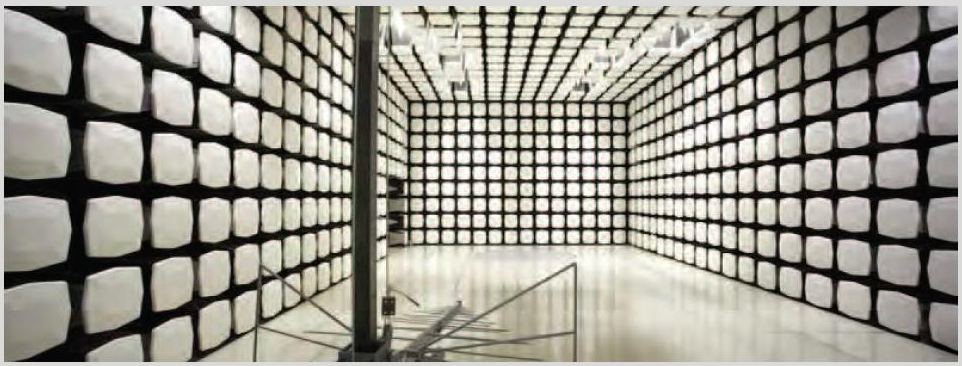
Masimo Corporation

MWMII

FCC 15.407:2019

802.11an SISO Radio

Report # MASI0553.4 Rev. 2



NVLAP LAB CODE: 200676-0

CERTIFICATE OF TEST

Last Date of Test: July 19, 2019
Masimo Corporation
Model: MWMII

Radio Equipment Testing

Standards

Specification	Method
FCC 15.207:2019	ANSI C63.10:2013
FCC 15.407:2019	ANSI C63.10:2013, KDB 789033, KDB 905462

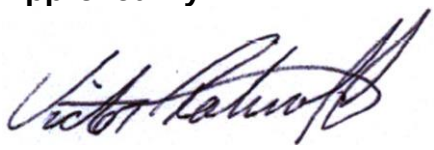
Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	Yes	Pass	
6.5, 6.6, 12.7	Spurious Radiated Emissions	Yes	Pass	
6.8	Frequency Stability	Yes	Pass	
12.2	Duty Cycle	Yes	N/A	
12.3.2.4	Maximum Conducted Output Power	Yes	Pass	
12.3.2.4	Equivalent Isotropic Radiated Power (EIRP)	Yes	Pass	
12.4.1	Emission Bandwidth	Yes	Pass	
12.4.2	Occupied Bandwidth	Yes	Pass	
12.4.2	Band Edge	Yes	Pass	
12.5	Maximum Power Spectral Density	Yes	Pass	
KDB 789033 -H	Measurement of Emission at Elevation Angle Higher Than 30 Degrees From Horizon	No	N/A	Not required unless the EUT is a Master device used outdoors.

Deviations From Test Standards

None

Approved By:



Victor Ratinoff, 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. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

REVISION HISTORY

Revision Number	Description	Date (yyyy-mm-dd)	Page Number
00	None		
01	Updated power setting from 20 to 21.	2019-11-16	19, 21, 23, 25
	Updated the header for each measurement that lists 'Value (%)' to Value (99%)	2019-11-16	302
	In Spurious Radiated Emissions the measurements with the -27 dBm limit updated to be peak measurements - not average.	2019-11-16	29, 34, 42, 48
	Fixed Power Spectral Density test description print area.	2019-11-16	313
02	Added comment to Spurious Radiated Emissions data, “No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.”	2019-11-26	29-37, 40-51

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) and as a CAB for the acceptance of test data.

European Union

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

Australia/New Zealand

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

Korea

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

Japan

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

Taiwan

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

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

Singapore

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

Israel

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

Hong Kong

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

Vietnam

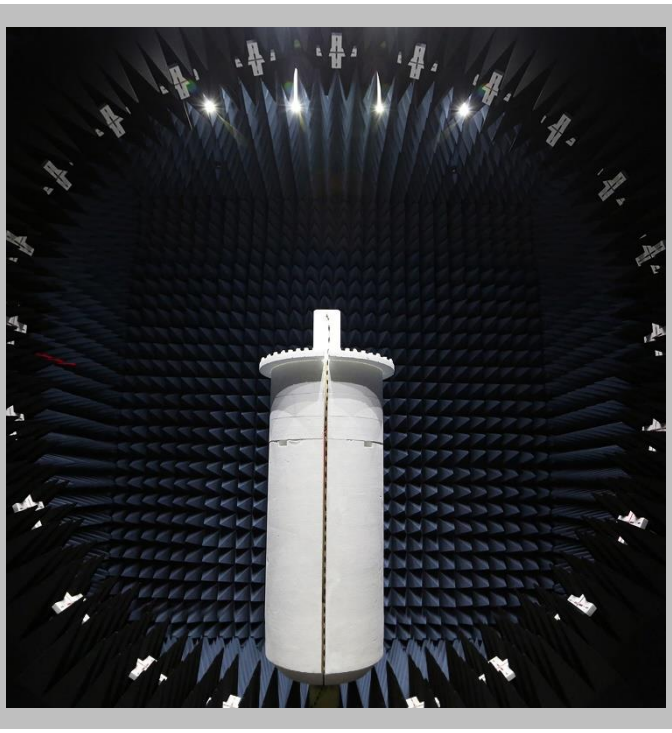
MIC – Recognized by MIC as a CAB for the acceptance of test data.

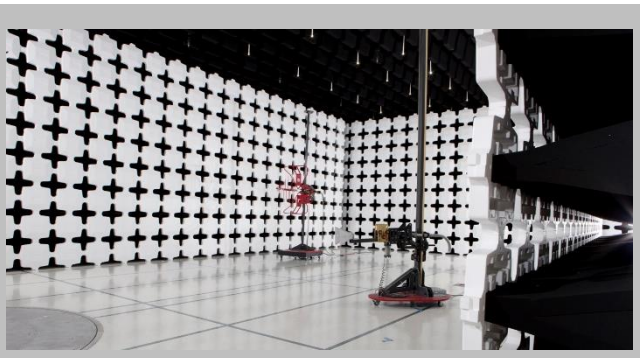
SCOPE

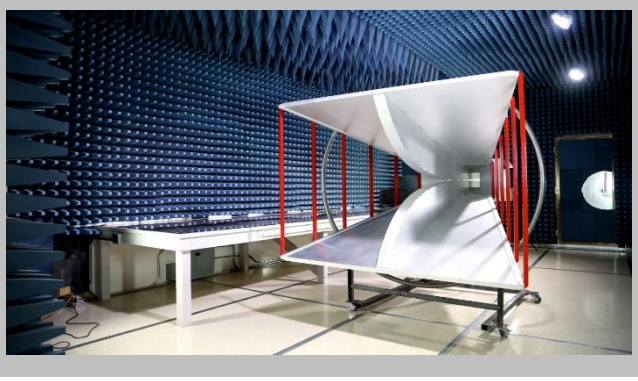
For details on the Scopes of our Accreditations, please visit:
https://www.nwemc.com/emc-testing-accreditations

FACILITIES

California	Minnesota	Oregon	Texas	Washington
Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Labs MN01-10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Labs EV01-12 6775 NE Evergreen Pkwy #400 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: 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	2834D-1	2834G-1	2834F-1
BSMI				
SL2-IN-E-1154R	SL2-IN-E-1152R	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI				
A-0029	A-0109	A-0108	A-0201	A-0110
Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA				
US0158	US0175	US0017	US0191	US0157







MEASUREMENT UNCERTAINTY

element
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.

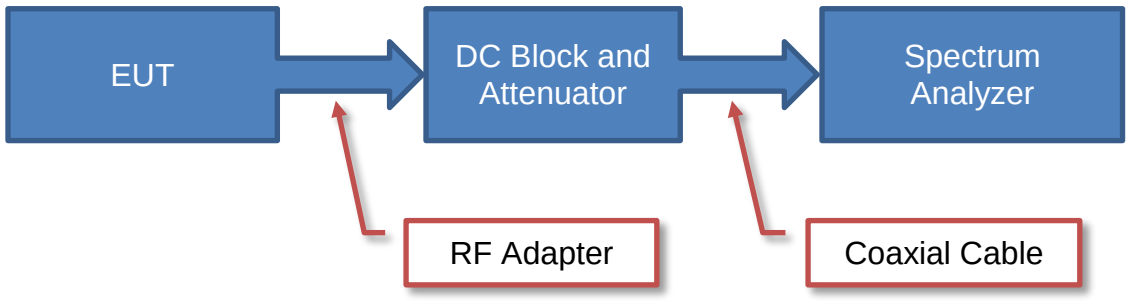
A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable 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.

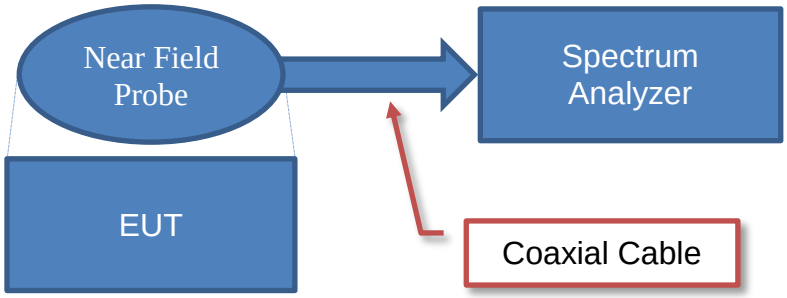
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	1.2 dB	-1.2 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.1 dB	-5.1 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

Test Setup Block Diagrams

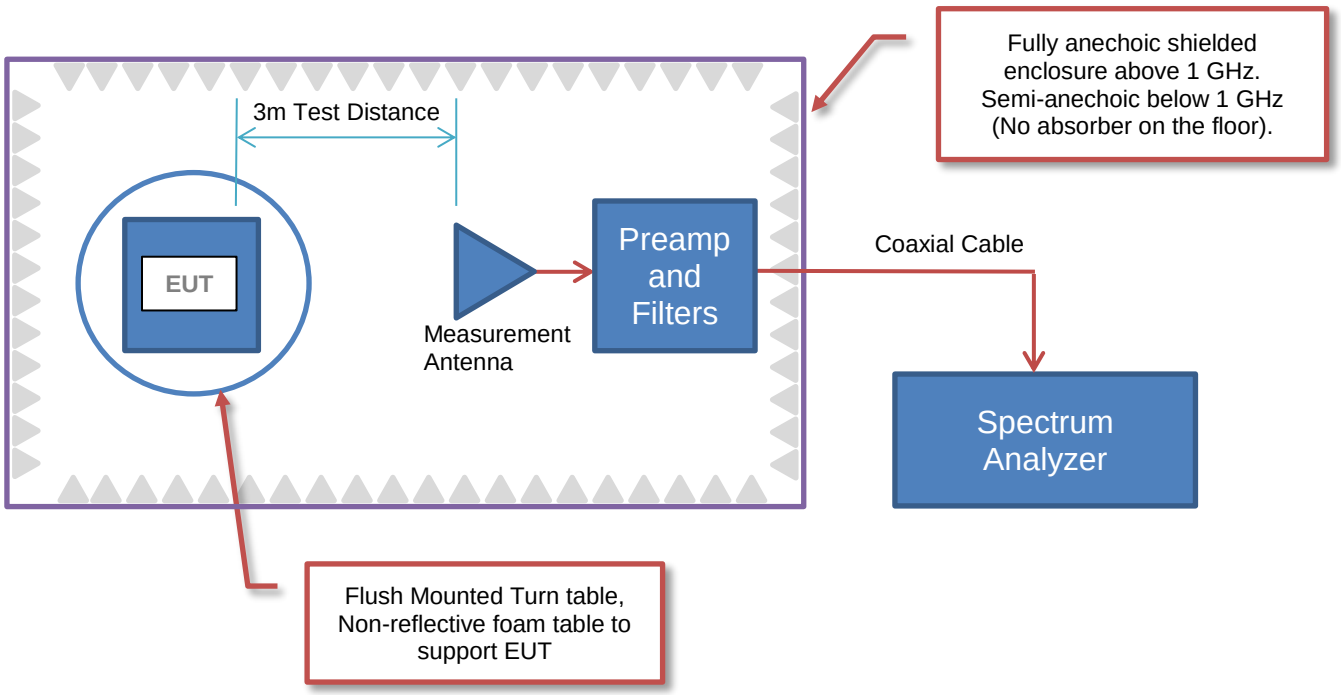
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Masimo Corporation
Address:	52 Discovery
City, State, Zip:	Irvine, CA 92618
Test Requested By:	Anami Joshi
Model:	MWMII
First Date of Test:	July 8, 2019
Last Date of Test:	July 19, 2019
Receipt Date of Samples:	July 8, 2019
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 MWMII is a stand-alone IEEE 802.11 and Bluetooth radio module (P/N 26269) that uses an AzureWave AW-CM256SM radio chipset, and which incorporates the Broadcom BCM43455 single chip. The 802.11 a/b/g/n operates in the 2.4 GHz, 5.2 GHz, 5.3 GHz, 5.6 GHz and 5.8 GHz band(s). The MWMII radio module can be paired with the same type of Ethertronics antenna of either Model 9000129 or 1000672. The antenna evaluated is of the highest gain per band.

Testing Objective:
To demonstrate compliance of the 802.11 radio under FCC 15.407 for operation in the 5.2 GHz, 5.3 GHz, 5.6 GHz and 5.8 GHz band(s).

CONFIGURATIONS

Configuration MASI0553- 3

Software/Firmware Running during test	
Description	**Version**
Firmware	7.45.100.7-mfgtest

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Masimo Wireless Module II	Masimo	MWMII (P/N: 26269)	ENG-1
Antenna (2.4GHz-5.35GHz)	Ethertronics	1000672	N/A

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Carrier Board	Masimo	26634 Rev. B	1847700024
Hawk Radio Board Debug Tool	Masimo	82403	None
Battery	Masimo	23794	21826002827

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
RF Cable	Yes	0.1m	No	Masimo Wireless Module II	Antenna

Configuration MASI0553- 4

Software/Firmware Running during test	
Description	**Version**
Firmware	7.45.100.7-mfgtest

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Masimo Wireless Module II	Masimo	MWMII (P/N: 26269)	ENG-1
Antenna (5.35GHz-5.8GHz)	Ethertronics	9000129	N/A

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Carrier Board	Masimo	26634 Rev. B	1847700024
Hawk Radio Board Debug Tool	Masimo	82403	None
Battery	Masimo	23794	21826002827

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
RF Cable	Yes	0.1m	No	Masimo Wireless Module II	Antenna

CONFIGURATIONS

Configuration MASI0553- 6

Software/Firmware Running during test	
Description	**Version**
Firmware	7.45.100.7-mfgtest

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Masimo Wireless Module II	Masimo	MWMII (P/N: 26269)	ENG-1
Antenna (2.4GHz-5.35GHz)	Ethertronics	1000672	N/A

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Carrier Board	Masimo	26634 Rev. B	1847700024
Switching Supply	TEKPOWER	TP6005E	187890
Hawk Radio Board Debug Tool	Masimo	82403	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Cable	No	1.8m	No	AC Mains	Switching Power Supply
DC Cable	Yes	1.0m	No	DC Power Supply	Hawk Radio Board Debug Tool
RF Cable	Yes	0.1m	No	Masimo Wireless Module II	Antenna

CONFIGURATIONS

Configuration MASI0553- 8

Software/Firmware Running during test	
Description	**Version**
Firmware	7.45.100.7-mfgtest

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Masimo Wireless Module II	Masimo	MWMII (P/N: 26269)	ENG-1

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Carrier Board	Masimo	26634 Rev. B	1847700024
AC Adapter	XP Power	ACM18US05-3A	160803-00607
i.MX 53 Quick Start Board	FreeScale	iMx-53	None
Host Laptop	Hewlett-Packard	ProBook	CND638CWSR
Laptop Power Supply	Hewlett-Packard	PPP009H	WBGSU0BL91FXO9
USB Hub	plugable	USB3-HUB7C	Y-3184
Hawk Radio Board Debug Tool	Masimo	82403	None
Dual Output DC Power Supply	Agilent	E3648A	MY51120045

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
USB Cable	Yes	3.0m	No	Host Laptop	USB Hub
USB-to-Serial Cable	Yes	0.3m	No	USB Hub	Hawk Radio Board Debug Tool
AC Cable	No	1.2m	No	AC Mains	Laptop Power Supply
DC Cable	Yes	1.4m	Yes	Laptop Power Supply	Host Laptop
DC Cable	Yes	1.6m	No	i.MX 53 Quick Start Board	AC Adapter (AC Mains)
DC Cable	No	3.0m	No	DC Power Supply	Hawk Radio Board Debug Tool

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2019-07-08	Powerline 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.
2	2019-07-16	Duty Cycle	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	2019-07-16	Maximum 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.
4	2019-07-16	Equivalent Isotropic 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.
5	2019-07-16	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.
6	2019-07-16	Occupied 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.
7	2019-07-16	Band Edge	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
8	2019-07-16	Maximum Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
9	2019-07-16	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.
10	2019-07-19	Frequency Stability	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

POWER SETTINGS

The EUT was tested using the power settings provided by the manufacturer:

SETTINGS FOR ALL TESTS IN THIS REPORT

Modulation Types	Protocol	Channel Bandwidths	Channel	Position	Frequency (MHz)	Power Setting
6 Mbps, 36 Mbps, 54 Mbps	a	20	36	Low Channel	5180	20
			48	High Channel	5240	20
MCS0, MCS7	n	20	36	Low Channel	5180	20
			48	High Channel	5240	20
MCS0, MCS7	n	40	36/40	Low Channel	5190	18
			44/48	High Channel	5230	18
6 Mbps, 36 Mbps, 54 Mbps	a	20	52	Low Channel	5260	21
			64	High Channel	5320	21
MCS0, MCS7	n	20	52	Low Channel	5260	21
			64	High Channel	5320	21
MCS0, MCS7	n	40	52/56	Low Channel	5270	18
			60/64	High Channel	5310	18
6 Mbps, 36 Mbps, 54 Mbps	a	20	100	Low Channel	5500	21
			116	Mid Channel	5580	21
			140	High Channel	5700	21
MCS0, MCS7	n	20	100	Low Channel	5500	21
			116	Mid Channel	5580	21
			140	High Channel	5700	21
MCS0, MCS7	n	40	100/104	Low Channel	5510	18
			116/120	Mid Channel	5590	18
			132/136	High Channel	5670	18
6 Mbps, 36 Mbps, 54 Mbps	a	20	149	Low Channel	5745	21
			157	Mid Channel	5785	21
			165	High Channel	5825	21
MCS0, MCS7	n	20	149	Low Channel	5745	21
			157	Mid Channel	5785	21
			165	High Channel	5825	21
MCS0, MCS7	n	40	149/153	Low Channel	5755	18
			157/161	High Channel	5795	18

POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

TEST DESCRIPTION

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
LISN	Solar Electronics	9252-50-24-BNC	LIA	2019-01-08	2020-01-08
LISN	Solar Electronics	9252-50-24-BNC	LIB	2019-01-08	2020-01-08
Cable - Conducted Cable Assembly	Northwest EMC	OCP, HFP, AWC	OCPA	2018-10-05	2019-10-05
Power Supply	Pacific Power	AFX 12KVA	SMT	NCR	NCR
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFP	2019-07-02	2020-07-02

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	2.4 dB	-2.4 dB

CONFIGURATIONS INVESTIGATED

MASI0553-6

MODES INVESTIGATED

Transmitting 802.11a Low Ch 52 (5260 MHz), 6 Mbps, Power Setting 21
Transmitting 802.11a Mid Ch 116 (5580 MHz), 6 Mbps, Power Setting 21
Transmitting 802.11a Mid Ch 157 (5785 MHz), 6 Mbps, Power Setting 21

POWERLINE CONDUCTED EMISSIONS

EUT:	MWMII	Work Order:	MASI0553
Serial Number:	ENG-1	Date:	2019-07-08
Customer:	Masimo Corporation	Temperature:	21.3°C
Attendees:	Anami Joshi, Nghi Nguyen	Relative Humidity:	50%
Customer Project:	None	Bar. Pressure:	1019 mb
Tested By:	Nolan De Ramos	Job Site:	OC06
Power:	3.6VDC via 120VAC/60Hz	Configuration:	MASI0553-6

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2019	ANSI C63.10:2013

TEST PARAMETERS

Run #:	11	Line:	High Line	Add. Ext. Attenuation (dB):	0

COMMENTS

EUT would not transmit 802.11 WiFi when DC is powered through LISN, therefore the AC line of the DC Power Supply was tested

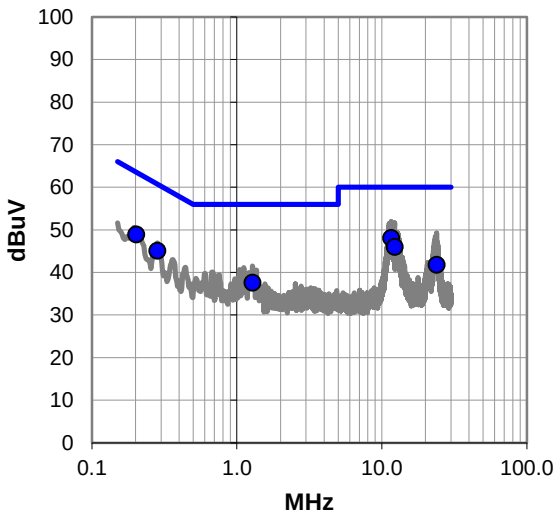
EUT OPERATING MODES

Transmitting 802.11a Low Ch 52 (5260 MHz), 6 Mbps, Power Setting 21

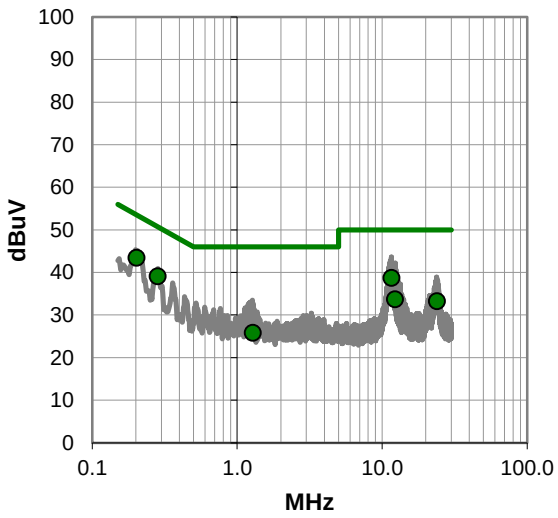
DEVIATIONS FROM TEST STANDARD

None

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

RESULTS - Run #11

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
11.589	27.4	20.7	48.1	60.0	-11.9
12.309	25.3	20.7	46.0	60.0	-14.0
0.203	28.8	20.1	48.9	63.5	-14.6
0.283	25.0	20.1	45.1	60.7	-15.6
23.897	20.3	21.5	41.8	60.0	-18.2
1.283	17.6	20.0	37.6	56.0	-18.4

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.203	23.3	20.1	43.4	53.5	-10.1
11.589	18.0	20.7	38.7	50.0	-11.3
0.283	19.0	20.1	39.1	50.7	-11.6
12.309	13.0	20.7	33.7	50.0	-16.3
23.897	11.7	21.5	33.2	50.0	-16.8
1.283	5.8	20.0	25.8	46.0	-20.2

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

EUT:	MWMII	Work Order:	MASI0553
Serial Number:	ENG-1	Date:	2019-07-08
Customer:	Masimo Corporation	Temperature:	21.3°C
Attendees:	Anami Joshi, Nghi Nguyen	Relative Humidity:	50%
Customer Project:	None	Bar. Pressure:	1019 mb
Tested By:	Nolan De Ramos	Job Site:	OC06
Power:	3.6VDC via 120VAC/60Hz	Configuration:	MASI0553-6

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2019	ANSI C63.10:2013

TEST PARAMETERS

Run #:	12	Line:	Neutral	Add. Ext. Attenuation (dB):	0

COMMENTS

EUT would not transmit 802.11 WiFi when DC is powered through LISN, therefore the AC line of the DC Power Supply was tested

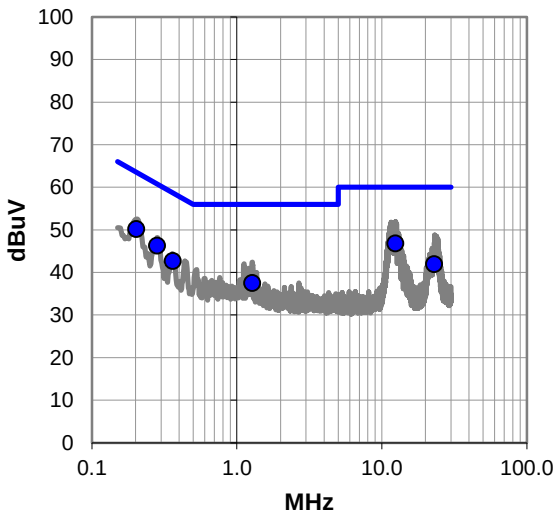
EUT OPERATING MODES

Transmitting 802.11a Low Ch 52 (5260 MHz), 6 Mbps, Power Setting 21

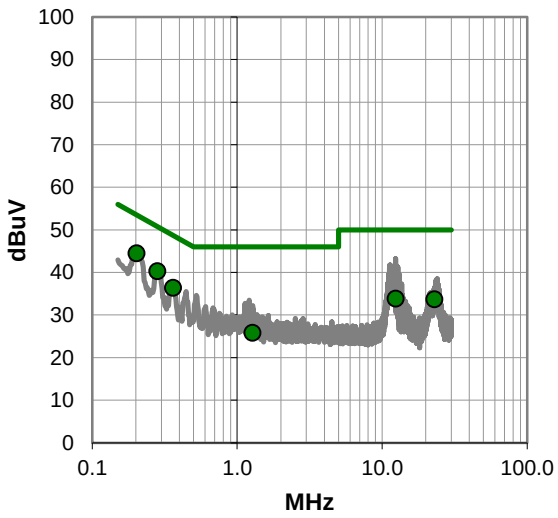
DEVIATIONS FROM TEST STANDARD

None

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

RESULTS - Run #12

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
12.388	26.1	20.7	46.8	60.0	-13.2
0.202	30.1	20.1	50.2	63.5	-13.3
0.282	26.2	20.1	46.3	60.7	-14.4
0.362	22.6	20.1	42.7	58.7	-16.0
23.010	20.4	21.5	41.9	60.0	-18.1
1.279	17.5	20.0	37.5	56.0	-18.5

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.202	24.4	20.1	44.5	53.5	-9.0
0.282	20.2	20.1	40.3	50.7	-10.4
0.362	16.3	20.1	36.4	48.7	-12.3
12.388	13.1	20.7	33.8	50.0	-16.2
23.010	12.2	21.5	33.7	50.0	-16.3
1.279	5.8	20.0	25.8	46.0	-20.2

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

EUT:	MWMII	Work Order:	MASI0553
Serial Number:	ENG-1	Date:	2019-07-08
Customer:	Masimo Corporation	Temperature:	21.3°C
Attendees:	Anami Joshi, Nghi Nguyen	Relative Humidity:	50%
Customer Project:	None	Bar. Pressure:	1019 mb
Tested By:	Nolan De Ramos	Job Site:	OC06
Power:	3.6VDC via 120VAC/60Hz	Configuration:	MASI0553-6

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2019	ANSI C63.10:2013

TEST PARAMETERS

Run #:	13	Line:	Neutral	Add. Ext. Attenuation (dB):	0

COMMENTS

EUT would not transmit 802.11 WiFi when DC is powered through LISN, therefore the AC line of the DC Power Supply was tested

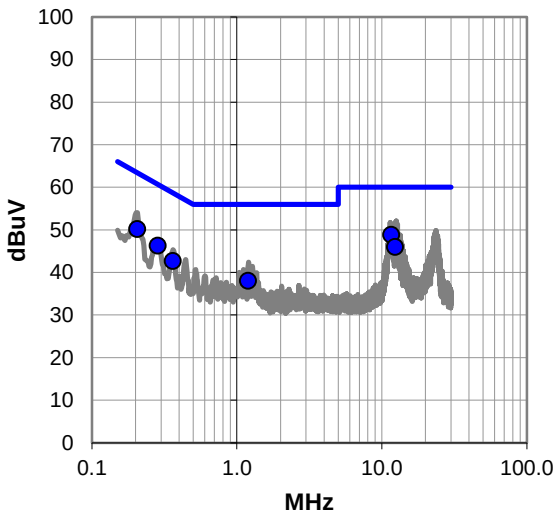
EUT OPERATING MODES

Transmitting 802.11a Mid Ch 116 (5580 MHz), 6 Mbps, Power Setting 21

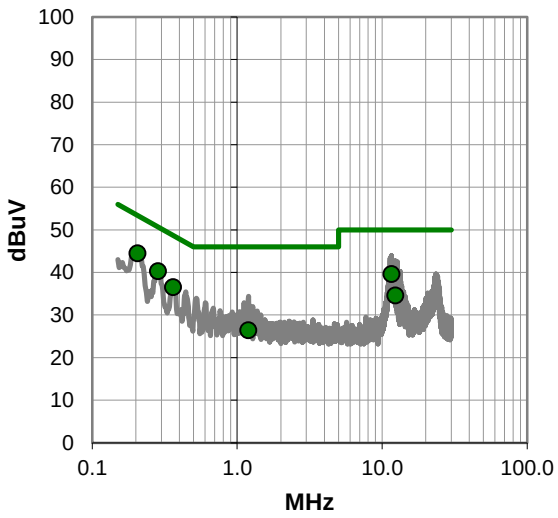
DEVIATIONS FROM TEST STANDARD

None

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

RESULTS - Run #13

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
11.596	28.1	20.7	48.8	60.0	-11.2
0.205	30.1	20.1	50.2	63.4	-13.2
12.318	25.3	20.7	46.0	60.0	-14.0
0.284	26.2	20.1	46.3	60.7	-14.4
0.362	22.6	20.1	42.7	58.7	-16.0
1.198	18.0	20.0	38.0	56.0	-18.0

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.205	24.4	20.1	44.5	53.4	-8.9
11.596	18.9	20.7	39.6	50.0	-10.4
0.284	20.2	20.1	40.3	50.7	-10.4
0.362	16.4	20.1	36.5	48.7	-12.2
12.318	13.9	20.7	34.6	50.0	-15.4
1.198	6.4	20.0	26.4	46.0	-19.6

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS

EUT:	MWMII	Work Order:	MASI0553
Serial Number:	ENG-1	Date:	2019-07-08
Customer:	Masimo Corporation	Temperature:	21.3°C
Attendees:	Anami Joshi, Nghi Nguyen	Relative Humidity:	50%
Customer Project:	None	Bar. Pressure:	1019 mb
Tested By:	Nolan De Ramos	Job Site:	OC06
Power:	3.6VDC via 120VAC/60Hz	Configuration:	MASI0553-6

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2019	ANSI C63.10:2013

TEST PARAMETERS

Run #:	14	Line:	High Line	Add. Ext. Attenuation (dB):	0

COMMENTS

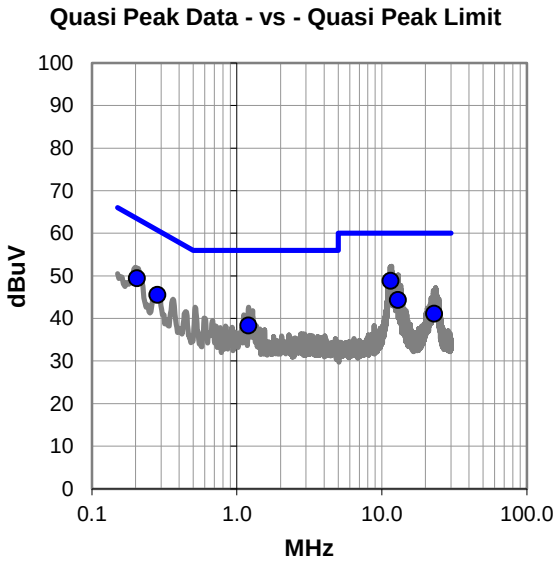
EUT would not transmit 802.11 WiFi when DC is powered through LISN, therefore the AC line of the DC Power Supply was tested

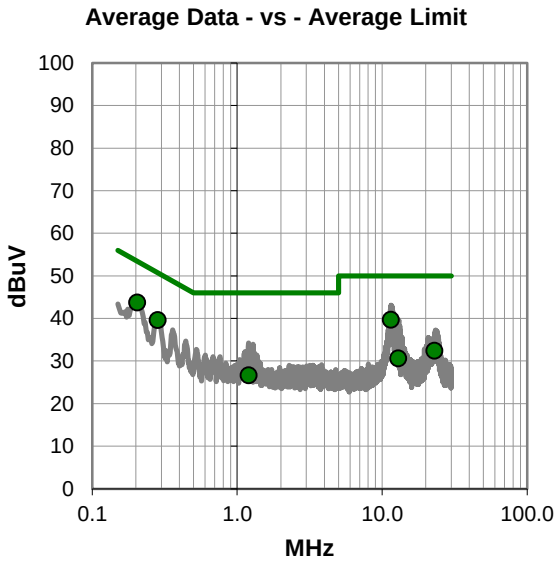
EUT OPERATING MODES

Transmitting 802.11a Mid Ch 116 (5580 MHz), 6 Mbps, Power Setting 21

DEVIATIONS FROM TEST STANDARD

None





POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

RESULTS - Run #14

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
11.514	28.1	20.7	48.8	60.0	-11.2
0.205	29.3	20.1	49.4	63.4	-14.0
0.283	25.4	20.1	45.5	60.7	-15.2
12.956	23.6	20.7	44.3	60.0	-15.7
1.203	18.3	20.0	38.3	56.0	-17.7
23.009	19.6	21.5	41.1	60.0	-18.9

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.205	23.6	20.1	43.7	53.4	-9.7
11.514	19.0	20.7	39.7	50.0	-10.3
0.283	19.5	20.1	39.6	50.7	-11.1
23.009	10.9	21.5	32.4	50.0	-17.6
12.956	9.9	20.7	30.6	50.0	-19.4
1.203	6.6	20.0	26.6	46.0	-19.4

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

EUT:	MWMII	Work Order:	MASI0553
Serial Number:	ENG-1	Date:	2019-07-08
Customer:	Masimo Corporation	Temperature:	21.3°C
Attendees:	Anami Joshi, Nghi Nguyen	Relative Humidity:	50%
Customer Project:	None	Bar. Pressure:	1019 mb
Tested By:	Nolan De Ramos	Job Site:	OC06
Power:	3.6VDC via 120VAC/60Hz	Configuration:	MASI0553-6

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2019	ANSI C63.10:2013

TEST PARAMETERS

Run #:	15	Line:	High Line	Add. Ext. Attenuation (dB):	0

COMMENTS

EUT would not transmit 802.11 WiFi when DC is powered through LISN, therefore the AC line of the DC Power Supply was tested

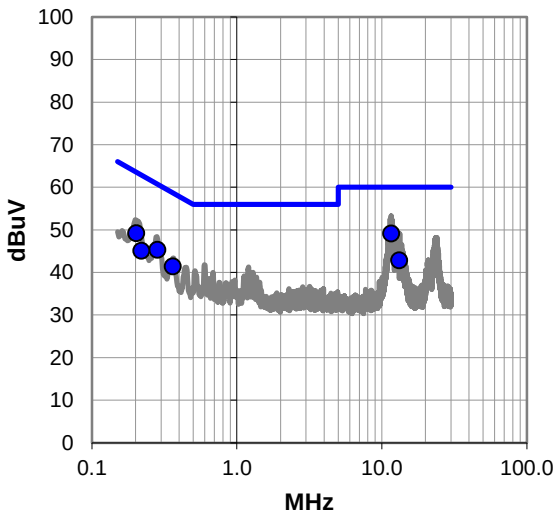
EUT OPERATING MODES

Transmitting 802.11a Mid Ch 157 (5785 MHz), 6 Mbps, Power Setting 21

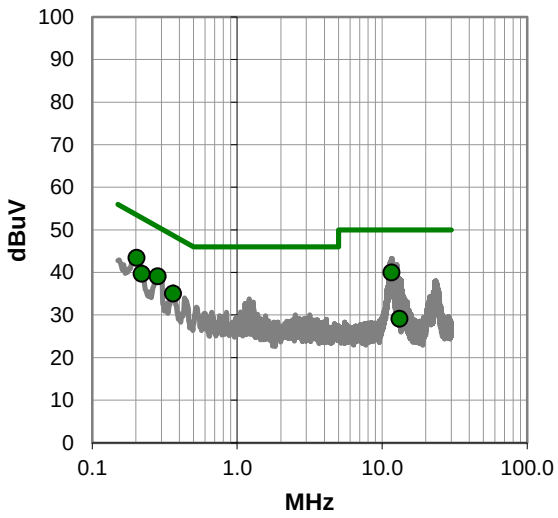
DEVIATIONS FROM TEST STANDARD

None

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

RESULTS - Run #15

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
11.598	28.4	20.7	49.1	60.0	-10.9
0.203	29.1	20.1	49.2	63.5	-14.3
0.283	25.2	20.1	45.3	60.7	-15.4
13.201	22.1	20.7	42.8	60.0	-17.2
0.362	21.3	20.1	41.4	58.7	-17.3
0.220	25.0	20.1	45.1	62.8	-17.7

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
11.598	19.3	20.7	40.0	50.0	-10.0
0.203	23.3	20.1	43.4	53.5	-10.1
0.283	19.0	20.1	39.1	50.7	-11.6
0.220	19.6	20.1	39.7	52.8	-13.1
0.362	14.9	20.1	35.0	48.7	-13.7
13.201	8.4	20.7	29.1	50.0	-20.9

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

EUT:	MWMII	Work Order:	MASI0553
Serial Number:	ENG-1	Date:	2019-07-08
Customer:	Masimo Corporation	Temperature:	21.3°C
Attendees:	Anami Joshi, Nghi Nguyen	Relative Humidity:	50%
Customer Project:	None	Bar. Pressure:	1019 mb
Tested By:	Nolan De Ramos	Job Site:	OC06
Power:	3.6VDC via 120VAC/60Hz	Configuration:	MASI0553-6

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2019	ANSI C63.10:2013

TEST PARAMETERS

Run #:	16	Line:	Neutral	Add. Ext. Attenuation (dB):	0

COMMENTS

EUT would not transmit 802.11 WiFi when DC is powered through LISN, therefore the AC line of the DC Power Supply was tested

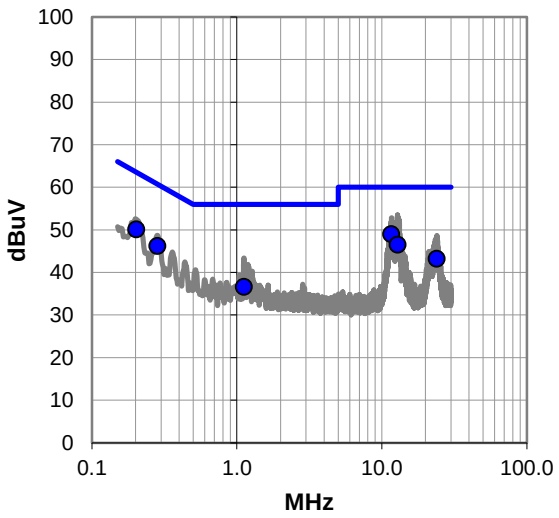
EUT OPERATING MODES

Transmitting 802.11a Mid Ch 157 (5785 MHz), 6 Mbps, Power Setting 21

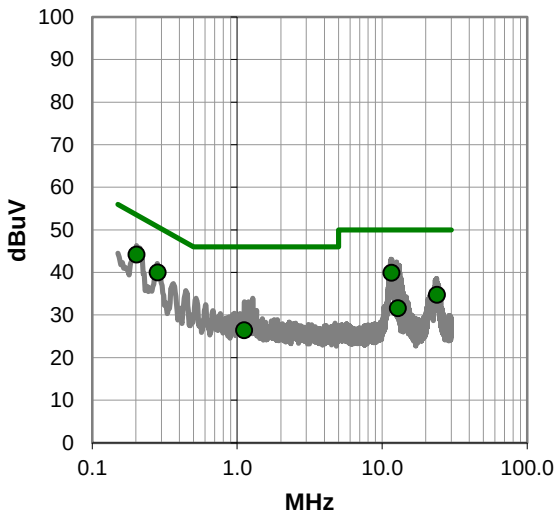
DEVIATIONS FROM TEST STANDARD

None

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



POWERLINE CONDUCTED EMISSIONS

element
WTD.2019.1.24

RESULTS - Run #16

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
11.598	28.3	20.7	49.0	60.0	-11.0
0.202	30.0	20.1	50.1	63.5	-13.4
12.842	25.8	20.7	46.5	60.0	-13.5
0.283	26.1	20.1	46.2	60.7	-14.5
23.890	21.7	21.5	43.2	60.0	-16.8
1.118	16.6	20.0	36.6	56.0	-19.4

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.202	24.1	20.1	44.2	53.5	-9.3
11.598	19.2	20.7	39.9	50.0	-10.1
0.283	19.9	20.1	40.0	50.7	-10.7
23.890	13.2	21.5	34.7	50.0	-15.3
12.842	10.9	20.7	31.6	50.0	-18.4
1.118	6.4	20.0	26.4	46.0	-19.6

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2019.05.10

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 802.11an: U-NII-1 Band and U-NII-2A Band - See data for channels and data rates.

