FCC TEST REPORT
for
SHENZHEN APEXIS ELECTRONIC CO., LTD.

IP Camera
Model No.: AH4033BW, AH6233BW, AH6243BW, AH9013BW, AH4033CW, AH6233CW, AH6243CW, AH9013CW, AH4036DW, AH6236DW, AH6246DW, AH9016DW, AH8093BW, AH6193BW, AH7173B, AH9063BW, AH8093CW, AH6193CW, AH7173C, AH9063CW, AH8096DW, AH6196DW, AH7176D, AH9066DW, AH8073BW, AH4105BW, AH7183B, AH8073CW, AH4105CW, AH7183C, AH8076DW, AH4106DW, AH7186D

Prepared for	:	SHENZHEN APEXIS ELECTRONIC CO., LTD.
Address	:	502 East Keji Building, ShenZhen High-Tech Ind-Park, Nanshan District, Shenzhen, 518057, China

Prepared By	:	Shenzhen Anbotek Compliance Laboratory Limited
Address	:	1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China Tel: (86) 755-26066544 Fax: (86) 755-26014772

Report Number	:	R011501677E
Date of Test	:	Jan. 20~ Feb. 02, 2015
Date of Report	:	Feb. 03, 2015

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TEST REPORT

Applicant	:	SHENZHEN APEXIS ELECTRONIC CO., LTD.
Manufacturer	:	SHENZHEN APEXIS ELECTRONIC CO., LTD.
EUT	:	IP Camera
Model No.	:	AH4033BW, AH6233BW, AH6243BW, AH9013BW, AH4033CW, AH6233CW, AH6243CW, AH9013CW, AH4036DW, AH6236DW, AH6246DW, AH9016DW, AH8093BW, AH6193BW, AH7173B, AH9063BW, AH8093CW, AH6193CW, AH7173C, AH9063CW, AH8096DW, AH6196DW, AH7176D, AH9066DW, AH8073BW, AH4105BW, AH7183B, AH8073CW, AH4105CW, AH7183C, AH8076DW, AH4106DW, AH7186D
Serial No.	:	N.A.
Trade Mark	:	apexis
Rating	:	5V⎓, 2A

Measurement Procedure Used:
FCC Part15 Subpart C 2014, 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 : Jan. 20~ Feb. 02, 2015

Prepared by : (Tested Engineer / Kebo Zhang)

Reviewer : (Project Manager / Amy Ding)

Approved & Authorized Signer : (Manager / Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	IP Camera
Model Number	:	AH4033BW, AH6233BW, AH6243BW, AH9013BW, AH4033CW, AH6233CW, AH6243CW, AH9013CW, AH4036DW, AH6236DW, AH6246DW, AH9016DW, AH8093BW, AH6193BW, AH7173B, AH9063BW, AH8093CW, AH6193CW, AH7173C, AH9063CW, AH8096DW, AH6196DW, AH7176D, AH9066DW, AH8073BW, AH4105BW, AH7183B, AH8073CW, AH4105CW, AH7183C, AH8076DW, AH4106DW, AH7186D (Note: All samples are the same except the model number and colour, so we prepare "AH4033BW" for test only.)
Test Power Supply	:	AC 120V/60Hz for adapter
Adapter	:	Model: SAW-0502000 Input: AC 100-240V, 50-60Hz, 0.5A Output: DC 5V, 2000mA
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:	:	2dBi
Applicant	:	SHENZHEN APEXIS ELECTRONIC CO., LTD.
Address	:	502 East Keji Building, ShenZhen High-Tech Ind-Park, Nanshan District, Shenzhen, 518057, China
Manufacturer	:	SHENZHEN APEXIS ELECTRONIC CO., LTD.
Address	:	1201 West Keji Building, ShenZhen High-Tech Ind-Park, Nanshan District, ShenZhen, China
Factory	:	SHENZHEN APEXIS ELECTRONIC CO., LTD.
Address	:	Building 11#, Shaer Bluesky Technology, Shajing, Bao'an, Shenzhen, China
Date of receipt	:	Jan. 20, 2015
Date of Test	:	Jan. 20~ Feb. 02, 2015

1.2. Auxiliary Equipment Used during Test

PC	:	Manufacturer: DELL M/N: Optiplex 3020 MT S/N: CN-079V51-70163-4AD-089K-A00 Input Rating: AC 100-240V, 50-60Hz 5.4A CE , FCC DOC, CCC
MONITOR	:	Manufacturer: DELL M/N: UZ2215Hf S/N: CN-035VN6-72872-45A-A3AB Input Rating: AC 100-240V, 50-60Hz, 1.5A Output Rating: DC 19.5V, 4.62A TUV-GS FCC CE KCC VCCI
KEYBOARD	:	Manufacturer: DELL M/N: SK-8120 S/N: CN-0DJ365-71616-49J-0MVR-A00 Input Rating: DC 5V,0.05A CE FCC VCCI KCC TUV-GS Cable: 1.8m, unshielded
MOUSE	:	Manufacturer: DELL M/N: MS111-T S/N: CN-0KW2YH-71616-488-1CBJ Input Rating: DC 5V,0.1A Cable: 1.8m, unshielded CE FCC VCCI KCC TUV-GS
Printer	:	Manufacturer:Brother M/N: MFC-3360C S/N: N/A CE, FCC:DOC
Power Line	:	Non-Shielded, 1.5m
VGA 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:

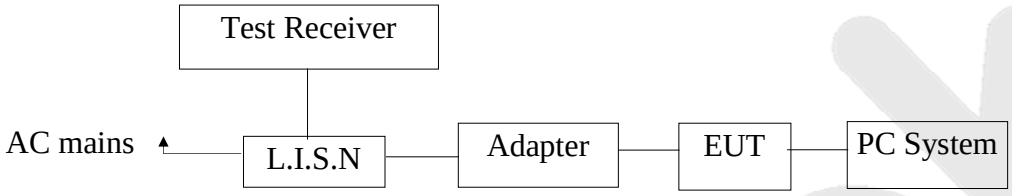
√ - available
X - tested

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. 22, 2014	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Apr. 22, 2014	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Apr. 22, 2014	1 Year

3.7. Power Line Conducted Emission Measurement Results

PASS.

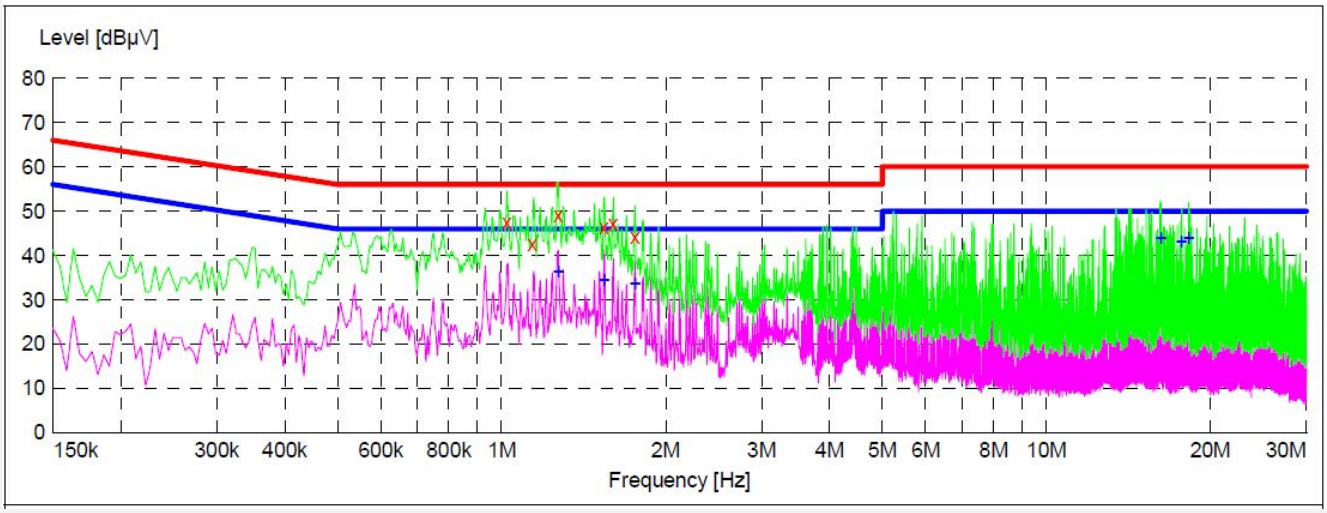
The frequency range from 150KHz to 30 MHz is investigated.

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



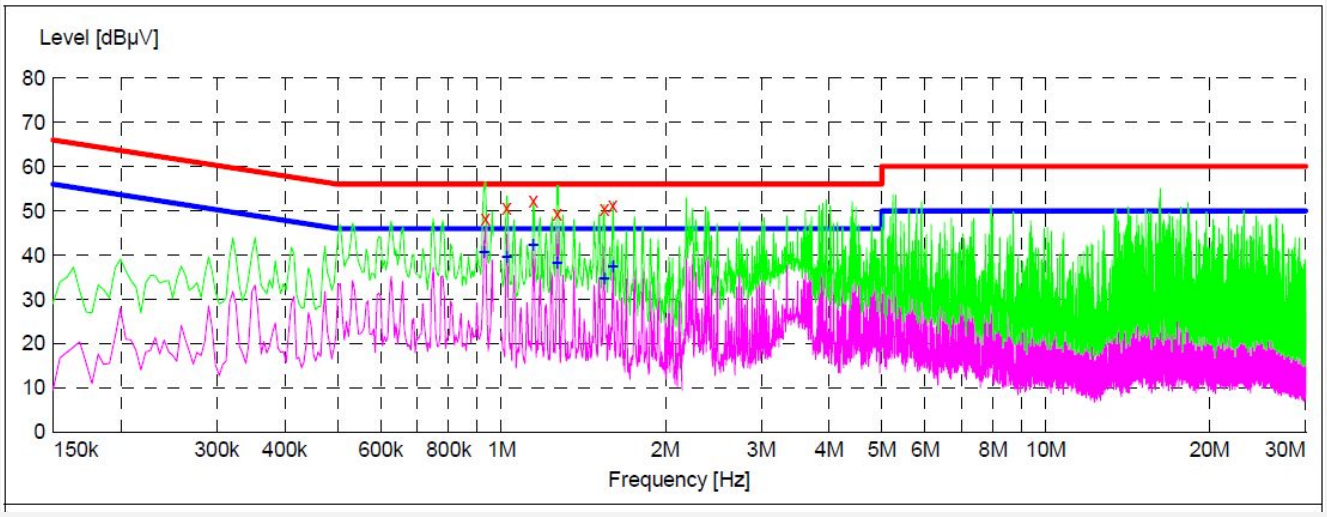
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
1.022500	47.50	20.2	56	8.5	QP	L1	GND
1.139500	42.60	20.2	56	13.4	QP	L1	GND
1.270000	49.00	20.2	56	7.0	QP	L1	GND
1.540000	46.50	20.3	56	9.5	QP	L1	GND
1.603000	47.20	20.3	56	8.8	QP	L1	GND
1.756000	44.30	20.3	56	11.7	QP	L1	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
1.270000	36.50	20.2	46	9.5	AV	L1	GND
1.540000	34.60	20.3	46	11.4	AV	L1	GND
1.756000	33.70	20.3	46	12.3	AV	L1	GND
16.228000	44.00	20.7	50	6.0	AV	L1	GND
17.695000	43.10	20.8	50	6.9	AV	L1	GND
18.244000	43.90	20.8	50	6.1	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

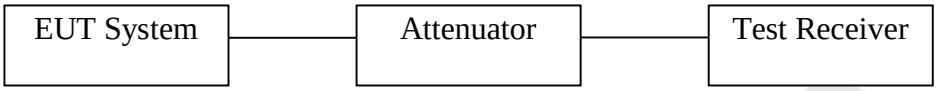


Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.933000	48.20	20.1	56	13.8	QP	N	GND
1.022500	50.80	20.2	56	5.2	QP	N	GND
1.144000	54.30	20.2	56	7.7	QP	N	GND
1.265500	49.50	20.2	56	12.5	QP	N	GND
1.544500	50.60	20.3	56	5.4	QP	N	GND
1.603000	51.30	20.3	56	4.7	QP	N	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.928500	40.70	20.1	46	5.3	AV	N	GND
1.022500	39.50	20.2	46	6.5	AV	N	GND
1.144000	42.30	20.2	46	3.7	AV	N	GND
1.265500	38.40	20.2	46	7.6	AV	N	GND
1.544500	34.80	20.3	46	11.2	AV	N	GND
1.603000	37.50	20.3	46	8.5	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.

20dB Bandwidth:
C63.10
Occupied Bandwidth (OBW=20dB Bandwidth

1. Set RBW=1%~5% OBW
2. Set the VBW⩾3*RBW
3. Set the span range between 2 times and 5 times of the OBW
4. Sweep Time= Auto
   Detector= Peak
   Trace= Max hold
5. Once the reference level is established, the equipment is conditioned with typical modulating signals to produce the worst case (i.e. the widest) bandwidth. Unless otherwise specified for an unlicensed wireless device, measure the bandwidth at the -20dB levels with respect to the reference level.

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. 08, 2014	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Aug. 08, 2014	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 22, 2014	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 04, 2014	1 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 24, 2014	1 Year
6.	Pre-amplifier	SONOMA	310N	186860	Aug. 08, 2014	1 Year
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

e. Test Results

Pass.

f. Test Data
6dB Bandwidth

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2412	10.00		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	16.56		Pass
Mid	2437	16.56	>500	Pass
High	2462	16.56		Pass

Test mode: IEEE 802.11n (HT20)

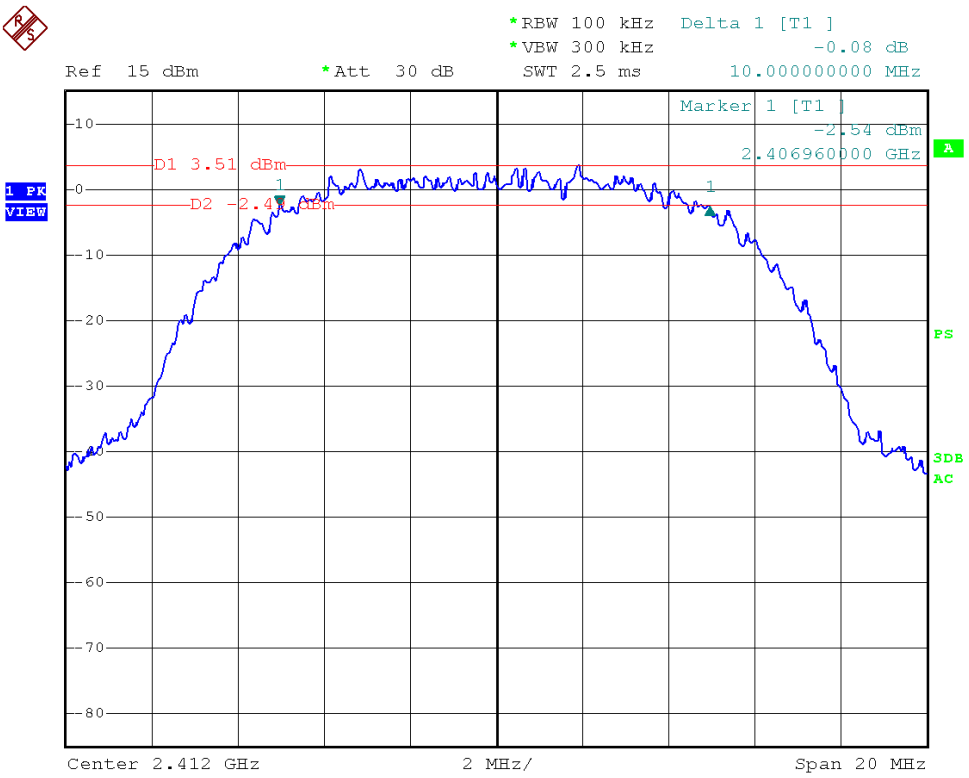
Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2412	17.68		Pass
Mid	2437	17.68	>500	Pass
High	2462	17.68		Pass

Test mode: IEEE 802.11n (HT40)

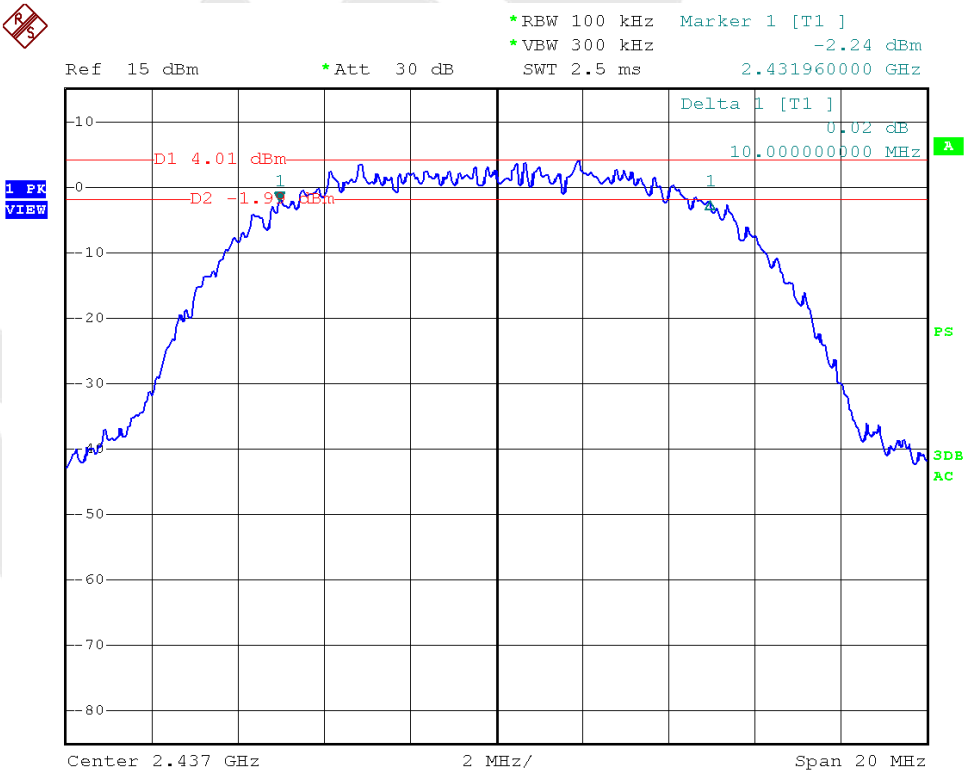
Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2422	36.48		Pass
Mid	2437	36.48	>500	Pass
High	2452	36.48		Pass

Test Plots See the following page.

