

FCC Part 15C Measurement and Test Report

For

XPX TECHNOLOGY CO., LTD

Rm689B, Huafa 411 Bldg. Huafa N. Road, Futian, Shenzhen, China

FCC ID: 2ADIZ-X50

FCC Rule(s): FCC Part 15C

Product Description: Mobile Phone

Tested Model: X50

Report No.: STR14118118I-2

Tested Date: 2014-11-12 to 2014-11-24

Issued Date: 2014-11-25

Tested By: Vigoss Liang / Engineer

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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.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: XPX TECHNOLOGY CO., LTD
 Address of applicant: Rm689B, Huafa 411 Bldg. Huafa N. Road, Futian, Shenzhen, China
 Manufacturer: XPX TECHNOLOGY CO., LTD
 Address of manufacturer: Flat2, 2/F, Wah Wai industrial Building, 53-61 Pak Tin Par Street, Tsuen Wan, NT, HK

General Description of EUT	
Product Name:	Mobile Phone
Brand Name:	D3, XPX, ZILO
Model No.:	X50
Adding Model:	D55Z; X51; D56Z; D57z
Hardware Version:	WS802_V3.1
Software Version:	Cherry_Mobile_CRUIZE2_Ver0.12_140920
IMEI:	352273017386340/352751010304560
Rated Voltage:	DC 3.7V Li-ion Battery
Battery:	Capacitance: 2000mAh
Power Adaptor:	XC-0510
	Input 100-240V, 50/60Hz, Output DC 5V/1.0A
Device Category:	Portable Device
<i>The EUT is GSM850/900/DCS1800/PCS1900, WCDMA Band II/V, Mobile Phone. the Mobile Phone is intended for speech and Multimedia Message Service (MMS) transmission. It is equipped with GPRS/EDGE class 12 for GSM850 and GSM1900 and Bluetooth, Wi-Fi , GPS and camera functions. For more information see the following datasheet</i> <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 X50, 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)
Frequency Range:	2412-2472MHz for 11b/g/n(HT20)
RF Output Power:	15.53dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	13
Channel Separation:	5MHz
Type of Antenna:	Integral Antenna
Antenna Gain:	1.49dBi
Lowest Internal Frequency	32.768KHz

1.2 Test Standards

The following report is prepared on behalf of the XPX TECHNOLOGY CO., 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, 2462MHz, 2467MHz, 2472MHz
TM2	802.11g	2412MHz, 2442MHz, 2462MHz, 2467MHz, 2472MHz
TM3	802.11n-HT20	2412MHz, 2442MHz, 2462MHz, 2467MHz, 2472MHz

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
USB Cable	0.8	Shielded	Without Core
Earphone	1.1	Unshielded	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
Notebook	Lenovo	E10	LR-63C8R

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 an 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, such specifications require that the same method as used to determine the conducted output power shall also be used to determine the power spectral density. The test method of power spectral density as below:

- Set instrument center frequency to DTS channel center frequency.
- Set span to at least 1.5 times the OBW.
- Set RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set VBW $\geq 3 \times \text{RBW}$.
- Detector = power averaging (RMS) or sample detector (when RMS not available).
- Ensure that the number of measurement points in the sweep $\geq 2 \times \text{span/RBW}$.
- Sweep time = auto couple.
- Employ trace averaging (RMS) mode over a minimum of 100 traces.
- Use the peak marker function to determine the maximum amplitude level.
- If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span in order to meet the minimum measurement point requirement as the RBW is reduced).

5.4 Environmental Conditions

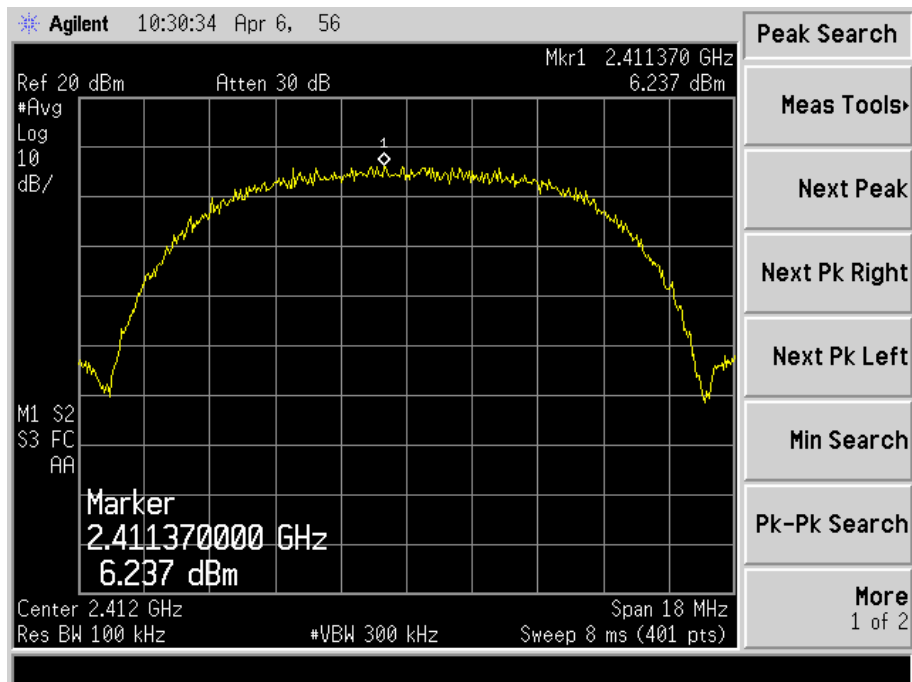
Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

5.5 Summary of Test Results/Plots

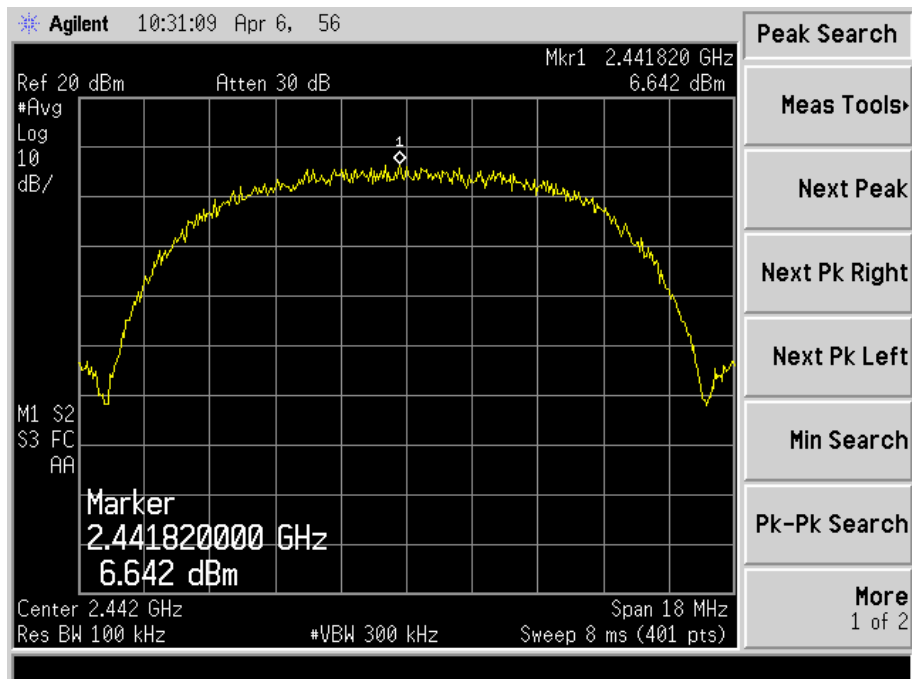
Test Mode	Test Channel MHz	Power Spectral Density dBm/100kHz	Limit dBm/3kHz
802.11b	2412	6.237	8
	2442	6.642	8
	2462	6.626	8
	2467	6.242	8
	2472	6.726	8
802.11g	2412	0.667	8
	2442	0.711	8
	2462	0.626	8
	2467	0.111	8
	2472	0.424	8
802.11n HT20	2412	-2.939	8
	2442	-2.306	8
	2462	-2.922	8
	2467	-0.306	8
	2472	-2.939	8

Please refer to the following test plots:

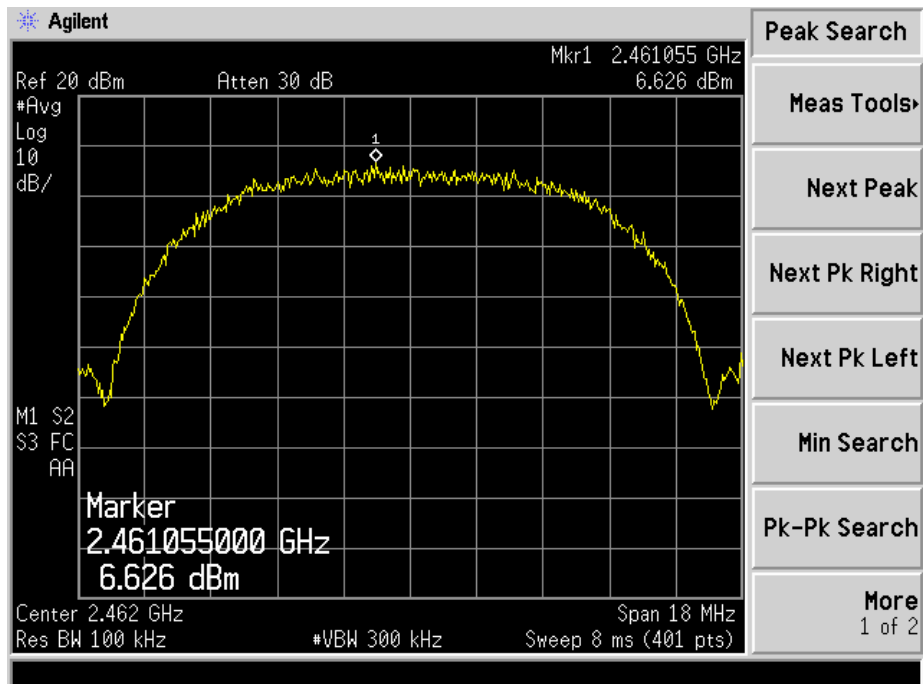
802.11b Channel 1-2412MHz



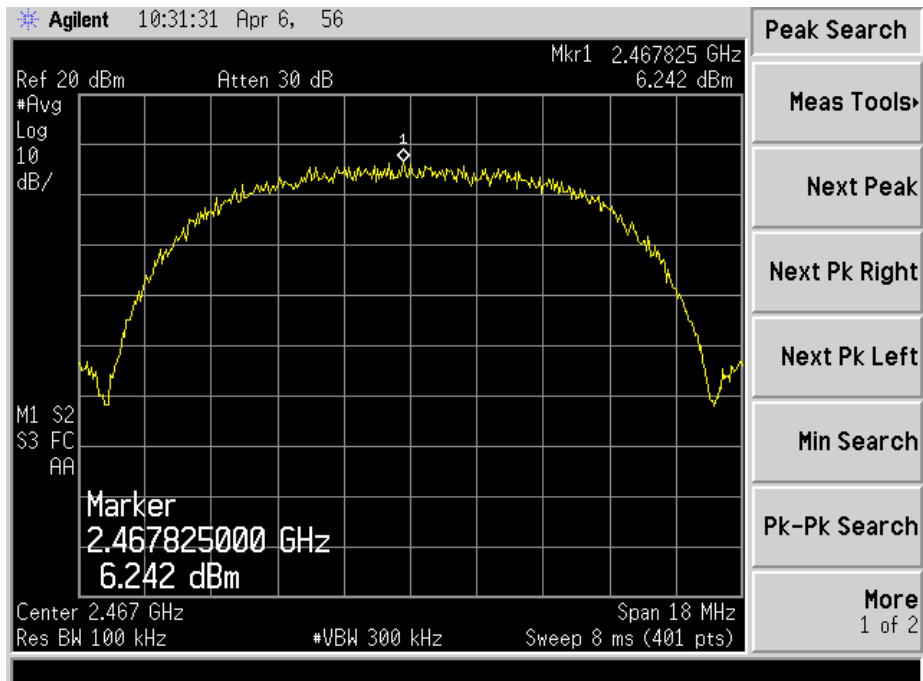
802.11b-Channel 7-2442MHz



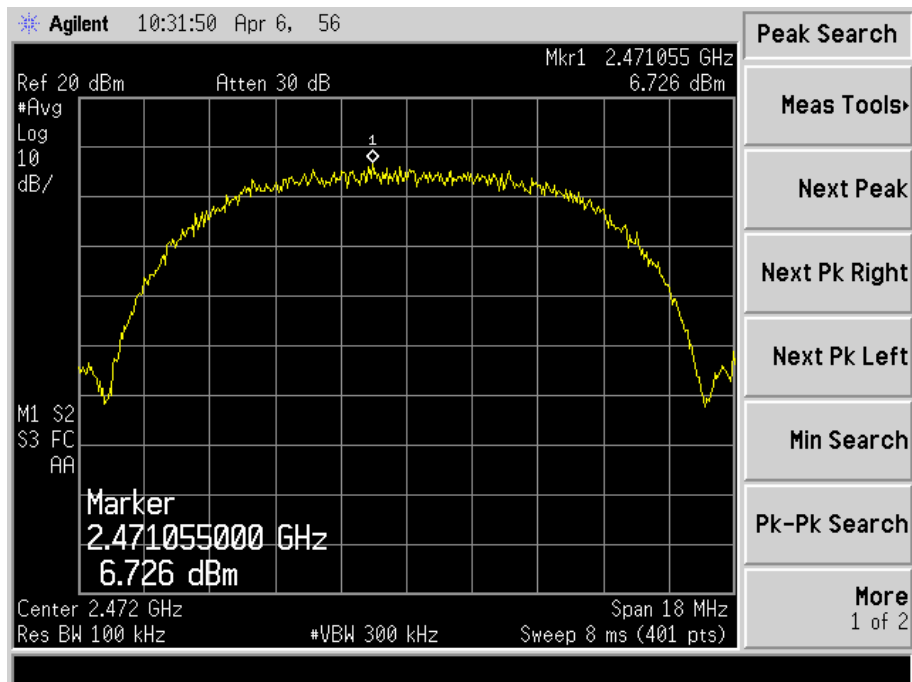
802.11b-Channel 11-2462MHz



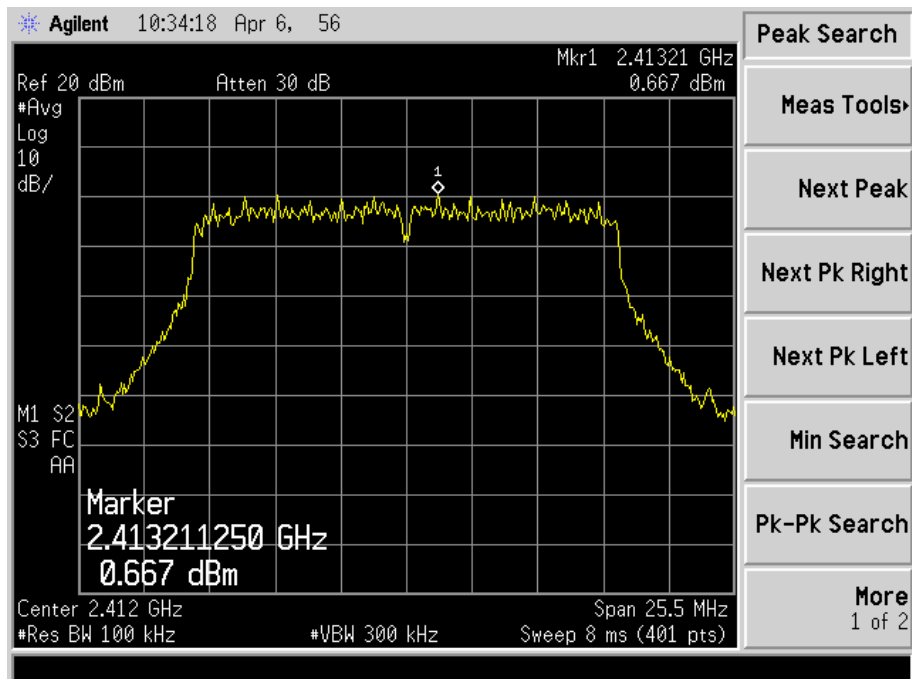
802.11b-Channel 12-2467MHz



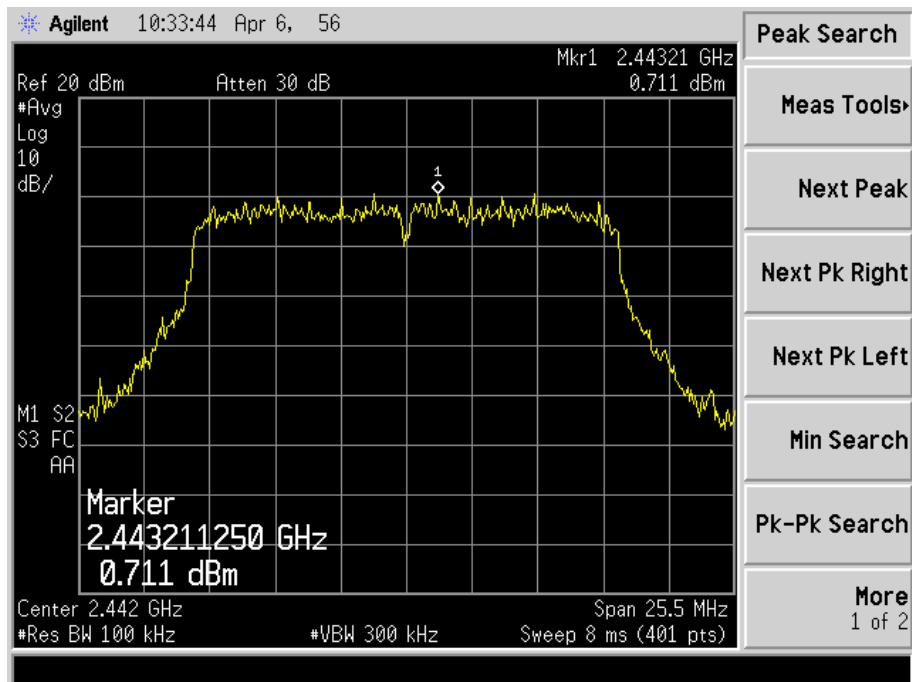
802.11b-Channel 13-2472MHz



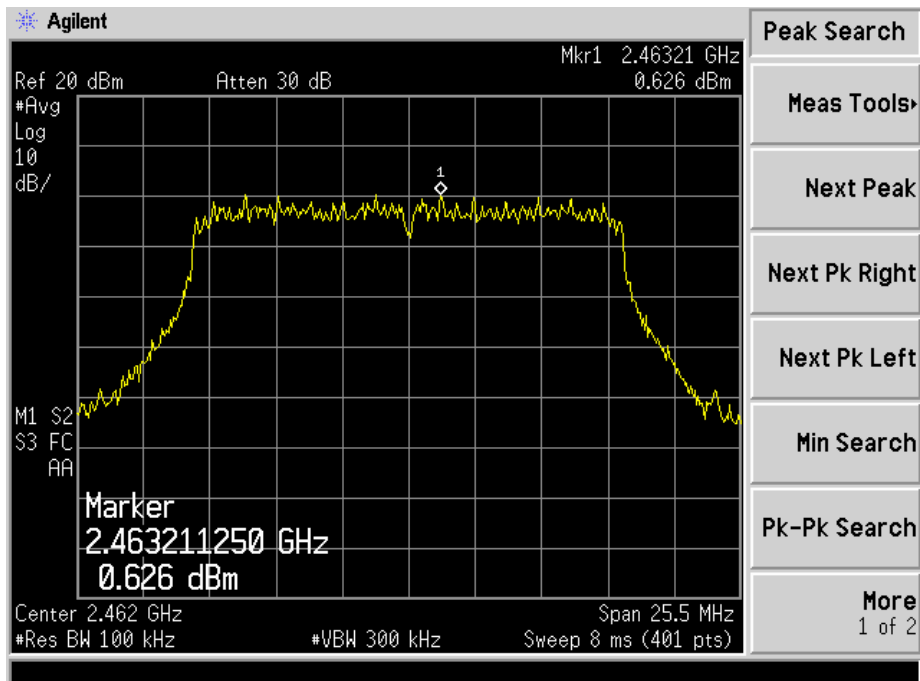
802.11g-Channel 1-2412MHz



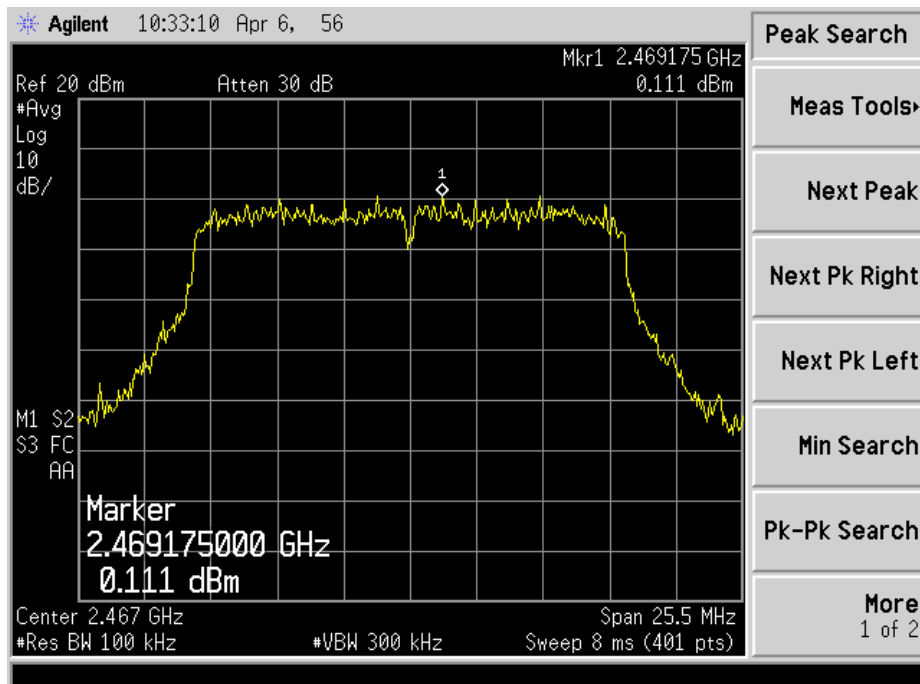
802.11g-Channel 7-2442MHz



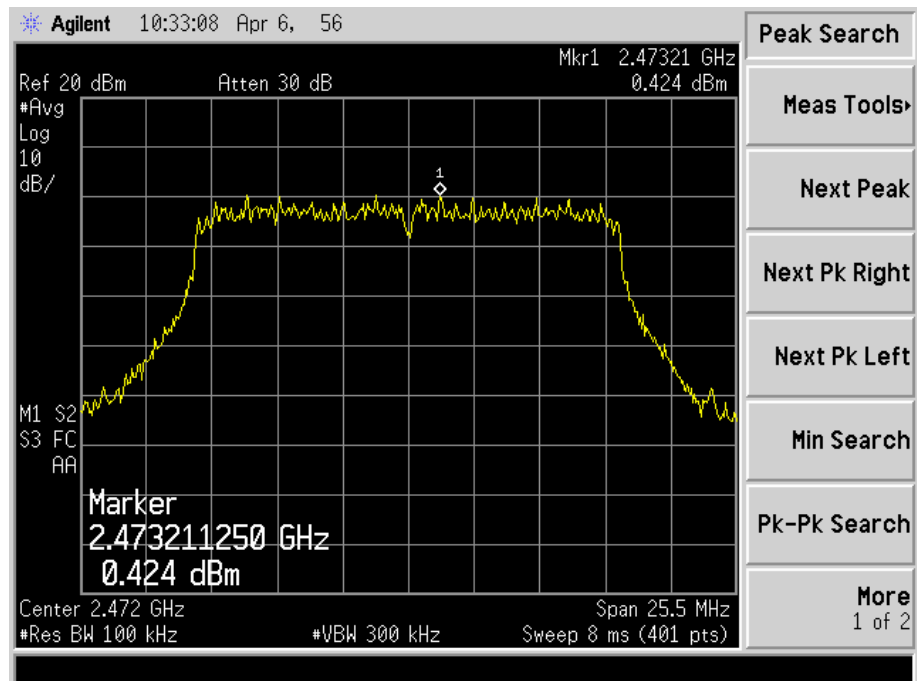
802.11b-Channel 11-2462MHz



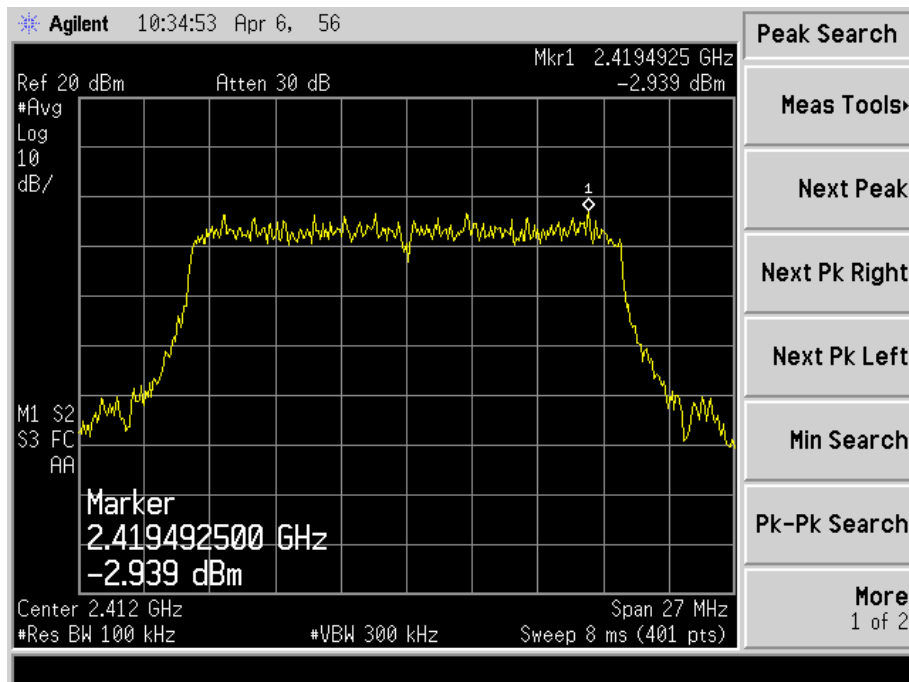
802.11g-Channel 12-2467MHz



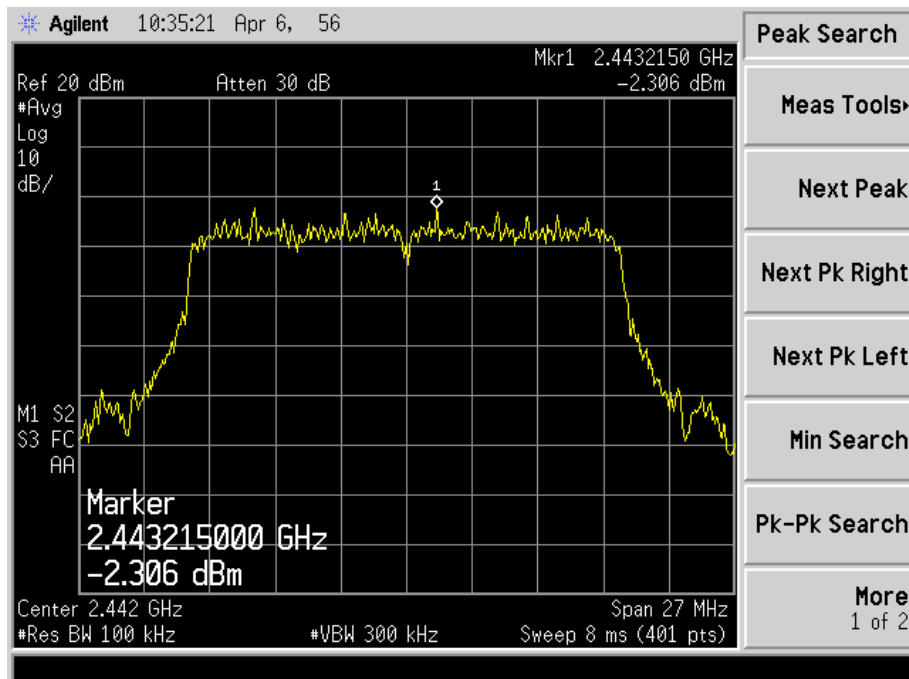
802.11g-Channel 13-2472MHz



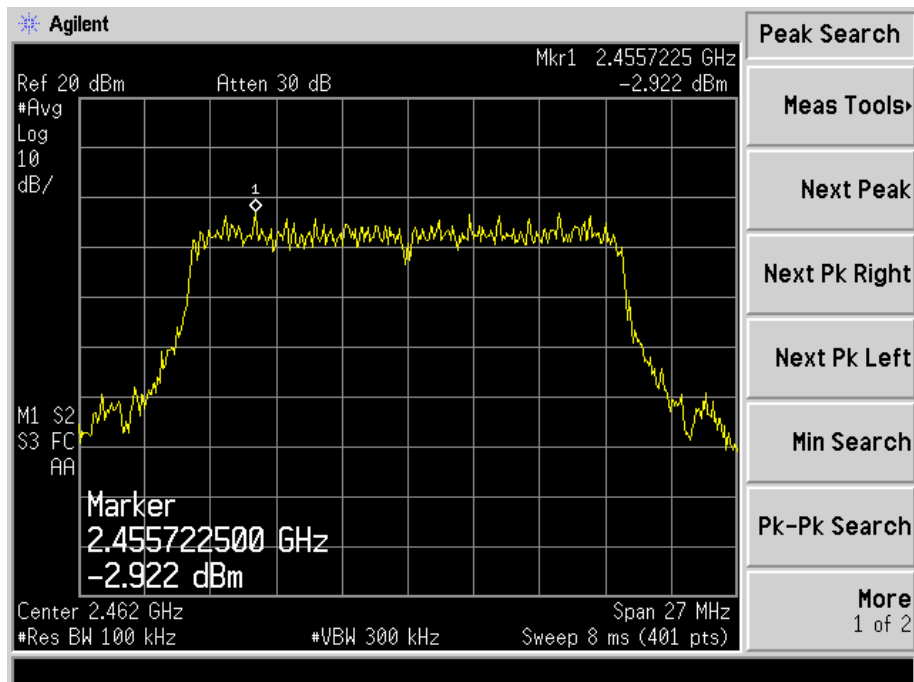
802.11n-HT20-Channel 1-2412MHz



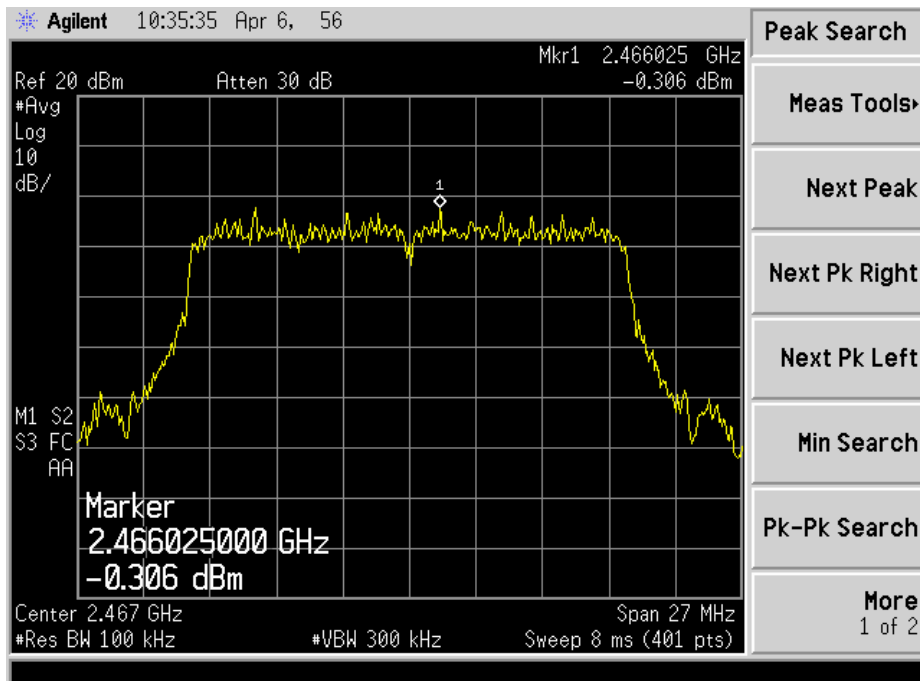
802.11n-HT20-Channel 7-2442MHz



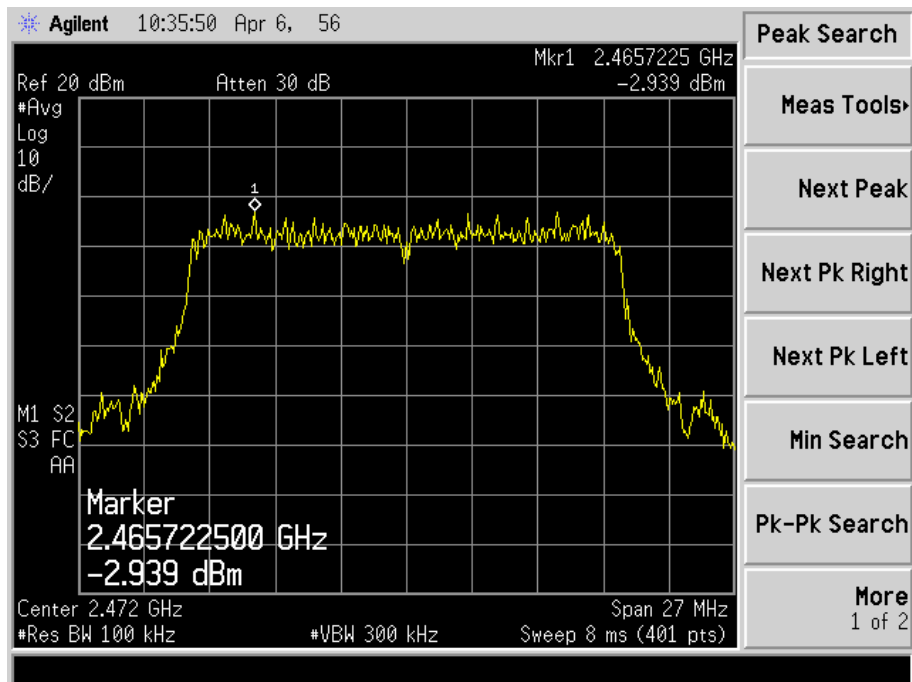
802.11n-HT20-Channel 11-2462MHz



802.11n-HT20-Channel 12-2467MHz



802.11n-HT20-High Channel-2472MHz



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

- Set RBW = 100 kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Allow the trace to stabilize.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.4 Environmental Conditions

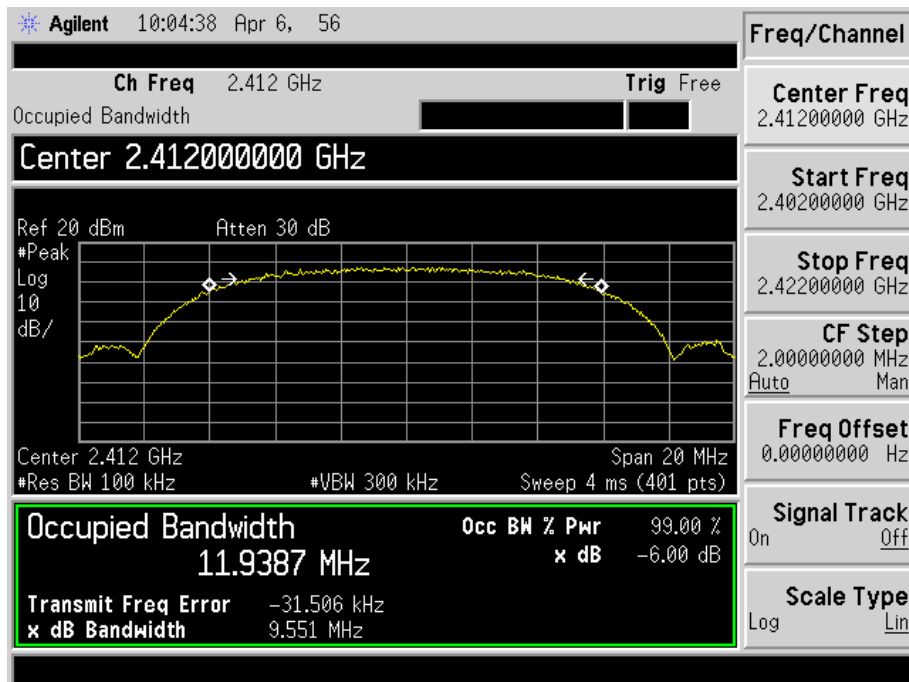
Temperature:	25° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

6.5 Summary of Test Results/Plots

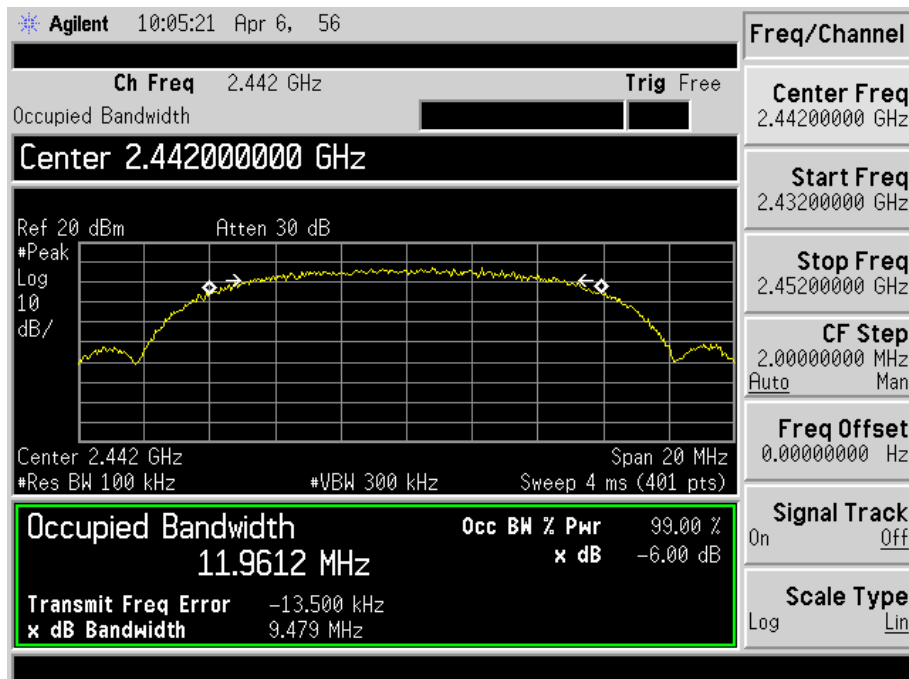
Test Mode	Test Channel MHz	6 dB Bandwidth kHz	99% Bandwidth kHz	Limit kHz
802.11b	2412	9551	11938.7	500
	2442	9479	11961.2	500
	2462	8310	11878.7	500
	2467	9183	11927.2	500
	2472	8970	11948.7	500
802.11g	2412	16326	16266.8	500
	2442	16190	16255.1	500
	2462	16411	16262.1	500
	2467	16358	16397.3	500
	2472	16408	16263.8	500
802.11n-HT20	2412	16960	17455.7	500
	2442	17561	17460.1	500
	2462	17317	17173.7	500
	2467	17619	17537.7	500
	2472	17231	17433.7	500

Please refer to the following test plots:

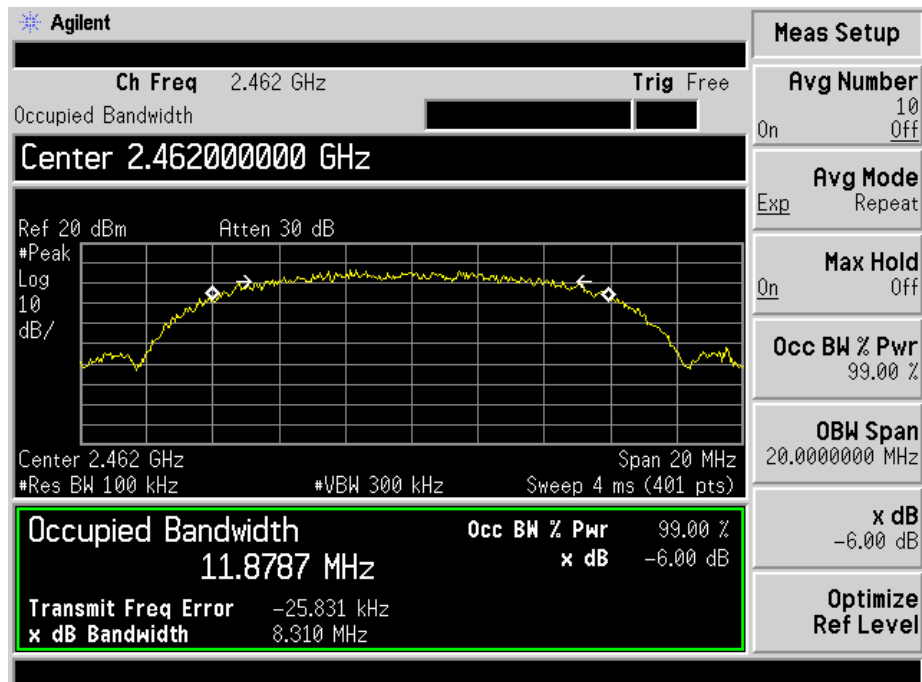
802.11b-Channel 1-2412MHz



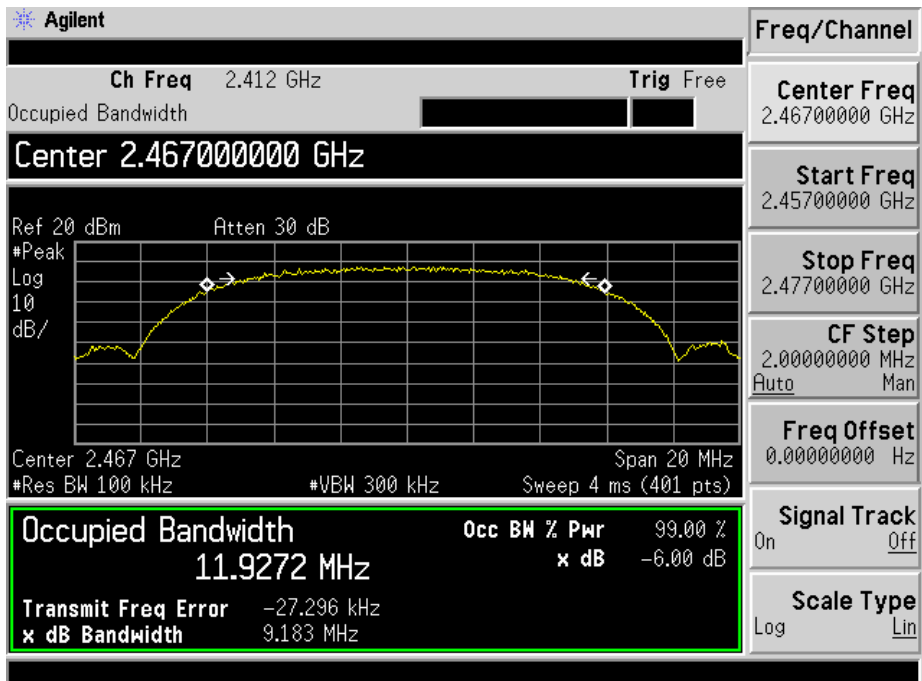
802.11b-Channel 7-2442MHz



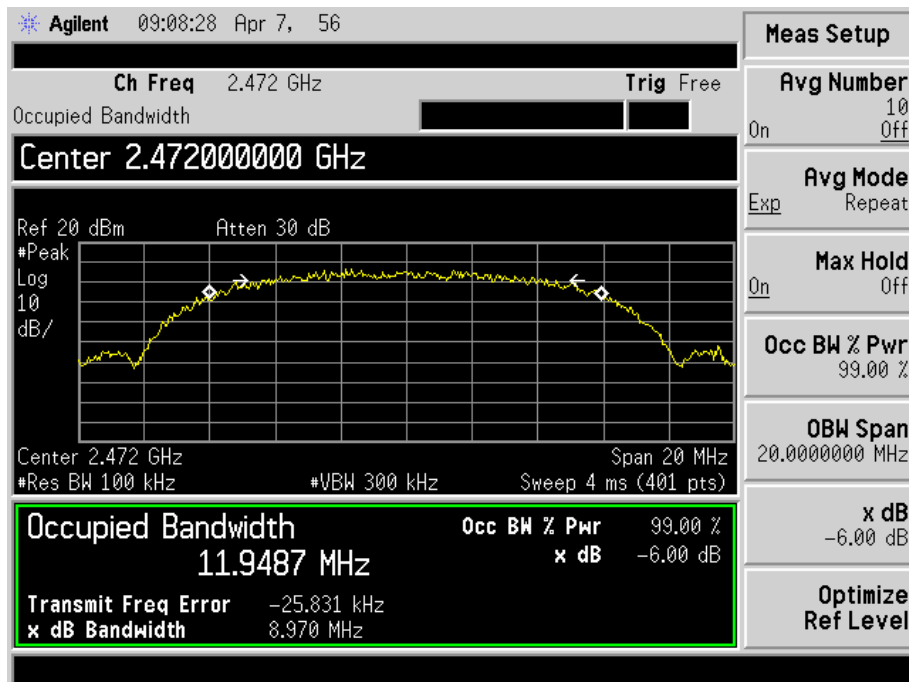
802.11b-Channel 11-2462MHz



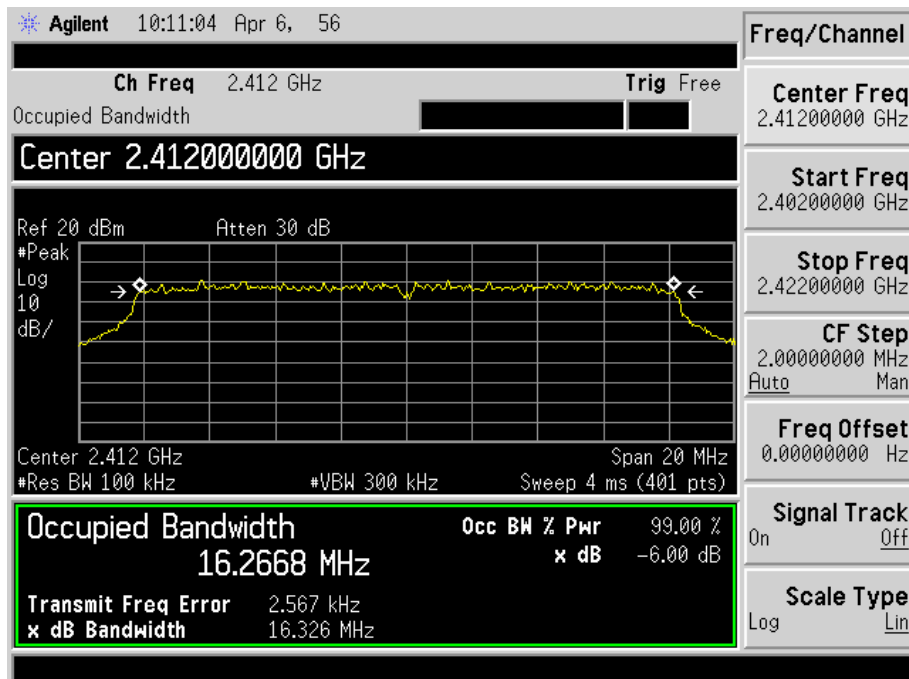
802.11b-Channel 12-2467MHz



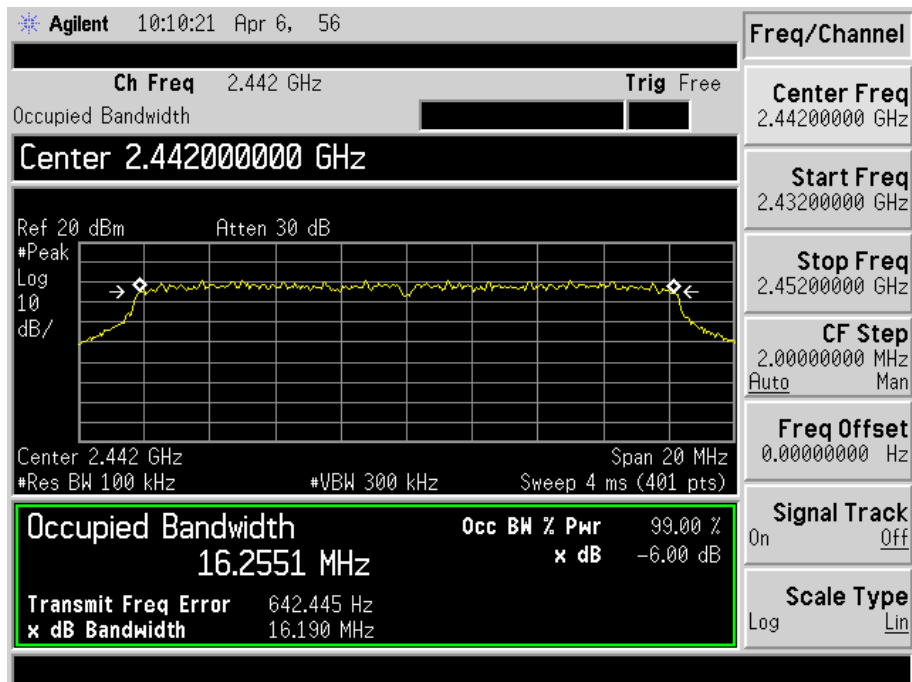
802.11b- Channel 13-2472MHz



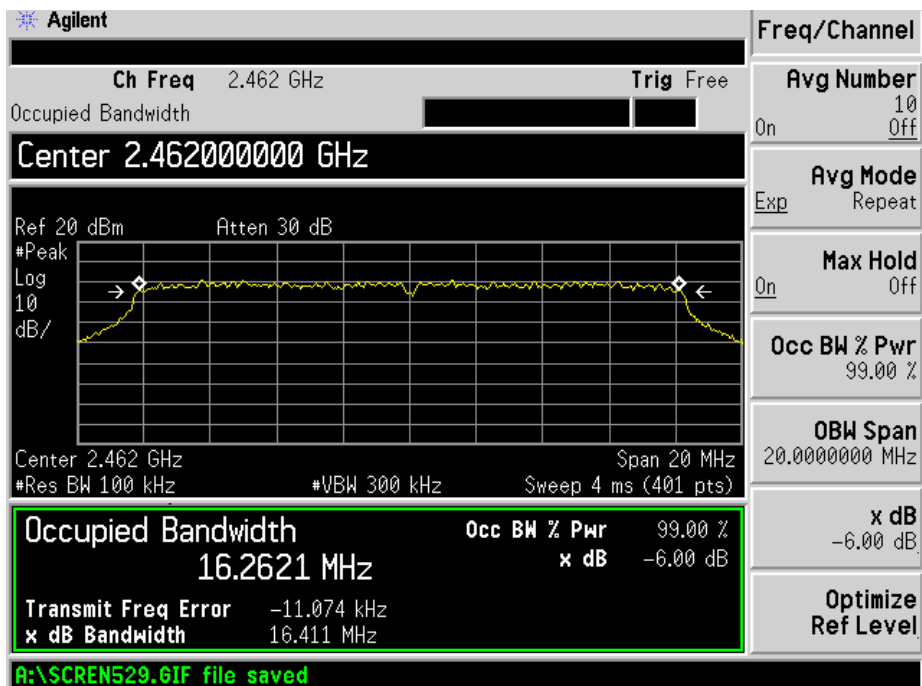
802.11g-Channel 1-2412MHz



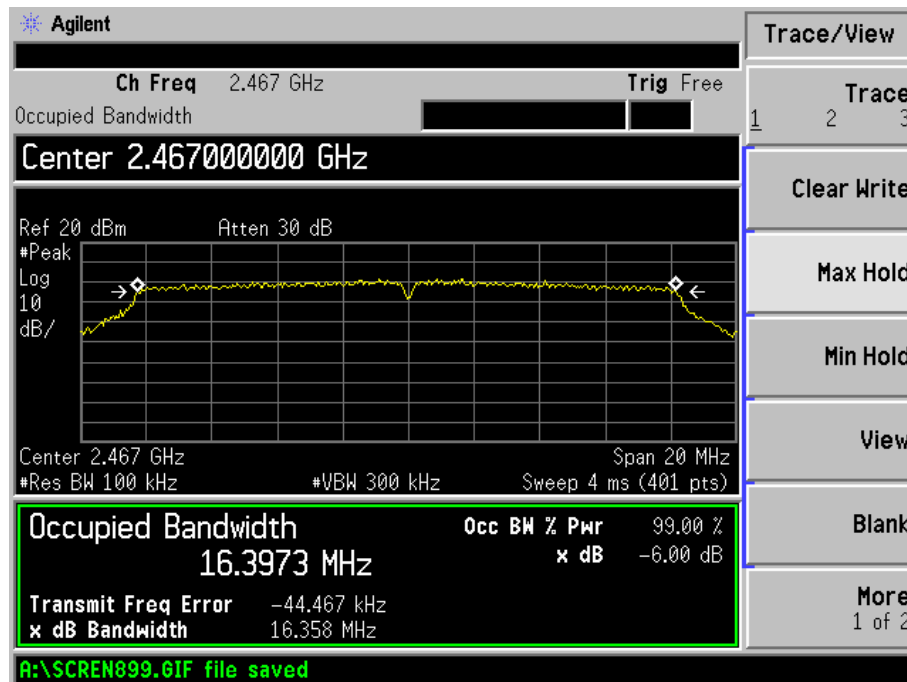
802.11g-Channel 7-2442MHz



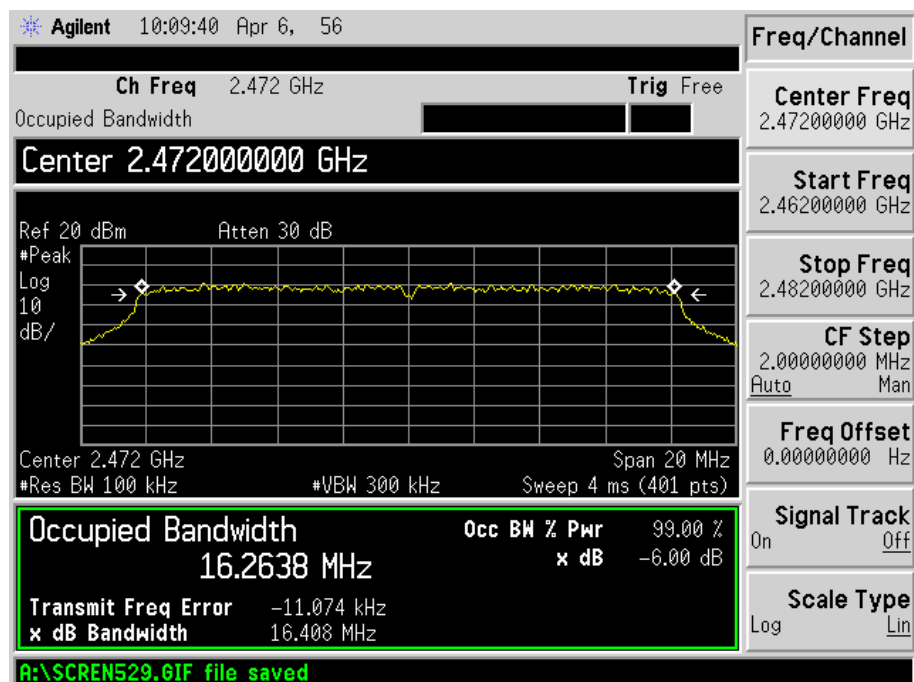
802.11g-Channel 11-2462MHz



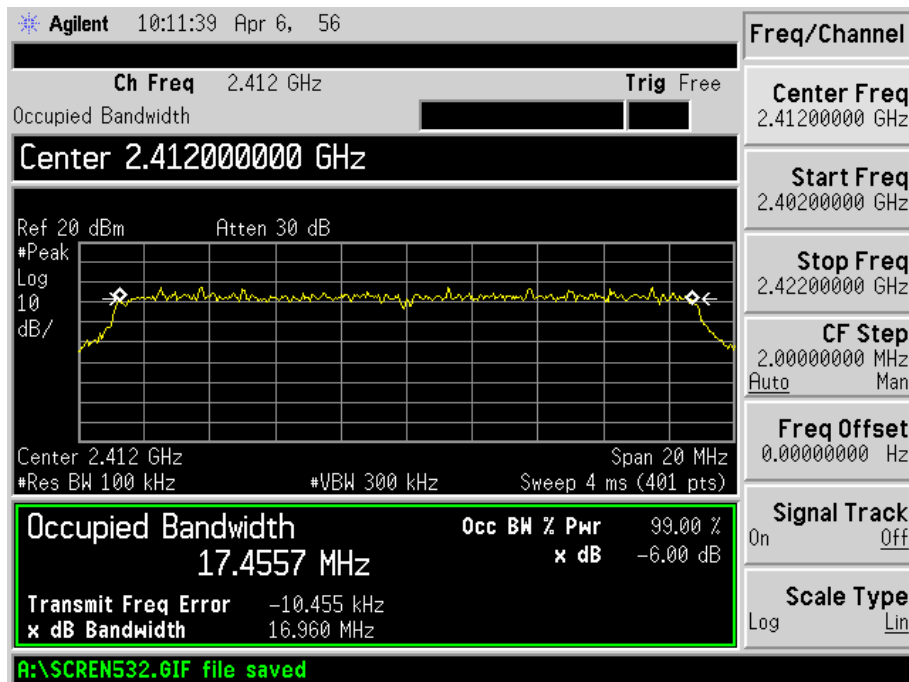
802.11g-Channel 12-2467MHz



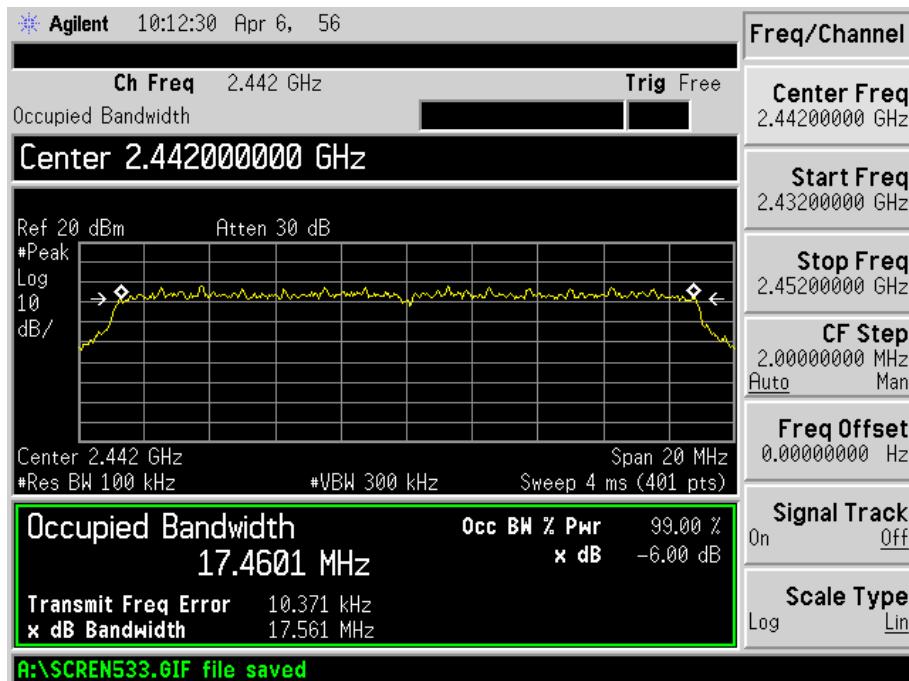
802.11g-Channel 13-2472MHz



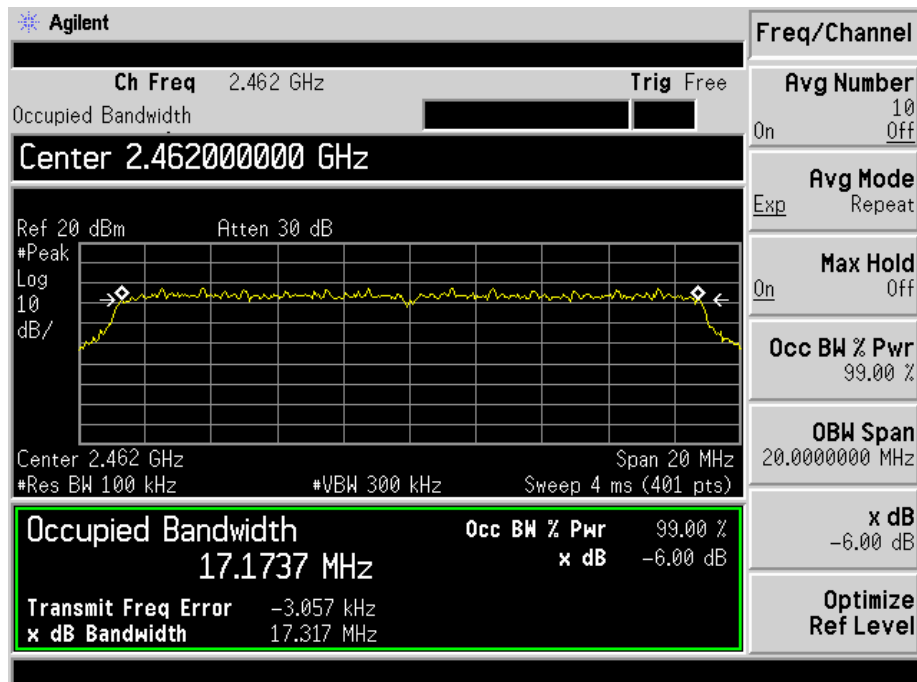
802.11n-HT20-Channel 1-2412MHz



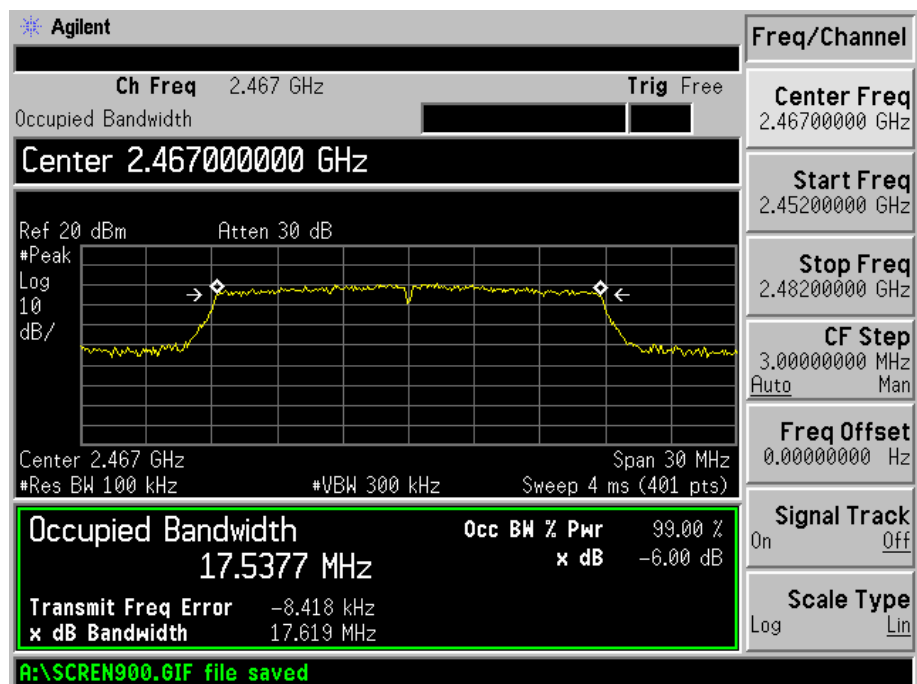
802.11n-HT20- Channel 1-2442MHz



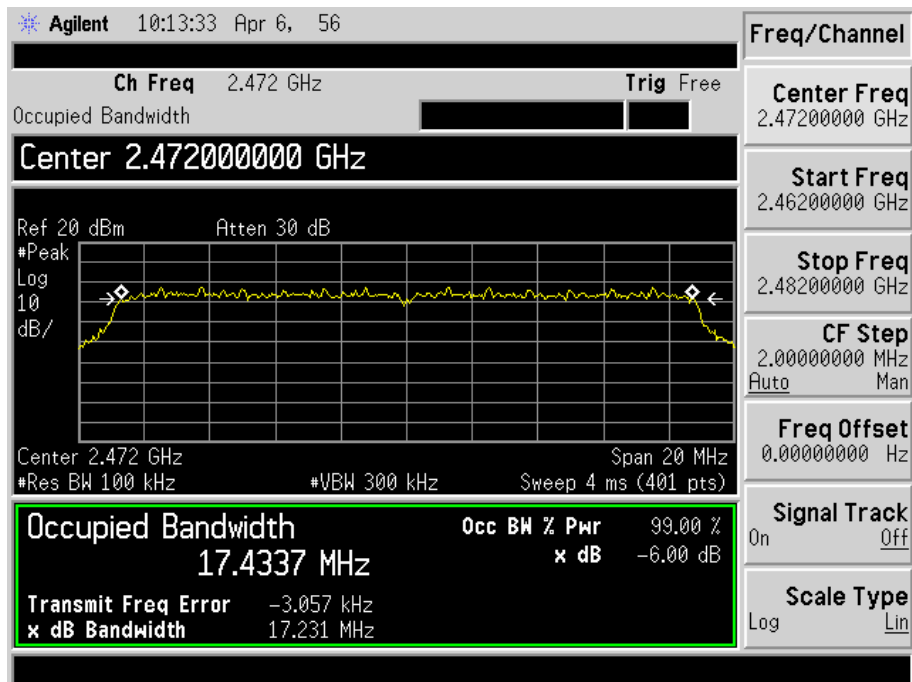
802.11n-HT20-Channel 11-2462MHz



802.11n-HT20-Channel 12-2467MHz



802.11n-HT20-Channel 13-2472MHz



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, 9.2.2.2 (channel integration method) When this option is exercised, the measured power is to be referenced to the OBW rather than the DTS bandwidth

- Set span to at least 1.5 times the OBW.
- Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
- Set VBW $\geq 3 \times$ RBW.
- Number of points in sweep $\geq 2 \times$ span / RBW. (This gives bin-to-bin spacing $\leq$ RBW/2, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto.
- Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- If transmit duty cycle $< 98 \%$, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle $\geq 98 \%$, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run” .
- Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

7.4 Environmental Conditions

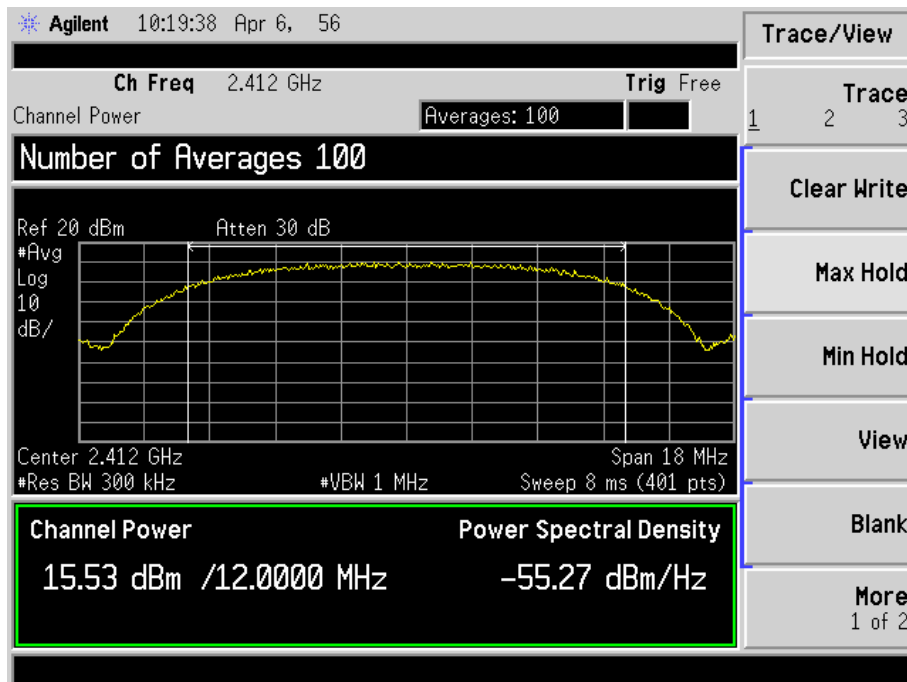
Temperature:	26° C
Relative Humidity:	57%
ATM Pressure:	1011 mbar

7.5 Summary of Test Results/Plots

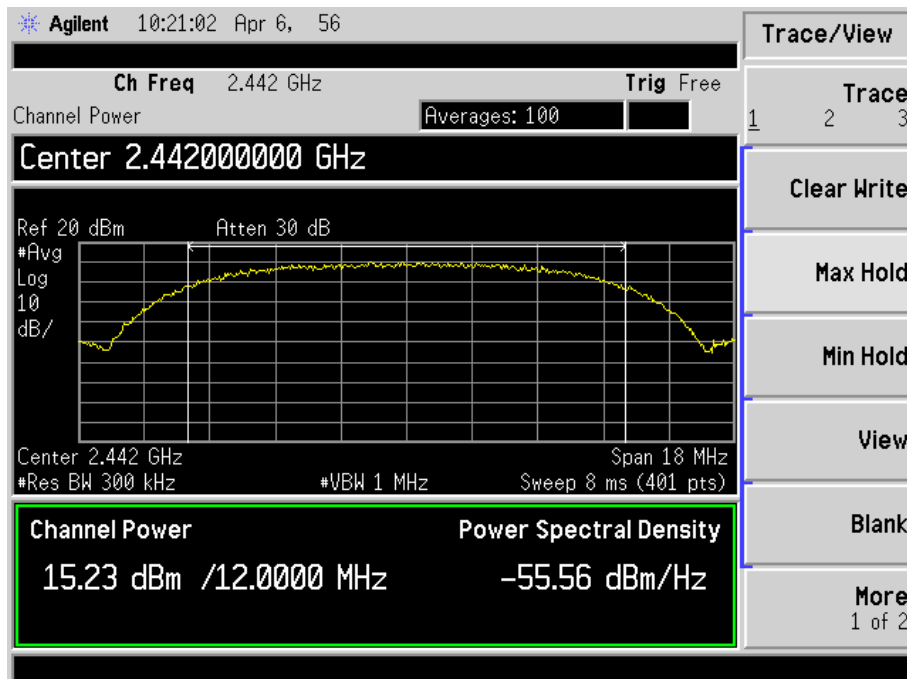
Test Mode	Frequency MHz	Reading dBm	Output Power mW	Limit mW
802.11b _ 11Mbps	2412	15.53	35.72	1000
	2442	15.23	33.34	1000
	2462	14.87	30.69	1000
	2467	15.42	34.83	1000
	2472	15.40	34.67	1000
802.11g_54Mbps	2412	10.91	12.33	1000
	2442	9.07	8.07	1000
	2462	10.00	10.00	1000
	2467	8.80	7.59	1000
	2472	10.77	11.94	1000
802.11n HT20_MCS7	2412	7.39	5.48	1000
	2442	7.12	5.15	1000
	2462	7.19	5.24	1000
	2467	7.79	6.01	1000
	2472	7.69	5.87	1000

Please refer to the following test plots:

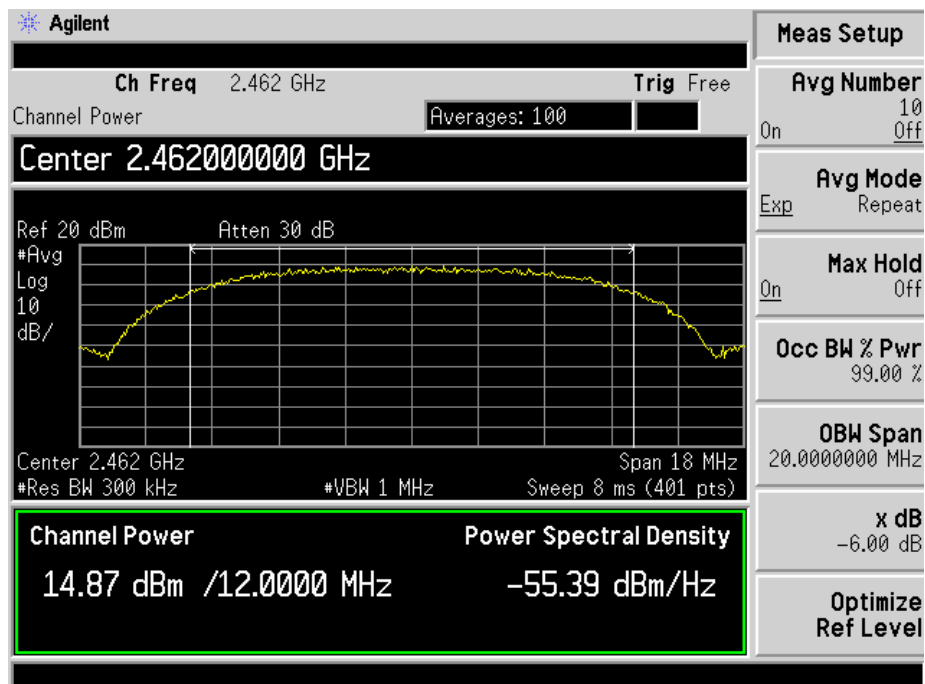
802.11b-11Mbps-Channel 1-2412MHz



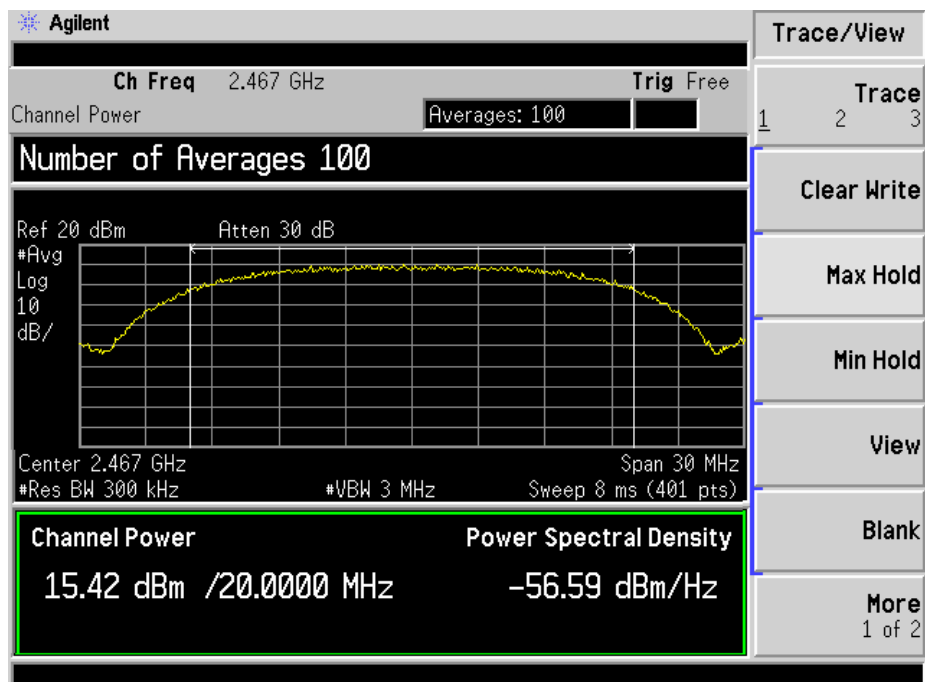
802.11b -11Mbps-Channel 7-2442MHz



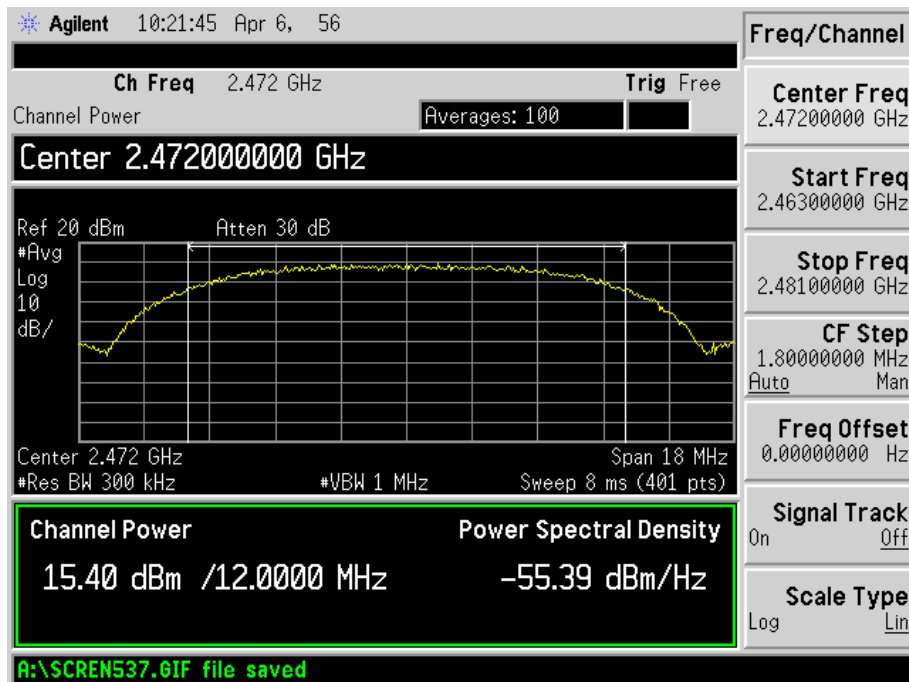
802.11b -11Mbps-Channel 11-2462MHz



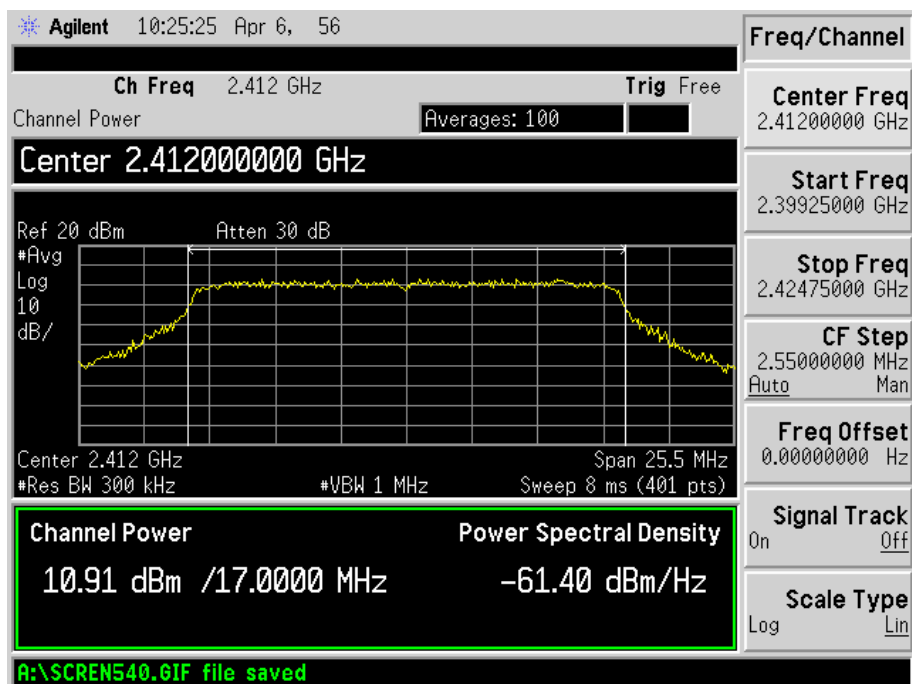
802.11b -11Mbps-Channel 12-2467MHz



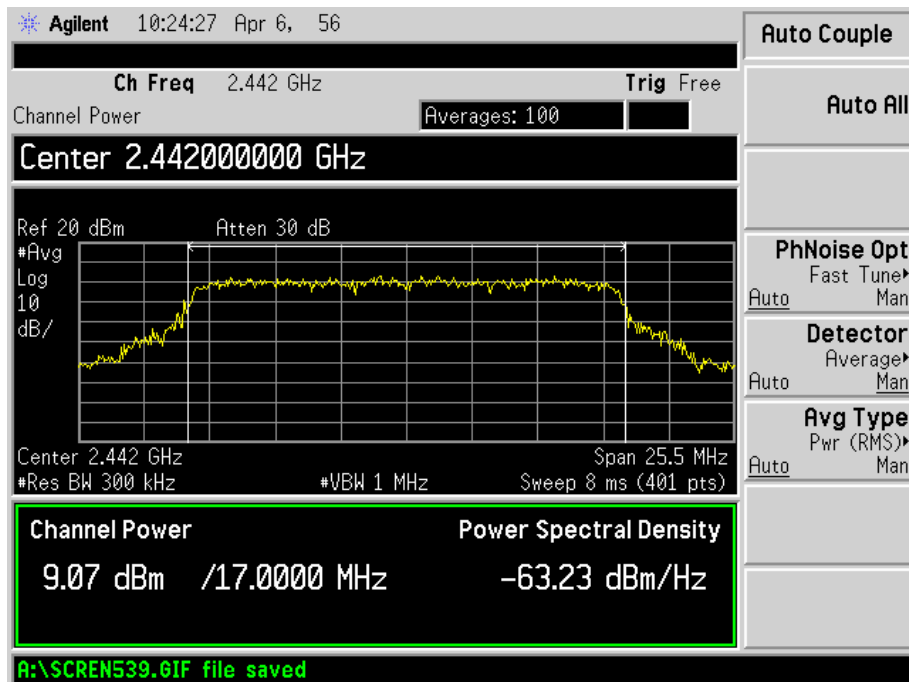
802.11b -11Mbps-Channel 13-2472MHz



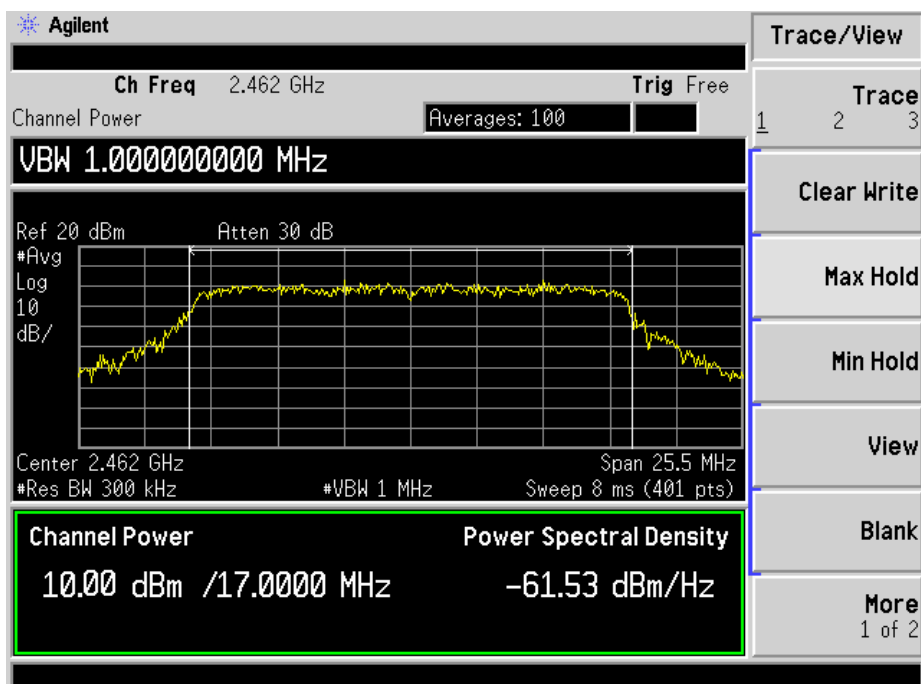
802.11g-54Mbps-Channel 1-2412MHz



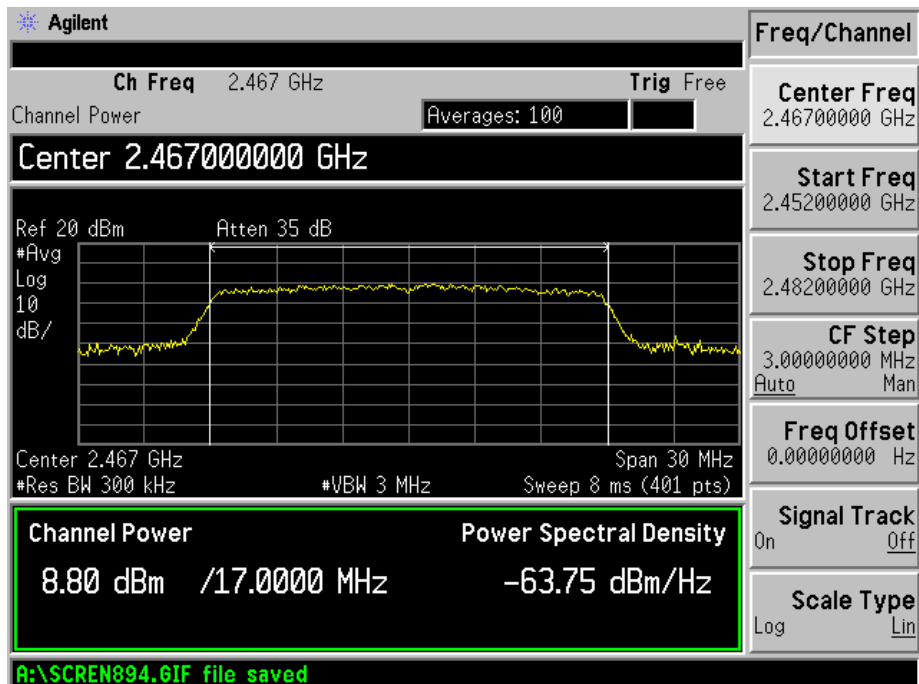
802.11g-54Mbps- Channel 7-2442MHz



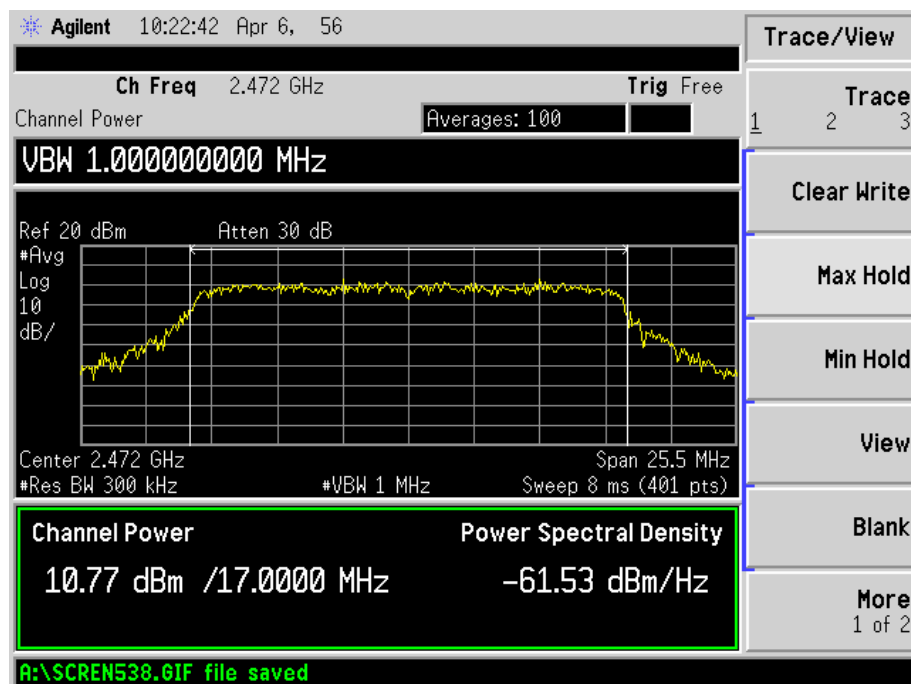
802.11g-54Mbps-Channel 11-2462MHz



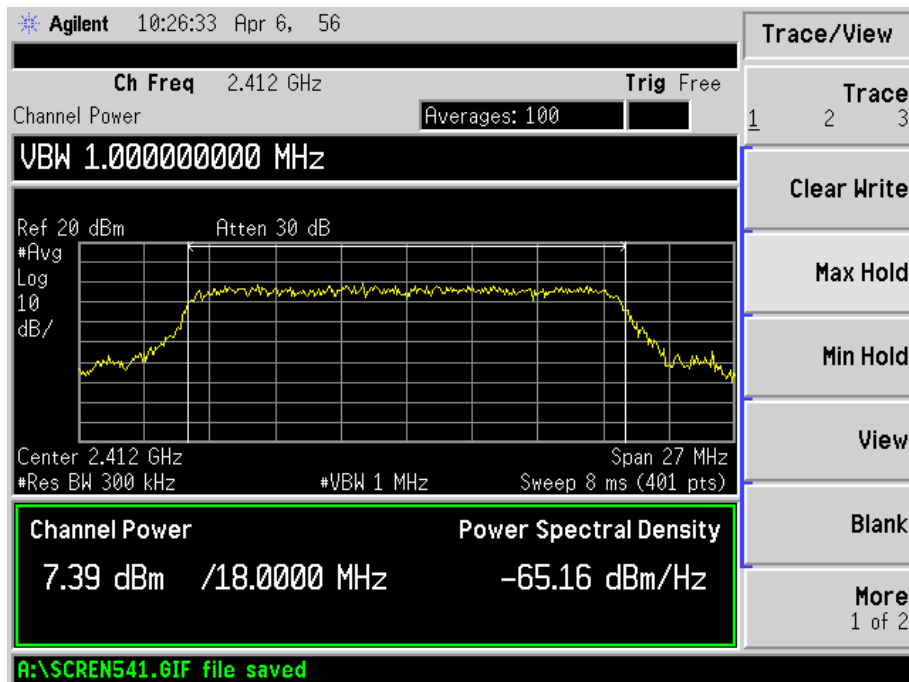
802.11g-54Mbps-Channel 12-2467MHz



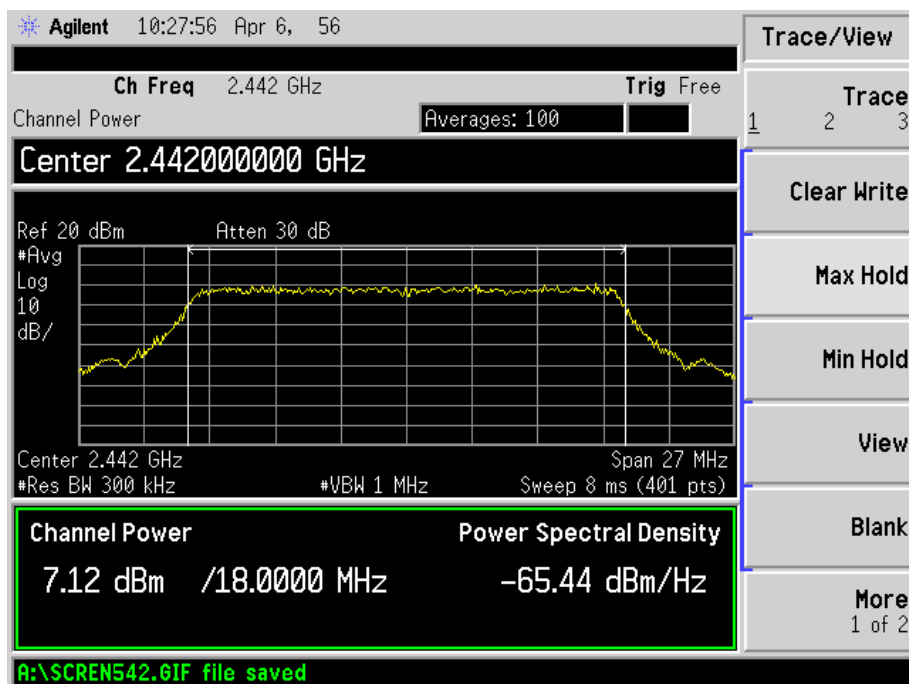
802.11g-54Mbps-Channel 13-2472MHz



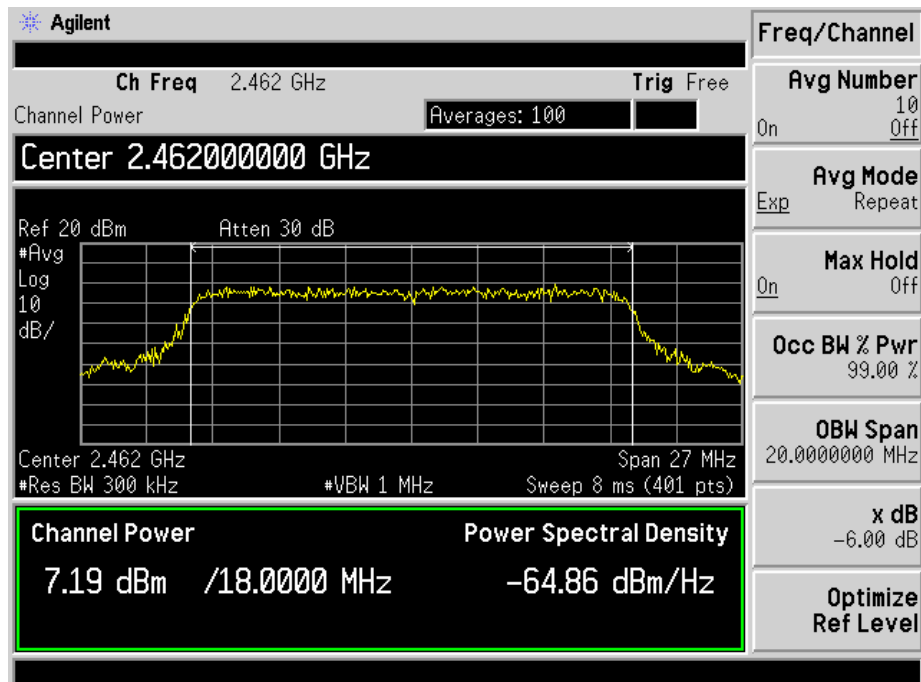
802.11n-HT20-MCS7-Channel 1-2412MHz



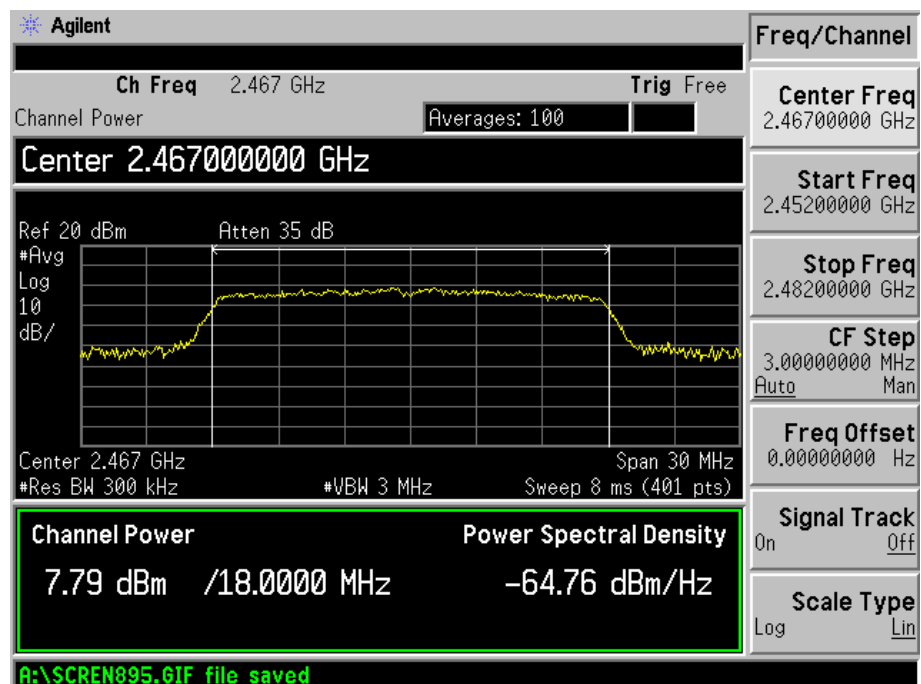
802.11n-HT20-MCS7-Channel 7-2442MHz



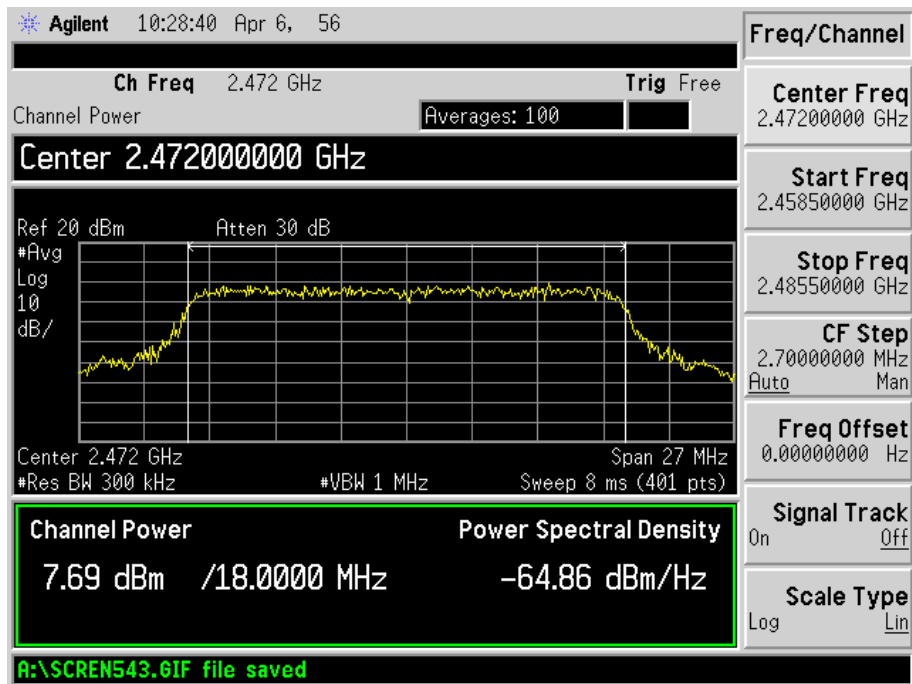
802.11n-HT20-MCS7-Channel 11-2462MHz



802.11n-HT20-MCS7-Channel 12-2467MHz



802.11n-HT20-MCS7-Channel 13-2472MHz



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

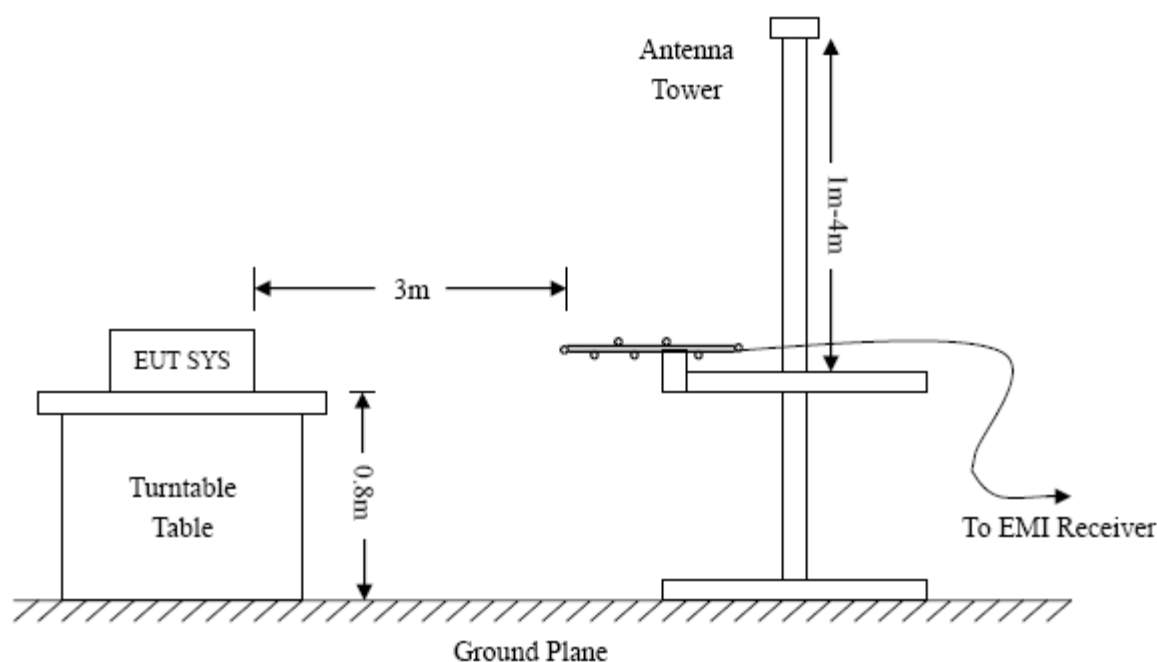
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2014-05-28	2015-05-27
EMI Test Receiver	R&S	ESVB	825471/005	2014-05-28	2015-05-27
Pre-amplifier	Agilent	8447F	3113A06717	2014-05-28	2015-05-27
Pre-amplifier	Compliance Direction	PAP-0118	24002	2014-05-28	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:

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

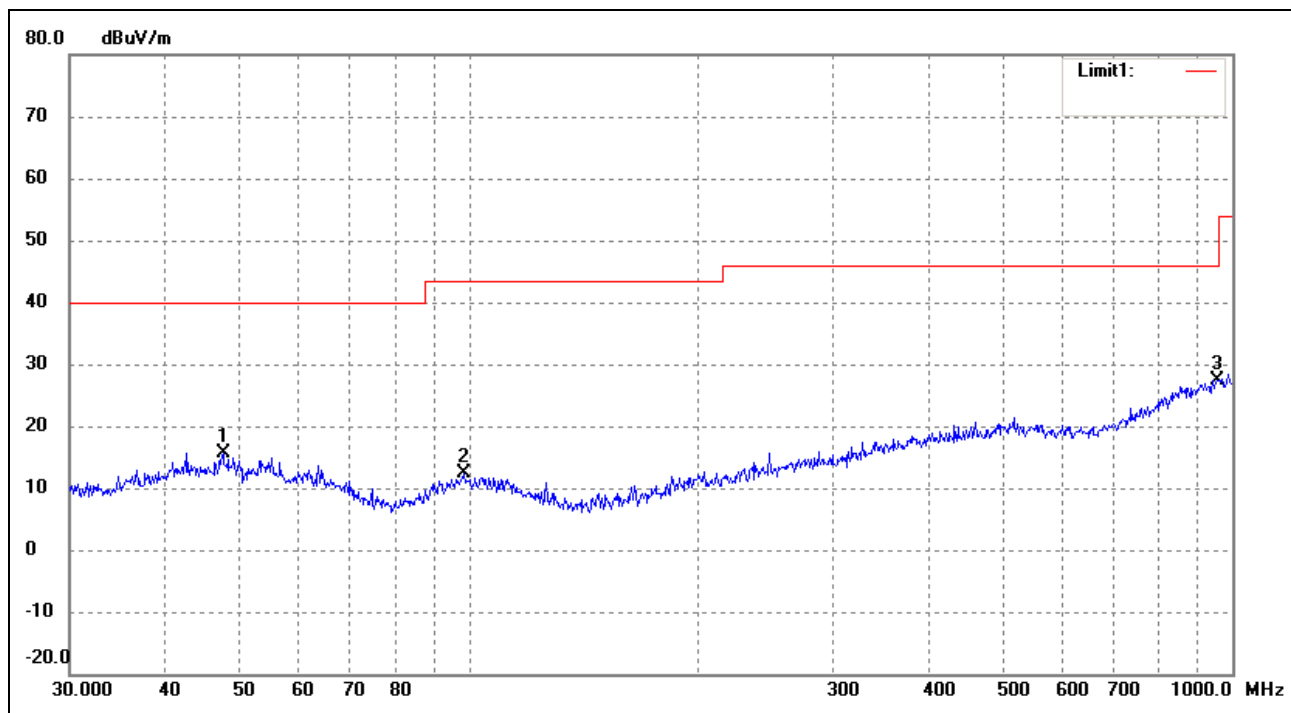
8.6 Environmental Conditions

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

8.7 Summary of Test Results/Plots

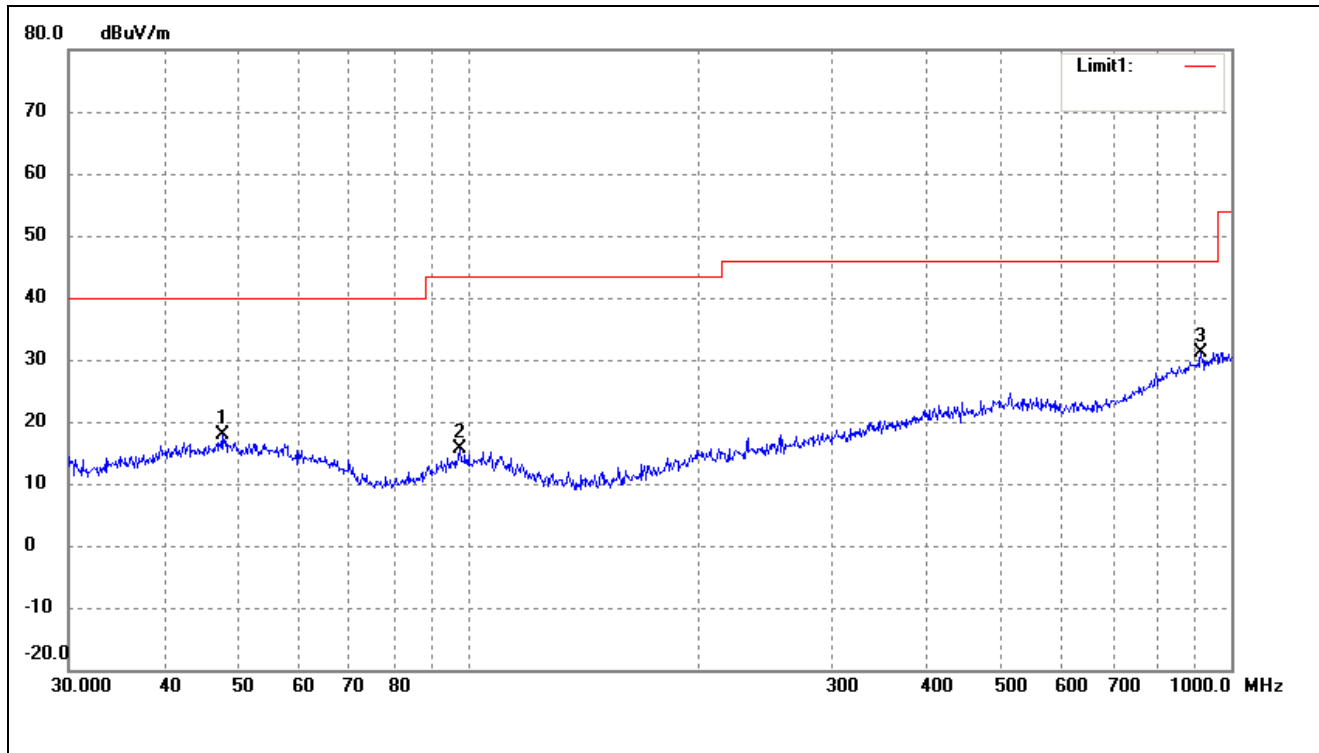
According to the data below, the FCC Part 15.205, 15.209 and 15.247 standards, and had the worst cases:

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:* Mobile Phone*Tested Model:* X50*Operating Condition:* 802.11b Transmitting Channel 1-2412MHz*Comment:* Battery: DC3.7V*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	47.6586	23.20	-7.46	15.74	40.00	-24.26	0	100	peak
2	98.4866	22.11	-9.75	12.36	43.50	-31.14	0	100	peak
3	955.4381	21.45	6.01	27.46	46.00	-18.54	0	100	peak

Test Specification: Vertical

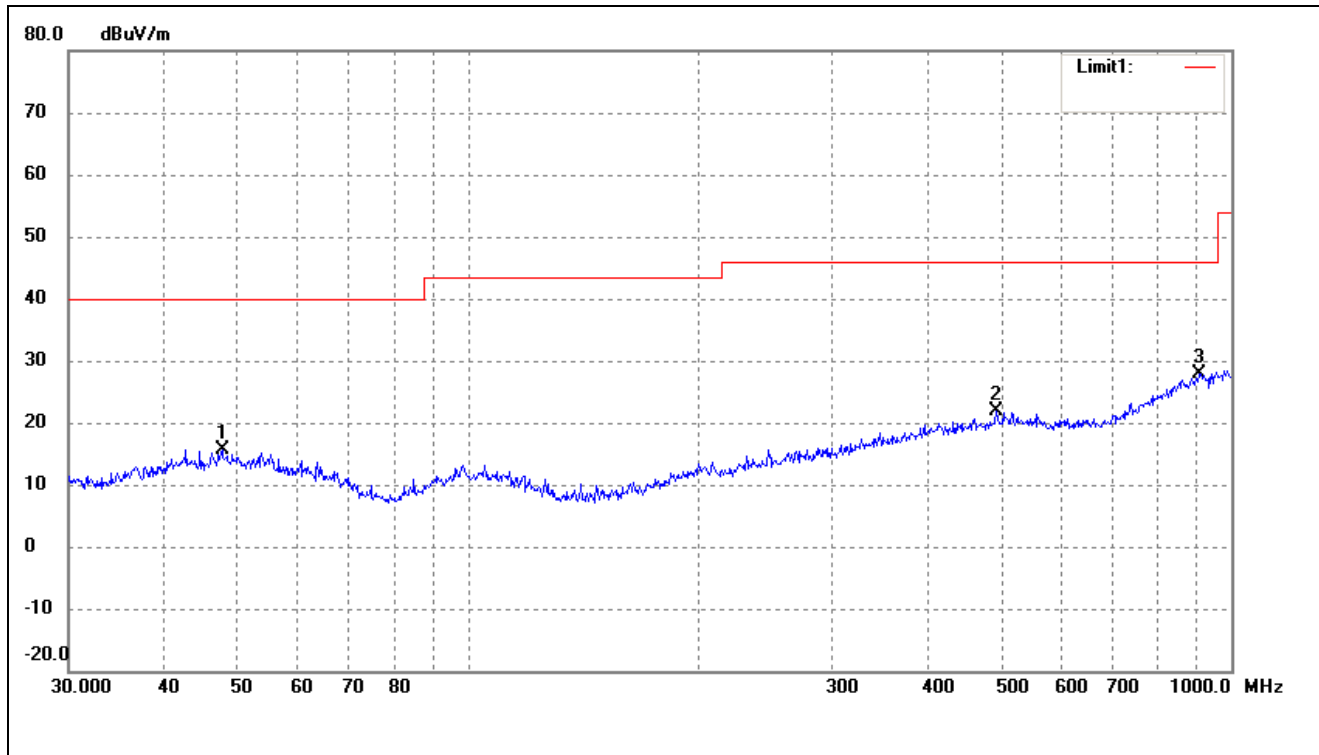


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	47.6586	25.22	-7.46	17.76	40.00	-22.24	0	100	peak
2	97.4560	25.62	-9.87	15.75	43.50	-27.75	0	100	peak
3	912.8620	25.65	5.53	31.18	46.00	-14.82	120	100	peak

Operating Condition: 802.11b Transmitting Channel 7-2442MHz

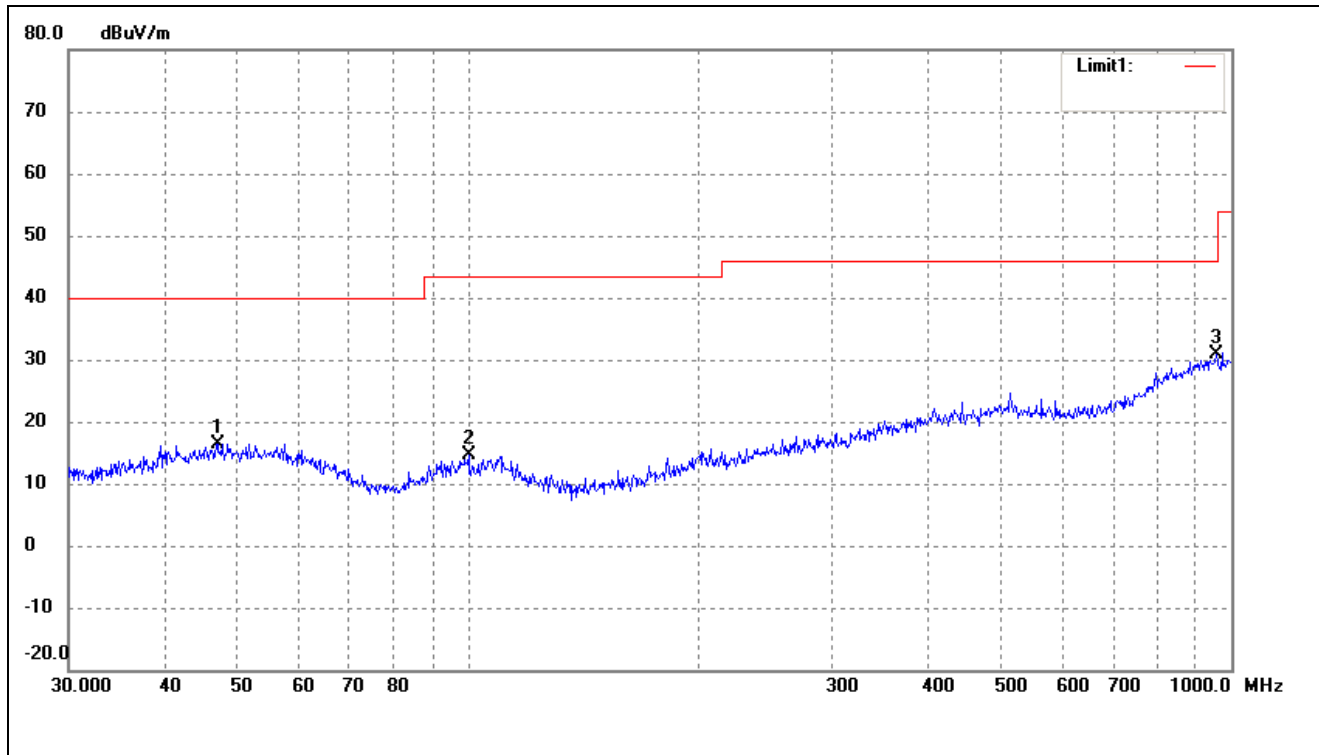
Comment: Battery: DC3.7V

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	47.6586	23.20	-7.46	15.74	40.00	-24.26	14	100	peak
2	492.4685	23.09	-1.29	21.80	46.00	-24.20	0	100	peak
3	909.6667	22.45	5.49	27.94	46.00	-18.06	10	100	peak

Test Specification: Vertical

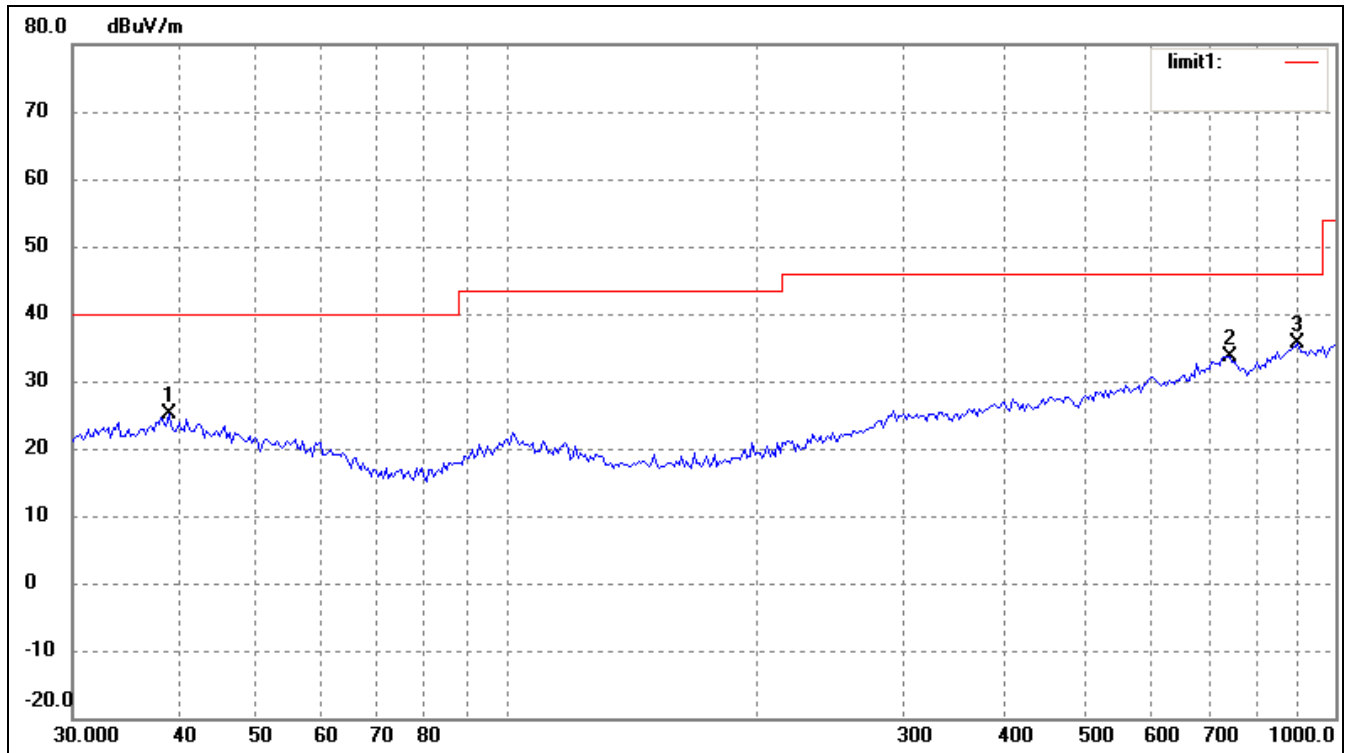


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	46.9948	23.90	-7.45	16.45	40.00	-23.55	120	100	peak
2	100.2286	24.30	-9.56	14.74	43.50	-28.76	11	100	peak
3	955.4381	24.85	6.01	30.86	46.00	-15.14	157	100	peak

Operating Condition: 802.11b Transmitting Channel 11-2462MHz

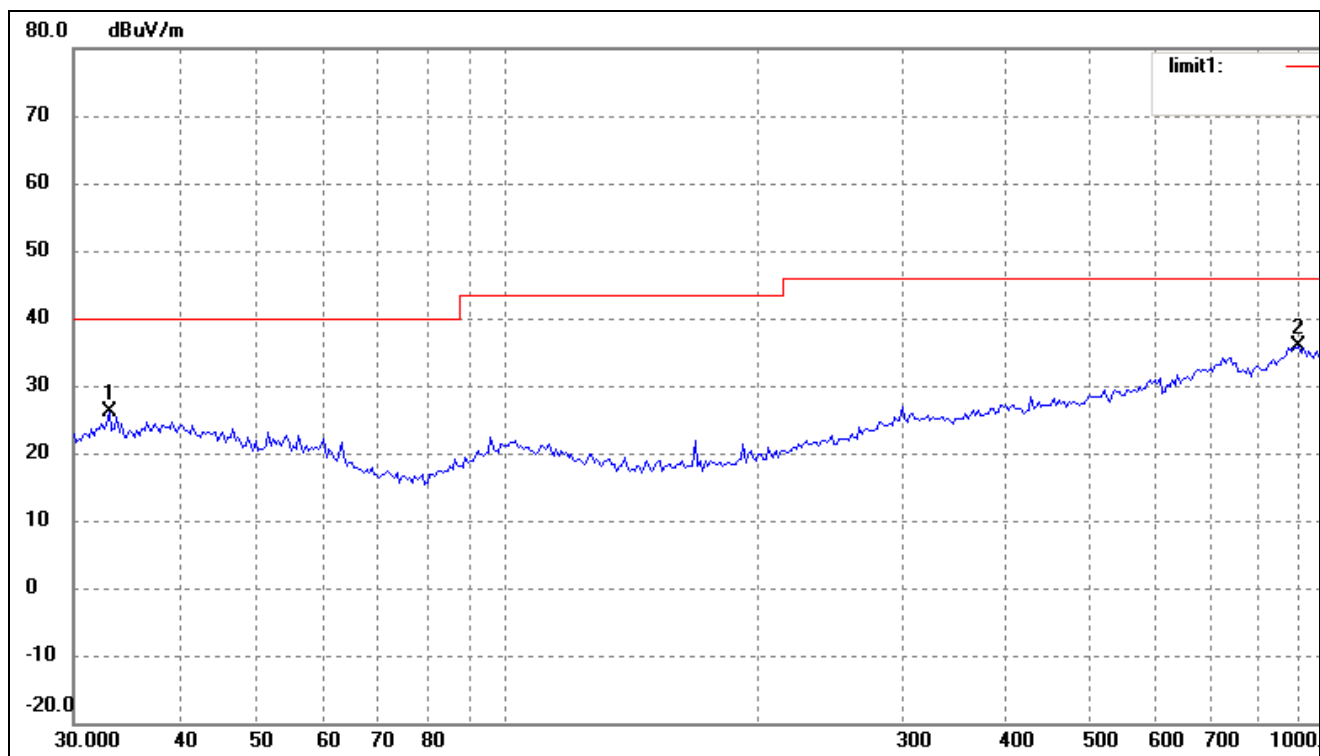
Comment: Battery: DC3.7V

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	39.1616	15.55	9.54	25.09	40.00	-14.91	100	150	peak
2	744.8661	15.70	17.94	33.64	46.00	-12.36	87	100	peak
3	900.1474	16.29	19.38	35.67	46.00	-10.33	105	200	peak