POWER SETTINGS INVESTIGATED

3.6VDC

CONFIGURATIONS INVESTIGATED

MASI0553 - 3

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	40 GHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Cable	Fairview Microwave	SCA1814-0505-72	OC2	3-May-2019	12 mo
Meter - Power	Hewlett Packard	E4418A	SPA	9-Jan-2019	12 mo
Generator - Signal	Agilent	E8257D	TGU	15-Feb-2018	36 mo
Antenna - Double Ridge	EMCO	3115	AHB	28-Mar-2018	24 mo
Filter - Low Pass	Micro-Tronics	LPM50004	HGK	23-Jan-2019	12 mo
Filter - Band Pass/Notch	Micro-Tronics	BRC50703	HHB	23-Jan-2019	12 mo
Filter - Band Pass/Notch	Micro-Tronics	BRC50704	HHA	23-Jan-2019	12 mo
Antenna - Double Ridge	A.H. Systems, Inc.	SAS-574	AXV	15-May-2018	24 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	PAD	3-Jul-2019	12 mo
Cable	ESM Cable Corp.	8-18GHz cables	OCY	16-Jan-2019	12 mo
Cable	ESM Cable Corp.	1-8GHz cables	OCX	16-Jan-2019	12 mo
Cable	ESM Cable Corp.	30-1GHz cables	OCW	8-May-2019	12 mo
Antenna - Biconilog	EMCO	3142	AXB	5-Apr-2018	24 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVP	16-Jan-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVL	16-Jan-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVJ	16-Jan-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	JSDWK42-18004000-60-5P	PAN	20-Dec-2018	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIR	28-Jun-2018	24 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AHX	NCR	0 mo
Antenna - Standard Gain	EMCO	3160-08	AHK	NCR	0 mo
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAY	30-Nov-2018	12 mo

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies in each operational band and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These “pre-scans” are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements at the edges of the allowable band may be presented in an alternative method as provided for in the ANSI C63.10 Marker-Delta method. This method involves performing an in-band fundamental measurement followed by a screen capture of the fundamental and out-of-band emission using reduced measurement instrumentation bandwidths. The amplitude delta measured on this screen capture is applied to the fundamental emission value to show the out-of-band emission level as applied to the limit.

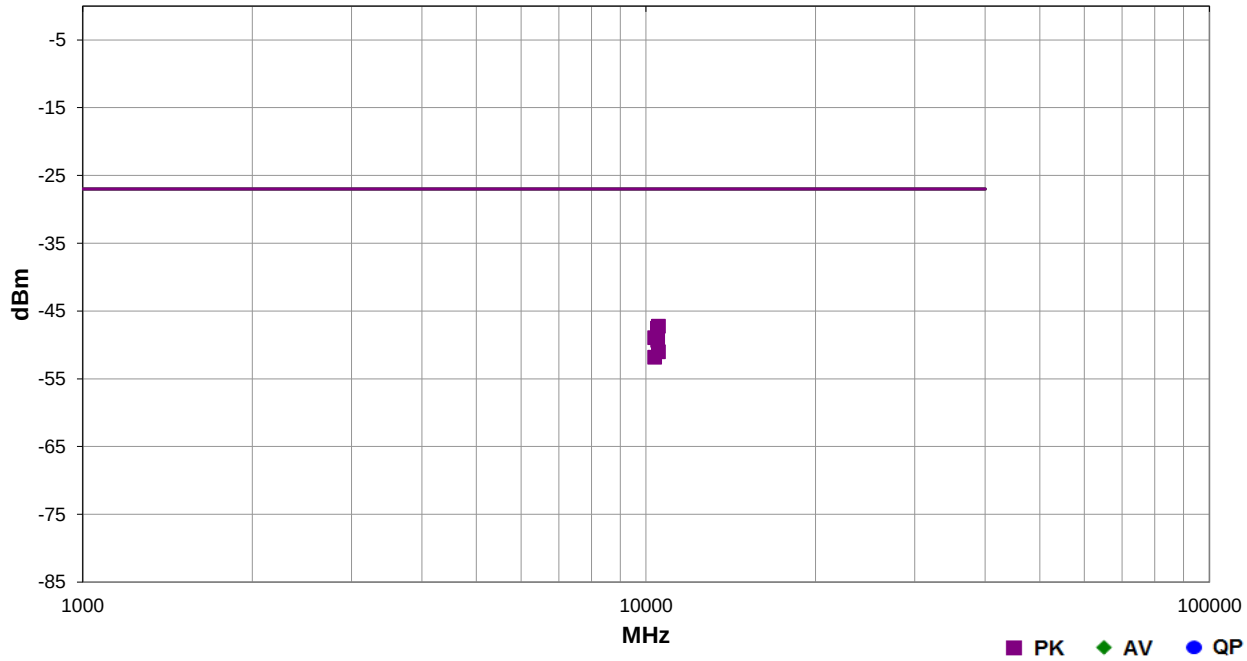
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	11-Jul-2019		
Project:	None	**Temperature:**	25.8 °C		
Job Site:	OC07	**Humidity:**	43.5% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1015 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	3				
Customer:	Masimo Corporation				
Attendees:	Nghi Nguyen				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-1 Band - Low Channel 36 (5180 MHz) and High Channel 48 (5240 MHz) and U-NII-2A Band - Low Channel 52 (5260 MHz). See comments below for data rates.				
Deviations:	None				
Comments:	Bandwidth 20 MHz Wide, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	141	**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
	10525.710	1.9	329.0	Horz	PK	18.9E-9	-47.2	-27.0	-20.2	Low Ch 52, EUT Vert, 6Mbps
	10479.540	1.5	328.0	Horz	PK	17.7E-9	-47.5	-27.0	-20.5	High Ch 48, EUT Vert,6Mbps
	10358.540	1.4	339.0	Horz	PK	12.8E-9	-48.9	-27.0	-21.9	Low Ch 36, EUT Vert,6Mbps
	10483.000	2.8	303.0	Vert	PK	11.7E-9	-49.3	-27.0	-22.3	High Ch 48, EUT Horz,6Mbps
	10522.500	1.9	112.0	Vert	PK	7.9E-9	-51.0	-27.0	-24.0	Low Ch 52, EUT Horz, 6Mbps
	10361.120	3.9	315.0	Vert	PK	6.6E-9	-51.8	-27.0	-24.8	Low Ch 36, EUT Horz,6Mbps

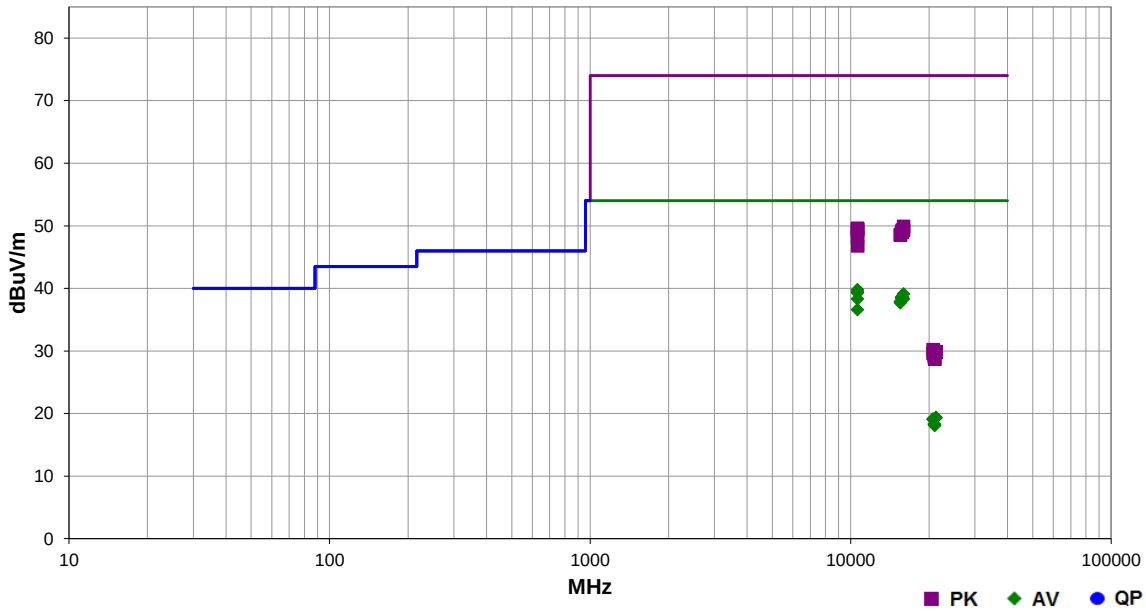
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	11-Jul-2019		
Project:	None	**Temperature:**	25.8 °C		
Job Site:	OC07	**Humidity:**	43.5% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1015 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	3				
Customer:	Masimo Corporation				
Attendees:	Nghi Nguyen				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-1 Band - Low Channel 36 (5180 MHz) and High Channel 48 (5240 MHz) and U-NII-2A Band - Low Channel 52 (5260 MHz) and High Channel 64 (5320 MHz). See comments below for data rates.				
Deviations:	None				
Comments:	Bandwidth 20 MHz Wide, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	139	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
10640.120	47.4	-7.6	1.4	329.0	3.0	0.0	Horz	AV	0.0	39.8	54.0	-14.2	High Ch 64, EUT Vert, 6Mbps
10639.980	47.1	-7.6	1.4	329.0	3.0	0.0	Horz	AV	0.0	39.5	54.0	-14.5	High Ch 64, EUT Vert, MCS0
10640.090	47.0	-7.6	1.4	329.0	3.0	0.0	Horz	AV	0.0	39.4	54.0	-14.6	High Ch 64, EUT Vert, 36 Mbps
10640.160	46.9	-7.6	1.4	329.0	3.0	0.0	Horz	AV	0.0	39.3	54.0	-14.7	High Ch 64, EUT Vert, 54 Mbps
15963.330	29.8	9.3	2.9	66.0	3.0	0.0	Horz	AV	0.0	39.1	54.0	-14.9	High Ch 64, EUT Vert, 6Mbps
15783.880	29.6	9.1	1.5	324.0	3.0	0.0	Horz	AV	0.0	38.7	54.0	-15.3	Low Ch 52, EUT Vert, 6Mbps
15786.080	29.5	9.1	1.5	48.0	3.0	0.0	Vert	AV	0.0	38.6	54.0	-15.4	Low Ch 52, EUT Horz, 6Mbps
15721.000	29.8	8.8	1.5	37.0	3.0	0.0	Horz	AV	0.0	38.6	54.0	-15.4	High Ch 48, EUT Vert,6Mbps
15720.080	29.6	8.8	1.5	284.0	3.0	0.0	Vert	AV	0.0	38.4	54.0	-15.6	High Ch 48, EUT Horz,6Mbps
15960.420	29.0	9.3	1.5	357.0	3.0	0.0	Vert	AV	0.0	38.3	54.0	-15.7	High Ch 64, EUT Horz, 6Mbps
10640.180	45.9	-7.6	1.4	329.0	3.0	0.0	Horz	AV	0.0	38.3	54.0	-15.7	High Ch 64, EUT Vert, MCS7
15532.290	30.7	7.2	1.5	272.0	3.0	0.0	Vert	AV	0.0	37.9	54.0	-16.1	Low Ch 36, EUT Horz,6Mbps
15537.540	30.5	7.2	3.3	307.0	3.0	0.0	Horz	AV	0.0	37.7	54.0	-16.3	Low Ch 36, EUT Vert,6Mbps
10640.210	44.2	-7.6	3.7	122.0	3.0	0.0	Vert	AV	0.0	36.6	54.0	-17.4	High Ch 64, EUT Horz, 6Mbps
15968.750	40.6	9.3	1.5	357.0	3.0	0.0	Vert	PK	0.0	49.9	74.0	-24.1	High Ch 64, EUT Horz, 6Mbps
10639.730	57.2	-7.6	1.4	329.0	3.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4	High Ch 64, EUT Vert, MCS0
10640.180	57.0	-7.6	1.4	329.0	3.0	0.0	Horz	PK	0.0	49.4	74.0	-24.6	High Ch 64, EUT Vert, 36 Mbps
10640.620	57.0	-7.6	1.4	329.0	3.0	0.0	Horz	PK	0.0	49.4	74.0	-24.6	High Ch 64, EUT Vert, 54 Mbps
15961.210	40.0	9.3	2.9	66.0	3.0	0.0	Horz	PK	0.0	49.3	74.0	-24.7	High Ch 64, EUT Vert, 6Mbps
15784.710	40.2	9.1	1.5	324.0	3.0	0.0	Horz	PK	0.0	49.3	74.0	-24.7	Low Ch 52, EUT Vert, 6Mbps
15722.880	40.3	8.8	1.5	37.0	3.0	0.0	Horz	PK	0.0	49.1	74.0	-24.9	High Ch 48, EUT Vert,6Mbps
10639.420	56.6	-7.6	1.4	329.0	3.0	0.0	Horz	PK	0.0	49.0	74.0	-25.0	High Ch 64, EUT Vert, 6Mbps

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
15778.290	39.9	9.1	1.5	48.0	3.0	0.0	Vert	PK	0.0	49.0	74.0	-25.0	Low Ch 52, EUT Horz, 6Mbps
15722.330	40.2	8.8	1.5	284.0	3.0	0.0	Vert	PK	0.0	49.0	74.0	-25.0	High Ch 48, EUT Horz,6Mbps
15542.750	41.4	7.2	1.5	272.0	3.0	0.0	Vert	PK	0.0	48.6	74.0	-25.4	Low Ch 36, EUT Horz,6Mbps
15540.290	41.3	7.2	3.3	307.0	3.0	0.0	Horz	PK	0.0	48.5	74.0	-25.5	Low Ch 36, EUT Vert,6Mbps
10637.780	55.8	-7.6	1.4	329.0	3.0	0.0	Horz	PK	0.0	48.2	74.0	-25.8	High Ch 64, EUT Vert, MCS7
10642.580	54.4	-7.6	3.7	122.0	3.0	0.0	Vert	PK	0.0	46.8	74.0	-27.2	High Ch 64, EUT Horz, 6Mbps
21282.080	28.5	-9.1	1.2	290.0	3.0	0.0	Vert	AV	0.0	19.4	54.0	-34.6	High Ch 64, 6 Mbps, EUT Horz
21278.160	28.4	-9.1	1.2	360.0	3.0	0.0	Horz	AV	0.0	19.3	54.0	-34.7	High Ch 64, 6 Mbps, EUT Vert
20719.730	28.5	-9.4	1.2	47.0	3.0	0.0	Vert	AV	0.0	19.1	54.0	-34.9	Low Ch 36, 6 Mbps, EUT Horz
20719.130	28.5	-9.4	1.2	96.0	3.0	0.0	Horz	AV	0.0	19.1	54.0	-34.9	Low Ch 36, 6 Mbps, EUT Vert
20958.180	27.2	-8.9	1.2	52.0	3.0	0.0	Horz	AV	0.0	18.3	54.0	-35.7	High Ch 48, 6 Mbps, EUT Vert
20959.630	27.2	-8.9	1.2	79.0	3.0	0.0	Vert	AV	0.0	18.3	54.0	-35.7	High Ch 48, 6 Mbps, EUT Horz
21038.080	27.0	-8.9	1.2	110.0	3.0	0.0	Vert	AV	0.0	18.1	54.0	-35.9	Low Ch 52, 6 Mbps, EUT Horz
21038.940	27.0	-8.9	1.2	307.0	3.0	0.0	Horz	AV	0.0	18.1	54.0	-35.9	Low Ch 52, 6 Mbps, EUT Vert
20721.820	39.6	-9.4	1.2	47.0	3.0	0.0	Vert	PK	0.0	30.2	74.0	-43.8	Low Ch 36, 6 Mbps, EUT Horz
21280.750	39.0	-9.1	1.2	290.0	3.0	0.0	Vert	PK	0.0	29.9	74.0	-44.1	High Ch 64, 6 Mbps, EUT Horz
21279.510	38.9	-9.1	1.2	360.0	3.0	0.0	Horz	PK	0.0	29.8	74.0	-44.2	High Ch 64, 6 Mbps, EUT Vert
20719.520	39.0	-9.4	1.2	96.0	3.0	0.0	Horz	PK	0.0	29.6	74.0	-44.4	Low Ch 36, 6 Mbps, EUT Vert
20959.230	38.2	-8.9	1.2	52.0	3.0	0.0	Horz	PK	0.0	29.3	74.0	-44.7	High Ch 48, 6 Mbps, EUT Vert
20960.830	37.9	-8.9	1.2	79.0	3.0	0.0	Vert	PK	0.0	29.0	74.0	-45.0	High Ch 48, 6 Mbps, EUT Horz
21042.410	37.5	-8.8	1.2	110.0	3.0	0.0	Vert	PK	0.0	28.7	74.0	-45.3	Low Ch 52, 6 Mbps, EUT Horz
21040.310	37.6	-8.9	1.2	307.0	3.0	0.0	Horz	PK	0.0	28.7	74.0	-45.3	Low Ch 52, 6 Mbps, EUT Vert

SPURIOUS RADIATED EMISSIONS

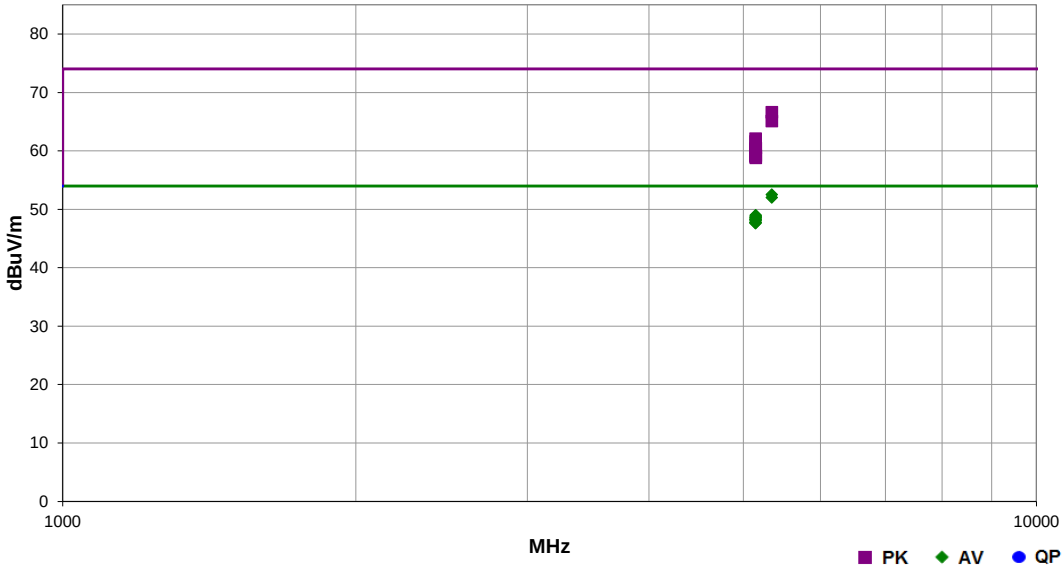
EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	11-Jul-2019		
Project:	None	**Temperature:**	25.8 °C		
Job Site:	OC07	**Humidity:**	43.5% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1015 mbar	**Tested by:**	Luis Flores, Nolan De Ramos

EUT:	MWMII
Configuration:	3
Customer:	Masimo Corporation
Attendees:	Mike Tran
EUT Power:	3.6VDC
Operating Mode:	Transmitting 802.11an: U-NII-1 Band - Low Channel 36 (5180 MHz) and U-NII-2A Band - High Channel 64 (5320 MHz). See comments below for data rates.
Deviations:	None
Comments:	Bandwidth 20 MHz Wide, Band Edge, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	182	**Test Distance (m)**	1	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
5350.227	26.6	35.4	1.5	70.0	1.0	0.0	Vert	AV	-9.5	52.5	54.0	-1.5	20 MHz BW, Ch 64, 6 Mbps, EUT Vert
5350.113	26.1	35.4	1.5	187.0	1.0	0.0	Horz	AV	-9.5	52.0	54.0	-2.0	20 MHz BW, Ch 64, 6 Mbps, EUT On Side
5149.863	23.4	35.1	1.5	70.0	1.0	0.0	Vert	AV	-9.5	49.0	54.0	-5.0	20 MHz BW, Ch 36, 6 Mbps, EUT Vert
5149.770	23.2	35.1	1.5	187.0	1.0	0.0	Horz	AV	-9.5	48.8	54.0	-5.2	20 MHz BW, Ch 36, 6 Mbps, EUT On Side
5149.703	23.2	35.1	1.5	70.0	1.0	0.0	Vert	AV	-9.5	48.8	54.0	-5.2	20 MHz BW, Ch 36, MCS0, EUT Vert
5149.790	23.0	35.1	1.5	99.0	1.0	0.0	Horz	AV	-9.5	48.6	54.0	-5.4	20 MHz BW, Ch 36, 6 Mbps, EUT Horz
5149.430	22.9	35.1	1.5	70.0	1.0	0.0	Vert	AV	-9.5	48.5	54.0	-5.5	20 MHz BW, Ch 36, 36 Mbps, EUT Vert
5149.377	22.9	35.1	1.5	70.0	1.0	0.0	Vert	AV	-9.5	48.5	54.0	-5.5	20 MHz BW, Ch 36, MCS7, EUT Vert
5148.600	22.7	35.1	1.5	70.0	1.0	0.0	Vert	AV	-9.5	48.3	54.0	-5.7	20 MHz BW, Ch 36, 54 Mbps, EUT Vert
5148.080	22.6	35.1	1.5	187.0	1.0	0.0	Horz	AV	-9.5	48.2	54.0	-5.8	20 MHz BW, Ch 36, 36 Mbps, EUT On Side
5148.687	22.6	35.1	1.5	187.0	1.0	0.0	Horz	AV	-9.5	48.2	54.0	-5.8	20 MHz BW, Ch 36, 54 Mbps, EUT On Side
5149.753	22.5	35.1	1.5	187.0	1.0	0.0	Horz	AV	-9.5	48.1	54.0	-5.9	20 MHz BW, Ch 36, MCS7, EUT On Side
5148.257	22.2	35.1	1.5	3.0	1.0	0.0	Horz	AV	-9.5	47.8	54.0	-6.2	20 MHz BW, Ch 36, 6 Mbps, EUT Vert
5148.583	22.1	35.1	1.5	78.0	1.0	0.0	Vert	AV	-9.5	47.7	54.0	-6.3	20 MHz BW, Ch 36, 6 Mbps, EUT Horz
5148.467	22.1	35.1	1.5	173.0	1.0	0.0	Vert	AV	-9.5	47.7	54.0	-6.3	20 MHz BW, Ch 36, 6 Mbps, EUT On Side
5148.810	22.0	35.1	1.5	187.0	1.0	0.0	Horz	AV	-9.5	47.6	54.0	-6.4	20 MHz BW, Ch 36, MCS0, EUT On Side
5350.437	40.7	35.4	1.5	187.0	1.0	0.0	Horz	PK	-9.5	66.6	74.0	-7.4	20 MHz BW, Ch 64, 6 Mbps, EUT On Side
5350.343	39.2	35.4	1.5	70.0	1.0	0.0	Vert	PK	-9.5	65.1	74.0	-8.9	20 MHz BW, Ch 64, 6 Mbps, EUT Vert
5148.173	36.5	35.1	1.5	70.0	1.0	0.0	Vert	PK	-9.5	62.1	74.0	-11.9	20 MHz BW, Ch 36, 6 Mbps, EUT Vert
5149.173	36.0	35.1	1.5	187.0	1.0	0.0	Horz	PK	-9.5	61.6	74.0	-12.4	20 MHz BW, Ch 36, 6 Mbps, EUT On Side
5149.410	34.9	35.1	1.5	70.0	1.0	0.0	Vert	PK	-9.5	60.5	74.0	-13.5	20 MHz BW, Ch 36, MCS7, EUT Vert
5149.070	34.6	35.1	1.5	99.0	1.0	0.0	Horz	PK	-9.5	60.2	74.0	-13.8	20 MHz BW, Ch 36, 6 Mbps, EUT Horz
5148.317	34.5	35.1	1.5	70.0	1.0	0.0	Vert	PK	-9.5	60.1	74.0	-13.9	20 MHz BW, Ch 36, 54 Mbps, EUT Vert
5149.343	34.4	35.1	1.5	187.0	1.0	0.0	Horz	PK	-9.5	60.0	74.0	-14.0	20 MHz BW, Ch 36, MCS7, EUT On Side
5148.183	34.2	35.1	1.5	70.0	1.0	0.0	Vert	PK	-9.5	59.8	74.0	-14.2	20 MHz BW, Ch 36, 36 Mbps, EUT Vert
5148.067	34.0	35.1	1.5	187.0	1.0	0.0	Horz	PK	-9.5	59.6	74.0	-14.4	20 MHz BW, Ch 36, 54 Mbps, EUT On Side
5148.087	33.9	35.1	1.5	70.0	1.0	0.0	Vert	PK	-9.5	59.5	74.0	-14.5	20 MHz BW, Ch 36, MCS0, EUT Vert
5148.850	33.7	35.1	1.5	187.0	1.0	0.0	Horz	PK	-9.5	59.3	74.0	-14.7	20 MHz BW, Ch 36, MCS0, EUT On Side
5149.827	33.6	35.1	1.5	3.0	1.0	0.0	Horz	PK	-9.5	59.2	74.0	-14.8	20 MHz BW, Ch 36, 6 Mbps, EUT Vert

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
5148.433	33.6	35.1	1.5	187.0	1.0	0.0	Horz	PK	-9.5	59.2	74.0	-14.8	20 MHz BW, Ch 36, 36 Mbps, EUT On Side
5148.707	33.4	35.1	1.5	78.0	1.0	0.0	Vert	PK	-9.5	59.0	74.0	-15.0	20 MHz BW, Ch 36, 6 Mbps, EUT Horz
5149.943	33.2	35.1	1.5	173.0	1.0	0.0	Vert	PK	-9.5	58.8	74.0	-15.2	20 MHz BW, Ch 36, 6 Mbps, EUT On Side

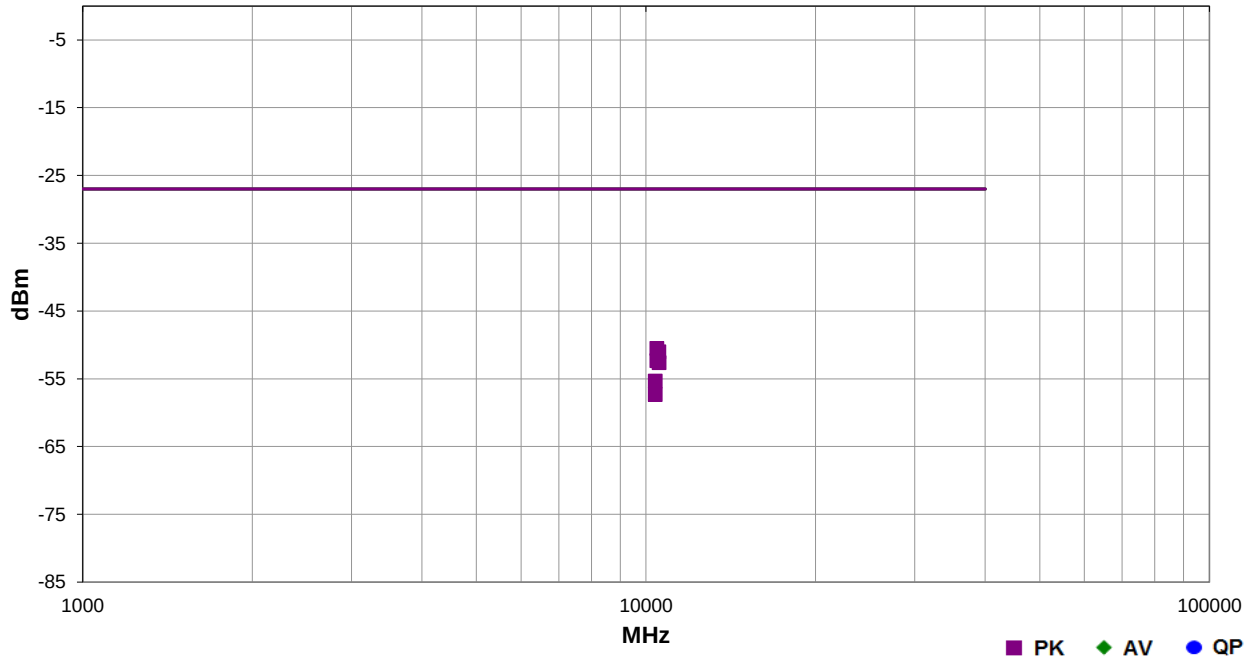
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	12-Jul-2019		
Project:	None	**Temperature:**	23.9 °C		
Job Site:	OC07	**Humidity:**	52.1% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1014 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	3				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-1 Band - Low Channel 36/40 (5190 MHz) and High Channel 44/48 (5230 MHz) and U-NII-2A Band - Low Channel 52/56 (5270 MHz). See comments below for data rates.				
Deviations:	None				
Comments:	Bandwidth 40 MHz Wide, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	154	**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
	10456.420	1.5	325.0	Horz	PK	8.9E-9	-50.5	-27.0	-23.5	High Ch 46,MCS0,EUT Vert
	10536.330	1.5	313.0	Horz	PK	7.9E-9	-51.0	-27.0	-24.0	Low Ch 54, MCS0, EUT Vert
	10456.330	2.0	95.0	Vert	PK	5.8E-9	-52.3	-27.0	-25.3	High Ch 46,MCS0,EUT Horz
	10544.920	2.0	302.0	Vert	PK	5.5E-9	-52.6	-27.0	-25.6	Low Ch 54, MCS0, EUT Horz
	10384.830	1.6	124.0	Vert	PK	2.9E-9	-55.3	-27.0	-28.3	Low Ch 38,MCS0, EUT Horz
	10380.540	1.5	349.0	Horz	PK	1.8E-9	-57.3	-27.0	-30.3	Low Ch 38,MCS0, EUT Vert

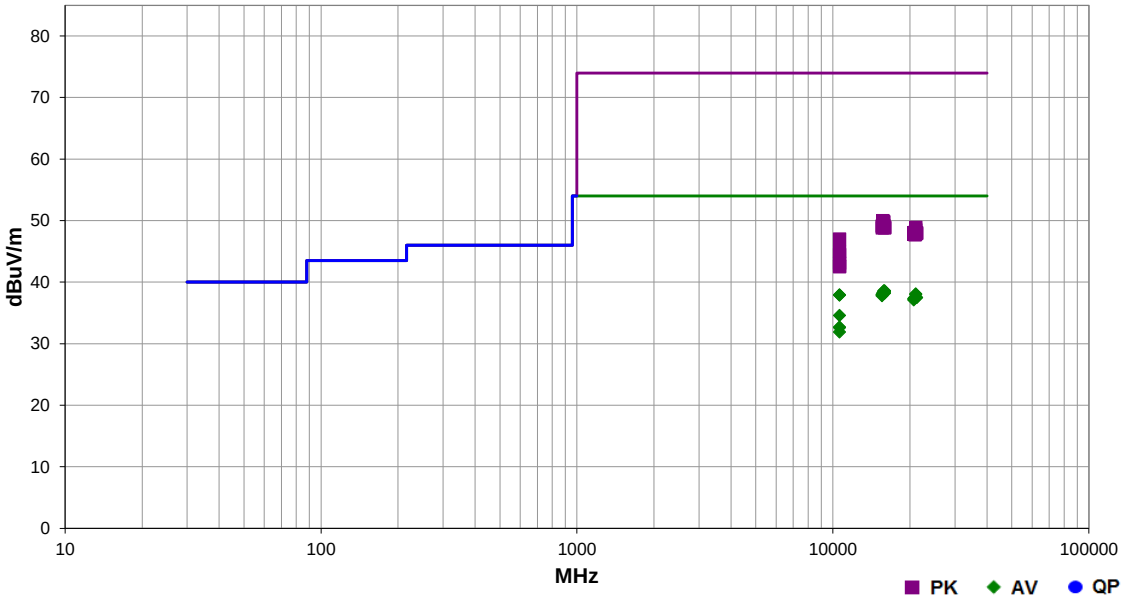
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	12-Jul-2019		
Project:	None	**Temperature:**	23.9 °C		
Job Site:	OC07	**Humidity:**	52.1% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1014 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	3				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-1 Band - Low Channel 36/40 (5190 MHz) and High Channel 44/48 (5230 MHz) and U-NII-2A Band - Low Channel 52/56 (5270 MHz) and High Channel 60/64 (5310 MHz). See comments below for data rates.				
Deviations:	None				
Comments:	Bandwidth 40 MHz Wide, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	152	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
15929.230	29.3	9.3	1.3	68.0	3.0	0.0	Horz	AV	0.0	38.6	54.0	-15.4	High Ch 62, MCS0, EUT Vert
15810.000	29.5	9.1	2.8	290.0	3.0	0.0	Vert	AV	0.0	38.6	54.0	-15.4	Low Ch 54, MCS0, EUT Horz
15807.790	29.4	9.1	1.5	170.0	3.0	0.0	Horz	AV	0.0	38.5	54.0	-15.5	Low Ch 54, MCS0, EUT Vert
15930.280	29.1	9.3	1.3	68.0	3.0	0.0	Horz	AV	0.0	38.4	54.0	-15.6	High Ch 62,MCS7, EUT Vert
15681.040	29.8	8.5	1.5	64.0	3.0	0.0	Horz	AV	0.0	38.3	54.0	-15.7	High Ch 46,MCS0,EUT Vert
15931.910	28.9	9.3	3.5	302.0	3.0	0.0	Vert	AV	0.0	38.2	54.0	-15.8	High Ch 62, MCS0, EUT Horz
15680.750	29.6	8.5	3.1	128.0	3.0	0.0	Vert	AV	0.0	38.1	54.0	-15.9	High Ch 46,MCS0,EUT Horz
21067.670	46.9	-8.8	1.5	106.0	3.0	0.0	Horz	AV	0.0	38.1	54.0	-15.9	Low Ch 54, MCS0, EUT Vert
15572.500	30.5	7.5	1.5	337.0	3.0	0.0	Vert	AV	0.0	38.0	54.0	-16.0	Low Ch 38,MCS0, EUT Horz
21076.790	46.8	-8.8	1.5	42.0	3.0	0.0	Vert	AV	0.0	38.0	54.0	-16.0	Low Ch 54, MCS0, EUT Horz
10620.170	45.7	-7.8	1.6	324.0	3.0	0.0	Horz	AV	0.0	37.9	54.0	-16.1	High Ch 62, MCS0, EUT Vert
10620.050	45.7	-7.8	2.1	318.0	3.0	0.0	Horz	AV	0.0	37.9	54.0	-16.1	High Ch 62, MCS0, EUT On Side
15560.290	30.5	7.3	1.5	173.0	3.0	0.0	Horz	AV	0.0	37.8	54.0	-16.2	Low Ch 38,MCS0, EUT Vert
20920.080	46.5	-9.0	1.5	0.0	3.0	0.0	Horz	AV	0.0	37.5	54.0	-16.5	High Ch 46, MCS0,EUT Vert
21237.330	46.4	-8.9	1.5	139.0	3.0	0.0	Horz	AV	0.0	37.5	54.0	-16.5	High Ch 62, MCS0, EUT Vert
21229.960	46.4	-8.9	1.5	265.0	3.0	0.0	Vert	AV	0.0	37.5	54.0	-16.5	High Ch 62, MCS0, EUT Horz
20918.210	46.4	-9.0	1.5	0.0	3.0	0.0	Vert	AV	0.0	37.4	54.0	-16.6	High Ch 46, MCS0,EUT Horz
20707.830	46.8	-9.5	1.5	36.0	3.0	0.0	Vert	AV	0.0	37.3	54.0	-16.7	Low Ch 38, MCS0, EUT Horz
20711.380	46.6	-9.5	1.5	137.0	3.0	0.0	Horz	AV	0.0	37.1	54.0	-16.9	Low Ch 38, MCS0, EUT Vert
10620.200	42.4	-7.8	2.7	293.0	3.0	0.0	Vert	AV	0.0	34.6	54.0	-19.4	High Ch 62, MCS0, EUT Horz
10619.970	40.5	-7.8	3.5	139.0	3.0	0.0	Horz	AV	0.0	32.7	54.0	-21.3	High Ch 62, MCS0, EUT Horz
10621.200	40.4	-7.8	3.6	5.0	3.0	0.0	Vert	AV	0.0	32.6	54.0	-21.4	High Ch 62, MCS0, EUT On Side
10620.230	39.7	-7.8	1.5	329.0	3.0	0.0	Vert	AV	0.0	31.9	54.0	-22.1	High Ch 62, MCS0, EUT Vert

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
15677.880	41.5	8.5	1.5	64.0	3.0	0.0	Horz	PK	0.0	50.0	74.0	-24.0	High Ch 46,MCS0,EUT Vert
15806.960	40.7	9.1	2.8	290.0	3.0	0.0	Vert	PK	0.0	49.8	74.0	-24.2	Low Ch 54, MCS0, EUT Horz
15811.210	40.1	9.1	1.5	170.0	3.0	0.0	Horz	PK	0.0	49.2	74.0	-24.8	Low Ch 54, MCS0, EUT Vert
15558.460	41.8	7.3	1.5	173.0	3.0	0.0	Horz	PK	0.0	49.1	74.0	-24.9	Low Ch 38,MCS0, EUT Vert
15681.080	40.5	8.5	3.1	128.0	3.0	0.0	Vert	PK	0.0	49.0	74.0	-25.0	High Ch 46,MCS0,EUT Horz
15931.780	39.6	9.3	1.3	68.0	3.0	0.0	Horz	PK	0.0	48.9	74.0	-25.1	High Ch 62, MCS0, EUT Vert
15930.640	39.6	9.3	3.5	302.0	3.0	0.0	Vert	PK	0.0	48.9	74.0	-25.1	High Ch 62, MCS0, EUT Horz
21079.080	57.7	-8.8	1.5	42.0	3.0	0.0	Vert	PK	0.0	48.9	74.0	-25.1	Low Ch 54, MCS0, EUT Horz
15577.880	41.3	7.5	1.5	337.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	Low Ch 38,MCS0, EUT Horz
15927.900	39.5	9.3	1.3	68.0	3.0	0.0	Horz	PK	0.0	48.8	74.0	-25.2	High Ch 62,MCS7, EUT Vert
21084.420	57.3	-8.8	1.5	106.0	3.0	0.0	Horz	PK	0.0	48.5	74.0	-25.5	Low Ch 54, MCS0, EUT Vert
20919.790	57.1	-9.0	1.5	0.0	3.0	0.0	Vert	PK	0.0	48.1	74.0	-25.9	High Ch 46, MCS0,EUT Horz
20726.290	57.4	-9.4	1.5	137.0	3.0	0.0	Horz	PK	0.0	48.0	74.0	-26.0	Low Ch 38, MCS0, EUT Vert
21246.120	56.9	-8.9	1.5	265.0	3.0	0.0	Vert	PK	0.0	48.0	74.0	-26.0	High Ch 62, MCS0, EUT Horz
21233.580	56.8	-8.9	1.5	139.0	3.0	0.0	Horz	PK	0.0	47.9	74.0	-26.1	High Ch 62, MCS0, EUT Vert
20722.040	57.2	-9.4	1.5	36.0	3.0	0.0	Vert	PK	0.0	47.8	74.0	-26.2	Low Ch 38, MCS0, EUT Horz
20928.750	56.6	-8.9	1.5	0.0	3.0	0.0	Horz	PK	0.0	47.7	74.0	-26.3	High Ch 46, MCS0,EUT Vert
10621.050	54.8	-7.8	1.6	324.0	3.0	0.0	Horz	PK	0.0	47.0	74.0	-27.0	High Ch 62, MCS0, EUT Vert
10620.130	52.8	-7.8	2.1	318.0	3.0	0.0	Horz	PK	0.0	45.0	74.0	-29.0	High Ch 62, MCS0, EUT On Side
10620.570	52.3	-7.8	2.7	293.0	3.0	0.0	Vert	PK	0.0	44.5	74.0	-29.5	High Ch 62, MCS0, EUT Horz
10618.580	50.9	-7.8	3.6	5.0	3.0	0.0	Vert	PK	0.0	43.1	74.0	-30.9	High Ch 62, MCS0, EUT On Side
10619.630	50.4	-7.8	3.5	139.0	3.0	0.0	Horz	PK	0.0	42.6	74.0	-31.4	High Ch 62, MCS0, EUT Horz
10620.590	50.3	-7.8	1.5	329.0	3.0	0.0	Vert	PK	0.0	42.5	74.0	-31.5	High Ch 62, MCS0, EUT Vert

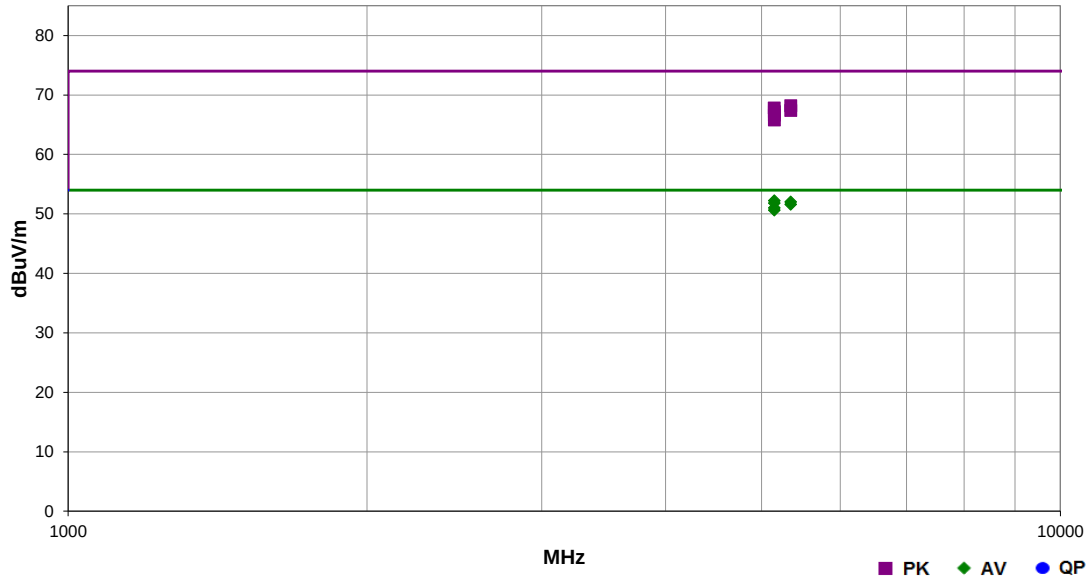
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	16-Jul-2019		
Project:	None	**Temperature:**	23.9 °C		
Job Site:	OC07	**Humidity:**	52.1% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1014 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	3				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-1 Band - Low Channel 36/40 (5190 MHz) and U-NII-2A Band - High Channel 60/64 (5310 MHz). See comments below for data rates.				
Deviations:	None				
Comments:	Bandwidth 40 MHz Wide, Band Edge, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	182	**Test Distance (m)**	1	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
5149.833	26.6	35.1	1.5	70.0	1.0	0.0	Vert	AV	-9.5	52.2	54.0	-1.8	40 MHz BW, Ch 38, MCS0, EUT Vert
5350.010	26.1	35.4	1.5	70.0	1.0	0.0	Vert	AV	-9.5	52.0	54.0	-2.0	40 MHz BW, Ch 62, MCS0, EUT Vert
5149.870	26.2	35.1	1.5	187.0	1.0	0.0	Horz	AV	-9.5	51.8	54.0	-2.2	40 MHz BW, Ch 38, MCS0, EUT On Side
5350.013	25.7	35.4	1.5	187.0	1.0	0.0	Horz	AV	-9.5	51.6	54.0	-2.4	40 MHz BW, Ch 62, MCS0, EUT On Side
5149.923	25.4	35.1	1.5	70.0	1.0	0.0	Vert	AV	-9.5	51.0	54.0	-3.0	40 MHz BW, Ch 38, MCS7, EUT Vert
5149.913	25.0	35.1	1.5	187.0	1.0	0.0	Horz	AV	-9.5	50.6	54.0	-3.4	40 MHz BW, Ch 38, MCS7, EUT On Side
5350.407	42.3	35.4	1.5	70.0	1.0	0.0	Vert	PK	-9.5	68.2	74.0	-5.8	40 MHz BW, Ch 62, MCS0, EUT Vert
5148.540	42.2	35.1	1.5	70.0	1.0	0.0	Vert	PK	-9.5	67.8	74.0	-6.2	40 MHz BW, Ch 38, MCS0, EUT Vert
5350.040	41.5	35.4	1.5	187.0	1.0	0.0	Horz	PK	-9.5	67.4	74.0	-6.6	40 MHz BW, Ch 62, MCS0, EUT On Side
5149.557	41.6	35.1	1.5	70.0	1.0	0.0	Vert	PK	-9.5	67.2	74.0	-6.8	40 MHz BW, Ch 38, MCS7, EUT Vert
5149.650	41.0	35.1	1.5	187.0	1.0	0.0	Horz	PK	-9.5	66.6	74.0	-7.4	40 MHz BW, Ch 38, MCS0, EUT On Side
5149.403	40.2	35.1	1.5	187.0	1.0	0.0	Horz	PK	-9.5	65.8	74.0	-8.2	40 MHz BW, Ch 38, MCS7, EUT On Side

SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2019.05.10

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 802.11an: U-NII-2C Band and U-NII-3 Band - See data for channels and data rates.

