

# FCC Part 15C Measurement and Test Report

For

**Shenzhen KVD Communication Equipment**

**13C, Block C, Shenzhen Electronic Technology Building, Shennan Middle  
Road, Futian District, Shenzhen, China**

**FCC ID: 2ADTEY100PRO**

<b>FCC Rule(s):</b>	<u>FCC Part 15C</u>
<b>Product Description:</b>	<u>Smart phone</u>
<b>Tested Model:</b>	<u>Valencia2 Y100 Pro</u>
<b>Report No.:</b>	<u>STR15098108I-2</u>
<b>Tested Date:</b>	<u>2015-09-10 to 2015-09-22</u>
<b>Issued Date:</b>	<u>2015-09-23</u>
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

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## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment Under Test (EUT)

#### Client Information

Applicant: Shenzhen KVD Communication Equipment  
 Address of applicant: 13C, Block C, Shenzhen Electronic Technology Building, Shennan Middle Road, Futian District, Shenzhen, China  
 Manufacturer: Shenzhen KVD Communication Equipment  
 Address of manufacturer: 13C, Block C, Shenzhen Electronic Technology Building, Shennan Middle Road, Futian District, Shenzhen, China

General Description of EUT	
Product Name:	Smart phone
Trade Name:	DOOGEE
Model No.:	Valencia2 Y100 Pro
Adding Model(s):	Valencia2 Y100 plus
Hardware Version:	N316B-13
Software Version:	DOOGEE-Valencia2_Y100pro-Android5.1-R07-20150812
IMEI:	353187071110090/353187071110108
Rated Voltage:	Battery: DC 3.8V
Power Adaptor:	DG50
	INPUT: AC100-240V 50/6Hz; OUTPUT: DC5V/1A
<p><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 Valencia2 Y100 Pro, but the circuit and the electronic construction do not change, declared by the manufacturer.</i></p>	

Technical Characteristics of EUT	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz for 11b/g/n(HT20) 2422-2452MHz For 11n(HT40)
RF Output Power:	14.52dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	11 for 802.11b/g/n(HT20), 7 for 802.11n(HT40)
Channel Separation:	5MHz
Type of Antenna:	Integral Antenna
Antenna Gain:	2.55dBi

## 1.2 Test Standards

The following report is prepared on behalf of the Shenzhen KVD Communication Equipment 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 C63.10-2013, American National Standard for Testing Unlicensed Wireless Devices, and ANSI C63.4-2014, 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 V03r03 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 2<sup>nd</sup> 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, 2437MHz, 2462MHz
TM2	802.11g	2412MHz, 2437MHz, 2462MHz
TM3	802.11n-HT20	2412MHz, 2437MHz, 2462MHz
TM4	802.11n-HT40	2422MHz, 2437MHz, 2452MHz

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
Earphone Cable	1.25	Unshielded	Without Core
USB Cable	1.0	Shielded	Without Core

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

## 1.6 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Spectrum Analyzer	Agilent	E4407B	MY41440400	2015-06-17	2016-06-16
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2015-06-17	2016-06-16
Amplifier	Agilent	8447F	3113A06717	2015-06-17	2016-06-16
Amplifier	C&D	PAP-1G18	2002	2015-06-17	2016-06-16
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2015-06-17	2016-06-16
Horn Antenna	ETS	3117	00086197	2015-06-17	2016-06-16
Horn Antenna	ETS	3116B	00088203	2015-06-17	2016-06-16
Loop Antenna	Schwarz beck	FMZB 1516	9773	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2015-06-17	2016-06-16
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2015-06-17	2016-06-16
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2015-06-17	2016-06-16

## 2. SUMMARY OF TEST RESULTS

<b>FCC Rules</b>	<b>Description of Test Item</b>	<b>Result</b>
§ 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**

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#### **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**

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### **4.1 Standard Applicable**

According to FCC Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

### **4.2 Evaluation Information**

This product has a FPCB Antenna, fulfill the requirement of this section.



## 5. Power Spectral Density

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### 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 Procedure

According to the KDB 558074 D01 V03r03, 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:

- a) Set instrument center frequency to DTS channel center frequency.
- b) Set span to at least 1.5 times the OBW.
- c) Set RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- d) Set VBW  $\geq 3 \times \text{RBW}$ .
- e) Detector = power averaging (RMS) or sample detector (when RMS not available).
- f) Ensure that the number of measurement points in the sweep  $\geq 2 \times \text{span/RBW}$ .
- g) Sweep time = auto couple.
- h) Employ trace averaging (RMS) mode over a minimum of 100 traces.
- i) Use the peak marker function to determine the maximum amplitude level.
- j) 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).

### 5.3 Environmental Conditions

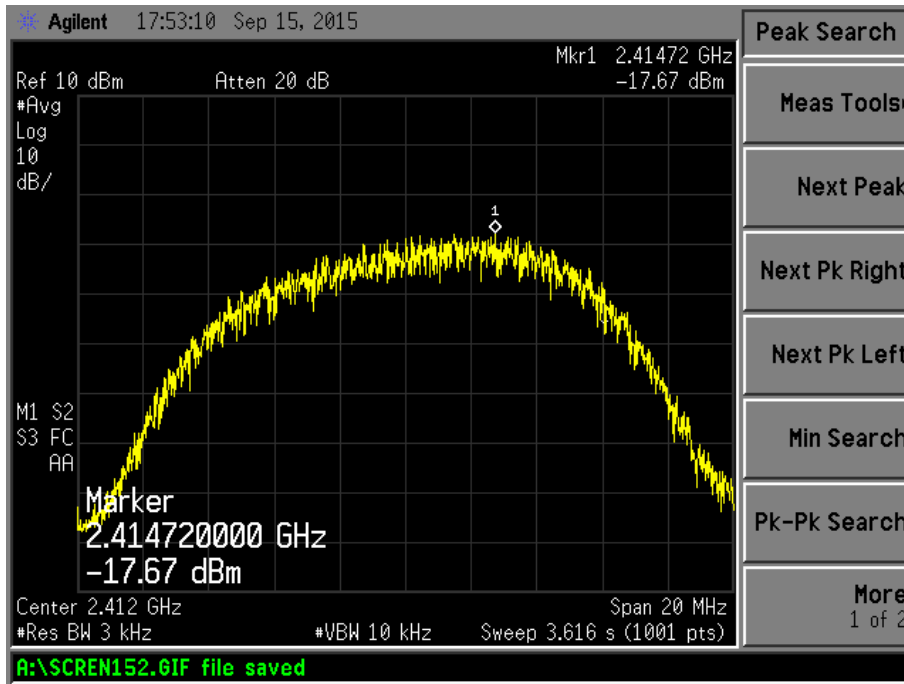
Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

#### 5.4 Summary of Test Results/Plots

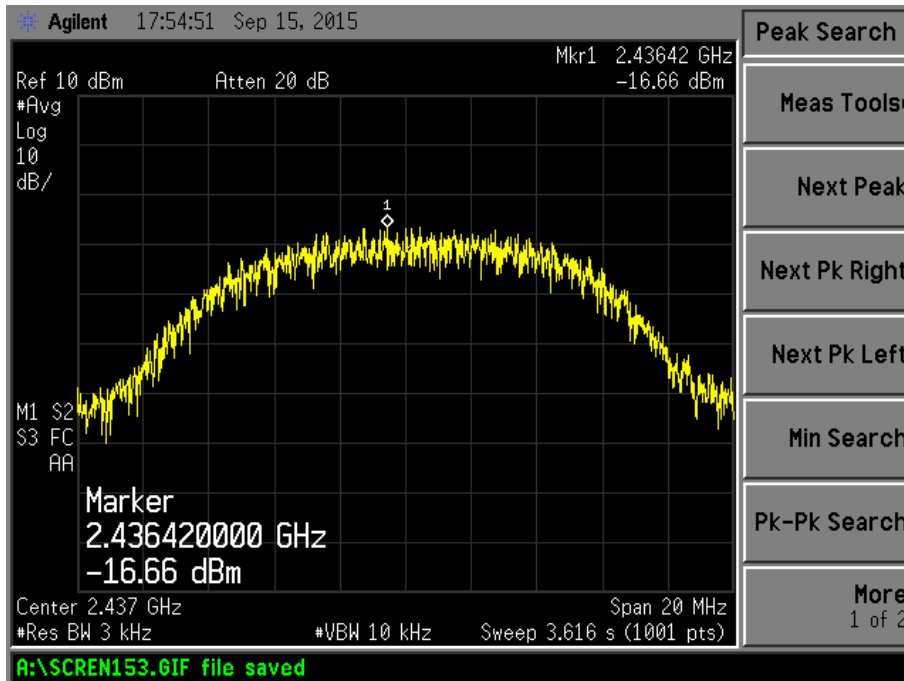
Test Mode	Test Channel MHz	Power Spectral Density dBm/3kHz	Limit dBm/3kHz
802.11b	2412	-17.67	8
	2437	-16.66	8
	2462	-17.36	8
802.11g	2412	-21.34	8
	2437	-29.14	8
	2462	-21.12	8
802.11n HT20	2412	-20.75	8
	2437	-29.20	8
	2462	-20.16	8
802.11n HT40	2422	-23.50	8
	2437	-26.30	8
	2452	-24.12	8

Please refer to the following test plots:

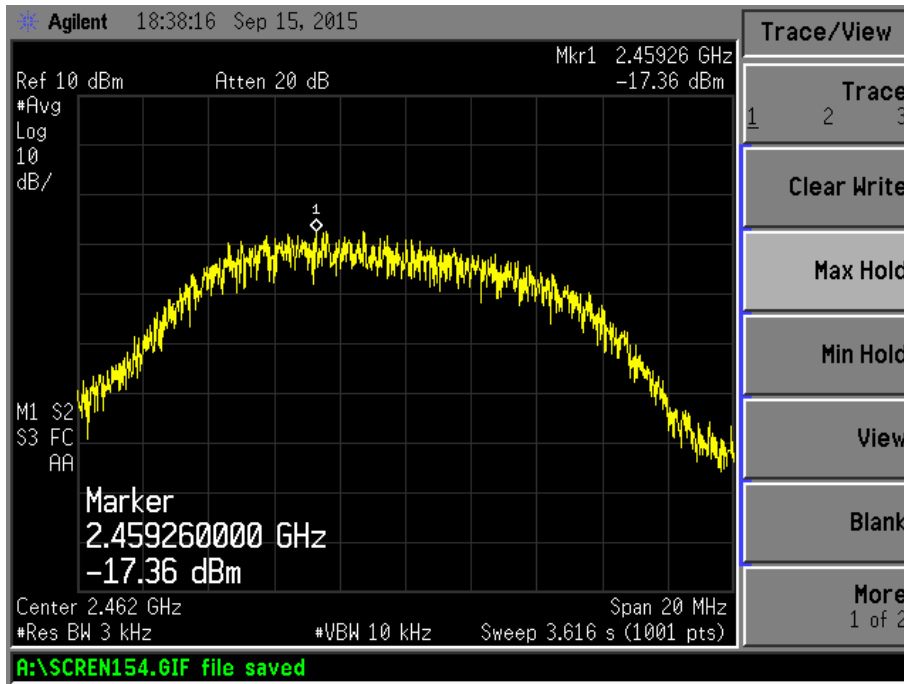
802.11b-Low Channel



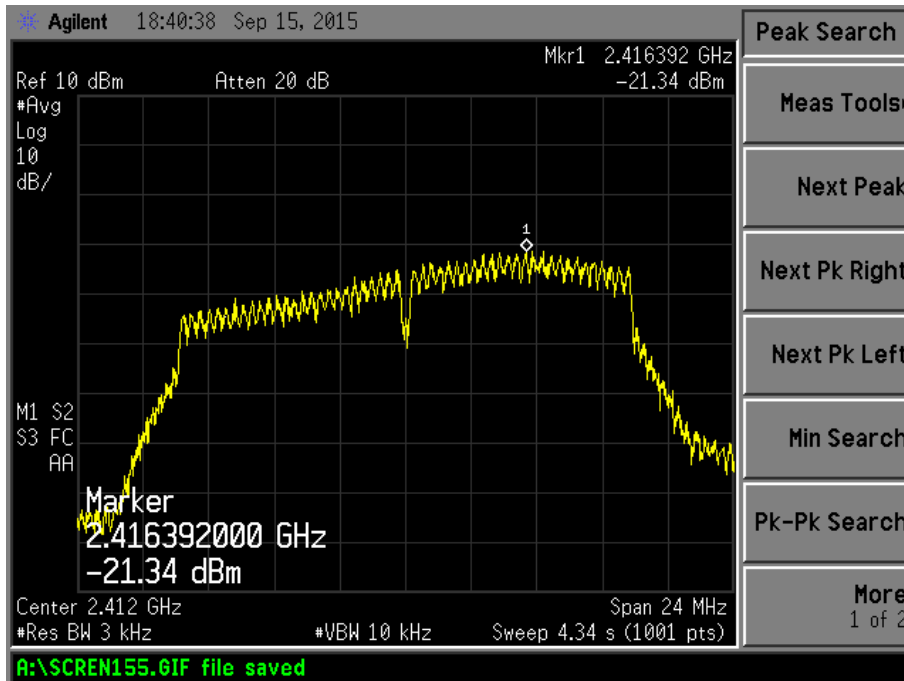
802.11b-Middle Channel



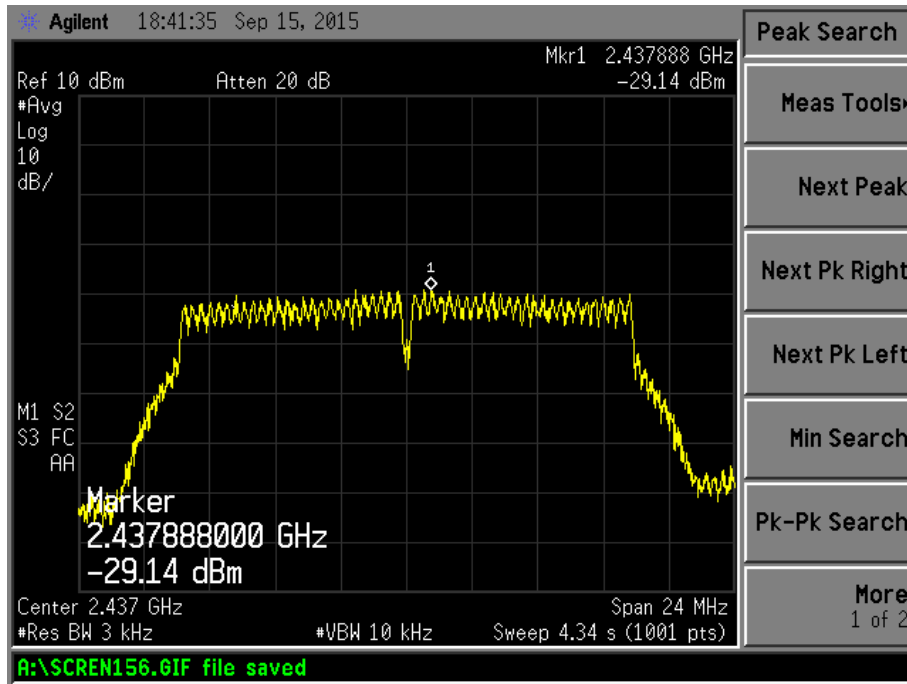
802.11b-High Channel



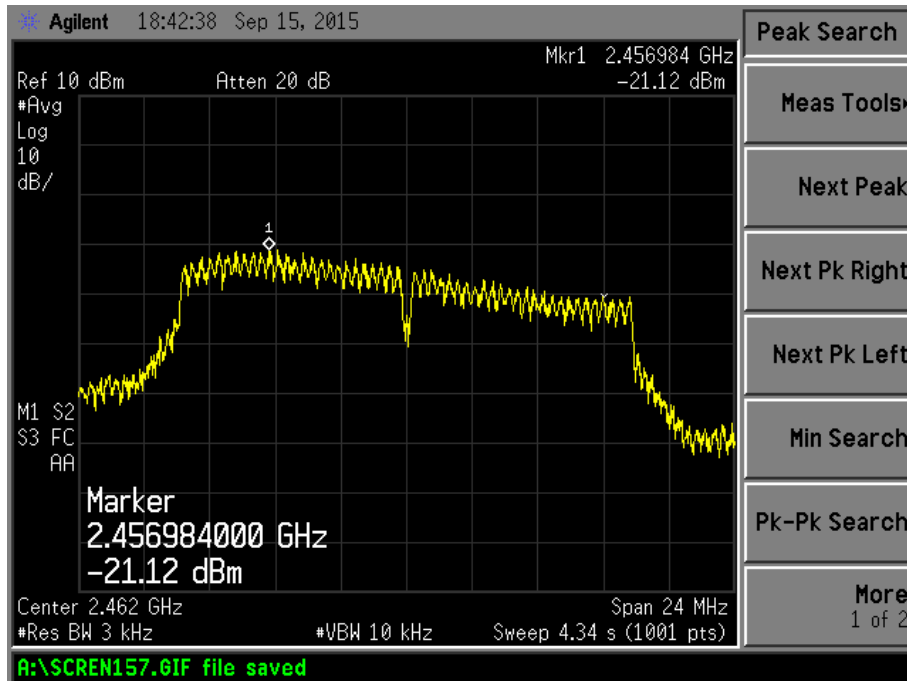
802.11g-Low Channel



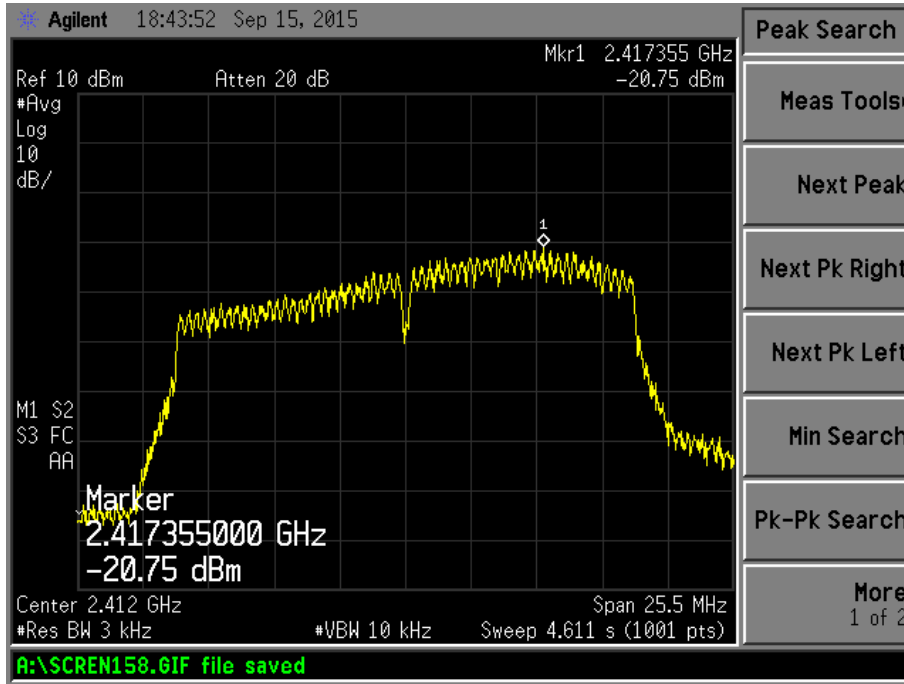
## 802.11g-Middle Channel



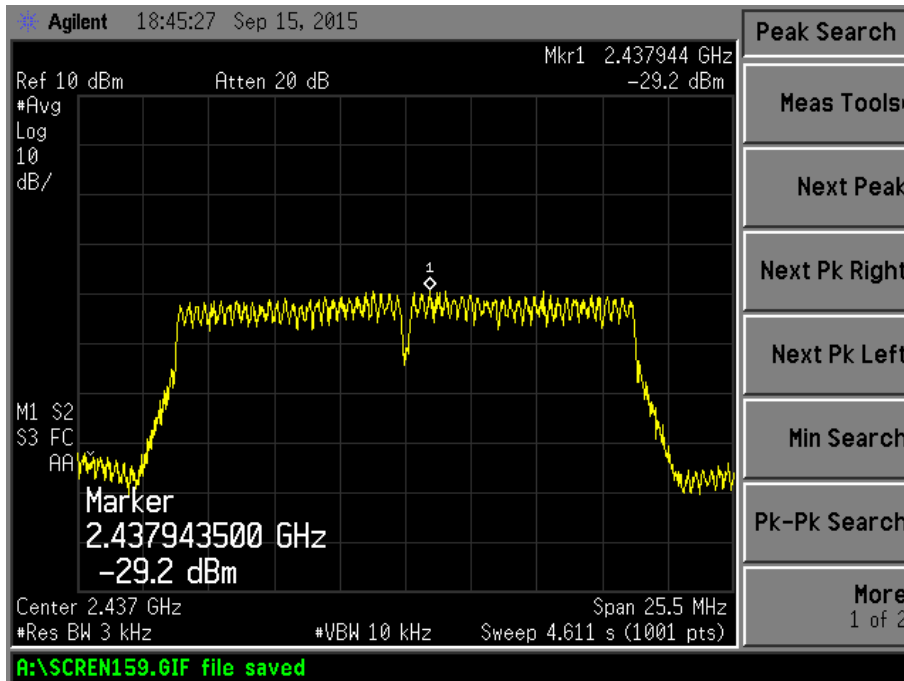
## 802.11g-High Channel



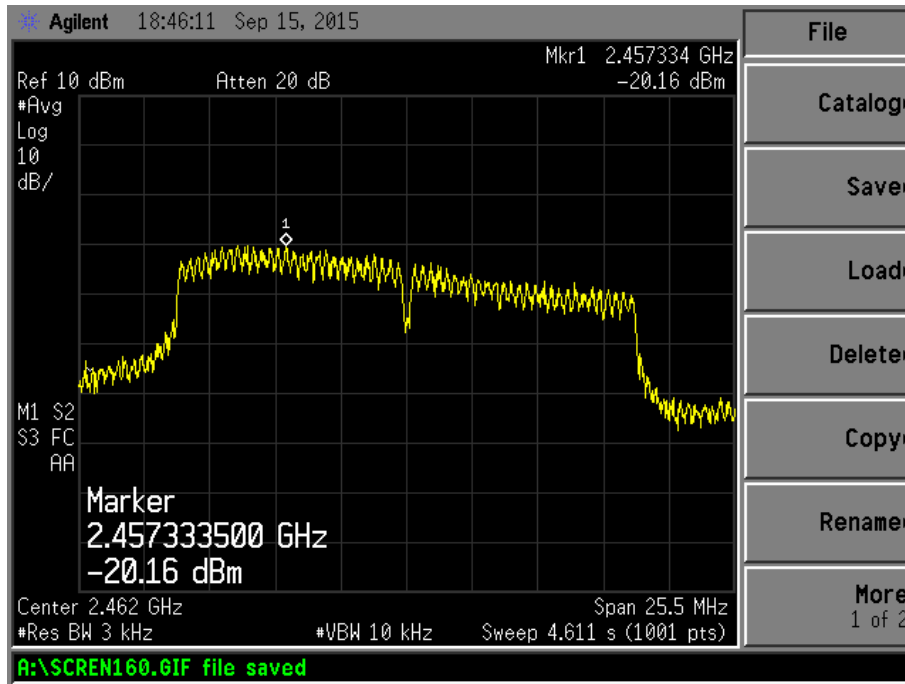
802.11n-HT20-Low Channel



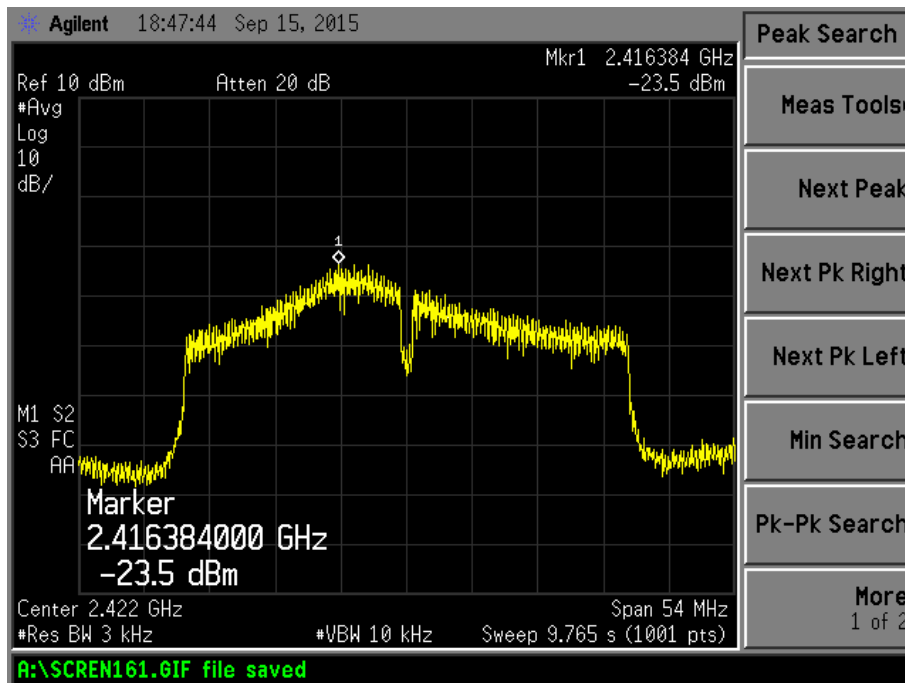
802.11n-HT20-Middle Channel



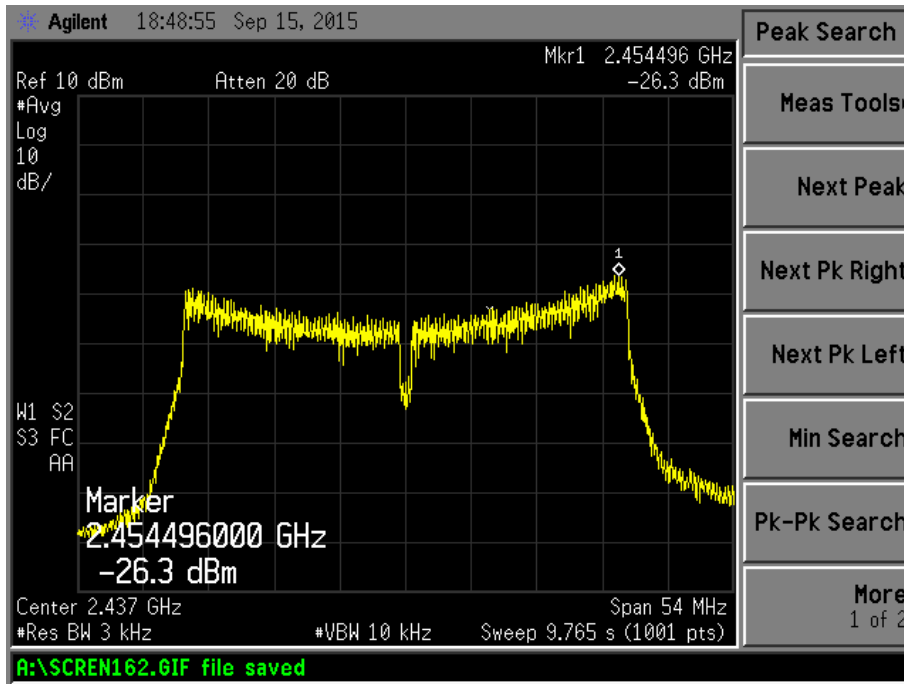
802.11n-HT20-High Channel



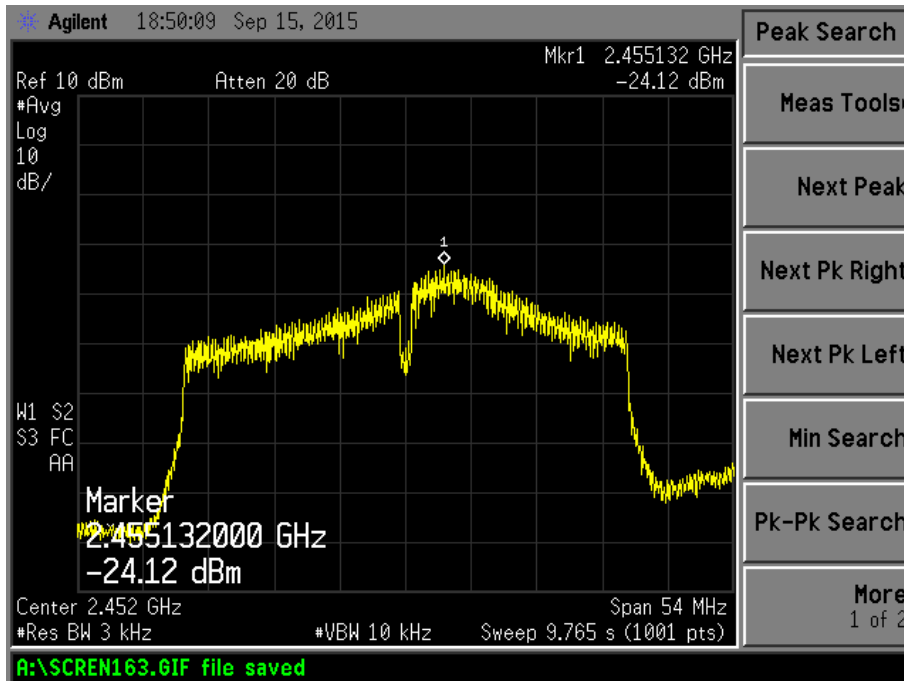
802.11n-HT40-Low Channel



802.11n-HT40-Middle Channel



802.11n-HT40-High Channel





## 6. 6dB Bandwidth

### 6.1 Standard Applicable

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

### 6.2 Test Procedure

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) 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.

### 6.3 Environmental Conditions

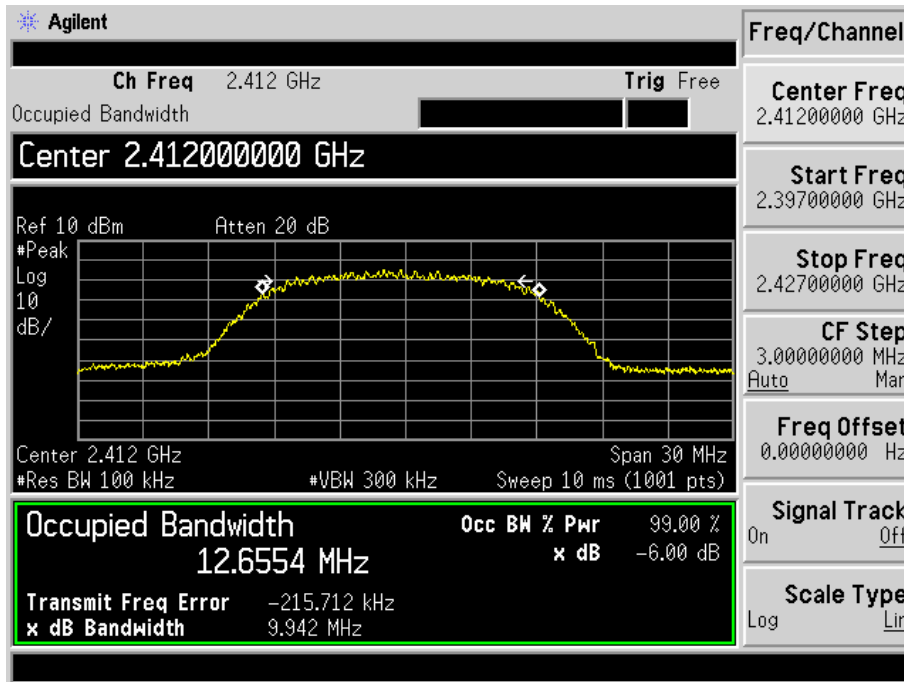
Temperature:	25° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

### 6.4 Summary of Test Results/Plots

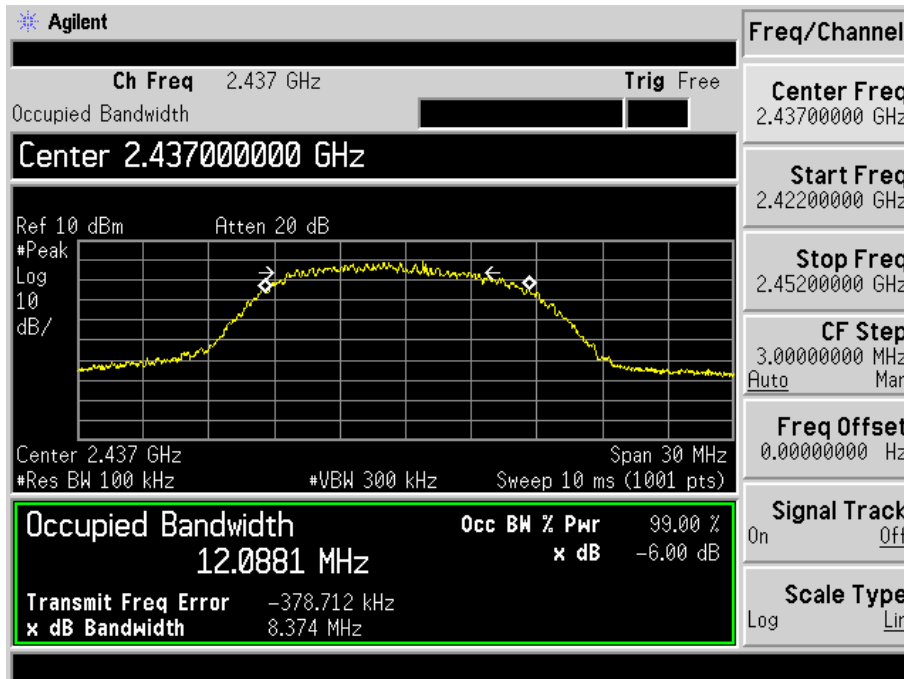
Test Mode	Test Channel MHz	6 dB Bandwidth MHz	99% Bandwidth MHz	Limit kHz
802.11b	2412	9.942	12.6554	>500
	2437	8.374	12.0881	>500
	2462	6.771	11.4194	>500
802.11g	2412	16.545	16.5020	>500
	2437	12.668	16.3341	>500
	2462	10.038	16.1419	>500
802.11n-HT20	2412	17.713	17.6340	>500
	2437	13.460	17.3560	>500
	2462	8.631	17.1148	>500
802.11n-HT40	2422	15.282	35.9226	>500
	2437	17.842	35.6854	>500
	2452	34.494	35.9057	>500

Please refer to the following test plots:

