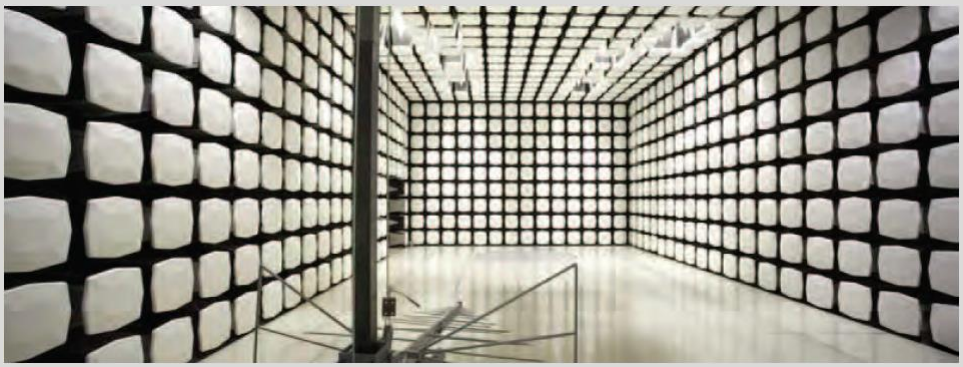
Axonics Modulation Technologies, Inc.

Patient Remote (PR) - 2301

FCC 95I:2017

MedRadio

Report # AXON0099.5



NVLAP Lab Code: 200629-0
NVLAP Lab Code: 200676-0

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More: https://www.bis.doc.gov/index.php/forms-documents/regulations-docs/14-commerce-country-chart/fileT

CERTIFICATE OF TEST

2017-1-25

Last Date of Test: November 21, 2017
Axonics Modulation Technologies, Inc.
Model: Patient Remote (PR) - 2301

Radio Equipment Testing

Standards

Specification	Method
FCC 95I:2017	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 5.2.3.3, 5.2.7	Radiated Power (EIRP)	Yes	Pass	
ANSI C63.26 5.5.4	Spurious Radiated Emissions	Yes	Pass	
ANSI C63.26 5.6	Frequency Stability	Yes	Pass	
ANSI C63.26 5.7	Spurious Conducted Emissions	Yes	Pass	

Deviations From Test Standards

None

Approved By:

Rod Munro, 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

2017.6.12

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

MEASUREMENT UNCERTAINTY

TMU.2015.07.10

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.

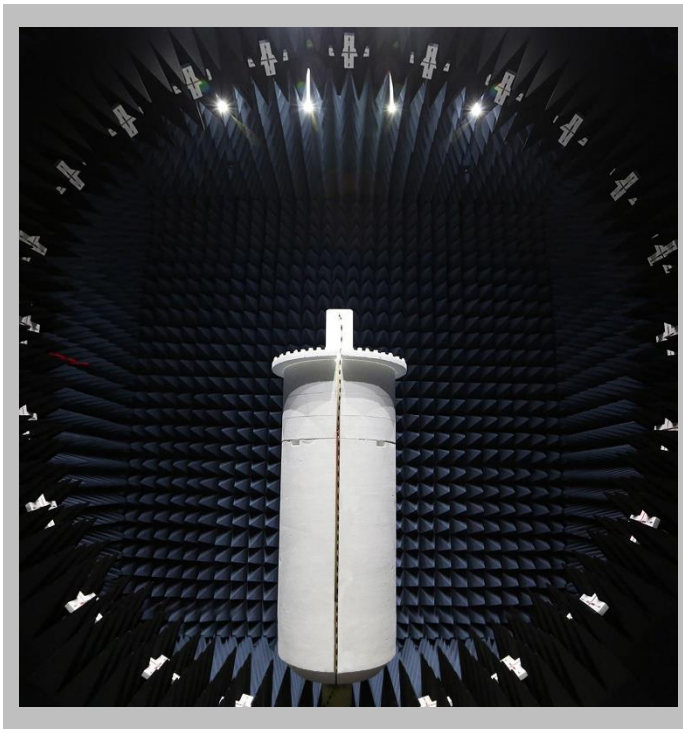
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

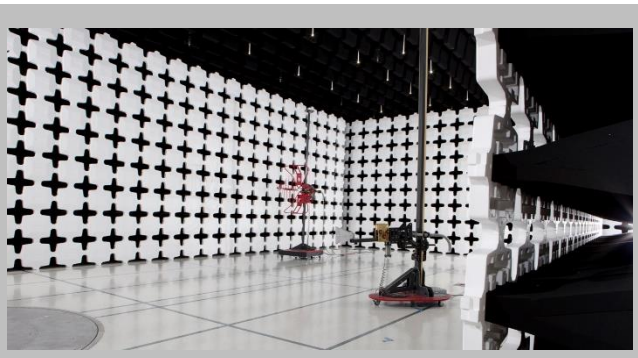
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%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

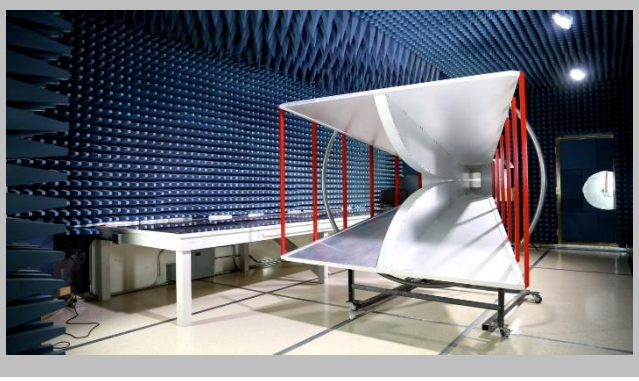
FACILITIES

2017.9.15

California	Minnesota	New York	Oregon	Texas	Washington
Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Labs NC01-05 19201 120th 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/RRA, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157

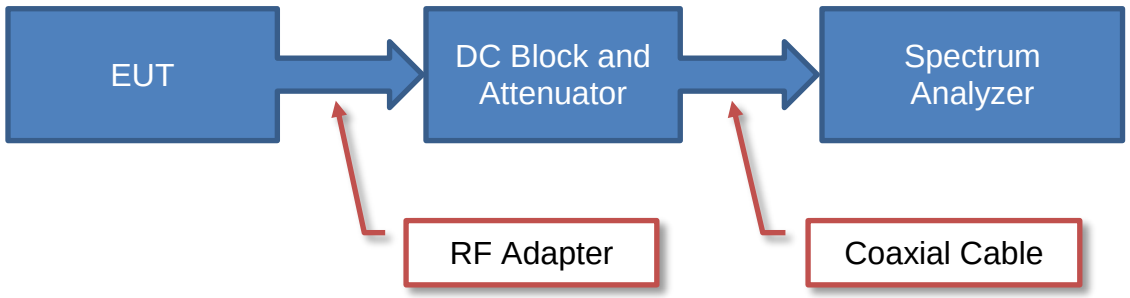




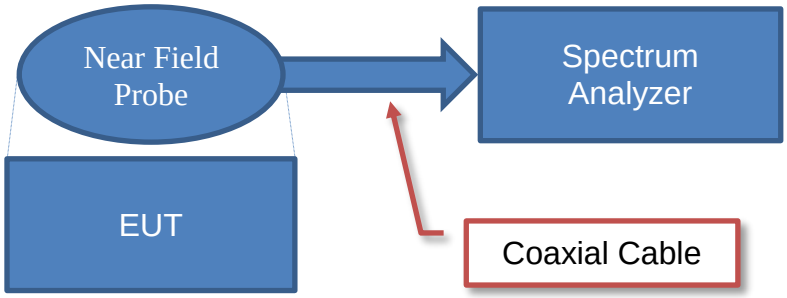


Test Setup Block Diagrams

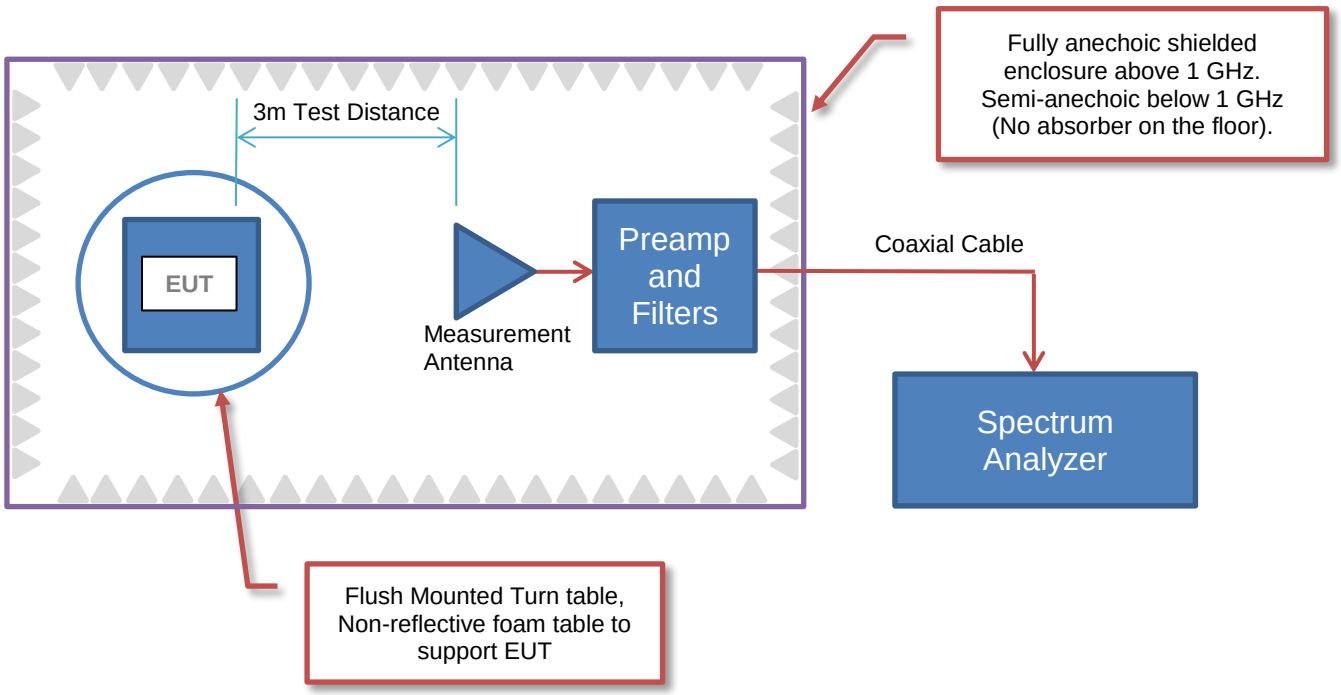
Antenna Port Conducted Measurements



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:	Patient Remote (PR) - 2301
First Date of Test:	November 7, 2017
Last Date of Test:	November 21, 2017
Receipt Date of Samples:	November 2, 2017
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
Patient Remote Control (PR): a battery-operated device the size of a key fob that uses radio-frequency (RF) signals to communicate with IPG/EPG. The PR allows the patient to adjust stimulation level, to check the status of the IPG/EPG battery charge level, to check the stimulation level in the IPG/EPG, and to turn the stimulation on or off.

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

CONFIGURATIONS

Configuration AXON0099- 3

Software/Firmware Running during test	
Description	**Version**
IPG Link	1.0.1.104

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Patient Remote	Axonics Modulation Technologies, Inc.	2301	AP1BA70018

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
DC Power Supply (1)	Kikusui	PWC0620	1930492

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
USB Dongle	Bluegiga	BLED112	None
Laptop	Dell	Precision M3800	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	No	0.7m	No	DC Power Supply (1)	Patient Remote
AC Power	No	1.8m	No	AC Mains	DC Power Supply (1)

Configuration AXON0099- 6

Software/Firmware Running during test	
Description	**Version**
IPG Link	1.0.1.104

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Patient Remote (PR)	Axonics Modulation Technologies, Inc.	2301	AP1BA70024

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	11/7/2017	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.
2	11/7/2017	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.
3	11/7/2017	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.
4	11/7/2017	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	11/7/2017	Frequency Stability	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	11/21/2017	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.
7	11/21/2017	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

EMISSION BANDWIDTH

XMit 2017.09.21

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	Fairview Microwave	SA4014-20	TKV	9-Mar-17	9-Mar-18
Block - DC	Fairview Microwave	SD3379	AMU	20-Apr-17	20-Apr-18
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	20-Apr-17	20-Apr-18
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	2-Jun-17	2-Jun-18
Generator - Signal	Keysight	N5182B	TFY	16-Apr-15	16-Apr-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.

EMISSION BANDWIDTH

NweTx 2016.09.14.2 XMit 2017.09.21

EUT:	**Patient Remote (PR) - 2301**			**Work Order:**	**AXON0099**
Serial Number:	**AP1BA70018**			**Date:**	**7-Nov-17**
Customer:	**Axonics Modulation Technologies, Inc.**			**Temperature:**	**22 °C**
Attendees:	**Flavio Ono**			**Humidity:**	**28% RH**
Project:	**None**			**Barometric Pres.:**	**1028 mbar**
Tested by:	**Richard Mellroth**	**Power:**	**2.8 VDC**	**Job Site:**	**NC04**

TEST SPECIFICATIONS	**Test Method**
FCC 95I:2017	ANSI C63.26:2015

COMMENTS

Transmitting at default power setting. EUT programmed via Bluetooth connection to remote laptop.

DEVIATIONS FROM TEST STANDARD

None

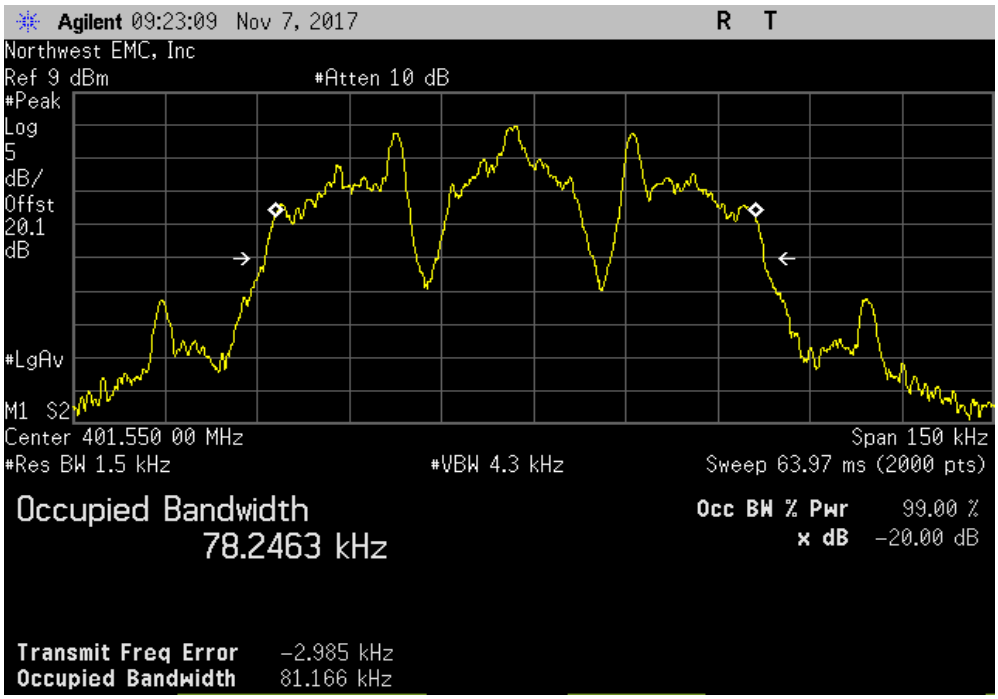
Configuration #	**3**	*Signature*

	Value	**Limit (≤)**	**Result**
MEDS Low Band, Mid Channel, 401.55 MHz	81.166 kHz	100 kHz	Pass
MEDS High Band, Mid Channel, 405.55 MHz	81.792 kHz	100 kHz	Pass
MICS Mid Band, Mid Channel, 403.5 MHz	160.802 kHz	300 kHz	Pass

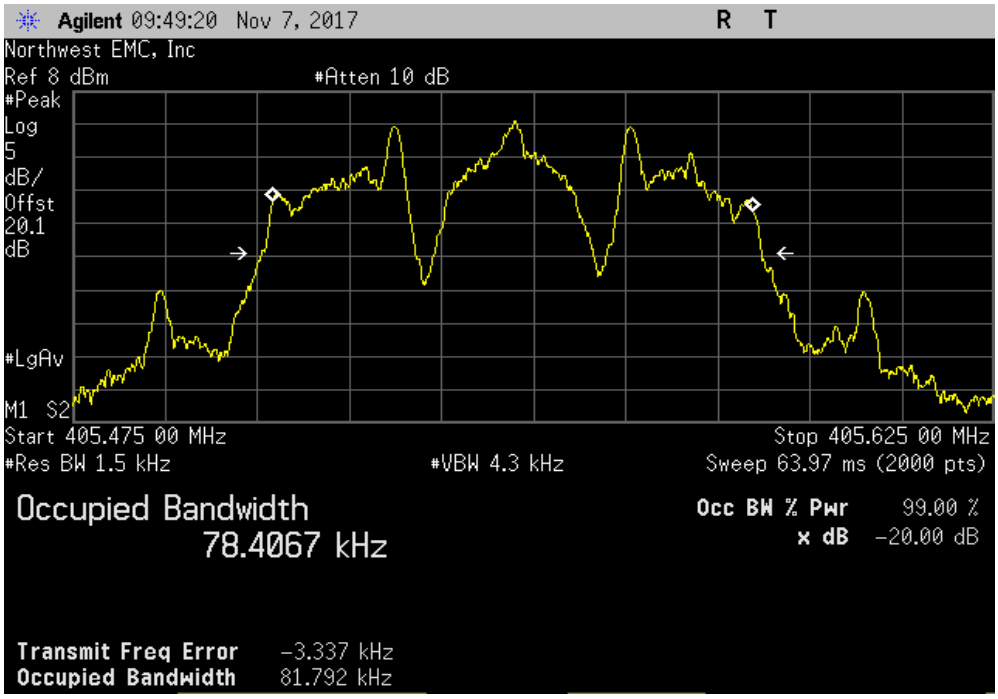
EMISSION BANDWIDTH

NweTx 2016.09.14.2 XMit 2017.09.21

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



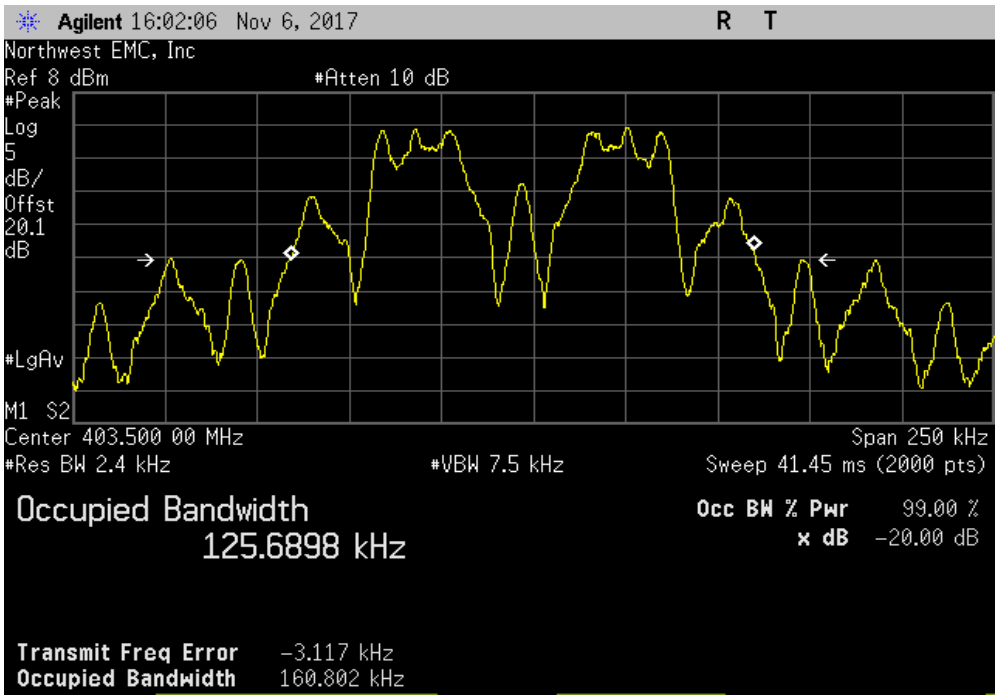
MEDS High Band, Mid Channel, 405.55 MHz						
				Value	Limit (≤)	Result
				81.792 kHz	100 kHz	Pass



EMISSION BANDWIDTH (MICS)

NweTx 2016.09.14.2 XMit 2017.09.21

MEDS High Band, Mid Channel, 405.55 MHz						
				Value	Limit (≤)	Result
				160.802 kHz	300 kHz	Pass



EMISSION MASK

XMit 2017.09.21

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	Fairview Microwave	SA4014-20	TKV	9-Mar-17	9-Mar-18
Block - DC	Fairview Microwave	SD3379	AMU	20-Apr-17	20-Apr-18
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	20-Apr-17	20-Apr-18
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	2-Jun-17	2-Jun-18
Generator - Signal	Keysight	N5182B	TFY	16-Apr-15	16-Apr-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.

