band (402-405 MHz) must be attenuated below the maximum permitted output power by at least 20 dB.

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

EMISSIONS MASK

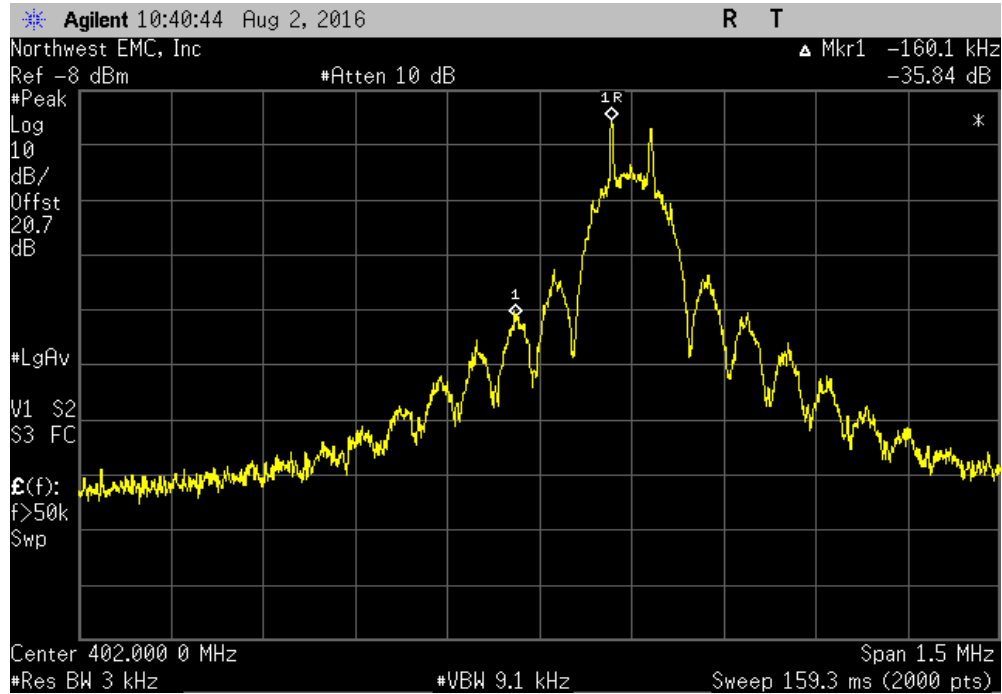


XMR 2016.05.06

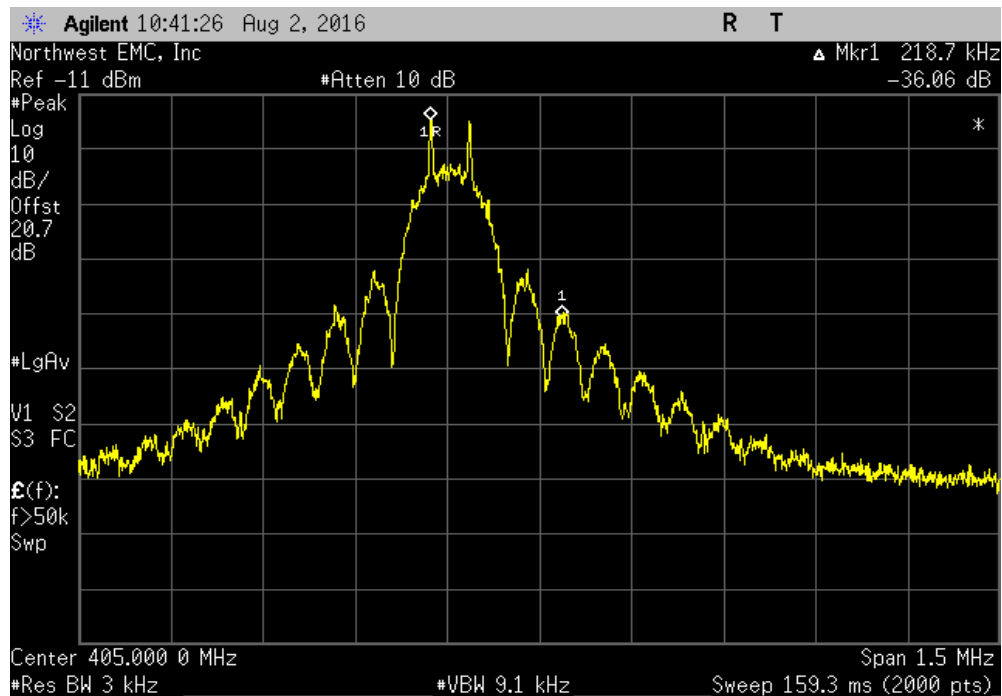
EUT: Model 3300		Work Order: BSTN0663	
Serial Number: 058		Date: 08/02/16	
Customer: Boston Scientific Corporation		Temperature: 23.7 °C	
Attendees: None		Humidity: 58.9% RH	
Project: Laramie Vision		Barometric Pres.: 1020 mbar	
Tested by: Dustin Sparks	Power: 110VAC/60Hz	Job Site: MN08	
TEST SPECIFICATIONS			
FCC 951:2016		Test Method: FCC 95.635(d)(4-5)	
COMMENTS			
Transmitting MICS 10 Channel (Legacy)			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	5	Signature 	
		Value (dBc)	Limit ≤ (dBc) Result
Antenna Port A			
	Low Channel, 402.15 MHz (Legacy)	-35.84	-20 Pass
	High Channel, 404.85 MHz (Legacy)	-36.06	-20 Pass
Antenna Port B			
	Low Channel, 402.15 MHz (Legacy)	-35.18	-20 Pass
	High Channel, 404.85 MHz (Legacy)	-35.46	-20 Pass
Antenna Port C			
	Low Channel, 402.15 MHz (Legacy)	-34.02	-20 Pass
	High Channel, 404.85 MHz (Legacy)	-33.44	-20 Pass

EMISSIONS MASK

Antenna Port A, Low Channel, 402.15 MHz (Legacy)						
				Value (dBc)	Limit ≤ (dBc)	Result
				-35.84	-20	Pass

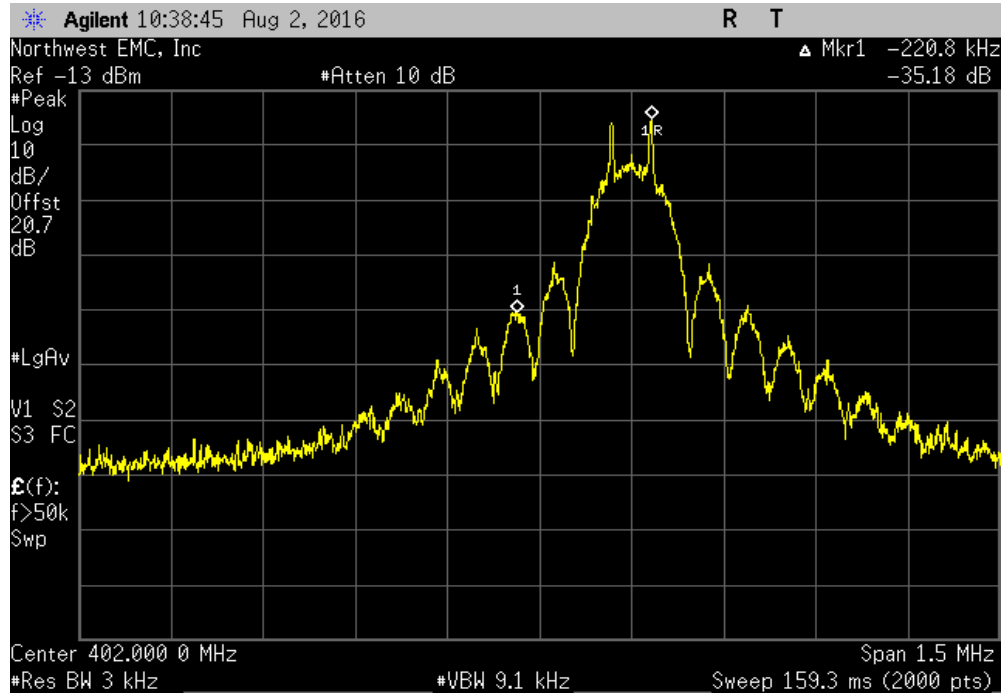


Antenna Port A, High Channel, 404.85 MHz (Legacy)						
				Value (dBc)	Limit ≤ (dBc)	Result
				-36.06	-20	Pass

