

FCC Part 15C Measurement and Test Report

For

Spheris Digital Ltd

Flat Room A21, BLK a, 4/F, Sheung Shui Plaza, 3ka fu close, Sheung Shui

Hong Kong

FCC ID: YHO-PXT51514

FCC Rule(s):	<u>FCC Part 15C</u>
Product Description:	<u>Wireless Digital Display</u>
Tested Model:	<u>PXT515WR04E</u>
Report No.:	<u>STR14068273I-1</u>
Tested Date:	<u>2014-06-18 to 2014-07-30</u>
Issued Date:	<u>2014-07-30</u>
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

TABLE OF CONTENTS

1. GENERAL INFORMATION.....	3
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	3
1.2 TEST STANDARDS.....	4
1.3 TEST METHODOLOGY.....	4
1.4 TEST FACILITY.....	4
1.5 EUT SETUP AND TEST MODE.....	5
2. SUMMARY OF TEST RESULTS	6
3. RF EXPOSURE	7
3.1 STANDARD APPLICABLE.....	7
3.2 TEST RESULT.....	7
4. ANTENNA REQUIREMENT	8
4.1 STANDARD APPLICABLE.....	8
4.2 EVALUATION INFORMATION	8
5. POWER SPECTRAL DENSITY	9
5.1 STANDARD APPLICABLE.....	9
5.2 TEST EQUIPMENT LIST AND DETAILS	9
5.3 TEST PROCEDURE.....	9
5.4 ENVIRONMENTAL CONDITIONS	9
5.5 SUMMARY OF TEST RESULTS/PLOTS	10
6. 6DB BANDWIDTH	17
6.1 STANDARD APPLICABLE.....	17
6.2 TEST EQUIPMENT LIST AND DETAILS	17
6.3 TEST PROCEDURE.....	17
6.4 ENVIRONMENTAL CONDITIONS	17
6.5 SUMMARY OF TEST RESULTS/PLOTS	18
7. RF OUTPUT POWER.....	25
7.1 STANDARD APPLICABLE.....	25
7.2 TEST EQUIPMENT LIST AND DETAILS	25
7.3 TEST PROCEDURE.....	25
7.4 ENVIRONMENTAL CONDITIONS	25
7.5 SUMMARY OF TEST RESULTS/PLOTS	26
8. FIELD STRENGTH OF SPURIOUS EMISSIONS	33
8.1 MEASUREMENT UNCERTAINTY	33
8.2 STANDARD APPLICABLE.....	33
8.3 TEST EQUIPMENT LIST AND DETAILS	33
8.4 TEST PROCEDURE.....	34
8.5 CORRECTED AMPLITUDE & MARGIN CALCULATION.....	34
8.6 ENVIRONMENTAL CONDITIONS	35
8.7 SUMMARY OF TEST RESULTS/PLOTS	35
9. OUT OF BAND EMISSIONS.....	64
9.1 STANDARD APPLICABLE.....	64
9.2 TEST EQUIPMENT LIST AND DETAILS	64
9.3 TEST PROCEDURE.....	64
9.4 ENVIRONMENTAL CONDITIONS	65
9.5 SUMMARY OF TEST RESULTS/PLOTS	65
10. CONDUCTED EMISSIONS	74
10.1 MEASUREMENT UNCERTAINTY	74
10.2 TEST EQUIPMENT LIST AND DETAILS	74
10.3 TEST PROCEDURE.....	74
10.4 BASIC TEST SETUP BLOCK DIAGRAM.....	74
10.5 ENVIRONMENTAL CONDITIONS	75
10.6 TEST RECEIVER SETUP	75
10.7 SUMMARY OF TEST RESULTS/PLOTS	75
10.8 CONDUCTED EMISSIONS TEST DATA.....	75

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Spheris Digital Ltd.
 Address of applicant: Flat Room A21, BLK a, 4/F, Sheung Shui Plaza,
 3ka fu close, Sheung Shui, Hong Kong
 Manufacturer: Spheris Digital Ltd.
 Address of manufacturer: Flat Room A21, BLK a, 4/F, Sheung Shui Plaza,
 3ka fu close, Sheung Shui, Hong Kong

General Description of EUT	
Product Name:	Wireless Digital Display
Trade Name:	Pix-Star
Model No.:	PXT515WR04E
Adding Model(s):	PXT515VR02E, PXT515GR02E, PXT515WR02E PXT515VR04E, PXT515GR04E
Rated Voltage:	Adapter:DV12V
Power Adapter Model:	GFP241-1220BX-1
<i>Note: The test data is gathered from a production sample provided by the manufacturer. The appearance of others models listed in the report is different from main-test model PXT515WR04E, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT	
Support Standards:	802.11b, 802.11g, 802.11n(HT20;HT40)
Frequency Range:	2412-2472MHz for 802.11b/b/n(HT20) 2422-2462MHz for 802.11n(HT40)
RF Output Power:	14.72dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	13 for 802.11b/b/n(HT20); 9 for 802.11n(HT40)
Channel Separation:	5MHz
Type of Antenna:	Integral
Antenna Gain:	2.0dBi
Lowest Internal Frequency	32.768KHz

1.2 Test Standards

The following report is prepared on behalf of the Spheris Digital Ltd in accordance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. The measurement guide KDB 558074 D01 V03r02 for digital transmission systems shall be performed also.

1.4 Test Facility

FCC – Registration No.: 934118

Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

CNAS Registration No.: L4062

Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101).

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	802.11b	2412MHz, 2442MHz, 2472MHz
TM2	802.11g	2412MHz, 2442MHz, 2472MHz
TM3	802.11n-HT20	2412MHz, 2442MHz, 2472MHz
TM4	802.11n-HT40	2422MHz, 2442MHz, 2462MHz

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Adapter	/	GFP241-1220BX-1	/

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 2.1093	RF Exposure	Compliant
§ 15.203; § 15.247(b)(4)(i)	Antenna Requirement	Compliant
§ 15.207(a)	Conducted Emission	Compliant
§ 15.247(e)	Power Spectral Density	Compliant
§ 15.247(a)(2)	6 dB Bandwidth	Compliant
§ 15.247(b)(3)	RF Output Power	Compliant
§ 15.209(a)	Radiated Emission	Compliant
§ 15.247(d)	Band Edge (Out of Band Emissions)	Compliant

N/A: not applicable

3. RF Exposure

3.1 Standard Applicable

According to § 1.1307 and § 2.1093, the portable transmitter must comply the RF exposure requirements.

3.2 Test Result

This product complied with the requirement of the RF exposure, please see the SAR Report.

4. Antenna Requirement

4.1 Standard Applicable

According to FCC Part 15.203, 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

4.2 Evaluation Information

This product has a integral antenna, fulfill the requirement of this section.

5. Power Spectral Density

5.1 Standard Applicable

According to 15.247(a)(1)(iii), For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

5.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2014-05-28	2015-05-27
Attenuator	ATTEN	ATS100-4-20	/	2014-05-28	2015-05-27

5.3 Test Procedure

According to the KDB 558074 D01 V03r02, the test method of power spectral density as below:

3

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set analyzer center frequency to DTS channel center frequency.
3. Set the span to 1.5 times the DTS channel bandwidth.
4. Set the RBW ≥ 3 kHz.
5. Set the VBW $\geq 3 \times$ RBW.
6. Detector = peak.
7. Sweep time = auto couple.
8. Trace mode = max hold.
9. Allow trace to fully stabilize.
10. Use the peak marker function to determine the maximum amplitude level.
11. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.4 Environmental Conditions

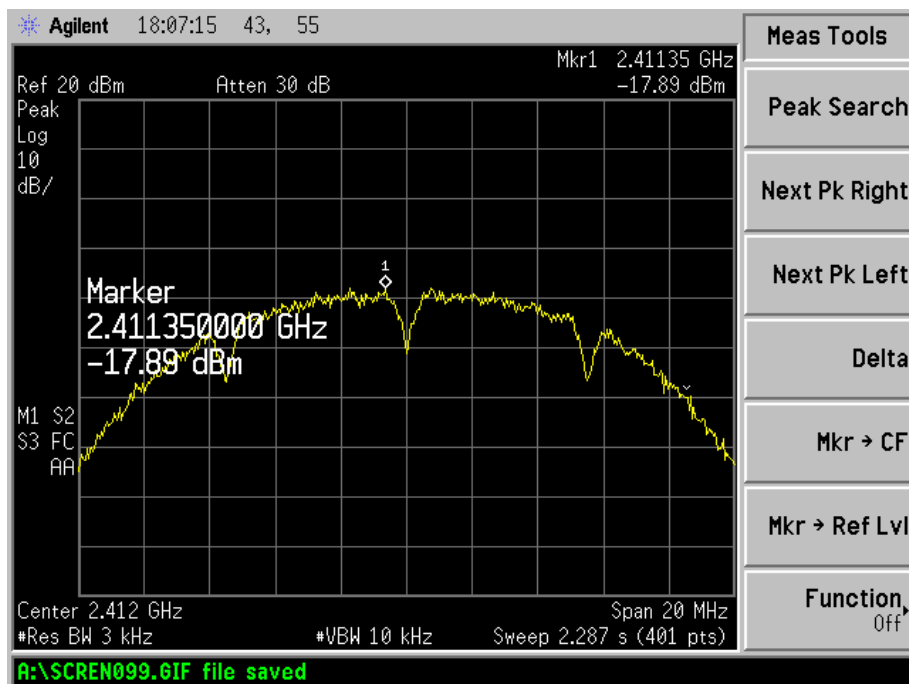
Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

5.5 Summary of Test Results/Plots

Test Mode	Test Channel MHz	Power Spectral Density dBm/3kHz	Limit dBm/3kHz
802.11b	2412	-17.89	8
	2442	-16.73	8
	2472	-17.65	8
802.11g	2412	-19.73	8
	2442	-19.43	8
	2472	-19.03	8
802.11n HT20	2412	-20.00	8
	2442	-19.26	8
	2472	-19.79	8
802.11n HT40	2422	-24.99	8
	2442	-24.94	8
	2462	-25.74	8

Please refer to the following test plots:

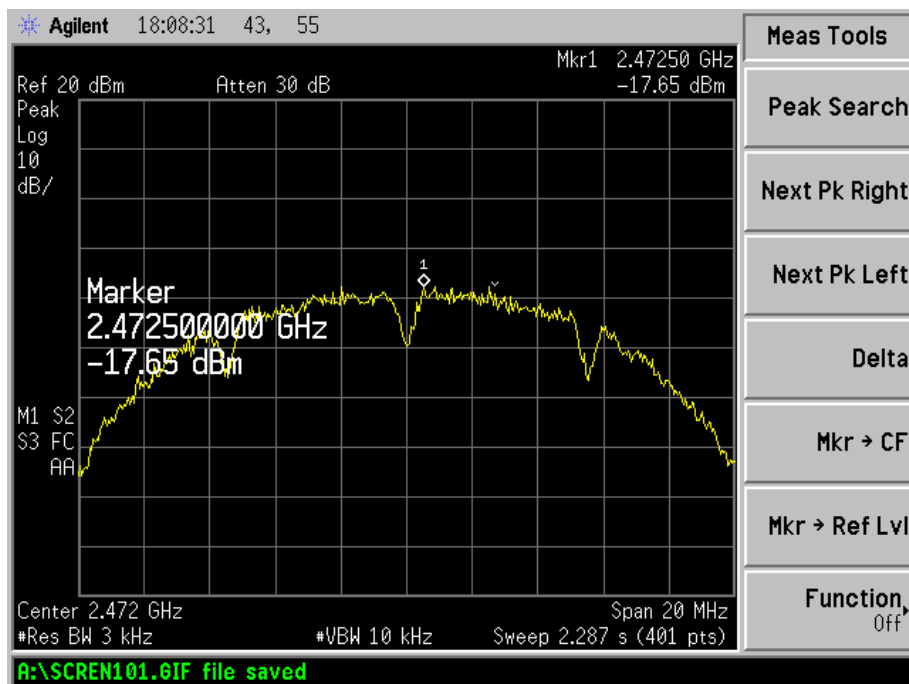
802.11b-Low Channel



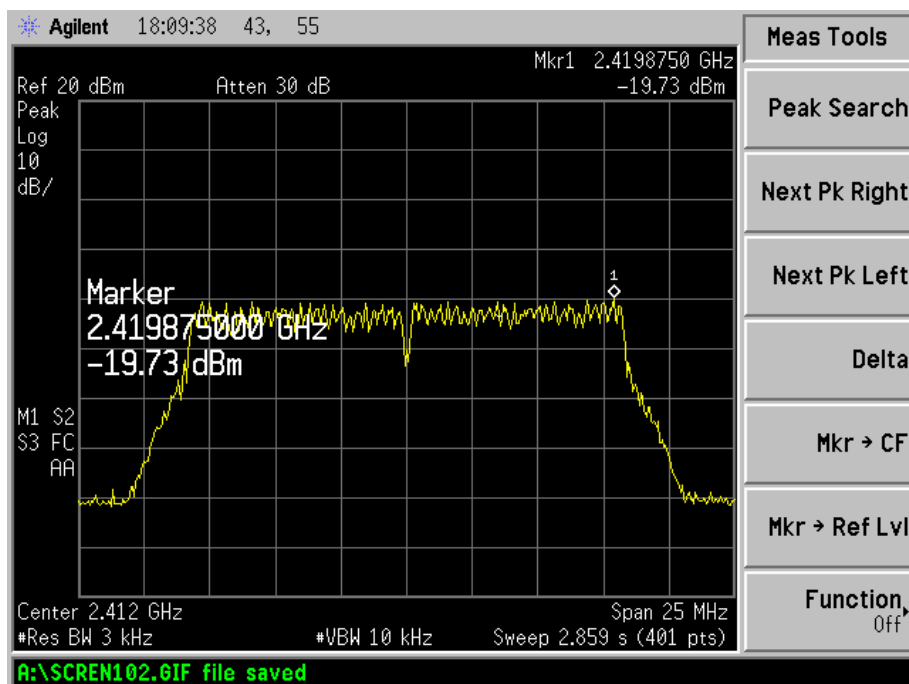
802.11b-Middle Channel



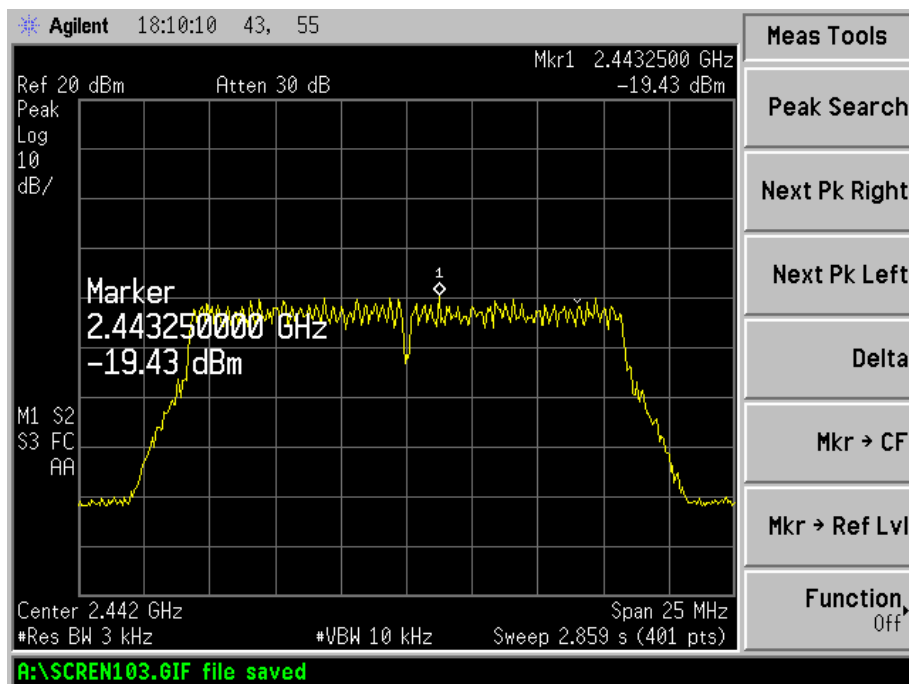
802.11b-High Channel



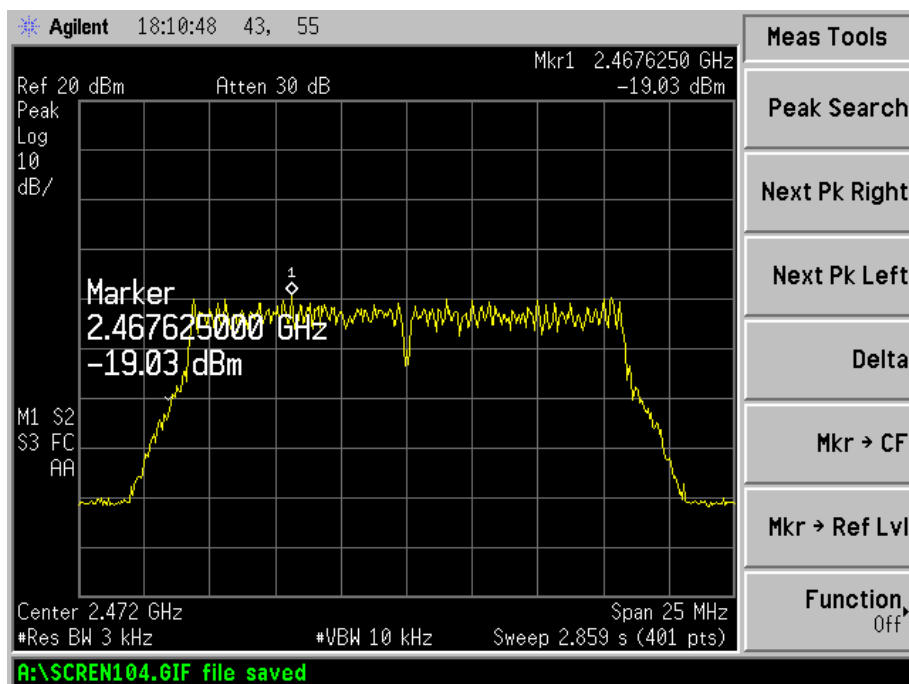
802.11g-Low Channel



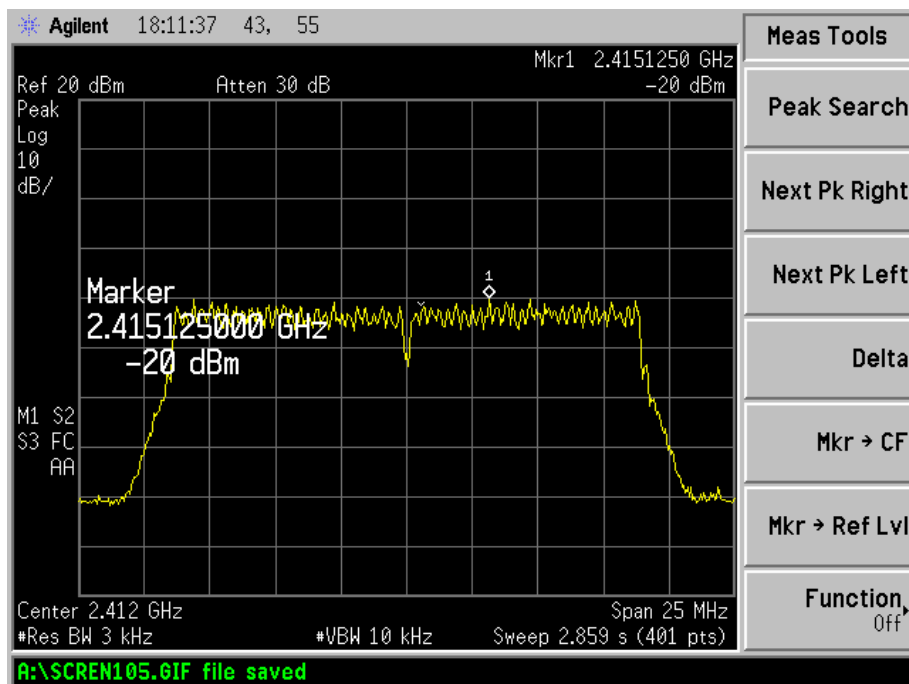
802.11g-Middle Channel



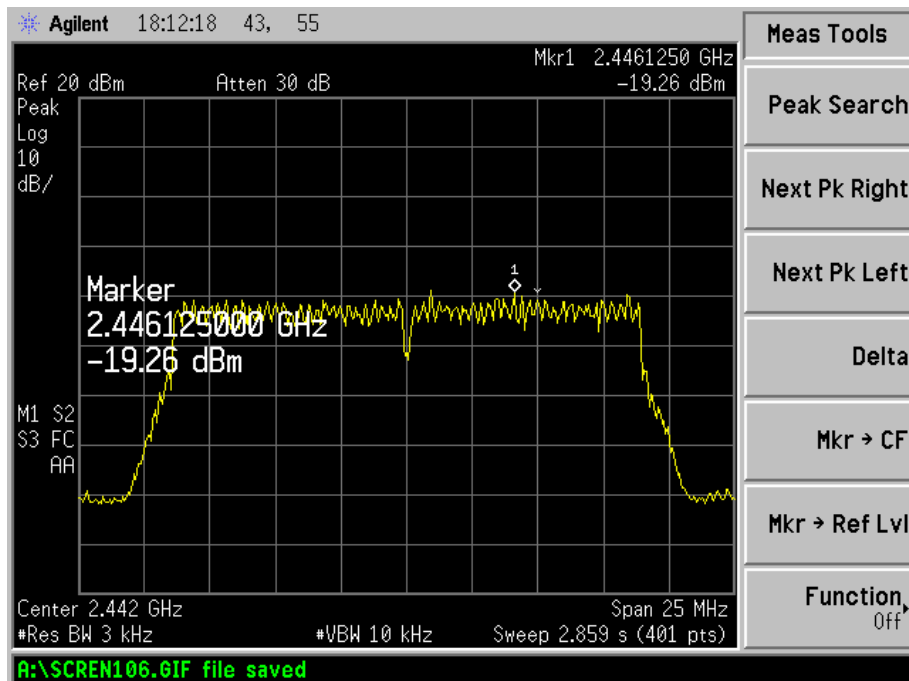
802.11g-High Channel



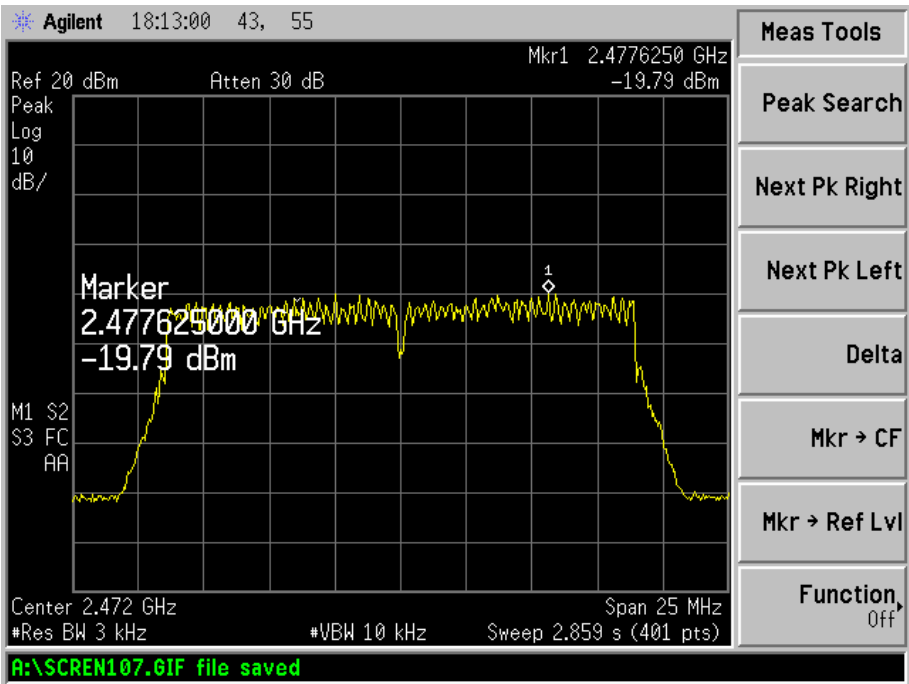
802.11n-HT20-Low Channel



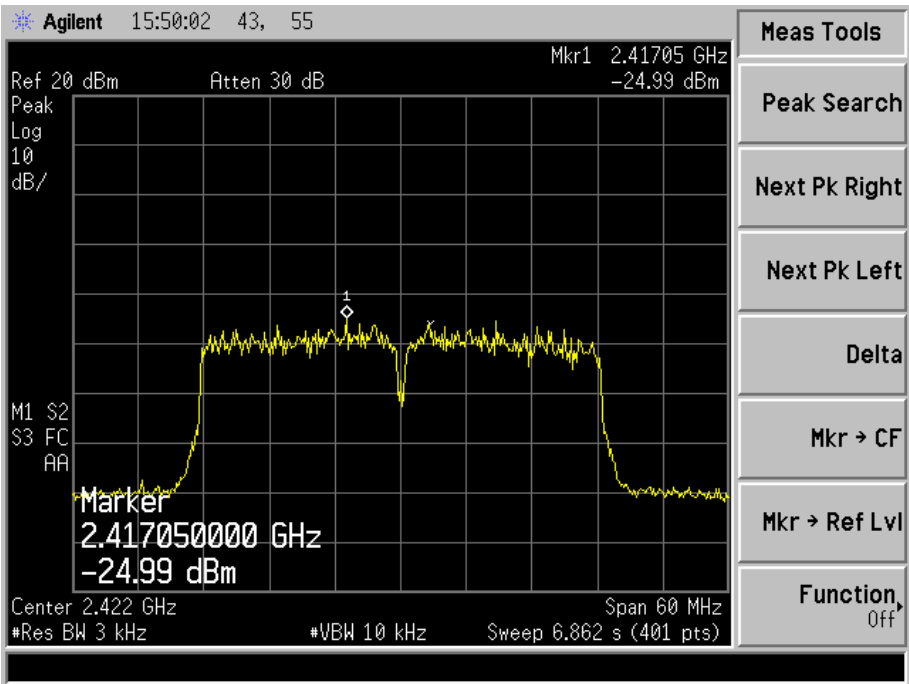
802.11n-HT20-Middle Channel



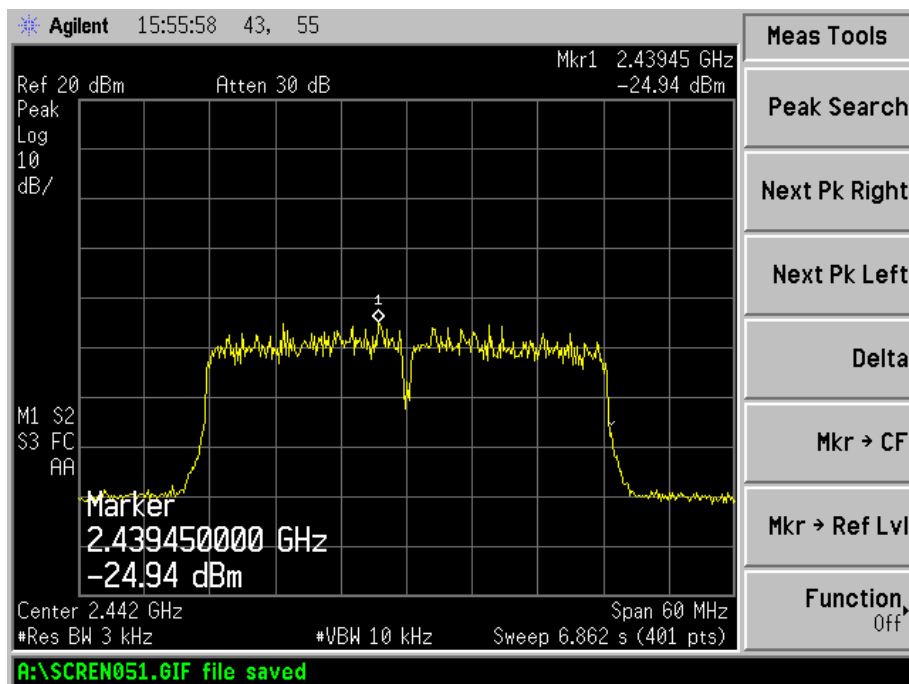
802.11n-HT20-High Channel



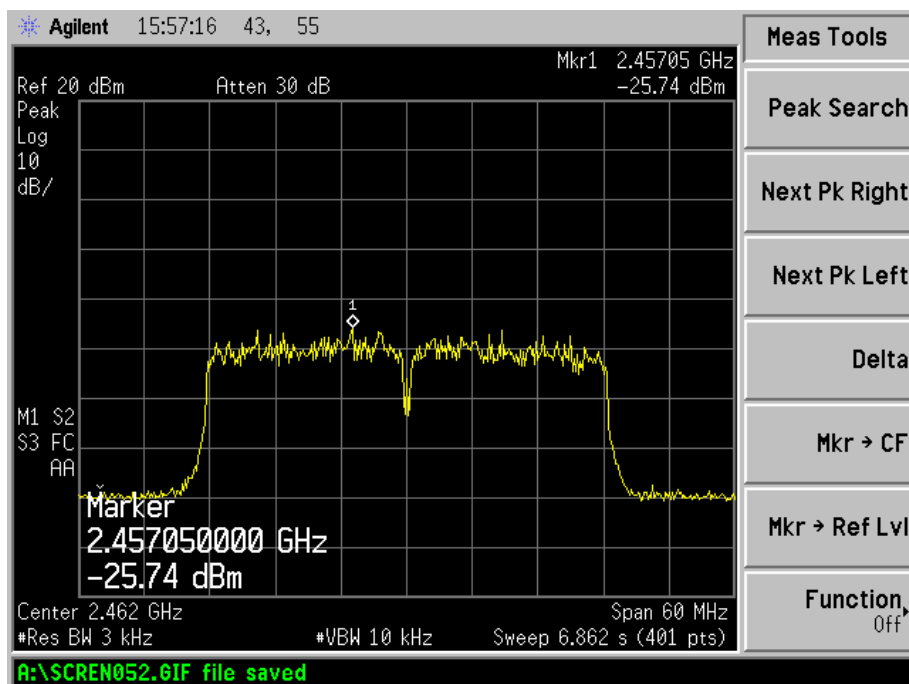
802.11n-HT40-Low Channel



802.11n-HT40-Middle Channel



802.11n-HT40-High Channel



6. 6dB Bandwidth

6.1 Standard Applicable

According to 15.247(a)(2). Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

6.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2014-05-28	2015-05-27
Attenuator	ATTEN	ATS100-4-20	/	2014-05-28	2015-05-27

6.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set resolution bandwidth (RBW) = 1-5% or DTS BW, not to exceed 100 kHz.
3. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission..

