ELECTRONIC SYSTEMS, INC.

166 South Carter, Genoa City, WI 53128

Company:	Whirlpool Corporation
Model Tested:	WICHTO01
Report Number:	22691
DLS Project:	8732

Code of Federal Regulations 47 Part 15 – Radio Frequency Devices

Subpart C – Intentional Radiators
Section 15.247
Operation within the bands 902 - 928 MHz,
2400 - 2483.5 MHz, 5725 - 5875 MHz,
and 24.0 - 24.25 GHz.

THE FOLLOWING **MEETS** THE ABOVE TEST SPECIFICATION

FCC ID: A5UWICHTO01

Formal Name:	Tourmaline WIFI Module
Kind of Equipment:	802.11 b/g/n WIFI Appliance Module
Frequency Range:	2412 to 2462 MHz
Test Configuration:	Tabletop / DC powered transceiver module
Model Number(s):	WICHTO01
Model(s) Tested:	WICHTO01
Serial Number(s):	15502E01D00770600009KSSA and 15502E01D00970600018KSSA
Date of Tests:	March 16 – 31, 2017
Test Conducted For:	Whirlpool Corporation 750 Monte Rd Benton Harbor, MI 49022, USA

NOTICE: "This test report relates only to the items tested and must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government". Please see the "Description of Test Sample" page listed inside of this report.

DLS ELECTRONIC SYSTEMS, INC.

166 South Carter, Genoa City, WI 53128

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SIGNATURE PAGE

Tested By:

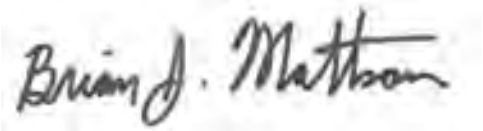
Craig Brandt
Senior Test Engineer

Paul Leo
Test Engineer

Reviewed By:

William Stumpf
OATS Manager

Approved By:



Brian Mattson
General Manager

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United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 100276-0

D.L.S. Electronic Systems, Inc.
Wheeling, IL

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Electromagnetic Compatibility & Telecommunications

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2016-08-16 through 2017-09-30
Effective Dates

For the National Voluntary Laboratory Accreditation Program

ELECTROMAGNETIC COMPATIBILITY & TELECOMMUNICATIONS

NVLAP LAB CODE 100276-0

Emissions

Designation	***Description***
Off-site test location	D.L.S. Electronics performs radiated emissions testing at an additional location, 166 South Carter Street, Genoa City, WI 53128.

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1.0 Summary of Test Report

It was determined that the Whirlpool Corporation, Tourmaline WIFI Module, model WICHTO01, complies with the requirements of CFR 47 Part 15 Subpart C Section 15.247.

Subpart C Section 15.247 Applicable Technical Requirements Tested:

Section	Description	Procedure	Note	Compliant?
Informative	Duty Cycle	ANSI C63.10-2013 Section 11.6(b)	1	NA
15.247(a)(2)	DTS Bandwidth	ANSI C63.10-2013 Sections 11.8 & 11.8.1	1	Yes
15.247(b)(3)	Fundamental Emission Output Power	ANSI C63.10-2013 Sections 11.9.1 & 11.9.1.3	1	Yes
15.247(e)	Maximum Power Spectral Density	ANSI C63.10-2013 Sections 11.10 & 11.10.2	1	Yes
15.247(d)	Emissions in Non-Restricted Frequency Bands – RF Conducted	ANSI C63.10-2013 Sections 11.11, 11.11.2 & 11.11.3	1	Yes
15.247(d) 15.205(a) 15.209(a)	Emissions in Restricted Frequency Bands – Radiated	ANSI C63.10-2013 Sections 11.12 & 11.12.1	2	Yes
15.247(d)	Operating Band-Edge Measurements – RF Conducted	ANSI C63.10-2013 Sections 11.11, 11.11.2 & 11.11.3	1	Yes
15.247(d) 15.205(a) 15.209(a)	Restricted Band-Edge Measurements - Radiated	ANSI C63.10-2013 Sections 11.12 & 11.12.1	2	Yes
15.207	AC Line Conducted Emissions	ANSI C63.10-2013 Section 6.2	3	Yes

Note 1: RF conducted measurement.
Note 2: Radiated emission measurement.
Note 3: AC power line conducted measurement.

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2.0 Introduction

During March 16 – 31, 2017, the Tourmaline WIFI Module, model WICHTO01, as provided from Whirlpool Corporation was tested to the requirements of CFR 47 Part 15 Subpart C Section 15.247 for single modular approval. To meet these requirements, the procedures contained within this report were performed by personnel of D.L.S Electronic Systems, Inc.

3.0 Test Facilities

D.L.S. Electronic Systems, Inc. is a full service EMC/Safety Testing Laboratory accredited to ISO 17025. NVLAP Certificate and Scope can be viewed at http://www.dlsemc.com/certificate. Our facilities are registered with the FCC, Industry Canada, and VCCI.

Wisconsin Test Facility:
D.L.S. Electronic Systems, Inc.
166 S. Carter Street
Genoa City, Wisconsin 53128

Wheeling Test Facility:
D.L.S. Electronic Systems, Inc.
1250 Peterson Drive
Wheeling, IL 60090

FCC Registration #90531

4.0 Description of Test Sample

Description:

The test samples consist of 2 Tourmaline WIFI modules. The 802.11 b/g/n specification compliant transceivers are mounted on FR4 substrate which insclues an integrated printed circuit board with two on-board/embedded antennas and a shield covering the RF circuitry. Through software configuration, the offboard/external antenna can be enabled depending on the geographical environment. Test tools are used to allow for different modulation types, power settings and frequency of operation to be set as needed. A 7.2V battery and mating connectors are used to power the device. UART is used to communicate with the the DUT.

Type of Equipment / Frequency Range:

Mobile / 2412-2462 MHz

Physical Dimensions of Equipment Under Test:

Length: 5.5 in., Width: 2.5 in., Height: 0.8 in.

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4.0 Description of Test Sample - continued

Power Source:

5-14 VDC provided from the host appliance
7.2 VDC used for radiated testing
12 VDC wall adapter used for RF conducted testing
Stepped down to 3.3VDC for use by the transmitter

120V / 60Hz for AC Line Conducted Testing

Internal Frequencies:

800 kHz and 650 kHz
38.4 MHz, 12 MHz, 20 MHz

Transmit / Receive Frequencies Used For Test Purpose:

Low channel: 2412 MHz, Middle channel: 2437 MHz, High channel: 2462 MHz
20 MHz channel bandwidth

Type of Modulation(s) / Antenna Type:

802.11b/g/n Modulations /

Internal Vertical Slot Antenna (1.6 dBi = highest antenna gain)
Internal Horizontal Monopole Antenna (2.4 dBi = highest antenna gain)
External Planar F ("PIFA") Antenna Model W10445535 (4.2 dBi = highest antenna gain)
External F Type Antenna Model W10503567 with 41 inch cable (1.6 dBi = highest antenna gain)

Description of Circuit Board(s) / Part Number:

Tourmaline Wifi Module	WICHTO01

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5.0 Test Equipment

A list of the equipment used can be found in the table below. All primary equipment was calibrated against known reference standards with a verified traceable path to NIST.

Radiated 30 – 1000 MHz (Site 3)

Description	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Date	Cal Due Dates
Receiver	Rohde & Schwarz	ESI 26	837491/010	20 Hz – 26 GHz	6-23-16	6-23-17
Low Pass Filter	Mini-Circuits	VLFX-1125	MUU9260	30 MHz – 1 GHz	6-3-16	6-3-17
Preamplifier	Rohde & Schwarz	TS-PR10	032001/005	9 kHz – 1 GHz	12-2-16	12-2-17
Antenna	EMCO	3104C	9701-4785	20 MHz – 200 MHz	2-16-16	2-16-18
Antenna	EMCO	3146	9702-4895	200 MHz – 1 GHz	2-4-16	2-4-18
Test Software	Rohde & Schwarz	ESK-1	V1.7.1	N/A	N/A	N/A

AC Line Conducted (Screen Room)

Description	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Date	Cal Due Dates
Receiver	Narda PMM	9010F	020WW40102	10Hz-50MHz	6-23-16	6-23-17
LISN	Solar	9252-50-R-24-BNC	961019	9 kHz – 30 MHz	5-4-16	5-4-17
Filter- High-Pass	SOLAR	7930-120	090702	120 kHz – 30 MHz	11-4-16	11-4-17
Limiter	Electro-Metrics	EM-7600	705	9 kHz – 30 MHz	11-4-16	11-4-17
Test Software	Narda PMM	PMM Emission Suite	Rel.2.17	N/A	N/A	N/A

5.0 Test Equipment - continued

Radiated 1-18 GHz (Site G1)

Description	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Date	Cal Due Dates
Receiver	Rohde & Schwarz	ESI 40	837808/005	20 Hz – 40 GHz	6-23-16	6-23-17
Preamp	Ciao	CA118-4010	101	1GHz-18GHz	1-9-17	1-9-18
Horn Antenna	EMCO	3115	9502-4451	1-18GHz	6-1-15	6-1-17
Filter- High-Pass	Q-Microwave	100462	2	4.2GHz-18GHz	9-23-16	9-23-17
Test Software	Rohde & Schwarz	ESK-1	V1.7.1	N/A	N/A	N/A

Additional Radiated 18-26 GHz (Site G1)

Description	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Date	Cal Due Dates
Preamp	Miteq	AMF-8B-180265-40-10P-H/S	438727	18GHz-26GHz	6-6-16	6-6-17
Horn Antenna	AH Systems	SAS-574	222	18 – 40GHz	3-14-16	3-14-18
Filter- High Pass	K&L	50140-11SH10-18000/T40000-K-K	438727	18-40GHz	1-9-17	1-9-18
Test Software	Rohde & Schwarz	ESK-1	V1.7.1	N/A	N/A	N/A

RF Conducted / Other

Description	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Date	Cal Due Dates
20 dB attenuator	Aeroflex/weinschel	75A-20-12	1071	DC – 40 GHz	6-5-16	6-5-17
20 dB attenuator	Anritsu	42N50-20	000451	DC – 18 GHz	5-11-16	5-11-17
Power Meter	Anritsu	ML2487A	6K00002069	N/A	6-24-16	6-24-17
Wideband Power Sensor	Anritsu	MA2490A	031563	50 MHz – 8 GHz	6-24-16	6-24-17

6.0 Test Arrangements

Radiated Emissions Measurement Arrangement:

All radiated emission measurements were performed at D.L.S. Electronic Systems, Inc. and set up according to ANSI C63.10-2013, unless otherwise noted. Description of procedures and measurements can be found in Appendix B – Measurement Data. See Appendix A for additional photos of the test set up. See Appendix C for measurement uncertainty.

Unless otherwise noted, the bandwidth of the measuring receiver / analyzer used during testing is shown below.

Frequency Range	Bandwidth (-6 dB)
10 to 150 kHz	200 Hz
150 kHz to 30 MHz	9 kHz
30 MHz to 1 GHz	120 kHz
Above 1 GHz	1 MHz

RF Conducted Emissions Measurement Arrangement:

All RF conducted emission measurements were performed at D.L.S. Electronic Systems, Inc. and set up according to ANSI C63.10-2013, unless otherwise noted. Description of procedures and measurements can be found in Appendix B – Measurement Data. See Appendix A for additional photos of the test set up. See Appendix C for measurement uncertainty.

7.0 Test Conditions

Temperature and Humidity:

69°F at 29% RH unless otherwise noted on test data

Supply Voltage:

7.2 VDC used for radiated testing
12 VDC wall adapter used for RF conducted testing
120V / 60Hz for AC Line Conducted Testing

8.0 Modifications Made To EUT For Compliance

The output power settings were set during testing. The output power setting is not related to the output power level in dBm.

This is intended to mean that an output power setting of 18 is unitless and does not imply that, at a setting of 18, the output power will be exactly 18 dBm. The power setting is, however, related to the output power to the extent that a lower setting will result in a lower output power level. The output power settings were reduced to facilitate bandedge compliance. These lower power settings did lower the actual output power level. However, the power level measured in dBm does not match exactly with the number of the power setting. Again, the power setting number is a unitless number and not a dBm power level declaration.

9.0 Additional Descriptions

The EUT was powered with an AC to DC power adapter for RF conducted emissions, and with a rechargeable battery for radiated emissions.

The EUT was tested stand-alone for Single Modular Approval.

The EUT was programmed for continuous transmission on Low, Mid, and High channels, using 802.11-b, g, and n modulation types with various data rates.

For radiated emissions, the EUT with the on-board antennas was tested in the two positions representing final installation possibilities. Worst case findings reported.

For radiated emissions, the EUT with either external antenna was rotated through 3 orthoganal axis to find worst-case.

AC line conducted tested with HON-KWANG, model HK-CP12-A12 12V DC power supply.

10.0 Final Power Settings

802.11b – with on-board antenna 1											
Channel	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Power Setting	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**

802.11b – with on-board antenna 2											
Channel	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Power Setting	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**

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10.0 Final Power Settings - continued

802.11b – with PIFA antenna											
Channel	1	2	3	4	5	6	7	8	9	10	11
Power Setting	18	18	18	18	18	18	18	18	18	18	17

802.11b – with F antenna											
Channel	1	2	3	4	5	6	7	8	9	10	11
Power Setting	18	18	18	18	18	18	18	18	18	18	18

802.11g – with on-board antenna 1											
Channel	1	2	3	4	5	6	7	8	9	10	11
Power Setting	14	17	17	17	17	17	17	17	17	16	11

802.11g – with on-board antenna 2											
Channel	1	2	3	4	5	6	7	8	9	10	11
Power Setting	16	17	17	17	17	17	17	17	17	16	11

802.11g – with PIFA antenna											
Channel	1	2	3	4	5	6	7	8	9	10	11
Power Setting	13	16	17	17	17	17	17	17	15	15	9

802.11g – with F antenna											
Channel	1	2	3	4	5	6	7	8	9	10	11
Power Setting	16	17	17	17	17	17	17	16	15	15	12

802.11n – with on-board antenna 1											
Channel	1	2	3	4	5	6	7	8	9	10	11
Power Setting	13	14	14	14	14	14	14	14	14	14	11

802.11n – with on-board antenna 2											
Channel	1	2	3	4	5	6	7	8	9	10	11
Power Setting	13	14	14	14	14	14	14	14	14	14	10

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10.0 Final Power Settings - continued

802.11n – with PIFA antenna											
Channel	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Power Setting	**11**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**8**

802.11n – with F antenna											
Channel	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Power Setting	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**14**	**11**

11.0 FCC 15.31 (e) Supply Voltage Requirement statement

FCC 15.31 (e) - For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.

Compliance Statement: This device complies with the requirements of Part 15.31(e):

☐ This device is battery operated. All tests were performed using a new (or fully charged) battery.

☒ This device provides a constant regulated voltage to the RF circuitry regardless of supply voltage (see schematic diagrams).

☐ This device does not provide a constant regulated voltage to the RF circuitry regardless of supply voltage. Data has been supplied in this test report that supports compliance. Details:

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12.0 FCC 15.23 Antenna Requirement statement

SECTION 15.203 ANTENNA REQUIREMENT

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device…. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221.

Statement: This wireless device (Intentional Radiator) meets the requirements of FCC Part 15.203:

☒ The antenna is permanently attached

☐ The antenna has a unique coupling to the intentional radiator.
Description of coupling:

☒ This intentional radiator is professionally installed

☐ This intentional radiator, in accordance with Section 15.31(d), must be measured at the installation site.

13.0 Results

Measurements were performed in accordance with CFR 47 Part 15 Subpart C Section 15.247 and ANSI C63.10-2013. Graphical and tabular data can be found in Appendix B at the end of this report.

14.0 Conclusion

The Tourmaline WIFI Module, model WICHTO01, as provided from Whirlpool Corporation, tested during March 16 – 31, 2017 **meets** the requirements of CFR 47 Part 15 Subpart C Section 15.247.

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Appendix A – Test Photos

Photo Information and Test Setup:

Item 0: Whirlpool Corporation Model WICHTO01
Item 1: HON-KWANG, model HK-CP12-A12 12V DC power supply (not part of the EUT)
Item 2: External antenna

Radiated Emissions Below 1 GHz

Position 1

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Appendix A

Radiated Emissions Below 1 GHz

Position 2

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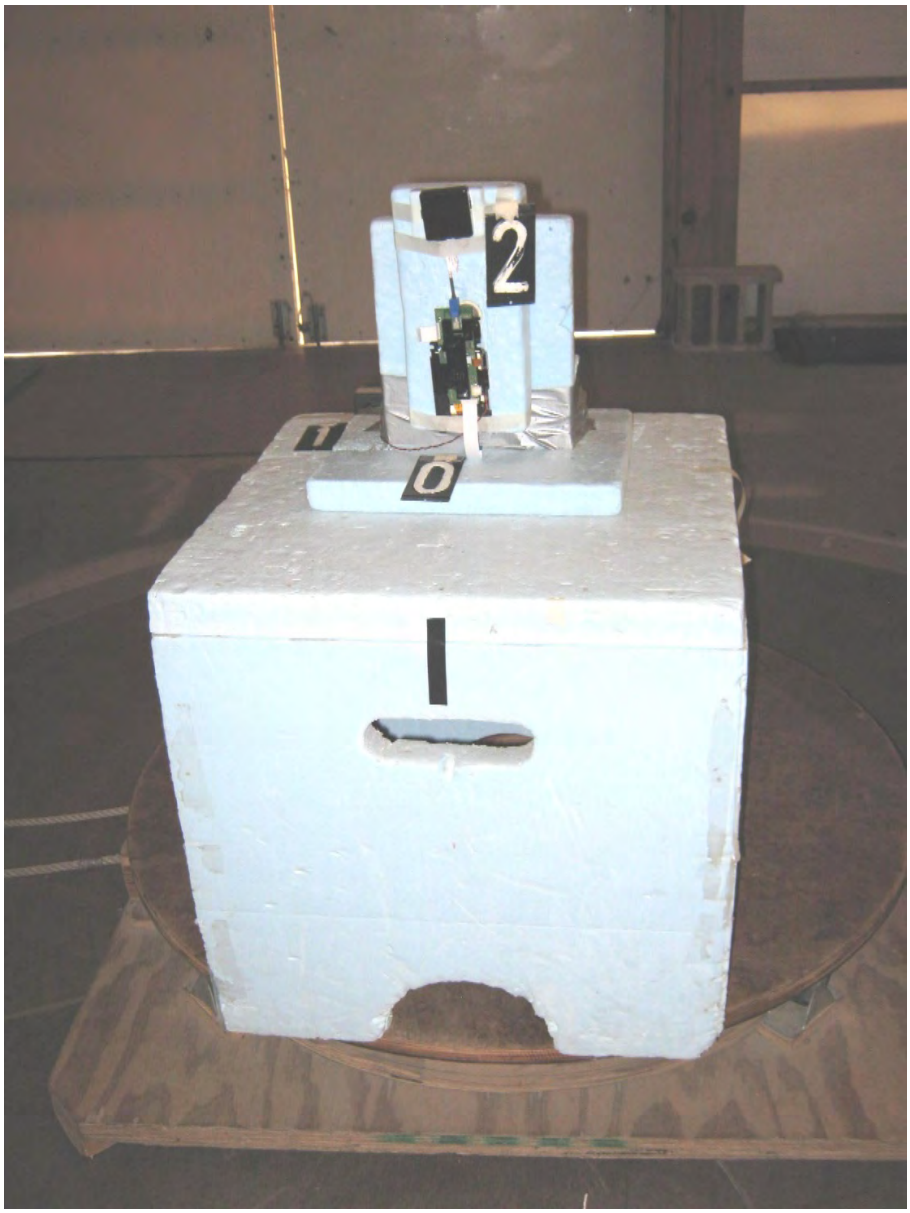
Appendix A

Radiated Emissions Below 1 GHz

Position 1 – with PIFA antenna



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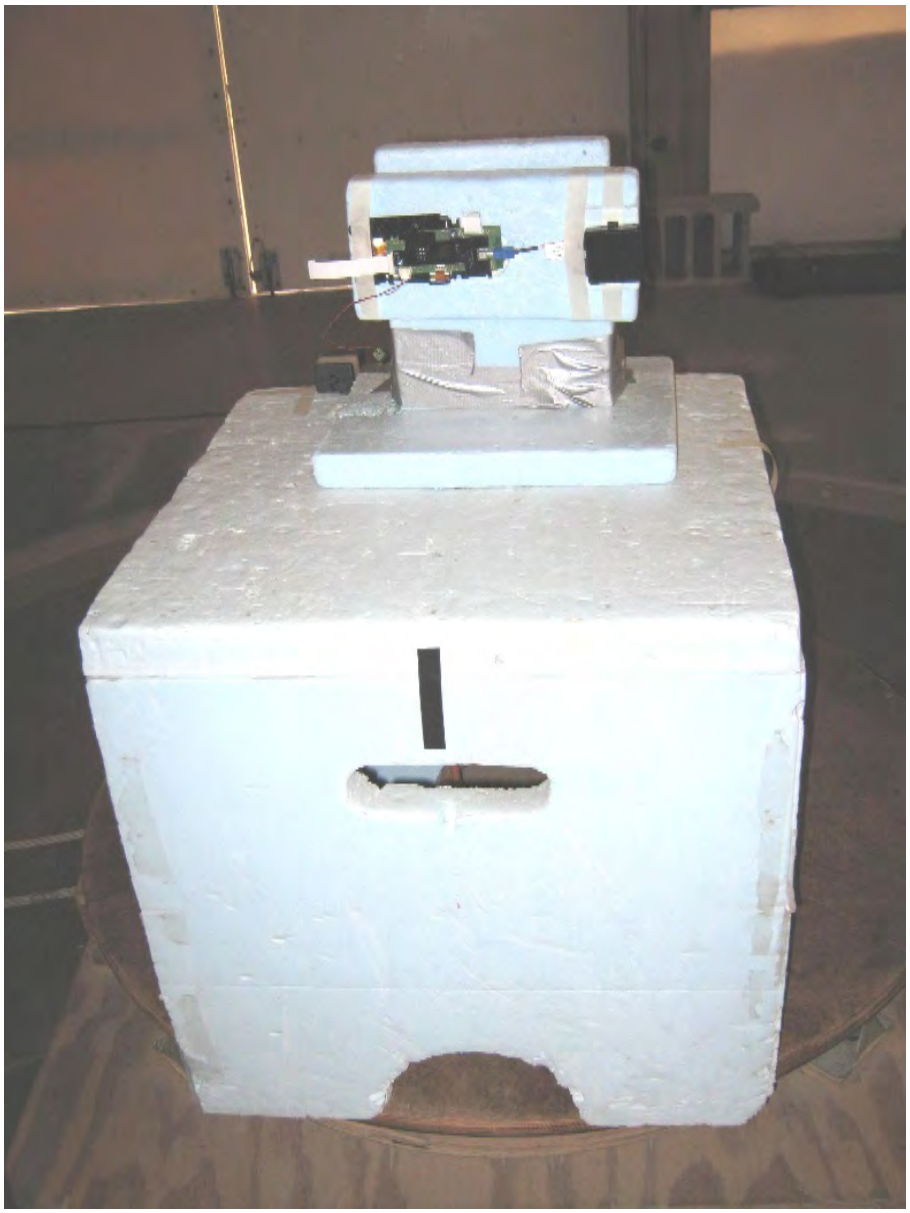
Appendix A

Radiated Emissions Below 1 GHz

Position 2 – with PIFA antenna



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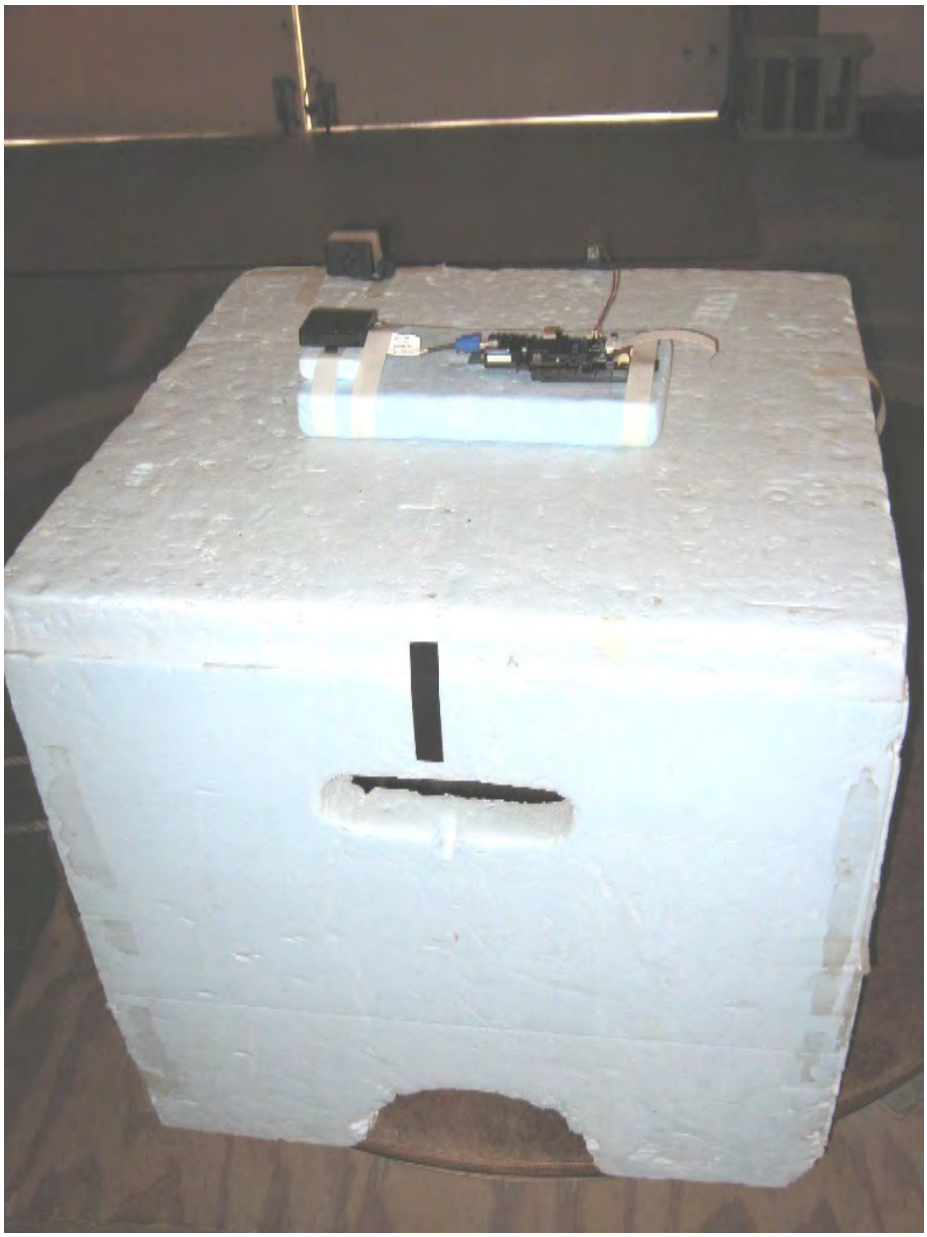
Appendix A

Radiated Emissions Below 1 GHz

Position 3 – with PIFA antenna



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Appendix A

Radiated Emissions Below 1 GHz

Position 1 – with F antenna

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Appendix A

Radiated Emissions Below 1 GHz

Position 2 – with F antenna

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Appendix A

Radiated Emissions Below 1 GHz

Position 3 – with F antenna

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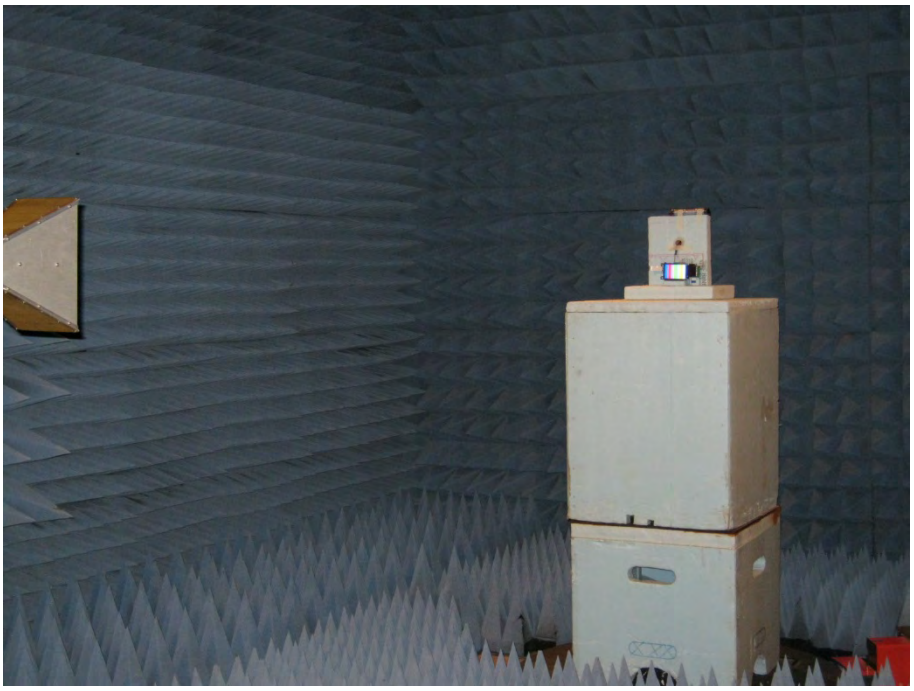
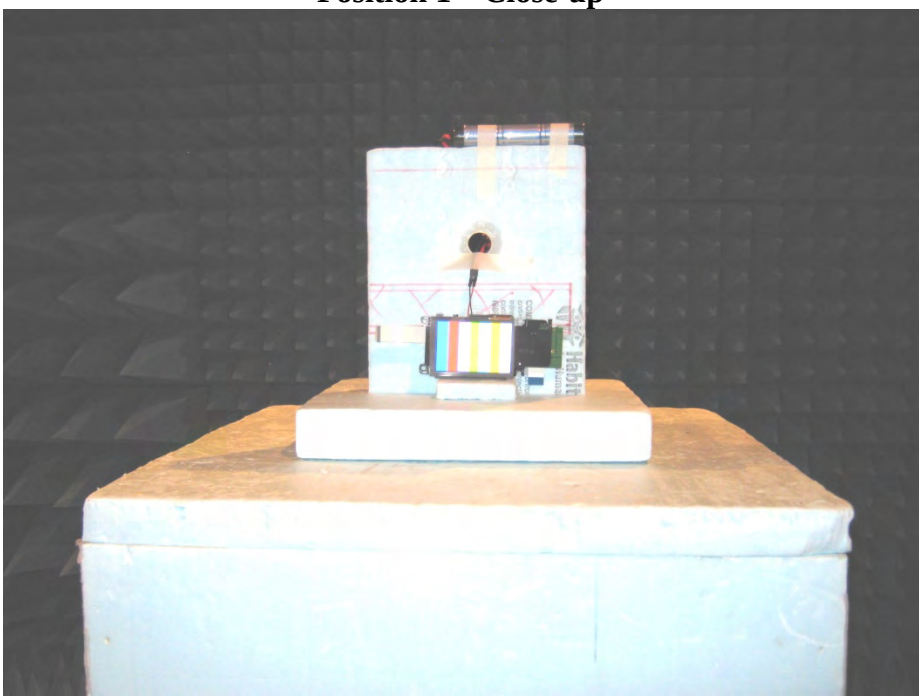
Appendix A

Radiated Emissions Above 1 GHz

Position 1



Position 1 – Close-up



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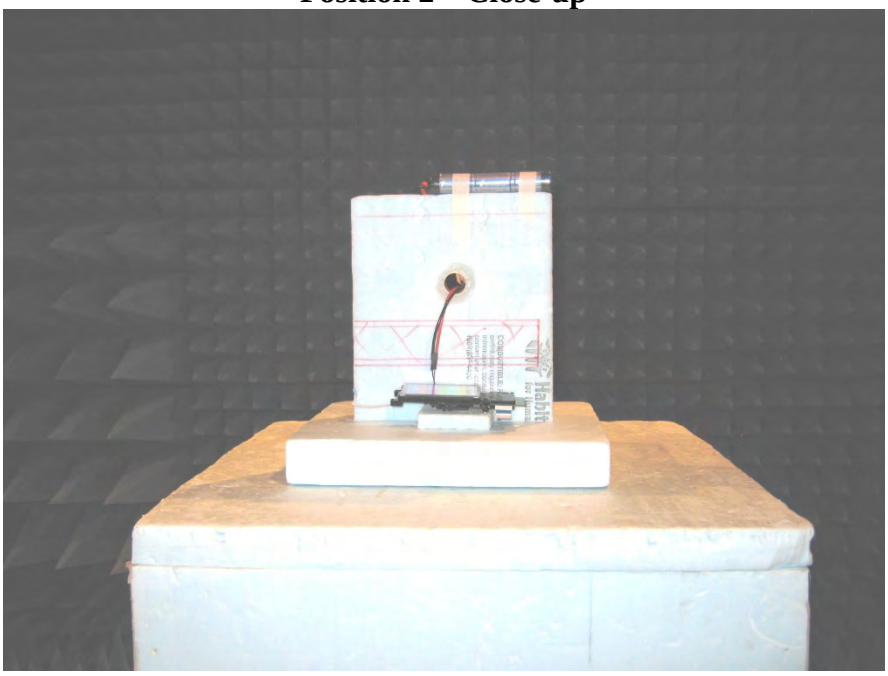
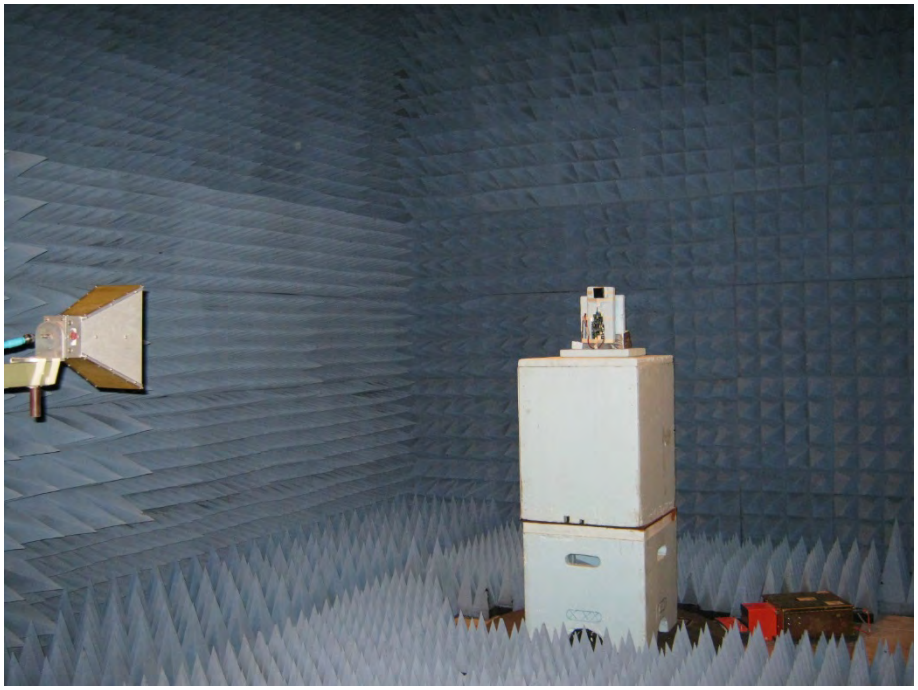
Appendix A

Radiated Emissions Above 1 GHz

Position 2 – Close-up



Position 1 – with PIFA antenna



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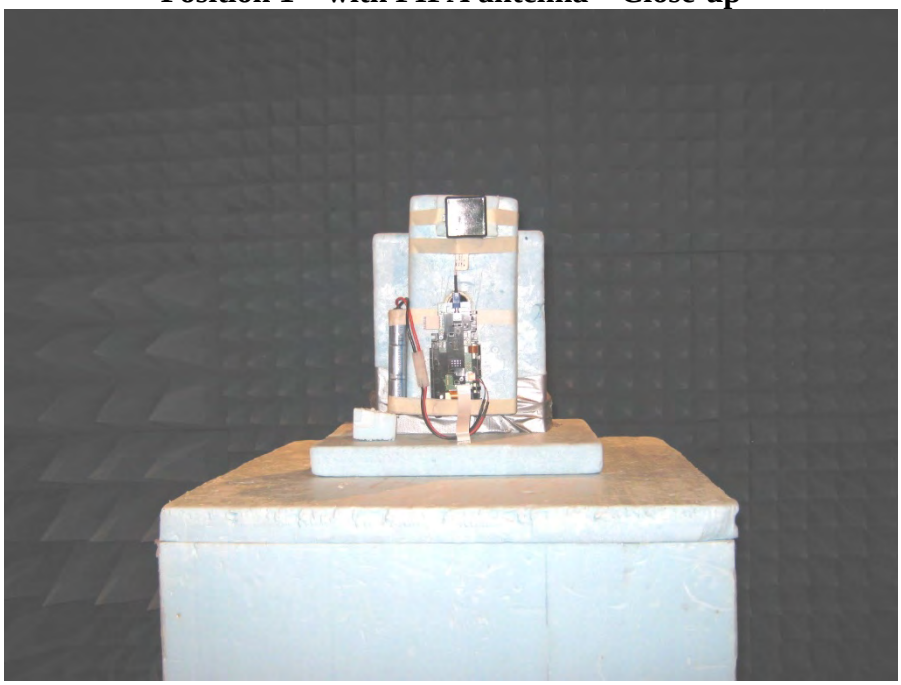
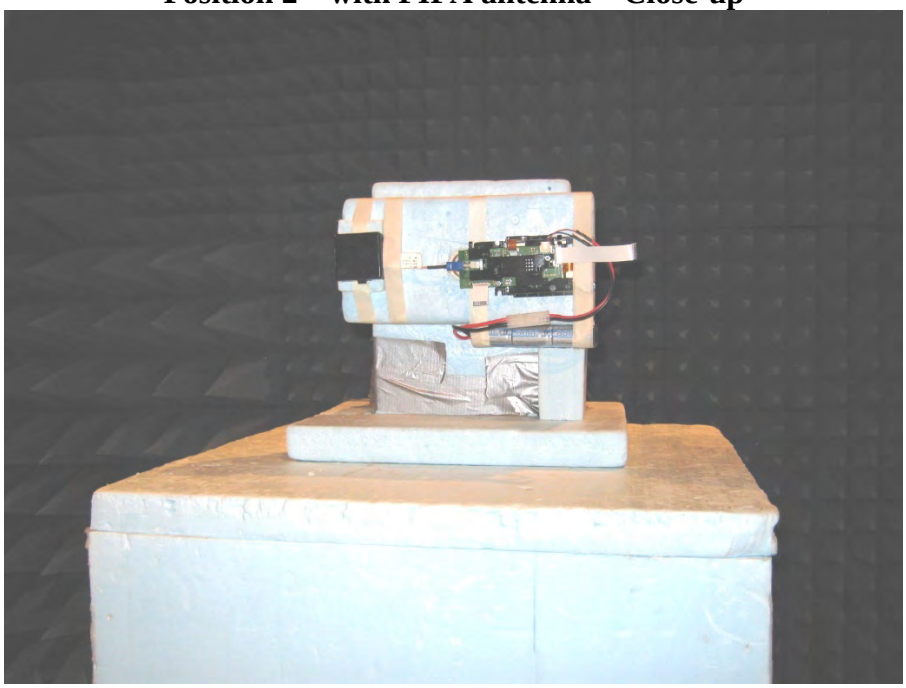
Appendix A

Radiated Emissions Above 1 GHz

Position 1 – with PIFA antenna – Close-up



Position 2 – with PIFA antenna – Close-up



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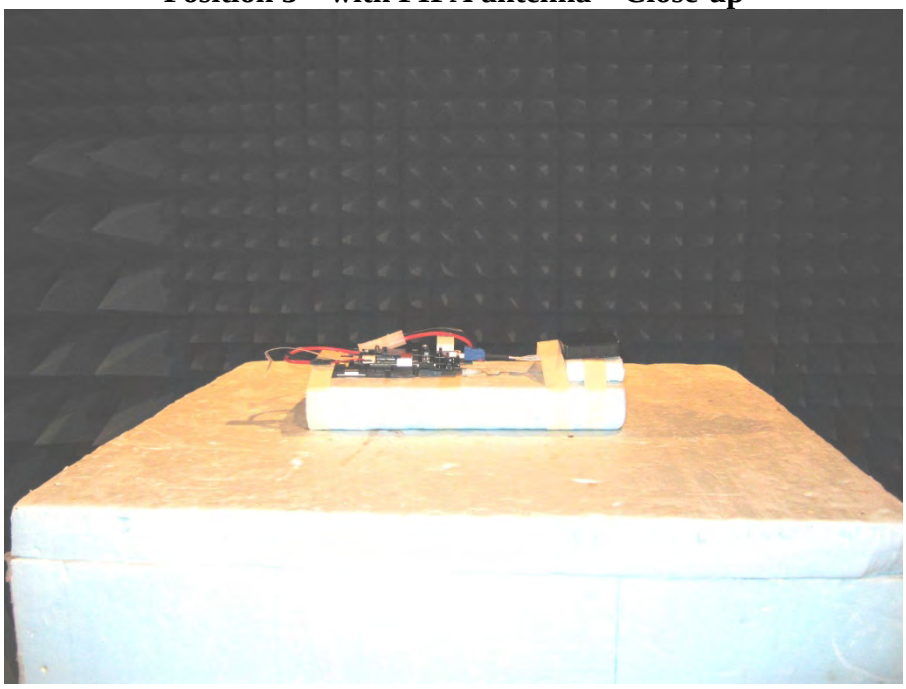
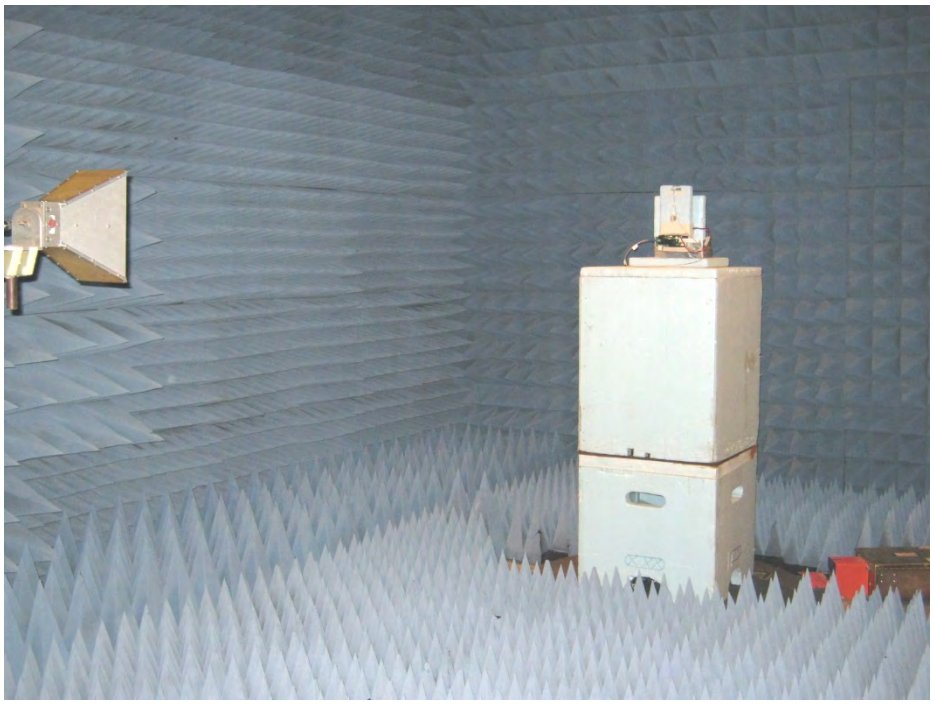
Appendix A

Radiated Emissions Above 1 GHz

Position 3 – with PIFA antenna – Close-up



Position 1 – with F antenna



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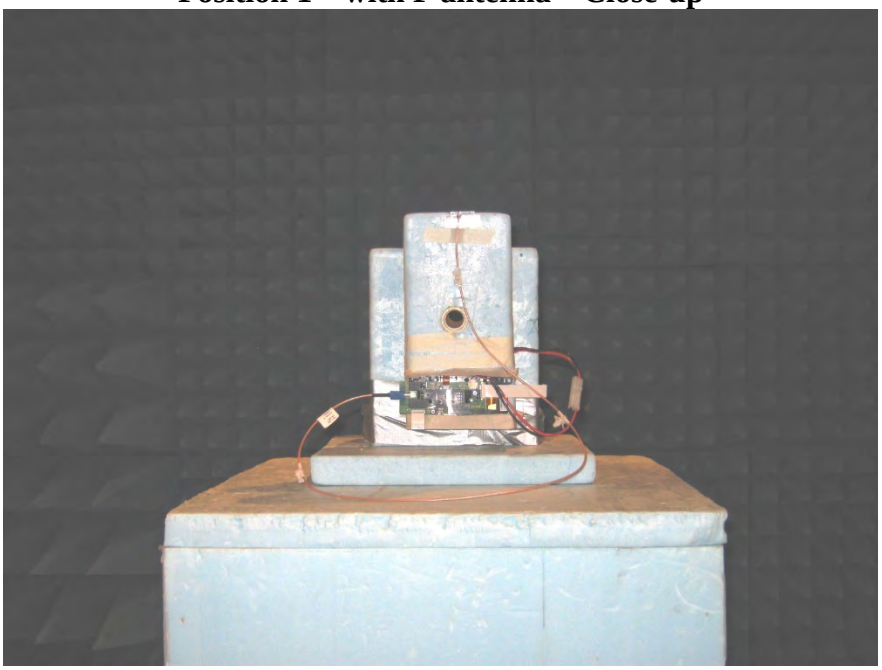
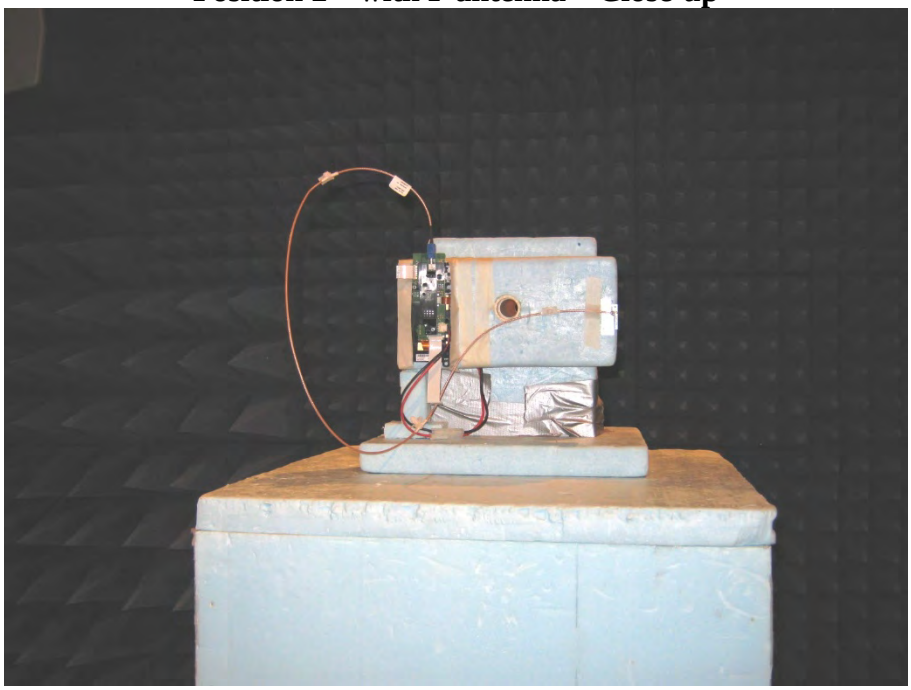
Appendix A

Radiated Emissions Above 1 GHz

Position 1 – with F antenna – Close-up



Position 2 – with F antenna – Close-up



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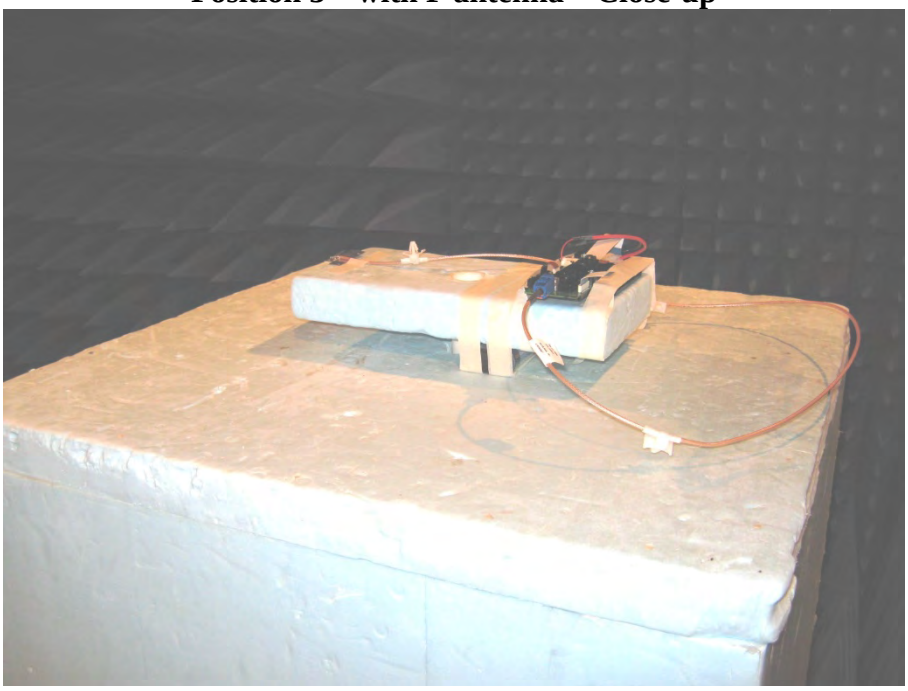
Appendix A

