



Axonics Modulation Technologies, Inc.

External Pulse Generator (EPG) Model 1601

FCC 95I:2018

MedRadio

Report # AXON0105.1



NVLAP Lab Code: 200676-0



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CERTIFICATE OF TEST

Last Date of Test: January 8, 2018
Axonics Modulation Technologies, Inc.
Model: External Pulse Generator (EPG) Model 1601

Radio Equipment Testing

Standards

Specification	Method
FCC 951:2018	ANSI C63.26:2015

Results

Method Clause	Test Description	Applied	Results	Comments
ANSI C63.26 5.4.3	Emission Bandwidth	Yes	Pass	
FCC 95.2579(a)(1)	Emission Mask	Yes	Pass	
ANSI C63.26 5.2.3.3	Conducted Output Power	Yes	Pass	
ANSI C63.26 5.6	Frequency Stability	Yes	Pass	
ANSI C63.26 5.5.4	Spurious Radiated Emissions	Yes	Pass	
ANSI C63.26 5.7	Spurious Conducted Emissions	Yes	Pass	
ANSI C63.26 5.2.3.3, 5.2.7	Radiated Power (EIRP)	Yes	Pass	

Deviations From Test Standards

None

Approved By:

Victor Ratnoff, 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
00		None		

ACCREDITATIONS AND AUTHORIZATIONS



United States

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

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

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

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

European Union

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

Australia/New Zealand

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

Korea

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:

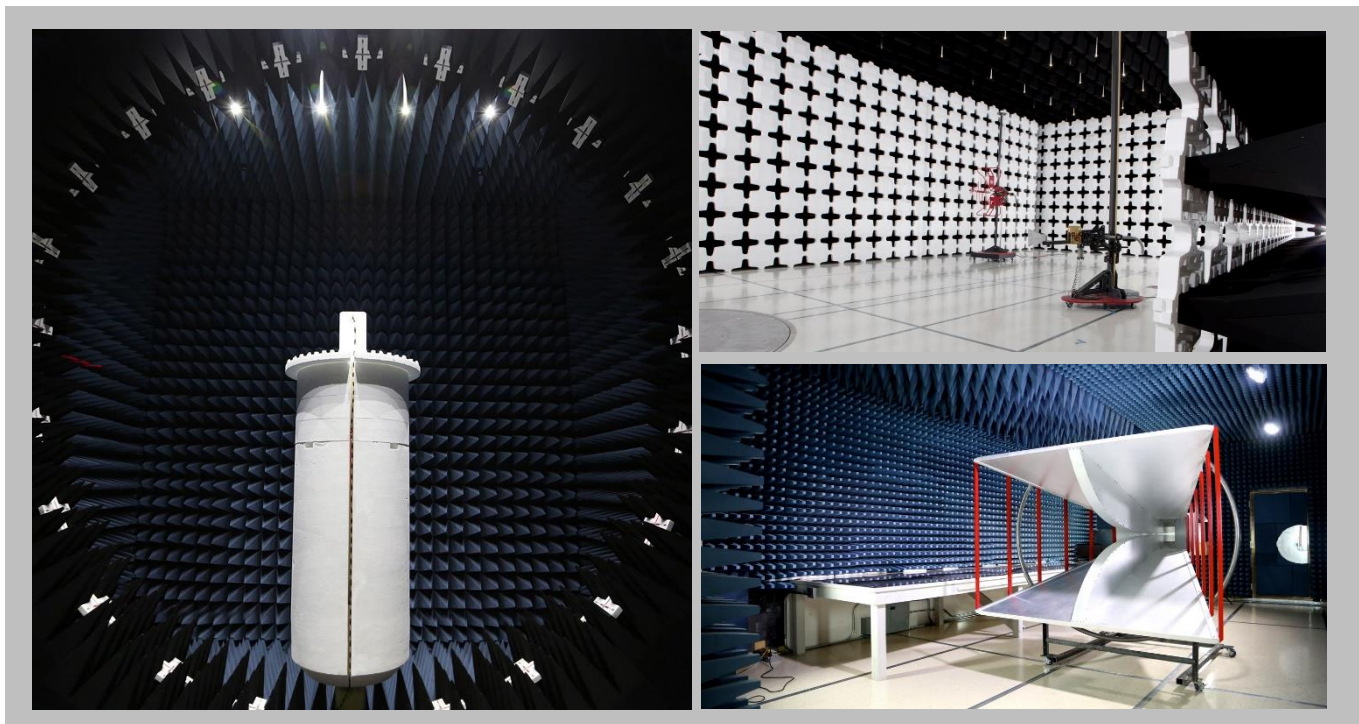
<http://portlandcustomer.element.com/ts/scope/scope.htm>

<http://gsi.nist.gov/global/docs/cabs/designations.html>

FACILITIES



California Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-10 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 6775 NE Evergreen Pkwy #400 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, 2834E-3	N/A	2834D-1, 2834D-2	2834G-1	2834F-1
BSMI					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
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



MEASUREMENT UNCERTAINTY

Measurement Uncertainty

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

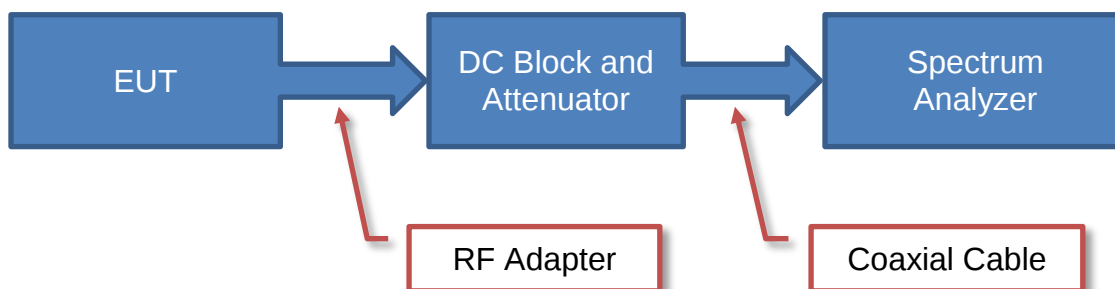
A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable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

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

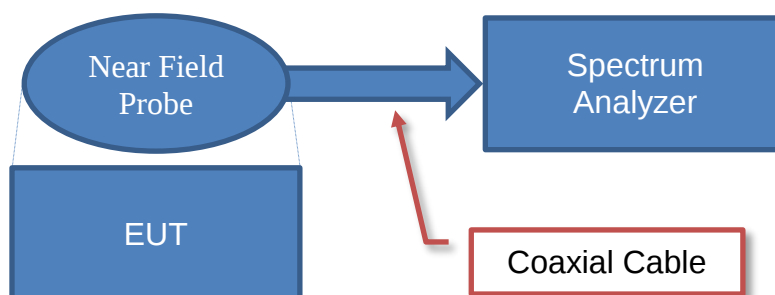
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%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

Test Setup Block Diagrams

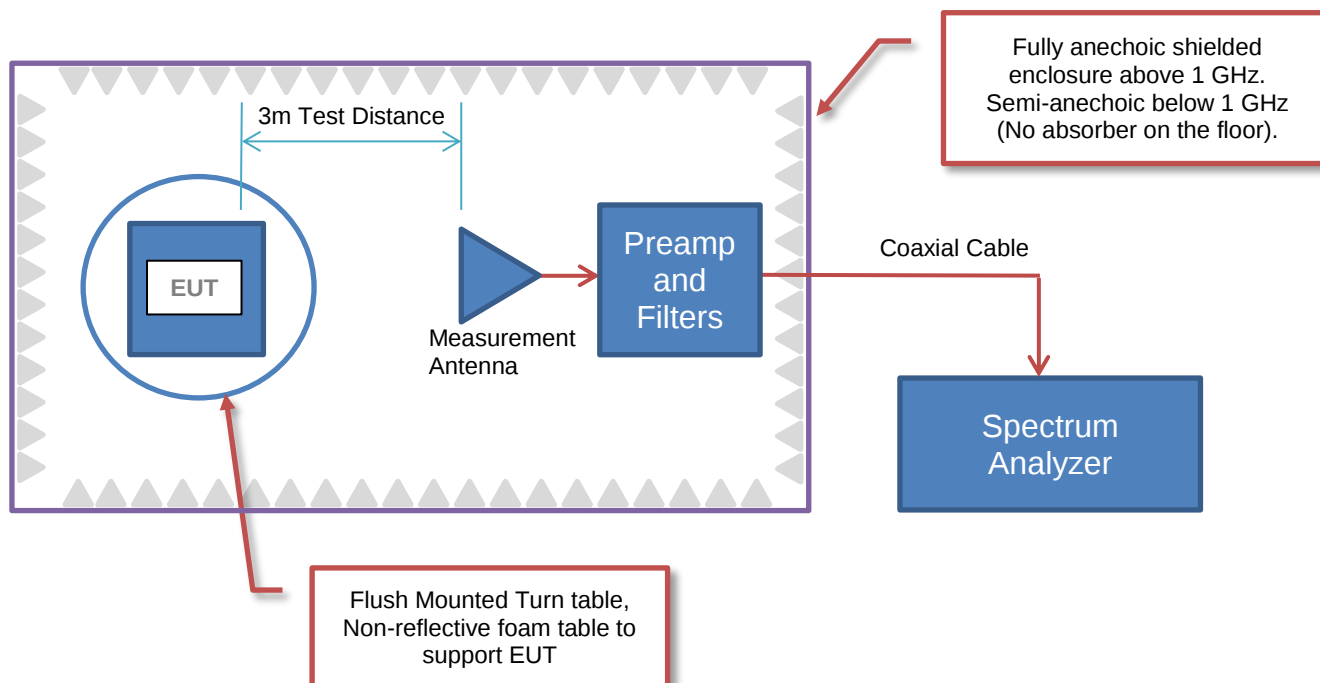
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions





PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Axonics Modulation Technologies, Inc.
Address:	7575 Irvine Center Drive Suite 200
City, State, Zip:	Irvine, CA 92618
Test Requested By:	Franklin Portillo
Model:	External Pulse Generator (EPG) Model 1601
First Date of Test:	January 3, 2018
Last Date of Test:	January 8, 2018
Receipt Date of Samples:	January 3, 2018
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:

The EPG Model - 1601 (MEDS) is a Battery operated External Pulse Generator (EPG). Tined Lead: stimulation lead with four (4) electrode contacts to provide stimulation. The distal tip is implanted through the applicable foramen near the sacral nerve (S3) with the proximal end connected to EPG. Operating in the MEDS Bands (MedRadio-WingBand) (401-402 MHz and 405-406 MHz)

Testing Objective:

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

CONFIGURATIONS



Configuration AXON0105- 4

Software/Firmware Running during test	
Description	Version
EPG Software	34

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
External Pulse Generator (EPG)	Axonics	1601	AE1GC70009

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Patient Remote (PR)	Axonics	2301	AP1BA70024

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Tined Lead (Lot# AL1G160008, Model 1201)	No	1.2m	No	External Pulse Generator (EPG)	Unterminated

Configuration AXON0105- 5

Software/Firmware Running during test	
Description	Version
EPG Software	34

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
External Pulse Generator (EPG)	Axonics	1601	AE1GC70009

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Patient Remote (PR)	Axonics	2301	AP1BA70024

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
BTC Cable (Lot# L2017-0546) with PNE Leads (Lot# AK2BA70001)	No	1.0m	No	External Pulse Generator (EPG)	Unterminated

CONFIGURATIONS



Configuration AXON0105- 6

Software/Firmware Running during test	
Description	Version
EPG Software	34

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
External Pulse Generator (EPG)	Axonics	1601	AT1B000003

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Patient Remote (PR)	Axonics	2301	AP1BA70024
DC Power Supply	HQ Power	PS3003U	DK10103872

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Cable	No	1.8m	No	DC Power Supply	AC Mains
DC Cable	No	3.0m	No	DC Power Supply	External Pulse Generator (EPG)

MODIFICATIONS



Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	1/3/2018	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
2	1/3/2018	Radiated Power (EIRP)	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
3	1/5/2018	Emission Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
4	1/5/2018	Emission Mask	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
5	1/5/2018	Conducted Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
6	1/5/2018	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
7	1/8/2018	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



XMIT 2017.12.13

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5182A	TIF	23-Aug-17	23-Aug-20
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Attenuator	Fairview Microwave	SA18H-20	TKR	28-Dec-17	28-Dec-18
Block - DC	Aeroflex	INMET 8535	AMO	27-Mar-17	27-Mar-18
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	9-Nov-17	9-Nov-18

TEST DESCRIPTION

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

EMISSIONS BANDWIDTH



THtTx 2017.10.04 XMtM 2017.12.13

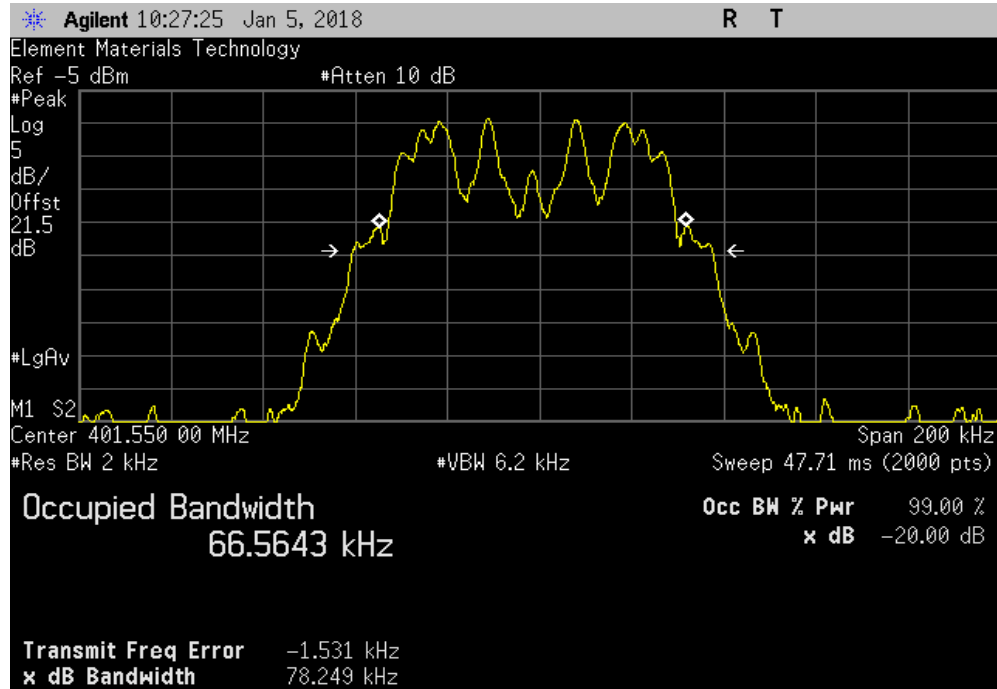
EUT: External Pulse Generator (EPG) Model 1601		Work Order: AXON0105	
Serial Number: AT1B000003		Date: 5-Jan-18	
Customer: Axonics Modulation Technologies, Inc.		Temperature: 22.1 °C	
Attendees: Franklin Portillo		Humidity: 53.5% RH	
Project: None		Barometric Pres.: 1022 mbar	
Tested by: Johnny Candelas	Power: 3.0VDC	Job Site: OC13	
TEST SPECIFICATIONS		Test Method	
FCC 951:2018		ANSI C63.26:2015	
COMMENTS			
DC Block + 20dB Attenuator + Coax Cable = 21.5dB Total Offset			
Power Index = 40			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	6	Signature 	
		Value	Limit (S)
MEDS Low Band, Mid Channel, 401.55 MHz		78.249 kHz	100 kHz
MEDS High Band, Mid Channel, 405.55 MHz		78.326 kHz	100 kHz
			Result
			Pass
			Pass

EMISSIONS BANDWIDTH

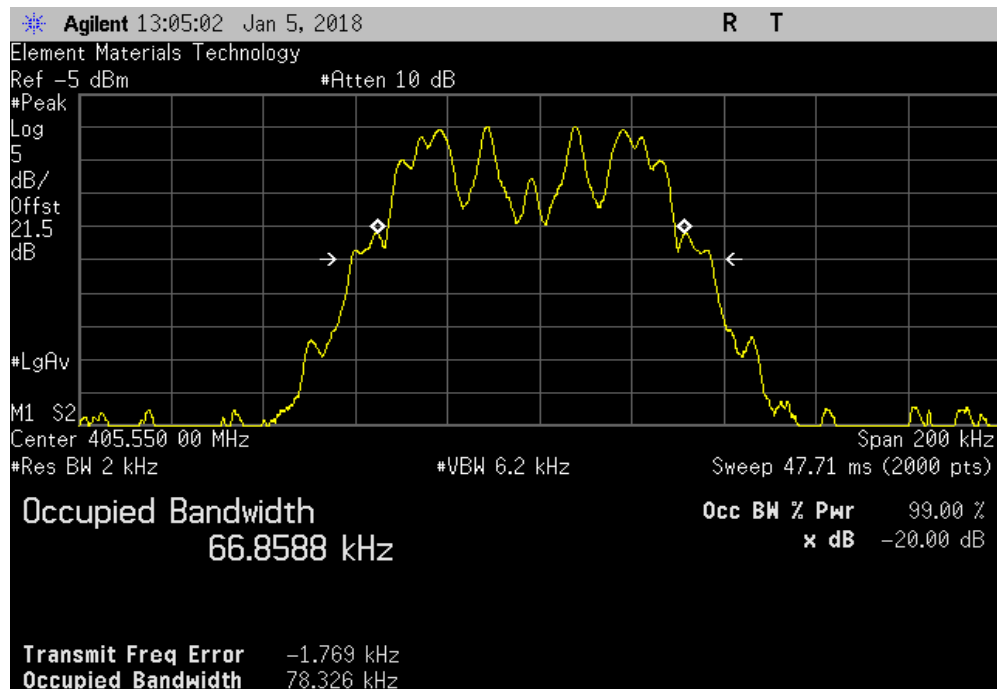


TMTx 2017.10.04 XMM 2017.12.13

MEDS Low Band, Mid Channel, 401.55 MHz						
				Value	Limit (S)	Result
				78.249 kHz	100 kHz	Pass