6.4 Environmental Conditions

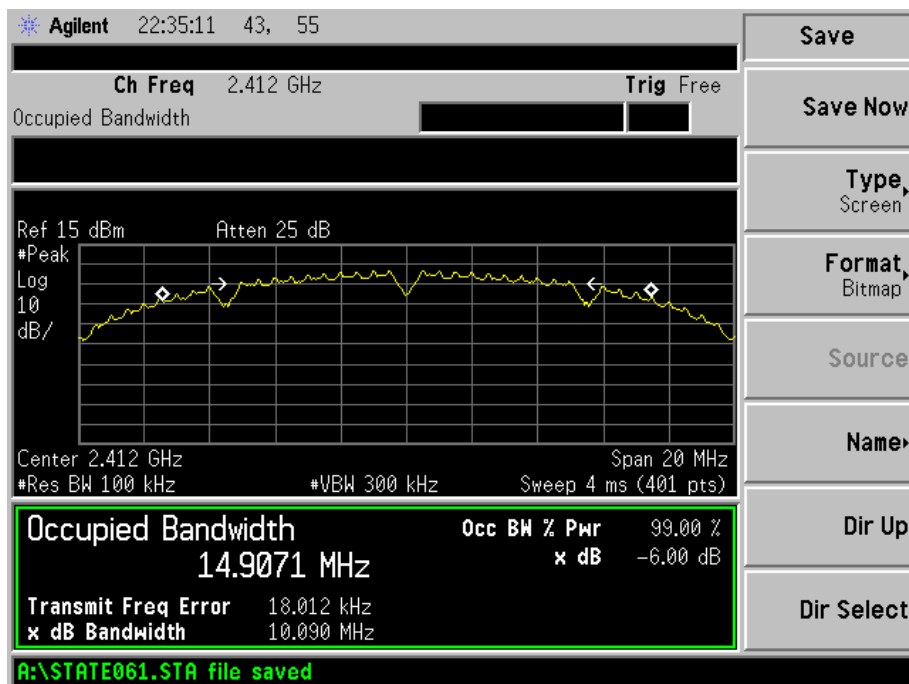
Temperature:	25° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

6.5 Summary of Test Results/Plots

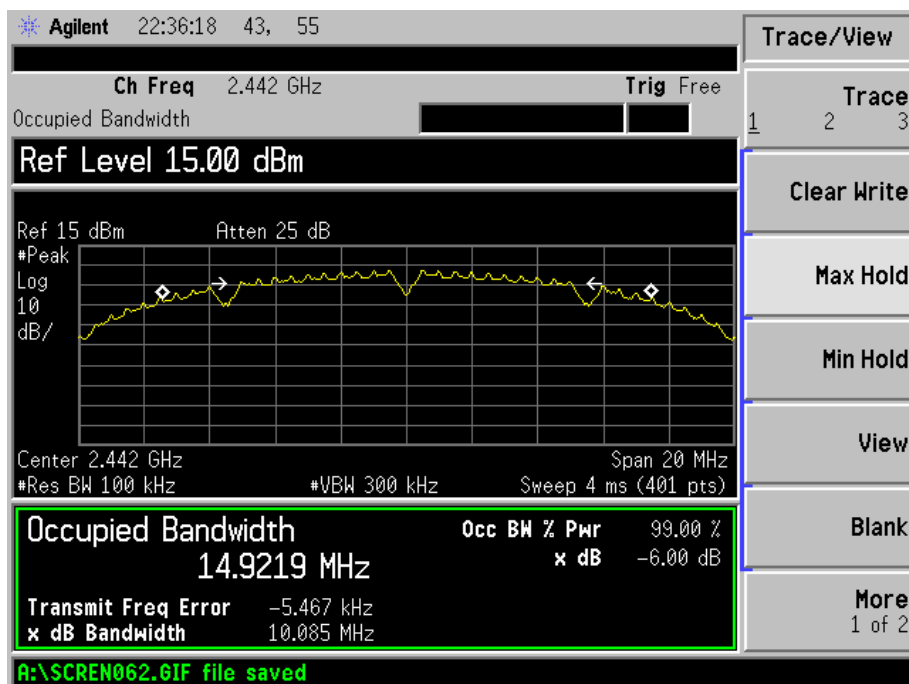
Test Mode	Test Channel MHz	6 dB Bandwidth kHz	99% Bandwidth kHz	Limit kHz
802.11b	2412	10090	14907.1	500
	2442	10085	14921.9	500
	2472	10090	14933.7	500
802.11g	2412	16558	16462.1	500
	2442	16575	16482.3	500
	2472	16576	16488.5	500
802.11n-HT20	2412	16551	16479.1	500
	2442	16550	16458.0	500
	2472	16533	16473.4	500
802.11n-HT40	2422	36168	36541.7	500
	2442	36267	36656.8	500
	2462	36262	36752.5	500

Please refer to the following test plots:

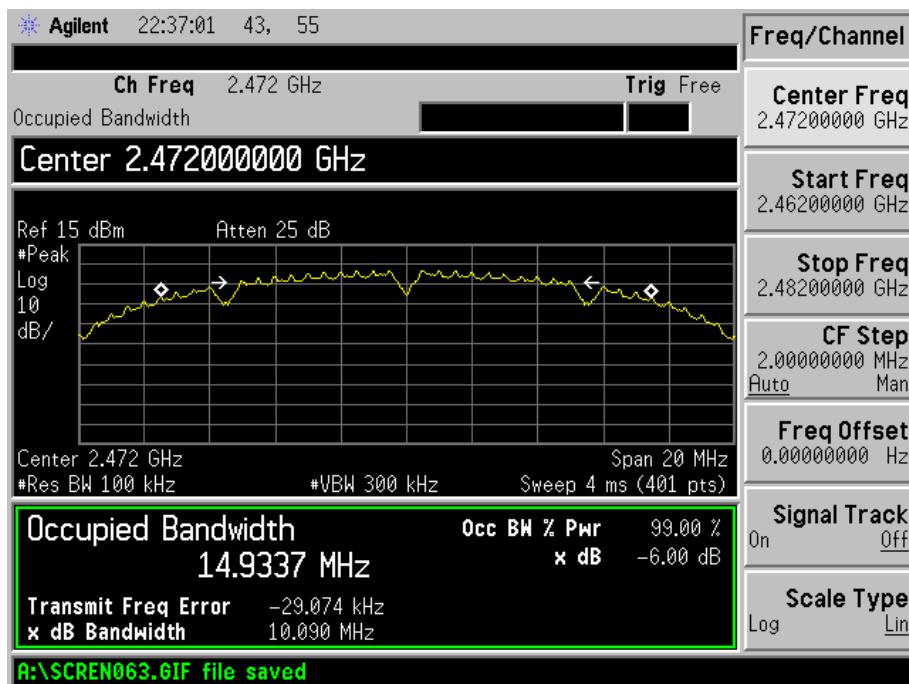
802.11b-Low Channel



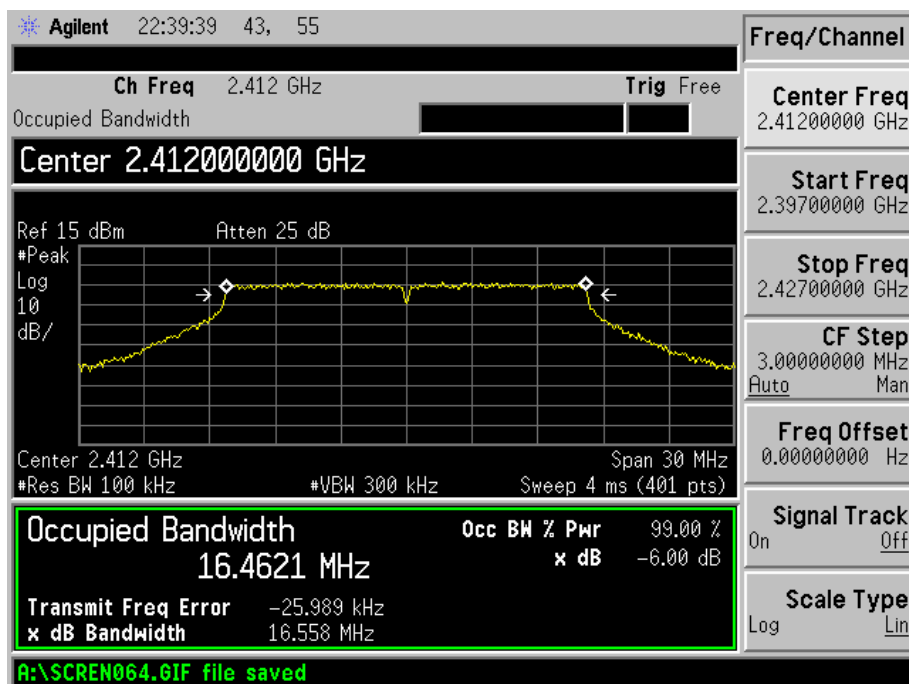
802.11b-Middle Channel



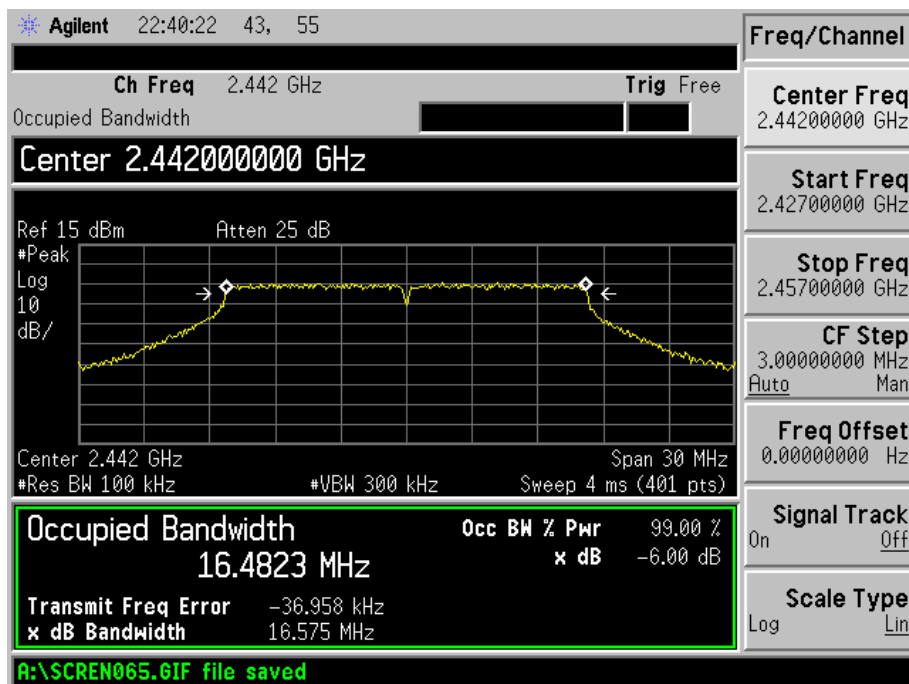
802.11b-High Channel



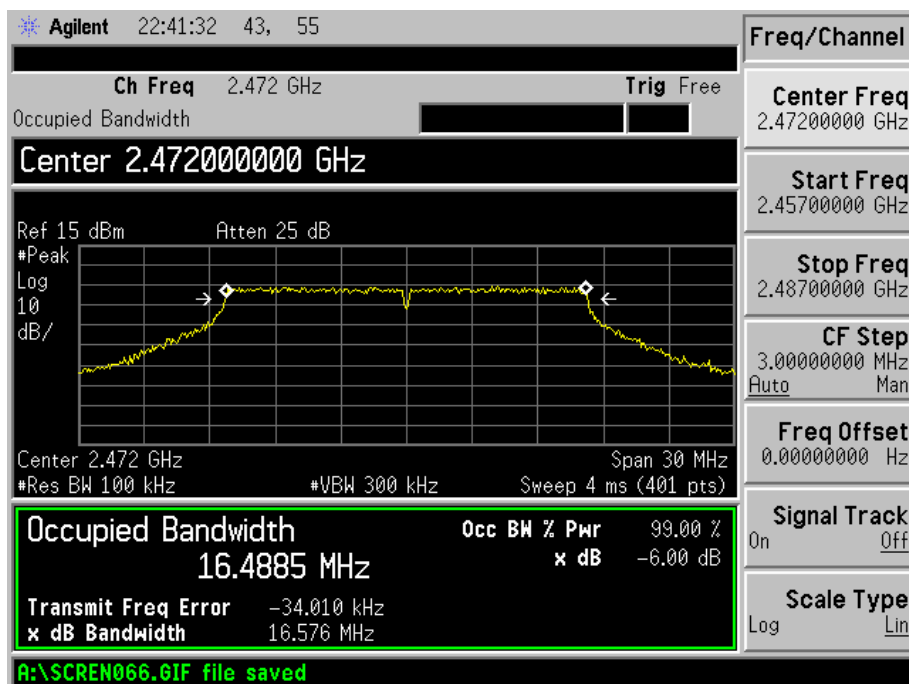
802.11g-Low Channel



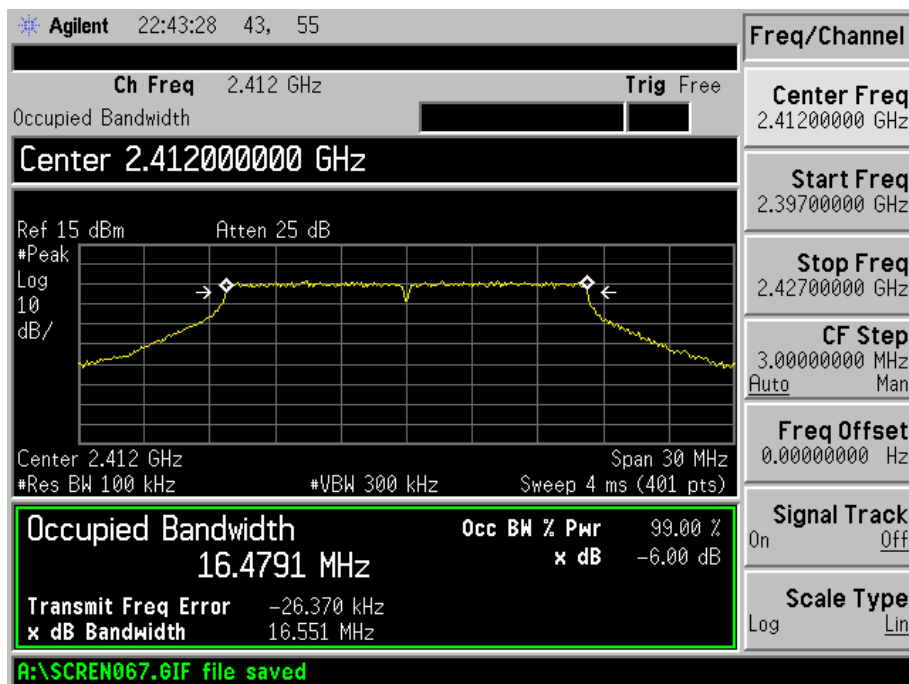
802.11g-Middle Channel



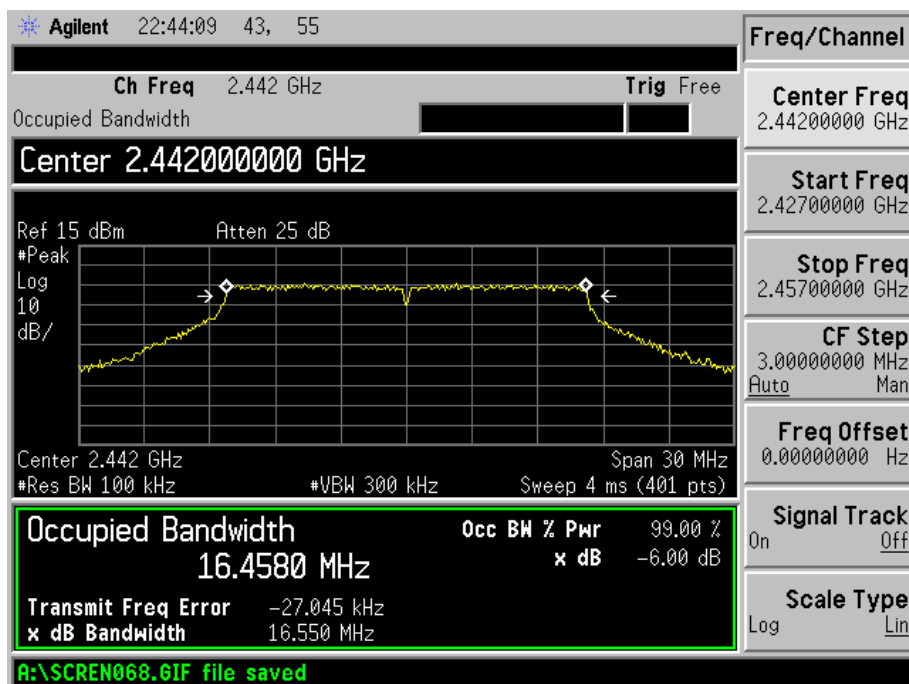
802.11g-High Channel



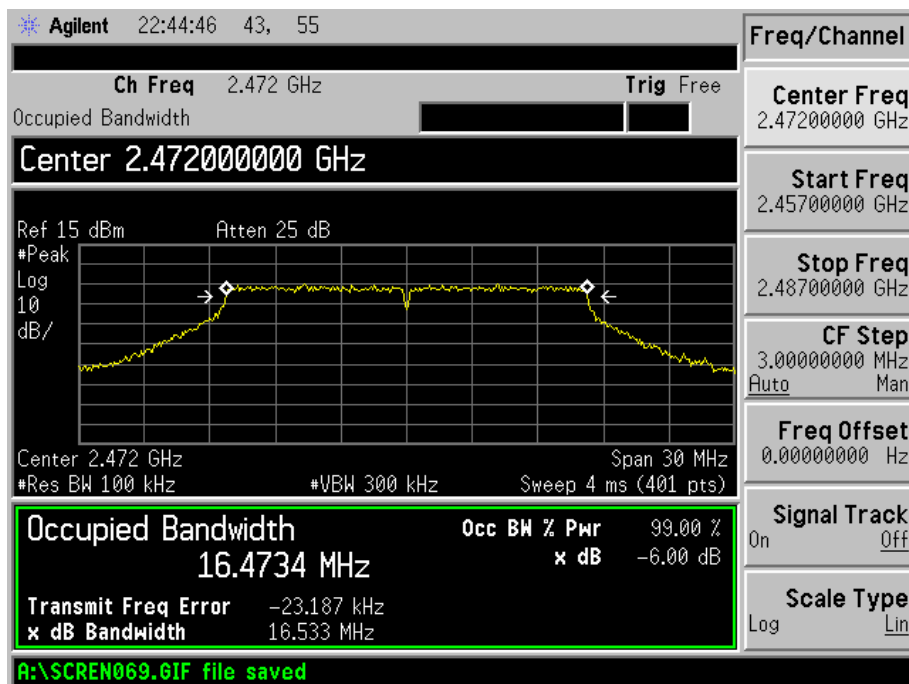
802.11n-HT20-Low Channel



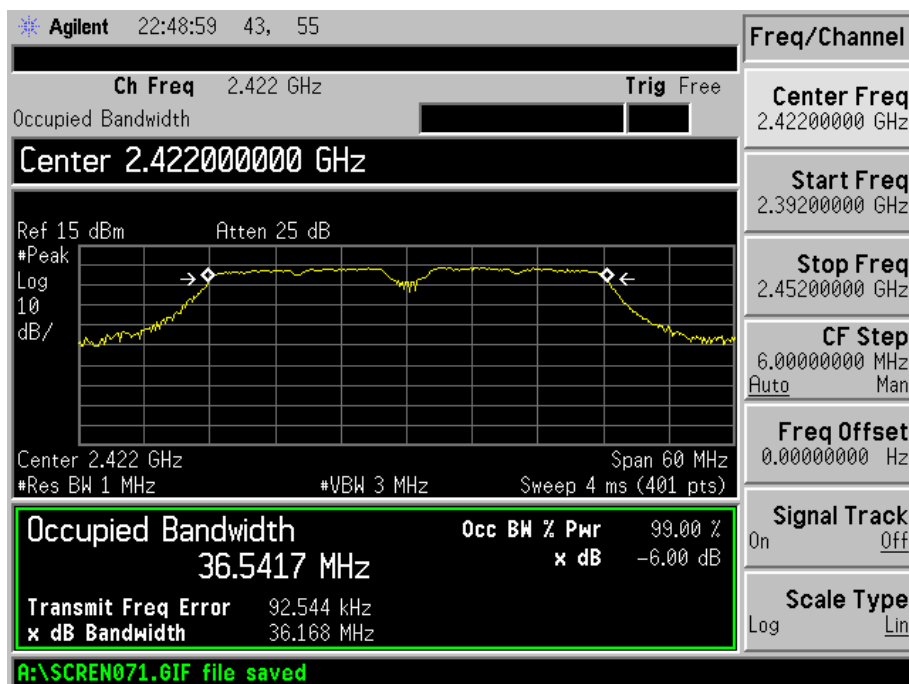
802.11n-HT20-Middle Channel



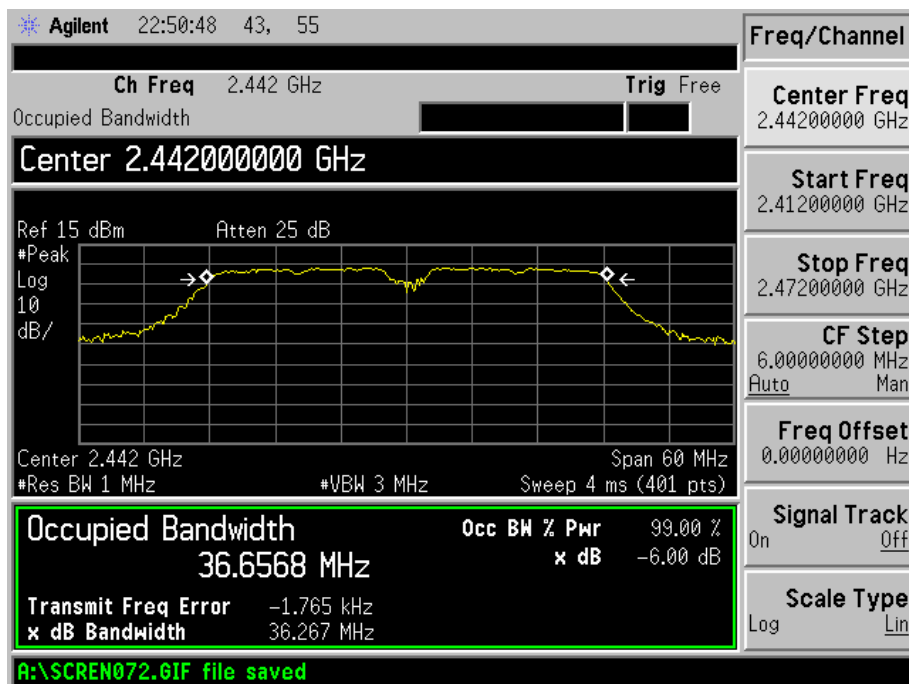
802.11n-HT20-High Channel



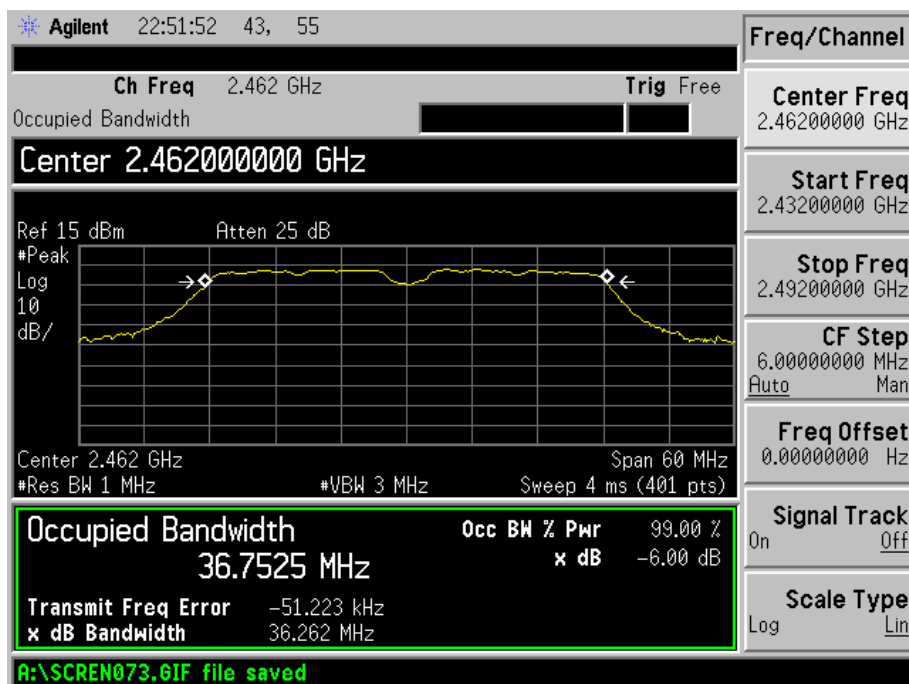
802.11n-HT40-Low Channel



802.11n-HT40-Middle Channel



802.11n-HT40-High Channel



7. RF Output Power

7.1 Standard Applicable

According to 15.247(b)(3). For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

7.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2014-05-28	2015-05-27
Attenuator	ATTEN	ATS100-4-20	/	2014-05-28	2015-05-27

7.3 Test Procedure

According to section 15.247(b)-power output of the KDB-558074 D01 V03r02, 8.1.2 Option 2 (channel integration method) this procedure should only be used when the maximum available RBW of the spectrum/signal analyzer is less than the DTS bandwidth.

