RF TEST REPORT

Report No.:	SET2015-19281
Product Name:	GPON SFU
FCC ID:	2AGHCHBMT04
Model No. :	7279G / 7278G / 7272G
Applicant:	Guangdong Hisense Broadband Technology Co.,Ltd
Address:	Building 2, No.8, Hisense Road, Tangxia Town, Pengjiang District, Jiangmen City, Guangdong Provice
Dates of Testing:	11/26/2015 — 12/20/2015
Issued by:	CCIC-SET
Lab Location:	Building 28/29, East of Shigu, Xili Industrial Zone, Xili Road, Nanshan District, Shenzhen, Guangdong, China **Tel:** 86 755 26627338 **Fax:** 86 755 26627238

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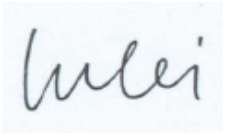
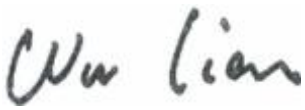
Test Report

Product Name ..... :	GPON SFU
Brand Name ..... :	iPhotonix / Ligent / Hisense
Trade Name ..... :	iPhotonix / Ligent / Hisense
Applicant ..... :	Guangdong Hisense Broadband Technology Co.,Ltd
Applicant Address ..... :	Building 2, No.8, Hisense Road, Tangxia Town, Pengjiang District, Jiangmen City, Guangdong Provice
Manufacturer ..... :	Guangdong Hisense Broadband Technology Co.,Ltd
Manufacturer Address ..... :	Building 2, No.8, Hisense Road, Tangxia Town, Pengjiang District, Jiangmen City, Guangdong Provice
Test Standards ..... :	47 CFR Part 15 Subpart C：Radio Frequency Devices ANSI C63.10 2009：American National Standard for Testing Unlicensed Wireless Devices KDB558074 D01 v03r03
Test Result ..... :	PASS
Tested by ..... :	 2015.12.22 Lu Lei, Test Engineer
Reviewed by..... :	 2015.12.22 Zhu Qi, Senior Egineer
Approved by ..... :	 2015.12.22 Wu Li'an, Manager

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Change History		
Issue	Date	Reason for change
1.0	2015-12-22	First edition

1. General Information

1.1. EUT Description

EUT Type	GPON SFU
Hardware Version	RGAC7.820.916
Software Version	\
EUT supports Radios application	WLAN2.4GHz 802.11b/g/n (HT20/HT40) WLAN5.0GHz 802.11a/n (HT20/40)/ac(VHT20/40/80)
Modulation technology	DSSS, OFDM
Modulation Type	CCK, DQPSK, DBPSK for DSSS 256QAM, 64QAM,16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Transfer Rate	2.4GHz: 802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n: up to 300 Mbps 5.0GHz: 802.11a: 54/48/36/24/18/12/9/6 Mbps 802.11n up to 450 Mbps 802.11ac: up to 1300Mbps
Frequency Range	2.4GHz: 802.11b, 802.11g, 802.11n(20MHz): 2412~2462MHz 802.11n(40MHz): 2422~2452MHz 5.0GHz: 5150 ~ 5250MHz 5725 ~ 5850MHz
Channel Number	2.4GHz: 802.11b/g/n-20MHz: 11 802.11n-40MHz: 7 5GHz: 5150 MHz ~ 5250MHz: 4 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80) 5725 MHz ~ 5850MHz: 5 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80)
Antenna Type	Linear Vertical Antenna
Antenna Gain	Antenna(1): 3.12dBi ; Antenna(2): 3.12dBi

Product Type	Refer to note
Output Power (Max.)	802.11b: 25.04dBm 802.11g: 23.73dBm 802.11n(20MHz): 26.03dBm 802.11n(40MHz): 25.38dBm

Note1：The EUT has three models: 7279G/7278G/7272G.Only the model 7279G contains all of the peripheral connector ports, which is recorded in this report.

Note2：The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers for 2.4GHz WLAN, provides 3 completed transmitters and 3 receivers for 5GHz WLAN.

Frequency	Modulation Mode	TX / RX Function
2.4GHz	802.11b	1TX / 1RX(Only Antenna 1)
	802.11g	1TX / 1RX
	802.11n (HT20)	1TX / 1RX or 2TX / 2RX
	802.11n (HT40)	1TX / 1RX or 2TX / 2RX
5.0GHz	802.11a	1TX / 1RX(Only Antenna 3)
	802.11n (HT20)	1TX / 1RX or 3TX / 3RX
	802.11n (HT40)	1TX / 1RX or 3TX / 3RX
	802.11ac (VHT20)	1TX / 1RX or 3TX / 3RX
	802.11ac (VHT40)	1TX / 1RX or 3TX / 3RX
	802.11ac (VHT80)	1TX / 1RX or 3TX / 3RX

WLAN 2.4GHz

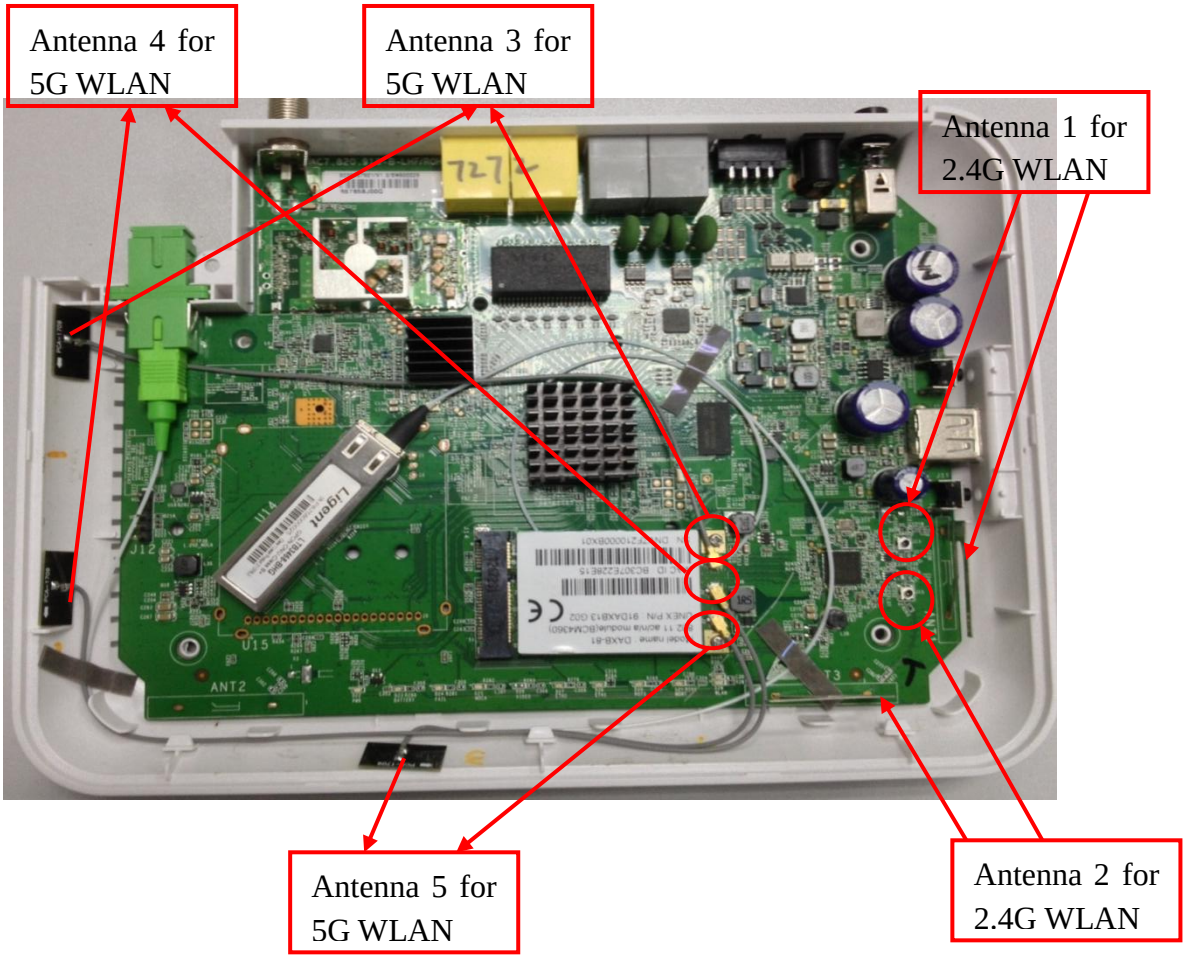
11 channels are provided for 802.11b, 802.11g, and 802.11n (20MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437		

7	2442		

7 channels are provided for 802.11n (40MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
3	2422	8	2447
4	2427	9	2452
5	2432	10	2457
6	2437	11	2462
7	2442		



1.2. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C (Bluetooth, 2.4GHz ISM band radiators) for the EUT FCC Certification:

No.	Identity	Document Title
1	47 CFR Part 15 Subpart C 2013	Radio Frequency Devices
2	ANSI C63.10 2009	American National Standard for Testing Unlicensed Wireless Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section in CFR 47	Description	Result
1	15.203	Antenna Requirement	PASS
2	15.247(b)	Peak Output Power	PASS
3	15.247(a)	6dB Bandwidth	PASS
4	15.247(d)	Conducted Band Edges and Spurious Emission	PASS
5	15.247(e)	Power spectral density (PSD)	PASS
6	15.207	Conducted Emission	PASS
7	15.209 15.247(d)	Radiated Band Edges and Spurious Emission	PASS

The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10-2009.

These RF tests were performed according to the method of measurements prescribed in KDB558074 D01 v03r03.

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

1.3. Test environment and mode

Operating Environment	
Temperature	24℃
Humidity	57 % RH
Atmospheric Pressure	1010 mbar
Test mode：	
Continuously transmitting mode	Keeps the EUT in 100% duty cycle transmitting with modulation in SISO and MIMO mode, duty cycle factor is not required.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Test Items	Mode	Data Rate	Channel
Peak Conducted Output Power Power Spectral Density 6dB Bandwidth Conducted and Spurious Emission Radiated and Spurious Emission	11b/DSSS	1 Mbps	1/6/11
	11g/OFDM	6 Mbps	1/6/11
	11n(20MHz)/OFDM	MCS 0	1/6/11
	11n(40MHz)/OFDM	MCS 0	3/6/9
Band Edge	11b/DSSS	1 Mbps	1/11
	11g/OFDM	6 Mbps	1/11
	11n(20MHz)/OFDM	MCS 0	1/11
	11n(40MHz)/OFDM	MCS 0	3/9

1.4. Table for Supporting Units

No.	Equipment	Brand Name	Model Name	Manufacturer	Serial No.	Note
1	Notebook	DELL	PP11L	DELL	H5914A03	FCC DOC

1.5. Laboratory Facilities

CNAS-Lab Code: L1659

CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd. CCIC is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659. A 12.8*6.8*6.4 (m) fully anechoic chamber was used for the radiated spurious emissions test.

FCC-Registration No.: 406086

CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 406086, valid time is until October 28, 2017.

IC-Registration No.: 11185A-1

CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on July. 15, 2013, valid time is until July. 15, 2016.

2. 47 CFR Part 15C Requirements

2.1. Antenna requirement

2.1.1. Applicable Standard

According to FCC 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.

And according to FCC 47 CFR Section 15.247(c), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

2.1.2. Antenna Information

Antenna Category: internal antenna

An internal antenna was soldered to the antenna port of EUT via an adaptor cable, can't be removed.

Antenna General Information:

Antenna	EUT	Ant. Type	Gain(dBi)	1+2 Gain(dBi)
1	GPON SFU	Linear Vertical	3.12	3.12_{note}
2	GPON SFU	Linear Vertical	3.12	

Note: According to KDB 662911, all transmit signals are completely uncorrelated with each other.
Directional gain = G_{ANT}

2.1.3. Result: comply

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

2.2. Peak Output Power

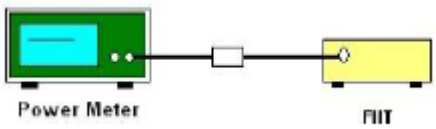
2.2.1. Limit of Peak Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

2.2.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.2.3. Test Setup



2.2.4. Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB 558074 D01 v03r03.

2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.

3. Set to the maximum power setting and enable the EUT transmit continuously.

4. Measure the conducted output power and record the results in the test report.

2.2.5. Test Result

802.11b mode

Channel	Frequency (MHz)	Output Power(dBm)		Limits (dBm)	Result
		Ant. 1	Ant. 2		
1	2412	25.04	\	30	PASS
6	2437	24.73	\	30	PASS
11	2462	24.17	\	30	PASS

802.11g Test mode

Channel	Frequency (MHz)	Output Power(dBm)		Limits (dBm)	Result
		Ant. 1	Ant. 2		
1	2412	23.73	23.28	30	PASS
6	2437	23.44	22.78	30	PASS
11	2462	23.17	22.62	30	PASS

802.11n-20MHz Test mode

Channel	Frequency (MHz)	Output Power(dBm)			Limits (dBm)	Result
		Ant. 1	Ant. 2	Ant. 1+2		
1	2412	23.23	22.77	26.03	30	PASS
6	2437	23.01	22.34	25.69	30	PASS
11	2462	22.79	22.01	25.43	30	PASS

802.11n-40MHz Test mode

Channel	Frequency (MHz)	Output Power(dBm)			Limits (dBm)	Result
		Ant. 1	Ant. 2	Ant. 1+2		
3	2422	22.46	22.27	25.38	30	PASS
6	2437	21.93	21.58	24.78	30	PASS
9	2452	21.87	21.50	24.70	30	PASS

Note: All data rates are testing, but the worse case data rate was record in the report.

2.3. 6dB Bandwidth

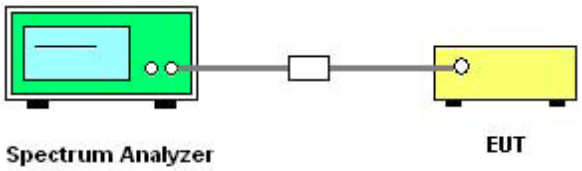
2.3.1. Limit of 6dB Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

2.3.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.3.3. Test Setup



2.3.4. Test Procedures

1. The testing follows FCC KDB558074 D01 v03r03.

2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.

3. Set to the maximum power setting and enable the EUT transmit continuously.

4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz.

5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 30kHz and set the Video bandwidth (VBW) = 100kHz.

6. Measure and record the results in the test report.

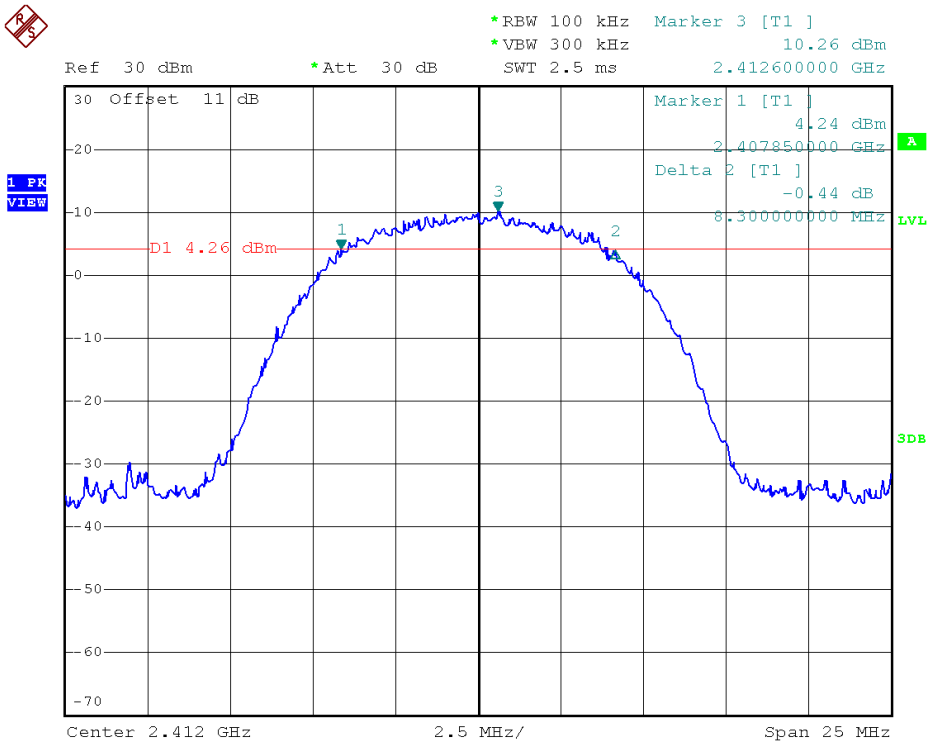
2.3.5. Test Results of 6dB Bandwidth

Antenna	Test mode	Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (MHz)	Result
Antenna 1	802.11b	1	2412	8.30	≥0.5	PASS
		6	2437	8.25		PASS
		11	2462	8.10		PASS
	802.11g	1	2412	15.65		PASS
		6	2437	15.40		PASS
		11	2462	15.75		PASS
	802.11n20	1	2412	17.30		PASS
		6	2437	17.60		PASS
		11	2462	16.60		PASS
	802.11n40	3	2422	35.73		PASS
		6	2437	35.76		PASS
		9	2452	35.70		PASS

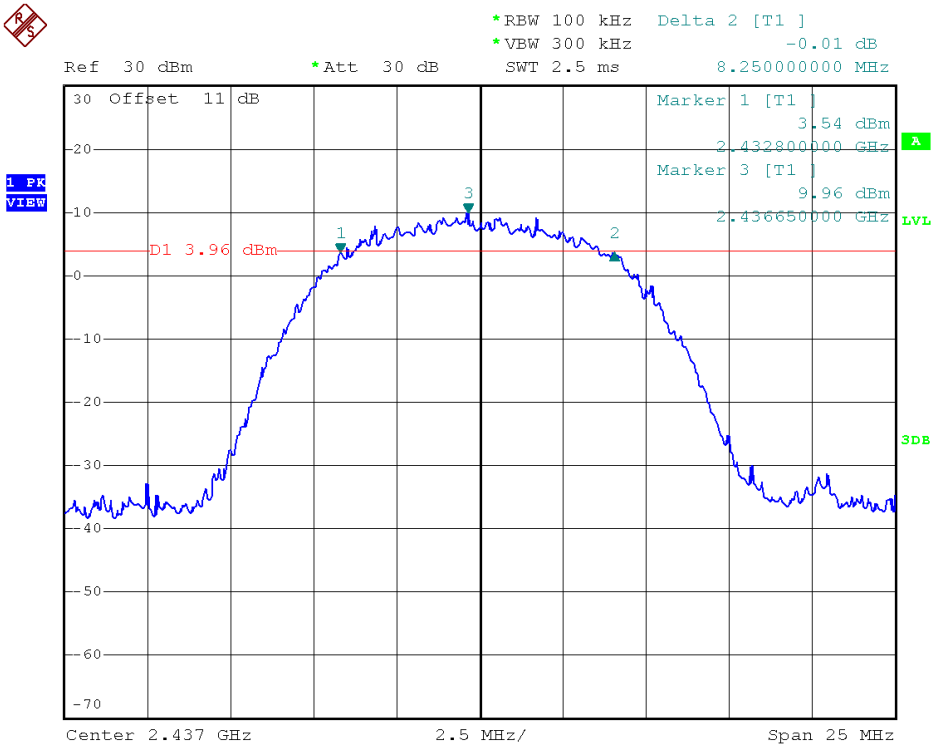
Antenna	Test mode	Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (MHz)	Result
Antenna 2	802.11g	1	2412	15.75	≥0.5	PASS
		6	2437	15.80		PASS
		11	2462	15.75		PASS
	802.11n20	1	2412	17.35		PASS
		6	2437	16.70		PASS
		11	2462	17.60		PASS
	802.11n40	3	2422	35.73		PASS
		6	2437	36.57		PASS
		9	2452	36.45		PASS

2.3.6. Test Results (plots) of 6dB Bandwidth

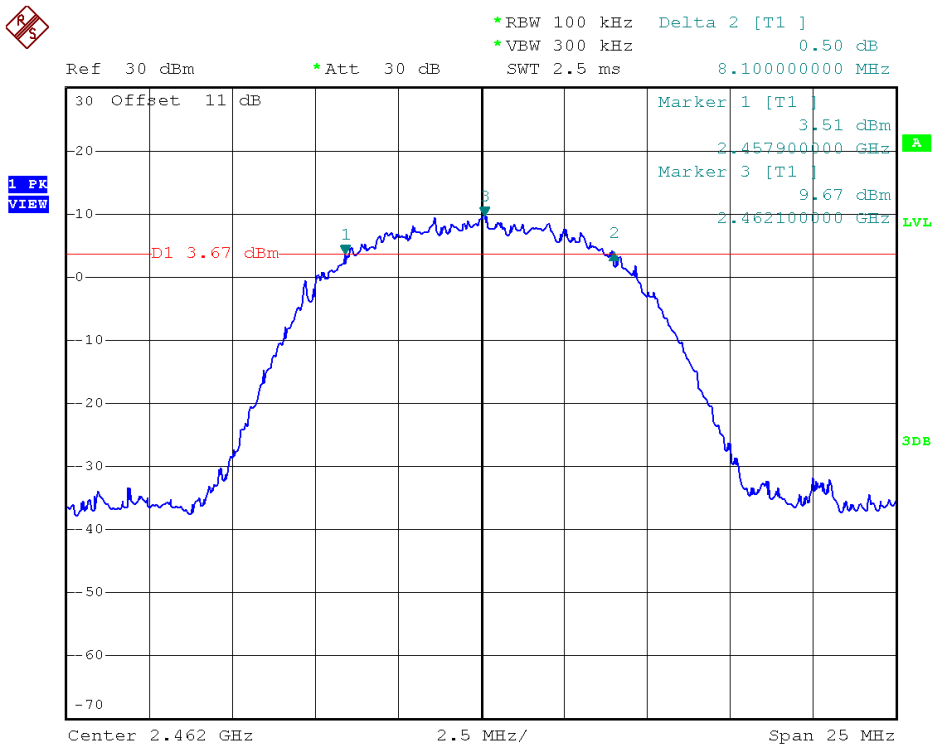
Antenna 1 - 802.11b - 6 dB Bandwidth Plot on channel 1



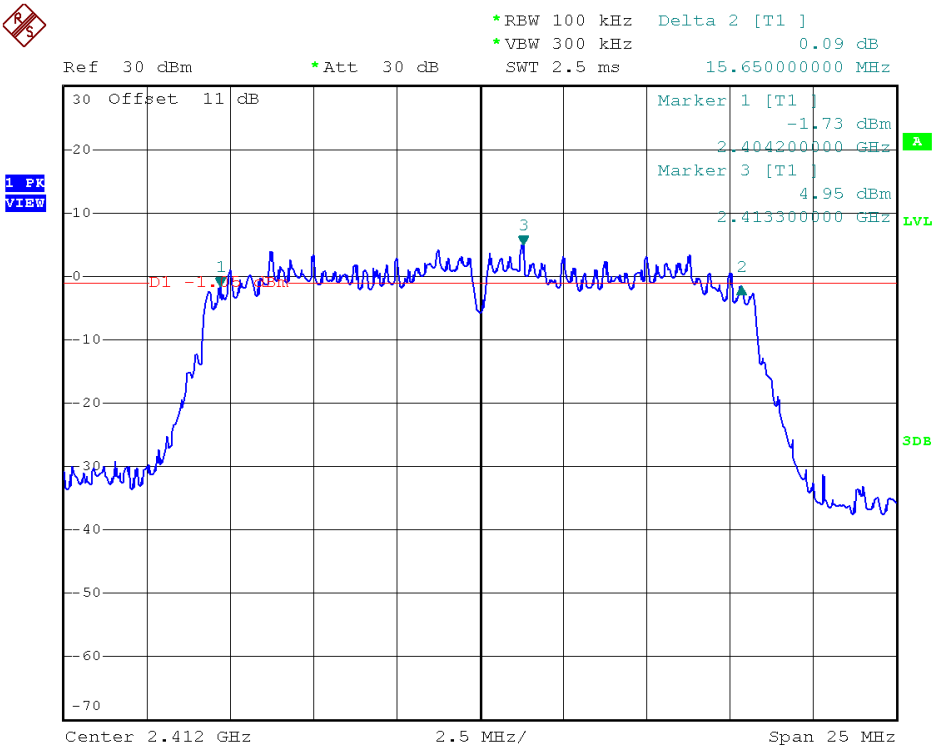
Antenna 1 - 802.11b - 6 dB Bandwidth Plot on channel 6



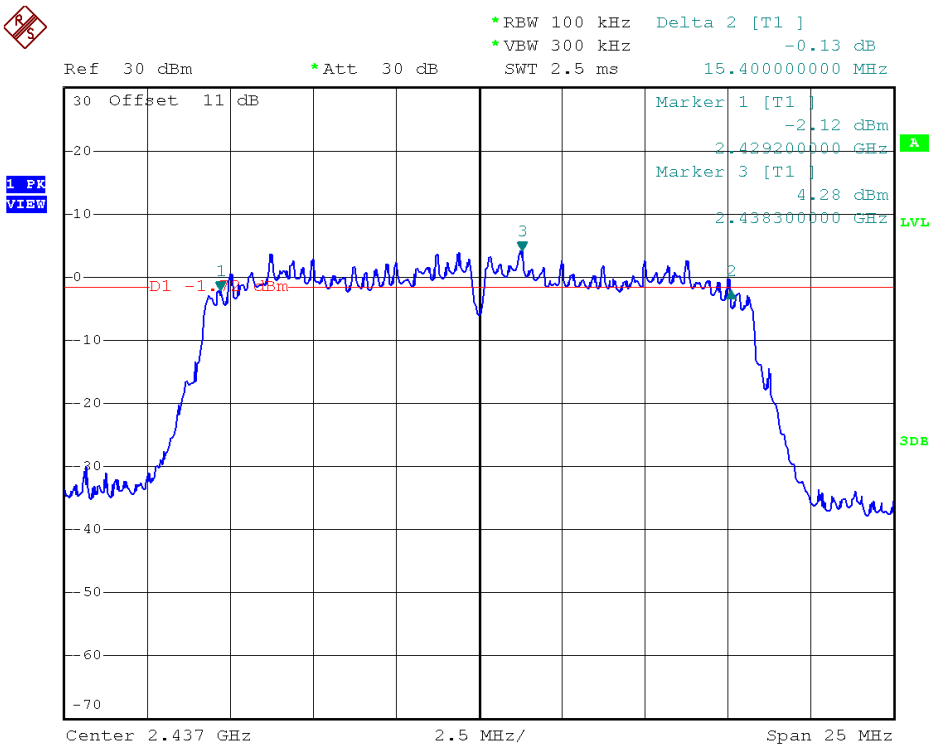
Antenna 1 - 802.11b - 6 dB Bandwidth Plot on channel 11



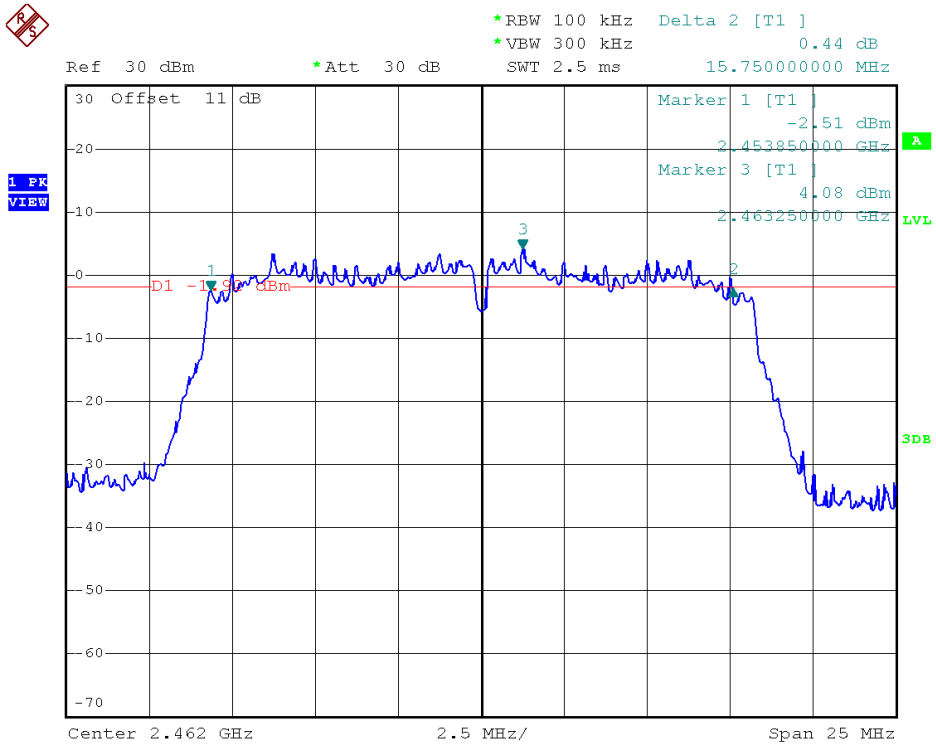
Antenna 1 - 802.11g - 6 dB Bandwidth Plot on channel 1



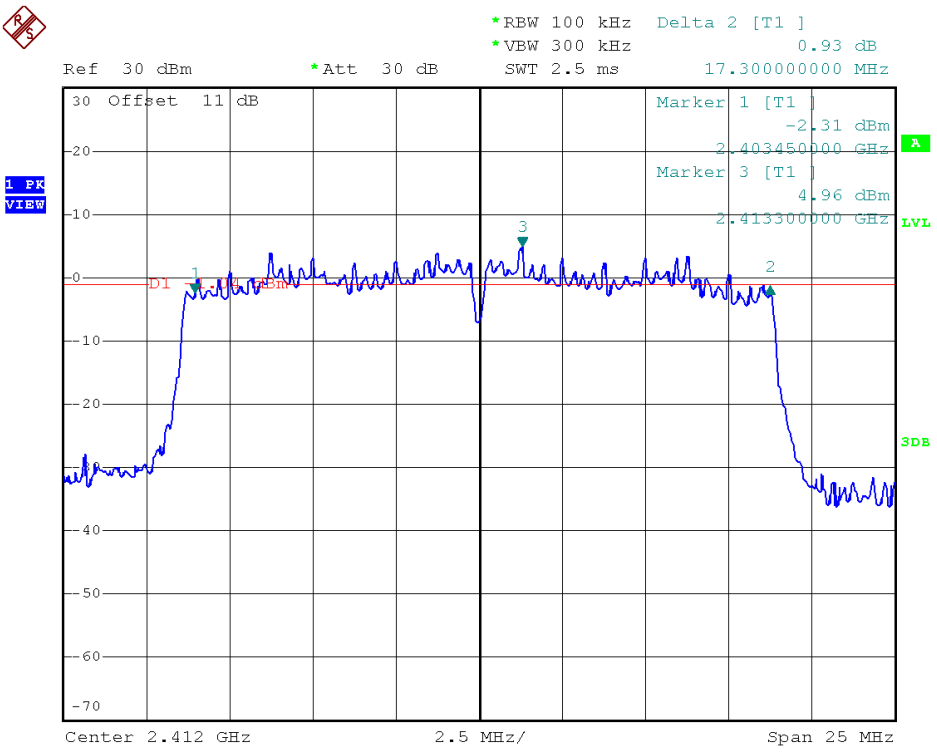
Antenna 1 - 802.11g - 6 dB Bandwidth Plot on channel 6



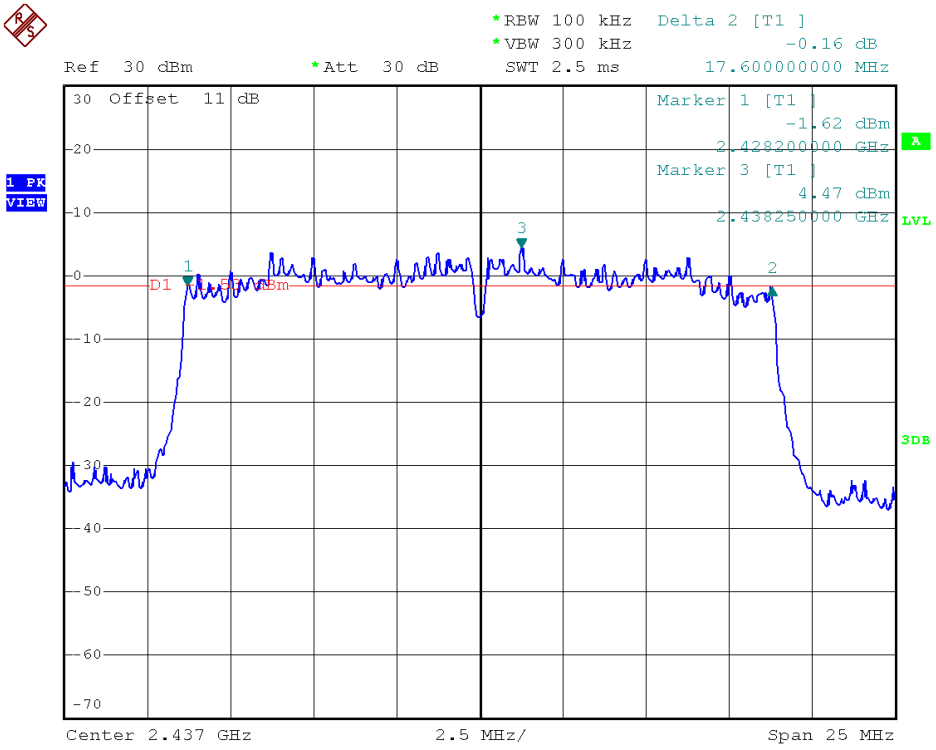
Antenna 1 - 802.11g - 6 dB Bandwidth Plot on channel 11



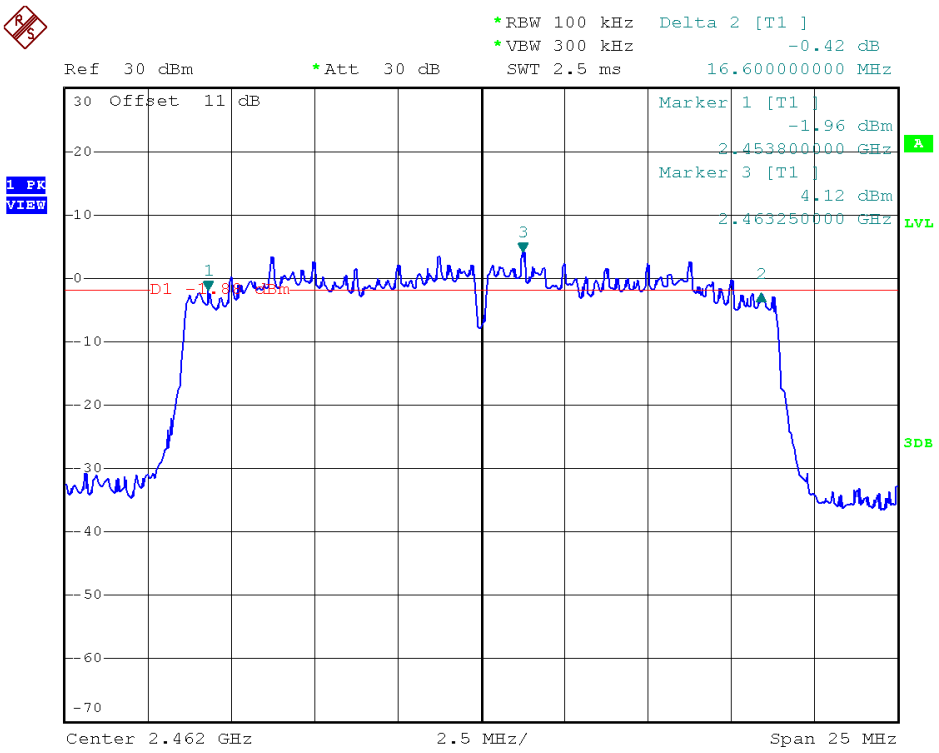
Antenna 1 - 802.11n20 - 6 dB Bandwidth Plot on channel 1