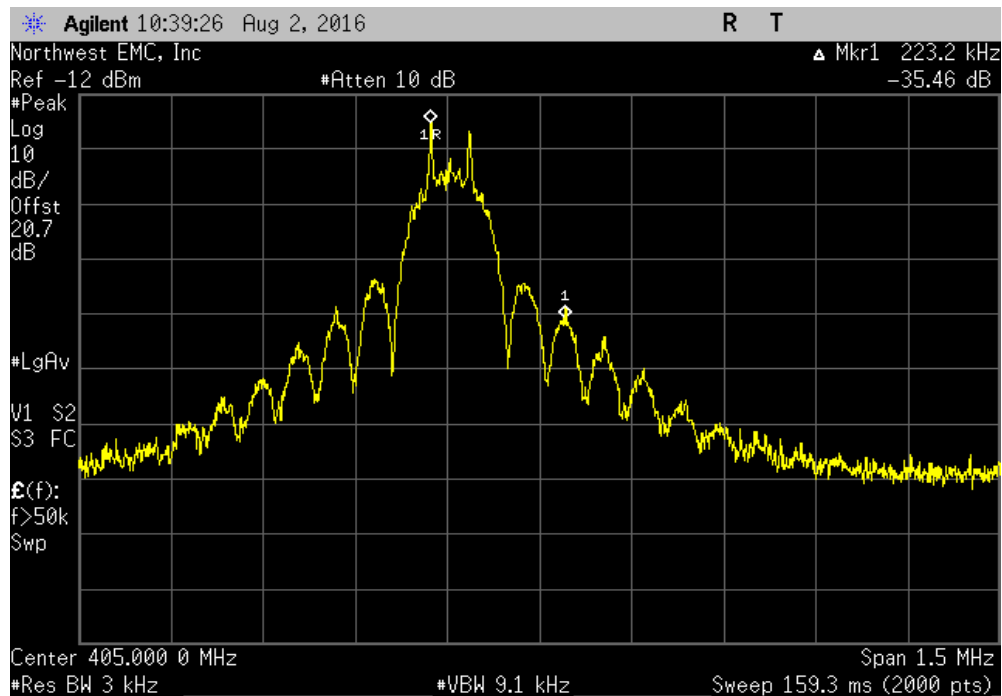


EMISSIONS MASK

Antenna Port B, Low Channel, 402.15 MHz (Legacy)						
				Value (dBc)	Limit ≤ (dBc)	Result
				-35.18	-20	Pass

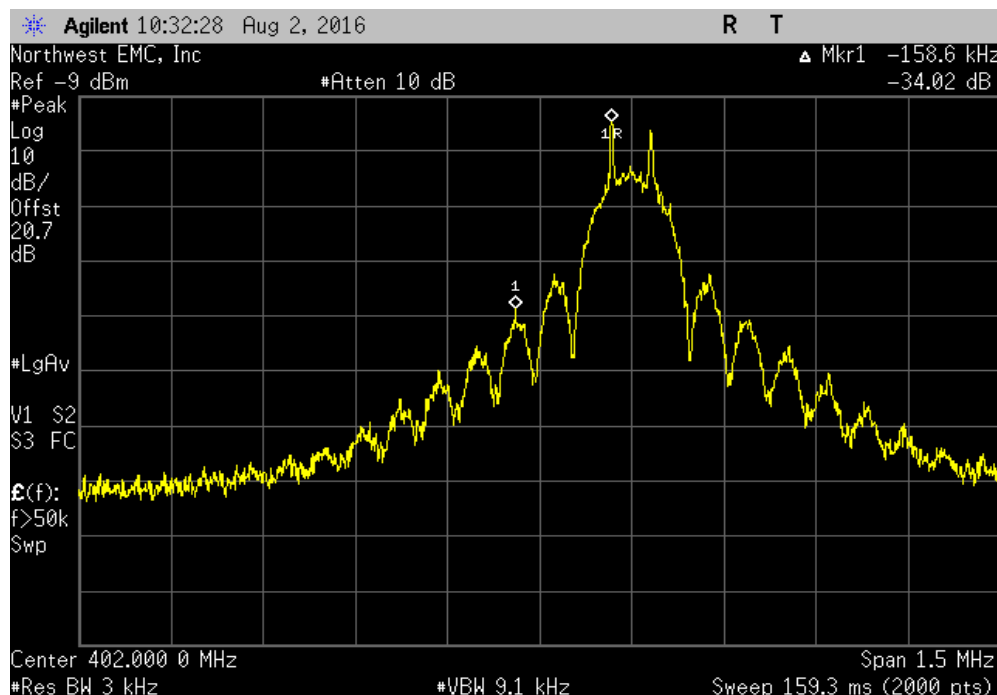


Antenna Port B, High Channel, 404.85 MHz (Legacy)						
				Value (dBc)	Limit ≤ (dBc)	Result
				-35.46	-20	Pass

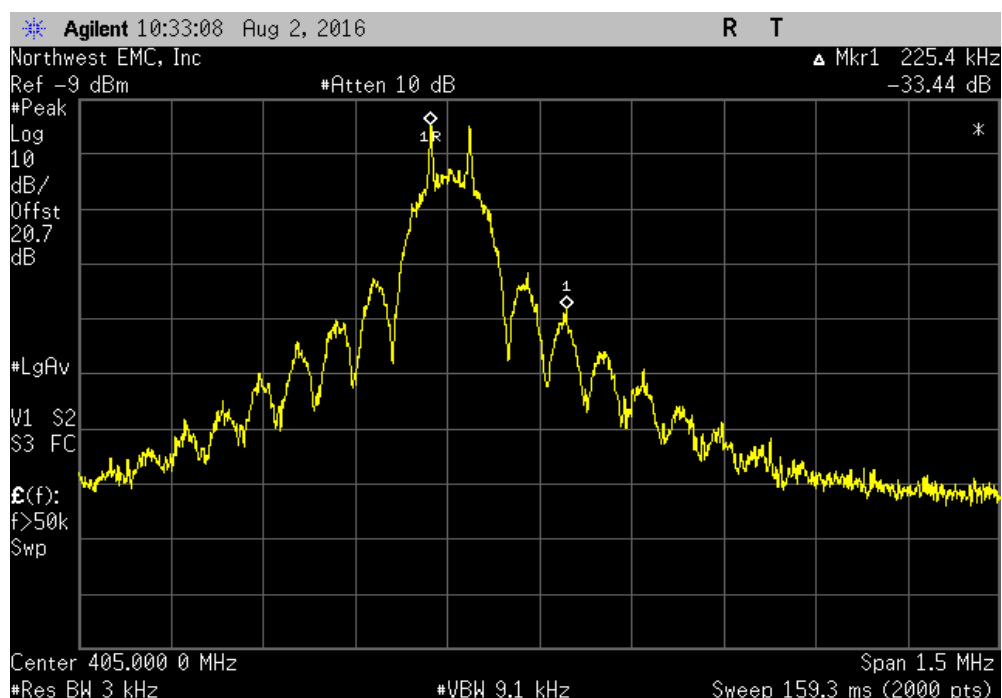


EMISSIONS MASK

Antenna Port C, Low Channel, 402.15 MHz (Legacy)						
				Value (dBc)	Limit ≤ (dBc)	Result
				-34.02	-20	Pass



Antenna Port C, High Channel, 404.85 MHz (Legacy)						
				Value (dBc)	Limit ≤ (dBc)	Result
				-33.44	-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

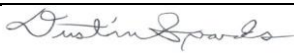
Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	2/26/2017
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	9/18/2016
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	9/18/2016
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	10/17/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	3/24/2017

TEST DESCRIPTION

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

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

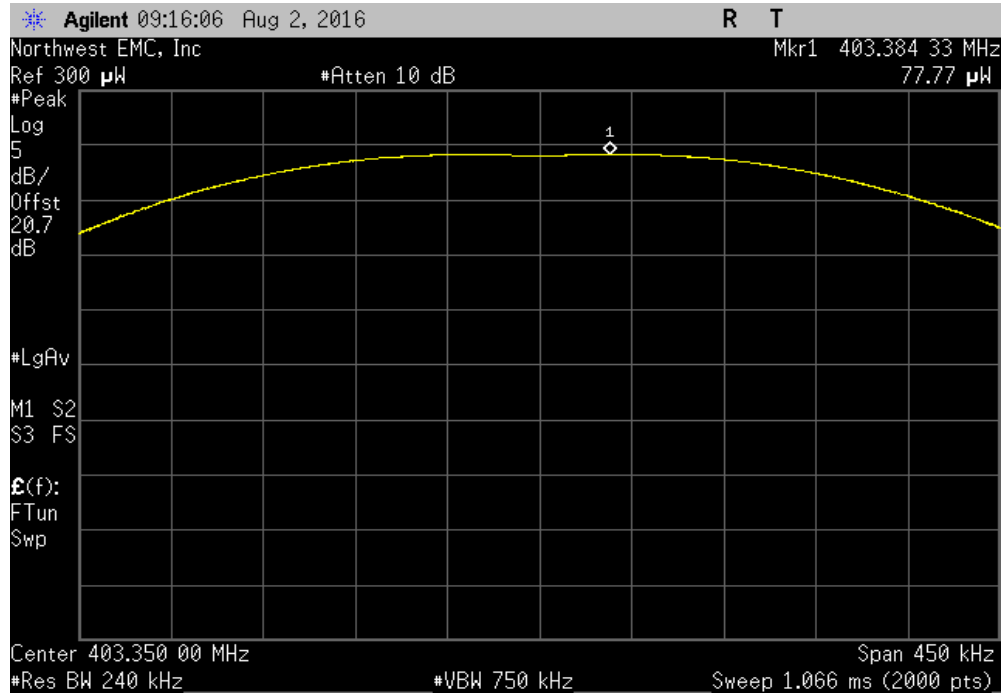
CONDUCTED OUTPUT POWER

EUT: Model 3300		Work Order: BSTN0663	
Serial Number: 058		Date: 08/02/16	
Customer: Boston Scientific Corporation		Temperature: 23.4 °C	
Attendees: None		Humidity: 59.4% RH	
Project: Laramie Vision		Barometric Pres.: 1020 mbar	
Tested by: Dustin Sparks	Power: 110VAC/60Hz	Job Site: MN08	
TEST SPECIFICATIONS			
FCC 951:2016		Test Method: ANSI/TIA/EIA-603-D-2010	
COMMENTS			
Transmitting MICS 10 Channel (Legacy)			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	5	Signature 	
		Value	Limit
Antenna Port A	Mid Channel, 403.35 MHz (Legacy)	77.768 uW	N/A
Antenna Port B	Mid Channel, 403.35 MHz (Legacy)	14.798 uW	N/A
Antenna Port C	Mid Channel, 403.35 MHz (Legacy)	52.505 uW	N/A
		Result	