Test Specification: Vertical

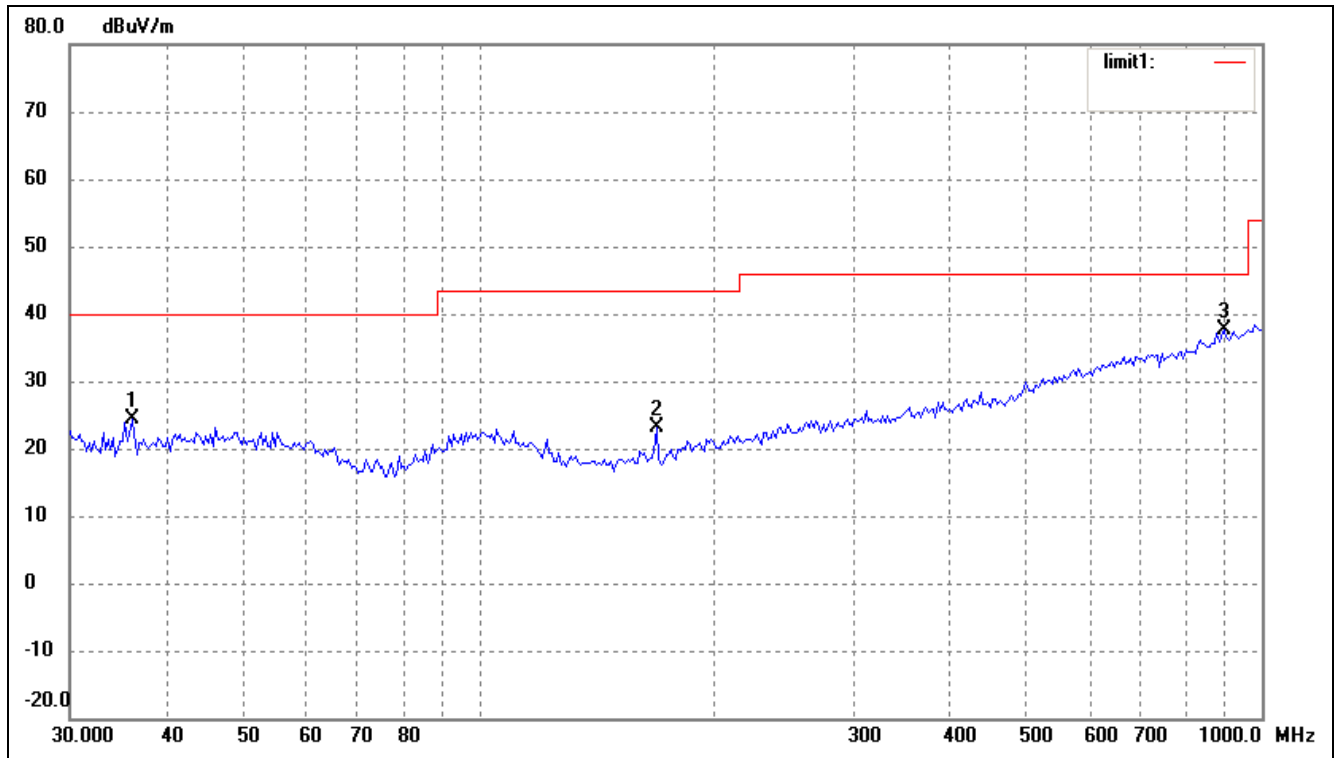


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	33.0950	17.52	8.56	26.08	40.00	-13.92	140	100	peak
2	900.1474	16.48	19.38	35.86	46.00	-10.14	158	150	peak

Operating Condition: 802.11b Transmitting Channel 12-2467MHz

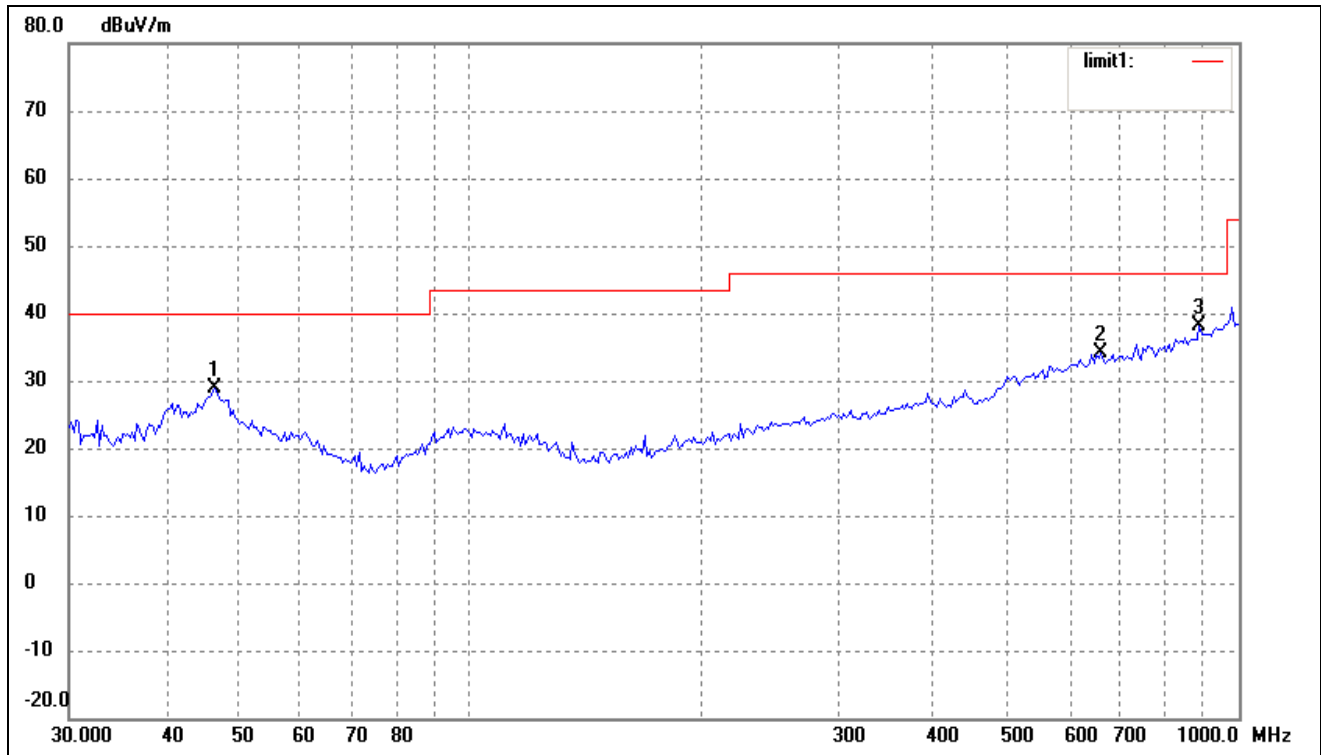
Comment: Battery: DC3.7V

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	36.0007	17.34	7.05	24.39	40.00	-15.61	162	100	peak
2	168.4138	18.39	4.84	23.23	43.50	-20.27	200	100	peak
3	893.8567	16.79	20.78	37.57	46.00	-8.43	200	100	peak

Test Specification: Vertical

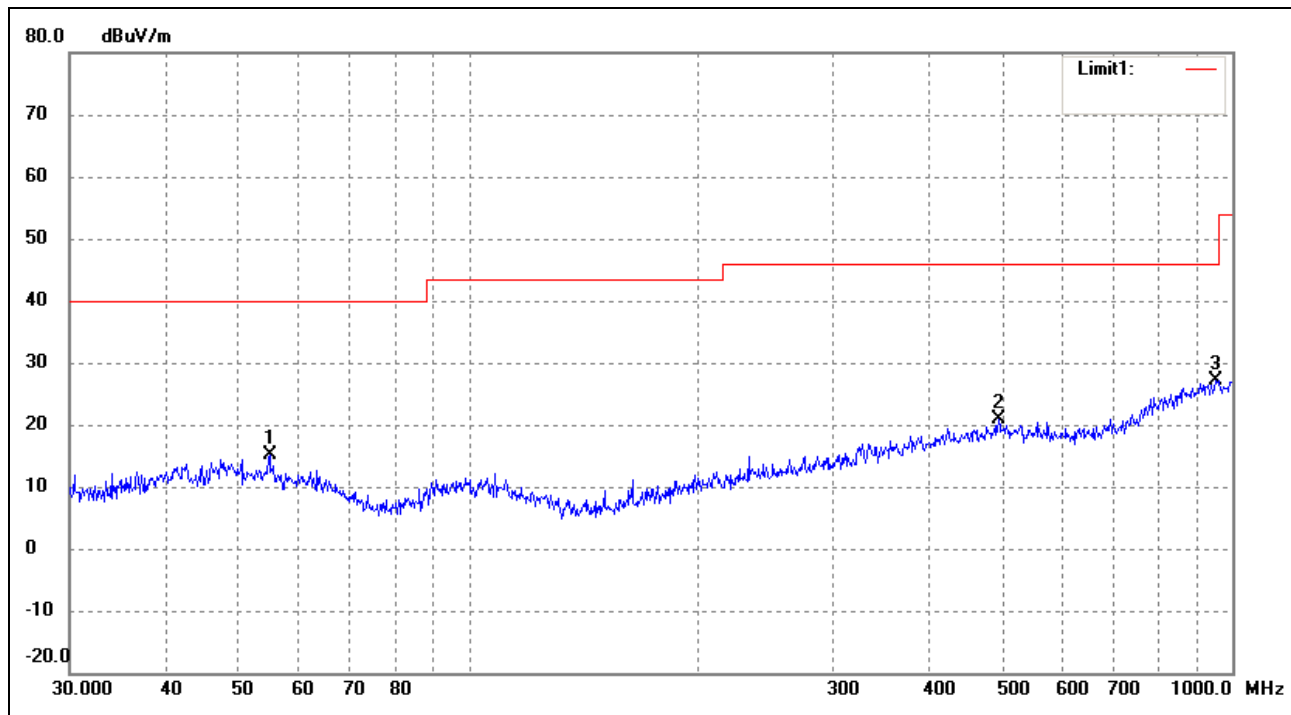


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	46.3402	20.68	8.16	28.84	40.00	-11.16	240	100	peak
2	661.1505	16.90	17.18	34.08	46.00	-11.92	187	100	peak
3	887.6099	17.34	20.67	38.01	46.00	-7.99	220	100	peak

Operating Condition: 802.11b Transmitting Channel 13-2472MHz

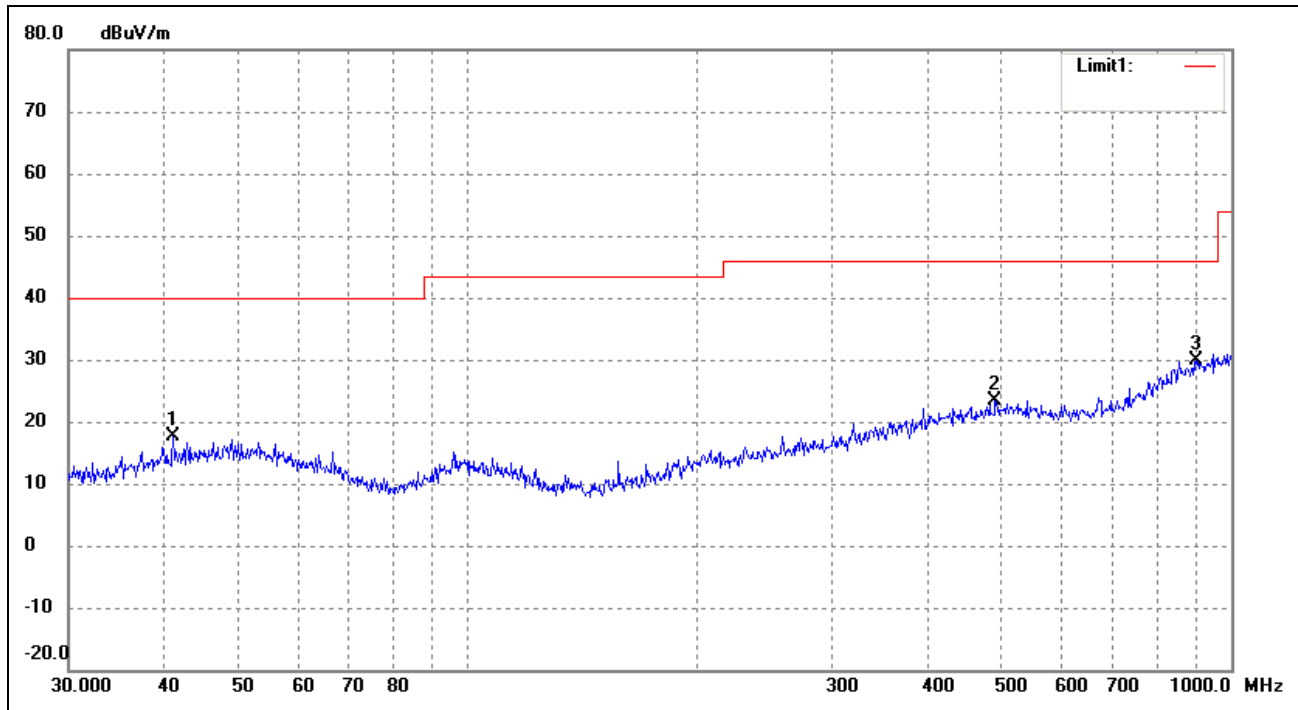
Comment: Battery: DC3.7V

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	54.8348	23.04	-7.93	15.11	40.00	-24.89	120	100	peak
2	494.1984	22.02	-1.26	20.76	46.00	-25.24	250	100	peak
3	952.0937	21.23	5.96	27.19	46.00	-18.81	360	100	peak

Test Specification: Vertical

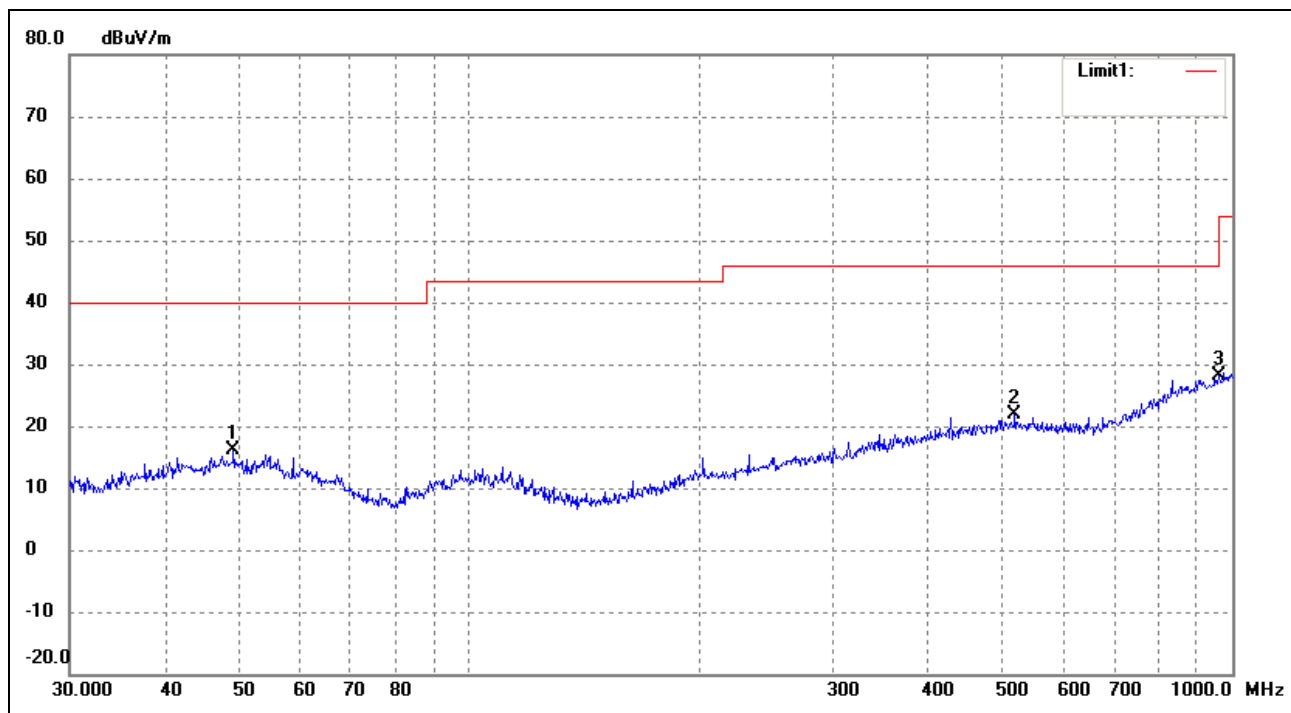


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	41.1320	25.84	-8.21	17.63	40.00	-22.37	360	100	peak
2	490.7447	24.76	-1.33	23.43	46.00	-22.57	200	100	peak
3	900.1474	24.56	5.38	29.94	46.00	-16.06	120	100	peak

Plot of Radiated Emissions Test Data (30MHz to 1GHz)

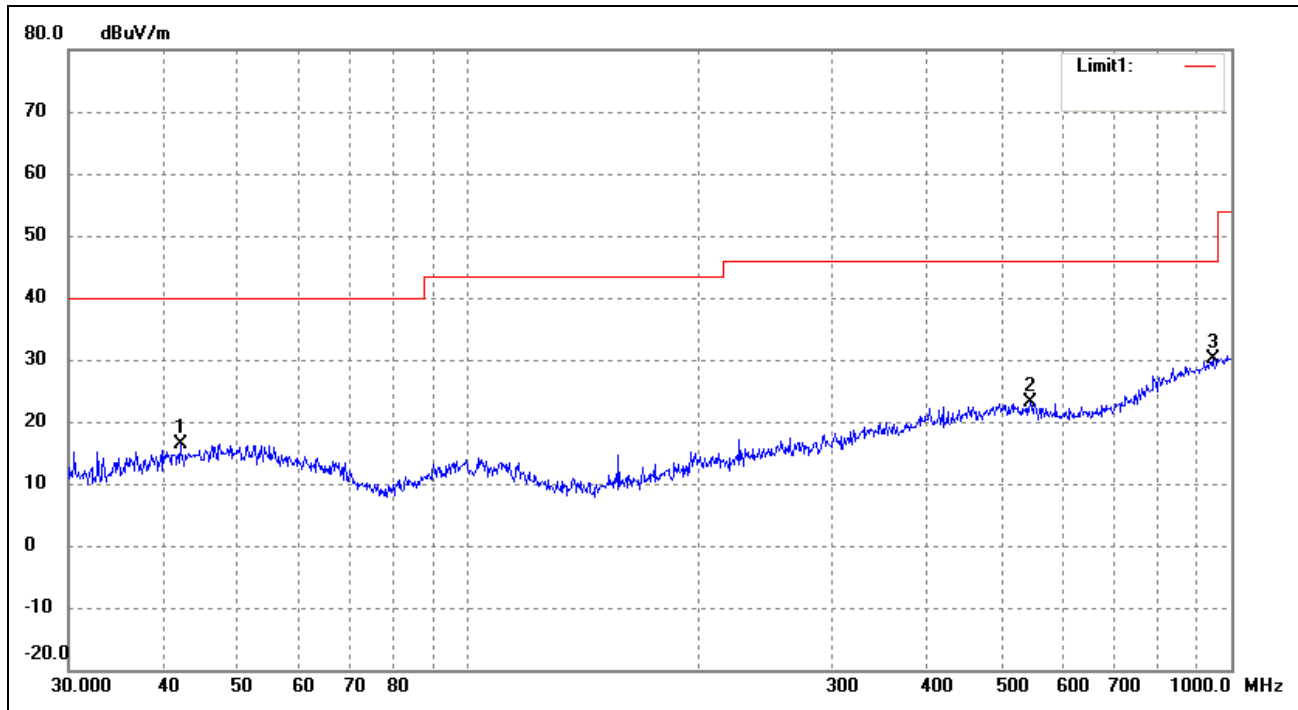
EUT: Mobile Phone
 Tested Model: X50
 Operating Condition: 802.11g Transmitting Channel 1-2412MHz
 Comment: Battery: DC3.7V

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	49.1866	23.48	-7.45	16.03	40.00	-23.97	170	100	peak
2	519.0649	23.02	-1.22	21.80	46.00	-24.20	20	100	peak
3	958.7943	22.08	6.06	28.14	46.00	-17.86	320	100	peak

Test Specification: Vertical

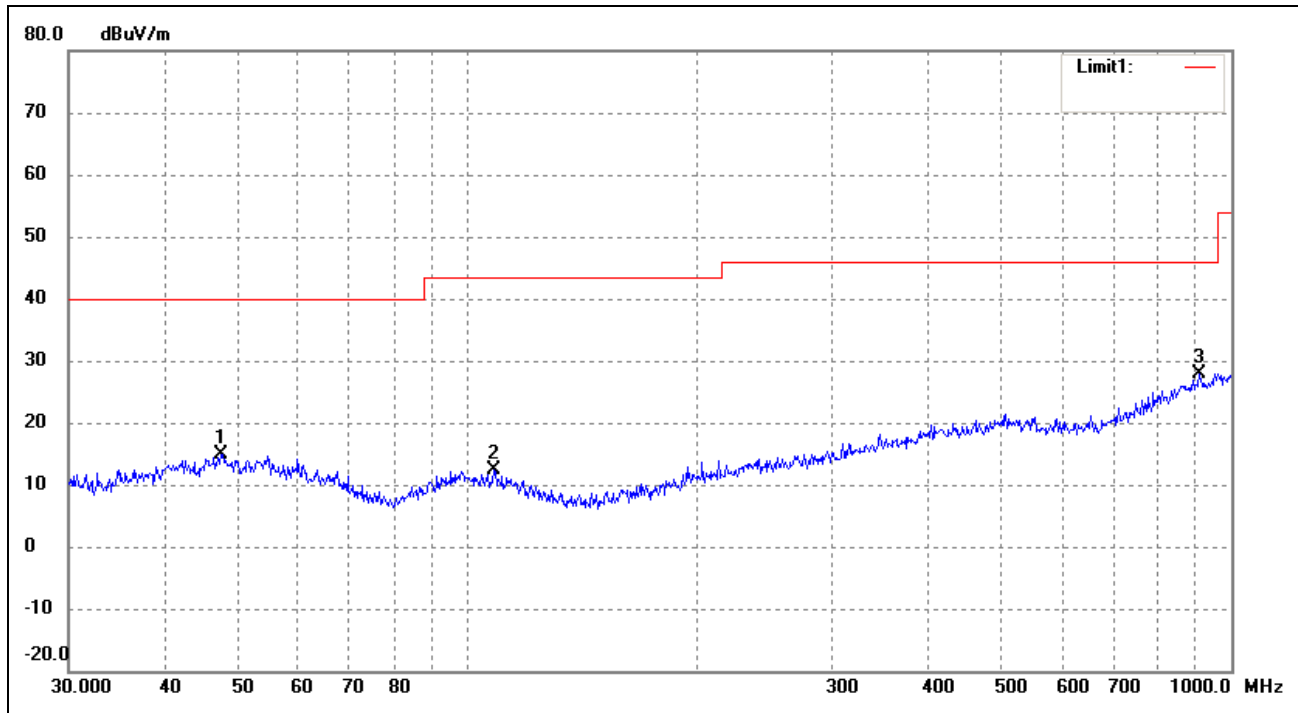


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	42.0066	24.55	-8.05	16.50	40.00	-23.50	270	100	peak
2	545.1826	23.10	0.02	23.12	46.00	-22.88	90	100	peak
3	945.4399	24.13	5.88	30.01	46.00	-15.99	360	100	peak

Operating Condition: 802.11g Transmitting Channel 7-2442MHz

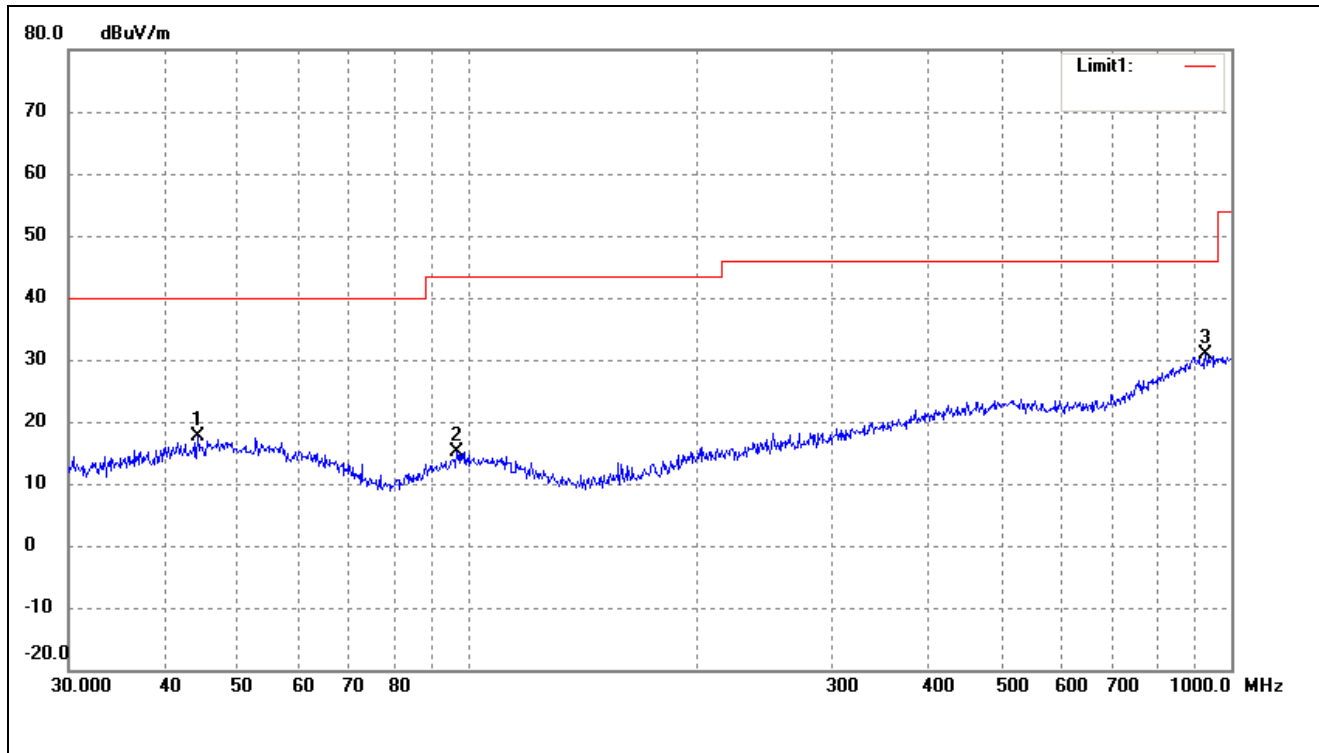
Comment: Battery: DC3.7V

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	47.4918	22.38	-7.45	14.93	40.00	-25.07	270	100	peak
2	108.2667	21.86	-9.59	12.27	43.50	-31.23	160	100	peak
3	906.4824	22.37	5.45	27.82	46.00	-18.18	228	200	peak