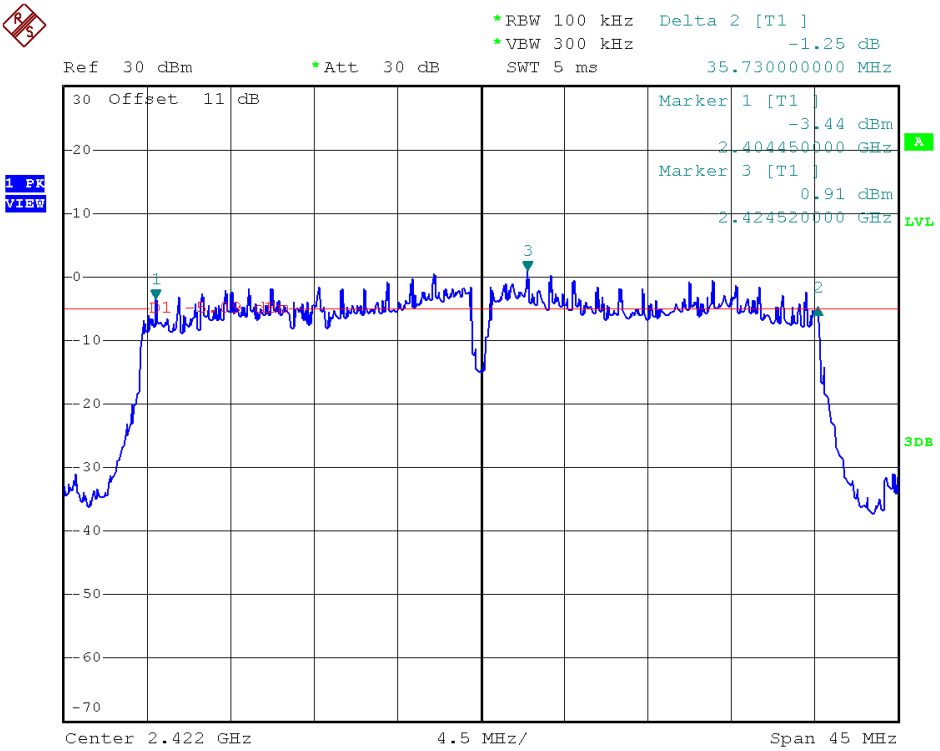
Antenna 1 - 802.11n20 - 6 dB Bandwidth Plot on channel 6



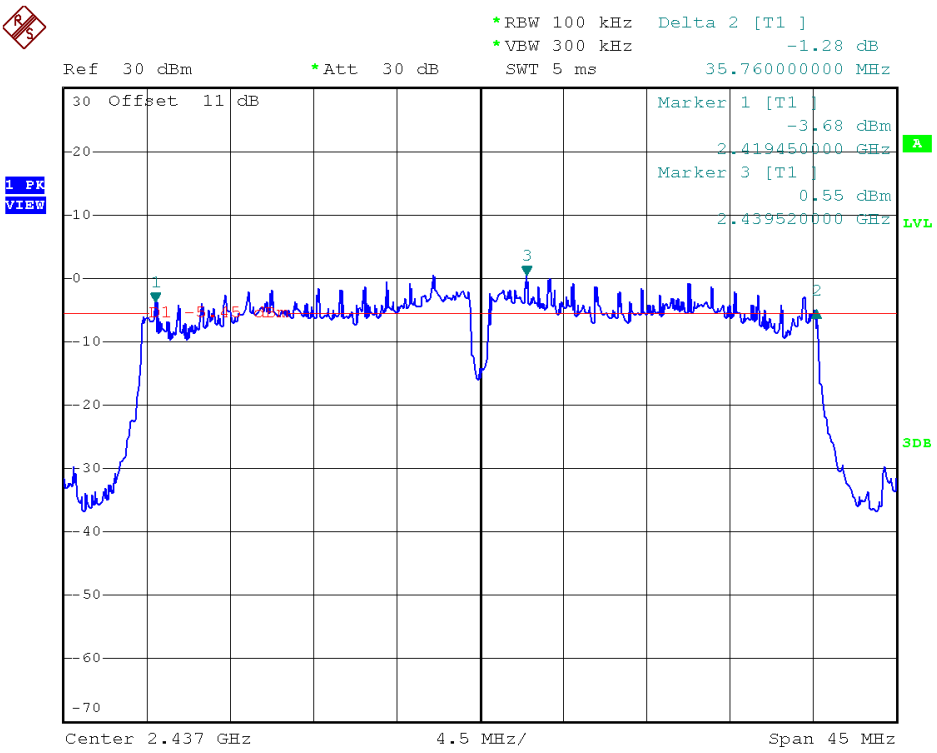
Antenna 1 - 802.11n20 - 6 dB Bandwidth Plot on channel 11



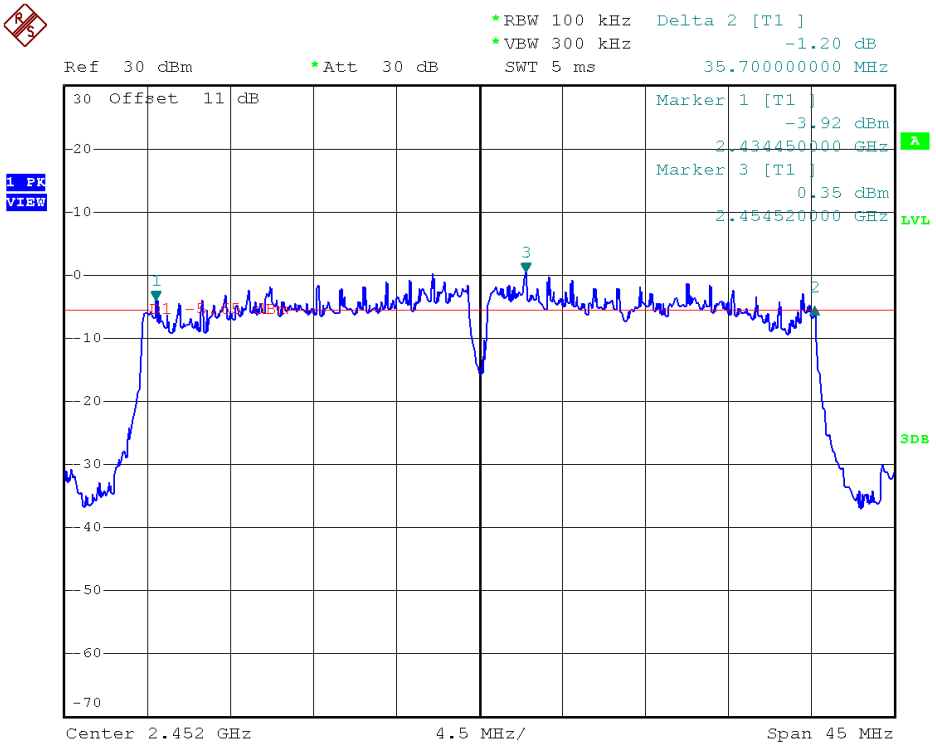
Antenna 1 - 802.11n40 - 6 dB Bandwidth Plot on channel 3



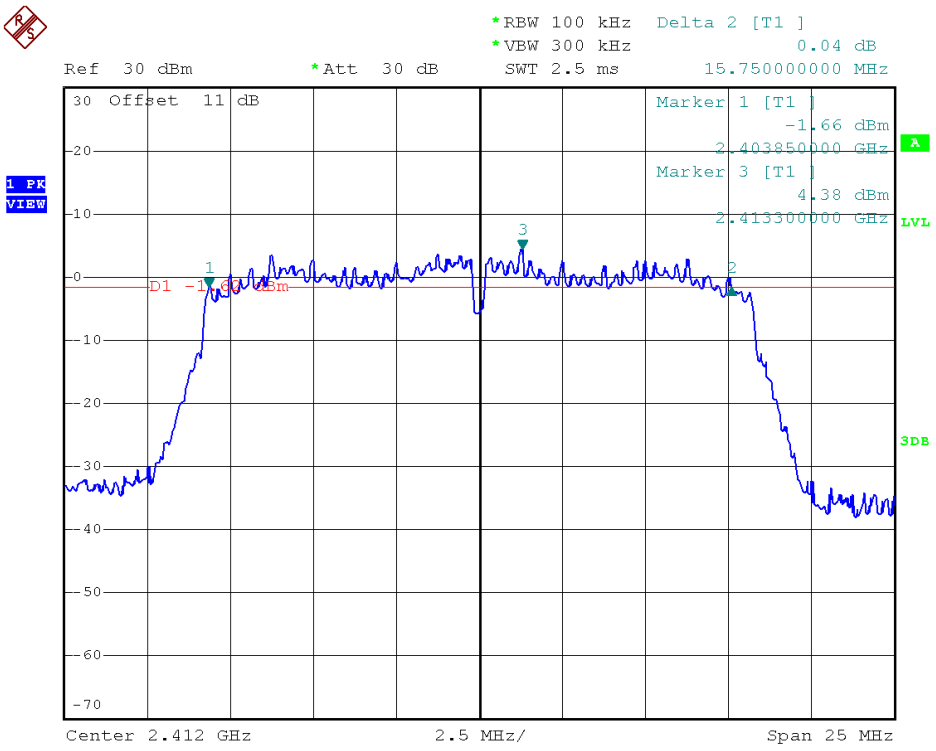
Antenna 1 - 802.11n40 - 6 dB Bandwidth Plot on channel 6



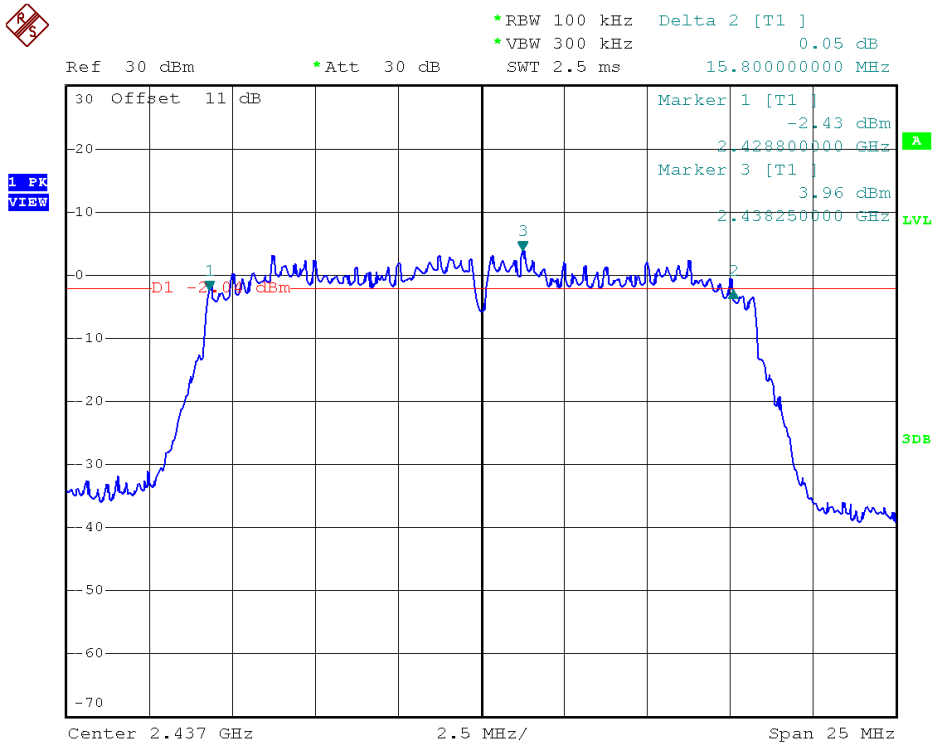
Antenna 1 - 802.11n40 - 6 dB Bandwidth Plot on channel 9



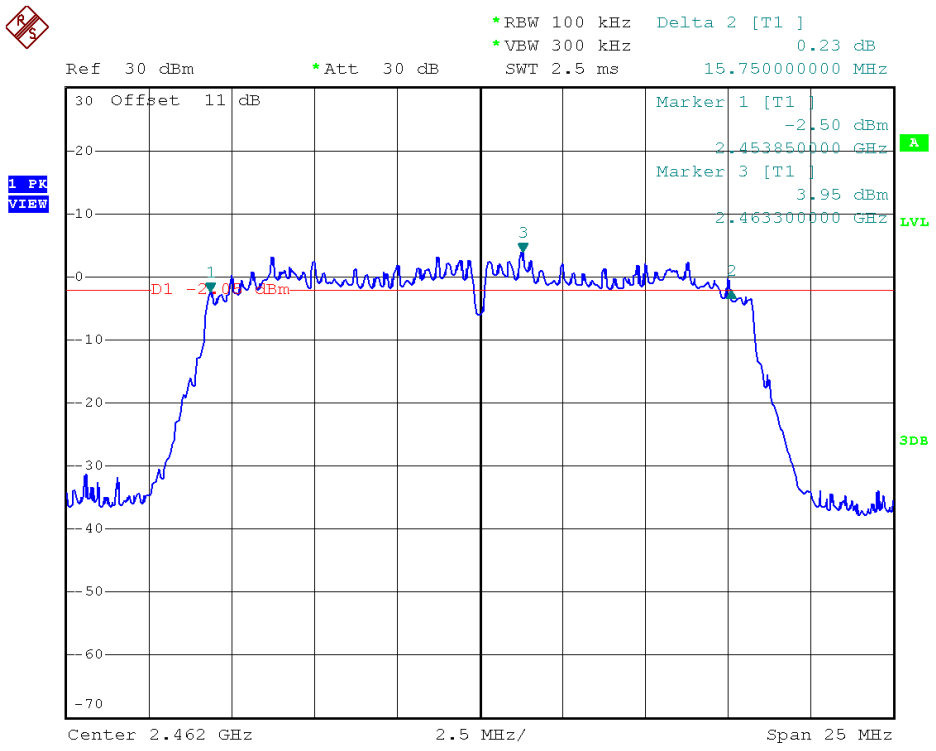
Antenna 2 - 802.11g - 6 dB Bandwidth Plot on channel 1



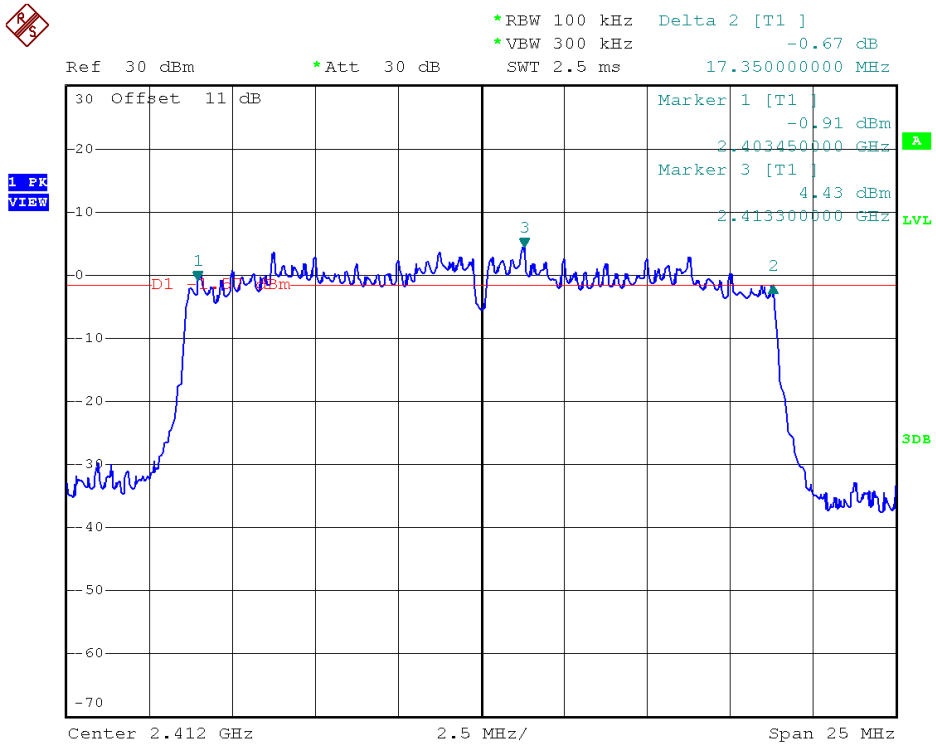
Antenna 2 - 802.11g - 6 dB Bandwidth Plot on channel 6



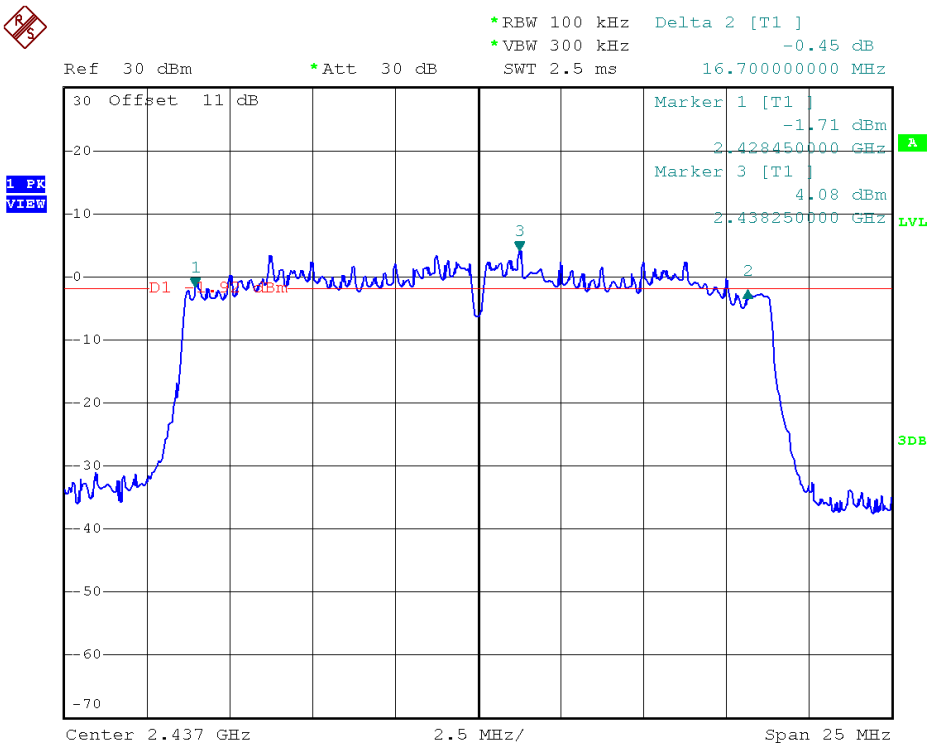
Antenna 2 - 802.11g - 6 dB Bandwidth Plot on channel 11



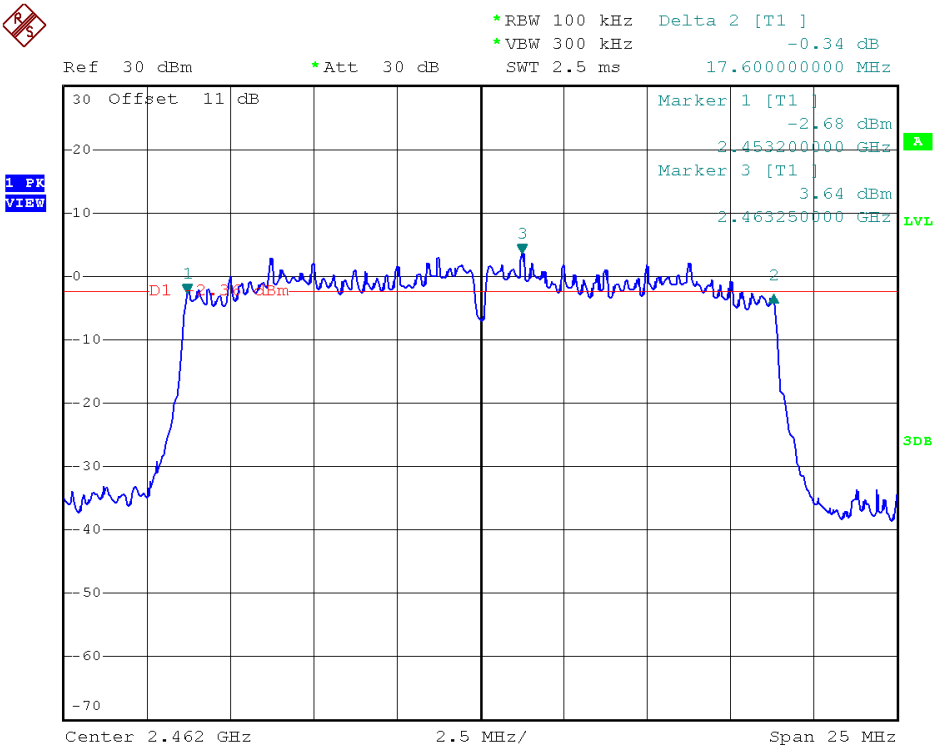
Antenna 2 - 802.11n20 - 6 dB Bandwidth Plot on channel 1



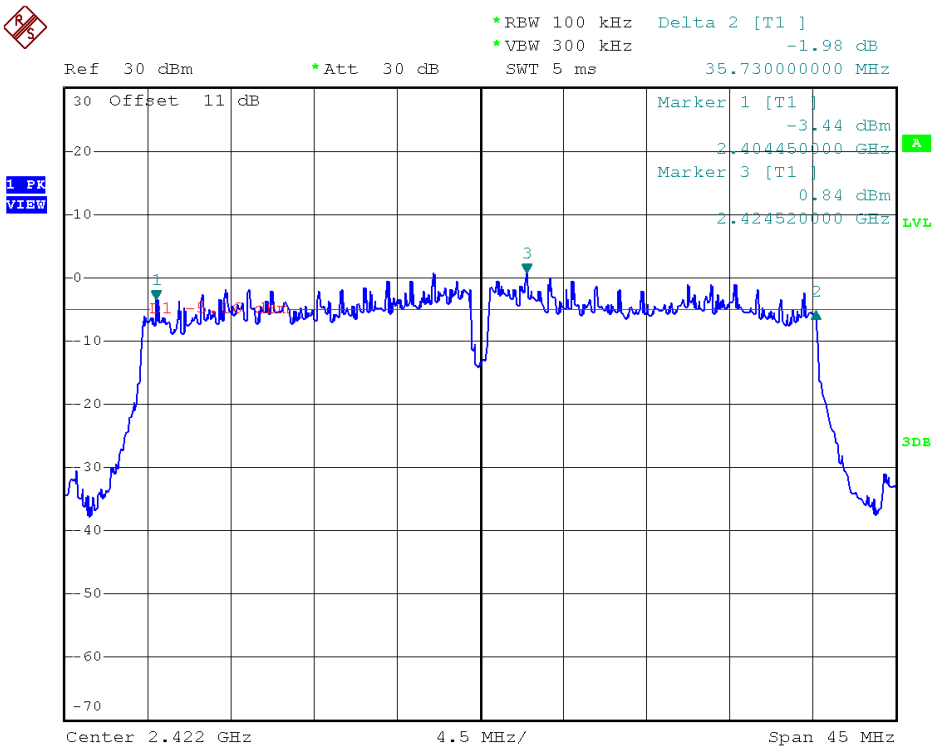
Antenna 2 - 802.11n20 - 6 dB Bandwidth Plot on channel 6



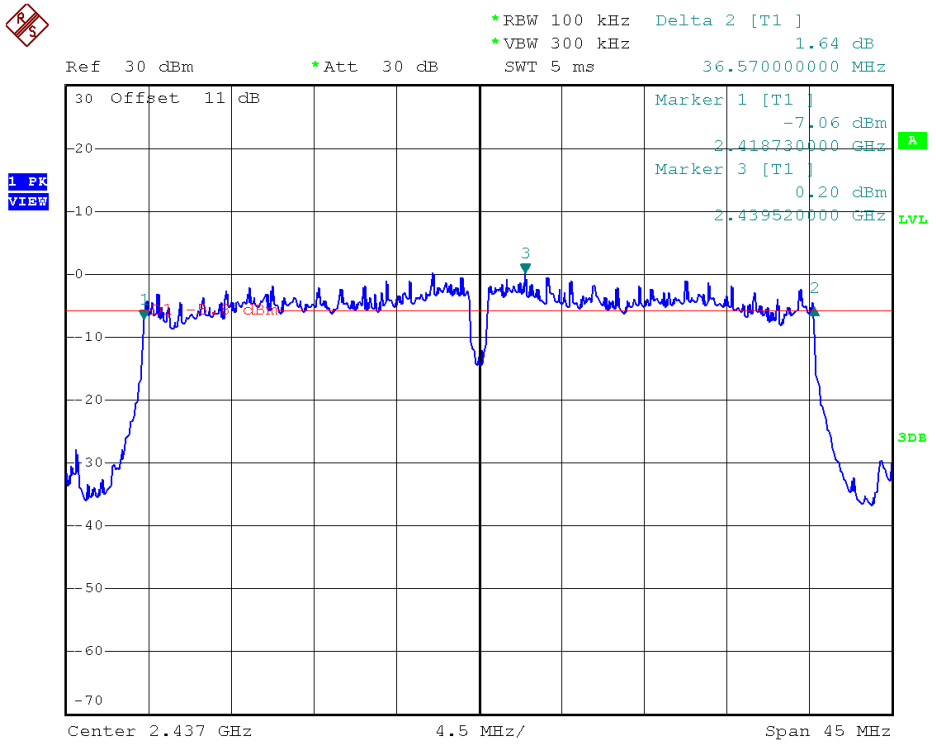
Antenna 2 - 802.11n20 - 6 dB Bandwidth Plot on channel 11



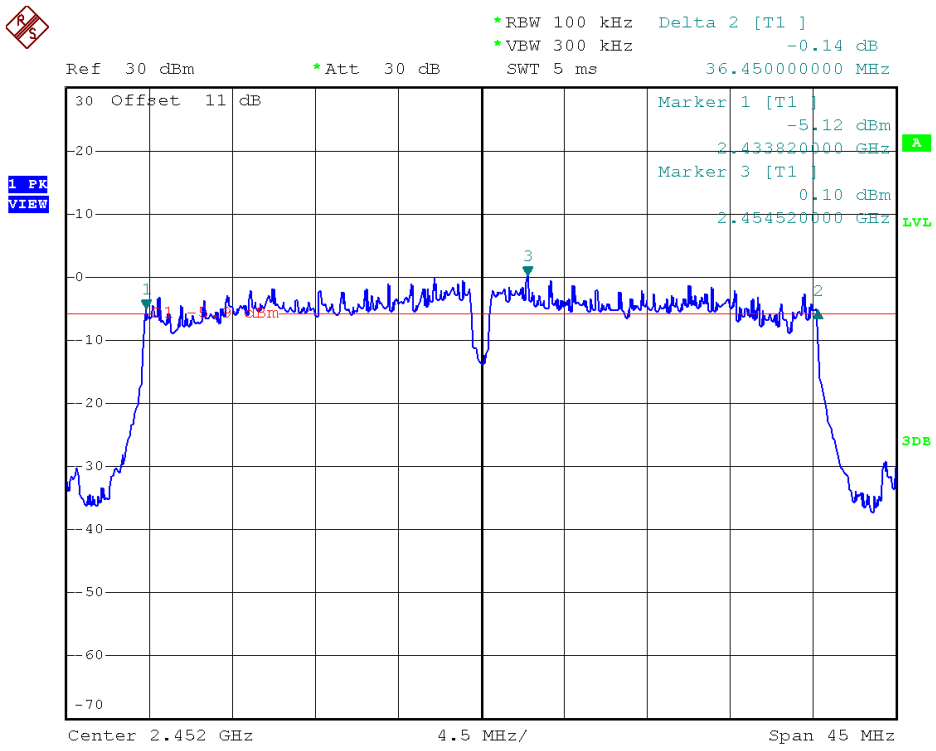
Antenna 2 - 802.11n40 - 6 dB Bandwidth Plot on channel 3



Antenna 2 - 802.11n40 - 6 dB Bandwidth Plot on channel 6



Antenna 2 - 802.11n40 - 6 dB Bandwidth Plot on channel 9



2.4. Conducted Band Edges and Spurious Emissions

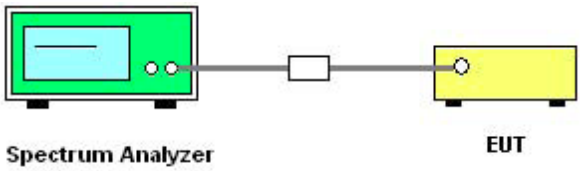
2.4.1. Limit of Conducted Band Edges and Spurious Emissions

All harmonics/spurious must be at least 20 dB down from the highest emission level within the authorized band.

2.4.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

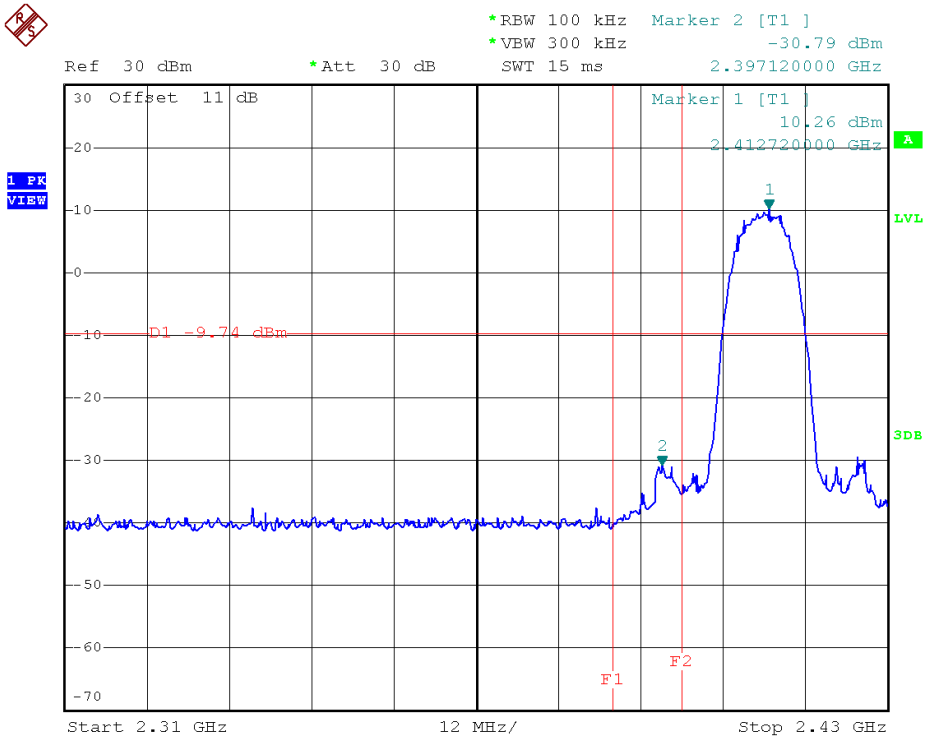
2.4.3. Test Setup



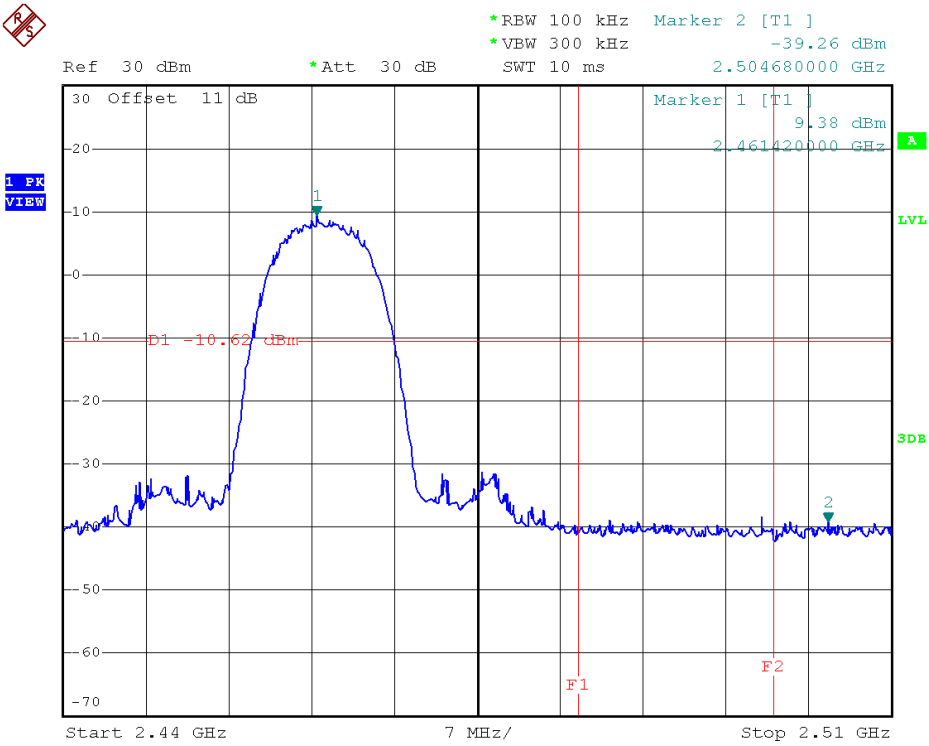
2.4.4. Test Procedure

1. The testing follows FCC KDB558074 D01 v03r03.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

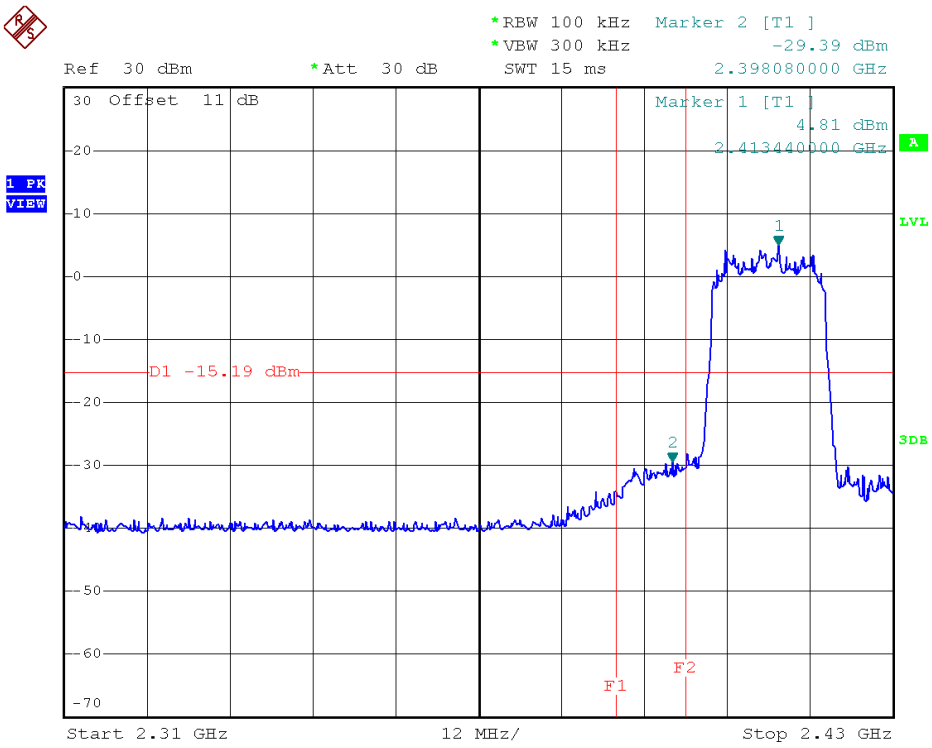
2.4.5. Test Results of Conducted Band Edges



