FCC TEST REPORT
for
Nanfoon Applied Technologies Ltd.

2.4 G Wireless Radio
Model No.: BWA-A, BWA-B, BWA-C, BWA-D

Prepared for	:	Nanfoon Applied Technologies Ltd.
Address	:	Suite 1810, Kuntai International Mansion, No.12 B, Chaowai ST., Beijing, 100020, China

Prepared By	:	Shenzhen Anbotek Compliance Laboratory Limited
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Report Number	:	R011405156E
Date of Test	:	May 16~ 28, 2014
Date of Report	:	May 29, 2014

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TEST REPORT

Applicant	:	Nanfoon Applied Technologies Ltd.
Manufacturer	:	Beijing Bitwave Telecom Technology Co., Ltd.
EUT	:	2.4 G Wireless Radio
Model No.	:	BWA-A, BWA-B, BWA-C, BWA-D
Serial No.	:	N.A.
Trade Mark	:	N.A.
Rating	:	DC 12-18V, 10-500mW

Measurement Procedure Used:
FCC Part15 Subpart C, Paragraph 15.247

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 : May 16~ 28, 2014

Prepared by : Rock zeng
(Tested Engineer / Rock Zeng)

Reviewer : Amy Ding
(Project Manager / Amy Ding)

Approved & Authorized Signer : Tom Chen
(Manager / Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	2.4 G Wireless Radio
Model Number	:	BWA-A, BWA-B, BWA-C, BWA-D (Note: All samples are the same except the model number and appearance, so we prepare "BWA-A" for EMC test only.)
Test Power Supply	:	AC 120V/60Hz for adapter
Adapter	:	Model: CAP012121 CN Input: 100-240V~, 47-63Hz, 0.35A Output: 12V⎓, 1.0A (12.0W)
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 Gain:	:	12dBi
Applicant	:	Nanfoon Applied Technologies Ltd.
Address	:	Suite 1810, Kuntai International Mansion, No.12 B, Chaowai ST., Beijing, 100020, China
Manufacturer	:	Beijing Bitwave Telecom Technology Co., Ltd.
Address	:	11F, No.18, Xueqing Street, Haidian District, Beijing, China
Factory	:	Beijing Bitwave Telecom Technology Co., Ltd.
Address	:	11F, No.18, Xueqing Street, Haidian District, Beijing, China
Date of receipt	:	May 16, 2014
Date of Test	:	May 16~ 28, 2014

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
Wireless Receive Cover Station:	:	M/N: BWDTS-V8MO-X23
Power Line	:	Non-Shielded, 1.5m
VGA Cable	:	Non-Shielded, 1.5m
Network Cable	:	Non-Shielded, 1.5m

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 registed 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

2. TEST METHODOLOGY

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

2.1. 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

2.2. 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 isprogrammed.
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.

2.3. List of channels:

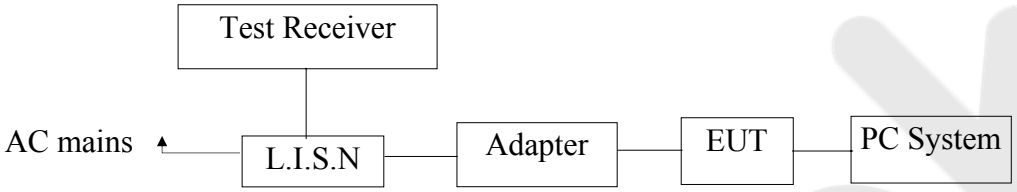
√ - available
X - tested

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	

3. Conducted Emission Test

3.1. Block Diagram of Test Setup

3.1.1. Block diagram of connection between the EUT and simulators



3.2. 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.

3.3. 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.

3.4. Operating Condition of EUT

3.4.1. Setup the EUT and simulator as shown as Section 3.1.

3.4.2. Turn on the power of all equipment.

3.4.3. Let the EUT work in test mode (On) and measure it.

3.5. 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 3.6.

3.6. Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Two-Line V-network	Rohde & Schwarz	ENV216	100055	Apr. 23, 2014	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Apr. 23, 2014	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Apr. 23, 2014	1 Year

3.7. Power Line Conducted Emission Measurement Results

PASS.

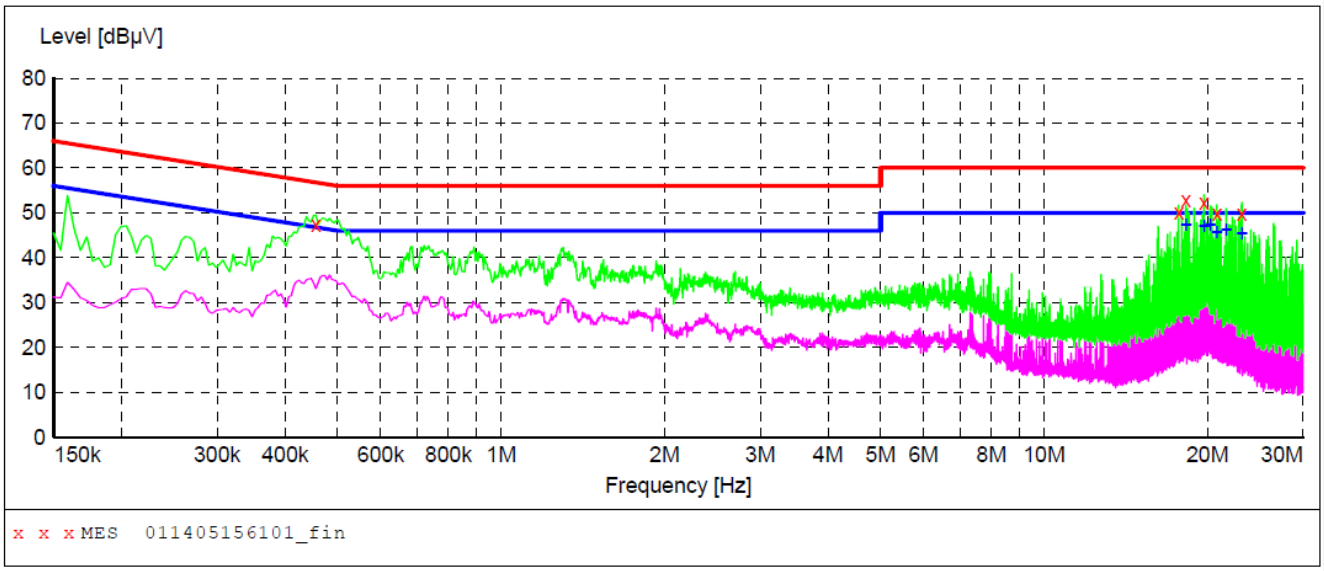
The frequency range from 150KHz to 30 MHz is investigated.

Please refer the following pages.

CONDUCTED EMISSION TEST DATA

Test Site:	1# Shielded Room
Operating Condition:	On
Test Specification:	AC 120V/60Hz for Adapter
Comment:	Live Line
	Tem:25℃ Hum:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



MEASUREMENT RESULT: "011405156101_fin"

5/23/2014 10:53AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.456000	47.40	20.1	57	9.4	QP	L1	GND
17.695000	50.00	20.8	60	10.0	QP	L1	GND
18.244000	52.80	20.8	60	7.2	QP	L1	GND
19.711000	52.40	20.8	60	7.6	QP	L1	GND
20.809000	49.90	20.8	60	10.1	QP	L1	GND
23.131000	49.90	20.8	60	10.1	QP	L1	GND

MEASUREMENT RESULT: "011405156101_fin2"

5/23/2014 10:53AM

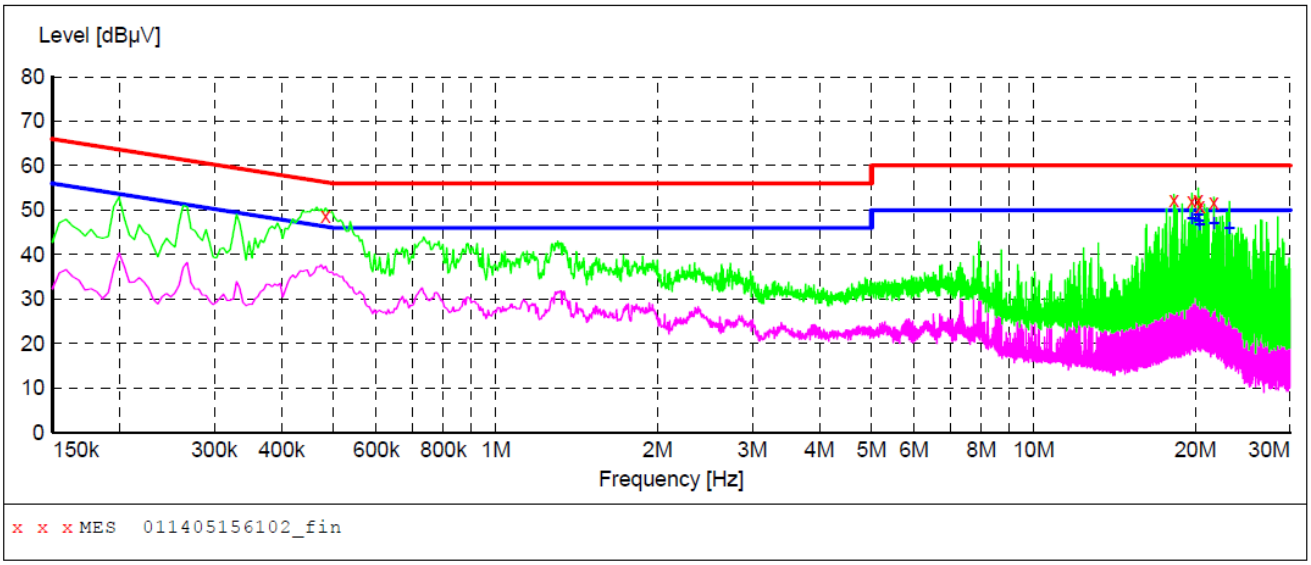
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
18.244000	47.40	20.8	50	2.6	AV	L1	GND
19.711000	47.00	20.8	50	3.0	AV	L1	GND
20.260000	47.40	20.8	50	2.6	AV	L1	GND
20.809000	45.60	20.8	50	4.4	AV	L1	GND
21.664000	46.20	20.8	50	3.8	AV	L1	GND
23.131000	45.30	20.8	50	4.7	AV	L1	GND

CONDUCTED EMISSION TEST DATA

Test Site:	1# Shielded Room
Operating Condition:	On
Test Specification:	AC 120V/60Hz for Adapter
Comment:	Neutral Line
	Tem:25℃ Hum:50%

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

Short Description: 150K-30M Disturbance Voltages



MEASUREMENT RESULT: "011405156102_fin"

5/23/2014 10:55AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.483000	48.70	20.1	56	7.6	QP	N	GND
18.244000	52.20	20.8	60	7.8	QP	N	GND
19.711000	52.00	20.8	60	8.0	QP	N	GND
20.260000	52.20	20.8	60	7.8	QP	N	GND
20.381500	50.80	20.8	60	9.2	QP	N	GND
21.664000	51.60	20.8	60	8.4	QP	N	GND

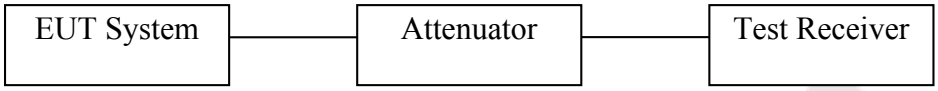
MEASUREMENT RESULT: "011405156102_fin2"

5/23/2014 10:55AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
19.711000	47.50	20.8	50	2.5	AV	N	GND
20.260000	47.70	20.8	50	2.3	AV	N	GND
20.318500	47.50	20.8	50	2.5	AV	N	GND
20.381500	46.80	20.8	50	3.2	AV	N	GND
21.664000	47.10	20.8	50	2.9	AV	N	GND
23.131000	45.90	20.8	50	4.1	AV	N	GND

4. FCC Part 15.247 Requirements for DSSS & OFDM Modulation

4.1 Test Setup



4.2 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, VBW≥3*RBW =300kHz,
   Detector= Peak
   Trace mode= Max hold.
   Sweep- auto couple.
4. Mark the peak frequency and –6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

c. Test Setup See 4.1

d. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Aug. 09, 2013	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Aug. 09, 2013	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 23, 2014	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Aug. 09, 2013	3 Year
5.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

e. Test Results

Pass.

f. Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2412	12.20		Pass
Mid	2437	12.20	>500	Pass
High	2462	12.20		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)

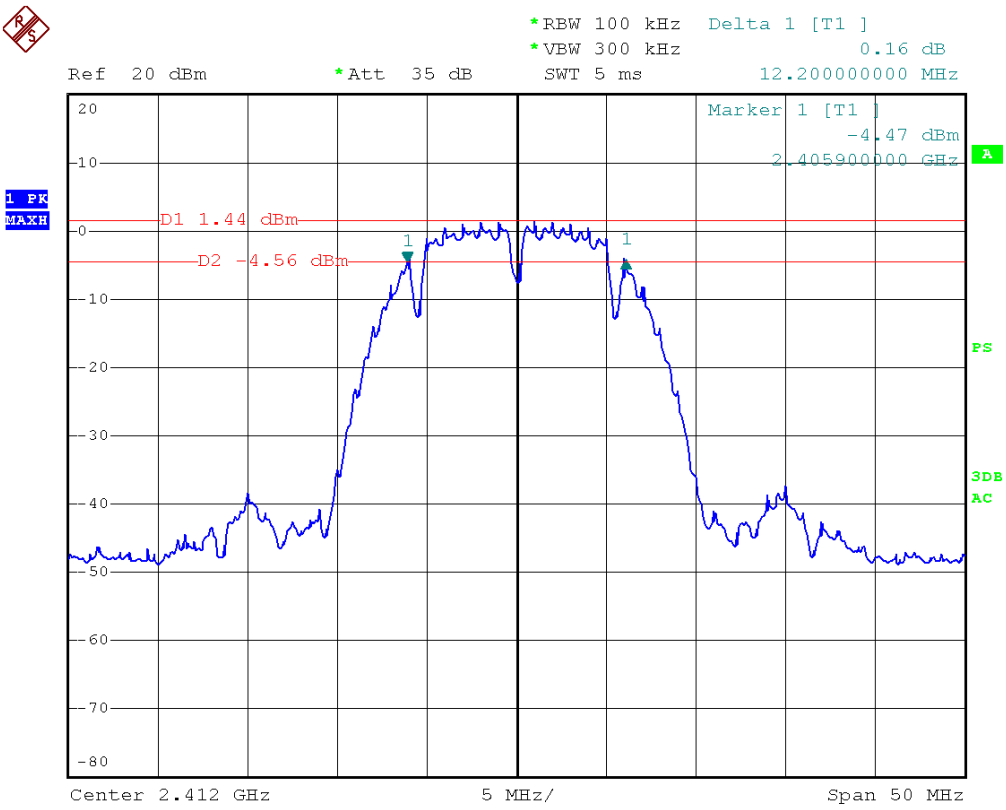
Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2412	17.60		Pass
Mid	2437	17.60	>500	Pass
High	2462	17.60		Pass

Test mode: IEEE 802.11n (HT40)

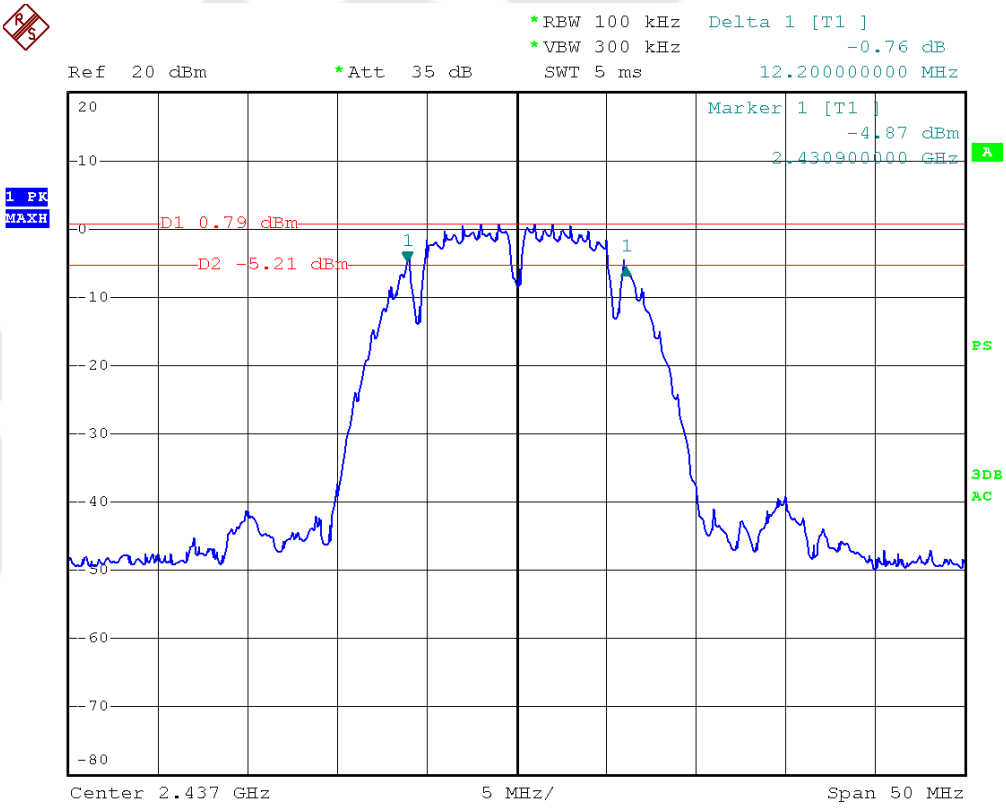
Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2422	36.32		Pass
Mid	2437	36.16	>500	Pass
High	2452	36.36		Pass

Test Plots See the following page.