Test Specification: Vertical

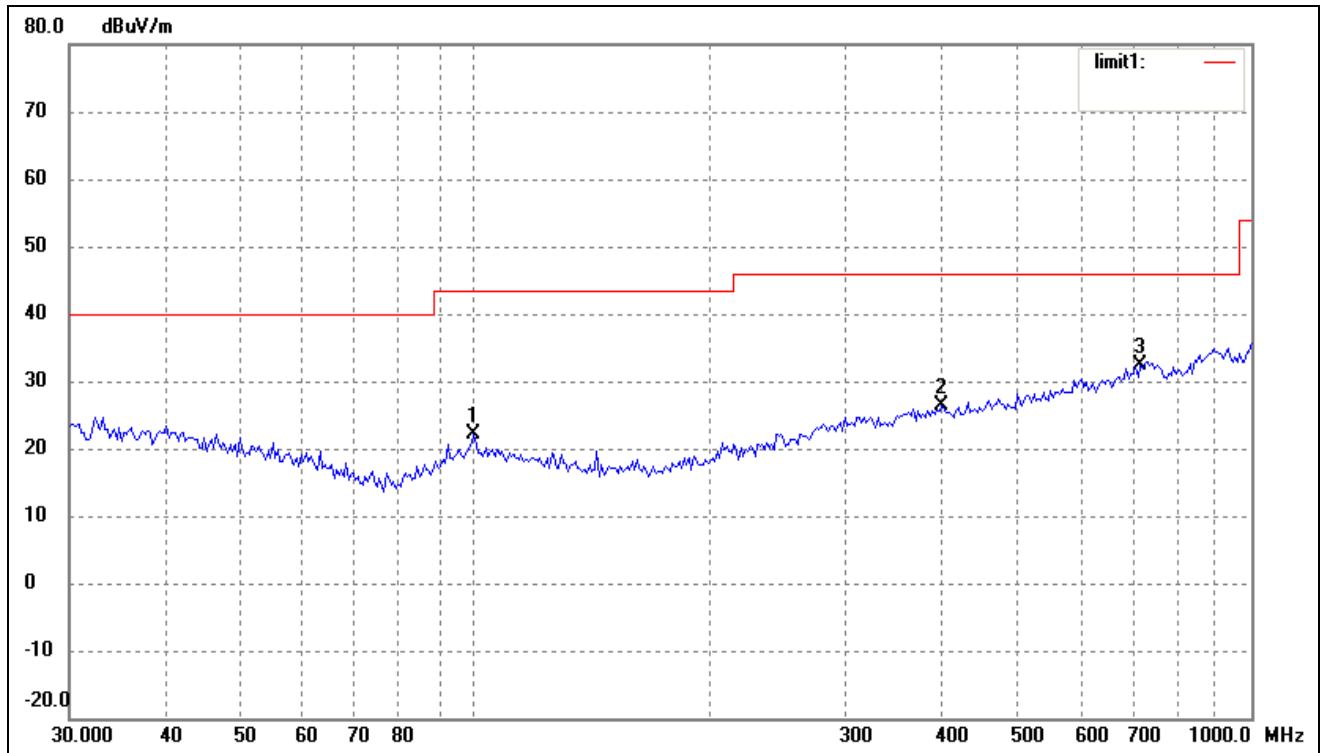


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	44.2752	25.36	-7.61	17.75	40.00	-22.25	360	100	peak
2	96.7749	24.98	-9.95	15.03	43.50	-28.47	120	100	peak
3	925.7563	25.24	5.66	30.90	46.00	-15.10	270	100	peak

Operating Condition: 802.11g Transmitting Channel 11-2462MHz

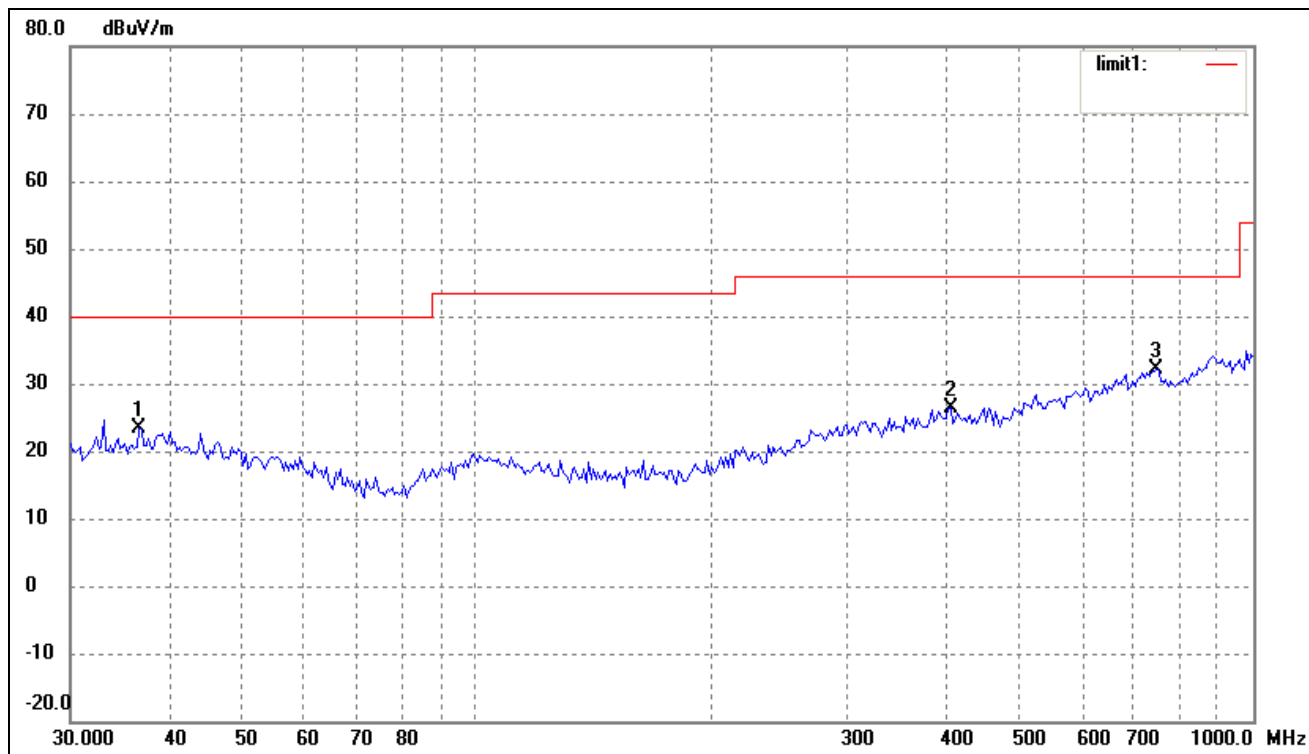
Comment: Battery: DC3.7V

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	99.5281	15.35	6.72	22.07	43.50	-21.43	12	100	peak
2	399.0302	14.90	11.50	26.40	46.00	-19.60	12	100	peak
3	719.1995	15.81	16.59	32.40	46.00	-13.60	12	100	peak

Test Specification: Vertical

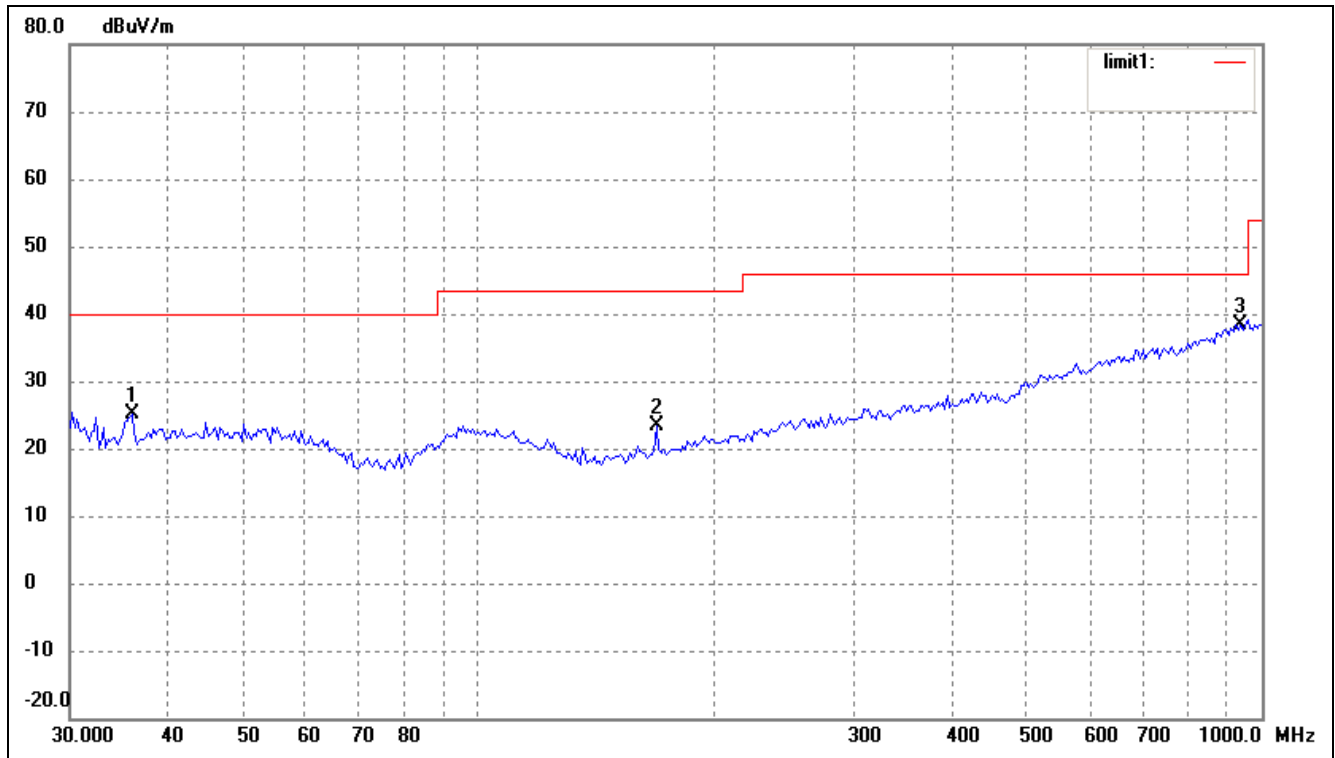


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	36.7662	14.28	9.16	23.44	40.00	-16.56	0	100	peak
2	407.5145	15.19	11.22	26.41	46.00	-19.59	0	100	peak
3	750.1083	14.37	17.78	32.15	46.00	-13.85	0	100	peak

Operating Condition: 802.11g Transmitting Channel 12-2467MHz

Comment: Battery: DC3.7V

Test Specification: Horizontal

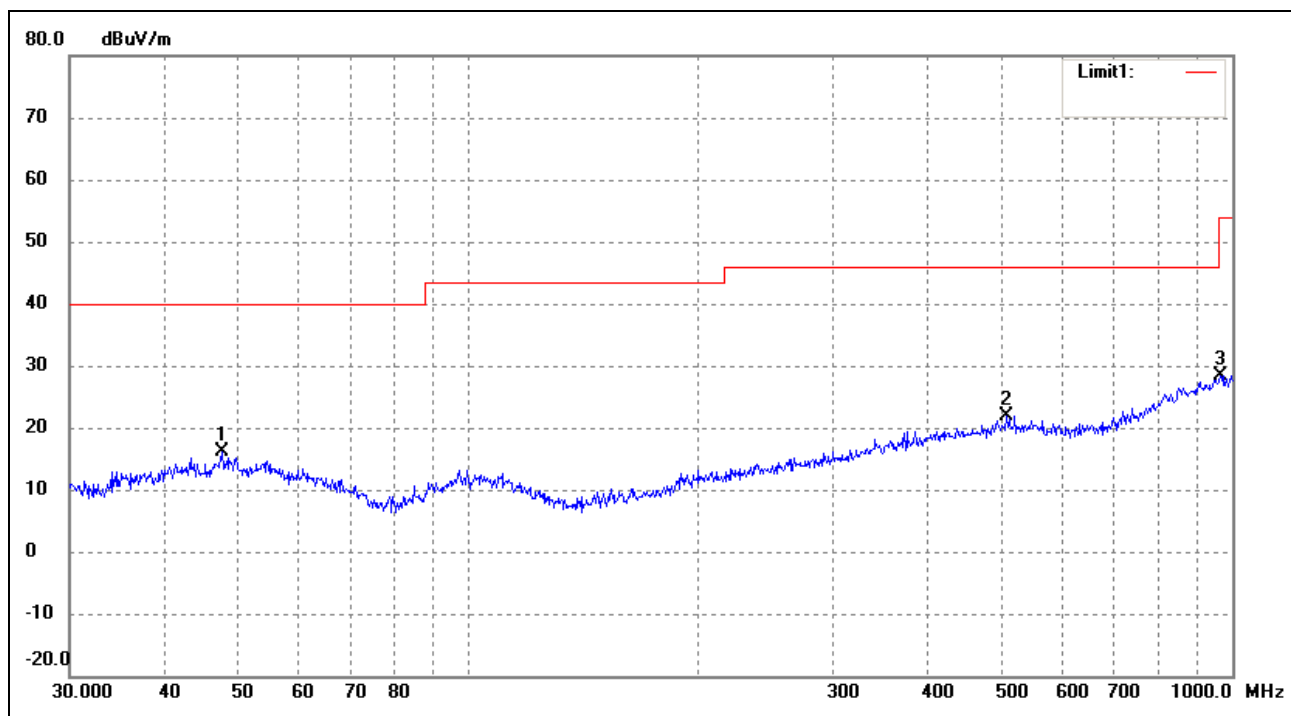


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	36.0007	18.13	7.05	25.18	40.00	-14.82	162	100	peak
2	168.4138	18.43	4.84	23.27	43.50	-20.23	200	100	peak
3	938.8326	16.88	21.61	38.49	46.00	-7.51	200	100	peak

Operating Condition: 802.11g Transmitting Channel 13-2472MHz

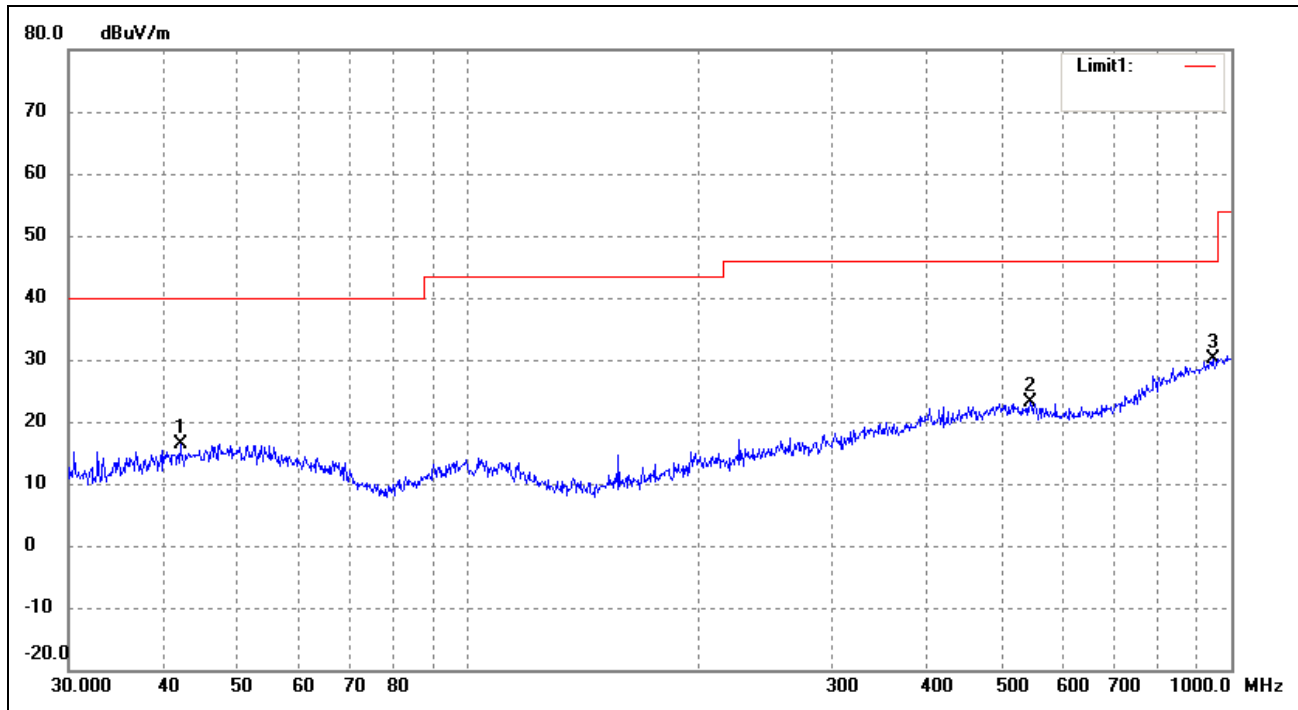
Comment: Battery: DC3.7V

Test Specification: Horizontal

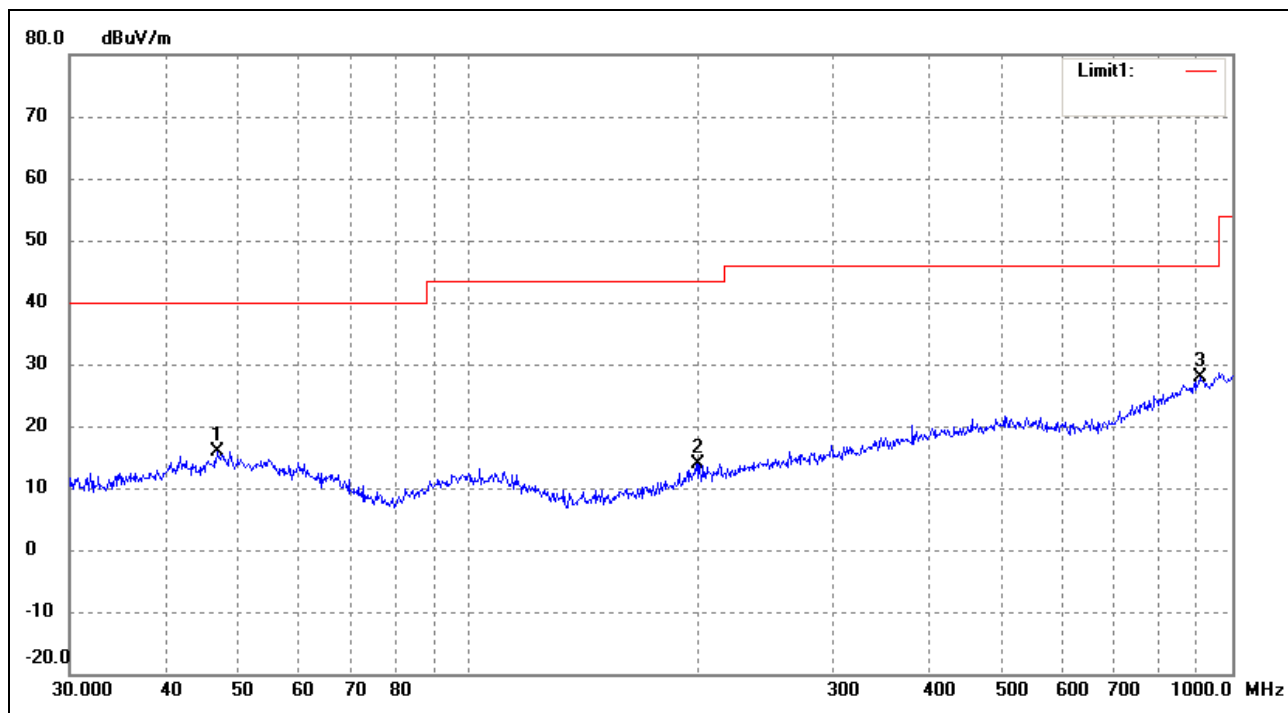


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	47.4918	23.48	-7.45	16.03	40.00	-23.97	270	100	peak
2	506.4791	23.03	-1.16	21.87	46.00	-24.13	150	100	peak
3	965.5421	22.32	6.16	28.48	54.00	-25.52	360	100	peak

Test Specification: Vertical

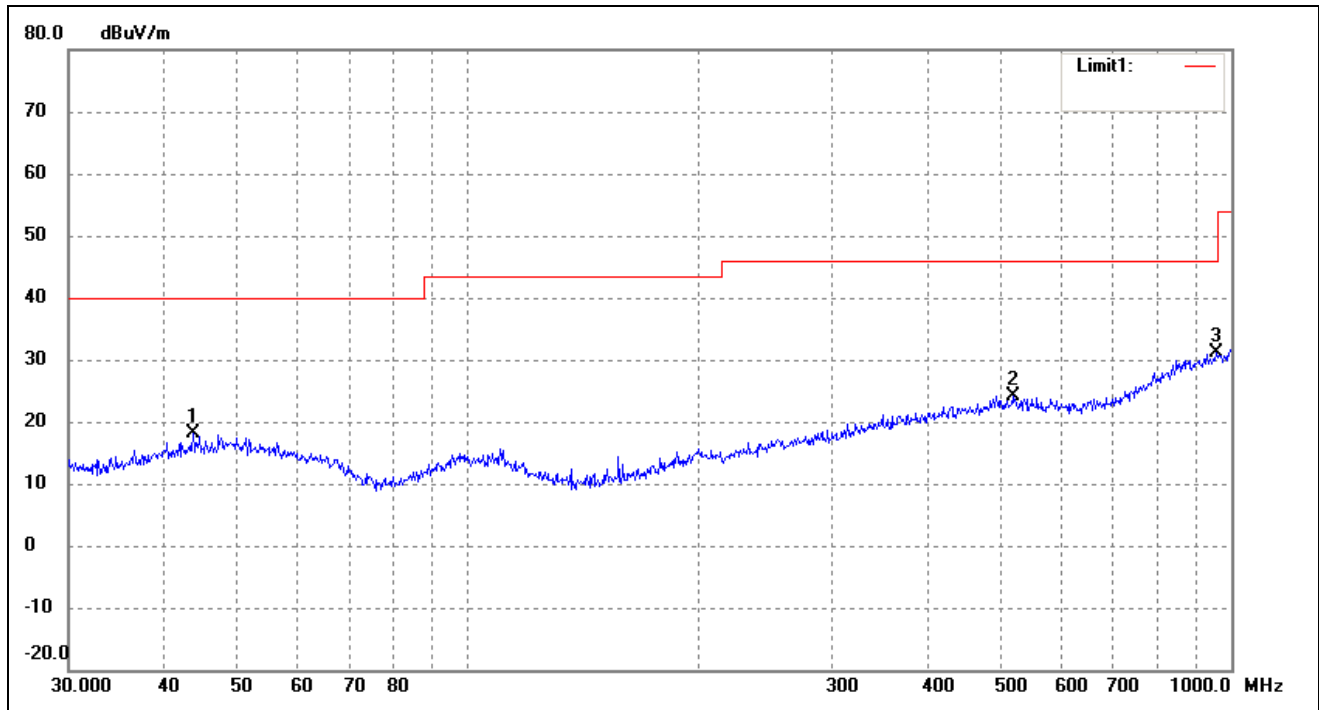


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	42.0066	24.55	-8.05	16.50	40.00	-23.50	360	100	peak
2	545.1826	23.10	0.02	23.12	46.00	-22.88	180	100	peak
3	945.4399	24.13	5.88	30.01	46.00	-15.99	120	100	peak

Plot of Radiated Emissions Test Data (30MHz to 1GHz)EUT: *Mobile Phone*Tested Model: *X50*Operating Condition: *802.11n-HT20 Transmitting Channel 1-2412MHz*Comment: *Battery: DC3.7V*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	46.8303	23.34	-7.45	15.89	40.00	-24.11	260	100	peak
2	199.9856	23.06	-9.06	14.00	43.50	-29.50	120	200	peak
3	906.4824	22.37	5.45	27.82	46.00	-18.18	289	200	peak

Test Specification: Vertical

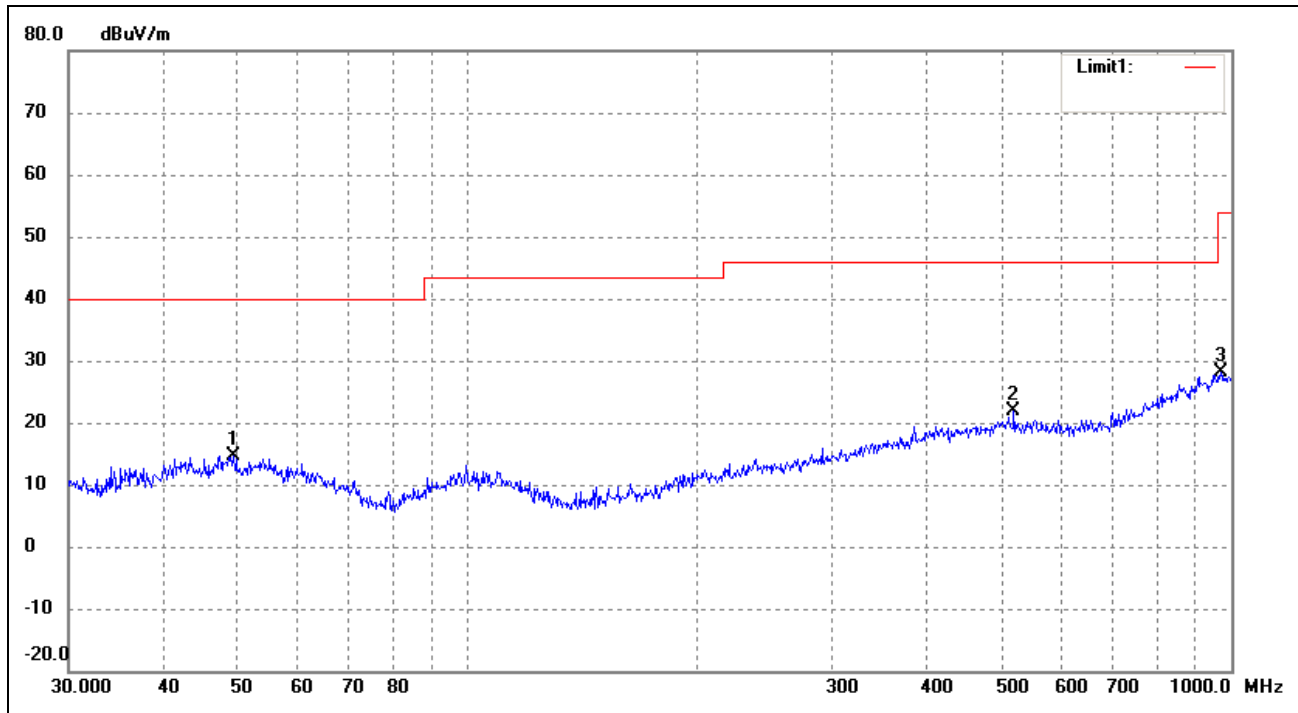


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	43.6585	25.89	-7.73	18.16	40.00	-21.84	130	100	peak
2	517.2480	24.85	-0.68	24.17	46.00	-21.83	120	100	peak
3	955.4381	25.13	6.01	31.14	46.00	-14.86	360	100	peak

Operating Condition: 802.11n-HT20 Transmitting Channel 7-2442MHz

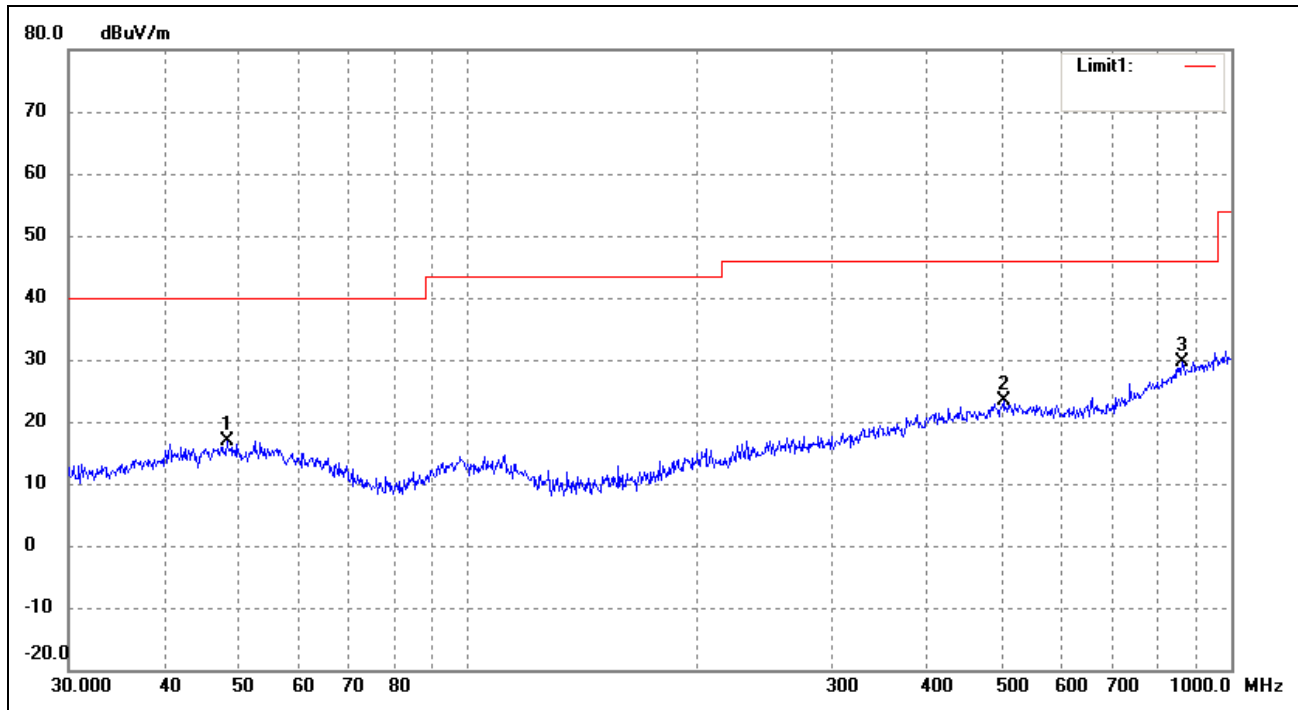
Comment: Battery: DC3.7V

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	49.3594	22.05	-7.45	14.60	40.00	-25.40	274	100	peak
2	519.0649	22.99	-1.22	21.77	46.00	-24.23	130	100	peak
3	968.9338	21.83	6.21	28.04	54.00	-25.96	120	100	peak

