

FCC TEST REPORT  
for  
T-Link Industrial Development Co., Ltd.

Tablet PC  
Model No.: M718 NEXTab 7

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Report Number : 201307791F-1  
Date of Test : Jul. 12~ Aug. 07, 2013  
Date of Report : Aug. 08, 2013

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Appendix II (3 Pages)

## TEST REPORT


Applicant : T-Link Industrial Development Co., Ltd.  
Manufacturer : T-Link Industrial Development Co., Ltd.  
EUT : Tablet PC  
Model No. : M718 NEXTab 7  
Serial No. : N/A  
Trade Mark : NEXGeneration Electronics  
Rating : DC 5V, 2000mA Via Adapter (Input: AC 100-240V, 0.3A, 50/60Hz)


Measurement Procedure Used:  
FCC Part15 Subpart C, Paragraph 15.247: 2011

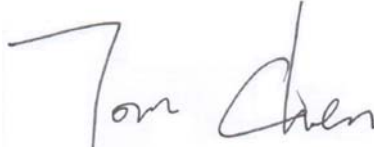
The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test : Jul. 12~ Aug. 07, 2013

Prepared by :   
(Engineer / Rock Zeng)

Reviewer :   
(Project Manager / Sally Zhang)

Approved & Authorized Signer :   
(Manager / Tom Chen)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

EUT : Tablet PC

Model Number : M718 NEXTab 7

Test Power Supply : AC 120V/60Hz for adapter

RF Transmission Frequency : 2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20))  
2422MHz~2452MHz ( 802.11n(HT40))

Channels : 11 For (802.11b/802.11g/802.11n(HT20))  
7 For (802.11n(HT40))

Modulation : 802.11b CCK  
802.11g OFDM  
802.11n MCS

Antenna Type : Integral

Antenna Gain : 0 dBi

Applicant : T-Link Industrial Development Co., Ltd.

Address : 2F A4th Bldg., Hekan Industrial Zone, WuHe Road S., Longgang District, Shenzhen, Guangdong, China 518129

Manufacturer : T-Link Industrial Development Co., Ltd.

Address : 2F A4th Bldg., Hekan Industrial Zone, WuHe Road S., Longgang District, Shenzhen, Guangdong, China 518129

Date of receiver : Jul. 11, 2013

Date of Test : Jul. 12~ Aug. 07, 2013

## 1.2. Auxiliary Equipment Used during Test

PC	: Manufacturer: DELL M/N: OPTIPLEX 380 S/N: 1J63X2X CE , FCC: DOC
MONITOR	: Manufacturer: DELL M/N: E170Sc S/N: CN-00V539-64180-055-0UPS CE , FCC: DOC
KEYBOARD	: Manufacturer: DELL M/N: SK-8115 S/N: CN-0DJ313-71616-06C-02XN CE , FCC: DOC Cable: 1m, unshielded
MOUSE	: Manufacturer: DELL M/N: M-UARDEL7 S/N: N/A CE , FCC: DOC Cable: 1m, unshielded
Printer	: Manufacturer: Brother M/N: MFC-3360C S/N: N/A CE, FCC: DOC
Power Cord of Printer	: Non-shielded, Detachable, 0.8m, w/o core
USB Cable for Printer	: Non-Shielded , 1.5m
Power Line	Non-Shielded, 1.5m
VGA Cable	: Non-Shielded, 1.5m
Network Cable	: Non-Shielded, 1.5m
USB Cable for EUT	: Non-Shielded, 1.2m

### 1.3. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

**CNAS - LAB Code: L3503**

Shenzhen Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

**FCC-Registration No.: 752021**

Shenzhen Anbotek Compliance Laboratory Limited, 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. Registration 752021, July 10, 2013.

**IC-Registration No.: 8058A-1**

Shenzhen Anbotek Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A, February 22, 2013.

**Test Location**

All Emissions tests were performed at  
Shenzhen Anbotek Compliance Laboratory Limited. at 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China

### 1.4. Measurement Uncertainty

Radiation Uncertainty : Ur = 4.3dB

Conduction Uncertainty : Uc = 3.4dB

### 3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4: 2009 and FCC Part 15, Paragraph 15.247.

#### 3.1. Summary of Test Results

The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.107, 15.207	Conducted Emission Test	PASS	Complies
FCC Part 15, Paragraph 15.247(b)(1)	Peak Output Power	PASS	Complies
FCC Part 15, Paragraph 15.247(a)(2)	6dB Bandwidth	PASS	Complies
FCC Part 15, Paragraph 15.247(c)	100kHz Bandwidth of Frequency Band Edges	PASS	Complies
FCC Part 15, Paragraph 15.209(a)(f)	Spurious Emission	PASS	Complies
FCC Part 15, Paragraph 15.247(a)(1)	Frequency Separation	-	N/A
FCC Part 15, Paragraph 15.247(a)(1)(iii)	Number of Hopping Frequency	-	N/A
FCC Part 15, Paragraph 15.247(a)(1)(iii)	Time of Occupancy	-	N/A
FCC Part 15, Paragraph 15.247(c)	Peak Power Density	PASS	Complies

\* The digital circuit porting of the EUT has been tested and verified to comply with FCC Part 15, Subpart B., Class B Digital Devices and the associated Radio Receiver has also been tested and found to comply with FCC Part 15, Subpart B – Radio Receivers.

#### 3.2. Description of Test Modes

The EUT has been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

IEEE802.11b: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 1 Mbps lowest data rate (worst case) are chosen for the final testing.

IEEE802.11g: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 6 Mbps lowest data rate (the worst case) are chosen for the final testing.

IEEE802.11n (HT20): Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with MCS 0 Mbps lowest data rate (the worst case) are chosen for the final testing.

IEEE802.11n (HT40): Channel 3(2422MHz), Channel 6(2437MHz) and Channel 9(2452MHz) with MCS 0 Mbps lowest data rate (the worst case) are chosen for the final testing.

## 3.3. List of channels:

√ - available

X - tested

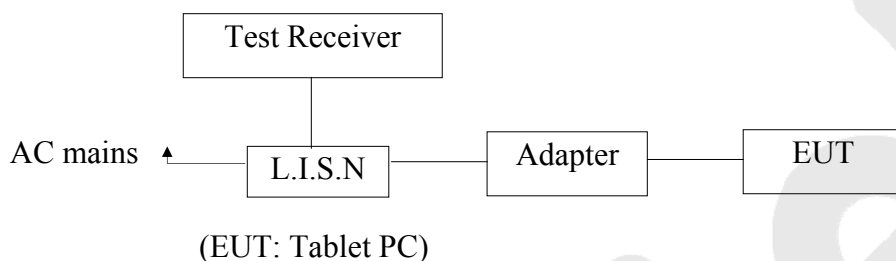
Number	Frequency(MHz)		802.11 b/g/n (HT20)	802.11 b/g/n (HT40)
1	2412	√	X	
2	2417	√		
3	2422	√		X
4	2427	√		
5	2432	√		
6	2437	√	X	X
7	2442	√		
8	2447	√		
9	2452	√		X
10	2457	√		
11	2462	√	X	



## 4. Conducted Emission Test

### 4.1. Block Diagram of Test Setup

#### 4.1.1. Block diagram of connection between the EUT and simulators



### 4.2. Power Line Conducted Emission Measurement Limits (15.207)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. \*Decreasing linearly with logarithm of frequency.  
2. The lower limit shall apply at the transition frequencies.

### 4.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

EUT : Tablet PC  
Model Number : M718 NEXTab 7  
Applicant : T-Link Industrial Development Co., Ltd.

### 4.4. Operating Condition of EUT

4.4.1. Setup the EUT and simulator as shown as Section 4.1.

4.4.2. Turn on the power of all equipment.

4.4.3. Let the EUT work in test mode (Charging to Adapter) and measure it.

#### 4.5. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.4-2003 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

The frequency range from 150KHz to 30MHz is checked.

The test results are reported on Section 4.6.

#### 4.6. Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Two-Line V-network	Rohde & Schwarz	ENV216	10055	Apr. 23, 2013	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Apr. 23, 2013	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Apr. 23, 2013	1 Year

Conduction Uncertainty :  $U_c = 3.4\text{dB}$

#### 4.7. Power Line Conducted Emission Measurement Results

**PASS.**

The frequency range from 150KHz to 30 MHz is investigated.

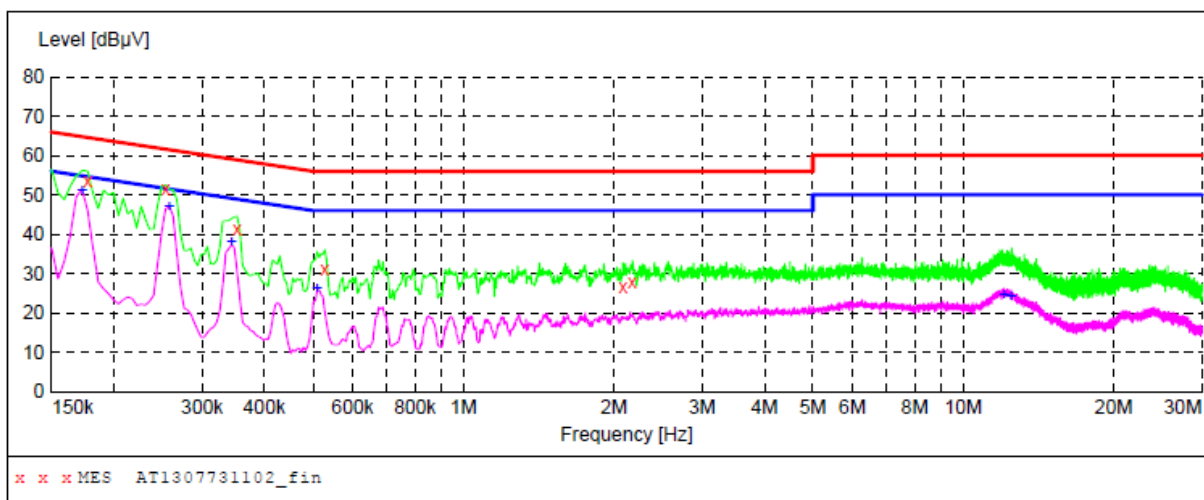
Please refer the following pages.

**CONDUCTED EMISSION TEST DATA**

EUT: Tablet PC M/N:M718 NEXTab 7  
Operating Condition: Charging to Adapter  
Test Site: 1# Shielded Room  
Operator: Barak Ban  
Test Specification: AC 120/60Hz for Adapter  
Comment: L  
Tem:25°C Hum:50%

**SCAN TABLE: "Voltage(150K~30M)FIN"**

Short Description: 150K-30M Disturbance Voltages

**MEASUREMENT RESULT: "AT1307731102\_fin"**

7/15/2013 5:29PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.177000	53.70	20.1	65	10.9	QP	L1	GND
0.253500	51.50	20.1	62	10.1	QP	L1	GND
0.352500	41.50	20.1	59	17.4	QP	L1	GND
0.528000	31.10	20.1	56	24.9	QP	L1	GND
2.084500	26.70	20.3	56	29.3	QP	L1	GND
2.179000	27.70	20.3	56	28.3	QP	L1	GND

**MEASUREMENT RESULT: "AT1307731102\_fin2"**

7/15/2013 5:29PM

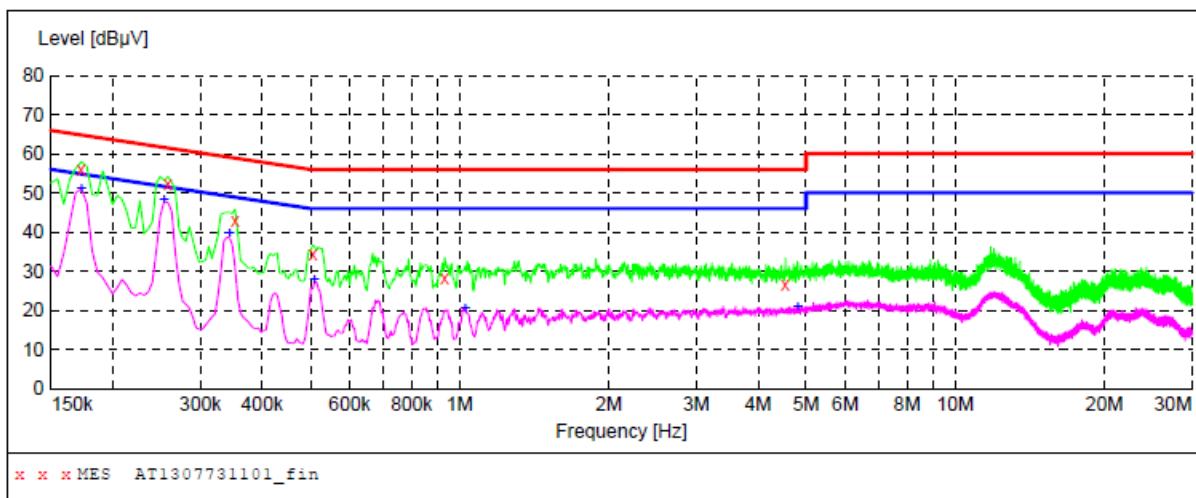
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.172500	51.30	20.1	55	3.7	AV	L1	GND
0.258000	47.00	20.1	52	4.5	AV	L1	GND
0.343500	37.90	20.1	49	11.2	AV	L1	GND
0.510000	26.30	20.1	46	19.7	AV	L1	GND
12.047500	24.70	20.6	50	25.3	AV	L1	GND
12.452500	24.20	20.7	50	25.8	AV	L1	GND

**CONDUCTED EMISSION TEST DATA**

EUT: Tablet PC M/N:M718 NEXTab 7  
Operating Condition: Charging to Adapter  
Test Site: 1# Shielded Room  
Operator: Barak Ban  
Test Specification: AC 120/60Hz for Adapter  
Comment: N  
Tem:25°C Hum:50%

**SCAN TABLE: "Voltage (150K~30M) FIN"**

Short Description: 150K-30M Disturbance Voltages

**MEASUREMENT RESULT: "AT1307731101\_fin"**

7/15/2013 5:33PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.172500	55.90	20.1	65	8.9	QP	N	GND
0.258000	52.30	20.1	62	9.2	QP	N	GND
0.352500	43.10	20.1	59	15.8	QP	N	GND
0.505500	34.30	20.1	56	21.7	QP	N	GND
0.933000	28.20	20.1	56	27.8	QP	N	GND
4.541500	26.40	20.5	56	29.6	QP	N	GND

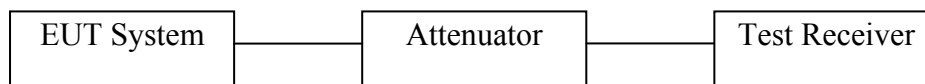
**MEASUREMENT RESULT: "AT1307731101\_fin2"**

7/15/2013 5:33PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.172500	51.10	20.1	55	3.9	AV	N	GND
0.253500	48.40	20.1	52	3.6	AV	N	GND
0.343500	39.50	20.1	49	9.6	AV	N	GND
0.510000	27.70	20.1	46	18.3	AV	N	GND
1.027000	20.40	20.2	46	25.6	AV	N	GND
4.807000	20.70	20.5	46	25.3	AV	N	GND

## 5. FCC Part 15.247 Requirements for DSSS & OFDM Modulation

### 5.1 Test Setup



### 5.2 6dB Bandwidth

#### a. Limit

For the direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz.

#### b. Test Procedure

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100kHz (802.11b/802.11g/802.11n(HT20)), RBW=300kHz,

VBW = 3\*RBW, Span = 50MHz, Sweep = auto.

4. Mark the peak frequency and -6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

#### c. Test Setup See 5.1

#### d. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Apr. 23, 2013	1 Year
2	EMI Receiver	Rohde & Schwarz	ESCI	100627	Apr. 23, 2013	1 Year
3.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 23, 2013	1 Year
4	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 23, 2013	1 Year
5	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

#### e. Test Results

Pass.

**f. Test Data****g.**

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2412	10.20		Pass
Mid	2437	10.00	>500	Pass
High	2462	10.00		Pass

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2412	16.60		Pass
Mid	2437	16.60	>500	Pass
High	2462	16.60		Pass

Test mode: IEEE 802.11n (HT20)

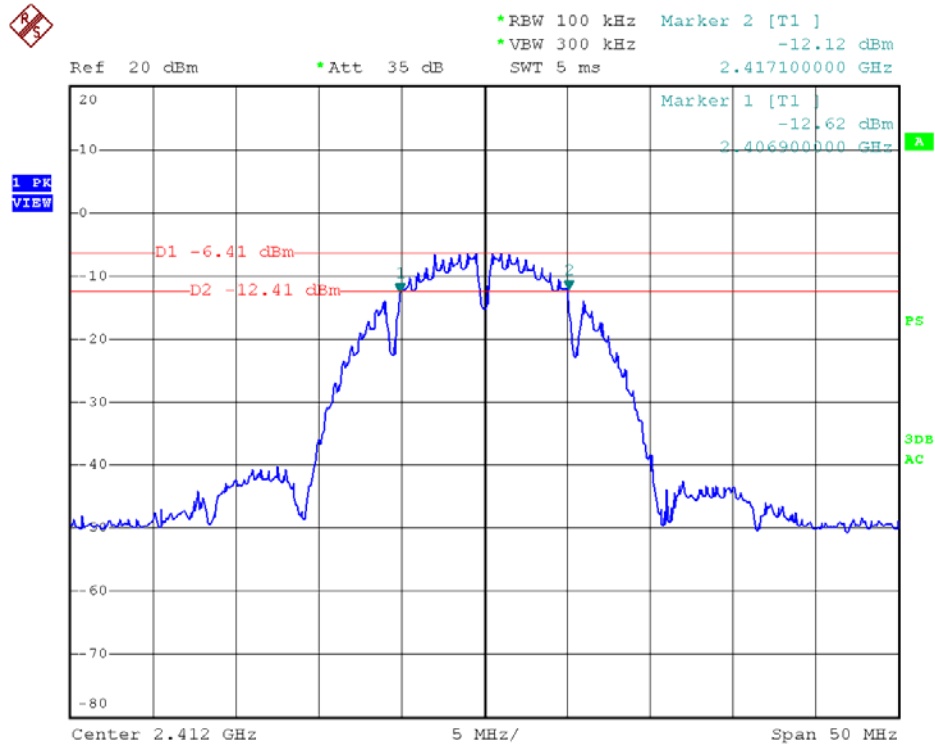
Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2412	17.60		Pass
Mid	2437	17.60	>500	Pass
High	2462	17.60		Pass

Test mode: IEEE 802.11n (HT40)

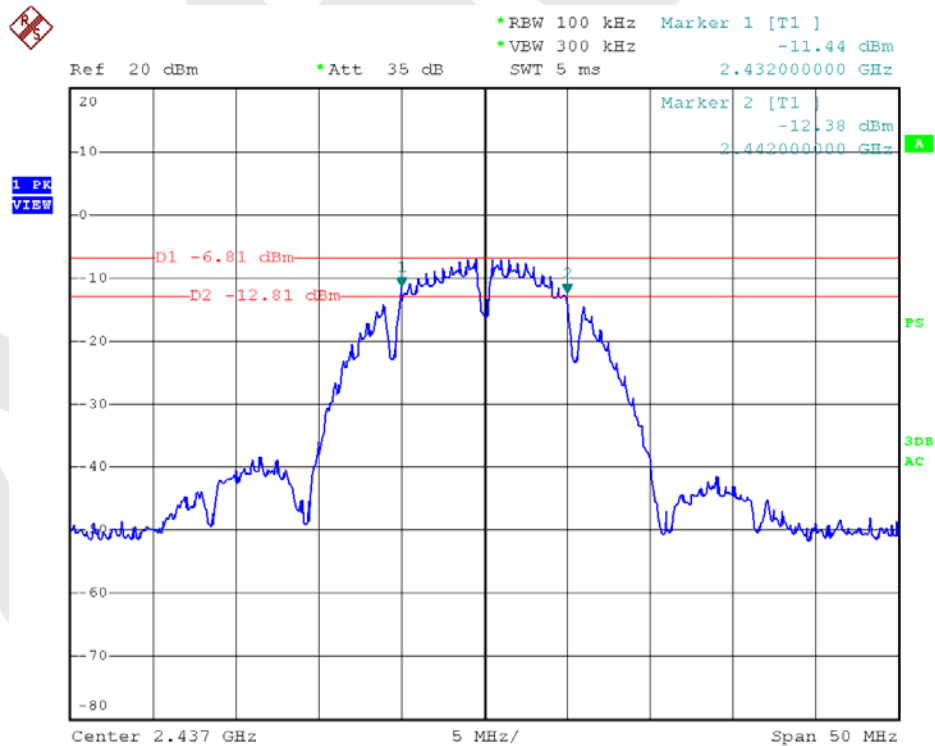
Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2422	35.30		Pass
Mid	2437	35.20	>500	Pass
High	2452	35.20		Pass

Test Plots See the following page.