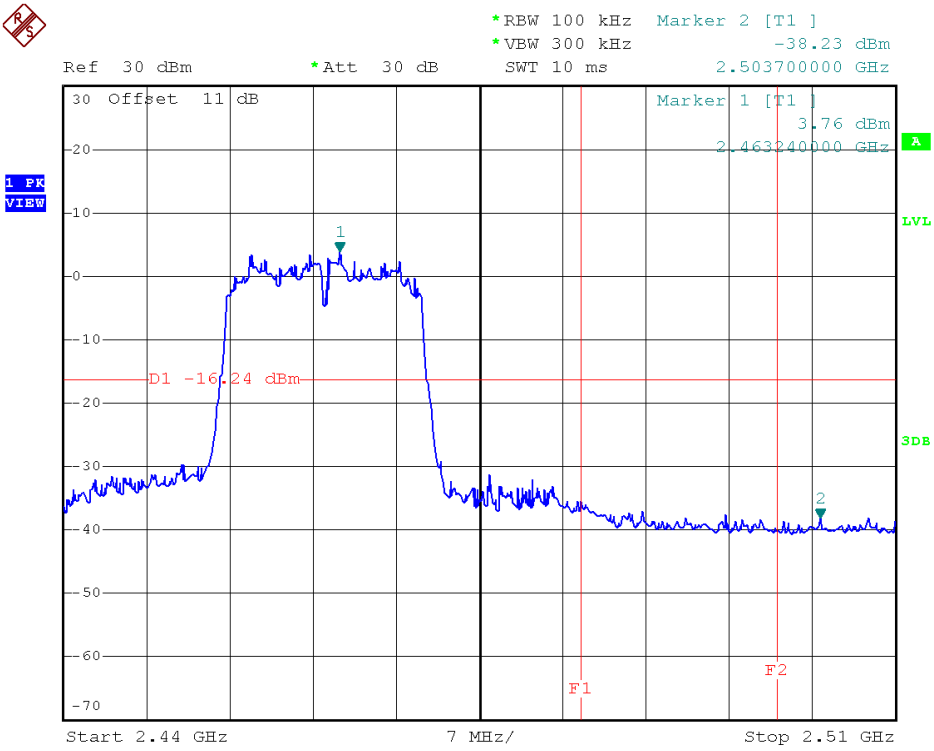
Antenna 1 - 802.11b - Low Band Edge Plot on Channel 1



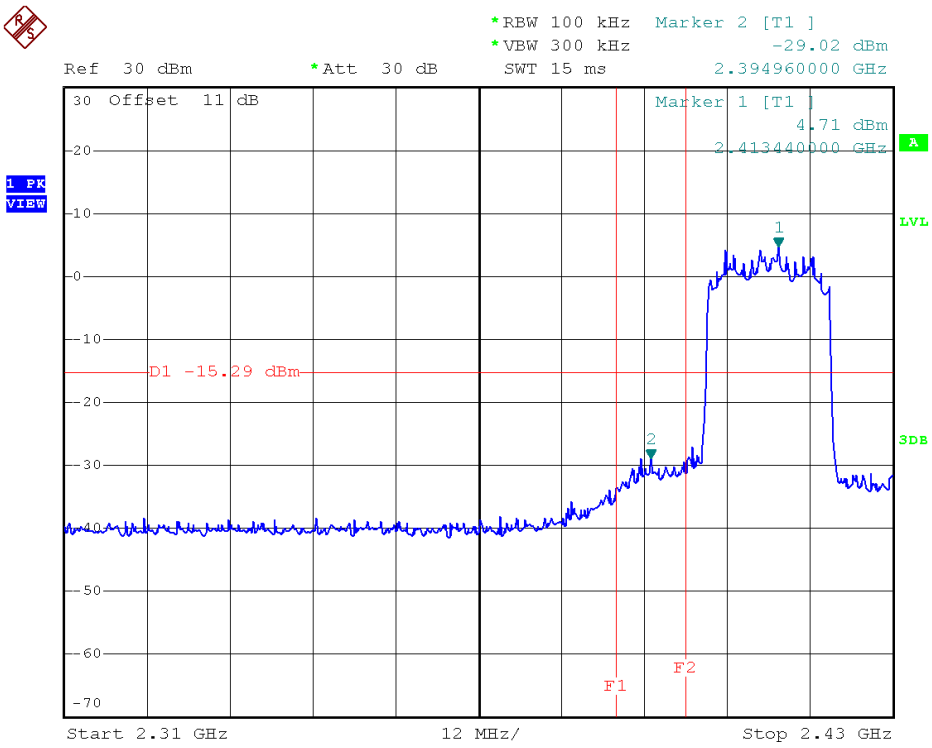
Antenna 1 - 802.11b - High Band Edge Plot on Channel 11



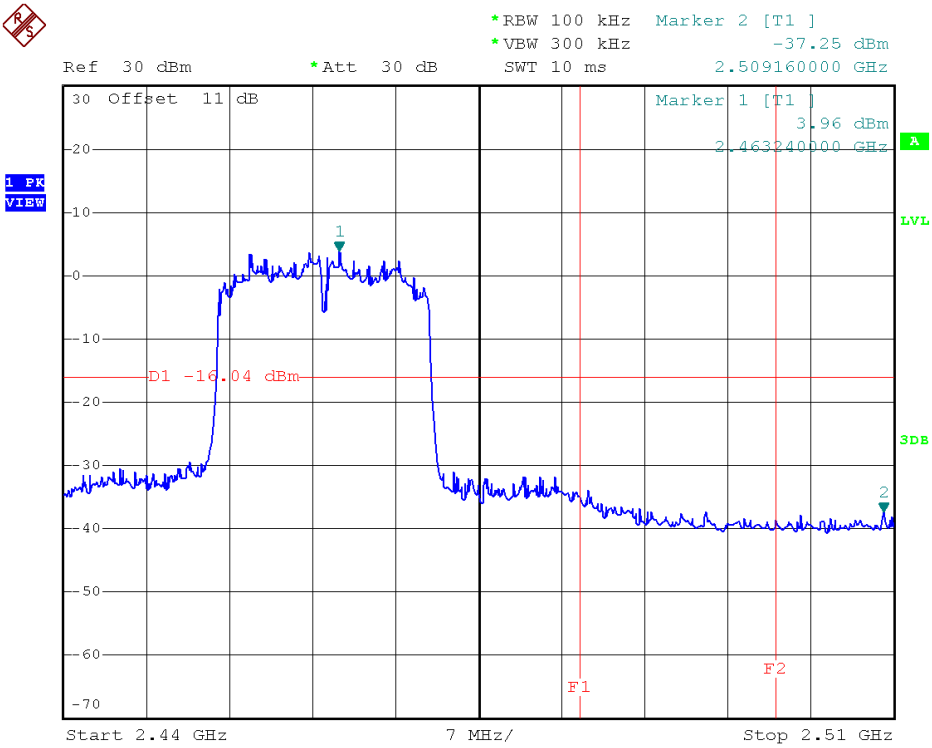
Antenna 1 - 802.11g - Low Band Edge Plot on Channel 1



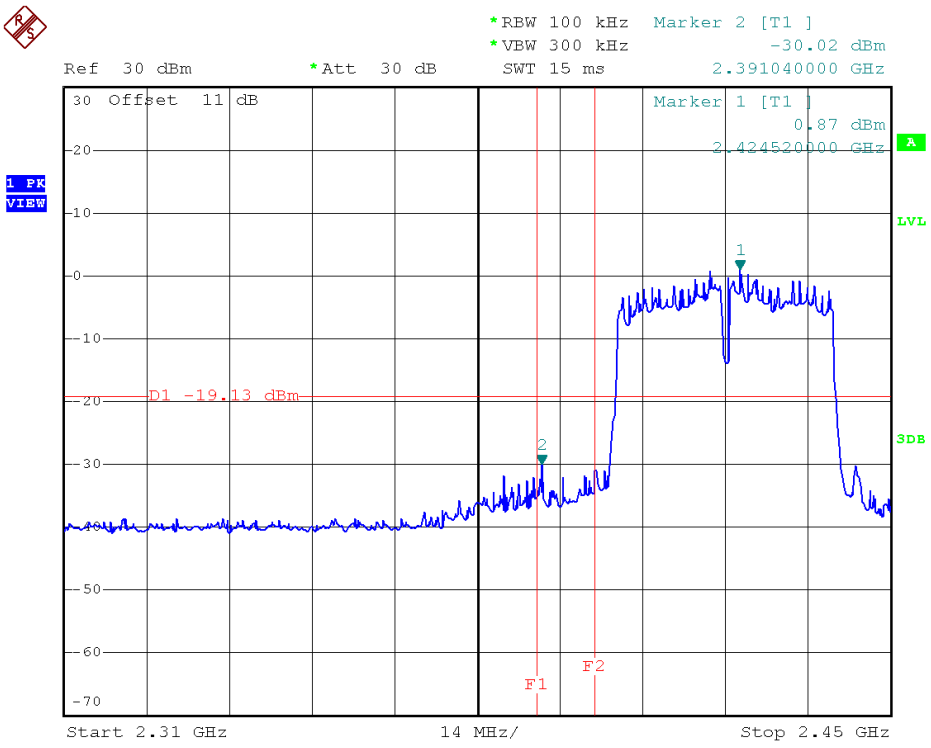
Antenna 1 - 802.11g - High Band Edge Plot on Channel 11



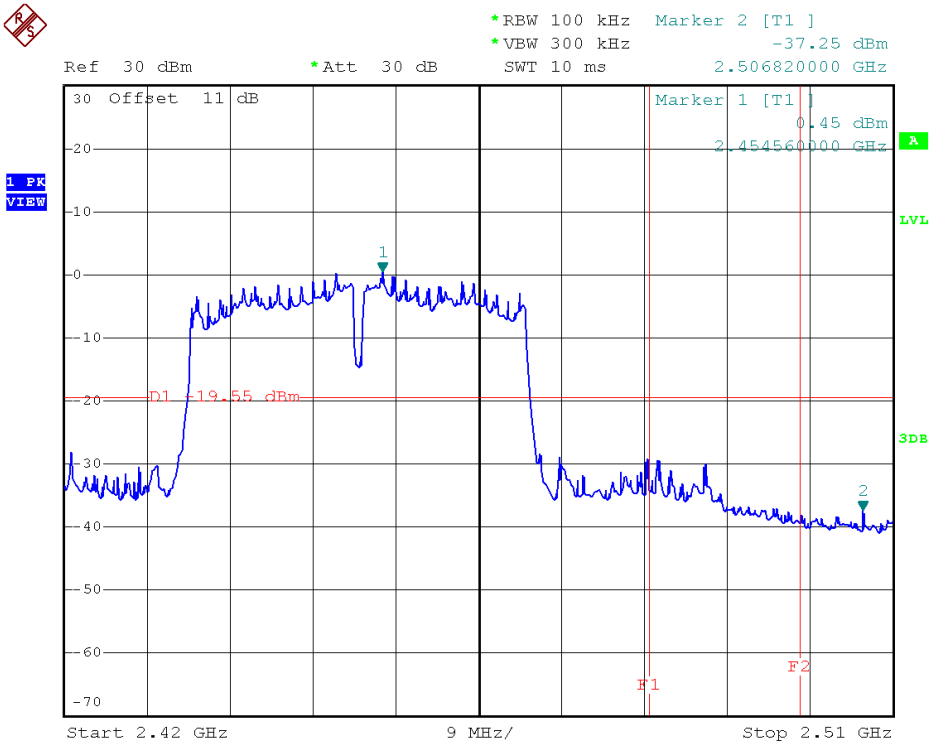
Antenna 1 - 802.11n20 - Low Band Edge Plot on Channel 1



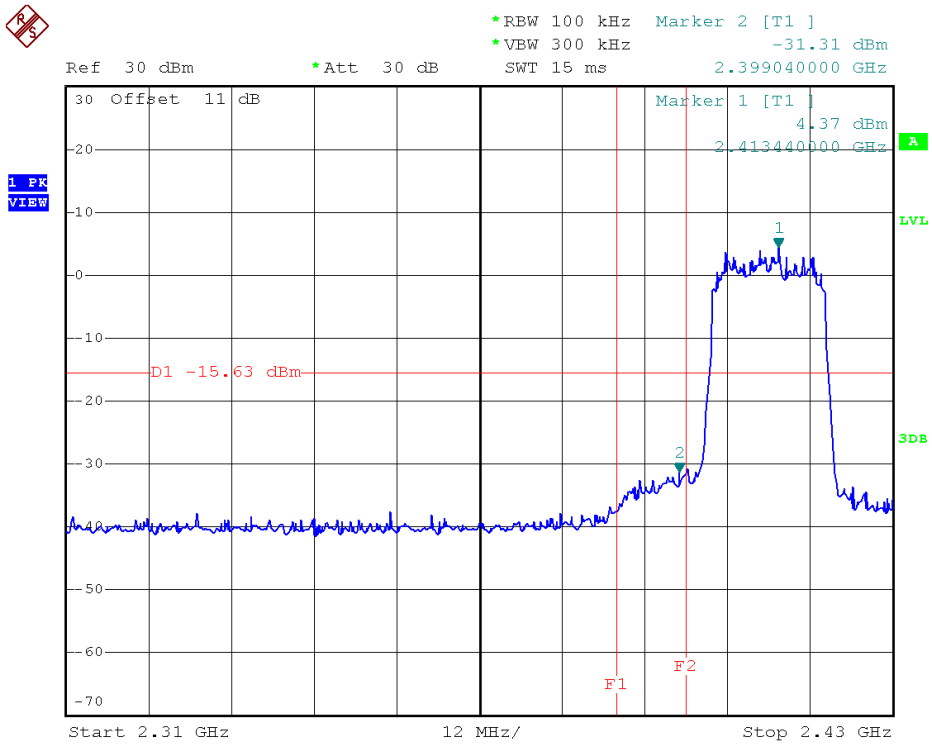
Antenna 1 - 802.11n20 - High Band Edge Plot on Channel 11



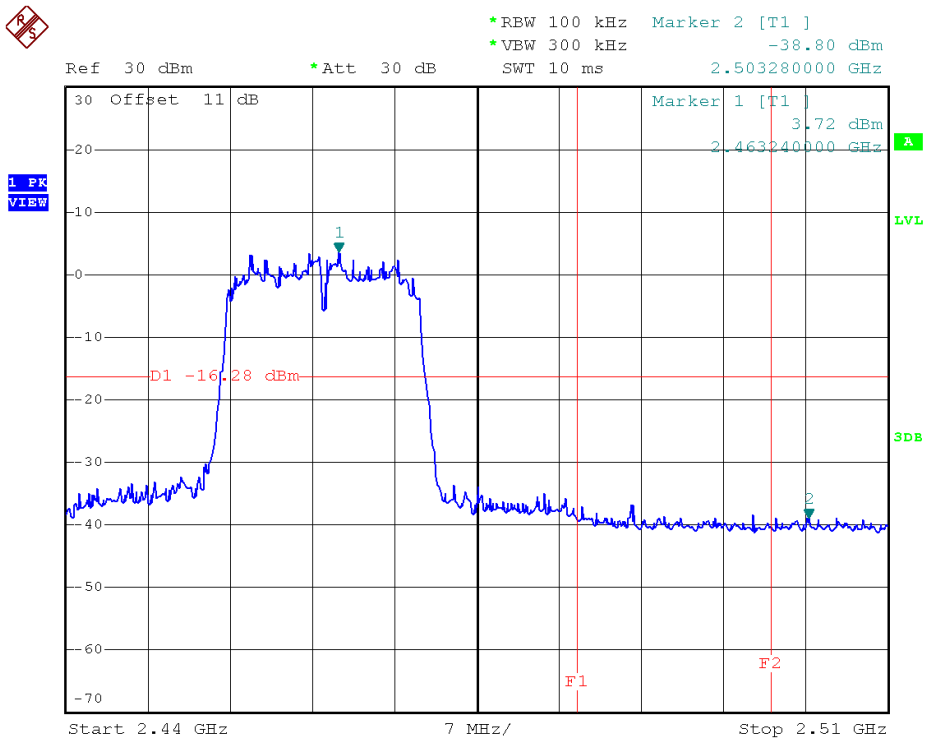
Antenna 1 - 802.11n40 - Low Band Edge Plot on Channel 3



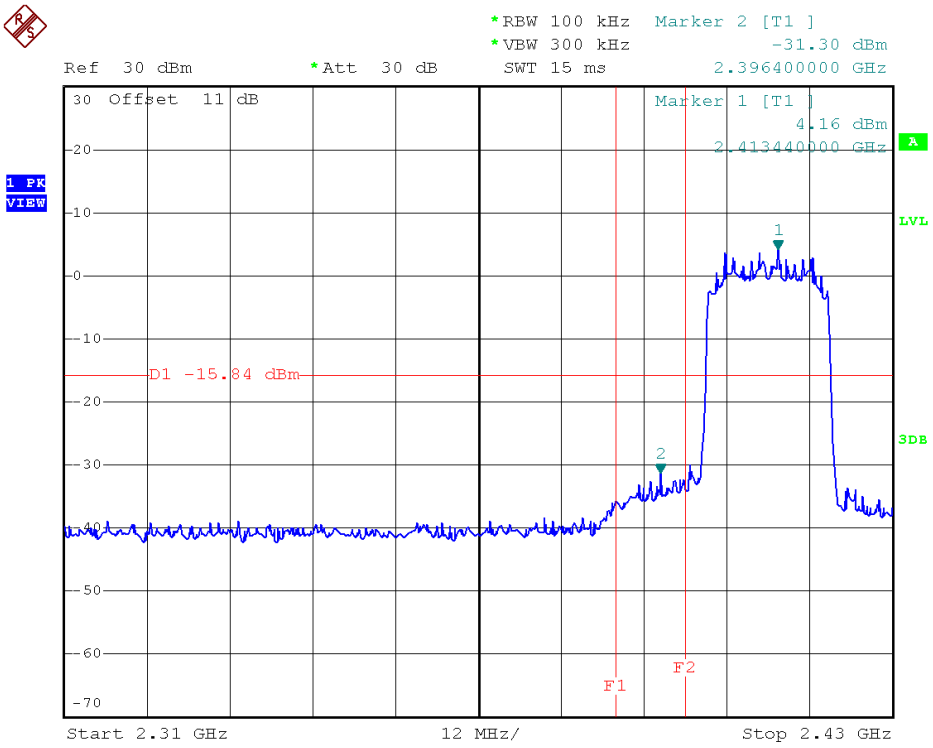
Antenna 1 - 802.11n40 - High Band Edge Plot on Channel 9



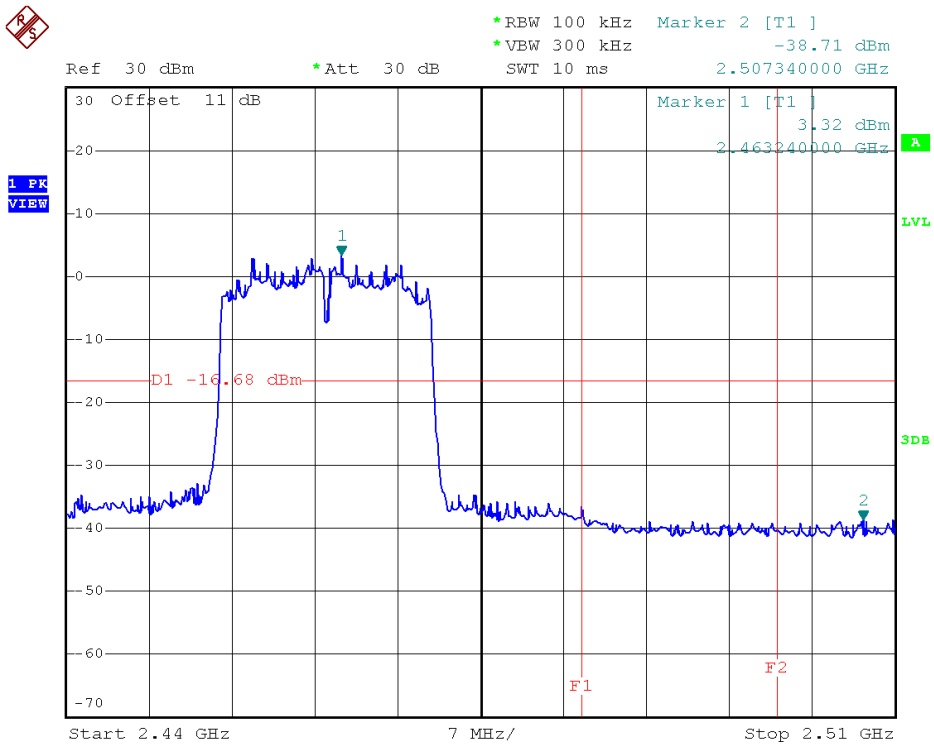
Antenna 2 - 802.11g - Low Band Edge Plot on Channel 1



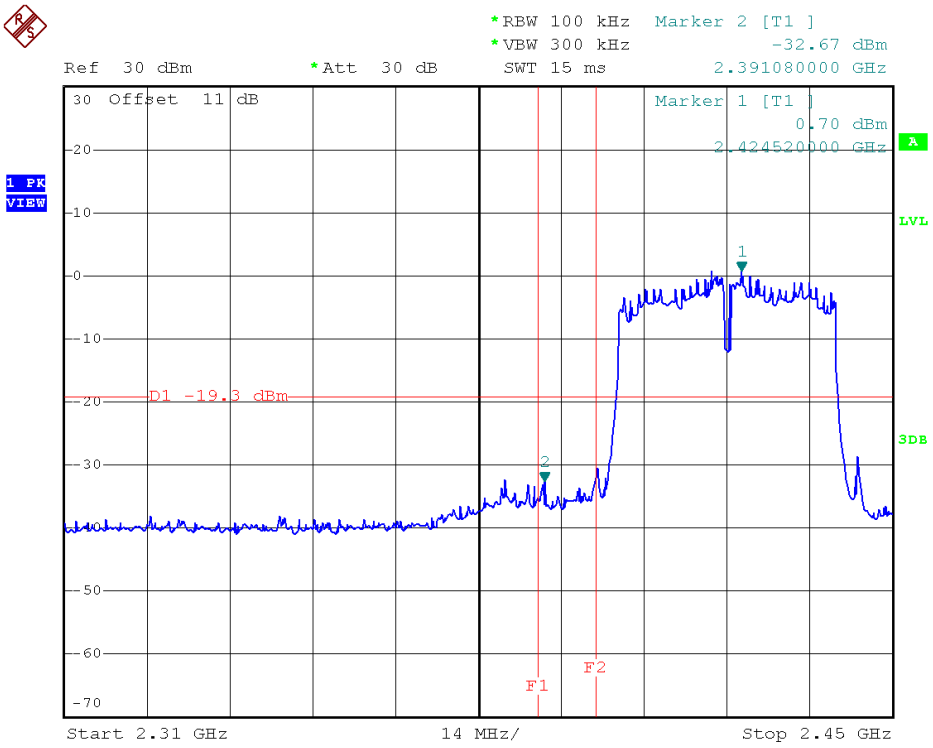
Antenna 2 - 802.11g - High Band Edge Plot on Channel 11



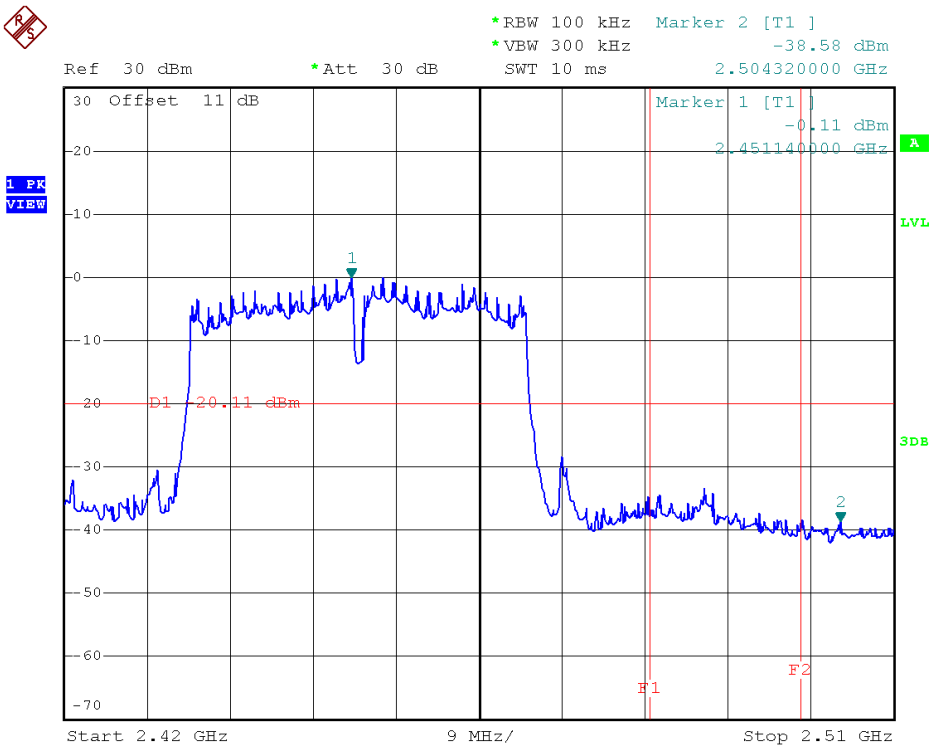
Antenna 2 - 802.11n20 - Low Band Edge Plot on Channel 1



Antenna 2 - 802.11n20 - High Band Edge Plot on Channel 11



Antenna 2 - 802.11n40 - Low Band Edge Plot on Channel 3



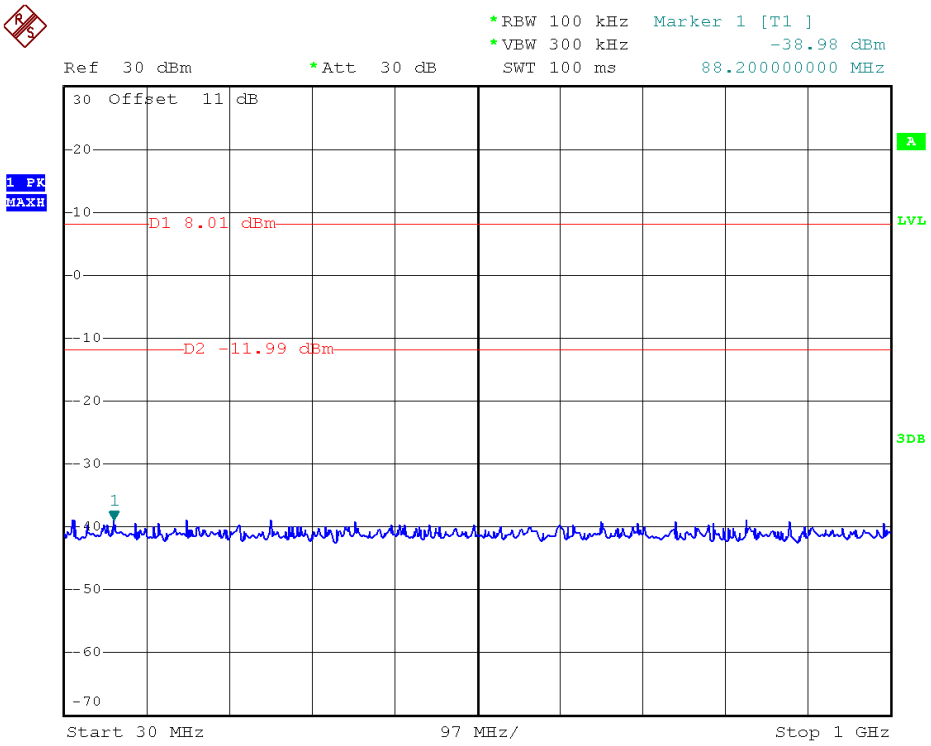
Antenna 2 - 802.11n40 - High Band Edge Plot on Channel 9

2.4.6. Test Result of Conducted Spurious Emission

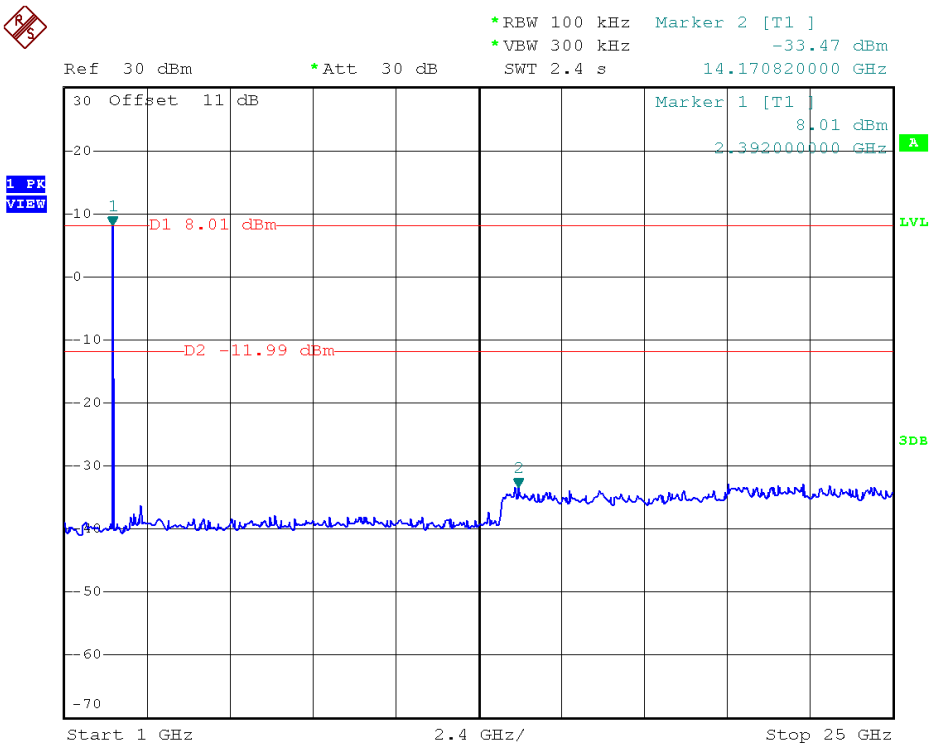
NOTE1: Two antenna were tested and found antenna 1 for 802.11b/g is the worst mode，the worst results were recorded in this report.

NOTE2: Two antenna were tested and found antenna 1+2 for 802.11n is the worst mode，the worst results were recorded in this report.