Radiated Emissions Above 1 GHz

Position 3 – with F antenna – Close-up



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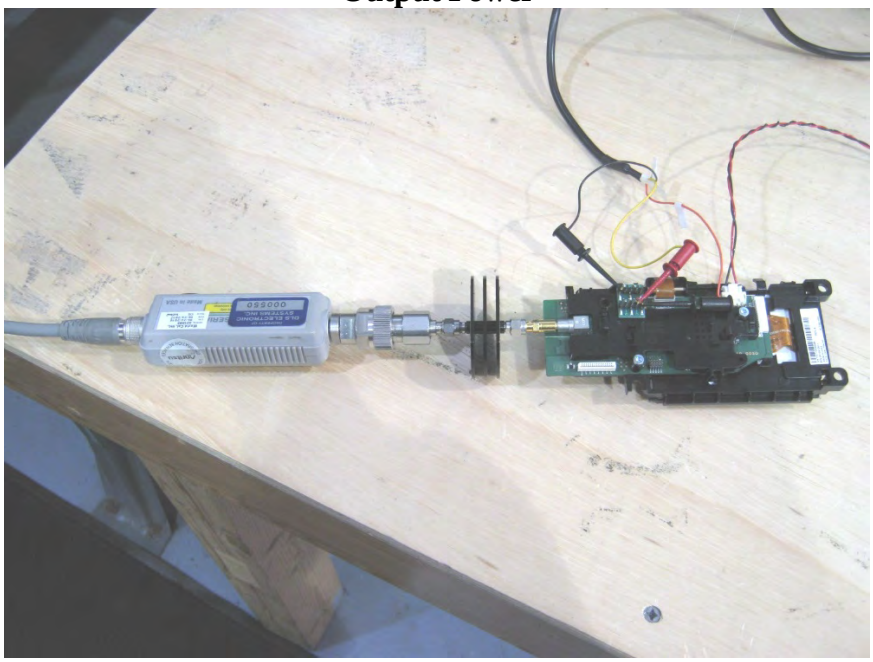
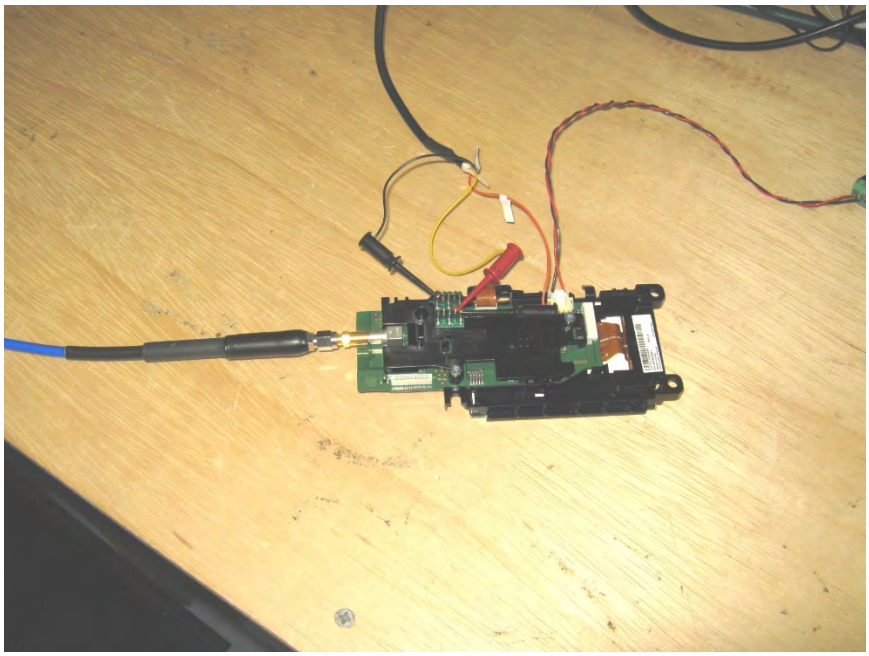
Appendix A

Output Power



RF Conducted



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Appendix A

AC Line Conducted – Front

AC Line Conducted – Back

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Appendix A

AC Line Conducted with PIFA antenna – Front

AC Line Conducted with PIFA antenna – Back

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Appendix A

AC Line Conducted with F antenna – Front

AC Line Conducted with F antenna – Back

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Appendix B – Measurement Data

B1.0 Duty Cycle of Test Unit

Rule Part:

Informative

Test Procedure:

ANSI C63.10-2013
11.6 Duty cycle, transmission duration, and maximum power control level
11.6(b) Zero-span mode on spectrum analyzer

Limits:

Not Applicable

Results:

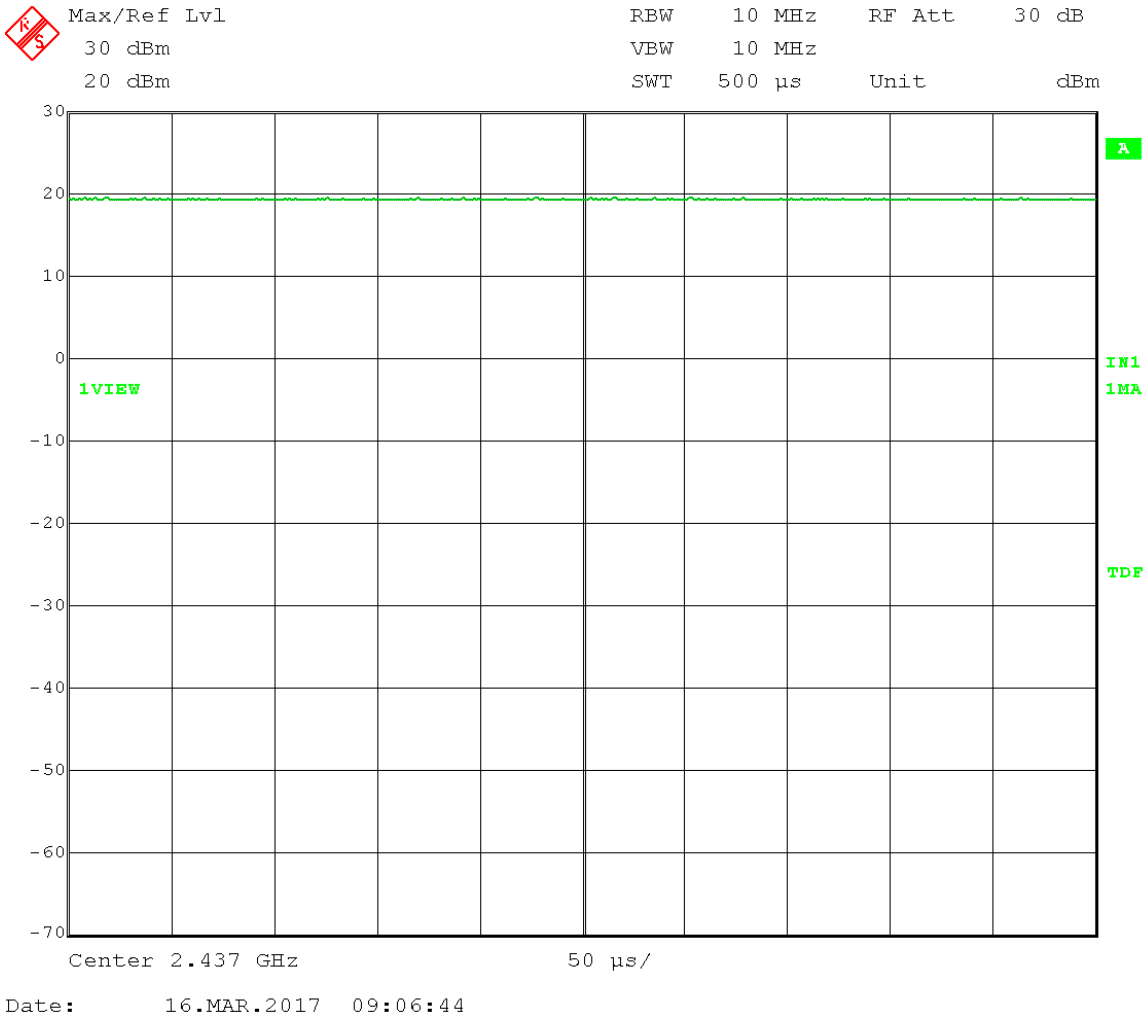
Duty cycle = 100%
Duty Cycle Correction: none

Notes:

Duty cycle testing was performed at the lowest and highest data rates for each modulation type.

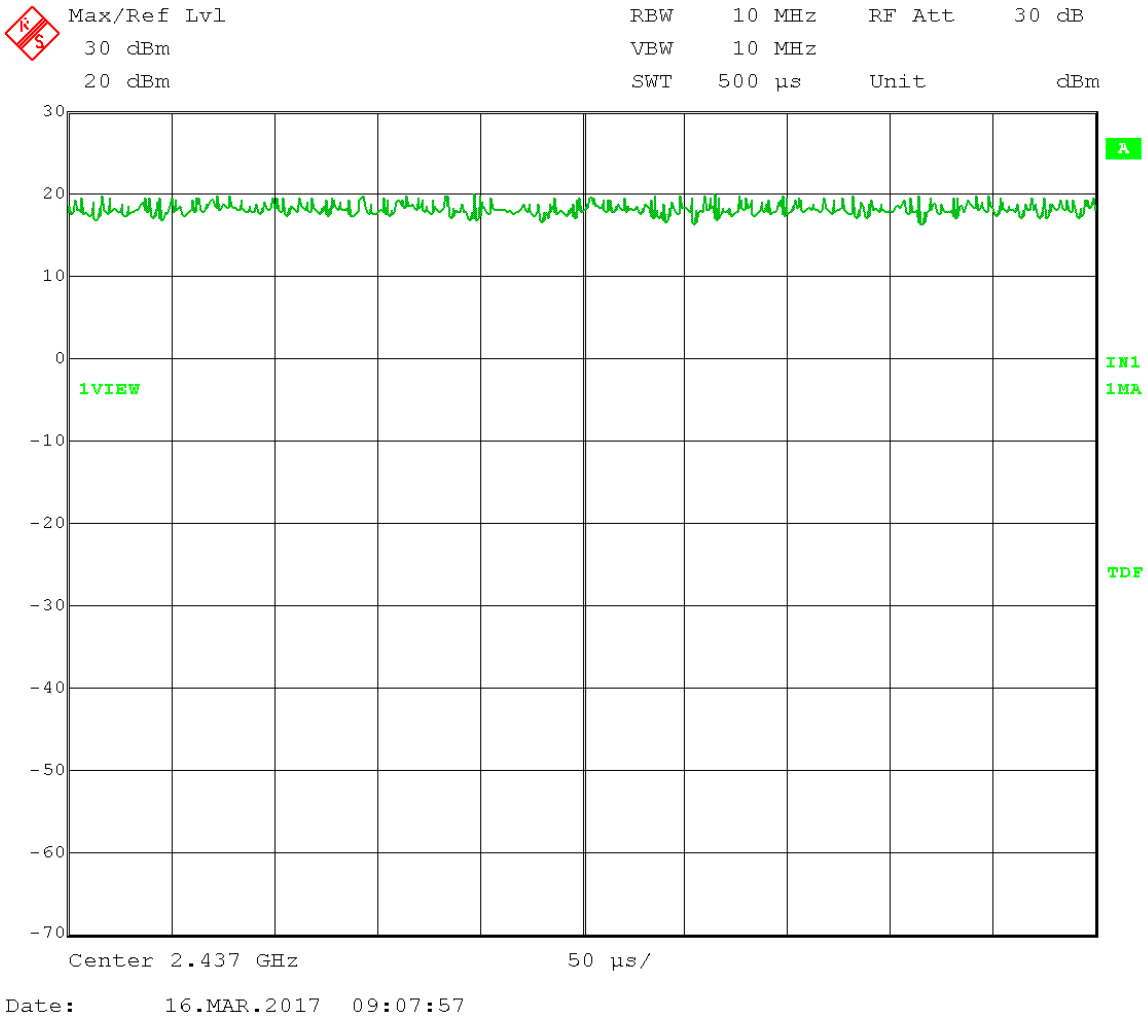
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Duty Cycle of test unit
Operator: Craig B

Modulation: 802.11-b, 1 Mbps
Comment: Duty cycle = 100%



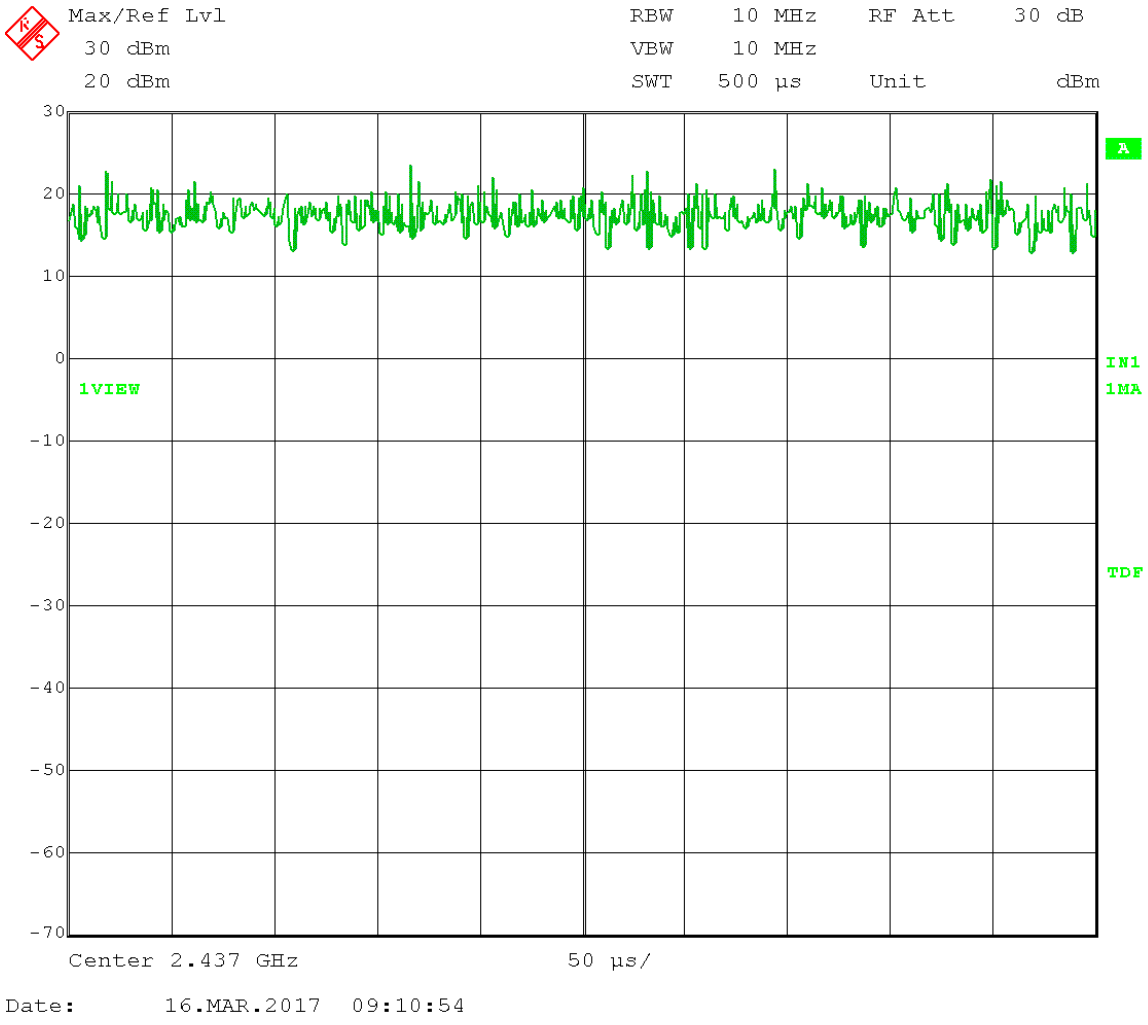
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Duty Cycle of test unit
Operator: Craig B

Modulation: 802.11-b, 11 Mbps
Comment: Duty cycle = 100%



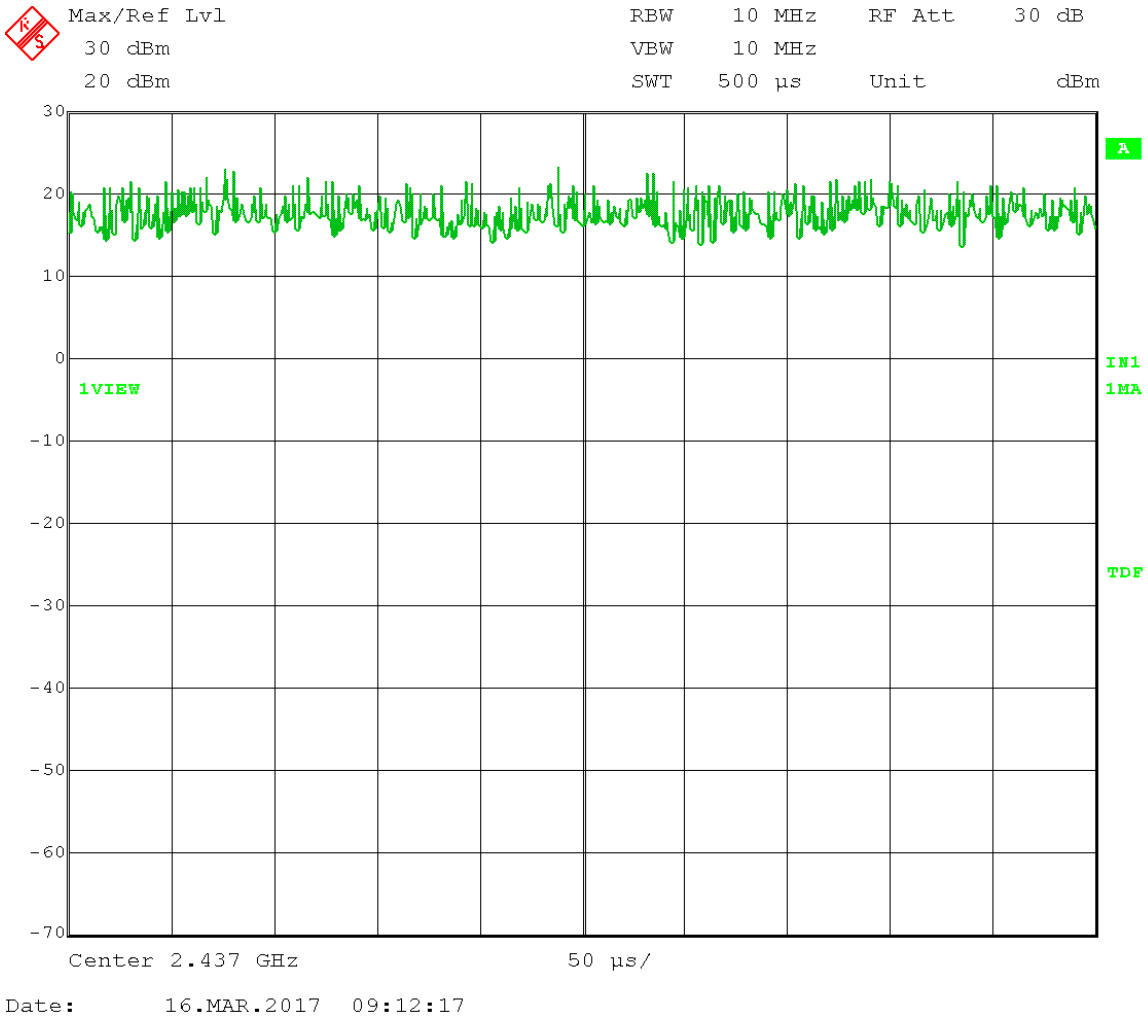
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Duty Cycle of test unit
Operator: Craig B

Modulation: 802.11-g, 6 Mbps
Comment: Duty cycle = 100%



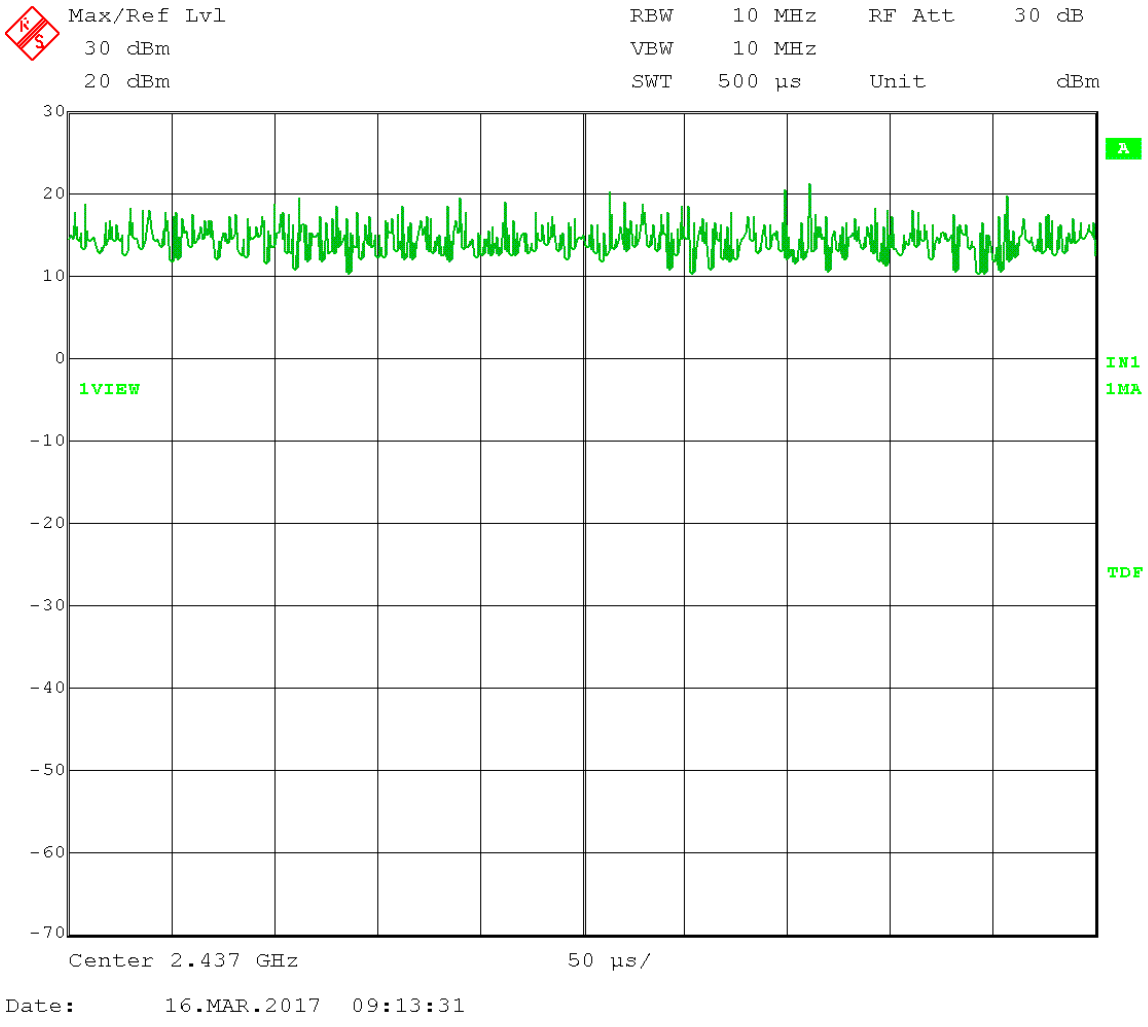
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Duty Cycle of test unit
Operator: Craig B

Modulation: 802.11-g, 54 Mbps
Comment: Duty cycle = 100%



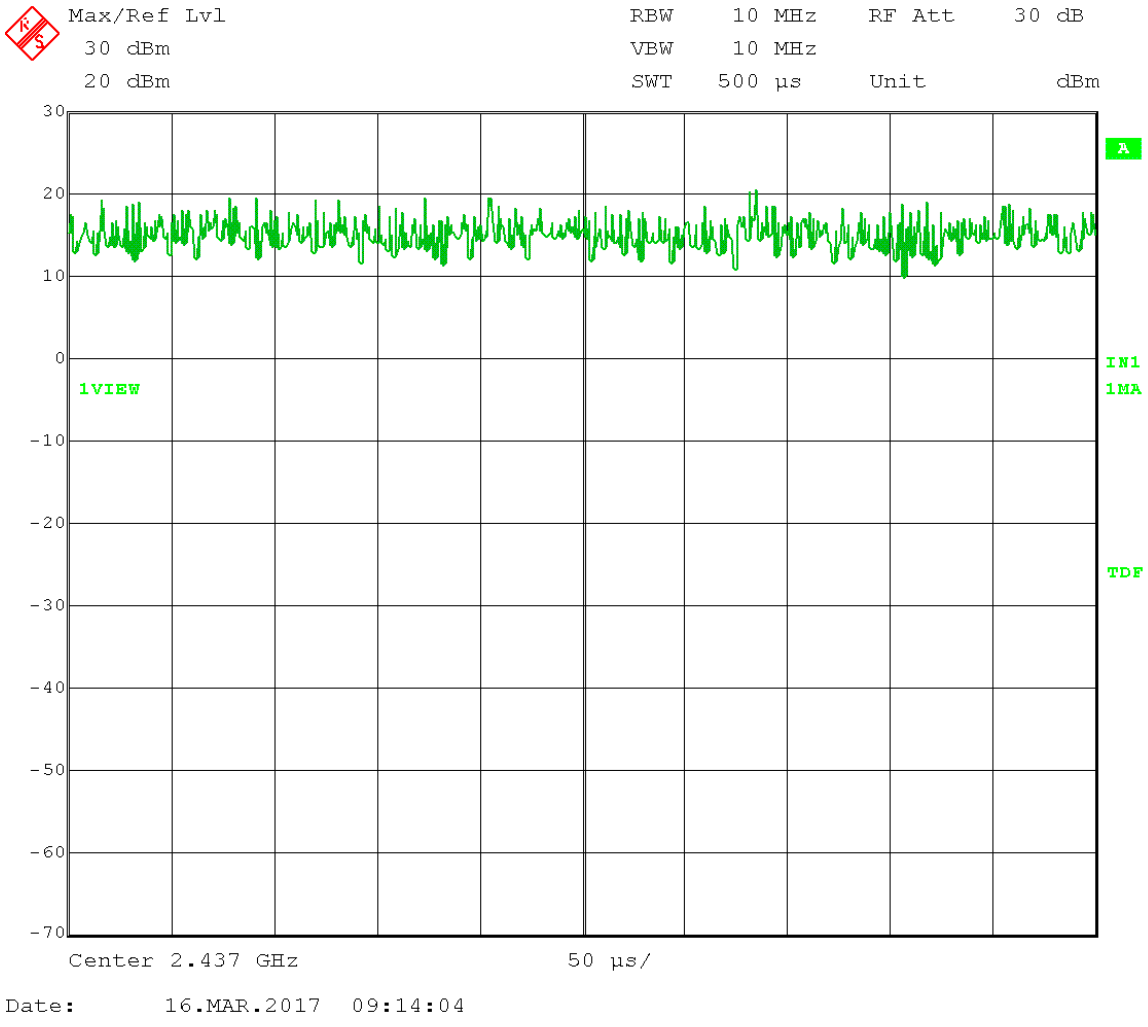
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Duty Cycle of test unit
Operator: Craig B

Modulation: 802.11-n, MCS0
Comment: Duty cycle = 100%



Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Duty Cycle of test unit
Operator: Craig B

Modulation: 802.11-n, MCS7
Comment: Duty cycle = 100%



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Appendix B

B2.0 DTS Bandwidth

Rule Part:

Section 15.247(a)(2)

Test Procedure:

ANSI C63.10-2013
11.8 DTS Bandwidth
11.8.1 Option 1

Limit:

6 dB bandwidth shall be at least 500 kHz

Results:

Compliant
Minimum 6 dB bandwidth: **10.02 MHz**

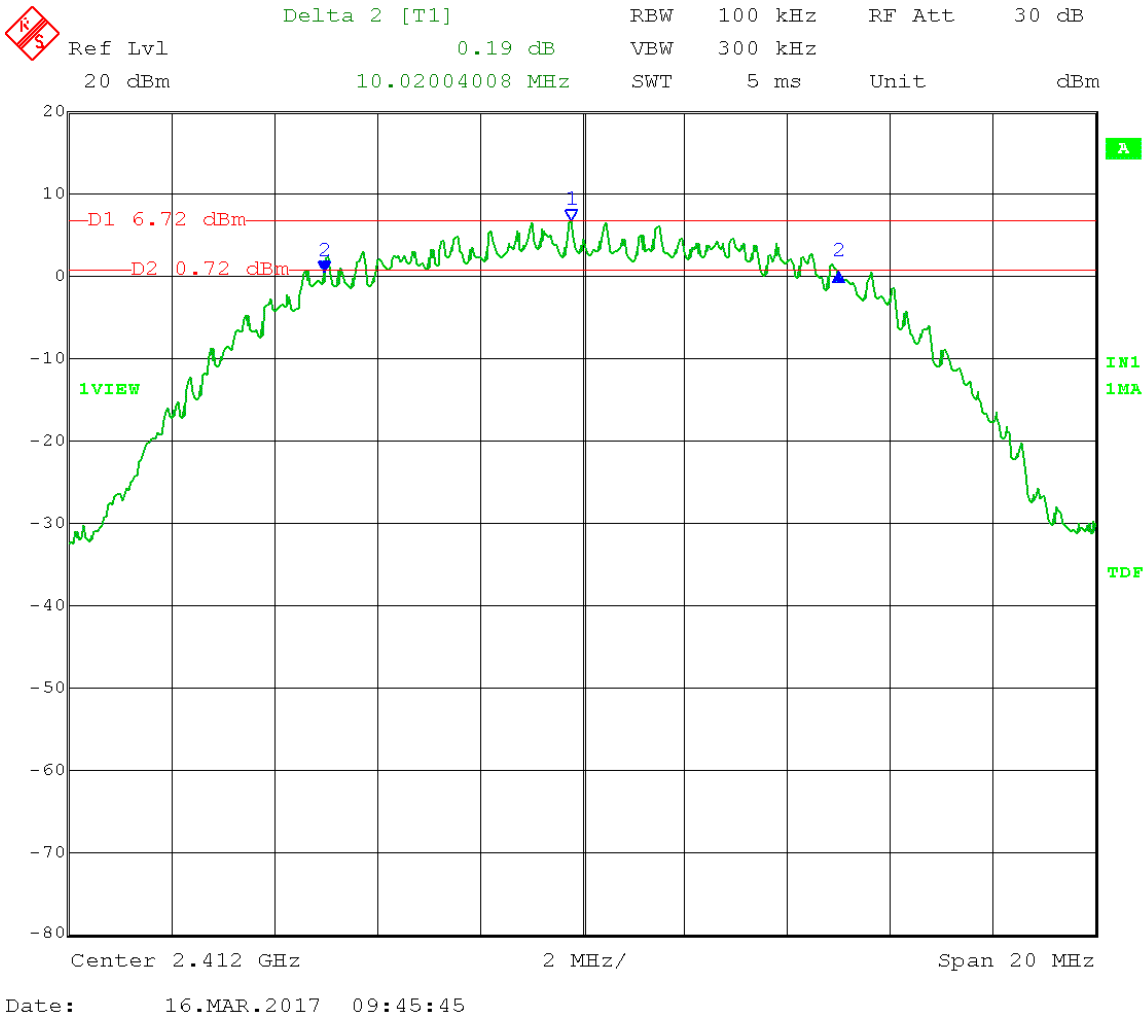
Notes:

Initial bandwidth measurements indicate the narrowest (worst-case) channel bandwidth occurred with the fastest data rate using 802.11-b modulation (11 Mbps). Therefore, measurements were performed in this mode. Testing was performed using the manufacturer's test software with output power setting 18. The EUT was tested at the low, middle, and high channels of operation.

Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: DTS Bandwidth
6 dB Bandwidth
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-b, 11 Mbps
Power setting: 18

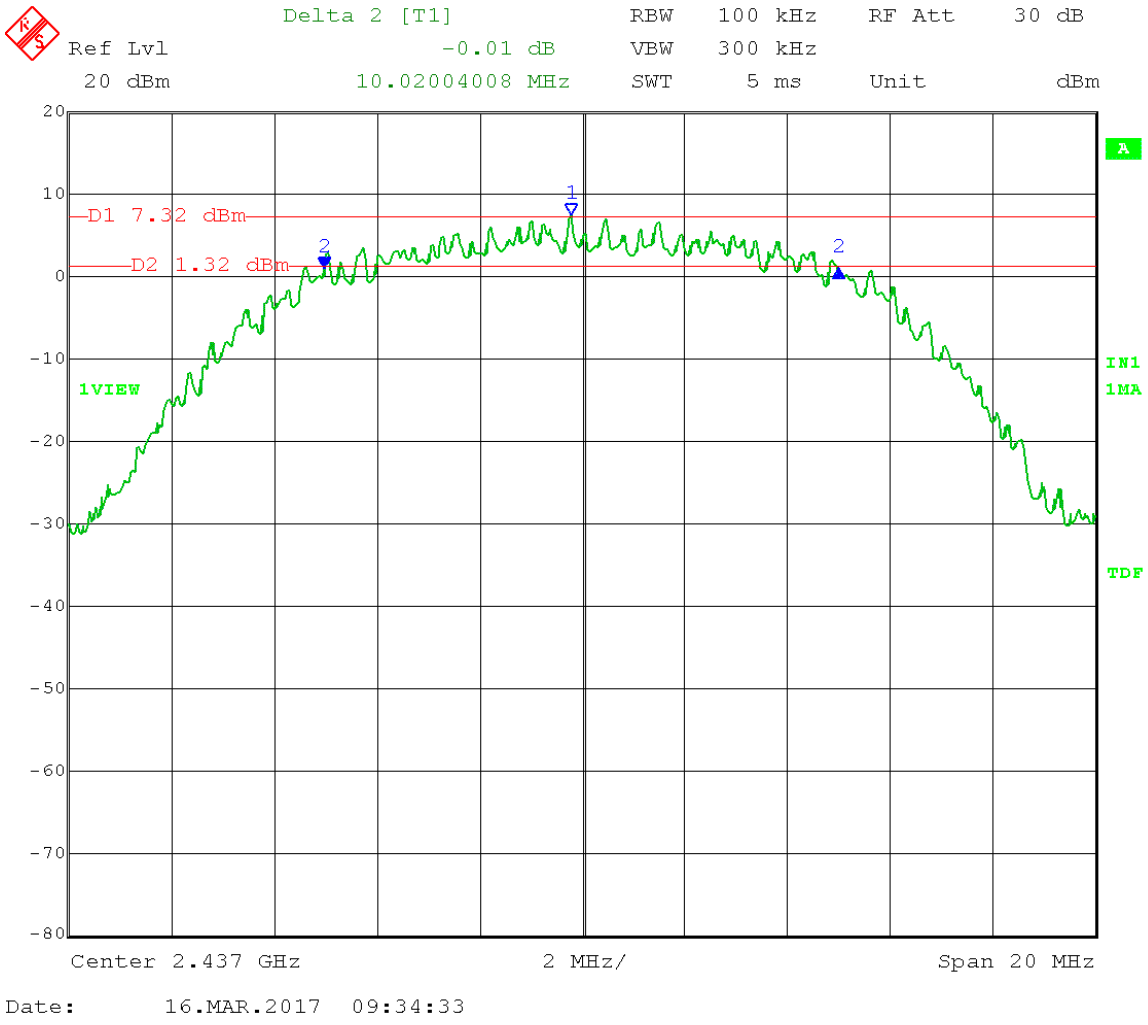
Comment: DTS Bandwidth = 10.02 MHz



Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: DTS Bandwidth
6 dB Bandwidth
Operator: Craig B

Antenna: External Antenna Port
Channel: Mid, 2437 MHz
Modulation: 802.11-b, 11 Mbps
Power setting: 18

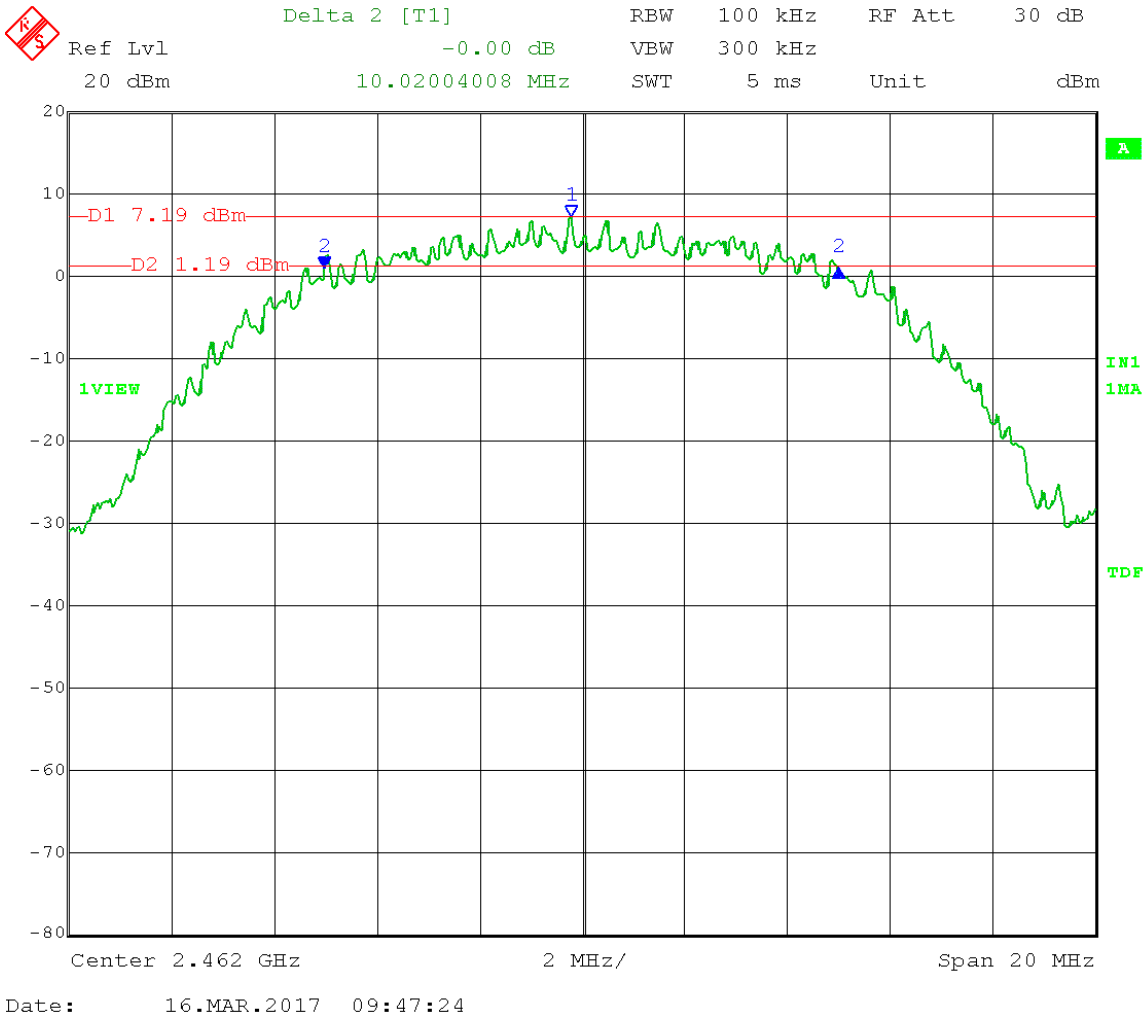
Comment: DTS Bandwidth = 10.02 MHz



Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: DTS Bandwidth
6 dB Bandwidth
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-b, 11 Mbps
Power setting: 18

Comment: DTS Bandwidth = 10.02 MHz



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Appendix B

B3.0 Fundamental Emission Output Power

Rule Part:

15.247(b)(3)

Test Procedure:

ANSI C63.10-2013
11.9.1 Maximum Peak Conducted Output Power
11.9.1.3 PKPM1 Peak power meter method

Limit:

The maximum peak conducted output power limit is 1 watt (30 dBm).

Results:

Compliant
Maximum peak conducted output power: **211 mW (23.25 dBm)**

Notes:

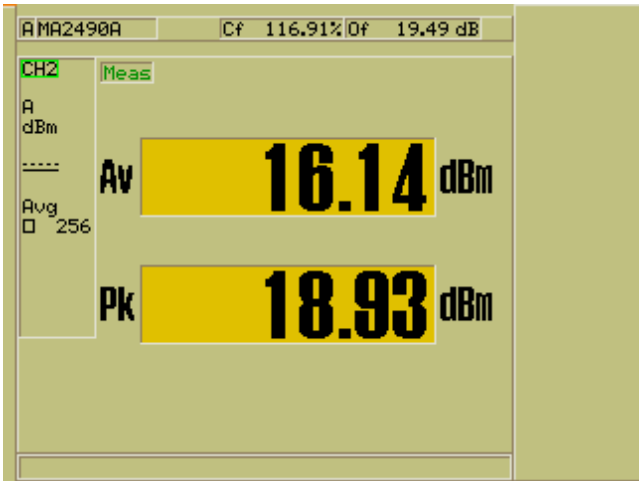
The EUT has 2 on-board antennas and one external antenna port of which only one can operate at a time. Initial output power measurements indicate the highest power levels occurred from the external antenna port. Measurements were performed on this port to represent worst-case power levels. Testing was performed using the manufacturer's test software with output power setting 18 for 802.11-b mode, 17 for 802.11-g mode, and 14 for 802.11-n mode. The data rate was set to worst-case (highest peak power) for each modulation type. The EUT was tested at the low, middle, and high channels of operation. The power meter measurements were corrected to account for the cable loss and external attenuator.

The output power was measured with power setting 18 for 802.11-b mode, and 17 for 802.11-g, and 14 for 802.11-n modes. It was later determined that the power settings of the low and high channels needed to be reduced to meet the restricted band-edge requirements. See pages 13-15 for the final power settings.

Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Fundamental emission output power
Maximum peak conducted output power
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

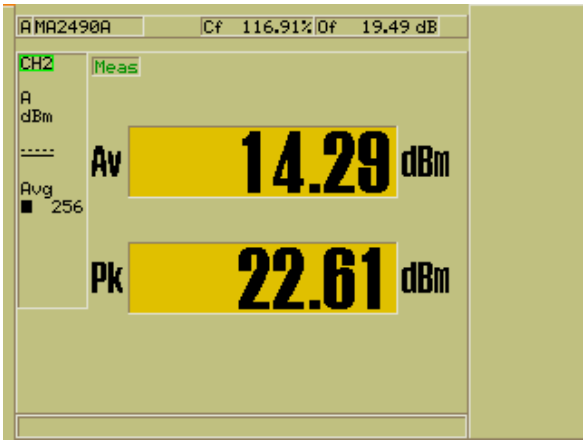
Comment: Maximum peak conducted output power = 18.93 dBm



Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Fundamental emission output power
Maximum peak conducted output power
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

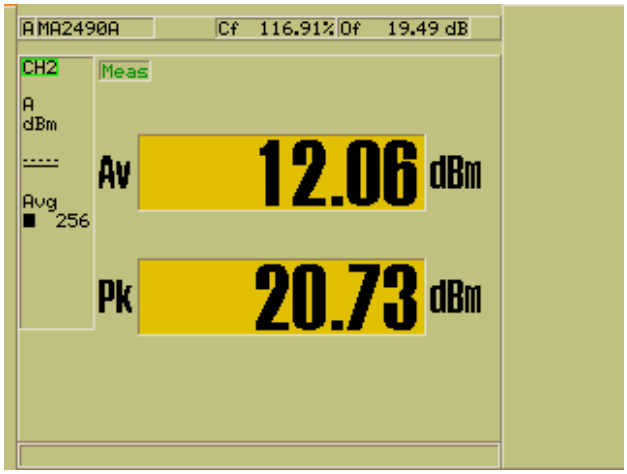
Comment: Maximum peak conducted output power = 22.61 dBm



Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Fundamental emission output power
Maximum peak conducted output power
Operator: Craig B

Antenna: On-board #2
Channel: Low, 2412 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

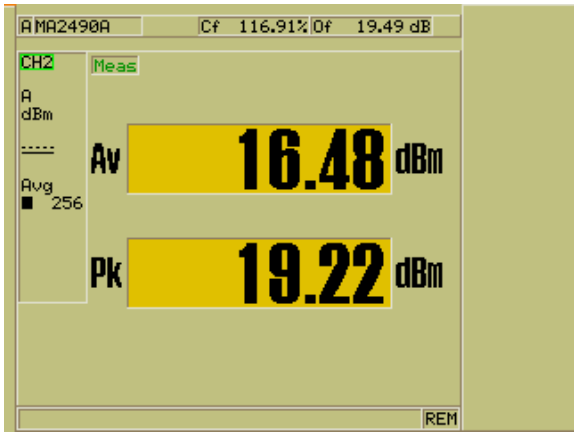
Comment: Maximum peak conducted output power = 20.73 dBm



Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Fundamental emission output power
Maximum peak conducted output power
Operator: Craig B

Antenna: External antenna port
Channel: Mid, 2437 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

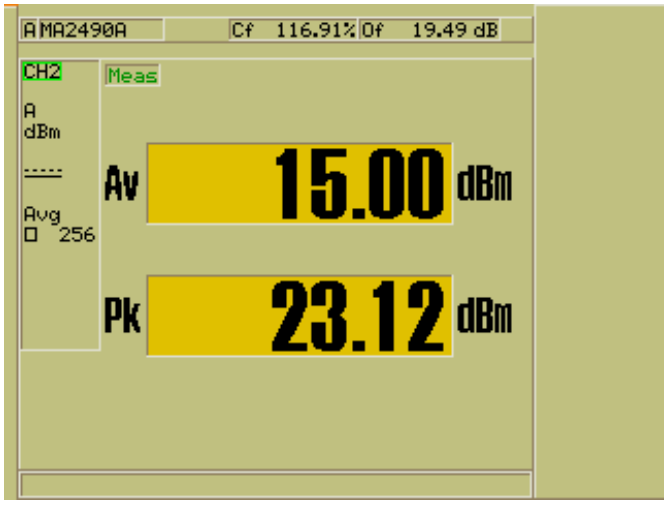
Comment: Maximum peak conducted output power = 19.22 dBm



Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Fundamental emission output power
Maximum peak conducted output power
Operator: Craig B

Antenna: External antenna port
Channel: Mid, 2437 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

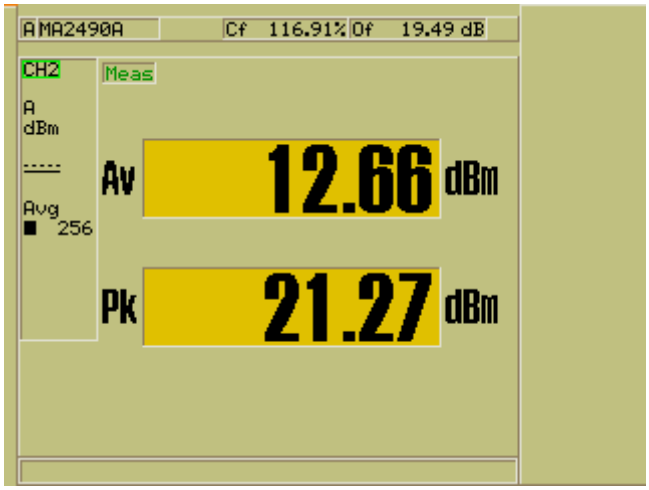
Comment: Maximum peak conducted output power = 23.12 dBm



Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Fundamental emission output power
Maximum peak conducted output power
Operator: Craig B

Antenna: External antenna port
Channel: Mid, 2437 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

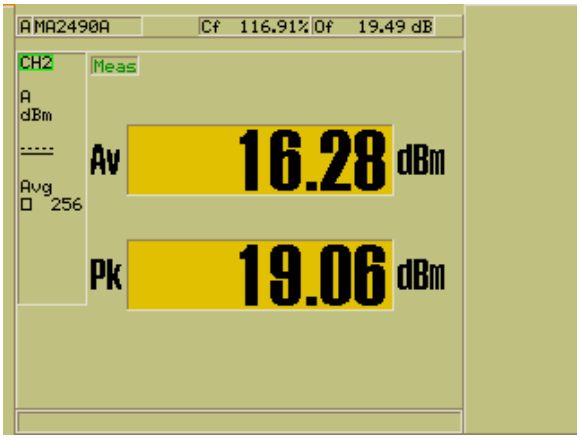
Comment: Maximum peak conducted output power = 21.27 dBm



Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Fundamental emission output power
Maximum peak conducted output power
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

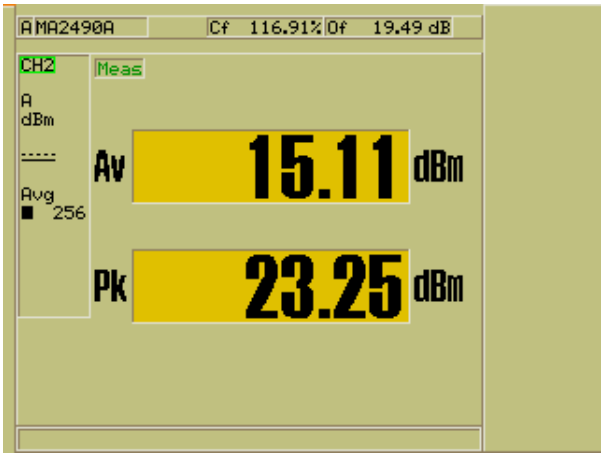
Comment: Maximum peak conducted output power = 19.06 dBm



Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Fundamental emission output power
Maximum peak conducted output power
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

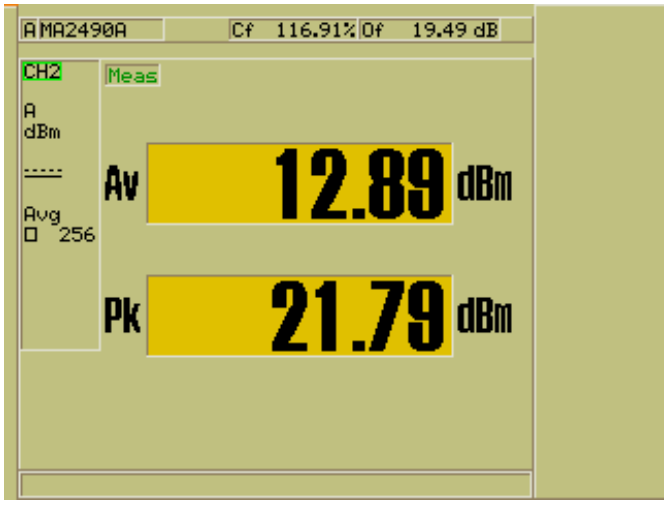
Comment: Maximum peak conducted output power = 23.25 dBm



Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Fundamental emission output power
Maximum peak conducted output power
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Comment: Maximum peak conducted output power = 21.79 dBm



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Appendix B

B4.0 Maximum Power Spectral Density (PSD)

Rule Part:

15.247(e)

Test Procedure:

ANSI C63.10-2013
11.10 Maximum Power Spectral Density Level in the Fundamental Emission
11.10.2 Method PKPSD (peak PSD)

Limit:

+8 dBm in any 3 kHz band segment within the fundamental during any time interval of continuous transmission.