CONDUCTED OUTPUT POWER

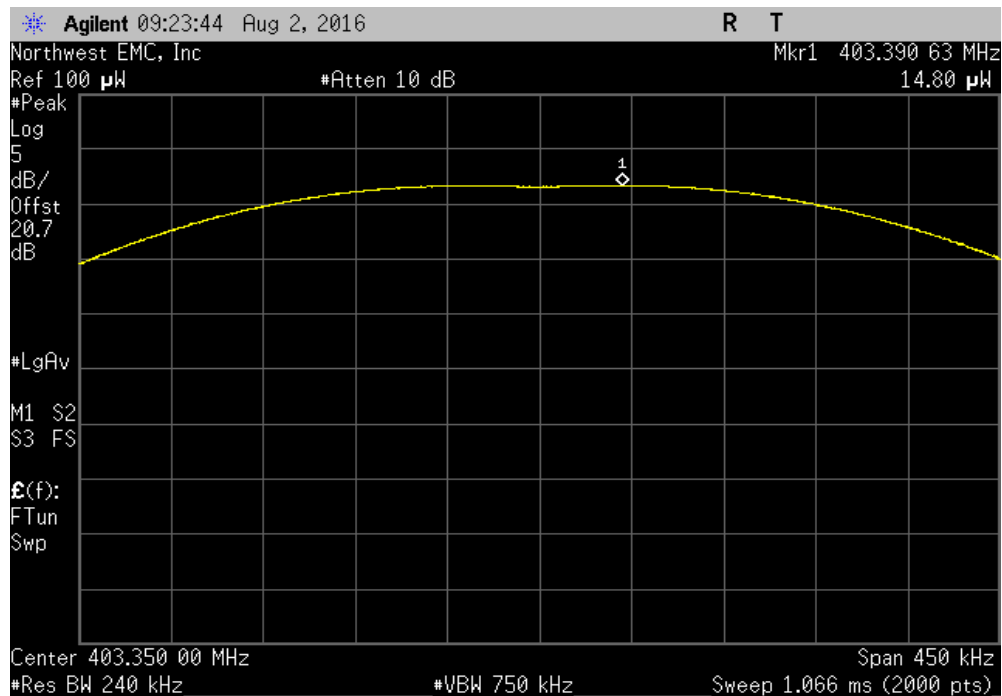
Antenna Port A, Mid Channel, 403.35 MHz (Legacy)

Value	Limit	Result
77.768 uW	N/A	N/A



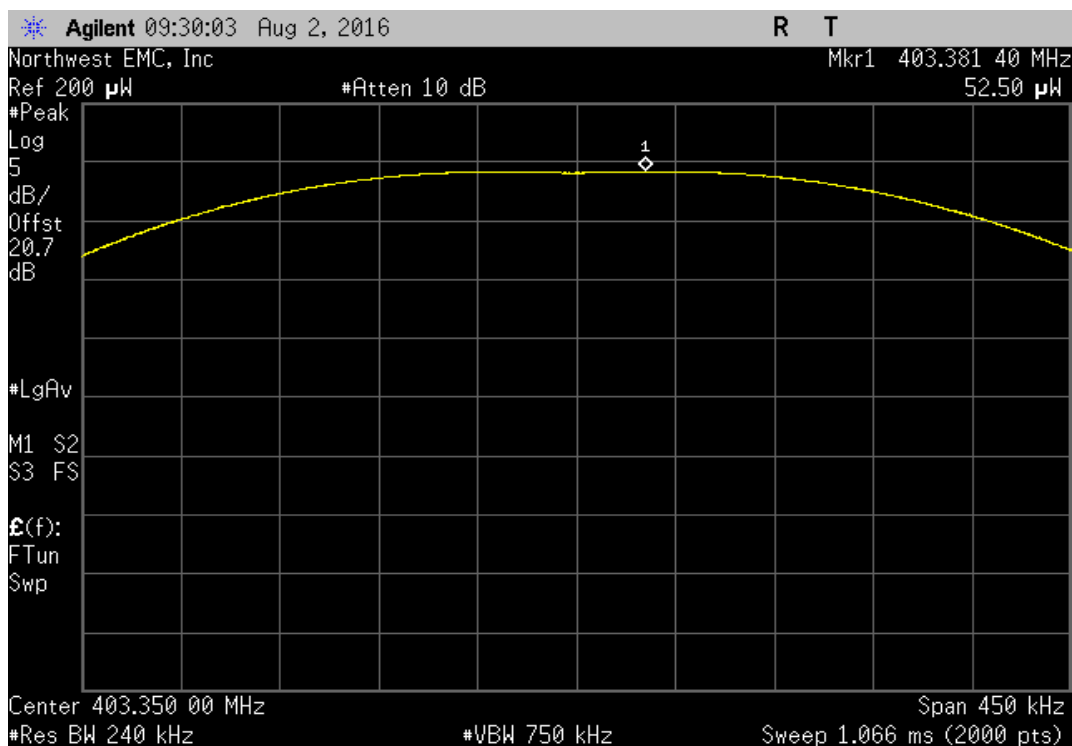
Antenna Port B, Mid Channel, 403.35 MHz (Legacy)

Value	Limit	Result
14.798 uW	N/A	N/A



CONDUCTED OUTPUT POWER

Antenna Port C, Mid Channel, 403.35 MHz (Legacy)						
				Value	Limit	Result
				52.505 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.	Cal. Due
Meter - Multimeter	Fluke	114	MMU	6/30/2014	6/30/2017
Thermometer	Omega Engineering, Inc.	HH311	DUB	11/3/2014	11/3/2017
Chamber - Temperature/Humidity	Cincinnati Sub Zero (CSZ)	ZPH-32-3.5-SCT/AC	TBF	10/21/2015	10/21/2016
Generator - Signal	Agilent	N5182A	TIF	8/12/2014	8/12/2017
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	9/18/2016
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	2/26/2017
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	9/18/2016
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	3/24/2017

TEST DESCRIPTION

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

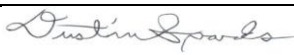
Variation of Supply Voltage

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

Variation of Ambient Temperature

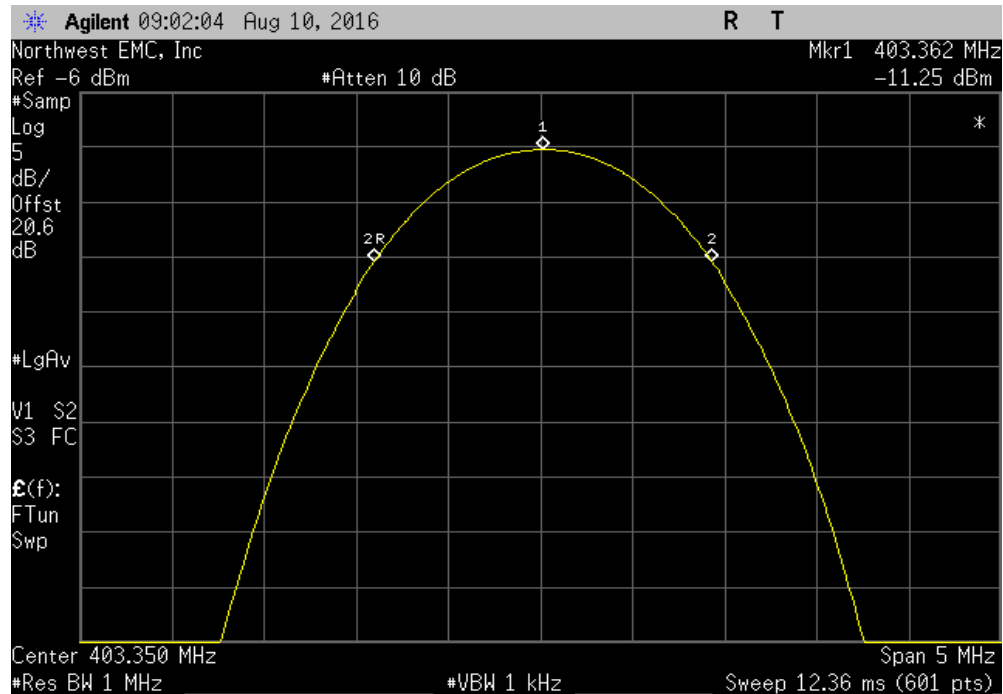
Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range (+0°C, +10°C, +20°C, +30°C, +40°C, +50°C, and +55°C).