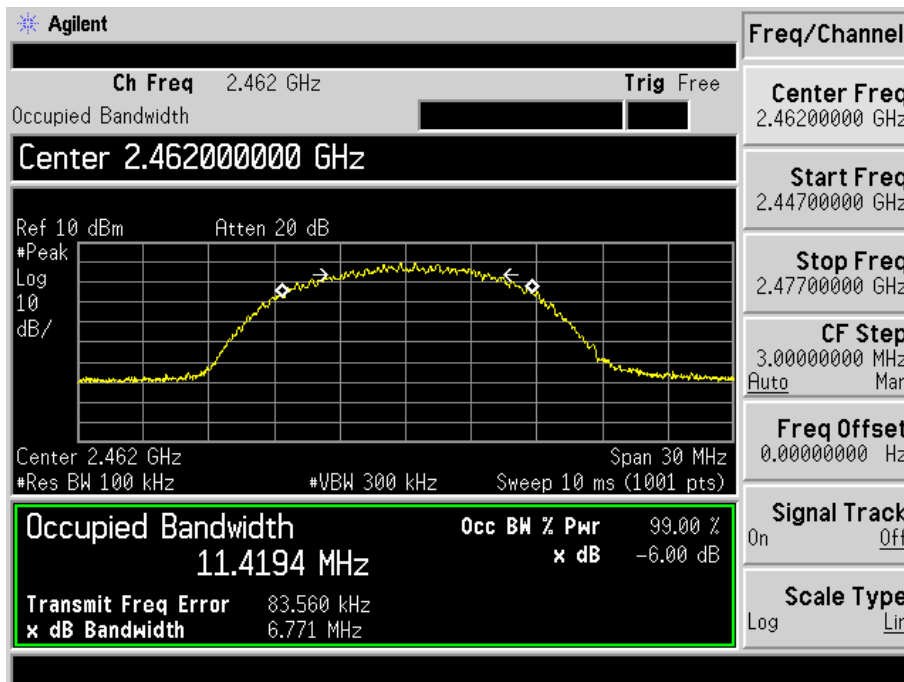
802.11b-Low Channel



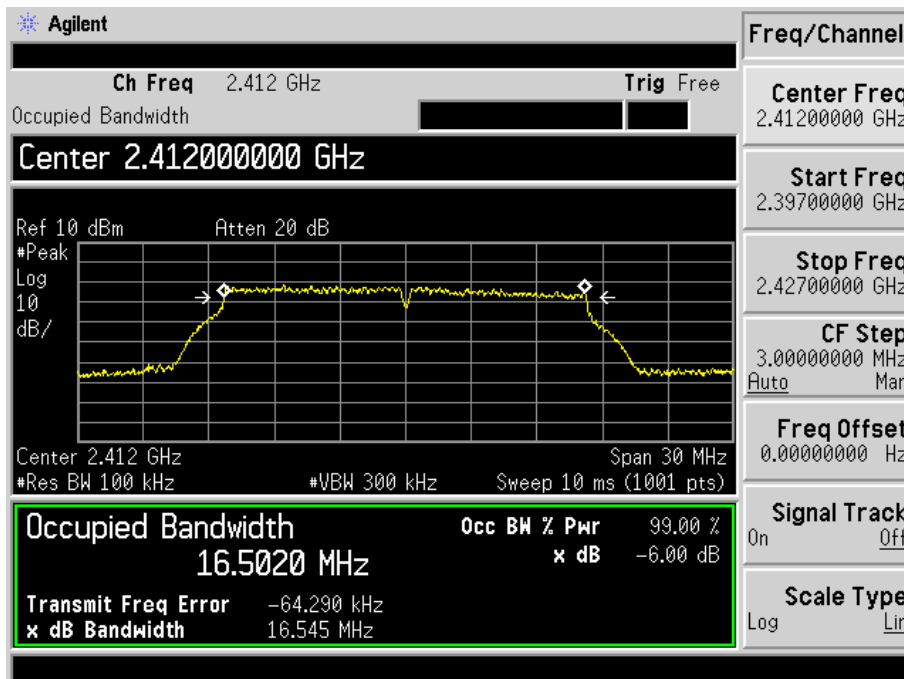
802.11b-Middle Channel



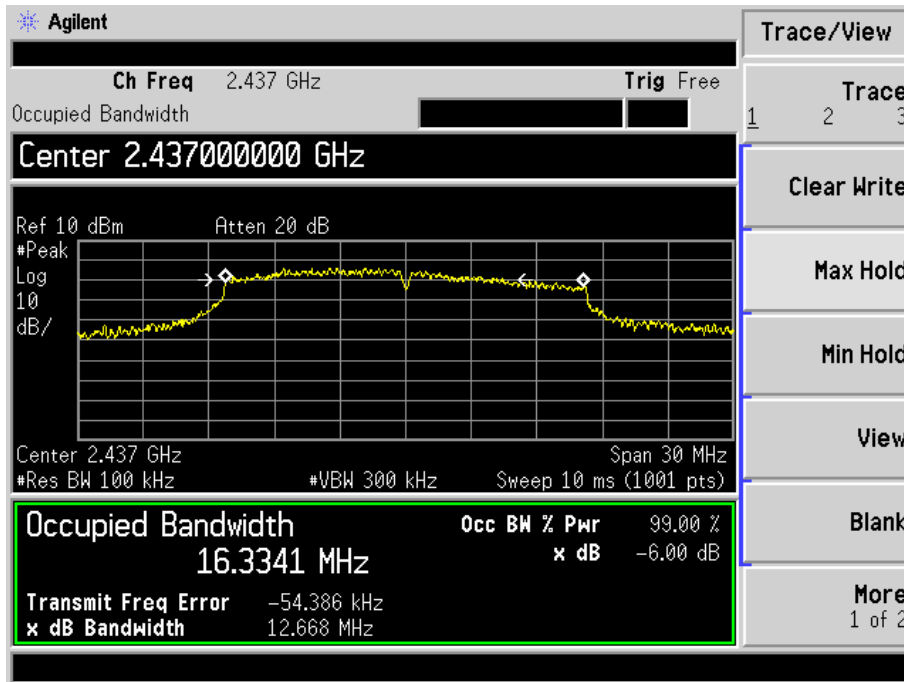
## 802.11b-High Channel



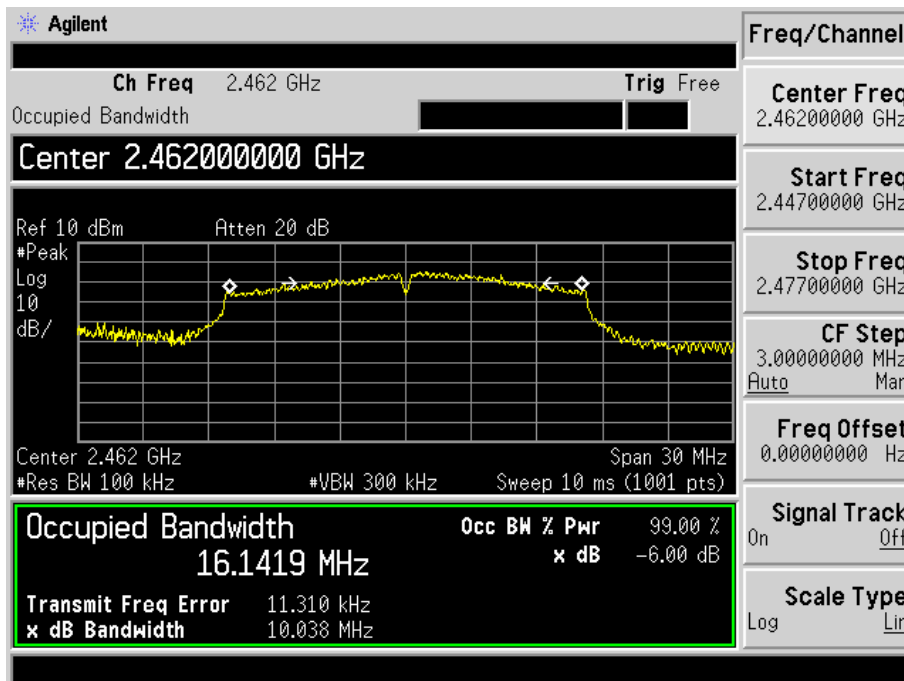
## 802.11g-Low Channel



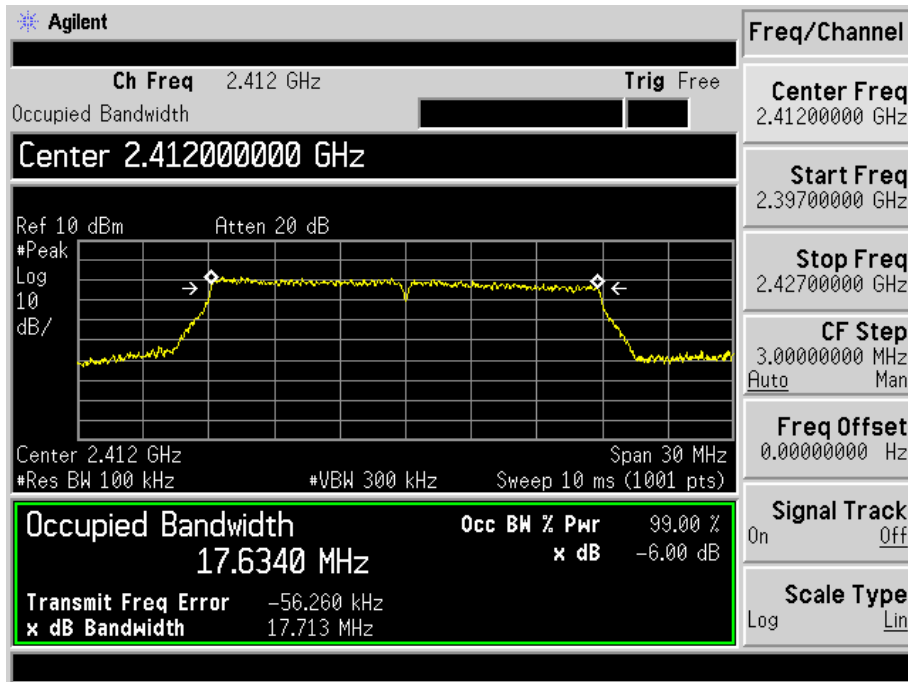
802.11g-Middle Channel



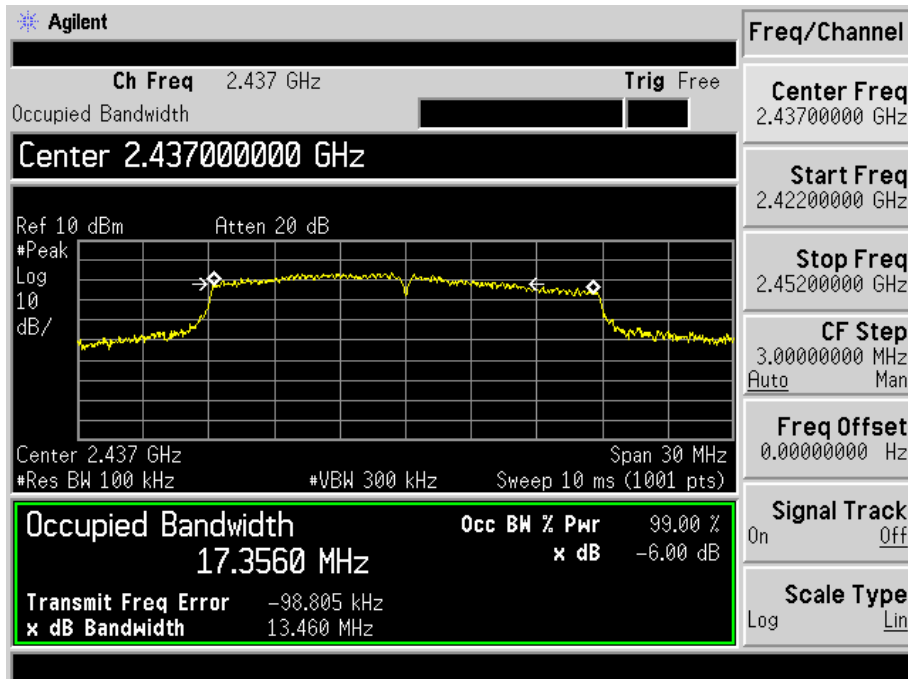
802.11g-High Channel



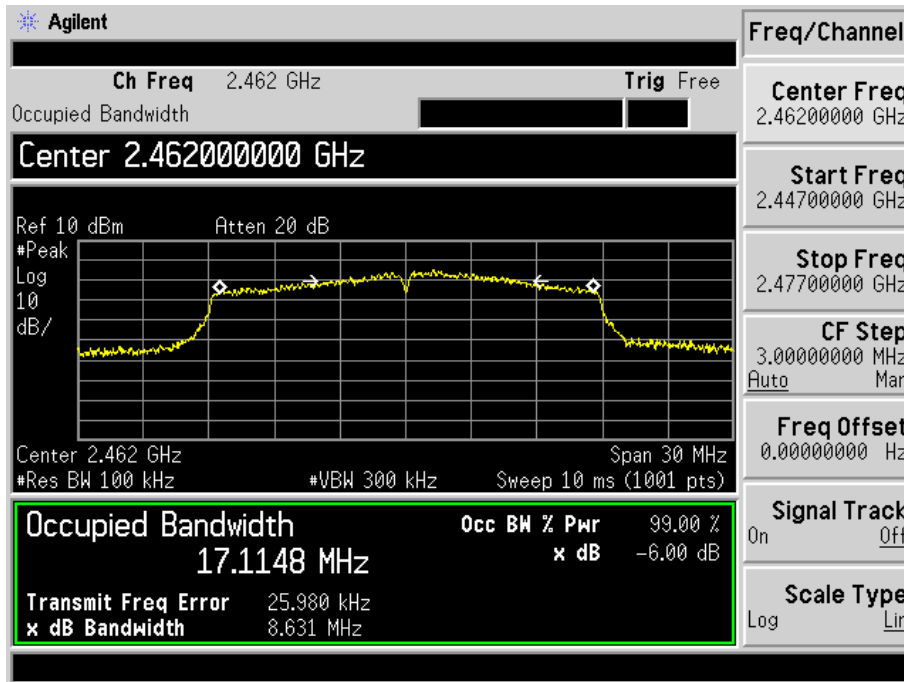
## 802.11n-HT20-Low Channel



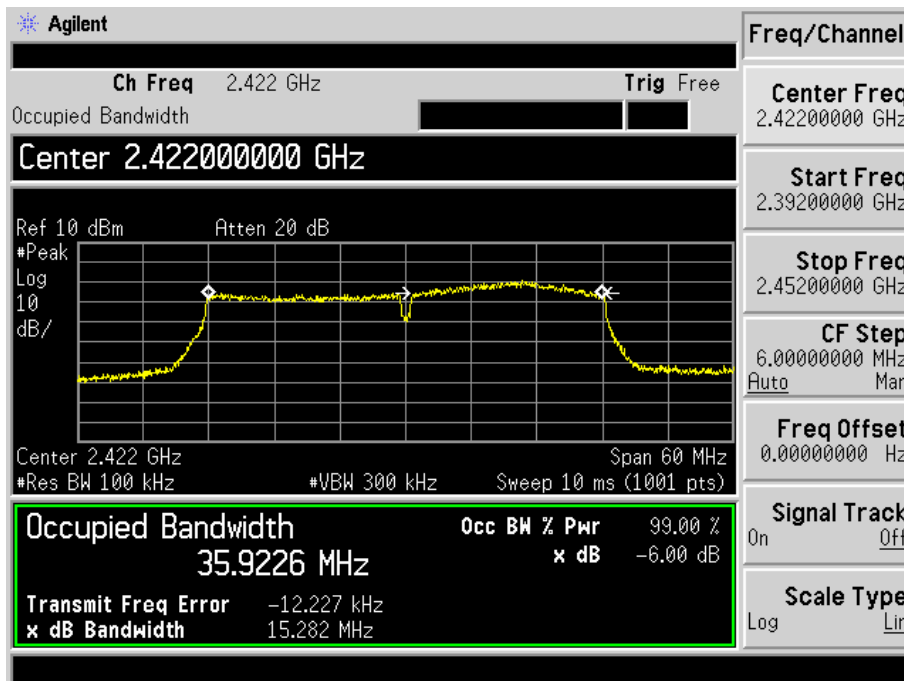
## 802.11n-HT20-Middle Channel



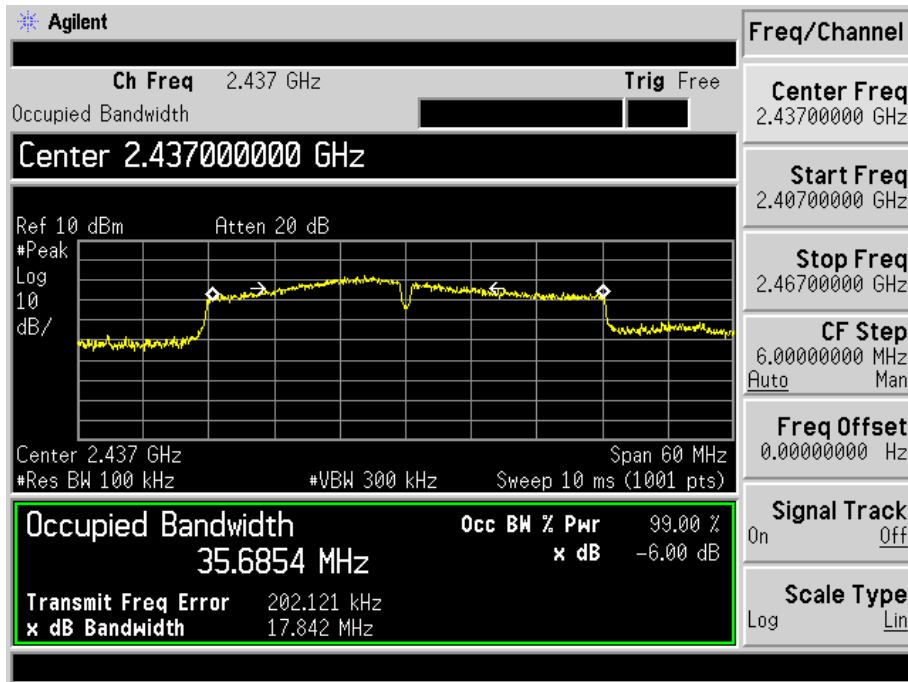
## 802.11n-HT20-High Channel



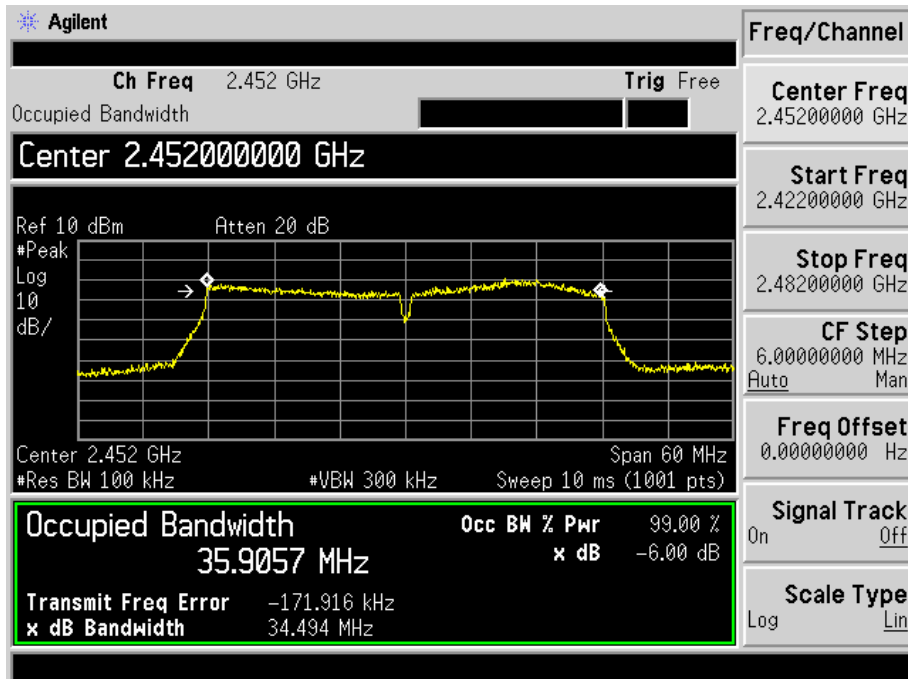
## 802.11n-HT40-Low Channel



## 802.11n-HT40-Middle Channel



## 802.11n-HT40-High Channel



## 7. RF Output Power

### 7.1 Standard Applicable

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

### 7.2 Test Procedure

According to section 15.247(b)-power output of the KDB-558074 D01 V03r03, 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

- a) Set span to at least 1.5 times the OBW.
- b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
- c) Set VBW  $\geq 3 \times$  RBW.
- d) 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.)
- e) Sweep time = auto.
- f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- g) 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” .
- h) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- i) 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.

### 7.3 Environmental Conditions

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

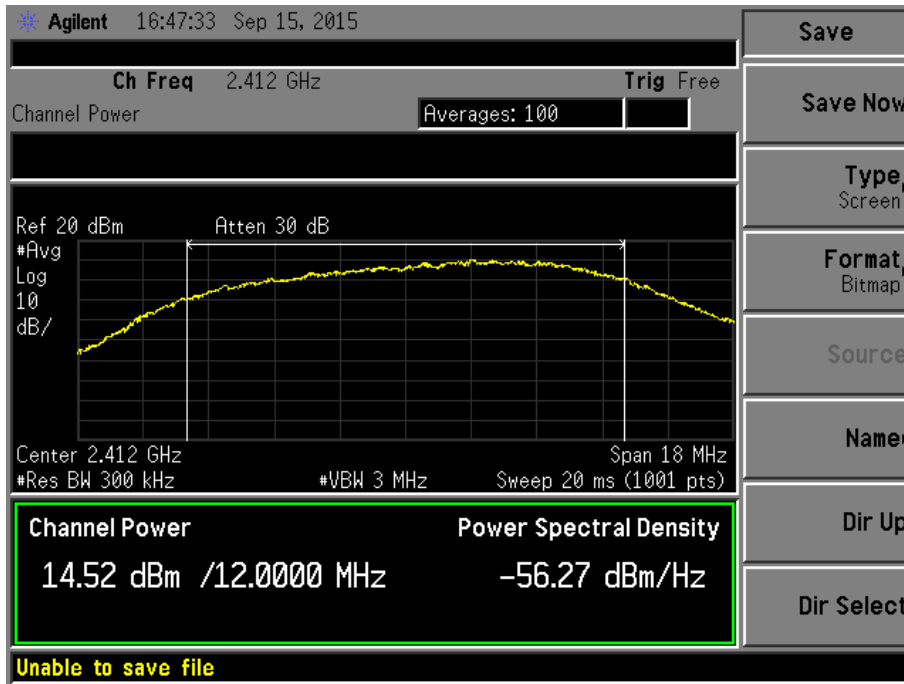


#### 7.4 Summary of Test Results/Plots

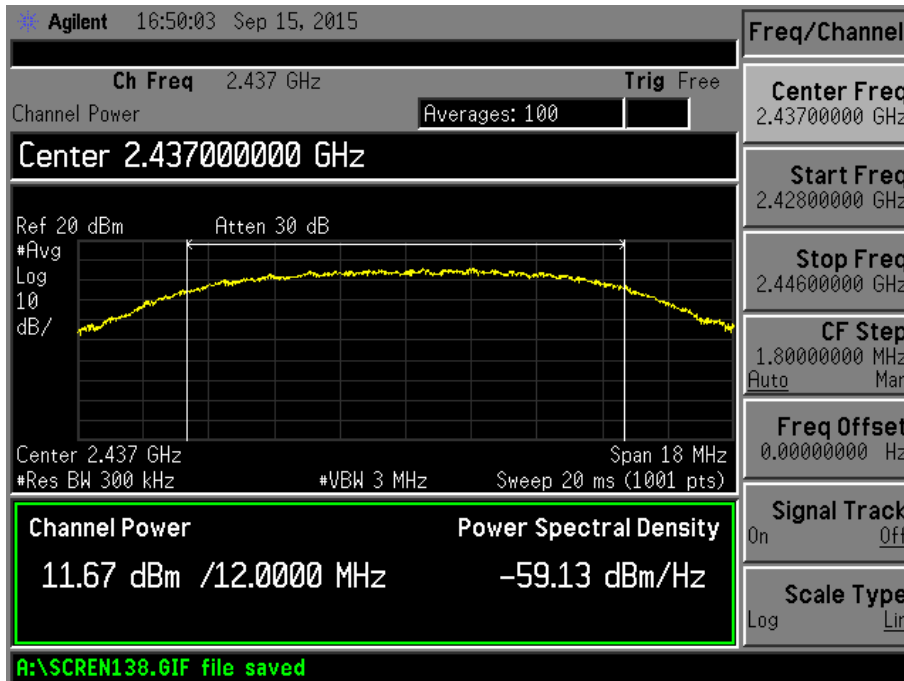
Test Mode	Frequency MHz	Reading dBm	Output Power mW	Limit mW
802.11b_11Mbps	2412	14.52	28.31	1000
	2437	11.67	14.69	1000
	2462	12.45	17.58	1000
802.11g_54Mbps	2412	9.44	8.79	1000
	2437	9.67	9.27	1000
	2462	10.46	11.12	1000
802.11n HT20_MCS7	2412	8.97	7.89	1000
	2437	8.93	7.82	1000
	2462	8.88	7.73	1000
802.11n HT40_MCS7	2422	7.23	5.28	1000
	2437	7.56	5.70	1000
	2452	6.74	4.72	1000

Please refer to the following test plots:

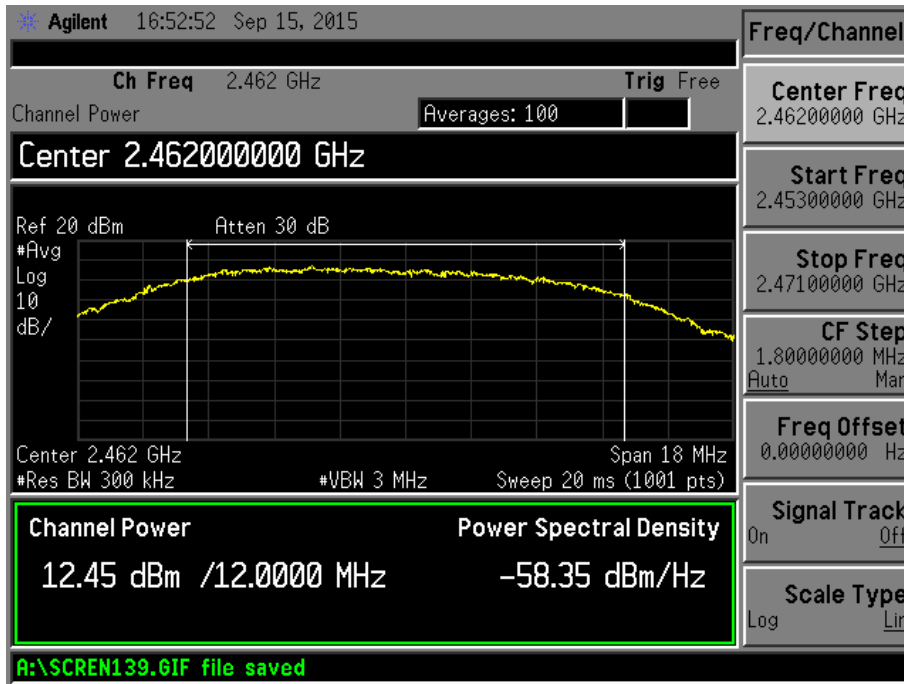
802.11-11Mbps-Low Channel



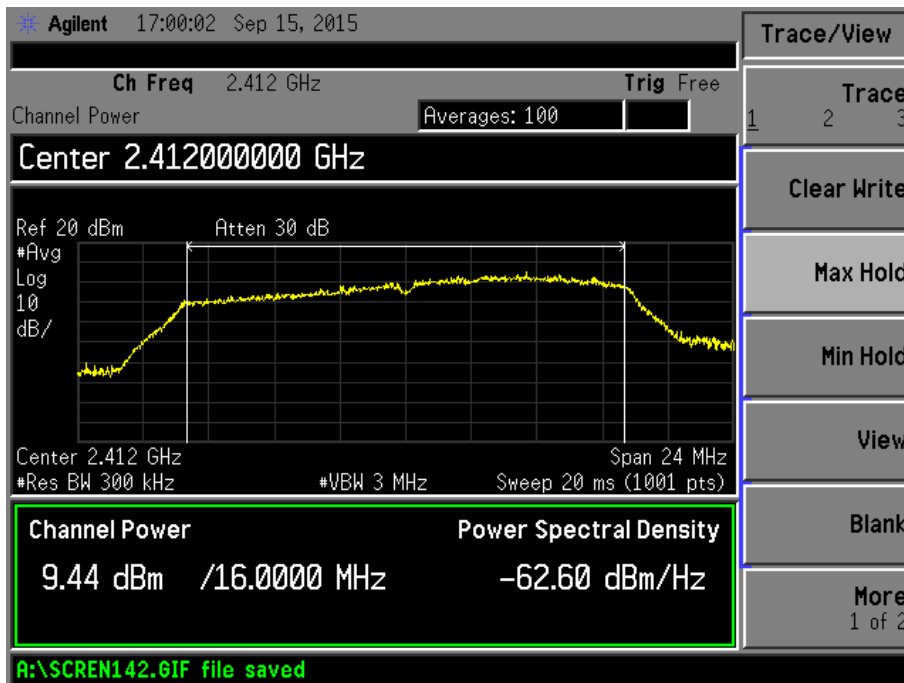
802.11b -11Mbps-Middle Channel



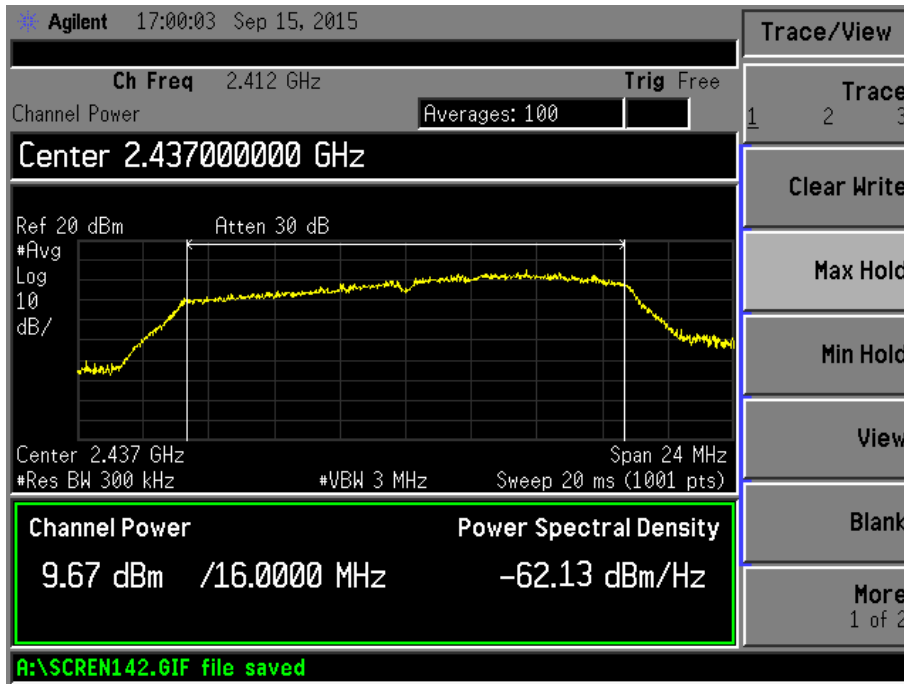
802.11b -11Mbps-High Channel



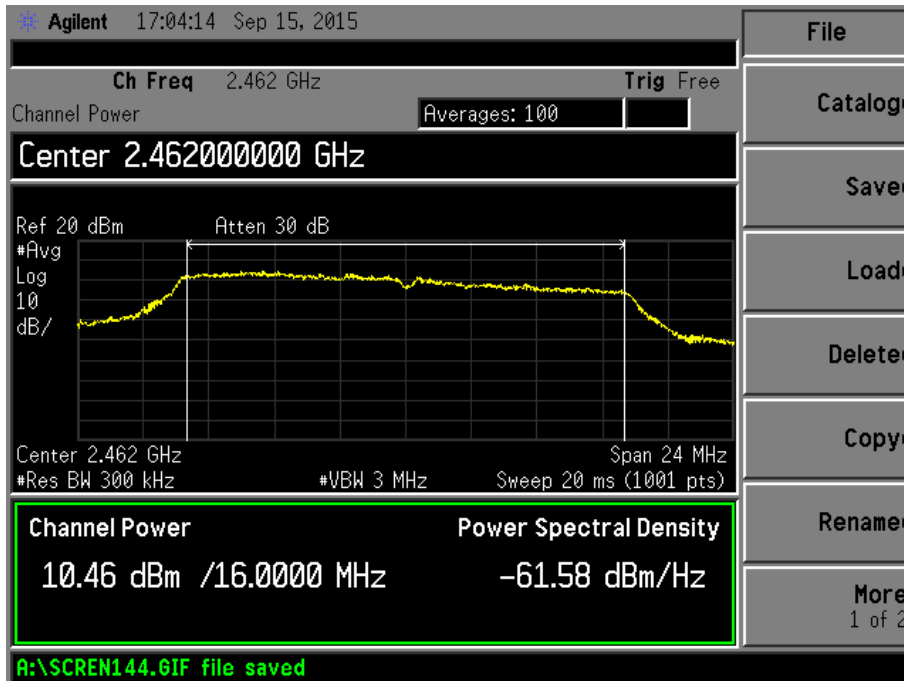
802.11g-54Mbps-Low Channel



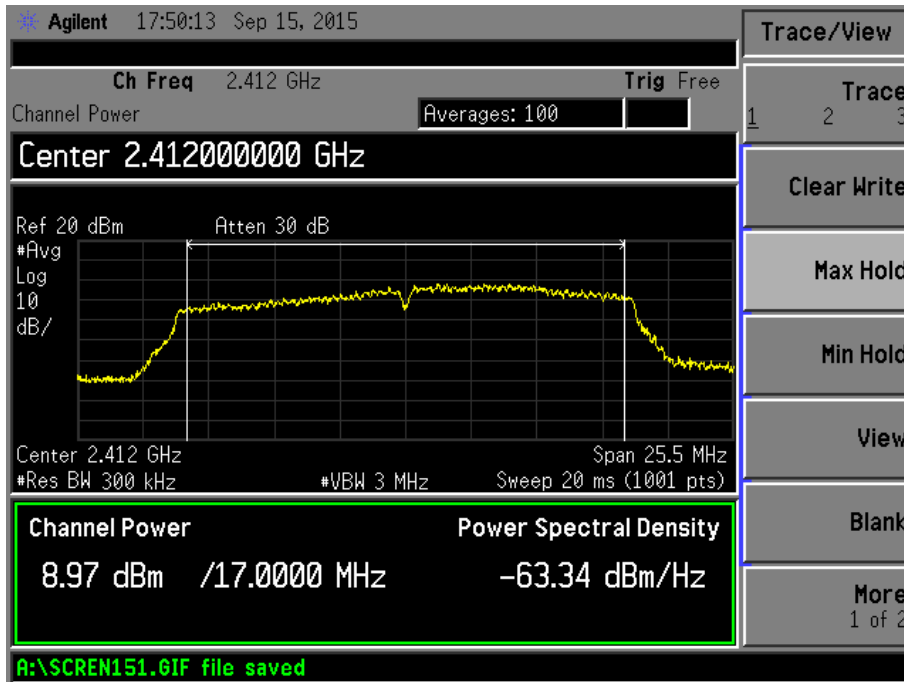
802.11g-54Mbps-Middle Channel



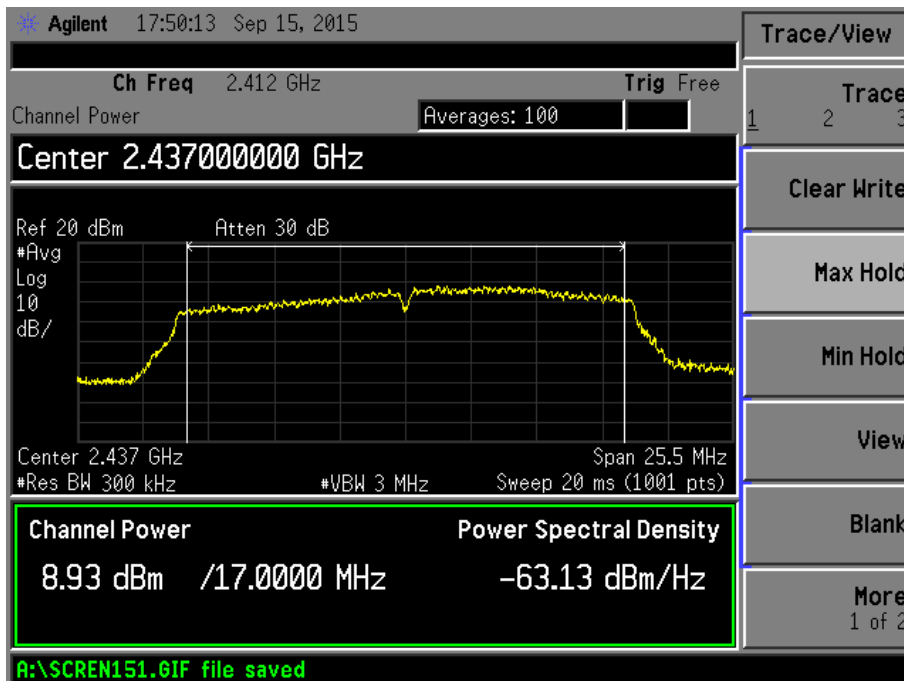
802.11g-54Mbps-High Channel



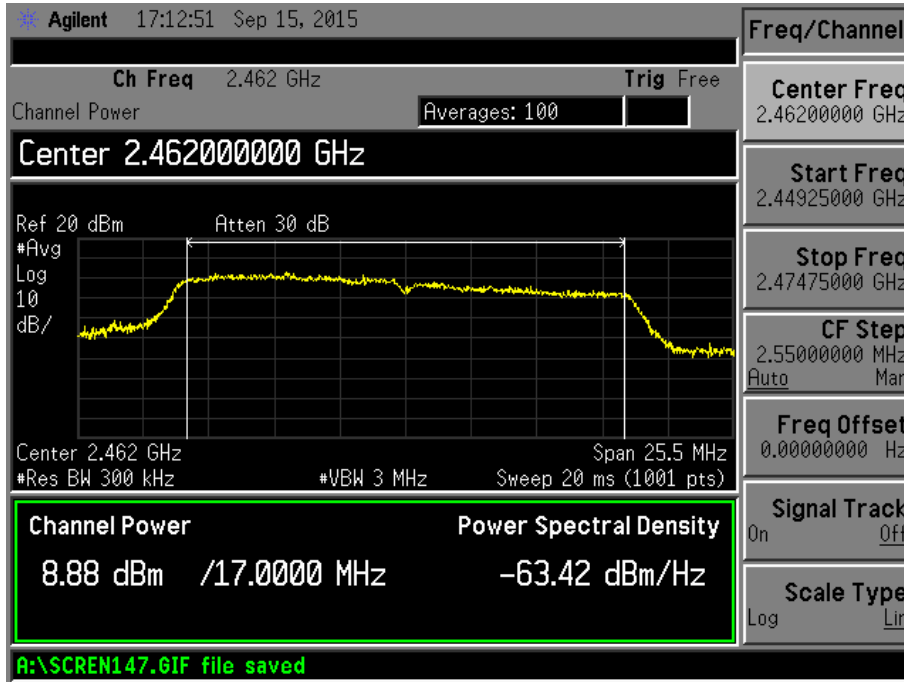
802.11n-HT20-MCS7-Low Channel



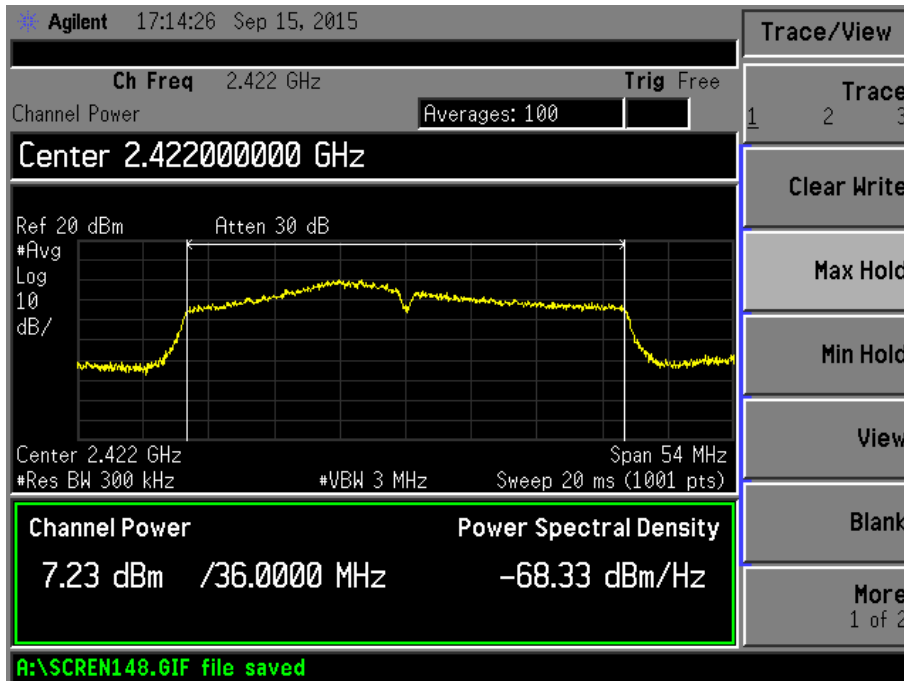
802.11n-HT20-MCS7-Middle Channel



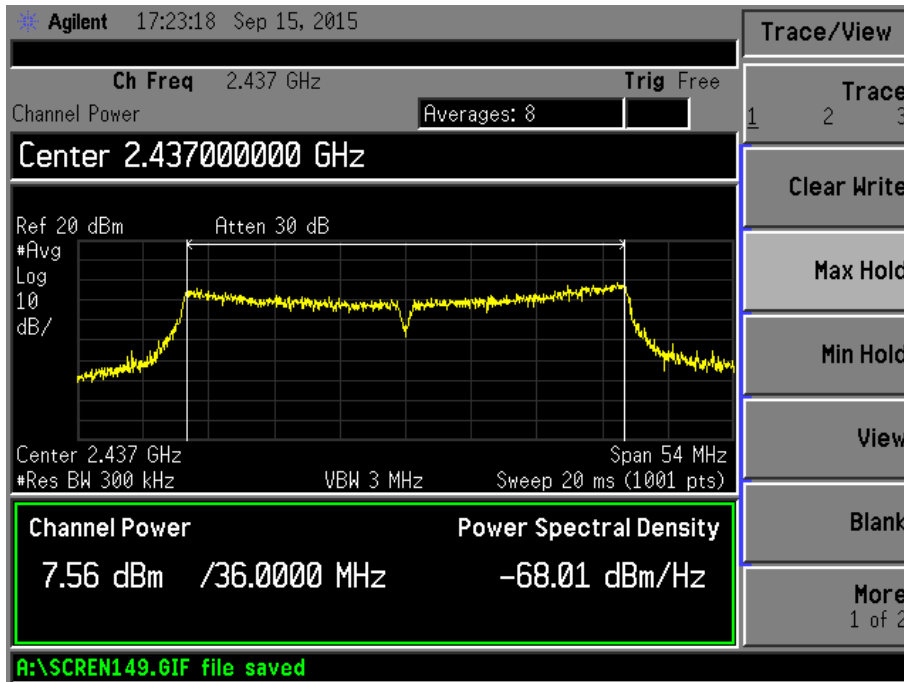
802.11n-HT20-MCS7-High Channel



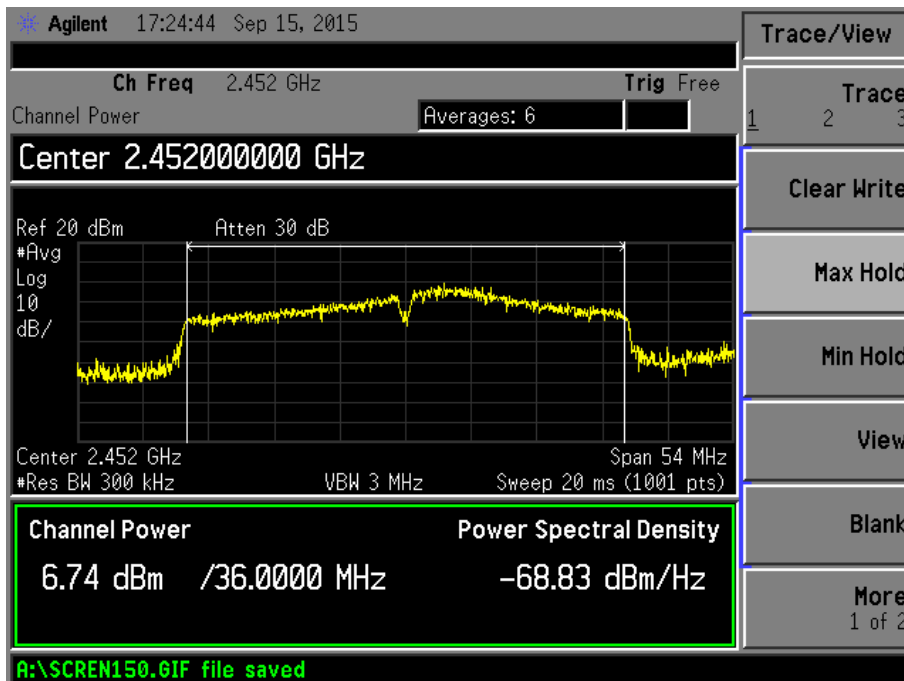
802.11n-HT40-MCS7-Low Channel



802.11n-HT40-MCS7-Middle Channel



802.11n-HT40-MCS7-High Channel



## 8. Field Strength of Spurious Emissions

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### 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  $\pm 5.10$  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.

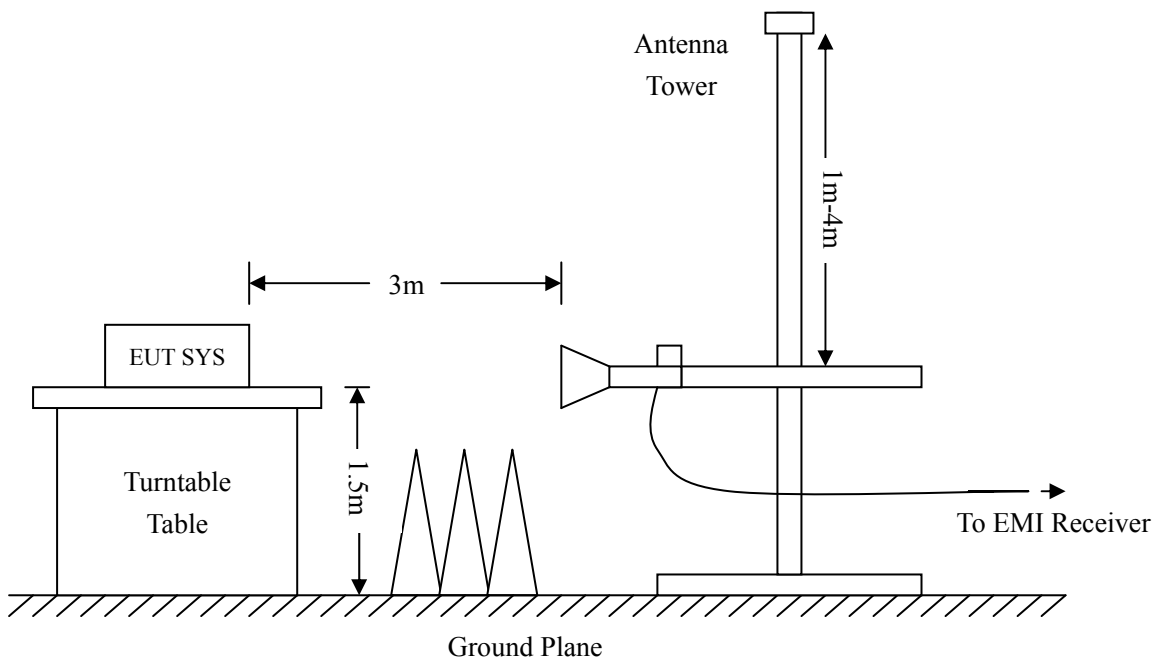
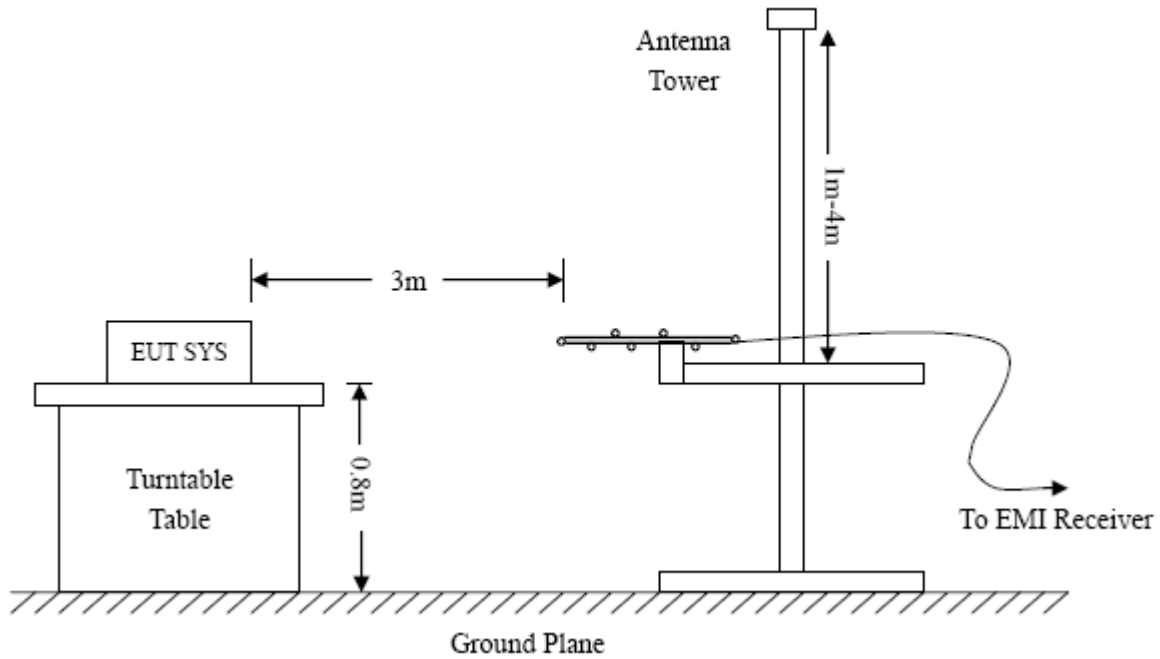
### 8.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 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

## 8.4 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 -6dB $\mu$ V means the emission is 6dB $\mu$ V below the maximum limit. The equation for margin calculation is as follows:

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

## 8.5 Environmental Conditions

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

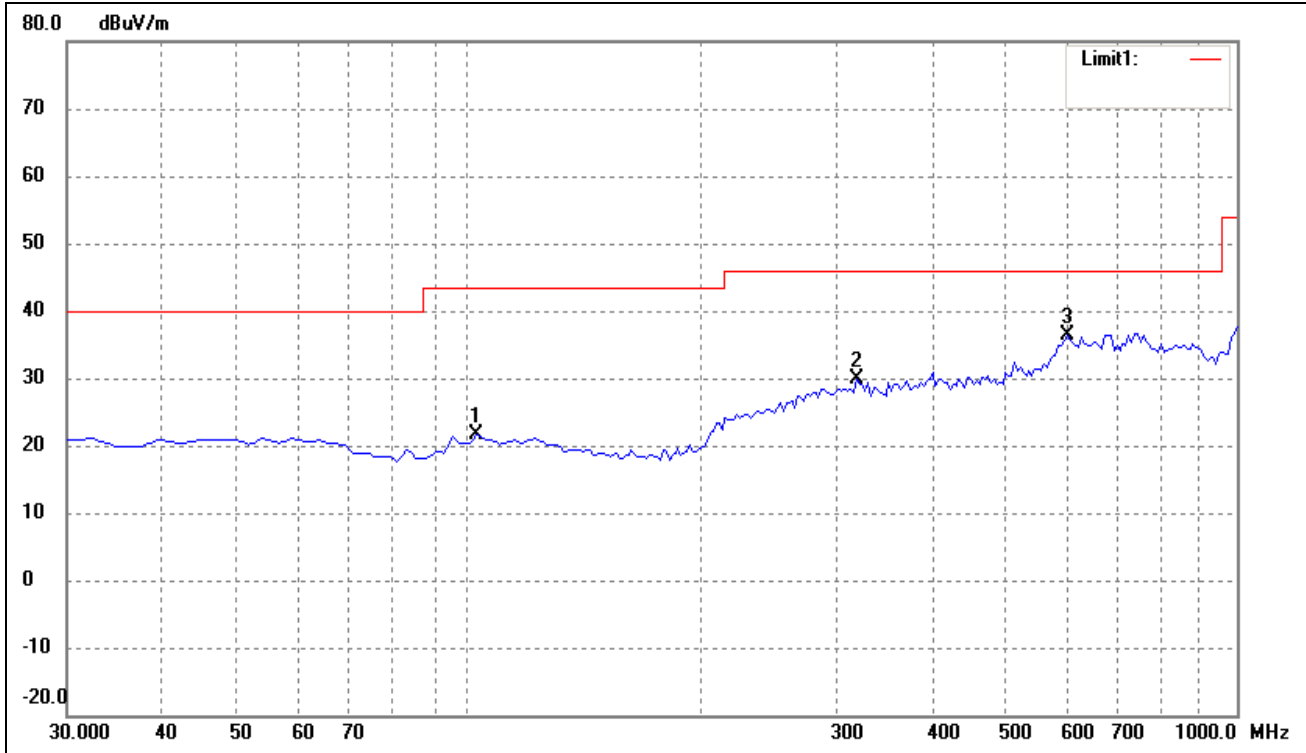
## 8.6 Summary of Test Results/Plots

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, the **antenna vertically** is worst case position and the data was reported.*

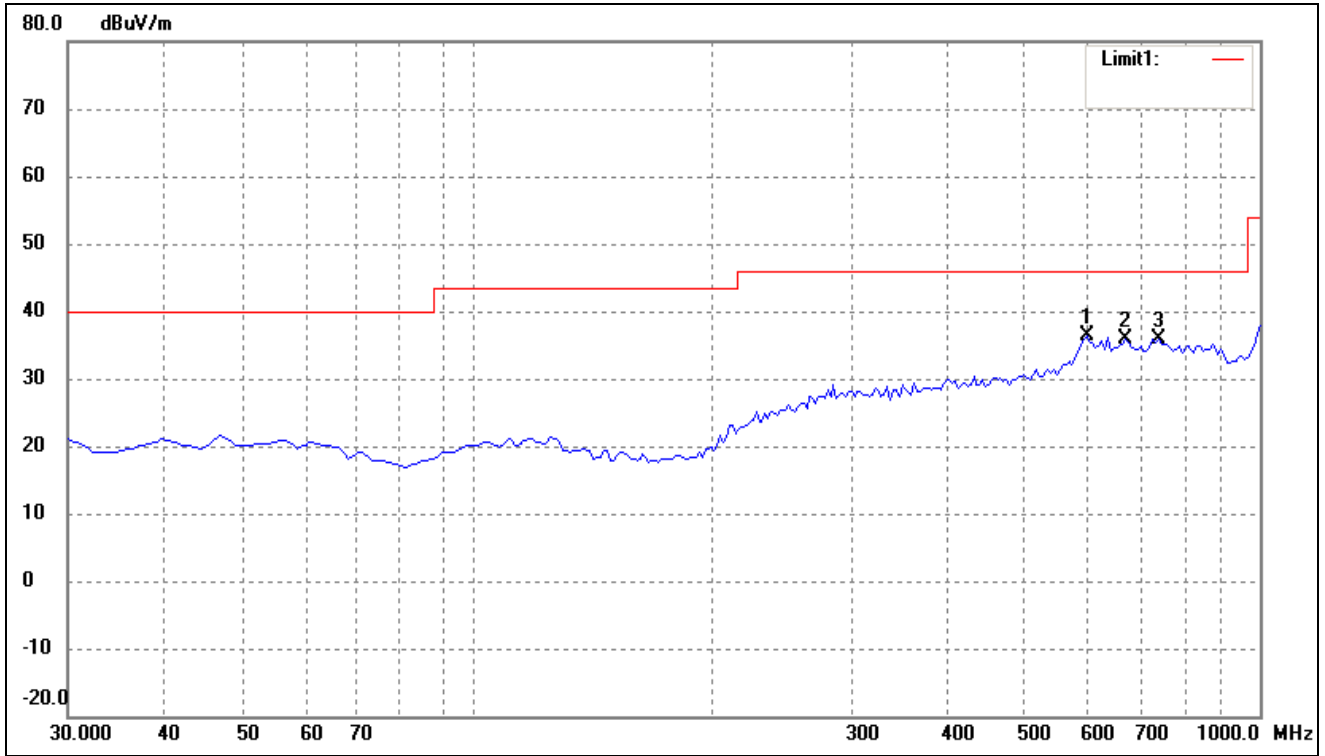
**Plot of Radiated Emissions Test Data (30MHz to 1GHz)**

EUT: Smart phone  
 Tested Model: Valencia2 Y100 Pro  
 Operating Condition: 802.11b Transmitting Low Channel-2412MHz  
 Comment: Battery DC3.8V  
 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	102.7500	16.41	5.12	21.53	43.50	-21.97	165	100	QP
2	321.0000	17.73	12.26	29.99	46.00	-16.01	120	100	QP
3	602.3000	17.19	19.15	36.34	46.00	-9.66	298	100	QP

Test Specification: Vertical

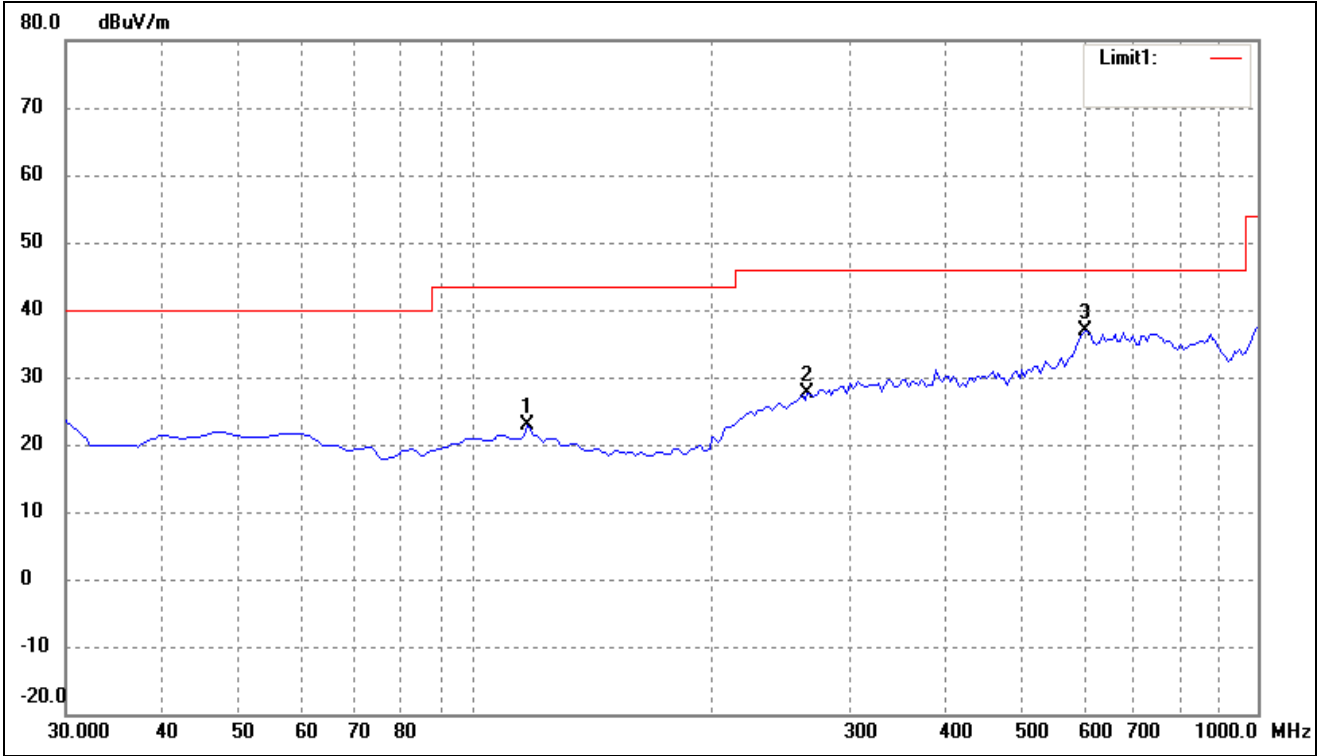


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	602.3000	17.16	19.15	36.31	46.00	-9.69	265	100	QP
2	675.0500	16.88	18.98	35.86	46.00	-10.14	15	100	QP
3	742.9500	16.42	19.42	35.84	46.00	-10.16	312	100	QP

Operating Condition: 802.11b Transmitting Middle Channel-2437MHz

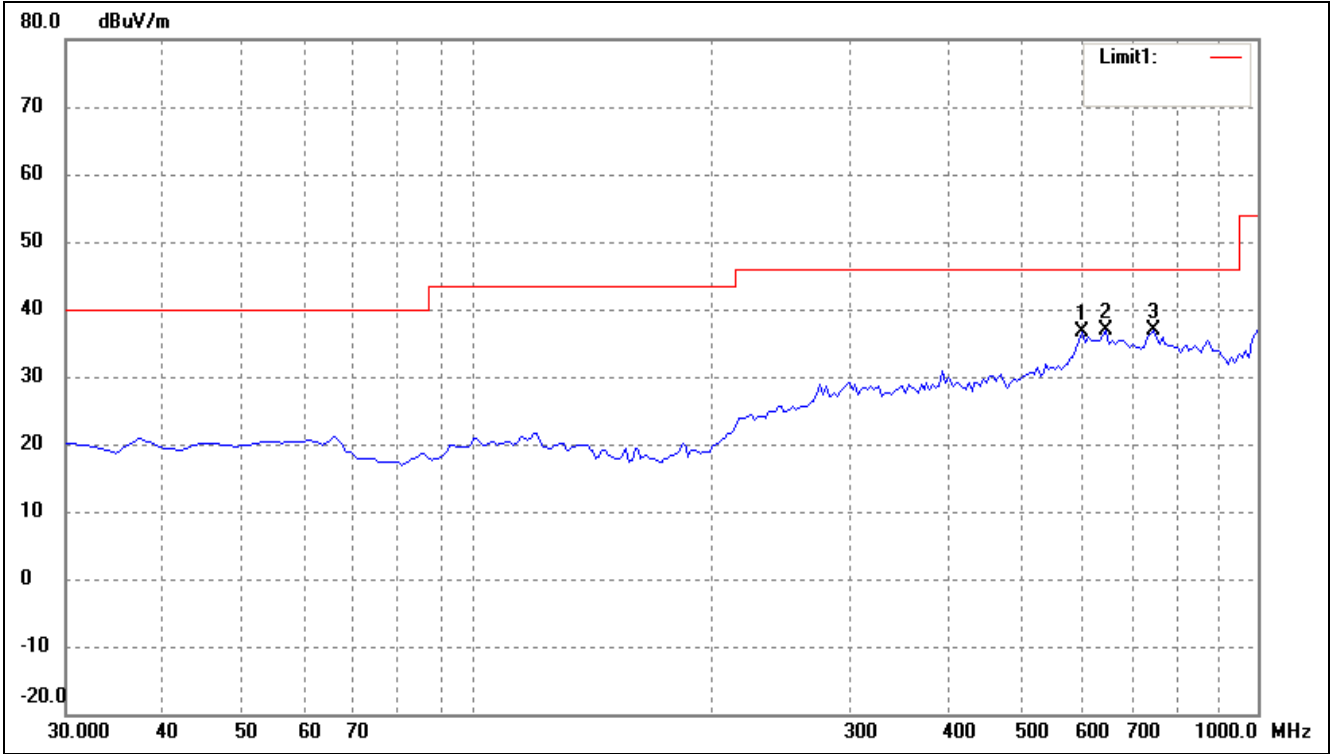
Comment: Battery DC3.8V

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	117.3000	17.76	5.03	22.79	43.50	-20.71	21	100	QP
2	267.6500	17.03	10.56	27.59	46.00	-18.41	228	100	QP
3	602.3000	17.78	19.15	36.93	46.00	-9.07	116	100	QP

Test Specification: Vertical

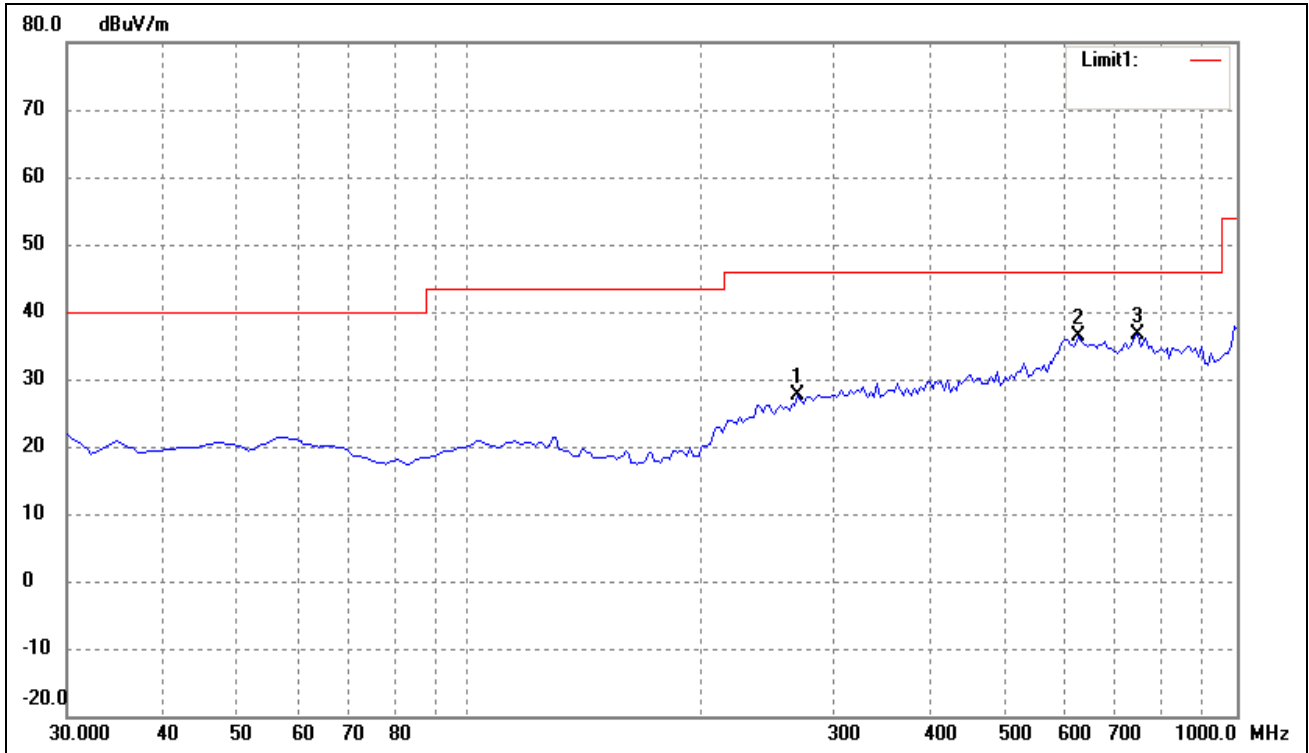


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	599.8750	17.42	19.30	36.72	46.00	-9.28	154	100	QP
2	641.1000	18.34	18.59	36.93	46.00	-9.07	201	100	QP
3	738.1000	17.44	19.44	36.88	46.00	-9.12	98	100	QP

Operating Condition: 802.11b Transmitting High Channel-2462MHz

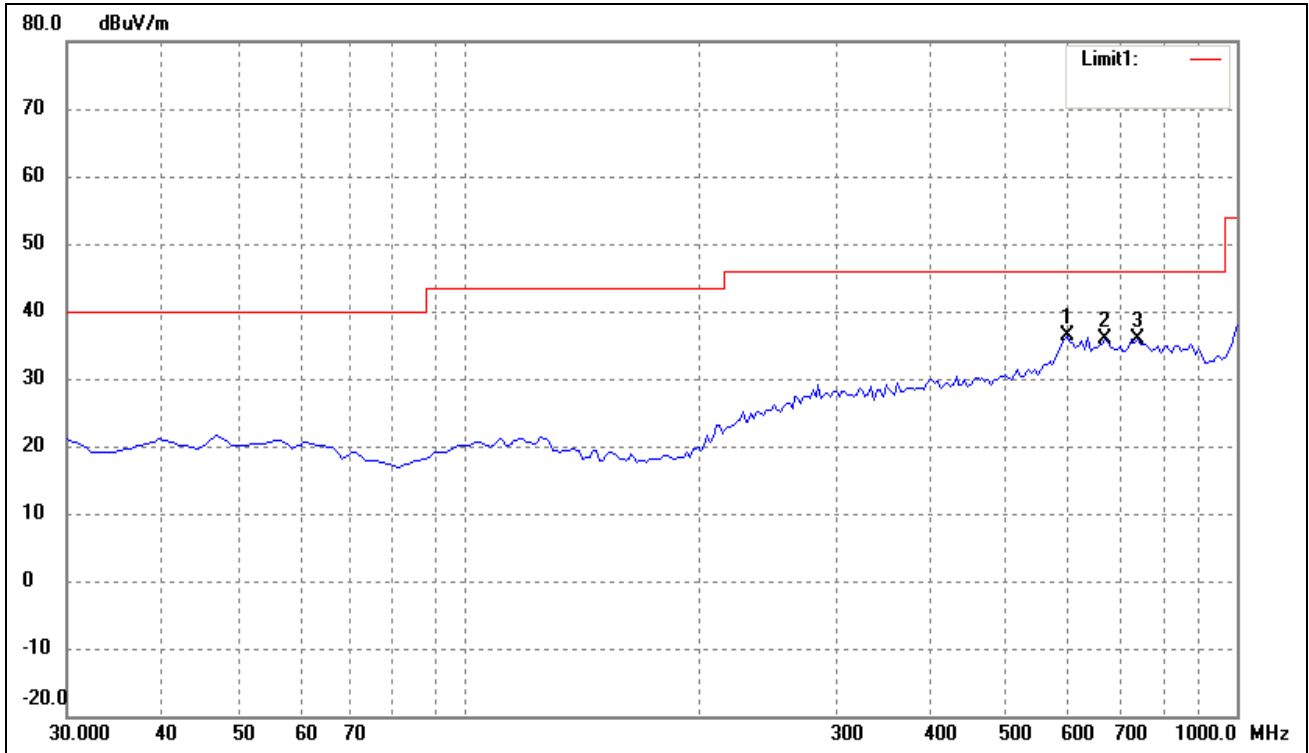
Comment: Battery DC 3.8V

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	270.0750	16.88	10.72	27.60	46.00	-18.40	21	100	QP
2	624.1250	18.41	18.06	36.47	46.00	-9.53	241	100	QP
3	745.3750	17.41	19.31	36.72	46.00	-9.28	102	100	QP