EMISSION MASK

NweTx 2016.09.14.2 XMit 2017.09.21

EUT:	**Patient Remote (PR) - 2301**			**Work Order:**	**AXON0099**
Serial Number:	**AP1BA70018**			**Date:**	**7-Nov-17**
Customer:	**Axonics Modulation Technologies, Inc.**			**Temperature:**	**22 °C**
Attendees:	**Flavio Ono**			**Humidity:**	**28% RH**
Project:	**None**			**Barometric Pres.:**	**1028 mbar**
Tested by:	**Richard Mellroth**	**Power:**	**2.8 VDC**	**Job Site:**	**NC04**

TEST SPECIFICATIONS	**Test Method**
FCC 95I:2017	ANSI C63.26:2015

COMMENTS

Transmitting at default power setting. EUT programmed via Bluetooth connection to remote laptop.

DEVIATIONS FROM TEST STANDARD

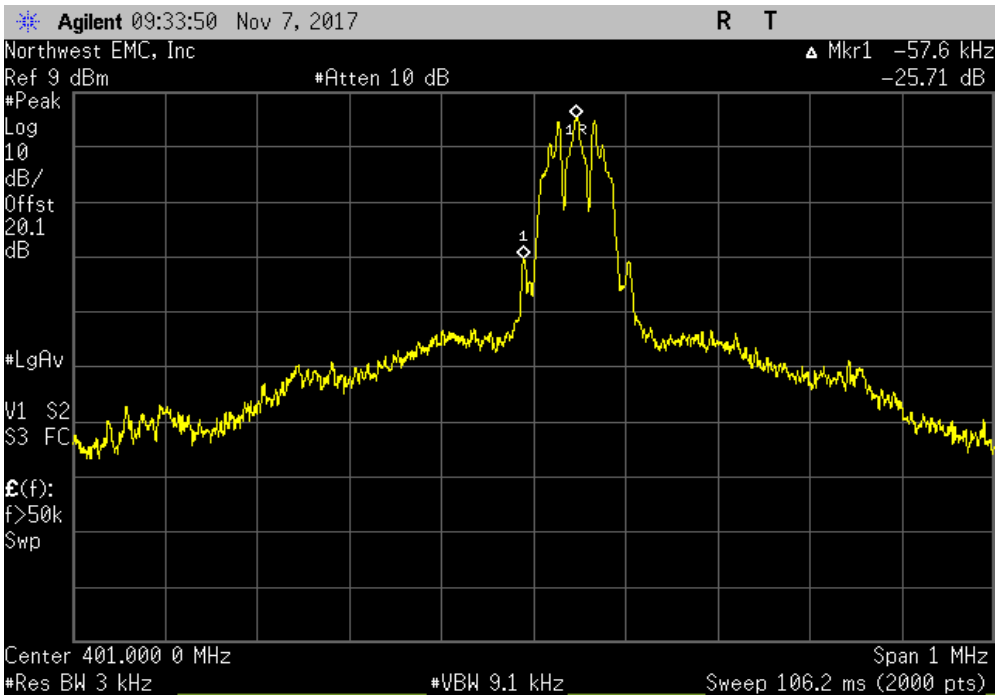
None

Configuration #	**3**	*Signature*

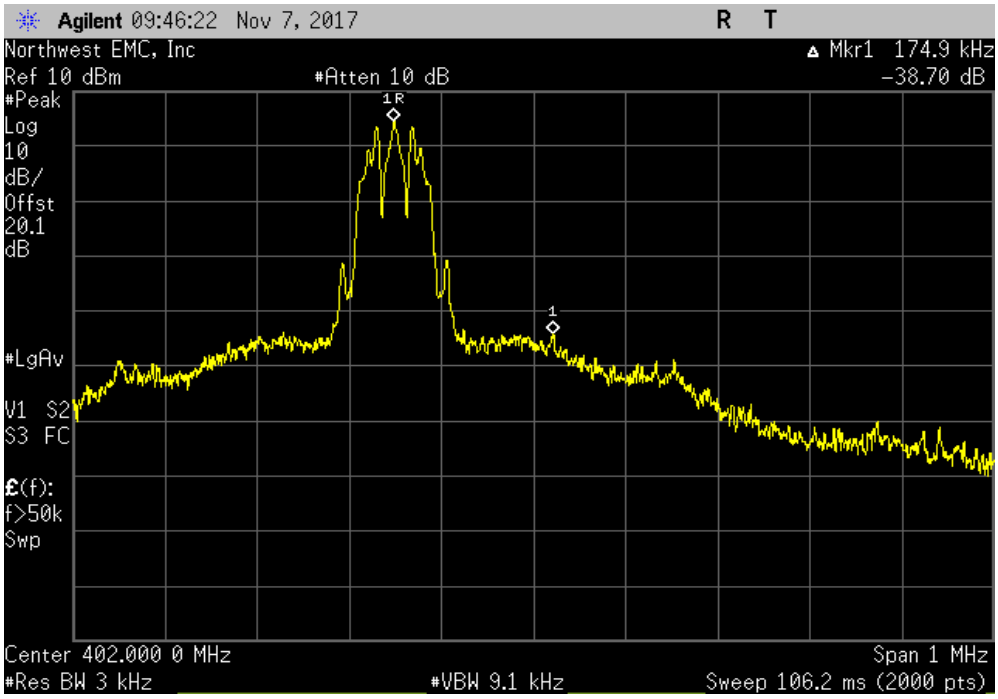
	Value (dBc)	**Limit ≤ (dBc)**	**Result**
MEDS Low Band, Low Channel, 401.05 MHz	-25.7	-20	Pass
MEDS Low Band, High Channel, 401.85 MHz	-38.7	-20	Pass
MEDS High Band, Low Channel, 405.05 MHz	-26.9	-20	Pass
MEDS High Band, High Channel, 405.85 MHz	-40.1	-20	Pass
MICS Mid Band, Low Channel, 402.3 MHz	-41.5	-20	Pass
MICS Mid Band, High Channel, 404.7 MHz	-41.0	-20	Pass

EMISSION MASK

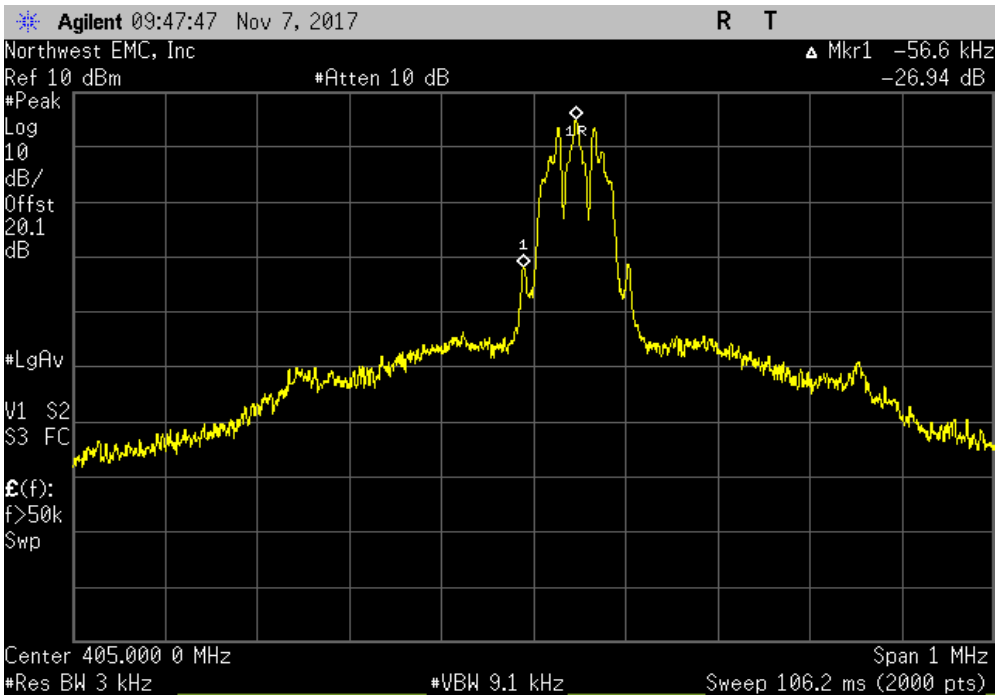
MEDS Low Band, Low Channel, 401.05 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-25.71	-20	Pass



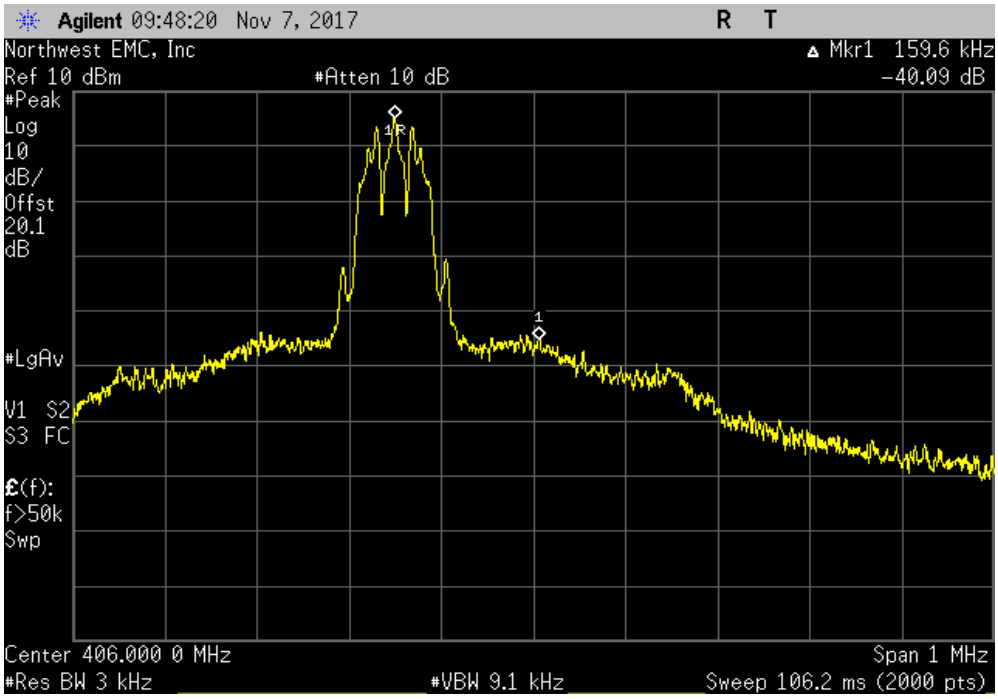
MEDS Low Band, High Channel, 401.85 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-38.7	-20	Pass



MEDS High Band, Low Channel, 405.05 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-26.94	-20	Pass



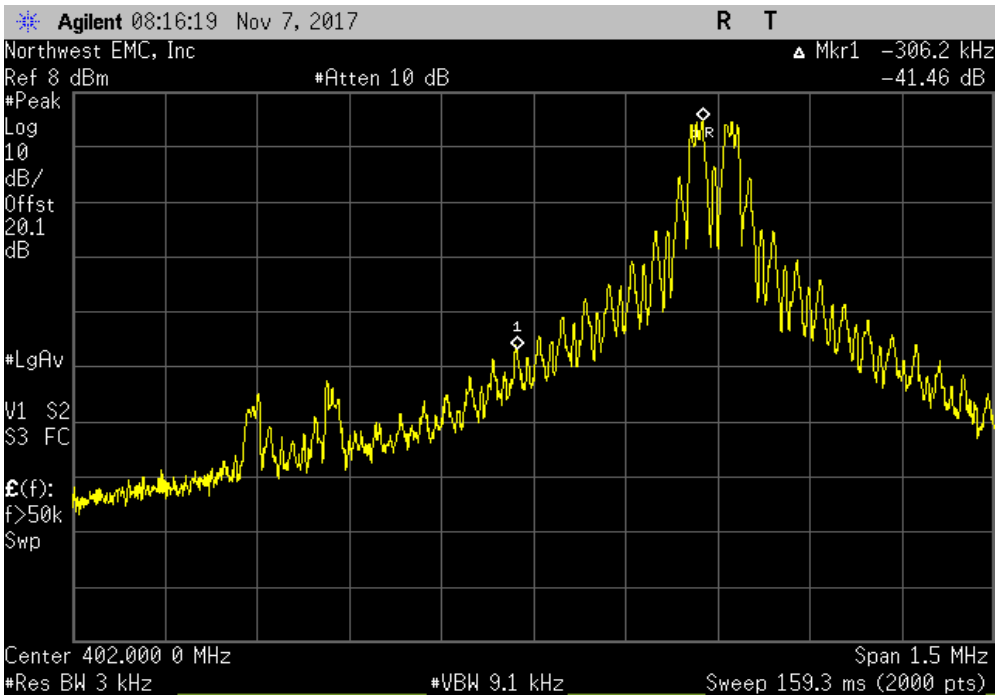
MEDS High Band, High Channel, 405.85 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-40.09	-20	Pass



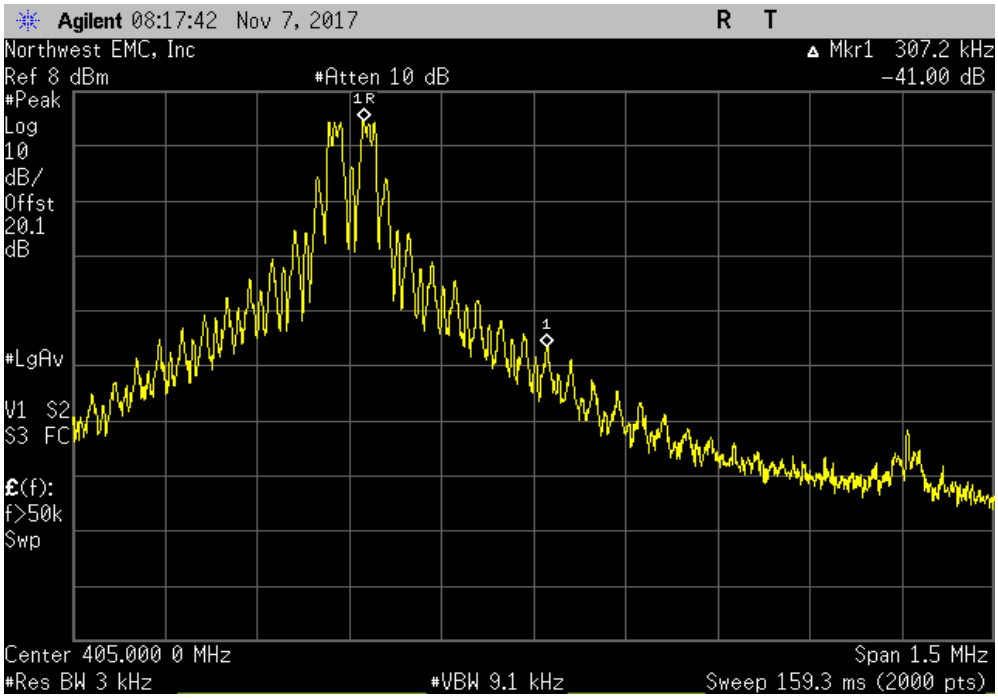
EMISSION MASK (MICS)

NweTx 2016.09.14.2 XMit 2017.09.21

MEDS Low Band, High Channel, 401.85 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-41.46	-20	Pass



MEDS High Band, Low Channel, 405.05 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-41	-20	Pass



CONDUCTED OUTPUT POWER (MEDS)

XMit 2017.09.21

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.

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Block - DC	Fairview Microwave	SD3379	AMU	20-Apr-17	20-Apr-18
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	20-Apr-17	20-Apr-18
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	2-Jun-17	2-Jun-18
Generator - Signal	Keysight	N5182B	TFY	16-Apr-15	16-Apr-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 (MEDS)

NweTx 2016.09.14.2 XMit 2017.09.21

EUT:	**Patient Remote (PR) - 2301**			**Work Order:**	**AXON0099**
Serial Number:	**AP1BA70018**			**Date:**	**7-Nov-17**
Customer:	**Axonics Modulation Technologies, Inc.**			**Temperature:**	**22 °C**
Attendees:	**Flavio Ono**			**Humidity:**	**28% RH**
Project:	**None**			**Barometric Pres.:**	**1028 mbar**
Tested by:	**Richard Mellroth**	**Power:**	**2.8 VDC**	**Job Site:**	**NC04**

TEST SPECIFICATIONS	**Test Method**
FCC 95I:2017	ANSI C63.26:2015

COMMENTS

Transmitting at default power setting (Power Index = 27). EUT programmed via Bluetooth connection to remote laptop.

DEVIATIONS FROM TEST STANDARD

None

Configuration #	**3**	*Signature*

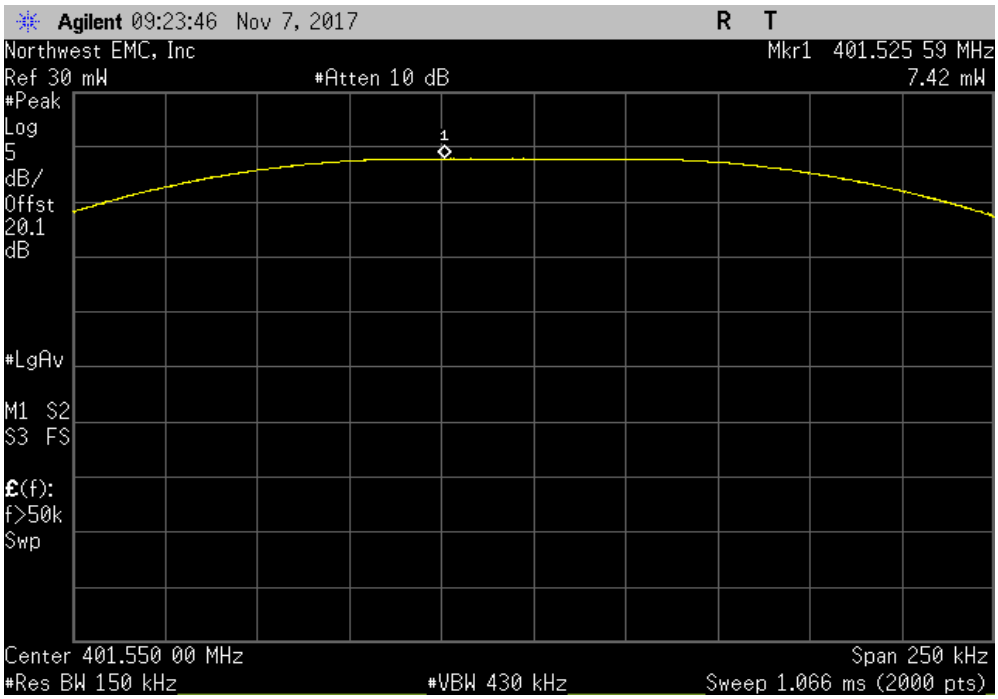
	Value	**Limit**	**Result**
MEDS Low Band, Mid Channel, 401.55 MHz	7.42 mW	N/A	N/A
MEDS High Band, Mid Channel, 405.55 MHz	7.29 mW	N/A	N/A
MICS Mid Band, Mid Channel, 403.5 MHz	7.40 mW	N/A	N/A

CONDUCTED OUTPUT POWER (MEDS)