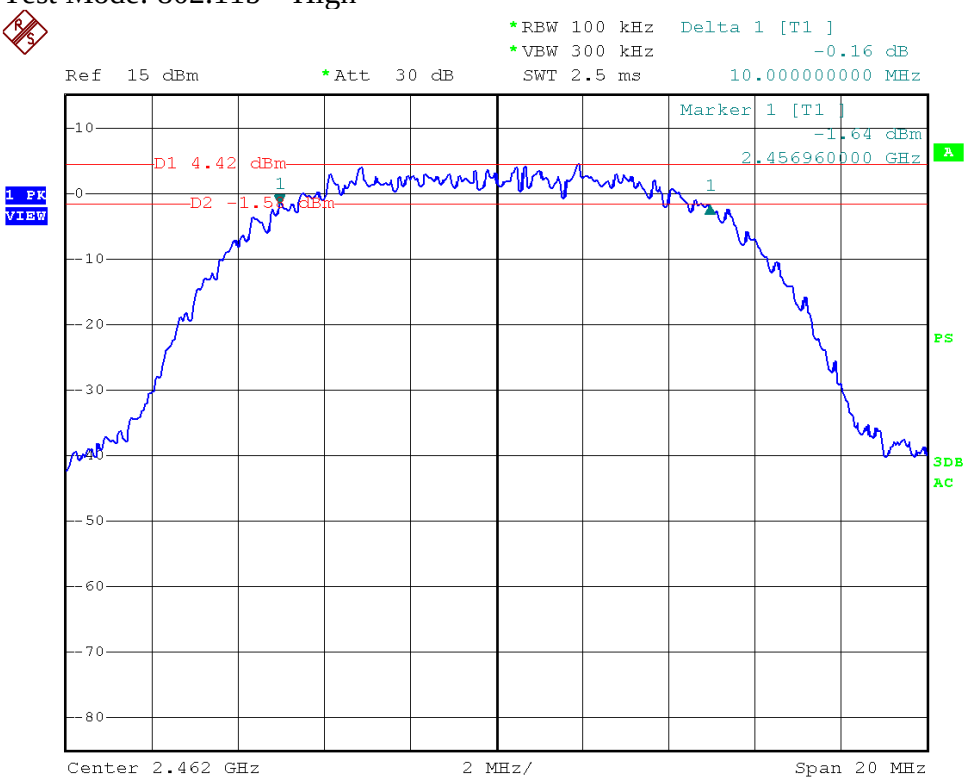
Test Mode: 802.11b---Low



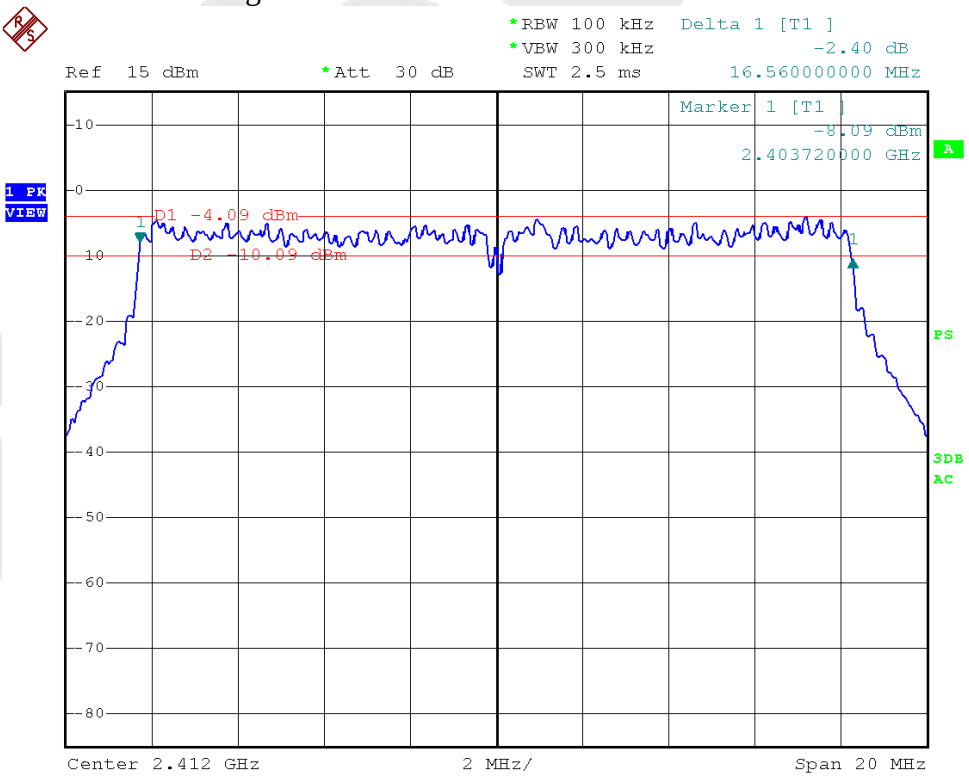
Test Mode: 802.11b---Mid



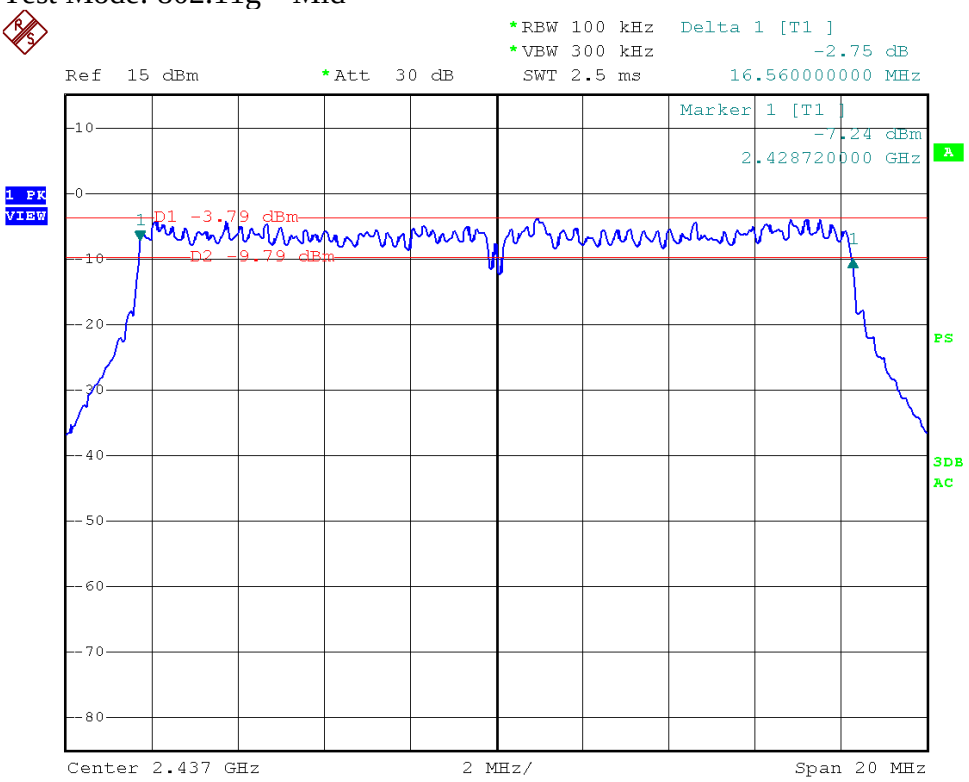
Test Mode: 802.11b---High



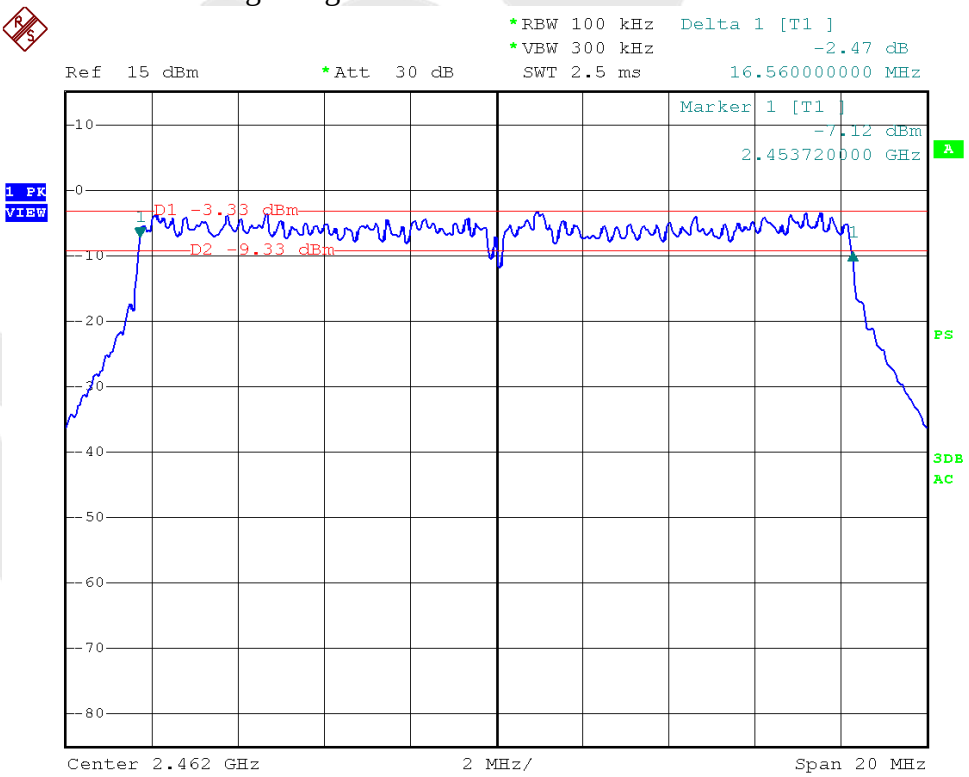
Test Mode: 802.11g---Low



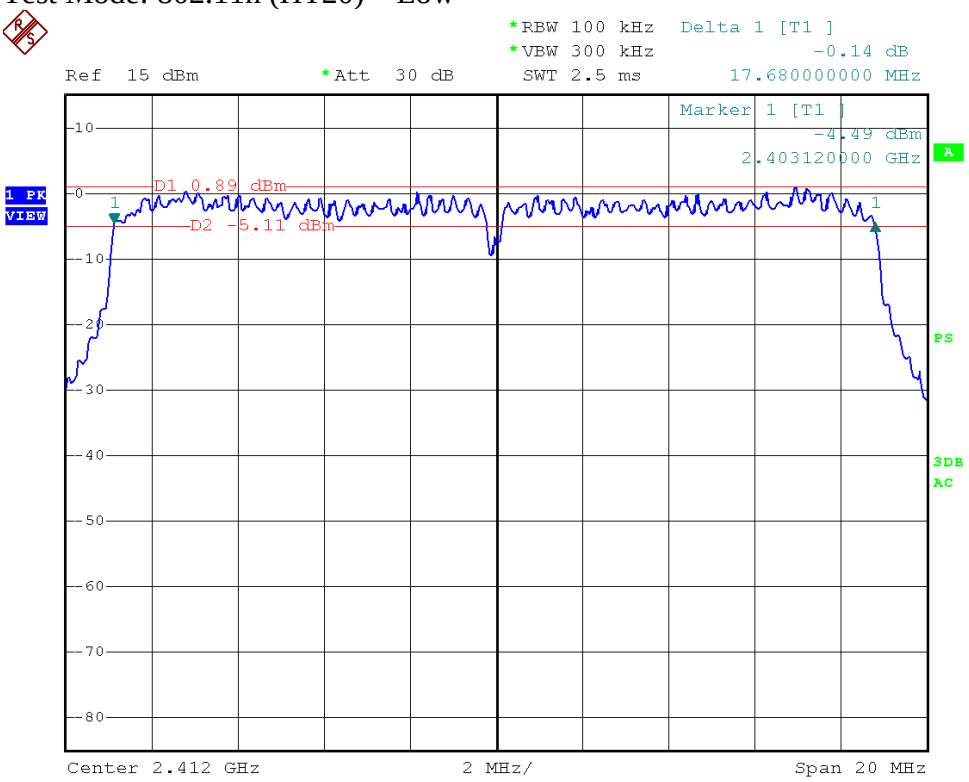
Test Mode: 802.11g---Mid



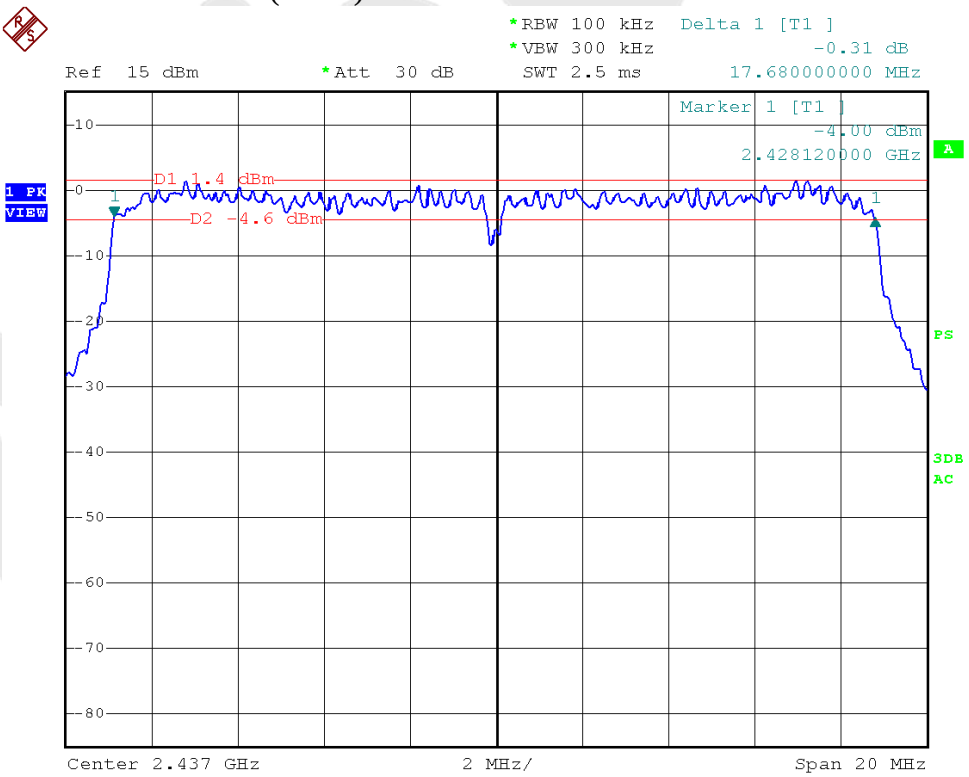
Test Mode: 802.11g---High



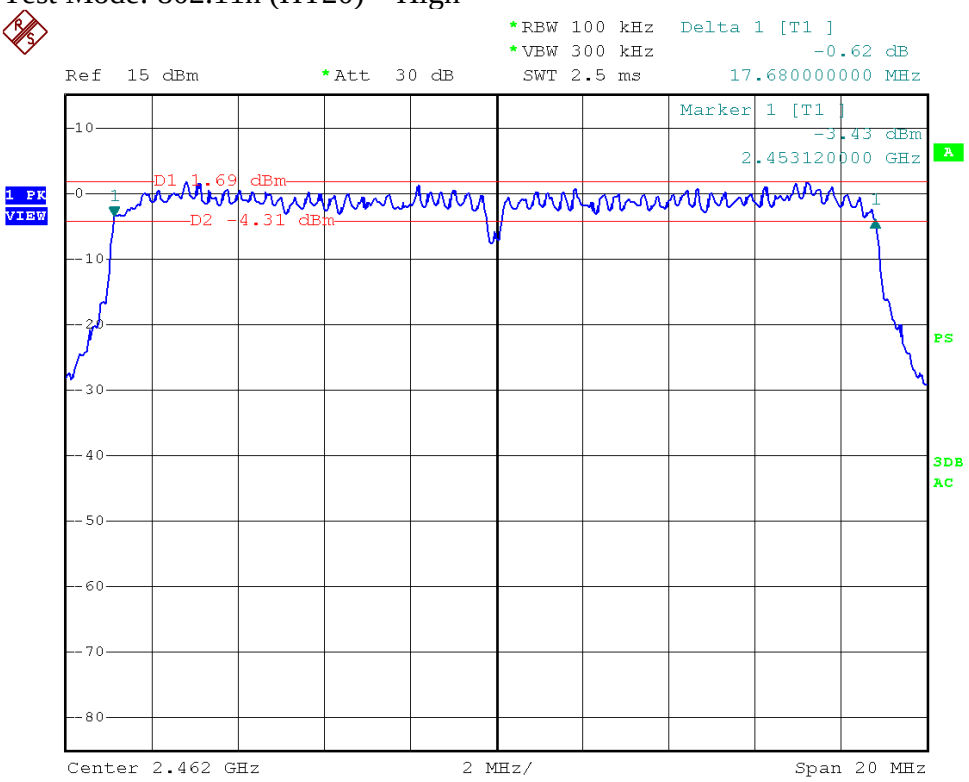
Test Mode: 802.11n (HT20)---Low



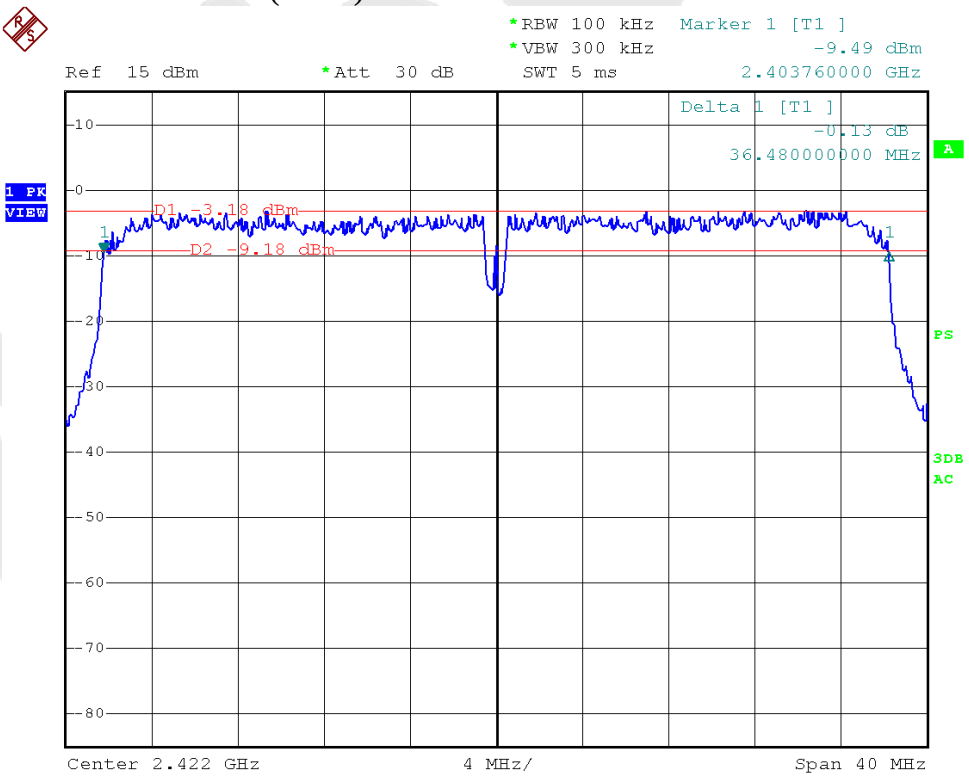
Test Mode: 802.11n (HT20)---Mid



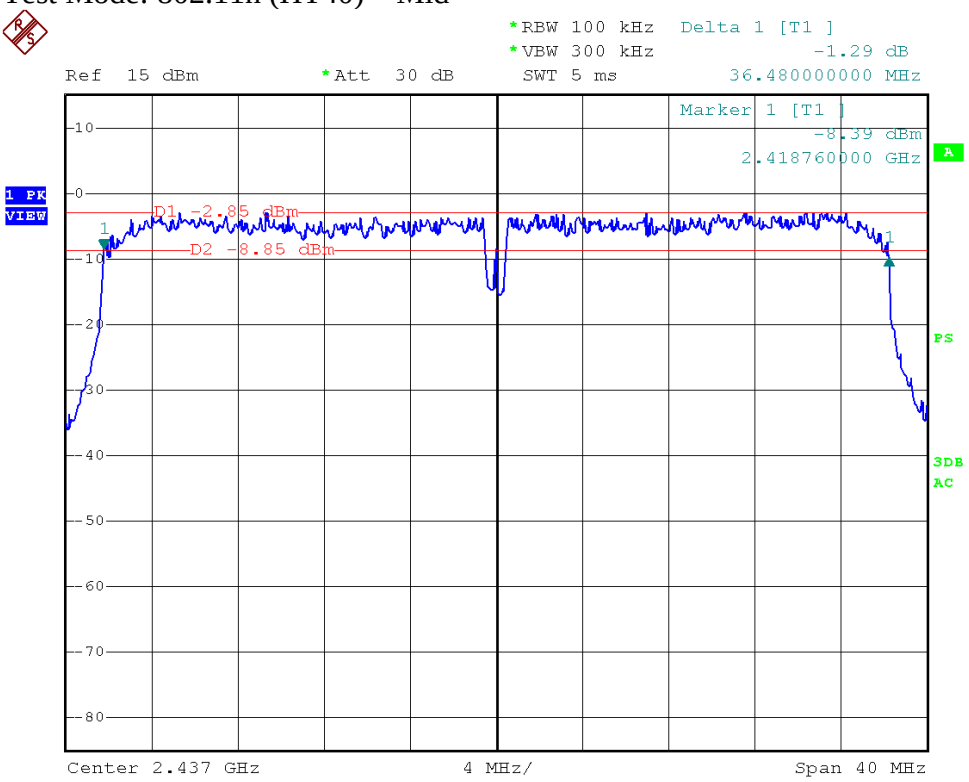
Test Mode: 802.11n (HT20)---High



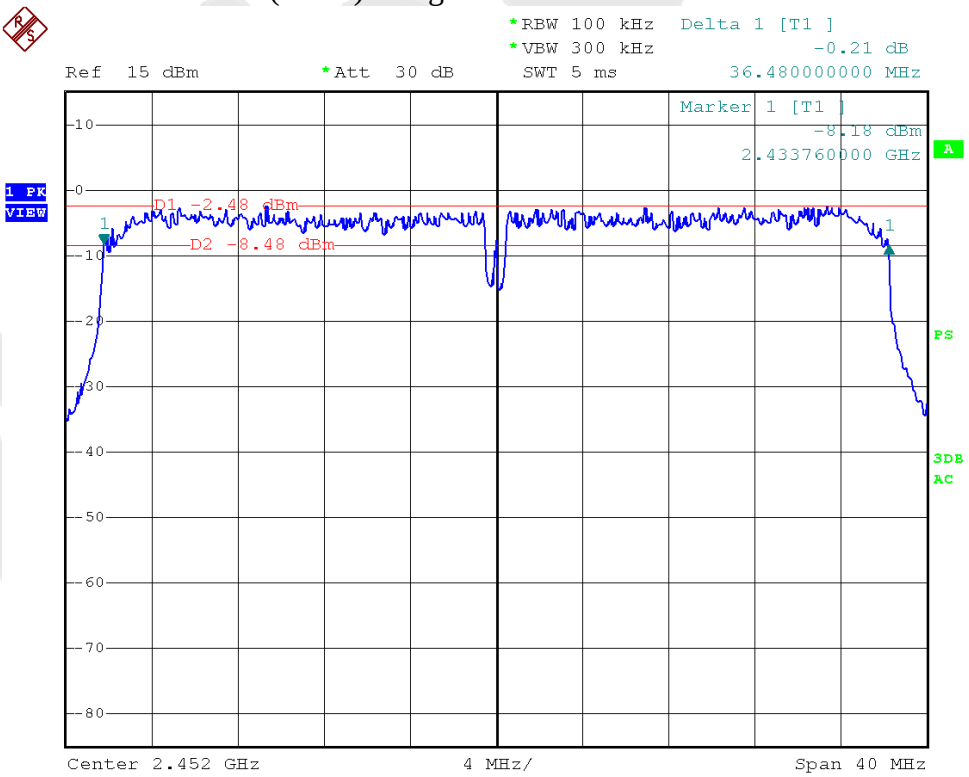
Test Mode: 802.11n (HT40)---Low



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



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



20dB Bandwidth

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Bandwidth (MHz)	Results
Low	2412	17.28	Pass
Mid	2437	17.28	Pass
High	2462	17.28	Pass

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Bandwidth (MHz)	Results
Low	2412	17.60	Pass
Mid	2437	17.60	Pass
High	2462	17.60	Pass

Test mode: IEEE 802.11n (HT20)

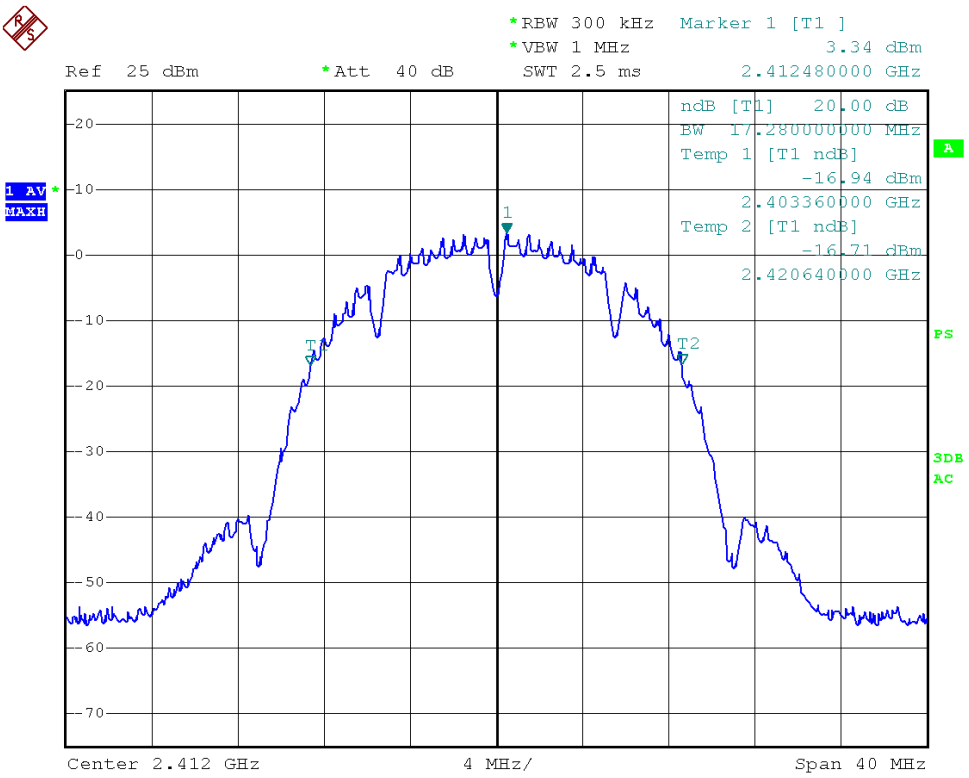
Channel	Frequency (MHz)	Bandwidth (MHz)	Results
Low	2412	18.88	Pass
Mid	2437	18.88	Pass
High	2462	18.88	Pass

Test mode: IEEE 802.11n (HT40)

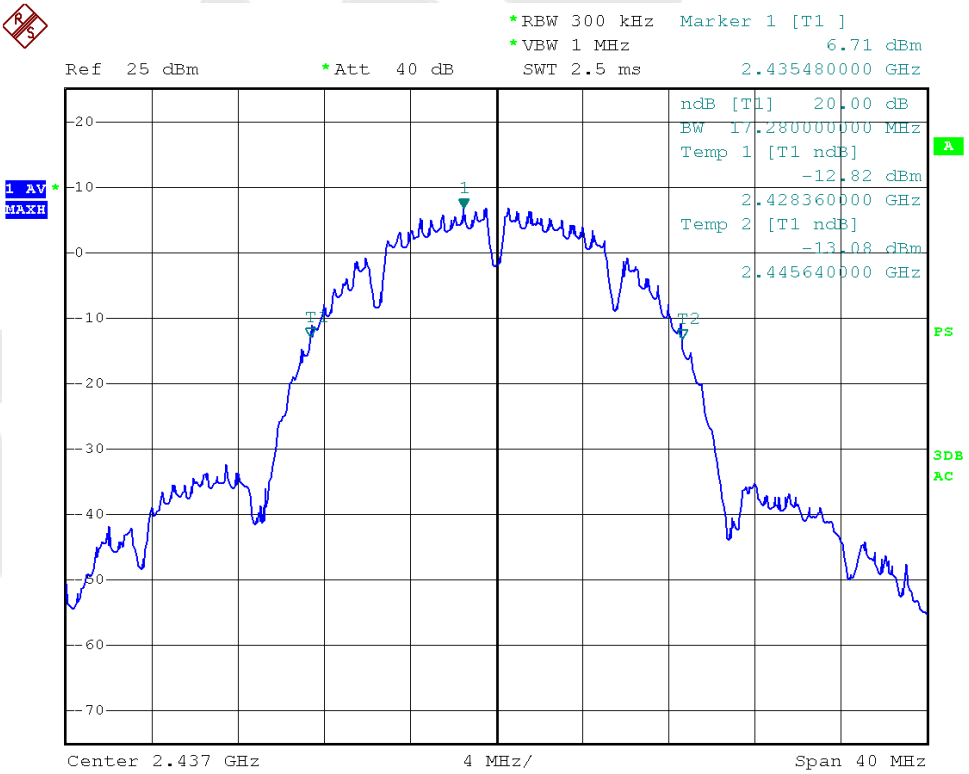
Channel	Frequency (MHz)	Bandwidth (MHz)	Results
Low	2422	37.76	Pass
Mid	2437	37.76	Pass
High	2452	37.92	Pass

Test Plots See the following page.