FREQUENCY STABILITY

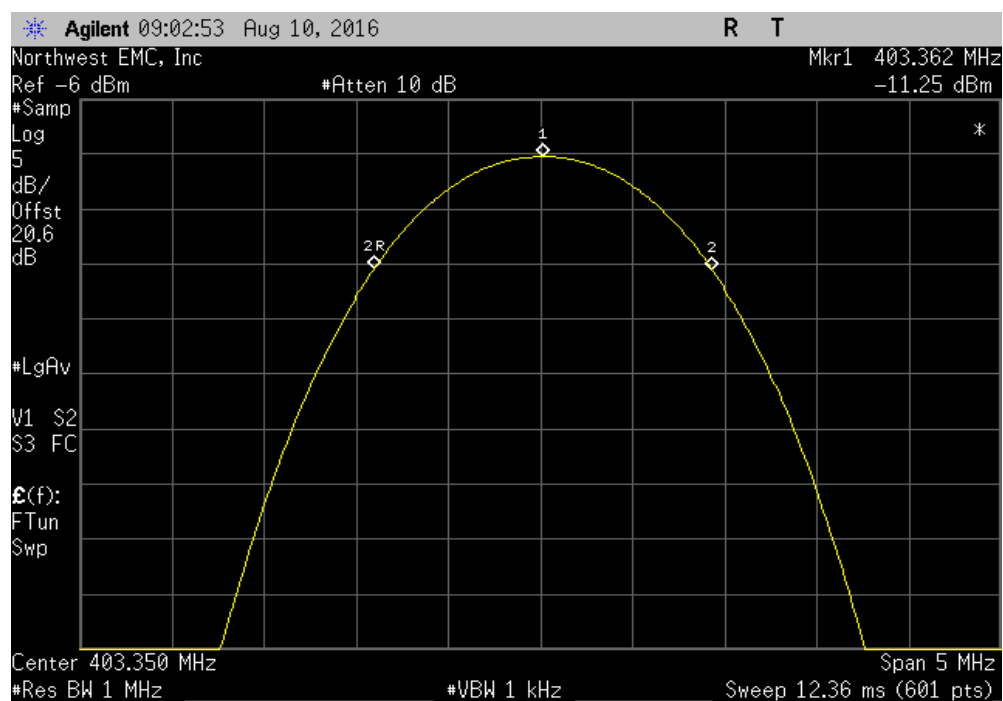
EUT: Model 3300		Work Order: BSTN0663	
Serial Number: 058		Date: 08/10/16	
Customer: Boston Scientific Corporation		Temperature: 23.4 °C	
Attendees: None		Humidity: 63.9% RH	
Project: Laramie Vision		Barometric Pres.: 1019 mbar	
Tested by: Dustin Sparks		Power: 120VAC/60Hz	
		Job Site: MN08	
TEST SPECIFICATIONS		Test Method	
FCC 951.2016		ANSI/TIA/EIA-603-D-2010	
COMMENTS			
Transmitting random data Antenna port A			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	6	Signature 	
		Measured Value (MHz)	Assigned Value (MHz)
		Error (ppm)	Limit (ppm)
			Results
Normal Voltage (120VAC/60Hz)			
	Mid Channel, 403.35 MHz	403.362	403.35
		29.8	100
	Pass		
Extreme Voltage +15% (138VAC/60Hz)			
	Mid Channel, 403.35 MHz	403.362	403.35
		29.8	100
	Pass		
Extreme Voltage -15% (102VAC/60Hz)			
	Mid Channel, 403.35 MHz	403.366	403.35
		39.7	100
	Pass		
Extreme Temperature +55°C			
	Mid Channel, 403.35 MHz	403.358	403.35
		19.8	100
	Pass		
Extreme Temperature +50°C			
	Mid Channel, 403.35 MHz	403.358	403.35
		19.8	100
	Pass		
Extreme Temperature +40°C			
	Mid Channel, 403.35 MHz	403.362	403.35
		29.8	100
	Pass		
Extreme Temperature +30°C			
	Mid Channel, 403.35 MHz	403.362	403.35
		29.8	100
	Pass		
Extreme Temperature +20°C			
	Mid Channel, 403.35 MHz	403.362	403.35
		29.8	100
	Pass		
Extreme Temperature +10°C			
	Mid Channel, 403.35 MHz	403.362	403.35
		29.8	100
	Pass		
Extreme Temperature 0°C			
	Mid Channel, 403.35 MHz	403.362	403.35
		29.8	100
	Pass		

FREQUENCY STABILITY

Normal Voltage (120VAC/60Hz), Mid Channel, 403.35 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	403.362	403.35	29.8	100	Pass	

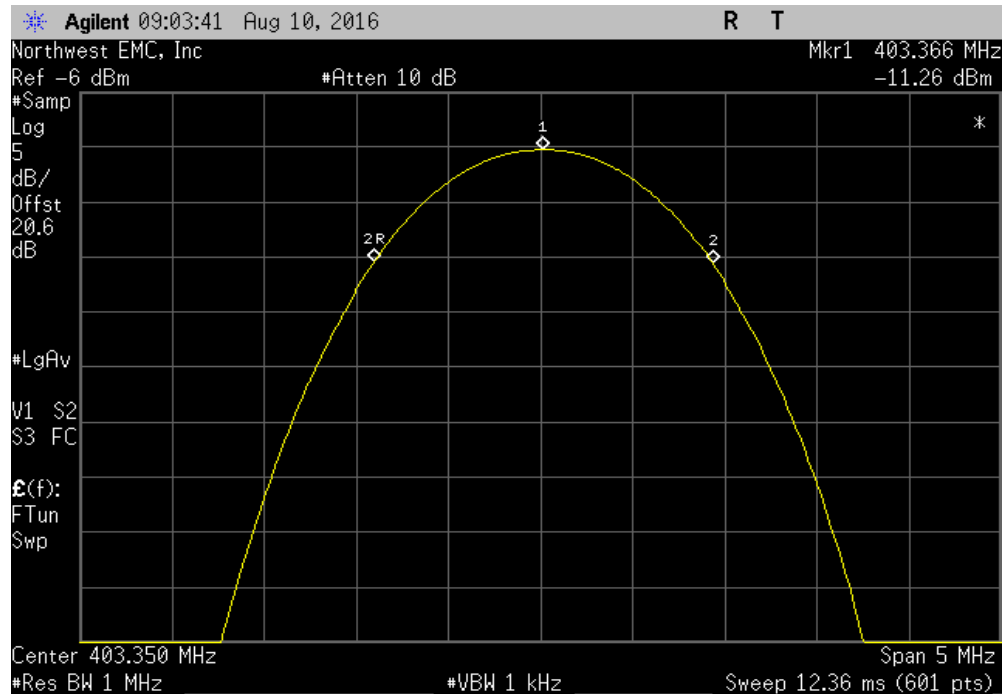


Extreme Voltage +15% (138VAC/60Hz), Mid Channel, 403.35 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	403.362	403.35	29.8	100	Pass	

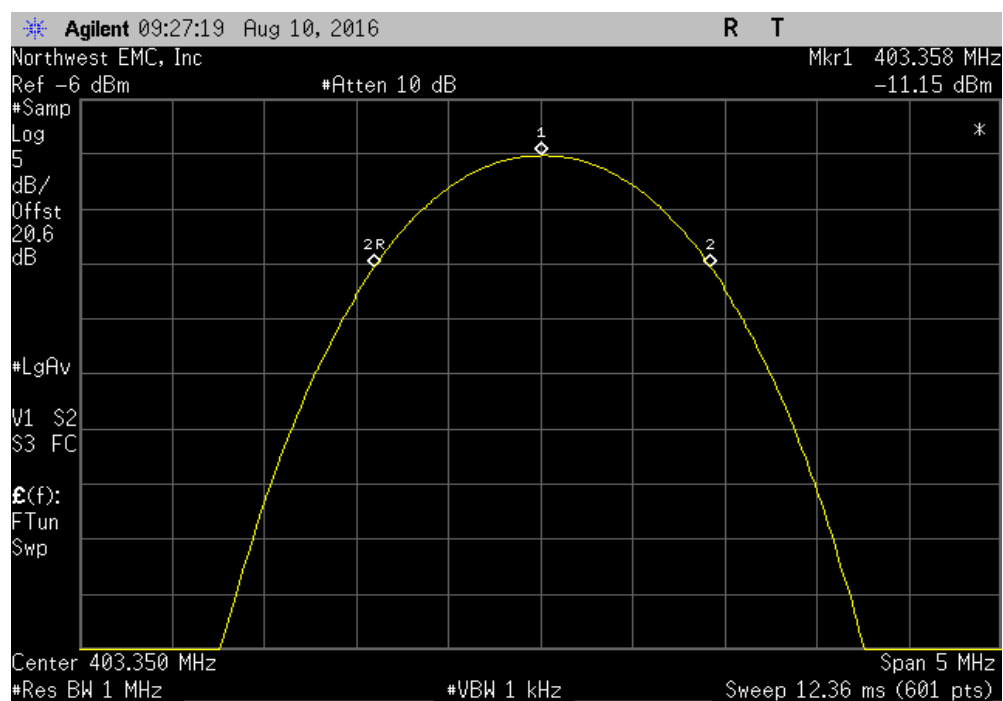


FREQUENCY STABILITY

Extreme Voltage -15% (102VAC/60Hz), Mid Channel, 403.35 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	403.366	403.35	39.7	100	Pass	