Results:

Compliant
Maximum conducted power spectral density (PSD): **-7.16 dBm**

Notes:

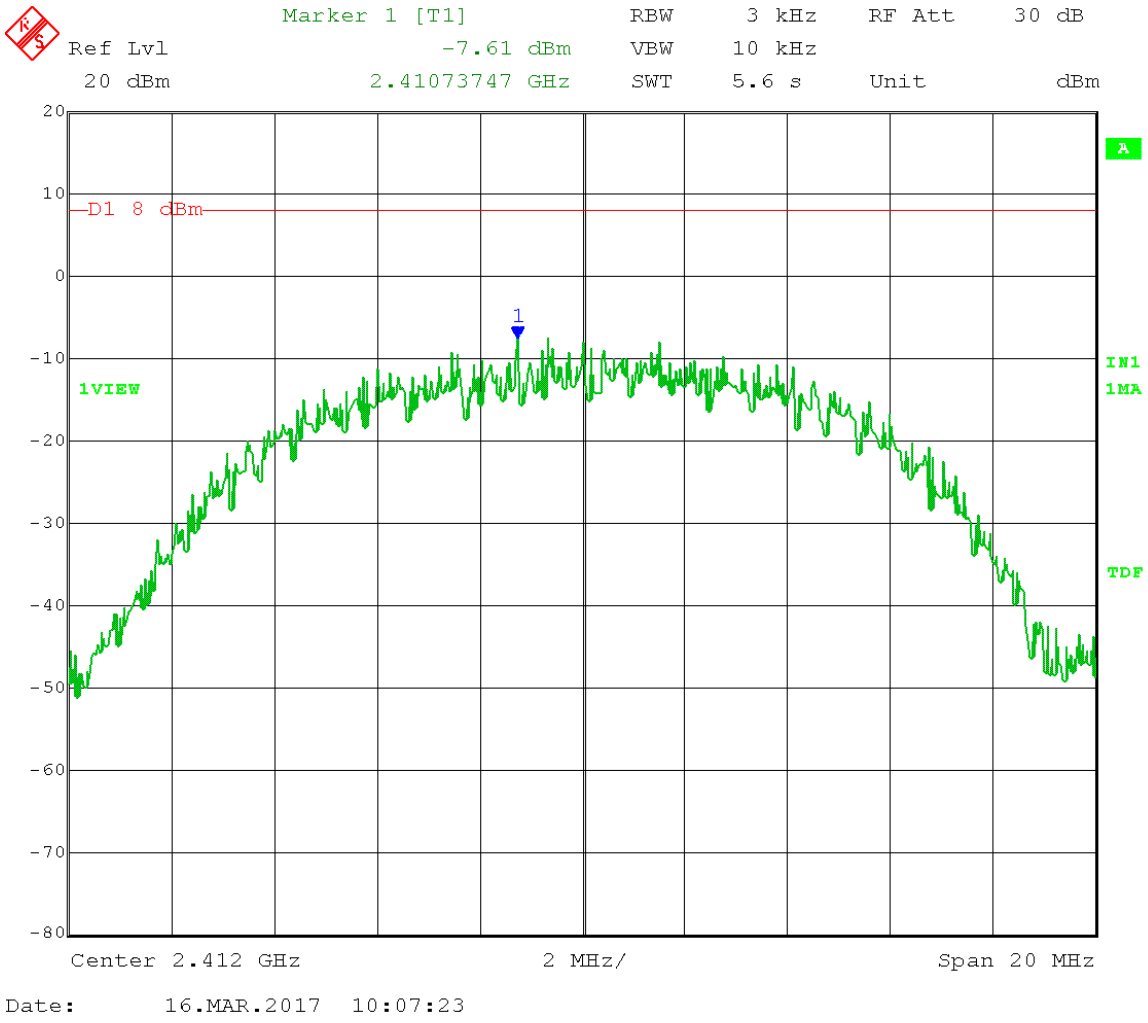
The EUT has 2 on-board antennas and one external antenna port of which only one can operate at a time. Initial pre-scan measurements indicate the highest power spectral density occurred from the external antenna port using 802.11-b modulation and 11 Mbps data rate. Therefore, measurements were performed in this mode from the external antenna port to represent worst-case power spectral density levels. The EUT was tested at the low, middle, and high channels of operation with power setting 18. The spectrum analyzer measurements were corrected to account for the cable loss and external attenuator.

Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Maximum power spectral density level in the fundamental emission
Peak Power Spectral Density
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-b, 11 Mbps
Power setting: 18

Limit: 8 dBm / 3 kHz

Peak PSD = -7.61 dBm / 3 kHz

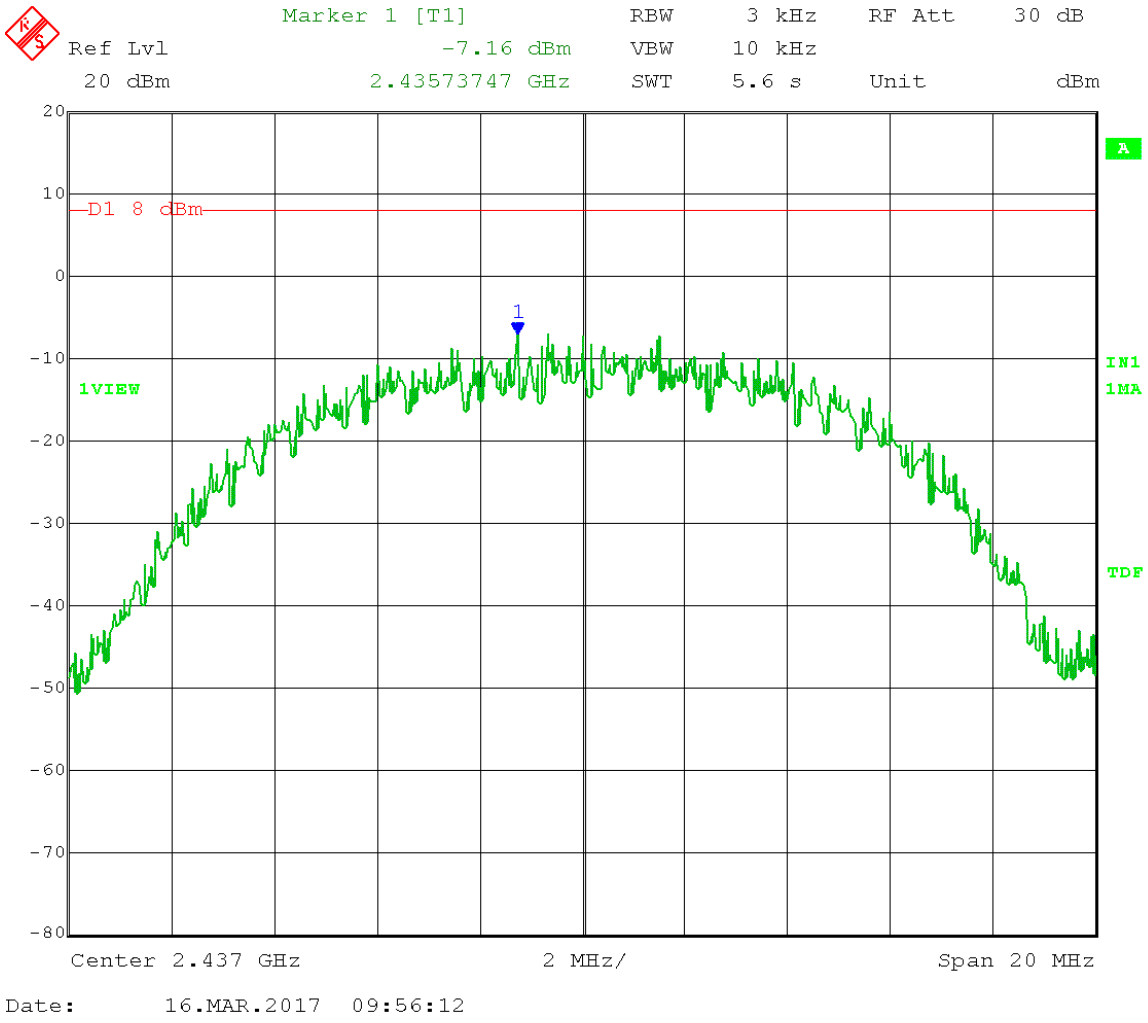


Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Maximum power spectral density level in the fundamental emission
Peak Power Spectral Density
Operator: Craig B

Antenna: External Antenna Port
Channel: Mid, 2437 MHz
Modulation: 802.11-b, 11 Mbps
Power setting: 18

Limit: 8 dBm / 3 kHz

Peak PSD = -7.16 dBm / 3 kHz

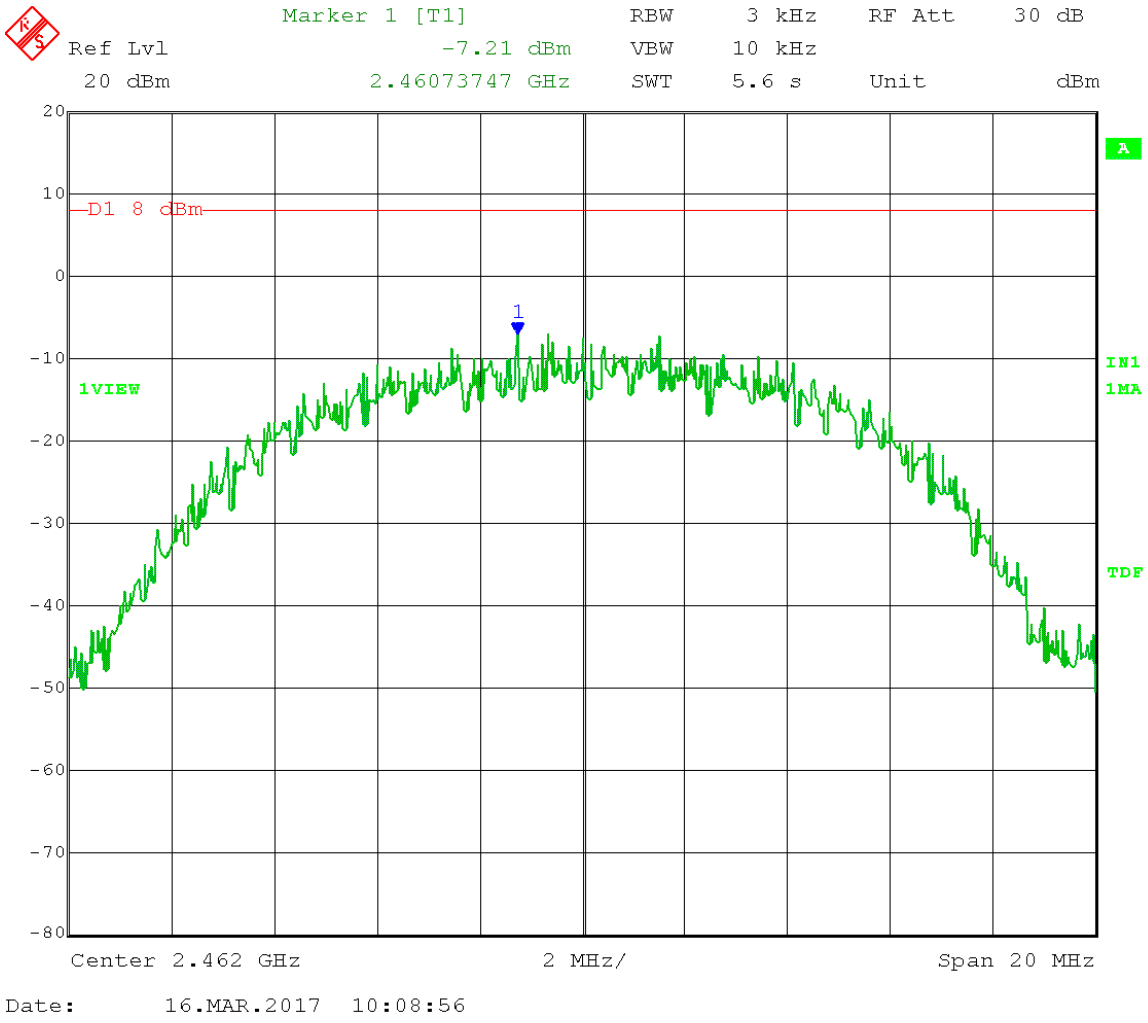


Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Maximum power spectral density level in the fundamental emission
Peak Power Spectral Density
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-b, 11 Mbps
Power setting: 18

Limit: 8 dBm / 3 kHz

Peak PSD = -7.21 dBm / 3 kHz



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Appendix B

B5.0 Emissions in Non-Restricted Frequency Bands - RF Conducted

Rule Part:

15.247(d)

Test Procedure:

ANSI C63.10-2013
11.11 Emissions in non-restricted frequency bands
11.11.2 Reference Level Measurement
11.11.3 Unwanted Emissions Level Measurement

Limit:

The peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

Results:

Compliant

Notes:

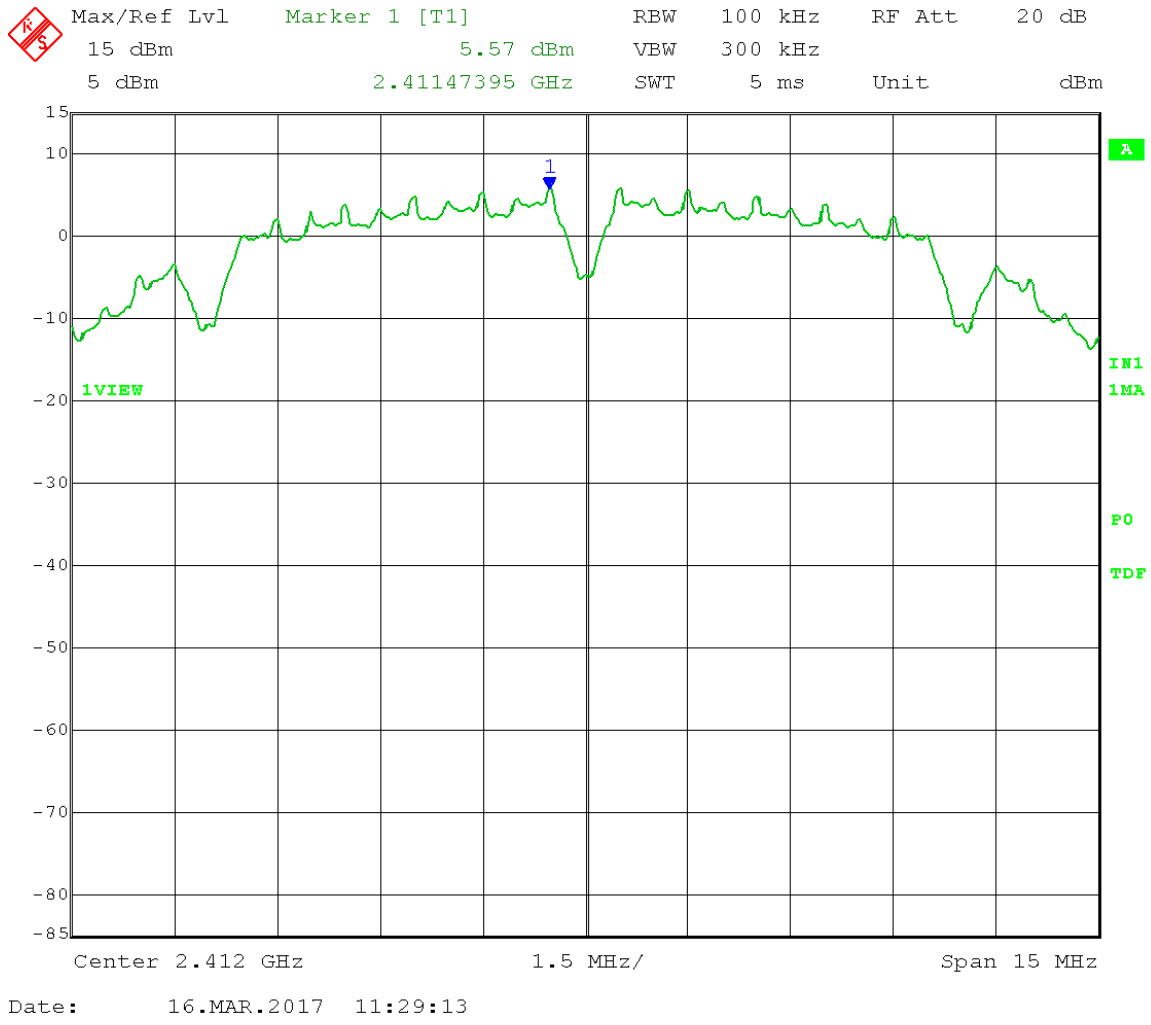
The EUT has 2 on-board antennas and one external antenna port of which only one can operate at a time. Initial output power measurements indicate the highest power levels occurred from the external antenna port. Measurements were performed on this port to represent worst-case emissions. Testing was performed using the manufacturer's test software with output power setting 18 for 802.11-b mode, 17 for 802.11-g mode, and 14 for 802.11-n mode. The data rate was set to worst-case (highest peak power) for each modulation type. The EUT was tested at the low, middle, and high channels of operation. The spectrum analyzer measurements were corrected to account for the cable loss and external attenuator.

Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Reference Level measurement

Limit = 5.57 dBm – 20 dB = -14.43 dBm



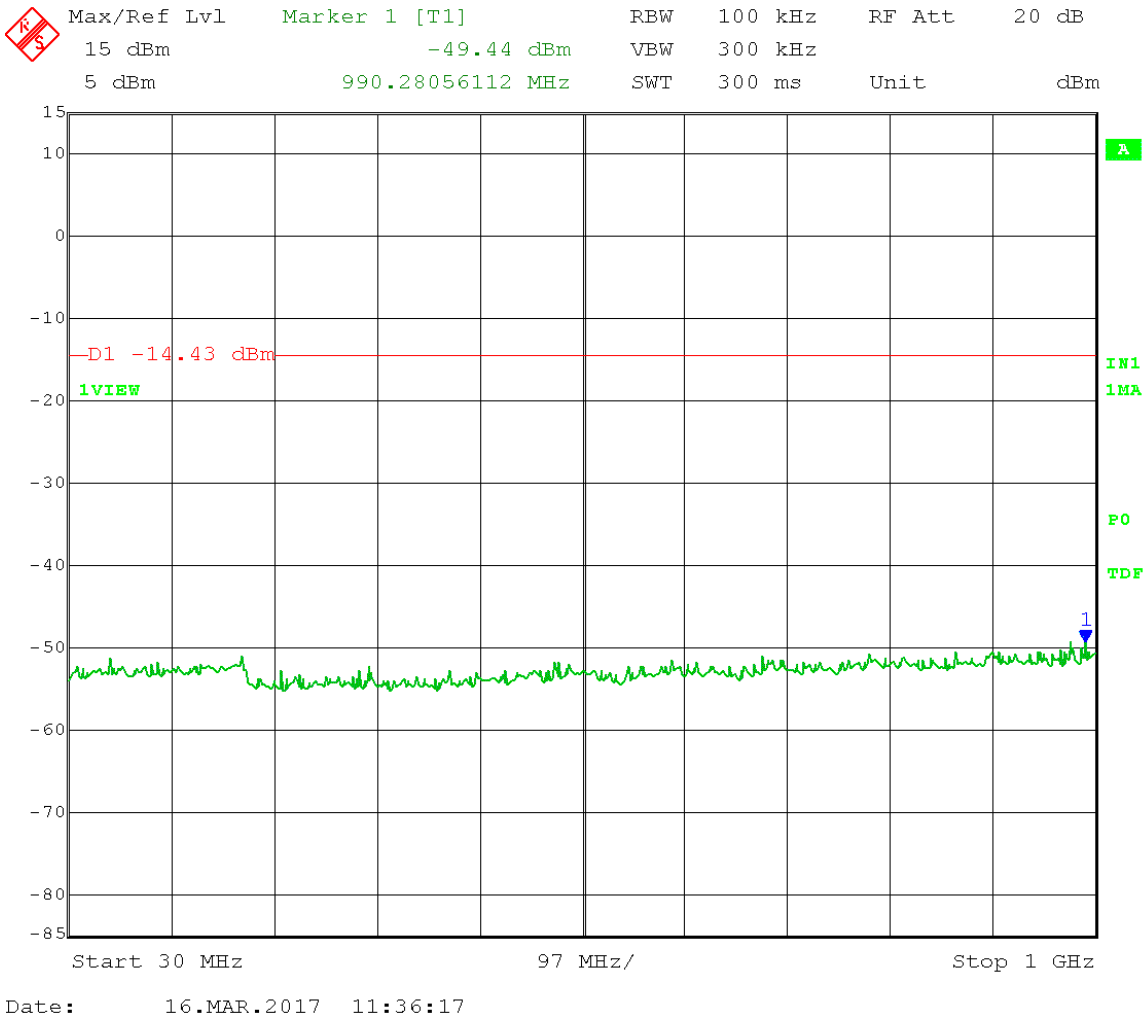
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Emission Level measurement

Limit = 5.57 dBm – 20 dB = -14.43 dBm

Frequency Range: 30 - 1000 MHz



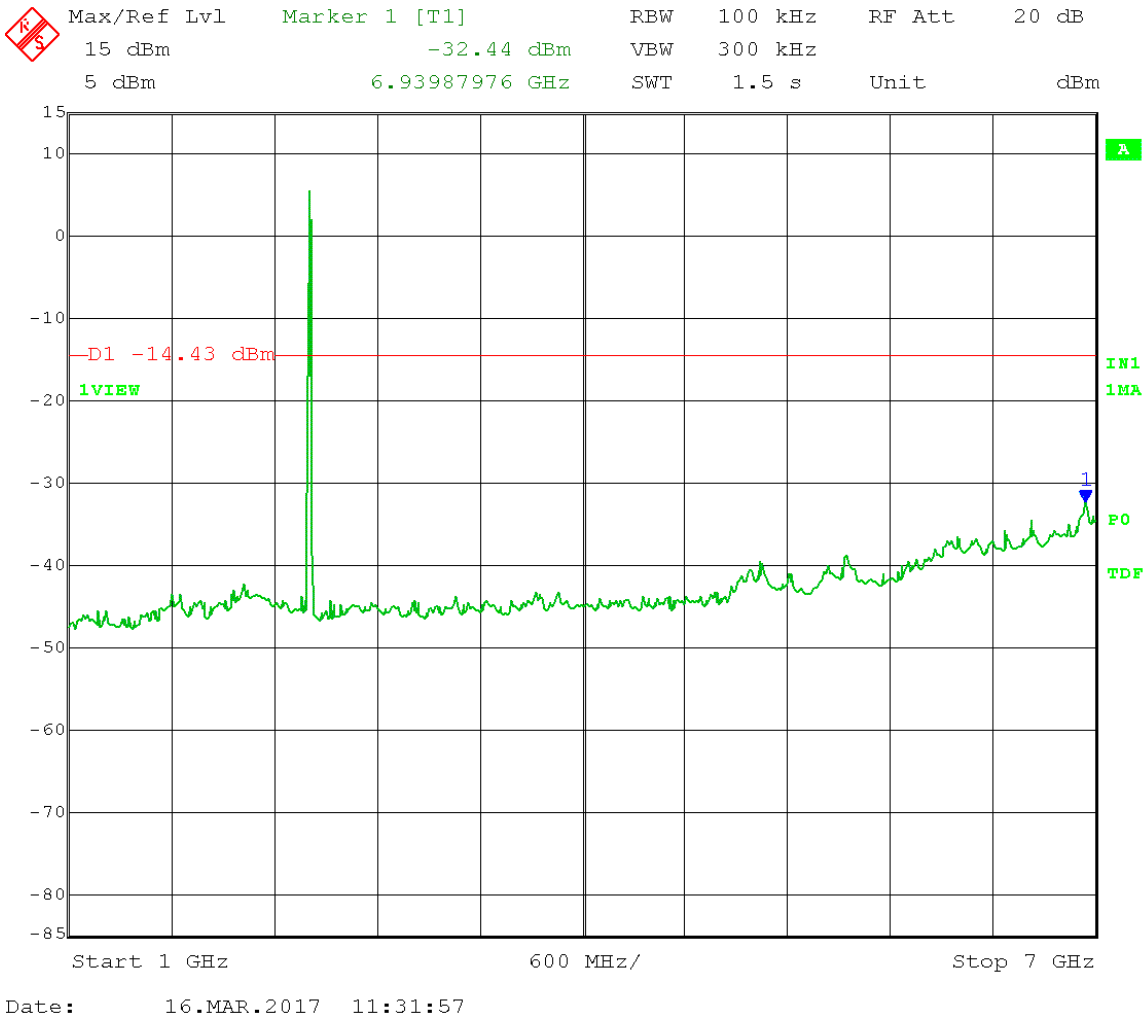
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Emission Level measurement

Limit = 5.57 dBm – 20 dB = -14.43 dBm

Frequency Range: 1 - 7 GHz



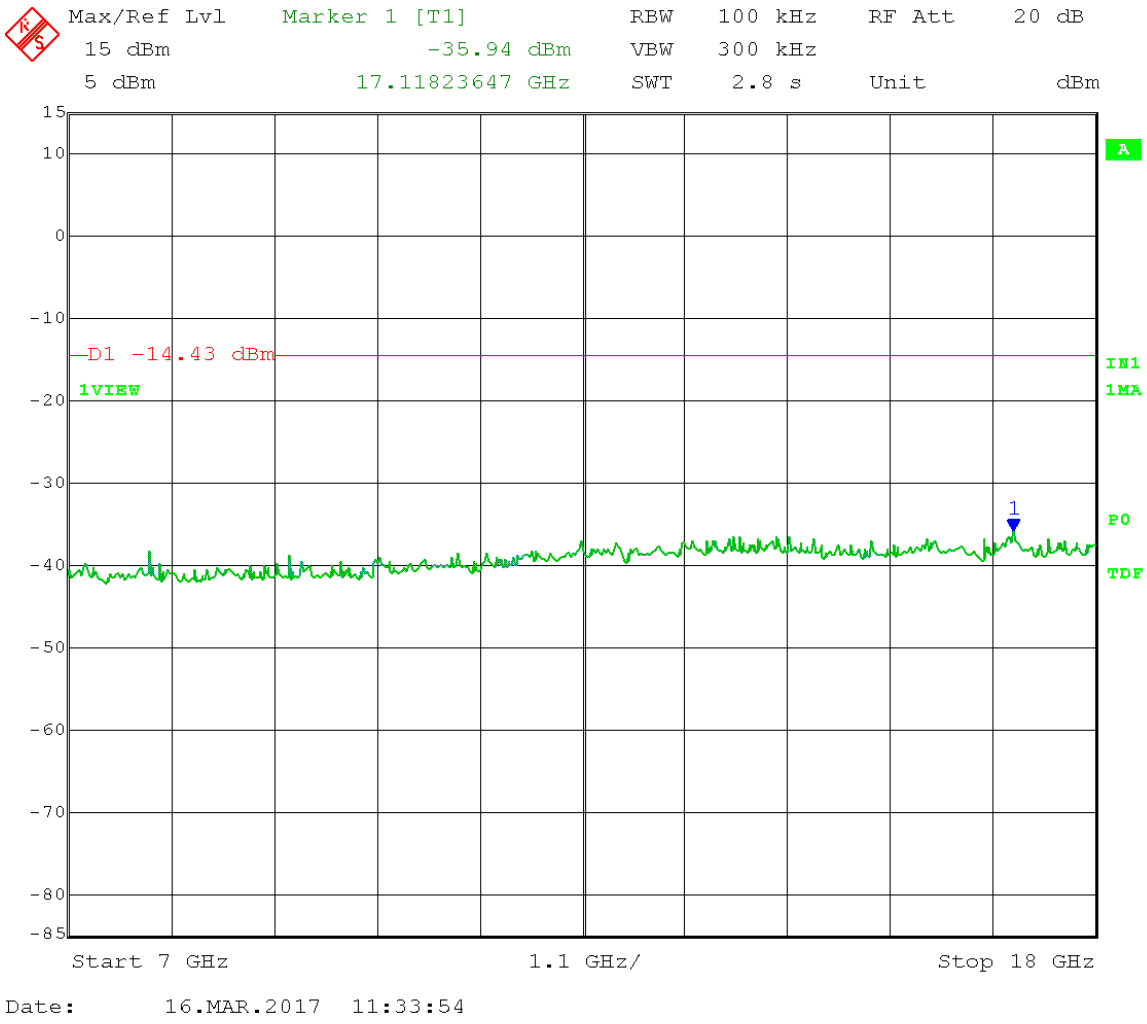
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Emission Level measurement

Limit = 5.57 dBm – 20 dB = -14.43 dBm

Frequency Range: 7 - 18 GHz



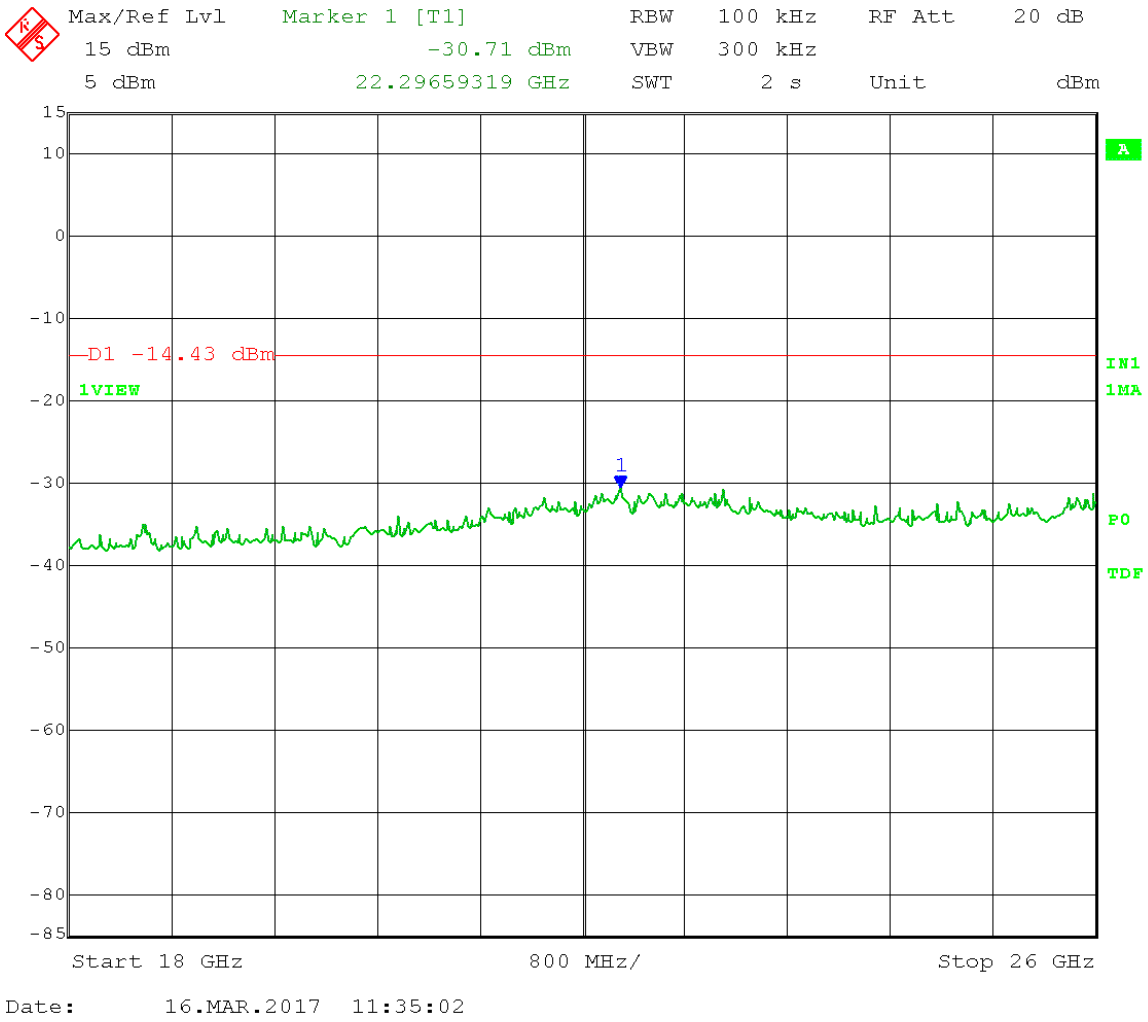
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Emission Level measurement

Limit = 5.57 dBm – 20 dB = -14.43 dBm

Frequency Range: 18 - 26 GHz

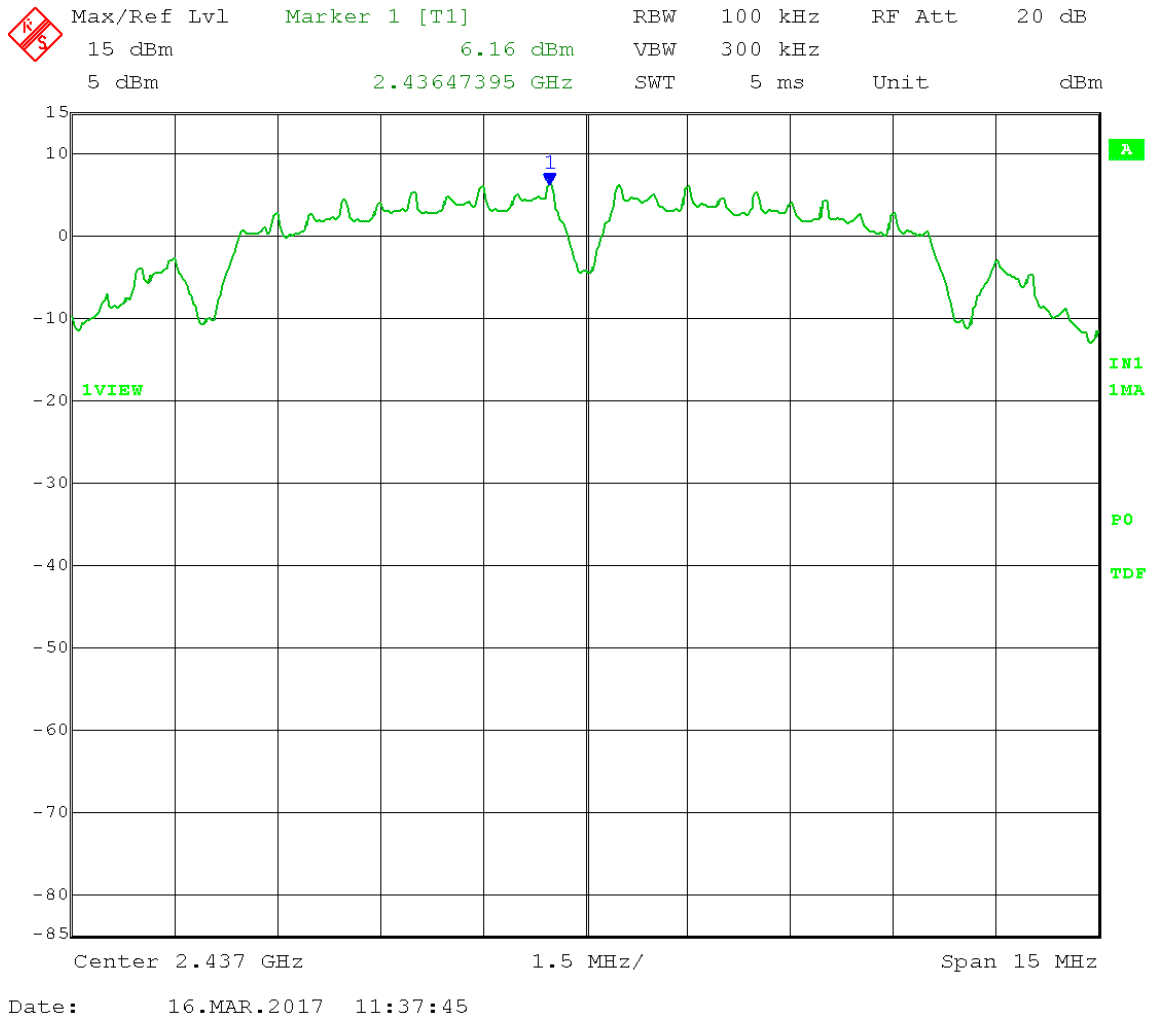


Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Mid, 2437 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Reference Level measurement

Limit = 6.16 dBm – 20 dB = -13.84 dBm



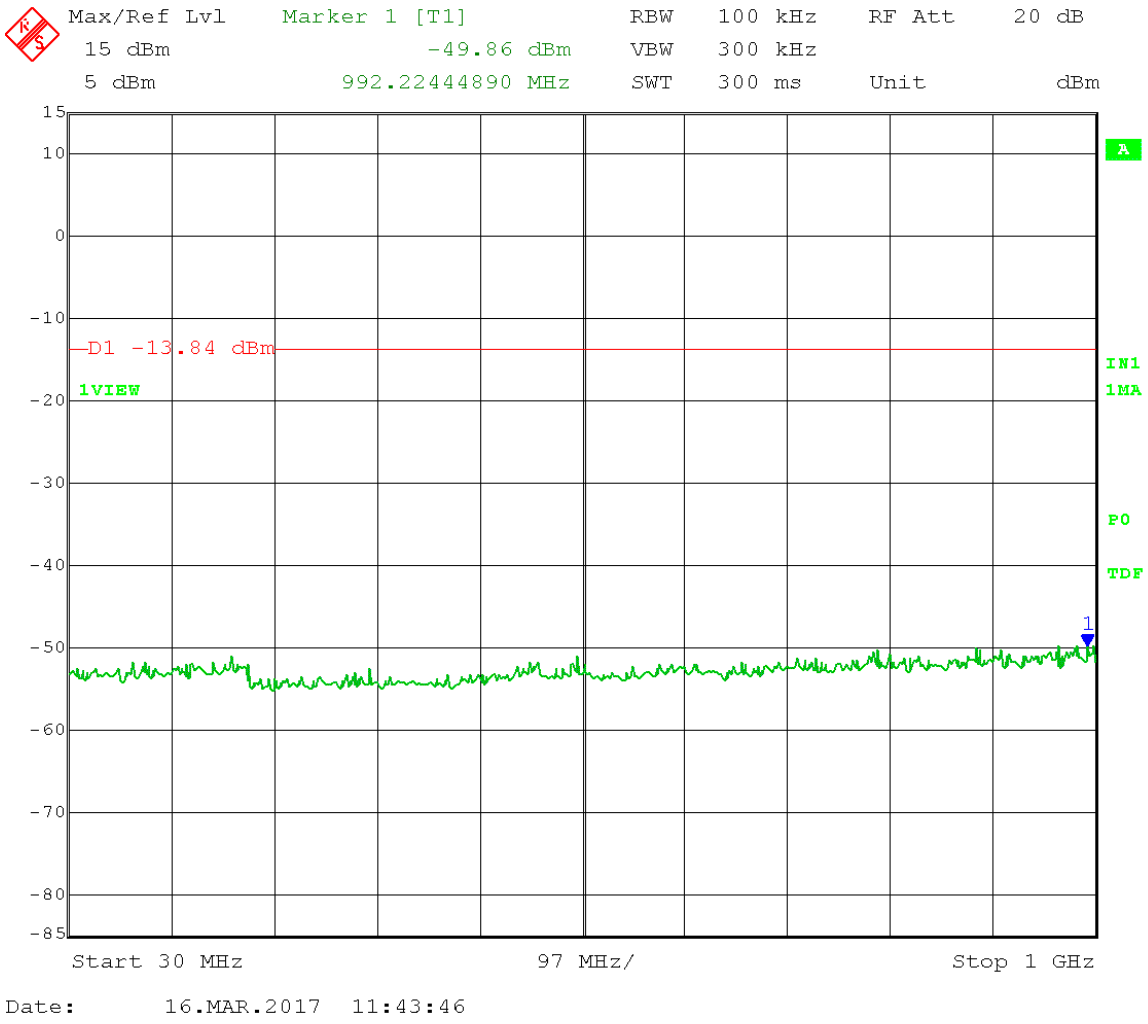
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Mid, 2437 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Emission Level measurement

Limit = 6.16 dBm – 20 dB = -13.84 dBm

Frequency Range: 30 - 1000 MHz



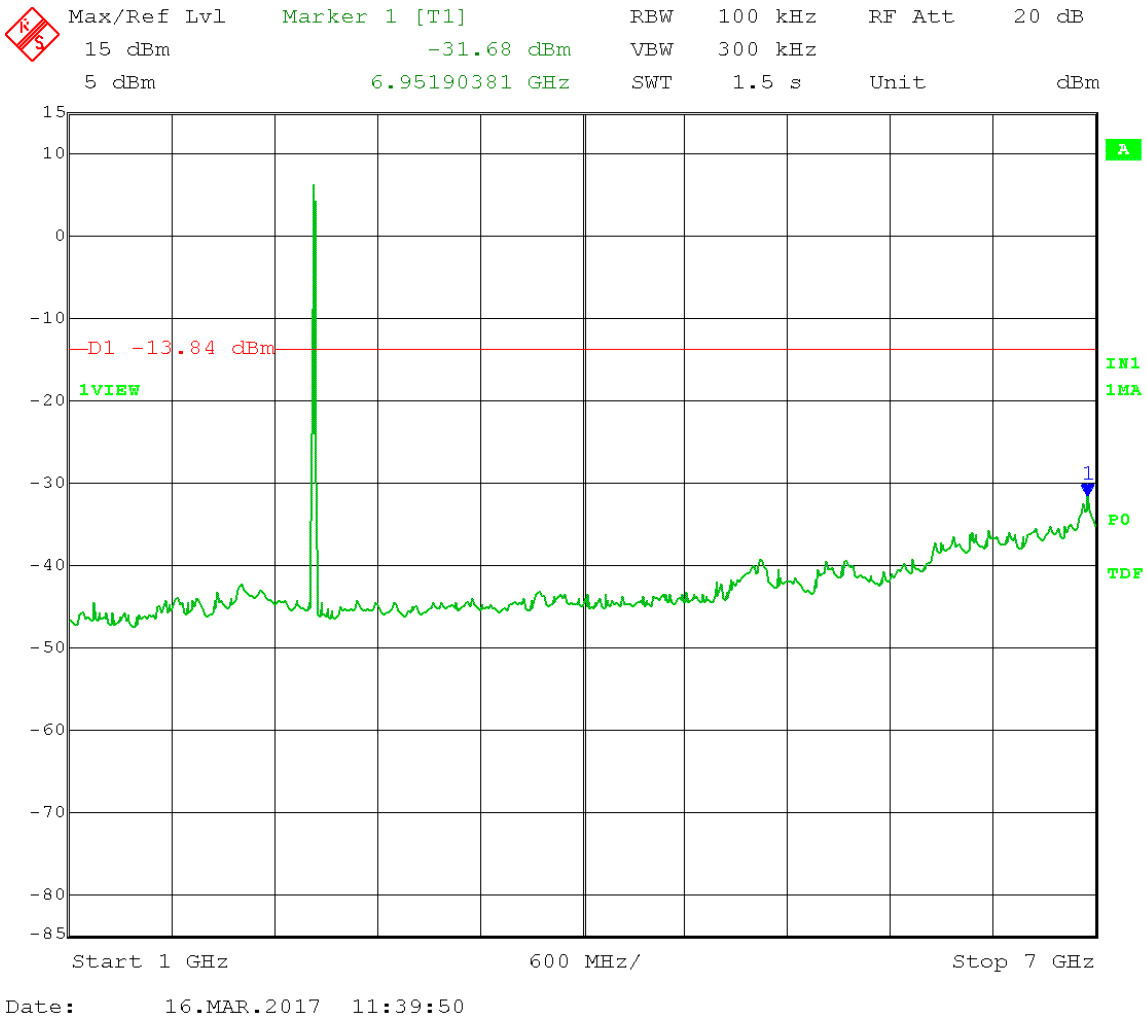
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Mid, 2437 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Emission Level measurement

Limit = 6.16 dBm – 20 dB = -13.84 dBm

Frequency Range: 1 - 7 GHz



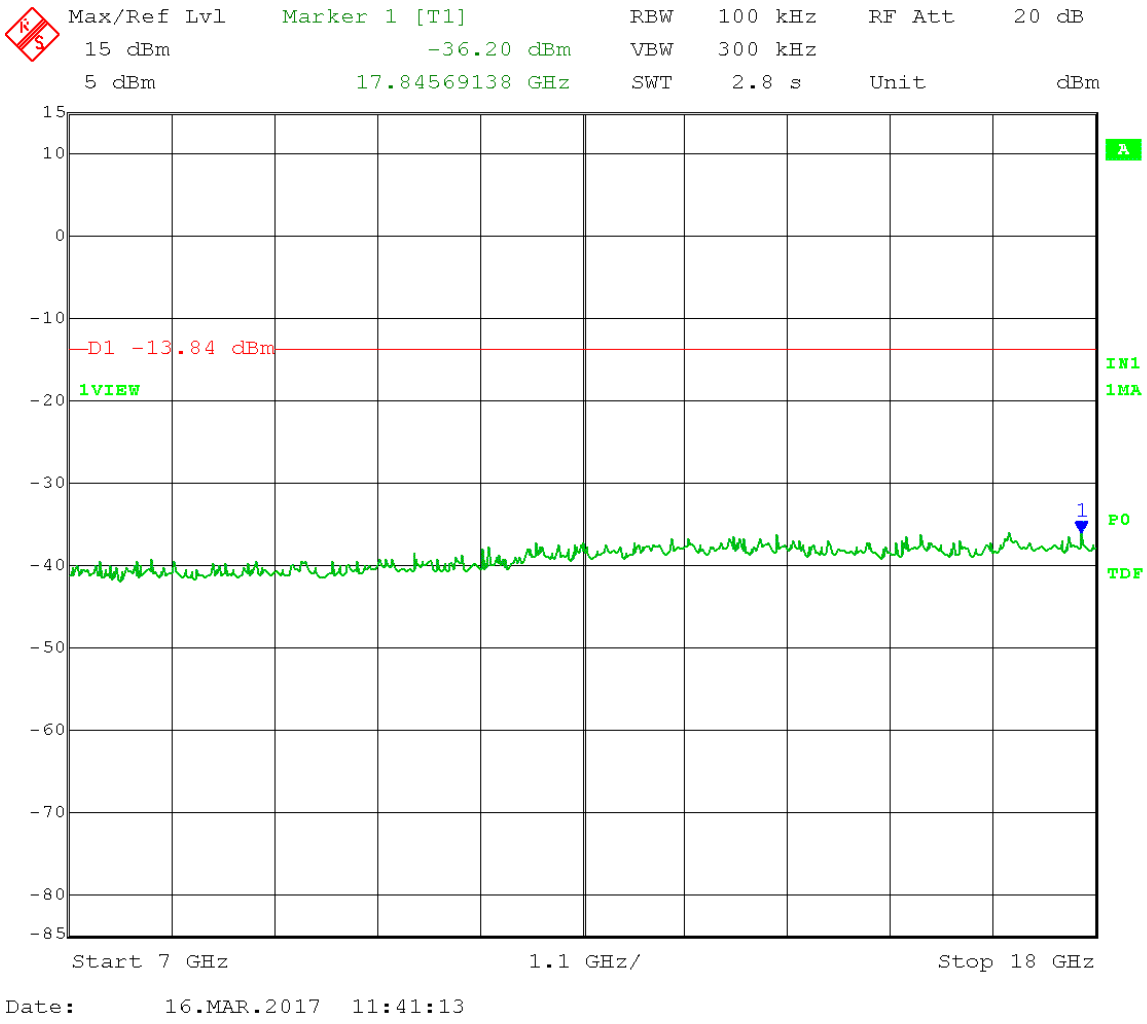
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Mid, 2437 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Emission Level measurement