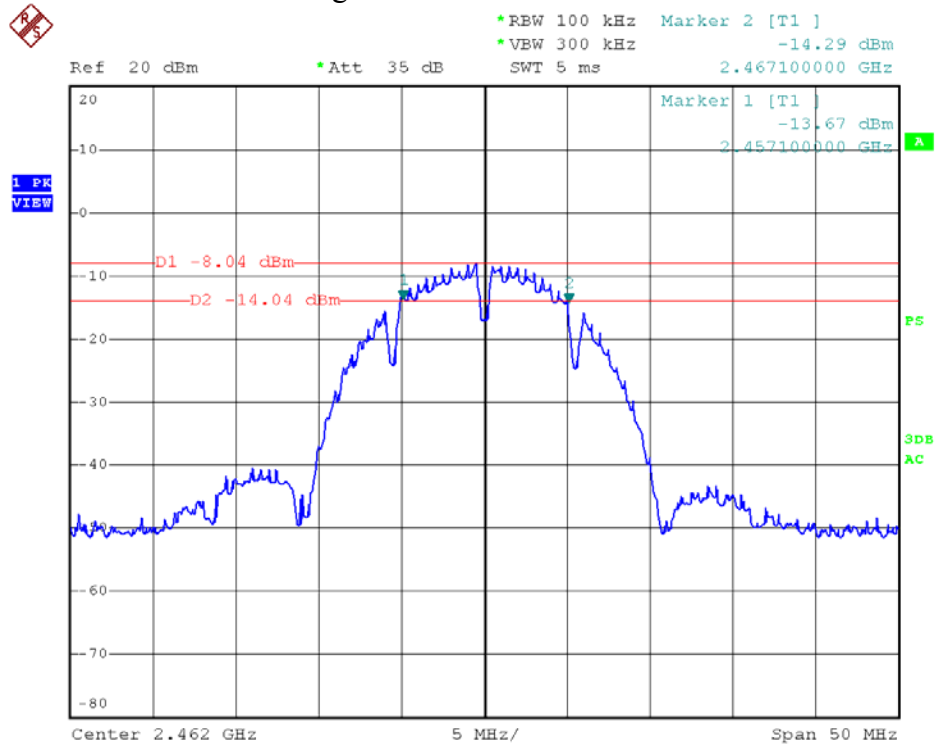
Test Mode: 802.11b---Low



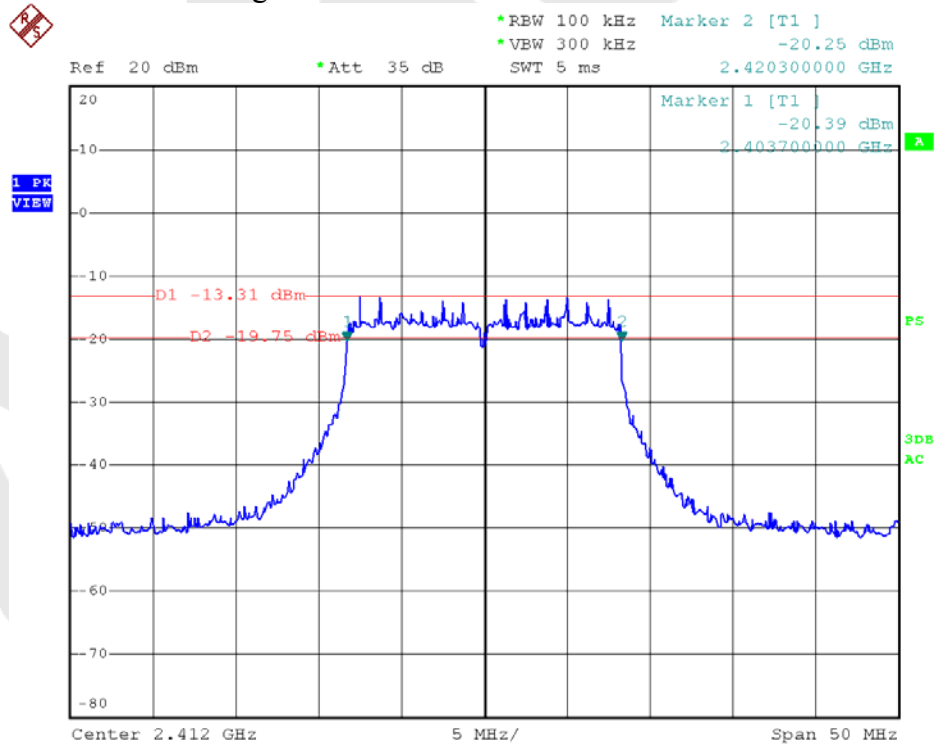
Test Mode: 802.11b---Mid



Test Mode: 802.11b---High

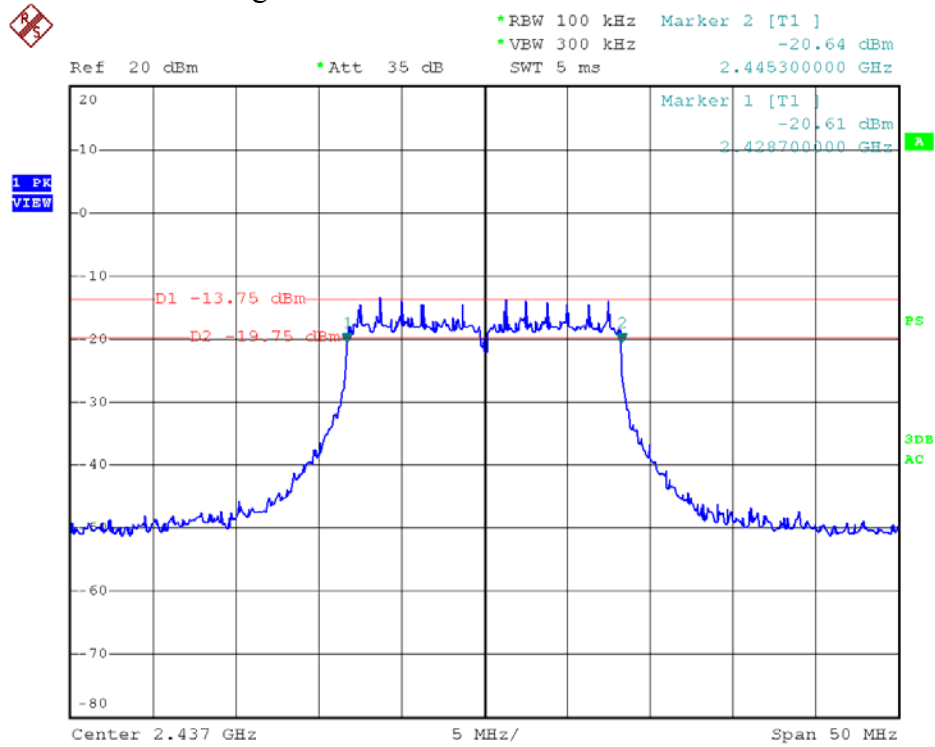


Test Mode: 802.11g---Low

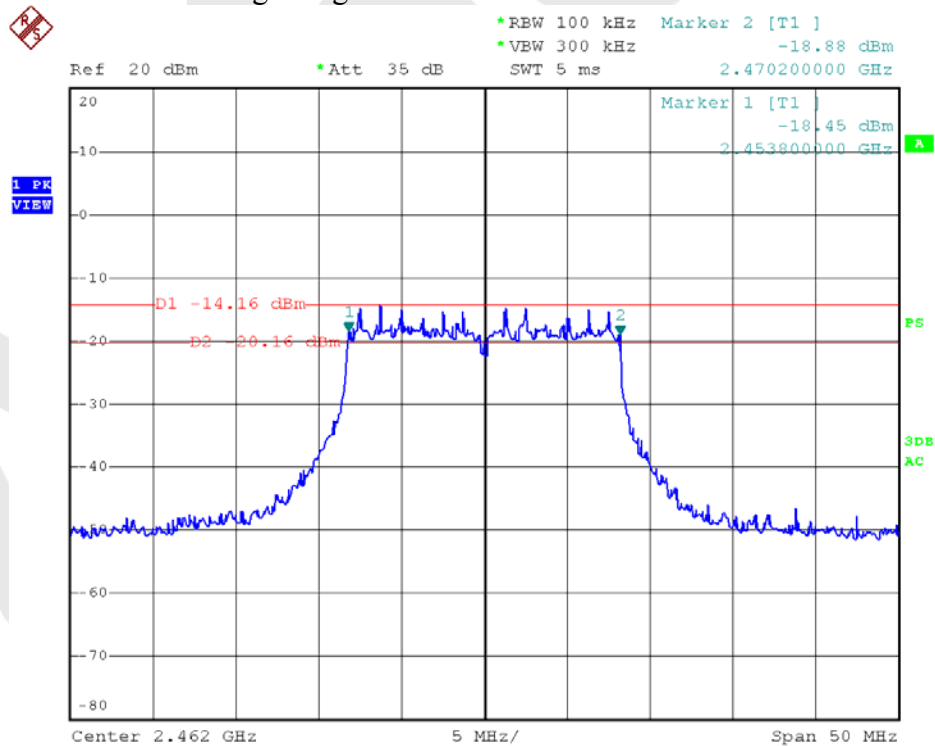




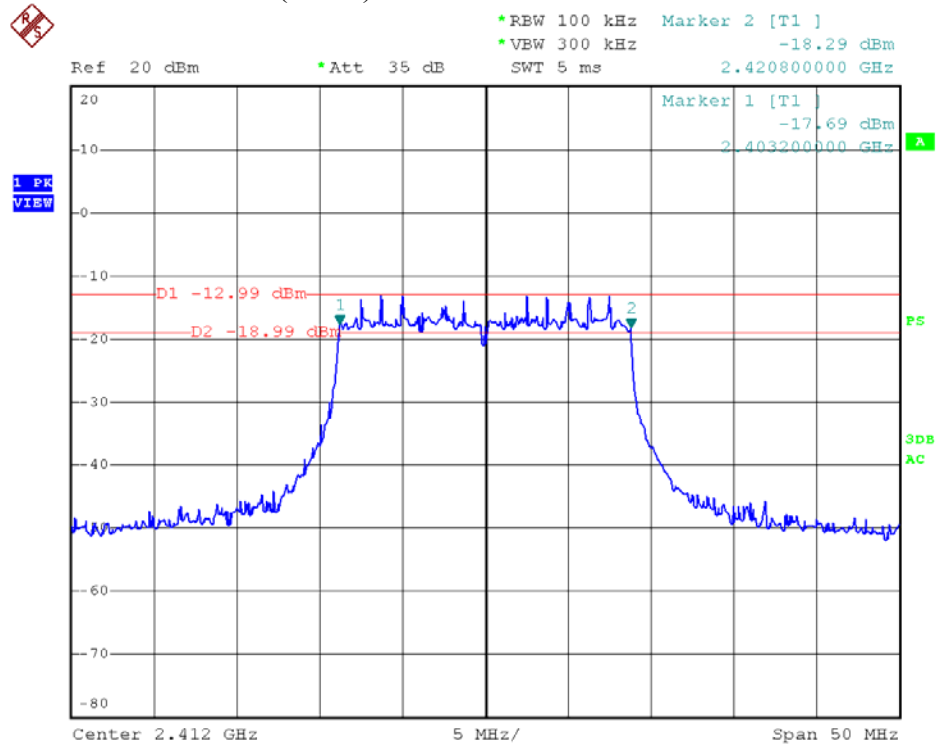
Test Mode: 802.11g---Mid



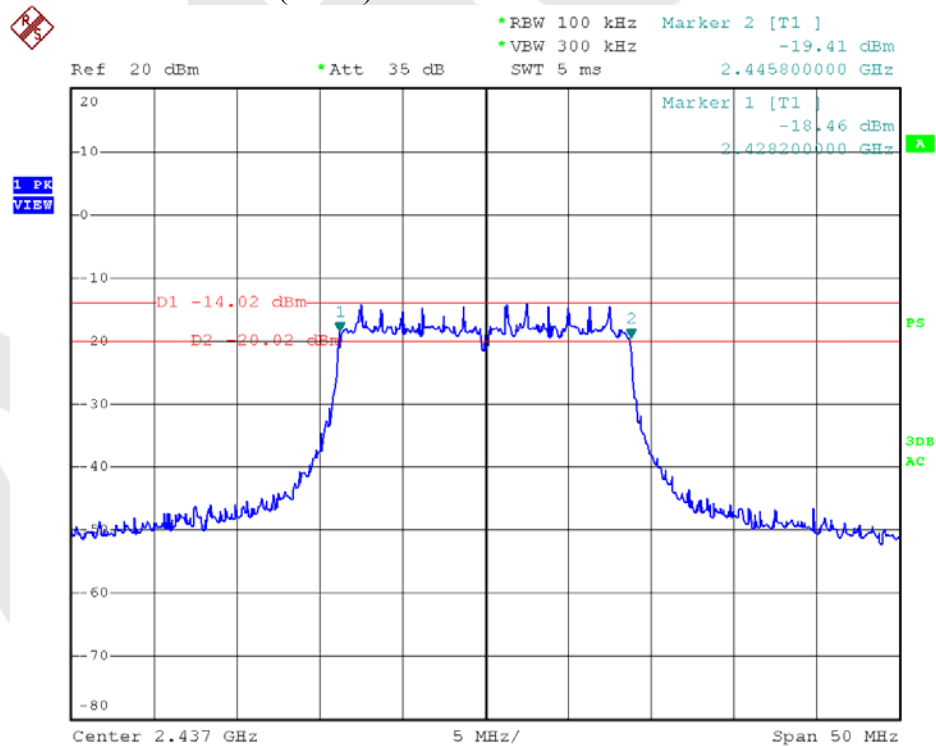
Test Mode: 802.11g---High



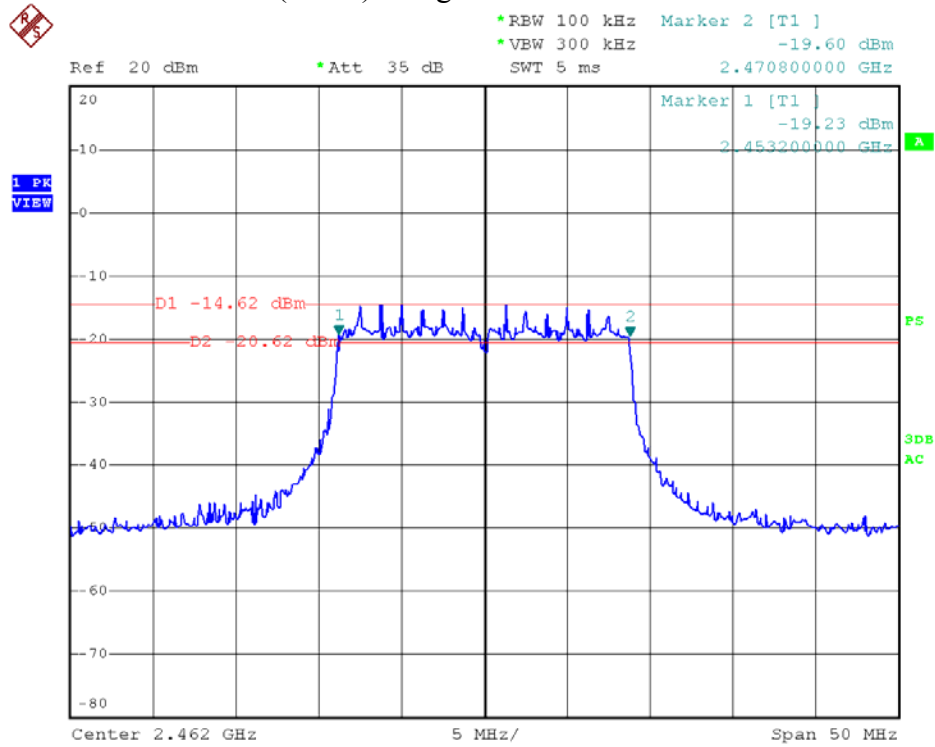
Test Mode: 802.11n (HT20)---Low



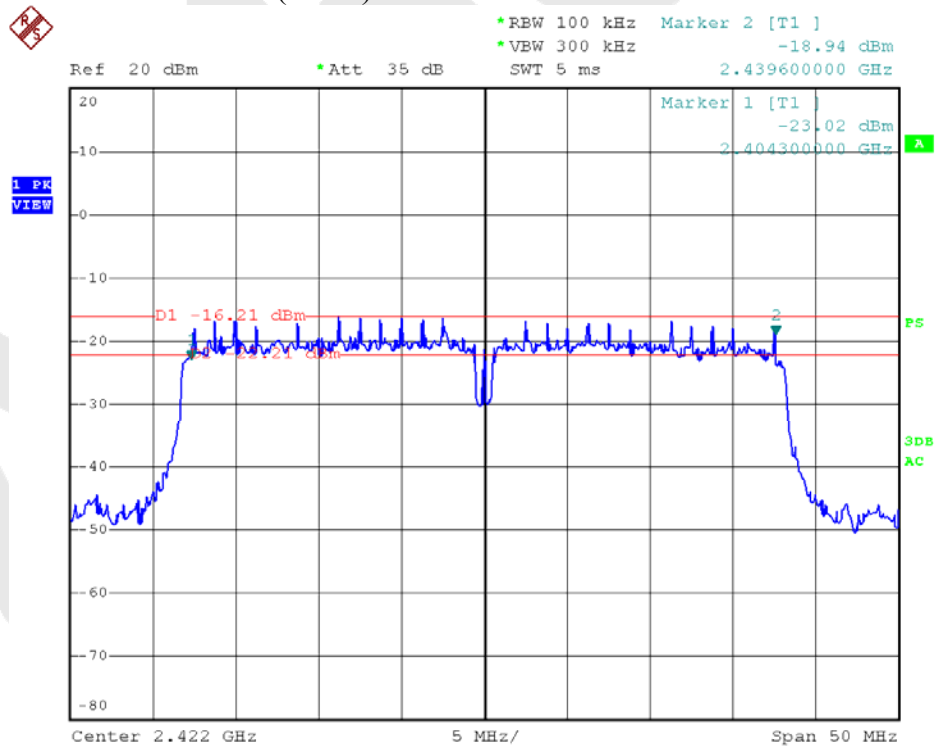
Test Mode: 802.11n (HT20)---Mid



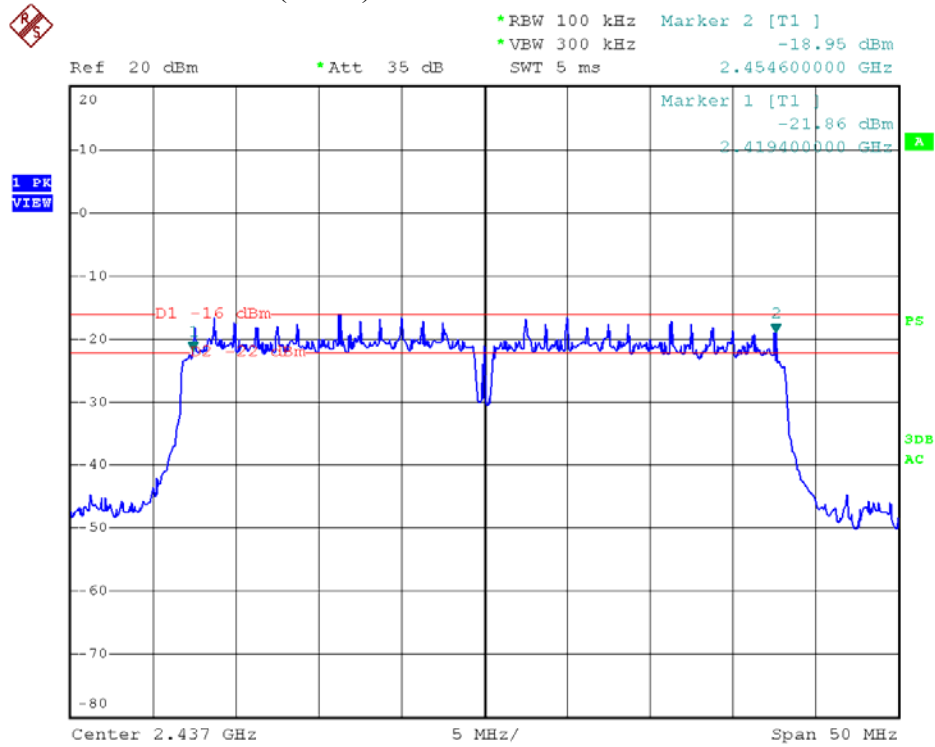
Test Mode: 802.11n (HT20)---High



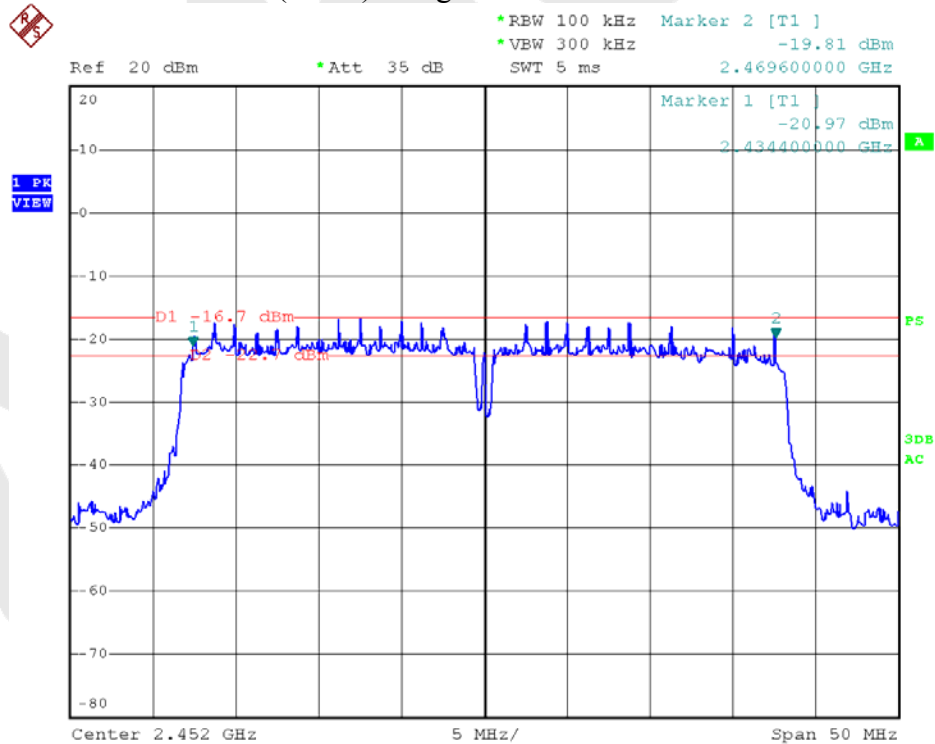
Test Mode: 802.11n (HT40)---Low



Test Mode: 802.11n (HT40)---Mid



Test Mode: 802.11n (HT40)---High



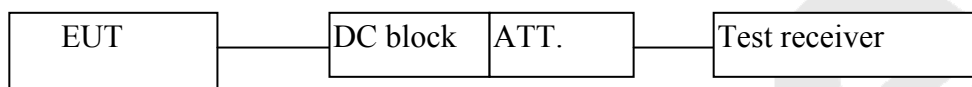
### 5.3 Maximum Peak output power test

#### a. Limit

The maximum peak output power of the intentional radiator shall not exceed the following:

1. For systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 watt (30dBm).
2. Except as shown in paragraphs (b)(3) (i), (ii) and (iii) of this section, if transmitting antenna of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### b. Configuration of Measurement



#### c. Test Procedure

**This test was according the kdb 558074 Clause 9.1:**

This procedure may be used when the maximum available RBW of the measurement instrument is less than the DTS bandwidth.