NweTx 2016.09.14.2 XMit 2017.09.21

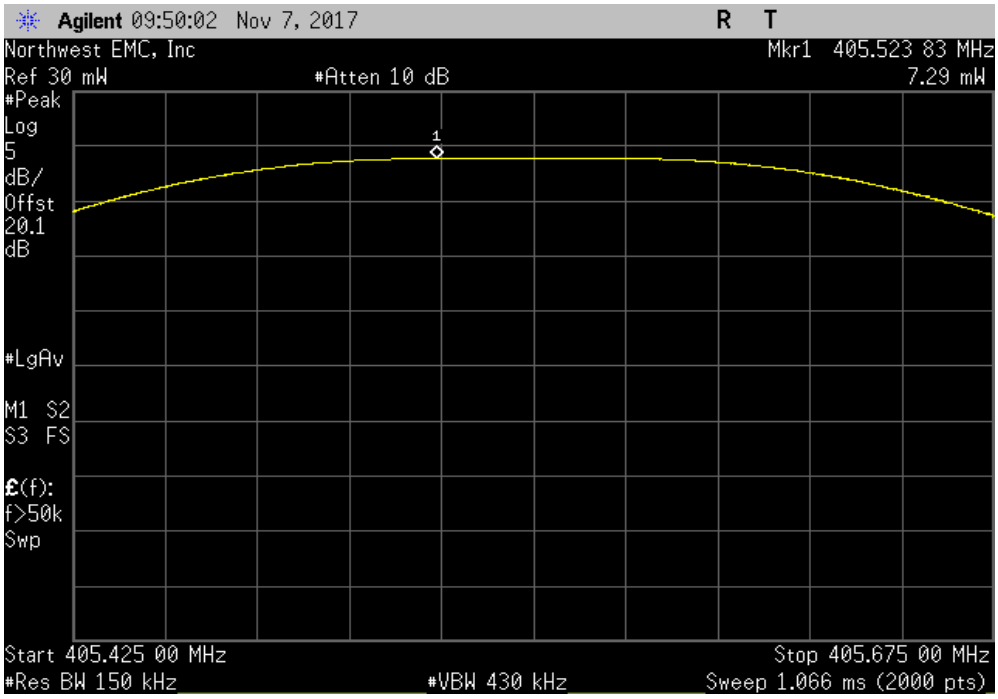
MEDS Low Band, Mid Channel, 401.55 MHz

				Value	Limit	Result
				7.42 mW	N/A	N/A



MEDS High Band, Mid Channel, 405.55 MHz

				Value	Limit	Result
				7.29 mW	N/A	N/A

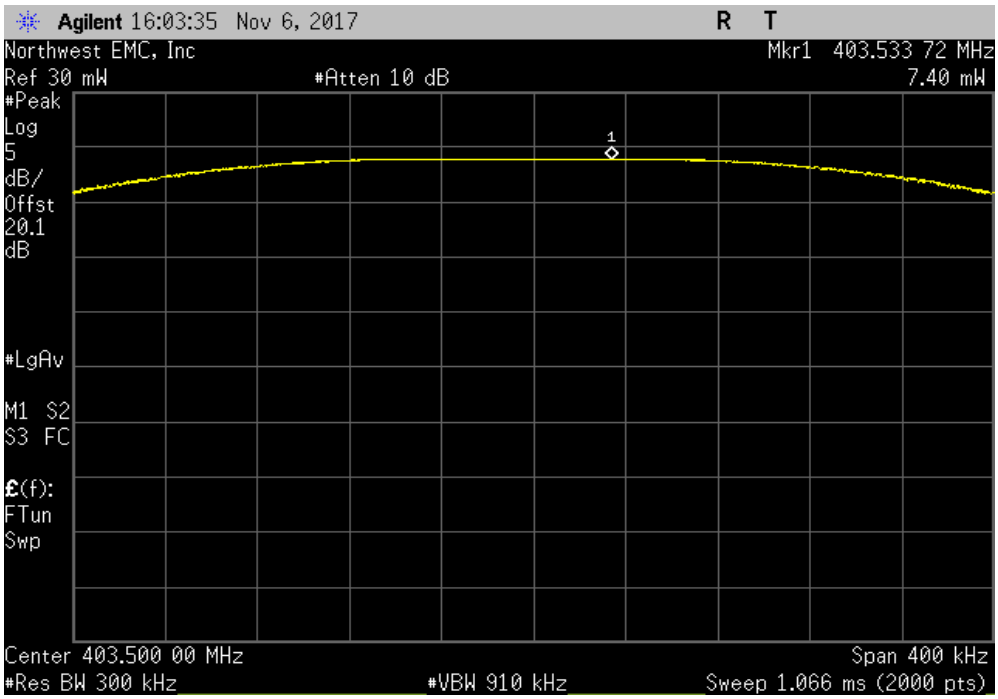


CONDUCTED OUTPUT POWER (MICS)

NweTx 2016.09.14.2 XMit 2017.09.21

MEDS High Band, Mid Channel, 405.55 MHz

					Value	Limit	Result
					7.40 mW	N/A	N/A



RADIATED POWER (EIRP)

PSA-ESCI 2017.06.01

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 - MICS Mid Band = 403.5 MHz &
Mid Ch - MEDS High Band = 405.55 MHz

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

AXON0099 - 6

FREQUENCY RANGE INVESTIGATED

Start Frequency	401 MHz	Stop Frequency	406 MHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Power Sensor	Agilent	E4412A	SQE	1/26/2017	12 mo
Meter - Power	Hewlett Packard	E4418A	SPA	1/26/2017	12 mo
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	36 mo
Antenna - Dipole	A.H. Systems, Inc.	FCC-4	ADCA	NCR	0 mo
Cable	Element	10kHz-1GHz RE Cables	OCH	8/1/2017	12 mo
Antenna - Biconilog	Teseq	CBL 6141A	AYE	11/7/2017	24 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A (EXA)	AFQ	12/22/2016	12 mo

TEST DESCRIPTION

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

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

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

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

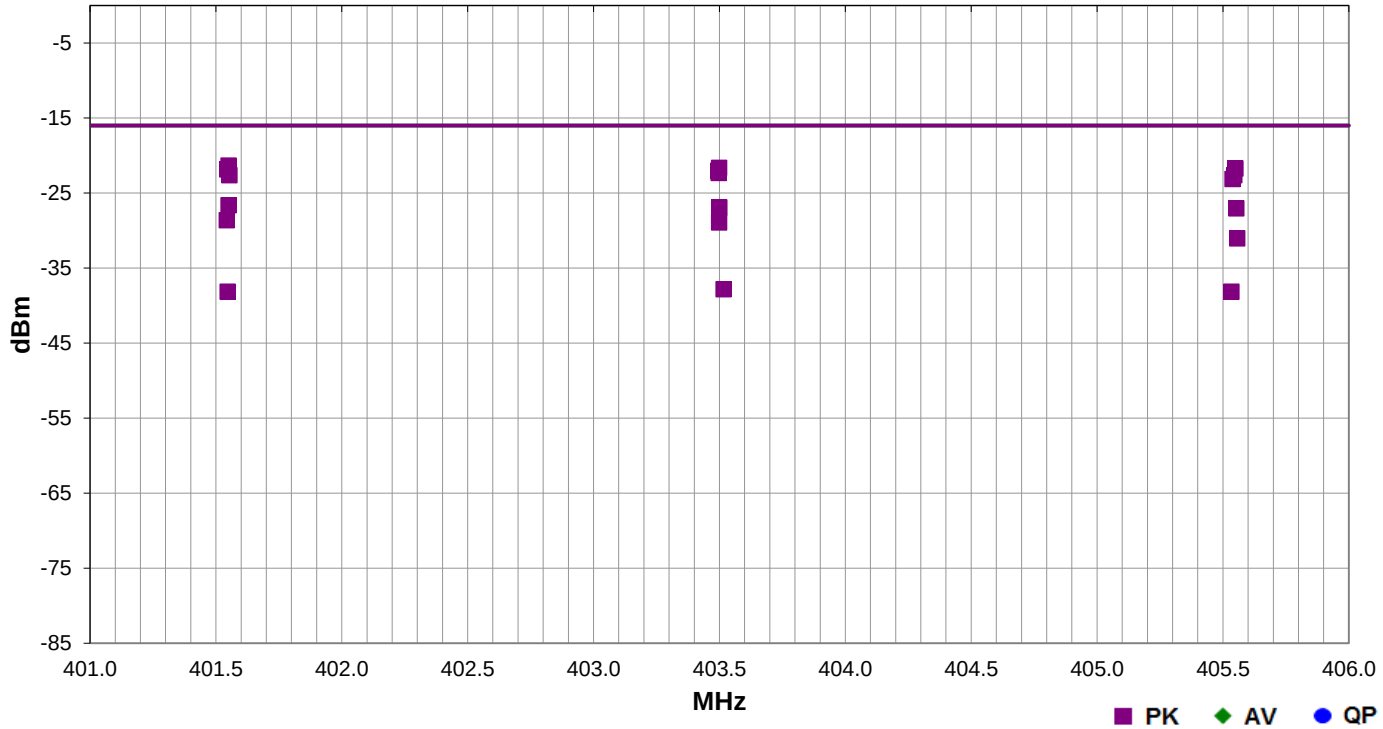
RADIATED POWER (EIRP)

EmiR5 2017.07.11 PSA-ESCI 2017.06.01

Work Order:	AXON0099	**Date:**	11/21/17		
Project:	None	**Temperature:**	21.2 °C		
Job Site:	OC10	**Humidity:**	39.4% RH		
Serial Number:	AP1BA70024	**Barometric Pres.:**	1021 mbar	**Tested by:**	Johnny Candelas
EUT:	Patient Remote (PR) - 2301				
Configuration:	6				
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 - MICS Mid Band = 403.5 MHz & Mid Ch - MEDS High Band = 405.55 MHz				
Deviations:	None				
Comments:	Power Transmit Index = 27				

Test Specifications	**Test Method**
FCC 95I:2016	ANSI C63.26:2015

Run #	0	**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
	401.550	1.0	317.0	Horz	PK	7.36E-06	-21.3	-16.0	-5.3	Low 401.55 MHz, EUT Horiz
	403.498	1.0	104.0	Horz	PK	6.87E-06	-21.6	-16.0	-5.6	Mid 403.5 MHz, EUT Horiz
	405.550	1.0	305.0	Horz	PK	6.72E-06	-21.7	-16.0	-5.7	High 405.55 MHz, EUT Horiz
	401.545	1.3	297.0	Vert	PK	6.56E-06	-21.8	-16.0	-5.8	Low 401.55 MHz, EUT Vert
	403.495	1.4	299.0	Vert	PK	6.27E-06	-22.0	-16.0	-6.0	Mid 403.5 MHz, EUT Vert

	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	403.497	1.5	293.0	Vert	PK	5.85E-06	-22.3	-16.0	-6.3	Mid 403.5 MHz, EUT on Side
	401.553	1.5	294.0	Vert	PK	5.46E-06	-22.6	-16.0	-6.6	Low 401.55 MHz, EUT on Side
	405.545	1.4	116.0	Vert	PK	5.46E-06	-22.6	-16.0	-6.6	High 405.55 MHz, EUT Vert
	405.538	1.5	289.0	Vert	PK	4.87E-06	-23.1	-16.0	-7.1	High 405.55 MHz, EUT on Side
	401.550	2.1	205.0	Horz	PK	2.17E-06	-26.6	-16.0	-10.6	Low 401.55 MHz, EUT on Side
	403.500	2.1	201.0	Horz	PK	2.03E-06	-26.9	-16.0	-10.9	Mid 403.5 MHz, EUT on Side
	405.553	2.2	210.0	Horz	PK	1.98E-06	-27.0	-16.0	-11.0	High 405.55 MHz, EUT on Side
	401.543	1.6	196.0	Horz	PK	1.37E-06	-28.6	-16.0	-12.6	Low 401.55 MHz, EUT Vert
	403.498	1.6	203.0	Horz	PK	1.28E-06	-28.9	-16.0	-12.9	Mid 403.5 MHz, EUT Vert
	405.557	2.8	203.0	Horz	PK	7.89E-07	-31.0	-16.0	-15.0	High 405.55 MHz, EUT Vert
	403.517	3.0	28.0	Vert	PK	1.65E-07	-37.8	-16.0	-21.8	Mid 403.5 MHz, EUT Horiz
	401.547	3.0	200.0	Vert	PK	1.54E-07	-38.1	-16.0	-22.1	Low 401.55 MHz, EUT Horiz
	405.533	3.0	213.0	Vert	PK	1.54E-07	-38.1	-16.0	-22.1	High 405.55 MHz, EUT Horiz

SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2017.06.01

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 - MICS Mid Band = 403.5 MHz & Mid Ch - MEDS High Band = 405.55 MHz

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

AXON0099 - 6

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	5000 MHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Cable	Element	1-8GHz RE Cables	OCJ	7/13/2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-4D-010120-30-10P-1	AOP	7/13/2017	12 mo
Antenna - Double Ridge	EMCO	3115	AHB	3/21/2016	24 mo
Cable	Element	10kHz-1GHz RE Cables	OCH	8/1/2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1402	AOZ	8/1/2017	12 mo
Antenna - Biconilog	Teseq	CBL 6141A	AYE	11/7/2017	24 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A (EXA)	AFQ	12/22/2016	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.

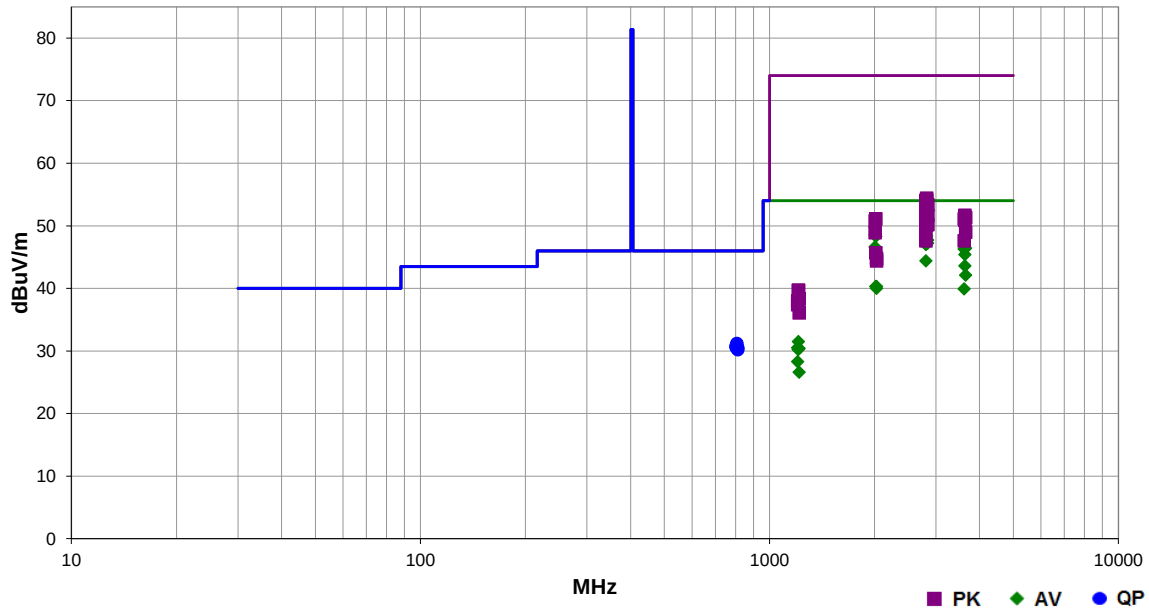
SPURIOUS RADIATED EMISSIONS

EmiR5 2017.07.11 PSA-ESCI 2017.06.01

Work Order:	AXON0099	**Date:**	11/21/17		
Project:	None	**Temperature:**	21.2 °C		
Job Site:	OC10	**Humidity:**	39.4% RH		
Serial Number:	AP1BA70024	**Barometric Pres.:**	1021 mbar	**Tested by:**	Johnny Candelas
EUT:	Patient Remote (PR) - 2301				
Configuration:	6				
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 - MICS Mid Band = 403.5 MHz & Mid Ch - MEDS High Band = 405.55 MHz				
Deviations:	None				
Comments:	Power Transmit Index = 27				

Test Specifications	**Test Method**
FCC 95I:2017	ANSI C63.26:2015

Run #	1	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 3(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2810.825	48.6	4.0	2.5	94.0	3.0	0.0	Horz	AV	0.0	52.6	54.0	-1.4	Low 401.55 MHz, EUT Horiz
2824.465	48.3	4.0	2.5	109.0	3.0	0.0	Horz	AV	0.0	52.3	54.0	-1.7	Mid 403.5 MHz, EUT on Side
2824.465	48.1	4.0	1.9	4.0	3.0	0.0	Horz	AV	0.0	52.1	54.0	-1.9	Mid 403.5 MHz, EUT Horiz
2838.845	47.9	4.2	2.6	110.0	3.0	0.0	Horz	AV	0.0	52.1	54.0	-1.9	High 405.55 MHz, EUT Vert
2838.815	47.4	4.2	1.8	281.0	3.0	0.0	Horz	AV	0.0	51.6	54.0	-2.4	High 405.55 MHz, EUT Horiz
2824.465	47.2	4.0	1.9	4.0	3.0	0.0	Horz	AV	0.0	51.2	54.0	-2.8	Mid 403.5 MHz, EUT Vert
2810.825	47.1	4.0	2.0	358.0	3.0	0.0	Horz	AV	0.0	51.1	54.0	-2.9	Low 401.55 MHz, EUT Vert
2810.820	46.6	4.0	2.7	108.0	3.0	0.0	Horz	AV	0.0	50.6	54.0	-3.4	Low 401.55 MHz, EUT on Side
2838.830	45.3	4.2	1.0	175.0	3.0	0.0	Vert	AV	0.0	49.5	54.0	-4.5	High 405.55 MHz, EUT on Side
2838.835	45.2	4.2	1.9	282.0	3.0	0.0	Horz	AV	0.0	49.4	54.0	-4.6	High 405.55 MHz, EUT on Side
2007.745	46.0	2.6	3.0	153.0	3.0	0.0	Horz	AV	0.0	48.6	54.0	-5.4	Low 401.55 MHz, EUT Horiz
2824.480	44.4	4.0	1.1	162.0	3.0	0.0	Vert	AV	0.0	48.4	54.0	-5.6	Mid 403.5 MHz, EUT on Side
2017.495	45.7	2.6	2.7	309.0	3.0	0.0	Horz	AV	0.0	48.3	54.0	-5.7	Mid 403.5 MHz, EUT on Side
2810.815	44.3	4.0	3.0	262.0	3.0	0.0	Vert	AV	0.0	48.3	54.0	-5.7	Low 401.55 MHz, EUT Vert
2824.485	43.8	4.0	1.7	346.0	3.0	0.0	Vert	AV	0.0	47.8	54.0	-6.2	Mid 403.5 MHz, EUT Horiz
2838.825	43.5	4.2	1.1	334.0	3.0	0.0	Vert	AV	0.0	47.7	54.0	-6.3	High 405.55 MHz, EUT Vert
2824.440	43.4	4.0	3.0	218.0	3.0	0.0	Vert	AV	0.0	47.4	54.0	-6.6	Mid 403.5 MHz, EUT Vert
2838.835	43.0	4.2	2.1	260.0	3.0	0.0	Vert	AV	0.0	47.2	54.0	-6.8	High 405.55 MHz, EUT Horiz
2810.805	43.0	4.0	1.2	316.0	3.0	0.0	Vert	AV	0.0	47.0	54.0	-7.0	Low 401.55 MHz, EUT on Side
2007.705	44.0	2.6	1.2	135.0	3.0	0.0	Vert	AV	0.0	46.6	54.0	-7.4	Low 401.55 MHz, EUT Vert
3649.940	38.1	8.3	1.9	246.0	3.0	0.0	Vert	AV	0.0	46.4	54.0	-7.6	High 405.55 MHz, EUT on Side
3613.915	38.4	7.9	1.9	235.0	3.0	0.0	Horz	AV	0.0	46.3	54.0	-7.7	Low 401.55 MHz, EUT Horiz