MEDS High Band, Mid Channel, 405.55 MHz						
				Value	Limit (S)	Result
				78.326 kHz	100 kHz	Pass



EMISSIONS MASK



XMIT 2017.12.13

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5182A	TIF	23-Aug-17	23-Aug-20
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Attenuator	Fairview Microwave	SA18H-20	TKR	28-Dec-17	28-Dec-18
Block - DC	Aeroflex	INMET 8535	AMO	27-Mar-17	27-Mar-18
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	9-Nov-17	9-Nov-18

TEST DESCRIPTION

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

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

EMISSIONS MASK



TM17x 2017.10.04 XMI 2017.12.13

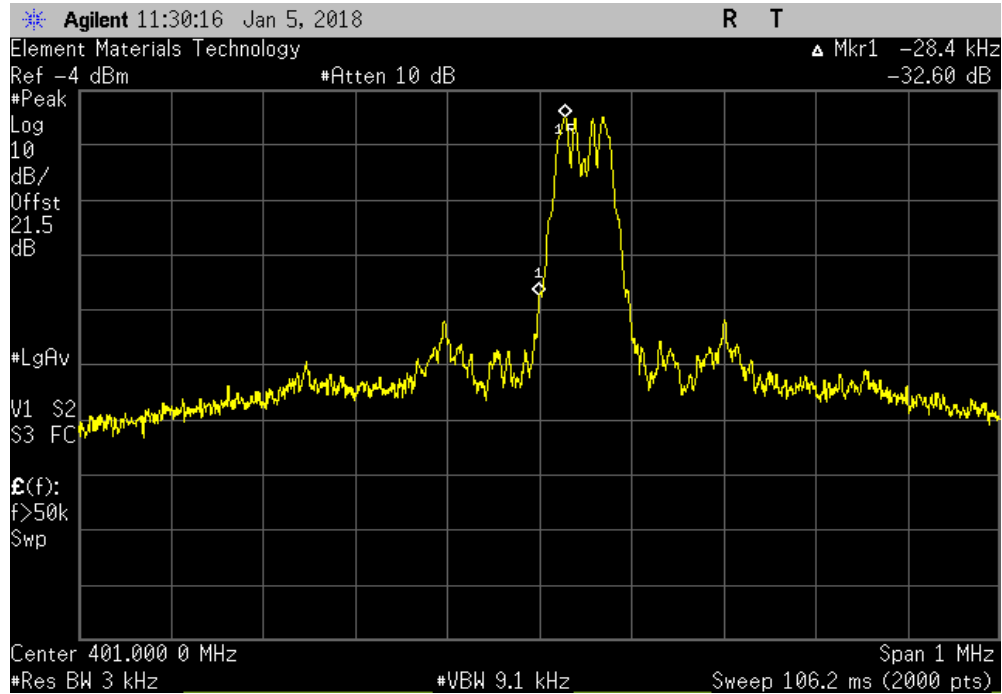
EUT: External Pulse Generator (EPG) Model 1601		Work Order: AXON0105	
Serial Number: AT1B000003		Date: 5-Jan-18	
Customer: Axonics Modulation Technologies, Inc.		Temperature: 22.1 °C	
Attendees: Franklin Portillo		Humidity: 53.5% RH	
Project: None		Barometric Pres.: 1022 mbar	
Tested by: Johnny Candelas	Power: 3.0VDC	Job Site: OC13	
TEST SPECIFICATIONS		Test Method	
FCC 951:2018		ANSI C63.26:2015	
COMMENTS			
DC Block + 20dB Attenuator + Coax Cable = 21.5dB Total Offset			
Power Index = 40			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	6	Signature 	
		Value (dBc)	Limit ≤ (dBc) Result
MEDS Low Band, Low Channel, 401.05 MHz		-32.60	-20 Pass
MEDS Low Band, High Channel, 401.85 MHz		-37.49	-20 Pass
MEDS High Band, Low Channel, 405.05 MHz		-32.47	-20 Pass
MEDS High Band, High Channel, 405.85 MHz		-37.20	-20 Pass

EMISSIONS MASK

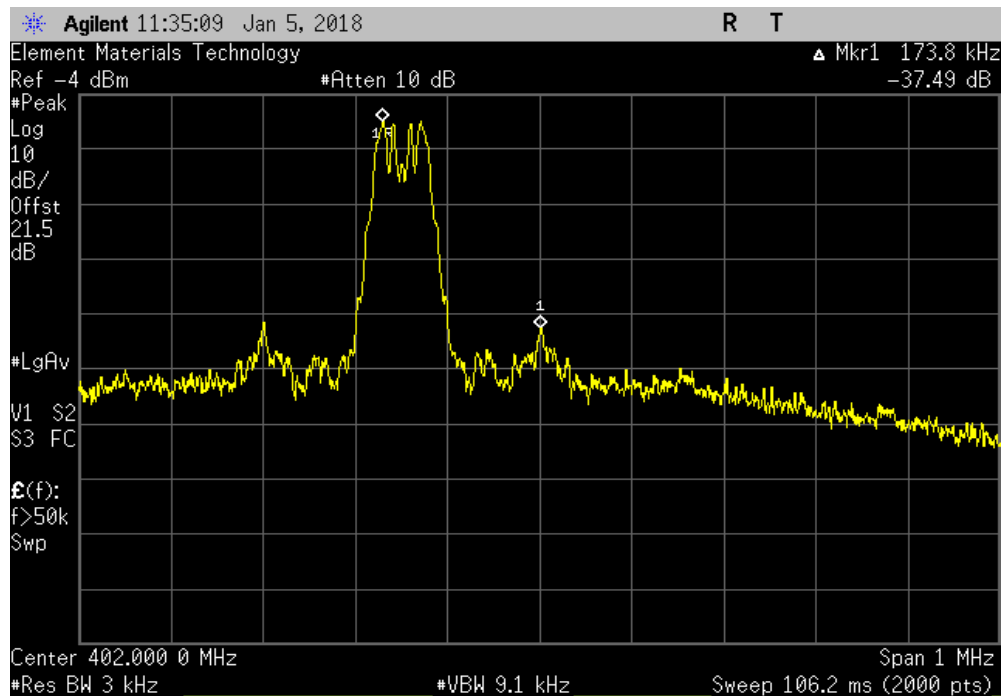


TMTX 2017.10.04 XMM 2017.12.13

MEDS Low Band, Low Channel, 401.05 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-32.60	-20	Pass



MEDS Low Band, High Channel, 401.85 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-37.49	-20	Pass

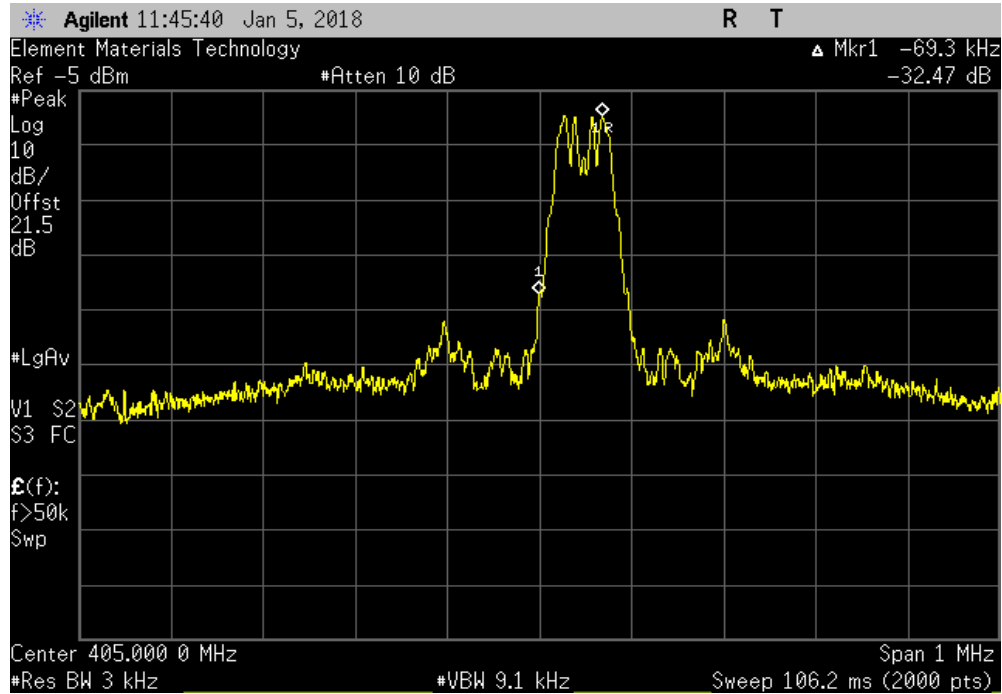


EMISSIONS MASK

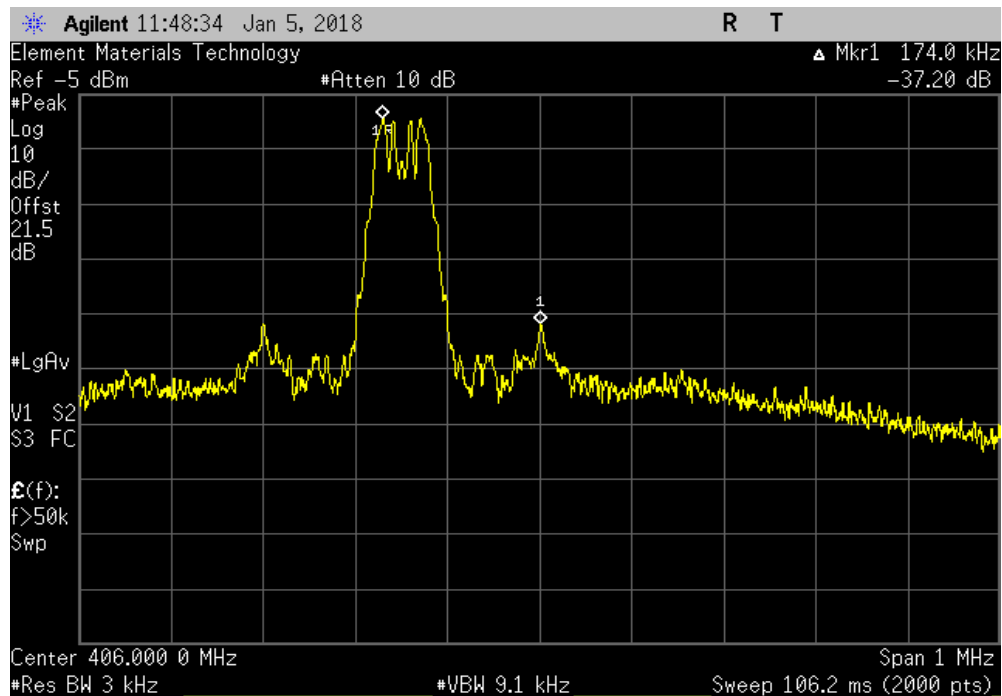


TMTx 2017.10.04 XMI 2017.12.13

MEDS High Band, Low Channel, 405.05 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-32.47	-20	Pass



MEDS High Band, High Channel, 405.85 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-37.20	-20	Pass



CONDUCTED OUTPUT POWER



XMR 2017.12.13

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5182A	TIF	23-Aug-17	23-Aug-20
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Attenuator	Fairview Microwave	SA18H-20	TKR	28-Dec-17	28-Dec-18
Block - DC	Aeroflex	INMET 8535	AMO	27-Mar-17	27-Mar-18
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	9-Nov-17	9-Nov-18

TEST DESCRIPTION

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

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

CONDUCTED OUTPUT POWER



THtTx 2017.10.04 XMtM 2017.12.13

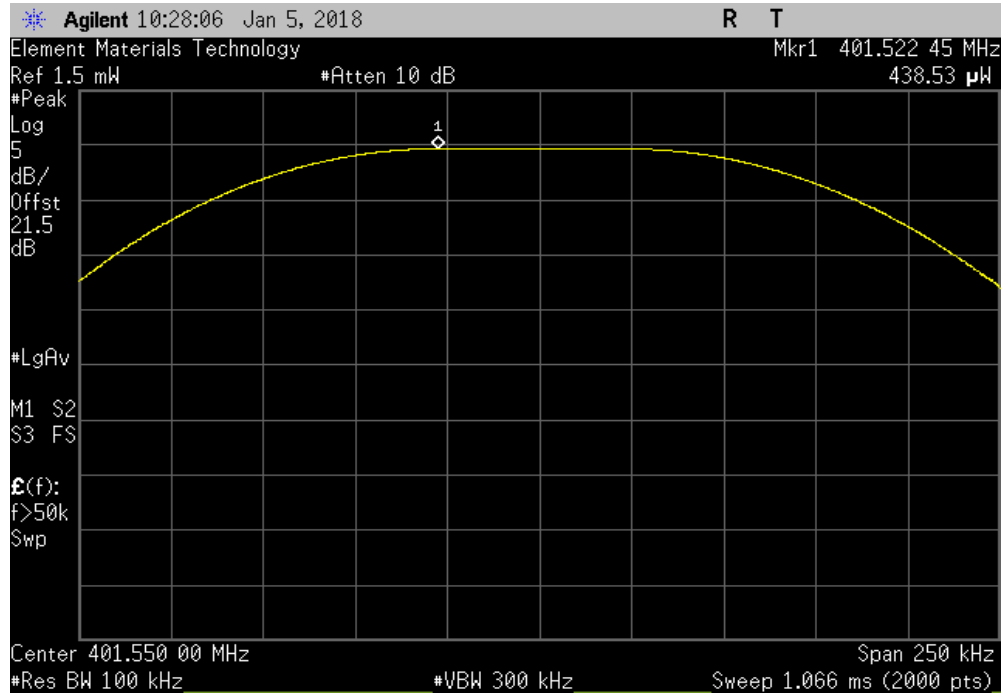
EUT: External Pulse Generator (EPG) Model 1601		Work Order: AXON0105	
Serial Number: AT1B000003		Date: 5-Jan-18	
Customer: Axonics Modulation Technologies, Inc.		Temperature: 22.1 °C	
Attendees: Franklin Portillo		Humidity: 53.5% RH	
Project: None		Barometric Pres.: 1022 mbar	
Tested by: Johnny Candelas		Power: 3.0VDC	
Job Site: OC13			
TEST SPECIFICATIONS			
FCC 951:2018		Test Method	
		ANSI C63.26:2015	
COMMENTS			
DC Block + 20dB Attenuator + Coax Cable = 21.5dB Total Offset			
Power Index = 40			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	6	Signature 	
		Value	Limit
MEDS Low Band, Mid Channel, 401.55 MHz		438.531 uW	N/A
MEDS High Band, Mid Channel, 405.55 MHz		386.545 uW	N/A
			Result
			N/A
			N/A

CONDUCTED OUTPUT POWER

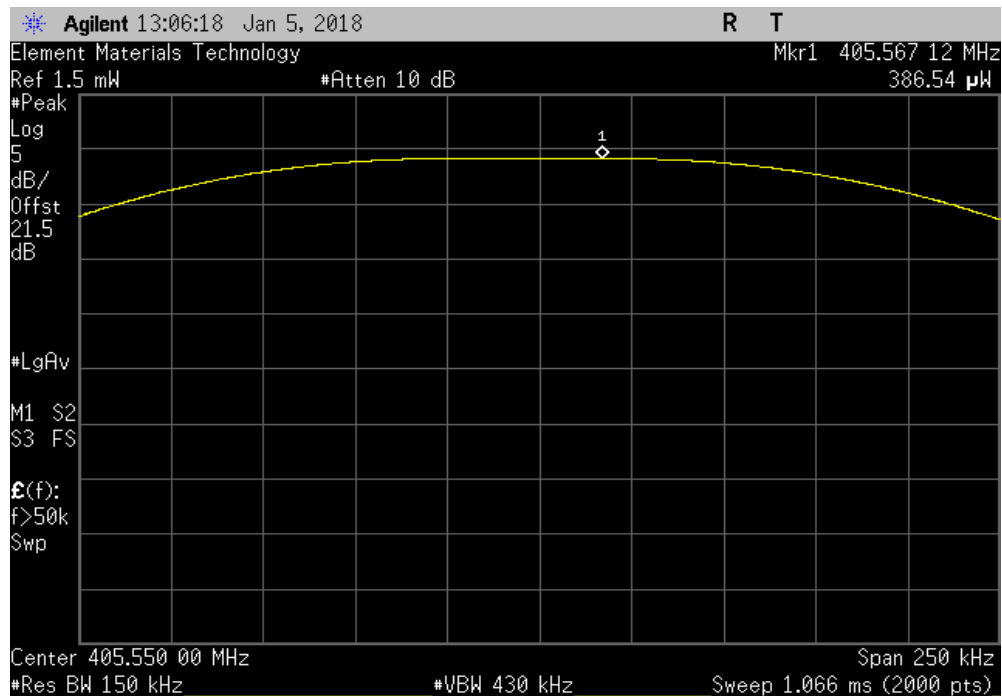


TMTx 2017.10.04 XMM 2017.12.13

MEDS Low Band, Mid Channel, 401.55 MHz						
				Value	Limit	Result
				438.531 uW	N/A	N/A



MEDS High Band, Mid Channel, 405.55 MHz						
				Value	Limit	Result
				386.545 uW	N/A	N/A



FREQUENCY STABILITY



XMIT 2017.12.13

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Meter - Multimeter	Fluke	79 III	MMD	11-Feb-16	11-Feb-19
Thermometer	Omega Engineering, Inc.	HH311	DUC	8-Nov-17	8-Nov-20
Chamber - Temperature/Humidity	Cincinnati Sub Zero (CSZ)	ZPHS-32-3.5-SCT/AC	TBE	27-Oct-17	27-Oct-18
Generator - Signal	Agilent	N5182A	TIF	23-Aug-17	23-Aug-20
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Attenuator	Fairview Microwave	SA18H-20	TKR	28-Dec-17	28-Dec-18
Block - DC	Aeroflex	INMET 8535	AMO	27-Mar-17	27-Mar-18
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	9-Nov-17	9-Nov-18

TEST DESCRIPTION

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

Variation of Supply Voltage

The primary supply voltage was varied over the range specified by the client. Per the client, the device only works over this voltage range; it will shut off if the voltage is outside the specified range.