- a). Set the RBW = 1MHz.
- b). Set the VBW  $\geq 3 \times \text{RBW}$ .
- c). Set the span  $\geq 1.5 \times \text{DTS bandwidth}$ .
- d). Detector = peak.
- e). Sweep time = auto couple.
- f). Trace mode = max hold.
- g). Allow trace to fully stabilize.
- h). Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select peak detector). If the instrument does not have a band power function. Sum the spectrum level (in linear power units) at interval equal to the RBW extending across the DTS bandwidth.

#### Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Apr. 23, 2013	1 Year
2	EMI Receiver	Rohde & Schwarz	ESCI	100627	Apr. 23, 2013	1 Year
3.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 23, 2013	1 Year
4	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 23, 2013	1 Year
5	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

#### d. Test Results

Pass

#### e. Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Maximum transmit power	Limit		Result
		(dBm)	(dBm)	(watts)	
Low	2412	14.56	30	1	Pass
Mid	2437	14.36			Pass
High	2462	14.42			Pass

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Maximum transmit power	Limit		Result
		(dBm)	(dBm)	(watts)	
Low	2412	9.79	30	1	Pass
Mid	2437	9.83			Pass
High	2462	9.71			Pass

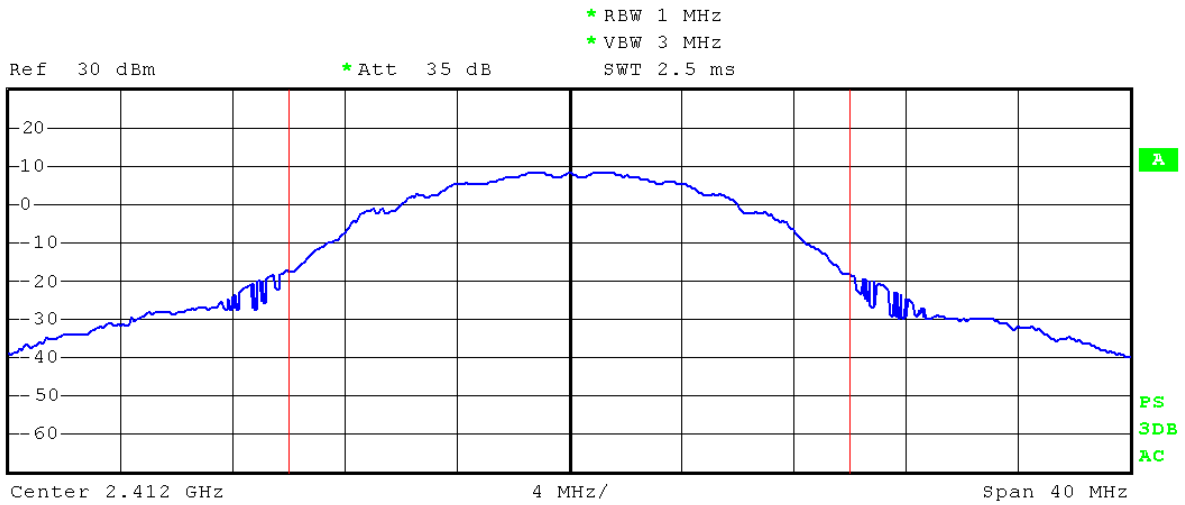
Test mode: IEEE 802.11n (HT20)

Channel	Frequency (MHz)	Maximum transmit power	Limit		Result
		(dBm)	(dBm)	(watts)	
Low	2412	8.47	30	1	Pass
Mid	2437	8.73			Pass
High	2462	8.92			Pass

Test mode: IEEE 802.11n (HT40)

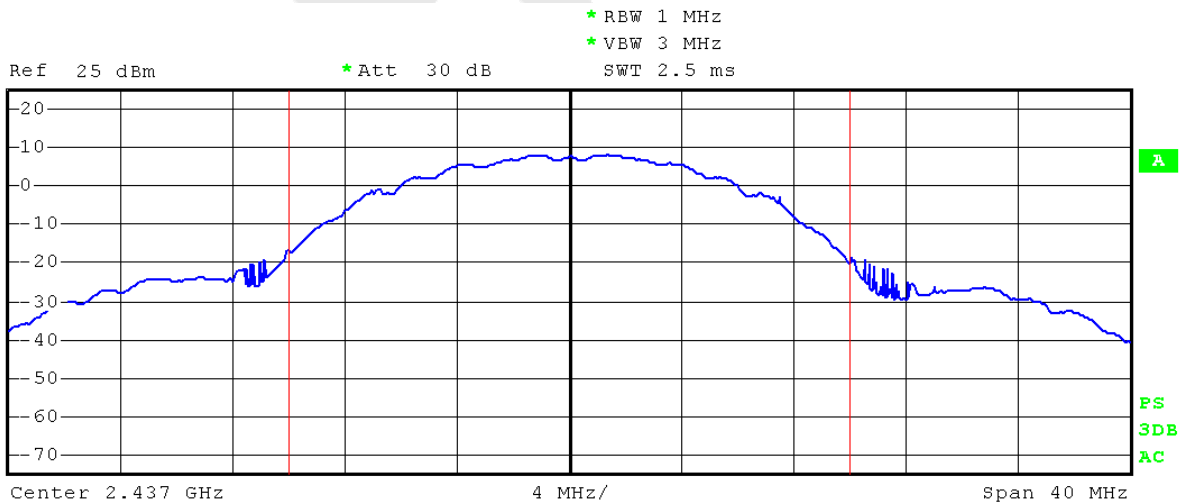
Channel	Frequency (MHz)	Maximum transmit power	Limit		Result
		(dBm)	(dBm)	(watts)	
Low	2422	7.94	30	1	Pass
Mid	2437	8.05			Pass
High	2452	7.81			Pass

Test Mode: 802.11b---Low



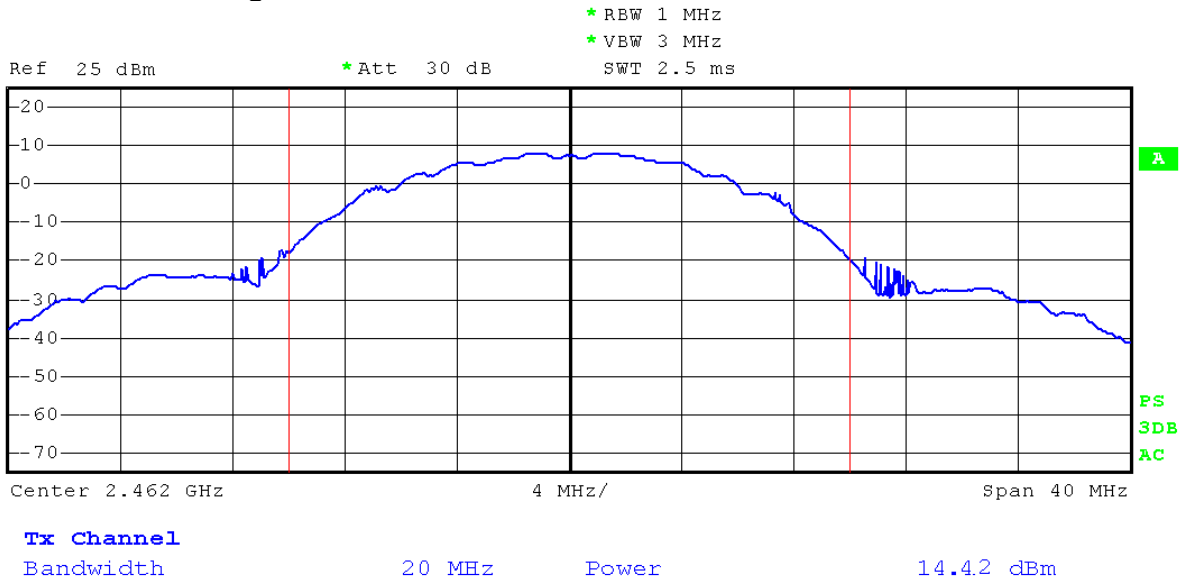
**Tx Channel**  
Bandwidth 20 MHz Power 14.56 dBm