802.11b - Conducted Spurious Emission Plot on channel 1

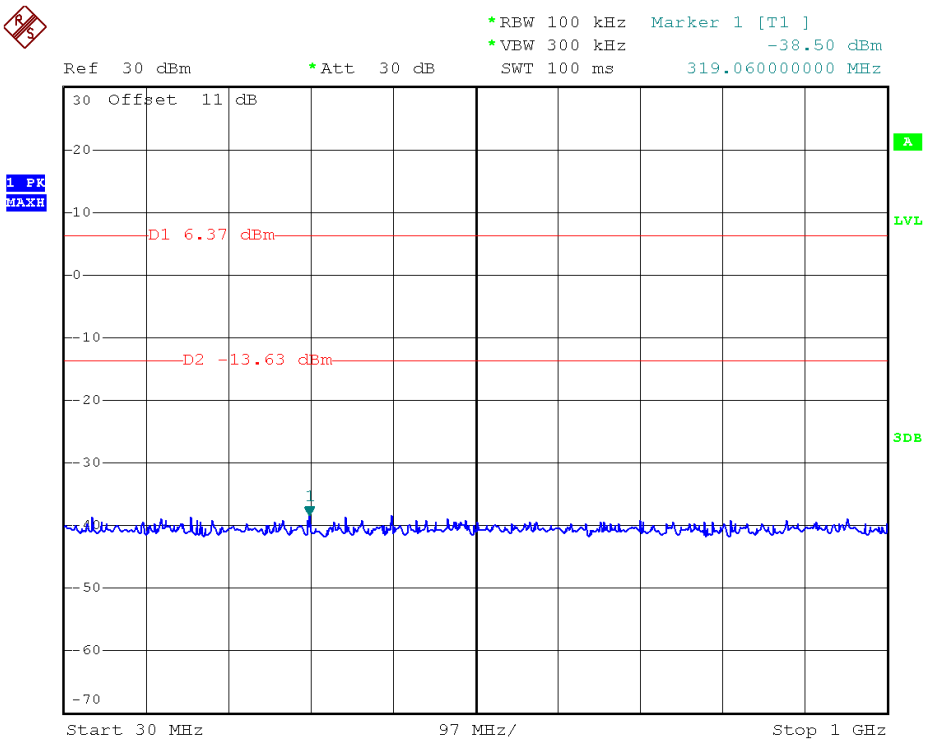


Channel = 1, 30MHz to 1GHz

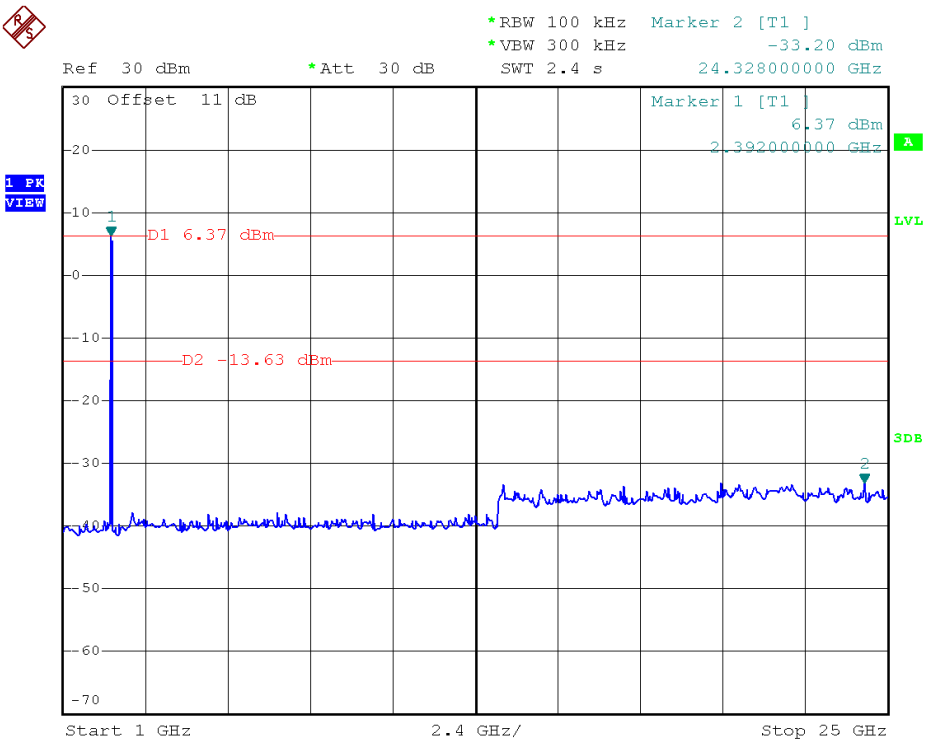


Channel = 1, 1GHz to 25GHz

802.11b - Conducted Spurious Emission Plot on channel 6

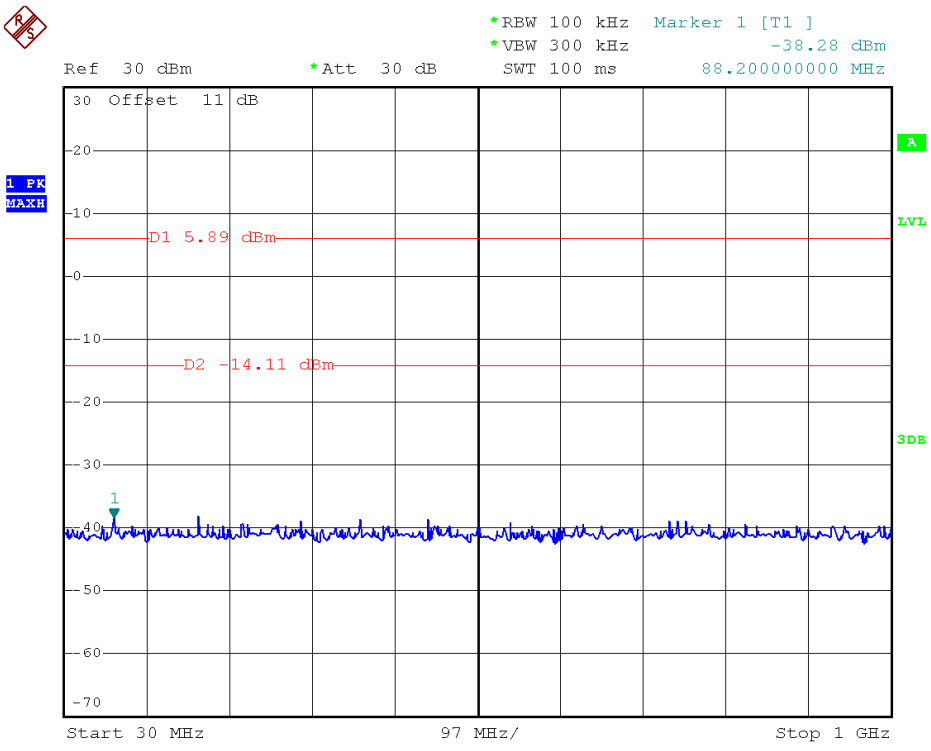


Channel = 6, 30MHz to 1GHz

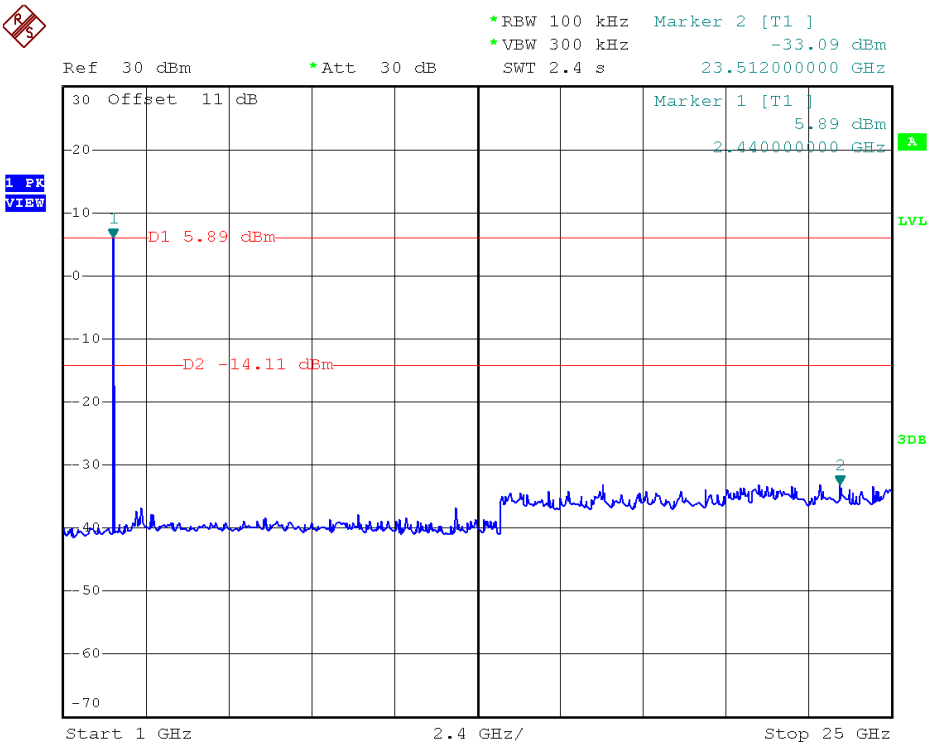


Channel = 6, 1GHz to 25GHz

802.11b - Conducted Spurious Emission Plot on channel 11

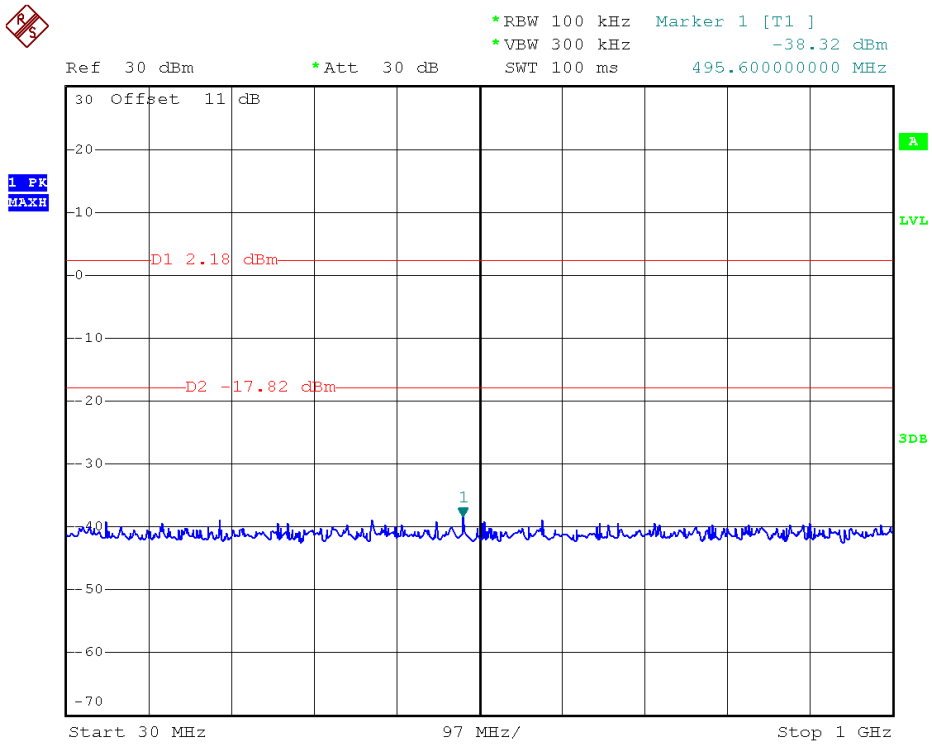


Channel = 11, 30MHz to 25GHz

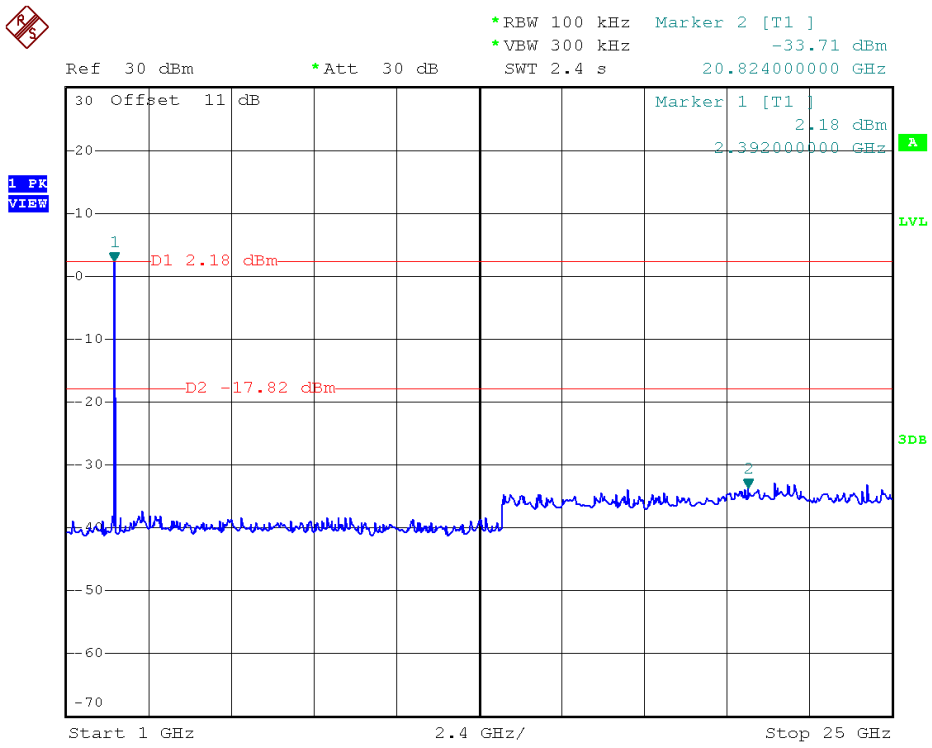


Channel = 11, 30MHz to 25GHz

802.11g - Conducted Spurious Emission Plot on channel 1

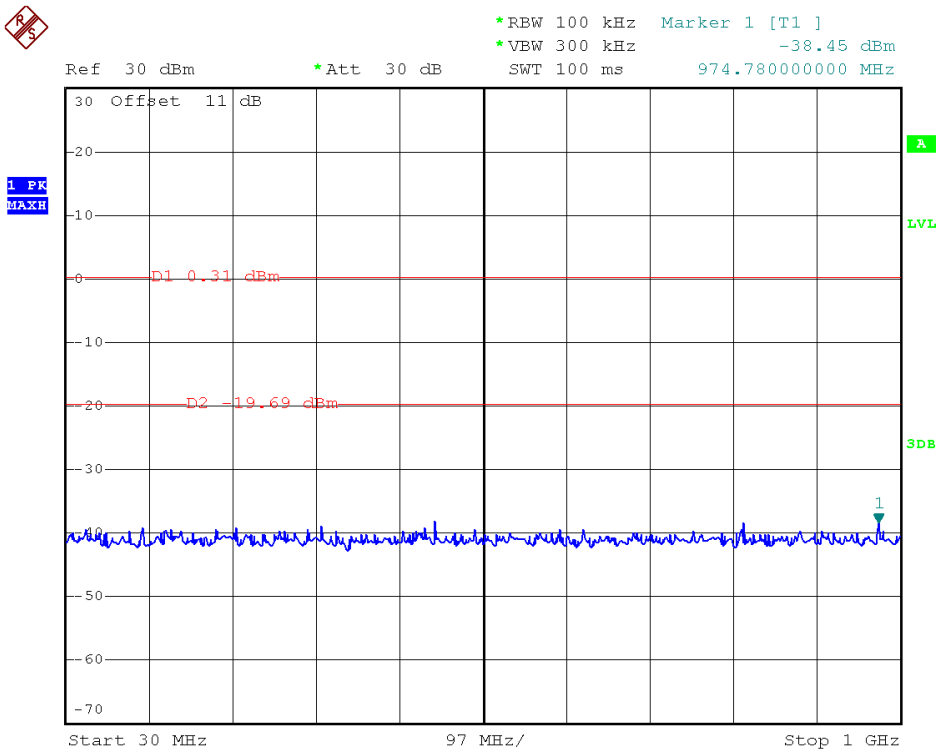


Channel = 1, 30MHz to 1GHz

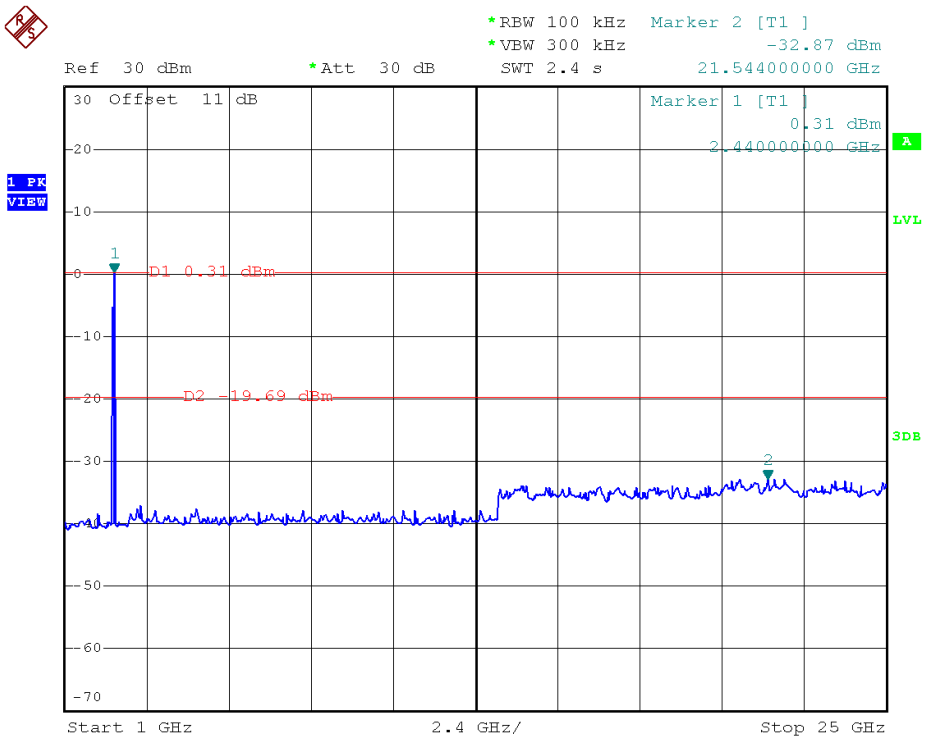


Channel = 1, 1GHz to 25GHz

802.11g - Conducted Spurious Emission Plot on channel 6

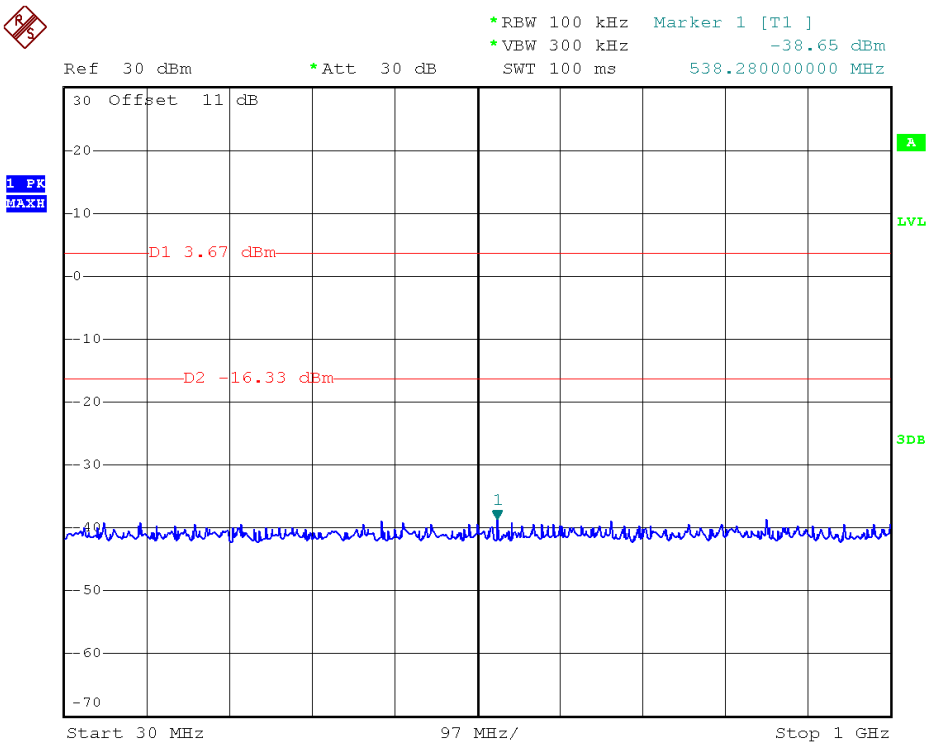


Channel = 6, 30MHz to 1GHz

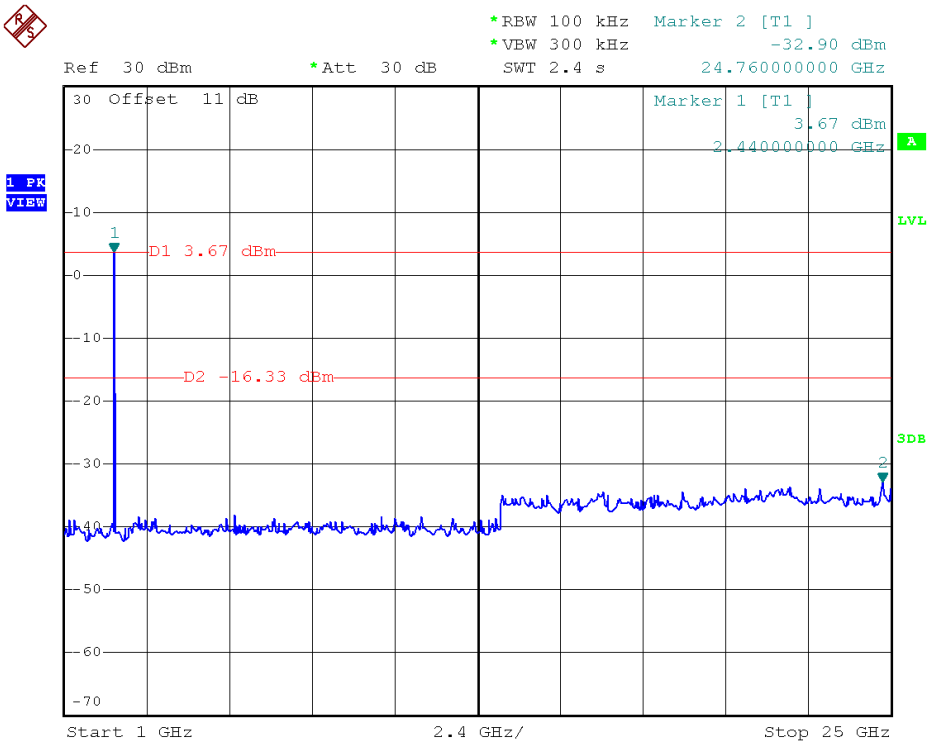


Channel = 6, 1GHz to 25GHz

802.11g - Conducted Spurious Emission Plot on channel 11

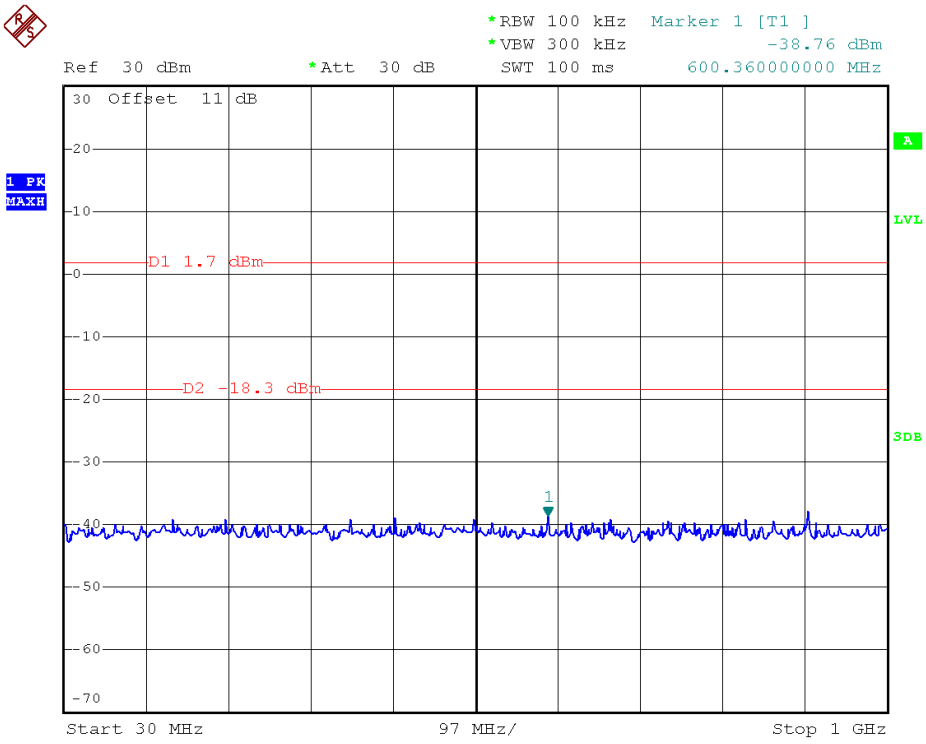


Channel = 11, 30MHz to 25GHz

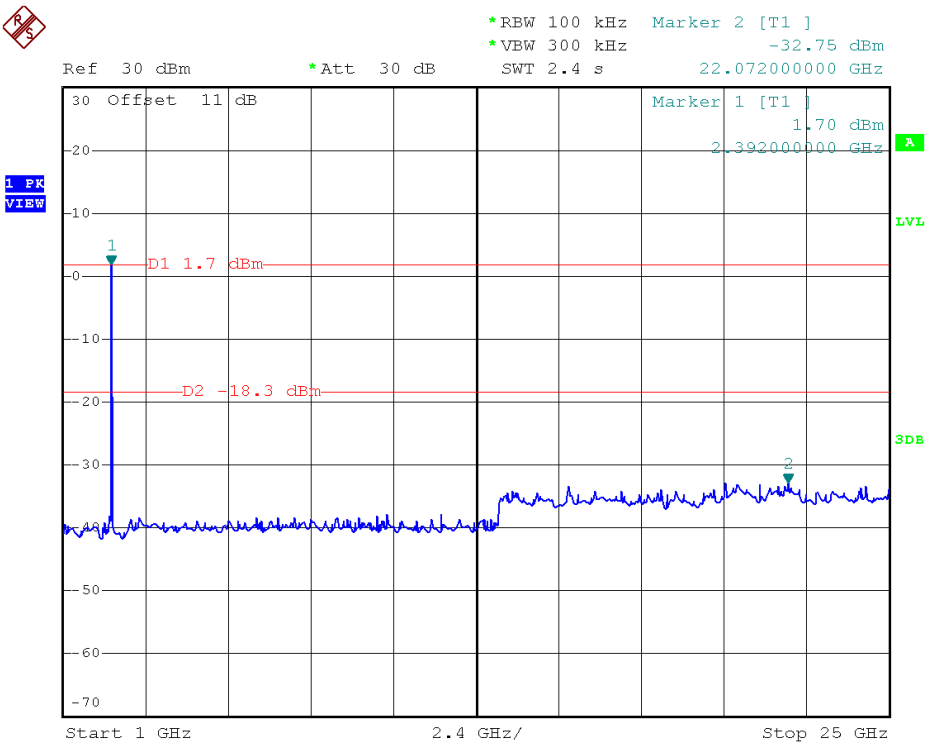


Channel = 11, 30MHz to 25GHz

802.11n20 - Conducted Spurious Emission Plot on channel 1

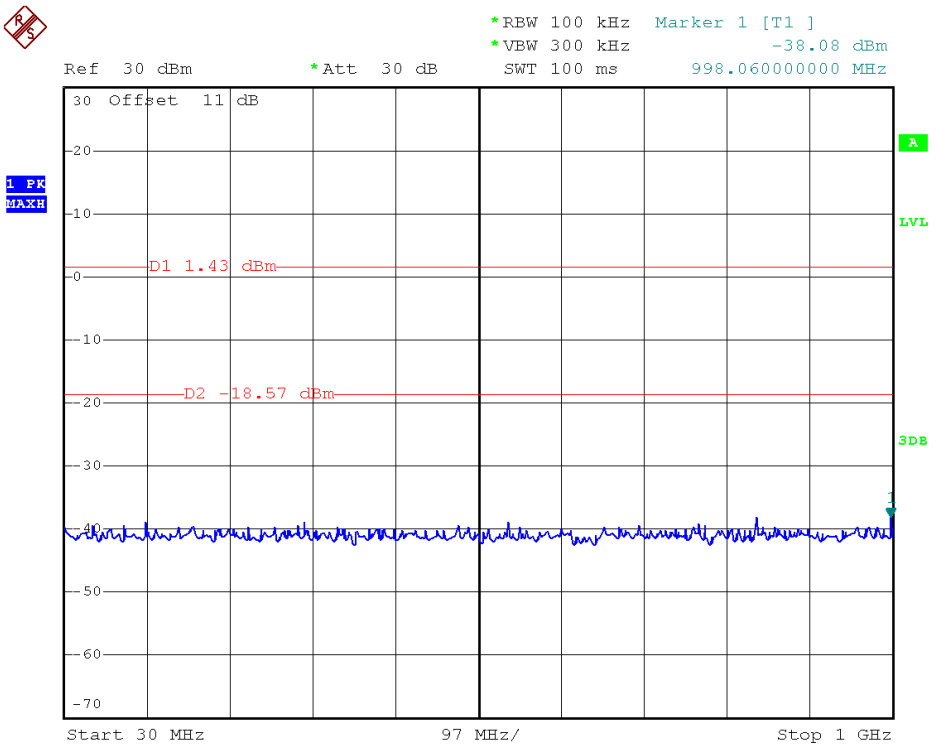


Channel = 1, 30MHz to 1GHz

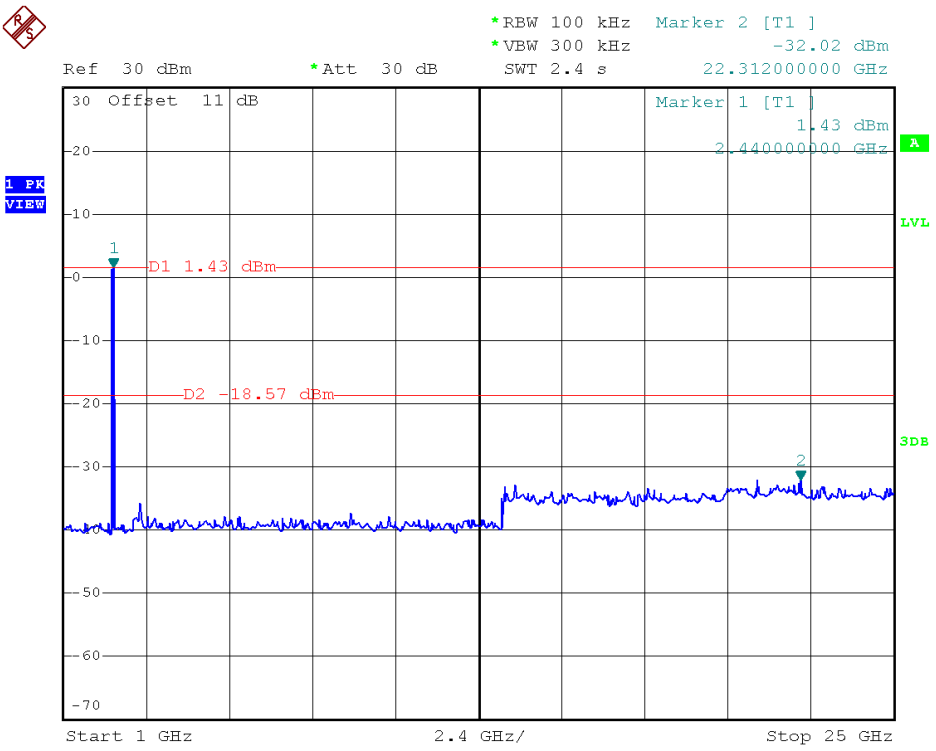


Channel = 1, 1GHz to 25GHz

802.11n20 - Conducted Spurious Emission Plot on channel 6

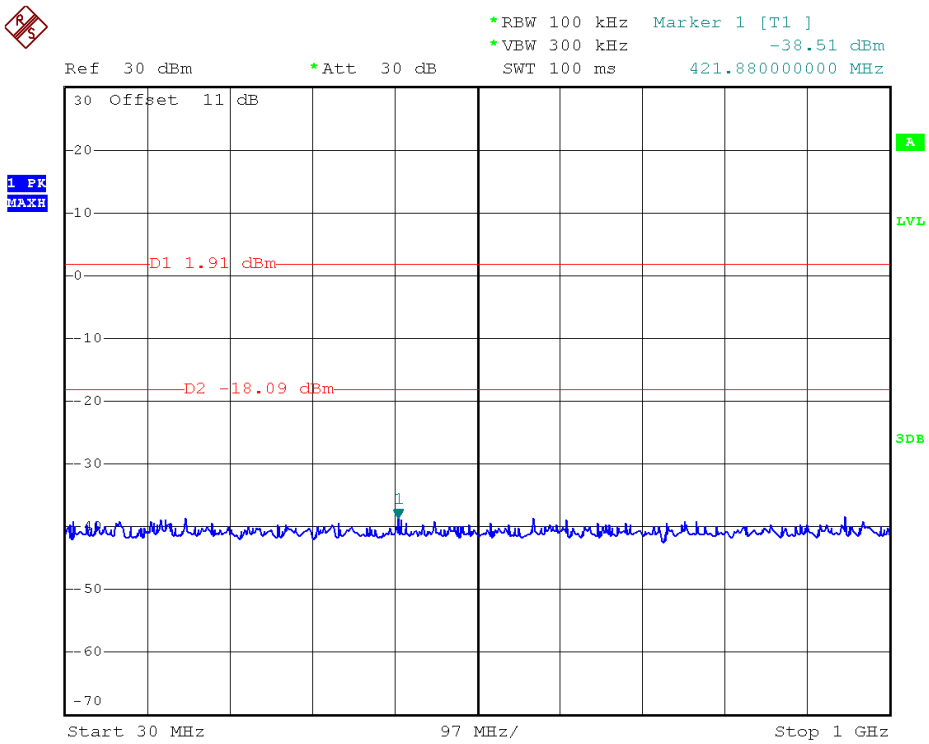


Channel = 6, 30MHz to 1GHz

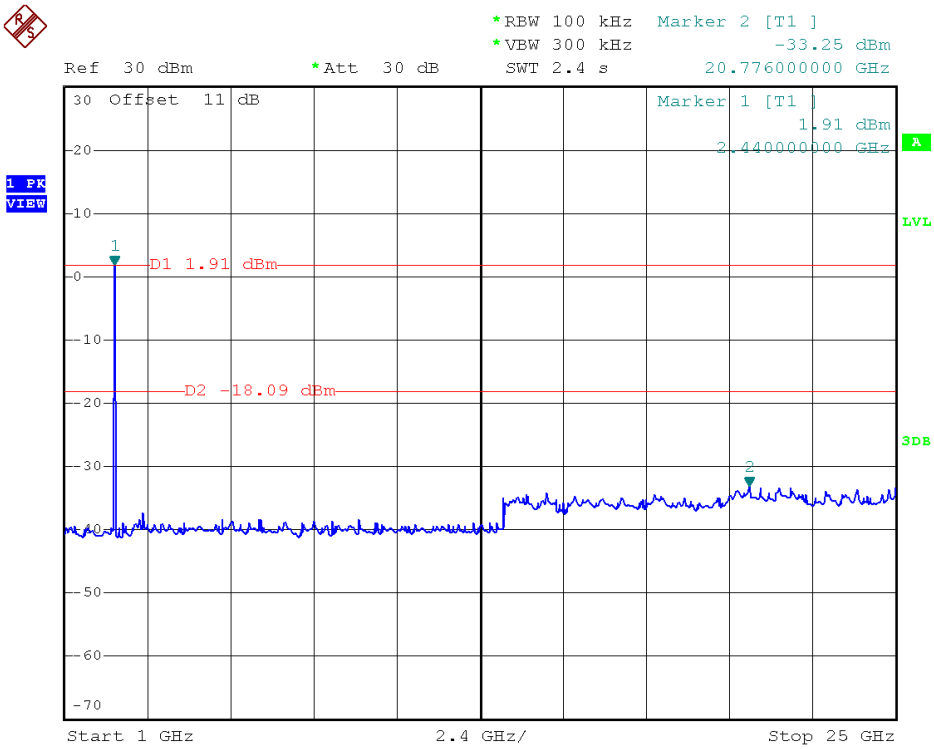


Channel = 6, 1GHz to 25GHz

802.11n20 - Conducted Spurious Emission Plot on channel 11

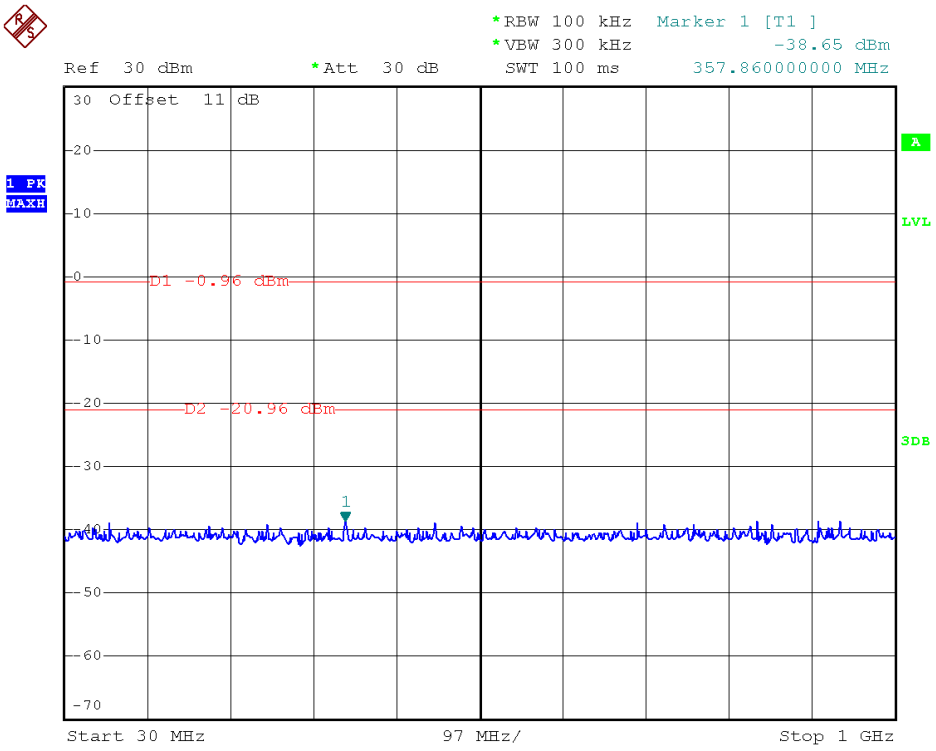


Channel = 11, 30MHz to 25GHz

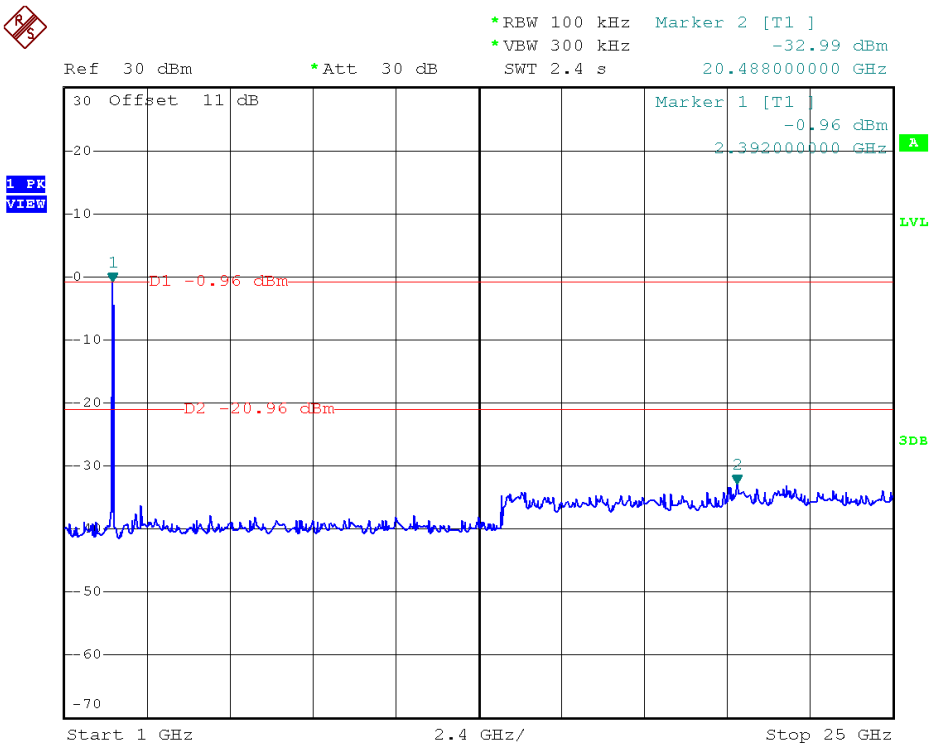


Channel = 11, 30MHz to 25GHz

802.11n40 - Conducted Spurious Emission Plot on channel 3

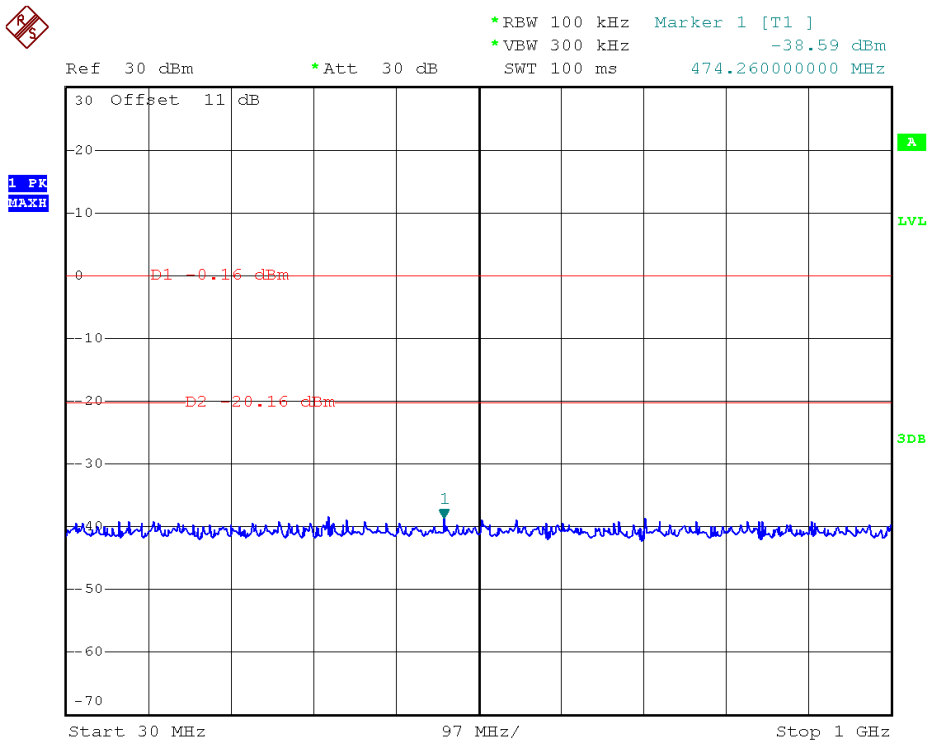


Channel = 3, 30MHz to 1GHz

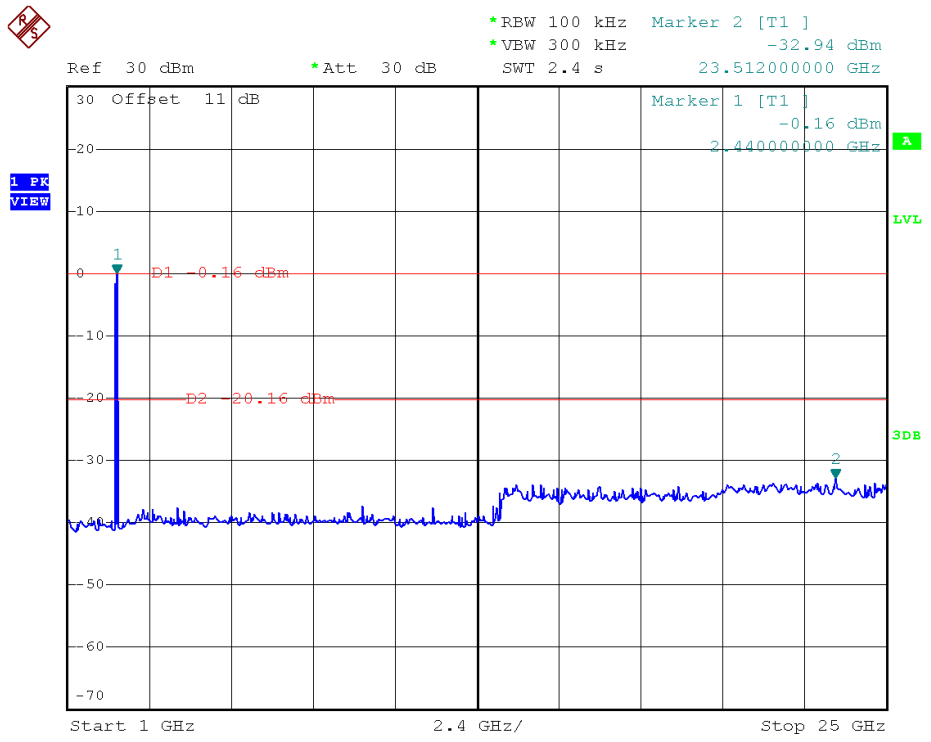


Channel = 3, 1GHz to 25GHz

802.11n40 - Conducted Spurious Emission Plot on channel 6

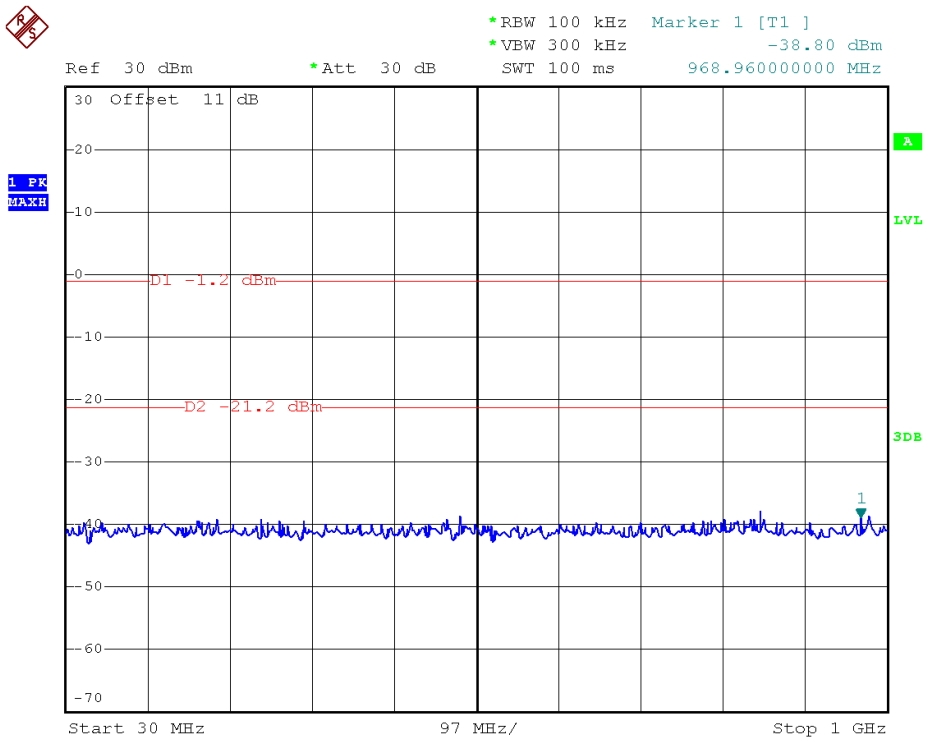


Channel = 6, 30MHz to 1GHz

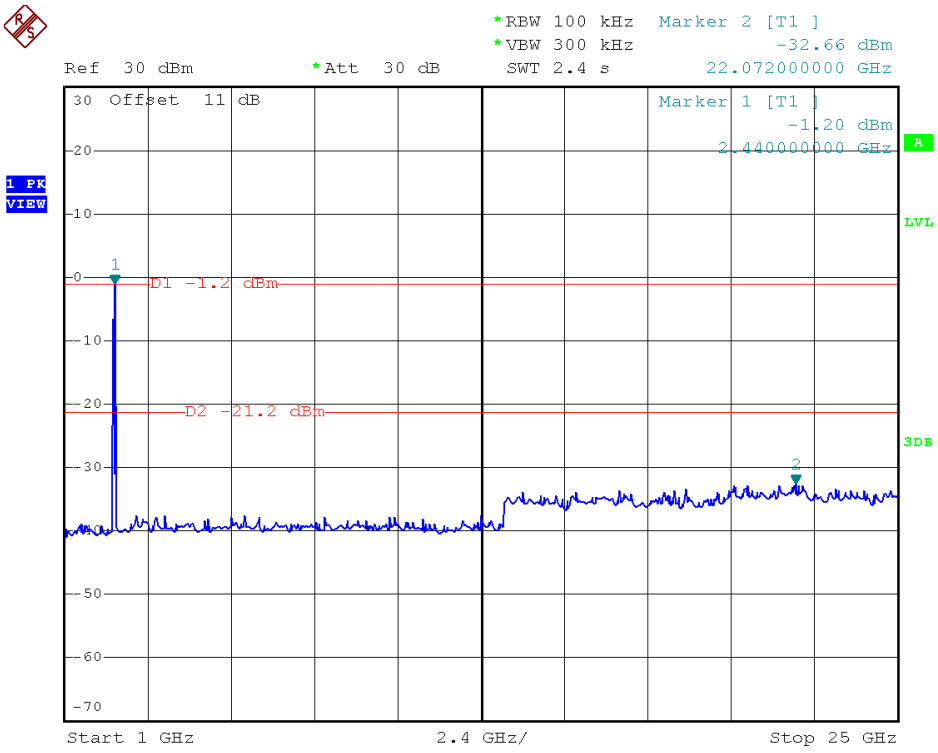


Channel = 6, 1GHz to 25GHz

802.11n40 - Conducted Spurious Emission Plot on channel 9



Channel = 9, 30MHz to 25GHz



Channel = 9, 30MHz to 25GHz

2.5. Power spectral density (PSD)

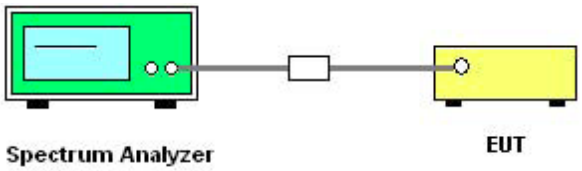
2.5.1. Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