1. Set the RBW = maximum available (at least 1 MHz).
2. Set the VBW = 3 x RBW or maximum available setting (must be \geq RBW).
3. Set the span to fully encompass the DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the spectrum analyzer's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some analyzers, this may require a manual override to ensure use of peak detector).

7.4 Environmental Conditions

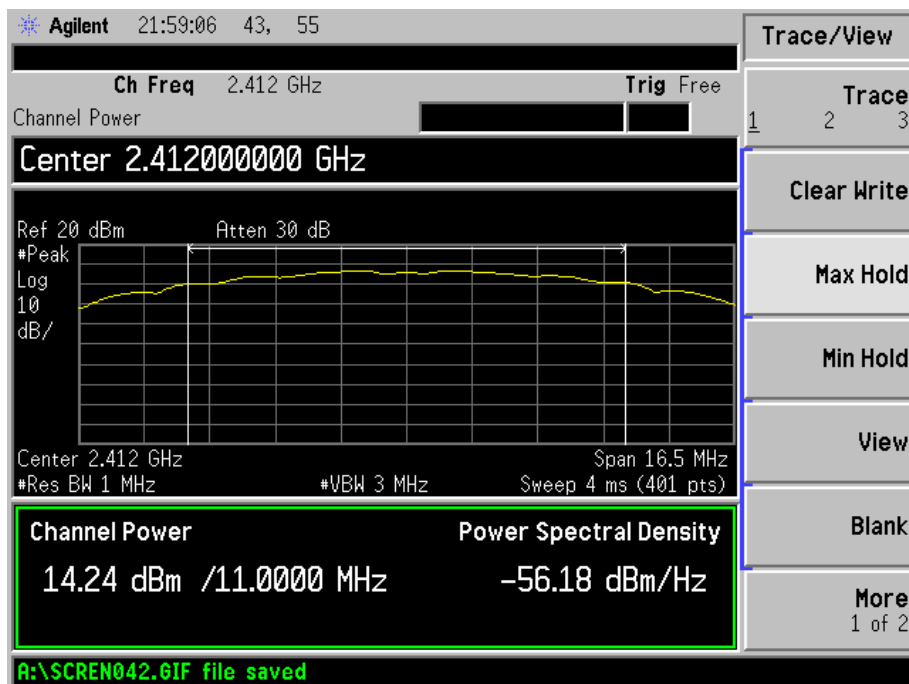
Temperature:	26° C
Relative Humidity:	57%
ATM Pressure:	1011 mbar

7.5 Summary of Test Results/Plots

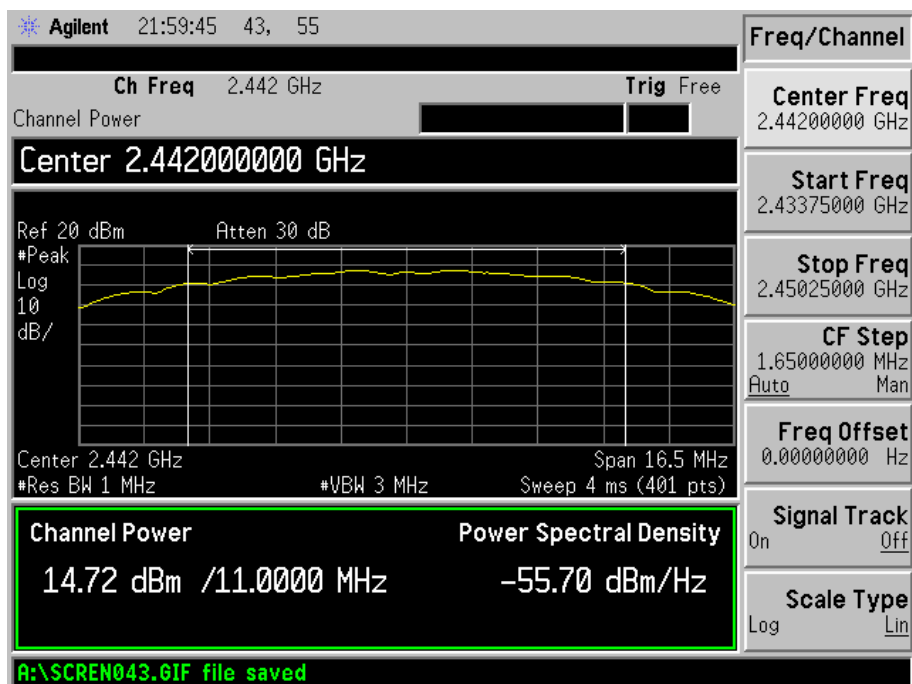
Test Mode	Frequency MHz	Reading dBm	Output Power mW	Limit mW
802.11b _ 11Mbps	2412	14.24	26.5461	1000
	2442	14.72	29.6483	1000
	2472	14.55	28.5102	1000
802.11g_54Mbps	2412	13.62	23.0144	1000
	2442	13.05	20.1837	1000
	2472	13.72	23.5505	1000
802.11n HT20_MCS7	2412	13.67	23.2809	1000
	2442	13.05	20.1837	1000
	2472	13.72	23.5505	1000
802.11n HT40_MCS7	2422	13.22	20.9893	1000
	2442	13.00	19.9526	1000
	2462	12.21	16.6341	1000

Please refer to the following test plots:

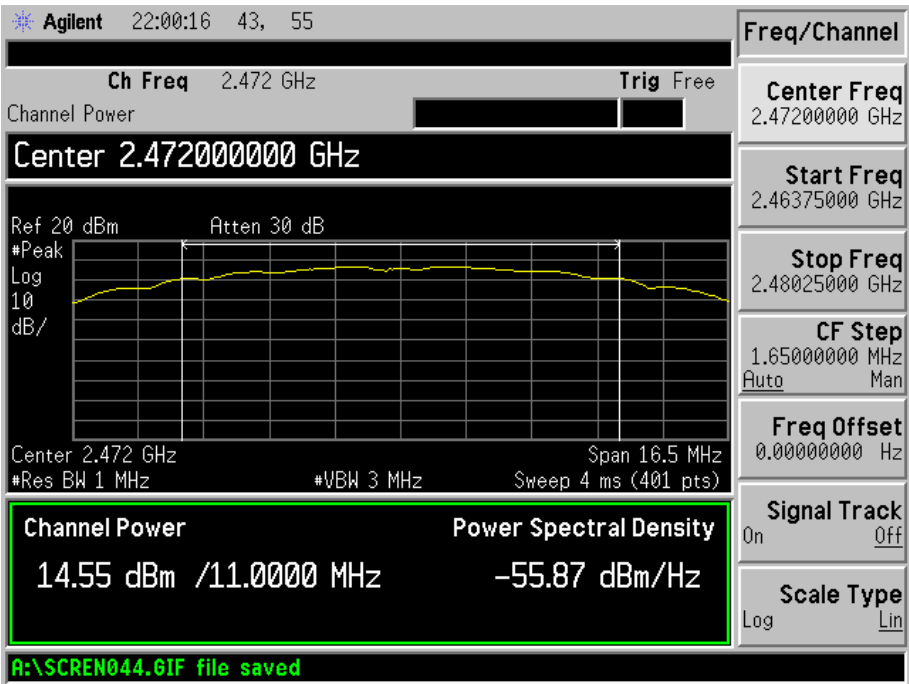
802.11b-Low Channel



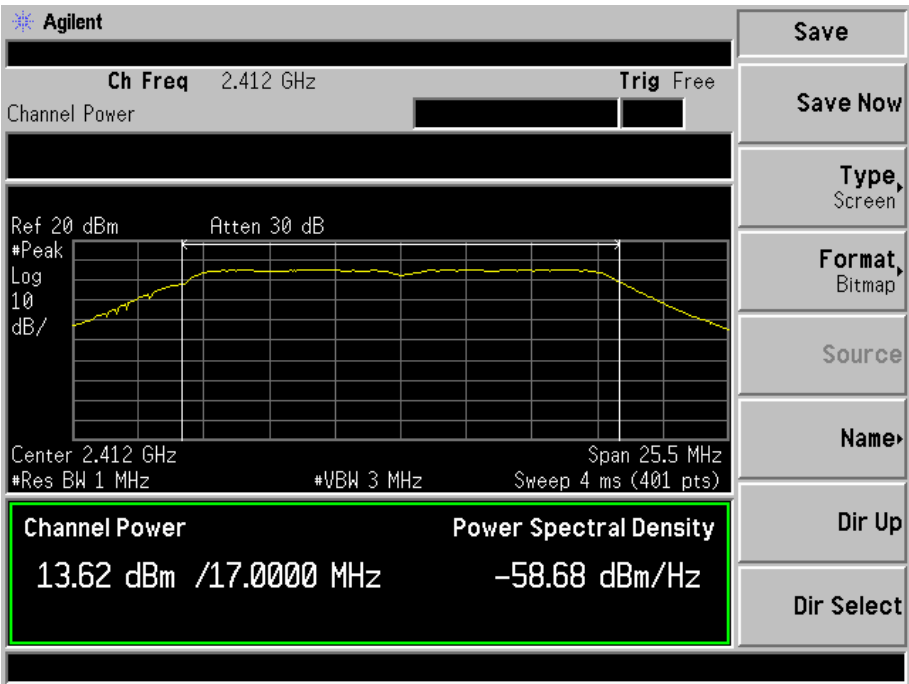
802.11b-Middle Channel



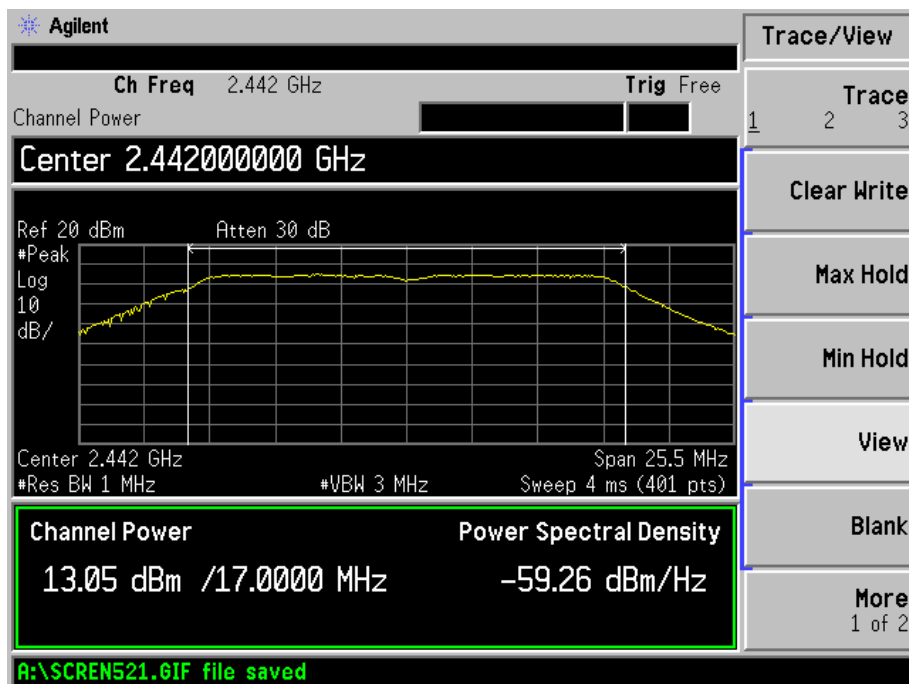
802.11b-High Channel



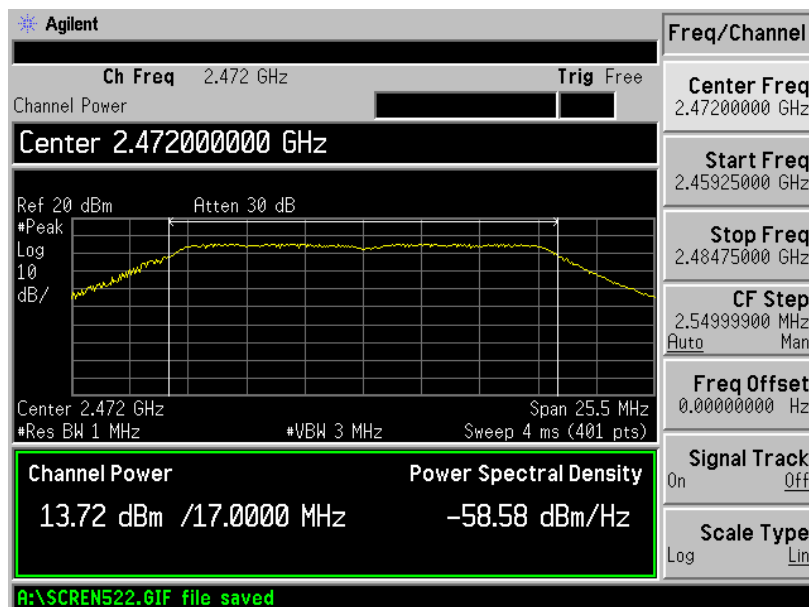
802.11g-Low Channel



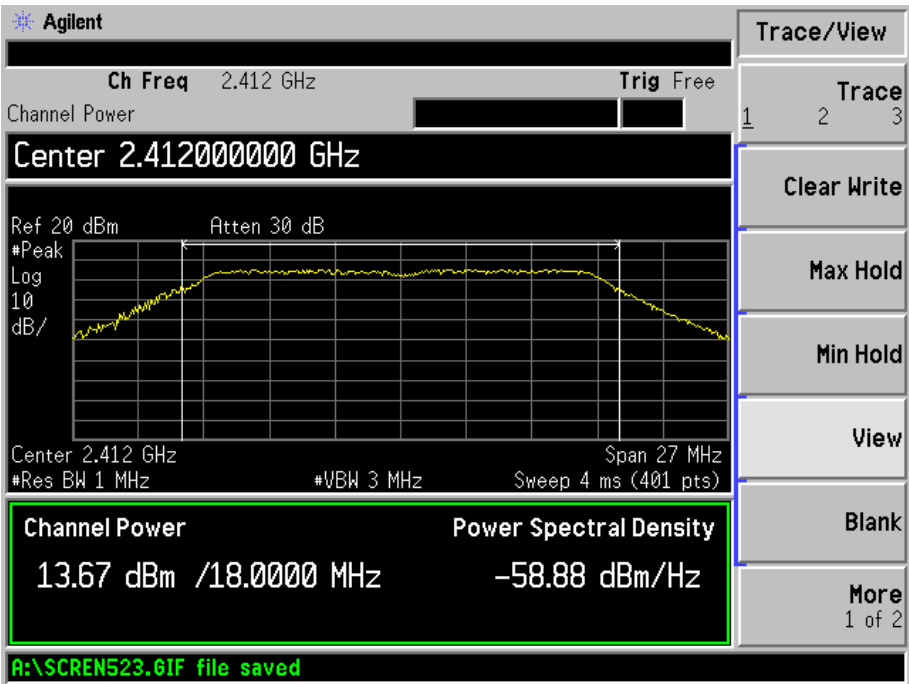
802.11g-Middle Channel



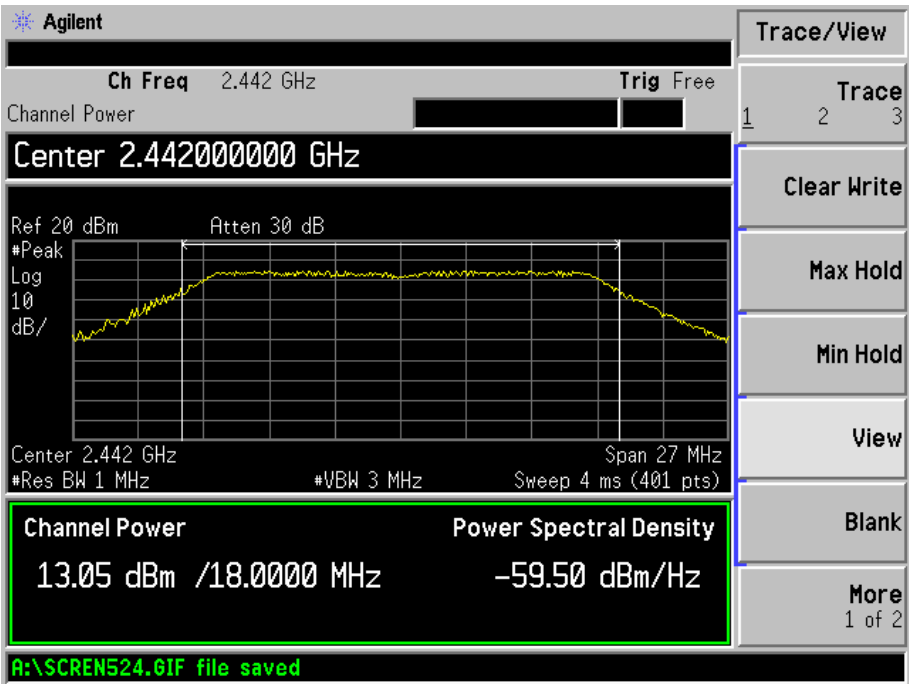
802.11g-High Channel



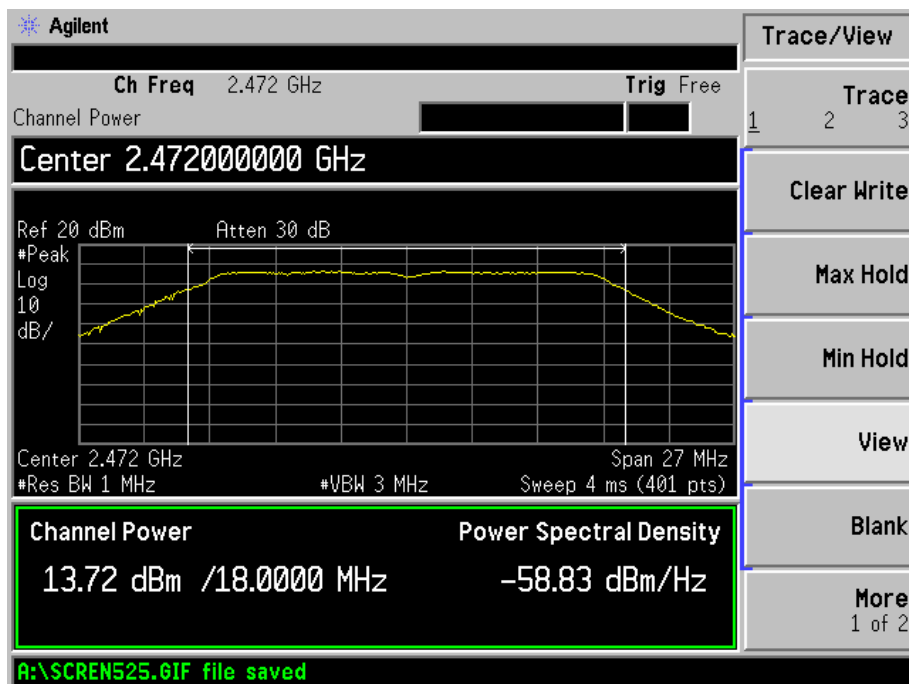
802.11n-HT20-Low Channel



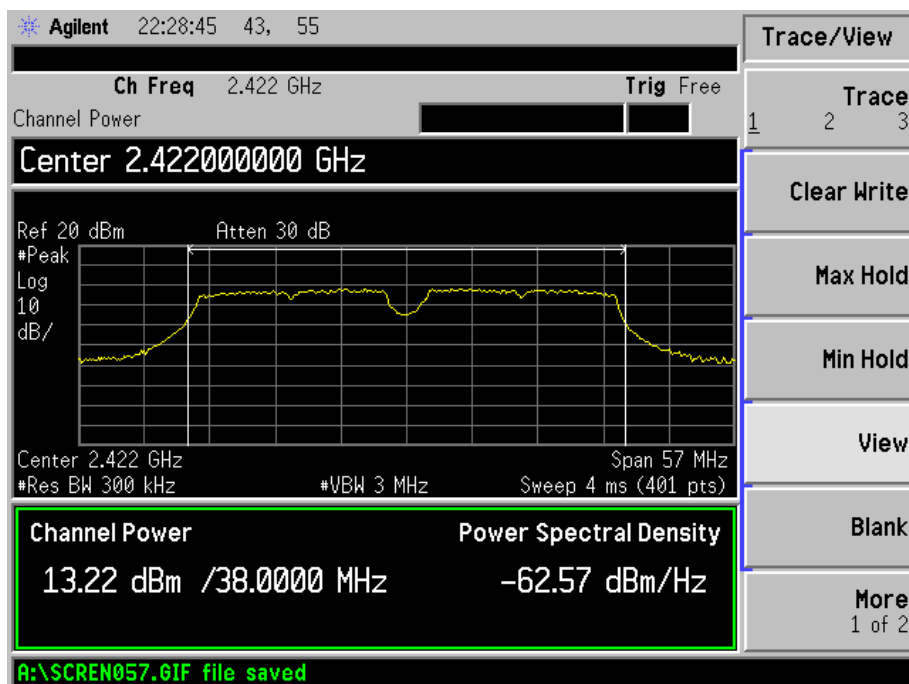
802.11n-HT20-Middle Channel



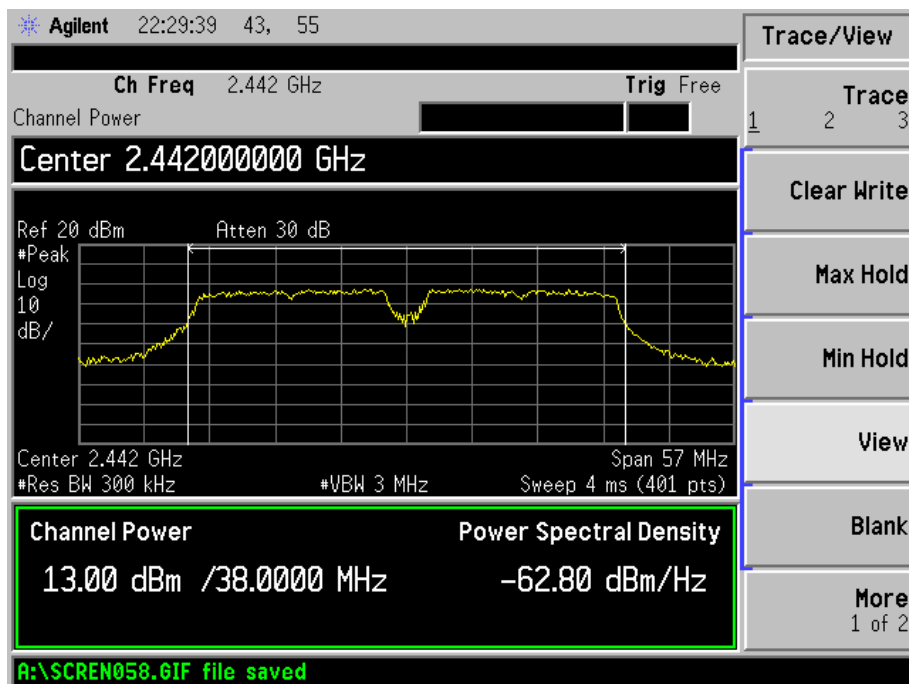
802.11n-HT20-High Channel



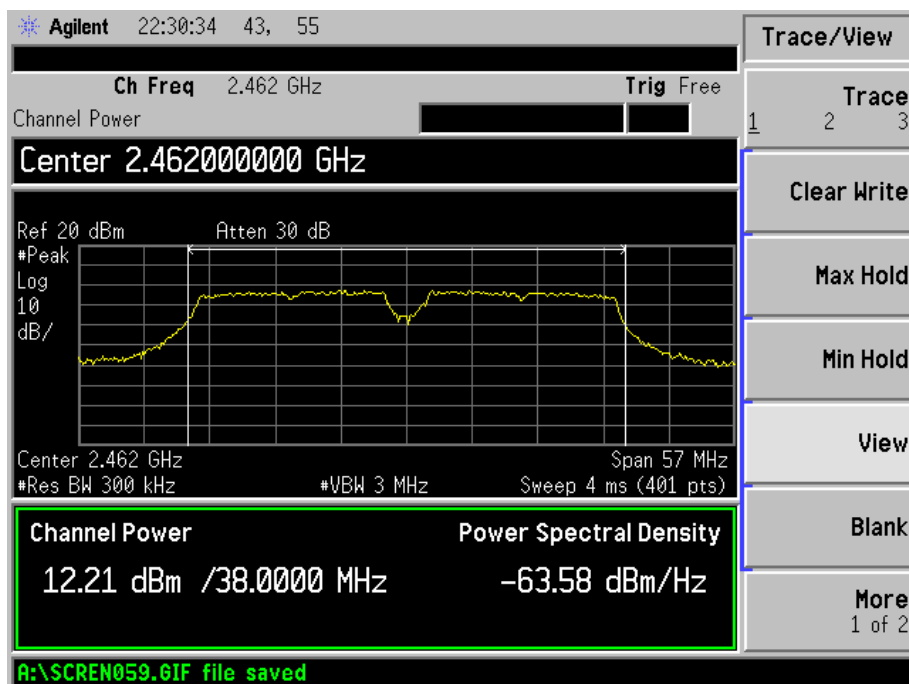
802.11n-HT40-Low Channel



802.11n-HT40-Middle Channel



802.11n-HT40-High Channel



8. Field Strength of Spurious Emissions

8.1 Measurement Uncertainty

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is ± 5.10 dB.

