NORTHWEST EMC

Masimo Corporation

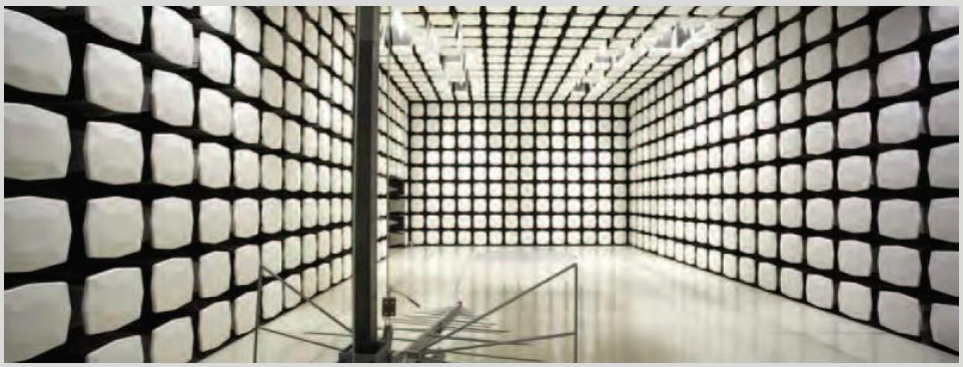
MWM1

FCC15.207:2015

FCC 15.247:2015

Bluetooth Radio

Report # MASI0274.7



NVLAP Lab Code: 200676-0

CERTIFICATE OF TEST

NORTHWEST EMC
2014-12-10

Last Date of Test: August 18, 2015
Masimo Corporation
Model: MWM1

Radio Equipment Testing

Standards

Specification	Method
FCC 15.207:2015	ANSI C63.10:2013
FCC 15.247:2015	ANSI C63.10:2013

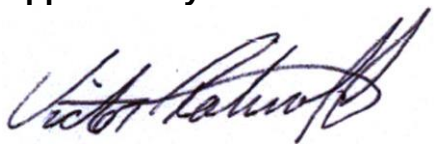
Results

Method Clause	Test Description	Applied	Results	Comments
6.2	AC Powerline Conducted Emissions	Yes	Pass	
6.5, 6.6	Spurious Radiated Emissions	Yes	Pass	
6.10	Band Edge Compliance	Yes	Pass	
7.8.2	Carrier Frequency Separation	Yes	Pass	
7.8.3	Number of Hopping Channels	Yes	Pass	
7.8.4	Dwell Time	Yes	Pass	
7.8.6	Band Edge Compliance - Hopping Mode	Yes	Pass	
11.6	Duty Cycle	Yes	Pass	
11.8.2	Occupied Bandwidth	Yes	Pass	
11.9	Output Power	Yes	Pass	
11.11	Spurious Conducted Emissions	Yes	Pass	

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.

REVISION HISTORY

NORTHWEST EMC
REV 2014.10.14

Revision Number	Description	Date	Page Number
00	None		

ACCREDITATIONS AND AUTHORIZATIONS

REV 2015.2.19

United States

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

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

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

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

European Union

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

Australia/New Zealand

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

Korea

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

Japan

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

Taiwan

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

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

Singapore

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

Israel

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

Hong Kong

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

Vietnam

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

SCOPE

For details on the Scopes of our Accreditations, please visit:
http://www.nwemc.com/accreditations/
http://gsi.nist.gov/global/docs/cabs/designations.html

MEASUREMENT UNCERTAINTY

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

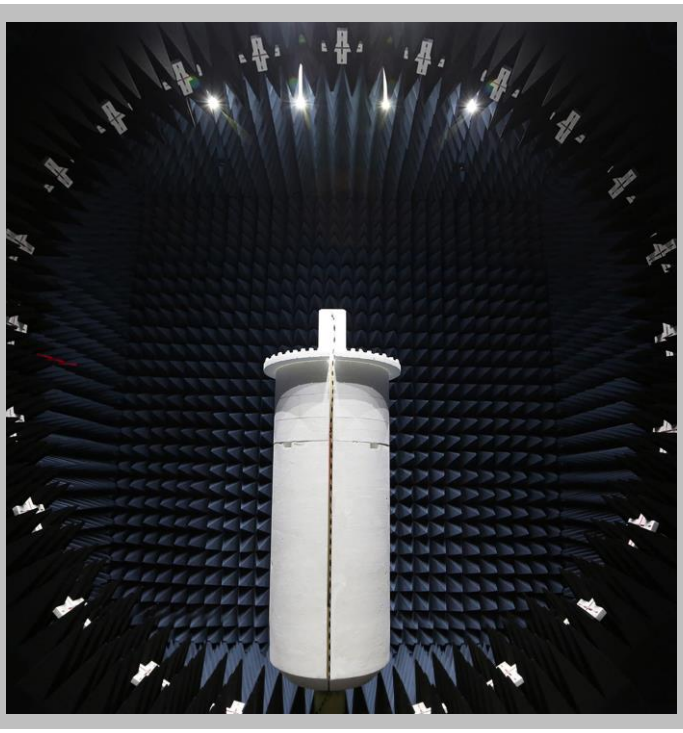
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

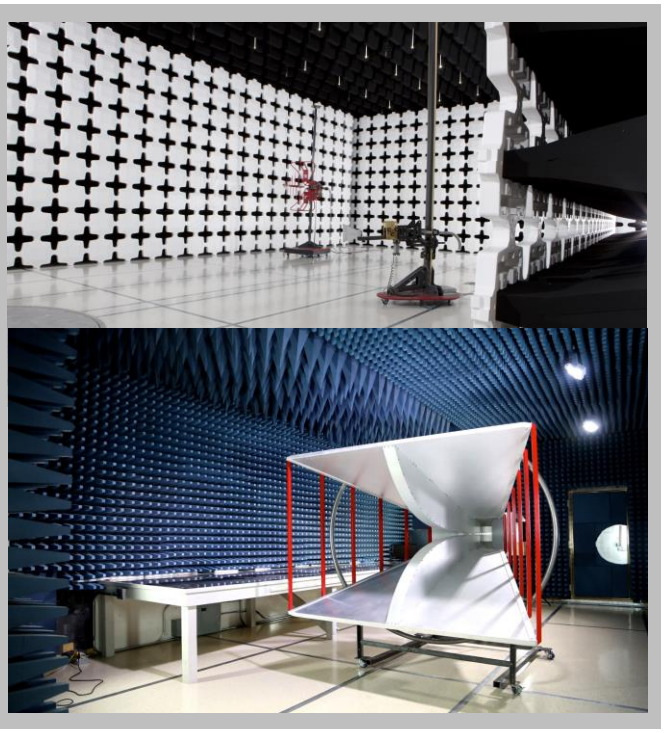
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%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

FACILITIES

REV 2015.2.19

California	Minnesota	New York	Oregon	Texas	Washington
Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Labs NC01-05 19201 120th Ave NE Bothell, WA 9801 (425)984-6600
NVLAP					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
Industry Canada					
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-*2*	2834G-1	2834F-1
BSMI					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157





PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Masimo Corporation
Address:	40 Parker
City, State, Zip:	Irvine, CA 92618
Test Requested By:	Michael Clark
Model:	MWM1
First Date of Test:	August 10, 2015
Last Date of Test:	August 18, 2015
Receipt Date of Samples:	August 06, 2015
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
Limited modular wireless radio that can be installed in multiple Masimo devices. Root is a docking station for the Radical-7 handheld monitor. RDS7A/ROOT V2 is a general floor monitor and docking station that the RAD7A/Radical 7 can dock too.

Testing Objective:
To demonstrate compliance of the Bluetooth radio to FCC 15.247 requirements.

CONFIGURATIONS

NORTHWEST EMC 2014-12-10

Configuration MASI0274- 1

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Wireless Radio	Masimo Corporation	MWM1/Azurewave AW-AH634	36235C

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Pulse Co-Oximeter	Masimo Corporation	RAD7A	1000000349
Charging and Docking Station	Masimo Corporation	RDS-1	147484
Laptop	HP	HSTNN-I27N	CNU7300W4L
Laptop Power Supply	HP	PPP014H-S	F3-08080097580E

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Cable	No	1.8m	No	Charging and Docking Station	AC Mains
USB Cable	No	2.0m	No	Wireless Radio	Laptop
AC Cable	No	1.8m	No	AC Mains	Laptop Power Supply
DC Cable	No	2.0m	Yes	Laptop	Laptop Power Supply

Configuration MASI0274- 2

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Wireless Radio	Masimo Corporation	MWM1/Azurewave AW-AH634	36235C

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Pulse Co-Oximeter	Masimo Corporation	RAD7A	1000000349
Charging and Docking Station	Masimo Corporation	RDS-1	147484
Finger Sensor	Masimo Corporation	DCI-DC12	9J042
Laptop	HP	HSTNN-I27N	CNU7300W4L
Laptop Power Supply	HP	PPP014H-S	F3-08080097580E

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Cable	No	1.8m	No	Charging and Docking Station	AC Mains
RS 232	No	1.8m	Yes	Charging and Docking Station	Unterminated
Vue Link Cable	No	1.8m	Yes	Charging and Docking Station	Unterminated
Nursecall Cable	No	1.0m	Yes	Charging and Docking Station	Unterminated
Sp02 Cable	Yes	3.0m	No	Pulse Co-Oximeter	Finger Sensor
Ground Cable	Yes	1.8m	No	Charging and Docking Station	Ground
USB Cable	No	2.0m	No	Wireless Radio	Laptop

MODIFICATIONS

NORTHWEST EMC
2014-12-10

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	8/10/2015	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	8/12/2015	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	8/12/2015	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	8/12/2015	Carrier Frequency Separation	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	8/12/2015	Number of Hopping Frequencies	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	8/12/2015	Dwell Time	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	8/12/2015	Duty Cycle	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
8	8/12/2015	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
9	8/12/2015	Band Edge Compliance - Hopping Mode	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
10	8/12/2015	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
11	8/18/2015	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

AC POWERLINE CONDUCTED EMISSIONS

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

MODES OF OPERATION

Operating Continuous Transmit Bluetooth: Low Channel 1 (2402 MHz)
Operating Continuous Transmit Bluetooth: Mid Channel 39 (2440 MHz)
Operating Continuous Transmit Bluetooth: High Channel 79 (2480 MHz)

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

MASI0275 - 2

SAMPLE CALCULATIONS

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
LISN	Solar Electronics	9252-50-24-BNC	LIA	3/4/2015	12 mo
Attenuator	Pasternack	6N10W-20	AWC	NCR	0 mo
Filter - High Pass	TTE	H97-100K-50-720B	HFP	NCR	0 mo
Cable - Conducted Cable	Northwest EMC	None	OCP	NCR	0 mo
Receiver	Rohde & Schwarz	ESCI	ARG	6/1/2015	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

TEST DESCRIPTION

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

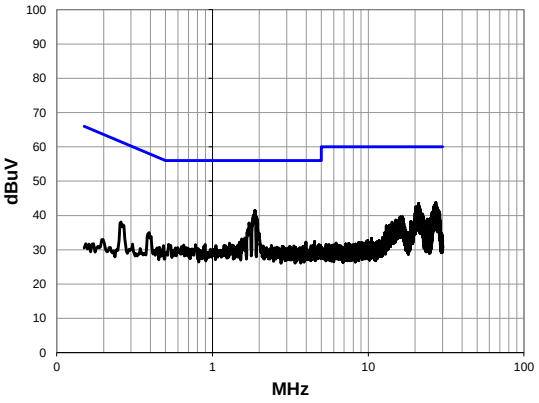
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	MASI0275	**Date:**	08/18/15		
Project:	None	**Temperature:**	23.9 °C		
Job Site:	OC06	**Humidity:**	44.9% RH		
Serial Number:	1521639422	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
EUT:	MWM1				
Configuration:	2				
Customer:	Masimo Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Operating Continuous Transmit Bluetooth: Low Channel 1 (2402 MHz)				
Deviations:	None				
Comments:	Tx Power set to 30.				

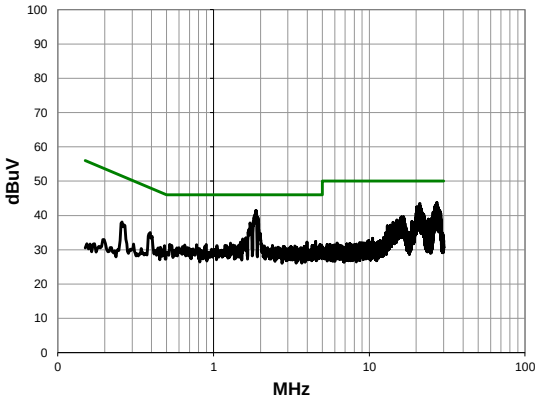
Test Specifications	**Test Method**
FCC 15.207:2015	ANSI C63.10:2013

Run #	20	**Line:**	High Line	**Ext. Attenuation:**	0	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
1.866	21.3	20.2	41.5	56.0	-14.5
27.172	21.9	21.8	43.7	60.0	-16.3
1.922	19.3	20.2	39.5	56.0	-16.5
21.091	22.3	21.2	43.5	60.0	-16.5
27.075	21.5	21.8	43.3	60.0	-16.7
26.862	21.5	21.8	43.3	60.0	-16.7
27.224	21.2	21.9	43.1	60.0	-16.9
26.635	21.3	21.7	43.0	60.0	-17.0
27.191	21.1	21.8	42.9	60.0	-17.1
20.882	21.7	21.1	42.8	60.0	-17.2
21.143	21.6	21.2	42.8	60.0	-17.2
26.366	21.0	21.7	42.7	60.0	-17.3
27.403	20.8	21.9	42.7	60.0	-17.3
26.847	20.9	21.8	42.7	60.0	-17.3
26.568	20.9	21.7	42.6	60.0	-17.4
27.549	20.7	21.9	42.6	60.0	-17.4
27.467	20.7	21.9	42.6	60.0	-17.4
21.221	21.4	21.2	42.6	60.0	-17.4
20.188	21.4	21.1	42.5	60.0	-17.5
27.303	20.6	21.9	42.5	60.0	-17.5
27.512	20.3	21.9	42.2	60.0	-17.8

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
1.866	21.3	20.2	41.5	46.0	-4.5
27.172	21.9	21.8	43.7	50.0	-6.3
1.922	19.3	20.2	39.5	46.0	-6.5
21.091	22.3	21.2	43.5	50.0	-6.5
27.075	21.5	21.8	43.3	50.0	-6.7
26.862	21.5	21.8	43.3	50.0	-6.7
27.224	21.2	21.9	43.1	50.0	-6.9
26.635	21.3	21.7	43.0	50.0	-7.0
27.191	21.1	21.8	42.9	50.0	-7.1
20.882	21.7	21.1	42.8	50.0	-7.2
21.143	21.6	21.2	42.8	50.0	-7.2
26.366	21.0	21.7	42.7	50.0	-7.3
27.403	20.8	21.9	42.7	50.0	-7.3
26.847	20.9	21.8	42.7	50.0	-7.3
26.568	20.9	21.7	42.6	50.0	-7.4
27.549	20.7	21.9	42.6	50.0	-7.4
27.467	20.7	21.9	42.6	50.0	-7.4
21.221	21.4	21.2	42.6	50.0	-7.4
20.188	21.4	21.1	42.5	50.0	-7.5
27.303	20.6	21.9	42.5	50.0	-7.5
27.512	20.3	21.9	42.2	50.0	-7.8

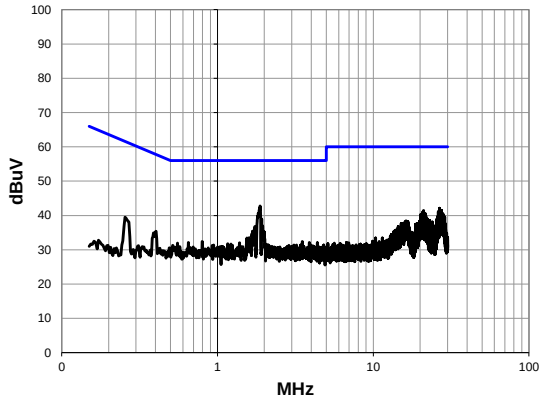
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	MASI0275	**Date:**	08/18/15		
Project:	None	**Temperature:**	23.9 °C		
Job Site:	OC06	**Humidity:**	44.9% RH		
Serial Number:	1521639422	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
EUT:	MWM1				
Configuration:	2				
Customer:	Masimo Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Operating Continuous Transmit Bluetooth: Low Channel 1 (2402 MHz)				
Deviations:	None				
Comments:	Tx Power set to 30.				