Test Specification: Vertical

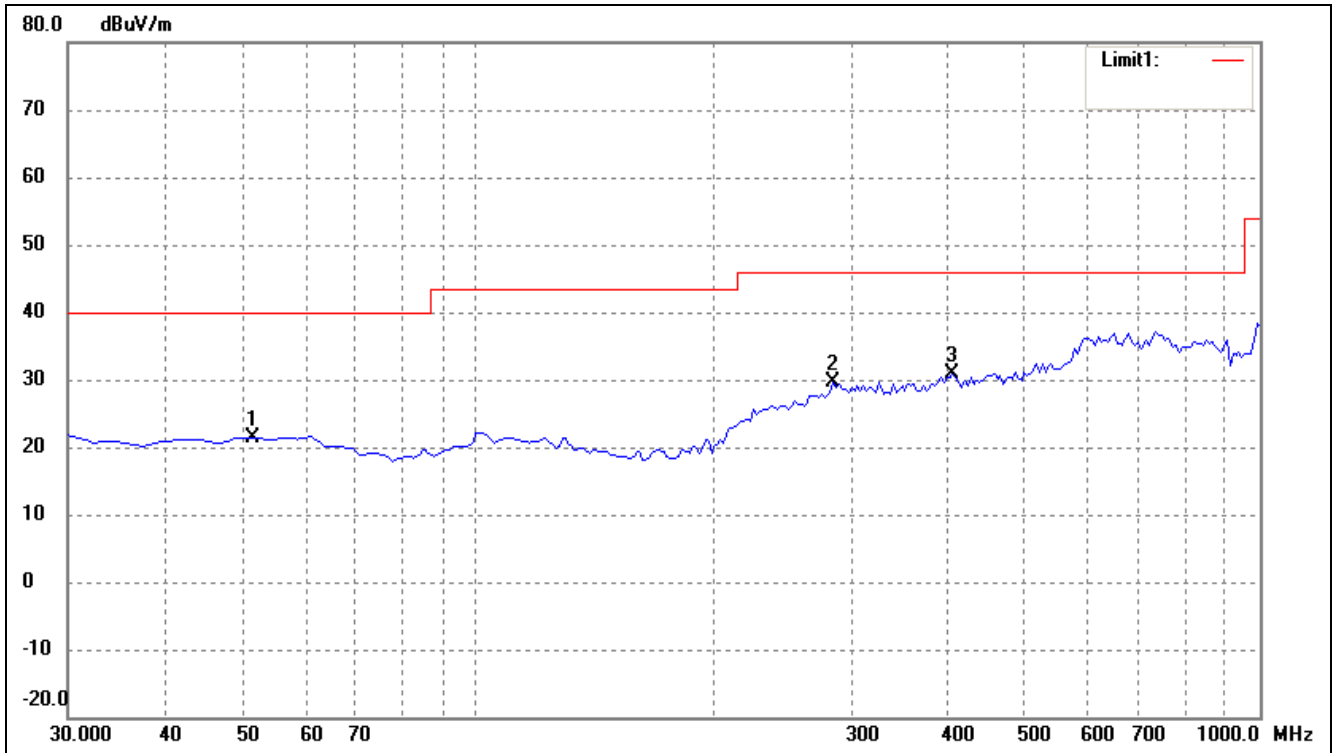


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	602.3000	17.16	19.15	36.31	46.00	-9.69	15	100	QP
2	675.0500	16.88	18.98	35.86	46.00	-10.14	155	100	QP
3	742.9500	16.42	19.42	35.84	46.00	-10.16	201	100	QP



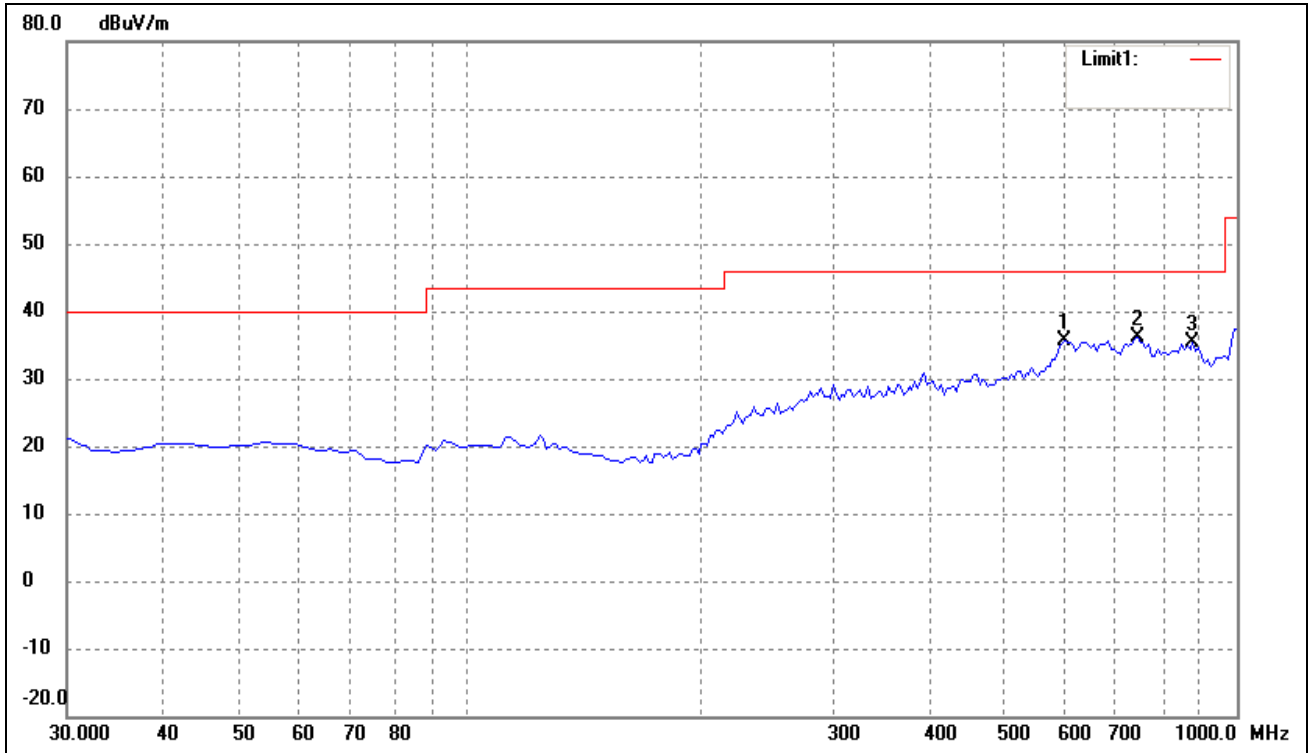
**Plot of Radiated Emissions Test Data (30MHz to 1GHz)**

EUT: Smart phone  
 Tested Model: Valencia2 Y100 Pro  
 Operating Condition: 802.11g Transmitting Low Channel-2412MHz  
 Comment: Battery DC 3.8V  
 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	51.8250	16.21	5.29	21.50	40.00	-18.50	245	100	QP
2	287.0500	17.84	11.68	29.52	46.00	-16.48	98	100	QP
3	408.3000	18.09	12.82	30.91	46.00	-15.09	125	100	QP

Test Specification: Vertical

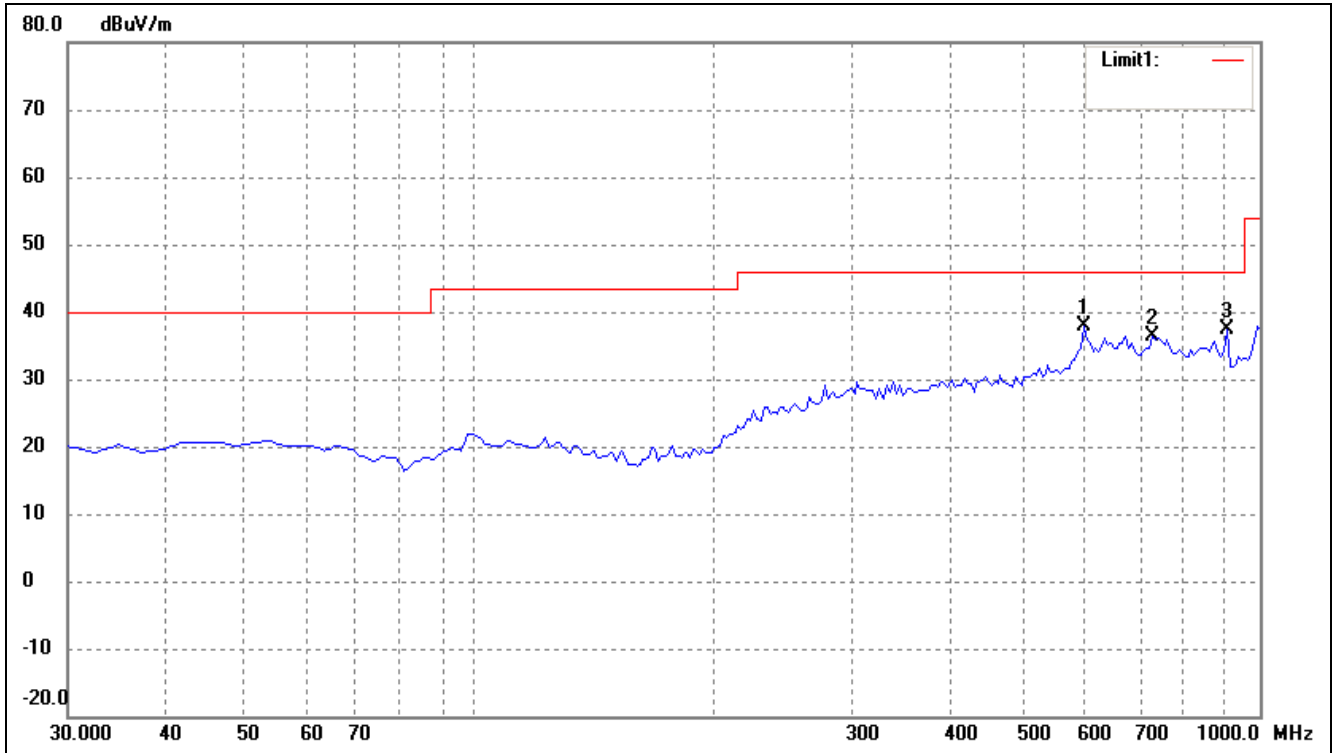


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	599.8750	16.21	19.30	35.51	46.00	-10.49	289	100	QP
2	742.9500	16.77	19.42	36.19	46.00	-9.81	124	100	QP
3	878.7500	17.67	17.79	35.46	46.00	-10.54	94	100	QP

Operating Condition: 802.11g Transmitting Middle Channel-2437MHz

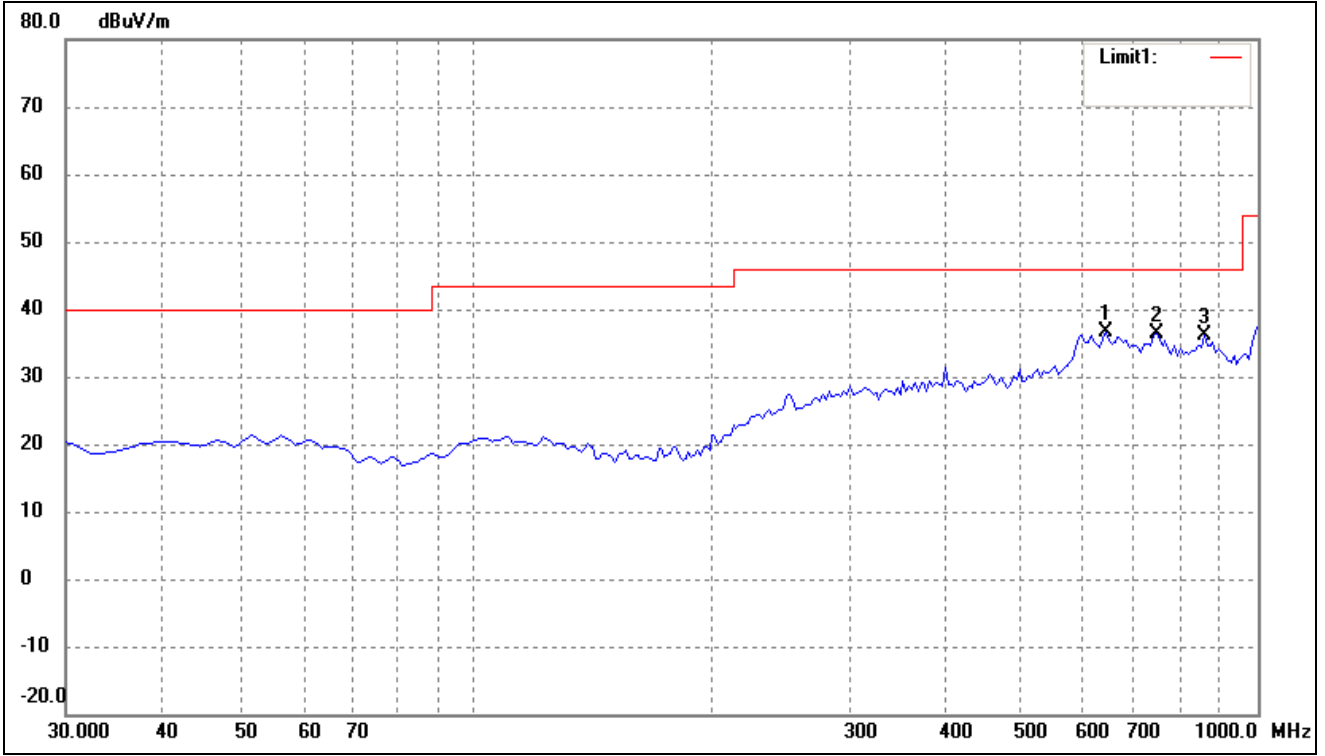
Comment: Battery DC 3.8V

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	599.8750	18.55	19.30	37.85	46.00	-8.15	167	100	QP
2	735.6750	17.04	19.29	36.33	46.00	-9.67	120	100	QP
3	910.2750	21.26	16.15	37.41	46.00	-8.59	187	100	QP

Test Specification: Vertical

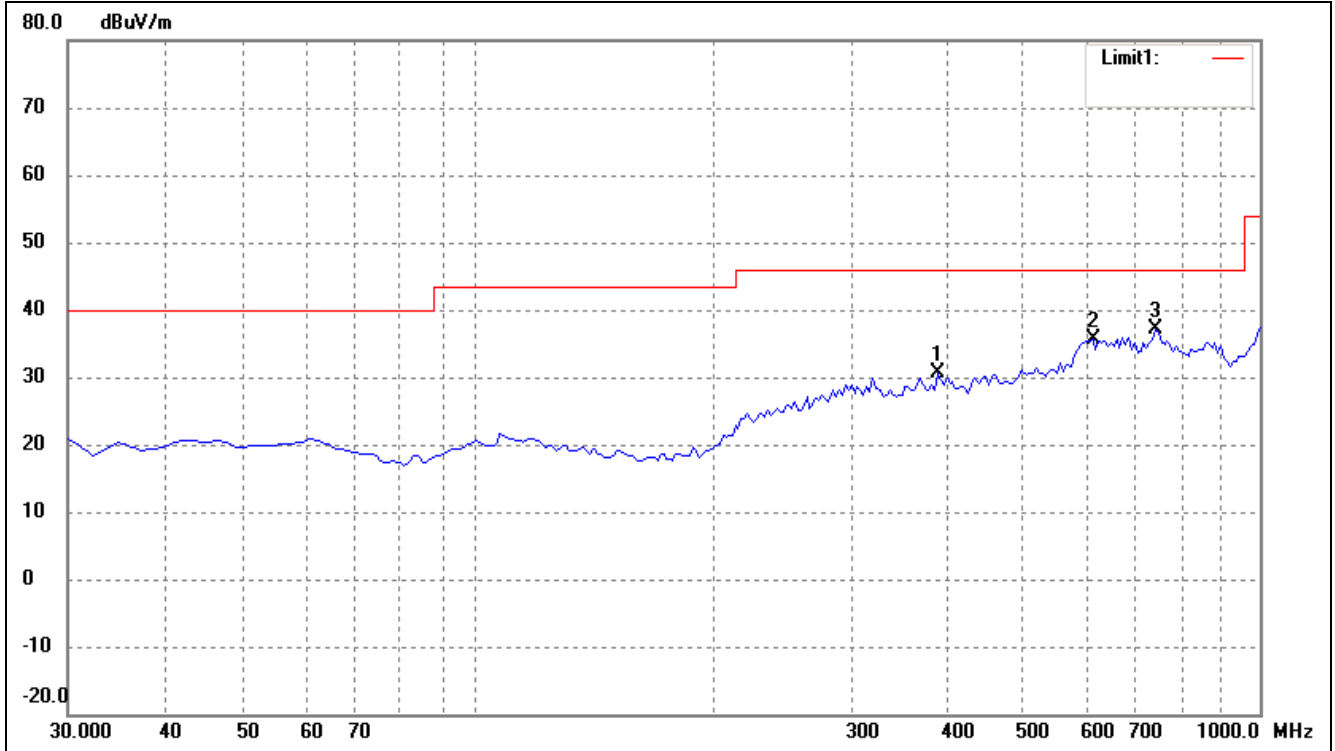


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	641.1000	18.04	18.59	36.63	46.00	-9.37	178	100	QP
2	745.3750	17.07	19.31	36.38	46.00	-9.62	268	100	QP
3	856.9250	18.76	17.33	36.09	46.00	-9.91	131	100	QP

Operating Condition: 802.11g Transmitting High Channel-2462MHz

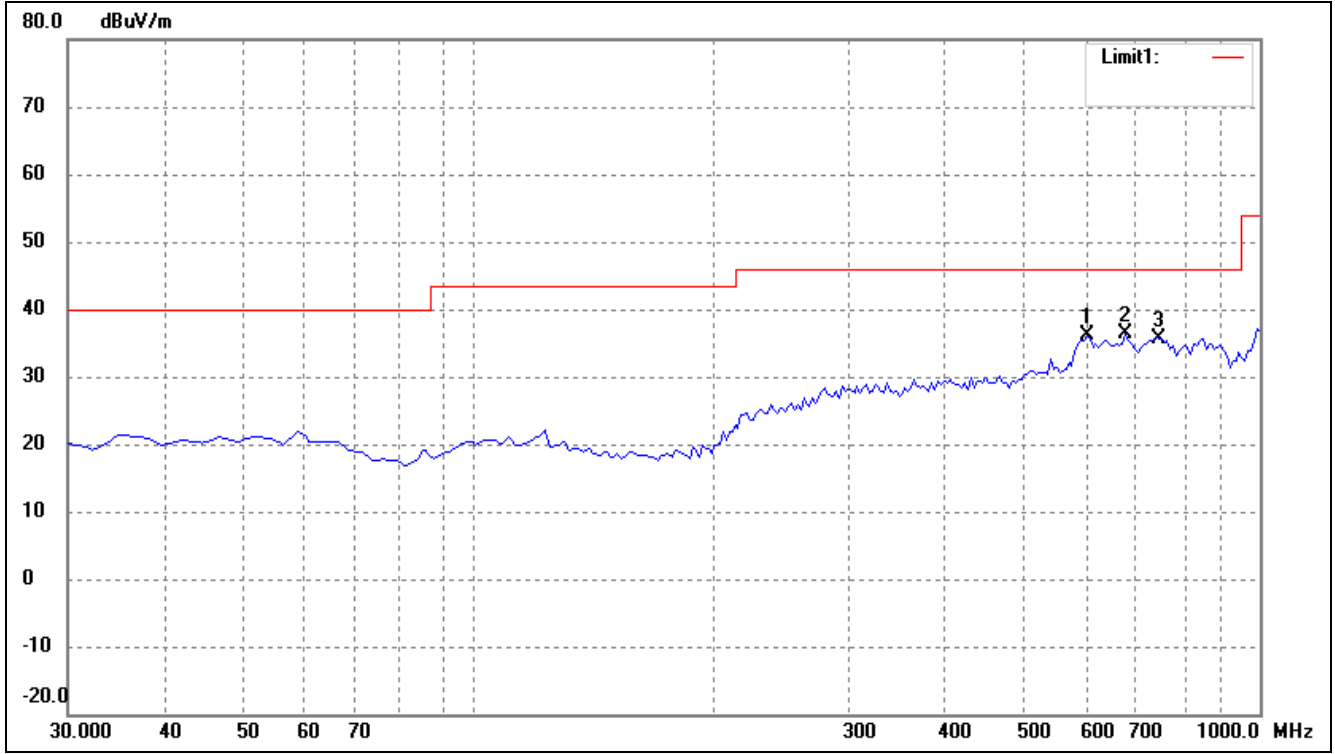
Comment: Battery DC 3.8V

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	391.3250	17.93	12.72	30.65	46.00	-15.35	270	100	QP
2	616.8500	17.56	18.14	35.70	46.00	-10.30	51	200	QP
3	738.1000	17.57	19.44	37.01	46.00	-8.99	310	200	QP

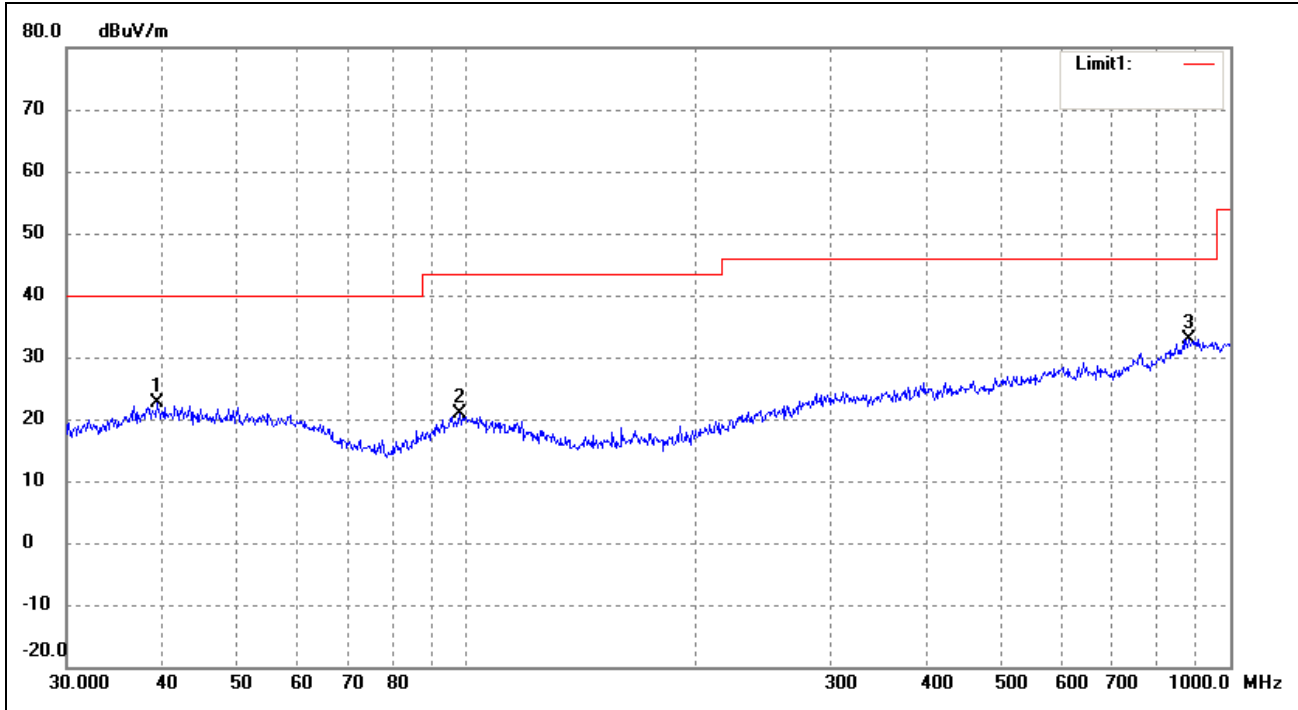
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	602.3000	16.86	19.15	36.01	46.00	-9.99	174	100	QP
2	679.9000	17.11	19.25	36.36	46.00	-9.64	205	100	QP
3	745.3750	16.42	19.31	35.73	46.00	-10.27	98	100	QP

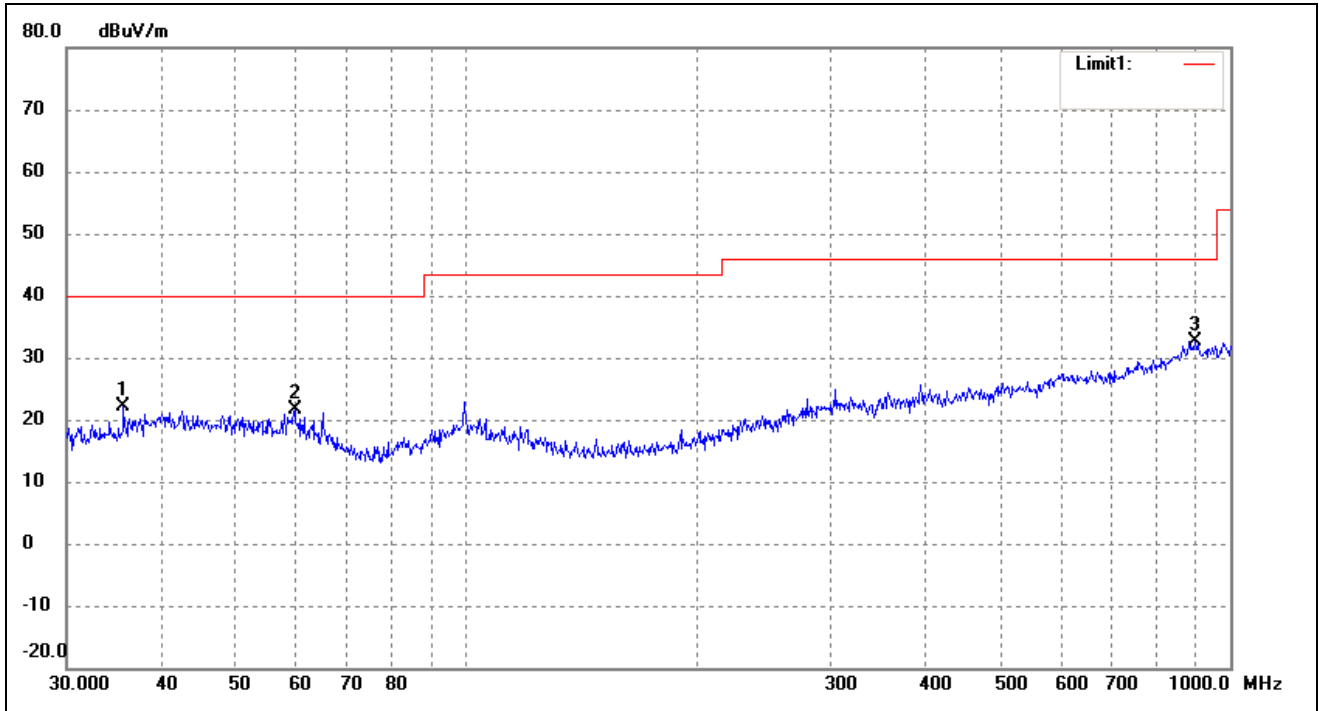
**Plot of Radiated Emissions Test Data (30MHz to 1GHz)**

EUT: Smart phone  
 Tested Model: Valencia2 Y100 Pro  
 Operating Condition: 802.11n-HT20 Transmitting Low Channel-2412MHz  
 Comment: Battery: DC3.8V  
 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	39.4372	15.43	7.10	22.53	40.00	-17.47	260	100	QP
2	98.1419	15.26	5.67	20.93	43.50	-22.57	120	200	QP
3	884.5029	16.12	16.83	32.95	46.00	-13.05	289	200	QP

Test Specification: Vertical



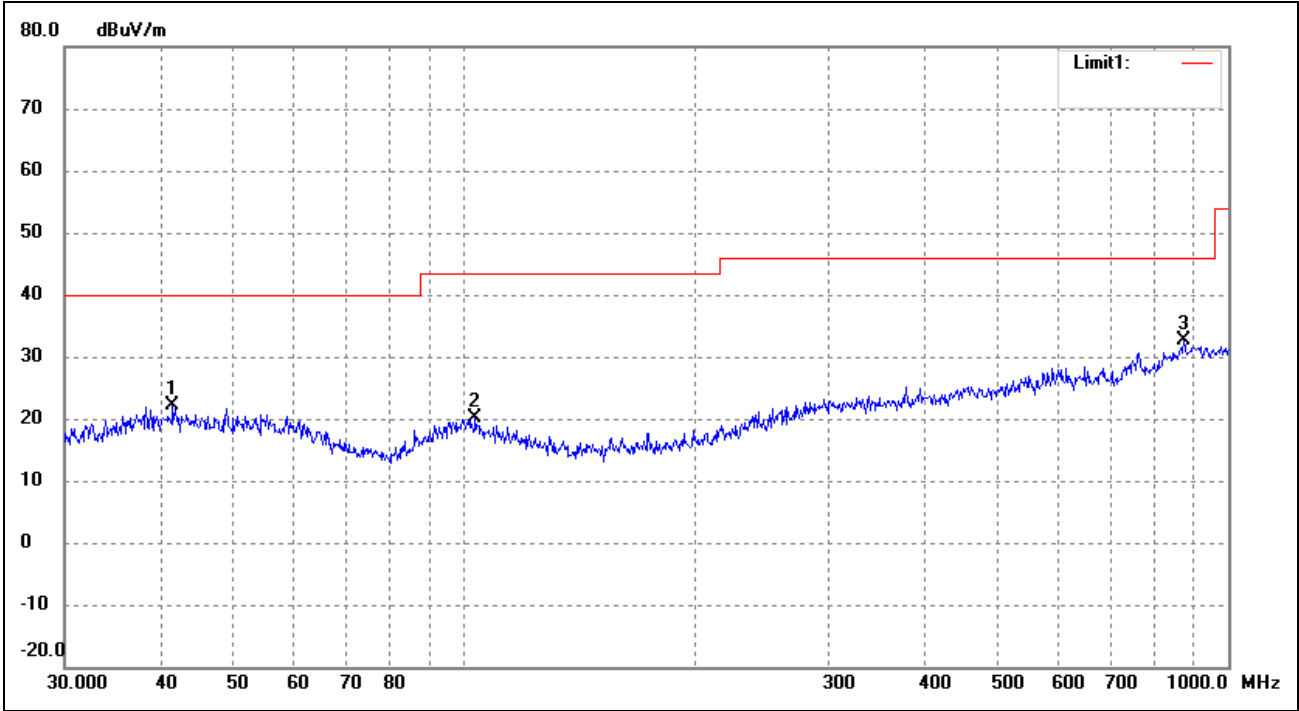
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	35.6240	13.62	8.49	22.11	40.00	-17.89	130	100	QP
2	59.6493	16.24	5.41	21.65	40.00	-18.35	120	100	QP
3	900.1474	15.73	16.85	32.58	46.00	-13.42	360	100	QP



Operating Condition: 802.11n-HT20 Transmitting Middle Channel-2437MHz

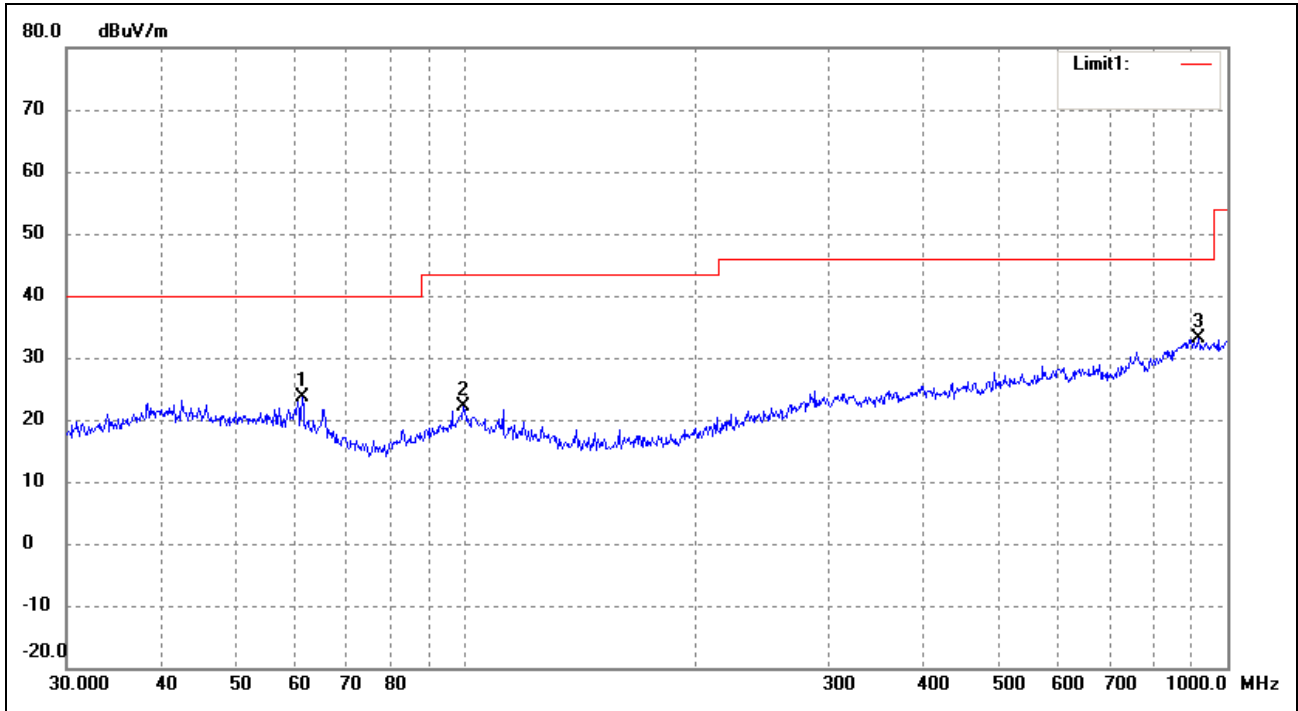
Comment: Battery: DC3.8V

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	41.5670	14.94	7.09	22.03	40.00	-17.97	274	100	QP
2	103.4421	14.40	5.77	20.17	43.50	-23.33	130	100	QP
3	875.2470	15.96	16.70	32.66	46.00	-13.34	120	100	QP

Test Specification: Vertical

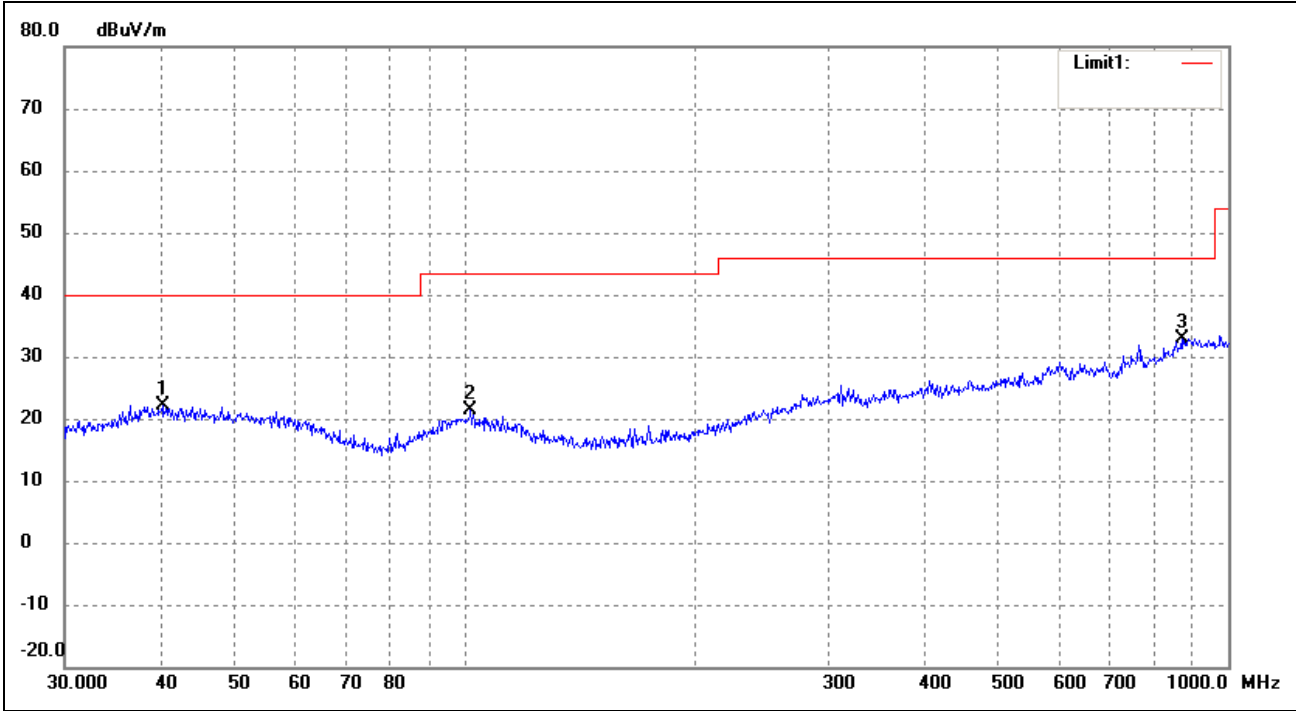


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	61.1316	18.53	5.02	23.55	40.00	-16.45	360	100	QP
2	99.5281	16.16	6.01	22.17	43.50	-21.33	110	100	QP
3	916.0687	16.62	16.56	33.18	46.00	-12.82	120	100	QP