8.2 Standard Applicable

According to §15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

8.3 Test Equipment List and Details

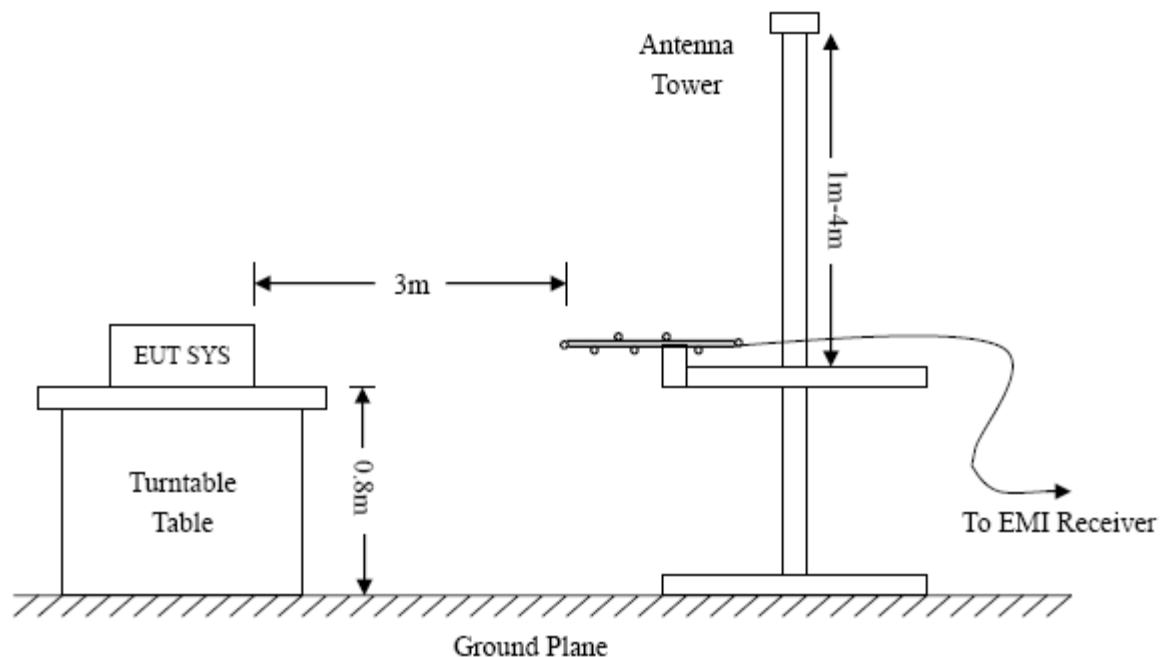
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2014-05-28	2015-05-27
EMI Test Receiver	R&S	ESVB	825471/005	2014-05-28	2015-05-27
Pre-amplifier	Agilent	8447F	3113A06717	2014-05-28	2015-05-27
Pre-amplifier	Compliance Direction	PAP-0118	24002	2014-05-28	2015-05-27
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2014-05-24	2015-05-23
Horn Antenna	ETS	3117	00086197	2014-05-24	2015-05-23
Horn Antenna	ETS	3116B	00088203	2014-05-24	2015-05-23
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2014-05-24	2015-05-23

8.4 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



Frequency :9kHz-30MHz

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=300KHz

Sweep time= Auto

Trace = max hold

Detector function = peak, QP

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

Detector function = peak, AV

8.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15 Limit}$$

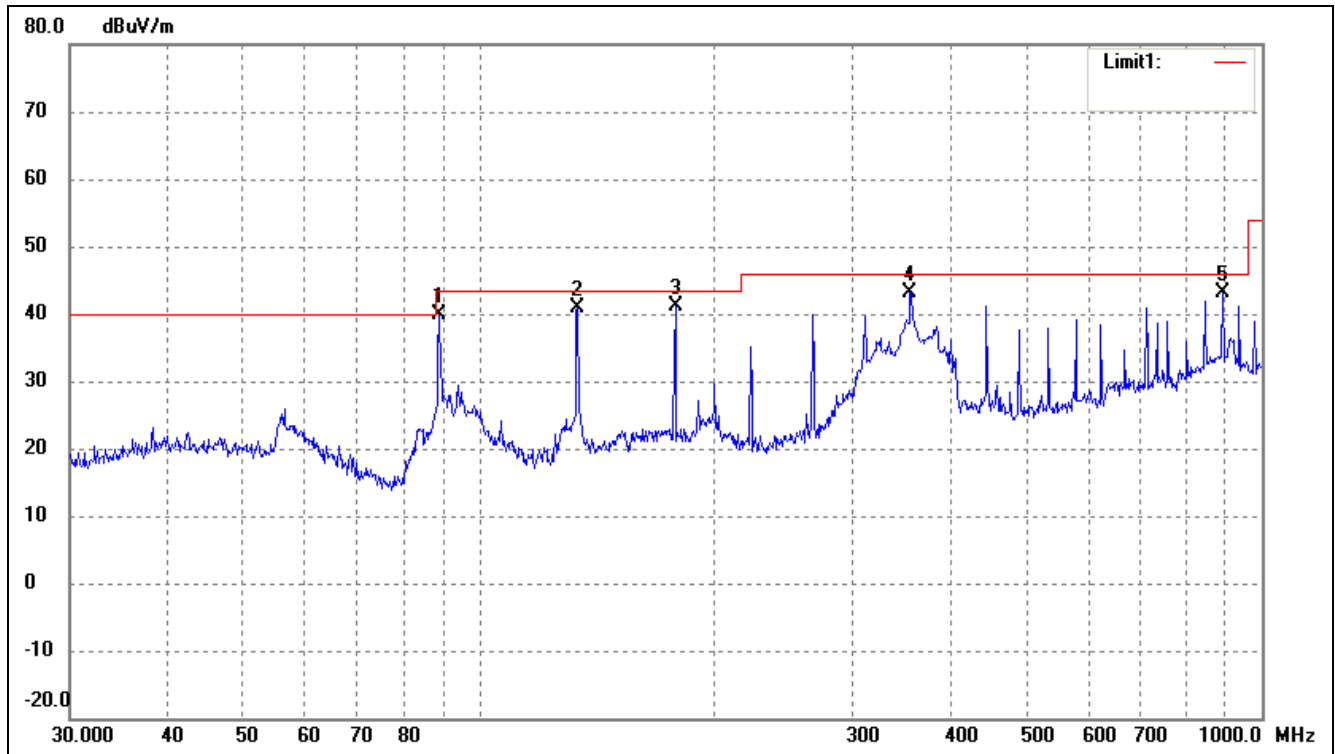
8.6 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

8.7 Summary of Test Results/Plots

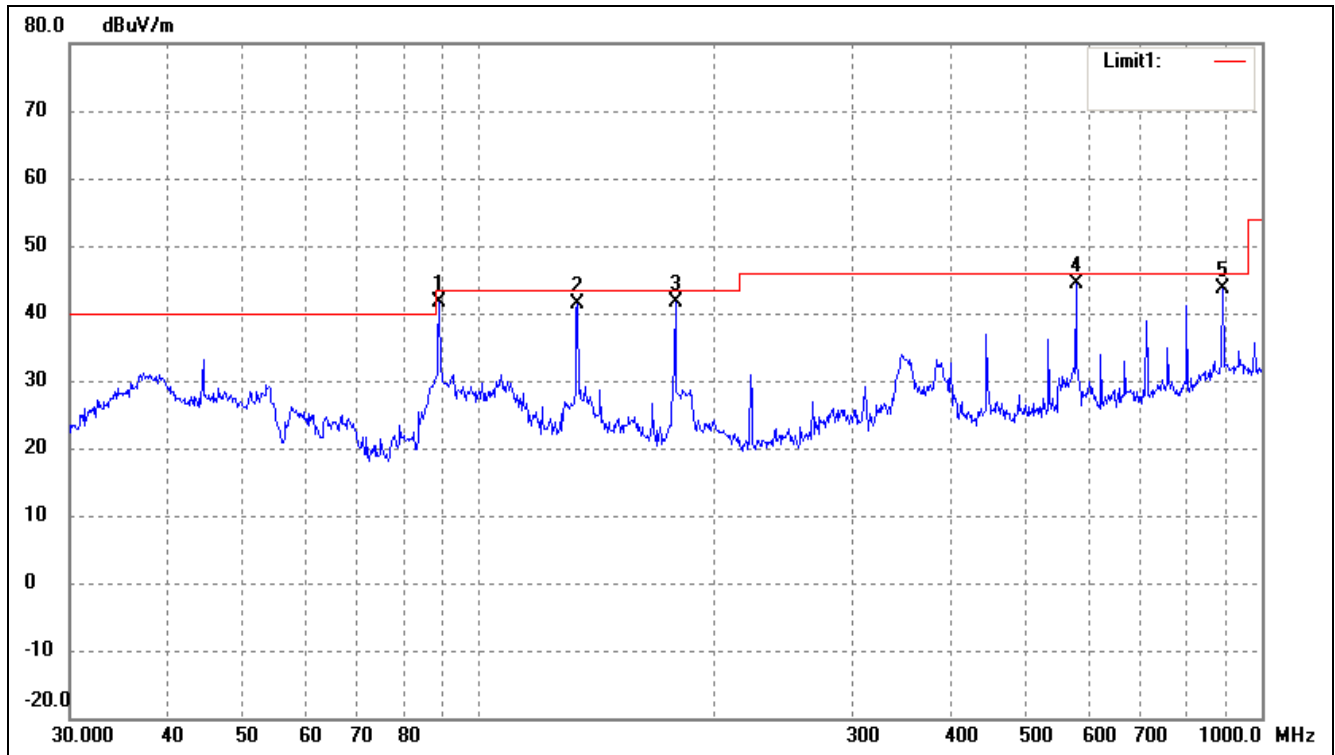
According to the data below, the FCC Part 15.205, 15.209 and 15.247 standards, and had the worst cases:

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Plot of Radiated Emissions Test Data (30MHz to 1GHz)*EUT: Wireless Digital Display**Tested Model: PXT515WR04E**Operating Condition: 802.11b Transmitting Low Channel-2412MHz**Comment: Adapter:DC12V**Test Specification: Horizontal*

No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	36.62	3.35	39.97	43.50	-3.53	254	100	peak
2	133.6188	37.95	2.92	40.87	43.50	-2.63	113	100	peak
3	178.1327	38.45	2.73	41.18	43.50	-2.32	284	100	peak
4	355.4273	34.13	9.12	43.25	46.00	-2.75	360	100	peak
5	890.7278	26.23	16.84	43.07	46.00	-2.93	100	100	peak

Test Specification: Vertical

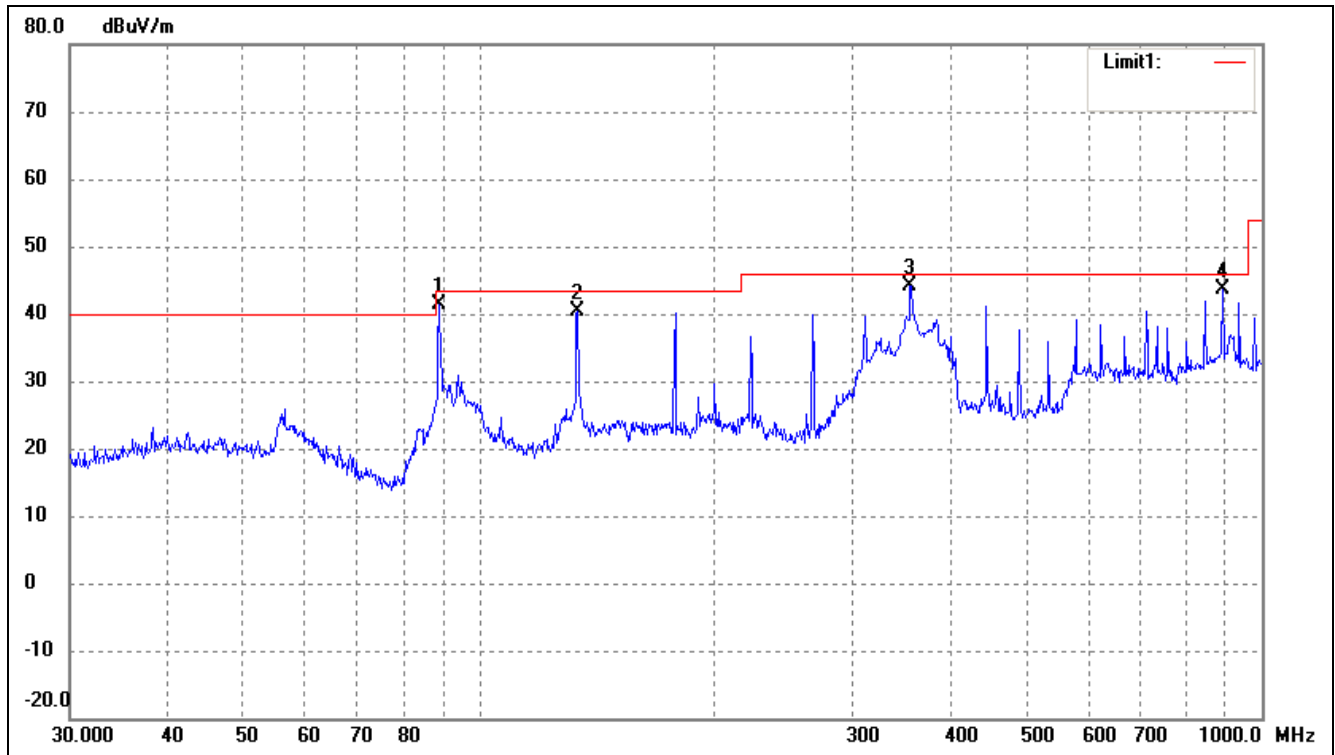


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	38.18	3.35	41.53	43.50	-1.97	114	100	peak
2	133.6188	38.47	2.92	41.39	43.50	-2.11	270	100	peak
3	178.1327	38.87	2.73	41.60	43.50	-1.90	360	100	peak
4	578.6699	31.95	12.50	44.45	46.00	-1.55	116	100	peak
5	890.7278	26.84	16.84	43.68	46.00	-2.32	312	200	peak

Operating Condition: 802.11b Transmitting Middle Channel-2442MHz

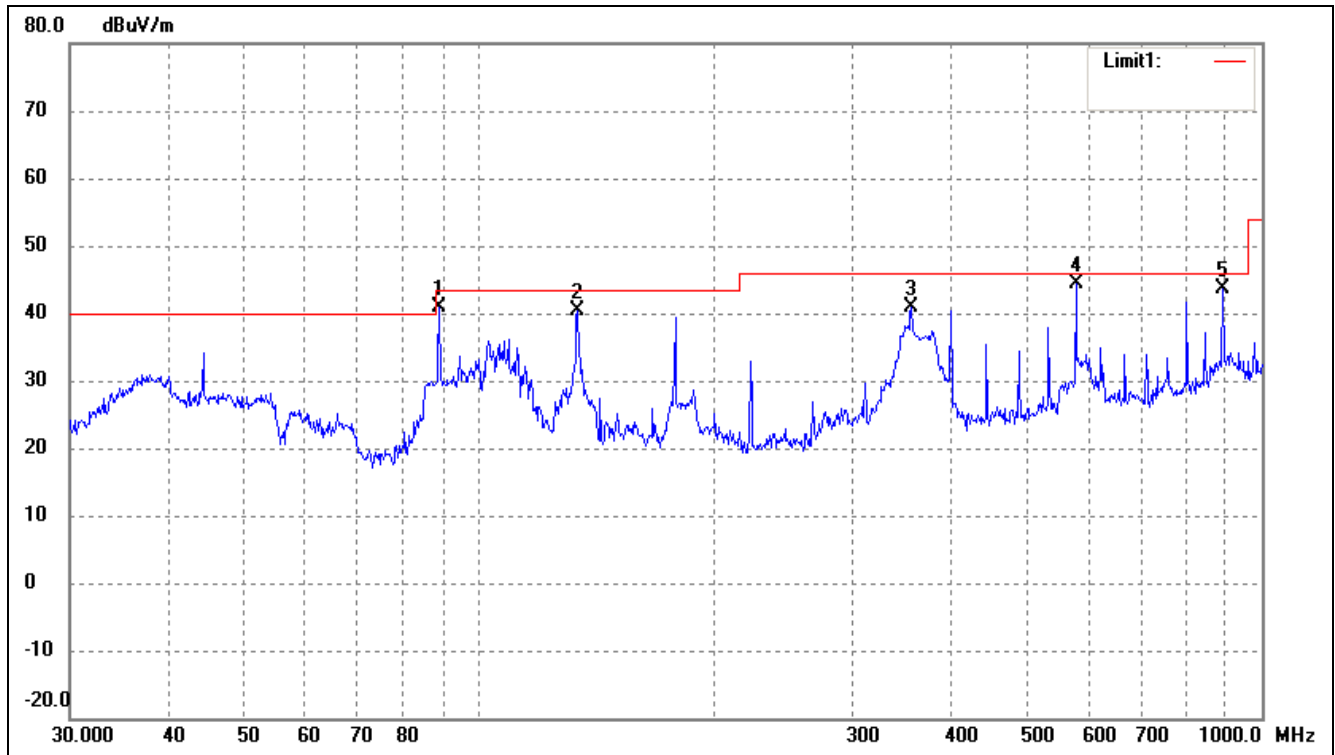
Comment: Adapter:DC12V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	38.12	3.35	41.47	43.50	-2.03	178	100	peak
2	133.6188	37.45	2.92	40.37	43.50	-3.13	224	100	peak
3	355.4273	35.13	9.12	44.25	46.00	-1.75	160	100	peak
4	890.7278	26.73	16.84	43.57	46.00	-2.43	290	100	peak

Test Specification: Vertical

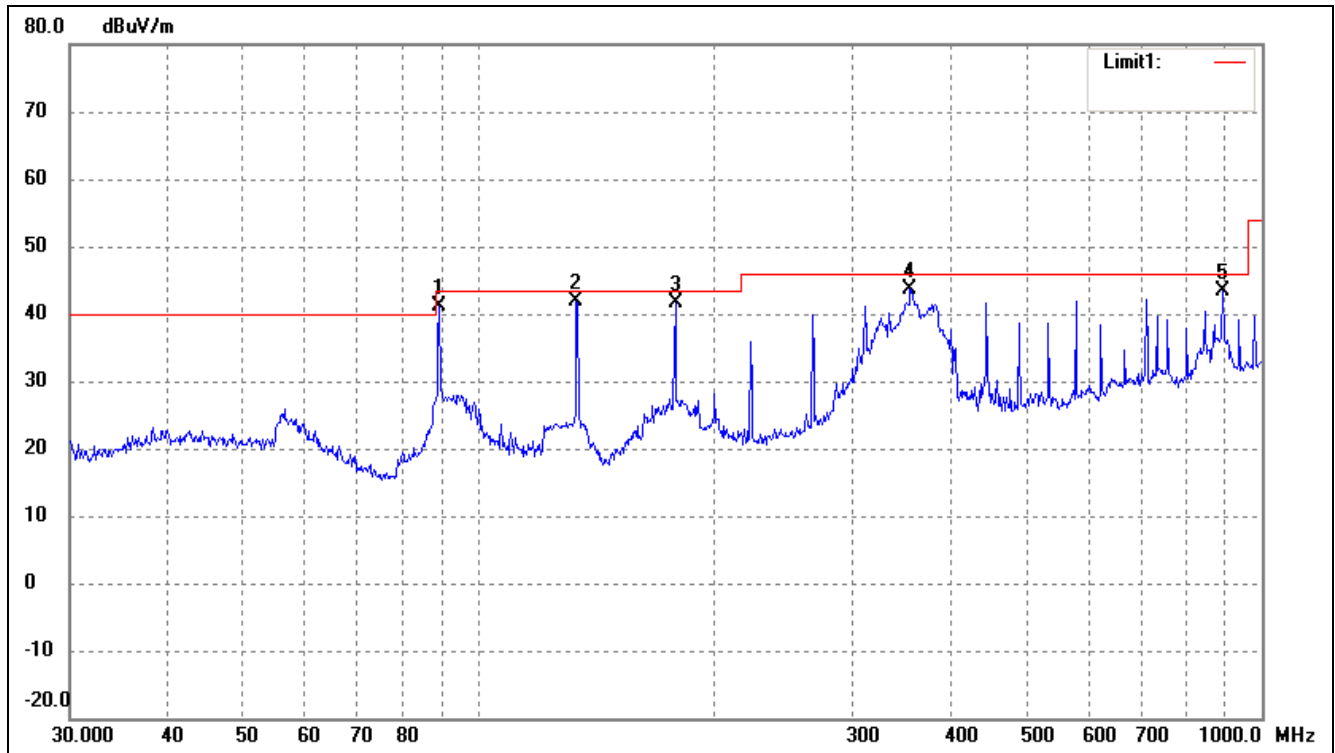


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	37.49	3.35	40.84	43.50	-2.66	256	100	peak
2	133.6188	37.45	2.92	40.37	43.50	-3.13	284	100	peak
3	356.6758	31.66	9.15	40.81	46.00	-5.19	45	100	peak
4	578.6699	31.92	12.50	44.42	46.00	-1.58	3	200	peak
5	890.7278	26.81	16.84	43.65	46.00	-2.35	98	100	

Operating Condition: 802.11b Transmitting High Channel-2472MHz

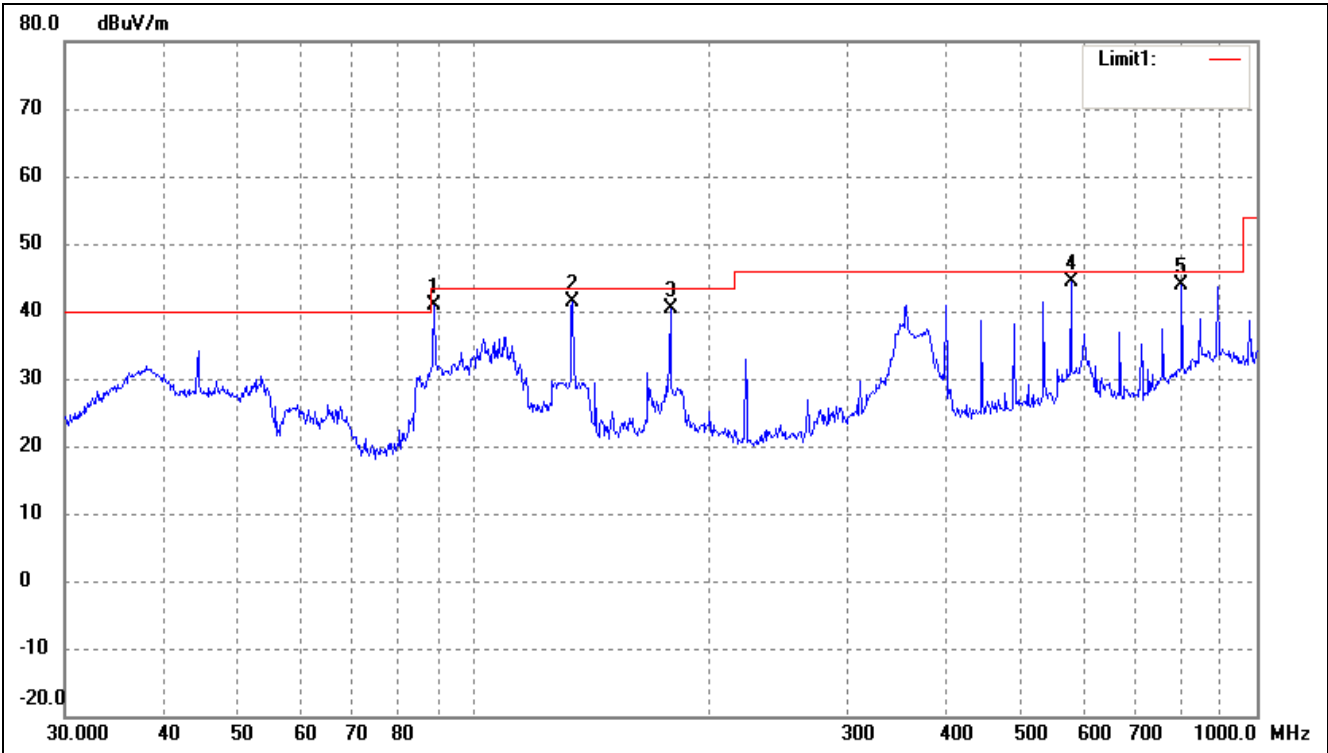
Comment: Adapter:DC12V

Test Specification: Horizontal

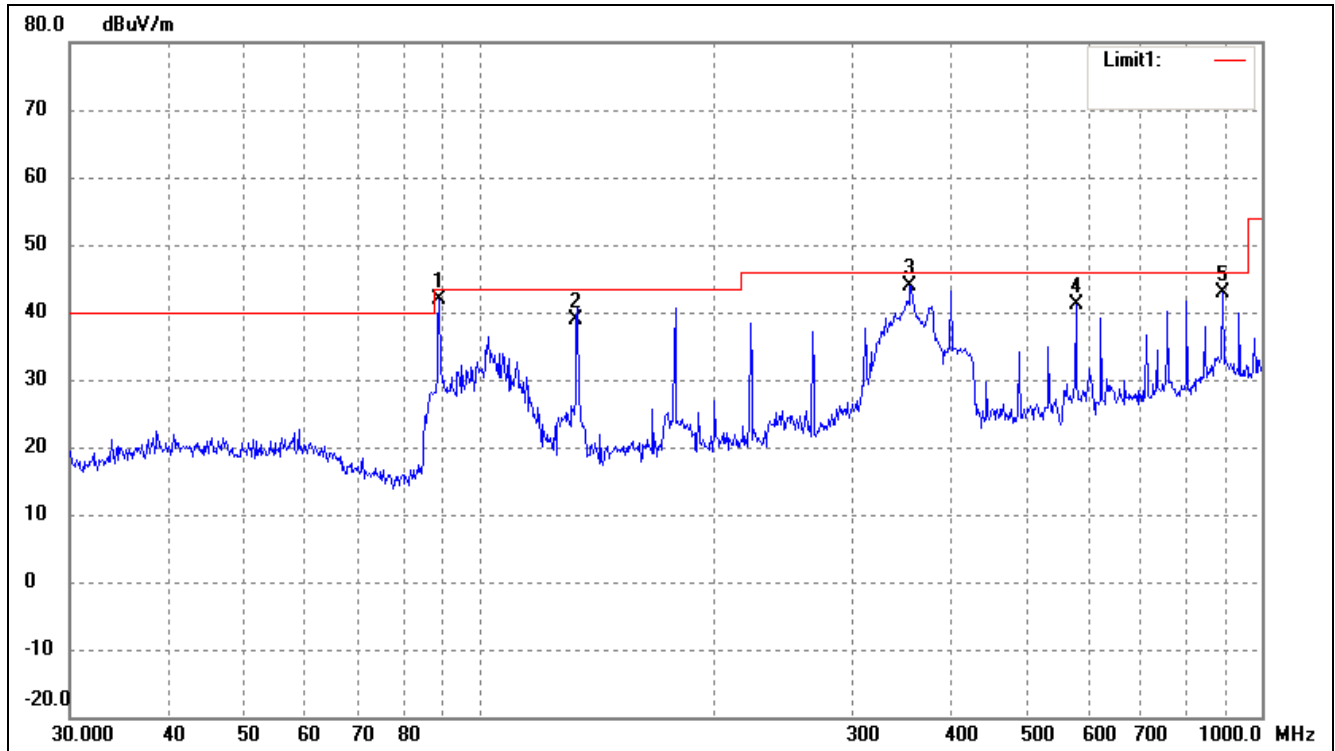


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	37.85	3.35	41.20	43.50	-2.30	176	100	peak
2	133.1511	38.97	2.96	41.93	43.50	-1.57	255	100	peak
3	178.1327	38.94	2.73	41.67	43.50	-1.83	360	100	peak
4	355.4273	34.63	9.12	43.75	46.00	-2.25	178	100	peak
5	890.7278	26.59	16.84	43.43	46.00	-2.57	79	200	peak

Test Specification: Vertical

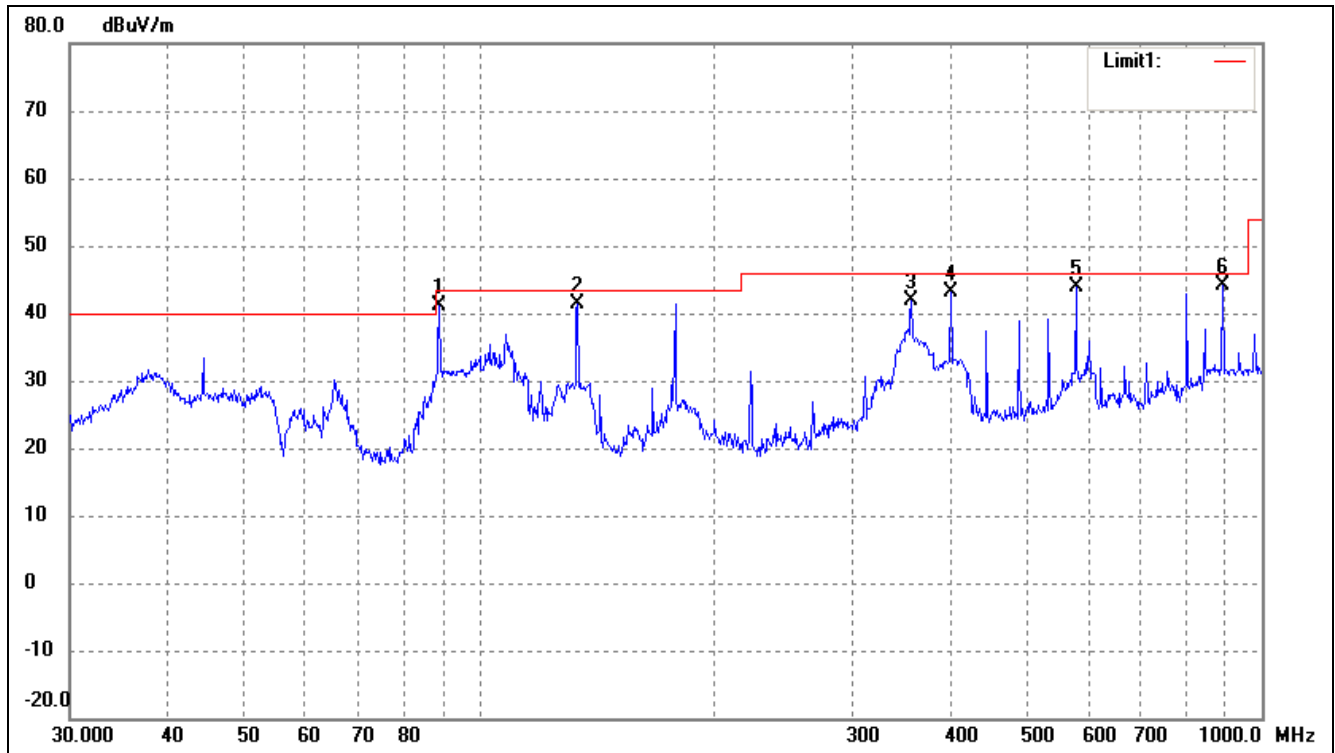


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	88.9639	37.49	3.35	40.84	43.50	-2.66	60	100	peak
2	133.6188	38.45	2.92	41.37	43.50	-2.13	225	100	peak
3	178.1327	37.54	2.73	40.27	43.50	-3.23	160	200	peak
4	578.6699	31.92	12.50	44.42	46.00	-1.58	310	100	peak
	801.7863	29.61	14.35	43.96	46.00	-2.04	68	200	