Test Mode: 802.11b---Mid

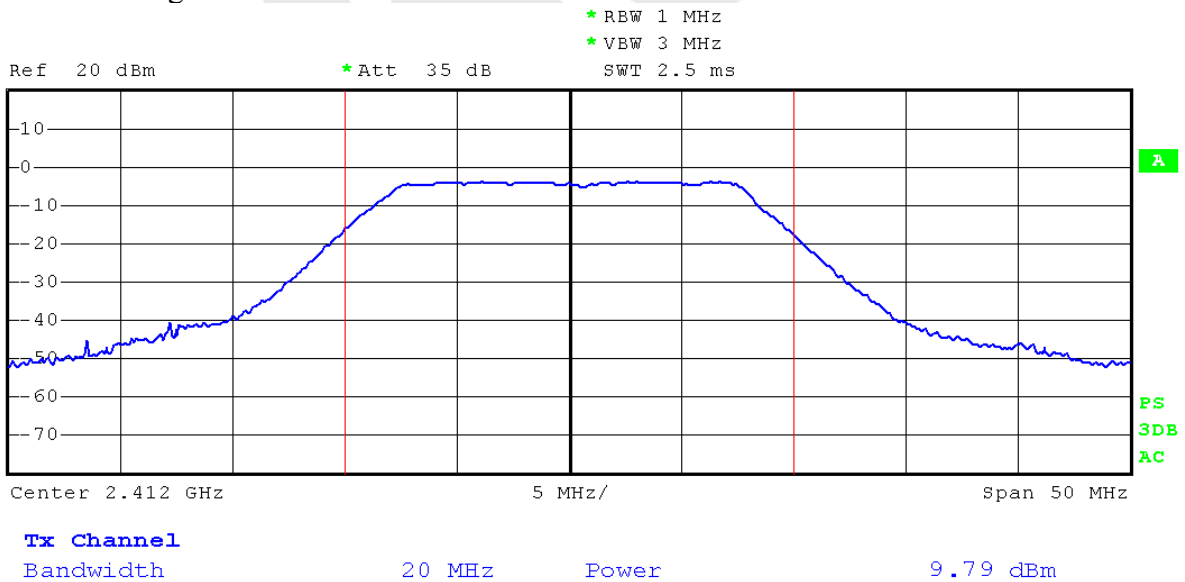


**Tx Channel**  
Bandwidth 20 MHz Power 14.36 dBm

Test Mode: 802.11b---High

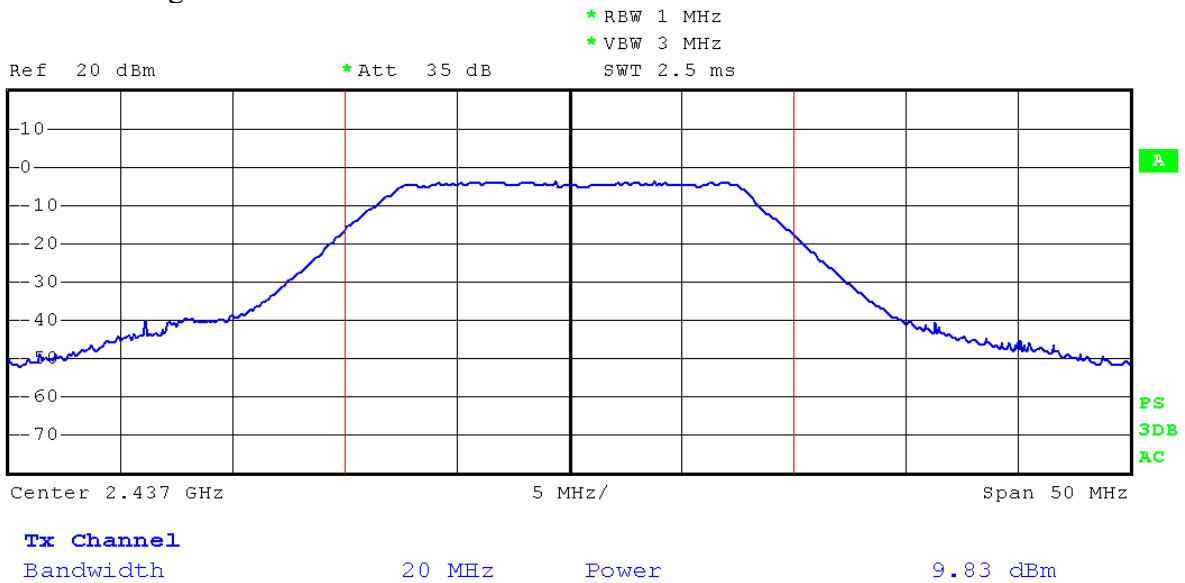


Test Mode: 802.11g---Low

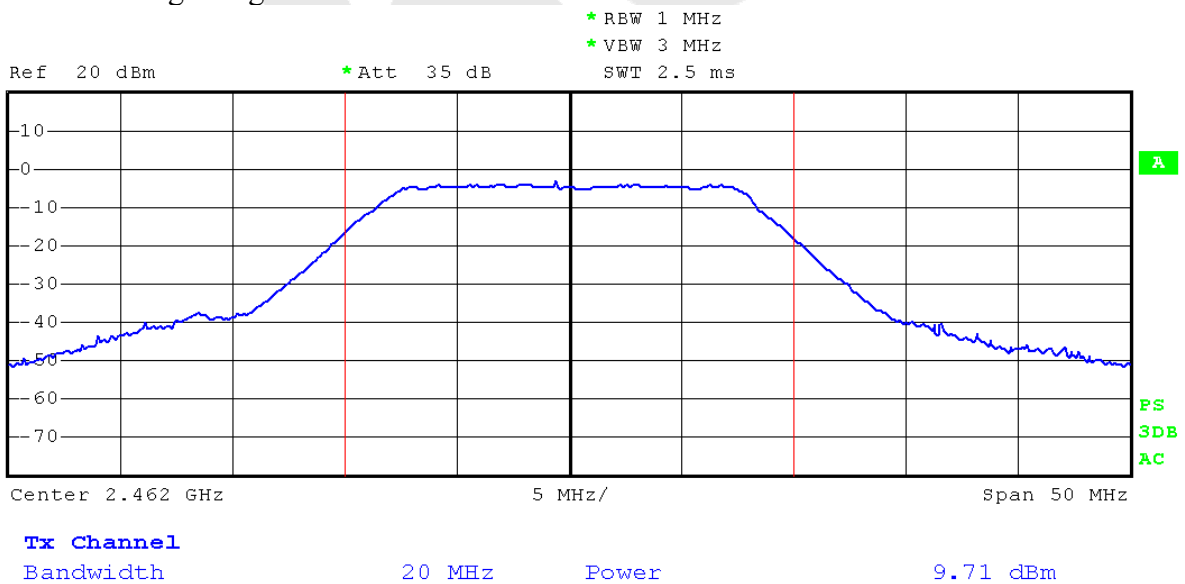




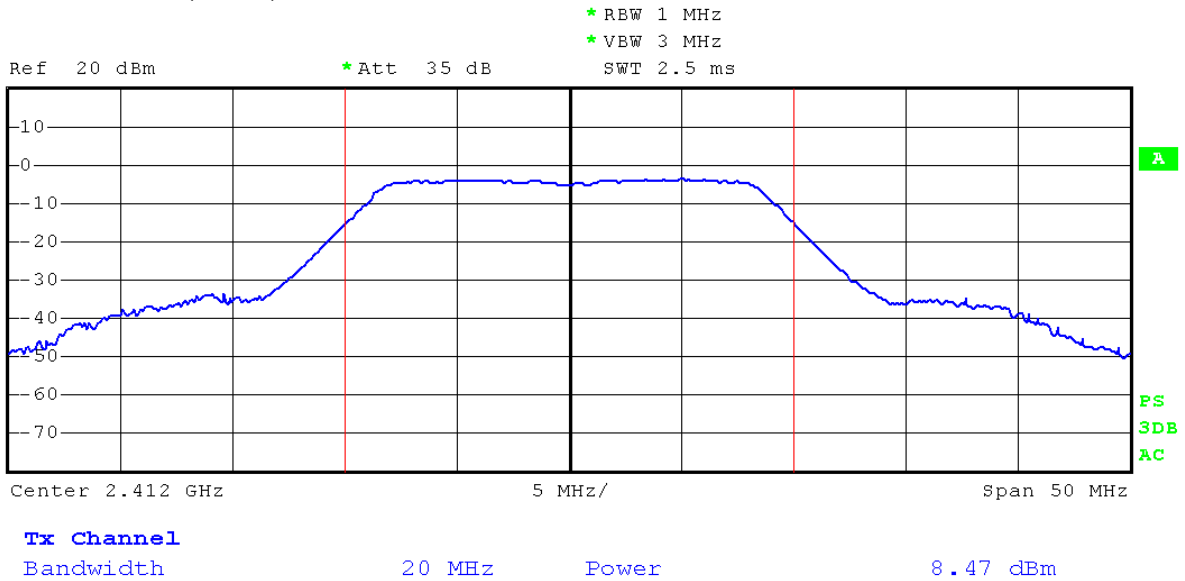
Test Mode: 802.11g---Mid



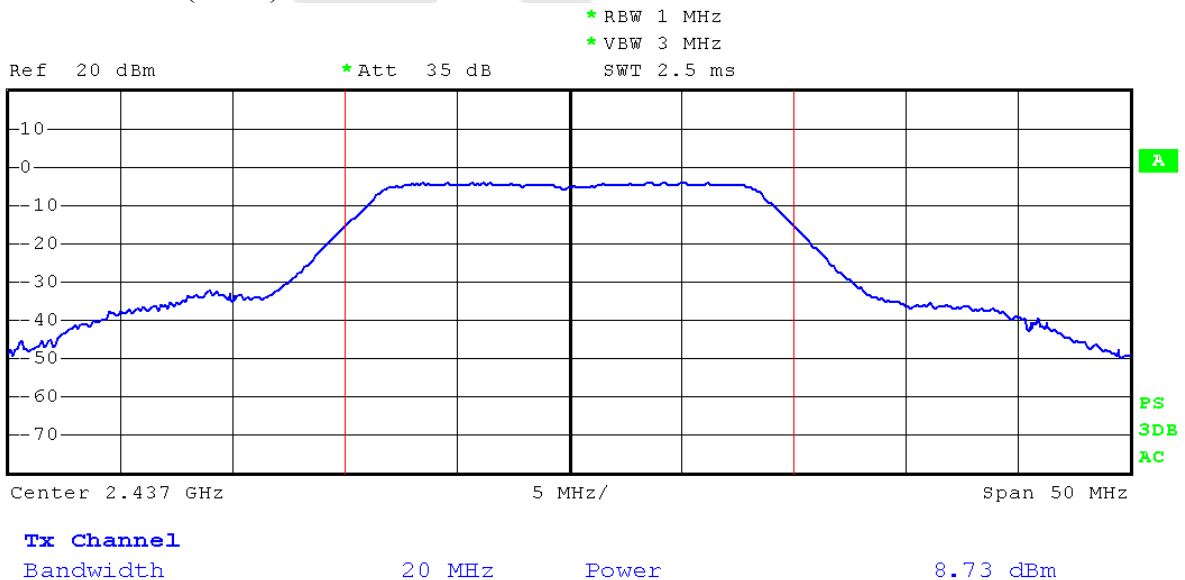
Test Mode: 802.11g---High



Test Mode: 802.11n(HT20)---Low



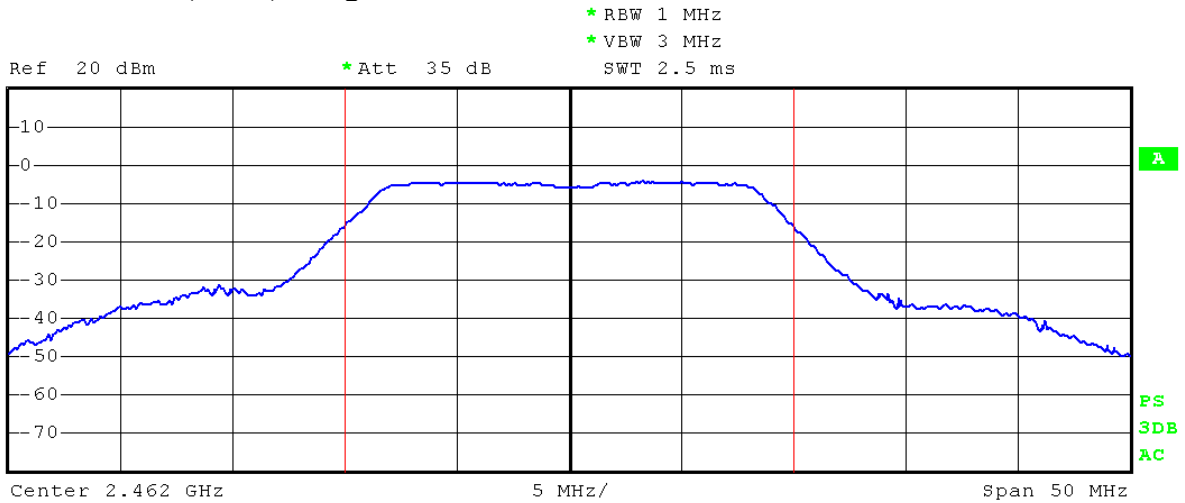
Test Mode: 802.11n(HT20)---Mid



Test Mode: 802.11n(HT20)---High



1 PK  
MAXH



Tx Channel

Bandwidth

20 MHz

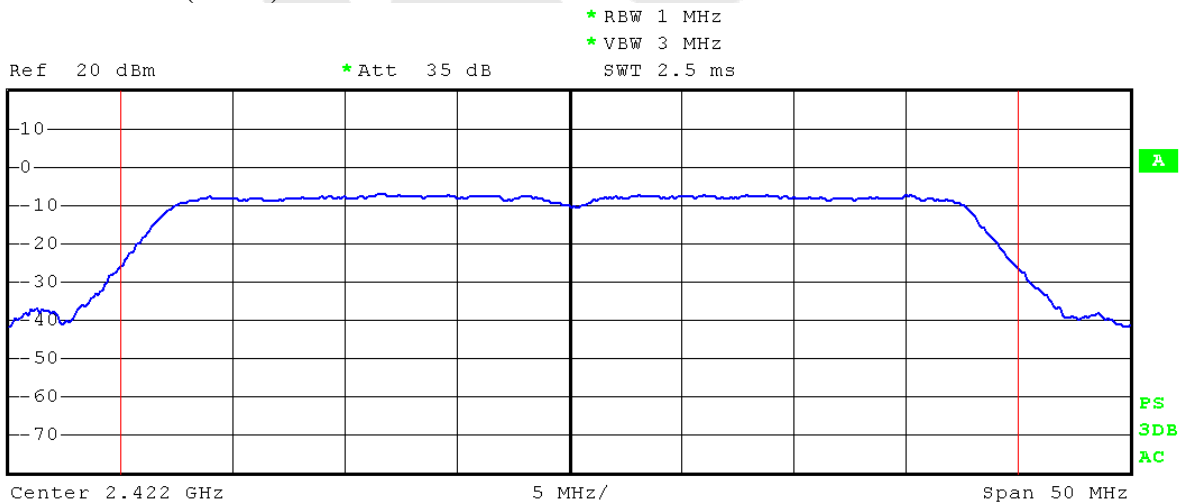
Power

8.92 dBm

Test Mode: 802.11n(HT40)---Low



1 PK  
MAXH



Tx Channel

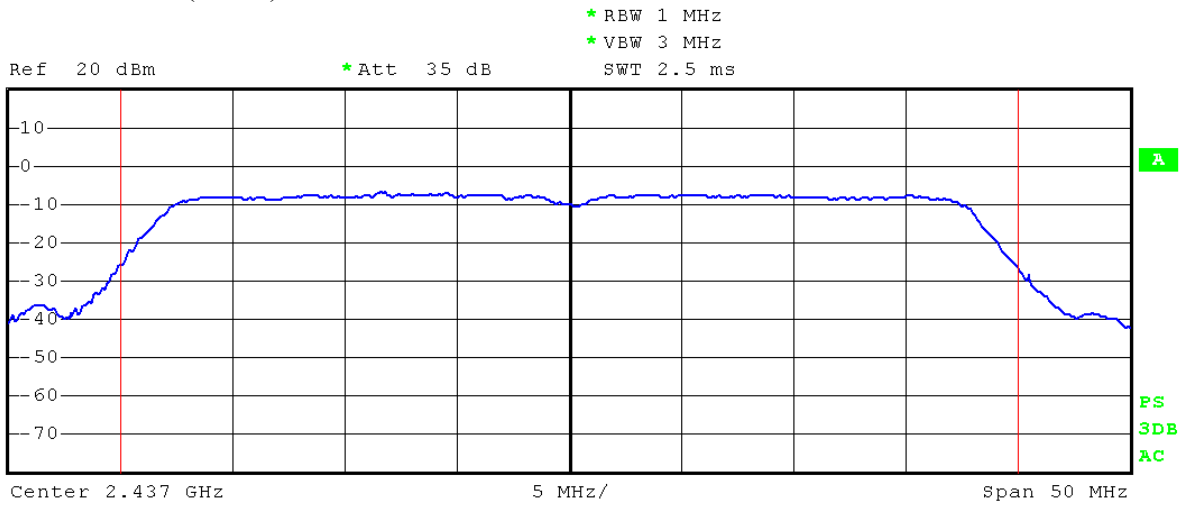
Bandwidth

40 MHz

Power

7.94 dBm

Test Mode: 802.11n(HT40)---Mid



**Tx Channel**

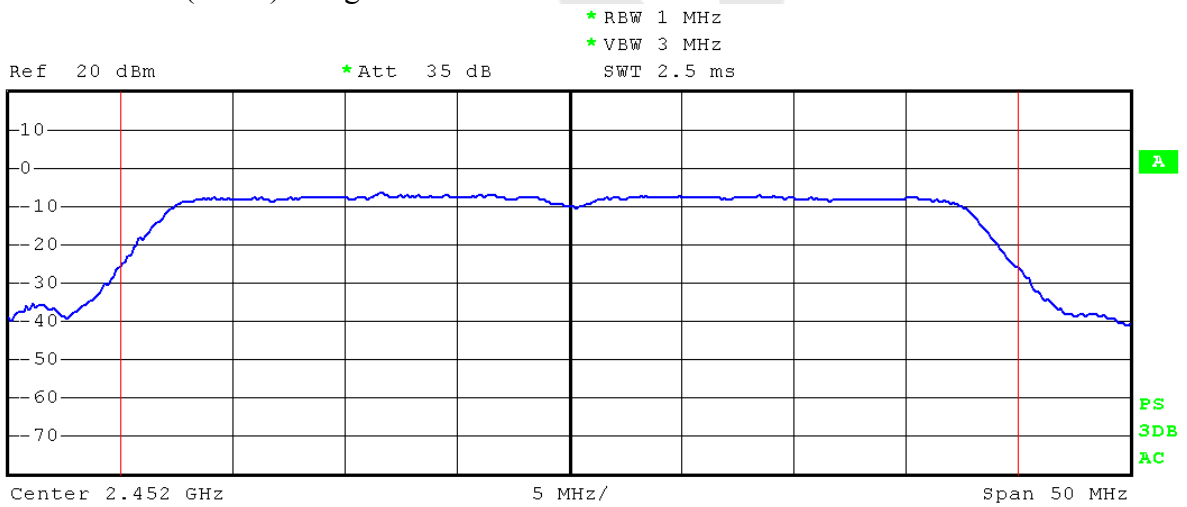
Bandwidth

40 MHz

Power

8.05 dBm

Test Mode: 802.11n(HT40)---High



**Tx Channel**

Bandwidth

40 MHz

Power

7.81 dBm

## 5.4 Band Edges Measurement

### a. Limit

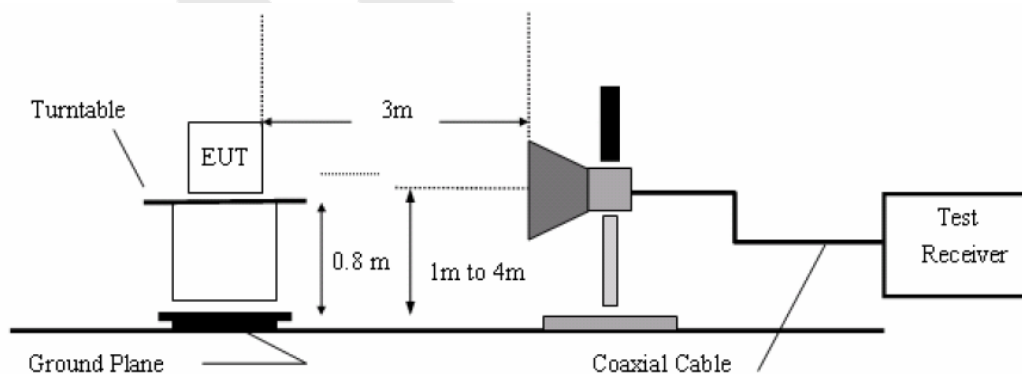
According to §15.247(c), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power. 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).

### b. Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Peak detector: RBW=100KHz, VBW=300KHz, SWT=AUTO  
Average detector: RBW=100KHz, VBW=300KHz, SWT=AUTO  
The EUT is tested in 9\*6\*6 Chamber.
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

#### Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Apr. 23, 2013	1 Year
2.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Apr. 23, 2013	1 Year
3.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 23, 2013	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 23, 2013	1 Year
5.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A



### c. Test Results

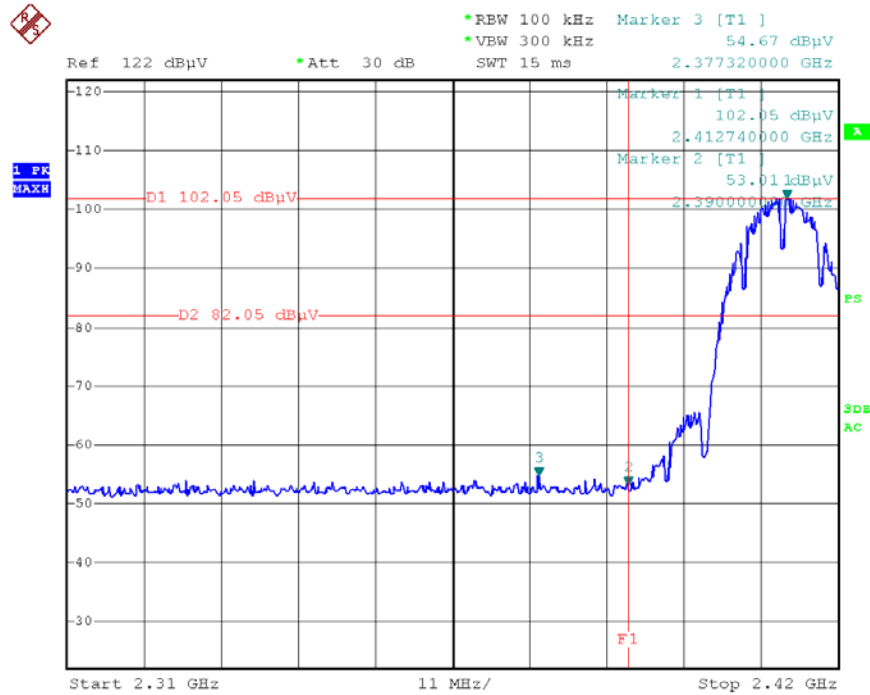
Pass

### d. Test Plots

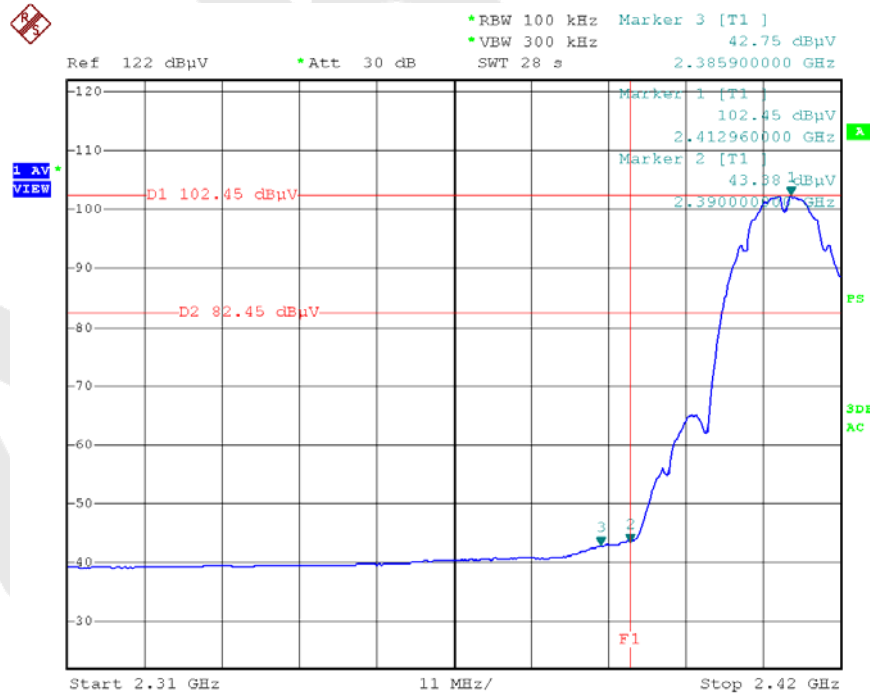
See the following page.

Test Mode: 802.11b ---Low

PEAK:

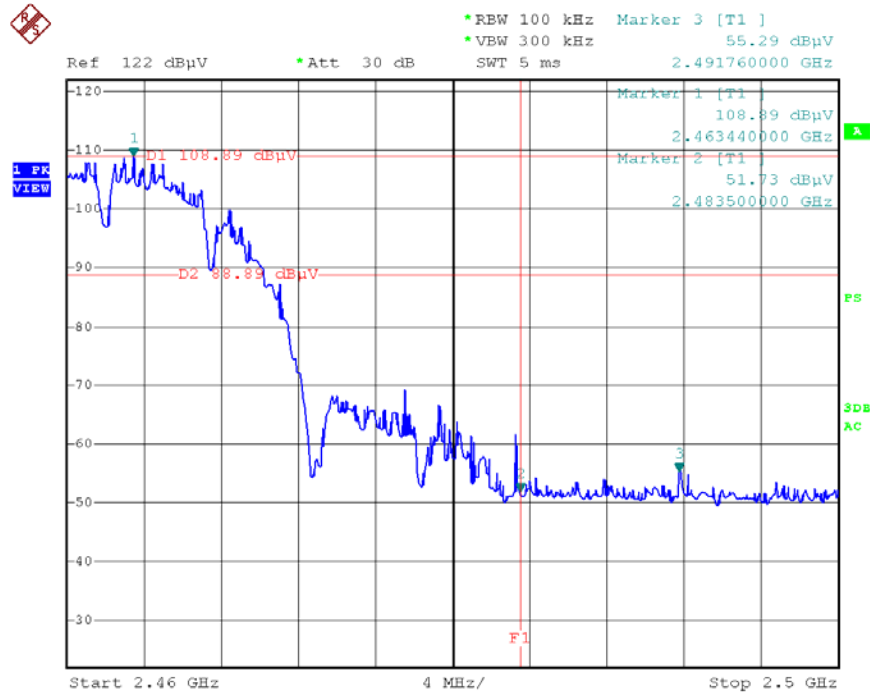


AV:

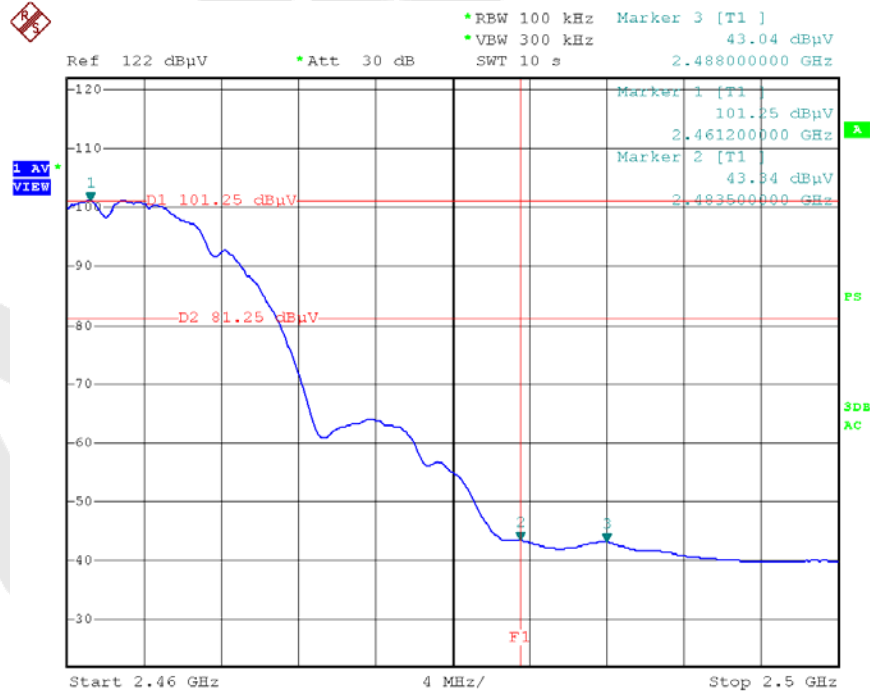


Test Mode: 802.11b ---High

PEAK:

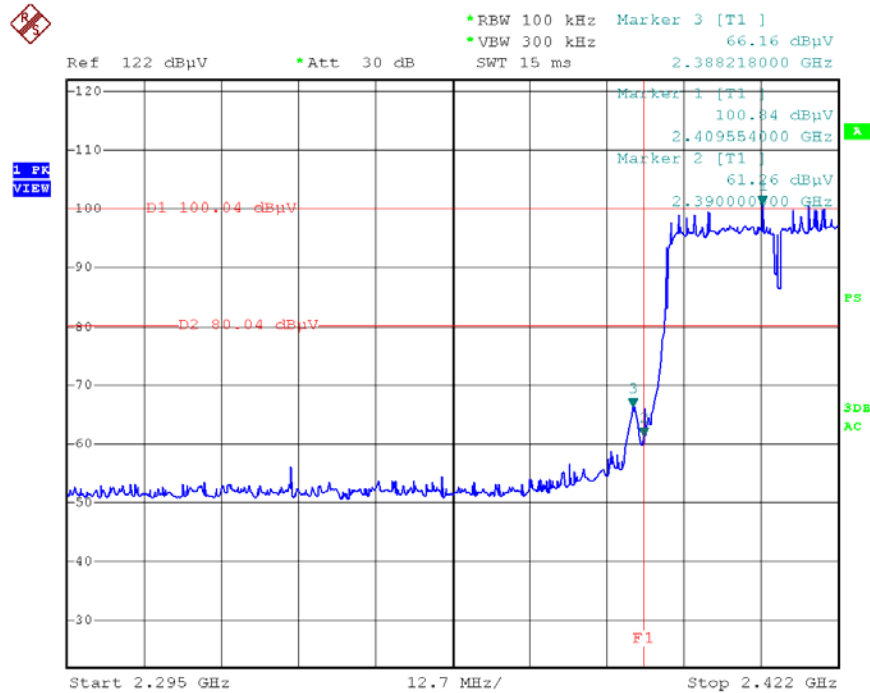


AV:

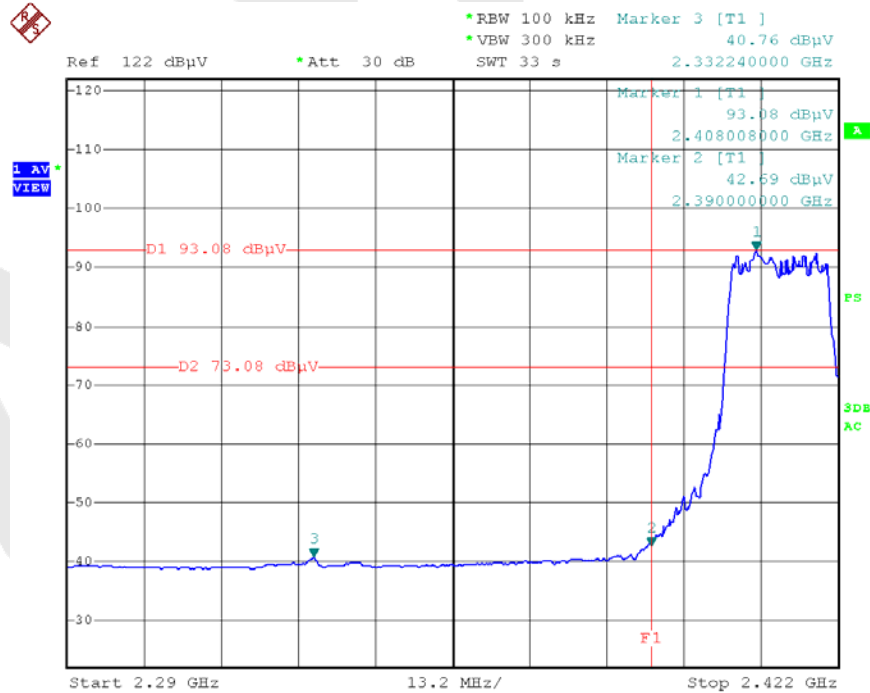


Test Mode: 802.11g ---Low

PEAK:



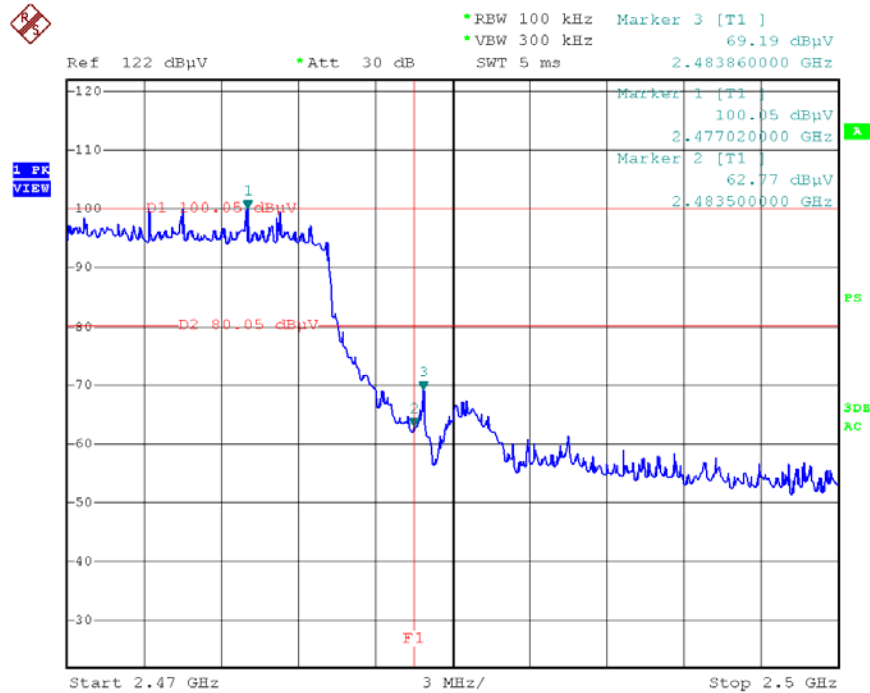
AV:



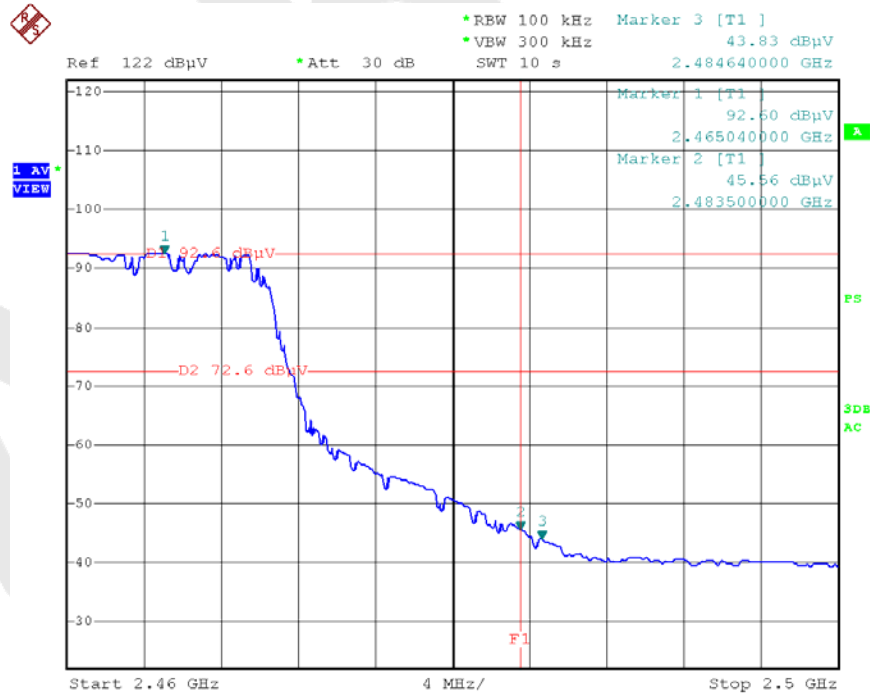


Test Mode: 802.11g ---High

PEAK:

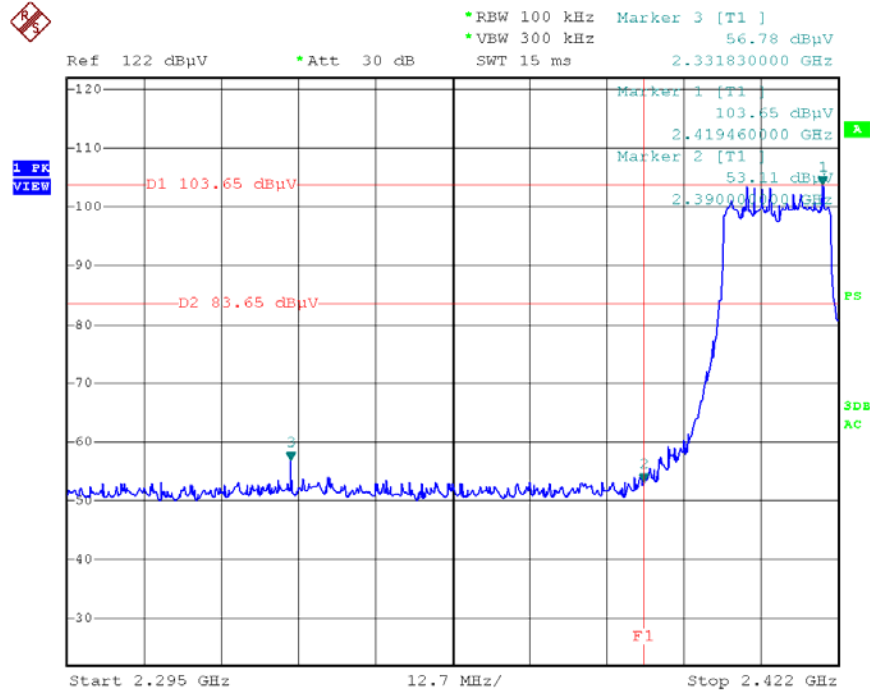


AV:

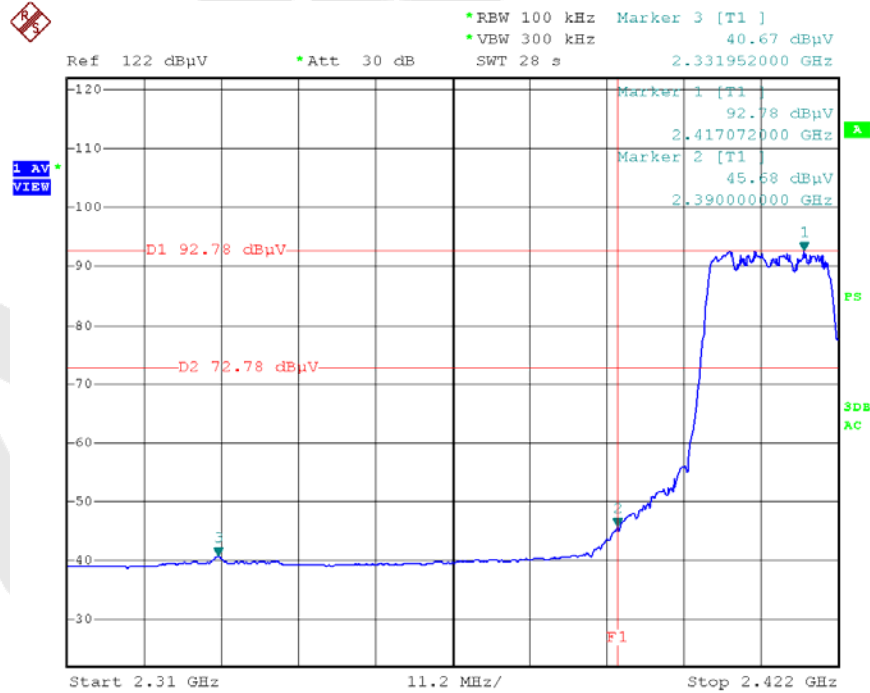


Test Mode: 802.11n (HT20) ---Low

PEAK:

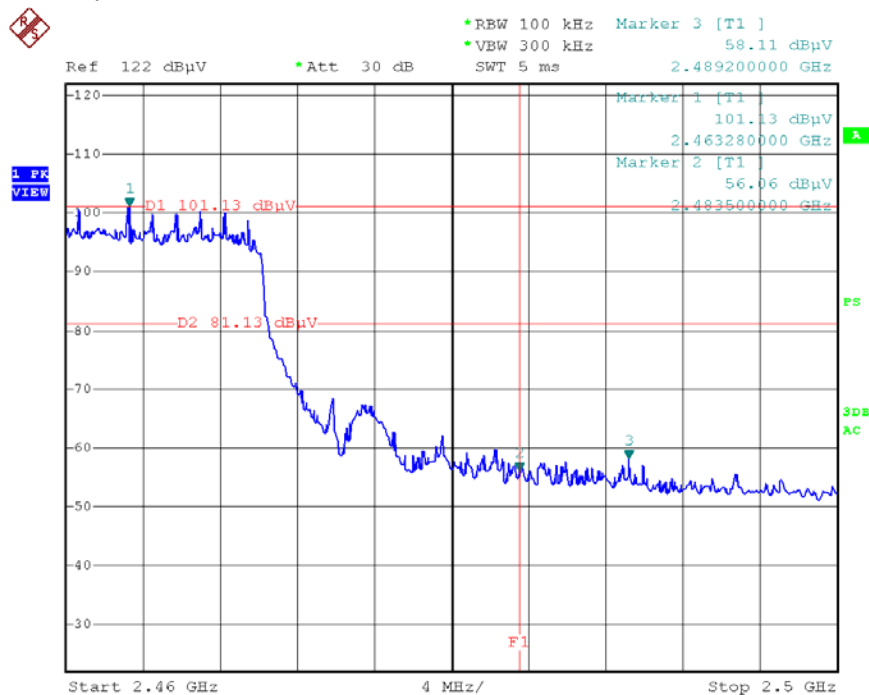


AV:

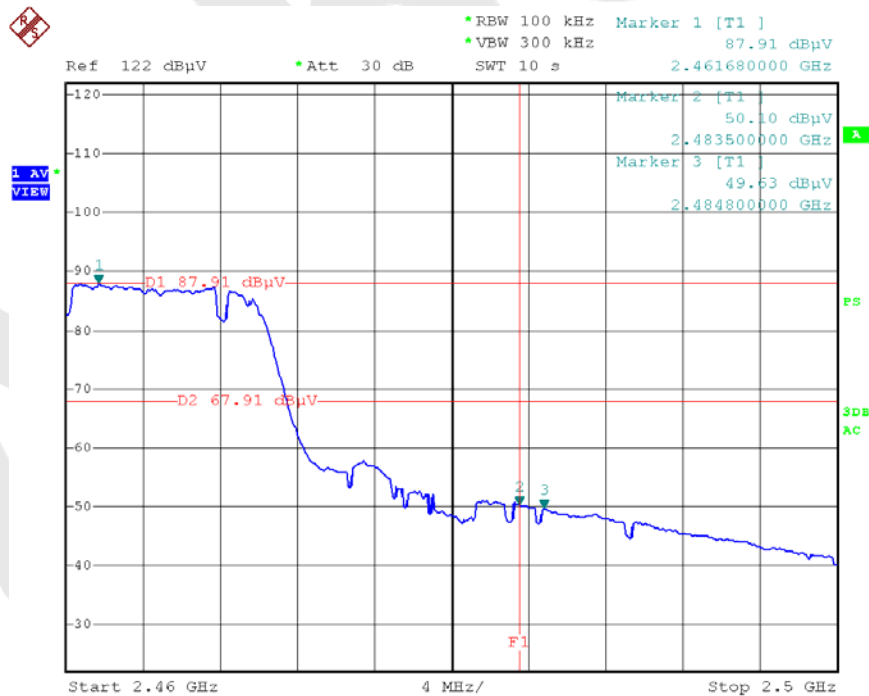


Test Mode: 802.11n (HT20)---High

PEAK:

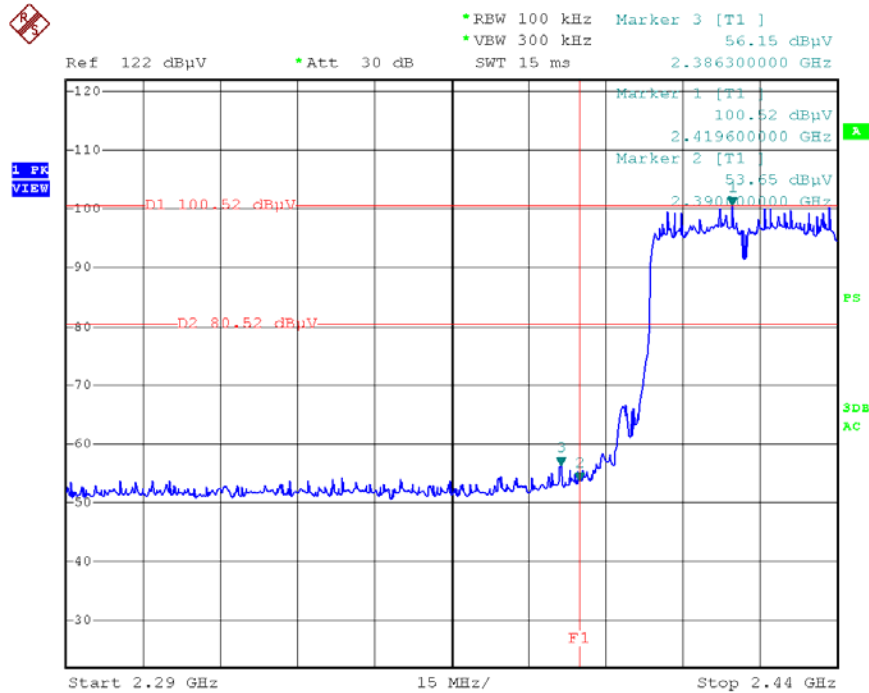


AV:

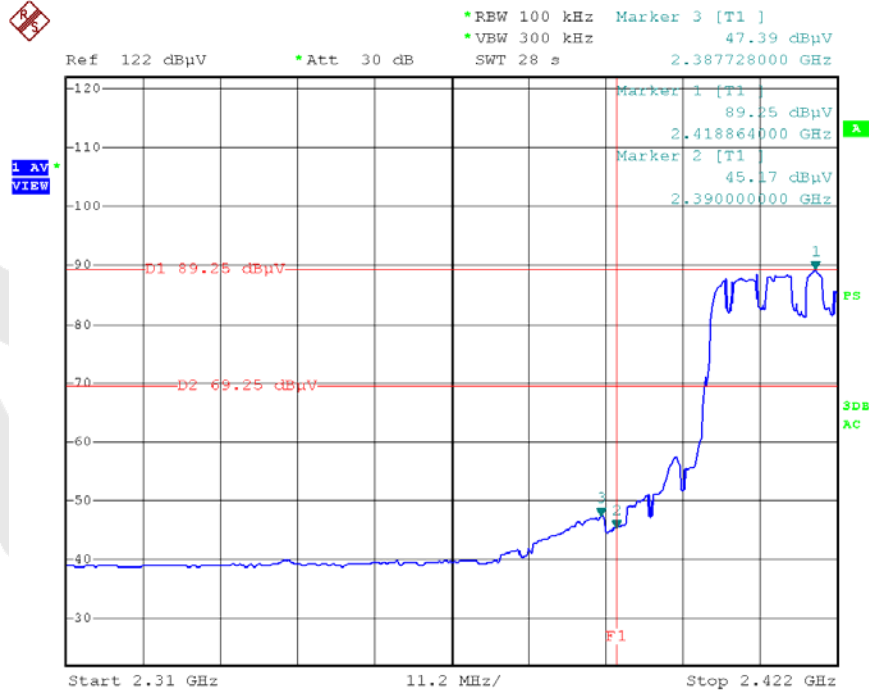


Test Mode: 802.11n (HT40) ---Low

PEAK:

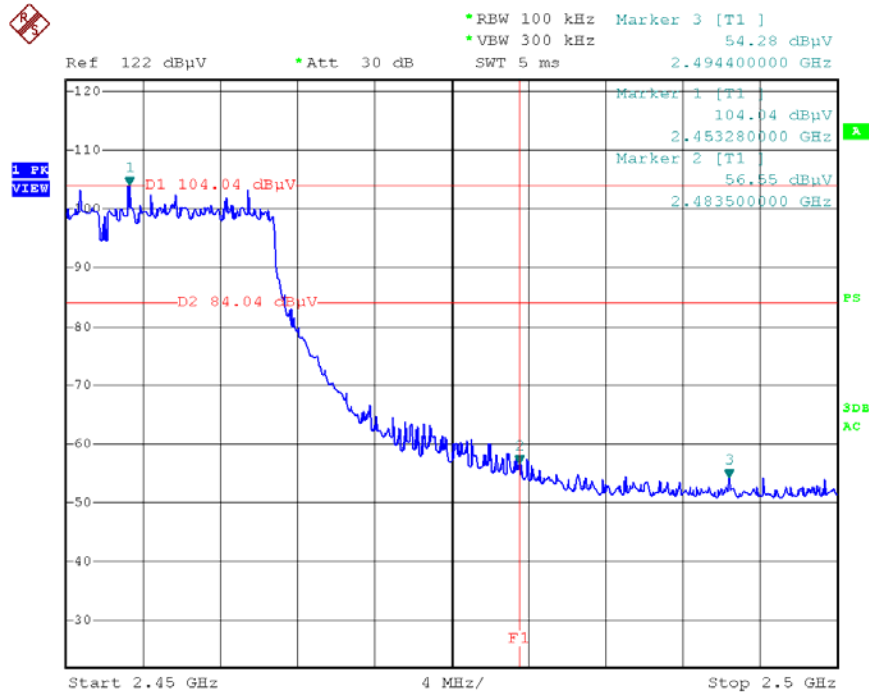


AV:

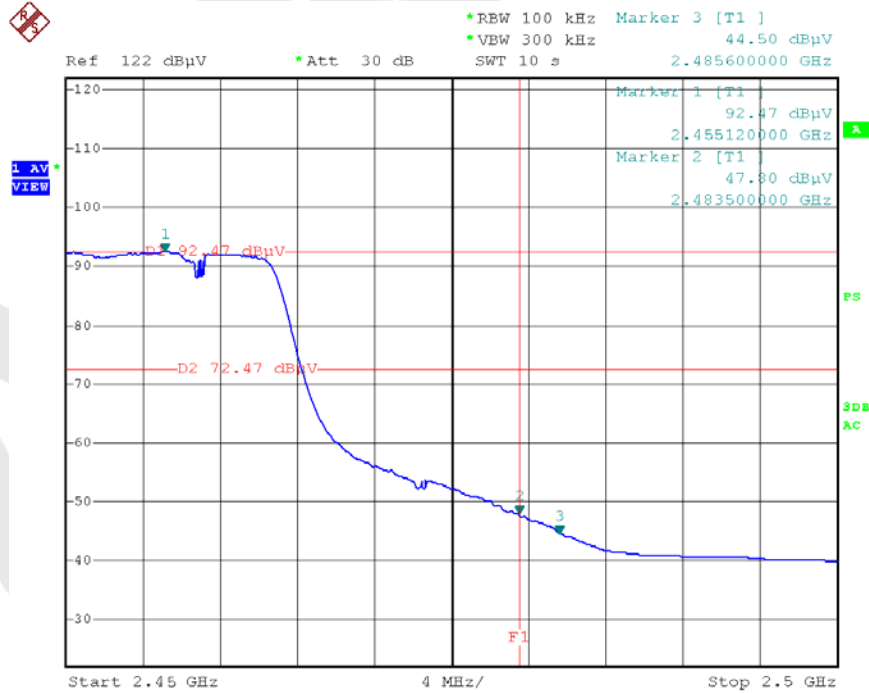


Test Mode: 802.11n (HT40) ---High

PEAK:



AV:



## 5.5 Peak Power Spectral Density

### a. Limit

1. For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.
2. The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

### b. Test Procedure

1. Place the EUT on the table and set it in transmitting mode. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW = 3kHz, VBW = 10kHz, Span = 1.5MHz, Sweep=500s
3. Record the max. reading.
4. Repeat the above procedure until the measurements for all frequencies are completed.

### Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Apr. 23, 2013	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 23, 2013	1 Year
3.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 23, 2013	1 Year
4.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

### c. Test Setup

See 5.1

### d. Test Results

Pass

### e. Test Data

Please refer to the following data.