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

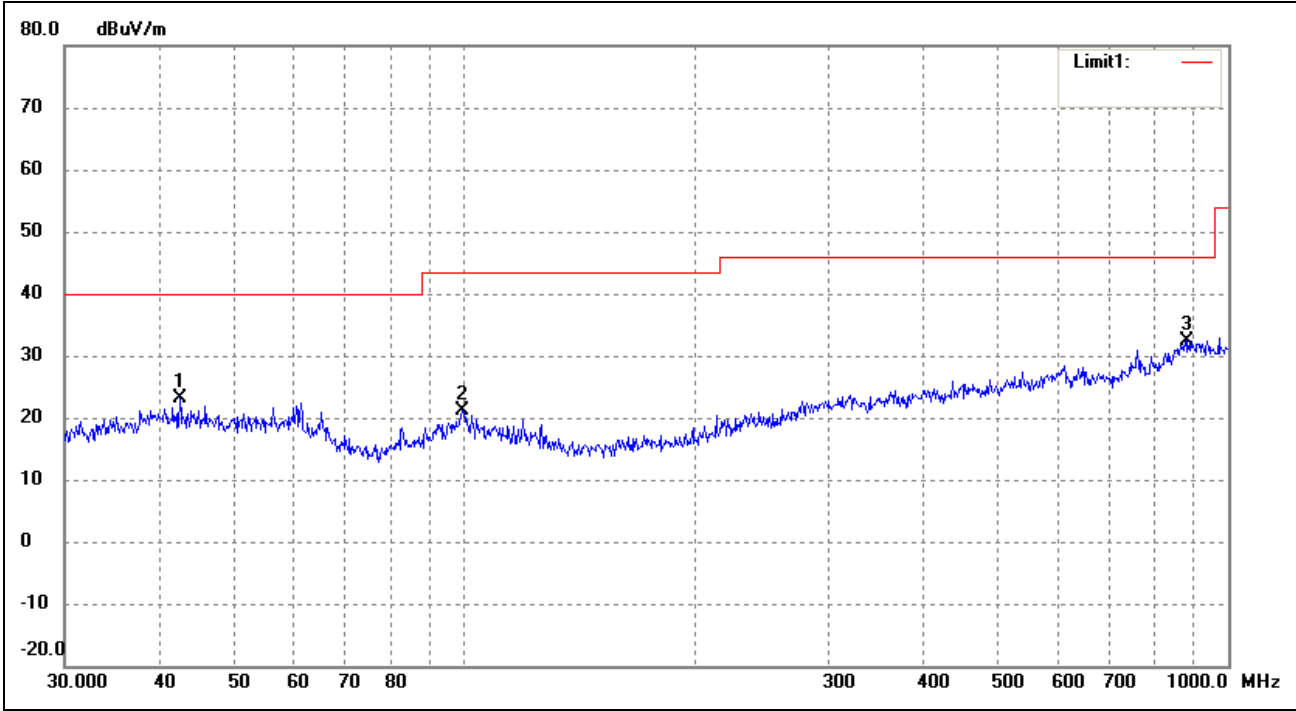
Comment: Battery: DC3.8V

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	40.2757	14.89	7.22	22.11	40.00	-17.89	360	100	QP
2	102.0014	15.56	5.91	21.47	43.50	-22.03	138	100	QP
3	869.1302	16.36	16.54	32.90	46.00	-13.10	180	200	QP

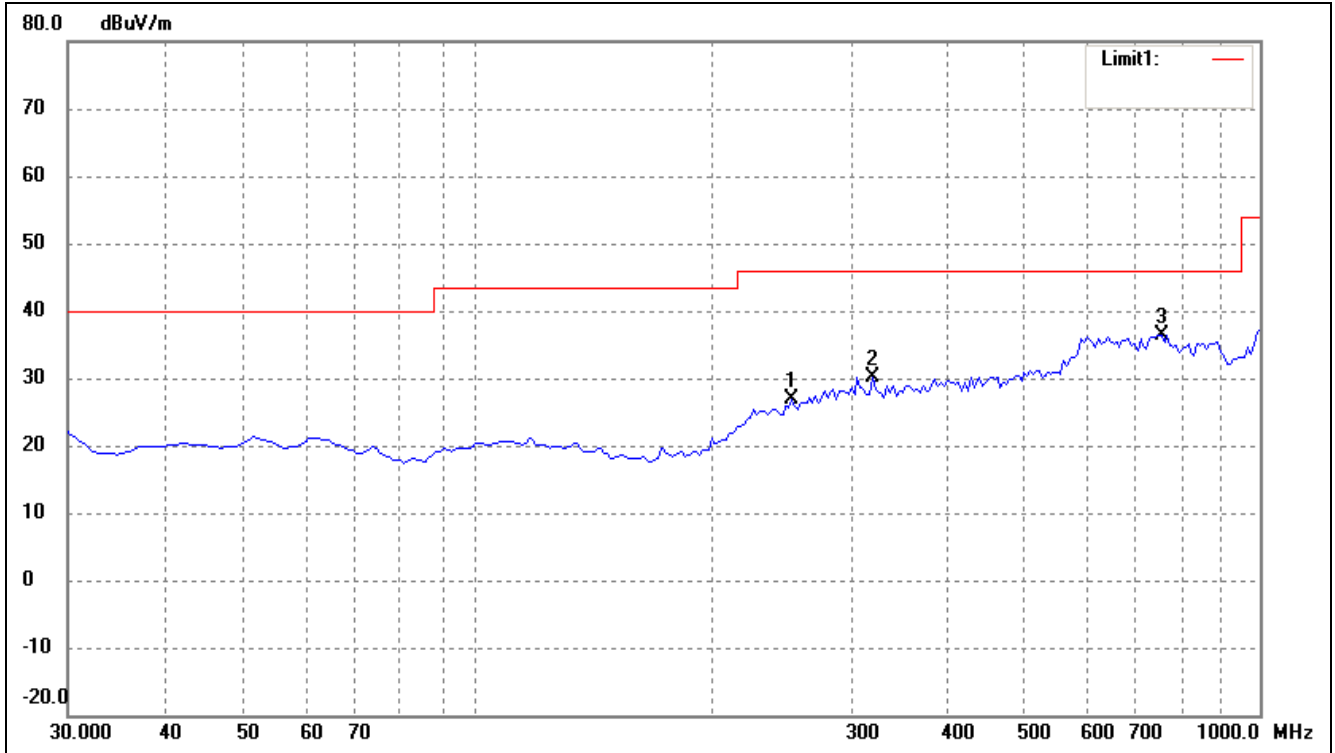
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	42.4508	14.66	8.51	23.17	40.00	-16.83	270	100	QP
2	99.5281	15.16	6.01	21.17	43.50	-22.33	120	100	QP
3	884.5029	15.57	16.83	32.40	46.00	-13.60	360	100	QP

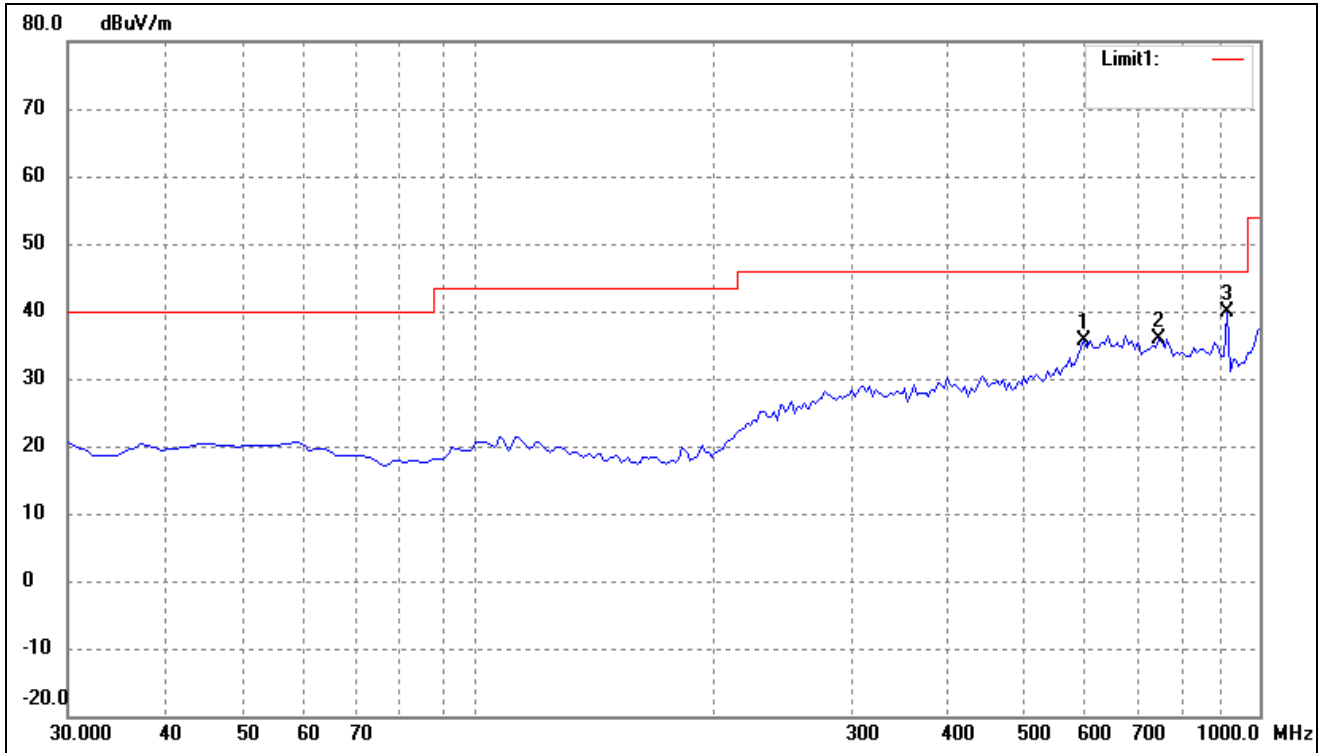
**Plot of Radiated Emissions Test Data (30MHz to 1GHz)**

EUT: Smart phone  
 Tested Model: Valencia2 Y100 Pro  
 Operating Condition: 802.11n-HT20 Transmitting Low Channel-2412MHz  
 Comment: Battery DC 3.8V  
 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	253.1000	16.97	9.80	26.77	46.00	-19.23	98	100	QP
2	321.0000	17.85	12.26	30.11	46.00	-15.89	165	200	QP
3	750.2250	17.36	19.08	36.44	46.00	-9.56	201	200	QP

Test Specification: Vertical

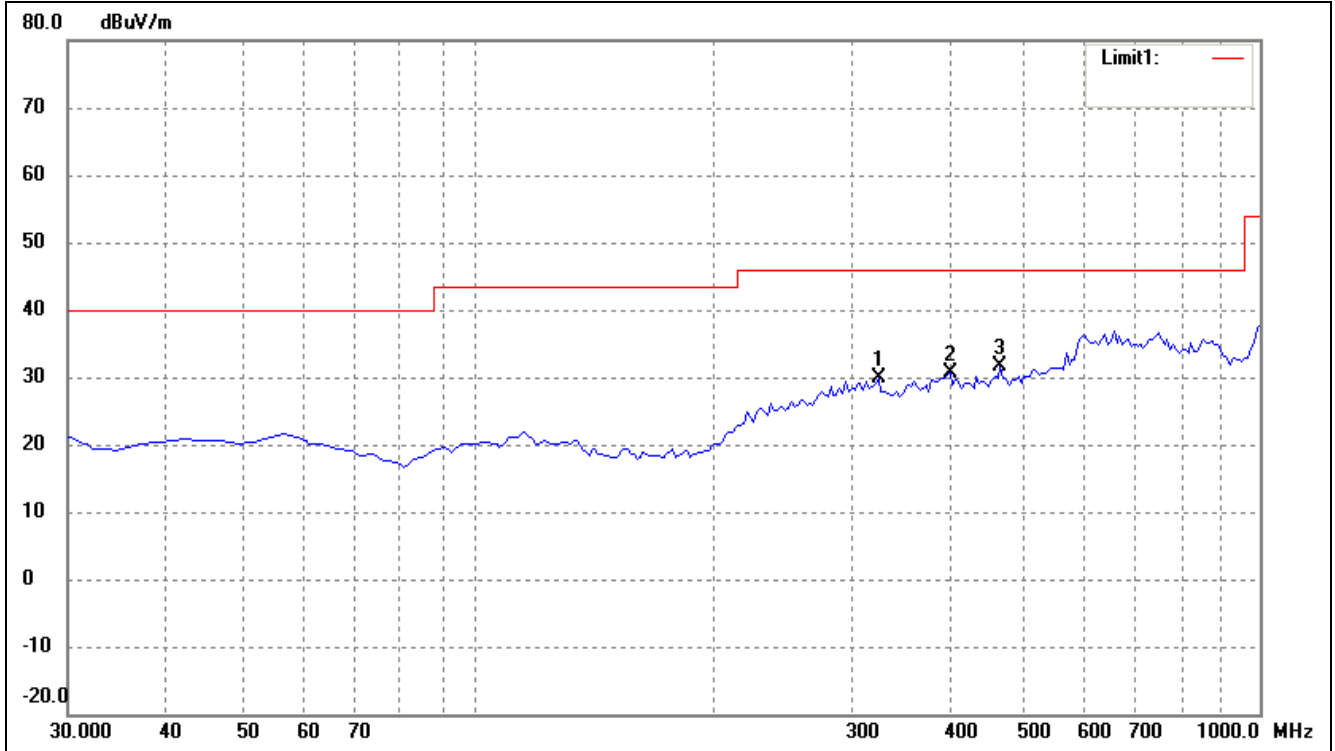


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	597.4500	16.82	18.84	35.66	46.00	-10.34	157	100	QP
2	742.9500	16.41	19.42	35.83	46.00	-10.17	201	100	QP
3	910.2750	23.75	16.15	39.90	46.00	-6.10	98	100	QP

Operating Condition: 802.11n-HT20 Transmitting Middle Channel-2437MHz

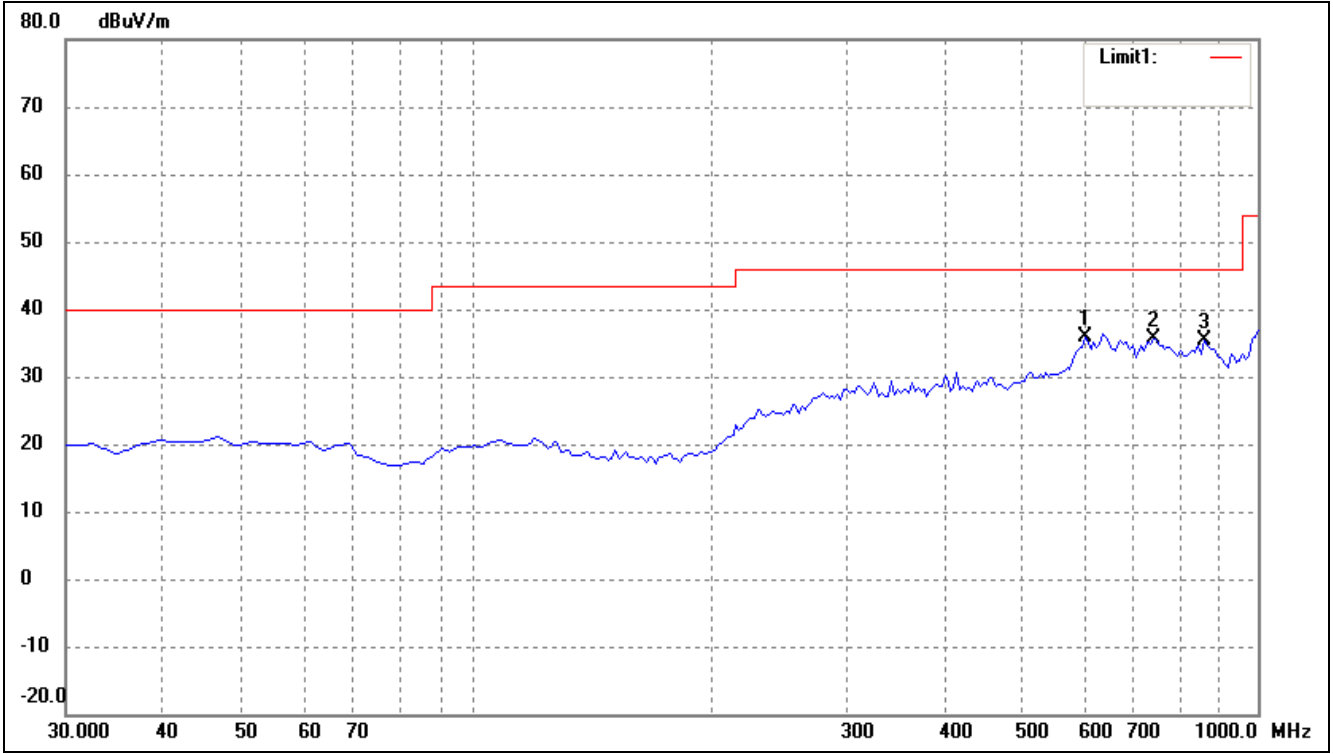
Comment: Battery DC 3.8V

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	325.8500	17.64	12.13	29.77	46.00	-16.23	274	100	QP
2	403.4500	17.55	13.01	30.56	46.00	-15.44	116	100	QP
3	466.5000	18.13	13.41	31.54	46.00	-14.46	82	100	QP

Test Specification: Vertical



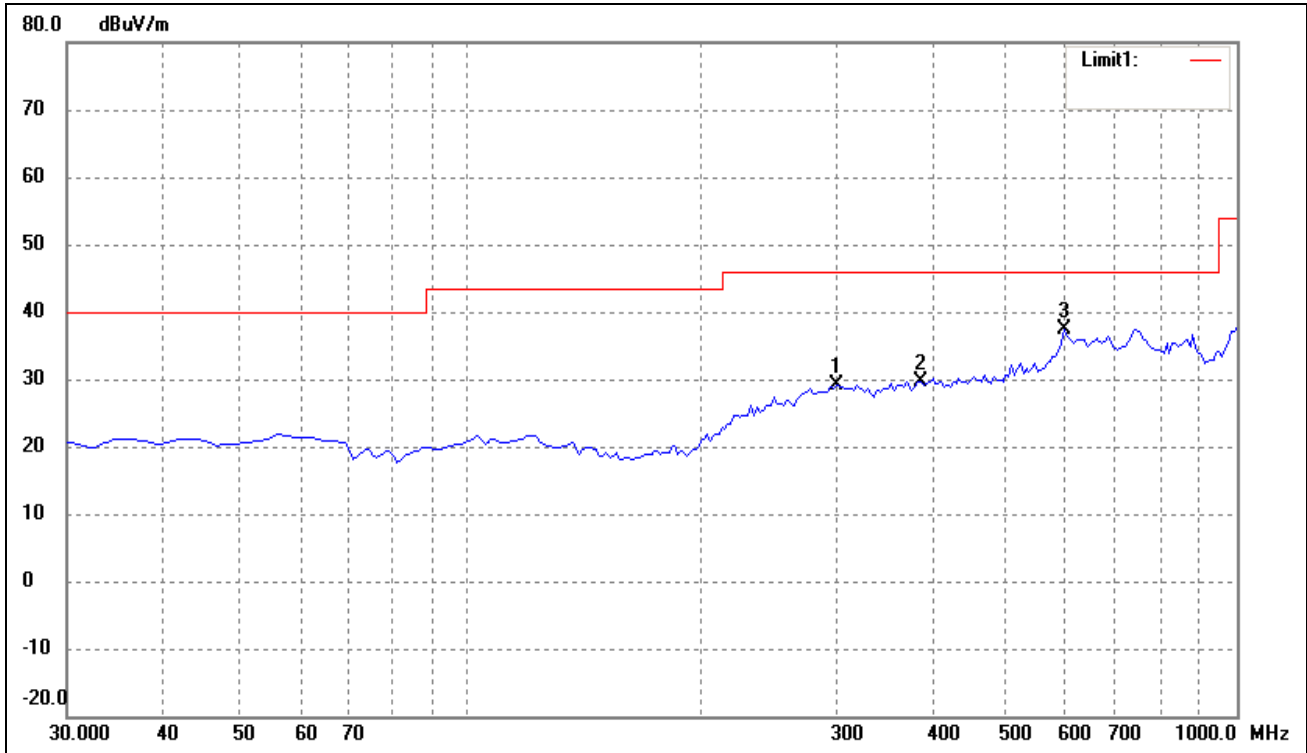
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	602.3000	16.75	19.15	35.90	46.00	-10.10	28	100	QP
2	740.5250	16.16	19.53	35.69	46.00	-10.31	112	100	QP
3	859.3500	18.03	17.30	35.33	46.00	-10.67	226	100	QP



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

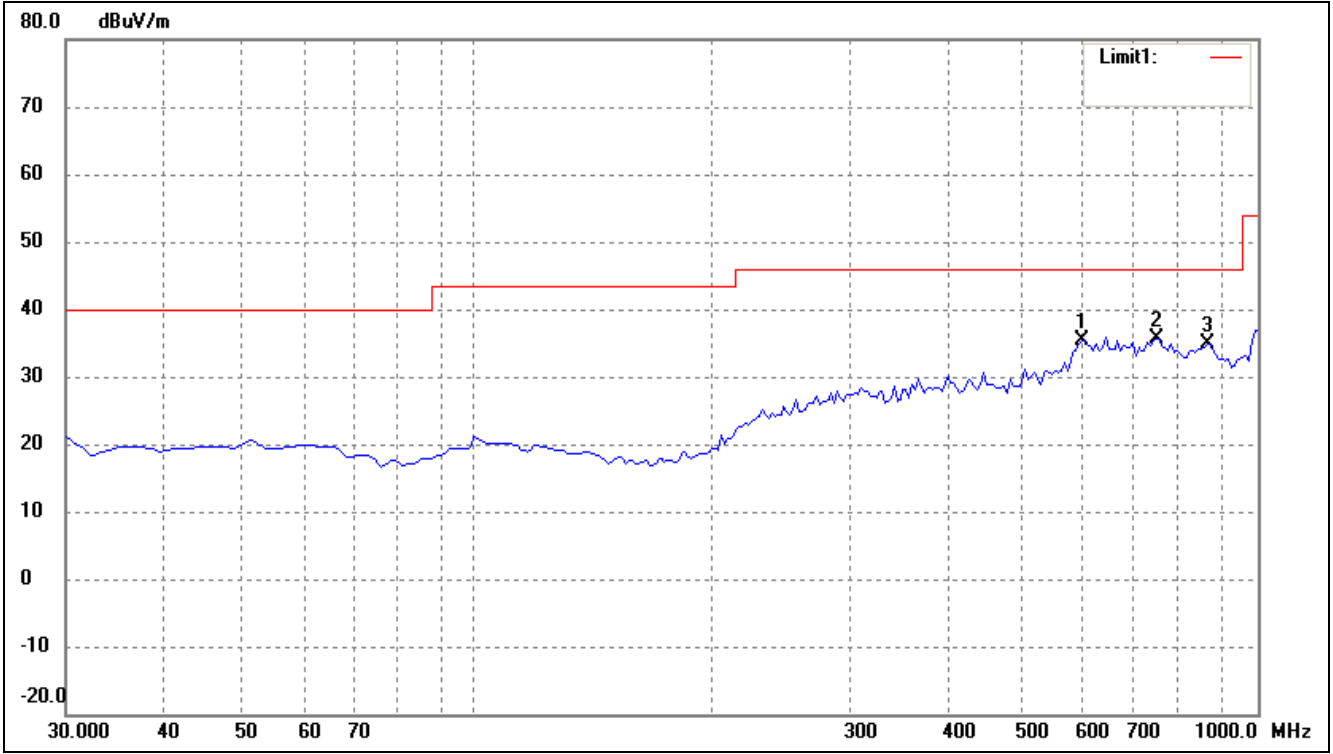
Comment: Battery DC 3.8V

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	301.6000	17.06	12.17	29.23	46.00	-16.77	185	100	QP
2	391.3250	16.95	12.72	29.67	46.00	-16.33	51	100	QP
3	599.8750	18.02	19.30	37.32	46.00	-8.68	78	200	QP

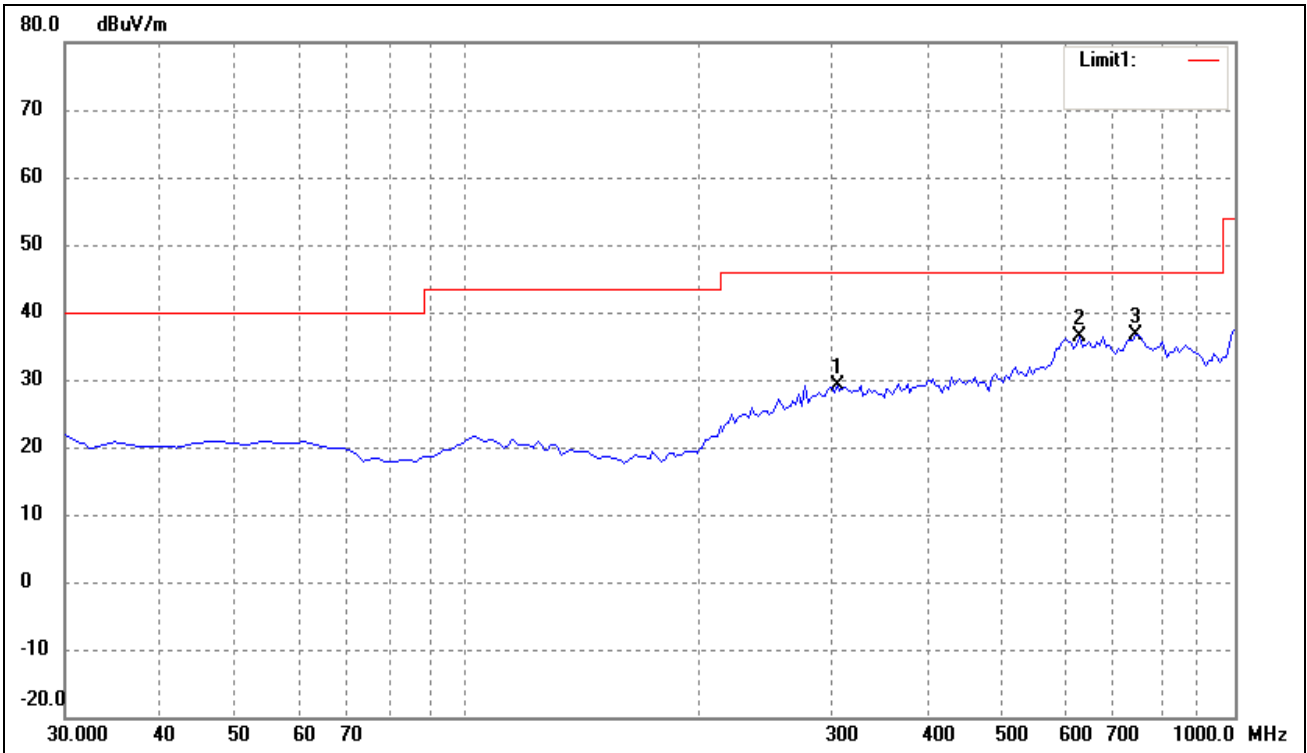
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	599.8750	16.02	19.30	35.32	46.00	-10.68	78	100	QP
2	747.8000	16.32	19.19	35.51	46.00	-10.49	126	100	QP
3	861.7750	17.51	17.33	34.84	46.00	-11.16	98	100	QP

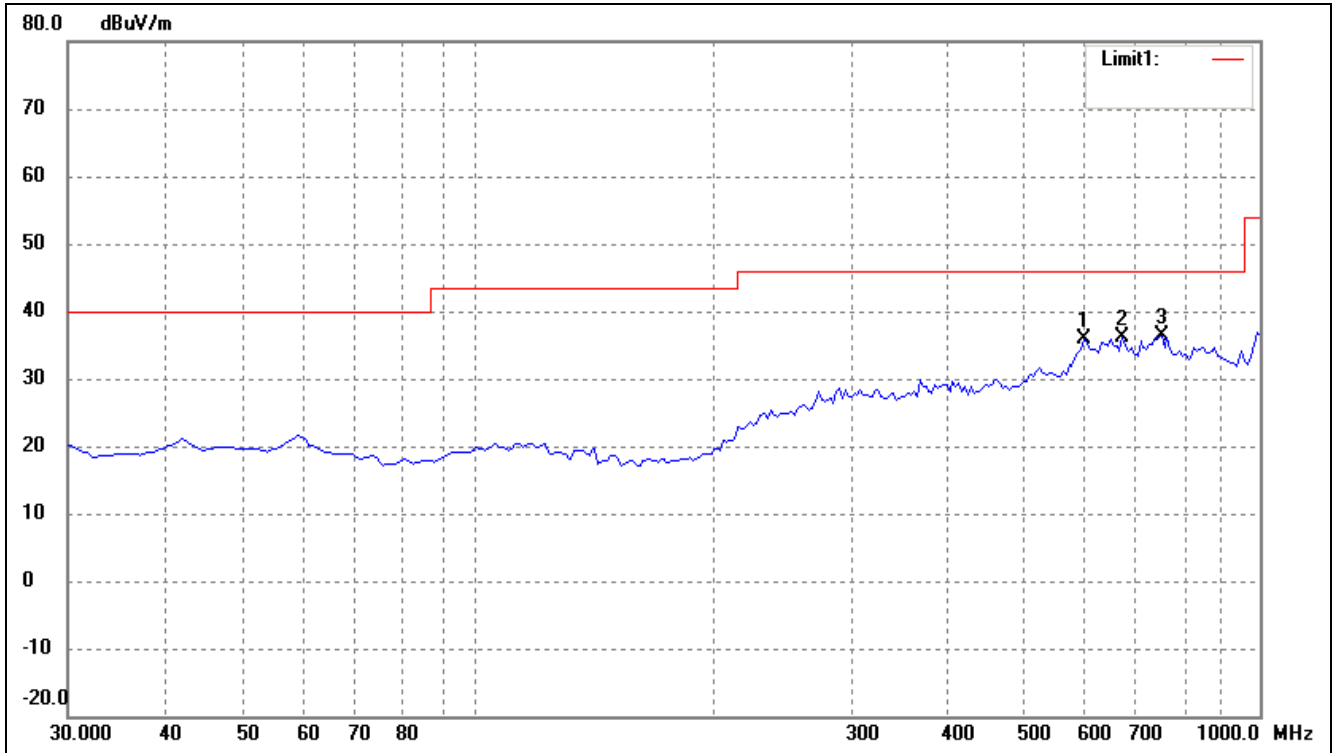
EUT: Smart phone  
 Tested Model: Valencia2 Y100 Pro  
 Operating Condition: 802.11n-HT40 Transmitting Low Channel-2422MHz  
 Comment: Battery DC 3.8V

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	304.0250	16.96	12.19	29.15	46.00	-16.85	18	100	QP
2	633.8250	18.06	18.40	36.46	46.00	-9.54	112	200	QP
3	747.8000	17.56	19.19	36.75	46.00	-9.25	98	200	QP

Test Specification: Vertical

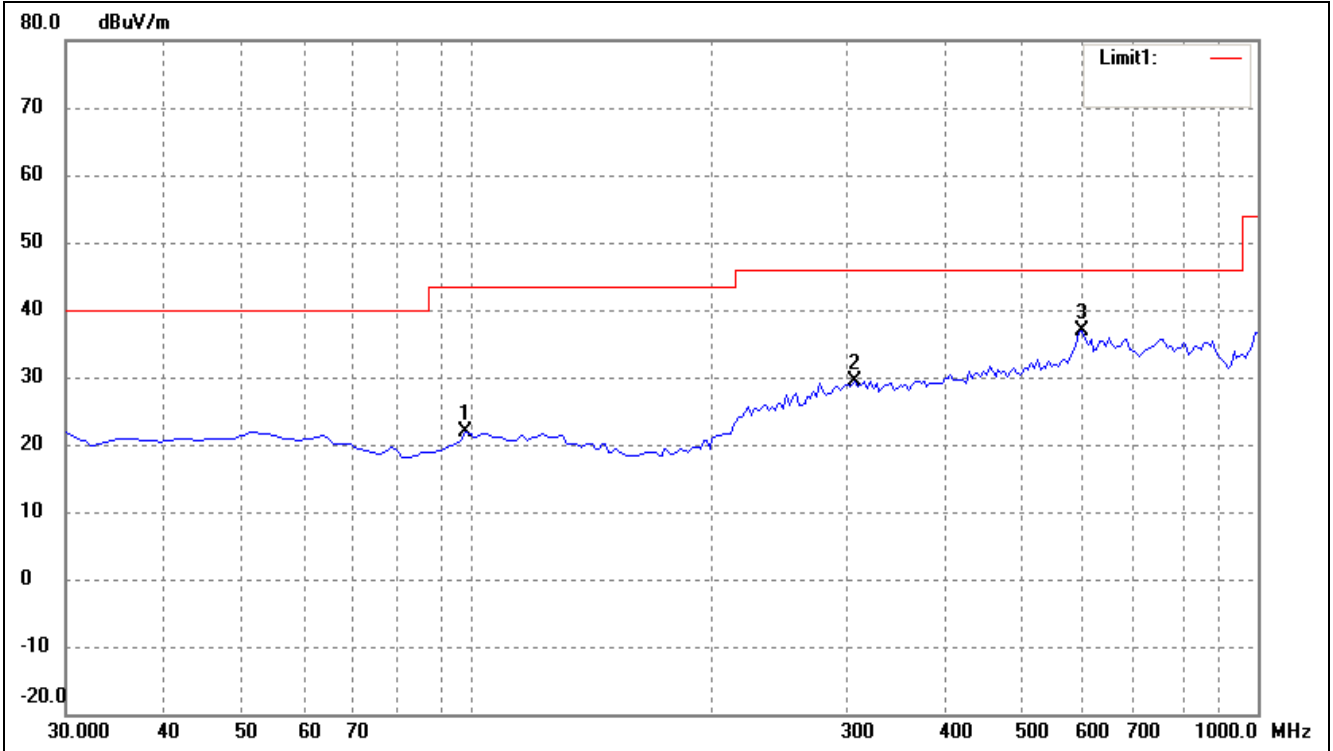


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	599.8750	16.50	19.30	35.80	46.00	-10.20	178	100	QP
2	672.6250	17.18	18.85	36.03	46.00	-9.97	278	100	QP
3	750.2250	17.34	19.08	36.42	46.00	-9.58	98	100	QP