Plot of Radiated Emissions Test Data (30MHz to 1GHz)*EUT: Wireless Digital Display**Tested Model: PXT515WR04E**Operating Condition: 802.11g Transmitting Low Channel-2412MHz**Comment: Adapter:DC12V**Test Specification: Horizontal*

No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	88.9639	38.49	3.35	41.84	43.50	-1.66	174	100	peak
2	133.1511	35.88	2.96	38.84	43.50	-4.66	160	100	peak
3	355.4273	34.76	9.12	43.88	46.00	-2.12	320	200	peak
4	578.6699	28.69	12.50	41.19	46.00	-4.81	360	100	peak
5	890.7278	26.14	16.84	42.98	46.00	-3.02	98	200	peak

Test Specification: Vertical

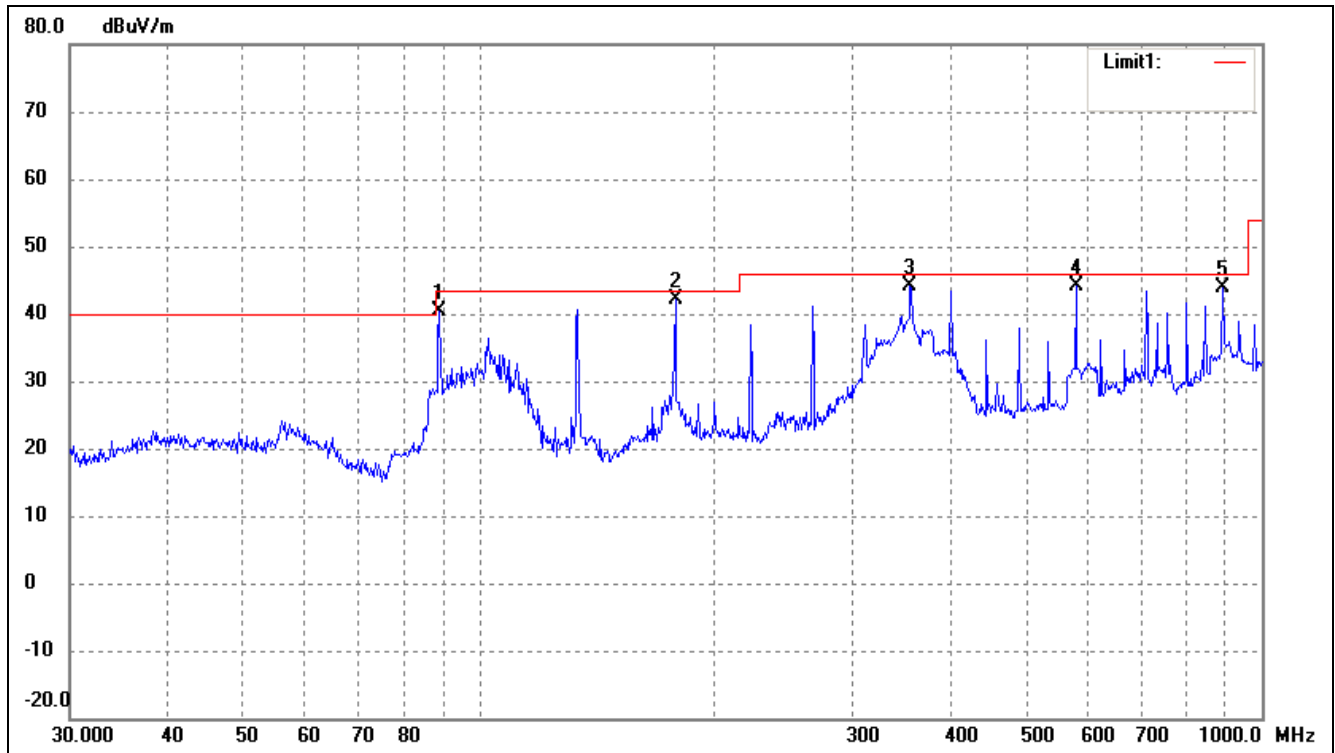


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	37.70	3.35	41.05	43.50	-2.45	177	100	peak
2	133.6188	38.41	2.92	41.33	43.50	-2.17	90	100	peak
3	356.6758	32.64	9.15	41.79	46.00	-4.21	336	100	peak
4	400.4319	33.01	10.12	43.13	46.00	-2.87	360	100	peak
5	578.6699	31.31	12.50	43.81	46.00	-2.19	54	200	peak
6	890.7278	27.22	16.84	44.06	46.00	-1.94	189	200	peak

Operating Condition: 802.11g Transmitting Middle Channel-2442MHz

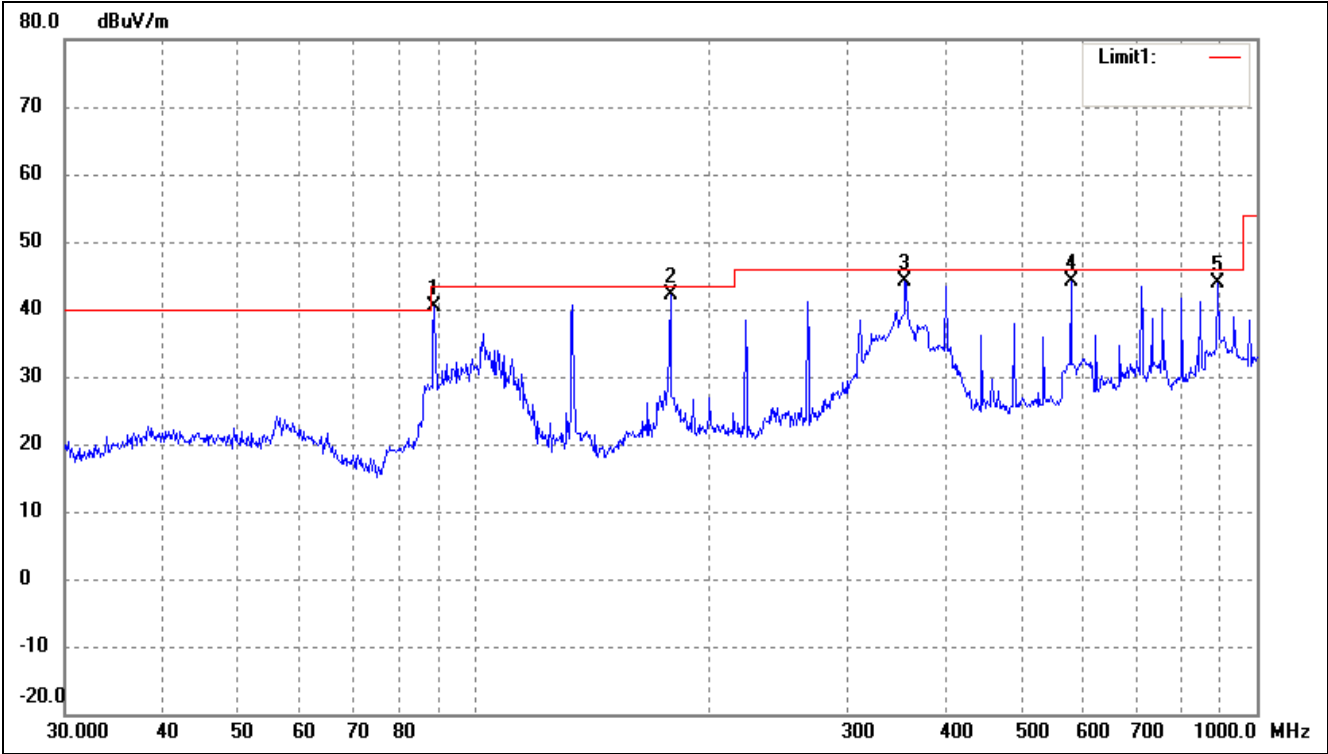
Comment: Adapter:DC12V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	36.99	3.35	40.34	43.50	-3.16	270	100	peak
2	178.1327	39.41	2.73	42.14	43.50	-1.36	164	100	peak
3	355.4273	34.90	9.12	44.02	46.00	-1.98	228	200	peak
4	578.6699	31.69	12.50	44.19	46.00	-1.81	130	200	peak
5	890.7278	26.95	16.84	43.79	46.00	-2.21	360	100	peak

Test Specification: Vertical

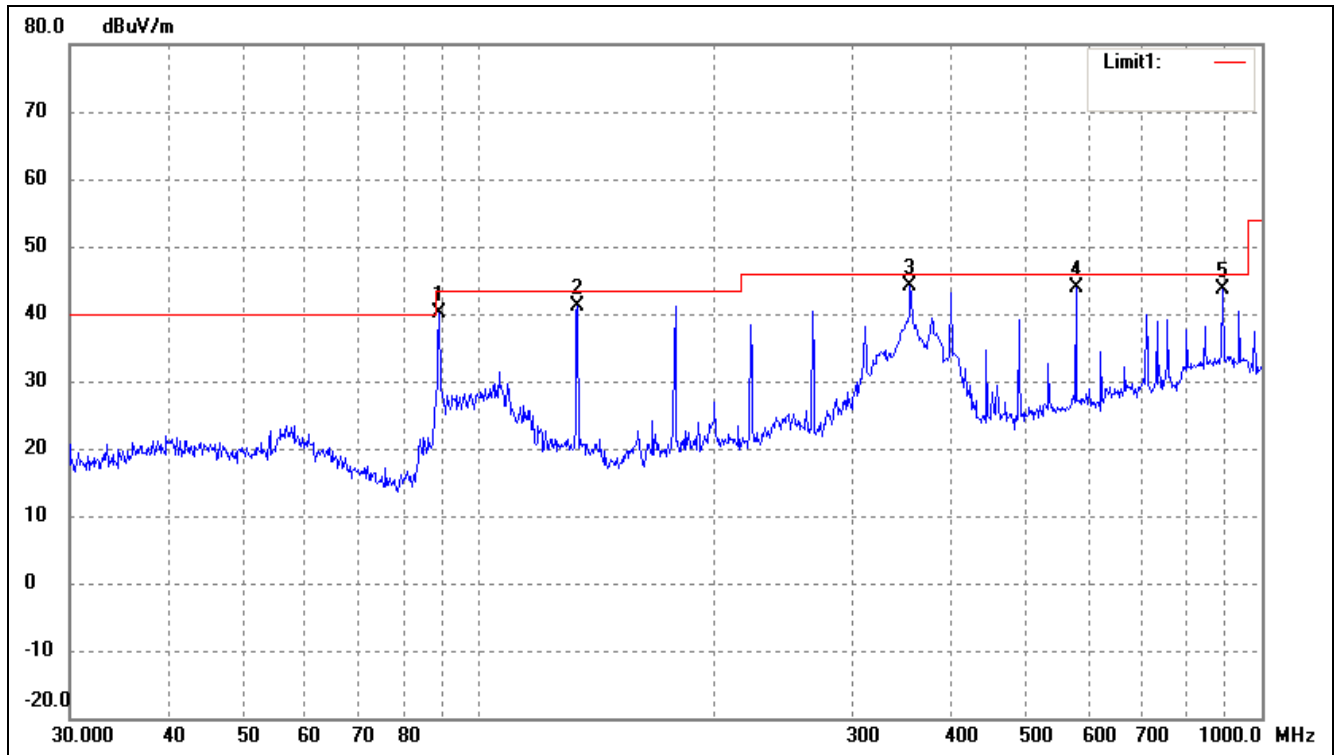


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	88.9639	36.99	3.35	40.34	43.50	-3.16	360	100	peak
2	178.1327	39.41	2.73	42.14	43.50	-1.36	255	100	peak
3	355.4273	34.90	9.12	44.02	46.00	-1.98	270	100	peak
4	578.6699	31.69	12.50	44.19	46.00	-1.81	180	100	peak
5	890.7278	26.95	16.84	43.79	46.00	-2.21	54	100	peak

Operating Condition: 802.11g Transmitting High Channel-2472MHz

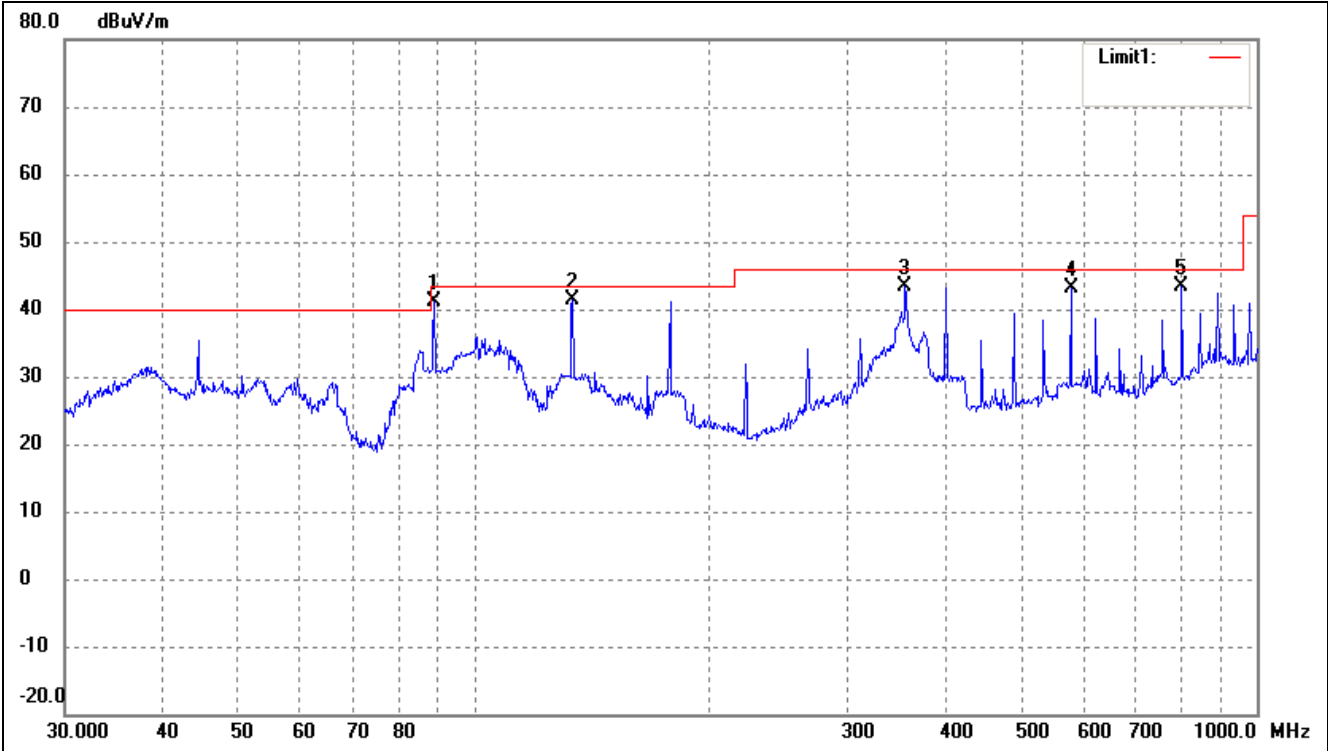
Comment: Adapter:DC12V

Test Specification: Horizontal

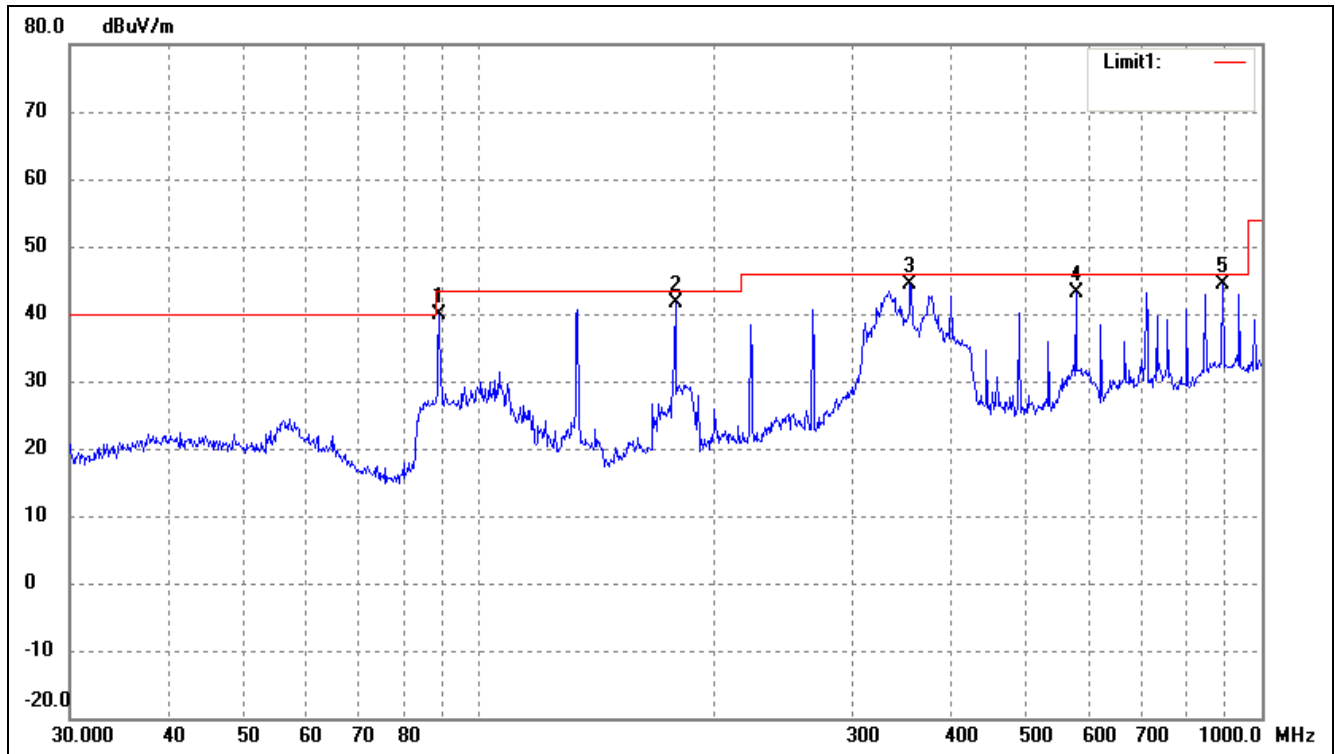


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	36.84	3.35	40.19	43.50	-3.31	270	100	peak
2	133.6188	38.30	2.92	41.22	43.50	-2.28	51	200	peak
3	355.4273	34.95	9.12	44.07	46.00	-1.93	360	200	peak
4	578.6699	31.33	12.50	43.83	46.00	-2.17	35	100	peak
5	890.7278	26.73	16.84	43.57	46.00	-2.43	245	200	peak

Test Specification: Vertical

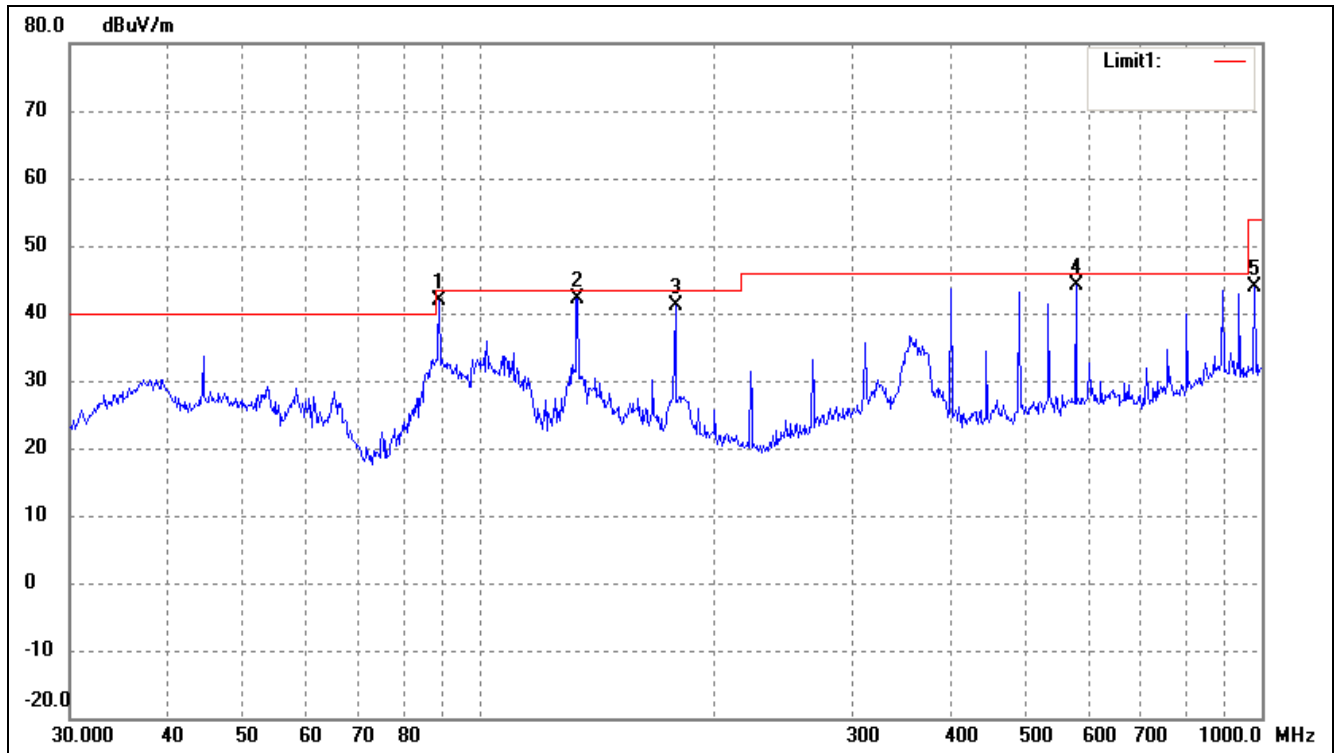


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	88.9639	37.69	3.35	41.04	43.50	-2.46	360	100	peak
2	133.6188	38.34	2.92	41.26	43.50	-2.24	180	100	peak
3	355.4273	34.18	9.12	43.30	46.00	-2.70	225	100	peak
4	578.6699	30.65	12.50	43.15	46.00	-2.85	67	100	peak
5	801.7863	29.08	14.35	43.43	46.00	-2.57	98	200	

Plot of Radiated Emissions Test Data (30MHz to 1GHz)*EUT: Wireless Digital Display**Tested Model: PXT515WR04E**Operating Condition: 802.11n-HT20 Transmitting Low Channel-2412MHz**Comment: Adapter:DC12V**Test Specification: Horizontal*

No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	36.50	3.35	39.85	43.50	-3.65	260	100	peak
2	178.1327	38.99	2.73	41.72	43.50	-1.78	131	200	peak
3	355.4273	35.33	9.12	44.45	46.00	-1.55	285	200	peak
4	578.6699	30.74	12.50	43.24	46.00	-2.76	224	100	peak
5	890.7278	27.50	16.84	44.34	46.00	-1.66	57	100	peak

Test Specification: Vertical

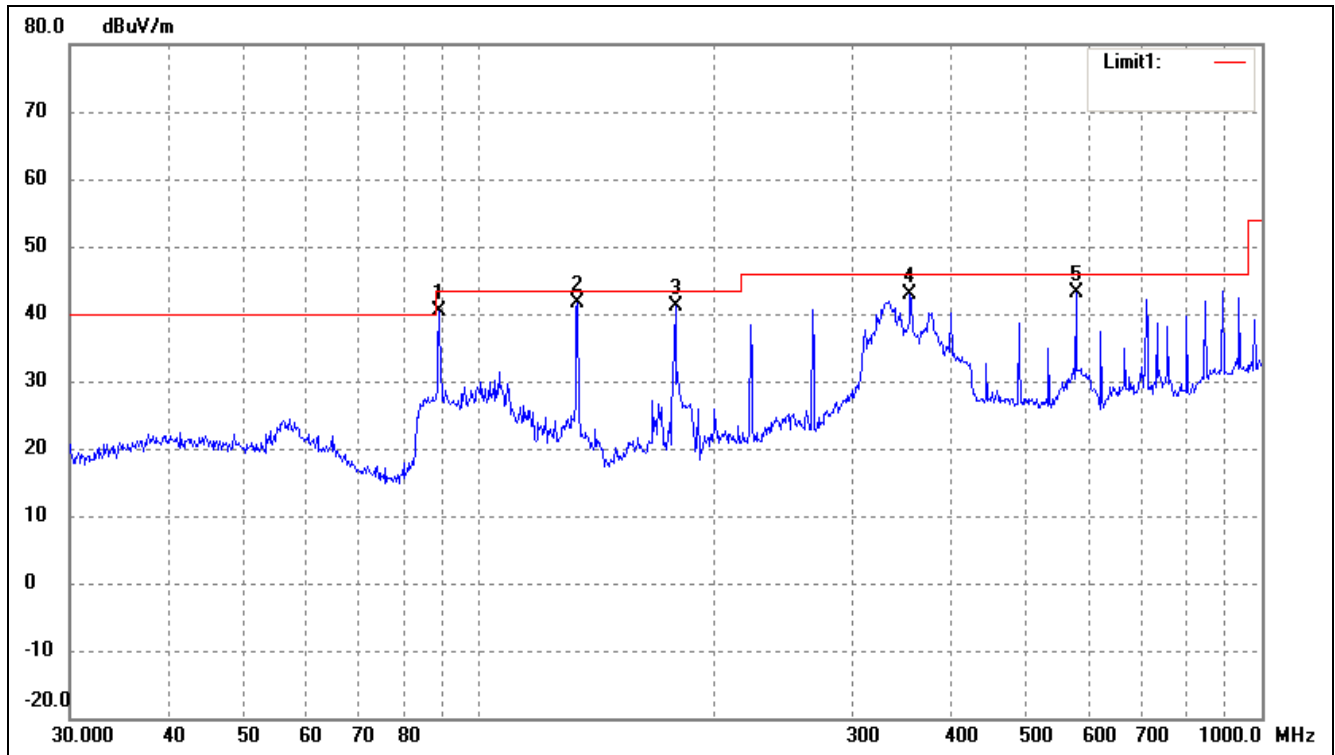


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	38.50	3.35	41.85	43.50	-1.65	155	100	peak
2	133.6188	39.19	2.92	42.11	43.50	-1.39	197	100	peak
3	178.1327	38.37	2.73	41.10	43.50	-2.40	310	100	peak
4	578.6699	31.75	12.50	44.25	46.00	-1.75	229	100	peak
5	979.1804	27.18	16.67	43.85	54.00	-10.15	130	100	peak