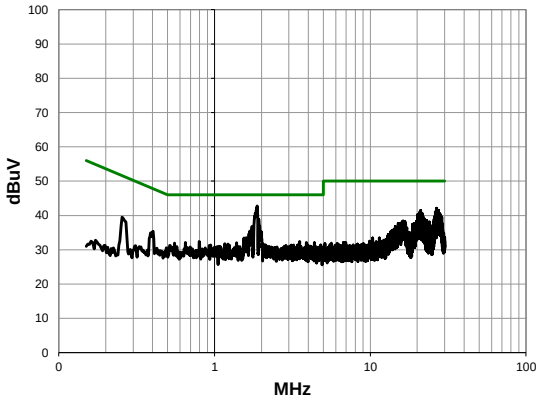
Test Specifications	**Test Method**
FCC 15.207:2015	ANSI C63.10:2013

Run #	21	**Line:**	Neutral	**Ext. Attenuation:**	0	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
1.877	22.6	20.2	42.8	56.0	-13.2
1.922	18.7	20.2	38.9	56.0	-17.1
26.639	20.4	21.7	42.1	60.0	-17.9
27.471	19.6	21.9	41.5	60.0	-18.5
27.403	19.6	21.9	41.5	60.0	-18.5
21.001	20.3	21.2	41.5	60.0	-18.5
27.239	19.5	21.9	41.4	60.0	-18.6
27.131	19.3	21.8	41.1	60.0	-18.9
26.217	19.4	21.7	41.1	60.0	-18.9
26.706	19.3	21.8	41.1	60.0	-18.9
27.168	19.2	21.8	41.0	60.0	-19.0
20.740	19.8	21.1	40.9	60.0	-19.1
27.605	18.9	21.9	40.8	60.0	-19.2
27.541	18.9	21.9	40.8	60.0	-19.2
1.743	16.6	20.2	36.8	56.0	-19.2
26.340	19.0	21.7	40.7	60.0	-19.3
26.915	18.8	21.8	40.6	60.0	-19.4
27.273	18.7	21.9	40.6	60.0	-19.4
21.505	19.3	21.2	40.5	60.0	-19.5
21.225	19.3	21.2	40.5	60.0	-19.5
21.143	19.3	21.2	40.5	60.0	-19.5

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
1.877	22.6	20.2	42.8	46.0	-3.2
1.922	18.7	20.2	38.9	46.0	-7.1
26.639	20.4	21.7	42.1	50.0	-7.9
27.471	19.6	21.9	41.5	50.0	-8.5
27.403	19.6	21.9	41.5	50.0	-8.5
21.001	20.3	21.2	41.5	50.0	-8.5
27.239	19.5	21.9	41.4	50.0	-8.6
27.131	19.3	21.8	41.1	50.0	-8.9
26.217	19.4	21.7	41.1	50.0	-8.9
26.706	19.3	21.8	41.1	50.0	-8.9
27.168	19.2	21.8	41.0	50.0	-9.0
20.740	19.8	21.1	40.9	50.0	-9.1
27.605	18.9	21.9	40.8	50.0	-9.2
27.541	18.9	21.9	40.8	50.0	-9.2
1.743	16.6	20.2	36.8	46.0	-9.2
26.340	19.0	21.7	40.7	50.0	-9.3
26.915	18.8	21.8	40.6	50.0	-9.4
27.273	18.7	21.9	40.6	50.0	-9.4
21.505	19.3	21.2	40.5	50.0	-9.5
21.225	19.3	21.2	40.5	50.0	-9.5
21.143	19.3	21.2	40.5	50.0	-9.5

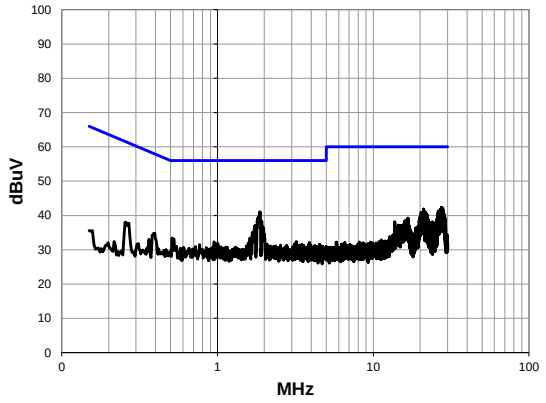
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	MASI0275	**Date:**	08/18/15		
Project:	None	**Temperature:**	23.9 °C		
Job Site:	OC06	**Humidity:**	44.9% RH		
Serial Number:	1521639422	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
EUT:	MWM1				
Configuration:	2				
Customer:	Masimo Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Operating Continuous Transmit Bluetooth: Mid Channel 39				
Deviations:	None				
Comments:	Tx Power set to 30.				

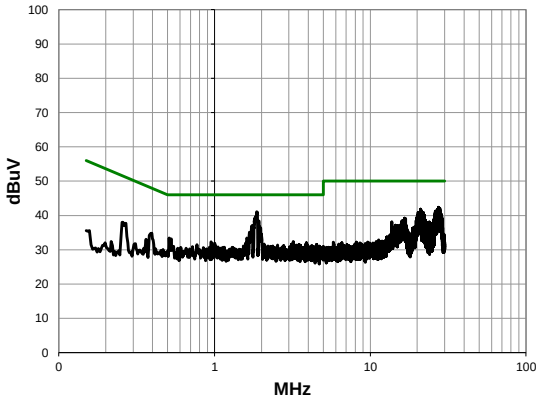
Test Specifications	**Test Method**
FCC 15.207:2015	ANSI C63.10:2013

Run #	22	**Line:**	Neutral	**Ext. Attenuation:**	0	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
1.866	20.9	20.2	41.1	56.0	-14.9
1.926	18.2	20.2	38.4	56.0	-17.6
27.392	20.5	21.9	42.4	60.0	-17.6
27.515	20.3	21.9	42.2	60.0	-17.8
27.956	20.1	22.0	42.1	60.0	-17.9
27.444	20.0	21.9	41.9	60.0	-18.1
21.087	20.7	21.2	41.9	60.0	-18.1
21.020	20.7	21.2	41.9	60.0	-18.1
27.191	20.0	21.8	41.8	60.0	-18.2
26.911	19.9	21.8	41.7	60.0	-18.3
27.127	19.8	21.8	41.6	60.0	-18.4
28.023	19.5	22.0	41.5	60.0	-18.5
21.139	20.3	21.2	41.5	60.0	-18.5
27.161	19.6	21.8	41.4	60.0	-18.6
27.676	19.5	21.9	41.4	60.0	-18.6
27.594	19.5	21.9	41.4	60.0	-18.6
26.202	19.6	21.7	41.3	60.0	-18.7
27.224	19.4	21.9	41.3	60.0	-18.7
26.862	19.4	21.8	41.2	60.0	-18.8
26.799	19.4	21.8	41.2	60.0	-18.8
1.747	16.9	20.2	37.1	56.0	-18.9

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
1.866	20.9	20.2	41.1	46.0	-4.9
1.926	18.2	20.2	38.4	46.0	-7.6
27.392	20.5	21.9	42.4	50.0	-7.6
27.515	20.3	21.9	42.2	50.0	-7.8
27.956	20.1	22.0	42.1	50.0	-7.9
27.444	20.0	21.9	41.9	50.0	-8.1
21.087	20.7	21.2	41.9	50.0	-8.1
21.020	20.7	21.2	41.9	50.0	-8.1
27.191	20.0	21.8	41.8	50.0	-8.2
26.911	19.9	21.8	41.7	50.0	-8.3
27.127	19.8	21.8	41.6	50.0	-8.4
28.023	19.5	22.0	41.5	50.0	-8.5
21.139	20.3	21.2	41.5	50.0	-8.5
27.161	19.6	21.8	41.4	50.0	-8.6
27.676	19.5	21.9	41.4	50.0	-8.6
27.594	19.5	21.9	41.4	50.0	-8.6
26.202	19.6	21.7	41.3	50.0	-8.7
27.224	19.4	21.9	41.3	50.0	-8.7
26.862	19.4	21.8	41.2	50.0	-8.8
26.799	19.4	21.8	41.2	50.0	-8.8
1.747	16.9	20.2	37.1	46.0	-8.9

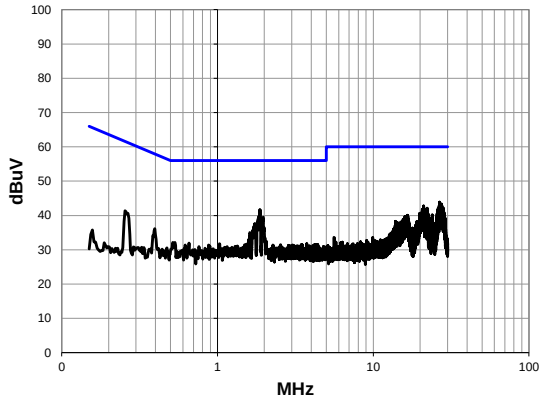
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	MASI0275	**Date:**	08/18/15		
Project:	None	**Temperature:**	23.9 °C		
Job Site:	OC06	**Humidity:**	44.9% RH		
Serial Number:	1521639422	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
EUT:	MWM1				
Configuration:	2				
Customer:	Masimo Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Operating Continuous Transmit Bluetooth: Mid Channel 39				
Deviations:	None				
Comments:	Tx Power set to 30.				

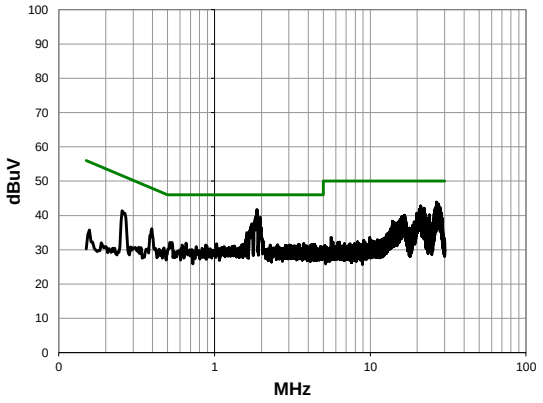
Test Specifications	**Test Method**
FCC 15.207:2015	ANSI C63.10:2013

Run #	23	**Line:**	High Line	**Ext. Attenuation:**	0	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
1.870	21.4	20.2	41.6	56.0	-14.4
26.639	22.1	21.7	43.8	60.0	-16.2
1.963	19.3	20.2	39.5	56.0	-16.5
27.400	21.4	21.9	43.3	60.0	-16.7
27.418	21.3	21.9	43.2	60.0	-16.8
1.825	18.8	20.2	39.0	56.0	-17.0
27.120	21.1	21.8	42.9	60.0	-17.1
26.508	21.2	21.7	42.9	60.0	-17.1
27.471	21.0	21.9	42.9	60.0	-17.1
27.609	20.9	21.9	42.8	60.0	-17.2
21.072	21.6	21.2	42.8	60.0	-17.2
27.280	20.9	21.9	42.8	60.0	-17.2
26.847	20.8	21.8	42.6	60.0	-17.4
27.079	20.7	21.8	42.5	60.0	-17.5
27.228	20.5	21.9	42.4	60.0	-17.6
27.519	20.4	21.9	42.3	60.0	-17.7
28.097	20.2	22.0	42.2	60.0	-17.8
26.198	20.5	21.7	42.2	60.0	-17.8
26.568	20.4	21.7	42.1	60.0	-17.9
22.199	20.9	21.2	42.1	60.0	-17.9
26.344	20.4	21.7	42.1	60.0	-17.9

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
1.870	21.4	20.2	41.6	46.0	-4.4
26.639	22.1	21.7	43.8	50.0	-6.2
1.963	19.3	20.2	39.5	46.0	-6.5
27.400	21.4	21.9	43.3	50.0	-6.7
27.418	21.3	21.9	43.2	50.0	-6.8
1.825	18.8	20.2	39.0	46.0	-7.0
27.120	21.1	21.8	42.9	50.0	-7.1
26.508	21.2	21.7	42.9	50.0	-7.1
27.471	21.0	21.9	42.9	50.0	-7.1
27.609	20.9	21.9	42.8	50.0	-7.2
21.072	21.6	21.2	42.8	50.0	-7.2
27.280	20.9	21.9	42.8	50.0	-7.2
26.847	20.8	21.8	42.6	50.0	-7.4
27.079	20.7	21.8	42.5	50.0	-7.5
27.228	20.5	21.9	42.4	50.0	-7.6
27.519	20.4	21.9	42.3	50.0	-7.7
28.097	20.2	22.0	42.2	50.0	-7.8
26.198	20.5	21.7	42.2	50.0	-7.8
26.568	20.4	21.7	42.1	50.0	-7.9
22.199	20.9	21.2	42.1	50.0	-7.9
26.344	20.4	21.7	42.1	50.0	-7.9

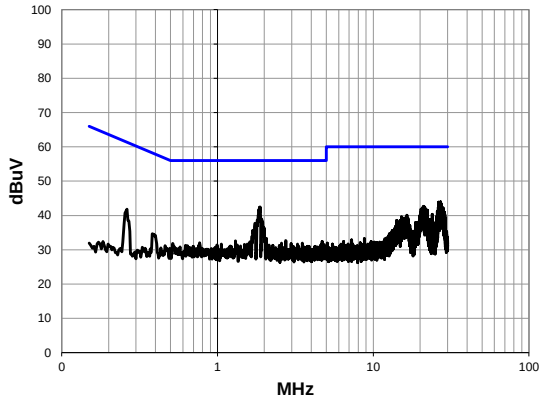
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	MASI0275	**Date:**	08/18/15		
Project:	None	**Temperature:**	23.9 °C		
Job Site:	OC06	**Humidity:**	44.9% RH		
Serial Number:	1521639422	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
EUT:	MWM1				
Configuration:	2				
Customer:	Masimo Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Operating Continuous Transmit Bluetooth: High Channel 79 (2480 MHz)				
Deviations:	None				
Comments:	Tx Power set to 30.				