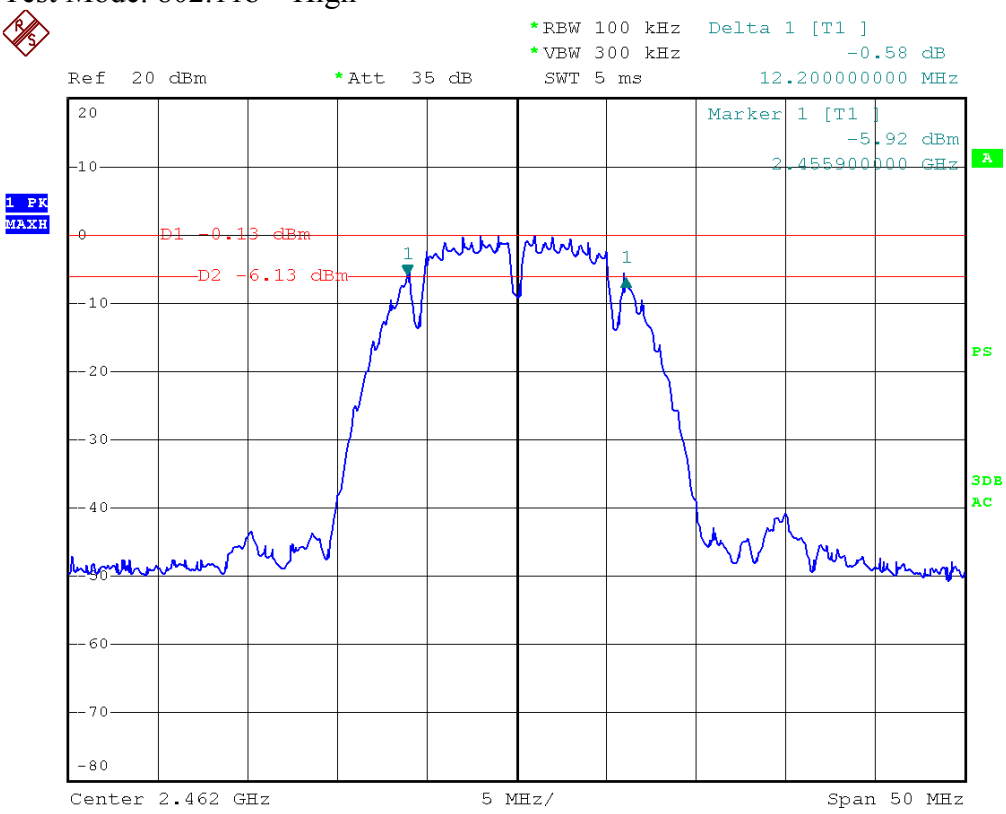
Test Mode: 802.11b---Low



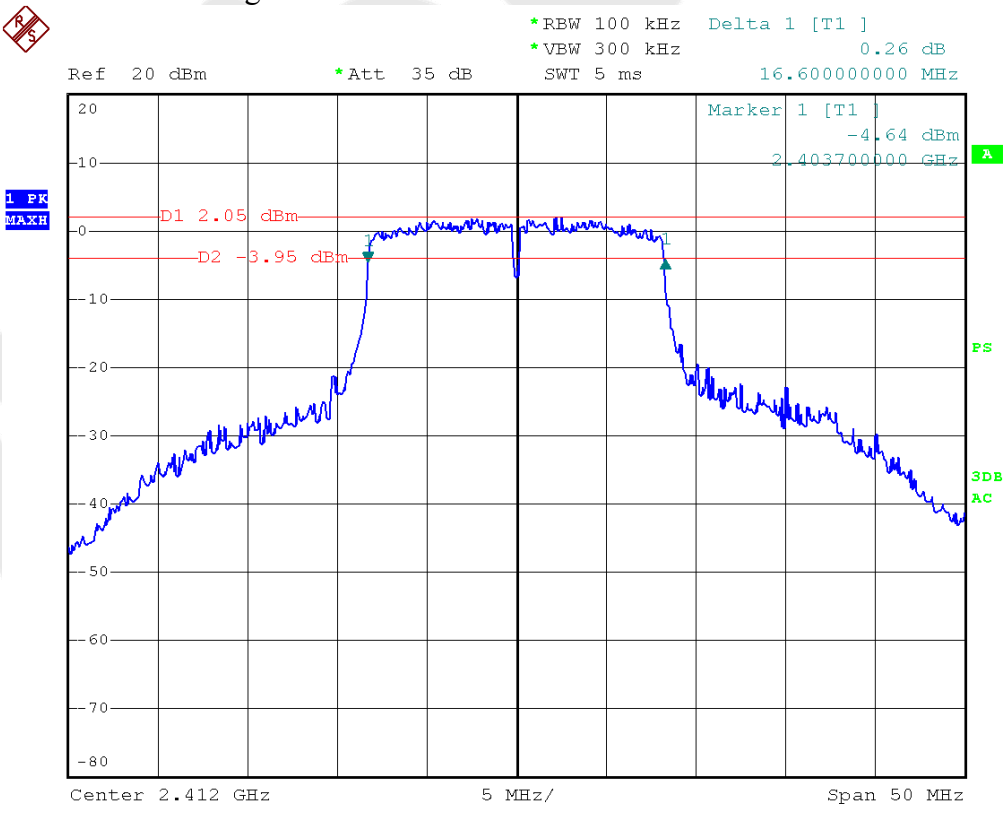
Test Mode: 802.11b---Mid



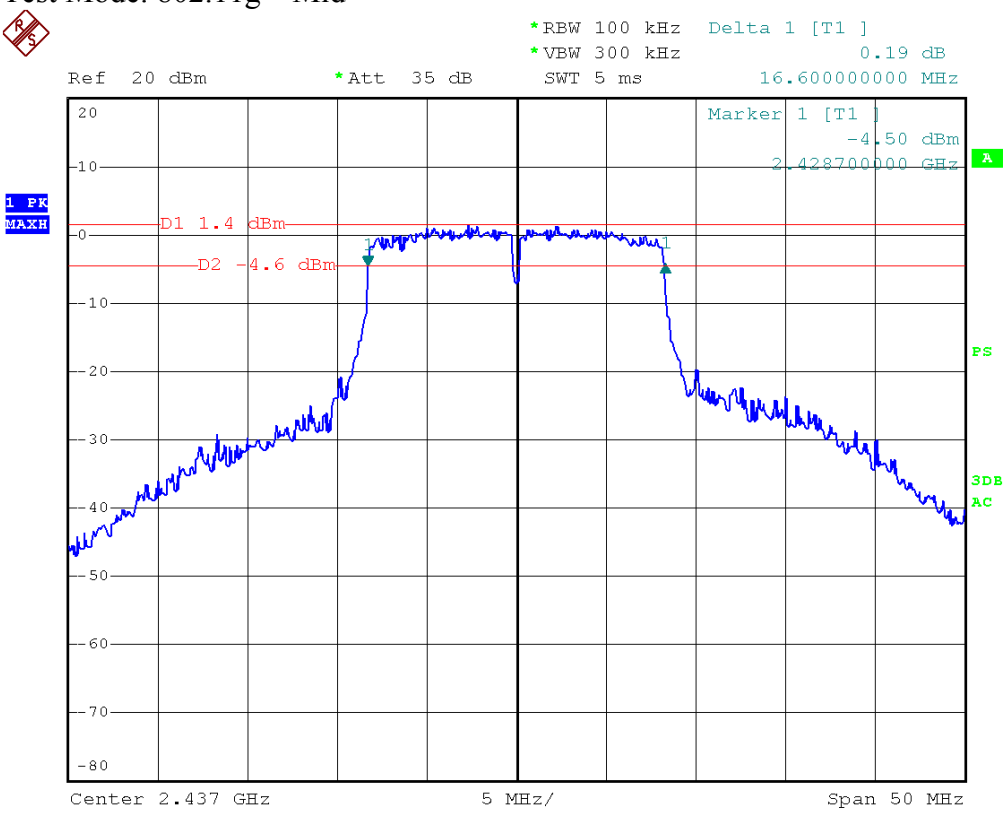
Test Mode: 802.11b---High



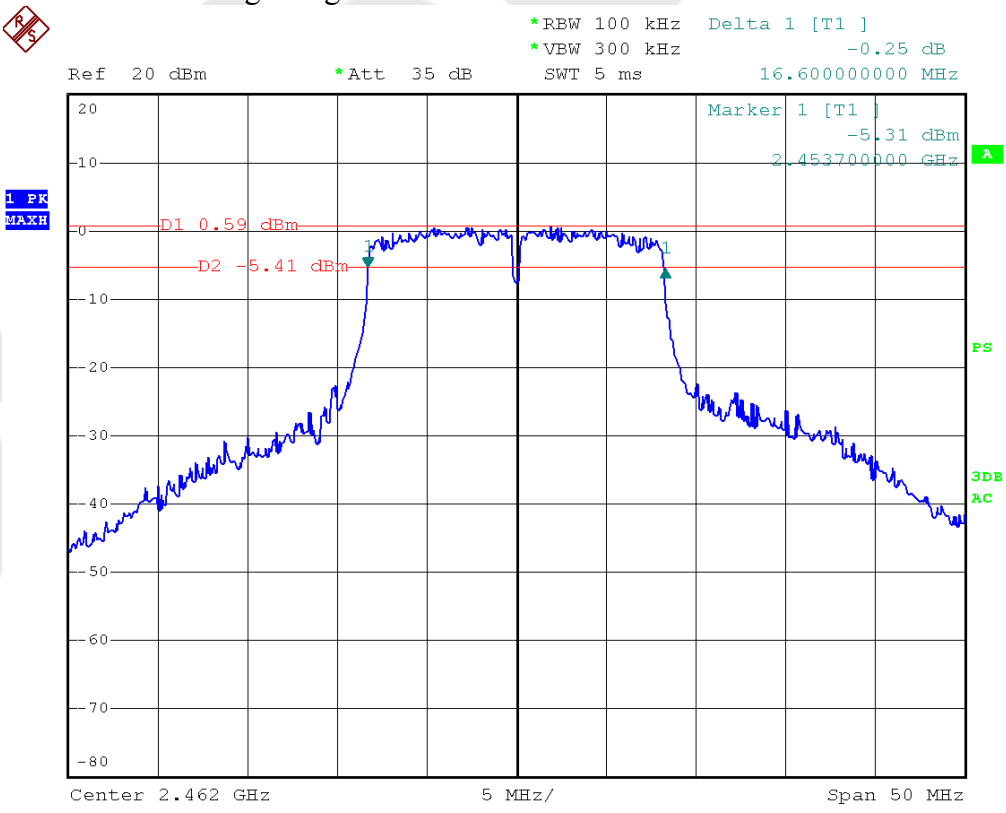
Test Mode: 802.11g---Low



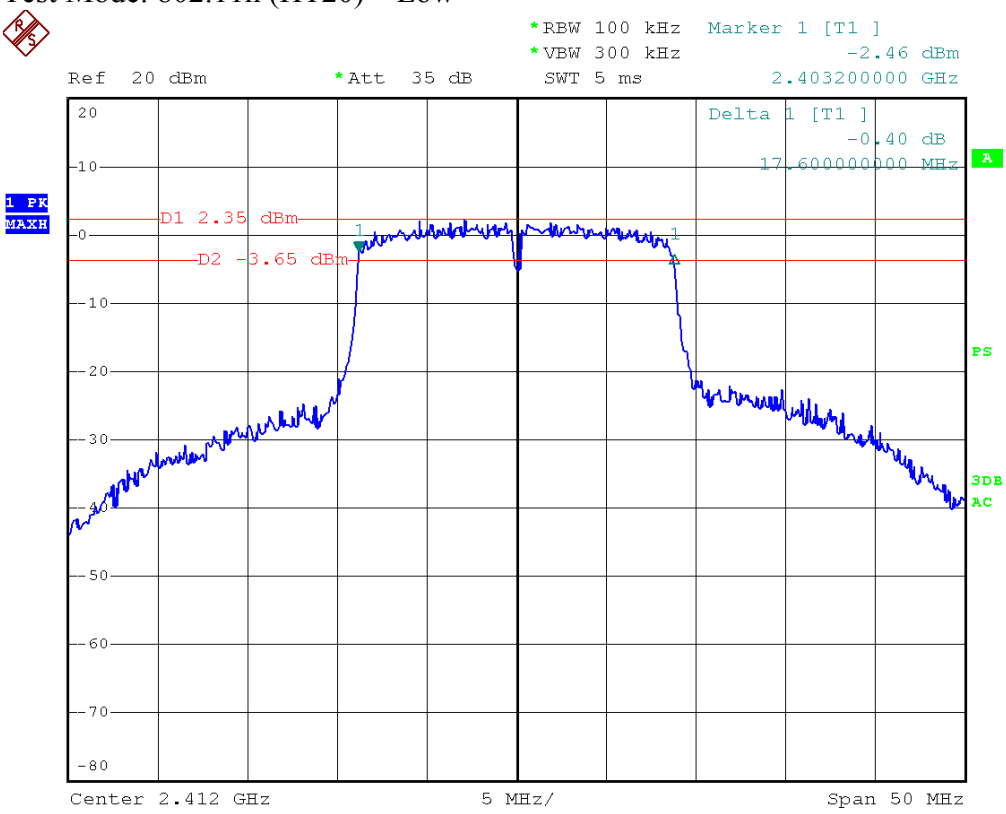
Test Mode: 802.11g---Mid



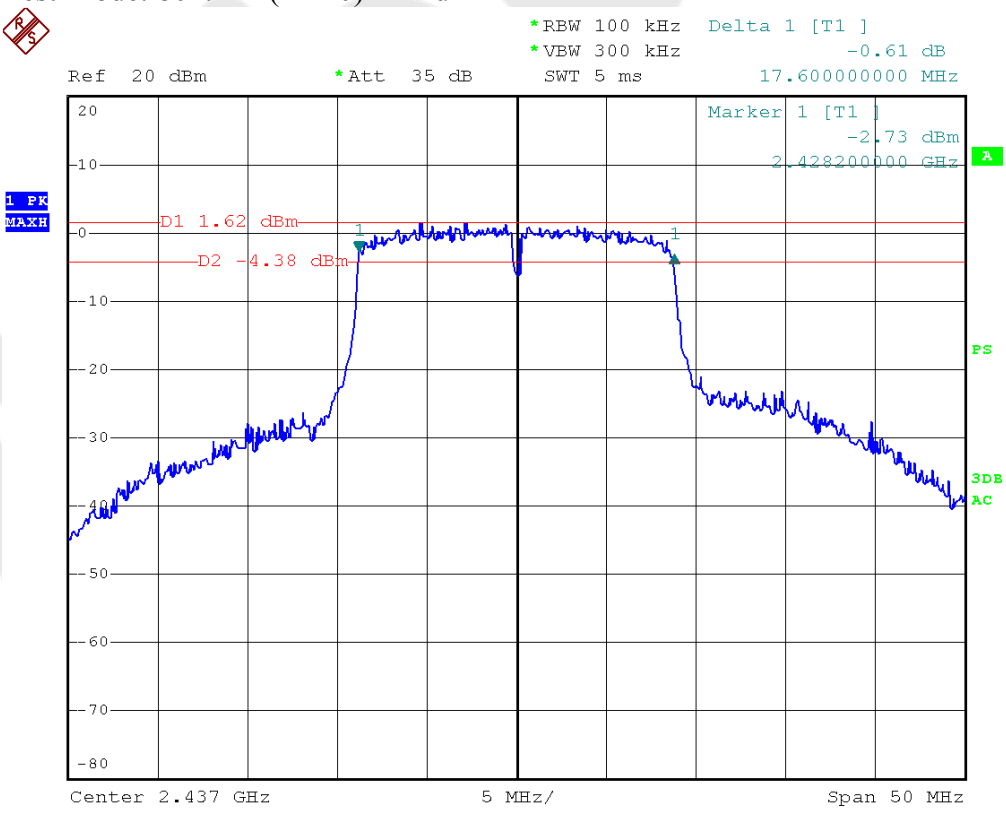
Test Mode: 802.11g---High



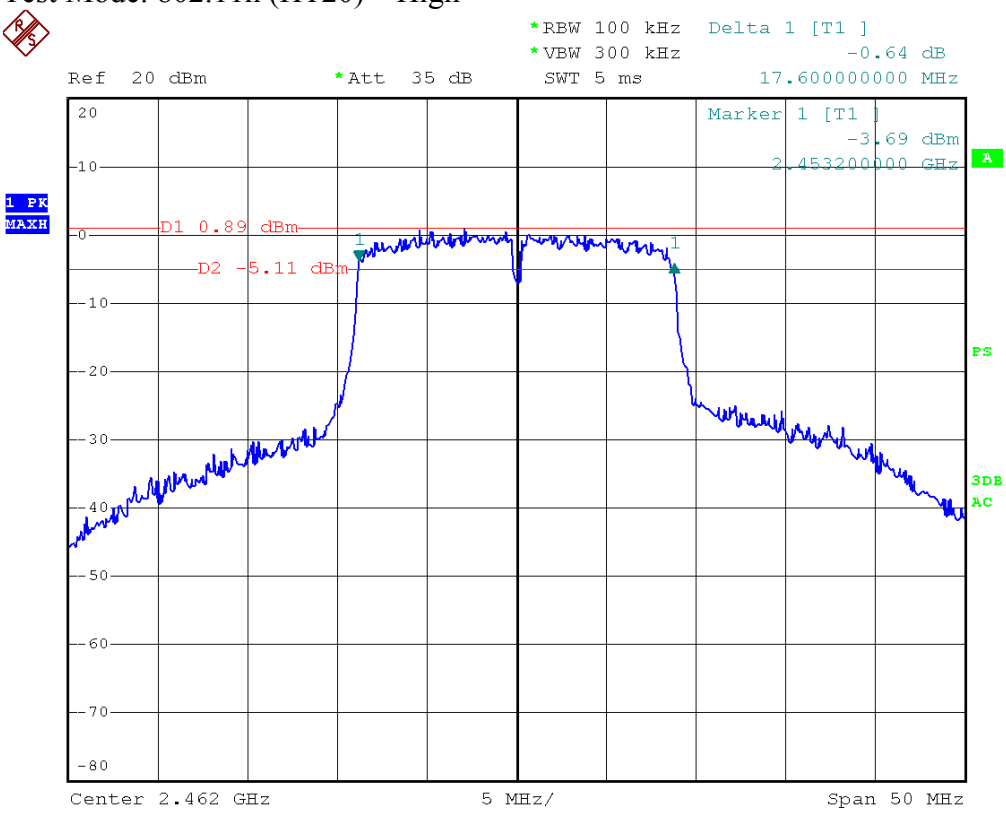
Test Mode: 802.11n (HT20)---Low



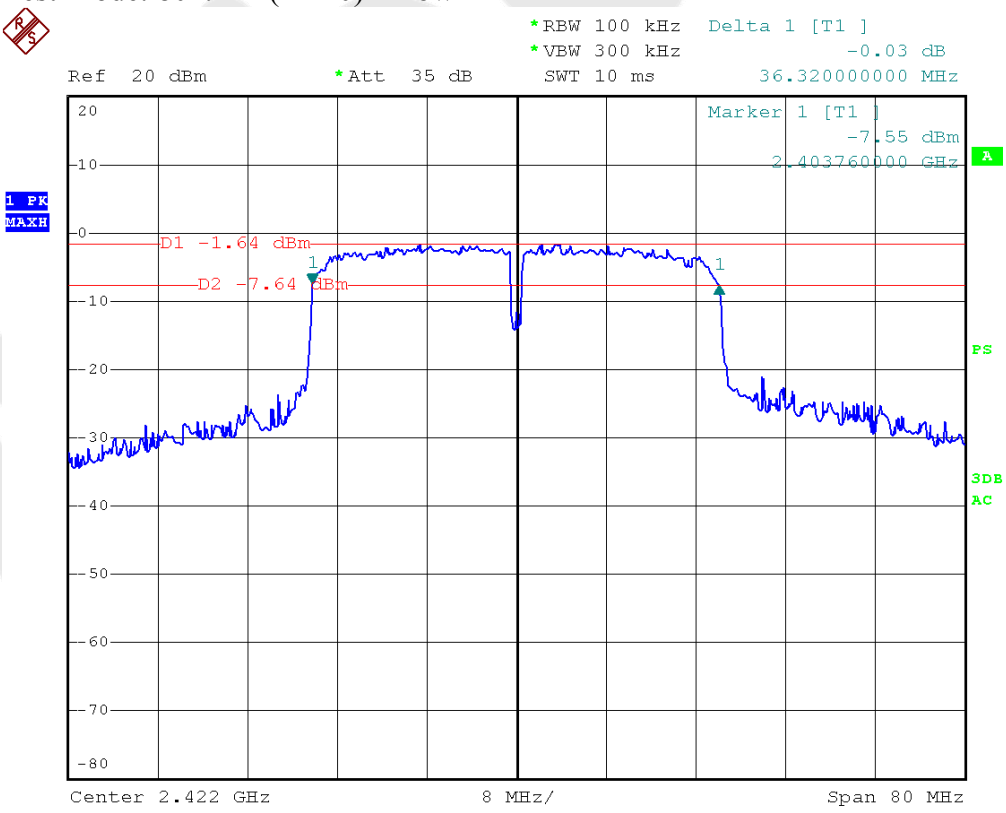
Test Mode: 802.11n (HT20)---Mid



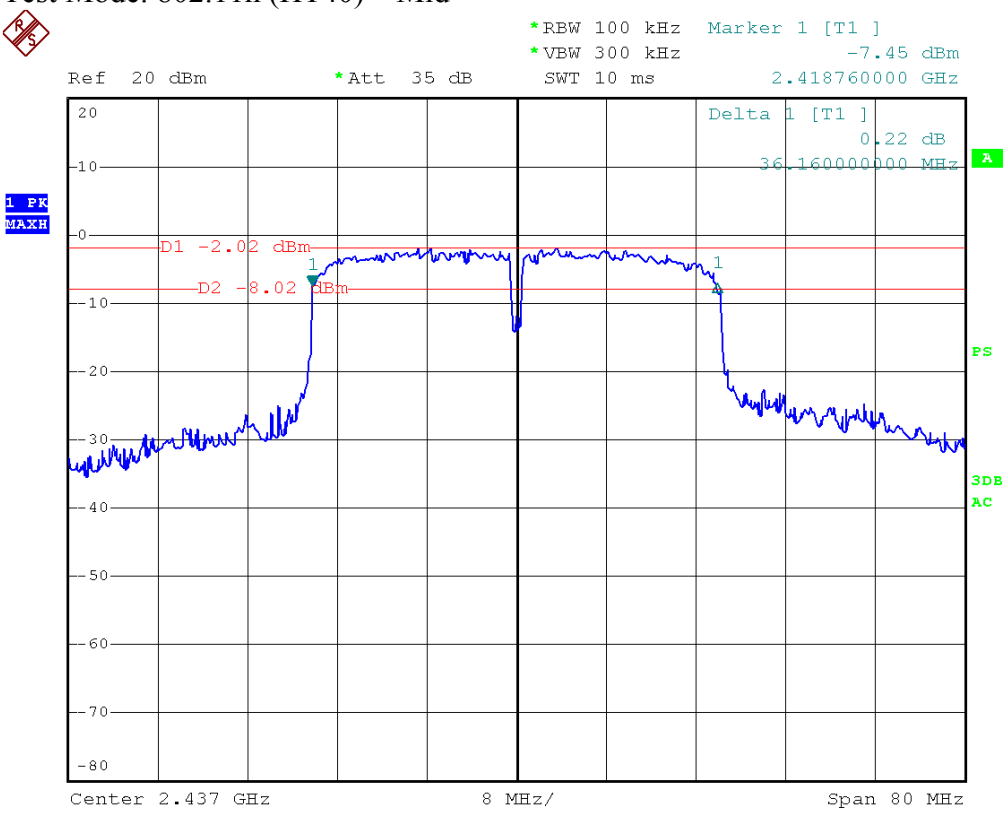
Test Mode: 802.11n (HT20)---High



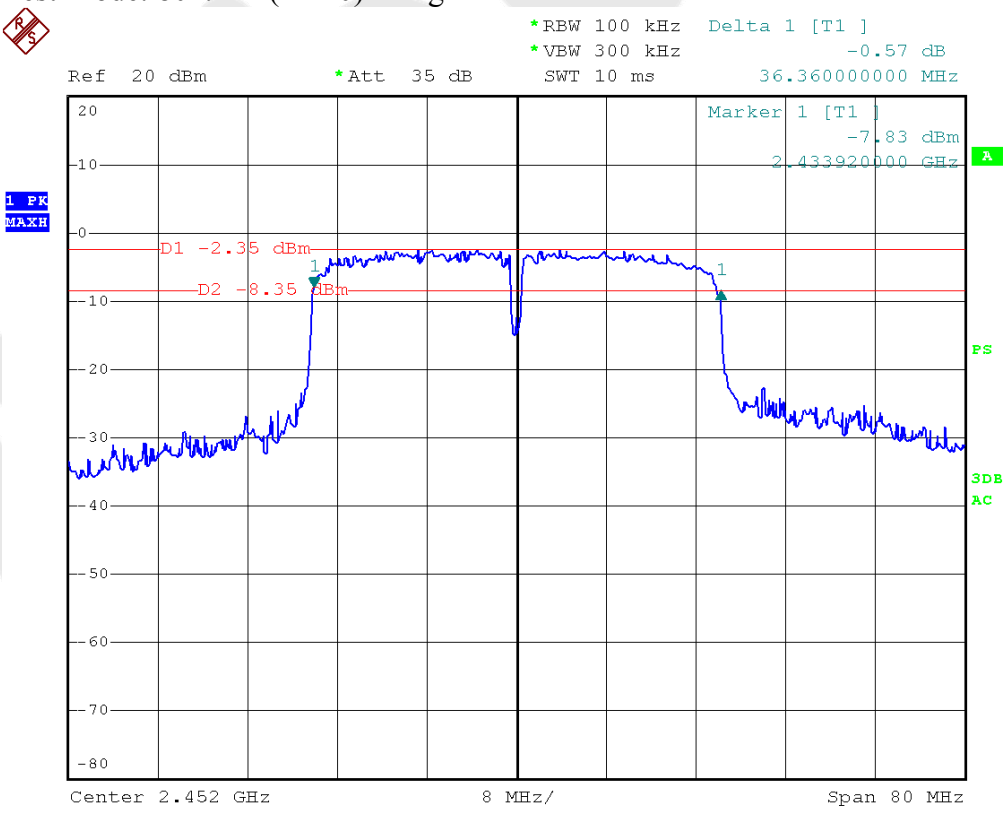
Test Mode: 802.11n (HT40)---Low



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



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



4.3. Maximum Peak output power test

a. Limit

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted out-put power. Maximum Conducted Out-put Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmit-ting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) 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. Data Rates

IEEE802.11b: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 1 Mbps 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 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 6.5Mbps 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 13.5Mbps data rate (the worst case) are chosen for the final testing.

d. Test Procedure

This test was according the kDB 558074 9.1.2:

1. This procedure may be used when the maximum available RBW of the measurement instrument is less than the DTS bandwidth.
2. Set the RBW = 1 MHz.
3. Set the VBW≥3*RBW = 3 MHz.
4. Set the span≥ 1.5*DTS bandwidth.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. 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 levels (in linear power units) at intervals equal to the RBW extending across the DTS bandwidth.

e. Test Equipment

Same as the equipment listed in 4.2.

f. Test Results

Pass.

g. Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Result
Low	2412	17.11	23	Pass
Mid	2437	16.33		Pass
High	2462	15.54		Pass

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Result
Low	2412	17.67	23	Pass
Mid	2437	17.13		Pass
High	2462	16.39		Pass

Test mode: IEEE 802.11n (HT20)

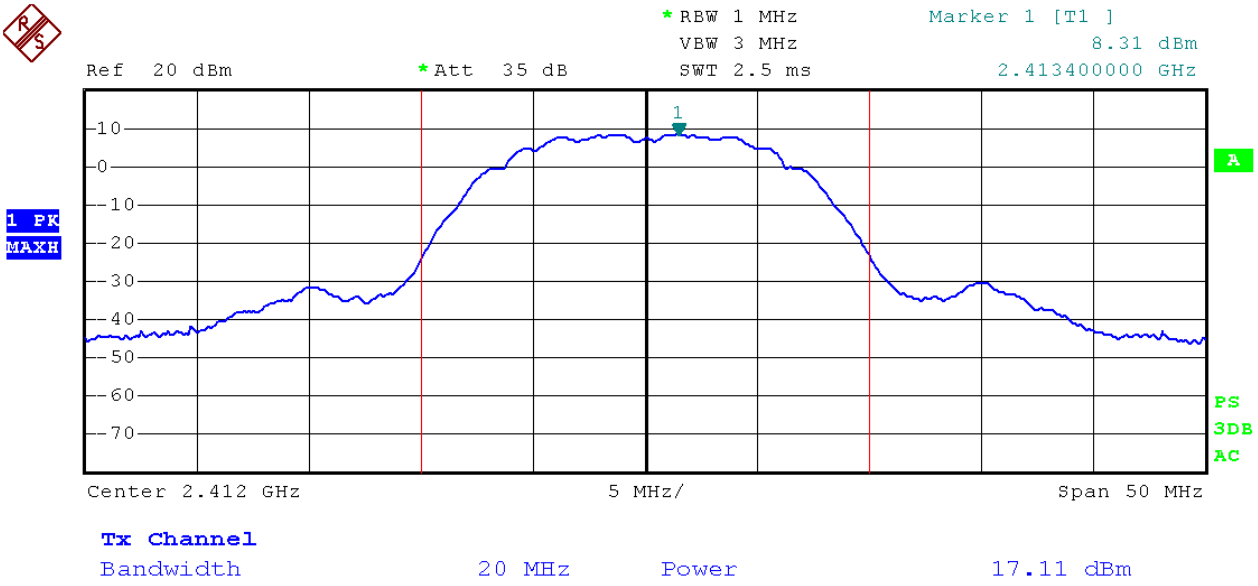
Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Result
Low	2412	18.01	23	Pass
Mid	2437	17.42		Pass
High	2462	14.48		Pass

Test mode: IEEE 802.11n (HT40)

Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Result
Low	2422	17.39	23	Pass
Mid	2437	17.15		Pass
High	2452	16.87		Pass

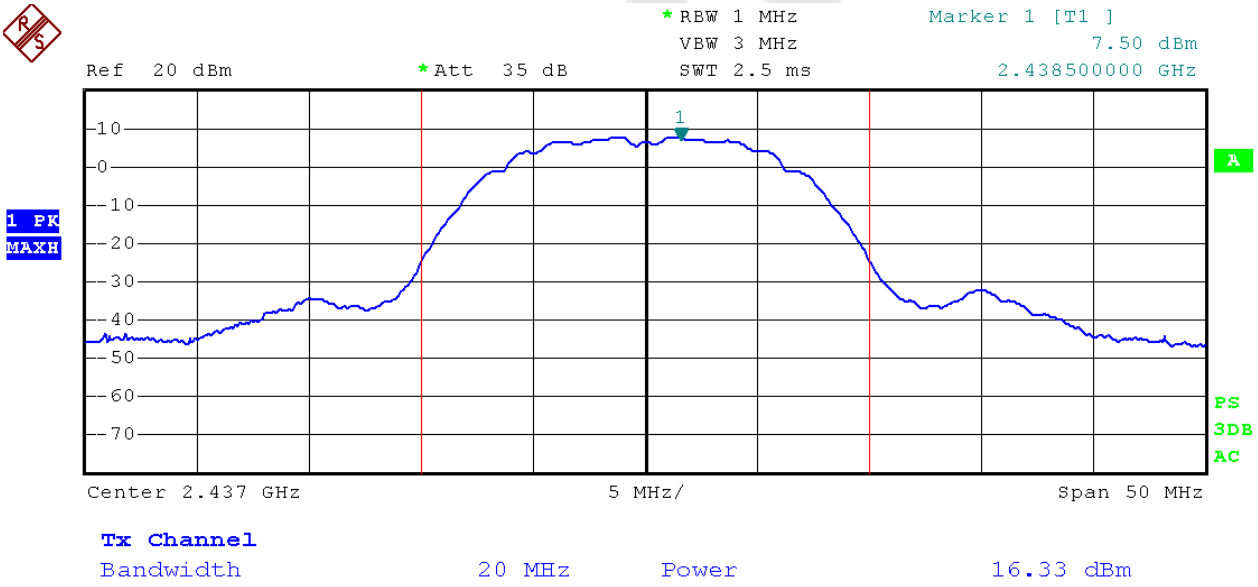
Remark: The antenna gain is 12dBi, so the output power limit should be reduced 7dBm, then the new calculated limit is 23dBm.

Test Mode: 802.11b---Low



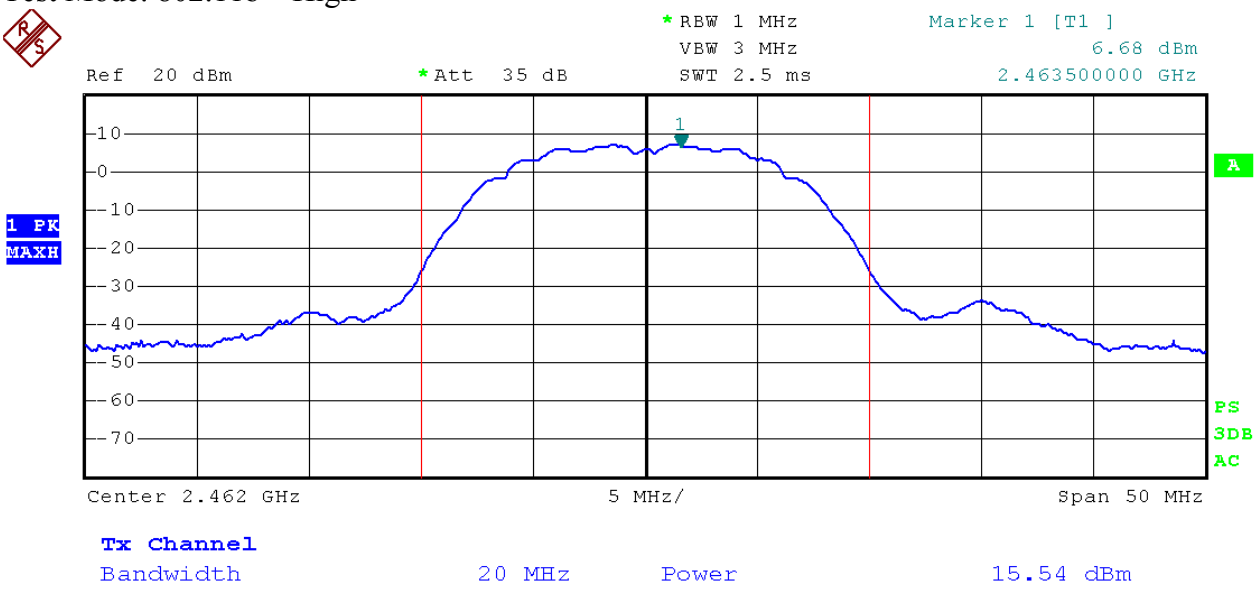
Tx Channel
Bandwidth 20 MHz Power 17.11 dBm

