FCC Part 15C
Measurement and Test Report

For

SHENZHEN KINGZONE COMMUNICATION TECHNOLOGY CO., LTD

RM2308, Block A, Electronics Science & Technology Building, NO.2070

Shennan Zhonglu, Shenzhen, China

FCC ID: 2AC57-K1

FCC Rule(s):	FCC Part 15C
Product Description:	KINGZONE K1
Tested Model:	K1
Report No.:	STR14088276I-2
Tested Date:	2014-08-26 to 2014-09-11
Issued Date:	2014-09-13
Tested By:	Silin Chen / Engineer
Reviewed By:	Lahm Peng / EMC Manager
Approved & Authorized By:	Jandy So / PSQ Manager

Prepared By:

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	SHENZHEN KINGZONE COMMUNICATION TECHNOLOGY CO., LTD
Address of applicant:	RM2308, Block A, Electronics Science & Technology Building, NO.2070 Shennan Zhonglu, Shenzhen, China
Manufacturer:	SHENZHEN KINGZONE COMMUNICATION TECHNOLOGY CO., LTD LONGHUA BRANCH
Address of manufacturer:	RM2308, Block A, Electronics Science & Technology Building, NO.2070 Shennan Zhonglu, Shenzhen, China

General Description of EUT	
Product Name:	KINGZONE K1
Brand Name:	KINGZONE, LEO
Model No.:	K1
Adding Model:	LFON3
Hardware Version:	E19_MAIN_PCBV1.0
Software Version:	0502L010_20140516
IMEI:	863811020013575/863811020013575
Rated Voltage:	DC 3.7V Battery
Battery:	K1 / 2500mAh
Adapter Model:	TC-G100
Device Category:	Portable Device
The EUT is GSM850/PCS1900, WCDMA Band II/ Band V smartphone. the smartphone is intended for speech and Multimedia Message Service (MMS) transmission. It is equipped with GPRS/EDGE class 12 for GSM850 and PCS1900 and Bluetooth, Wi-Fi, and camera functions. For more information see the following datasheet	
Note: The test data is gathered from a production sample, provided by the manufacturer. The other model listed in the report has different appearance only of K1 without circuit and electronic construction changed, declared by the manufacturer.	

Technical Characteristics of EUT	
WIFI	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2472MHz for 11b/g/n(HT20) 2422-2462MHz for 11n(HT40)
Max RF Output Power:	13.69 dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	13 for 11b/g/n(HT20), 9 for 11n(HT40)
Channel Separation:	5MHz
Type of Antenna:	Integral Antenna
Antenna Gain:	-1.0dBi

1.2 Test Standards

The following report is prepared on behalf of the SHENZHEN KINGZONE COMMUNICATION 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 public notice 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

Note: The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

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
USB Cable	0.8	Unshielded	Without Core

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook Computer	Lenovo	20007	EB12648265

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 refer to 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. RF Output Power

5.1 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.

5.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Wideband Power Meter	Anritsu	ML2487B	0935002	2014-05-28	2015-05-27
Power Sensor	Anritsu	MA2491A	1027199	2014-05-28	2015-05-27

5.3 Test Procedure

According to section 15.247(b)-power output of the KDB 558074 D01 v03r02, 9.1.2 PKPM1 Peak power meter Method The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

5.4 Environmental Conditions

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

5.5 Summary of Test Results/Plots

Test Mode	Frequency MHz	Reading dBm	Output Power mW	Limit mW
802.11b _ 11Mbps	2412	13.55	22.6464	1000
	2442	13.69	23.3884	1000
	2472	12.84	19.2309	1000
802.11g_54Mbps	2412	12.34	17.1396	1000
	2442	12.21	16.6341	1000
	2472	11.44	13.9316	1000
802.11n HT20_MCS7	2412	10.10	10.2329	1000
	2442	9.52	8.9536	1000
	2472	8.11	6.4714	1000
802.11n HT40_MCS7	2422	10.82	12.0781	1000
	2442	10.46	11.1173	1000
	2462	9.53	8.9740	1000

6. Power Spectral Density

6.1 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.

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

According to the KDB 558074 D01 v03r02, the test method of power spectral density as below:

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 to: 3 kHz ≤ RBW ≤ 100 kHz.
5. Set the VBW ≥ 3 x 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.

6.4 Environmental Conditions

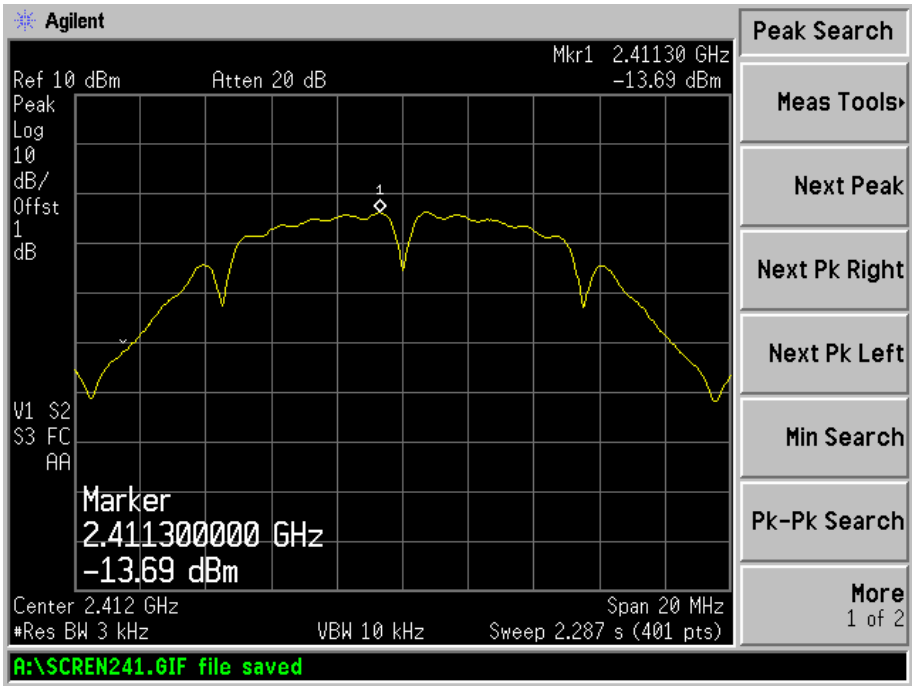
Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

6.5 Summary of Test Results/Plots

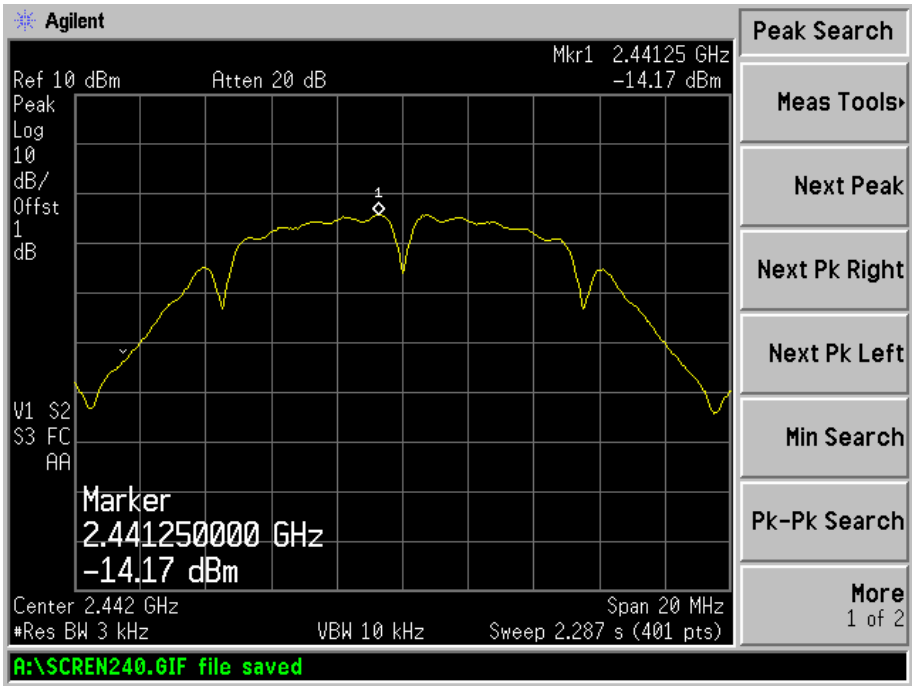
Test Mode	Test Channel MHz	Power Spectral Density dBm/3kHz	Limit dBm/3kHz
802.11b	2412	-13.69	8
	2442	-14.17	8
	2472	-14.86	8
802.11g	2412	-14.80	8
	2442	-14.95	8
	2472	-15.32	8
802.11n HT20	2412	-15.26	8
	2442	-15.60	8
	2472	-15.35	8
802.11n HT40	2422	-18.69	8
	2442	-17.45	8
	2462	-18.86	8

Please refer to the following test plots:

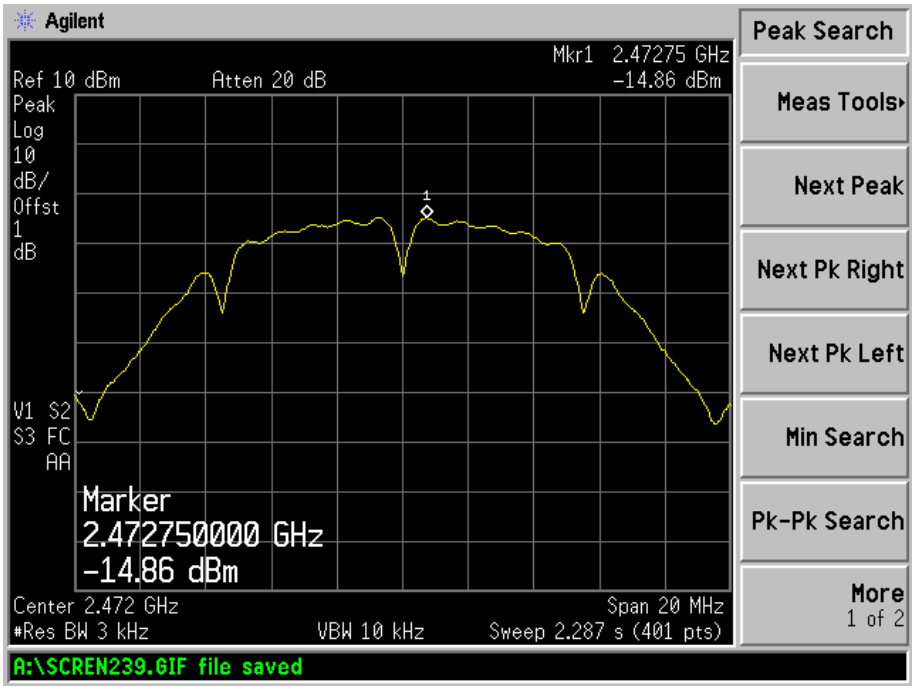
802.11b-Low Channel



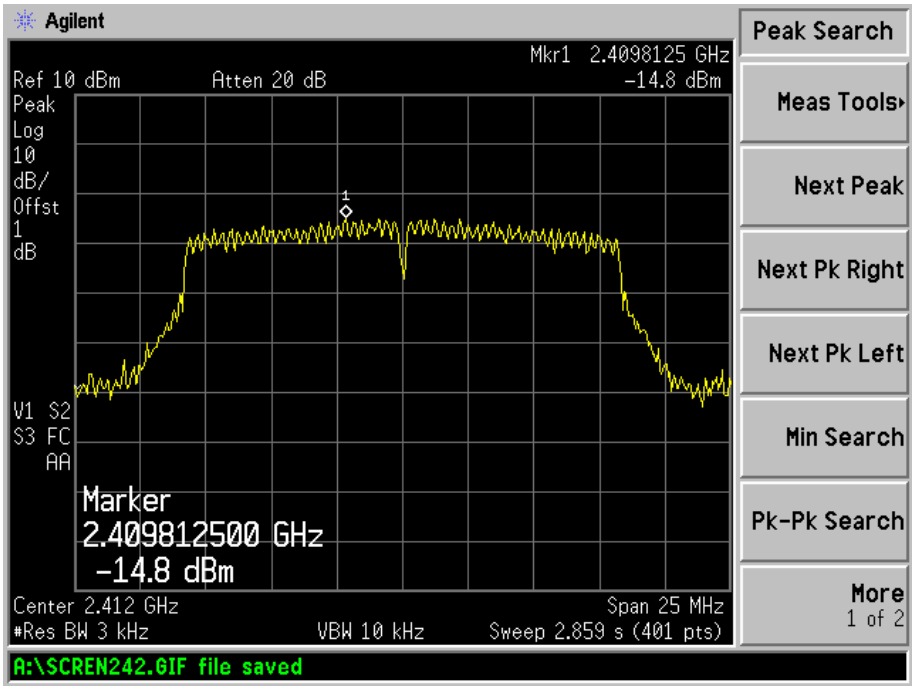
802.11b-Middle Channel



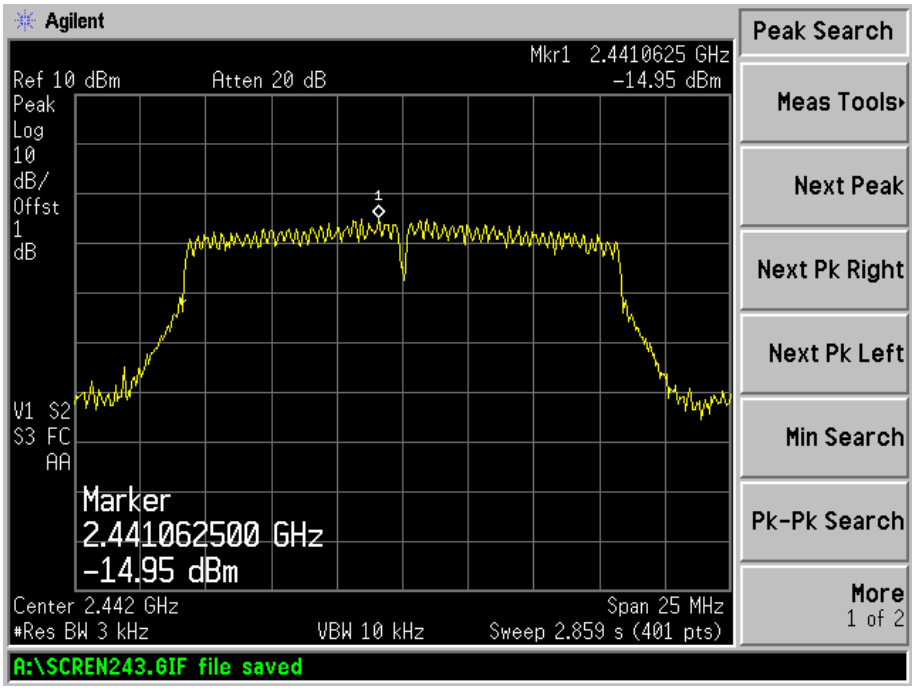
802.11b-High Channel



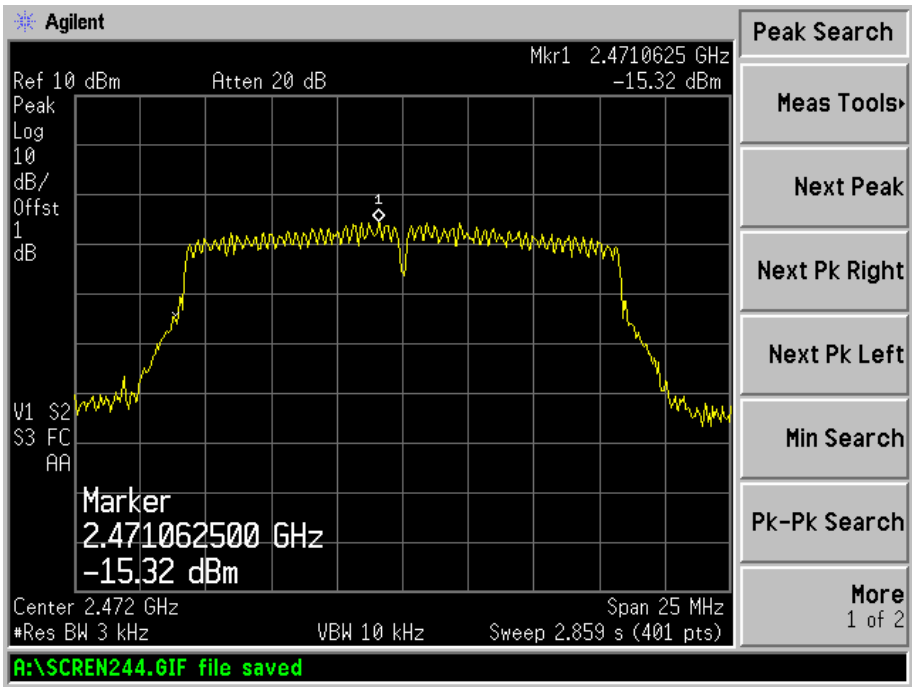
802.11g-Low Channel



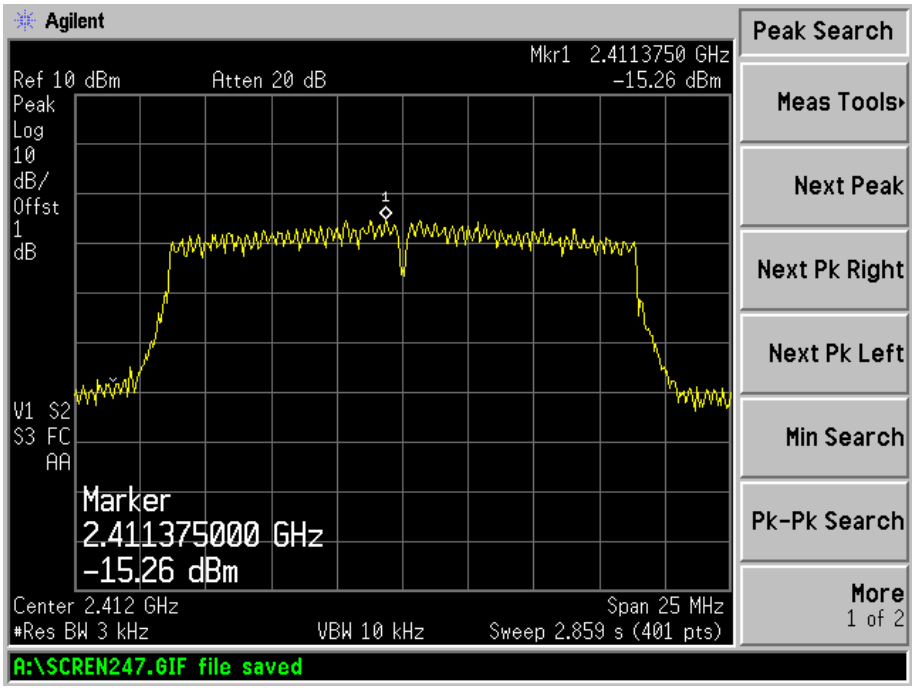
802.11g-Middle Channel



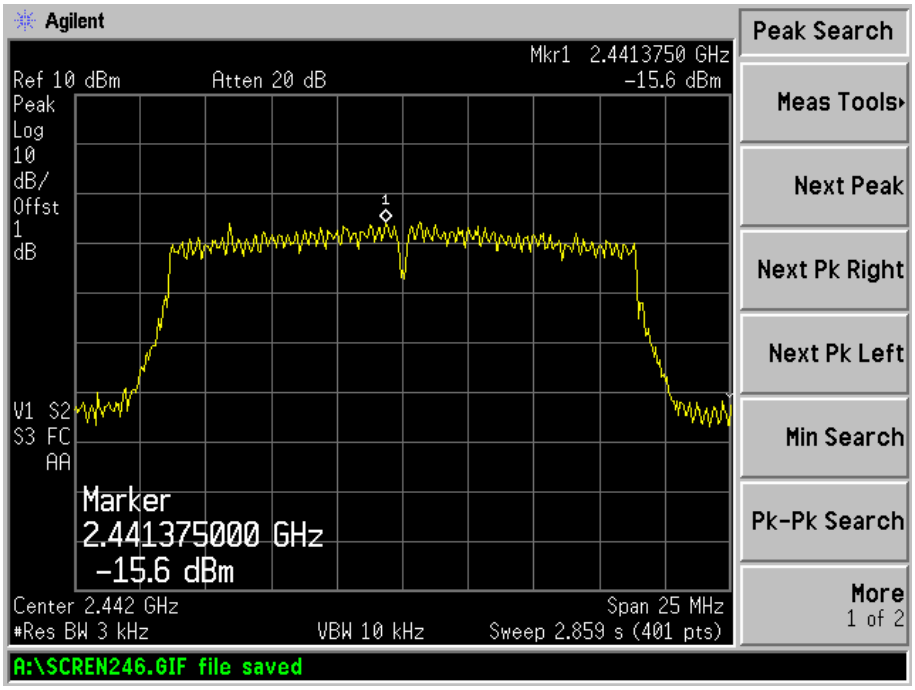
802.11g-High Channel



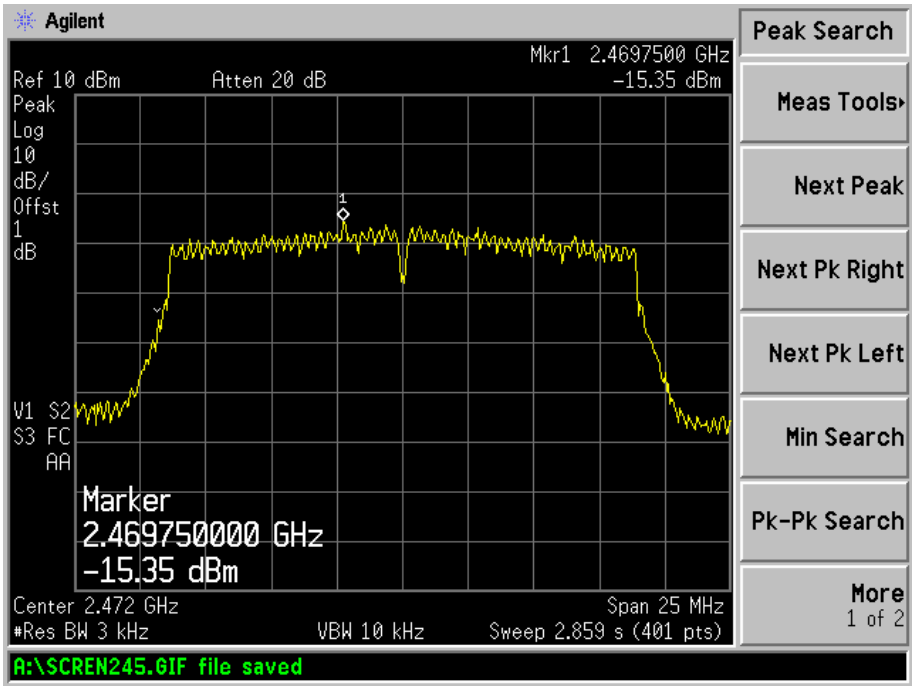
802.11n-HT20-Low Channel



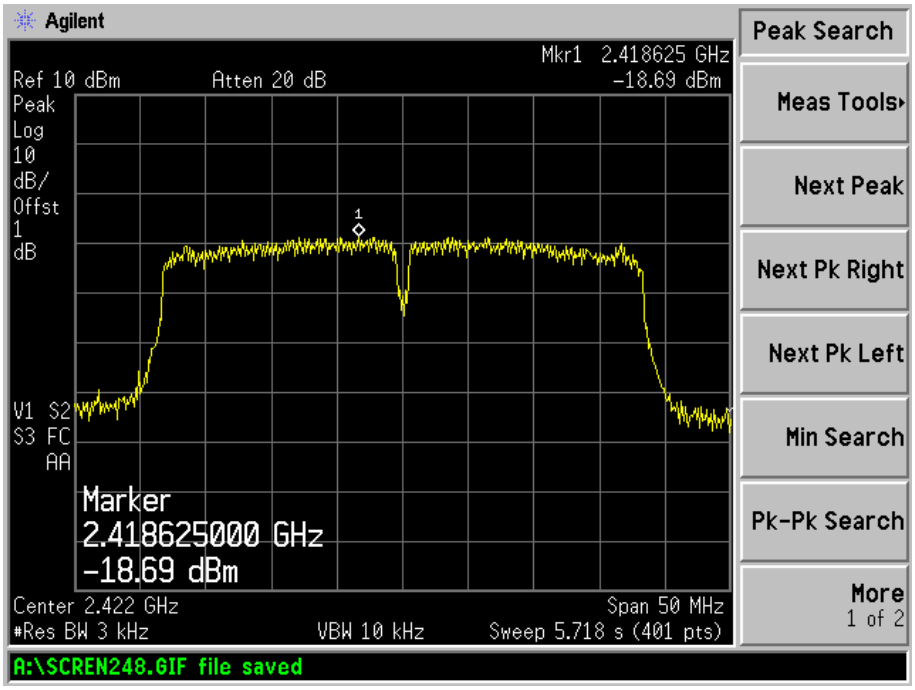
802.11n-HT20-Middle Channel



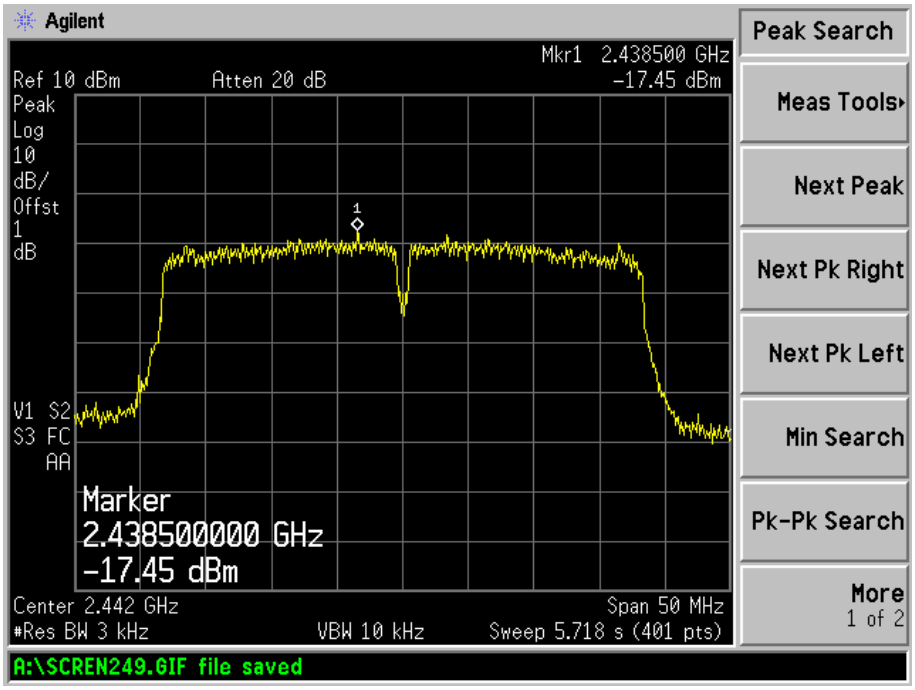
802.11n-HT20-High Channel



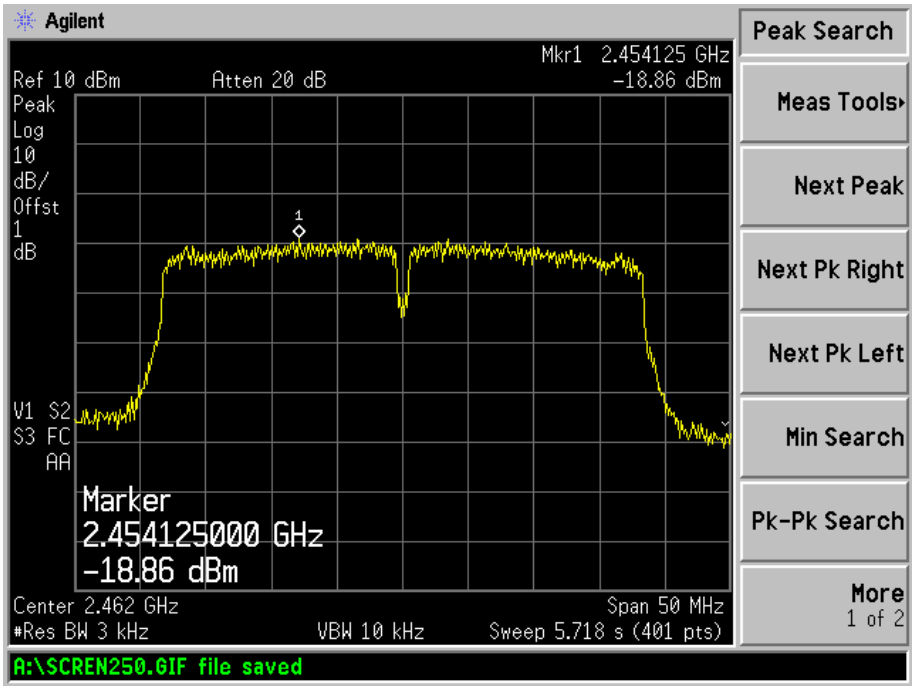
802.11n-HT40-Low Channel



802.11n-HT40-Middle Channel



802.11n-HT40-High Channel



7. 6dB Bandwidth

7.1 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.

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

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 RBW = 100 kHz.
3. Set the video bandwidth (VBW) ≥ 3 × 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.

7.4 Environmental Conditions

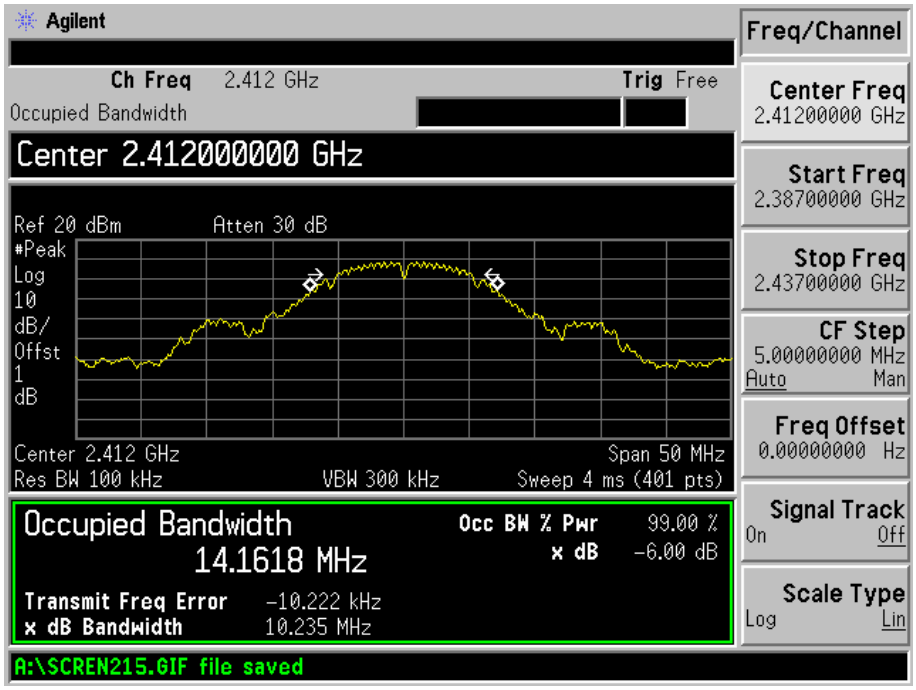
Temperature:	25° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

7.5 Summary of Test Results/Plots

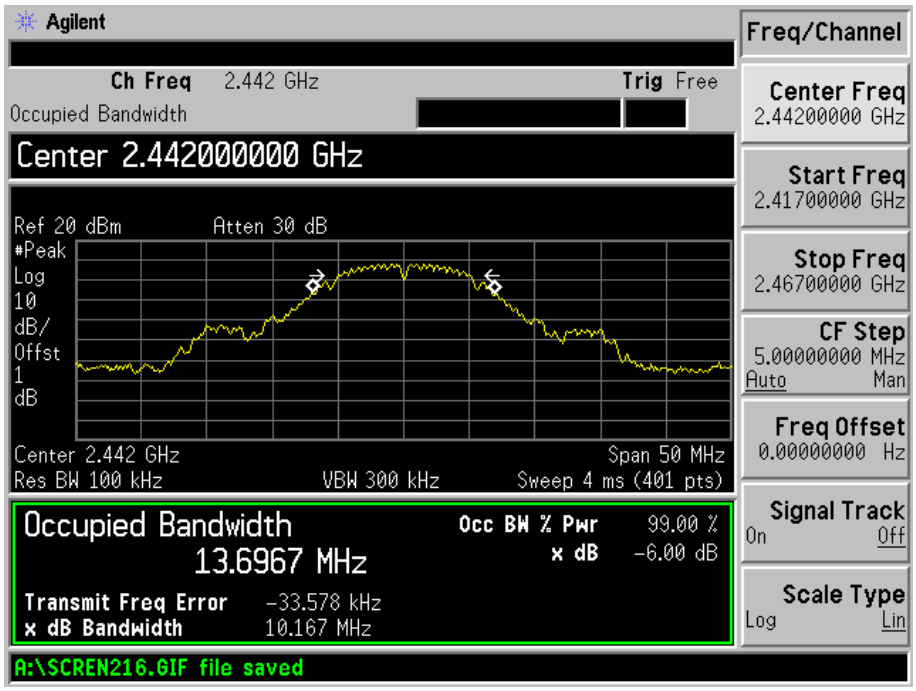
Test Mode	Test Channel MHz	6 dB Bandwidth kHz	99% Bandwidth kHz	Limit kHz
802.11b	2412	10235	14161.8	500
	2442	10167	13696.7	500
	2472	10040	13254.8	500
802.11g	2412	16275	16683.8	500
	2442	15930	16717.4	500
	2472	15802	16635.6	500
802.11n-HT20	2412	17222	17715.1	500
	2442	17381	17662.4	500
	2472	17435	17648.2	500
802.11n-HT40	2422	35807	35794.2	500
	2442	35783	35745.7	500
	2462	35840	35789.5	500

Please refer to the following test plots:

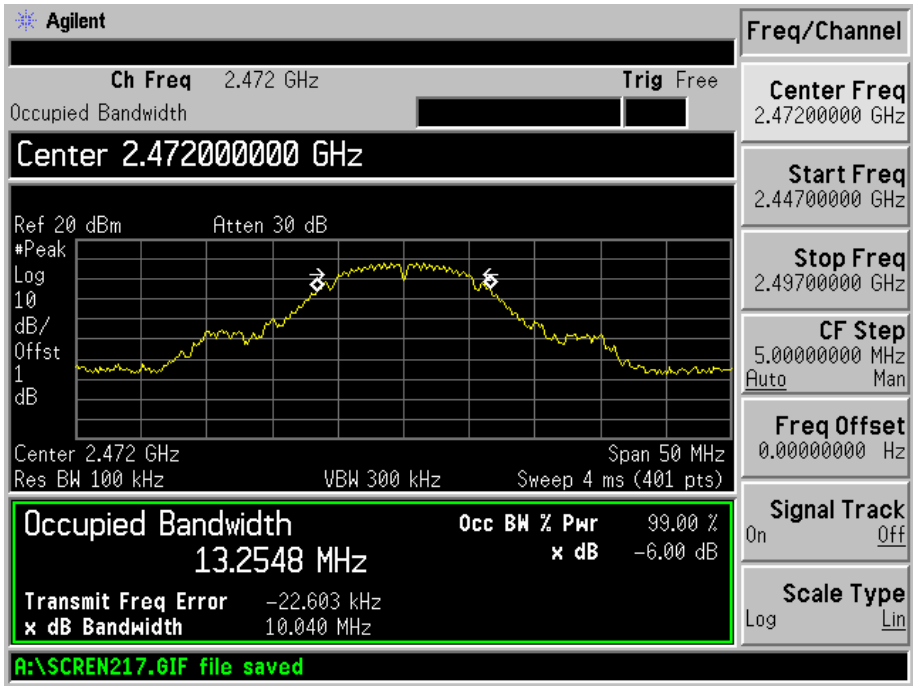
802.11b-Low Channel



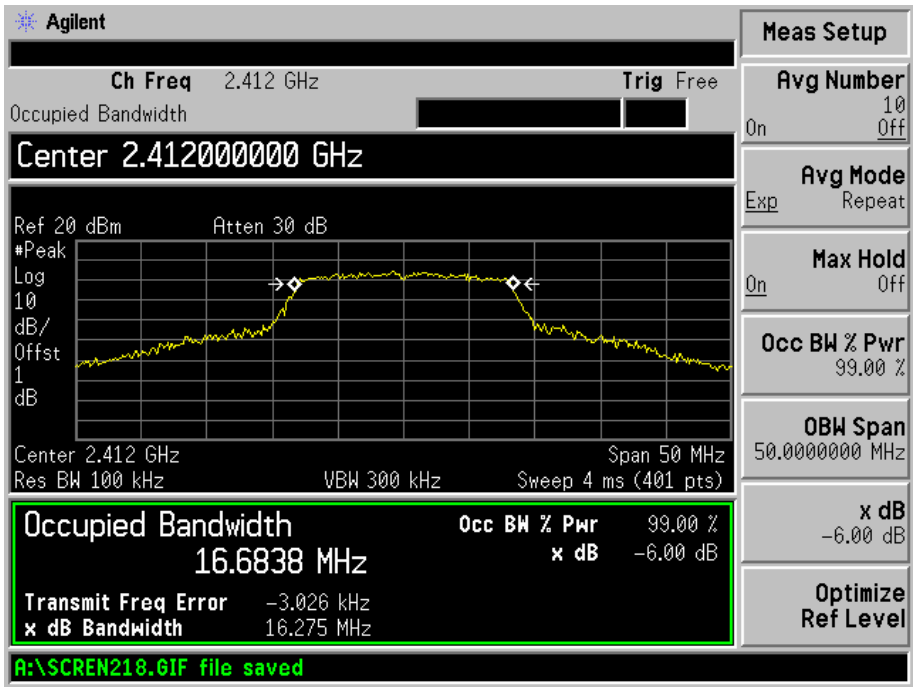
802.11b-Middle Channel



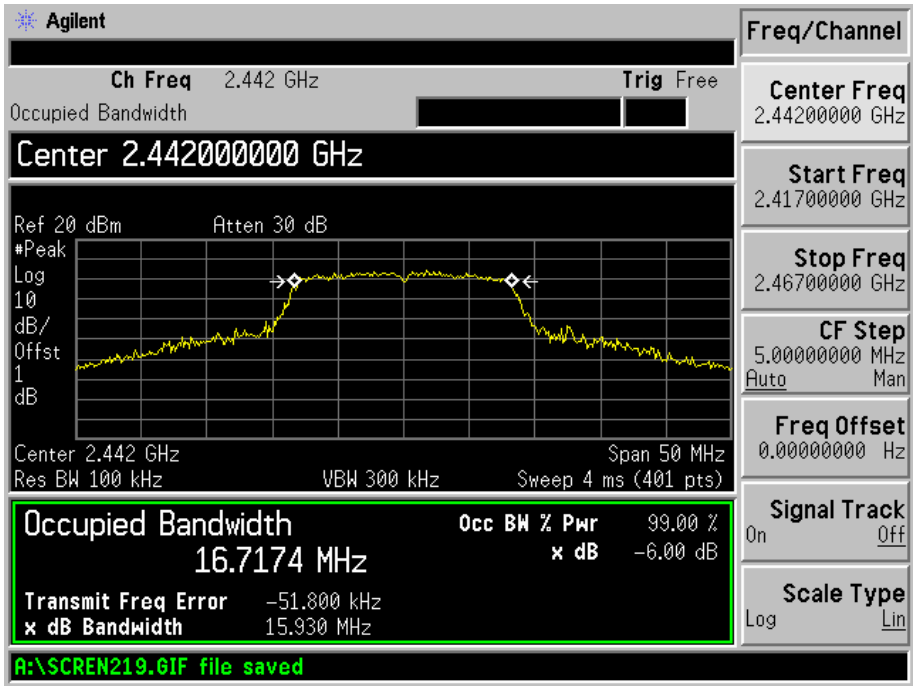
802.11b-High Channel



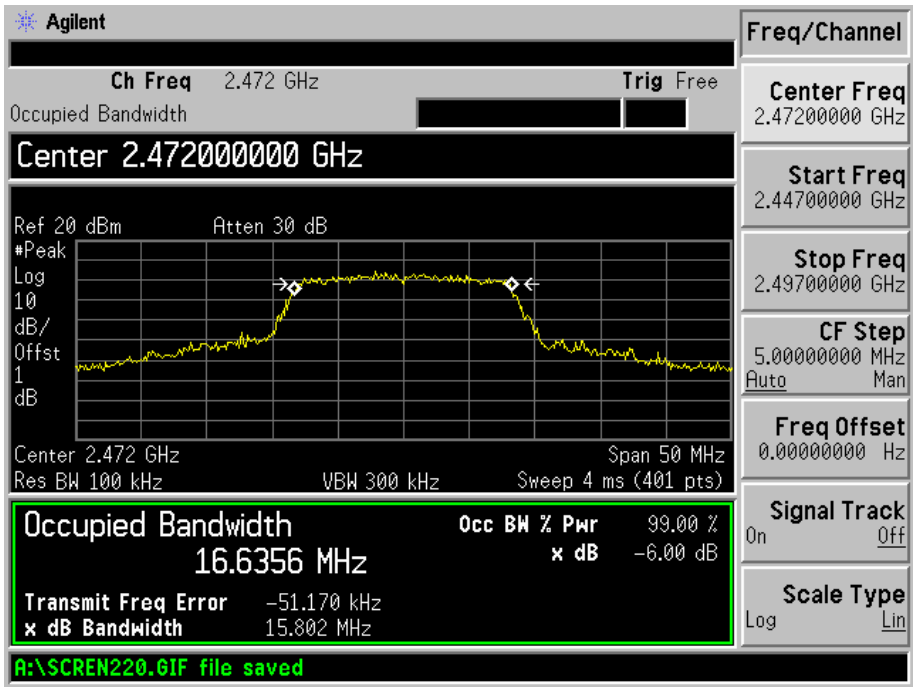
802.11g-Low Channel



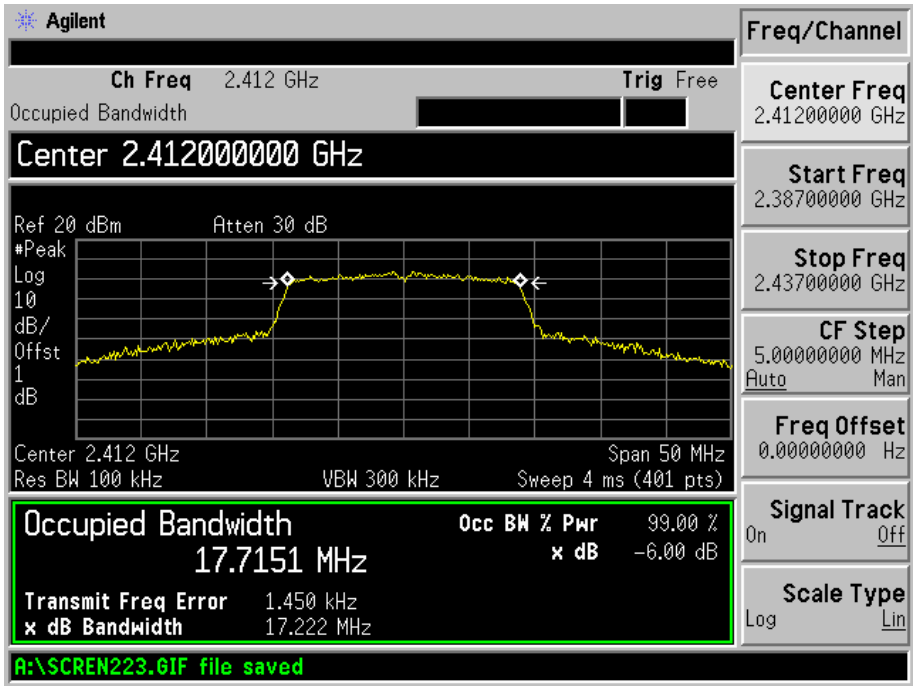
802.11g-Middle Channel



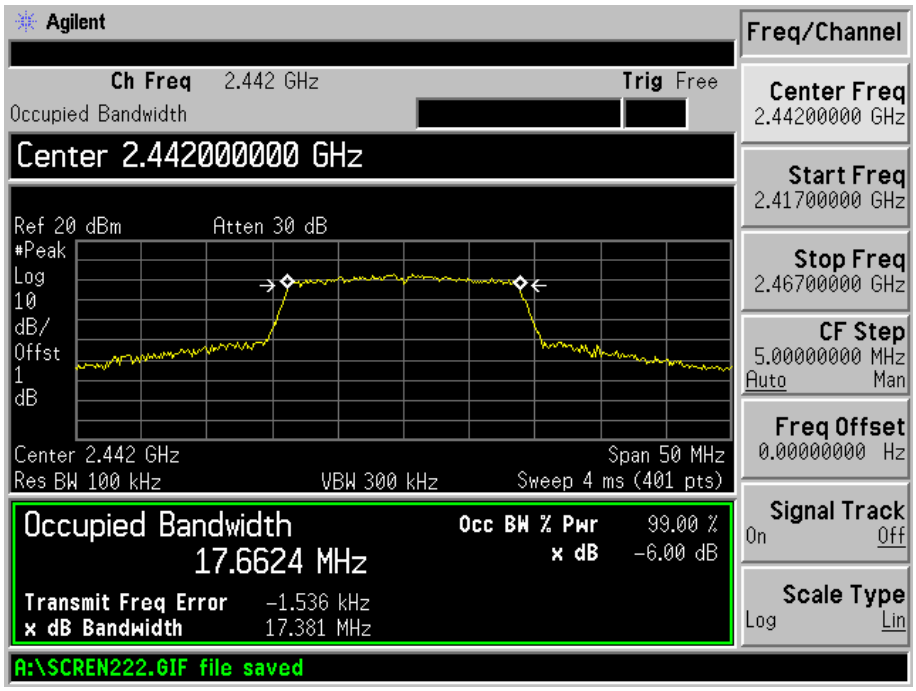
802.11g-High Channel



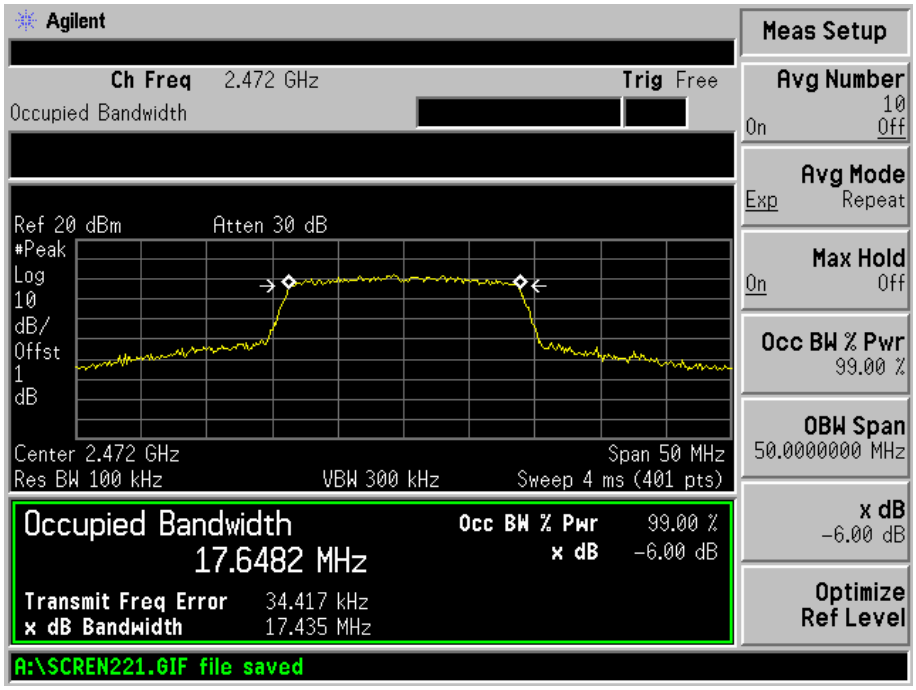
802.11n-HT20-Low Channel



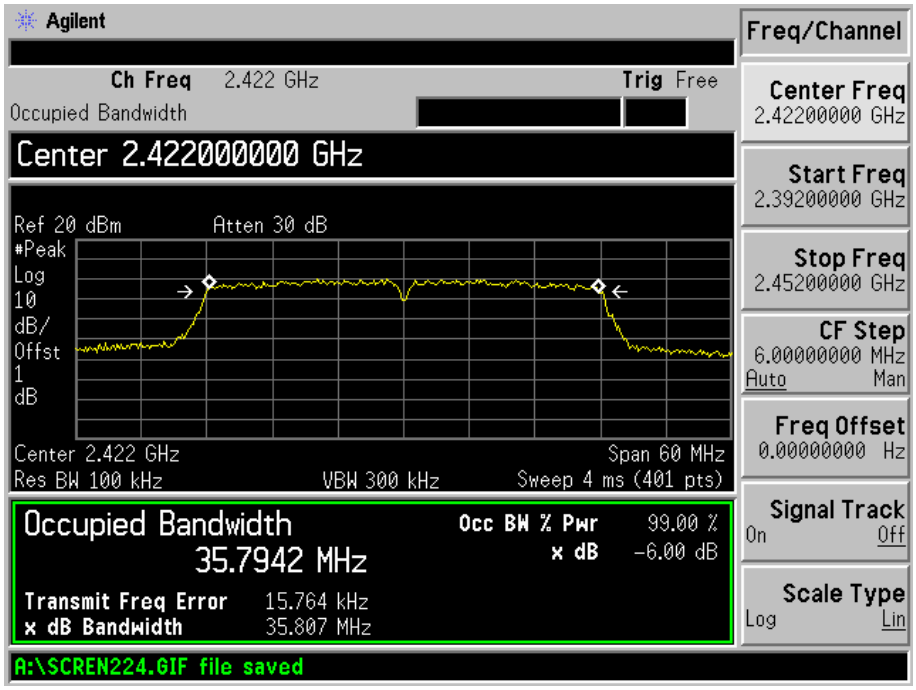
802.11n-HT20-Middle Channel



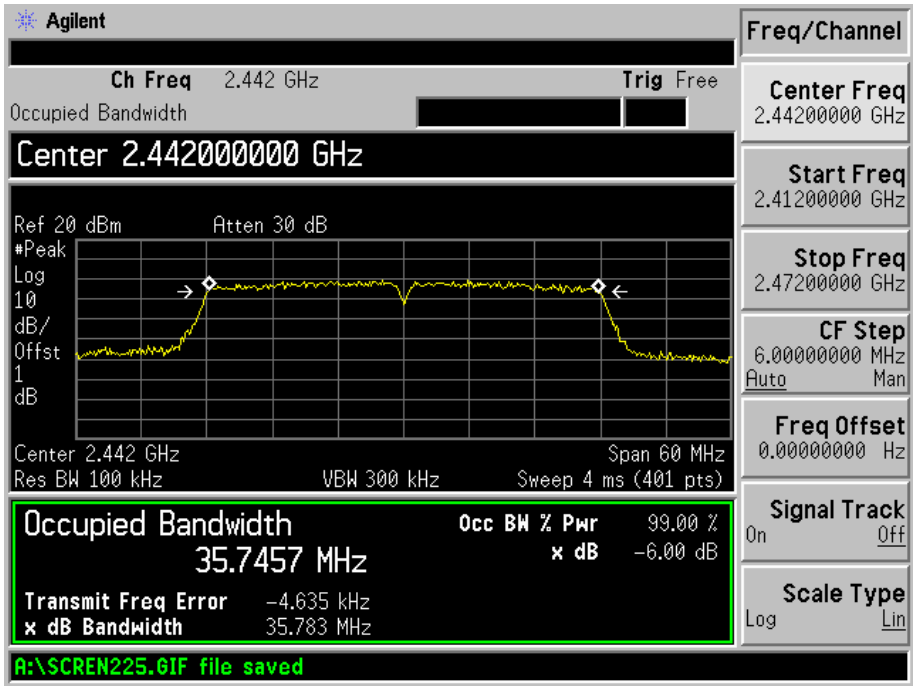
802.11n-HT20-High Channel



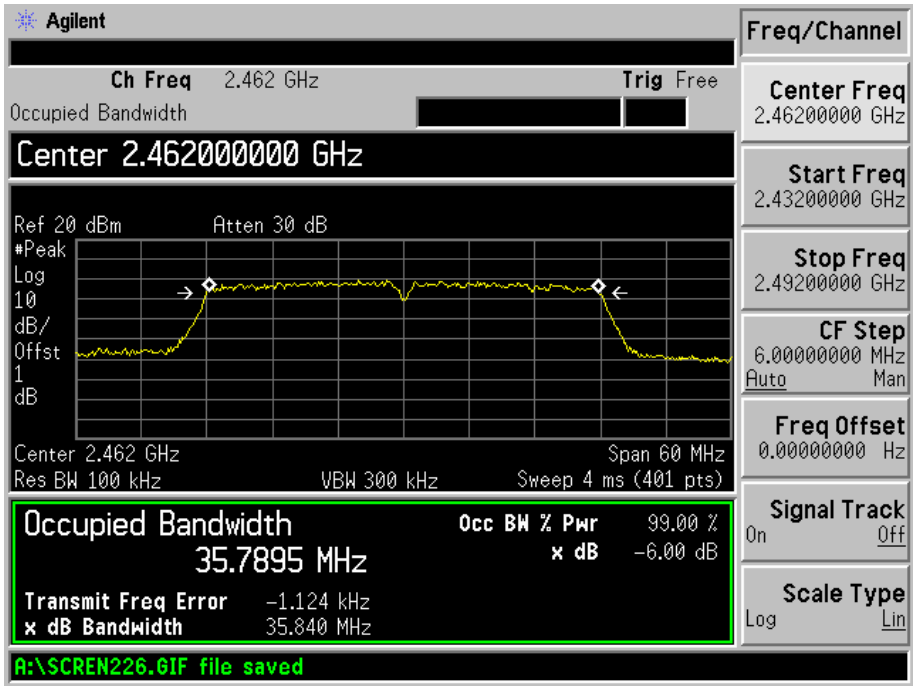
802.11n-HT40-Low Channel



802.11n-HT40-Middle Channel



802.11n-HT40-High Channel



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).

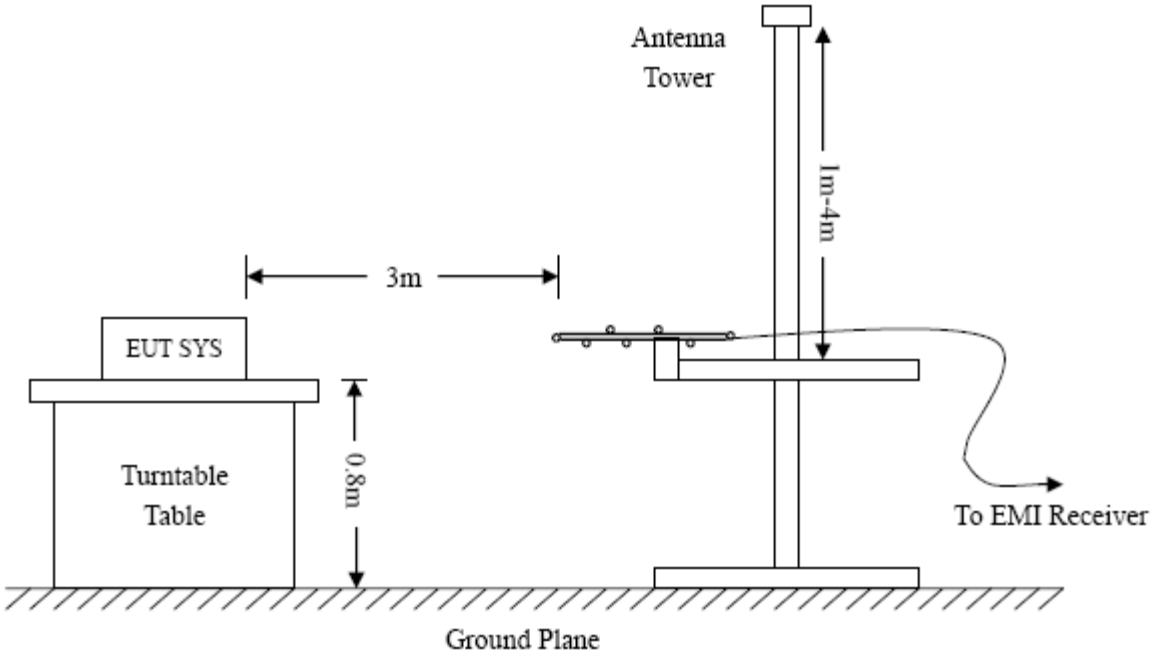
The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

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	Frequency :30MHz-1GHz	Frequency :Above 1GHz
RBW=10KHz,	RBW=120KHz,	RBW=1MHz,
VBW =30KHz	VBW=300KHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold	Trace = max hold
Detector function = peak	Detector function = peak, QP	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:

Corr. Ampl. = Indicated Reading + Ant. Factor + Cable Loss – 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:

Margin = Corr. Ampl. – 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

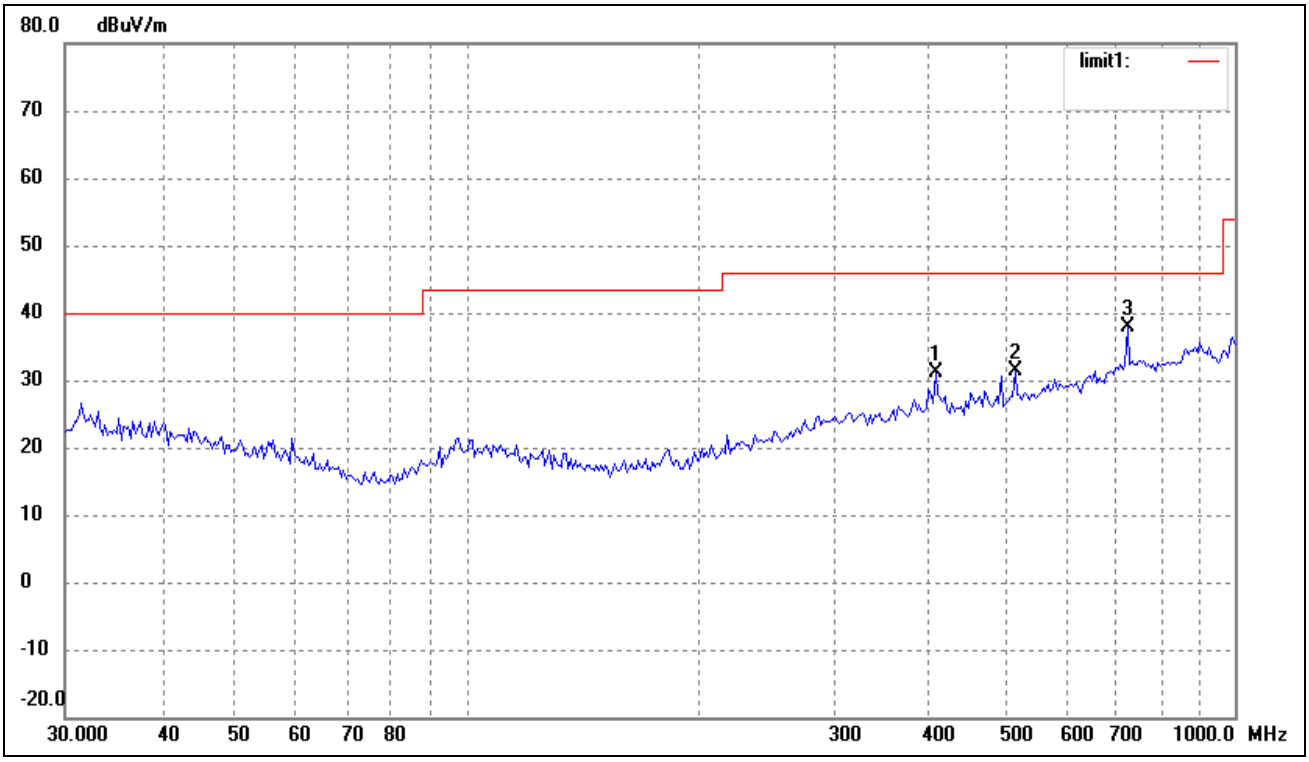
According to the data below, the FCC Part 15.205, 15.209 and 15.247 standards, and had the worst cases:

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)

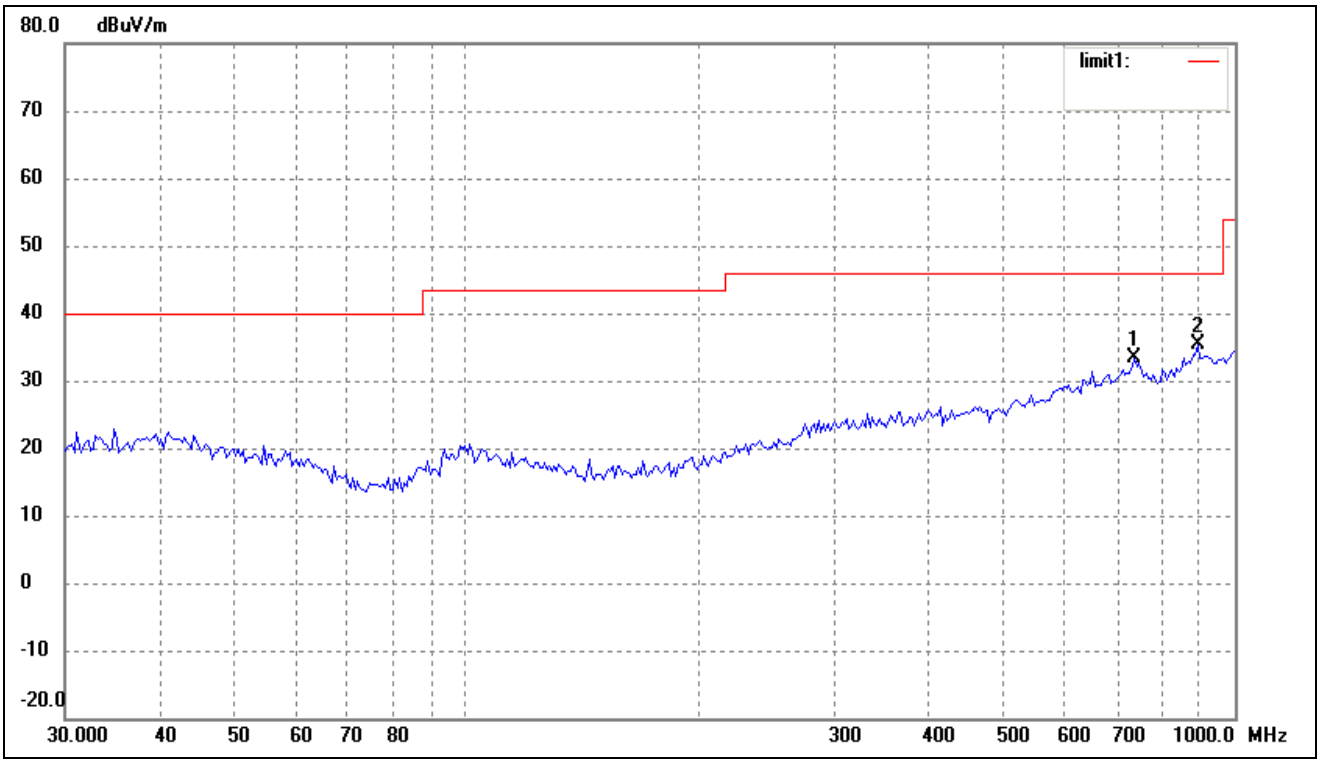
EUT: *KINGZONE K1*
Tested Model: *K1*
Operating Condition: *802.11b Transmitting Low Channel-2412MHz*
Comment: *DC 3.7V*

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	407.5145	19.79	11.22	31.01	46.00	-14.99	264	100	peak
2	517.2480	18.65	12.82	31.47	46.00	-14.53	138	100	peak
3	724.2611	20.86	16.93	37.79	46.00	-8.21	360	100	peak

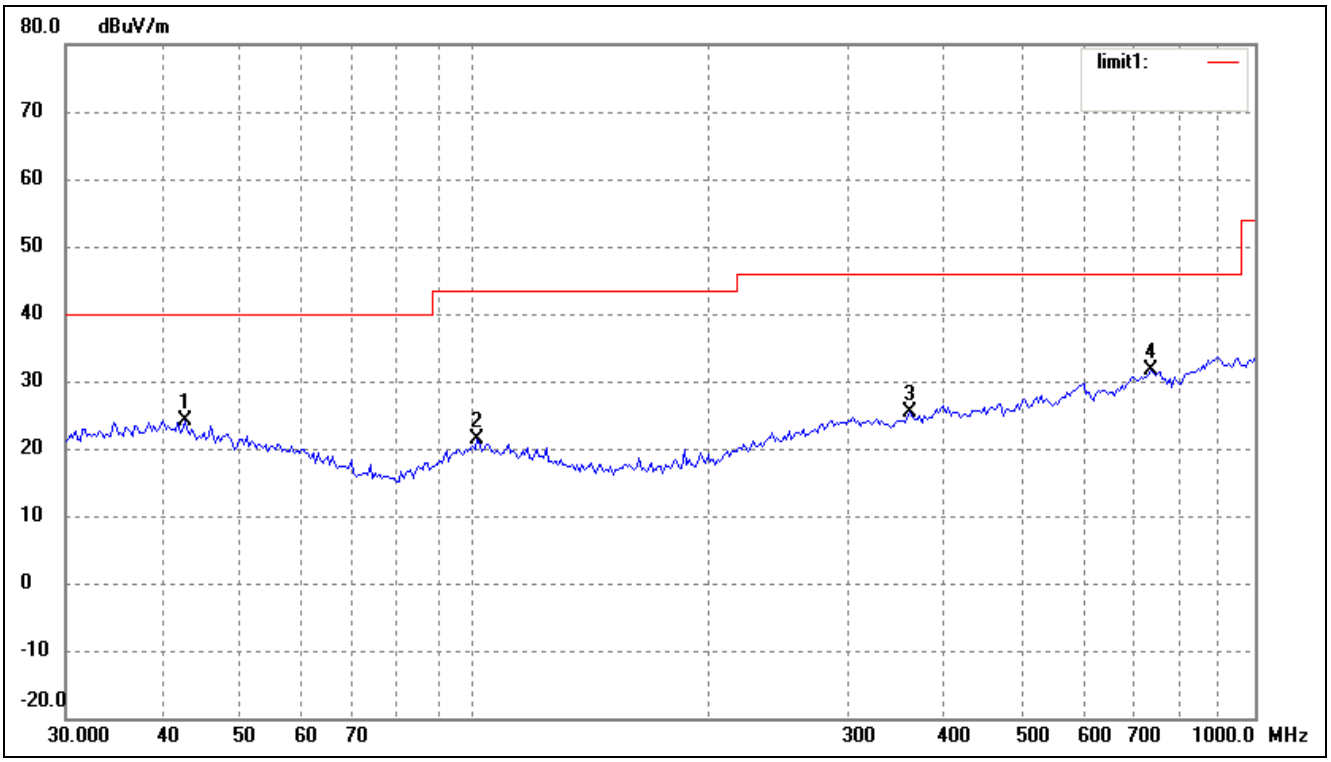
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	739.6604	15.24	18.07	33.31	46.00	-12.69	214	100	peak
2	893.8567	16.15	19.27	35.42	46.00	-10.58	360	100	peak

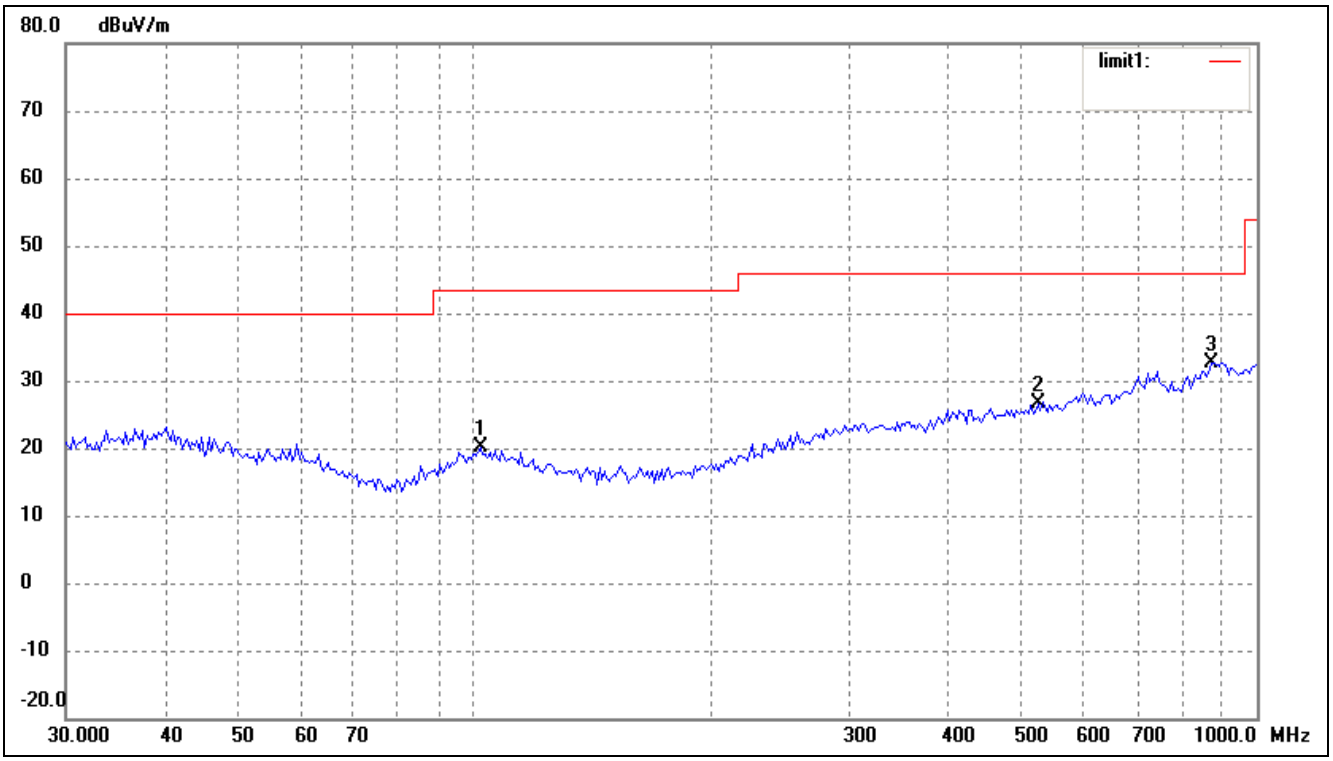
Operating Condition: *802.11b Transmitting Middle Channel-2442MHz*
Comment: *DC 3.7V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	42.6000	15.76	8.47	24.23	40.00	-15.77	256	100	peak
2	100.9339	15.43	6.03	21.46	43.50	-22.04	360	100	peak
3	361.7139	16.18	9.24	25.42	46.00	-20.58	360	100	peak
4	734.4913	16.40	15.22	31.62	46.00	-14.38	360	100	peak