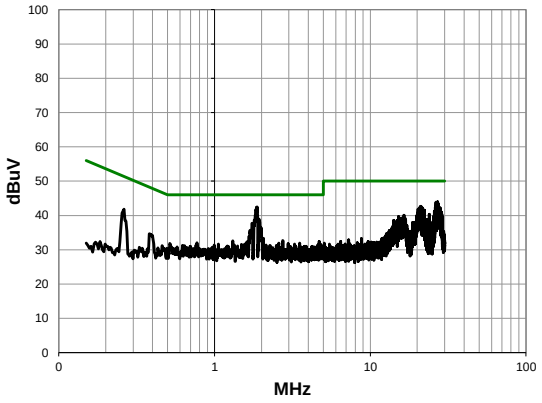
Test Specifications	**Test Method**
FCC 15.207:2015	ANSI C63.10:2013

Run #	24	**Line:**	High Line	**Ext. Attenuation:**	0	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
1.877	22.3	20.2	42.5	56.0	-13.5
26.986	22.2	21.8	44.0	60.0	-16.0
26.344	22.2	21.7	43.9	60.0	-16.1
27.332	21.5	21.9	43.4	60.0	-16.6
26.930	21.4	21.8	43.2	60.0	-16.8
27.191	21.3	21.8	43.1	60.0	-16.9
26.642	21.2	21.7	42.9	60.0	-17.1
1.926	18.7	20.2	38.9	56.0	-17.1
26.497	21.1	21.7	42.8	60.0	-17.2
21.128	21.5	21.2	42.7	60.0	-17.3
27.403	20.7	21.9	42.6	60.0	-17.4
21.076	21.4	21.2	42.6	60.0	-17.4
27.291	20.7	21.9	42.6	60.0	-17.4
26.706	20.7	21.8	42.5	60.0	-17.5
27.224	20.6	21.9	42.5	60.0	-17.5
27.150	20.6	21.8	42.4	60.0	-17.6
27.467	20.5	21.9	42.4	60.0	-17.6
26.124	20.7	21.7	42.4	60.0	-17.6
26.277	20.6	21.7	42.3	60.0	-17.7
21.210	21.1	21.2	42.3	60.0	-17.7
20.684	21.1	21.1	42.2	60.0	-17.8

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
1.877	22.3	20.2	42.5	46.0	-3.5
26.986	22.2	21.8	44.0	50.0	-6.0
26.344	22.2	21.7	43.9	50.0	-6.1
27.332	21.5	21.9	43.4	50.0	-6.6
26.930	21.4	21.8	43.2	50.0	-6.8
27.191	21.3	21.8	43.1	50.0	-6.9
26.642	21.2	21.7	42.9	50.0	-7.1
1.926	18.7	20.2	38.9	46.0	-7.1
26.497	21.1	21.7	42.8	50.0	-7.2
21.128	21.5	21.2	42.7	50.0	-7.3
27.403	20.7	21.9	42.6	50.0	-7.4
21.076	21.4	21.2	42.6	50.0	-7.4
27.291	20.7	21.9	42.6	50.0	-7.4
26.706	20.7	21.8	42.5	50.0	-7.5
27.224	20.6	21.9	42.5	50.0	-7.5
27.150	20.6	21.8	42.4	50.0	-7.6
27.467	20.5	21.9	42.4	50.0	-7.6
26.124	20.7	21.7	42.4	50.0	-7.6
26.277	20.6	21.7	42.3	50.0	-7.7
21.210	21.1	21.2	42.3	50.0	-7.7
20.684	21.1	21.1	42.2	50.0	-7.8

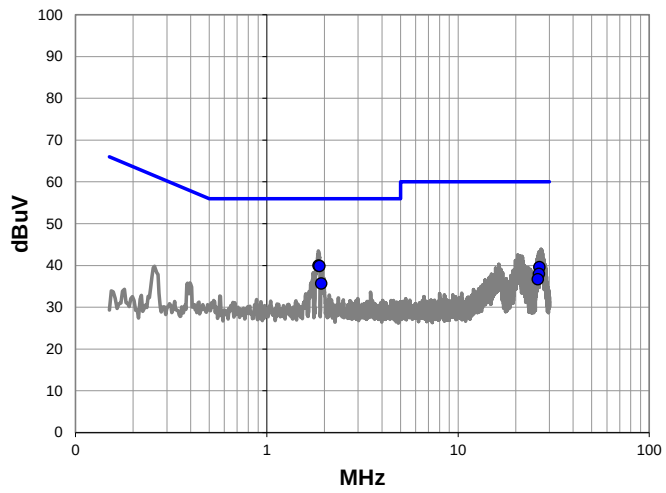
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	MASI0275	**Date:**	08/18/15		
Project:	None	**Temperature:**	23.9 °C		
Job Site:	OC06	**Humidity:**	44.9% RH		
Serial Number:	1521639422	**Barometric Pres.:**	1011 mbar	**Tested by:**	Mark Baytan
EUT:	MWM1				
Configuration:	2				
Customer:	Masimo Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Operating Continuous Transmit Bluetooth: High Channel 79 (2480 MHz)				
Deviations:	None				
Comments:	Tx Power set to 30.				

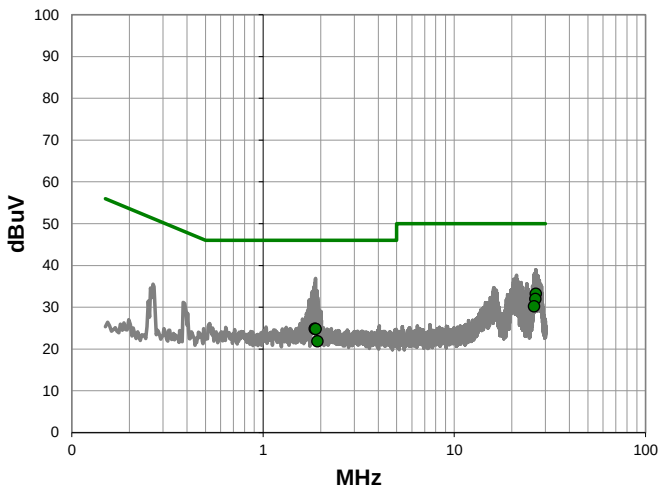
Test Specifications	**Test Method**
FCC 15.207:2015	ANSI C63.10:2013

Run #	25	**Line:**	Neutral	**Ext. Attenuation:**	0	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
1.860	19.8	20.2	40.0	56.0	-16.0
1.884	19.7	20.2	39.9	56.0	-16.1
1.924	15.5	20.2	35.7	56.0	-20.3
26.638	17.9	21.7	39.6	60.0	-20.4
26.496	16.3	21.7	38.0	60.0	-22.0
26.086	15.1	21.6	36.7	60.0	-23.3

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
26.638	11.5	21.7	33.2	50.0	-16.8
26.496	10.3	21.7	32.0	50.0	-18.0
26.086	8.6	21.6	30.2	50.0	-19.8
1.860	4.7	20.2	24.9	46.0	-21.1
1.884	4.6	20.2	24.8	46.0	-21.2
1.924	1.7	20.2	21.9	46.0	-24.1

SPURIOUS RADIATED EMISSIONS

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

MODES OF OPERATION

Continuous Transmit Bluetooth: Low Channel 0 (2402 MHz), Mid Channel 39 (2440 MHz), High Channel 78 (2480 MHz)

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

MASI0274 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26000 MHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Filter - High Pass	Micro-Tronics	HPM50111	HGC	3/5/2015	12 mo
Attenuator	Weinschel Corp	4H-20	AWB	3/5/2015	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	LFC	11/14/2014	12 mo
Cable	D-Coax	None	OC4	12/16/2014	12 mo
Amplifier - Pre-Amplifier	Miteq	JSDWK42-18004000-60-5P-HS	PAN	12/16/2014	12 mo
Antenna - Double Ridge	A.H. Systems, Inc.	SAS-574	AXV	4/9/2014	24 mo
Cable	ESM Cable Corp.	8-18GHz cables	OCY	5/28/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVP	9/15/2014	12 mo
Antenna - Standard Gain	EMCO	3160-08	AHK	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVL	9/15/2014	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AHX	NCR	0 mo
Cable	ESM Cable Corp.	1-8GHz cables	OCX	5/28/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVJ	9/15/2014	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIR	6/4/2014	24 mo
Cable	ESM Cable Corp.	30-1GHz cables	OCW	6/23/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1402	AOZ	6/23/2015	12 mo
Antenna - Biconilog	EMCO	3142	AXA	11/25/2013	24 mo
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAY	10/27/2014	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

TEST DESCRIPTION

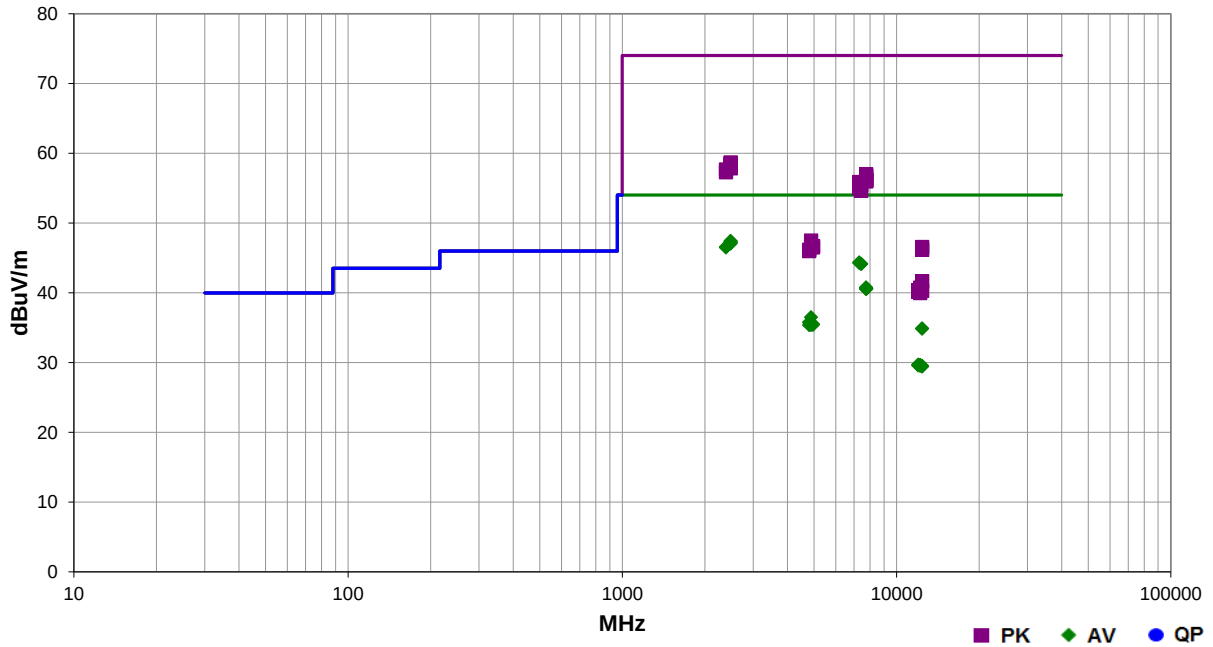
The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization. A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

SPURIOUS RADIATED EMISSIONS

Work Order:	MASI0274	**Date:**	08/10/15		
Project:	None	**Temperature:**	21.2 °C		
Job Site:	OC07	**Humidity:**	46.4% RH		
Serial Number:	521639422	**Barometric Pres.:**	1014.5 mbar	**Tested by:**	Mike Tran
EUT:	MWM1				
Configuration:	2				
Customer:	Masimo Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Continuous Transmit Bluetooth: Low Channel 0 (2402 MHz), Mid Channel 39 (2440 MHz), High Channel 78 (2480 MHz)				
Deviations:	None				
Comments:	TX Power = 20				

Test Specifications	**Test Method**
FCC 15.247:2015	ANSI C63.10:2013

Run #	55	**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
2483.598	31.7	-4.3	4.0	116.0	3.0	20.0	Vert	AV	0.0	47.4	54.0	-6.6	EUT Vert, High Ch
2483.772	31.6	-4.3	1.2	201.0	3.0	20.0	Horz	AV	0.0	47.3	54.0	-6.7	EUT Vert, High Ch
2484.392	31.5	-4.3	3.4	178.0	3.0	20.0	Horz	AV	0.0	47.2	54.0	-6.8	EUT Horz, High Ch
2483.628	31.5	-4.3	1.2	216.0	3.0	20.0	Vert	AV	0.0	47.2	54.0	-6.8	EUT Horz, High Ch
2484.305	31.4	-4.3	2.9	323.0	3.0	20.0	Horz	AV	0.0	47.1	54.0	-6.9	EUT on Side, High Ch
2483.693	31.3	-4.3	3.4	151.0	3.0	20.0	Vert	AV	0.0	47.0	54.0	-7.0	EUT on Side, High Ch
2389.275	31.5	-4.9	1.2	217.0	3.0	20.0	Vert	AV	0.0	46.6	54.0	-7.4	EUT Vert, Low Ch
2389.422	31.4	-4.9	1.2	79.0	3.0	20.0	Horz	AV	0.0	46.5	54.0	-7.5	EUT Vert, Low Ch
7318.550	31.4	13.0	3.0	108.0	3.0	0.0	Vert	AV	0.0	44.4	54.0	-9.6	EUT Horz, Mid Ch
7318.792	31.3	13.0	1.2	305.0	3.0	0.0	Horz	AV	0.0	44.3	54.0	-9.7	EUT Horz, Mid Ch
7439.533	30.9	13.2	3.8	151.0	3.0	0.0	Horz	AV	0.0	44.1	54.0	-9.9	EUT Horz, High Ch
7441.117	30.9	13.2	2.2	341.0	3.0	0.0	Vert	AV	0.0	44.1	54.0	-9.9	EUT Horz, High Ch
7746.975	27.6	13.2	1.2	345.0	3.0	0.0	Horz	AV	0.0	40.8	54.0	-13.2	EUT Horz, High Ch
7746.042	27.5	13.2	1.2	142.0	3.0	0.0	Horz	AV	0.0	40.7	54.0	-13.3	EUT on Side, High Ch
7760.983	27.5	13.1	1.2	173.0	3.0	0.0	Vert	AV	0.0	40.6	54.0	-13.4	EUT Horz, High Ch
7747.442	27.4	13.2	1.2	172.0	3.0	0.0	Horz	AV	0.0	40.6	54.0	-13.4	EUT Vert, High Ch
7760.567	27.4	13.1	3.7	41.0	3.0	0.0	Vert	AV	0.0	40.5	54.0	-13.5	EUT on Side, High Ch
7760.850	27.4	13.1	1.2	64.0	3.0	0.0	Vert	AV	0.0	40.5	54.0	-13.5	EUT Vert, High Ch
2483.840	42.9	-4.3	2.9	323.0	3.0	20.0	Horz	PK	0.0	58.6	74.0	-15.4	EUT on Side, High Ch
2483.575	42.9	-4.3	1.2	201.0	3.0	20.0	Horz	PK	0.0	58.6	74.0	-15.4	EUT Vert, High Ch