POWER SETTINGS INVESTIGATED

3.6VDC

CONFIGURATIONS INVESTIGATED

MASI0553 - 4

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	40 GHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Cable	Fairview Microwave	SCA1814-0505-72	OC2	3-May-2019	12 mo
Meter - Power	Hewlett Packard	E4418A	SPA	9-Jan-2019	12 mo
Generator - Signal	Agilent	E8257D	TGU	15-Feb-2018	36 mo
Antenna - Double Ridge	EMCO	3115	AHB	28-Mar-2018	24 mo
Filter - Low Pass	Micro-Tronics	LPM50004	HGK	23-Jan-2019	12 mo
Filter - Band Pass/Notch	Micro-Tronics	BRC50703	HHB	23-Jan-2019	12 mo
Filter - Band Pass/Notch	Micro-Tronics	BRC50704	HHA	23-Jan-2019	12 mo
Antenna - Double Ridge	A.H. Systems, Inc.	SAS-574	AXV	15-May-2018	24 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	PAD	3-Jul-2019	12 mo
Cable	ESM Cable Corp.	8-18GHz cables	OCY	16-Jan-2019	12 mo
Cable	ESM Cable Corp.	1-8GHz cables	OCX	16-Jan-2019	12 mo
Cable	ESM Cable Corp.	30-1GHz cables	OCW	8-May-2019	12 mo
Antenna - Biconilog	EMCO	3142	AXB	5-Apr-2018	24 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVP	16-Jan-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVL	16-Jan-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVJ	16-Jan-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	JSDWK42-18004000-60-5P	PAN	20-Dec-2018	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIR	28-Jun-2018	24 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AHX	NCR	0 mo
Antenna - Standard Gain	EMCO	3160-08	AHK	NCR	0 mo
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAY	30-Nov-2018	12 mo

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies in each operational band and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These “pre-scans” are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements at the edges of the allowable band may be presented in an alternative method as provided for in the ANSI C63.10 Marker-Delta method. This method involves performing an in-band fundamental measurement followed by a screen capture of the fundamental and out-of-band emission using reduced measurement instrumentation bandwidths. The amplitude delta measured on this screen capture is applied to the fundamental emission value to show the out-of-band emission level as applied to the limit.

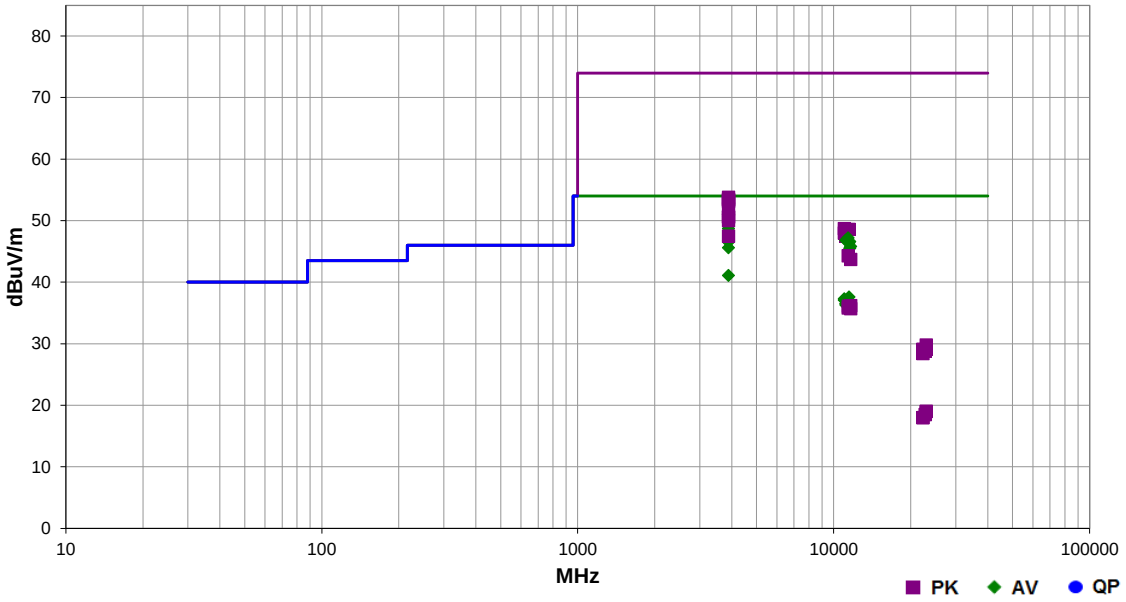
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	11-Jul-2019		
Project:	None	**Temperature:**	23.5 °C		
Job Site:	OC07	**Humidity:**	50.4% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1017 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	4				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-2C Band - Low Channel 100 (5500 MHz), Mid Channel 116 (5580 MHz) and High Channel 140 (5700 MHz) and U-NII-3 Band - Low Channel 149 (5745 MHz), Mid Channel 157 (5785 MHz) and High Channel 165 (5825 MHz). See comments below for data rates.				
Deviations:	None				
Comments:	Bandwidth 20 MHz Wide, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	130	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
3883.367	48.1	3.4	2.1	62.0	3.0	0.0	Horz	AV	0.0	51.5	54.0	-2.5	High Ch 165, EUT Vert, 6Mbps
3883.383	47.8	3.4	2.06	62.0	3.0	0.0	Horz	AV	0.0	51.2	54.0	-2.8	High Ch 165, EUT Vert, MCS0
3883.308	47.6	3.4	2.06	62.0	3.0	0.0	Horz	AV	0.0	51.0	54.0	-3.0	High Ch 165, EUT Vert, 54 Mbps
3883.367	47.6	3.4	2.06	62.0	3.0	0.0	Horz	AV	0.0	51.0	54.0	-3.0	High Ch 165, EUT Vert, MCS7
3883.308	47.3	3.4	2.06	62.0	3.0	0.0	Horz	AV	0.0	50.7	54.0	-3.3	High Ch 165, EUT Vert, 36 Mbps
3883.392	45.3	3.4	3.6	302.0	3.0	0.0	Vert	AV	0.0	48.7	54.0	-5.3	High Ch 165, EUT Horz, 6Mbps
3883.358	43.4	3.4	2.9	343.0	3.0	0.0	Horz	AV	0.0	46.8	54.0	-7.2	High Ch 165, EUT on side, 6Mbps
3883.350	43.1	3.4	2.4	354.0	3.0	0.0	Vert	AV	0.0	46.5	54.0	-7.5	High Ch 165, EUT on side, 6Mbps
3883.383	42.2	3.4	2.8	39.0	3.0	0.0	Horz	AV	0.0	45.6	54.0	-8.4	High Ch 165, EUT Horz, 6Mbps
3883.333	37.7	3.4	1.5	296.0	3.0	0.0	Vert	AV	0.0	41.1	54.0	-12.9	High Ch 165, EUT Vert, 6Mbps
11490.500	43.5	-5.9	1.9	0.0	3.0	0.0	Horz	AV	0.0	37.6	54.0	-16.4	Low Ch 149, EUT Vert, 6Mbps
11000.790	45.8	-8.5	1.5	0.0	3.0	0.0	Horz	AV	0.0	37.3	54.0	-16.7	Low Ch 100, EUT Vert, 6Mbps
11000.420	45.6	-8.5	2.5	122.0	3.0	0.0	Vert	AV	0.0	37.1	54.0	-16.9	Low Ch 100, EUT Horz, 6Mbps
11490.120	42.6	-5.9	3.2	130.0	3.0	0.0	Vert	AV	0.0	36.7	54.0	-17.3	Low Ch 149, EUT Horz, 6Mbps
11570.170	41.6	-5.0	1.5	82.0	3.0	0.0	Horz	AV	0.0	36.6	54.0	-17.4	Mid Ch 157, EUT Vert, 6Mbps
11159.960	45.4	-8.9	2.9	126.0	3.0	0.0	Vert	AV	0.0	36.5	54.0	-17.5	Mid Ch 116, EUT Horz, 6Mbps
11162.790	45.2	-8.9	2.3	0.0	3.0	0.0	Horz	AV	0.0	36.3	54.0	-17.7	Mid Ch 116, EUT Vert, 6Mbps
11570.080	41.2	-5.0	2.4	130.0	3.0	0.0	Vert	AV	0.0	36.2	54.0	-17.8	Mid Ch 157, EUT Horz, 6Mbps
11650.170	40.7	-4.5	2.8	125.0	3.0	0.0	Vert	AV	0.0	36.2	54.0	-17.8	High Ch 165, EUT Horz, 6Mbps
11402.420	43.0	-6.9	1.5	0.0	3.0	0.0	Horz	AV	0.0	36.1	54.0	-17.9	High Ch 140, EUT Vert, 6Mbps
11400.000	42.7	-6.9	2.9	122.0	3.0	0.0	Vert	AV	0.0	35.8	54.0	-18.2	High Ch 140, EUT Horz, 6Mbps
11650.080	40.2	-4.5	1.8	4.0	3.0	0.0	Horz	AV	0.0	35.7	54.0	-18.3	High Ch 165, EUT Vert, 6Mbps

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
3883.267	50.4	3.4	2.1	62.0	3.0	0.0	Horz	PK	0.0	53.8	74.0	-20.2	High Ch 165, EUT Vert, 6Mbps
3883.467	50.1	3.4	2.06	62.0	3.0	0.0	Horz	PK	0.0	53.5	74.0	-20.5	High Ch 165, EUT Vert, 54 Mbps
3883.250	50.0	3.4	2.06	62.0	3.0	0.0	Horz	PK	0.0	53.4	74.0	-20.6	High Ch 165, EUT Vert, MCS0
3883.408	49.9	3.4	2.06	62.0	3.0	0.0	Horz	PK	0.0	53.3	74.0	-20.7	High Ch 165, EUT Vert, MCS7
3883.442	49.7	3.4	2.06	62.0	3.0	0.0	Horz	PK	0.0	53.1	74.0	-20.9	High Ch 165, EUT Vert, 36 Mbps
3883.300	48.5	3.4	3.6	302.0	3.0	0.0	Vert	PK	0.0	51.9	74.0	-22.1	High Ch 165, EUT Horz, 6Mbps
3883.283	47.2	3.4	2.4	354.0	3.0	0.0	Vert	PK	0.0	50.6	74.0	-23.4	High Ch 165, EUT on side, 6Mbps
3883.517	47.2	3.4	2.9	343.0	3.0	0.0	Horz	PK	0.0	50.6	74.0	-23.4	High Ch 165, EUT on side, 6Mbps
3883.400	46.6	3.4	2.8	39.0	3.0	0.0	Horz	PK	0.0	50.0	74.0	-24.0	High Ch 165, EUT Horz, 6Mbps
10998.460	57.2	-8.5	1.5	0.0	3.0	0.0	Horz	PK	0.0	48.7	74.0	-25.3	Low Ch 100, EUT Vert, 6Mbps
11492.500	54.5	-5.9	1.9	0.0	3.0	0.0	Horz	PK	0.0	48.6	74.0	-25.4	Low Ch 149, EUT Vert, 6Mbps
10998.960	56.5	-8.5	2.5	122.0	3.0	0.0	Vert	PK	0.0	48.0	74.0	-26.0	Low Ch 100, EUT Horz, 6Mbps
3883.275	44.1	3.4	1.5	296.0	3.0	0.0	Vert	PK	0.0	47.5	74.0	-26.5	High Ch 165, EUT Vert, 6Mbps
11158.460	56.4	-8.9	2.3	0.0	3.0	0.0	Horz	PK	0.0	47.5	74.0	-26.5	Mid Ch 116, EUT Vert, 6Mbps
11400.380	54.1	-6.9	1.5	0.0	3.0	0.0	Horz	PK	0.0	47.2	74.0	-26.8	High Ch 140, EUT Vert, 6Mbps
11158.620	55.7	-8.9	2.9	126.0	3.0	0.0	Vert	PK	0.0	46.8	74.0	-27.2	Mid Ch 116, EUT Horz, 6Mbps
11568.670	51.6	-5.0	1.5	82.0	3.0	0.0	Horz	PK	0.0	46.6	74.0	-27.4	Mid Ch 157, EUT Vert, 6Mbps
11486.710	52.3	-5.9	3.2	130.0	3.0	0.0	Vert	PK	0.0	46.4	74.0	-27.6	Low Ch 149, EUT Horz, 6Mbps
11648.830	50.3	-4.5	1.8	4.0	3.0	0.0	Horz	PK	0.0	45.8	74.0	-28.2	High Ch 165, EUT Vert, 6Mbps
11570.670	50.5	-5.0	2.4	130.0	3.0	0.0	Vert	PK	0.0	45.5	74.0	-28.5	Mid Ch 157, EUT Horz, 6Mbps
11399.790	51.3	-7.0	2.9	122.0	3.0	0.0	Vert	PK	0.0	44.3	74.0	-29.7	High Ch 140, EUT Horz, 6Mbps
11653.380	48.2	-4.5	2.8	125.0	3.0	0.0	Vert	PK	0.0	43.7	74.0	-30.3	High Ch 165, EUT Horz, 6Mbps
22980.910	27.7	-8.7	1.2	17.0	3.0	0.0	Vert	AV	0.0	19.0	54.0	-35.0	Low Ch 149, 6 Mbps, EUT Horz
22981.550	27.7	-8.7	1.2	214.0	3.0	0.0	Horz	AV	0.0	19.0	54.0	-35.0	Low Ch 149, 6 Mbps, EUT Vert
22799.130	26.8	-8.3	1.2	0.0	3.0	0.0	Horz	AV	0.0	18.5	54.0	-35.5	High Ch 140, 6 Mbps, EUT Vert
22802.080	26.8	-8.3	1.2	0.0	3.0	0.0	Vert	AV	0.0	18.5	54.0	-35.5	High Ch 140, 6 Mbps, EUT Horz
22318.280	26.5	-8.5	1.2	158.0	3.0	0.0	Vert	AV	0.0	18.0	54.0	-36.0	Mid Ch 116, 6 Mbps, EUT Horz
22321.530	26.5	-8.5	1.2	57.0	3.0	0.0	Horz	AV	0.0	18.0	54.0	-36.0	Mid Ch 116, 6 Mbps, EUT Vert
22978.110	38.5	-8.7	1.2	214.0	3.0	0.0	Horz	PK	0.0	29.8	74.0	-44.2	Low Ch 149, 6 Mbps, EUT Vert
22318.040	37.6	-8.5	1.2	158.0	3.0	0.0	Vert	PK	0.0	29.1	74.0	-44.9	Mid Ch 116, 6 Mbps, EUT Horz
22977.880	37.8	-8.7	1.2	17.0	3.0	0.0	Vert	PK	0.0	29.1	74.0	-44.9	Low Ch 149, 6 Mbps, EUT Horz
22799.650	37.3	-8.3	1.2	0.0	3.0	0.0	Horz	PK	0.0	29.0	74.0	-45.0	High Ch 140, 6 Mbps, EUT Vert
22798.560	37.1	-8.3	1.2	0.0	3.0	0.0	Vert	PK	0.0	28.8	74.0	-45.2	High Ch 140, 6 Mbps, EUT Horz
22319.670	36.9	-8.5	1.2	57.0	3.0	0.0	Horz	PK	0.0	28.4	74.0	-45.6	Mid Ch 116, 6 Mbps, EUT Vert

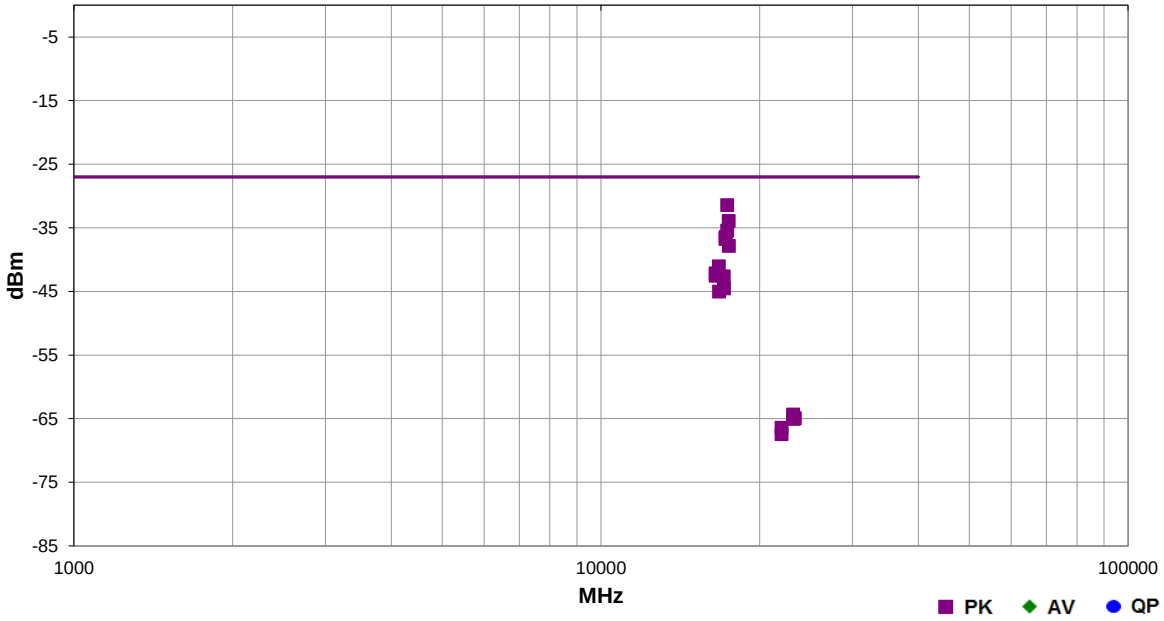
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	11-Jul-2019		
Project:	None	**Temperature:**	23.5 °C		
Job Site:	OC07	**Humidity:**	50.4% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1017 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	4				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-2C Band - Low Channel 100 (5500 MHz), Mid Channel 116 (5580 MHz) and High Channel 140 (5700 MHz) and U-NII-3 Band - Low Channel 149 (5745 MHz), Mid Channel 157 (5785 MHz) and High Channel 165 (5825 MHz). See comments below for data rates.				
Deviations:	None				
Comments:	Bandwidth 20 MHz Wide, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	132	**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
	17355.880	1.8	143.0	Vert	PK	719.6E-9	-31.4	-27.0	-4.4	Mid Ch 157, EUT Horz, 6Mbps
	17468.580	1.8	138.0	Vert	PK	404.7E-9	-33.9	-27.0	-6.9	High Ch 165, EUT Horz, 6Mbps
	17356.120	1.8	47.0	Horz	PK	286.5E-9	-35.4	-27.0	-8.4	Mid Ch 157, EUT Vert, 6Mbps
	17236.750	1.8	59.0	Horz	PK	227.6E-9	-36.4	-27.0	-9.4	Low Ch 149, EUT Vert, 6Mbps
	17229.620	3.7	139.0	Vert	PK	212.4E-9	-36.7	-27.0	-9.7	Low Ch 149, EUT Horz, 6Mbps
	17476.210	1.5	19.0	Horz	PK	164.9E-9	-37.8	-27.0	-10.8	High Ch 165, EUT Vert, 6Mbps
	16734.040	1.4	126.0	Vert	PK	78.9E-9	-41.0	-27.0	-14.0	Mid Ch 116, EUT Horz, 6Mbps
	16502.670	2.1	68.0	Horz	PK	61.3E-9	-42.1	-27.0	-15.1	Low Ch 100, EUT Vert, 6Mbps
	16501.580	1.5	275.0	Vert	PK	55.9E-9	-42.5	-27.0	-15.5	Low Ch 100, EUT Horz, 6Mbps
	17102.420	1.9	129.0	Vert	PK	54.6E-9	-42.6	-27.0	-15.6	High Ch 140, EUT Horz, 6Mbps
	17109.460	1.6	330.0	Horz	PK	35.2E-9	-44.5	-27.0	-17.5	High Ch 140, EUT Vert, 6Mbps
	16746.960	1.5	65.0	Horz	PK	31.4E-9	-45.0	-27.0	-18.0	Mid Ch 116, EUT Vert, 6Mbps
	23138.250	1.2	208.0	Vert	PK	369.1E-12	-64.3	-27.0	-37.3	Mid Ch 157, 6 Mbps, EUT Horz
	23302.030	1.2	139.0	Horz	PK	321.5E-12	-64.9	-27.0	-37.9	High Ch 165, 6 Mbps, EUT Vert
	23299.920	1.2	305.0	Vert	PK	321.5E-12	-64.9	-27.0	-37.9	High Ch 165, 6 Mbps, EUT Horz
	23140.080	1.2	9.0	Horz	PK	314.1E-12	-65.0	-27.0	-38.0	Mid Ch 157, 6 Mbps, EUT Vert
	21998.270	1.2	21.0	Horz	PK	227.6E-12	-66.4	-27.0	-39.4	Low Ch 100, 6 Mbps, EUT Vert
	21998.140	1.2	74.0	Vert	PK	180.8E-12	-67.4	-27.0	-40.4	Low Ch 100, 6 Mbps, EUT Horz

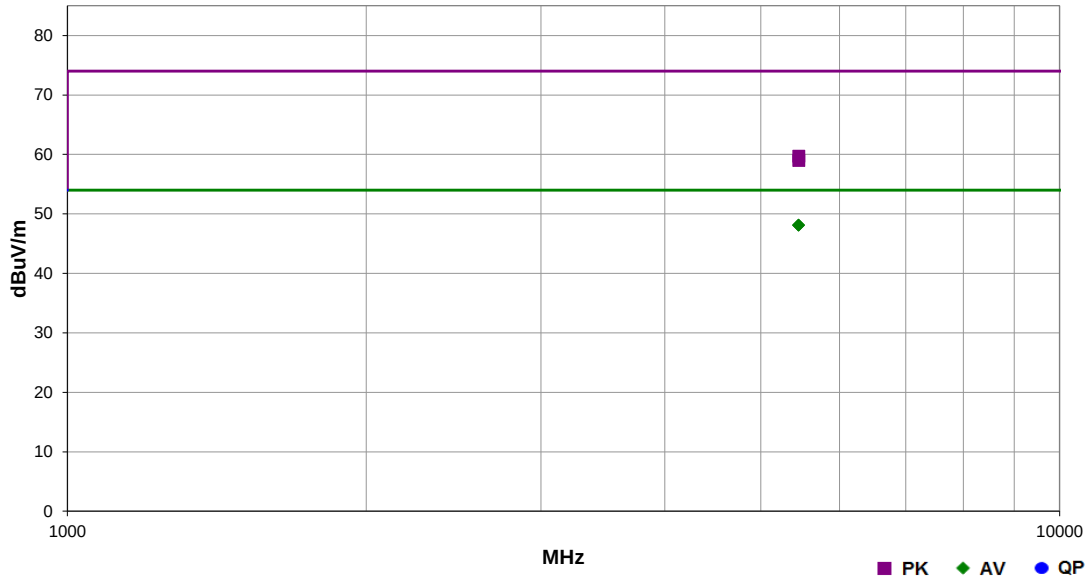
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	16-Jul-2019		
Project:	None	**Temperature:**	23.5 °C		
Job Site:	OC07	**Humidity:**	50.4% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1017 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	4				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-2C Band - Low Channel 100 (5500 MHz)				
Deviations:	None				
Comments:	Bandwidth 20 MHz Wide, Band Edge, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	182	**Test Distance (m)**	1	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
5458.627	22.0	35.6	1.5	70.0	1.0	0.0	Vert	AV	-9.5	48.1	54.0	-5.9	20 MHz BW, Ch 100, 6 Mbps, EUT Vert
5458.733	22.0	35.6	1.5	187.0	1.0	0.0	Horz	AV	-9.5	48.1	54.0	-5.9	20 MHz BW, Ch 100, 6 Mbps, EUT On Side
5459.167	33.6	35.6	1.5	187.0	1.0	0.0	Horz	PK	-9.5	59.7	74.0	-14.3	20 MHz BW, Ch 100, 6 Mbps, EUT On Side
5459.823	32.9	35.6	1.5	70.0	1.0	0.0	Vert	PK	-9.5	59.0	74.0	-15.0	20 MHz BW, Ch 100, 6 Mbps, EUT Vert

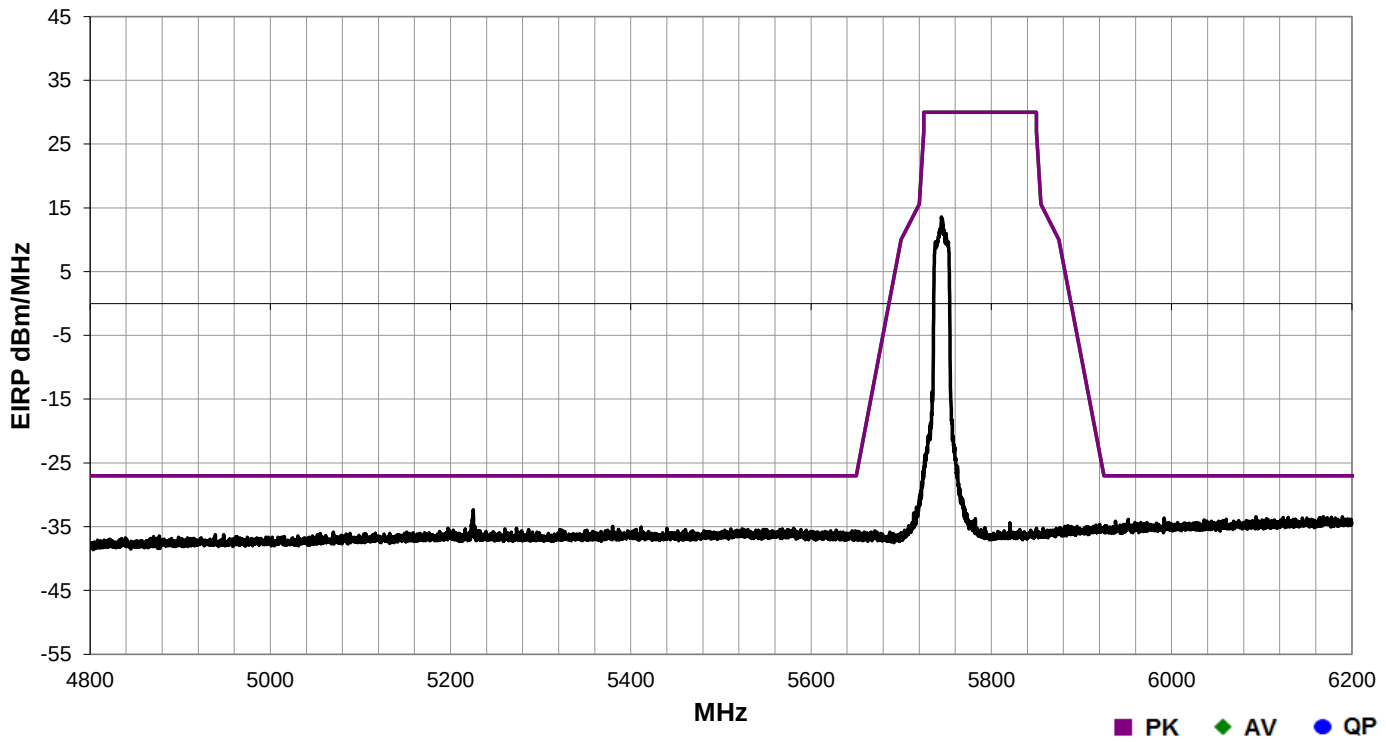
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	16-Jul-2019		
Project:	None	**Temperature:**	23.5 °C		
Job Site:	OC07	**Humidity:**	50.4% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1017 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	4				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-3 Band - Low Channel 149 (5745 MHz). MCS0.				
Deviations:	None				
Comments:	Bandwidth 20 MHz Wide, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	183	**Test Distance (m)**	1	**Antenna Height(s)**	1.2 (m)	**Results**	Pass



	Freq (MHz)	Antenna Height (meters)	Transducer (dB)	Polarity/ Transducer Type	Detector	EIRP (Watts/MHz)	EIRP (dBm/MHz)	Spec. Limit (dBm/MHz)	Compared to Spec. (dB)	Comments

All emissions were below the limit (see graph above).

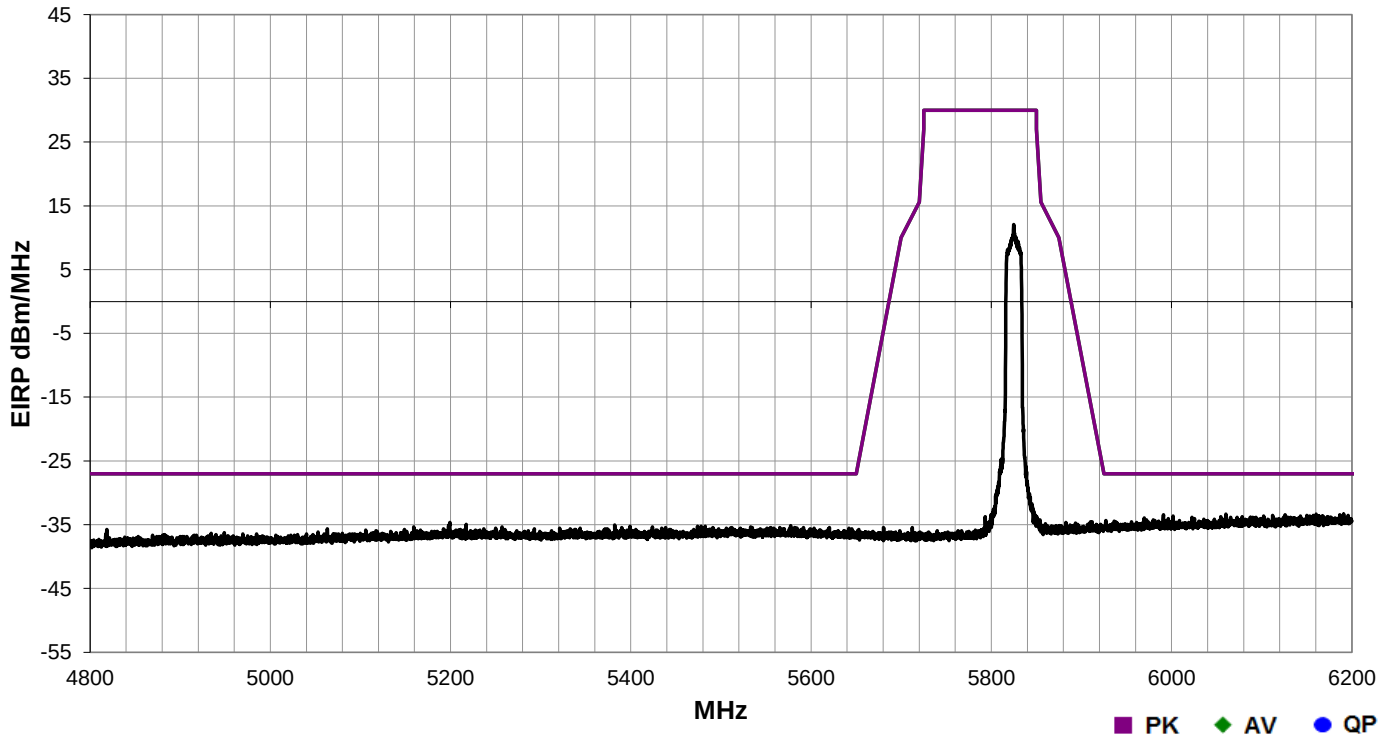
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	16-Jul-2019		
Project:	None	**Temperature:**	23.5 °C		
Job Site:	OC07	**Humidity:**	50.4% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1017 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	4				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-3 Band - High Channel 165 (5825 MHz). MCS0.				
Deviations:	None				
Comments:	Bandwidth 20 MHz Wide, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	186	**Test Distance (m)**	1	**Antenna Height(s)**	1.2 (m)	**Results**	Pass



	Freq (MHz)	Antenna Height (meters)	Transducer (dB)	Polarity/ Transducer Type	Detector	EIRP (Watts/MHz)	EIRP (dBm/MHz)	Spec. Limit (dBm/MHz)	Compared to Spec. (dB)	Comments

All emissions were below the limit (see graph above).