Operating Condition: 802.11n-HT40 Transmitting Middle Channel-2437MHz

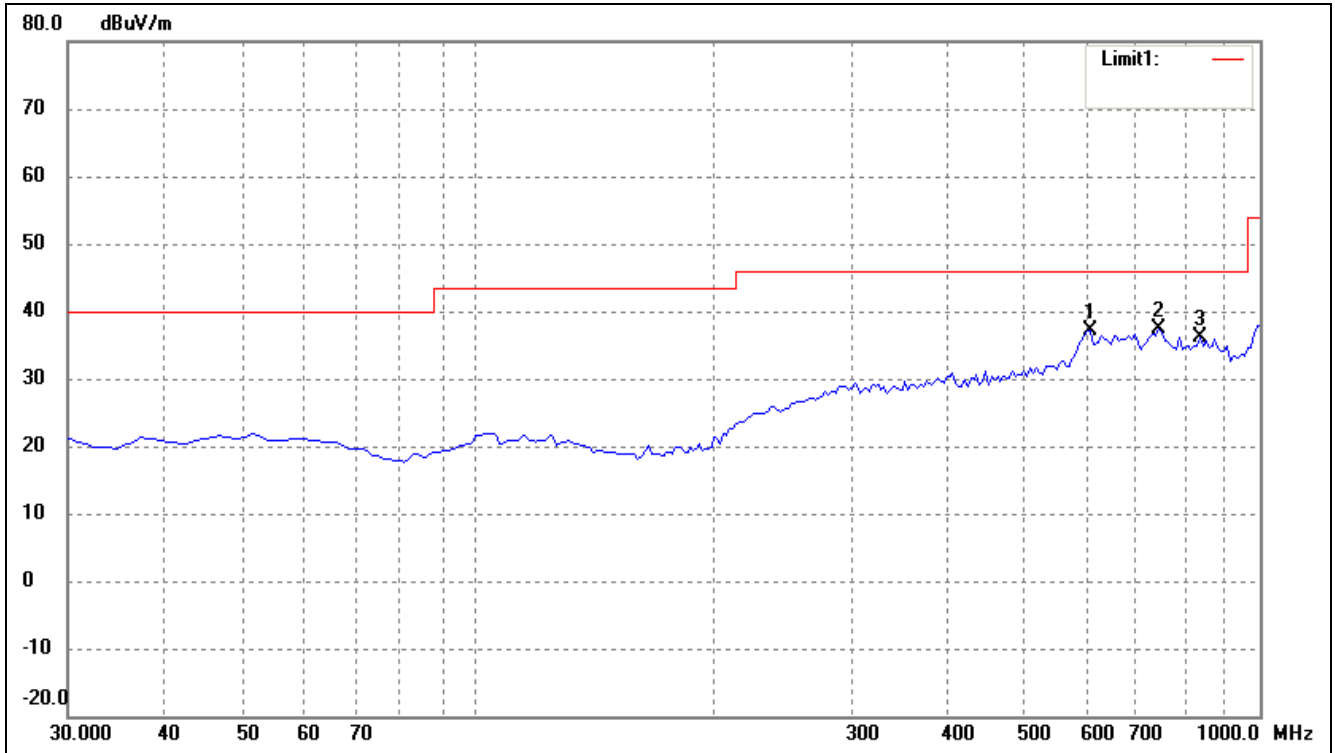
Comment: Battery DC 3.8V

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	97.9000	16.95	4.81	21.76	43.50	-21.74	274	100	QP
2	308.8750	17.20	12.22	29.42	46.00	-16.58	167	100	QP
3	599.8750	17.54	19.30	36.84	46.00	-9.16	201	100	QP

Test Specification: Vertical

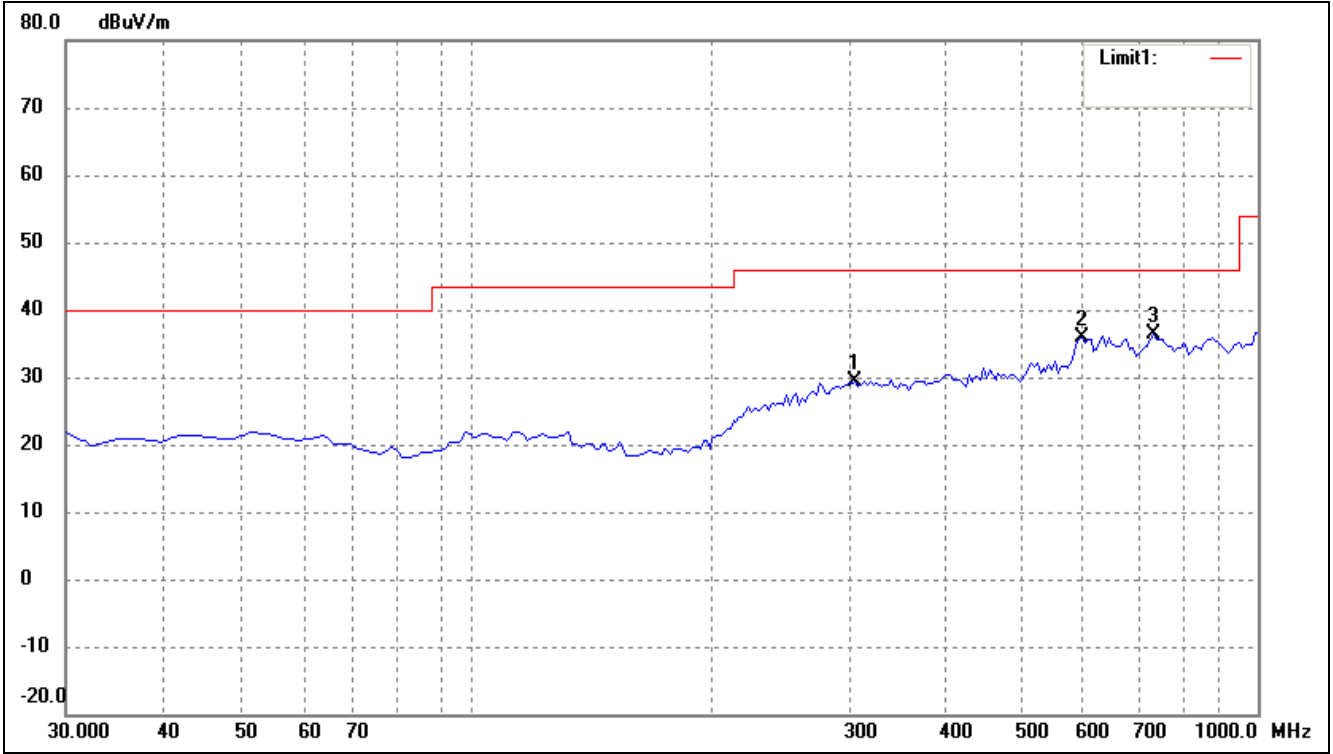


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	609.5750	18.51	18.65	37.16	46.00	-8.84	57	100	QP
2	745.3750	18.00	19.31	37.31	46.00	-8.69	142	100	QP
3	844.8000	18.53	17.50	36.03	46.00	-9.97	98	100	QP

Operating Condition: 802.11n-HT40 Transmitting High Channel-2452MHz

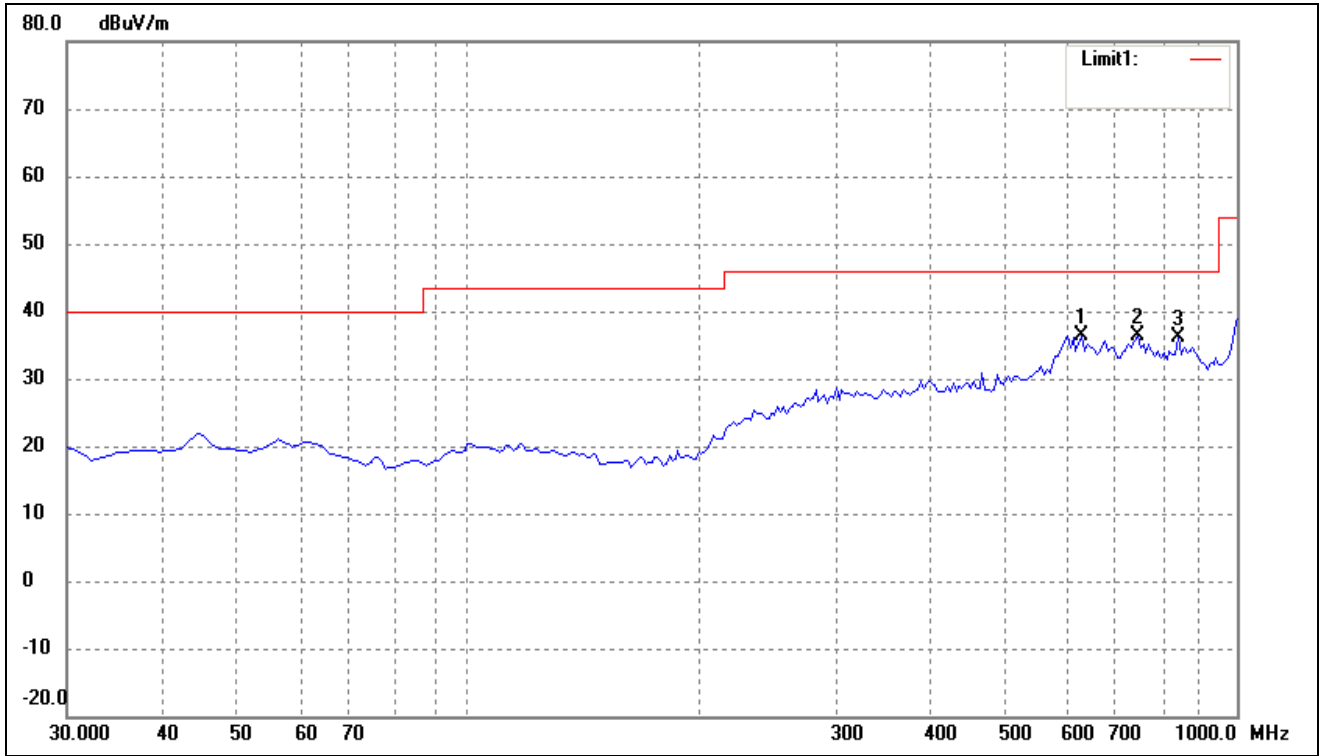
Comment: Battery DC 3.8V

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	308.8750	17.20	12.22	29.42	46.00	-16.58	310	100	QP
2	599.8750	16.54	19.30	35.84	46.00	-10.16	257	100	QP
3	740.5250	16.93	19.53	36.46	46.00	-9.54	187	100	QP

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	631.4000	18.03	18.32	36.35	46.00	-9.65	17	100	QP
2	747.8000	17.10	19.19	36.29	46.00	-9.71	87	100	QP
3	844.8000	18.60	17.50	36.10	46.00	-9.90	265	100	QP



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

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2412MHz							
4824.000	57.71	-3.87	53.84	74.00	-20.16	H	Peak
4824.000	42.21	-3.87	38.34	54.00	-15.66	H	AV
7236.000	49.39	1.14	50.53	74.00	-23.47	H	Peak
7236.000	36.52	1.19	37.71	54.00	-16.29	H	AV
4824.000	58.83	-3.86	54.97	74.00	-19.03	V	Peak
4824.000	45.31	-3.86	41.45	54.00	-12.55	V	AV
7236.000	51.35	1.10	52.45	74.00	-21.55	V	Peak
7236.000	37.91	1.10	39.01	54.00	-14.99	V	AV
Middle Channel-2437MHz							
4874.000	56.12	-3.74	52.38	74.00	-21.62	H	Peak
4874.000	44.46	-3.74	40.72	54.00	-13.28	H	AV
7311.000	50.71	1.47	52.18	74.00	-21.82	H	Peak
7311.000	35.05	1.47	36.52	54.00	-17.48	H	AV
4874.000	56.98	-3.74	53.24	74.00	-20.76	V	Peak
4874.000	44.66	-3.74	40.92	54.00	-13.08	V	AV
7311.000	50.41	1.47	51.88	74.00	-22.12	V	Peak
7311.000	37.16	1.47	38.63	54.00	-15.37	V	AV
High Channel-2462MHz							
4924.000	55.92	-3.59	52.33	74.00	-21.67	H	Peak
4924.000	45.33	-3.59	41.74	54.00	-12.26	H	AV
7386.000	50.31	1.79	52.1	74.00	-21.90	H	Peak
7386.000	38.15	1.79	39.94	54.00	-14.06	H	AV
4924.000	57.71	-3.59	54.12	74.00	-19.88	V	Peak
4924.000	43.55	-3.59	39.96	54.00	-14.04	V	AV
7386.000	50.64	1.79	52.43	74.00	-21.57	V	Peak
7386.000	37.42	1.79	39.21	54.00	-14.79	V	AV

Test Mode: 802.11g

Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar H/V	Detector
Low Channel-2412MHz							
4824.000	57.91	-3.87	54.04	74.00	-19.96	H	Peak
4824.000	43.82	-3.87	39.95	54.00	-14.05	H	AV
7236.000	48.56	1.14	49.70	74.00	-24.30	H	Peak
7236.000	36.91	1.19	38.10	54.00	-15.90	H	AV
4824.000	57.05	-3.86	53.19	74.00	-20.81	V	Peak
4824.000	44.15	-3.86	40.29	54.00	-13.71	V	AV
7236.000	50.12	1.10	51.22	74.00	-22.78	V	Peak
7236.000	37.33	1.10	38.43	54.00	-15.57	V	AV
Middle Channel-2437MHz							
4874.000	56.04	-3.74	52.30	74.00	-21.70	H	Peak
4874.000	40.89	-3.74	37.15	54.00	-16.85	H	AV
7311.000	48.21	1.47	49.68	74.00	-24.32	H	Peak
7311.000	36.95	1.47	38.42	54.00	-15.58	H	AV
4874.000	59.24	-3.74	55.50	74.00	-18.50	V	Peak
4874.000	42.41	-3.74	38.67	54.00	-15.33	V	AV
7311.000	51.03	1.47	52.50	74.00	-21.50	V	Peak
7311.000	39.47	1.47	40.94	54.00	-13.06	V	AV
High Channel-2462MHz							
4924.000	57.97	-3.59	54.38	74.00	-19.62	H	Peak
4924.000	43.81	-3.59	40.22	54.00	-13.78	H	AV
7386.000	48.47	1.79	50.26	74.00	-23.74	H	Peak
7386.000	36.90	1.79	38.69	54.00	-15.31	H	AV
4924.000	57.01	-3.59	53.42	74.00	-20.58	V	Peak
4924.000	44.16	-3.59	40.57	54.00	-13.43	V	AV
7386.000	50.01	1.79	51.80	74.00	-22.20	V	Peak
7386.000	37.24	1.79	39.03	54.00	-14.97	V	AV

Test Mode: 802.11n-HT20

Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar H/V	Detector
Low Channel-2412MHz							
4824.000	57.60	-3.87	53.73	74.00	-20.27	H	Peak
4824.000	44.32	-3.87	40.45	54.00	-13.55	H	AV
7236.000	50.52	1.14	51.66	74.00	-22.34	H	Peak
7236.000	36.51	1.19	37.70	54.00	-16.30	H	AV
4824.000	58.11	-3.86	54.25	74.00	-19.75	V	Peak
4824.000	44.74	-3.86	40.88	54.00	-13.12	V	AV
7236.000	51.31	1.10	52.41	74.00	-21.59	V	Peak
7236.000	37.63	1.10	38.73	54.00	-15.27	V	AV
Middle Channel-2437MHz							
4874.000	57.03	-3.74	53.29	74.00	-20.71	H	Peak
4874.000	45.22	-3.74	41.48	54.00	-12.52	H	AV
7311.000	49.31	1.47	50.78	74.00	-23.22	H	Peak
7311.000	37.24	1.47	38.71	54.00	-15.29	H	AV
4874.000	59.07	-3.74	55.33	74.00	-18.67	V	Peak
4874.000	45.88	-3.74	42.14	54.00	-11.86	V	AV
7311.000	50.34	1.47	51.81	74.00	-22.19	V	Peak
7311.000	37.30	1.47	38.77	54.00	-15.23	V	AV
High Channel-2462MHz							
4924.000	56.01	-3.59	52.42	74.00	-21.58	H	Peak
4924.000	42.82	-3.59	39.23	54.00	-14.77	H	AV
7386.000	49.23	1.79	51.02	74.00	-22.98	H	Peak
7386.000	36.86	1.79	38.65	54.00	-15.35	H	AV
4924.000	58.18	-3.59	54.59	74.00	-19.41	V	Peak
4924.000	44.71	-3.59	41.12	54.00	-12.88	V	AV
7386.000	50.62	1.79	52.41	74.00	-21.59	V	Peak
7386.000	38.01	1.79	39.80	54.00	-14.20	V	AV

Test Mode: 802.11n-HT40

Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar H/V	Detector
Low Channel-2422MHz							
4844.000	53.21	-3.90	49.31	74.00	-24.69	H	PK
4824.000	38.22	-3.90	34.32	54.00	-19.68	H	AV
7266.000	46.46	1.06	47.52	74.00	-26.48	H	PK
7266.000	32.54	1.06	33.60	54.00	-20.40	H	AV
4844.000	54.21	-3.90	50.31	74.00	-23.69	V	PK
4824.000	39.45	-3.90	35.55	54.00	-18.45	V	AV
7266.000	48.86	1.06	49.92	74.00	-24.08	V	PK
7266.000	34.71	1.06	35.77	54.00	-18.23	V	AV
Middle Channel-2437MHz							
4874.000	52.51	-3.74	48.77	74.00	-25.23	H	PK
4874.000	37.82	-3.74	34.08	54.00	-19.92	H	AV
7311.000	44.86	1.47	46.33	74.00	-27.67	H	PK
7311.000	32.04	1.47	33.51	54.00	-20.49	H	AV
4874.000	53.77	-3.74	50.03	74.00	-23.97	V	PK
4874.000	39.91	-3.74	36.17	54.00	-17.83	V	AV
7311.000	45.70	1.47	47.17	74.00	-26.83	V	PK
7311.000	34.03	1.47	35.5	54.00	-18.50	V	AV
High Channel-2452MHz							
4904.000	52.62	-3.63	48.99	74.00	-25.01	H	PK
4904.000	39.36	-3.63	35.73	54.00	-18.27	H	AV
7356.000	45.64	1.62	47.26	74.00	-26.74	H	PK
7356.000	30.74	1.62	32.36	54.00	-21.64	H	AV
4904.000	54.87	-3.63	51.24	74.00	-22.76	V	PK
4904.000	40.85	-3.63	37.22	54.00	-16.78	V	AV
7356.000	48.16	1.62	49.78	74.00	-24.22	V	PK
7356.000	35.11	1.62	36.73	54.00	-17.27	V	AV

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 3<sup>th</sup> 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.

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## 9. Out of Band Emissions

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### 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 Procedure

According to the KDB 558074D01 v03r03, 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 V03r03, 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.

### 9.3 Environmental Conditions

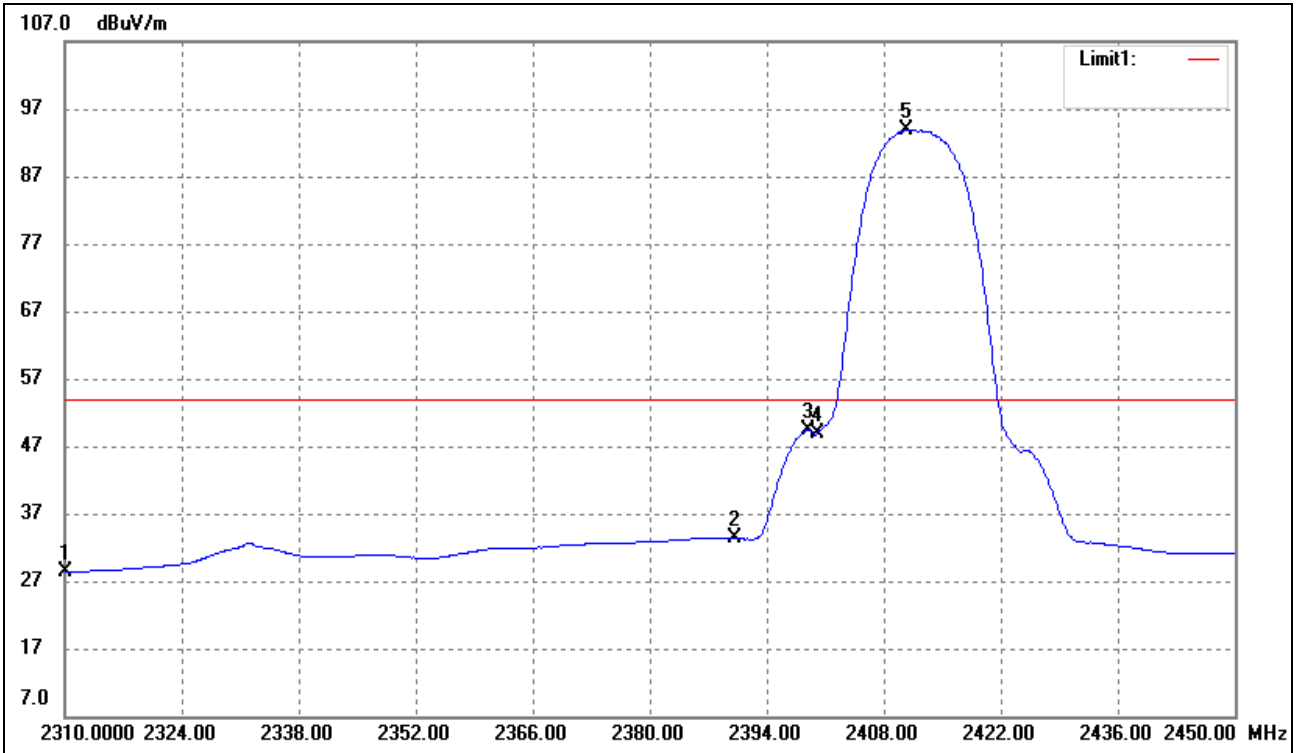
Temperature:	23°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

### 9.4 Summary of Test Results/Plots

Please refer to the test plots as below.

802.11b-Lowest Bandedge

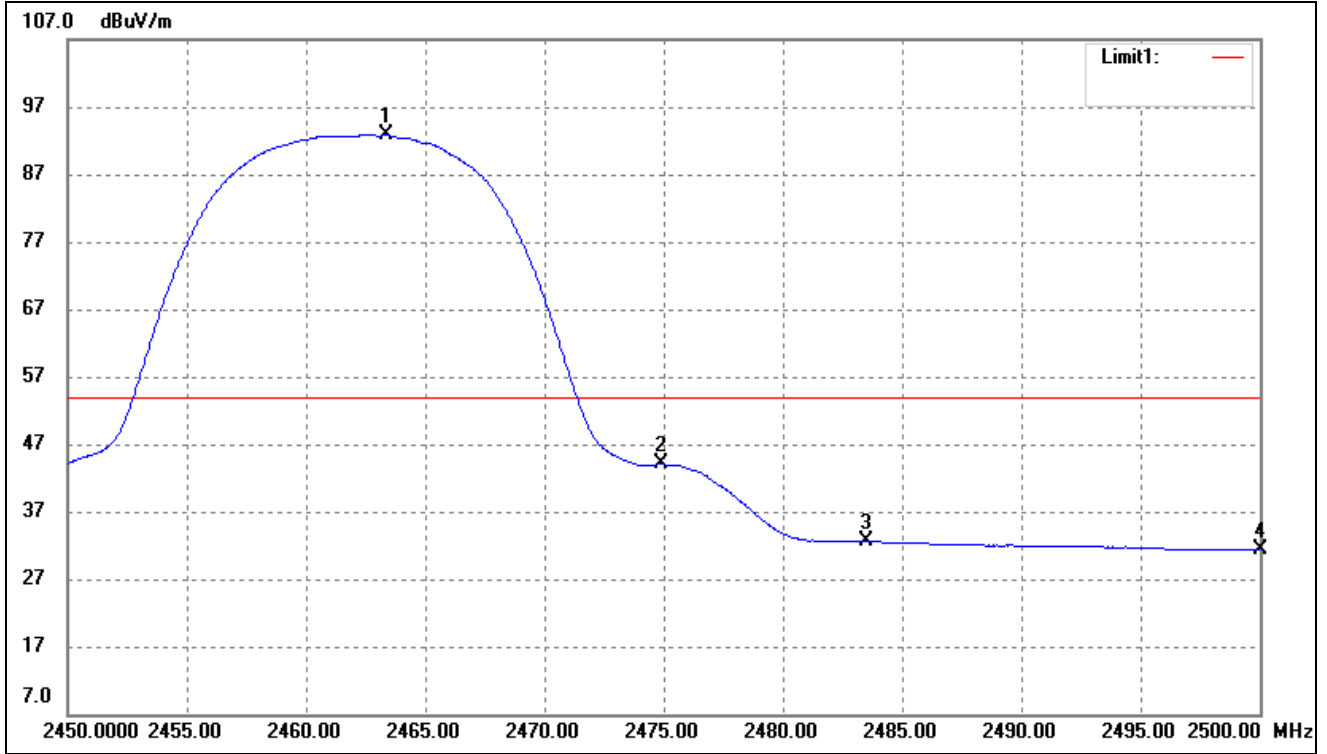
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	32.00	-3.71	28.29	54.00	-25.71	Average Detector
		44.68	-3.71	40.97	74.00	-33.03	Peak Detector
2	2390.000	37.01	-3.54	33.47	54.00	-20.53	Average Detector
		49.35	-3.54	45.81	74.00	-28.19	Peak Detector
3	2398.900	52.85	-3.51	49.34	54.00	-4.66	Average Detector
		62.87	-3.51	59.36	74.00	-14.64	Peak Detector
4	2400.000	52.32	-3.51	48.81	Delta =45.04dBc		Average Detector
5	2410.660	97.33	-3.48	93.85			Average Detector

## 802.11b-Highest Bandedge

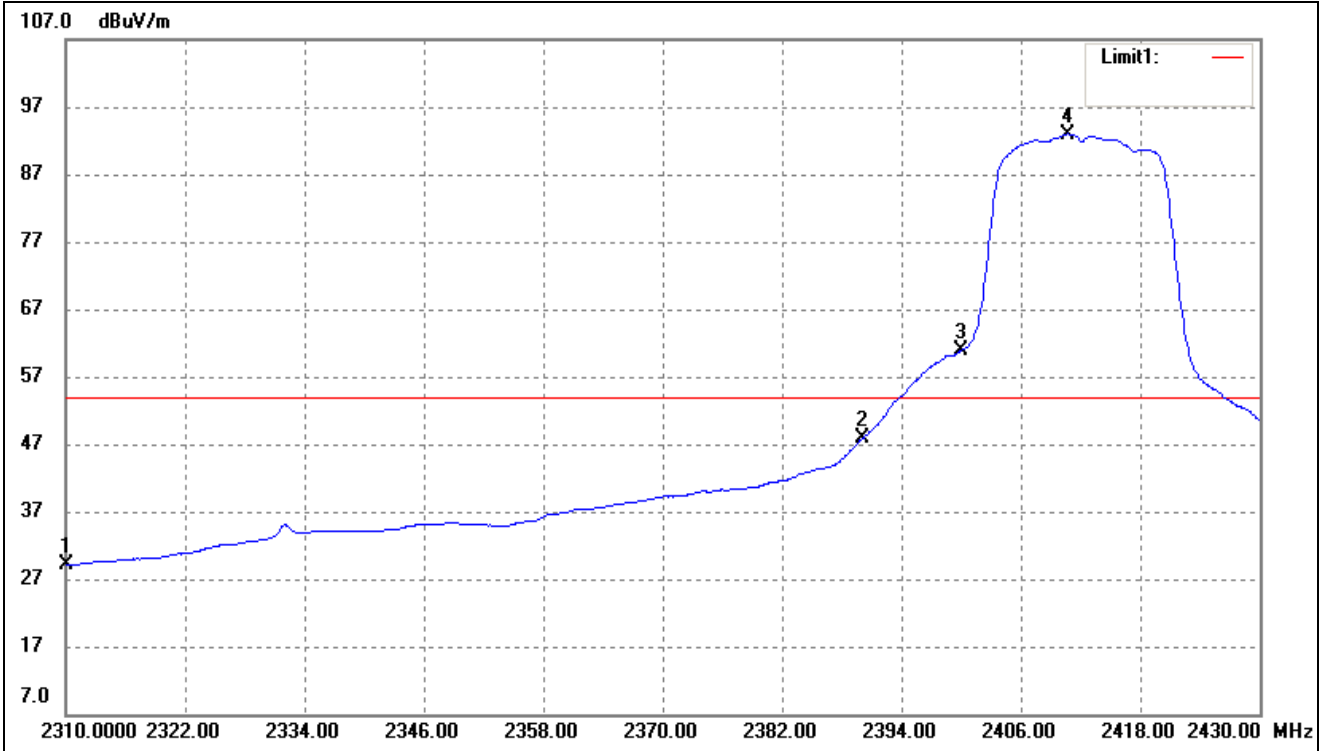
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.350	96.21	-3.36	92.85	/	/	Average Detector
	2463.300	104.80	-3.36	101.44	/	/	Peak Detector
2	2474.900	47.38	-3.33	44.05	54.00	-9.95	Average Detector
	2474.800	58.85	-3.33	55.52	74.00	-18.48	Peak Detector
3	2483.500	35.96	-3.33	32.63	54.00	-21.37	Average Detector
	2483.500	47.98	-3.33	44.65	74.00	-29.35	Peak Detector
4	2500.000	34.61	-3.28	31.33	54.00	-22.67	Average Detector
	2500.000	46.84	-3.28	43.56	74.00	-30.44	Peak Detector

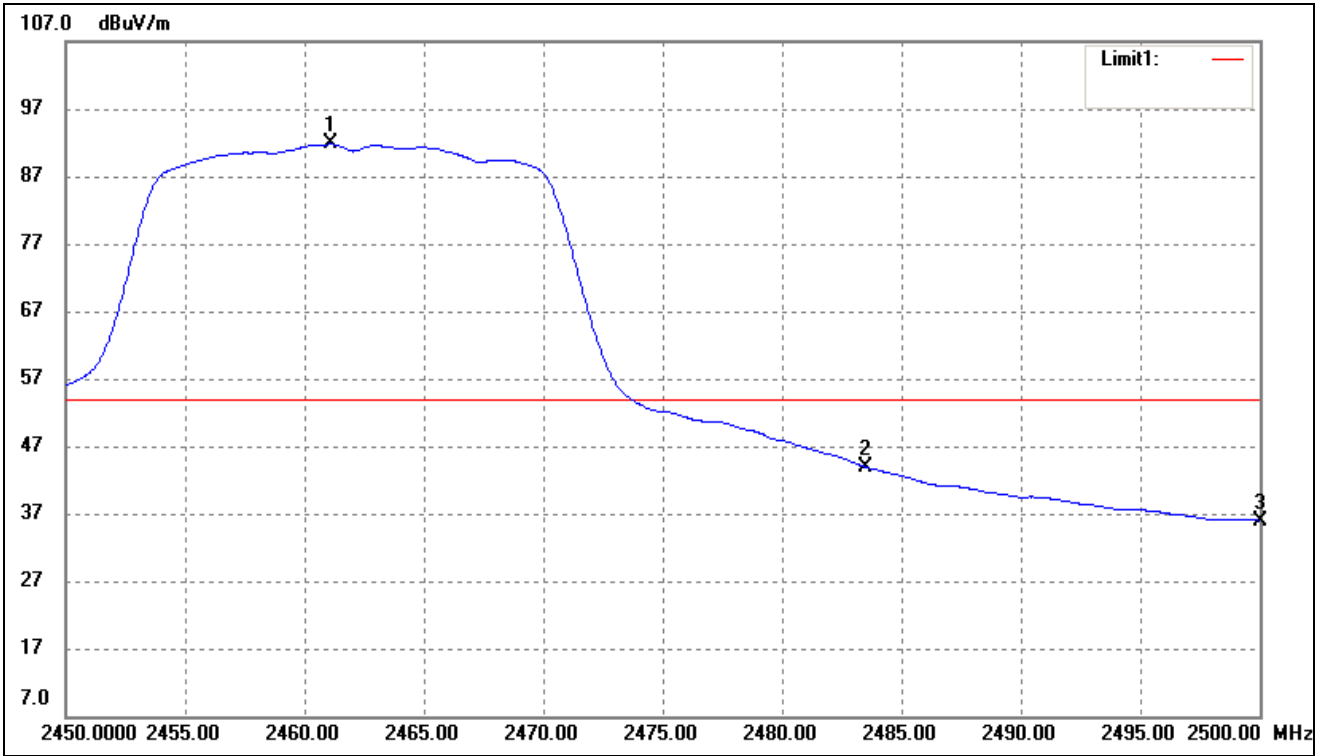


802.11g-Lowest Bandedge  
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	32.78	-3.71	29.07	54.00	-24.93	Average Detector
	2310.000	45.98	-3.71	42.27	74.00	-31.73	Peak Detector
2	2390.000	51.37	-3.54	47.83	54.00	-6.17	Average Detector
	2390.000	69.12	-3.54	65.58	74.00	-8.42	Peak Detector
3	2400.000	64.41	-3.51	60.90	Delta =33.10dBc		Average Detector
4	2410.680	96.48	-3.48	93.00			Average Detector

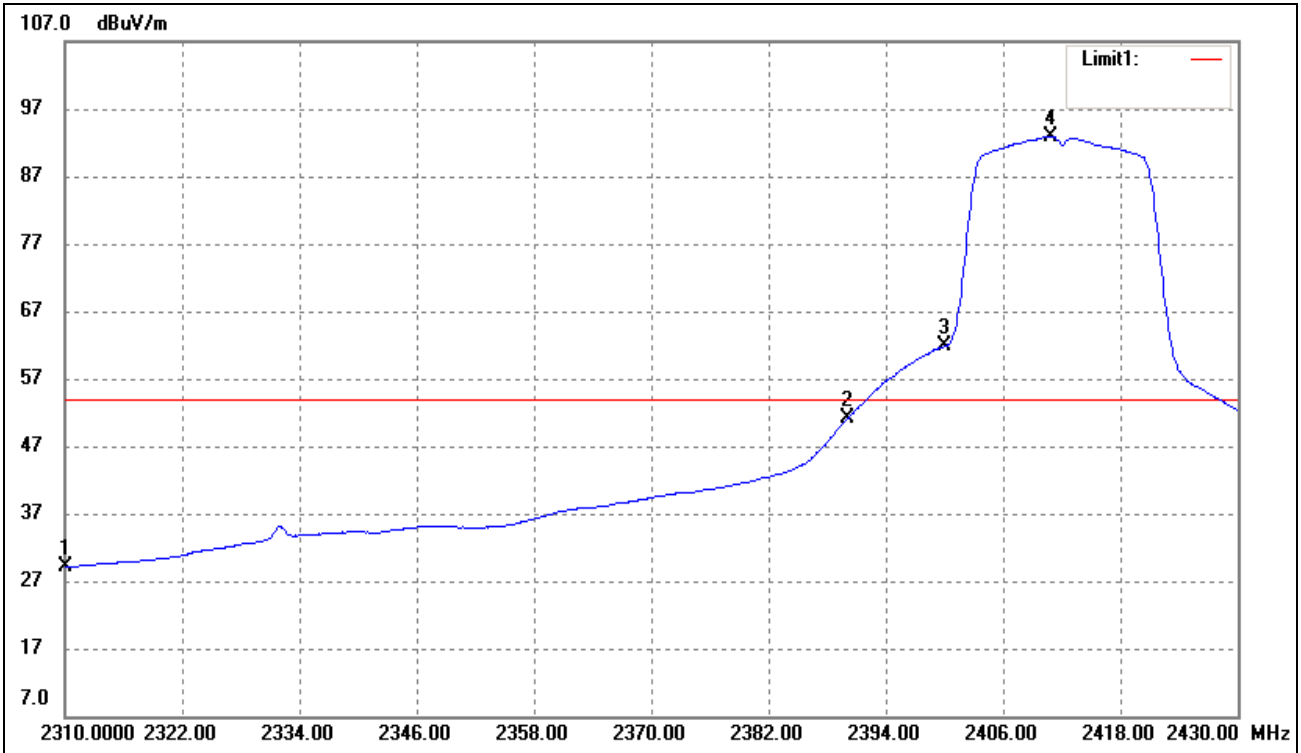
802.11g-Highest Bandedge  
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2461.100	95.13	-3.37	91.76	/	/	Average Detector
	2463.750	107.16	-3.36	103.80	/	/	Peak Detector
2	2483.500	47.27	-3.33	43.94	54.00	-10.06	Average Detector
	2483.500	68.14	-3.33	64.81	74.00	-9.19	Peak Detector
3	2500.000	39.25	-3.28	35.97	54.00	-18.03	Average Detector
	2500.000	53.89	-3.28	50.61	74.00	-23.39	Peak Detector