Operating Condition: 802.11n-HT20 Transmitting Middle Channel-2442MHz

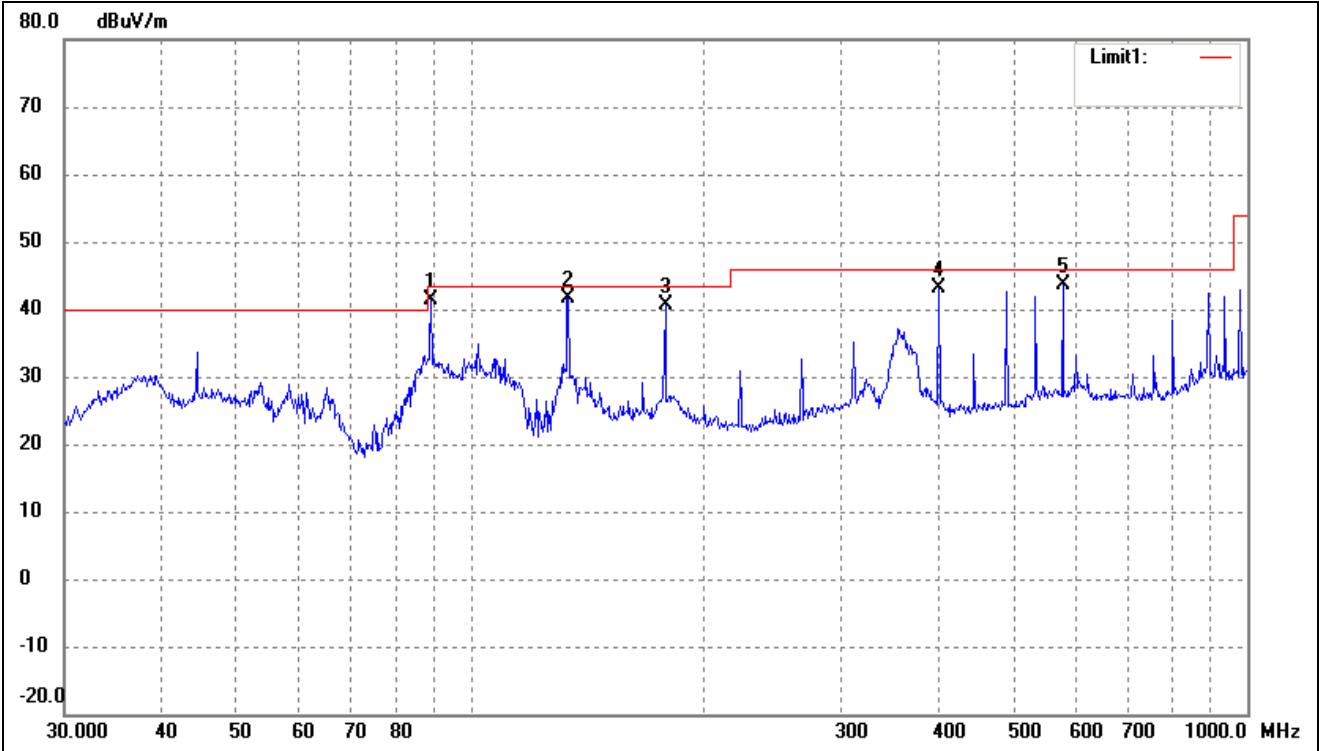
Comment: Adapter:DC12V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	37.00	3.35	40.35	43.50	-3.15	274	100	peak
2	133.6188	38.80	2.92	41.72	43.50	-1.78	116	100	peak
3	178.1327	38.49	2.73	41.22	43.50	-2.28	82	100	peak
4	355.4273	33.83	9.12	42.95	46.00	-3.05	134	100	peak
5	578.6699	30.74	12.50	43.24	46.00	-2.76	97	100	

Test Specification: Vertical

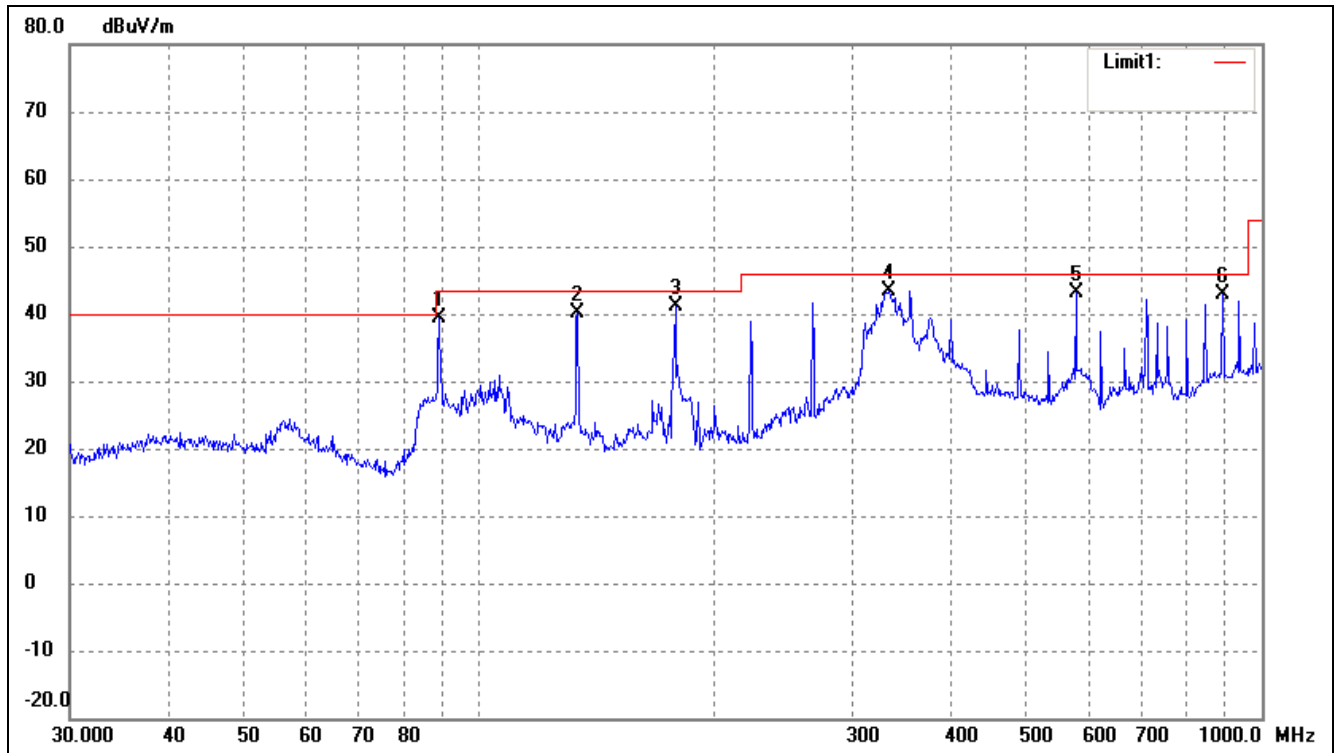


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	88.9639	38.00	3.35	41.35	43.50	-2.15	264	100	peak
2	133.6188	38.69	2.92	41.61	43.50	-1.89	110	100	peak
3	178.1327	37.87	2.73	40.60	43.50	-2.90	136	100	peak
4	400.4319	32.93	10.12	43.05	46.00	-2.95	90	100	peak
5	578.6699	31.25	12.50	43.75	46.00	-2.25	165	100	peak

Operating Condition: 802.11n-HT20 Transmitting High Channel-2472MHz

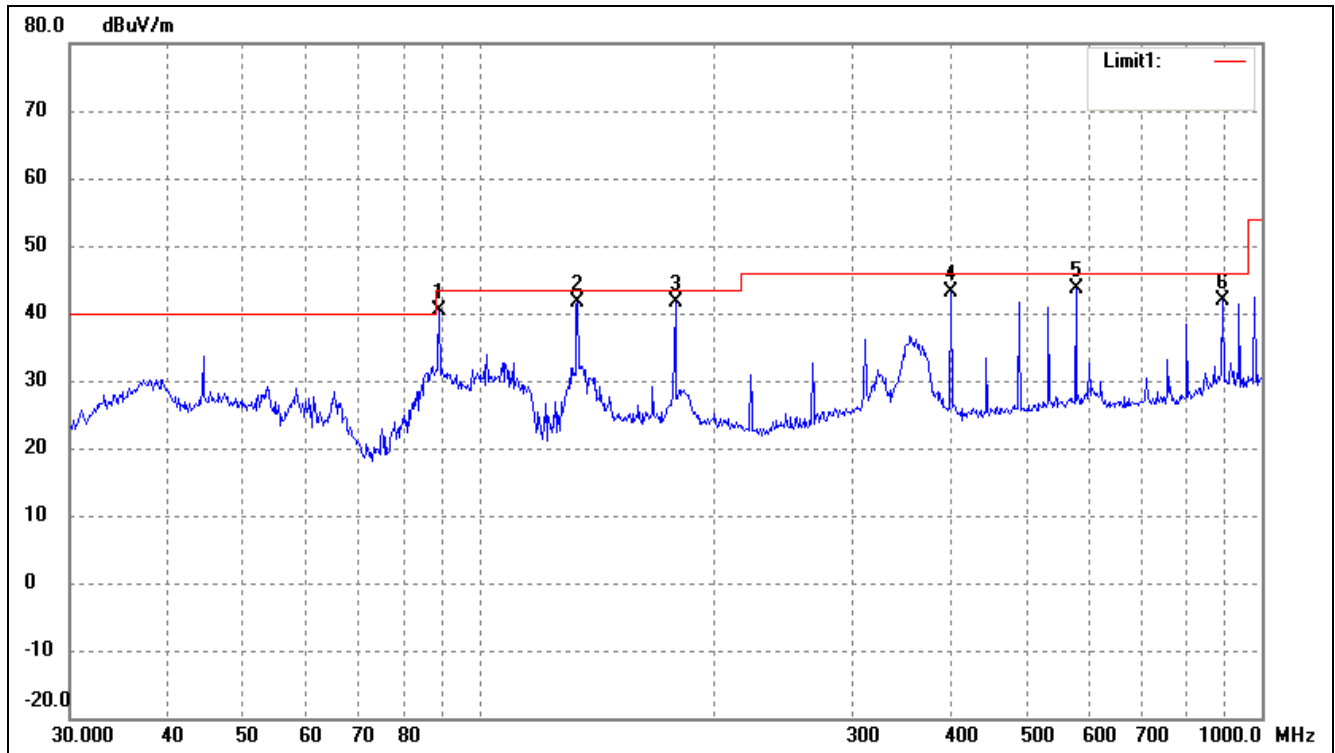
Comment: Adapter:DC12V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	36.00	3.35	39.35	43.50	-4.15	360	100	peak
2	133.6188	37.30	2.92	40.22	43.50	-3.28	112	100	peak
3	178.1327	38.49	2.73	41.22	43.50	-2.28	180	200	peak
4	333.6867	34.46	8.90	43.36	46.00	-2.64	270	200	peak
5	578.6699	30.74	12.50	43.24	46.00	-2.76	98	100	peak
6	890.7278	26.00	16.84	42.84	46.00	-3.16	135	200	peak

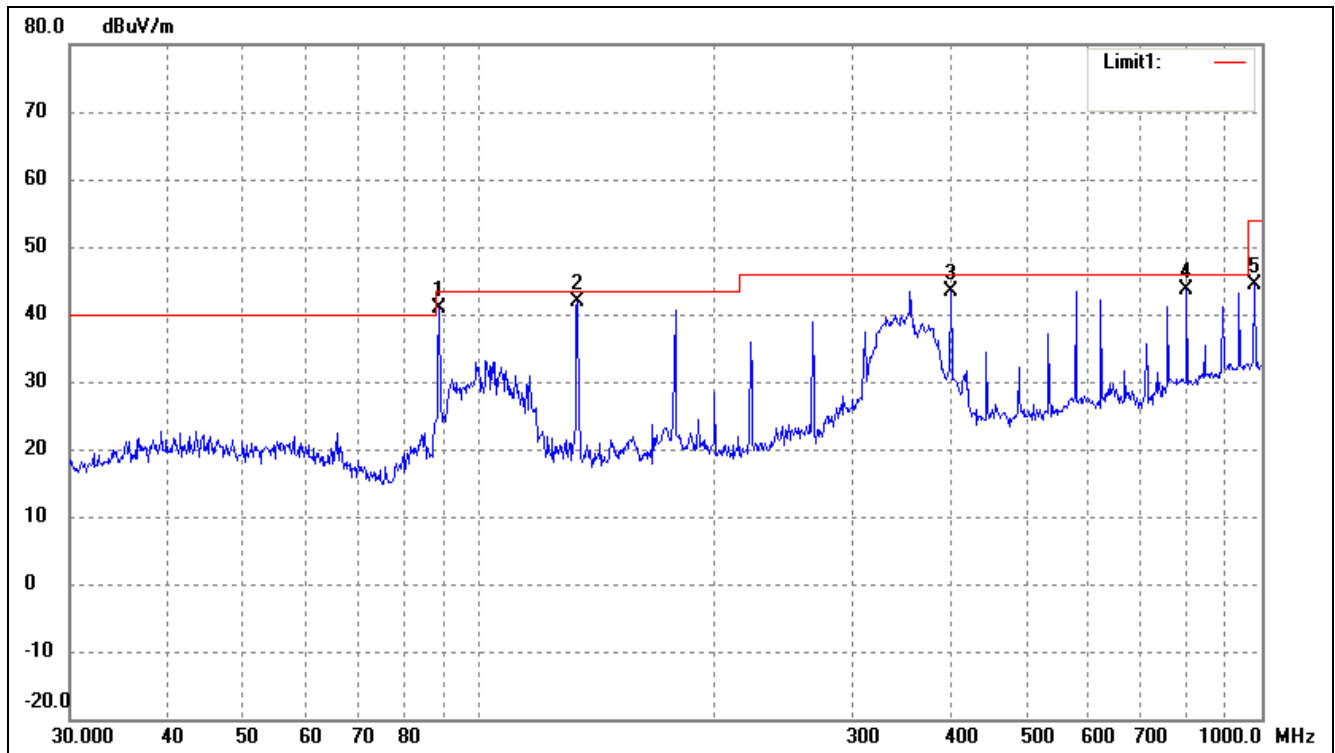
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	37.00	3.35	40.35	43.50	-3.15	267	100	peak
2	133.6188	38.69	2.92	41.61	43.50	-1.89	116	100	peak
3	178.1327	38.87	2.73	41.60	43.50	-1.90	360	100	peak
4	400.4319	32.93	10.12	43.05	46.00	-2.95	228	100	peak
5	578.6699	31.25	12.50	43.75	46.00	-2.25	270	100	peak
6	890.7278	25.00	16.84	41.84	46.00	-4.16	98	100	peak

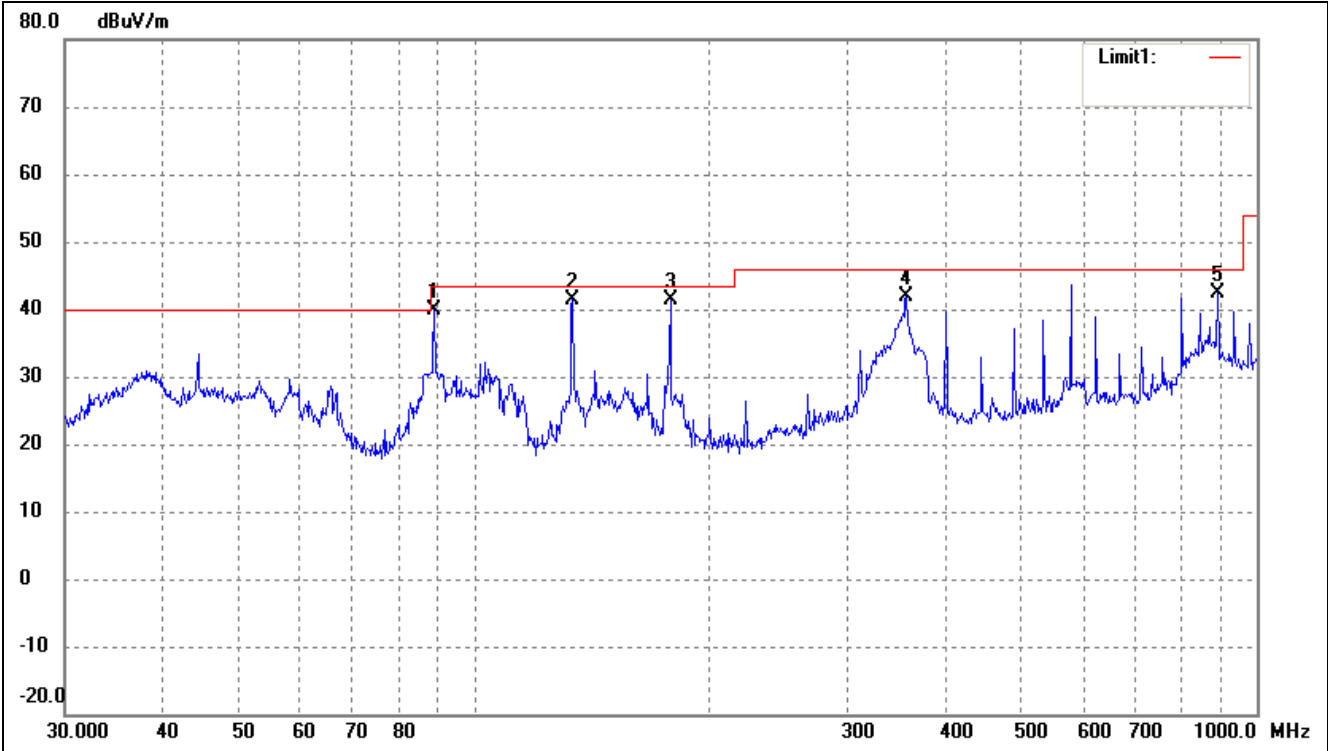
EUT: *Wireless Digital Display*
 Tested Model: *PXT515WR04E*
 Operating Condition: *802.11n-HT40 Transmitting Low Channel-2422MHz*
 Comment: *Adapter:DC12V*

Test Specification: *Horizontal*



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	37.64	3.35	40.99	43.50	-2.51	267	100	peak
2	133.6188	38.98	2.92	41.90	43.50	-1.60	114	200	peak
3	400.4319	33.29	10.12	43.41	46.00	-2.59	35	200	peak
4	801.7863	29.28	14.35	43.63	46.00	-2.37	81	100	peak
5	979.1804	27.81	16.67	44.48	54.00	-9.52	155	100	peak

Test Specification: Vertical

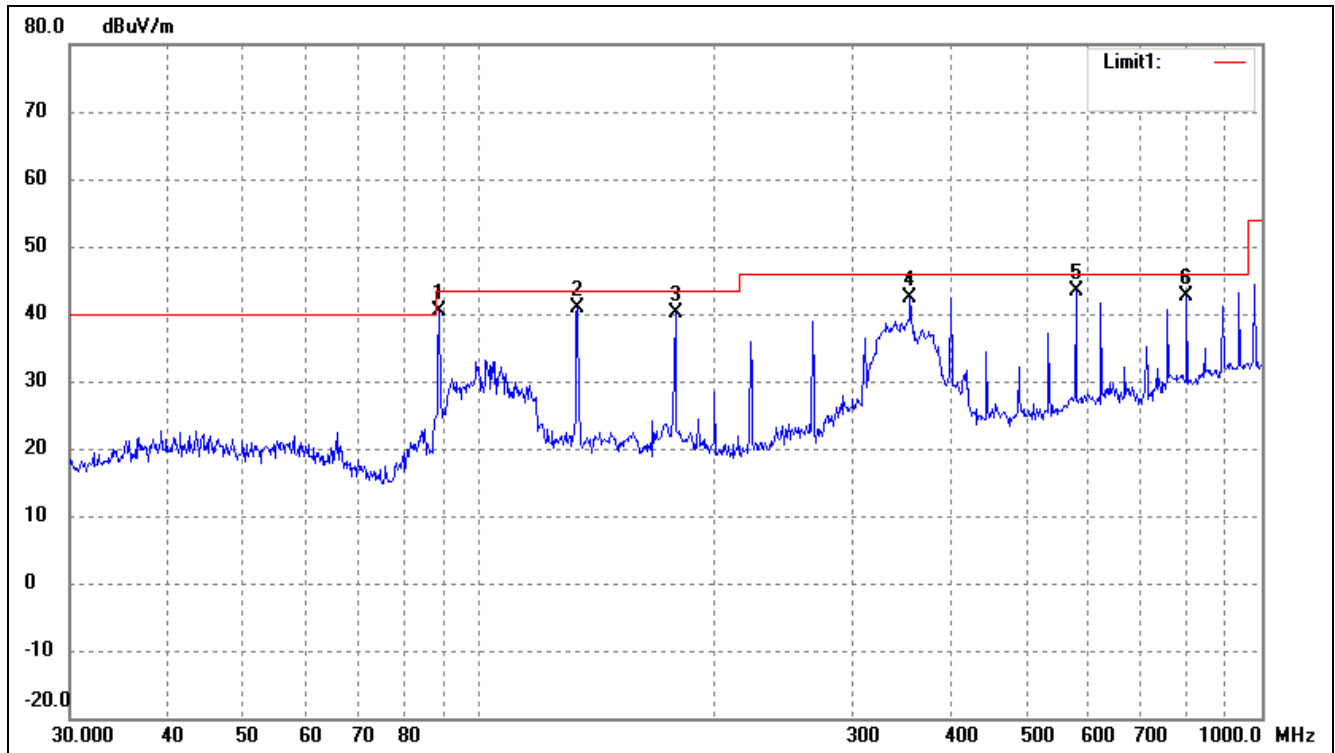


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	88.9639	36.62	3.35	39.97	43.50	-3.53	360	100	peak
2	133.6188	38.39	2.92	41.31	43.50	-2.19	258	100	peak
3	178.1327	38.73	2.73	41.46	43.50	-2.04	347	100	peak
4	356.6758	32.75	9.15	41.90	46.00	-4.10	270	100	peak
5	890.7278	25.47	16.84	42.31	46.00	-3.69	90	100	peak

Operating Condition: 802.11n-HT40 Transmitting Middle Channel-2442MHz

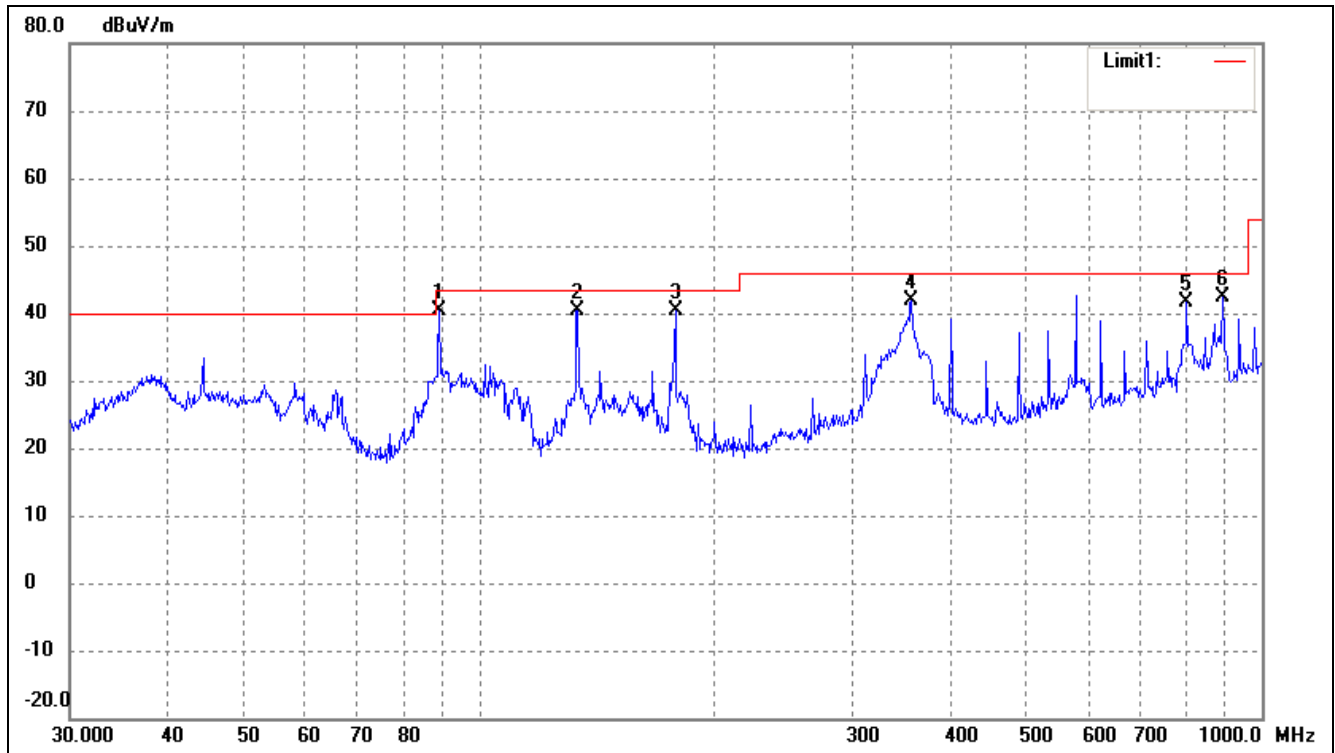
Comment: Adapter:DC12V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	37.14	3.35	40.49	43.50	-3.01	251	100	peak
2	133.6188	37.98	2.92	40.90	43.50	-2.60	167	100	peak
3	178.1327	37.39	2.73	40.12	43.50	-3.38	44	100	peak
4	355.4273	33.27	9.12	42.39	46.00	-3.61	130	100	peak
5	578.6699	30.97	12.50	43.47	46.00	-2.53	97	100	peak
6	801.7863	28.28	14.35	42.63	46.00	-3.37	135	200	peak