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
3631.500	37.2	8.2	1.8	306.0	3.0	0.0	Horz	AV	0.0	45.4	54.0	-8.6	Mid 403.5 MHz, EUT on Side
2810.815	40.4	4.0	1.2	161.0	3.0	0.0	Vert	AV	0.0	44.4	54.0	-9.6	Low 401.55 MHz, EUT Horiz
3631.515	35.4	8.2	2.5	39.0	3.0	0.0	Vert	AV	0.0	43.6	54.0	-10.4	Mid 403.5 MHz, EUT on Side
3649.910	33.8	8.3	2.0	155.0	3.0	0.0	Horz	AV	0.0	42.1	54.0	-11.9	High 405.55 MHz, EUT Vert
2017.455	37.7	2.6	1.2	70.0	3.0	0.0	Vert	AV	0.0	40.3	54.0	-13.7	Mid 403.5 MHz, EUT on Side
2027.725	37.8	2.5	2.7	83.0	3.0	0.0	Horz	AV	0.0	40.3	54.0	-13.7	High 405.55 MHz, EUT Vert
2027.740	37.5	2.5	1.2	256.0	3.0	0.0	Vert	AV	0.0	40.0	54.0	-14.0	High 405.55 MHz, EUT on Side
3613.890	32.0	7.9	1.2	215.0	3.0	0.0	Vert	AV	0.0	39.9	54.0	-14.1	Low 401.55 MHz, EUT Vert
807.000	15.3	15.9	1.0	56.0	3.0	0.0	Horz	QP	0.0	31.2	46.0	-14.8	Mid 403.5 MHz, EUT on Side
803.097	14.8	16.0	1.0	320.0	3.0	0.0	Horz	QP	0.0	30.8	46.0	-15.2	Low 401.55 MHz, EUT Horiz
803.102	14.6	16.0	1.0	52.0	3.0	0.0	Vert	QP	0.0	30.6	46.0	-15.4	Low 401.55 MHz, EUT Vert
806.992	14.6	15.9	1.0	224.0	3.0	0.0	Vert	QP	0.0	30.5	46.0	-15.5	Mid 403.5 MHz, EUT on Side
811.098	14.7	15.8	1.0	302.0	3.0	0.0	Horz	QP	0.0	30.5	46.0	-15.5	High 405.55 MHz, EUT Vert
811.105	14.4	15.8	1.0	191.0	3.0	0.0	Vert	QP	0.0	30.2	46.0	-15.8	High 405.55 MHz, EUT on Side
2824.465	50.4	4.0	2.5	109.0	3.0	0.0	Horz	PK	0.0	54.4	74.0	-19.6	Mid 403.5 MHz, EUT on Side
2824.465	50.1	4.0	1.9	4.0	3.0	0.0	Horz	PK	0.0	54.1	74.0	-19.9	Mid 403.5 MHz, EUT Horiz
2810.860	50.1	4.0	2.5	94.0	3.0	0.0	Horz	PK	0.0	54.1	74.0	-19.9	Low 401.55 MHz, EUT Horiz
2838.800	49.2	4.2	2.6	110.0	3.0	0.0	Horz	PK	0.0	53.4	74.0	-20.6	High 405.55 MHz, EUT Vert
2838.820	49.1	4.2	1.8	281.0	3.0	0.0	Horz	PK	0.0	53.3	74.0	-20.7	High 405.55 MHz, EUT Horiz
2824.635	49.2	4.0	1.9	4.0	3.0	0.0	Horz	PK	0.0	53.2	74.0	-20.8	Mid 403.5 MHz, EUT Vert
2810.880	48.6	4.0	2.0	358.0	3.0	0.0	Horz	PK	0.0	52.6	74.0	-21.4	Low 401.55 MHz, EUT Vert
2810.830	48.4	4.0	2.7	108.0	3.0	0.0	Horz	PK	0.0	52.4	74.0	-21.6	Low 401.55 MHz, EUT on Side
3631.425	43.5	8.2	1.8	306.0	3.0	0.0	Horz	PK	0.0	51.7	74.0	-22.3	Mid 403.5 MHz, EUT on Side
2838.685	47.5	4.2	1.0	175.0	3.0	0.0	Vert	PK	0.0	51.7	74.0	-22.3	High 405.55 MHz, EUT on Side
2838.860	47.4	4.2	1.9	282.0	3.0	0.0	Horz	PK	0.0	51.6	74.0	-22.4	High 405.55 MHz, EUT on Side
1210.565	33.4	-1.9	2.2	346.0	3.0	0.0	Horz	AV	0.0	31.5	54.0	-22.5	Mid 403.5 MHz, EUT on Side
2824.520	47.3	4.0	1.1	162.0	3.0	0.0	Vert	PK	0.0	51.3	74.0	-22.7	Mid 403.5 MHz, EUT on Side
3649.910	43.0	8.3	1.9	246.0	3.0	0.0	Vert	PK	0.0	51.3	74.0	-22.7	High 405.55 MHz, EUT on Side
2017.645	48.5	2.6	2.7	309.0	3.0	0.0	Horz	PK	0.0	51.1	74.0	-22.9	Mid 403.5 MHz, EUT on Side
3613.970	43.2	7.9	1.9	235.0	3.0	0.0	Horz	PK	0.0	51.1	74.0	-22.9	Low 401.55 MHz, EUT Horiz
3631.385	42.7	8.2	2.5	39.0	3.0	0.0	Vert	PK	0.0	50.9	74.0	-23.1	Mid 403.5 MHz, EUT on Side
2007.695	48.2	2.6	3.0	153.0	3.0	0.0	Horz	PK	0.0	50.8	74.0	-23.2	Low 401.55 MHz, EUT Horiz
2824.490	46.7	4.0	1.7	346.0	3.0	0.0	Vert	PK	0.0	50.7	74.0	-23.3	Mid 403.5 MHz, EUT Horiz
2810.695	46.5	4.0	3.0	262.0	3.0	0.0	Vert	PK	0.0	50.5	74.0	-23.5	Low 401.55 MHz, EUT Vert
1204.635	32.4	-1.9	1.0	293.0	3.0	0.0	Vert	AV	0.0	30.5	54.0	-23.5	Low 401.55 MHz, EUT Vert
2824.525	46.4	4.0	3.0	218.0	3.0	0.0	Vert	PK	0.0	50.4	74.0	-23.6	Mid 403.5 MHz, EUT Vert
1216.705	32.3	-1.9	1.2	76.0	3.0	0.0	Vert	AV	0.0	30.4	54.0	-23.6	High 405.55 MHz, EUT on Side
2838.720	46.0	4.2	2.1	260.0	3.0	0.0	Vert	PK	0.0	50.2	74.0	-23.8	High 405.55 MHz, EUT Horiz
2838.735	46.0	4.2	1.1	334.0	3.0	0.0	Vert	PK	0.0	50.2	74.0	-23.8	High 405.55 MHz, EUT Vert
1210.370	32.1	-1.9	2.4	234.0	3.0	0.0	Vert	AV	0.0	30.2	54.0	-23.8	Mid 403.5 MHz, EUT on Side
2810.855	45.7	4.0	1.2	316.0	3.0	0.0	Vert	PK	0.0	49.7	74.0	-24.3	Low 401.55 MHz, EUT on Side
3649.800	40.7	8.3	2.0	155.0	3.0	0.0	Horz	PK	0.0	49.0	74.0	-25.0	High 405.55 MHz, EUT Vert
2007.685	46.3	2.6	1.2	135.0	3.0	0.0	Vert	PK	0.0	48.9	74.0	-25.1	Low 401.55 MHz, EUT Vert
1204.615	30.2	-1.9	1.0	273.0	3.0	0.0	Horz	AV	0.0	28.3	54.0	-25.7	Low 401.55 MHz, EUT Horiz
2810.680	43.6	4.0	1.2	161.0	3.0	0.0	Vert	PK	0.0	47.6	74.0	-26.4	Low 401.55 MHz, EUT Horiz
3613.830	39.7	7.9	1.2	215.0	3.0	0.0	Vert	PK	0.0	47.6	74.0	-26.4	Low 401.55 MHz, EUT Vert
1216.655	28.5	-1.9	1.9	199.0	3.0	0.0	Horz	AV	0.0	26.6	54.0	-27.4	High 405.55 MHz, EUT Vert
2017.485	43.1	2.6	1.2	70.0	3.0	0.0	Vert	PK	0.0	45.7	74.0	-28.3	Mid 403.5 MHz, EUT on Side
2027.730	42.3	2.5	1.2	256.0	3.0	0.0	Vert	PK	0.0	44.8	74.0	-29.2	High 405.55 MHz, EUT on Side
2027.575	41.9	2.5	2.7	83.0	3.0	0.0	Horz	PK	0.0	44.4	74.0	-29.6	High 405.55 MHz, EUT Vert
1210.775	41.6	-1.9	2.2	346.0	3.0	0.0	Horz	PK	0.0	39.7	74.0	-34.3	Mid 403.5 MHz, EUT on Side
1210.510	41.6	-1.9	2.4	234.0	3.0	0.0	Vert	PK	0.0	39.7	74.0	-34.3	Mid 403.5 MHz, EUT on Side
1216.485	40.2	-1.9	1.2	76.0	3.0	0.0	Vert	PK	0.0	38.3	74.0	-35.7	High 405.55 MHz, EUT on Side
1204.760	39.9	-1.9	1.0	293.0	3.0	0.0	Vert	PK	0.0	38.0	74.0	-36.0	Low 401.55 MHz, EUT Vert
1204.715	39.3	-1.9	1.0	273.0	3.0	0.0	Horz	PK	0.0	37.4	74.0	-36.6	Low 401.55 MHz, EUT Horiz
1216.710	38.0	-1.9	1.9	199.0	3.0	0.0	Horz	PK	0.0	36.1	74.0	-37.9	High 405.55 MHz, EUT Vert

FREQUENCY STABILITY

XMit 2017.09.21

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
Chamber - Temperature/Humidity	Tenney	T6S	TBG	NCR	NCR
Thermometer	Omega Engineering, Inc.	HH311	DUH	3-Apr-15	3-Apr-18
Meter - Multimeter	Fluke	111	MMM	18-Feb-16	18-Feb-19
Attenuator	Fairview Microwave	SA4014-20	TKV	9-Mar-17	9-Mar-18
Block - DC	Fairview Microwave	SD3379	AMU	20-Apr-17	20-Apr-18
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	20-Apr-17	20-Apr-18
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	2-Jun-17	2-Jun-18
Generator - Signal	Keysight	N5182B	TFY	16-Apr-15	16-Apr-18

TEST DESCRIPTION

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

Variation of Supply Voltage
The primary supply voltage was varied from 2.1 VDC to 3.3 VDC, as specified by the manufacturer. A DC lab supply was used to vary the supply voltage.

Variation of Ambient Temperature
Using a temperature chamber, the transmit frequency was recorded at intervals of 10°C over the specified temperature range of 0°C to 55°C.

FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

EUT:	Patient Remote (PR) - 2301			**Work Order:**	AXON0099
Serial Number:	AP1BA70018			**Date:**	7-Nov-17
Customer:	Axonics Modulation Technologies, Inc.			**Temperature:**	22 °C
Attendees:	Flavio Ono			**Humidity:**	28% RH
Project:	None			**Barometric Pres.:**	1028 mbar
Tested by:	Richard Mellroth	**Power:**	2.8 VDC	**Job Site:**	NC04

TEST SPECIFICATIONS	**Test Method**
FCC 95I:2017	ANSI C63.26:2015

COMMENTS

Transmitting at default power setting. EUT programmed via Bluetooth connection to remote laptop.

DEVIATIONS FROM TEST STANDARD

None

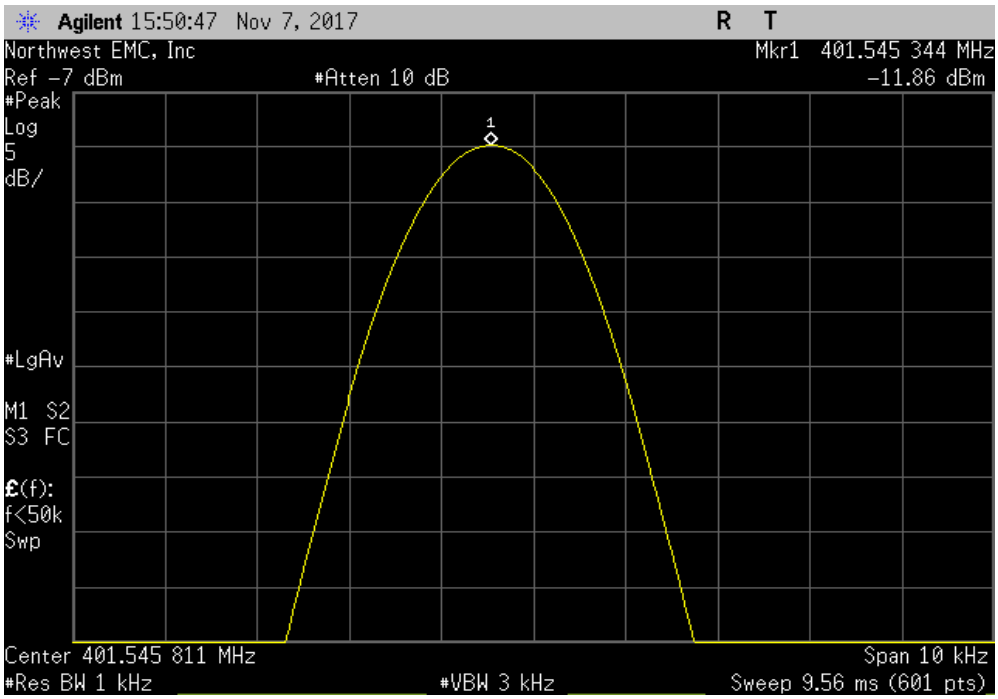
Configuration #	3	*Signature*

	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
401-402 MHz MEDS Band					
Extreme Temperature +55°C					
MEDS Low Band, Mid Channel, 401.55 MHz	401.545344	401.55	11.6	100	Pass
Extreme Temperature +50°C					
MEDS Low Band, Mid Channel, 401.55 MHz	401.544894	401.55	12.7	100	Pass
Extreme Temperature +40°C					
MEDS Low Band, Mid Channel, 401.55 MHz	401.544877	401.55	12.8	100	Pass
Extreme Temperature +30°C					
MEDS Low Band, Mid Channel, 401.55 MHz	401.545578	401.55	11	100	Pass
Extreme Temperature +20°C					
MEDS Low Band, Mid Channel, 401.55 MHz	401.54688	401.55	7.8	100	Pass
Extreme Voltage, 3.3 VDC					
MEDS Low Band, Mid Channel, 401.55 MHz	401.546863	401.55	7.8	100	Pass
Extreme Voltage, 2.1 VDC					
MEDS Low Band, Mid Channel, 401.55 MHz	401.54688	401.55	7.8	100	Pass
Extreme Temperature +10°C					
MEDS Low Band, Mid Channel, 401.55 MHz	401.547014	401.55	7.4	100	Pass
Extreme Temperature 0°C					
MEDS Low Band, Mid Channel, 401.55 MHz	401.547899	401.55	5.2	100	Pass
405-406 MHz MEDS Band					
Extreme Temperature +55°C					
MEDS High Band, Mid Channel, 405.55 MHz	405.545126	405.55	12	100	Pass
Extreme Temperature +50°C					
MEDS High Band, Mid Channel, 405.55 MHz	405.544675	405.55	13.1	100	Pass
Extreme Temperature +40°C					
MEDS High Band, Mid Channel, 405.55 MHz	405.544658	405.55	13.2	100	Pass
Extreme Temperature +30°C					
MEDS High Band, Mid Channel, 405.55 MHz	405.545328	405.55	11.5	100	Pass
Extreme Temperature +20°C					
Nominal Voltage, 2.8 VDC					
MEDS High Band, Mid Channel, 405.55 MHz	405.54668	405.55	8.2	100	Pass
Extreme Voltage, 3.3 VDC					
MEDS High Band, Mid Channel, 405.55 MHz	405.546631	405.55	8.3	100	Pass
Extreme Voltage, 2.1 VDC					
MEDS High Band, Mid Channel, 405.55 MHz	405.546679	405.55	8.2	100	Pass
Extreme Temperature +10°C					
MEDS High Band, Mid Channel, 405.55 MHz	405.546763	405.55	8	100	Pass
Extreme Temperature 0°C					
MEDS High Band, Mid Channel, 405.55 MHz	405.547698	405.55	5.7	100	Pass
402-405 MHz MICS Band					
Extreme Temperature +55°C					
MICS Mid Band, Mid Channel, 403.5 MHz	403.49521	403.5	11.9	100	Pass
Extreme Temperature +50°C					
MICS Mid Band, Mid Channel, 403.5 MHz	403.494809	403.5	12.9	100	Pass
Extreme Temperature +40°C					
MICS Mid Band, Mid Channel, 403.5 MHz	403.494809	403.5	12.9	100	Pass
Extreme Temperature +30°C					
MICS Mid Band, Mid Channel, 403.5 MHz	403.495428	403.5	11.3	100	Pass
Extreme Temperature +20°C					
Nominal Voltage, 2.8 VDC					
MICS Mid Band, Mid Channel, 403.5 MHz	403.496813	403.5	7.9	100	Pass
Extreme Voltage, 3.3 VDC					
MICS Mid Band, Mid Channel, 403.5 MHz	403.496781	403.5	8	100	Pass
Extreme Voltage, 2.1 VDC					
MICS Mid Band, Mid Channel, 403.5 MHz	403.496814	403.5	7.9	100	Pass
Extreme Temperature +10°C					
MICS Mid Band, Mid Channel, 403.5 MHz	403.496846	403.5	7.8	100	Pass
Extreme Temperature 0°C					
MICS Mid Band, Mid Channel, 403.5 MHz	403.497816	403.5	5.4	100	Pass

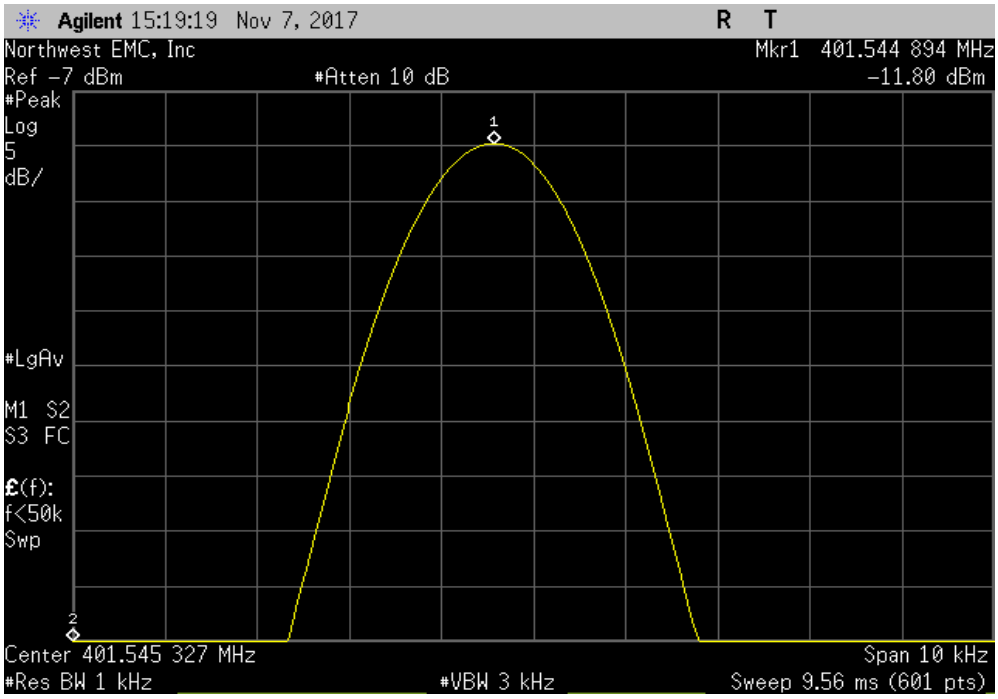
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

401-402 MHz Band, Extreme Temperature +55°C, Nominal Voltage, 2.8 VDC, Mid Channel, 401.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		401.545344	401.55	11.6	100	Pass



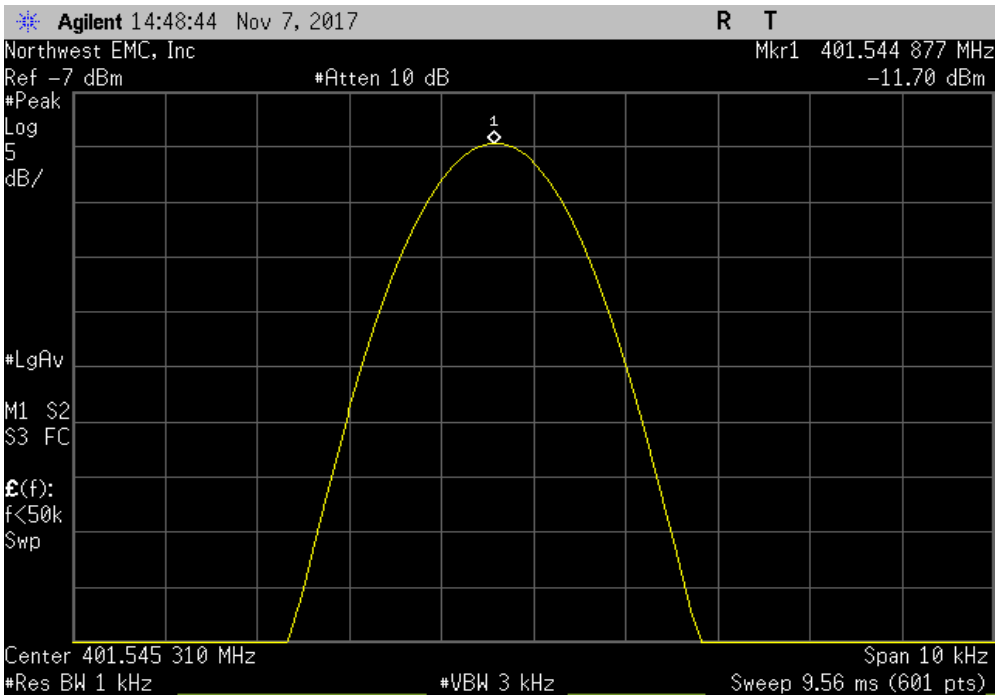
401-402 MHz Band, Extreme Temperature +50°C, Nominal Voltage, 2.8 VDC, Mid Channel, 401.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		401.544894	401.55	12.7	100	Pass