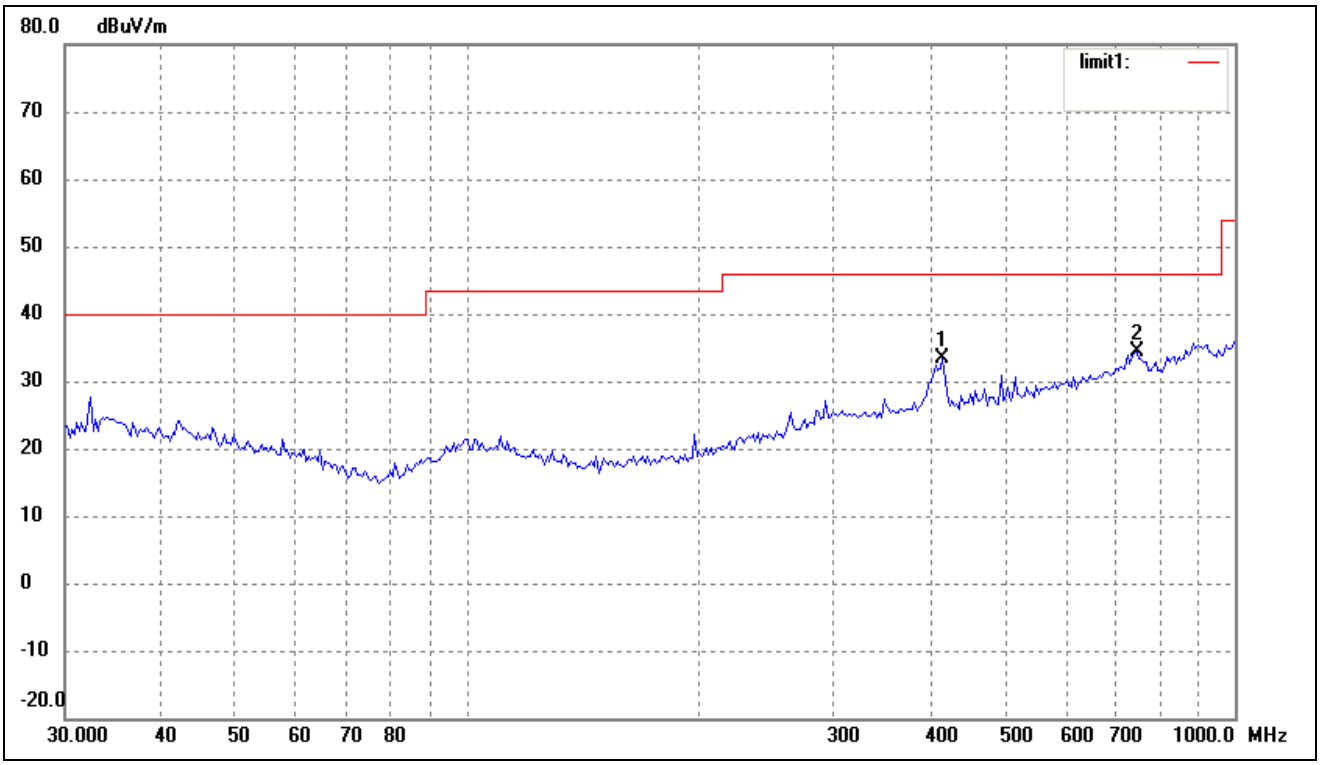
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	101.6443	14.15	5.95	20.10	43.50	-23.40	176	100	peak
2	524.5541	15.21	11.36	26.57	46.00	-19.43	255	100	peak
3	875.2470	16.03	16.70	32.73	46.00	-13.27	360	100	peak

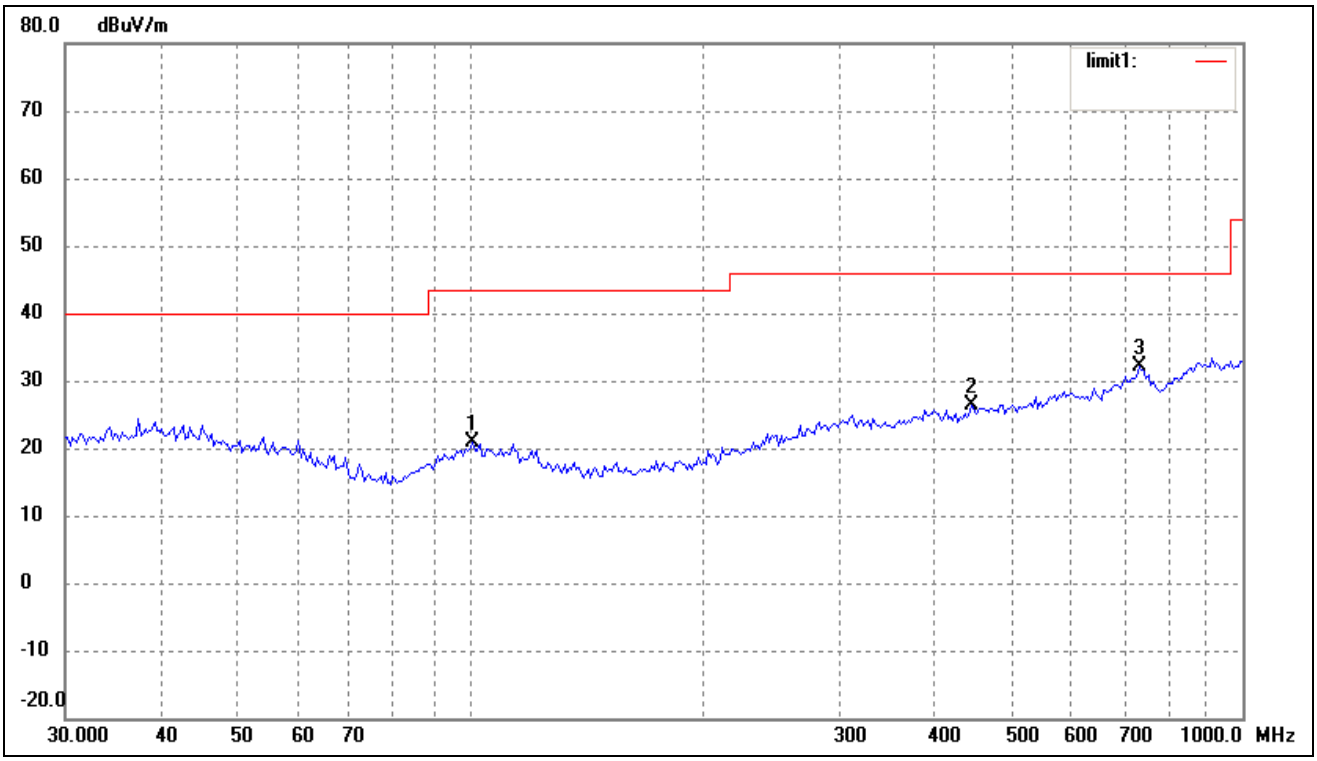
Operating Condition: *802.11b Transmitting High Channel-2472MHz*
Comment: *DC 3.7V*

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	416.1791	22.43	10.86	33.29	46.00	-12.71	360	100	peak
2	744.8661	16.34	17.95	34.29	46.00	-11.71	360	100	peak

Test Specification: *Vertical*

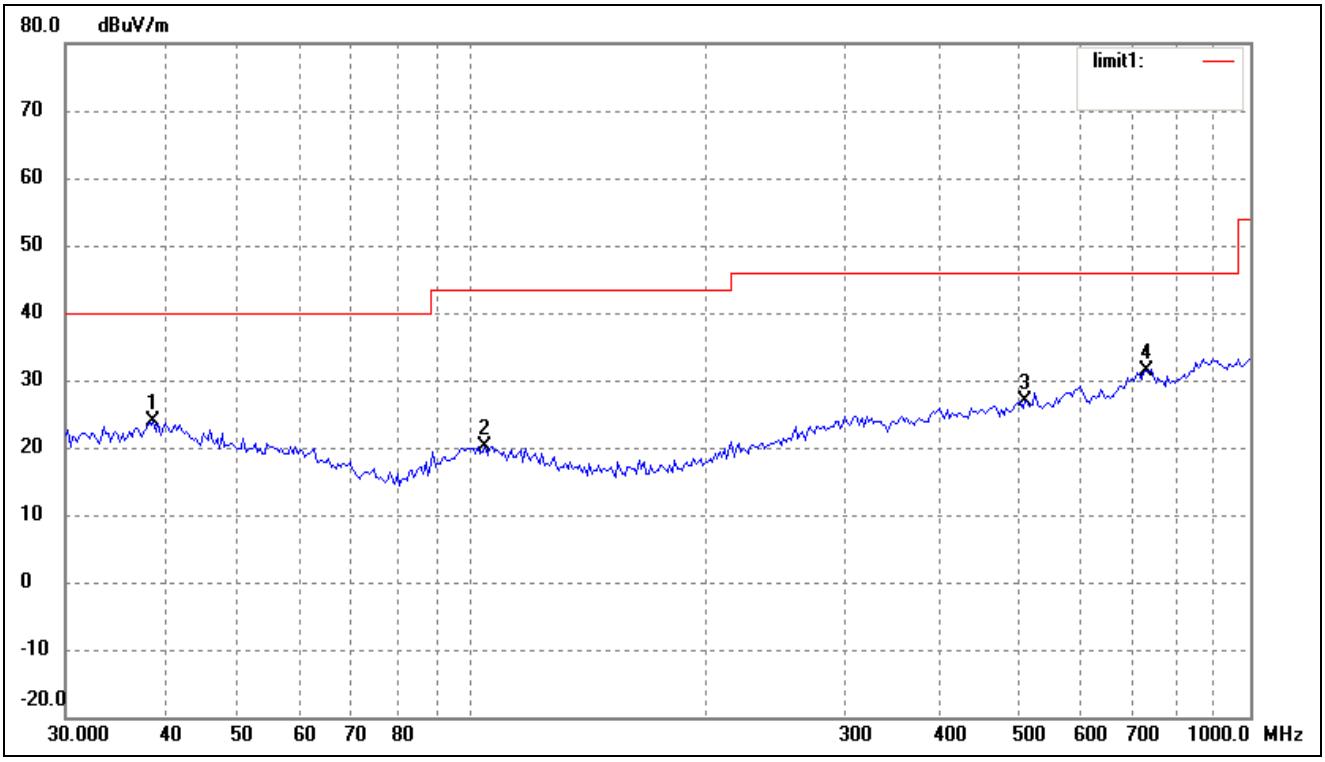


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	100.9340	14.78	6.03	20.81	43.50	-22.69	174	100	peak
2	446.4141	16.14	10.19	26.33	46.00	-19.67	160	100	peak
3	734.4913	16.85	15.22	32.07	46.00	-13.93	320	100	peak

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

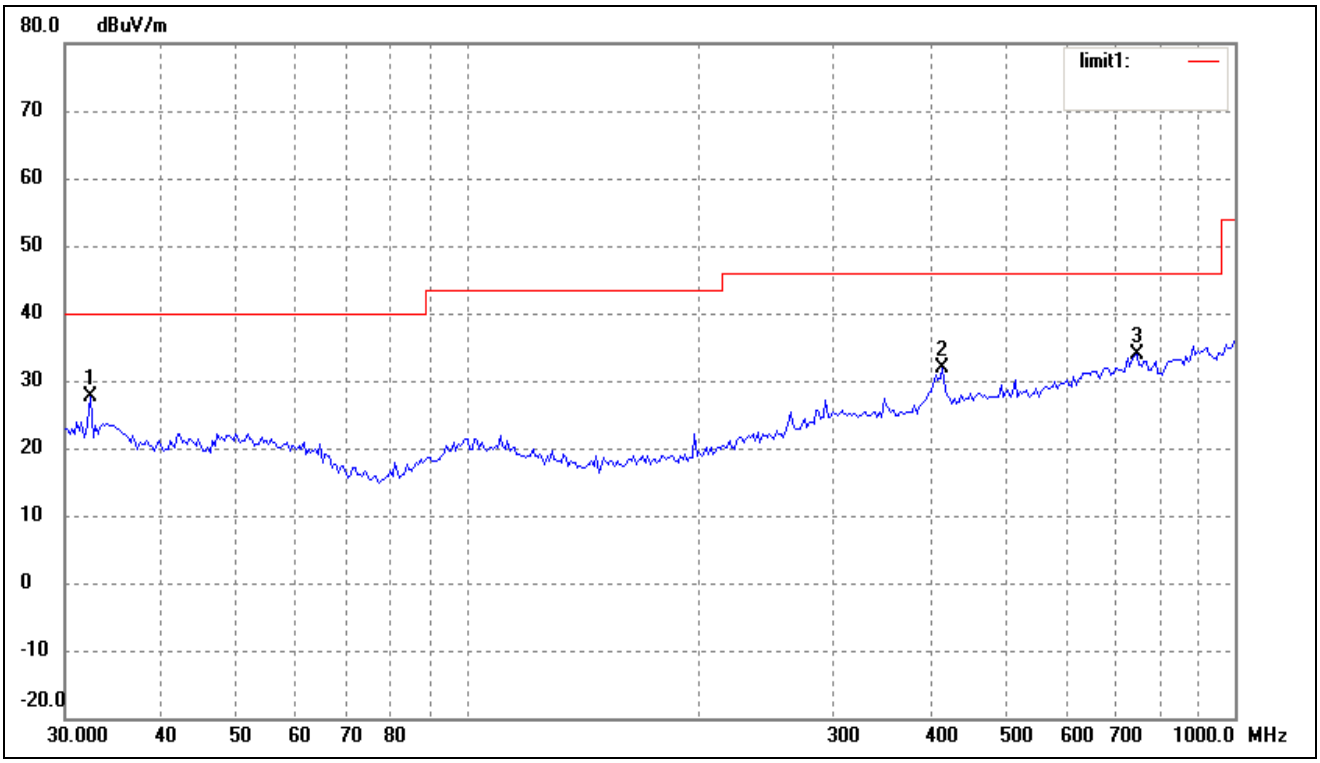
EUT: *KINGZONE K1*
Tested Model: *K1*
Operating Condition: *802.11g Transmitting Low Channel-2412MHz*
Comment: *DC 3.7V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	38.8879	14.75	9.06	23.81	40.00	-16.19	177	100	peak
2	103.8055	14.46	5.73	20.19	43.50	-23.31	90	100	peak
3	513.6331	15.58	11.21	26.79	46.00	-19.21	336	100	peak
4	734.4913	16.04	15.22	31.26	46.00	-14.74	360	100	peak

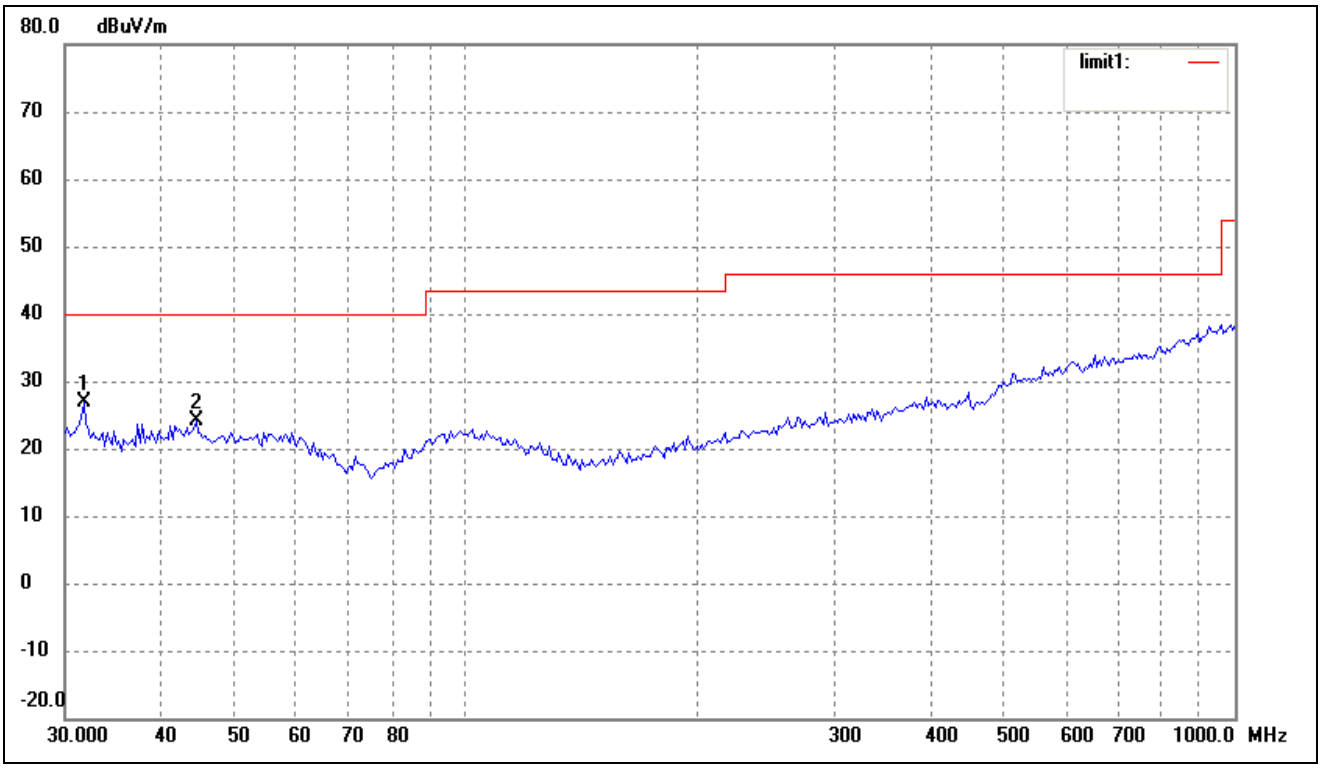
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	32.4059	19.17	8.44	27.61	40.00	-12.39	255	100	peak
2	416.1791	20.93	10.86	31.79	46.00	-14.21	278	100	peak
3	744.8661	15.84	17.95	33.79	46.00	-12.21	134	100	peak

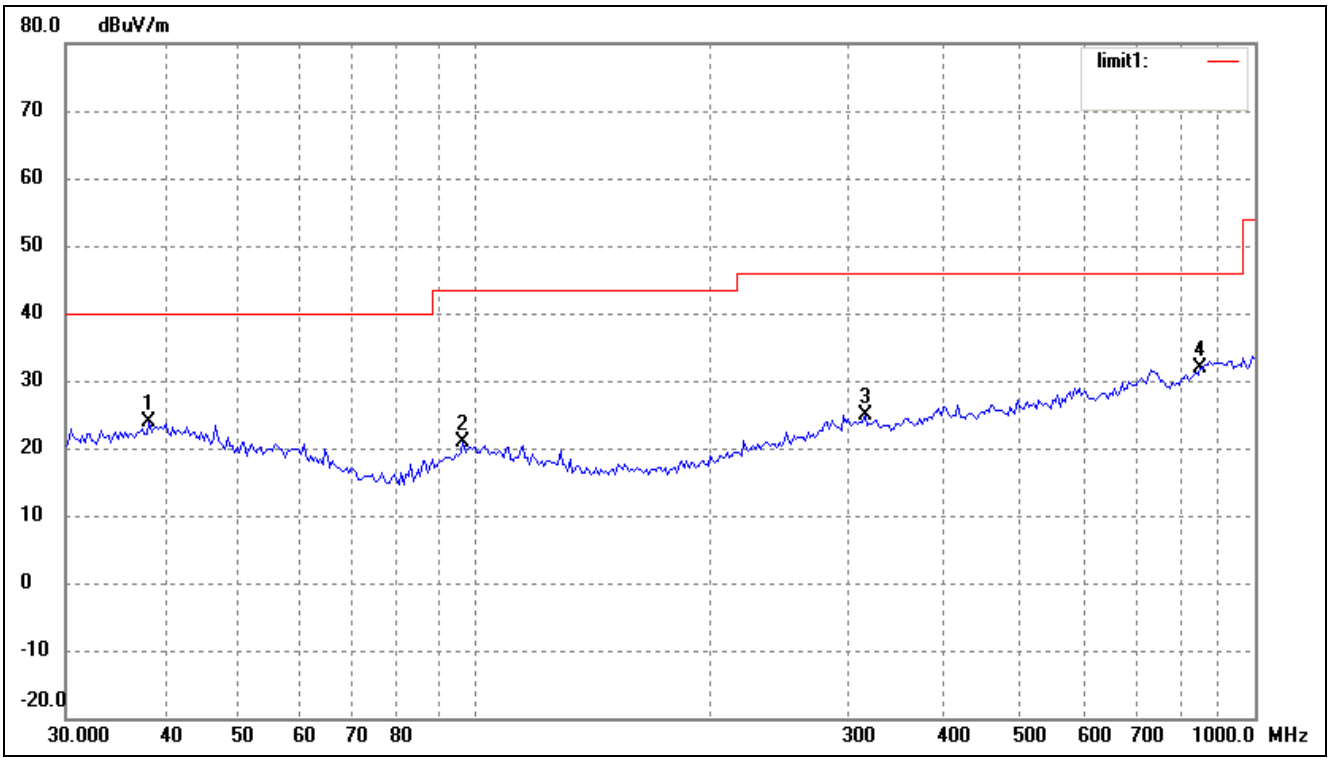
Operating Condition: *802.11g Transmitting Middle Channel-2442MHz*
Comment: *DC 3.7V*

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	31.7313	20.09	6.77	26.86	40.00	-13.14	162	100	peak
2	44.4308	15.81	8.22	24.03	40.00	-15.97	200	100	peak