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
2484.433	42.7	-4.3	1.2	216.0	3.0	20.0	Vert	PK	0.0	58.4	74.0	-15.6	EUT Horz, High Ch
2483.537	42.7	-4.3	3.4	151.0	3.0	20.0	Vert	PK	0.0	58.4	74.0	-15.6	EUT on Side, High Ch
2483.828	42.6	-4.3	4.0	116.0	3.0	20.0	Vert	PK	0.0	58.3	74.0	-15.7	EUT Vert, High Ch
2483.942	42.1	-4.3	3.4	178.0	3.0	20.0	Horz	PK	0.0	57.8	74.0	-16.2	EUT Horz, High Ch
2389.377	42.6	-4.9	1.2	79.0	3.0	20.0	Horz	PK	0.0	57.7	74.0	-16.3	EUT Vert, Low Ch
2389.067	42.2	-4.9	1.2	217.0	3.0	20.0	Vert	PK	0.0	57.3	74.0	-16.7	EUT Vert, Low Ch
7747.817	43.8	13.2	1.2	345.0	3.0	0.0	Horz	PK	0.0	57.0	74.0	-17.0	EUT Horz, High Ch
7760.525	43.6	13.1	3.7	41.0	3.0	0.0	Vert	PK	0.0	56.7	74.0	-17.3	EUT on Side, High Ch
4879.925	31.4	5.1	1.7	159.0	3.0	0.0	Horz	AV	0.0	36.5	54.0	-17.5	EUT Horz, Mid Ch
7749.075	43.0	13.2	1.2	172.0	3.0	0.0	Horz	PK	0.0	56.2	74.0	-17.8	EUT Vert, High Ch
7762.167	43.0	13.1	1.2	173.0	3.0	0.0	Vert	PK	0.0	56.1	74.0	-17.9	EUT Horz, High Ch
7762.092	42.9	13.1	1.2	64.0	3.0	0.0	Vert	PK	0.0	56.0	74.0	-18.0	EUT Vert, High Ch
7747.417	42.8	13.2	1.2	354.0	3.0	0.0	Horz	PK	0.0	56.0	74.0	-18.0	EUT on Side, High Ch
7320.483	42.9	13.0	1.2	305.0	3.0	0.0	Horz	PK	0.0	55.9	74.0	-18.1	EUT Horz, Mid Ch
4804.017	31.0	4.8	1.2	124.0	3.0	0.0	Horz	AV	0.0	35.8	54.0	-18.2	EUT Horz, Low Ch
4961.950	30.0	5.5	1.6	154.0	3.0	0.0	Vert	AV	0.0	35.5	54.0	-18.5	EUT Horz, High Ch
7440.475	42.2	13.2	3.8	151.0	3.0	0.0	Horz	PK	0.0	55.4	74.0	-18.6	EUT Horz, High Ch
4959.742	29.9	5.5	1.2	311.0	3.0	0.0	Horz	AV	0.0	35.4	54.0	-18.6	EUT Horz, High Ch
4878.750	30.3	5.1	2.3	185.0	3.0	0.0	Vert	AV	0.0	35.4	54.0	-18.6	EUT Horz, Mid Ch
4803.600	30.6	4.8	1.2	196.0	3.0	0.0	Vert	AV	0.0	35.4	54.0	-18.6	EUT Horz, Low Ch
7320.267	42.0	13.0	3.0	108.0	3.0	0.0	Vert	PK	0.0	55.0	74.0	-19.0	EUT Horz, Mid Ch
12400.100	30.2	4.7	1.2	173.0	3.0	0.0	Vert	AV	0.0	34.9	54.0	-19.1	EUT Horz, High Ch
12400.150	30.2	4.7	2.4	236.0	3.0	0.0	Horz	AV	0.0	34.9	54.0	-19.1	EUT Horz, High Ch
7437.625	41.4	13.2	2.2	341.0	3.0	0.0	Vert	PK	0.0	54.6	74.0	-19.4	EUT Horz, High Ch
12009.350	36.8	-7.1	1.2	360.0	3.0	0.0	Horz	AV	0.0	29.7	54.0	-24.3	EUT Horz, Low Ch
12200.930	35.7	-6.0	1.2	174.0	3.0	0.0	Vert	AV	0.0	29.7	54.0	-24.3	EUT Horz, Mid Ch
12007.760	36.7	-7.1	1.6	294.0	3.0	0.0	Vert	AV	0.0	29.6	54.0	-24.4	EUT Horz, Low Ch
12197.810	35.6	-6.1	2.5	36.0	3.0	0.0	Horz	AV	0.0	29.5	54.0	-24.5	EUT Horz, Mid Ch
12397.520	34.5	-5.0	1.2	280.0	3.0	0.0	Horz	AV	0.0	29.5	54.0	-24.5	EUT Horz, High Ch
12397.530	34.4	-5.0	2.7	273.0	3.0	0.0	Vert	AV	0.0	29.4	54.0	-24.6	EUT Horz, High Ch
4880.042	42.4	5.1	1.7	159.0	3.0	0.0	Horz	PK	0.0	47.5	74.0	-26.5	EUT Horz, Mid Ch
4960.967	41.2	5.5	1.2	311.0	3.0	0.0	Horz	PK	0.0	46.7	74.0	-27.3	EUT Horz, High Ch
4878.317	41.6	5.1	2.3	185.0	3.0	0.0	Vert	PK	0.0	46.7	74.0	-27.3	EUT Horz, Mid Ch
12400.990	41.9	4.7	2.4	236.0	3.0	0.0	Horz	PK	0.0	46.6	74.0	-27.4	EUT Horz, High Ch
4958.092	41.0	5.5	1.6	154.0	3.0	0.0	Vert	PK	0.0	46.5	74.0	-27.5	EUT Horz, High Ch
4804.533	41.4	4.8	1.2	124.0	3.0	0.0	Horz	PK	0.0	46.2	74.0	-27.8	EUT Horz, Low Ch
12400.060	41.5	4.7	1.2	173.0	3.0	0.0	Vert	PK	0.0	46.2	74.0	-27.8	EUT Horz, High Ch
4803.517	41.2	4.8	1.2	196.0	3.0	0.0	Vert	PK	0.0	46.0	74.0	-28.0	EUT Horz, Low Ch
12398.260	46.6	-5.0	1.2	280.0	3.0	0.0	Horz	PK	0.0	41.6	74.0	-32.4	EUT Horz, High Ch
12200.430	46.8	-6.0	1.2	174.0	3.0	0.0	Vert	PK	0.0	40.8	74.0	-33.2	EUT Horz, Mid Ch
12007.980	47.5	-7.1	1.6	294.0	3.0	0.0	Vert	PK	0.0	40.4	74.0	-33.6	EUT Horz, Low Ch
12397.880	45.3	-5.0	2.7	273.0	3.0	0.0	Vert	PK	0.0	40.3	74.0	-33.7	EUT Horz, High Ch
12009.170	47.3	-7.1	1.2	360.0	3.0	0.0	Horz	PK	0.0	40.2	74.0	-33.8	EUT Horz, Low Ch
12199.930	46.0	-6.1	2.5	36.0	3.0	0.0	Horz	PK	0.0	39.9	74.0	-34.1	EUT Horz, Mid Ch

BAND EDGE COMPLIANCE

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	0
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	36
Attenuator	Fairview Microwave	SA18H-20	TKR	4/8/2015	12
Block - DC	Aeroflex	INMET 8535	AMO	4/8/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	8/28/2014	12

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to low and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet in a no hop mode. The channels closest to the band edges were selected.

The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE

NORTHWEST EMC

XMit 2015.01.14

EUT:	MWM1			**Work Order:**	MASI0275
Serial Number:	1521639422			**Date:**	08/12/15
Customer:	Masimo Corporation			**Temperature:**	23°C
Attendees:	Mike Clark			**Humidity:**	48%
Project:	None			**Barometric Pres.:**	1015
Tested by:	Mike Tran / Johnny Candelas	**Power:**	110VAC/60Hz	**Job Site:**	OC13

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

TX Power = 30. DC Block/20dB Attenuator + coax cable + client provided patch cable = 23.5dB total offset

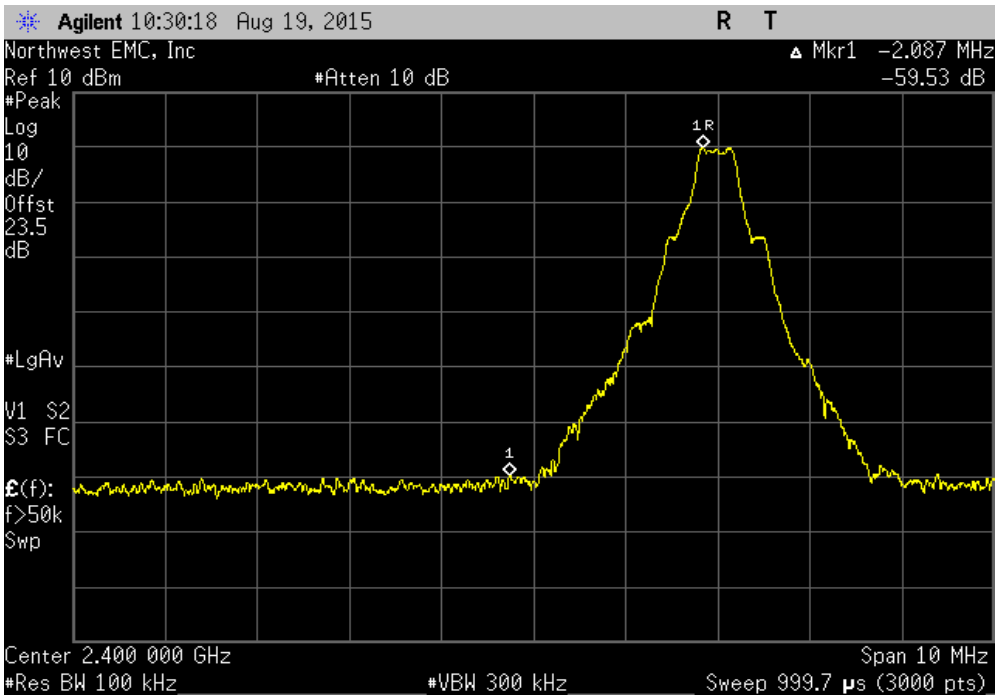
DEVIATIONS FROM TEST STANDARD

None

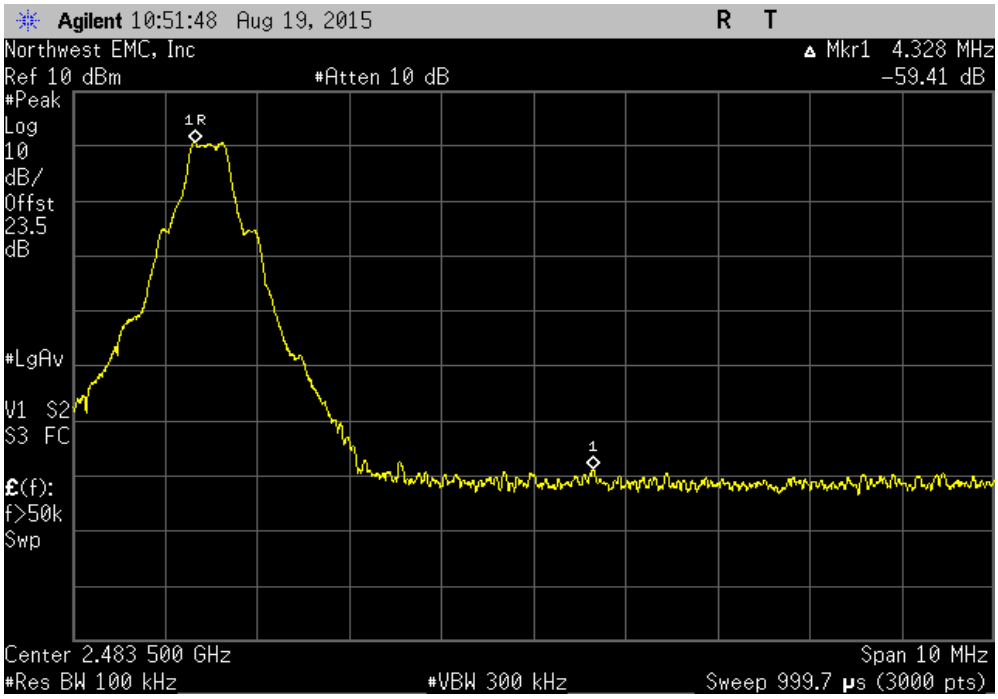
Configuration #	1	Signature

	Value (dBc)	Limit ≤ (dBc)	Result
DH5, GFSK			
Low Channel 0, 2402 MHz	-59.53	-20	Pass
High Channel 78, 2480 MHz	-59.41	-20	Pass

DH5, GFSK, Low Channel 0, 2402 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-59.53	-20	Pass



DH5, GFSK, High Channel 78, 2480 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-59.41	-20	Pass



CARRIER FREQUENCY SEPARATION

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	0
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	36
Attenuator	Fairview Microwave	SA18H-20	TKR	4/8/2015	12
Block - DC	Aeroflex	INMET 8535	AMO	4/8/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	8/28/2014	12

TEST DESCRIPTION

The carrier frequency separation was measured between each of 5 hopping channels in the middle of the authorized band. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The hopping function of the EUT was enabled.

CARRIER FREQUENCY SEPARATION

NORTHWEST EMC

XMit 2015.01.14

EUT:	MWM1			**Work Order:**	MASI0275
Serial Number:	1521639422			**Date:**	08/12/15
Customer:	Masimo Corporation			**Temperature:**	23°C
Attendees:	Mike Clark			**Humidity:**	48%
Project:	None			**Barometric Pres.:**	1015
Tested by:	Mike Tran / Johnny Candelas	**Power:**	110VAC/60Hz	**Job Site:**	OC13

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

TX Power = 30. DC Block/20dB Attenuator + coax cable + client provided patch cable = 23.5dB total offset

DEVIATIONS FROM TEST STANDARD

None

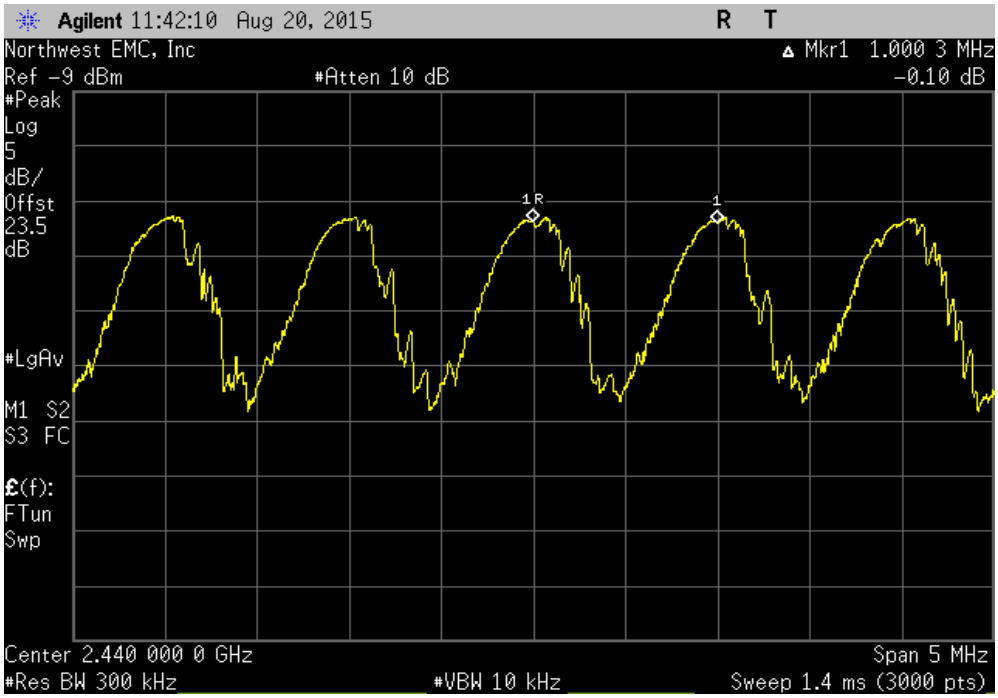
Configuration #	1	Signature

	Value	Limit (≥)	Results
DH5, GFSK			
Mid Channel 39, 2440 MHz	1.0 MHz	1 MHz	Pass

CARRIER FREQUENCY SEPARATION

XMit 2015.01.14

DH5, GFSK, Mid Channel 39, 2440 MHz						
				Value	Limit (≥)	Results
				1.0 MHz	1 MHz	Pass



NUMBER OF HOPPING FREQUENCIES

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	0
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	36
Attenuator	Fairview Microwave	SA18H-20	TKR	4/8/2015	12
Block - DC	Aeroflex	INMET 8535	AMO	4/8/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	8/28/2014	12

TEST DESCRIPTION

The number of hopping frequencies was measured across the authorized band. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The hopping function of the EUT was enabled.