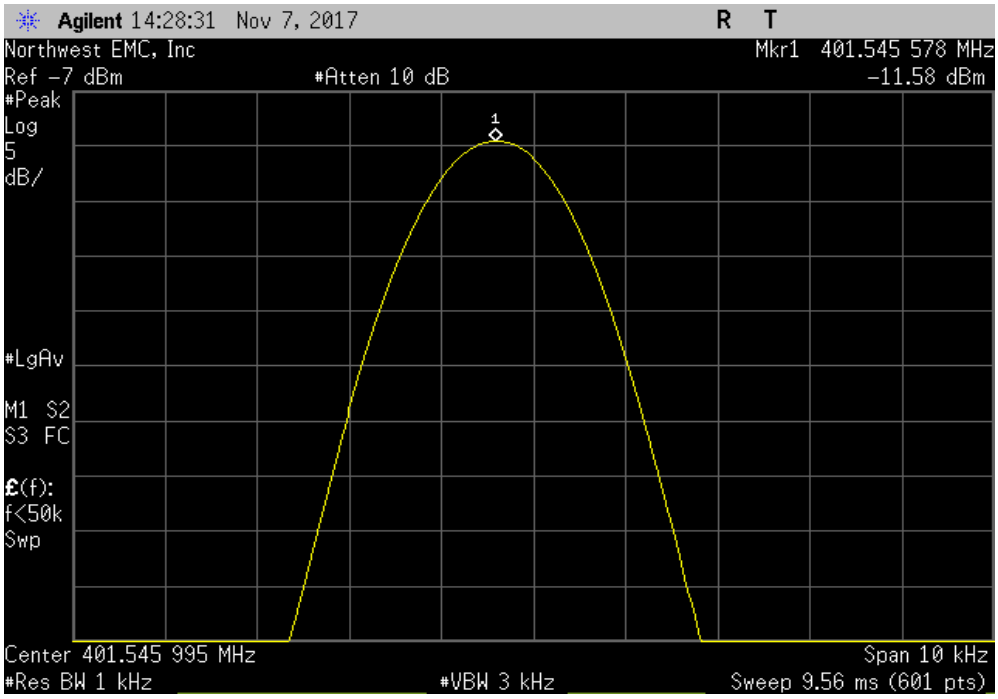
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

401-402 MHz Band, Extreme Temperature +40°C, Nominal Voltage, 2.8 VDC, Mid Channel, 401.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		401.544877	401.55	12.8	100	Pass



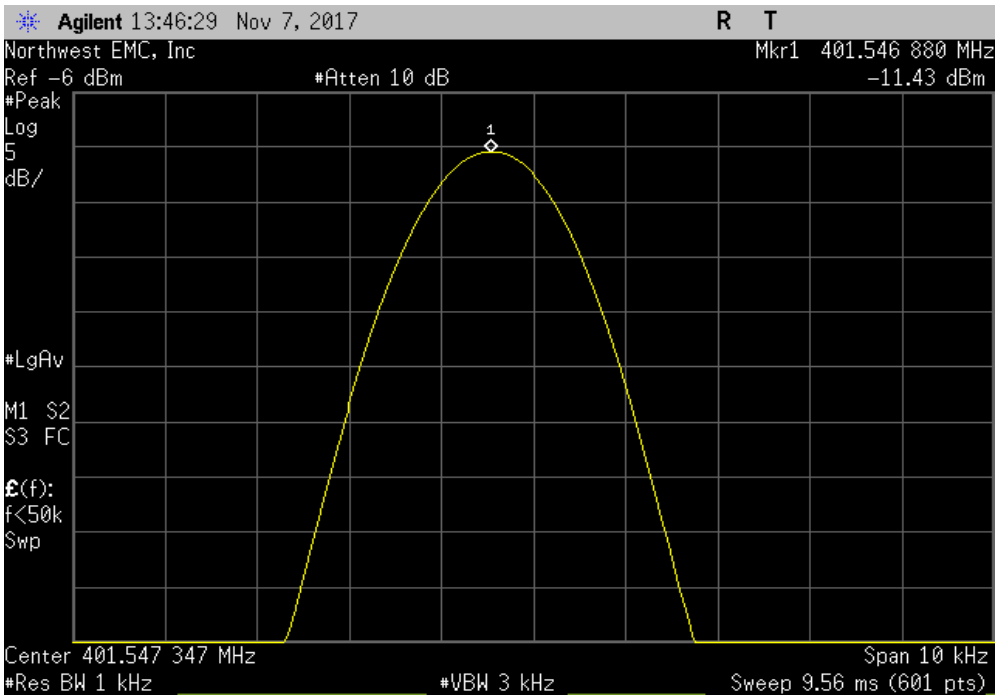
401-402 MHz Band, Extreme Temperature +30°C, Nominal Voltage, 2.8 VDC, Mid Channel, 401.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		401.545578	401.55	11	100	Pass



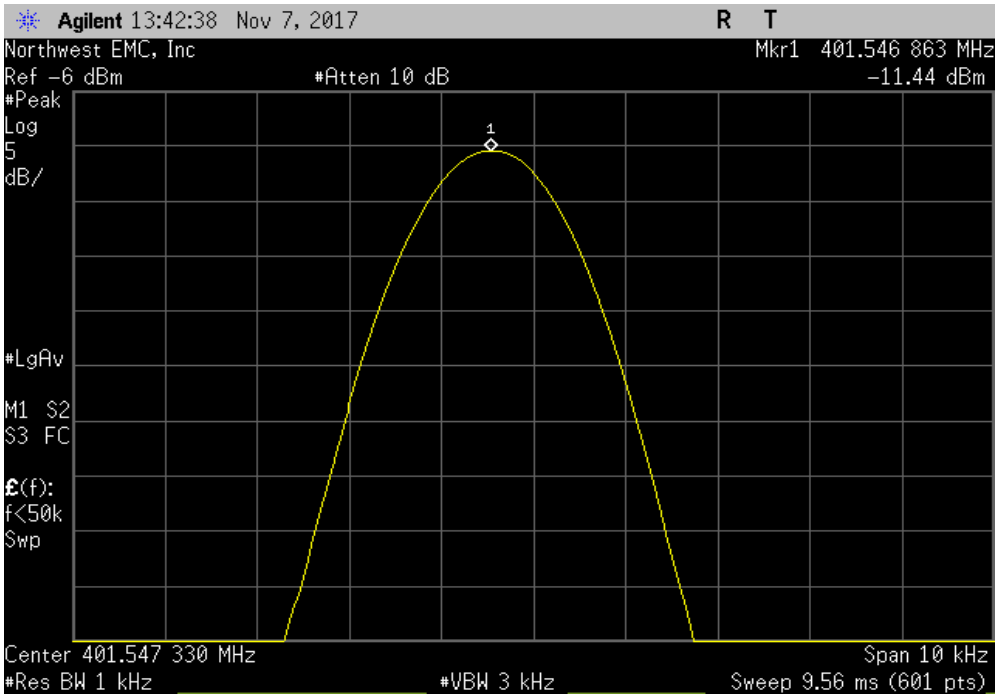
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

401-402 MHz Band, Extreme Temperature +20°C, Nominal Voltage, 2.8 VDC, Mid Channel, 401.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		401.54688	401.55	7.8	100	Pass



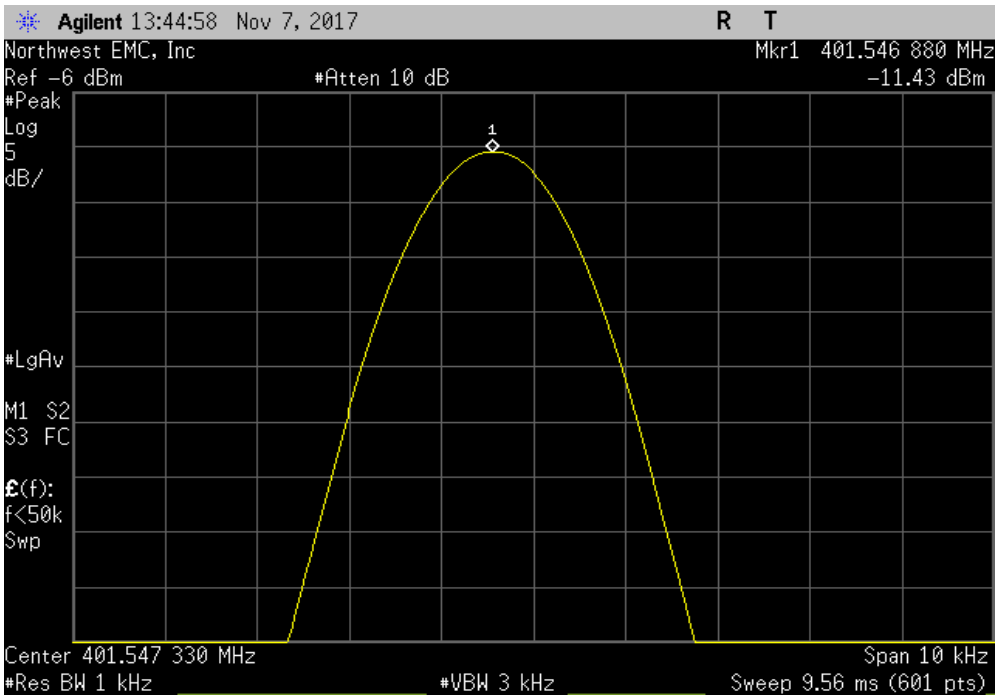
401-402 MHz Band, Extreme Temperature +20°C, Extreme Voltage, 3.3 VDC, Mid Channel, 401.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		401.546863	401.55	7.8	100	Pass



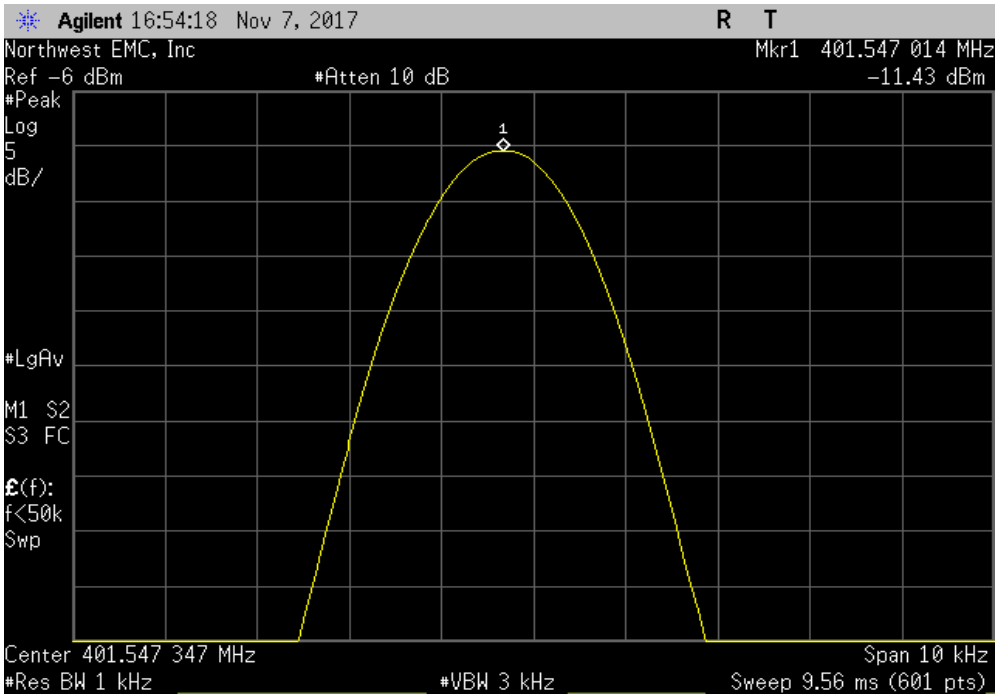
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

401-402 MHz Band, Extreme Temperature +20°C, Extreme Voltage, 2.1 VDC, Mid Channel, 401.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		401.54688	401.55	7.8	100	Pass



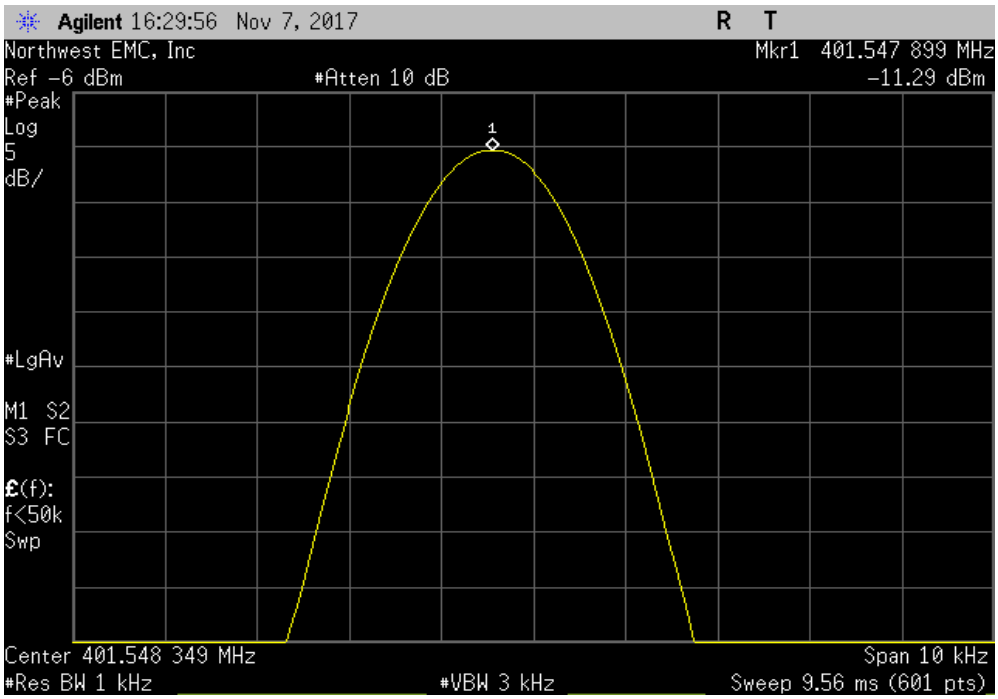
401-402 MHz Band, Extreme Temperature +10°C, Nominal Voltage, 2.8 VDC, Mid Channel, 401.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		401.547014	401.55	7.4	100	Pass



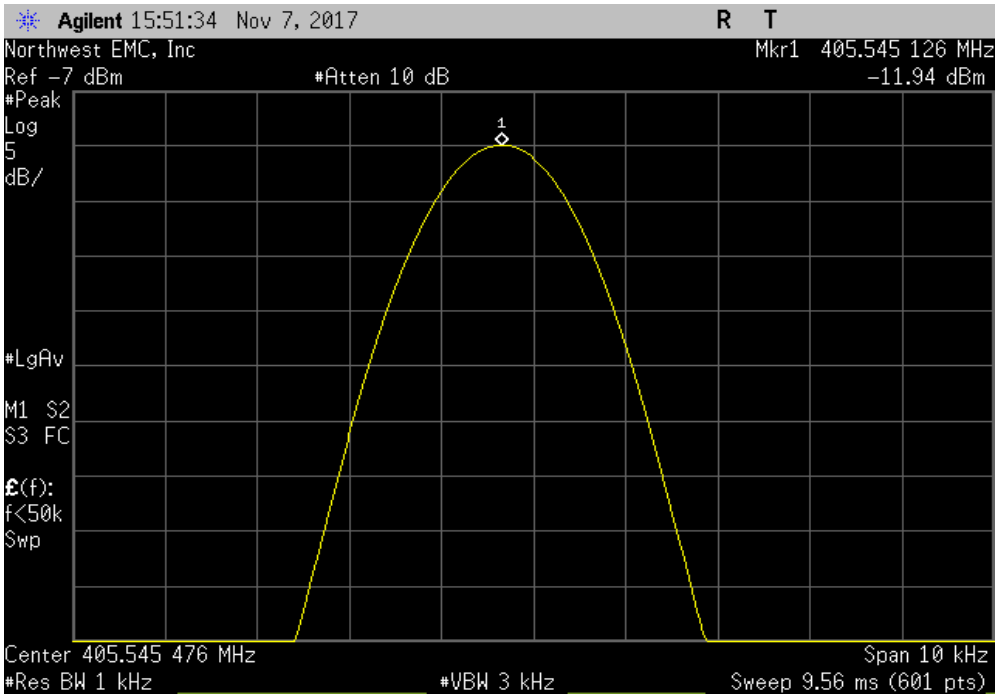
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

401-402 MHz Band, Extreme Temperature 0°C, Nominal Voltage, 2.8 VDC, Mid Channel, 401.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		401.547899	401.55	5.2	100	Pass



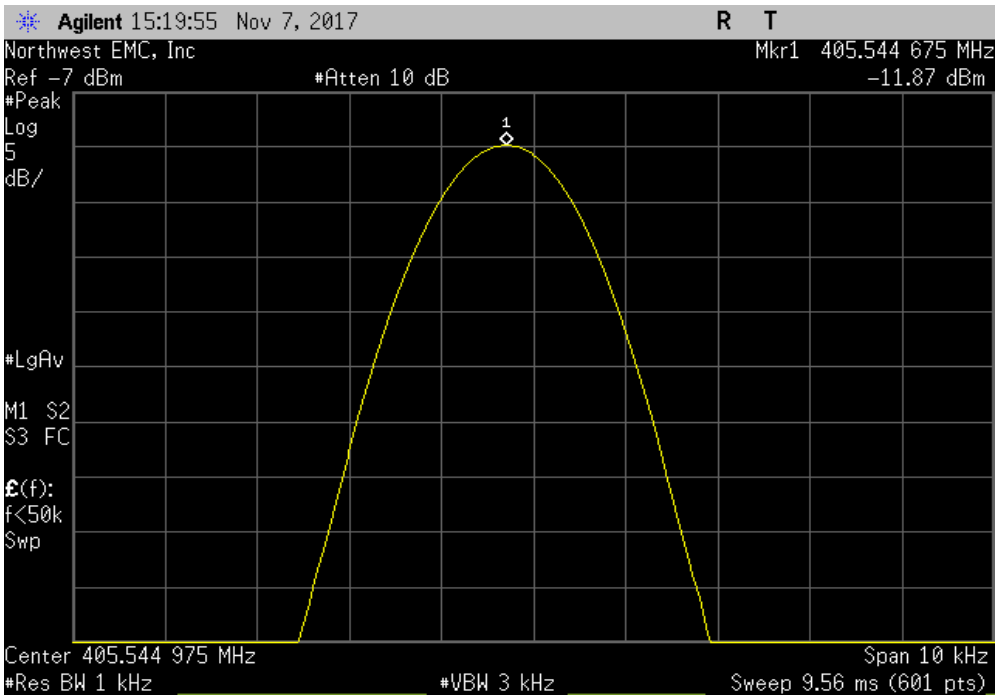
405-406 MHz Band, Extreme Temperature +55°C, Nominal Voltage, 2.8 VDC, Mid Channel, 405.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		405.545126	405.55	12	100	Pass