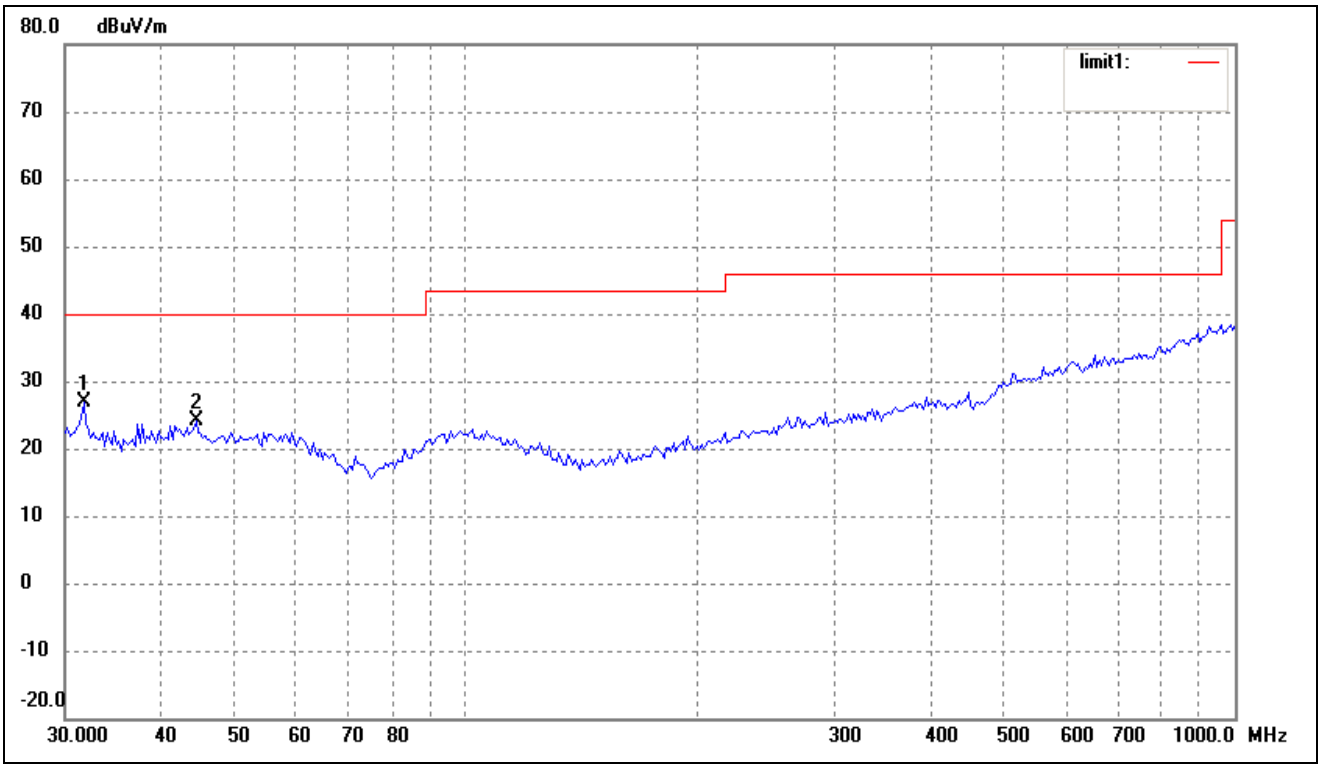
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	38.3462	14.80	8.97	23.77	40.00	-16.23	270	100	peak
2	96.7749	15.52	5.32	20.84	43.50	-22.66	51	200	peak
3	316.5890	15.66	9.28	24.94	46.00	-21.06	360	200	peak
4	851.0353	15.81	15.97	31.78	46.00	-14.22	360	100	peak

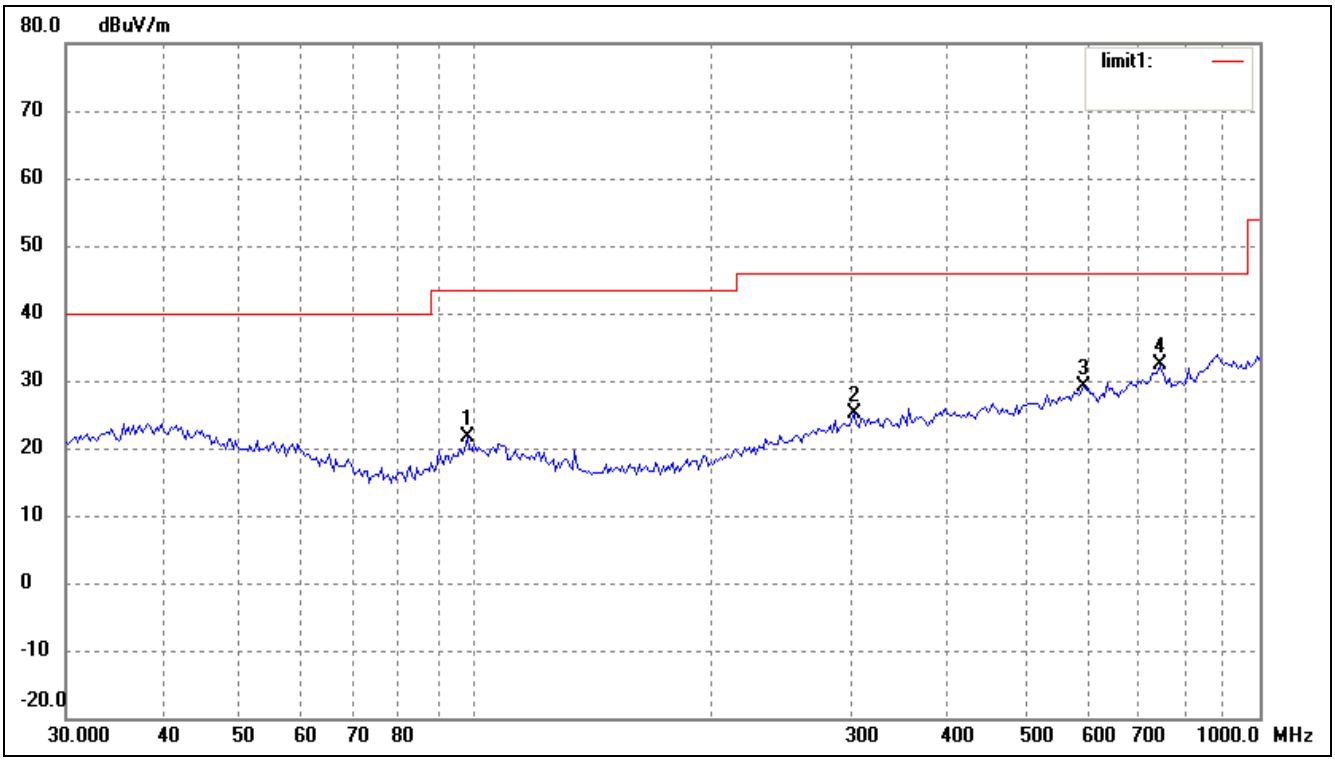
Operating Condition: *802.11g Transmitting High Channel-2472MHz*
Comment: *DC 3.7V*

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	31.7313	20.09	6.77	26.86	40.00	-13.14	162	100	peak
2	44.4308	15.81	8.22	24.03	40.00	-15.97	200	100	peak

Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	97.4560	16.14	5.49	21.63	43.50	-21.87	260	100	peak
2	303.5437	15.82	9.19	25.01	46.00	-20.99	131	200	peak
3	595.1329	15.93	13.14	29.07	46.00	-16.93	285	200	peak
4	744.8661	16.95	15.33	32.28	46.00	-13.72	224	100	peak

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

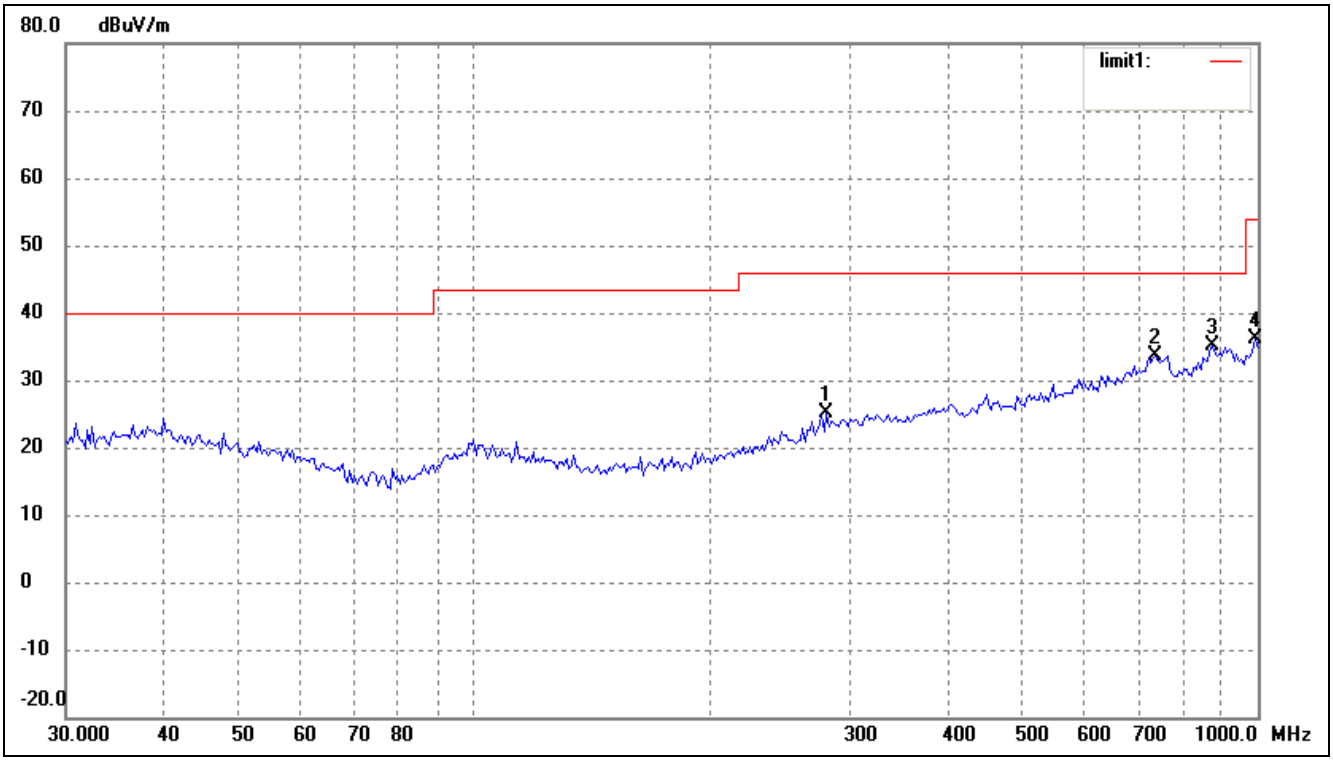
EUT: *KINGZONE K1*

Tested Model: *K1*

Operating Condition: *802.11n-HT20 Transmitting Low Channel-2412MHz*

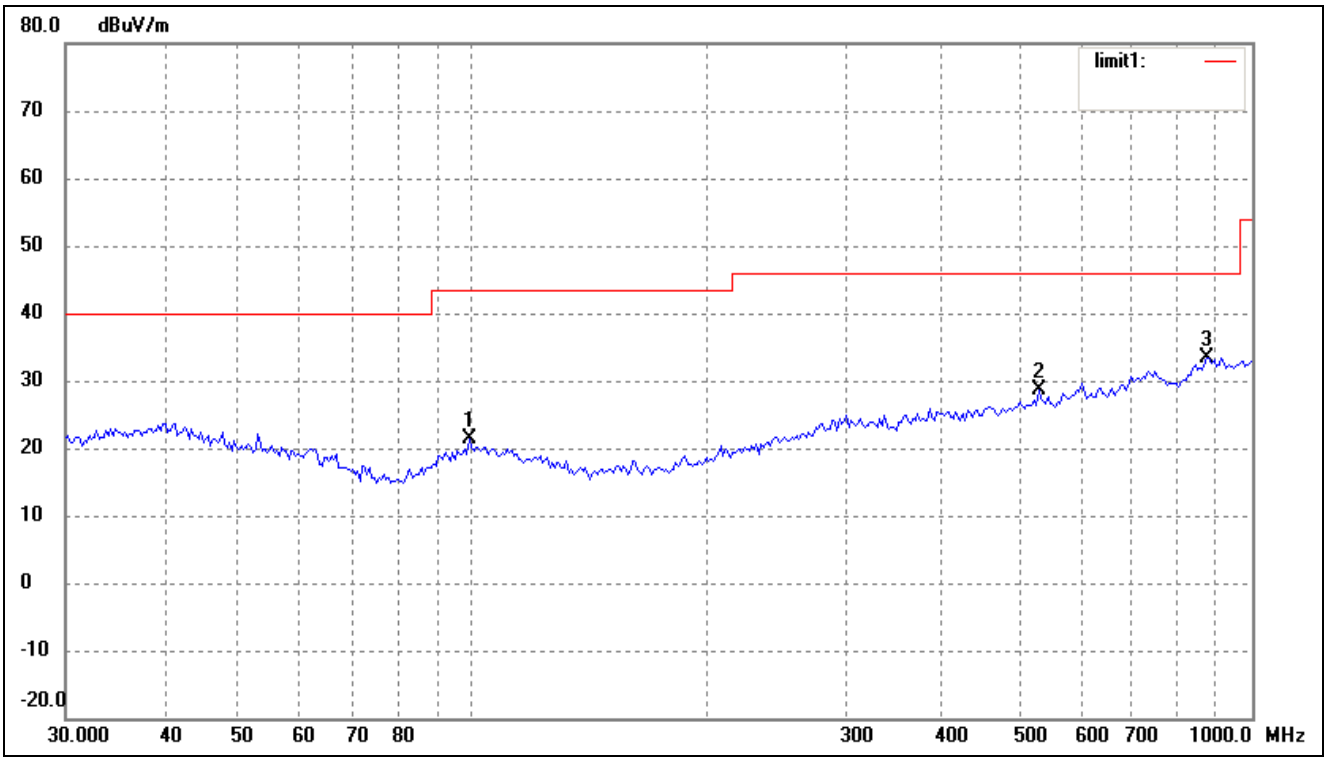
Comment: *DC 3.7V*

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	281.0075	15.92	9.29	25.21	46.00	-20.79	360	100	peak
2	739.6605	15.61	18.07	33.68	46.00	-12.32	147	100	peak
3	875.2470	16.42	18.80	35.22	46.00	-10.78	152	100	peak
4	993.0114	16.48	19.53	36.01	54.00	-17.99	360	100	peak

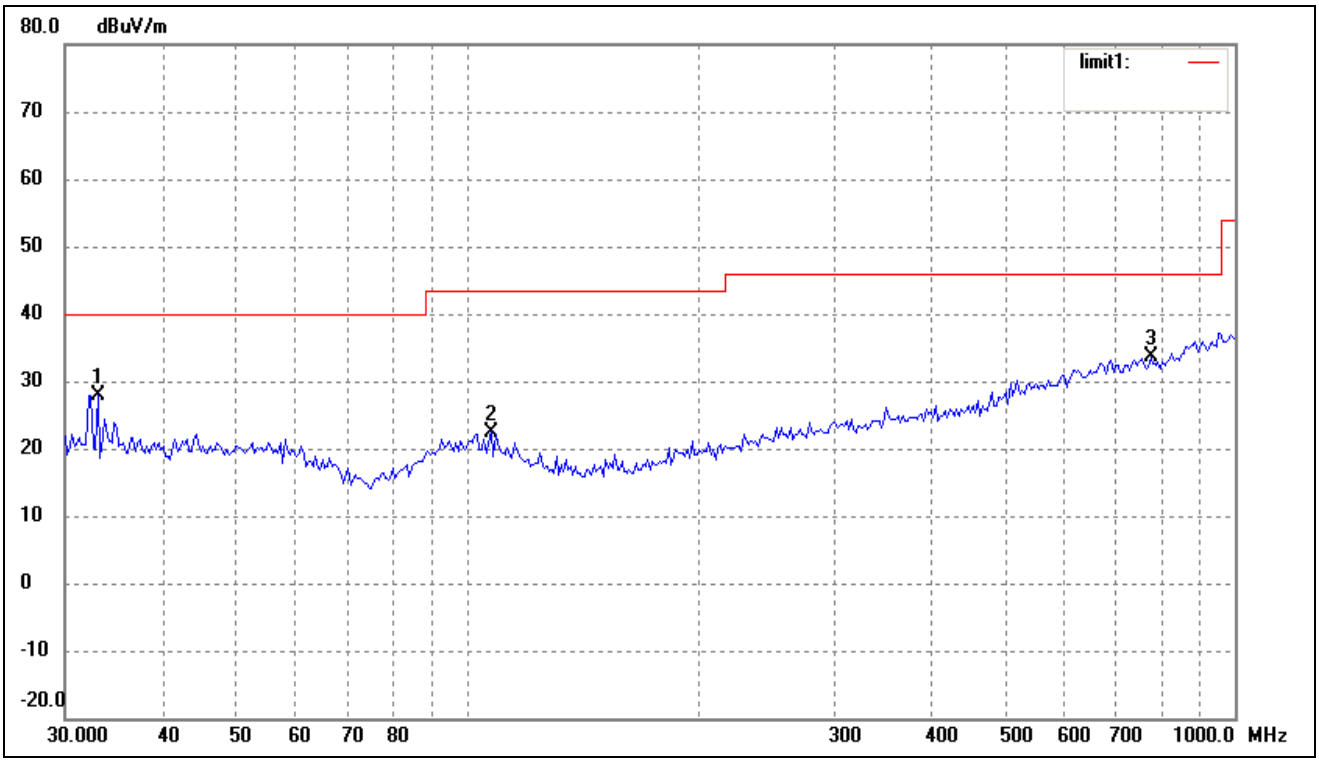
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	98.8326	15.53	5.84	21.37	43.50	-22.13	274	100	peak
2	531.9635	17.31	11.32	28.63	46.00	-17.37	116	100	peak
3	875.2470	16.71	16.70	33.41	46.00	-12.59	82	100	peak

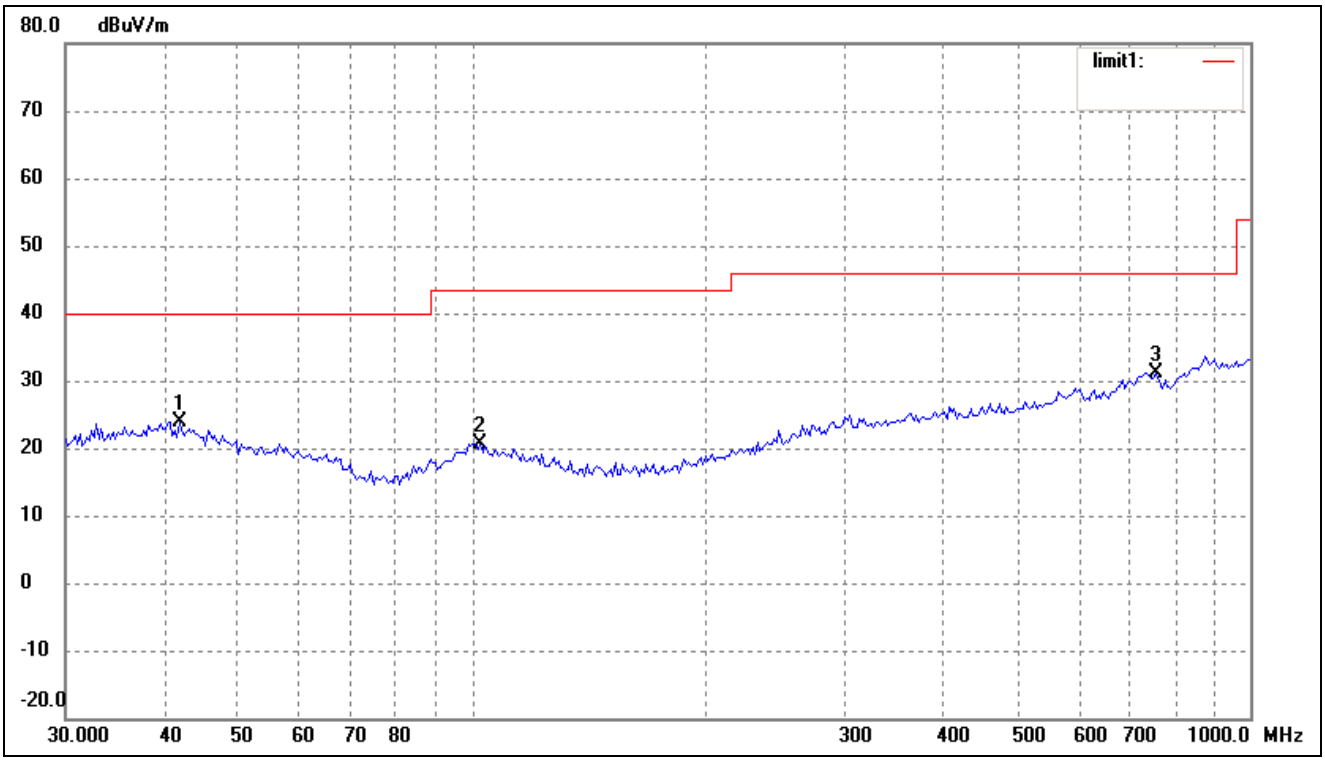
Operating Condition: *802.11n-HT20 Transmitting Middle Channel-2442MHz*
Comment: *DC 3.7V*

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	33.0950	21.20	6.77	27.97	40.00	-12.03	255	100	peak
2	107.5101	14.70	7.80	22.50	43.50	-21.00	180	100	peak
3	776.8778	15.04	18.66	33.70	46.00	-12.30	87	100	peak

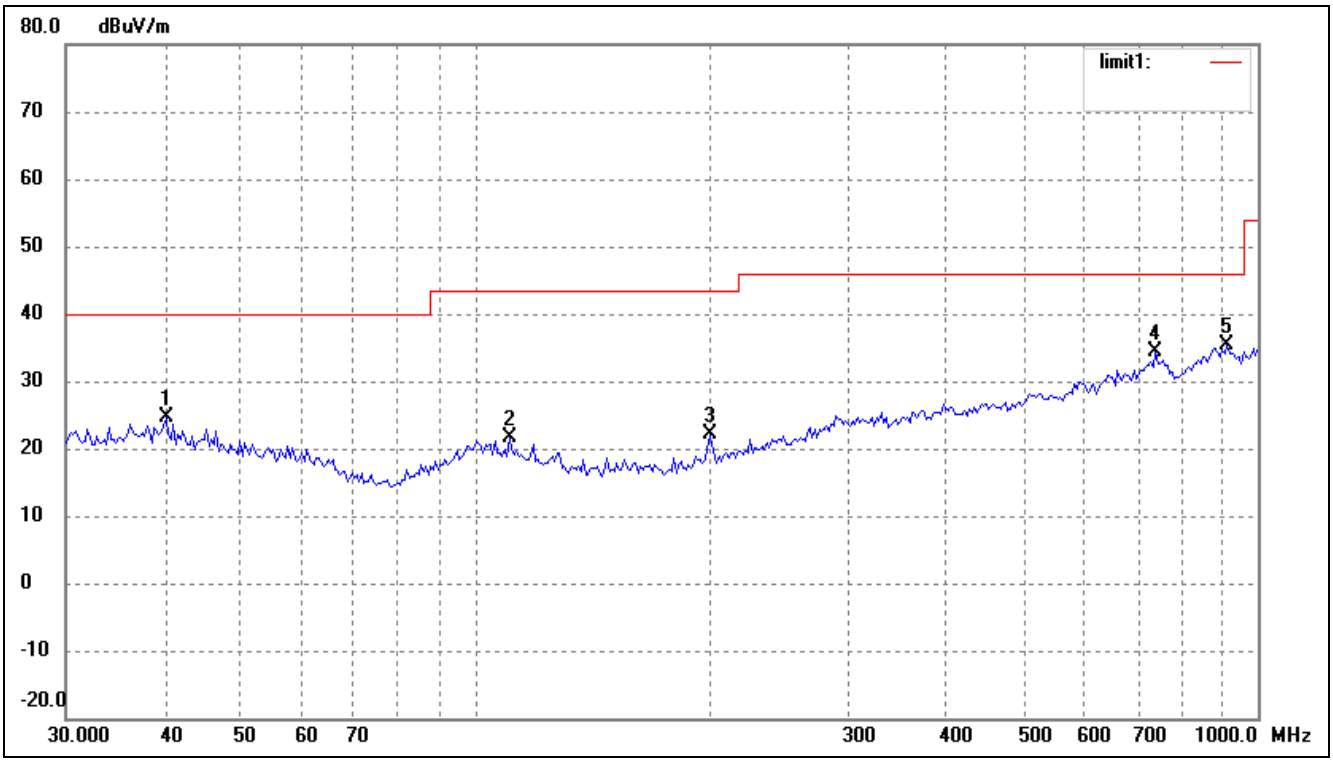
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	42.0066	15.29	8.65	23.94	40.00	-16.06	360	100	peak
2	102.3597	14.80	5.88	20.68	43.50	-22.82	112	100	peak
3	755.3873	16.28	14.86	31.14	46.00	-14.86	180	200	peak