2.5.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.5.3. Test Setup



2.5.4. Test Procedures

1. The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB558074 D01 v03r03.

2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.

3. Set to the maximum power setting and enable the EUT transmit continuously.

4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)

5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.

6. Measure and record the results in the test report.

7. The Measured power density (dBm)/ 100kHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

2.5.5. Test Results of Power spectral density

Note: Measured power density (dBm) has offset with cable loss.

802.11b Test mode

Spectral power density (Ant. 1)				
Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11b	1	-4.73	8	PASS
	6	-4.43	8	PASS
	11	-5.48	8	PASS
Measurement uncertainty: ±1.3dB				

802.11g Test mode

Spectral power density (Ant. 1)				
Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11g	1	-10.84	8	PASS
	6	-11.60	8	PASS
	11	-11.25	8	PASS
Measurement uncertainty: ±1.3dB				

Spectral power density (Ant. 2)				
Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11g	1	-11.15	8	PASS
	6	-9.69	8	PASS
	11	-12.82	8	PASS
Measurement uncertainty: ±1.3dB				

802.11n20 Test mode

Spectral power density (Ant. 1)				
Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11n20	1	-10.90	8	PASS
	6	-11.89	8	PASS
	11	-11.68	8	PASS
Measurement uncertainty: ±1.3dB				

Spectral power density (Ant. 2)				
Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11n20	1	-11.70	8	PASS
	6	-11.55	8	PASS
	11	-12.18	8	PASS
Measurement uncertainty: ±1.3dB				

Spectral power density (Ant. 1+2)				
Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11n20	1	-8.27	8	PASS
	6	-8.71	8	PASS
	11	-8.92	8	PASS

802.11n40 Test mode

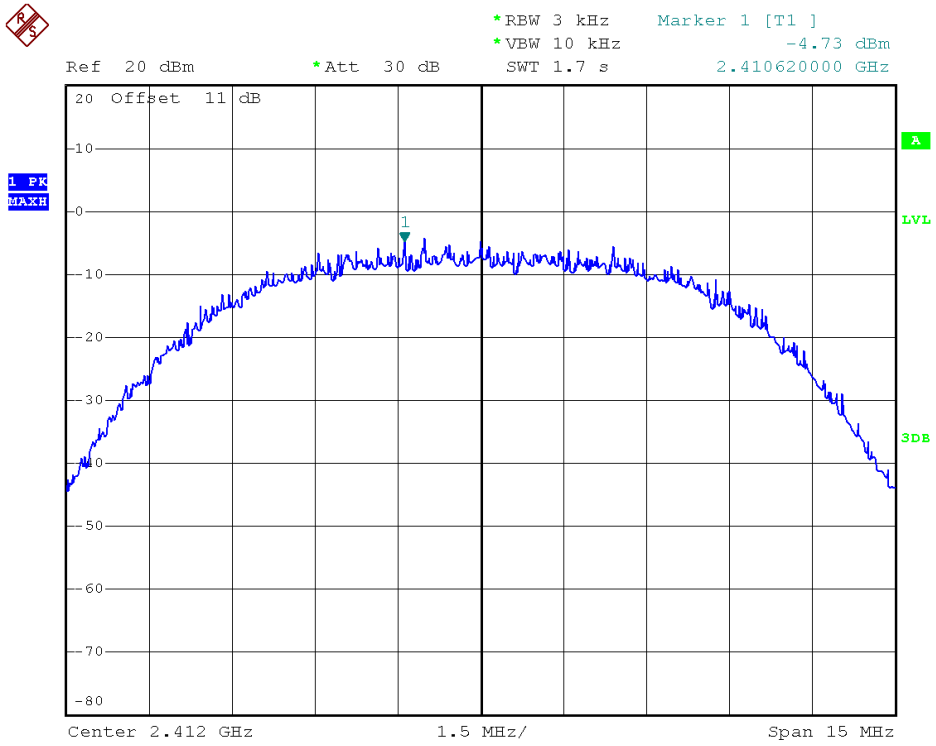
Spectral power density (Ant. 1)				
Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11n40	3	-15.35	8	PASS
	6	-15.91	8	PASS
	9	-17.57	8	PASS
Measurement uncertainty: ±1.3dB				

Spectral power density (Ant. 2)				
Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11n40	3	-16.05	8	PASS
	6	-16.88	8	PASS
	9	-16.02	8	PASS
Measurement uncertainty: ±1.3dB				

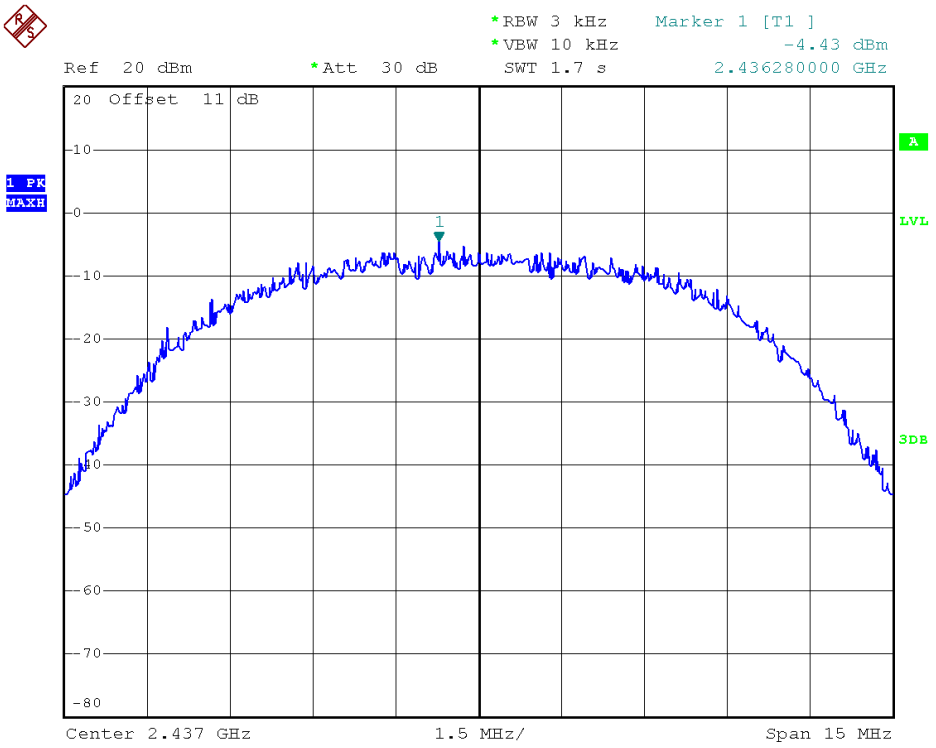
Spectral power density (Ant. 1+2)				
Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11n40	3	-12.68	8	PASS
	6	-13.36	8	PASS
	9	-13.72	8	PASS
Measurement uncertainty: ±1.3dB				