Variation of Ambient Temperature

Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range (+5°C, +20°C and +40° C).

FREQUENCY STABILITY



THxTx 2017.10.04 XMt 2017.12.13

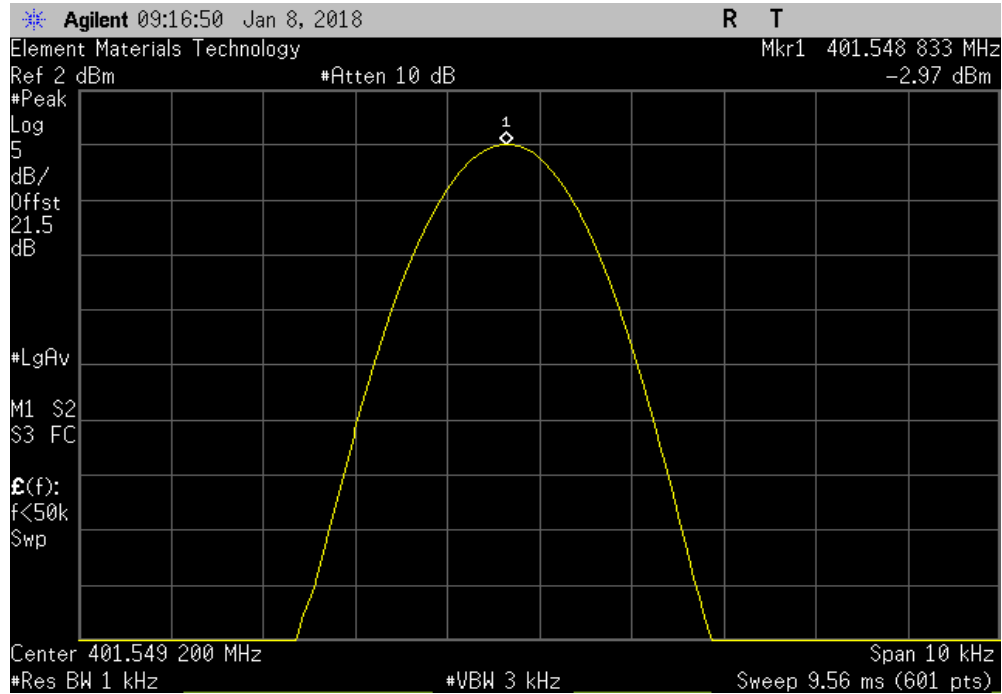
EUT: External Pulse Generator (EPG) Model 1601		Work Order: AXON0105	
Serial Number: AT1B000003		Date: 8-Jan-18	
Customer: Axonics Modulation Technologies, Inc.		Temperature: 21.9 °C	
Attendees: Flavio Ono		Humidity: 62.8% RH	
Project: None		Barometric Pres.: 1015 mbar	
Tested by: Johnny Candelas		Power: 3.0VDC	
Job Site: OC13			
TEST SPECIFICATIONS		Test Method	
FCC 951:2018		ANSI C63.26:2015	
COMMENTS			
DC Block + 20dB Attenuator + Coax Cable = 21.5dB Total Offset			
Power Index = 40			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	6	Signature	
		Measured Value (MHz)	Assigned Value (MHz)
		Error (ppm)	Limit (ppm)
		Results	
Battery Nominal Voltage 3.0VDC			
MEDS Low Band, Mid Channel, 401.55 MHz		401.5488	401.55
MEDS High Band, Mid Channel, 405.55 MHz		405.5486	405.55
Extreme Battery Full Voltage 3.6VDC			
MEDS Low Band, Mid Channel, 401.55 MHz		401.5488	401.55
MEDS High Band, Mid Channel, 405.55 MHz		405.5486	405.55
Extreme Battery Shutdown Voltage 2.3VDC			
MEDS Low Band, Mid Channel, 401.55 MHz		401.5488	401.55
MEDS High Band, Mid Channel, 405.55 MHz		405.5486	405.55
Extreme Temperature +55°C			
MEDS Low Band, Mid Channel, 401.55 MHz		401.5458	401.55
MEDS High Band, Mid Channel, 405.55 MHz		405.5453	405.55
Extreme Temperature +50°C			
MEDS Low Band, Mid Channel, 401.55 MHz		401.5458	401.55
MEDS High Band, Mid Channel, 405.55 MHz		405.5456	405.55
Extreme Temperature +40°C			
MEDS Low Band, Mid Channel, 401.55 MHz		401.5466	401.55
MEDS High Band, Mid Channel, 405.55 MHz		405.5464	405.55
Extreme Temperature +30°C			
MEDS Low Band, Mid Channel, 401.55 MHz		401.5476	401.55
MEDS High Band, Mid Channel, 405.55 MHz		405.5475	405.55
Extreme Temperature +20°C			
MEDS Low Band, Mid Channel, 401.55 MHz		401.5487	401.55
MEDS High Band, Mid Channel, 405.55 MHz		405.5486	405.55
Extreme Temperature +10°C			
MEDS Low Band, Mid Channel, 401.55 MHz		401.5496	401.55
MEDS High Band, Mid Channel, 405.55 MHz		405.5494	405.55
Extreme Temperature 0°C			
MEDS Low Band, Mid Channel, 401.55 MHz		401.5500	401.55
MEDS High Band, Mid Channel, 405.55 MHz		405.5499	405.55

FREQUENCY STABILITY

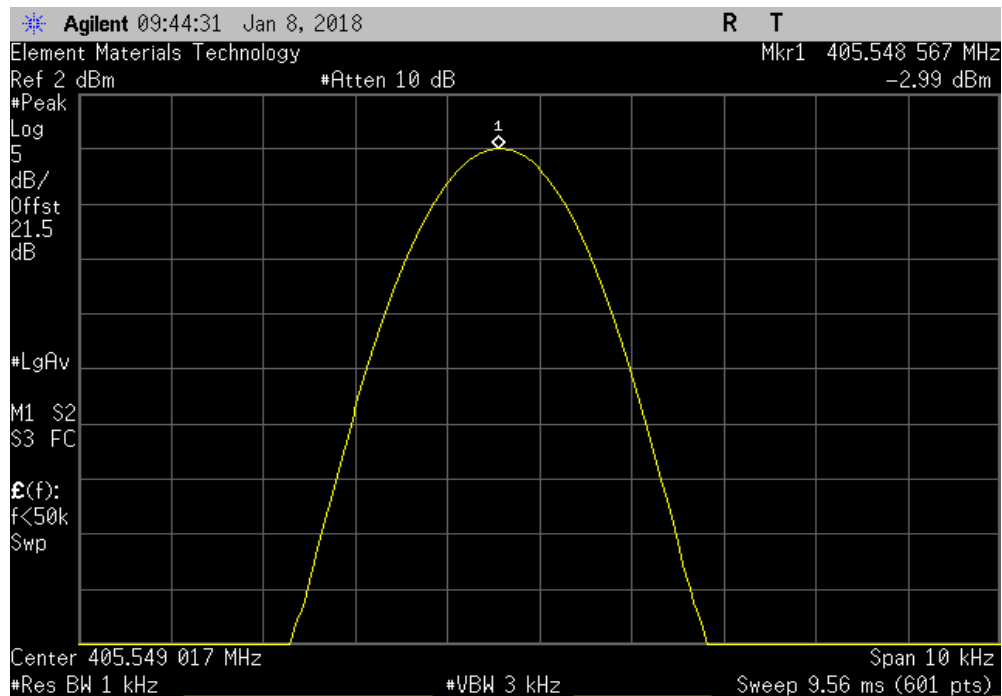


TMTx 2017.10.04 XMM 2017.12.13

Battery Nominal Voltage 3.0VDC, MEDS Low Band, Mid Channel, 401.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	401.5488	401.55	2.9	100	Pass	



Battery Nominal Voltage 3.0VDC, MEDS High Band, Mid Channel, 405.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	405.5486	405.55	3.5	100	Pass	

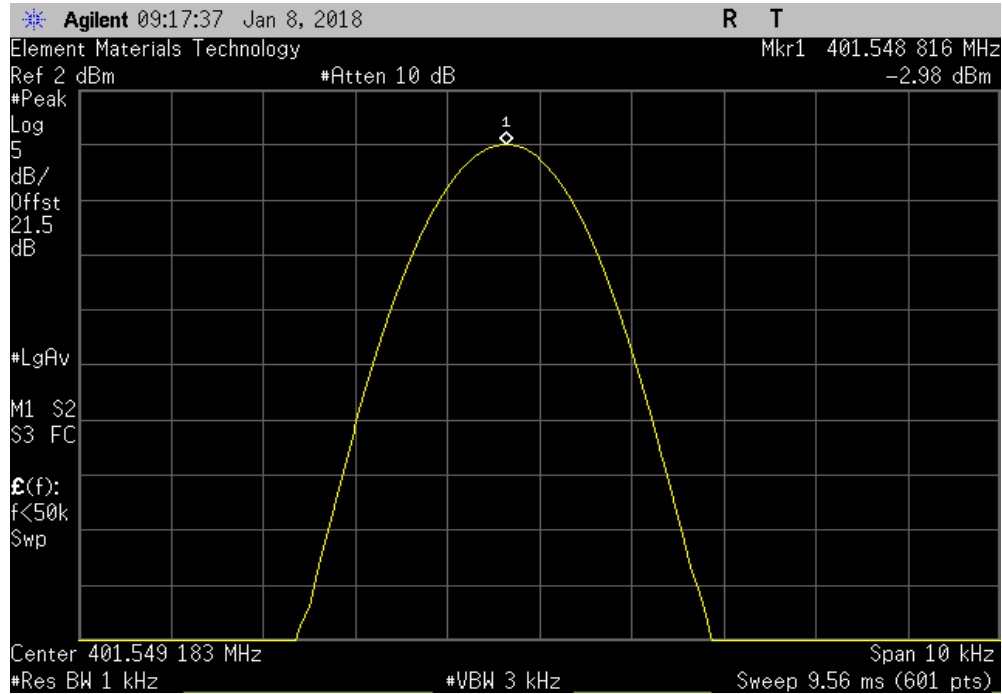


FREQUENCY STABILITY

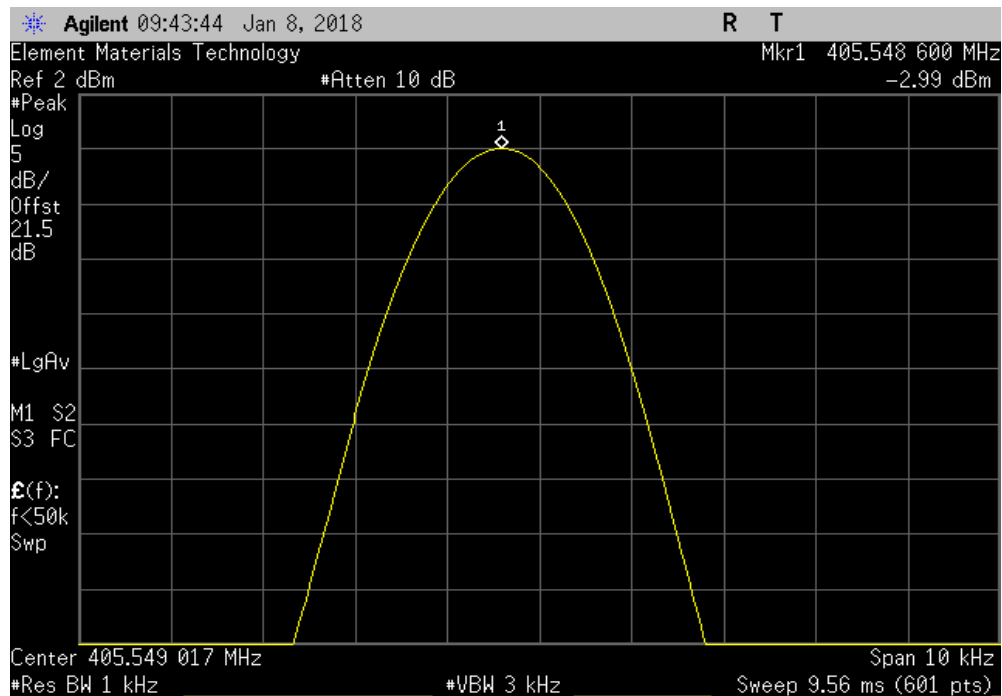


TMTx 2017.10.04 XMM 2017.12.13

Extreme Battery Full Voltage 3.6VDC, MEDS Low Band, Mid Channel, 401.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	401.5488	401.55	3.0	100	Pass	



Extreme Battery Full Voltage 3.6VDC, MEDS High Band, Mid Channel, 405.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	405.5486	405.55	3.5	100	Pass	

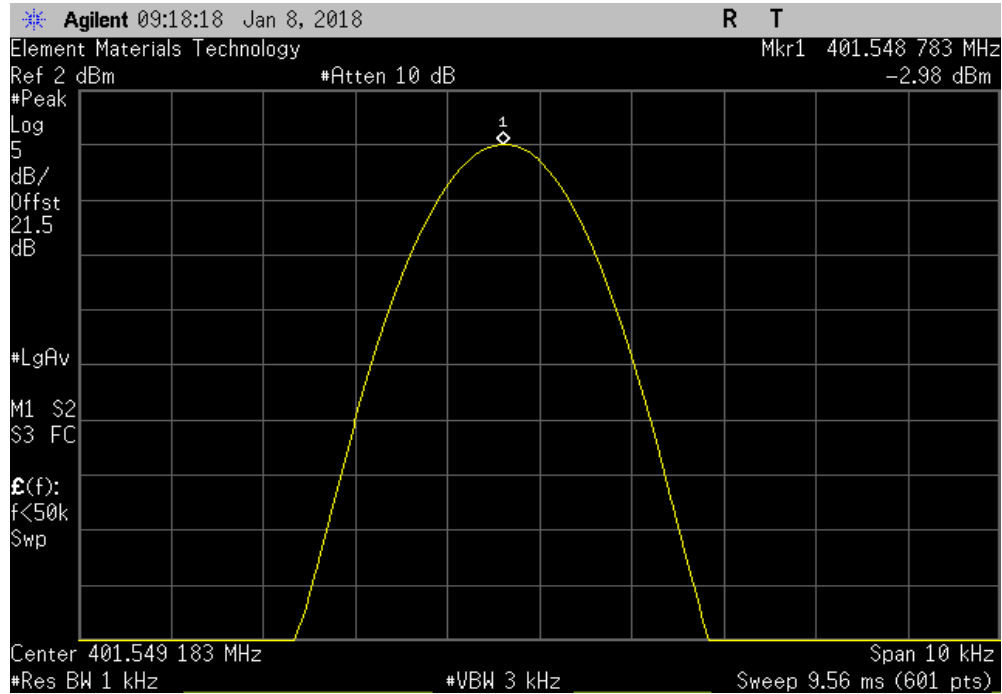


FREQUENCY STABILITY

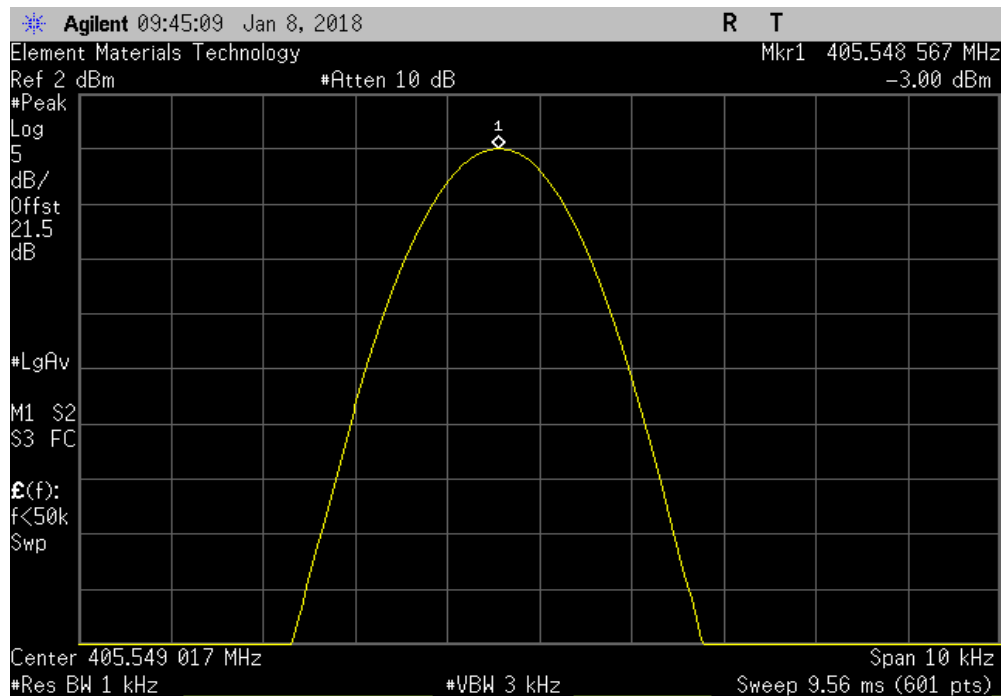


TMTx 2017.10.04 XMM 2017.12.13

Extreme Battery Shutdown Voltage 2.3VDC, MEDS Low Band, Mid Channel, 401.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	401.5488	401.55	3.0	100	Pass	