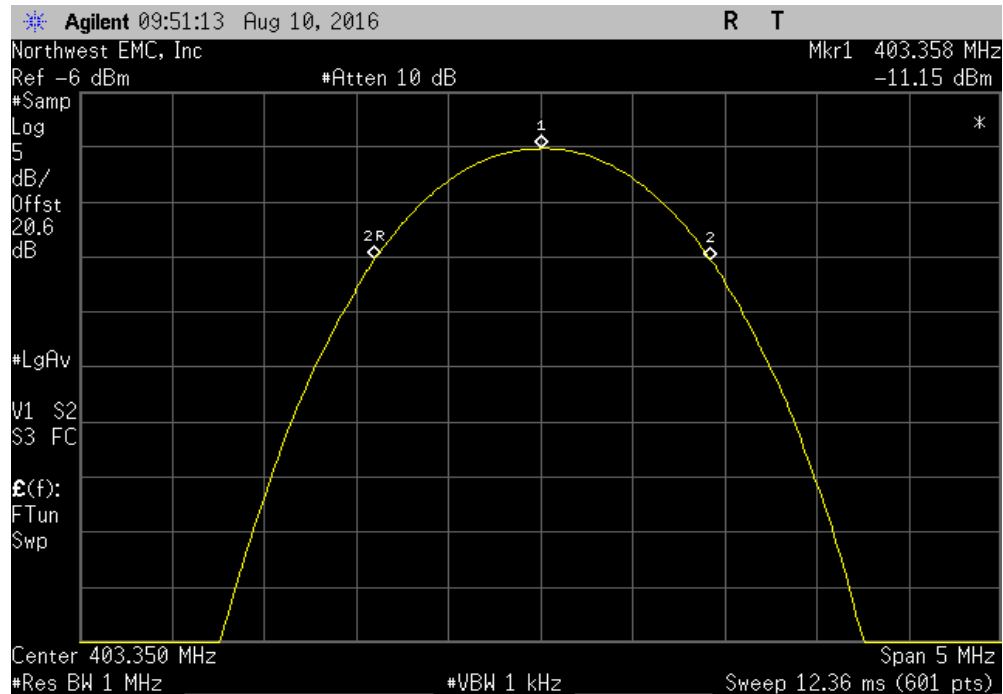


Extreme Temperature +55°C, Mid Channel, 403.35 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	403.358	403.35	19.8	100	Pass	

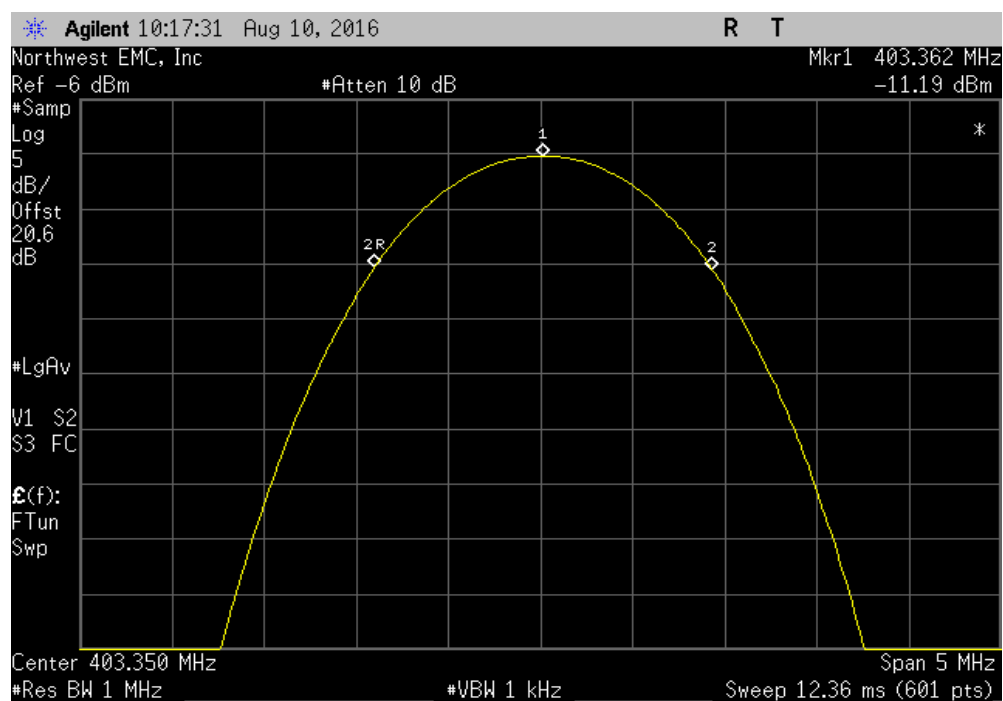


FREQUENCY STABILITY

Extreme Temperature +50°C, Mid Channel, 403.35 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	403.358	403.35	19.8	100	Pass	

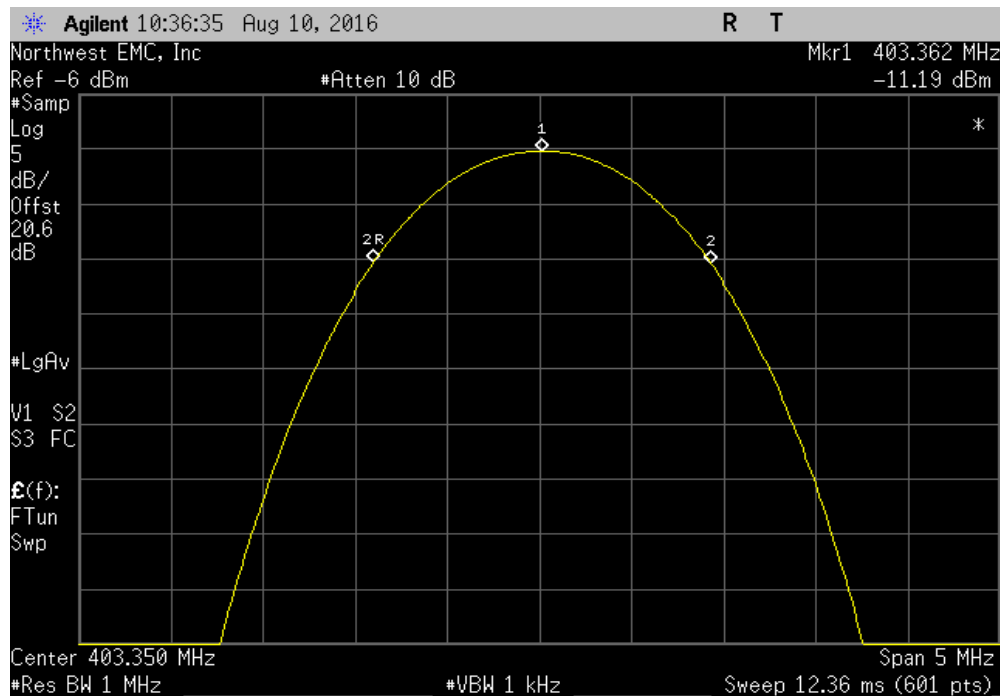


Extreme Temperature +40°C, Mid Channel, 403.35 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	403.362	403.35	29.8	100	Pass	

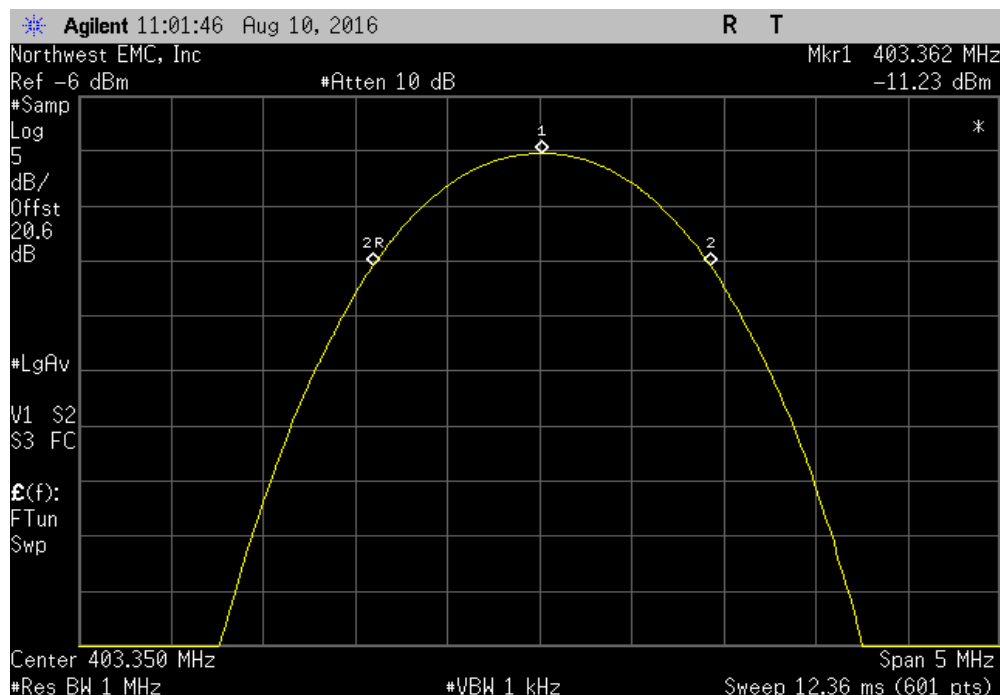


FREQUENCY STABILITY

Extreme Temperature +30°C, Mid Channel, 403.35 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	403.362	403.35	29.8	100	Pass	