2.5.6. Test Results (plots) of Power spectral density

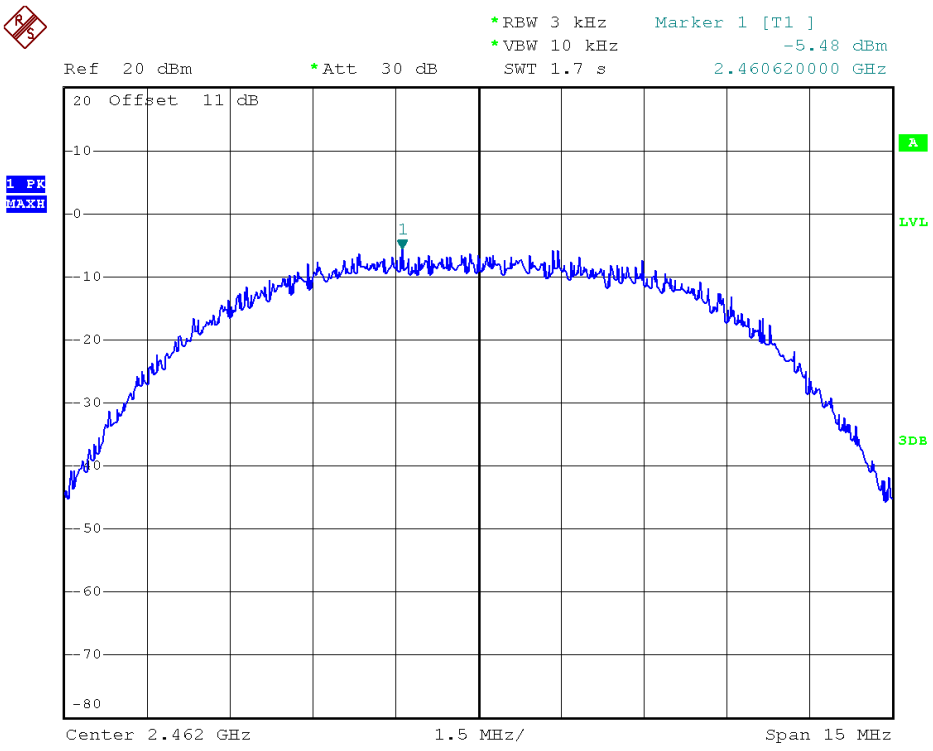
Antenna 1 - 802.11b - Channel 1



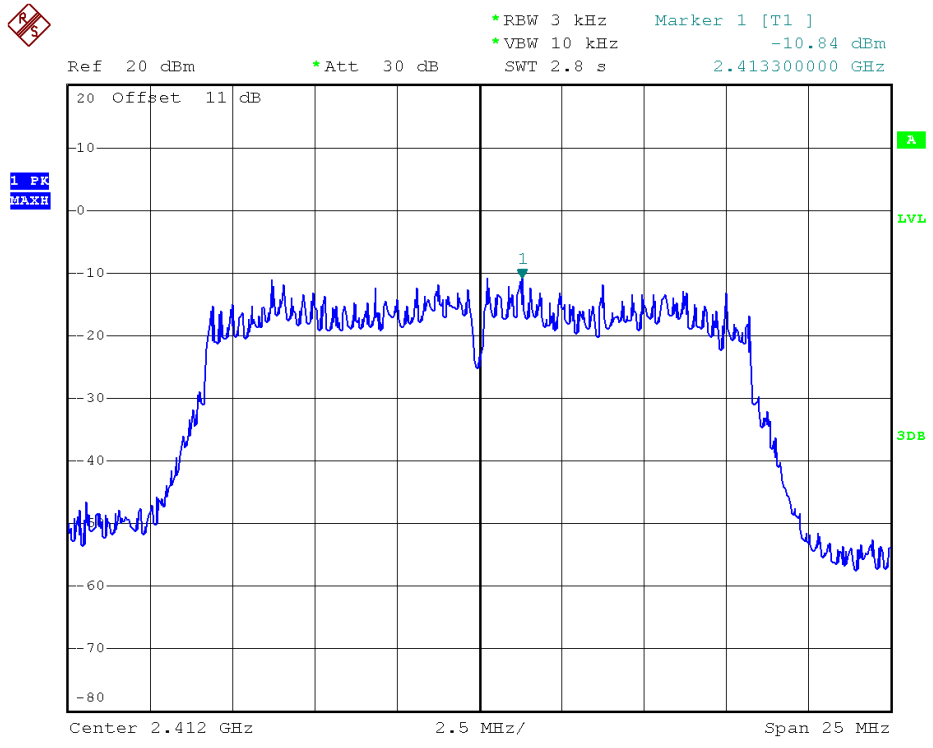
Antenna 1 - 802.11b - Channel 6



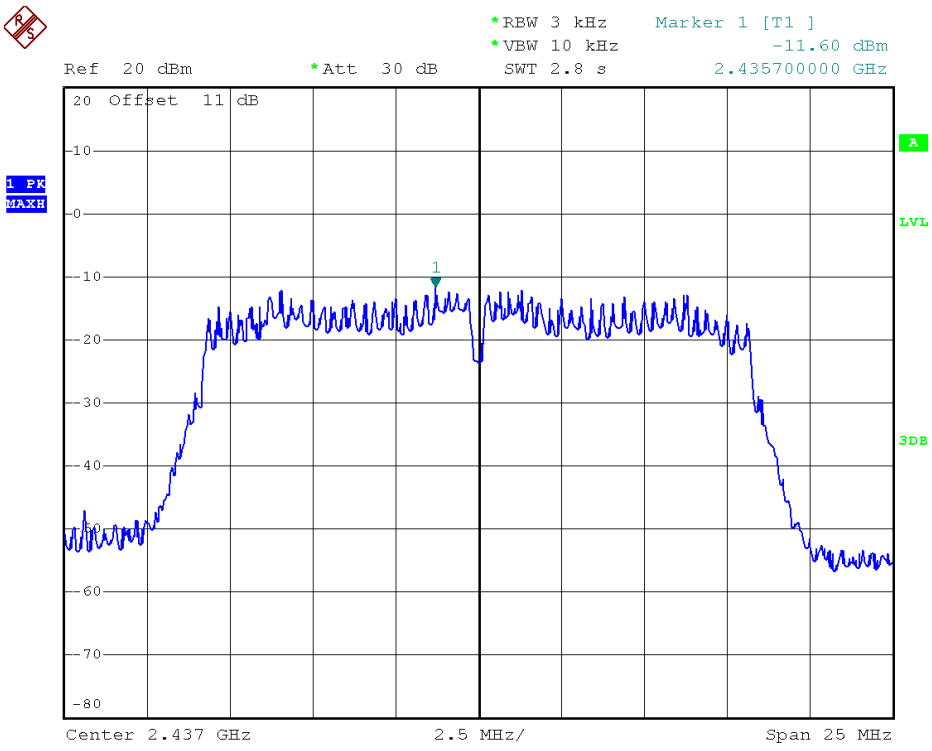
Antenna 1 - 802.11b - Channel 11



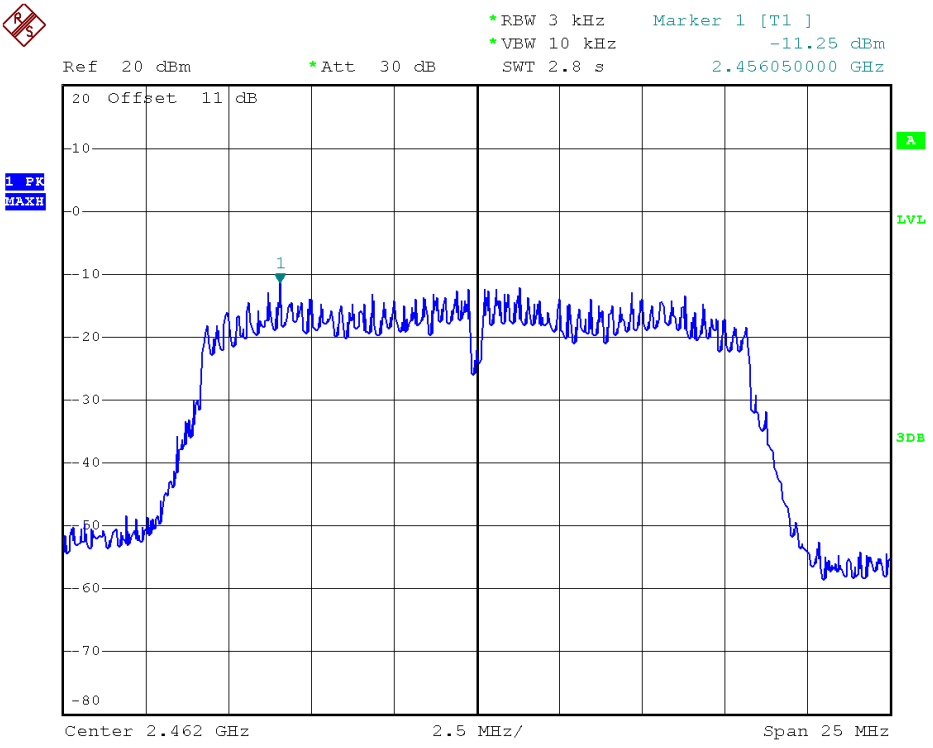
Antenna 1 - 802.11g - Channel 1



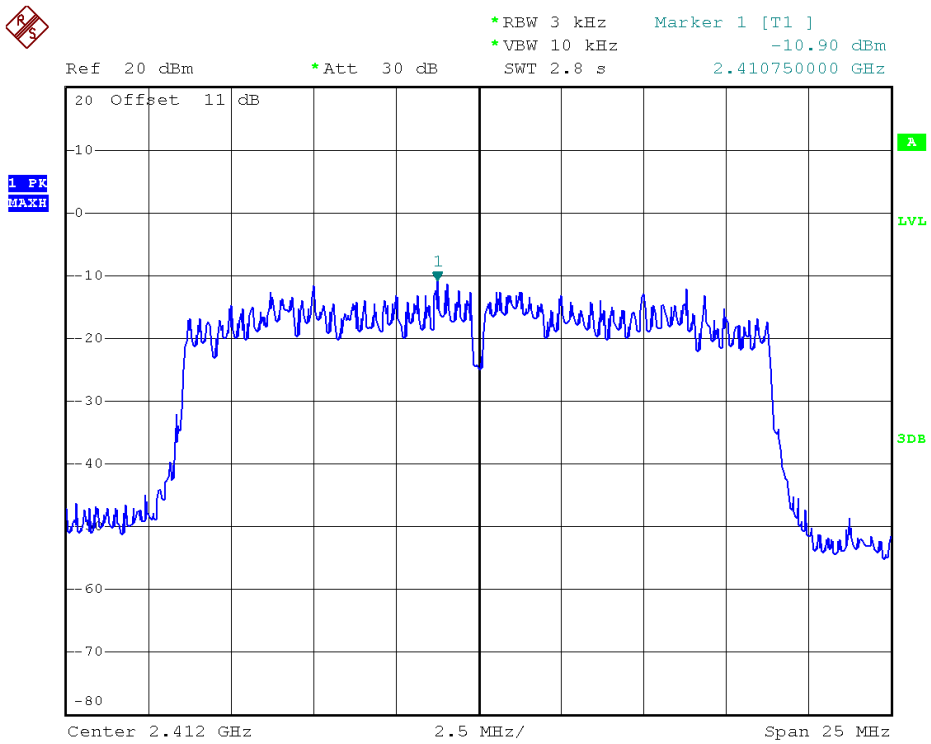
Antenna 1 - 802.11g - Channel 6



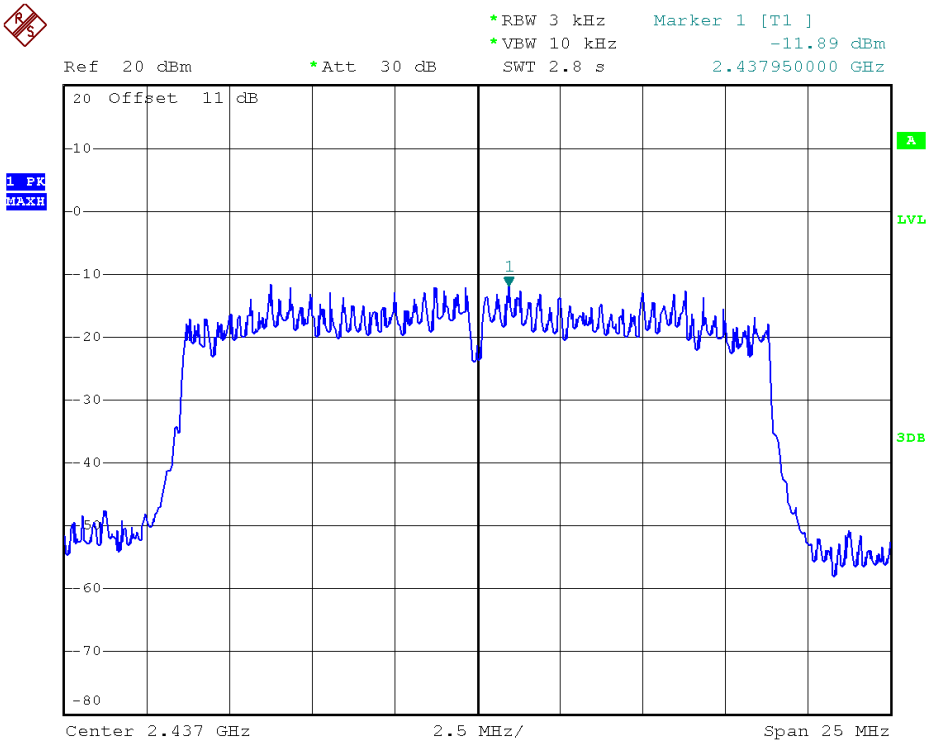
Antenna 1 - 802.11g - Channel 11



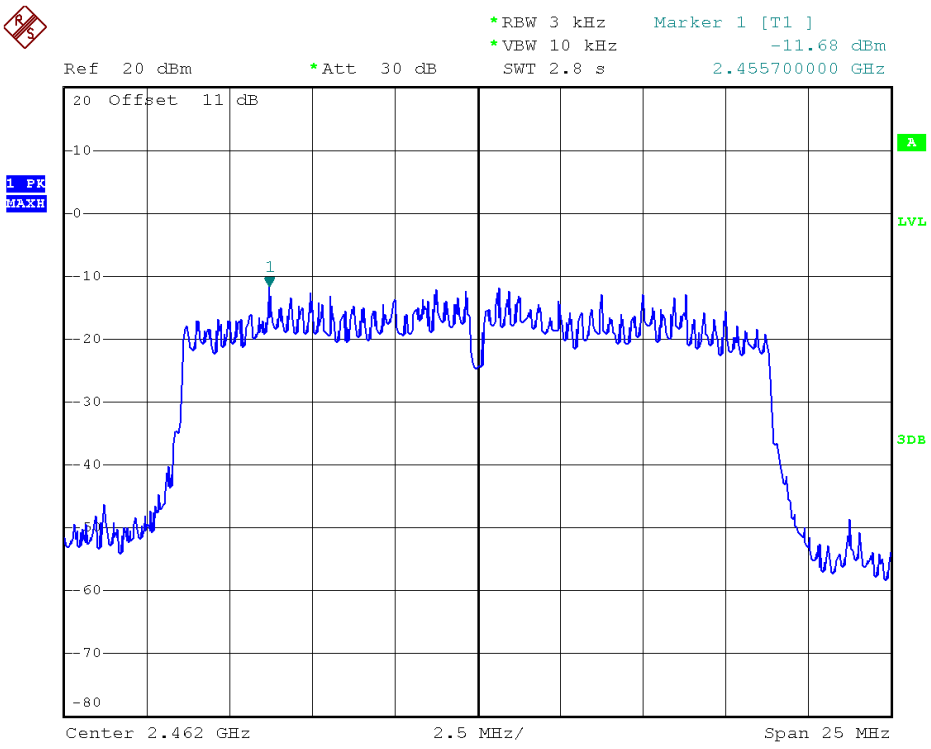
Antenna 1 - 802.11n20 - Channel 1



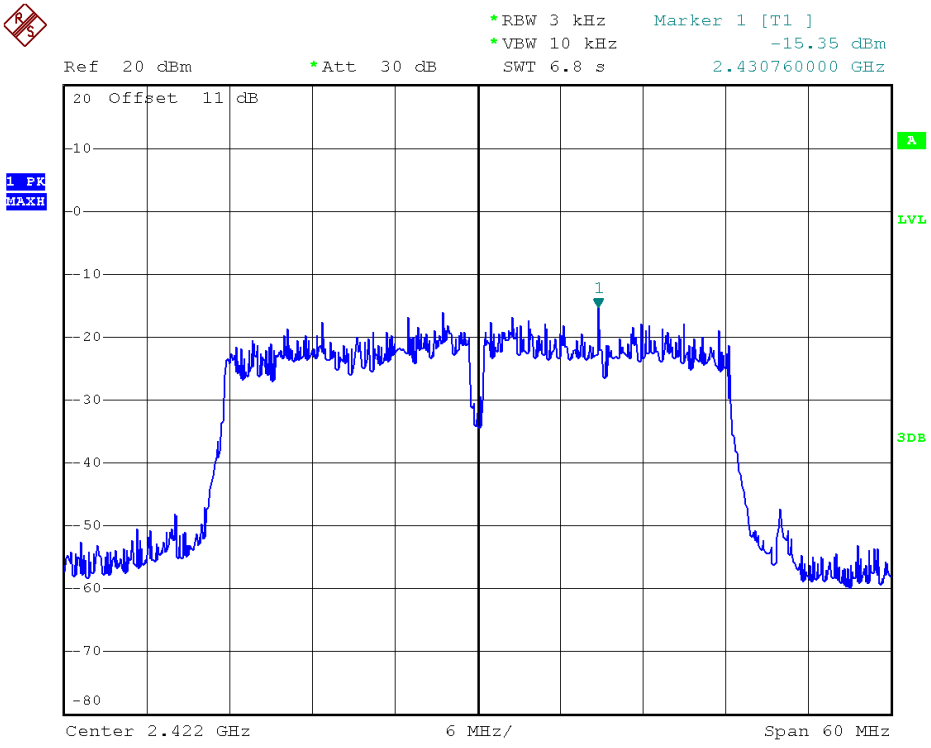
Antenna 1 - 802.11n20 - Channel 6



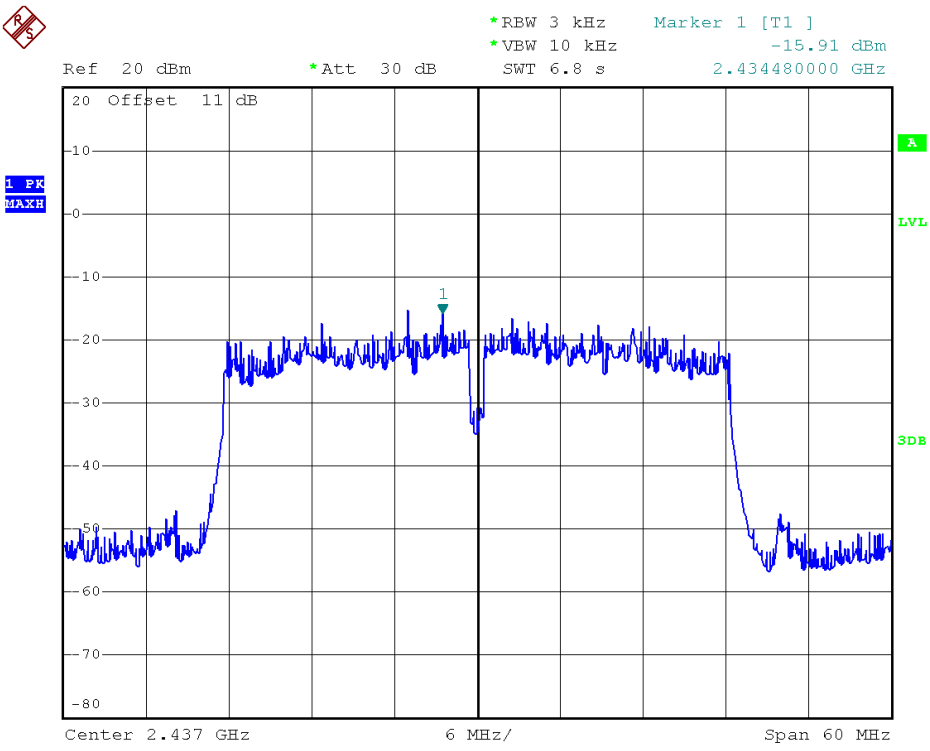
Antenna 1 - 802.11n20 - Channel 11



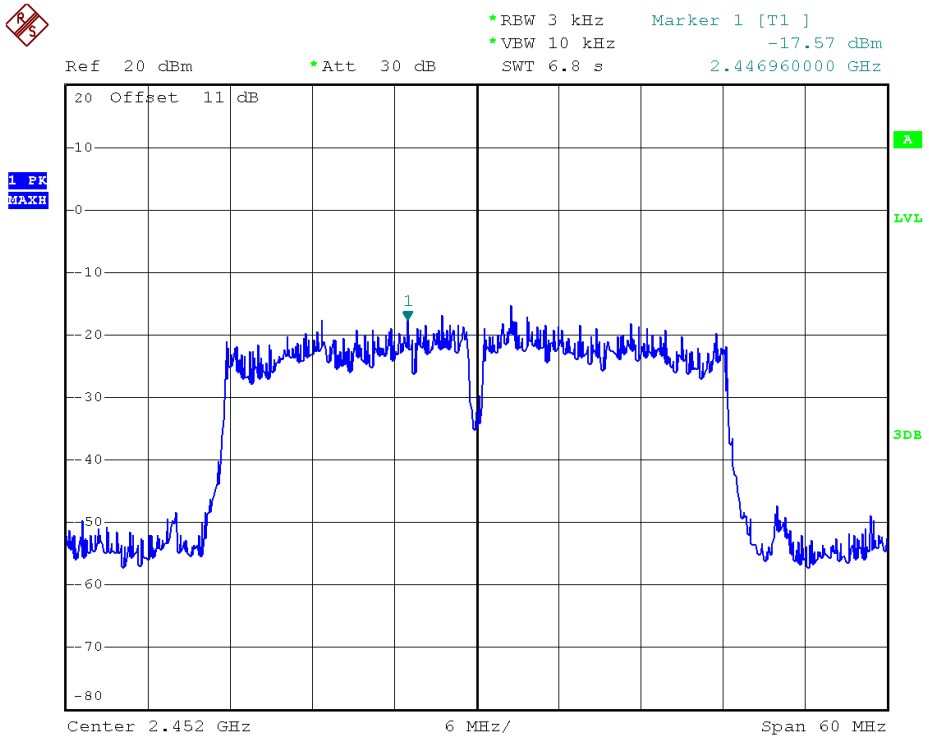
Antenna 1 - 802.11n40 - Channel 3



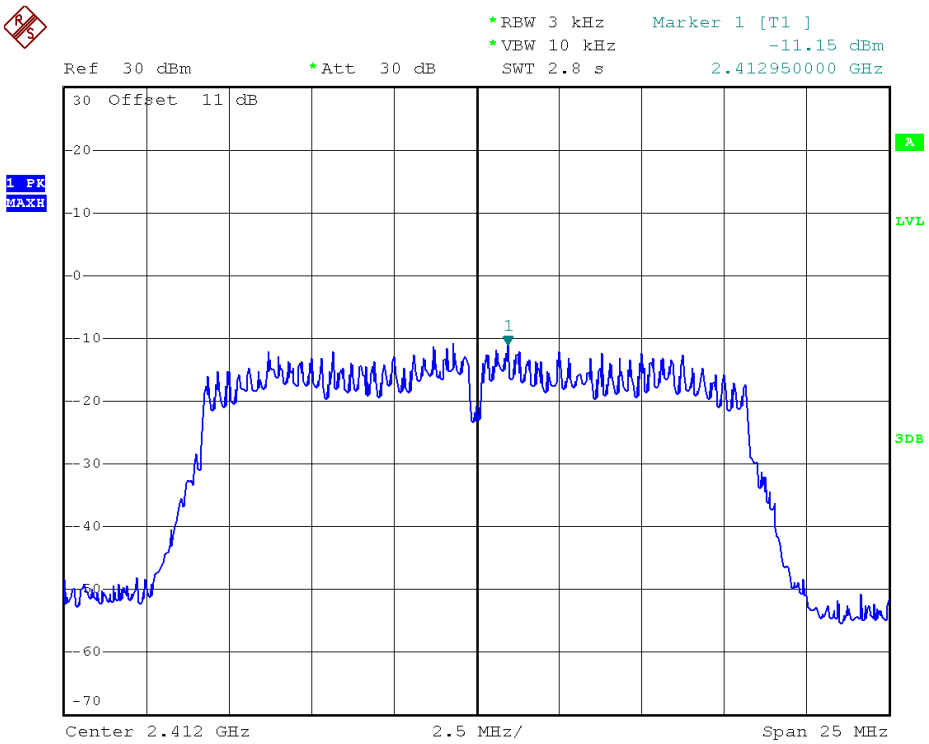
Antenna 1 - 802.11n40 - Channel 6



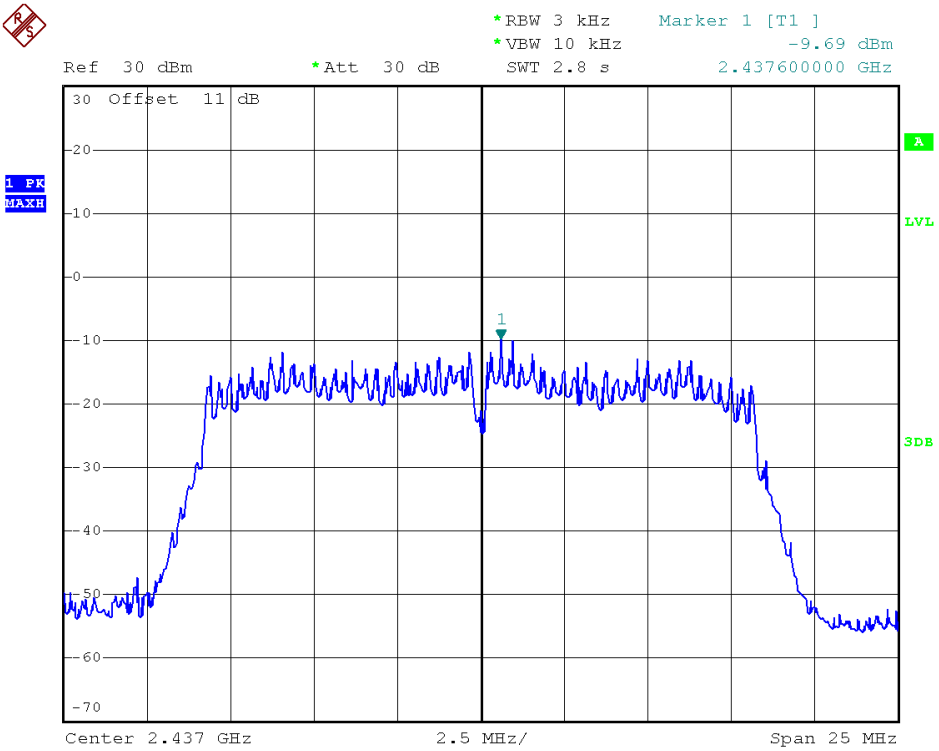
Antenna 1 - 802.11n40 - Channel 9



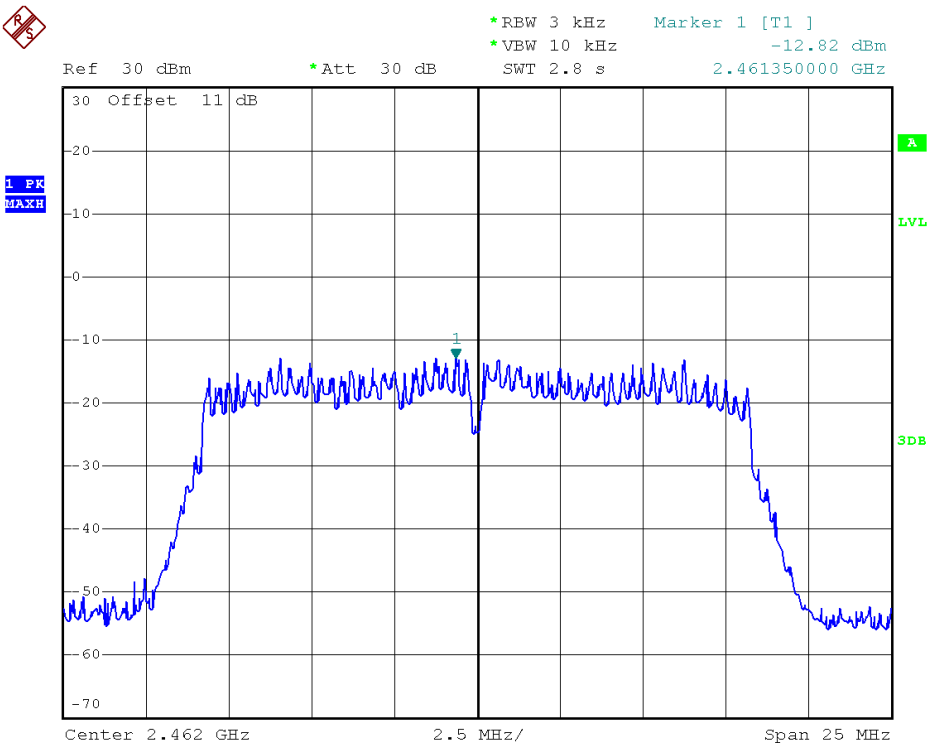
Antenna 2 - 802.11g - Channel 1



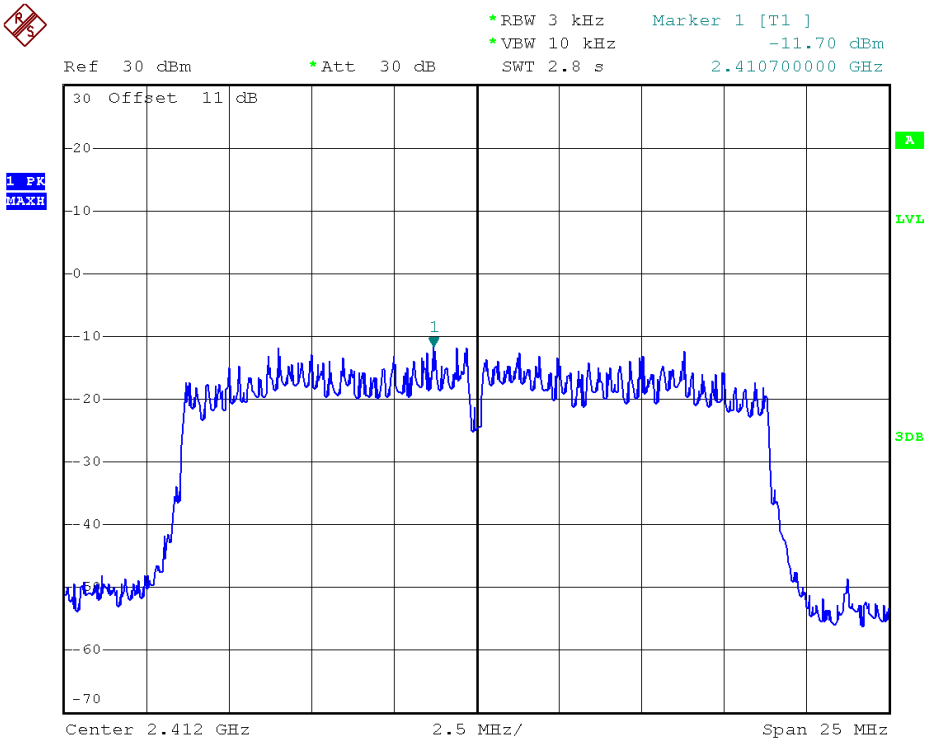
Antenna 2 - 802.11g - Channel 6



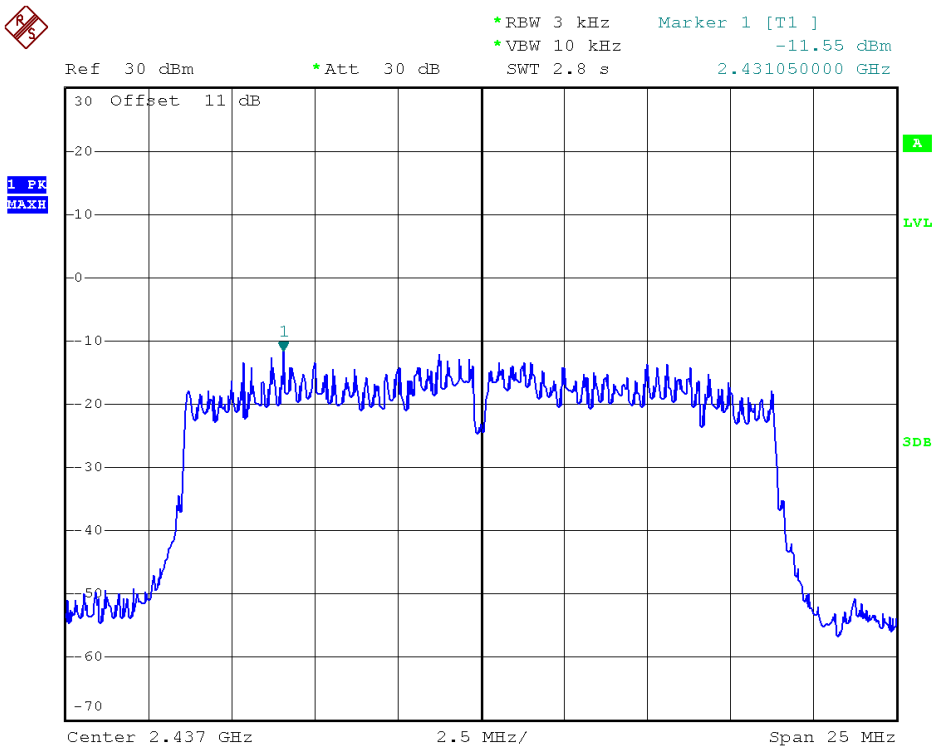
Antenna 2 - 802.11g - Channel 11



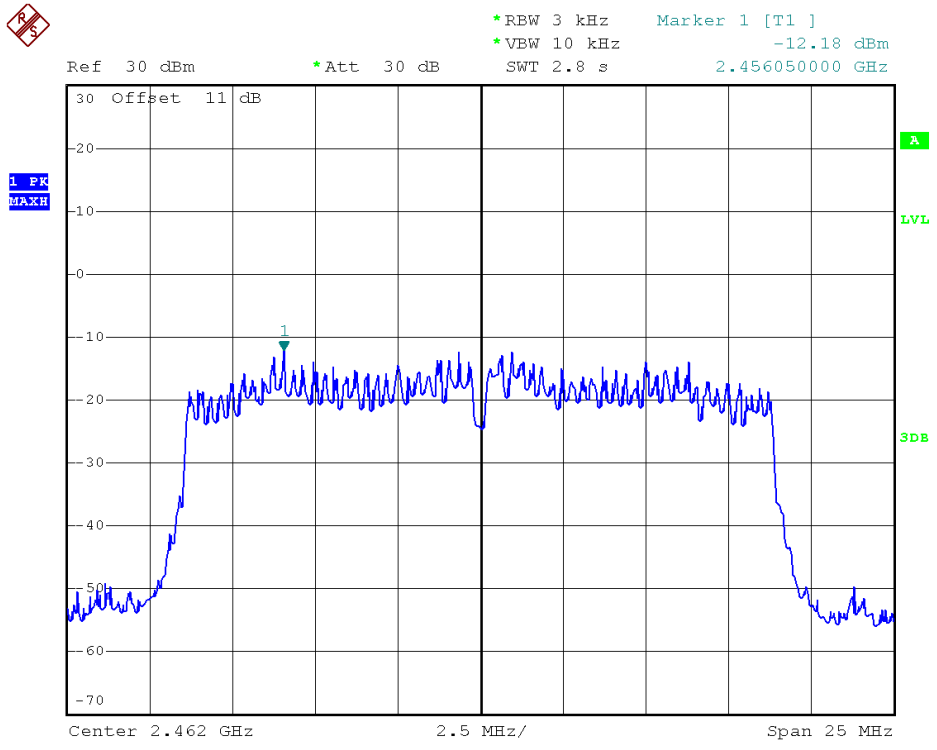
Antenna 2 - 802.11n20 - Channel 1



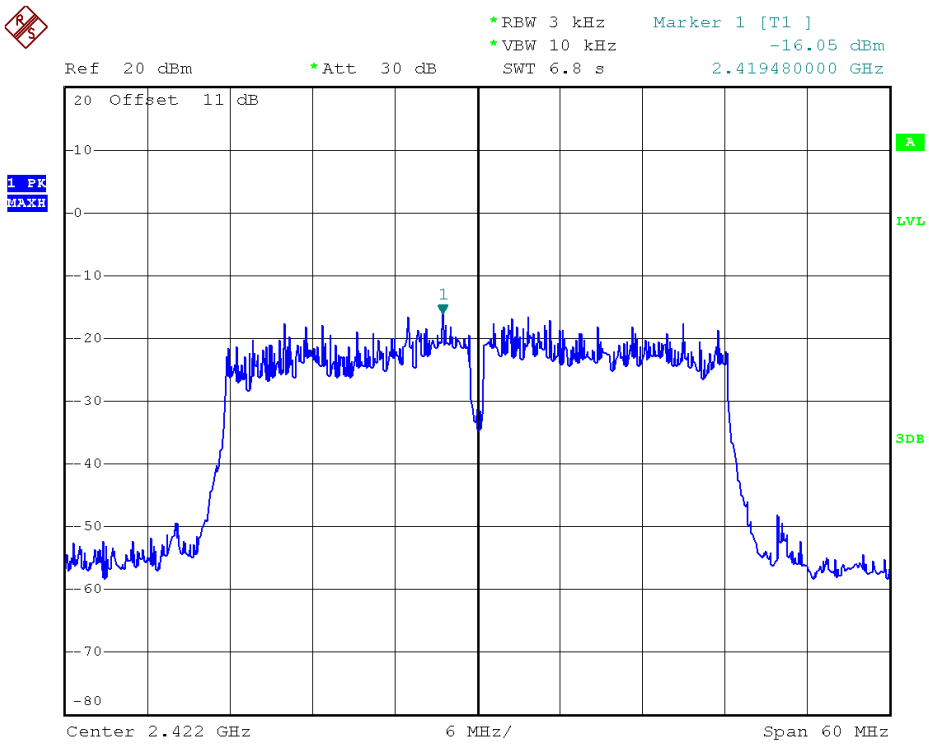
Antenna 2 - 802.11n20 - Channel 6



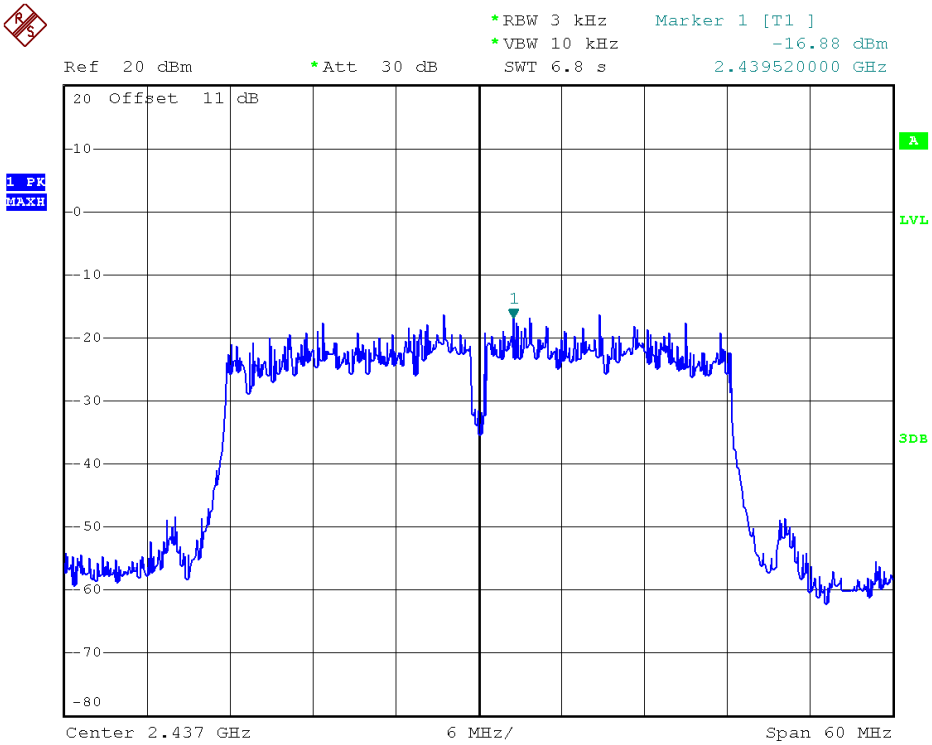
Antenna 2 - 802.11n20 - Channel 11



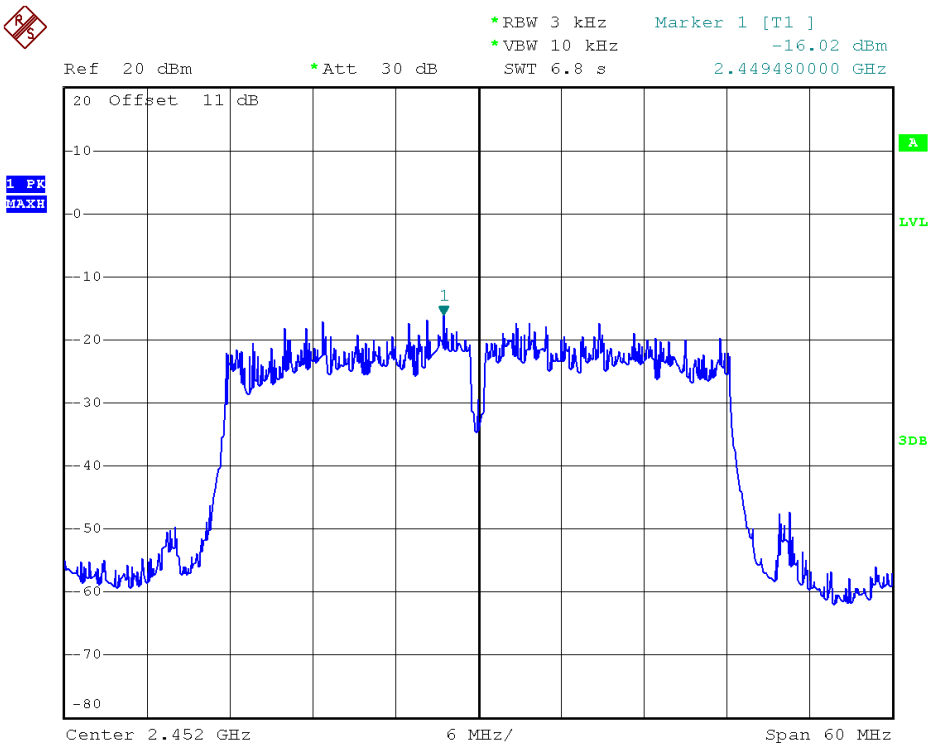
Antenna 2 - 802.11n40 - Channel 3



Antenna 2 - 802.11n40 - Channel 6



Antenna 2 - 802.11n40 - Channel 9



2.6. Radiated Band Edge and Spurious Emission

2.6.1. Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Note: Wireless charger configuration was evaluated.

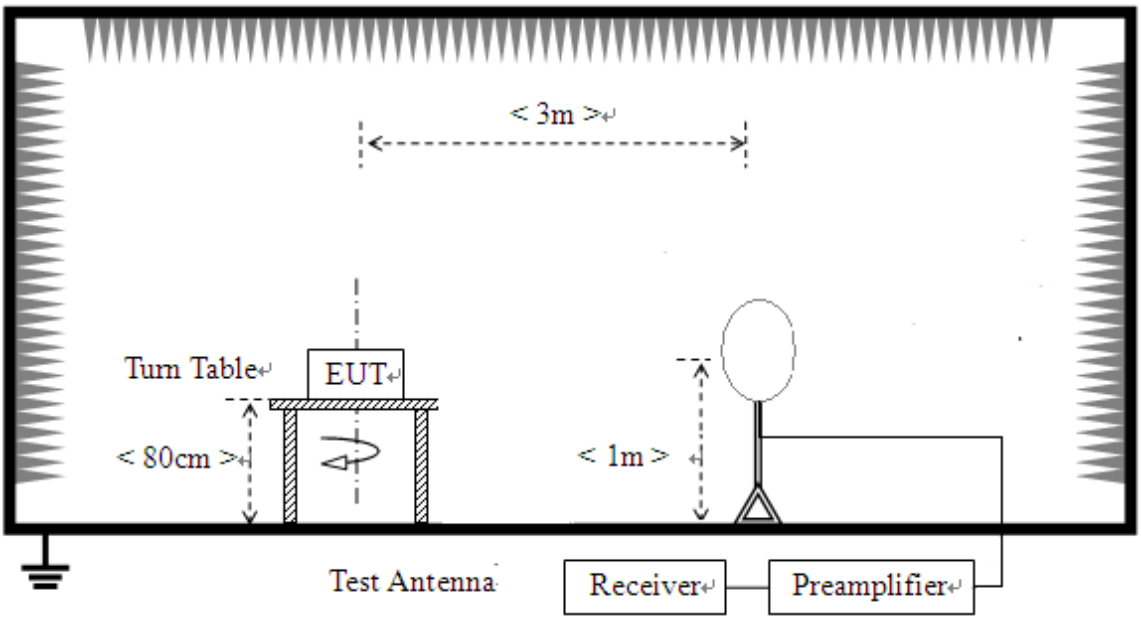
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

2.6.2. Measuring Instruments

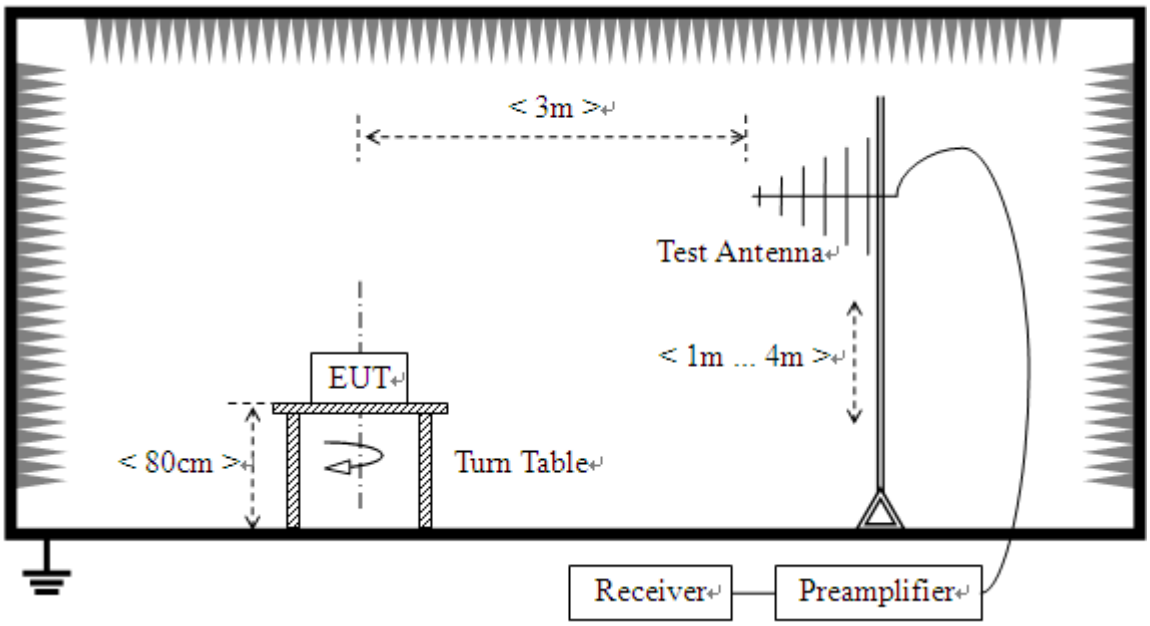
The measuring equipment is listed in the section 3 of this test report.

2.6.3. Test Setup

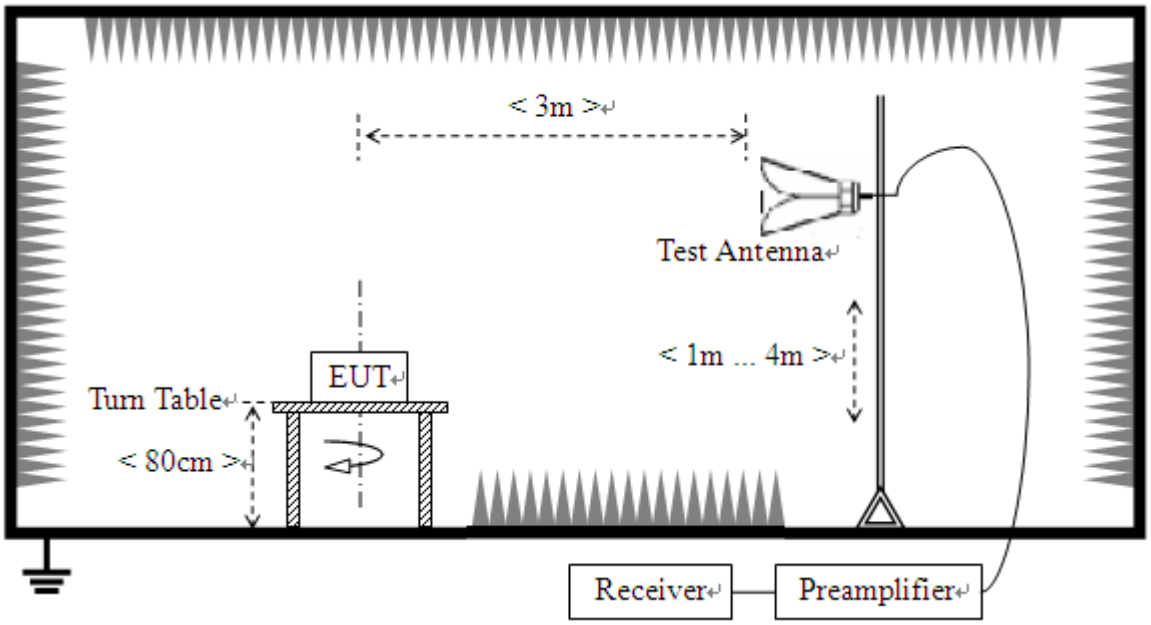
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



2.6.4. Test Procedures

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. Height of receiving antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported.
   Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.