802.11n-HT20-Lowest Bandedge

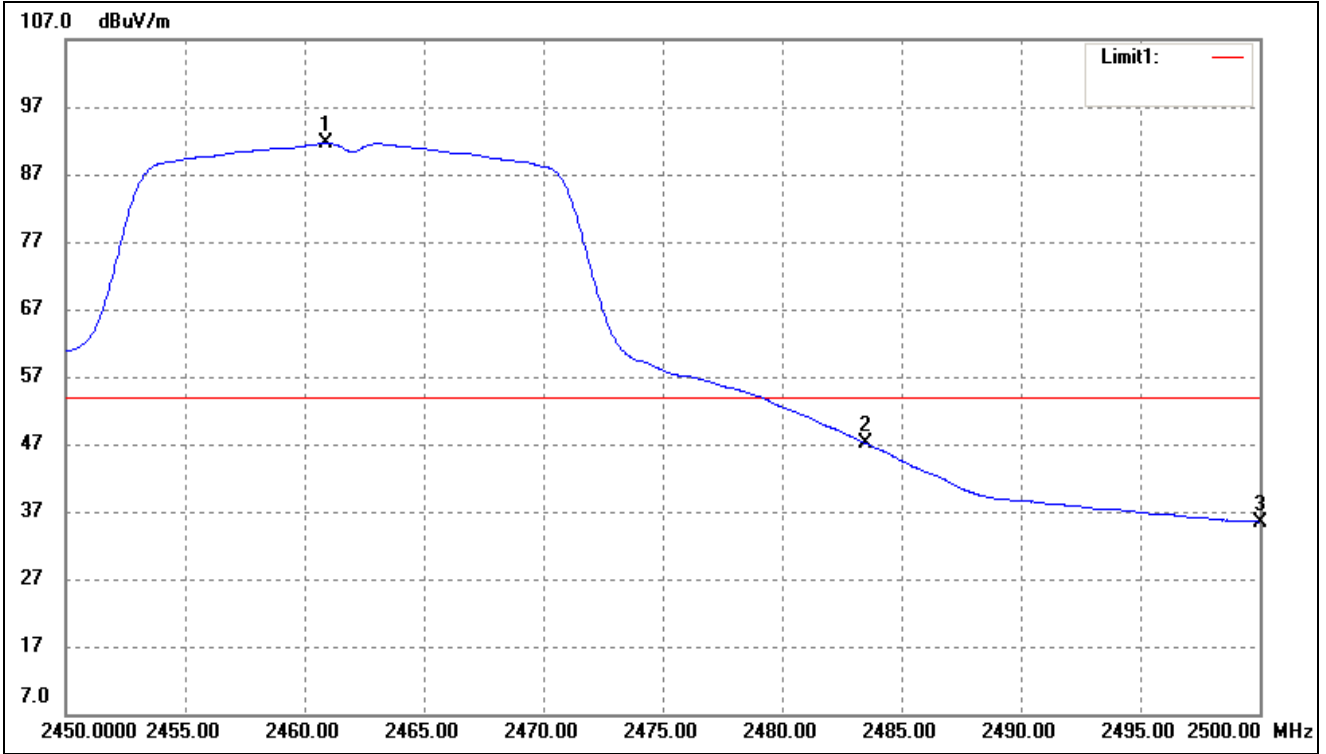
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	32.76	-3.71	29.05	54.00	-24.95	Average Detector
		45.71	-3.71	42.00	74.00	-32.00	Peak Detector
2	2390.000	54.55	-3.54	51.01	54.00	-2.99	Average Detector
		72.98	-3.54	69.44	74.00	-4.56	Peak Detector
3	2400.000	65.28	-3.51	61.77	Delta =31.22dBc		Average Detector
4	2410.800	96.47	-3.48	92.99			Average Detector

802.11n-HT20-Highest Bandedge

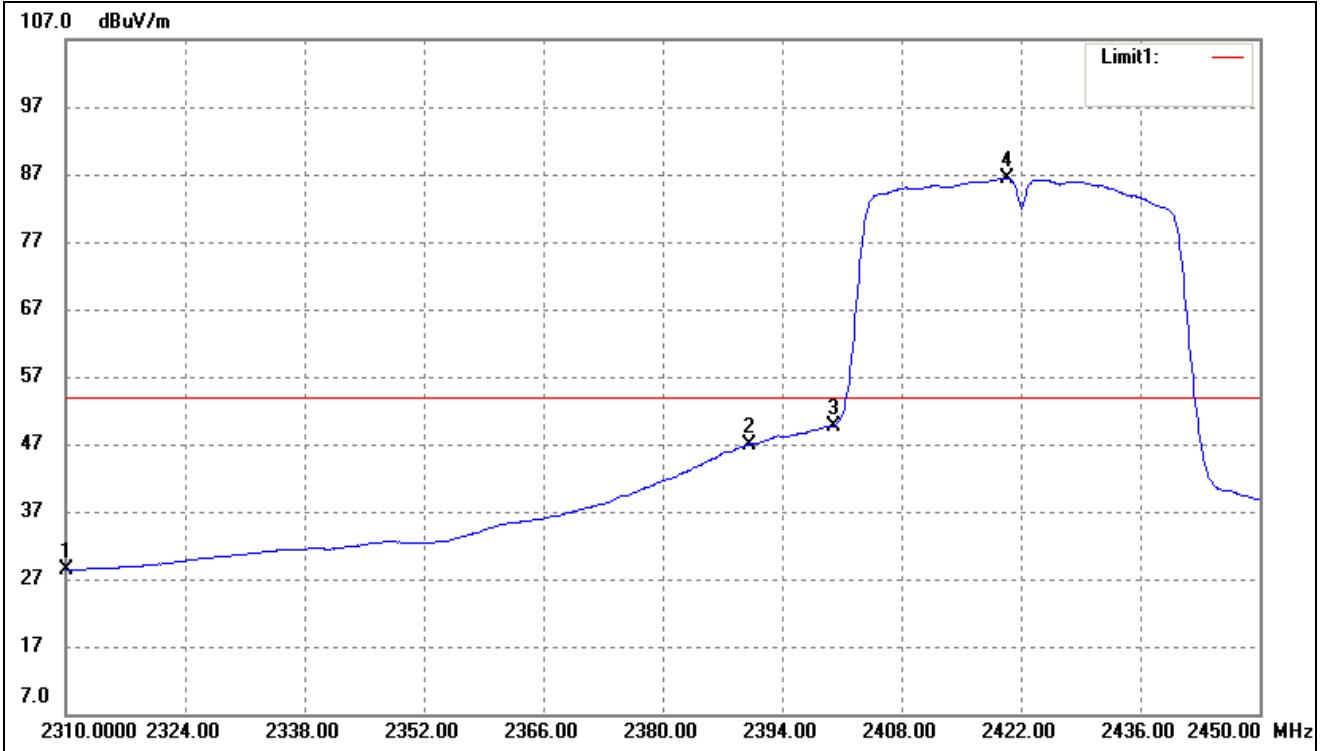
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.900	94.97	-3.37	91.60	/	/	Average Detector
	2461.400	106.90	-3.37	103.53	/	/	Peak Detector
2	2483.500	50.40	-3.33	47.07	54.00	-6.93	Average Detector
	2483.500	68.86	-3.33	65.53	74.00	-8.47	Peak Detector
3	2500.000	38.74	-3.28	35.46	54.00	-18.54	Average Detector
	2500.000	51.67	-3.28	48.39	74.00	-25.61	Peak Detector

802.11n-HT40-Lowest Bandedge

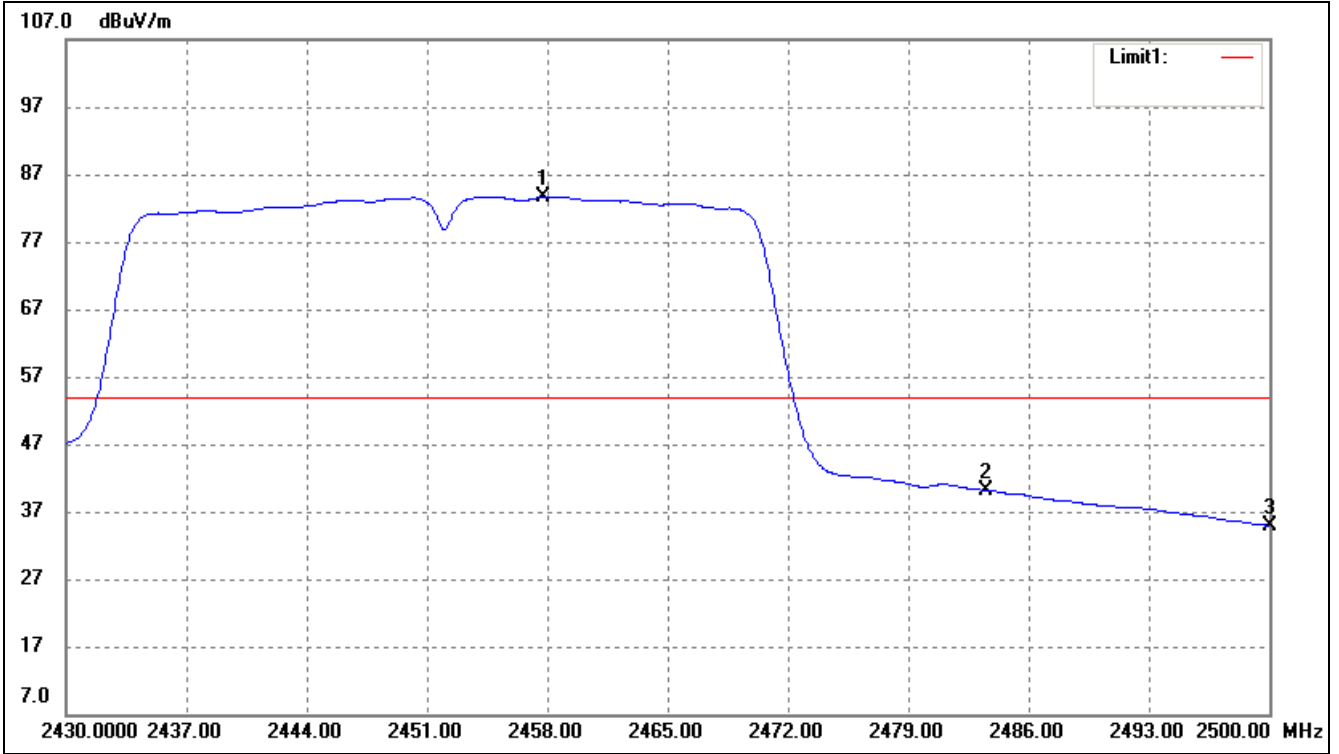
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	31.98	-3.71	28.27	54.00	-25.73	Average Detector
		44.31	-3.71	40.60	74.00	-33.40	Peak Detector
2	2390.000	50.54	-3.54	47.00	54.00	-7.00	Average Detector
		65.03	-3.54	61.49	74.00	-12.51	Peak Detector
3	2400.000	53.25	-3.51	49.74	Delta =36.74dBc		Average Detector
4	2420.320	89.94	-3.46	86.48			Average Detector

## 802.11n-HT40-Highest Bandedge

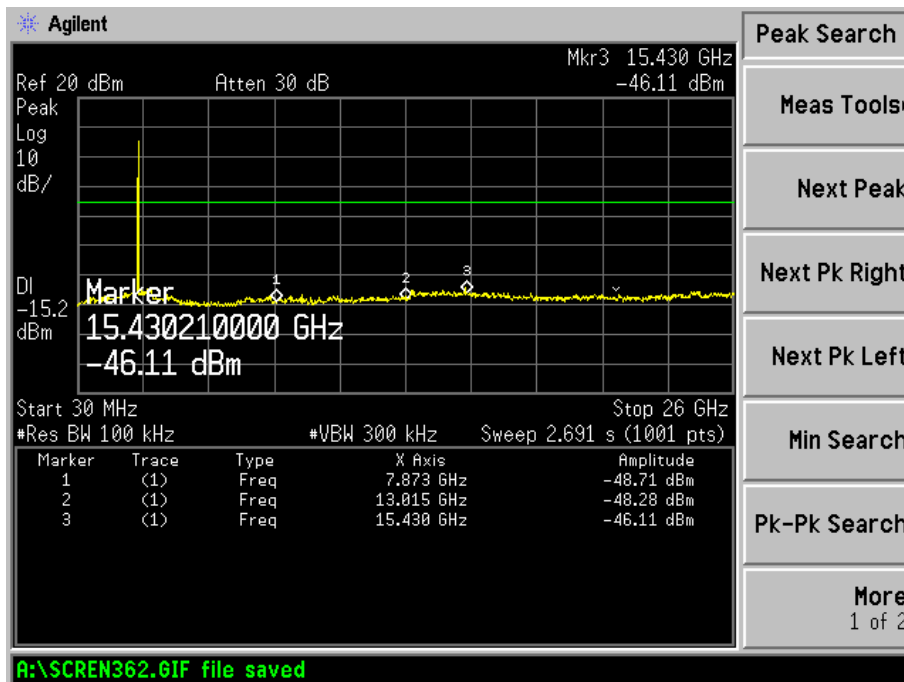
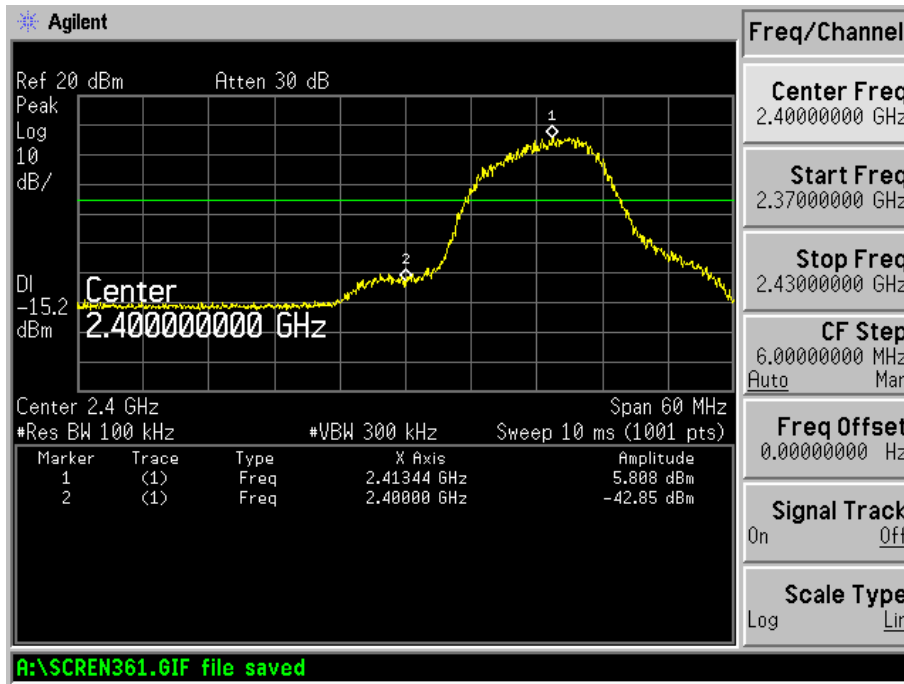
Vertical (Worst case)



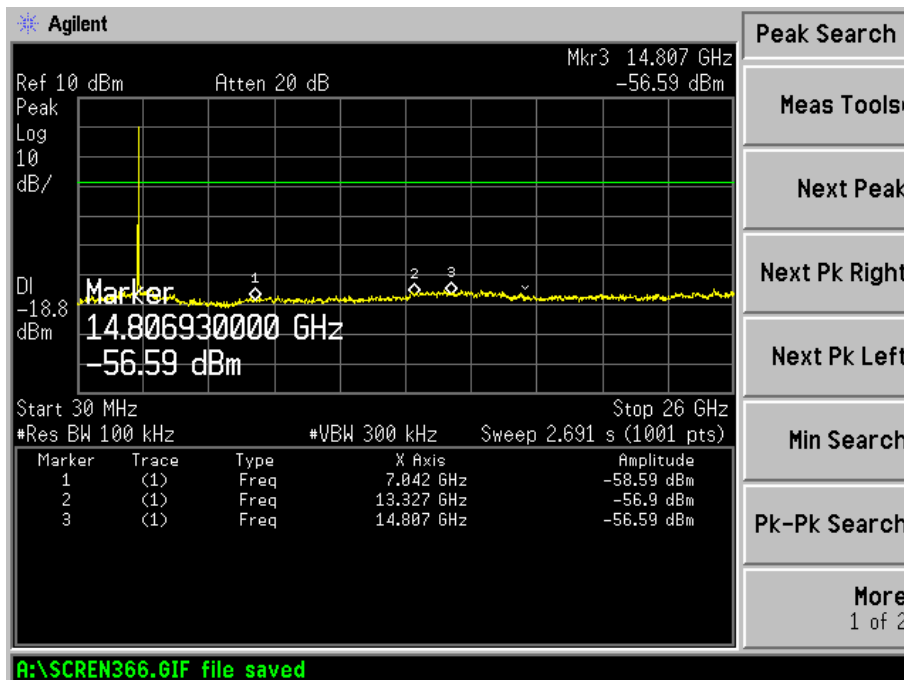
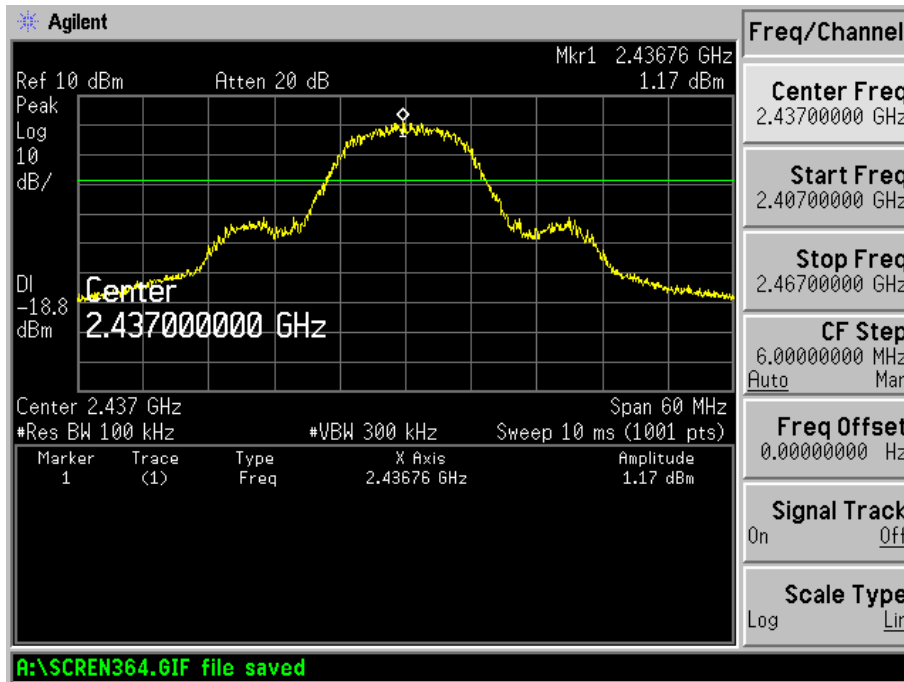
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2457.790	87.06	-3.38	83.68	/	/	Average Detector
	2454.990	99.24	-3.38	95.86	/	/	Peak Detector
2	2483.500	43.53	-3.33	40.20	54.00	-13.80	Average Detector
	2483.500	62.09	-3.33	58.76	74.00	-15.24	Peak Detector
3	2500.000	38.23	-3.28	34.95	54.00	-19.05	Average Detector
	2500.000	54.09	-3.28	50.81	74.00	-23.19	Peak Detector

802.11b- Bandedge(Conducted)

Low Channel

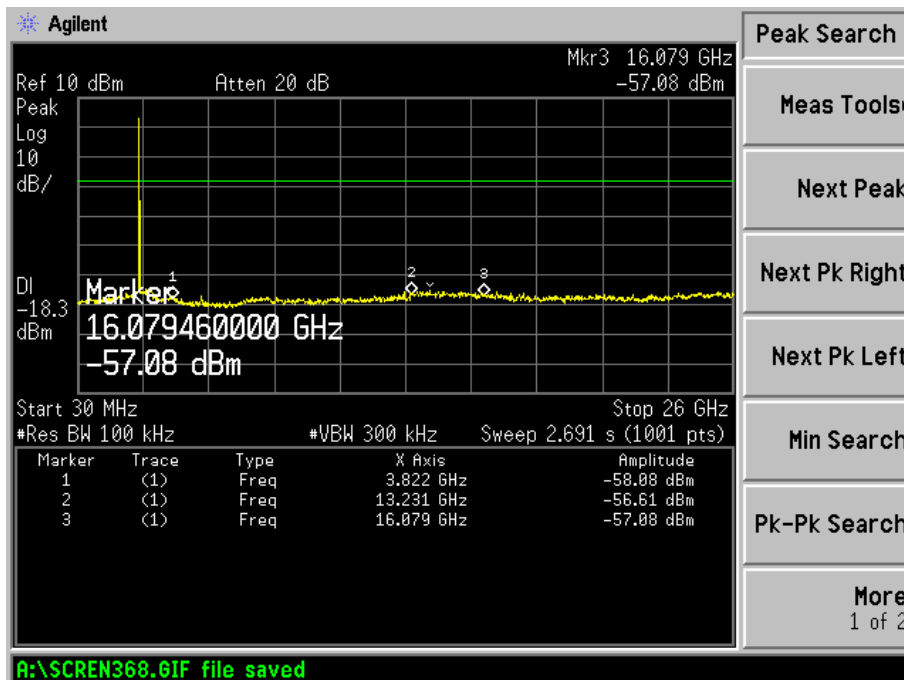
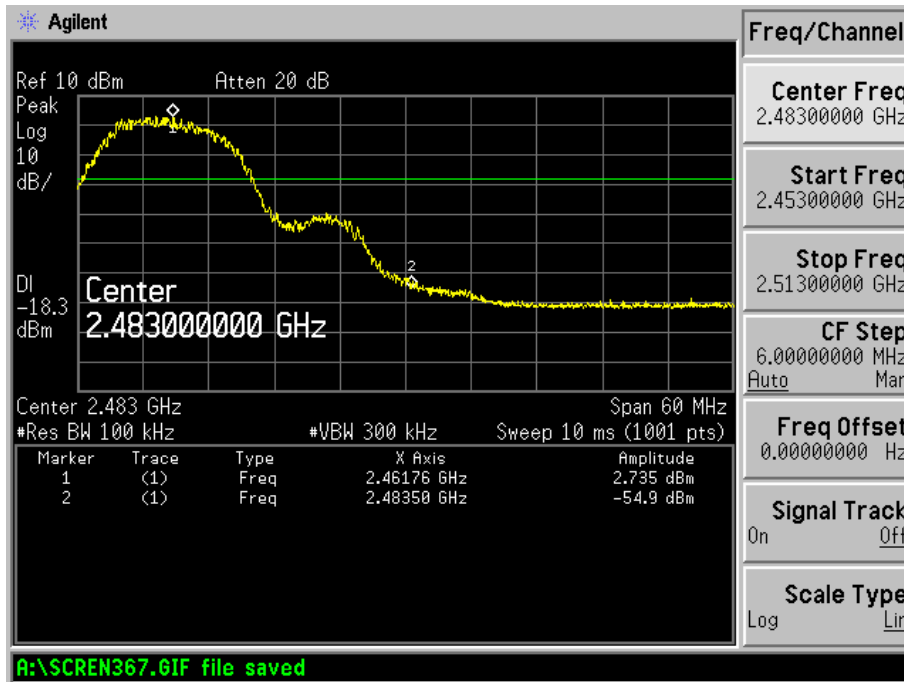


Middle Channel



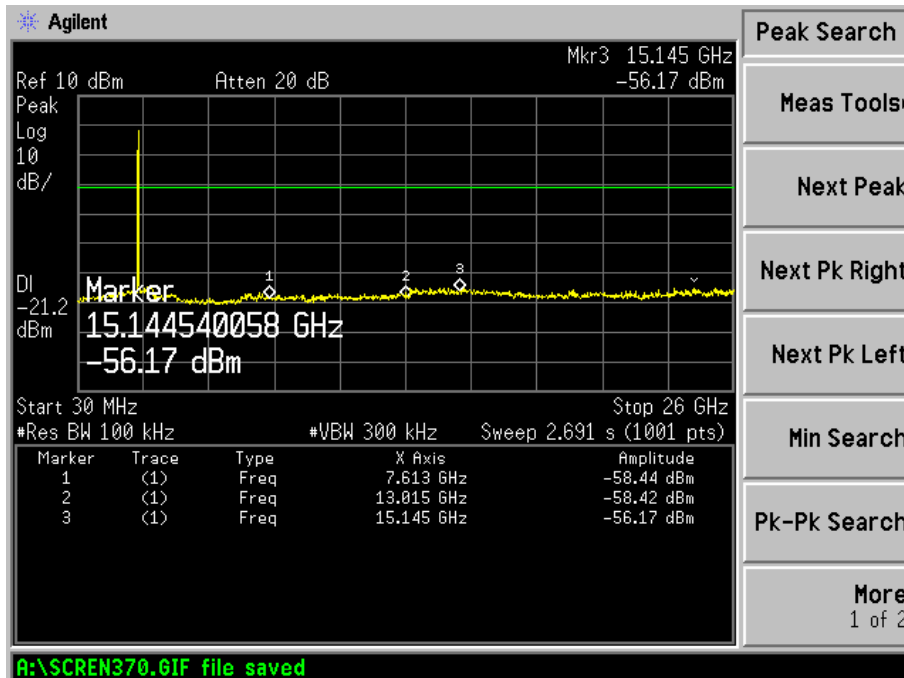
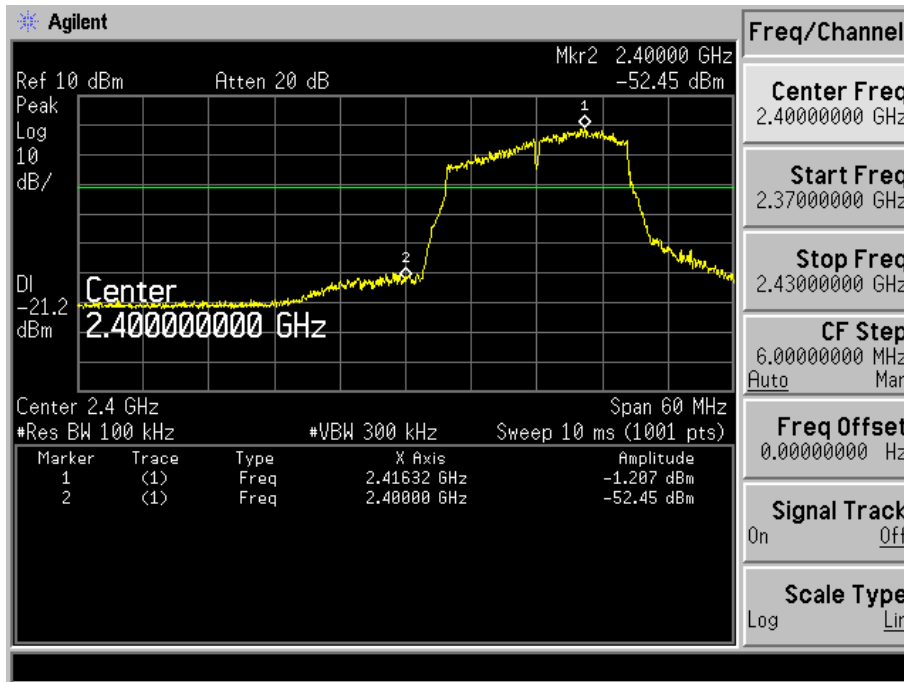


High Channel

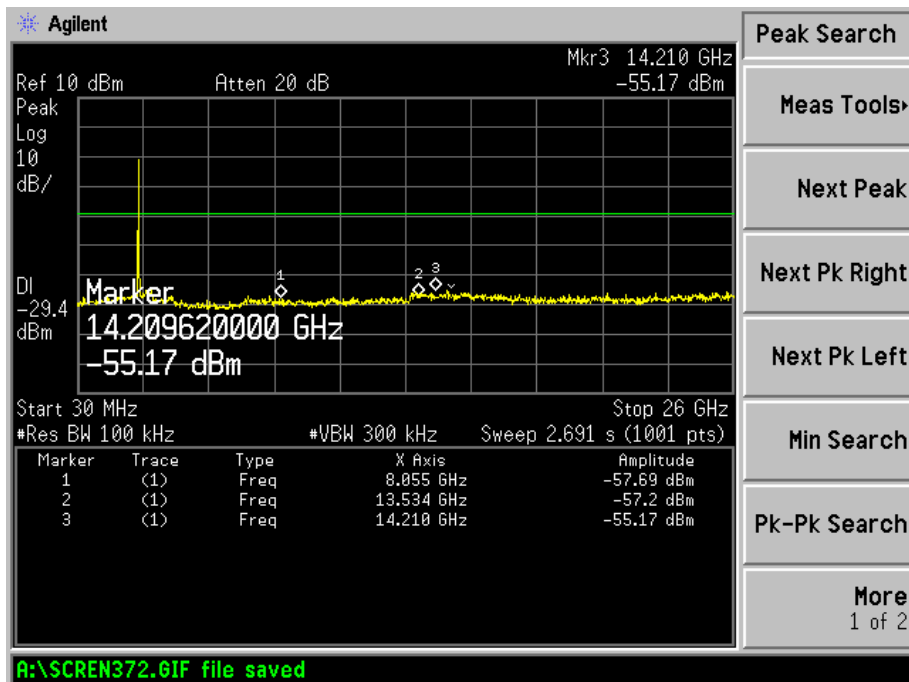
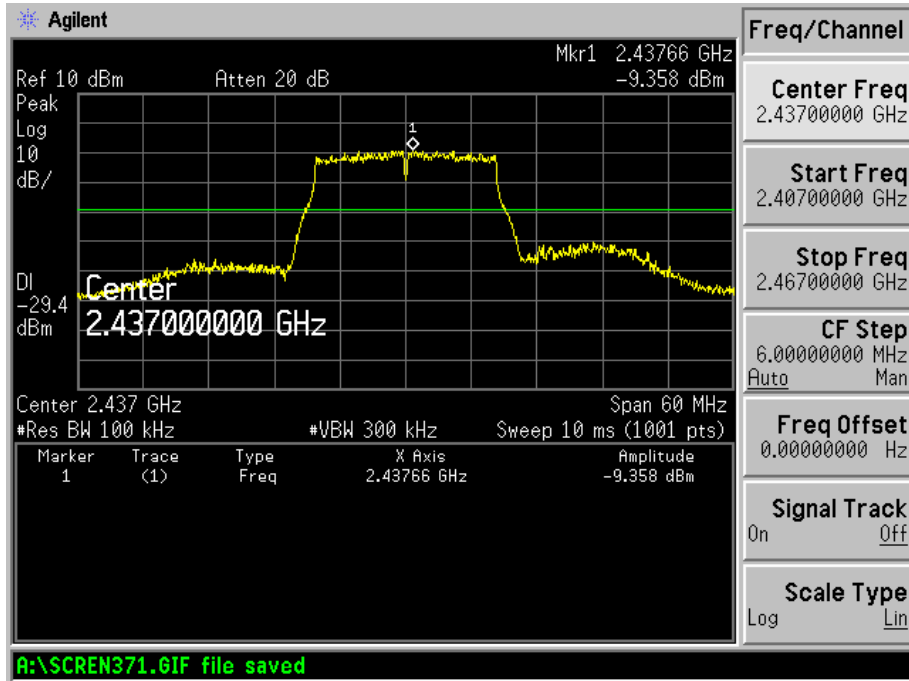


802.11g- Bandedge(Conducted)

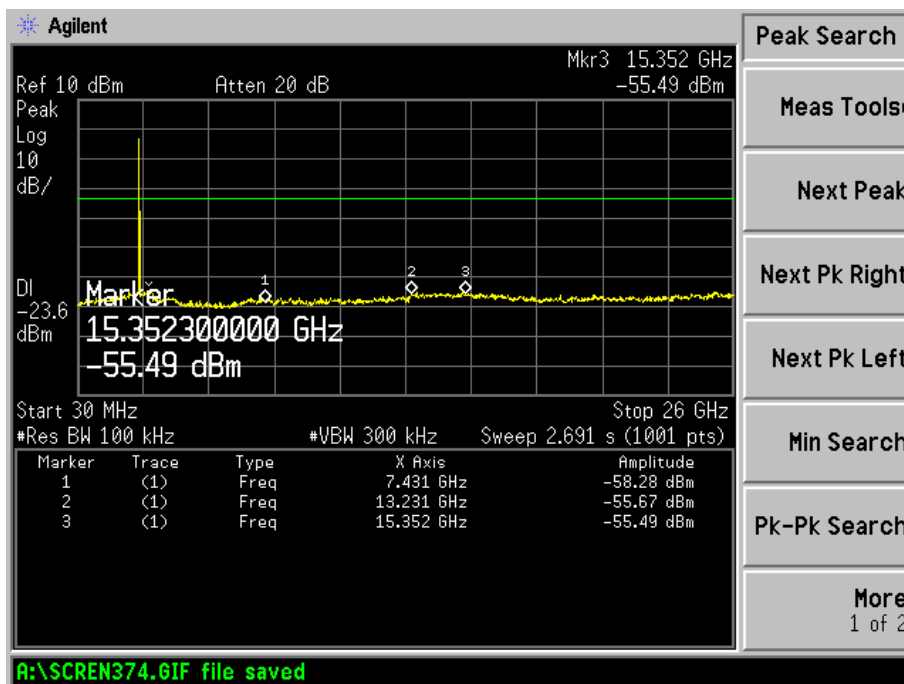
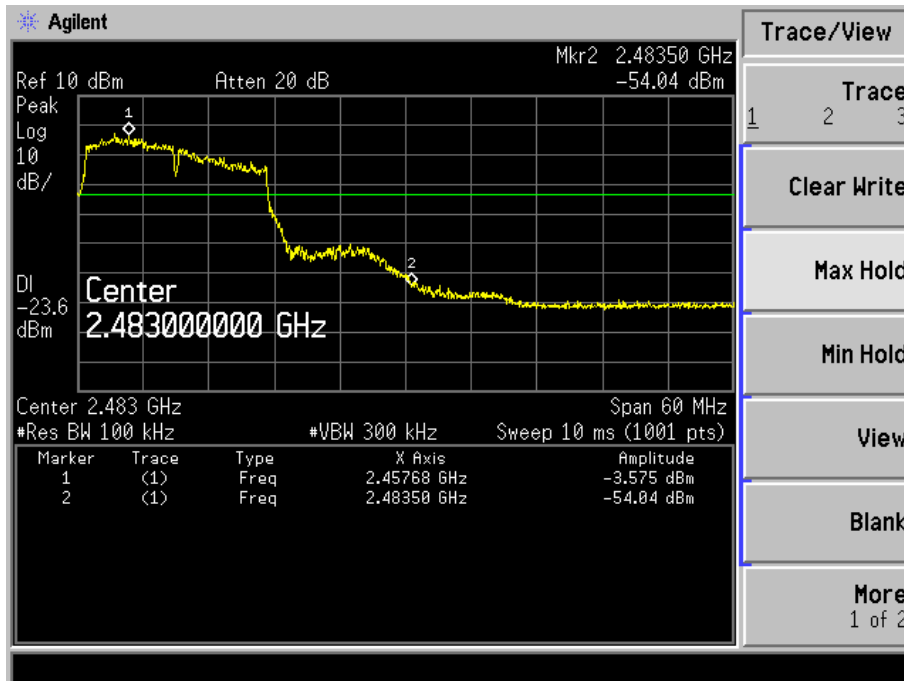
Low Channel