Limit = 6.16 dBm – 20 dB = -13.84 dBm

Frequency Range: 7 - 18 GHz



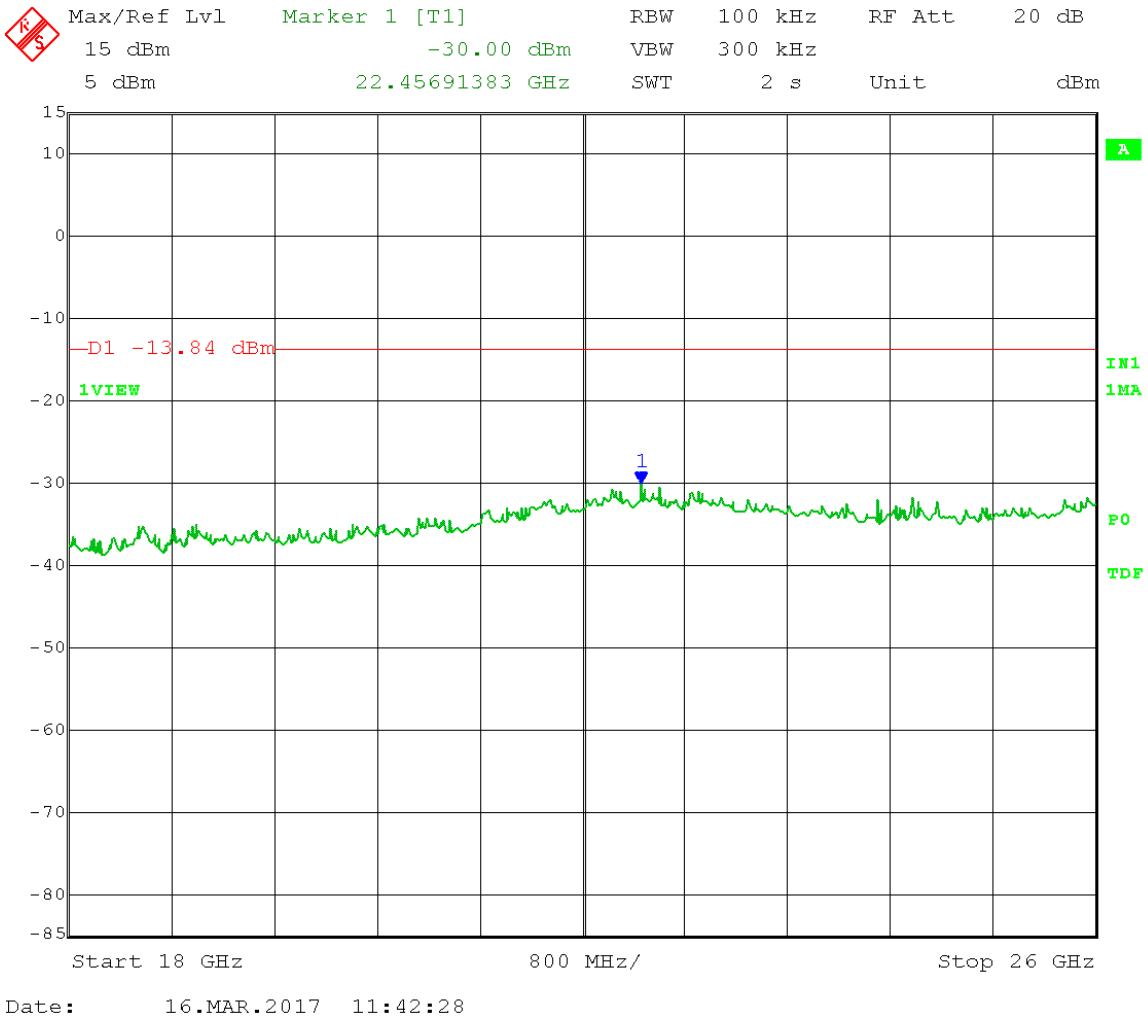
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Mid, 2437 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Emission Level measurement

Limit = 6.16 dBm – 20 dB = -13.84 dBm

Frequency Range: 18 - 26 GHz

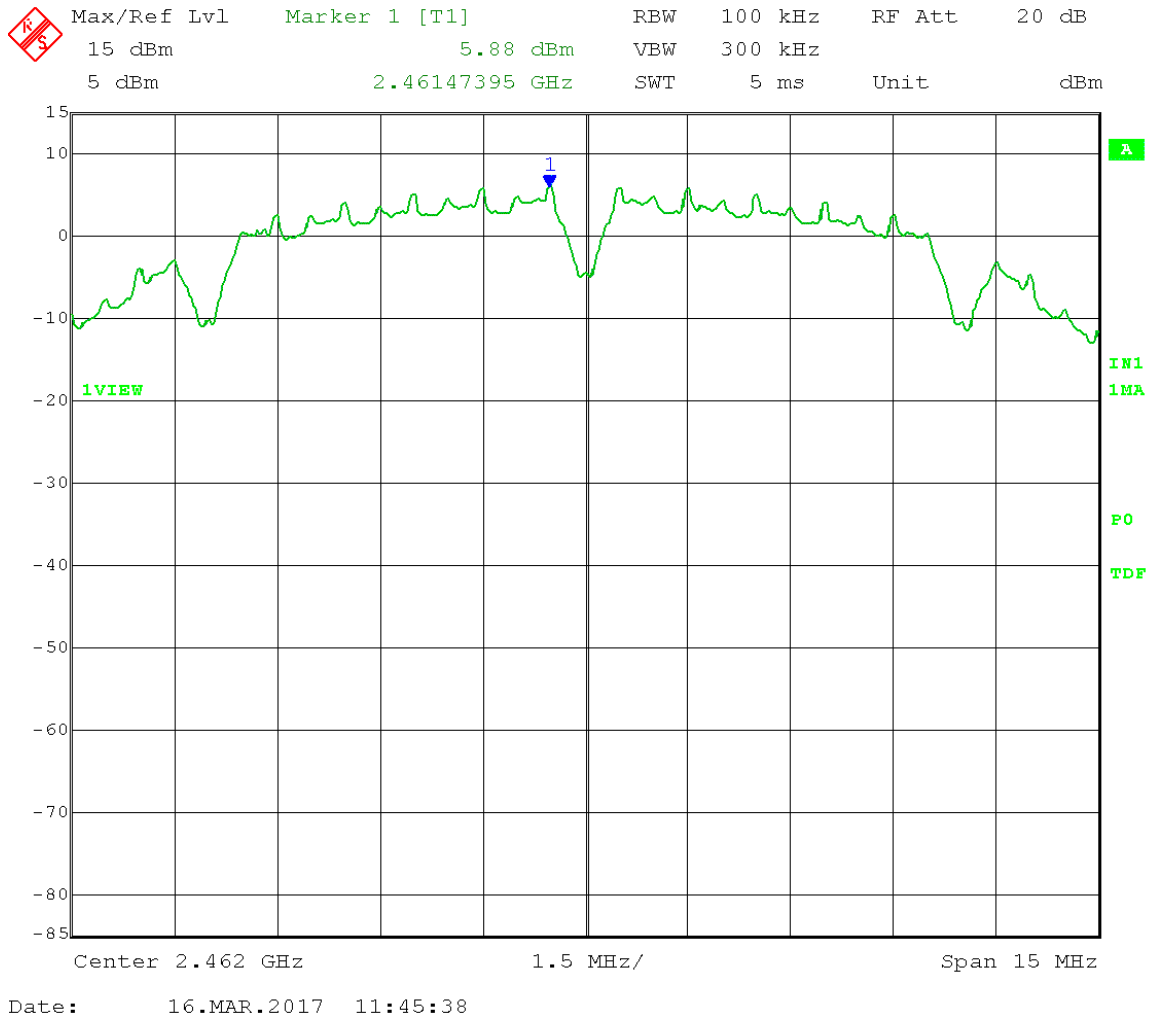


Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Reference Level measurement

Limit = 5.88 dBm – 20 dB = -14.12 dBm



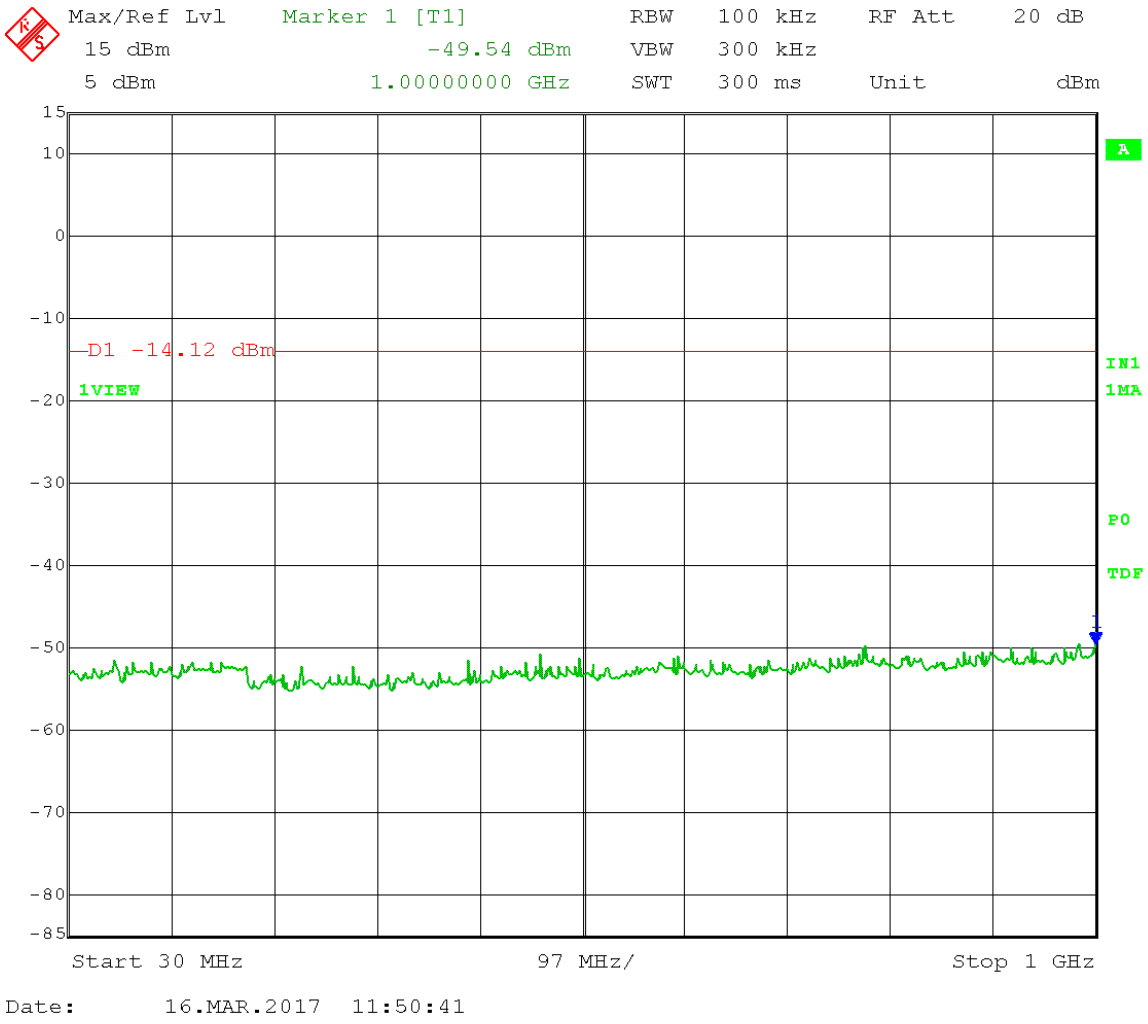
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Emission Level measurement

Limit = 5.88 dBm – 20 dB = -14.12 dBm

Frequency Range: 30 - 1000 MHz



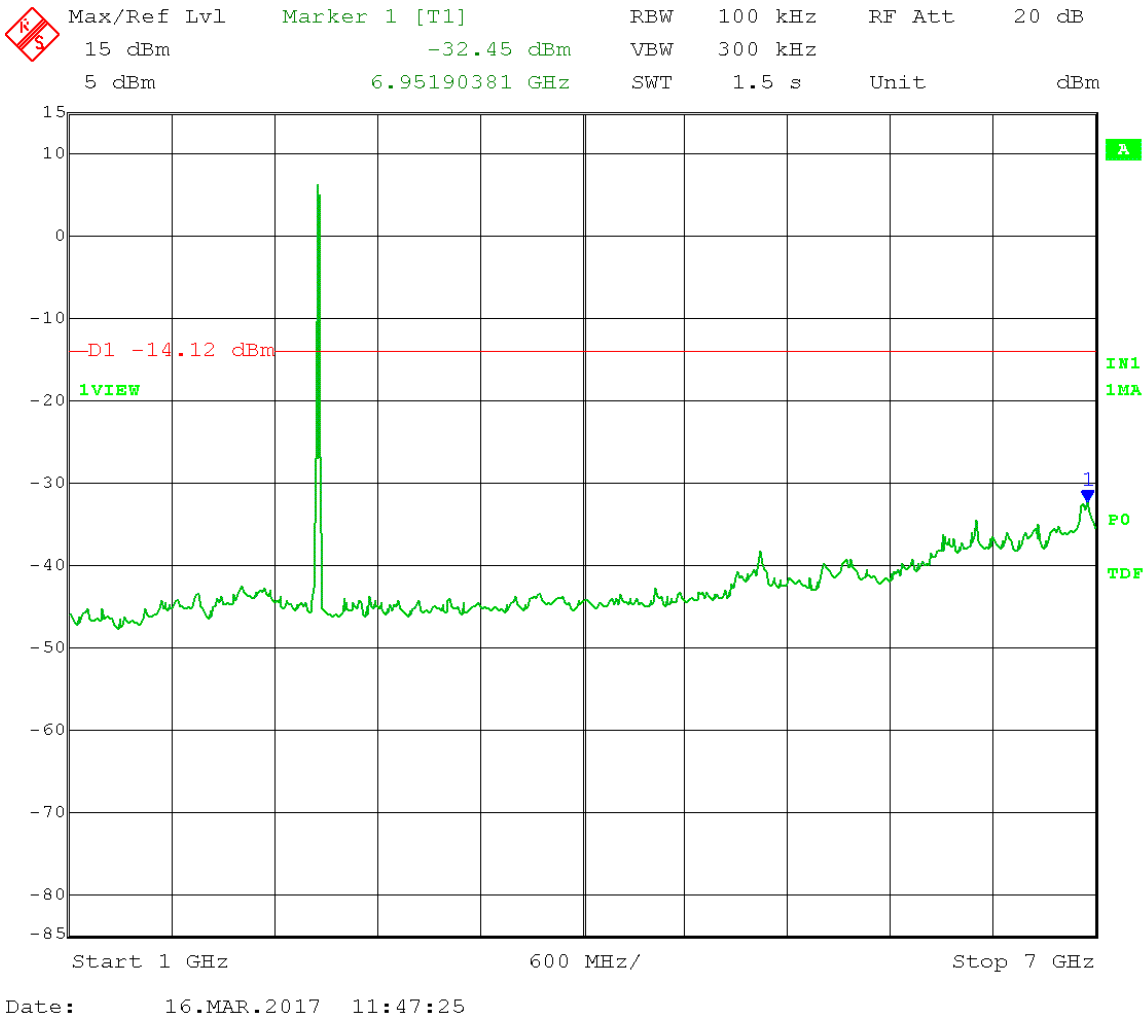
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Emission Level measurement

Limit = 5.88 dBm – 20 dB = -14.12 dBm

Frequency Range: 1 - 7 GHz



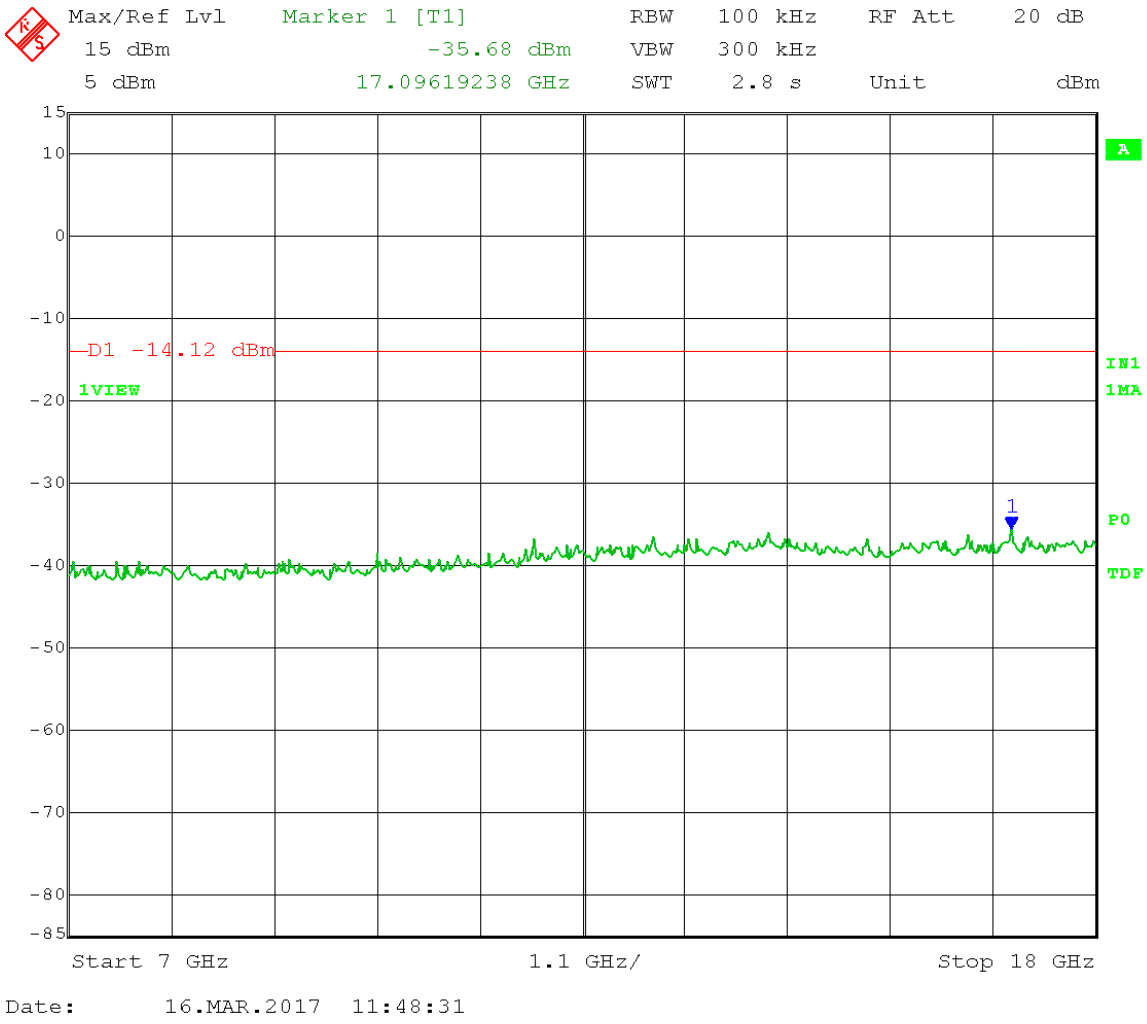
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Emission Level measurement

Limit = 5.88 dBm – 20 dB = -14.12 dBm

Frequency Range: 7 - 18 GHz



Test Date: 03-16-2017
Company: Whirlpool Corporation
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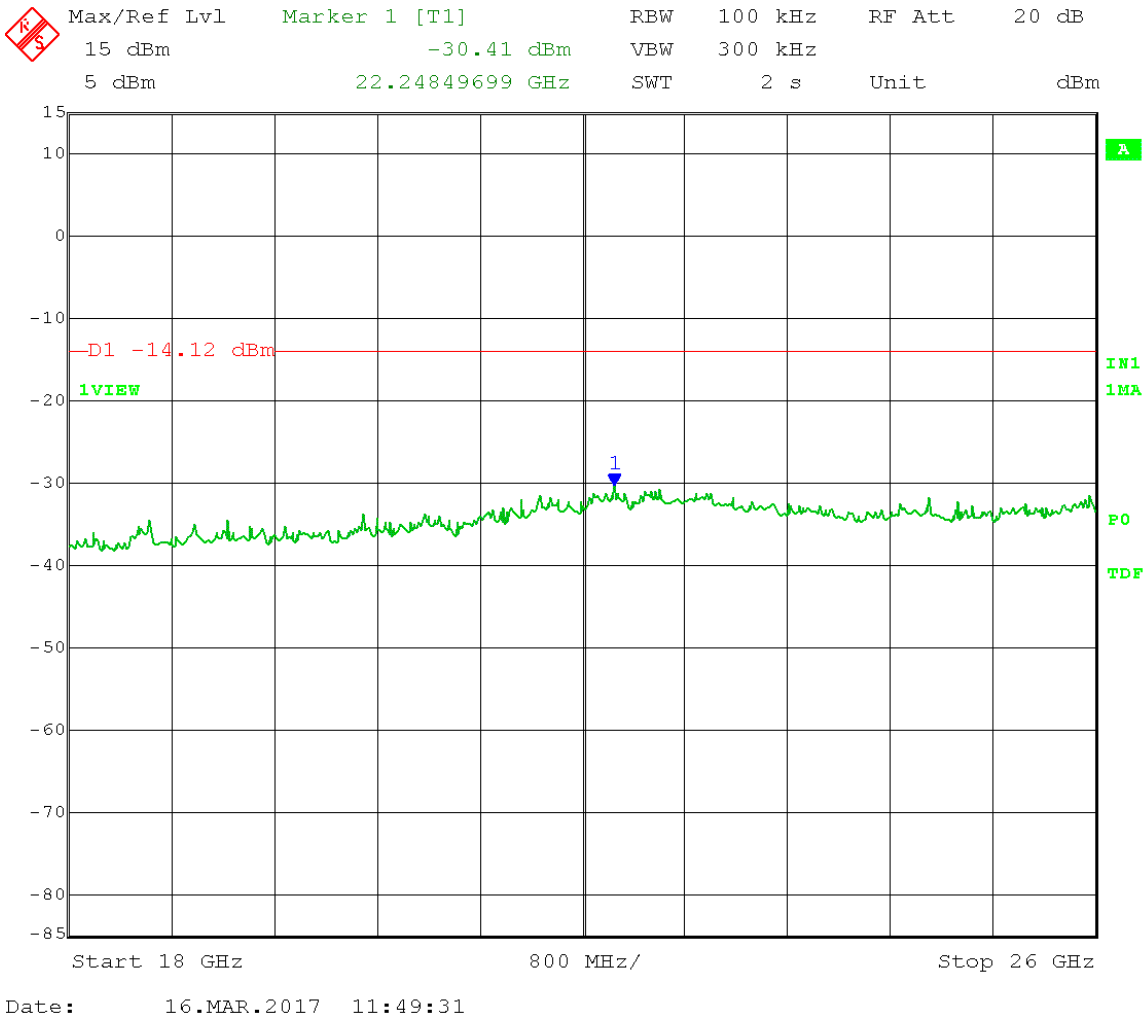
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-b, 1 Mbps
Power setting: 18

Emission Level measurement

Limit = 5.88 dBm – 20 dB = -14.12 dBm

Frequency Range: 18 - 26 GHz

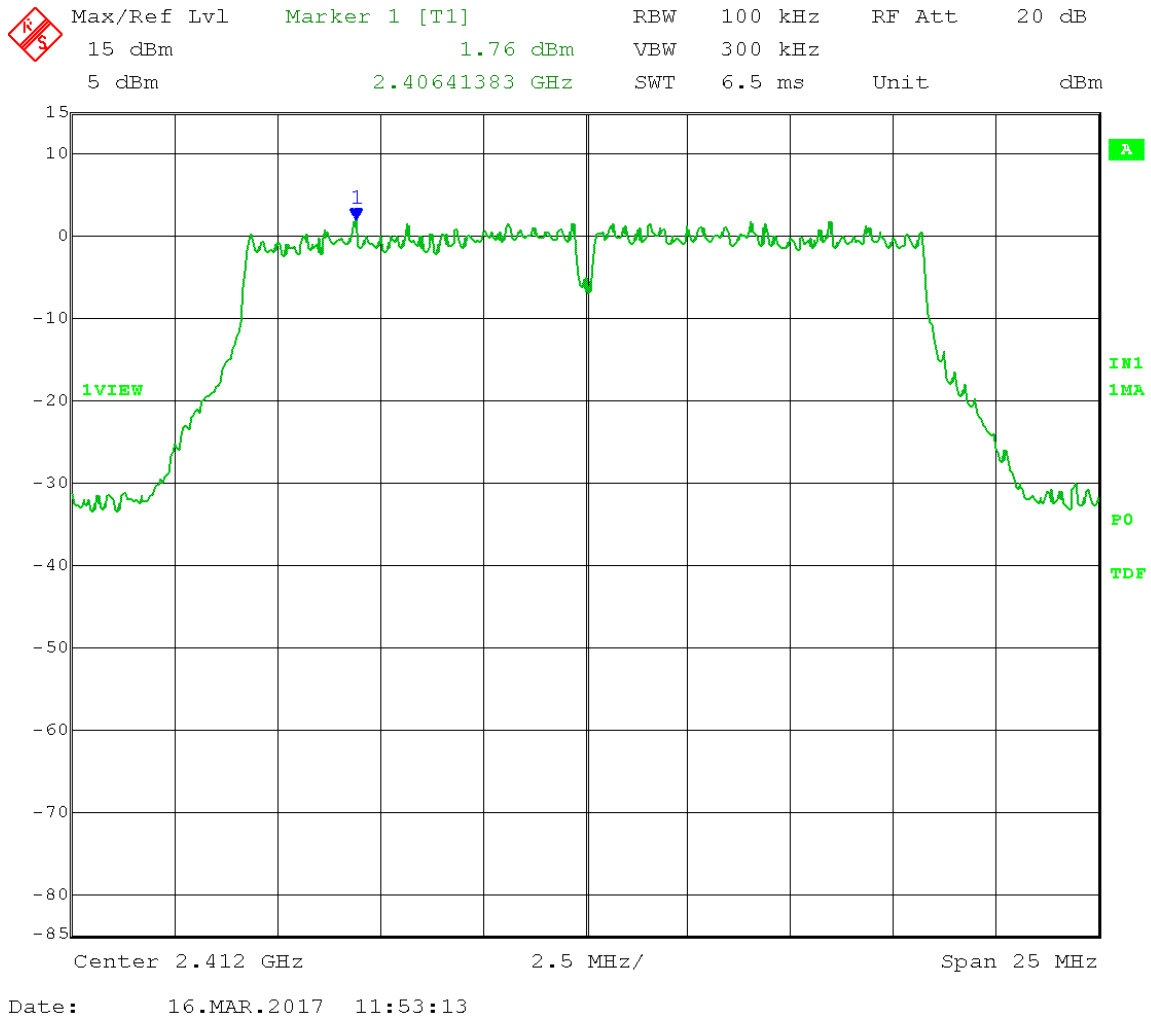


Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

Reference Level measurement

Limit = 1.76 dBm – 20 dB = -18.24 dBm



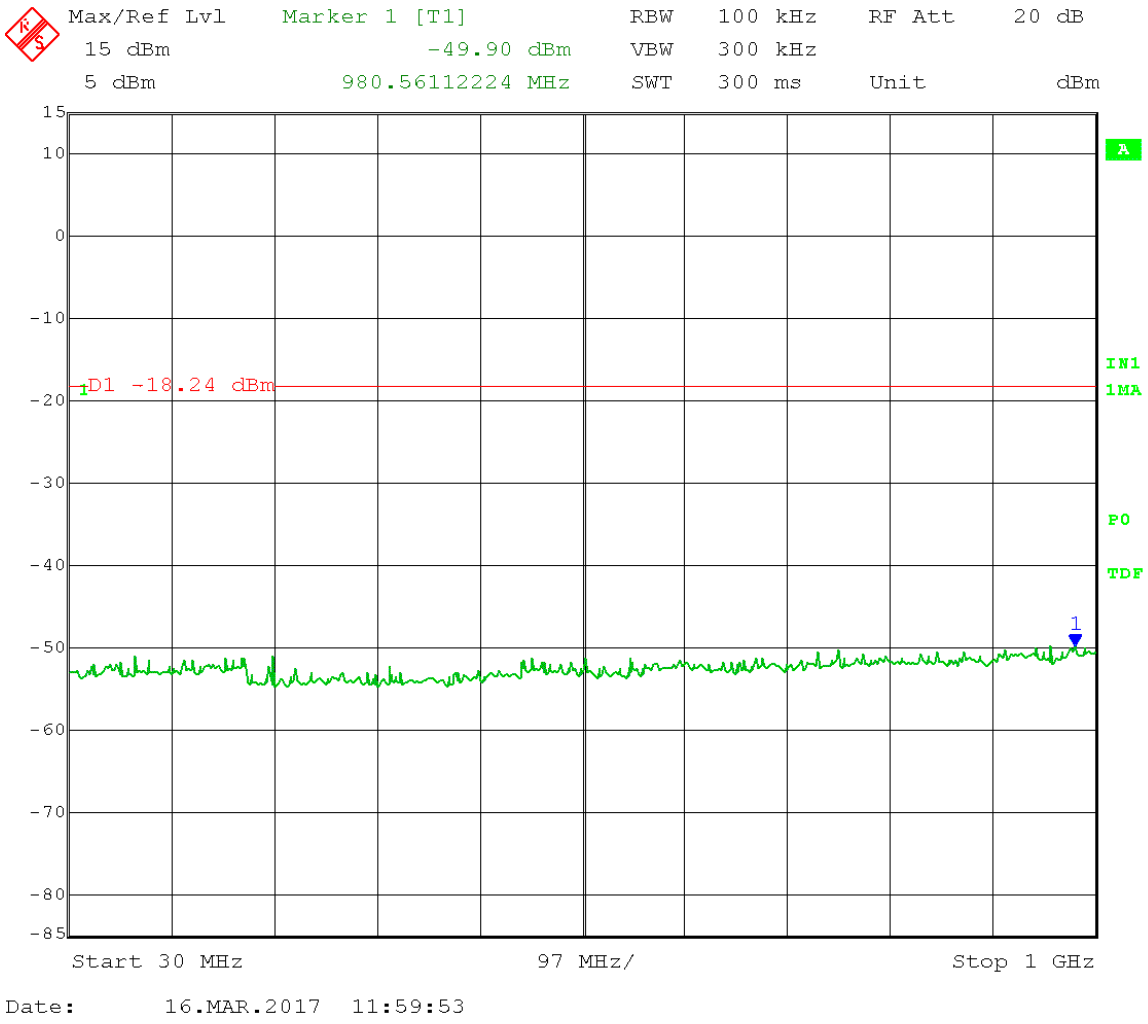
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

Emission Level measurement

Limit = 1.76 dBm – 20 dB = -18.24 dBm

Frequency Range: 30 – 1000 MHz



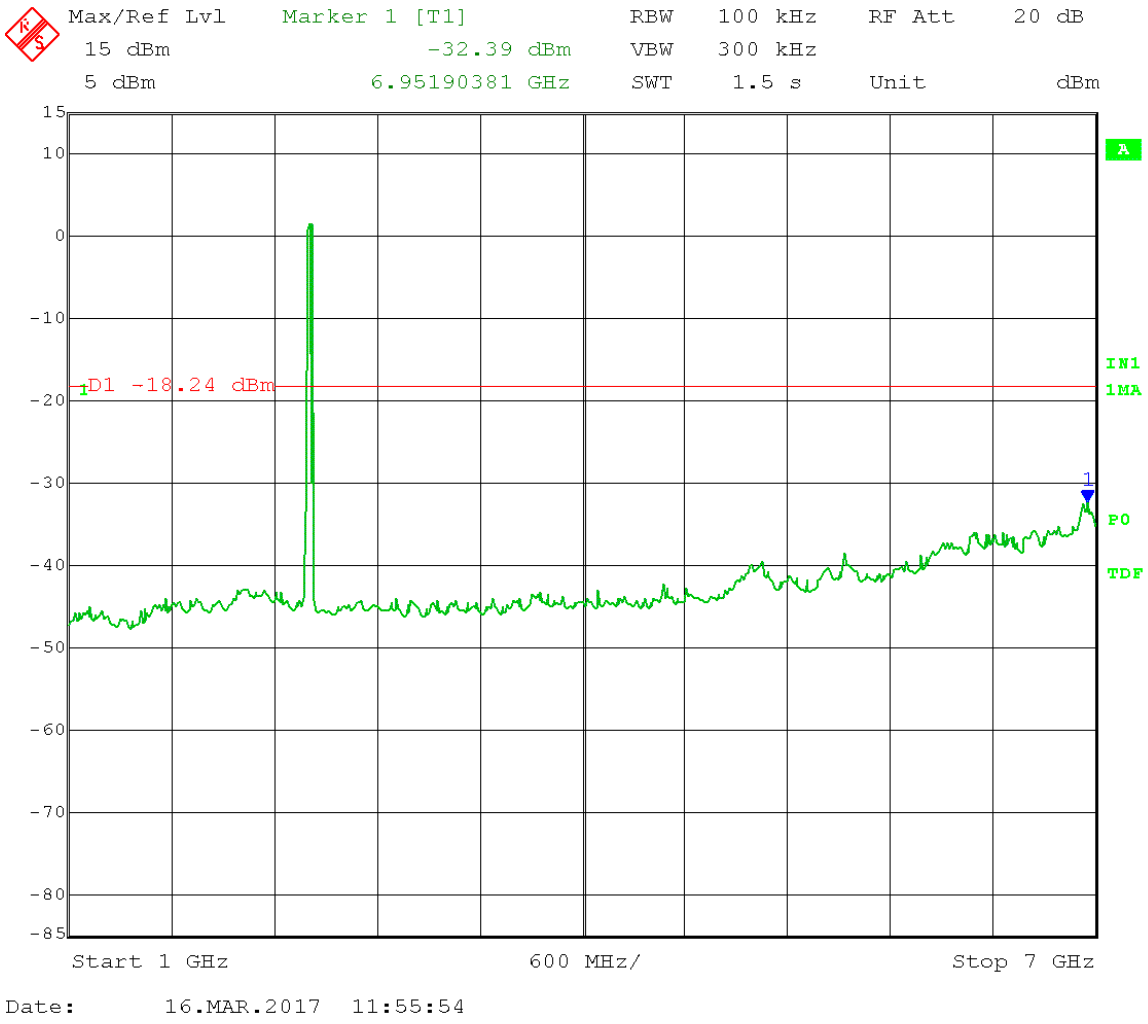
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

Emission Level measurement

Limit = 1.76 dBm – 20 dB = -18.24 dBm

Frequency Range: 1 – 7 GHz



Test Date: 03-16-2017
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EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
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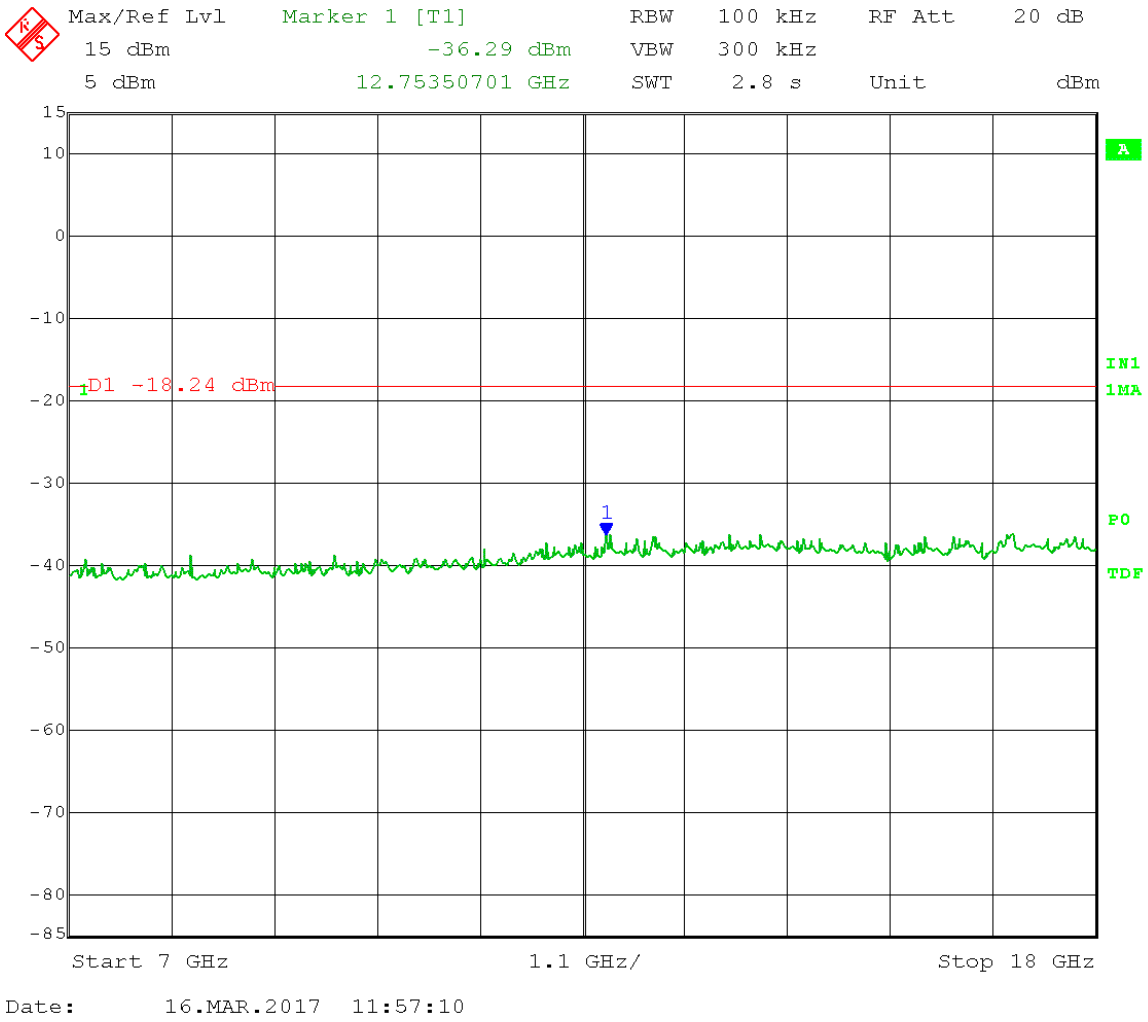
Power setting: 17

Emission Level measurement

Limit = 1.76 dBm – 20 dB = -18.24 dBm

Frequency Range: 7 – 18 GHz



Test Date: 03-16-2017
Company: Whirlpool Corporation
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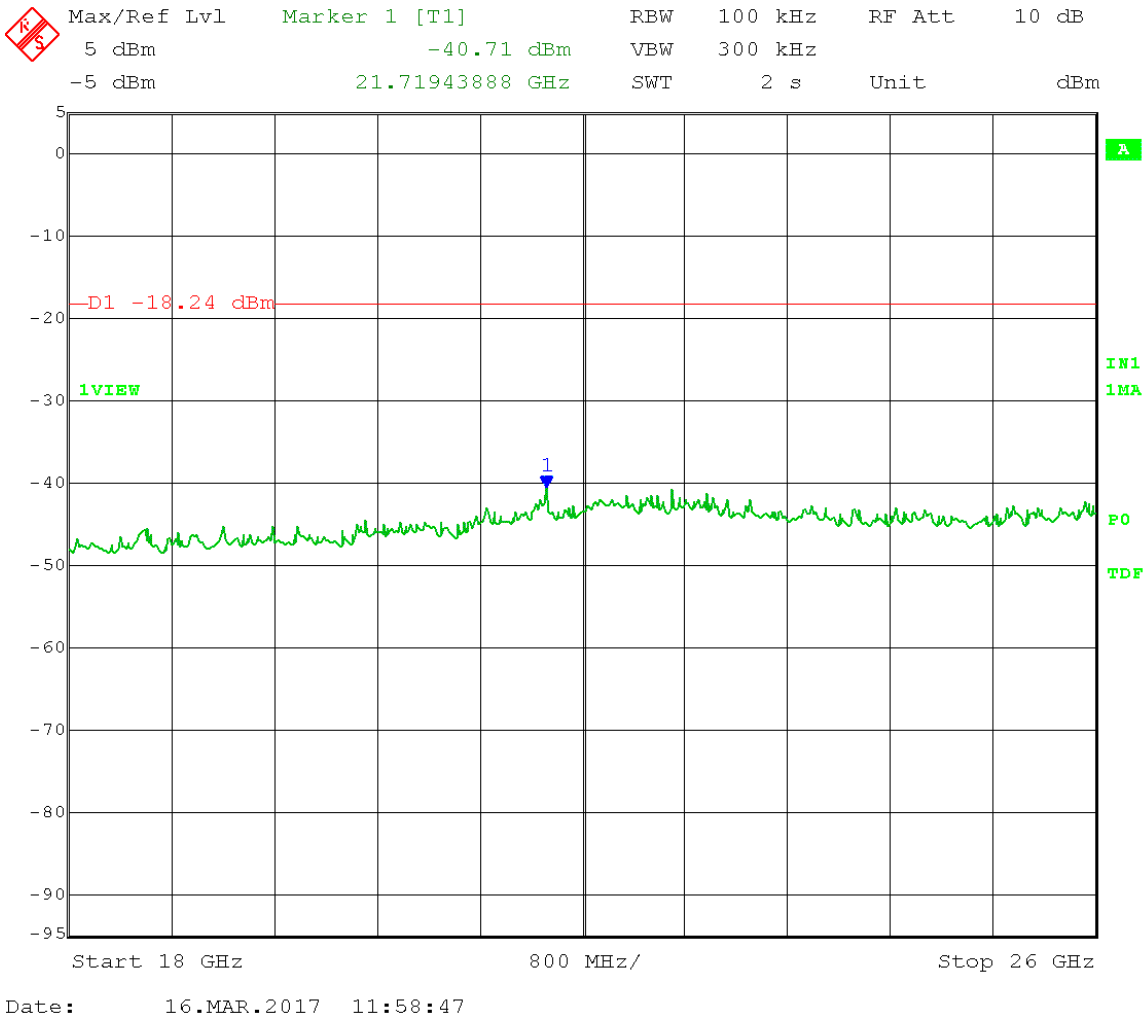
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

Emission Level measurement

Limit = 1.76 dBm – 20 dB = -18.24 dBm

Frequency Range: 18 – 26 GHz

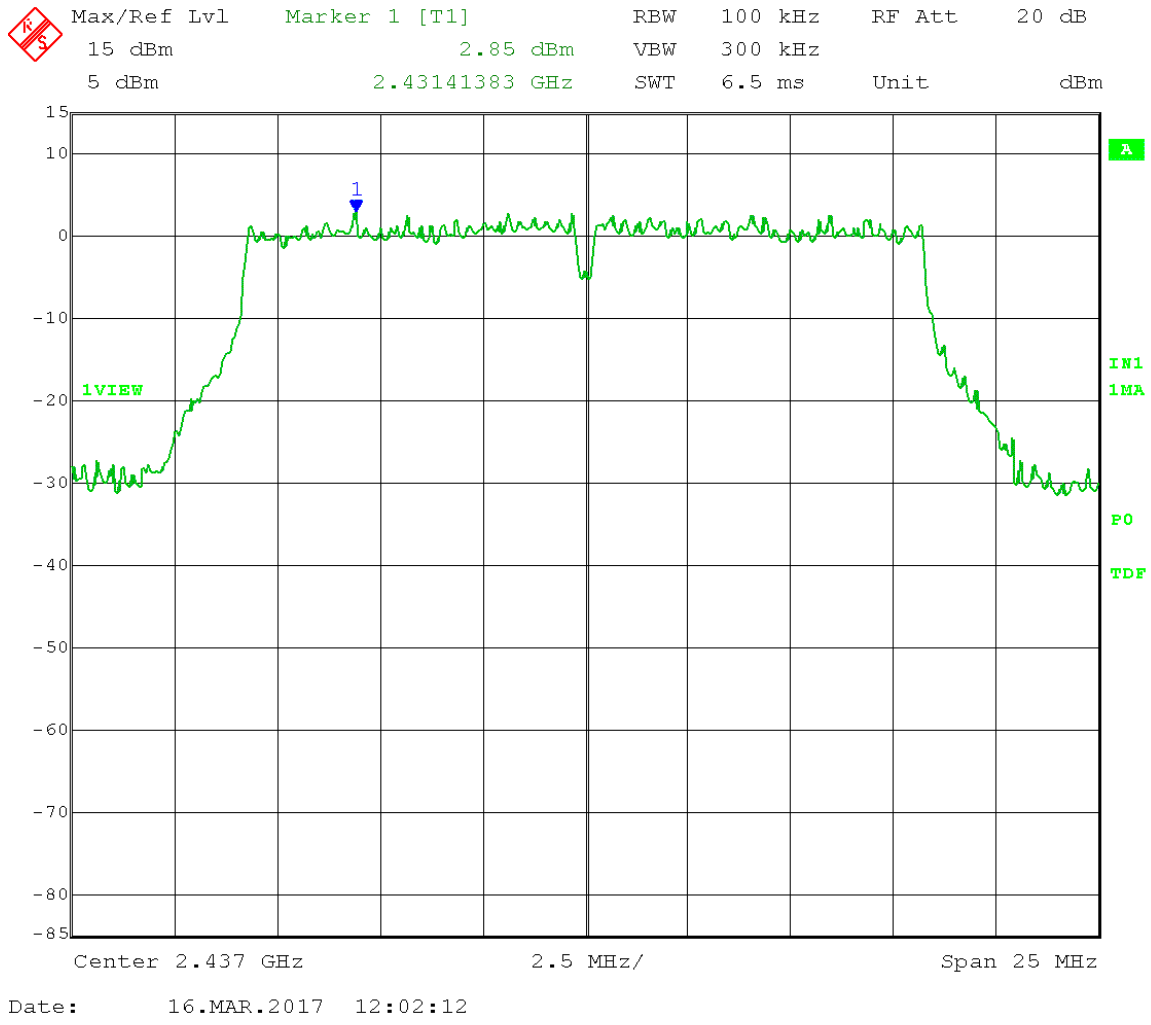


Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Mid, 2437 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