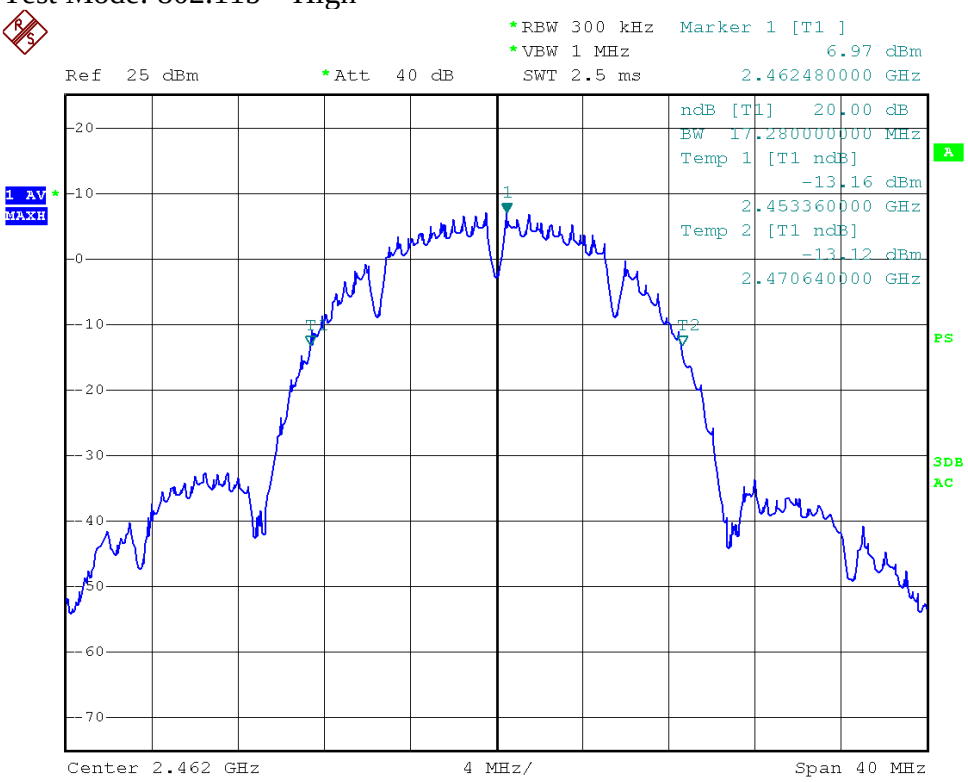
Test Mode: 802.11b---Low



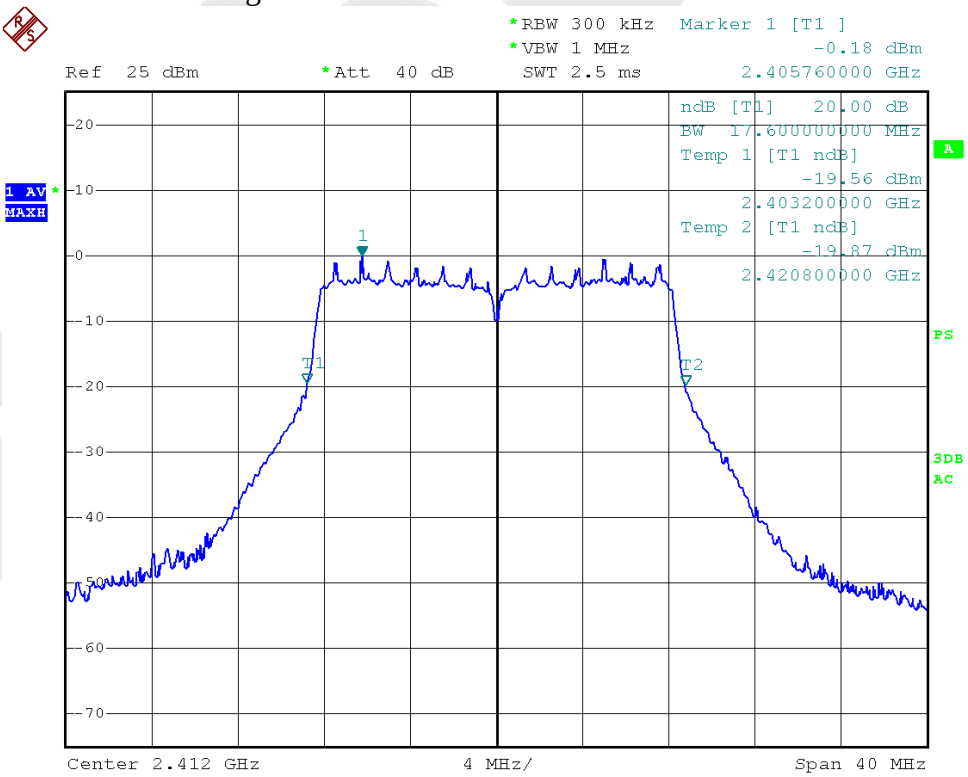
Test Mode: 802.11b---Mid



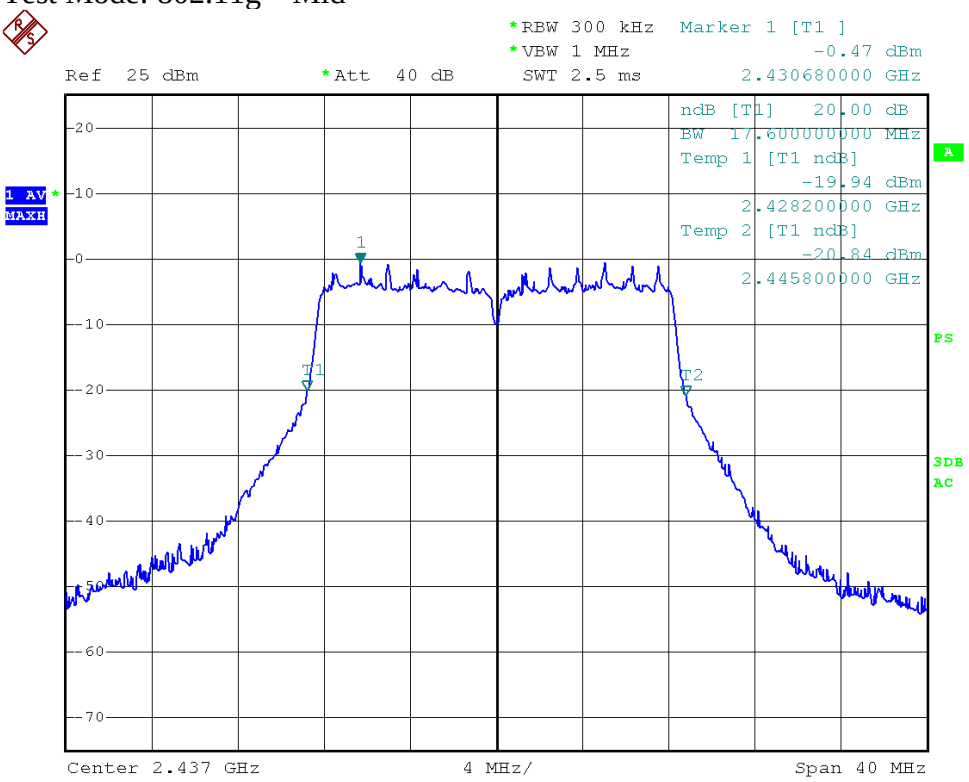
Test Mode: 802.11b---High



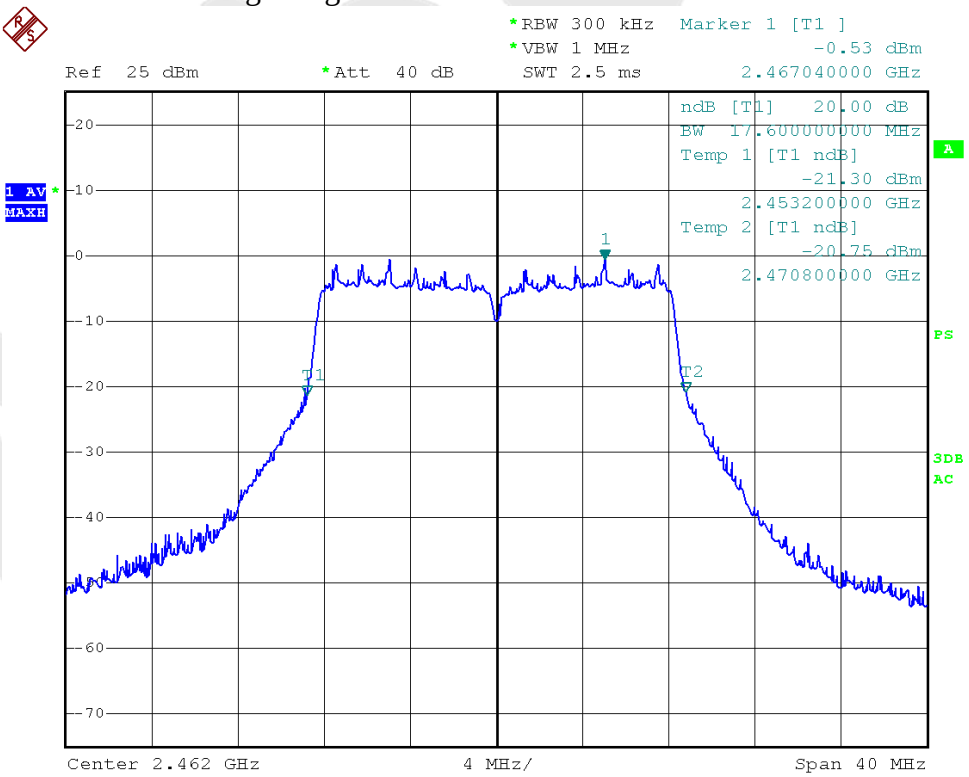
Test Mode: 802.11g---Low



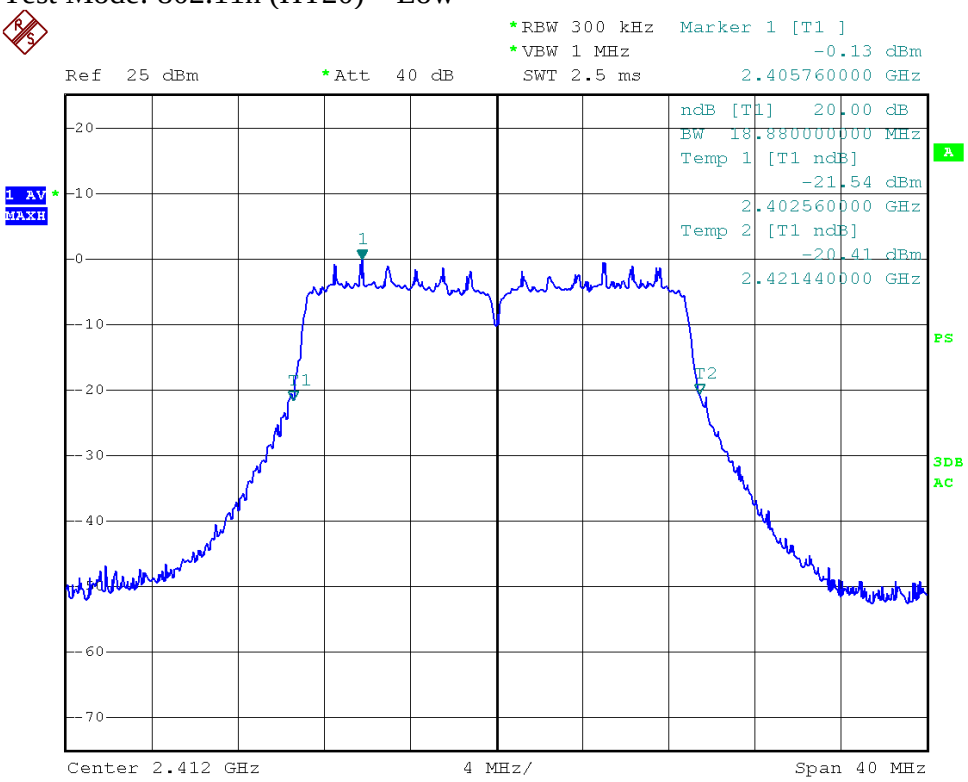
Test Mode: 802.11g---Mid



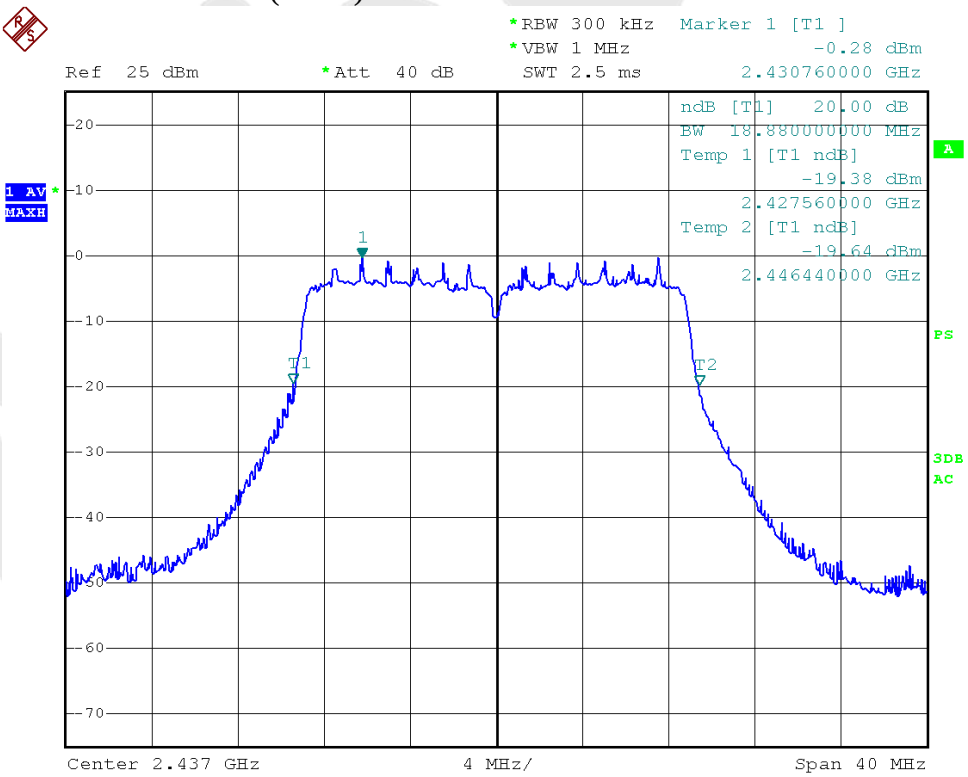
Test Mode: 802.11g---High



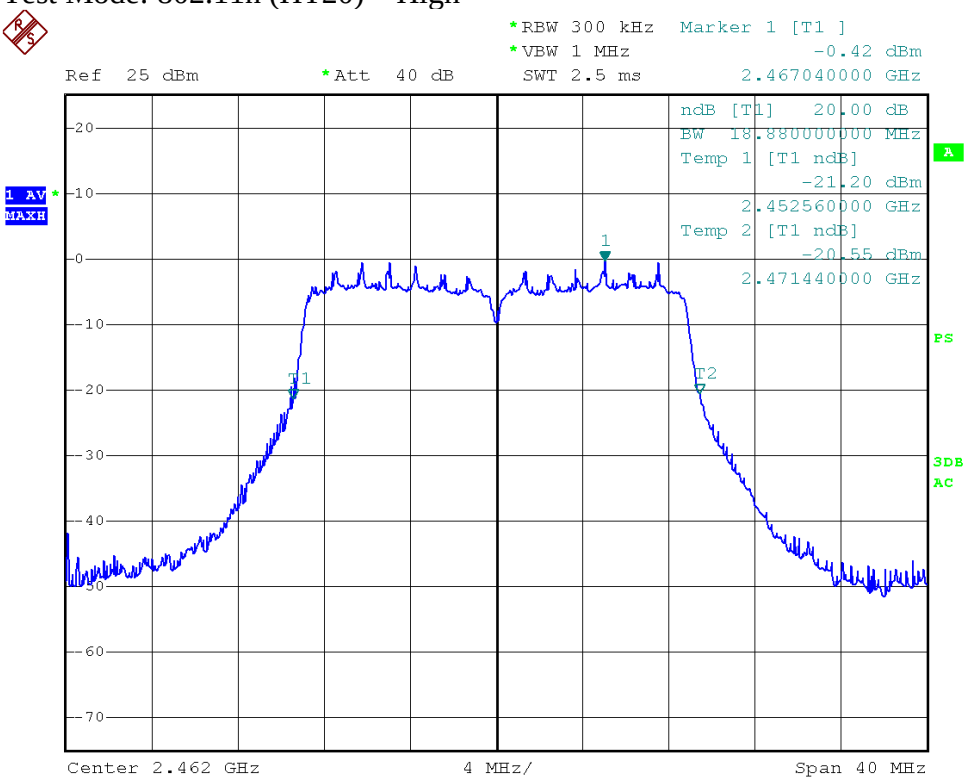
Test Mode: 802.11n (HT20)---Low



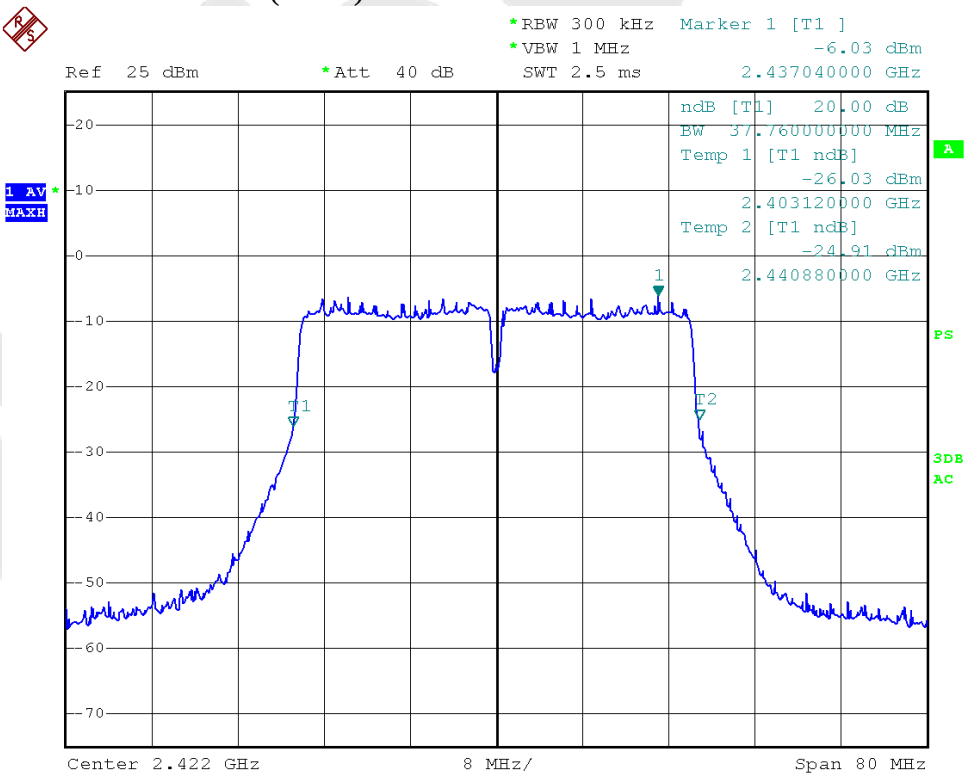
Test Mode: 802.11n (HT20)---Mid



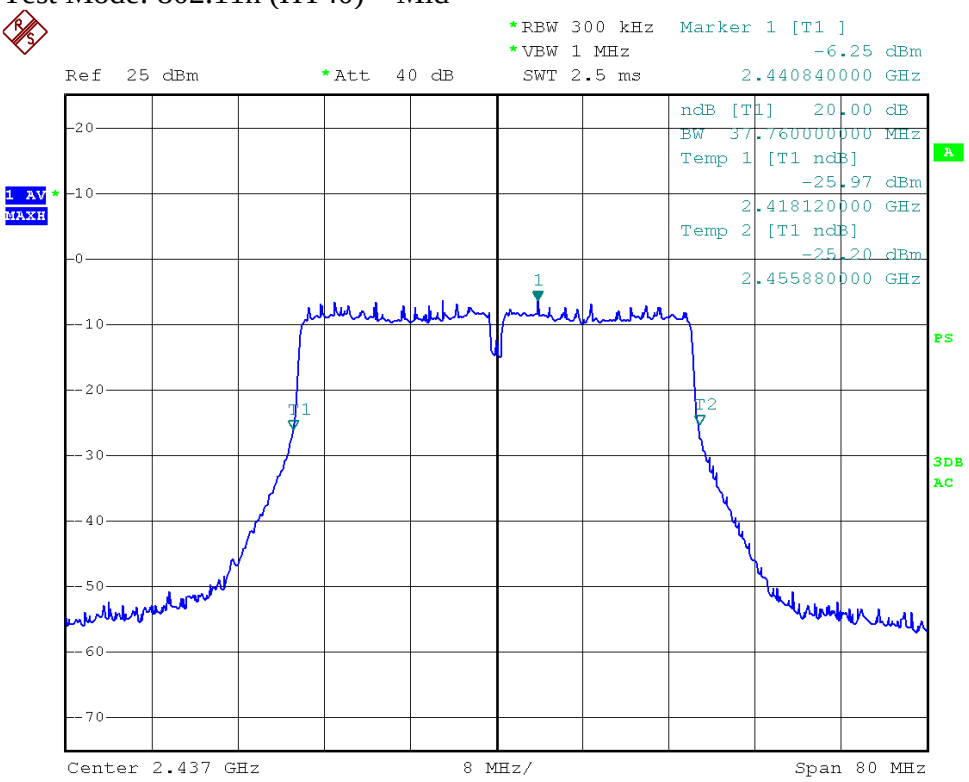
Test Mode: 802.11n (HT20)---High



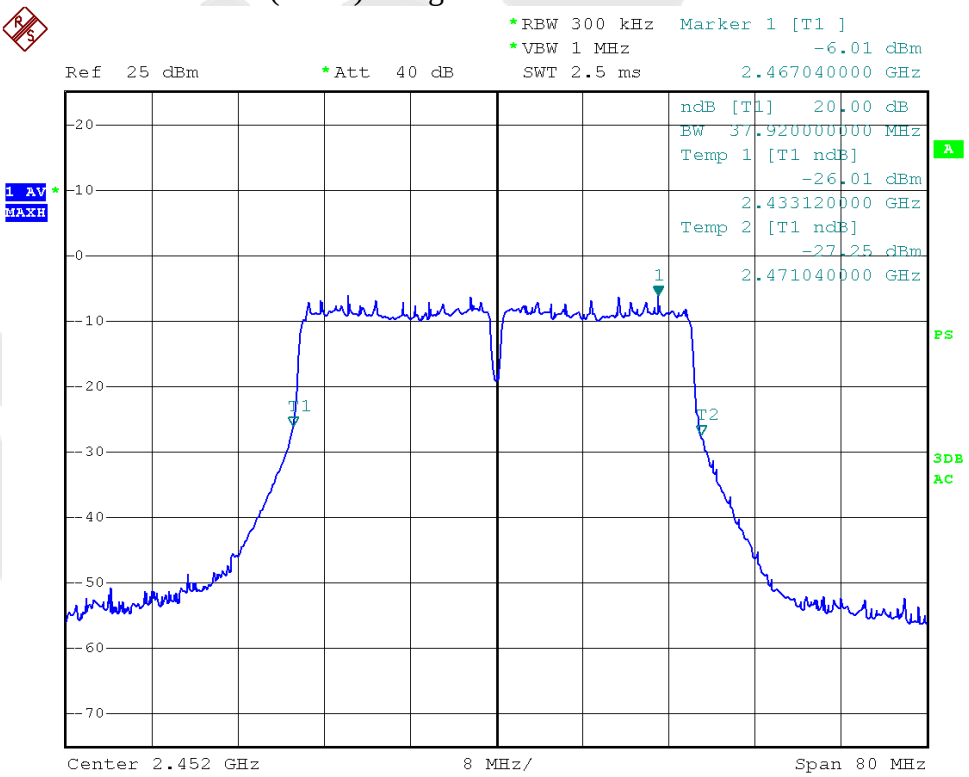
Test Mode: 802.11n (HT40)---Low



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



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

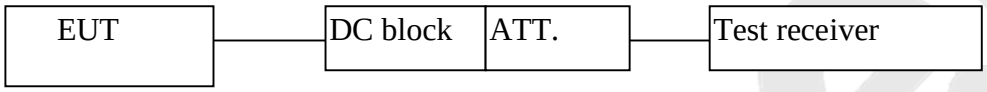


4.3. Maximum Output Power Test

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. 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 9.2.2:
1. Set span to at least 1.5 times the OBW.
2. Set the RBW =1~5% of the OBW, not to exceed 1MHz.
3. Set VBW⩾3*RBW.
4. Detector = Average.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

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)	Limit (watts)	Result
Low	2412	14.44	30	1	Pass
Mid	2437	14.96			Pass
High	2462	15.67			Pass

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Limit (watts)	Result
Low	2412	10.70	30	1	Pass
Mid	2437	12.11			Pass
High	2462	12.39			Pass

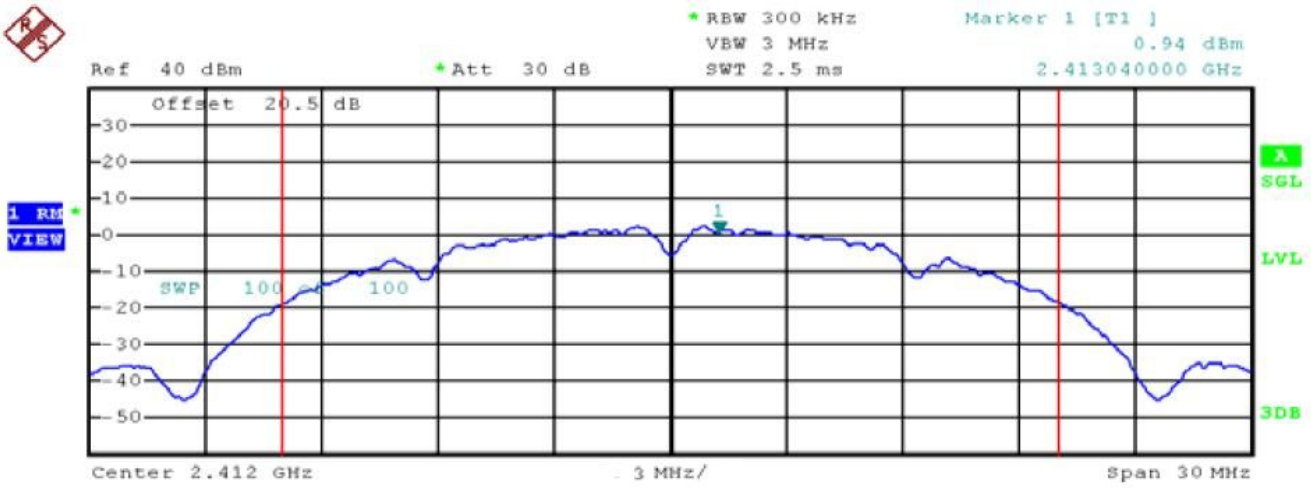
Test mode: IEEE 802.11n (HT20)

Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Limit (watts)	Result
Low	2412	10.93	30	1	Pass
Mid	2437	11.45			Pass
High	2462	12.24			Pass

Test mode: IEEE 802.11n (HT40)