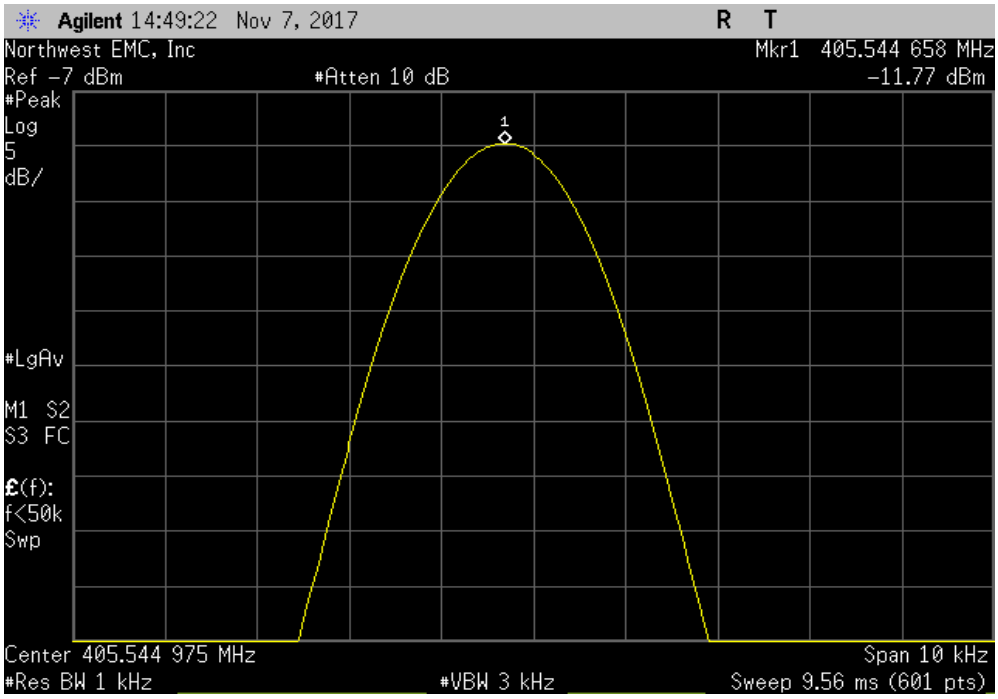
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

405-406 MHz Band, Extreme Temperature +50°C, Nominal Voltage, 2.8 VDC, Mid Channel, 405.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		405.544675	405.55	13.1	100	Pass



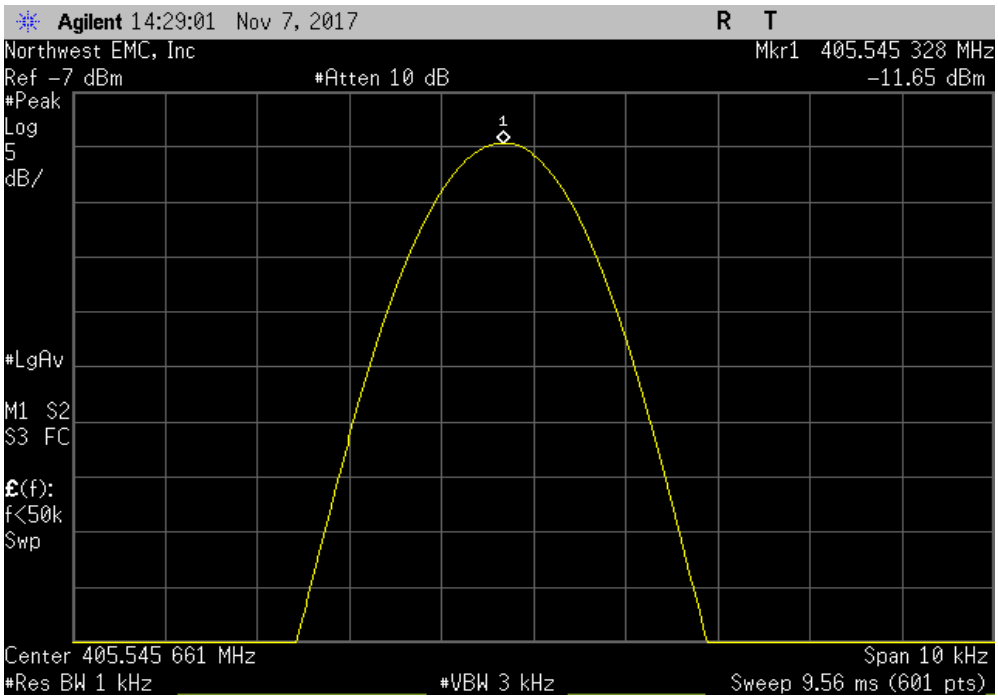
405-406 MHz Band, Extreme Temperature +40°C, Nominal Voltage, 2.8 VDC, Mid Channel, 405.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		405.544658	405.55	13.2	100	Pass



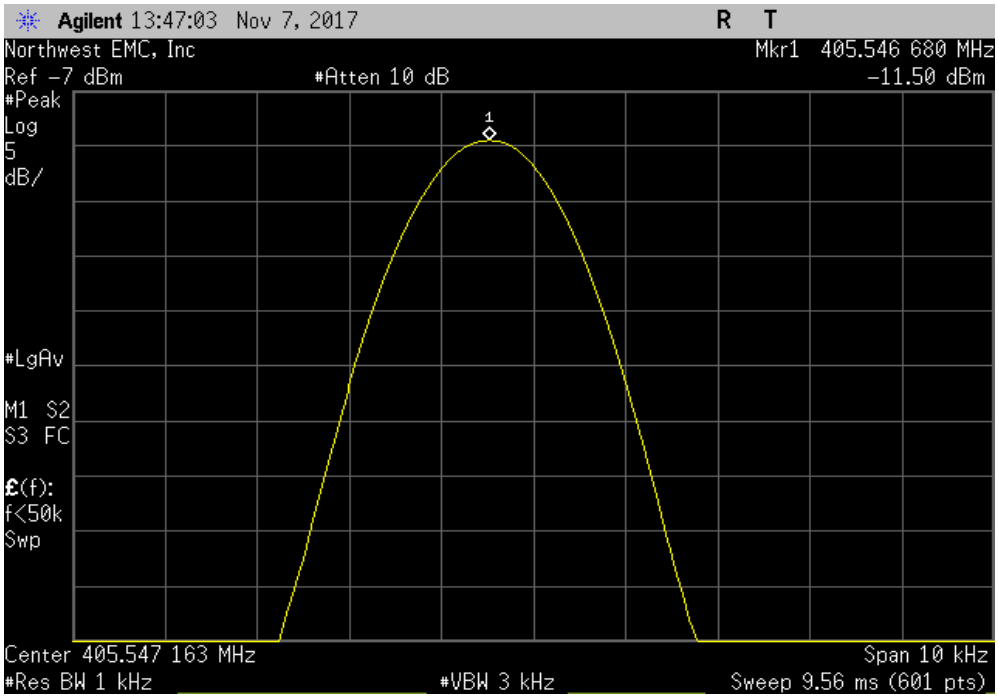
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

405-406 MHz Band, Extreme Temperature +30°C, Nominal Voltage, 2.8 VDC, Mid Channel, 405.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		405.545328	405.55	11.5	100	Pass



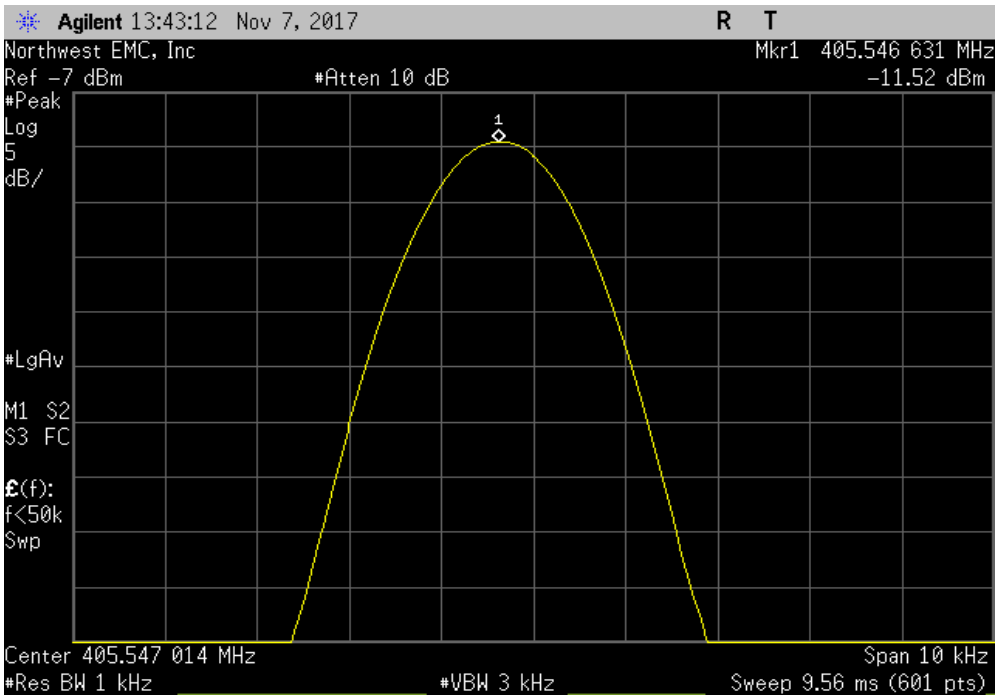
405-406 MHz Band, Extreme Temperature +20°C, Nominal Voltage, 2.8 VDC, Mid Channel, 405.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		405.54668	405.55	8.2	100	Pass



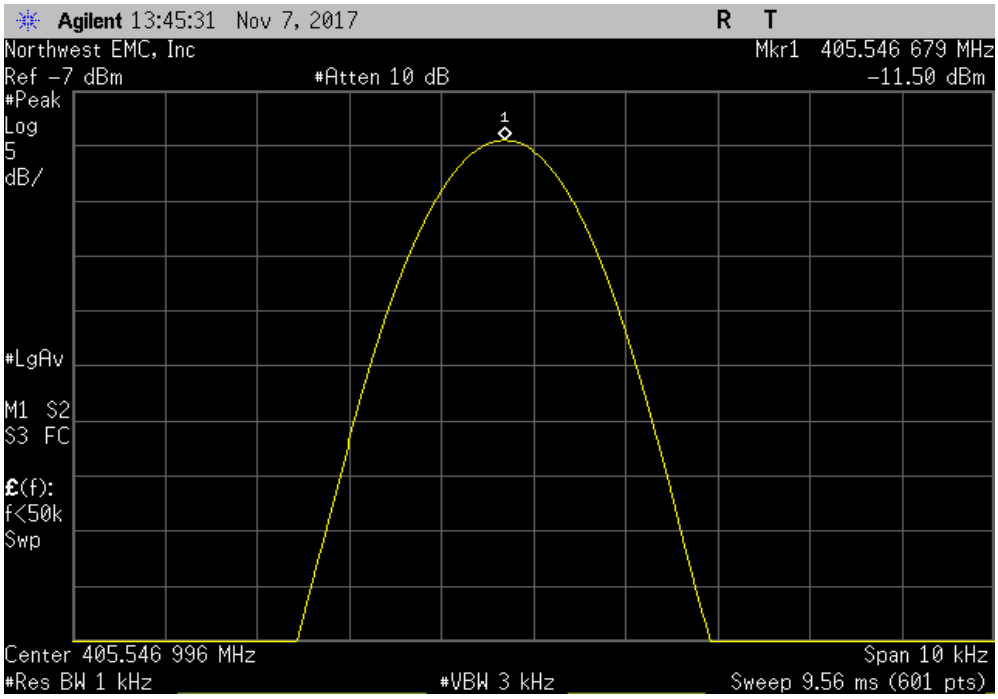
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

405-406 MHz Band, Extreme Temperature +20°C, Extreme Voltage, 3.3 VDC, Mid Channel, 405.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		405.546631	405.55	8.3	100	Pass



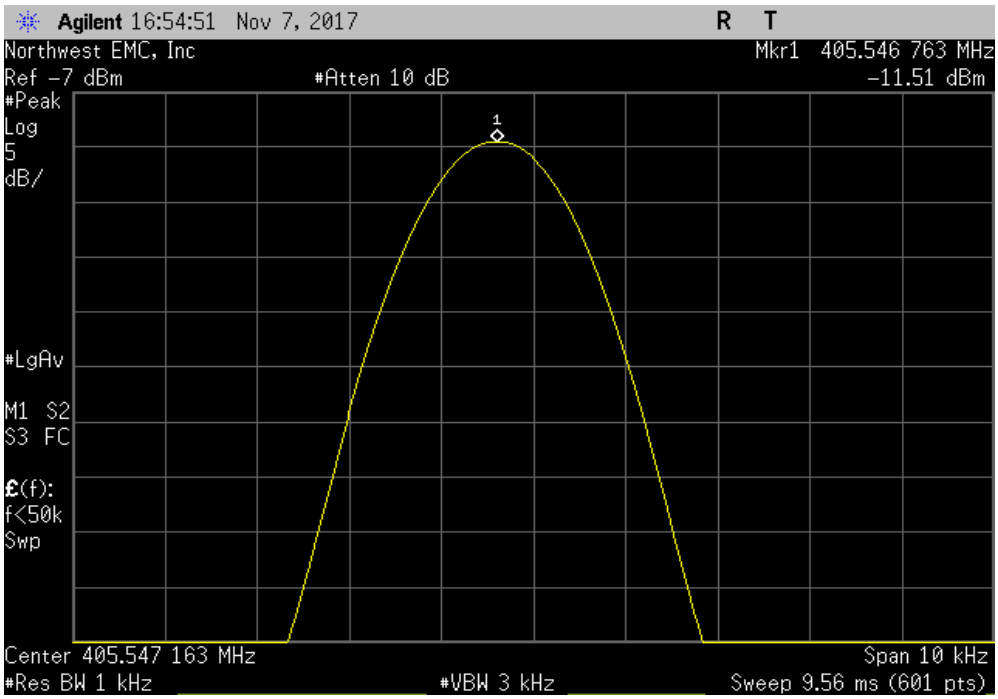
405-406 MHz Band, Extreme Temperature +20°C, Extreme Voltage, 2.1 VDC, Mid Channel, 405.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		405.546679	405.55	8.2	100	Pass



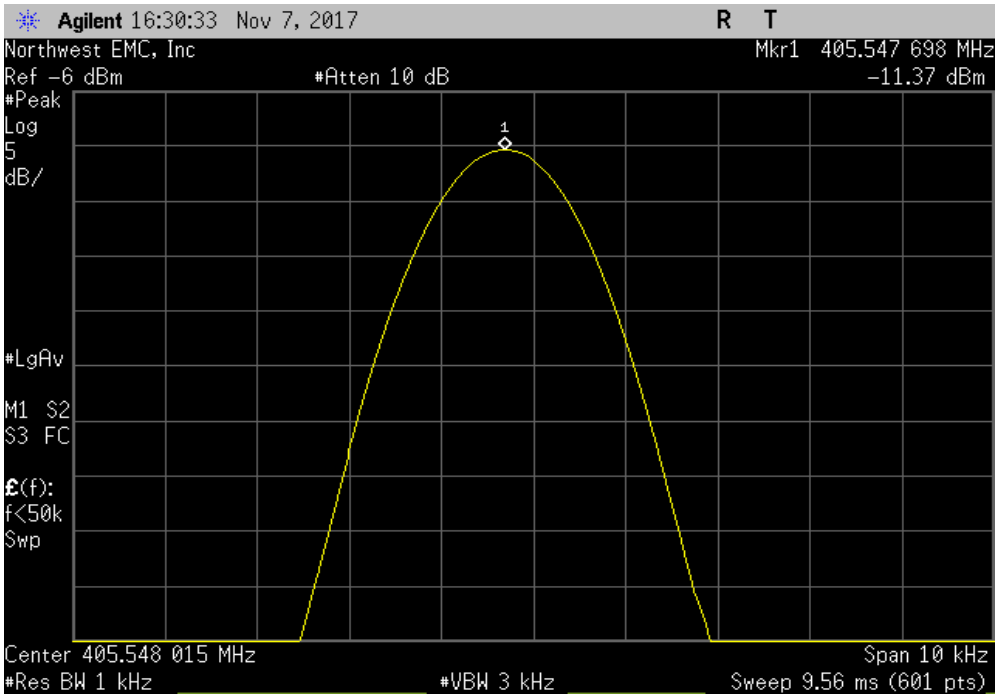
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

405-406 MHz Band, Extreme Temperature +10°C, Nominal Voltage, 2.8 VDC, Mid Channel, 405.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		405.546763	405.55	8	100	Pass



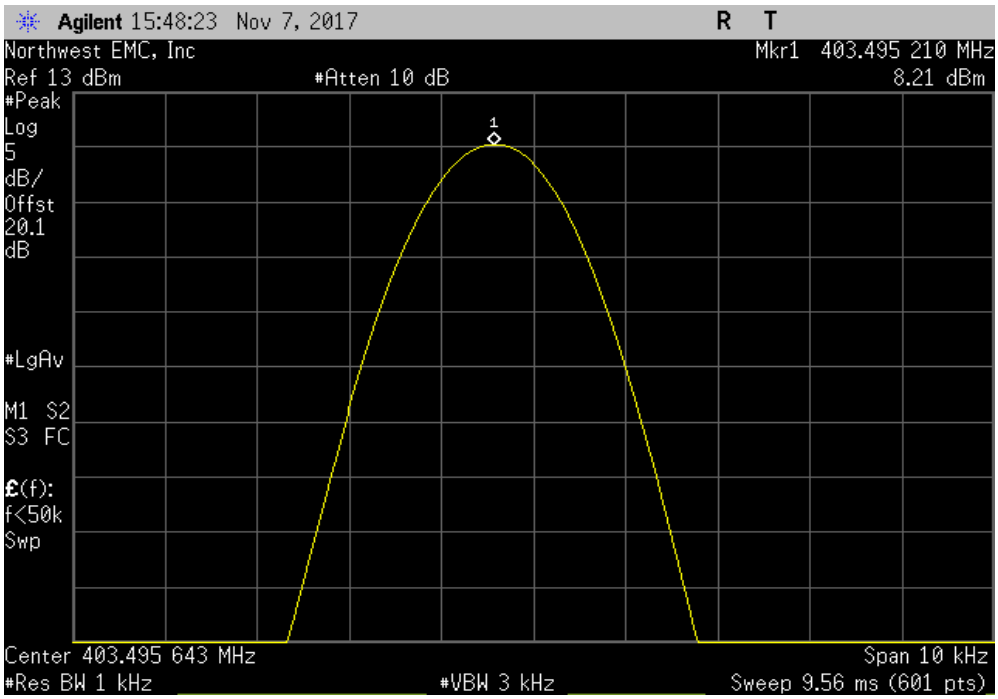
405-406 MHz Band, Extreme Temperature 0°C, Nominal Voltage, 2.8 VDC, Mid Channel, 405.55 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		405.547698	405.55	5.7	100	Pass



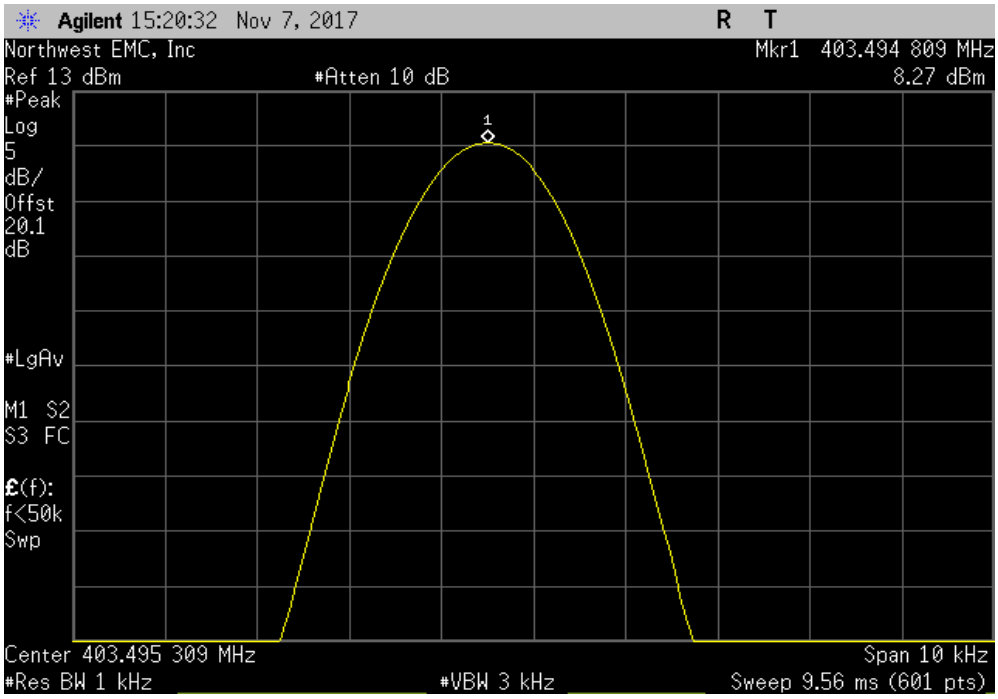
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