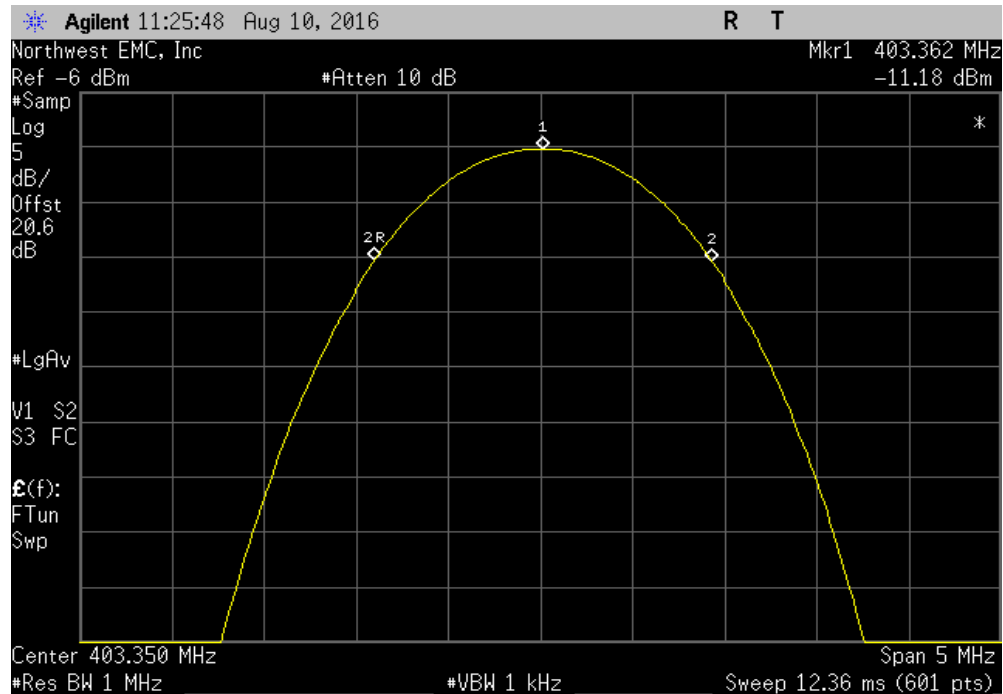


Extreme Temperature +20°C, Mid Channel, 403.35 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	403.362	403.35	29.8	100	Pass	

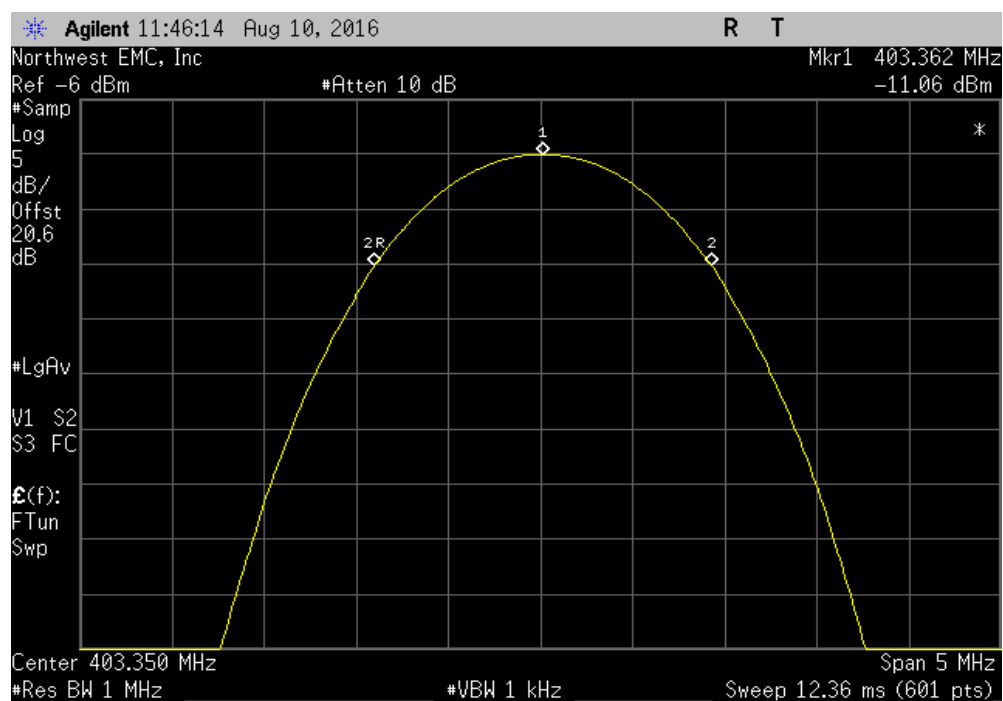


FREQUENCY STABILITY

Extreme Temperature +10°C, Mid Channel, 403.35 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	403.362	403.35	29.8	100	Pass	



Extreme Temperature 0°C, Mid Channel, 403.35 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	403.362	403.35	29.8	100	Pass	



SPURIOUS RADIATED 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. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

Transmit. Mid Channel 4, 403.35 MHz, FSK Modulation

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

BSTN0663 - 3

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	5000 MHz
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SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	12/10/2015	12 mo
Cable	ESM Cable Corp.	Bilog Cables	MNH	12/7/2015	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AYD	1/6/2016	24 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	3/1/2016	12 mo
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	12/7/2015	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIB	8/12/2014	24 mo
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	1/27/2016	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

At an approved test site, the transmitter is placed on a remotely controlled turntable, and the measurement antenna is placed 3 meters from the transmitter. The turntable azimuth is varied to maximize the level of spurious emissions. The height of the measurement antenna is also varied from 1 to 4 meters. The amplitude and frequency of the highest emissions are noted. The transmitter is then replaced with a ½ wave dipole that is successively tuned to each of the highest spurious emissions. A signal generator is connected to the dipole (horn antenna for frequencies above 1 GHz), and its output is adjusted to match the level previously noted for each frequency. The output of the signal generator is recorded, and by factoring in the cable loss to the dipole antenna and its gain; the power (dBm) into an ideal ½ wave dipole antenna is determined for each radiated spurious emission.

SPURIOUS RADIATED EMISSIONS

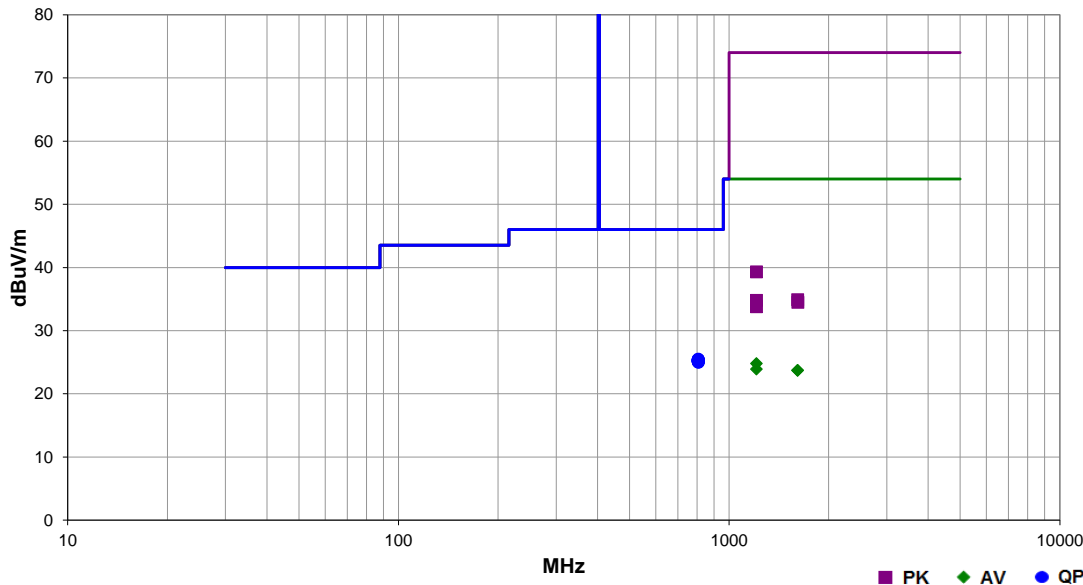


PSA-ESCI 2016.04.26.1
EmiR5 2016.04.26.1

Work Order:	BSTN0663	Date:	07/22/16	
Project:	Laramie Vision	Temperature:	22.7 °C	
Job Site:	MN05	Humidity:	63.3% RH	
Serial Number:	097	Barometric Pres.:	1018 mbar	
EUT:	Model 3300			
Configuration:	3			
Customer:	Boston Scientific Corporation			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Transmit. Mid Channel 4, 403.35 MHz, FSK Modulation			
Deviations:	None.			
Comments:	10 Channel			