Test Mode: 802.11b---Mid

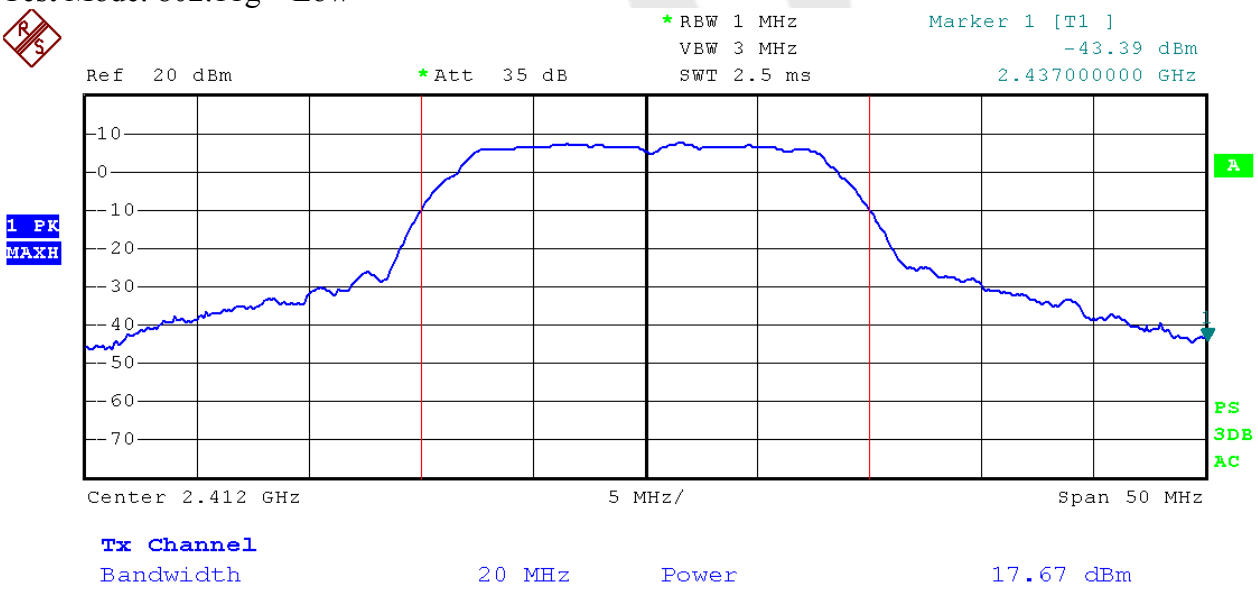


Tx Channel
Bandwidth 20 MHz Power 16.33 dBm

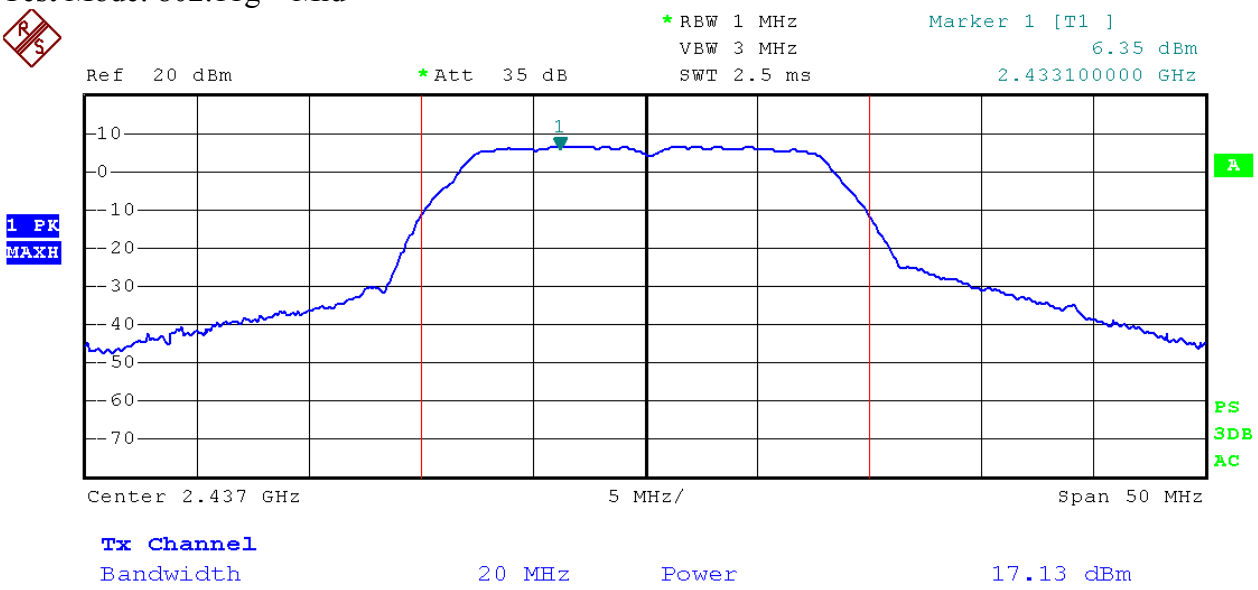
Test Mode: 802.11b---High



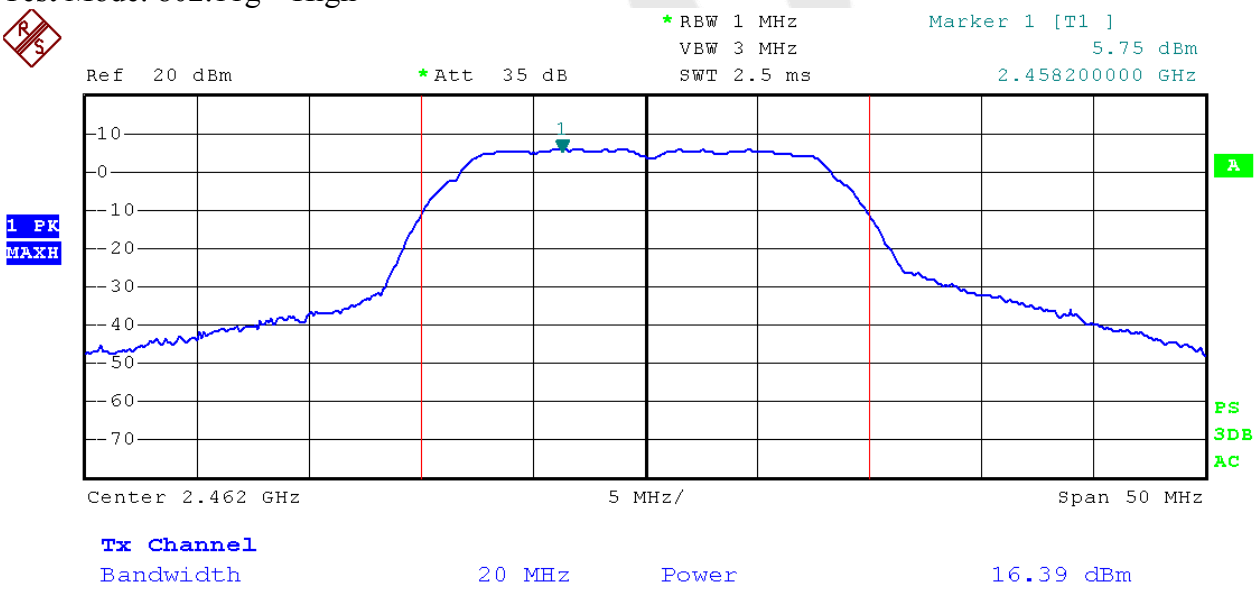
Test Mode: 802.11g---Low



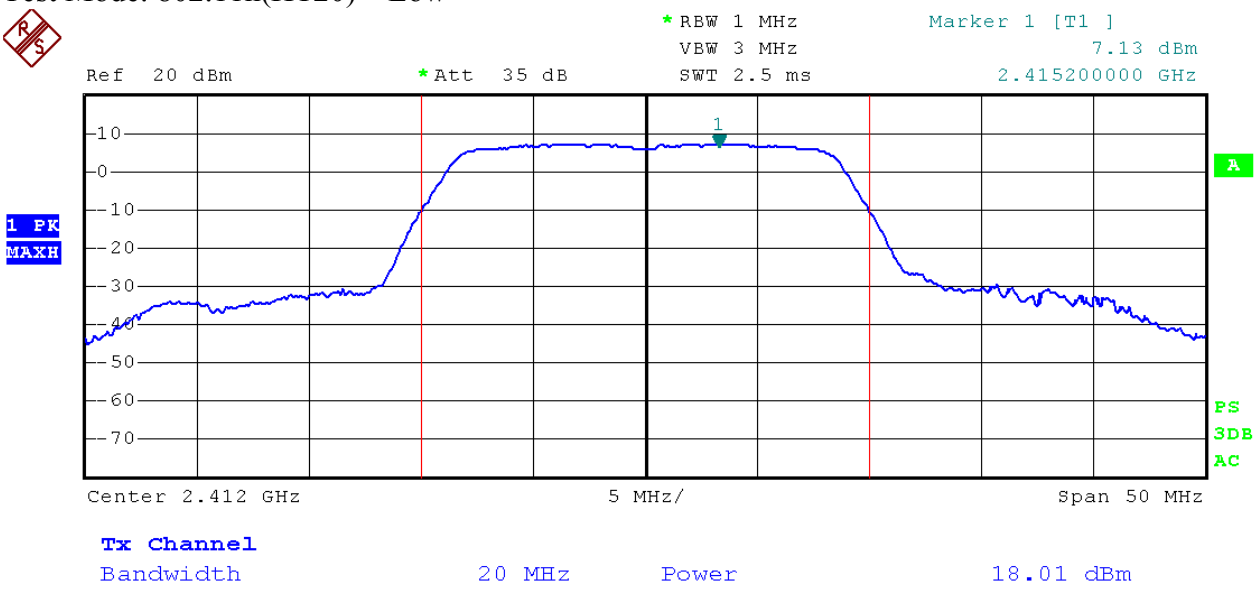
Test Mode: 802.11g---Mid



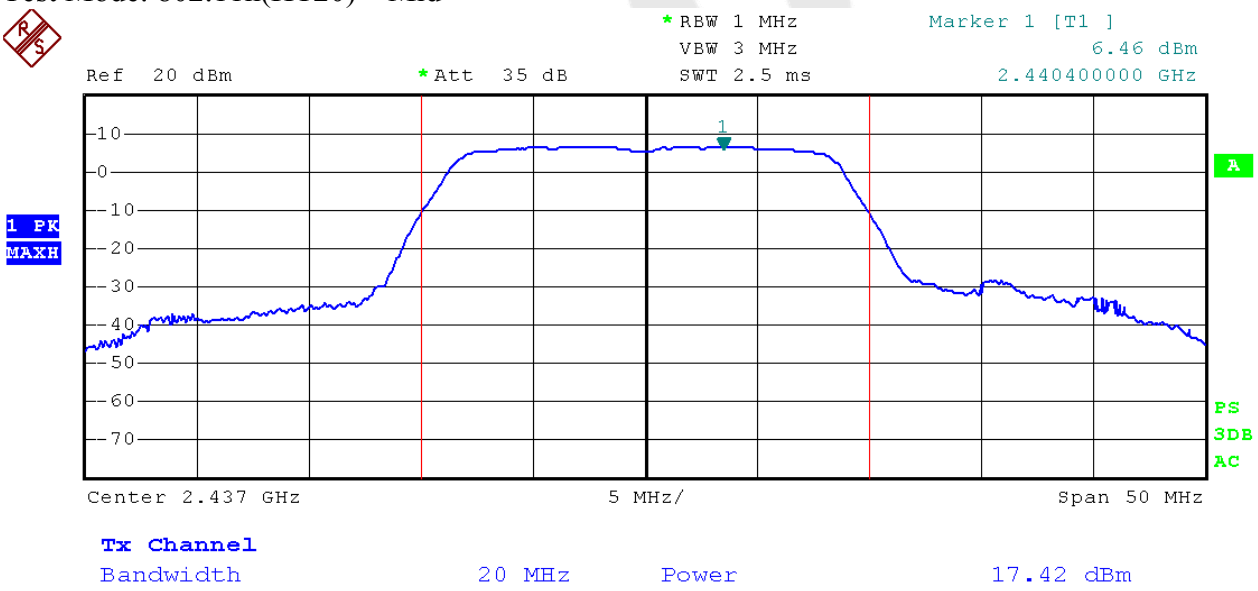
Test Mode: 802.11g---High



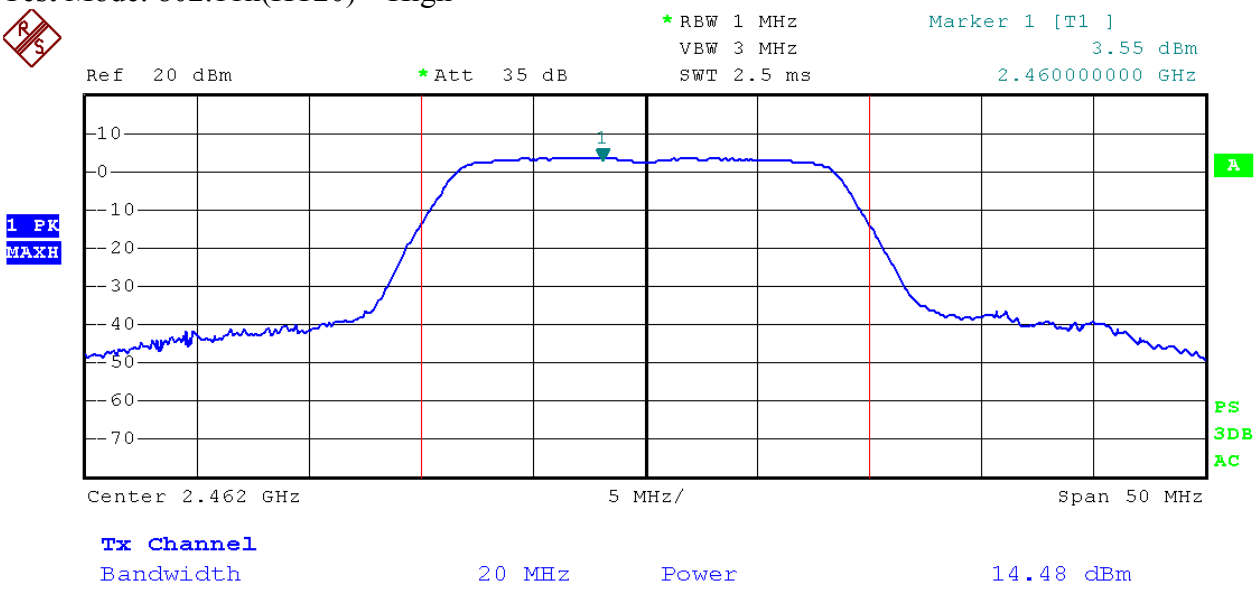
Test Mode: 802.11n(HT20)---Low



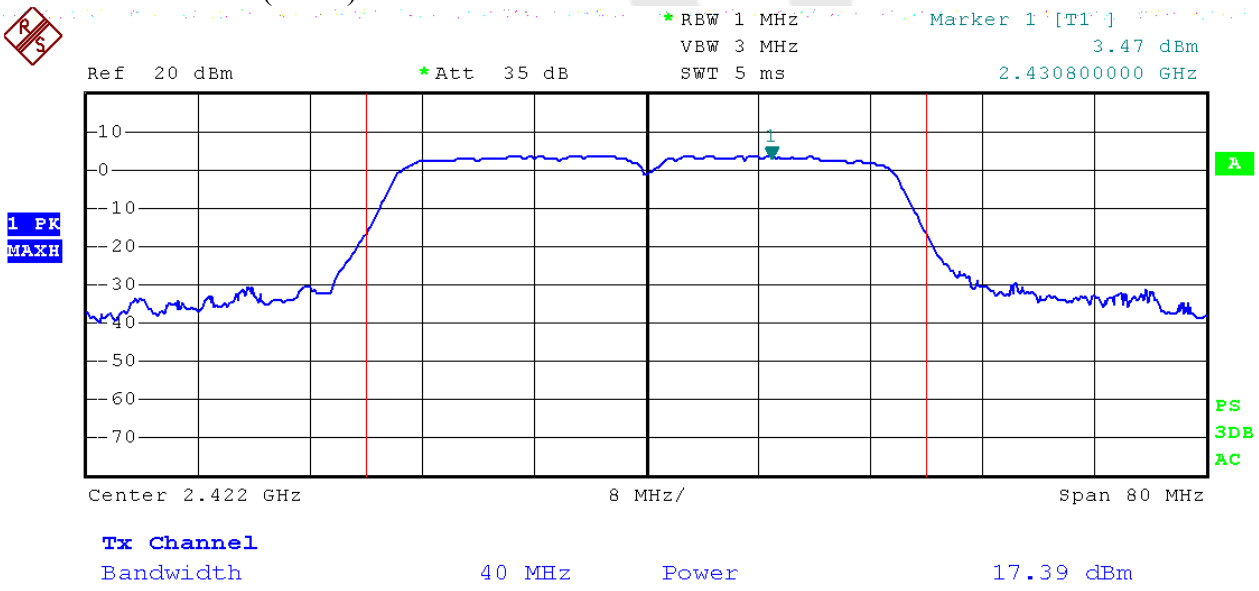
Test Mode: 802.11n(HT20)---Mid



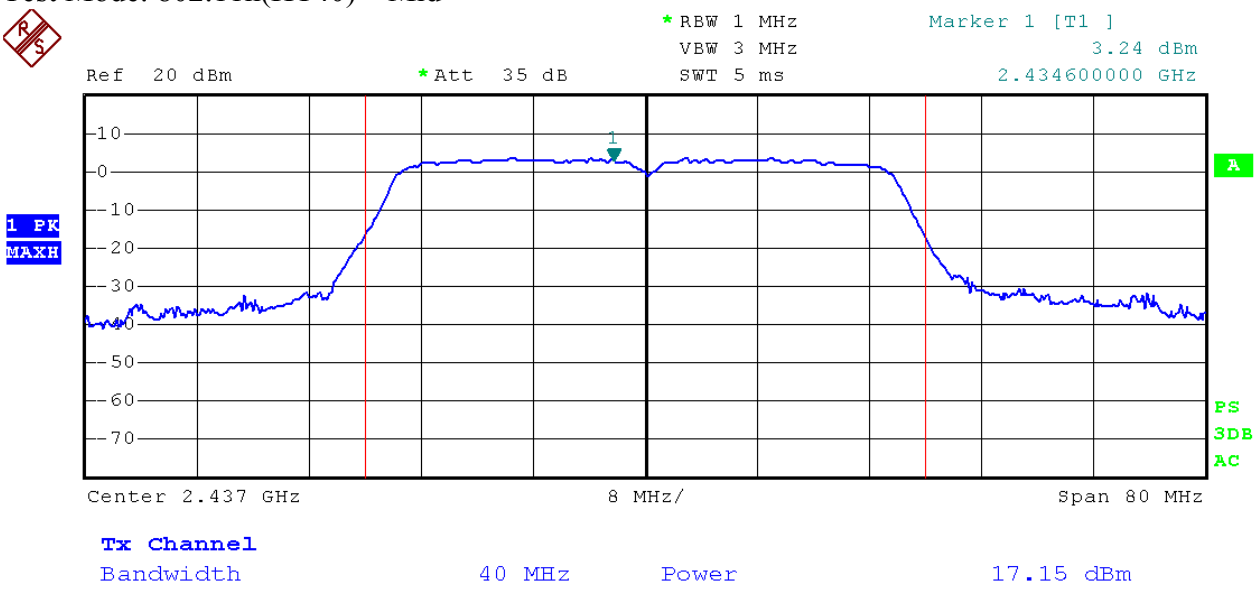
Test Mode: 802.11n(HT20)---High



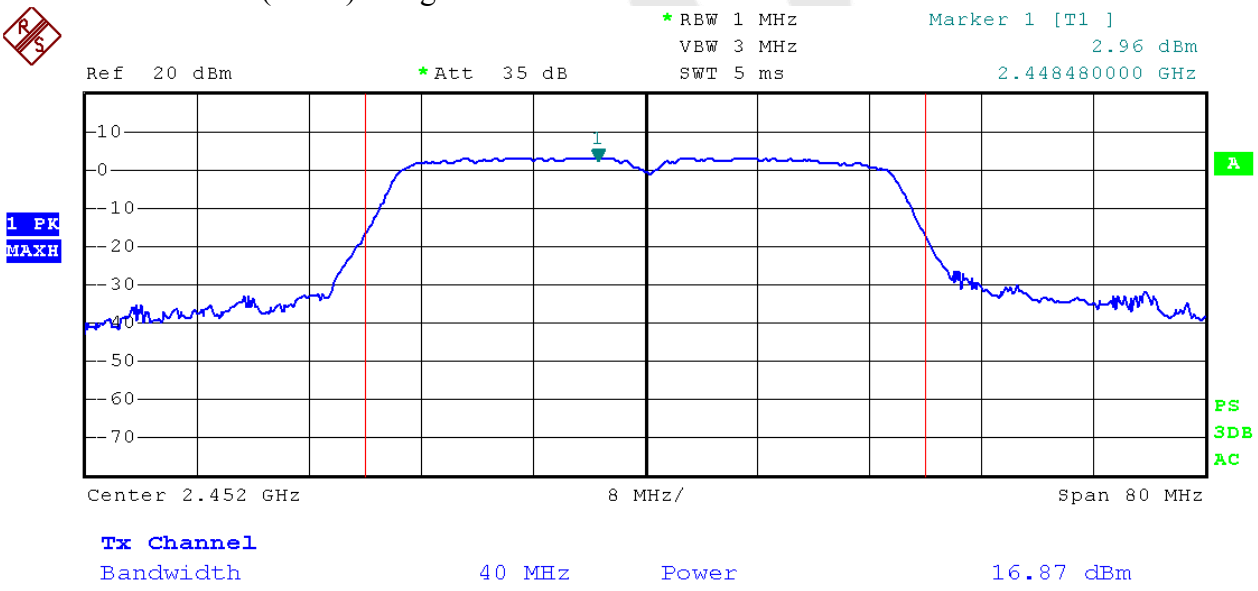
Test Mode: 802.11n(HT40)---Low



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



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



4.4. Band Edges Measurement

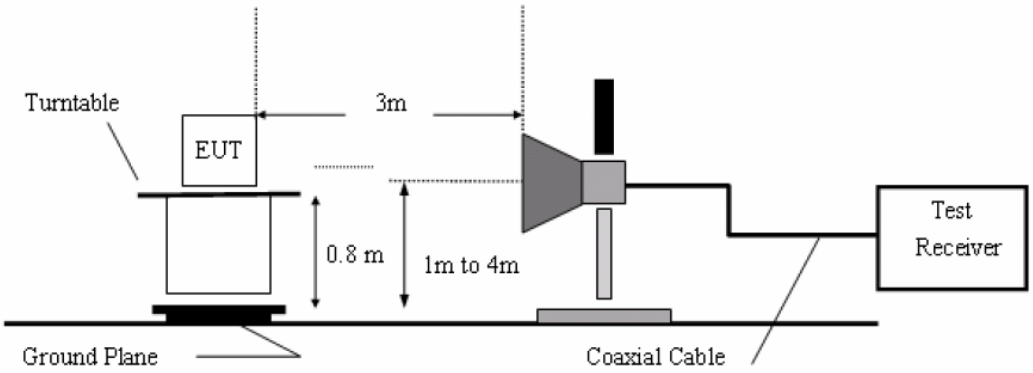
a. Limit

According to §15.247(c), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in 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 in15.209(a).

b. Test Procedure

1. Conducted Method:
1) Set RBW=100KHz, VBW=300KHz
2) Detector=peak
3) Sweep time= auto
4) Trace mode=max hold.

2. Radiated Method:
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=1MHz, VBW=3MHz, SWT=AUTO
Average detector: RBW=1MHz, VBW=10Hz, 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.



c. Test Equipment

Same as the equipment listed in 4.2.

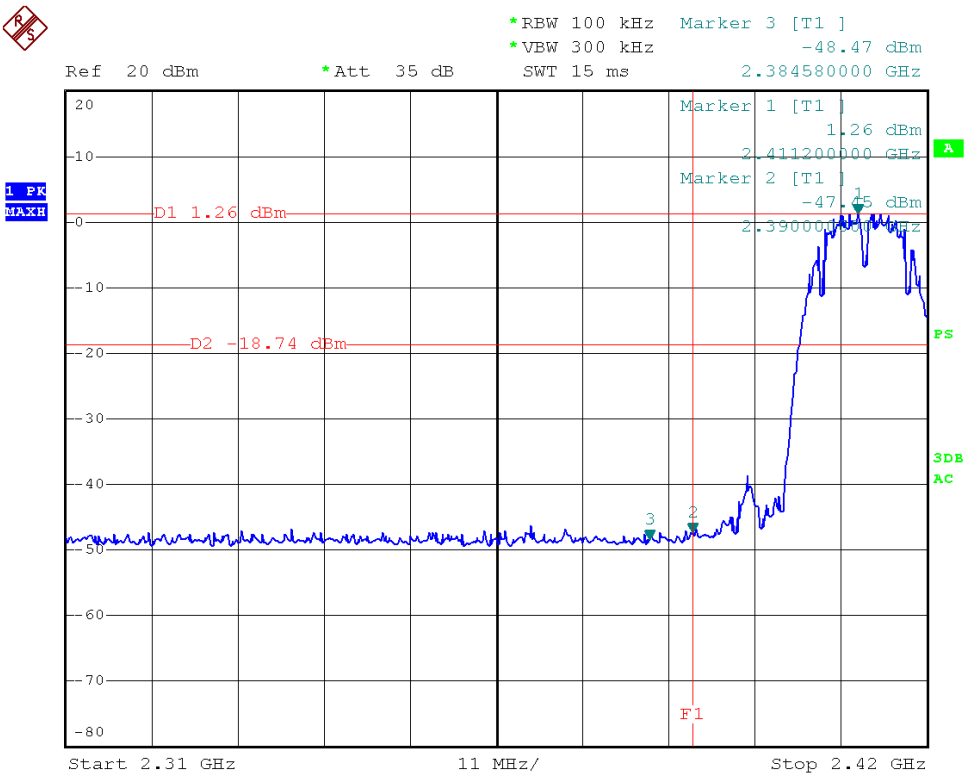
d. Test Results

Pass.

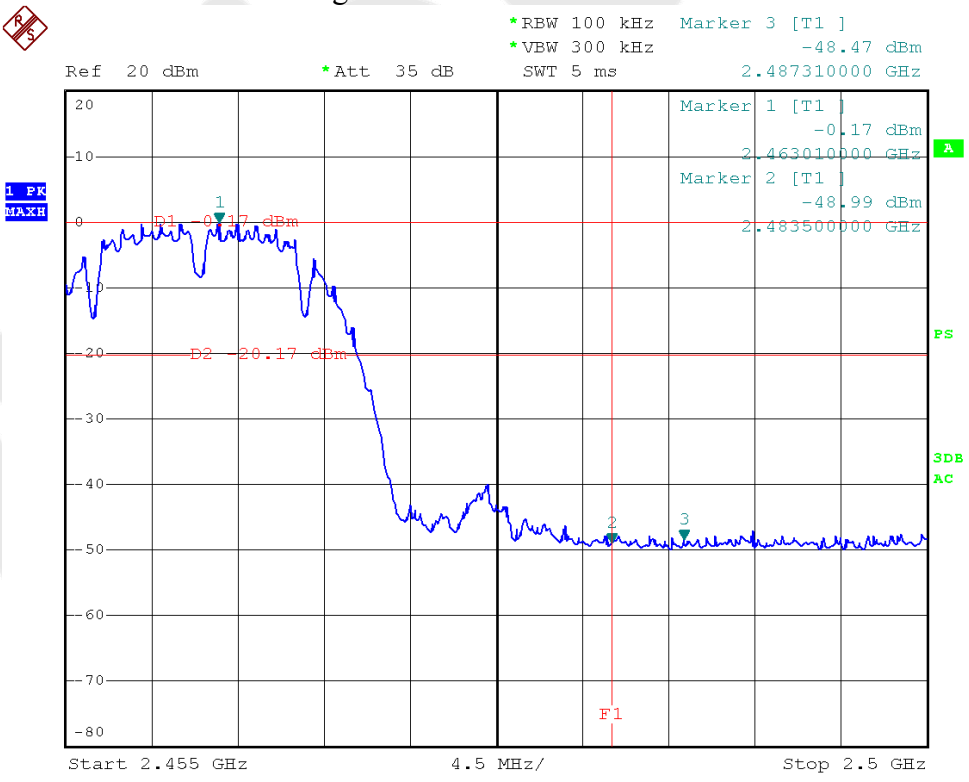
e. Test Plots

See the following page.