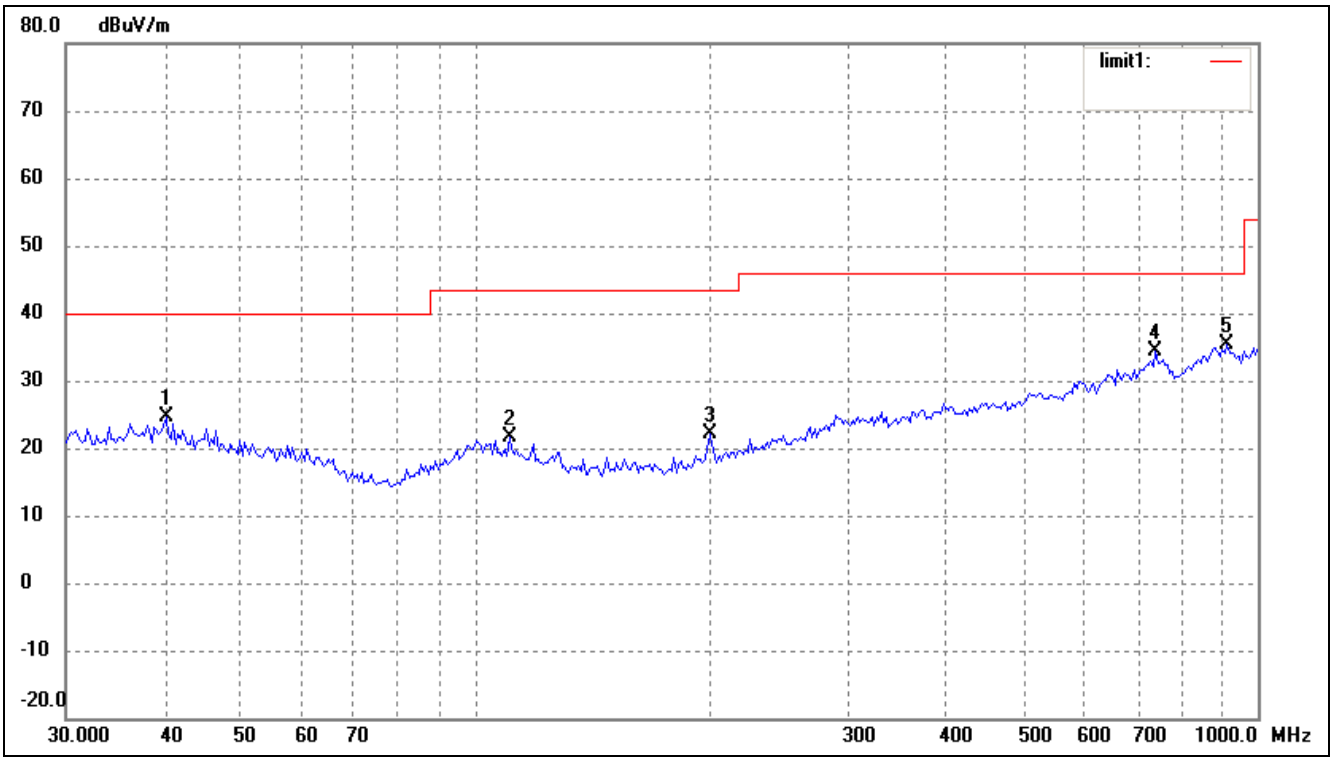
Operating Condition: *802.11n-HT20 Transmitting High Channel-2472MHz*
Comment: *DC 3.7V*

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	40.2757	15.03	9.60	24.63	40.00	-15.37	221	100	peak
2	110.5687	15.81	5.80	21.61	43.50	-21.89	238	100	peak
3	199.2855	17.47	4.61	22.08	43.50	-21.42	67	100	peak
4	739.6605	16.33	18.07	34.40	46.00	-11.60	91	100	peak
5	912.8620	16.49	18.93	35.42	46.00	-10.58	236	100	peak

Test Specification: *Vertical*

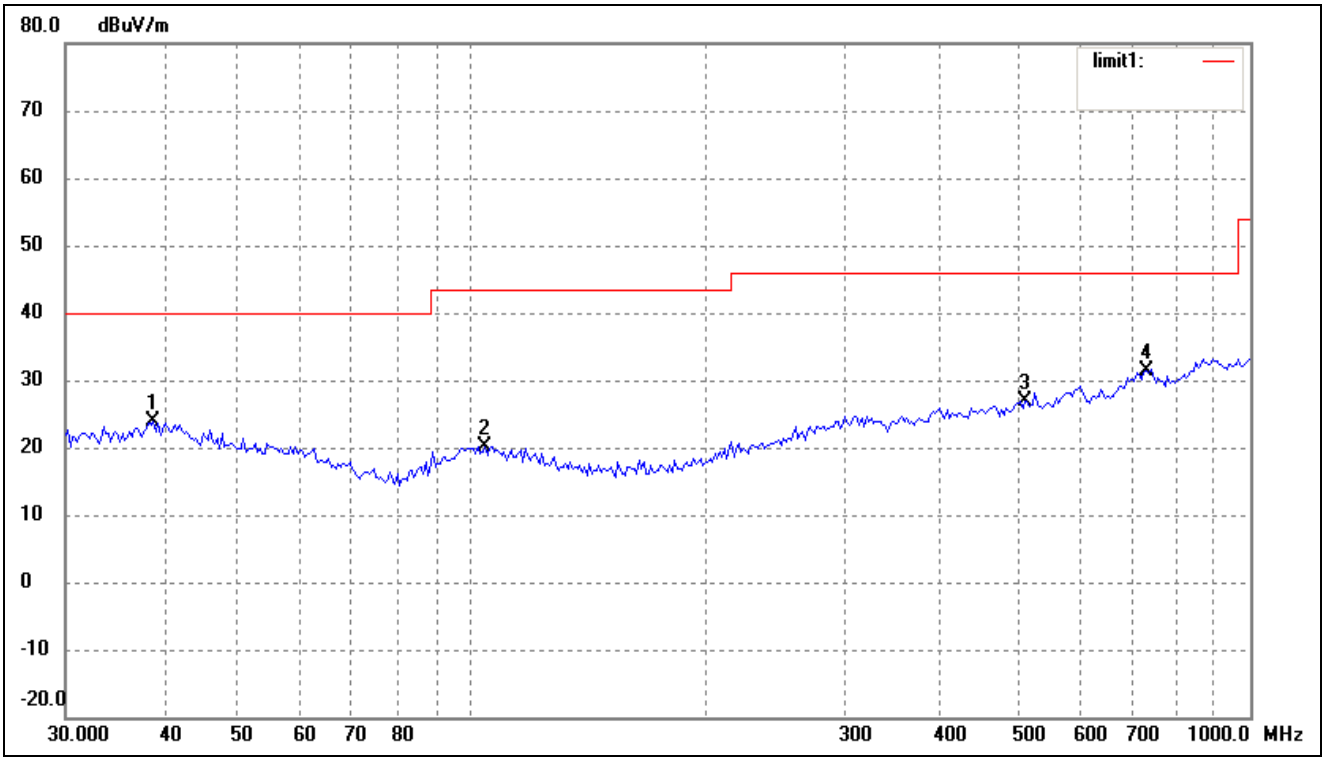


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	40.2757	15.03	9.60	24.63	40.00	-15.37	221	100	peak
2	110.5687	15.81	5.80	21.61	43.50	-21.89	238	100	peak
3	199.2855	17.47	4.61	22.08	43.50	-21.42	67	100	peak
4	739.6605	16.33	18.07	34.40	46.00	-11.60	91	100	peak
5	912.8620	16.49	18.93	35.42	46.00	-10.58	236	100	peak

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

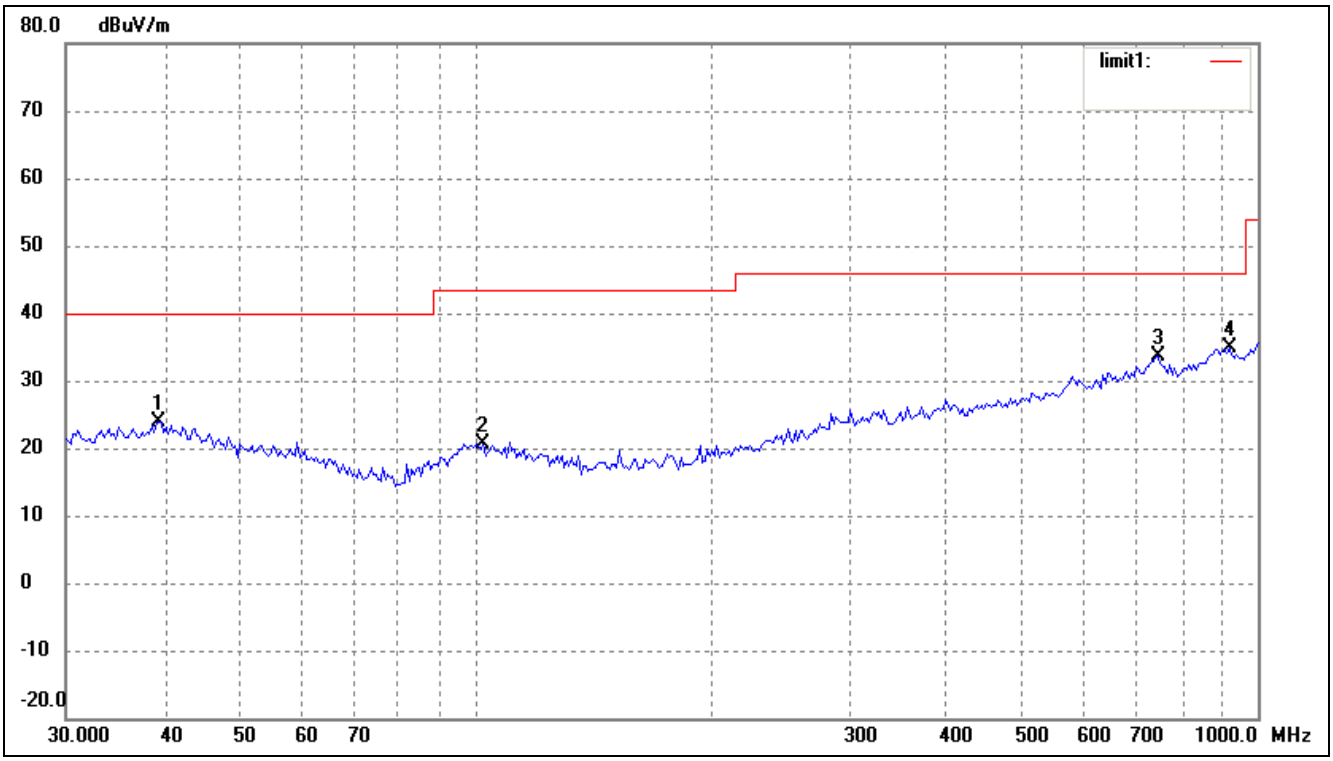
EUT: *KINGZONE K1*
Tested Model: *K1*
Operating Condition: *802.11n-HT40 Transmitting Low Channel-2422MHz*
Comment: *DC 3.7V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	38.8879	14.75	9.06	23.81	40.00	-16.19	177	100	peak
2	103.8055	14.46	5.73	20.19	43.50	-23.31	90	100	peak
3	513.6331	15.58	11.21	26.79	46.00	-19.21	336	100	peak
4	734.4913	16.04	15.22	31.26	46.00	-14.74	360	100	peak

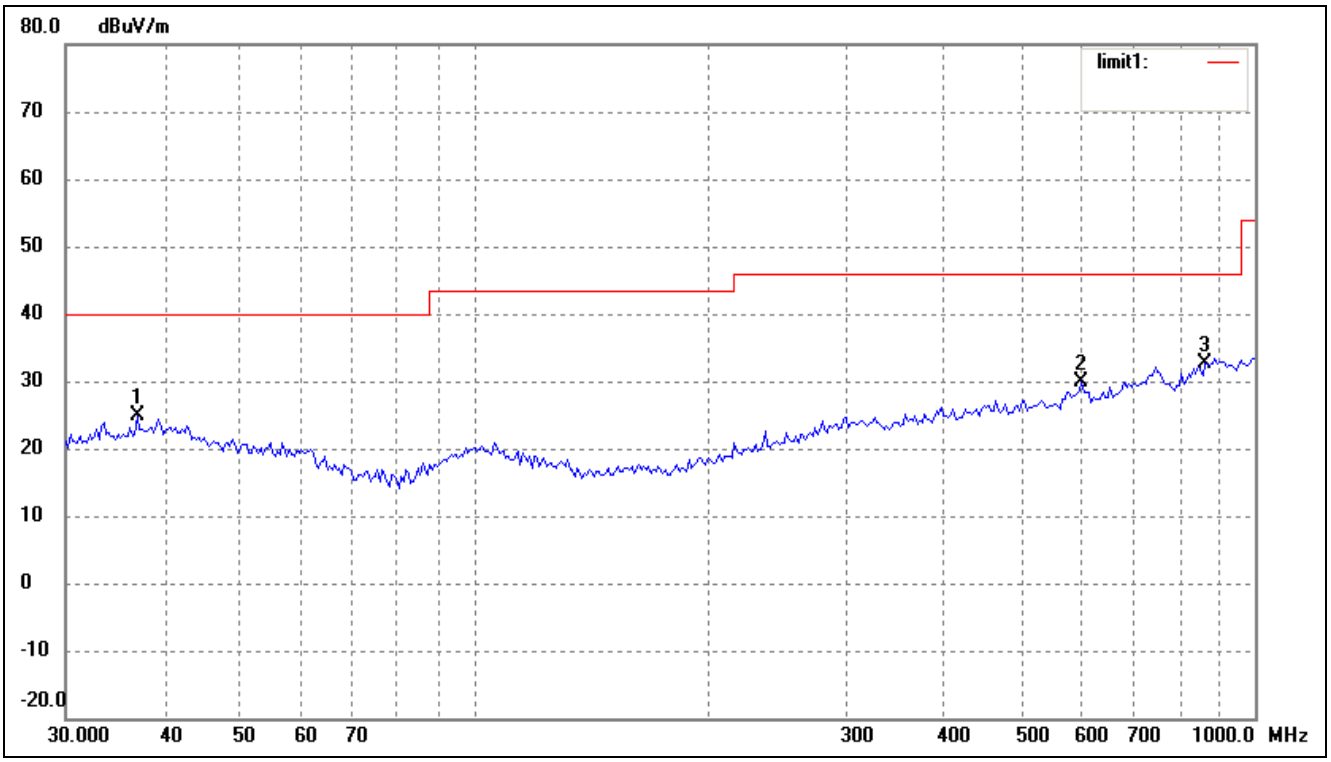
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	39.4372	14.37	9.60	23.97	40.00	-16.03	260	100	peak
2	102.3597	14.14	6.61	20.75	43.50	-22.75	131	200	peak
3	744.8661	15.61	17.95	33.56	46.00	-12.44	285	200	peak
4	919.2866	16.27	18.70	34.97	46.00	-11.03	224	100	peak

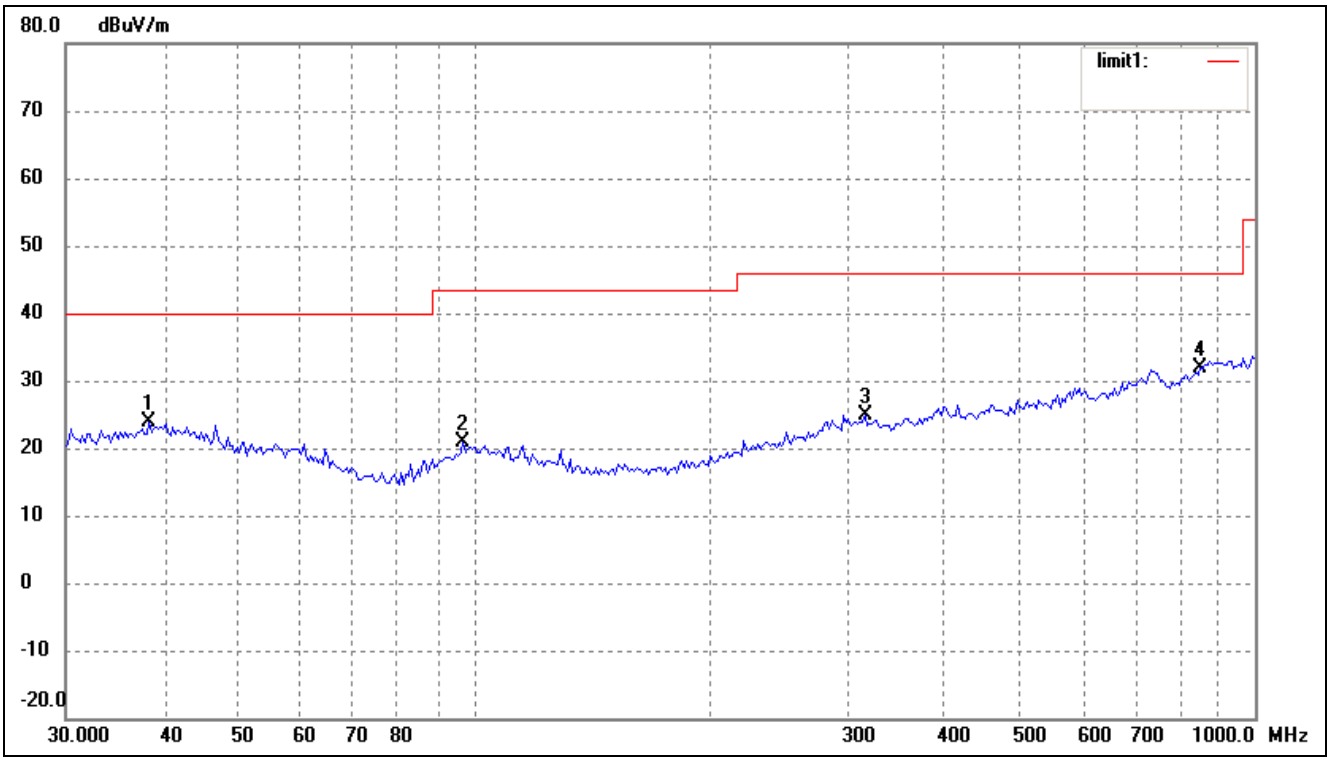
Operating Condition: *802.11n-HT40 Transmitting Middle Channel-2442MHz*
Comment: *DC 3.7V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	37.0249	16.07	8.74	24.81	40.00	-15.19	360	100	peak
2	599.3213	16.46	13.30	29.76	46.00	-16.24	255	100	peak
3	863.0562	16.29	16.38	32.67	46.00	-13.33	270	100	peak

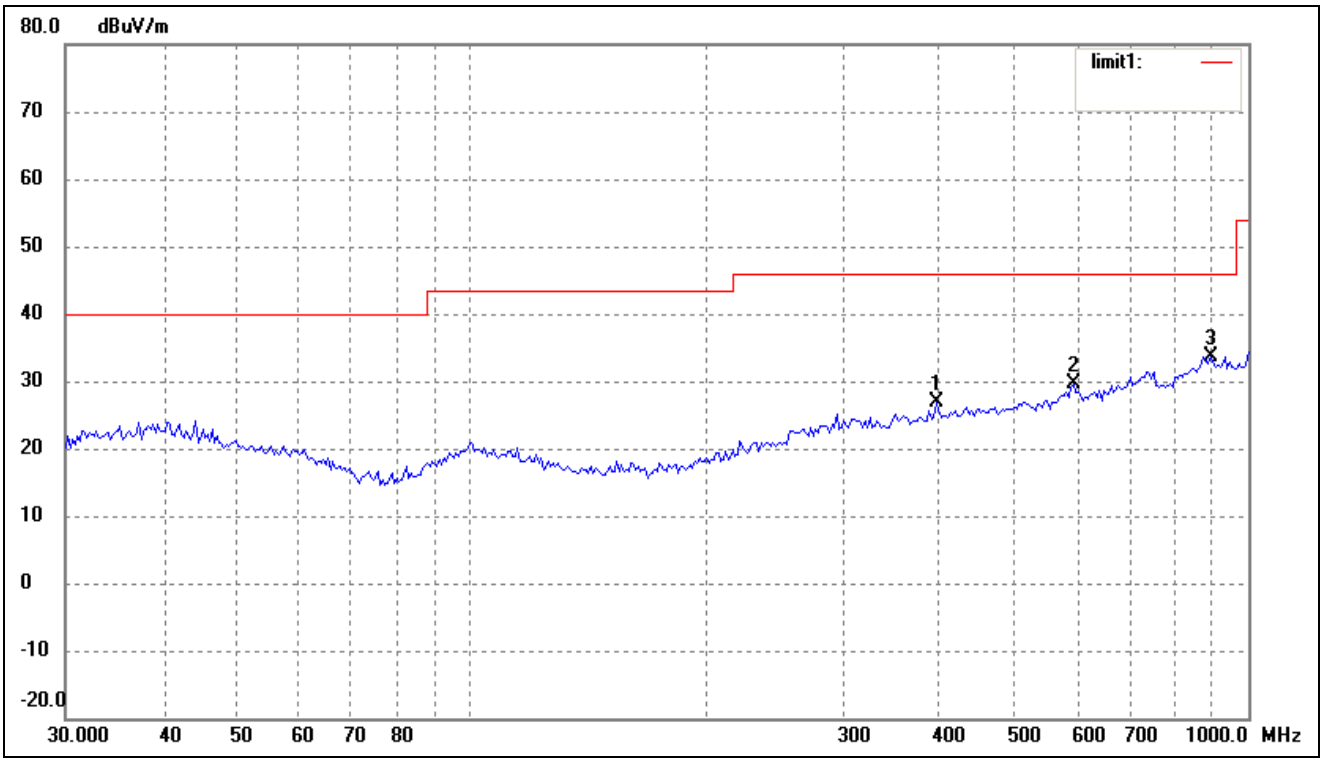
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	38.3462	14.80	8.97	23.77	40.00	-16.23	270	100	peak
2	96.7749	15.52	5.32	20.84	43.50	-22.66	51	200	peak
3	316.5890	15.66	9.28	24.94	46.00	-21.06	360	200	peak
4	851.0353	15.81	15.97	31.78	46.00	-14.22	360	100	peak