Test Specifications	Test Method
FCC 951:2016	ANSI/TIA/EIA-603-D-2010

Run #	83	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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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)	Comments
1210.020	42.3	-7.6	1.1	224.1	3.0	0.0	Horz	AV	0.0	34.7	54.0	-19.3	Mid Ch. 4: 403.35 MHz, Ant A, EUT Horz
806.647	15.4	10.1	1.0	343.0	3.0	0.0	Horz	QP	0.0	25.5	46.0	-20.5	Mid Ch. 4: 403.35 MHz, Ant A, EUT Horz
806.660	15.3	10.1	1.0	69.1	3.0	0.0	Horz	QP	0.0	25.4	46.0	-20.6	Mid Ch. 4: 403.35 MHz, Ant B, EUT Horz
806.768	15.3	10.1	1.0	88.1	3.0	0.0	Horz	QP	0.0	25.4	46.0	-20.6	Mid Ch. 4: 403.35 MHz, Ant C, EUT Horz
805.395	15.2	10.1	2.2	109.1	3.0	0.0	Vert	QP	0.0	25.3	46.0	-20.7	Mid Ch. 4: 403.35 MHz, Ant B, EUT Vert
805.427	15.2	10.1	3.6	162.0	3.0	0.0	Vert	QP	0.0	25.3	46.0	-20.7	Mid Ch. 4: 403.35 MHz, Ant A, EUT Horz
806.308	15.2	10.1	4.0	0.0	3.0	0.0	Vert	QP	0.0	25.3	46.0	-20.7	Mid Ch. 4: 403.35 MHz, Ant C, EUT Vert
806.717	15.1	10.1	2.9	109.1	3.0	0.0	Horz	QP	0.0	25.2	46.0	-20.8	Mid Ch. 4: 403.35 MHz, Ant A, EUT Vert
806.250	15.1	10.1	2.8	151.0	3.0	0.0	Vert	QP	0.0	25.2	46.0	-20.8	Mid Ch. 4: 403.35 MHz, Ant B, EUT Horz
805.697	15.1	10.1	3.5	235.9	3.0	0.0	Vert	QP	0.0	25.2	46.0	-20.8	Mid Ch. 4: 403.35 MHz, Ant C, EUT Horz
806.950	15.1	10.0	1.1	311.9	3.0	0.0	Horz	QP	0.0	25.1	46.0	-20.9	Mid Ch. 4: 403.35 MHz, Ant B, EUT Vert
806.943	15.1	10.0	3.7	289.9	3.0	0.0	Horz	QP	0.0	25.1	46.0	-20.9	Mid Ch. 4: 403.35 MHz, Ant C, EUT Vert
807.532	15.0	10.0	3.8	23.1	3.0	0.0	Vert	QP	0.0	25.0	46.0	-21.0	Mid Ch. 4: 403.35 MHz, Ant A, EUT Vert
1210.095	32.4	-7.6	1.0	286.0	3.0	0.0	Vert	AV	0.0	24.8	54.0	-29.2	Mid Ch. 4: 403.35 MHz, Ant B, EUT Vert
1210.045	31.5	-7.6	1.0	328.0	3.0	0.0	Horz	AV	0.0	23.9	54.0	-30.1	Mid Ch. 4: 403.35 MHz, Ant C, EUT Horz
1612.770	29.9	-6.2	1.0	35.0	3.0	0.0	Vert	AV	0.0	23.7	54.0	-30.3	Mid Ch. 4: 403.35 MHz, Ant B, EUT Vert
1612.515	29.9	-6.2	1.0	63.0	3.0	0.0	Horz	AV	0.0	23.7	54.0	-30.3	Mid Ch. 4: 403.35 MHz, Ant A, EUT Horz
1210.190	46.9	-7.6	1.1	224.1	3.0	0.0	Horz	PK	0.0	39.3	74.0	-34.7	Mid Ch. 4: 403.35 MHz, Ant A, EUT Horz
1611.960	41.1	-6.2	1.0	35.0	3.0	0.0	Vert	PK	0.0	34.9	74.0	-39.1	Mid Ch. 4: 403.35 MHz, Ant B, EUT Vert
1210.540	42.4	-7.6	1.0	286.0	3.0	0.0	Vert	PK	0.0	34.8	74.0	-39.2	Mid Ch. 4: 403.35 MHz, Ant B, EUT Vert
1614.550	40.7	-6.2	1.0	63.0	3.0	0.0	Horz	PK	0.0	34.5	74.0	-39.5	Mid Ch. 4: 403.35 MHz, Ant A, EUT Horz
1209.760	41.4	-7.6	1.0	328.0	3.0	0.0	Horz	PK	0.0	33.8	74.0	-40.2	Mid Ch. 4: 403.35 MHz, Ant C, EUT Horz

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.	Cal. Due
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	10/17/2017
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	9/18/2016
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	2/26/2017
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	9/18/2016
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	3/24/2017

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Per FCC Part 2.1052, RSS-GEN, the spurious emissions shall be measured at the RF terminal. The peak spurious emissions were measured with the EUT configured to the modes listed in the datasheet. The EUT was transmitting at its maximum data rate.

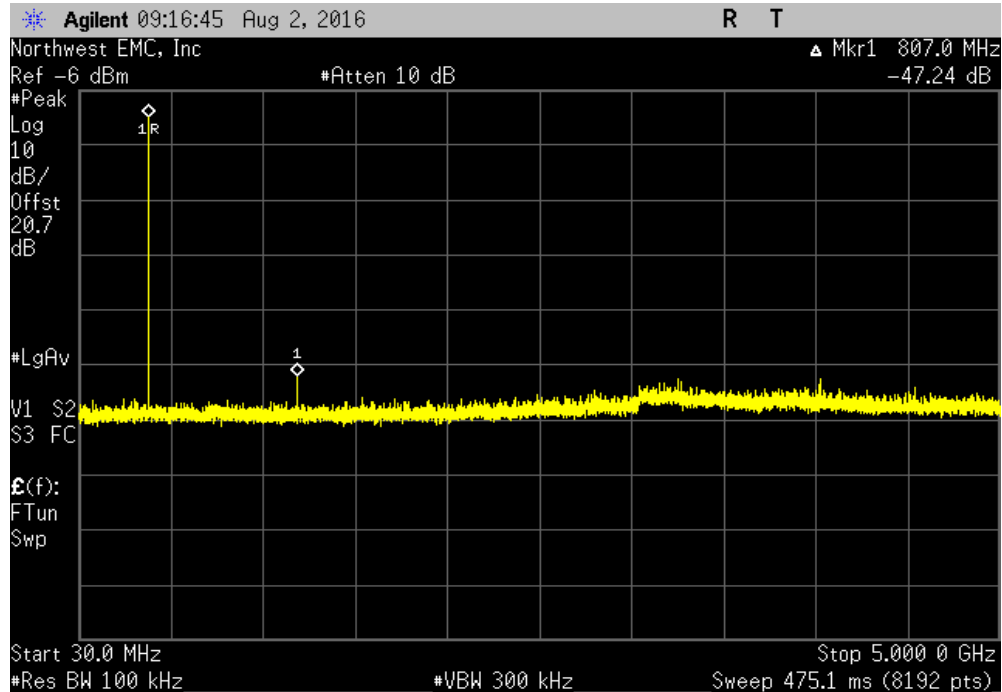
FCC Part 95 and RSS-243 have no conducted spurious emissions limit. It is a requirement to characterize this information and that data is contained within this datasheet.

SPURIOUS CONDUCTED EMISSIONS

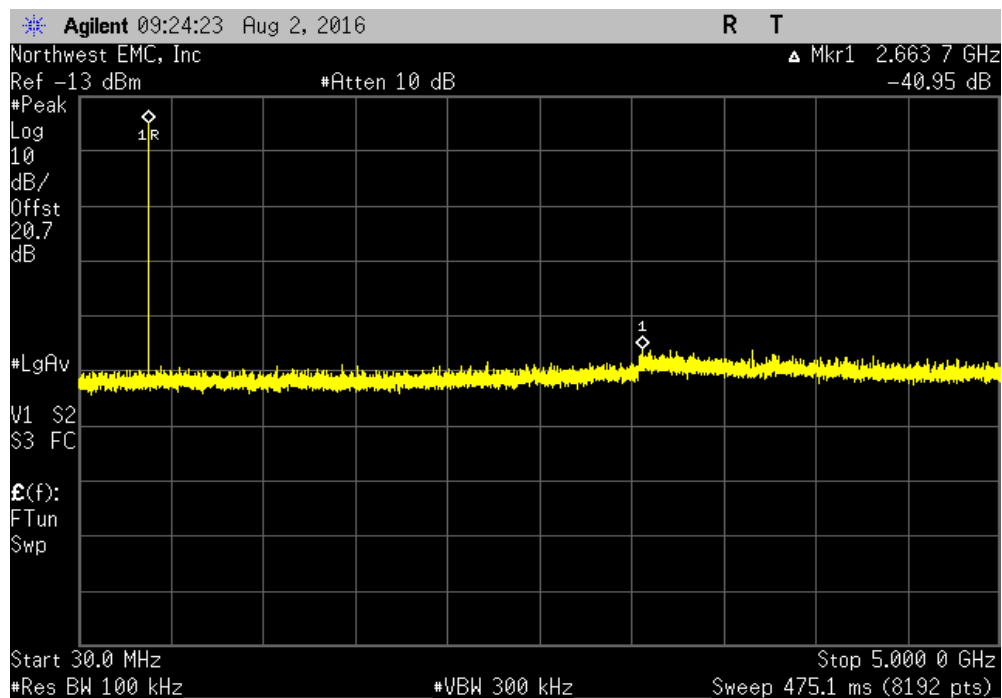
EUT: Model 3300		Work Order: BSTN0663		
Serial Number: 058		Date: 08/02/16		
Customer: Boston Scientific Corporation		Temperature: 23.5 °C		
Attendees: None		Humidity: 59.3% RH		
Project: Laramie Vision		Barometric Pres.: 1020 mbar		
Tested by: Dustin Sparks	Power: 110VAC/60Hz	Job Site: MN08		
TEST SPECIFICATIONS				
FCC 951:2016		Test Method: ANSI/TIA/EIA-603-D-2010		
COMMENTS				
Transmitting MICS 10 Channel (Legacy)				
DEVIATIONS FROM TEST STANDARD				
None				
Configuration #	5	Signature 		
		Frequency Range	Max Value (dBc) Limit A (dBc) Result	
Antenna Port A	Mid Channel, 403.35 MHz (Legacy)	30 MHz - 5 GHz	-47.24 N/A	N/A
Antenna Port B	Mid Channel, 403.35 MHz (Legacy)	30 MHz - 5 GHz	-40.95 N/A	N/A
Antenna Port C	Mid Channel, 403.35 MHz (Legacy)	30 MHz - 5 GHz	-46.31 N/A	N/A

SPURIOUS CONDUCTED EMISSIONS

Antenna Port A, Mid Channel, 403.35 MHz (Legacy)					
Frequency Range	Max Value (dBc)	Limit A (dBc)	Result		
30 MHz - 5 GHz	-47.24	N/A	N/A		