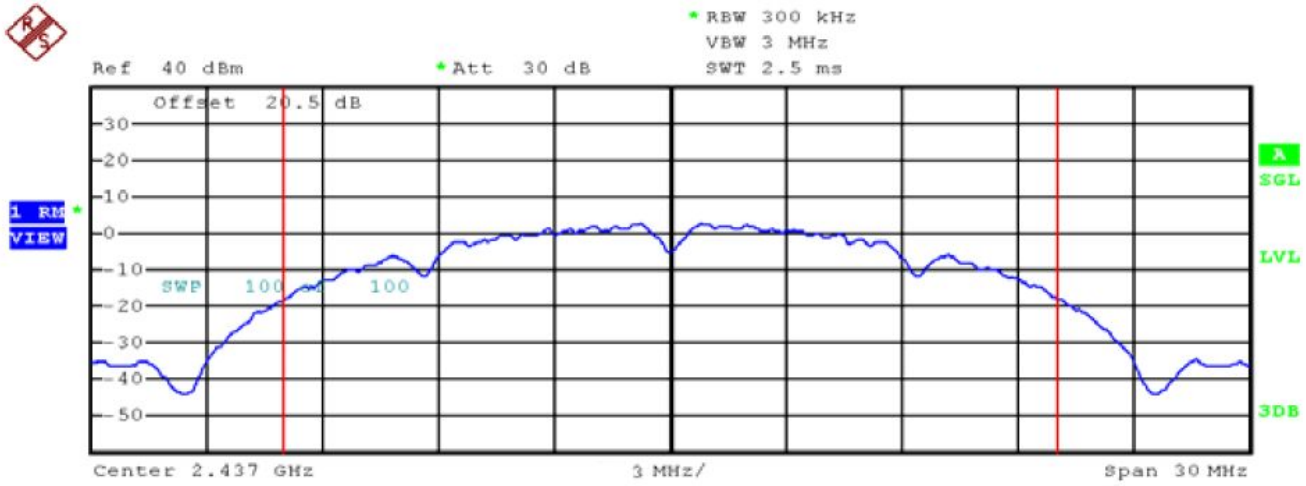
Channel	Frequency (MHz)	Maximum transmit power (dBm)	Limit (dBm)	Limit (watts)	Result
Low	2422	10.21	30	1	Pass
Mid	2437	10.79			Pass
High	2452	11.43			Pass

Test Mode: 802.11b---Low



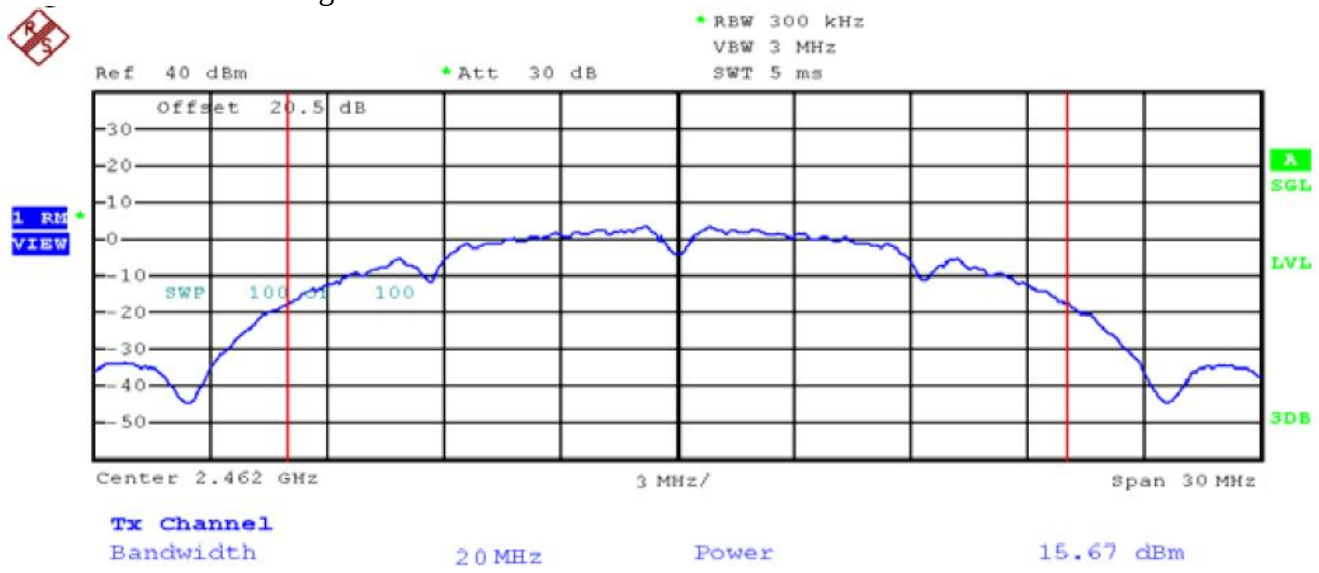
Tx Channel
Bandwidth 20 MHz Power 14.44 dBm

Test Mode: 802.11b---Mid

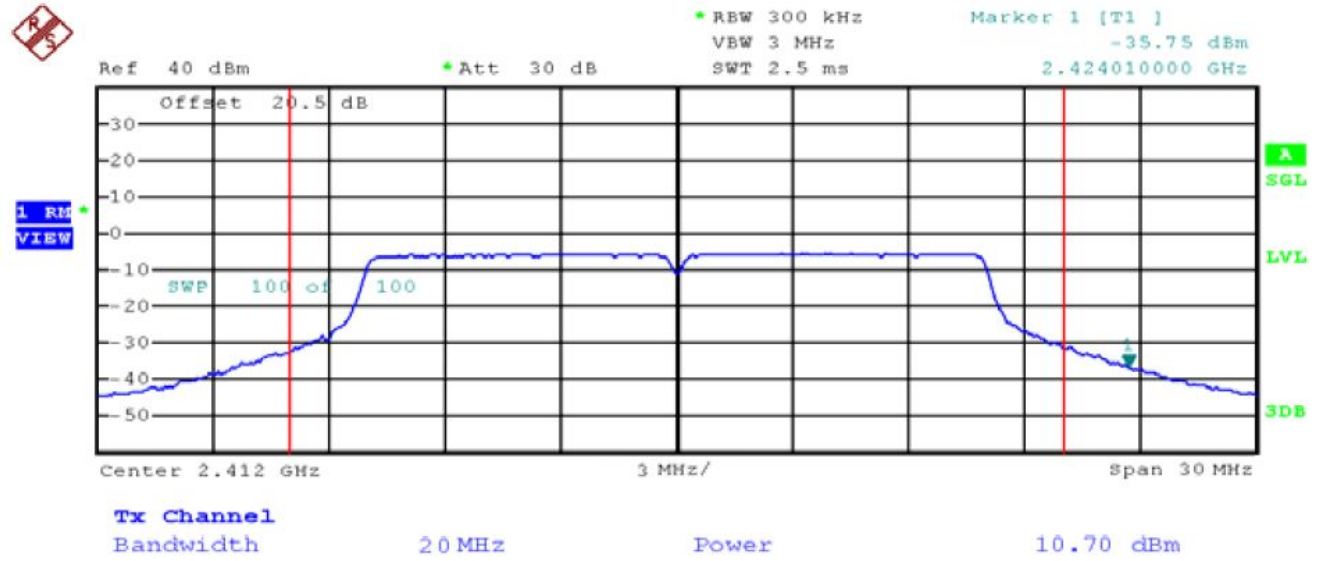


Tx Channel
Bandwidth 20 MHz Power 14.96 dBm

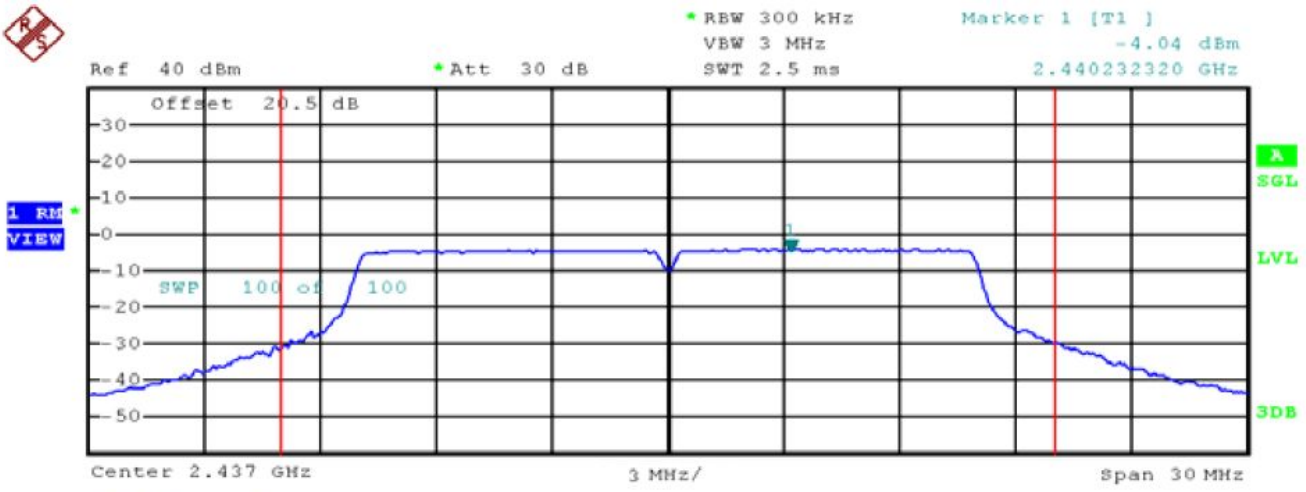
Test Mode: 802.11b---High



Test Mode: 802.11g---Low

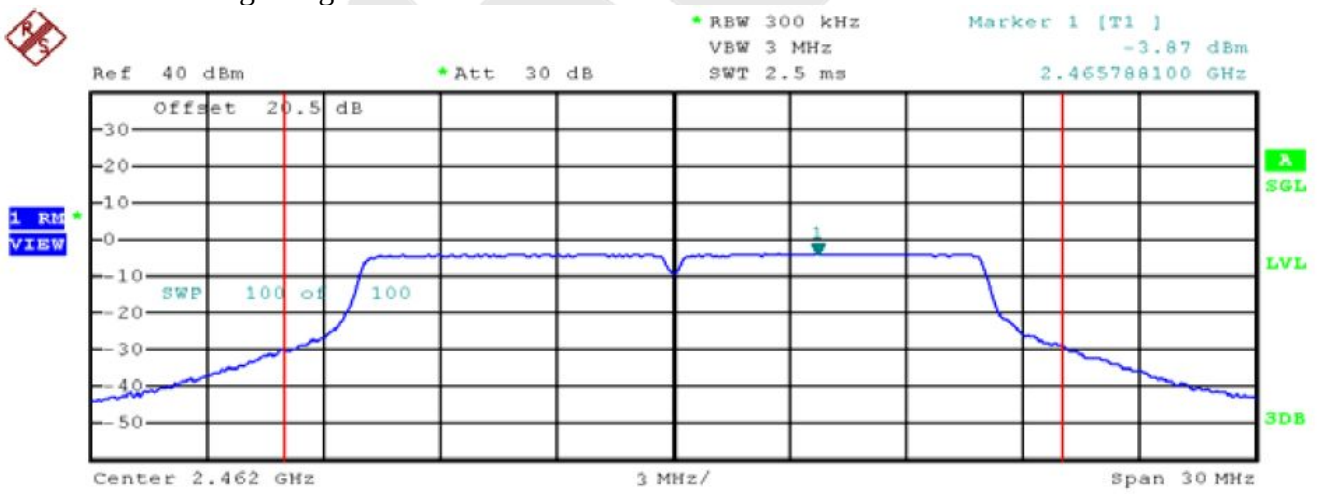


Test Mode: 802.11g---Mid



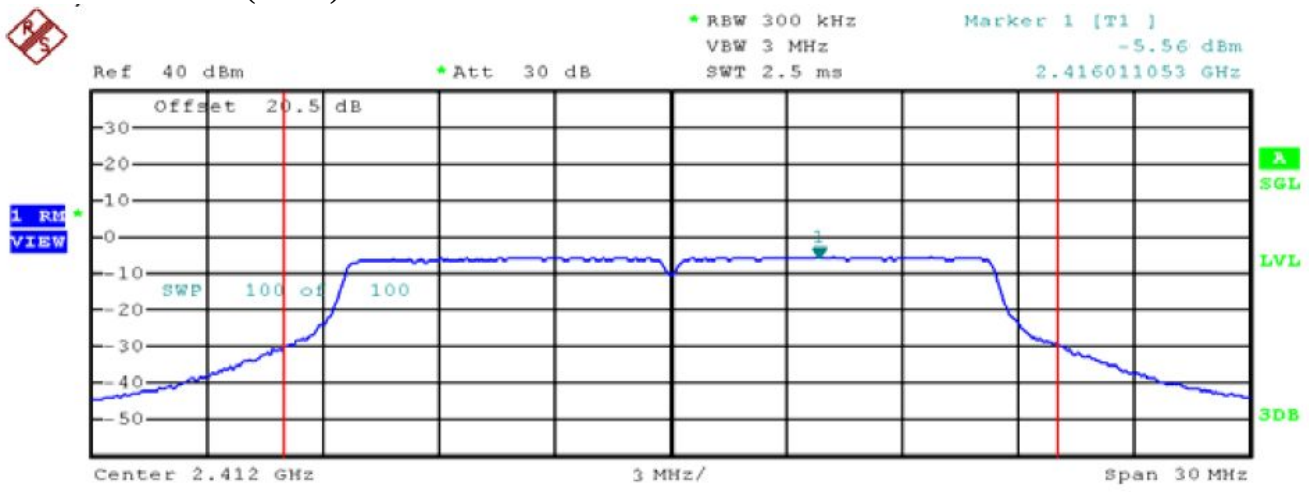
Tx Channel
Bandwidth 20 MHz Power 12.11 dBm

Test Mode: 802.11g---High



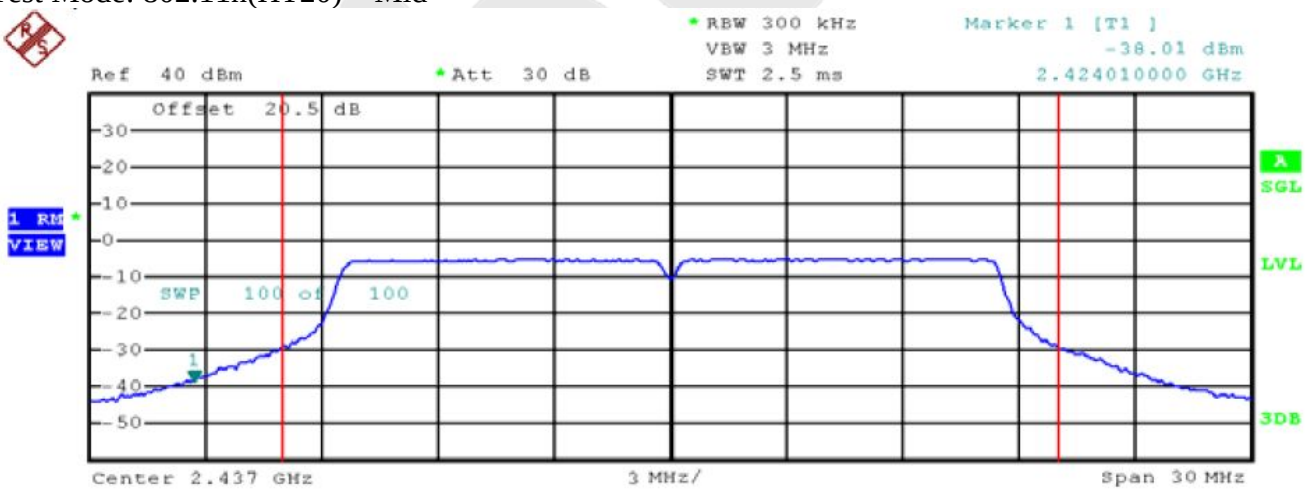
Tx Channel
Bandwidth 20 MHz Power 12.39 dBm

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



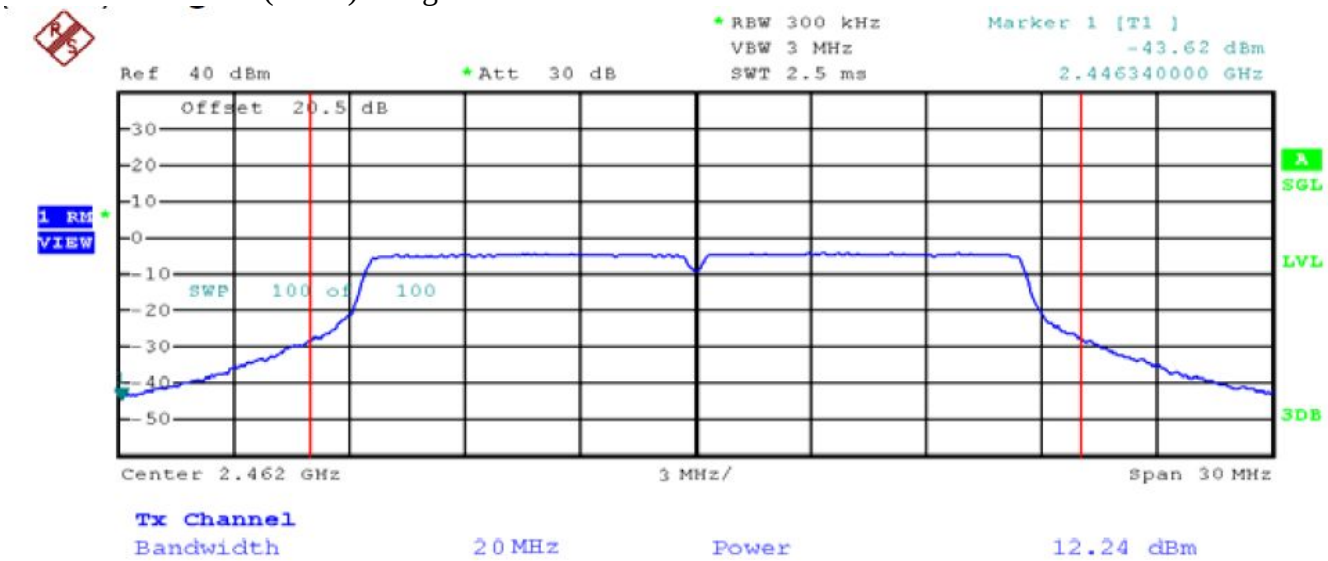
Tx Channel
Bandwidth 20 MHz Power 10.93 dBm

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

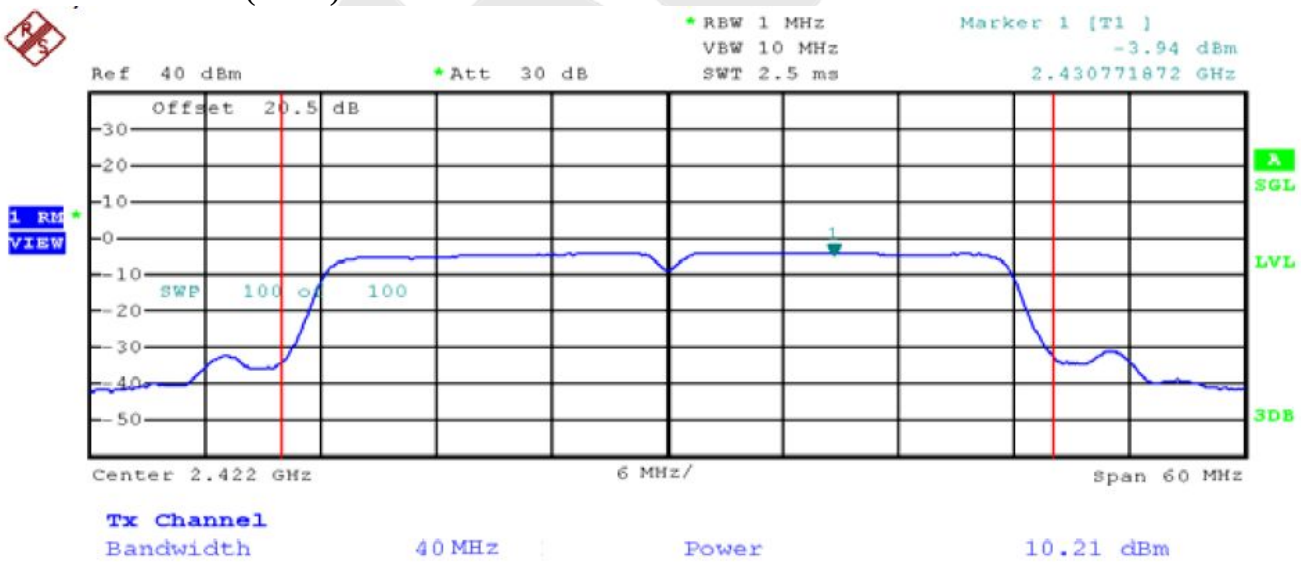


Tx Channel
Bandwidth 20 MHz Power 11.45 dBm

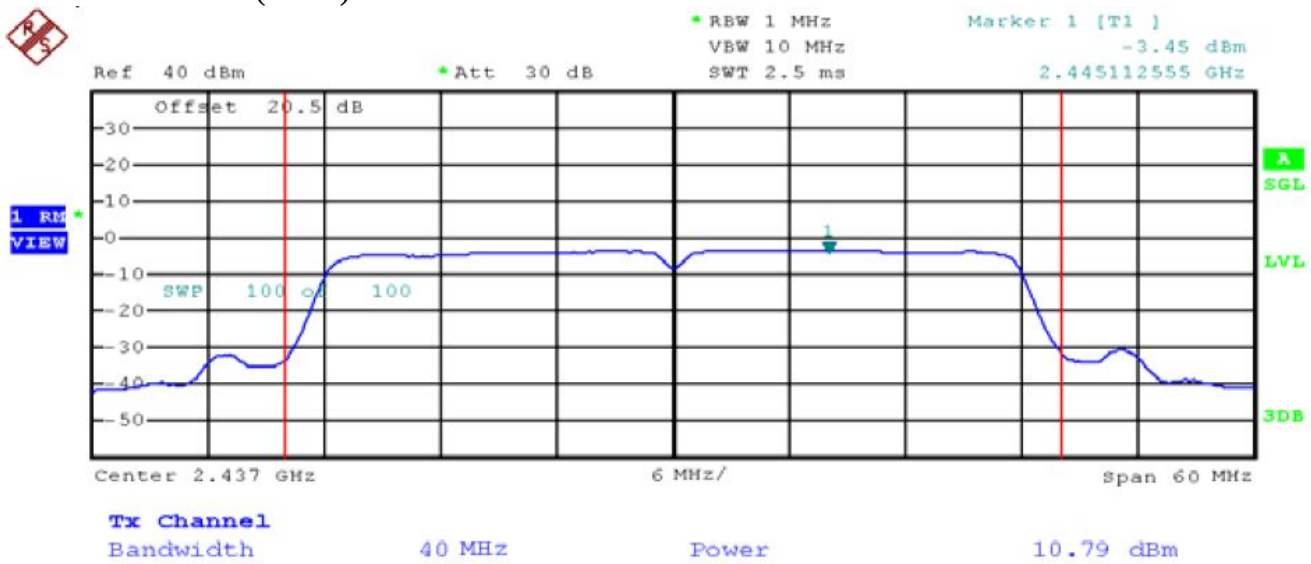
Test Mode: 802.11n(HT20)---High



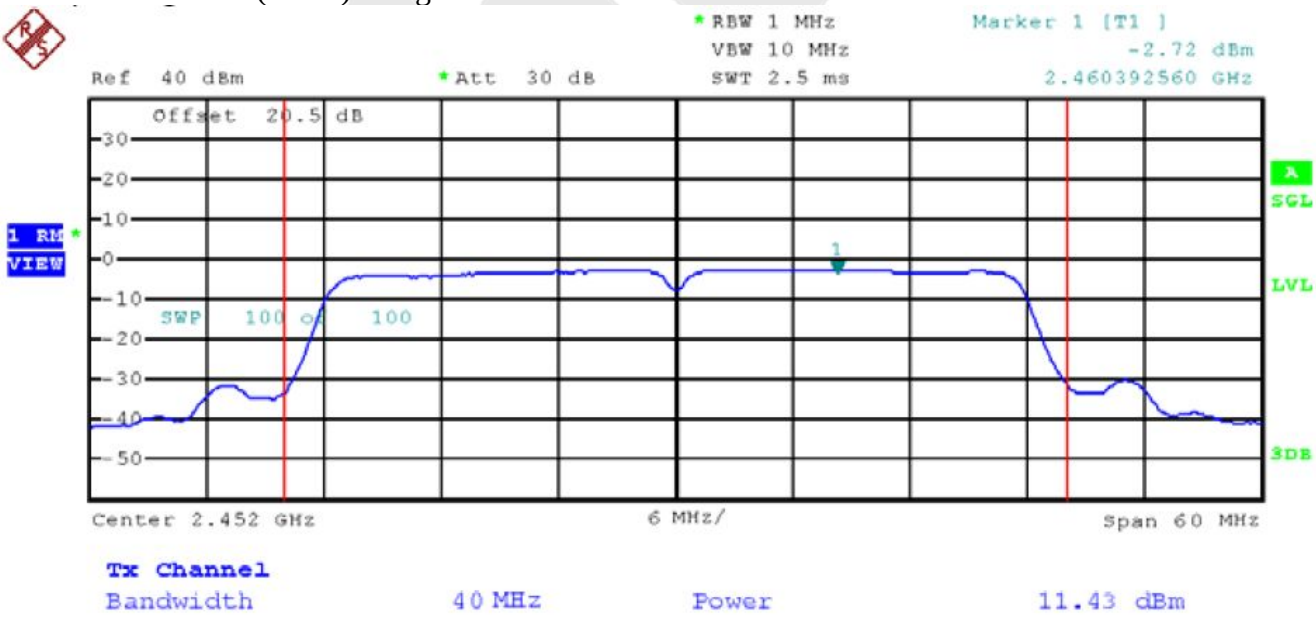
Test Mode: 802.11n(HT40)---Low



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



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



4.4. Band Edges Measurement

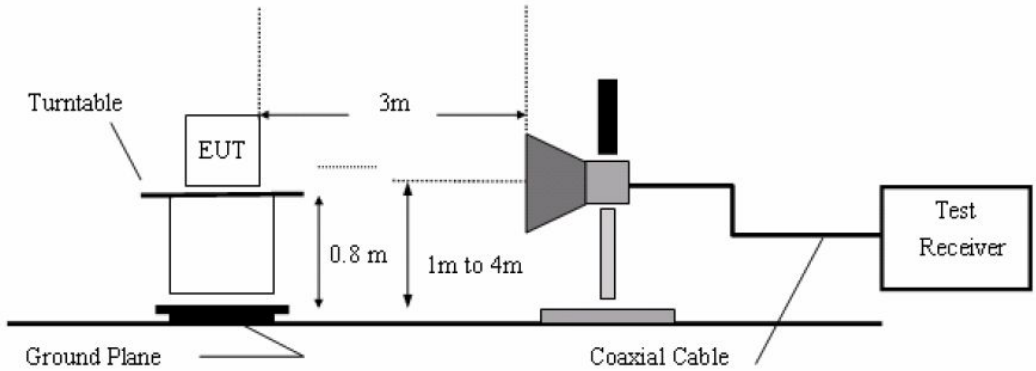
a. Limit

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.