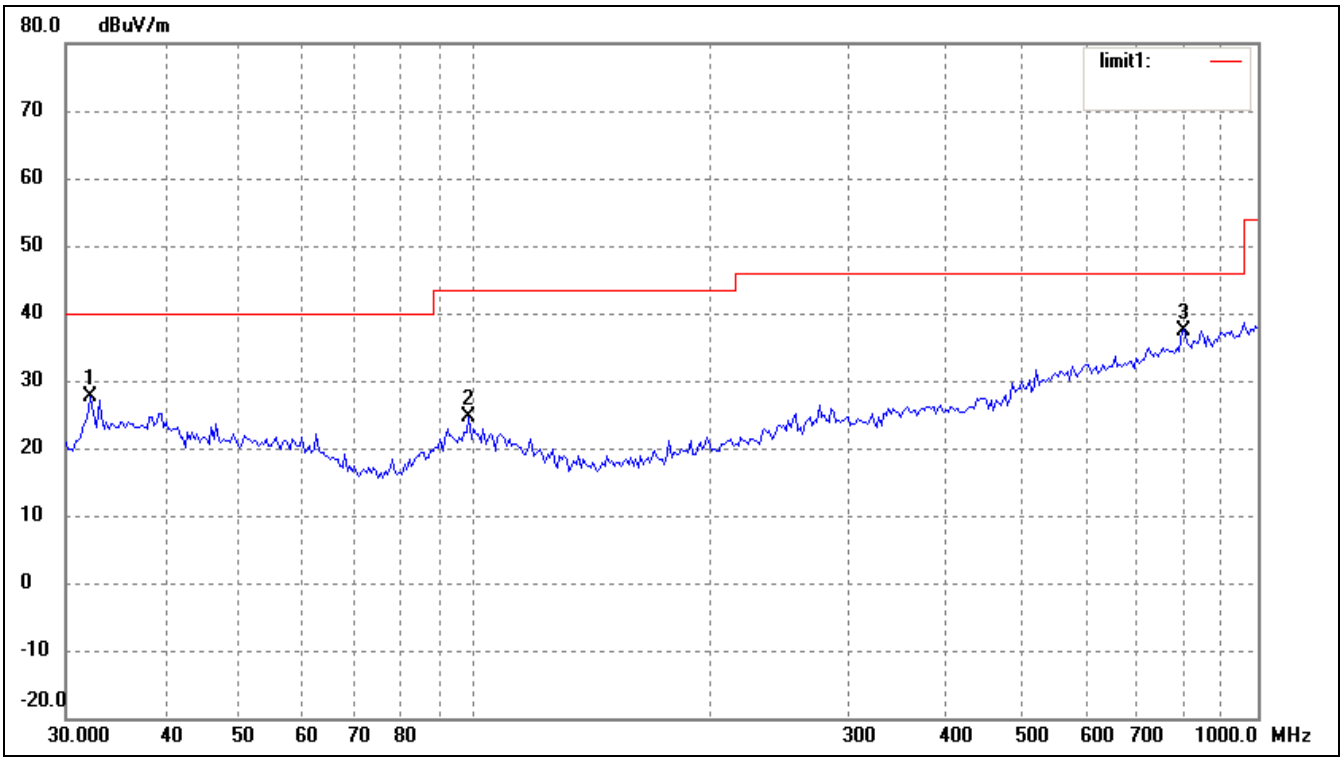
Operating Condition: *802.11n-HT40 Transmitting High Channel-2462MHz*
Comment: *DC 3.7V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	396.2415	16.87	9.95	26.82	46.00	-19.18	360	100	peak
2	595.1329	16.45	13.14	29.59	46.00	-16.41	180	100	peak
3	893.8567	16.88	16.85	33.73	46.00	-12.27	225	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	32.1795	20.84	6.77	27.61	40.00	-12.39	25	100	peak
2	98.1419	16.21	8.30	24.51	43.50	-18.99	300	100	peak
3	804.6028	18.40	19.10	37.50	46.00	-8.50	130	100	peak

Note: Margin= (Reading+ Correct)- Limit

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	53.31	-3.86	49.45	74.00	-24.55	H	PK
4824	38.14	-3.86	34.28	54.00	-19.72	H	AV
7236	49.53	1.10	50.63	74.00	-23.37	H	PK
7236	36.79	1.10	37.89	54.00	-16.11	H	AV
4824	50.44	-3.86	46.58	74.00	-27.42	V	PK
4824	36.56	-3.86	32.70	54.00	-21.30	V	AV
7236	48.85	1.10	49.95	74.00	-24.05	V	PK
7236	36.84	1.10	37.94	54.00	-16.06	V	AV
Middle Channel-2437MHz							
4874	54.97	-3.74	51.23	74.00	-22.77	H	PK
4874	39.87	-3.74	36.13	54.00	-17.87	H	AV
7311	49.66	1.47	51.13	74.00	-22.87	H	PK
7311	37.77	1.47	39.24	54.00	-14.76	H	AV
4874	50.99	-3.74	47.25	74.00	-26.75	V	PK
4874	35.31	-3.74	31.57	54.00	-22.43	V	AV
7311	49.73	1.47	51.20	74.00	-22.80	V	PK
7311	38.85	1.47	40.32	54.00	-13.68	V	AV
High Channel-2462MHz							
4924	54.96	-3.59	51.37	74.00	-22.63	H	PK
4924	46.11	-3.59	42.52	54.00	-11.48	H	AV
7386	50.42	1.79	52.21	74.00	-21.79	H	PK
7386	39.01	1.79	40.80	54.00	-13.20	H	AV
4924	54.51	-3.59	50.92	74.00	-23.08	V	PK
4924	35.14	-3.59	31.55	54.00	-22.45	V	AV
7386	46.68	1.79	48.47	74.00	-25.53	V	PK
7386	38.48	1.79	40.27	54.00	-13.73	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	55.30	-3.85	51.45	74.00	-22.55	H	PK
4824	42.76	-3.85	38.91	54.00	-15.09	H	AV
7236	46.08	1.26	47.34	74.00	-26.66	H	PK
7236	34.49	1.26	35.75	54.00	-18.25	H	AV
4824	58.58	-3.85	54.73	74.00	-19.27	V	PK
4824	46.91	-3.85	43.06	54.00	-10.94	V	AV
7236	48.36	1.26	49.50	74.00	-24.50	V	PK
7236	36.39	1.26	37.65	54.00	-16.35	V	AV
Middle Channel-2437MHz							
4874	60.69	-3.71	56.98	74.00	-17.02	H	PK
4874	46.15	-3.71	42.44	54.00	-11.56	H	AV
7311	50.54	1.59	52.13	74.00	-21.87	H	PK
7311	35.71	1.59	37.30	54.00	-16.70	H	AV
4874	67.46	-3.71	63.75	74.00	-10.25	V	PK
4874	52.01	-3.71	48.30	54.00	-5.70	V	AV
7311	57.83	1.59	59.42	74.00	-14.58	V	PK
7311	40.19	1.59	41.78	54.00	-12.22	V	AV
High Channel-2462MHz							
4924	58.34	-3.57	54.77	74.00	-19.23	H	PK
4924	43.94	-3.57	40.37	54.00	-13.63	H	AV
7386	47.18	1.91	49.09	74.00	-24.91	H	PK
7386	35.19	1.91	37.10	54.00	-16.90	H	AV
4924	64.67	-3.57	61.10	74.00	-12.90	V	PK
4924	49.49	-3.57	45.92	54.00	-8.08	V	AV
7386	52.40	1.91	54.31	74.00	-19.69	V	PK
7386	37.35	1.91	39.26	54.00	-14.74	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	58.23	-3.87	54.36	74.00	-19.64	H	PK
4824	47.21	-3.87	43.34	54.00	-10.66	H	AV
7236	51.18	1.14	52.32	74.00	-21.68	H	PK
7236	39.18	1.19	40.37	54.00	-13.63	H	AV
4824	57.51	-3.86	53.65	74.00	-20.35	V	PK
4824	45.21	-3.86	41.35	54.00	-12.65	V	AV
7236	50.20	1.10	51.30	74.00	-22.70	V	PK
7236	39.60	1.10	40.70	54.00	-13.30	V	AV
Middle Channel-2437MHz							
4874	56.59	-3.74	52.85	74.00	-21.15	H	PK
4874	46.90	-3.74	43.16	54.00	-10.84	H	AV
7311	48.90	1.47	50.37	74.00	-23.63	H	PK
7311	38.63	1.47	40.10	54.00	-13.90	H	AV
4874	58.09	-3.74	54.35	74.00	-19.65	V	PK
4874	45.54	-3.74	41.80	54.00	-12.20	V	AV
7311	52.59	1.47	54.06	74.00	-19.94	V	PK
7311	41.45	1.47	42.92	54.00	-11.08	V	AV
High Channel-2462MHz							
4924	56.72	-3.59	53.13	74.00	-20.87	H	PK
4924	47.14	-3.59	43.55	54.00	-10.45	H	AV
7386	50.34	1.79	52.13	74.00	-21.87	H	PK
7386	39.51	1.79	41.30	54.00	-12.70	H	AV
4924	59.34	-3.59	55.75	74.00	-18.25	V	PK
4924	45.81	-3.59	42.22	54.00	-11.78	V	AV
7386	49.58	1.79	51.37	74.00	-22.63	V	PK
7386	37.89	1.79	39.68	54.00	-14.32	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-2412MHz							
4824	56.32	-3.86	52.46	74.00	-21.54	H	PK
4824	45.66	-3.86	41.80	54.00	-12.20	H	AV
7236	53.30	1.10	54.40	74.00	-19.60	H	PK
7236	42.18	1.10	43.28	54.00	-10.72	H	AV
4824	54.21	-3.86	50.35	74.00	-23.65	V	PK
4824	44.12	-3.86	40.26	54.00	-13.74	V	AV
7236	53.25	1.10	54.35	74.00	-19.65	V	PK
7236	42.20	1.10	43.30	54.00	-10.70	V	AV
Middle Channel-2437MHz							
4874	56.94	-3.74	53.20	74.00	-20.80	H	PK
4874	48.38	-3.74	44.64	54.00	-9.36	H	AV
7311	53.10	1.47	54.57	74.00	-19.43	H	PK
7311	42.50	1.47	43.97	54.00	-10.03	H	AV
4874	57.39	-3.74	53.65	74.00	-20.35	V	PK
4874	45.94	-3.74	42.20	54.00	-11.80	V	AV
7311	49.85	1.47	51.32	74.00	-22.68	V	PK
7311	38.53	1.47	40.00	54.00	-14.00	V	AV
High Channel-2462MHz							
4924	58.17	-3.59	54.58	74.00	-19.42	H	PK
4924	47.12	-3.59	43.53	54.00	-10.47	H	AV
7386	52.71	1.79	54.50	74.00	-19.50	H	PK
7386	38.54	1.79	40.33	54.00	-13.67	H	AV
4924	55.95	-3.59	52.36	74.00	-21.64	V	PK
4924	42.13	-3.59	38.54	54.00	-15.46	V	AV
7386	48.56	1.79	50.35	74.00	-23.65	V	PK
7386	37.24	1.79	39.03	54.00	-14.97	V	AV

Note: Margin= (Reading+ Correct)- Limit

Remark:

Testing is carried out with frequency rang 9kHz to the 25GHz, 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, and the data is not report.

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 558074 D01 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 ≥ 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

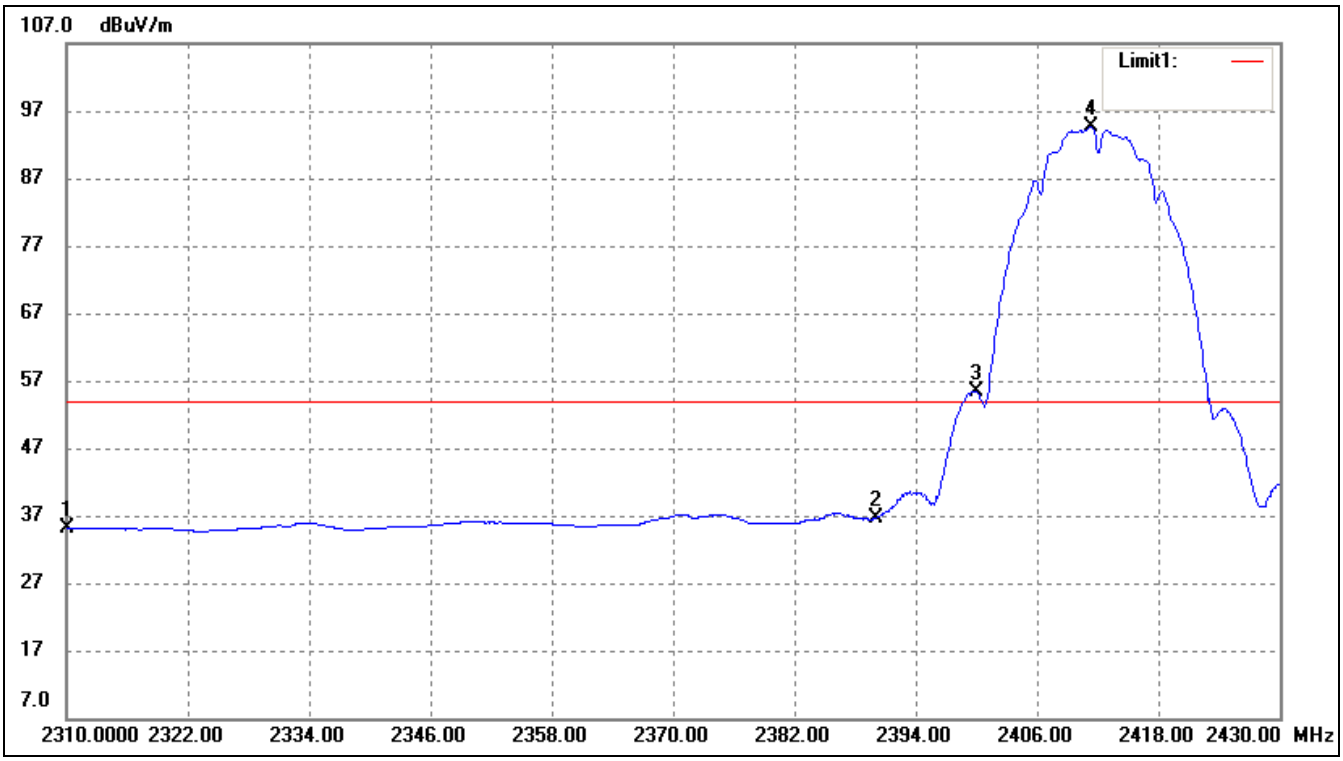
Temperature:	23°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

9.5 Summary of Test Results/Plots

Please refer to the test plots as below.

802.11b-Lowest Bandedge

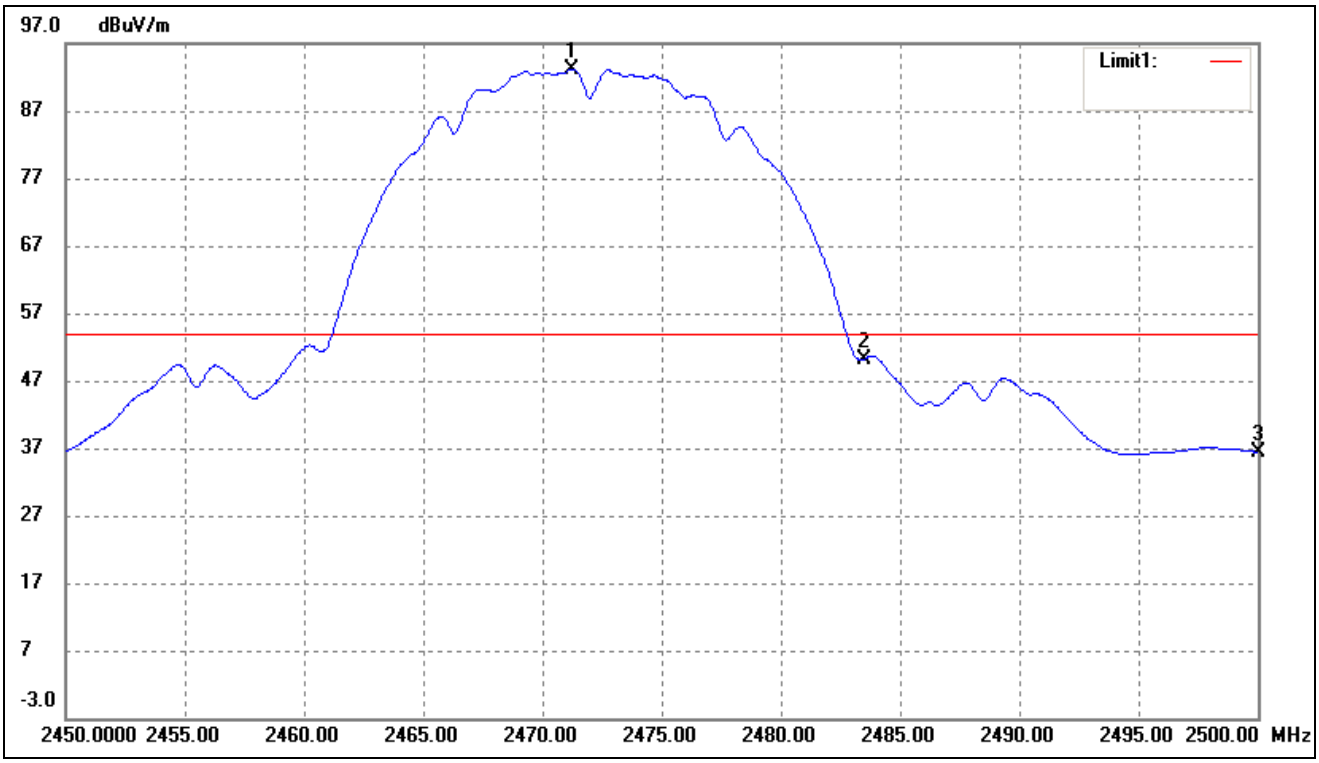
Vertical (Worst case)



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

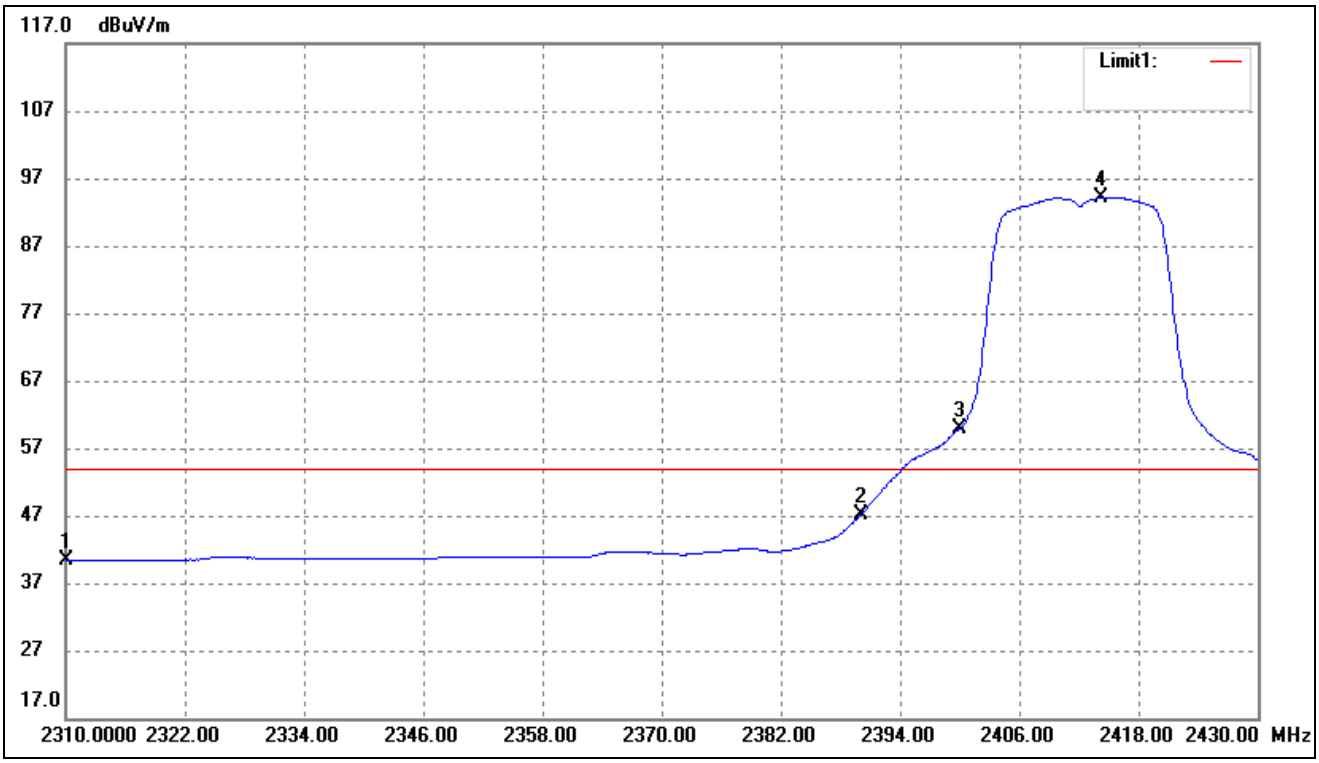
Vertical (Worst case)



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

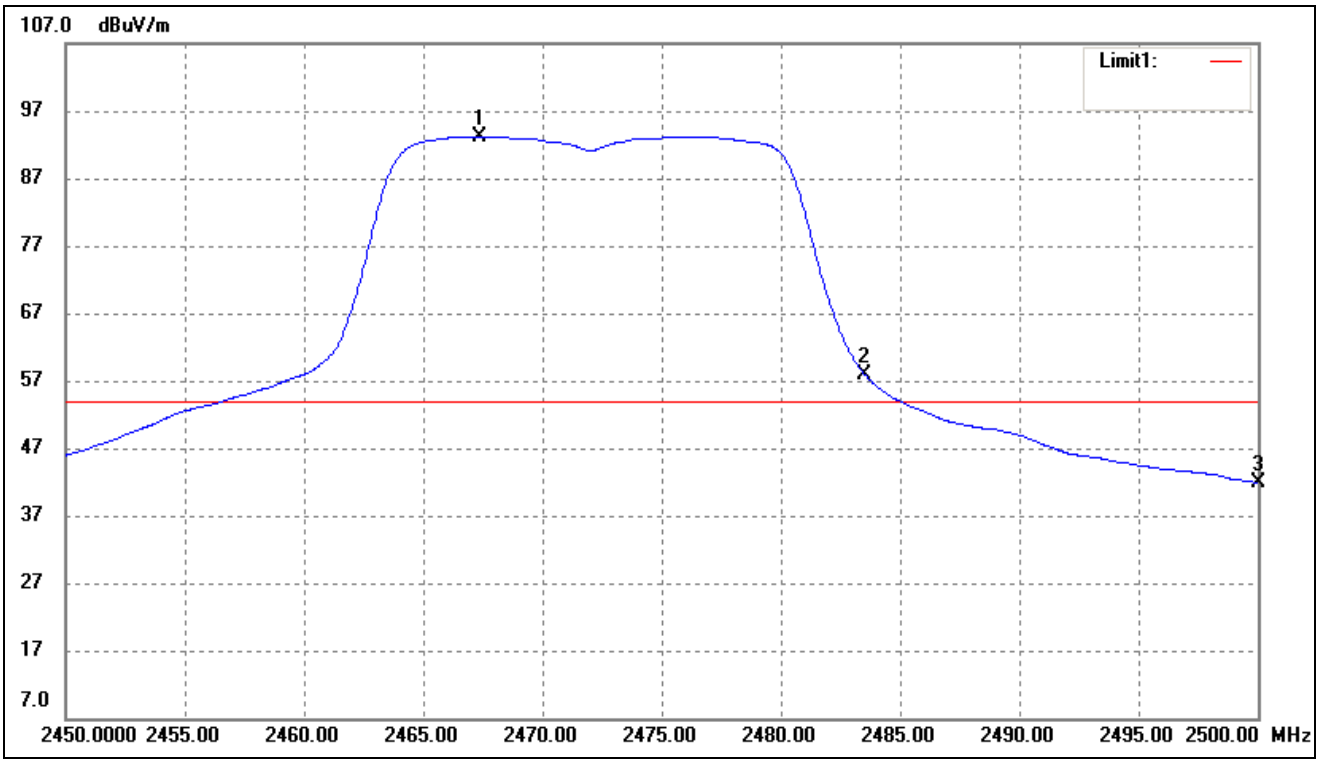
Vertical (Worst case)