NUMBER OF HOPPING FREQUENCIES

NORTHWEST EMC

XMit 2015.01.14

EUT:	MWM1			**Work Order:**	MASI0275
Serial Number:	1521639422			**Date:**	08/12/15
Customer:	Masimo Corporation			**Temperature:**	23°C
Attendees:	Mike Clark			**Humidity:**	48%
Project:	None			**Barometric Pres.:**	1015
Tested by:	Mike Tran / Johnny Candelas	**Power:**	110VAC/60Hz	**Job Site:**	OC13

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

TX Power = 30. DC Block/20dB Attenuator + coax cable + client provided patch cable = 23.5dB total offset

DEVIATIONS FROM TEST STANDARD

None

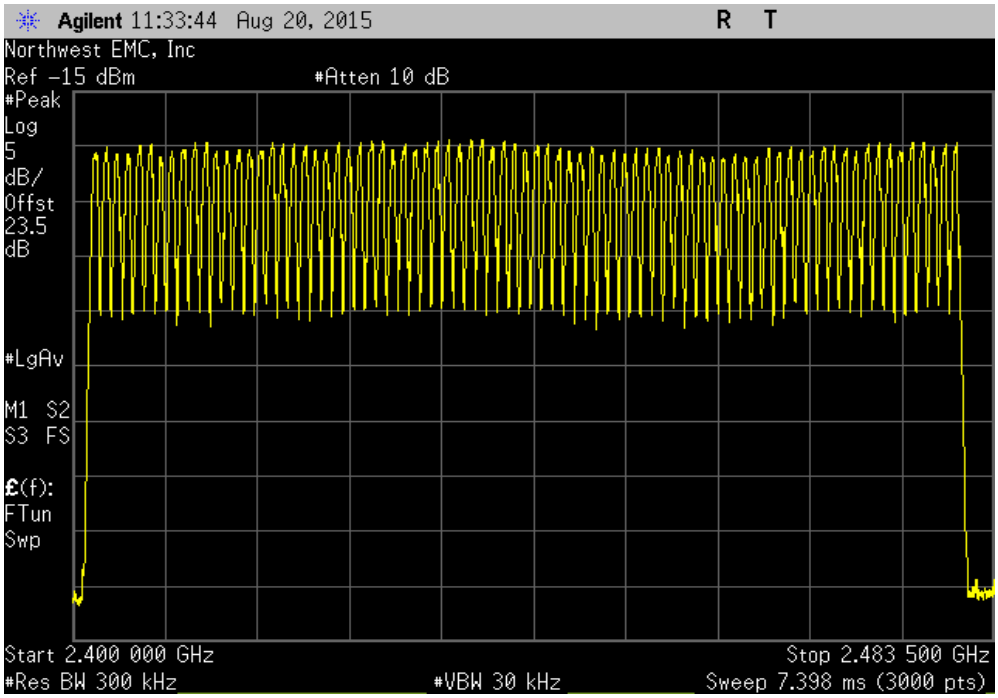
Configuration #	1	Signature

	Number of Channels	Limit	Results
DH5, GFSK			
Mid Channel 39, 2440 MHz	79	15	Pass

NUMBER OF HOPPING FREQUENCIES

XMit 2015.01.14

DH5, GFSK, Mid Channel 39, 2440 MHz						
				Number of Channels	Limit	Results
				79	15	Pass



DWELL TIME

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	0
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	36
Attenuator	Fairview Microwave	SA18H-20	TKR	4/8/2015	12
Block - DC	Aeroflex	INMET 8535	AMO	4/8/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	8/28/2014	12

TEST DESCRIPTION

The average dwell time per hopping channel was measured at one hopping channel in the middle of the authorized band. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The hopping function of the EUT was enabled.

The dwell time limit is based on the Number of Hopping Channels * 400 mS. For Bluetooth this would be 79 Channels * 400mS = 31.6 Sec.

On Time During 31.6 Sec = Pulse Width * Average Number of Pulses * Scale Factor

- Average Number of Pulses is based on 4 samples.

- Scale Factor = 31.6 Sec / Screen Capture Sweep Time = 31.6 Sec / 6.32 Sec = 5

DWELL TIME

NORTHWEST EMC

XMit 2015.01.14

EUT:	MWM1			**Work Order:**	MASI0275
Serial Number:	1521639422			**Date:**	08/12/15
Customer:	Masimo Corporation			**Temperature:**	23°C
Attendees:	Mike Clark			**Humidity:**	48%
Project:	None			**Barometric Pres.:**	1015
Tested by:	Mike Tran / Johnny Candelas	**Power:**	110VAC/60Hz	**Job Site:**	OC13

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

TX Power = 30. DC Block/20dB Attenuator + coax cable + client provided patch cable = 23.5dB total offset

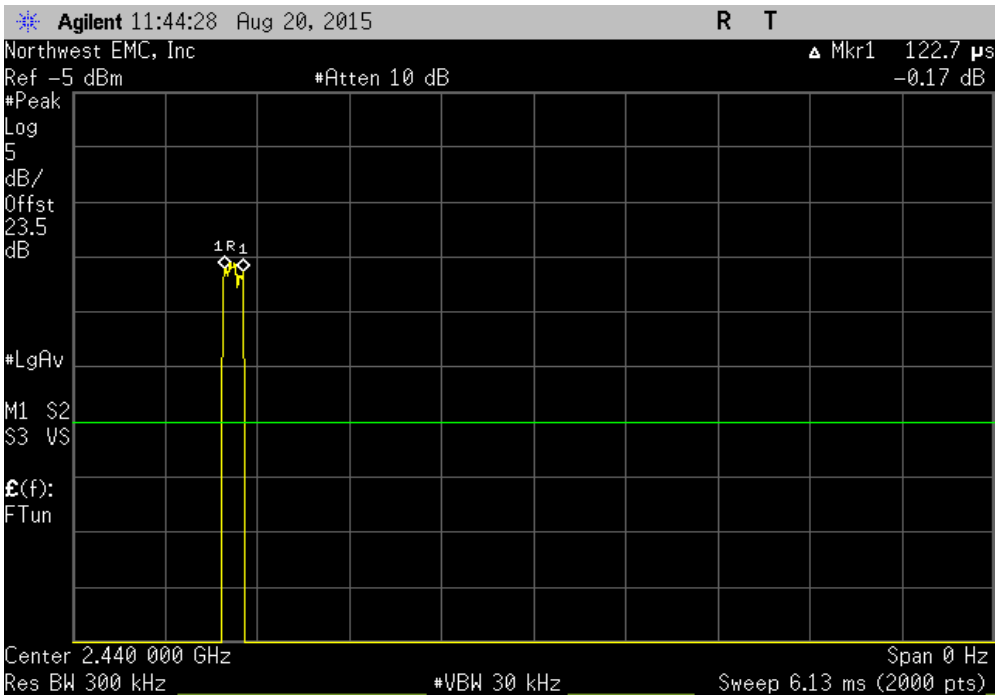
DEVIATIONS FROM TEST STANDARD

None

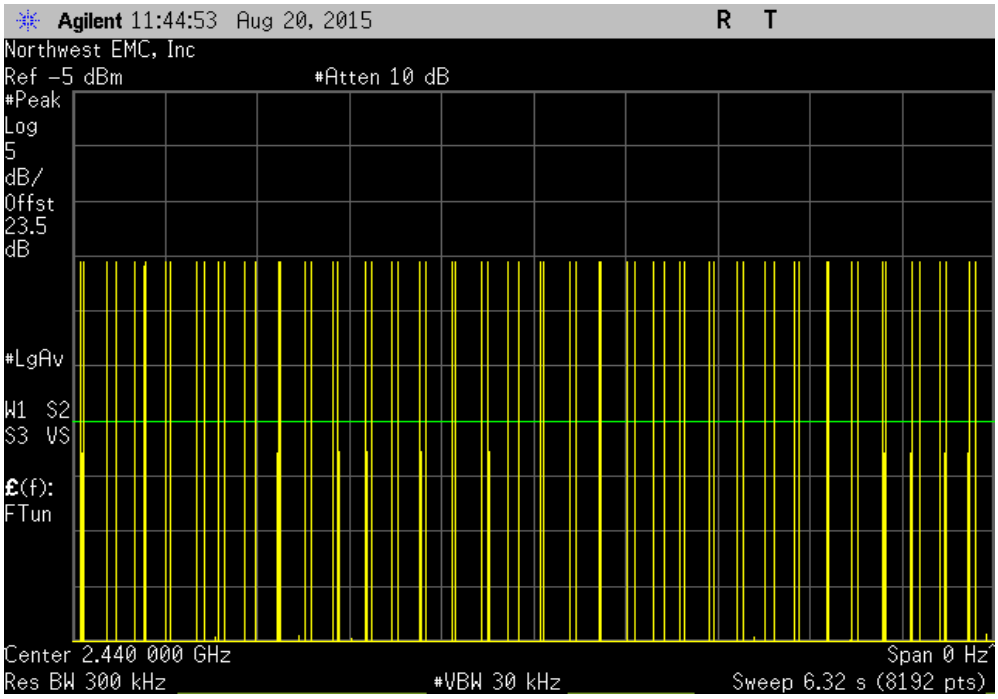
Configuration #	1	Signature

	Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
DH5, GFSK							
Mid Channel 39, 2440 MHz	0.123	N/A	N/A	N/A	N/A	N/A	N/A
Mid Channel 39, 2440 MHz	N/A	64	N/A	N/A	N/A	N/A	N/A
Mid Channel 39, 2440 MHz	N/A	63	N/A	N/A	N/A	N/A	N/A
Mid Channel 39, 2440 MHz	N/A	63	N/A	N/A	N/A	N/A	N/A
Mid Channel 39, 2440 MHz	N/A	64	N/A	N/A	N/A	N/A	N/A
Mid Channel 39, 2440 MHz	0.123	N/A	63.5	5	39.05	400	Pass

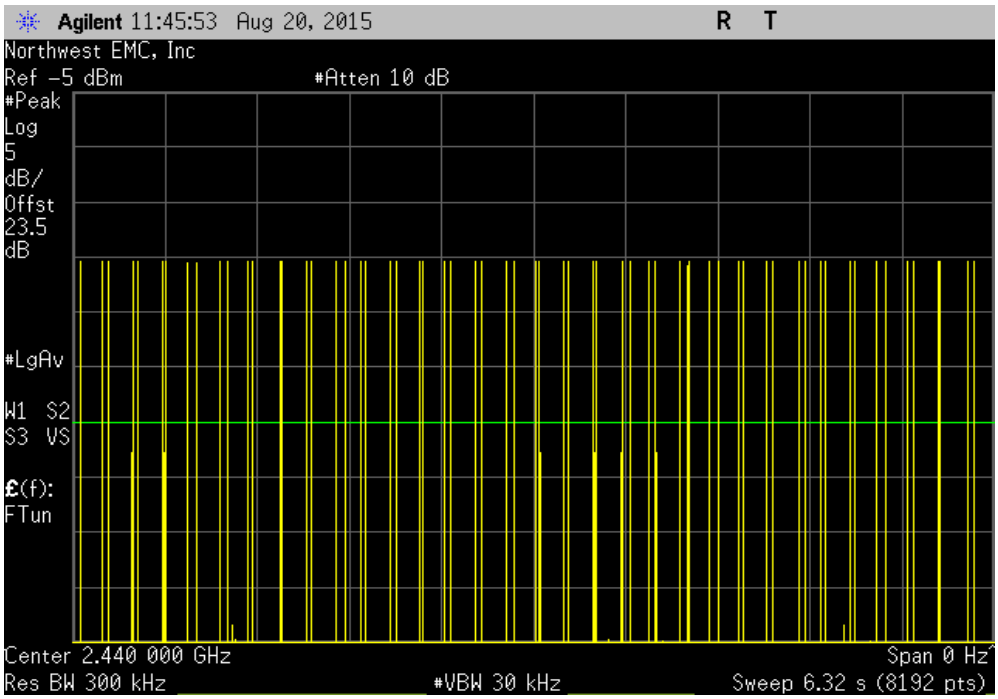
DH5, GFSK, Mid Channel 39, 2440 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
0.123	N/A	N/A	N/A	N/A	N/A	N/A



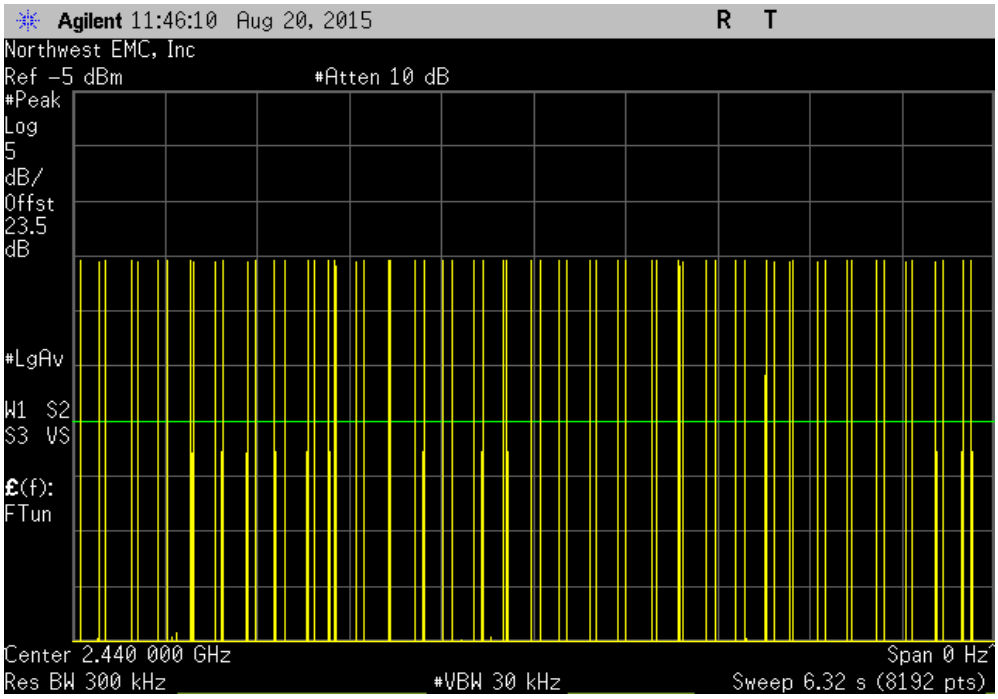
DH5, GFSK, Mid Channel 39, 2440 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	64	N/A	N/A	N/A	N/A	N/A