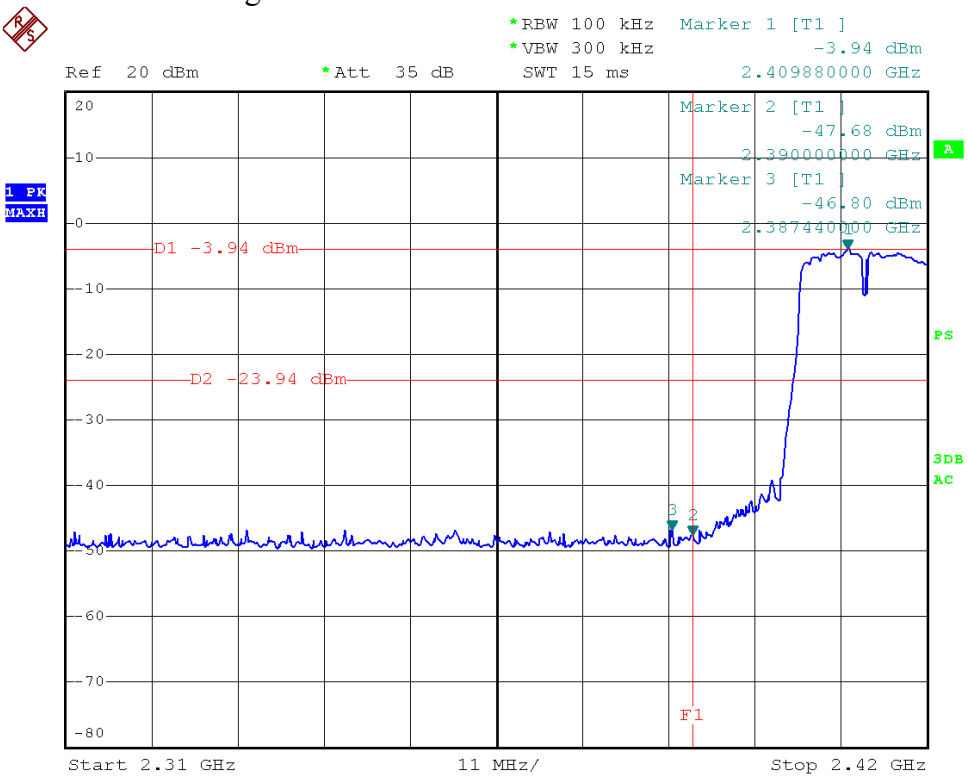
Test Mode: 802.11b ---Low



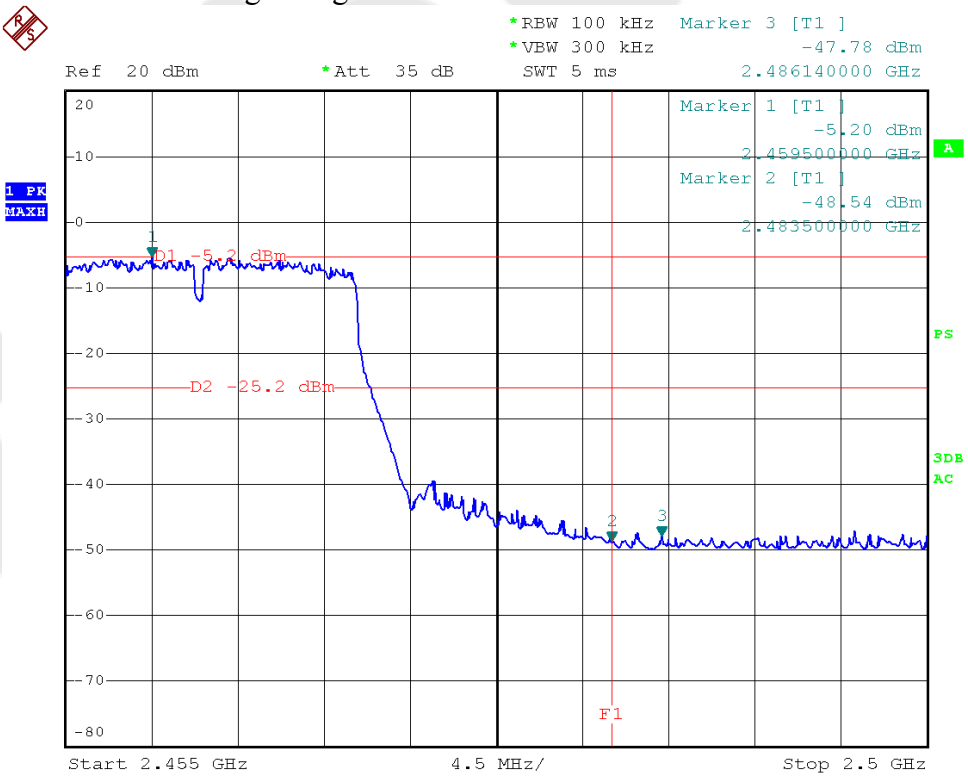
Test Mode: 802.11b ---High



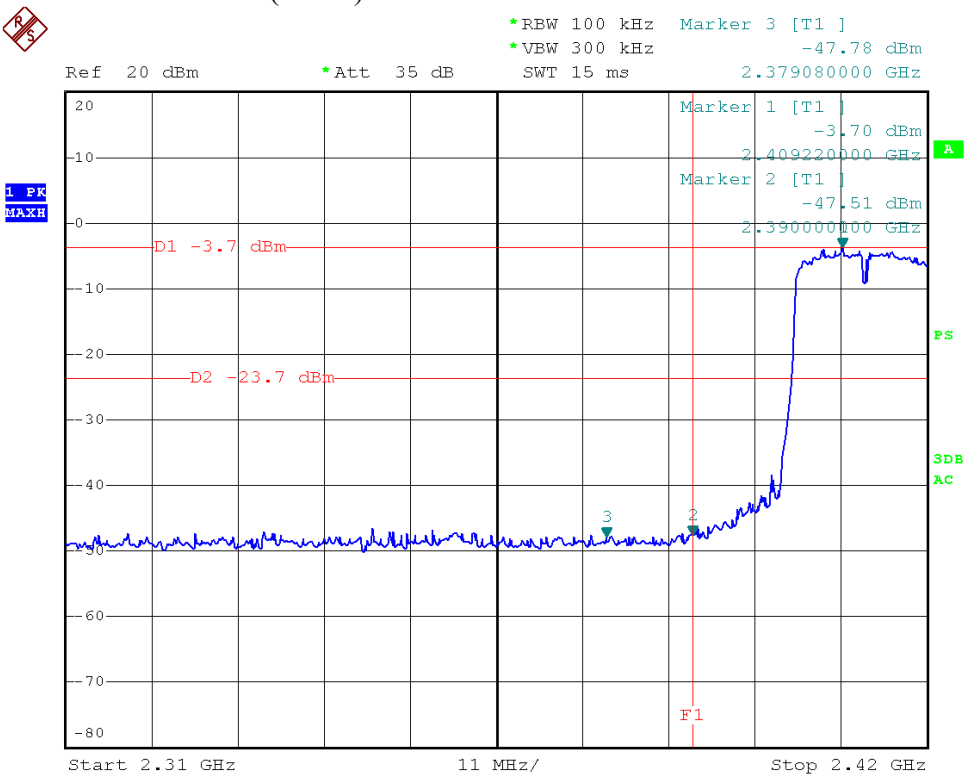
Test Mode: 802.11g ---Low



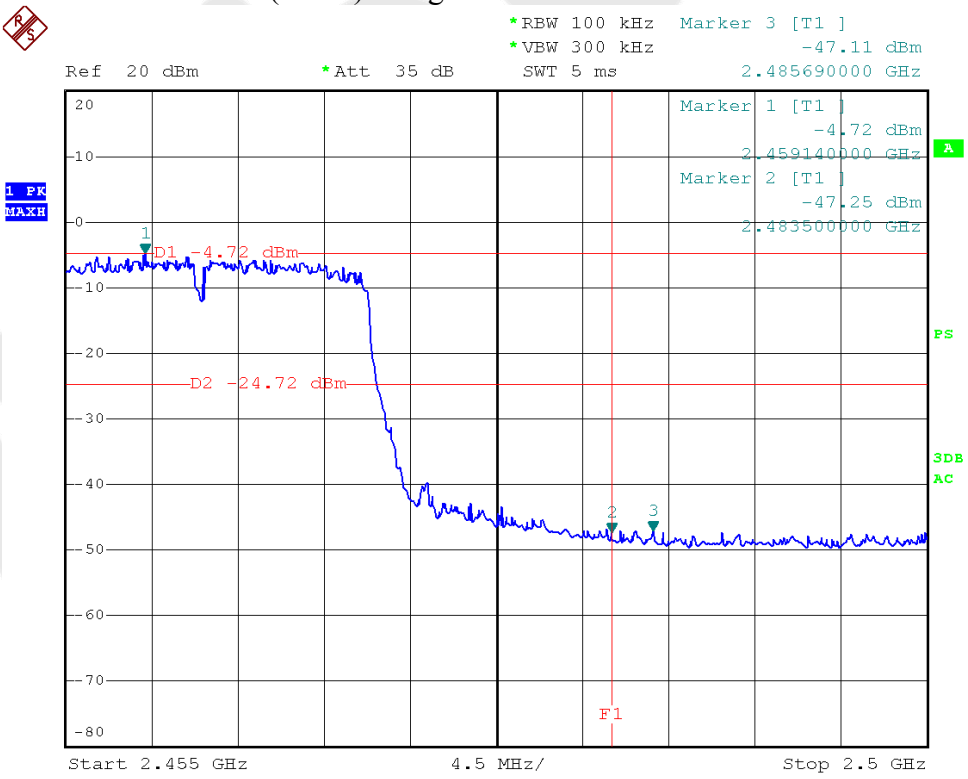
Test Mode: 802.11g ---High



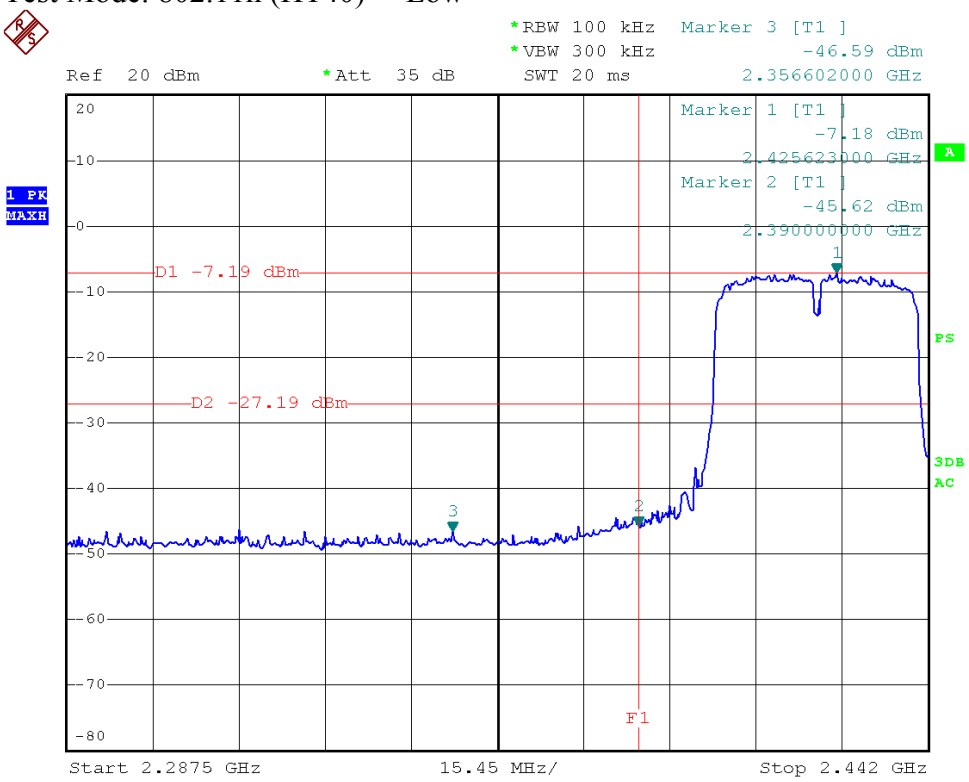
Test Mode: 802.11n (HT20) ---Low



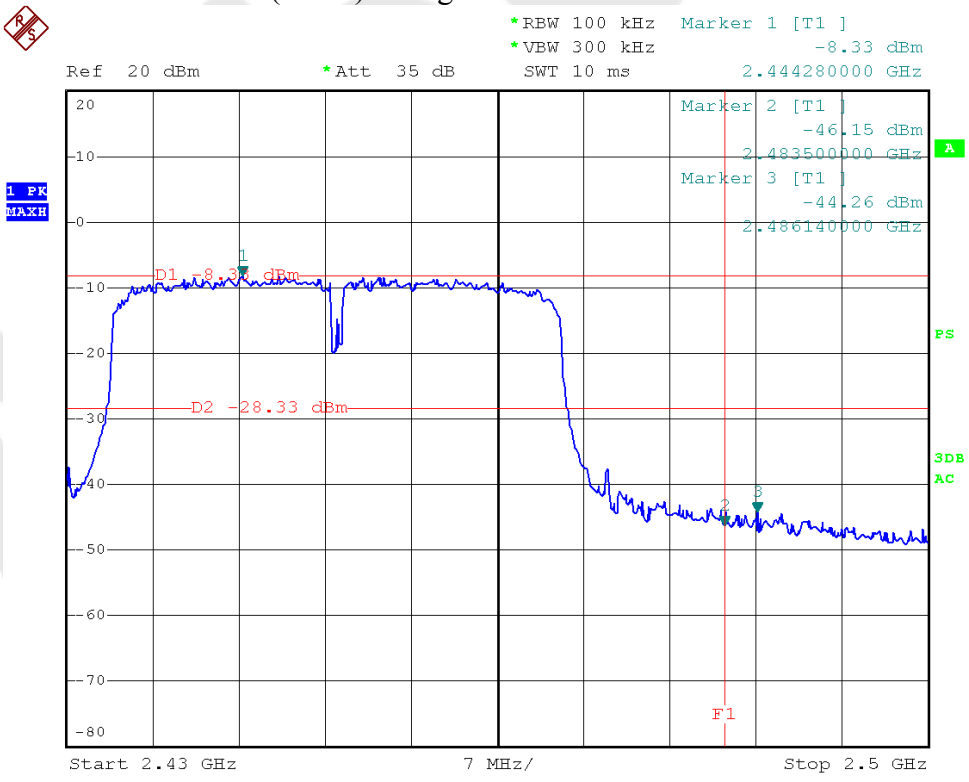
Test Mode: 802.11n (HT20)---High



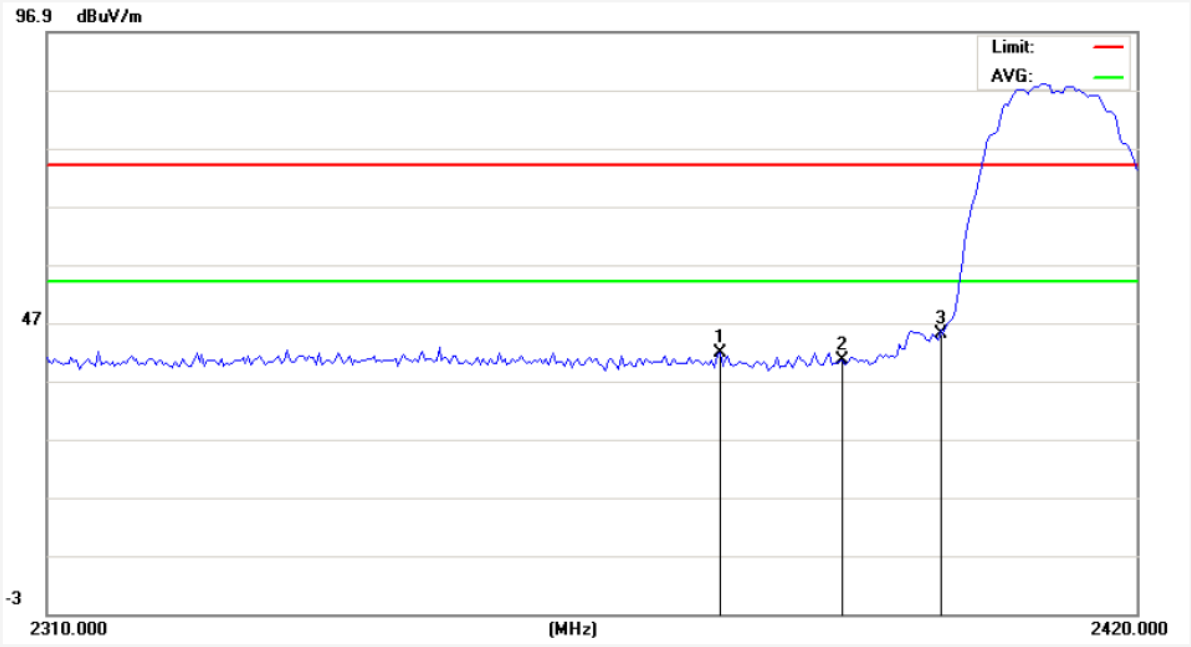
Test Mode: 802.11n (HT40) ---Low



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

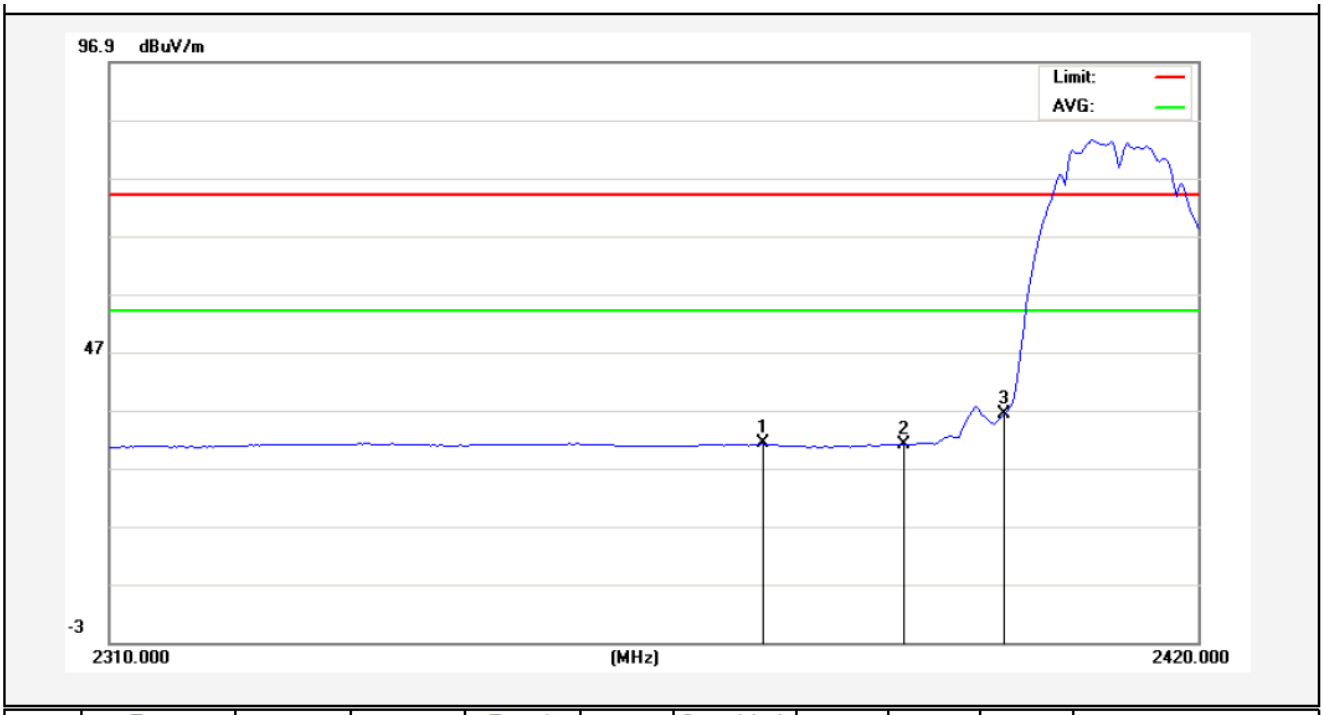


Test Mode: 802.11b
2412MHz
Horizontal-PEAK:



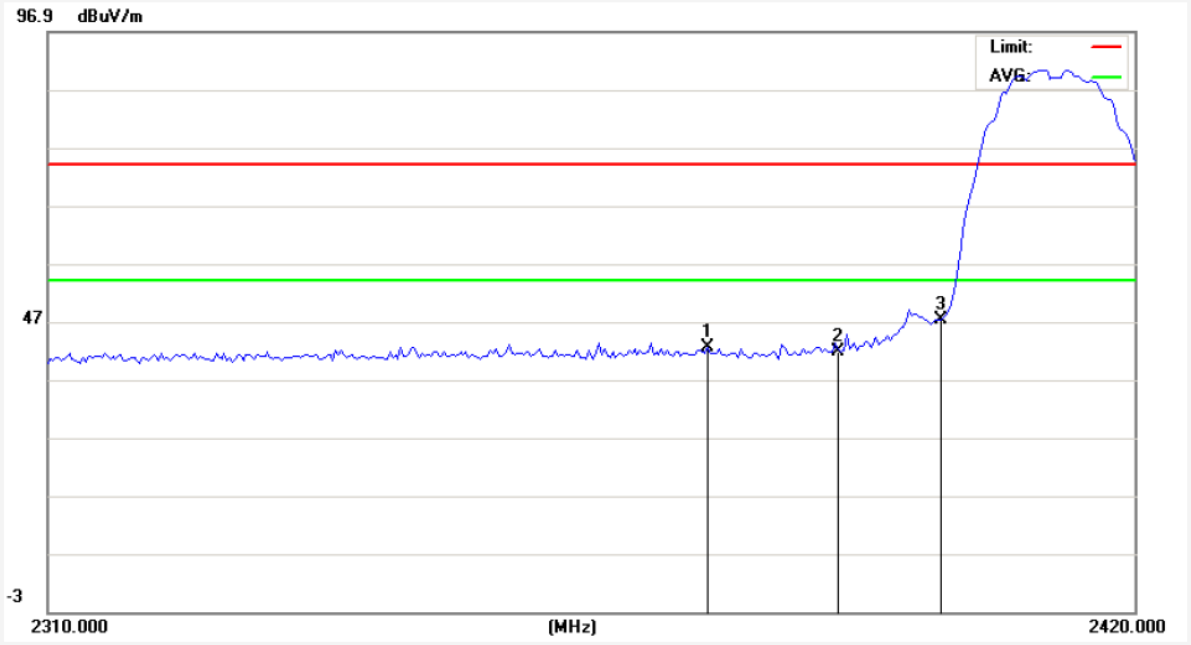
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2377.375	44.24	-2.54	41.70	74.00	-32.30	peak			
2	2390.000	42.96	-2.51	40.45	74.00	-33.55	peak			
3	2400.000	47.56	-2.49	45.07	74.00	-28.93	peak			

Horizontal-AV:



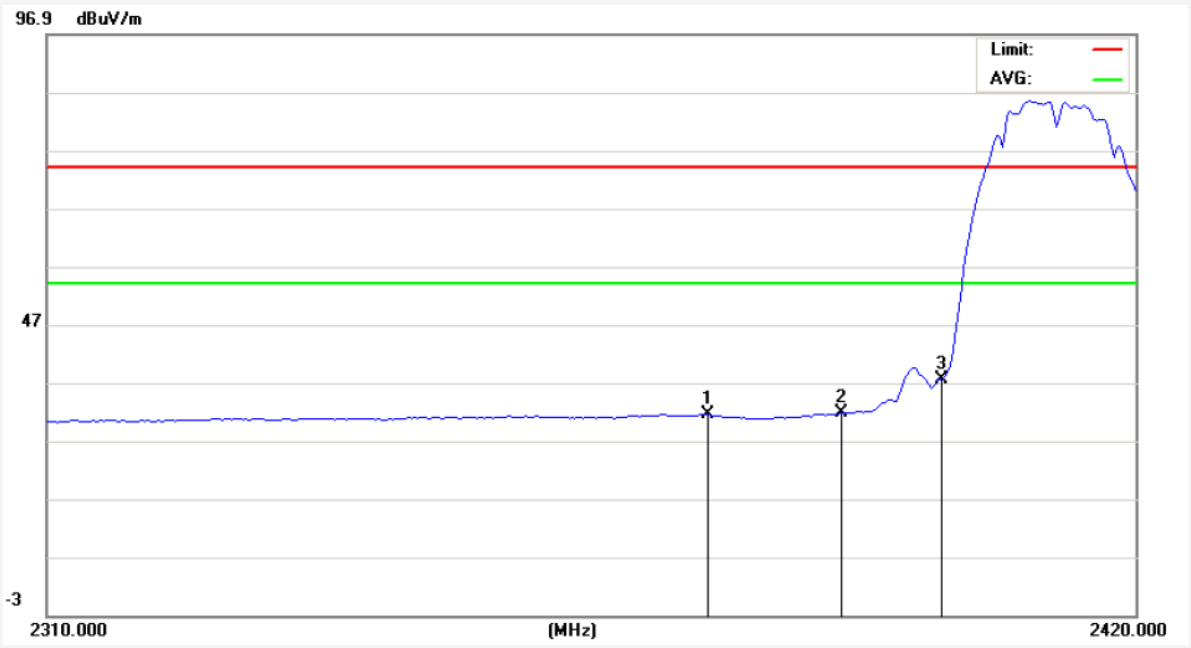
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2375.450	33.78	-2.55	31.23	54.00	-22.77	AVG			
2	2390.000	33.61	-2.51	31.10	54.00	-22.90	AVG			
3	2400.000	38.76	-2.49	36.27	54.00	-17.73	AVG			

Test Mode: 802.11b
2412MHz
Vertical-PEAK:



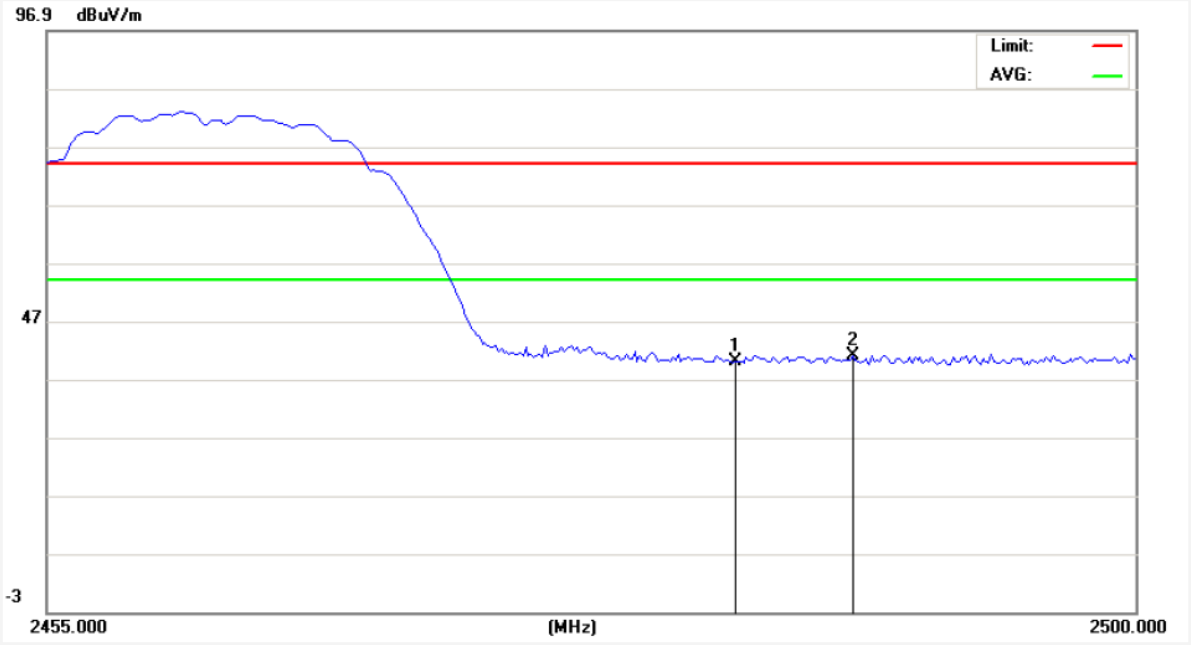
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2376.275	45.04	-2.54	42.50	74.00	-31.50	peak			
2	2390.000	44.34	-2.51	41.83	74.00	-32.17	peak			
3	2400.000	49.76	-2.49	47.27	74.00	-26.73	peak			

Vertical-AV:



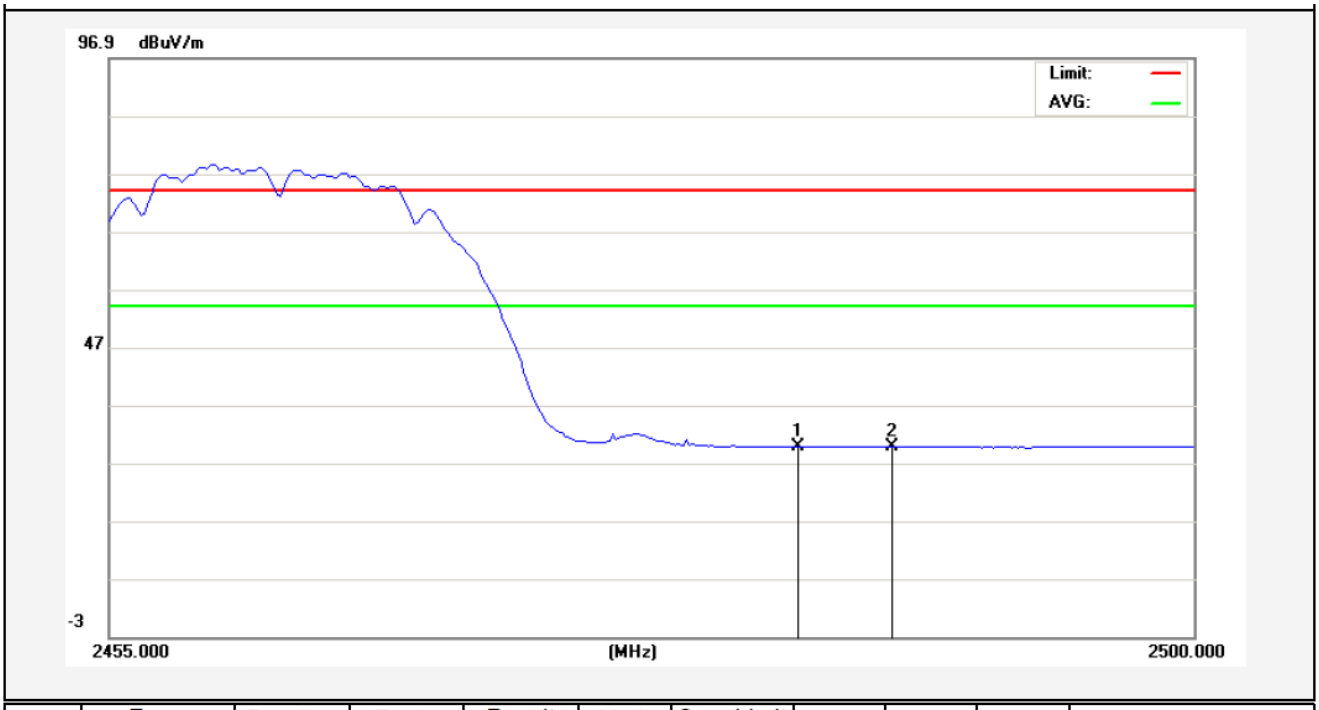
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2376.275	34.11	-2.54	31.57	54.00	-22.43	AVG			
2	2390.000	34.23	-2.51	31.72	54.00	-22.28	AVG			
3	2400.000	40.14	-2.49	37.65	54.00	-16.35	AVG			

Test Mode: 802.11b
2462MHz
Horizontal-PEAK:



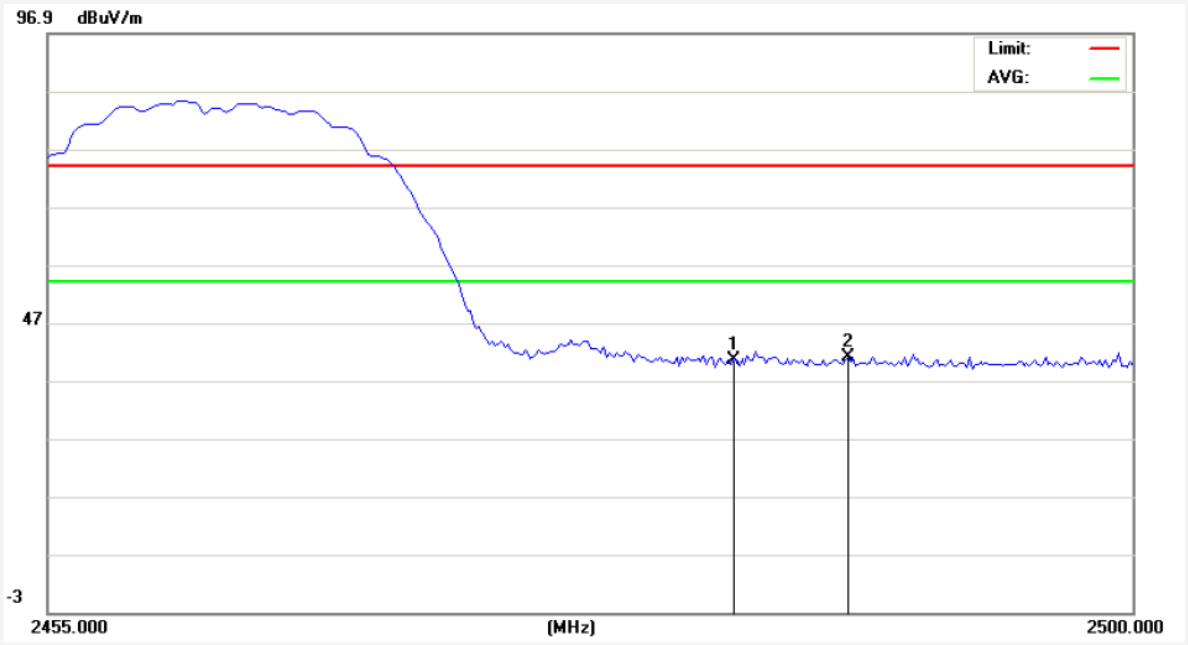
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	42.23	-2.31	39.92	74.00	-34.08	peak			
2	2488.300	43.29	-2.30	40.99	74.00	-33.01	peak			

Horizontal-AV:



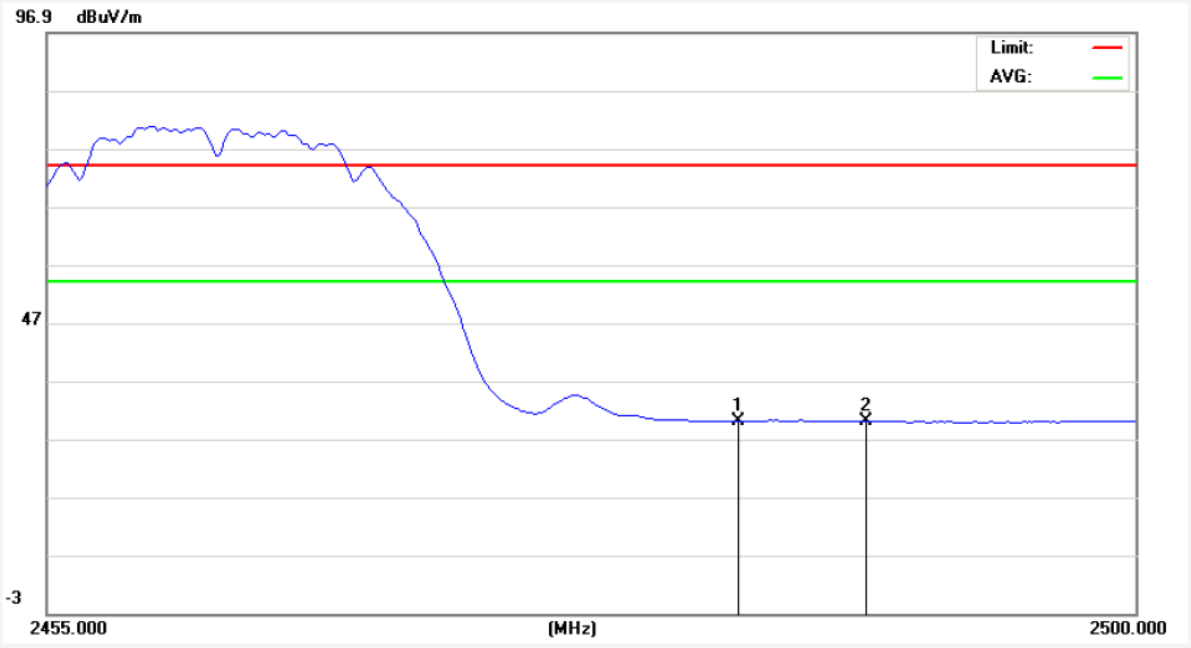
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	32.14	-2.31	29.83	54.00	-24.17	AVG			
2	2487.512	32.19	-2.30	29.89	54.00	-24.11	AVG			

Test Mode: 802.11b
2462MHz
Vertical-PEAK:



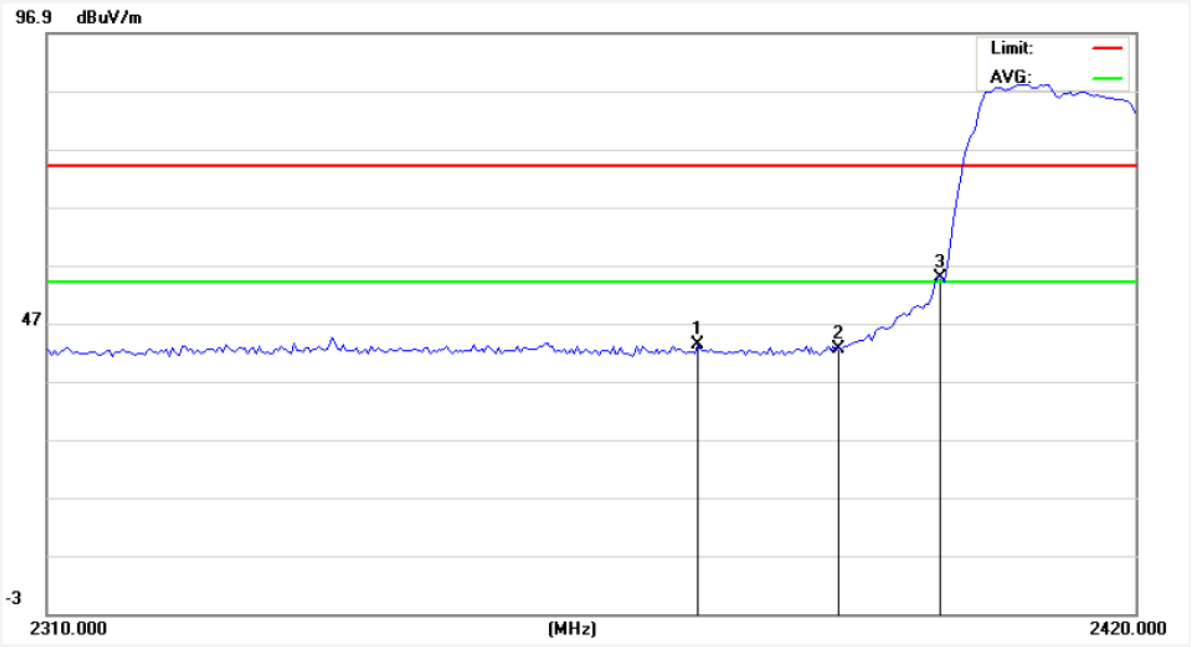
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	42.80	-2.31	40.49	74.00	-33.51	peak			
2	2488.188	43.35	-2.30	41.05	74.00	-32.95	peak			

Vertical-AV:



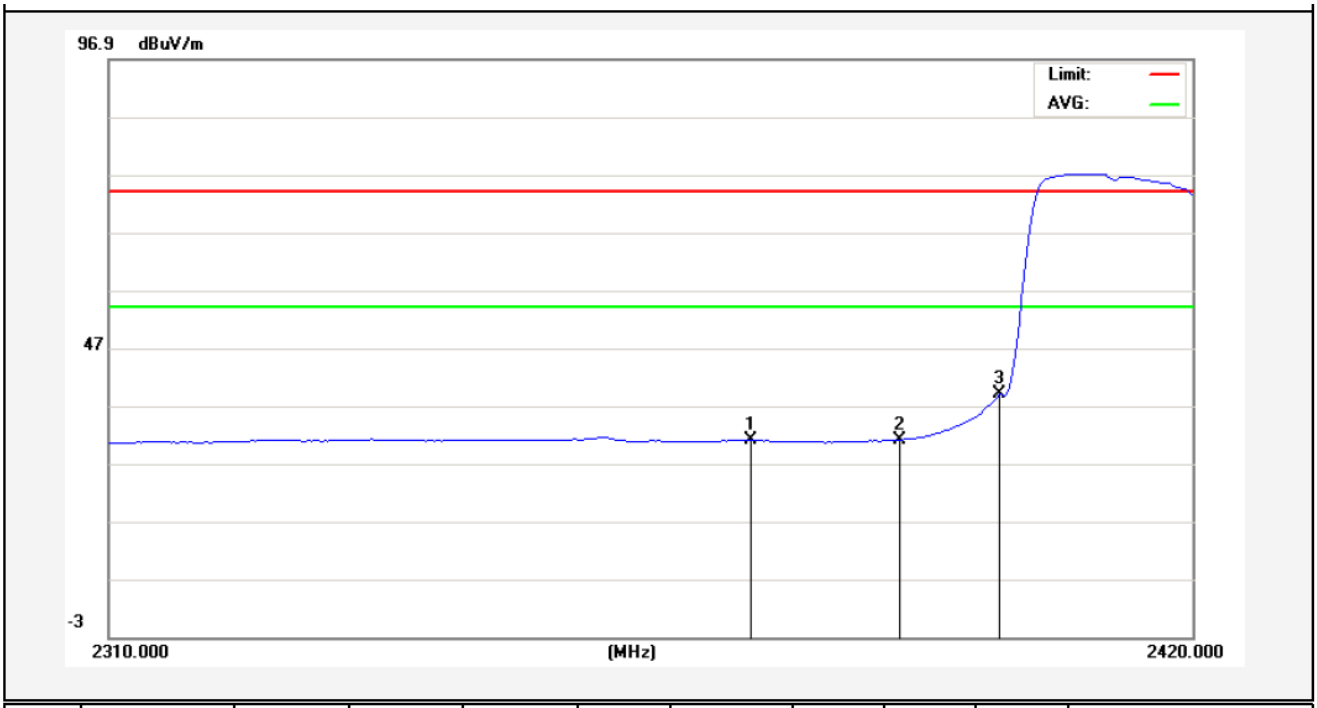
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	32.37	-2.31	30.06	54.00	-23.94	AVG			
2	2488.863	32.41	-2.29	30.12	54.00	-23.88	AVG			

Test Mode: 802.11g
2412MHz
Horizontal-PEAK:



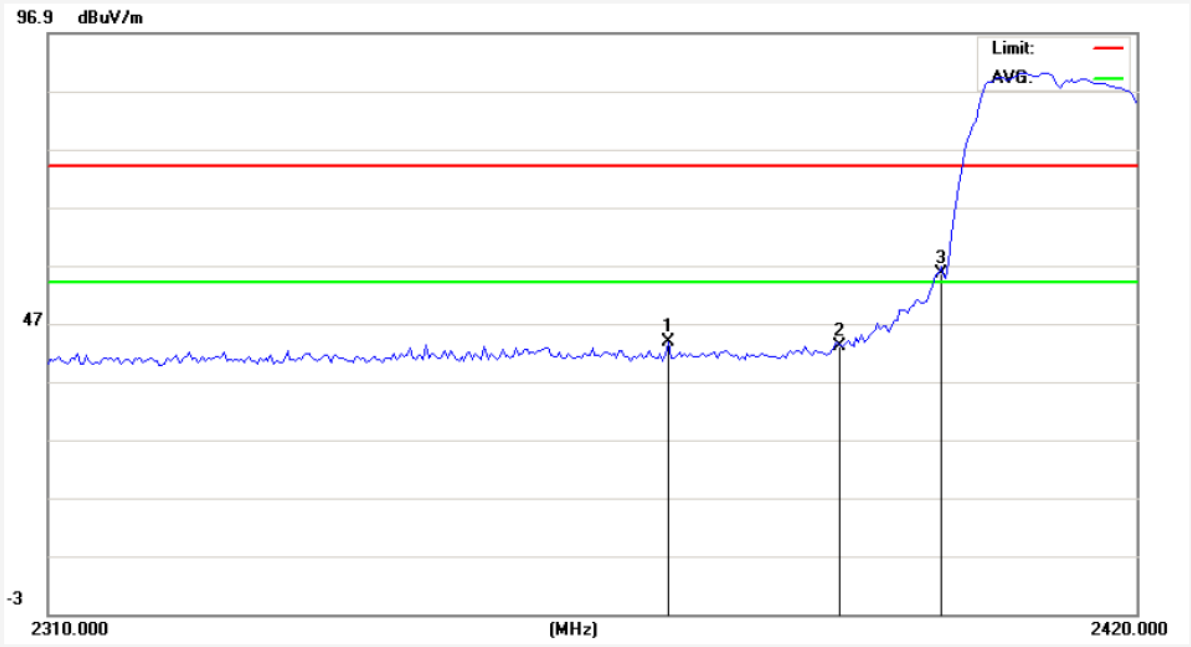
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2375.175	45.73	-2.55	43.18	74.00	-30.82	peak			
2	2390.000	45.05	-2.51	42.54	74.00	-31.46	peak			
3	2400.000	57.21	-2.49	54.72	74.00	-19.28	peak			

Horizontal-AV:



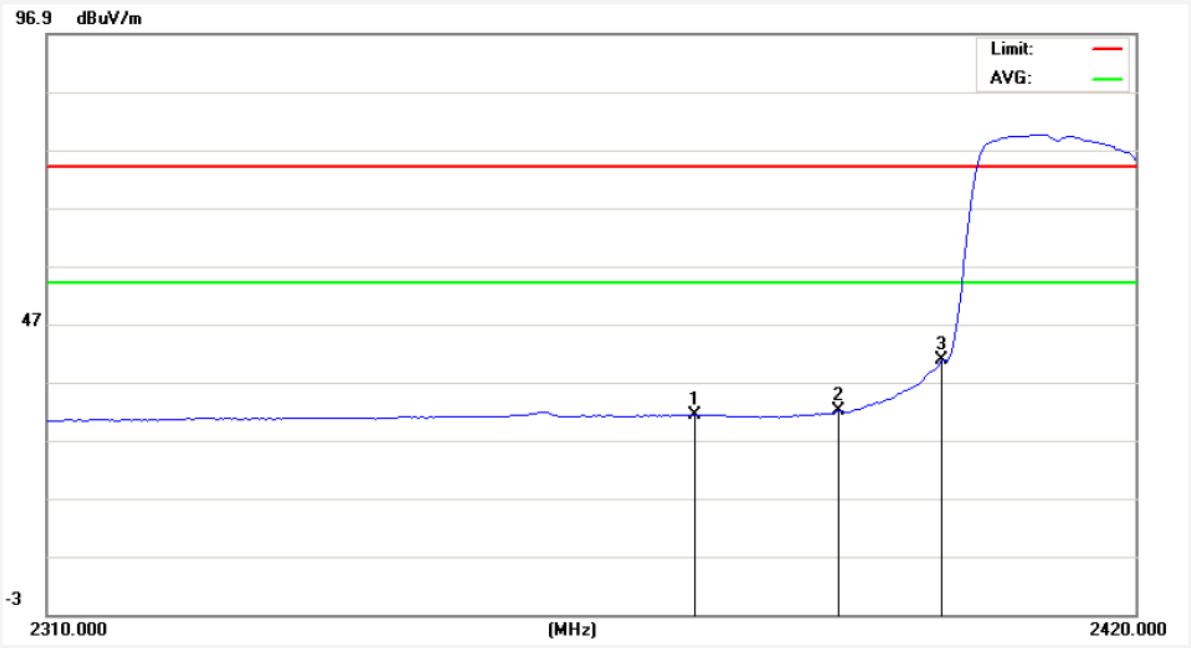
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2374.625	33.61	-2.55	31.06	54.00	-22.94	AVG			
2	2390.000	33.63	-2.51	31.12	54.00	-22.88	AVG			
3	2400.000	41.50	-2.49	39.01	54.00	-14.99	AVG			

Test Mode: 802.11g
2412MHz
Vertical-PEAK:



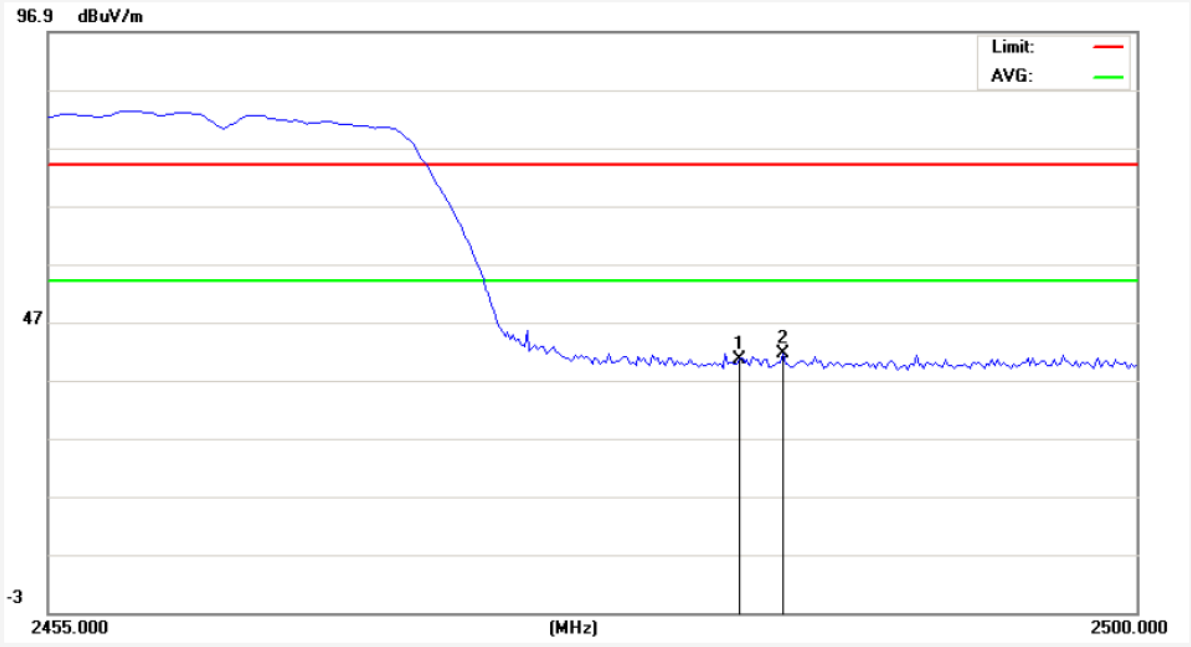
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2372.150	46.31	-2.55	43.76	74.00	-30.24	peak			
2	2390.000	45.53	-2.51	43.02	74.00	-30.98	peak			
3	2400.000	58.01	-2.49	55.52	74.00	-18.48	peak			

Vertical-AV:



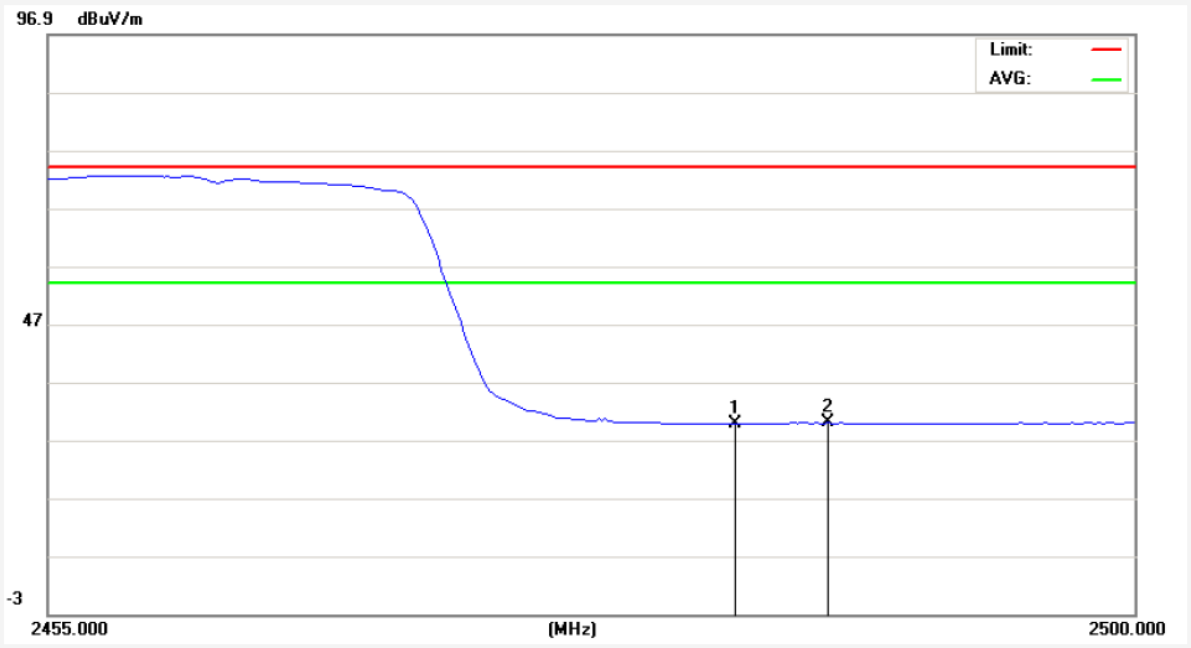
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2374.900	33.92	-2.55	31.37	54.00	-22.63	AVG			
2	2390.000	34.44	-2.51	31.93	54.00	-22.07	AVG			
3	2400.000	43.33	-2.49	40.84	54.00	-13.16	AVG			

Test Mode: 802.11g
2462MHz
Horizontal-PEAK:



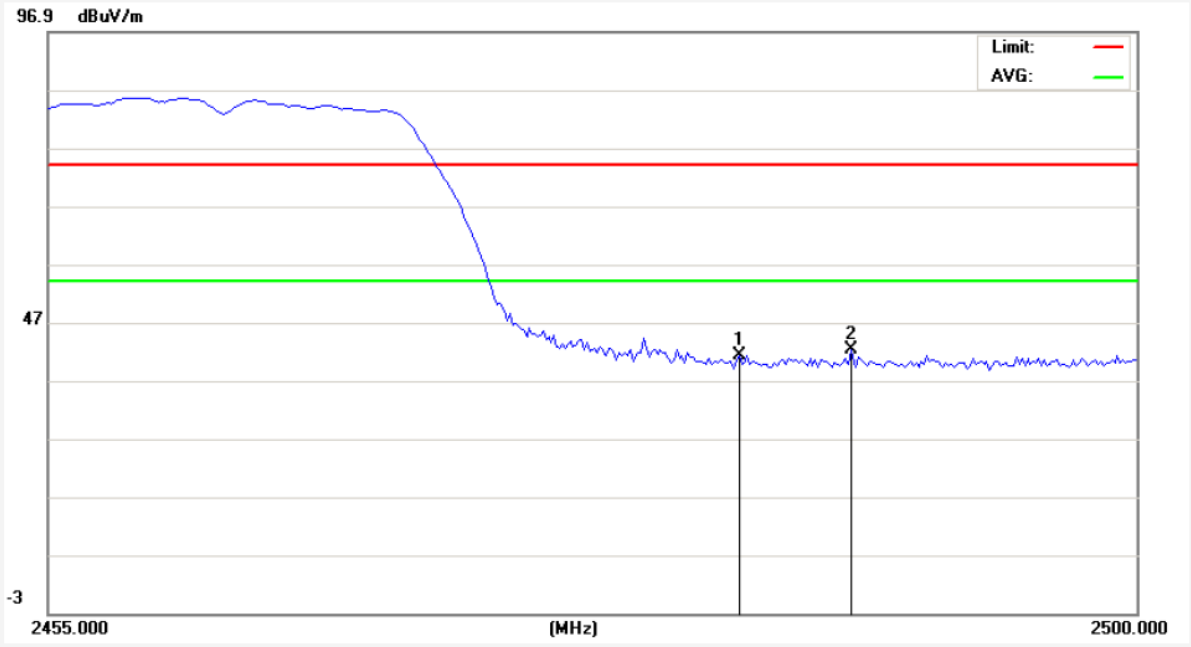
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	42.95	-2.31	40.64	74.00	-33.36	peak			
2	2485.375	43.81	-2.30	41.51	74.00	-32.49	peak			

Horizontal-AV:



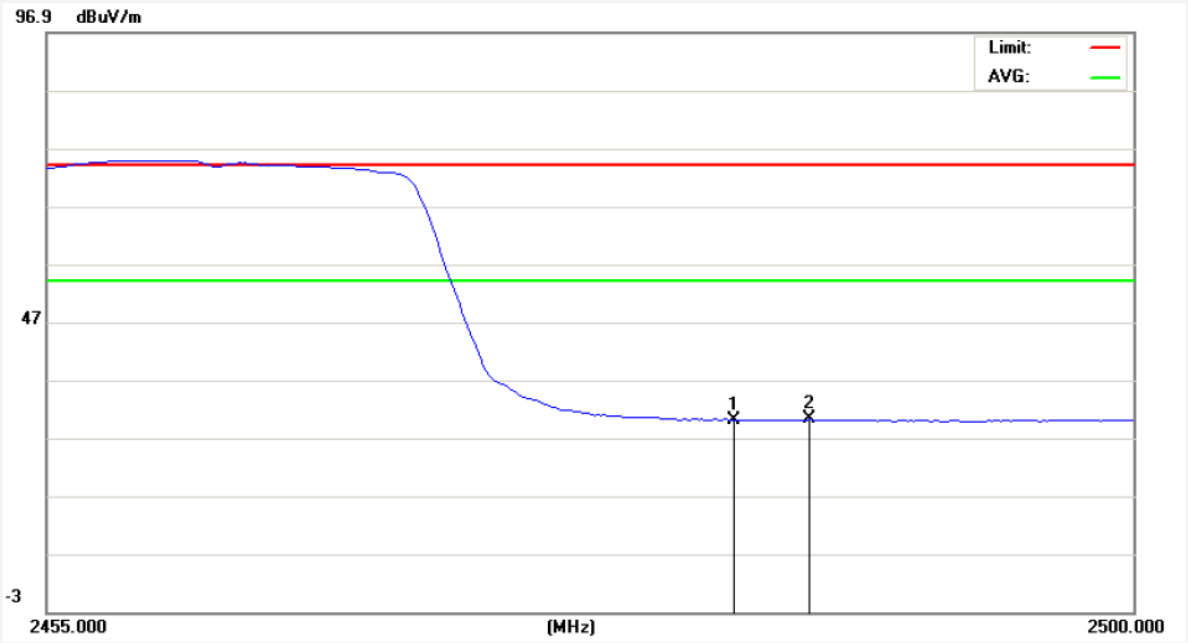
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	32.13	-2.31	29.82	54.00	-24.18	AVG			
2	2487.287	32.24	-2.30	29.94	54.00	-24.06	AVG			

Test Mode: 802.11g
2462MHz
Vertical-PEAK:



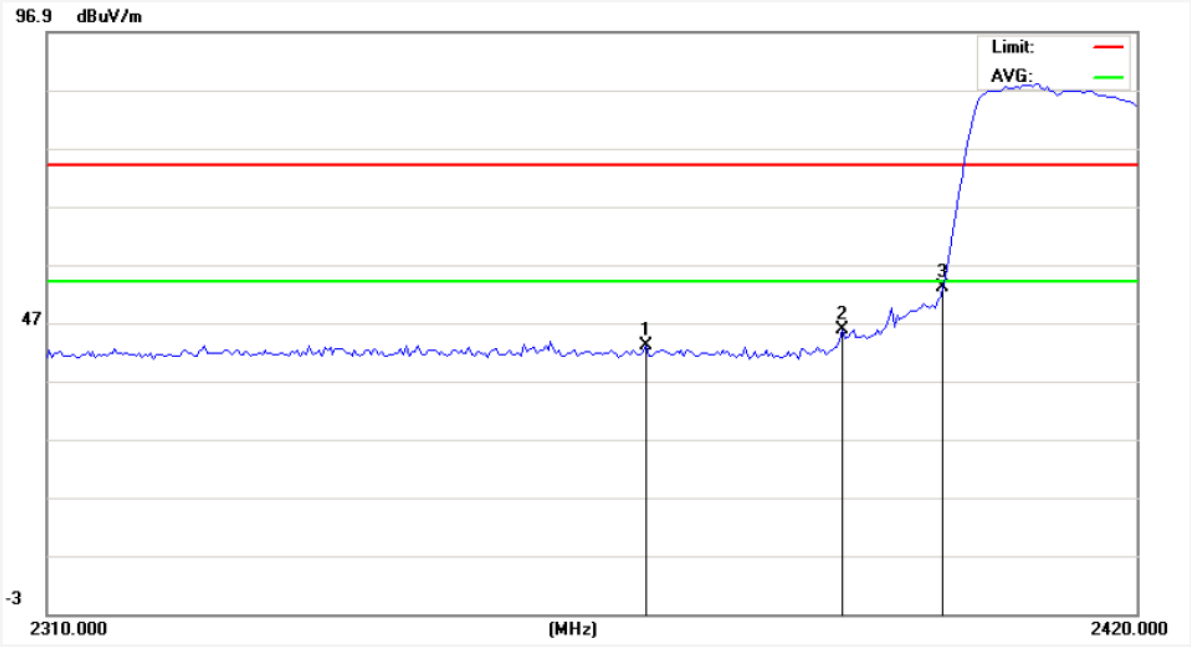
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	43.54	-2.31	41.23	74.00	-32.77	peak			
2	2488.188	44.52	-2.30	42.22	74.00	-31.78	peak			

Vertical-AV:



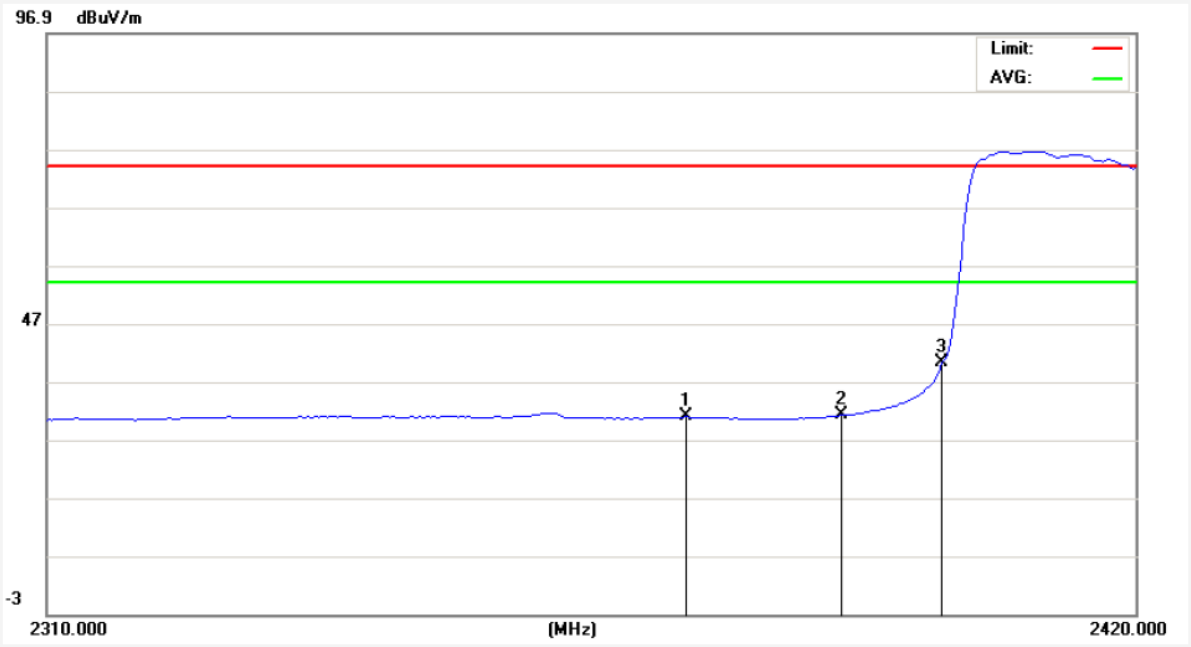
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	32.40	-2.31	30.09	54.00	-23.91	AVG			
2	2486.613	32.46	-2.30	30.16	54.00	-23.84	AVG			

Test Mode: 802.11n (HT20)
2412MHz
Horizontal-PEAK:



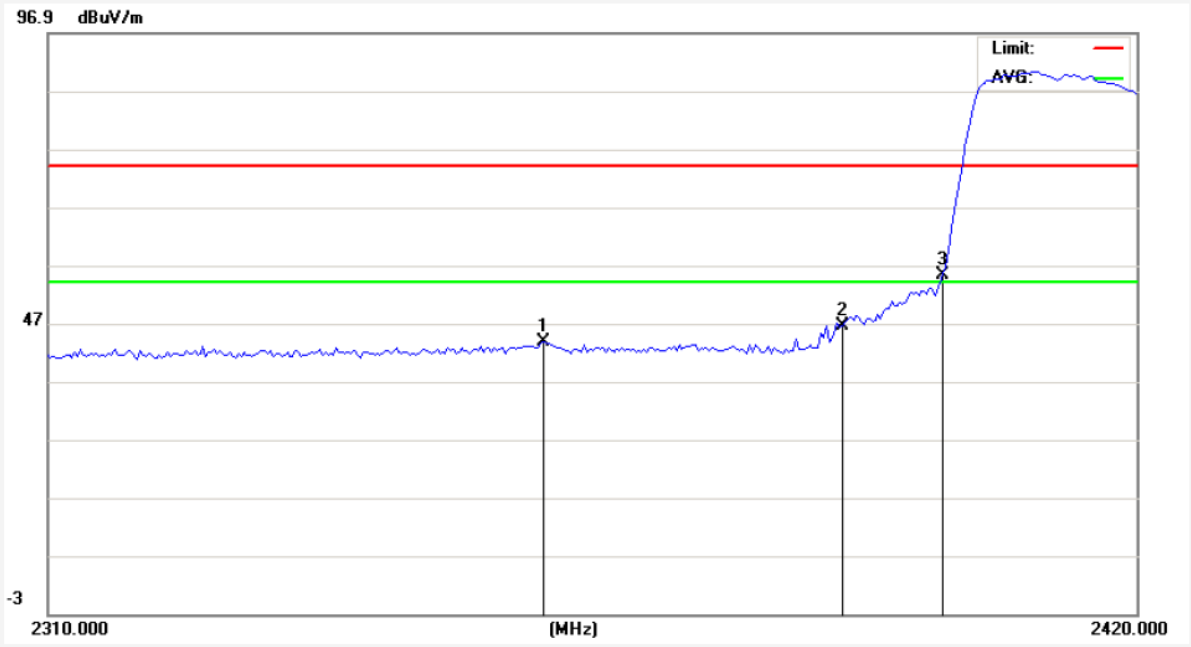
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2369.950	45.47	-2.56	42.91	74.00	-31.09	peak			
2	2390.000	48.39	-2.51	45.88	74.00	-28.12	peak			
3	2400.000	55.62	-2.49	53.13	74.00	-20.87	peak			

Horizontal-AV:



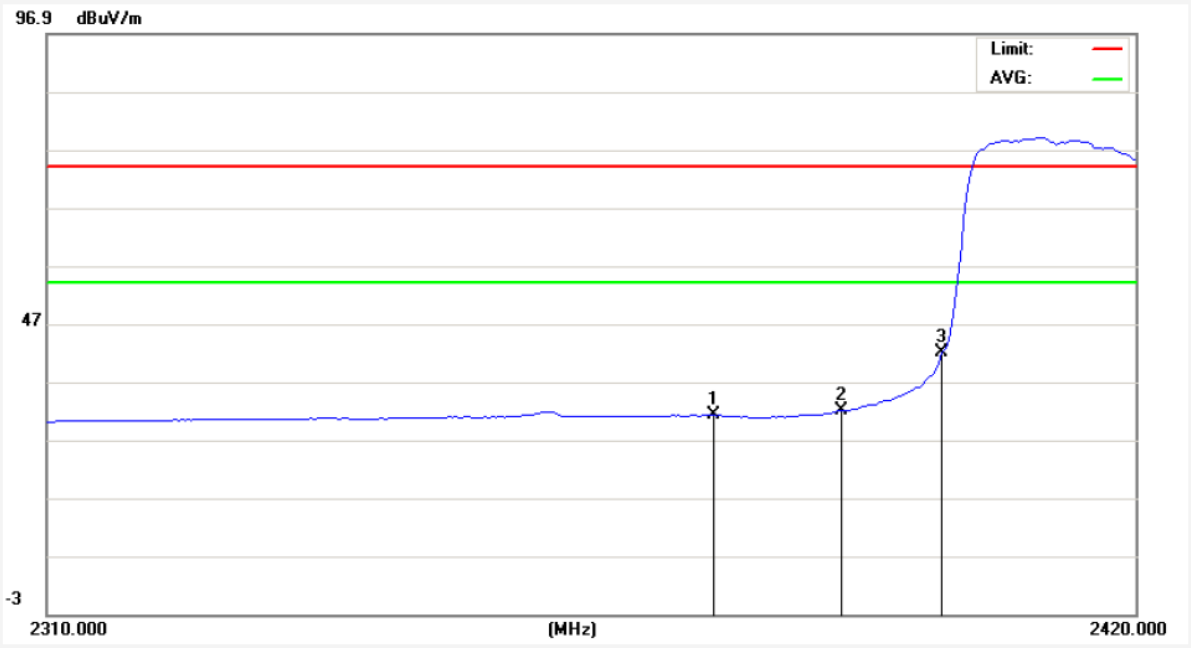
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2374.075	33.46	-2.55	30.91	54.00	-23.09	AVG			
2	2390.000	33.73	-2.51	31.22	54.00	-22.78	AVG			
3	2400.000	42.70	-2.49	40.21	54.00	-13.79	AVG			

Test Mode: 802.11n (HT20)
2412MHz
Vertical-PEAK:



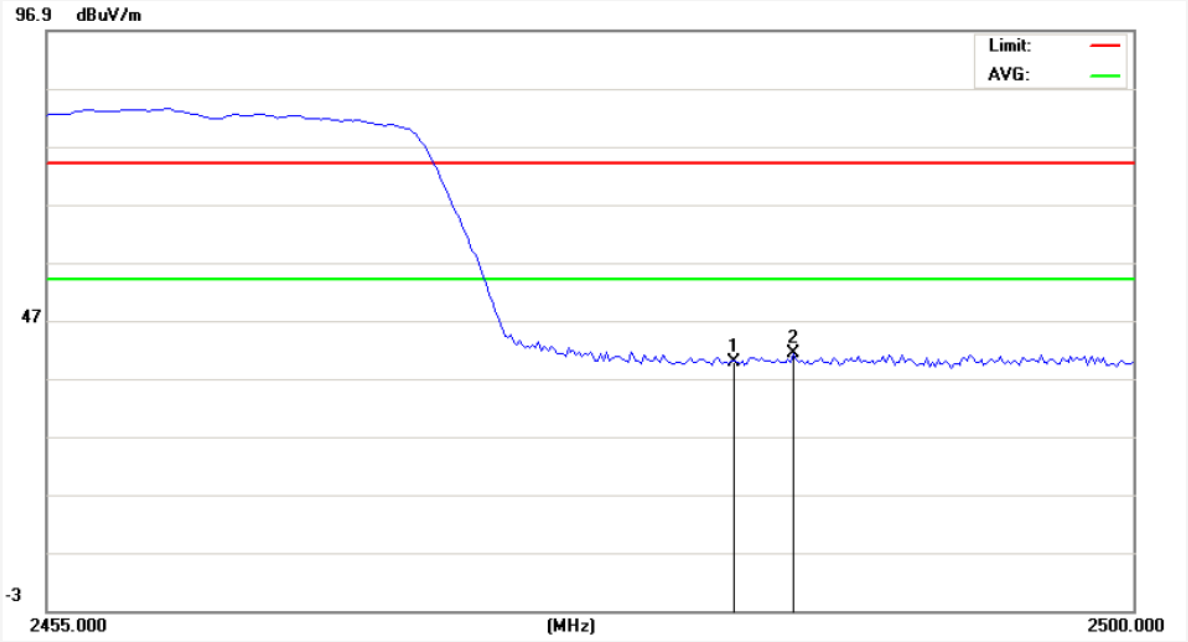
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2359.500	46.33	-2.58	43.75	74.00	-30.25	peak			
2	2390.000	49.16	-2.51	46.65	74.00	-27.35	peak			
3	2400.000	57.89	-2.49	55.40	74.00	-18.60	peak			

Vertical-AV:



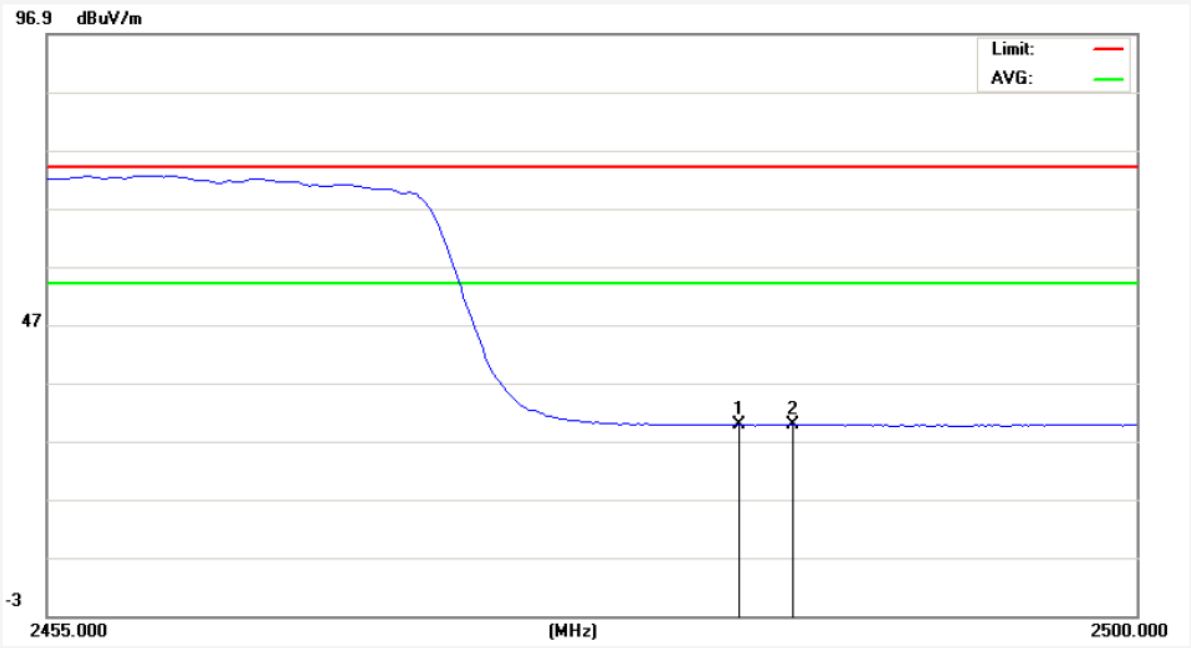
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2376.825	33.73	-2.54	31.19	54.00	-22.81	AVG			
2	2390.000	34.60	-2.51	32.09	54.00	-21.91	AVG			
3	2400.000	44.47	-2.49	41.98	54.00	-12.02	AVG			

Test Mode: 802.11n (HT20)
2462MHz
Horizontal-PEAK:



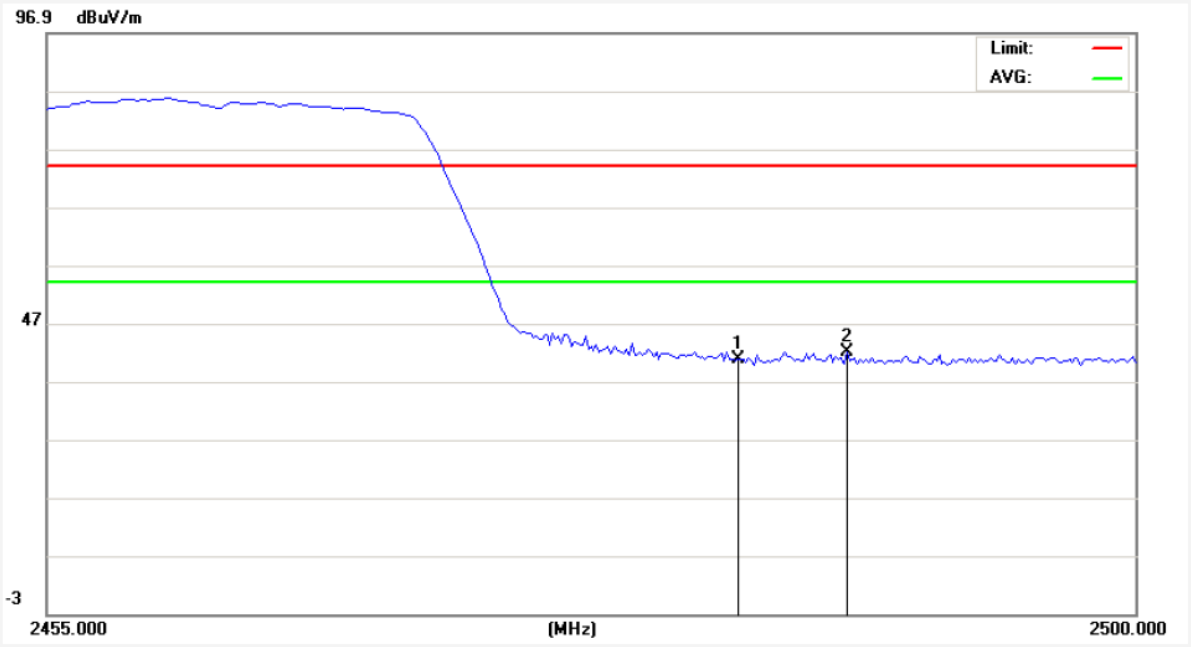
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	42.19	-2.31	39.88	74.00	-34.12	peak			
2	2485.938	43.54	-2.30	41.24	74.00	-32.76	peak			