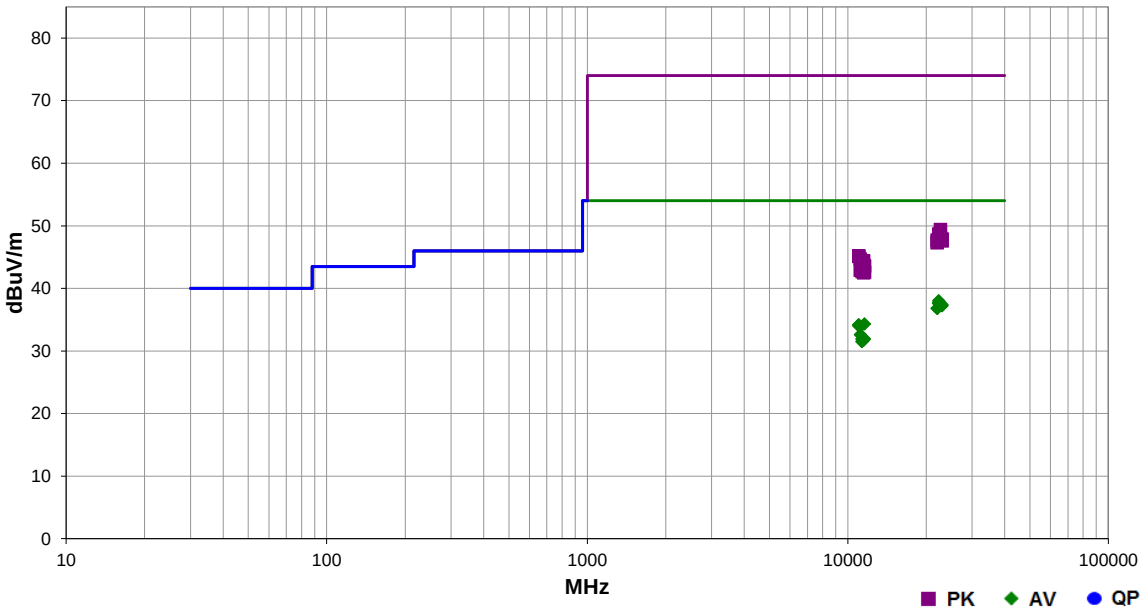
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	12-Jul-2019		
Project:	None	**Temperature:**	23.9 °C		
Job Site:	OC07	**Humidity:**	52.1% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1014 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	4				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-2C Band - Low Channel 100/104 (5510 MHz), Mid Channel 116/120 (5590 MHz) and High Channel 132/136 (5670 MHz) and U-NII-3 Band - Low Channel 149/153 (5755 MHz) and High Channel 157/161 (5795				
Deviations:	None				
Comments:	Bandwidth 40 MHz Wide, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	159	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
22360.260	46.5	-8.5	1.2	327.0	3.0	0.0	Horz	AV	0.0	38.0	54.0	-16.0	Mid Ch 118, MCS0, EUT Vert
22359.810	46.2	-8.5	1.2	95.0	3.0	0.0	Vert	AV	0.0	37.7	54.0	-16.3	Mid Ch 118, MCS0, EUT Horz
22358.510	46.1	-8.5	1.2	208.0	3.0	0.0	Vert	AV	0.0	37.6	54.0	-16.4	Mid Ch 118, MCS7, EUT Horz
22358.950	46.1	-8.5	1.2	234.0	3.0	0.0	Horz	AV	0.0	37.6	54.0	-16.4	Mid Ch 118, MCS7, EUT Vert
22670.500	45.8	-8.3	1.5	203.0	3.0	0.0	Horz	AV	0.0	37.5	54.0	-16.5	High Ch 134, MCS0,EUT Vert
22676.790	45.7	-8.3	1.5	130.0	3.0	0.0	Vert	AV	0.0	37.4	54.0	-16.6	High Ch 134, MCS0,EUT Horz
23020.330	46.1	-8.7	1.5	53.0	3.0	0.0	Horz	AV	0.0	37.4	54.0	-16.6	Low Ch 151, MCS0,EUT Vert
23020.330	45.9	-8.7	1.5	0.0	3.0	0.0	Vert	AV	0.0	37.2	54.0	-16.8	Low Ch 151, MCS0,EUT Horz
22048.710	46.0	-9.2	1.5	126.0	3.0	0.0	Horz	AV	0.0	36.8	54.0	-17.2	Low Ch 102, MCS0, EUT Vert
22049.750	46.0	-9.2	1.5	31.0	3.0	0.0	Vert	AV	0.0	36.8	54.0	-17.2	Low Ch 102, MCS0, EUT Horz
11590.080	39.1	-4.8	2.9	66.0	3.0	0.0	Horz	AV	0.0	34.3	54.0	-19.7	High Ch 159,MCS0,EUT Vert
11019.830	42.8	-8.6	1.5	5.0	3.0	0.0	Horz	AV	0.0	34.2	54.0	-19.8	Low Ch 102,MCS0, EUT Vert
11019.880	42.6	-8.6	2.9	118.0	3.0	0.0	Vert	AV	0.0	34.0	54.0	-20.0	Low Ch 102,MCS0, EUT Horz
11180.000	42.7	-8.8	2.9	123.0	3.0	0.0	Vert	AV	0.0	33.9	54.0	-20.1	Mid Ch 118, MCS0, EUT Horz
11181.420	41.4	-8.8	1.5	7.0	3.0	0.0	Horz	AV	0.0	32.6	54.0	-21.4	Mid Ch 118, MCS0, EUT Vert
11509.920	37.7	-5.7	1.5	356.0	3.0	0.0	Horz	AV	0.0	32.0	54.0	-22.0	Low Ch 151, MCS0, EUT Vert
11341.420	39.6	-7.7	3.4	102.0	3.0	0.0	Vert	AV	0.0	31.9	54.0	-22.1	High Ch 134, MCS0, EUT Horz
11590.000	36.7	-4.8	2.1	45.0	3.0	0.0	Vert	AV	0.0	31.9	54.0	-22.1	High Ch 159,MCS0,EUT Horz
11510.040	37.4	-5.7	3.3	114.0	3.0	0.0	Vert	AV	0.0	31.7	54.0	-22.3	Low Ch 151, MCS0, EUT Horz
11338.830	39.2	-7.7	1.5	39.0	3.0	0.0	Horz	AV	0.0	31.5	54.0	-22.5	High Ch 134, MCS0, EUT Vert
22679.460	57.7	-8.3	1.5	203.0	3.0	0.0	Horz	PK	0.0	49.4	74.0	-24.6	High Ch 134, MCS0,EUT Vert
22359.940	57.2	-8.5	1.2	95.0	3.0	0.0	Vert	PK	0.0	48.7	74.0	-25.3	Mid Ch 118, MCS0, EUT Horz

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
22361.570	56.9	-8.5	1.2	327.0	3.0	0.0	Horz	PK	0.0	48.4	74.0	-25.6	Mid Ch 118, MCS0, EUT Vert
22361.770	56.8	-8.5	1.2	208.0	3.0	0.0	Vert	PK	0.0	48.3	74.0	-25.7	Mid Ch 118, MCS7, EUT Horz
22677.170	56.5	-8.3	1.5	130.0	3.0	0.0	Vert	PK	0.0	48.2	74.0	-25.8	High Ch 134, MCS0,EUT Horz
23017.290	56.6	-8.7	1.5	0.0	3.0	0.0	Vert	PK	0.0	47.9	74.0	-26.1	Low Ch 151, MCS0,EUT Horz
22035.420	56.9	-9.2	1.5	31.0	3.0	0.0	Vert	PK	0.0	47.7	74.0	-26.3	Low Ch 102, MCS0, EUT Horz
22361.650	56.2	-8.5	1.2	234.0	3.0	0.0	Horz	PK	0.0	47.7	74.0	-26.3	Mid Ch 118, MCS7, EUT Vert
23030.670	56.4	-8.8	1.5	53.0	3.0	0.0	Horz	PK	0.0	47.6	74.0	-26.4	Low Ch 151, MCS0,EUT Vert
22033.250	56.5	-9.2	1.5	126.0	3.0	0.0	Horz	PK	0.0	47.3	74.0	-26.7	Low Ch 102, MCS0, EUT Vert
11016.420	53.8	-8.6	1.5	5.0	3.0	0.0	Horz	PK	0.0	45.2	74.0	-28.8	Low Ch 102,MCS0, EUT Vert
11020.500	53.7	-8.6	2.9	118.0	3.0	0.0	Vert	PK	0.0	45.1	74.0	-28.9	Low Ch 102,MCS0, EUT Horz
11169.880	53.6	-8.9	1.5	7.0	3.0	0.0	Horz	PK	0.0	44.7	74.0	-29.3	Mid Ch 118, MCS0, EUT Vert
11506.420	50.1	-5.7	1.5	356.0	3.0	0.0	Horz	PK	0.0	44.4	74.0	-29.6	Low Ch 151, MCS0, EUT Vert
11589.040	48.4	-4.8	2.9	66.0	3.0	0.0	Horz	PK	0.0	43.6	74.0	-30.4	High Ch 159,MCS0,EUT Vert
11348.750	50.9	-7.5	3.4	102.0	3.0	0.0	Vert	PK	0.0	43.4	74.0	-30.6	High Ch 134, MCS0, EUT Horz
11176.080	51.8	-8.9	2.9	123.0	3.0	0.0	Vert	PK	0.0	42.9	74.0	-31.1	Mid Ch 118, MCS0, EUT Horz
11346.540	50.4	-7.7	1.5	39.0	3.0	0.0	Horz	PK	0.0	42.7	74.0	-31.3	High Ch 134, MCS0, EUT Vert
11595.000	47.4	-4.8	2.1	45.0	3.0	0.0	Vert	PK	0.0	42.6	74.0	-31.4	High Ch 159,MCS0,EUT Horz
11509.790	48.2	-5.7	3.3	114.0	3.0	0.0	Vert	PK	0.0	42.5	74.0	-31.5	Low Ch 151, MCS0, EUT Horz

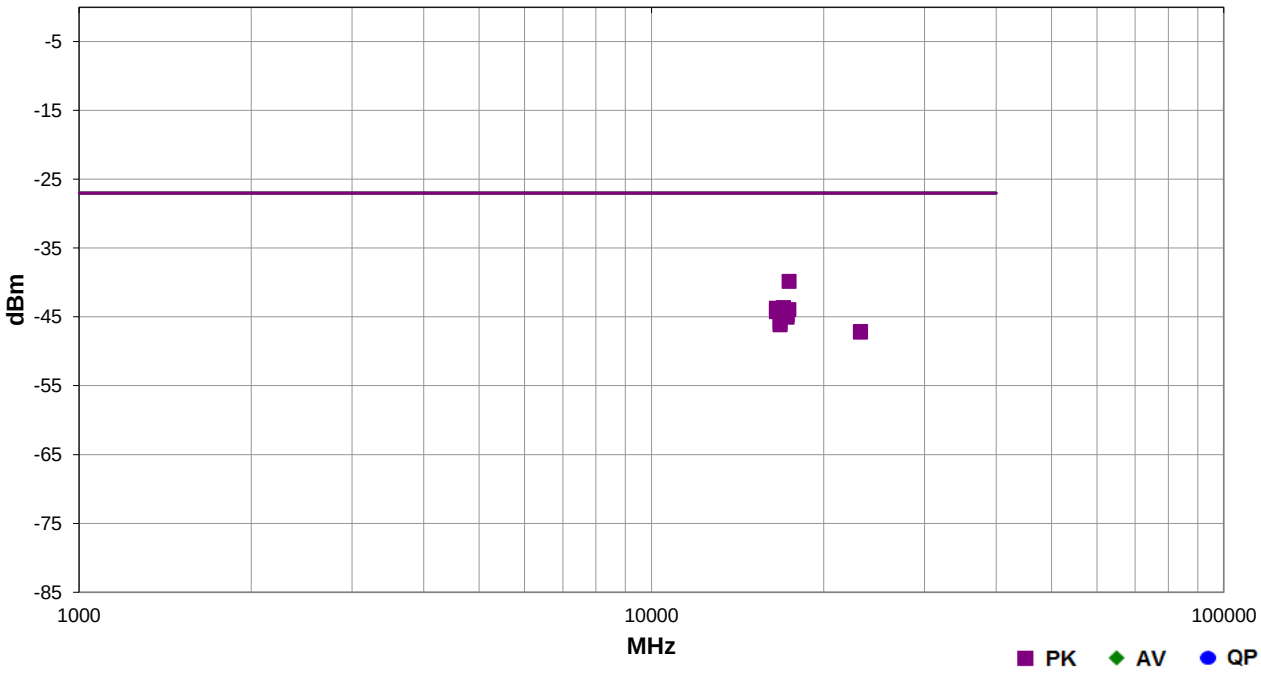
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	12-Jul-2019		
Project:	None	**Temperature:**	23.9 °C		
Job Site:	OC07	**Humidity:**	52.1% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1014 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	4				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-2C Band - Low Channel 100/104 (5510 MHz), Mid Channel 116/120 (5590 MHz) and High Channel 132/136 (5670 MHz) and U-NII-3 Band - Low Channel 149/153 (5755 MHz) and High Channel 157/161 (5795				
Deviations:	None				
Comments:	Bandwidth 40 MHz Wide, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	158	**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
	17397.040	3.0	142.0	Vert	PK	104.0E-9	-39.8	-27.0	-12.8	High Ch 159,MCS0,EUT Horz
	17009.250	1.5	297.0	Vert	PK	43.4E-9	-43.6	-27.0	-16.6	High Ch 134, MCS0, EUT Horz
	16524.420	1.2	66.0	Vert	PK	42.4E-9	-43.7	-27.0	-16.7	Low Ch 102,MCS0, EUT Horz
	17376.250	1.1	66.0	Horz	PK	40.5E-9	-43.9	-27.0	-16.9	High Ch 159,MCS0,EUT Vert
	16533.960	1.5	189.0	Horz	PK	37.8E-9	-44.2	-27.0	-17.2	Low Ch 102,MCS0, EUT Vert
	17009.920	1.5	31.0	Horz	PK	37.8E-9	-44.2	-27.0	-17.2	High Ch 134, MCS0, EUT Vert
	17262.540	1.5	257.0	Vert	PK	33.7E-9	-44.7	-27.0	-17.7	Low Ch 151, MCS0, EUT Horz
	17256.500	2.6	264.0	Horz	PK	31.4E-9	-45.0	-27.0	-18.0	Low Ch 151, MCS0, EUT Vert
	16773.080	1.4	146.0	Vert	PK	26.1E-9	-45.8	-27.0	-18.8	Mid Ch 118,MSC0, EUT Horz
	16772.380	1.5	157.0	Horz	PK	24.4E-9	-46.1	-27.0	-19.1	Mid Ch 118,MSC0, EUT Vert
	23186.960	1.5	226.0	Vert	PK	19.4E-9	-47.1	-27.0	-20.1	High Ch 159,MCS0, EUT Horz
	23180.040	1.5	82.0	Horz	PK	18.9E-9	-47.2	-27.0	-20.2	High Ch 159,MCS0, EUT Vert

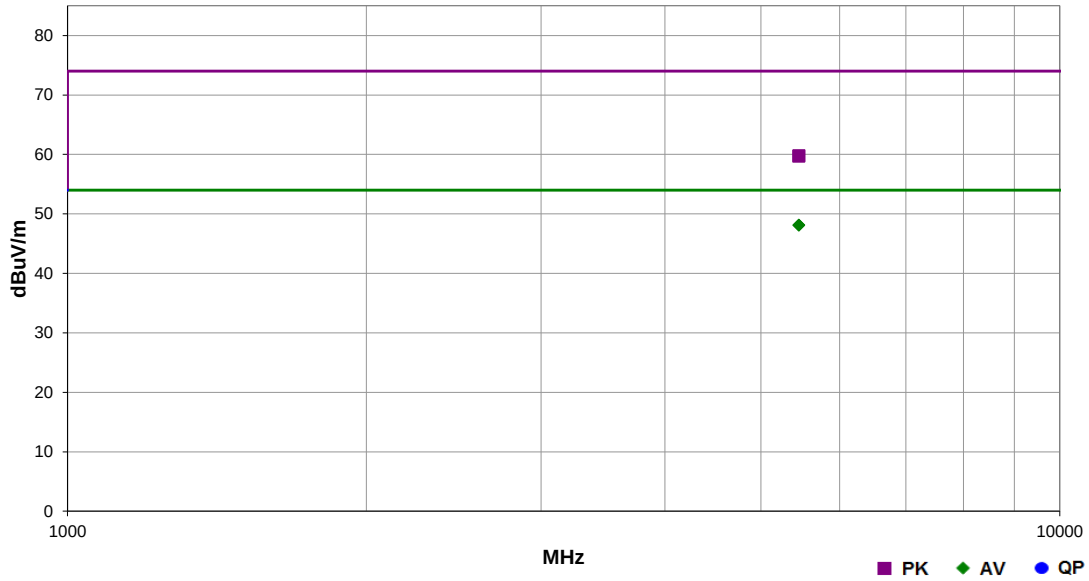
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	16-Jul-2019		
Project:	None	**Temperature:**	23.5 °C		
Job Site:	OC07	**Humidity:**	50.4% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1017 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	4				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-2C Band - Low Channel 100/104 (5510 MHz). See comments below for data rates.				
Deviations:	None				
Comments:	Bandwidth 40 MHz Wide, Band Edge, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	182	**Test Distance (m)**	1	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
5459.523	22.0	35.6	1.5	187.0	1.0	0.0	Horz	AV	-9.5	48.1	54.0	-5.9	40 MHz BW, Ch 102, MCS0, EUT On Side
5459.467	33.7	35.6	1.5	187.0	1.0	0.0	Horz	PK	-9.5	59.8	74.0	-14.2	40 MHz BW, Ch 102, MCS0, EUT On Side
5459.430	22.0	35.6	1.5	70.0	1.0	0.0	Vert	AV	-9.5	48.1	54.0	-5.9	40 MHz BW, Ch 102, MCS0, EUT Vert
5458.277	33.6	35.6	1.5	70.0	1.0	0.0	Vert	PK	-9.5	59.7	74.0	-14.3	40 MHz BW, Ch 102, MCS0, EUT Vert

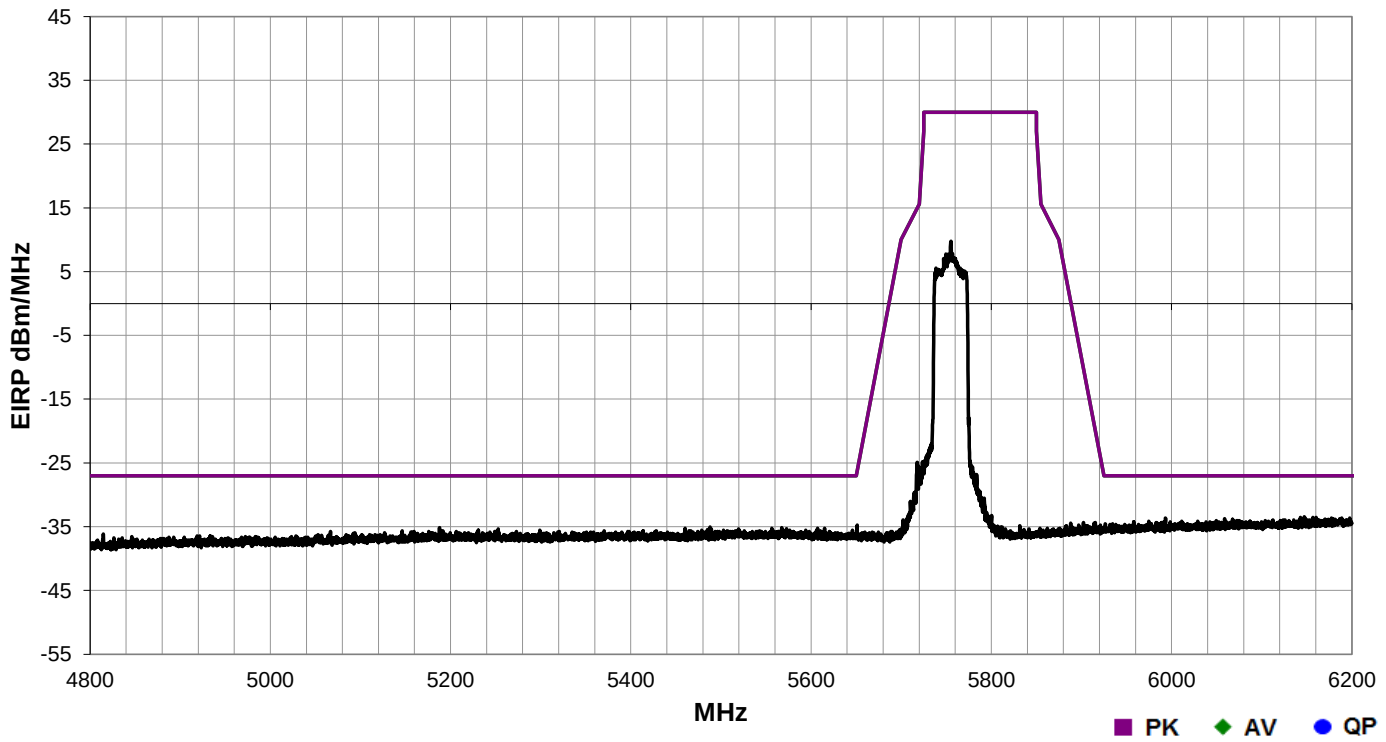
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	16-Jul-2019		
Project:	None	**Temperature:**	23.5 °C		
Job Site:	OC07	**Humidity:**	50.4% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1017 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	4				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-3 Band - Low Channel 149/153 (5755 MHz). MCS0.				
Deviations:	None				
Comments:	Bandwidth 40 MHz Wide, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	184	**Test Distance (m)**	1	**Antenna Height(s)**	1.2 (m)	**Results**	Pass



	Freq (MHz)	Antenna Height (meters)	Transducer (dB)	Polarity/ Transducer Type	Detector	EIRP (Watts/MHz)	EIRP (dBm/MHz)	Spec. Limit (dBm/MHz)	Compared to Spec. (dB)	Comments

All emissions were below the limit (see graph above).

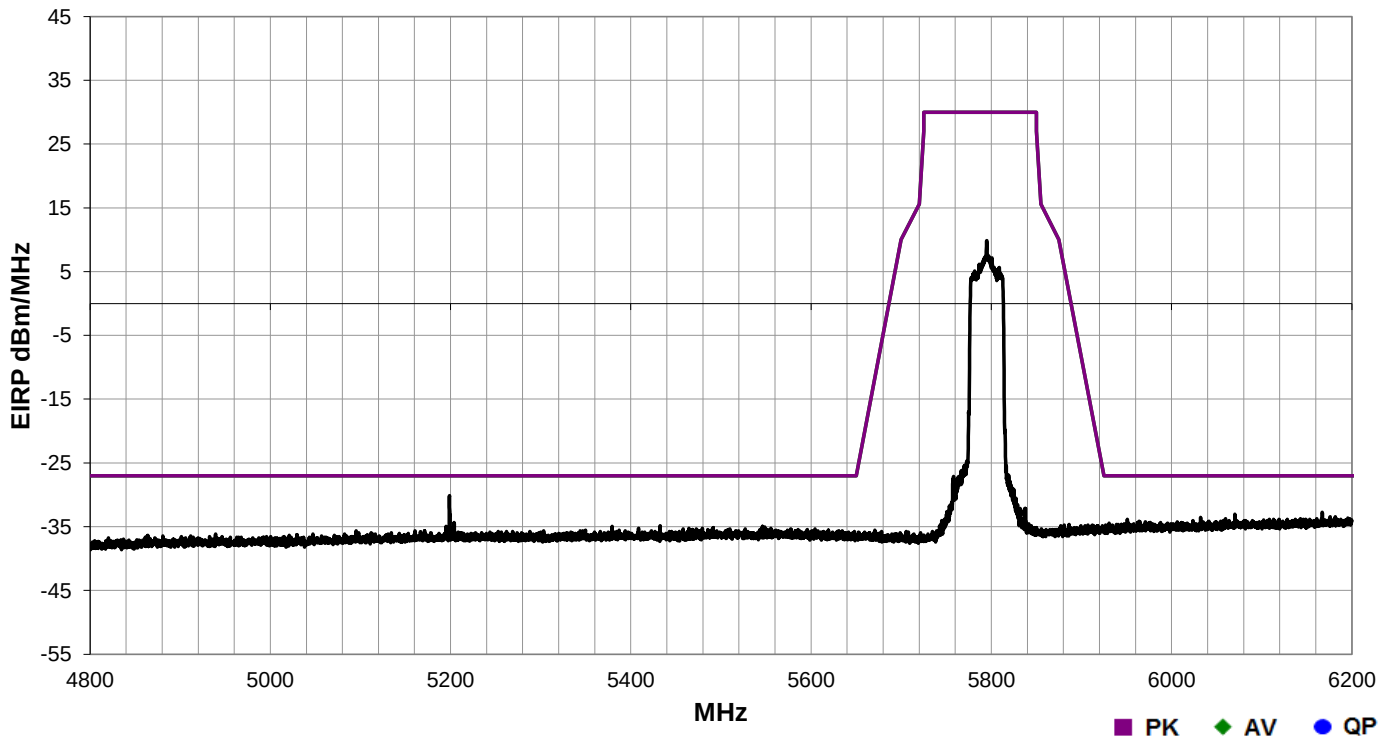
SPURIOUS RADIATED EMISSIONS

EmiR5 2019.05.20 PSA-ESCI 2019.05.10

Work Order:	MASI0553	**Date:**	16-Jul-2019		
Project:	None	**Temperature:**	23.5 °C		
Job Site:	OC07	**Humidity:**	50.4% RH		
Serial Number:	ENG-1	**Barometric Pres.:**	1017 mbar	**Tested by:**	Luis Flores, Nolan De Ramos
EUT:	MWMII				
Configuration:	4				
Customer:	Masimo Corporation				
Attendees:	Mike Tran				
EUT Power:	3.6VDC				
Operating Mode:	Transmitting 802.11an: U-NII-3 Band - High Channel 157/161 (5795 MHz). MCS0.				
Deviations:	None				
Comments:	Bandwidth 40 MHz Wide, No duty cycle correction factor was applied to any emissions as they were not temporally related to the duty cycle of the carrier.				

Test Specifications	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

Run #	185	**Test Distance (m)**	1	**Antenna Height(s)**	1.2 (m)	**Results**	Pass



	Freq (MHz)	Antenna Height (meters)	Transducer (dB)	Polarity/ Transducer Type	Detector	EIRP (Watts/MHz)	EIRP (dBm/MHz)	Spec. Limit (dBm/MHz)	Compared to Spec. (dB)	Comments

All emissions were below the limit (see graph above).

FREQUENCY STABILITY

XMit 2019.05.15

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Power Supply - DC	Agilent	E3648A	TPE	NCR	NCR
Chamber - Temperature/Humidity	Cincinnati Sub Zero (CSZ)	ZPHS-32-3.5-SCT/AC	TBE	19-Nov-18	19-Nov-19
Thermometer	Omega Engineering, Inc.	HH311	DUC	8-Nov-17	8-Nov-20
Generator - Signal	Agilent	E8257D	TGU	15-Feb-18	15-Feb-21
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Attenuator	Fairview Microwave	SA18H-20	TKR	20-Dec-18	20-Dec-19
Block - DC	Fairview Microwave	SD3379	AMV	3-Jan-19	3-Jan-20
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAY	30-Nov-18	30-Nov-19

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 equipped with a precision frequency reference that exceeds the stability requirement of the EUT.

Measurements were made at the edges of the main transmit bands as called out on the data sheets. Testing was done with an absence of modulation in a CW mode of operation.

The primary supply voltage was varied from 85 % to 115% of the nominal voltage Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range (-30 ° to +50° C) and at 10°C intervals.

Where a ppm limit applies: ppm = (Measured Frequency / Measured Nominal Frequency - 1) * 1,000,000

Per the requirements of FCC 15.407:

“Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user’s manual.”

No specific limits are provided in either FCC 15.407, the product specific rule part, or FCC 2.1055, the equipment authorization procedure for testing frequency stability. While there are no limits called out, any results less than 100ppm will still allow the radio to be operating within the band.

FREQUENCY STABILITY

element

TbtTx 2018.09.13 XMit 2019.05.15

EUT:	**MWMII**			**Work Order:**	**MASI0553**
Serial Number:	**ENG-1**			**Date:**	**19-Jul-19**
Customer:	**Masimo Corporation**			**Temperature:**	**23.6 °C**
Attendees:	**Anami Joshi & Nghi Nguyen**			**Humidity:**	**48.1% RH**
Project:	**None**			**Barometric Pres.:**	**1014 mbar**
Tested by:	**Nolan De Ramos, Luis Flores, and Mark Baytan**	**Power:**	**3.6VDC**	**Job Site:**	**OC13**

TEST SPECIFICATIONS	**Test Method**
FCC 15.407:2019	ANSI C63.10:2013

COMMENTS

Reference level offset: DC block + 20dB attenuator + coax cable + client provided patch cable = 26.3dB Total Offset (5.2 GHz - 5.35 GHz)
Reference level offset: DC block + 20dB attenuator + coax cable + client provided patch cable = 26dB Total Offset (5.35 GHz - 5.8 GHz)

DEVIATIONS FROM TEST STANDARD

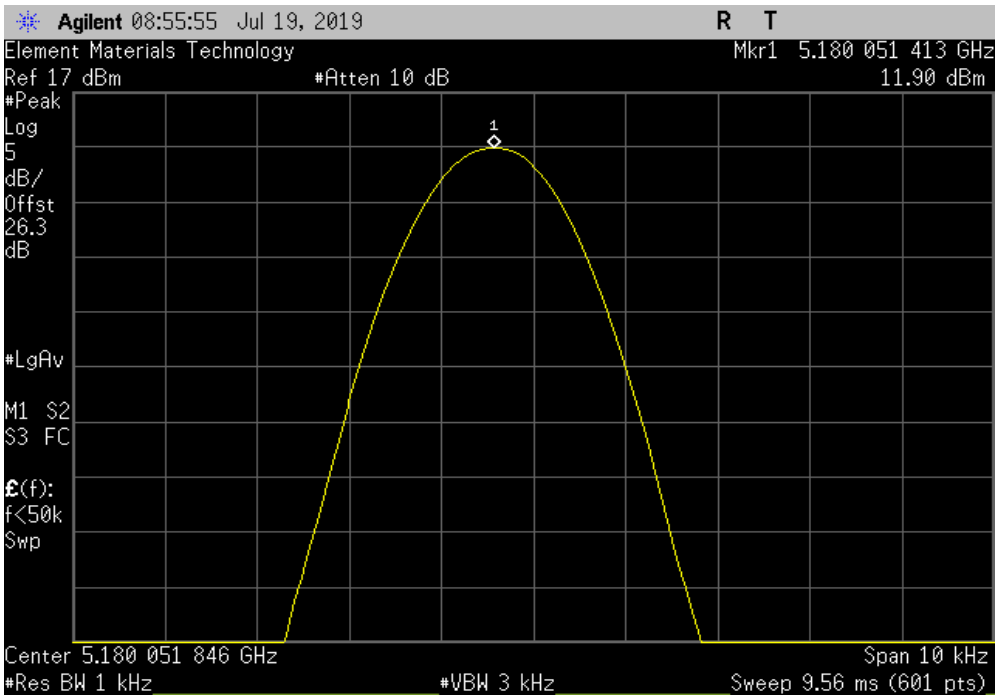
None

Configuration #	**8**	

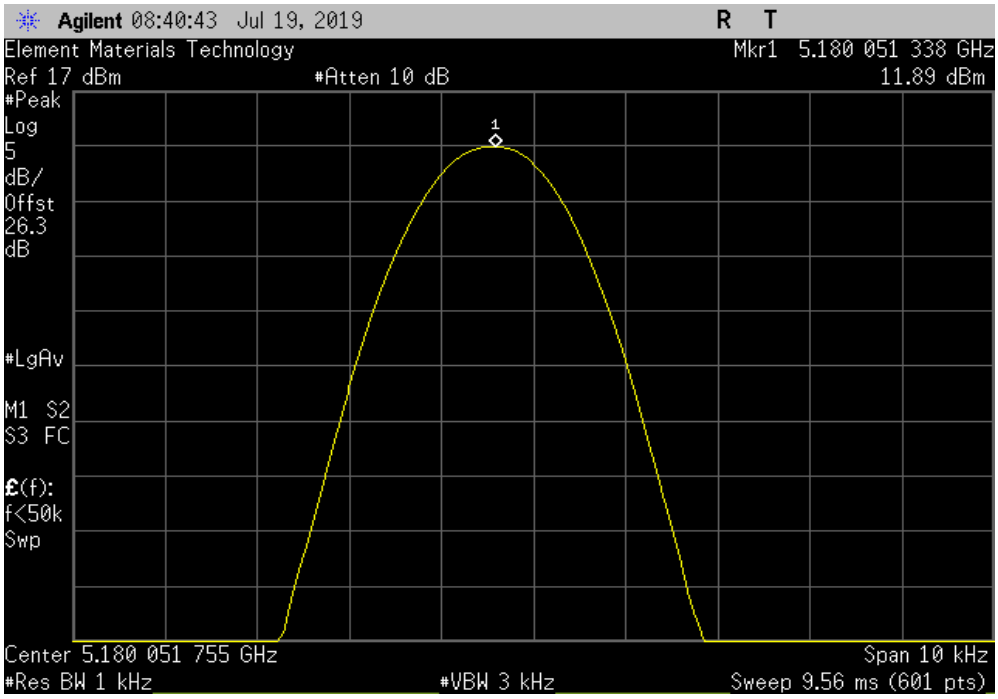
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
5150 MHz - 5250 MHz - Low Channel, 5180 MHz					
Voltage: 115%	5180.051413	5180	9.9	100	Pass
Voltage: 100%	5180.051338	5180	9.9	100	Pass
Voltage: 85%	5180.051496	5180	9.9	100	Pass
Temperature: +85°	5180.176653	5180	34.1	100	Pass
Temperature: +80°	5180.153582	5180	29.7	100	Pass
Temperature: +70°	5180.106181	5180	20.5	100	Pass
Temperature: +60°	5180.074135	5180	14.3	100	Pass
Temperature: +50°	5180.05435	5180	10.5	100	Pass
Temperature: +40°	5180.05203	5180	10	100	Pass
Temperature: +30°	5180.059574	5180	11.5	100	Pass
Temperature: +20°	5180.070559	5180	13.6	100	Pass
Temperature: +10°	5180.082877	5180	16	100	Pass
Temperature: 0°	5180.09269	5180	17.9	100	Pass
Temperature: -10°	5180.097298	5180	18.8	100	Pass
Temperature: -20°	5180.093876	5180	18.1	100	Pass
Temperature: -30°	5180.080494	5180	15.5	100	Pass
5250 MHz - 5350 MHz - High Channel, 5320 MHz					
Voltage: 115%	5320.053028	5320	10	100	Pass
Voltage: 100%	5320.053028	5320	10	100	Pass
Voltage: 85%	5320.052862	5320	9.9	100	Pass
Temperature: +85°	5320.187206	5320	35.2	100	Pass
Temperature: +80°	5320.157457	5320	29.6	100	Pass
Temperature: +70°	5320.108223	5320	20.3	100	Pass
Temperature: +60°	5320.076358	5320	14.4	100	Pass
Temperature: +50°	5320.055672	5320	10.5	100	Pass
Temperature: +40°	5320.053279	5320	10	100	Pass
Temperature: +30°	5320.061037	5320	11.5	100	Pass
Temperature: +20°	5320.072586	5320	13.6	100	Pass
Temperature: +10°	5320.084622	5320	15.9	100	Pass
Temperature: 0°	5320.095205	5320	17.9	100	Pass
Temperature: -10°	5320.09987	5320	18.8	100	Pass
Temperature: -20°	5320.096761	5320	18.2	100	Pass
Temperature: -30°	5320.074799	5320	14.1	100	Pass
5470 MHz - 5725 MHz - Low Channel, 5500 MHz					
Voltage: 115%	5500.054916	5500	10	100	Pass
Voltage: 100%	5500.054682	5500	9.9	100	Pass
Voltage: 85%	5500.054632	5500	9.9	100	Pass
Temperature: +85°	5500.192256	5500	35	100	Pass
Temperature: +80°	5500.16433	5500	29.9	100	Pass
Temperature: +70°	5500.111262	5500	20.2	100	Pass
Temperature: +60°	5500.078798	5500	14.3	100	Pass
Temperature: +50°	5500.057554	5500	10.5	100	Pass
Temperature: +40°	5500.055217	5500	10	100	Pass
Temperature: +30°	5500.063195	5500	11.5	100	Pass
Temperature: +20°	5500.07516	5500	13.7	100	Pass
Temperature: +10°	5500.087699	5500	16	100	Pass
Temperature: 0°	5500.098733	5500	18	100	Pass
Temperature: -10°	5500.103354	5500	18.8	100	Pass
Temperature: -20°	5500.100151	5500	18.2	100	Pass
Temperature: -30°	5500.080597	5500	14.7	100	Pass
5470 MHz - 5725 MHz - High Channel, 5700 MHz					
Voltage: 115%	5700.056929	5700	10	100	Pass
Voltage: 100%	5700.056596	5700	9.9	100	Pass
Voltage: 85%	5700.056578	5700	9.9	100	Pass
Temperature: +85°	5700.202336	5700	35.5	100	Pass
Temperature: +80°	5700.170906	5700	30	100	Pass
Temperature: +70°	5700.115543	5700	20.3	100	Pass
Temperature: +60°	5700.081944	5700	14.4	100	Pass
Temperature: +50°	5700.059468	5700	10.4	100	Pass
Temperature: +40°	5700.057197	5700	10	100	Pass
Temperature: +30°	5700.065166	5700	11.4	100	Pass
Temperature: +20°	5700.077773	5700	13.6	100	Pass
Temperature: +10°	5700.09088	5700	15.9	100	Pass
Temperature: 0°	5700.102228	5700	17.9	100	Pass
Temperature: -10°	5700.107594	5700	18.9	100	Pass
Temperature: -20°	5700.10403	5700	18.3	100	Pass
Temperature: -30°	5700.085986	5700	15.1	100	Pass
5725 MHz - 5850 MHz - High Channel, 5825 MHz					
Voltage: 115%	5825.058369	5825	10	100	Pass
Voltage: 100%	5825.058088	5825	10	100	Pass
Voltage: 85%	5825.057919	5825	9.9	100	Pass
Temperature: +85°	5825.206183	5825	35.4	100	Pass
Temperature: +80°	5825.17286	5825	29.7	100	Pass
Temperature: +70°	5825.11773	5825	20.2	100	Pass
Temperature: +60°	5825.083504	5825	14.3	100	Pass
Temperature: +50°	5825.06096	5825	10.5	100	Pass

Temperature: +40°	5825.058462	5825	10	100	Pass
Temperature: +30°	5825.06689	5825	11.5	100	Pass
Temperature: +20°	5825.079594	5825	13.7	100	Pass
Temperature: +10°	5825.092597	5825	15.9	100	Pass
Temperature: 0°	5825.104579	5825	18	100	Pass
Temperature: -10°	5825.109372	5825	18.8	100	Pass
Temperature: -20°	5825.106225	5825	18.2	100	Pass
Temperature: -30°	5825.08848	5825	15.2	100	Pass

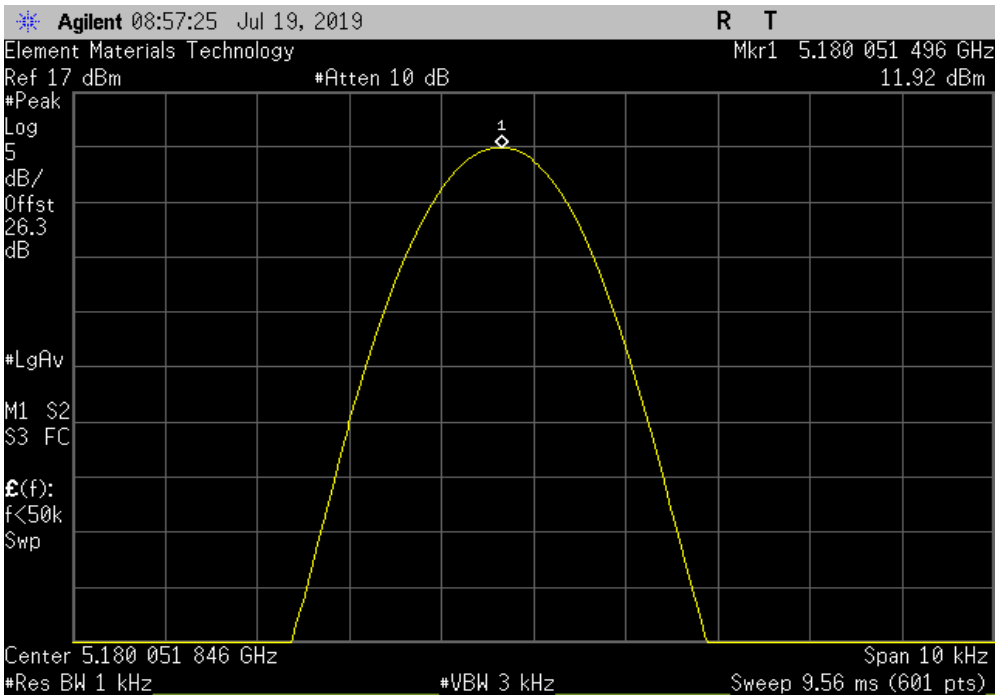
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.051413	5180	9.9	100	Pass



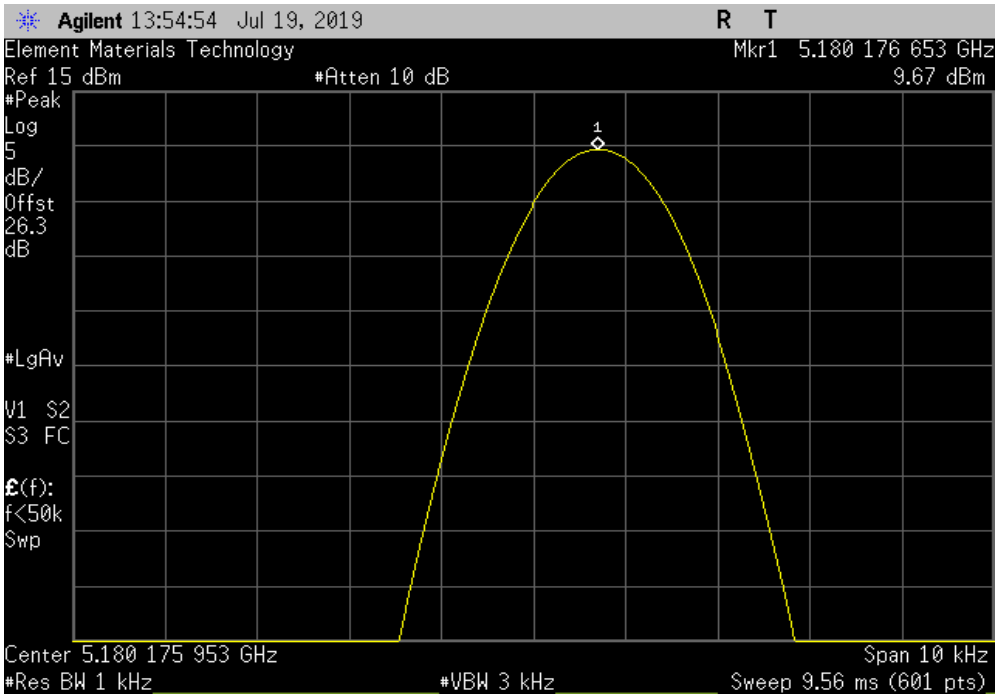
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.051338	5180	9.9	100	Pass



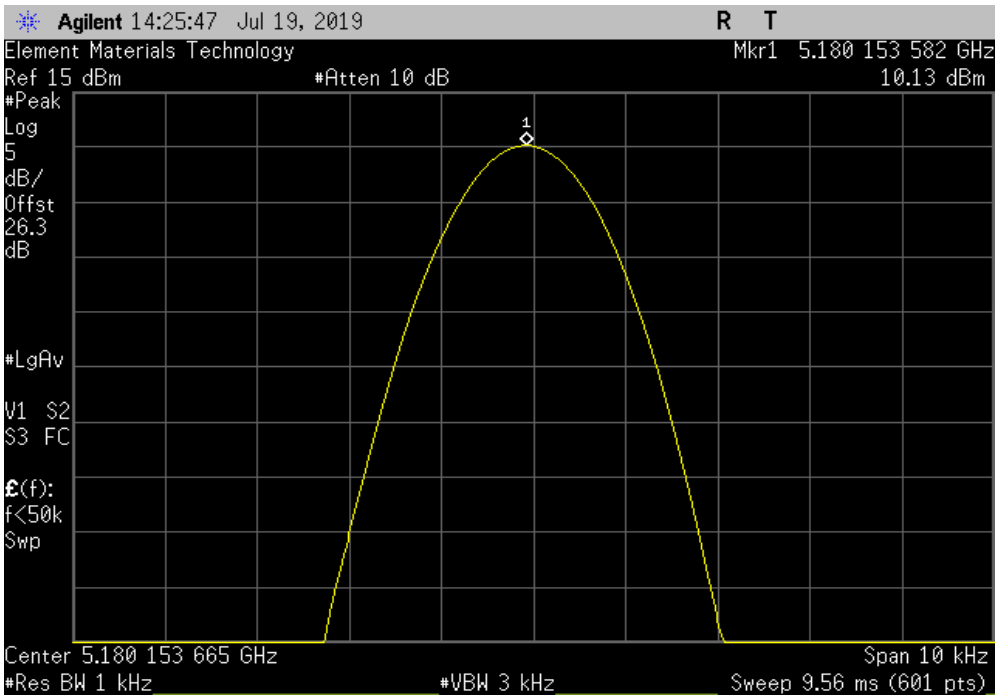
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.051496	5180	9.9	100	Pass