Test Specification: Vertical

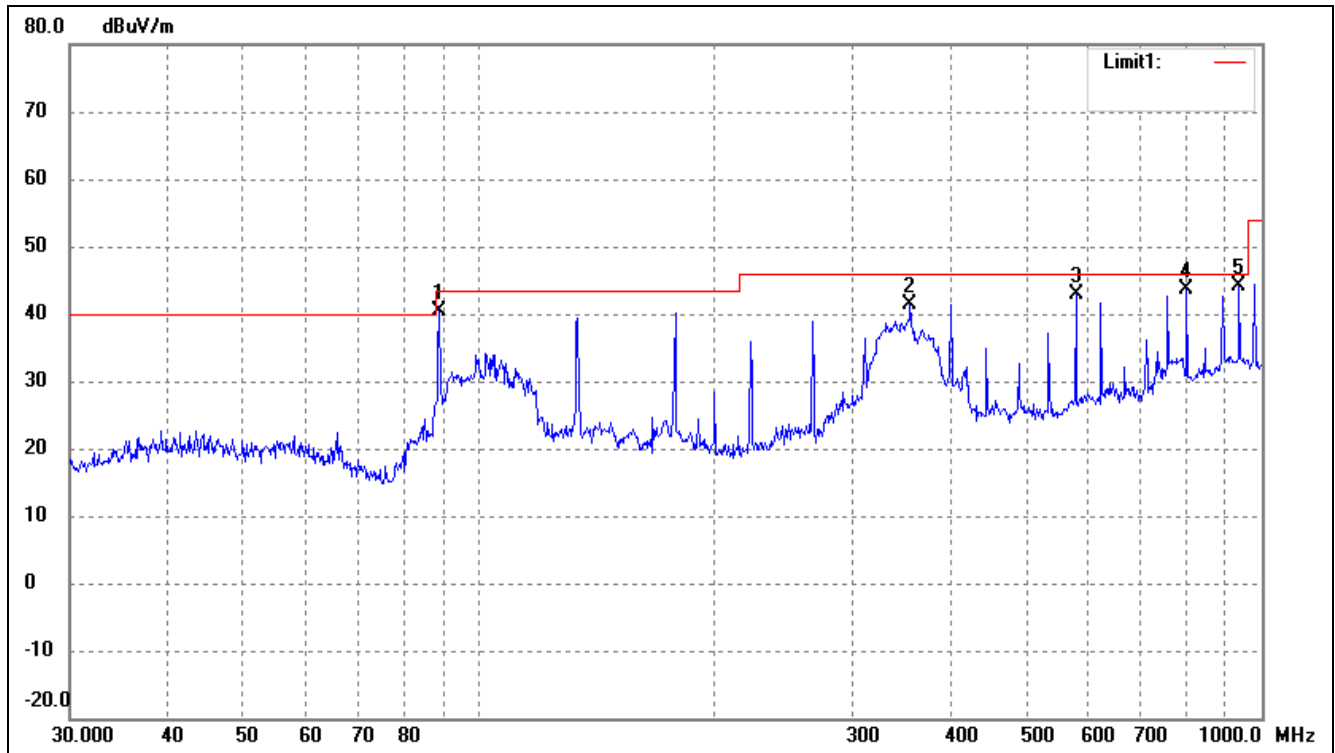


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	88.9639	37.12	3.35	40.47	43.50	-3.03	47	100	peak
2	133.6188	37.39	2.92	40.31	43.50	-3.19	264	100	peak
3	178.1327	37.73	2.73	40.46	43.50	-3.04	225	200	peak
4	356.6758	32.75	9.15	41.90	46.00	-4.10	180	100	peak
5	801.7863	27.38	14.35	41.73	46.00	-4.27	315	100	peak
6	890.7278	25.47	16.84	42.31	46.00	-3.69	54	200	peak

Operating Condition: 802.11n-HT40 Transmitting High Channel-2462MHz

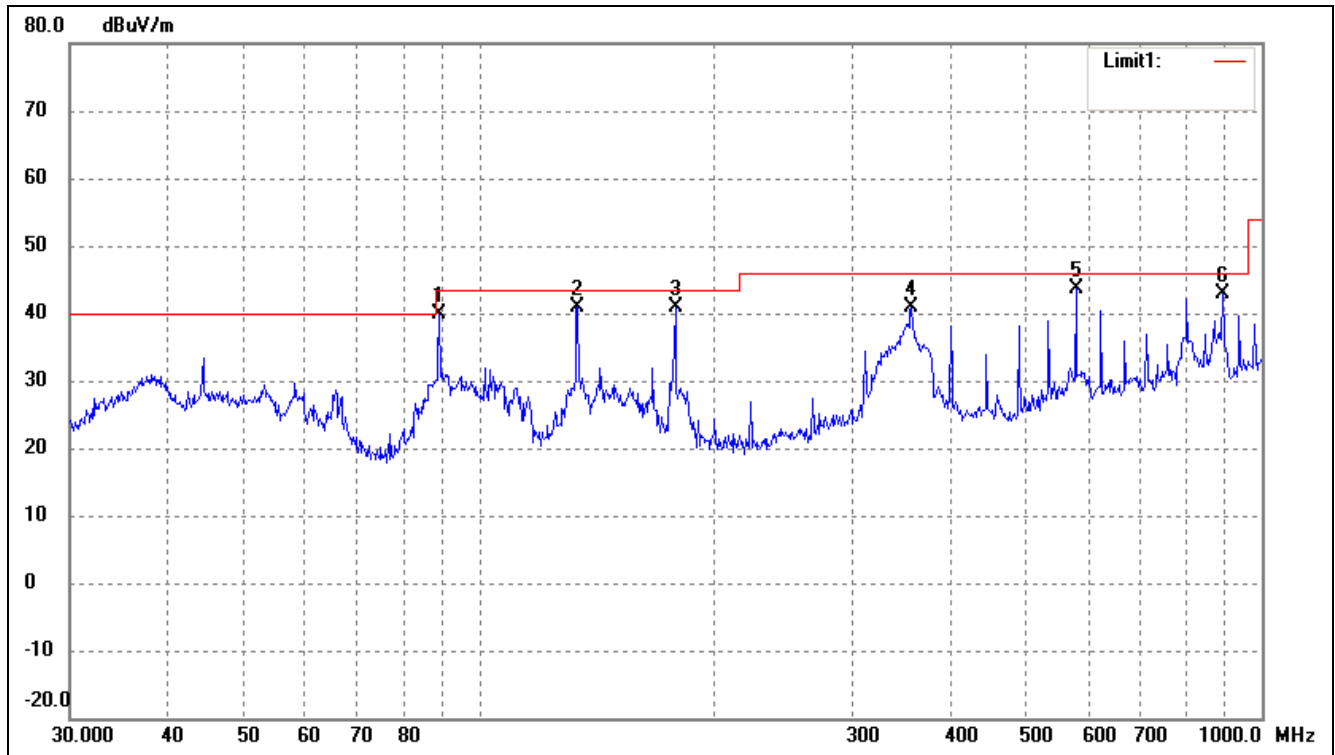
Comment: Adapter:DC12V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	37.14	3.35	40.49	43.50	-3.01	360	100	peak
2	355.4273	32.27	9.12	41.39	46.00	-4.61	287	100	peak
3	578.6699	30.47	12.50	42.97	46.00	-3.03	168	100	peak
4	801.7863	29.28	14.35	43.63	46.00	-2.37	122	100	peak
5	935.5463	27.93	16.28	44.21	46.00	-1.79	198	200	peak

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	88.9639	36.62	3.35	39.97	43.50	-3.53	78	100	peak
2	133.6188	37.89	2.92	40.81	43.50	-2.69	136	100	peak
3	178.1327	38.23	2.73	40.96	43.50	-2.54	284	100	peak
4	356.6758	31.75	9.15	40.90	46.00	-5.10	60	100	peak
5	578.6699	31.12	12.50	43.62	46.00	-2.38	330	100	peak
6	890.7278	25.97	16.84	42.81	46.00	-3.19	324	100	peak

*Spurious Emissions Above 1GHz**Test Mode: 802.11b*

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2412MHz							
4824.000	48.79	0.57	49.36	74.00	-24.64	H	PK
4824.000	35.93	0.57	36.50	54.00	-17.50	H	AV
7236.000	35.78	3.69	39.47	74.00	-34.53	H	PK
7236.000	23.90	3.69	27.59	54.00	-26.41	H	AV
4824.000	43.50	0.57	44.07	74.00	-29.93	V	PK
4824.000	32.01	0.57	32.58	54.00	-21.42	V	AV
7236.000	35.24	3.69	38.93	74.00	-35.07	V	PK
7236.000	23.86	3.69	27.55	54.00	-26.45	V	AV
Middle Channel-2442MHz							
4884.000	43.51	0.66	44.17	74.00	-29.83	H	PK
4884.000	32.09	0.66	32.75	54.00	-21.25	H	AV
7326.000	37.52	3.76	41.28	74.00	-32.72	H	PK
7326.000	27.39	3.83	31.22	54.00	-22.78	H	AV
4884.000	42.75	0.66	43.41	74.00	-30.59	V	PK
4884.000	31.71	0.66	32.37	54.00	-21.63	V	AV
7326.000	37.54	3.76	41.30	74.00	-32.70	V	PK
7326.000	25.83	3.76	29.59	54.00	-24.41	V	AV
High Channel-2472MHz							
4944.000	43.28	0.75	44.03	74.00	-29.97	H	PK
4944.000	31.35	0.75	32.10	54.00	-21.90	H	AV
7416.000	37.65	3.83	41.48	74.00	-32.52	H	PK
7416.000	27.09	3.83	30.92	54.00	-23.08	H	AV
4944.000	42.93	0.75	43.68	74.00	-30.32	V	PK
4944.000	31.54	0.75	32.29	54.00	-21.71	V	AV
7416.000	39.02	3.83	42.85	74.00	-31.15	V	PK
7416.000	27.14	3.83	30.97	54.00	-23.03	V	AV

Test Mode: 802.11g

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2412MHz							
4824.000	42.86	2.14	45.00	74.00	-29.00	H	PK
4824.000	31.44	2.14	33.58	54.00	-20.42	H	AV
7236.000	38.98	-3.98	35.00	74.00	-39.00	H	PK
7236.000	27.48	-3.98	23.50	54.00	-30.50	H	AV
4824.000	43.13	2.14	45.27	74.00	-28.73	V	PK
4824.000	31.70	2.14	33.84	54.00	-20.16	V	AV
7236.000	39.05	-3.98	35.07	74.00	-38.93	V	PK
7236.000	26.73	-3.98	22.75	54.00	-31.25	V	AV
Middle Channel-2442MHz							
4884.000	43.56	2.30	45.86	74.00	-28.14	H	PK
4884.000	31.94	2.30	34.24	54.00	-19.76	H	AV
7326.000	41.13	-3.97	37.16	74.00	-36.84	H	PK
7326.000	31.17	-3.97	27.20	54.00	-26.80	H	AV
4884.000	43.49	2.30	45.79	74.00	-28.21	V	PK
4884.000	32.27	2.30	34.57	54.00	-19.43	V	AV
7326.000	41.85	-3.97	37.88	74.00	-36.12	V	PK
7326.000	30.43	-3.97	26.46	54.00	-27.54	V	AV
High Channel-2472MHz							
4944.000	43.76	2.46	46.22	74.00	-27.78	H	PK
4944.000	31.74	2.46	34.20	54.00	-19.80	H	AV
7416.000	42.09	-3.96	38.13	74.00	-35.87	H	PK
7416.000	31.28	-3.96	27.32	54.00	-26.68	H	AV
4944.000	43.83	2.46	46.29	74.00	-27.71	V	PK
4944.000	31.51	2.46	33.97	54.00	-20.03	V	AV
7416.000	42.48	-3.96	38.52	74.00	-35.48	V	PK
7416.000	31.42	-3.96	27.46	54.00	-26.54	V	AV

Test Mode: 802.11n-HT20

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2412MHz							
4824.000	43.37	2.14	45.51	74.00	-28.49	H	PK
4824.000	31.85	2.14	33.99	54.00	-20.01	H	AV
7236.000	39.50	-3.98	35.52	74.00	-38.48	H	PK
7236.000	29.82	-3.98	25.84	54.00	-28.16	H	AV
4824.000	43.42	2.14	45.56	74.00	-28.44	V	PK
4824.000	32.11	2.14	34.25	54.00	-19.75	V	AV
7236.000	39.87	-3.98	35.89	74.00	-38.11	V	PK
7236.000	27.64	-3.98	23.66	54.00	-30.34	V	AV
Middle Channel-2442MHz							
4884.000	43.51	2.30	45.81	74.00	-28.19	H	PK
4884.000	31.71	2.30	34.01	54.00	-19.99	H	AV
7326.000	41.70	-3.97	37.73	74.00	-36.27	H	PK
7326.000	30.91	-3.97	26.94	54.00	-27.06	H	AV
4884.000	42.50	2.30	44.80	74.00	-29.20	V	PK
4884.000	32.04	2.30	34.34	54.00	-19.66	V	AV
7326.000	41.53	-3.97	37.56	74.00	-36.44	V	PK
7326.000	30.95	-3.97	26.98	54.00	-27.02	V	AV
High Channel-2472MHz							
4944.000	43.48	2.46	45.94	74.00	-28.06	H	PK
4944.000	31.77	2.46	34.23	54.00	-19.77	H	AV
7416.000	42.13	-3.96	38.17	74.00	-35.83	H	PK
7416.000	31.19	-3.96	27.23	54.00	-26.77	H	AV
4944.000	43.41	2.46	45.87	74.00	-28.13	V	PK
4944.000	31.57	2.46	34.03	54.00	-19.97	V	AV
7416.000	42.77	-3.96	38.81	74.00	-35.19	V	PK
7416.000	31.16	-3.96	27.20	54.00	-26.80	V	AV

Test Mode: 802.11n-HT40

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2422MHz							
4844.000	44.15	2.20	46.35	74.00	-27.65	H	PK
4824.000	32.10	2.20	34.30	54.00	-19.70	H	AV
7266.000	39.68	-3.97	35.71	74.00	-38.29	H	PK
7266.000	30.45	-3.97	26.48	54.00	-27.52	H	AV
4844.000	43.53	2.20	45.73	74.00	-28.27	V	PK
4824.000	32.02	2.20	34.22	54.00	-19.78	V	AV
7266.000	39.84	-3.97	35.87	74.00	-38.13	V	PK
7266.000	29.04	-3.97	25.07	54.00	-28.93	V	AV
Middle Channel-2442MHz							
4884.000	42.50	2.30	44.80	74.00	-29.20	H	PK
4884.000	31.45	2.30	33.75	54.00	-20.25	H	AV
7326.000	42.15	-3.97	38.18	74.00	-35.82	H	PK
7326.000	29.73	-3.97	25.76	54.00	-28.24	H	AV
4884.000	43.08	2.30	45.38	74.00	-28.62	V	PK
4884.000	31.71	2.30	34.01	54.00	-19.99	V	AV
7326.000	42.69	-3.97	38.72	74.00	-35.28	V	PK
7326.000	31.20	-3.97	27.23	54.00	-26.77	V	AV
High Channel-2462MHz							
4924.000	42.69	2.40	45.09	74.00	-28.91	H	PK
4924.000	31.54	2.40	33.94	54.00	-20.06	H	AV
7386.000	42.24	-3.96	38.28	74.00	-35.72	H	PK
7386.000	31.23	-3.96	27.27	54.00	-26.73	H	AV
4924.000	44.08	2.40	46.48	74.00	-27.52	V	PK
4924.000	31.85	2.40	34.25	54.00	-19.75	V	AV
7386.000	42.79	-3.96	38.83	74.00	-35.17	V	PK
7386.000	31.22	-3.96	27.26	54.00	-26.74	V	AV

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

The measurements greater than 20dB below the limit from 9kHz to 30MHz.

9. Out of Band Emissions

9.1 Standard Applicable

According to §15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

9.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2014-05-28	2015-05-27
EMI Test Receiver	R&S	ESVB	825471/005	2014-05-28	2015-05-27
Pre-amplifier	Agilent	8447F	3113A06717	2014-05-28	2015-05-27
Pre-amplifier	Compliance Direction	PAP-0118	24002	2014-05-28	2015-05-27
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2014-05-24	2015-05-23
Horn Antenna	ETS	3117	00086197	2014-05-24	2015-05-23

9.3 Test Procedure

According to the KDB 558074D01 v03r02, the band-edge radiated test method as follows:

Set span = wide enough to capture the peak level of the emission operating on the channel closest to the bandedge, as well as any modulation products which fall outside of the authorized band of operation (2310MHz to 2420MHz for low bandedge, 2460MHz to 2500MHz for the high bandedge)

RBW = 1MHz, VBW = 1MHz for peak value measured

RBW = 1MHz, VBW = 10Hz for average value measured

Sweep = auto; Detector function = peak/average; Trace = max hold

All the trace to stabilize, set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. Those emission must comply with the 15.209 limit for fall in the restricted bands listed in section 15.205. Note that the method of measurement KDB publication number: 913591 may be used for the radiated bandedge measurements.

According to the KDB 558074 D01 V03r02, the conducted spurious emissions test method as follows:

1. Set start frequency to DTS channel edge frequency.
2. Set stop frequency so as to encompass the spectrum to be examined.
3. Set RBW = 100 kHz.
4. Set VBW \geq 300 kHz.
5. Detector = peak.
6. Trace Mode = max hold.
7. Sweep = auto couple.
8. Allow the trace to stabilize (this may take some time, depending on the extent of the span).
9. Use peak marker function to determine maximum amplitude of all unwanted emissions within any 100 kHz bandwidth.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements specified in section 8.1. Report the three highest emissions relative to the limit.

9.4 Environmental Conditions

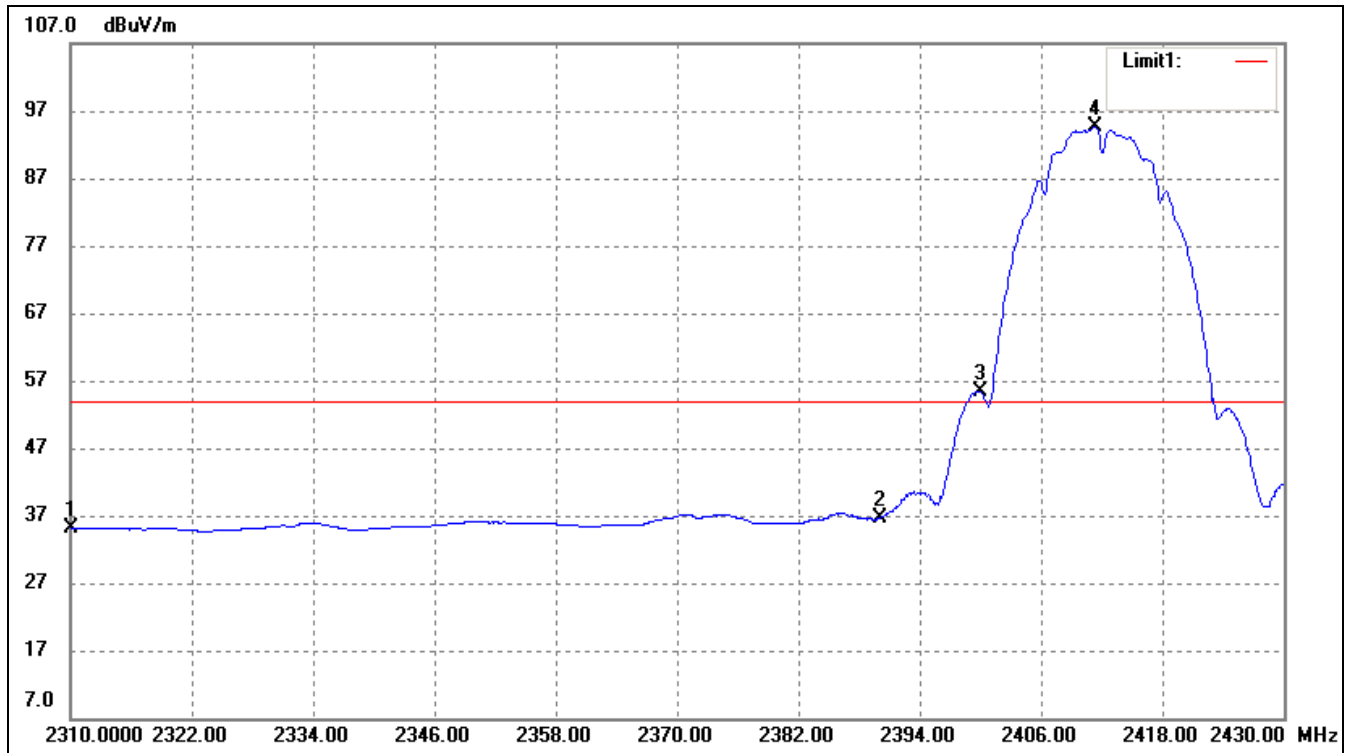
Temperature:	23°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

9.5 Summary of Test Results/Plots

Please refer to the test plots as below.

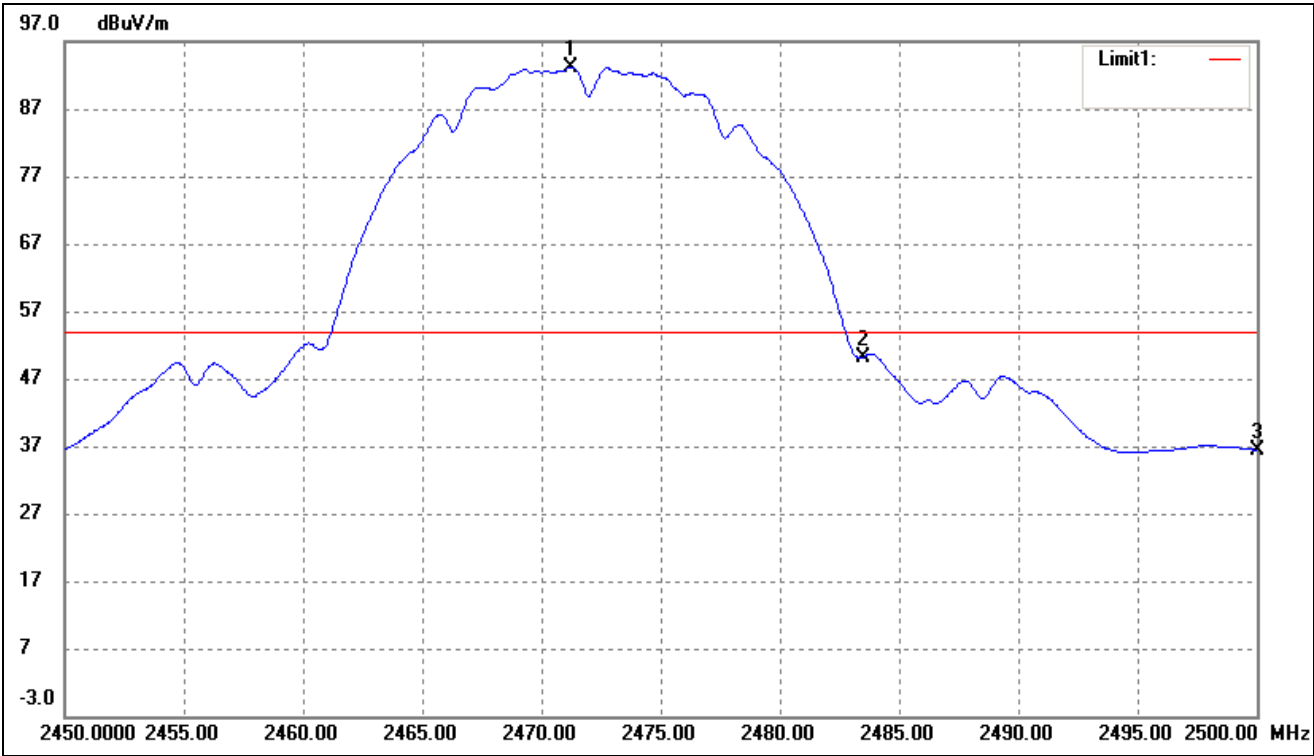
802.11b-Lowest Bandedge

Vertical (Worst case)



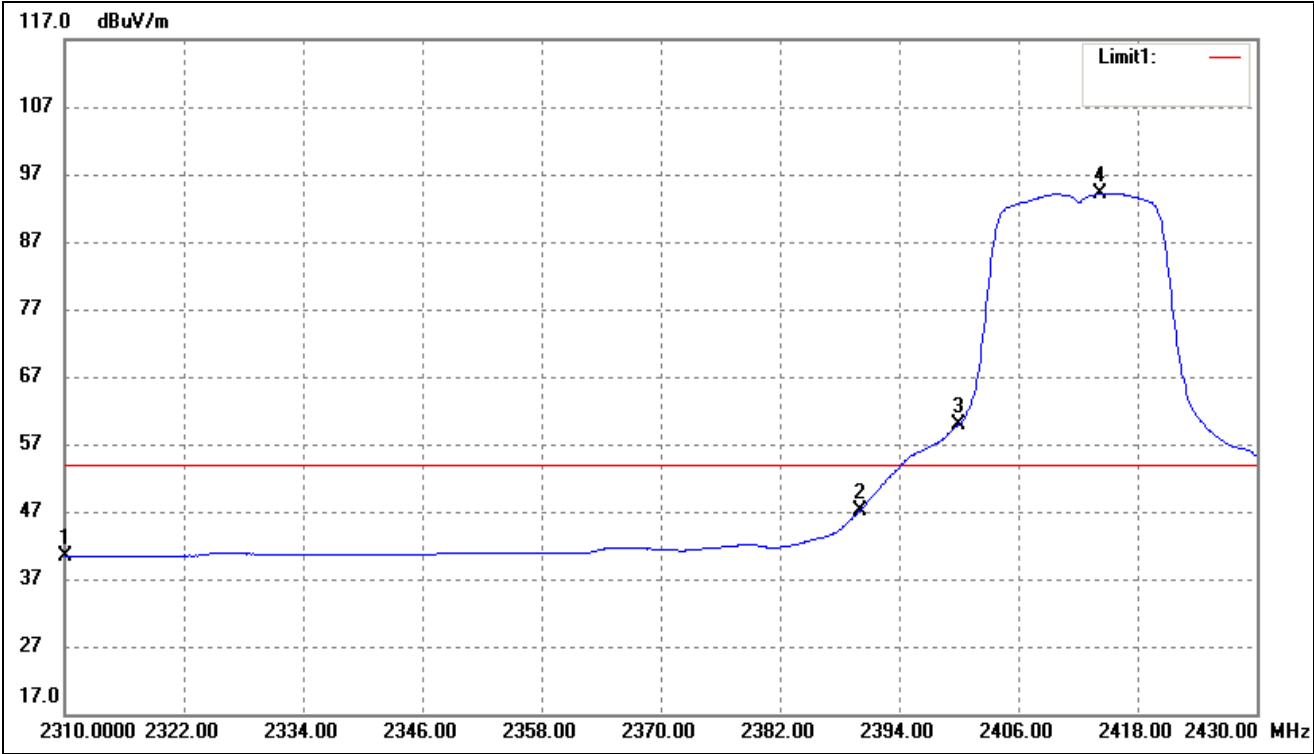
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	18.80	16.34	35.14	54.00	-18.86	Average Detector
	2310.000	31.04	16.34	47.38	74.00	-26.62	Peak Detector
2	2390.000	19.65	17.03	36.68	54.00	-17.32	Average Detector
	2390.000	31.44	17.03	48.47	74.00	-25.53	Peak Detector
3	2400.000	38.21	17.11	55.32	Delta=39.41		Average Detector
	2411.280	77.54	17.19	94.73			Peak Detector

802.11b-Highest Bandedge
Vertical (Worst case)



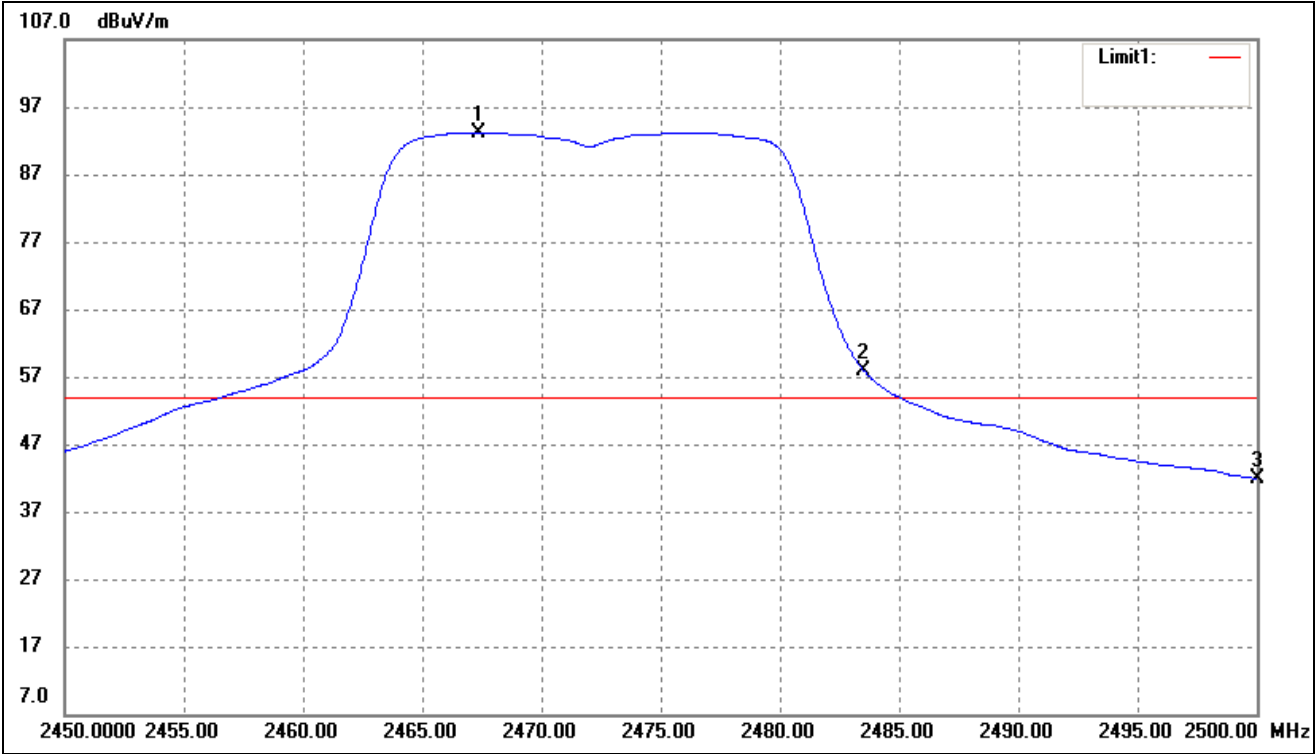
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2471.250	75.55	17.65	93.20	/	/	Average Detector
	2472.950	82.01	17.66	99.67	/	/	Peak Detector
2	2483.500	Delta = 44.91dBc		48.29	54.00	-5.71	Average Detector
	2483.500			54.76	74.00	-19.24	Peak Detector
3	2500.000	18.61	17.86	36.47	54.00	-17.53	Average Detector
	2500.000	31.21	17.86	49.07	74.00	-24.93	Peak Detector