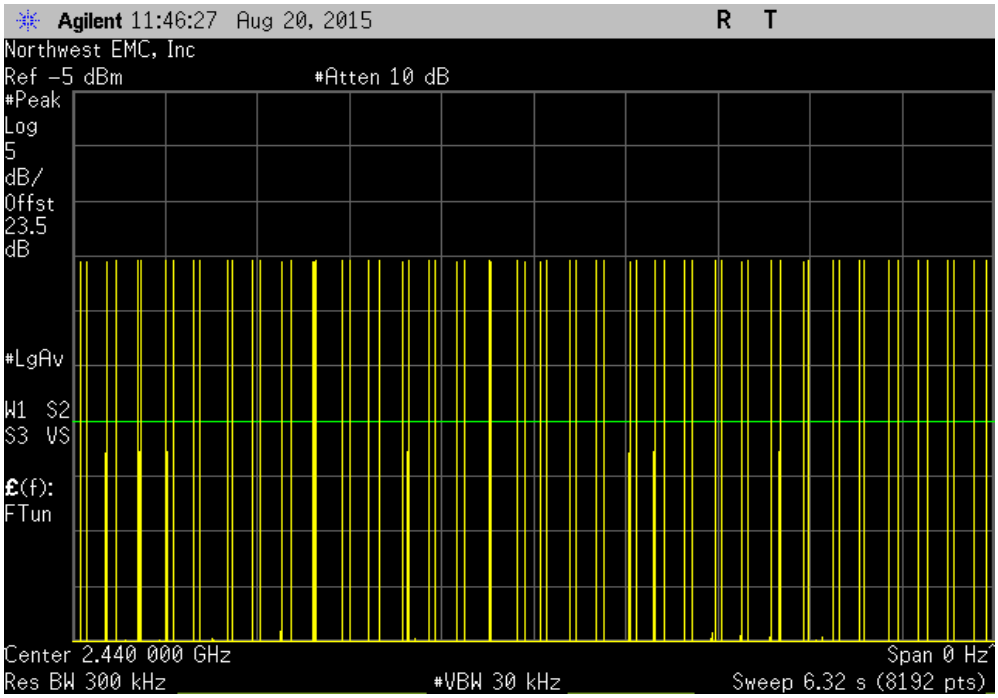
DH5, GFSK, Mid Channel 39, 2440 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	63	N/A	N/A	N/A	N/A	N/A



DH5, GFSK, Mid Channel 39, 2440 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	63	N/A	N/A	N/A	N/A	N/A



DH5, GFSK, Mid Channel 39, 2440 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
N/A	64	N/A	N/A	N/A	N/A	N/A



DH5, GFSK, Mid Channel 39, 2440 MHz						
Pulse Width (ms)	Number of Pulses	Average No. of Pulses	Scale Factor	On Time (ms) During 31.6 s	Limit (ms)	Results
0.123	N/A	63.5	5	39.05	400	Pass

Calculation Only

No Screen Capture Required

BAND EDGE COMPLIANCE -HOPPING MODE

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	0
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	36
Attenuator	Fairview Microwave	SA18H-20	TKR	4/8/2015	12
Block - DC	Aeroflex	INMET 8535	AMO	4/8/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	8/28/2014	12

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to its normal pseudo-random hopping sequence. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE -HOPPING MODE

NORTHWEST EMC

XMit 2015.01.14

EUT:	MWM1			**Work Order:**	MASI0275
Serial Number:	1521639422			**Date:**	08/12/15
Customer:	Masimo Corporation			**Temperature:**	23°C
Attendees:	Mike Clark			**Humidity:**	48%
Project:	None			**Barometric Pres.:**	1015
Tested by:	Mike Tran / Johnny Candelas	**Power:**	110VAC/60Hz	**Job Site:**	OC13

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

TX Power = 30. DC Block/20dB Attenuator + coax cable + client provided patch cable = 23.5dB total offset

DEVIATIONS FROM TEST STANDARD

None

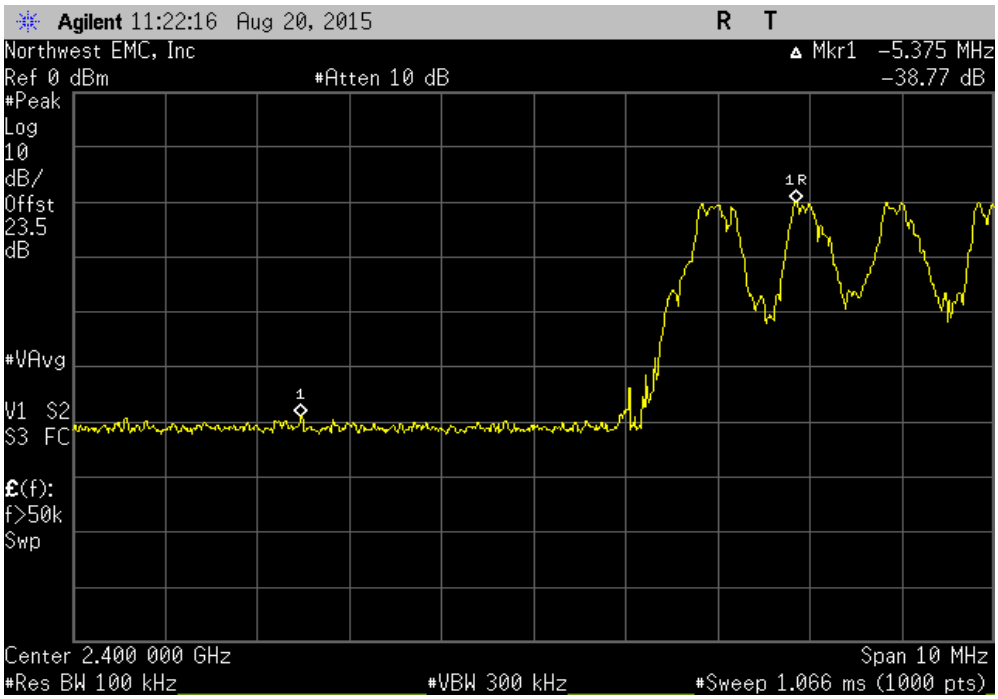
Configuration #	1	Signature

	Value (dBc)	Limit ≤ (dBc)	Result
DH5, GFSK			
Low Channel 0, 2402 MHz	-38.77	-20	Pass
High Channel 78, 2480 MHz	-38.71	-20	Pass

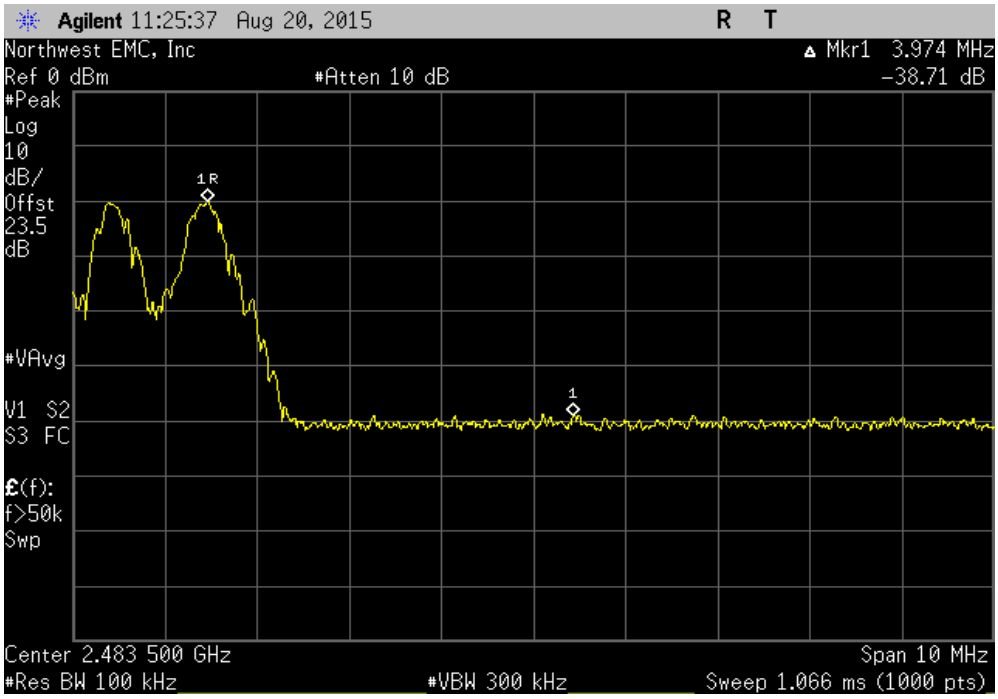
BAND EDGE COMPLIANCE -HOPPING MODE

XMit 2015.01.14

DH5, GFSK, Low Channel 0, 2402 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-38.77	-20	Pass



DH5, GFSK, High Channel 78, 2480 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-38.71	-20	Pass



DUTY CYCLE

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	0
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	36
Attenuator	Fairview Microwave	SA18H-20	TKR	4/8/2015	12
Block - DC	Aeroflex	INMET 8535	AMO	4/8/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	8/28/2014	12

TEST DESCRIPTION

The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used

The test software provided for operation in a fixed, single channel mode allows the EUT to operate continuously at 100% Duty Cycle.

DUTY CYCLE

NORTHWEST EMC

XMit 2015.01.14

EUT:	MWM1			**Work Order:**	MASI0275
Serial Number:	1521639422			**Date:**	08/12/15
Customer:	Masimo Corporation			**Temperature:**	23°C
Attendees:	Mike Clark			**Humidity:**	48%
Project:	None			**Barometric Pres.:**	1015
Tested by:	Mike Tran / Johnny Candelas	**Power:**	110VAC/60Hz	**Job Site:**	OC13

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

TX Power = 30. DC Block/20dB Attenuator + coax cable + client provided patch cable = 23.5dB total offset

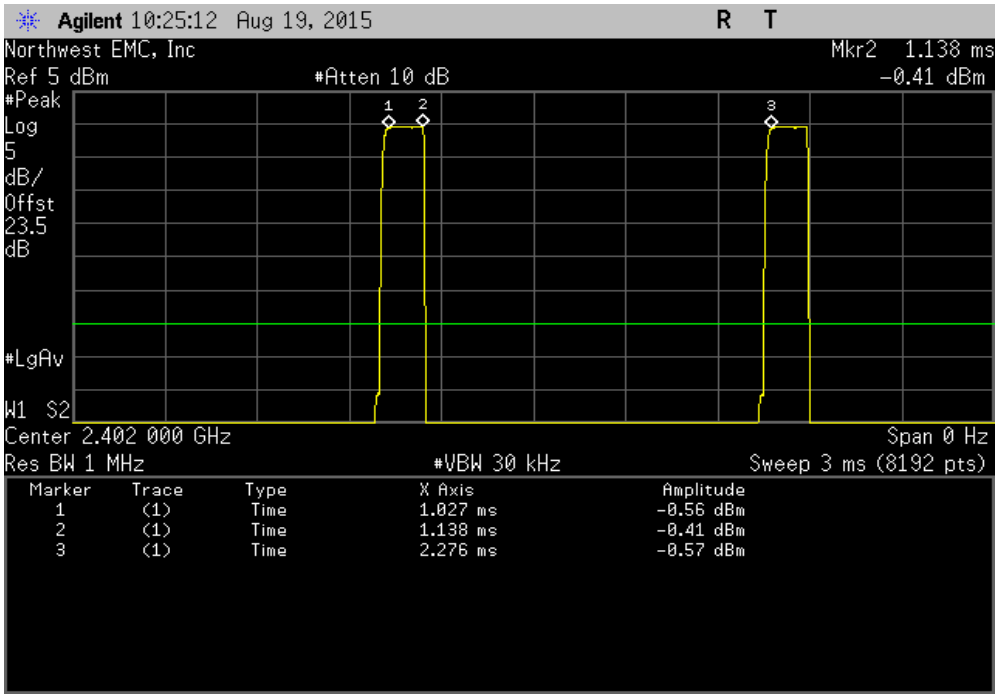
DEVIATIONS FROM TEST STANDARD

None

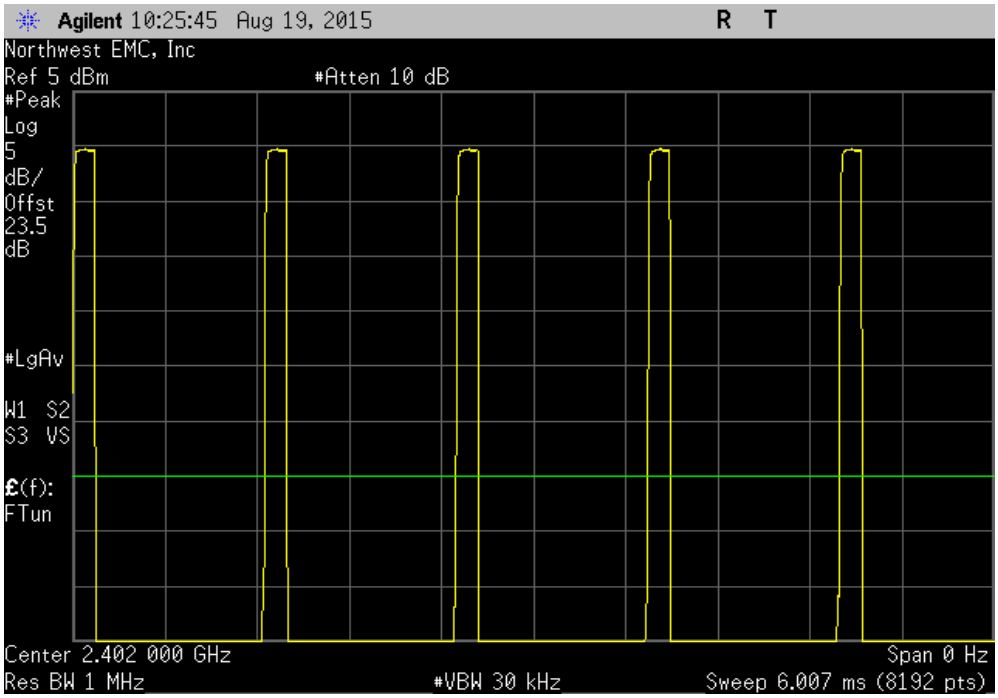
Configuration #	1	Signature

	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
DH5, GFSK						
Low Channel 0, 2402 MHz	111.77 us	1.249 ms	1	8.9	N/A	N/A
Low Channel 0, 2402 MHz	N/A	N/A	5	N/A	N/A	N/A
Mid Channel 39, 2440 MHz	118.695 us	1.25 ms	1	9.5	N/A	N/A
Mid Channel 39, 2440 MHz	N/A	N/A	5	N/A	N/A	N/A
High Channel 78, 2480 MHz	111.337 us	1.25 ms	1	8.9	N/A	N/A
High Channel 78, 2480 MHz	N/A	N/A	5	N/A	N/A	N/A

DH5, GFSK, Low Channel 0, 2402 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	111.77 us	1.249 ms	1	8.9	N/A	N/A



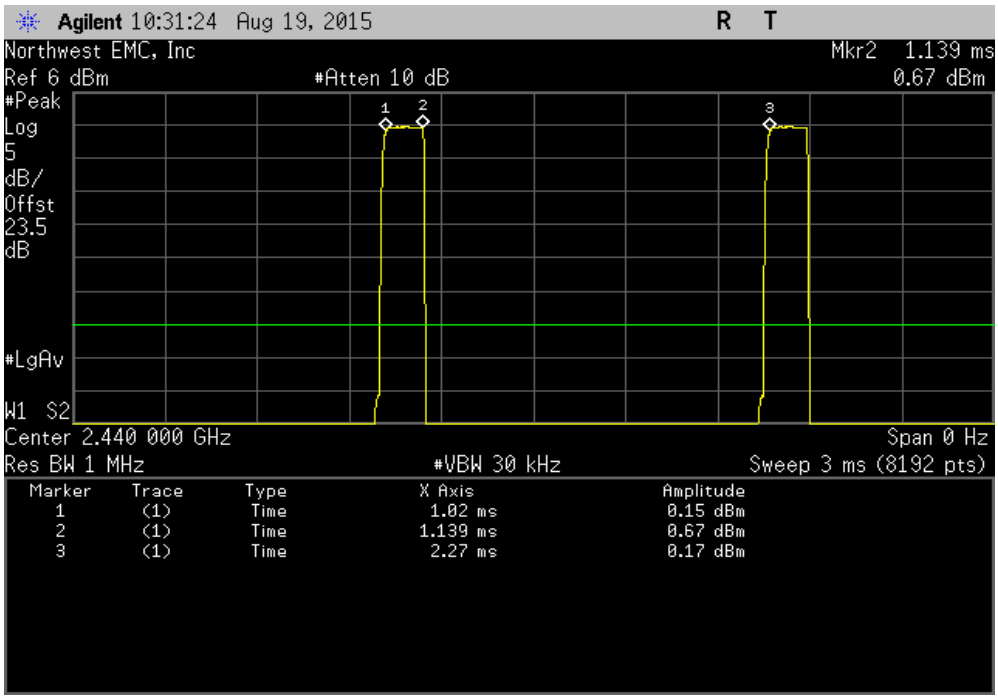
DH5, GFSK, Low Channel 0, 2402 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