Reference Level measurement

Limit = 2.85 dBm – 20 dB = -17.15 dBm



Test Date: 03-16-2017
Company: Whirlpool Corporation
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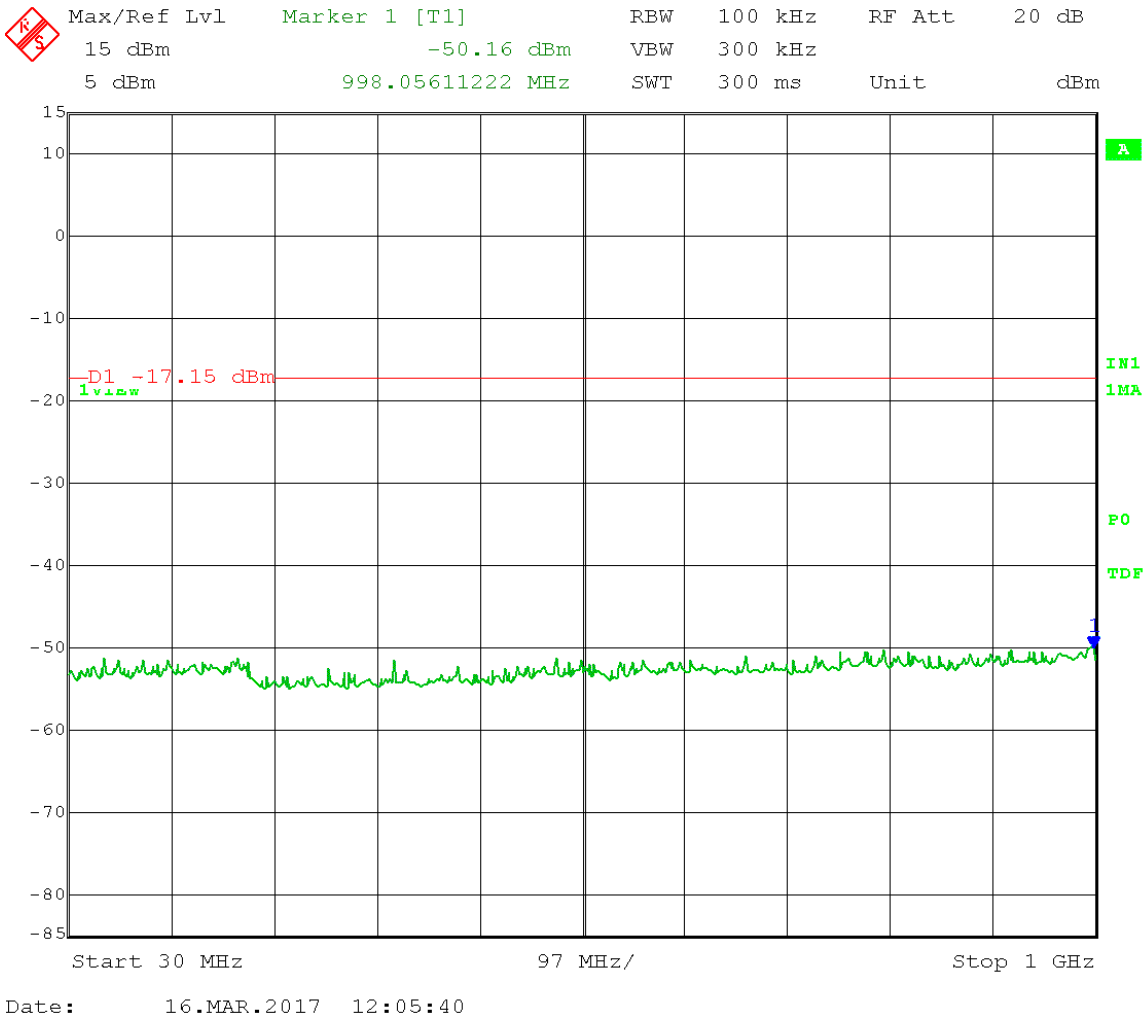
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Mid, 2437 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

Emission Level measurement

Limit = 2.85 dBm – 20 dB = -17.15 dBm

Frequency Range: 30 – 1000 MHz



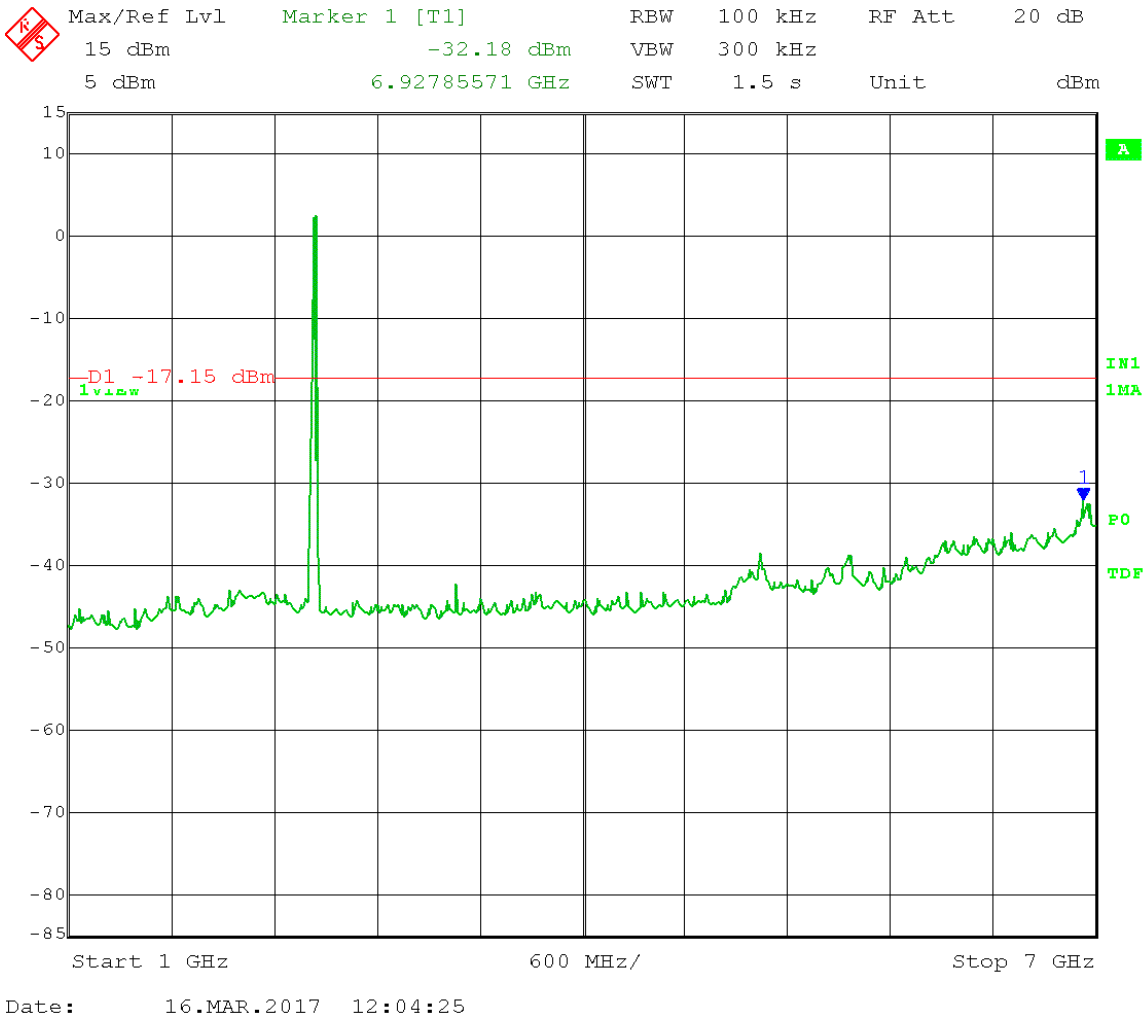
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Mid, 2437 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

Emission Level measurement

Limit = 2.85 dBm – 20 dB = -17.15 dBm

Frequency Range: 1 – 7 GHz



Test Date: 03-16-2017
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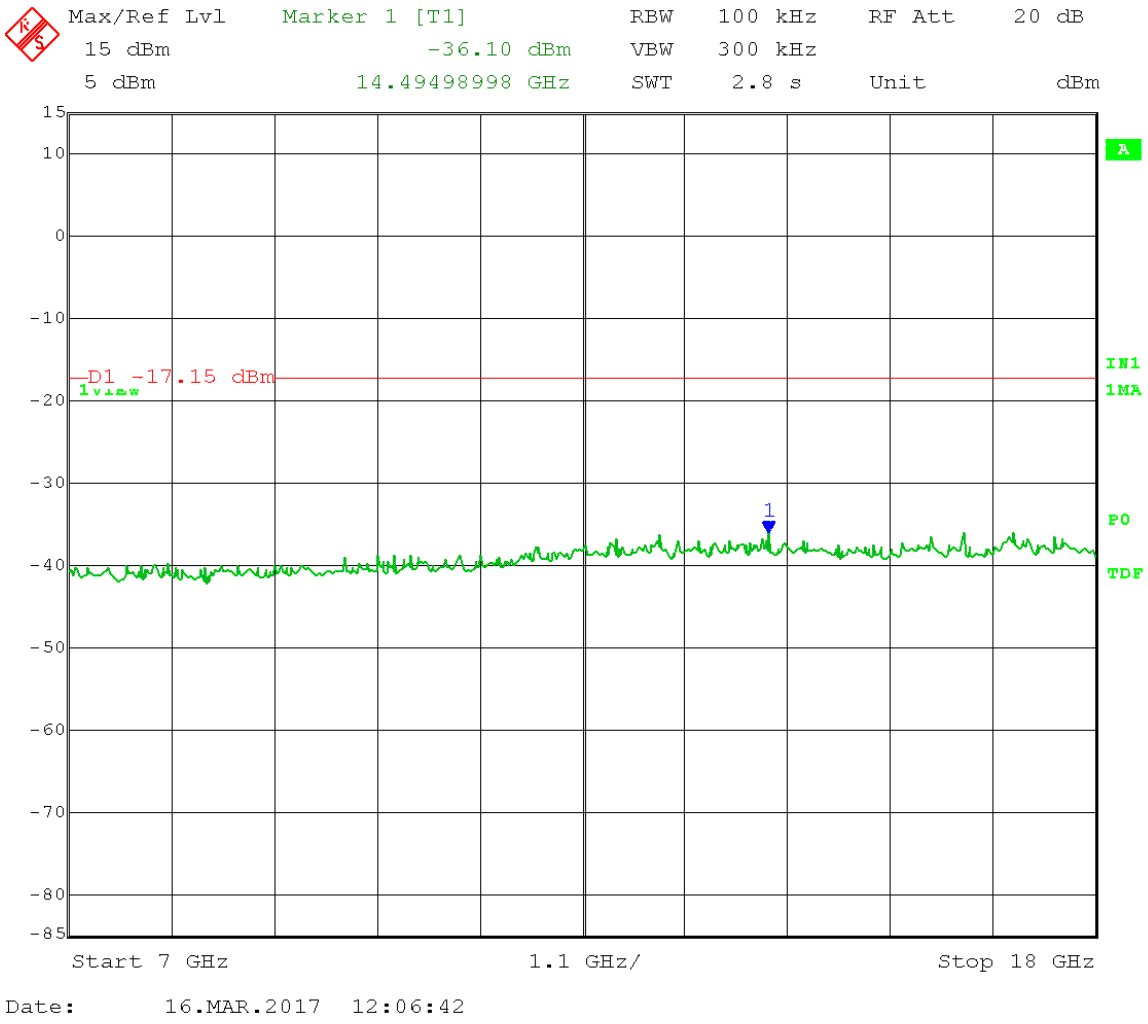
Emission Level measurement

Limit = 2.85 dBm – 20 dB = -17.15 dBm

Frequency Range: 7 – 18 GHz



Test Date: 03-16-2017
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Test: Emissions in non-restricted frequency bands
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Channel: Mid, 2437 MHz
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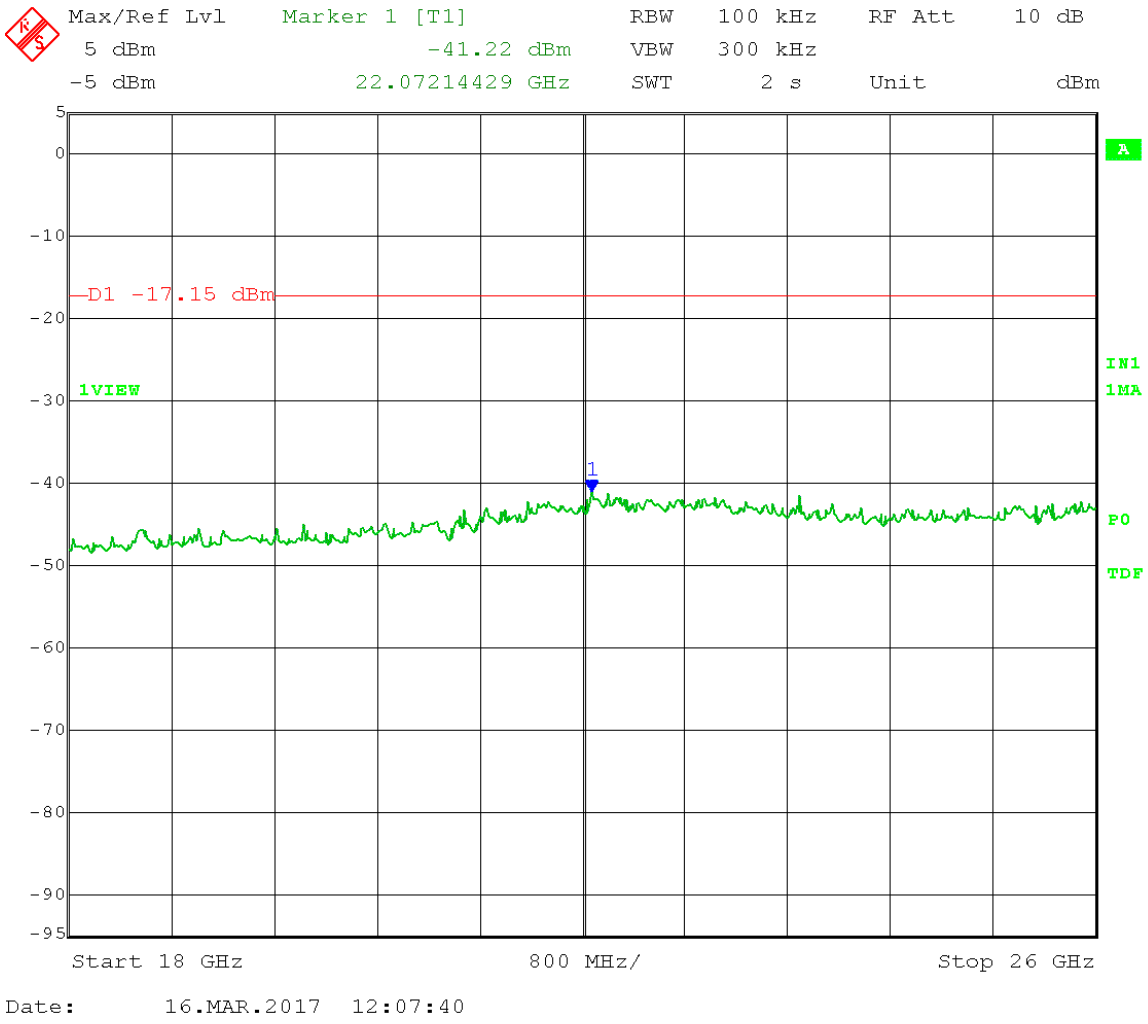
Emission Level measurement

Limit = 2.85 dBm – 20 dB = -17.15 dBm

Frequency Range: 18 – 26 GHz

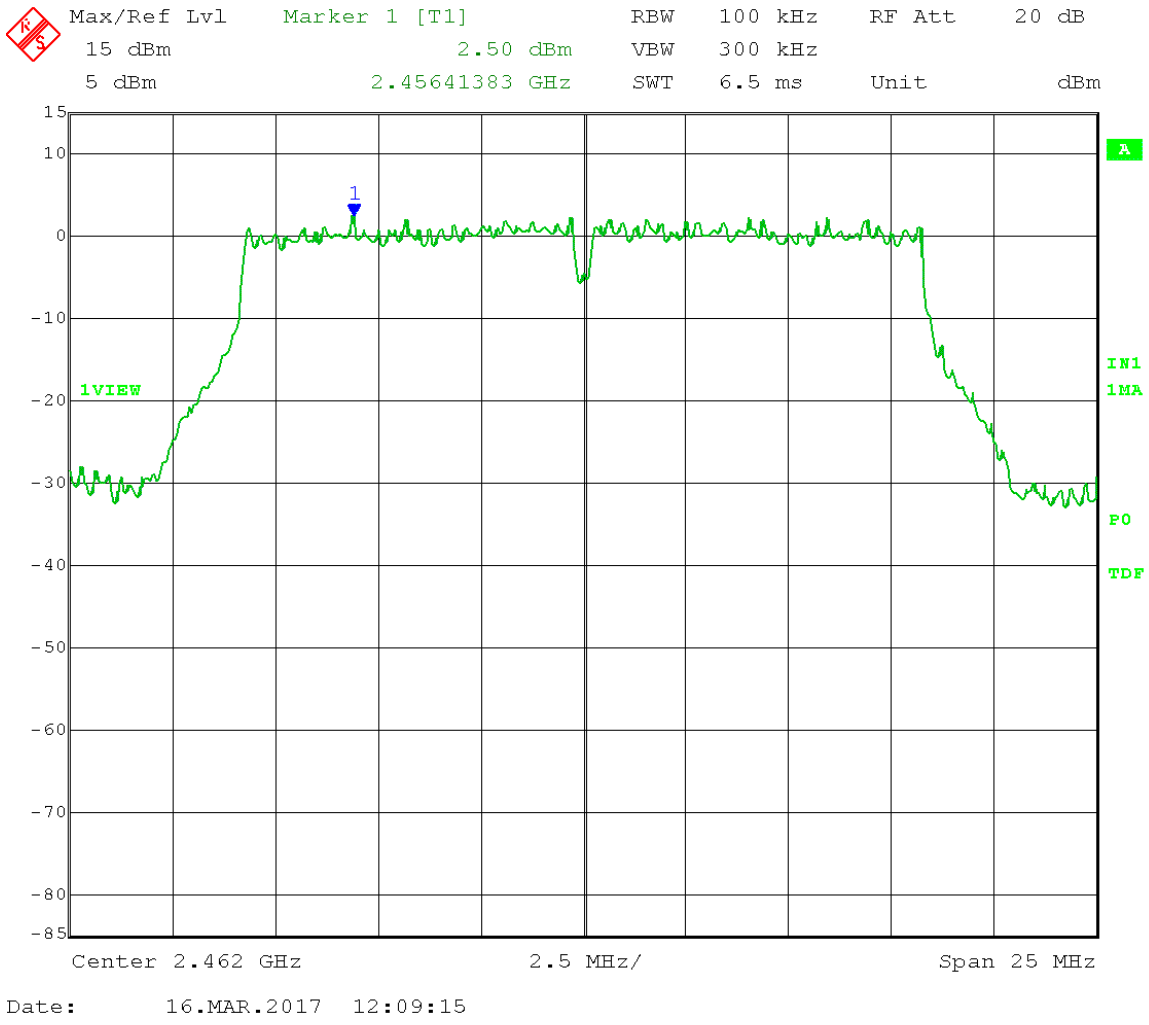


Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

Reference Level measurement

Limit = 2.50 dBm – 20 dB = -17.50 dBm



Test Date: 03-16-2017
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Test: Emissions in non-restricted frequency bands
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Operator: Craig B

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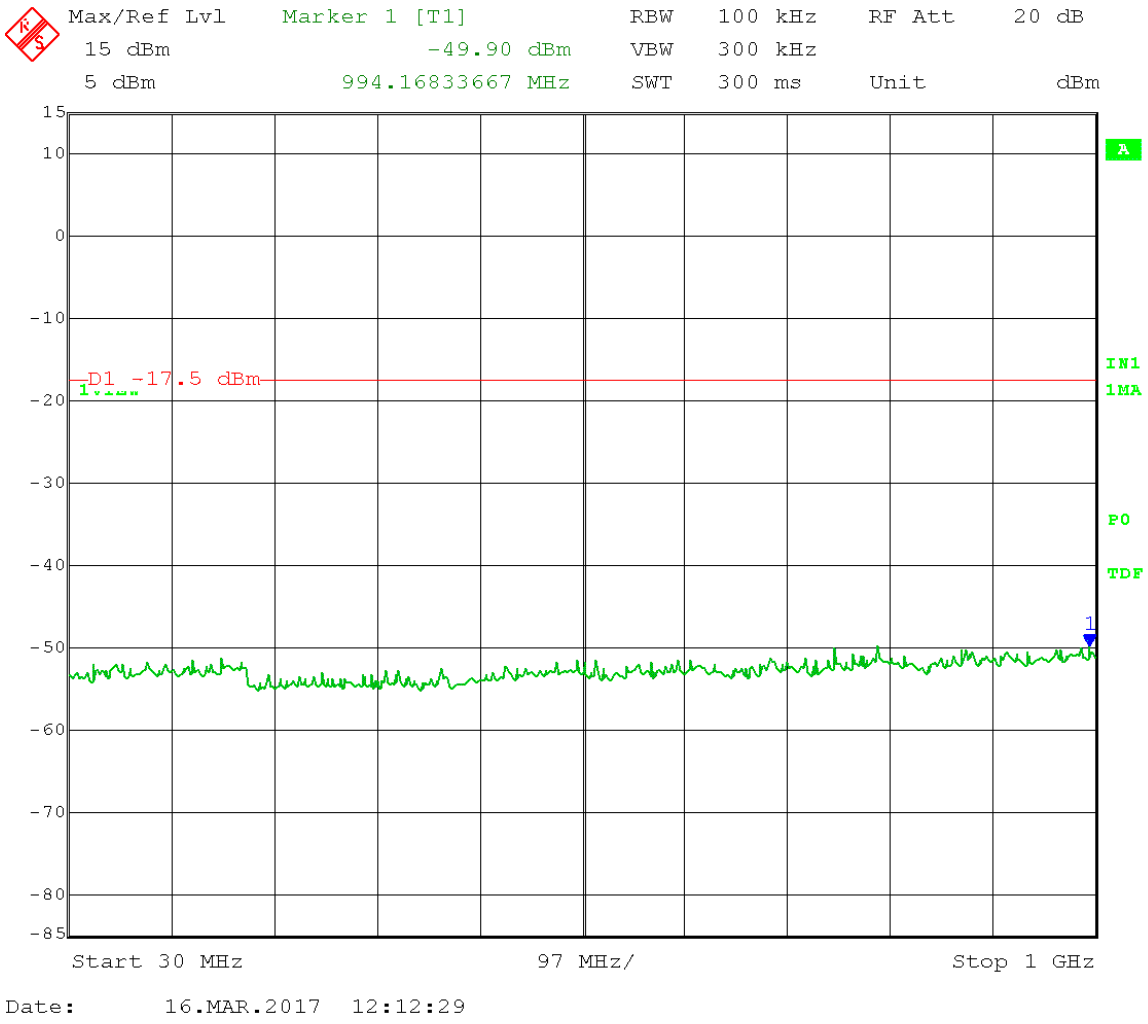
Modulation: 802.11-g, 54 Mbps
Power setting: 17

Emission Level measurement

Limit = 2.50 dBm – 20 dB = -17.50 dBm

Frequency Range: 30 – 1000 MHz



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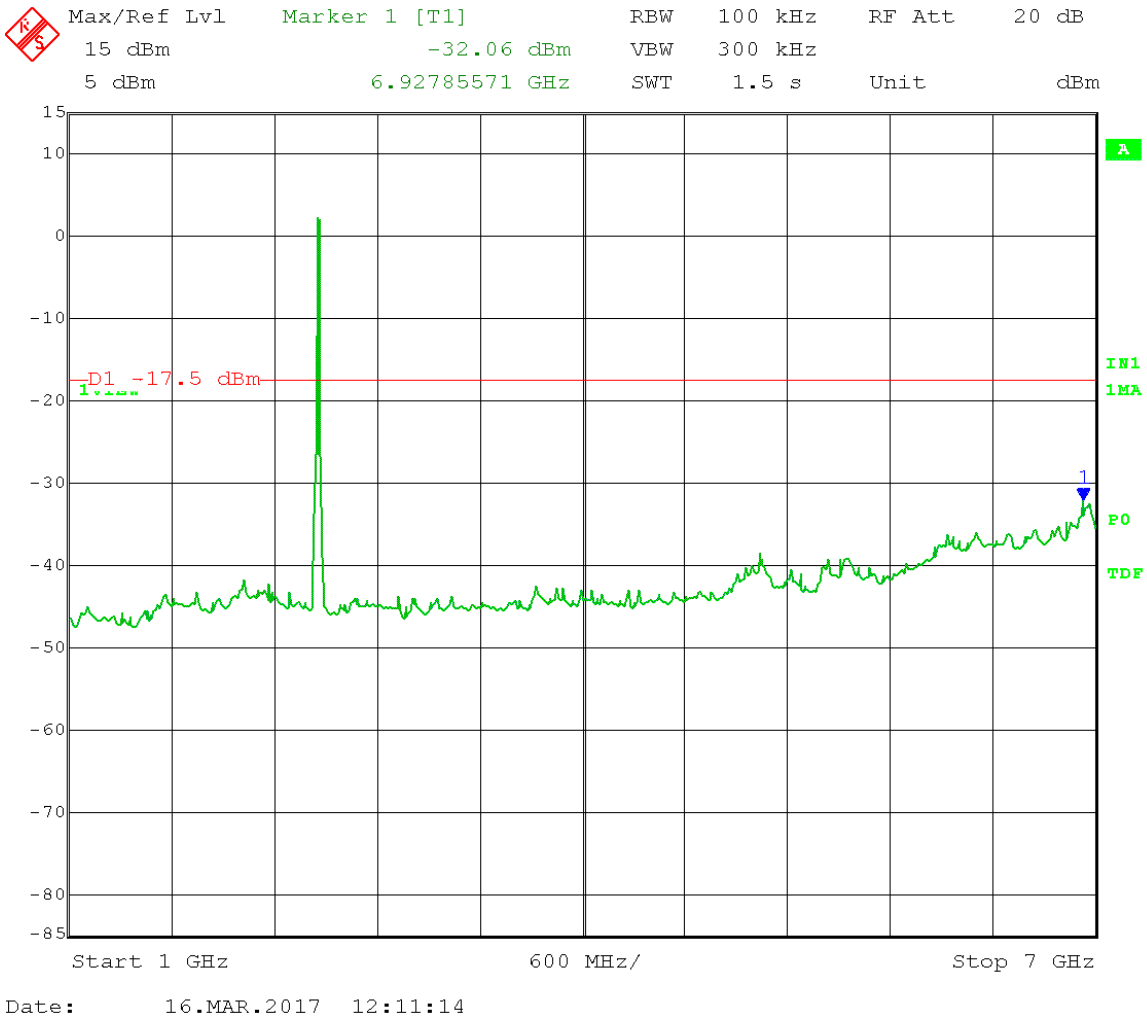
Emission Level measurement

Limit = 2.50 dBm – 20 dB = -17.50 dBm

Frequency Range: 1 – 7 GHz



Test Date: 03-16-2017
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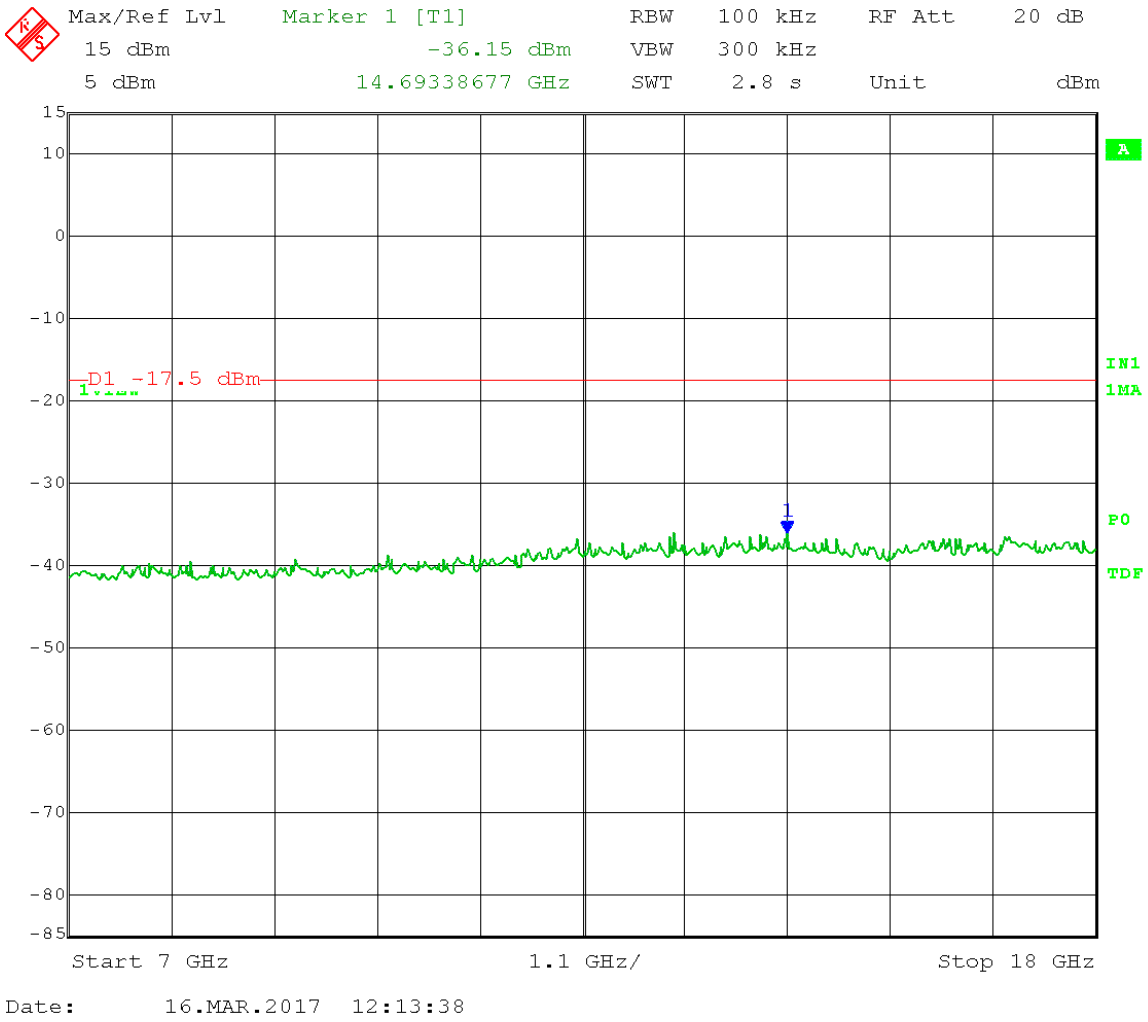
Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

Emission Level measurement

Limit = 2.50 dBm – 20 dB = -17.50 dBm

Frequency Range: 7 – 18 GHz



Test Date: 03-16-2017
Company: Whirlpool Corporation
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Test: Emissions in non-restricted frequency bands
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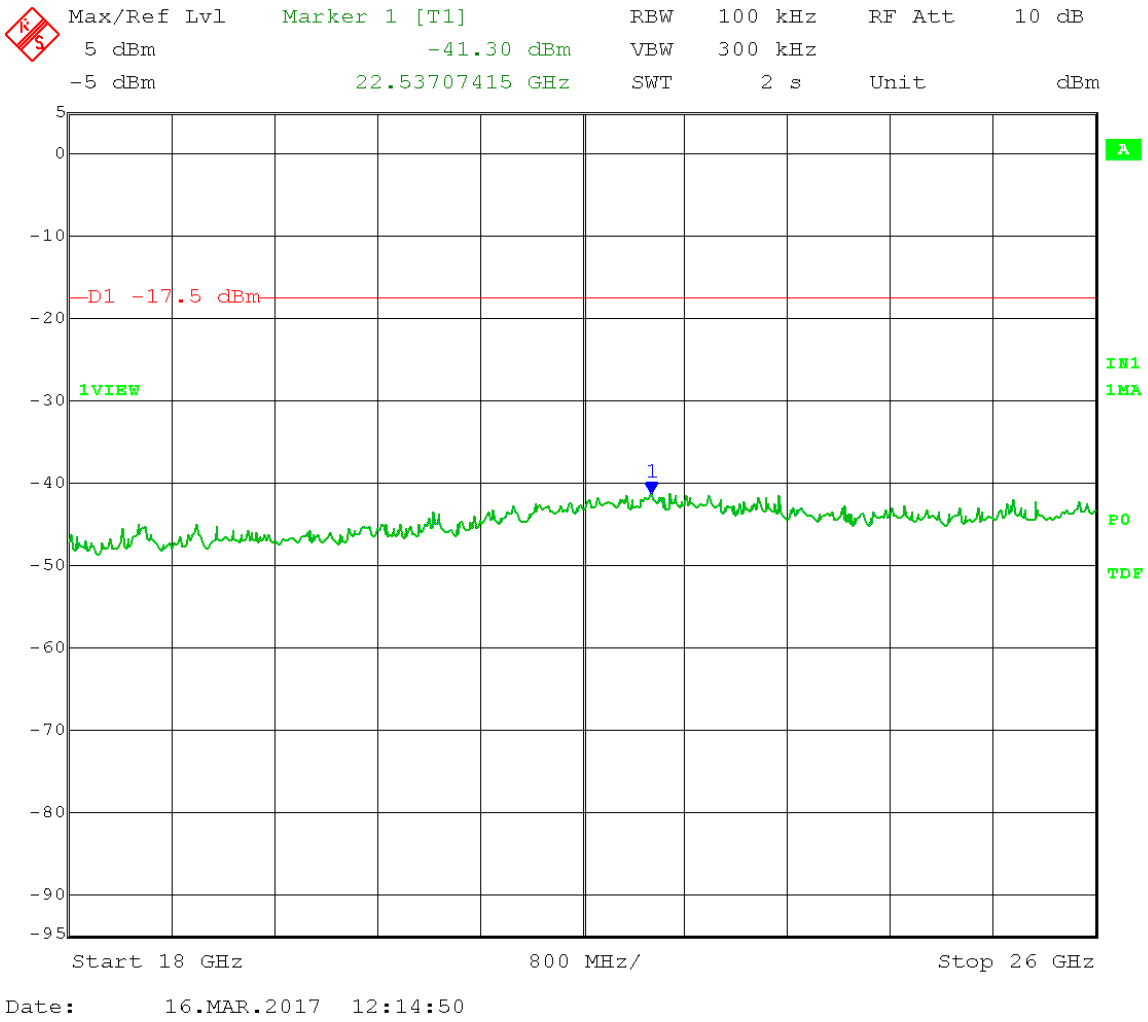
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-g, 54 Mbps
Power setting: 17

Emission Level measurement

Limit = 2.50 dBm – 20 dB = -17.50 dBm

Frequency Range: 18 – 26 GHz

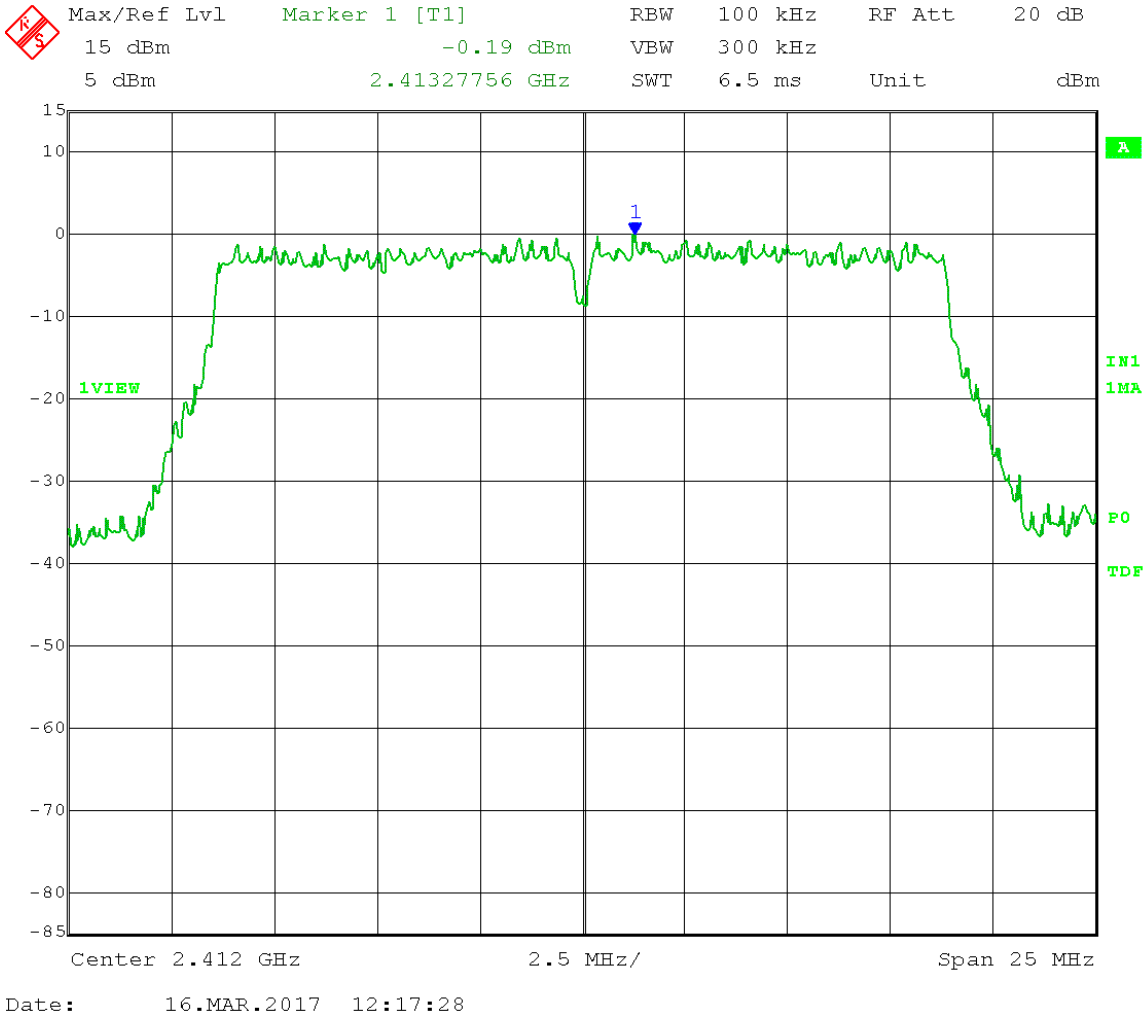


Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Reference Level measurement

Limit = -0.19 dBm – 20 dB = -20.19 dBm



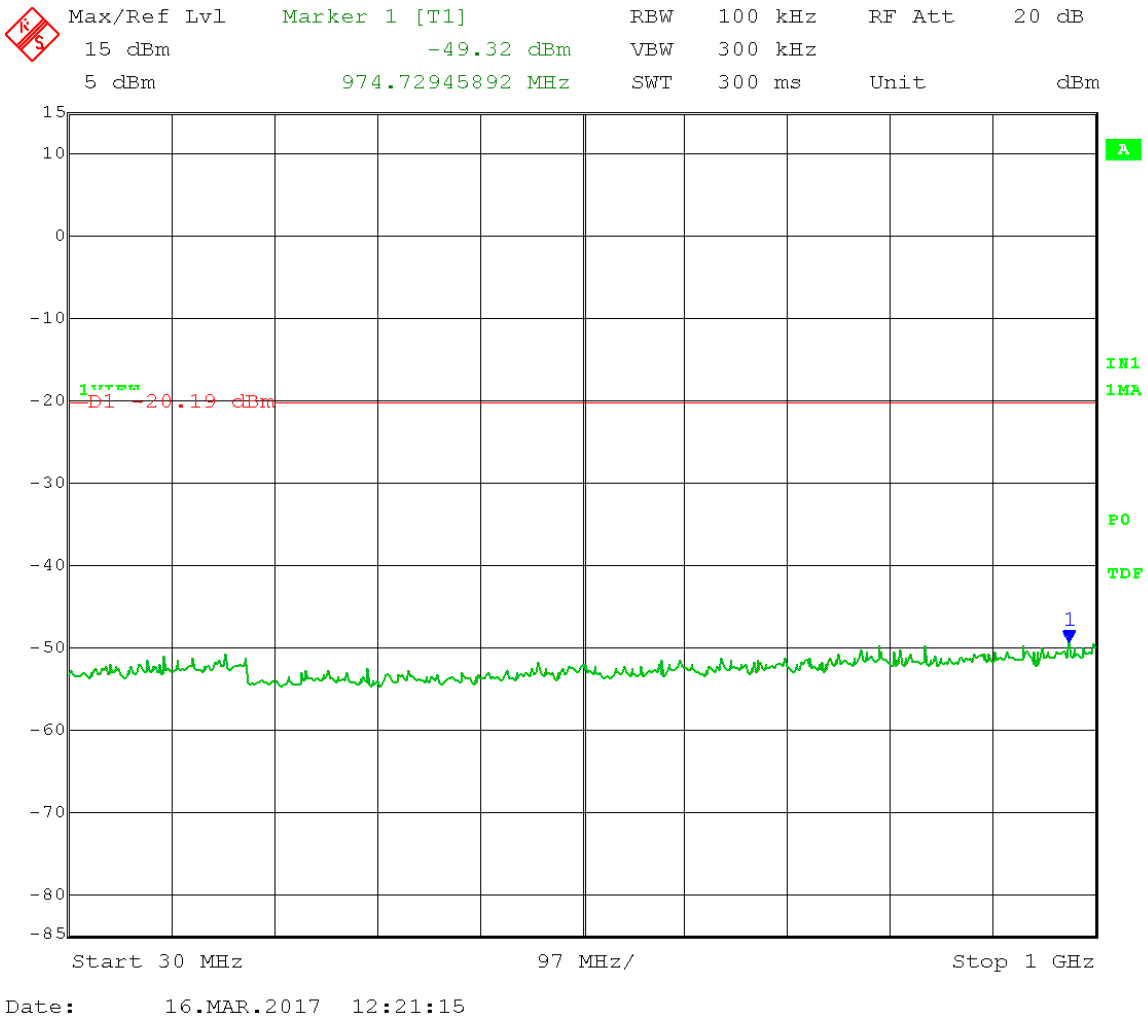
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Emission Level measurement

Limit = -0.19 dBm – 20 dB = -20.19 dBm

Frequency Range: 30 – 1000 MHz



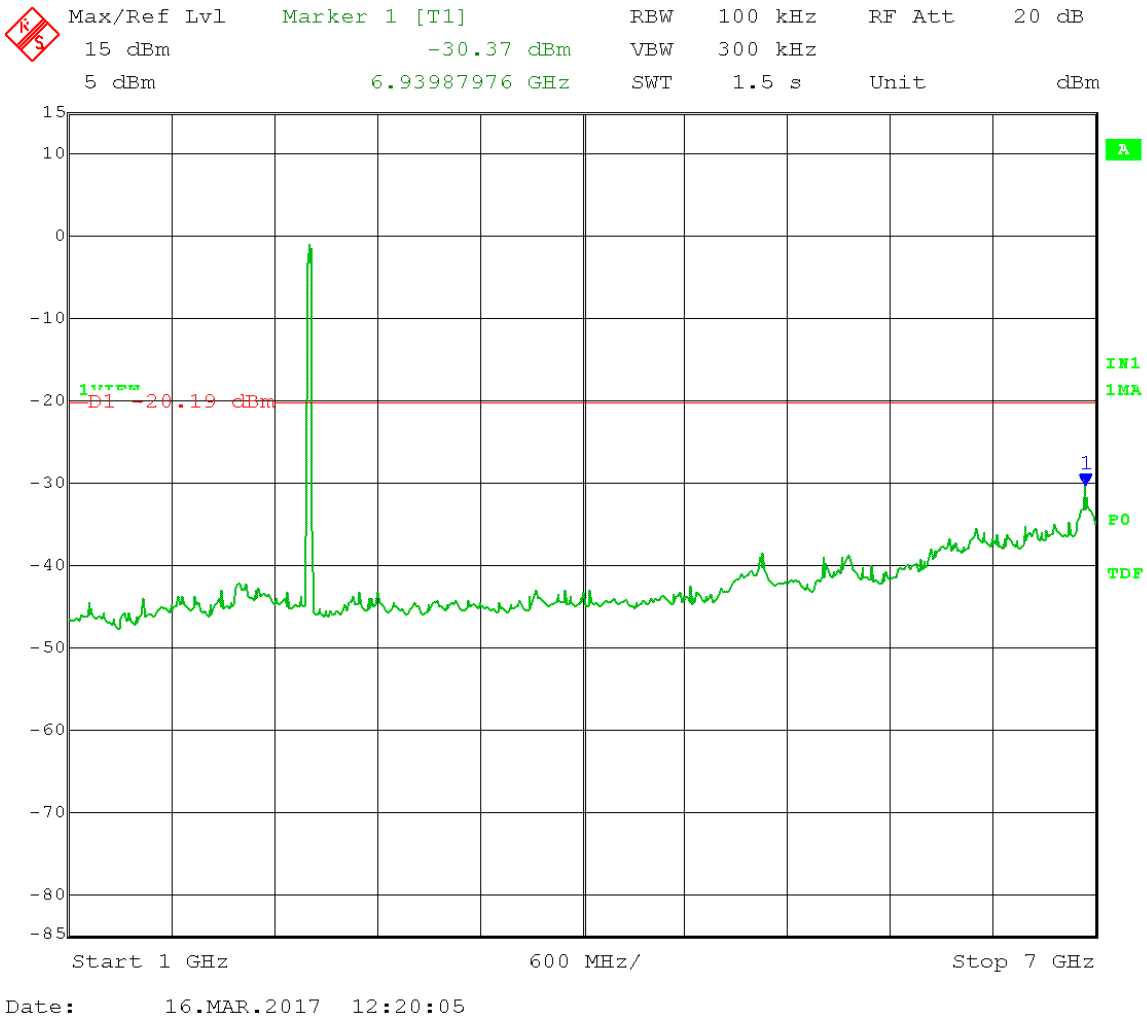
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Emission Level measurement

Limit = -0.19 dBm – 20 dB = -20.19 dBm

Frequency Range: 1 – 7 GHz



Test Date: 03-16-2017
Company: Whirlpool Corporation
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Test: Emissions in non-restricted frequency bands
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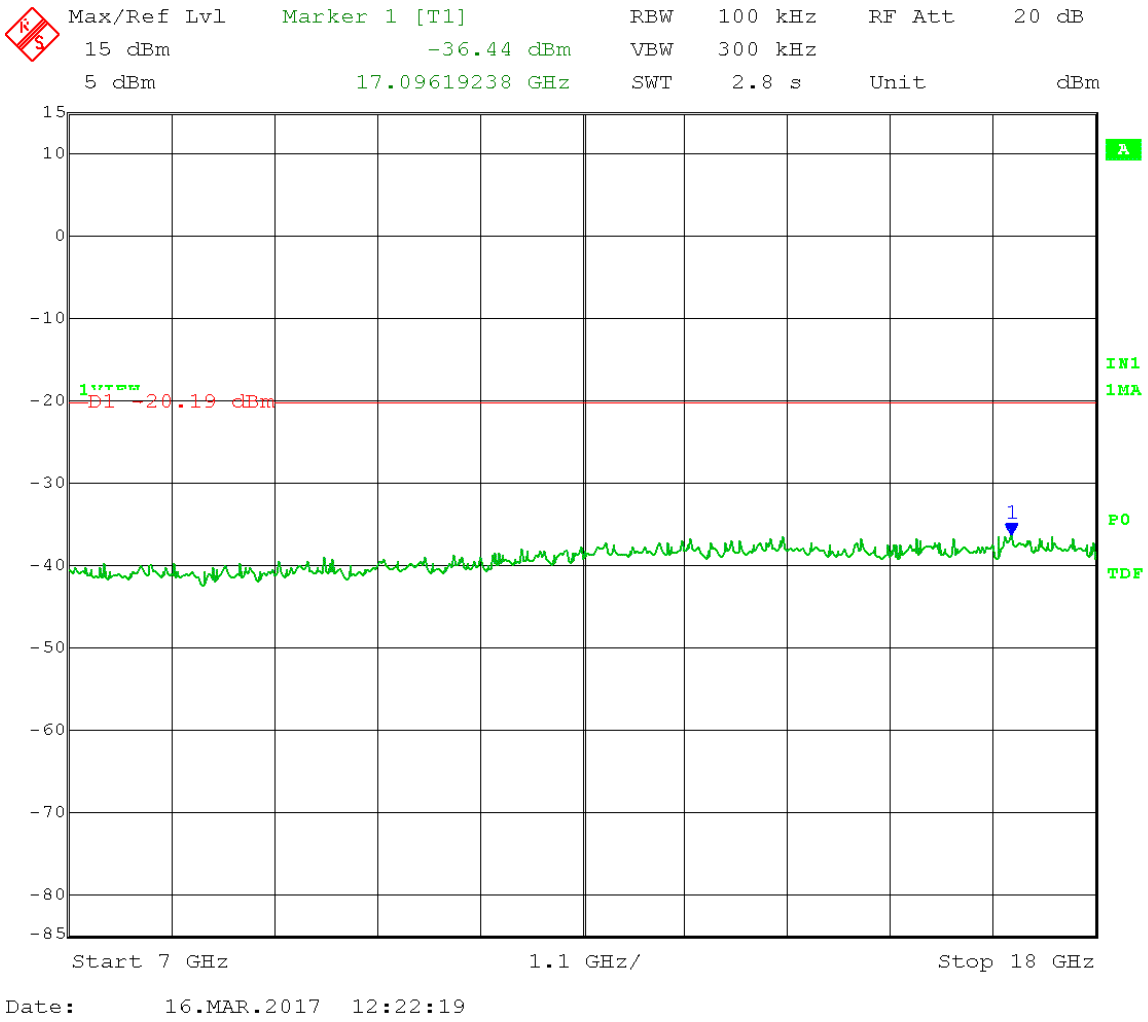
Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Emission Level measurement