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	PPSD (dBm/3KHz)	$\Sigma$ PPSD (dBm/3KHz)	Limit (dBm)	Result
Low	2412	-13.15	-	8.00	Pass
Mid	2437	-12.84	-		Pass
High	2462	-12.62	-		Pass

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	PPSD (dBm)	$\Sigma$ PPSD (dBm)	Limit (dBm)	Result
Low	2412	-13.26	-	8.00	Pass
Mid	2437	-12.83	-		Pass
High	2462	-12.82	-		Pass

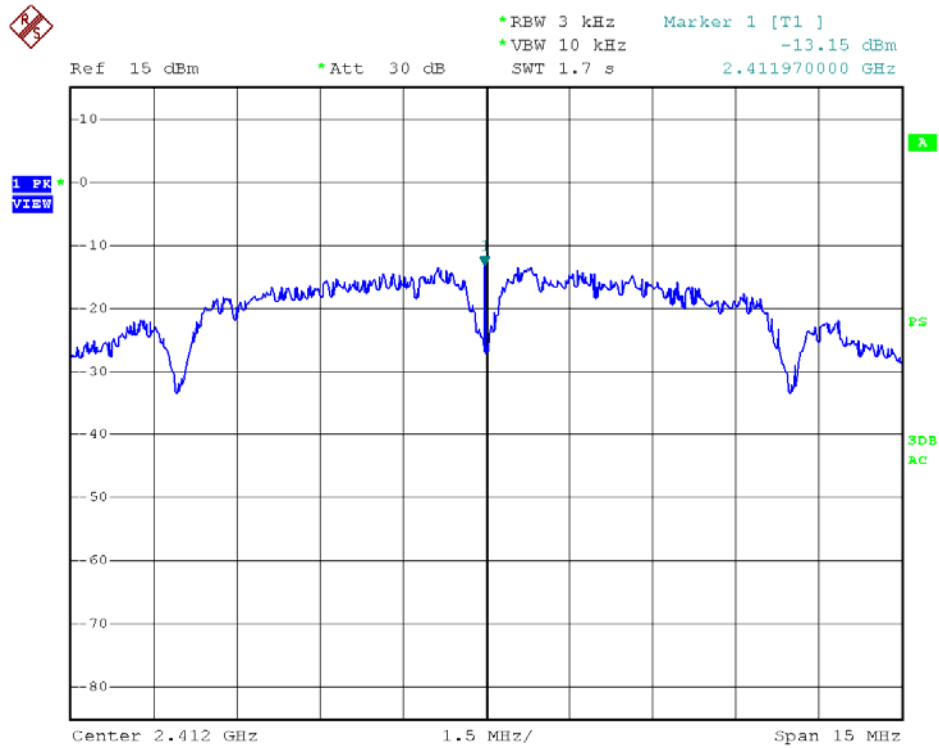
Test mode: IEEE 802.11n (HT20)

Channel	Frequency (MHz)	PPSD (dBm/3KHz)	$\Sigma$ PPSD (dBm/3KHz)	Limit (dBm)	Result
Low	2412	-13.15	-	8.00	Pass
Mid	2437	-12.95	-		Pass
High	2462	-12.74	-		Pass

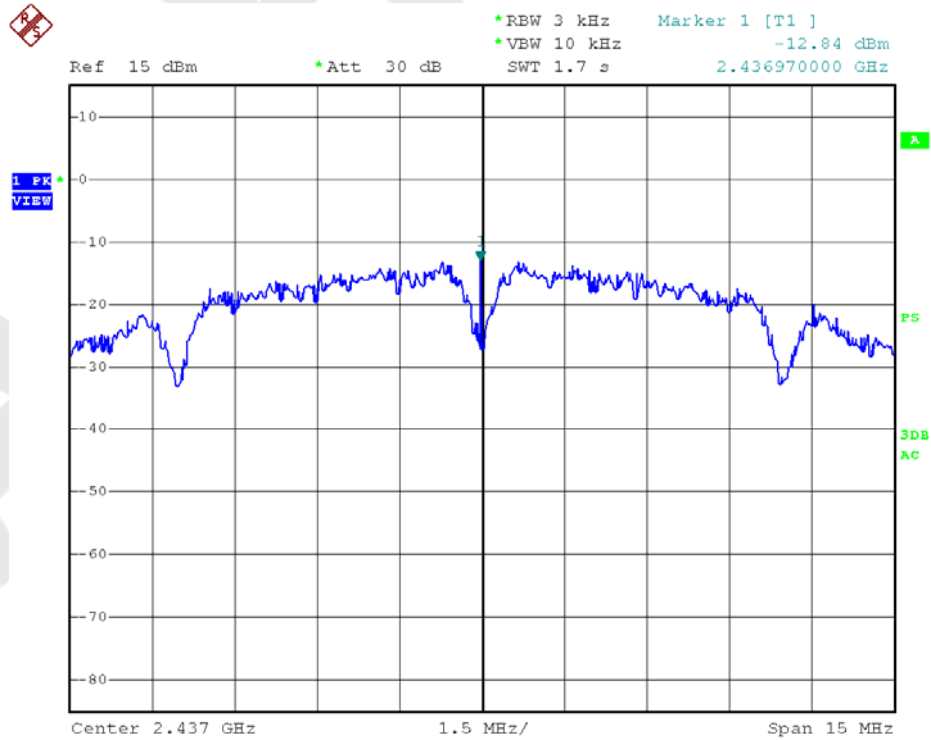
Test mode: IEEE 802.11n (HT40)

Channel	Frequency (MHz)	PPSD (dBm/3KHz)	$\Sigma$ PPSD (dBm/3KHz)	Limit (dBm)	Result
Low	2422	-13.08	-	8.00	Pass
Mid	2437	-12.94	-		Pass
High	2452	-12.83	-		Pass