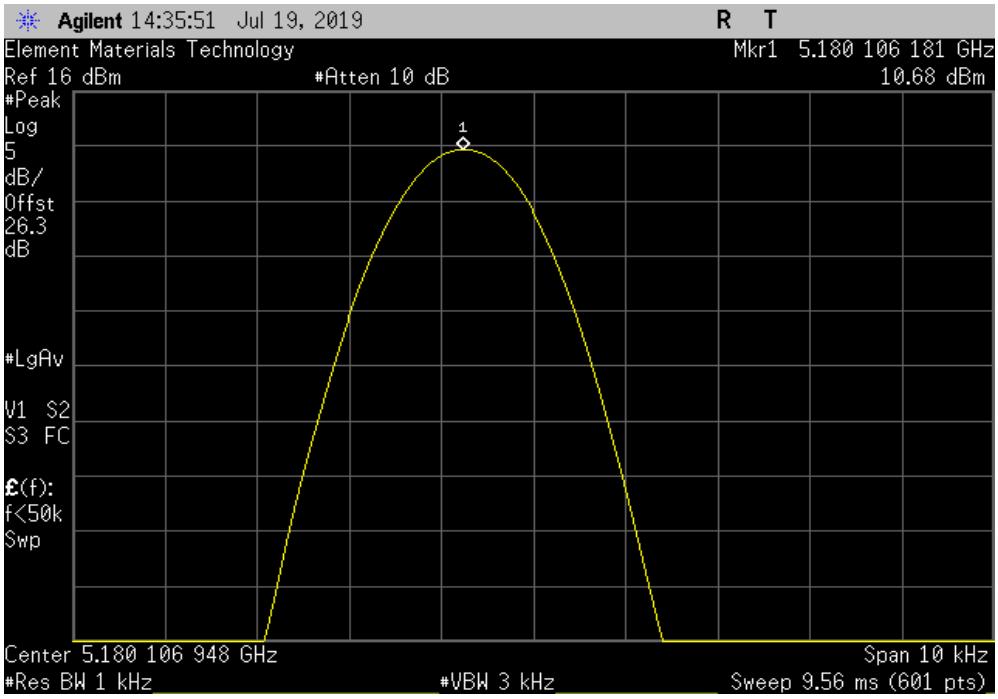
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +85°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.176653	5180	34.1	100	Pass



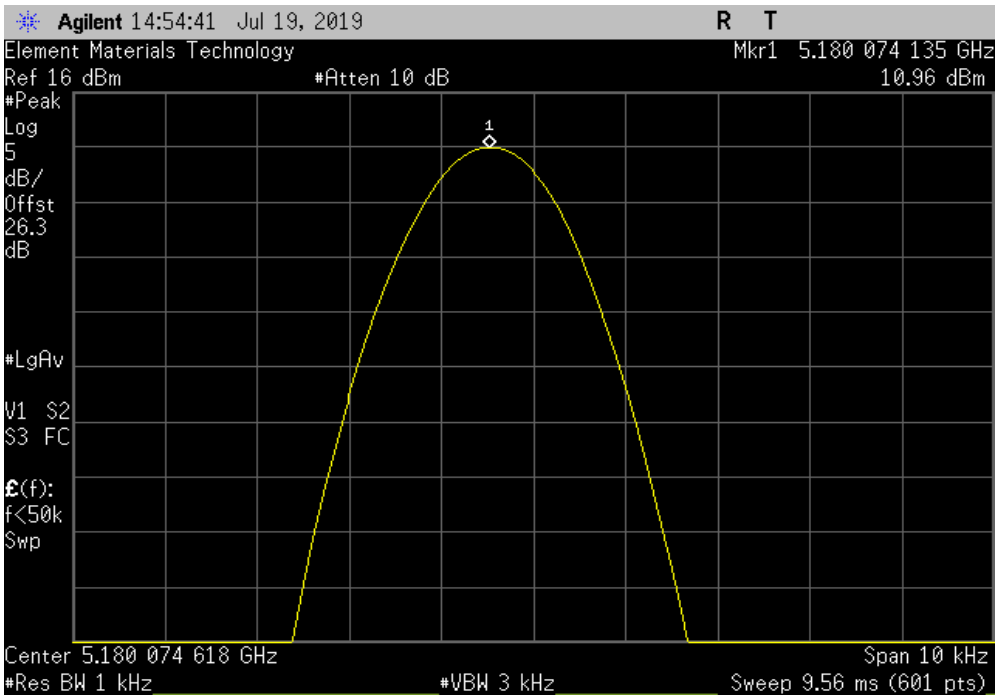
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +80°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.153582	5180	29.7	100	Pass



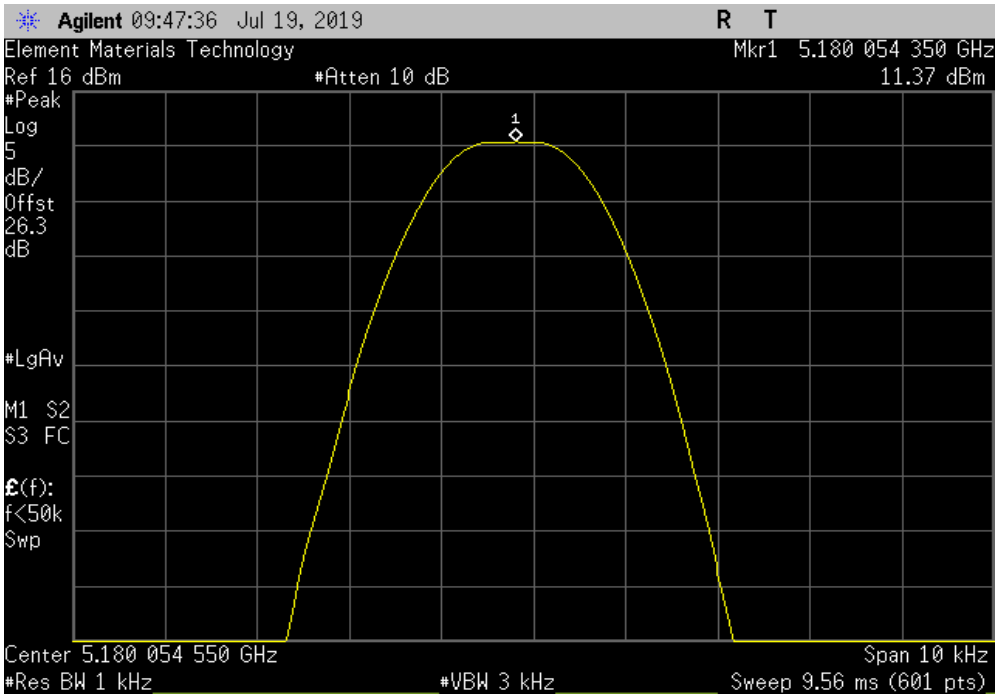
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +70°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.106181	5180	20.5	100	Pass



5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +60°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.074135	5180	14.3	100	Pass



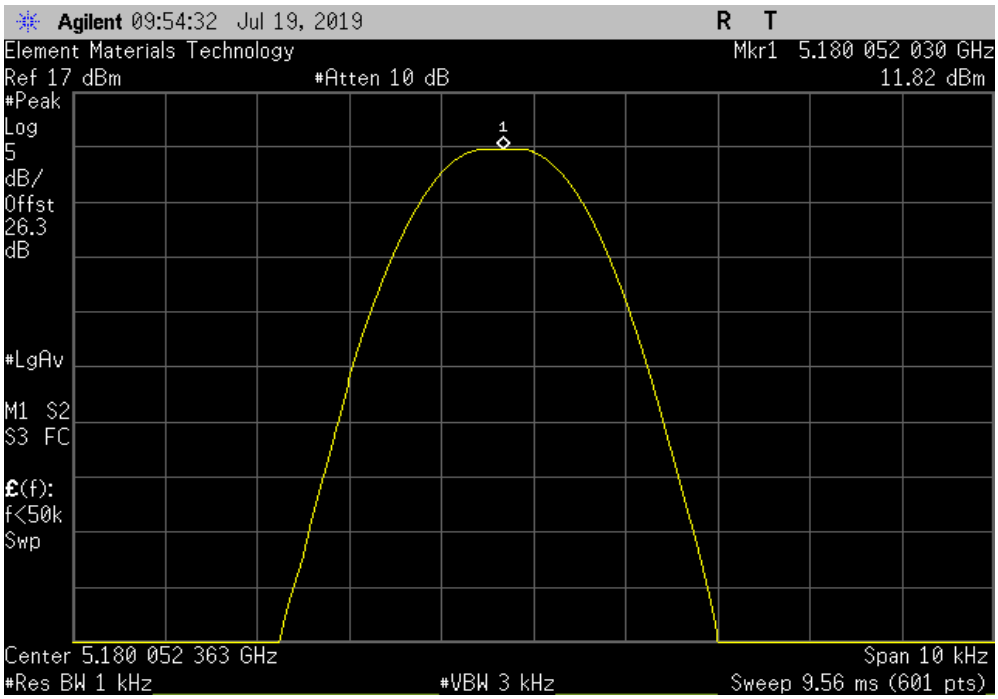
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.05435	5180	10.5	100	Pass



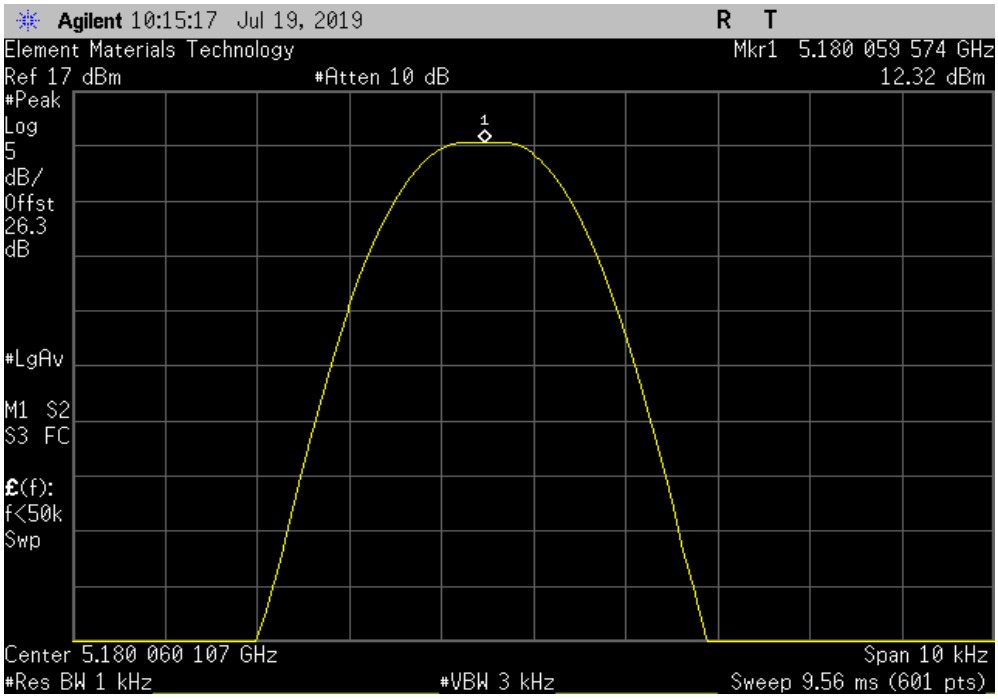
FREQUENCY STABILITY

TbtTx 2018.09.13 XMit 2019.05.15

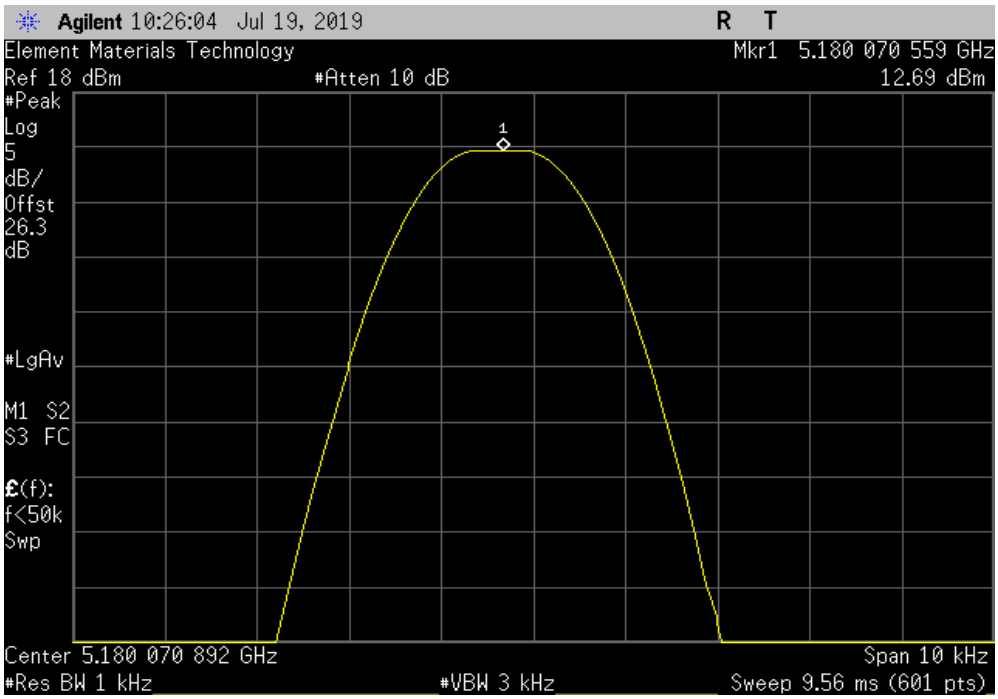
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.05203	5180	10	100	Pass



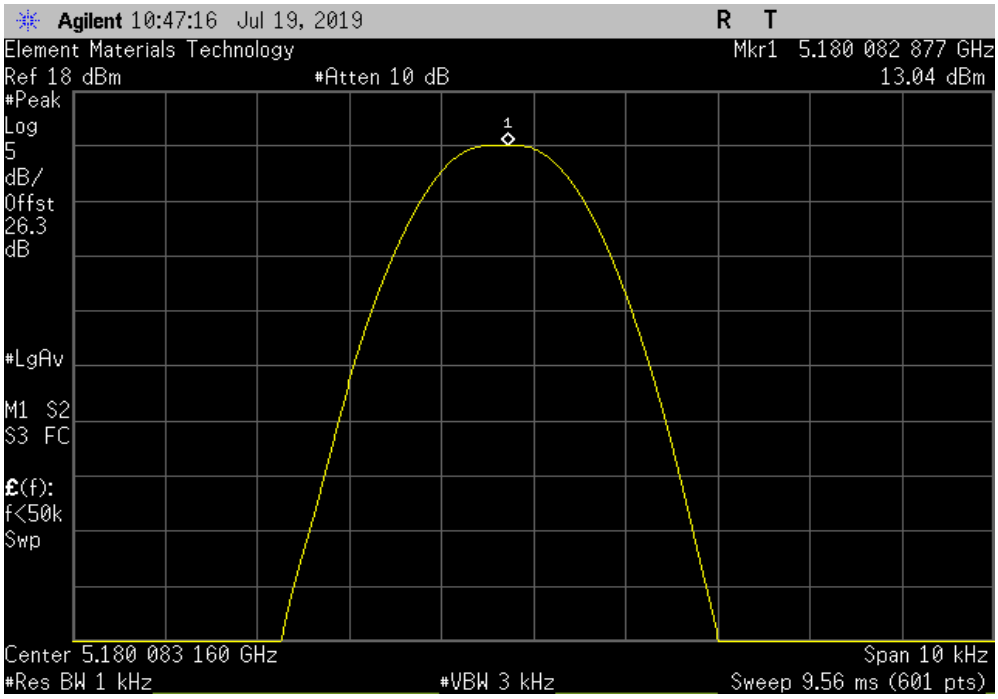
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.059574	5180	11.5	100	Pass



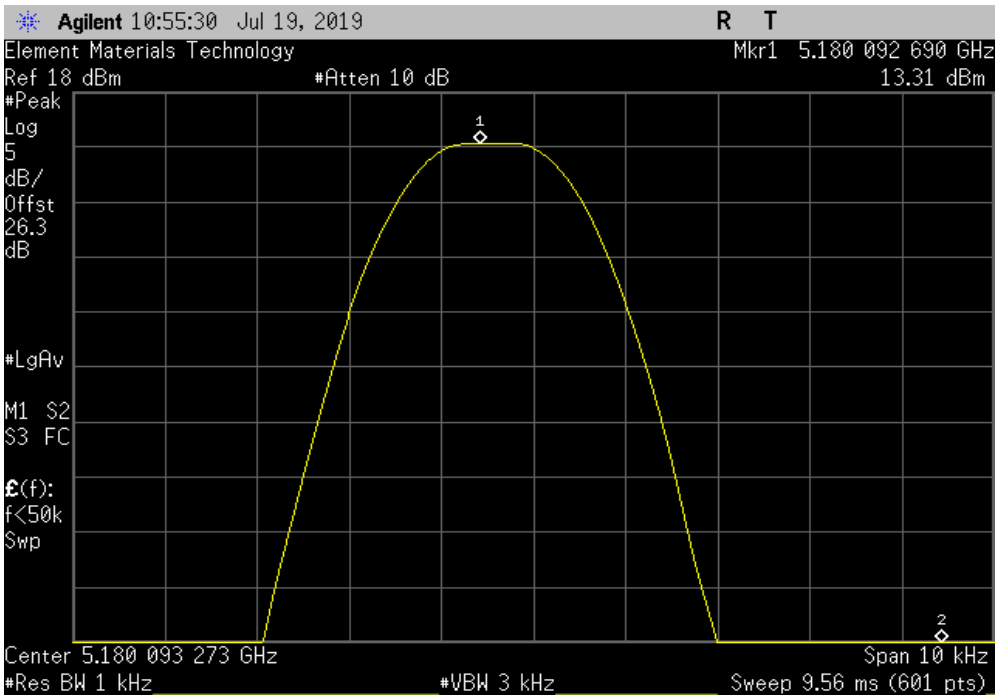
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.070559	5180	13.6	100	Pass



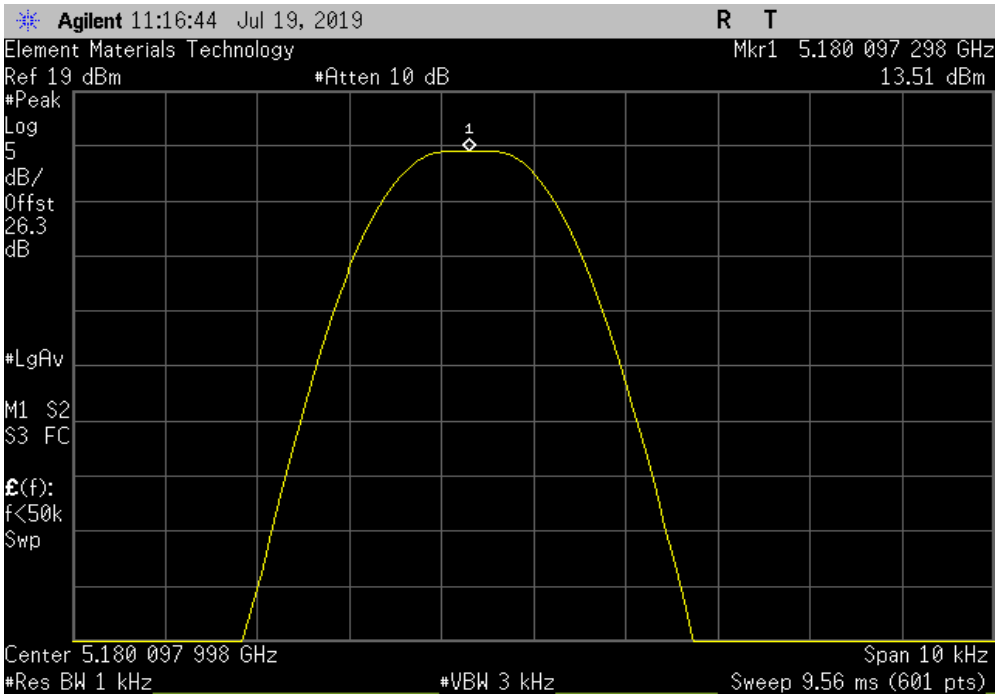
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.082877	5180	16	100	Pass



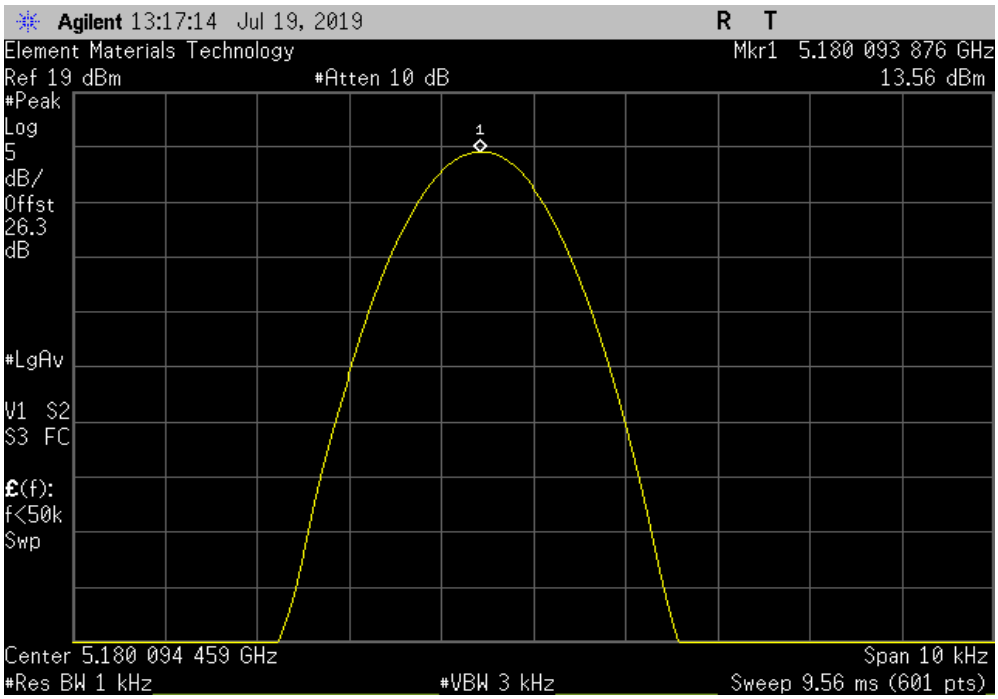
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.09269	5180	17.9	100	Pass



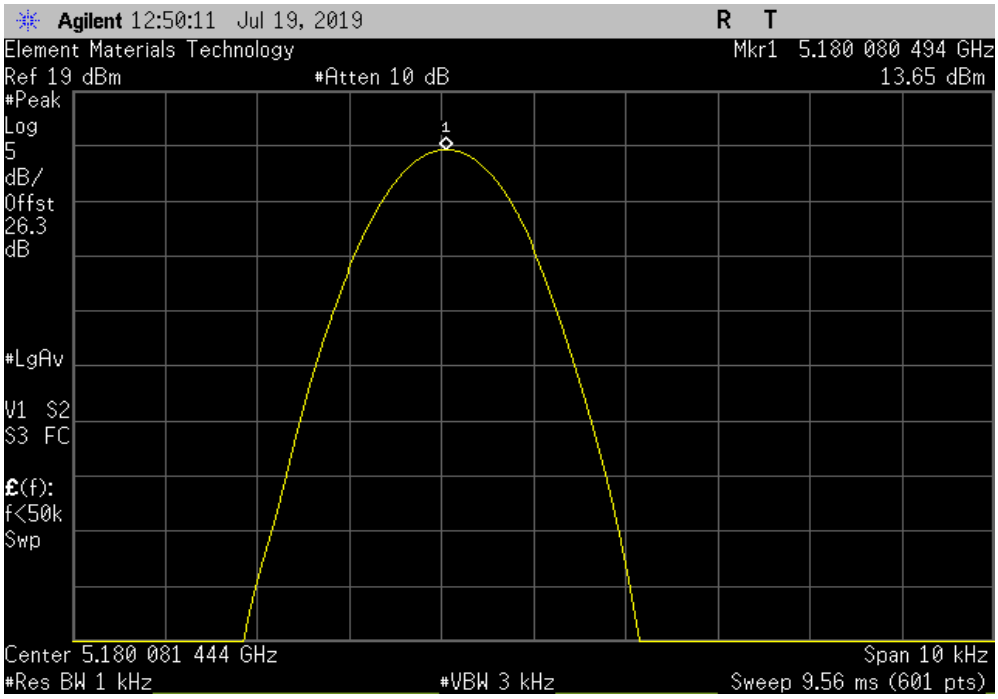
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.097298	5180	18.8	100	Pass



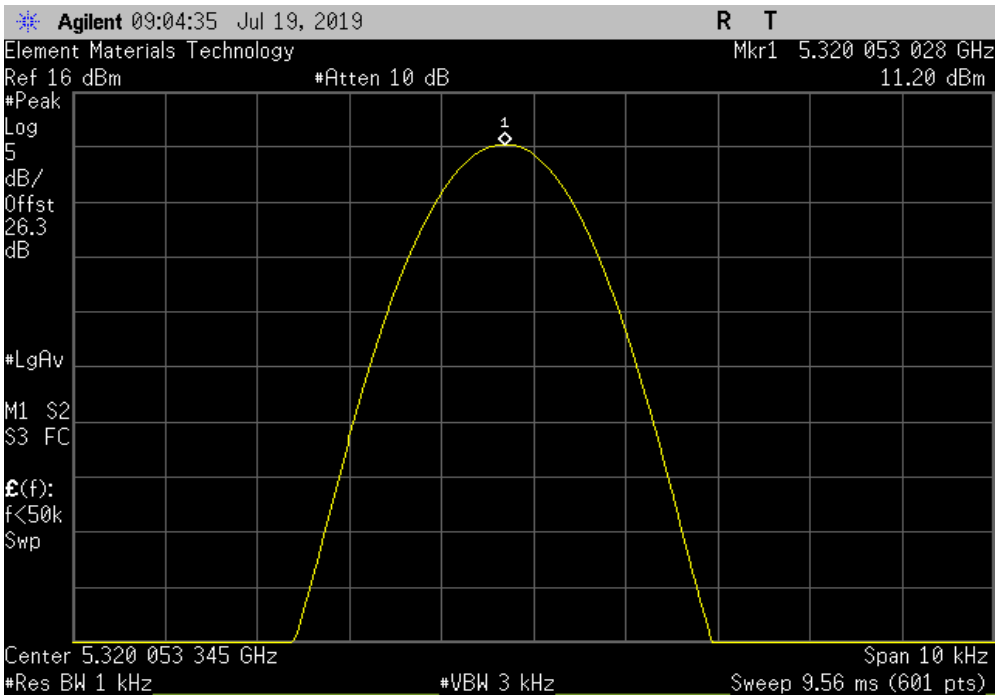
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.093876	5180	18.1	100	Pass



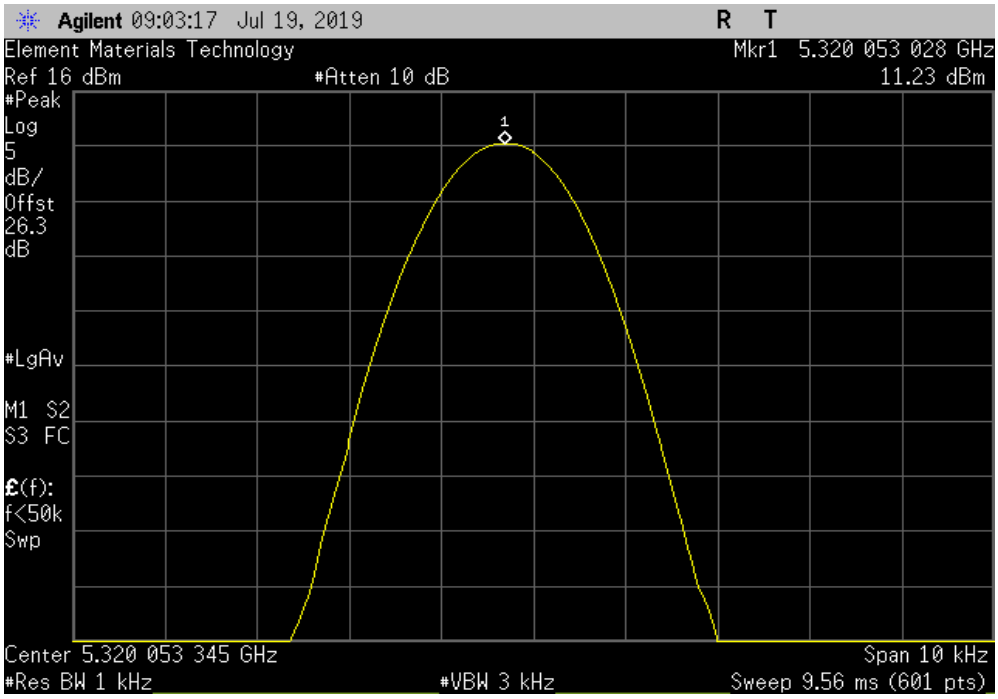
5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5180.080494	5180	15.5	100	Pass



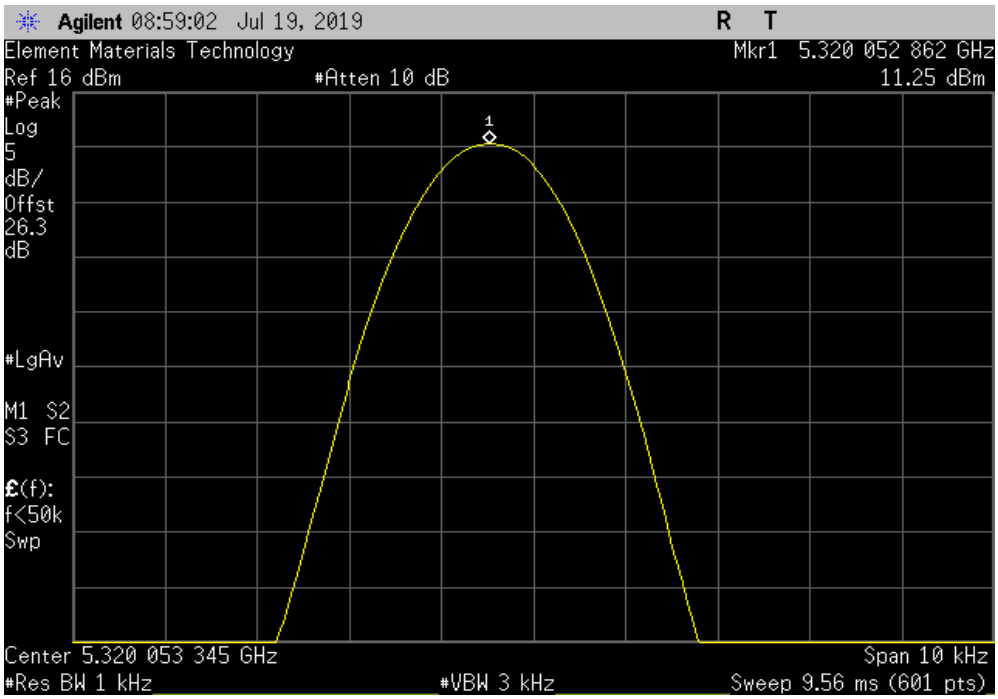
5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.053028	5320	10	100	Pass



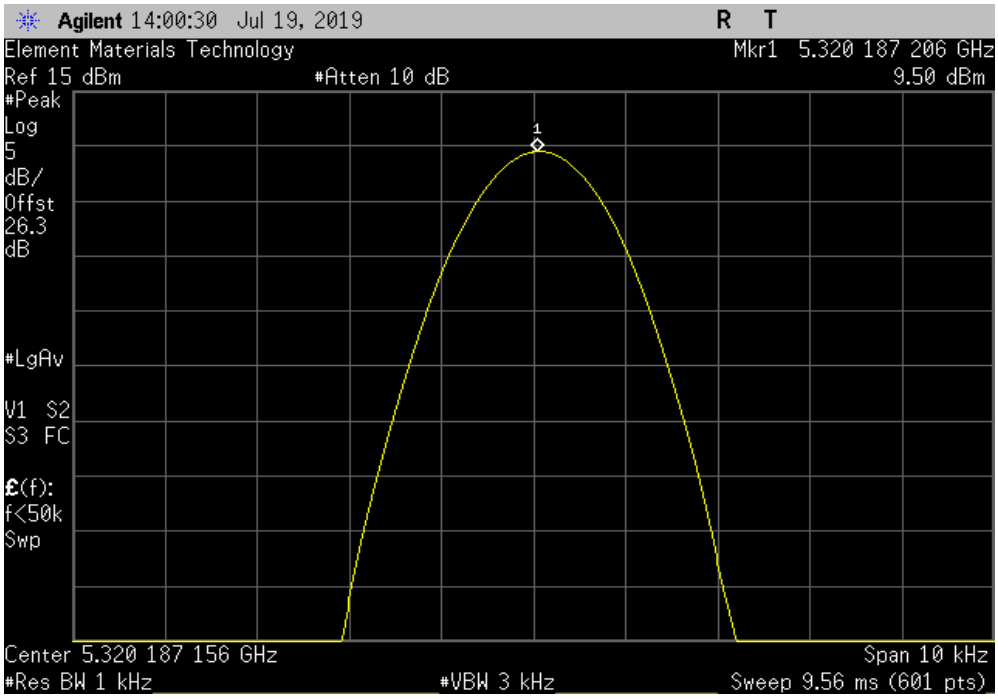
5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.053028	5320	10	100	Pass



5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.052862	5320	9.9	100	Pass



5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +85°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.187206	5320	35.2	100	Pass

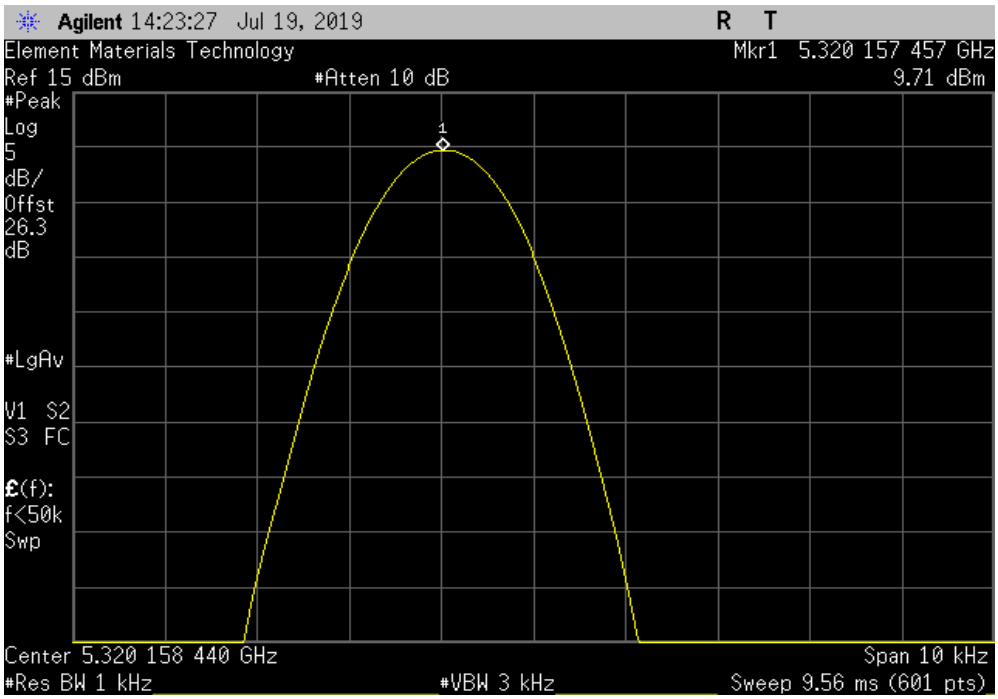


FREQUENCY STABILITY

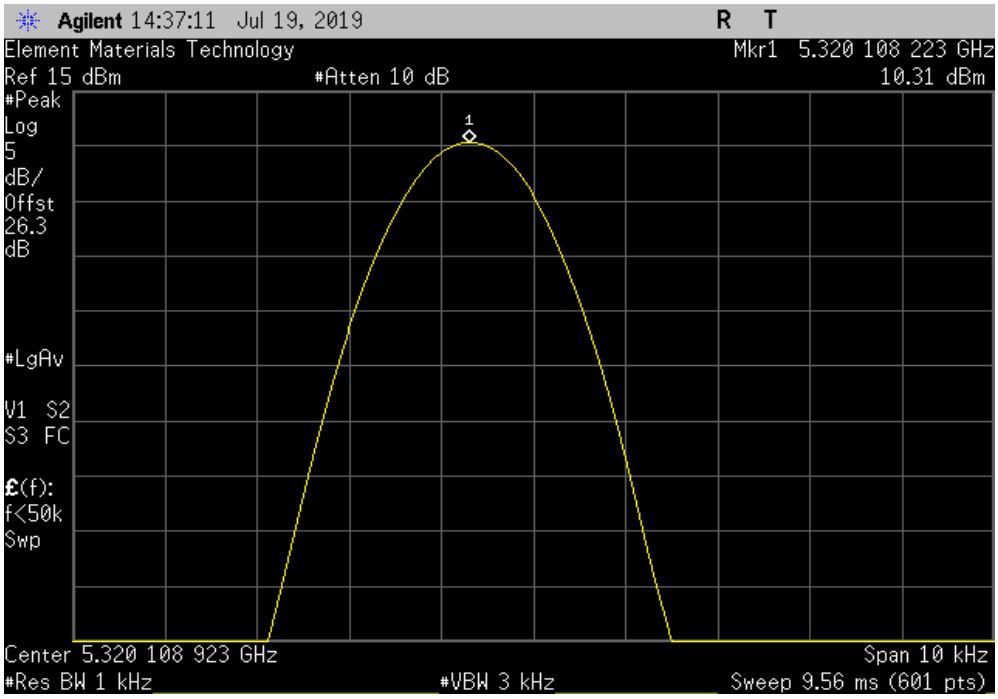
element

TbtTx 2018.09.13 XMit 2019.05.15

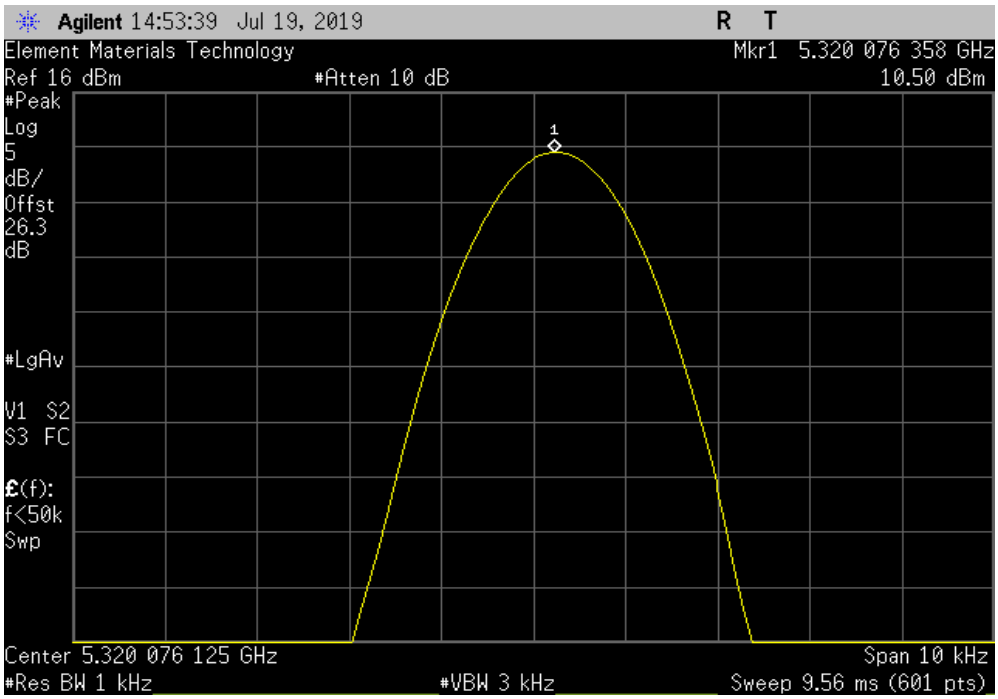
5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +80°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.157457	5320	29.6	100	Pass



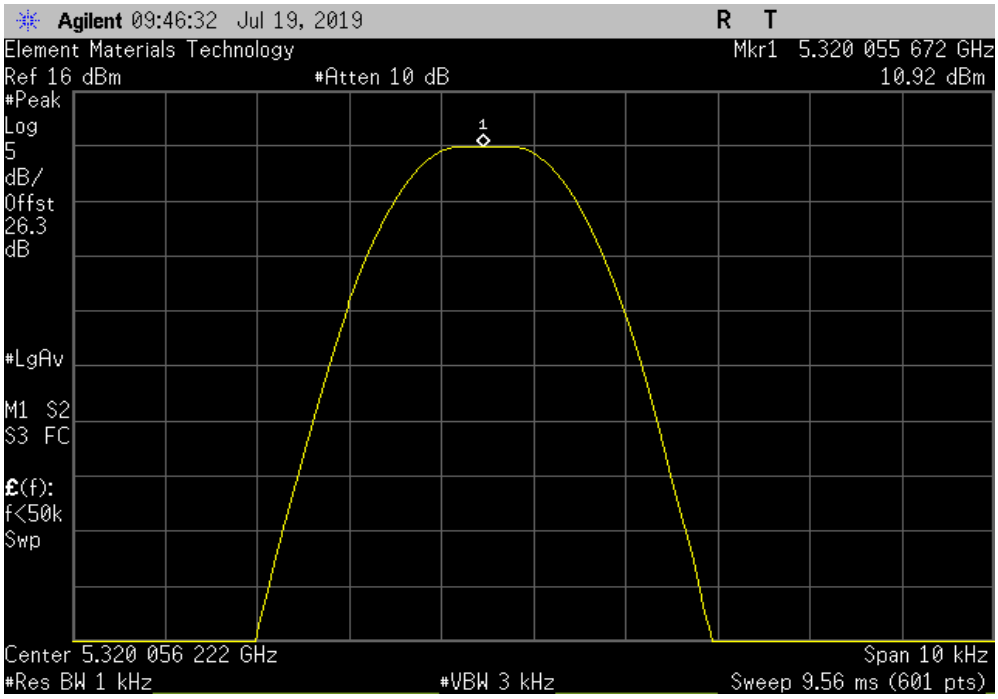
5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +70°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.108223	5320	20.3	100	Pass