Test Specification: Vertical

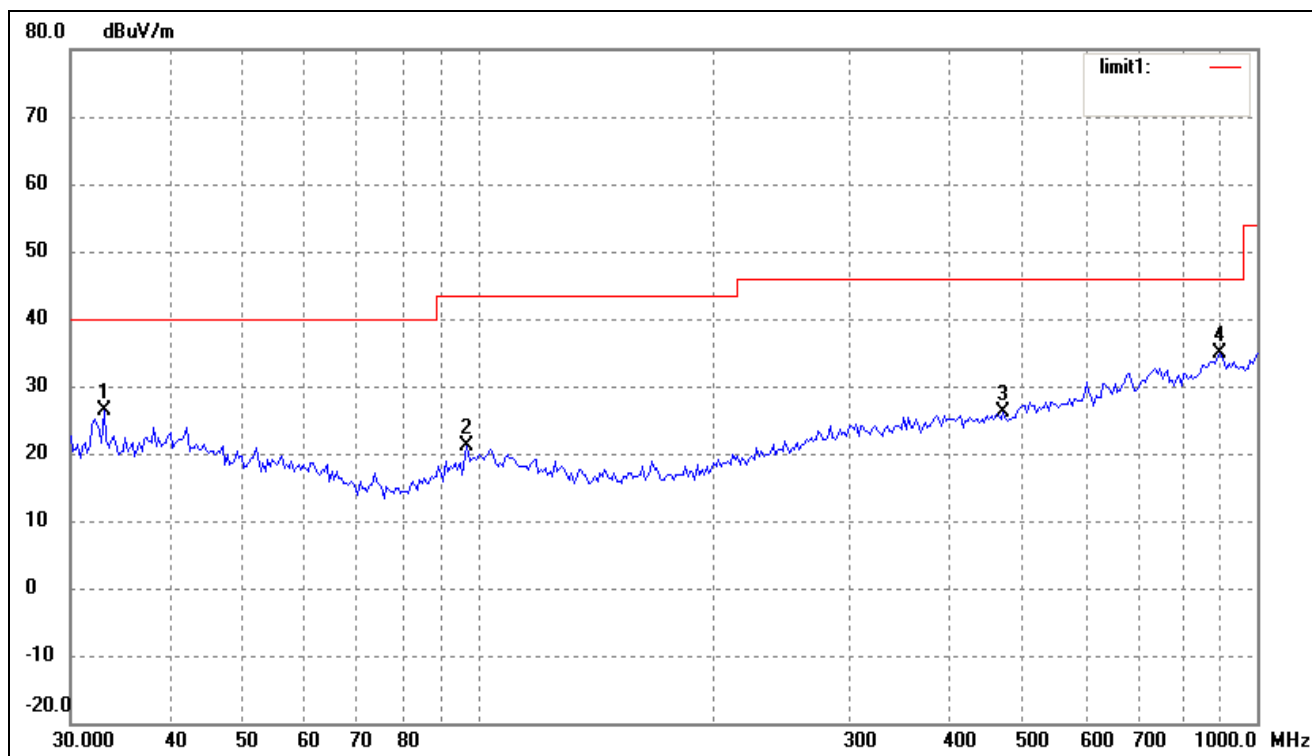


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	48.3318	24.38	-7.45	16.93	40.00	-23.07	360	100	peak
2	502.9395	24.35	-1.05	23.30	46.00	-22.70	110	100	peak
3	863.0562	25.03	4.65	29.68	46.00	-16.32	120	100	peak

Operating Condition: 802.11n-HT20 Transmitting Channel 11-2462MHz

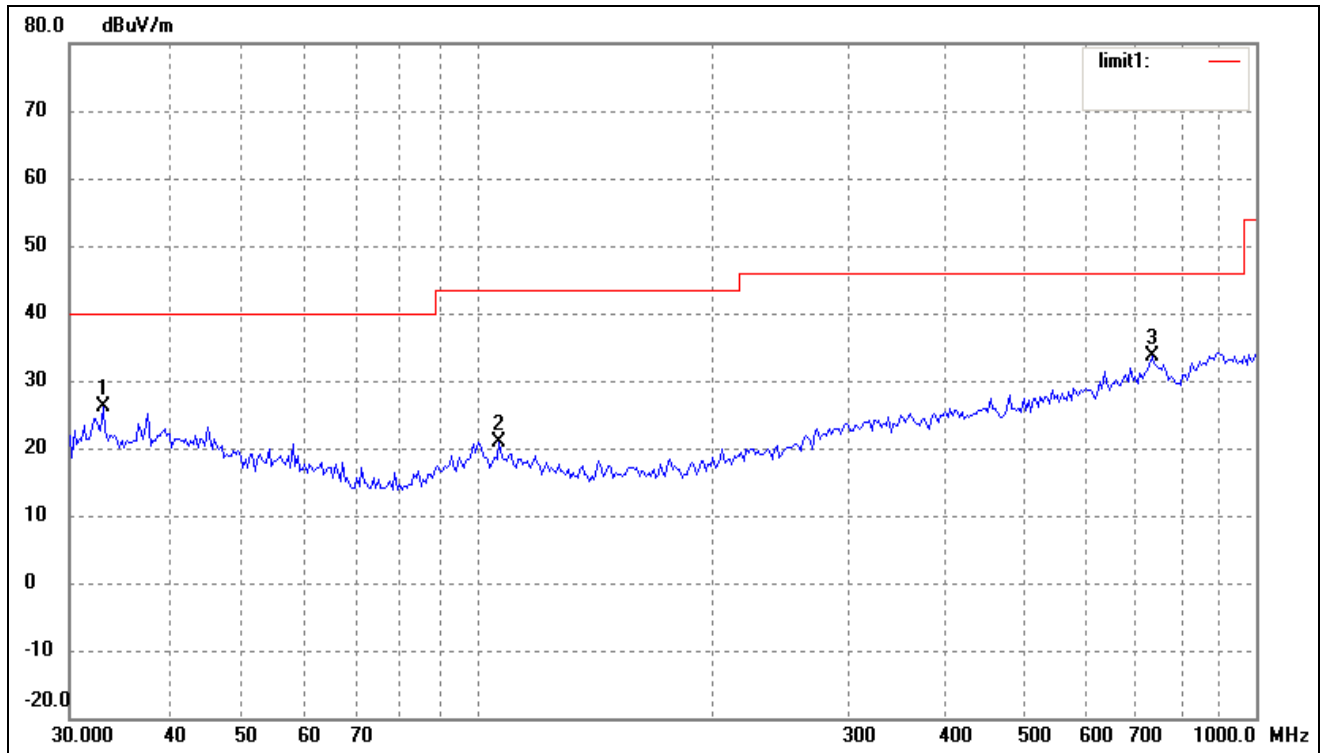
Comment: Battery: DC3.7V

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	33.0950	17.92	8.56	26.48	40.00	-13.52	12	100	peak
2	96.7749	14.97	6.04	21.01	43.50	-22.49	12	100	peak
3	472.1760	14.50	11.55	26.05	46.00	-19.95	12	100	peak
4	893.8567	15.72	19.27	34.99	46.00	-11.01	12	100	peak

Test Specification: Vertical

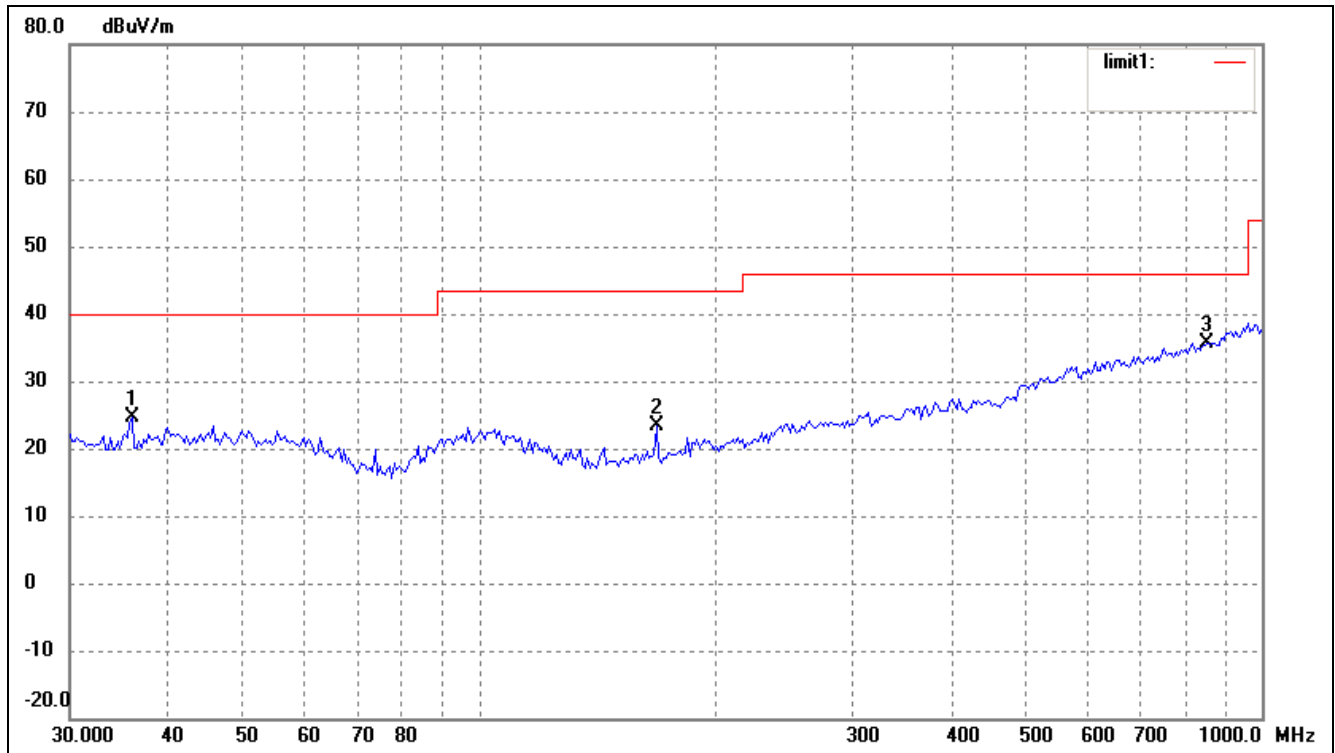


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	33.0950	17.53	8.56	26.09	40.00	-13.91	0	100	peak
2	106.7587	14.79	6.18	20.97	43.50	-22.53	0	100	peak
3	734.4913	15.85	17.68	33.53	46.00	-12.47	0	100	peak
1	33.0950	17.53	8.56	26.09	40.00	-13.91	0	100	peak

Operating Condition: 802.11n-HT20 Transmitting Channel 12-2467MHz

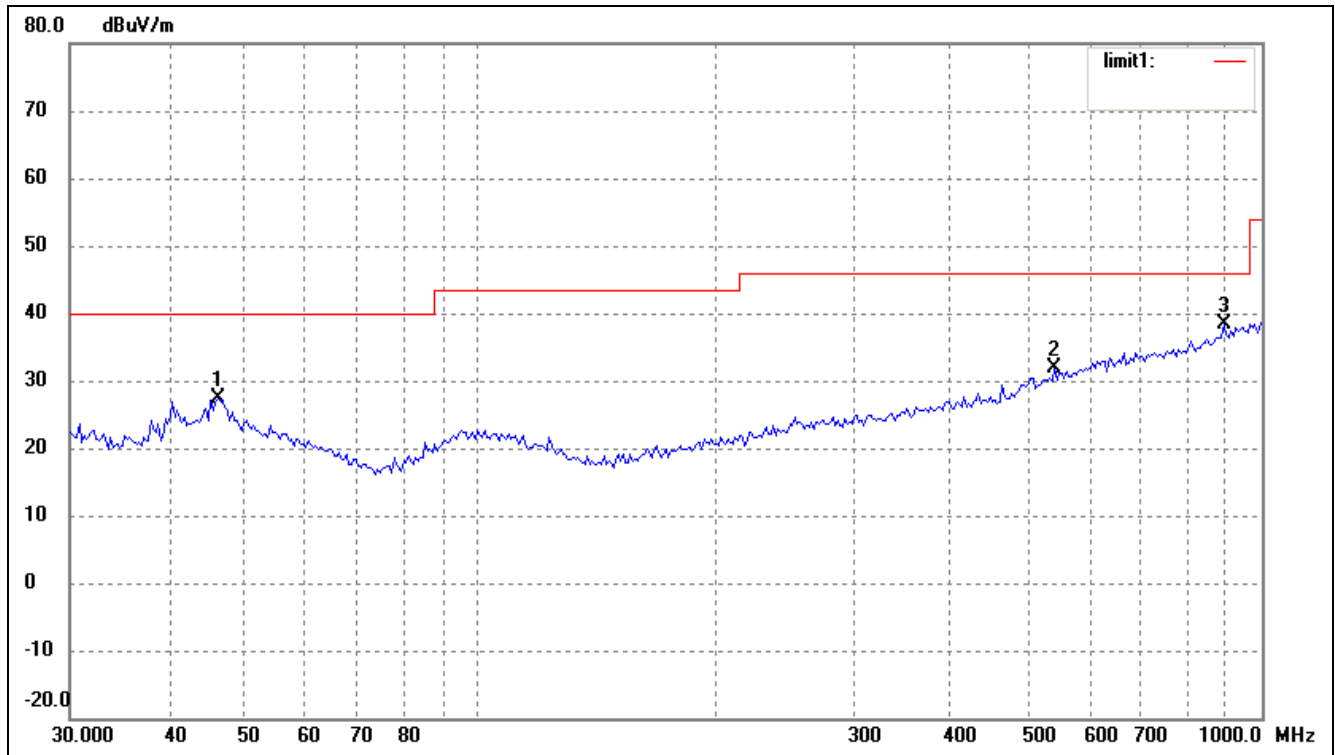
Comment: Battery: DC3.7V

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	36.0007	17.53	7.05	24.58	40.00	-15.42	264	100	peak
2	168.4138	18.62	4.84	23.46	43.50	-20.04	113	200	peak
3	851.0353	15.66	19.97	35.63	46.00	-10.37	287	100	peak

Test Specification: Vertical

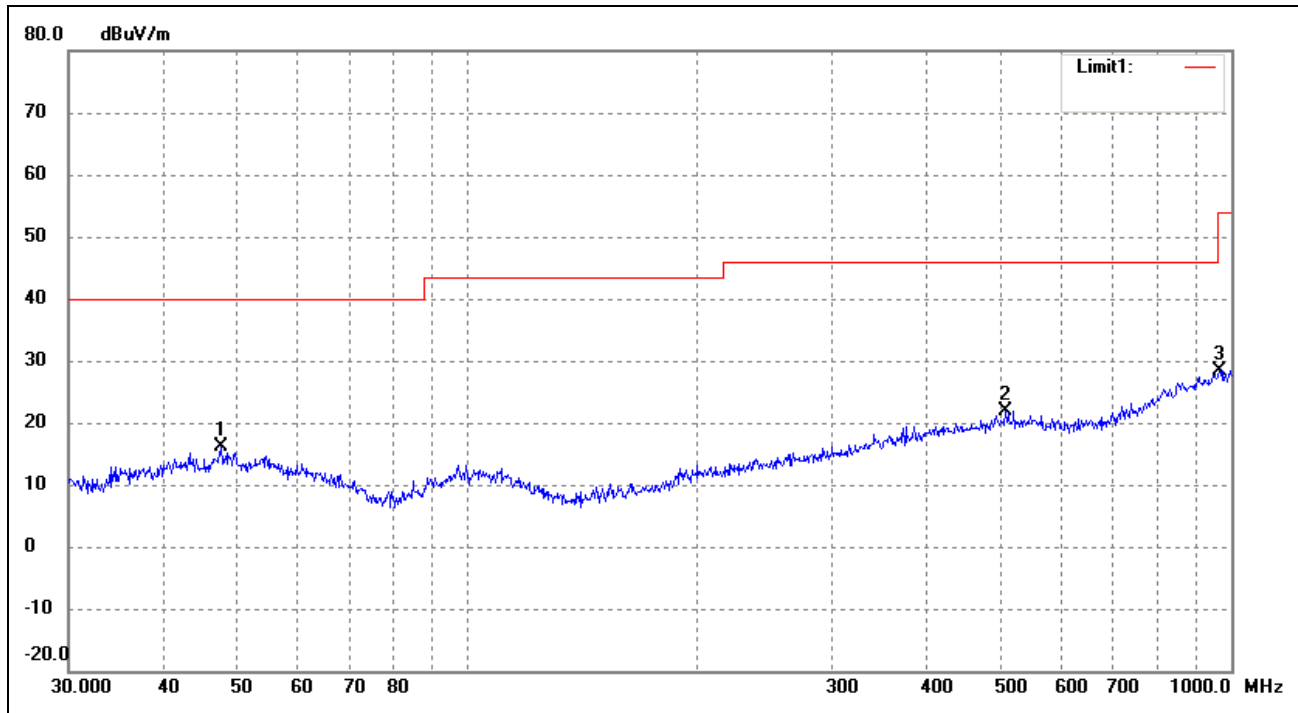


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	46.3402	19.23	8.16	27.39	40.00	-12.61	234	100	peak
2	543.2742	16.38	15.38	31.76	46.00	-14.24	118	100	QP
3	893.8567	17.70	20.78	38.48	46.00	-7.52	164	100	QP

Operating Condition: 802.11n-HT20 Transmitting Channel 13-2472MHz

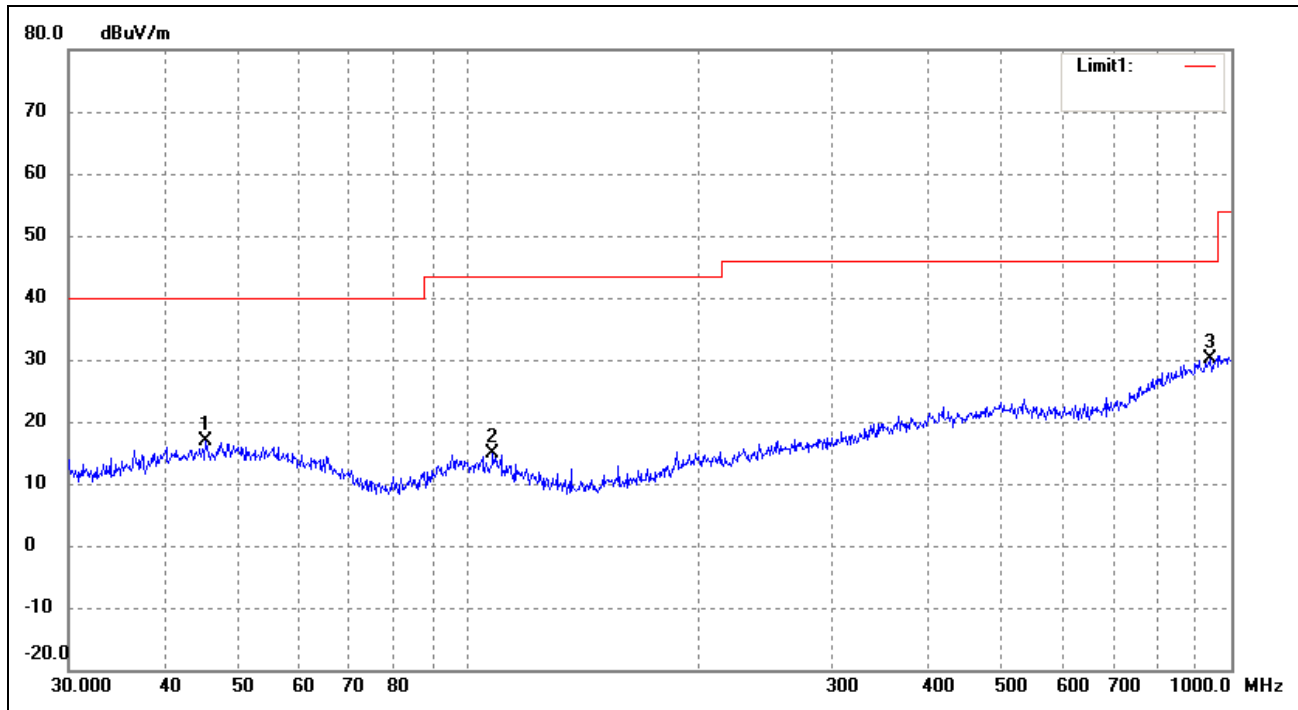
Comment: Battery: DC3.7V

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	47.4918	23.48	-7.45	16.03	40.00	-23.97	360	100	peak
2	506.4791	23.03	-1.16	21.87	46.00	-24.13	138	100	peak
3	965.5421	22.32	6.16	28.48	54.00	-25.52	180	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	45.3755	24.37	-7.46	16.91	40.00	-23.09	270	100	peak
2	107.8877	24.55	-9.59	14.96	43.50	-28.54	120	100	peak
3	938.8326	24.35	5.81	30.16	46.00	-15.84	360	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	
Channel 1-2412MHz							
4824.000	51.64	-3.87	47.77	74.00	-26.23	H	PK
4824.000	38.37	-3.87	34.50	54.00	-19.50	H	AV
7236.000	49.52	1.14	50.66	74.00	-23.34	H	PK
7236.000	35.5	1.19	36.69	54.00	-17.31	H	AV
4824.000	52.79	-3.86	48.93	74.00	-25.07	V	PK
4824.000	39.37	-3.86	35.51	54.00	-18.49	V	AV
7236.000	51.06	1.10	52.16	74.00	-21.84	V	PK
7236.000	38.43	1.10	39.53	54.00	-14.47	V	AV
Channel 7-2442MHz							
4884.000	53.33	-3.74	46.47	74.00	-24.41	H	PK
4884.000	40.12	-3.74	35.14	54.00	-17.62	H	AV
7326.000	49.87	1.47	45.29	74.00	-22.66	H	PK
7326.000	36.8	1.47	32.71	54.00	-15.73	H	AV
4884.000	52.01	-3.74	46.22	74.00	-25.73	V	PK
4884.000	38.67	-3.74	35.02	54.00	-19.07	V	AV
7326.000	49.95	1.47	45.12	74.00	-22.58	V	PK
7326.000	36.27	1.47	33.47	54.00	-16.26	V	AV
Channel 11-2462MHz							
4924.000	53.33	-3.74	49.59	74.00	-24.41	H	PK
4924.000	40.12	-3.74	36.38	54.00	-17.62	H	AV
7386.000	49.87	1.47	51.34	74.00	-22.66	H	PK
7386.000	36.80	1.47	38.27	54.00	-15.73	H	AV
4924.000	52.01	-3.74	48.27	74.00	-25.73	V	PK
4924.000	38.67	-3.74	34.93	54.00	-19.07	V	AV
7386.000	49.95	1.47	51.42	74.00	-22.58	V	PK
7386.000	36.27	1.47	37.74	54.00	-16.26	V	AV
Channel 12-2467MHz							
4934.000	49.42	-3.62	45.80	74.00	-28.20	H	PK
4934.000	35.12	-3.62	31.50	54.00	-22.50	H	AV
7401.000	46.75	1.62	48.37	74.00	-25.63	H	PK
7401.000	33.05	1.62	34.67	54.00	-19.33	H	AV
4934.000	53.97	-3.62	50.35	74.00	-23.65	V	PK
4934.000	36.97	-3.62	33.35	54.00	-20.65	V	AV
7401.000	46.86	1.62	48.48	74.00	-25.52	V	PK
7401.000	35.14	1.62	36.76	54.00	-17.24	V	AV

Channel 13-2472MHz							
4944.000	51.21	-3.59	47.62	74.00	-26.38	H	PK
4944.000	39.39	-3.59	35.80	54.00	-18.20	H	AV
7416.000	48.53	1.79	50.32	74.00	-23.68	H	PK
7416.000	36.42	1.79	38.21	54.00	-15.79	H	AV
4944.000	50.41	-3.59	46.82	74.00	-27.18	V	PK
4944.000	37.16	-3.59	33.57	54.00	-20.43	V	AV
7416.000	48.97	1.79	50.76	74.00	-23.24	V	PK
7416.000	36.52	1.79	38.31	54.00	-15.69	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	
Channel 1-2412MHz							
4824.000	52.86	-3.87	48.99	74.00	-25.01	H	PK
4824.000	39.33	-3.87	35.46	54.00	-18.54	H	AV
7236.000	50.27	1.14	51.41	74.00	-22.59	H	PK
7236.000	36.78	1.19	37.97	54.00	-16.03	H	AV
4824.000	51.73	-3.86	47.87	74.00	-26.13	V	PK
4824.000	36.67	-3.86	32.81	54.00	-21.19	V	AV
7236.000	48.40	1.10	49.50	74.00	-24.50	V	PK
7236.000	35.63	1.10	36.73	54.00	-17.27	V	AV
Channel 7-2442MHz							
4884.000	52.73	-3.74	48.99	74.00	-25.01	H	PK
4884.000	39.2	-3.74	35.46	54.00	-18.54	H	AV
7326.000	49.94	1.47	51.41	74.00	-22.59	H	PK
7326.000	36.5	1.47	37.97	54.00	-16.03	H	AV
4884.000	50.46	-3.74	46.72	74.00	-27.28	V	PK
4884.000	39.79	-3.74	36.05	54.00	-17.95	V	AV
7326.000	50.42	1.47	51.89	74.00	-22.11	V	PK
7326.000	38.21	1.47	39.68	54.00	-14.32	V	AV
Channel 11-2462MHz							
4924.000	50.54	-3.74	46.8	74.00	-27.20	H	PK
4924.000	38.13	-3.74	34.39	54.00	-19.61	H	AV
7386.000	44.17	1.47	45.64	74.00	-28.36	H	PK
7386.000	32.85	1.47	34.32	54.00	-19.68	H	AV
4924.000	50.54	-3.74	46.8	74.00	-27.20	V	PK
4924.000	38.13	-3.74	34.39	54.00	-19.61	V	AV
7386.000	43.46	1.47	44.93	74.00	-29.07	V	PK
7386.000	31.83	1.47	33.3	54.00	-20.70	V	AV

Channel 12-2467MHz							
4934.000	49.87	-3.62	46.25	74.00	-27.75	H	PK
4934.000	35.35	-3.62	31.73	54.00	-22.27	H	AV
7401.000	47.17	1.62	48.79	74.00	-25.21	H	PK
7401.000	35.29	1.62	36.91	54.00	-17.09	H	AV
4934.000	51.53	-3.62	47.91	74.00	-26.09	V	PK
4934.000	36.47	-3.62	32.85	54.00	-21.15	V	AV
7401.000	46.73	1.62	48.35	74.00	-25.65	V	PK
7401.000	35.13	1.62	36.75	54.00	-17.25	V	AV
Channel 13-2472MHz							
4944.000	51.46	-3.59	47.87	74.00	-26.13	H	PK
4944.000	36.4	-3.59	32.81	54.00	-21.19	H	AV
7416.000	47.71	1.79	49.50	74.00	-24.50	H	PK
7416.000	34.94	1.79	36.73	54.00	-17.27	H	AV
4944.000	50.41	-3.59	46.82	74.00	-27.18	V	PK
4944.000	37.16	-3.59	33.57	54.00	-20.43	V	AV
7416.000	48.97	1.79	50.76	74.00	-23.24	V	PK
7416.000	36.52	1.79	38.31	54.00	-15.69	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	
Channel 1-2412MHz							
4824.000	49.26	-3.87	45.39	74.00	-28.61	H	PK
4824.000	35.98	-3.87	32.11	54.00	-21.89	H	AV
7236.000	47.73	1.14	48.87	74.00	-25.13	H	PK
7236.000	32.78	1.19	33.97	54.00	-20.03	H	AV
4824.000	51.44	-3.86	47.58	74.00	-26.42	V	PK
4824.000	37.43	-3.86	33.57	54.00	-20.43	V	AV
7236.000	50.32	1.10	51.42	74.00	-22.58	V	PK
7236.000	37.26	1.10	38.36	54.00	-15.64	V	AV
Channel 7-2442MHz							
4884.000	48.79	-3.74	45.05	74.00	-28.95	H	PK
4884.000	34.14	-3.74	30.40	54.00	-23.60	H	AV
7326.000	46.35	1.47	47.82	74.00	-26.18	H	PK
7326.000	33.50	1.47	34.97	54.00	-19.03	H	AV
4884.000	50.00	-3.74	46.26	74.00	-27.74	V	PK
4884.000	36.21	-3.74	32.47	54.00	-21.53	V	AV
7326.000	47.25	1.47	48.72	74.00	-25.28	V	PK
7326.000	35.47	1.47	36.94	54.00	-17.06	V	AV

Channel 11-2462MHz							
4934.000	49.29	-3.74	45.55	74.00	-28.45	H	PK
4934.000	38.69	-3.74	34.95	54.00	-19.05	H	AV
7401.000	44.67	1.47	46.14	74.00	-27.86	H	PK
7401.000	33.44	1.47	34.91	54.00	-19.09	H	AV
4934.000	50.18	-3.74	46.44	74.00	-27.56	V	PK
4934.000	38.63	-3.74	34.89	54.00	-19.11	V	AV
7401.000	43.96	1.47	45.43	74.00	-28.57	V	PK
7401.000	33.56	1.47	35.03	54.00	-18.97	V	AV
Channel 12-2467MHz							
4934.000	53.35	-3.62	49.73	74.00	-24.27	H	PK
4934.000	36.64	-3.62	33.02	54.00	-20.98	H	AV
7401.000	46.45	1.62	48.07	74.00	-25.93	H	PK
7401.000	35.21	1.62	36.83	54.00	-17.17	H	AV
4934.000	53.51	-3.62	49.89	74.00	-24.11	V	PK
4934.000	37.40	-3.62	33.78	54.00	-20.22	V	AV
7401.000	46.08	1.62	47.70	74.00	-26.30	V	PK
7401.000	35.09	1.62	36.71	54.00	-17.29	V	AV
Channel 13-2472MHz							
4944.000	50.01	-3.59	46.42	74.00	-27.58	H	PK
4944.000	35.21	-3.59	31.62	54.00	-22.38	H	AV
7416.000	49.14	1.79	50.93	74.00	-23.07	H	PK
7416.000	35.11	1.79	36.90	54.00	-17.10	H	AV
4944.000	49.04	-3.59	45.45	74.00	-28.55	V	PK
4944.000	34.04	-3.59	30.45	54.00	-23.55	V	AV
7416.000	46.81	1.79	48.60	74.00	-25.40	V	PK
7416.000	32.89	1.79	34.68	54.00	-19.32	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

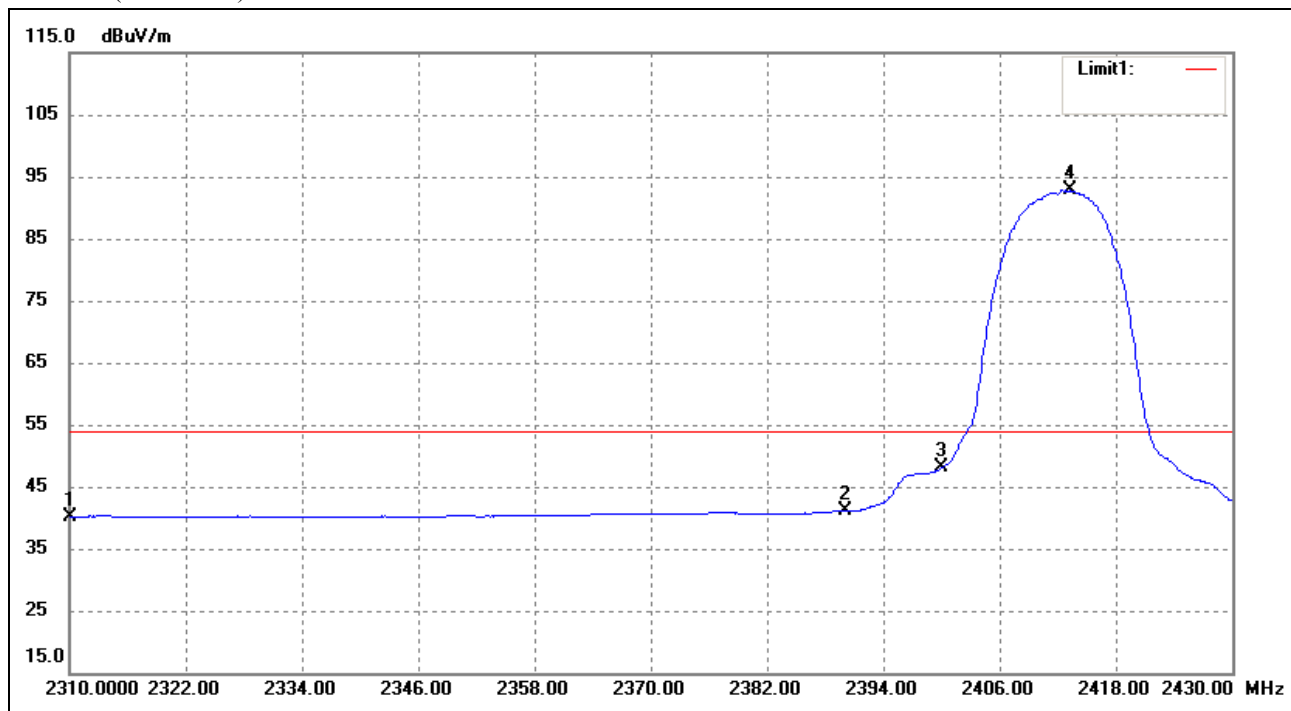
Temperature:	23°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

9.5 Summary of Test Results/Plots

Please refer to the test plots as below.