2.6.5. Test Results of Radiated Band Edge and Spurious Emission

For 9 kHz to 30MHz

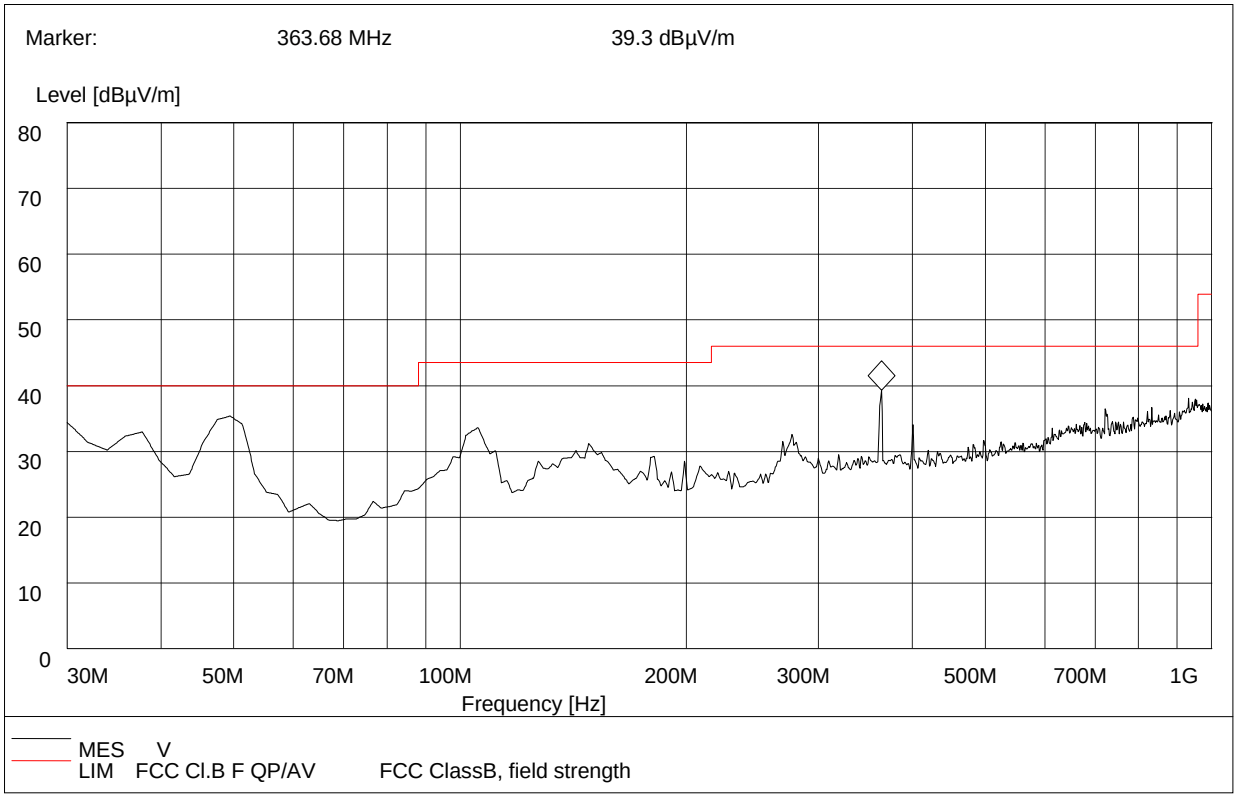
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

For 30MHz to 1000 MHz

Test mode:

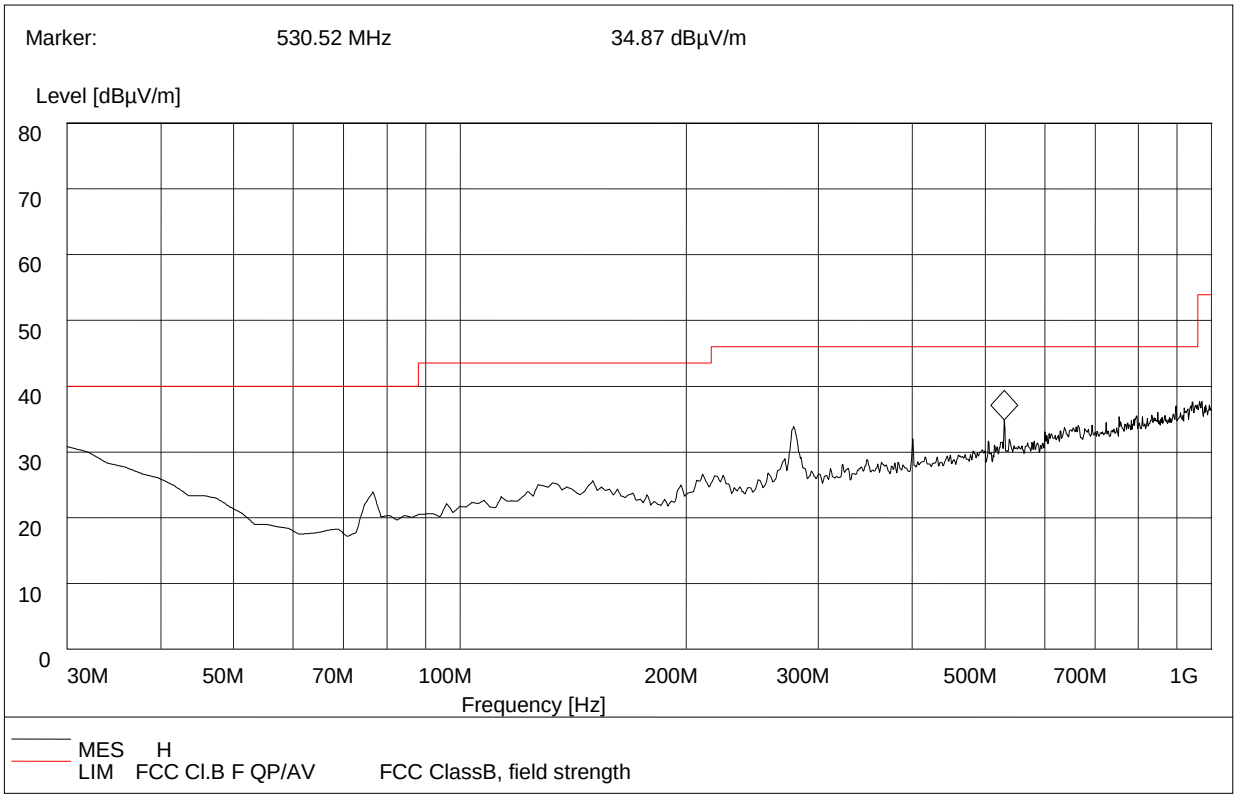
(1) Adapter (model: RD1202000-C55-29MG) with EUT (model: 7279G) operating frequency: 2437MHz
(2) Adapter (model: RD1202000-C55-29MG) with EUT (model: 7278G) operating frequency: 2437MHz
(3) Adapter (model: RD1202000-C55-29MG) with EUT (model: 7272G) operating frequency: 2437MHz
(4) Adapter (model: YJS024U-1202000U) with EUT (model: 7279G) operating frequency: 2437MHz
(5) Adapter (model: YJS024U-1202000U) with EUT (model: 7278G) operating frequency: 2437MHz
(6) Adapter (model: YJS024U-1202000U) with EUT (model: 7272G) operating frequency: 2437MHz

Test Mode 1：



30MHz to 1GHz, Antenna Vertical

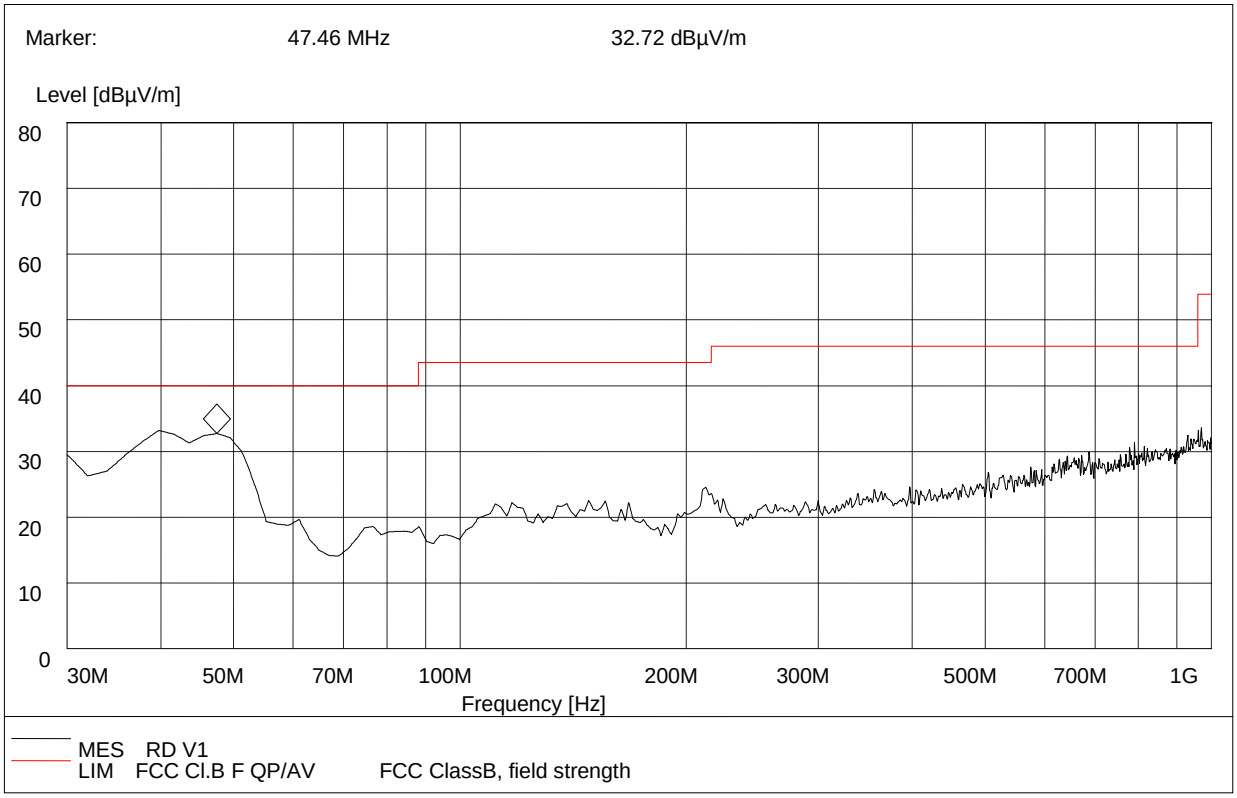
Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµV/m)	Antenna	Verdict
363.68	39.3	120.000	100.0	46.00	Vertical	Pass



30MHz to 1GHz, Antenna Horizontal

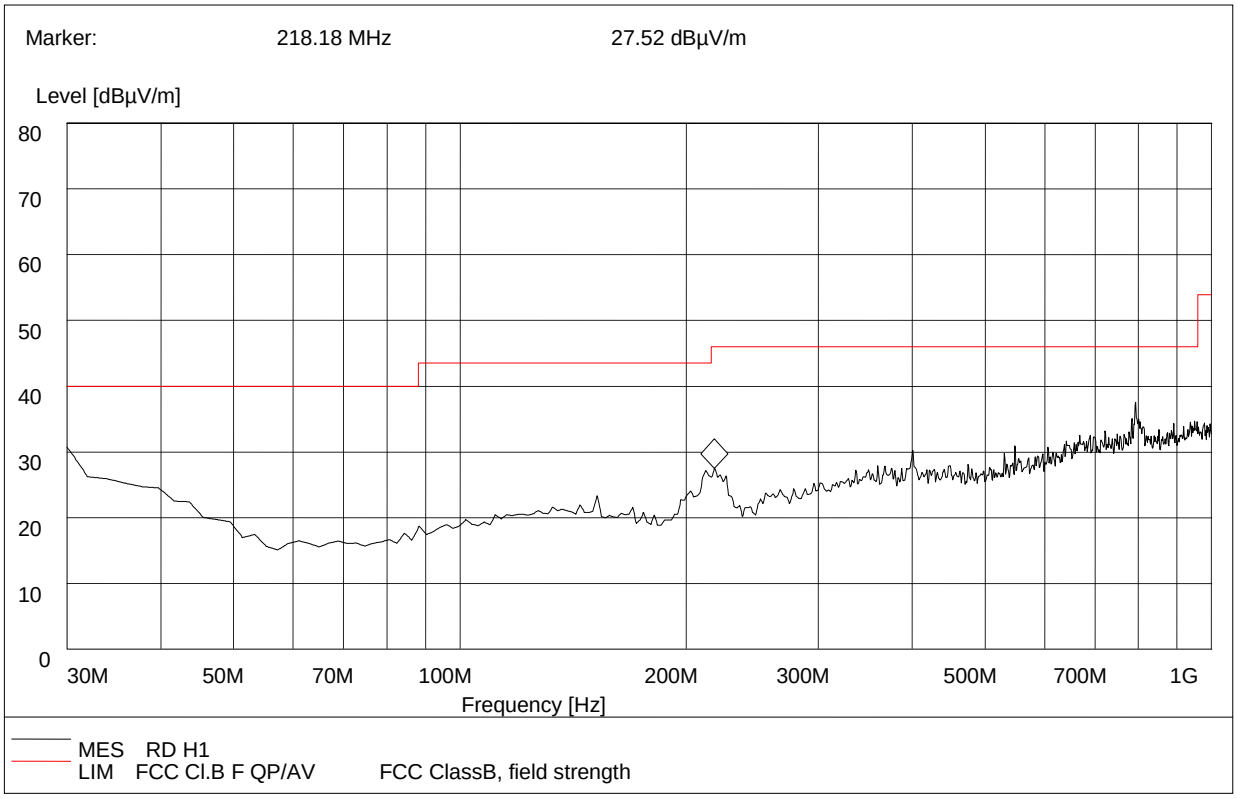
Frequency (MHz)	QuasiPeak (dBµ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµ V/m)	Antenna	Verdict
530.52	34.87	120.000	100.0	46.00	Horizontal	Pass

Test Mode 2：



30MHz to 1GHz, Antenna Vertical

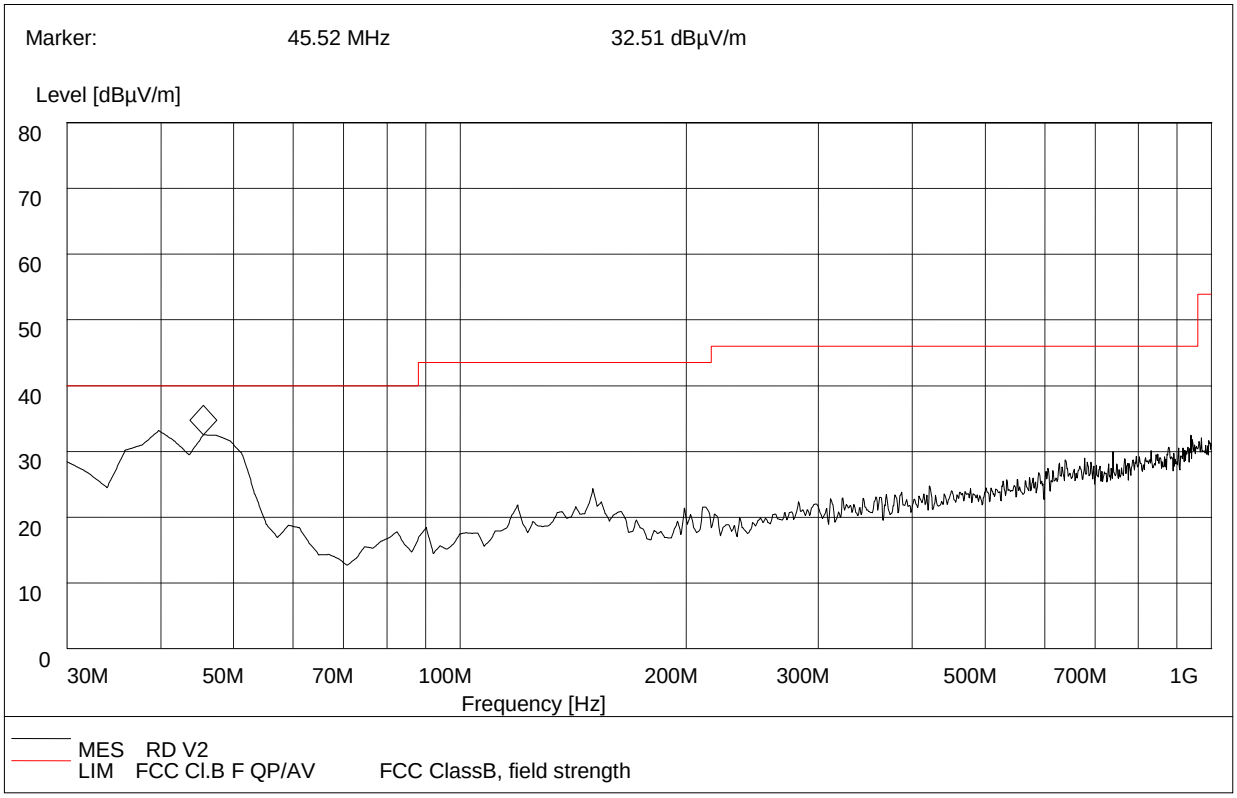
Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµV/m)	Antenna	Verdict
47.46	32.72	120.000	100.0	40.00	Vertical	Pass



30MHz to 1GHz, Antenna Horizontal

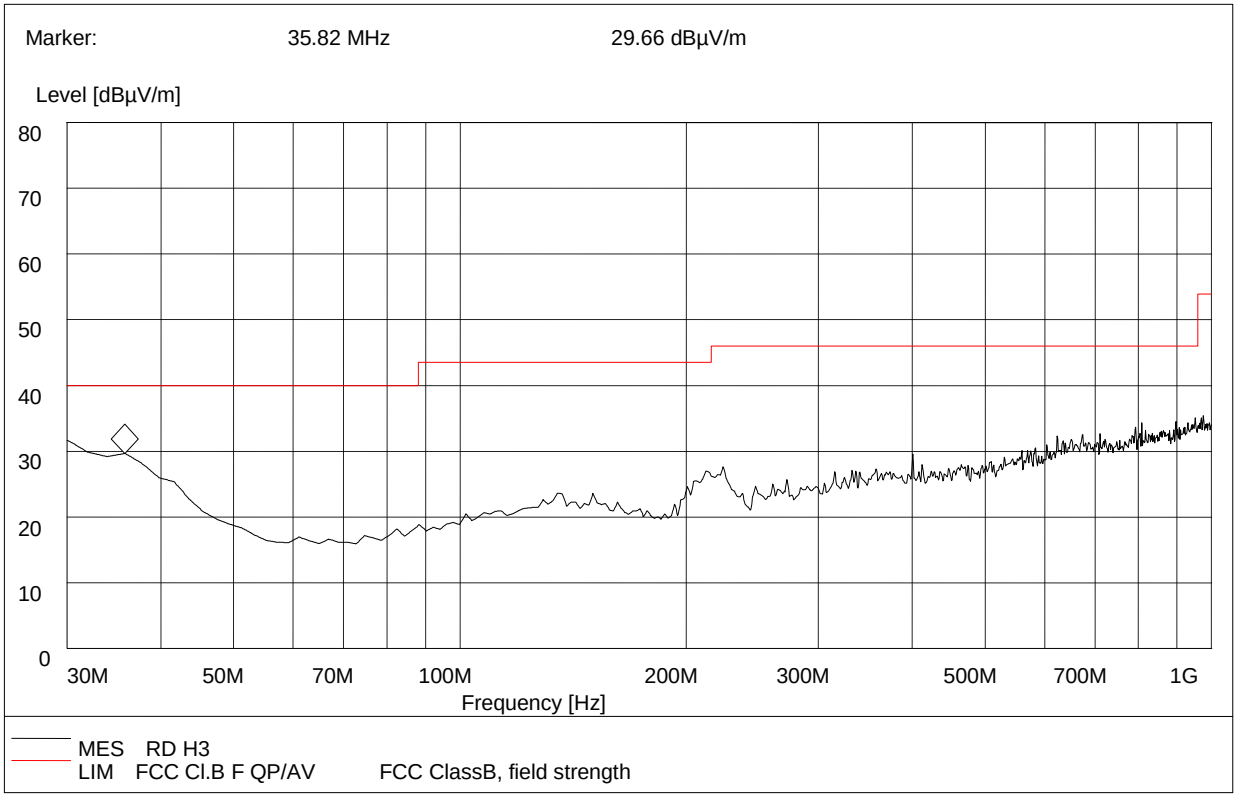
Frequency (MHz)	QuasiPeak (dBµ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµ V/m)	Antenna	Verdict
218.18	27.52	120.000	100.0	46.00	Horizontal	Pass
795.56	37.15	120.000	100.0	46.0	Horizontal	Pass

Test Mode 3：



30MHz to 1GHz, Antenna Vertical

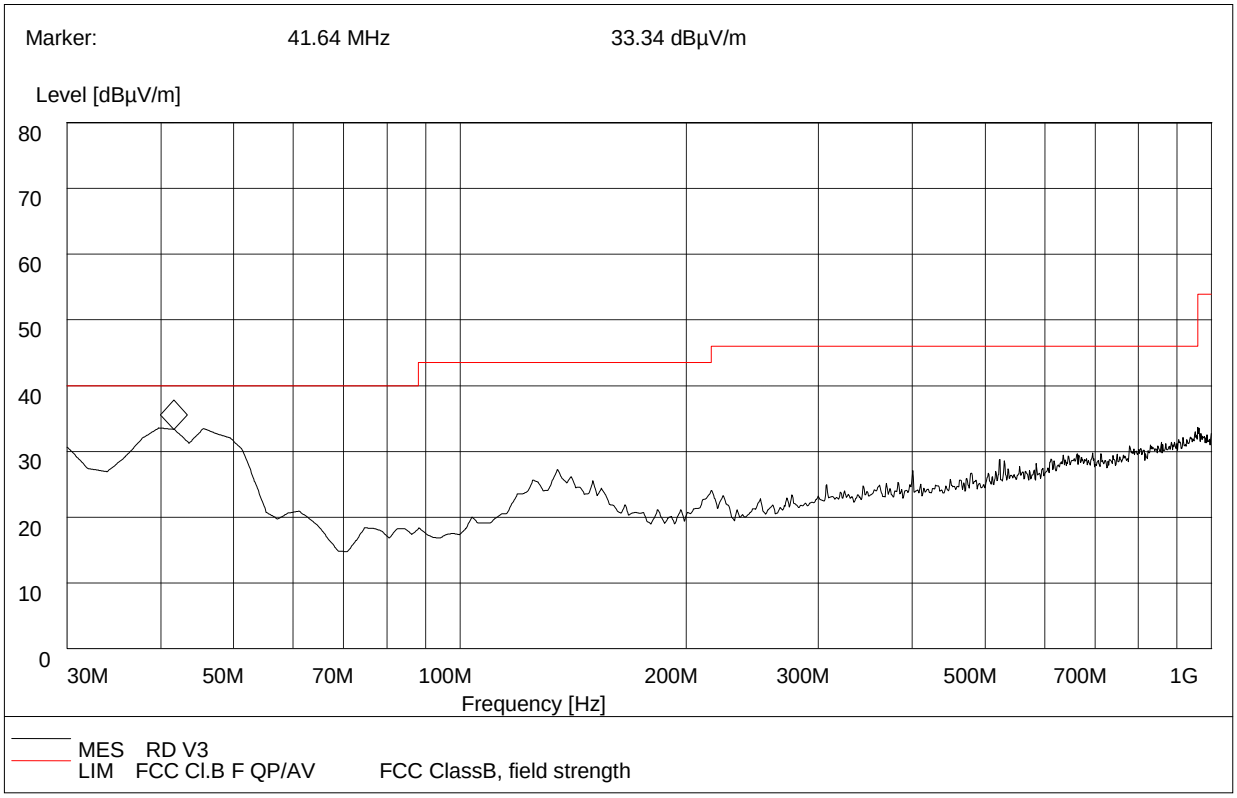
Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµV/m)	Antenna	Verdict
45.52	32.51	120.000	100.0	40.00	Vertical	Pass



30MHz to 1GHz, Antenna Horizontal

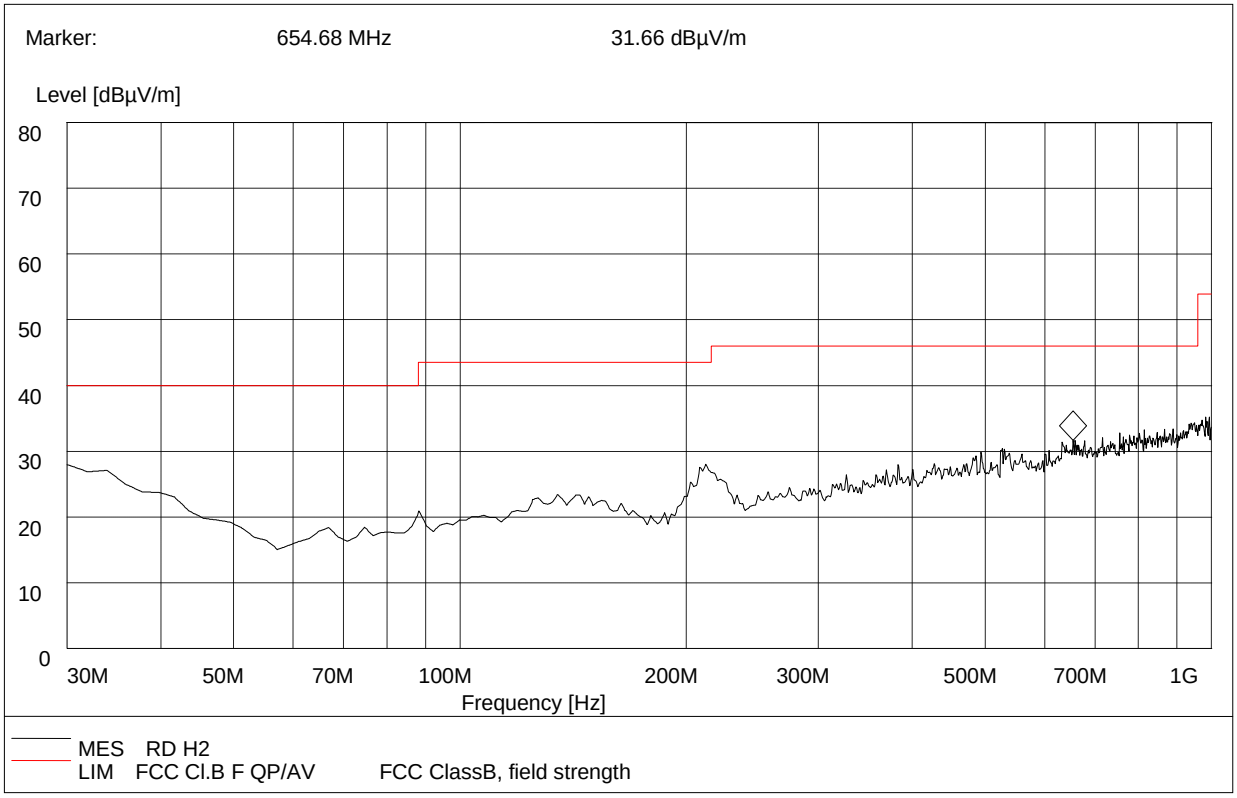
Frequency (MHz)	QuasiPeak (dBµ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµ V/m)	Antenna	Verdict
35.82	29.66	120.000	100.0	40.00	Horizontal	Pass

Test Mode 4：



30MHz to 1GHz, Antenna Vertical

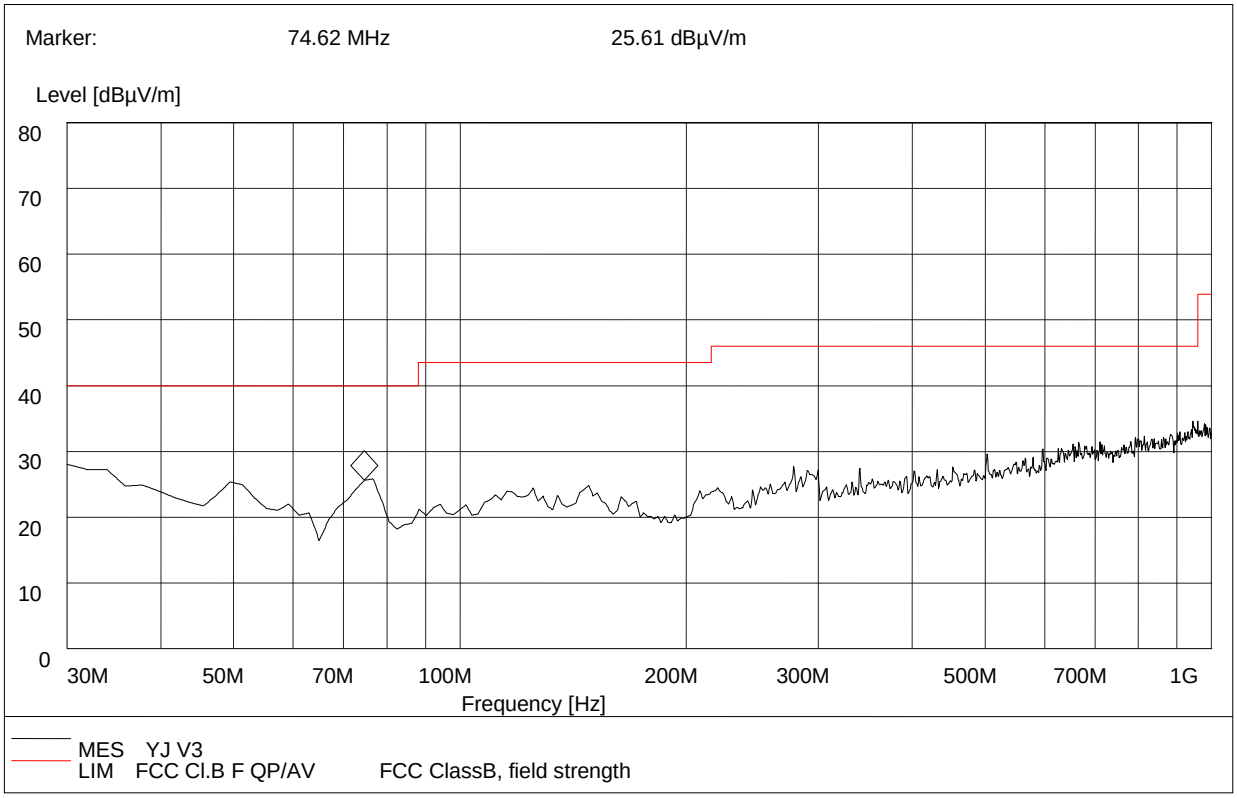
Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµV/m)	Antenna	Verdict
41.64	33.34	120.000	100.0	40.00	Vertical	Pass



30MHz to 1GHz, Antenna Horizontal

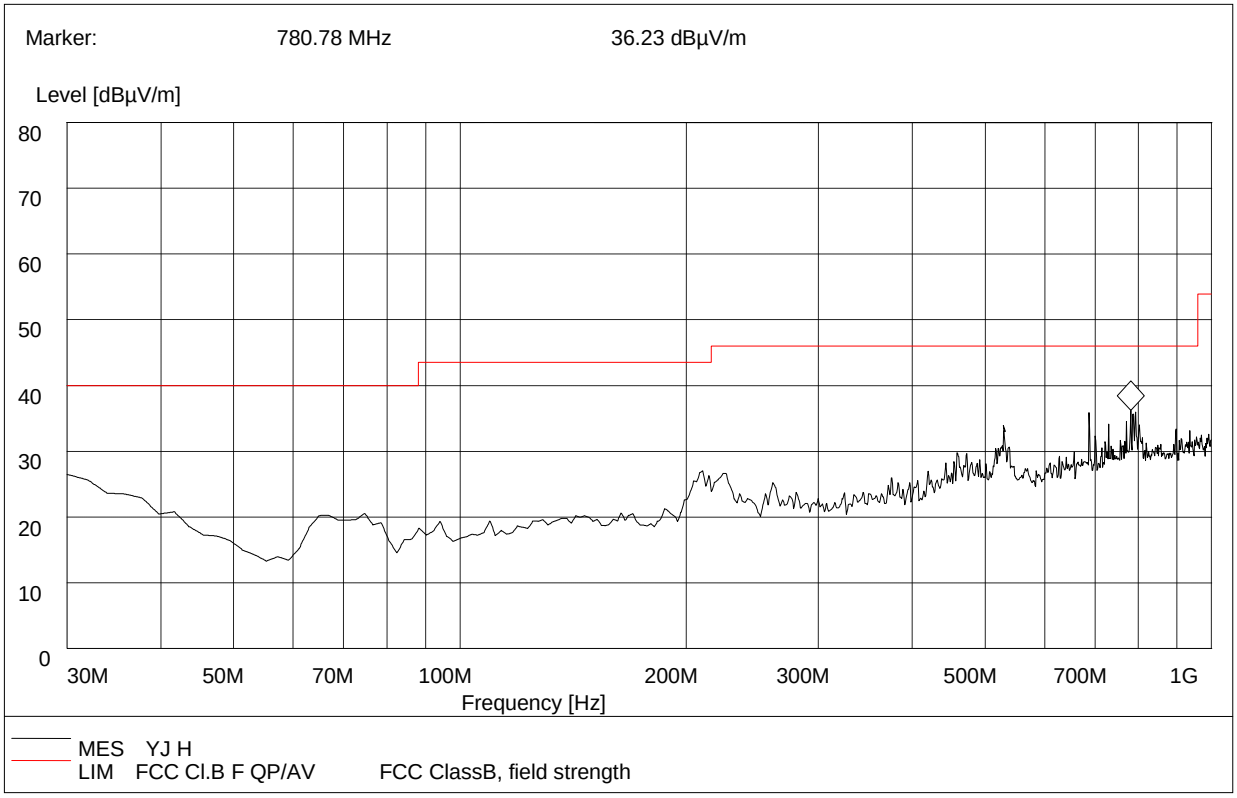
Frequency (MHz)	QuasiPeak (dBµ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµ V/m)	Antenna	Verdict
654.68	31.66	120.000	100.0	46.00	Horizontal	Pass

Test Mode 5：



30MHz to 1GHz, Antenna Vertical

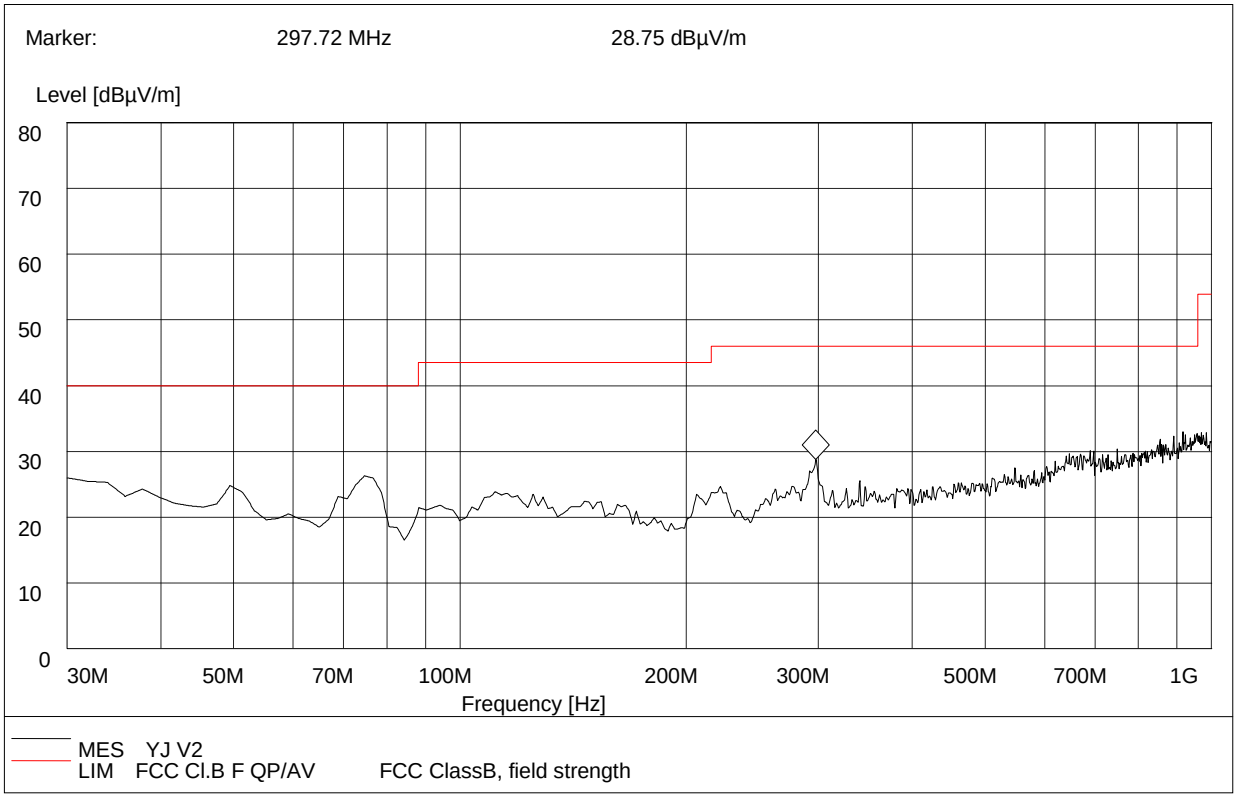
Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµV/m)	Antenna	Verdict
74.62	25.61	120.000	100.0	40.00	Vertical	Pass