**f. Test Plot** See the following pages  
802.11 b CH--Low

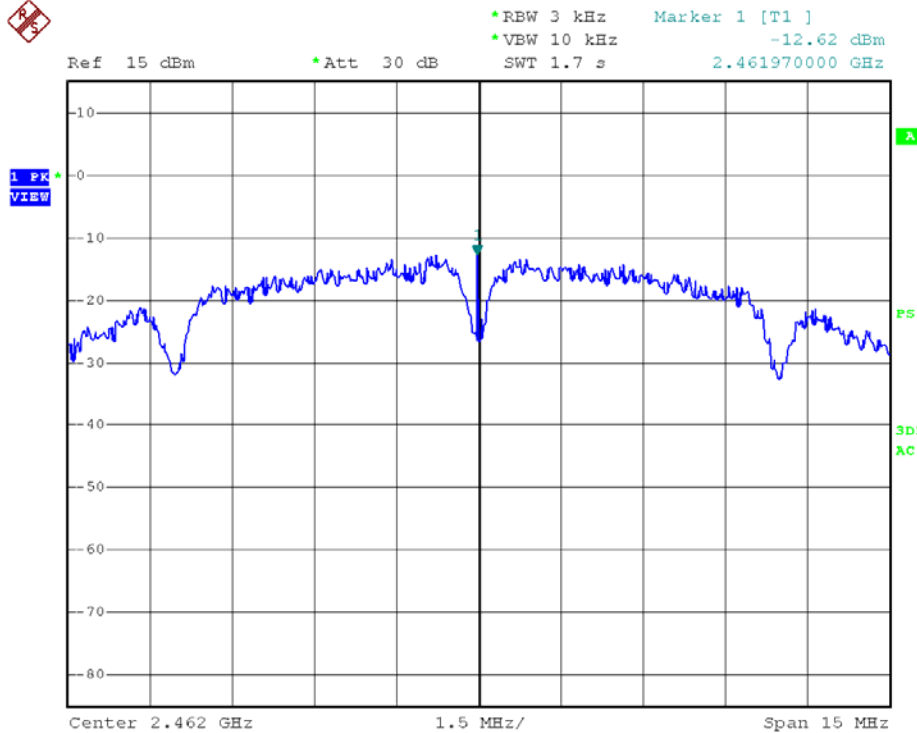


802.11 b CH--Mid

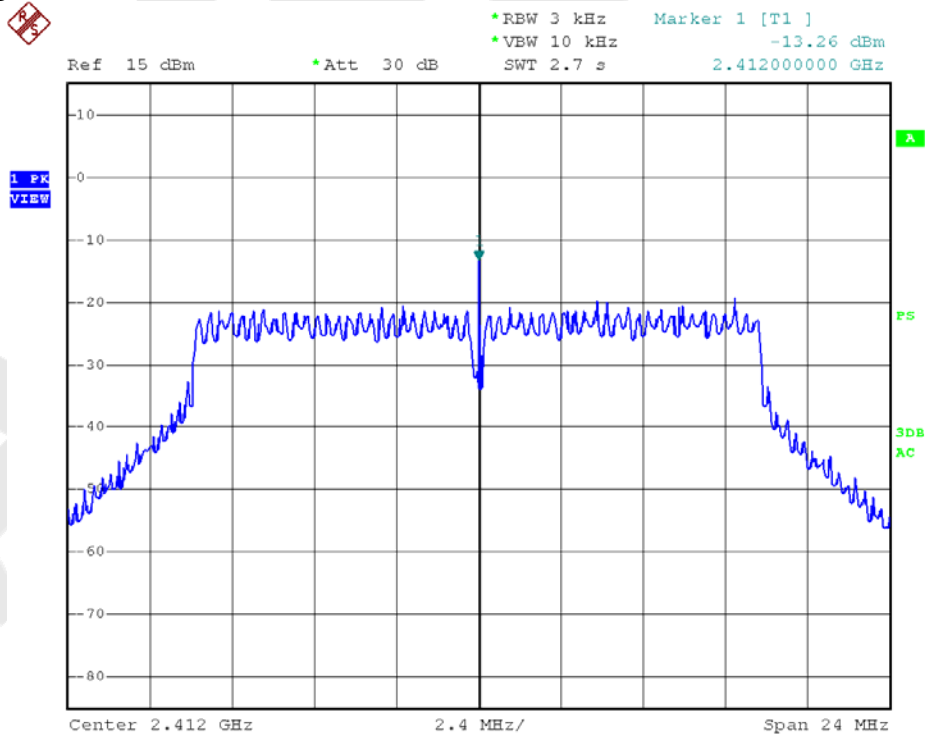




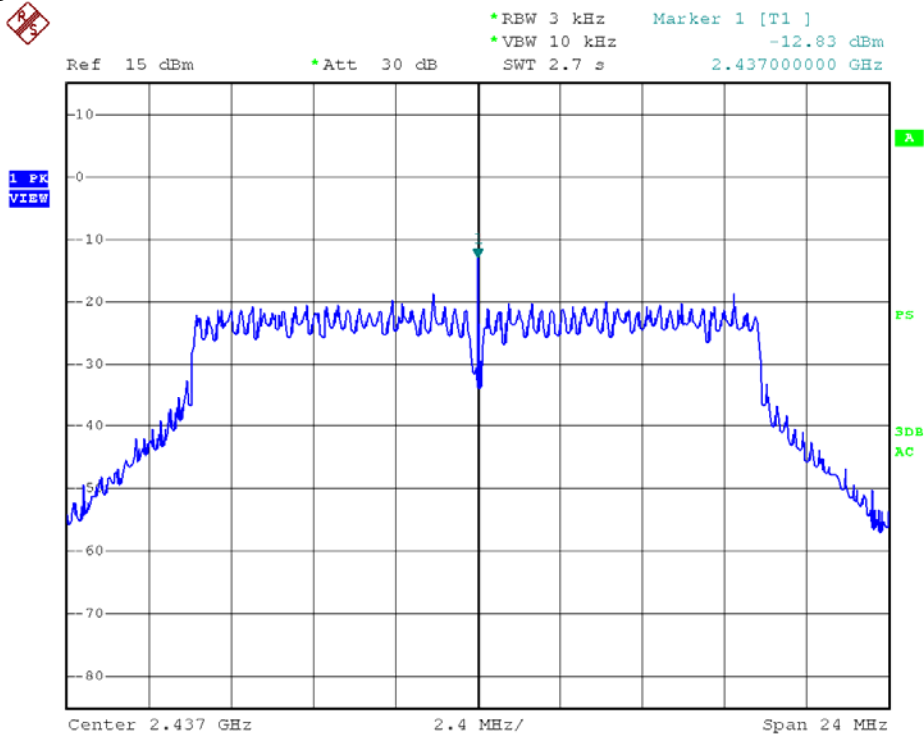
802.11 b CH--High



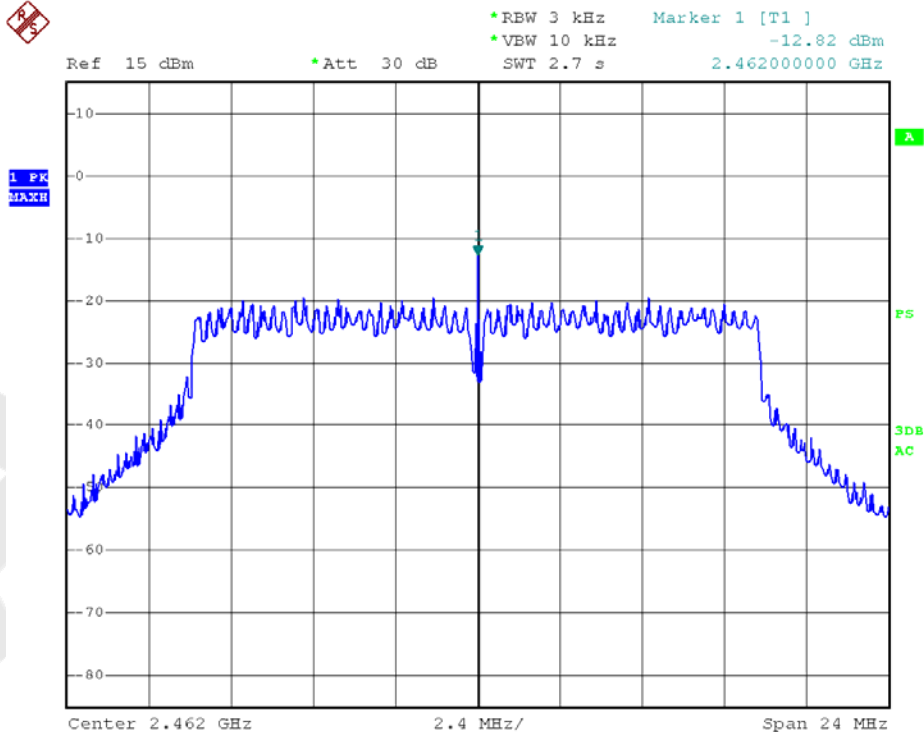
802.11g CH--Low



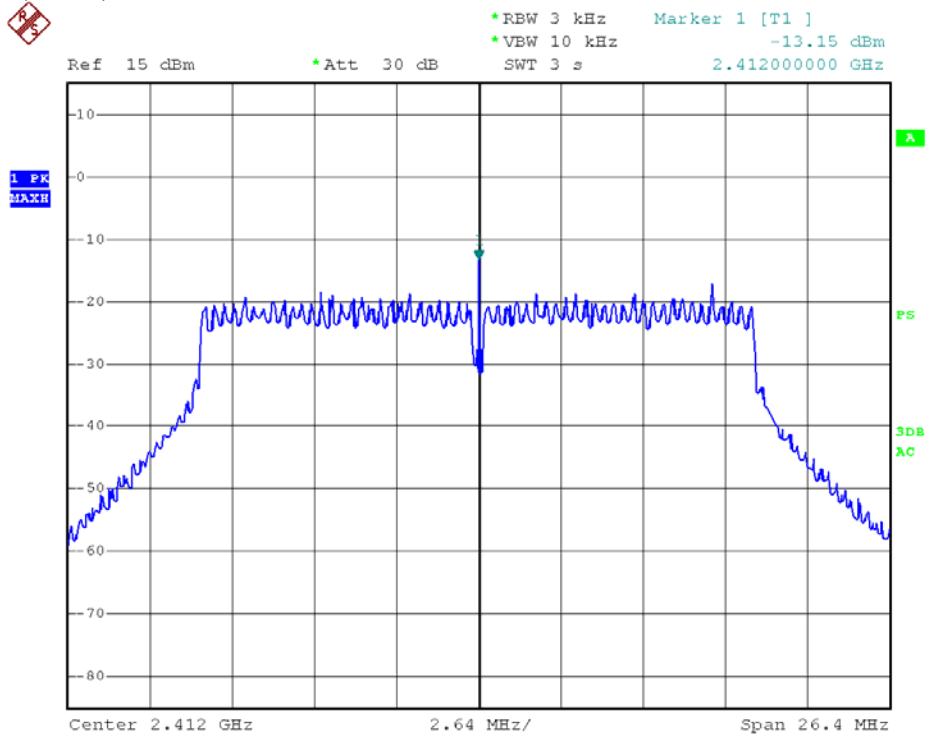
802.11g CH--Mid



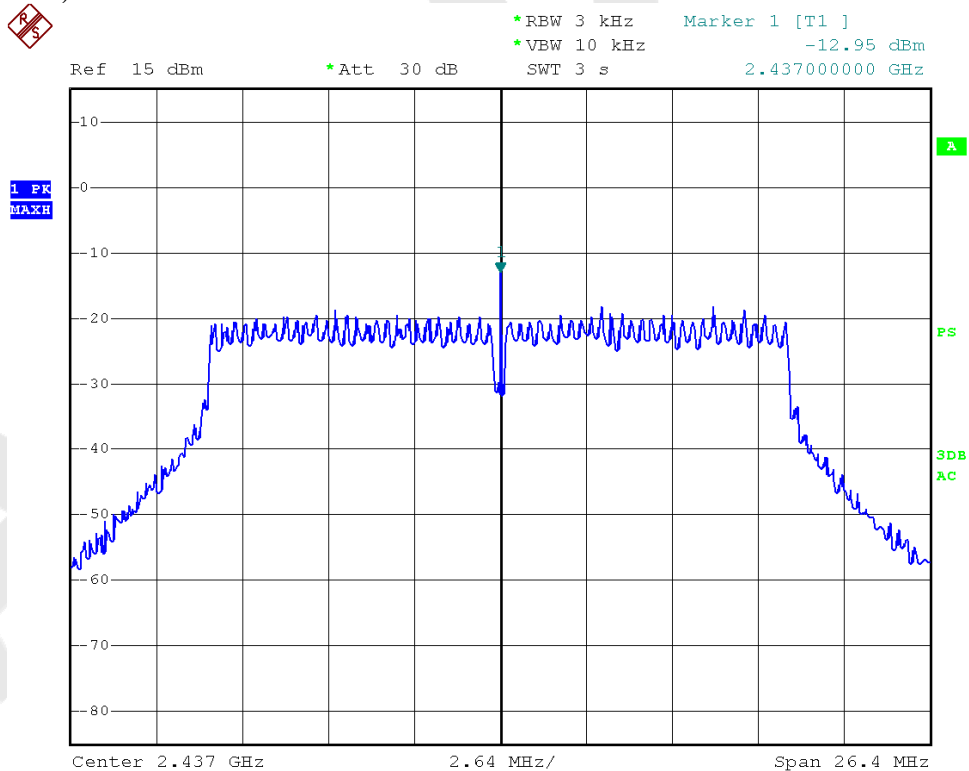
802.11g CH--High



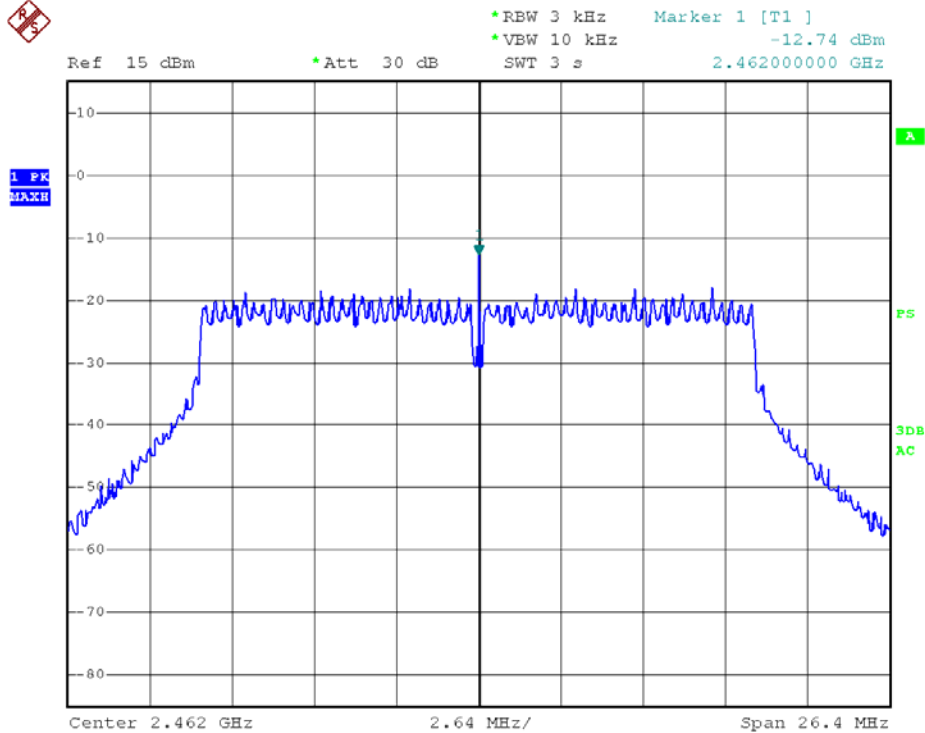
802.11n (HT20) CH—Low



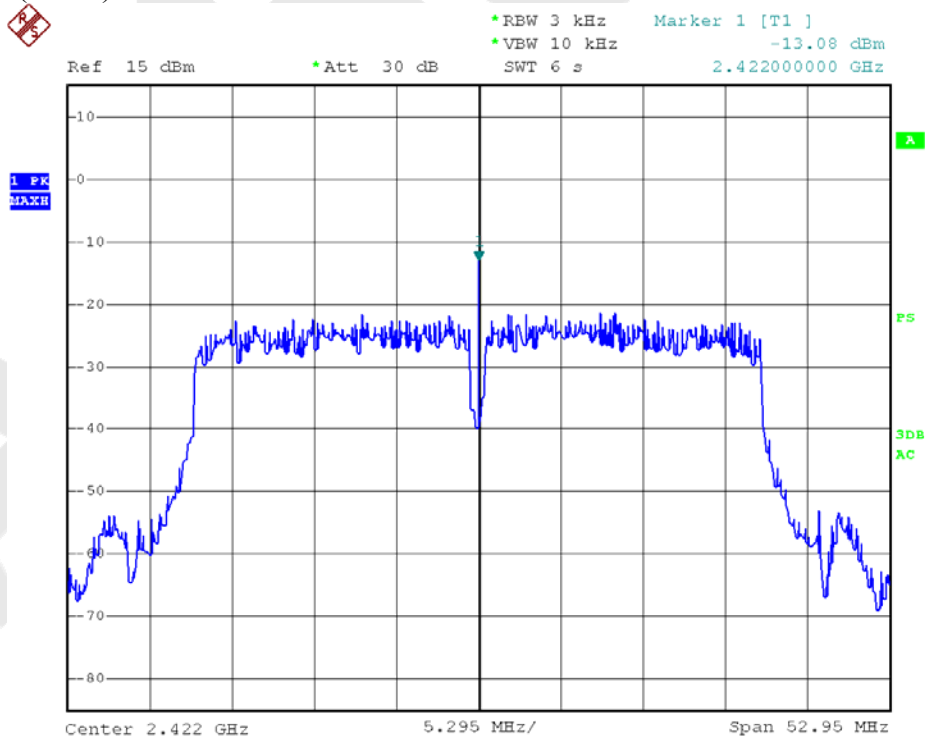
802.11n (HT20) CH—Mid



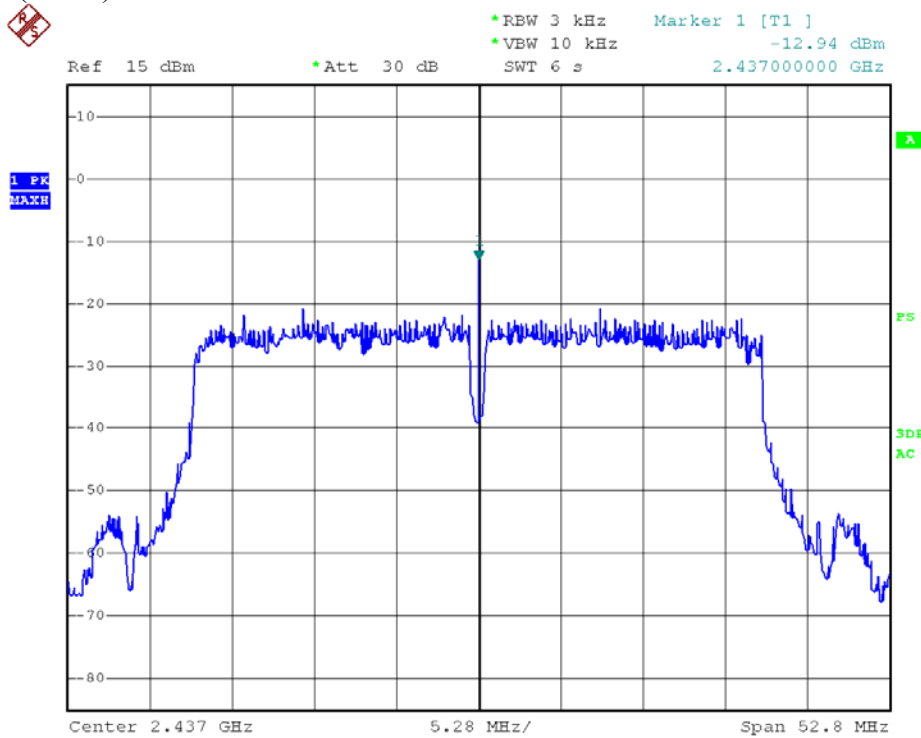
802.11n (HT20) CH—High



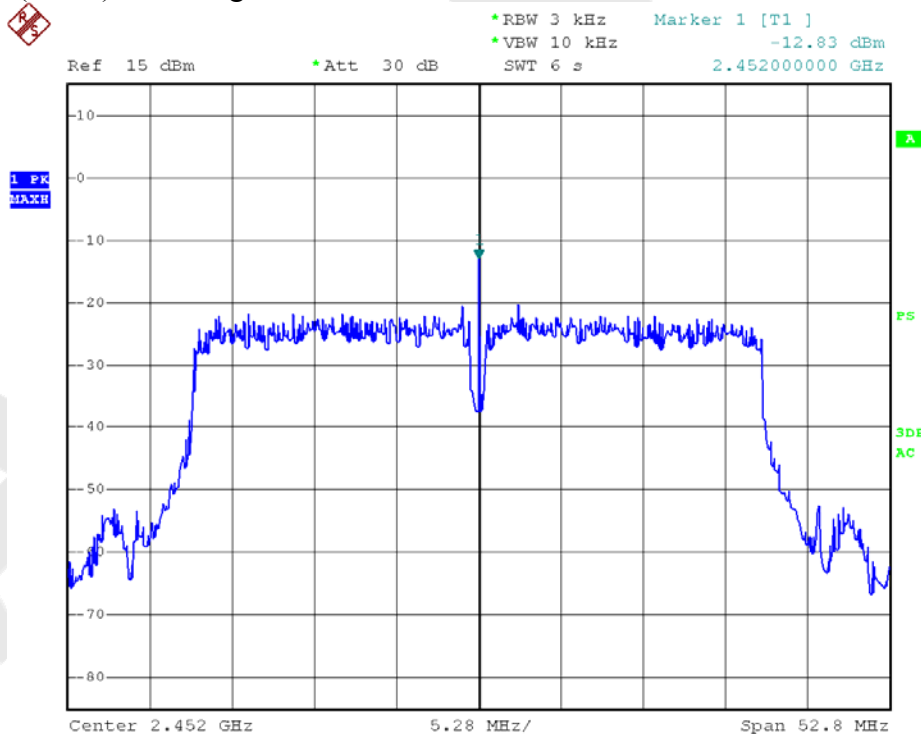
802.11n (HT40) CH—Low



802.11n (HT40) CH—Mid



802.11n (HT40) CH—High



## 5.6 Radiated Emissions

### 5.6.1.1. Test Limits (< 30 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30

### 5.6.1.2. Test Limits ( $\geq$ 30 MHz)

FIELD STRENGTH of Fundamental: @3M	FIELD STRENGTH of Harmonics	S15.209 30 - 88 MHz	40 dBuV/m
902-928 MHz		88 - 216 MHz	43.5
2.4-2.4835 GHz		216 - 960 MHz	46
94 dBuV/m @3m	54 dBuV/m @3m	ABOVE 960 MHz	54dBuV/m

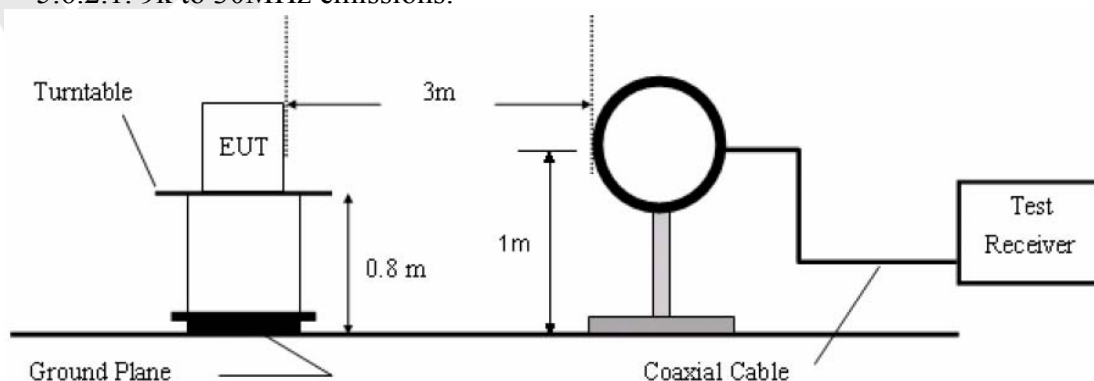
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

### Test Equipment

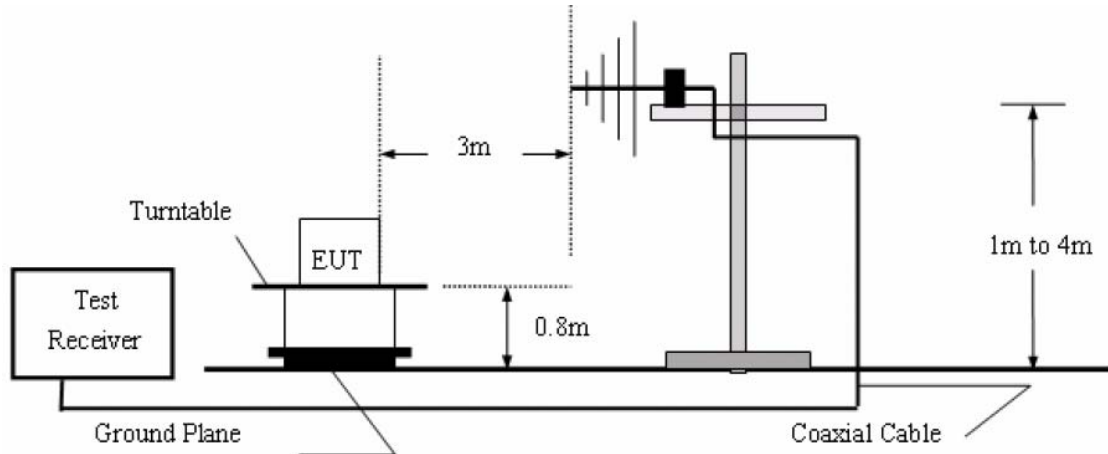
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Apr. 23, 2013	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 23, 2013	1 Year
3.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 23, 2013	1 Year
4.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

### 5.6.2. Test Configuration:

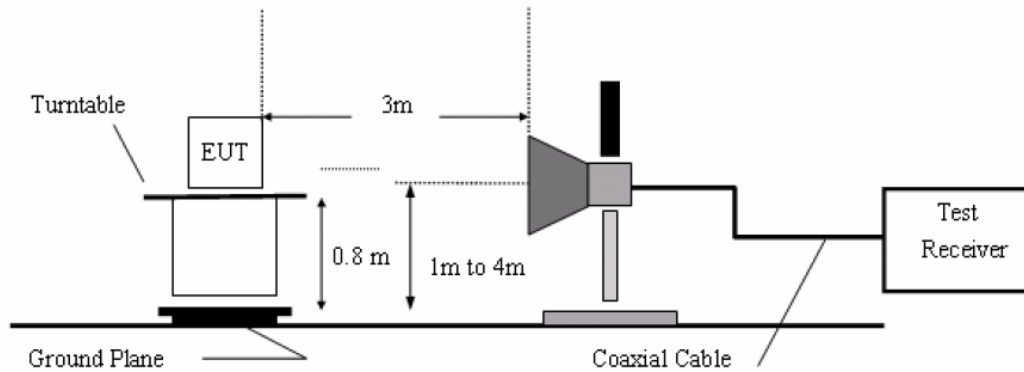
#### 5.6.2.1. 9k to 30MHz emissions:



#### 5.6.2.2. 30M to 1G emissions:



#### 5.6.2.3. 1G to 40G emissions:



#### 5.6.3. Test Procedure

The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Measurements are made on 9KHz to 30MHz and 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz.

The EUT is tested in 9\*6\*6 Chamber.

The test results are listed in Section 5.6.4.

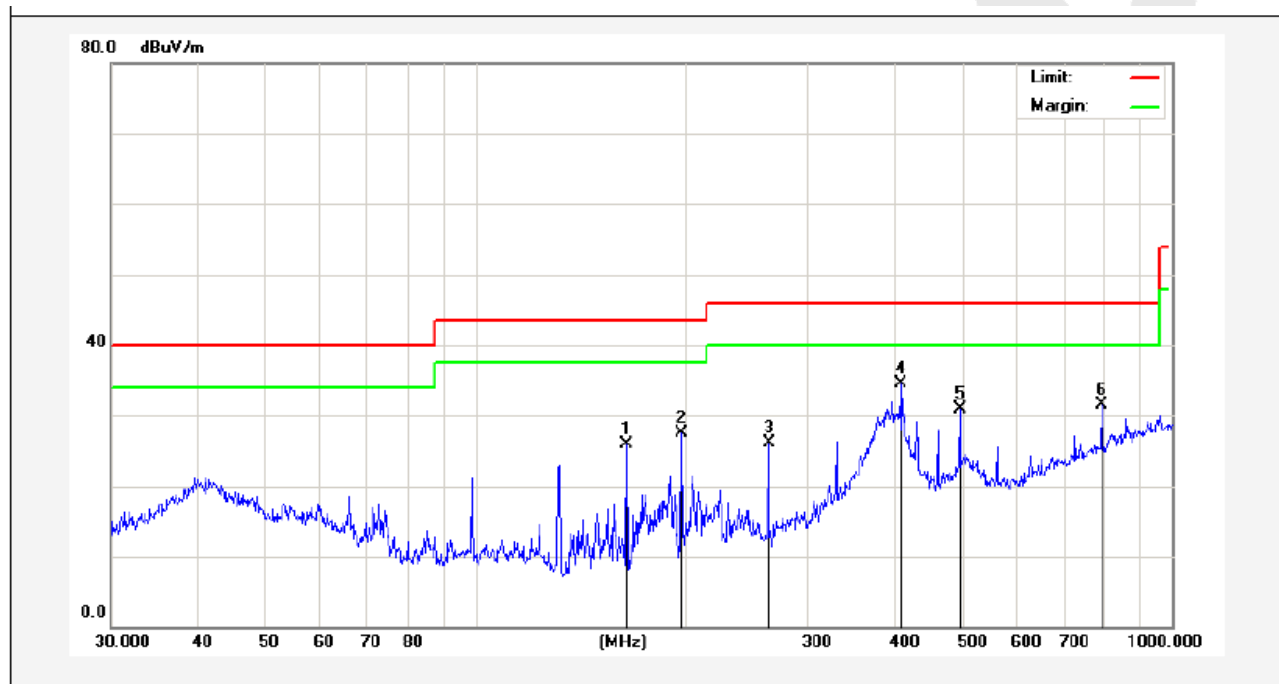
## h. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Apr. 23, 2013	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 23, 2013	1 Year
3.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 23, 2013	1 Year
4.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

## 5.6.4. Test Results



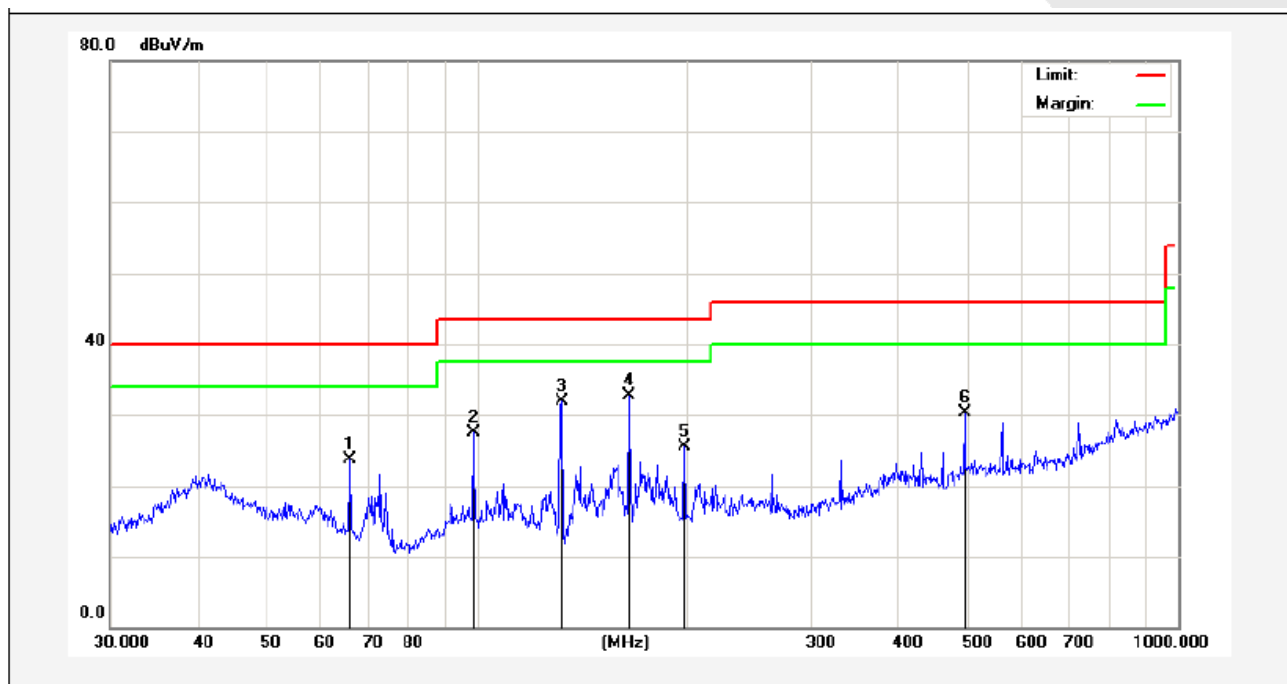
<b>Job No.:</b>	AT1306818F	<b>Polarziation:</b>	Horizontal
<b>Standard:</b>	(RE)FCC PART15 C _3m	<b>Power Source:</b>	DC 5V
<b>Test item:</b>	Radiation Test	<b>Date:</b>	2013/07/12
<b>Temp.(C)/Hum.(%RH):</b>	24.3( C)/55%RH	<b>Time:</b>	22/11/23
<b>EUT:</b>	Wiimu WiFi Audio Module	<b>Test By:</b>	Rock Zeng
<b>Model:</b>	A02	<b>Distance:</b>	3m
<b>Mode:</b>	On		
<b>Note:</b>	30-1000MHz		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	164.9075	48.60	-22.71	25.89	43.50	-17.61	peak			
2	197.8928	48.37	-20.88	27.49	43.50	-16.01	peak			
3	263.8190	44.85	-18.84	26.01	46.00	-19.99	peak			
4	408.9460	47.22	-12.65	34.57	46.00	-11.43	peak			
5	495.9344	41.94	-11.06	30.88	46.00	-15.12	peak			
6	793.3960	38.23	-6.65	31.58	46.00	-14.42	peak			

Job No.: AT1306818F  
Standard: (RE)FCC PART15 C \_3m  
Test item: Radiation Test  
Temp.(C)/Hum.(%RH): 24.3( C)/55%RH  
EUT: Wiimu WiFi Audio Module  
Model: A02  
Mode: On  
Note: 30-1000MHz

Polarization: Vertical  
Power Source: DC 5V  
Date: 2013/07/12  
Time: 22/14/47  
Test By: Rock Zeng  
Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	66.0341	41.61	-17.92	23.69	40.00	-16.31	peak			
2	98.8324	43.33	-15.82	27.51	43.50	-15.99	peak			
3	132.2205	49.77	-17.96	31.81	43.50	-11.69	peak			
4	164.9074	50.33	-17.71	32.62	43.50	-10.88	peak			
5	197.8926	41.45	-15.88	25.57	43.50	-17.93	peak			
6	495.9343	41.44	-11.06	30.38	46.00	-15.62	peak			

**Above 1 GHz (The worst Mode)**

Operation Mode: TX / IEEE 802.11b / CH Low

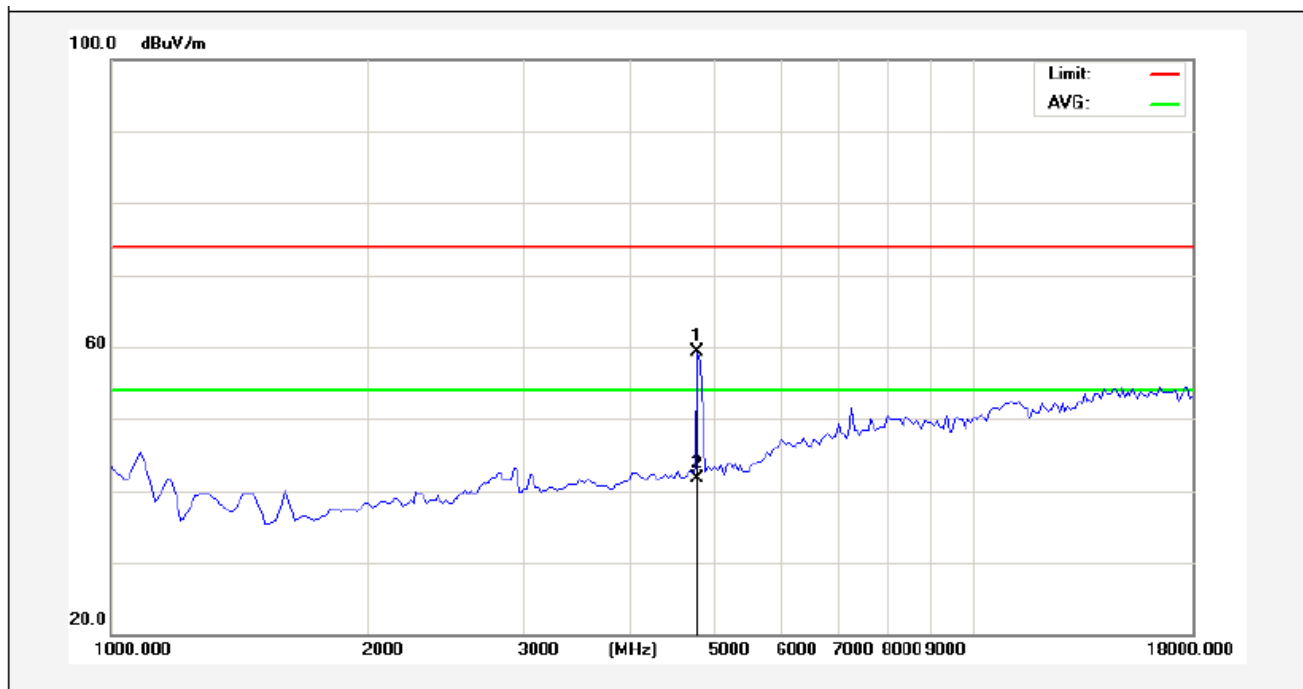
Temperature: 25°C

Humidity: 50 % RH

Test Date: Jul.30, 2013

Tested by: Rock Zeng

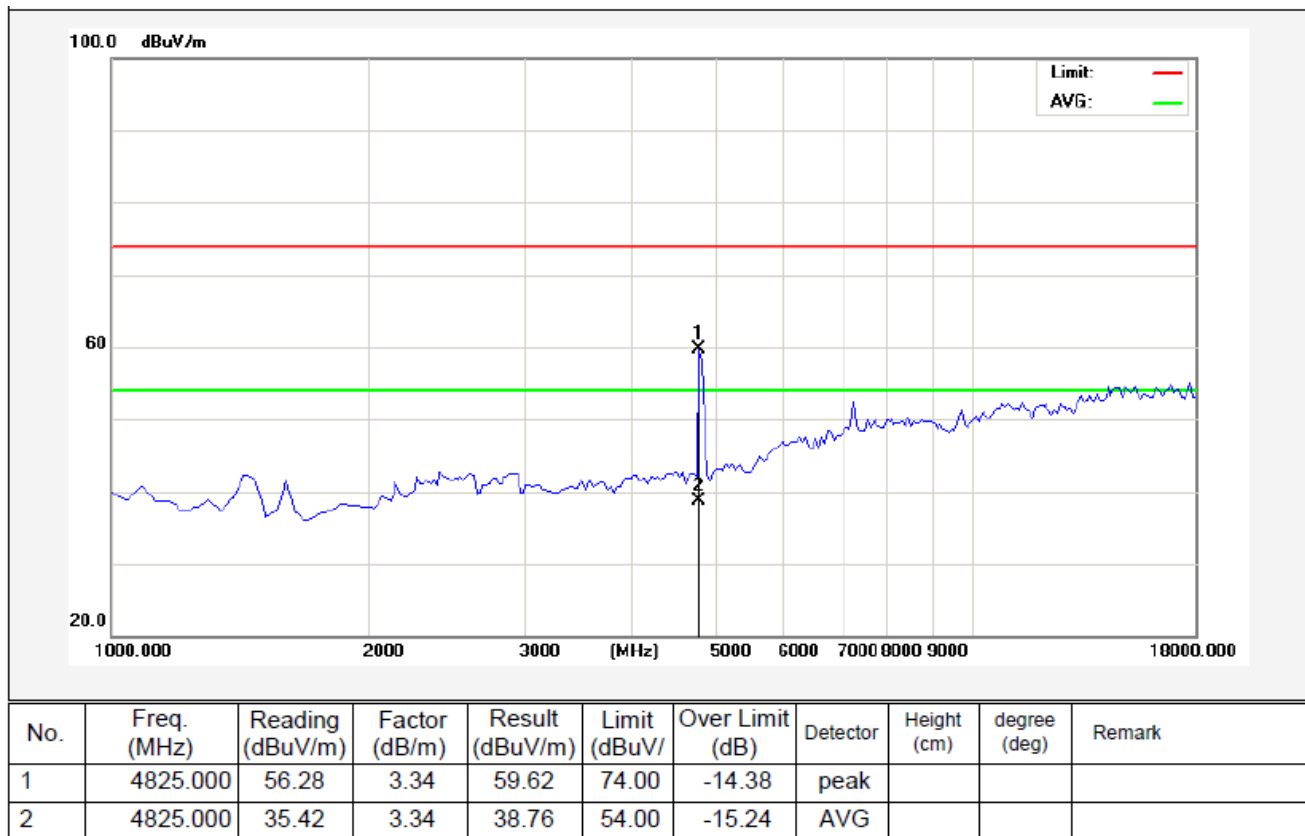
Polarity: Horizontal



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	4825.000	55.96	3.34	59.30	74.00	-14.70	peak			
2	4825.000	38.41	3.34	41.75	54.00	-12.25	AVG			