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

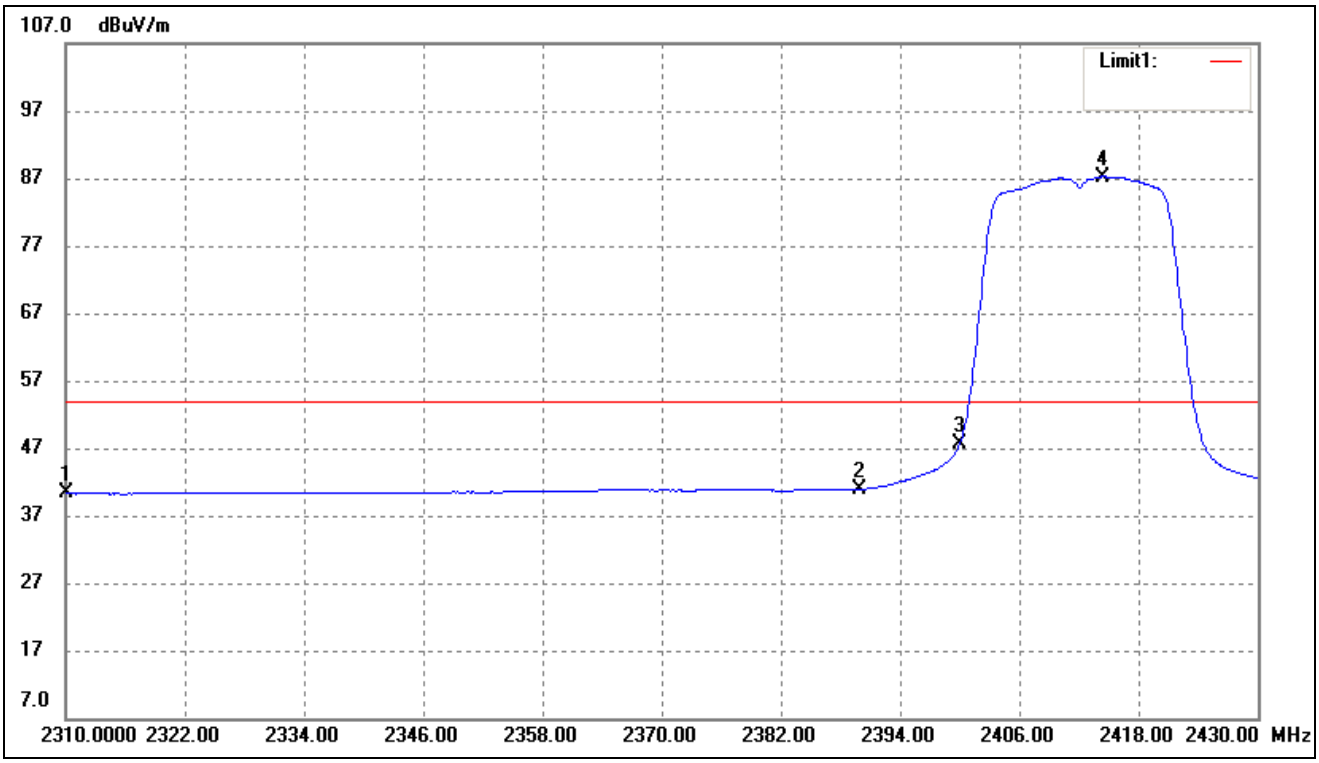
Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
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-MCS7-Lowest Bandedge

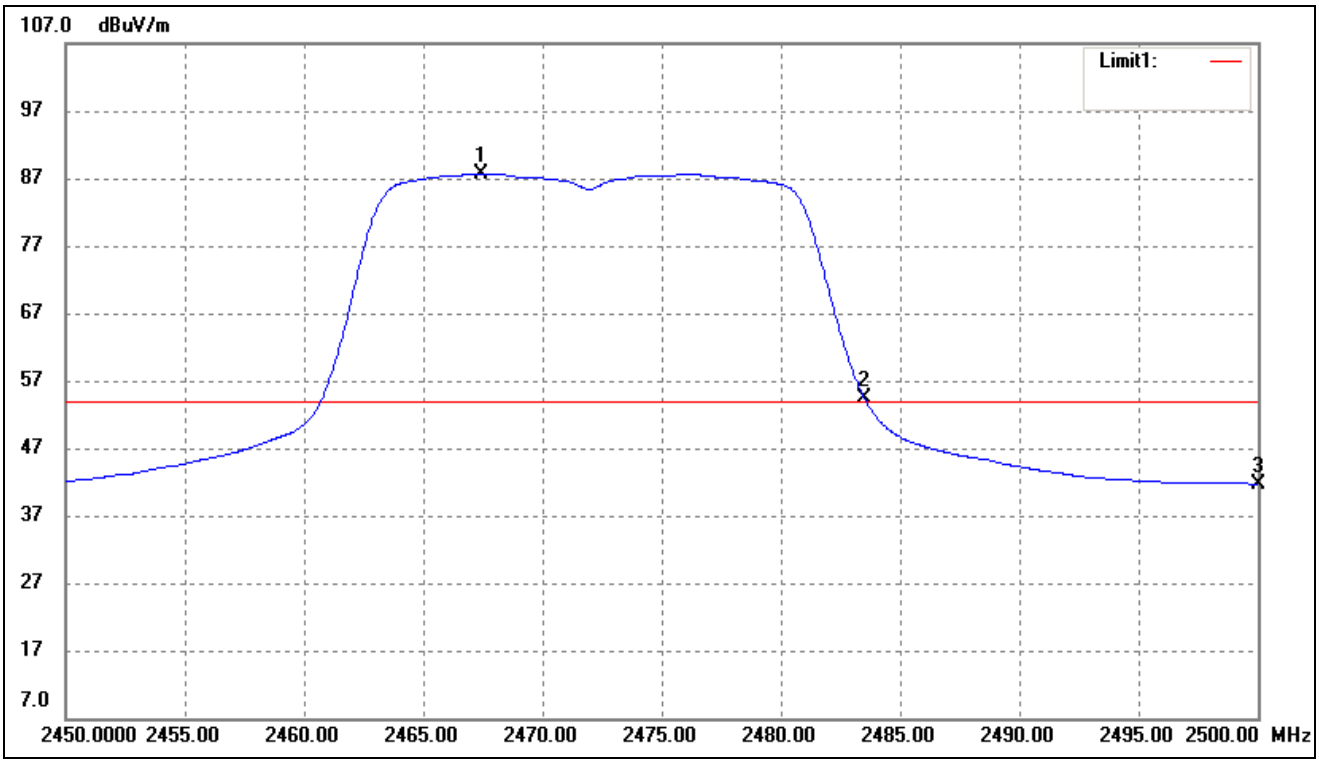
Vertical (Worst case)



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-MCS7-Highest Bandedge

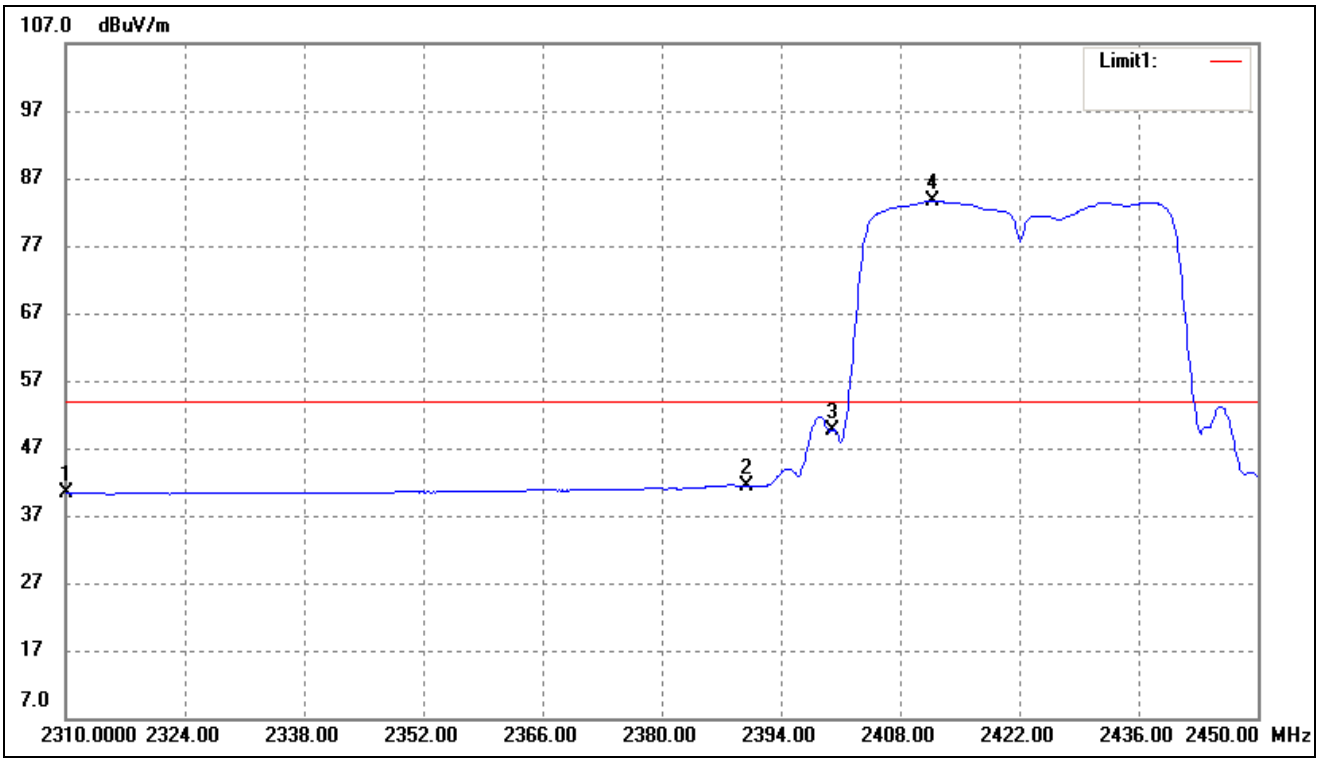
Vertical (Worst case)



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

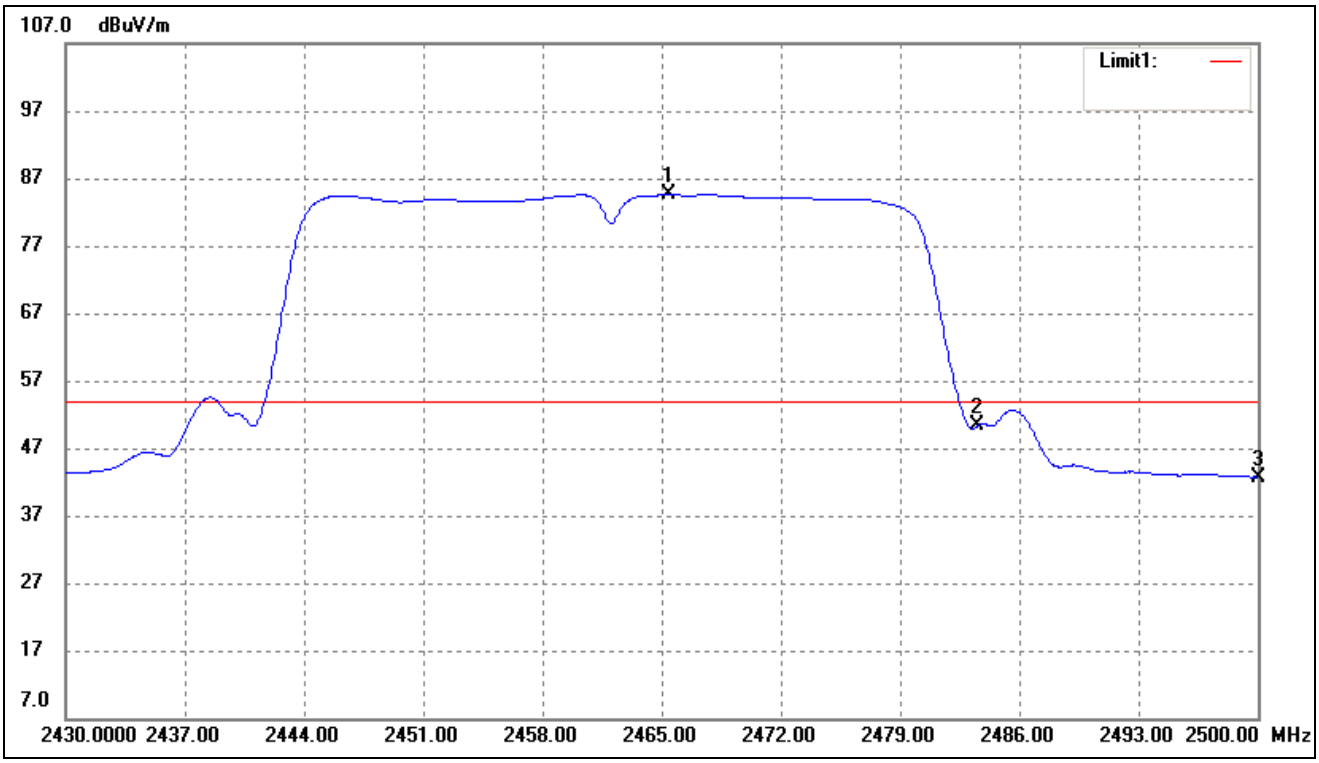
Vertical (Worst case)



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	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
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.

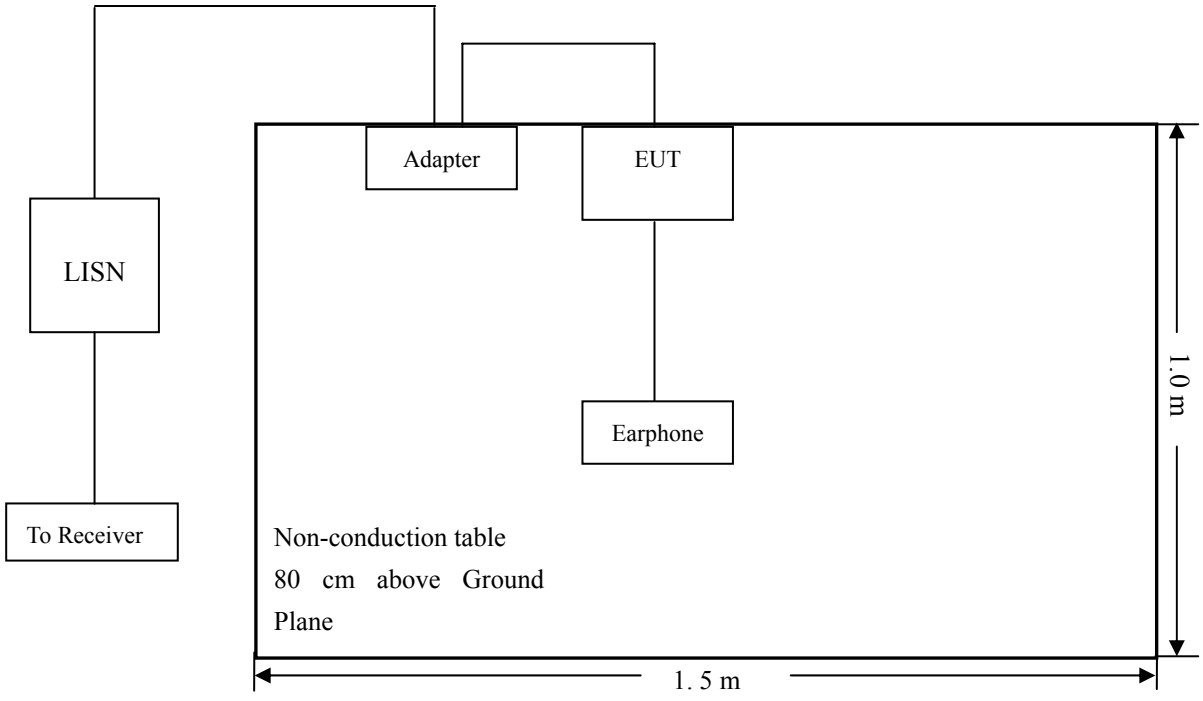
10.2 Test Equipment List and Details

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.
Note: Base on the calibrated result, for the impedance characteristic and insertion loss, the effect shall be ignored from the placed multiple outlet power strip between the device and LISN.

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:

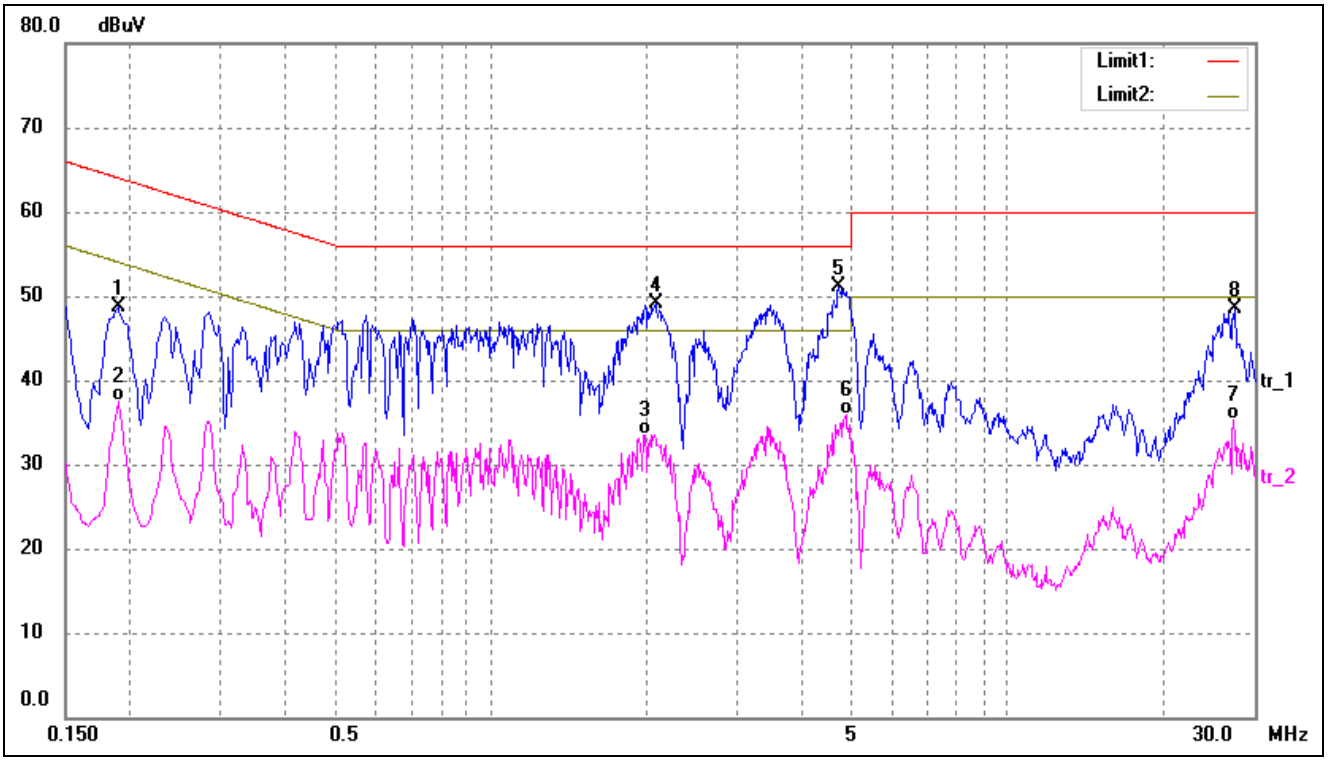
-4.96 dB at 4.7060 MHz in the **Lin, Peak** detector, 0.15-30MHz

10.8 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

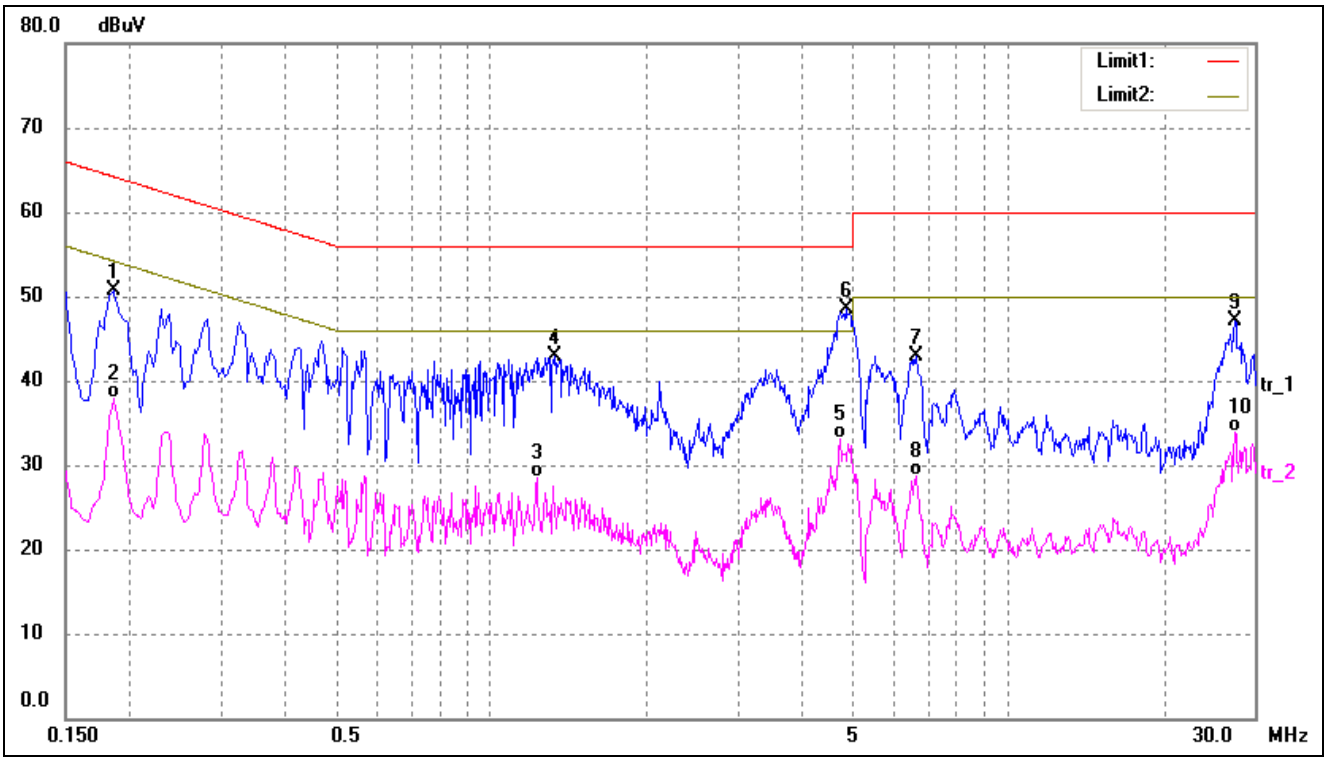
EUT: *KINGZONE K1*
Tested Model: *K1*
Operating Condiation: *AC 120V/60Hz; Adapter DC 5V/2A*
Comment: *WIFI Transmitting*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1900	39.23	9.50	48.73	64.04	-15.31	peak
2	0.1900	28.07	9.50	37.57	54.04	-16.47	AVG
3	1.9860	23.56	10.00	33.56	46.00	-12.44	AVG
4	2.0780	39.01	10.00	49.01	56.00	-6.99	peak
5*	4.7060	41.04	10.00	51.04	56.00	-4.96	peak
6	4.8620	25.87	10.00	35.87	46.00	-10.13	AVG
7	27.3740	22.35	13.00	35.35	50.00	-14.65	AVG
8	27.4380	35.49	13.00	48.49	60.00	-11.51	peak

Test Specification: *Line*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1860	41.27	9.50	50.77	64.21	-13.44	peak
2	0.1860	28.44	9.50	37.94	54.21	-16.27	AVG
3	1.2260	18.46	10.00	28.46	46.00	-17.54	AVG
4	1.3300	32.90	10.00	42.90	56.00	-13.10	peak
5	4.7460	23.01	10.00	33.01	46.00	-12.99	AVG
6*	4.8540	38.45	10.00	48.45	56.00	-7.55	peak
7	6.6420	32.99	10.00	42.99	60.00	-17.01	peak
8	6.6420	18.72	10.00	28.72	50.00	-21.28	AVG
9	27.4780	34.08	13.00	47.08	60.00	-12.92	peak
10	27.4780	20.99	13.00	33.99	50.00	-16.01	AVG

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