Horizontal-AV:



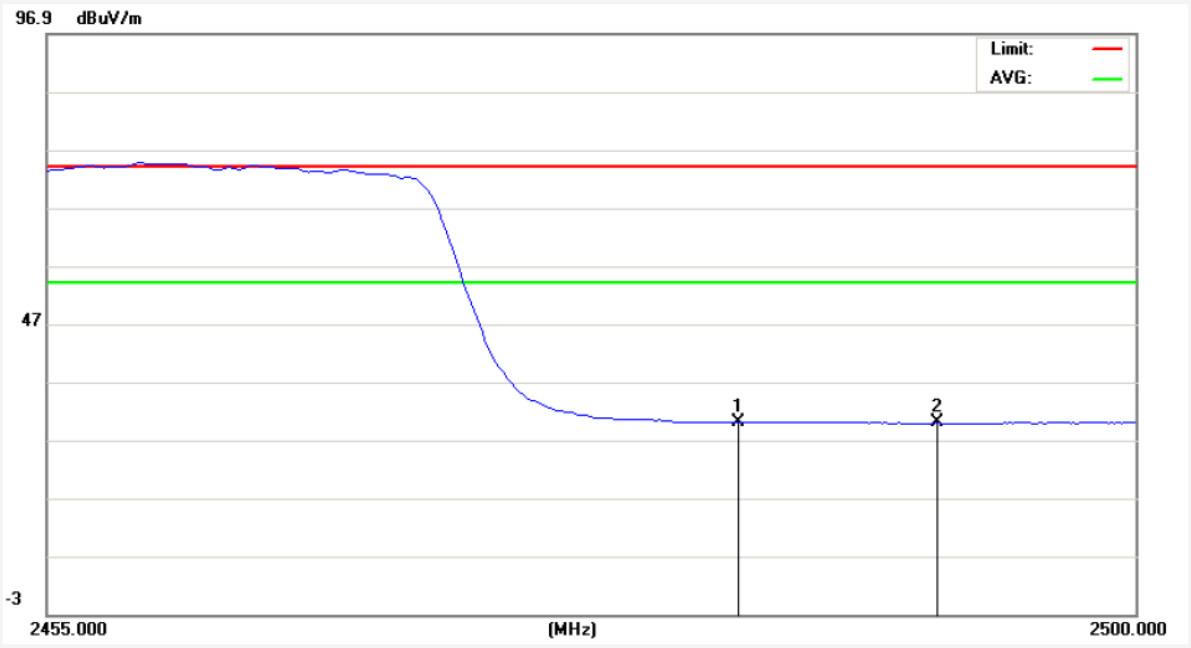
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	32.03	-2.31	29.72	54.00	-24.28	AVG			
2	2485.825	32.17	-2.30	29.87	54.00	-24.13	AVG			

Test Mode: 802.11n (HT20)
2462MHz
Vertical-PEAK:



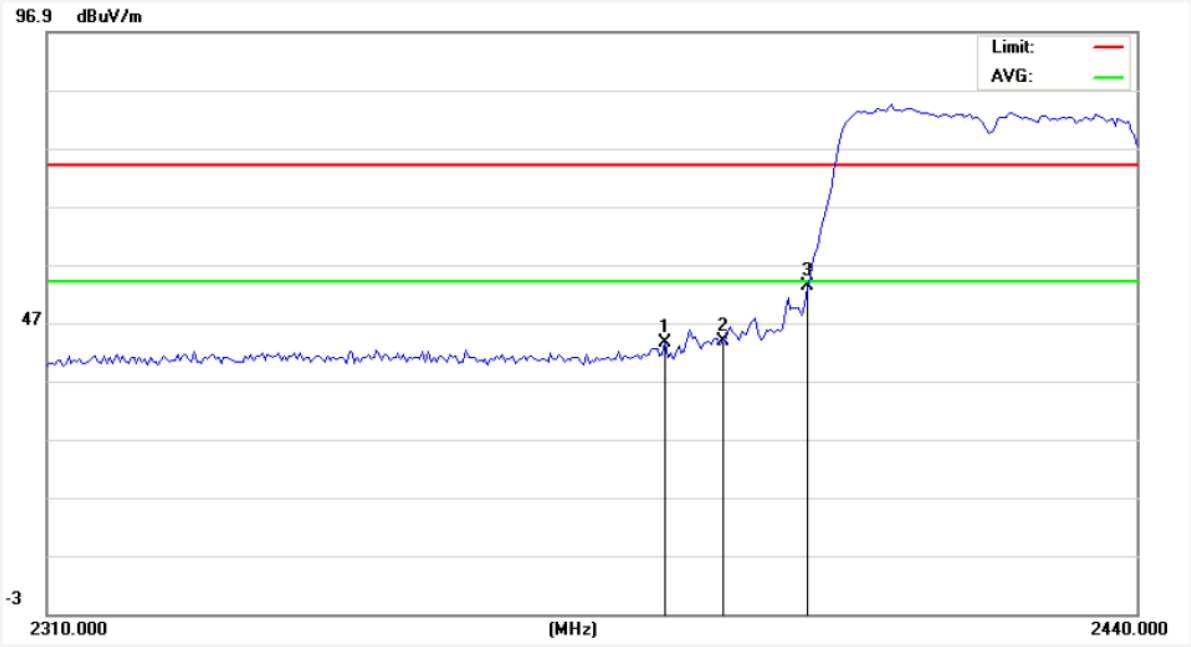
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	43.13	-2.31	40.82	74.00	-33.18	peak			
2	2488.075	44.28	-2.30	41.98	74.00	-32.02	peak			

Vertical-AV:



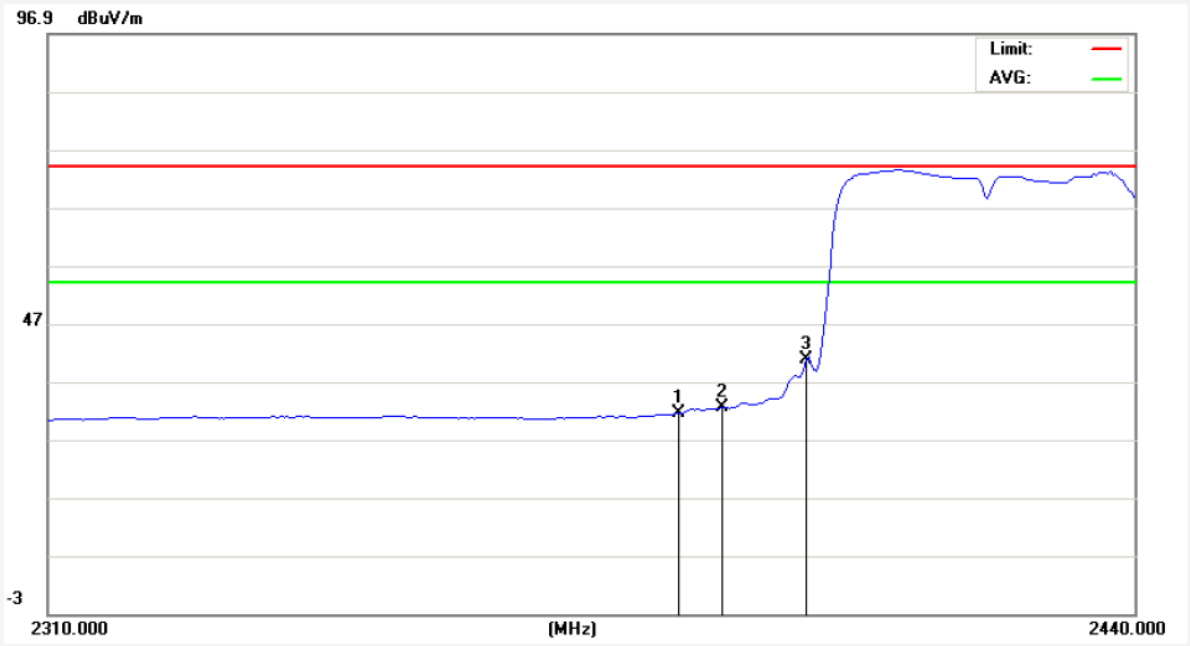
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	32.42	-2.31	30.11	54.00	-23.89	AVG			
2	2491.787	32.30	-2.29	30.01	54.00	-23.99	AVG			

Test Mode: 802.11n (HT40)
2422MHz
Horizontal-PEAK:



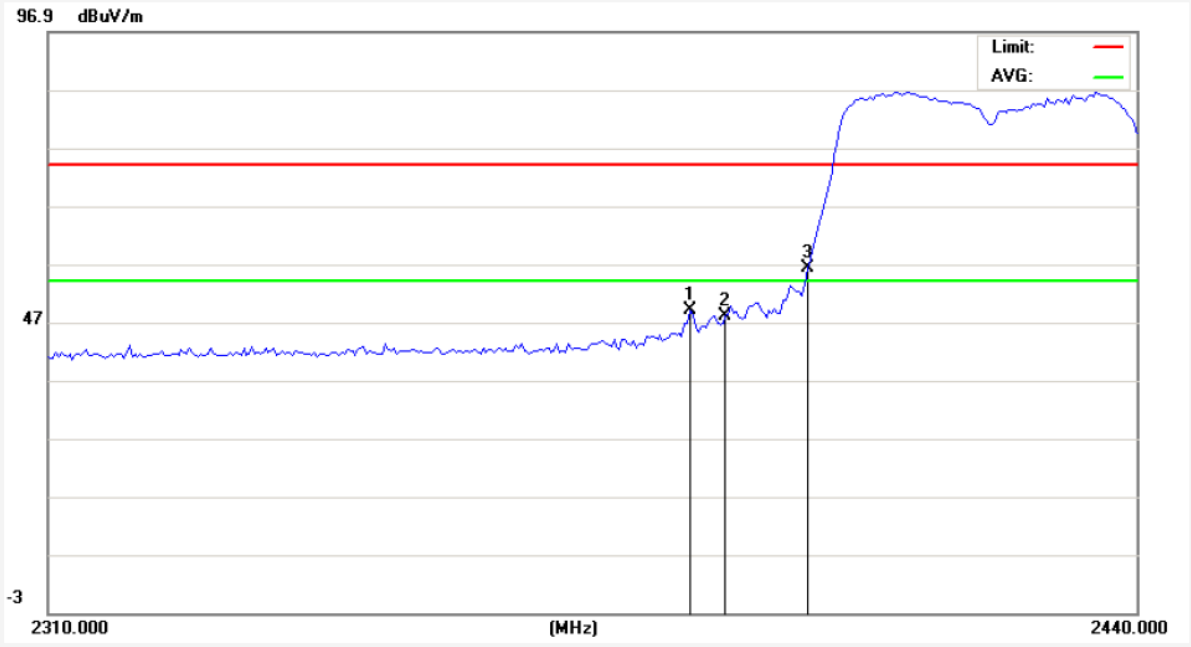
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2383.125	46.16	-2.53	43.63	74.00	-30.37	peak			
2	2390.000	46.40	-2.51	43.89	74.00	-30.11	peak			
3	2400.000	55.73	-2.49	53.24	74.00	-20.76	peak			

Horizontal-AV:



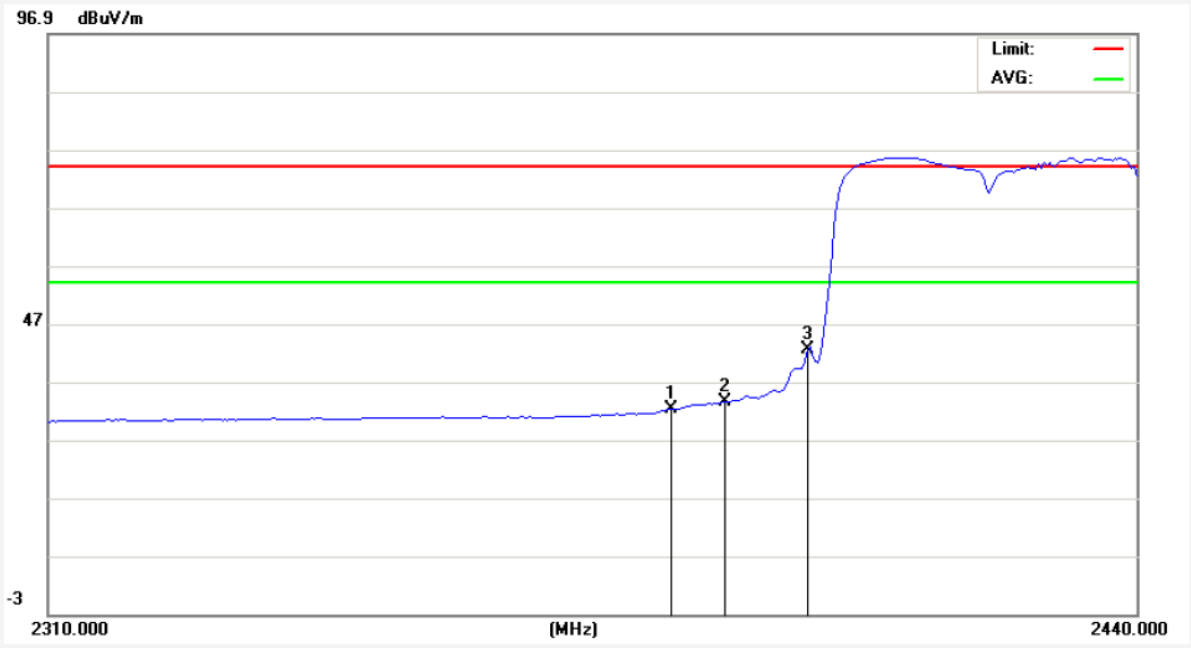
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2384.750	34.10	-2.53	31.57	54.00	-22.43	AVG			
2	2390.000	34.98	-2.51	32.47	54.00	-21.53	AVG			
3	2400.000	43.29	-2.49	40.80	54.00	-13.20	AVG			

Test Mode: 802.11n (HT40)
2422MHz
Vertical-PEAK:



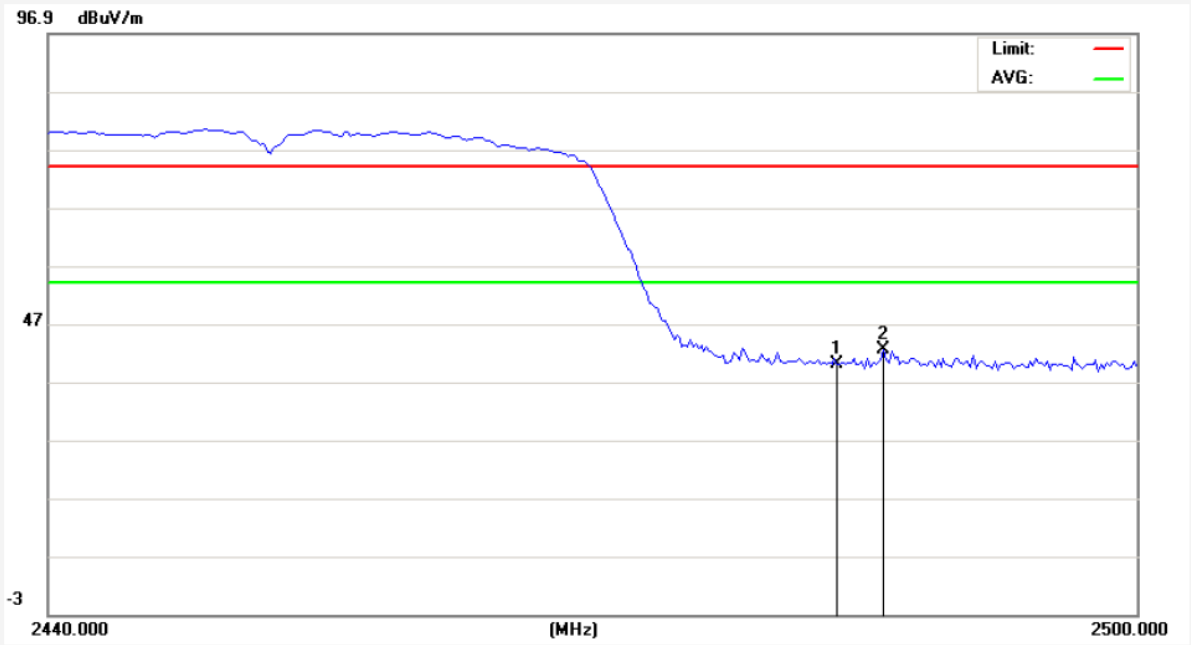
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2386.050	51.50	-2.52	48.98	74.00	-25.02	peak			
2	2390.000	50.63	-2.51	48.12	74.00	-25.88	peak			
3	2400.000	58.87	-2.49	56.38	74.00	-17.62	peak			

Vertical-AV:



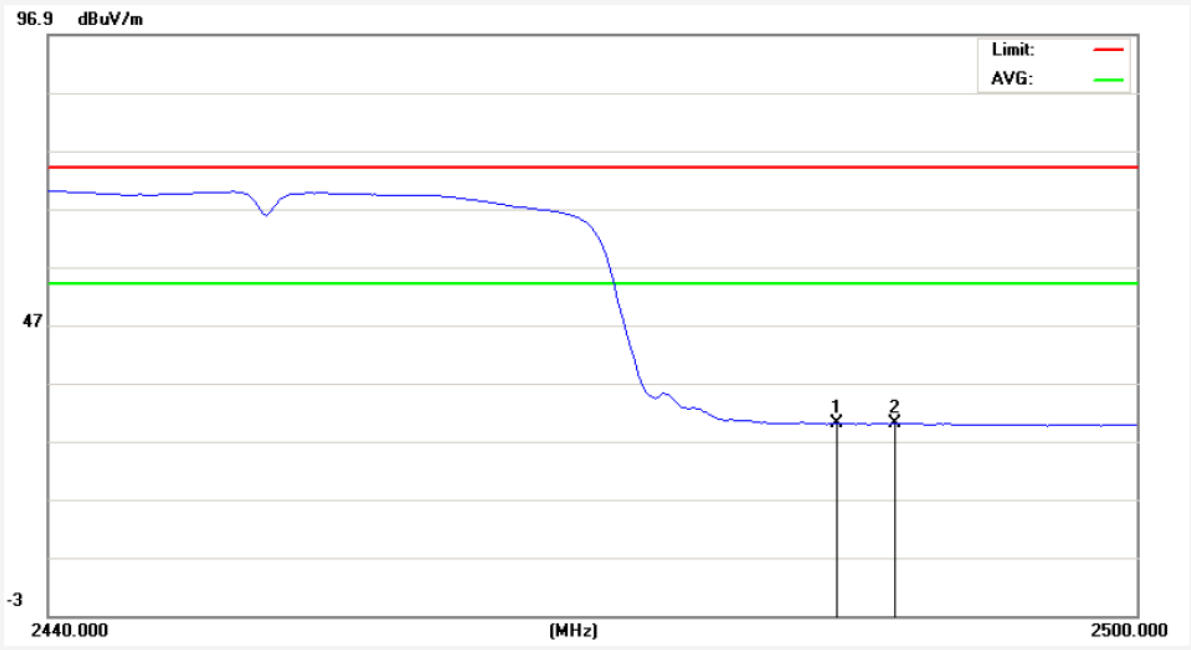
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2383.775	34.84	-2.53	32.31	54.00	-21.69	AVG			
2	2390.000	35.96	-2.51	33.45	54.00	-20.55	AVG			
3	2400.000	44.92	-2.49	42.43	54.00	-11.57	AVG			

Test Mode: 802.11n (HT40)
2452MHz
Horizontal-PEAK:



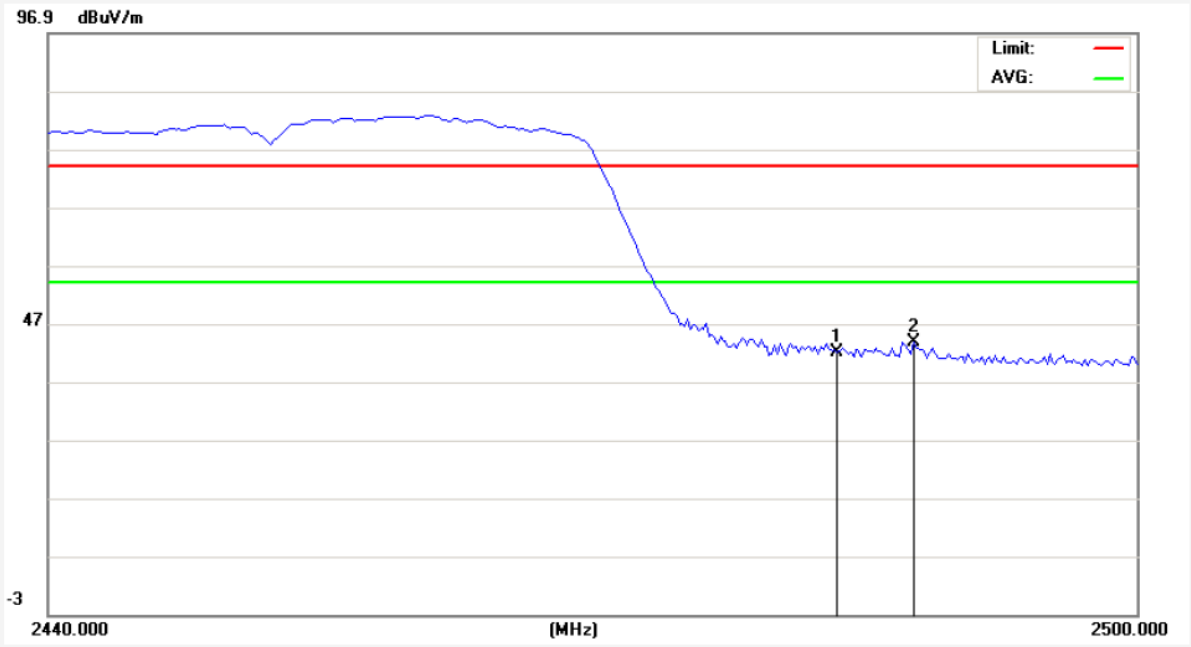
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	42.30	-2.31	39.99	74.00	-34.01	peak			
2	2486.050	44.90	-2.30	42.60	74.00	-31.40	peak			

Horizontal-AV:



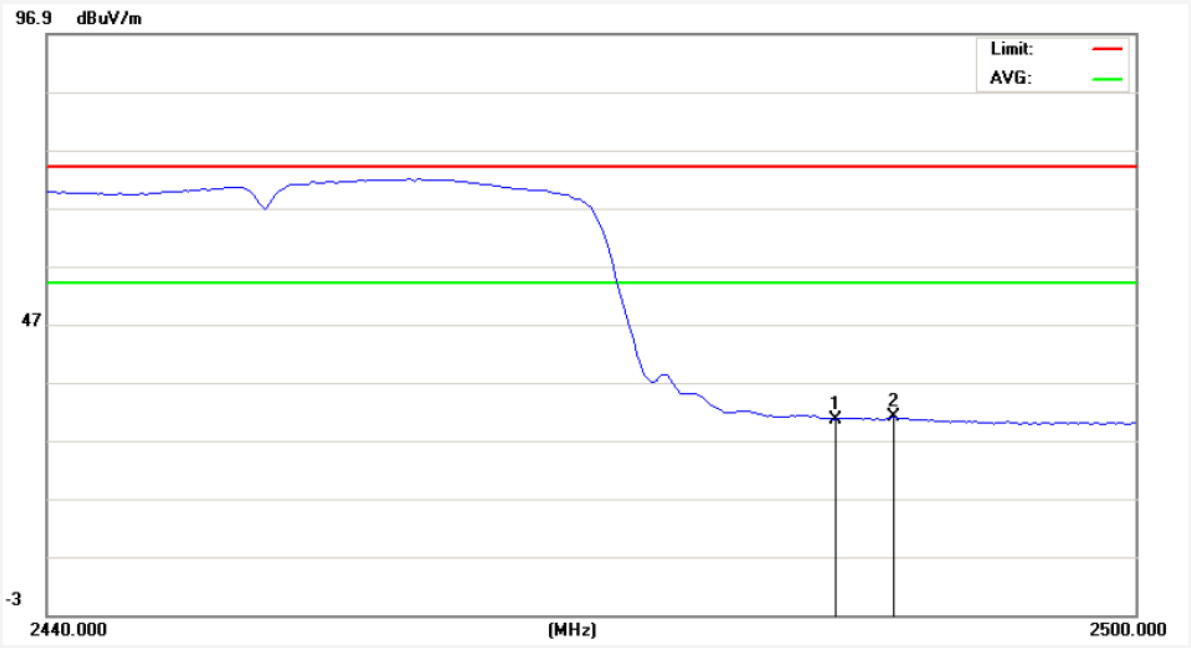
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	32.22	-2.31	29.91	54.00	-24.09	AVG			
2	2486.650	32.36	-2.30	30.06	54.00	-23.94	AVG			

Test Mode: 802.11n (HT40)
2452MHz
Vertical-PEAK:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	44.37	-2.31	42.06	74.00	-31.94	peak			
2	2487.700	46.08	-2.30	43.78	74.00	-30.22	peak			

Vertical-AV:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	32.84	-2.31	30.53	54.00	-23.47	AVG			
2	2486.650	33.21	-2.30	30.91	54.00	-23.09	AVG			

4.5. 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.

c. Test Equipment

Same as the equipment listed in 4.2.

d. Test Setup

See 4.1

e. Test Results

Pass

f. Test Data

Please refer to the following data.

g. Test Plot See the following pages

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	PPSD (dBm/3KHz)	∑PPSD (dBm/3KHz)	Limit (dBm)	Result
Low	2412	-16.97	-		Pass
Mid	2437	-17.48	-	8.00	Pass
High	2462	-18.03	-		Pass

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	PPSD (dBm)	∑PPSD (dBm)	Limit (dBm)	Result
Low	2412	-12.69	-		Pass
Mid	2437	-12.75	-	8.00	Pass
High	2462	-13.39	-		Pass

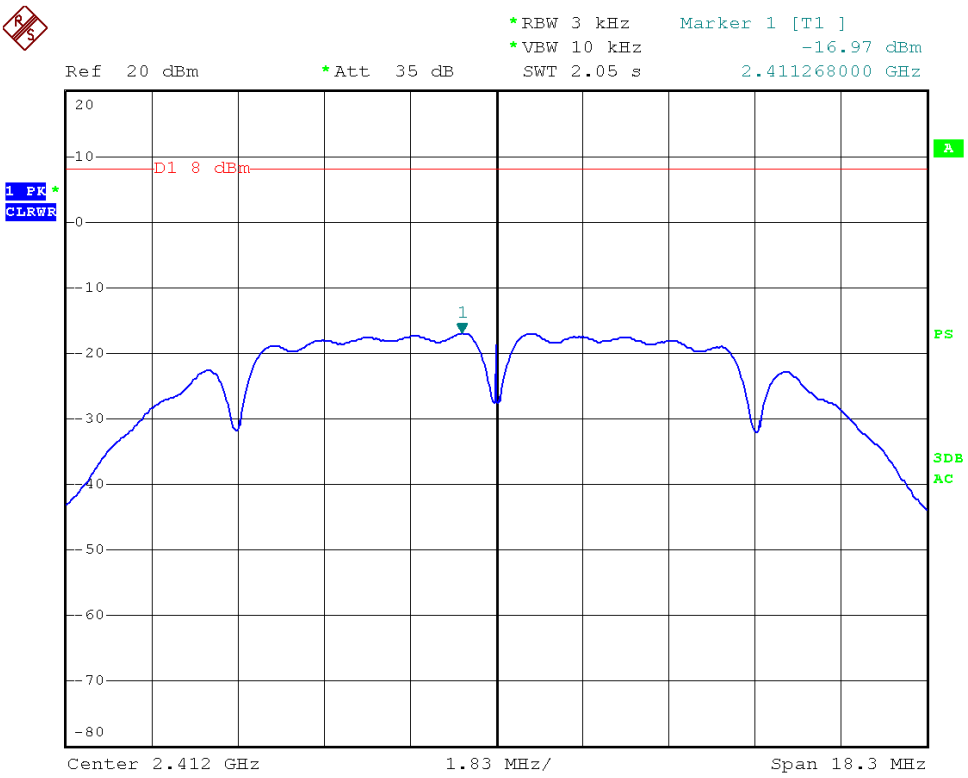
Test mode: IEEE 802.11n (HT20)

Channel	Frequency (MHz)	PPSD (dBm/3KHz)	∑PPSD (dBm/3KHz)	Limit (dBm)	Result
Low	2412	-12.76	-		Pass
Mid	2437	-12.86	-	8.00	Pass
High	2462	-13.18	-		Pass

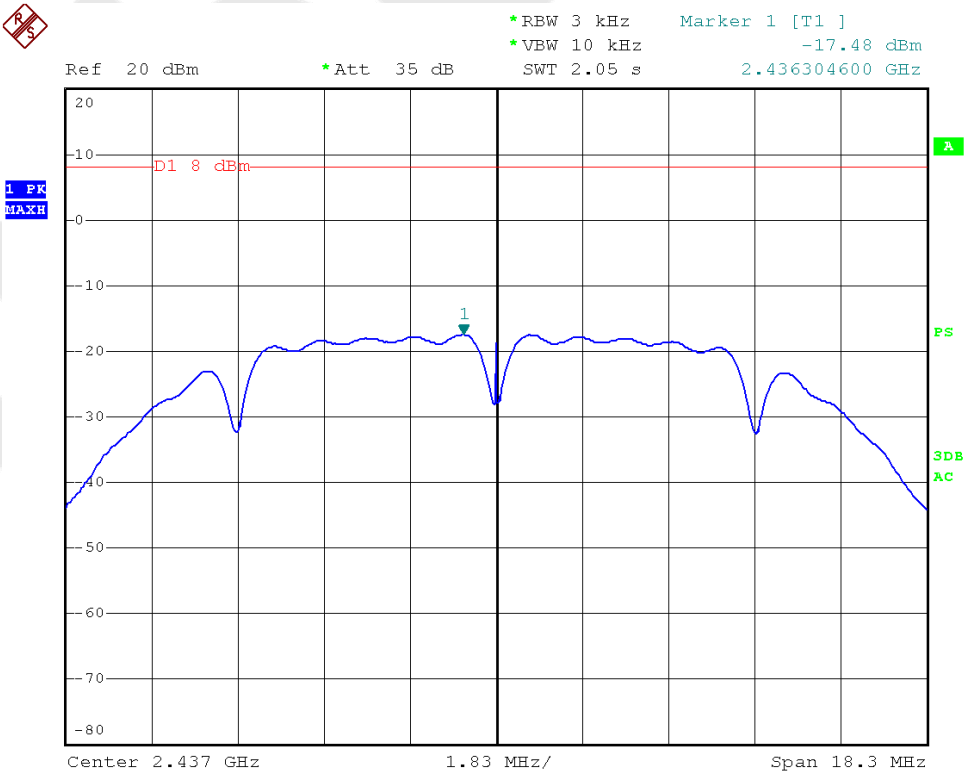
Test mode: IEEE 802.11n (HT40)

Channel	Frequency (MHz)	PPSD (dBm/3KHz)	∑PPSD (dBm/3KHz)	Limit (dBm)	Result
Low	2422	-14.28	-		Pass
Mid	2437	-13.89	-	8.00	Pass
High	2452	-15.50	-		Pass