802.11b-Lowest Bandedge

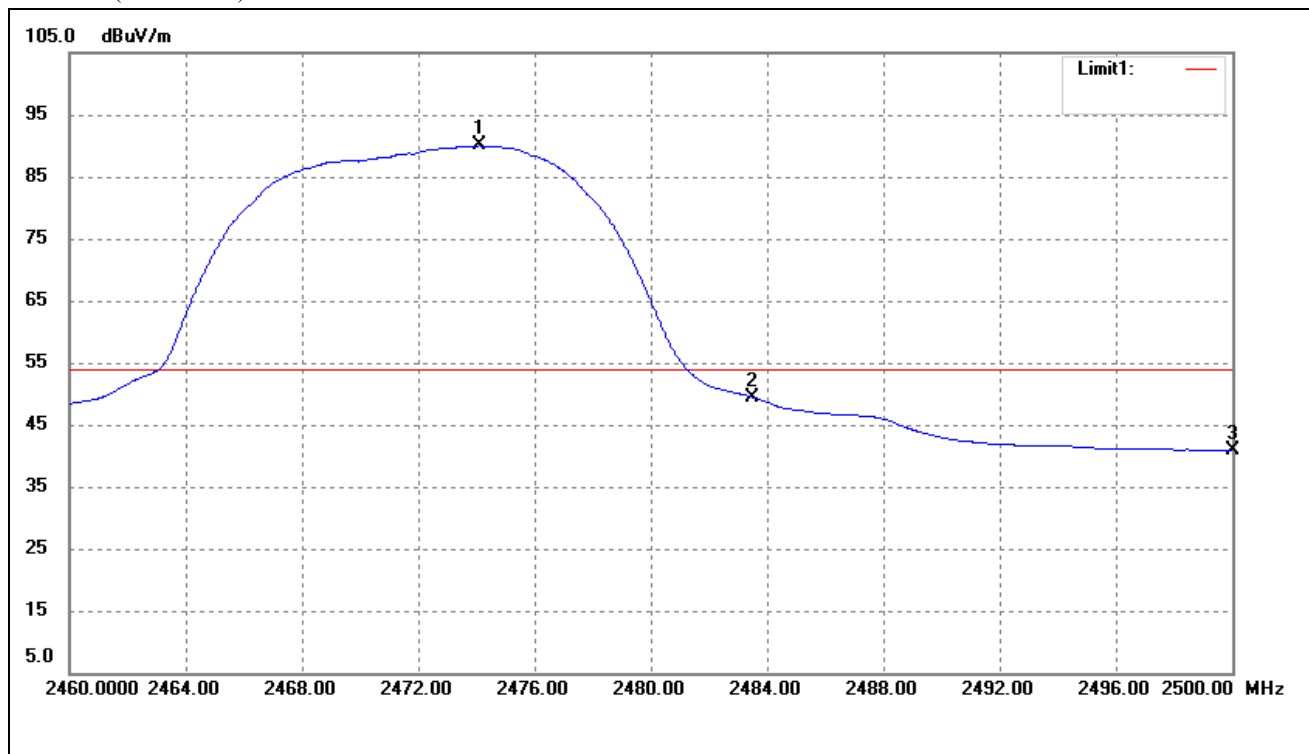
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	23.85	16.34	40.19	54.00	-13.81	Average Detector
	2310.000	35.65	16.34	51.99	74.00	-22.01	Peak Detector
2	2390.000	24.13	17.03	41.16	54.00	-12.84	Average Detector
	2390.000	36.07	17.03	53.10	74.00	-20.90	Peak Detector
3	2400.000	30.99	17.11	48.10	Delta =44.74dBc		Average Detector
4	2413.320	75.63	17.21	92.84			Average Detector

802.11b-Highest Bandedge

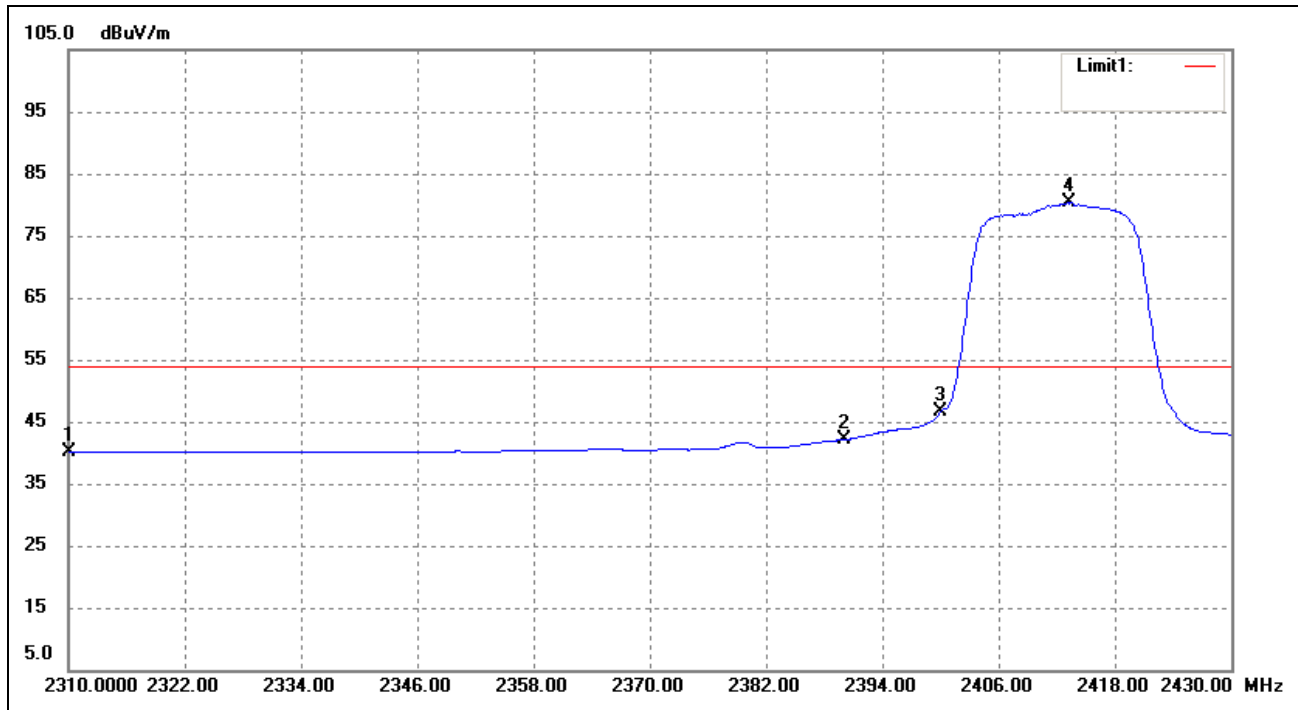
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2474.080	72.34	17.67	90.01	/	/	Average Detector
	2474.040	82.57	17.67	100.24	/	/	Peak Detector
2	2483.500	Delta = 40.56dBc		49.45	54.00	-4.55	Average Detector
	2483.500			64.06	74.00	-9.94	Peak Detector
3	2500.000	22.95	17.86	40.81	54.00	-13.19	Average Detector
	2500.000	33.76	17.86	51.62	74.00	-22.38	Peak Detector

802.11g-Lowest Bandedge

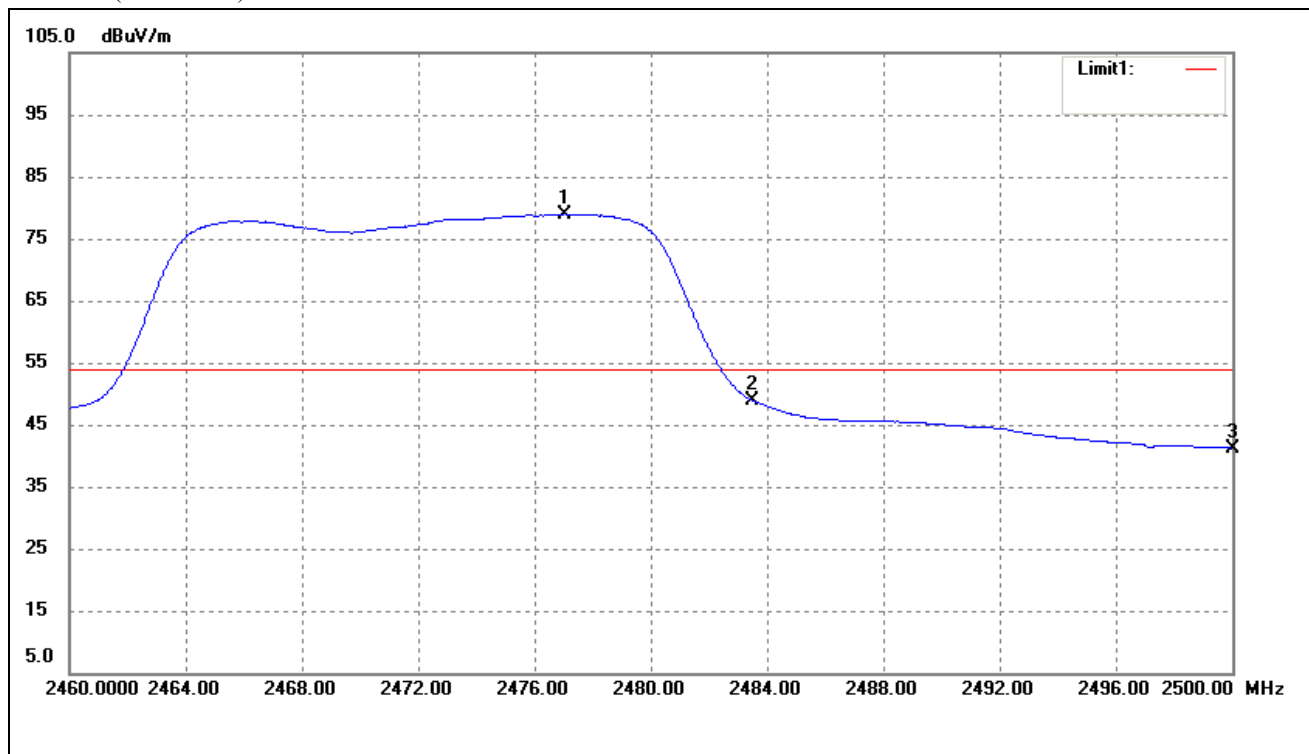
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	23.79	16.34	40.13	54.00	-13.87	Average Detector
	2310.000	35.17	16.34	51.51	74.00	-22.49	Peak Detector
2	2390.000	25.09	17.03	42.12	54.00	-11.88	Average Detector
	2390.000	41.27	17.03	58.30	74.00	-15.70	Peak Detector
3	2400.000	29.57	17.11	46.68	Delta =33.67dBc		Average Detector
4	2413.320	63.14	17.21	80.35			Average Detector

802.11g-Highest Bandedge

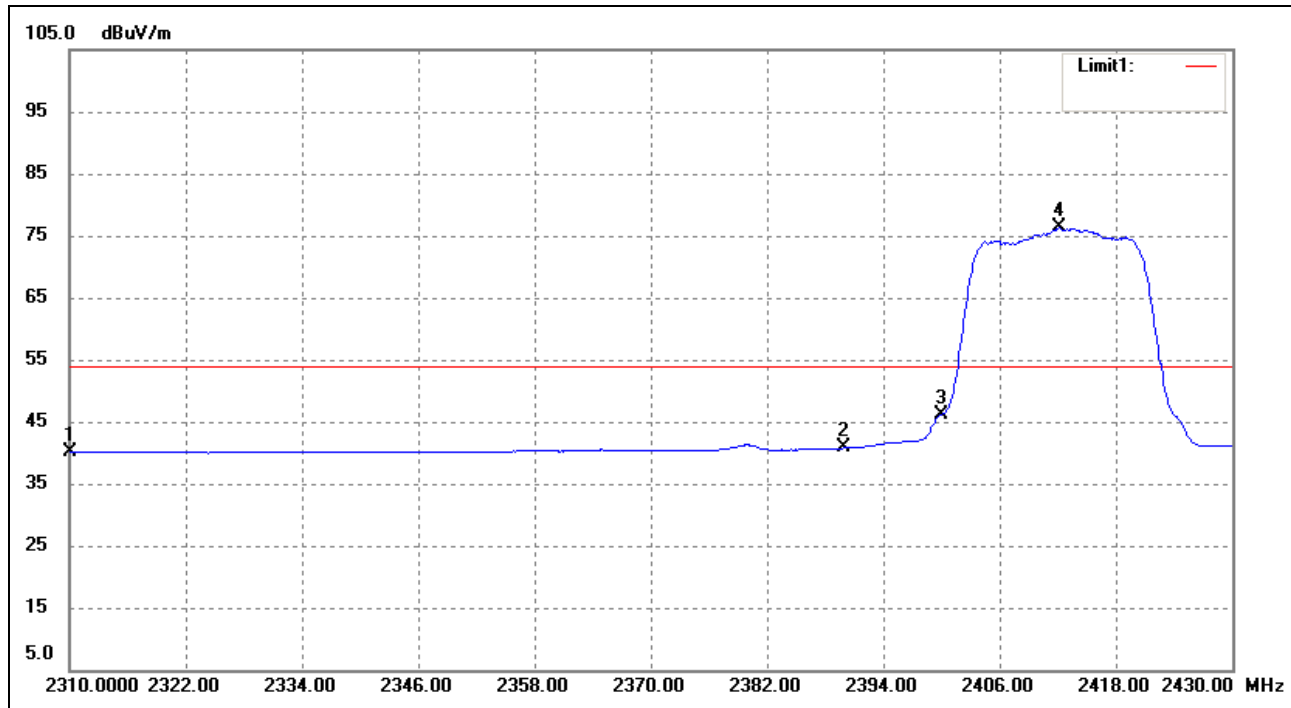
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2477.040	61.31	17.69	79.00	/	/	Average Detector
	2476.920	80.67	17.69	98.36	/	/	Peak Detector
2	2483.500	Delta = 30.15dBc		48.85	54.00	-5.15	Average Detector
	2483.500			69.02	74.00	-4.98	Peak Detector
3	2500.000	23.36	17.86	41.22	54.00	-12.78	Average Detector
	2500.000	38.90	17.86	56.76	74.00	-17.24	Peak Detector

802.11n-HT20-Lowest Bandedge

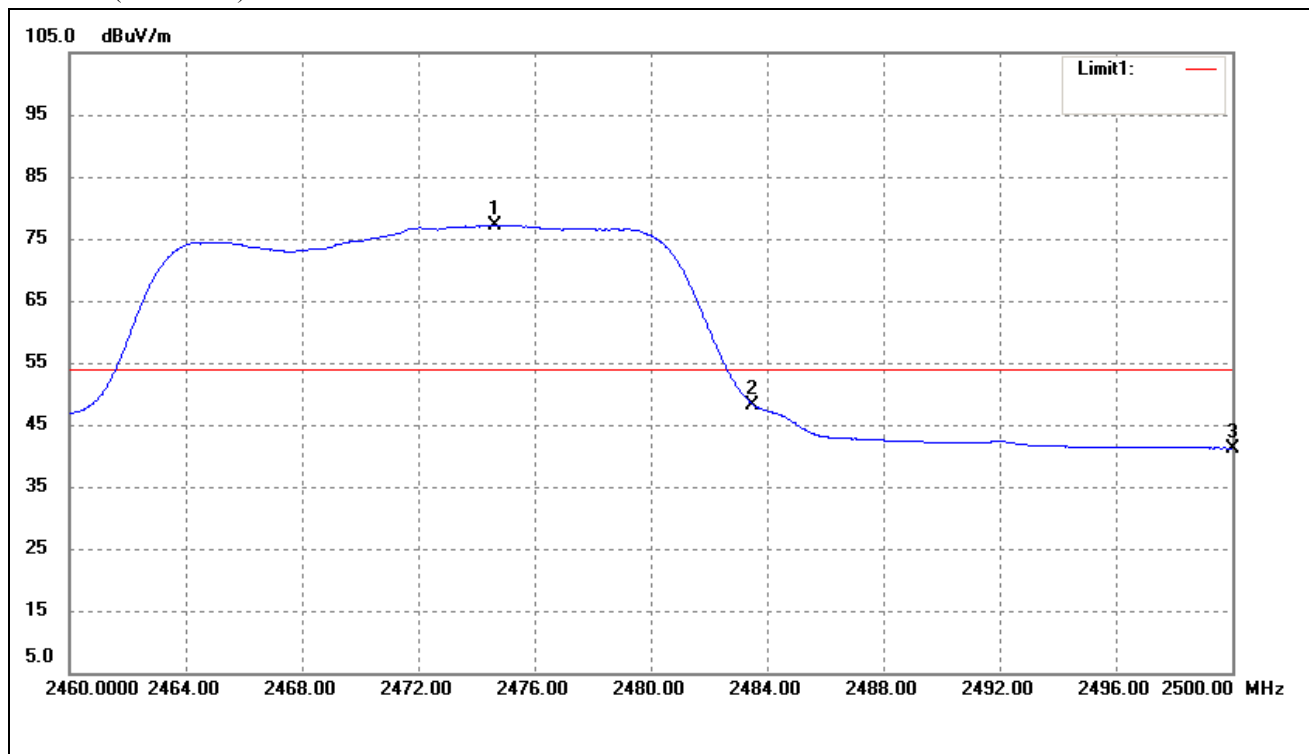
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	23.73	16.34	40.07	54.00	-13.93	Average Detector
	2310.000	35.02	16.34	51.36	74.00	-22.64	Peak Detector
2	2390.000	23.74	17.03	40.77	54.00	-13.23	Average Detector
	2390.000	36.58	17.03	53.61	74.00	-20.39	Peak Detector
3	2400.000	29.14	17.11	46.25	Delta =30.03dBc		Average Detector
4	2412.120	59.08	17.20	76.28			Average Detector

802.11n-HT20-Highest Bandedge

Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2474.640	59.52	17.67	77.19	/	/	Average Detector
	2475.600	79.51	17.68	97.19	/	/	Peak Detector
2	2483.500	Delta = 28.94dBc		48.25	54.00	-5.75	Average Detector
	2483.500			66.47	74.00	-7.53	Peak Detector
3	2500.000	23.37	17.86	41.23	54.00	-12.77	Average Detector
	2500.000	35.64	17.86	53.50	74.00	-20.50	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

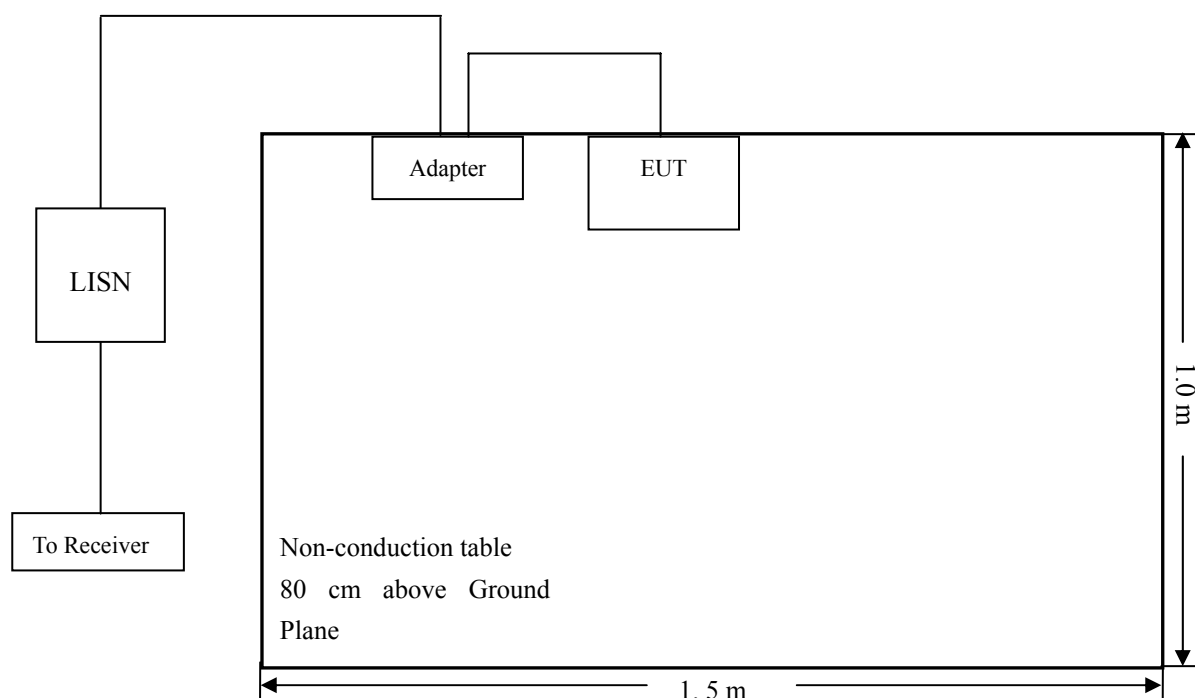
10.3 Test Procedure

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:

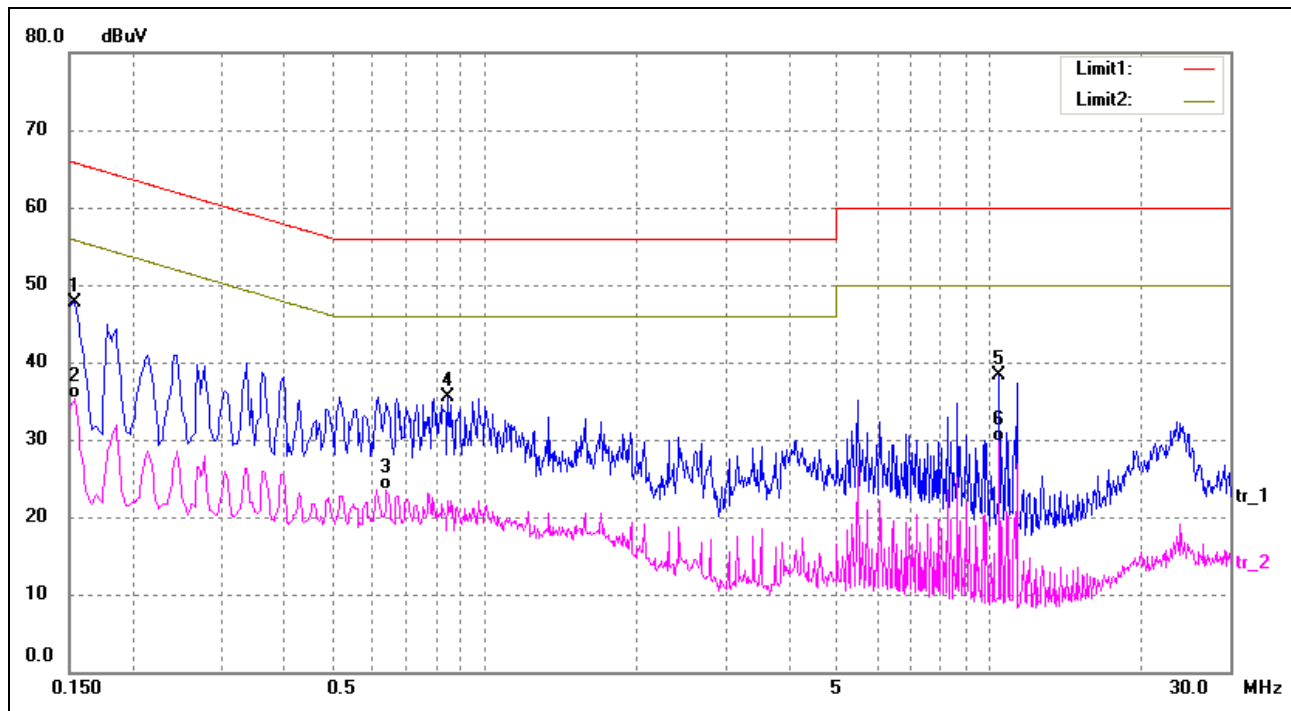
-7.16 dB at 0.1940 MHz in the Line, Peak detector, 0.15-30MHz

10.8 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

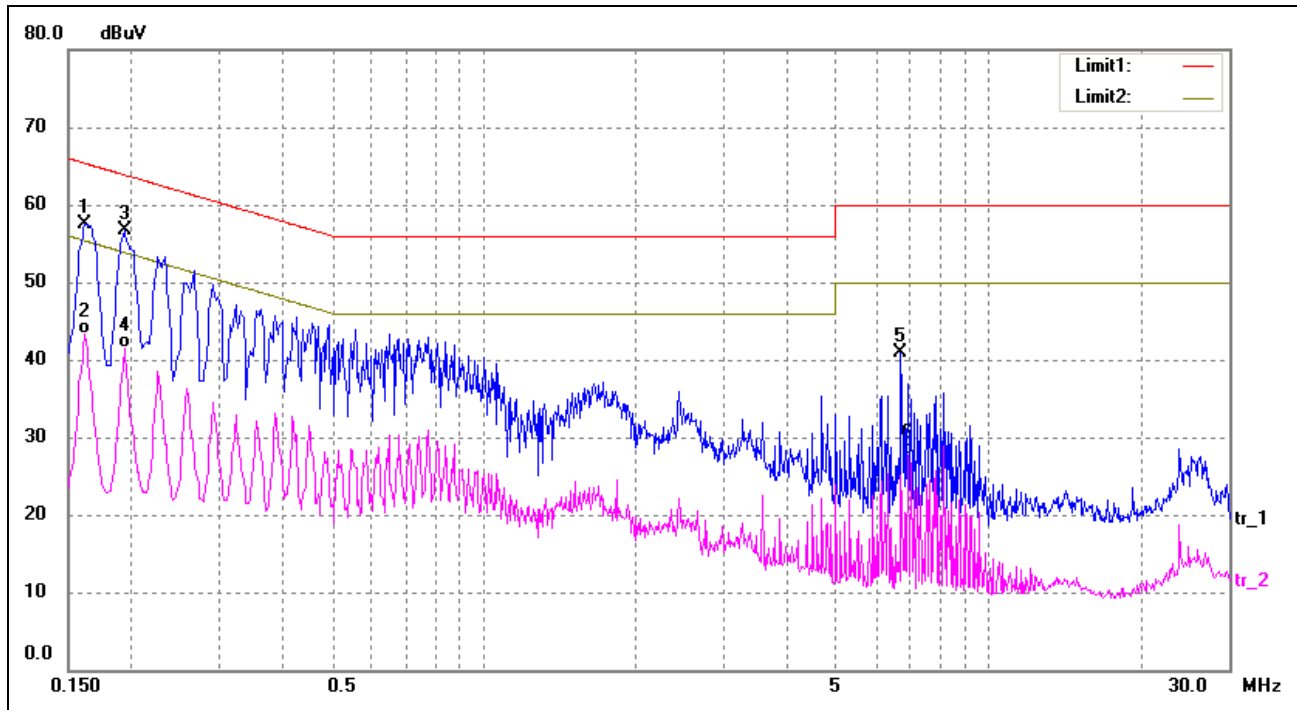
EUT: Mobile Phone
 Tested Model: X50
 Operating Condition: (WIFI)Transmitting
 Comment: AC 120V/60Hz

Test Specification: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1580	43.85	9.50	53.35	65.57	-12.22	peak
2	0.1580	28.70	9.50	38.20	55.57	-17.37	AVG
3	0.1900	27.70	9.50	37.20	54.04	-16.84	AVG
4	0.1940	42.37	9.50	51.87	63.86	-11.99	peak
5	0.7340	33.24	9.73	42.97	56.00	-13.03	peak
6	0.7340	20.30	9.73	30.03	46.00	-15.97	AVG

Test Specification: Line



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1620	48.04	9.50	57.54	65.36	-7.82	peak
2	0.1620	33.72	9.50	43.22	55.36	-12.14	AVG
3	0.1940	47.20	9.50	56.70	63.86	-7.16	peak
4	0.1940	32.04	9.50	41.54	53.86	-12.32	AVG
5	6.7300	30.86	10.00	40.86	60.00	-19.14	peak
6	6.9380	17.80	10.00	27.80	50.00	-22.20	AVG

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