Extreme Temperature +55°C, Nominal Voltage, 2.8 VDC, Mid Channel, 403.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		403.49521	403.5	11.9	100	Pass



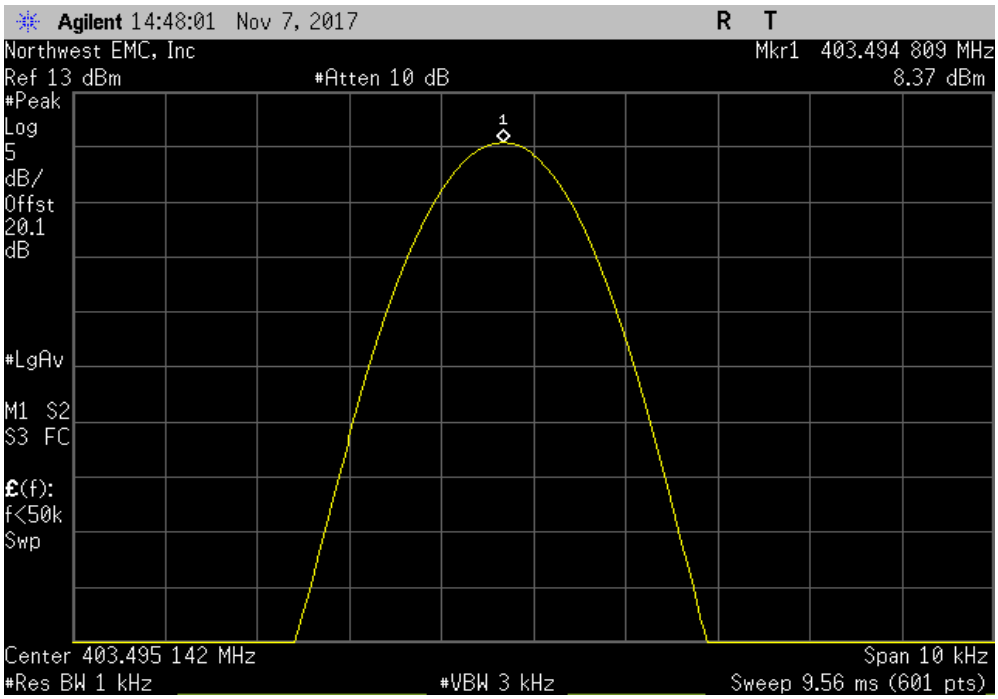
Extreme Temperature +50°C, Nominal Voltage, 2.8 VDC, Mid Channel, 403.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		403.494809	403.5	12.9	100	Pass



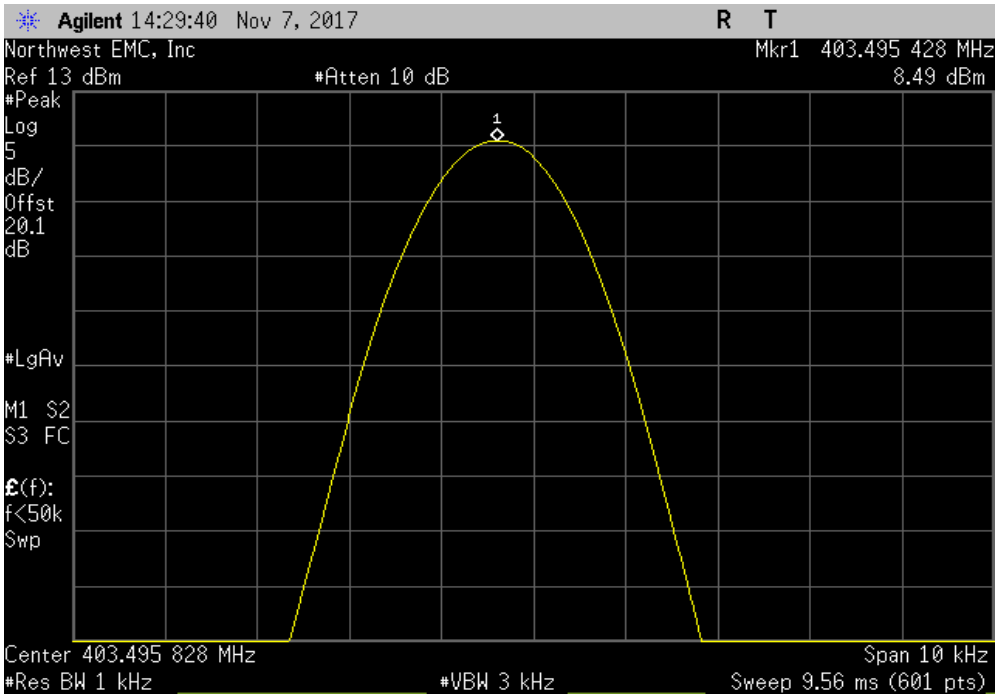
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

Extreme Temperature +40°C, Nominal Voltage, 2.8 VDC, Mid Channel, 403.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		403.494809	403.5	12.9	100	Pass



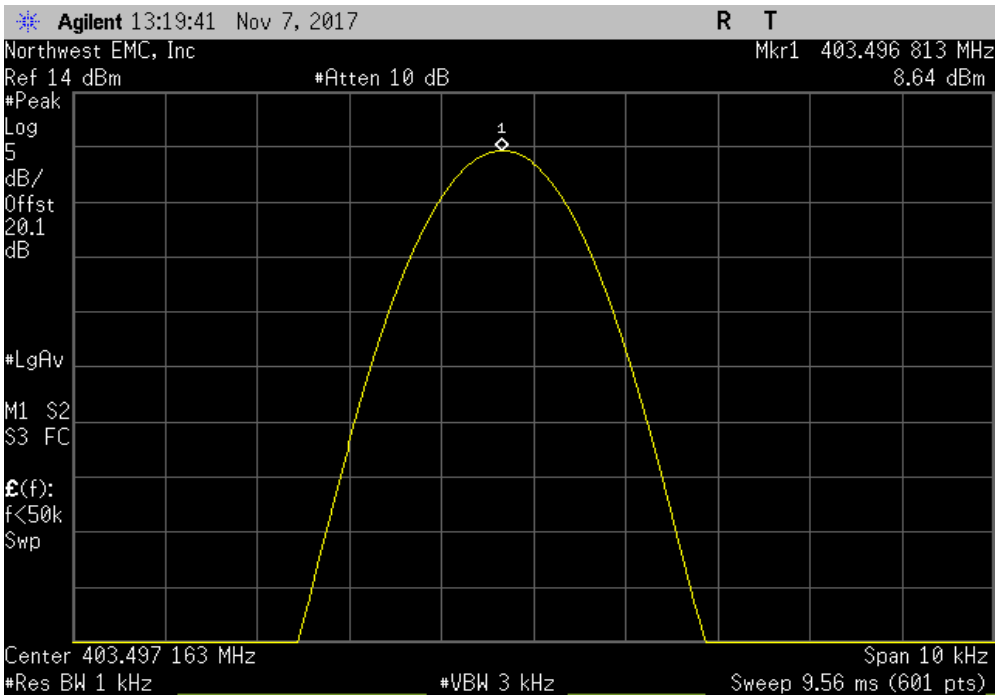
Extreme Temperature +30°C, Nominal Voltage, 2.8 VDC, Mid Channel, 403.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		403.495428	403.5	11.3	100	Pass



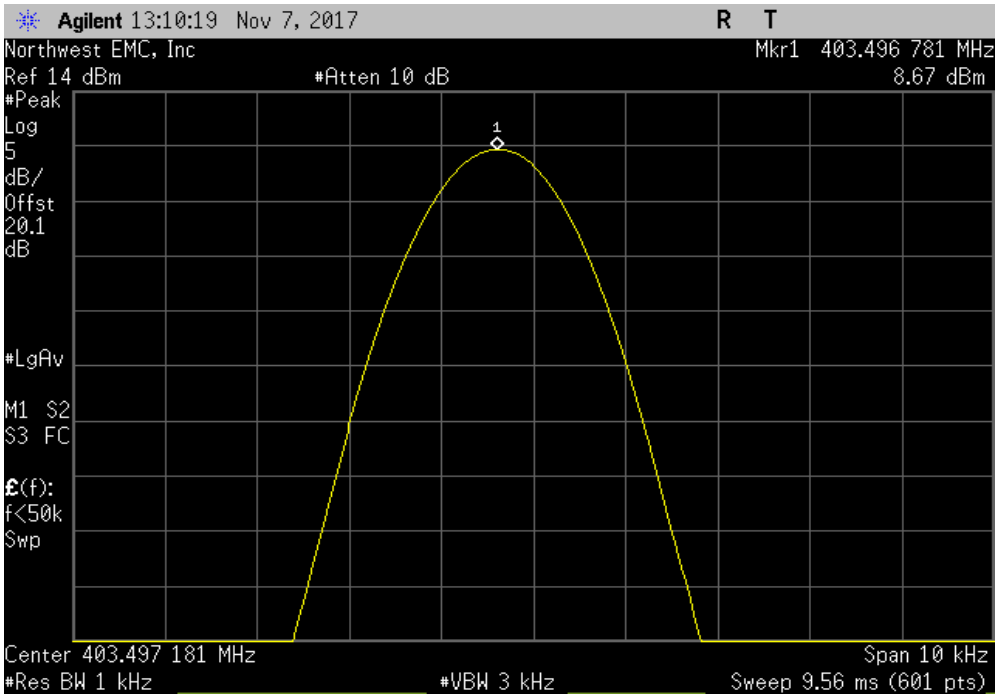
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

Extreme Temperature +20°C, Nominal Voltage, 2.8 VDC, Mid Channel, 403.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		403.496813	403.5	7.9	100	Pass



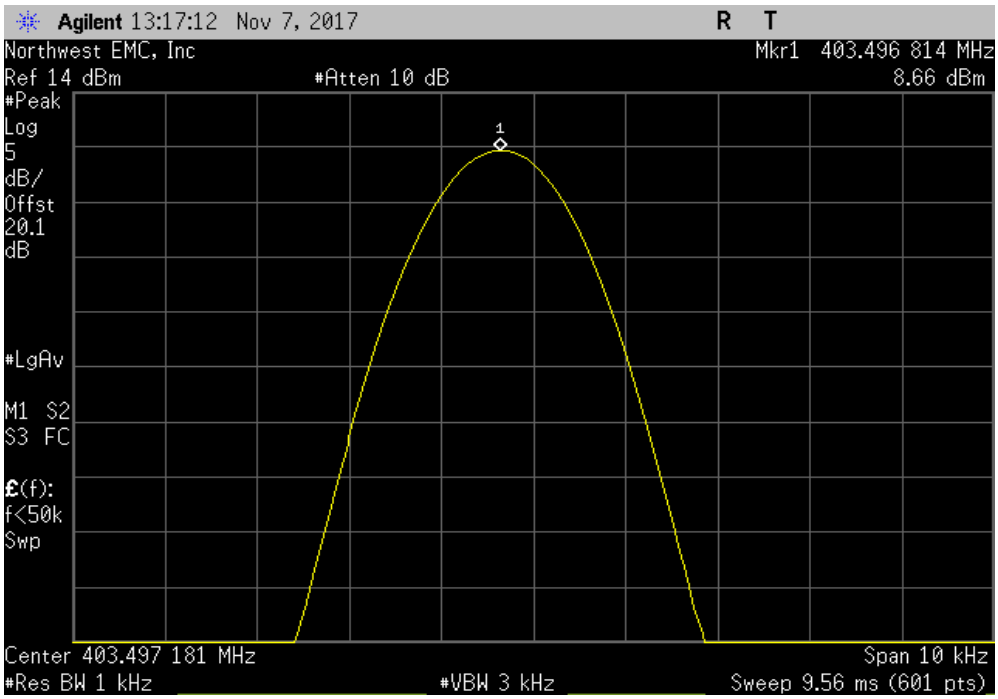
Extreme Temperature +20°C, Extreme Voltage, 3.3 VDC, Mid Channel, 403.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		403.496781	403.5	8	100	Pass



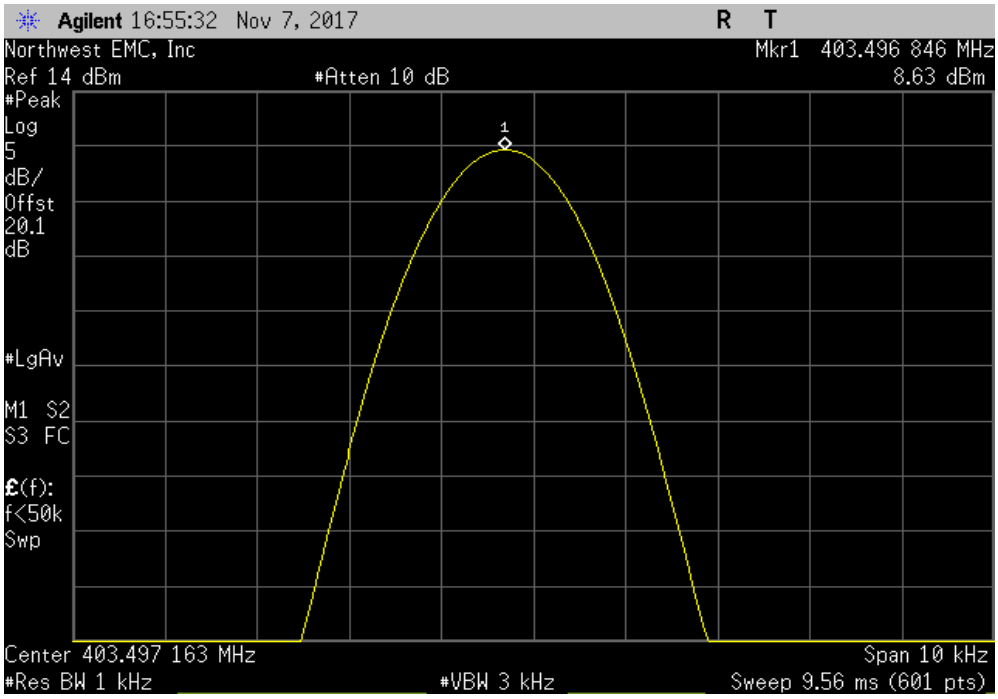
FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

Extreme Temperature +20°C, Extreme Voltage, 2.1 VDC, Mid Channel, 403.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		403.496814	403.5	7.9	100	Pass



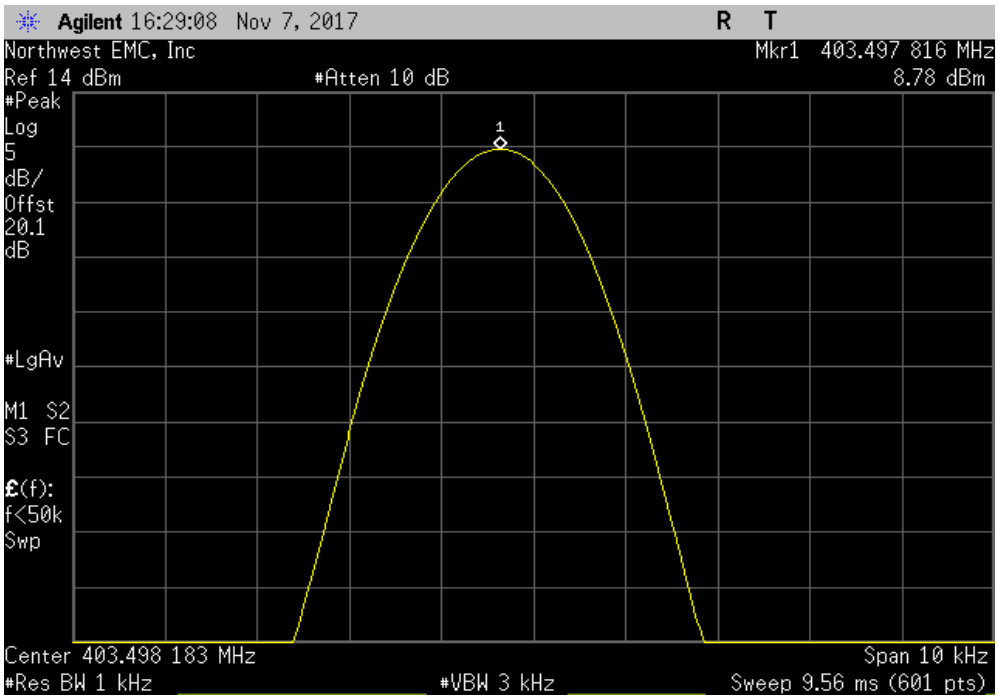
Extreme Temperature +10°C, Nominal Voltage, 2.8 VDC, Mid Channel, 403.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		403.496846	403.5	7.8	100	Pass



FREQUENCY STABILITY

NweTx 2016.09.14.2 XMit 2017.09.21

Extreme Temperature 0°C, Nominal Voltage, 2.8 VDC, Mid Channel, 403.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		403.497816	403.5	5.4	100	Pass



SPURIOUS CONDUCTED EMISSIONS

XMit 2017.09.21

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	Fairview Microwave	SA4014-20	TKV	9-Mar-17	9-Mar-18
Block - DC	Fairview Microwave	SD3379	AMU	20-Apr-17	20-Apr-18
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	20-Apr-17	20-Apr-18
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	2-Jun-17	2-Jun-18
Generator - Signal	Keysight	N5182B	TFY	16-Apr-15	16-Apr-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

NweTx 2016.09.14.2 XMit 2017.09.21

EUT:	**Patient Remote (PR) - 2301**			**Work Order:**	**AXON0099**
Serial Number:	**AP1BA70018**			**Date:**	**7-Nov-17**
Customer:	**Axonics Modulation Technologies, Inc.**			**Temperature:**	**22 °C**
Attendees:	**Flavio Ono**			**Humidity:**	**28% RH**
Project:	**None**			**Barometric Pres.:**	**1028 mbar**
Tested by:	**Richard Mellroth**	**Power:**	**2.8 VDC**	**Job Site:**	**NC04**

TEST SPECIFICATIONS	**Test Method**
FCC 95I:2017	ANSI C63.26:2015

COMMENTS

Transmitting at default power setting. EUT programmed via Bluetooth connection to remote laptop.