5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +60°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.076358	5320	14.4	100	Pass

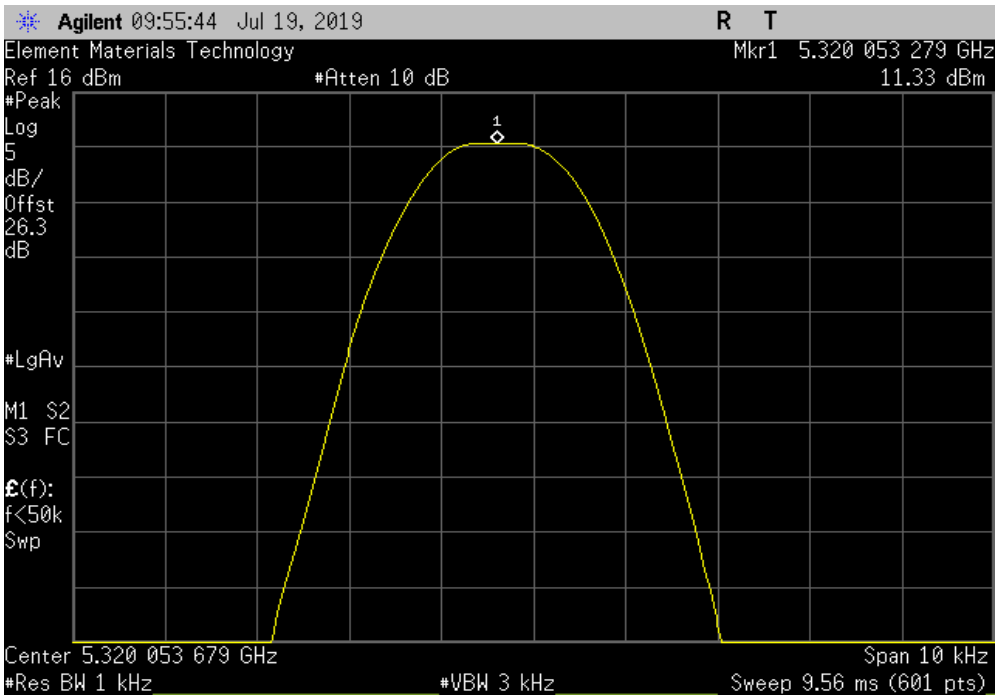


5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.055672	5320	10.5	100	Pass

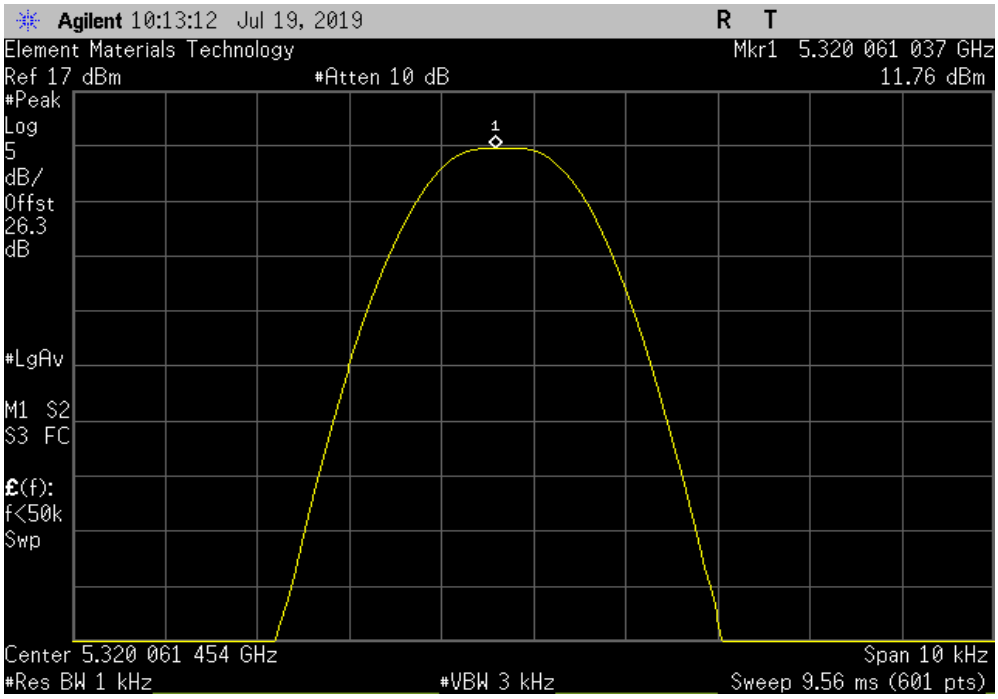


FREQUENCY STABILITY

5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.053279	5320	10	100	Pass

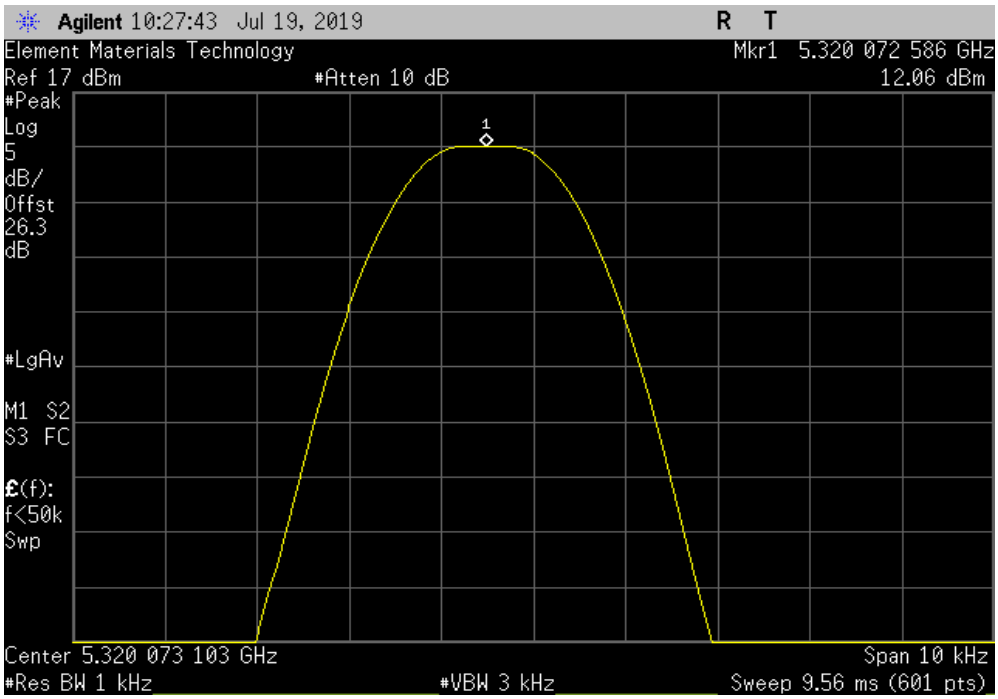


5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.061037	5320	11.5	100	Pass

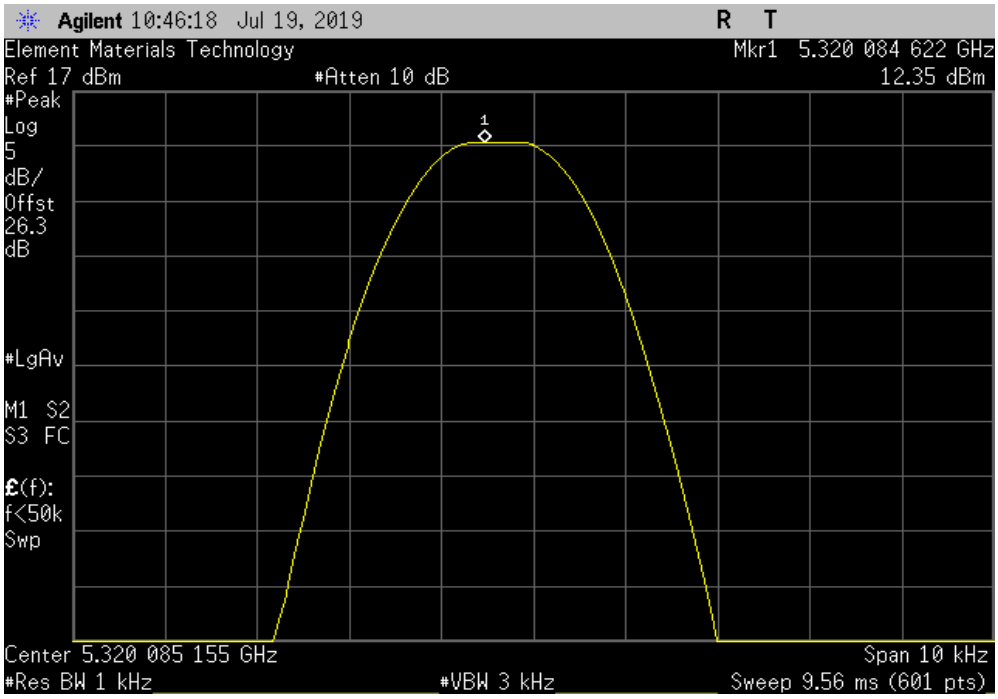


FREQUENCY STABILITY

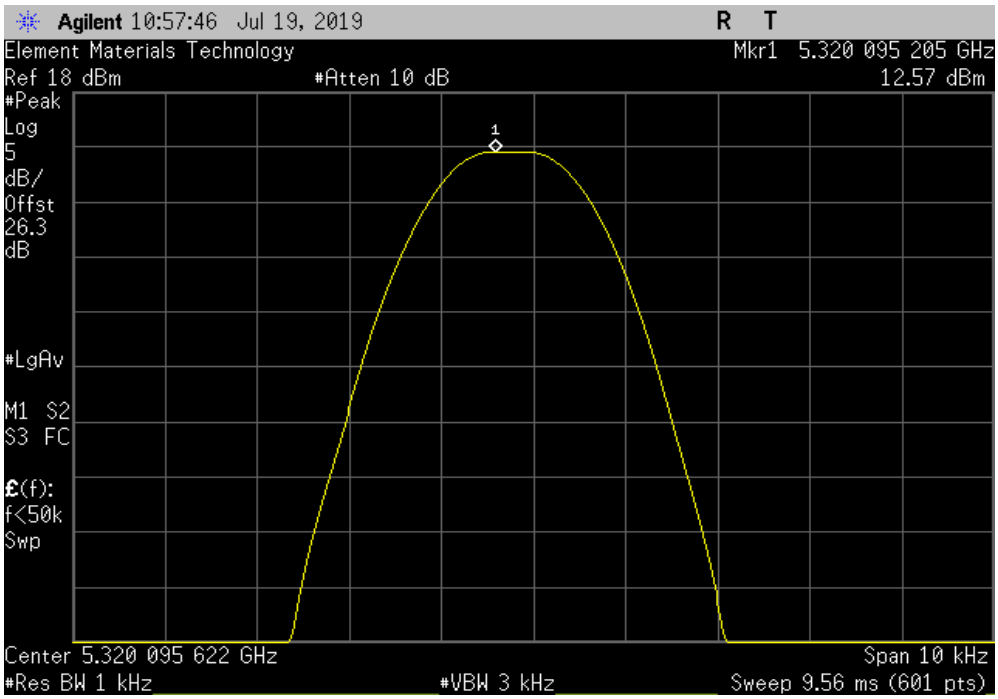
5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.072586	5320	13.6	100	Pass



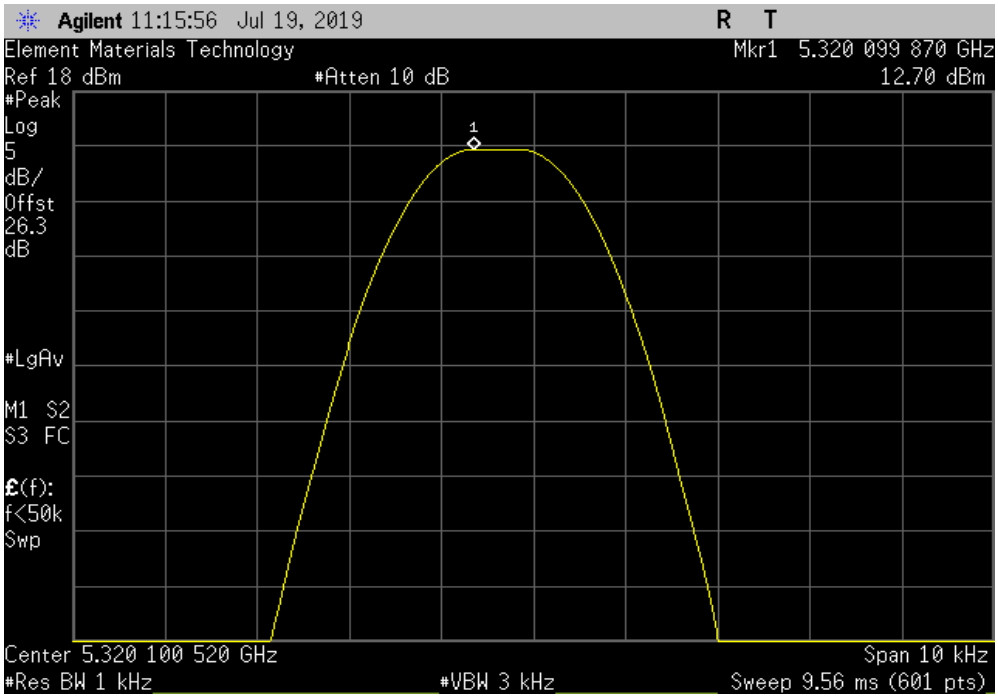
5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.084622	5320	15.9	100	Pass



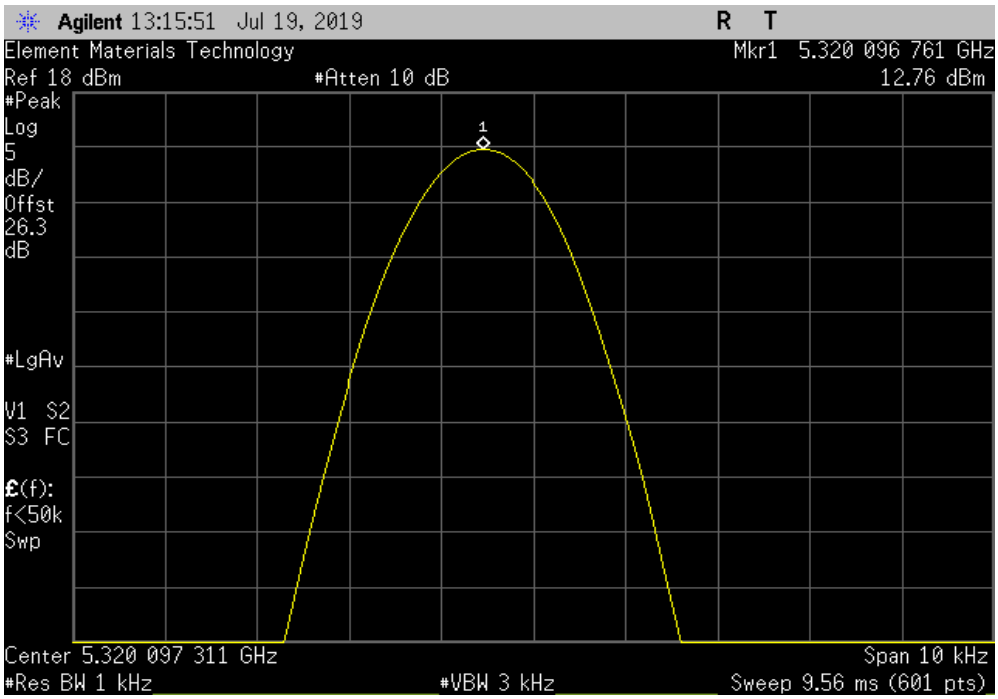
5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.095205	5320	17.9	100	Pass



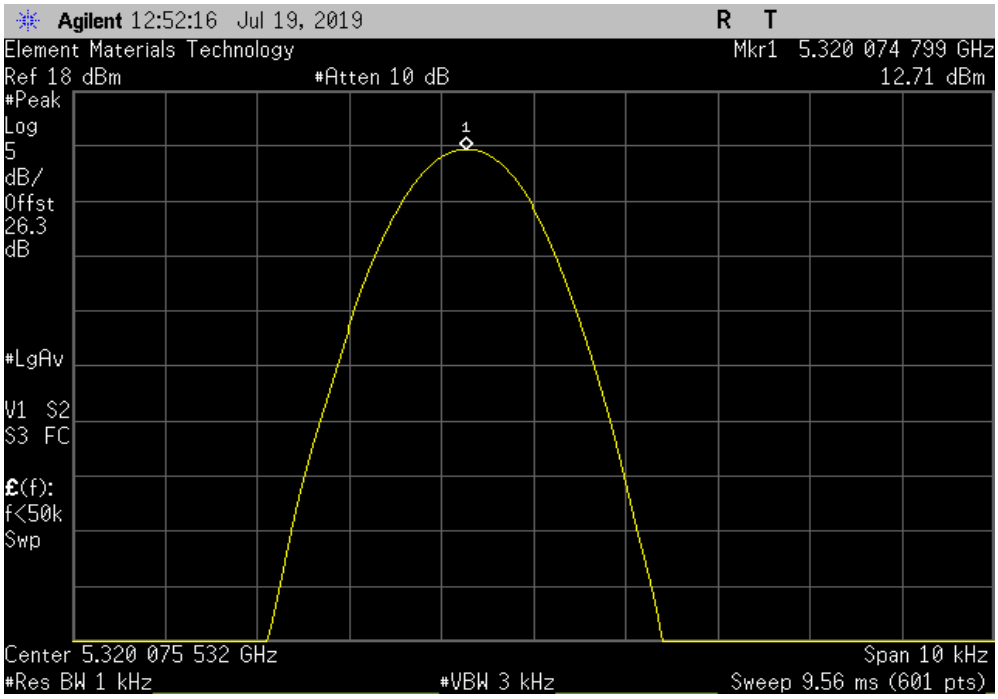
5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.09987	5320	18.8	100	Pass



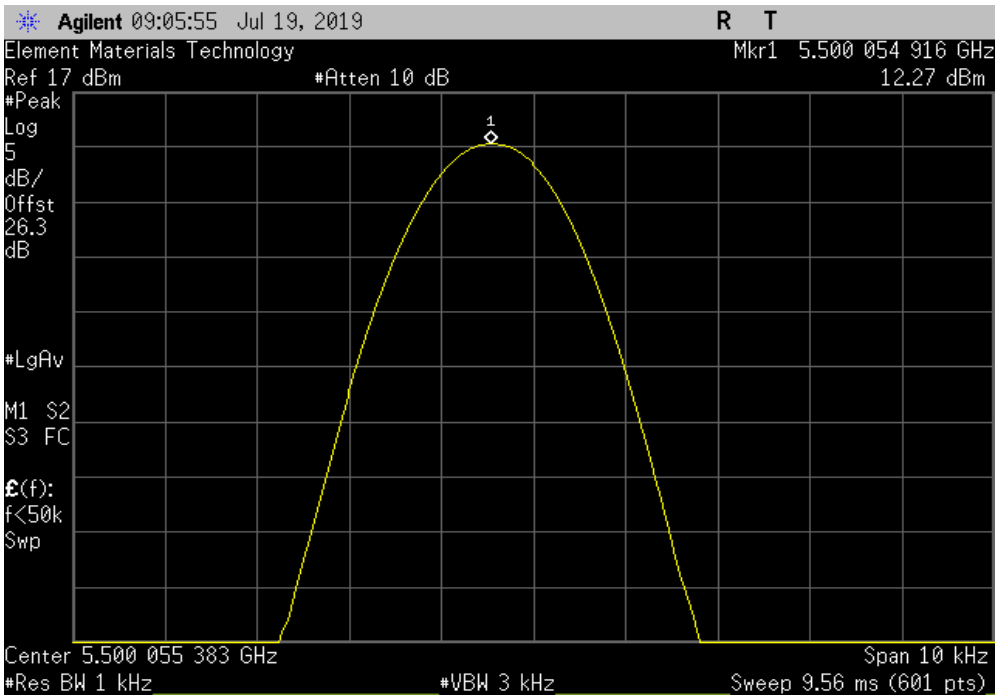
5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.096761	5320	18.2	100	Pass



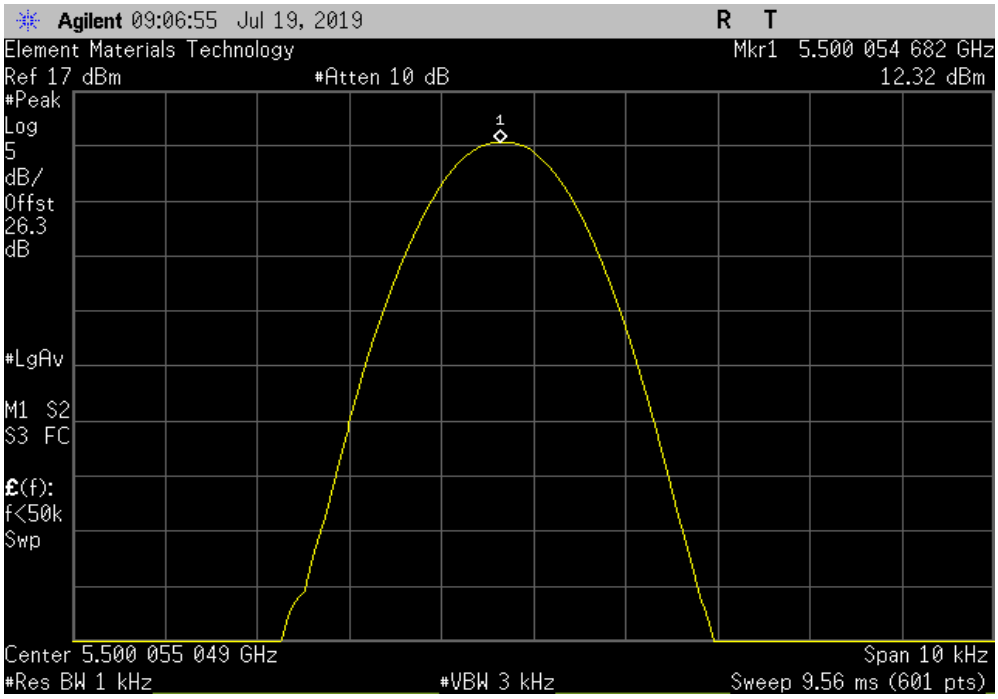
5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5320.074799	5320	14.1	100	Pass



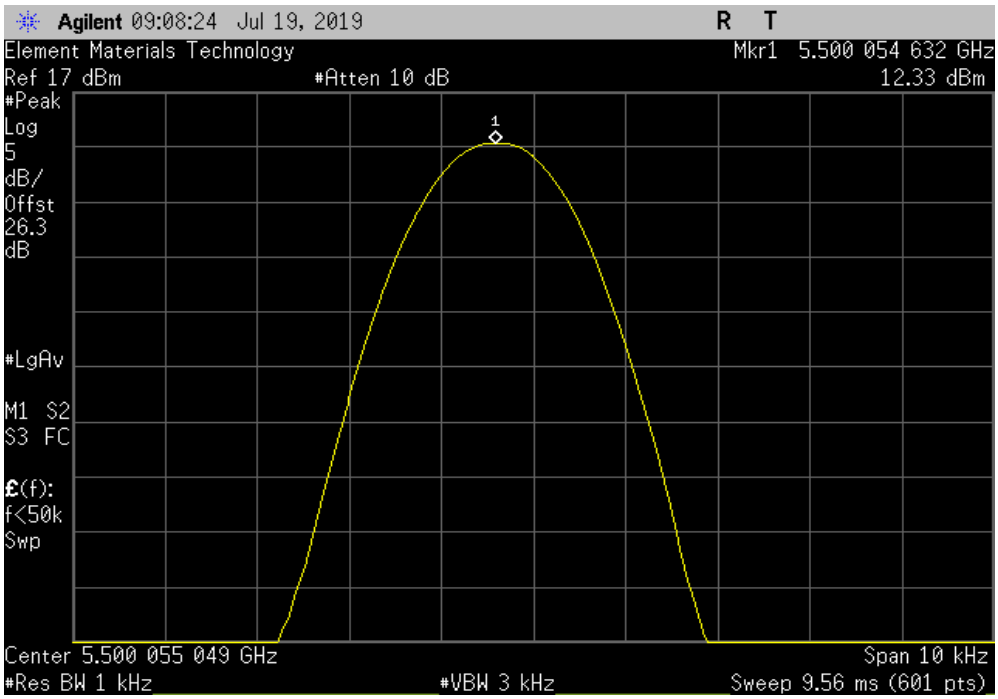
5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.054916	5500	10	100	Pass



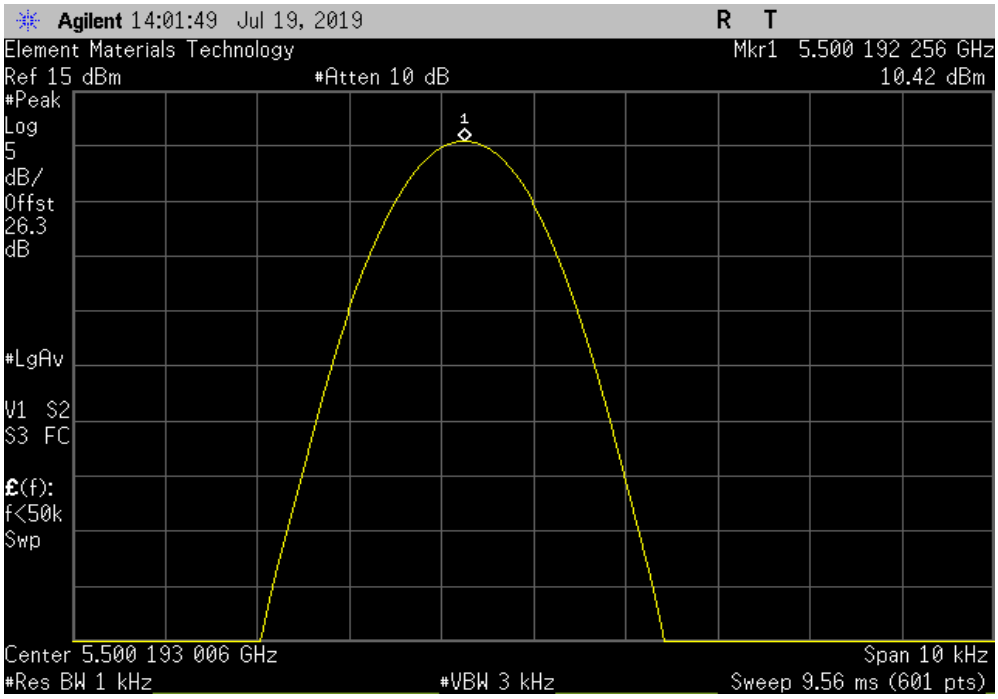
5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.054682	5500	9.9	100	Pass



5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.054632	5500	9.9	100	Pass

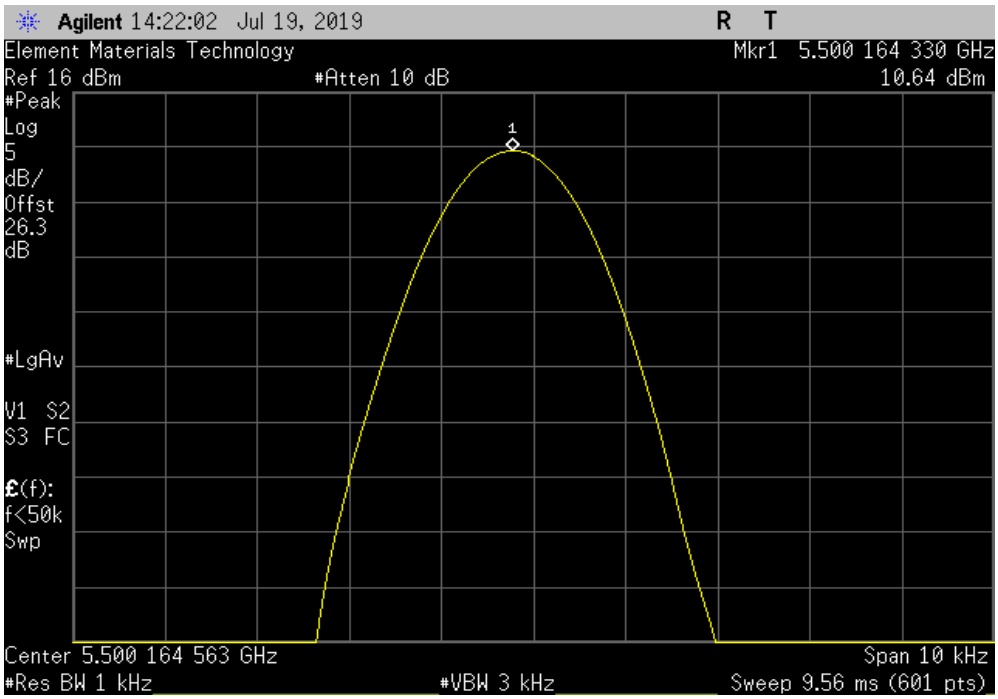


5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +85°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.192256	5500	35	100	Pass

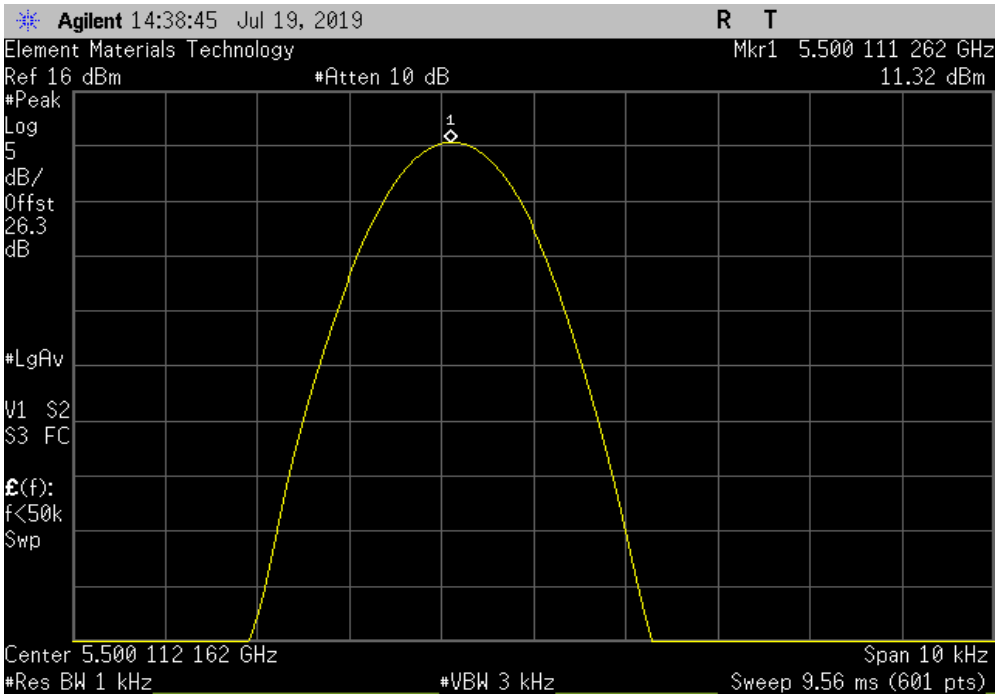


FREQUENCY STABILITY

5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +80°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.16433	5500	29.9	100	Pass

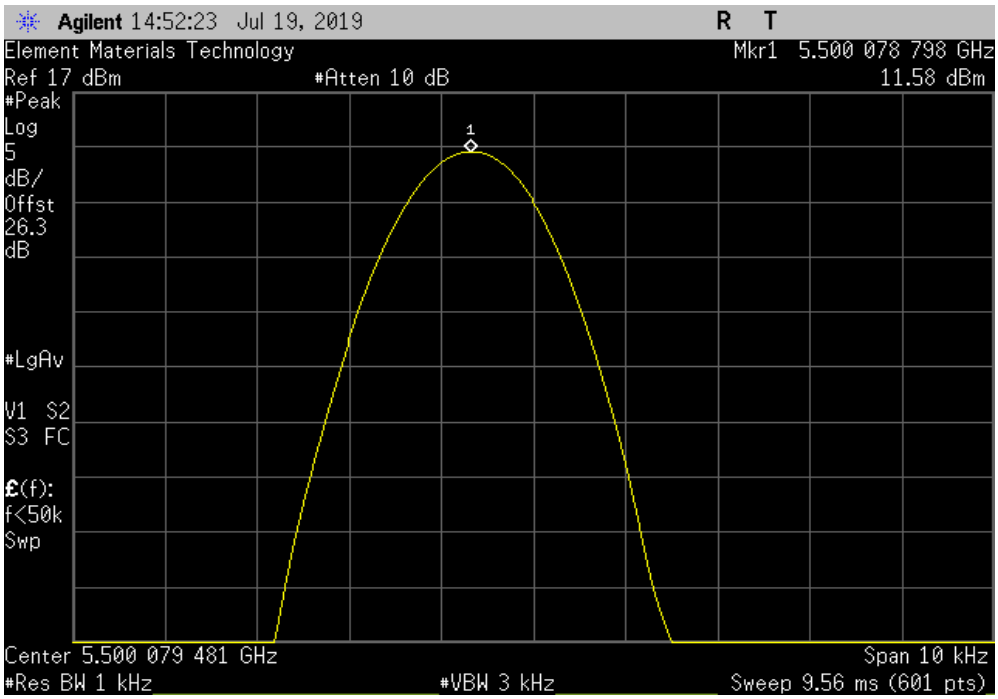


5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +70°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.111262	5500	20.2	100	Pass

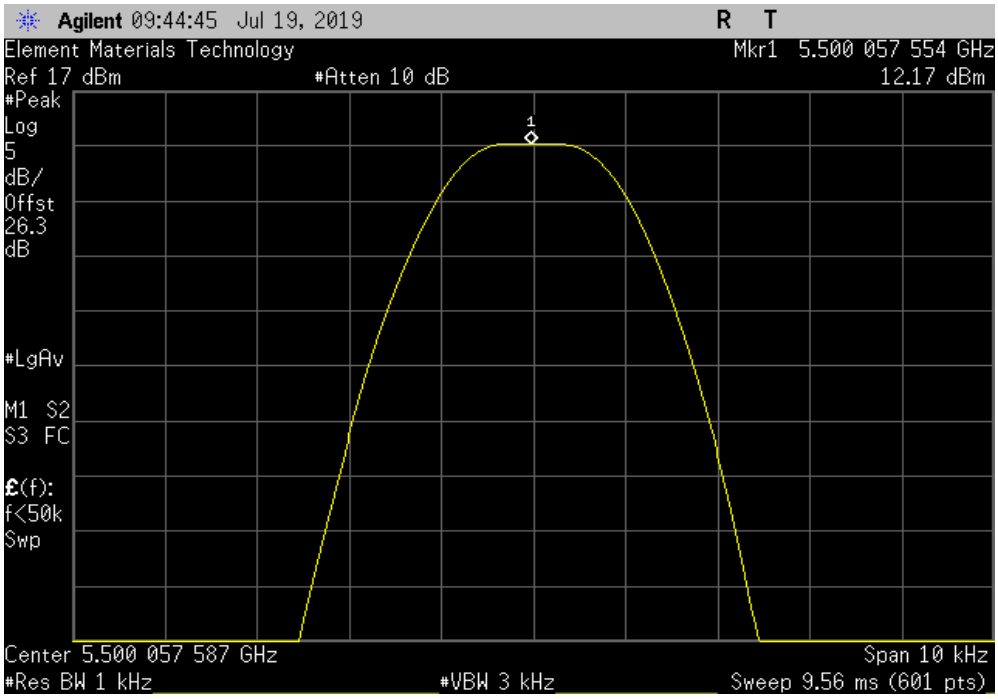


FREQUENCY STABILITY

5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +60°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.078798	5500	14.3	100	Pass

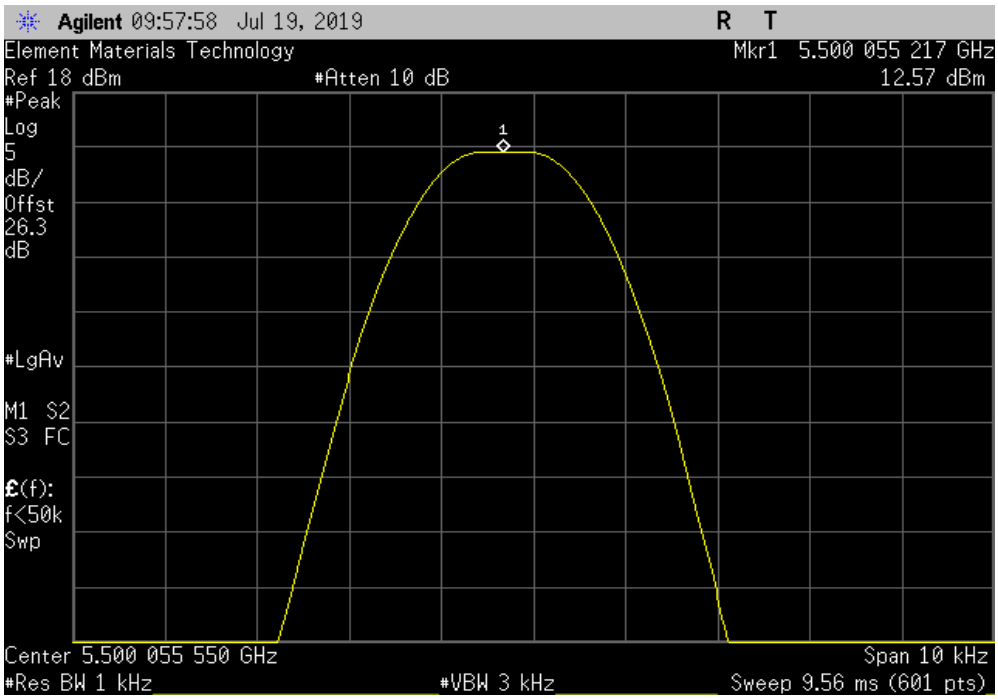


5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.057554	5500	10.5	100	Pass

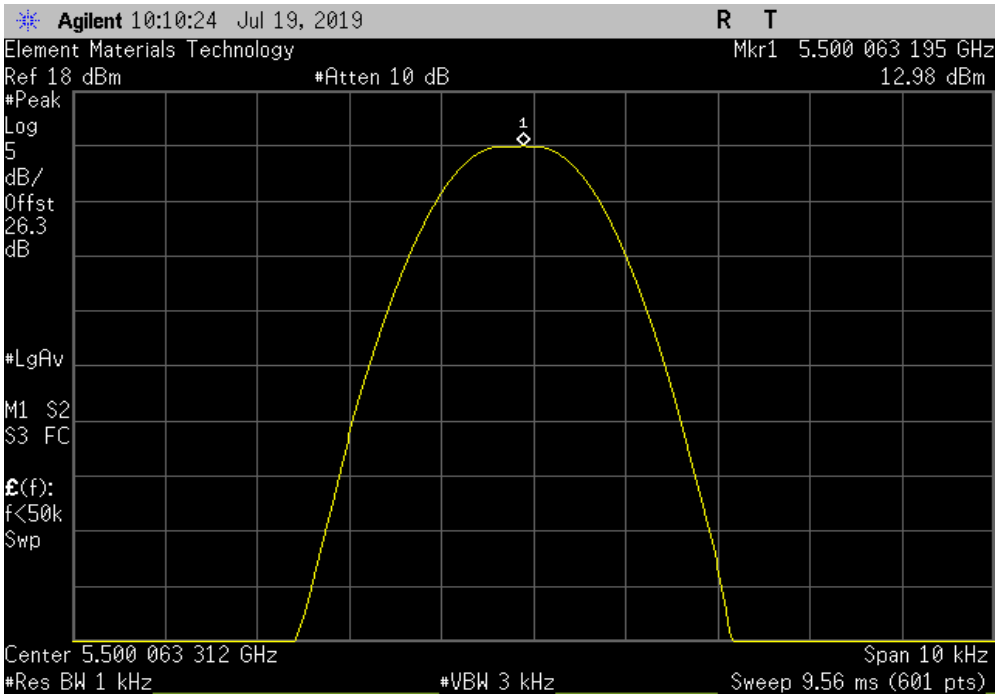


FREQUENCY STABILITY

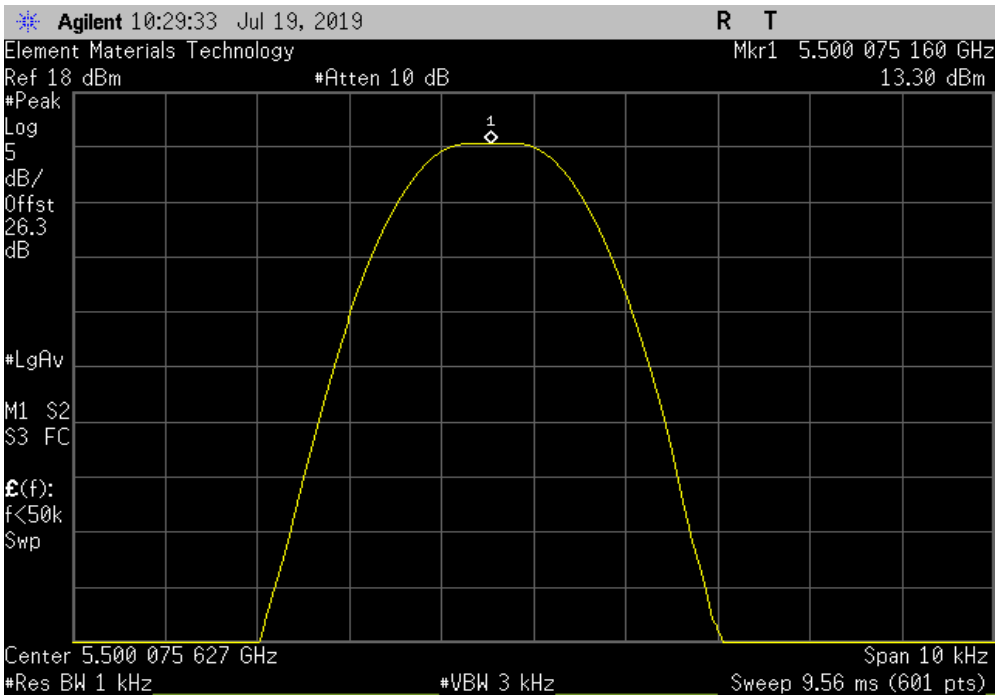
5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.055217	5500	10	100	Pass