Extreme Battery Shutdown Voltage 2.3VDC, MEDS High Band, Mid Channel, 405.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	405.5486	405.55	3.5	100	Pass	

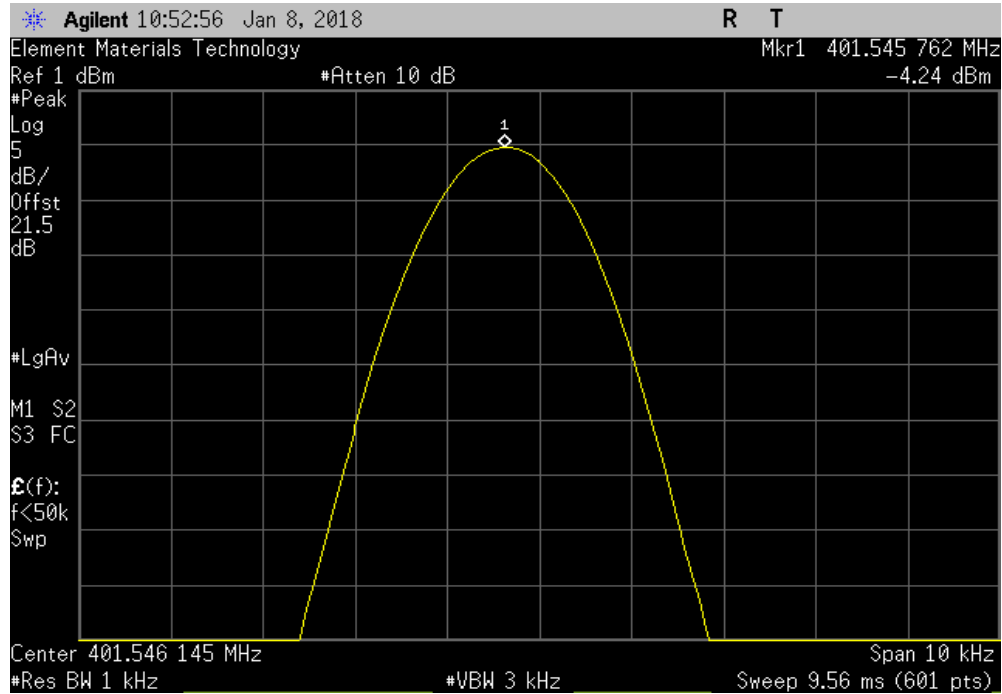


FREQUENCY STABILITY

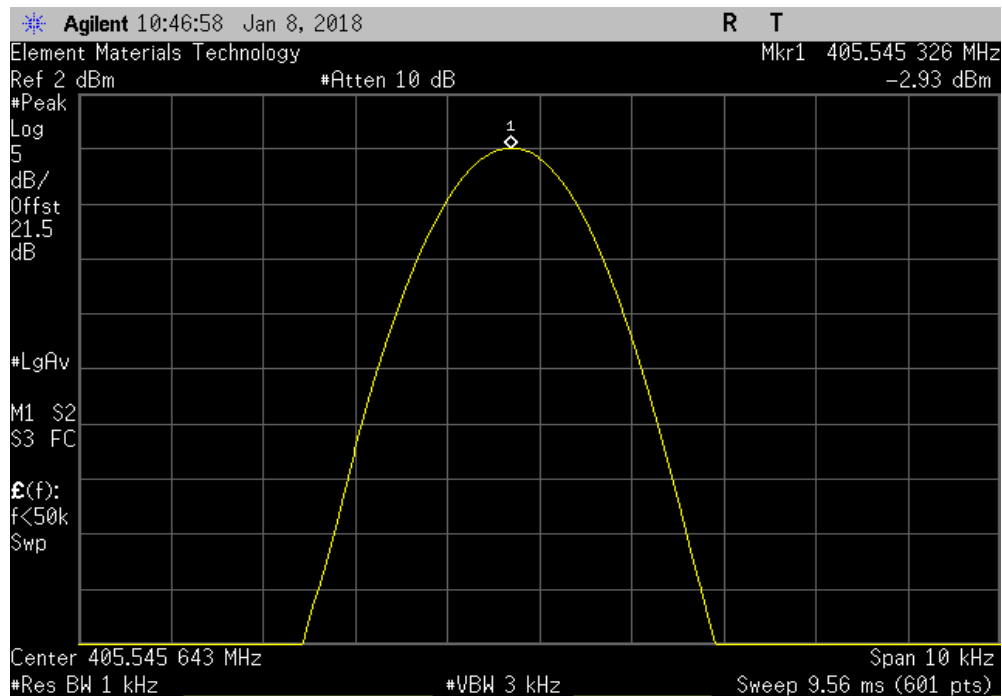


TMTx 2017.10.04 XMM 2017.12.13

Extreme Temperature +55°C, MEDS Low Band, Mid Channel, 401.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	401.5458	401.55	10.6	100	Pass	



Extreme Temperature +55°C, MEDS High Band, Mid Channel, 405.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	405.5453	405.55	11.5	100	Pass	

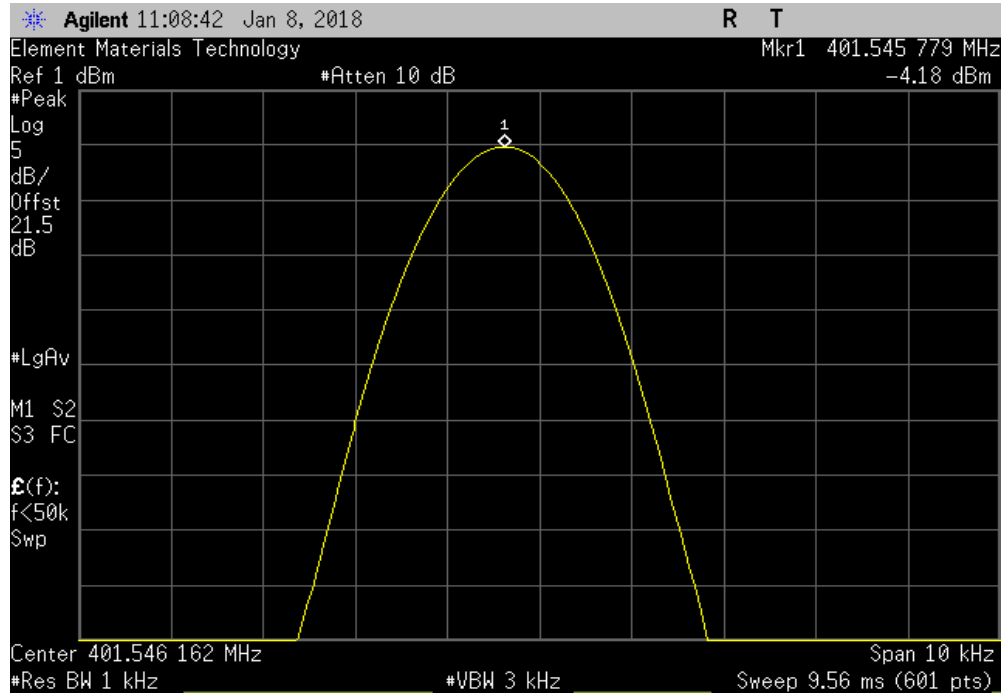


FREQUENCY STABILITY

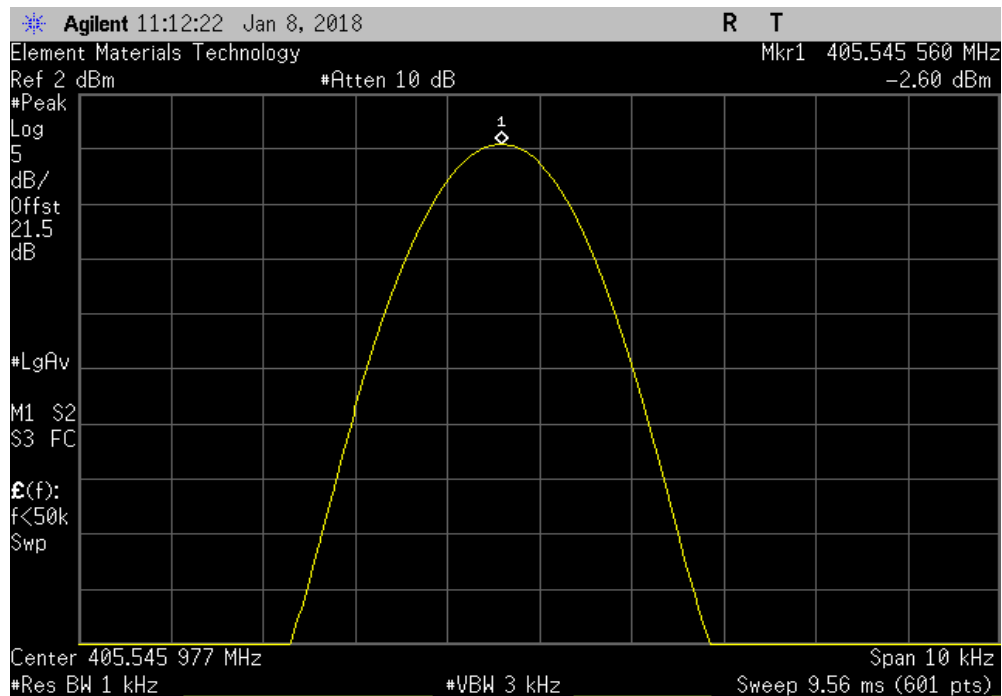


TMTx 2017.10.04 XMM 2017.12.13

Extreme Temperature +50°C, MEDS Low Band, Mid Channel, 401.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	401.5458	401.55	10.5	100	Pass	



Extreme Temperature +50°C, MEDS High Band, Mid Channel, 405.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	405.5456	405.55	11.0	100	Pass	

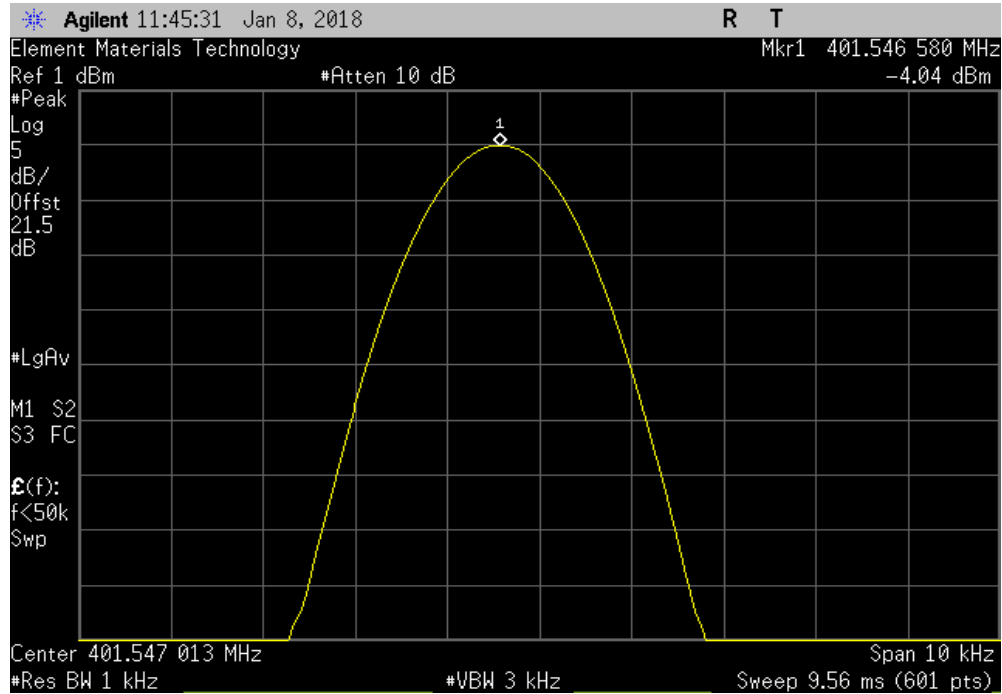


FREQUENCY STABILITY

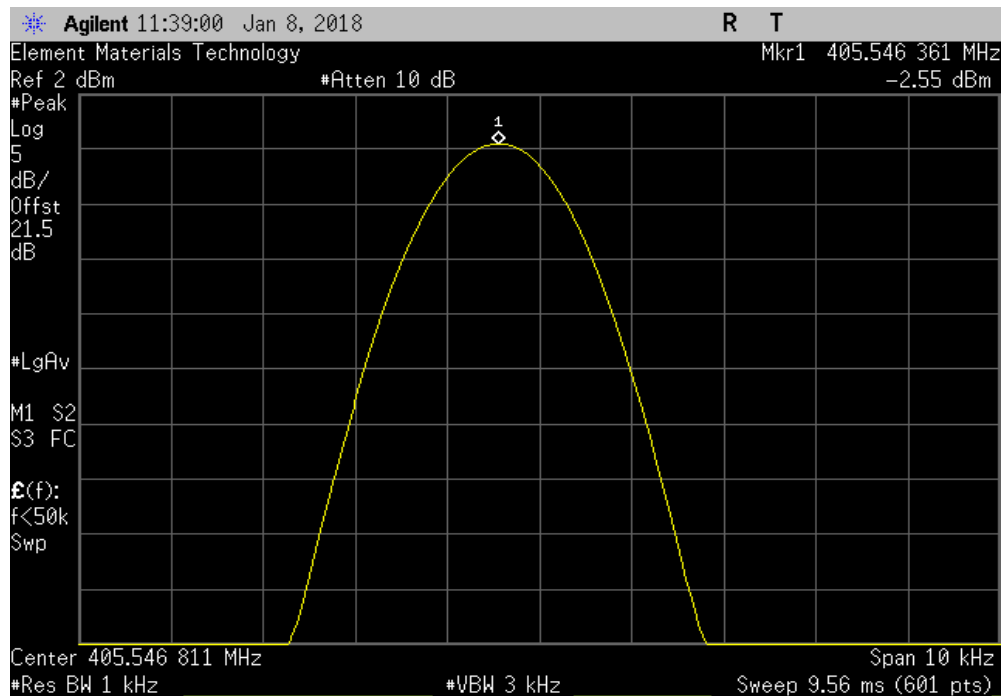


TMTx 2017.10.04 XMM 2017.12.13

Extreme Temperature +40°C, MEDS Low Band, Mid Channel, 401.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	401.5466	401.55	8.5	100	Pass	



Extreme Temperature +40°C, MEDS High Band, Mid Channel, 405.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	405.5464	405.55	9.0	100	Pass	