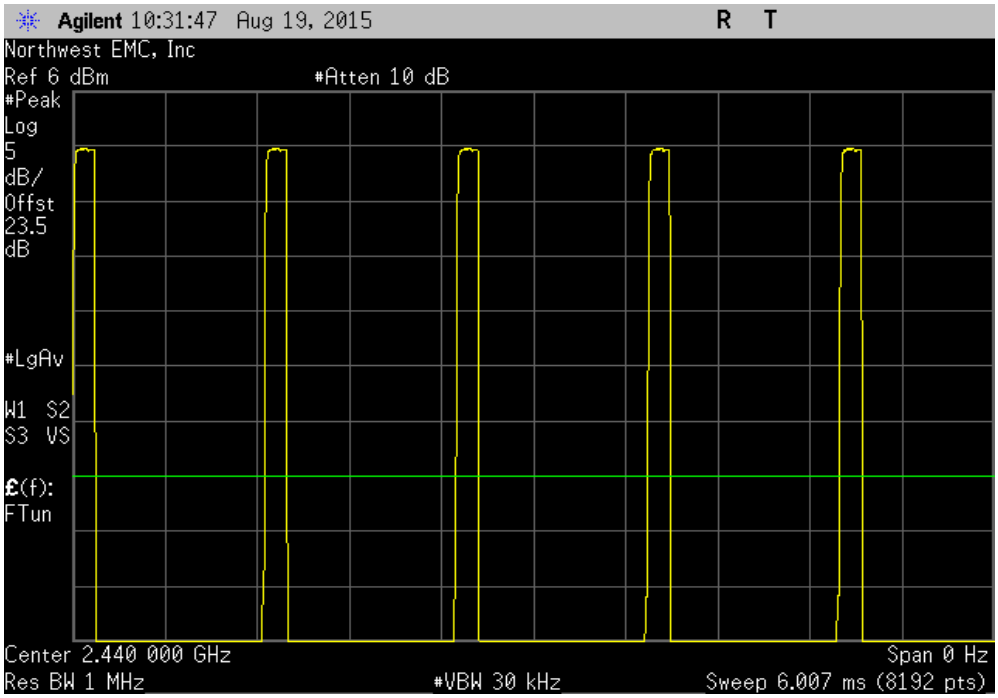
DUTY CYCLE

XMit 2015.01.14

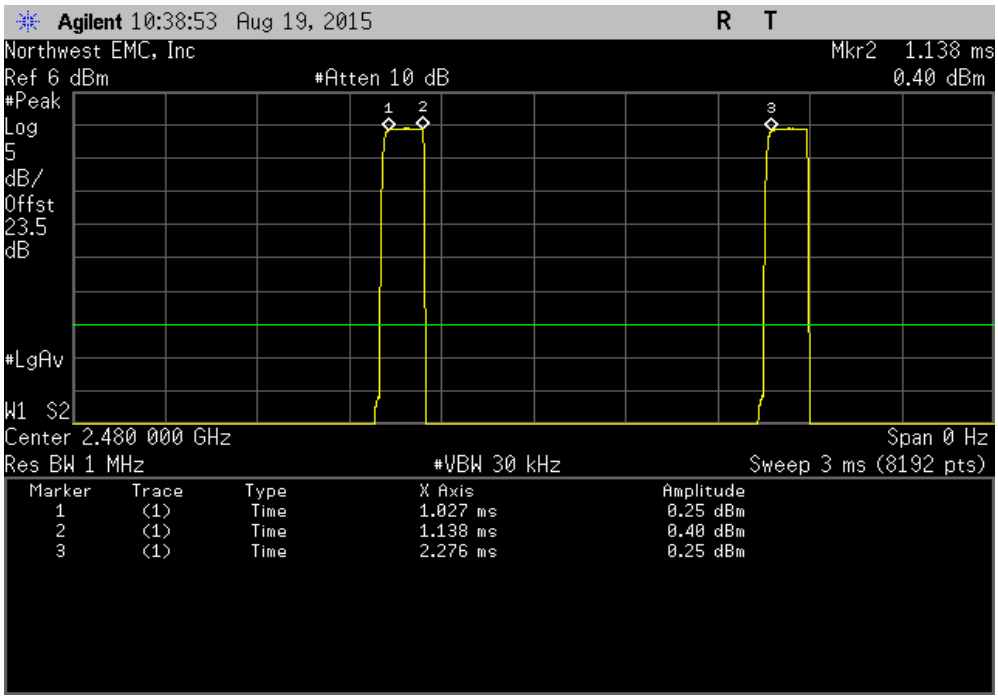
DH5, GFSK, Mid Channel 39, 2440 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	118.695 us	1.25 ms	1	9.5	N/A	N/A



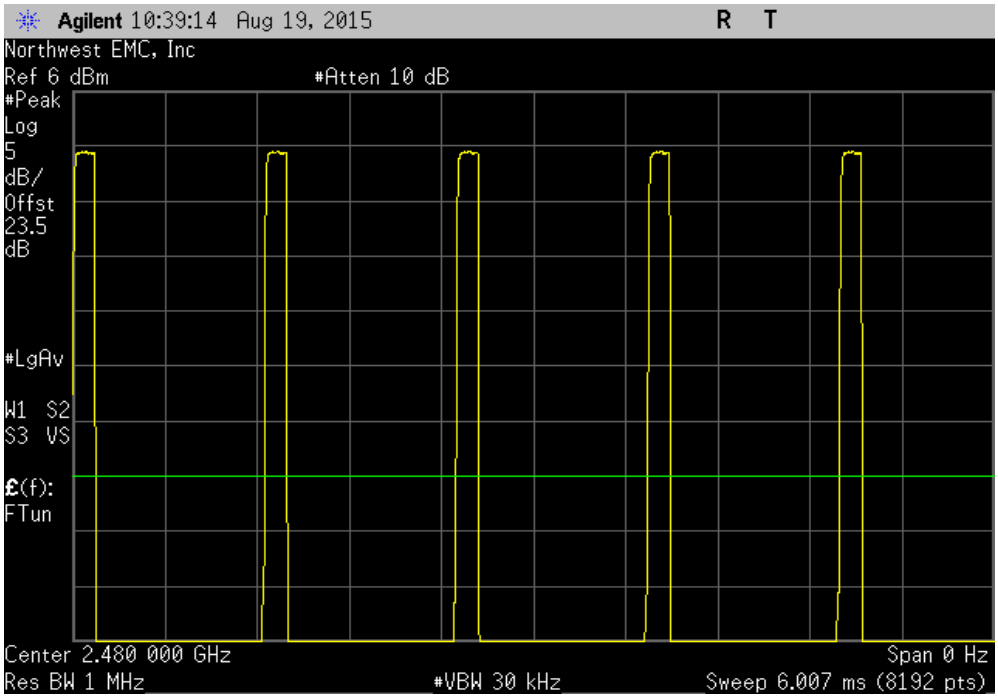
DH5, GFSK, Mid Channel 39, 2440 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



DH5, GFSK, High Channel 78, 2480 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	111.337 us	1.25 ms	1	8.9	N/A	N/A



DH5, GFSK, High Channel 78, 2480 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



OCCUPIED BANDWIDTH

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	0
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	36
Attenuator	Fairview Microwave	SA18H-20	TKR	4/8/2015	12
Block - DC	Aeroflex	INMET 8535	AMO	4/8/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	8/28/2014	12

TEST DESCRIPTION

The occupied bandwidth was measured with the EUT set to low, medium and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet in a no-hop mode.

OCCUPIED BANDWIDTH

NORTHWEST EMC

XMit 2015.01.14

EUT:	BCM4334			**Work Order:**	MASI0275
Serial Number:	1521639422			**Date:**	08/12/15
Customer:	Masimo Corporation			**Temperature:**	23°C
Attendees:	Mike Clark			**Humidity:**	48%
Project:	None			**Barometric Pres.:**	1015
Tested by:	Mike Tran / Johnny Candelas	**Power:**	110VAC/60Hz	**Job Site:**	OC13

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

TX Power = 30. DC Block/20dB Attenuator + coax cable + client provided patch cable = 23.5dB total offset

DEVIATIONS FROM TEST STANDARD

None

Configuration #	1	Signature

	Value	Limit (<)	Result
DH5, GFSK			
Low Channel 0, 2402 MHz	973.698 kHz	1.5 MHz	Pass
Mid Channel 39, 2440 MHz	1.003 MHz	1.5 MHz	Pass
High Channel 78, 2480 MHz	1.006 MHz	1.5 MHz	Pass

DH5, GFSK, Low Channel 0, 2402 MHz						
				Value	Limit (<)	Result
				973.698 kHz	1.5 MHz	Pass

DH5, GFSK, Mid Channel 39, 2440 MHz						
				Value	Limit (<)	Result
				1.003 MHz	1.5 MHz	Pass

DH5, GFSK, High Channel 78, 2480 MHz						
				Value	Limit (<)	Result
				1.006 MHz	1.5 MHz	Pass

OUTPUT POWER

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	0
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	36
Attenuator	Fairview Microwave	SA18H-20	TKR	4/8/2015	12
Block - DC	Aeroflex	INMET 8535	AMO	4/8/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	8/28/2014	12

TEST DESCRIPTION

The peak output power was measured with the EUT set to low, medium and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was transmitting in a no hop mode at the data rate(s) listed in the datasheet.

OUTPUT POWER

NORTHWEST EMC

XMit 2015.01.14

EUT:	**MWM1**			**Work Order:**	**MASI0275**
Serial Number:	**1521639422**			**Date:**	**08/12/15**
Customer:	**Masimo Corporation**			**Temperature:**	**23°C**
Attendees:	**Mike Clark**			**Humidity:**	**48%**
Project:	**None**			**Barometric Pres.:**	**1015**
Tested by:	**Mike Tran / Johnny Candelas**	**Power:**	**110VAC/60Hz**	**Job Site:**	**OC13**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

TX Power = 30. DC Block/20dB Attenuator + coax cable + client provided patch cable = 23.5dB total offset

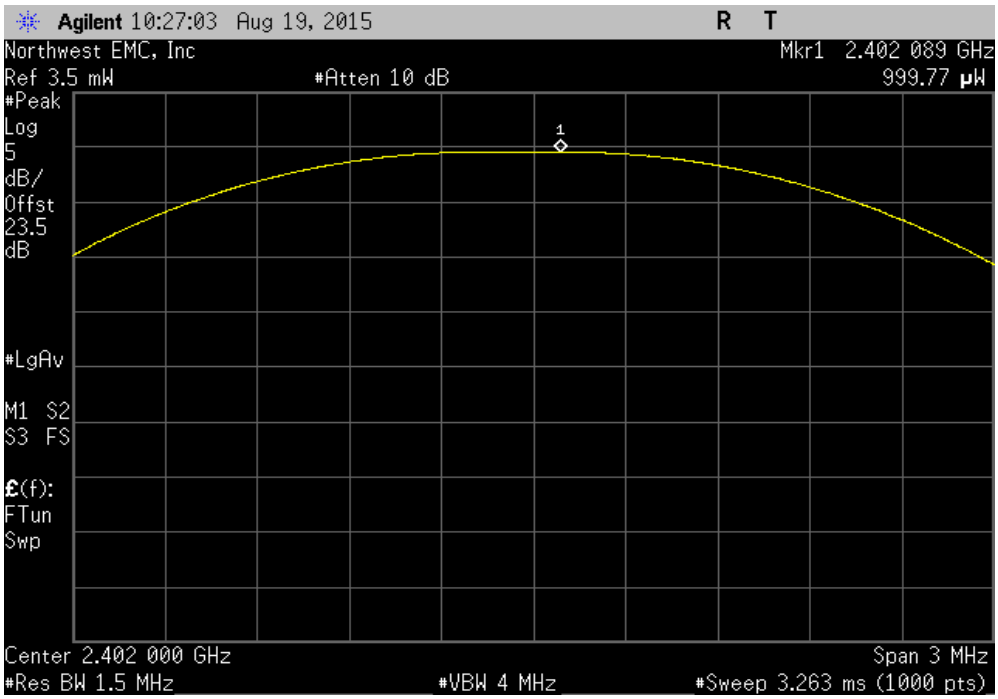
DEVIATIONS FROM TEST STANDARD

None

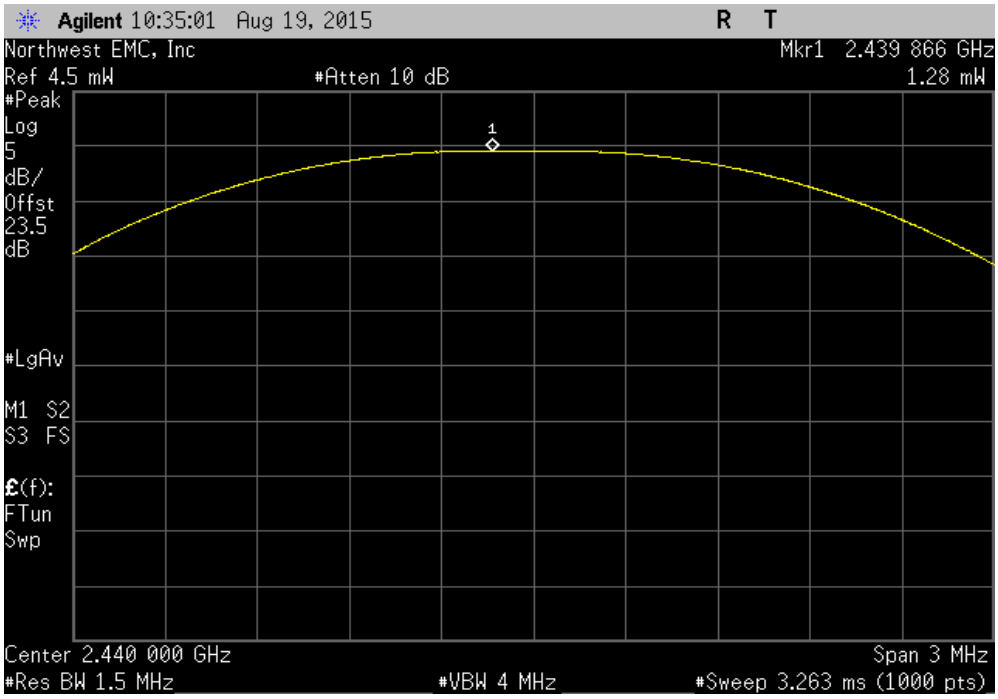
Configuration #	**1**	*Signature*

	Value	**Limit (<)**	**Result**
DH5, GFSK			
Low Channel 0, 2402 MHz	999.77 uW	125 mW	Pass
Mid Channel 39, 2440 MHz	1.284 mW	125 mW	Pass
High Channel 78, 2480 MHz	1.211 mW	125 mW	Pass