Limit = -0.19 dBm – 20 dB = -20.19 dBm

Frequency Range: 7 – 18 GHz



Test Date: 03-16-2017
Company: Whirlpool Corporation
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Test: Emissions in non-restricted frequency bands
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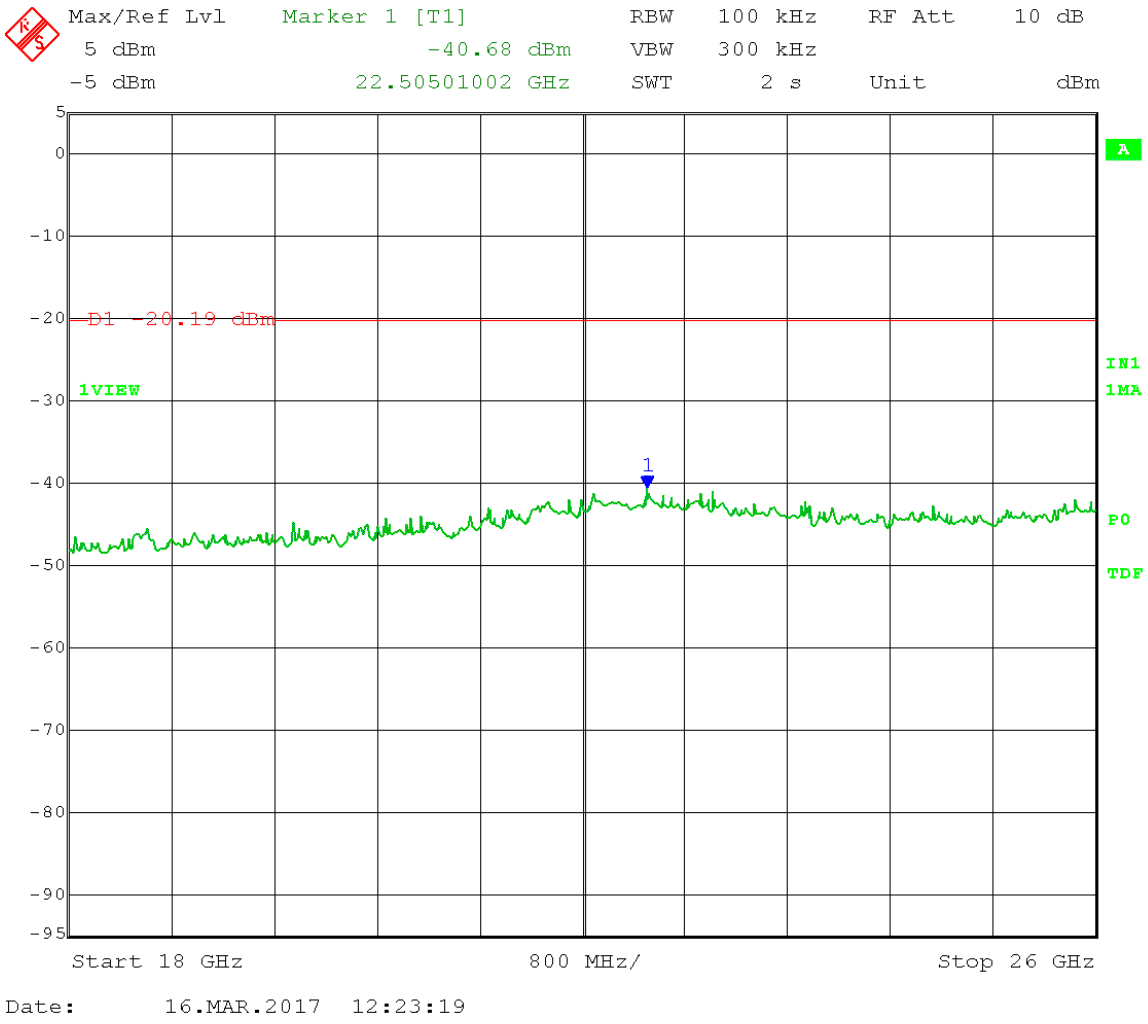
Antenna: External Antenna Port
Channel: Low, 2412 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Emission Level measurement

Limit = -0.19 dBm – 20 dB = -20.19 dBm

Frequency Range: 18 – 26 GHz

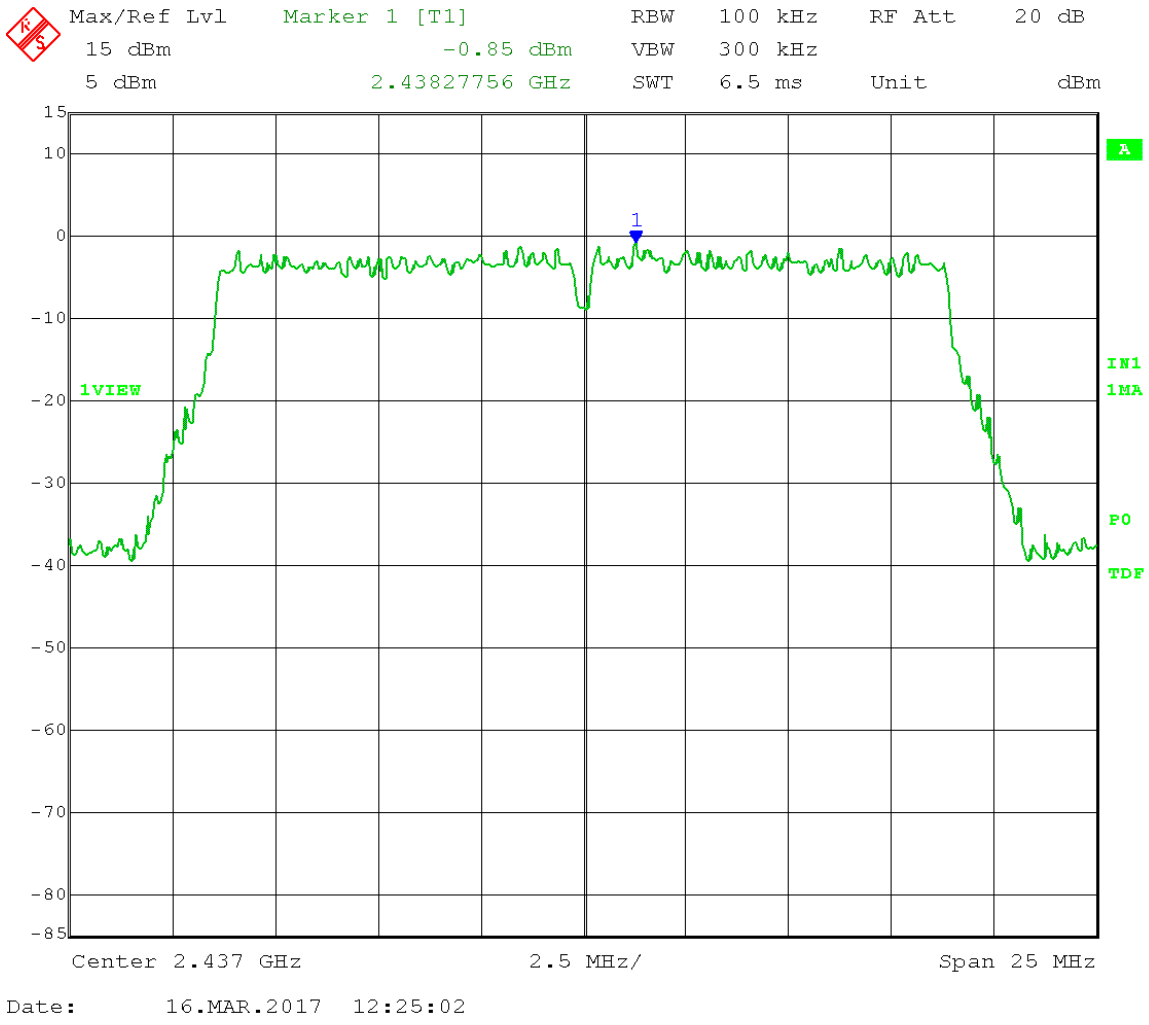


Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: Mid, 2437 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Reference Level measurement

Limit = -0.85 dBm – 20 dB = -20.85 dBm



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Channel: Mid, 2437 MHz
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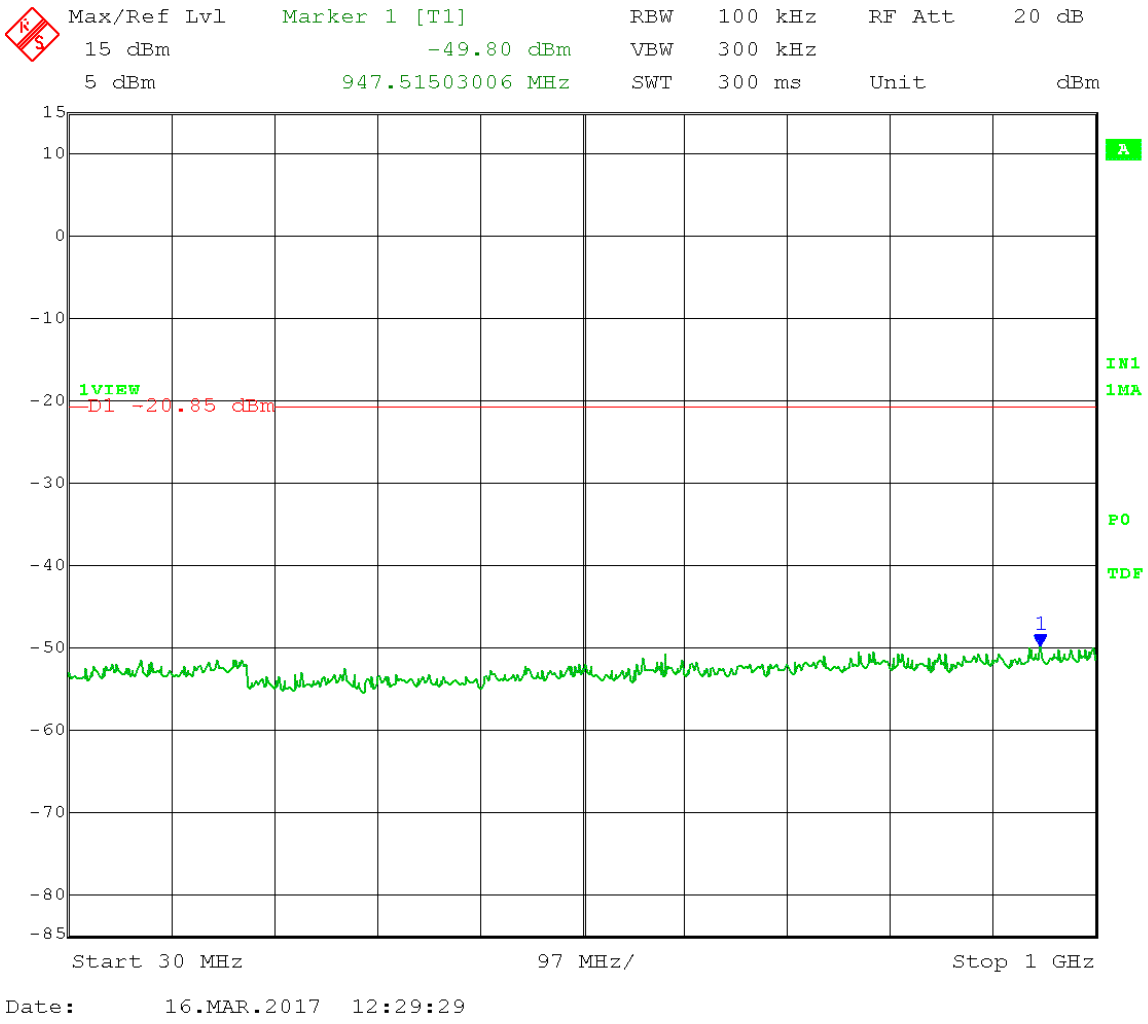
Emission Level measurement

Limit = -0.85 dBm – 20 dB = -20.85 dBm

Frequency Range: 30 – 1000 MHz



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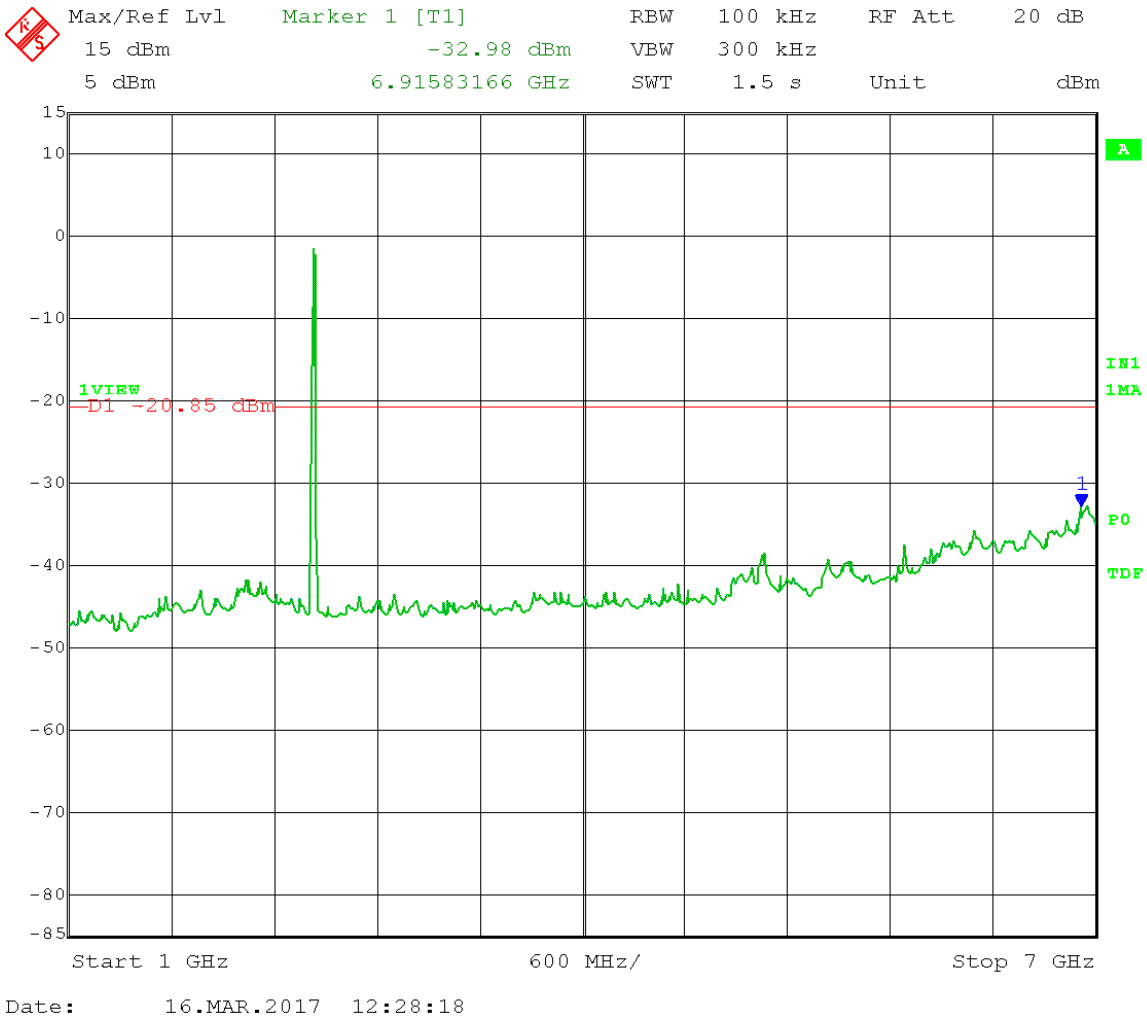
Emission Level measurement

Limit = -0.85 dBm – 20 dB = -20.85 dBm

Frequency Range: 1 – 7 GHz



Test Date: 03-16-2017
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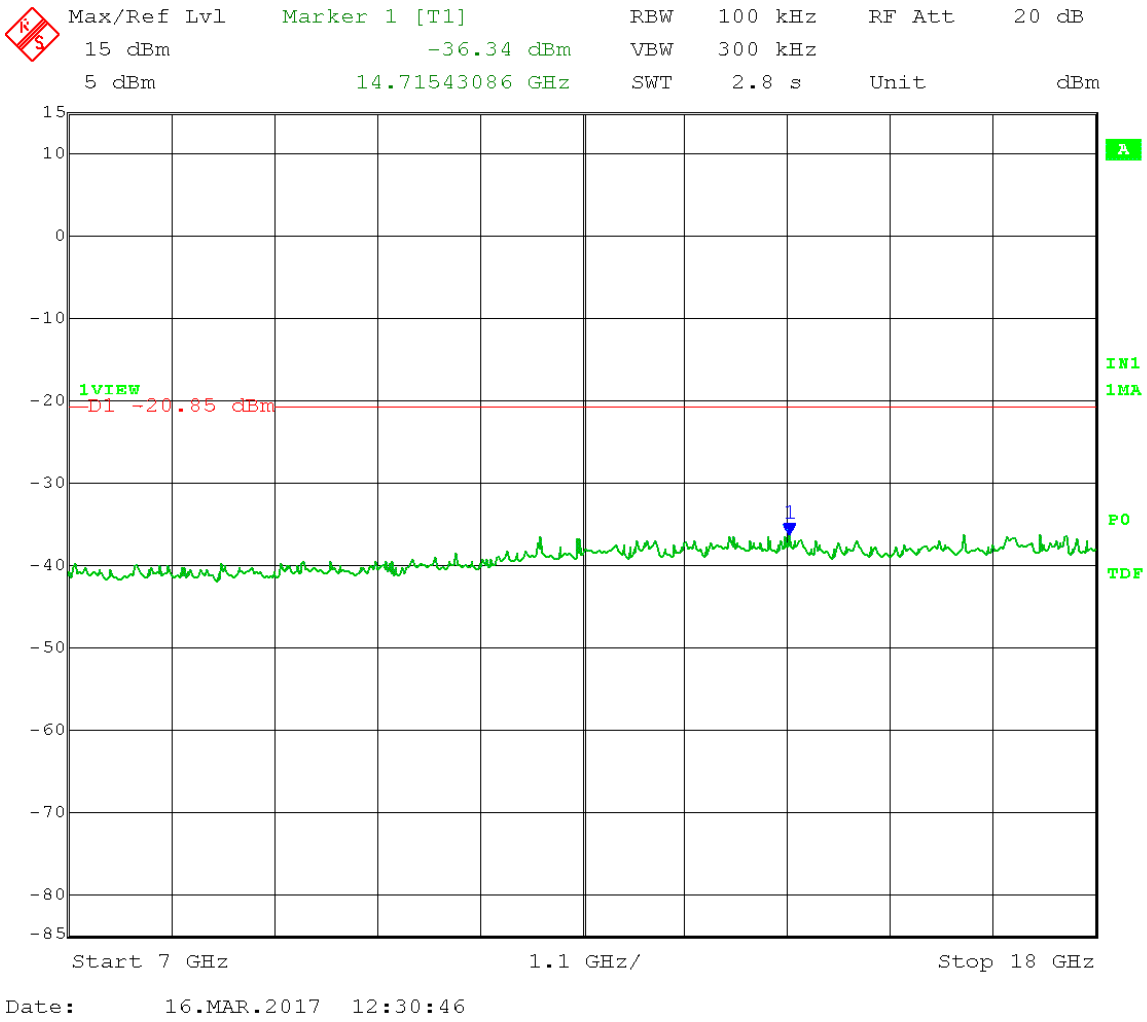
Antenna: External Antenna Port
Channel: Mid, 2437 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Emission Level measurement

Limit = -0.85 dBm – 20 dB = -20.85 dBm

Frequency Range: 7 – 18 GHz



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Antenna: External Antenna Port
Channel: Mid, 2437 MHz
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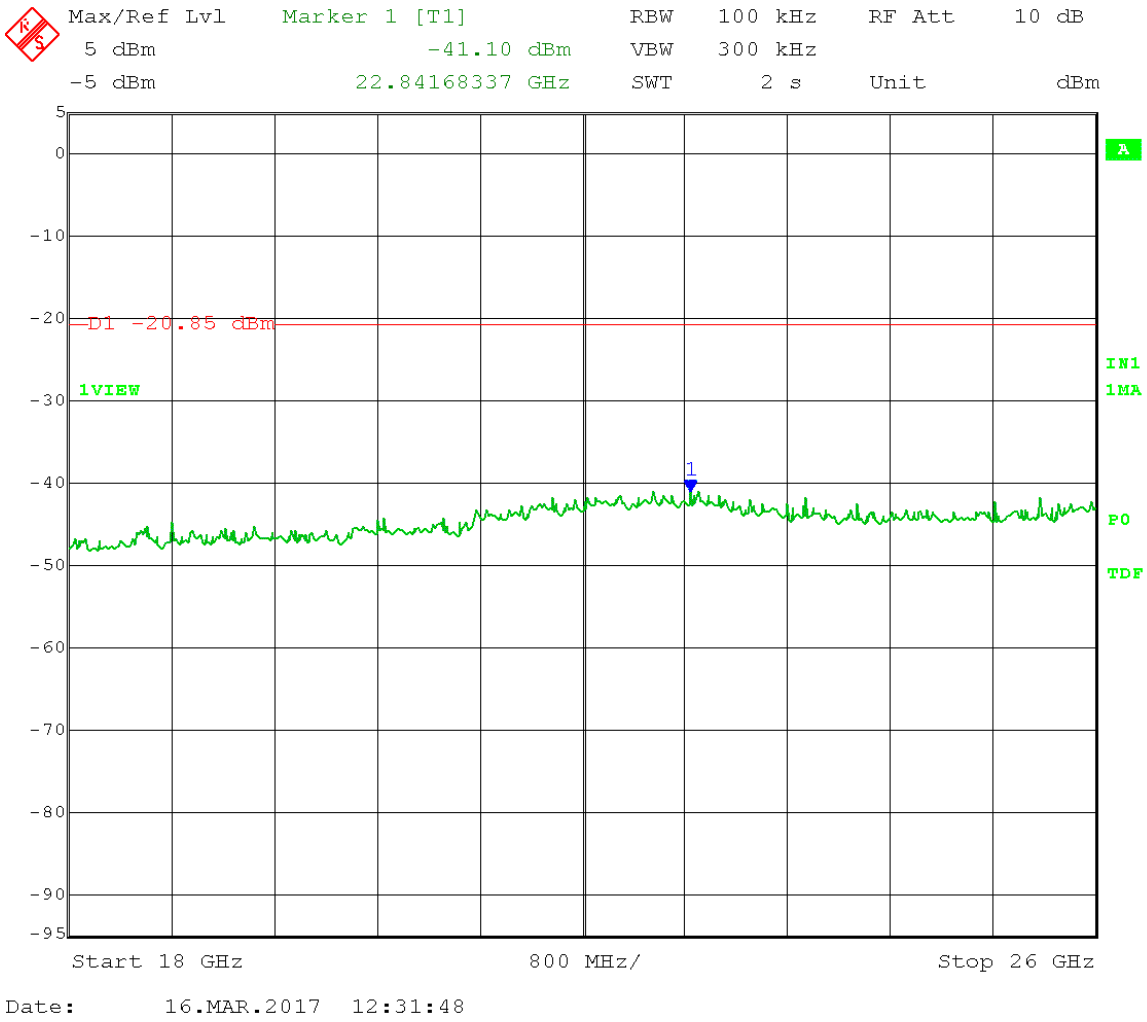
Power setting: 14

Emission Level measurement

Limit = -0.85 dBm – 20 dB = -20.85 dBm

Frequency Range: 18 – 26 GHz

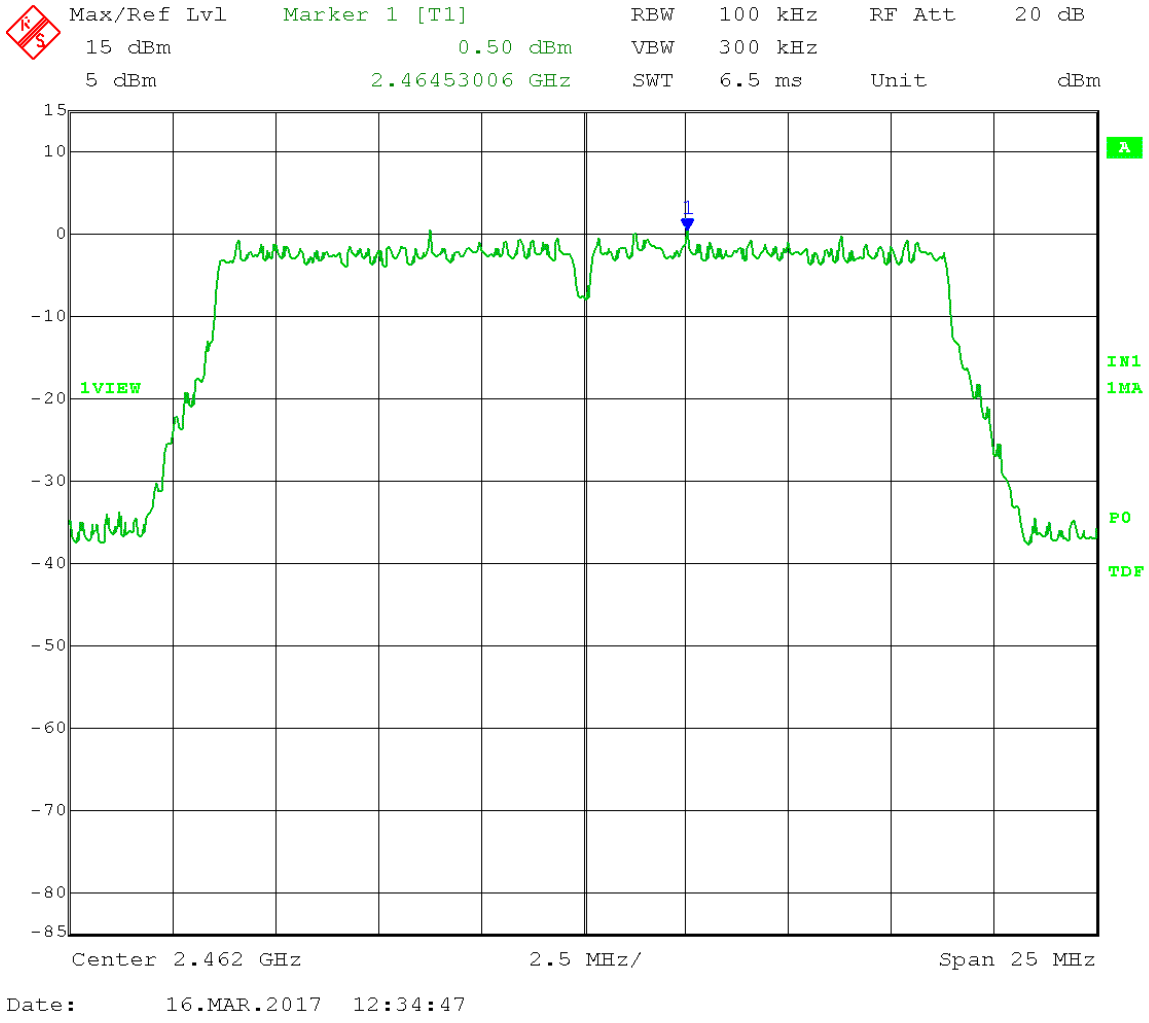


Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Reference Level measurement

Limit = 0.50 dBm – 20 dB = -19.5 dBm



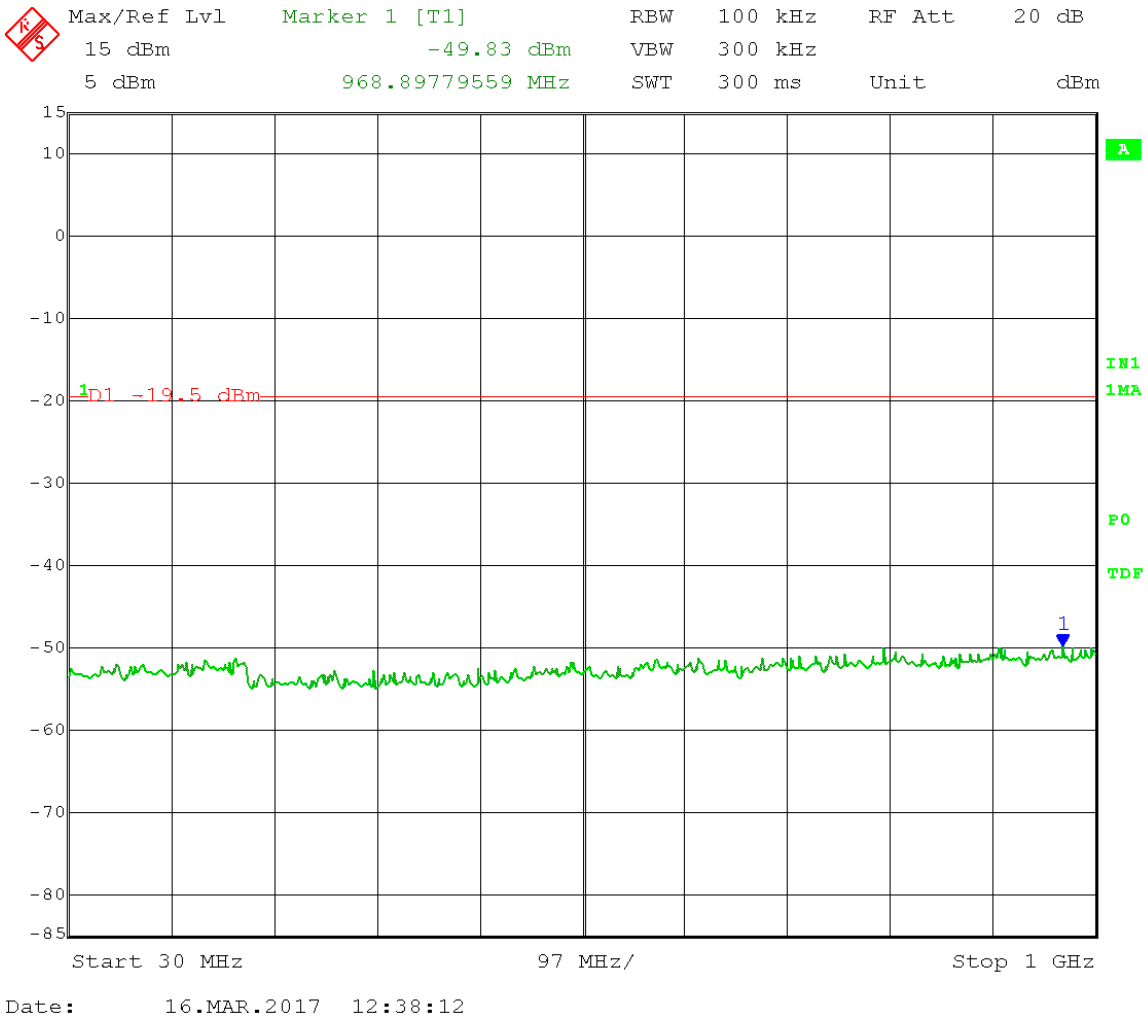
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Emission Level measurement

Limit = 0.50 dBm – 20 dB = -19.5 dBm

Frequency Range: 30 – 1000 MHz



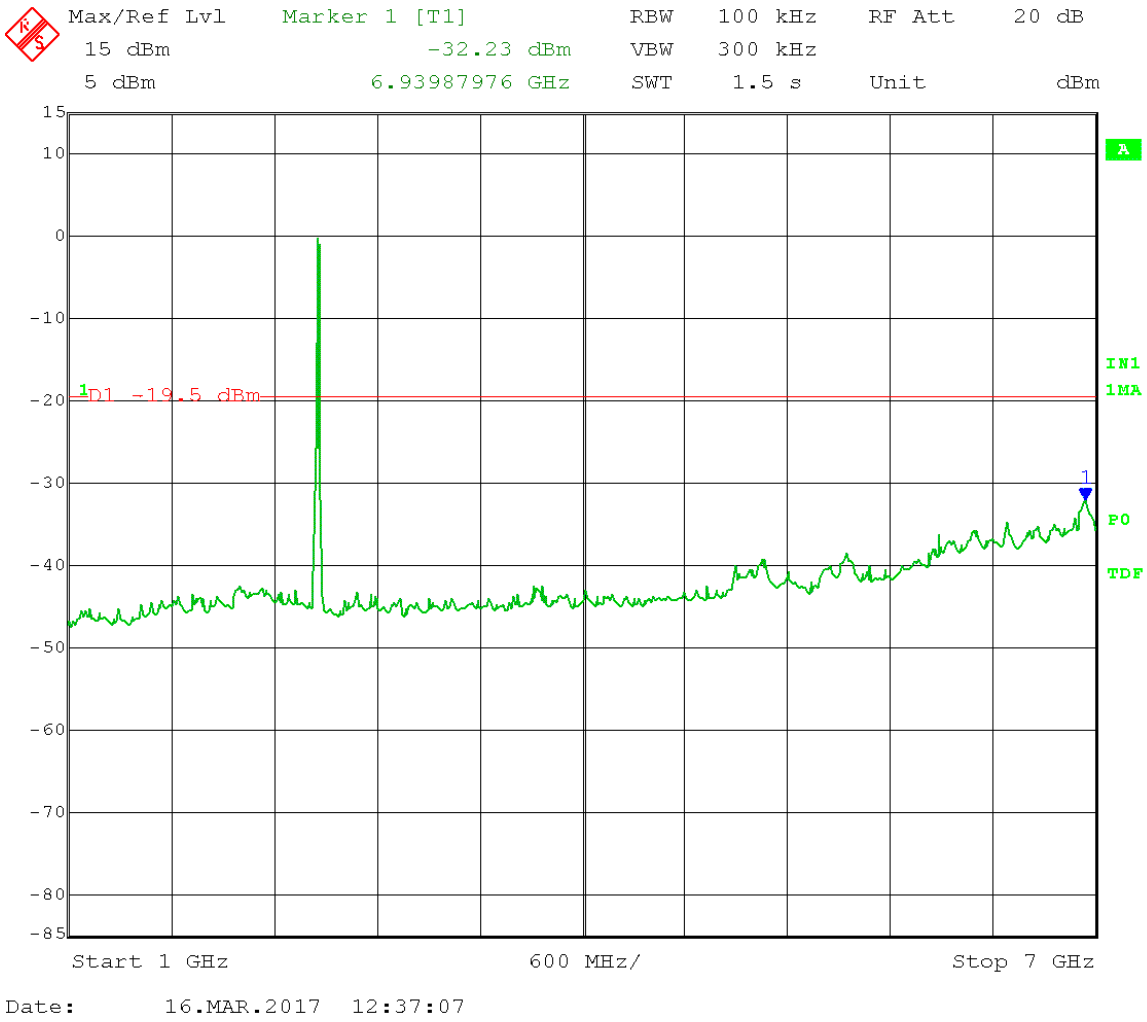
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Emission Level measurement

Limit = 0.50 dBm – 20 dB = -19.5 dBm

Frequency Range: 1 – 7 GHz



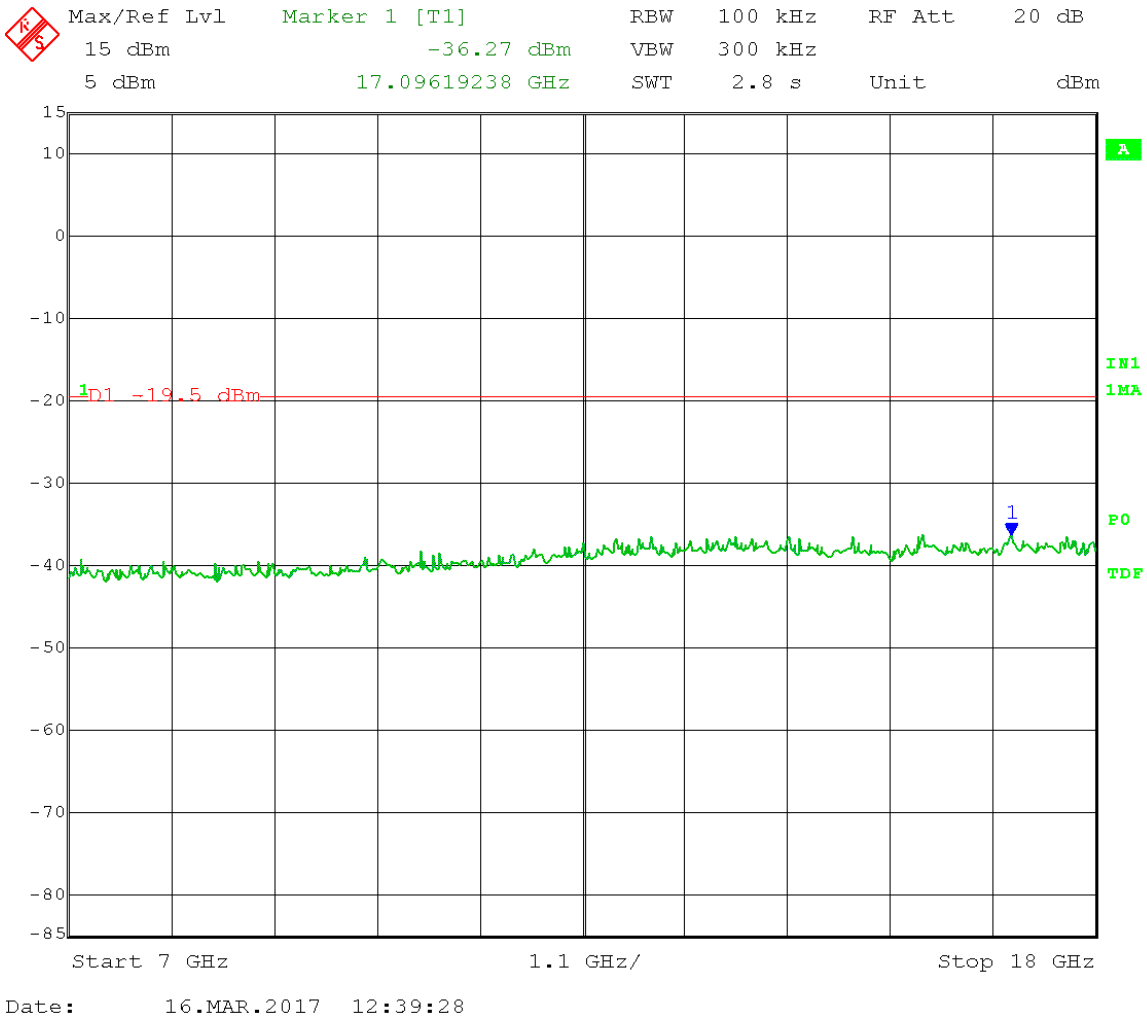
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Emission Level measurement

Limit = 0.50 dBm – 20 dB = -19.5 dBm

Frequency Range: 7 – 18 GHz



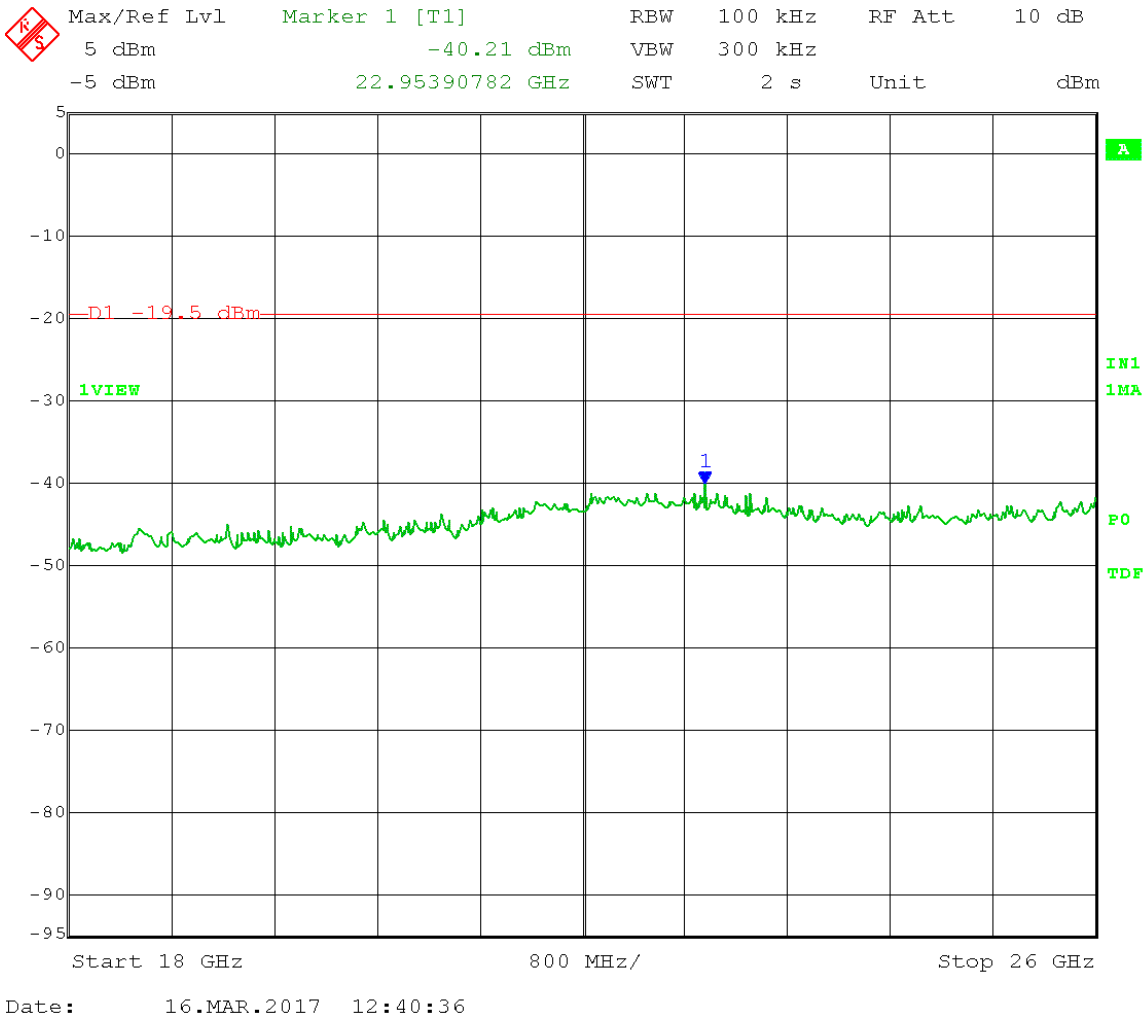
Test Date: 03-16-2017
Company: Whirlpool Corporation
EUT: Tourmaline
Test: Emissions in non-restricted frequency bands
RF conducted spurious emissions
Operator: Craig B

Antenna: External Antenna Port
Channel: High, 2462 MHz
Modulation: 802.11-n, MCS7
Power setting: 14

Emission Level measurement

Limit = 0.50 dBm – 20 dB = -19.5 dBm

Frequency Range: 18 – 26 GHz



166 South Carter, Genoa City, WI 53128

Appendix B

B6.0 Emissions in Restricted Frequency Bands – Radiated

Rule Part:

15.247(d), 15.205(a), 15.209(a)

Test Procedure:

ANSI C63.10-2013
11.12 Emissions in Restricted Frequency Bands
11.12.1 Radiated Emissions Measurements

Limit:

15.209(a)

Results:

Compliant

Notes:

Measurements were performed while the EUT was transmitting from on-board antenna number 1. Testing was then repeated with the EUT transmitting from on-board antenna number 2. Testing was then repeated with the EUT transmitting from the external antenna port with the PIFA and F antennas. Testing was performed with 802.11-b 1 Mbps modulation (found to be worst-case) and output power setting 18. The EUT was tested at the low, middle, and high channels of operation.