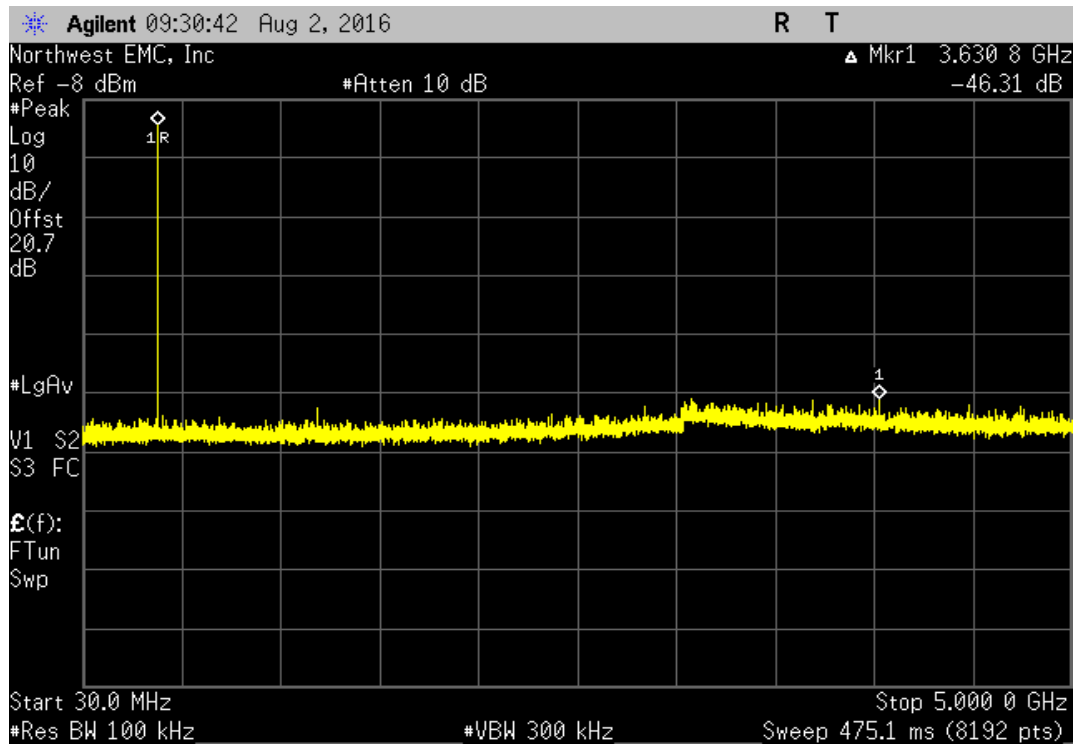


Antenna Port B, Mid Channel, 403.35 MHz (Legacy)					
Frequency Range	Max Value (dBc)	Limit A (dBc)	Result		
30 MHz - 5 GHz	-40.95	N/A	N/A		



SPURIOUS CONDUCTED EMISSIONS

Antenna Port C, Mid Channel, 403.35 MHz (Legacy)						
Frequency Range		Max Value (dBc)		Limit A (dBc)	Result	
30 MHz - 5 GHz		-46.31		N/A	N/A	



RADIATED POWER (EIRP)

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

Transmit, 403.35 MHz, CW

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

BSTN0663 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency	401 MHz	Stop Frequency	405 MHz
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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
Power Sensor	Agilent	N8481A	SQN	8/17/2015	12 mo
Meter - Power	Agilent	N1913A	SQL	8/17/2015	12 mo
Antenna - Dipole	EMCO	3121C-DB4	ADI	2/10/2016	36 mo
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36 mo
Cable	ESM Cable Corp.	Bilog Cables	MNH	12/7/2015	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AYD	1/6/2016	24 mo
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	1/27/2016	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

Per 95.627(g)(3)(i), 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.

The EUT was configured to transmit in a fixture that simulates the human torso. The dimensions of the test fixture and the characteristics of the tissue substitute material met the requirements 95.627(g)(3)(i) and FCC KDB 617965. The height of the transmitter was 1.5-meter above the reference ground plane.

RADIATED POWER (EIRP)

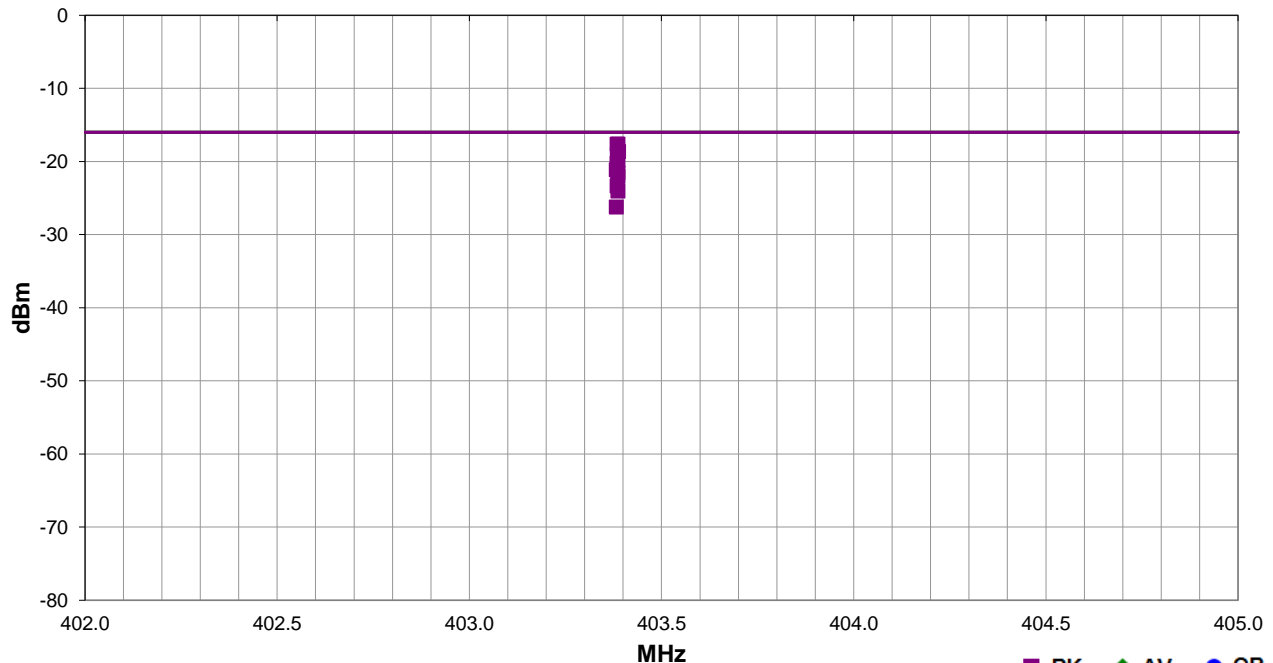


PSA-ESCI 2016.04.26.1
EmiR5 2016.04.26.1

Work Order:	BSTN0663	Date:	07/14/16	
Project:	Laramie Vision	Temperature:	22.6 °C	
Job Site:	MN05	Humidity:	51.7% RH	
Serial Number:	097	Barometric Pres.:	1015 mbar	
EUT:	Model 3300			
Configuration:	2			
Customer:	Boston Scientific Corporation			
Attendees:	Pete Musto			
EUT Power:	110VAC/60Hz			
Operating Mode:	Transmit, 403.35 MHz, CW			
Deviations:	None			
Comments:	10 Channel.			

Test Specifications	FCC 95I:2016	Test Method	ANSI/TIA/EIA-603-D-2010
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Run #	3	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
403.387	1.0	118.0	Horz	PK	1.73E-05	-17.63	-16.0	-1.6	Ch. 4: 403.35 MHz, Ant A, EUT Horz
403.384	1.0	83.1	Horz	PK	1.73E-05	-17.63	-16.0	-1.6	Ch. 4: 403.35 MHz, Ant B, EUT Horz
403.388	1.2	24.0	Vert	PK	1.37E-05	-18.63	-16.0	-2.6	Ch. 4: 403.35 MHz, Ant A, EUT Vert
403.385	1.1	243.9	Vert	PK	1.25E-05	-19.03	-16.0	-3.0	Ch. 4: 403.35 MHz, Ant B, EUT Vert
403.387	1.0	75.0	Horz	PK	1.04E-05	-19.83	-16.0	-3.8	Ch. 4: 403.35 MHz, Ant B, EUT Vert
403.384	2.3	346.0	Horz	PK	9.49E-06	-20.23	-16.0	-4.2	Ch. 4: 403.35 MHz, Ant C, EUT Horz
403.383	1.0	0.0	Horz	PK	7.71E-06	-21.13	-16.0	-5.1	Ch. 4: 403.35 MHz, Ant A, EUT Vert
403.387	1.0	18.0	Vert	PK	7.03E-06	-21.53	-16.0	-5.5	Ch. 4: 403.35 MHz, Ant C, EUT Vert
403.387	2.2	111.0	Vert	PK	6.27E-06	-22.03	-16.0	-6.0	Ch. 4: 403.35 MHz, Ant B, EUT Horz
403.384	1.0	297.9	Horz	PK	4.65E-06	-23.33	-16.0	-7.3	Ch. 4: 403.35 MHz, Ant C, EUT Vert
403.387	1.1	337.9	Vert	PK	3.95E-06	-24.03	-16.0	-8.0	Ch. 4: 403.35 MHz, Ant A, EUT Horz
403.383	1.0	27.0	Vert	PK	2.38E-06	-26.23	-16.0	-10.2	Ch. 4: 403.35 MHz, Ant C, EUT Horz