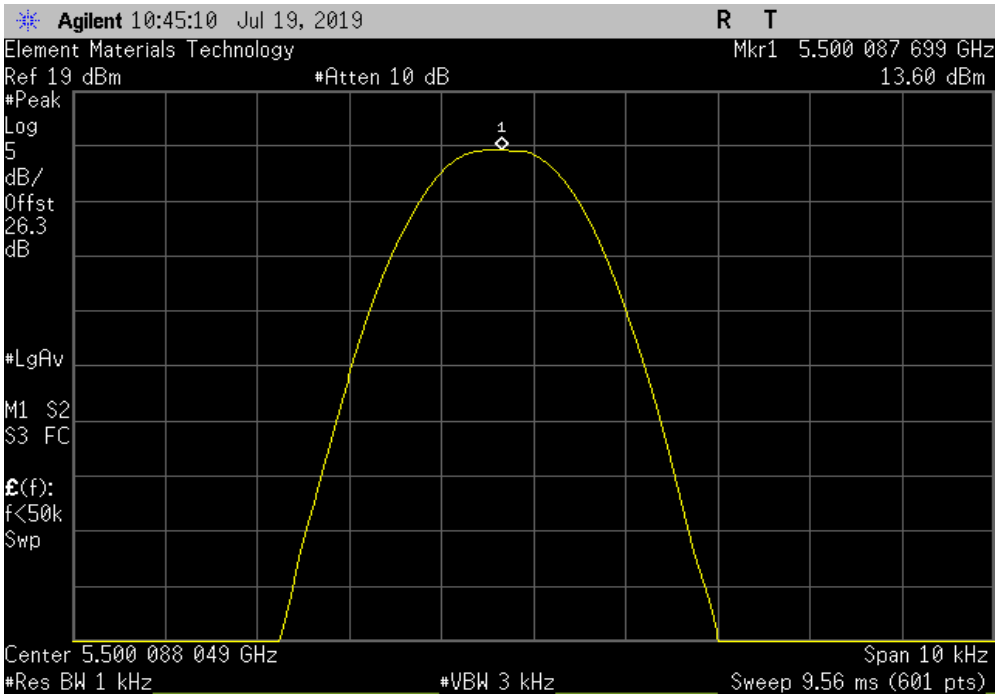
5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.063195	5500	11.5	100	Pass



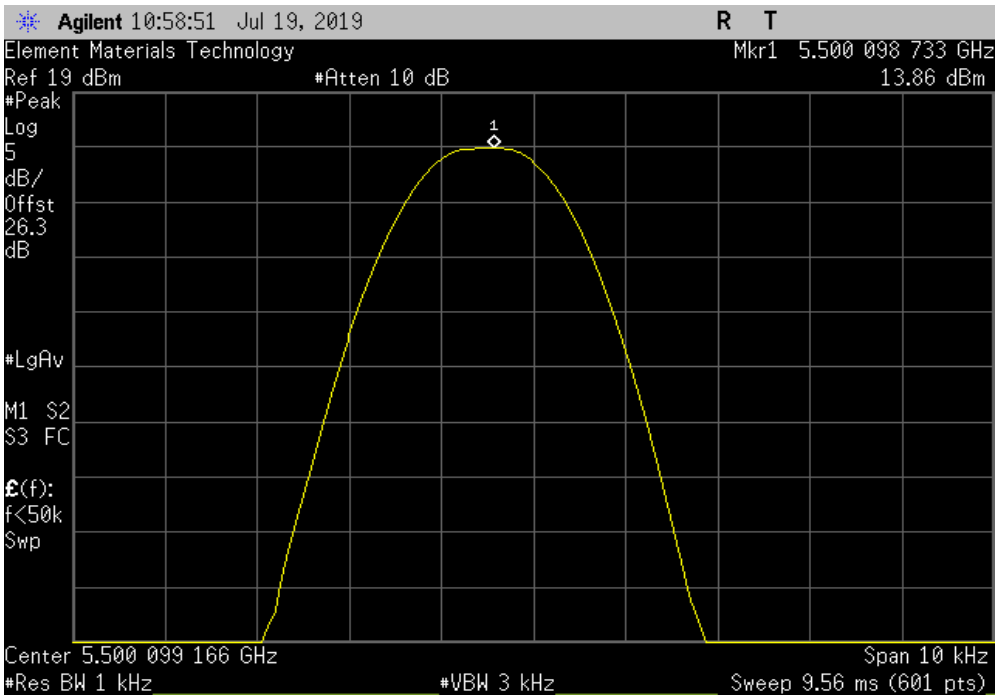
5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.07516	5500	13.7	100	Pass



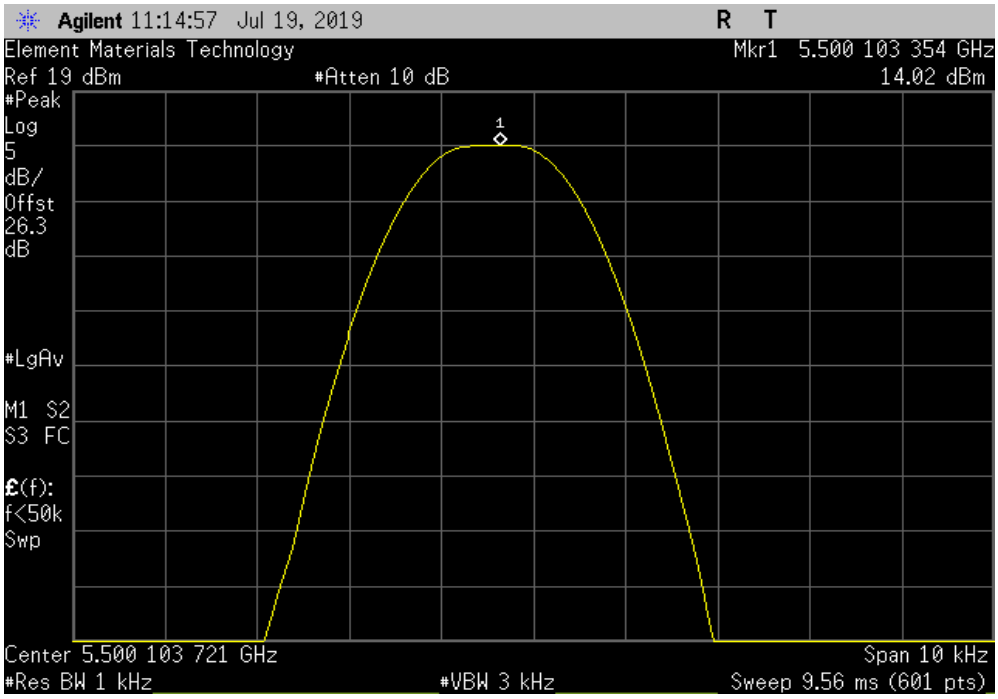
5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.087699	5500	16	100	Pass



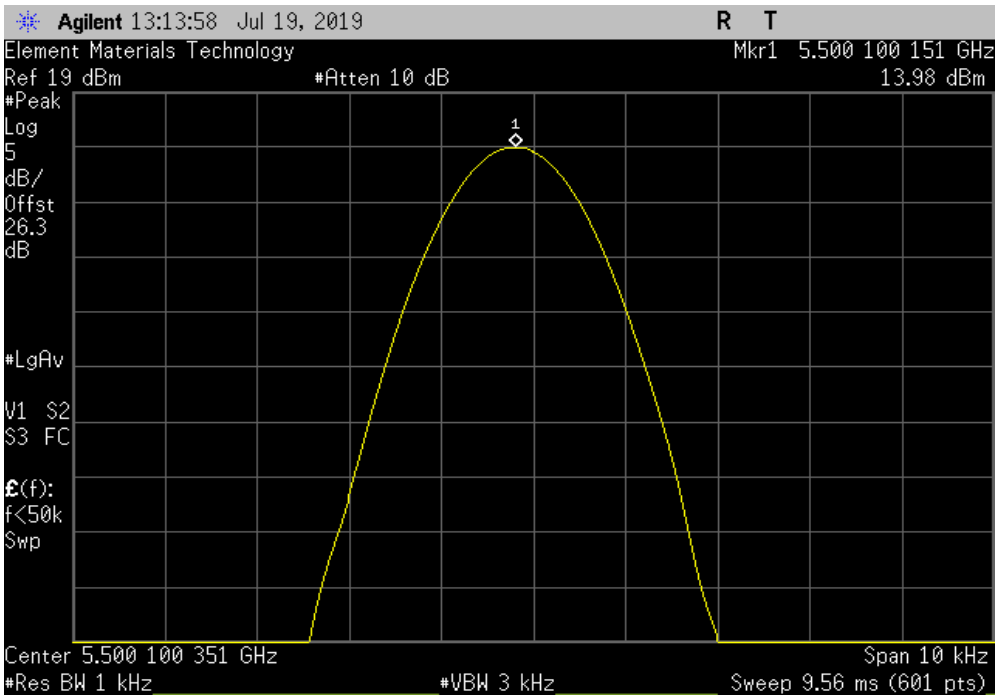
5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.098733	5500	18	100	Pass



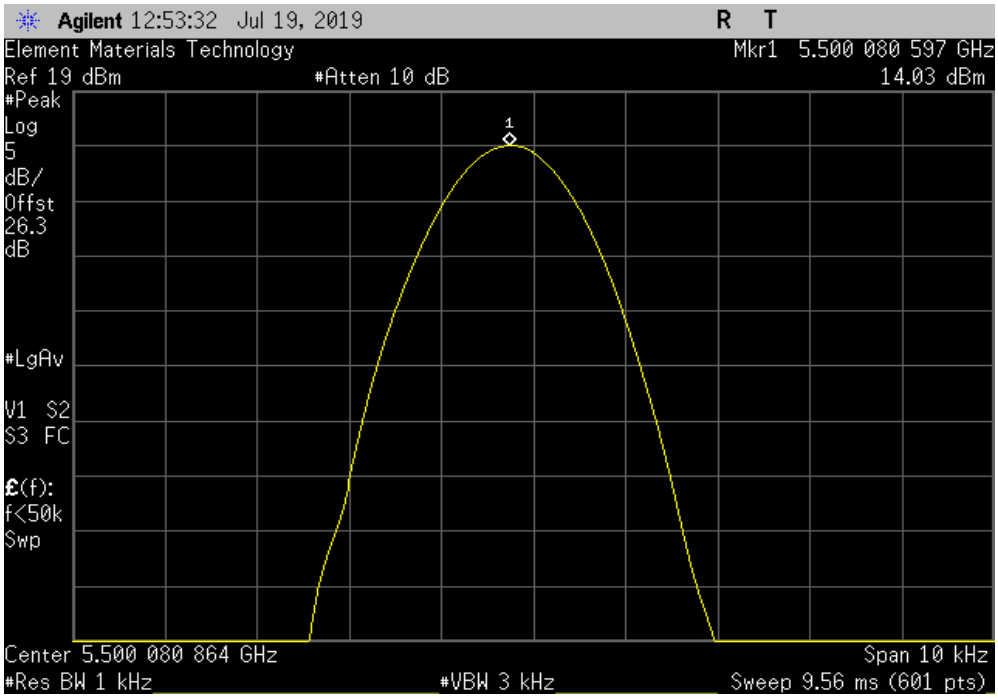
5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.103354	5500	18.8	100	Pass



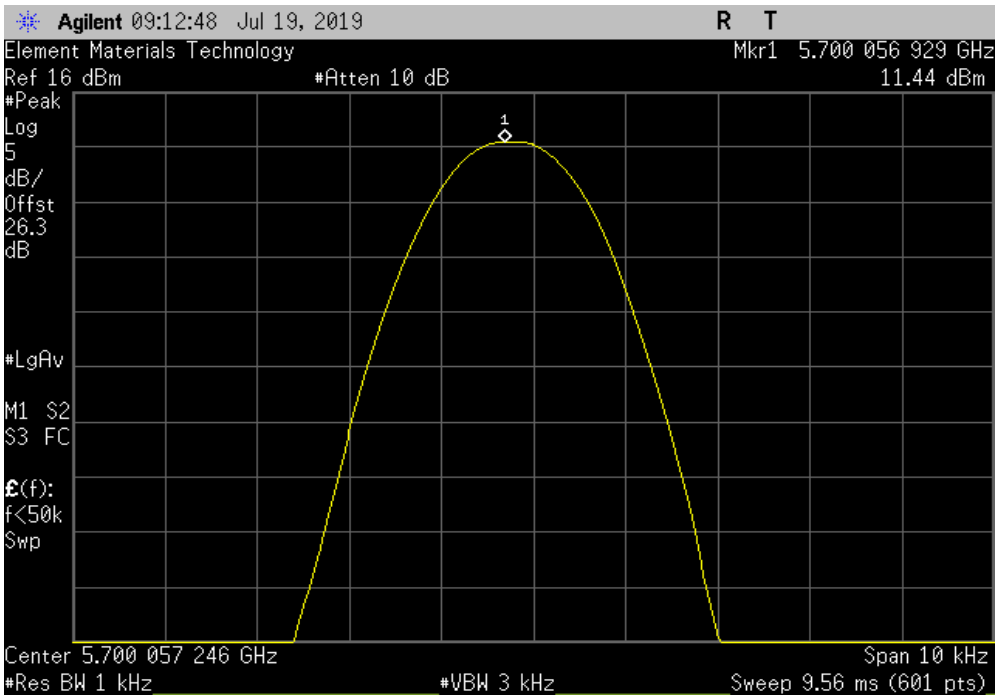
5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.100151	5500	18.2	100	Pass



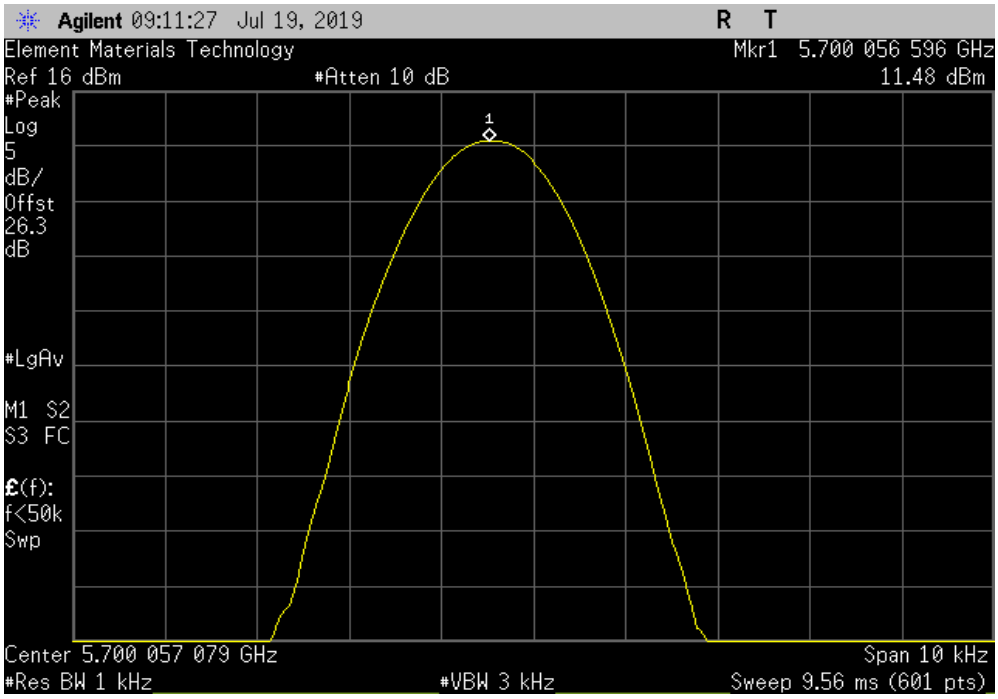
5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5500.080597	5500	14.7	100	Pass



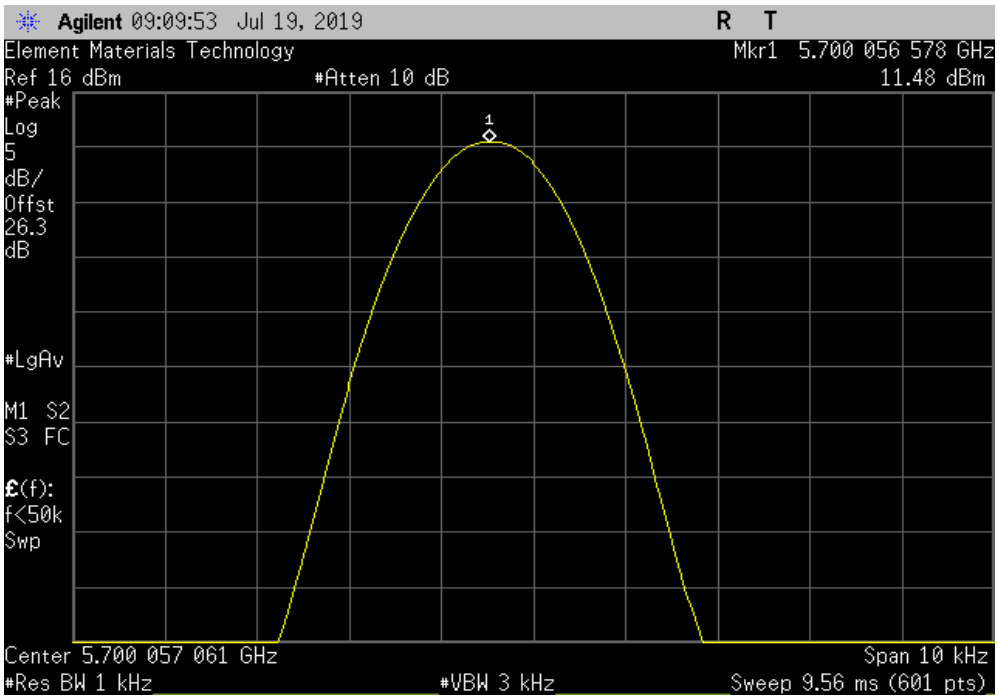
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.056929	5700	10	100	Pass



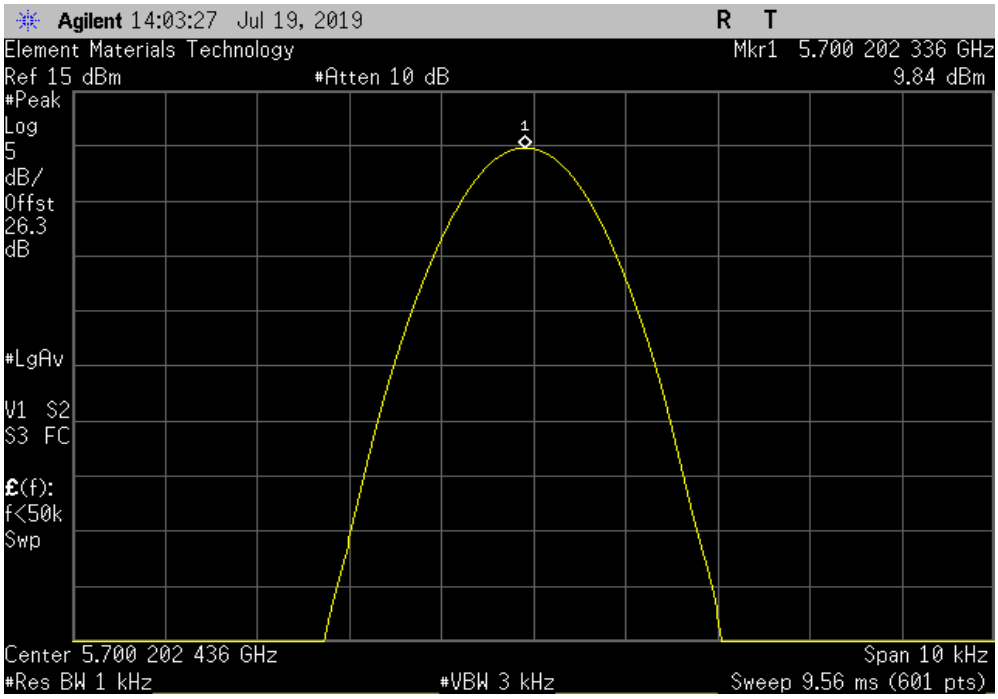
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.056596	5700	9.9	100	Pass



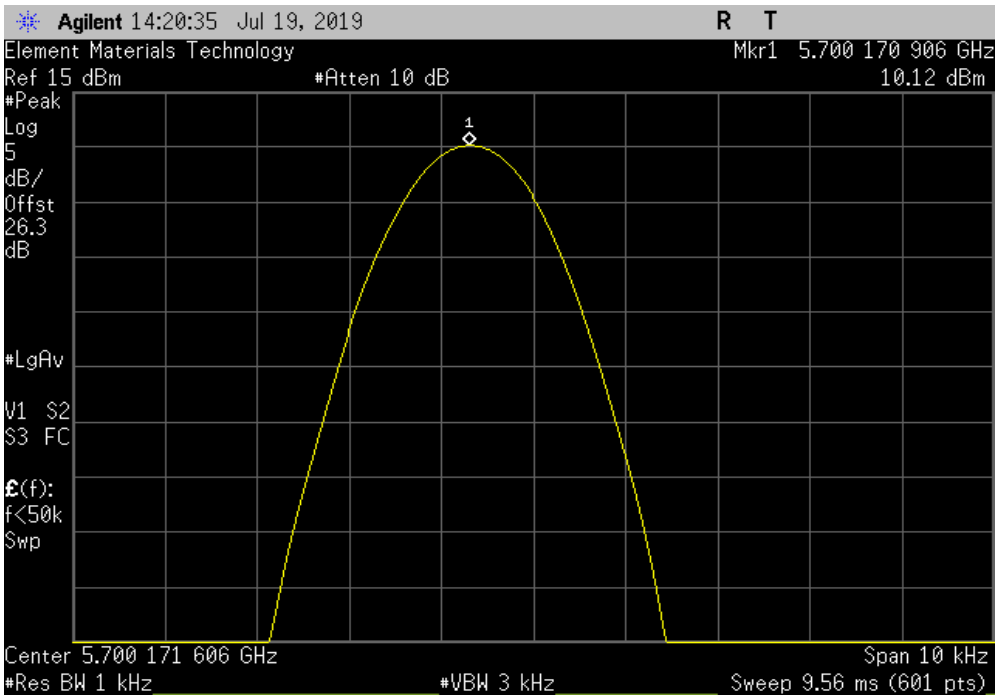
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.056578	5700	9.9	100	Pass



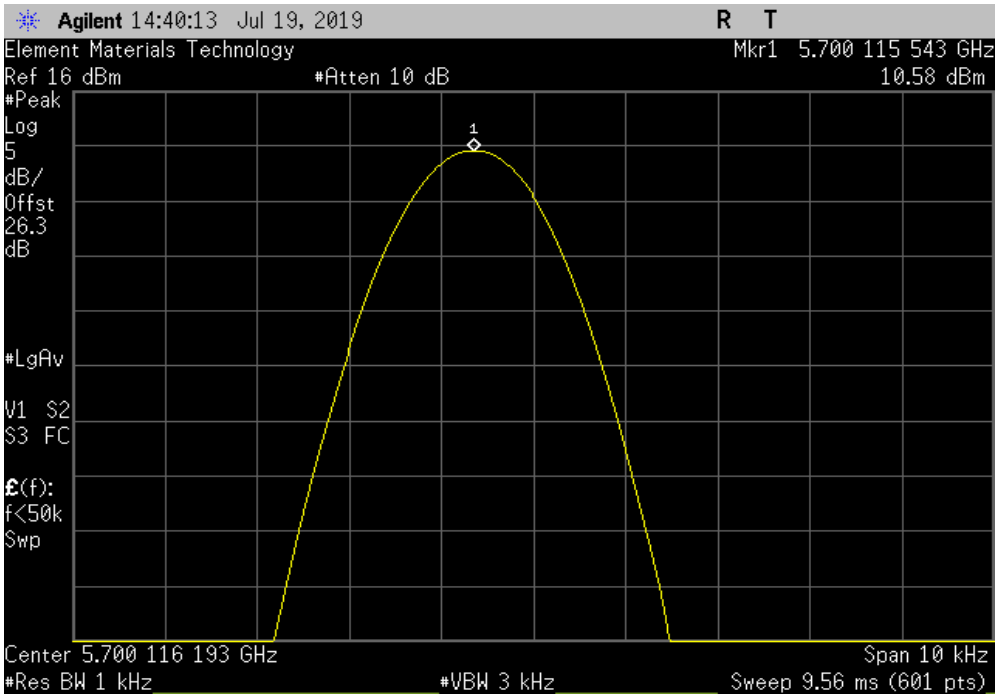
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +85°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.202336	5700	35.5	100	Pass



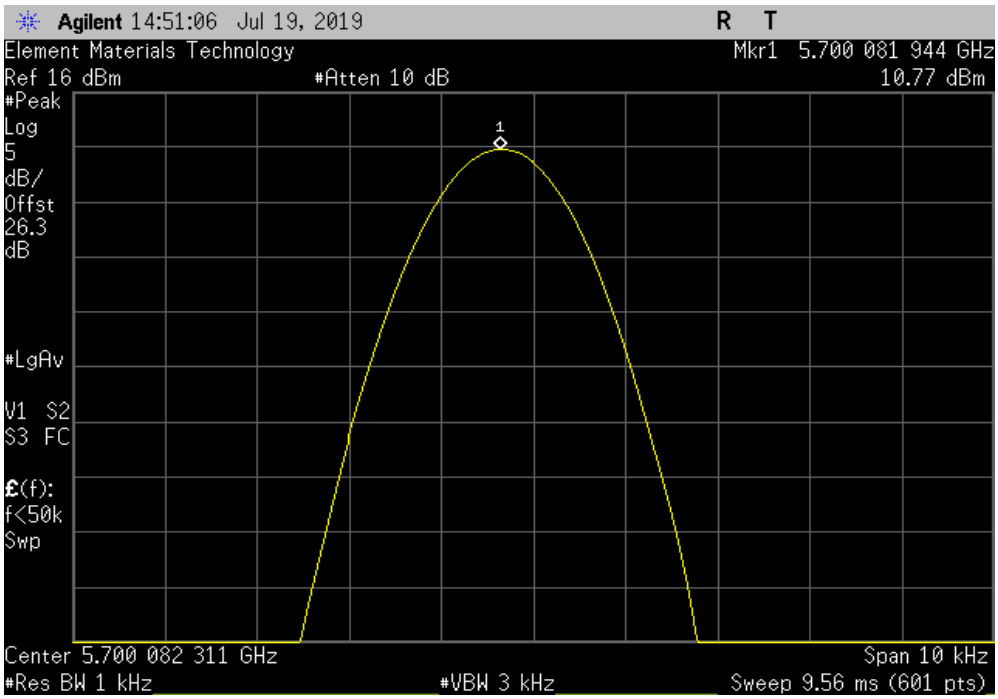
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +80°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.170906	5700	30	100	Pass



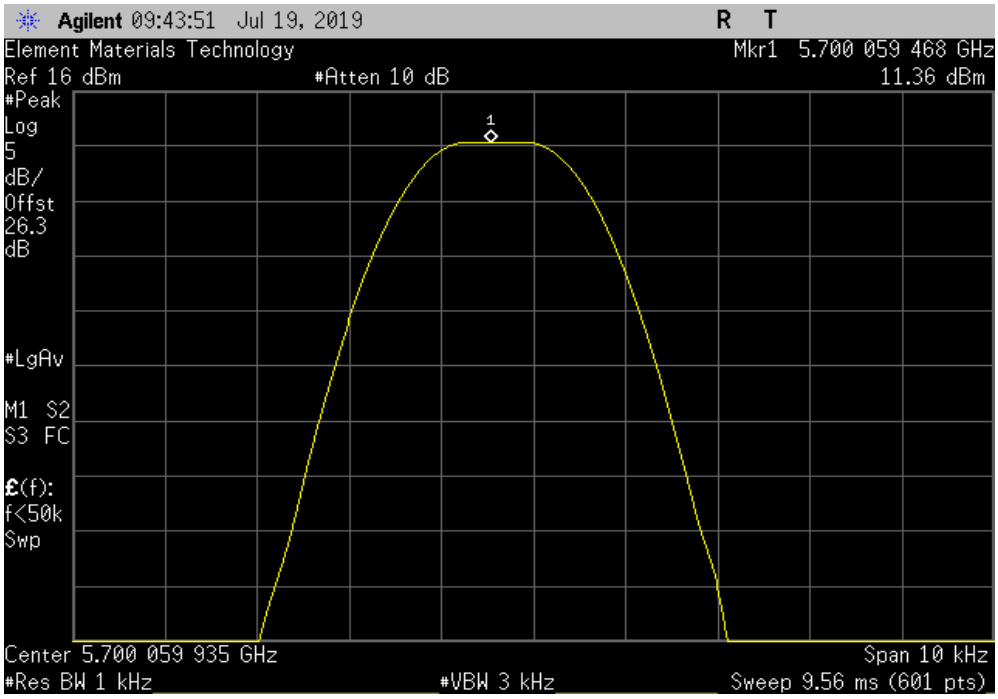
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +70°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.115543	5700	20.3	100	Pass



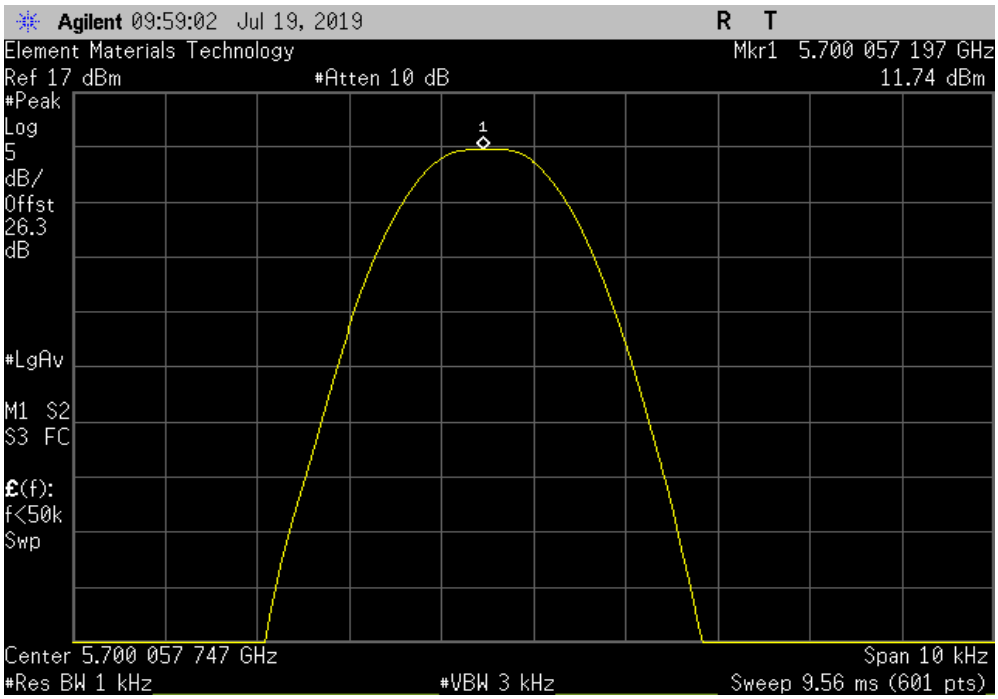
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +60°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.081944	5700	14.4	100	Pass



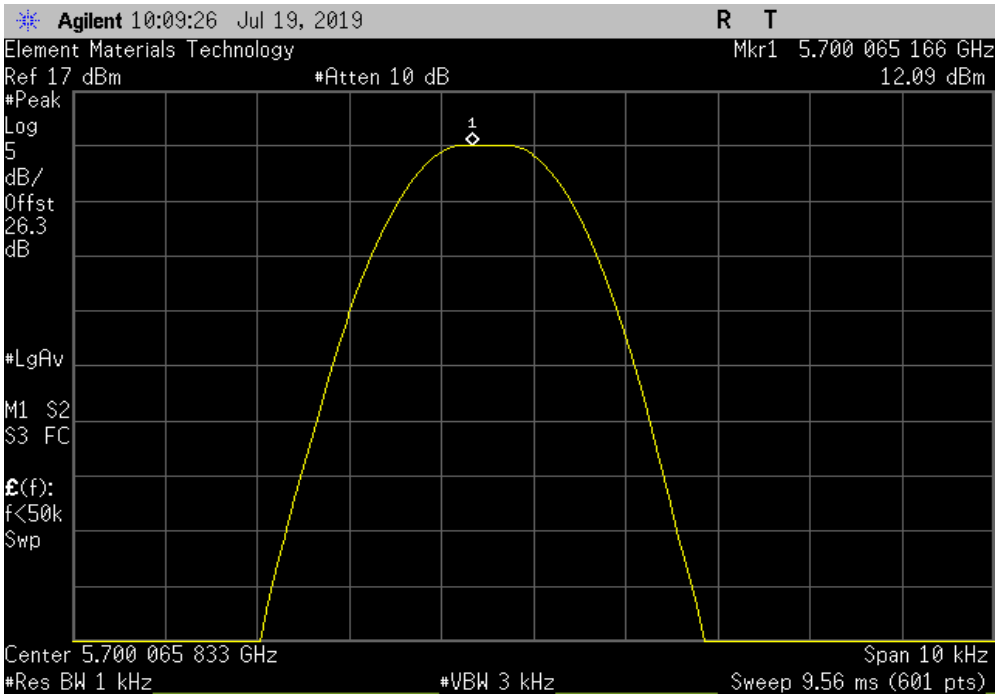
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.059468	5700	10.4	100	Pass



5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.057197	5700	10	100	Pass

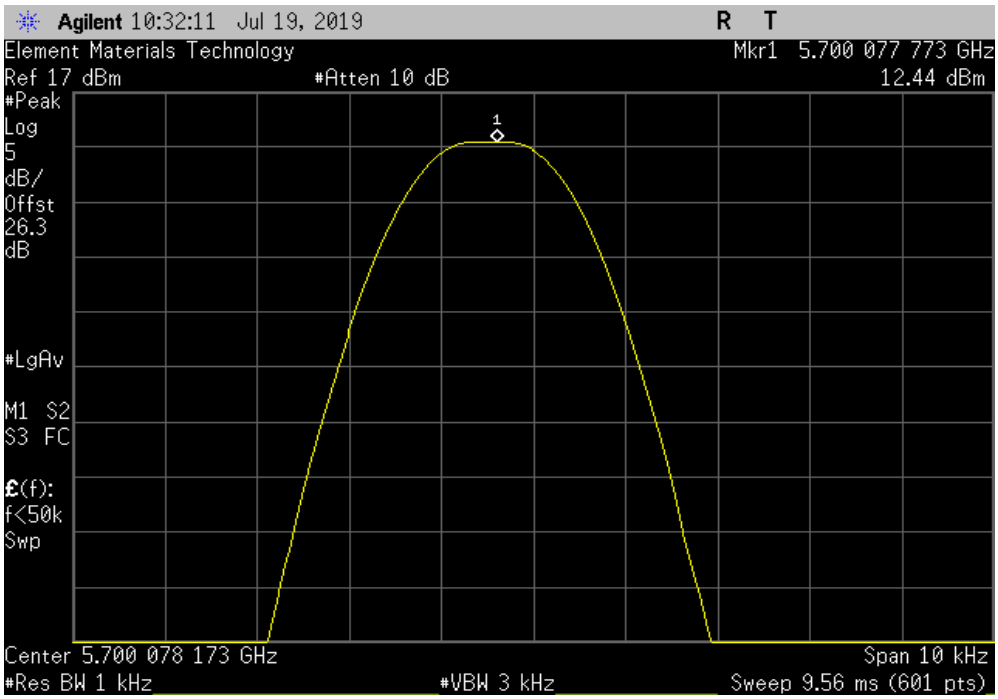


5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.065166	5700	11.4	100	Pass

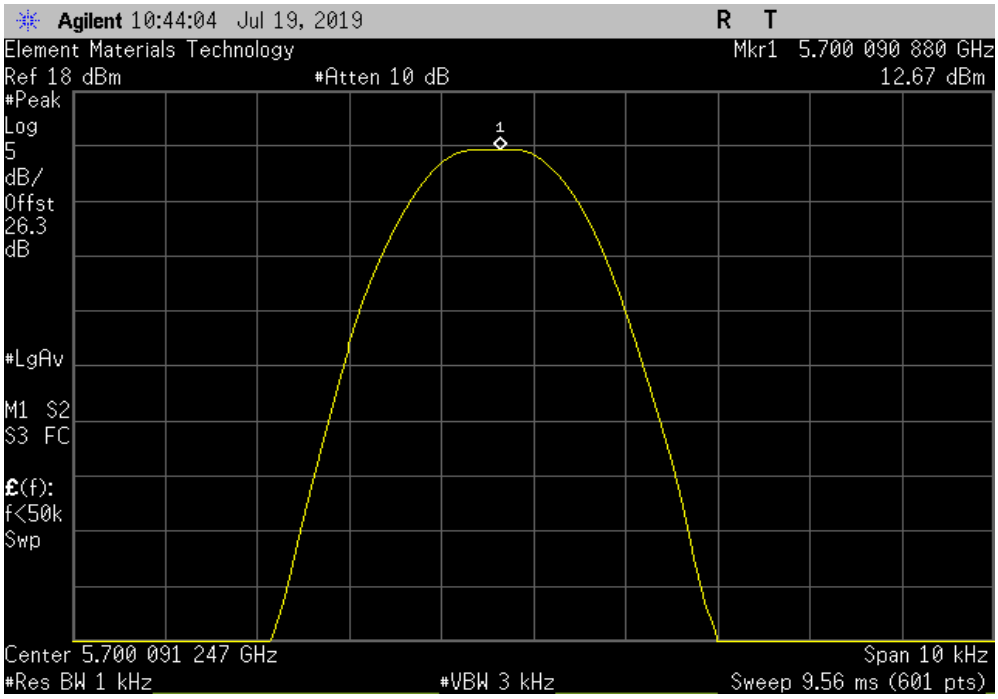


FREQUENCY STABILITY

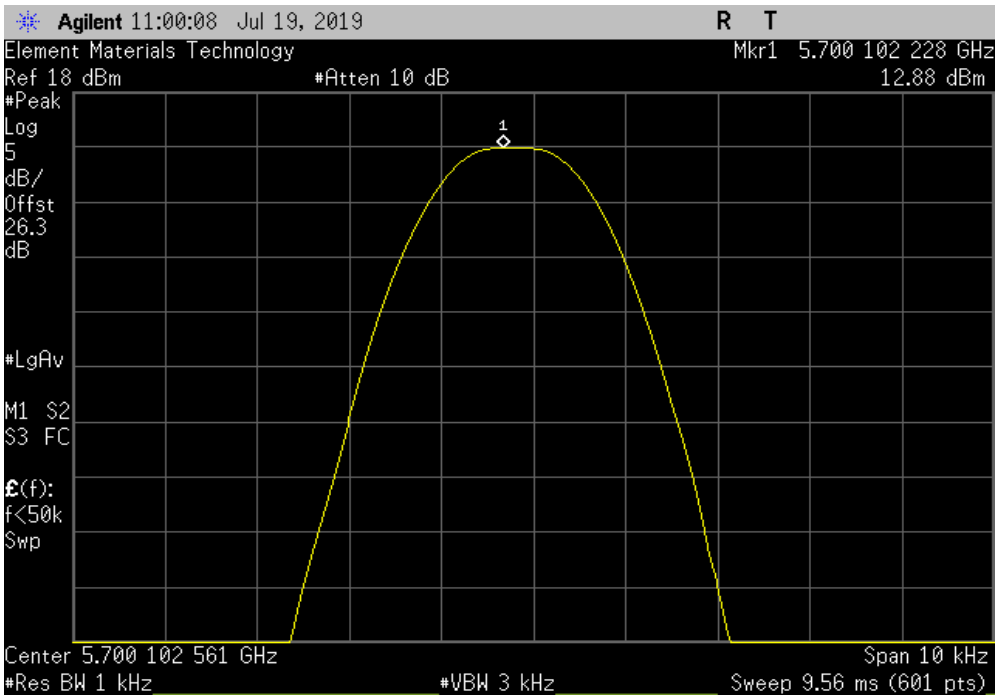
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.077773	5700	13.6	100	Pass