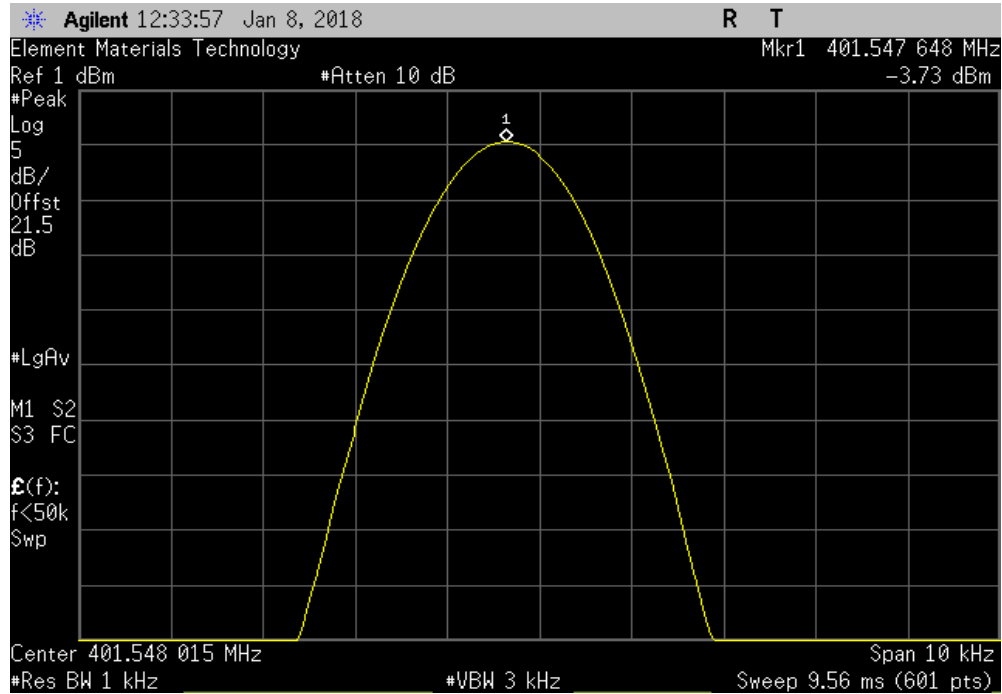


FREQUENCY STABILITY

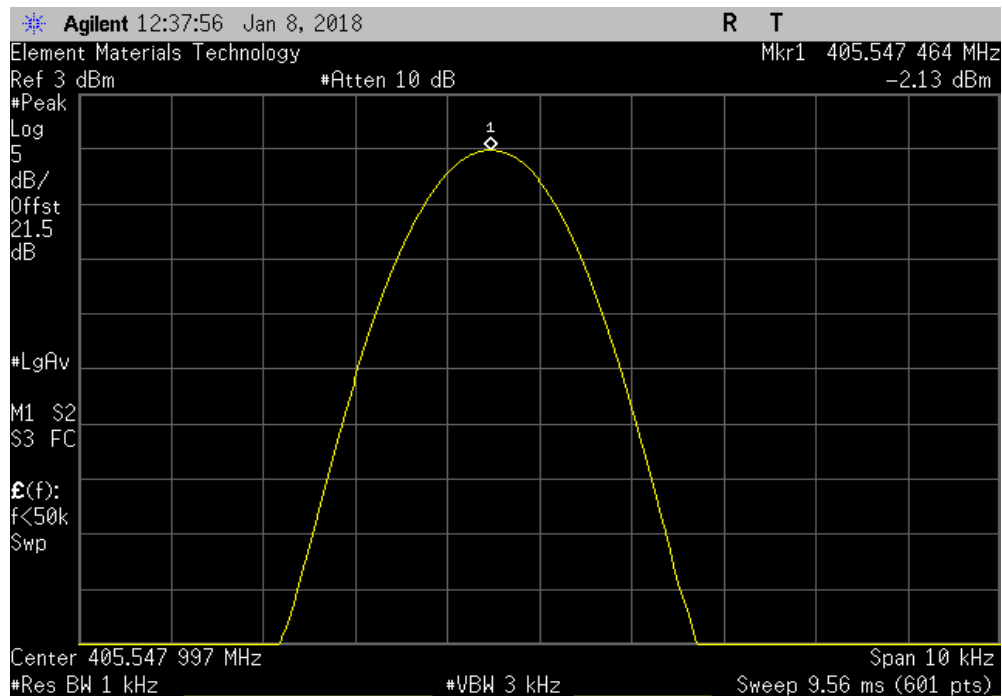


TMTx 2017.10.04 XMM 2017.12.13

Extreme Temperature +30°C, MEDS Low Band, Mid Channel, 401.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	401.5476	401.55	5.9	100	Pass	



Extreme Temperature +30°C, MEDS High Band, Mid Channel, 405.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	405.5475	405.55	6.3	100	Pass	

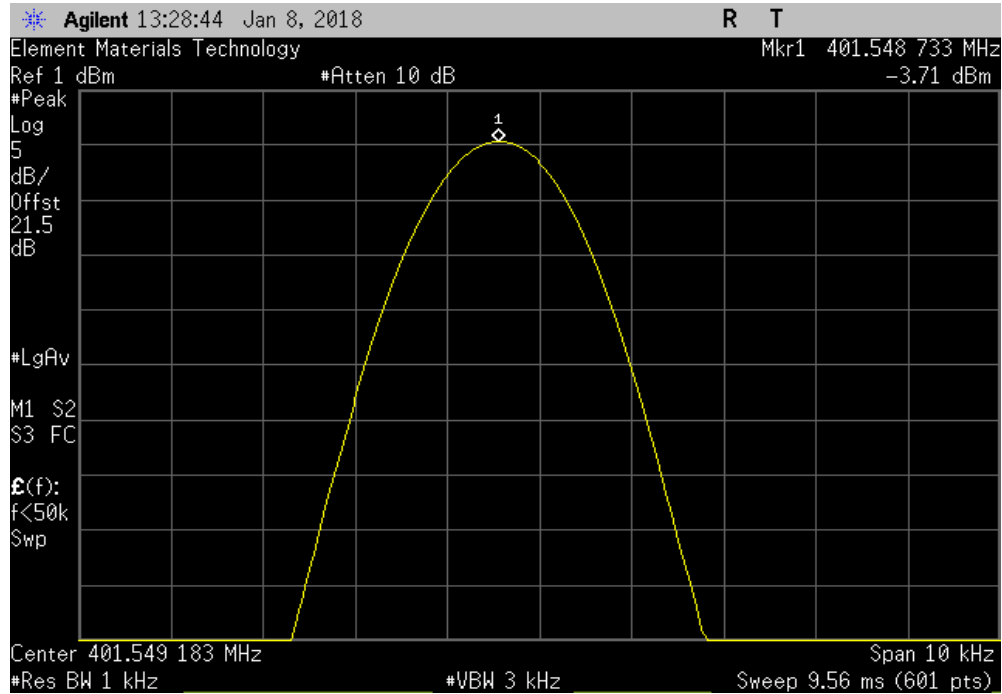


FREQUENCY STABILITY

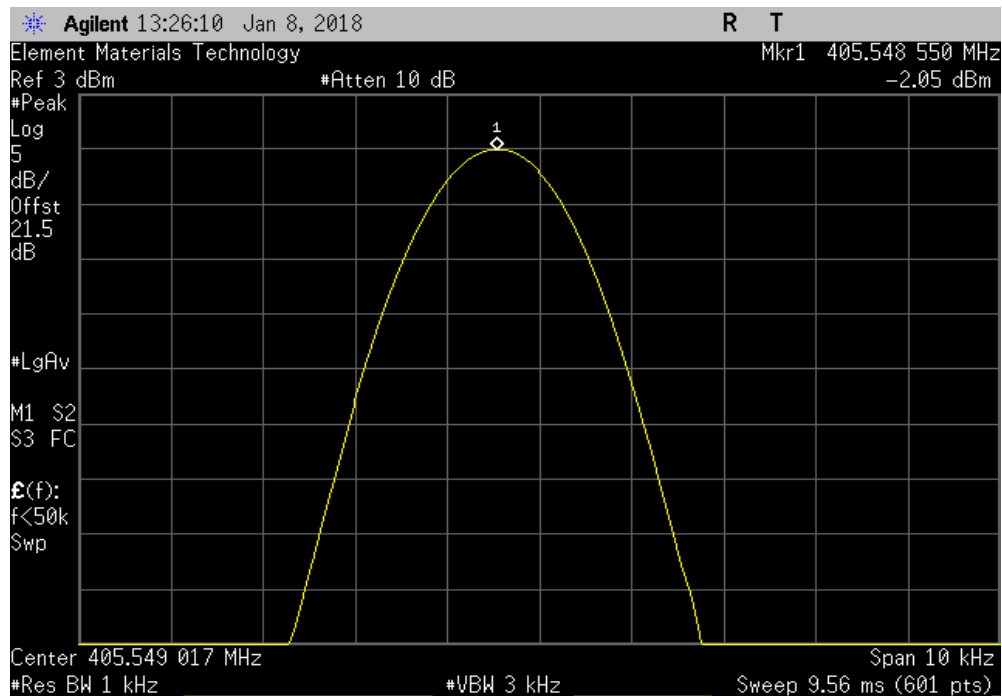


TMTx 2017.10.04 XMM 2017.12.13

Extreme Temperature +20°C, MEDS Low Band, Mid Channel, 401.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	401.5487	401.55	3.2	100	Pass	



Extreme Temperature +20°C, MEDS High Band, Mid Channel, 405.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	405.5486	405.55	3.6	100	Pass	

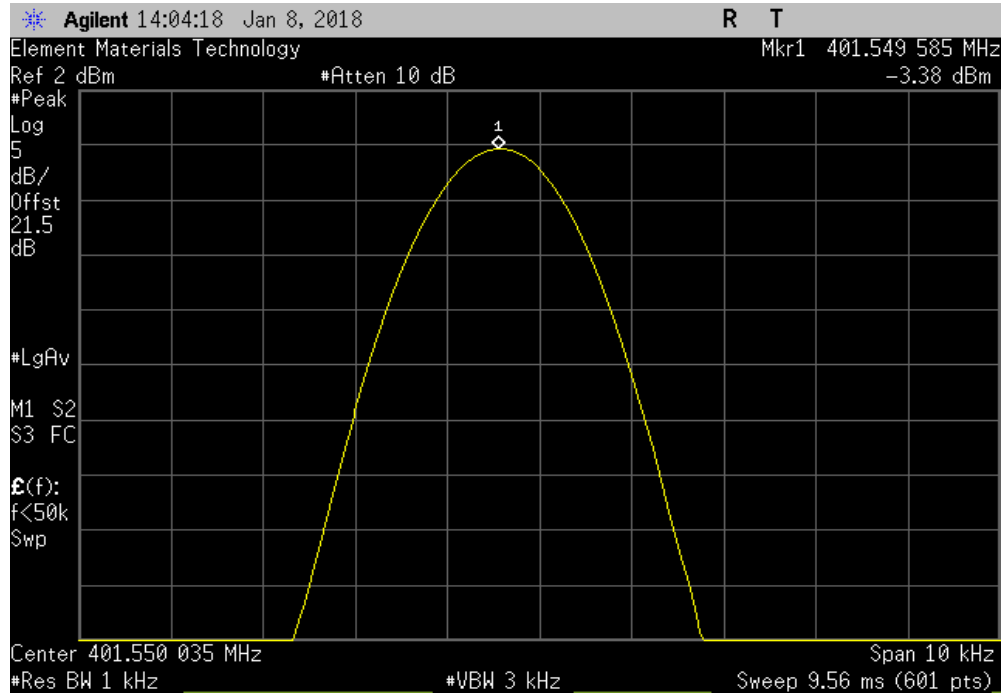


FREQUENCY STABILITY

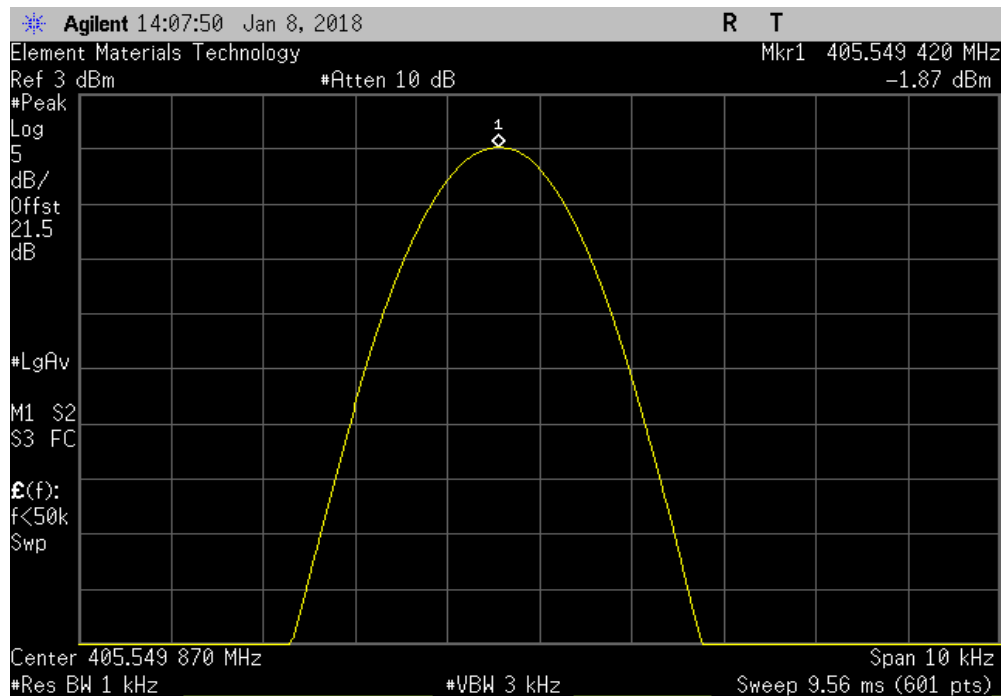


TMTx 2017.10.04 XMM 2017.12.13

Extreme Temperature +10°C, MEDS Low Band, Mid Channel, 401.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	401.5496	401.55	1.0	100	Pass	



Extreme Temperature +10°C, MEDS High Band, Mid Channel, 405.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	405.5494	405.55	1.4	100	Pass	

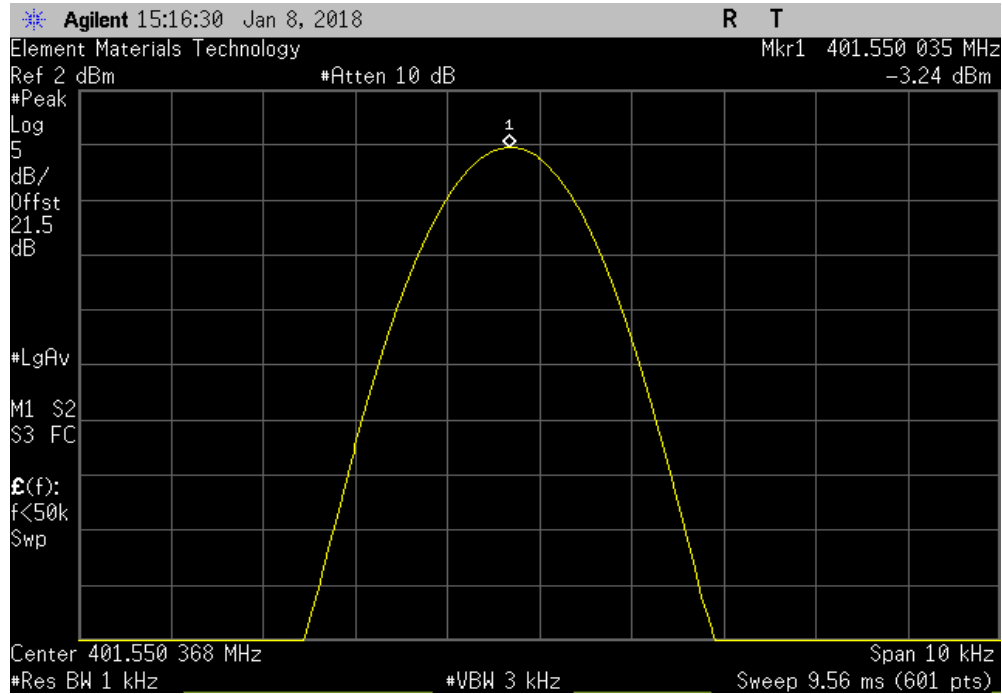


FREQUENCY STABILITY

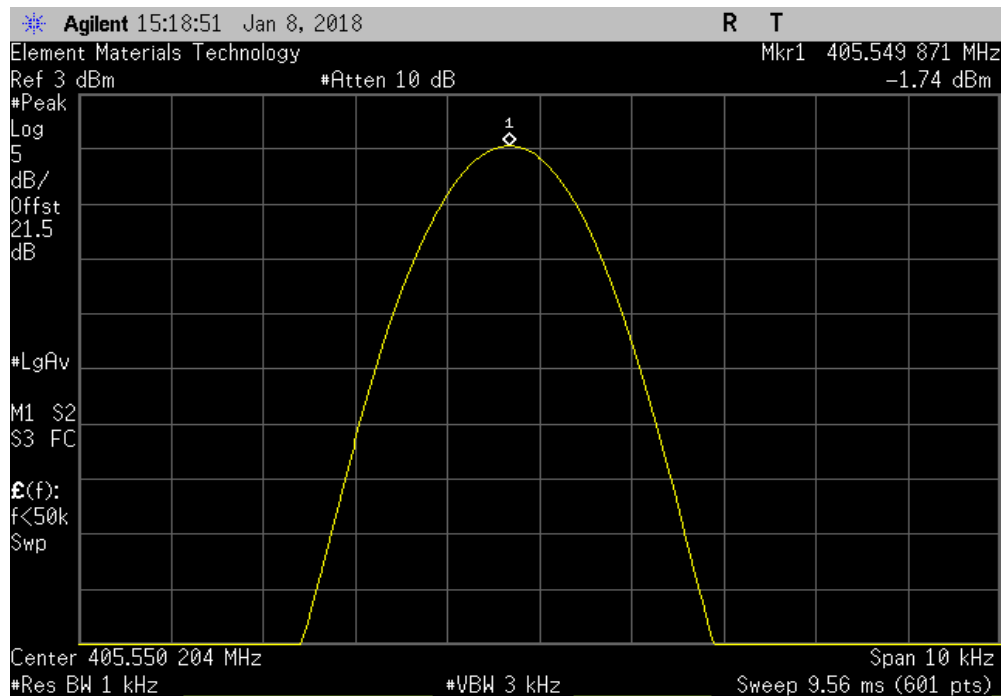


TMTx 2017.10.04 XMM 2017.12.13

Extreme Temperature 0°C, MEDS Low Band, Mid Channel, 401.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	401.5500	401.55	0.1	100	Pass	



Extreme Temperature 0°C, MEDS High Band, Mid Channel, 405.55 MHz						
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results	
	405.5499	405.55	0.3	100	Pass	



SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2017.09.18

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 Modulated at Mid Ch - MEDS Low Band = 401.55 MHz & Mid Ch - MEDS High Band = 405.55 MHz

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

AXON0105 - 4

AXON0105 - 5

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
Cable	Northwest EMC	1-8GHz RE Cables	OCJ	13-Jul-2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-4D-010120-30-10P-1	AOP	13-Jul-2017	12 mo
Antenna - Double Ridge	EMCO	3115	AHB	21-Mar-2016	24 mo
Cable	Northwest EMC	10kHz-1GHz RE Cables	OCH	1-Aug-2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1402	AOZ	1-Aug-2017	12 mo
Antenna - Biconilog	Teseq	CBL 6141A	AYE	7-Nov-2017	24 mo
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAY	21-Nov-2017	12 mo

TEST DESCRIPTION

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

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

SPURIOUS RADIATED EMISSIONS

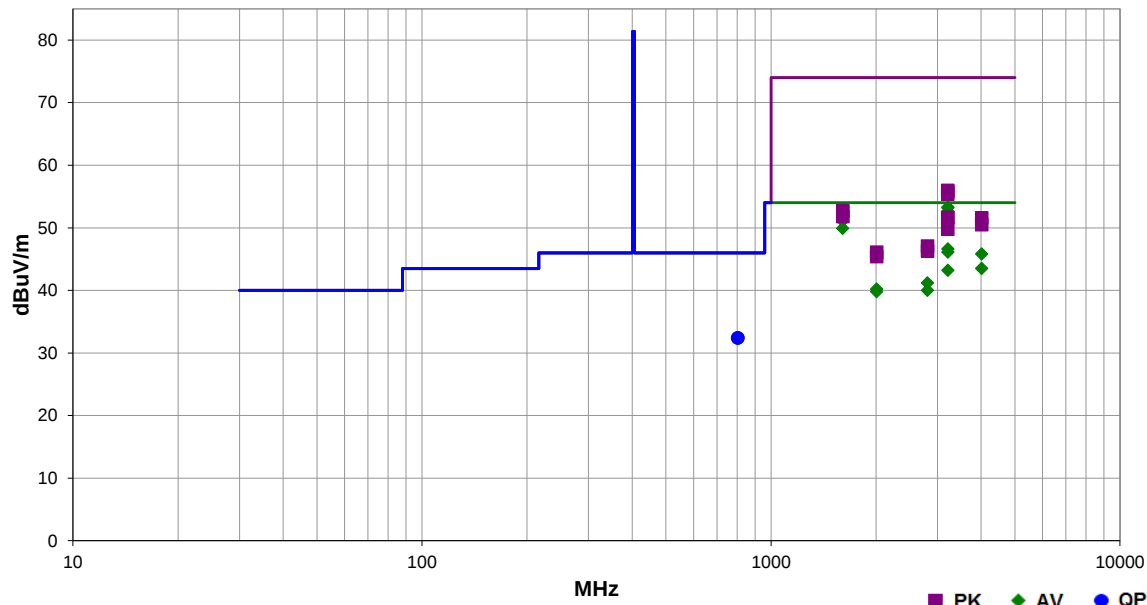


EmiRS 2017.09.18.2 PSA-ESCI 2017.09.18

Work Order:	AXON0105	Date:	3-Jan-2018	
Project:	None	Temperature:	19.5 °C	
Job Site:	OC10	Humidity:	52.3% RH	
Serial Number:	AE1GC70009	Barometric Pres.:	1020 mbar	
Tested by: Johnny Candelas				
EUT:	External Pulse Generator (EPG) Model 1601			
Configuration:	4			
Customer:	Axonics Modulation Technologies, Inc.			
Attendees:	Franklin Portillo			
EUT Power:	Battery			
Operating Mode:	Transmitting Modulated at Mid Ch - MEDS Low Band = 401.55 MHz & Mid Ch - MEDS High Band = 405.55 MHz			
Deviations:	None			
Comments:	Tuned lead. EUT Vertical. Power Index = 40 X-Axis = EUT White Face Out, Y-Axis = EUT Grey Face Out, & Z-Axis = Grey Face Out turned 90° so top is facing out			

Test Specifications	Test Method
FCC 951:2018	ANSI C63.26:2015

Run #	5	Test Distance (m)	3	Antenna Height(s)	1 to 3(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
3212.360	46.5	6.8	1.5	348.0	3.0	0.0	Horz	AV	0.0	53.3	54.0	-0.7	Low 401.55 MHz, EUT Y-Axis
3212.365	46.4	6.8	1.5	351.0	3.0	0.0	Horz	AV	0.0	53.2	54.0	-0.8	Low 401.55 MHz, EUT X-Axis
3212.375	45.8	6.8	1.2	333.0	3.0	0.0	Vert	AV	0.0	52.6	54.0	-1.4	Low 401.55 MHz, EUT Z-Axis
1606.185	51.0	0.1	1.5	354.0	3.0	0.0	Horz	AV	0.0	51.1	54.0	-2.9	Low 401.55 MHz, EUT Y-Axis
1606.180	49.8	0.1	1.5	340.0	3.0	0.0	Vert	AV	0.0	49.9	54.0	-4.1	Low 401.55 MHz, EUT Z-Axis
3212.415	39.8	6.8	1.5	9.0	3.0	0.0	Vert	AV	0.0	46.6	54.0	-7.4	Low 401.55 MHz, EUT X-Axis
3212.355	39.3	6.8	1.5	291.0	3.0	0.0	Vert	AV	0.0	46.1	54.0	-7.9	Low 401.55 MHz, EUT Y-Axis
4015.520	36.4	9.4	2.8	338.0	3.0	0.0	Vert	AV	0.0	45.8	54.0	-8.2	Low 401.55 MHz, EUT Z-Axis
4015.465	34.1	9.4	3.0	351.0	3.0	0.0	Horz	AV	0.0	43.5	54.0	-10.5	Low 401.55 MHz, EUT Y-Axis
3212.370	36.4	6.8	1.5	346.0	3.0	0.0	Horz	AV	0.0	43.2	54.0	-10.8	Low 401.55 MHz, EUT Z-Axis
2810.840	37.2	4.0	1.4	0.0	3.0	0.0	Horz	AV	0.0	41.2	54.0	-12.8	Low 401.55 MHz, EUT Y-Axis
803.191	16.4	16.0	1.5	2.0	3.0	0.0	Horz	QP	0.0	32.4	46.0	-13.6	Low 401.55 MHz, EUT Y-Axis
802.800	16.4	16.0	2.5	14.0	3.0	0.0	Vert	QP	0.0	32.4	46.0	-13.6	Low 401.55 MHz, EUT Z-Axis
2007.730	37.6	2.6	1.5	16.0	3.0	0.0	Horz	AV	0.0	40.2	54.0	-13.8	Low 401.55 MHz, EUT Y-Axis
2810.835	36.0	4.0	1.5	326.0	3.0	0.0	Vert	AV	0.0	40.0	54.0	-14.0	Low 401.55 MHz, EUT Z-Axis
2007.765	37.2	2.6	1.5	329.0	3.0	0.0	Vert	AV	0.0	39.8	54.0	-14.2	Low 401.55 MHz, EUT Z-Axis
3212.060	49.2	6.8	1.5	348.0	3.0	0.0	Horz	PK	0.0	56.0	74.0	-18.0	Low 401.55 MHz, EUT Y-Axis
3212.240	49.0	6.8	1.5	351.0	3.0	0.0	Horz	PK	0.0	55.8	74.0	-18.2	Low 401.55 MHz, EUT X-Axis
3212.085	48.6	6.8	1.2	333.0	3.0	0.0	Vert	PK	0.0	55.4	74.0	-18.6	Low 401.55 MHz, EUT Z-Axis
1606.260	52.6	0.1	1.5	354.0	3.0	0.0	Horz	PK	0.0	52.7	74.0	-21.3	Low 401.55 MHz, EUT Y-Axis
1606.390	51.7	0.1	1.5	340.0	3.0	0.0	Vert	PK	0.0	51.8	74.0	-22.2	Low 401.55 MHz, EUT Z-Axis
3212.150	44.9	6.8	1.5	291.0	3.0	0.0	Vert	PK	0.0	51.7	74.0	-22.3	Low 401.55 MHz, EUT Y-Axis

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
3211.935	44.8	6.8	1.5	9.0	3.0	0.0	Vert	PK	0.0	51.6	74.0	-22.4	Low 401.55 MHz, EUT X-Axis
4014.960	42.2	9.4	2.8	338.0	3.0	0.0	Vert	PK	0.0	51.6	74.0	-22.4	Low 401.55 MHz, EUT Z-Axis
4015.255	41.1	9.4	3.0	351.0	3.0	0.0	Horz	PK	0.0	50.5	74.0	-23.5	Low 401.55 MHz, EUT Y-Axis
3212.075	43.0	6.8	1.5	346.0	3.0	0.0	Horz	PK	0.0	49.8	74.0	-24.2	Low 401.55 MHz, EUT Z-Axis
2810.545	43.1	4.0	1.4	0.0	3.0	0.0	Horz	PK	0.0	47.1	74.0	-26.9	Low 401.55 MHz, EUT Y-Axis
2810.875	42.3	4.0	1.5	326.0	3.0	0.0	Vert	PK	0.0	46.3	74.0	-27.7	Low 401.55 MHz, EUT Z-Axis
2007.785	43.5	2.6	1.5	16.0	3.0	0.0	Horz	PK	0.0	46.1	74.0	-27.9	Low 401.55 MHz, EUT Y-Axis
2007.495	42.8	2.6	1.5	329.0	3.0	0.0	Vert	PK	0.0	45.4	74.0	-28.6	Low 401.55 MHz, EUT Z-Axis

SPURIOUS RADIATED EMISSIONS

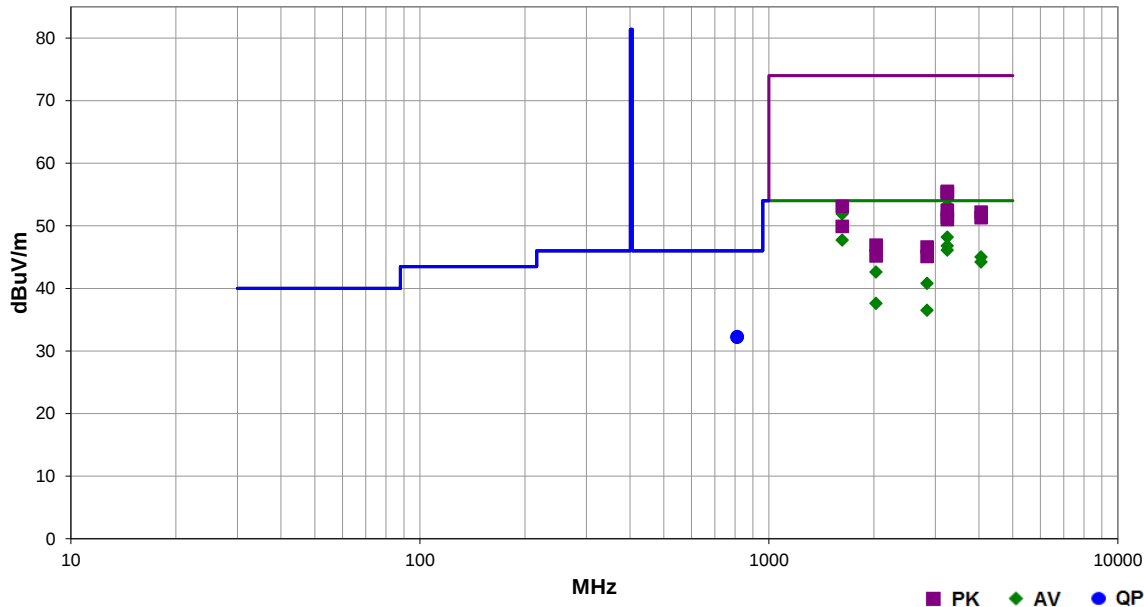


EmiR5 2017.09.18.2 PSA-ESCI 2017.09.18

Work Order:	AXON0105	Date:	3-Jan-2018	
Project:	None	Temperature:	19.5 °C	
Job Site:	OC10	Humidity:	52.3% RH	
Serial Number:	AE1GC70009	Barometric Pres.:	1020 mbar	
		Tested by: Johnny Candelas		
EUT:	External Pulse Generator (EPG) Model 1601			
Configuration:	5			
Customer:	Axonics Modulation Technologies, Inc.			
Attendees:	Franklin Portillo			
EUT Power:	Battery			
Operating Mode:	Transmitting Modulated at Mid Ch - MEDS Low Band = 401.55 MHz & Mid Ch - MEDS High Band = 405.55 MHz			
Deviations:	None			
Comments:	PNE lead. EUT Vertical. Power Index = 40 X-Axis = EUT White Face Out, Y-Axis = EUT Grey Face Out, & Z-Axis = Grey Face Out turned 90° so top is facing out			

Test Specifications	Test Method
FCC 951:2018	ANSI C63.26:2015

Run #	9	Test Distance (m)	3	Antenna Height(s)	1 to 3(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
3244.400	46.5	6.8	1.5	343.0	3.0	0.0	Horz	AV	0.0	53.3	54.0	-0.7	High 405.55 MHz, EUT Y-Axis
3244.345	46.3	6.8	1.0	0.0	3.0	0.0	Vert	AV	0.0	53.1	54.0	-0.9	High 405.55 MHz, EUT Z-Axis
3244.370	45.8	6.8	1.5	354.0	3.0	0.0	Horz	AV	0.0	52.6	54.0	-1.4	High 405.55 MHz, EUT X-Axis
1622.200	51.8	0.1	1.4	344.0	3.0	0.0	Vert	AV	0.0	51.9	54.0	-2.1	High 405.55 MHz, EUT Z-Axis
3244.365	41.4	6.8	1.5	41.0	3.0	0.0	Vert	AV	0.0	48.2	54.0	-5.8	High 405.55 MHz, EUT Y-Axis
1622.195	47.6	0.1	1.4	360.0	3.0	0.0	Horz	AV	0.0	47.7	54.0	-6.3	High 405.55 MHz, EUT Y-Axis
3244.330	40.0	6.8	3.0	324.0	3.0	0.0	Horz	AV	0.0	46.8	54.0	-7.2	High 405.55 MHz, EUT Z-Axis
3244.340	39.3	6.8	1.5	22.0	3.0	0.0	Vert	AV	0.0	46.1	54.0	-7.9	High 405.55 MHz, EUT X-Axis
4055.425	35.5	9.5	1.0	0.0	3.0	0.0	Vert	AV	0.0	45.0	54.0	-9.0	High 405.55 MHz, EUT Z-Axis
4055.400	34.7	9.5	2.6	12.0	3.0	0.0	Horz	AV	0.0	44.2	54.0	-9.8	High 405.55 MHz, EUT Y-Axis
2027.720	40.1	2.5	2.0	337.0	3.0	0.0	Vert	AV	0.0	42.6	54.0	-11.4	High 405.55 MHz, EUT Z-Axis
2838.840	36.6	4.2	1.5	3.0	3.0	0.0	Horz	AV	0.0	40.8	54.0	-13.2	High 405.55 MHz, EUT Y-Axis
811.503	16.4	15.9	1.5	55.0	3.0	0.0	Vert	QP	0.0	32.3	46.0	-13.7	High 405.55 MHz, EUT Z-Axis
810.843	16.4	15.8	3.7	10.0	3.0	0.0	Horz	QP	0.0	32.2	46.0	-13.8	High 405.55 MHz, EUT Y-Axis
2027.000	35.1	2.5	1.5	352.0	3.0	0.0	Horz	AV	0.0	37.6	54.0	-16.4	High 405.55 MHz, EUT Y-Axis
2838.830	32.3	4.2	1.2	16.0	3.0	0.0	Vert	AV	0.0	36.5	54.0	-17.5	High 405.55 MHz, EUT Z-Axis
3244.440	48.7	6.8	1.5	343.0	3.0	0.0	Horz	PK	0.0	55.5	74.0	-18.5	High 405.55 MHz, EUT Y-Axis
3244.290	48.6	6.8	1.5	354.0	3.0	0.0	Horz	PK	0.0	55.4	74.0	-18.6	High 405.55 MHz, EUT X-Axis
3244.135	48.4	6.8	1.0	0.0	3.0	0.0	Vert	PK	0.0	55.2	74.0	-18.8	High 405.55 MHz, EUT Z-Axis
1622.120	53.0	0.1	1.4	344.0	3.0	0.0	Vert	PK	0.0	53.1	74.0	-20.9	High 405.55 MHz, EUT Z-Axis
3244.355	45.7	6.8	1.5	41.0	3.0	0.0	Vert	PK	0.0	52.5	74.0	-21.5	High 405.55 MHz, EUT Y-Axis
4055.565	42.7	9.5	2.6	12.0	3.0	0.0	Horz	PK	0.0	52.2	74.0	-21.8	High 405.55 MHz, EUT Y-Axis

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
3244.285	44.6	6.8	3.0	324.0	3.0	0.0	Horz	PK	0.0	51.4	74.0	-22.6	High 405.55 MHz, EUT Z-Axis
4055.725	41.8	9.5	1.0	0.0	3.0	0.0	Vert	PK	0.0	51.3	74.0	-22.7	High 405.55 MHz, EUT Z-Axis
3244.480	44.2	6.8	1.5	22.0	3.0	0.0	Vert	PK	0.0	51.0	74.0	-23.0	High 405.55 MHz, EUT X-Axis
1622.195	49.8	0.1	1.4	360.0	3.0	0.0	Horz	PK	0.0	49.9	74.0	-24.1	High 405.55 MHz, EUT Y-Axis
2027.595	44.4	2.5	2.0	337.0	3.0	0.0	Vert	PK	0.0	46.9	74.0	-27.1	High 405.55 MHz, EUT Z-Axis
2838.660	42.4	4.2	1.5	3.0	3.0	0.0	Horz	PK	0.0	46.6	74.0	-27.4	High 405.55 MHz, EUT Y-Axis
2027.500	42.7	2.5	1.5	352.0	3.0	0.0	Horz	PK	0.0	45.2	74.0	-28.8	High 405.55 MHz, EUT Y-Axis
2838.915	40.9	4.2	1.2	16.0	3.0	0.0	Vert	PK	0.0	45.1	74.0	-28.9	High 405.55 MHz, EUT Z-Axis

SPURIOUS CONDUCTED EMISSIONS



XMR 2017.12.13

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5182A	TIF	23-Aug-17	23-Aug-20
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Attenuator	Fairview Microwave	SA18H-20	TKR	28-Dec-17	28-Dec-18
Block - DC	Aeroflex	INMET 8535	AMO	27-Mar-17	27-Mar-18
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	9-Nov-17	9-Nov-18

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Per FCC Part 2.1051, RSS-GEN, the spurious emissions shall be measured at the RF terminal. The peak spurious emissions were measured with the EUT configured to the modes listed in the datasheet. The EUT was transmitting at its maximum data rate. FCC Part 95 and RSS-243 have no conducted spurious emissions limit. It is a requirement to characterize this information and that data is contained within this datasheet.