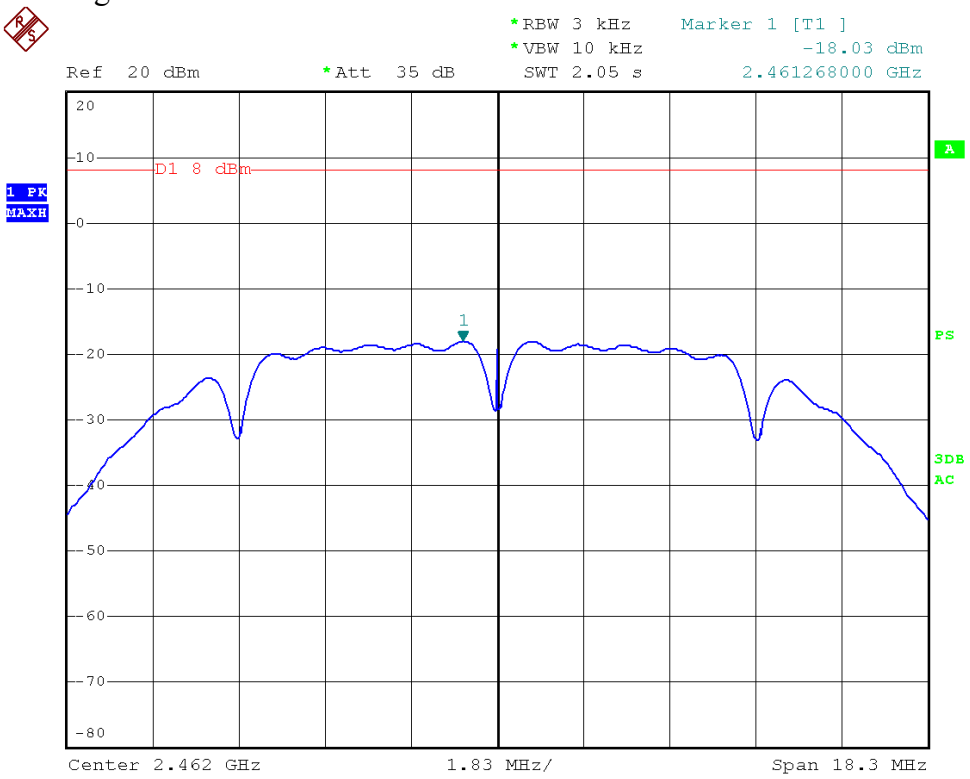
802.11 b CH--Low



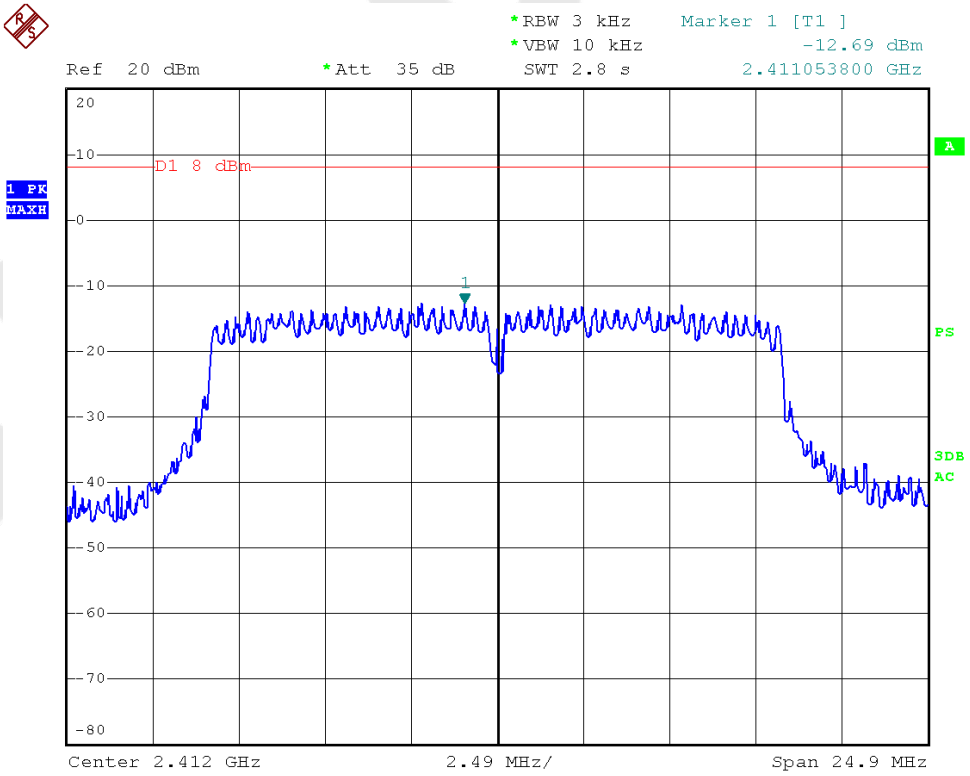
802.11 b CH--Mid



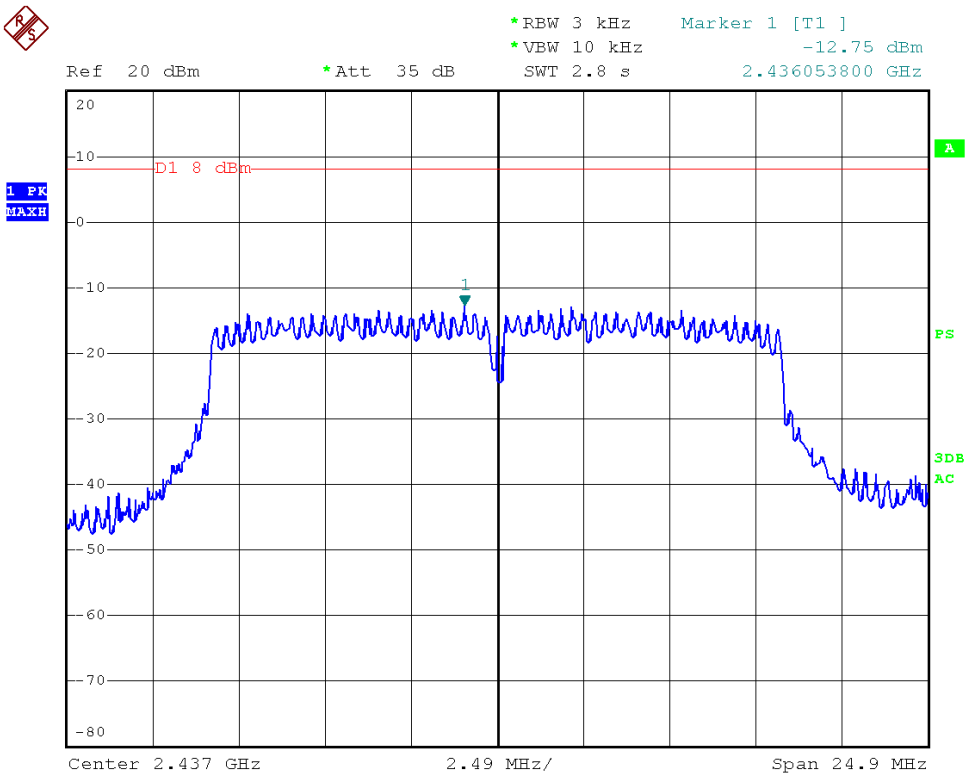
802.11 b CH--High



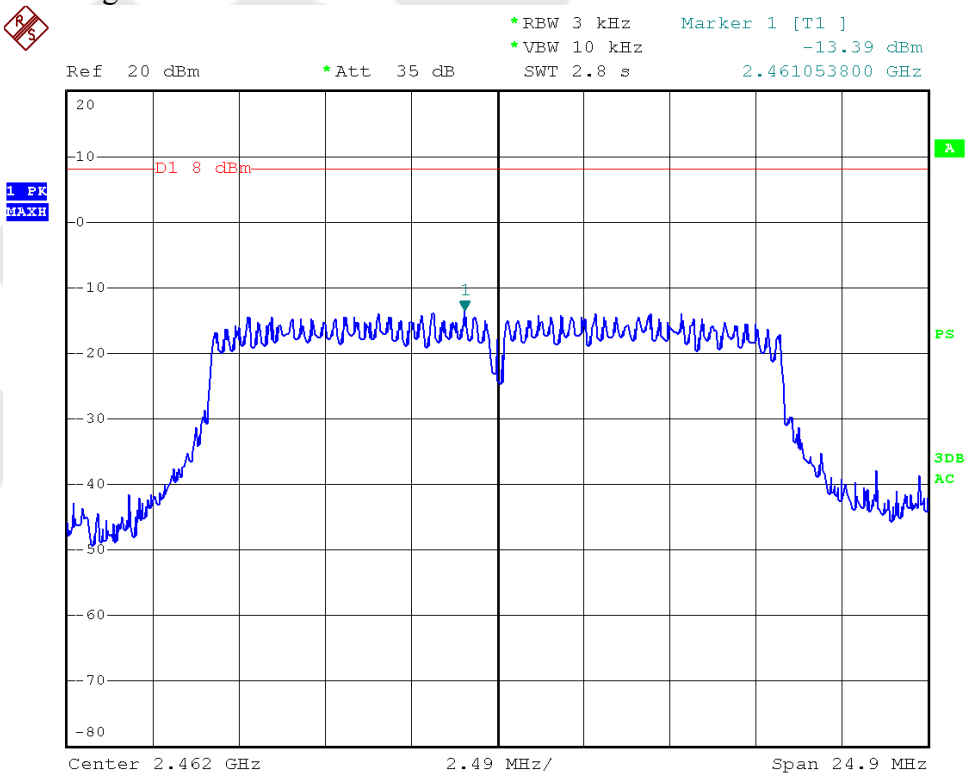
802.11g CH--Low



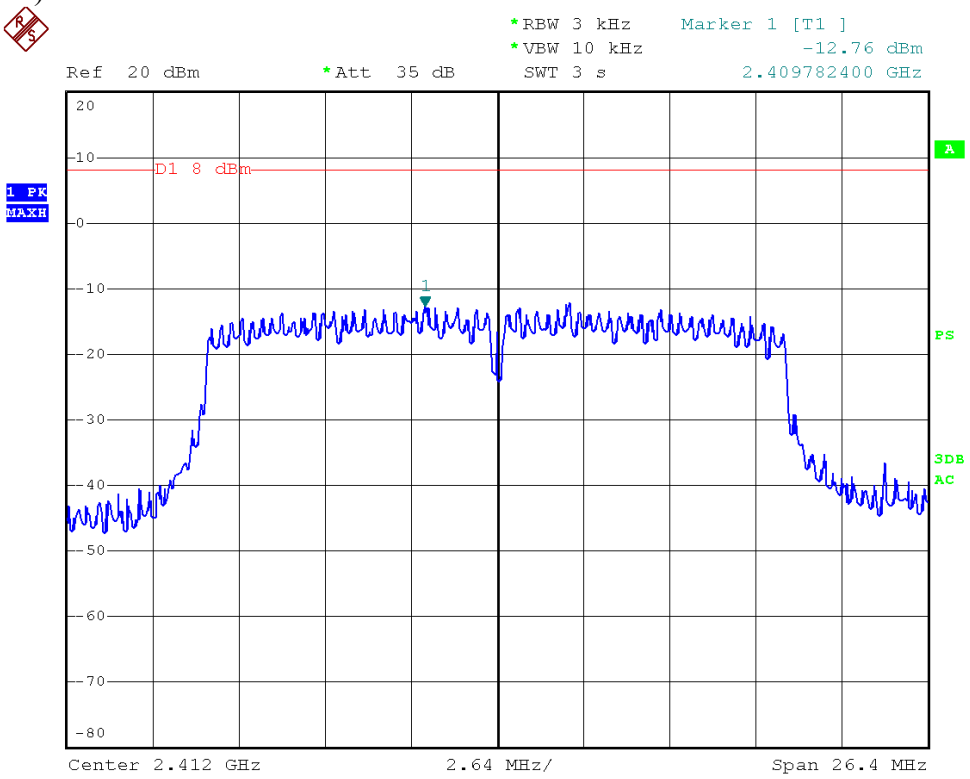
802.11g CH--Mid



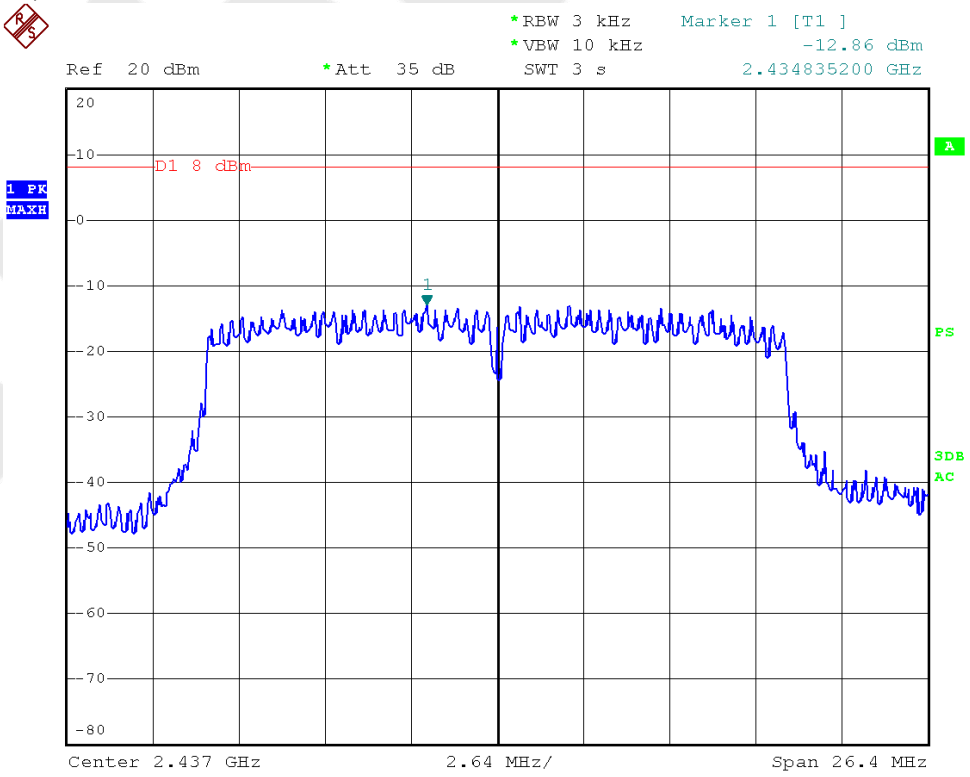
802.11g CH--High



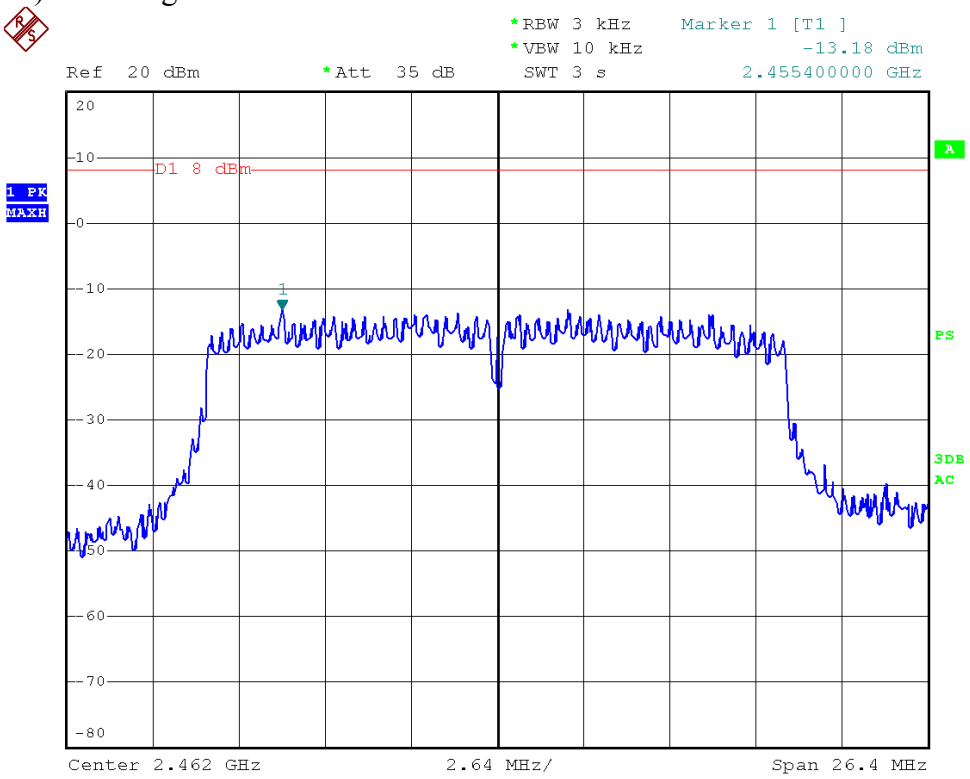
802.11n (HT20) CH—Low



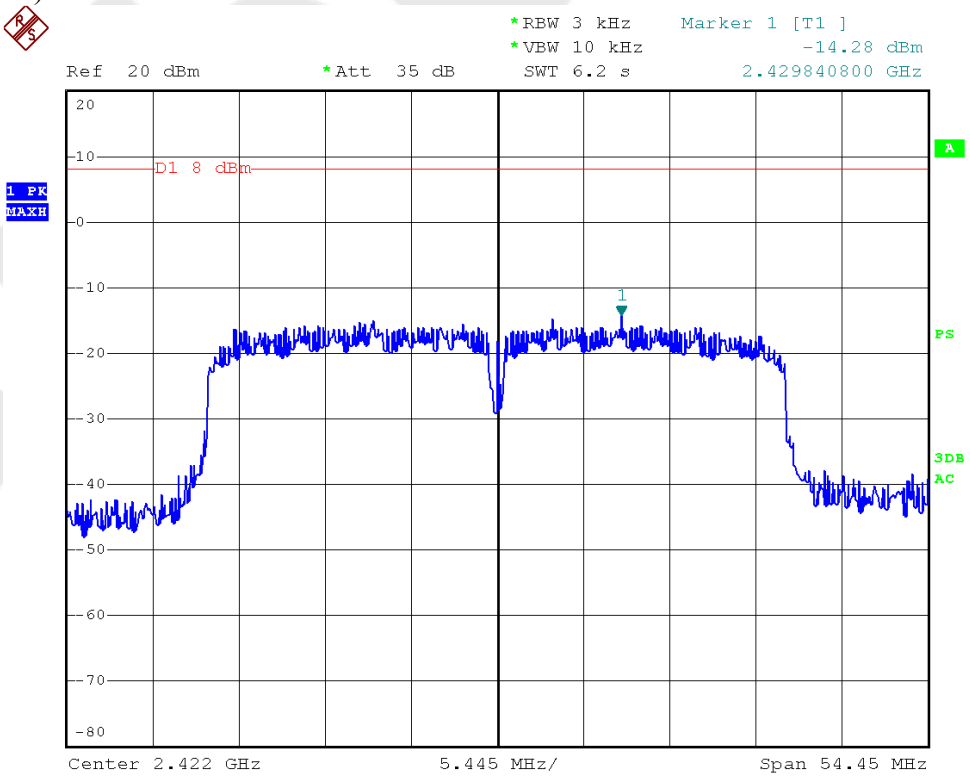
802.11n (HT20) CH—Mid



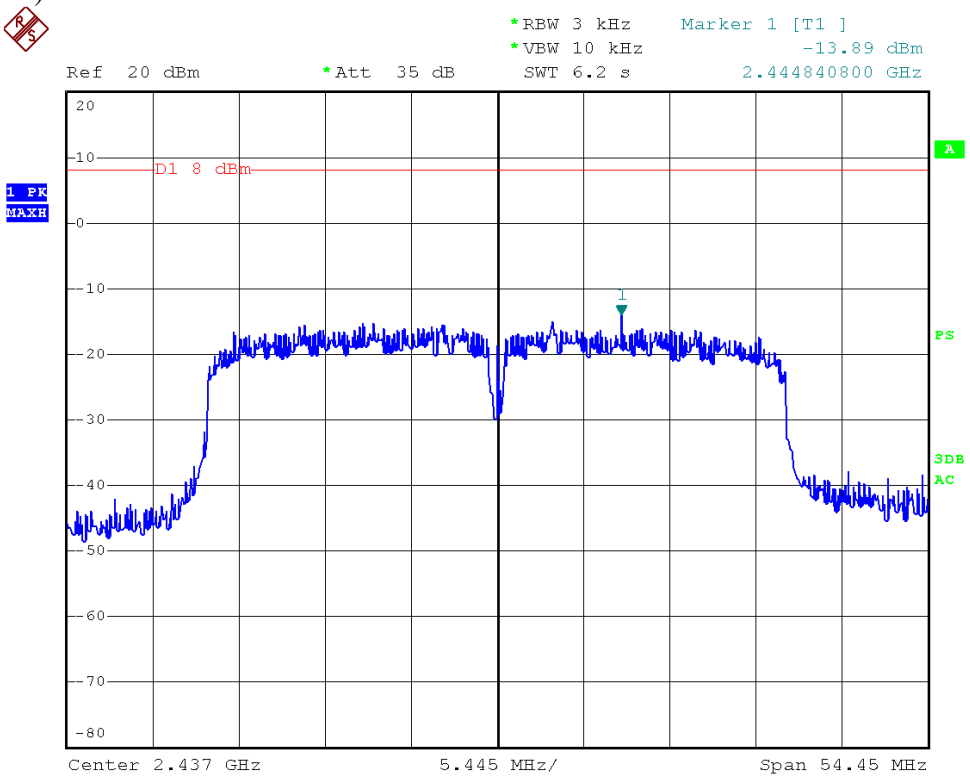
802.11n (HT20) CH—High



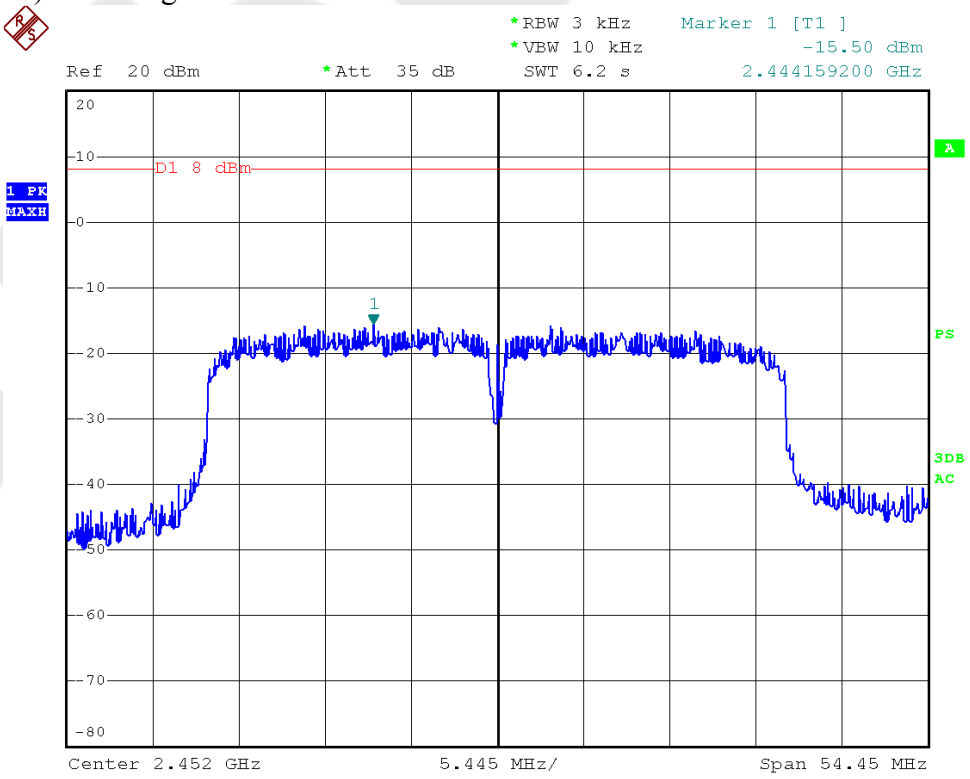
802.11n (HT40) CH—Low



802.11n (HT40) CH—Mid



802.11n (HT40) CH—High



4.6. Radiated Emissions

4.6.1.1. 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

4.6.1.2. Test Limits (≥ 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 dBμV/m @3m	54 dBμV/m @3m	ABOVE 960 MHz	54dBuV/m

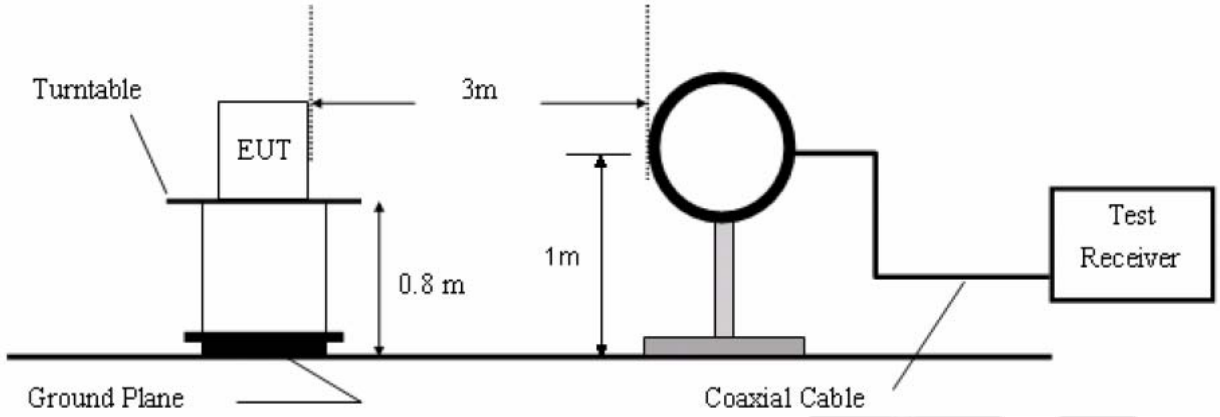
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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

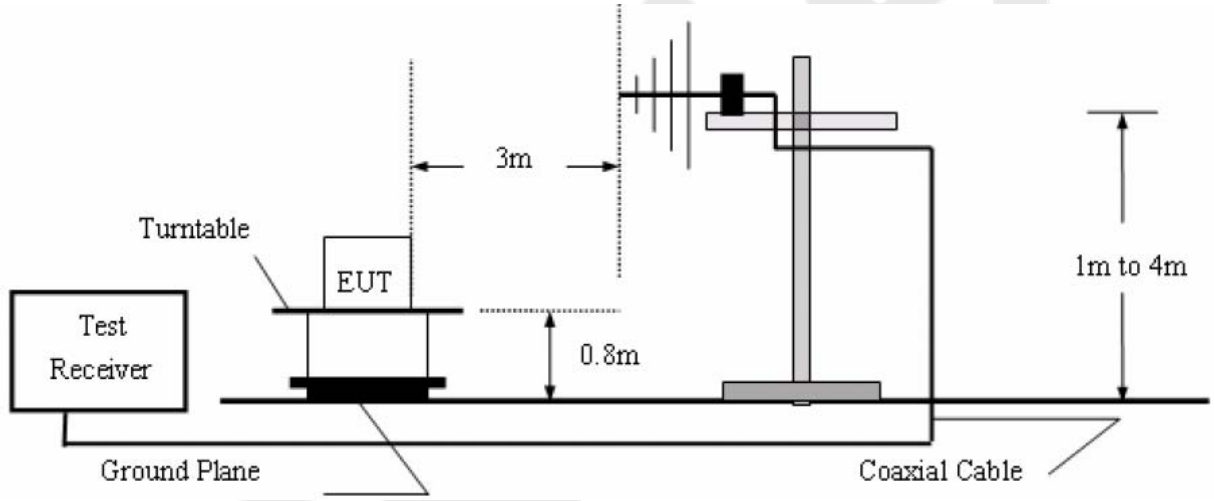
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Preamplifier	Instruments corporation	EMC011830	980100	Aug. 09, 2013	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 23, 2014	1 Year
3.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Aug. 09, 2013	3 Year
4.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 23, 2013	3 Year
5.	Pre-amplifier	SONOMA	310N	186860	Apr. 23, 2014	1 Year
6.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

4.6.2. Test Configuration:

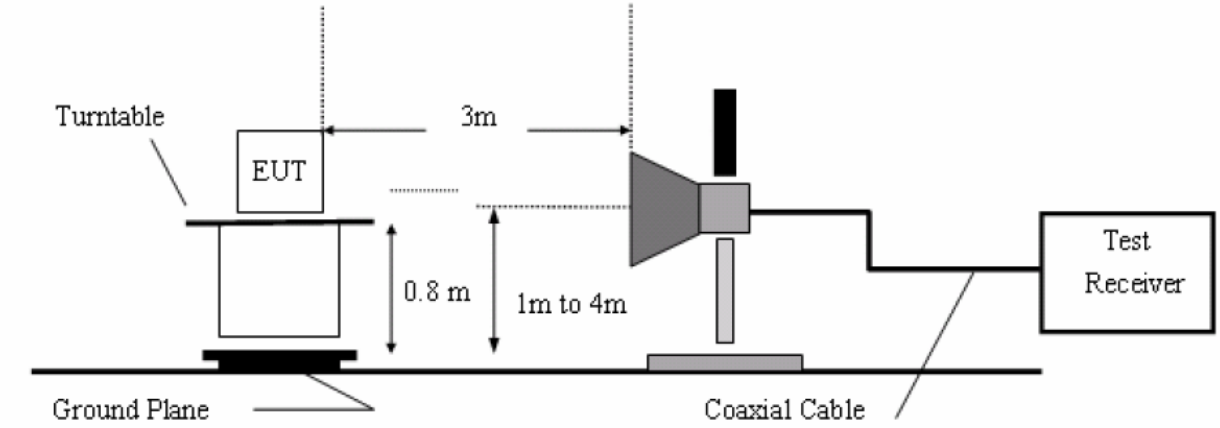
4.6.2.1. 9k to 30MHz emissions:



4.6.2.2. 30M to 1G emissions:



4.6.2.3. 1G to 40G emissions:



4.6.3. 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.

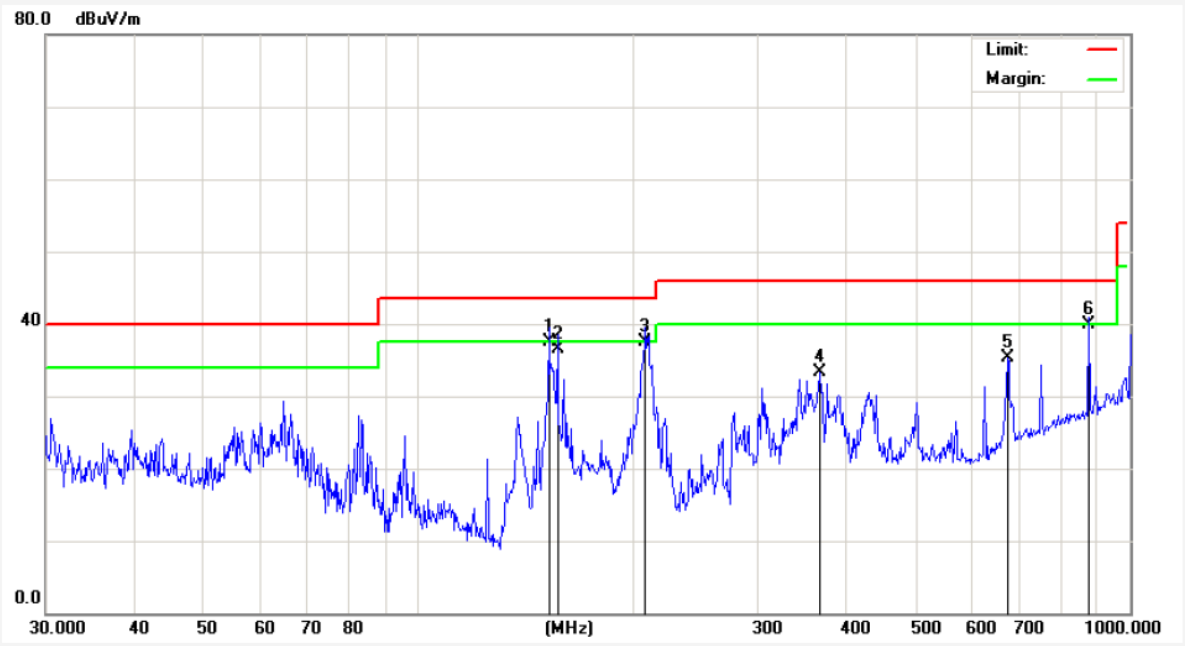
All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz.
The EUT is tested in 9*6*6 Chamber.