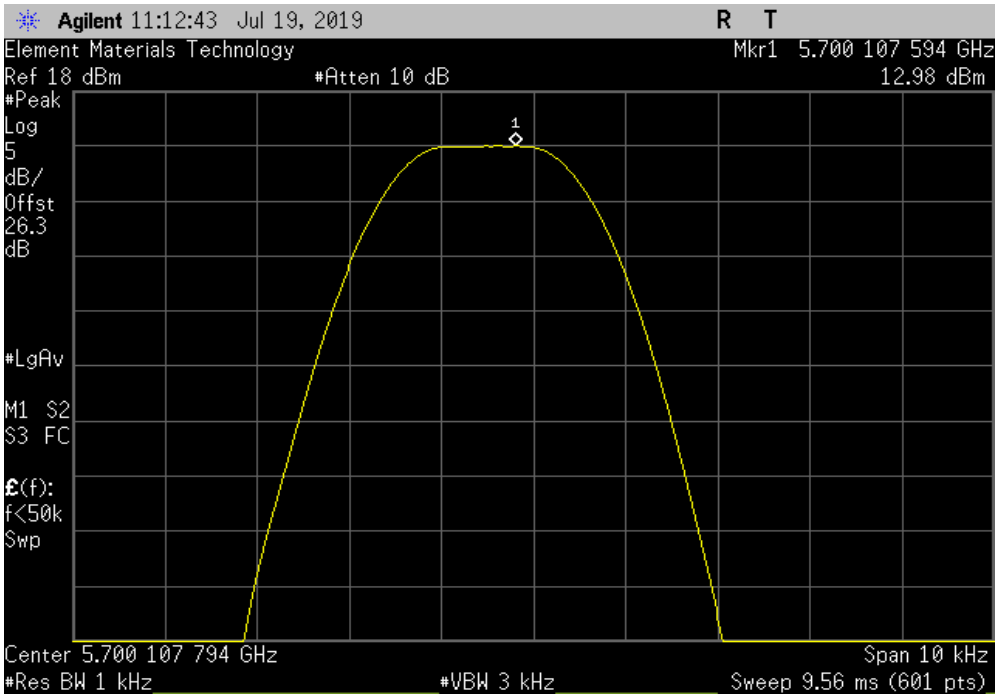
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.09088	5700	15.9	100	Pass



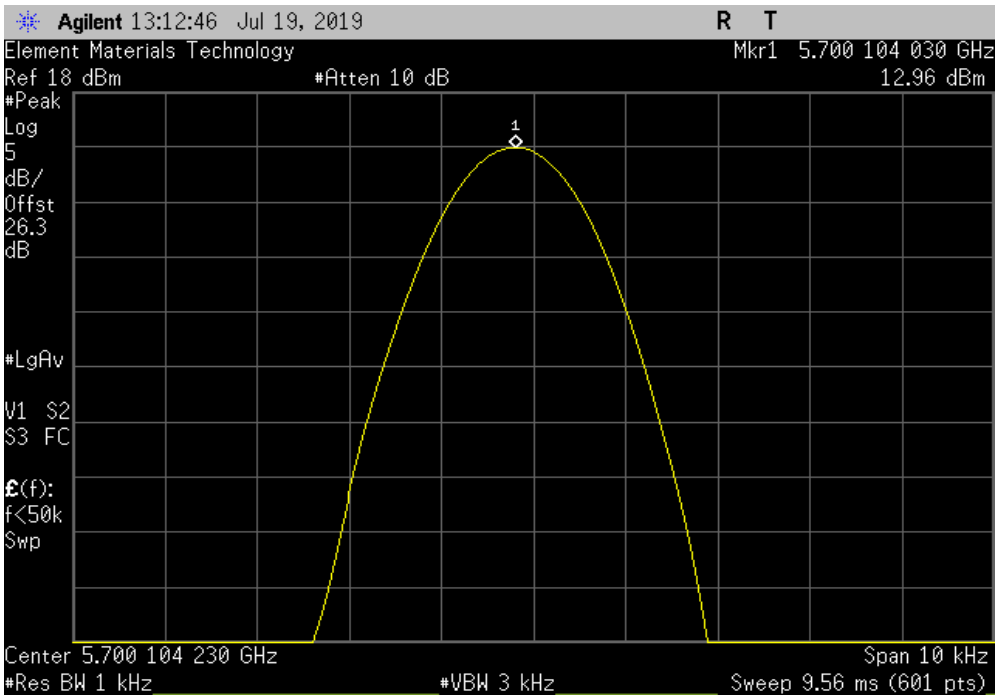
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.102228	5700	17.9	100	Pass



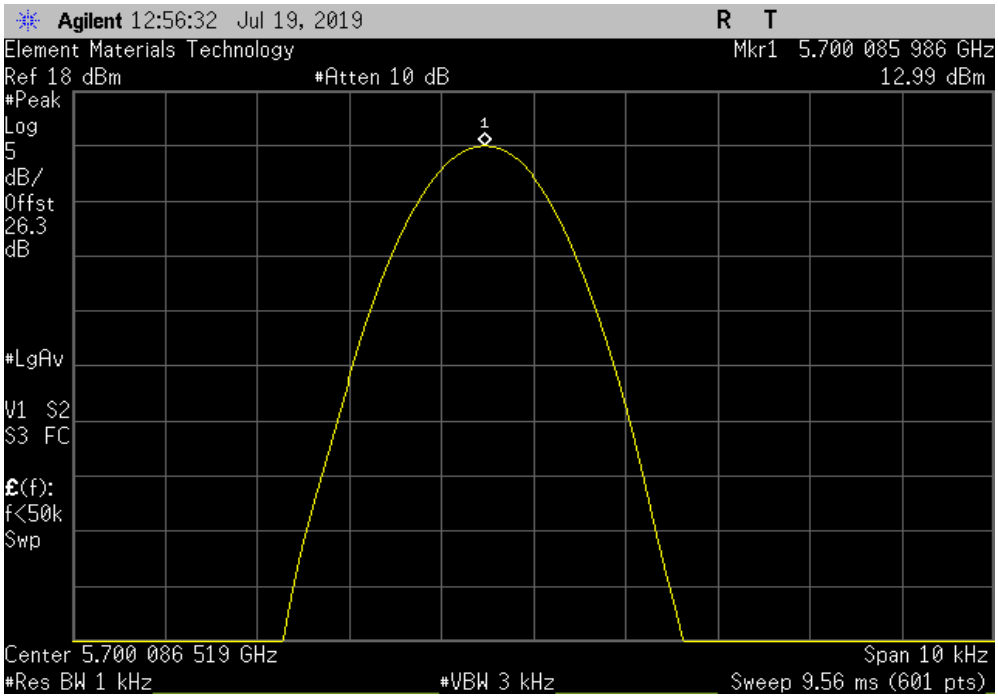
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.107594	5700	18.9	100	Pass



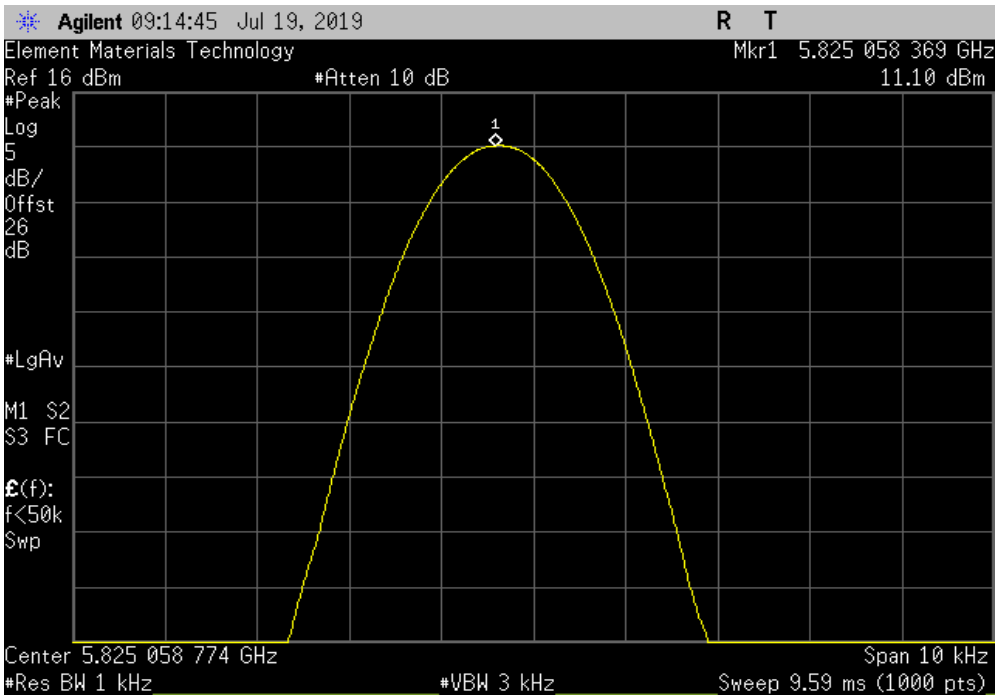
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.10403	5700	18.3	100	Pass



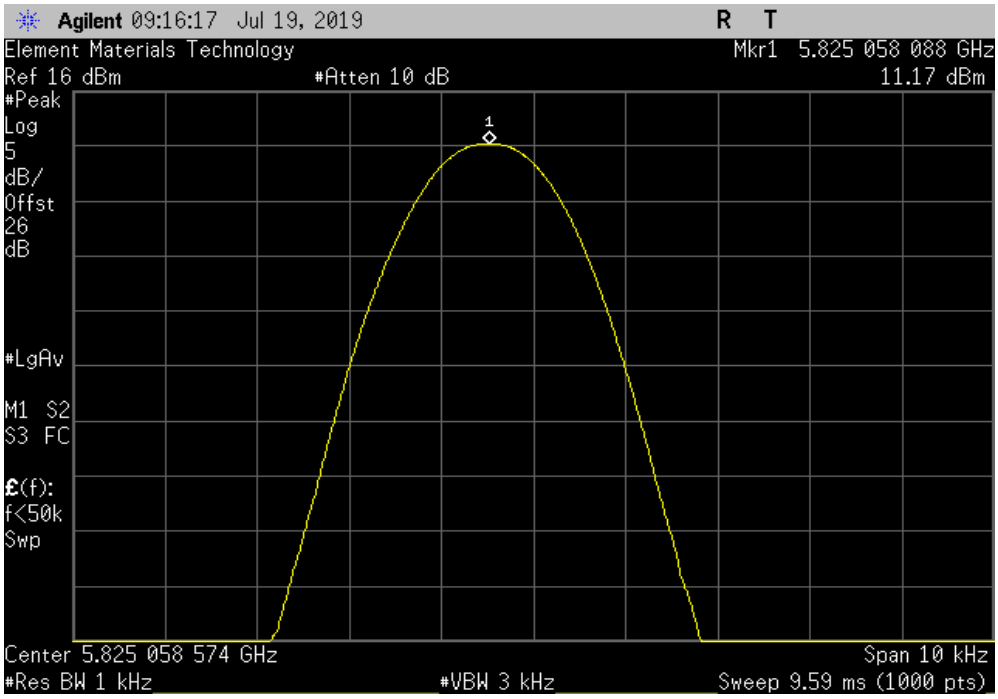
5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5700.085986	5700	15.1	100	Pass



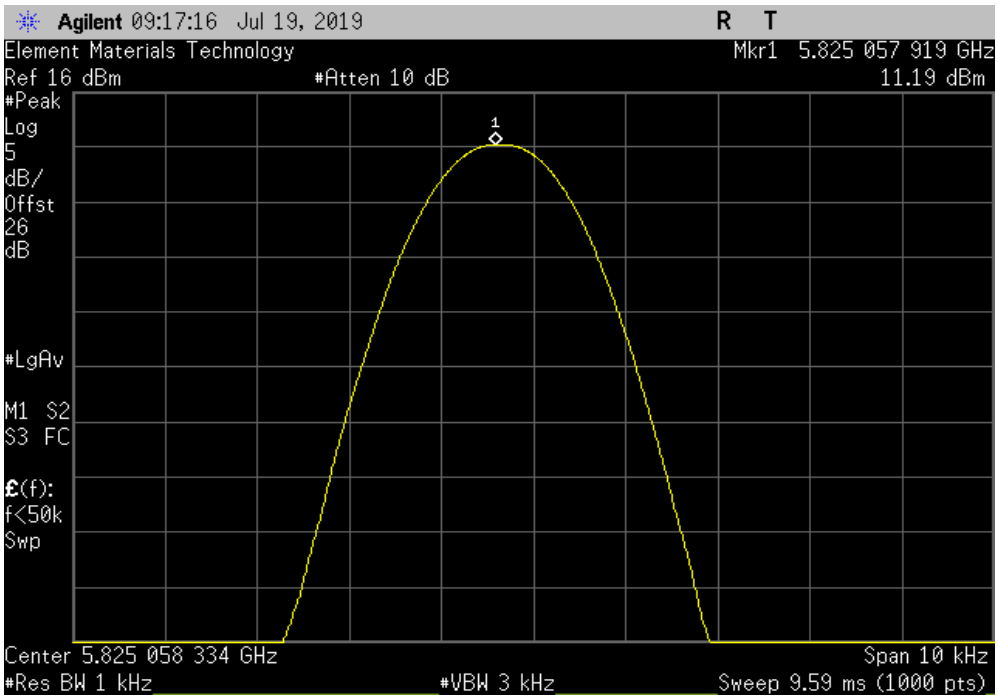
5725 MHz - 5850 MHz - High Channel, 5825 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.058369	5825	10	100	Pass



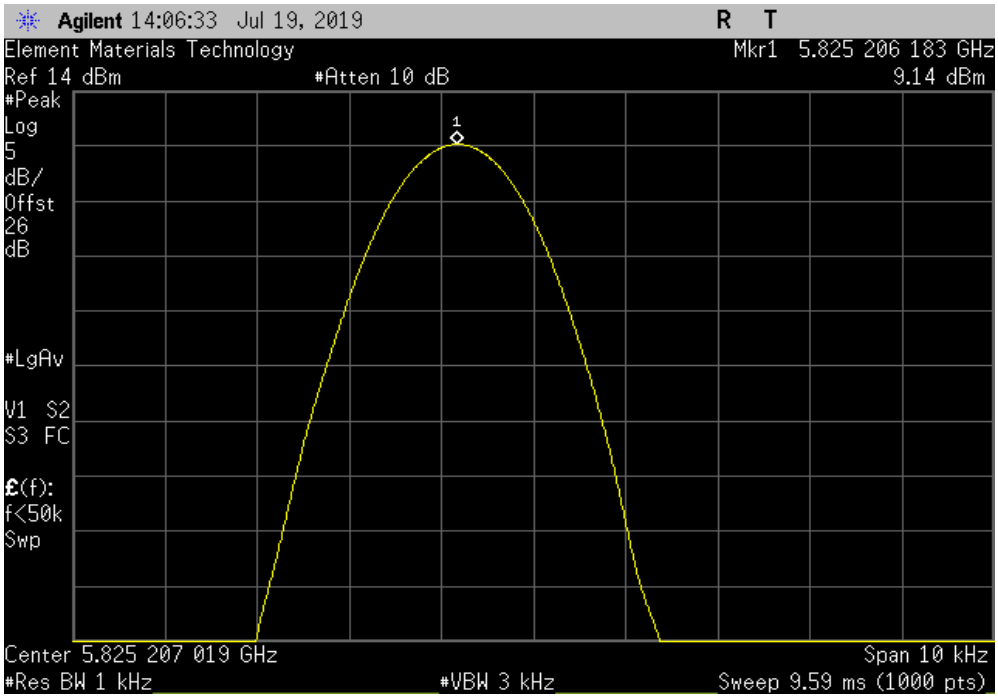
5725 MHz - 5850 MHz - High Channel, 5825 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.058088	5825	10	100	Pass



5725 MHz - 5850 MHz - High Channel, 5825 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.057919	5825	9.9	100	Pass

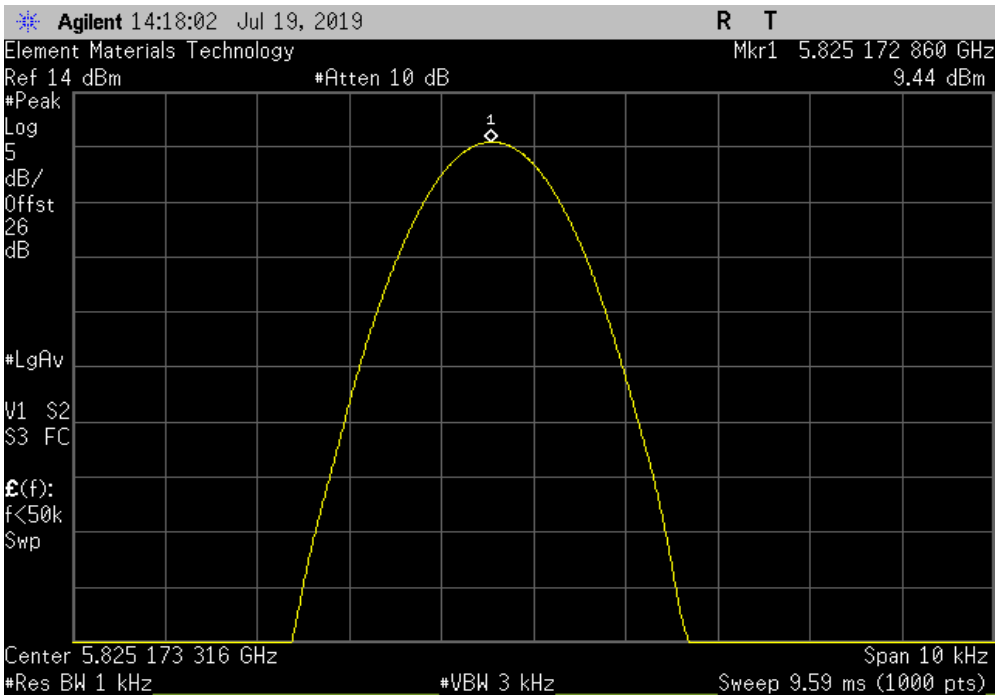


5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +85°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.206183	5825	35.4	100	Pass

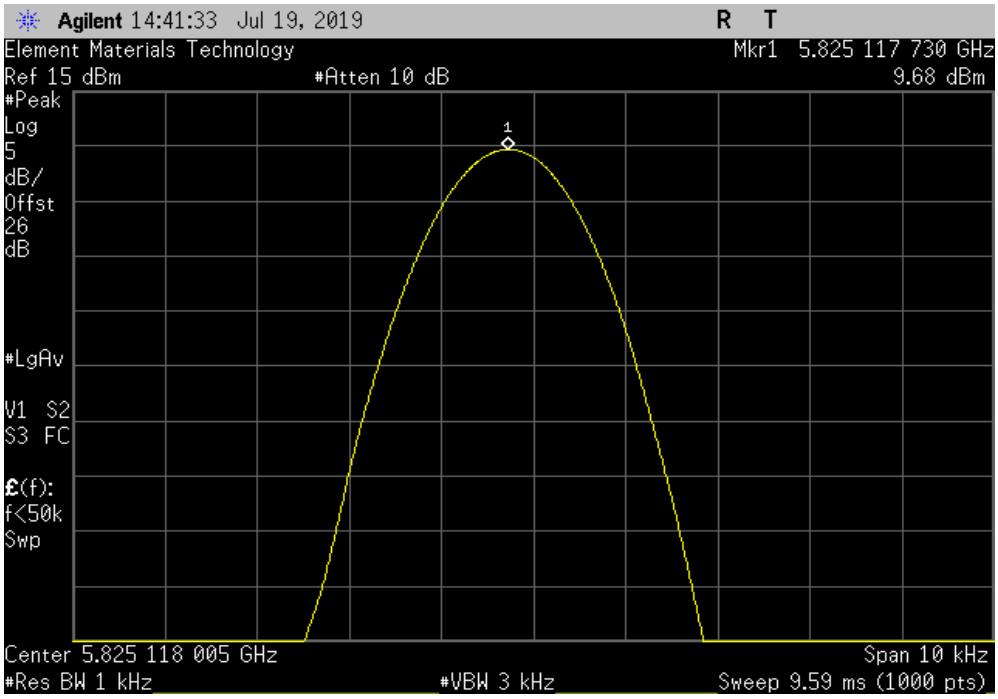


FREQUENCY STABILITY

5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +80°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.17286	5825	29.7	100	Pass

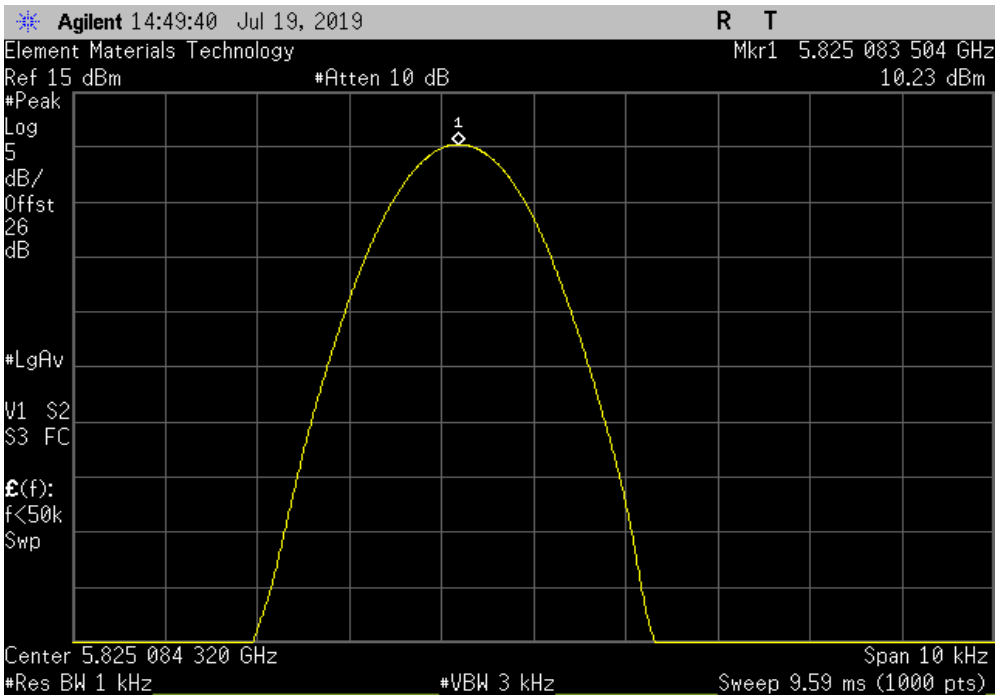


5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +70°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.11773	5825	20.2	100	Pass

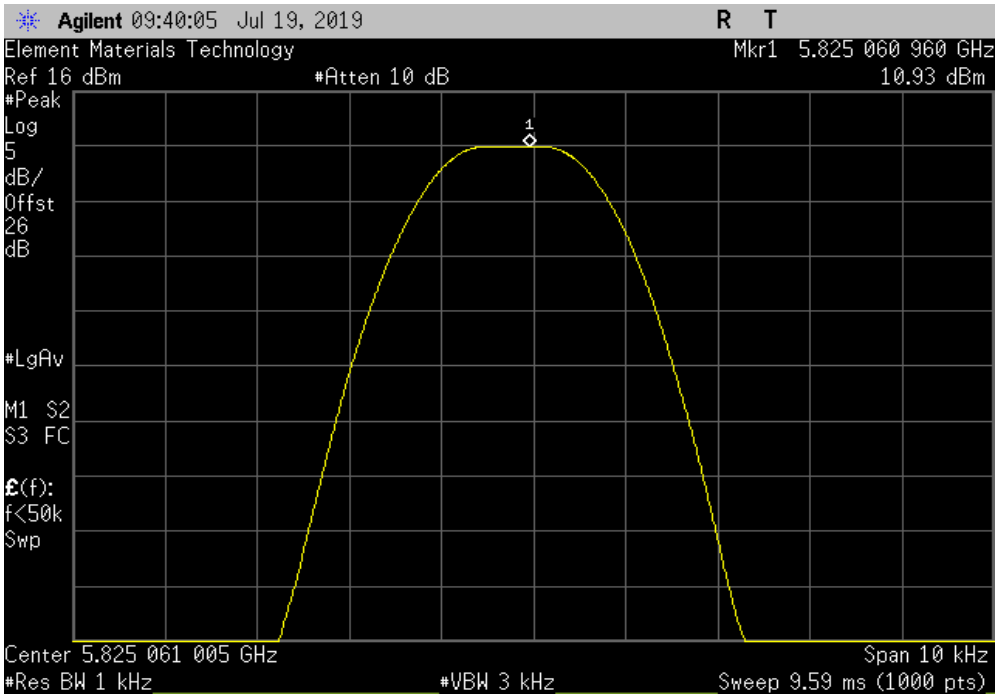


FREQUENCY STABILITY

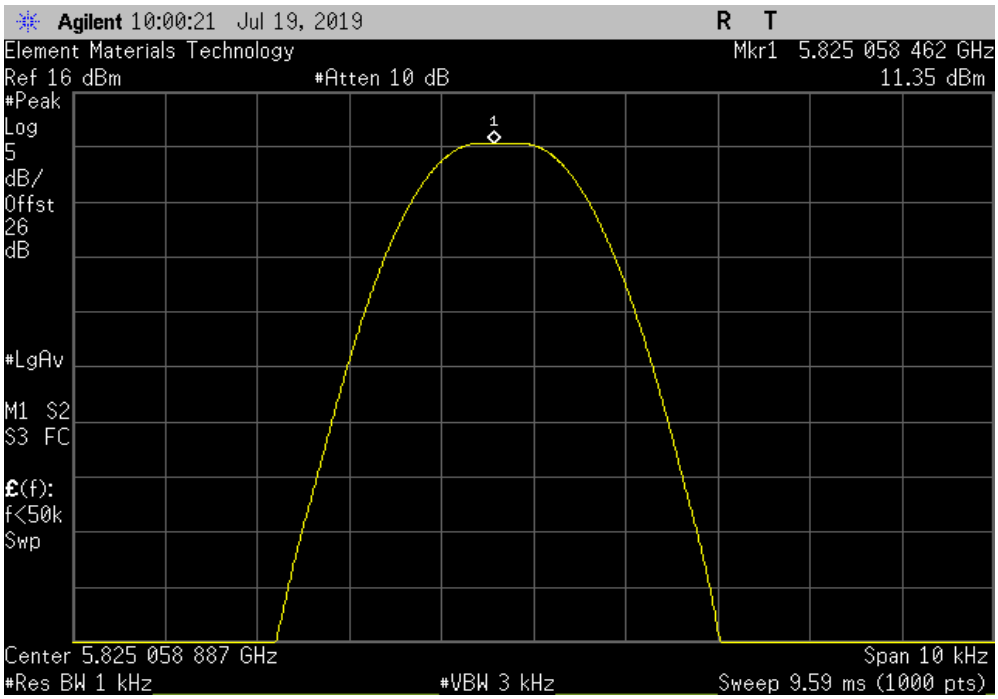
5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +60°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.083504	5825	14.3	100	Pass



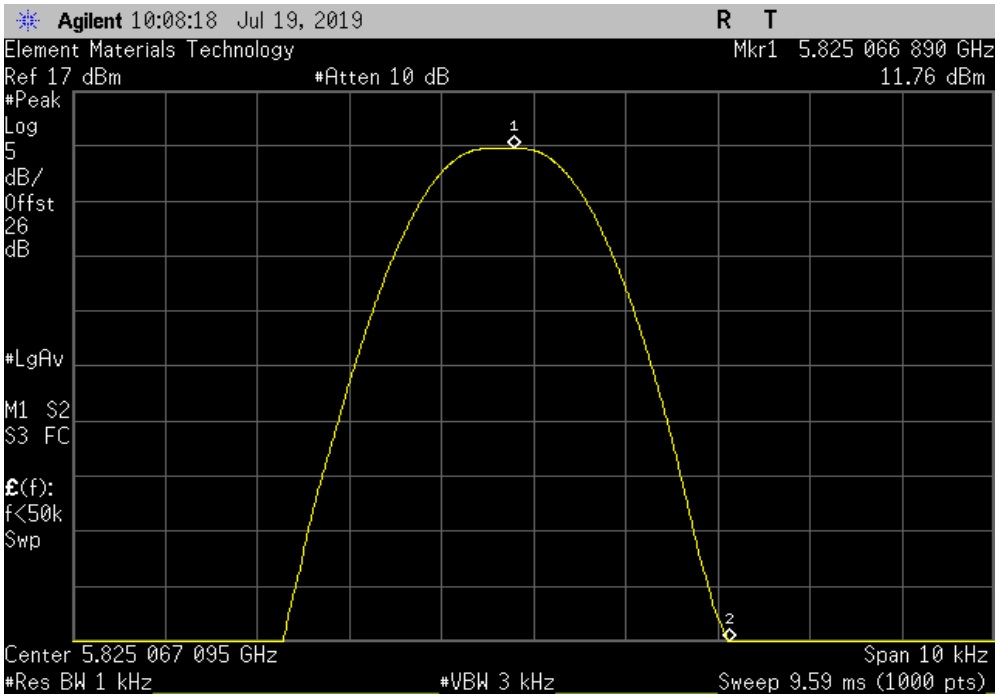
5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.06096	5825	10.5	100	Pass



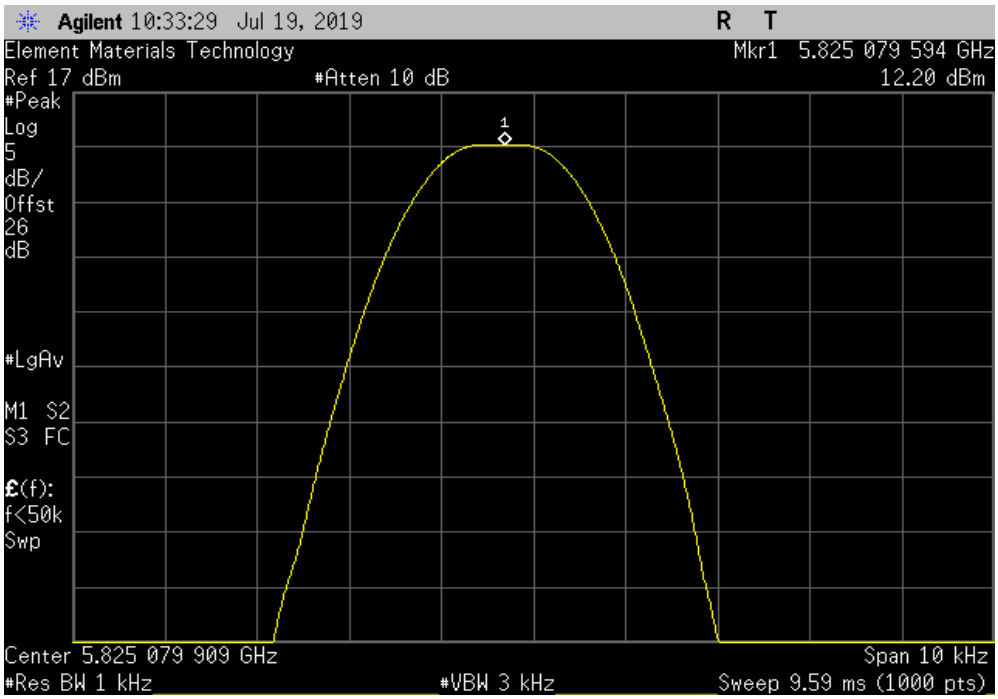
5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.058462	5825	10	100	Pass



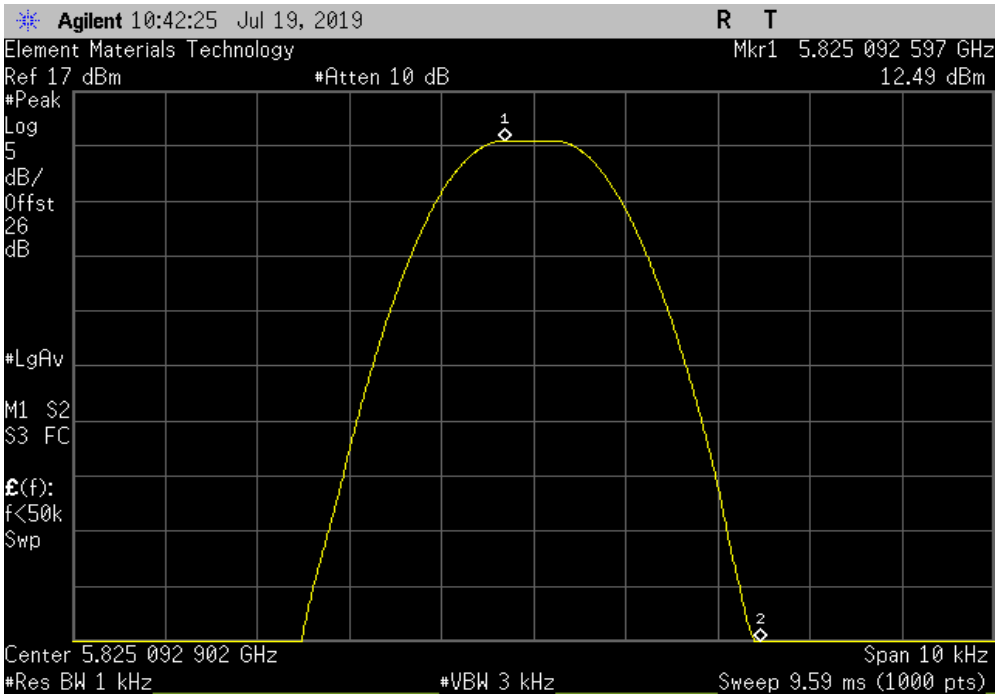
5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.06689	5825	11.5	100	Pass



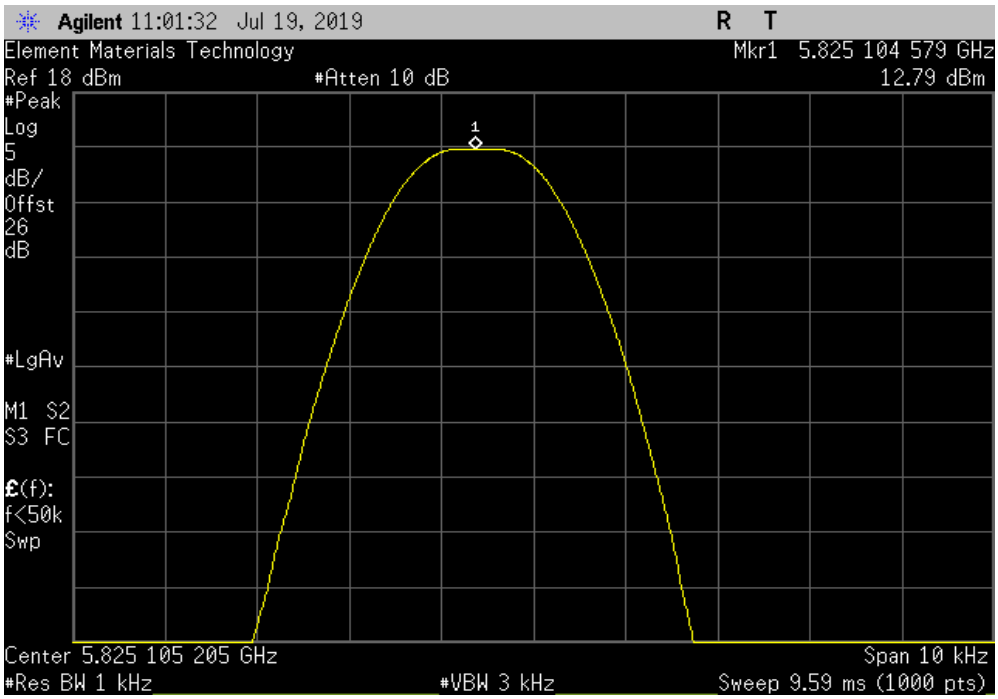
5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.079594	5825	13.7	100	Pass



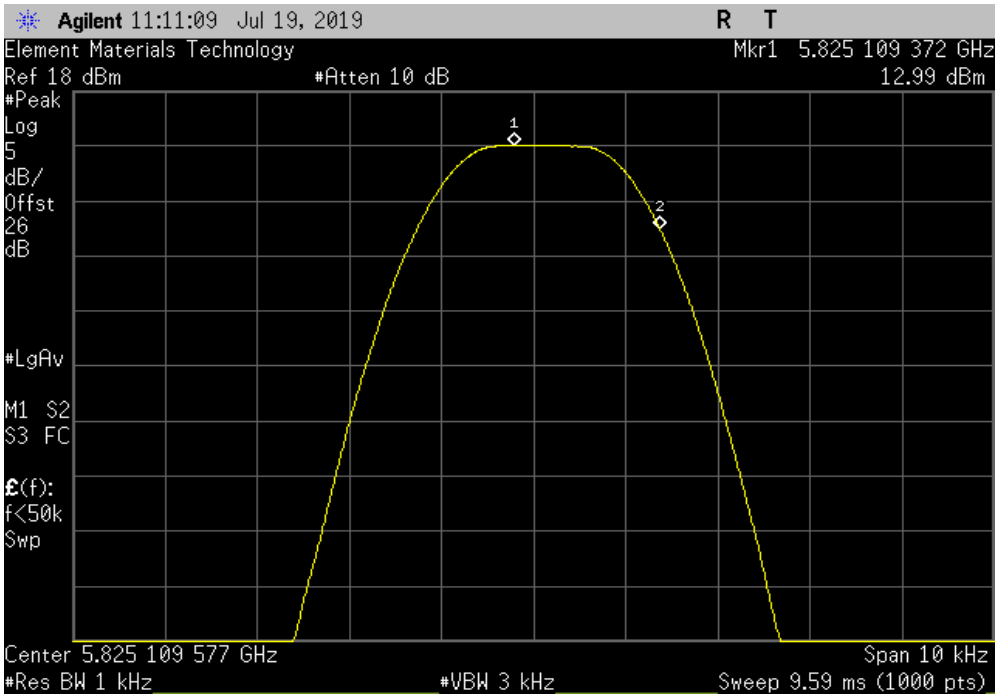
5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.092597	5825	15.9	100	Pass



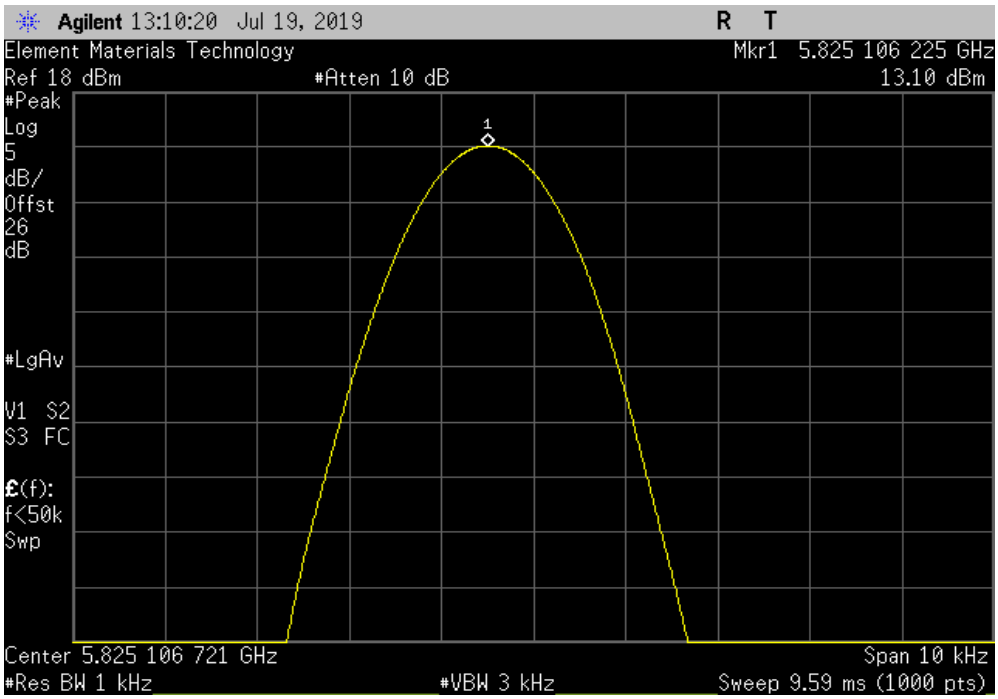
5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.104579	5825	18	100	Pass



5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.109372	5825	18.8	100	Pass



5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.106225	5825	18.2	100	Pass



5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Results
		5825.08848	5825	15.2	100	Pass