SPURIOUS CONDUCTED EMISSIONS



XMM 2017.12.13

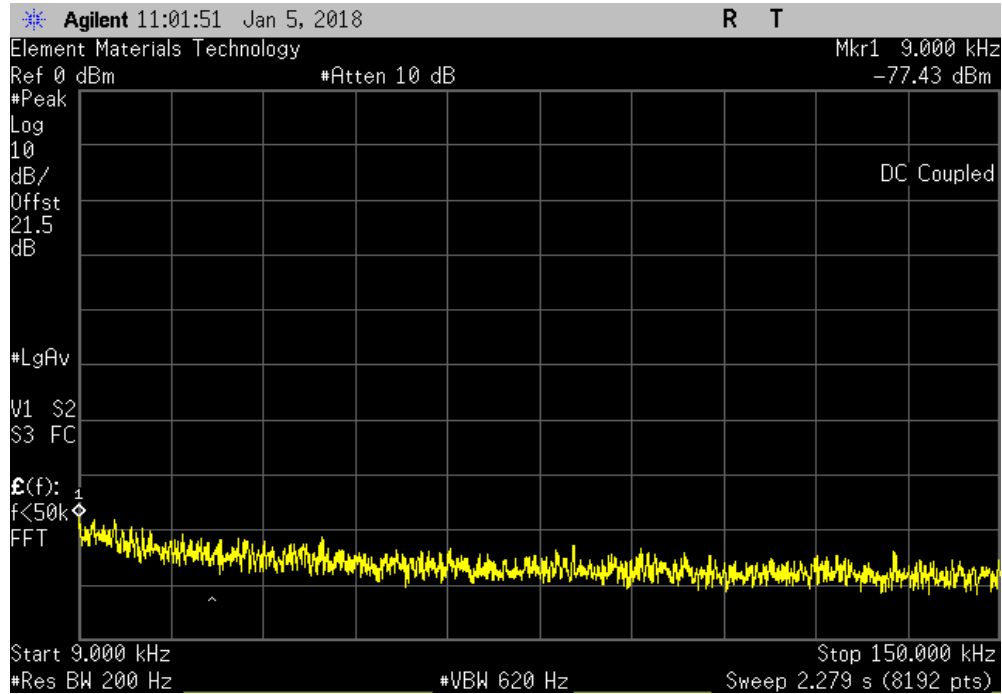
EUT: External Pulse Generator (EPG) Model 1601		Work Order: AXON0105		
Serial Number: AT1B000003		Date: 5-Jan-18		
Customer: Axonics Modulation Technologies, Inc.		Temperature: 22.1 °C		
Attendees: Franklin Portillo		Humidity: 53.5% RH		
Project: None		Barometric Pres.: 1022 mbar		
Tested by: Johnny Candelas		Power: 3.0VDC		
Job Site: OC13				
TEST SPECIFICATIONS		Test Method		
FCC 951:2018		ANSI C63.26:2015		
COMMENTS				
DC Block + 20dB Attenuator + Coax Cable = 21.5dB Total Offset				
Power Index = 40				
DEVIATIONS FROM TEST STANDARD				
None				
Configuration #	6	Signature		
	Frequency Range	Max Value (dBc)	Limit A (dBc) Result	
MEDS Low Band, Mid Channel, 401.55 MHz	9 kHz - 150 kHz	-77.43	N/A	N/A
MEDS Low Band, Mid Channel, 401.55 MHz	150 kHz - 30 MHz	-65.33	N/A	N/A
MEDS Low Band, Mid Channel, 401.55 MHz	30 MHz - 1 GHz	-53.99	N/A	N/A
MEDS Low Band, Mid Channel, 401.55 MHz	1 GHz - 5 GHz	-41.96	N/A	N/A
MEDS High Band, Mid Channel, 405.55 MHz	9 kHz - 150 kHz	-78.37	N/A	N/A
MEDS High Band, Mid Channel, 405.55 MHz	150 kHz - 30 MHz	-65.76	N/A	N/A
MEDS High Band, Mid Channel, 405.55 MHz	30 MHz - 1 GHz	-53.74	N/A	N/A
MEDS High Band, Mid Channel, 405.55 MHz	1 GHz - 5 GHz	-41.04	N/A	N/A

SPURIOUS CONDUCTED EMISSIONS

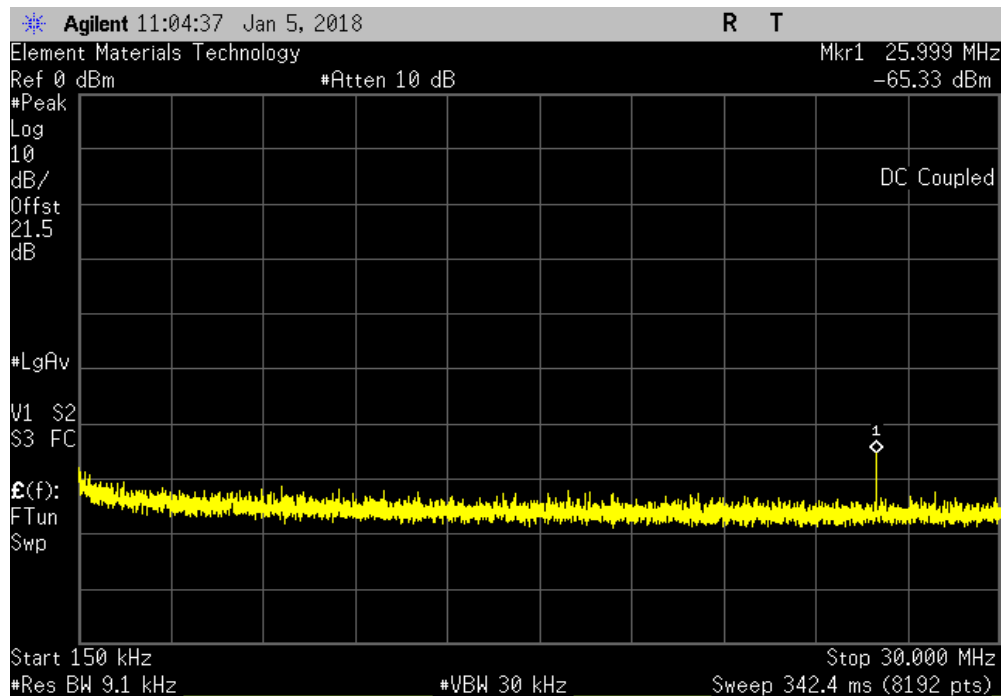


XMM 2017.12.13

MEDS Low Band, Mid Channel, 401.55 MHz				
Frequency Range	Max Value (dBc)	Limit A (dBc)	Result	
9 kHz - 150 kHz	-77.43	N/A	N/A	



MEDS Low Band, Mid Channel, 401.55 MHz				
Frequency Range	Max Value (dBc)	Limit A (dBc)	Result	
150 kHz - 30 MHz	-65.33	N/A	N/A	

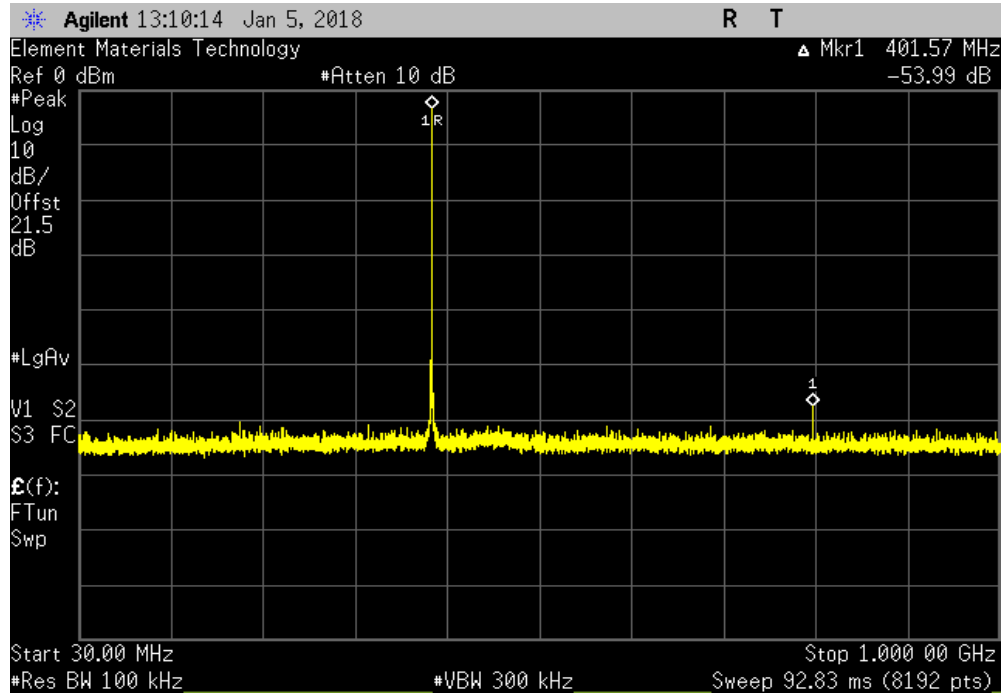


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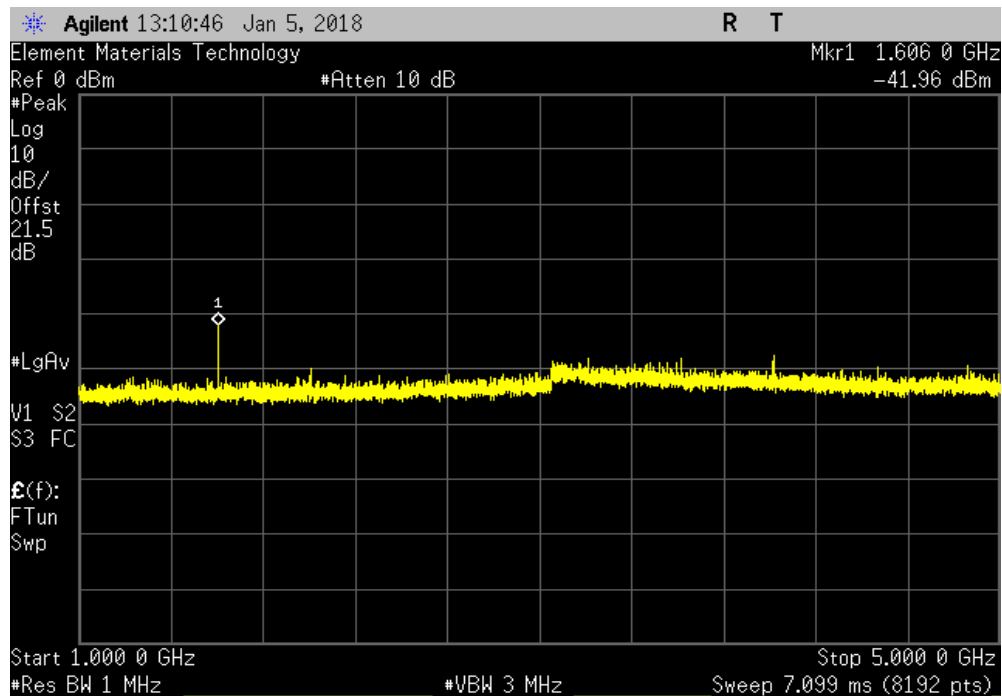


XMM 2017.12.13

MEDS Low Band, Mid Channel, 401.55 MHz				
Frequency Range	Max Value (dBc)	Limit A (dBc)	Result	
30 MHz - 1 GHz	-53.99	N/A	N/A	



MEDS Low Band, Mid Channel, 401.55 MHz				
Frequency Range	Max Value (dBc)	Limit A (dBc)	Result	
1 GHz - 5 GHz	-41.96	N/A	N/A	

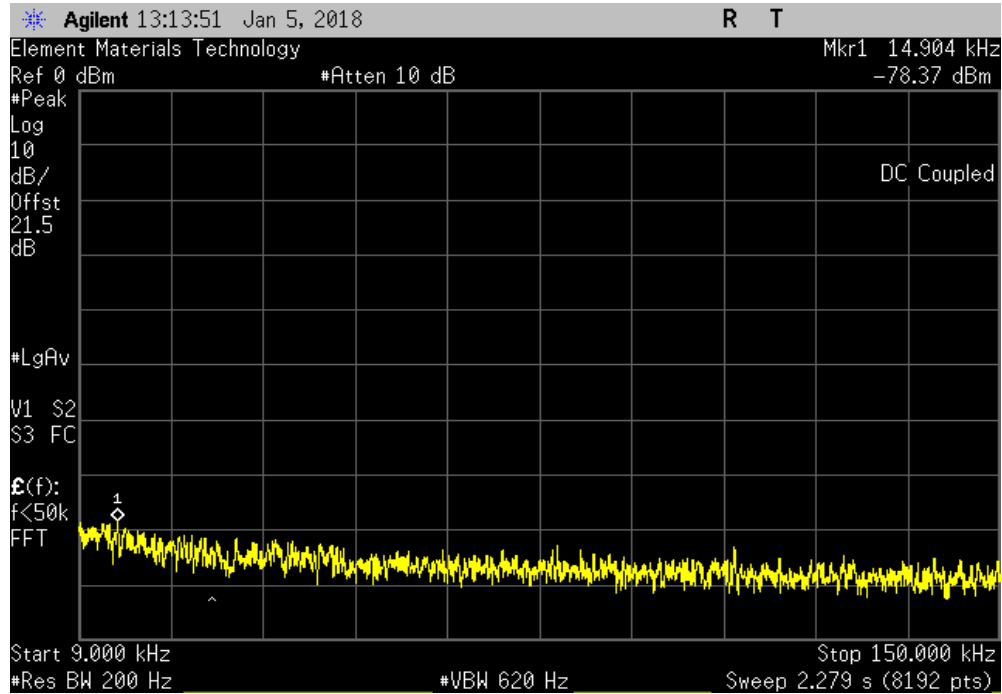


SPURIOUS CONDUCTED EMISSIONS

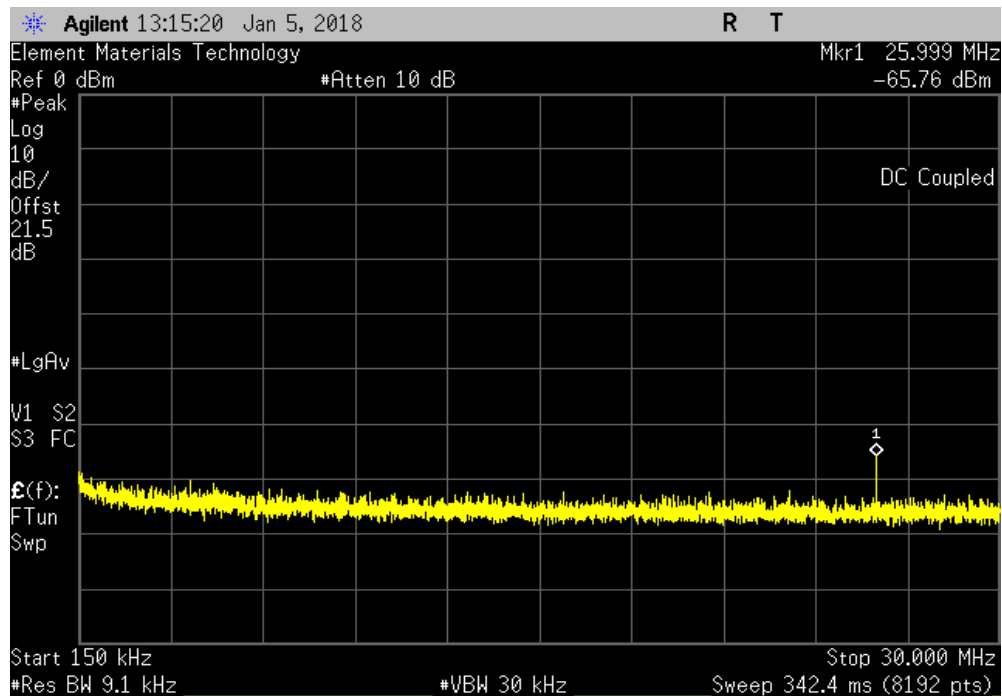


XMM 2017.12.13

MEDS High Band, Mid Channel, 405.55 MHz				
Frequency Range	Max Value (dBc)	Limit A (dBc)	Result	
9 kHz - 150 kHz	-78.37	N/A	N/A	