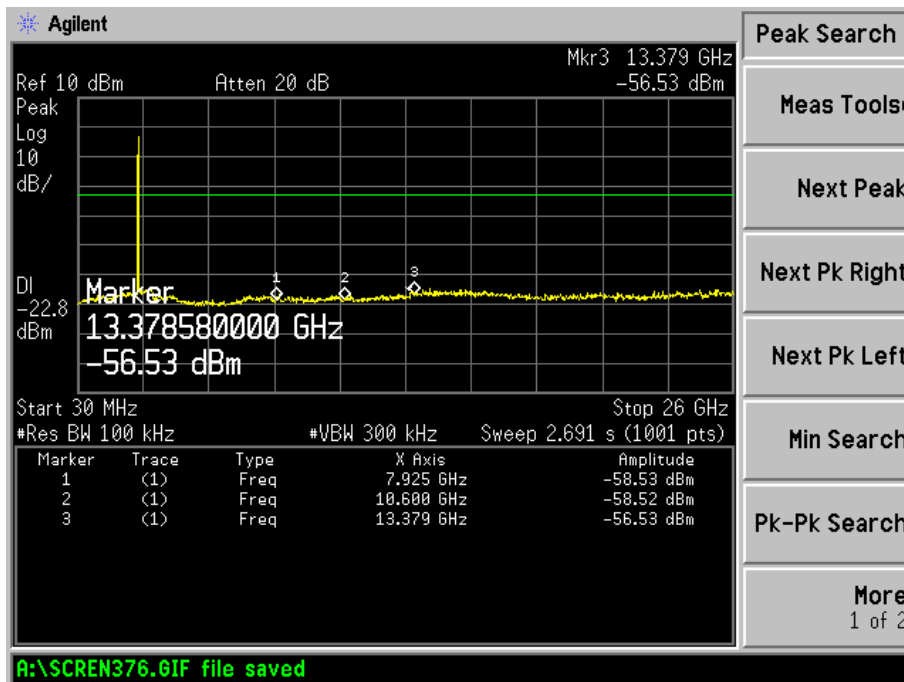
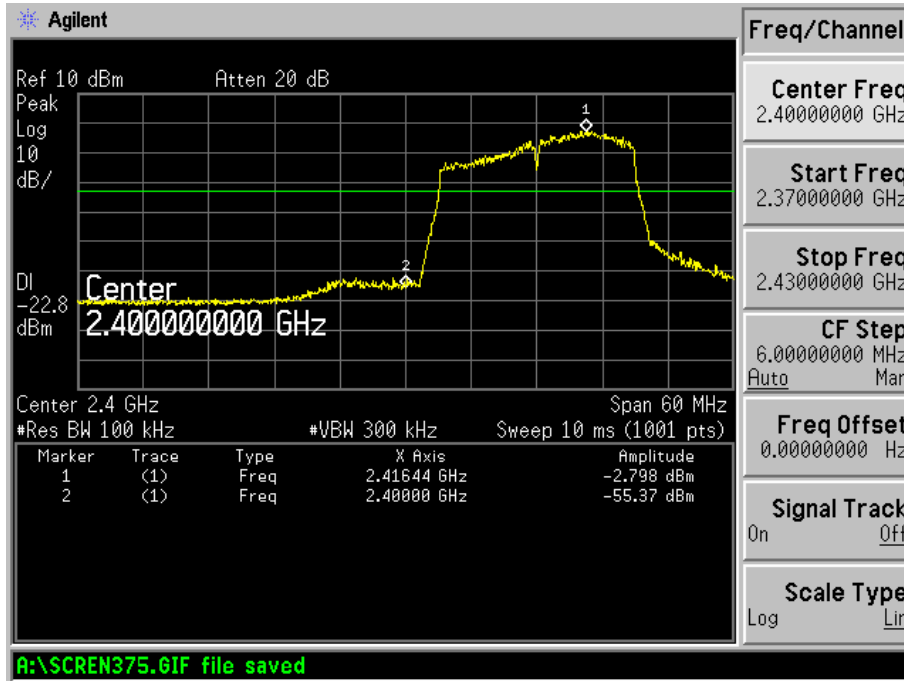
Middle Channel



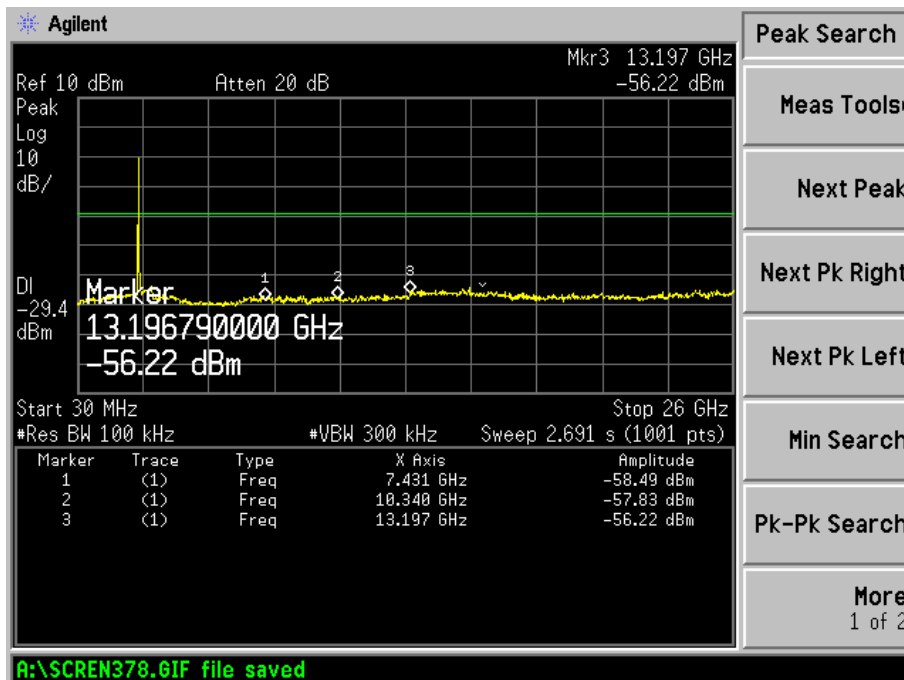
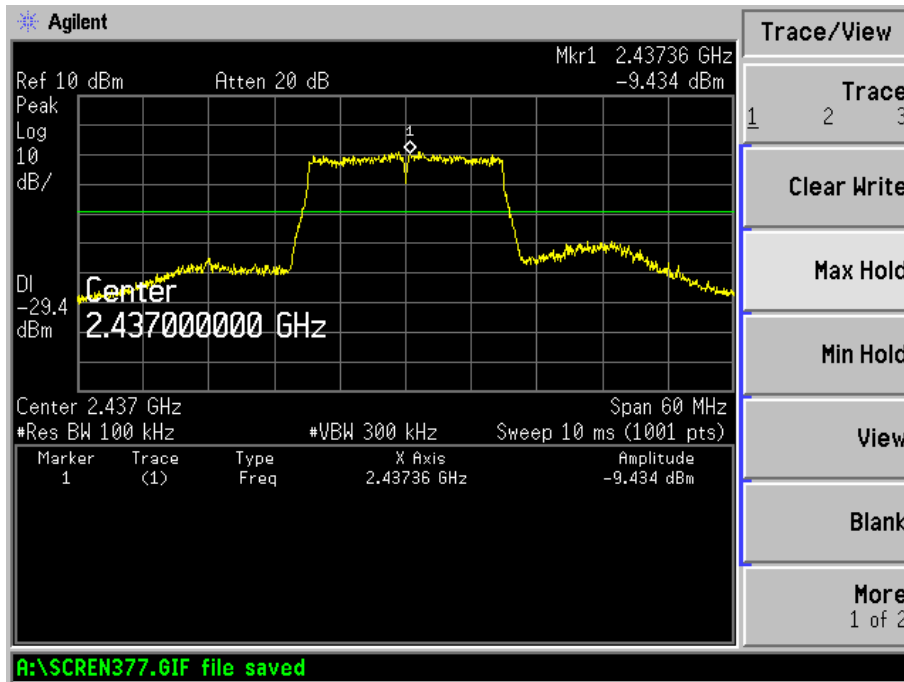
High Channel



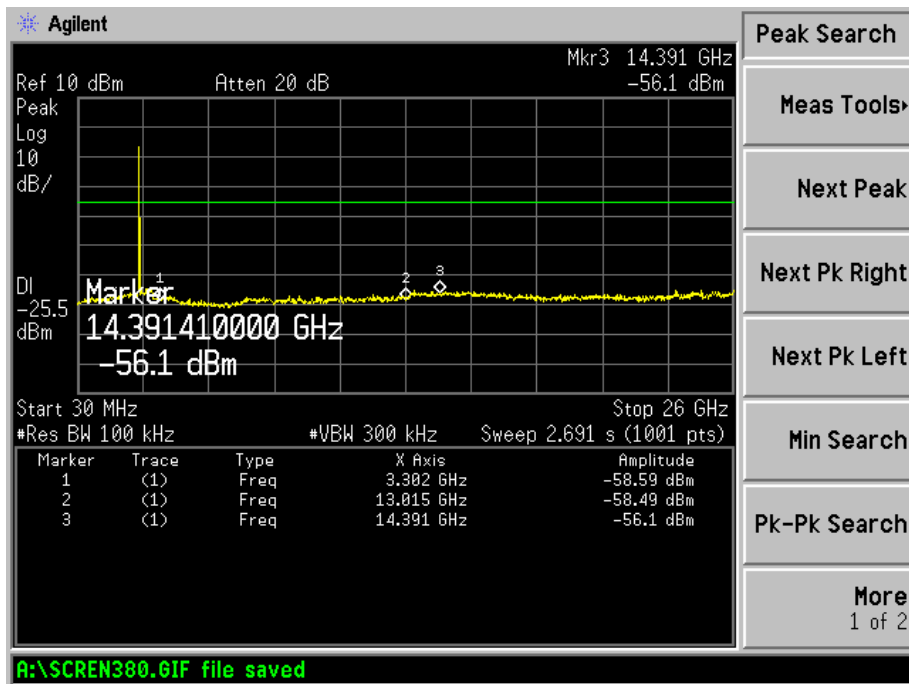
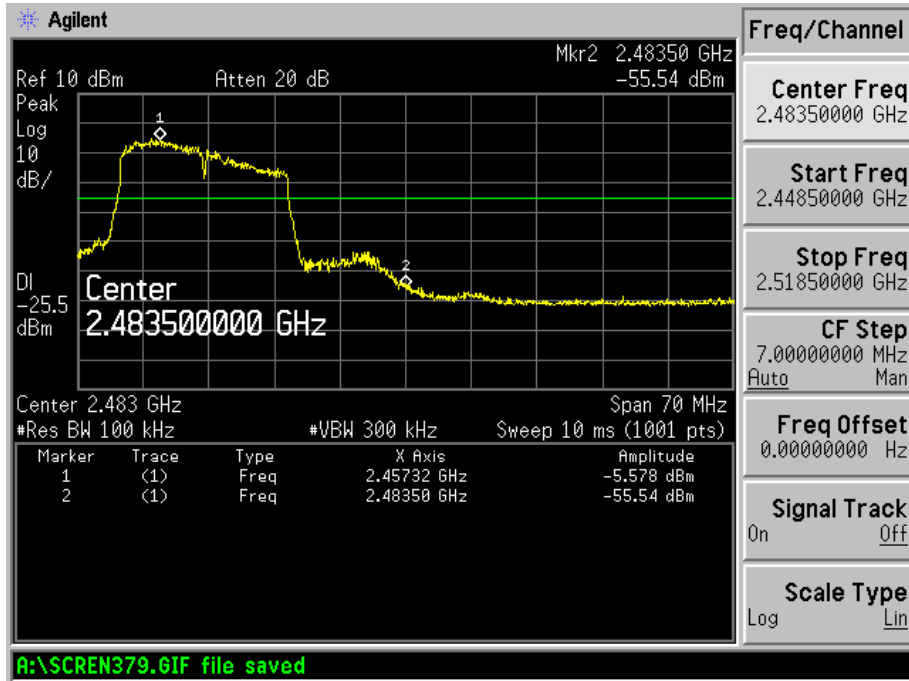
802.11n20- Bandedge(Conducted)  
Low Channel



Middle Channel

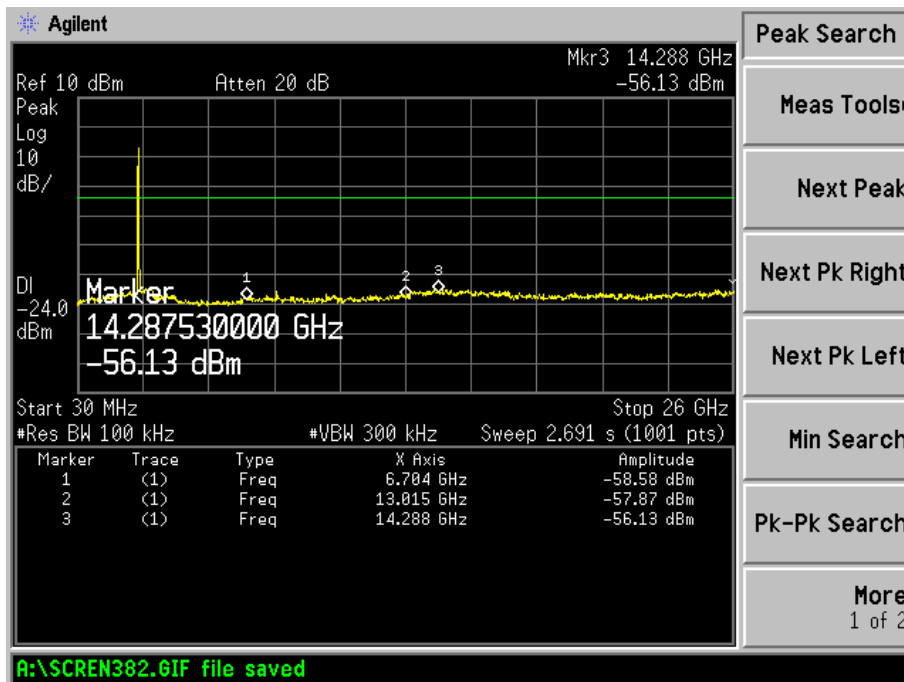
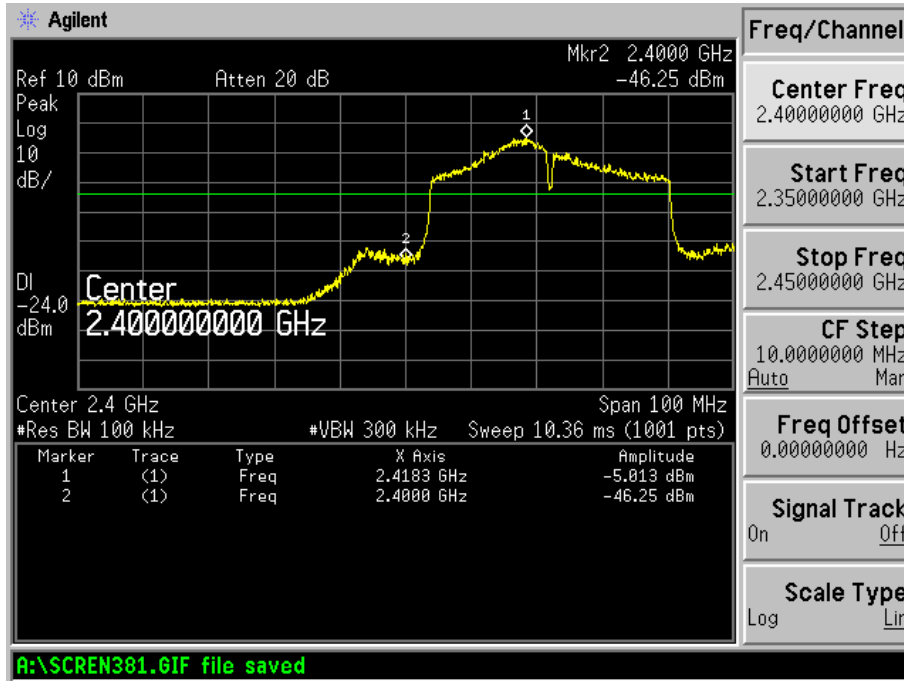


High Channel



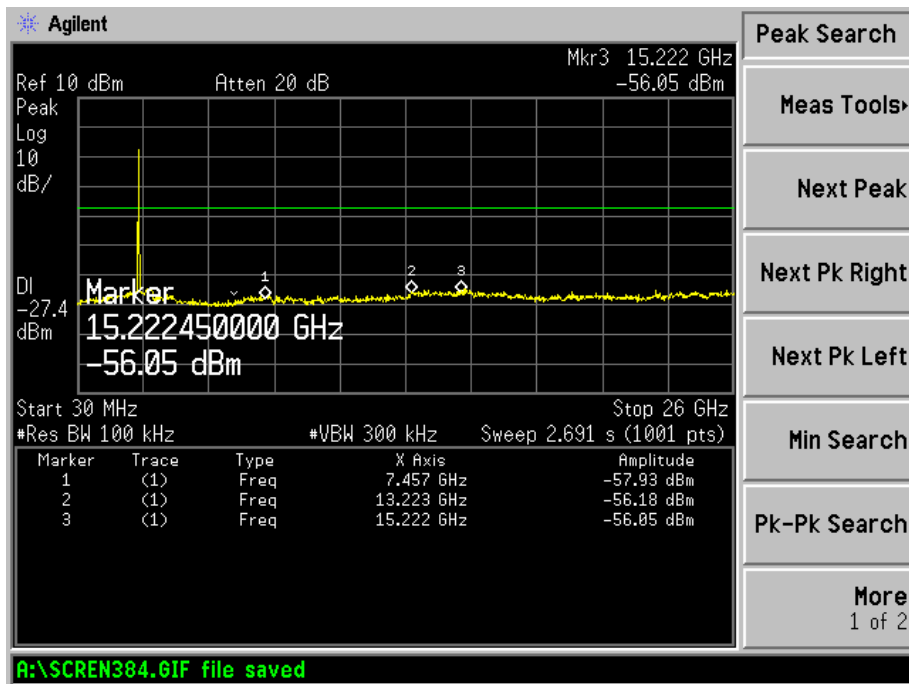
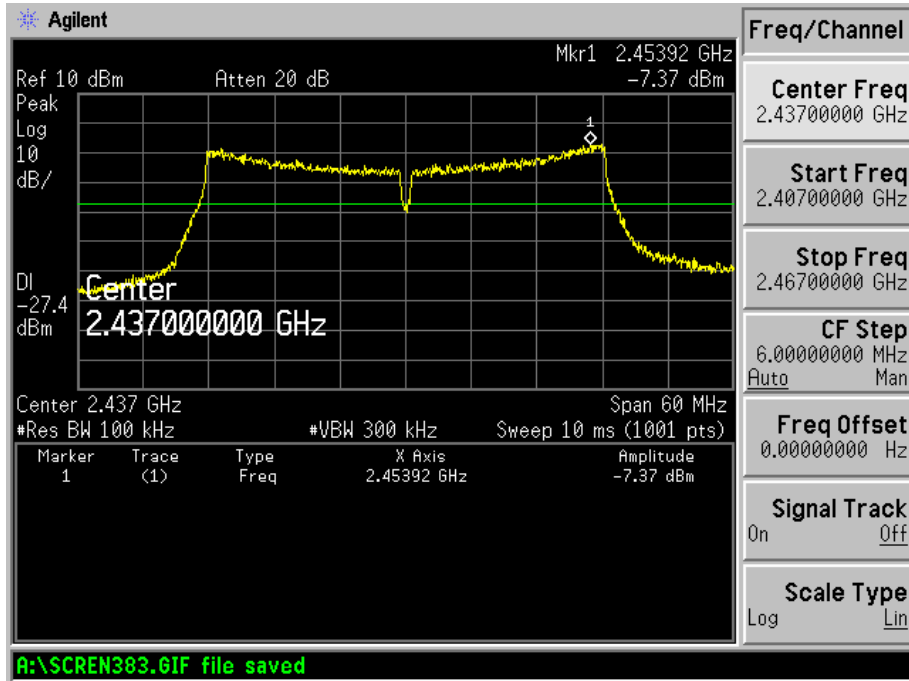
802.11n40- Bandedge(Conducted)

Low Channel

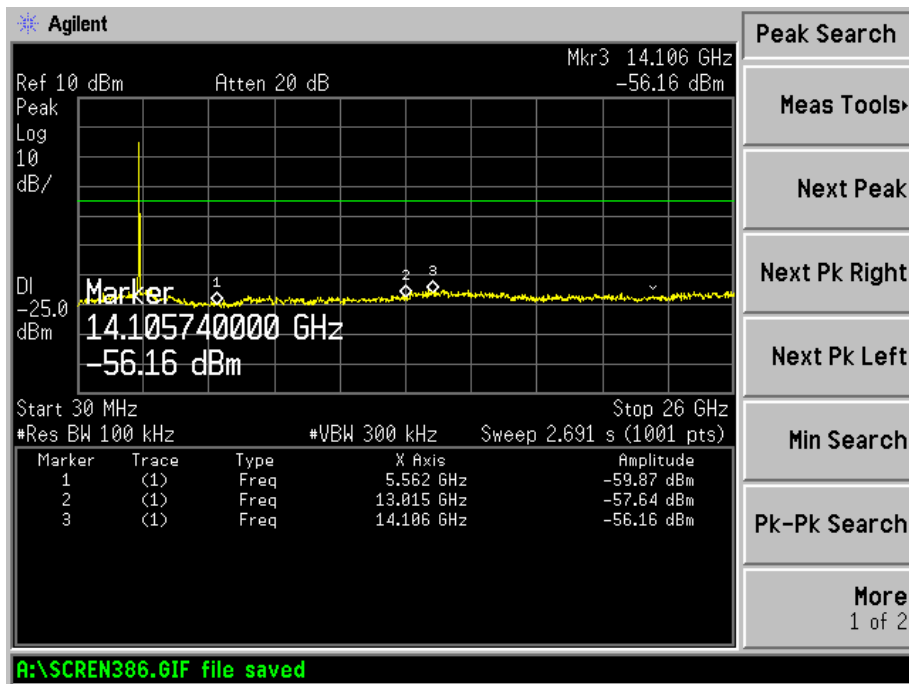
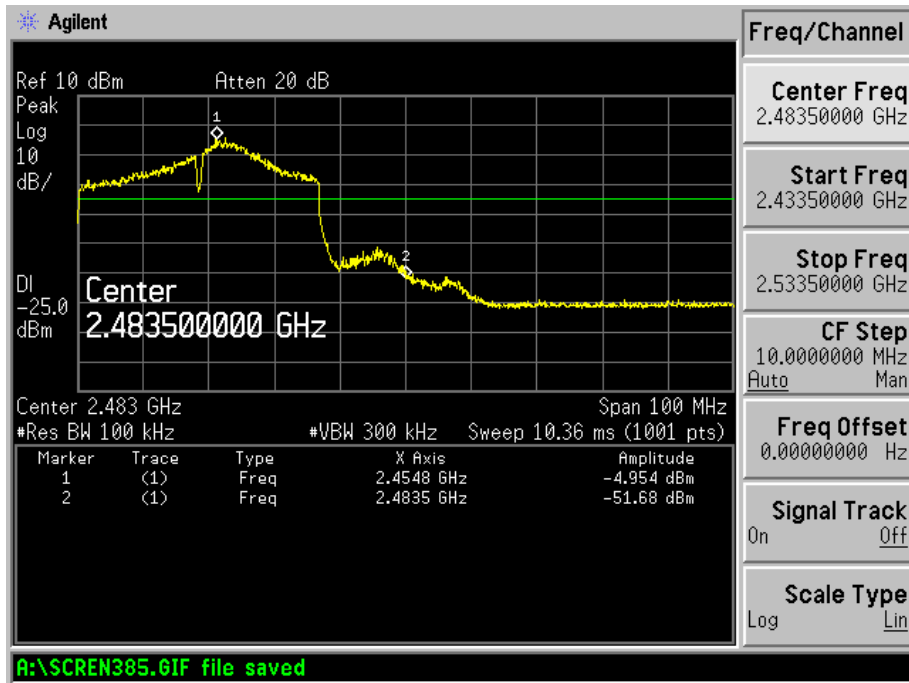




Middle Channel



High Channel



## 10. Conducted Emissions

### 10.1 Measurement Uncertainty

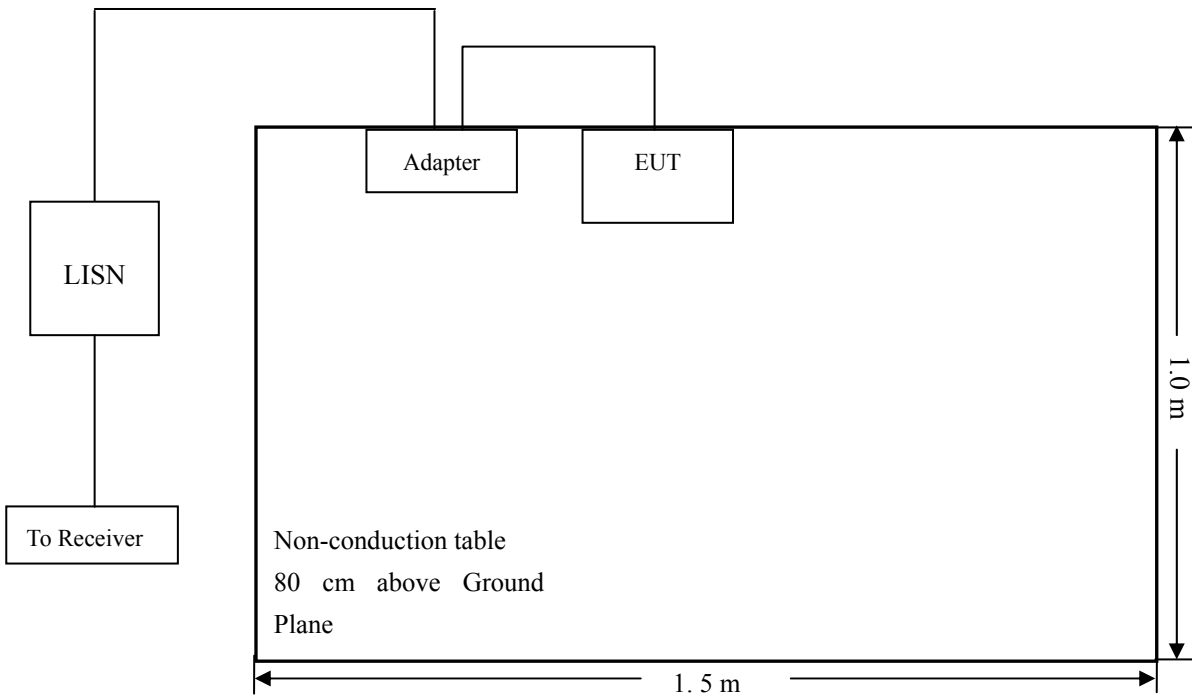
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is  $\pm 2.88$  dB.

### 10.2 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 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.

### 10.3 Basic Test Setup Block Diagram



### 10.4 Environmental Conditions

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

### 10.5 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

### 10.6 Summary of Test Results/Plots

According to the data in section 107, the EUT complied with the FCC Part 15.207 Conducted margin for this device, with the *worst* margin reading of:

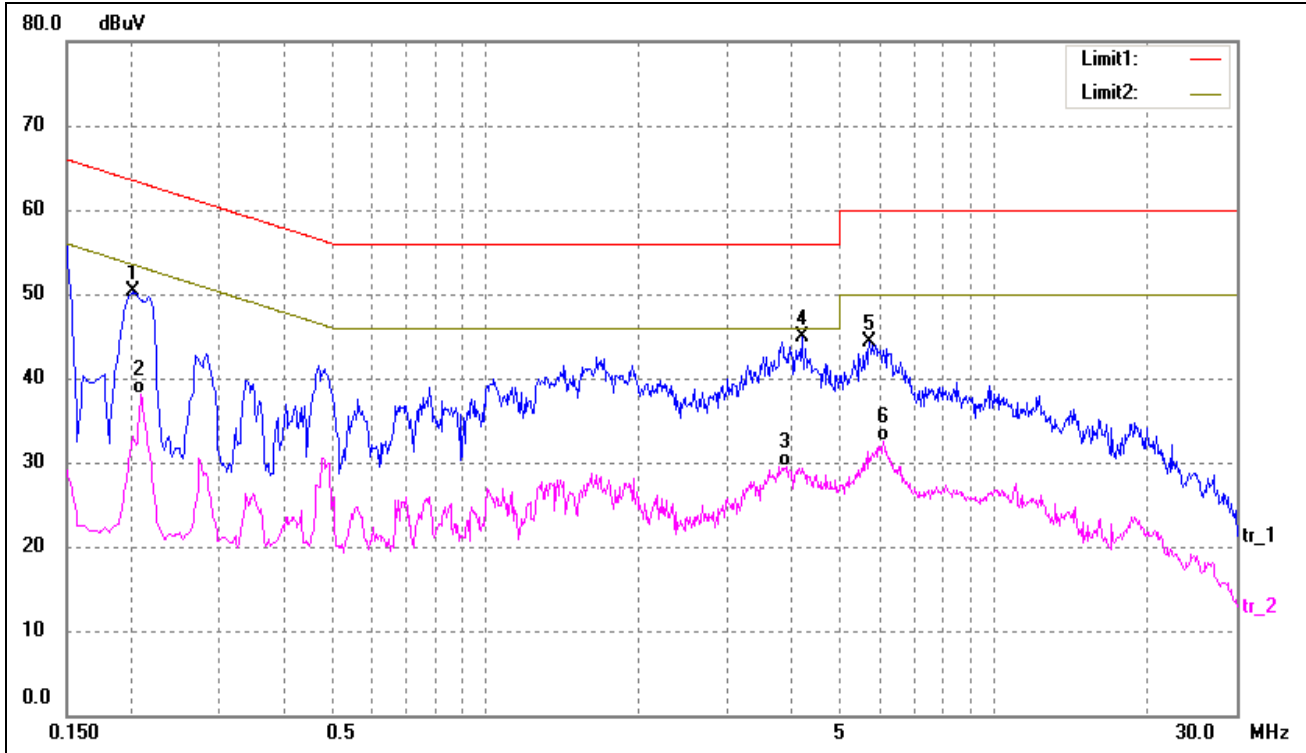
**-10.71 dB at 0.2060 MHz in the Line mode, QP detector, 0.15-30MHz**

### 10.7 Conducted Emissions Test Data

**Plot of Conducted Emissions Test Data**

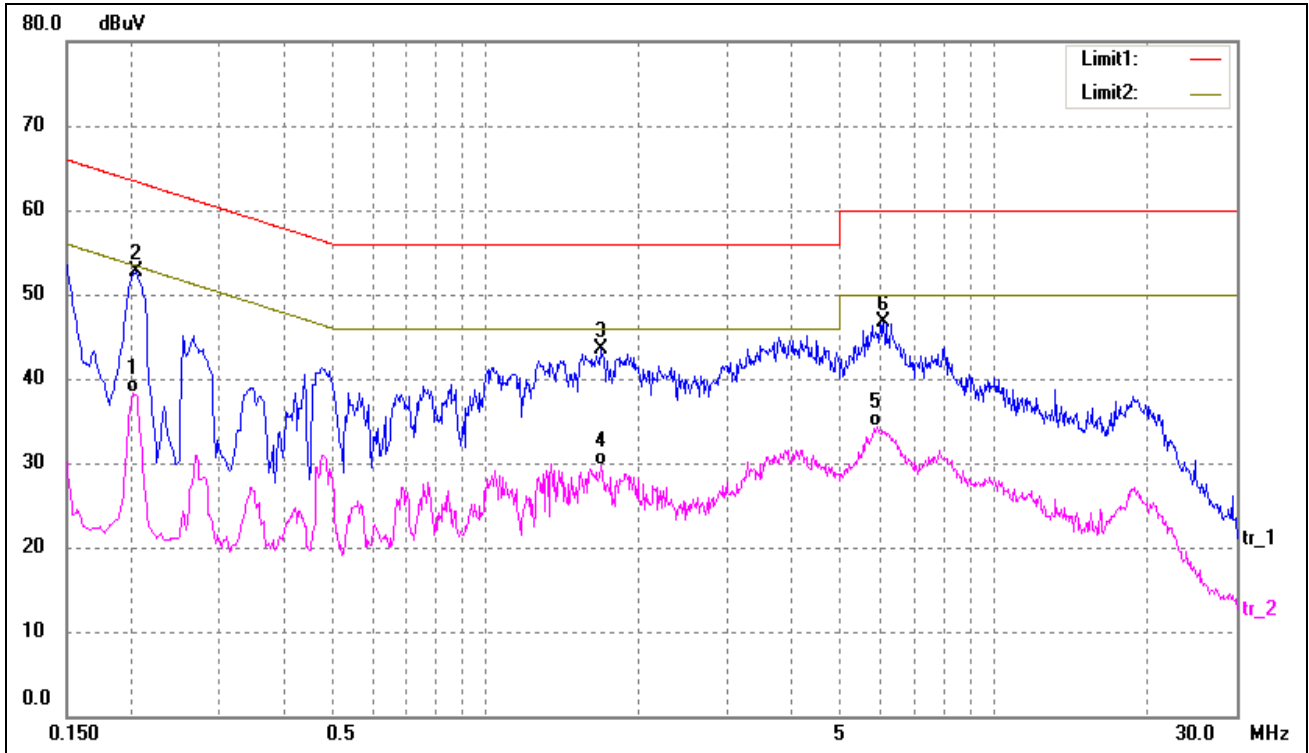
EUT: Smart phone  
 Tested Model: Valencia2 Y100 Pro  
 Operating Condition: Transmitting  
 Comment: AC 120V/60Hz; Adapter DC 5V

Test Specification: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2020	40.78	9.50	50.28	63.53	-13.25	QP
2	0.2100	28.55	9.50	38.05	53.21	-15.16	AVG
3	3.9100	19.45	10.00	29.45	46.00	-16.55	AVG
4	4.1820	34.84	10.00	44.84	56.00	-11.16	QP
5	5.6860	34.36	10.00	44.36	60.00	-15.64	QP
6	6.0820	22.45	10.00	32.45	50.00	-17.55	AVG

Test Specification: Line



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2020	28.80	9.50	38.30	53.53	-15.23	AVG
2	0.2060	43.16	9.50	52.66	63.37	-10.71	QP
3	1.6820	33.55	10.00	43.55	56.00	-12.45	QP
4	1.6900	19.73	10.00	29.73	46.00	-16.27	AVG
5	5.8700	24.25	10.00	34.25	50.00	-15.75	AVG
6	6.0740	36.74	10.00	46.74	60.00	-13.26	QP

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