FCC Part 15.209

Electric Field Strength

EUT: Tourmaline WiFi module
Manufacturer: Whirlpool Corporation
Operating Condition: 68 deg F; 33%R.H.
Test Site: DLS OATS 3
Operator: Craig B
Test Specification: Transmitter spurious emissions
Comment: Continuous transmit; L,M,H ch's; On-borad 1 & 2 antennas
Date: 03-31-2017

TEXT: "Vert 3 meters"

Short Description: Test Set-up

Test Set-up: EUT Measured at 3 Meters with VERTICAL Antenna Polarization

Sample Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
24.6 = 35.51 + (-22.1) + 11.20

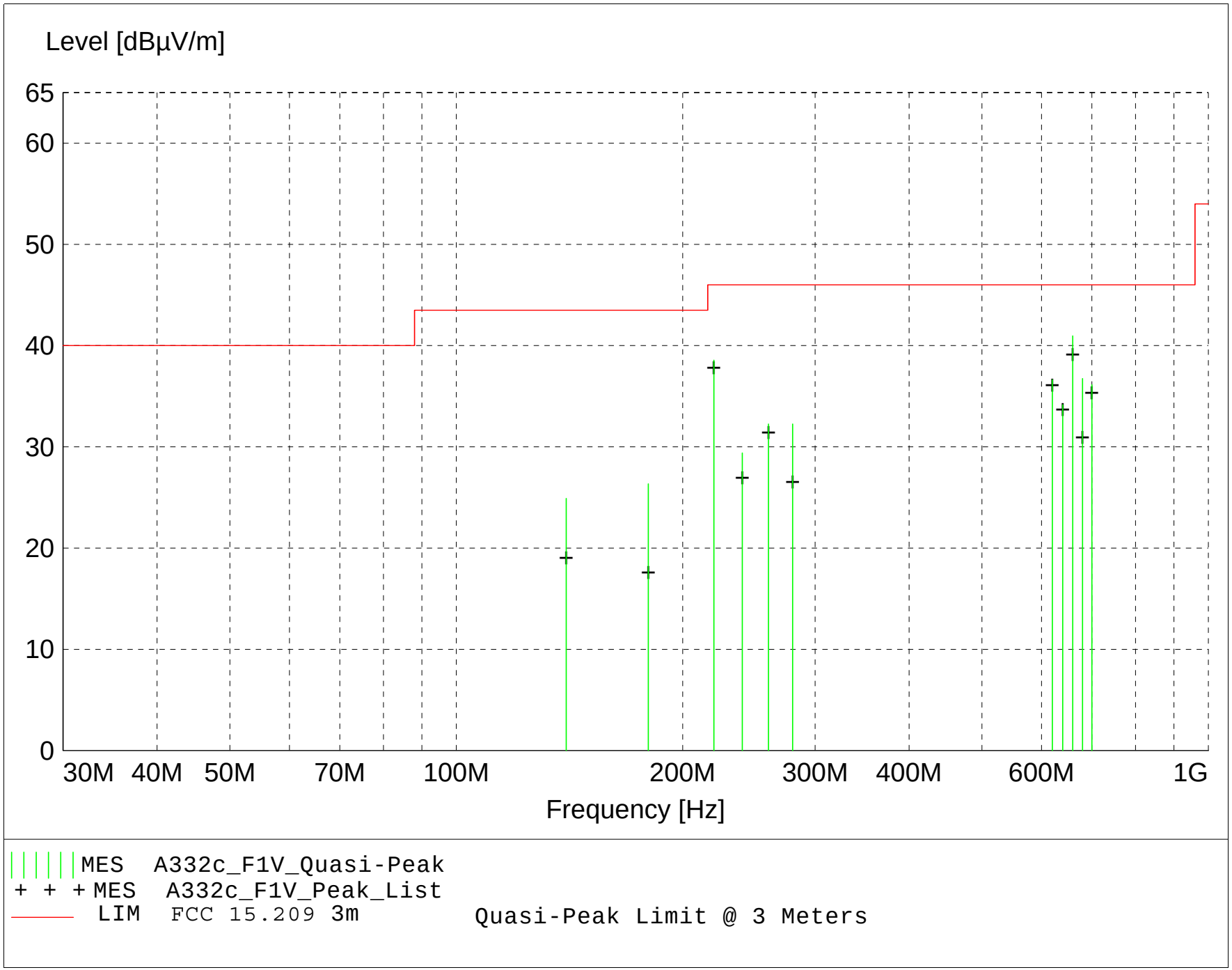
Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)
15.4 = 40 - 24.6

Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average dector

Final maximized level using Peak detector


Level [dBµV/m]
65
60
50
40
30
20
10
0
30M
40M
50M
70M
100M
200M
300M
400M
600M
1G
Frequency [Hz]
MES A332c_F1V_Quasi-Peak
MES A332c_F1V_Peak_List
LIM FCC 15.209 3m
Quasi-Peak Limit @ 3 Meters

MEASUREMENT RESULT: "A332c_F1V_Final"

3/31/2017 3:50PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
140.020000	35.28	12.00	-22.4	24.9	43.5	18.6	1.00	80	QUASI-PEAK	Limit N/A; not in restricted band
180.020000	32.10	16.20	-22.0	26.4	43.5	17.1	1.00	80	QUASI-PEAK	Limit N/A; not in restricted band
220.040000	49.21	11.00	-21.6	38.6	46.0	7.4	1.00	135	QUASI-PEAK	Limit N/A; not in restricted band
240.060000	39.38	11.60	-21.6	29.4	46.0	16.6	1.00	170	QUASI-PEAK	None
260.040000	41.11	12.60	-21.5	32.3	46.0	13.7	1.00	110	QUASI-PEAK	None
280.040000	40.13	13.40	-21.3	32.3	46.0	13.7	1.00	200	QUASI-PEAK	None
620.120000	36.07	19.90	-19.3	36.6	46.0	9.4	1.00	100	QUASI-PEAK	Limit N/A; not in restricted band
640.120000	34.03	19.41	-19.3	34.2	46.0	11.8	1.00	110	QUASI-PEAK	Limit N/A; not in restricted band
660.120000	40.17	20.00	-19.2	41.0	46.0	5.0	1.00	90	QUASI-PEAK	Limit N/A; not in restricted band
680.120000	35.13	20.51	-18.9	36.8	46.0	9.2	1.00	135	QUASI-PEAK	Limit N/A; not in restricted band
700.120000	34.37	20.70	-18.9	36.1	46.0	9.9	1.00	110	QUASI-PEAK	Limit N/A; not in restricted band

FCC Part 15.209

Electric Field Strength

EUT: Tourmaline WiFi module
Manufacturer: Whirlpool Corporation
Operating Condition: 68 deg F; 33%R.H.
Test Site: DLS OATS 3
Operator: Craig B
Test Specification: Transmitter spurious emissions
Comment: Continuous transmit; L,M,H ch's; On-borad 1 & 2 antennas
Date: 03-31-2017

TEXT: "Horz 3 meters"

Short Description: Test Set-up

Test Set-up: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization

Sample Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
24.6 = 35.51 + (-22.1) + 11.20

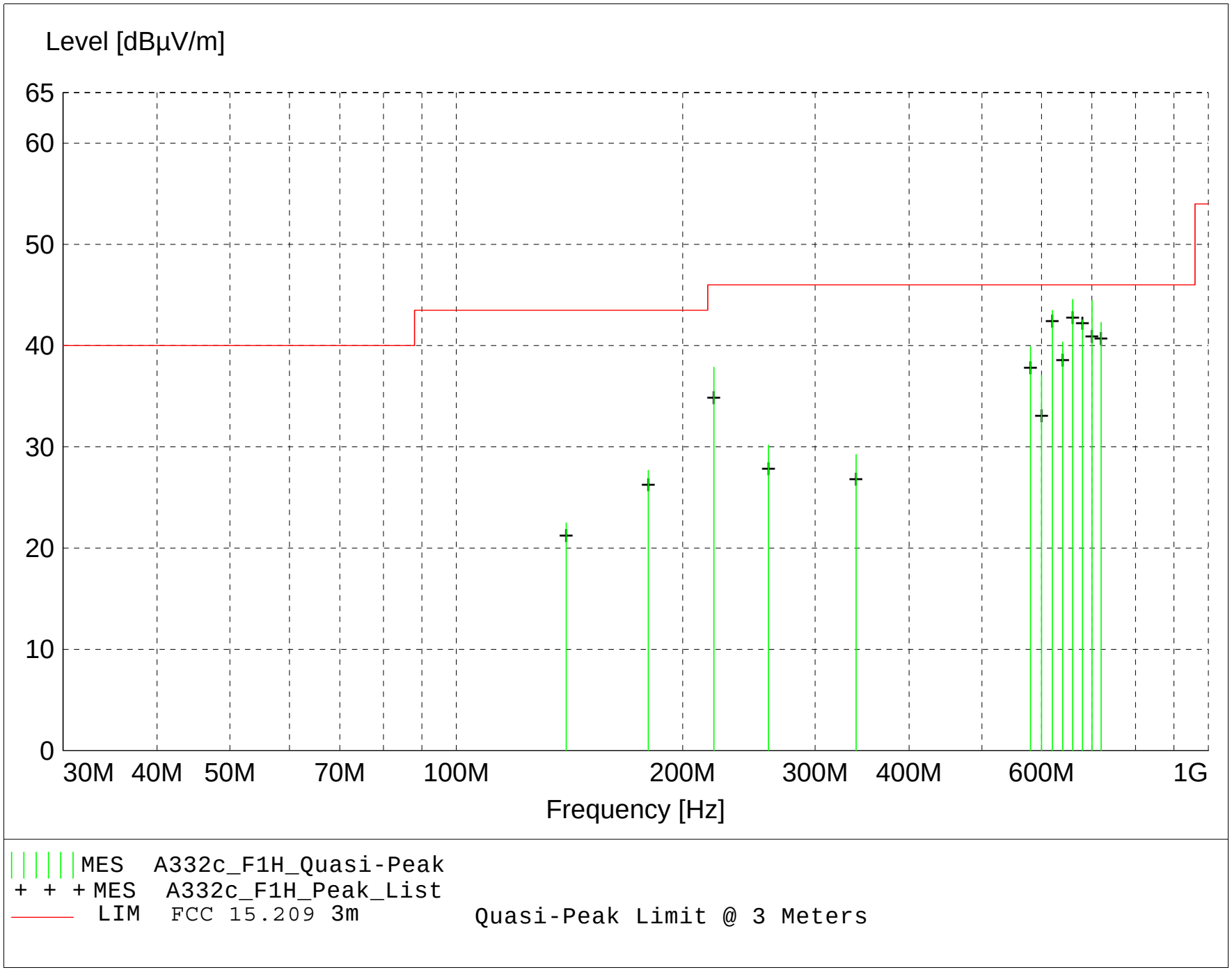
Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)
15.4 = 40 - 24.6

Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average dector

Final maximized level using Peak detector


Level [dBµV/m]
65
60
50
40
30
20
10
0
30M
40M
50M
70M
100M
200M
300M
400M
600M
1G
Frequency [Hz]
MES A332c_F1H_Quasi-Peak
MES A332c_F1H_Peak_List
LIM FCC 15.209 3m
Quasi-Peak Limit @ 3 Meters

MEASUREMENT RESULT: "A332c_F1H_Final"

3/31/2017 3:50PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
140.020000	32.85	12.00	-22.4	22.5	43.5	21.0	2.60	210	QUASI-PEAK	Limit N/A; not in restricted band
180.030000	33.42	16.21	-22.0	27.7	43.5	15.8	1.70	225	QUASI-PEAK	Limit N/A; not in restricted band
220.040000	48.51	11.00	-21.6	37.9	46.0	8.1	1.40	230	QUASI-PEAK	None
260.040000	39.02	12.60	-21.5	30.2	46.0	15.8	1.10	225	QUASI-PEAK	None
340.060000	35.29	14.80	-20.9	29.2	46.0	16.8	1.00	0	QUASI-PEAK	Limit N/A; not in restricted band
580.100000	40.52	19.10	-19.7	39.9	46.0	6.1	2.10	210	QUASI-PEAK	Limit N/A; not in restricted band
600.120000	37.34	19.20	-19.5	37.1	46.0	8.9	1.60	20	QUASI-PEAK	Limit N/A; not in restricted band
620.120000	42.93	19.90	-19.3	43.5	46.0	2.5	1.30	30	QUASI-PEAK	Limit N/A; not in restricted band
640.120000	40.21	19.41	-19.3	40.3	46.0	5.7	1.50	0	QUASI-PEAK	Limit N/A; not in restricted band
660.120000	43.76	20.00	-19.2	44.6	46.0	1.4	1.40	20	QUASI-PEAK	Limit N/A; not in restricted band
680.140000	40.92	20.51	-18.9	42.6	46.0	3.4	1.30	10	QUASI-PEAK	Limit N/A; not in restricted band
700.140000	42.68	20.70	-18.9	44.4	46.0	1.6	1.20	15	QUASI-PEAK	Limit N/A; not in restricted band
720.140000	39.87	21.30	-18.9	42.3	46.0	3.7	1.20	0	QUASI-PEAK	Limit N/A; not in restricted band

FCC Part 15.209

Electric Field Strength

EUT: Tourmaline WiFi module
Manufacturer: Whirlpool Corporation
Operating Condition: 68 deg F; 33%R.H.
Test Site: DLS OATS 3
Operator: Craig B
Test Specification: Transmitter spurious emissions
Comment: Continuous transmit; L,M,H ch's; PIFA antenna
Date: 03-31-2017

TEXT: "Vert 3 meters"

Short Description: Test Set-up

Test Set-up: EUT Measured at 3 Meters with VERTICAL Antenna Polarization

Sample Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
24.6 = 35.51 + (-22.1) + 11.20

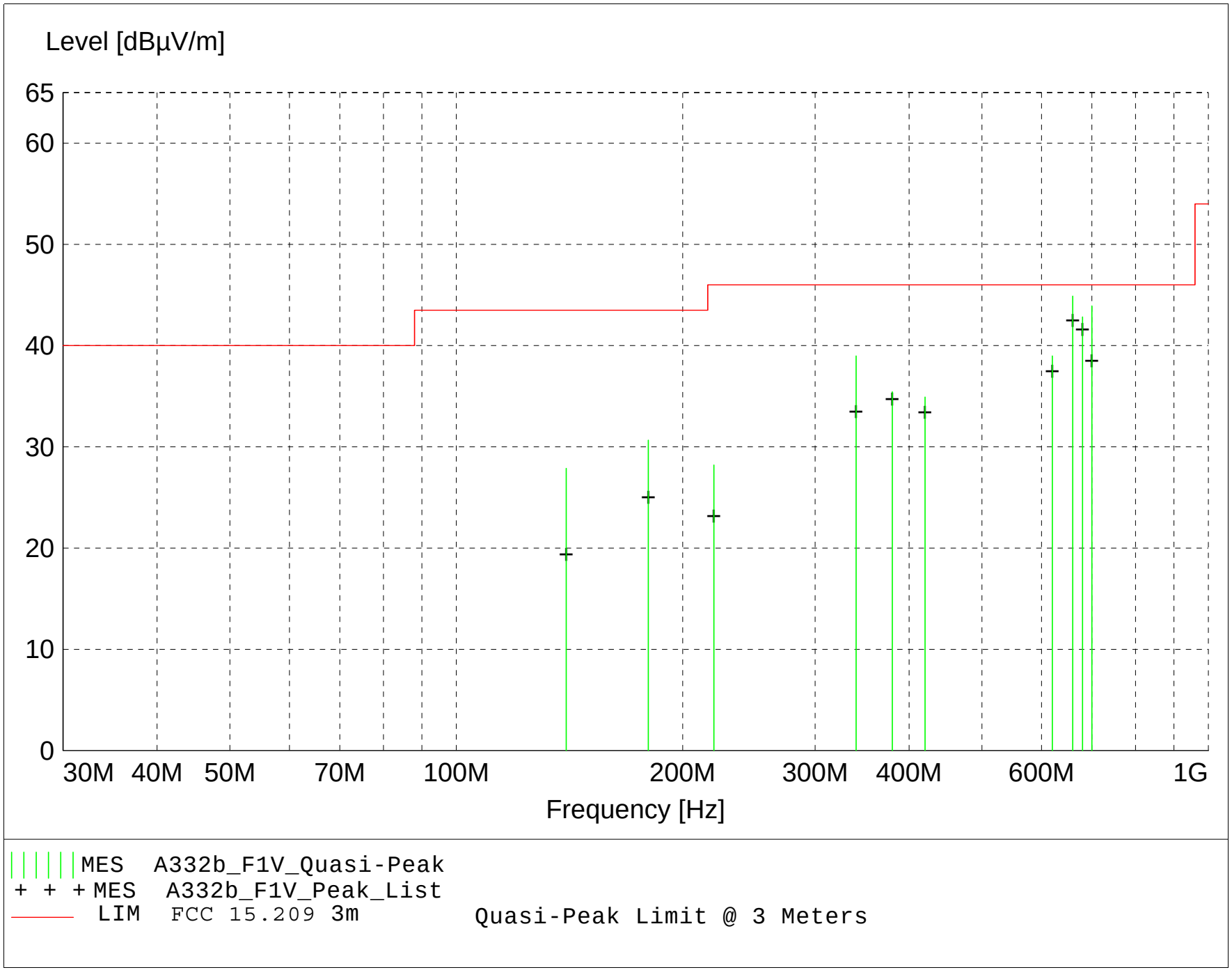
Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)
15.4 = 40 - 24.6

Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average dector

Final maximized level using Peak detector


Level [dBµV/m]
65
60
50
40
30
20
10
0
30M
40M
50M
70M
100M
200M
300M
400M
600M
1G
Frequency [Hz]
MES A332b_F1V_Quasi-Peak
MES A332b_F1V_Peak_List
LIM FCC 15.209 3m
Quasi-Peak Limit @ 3 Meters

MEASUREMENT RESULT: "A332b_F1V_Final"

3/31/2017 2:13PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
140.010000	38.25	12.00	-22.4	27.9	43.5	15.6	1.00	50	QUASI-PEAK	Limit N/A; not in restricted band
180.030000	36.40	16.21	-22.0	30.7	43.5	12.8	1.00	90	QUASI-PEAK	Limit N/A; not in restricted band
220.040000	38.86	11.00	-21.6	28.2	46.0	17.8	2.00	45	QUASI-PEAK	Limit N/A; not in restricted band
340.060000	45.04	14.80	-20.9	39.0	46.0	7.0	1.60	315	QUASI-PEAK	Limit N/A; not in restricted band
380.060000	40.90	15.20	-20.7	35.4	46.0	10.6	1.00	350	QUASI-PEAK	Limit N/A; not in restricted band
420.080000	39.12	16.10	-20.3	34.9	46.0	11.1	1.00	0	QUASI-PEAK	Limit N/A; not in restricted band
620.120000	38.42	19.90	-19.3	39.0	46.0	7.0	1.60	130	QUASI-PEAK	Limit N/A; not in restricted band
660.120000	44.09	20.00	-19.2	44.9	46.0	1.1	2.10	340	QUASI-PEAK	Limit N/A; not in restricted band
680.120000	41.20	20.51	-18.9	42.8	46.0	3.2	1.80	270	QUASI-PEAK	Limit N/A; not in restricted band
700.120000	42.16	20.70	-18.9	43.9	46.0	2.1	2.00	270	QUASI-PEAK	Limit N/A; not in restricted band

FCC Part 15.209

Electric Field Strength

EUT: Tourmaline WiFi module
Manufacturer: Whirlpool Corporation
Operating Condition: 68 deg F; 33%R.H.
Test Site: DLS OATS 3
Operator: Craig B
Test Specification: Transmitter spurious emissions
Comment: Continuous transmit; L,M,H ch's; PIFA antenna
Date: 03-31-2017

TEXT: "Horz 3 meters"

Short Description: Test Set-up

Test Set-up: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization

Sample Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
24.6 = 35.51 + (-22.1) + 11.20

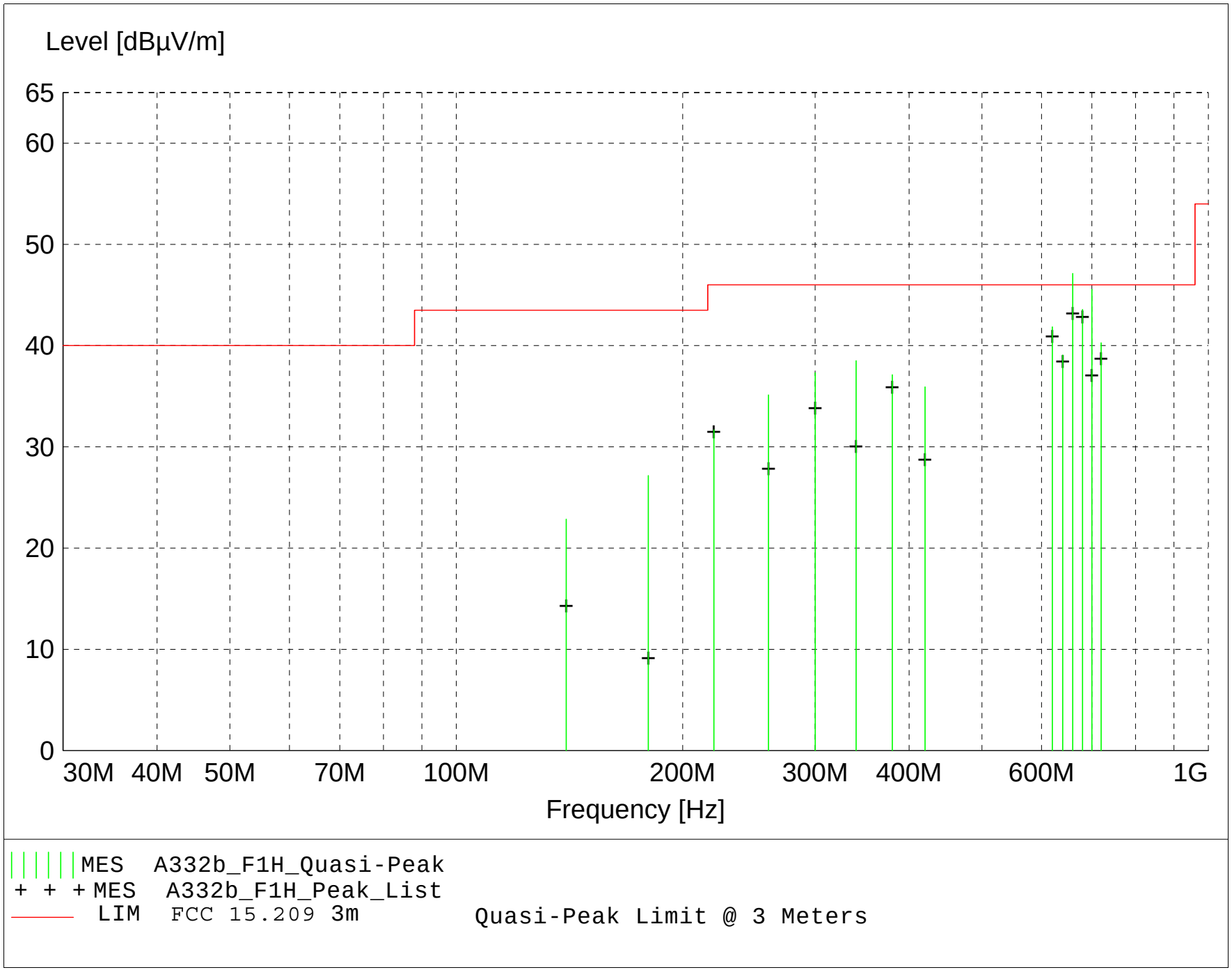
Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)
15.4 = 40 - 24.6

Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average dector

Final maximized level using Peak detector


Level [dBµV/m]
65
60
50
40
30
20
10
0
30M
40M
50M
70M
100M
200M
300M
400M
600M
1G
Frequency [Hz]
MES A332b_F1H_Quasi-Peak
MES A332b_F1H_Peak_List
LIM FCC 15.209 3m
Quasi-Peak Limit @ 3 Meters

MEASUREMENT RESULT: "A332b_F1H_Final"

3/31/2017 2:14PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
140.020000	33.24	12.00	-22.4	22.9	43.5	20.6	2.60	0	QUASI-PEAK	Limit N/A; not in restricted band
180.040000	32.91	16.21	-22.0	27.2	43.5	16.3	1.60	40	QUASI-PEAK	Limit N/A; not in restricted band
220.040000	42.31	11.00	-21.6	31.7	46.0	14.3	1.50	315	QUASI-PEAK	Limit N/A; not in restricted band
260.040000	43.98	12.60	-21.5	35.1	46.0	10.9	1.00	0	QUASI-PEAK	None
300.060000	44.00	14.50	-21.2	37.3	46.0	8.7	1.00	0	QUASI-PEAK	Limit N/A; not in restricted band
340.080000	44.57	14.80	-20.9	38.5	46.0	7.5	1.00	220	QUASI-PEAK	Limit N/A; not in restricted band
380.060000	42.58	15.20	-20.7	37.1	46.0	8.9	1.00	225	QUASI-PEAK	Limit N/A; not in restricted band
420.080000	40.12	16.10	-20.3	35.9	46.0	10.1	2.10	100	QUASI-PEAK	Limit N/A; not in restricted band
620.120000	41.29	19.90	-19.3	41.9	46.0	4.1	1.10	0	QUASI-PEAK	Limit N/A; not in restricted band
640.120000	38.93	19.41	-19.3	39.1	46.0	6.9	1.00	350	QUASI-PEAK	Limit N/A; not in restricted band
660.120000	46.32	20.00	-19.2	47.1	46.0	-1.1	1.00	350	QUASI-PEAK	Limit N/A; not in restricted band
680.120000	41.94	20.51	-18.9	43.6	46.0	2.4	1.00	350	QUASI-PEAK	Limit N/A; not in restricted band
700.120000	43.78	20.70	-18.9	45.5	46.0	0.5	1.70	330	QUASI-PEAK	Limit N/A; not in restricted band
720.140000	37.86	21.30	-18.9	40.3	46.0	5.7	1.00	350	QUASI-PEAK	Limit N/A; not in restricted band

FCC Part 15.209

Electric Field Strength

EUT: Tourmaline WiFi module
Manufacturer: Whirlpool Corporation
Operating Condition: 68 deg F; 33%R.H.
Test Site: DLS OATS 3
Operator: Craig B
Test Specification: Transmitter spurious emissions
Comment: Continuous transmit; L,M,H ch's; F antenna
Date: 03-31-2017

TEXT: "Vert 3 meters"

Short Description: Test Set-up

Test Set-up: EUT Measured at 3 Meters with VERTICAL Antenna Polarization

Sample Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
24.6 = 35.51 + (-22.1) + 11.20

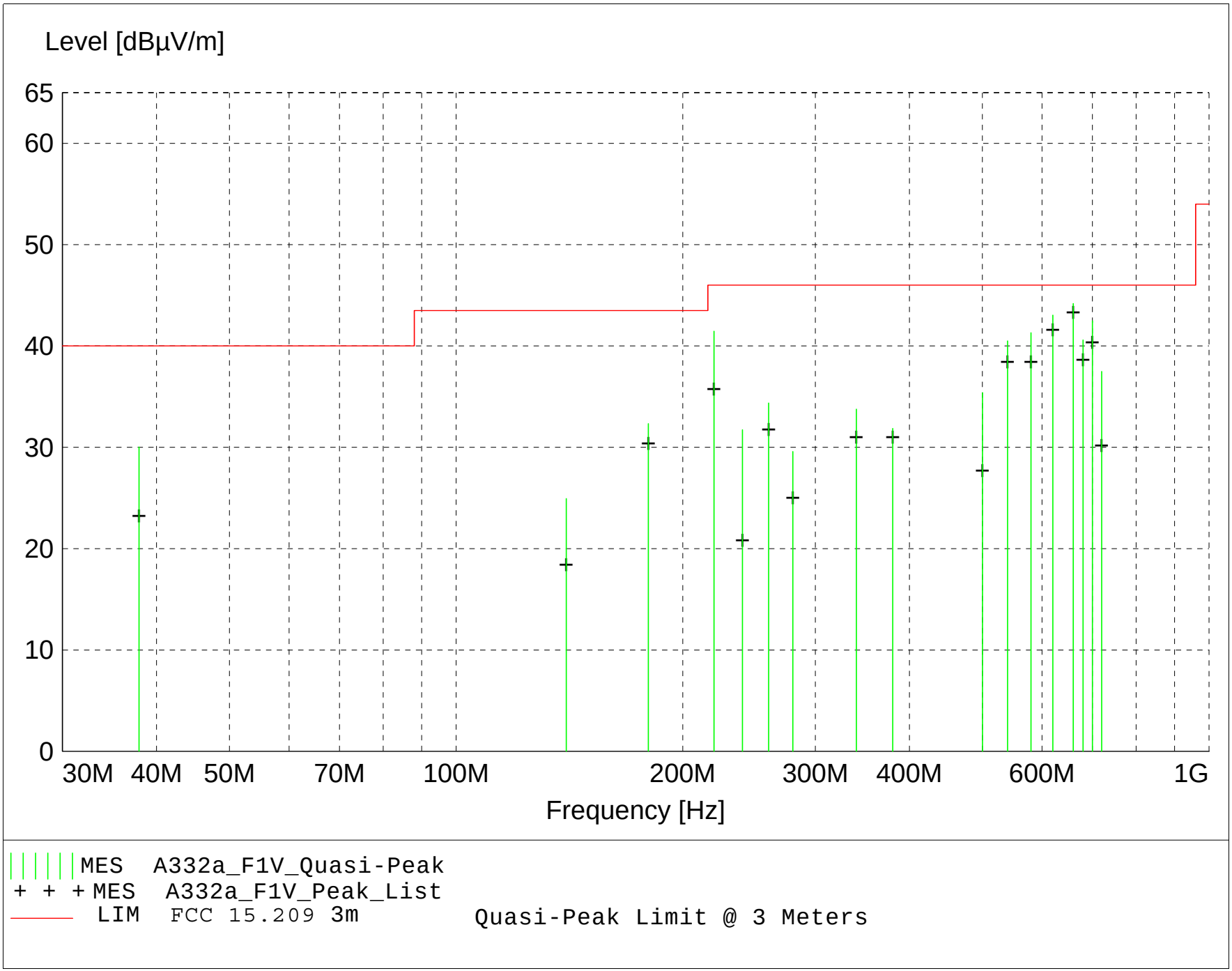
Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)
15.4 = 40 - 24.6

Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average dector

Final maximized level using Peak detector


Level [dBµV/m]
65
60
50
40
30
20
10
0
30M
40M
50M
70M
100M
200M
300M
400M
600M
1G
Frequency [Hz]
MES A332a_F1V_Quasi-Peak
MES A332a_F1V_Peak_List
LIM FCC 15.209 3m
Quasi-Peak Limit @ 3 Meters

MEASUREMENT RESULT: "A332a_F1V_Final"

3/31/2017 11:17AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
37.920000	42.21	11.60	-23.8	30.0	40.0	10.0	1.00	35	QUASI-PEAK	broadband
140.030000	35.32	12.00	-22.4	24.9	43.5	18.6	1.00	180	QUASI-PEAK	Limit N/A; not in restricted band
180.040000	38.08	16.21	-22.0	32.3	43.5	11.2	1.00	165	QUASI-PEAK	Limit N/A; not in restricted band
220.040000	52.10	11.00	-21.6	41.5	46.0	4.5	1.00	180	QUASI-PEAK	Limit N/A; not in restricted band
240.040000	41.72	11.60	-21.6	31.7	46.0	14.3	2.00	0	QUASI-PEAK	None
260.040000	43.22	12.60	-21.5	34.4	46.0	11.6	2.10	175	QUASI-PEAK	None
280.000000	37.46	13.40	-21.3	29.6	46.0	16.4	2.00	180	QUASI-PEAK	None
340.060000	39.82	14.80	-20.9	33.8	46.0	12.2	1.80	25	QUASI-PEAK	Limit N/A; not in restricted band
380.080000	37.32	15.20	-20.7	31.9	46.0	14.1	1.50	80	QUASI-PEAK	Limit N/A; not in restricted band
500.080000	37.55	17.80	-20.0	35.4	46.0	10.6	1.20	330	QUASI-PEAK	Limit N/A; not in restricted band
540.100000	41.74	18.50	-19.7	40.5	46.0	5.5	1.10	315	QUASI-PEAK	Limit N/A; not in restricted band
580.100000	41.91	19.10	-19.7	41.3	46.0	4.7	1.00	315	QUASI-PEAK	Limit N/A; not in restricted band
620.120000	42.49	19.90	-19.3	43.0	46.0	3.0	1.00	280	QUASI-PEAK	Limit N/A; not in restricted band
660.120000	43.39	20.00	-19.2	44.2	46.0	1.8	1.00	290	QUASI-PEAK	Limit N/A; not in restricted band
680.120000	38.97	20.51	-18.9	40.6	46.0	5.4	1.00	270	QUASI-PEAK	Limit N/A; not in restricted band
700.120000	40.72	20.70	-18.9	42.5	46.0	3.5	1.30	260	QUASI-PEAK	Limit N/A; not in restricted band
720.140000	35.06	21.30	-18.9	37.5	46.0	8.5	1.30	260	QUASI-PEAK	Limit N/A; not in restricted band

FCC Part 15.209

Electric Field Strength

EUT: Tourmaline WiFi module
Manufacturer: Whirlpool Corporation
Operating Condition: 68 deg F; 33%R.H.
Test Site: DLS OATS 3
Operator: Craig B
Test Specification: Transmitter spurious emissions
Comment: Continuous transmit; L,M,H ch's; F antenna
Date: 03-31-2017

TEXT: "Horz 3 meters"

Short Description: Test Set-up

Test Set-up: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization

Sample Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
24.6 = 35.51 + (-22.1) + 11.20

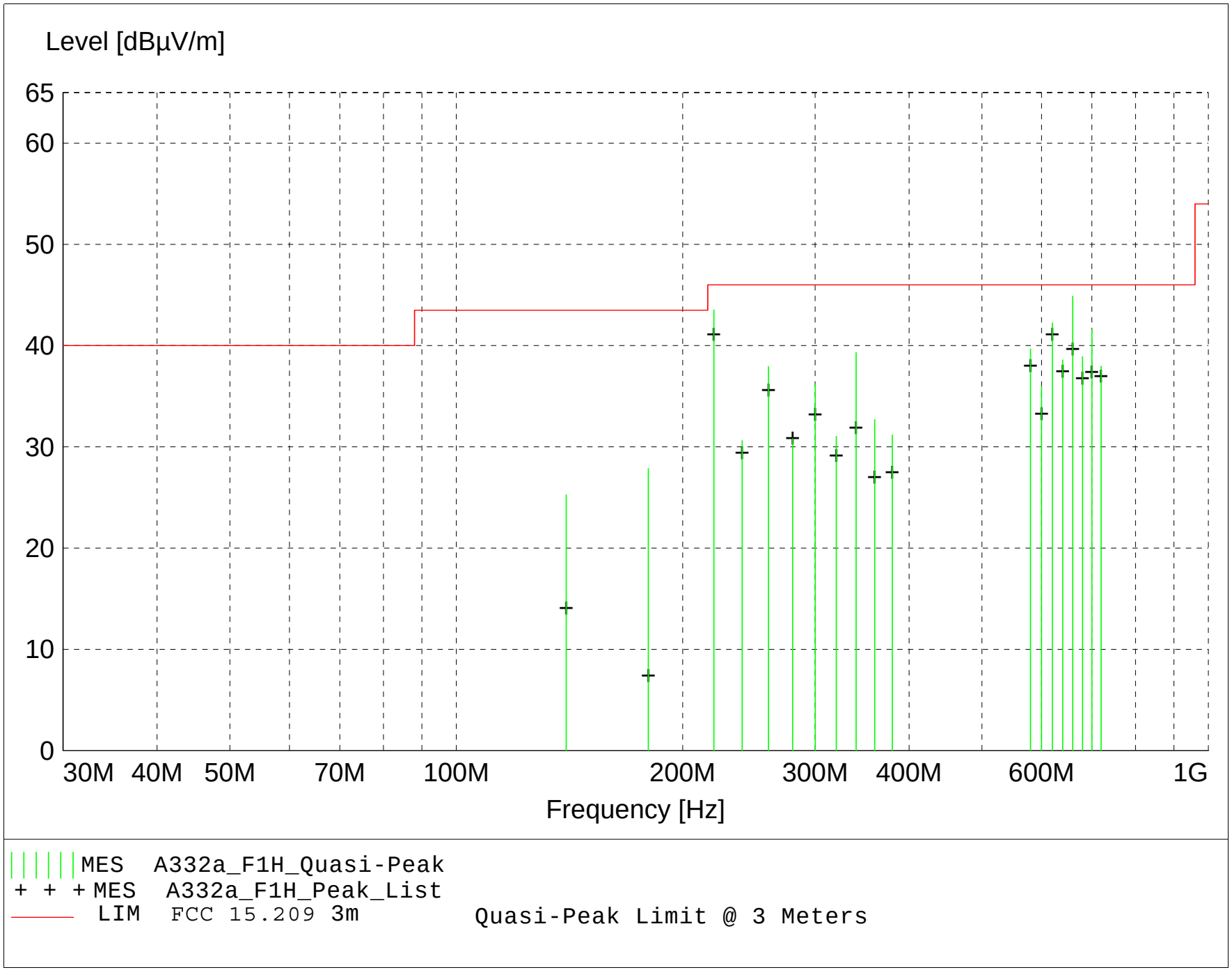
Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)
15.4 = 40 - 24.6

Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average dector

Final maximized level using Peak detector


Level [dBµV/m]
65
60
50
40
30
20
10
0
30M
40M
50M
70M
100M
200M
300M
400M
600M
1G
Frequency [Hz]
MES A332a_F1H_Quasi-Peak
MES A332a_F1H_Peak_List
LIM FCC 15.209 3m
Quasi-Peak Limit @ 3 Meters

MEASUREMENT RESULT: "A332a_F1H_Final"

3/31/2017 11:16AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
140.010000	35.64	12.00	-22.4	25.3	43.5	18.2	2.20	90	QUASI-PEAK	Limit N/A; not in restricted band
180.040000	33.60	16.21	-22.0	27.9	43.5	15.6	1.70	135	QUASI-PEAK	Limit N/A; not in restricted band
220.040000	54.17	11.00	-21.6	43.5	46.0	2.5	1.20	15	QUASI-PEAK	Limit N/A; not in restricted band
240.000000	40.61	11.60	-21.6	30.6	46.0	15.4	1.00	350	QUASI-PEAK	None
260.040000	46.80	12.60	-21.5	37.9	46.0	8.1	1.10	180	QUASI-PEAK	None
280.020000	38.69	13.40	-21.3	30.8	46.0	15.2	1.00	0	QUASI-PEAK	None
300.060000	42.88	14.50	-21.2	36.2	46.0	9.8	1.00	180	QUASI-PEAK	Limit N/A; not in restricted band
320.040000	37.46	14.70	-21.1	31.0	46.0	15.0	1.00	200	QUASI-PEAK	Limit N/A; not in restricted band
340.060000	45.37	14.80	-20.9	39.3	46.0	6.7	1.00	350	QUASI-PEAK	Limit N/A; not in restricted band
360.080000	38.66	14.80	-20.8	32.7	46.0	13.3	1.00	320	QUASI-PEAK	Limit N/A; not in restricted band
380.060000	36.63	15.20	-20.7	31.2	46.0	14.8	1.00	330	QUASI-PEAK	Limit N/A; not in restricted band
580.100000	40.28	19.10	-19.7	39.7	46.0	6.3	1.30	240	QUASI-PEAK	Limit N/A; not in restricted band
600.100000	36.22	19.20	-19.5	36.0	46.0	10.0	1.20	225	QUASI-PEAK	Limit N/A; not in restricted band
620.120000	41.68	19.90	-19.3	42.2	46.0	3.8	1.20	230	QUASI-PEAK	Limit N/A; not in restricted band
640.120000	38.45	19.41	-19.3	38.6	46.0	7.4	1.20	260	QUASI-PEAK	Limit N/A; not in restricted band
660.120000	44.09	20.00	-19.2	44.9	46.0	1.1	1.10	160	QUASI-PEAK	Limit N/A; not in restricted band
680.120000	37.28	20.51	-18.9	38.9	46.0	7.1	1.10	160	QUASI-PEAK	Limit N/A; not in restricted band
700.120000	39.81	20.70	-18.9	41.6	46.0	4.4	1.00	75	QUASI-PEAK	Limit N/A; not in restricted band
720.120000	35.56	21.30	-18.9	38.0	46.0	8.0	1.00	80	QUASI-PEAK	Limit N/A; not in restricted band

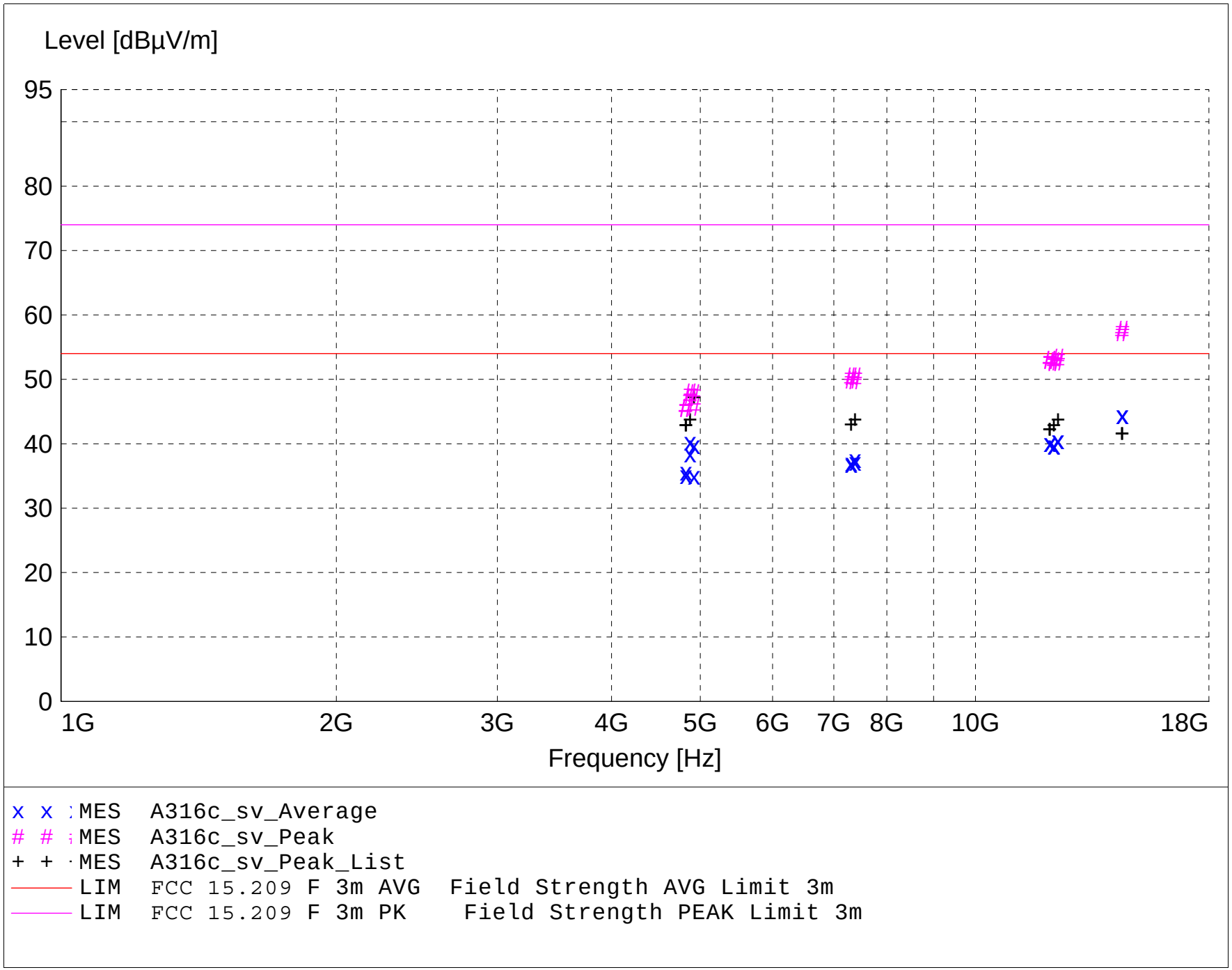
FCC Part 15.247

Electric Field Strength

```
EUT:                  Tourmaline
Manufacturer:         Whirlpool Corporation
Operating Condition:  71 deg C  26% R.H.
Test Site:            DLS O.F. G1
Operator:             Clark C  #8732
Test Specification:   Transmitter Spurious; On-board ant #1; L, M, H channels
Comment:              802.11-b; 1 Mbps; pwr setting 18
                      Date:  03-14-2017
```

TEXT: "Vert 3 meters"

```
  Short Description:            Test Set-up


Test Set-up:    EUT Measured at 3 Meters with VERTICAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6


Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector

                -       Background Scan Peak Detector (Optional)

                -       Background Scan Average Detector (Optional)
```


Level [dBµV/m]
95
80
70
60
50
40
30
20
10
0
1G
2G
3G
4G
5G
6G
7G
8G
10G
18G
Frequency [Hz]
x x x MES A316c_sv_Average
MES A316c_sv_Peak
+ + + MES A316c_sv_Peak_List
LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A316c_sv_Final"

3/17/2017 2:19PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
14472.000000	35.80	41.89	-33.3	44.4	54.0	9.6	1.00	0	AVERAGE	Up; Low; NF
14472.000000	35.80	41.89	-33.3	44.4	54.0	9.6	1.00	0	AVERAGE	Out; Low; NF
12310.000000	35.42	38.75	-33.7	40.5	54.0	13.5	1.00	0	AVERAGE	Out; High; NF
12310.000000	35.42	38.75	-33.7	40.5	54.0	13.5	1.00	0	AVERAGE	Up; High; NF
4874.000000	43.98	32.98	-36.6	40.4	54.0	13.6	1.08	315	AVERAGE	Out; Mid-Ch
12060.000000	34.61	38.90	-33.4	40.1	54.0	13.9	1.00	0	AVERAGE	Up; Low; NF
12060.000000	34.61	38.90	-33.4	40.1	54.0	13.9	1.00	0	AVERAGE	Out; Low; NF
12185.200000	34.61	38.82	-33.7	39.8	54.0	14.2	1.00	0	AVERAGE	Up; Mid; NF
4924.000000	43.35	33.05	-36.7	39.7	54.0	14.3	1.15	299	AVERAGE	Up; High-Ch
12185.200000	34.52	38.82	-33.7	39.7	54.0	14.3	1.00	0	AVERAGE	Out; Mid; NF
4874.000000	42.15	32.98	-36.6	38.5	54.0	15.5	1.71	349	AVERAGE	Up; Mid-Ch
14472.000000	49.05	41.89	-33.3	57.7	74.0	16.3	1.00	0	MAX PEAK	Out; Low; NF
7386.000000	34.26	36.59	-33.3	37.6	54.0	16.4	1.62	29	AVERAGE	Out; High-Ch
14472.000000	48.65	41.89	-33.3	57.3	74.0	16.7	1.00	0	MAX PEAK	Up; Low; NF
7386.000000	33.90	36.59	-33.3	37.2	54.0	16.8	1.00	0	AVERAGE	Up; High; NF
7311.200000	34.43	36.44	-33.8	37.0	54.0	17.0	1.77	28	AVERAGE	Out; Mid-Ch
7311.200000	34.26	36.44	-33.8	36.9	54.0	17.1	1.00	311	AVERAGE	Up; Mid-Ch
4824.000000	39.34	32.88	-36.6	35.7	54.0	18.3	1.95	289	AVERAGE	Up; Low-Ch
4824.000000	38.78	32.88	-36.6	35.1	54.0	18.9	1.00	320	AVERAGE	Out; Low-Ch
4924.000000	38.62	33.05	-36.7	35.0	54.0	19.0	2.04	60	AVERAGE	Out; High-Ch
12310.000000	48.39	38.75	-33.7	53.4	74.0	20.6	1.00	0	MAX PEAK	Out; High; NF
12060.000000	47.58	38.90	-33.4	53.1	74.0	20.9	1.00	0	MAX PEAK	Out; Low; NF
12060.000000	47.45	38.90	-33.4	52.9	74.0	21.1	1.00	0	MAX PEAK	Up; Low; NF
12185.200000	47.72	38.82	-33.7	52.9	74.0	21.1	1.00	0	MAX PEAK	Out; Mid; NF
12310.000000	47.72	38.75	-33.7	52.8	74.0	21.2	1.00	0	MAX PEAK	Up; High; NF
12185.200000	47.45	38.82	-33.7	52.6	74.0	21.4	1.00	0	MAX PEAK	Up; Mid; NF
7386.000000	47.17	36.59	-33.3	50.5	74.0	23.5	1.62	29	MAX PEAK	Out; High-Ch
7311.200000	47.85	36.44	-33.8	50.4	74.0	23.6	1.77	28	MAX PEAK	Out; Mid-Ch
7311.200000	47.31	36.44	-33.8	49.9	74.0	24.1	1.00	311	MAX PEAK	Up; Mid-Ch
7386.000000	46.50	36.59	-33.3	49.8	74.0	24.2	1.00	0	MAX PEAK	Up; High; NF
4874.000000	51.59	32.98	-36.6	48.0	74.0	26.0	1.08	315	MAX PEAK	Out; Mid-Ch
4924.000000	51.46	33.05	-36.7	47.8	74.0	26.2	1.15	299	MAX PEAK	Up; High-Ch
4874.000000	50.81	32.98	-36.6	47.2	74.0	26.8	1.71	349	MAX PEAK	Up; Mid-Ch
4924.000000	49.32	33.05	-36.7	45.7	74.0	28.3	2.04	60	MAX PEAK	Out; High-Ch
4824.000000	49.32	32.88	-36.6	45.6	74.0	28.4	1.95	289	MAX PEAK	Up; Low-Ch
4824.000000	49.18	32.88	-36.6	45.5	74.0	28.5	1.00	320	MAX PEAK	Out; Low-Ch

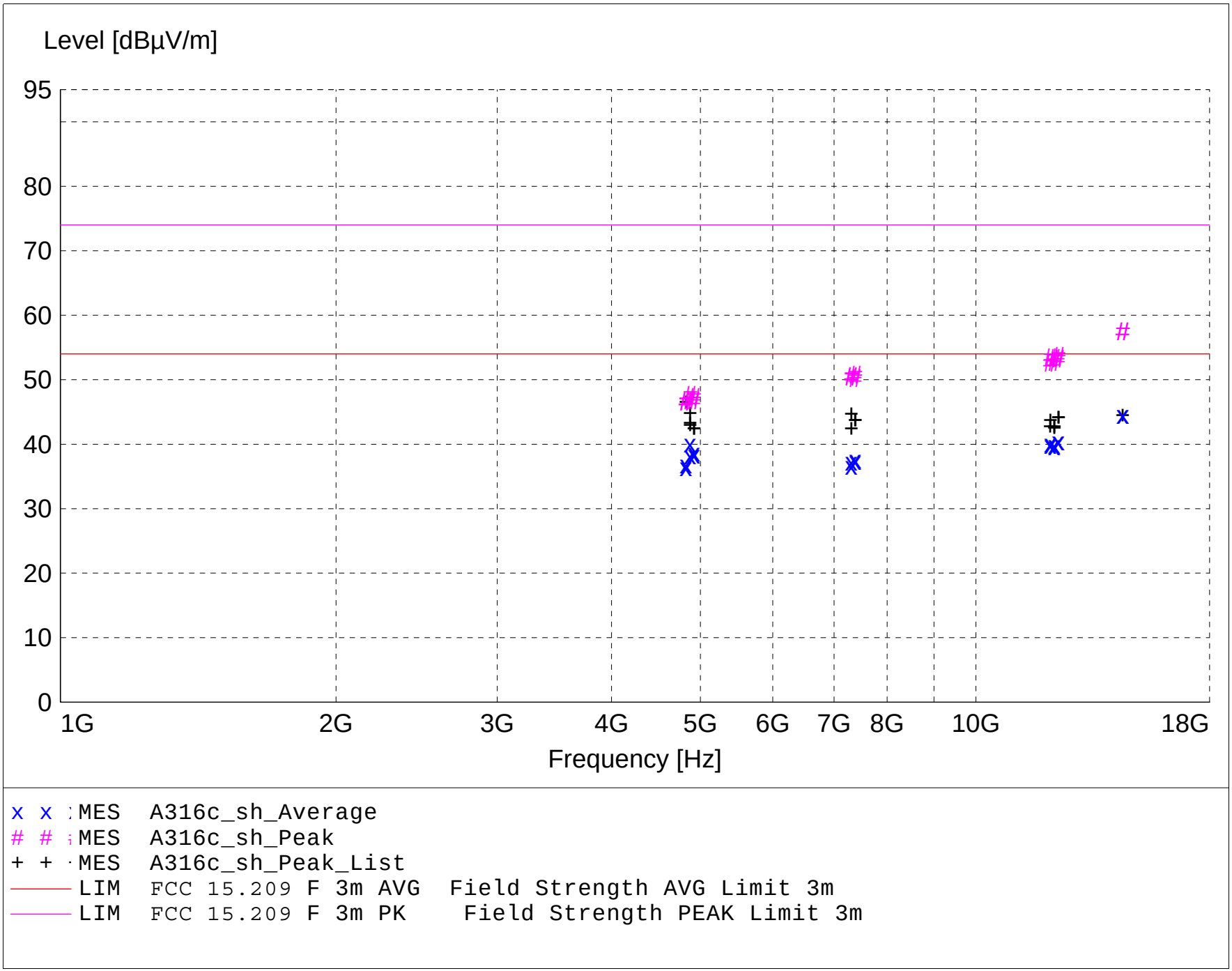
FCC Part 15.247

Electric Field Strength

```
EUT:                  Tourmaline
Manufacturer:         Whirlpool Corporation
Operating Condition:  71 deg C  26% R.H.
Test Site:            DLS O.F. G1
Operator:             Clark C  #8732
Test Specification:   Transmitter Spurious; On-board ant #1; L, M, H channels
Comment:              802.11-b; 1 Mbps; pwr setting 18
                      Date:  03-14-2017
```

TEXT: "Horz 3 meters"

```
  Short Description:            Test Set-up


Test Set-up:    EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6


Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector

                -       Background Scan Peak Detector (Optional)

                -       Background Scan Average Detector (Optional)
```


Level [dBµV/m]
95
80
70
60
50
40
30
20
10
0
1G
2G
3G
4G
5G
6G
7G
8G
10G
18G
Frequency [Hz]
x x x MES A316c_sh_Average
MES A316c_sh_Peak
+ + + MES A316c_sh_Peak_List
LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A316c_sh_Final"