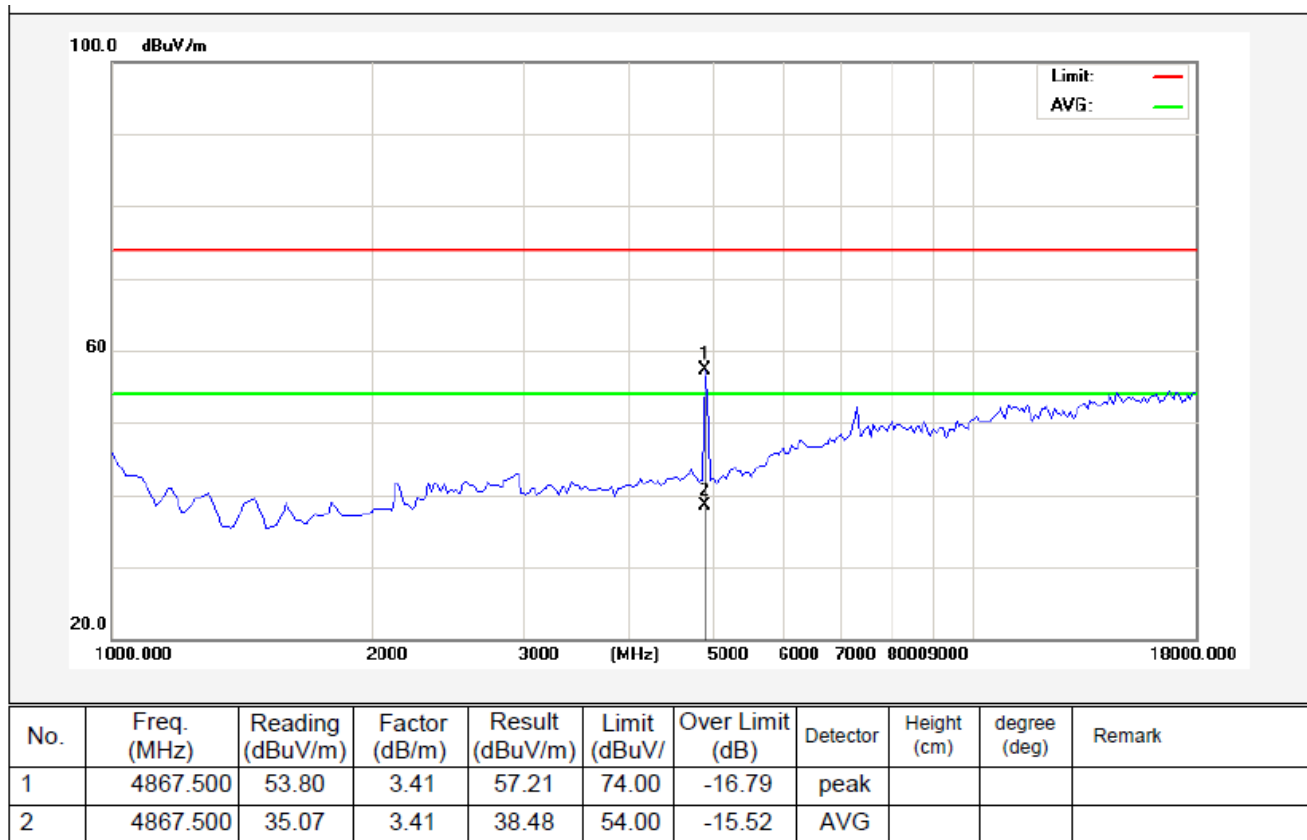
Operation Mode: TX / IEEE 802.11b / CH Low  
Temperature: 25°C  
Humidity: 50 % RH

Test Date: Jul.30, 2013  
Tested by: Rock Zeng  
Polarity: Vertical



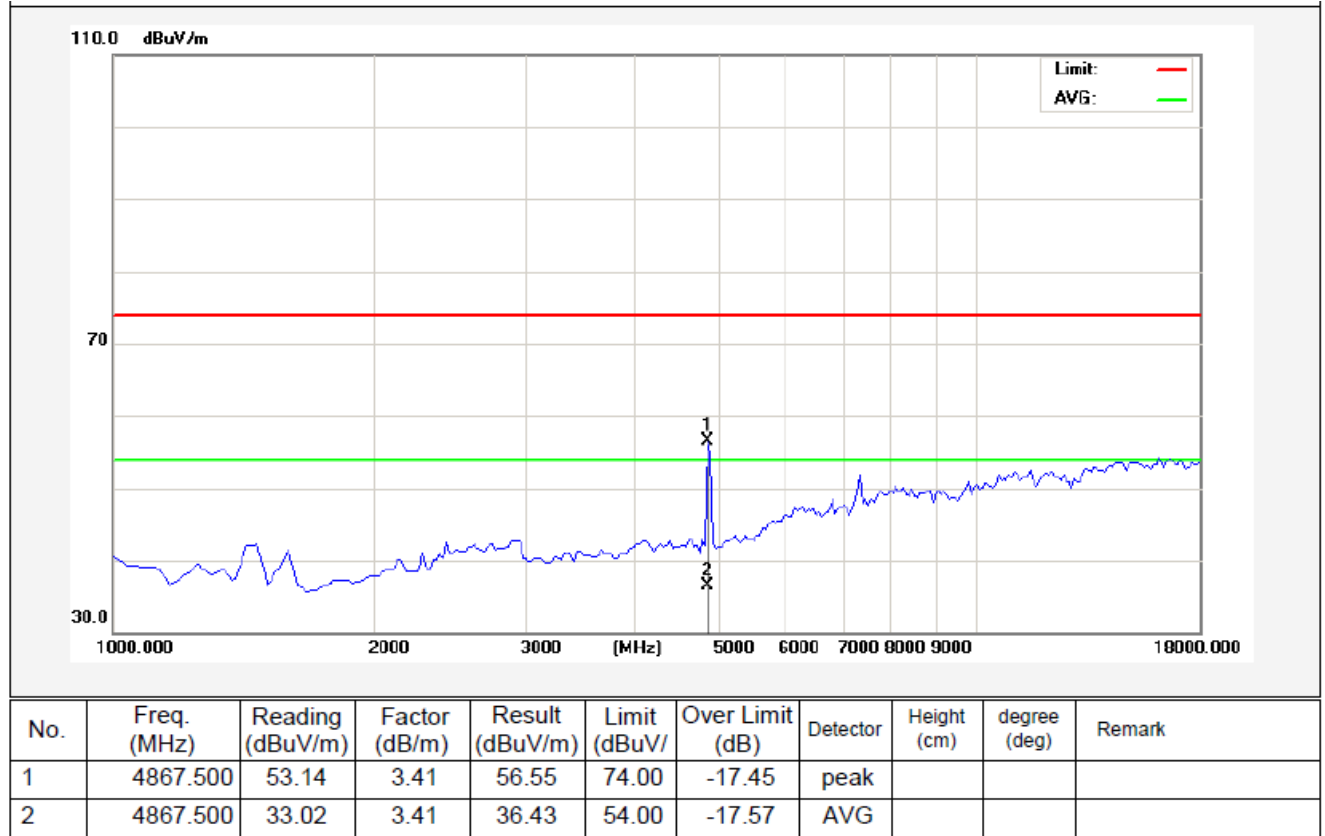
Operation Mode: TX / IEEE 802.11b / CH Mid  
Temperature: 25°C  
Humidity: 50 % RH

Test Date: Jul.30, 2013  
Tested by: Rock Zeng  
Polarity: Horizontal



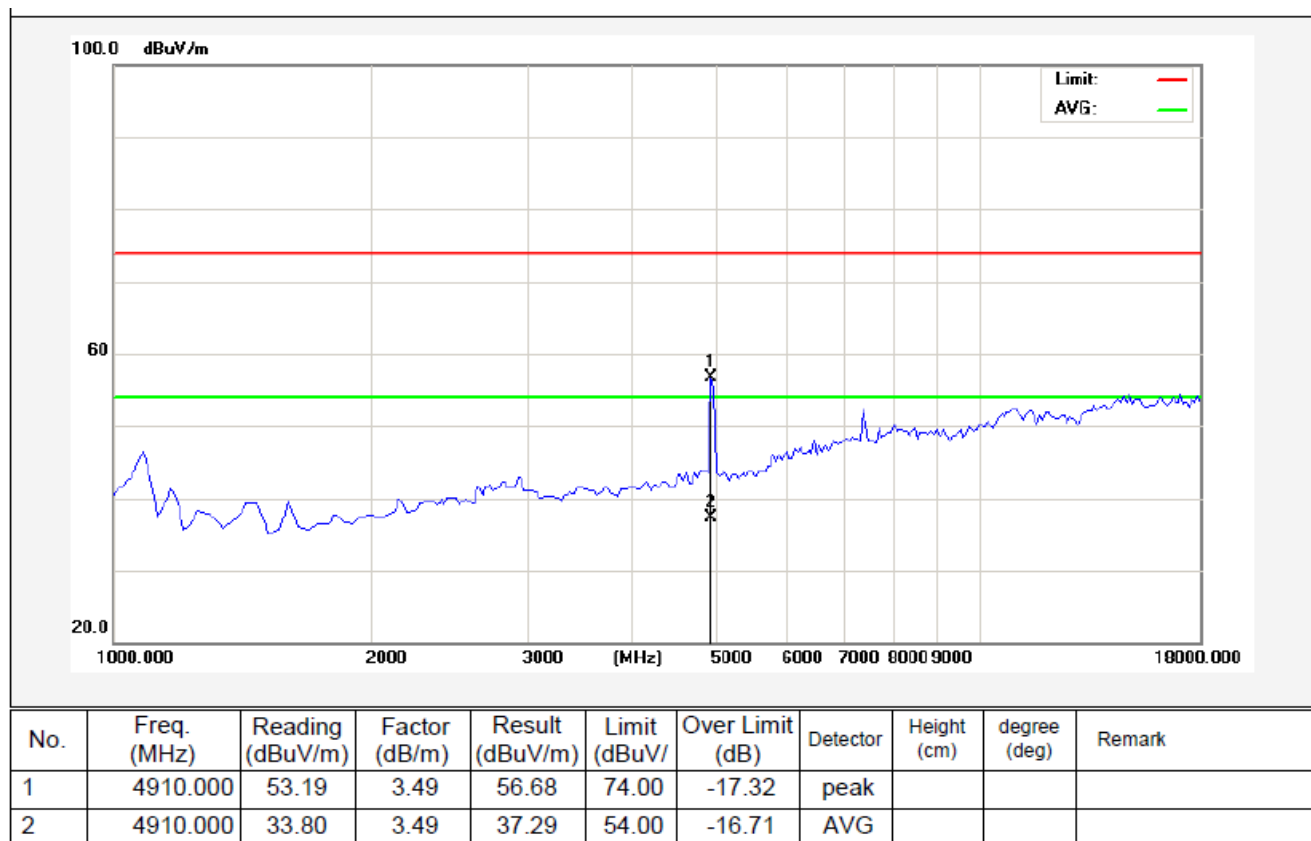
Operation Mode: TX / IEEE 802.11b / CH Mid  
Temperature: 25°C  
Humidity: 50 % RH

Test Date: Jul.30, 2013  
Tested by: Rock Zeng  
Polarity: Vertical



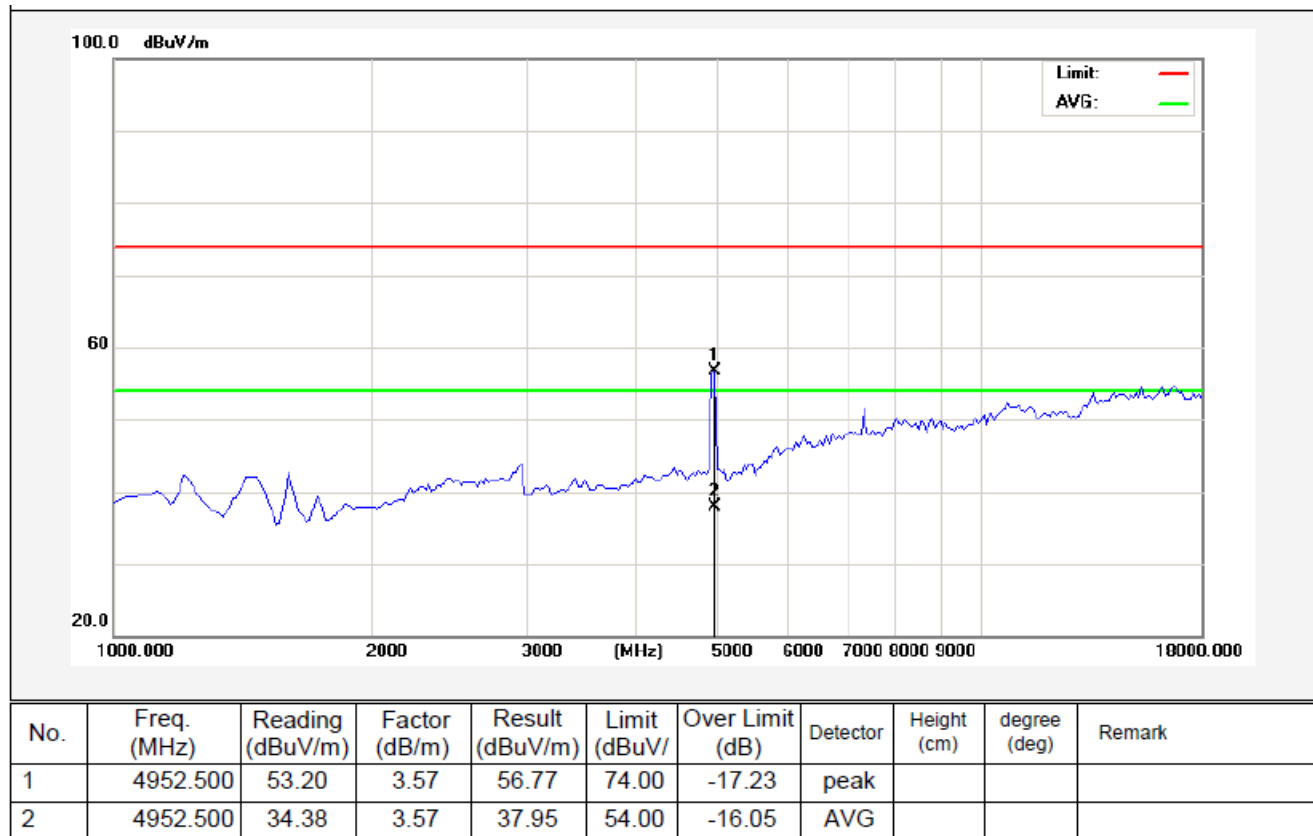
Operation Mode: TX / IEEE 802.11b / CH High  
Temperature: 25°C  
Humidity: 50 % RH

Test Date: Jul.30, 2013  
Tested by: Rock Zeng  
Polarity: Horizontal



Operation Mode: TX / IEEE 802.11b / CH High  
Temperature: 25°C  
Humidity: 50 % RH

Test Date: Jul.30, 2013  
Tested by: Rock Zeng  
Polarity: Vertical





## 6. PHOTOGRAPH

### 6.1. Photo of Conducted Emission Measurement



### 6.2. Photo of Radiation Emission Test





## Appendix I (External Photos)

Figure 1  
The EUT-Overall View



Figure 2  
The EUT-Front View





Figure 3  
The EUT-Back View



Figure 4  
The EUT-Port View



Figure 5  
The EUT-Port View



Figure 6  
The Label of Adapter View



## Appendix II (Internal Photos)

Figure 7  
The EUT-Inside View



Figure 8  
PCB of the EUT-Front View

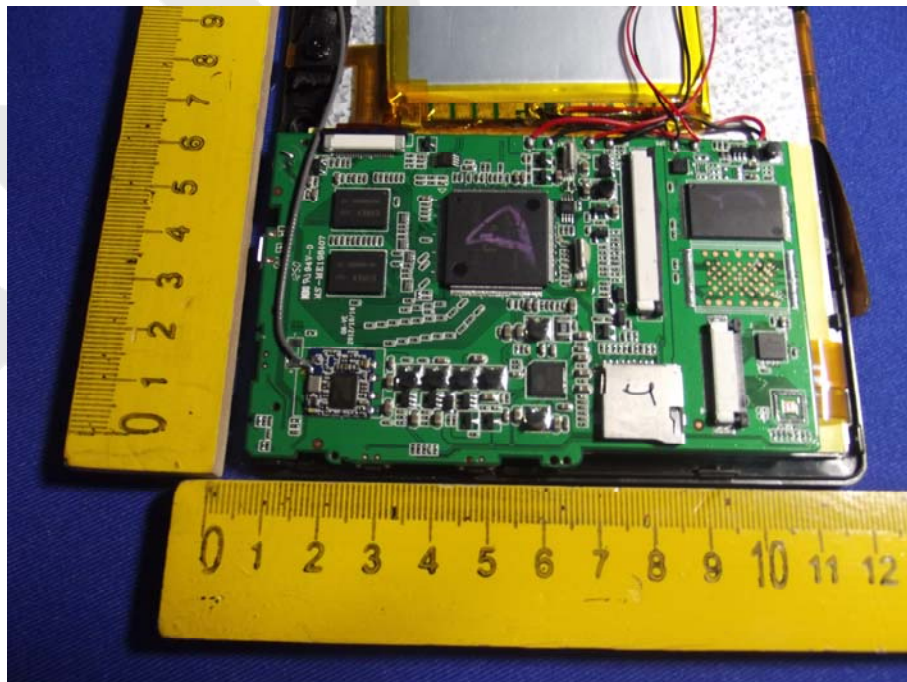




Figure 9  
PCB of the EUT-Back View

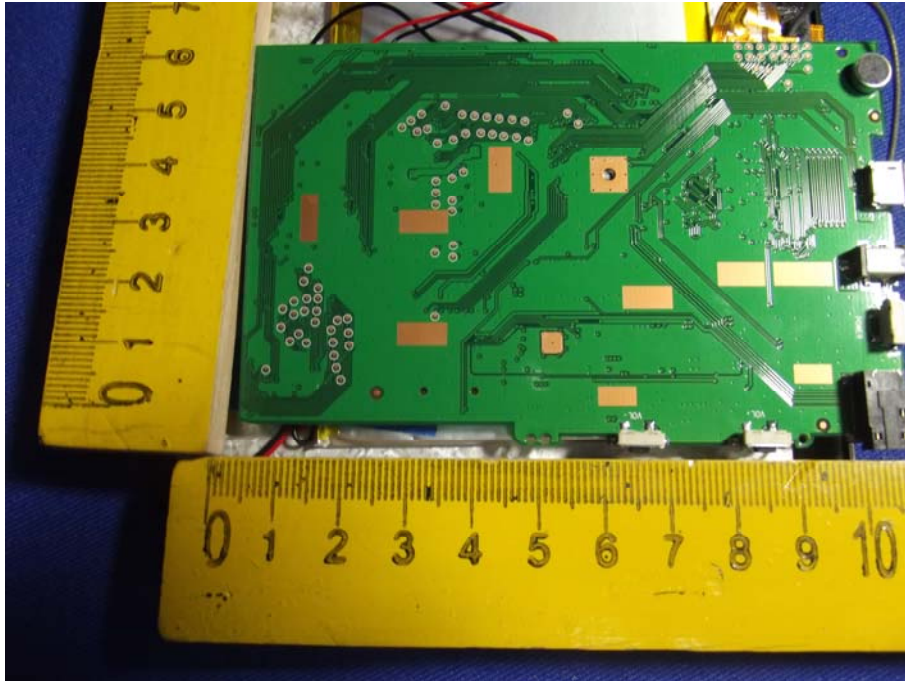


Figure 10  
PCB of the EUT-Battery View



Figure 11  
PCB of the EUT-Front View