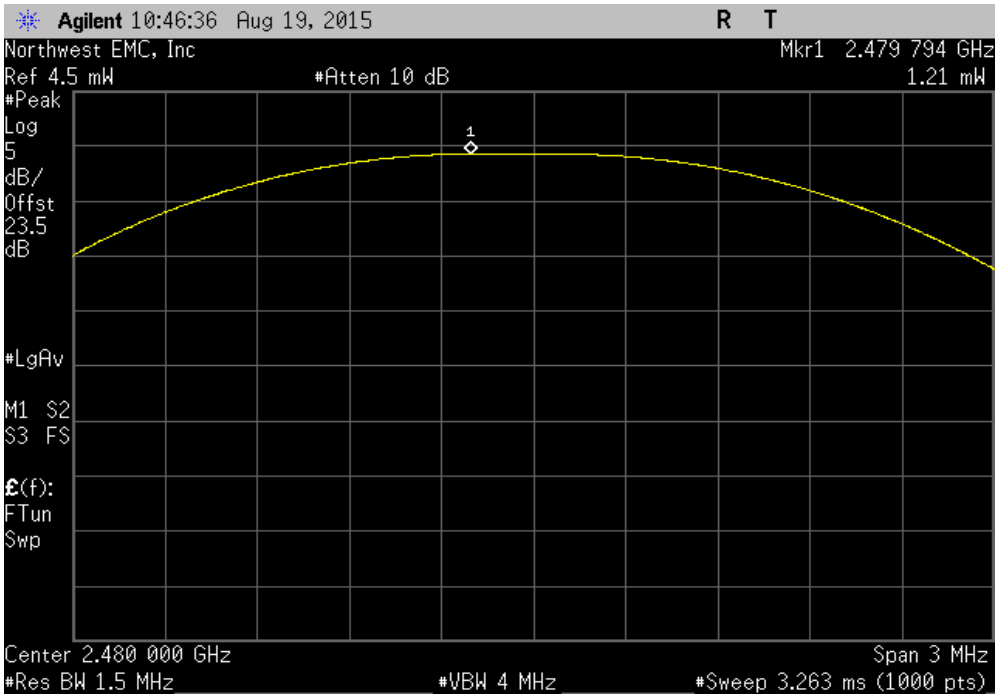
DH5, GFSK, Low Channel 0, 2402 MHz						
				Value	Limit (<)	Result
				999.77 uW	125 mW	Pass



DH5, GFSK, Mid Channel 39, 2440 MHz						
				Value	Limit (<)	Result
				1.284 mW	125 mW	Pass



DH5, GFSK, High Channel 78, 2480 MHz						
				Value	Limit (<)	Result
				1.211 mW	125 mW	Pass



SPURIOUS CONDUCTED EMISSIONS

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	0
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	36
Attenuator	Fairview Microwave	SA18H-20	TKR	4/8/2015	12
Block - DC	Aeroflex	INMET 8535	AMO	4/8/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	8/28/2014	12

TEST DESCRIPTION

The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet in a no-hop mode. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

SPURIOUS CONDUCTED EMISSIONS

NORTHWEST EMC

XMit 2015.01.14

EUT:	MWM1			**Work Order:**	MASI0275
Serial Number:	1521639422			**Date:**	08/12/15
Customer:	Masimo Corporation			**Temperature:**	23°C
Attendees:	Mike Clark			**Humidity:**	48%
Project:	None			**Barometric Pres.:**	1015
Tested by:	Mike Tran / Johnny Candelas	**Power:**	110VAC/60Hz	**Job Site:**	OC13

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

TX Power = 30. DC Block/20dB Attenuator + coax cable + client provided patch cable = 23.5dB total offset

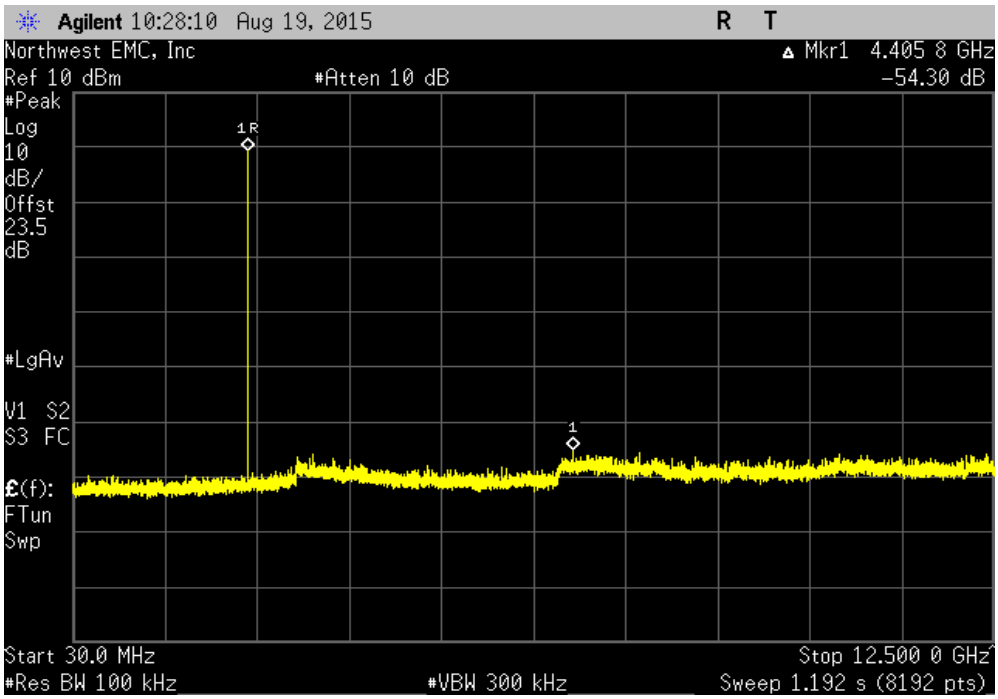
DEVIATIONS FROM TEST STANDARD

None

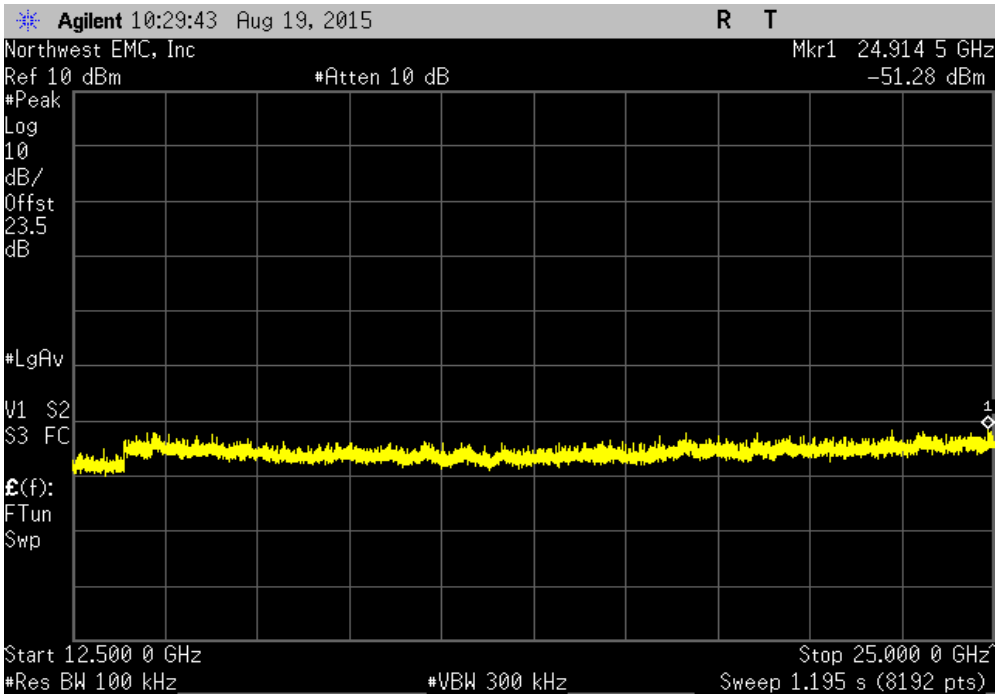
Configuration #	1	Signature

		Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result
DH5, GFSK					
	Low Channel 0, 2402 MHz	30 MHz - 12.5 GHz	-54.3	-20	Pass
	Low Channel 0, 2402 MHz	12.5 GHz - 25 GHz	-50.61	-20	Pass
	Mid Channel 39, 2440 MHz	30 MHz - 12.5 GHz	-56.1	-20	Pass
	Mid Channel 39, 2440 MHz	12.5 GHz - 25 GHz	-52.31	-20	Pass
	High Channel 78, 2480 MHz	30 MHz - 12.5 GHz	-54.33	-20	Pass
	High Channel 78, 2480 MHz	12.5 GHz - 25 GHz	-50.41	-20	Pass

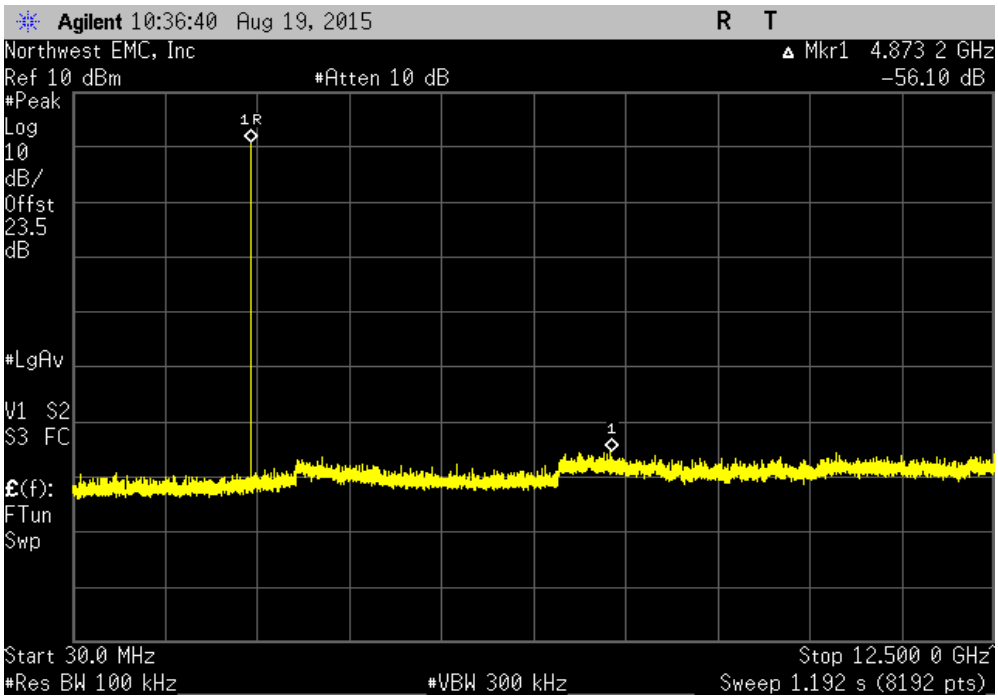
DH5, GFSK, Low Channel 0, 2402 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-54.3	-20	Pass



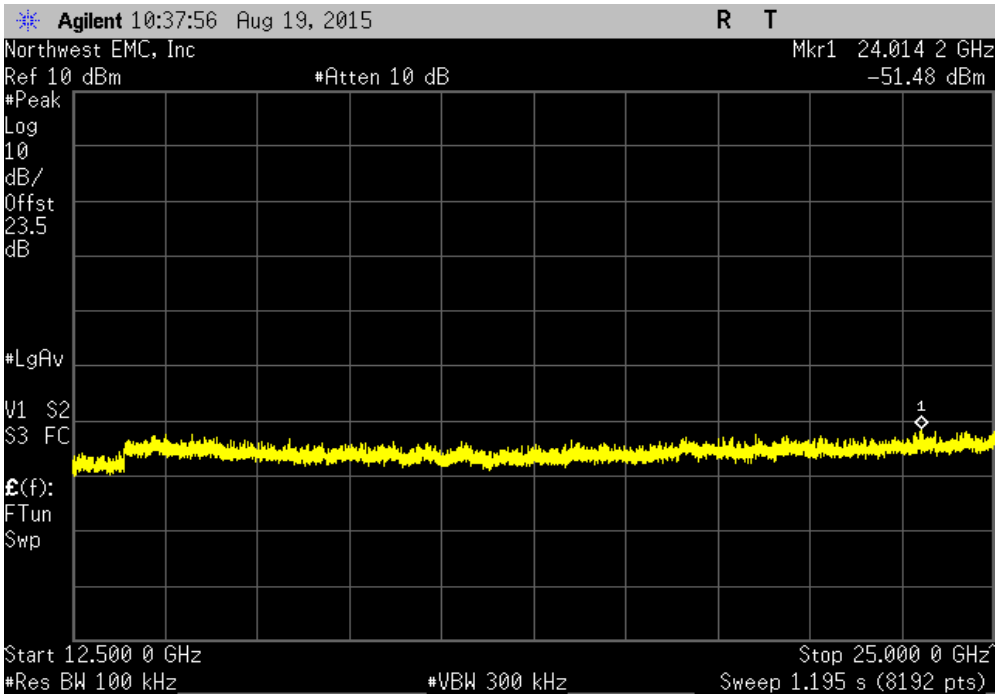
DH5, GFSK, Low Channel 0, 2402 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-50.61	-20	Pass



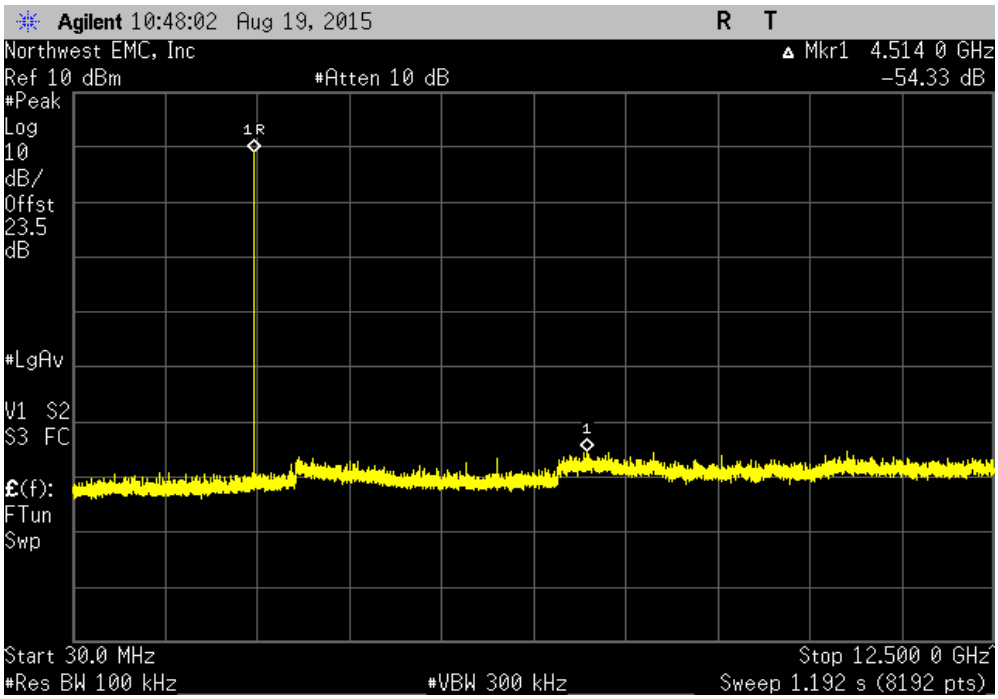
DH5, GFSK, Mid Channel 39, 2440 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-56.1	-20	Pass



DH5, GFSK, Mid Channel 39, 2440 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-52.31	-20	Pass



DH5, GFSK, High Channel 78, 2480 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-54.33	-20	Pass



DH5, GFSK, High Channel 78, 2480 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-50.41	-20	Pass