3/17/2017 1:14PM

Frequency MHz	Level dBµV	Antenna Factor dBµV/m	System Loss dB	Total Level dBµV/m	Limit dBµV/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
14472.000000	35.95	41.89	-33.3	44.6	54.0	9.4	1.00	0	AVERAGE	Noise Floor
14472.000000	35.95	41.89	-33.3	44.6	54.0	9.4	1.00	0	AVERAGE	Up; Noise Floor
12310.000000	35.42	38.75	-33.7	40.5	54.0	13.5	1.00	0	AVERAGE	Out; High; NF
12310.000000	35.34	38.75	-33.7	40.4	54.0	13.6	1.00	0	AVERAGE	Up; High; NF
4874.000000	43.77	32.98	-36.6	40.1	54.0	13.9	1.73	284	AVERAGE	Up; Mid-Ch
12060.000000	34.61	38.90	-33.4	40.1	54.0	13.9	1.00	0	AVERAGE	Noise Floor
12185.200000	34.69	38.82	-33.7	39.8	54.0	14.2	1.00	0	AVERAGE	Mid; NF
12062.000000	34.35	38.90	-33.4	39.8	54.0	14.2	1.00	0	AVERAGE	Up; Noise Floor
12185.200000	34.52	38.82	-33.7	39.7	54.0	14.3	1.00	0	AVERAGE	Up; Mid; NF
4924.000000	42.32	33.05	-36.7	38.7	54.0	15.3	1.58	325	AVERAGE	Up; High-Ch
4924.000000	41.97	33.05	-36.7	38.4	54.0	15.6	1.70	139	AVERAGE	Out; High Ch
4874.000000	41.93	32.98	-36.6	38.3	54.0	15.7	1.70	20	AVERAGE	Out; Mid-Ch
7386.000000	34.26	36.59	-33.3	37.6	54.0	16.4	2.00	36	AVERAGE	Out; High Ch
14472.000000	48.92	41.89	-33.3	57.5	74.0	16.5	1.00	0	MAX PEAK	Noise Floor
14472.000000	48.92	41.89	-33.3	57.5	74.0	16.5	1.00	0	MAX PEAK	Up; Noise Floor
7386.000000	34.08	36.59	-33.3	37.4	54.0	16.6	1.60	150	AVERAGE	Up; High-Ch
7311.200000	34.69	36.44	-33.8	37.3	54.0	16.7	1.65	25	AVERAGE	Out; Mid-Ch
4824.000000	40.58	32.88	-36.6	36.9	54.0	17.1	1.00	280	AVERAGE	Up; Low-Ch
7311.200000	34.08	36.44	-33.8	36.7	54.0	17.3	1.00	0	AVERAGE	Up; Mid; NF
4824.000000	40.15	32.88	-36.6	36.5	54.0	17.5	1.10	80	AVERAGE	Out; Low-Ch
12310.000000	48.65	38.75	-33.7	53.7	74.0	20.3	1.00	0	MAX PEAK	Up; High; NF
12060.000000	47.99	38.90	-33.4	53.5	74.0	20.5	1.00	0	MAX PEAK	Noise Floor
12185.200000	48.25	38.82	-33.7	53.4	74.0	20.6	1.00	0	MAX PEAK	Mid; NF
12310.000000	48.25	38.75	-33.7	53.3	74.0	20.7	1.00	0	MAX PEAK	Out; High; NF
12185.200000	47.58	38.82	-33.7	52.7	74.0	21.3	1.00	0	MAX PEAK	Up; Mid; NF
12062.000000	47.17	38.90	-33.4	52.7	74.0	21.3	1.00	0	MAX PEAK	Up; Noise Floor
7386.000000	47.45	36.59	-33.3	50.8	74.0	23.2	2.00	36	MAX PEAK	Out; High Ch
7311.200000	47.99	36.44	-33.8	50.6	74.0	23.4	1.65	25	MAX PEAK	Out; Mid-Ch
7311.200000	47.85	36.44	-33.8	50.4	74.0	23.6	1.00	0	MAX PEAK	Up; Mid; NF
7386.000000	46.90	36.59	-33.3	50.2	74.0	23.8	1.60	150	MAX PEAK	Up; High-Ch
4874.000000	51.33	32.98	-36.6	47.7	74.0	26.3	1.73	284	MAX PEAK	Up; Mid-Ch
4924.000000	50.94	33.05	-36.7	47.3	74.0	26.7	1.70	139	MAX PEAK	Out; High Ch
4924.000000	50.39	33.05	-36.7	46.8	74.0	27.2	1.58	325	MAX PEAK	Up; High-Ch
4874.000000	50.39	32.98	-36.6	46.8	74.0	27.2	1.70	20	MAX PEAK	Out; Mid-Ch
4824.000000	50.39	32.88	-36.6	46.7	74.0	27.3	1.00	280	MAX PEAK	Up; Low-Ch
4824.000000	50.26	32.88	-36.6	46.6	74.0	27.4	1.10	80	MAX PEAK	Out; Low-Ch

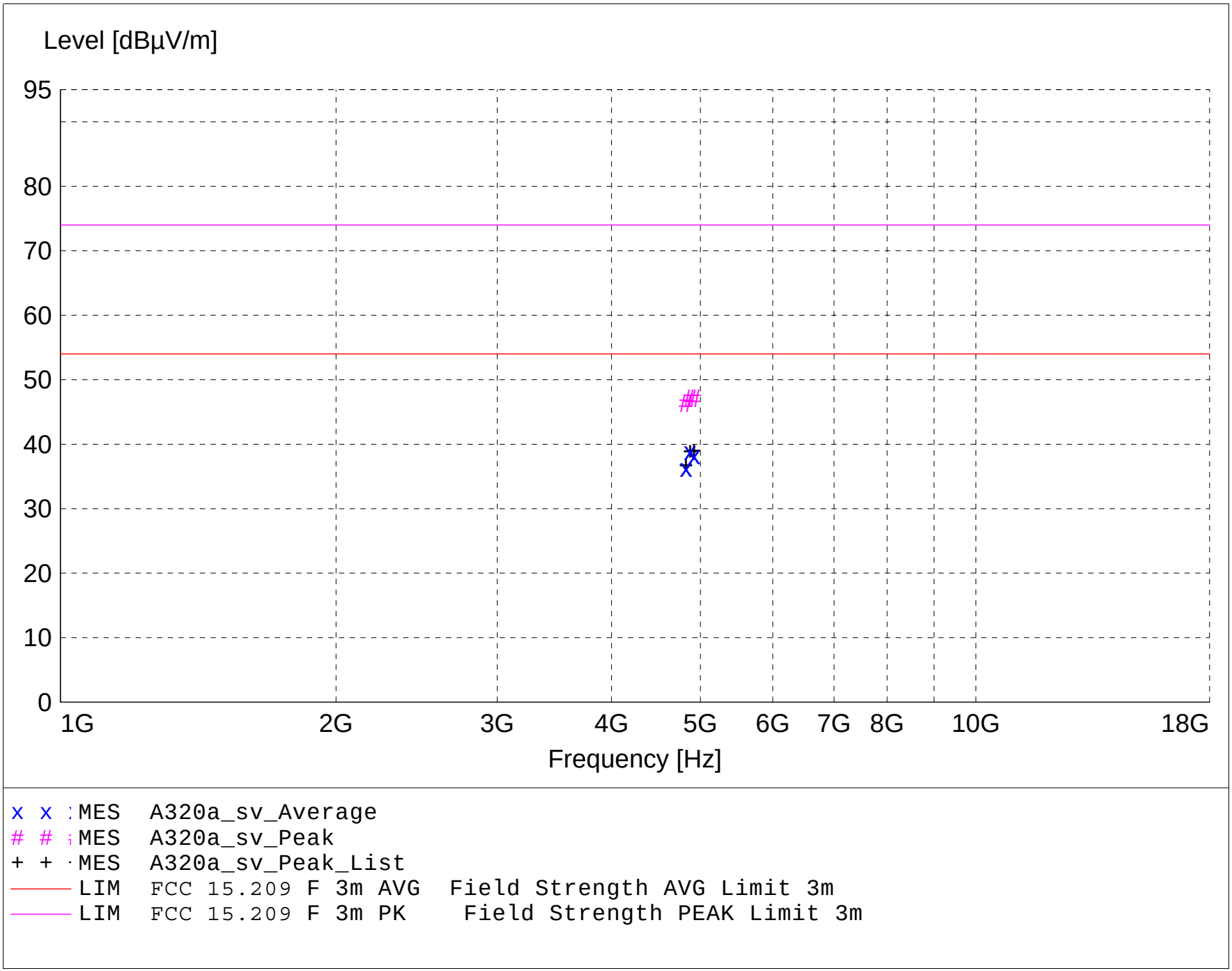
FCC Part 15.247

Electric Field Strength

```
EUT:                  Tourmaline
Manufacturer:         Whirlpool Corporation
Operating Condition:  71 deg C  27% R.H.
Test Site:            DLS O.F. G1
Operator:             Craig B  #8732
Test Specification:   Transmitter Spurious; On-board ant #2; L, M, H channels
Comment:              802.11-b; 1 Mbps; pwr setting 18
                      Date:  03-20-2017
```

TEXT: "Vert 3 meters"

```
  Short Description:            Test Set-up


Test Set-up:    EUT Measured at 3 Meters with VERTICAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6


Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector

                -       Background Scan Peak Detector (Optional)

                -       Background Scan Average Detector (Optional)
```


Level [dBµV/m]
95
80
70
60
50
40
30
20
10
0
1G
2G
3G
4G
5G
6G
7G
8G
10G
18G
Frequency [Hz]
x x x MES A320a_sv_Average
MES A320a_sv_Peak
+ + + MES A320a_sv_Peak_List
LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A320a_sv_Final"

3/20/2017 9:41AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
4874.000000	42.57	32.98	-36.6	38.9	54.0	15.1	1.24	226	AVERAGE	Mid ch
4924.000000	41.82	33.05	-36.7	38.2	54.0	15.8	1.96	42	AVERAGE	High ch
4824.000000	39.96	32.88	-36.6	36.3	54.0	17.7	1.73	41	AVERAGE	Low ch
4924.000000	50.74	33.05	-36.7	47.1	74.0	26.9	1.96	42	MAX PEAK	High ch
4874.000000	50.74	32.98	-36.6	47.1	74.0	26.9	1.24	226	MAX PEAK	Mid ch
4824.000000	50.08	32.88	-36.6	46.4	74.0	27.6	1.73	41	MAX PEAK	Low ch

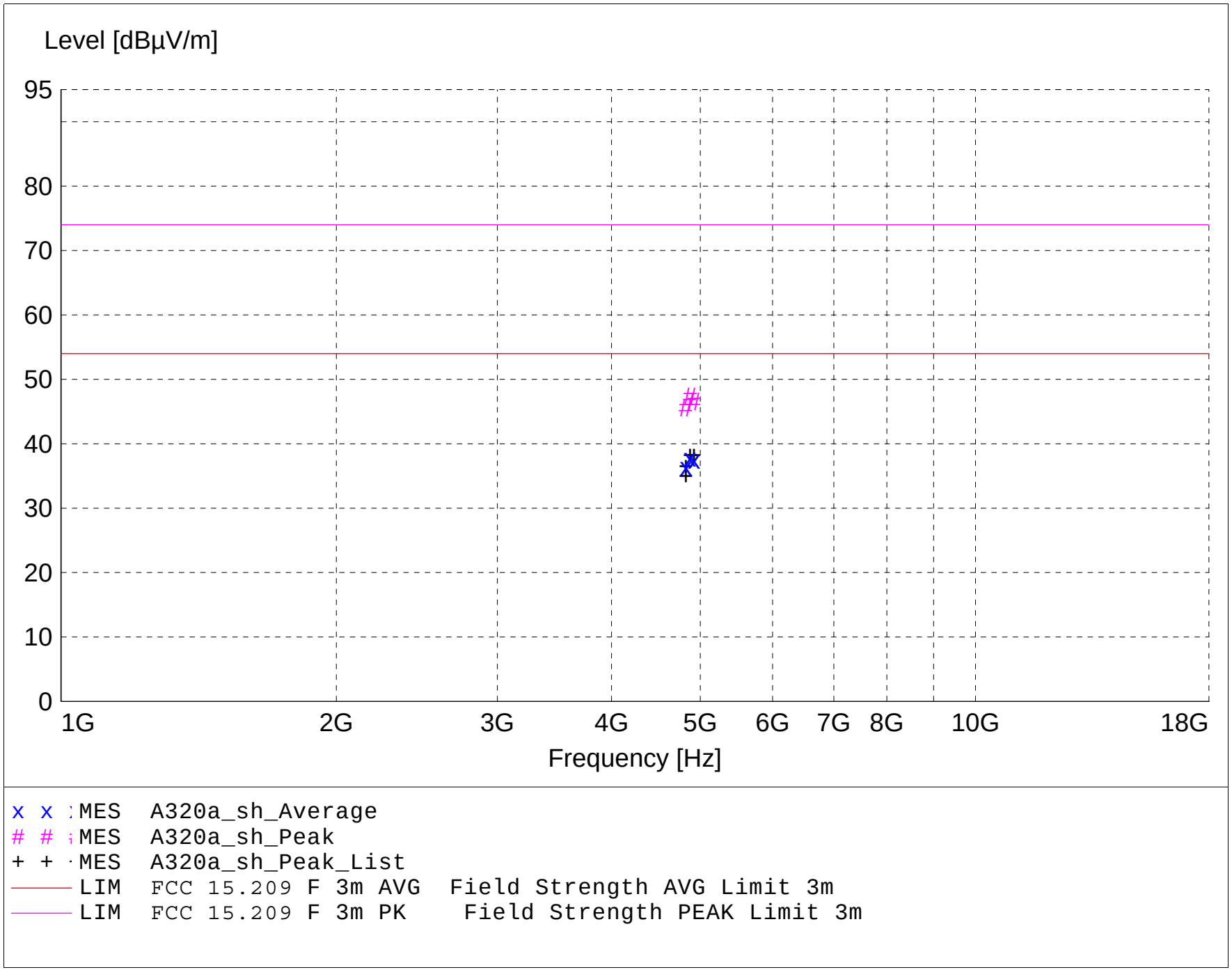
FCC Part 15.247

Electric Field Strength

```
EUT:                  Tourmaline
Manufacturer:         Whirlpool Corporation
Operating Condition:  71 deg C  27% R.H.
Test Site:            DLS O.F. G1
Operator:             Craig B  #8732
Test Specification:   Transmitter Spurious; On-board ant #2; L, M, H channels
Comment:              802.11-b; 1 Mbps; pwr setting 18
                      Date:  03-20-2017
```

TEXT: "Horz 3 meters"

```
  Short Description:            Test Set-up


Test Set-up:    EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6


Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector

                -       Background Scan Peak Detector (Optional)

                -       Background Scan Average Detector (Optional)
```



x x MES A320a_sh_Average
MES A320a_sh_Peak
+ + MES A320a_sh_Peak_List
——— LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
——— LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A320a_sh_Final"

3/20/2017 10:48AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
4874.000000	41.40	32.98	-36.6	37.8	54.0	16.2	1.16	65	AVERAGE	Mid ch
4924.000000	41.16	33.05	-36.7	37.6	54.0	16.4	1.02	45	AVERAGE	High ch
4824.000000	40.22	32.88	-36.6	36.5	54.0	17.5	1.58	114	AVERAGE	Low ch
4874.000000	51.01	32.98	-36.6	47.4	74.0	26.6	1.16	65	MAX PEAK	Mid ch
4924.000000	50.21	33.05	-36.7	46.6	74.0	27.4	1.02	45	MAX PEAK	High ch
4824.000000	49.27	32.88	-36.6	45.6	74.0	28.4	1.58	114	MAX PEAK	Low ch

FCC Part 15.247

Electric Field Strength

EUT: Tourmaline
Manufacturer: Whirlpool Corporation
Operating Condition: 69 deg C 29% R.H.
Test Site: DLS O.F. G1
Operator: Paul L #8732
Test Specification: Transmitter Spurious; PIFA ant; L, M, H channels
Comment: 802.11-b; 1 Mbps; pwr setting 18
Date: 03-27-2017

TEXT: "Vert 3 meters"

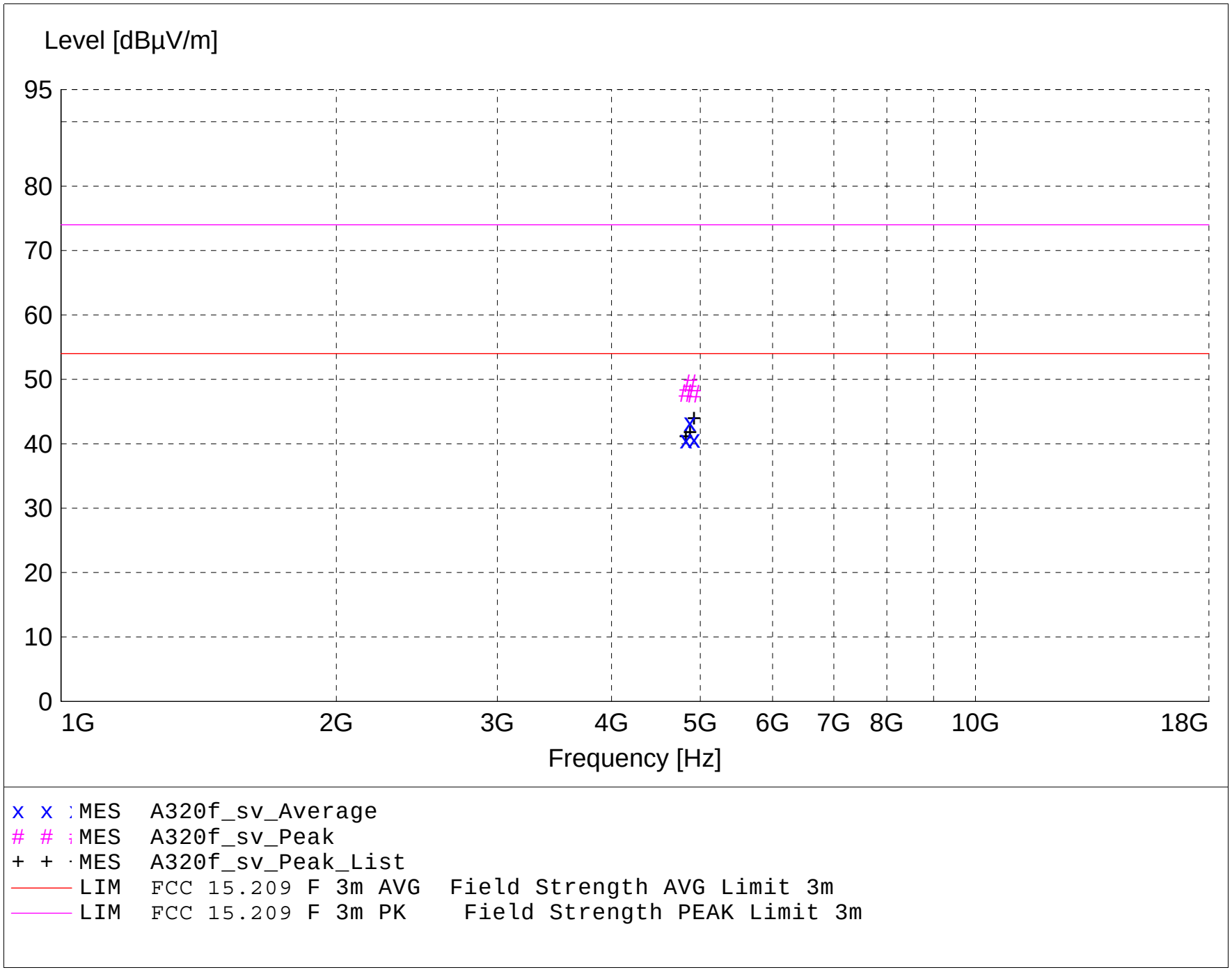
Short Description: Test Set-up

Test Set-up: EUT Measured at 3 Meters with VERTICAL Antenna Polarization

Sample Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
24.6 = 35.51 + (-22.1) + 11.20

Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)
15.4 = 40 - 24.6

Graph Markers:
+ Frequency marker (Level of marker not related to final level)
| Final maximized level using Quasi-Peak detector
X Final maximized level using Average dector
Final maximized level using Peak detector
- Background Scan Peak Detector (Optional)
- Background Scan Average Detector (Optional)


Level [dBµV/m]
95
80
70
60
50
40
30
20
10
0
1G
2G
3G
4G
5G
6G
7G
8G
10G
18G
Frequency [Hz]
x x x MES A320f_sv_Average
MES A320f_sv_Peak
+ + + MES A320f_sv_Peak_List
LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A320f_sv_Final"

3/27/2017 3:14PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
4874.000000	46.94	32.98	-36.6	43.3	54.0	10.7	1.76	340	AVERAGE	Mid ch
4924.000000	44.37	33.05	-36.7	40.8	54.0	13.2	1.77	340	AVERAGE	High ch
4824.000000	44.32	32.88	-36.6	40.6	54.0	13.4	1.08	90	AVERAGE	Low ch
4874.000000	53.01	32.98	-36.6	49.4	74.0	24.6	1.76	340	MAX PEAK	Mid ch
4824.000000	51.55	32.88	-36.6	47.9	74.0	26.1	1.08	90	MAX PEAK	Low ch
4924.000000	51.42	33.05	-36.7	47.8	74.0	26.2	1.77	340	MAX PEAK	High ch

FCC Part 15.247

Electric Field Strength

EUT: Tourmaline
Manufacturer: Whirlpool Corporation
Operating Condition: 69 deg C 29% R.H.
Test Site: DLS O.F. G1
Operator: Paul L #8732
Test Specification: Transmitter Spurious; PIFA ant; L, M, H channels
Comment: 802.11-b; 1 Mbps; pwr setting 18
Date: 03-27-2017

TEXT: "Horz 3 meters"

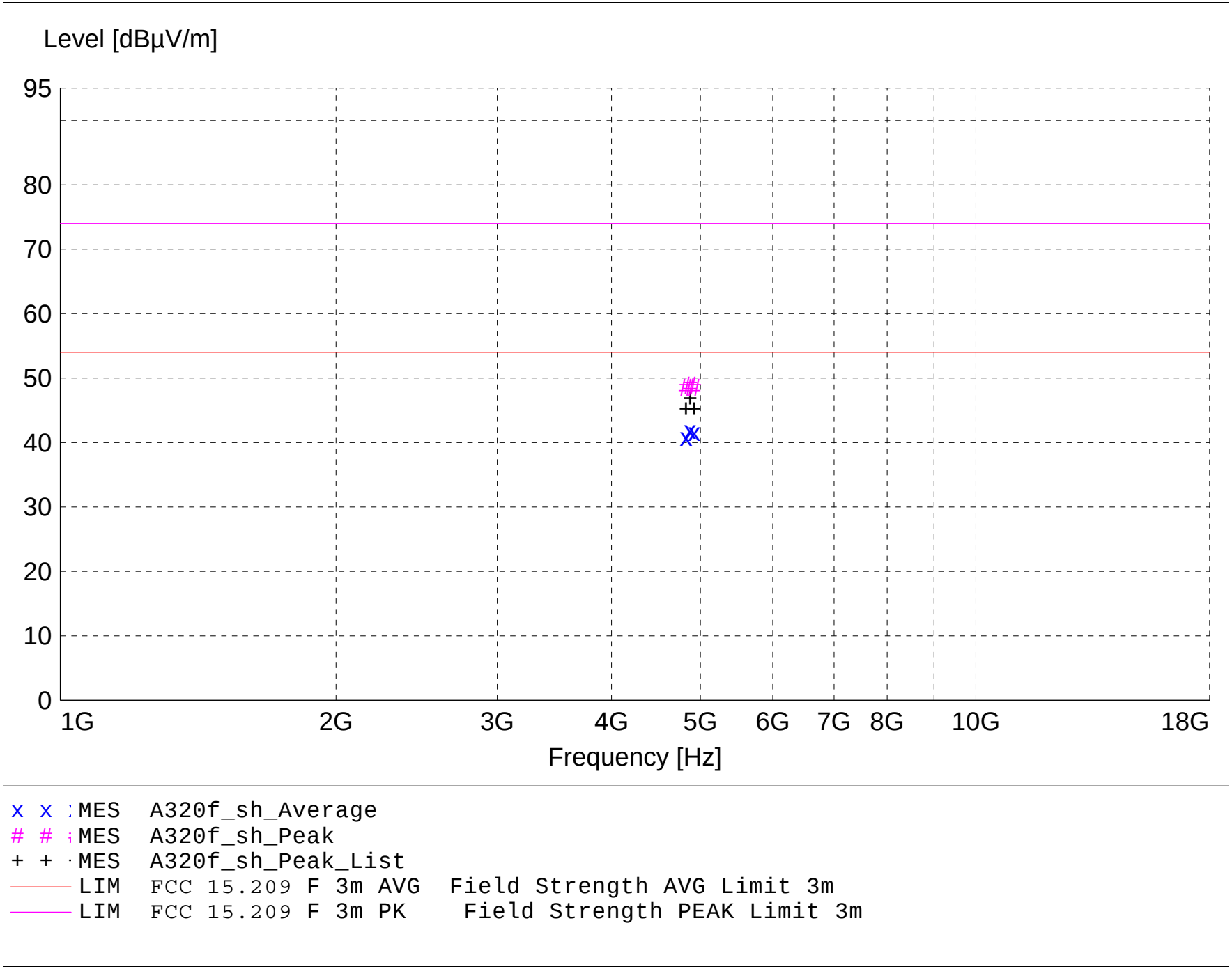
Short Description: Test Set-up

Test Set-up: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization

Sample Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
24.6 = 35.51 + (-22.1) + 11.20

Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)
15.4 = 40 - 24.6

Graph Markers:
+ Frequency marker (Level of marker not related to final level)
| Final maximized level using Quasi-Peak detector
X Final maximized level using Average dector
Final maximized level using Peak detector
- Background Scan Peak Detector (Optional)
- Background Scan Average Detector (Optional)



x x MES A320f_sh_Average
MES A320f_sh_Peak
+ + MES A320f_sh_Peak_List
——— LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
——— LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A320f_sh_Final"

3/27/2017 3:46PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
4874.000000	45.56	32.98	-36.6	41.9	54.0	12.1	1.24	335	AVERAGE	Mid ch
4924.000000	45.24	33.05	-36.7	41.6	54.0	12.4	1.24	340	AVERAGE	High ch
4824.000000	44.48	32.88	-36.6	40.8	54.0	13.2	1.36	335	AVERAGE	Low ch
4874.000000	52.48	32.98	-36.6	48.9	74.0	25.1	1.24	335	MAX PEAK	Mid ch
4824.000000	52.22	32.88	-36.6	48.5	74.0	25.5	1.36	335	MAX PEAK	Low ch
4924.000000	52.08	33.05	-36.7	48.5	74.0	25.5	1.24	340	MAX PEAK	High ch

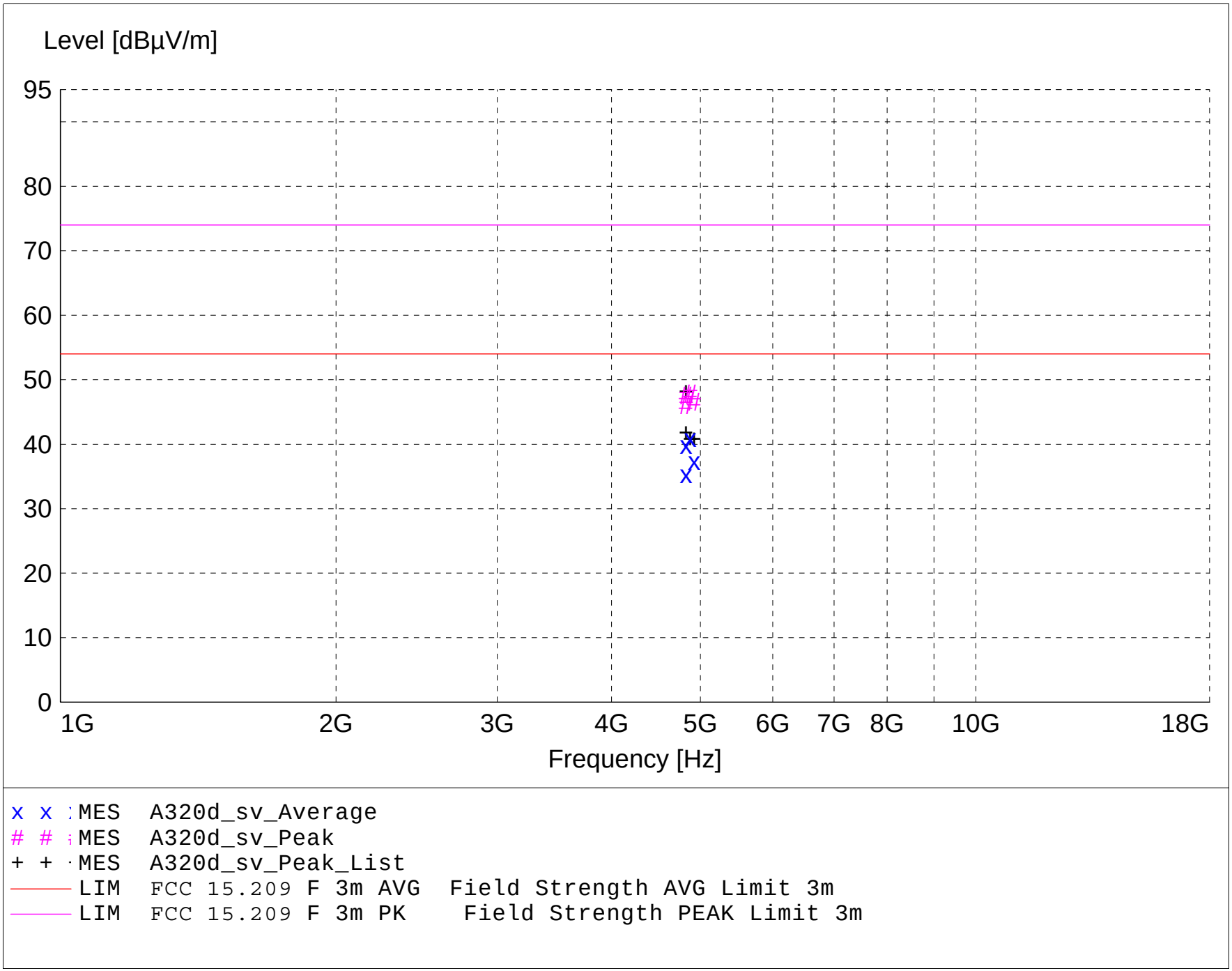
FCC Part 15.247

Electric Field Strength

```
EUT:                  Tourmaline
Manufacturer:         Whirlpool Corporation
Operating Condition:  69 deg C  29% R.H.
Test Site:            DLS O.F. G1
Operator:             Paul L  #8732
Test Specification:   Transmitter Spurious; F ant; L, M, H channels
Comment:              802.11-b; 1 Mbps; pwr setting 18
                      Date:  03-27-2017
```

TEXT: "Vert 3 meters"

```
  Short Description:            Test Set-up


Test Set-up:    EUT Measured at 3 Meters with VERTICAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6


Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector

                -       Background Scan Peak Detector (Optional)

                -       Background Scan Average Detector (Optional)
```


Level [dBµV/m]
95
80
70
60
50
40
30
20
10
0
1G
2G
3G
4G
5G
6G
7G
8G
10G
18G
Frequency [Hz]
x x x MES A320d_sv_Average
MES A320d_sv_Peak
+ + + MES A320d_sv_Peak_List
LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A320d_sv_Final"

3/27/2017 11:40AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
4874.000000	44.54	32.98	-36.6	40.9	54.0	13.1	1.13	340	AVERAGE	Mid ch
4823.940000	43.56	32.88	-36.6	39.9	54.0	14.1	1.55	90	AVERAGE	Low ch
4924.000000	41.00	33.05	-36.7	37.4	54.0	16.6	1.53	135	AVERAGE	High ch
4824.000000	39.04	32.88	-36.6	35.4	54.0	18.6	1.22	340	AVERAGE	Low ch
4874.000000	51.55	32.98	-36.6	47.9	74.0	26.1	1.13	340	MAX PEAK	Mid ch
4823.940000	51.29	32.88	-36.6	47.6	74.0	26.4	1.55	90	MAX PEAK	Low ch
4924.000000	50.22	33.05	-36.7	46.6	74.0	27.4	1.53	135	MAX PEAK	High ch
4824.000000	49.69	32.88	-36.6	46.0	74.0	28.0	1.22	340	MAX PEAK	Low ch

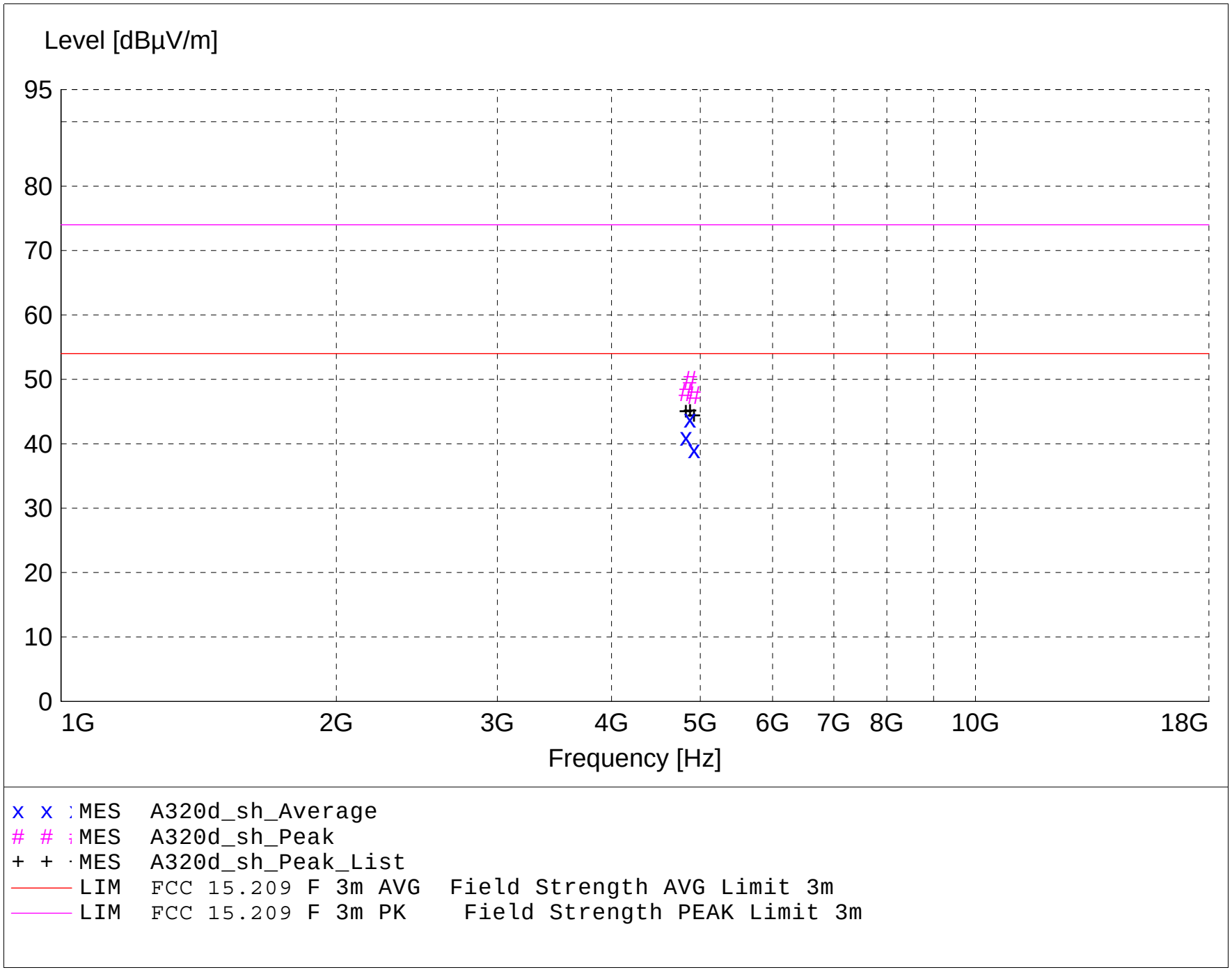
FCC Part 15.247

Electric Field Strength

```
EUT:                 Tourmaline
Manufacturer:        Whirlpool Corporation
Operating Condition: 69 deg C  29% R.H.
Test Site:           DLS O.F. G1
Operator:            Paul L  #8732
Test Specification:  Transmitter Spurious; F ant; L, M, H channels
Comment:             802.11-b; 1 Mbps; pwr setting 18
                     Date:  03-27-2017
```

TEXT: "Horz 3 meters"

```
  Short Description:           Test Set-up


Test Set-up:    EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6


Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector

                -       Background Scan Peak Detector (Optional)

                -       Background Scan Average Detector (Optional)
```



x x x MES A320d_sh_Average
MES A320d_sh_Peak
+ + + MES A320d_sh_Peak_List
——— LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
——— LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A320d_sh_Final"

3/27/2017 1:53PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
4874.000000	47.52	32.98	-36.6	43.9	54.0	10.1	1.30	45	AVERAGE	Mid ch
4824.000000	44.78	32.88	-36.6	41.1	54.0	12.9	1.48	45	AVERAGE	Low ch
4924.000000	42.70	33.05	-36.7	39.1	54.0	14.9	1.36	90	AVERAGE	High ch
4874.000000	53.53	32.98	-36.6	49.9	74.0	24.1	1.30	45	MAX PEAK	Mid ch
4824.000000	51.68	32.88	-36.6	48.0	74.0	26.0	1.48	45	MAX PEAK	Low ch
4924.000000	51.15	33.05	-36.7	47.5	74.0	26.5	1.36	90	MAX PEAK	High ch

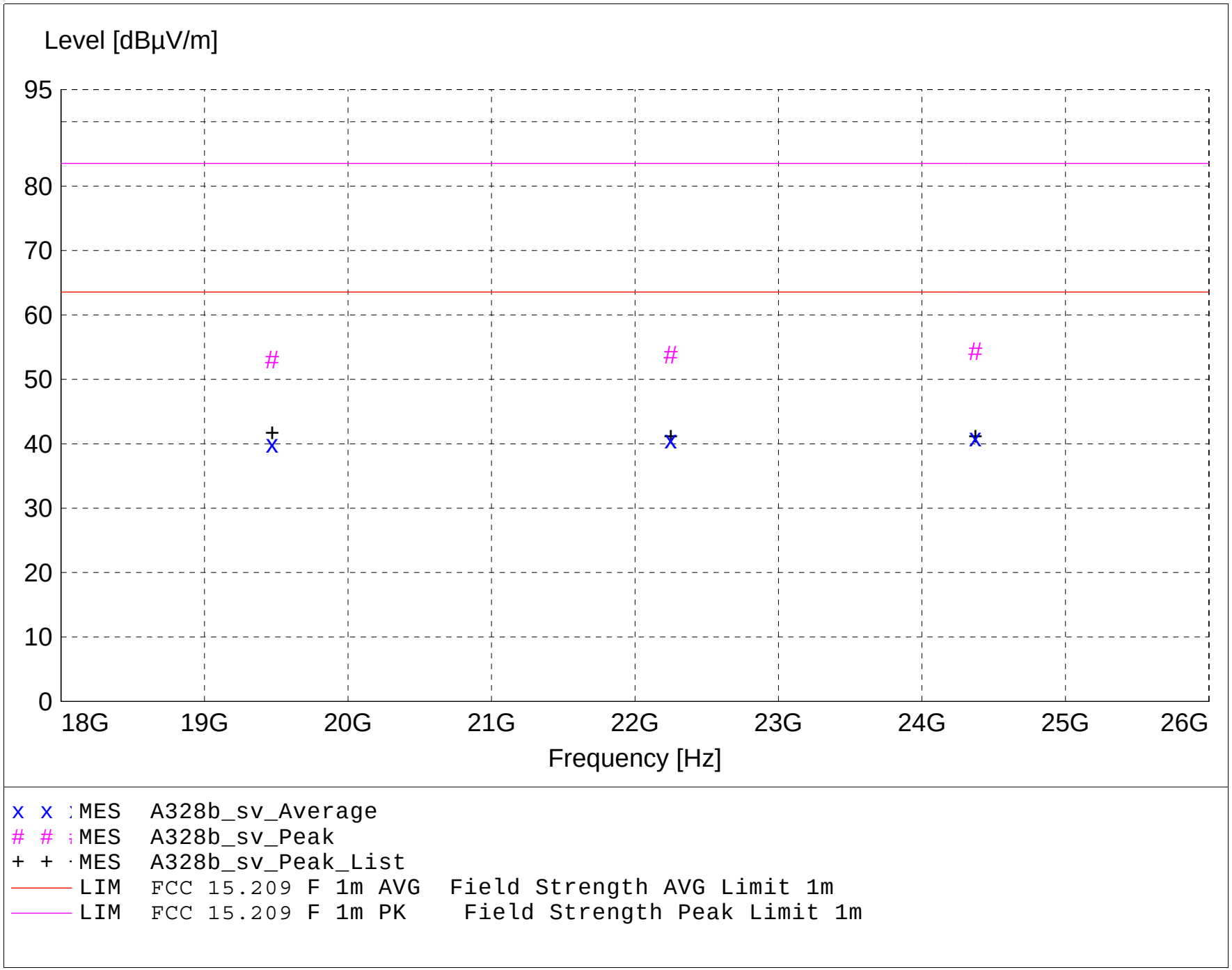
FCC Part 15.247

Electric Field Strength

```
EUT:                  Tourmaline
Manufacturer:         Whirlpool Corporation
Operating Condition:  70 deg C  29% R.H.
Test Site:            DLS O.F. G1
Operator:             Craig B  #8732
Test Specification:   Transmitter Spurious; PIFA, F, On-board #1 & #2 antennas
Comment:              802.11-b; 1 Mbps; pwr setting 18;  L, M, H channels
                      Date:  03-28-2017
```

TEXT: "Vert 1 meters"

```
  Short Description:            Test Set-up


Test Set-up:    EUT Measured at 1 Meters with VERTICAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6


Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector
```


Level [dBµV/m]
95
80
70
60
50
40
30
20
10
0
18G
19G
20G
21G
22G
23G
24G
25G
26G
Frequency [Hz]
x x x MES A328b_sv_Average
MES A328b_sv_Peak
+ + + MES A328b_sv_Peak_List
LIM FCC 15.209 F 1m AVG Field Strength AVG Limit 1m
LIM FCC 15.209 F 1m PK Field Strength Peak Limit 1m

MEASUREMENT RESULT: "A328b_sv_Final"

3/28/2017 9:41AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
24372.800000	41.20	40.36	-40.5	41.0	63.5	22.5	1.50	0	AVERAGE	noise floor
22249.200000	42.15	40.15	-41.7	40.6	63.5	22.9	1.50	0	AVERAGE	noise floor
19470.800000	39.87	40.26	-40.1	40.0	63.5	23.5	1.50	0	AVERAGE	noise floor
24372.800000	54.55	40.36	-40.5	54.4	83.5	29.2	1.50	0	MAX PEAK	noise floor
22249.200000	55.35	40.15	-41.7	53.8	83.5	29.7	1.50	0	MAX PEAK	noise floor
19470.800000	52.94	40.26	-40.1	53.1	83.5	30.4	1.50	0	MAX PEAK	noise floor

FCC Part 15.247

Electric Field Strength

EUT: Tourmaline
Manufacturer: Whirlpool Corporation
Operating Condition: 70 deg C 29% R.H.
Test Site: DLS O.F. G1
Operator: Craig B #8732
Test Specification: Transmitter Spurious; PIFA, F, On-board #1 & #2 antennas
Comment: 802.11-b; 1 Mbps; pwr setting 18; L, M, H channels
Date: 03-28-2017

TEXT: "Horz 1 meters"

Short Description: Test Set-up

Test Set-up: EUT Measured at 1 Meters with HORIZONTAL Antenna Polarization

Sample Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
24.6 = 35.51 + (-22.1) + 11.20

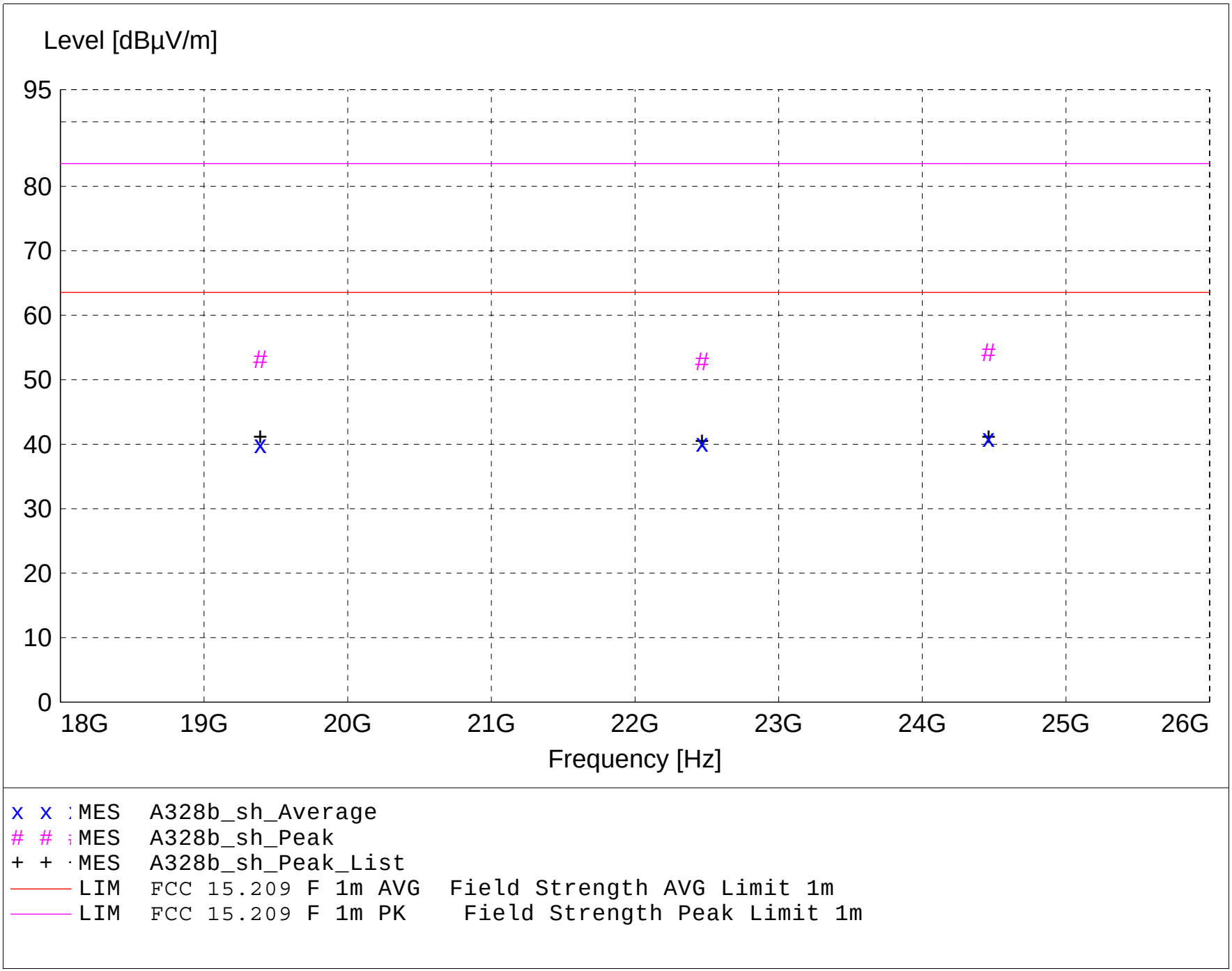
Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)
15.4 = 40 - 24.6

Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average dector

Final maximized level using Peak detector


Level [dBµV/m]
95
80
70
60
50
40
30
20
10
0
18G
19G
20G
21G
22G
23G
24G
25G
26G
Frequency [Hz]
x x x MES A328b_sh_Average
MES A328b_sh_Peak
+ + + MES A328b_sh_Peak_List
LIM FCC 15.209 F 1m AVG Field Strength AVG Limit 1m
LIM FCC 15.209 F 1m PK Field Strength Peak Limit 1m

MEASUREMENT RESULT: "A328b_sh_Final"

3/28/2017 8:59AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
24461.700000	41.16	40.39	-40.6	41.0	63.5	22.6	1.50	0	AVERAGE	noise floor
22467.600000	42.15	40.18	-42.2	40.2	63.5	23.4	1.50	0	AVERAGE	noise floor
19391.700000	39.92	40.24	-40.1	40.0	63.5	23.5	1.50	0	AVERAGE	noise floor
24461.700000	54.41	40.39	-40.6	54.2	83.5	29.3	1.50	0	MAX PEAK	noise floor
19391.700000	53.08	40.24	-40.1	53.2	83.5	30.4	1.50	0	MAX PEAK	noise floor
22467.600000	54.82	40.18	-42.2	52.8	83.5	30.7	1.50	0	MAX PEAK	noise floor