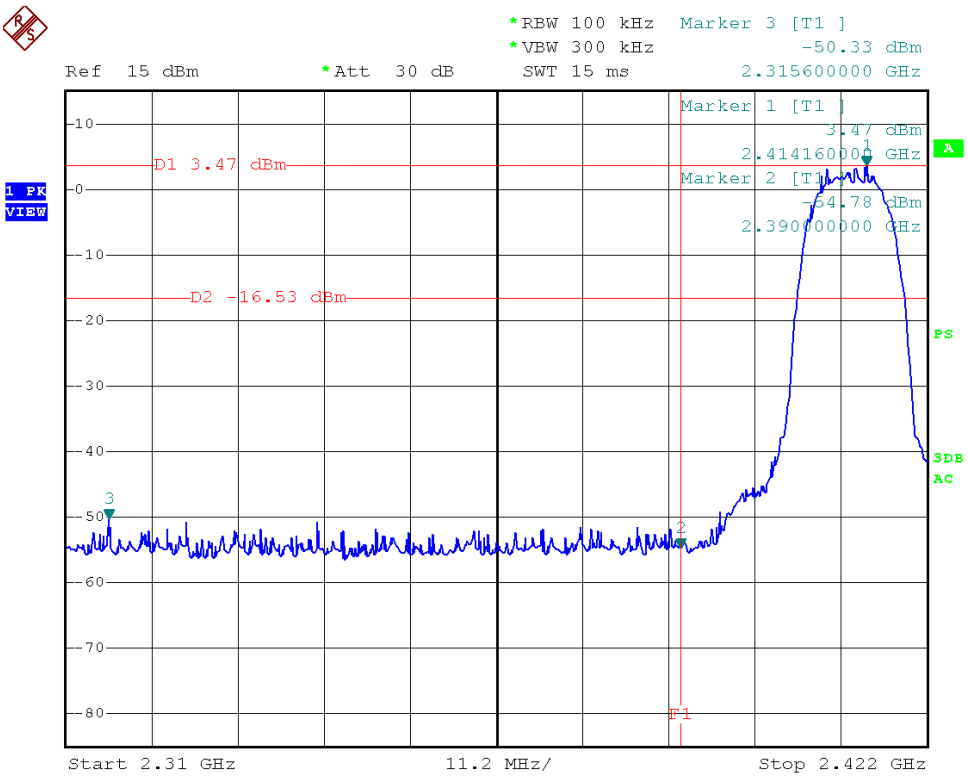
d. Test Results

Pass.

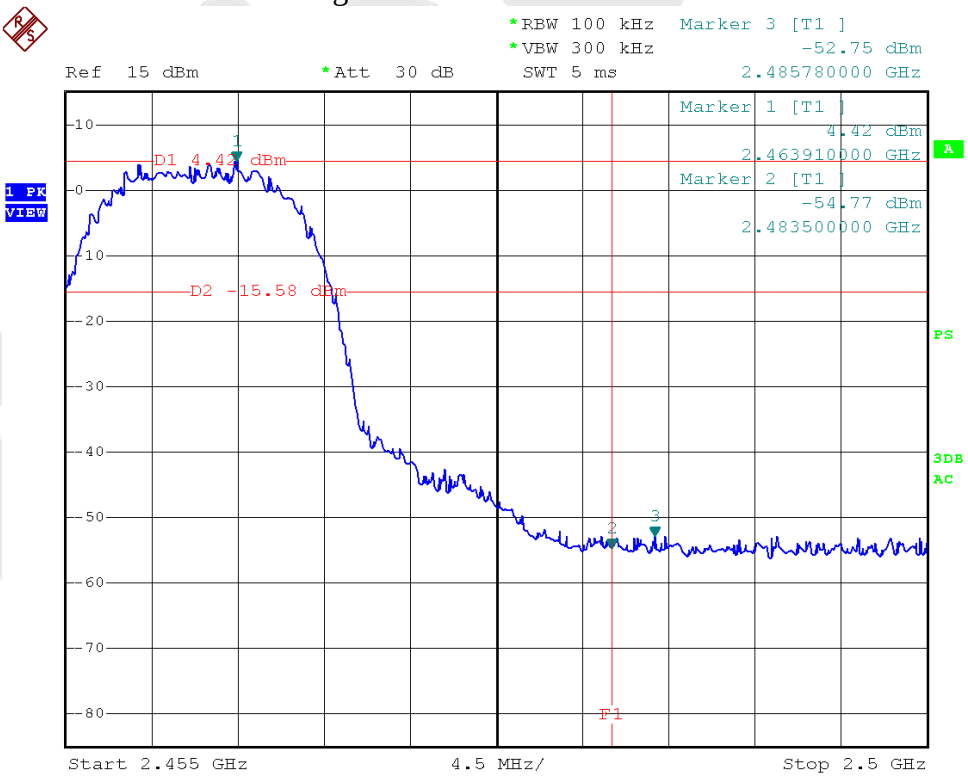
e. Test Plots

See the following page.

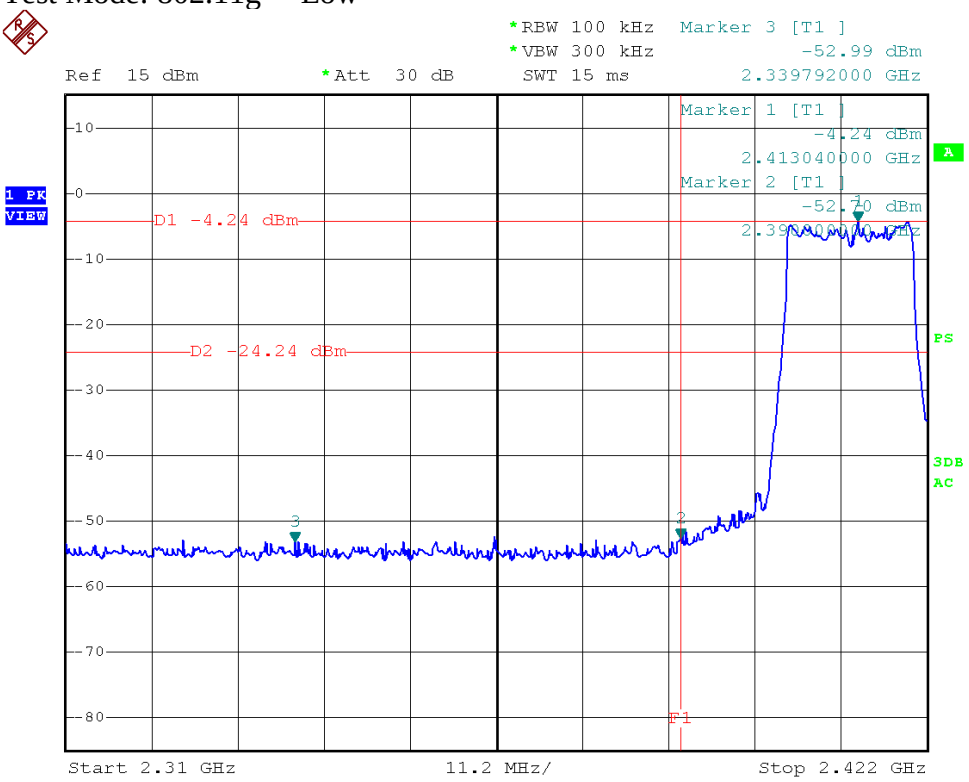
Test Mode: 802.11b ---Low



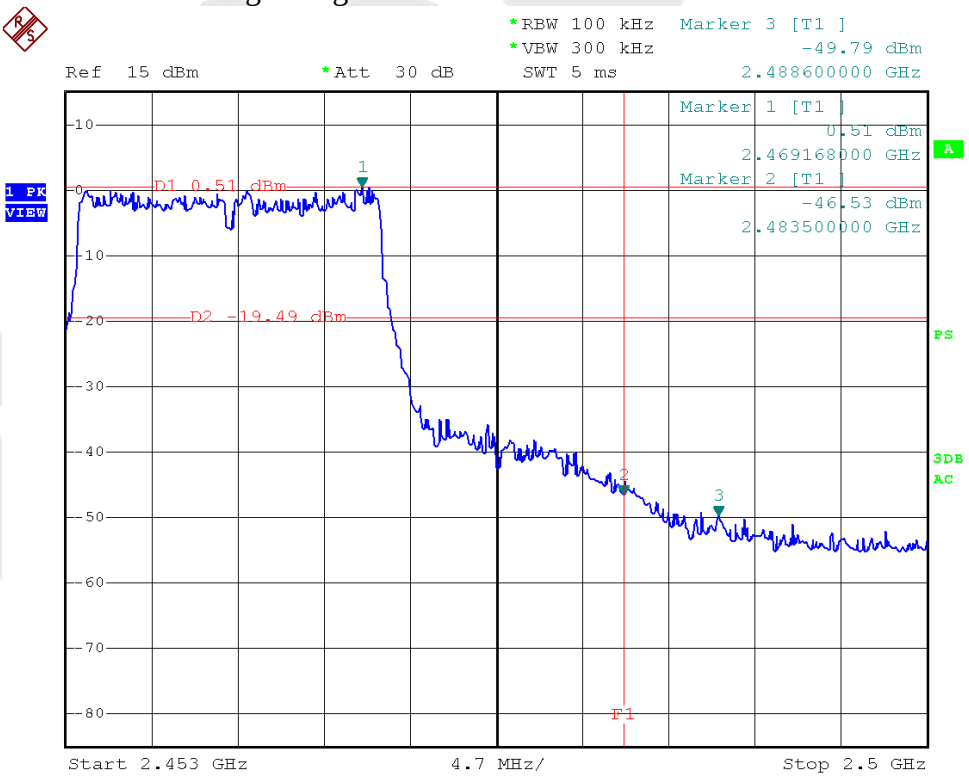
Test Mode: 802.11b ---High



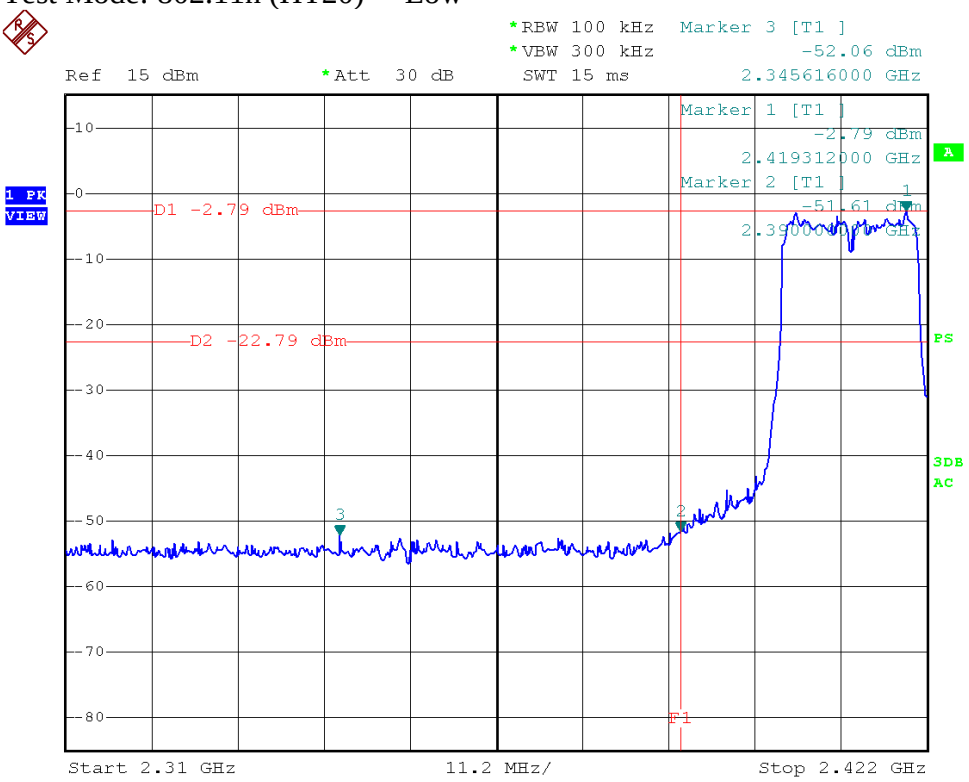
Test Mode: 802.11g ---Low



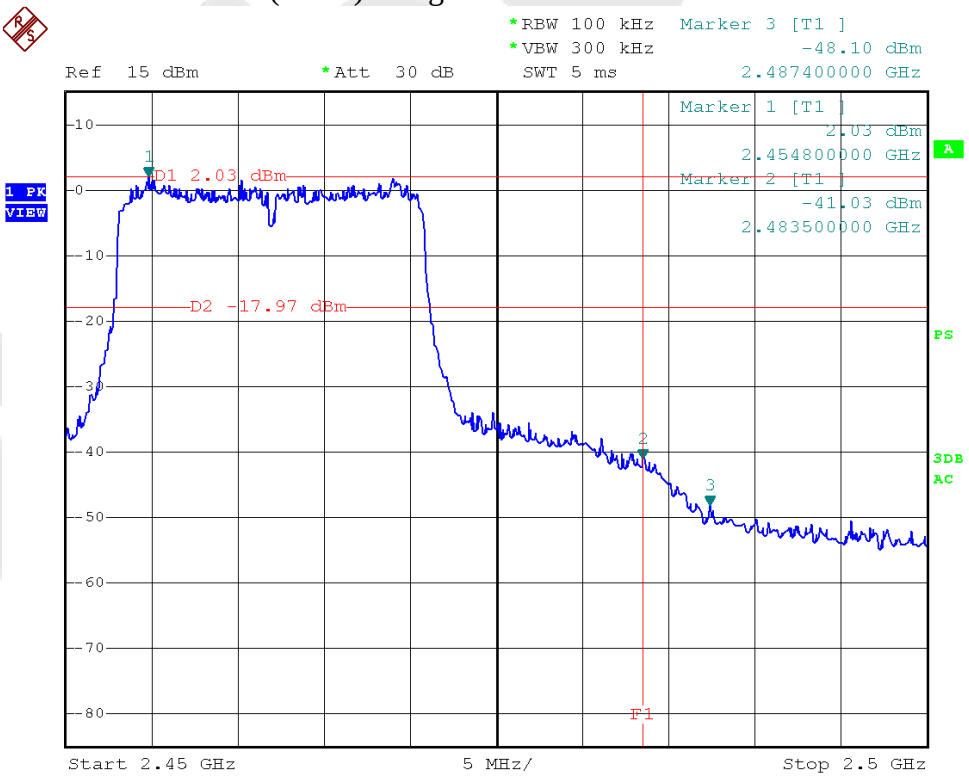
Test Mode: 802.11g ---High



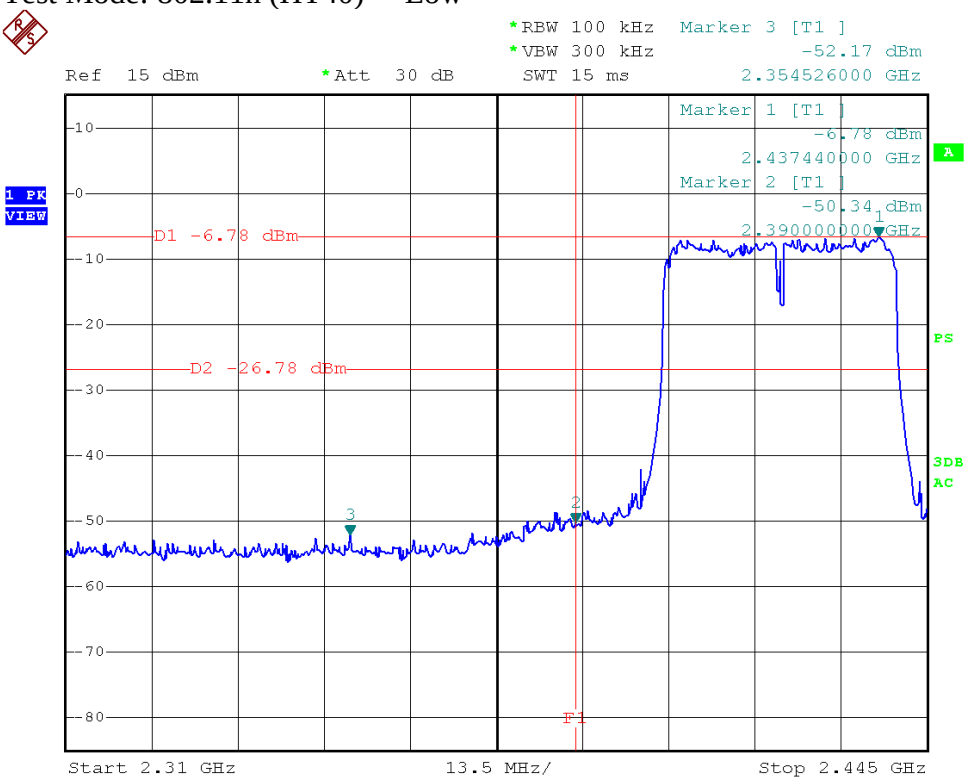
Test Mode: 802.11n (HT20) ---Low



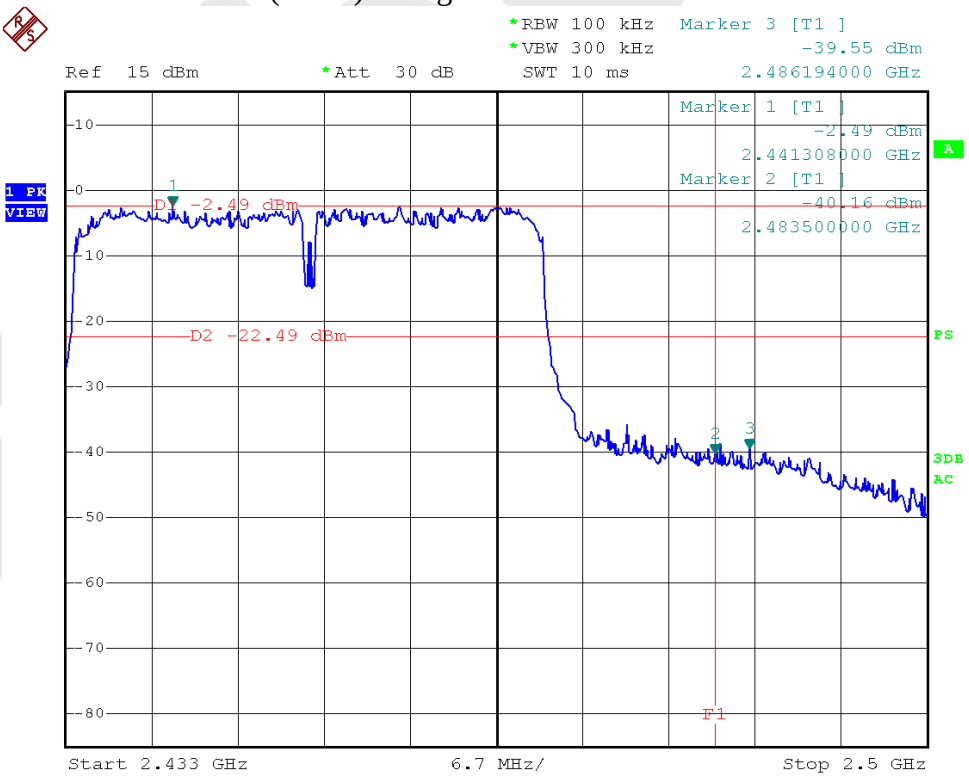
Test Mode: 802.11n (HT20)---High



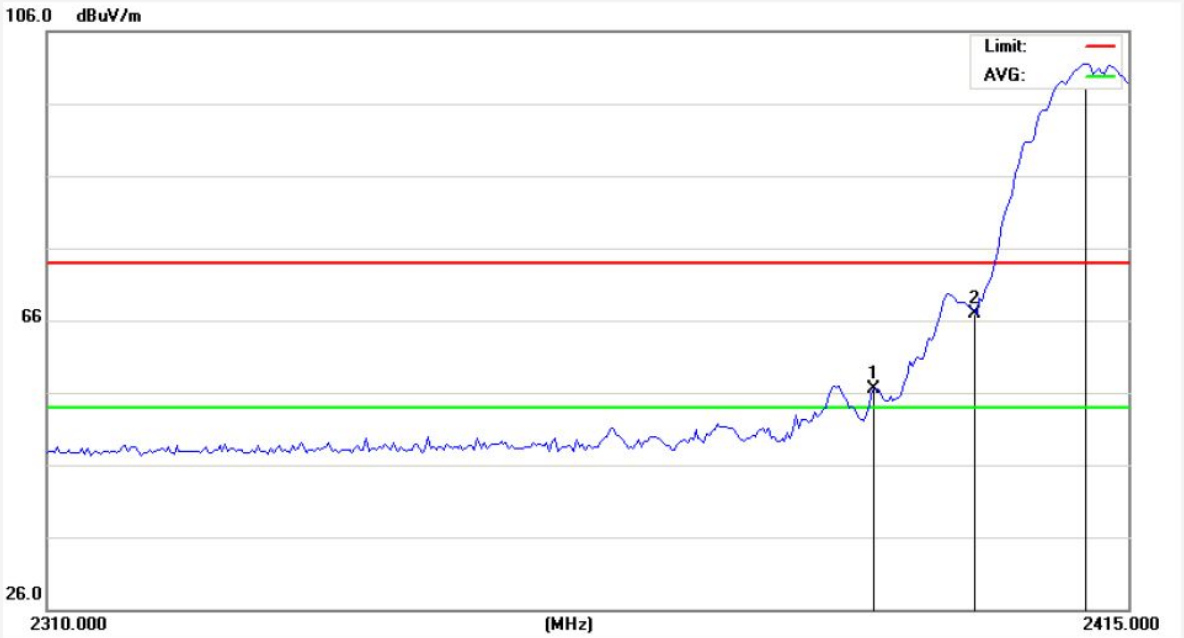
Test Mode: 802.11n (HT40) ---Low



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

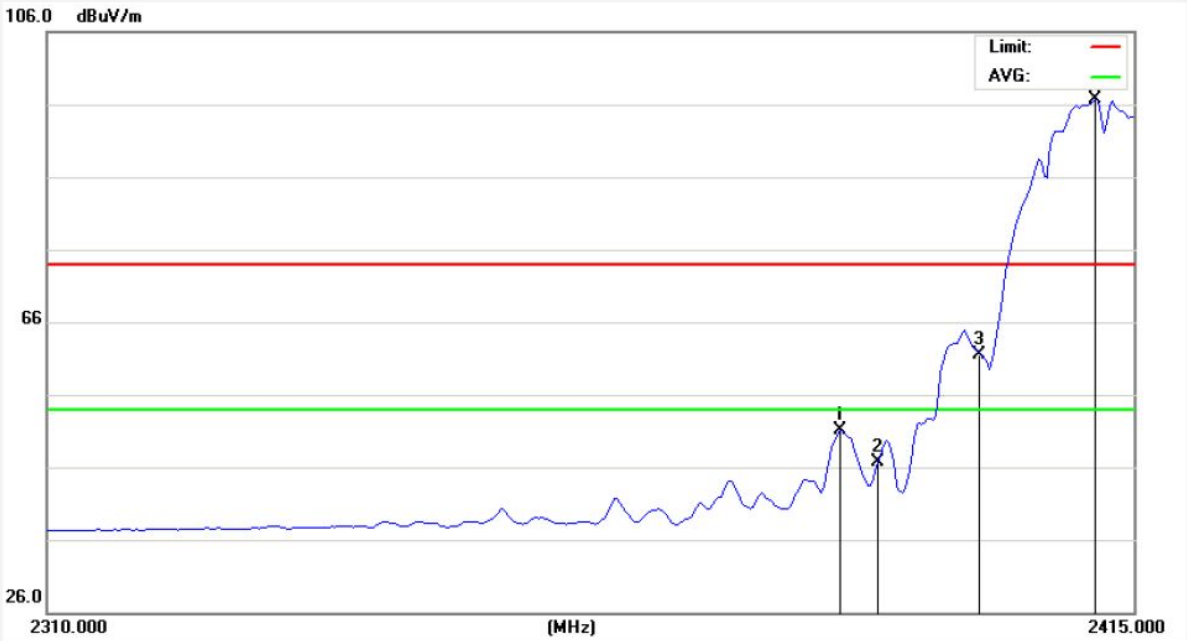


Test Mode: 802.11b
2412MHz
Horizontal-PEAK:



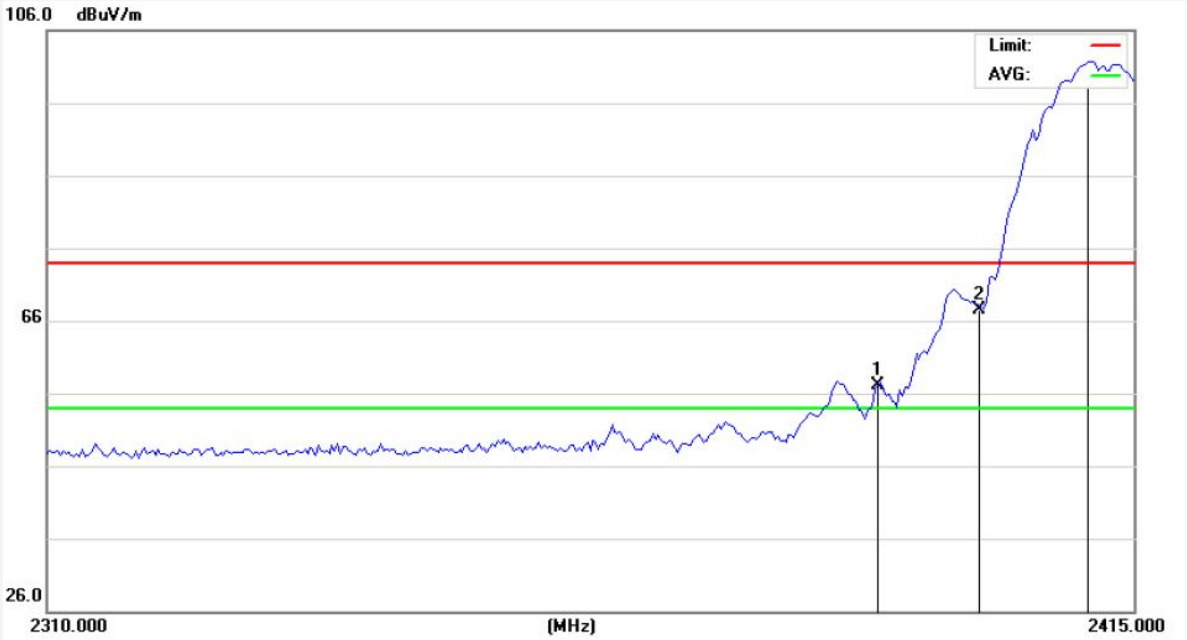
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	59.07	-2.51	56.56	74.00	-17.44	peak			
2	2400.000	69.48	-2.49	66.99	74.00	-7.01	peak			
3	2410.800	103.97	-2.47	101.50	74.00	27.50	peak			

Horizontal-AV:



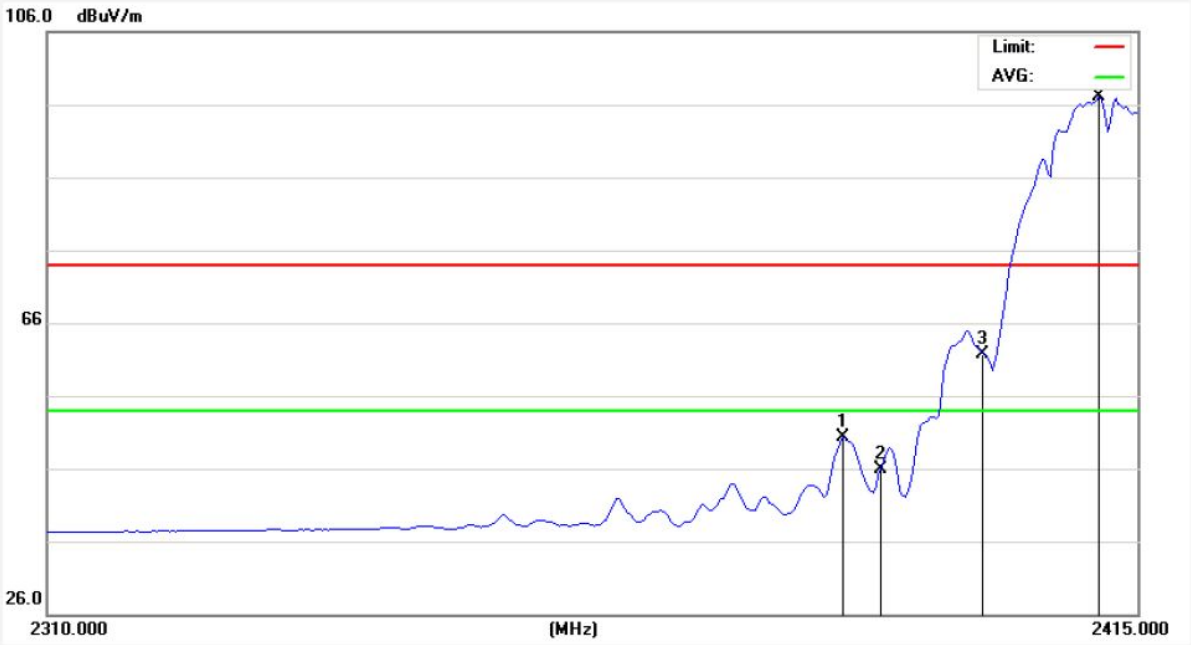
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2386.387	53.61	-2.52	51.09	54.00	-2.91	AVG			
2	2390.000	49.12	-2.51	46.61	54.00	-7.39	AVG			
3	2400.000	64.09	-2.49	61.60	54.00	7.60	AVG			
4	2411.325	99.20	-2.47	96.73	54.00	42.73	AVG			

Test Mode: 802.11b
2412MHz
Vertical-PEAK:



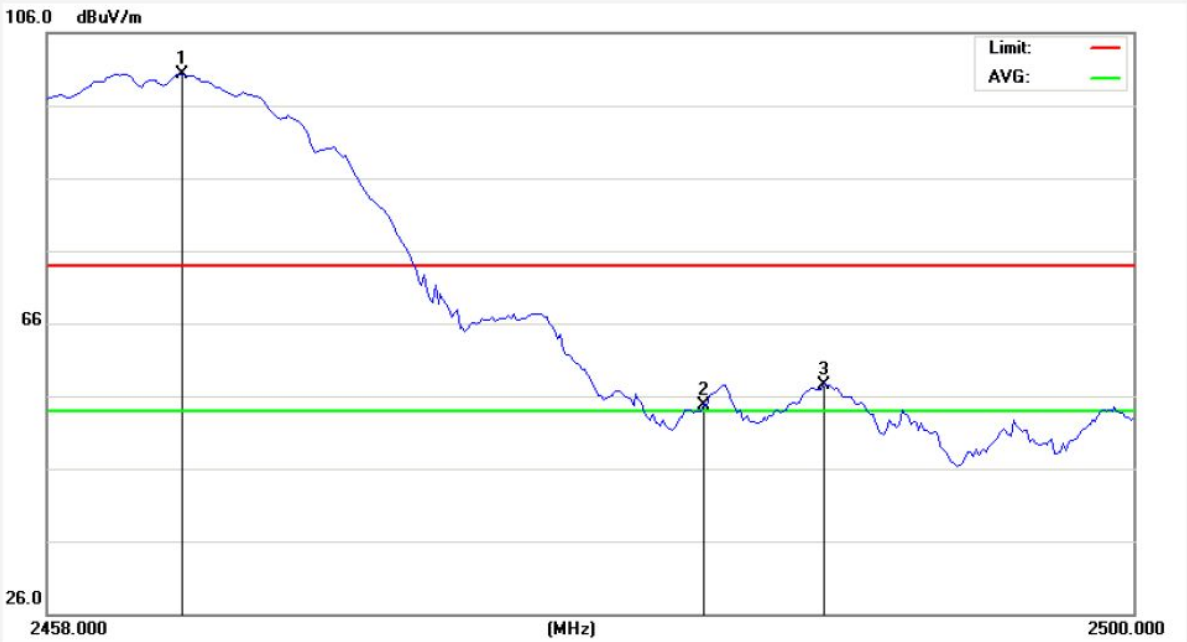
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	59.59	-2.51	57.08	74.00	-16.92	peak			
2	2400.000	69.98	-2.49	67.49	74.00	-6.51	peak			
3	2410.537	104.24	-2.47	101.77	74.00	27.77	peak			

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	2386.387	52.79	-2.52	50.27	54.00	-3.73	AVG			
2	2390.000	48.37	-2.51	45.86	54.00	-8.14	AVG			
3	2400.000	64.20	-2.49	61.71	54.00	7.71	AVG			
4	2411.325	99.49	-2.47	97.02	54.00	43.02	AVG			

Test Mode: 802.11b
2462MHz
Horizontal-PEAK:

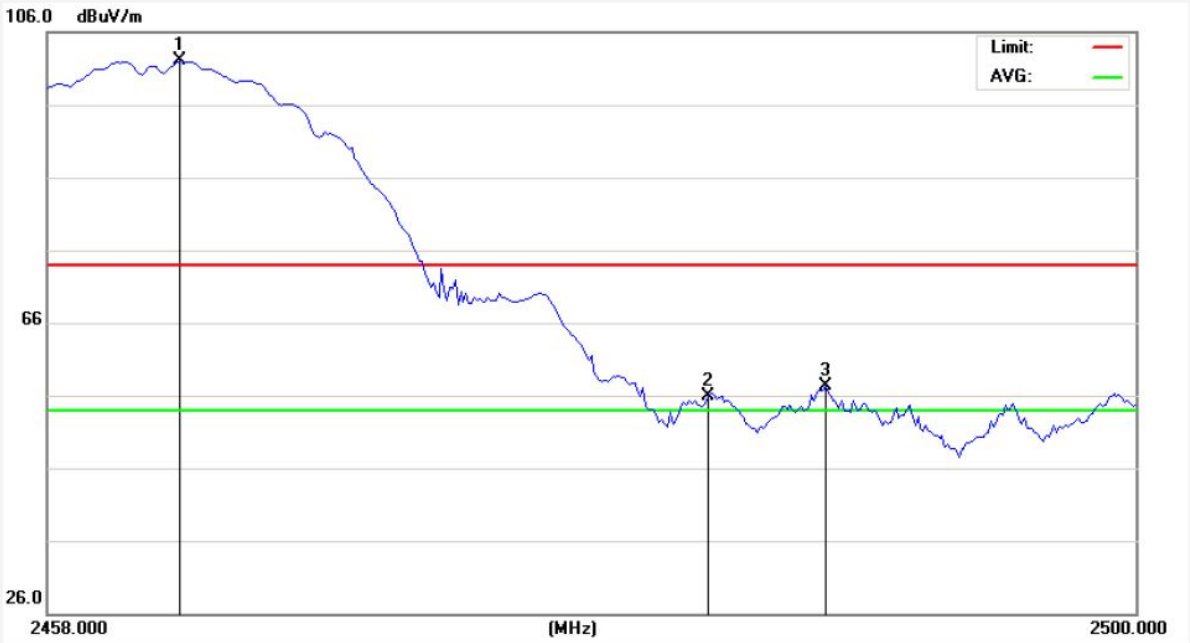


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2463.250	102.62	-2.35	100.27	74.00	26.27	peak			
2	2483.500	57.11	-2.31	54.80	74.00	-19.20	peak			
3	2488.030	59.90	-2.30	57.60	74.00	-16.40	peak			

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	2461.360	97.92	-2.36	95.56	54.00	41.56	AVG			
2	2483.500	54.00	-2.31	51.69	54.00	-2.31	AVG			
3	2487.925	53.82	-2.30	51.52	54.00	-2.48	AVG			

Test Mode: 802.11b
2462MHz
Vertical-PEAK:

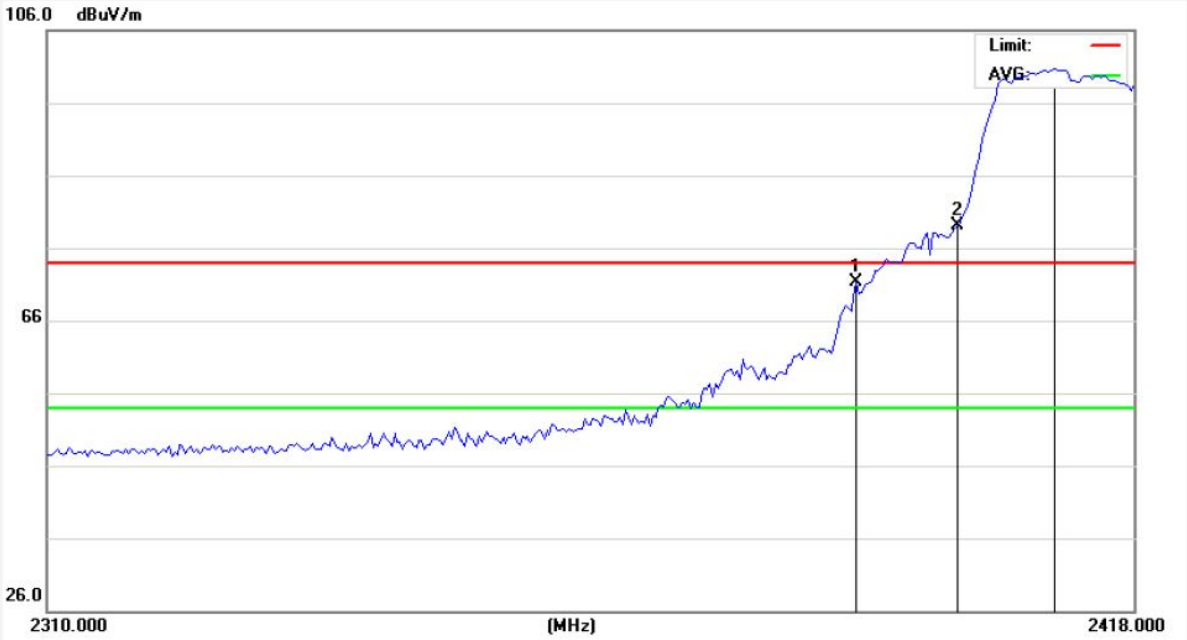


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2463.145	104.36	-2.35	102.01	74.00	28.01	peak			
2	2483.500	58.17	-2.31	55.86	74.00	-18.14	peak			
3	2488.030	59.64	-2.30	57.34	74.00	-16.66	peak			

Vertical-AV:

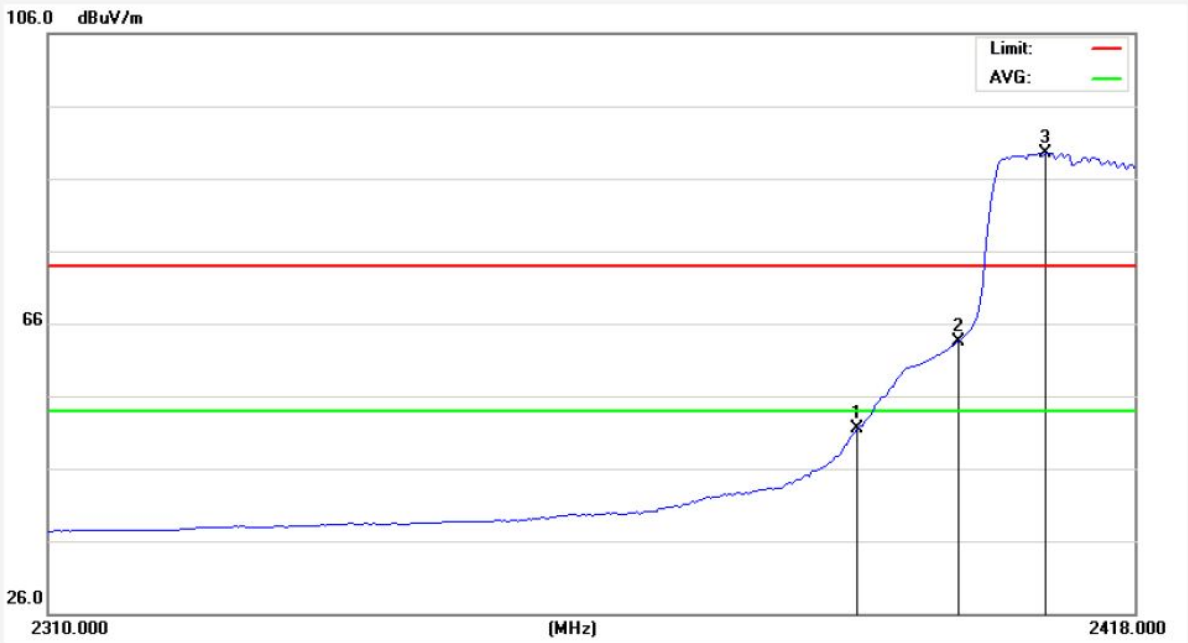
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2461.360	99.83	-2.36	97.47	54.00	43.47	AVG			
2	2483.500	54.73	-2.31	52.42	54.00	-1.58	AVG			
3	2487.820	54.15	-2.30	51.85	54.00	-2.15	AVG			
4	2490.445	53.17	-2.29	50.88	54.00	-3.12	AVG			
5	2498.845	53.01	-2.27	50.74	54.00	-3.26	AVG			

Test Mode: 802.11g
2412MHz
Horizontal-PEAK:



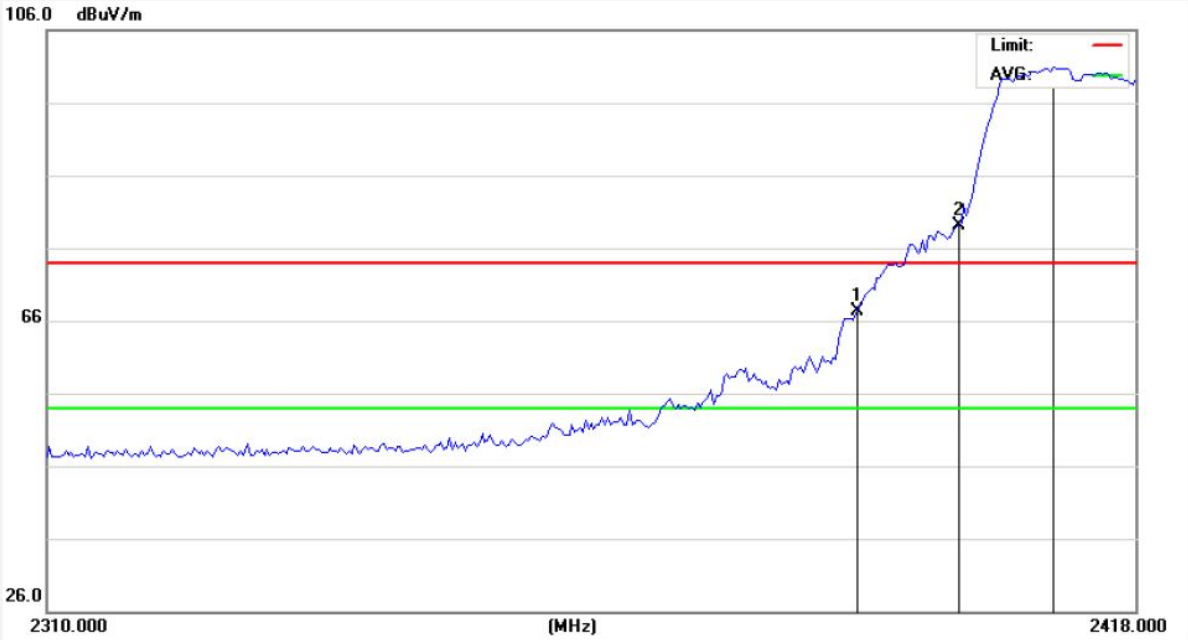
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	73.82	-2.51	71.31	74.00	-2.69	peak			
2	2400.000	81.59	-2.49	79.10	74.00	5.10	peak			
3	2410.170	103.11	-2.47	100.64	74.00	26.64	peak			

Horizontal-AV:



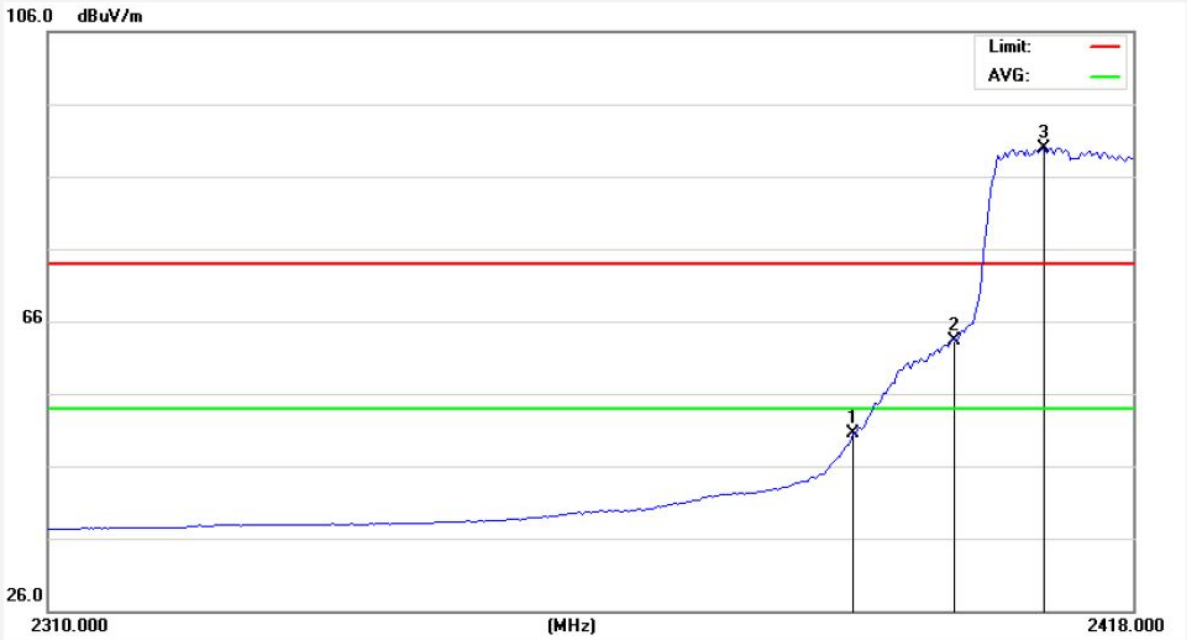
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	53.95	-2.51	51.44	54.00	-2.56	AVG			
2	2400.000	66.04	-2.49	63.55	54.00	9.55	AVG			
3	2409.090	92.03	-2.47	89.56	54.00	35.56	AVG			

Test Mode: 802.11g
2412MHz
Vertical-PEAK:



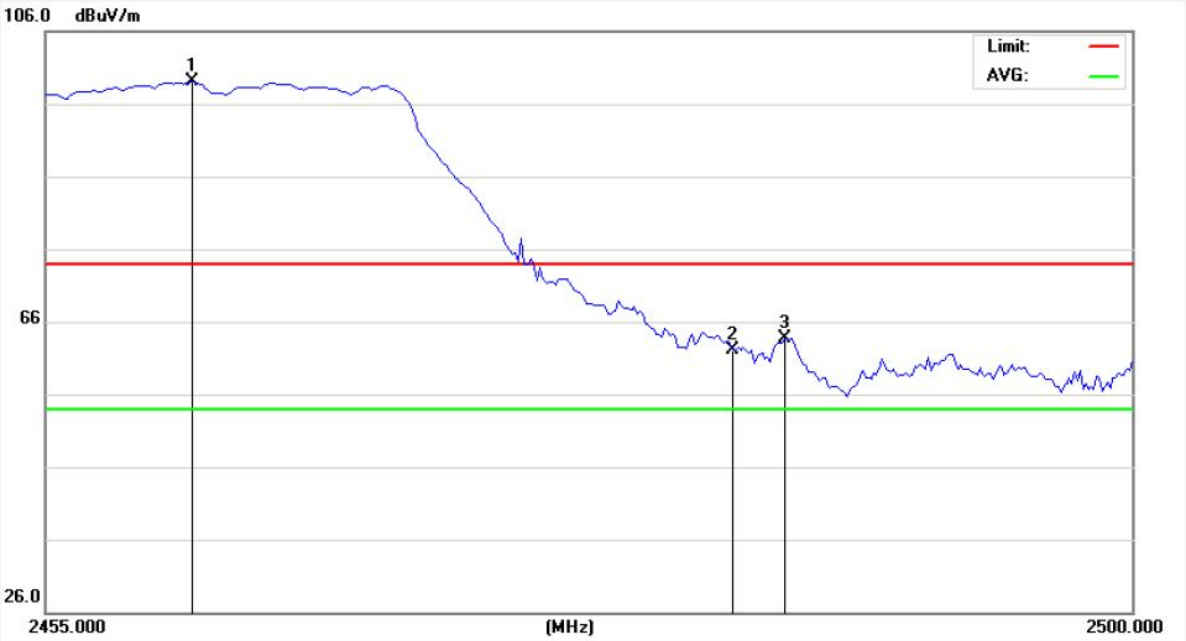
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	69.75	-2.51	67.24	74.00	-6.76	peak			
2	2400.000	81.51	-2.49	79.02	74.00	5.02	peak			
3	2409.900	103.32	-2.47	100.85	74.00	26.85	peak			

Vertical-AV:



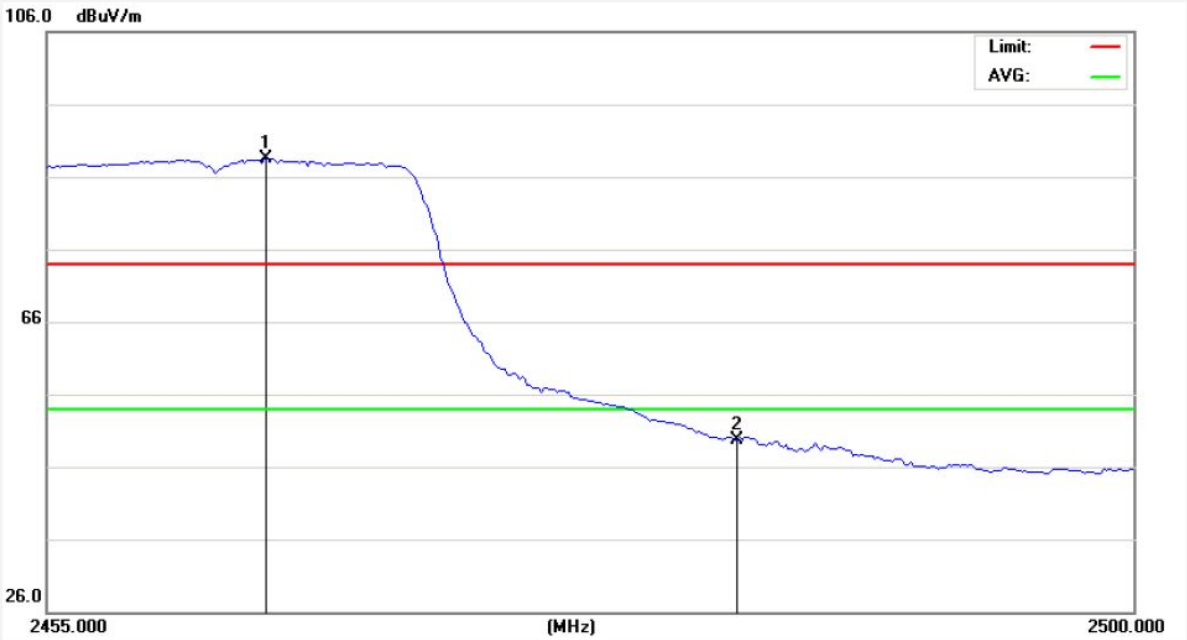
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	53.01	-2.51	50.50	54.00	-3.50	AVG			
2	2400.000	65.76	-2.49	63.27	54.00	9.27	AVG			
3	2409.090	92.43	-2.47	89.96	54.00	35.96	AVG			

Test Mode: 802.11g
2462MHz
Horizontal-PEAK:



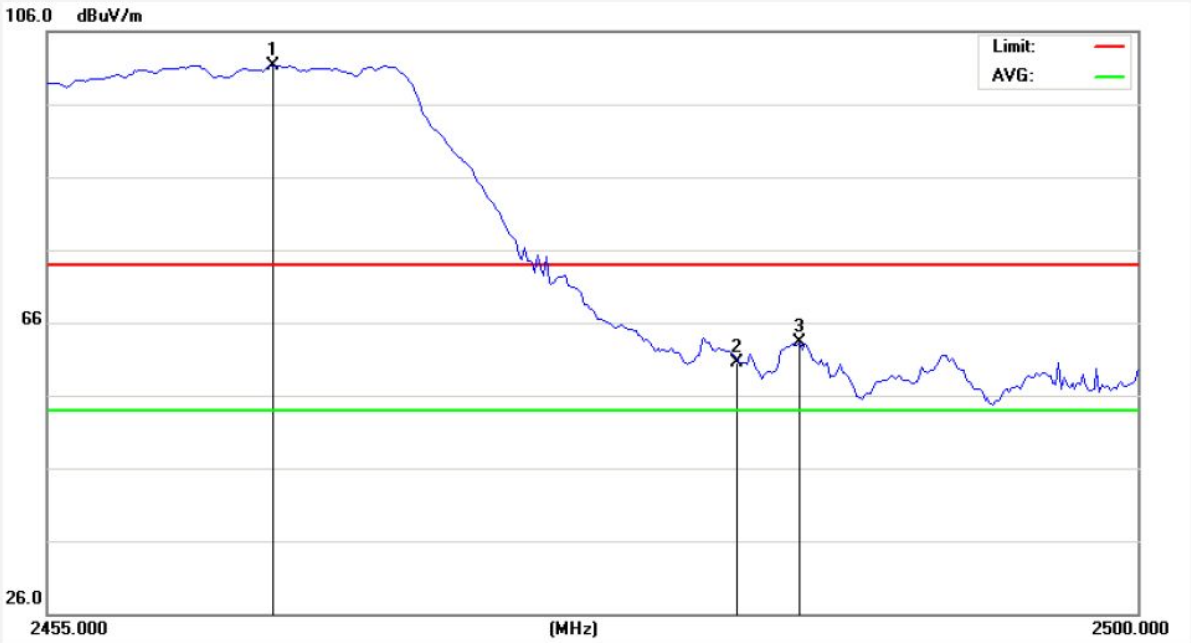
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2461.075	101.38	-2.36	99.02	74.00	25.02	peak			
2	2483.500	64.32	-2.31	62.01	74.00	-11.99	peak			
3	2485.600	66.07	-2.30	63.77	74.00	-10.23	peak			

Horizontal-AV:



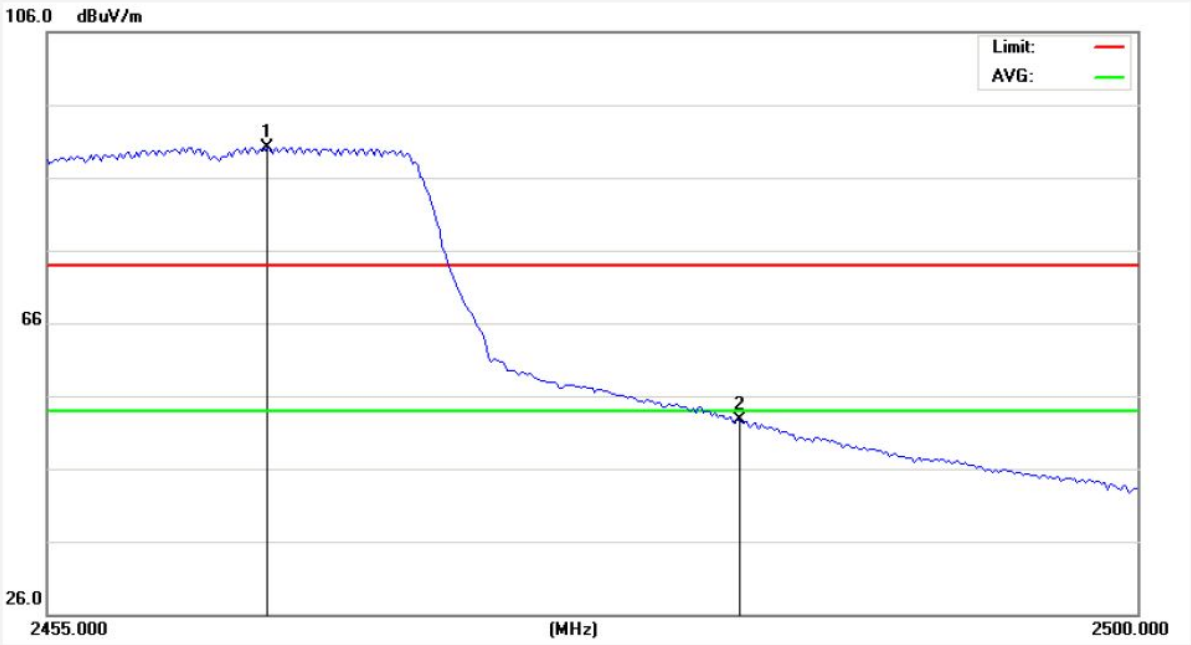
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2464.113	90.83	-2.35	88.48	54.00	34.48	AVG			
2	2483.500	52.11	-2.31	49.80	54.00	-4.20	AVG			

Test Mode: 802.11g
2462MHz
Vertical-PEAK:



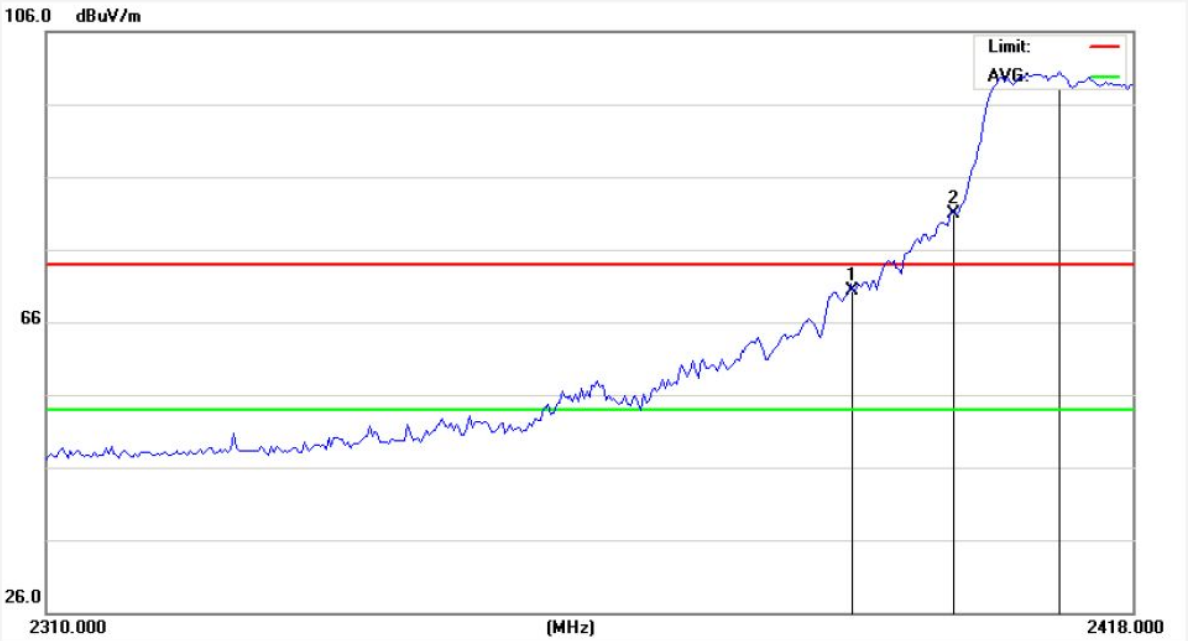
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2464.338	103.70	-2.35	101.35	74.00	27.35	peak			
2	2483.500	62.84	-2.31	60.53	74.00	-13.47	peak			
3	2486.050	65.58	-2.30	63.28	74.00	-10.72	peak			

Vertical-AV:



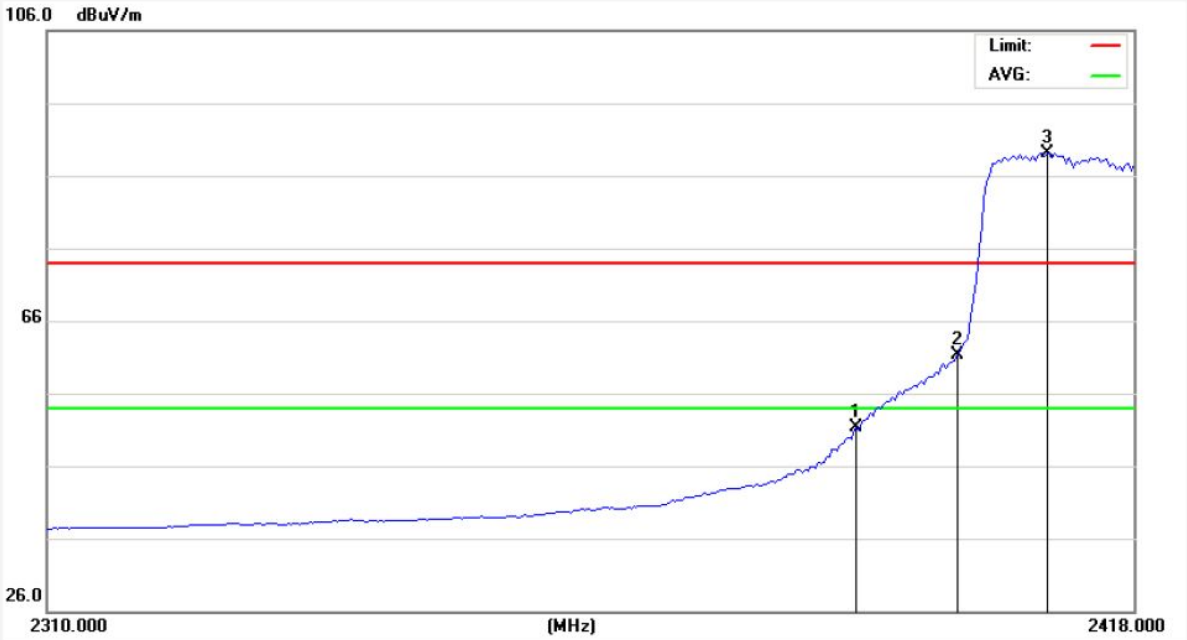
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2464.113	92.53	-2.35	90.18	54.00	36.18	AVG			
2	2483.500	55.05	-2.31	52.74	54.00	-1.26	AVG			

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



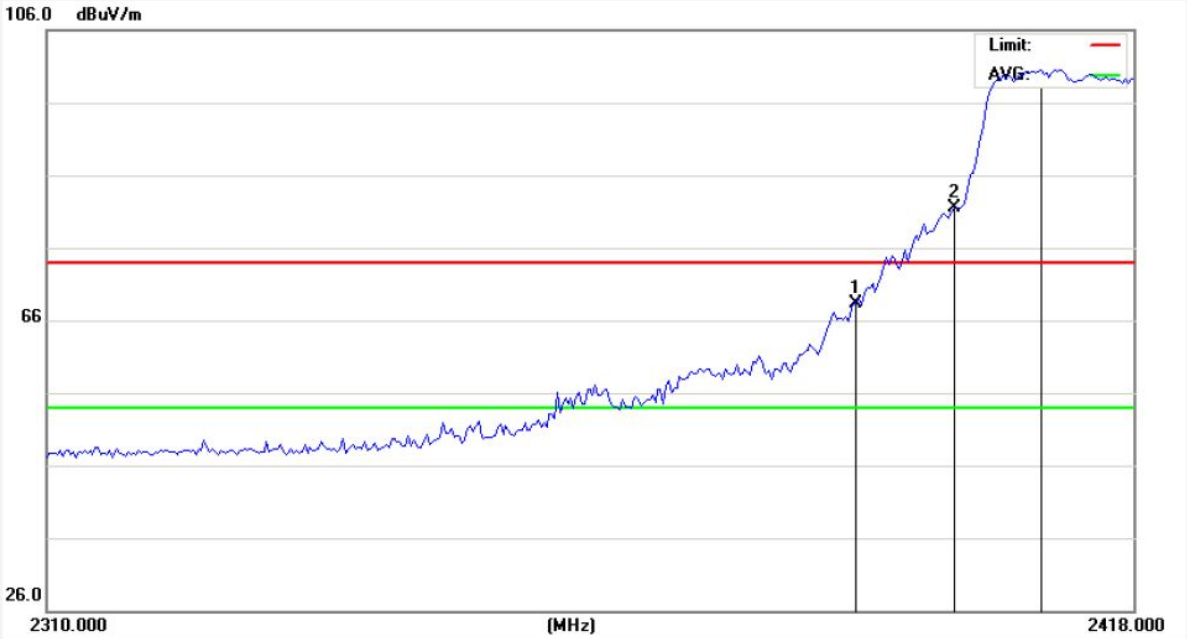
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	72.81	-2.51	70.30	74.00	-3.70	peak			
2	2400.000	83.47	-2.49	80.98	74.00	6.98	peak			
3	2410.710	102.91	-2.47	100.44	74.00	26.44	peak			

Horizontal-AV:



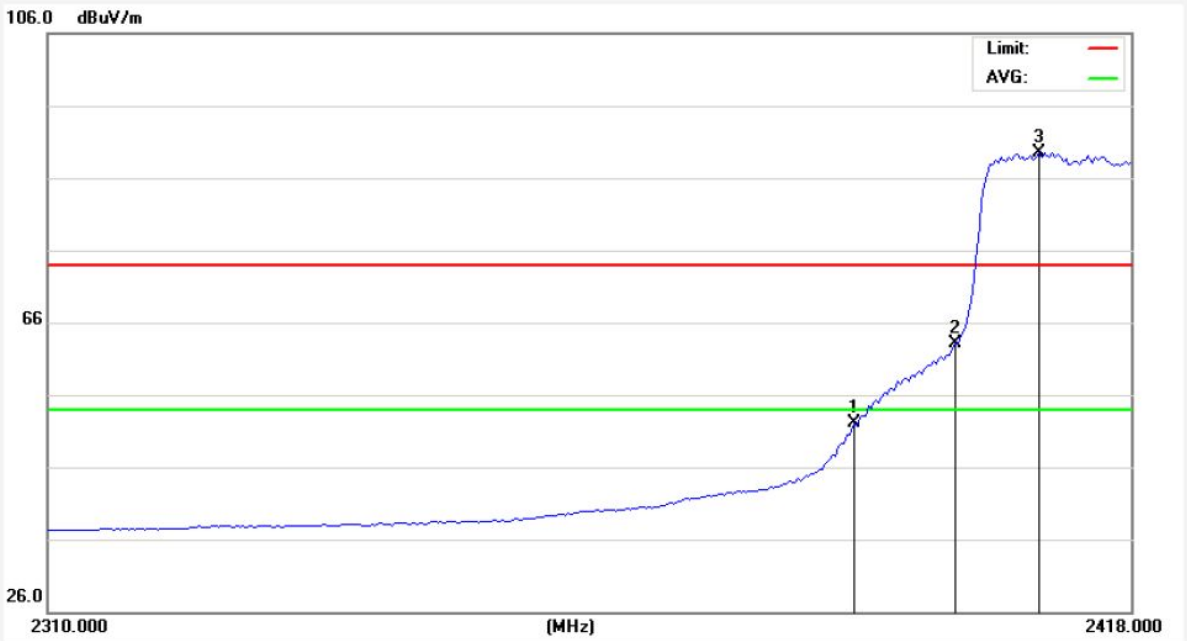
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	53.82	-2.51	51.31	54.00	-2.69	AVG			
2	2400.000	63.86	-2.49	61.37	54.00	7.37	AVG			
3	2409.360	91.65	-2.47	89.18	54.00	35.18	AVG			

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



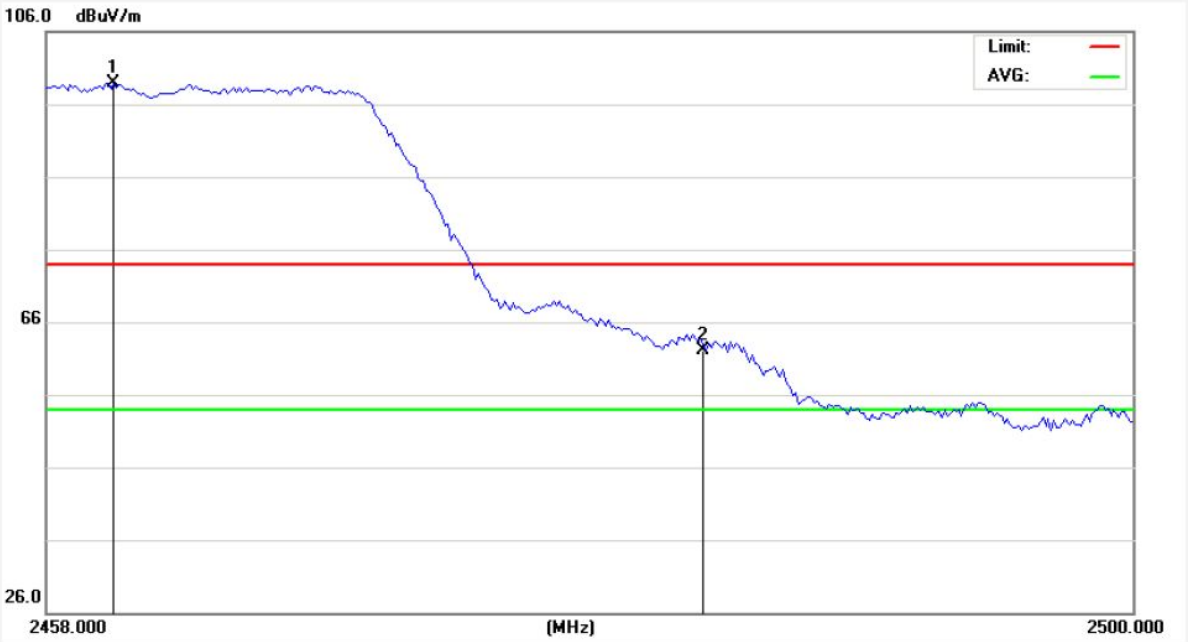
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	70.81	-2.51	68.30	74.00	-5.70	peak			
2	2400.000	83.90	-2.49	81.41	74.00	7.41	peak			
3	2408.820	102.98	-2.47	100.51	74.00	26.51	peak			

Vertical-AV:



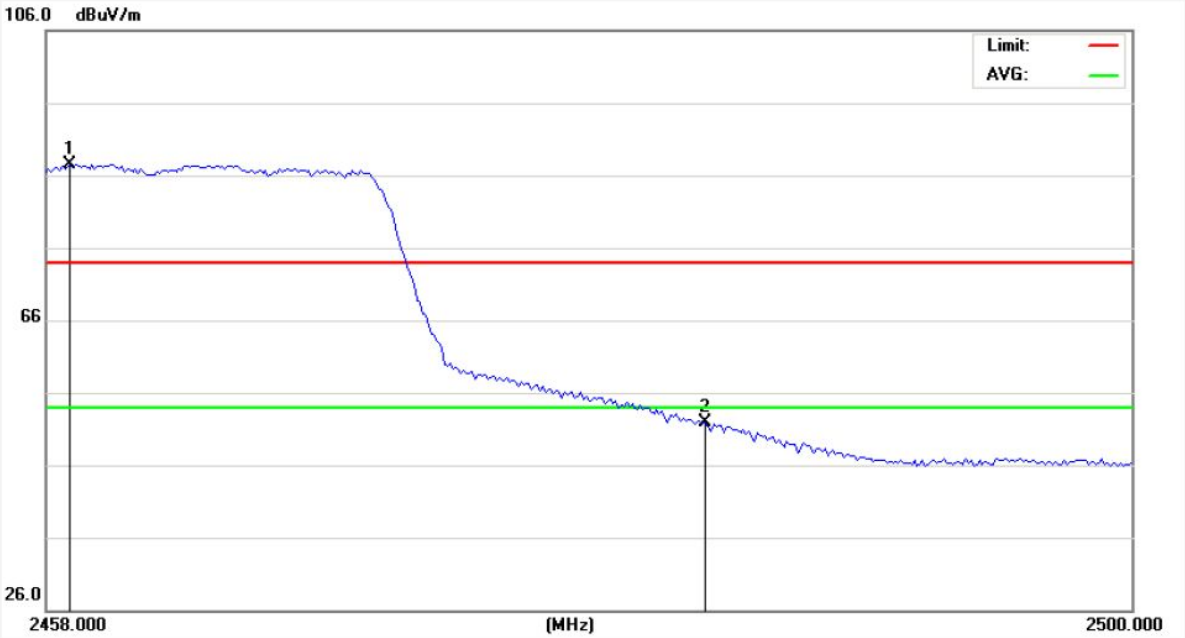
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	54.52	-2.51	52.01	54.00	-1.99	AVG			
2	2400.000	65.62	-2.49	63.13	54.00	9.13	AVG			
3	2408.820	91.97	-2.47	89.50	54.00	35.50	AVG			

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



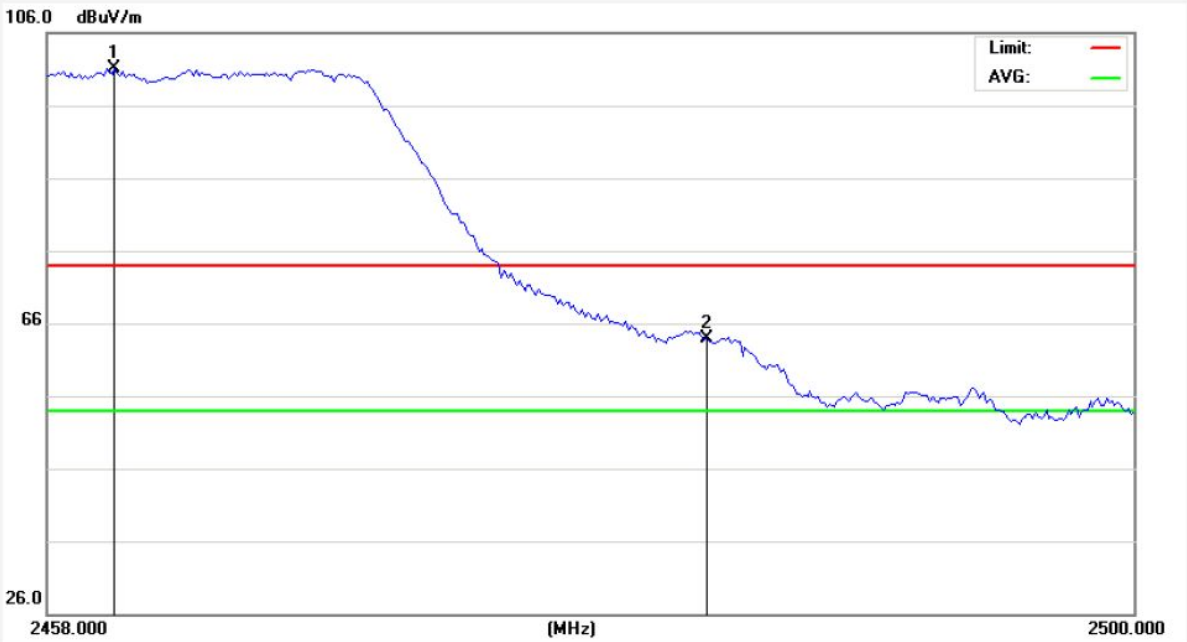
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2460.625	101.33	-2.36	98.97	74.00	24.97	peak			
2	2483.500	64.46	-2.31	62.15	74.00	-11.85	peak			

Horizontal-AV:



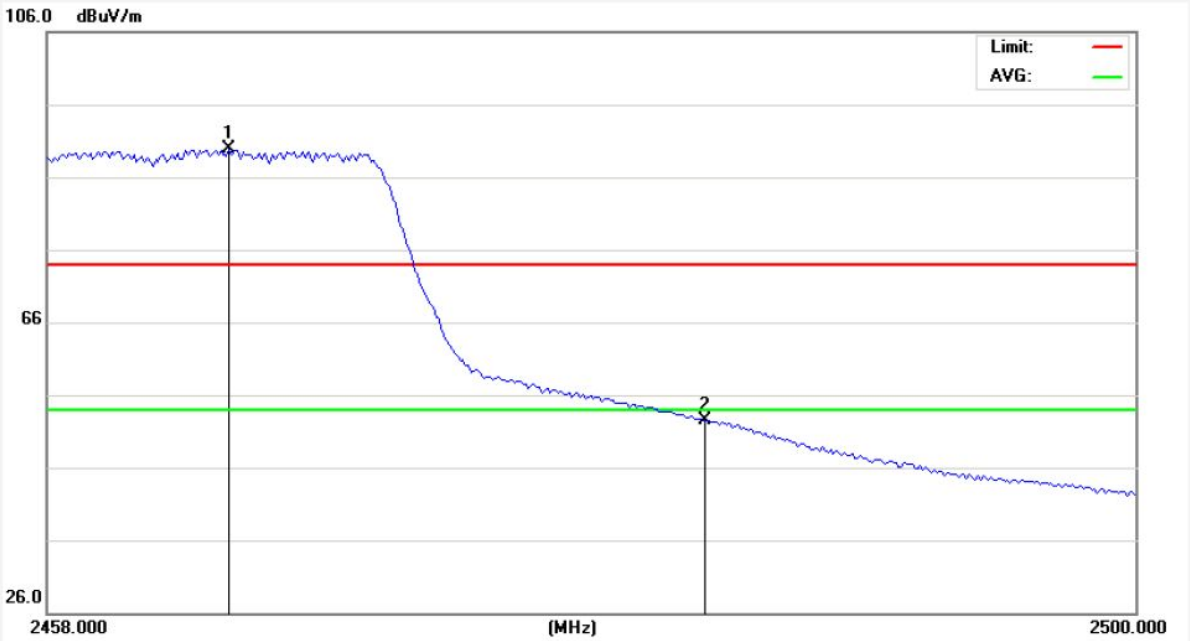
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2458.945	89.89	-2.36	87.53	54.00	33.53	AVG			
2	2483.500	54.30	-2.31	51.99	54.00	-2.01	AVG			

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



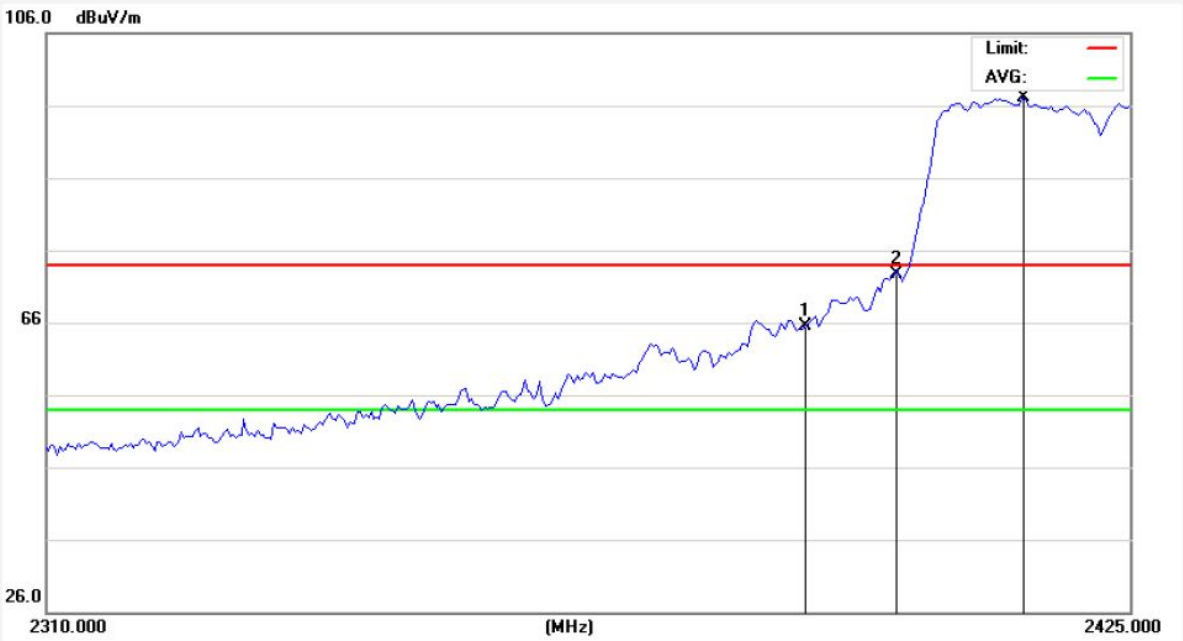
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2460.625	103.51	-2.36	101.15	74.00	27.15	peak			
2	2483.500	66.25	-2.31	63.94	74.00	-10.06	peak			

Vertical-AV:



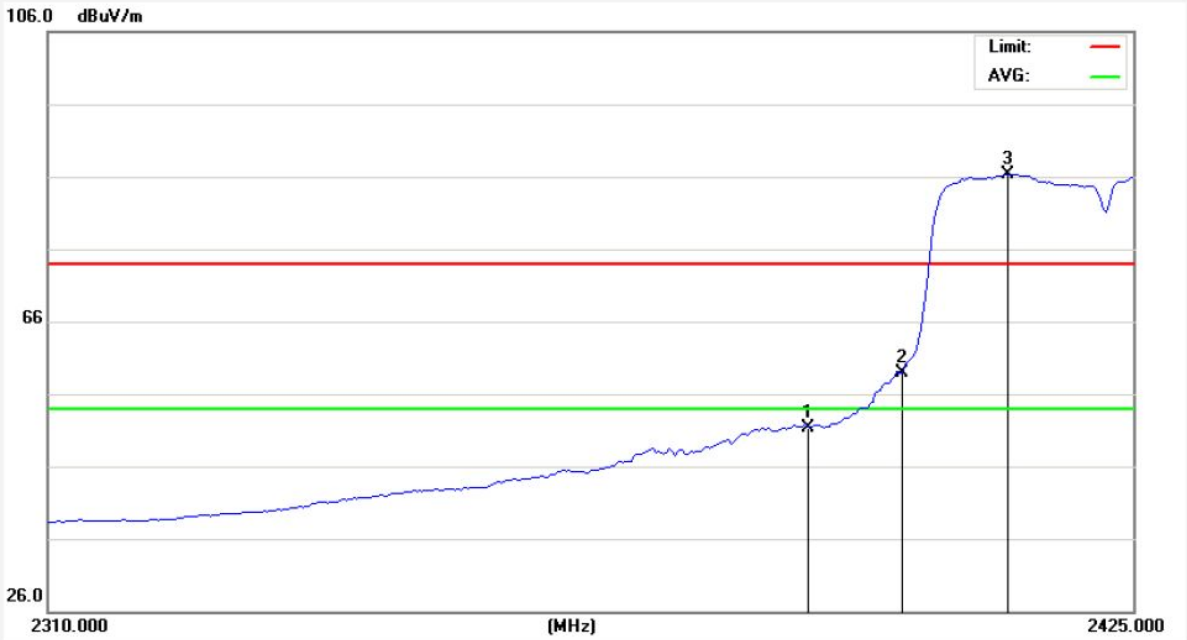
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2465.035	92.18	-2.35	89.83	54.00	35.83	AVG			
2	2483.500	54.75	-2.31	52.44	54.00	-1.56	AVG			

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



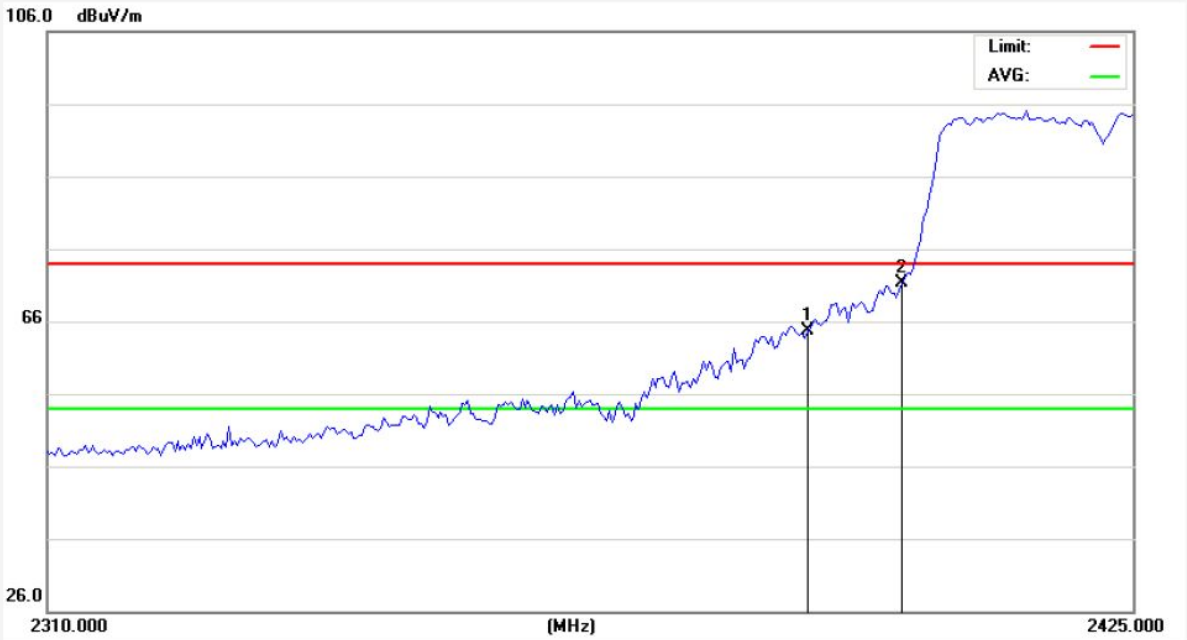
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	67.97	-2.51	65.46	74.00	-8.54	peak			
2	2400.000	75.18	-2.49	72.69	74.00	-1.31	peak			
3	2413.787	99.60	-2.46	97.14	74.00	23.14	peak			

Horizontal-AV:



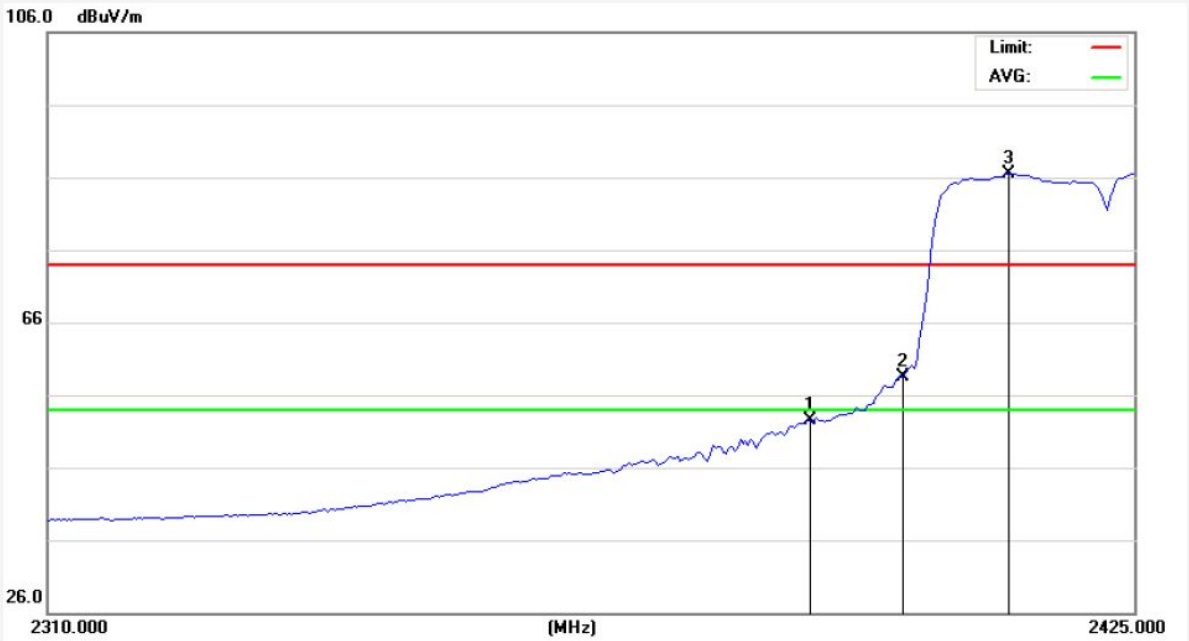
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	53.88	-2.51	51.37	54.00	-2.63	AVG			
2	2400.000	61.38	-2.49	58.89	54.00	4.89	AVG			
3	2411.775	88.84	-2.47	86.37	54.00	32.37	AVG			

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



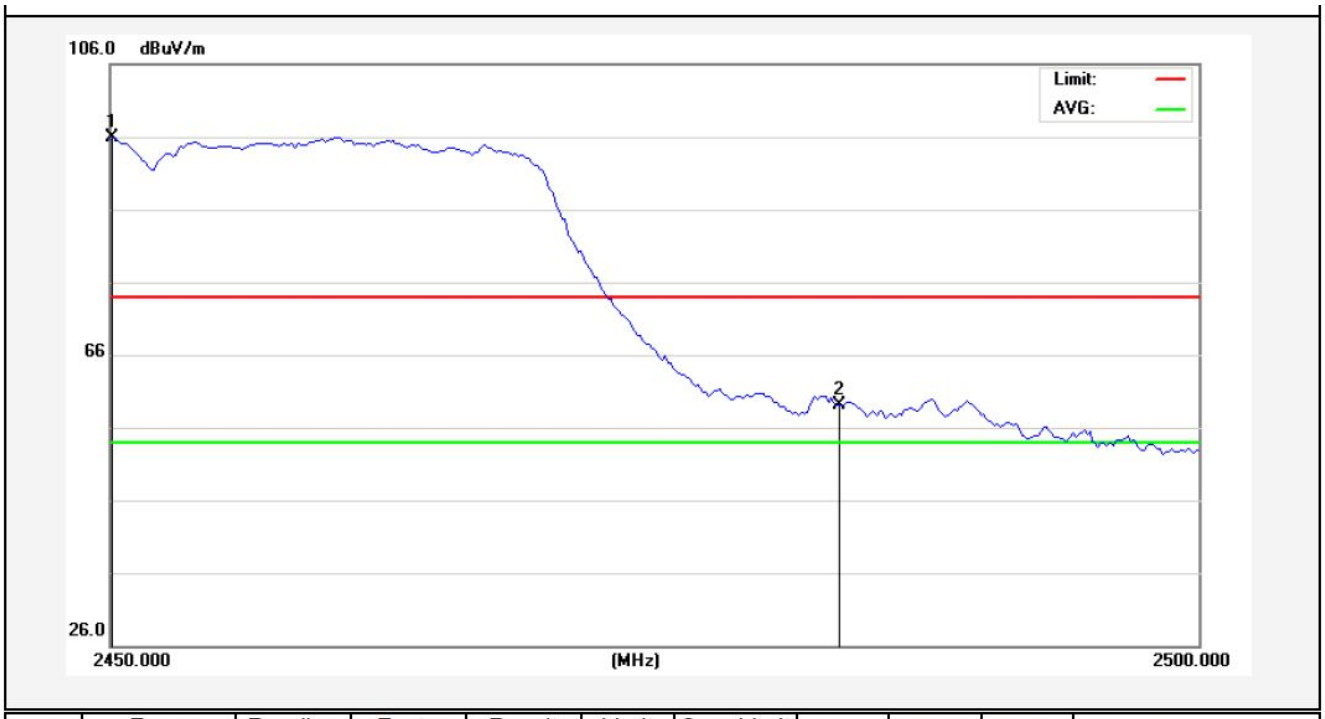
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	67.19	-2.51	64.68	74.00	-9.32	peak			
2	2400.000	73.79	-2.49	71.30	74.00	-2.70	peak			

Vertical-AV:



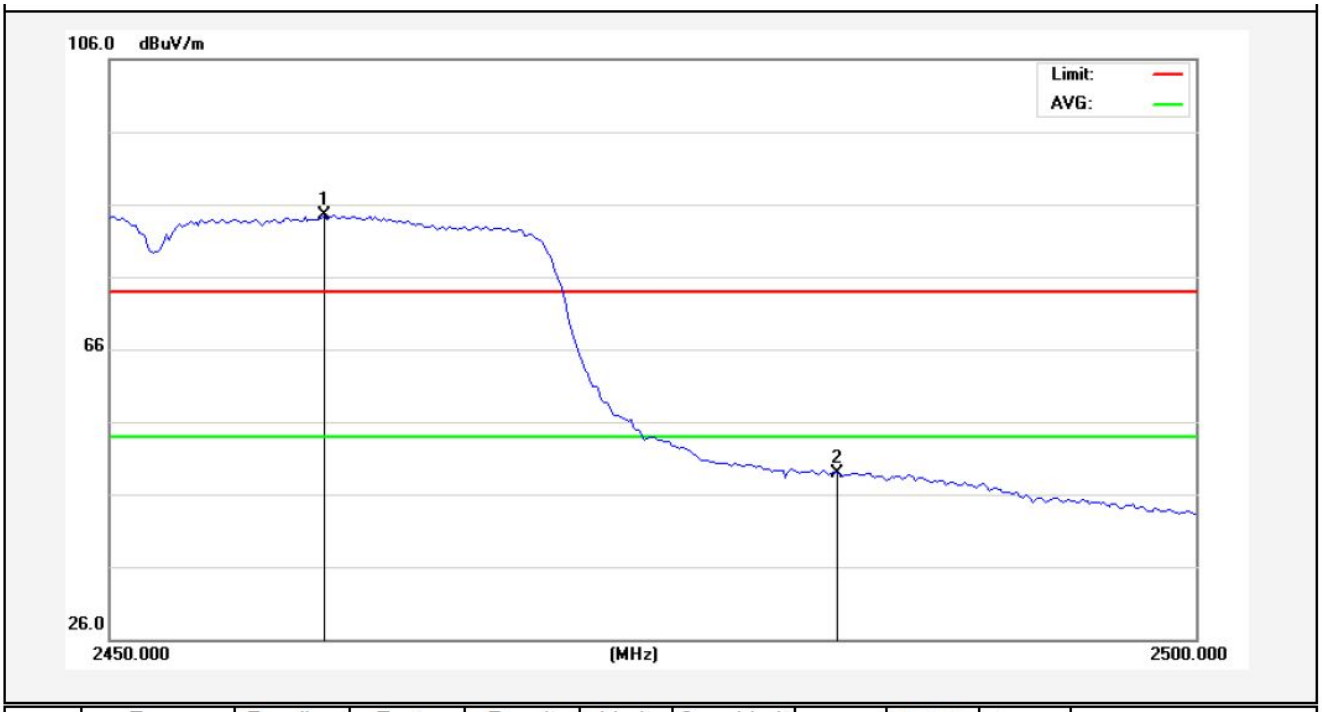
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	55.08	-2.51	52.57	54.00	-1.43	AVG			
2	2400.000	61.03	-2.49	58.54	54.00	4.54	AVG			
3	2411.775	88.99	-2.47	86.52	54.00	32.52	AVG			

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



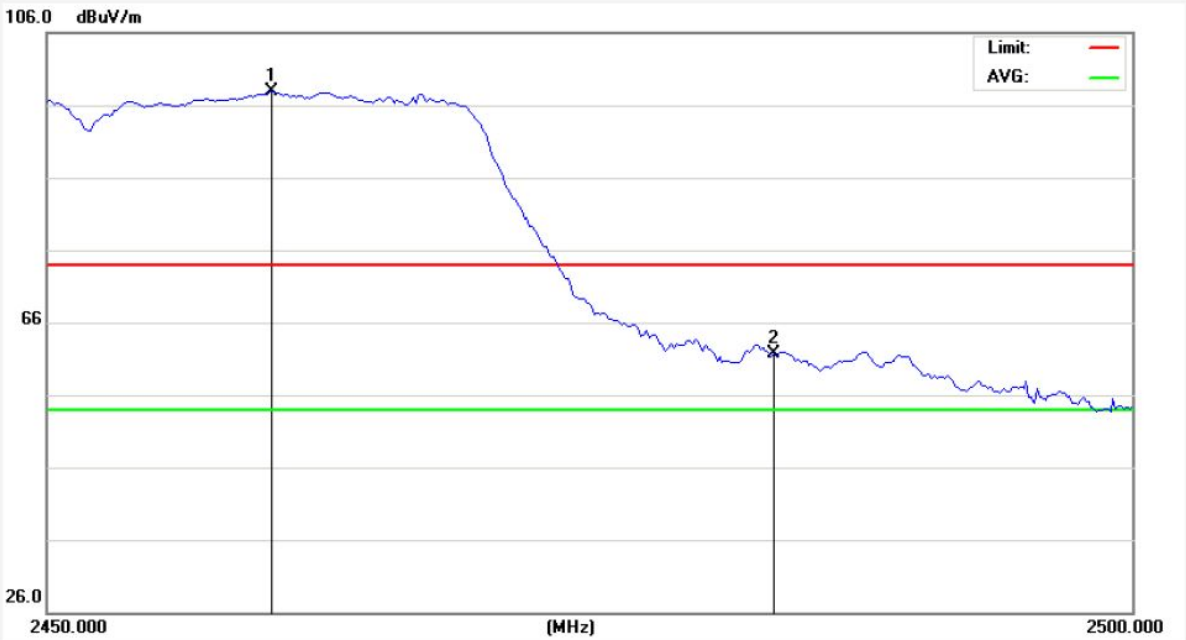
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2450.125	98.24	-2.38	95.86	74.00	21.86	peak			
2	2483.500	61.50	-2.31	59.19	74.00	-14.81	peak			

Horizontal-AV:



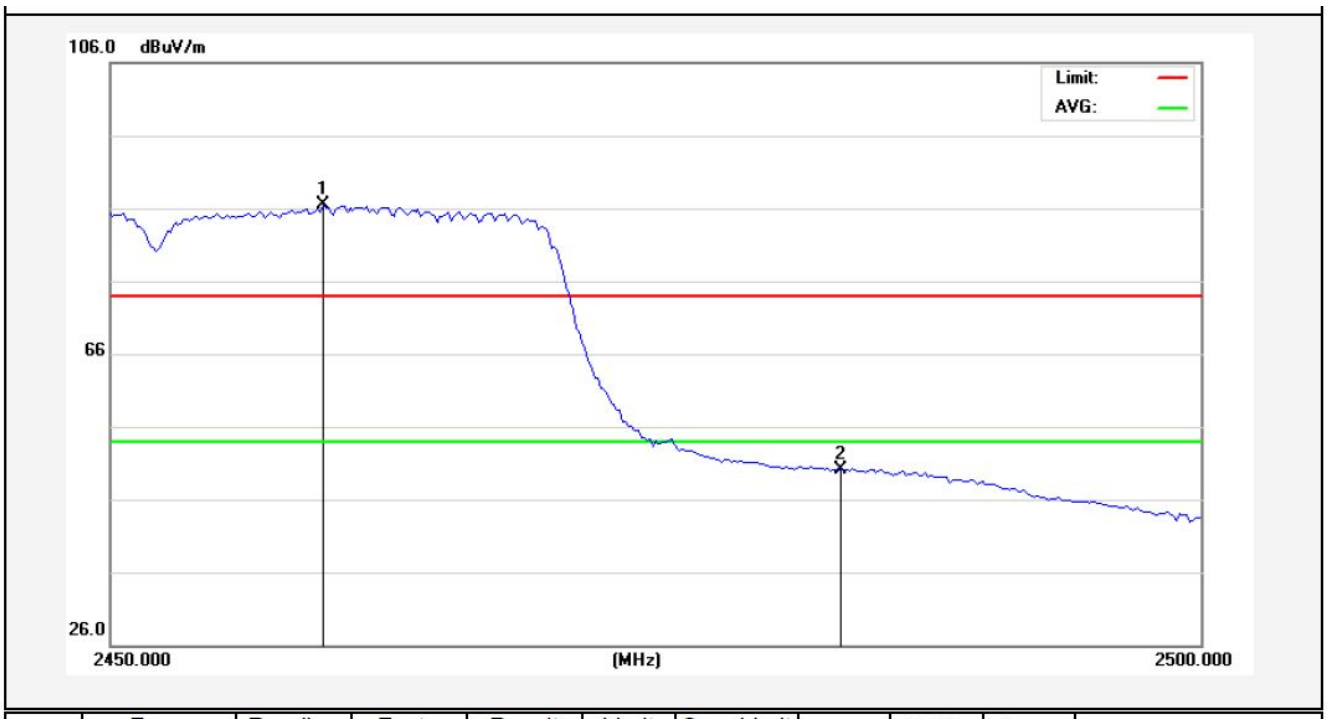
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2459.875	86.87	-2.36	84.51	54.00	30.51	AVG			
2	2483.500	51.18	-2.31	48.87	54.00	-5.13	AVG			

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	2460.375	100.17	-2.36	97.81	74.00	23.81	peak			
2	2483.500	64.06	-2.31	61.75	74.00	-12.25	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	2459.750	88.90	-2.36	86.54	54.00	32.54	AVG			
2	2483.500	52.41	-2.31	50.10	54.00	-3.90	AVG			