The test results are listed in Section 4.6.4.

4.6.4. Test Results

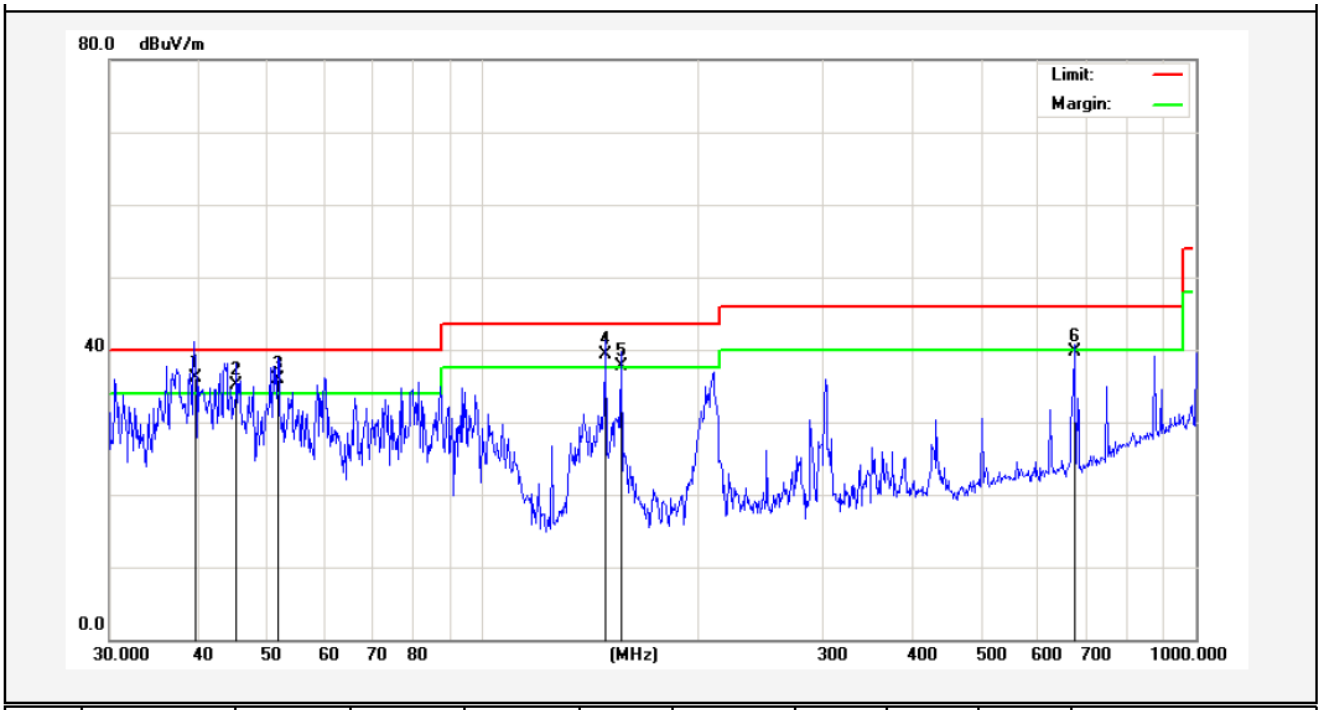
Please refer to the following pages.

Job No.:	**011405156E**	**Polarization:**	**Horizontal**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**AC 120V/60Hz for Adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Test Mode:	**On**	**Distance:**	**3m**



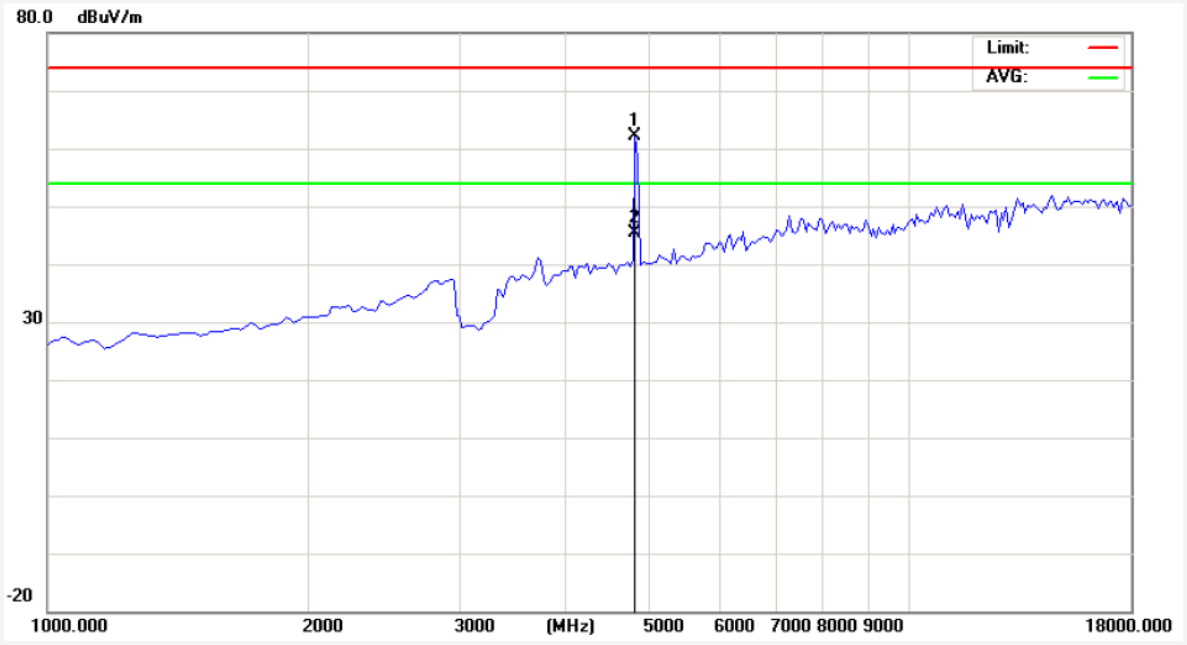
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	152.6640	60.79	-23.22	37.57	43.50	-5.93	QP	300	0	
2	157.0074	59.59	-23.00	36.59	43.50	-6.91	QP	300	360	
3	208.5801	57.96	-20.55	37.41	43.50	-6.09	QP	300	0	
4	366.8231	46.75	-13.53	33.22	46.00	-12.78	peak			
5	672.8444	44.58	-9.22	35.36	46.00	-10.64	peak			
6	875.2470	45.15	-5.17	39.98	46.00	-6.02	QP	300	360	

Job No.:	**011405156E**	**Polarization:**	**Vertical**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**AC 120V/60Hz for Adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Test Mode:	**On**	**Distance:**	**3m**



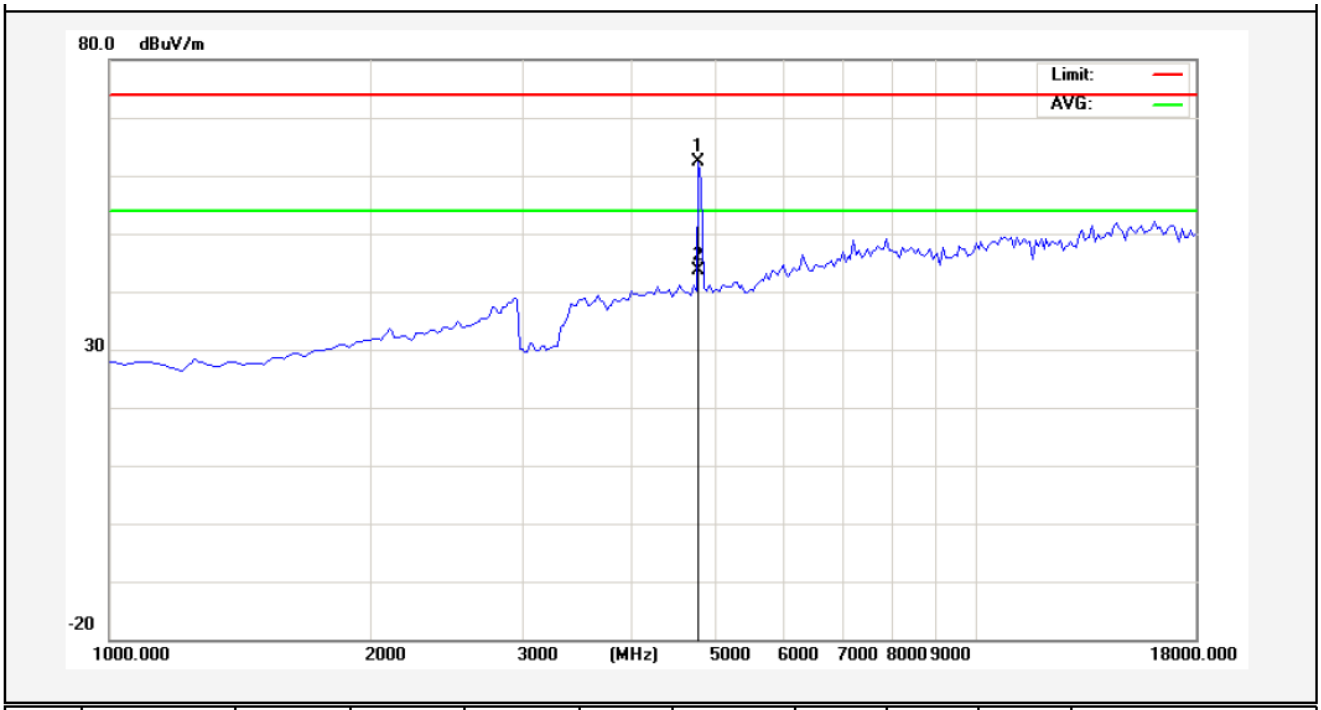
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	39.6672	50.56	-14.50	36.06	40.00	-3.94	QP	100	360	
2	45.2166	49.40	-14.34	35.06	40.00	-4.94	QP	100	0	
3	51.8416	50.62	-14.70	35.92	40.00	-4.08	QP	100	0	
4	148.9625	57.64	-18.36	39.28	43.50	-4.22	QP	100	360	
5	156.4578	55.80	-18.04	37.76	43.50	-5.74	QP	100	0	
6	675.2080	48.43	-8.67	39.76	46.00	-6.24	QP	100	360	

Job No.:	**011405156E**	**Polarization:**	**Horizontal**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**AC 120V/60Hz for Adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**802.11b(2412MHz)**	**Distance:**	**3m**



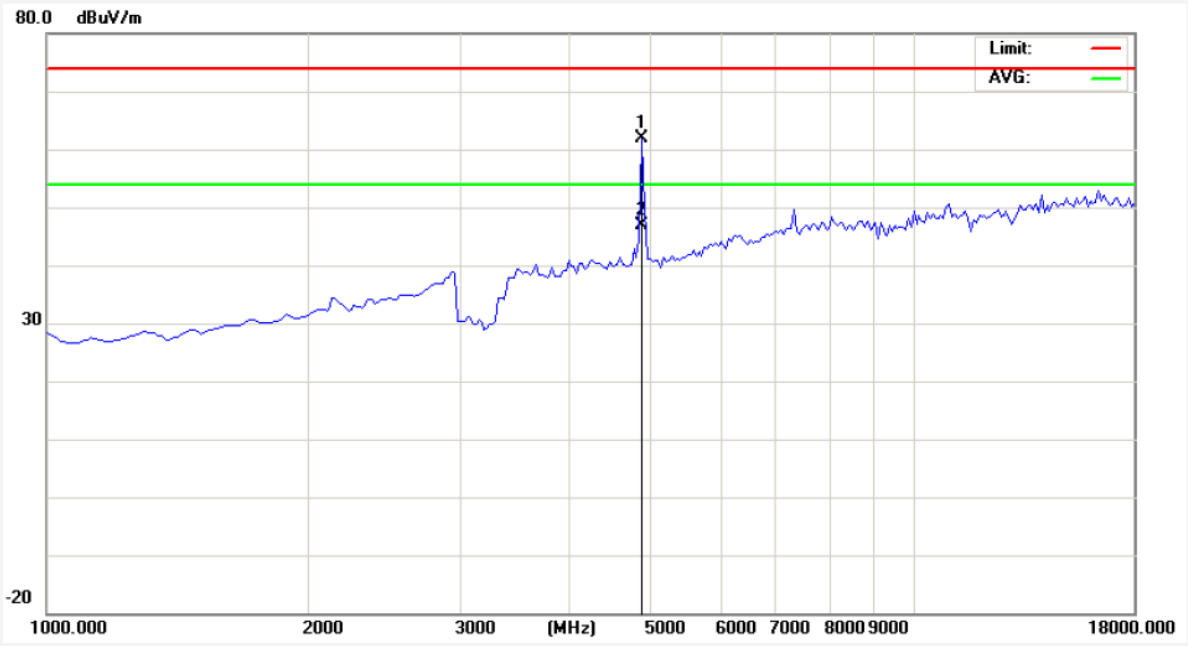
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	4825.000	58.79	3.34	62.13	74.00	-11.87	peak			
2	4825.000	42.00	3.34	45.34	54.00	-8.66	AVG			

Job No.:	**011405156E**	**Polarization:**	**Vertical**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**AC 120V/60Hz for Adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**802.11b(2412MHz)**	**Distance:**	**3m**



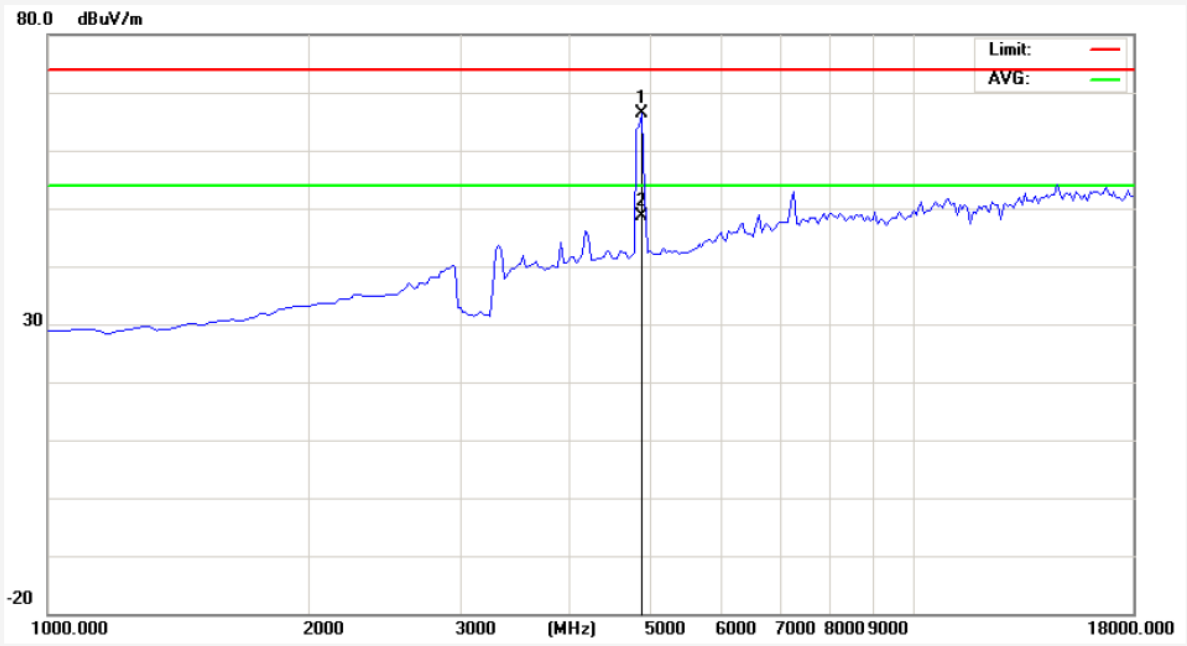
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	4825.000	59.01	3.34	62.35	74.00	-11.65	peak			
2	4825.000	40.35	3.34	43.69	54.00	-10.31	AVG			

Job No.:	**011405156E**	**Polarization:**	**Horizontal**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**AC 120V/60Hz for Adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**802.11b(2437MHz)**	**Distance:**	**3m**



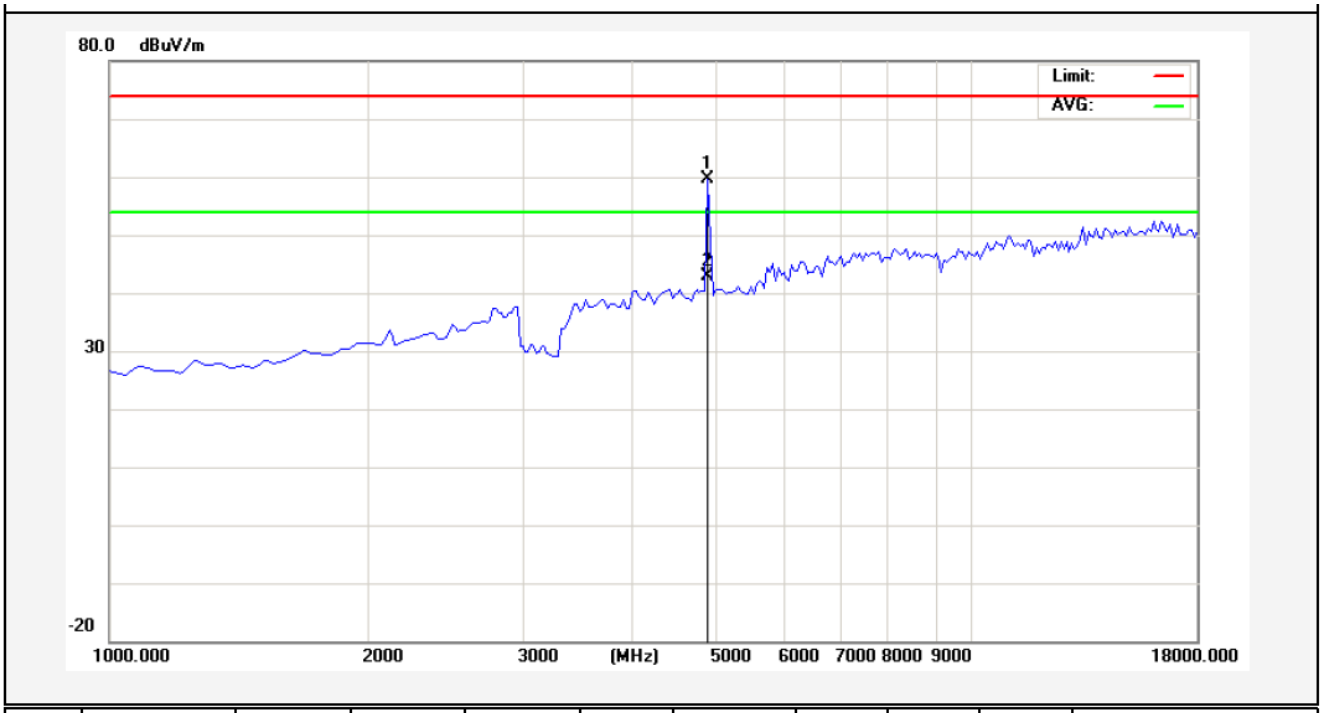
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	4867.500	58.53	3.41	61.94	74.00	-12.06	peak			
2	4867.500	43.38	3.41	46.79	54.00	-7.21	AVG			

Job No.:	**011405156E**	**Polarization:**	**Vertical**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**AC 120V/60Hz for Adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**802.11b(2437MHz)**	**Distance:**	**3m**



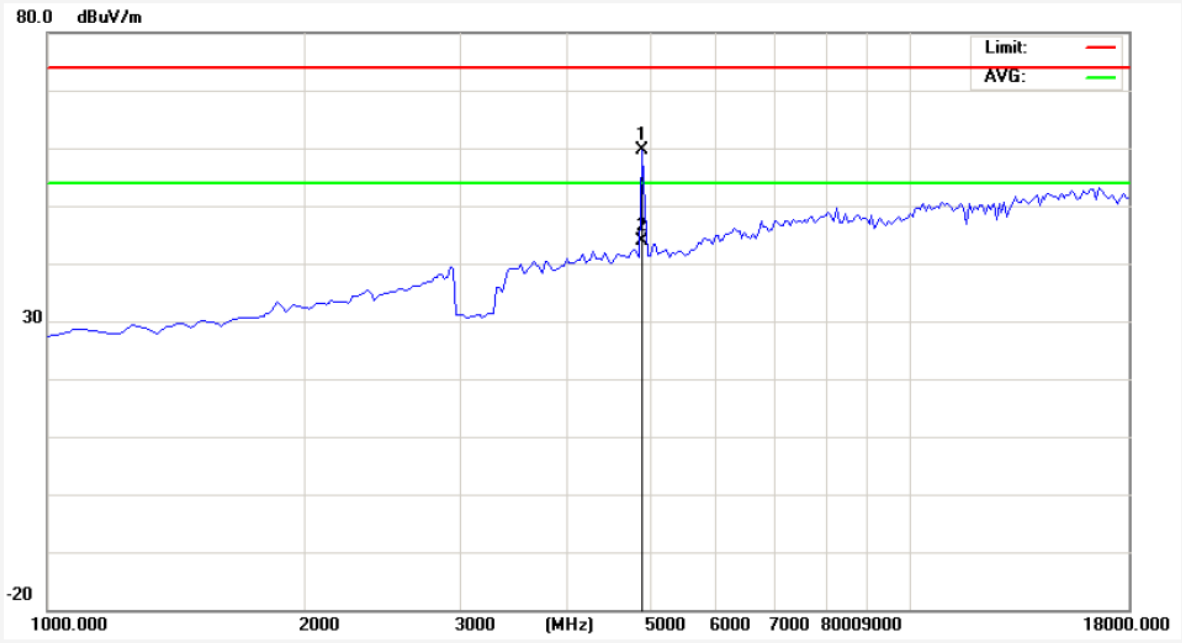
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	4867.500	62.97	3.41	66.38	74.00	-7.62	peak			
2	4867.500	45.24	3.41	48.65	54.00	-5.35	AVG			

Job No.:	**011405156E**	**Polarization:**	**Horizontal**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**AC 120V/60Hz for Adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**802.11b(2462MHz)**	**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	4910.000	56.25	3.49	59.74	74.00	-14.26	peak			
2	4910.000	39.37	3.49	42.86	54.00	-11.14	AVG			

Job No.:	**011405156E**	**Polarization:**	**Vertical**
Standard:	**(RE)FCC PART15 C _3m**	**Power Source:**	**AC 120V/60Hz for Adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3(C)/55%RH**
Note:	**802.11b(2462MHz)**	**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	4910.000	56.09	3.49	59.58	74.00	-14.42	peak			
2	4910.000	40.37	3.49	43.86	54.00	-10.14	AVG			

5. ANTENNA REQUIREMENT

Applicable Standard

According to section 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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section 15.203 of the rules. 15.203 state that the subject device must meet the following criteria:
a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.
Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.
And according to FCC 47 CFR section 15.247(b), if the transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has a 12dBi antenna which uses a unique type of connector to attach to the EUT. So it complies with the requirement of section 15.203. Please refer to the internal photos.

According with FCC 15.247(b)(4), the conducted output power at antenna limits should be reduced 7dB, the new calculated limit is 23dBm.

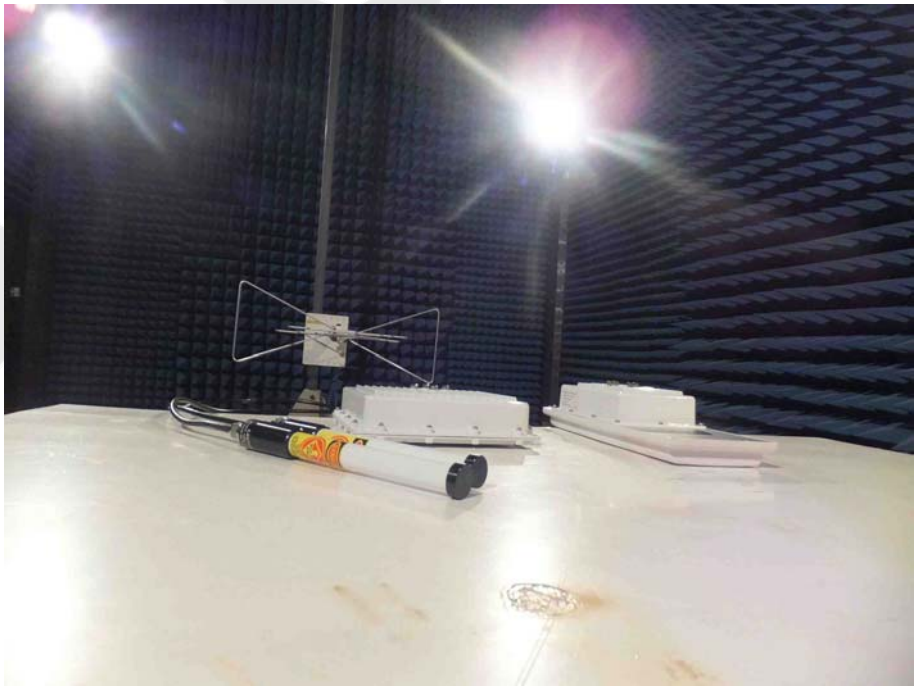
Results:

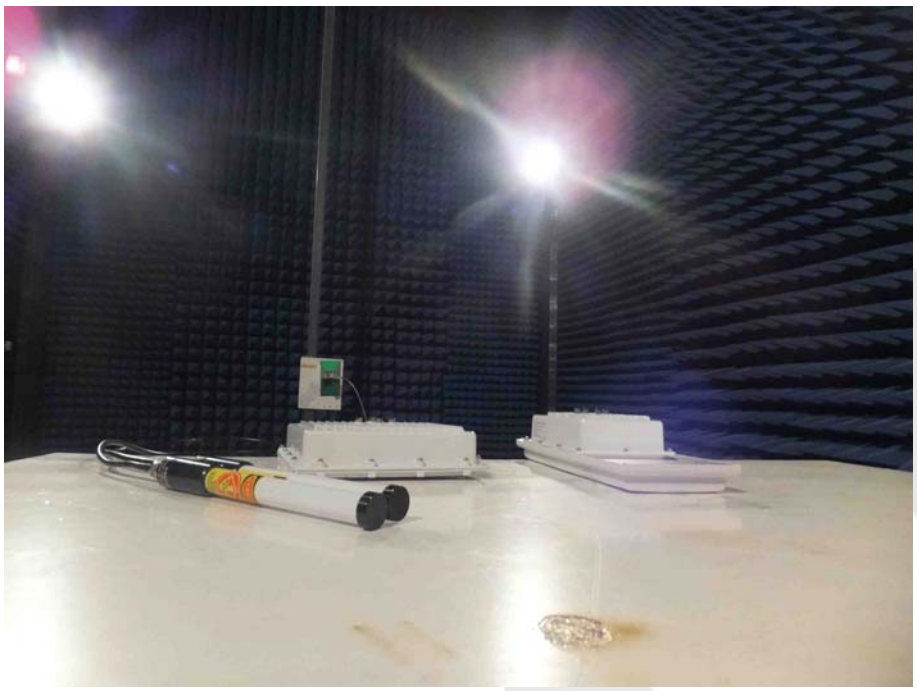
Compliance.

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

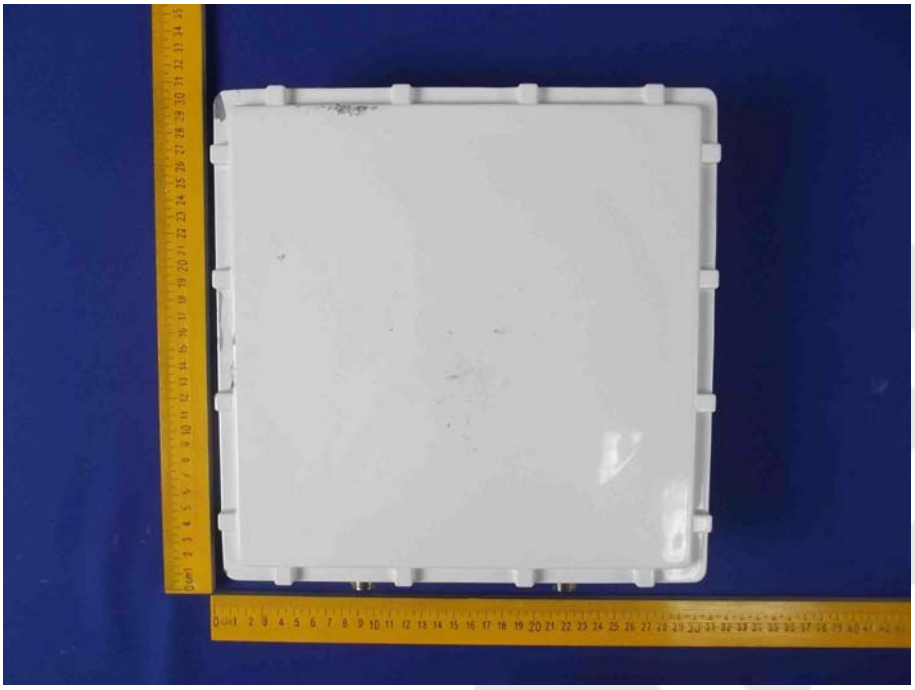


Figure 4
The EUT- Side View

APPENDIX Ⅱ(INTERNAL PHOTOS)

Figure 5
The EUT-Inside View

Figure 6
PCB of the EUT-Front View

Figure 7
PCB of the EUT-Front View

Figure 8
PCB of the EUT-Back View

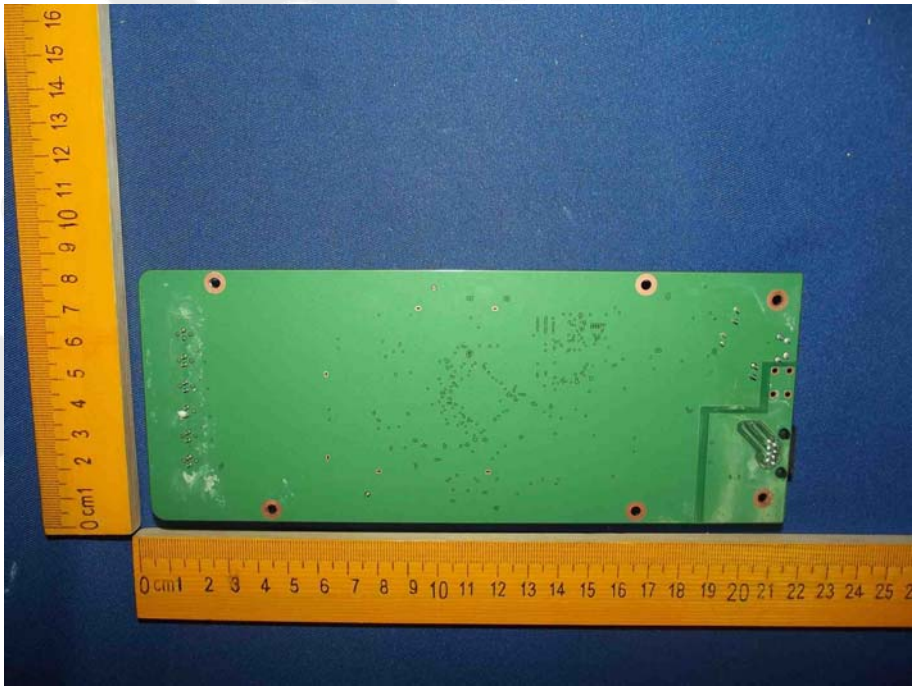


Figure 9
PCB of the EUT View