802.11g-Lowest Bandedge
Vertical (Worst case)



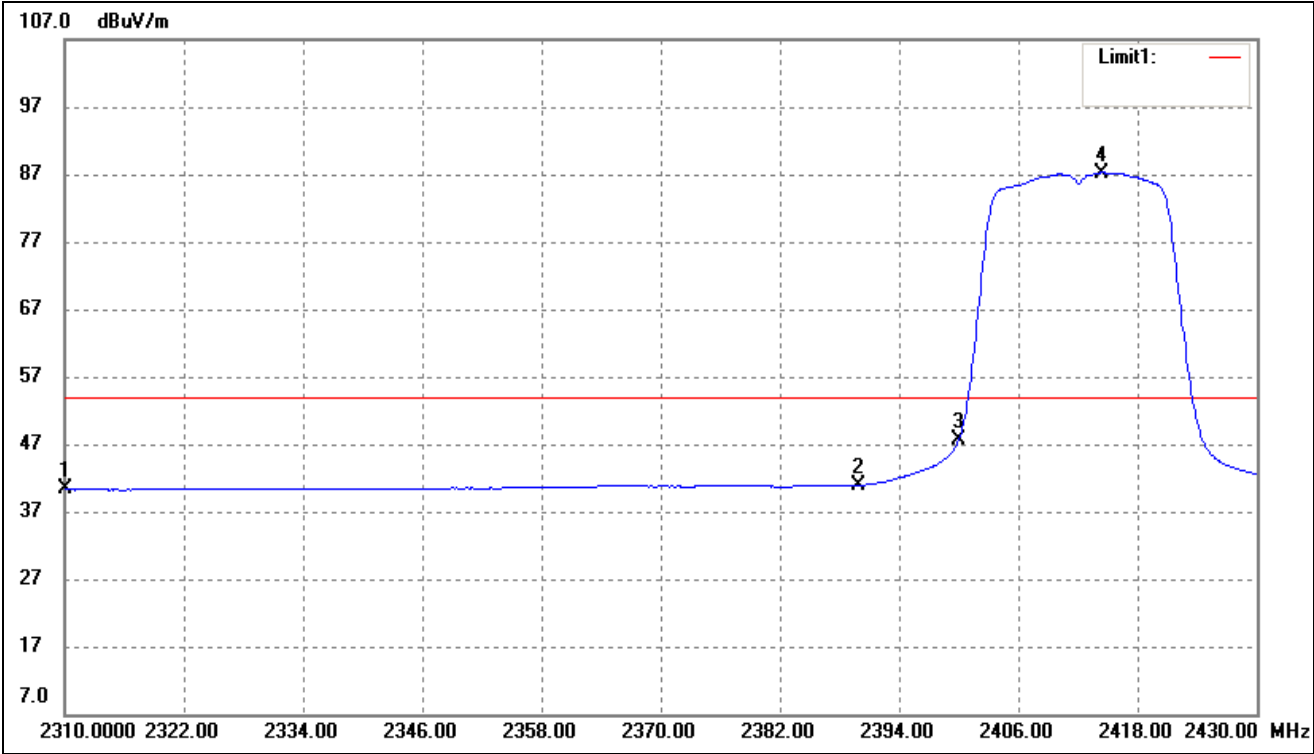
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	24.09	16.34	40.43	54.00	-13.57	Average Detector
	2310.000	35.88	16.34	52.22	74.00	-21.78	Peak Detector
2	2390.000	30.16	17.03	47.19	54.00	-6.81	Average Detector
	2390.000	48.68	17.03	65.71	74.00	-8.29	Peak Detector
3	2400.000	42.81	17.11	59.92	Delta=34.32		Average Detector
	2414.160	77.02	17.22	94.24			Peak Detector

802.11g-Highest Bandedge
Vertical (Worst case)



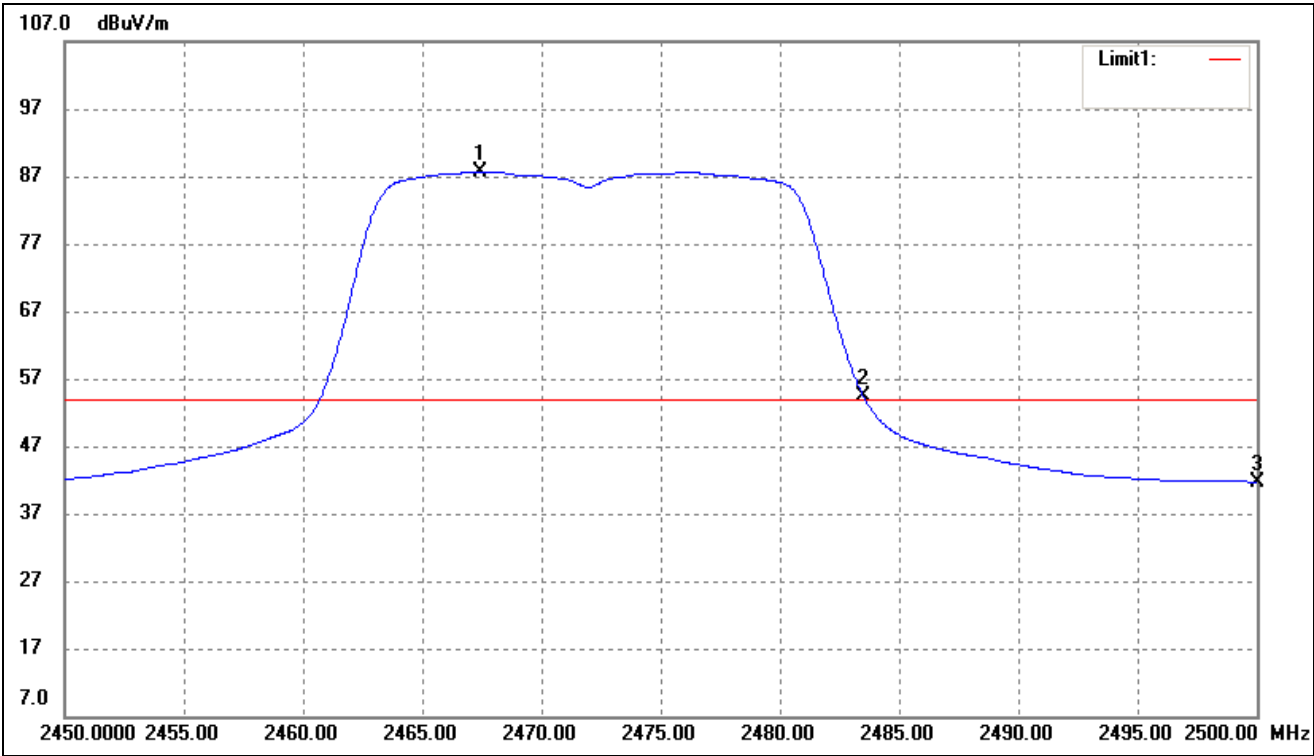
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2467.350	75.64	17.60	93.24	/	/	Average Detector
	2467.350	86.80	17.59	104.40	/	/	Peak Detector
1	2483.500	Delta = 52.78dBc		40.46	54.00	-13.54	Average Detector
	2483.500			51.62	74.00	-22.38	Peak Detector
3	2500.000	23.97	17.86	41.83	54.00	-12.17	Average Detector
	2500.000	39.43	17.86	57.29	74.00	-16.71	Peak Detector

802.11n-HT20-Lowest Bandedge
Vertical (Worst case)



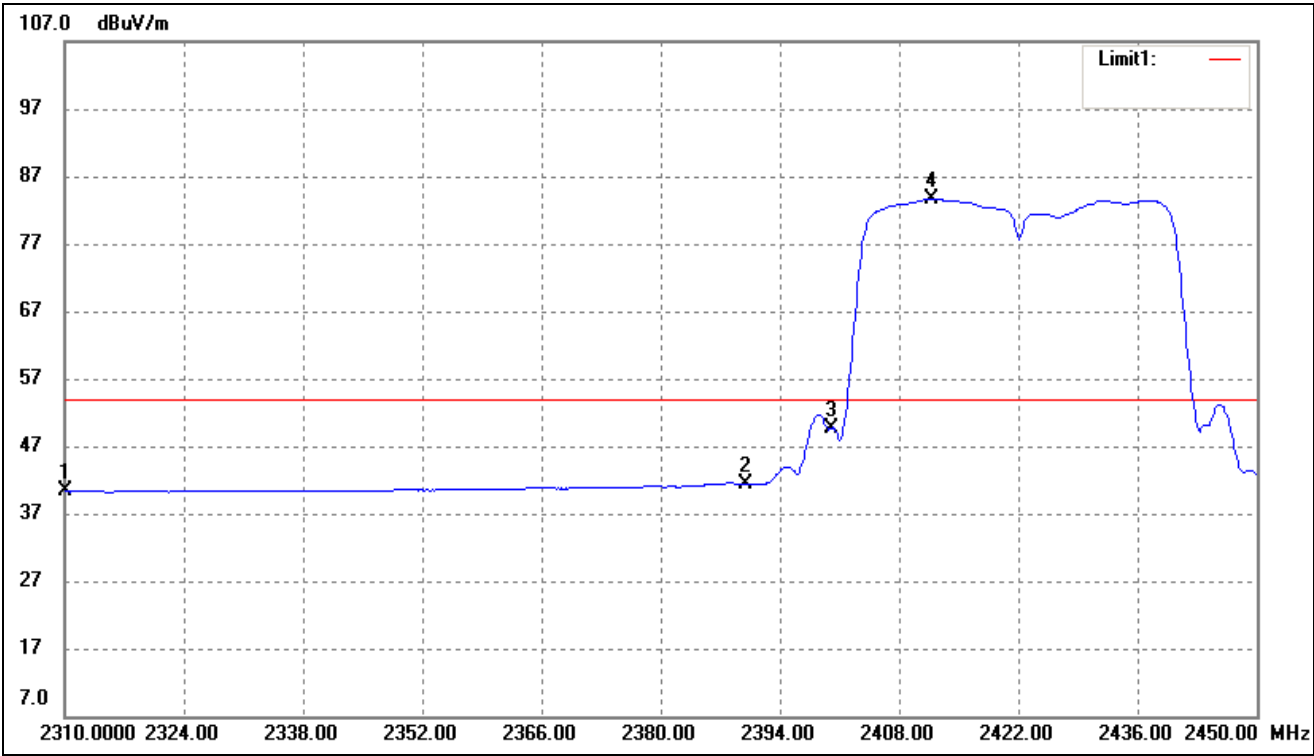
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	23.95	16.34	40.29	54.00	-13.71	Average Detector
	2310.000	35.16	16.34	51.50	74.00	-22.50	Peak Detector
2	2390.000	23.91	17.03	40.94	54.00	-13.06	Average Detector
	2390.000	34.92	17.03	51.95	74.00	-22.05	Peak Detector
3	2400.000	30.42	17.11	47.53	Delta=39.72		Average Detector
	2414.400	70.03	17.22	87.25			Peak Detector

802.11n-HT20-Highest Bandedge
Vertical (Worst case)



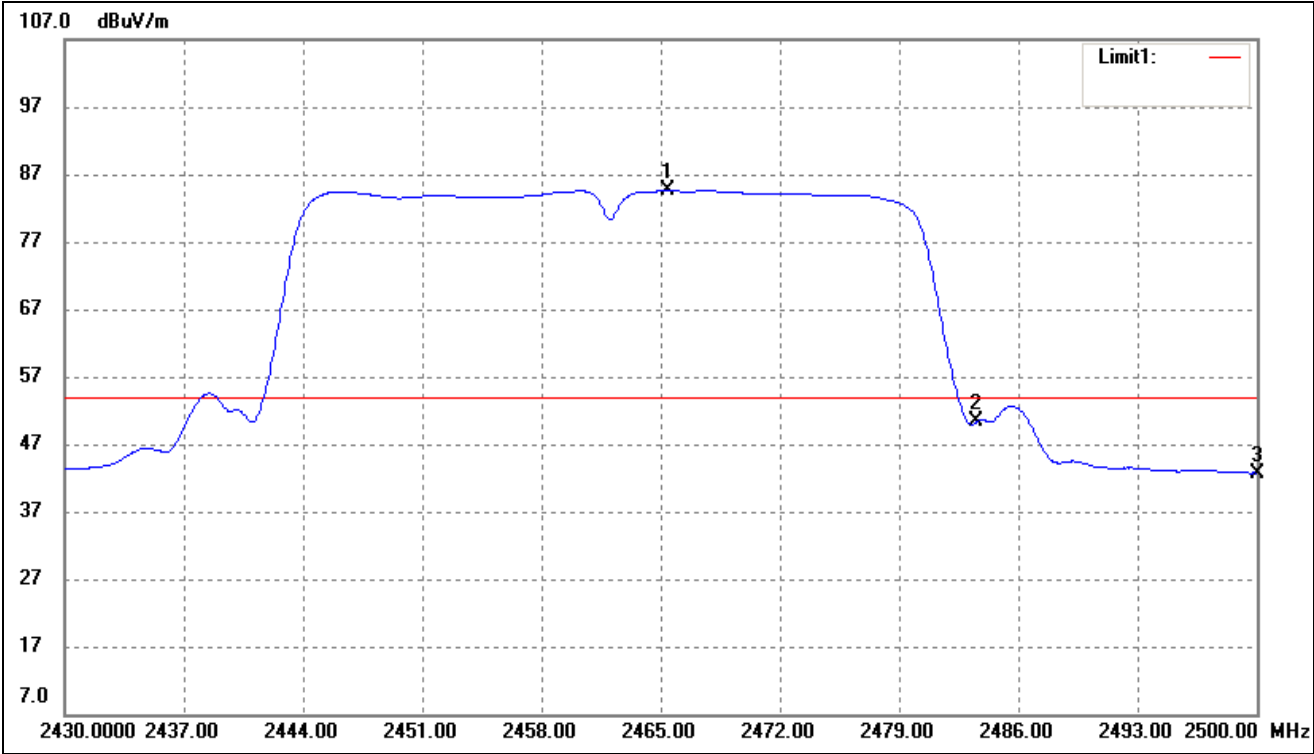
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2467.400	70.08	17.60	87.68	/	/	Average Detector
	2466.900	81.79	17.60	99.39	/	/	Peak Detector
2	2483.500	Delta =51.35dBc		36.33	54.00	-17.67	Average Detector
	2483.500			48.04	74.00	-25.96	Peak Detector
3	2500.000	23.86	17.86	41.72	54.00	-12.28	Average Detector
	2500.000	36.28	17.86	54.14	74.00	-19.86	Peak Detector

802.11n-HT40-Lowest Bandedge
Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	23.96	16.34	40.30	54.00	-13.70	Average Detector
	2310.000	35.63	16.34	51.97	74.00	-22.03	Peak Detector
2	2390.000	24.30	17.03	41.33	54.00	-12.67	Average Detector
	2390.000	35.51	17.03	52.54	74.00	-21.46	Peak Detector
3	2400.000	32.62	17.11	49.73	Delta=34.02		Average Detector
	2411.780	66.55	17.20	83.75			Peak Detector

802.11n-HT40-Highest Bandedge
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2465.420	67.06	17.59	84.65	/	/	Average Detector
	2465.140	79.02	17.59	96.61	/	/	Peak Detector
2	2483.500	Delta = 51.52dBc		33.13	54.00	-20.87	Average Detector
	2483.500			45.09	74.00	-28.91	Peak Detector
3	2500.000	24.89	17.86	42.75	54.00	-11.25	Average Detector
4	2500.000	36.44	17.86	54.30	74.00	-19.70	Peak Detector

10. Conducted Emissions

10.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

10.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2014-05-28	2015-05-27
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2014-05-28	2015-05-27
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2014-05-28	2015-05-27

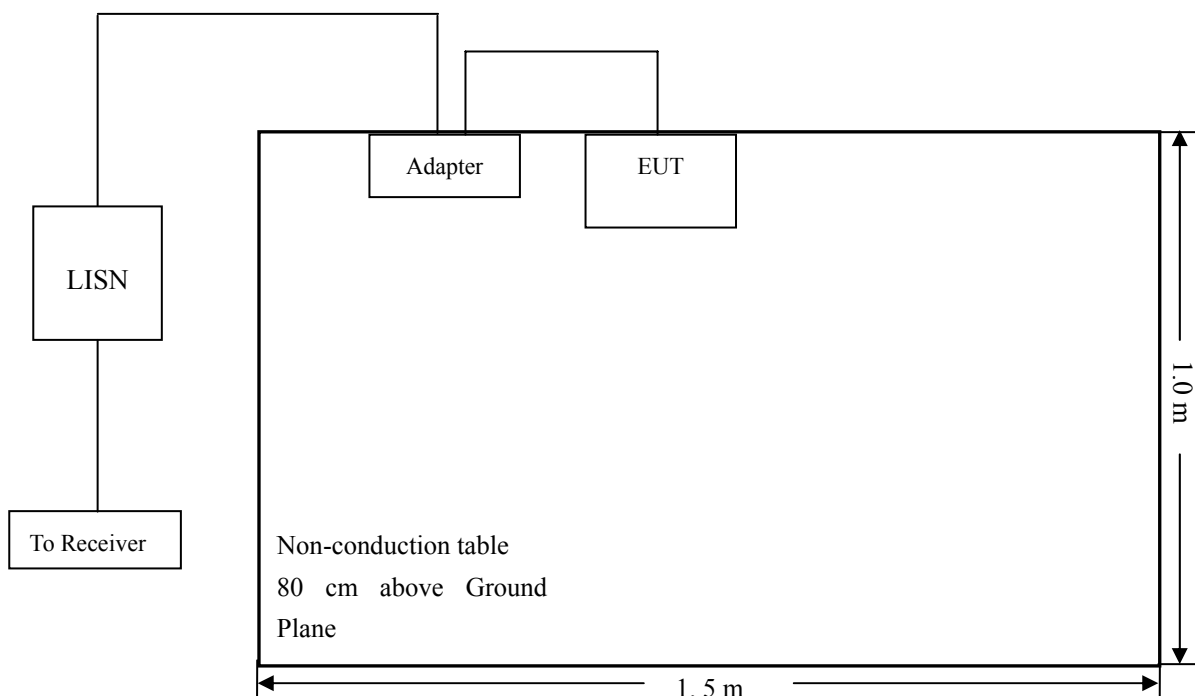
10.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

10.4 Basic Test Setup Block Diagram



10.5 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

10.6 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency 150 kHz
Stop Frequency..... 30 MHz
Sweep Speed Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth 9 kHz
Quasi-Peak Adapter Mode Normal

10.7 Summary of Test Results/Plots

According to the data in section 9.8, the EUT complied with the FCC Part 15.207 Conducted margin for a Class B device, with the *worst* margin reading of:

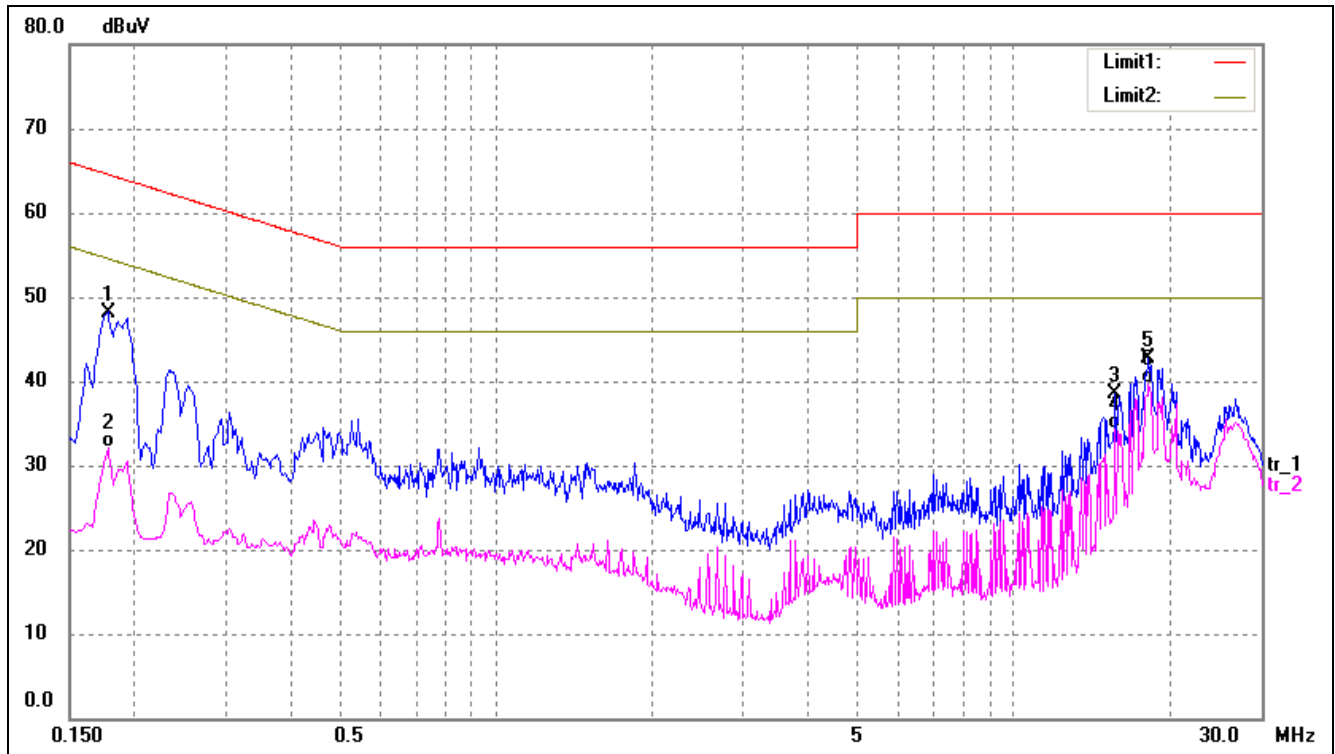
-10.39 dB at 18.1660 MHz in the Neutral mode, Average detector, 0.15-30MHz

10.8 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

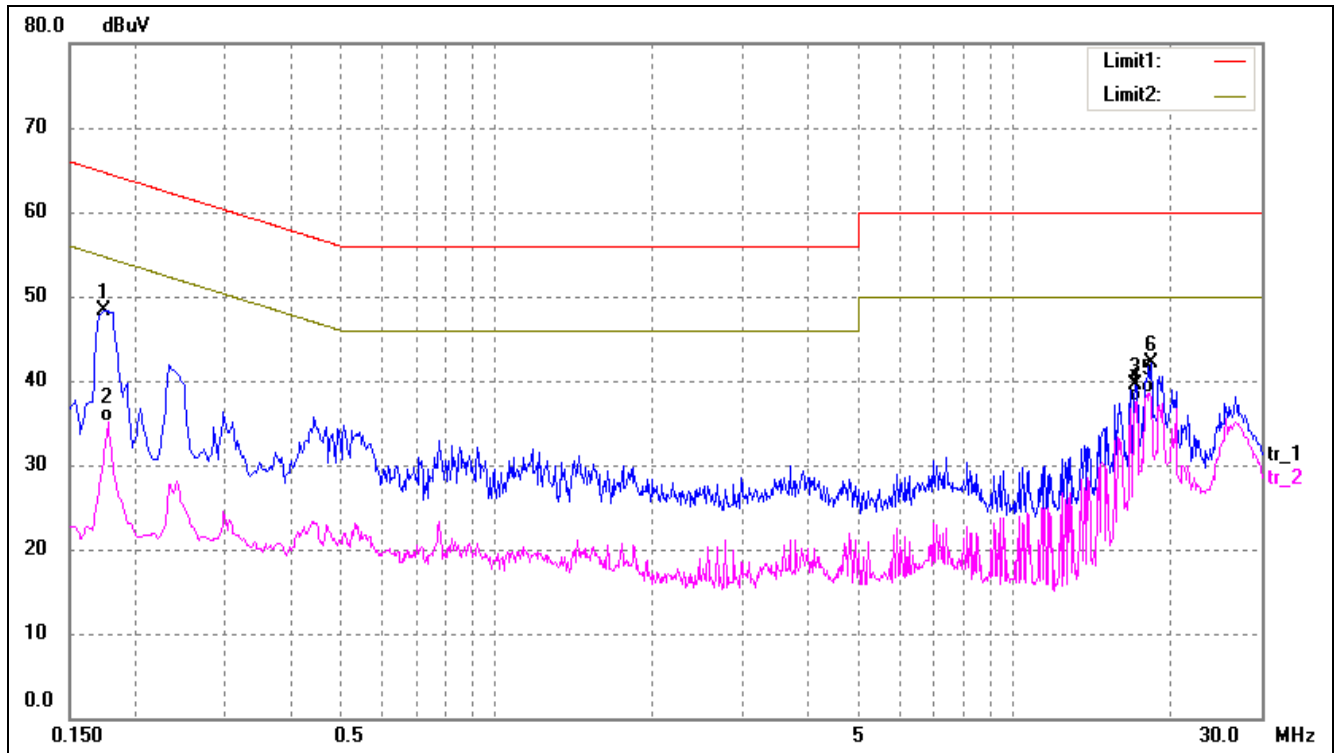
EUT: *Wireless Digital Display*
 Tested Model: *PXT515WR04E*
 Operating Condition: *Transmitting(Wi-Fi)*
 Comment: *Adapter:DC12V*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1780	38.70	9.50	48.20	64.58	-16.38	peak
2	0.1780	22.63	9.50	32.13	54.58	-22.45	AVG
3	15.7020	27.38	11.14	38.52	60.00	-21.48	peak
4	15.7020	23.25	11.14	34.39	50.00	-15.61	AVG
5	18.1660	31.05	11.63	42.68	60.00	-17.32	peak
6	18.1660	27.98	11.63	39.61	50.00	-10.39	AVG

Test Specification: Live



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1740	38.88	9.50	48.38	64.77	-16.39	peak
2	0.1780	25.66	9.50	35.16	54.58	-19.42	AVG
3	17.1380	28.06	11.43	39.49	60.00	-20.51	peak
4	17.2420	26.00	11.45	37.45	50.00	-12.55	AVG
5	18.1660	26.96	11.63	38.59	50.00	-11.41	AVG
6	18.3700	30.34	11.67	42.01	60.00	-17.99	peak

***** END OF REPORT *****