MEDS High Band, Mid Channel, 405.55 MHz				
Frequency Range	Max Value (dBc)	Limit A (dBc)	Result	
150 kHz - 30 MHz	-65.76	N/A	N/A	

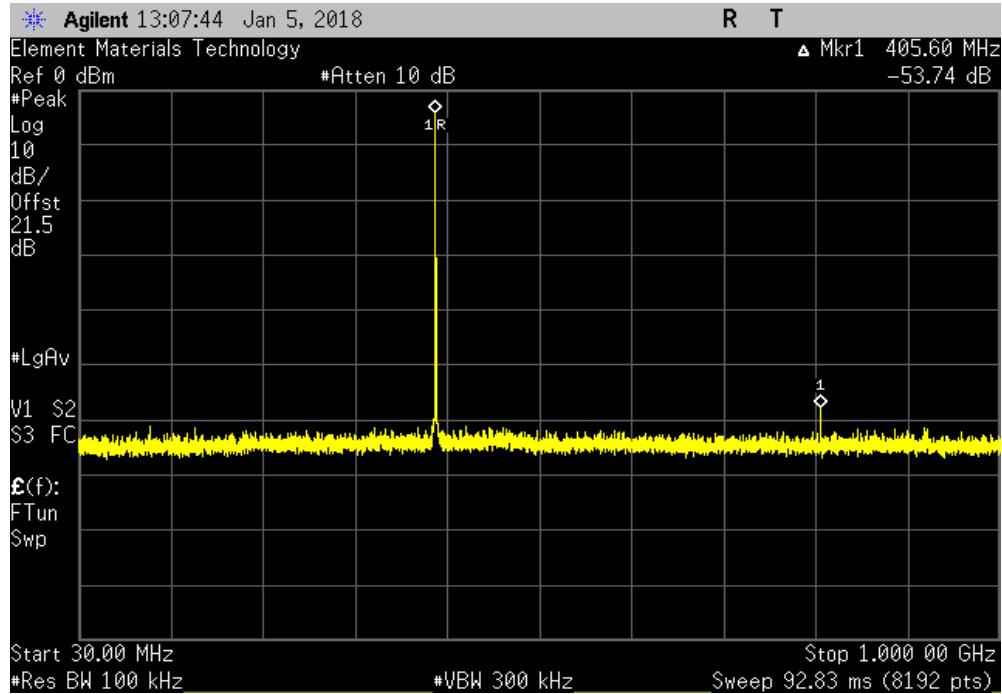


SPURIOUS CONDUCTED EMISSIONS

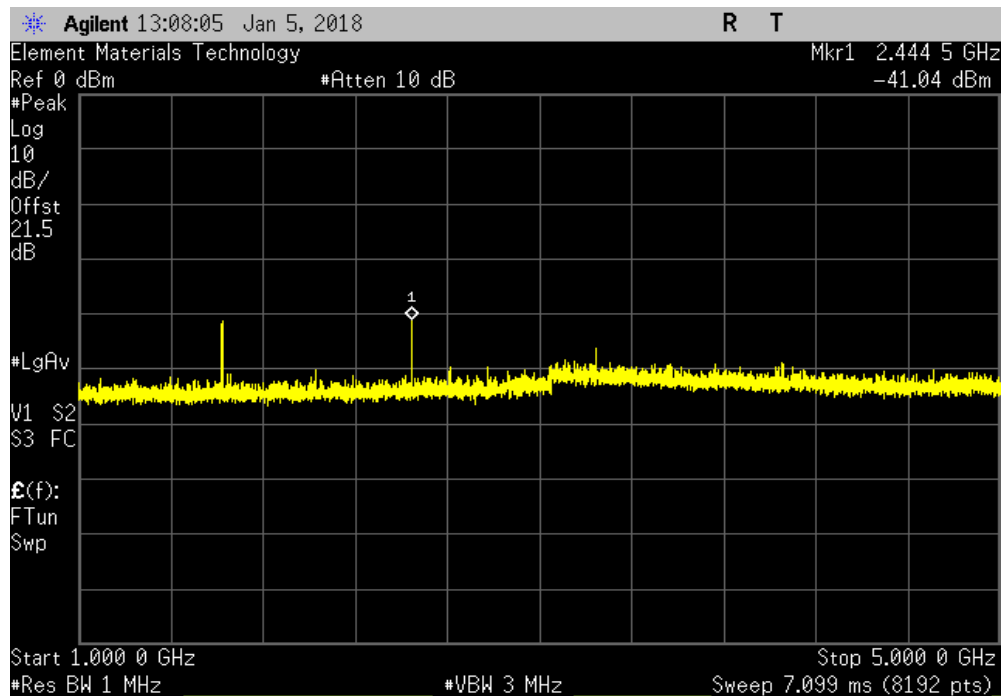


XMM 2017.12.13

MEDS High Band, Mid Channel, 405.55 MHz				
Frequency Range	Max Value (dBc)	Limit A (dBc)	Result	
30 MHz - 1 GHz	-53.74	N/A	N/A	



MEDS High Band, Mid Channel, 405.55 MHz				
Frequency Range	Max Value (dBc)	Limit A (dBc)	Result	
1 GHz - 5 GHz	-41.04	N/A	N/A	



RADIATED POWER (EIRP)



PSA-ESCI 2017.09.18

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

Continuously Transmitting at Mid Ch - MEDS Low Band = 401.55 MHz & Mid Ch - MEDS High Band = 405.55 MHz

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

AXON0105 - 4

AXON0105 - 5

FREQUENCY RANGE INVESTIGATED

Start Frequency	401 MHz	Stop Frequency	406 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	E4412A	SQE	26-Jan-2017	12 mo
Meter - Power	Hewlett Packard	E4418A	SPA	26-Jan-2017	12 mo
Cable	Fairview Microwave	SCA1814-0505-72	OC2	15-May-2017	12 mo
Generator - Signal	Agilent	E8257D	TGU	5-Feb-2015	36 mo
Antenna - Dipole	A.H. Systems, Inc.	FCC-4	ADCA	NCR	0 mo
Cable	Northwest EMC	10kHz-1GHz RE Cables	OCH	1-Aug-2017	12 mo
Antenna - Biconilog	Teseq	CBL 6141A	AYE	7-Nov-2017	24 mo
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAY	21-Nov-2017	12 mo

TEST DESCRIPTION

Per 95.2567(b)(1), the maximum radiated field strength for a MEDS transmitter is 25uW EIRP. The Field Strength of the Fundamental data was converted to EIRP with the formula based upon the Friis transmission equation with 6 dB removed due to reflections from the ground plane: $EIRP = ((E/2)*d)^2/30$ where E is V/m and d = distance = 3m, and $EIRP = W$ (Reference 95.2569(a)).

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

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

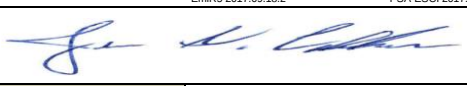
The EUT was configured to transmit in a fixture that simulates the human torso. The dimensions of the test fixture and the characteristics of the tissue substitute material met the requirements 95.2569(c) and FCC KDB 617965. The height of the transmitter was 1.5-meter above the reference ground plane.

RADIATED POWER (EIRP)

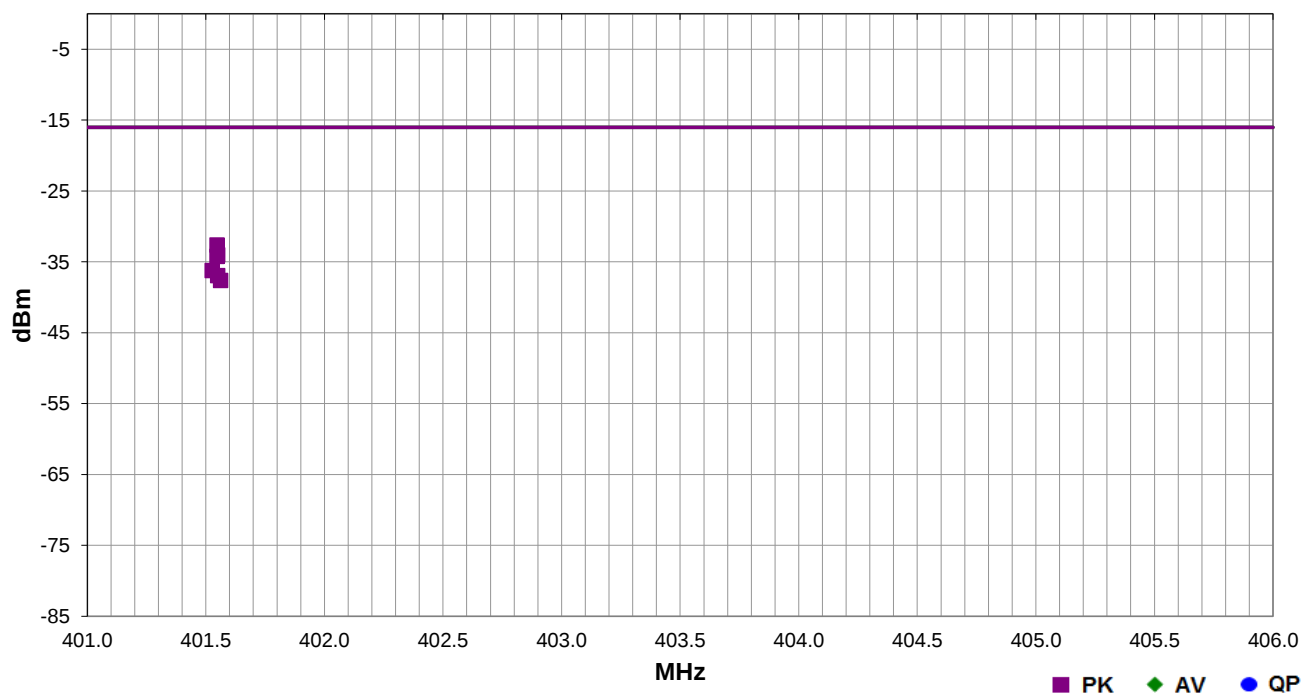


EmiRS 2017.09.18.2

PSA-ESCI 2017.09.18

Work Order:	AXON0105	Date:	3-Jan-2018	
Project:	None	Temperature:	19.5 °C	
Job Site:	OC10	Humidity:	52.3% RH	
Serial Number:	AE1GC70009	Barometric Pres.:	1020 mbar	Tested by: Johnny Candelas
EUT:	External Pulse Generator (EPG) Model 1601			
Configuration:	4			
Customer:	Axonics Modulation Technologies, Inc.			
Attendees:	Franklin Portillo			
EUT Power:	Battery			
Operating Mode:	Continuously Transmitting at Mid Ch - MEDS Low Band = 401.55 MHz & Mid Ch - MEDS High Band = 405.55 MHz			
Deviations:	None			
Comments:	Tined lead. EUT Vertical. Power Index = 40 X-Axis = EUT White Face Out, Y-Axis = EUT Grey Face Out, & Z-Axis = Grey Face Out turned 90° so top is facing out			

Test Specifications				Test Method	
FCC 951:2018				ANSI C63.26:2015	
Run #	7	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)
				Results	Pass



Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
401.547	2.3	139.0	Horz	PK	5.46E-07	-32.6	-16.0	-16.6	Low 401.55 MHz, EUT Y-Axis
401.550	1.7	80.0	Vert	PK	3.95E-07	-34.0	-16.0	-18.0	Low 401.55 MHz, EUT Z-Axis
401.547	1.6	327.0	Vert	PK	3.78E-07	-34.2	-16.0	-18.2	Low 401.55 MHz, EUT Y-Axis
401.526	2.6	81.0	Horz	PK	2.38E-07	-36.2	-16.0	-20.2	Low 401.55 MHz, EUT X-Axis
401.550	2.6	347.0	Horz	PK	2.03E-07	-36.9	-16.0	-20.9	Low 401.55 MHz, EUT Z-Axis
401.562	1.5	318.0	Vert	PK	1.73E-07	-37.6	-16.0	-21.6	Low 401.55 MHz, EUT X-Axis

RADIATED POWER (EIRP)



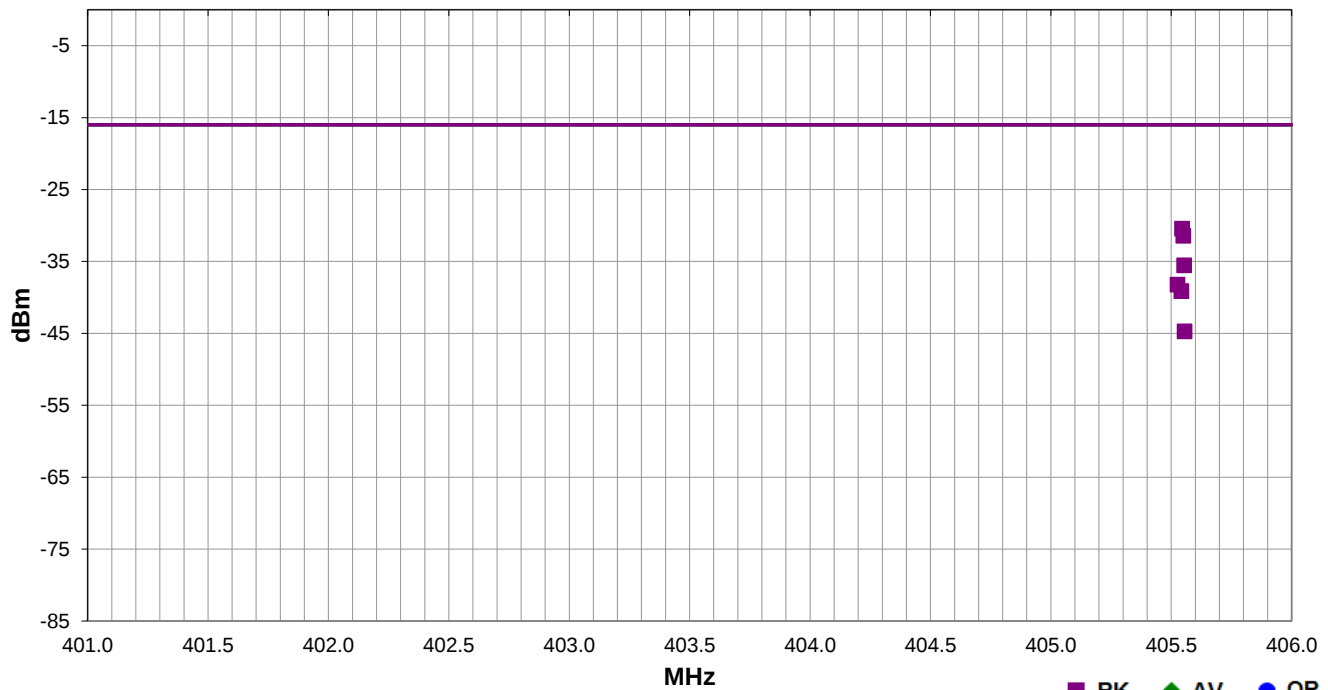
EmiR5 2017.09.18.2

PSA-ESCI 2017.09.18

Work Order:	AXON0105	Date:	3-Jan-2018	
Project:	None	Temperature:	19.5 °C	
Job Site:	OC10	Humidity:	52.3% RH	
Serial Number:	AE1GC70009	Barometric Pres.:	1020 mbar	
EUT:	External Pulse Generator (EPG) Model 1601			Tested by: Johnny Candelas
Configuration:	5			
Customer:	Axonics Modulation Technologies, Inc.			
Attendees:	Franklin Portillo			
EUT Power:	Battery			
Operating Mode:	Continuously Transmitting at Mid Ch - MEDS Low Band = 401.55 MHz & Mid Ch - MEDS High Band = 405.55 MHz			
Deviations:	None			
Comments:	PNE lead. EUT Vertical. Power Index = 40 X-Axis = EUT White Face Out, Y-Axis = EUT Grey Face Out, & Z-Axis = Grey Face Out turned 90° so top is facing out			

Test Specifications	Test Method
FCC 95I:2018	ANSI C63.26:2015

Run #	8	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
	405.545	1.6	21.0	Vert	PK	9.06E-07	-30.4	-16.0	-14.4	High 405.55 MHz, EUT X-Axis
	405.550	1.7	59.0	Vert	PK	7.20E-07	-31.4	-16.0	-15.4	High 405.55 MHz, EUT Z-Axis
	405.553	1.7	76.0	Vert	PK	2.80E-07	-35.5	-16.0	-19.5	High 405.55 MHz, EUT Y-Axis
	405.526	1.8	334.0	Horz	PK	1.50E-07	-38.2	-16.0	-22.2	High 405.55 MHz, EUT Z-Axis
	405.542	2.5	47.0	Horz	PK	1.22E-07	-39.1	-16.0	-23.1	High 405.55 MHz, EUT X-Axis
	405.555	1.5	237.0	Horz	PK	3.37E-08	-44.7	-16.0	-28.7	High 405.55 MHz, EUT Y-Axis