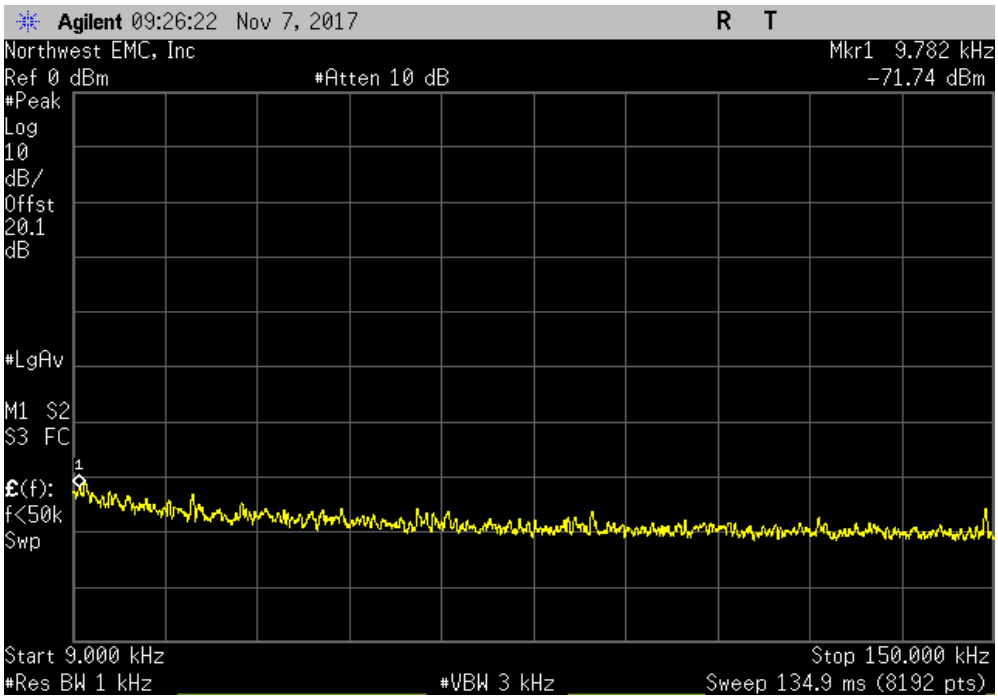
DEVIATIONS FROM TEST STANDARD

None

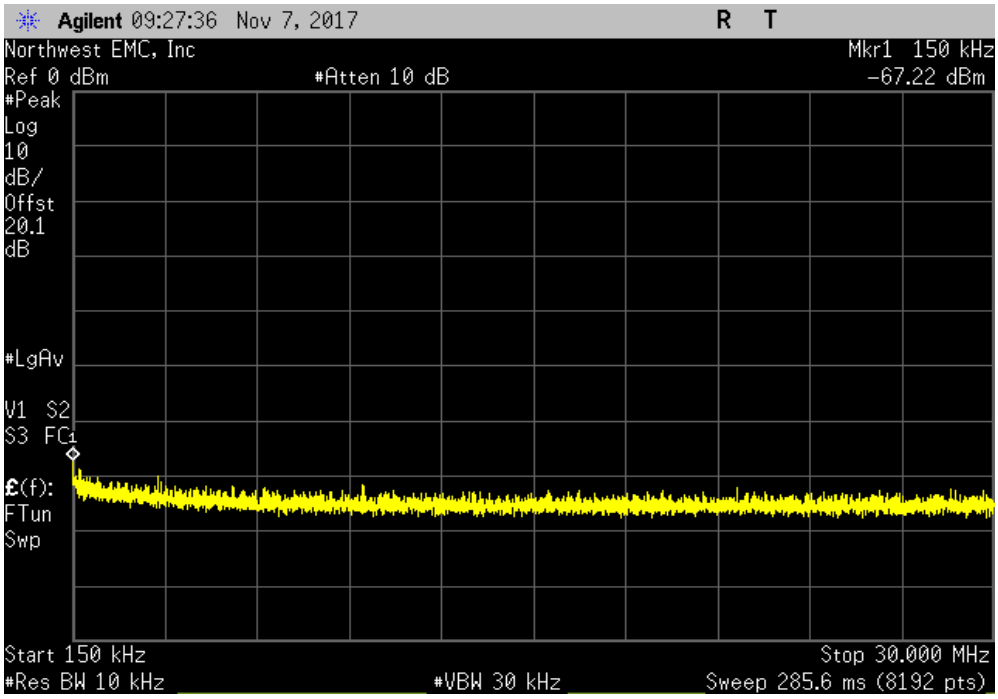
Configuration #	**3**	*Signature*

	Frequency Range	Max Value (dBc)	Limit (dBc)	Result
MEDS Low Band, Mid Channel, 401.55 MHz	9 kHz - 150 kHz	N/A	N/A	N/A
MEDS Low Band, Mid Channel, 401.55 MHz	150 kHz - 30 MHz	N/A	N/A	N/A
MEDS Low Band, Mid Channel, 401.55 MHz	30 MHz - 5 GHz	-45.23	N/A	N/A
MEDS High Band, Mid Channel, 405.55 MHz	9 kHz - 150 kHz	N/A	N/A	N/A
MEDS High Band, Mid Channel, 405.55 MHz	150 kHz - 30 MHz	N/A	N/A	N/A
MEDS High Band, Mid Channel, 405.55 MHz	30 MHz - 5 GHz	-66.72	N/A	N/A
MICS Mid Band, Mid Channel, 403.5 MHz	9 kHz - 150 kHz	N/A	N/A	N/A
MICS Mid Band, Mid Channel, 403.5 MHz	150 kHz - 30 MHz	N/A	N/A	N/A
MICS Mid Band, Mid Channel, 403.5 MHz	30 MHz - 5 GHz	-32.18	N/A	N/A

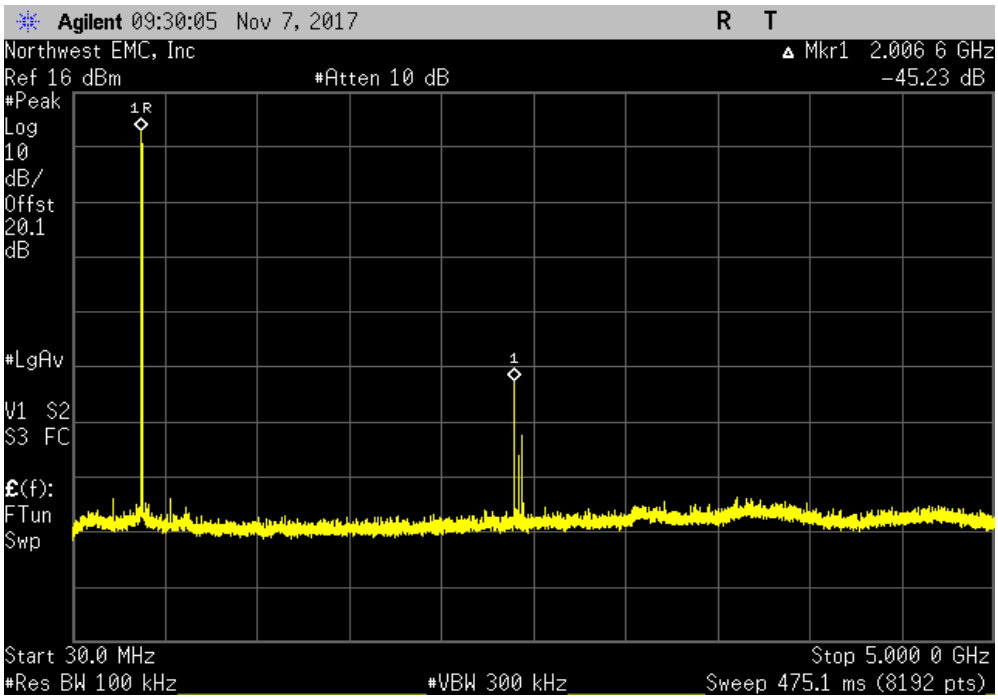
MEDS Low Band, Mid Channel, 401.55 MHz					
Frequency Range			Max Value (dBc)	Limit (dBc)	Result
	9 kHz - 150 kHz		N/A	N/A	N/A



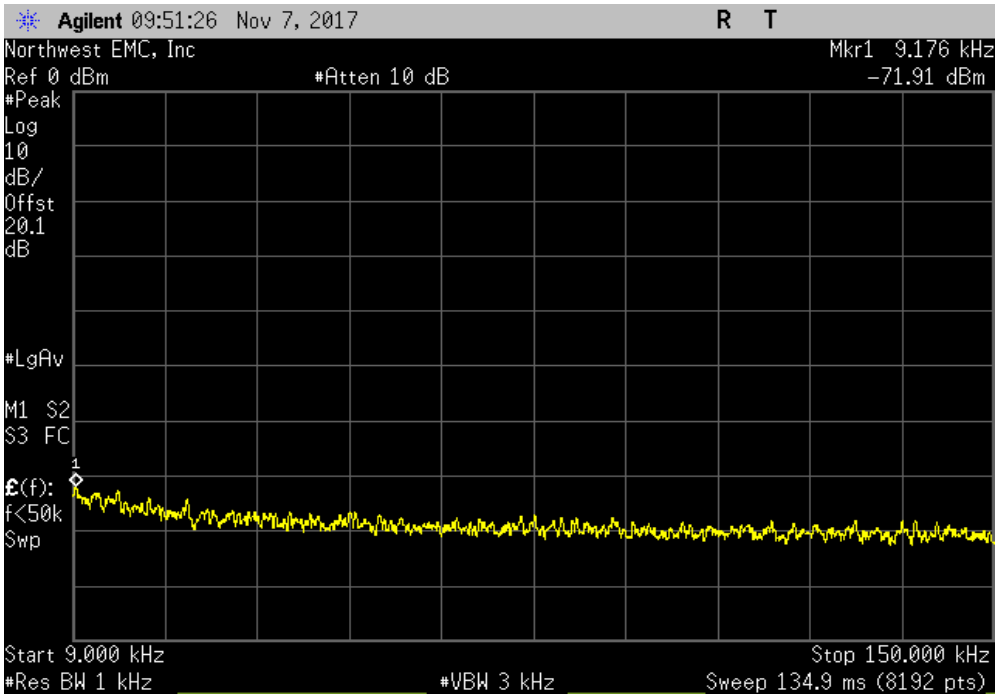
MEDS Low Band, Mid Channel, 401.55 MHz				
Frequency Range		Max Value (dBc)	Limit (dBc)	Result
150 kHz - 30 MHz		N/A	N/A	N/A



MEDS Low Band, Mid Channel, 401.55 MHz						
	Frequency Range			Max Value (dBc)	Limit (dBc)	Result
	30 MHz - 5 GHz			-45.23	N/A	N/A



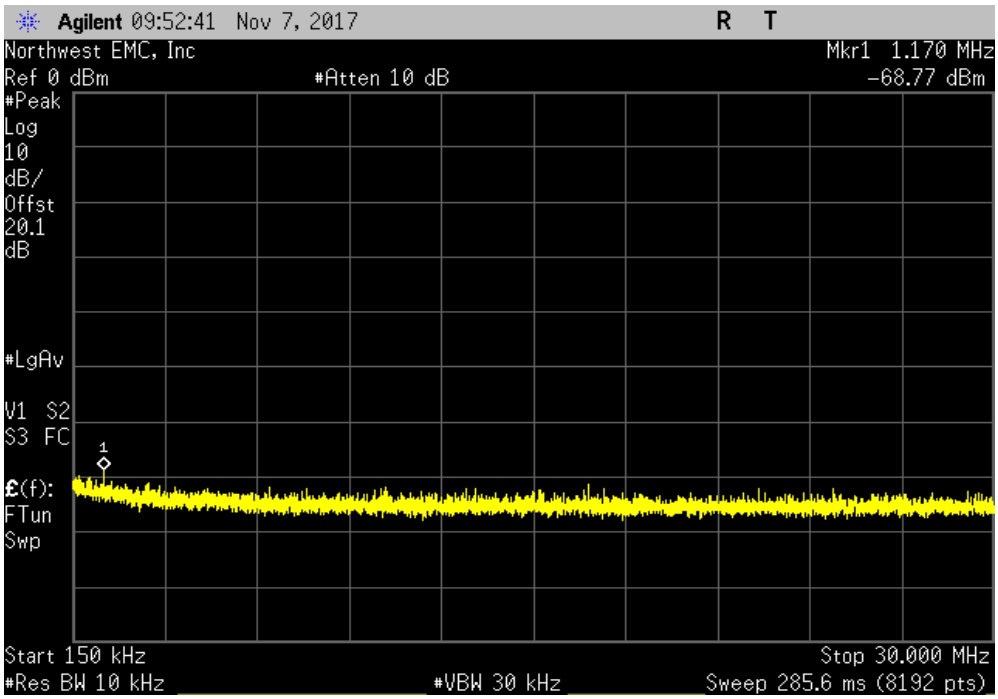
MEDS High Band, Mid Channel, 405.55 MHz						
	Frequency Range			Max Value (dBc)	Limit (dBc)	Result
	9 kHz - 150 kHz			N/A	N/A	N/A



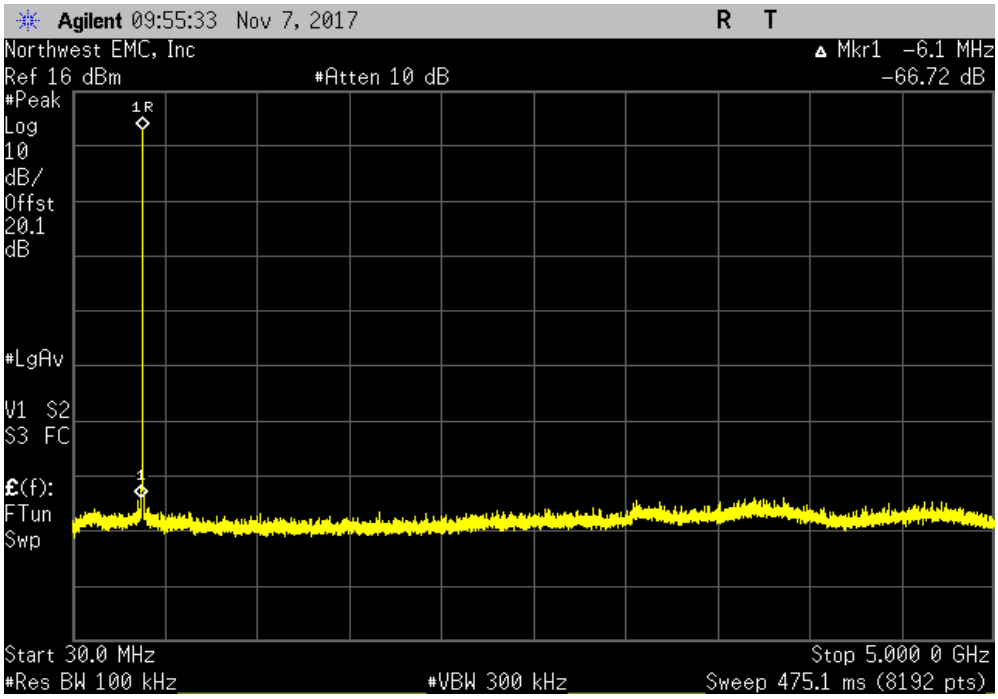
SPURIOUS CONDUCTED EMISSIONS

NweTx 2016.09.14.2 XMit 2017.09.21

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

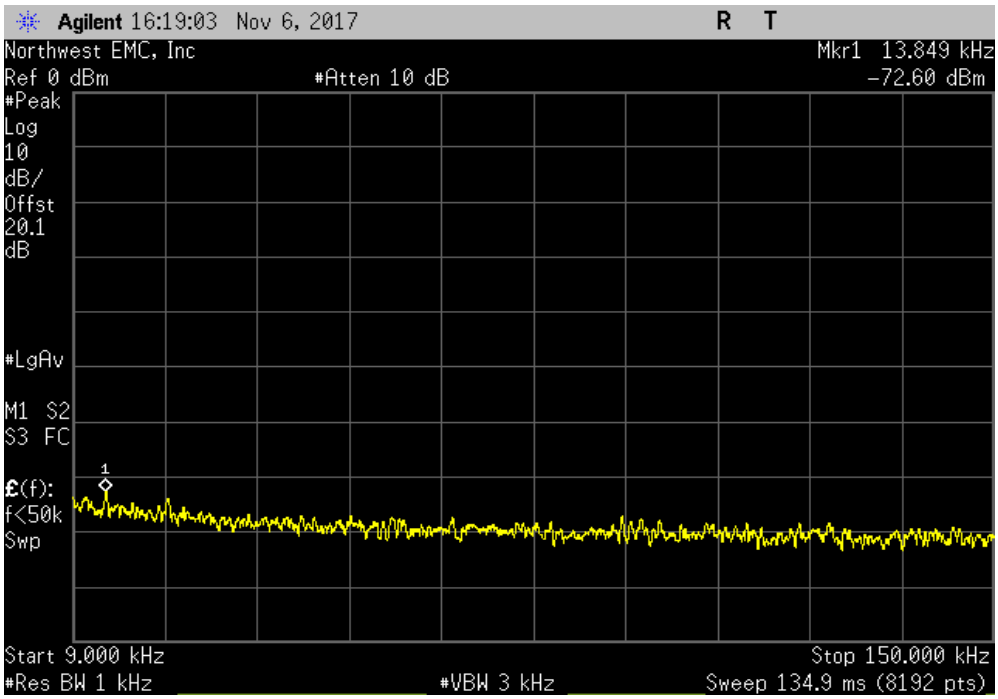


MEDS High Band, Mid Channel, 405.55 MHz					
	Frequency Range		Max Value (dBc)	Limit (dBc)	Result
	30 MHz - 5 GHz		-66.72	N/A	N/A

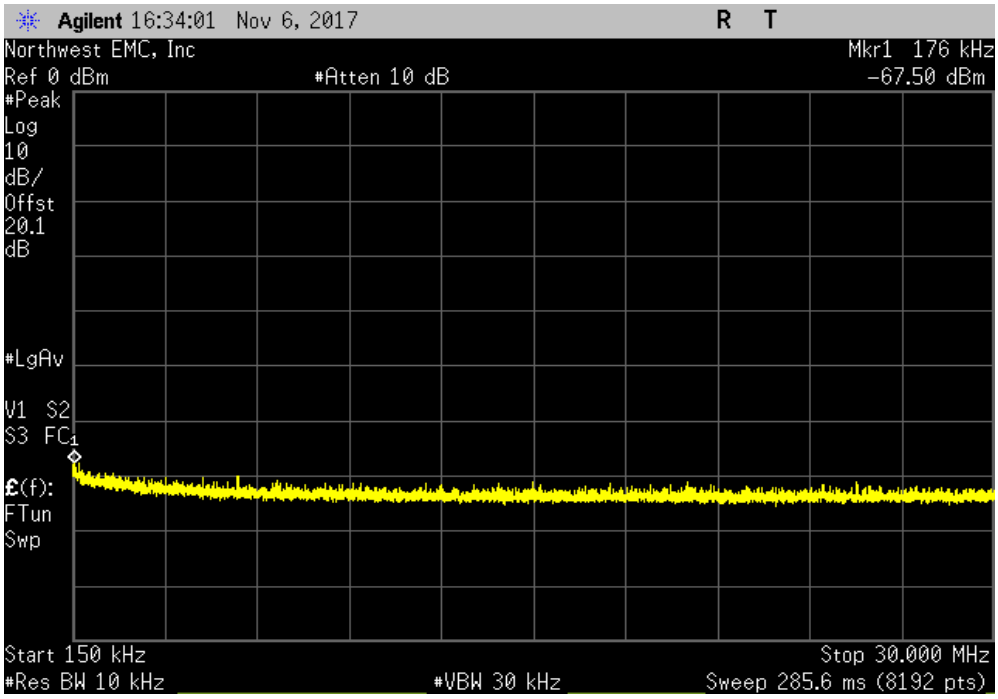


NweTx 2016.09.14.2 XMit 2017.09.21

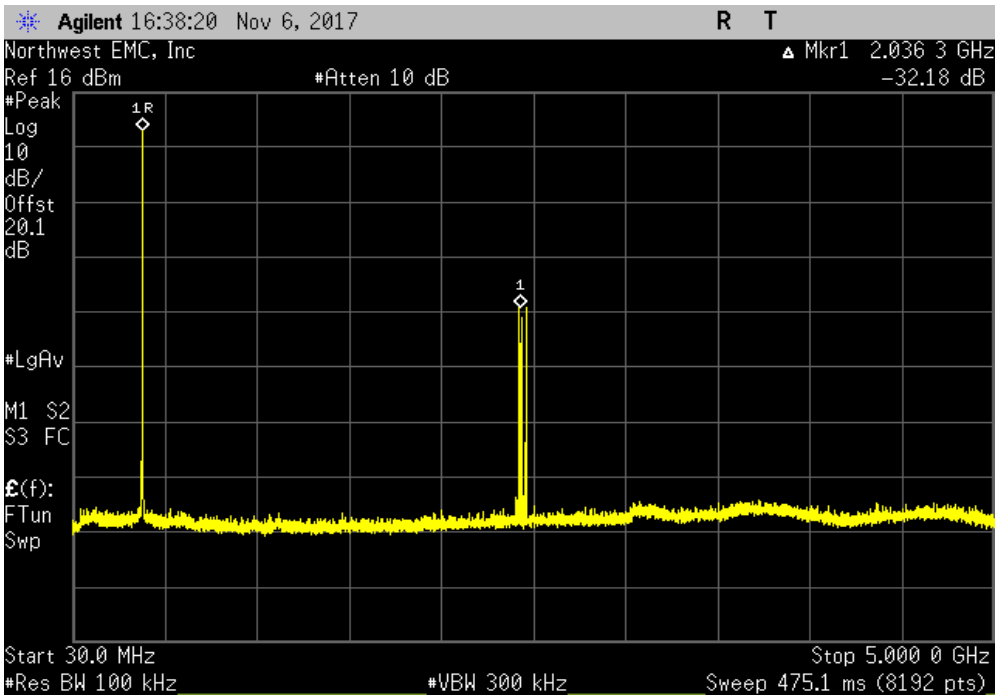
FSK Modulation, Mid Channel, 403.5 MHz						
	Frequency Range			Max Value (dBc)	Limit A (dBc)	Result
	9 kHz - 150 kHz			N/A	N/A	N/A



FSK Modulation, Mid Channel, 403.5 MHz					
Frequency Range			Max Value (dBc)	Limit A (dBc)	Result
150 kHz - 30 MHz			N/A	N/A	N/A



SPURIOUS CONDUCTED EMISSIONS (MICS)

NweTx 2016.09.14.2 XMit 2017.09.21

FSK Modulation, Mid Channel, 403.5 MHz						
	Frequency Range			Max Value (dBc)	Limit A (dBc)	Result
	30 MHz - 5 GHz			-32.18	N/A	N/A