30MHz to 1GHz, Antenna Horizontal

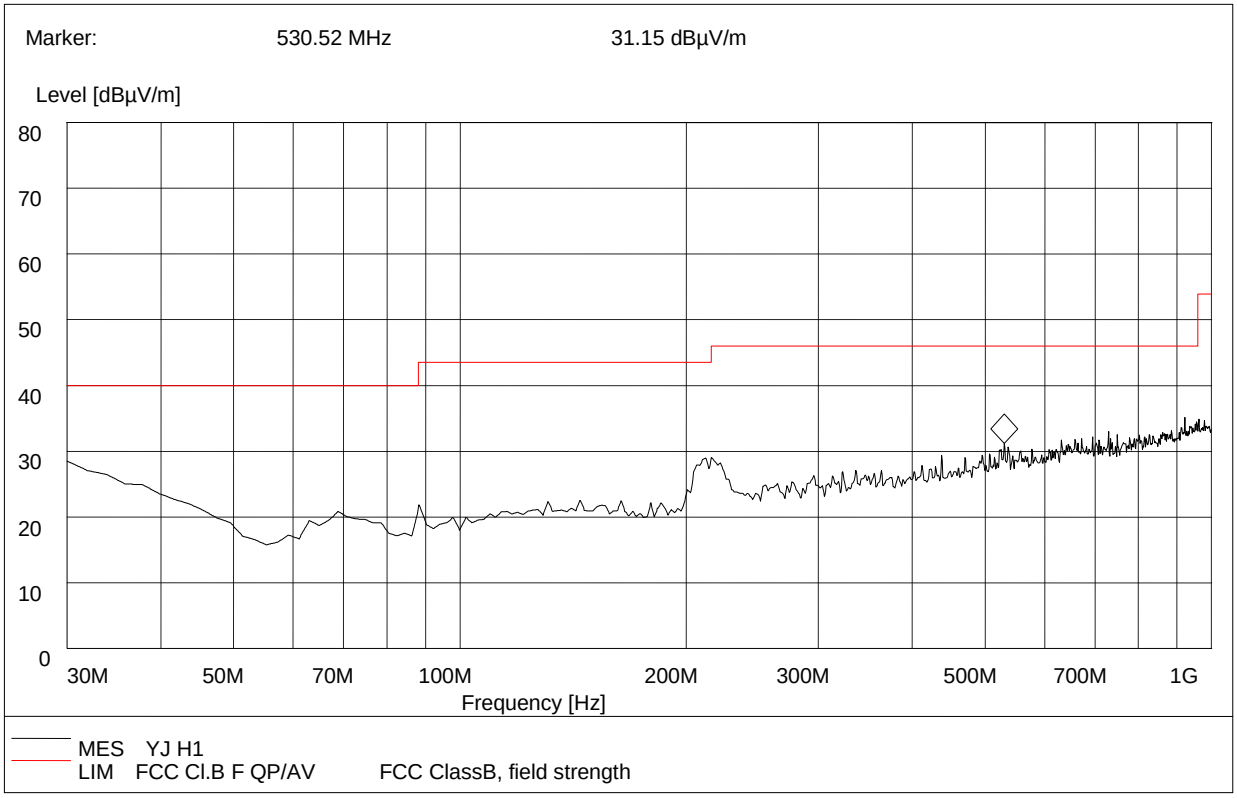
Frequency (MHz)	QuasiPeak (dBµ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµ V/m)	Antenna	Verdict
780.78	36.23	120.000	100.0	46.00	Horizontal	Pass

Test Mode 6：



30MHz to 1GHz, Antenna Vertical

Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµV/m)	Antenna	Verdict
292.72	28.75	120.000	100.0	46.00	Vertical	Pass



30MHz to 1GHz, Antenna Horizontal

Frequency (MHz)	QuasiPeak (dBµ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµ V/m)	Antenna	Verdict
530.52	31.15	120.000	100.0	46.00	Horizontal	Pass

For 1GHz to 25 GHz

Note： Only provide the worst-case data here (adapter model: RD1202000-C55-29MG with EUT model：7279G)。

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11b_2412MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	2390.00	56.40	PK	74.00	-17.60	1.01 H	228	24.20	32.20
2	2390.00	43.60	AV	54.00	-10.40	1.01 H	228	11.40	32.20
3	*2412.00	108.70	PK	/	/	1.03 H	112	76.50	32.20
4	*2412.00	97.70	AV	/	/	1.03 H	112	65.50	32.20
5	4824.00	51.40	PK	74.00	-22.60	1.00 H	254	46.10	5.30
6	4824.00	43.50	AV	54.00	-10.50	1.00 H	254	38.20	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11b_2412MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	2390.00	55.40	PK	74.00	-18.60	1.11 V	228	23.20	32.20
2	2390.00	44.30	AV	54.00	-9.70	1.11 V	228	12.10	32.20
3	*2412.00	111.70	PK	/	/	1.09 V	112	78.50	32.20
4	*2412.00	99.90	AV	/	/	1.03 V	112	67.70	32.20
5	4824.00	54.40	PK	74.00	-19.60	1.21 V	254	49.10	5.30
6	4824.00	43.60	AV	54.00	-10.40	1.21 V	254	38.30	5.30

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11b_2437MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2437.00	109.70	PK	/	/	1.01 H	210	77.50	32.20
2	*2437.00	100.40	AV	/	/	1.01 H	210	68.20	32.20
3	4874.00	54.20	PK	74.00	-19.80	1.03 H	272	48.90	5.30
4	4874.00	44.00	AV	54.00	-10.00	1.03 H	272	38.70	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11b_2437MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2437.00	109.00	PK	/	/	1.09 V	112	76.80	32.20
2	*2437.00	101.30	AV	/	/	1.09 V	112	69.10	32.20
3	4874.00	56.80	PK	74.00	-17.20	1.21 V	254	51.50	5.30
4	4874.00	46.50	AV	54.00	-7.50	1.21 V	254	41.20	5.30

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11b_2462MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2462.00	107.70	PK	/	/	1.05 H	215	75.40	32.30
2	*2462.00	100.50	AV	/	/	1.05 H	215	68.20	32.30
3	2483.50	56.80	PK	74.00	-17.20	1.05 H	211	24.40	32.40
4	2483.50	44.50	AV	54.00	-9.50	1.05 H	211	12.10	32.40
5	4924.00	52.10	PK	74.00	-21.90	1.45 H	320	46.60	5.50
6	4924.00	44.30	AV	54.00	-9.70	1.45 H	320	38.80	5.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11b_2462MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2462.00	110.50	PK	/	/	1.05 V	174	78.20	32.30
2	*2462.00	101.80	AV	/	/	1.05 V	174	69.50	32.30
3	2483.50	57.50	PK	74.00	-16.50	1.05 V	177	25.10	32.40
4	2483.50	44.70	AV	54.00	-9.30	1.05 V	177	12.30	32.40
5	4924.00	54.90	PK	74.00	-19.10	1.45 V	201	49.40	5.50
6	4924.00	42.60	AV	54.00	-11.40	1.45 V	201	37.10	5.50

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11g_2412MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	2390.00	56.30	PK	74.0	-17.70	1.01 H	228	24.10	32.20
2	2390.00	43.40	AV	54.0	-10.60	1.01 H	228	11.20	32.20
3	*2412.00	110.10	PK	/	/	1.03 H	112	77.90	32.20
4	*2412.00	97.60	AV	/	/	1.03 H	112	65.40	32.20
5	4824.00	51.70	PK	74.00	-22.30	1.00 H	254	46.40	5.30
6	4824.00	45.50	AV	54.00	-8.50	1.00 H	254	40.20	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11g_2412MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	2390.00	56.10	PK	74.0	-17.90	1.11 V	228	23.90	32.20
2	2390.00	43.40	AV	54.0	-10.60	1.11 V	228	11.20	32.20
3	*2412.00	108.90	PK	/	/	1.09 V	112	76.70	32.20
4	*2412.00	105.60	AV	/	/	1.03 V	112	73.40	32.20
5	4824.00	54.40	PK	74.00	-19.60	1.21 V	254	49.10	5.30
6	4824.00	43.70	AV	54.00	-10.30	1.21 V	254	38.40	5.30

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11g_2437MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2437.00	107.90	PK	/	/	1.01 H	210	75.70	32.20
2	*2437.00	100.60	AV	/	/	1.01 H	210	68.40	32.20
3	4874.00	53.40	PK	74.00	-20.60	1.03 H	272	48.10	5.30
4	4874.00	43.90	AV	54.00	-10.10	1.03 H	272	38.60	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11g_2437MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2437.00	108.30	PK	/	/	1.09 V	112	76.10	32.20
2	*2437.00	98.70	AV	/	/	1.09 V	112	66.50	32.20
3	4874.00	56.80	PK	74.00	-17.20	1.21 V	254	51.50	5.30
4	4874.00	44.50	AV	54.00	-9.50	1.21 V	254	39.20	5.30

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11g_2462MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2462.00	109.70	PK	/	/	1.05 H	215	77.40	32.30
2	*2462.00	100.90	AV	/	/	1.05 H	215	68.60	32.30
3	2483.50	57.30	PK	74.0	-16.70	1.05 H	211	24.90	32.40
4	2483.50	44.20	AV	54.0	-9.80	1.05 H	211	11.80	32.40
5	4924.00	52.40	PK	74.0	-21.60	1.45 H	320	46.90	5.50
6	4924.00	44.20	AV	54.0	-9.80	1.45 H	320	38.70	5.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11g_2462MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2462.00	111.60	PK	/	/	1.05 V	174	79.30	32.30
2	*2462.00	103.80	AV	/	/	1.05 V	174	71.50	32.30
3	2483.50	55.50	PK	74.0	-18.50	1.05 V	177	23.10	32.40
4	2483.50	44.70	AV	54.0	-9.30	1.05 V	177	12.30	32.40
5	4924.00	53.90	PK	74.0	-20.10	1.45 V	201	48.40	5.50
6	4924.00	45.90	AV	54.0	-8.10	1.45 V	201	40.40	5.50

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11n20_2412MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	2390.00	59.30	PK	74.0	-14.70	1.01 H	228	27.10	32.20
2	2390.00	42.70	AV	54.0	-11.30	1.01 H	228	10.50	32.20
3	*2412.00	109.40	PK	/	/	1.03 H	112	77.20	32.20
4	*2412.00	102.00	AV	/	/	1.03 H	112	69.80	32.20
5	4824.00	54.80	PK	74.00	-19.20	1.00 H	254	49.50	5.30
6	4824.00	45.60	AV	54.00	-8.40	1.00 H	254	40.30	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11n20_2412MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	2390.00	57.70	PK	74.0	-16.30	1.11 V	228	25.50	32.20
2	2390.00	43.70	AV	54.0	-10.30	1.11 V	228	11.50	32.20
3	*2412.00	112.10	PK	/	/	1.09 V	112	79.90	32.20
4	*2412.00	104.00	AV	/	/	1.03 V	112	70.80	32.20
5	4824.00	54.40	PK	74.00	-19.60	1.21 V	254	49.10	5.30
6	4824.00	44.90	AV	54.00	-9.10	1.21 V	254	39.60	5.30

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11n20_2437MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2437.00	112.30	PK	/	/	1.01 H	210	80.10	32.20
2	*2437.00	104.10	AV	/	/	1.01 H	210	71.90	32.20
3	4874.00	57.80	PK	74.00	-16.20	1.03 H	272	52.50	5.30
4	4874.00	45.20	AV	54.00	-8.80	1.03 H	272	39.90	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11n20_2437MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2437.00	113.90	PK	/	/	1.09 V	112	81.70	32.20
2	*2437.00	105.30	AV	/	/	1.09 V	112	73.10	32.20
3	4874.00	56.80	PK	74.00	-17.20	1.21 V	254	51.50	5.30
4	4874.00	45.50	AV	54.00	-8.50	1.21 V	254	40.20	5.30

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11n20_2462MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2462.00	111.20	PK	/	/	1.05 H	215	78.90	32.30
2	*2462.00	101.90	AV	/	/	1.05 H	215	69.60	32.30
3	2483.50	56.30	PK	74.0	-17.70	1.05 H	211	23.90	32.40
4	2483.50	44.10	AV	54.0	-9.90	1.05 H	211	11.70	32.40
5	4924.00	53.40	PK	74.0	-20.60	1.45 H	320	47.90	5.50
6	4924.00	46.30	AV	54.0	-7.70	1.45 H	320	40.80	5.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11n20_2462MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2462.00	110.50	PK	/	/	1.05 V	174	78.20	32.30
2	*2462.00	99.80	AV	/	/	1.05 V	174	67.50	32.30
3	2483.50	55.50	PK	74.0	-18.50	1.05 V	177	23.10	32.40
4	2483.50	44.70	AV	54.0	-9.30	1.05 V	177	12.30	32.40
5	4924.00	55.90	PK	74.0	-18.10	1.45 V	201	50.40	5.50
6	4924.00	46.40	AV	54.0	-7.60	1.45 V	201	40.90	5.50

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11n40_2422MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	2390.00	56.90	PK	74.0	-17.10	1.01 H	228	24.70	32.20
2	2390.00	43.60	AV	54.0	-10.40	1.01 H	228	11.40	32.20
3	*2422.00	107.80	PK	/	/	1.03 H	112	75.60	32.20
4	*2422.00	98.30	AV	/	/	1.03 H	112	66.10	32.20
5	4844.00	51.70	PK	74.00	-22.30	1.00 H	254	46.40	5.30
6	4844.00	43.60	AV	54.00	-10.40	1.00 H	254	38.30	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11n40_2422MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	2390.00	57.00	PK	74.0	-17.00	1.11 V	228	24.80	32.20
2	2390.00	44.40	AV	54.0	-9.60	1.11 V	228	12.20	32.20
3	*2422.00	109.60	PK	/	/	1.09 V	112	77.40	32.20
4	*2422.00	99.60	AV	/	/	1.03 V	112	67.40	32.20
5	4844.00	54.40	PK	74.00	-19.60	1.21 V	254	49.10	5.30
6	4844.00	44.60	AV	54.00	-9.40	1.21 V	254	39.30	5.30

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11n40_2437MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2437.00	109.30	PK	/	/	1.01 H	210	77.10	32.20
2	*2437.00	101.10	AV	/	/	1.01 H	210	68.90	32.20
3	4874.00	53.80	PK	74.00	-20.20	1.03 H	272	48.50	5.30
4	4874.00	44.20	AV	54.00	-9.80	1.03 H	272	38.90	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11n40_2437MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2437.00	109.00	PK	/	/	1.09 V	112	76.80	32.20
2	*2437.00	99.30	AV	/	/	1.09 V	112	67.10	32.20
3	4874.00	56.40	PK	74.00	-17.60	1.21 V	254	51.10	5.30
4	4874.00	44.50	AV	54.00	-9.50	1.21 V	254	39.20	5.30

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11n40_2452MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2452.00	112.20	PK	/	/	1.05 H	215	79.90	32.30
2	*2452.00	101.10	AV	/	/	1.05 H	215	68.80	32.30
3	2483.50	57.30	PK	74.0	-16.70	1.05 H	211	24.90	32.40
4	2483.50	45.00	AV	54.0	-9.00	1.05 H	211	12.60	32.40
5	4904.00	52.70	PK	74.0	-21.30	1.45 H	320	47.20	5.50
6	4904.00	43.00	AV	54.0	-11.00	1.45 H	320	37.50	5.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11n40_2452MHz）									
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)
1	*2452.00	110.40	PK	/	/	1.05 V	174	78.10	32.30
2	*2452.00	97.80	AV	/	/	1.05 V	174	65.50	32.30
3	2483.50	55.50	PK	74.0	-18.50	1.05 V	177	23.10	32.40
4	2483.50	45.70	AV	54.0	-8.30	1.05 V	177	13.30	32.40
5	4904.00	55.90	PK	74.0	-18.10	1.45 V	201	50.40	5.50
6	4904.00	44.70	AV	54.0	-7.30	1.45 V	201	39.20	5.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
   － Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level － Limit value
5. " * ": Fundamental frequency.

2.7. Conducted Emission

2.7.1. Limit of Conducted Emission

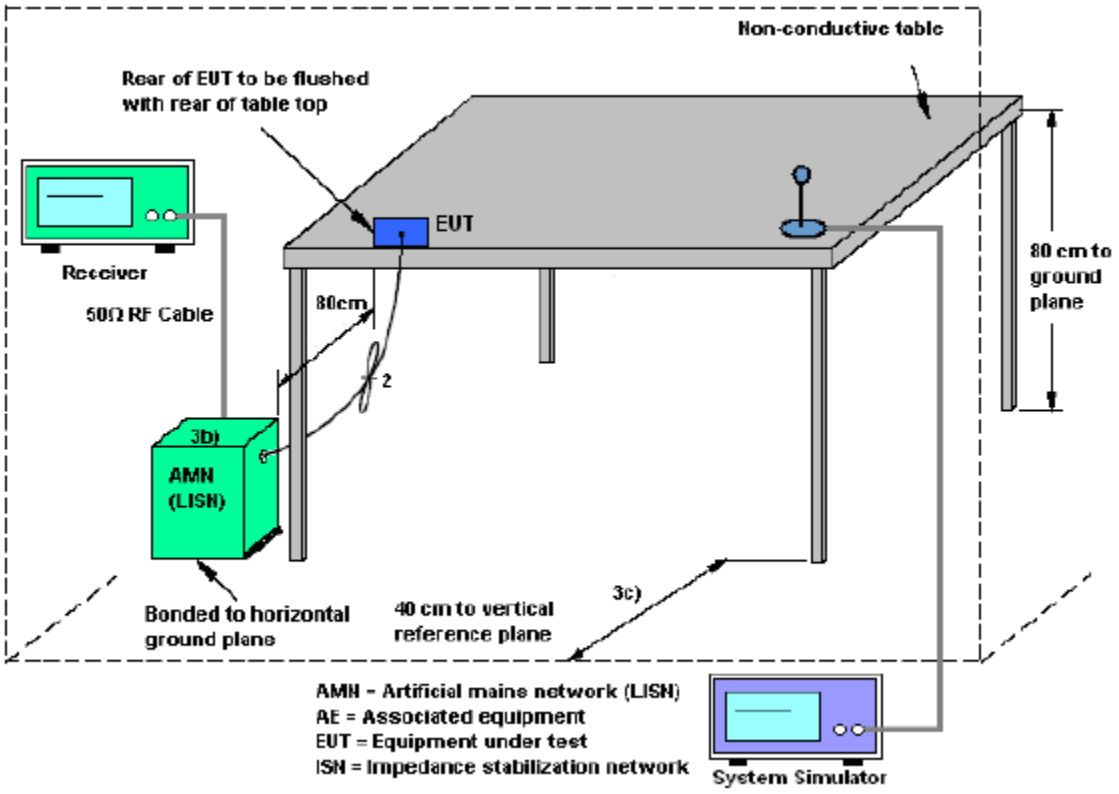
For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

2.7.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.7.3. Test Setup



2.7.4. Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

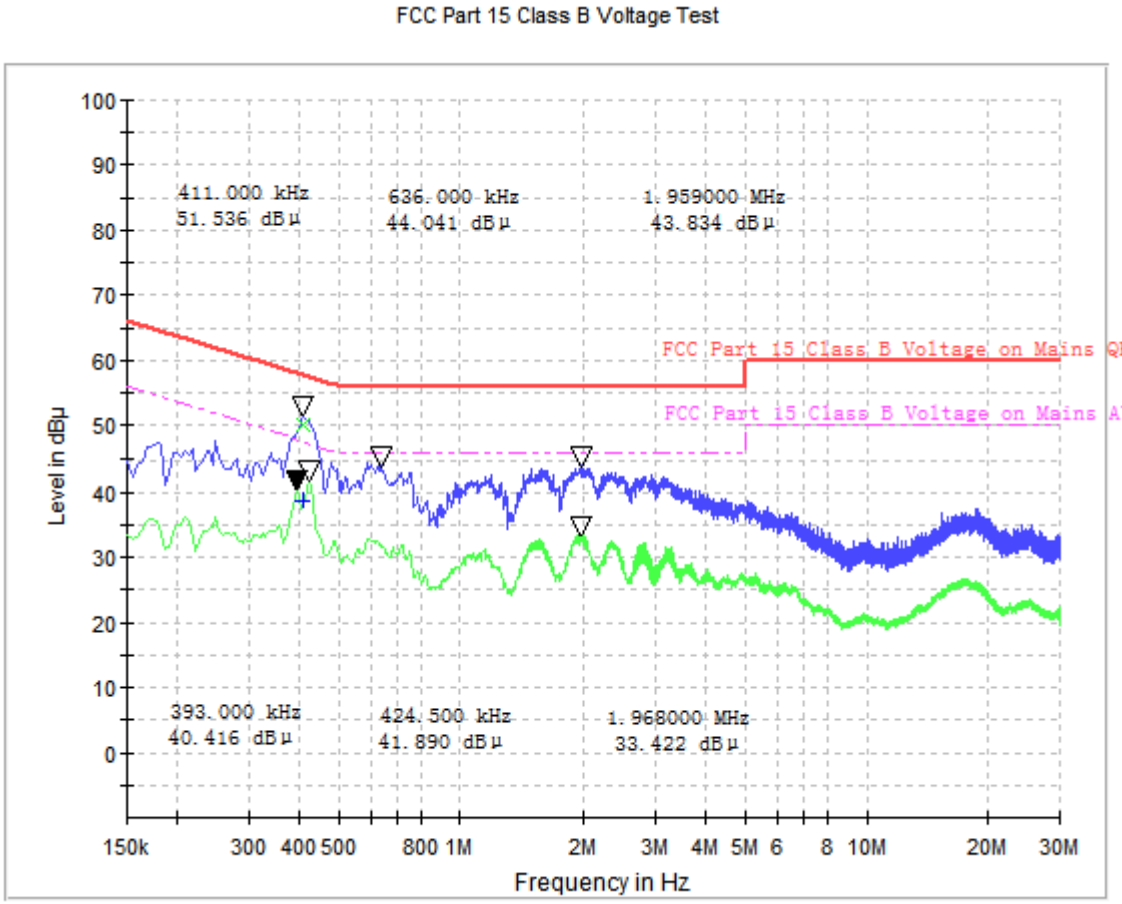
2.7.5. Test Results of Conducted Emission

The EUT configuration of the emission tests is WLAN Link + USB Cable (Charging from Adapter).

Test mode:

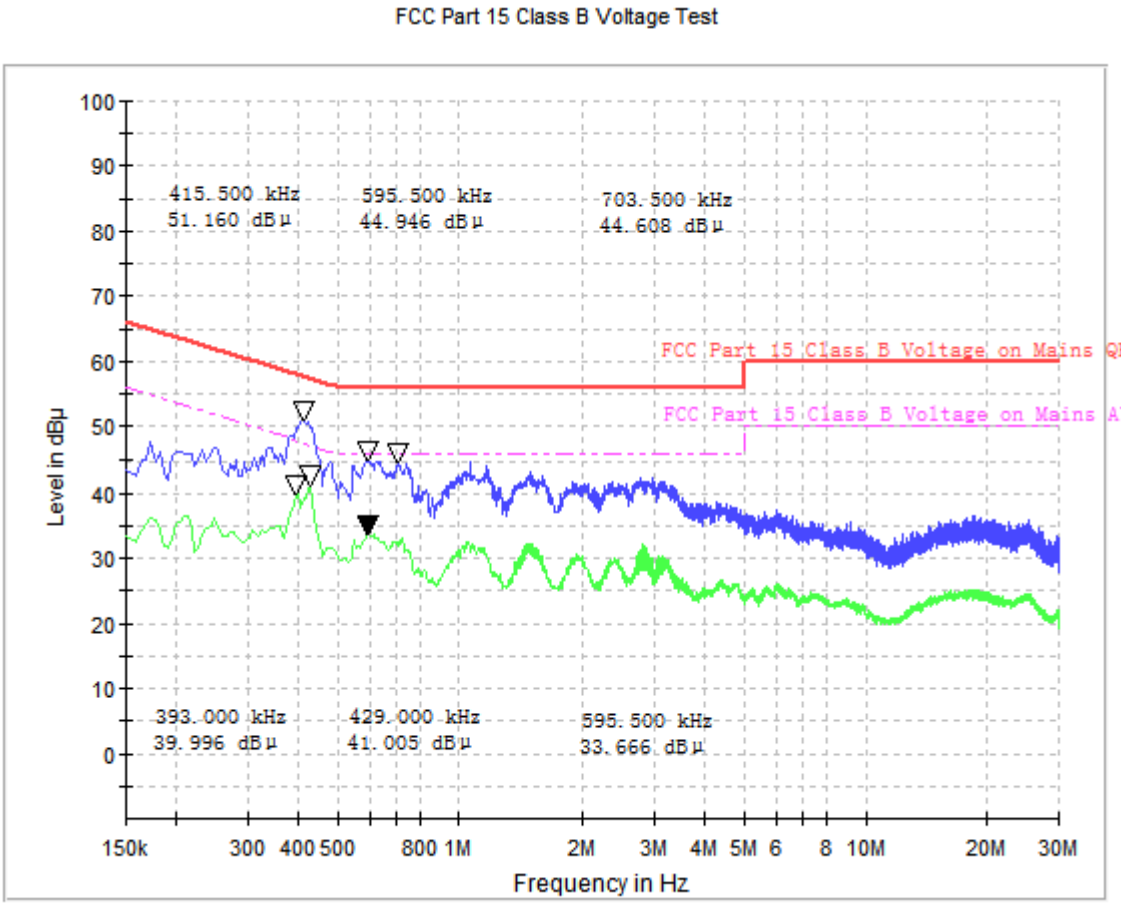
(1) Adapter (model: RD1202000-C55-29MG) with EUT (model: 7279G) operating frequency: 2437MHz
(2) Adapter (model: RD1202000-C55-29MG) with EUT (model: 7278G) operating frequency: 2437MHz
(3) Adapter (model: RD1202000-C55-29MG) with EUT (model: 7272G) operating frequency: 2437MHz
(4) Adapter (model: YJS024U-1202000U) with EUT (model: 7279G) operating frequency: 2437MHz
(5) Adapter (model: YJS024U-1202000U) with EUT (model: 7278G) operating frequency: 2437MHz
(6) Adapter (model: YJS024U-1202000U) with EUT (model: 7272G) operating frequency: 2437MHz

Test Mode 1



L Phase

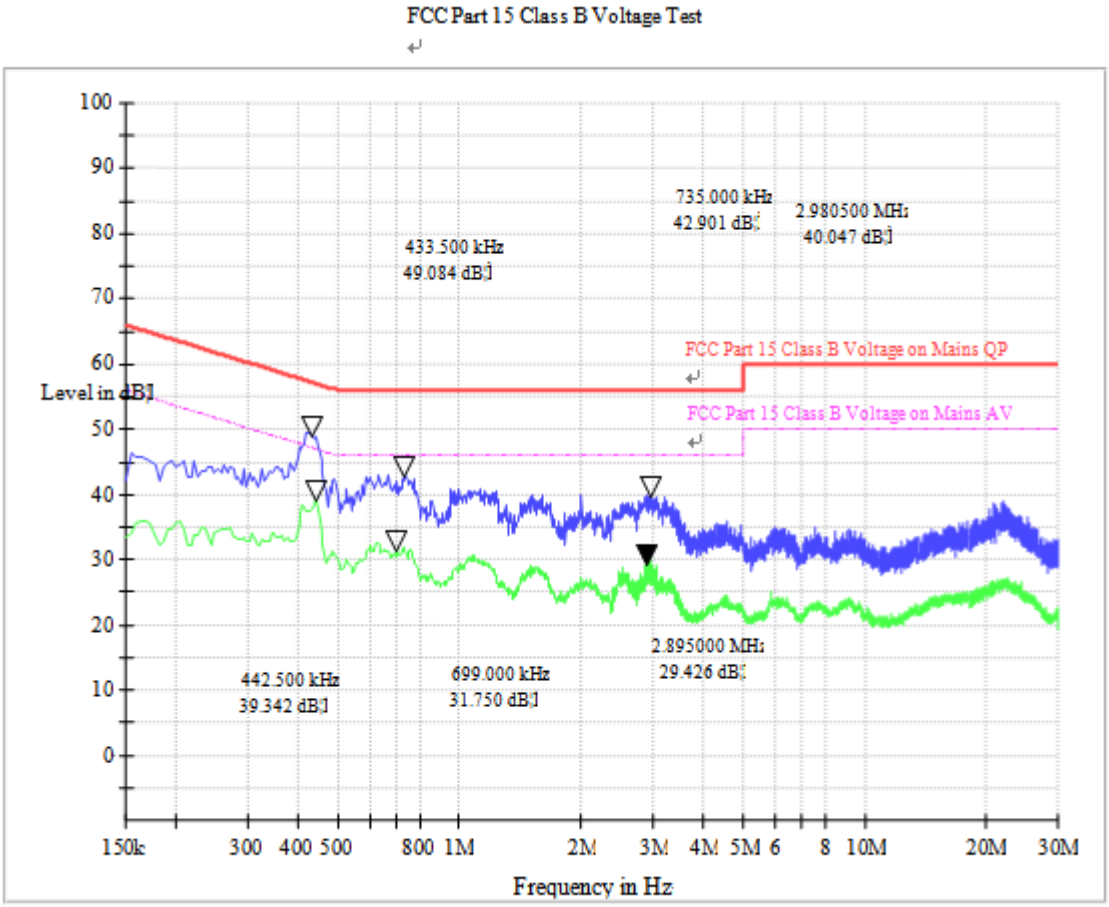
Conducted Disturbance at Mains Terminals					
L Test Data					
QP			**AV**		
Frequency (MHz)	**Limits (dBµV)**	**Measurement Value (dBµV)**	**Frequency (MHz)**	**Limits (dBµV)**	**Measurement Value (dBµV)**
0.411	57.6	51.536	0.393	48.0	40.416
0.636	56.0	44.041	0.425	47.3	41.890
1.959	56.0	43.834	1.968	46.0	33.422



N Phase

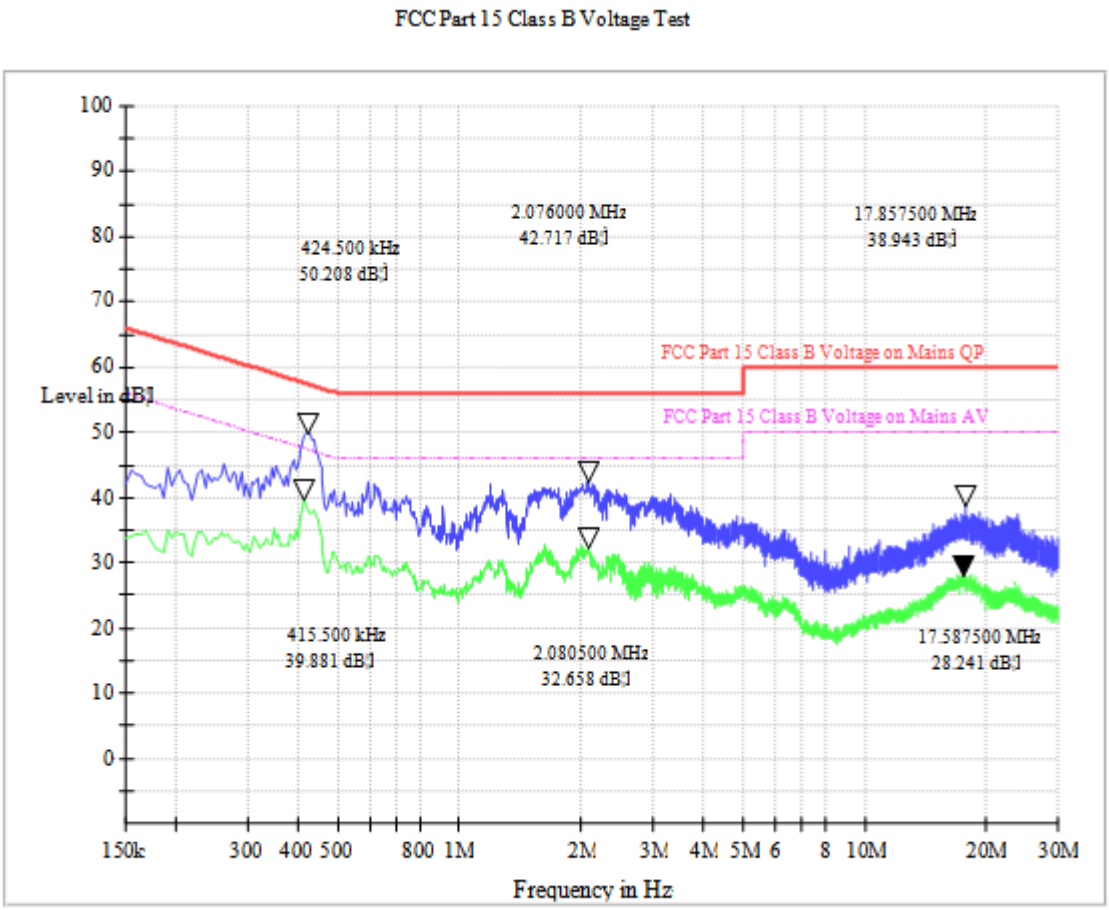
Conducted Disturbance at Mains Terminals					
N Test Data					
QP			AV		
Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)	Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)
0.416	57.5	51.160	0.393	48.0	39.996
0.596	56.0	44.946	0.429	47.3	41.005
0.704	56.0	44.608	0.596	46.0	33.666

Test Mode 2



L Phase

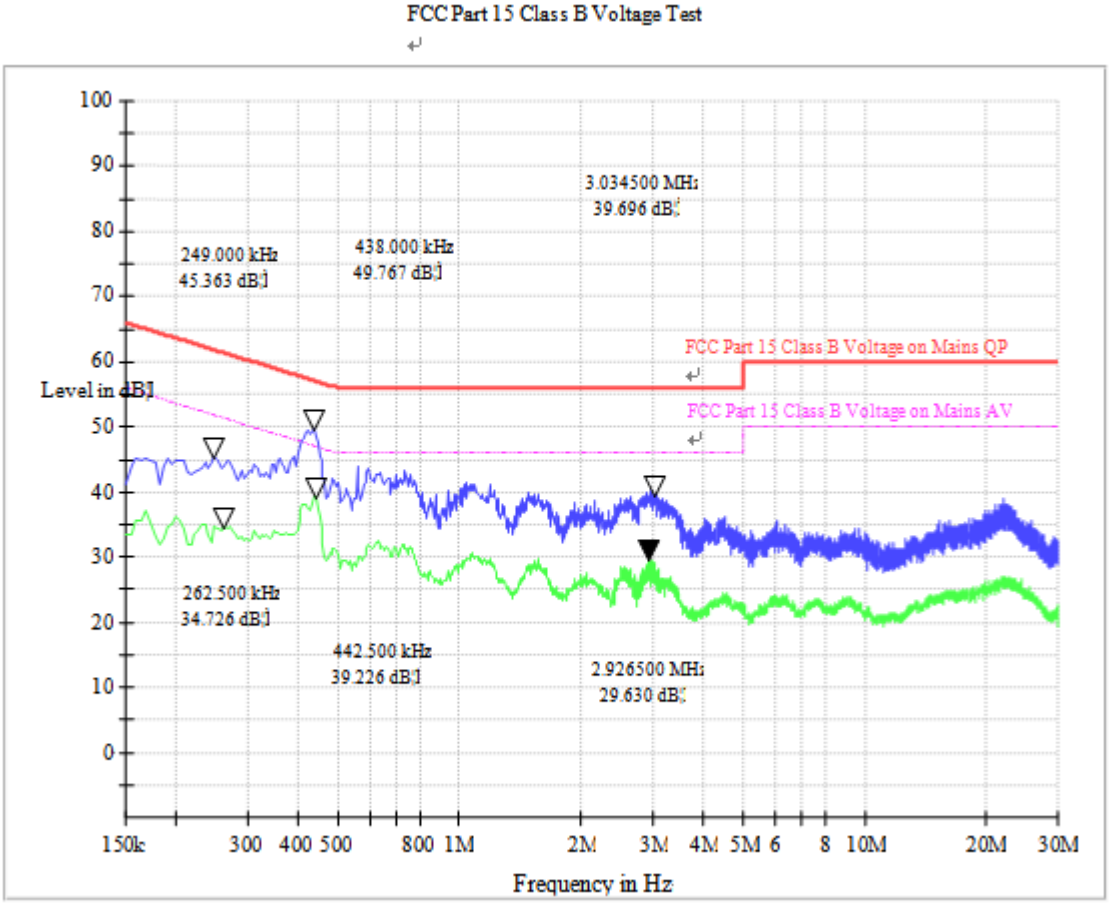
Conducted Disturbance at Mains Terminals					
L Test Data					
QP			AV		
Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)	Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)
0.434	57.2	49.084	0.443	47.0	39.342
0.735	56.0	42.901	0.699	46.0	31.750
2.981	56.0	40.047	2.895	46.0	29.426



N Phase

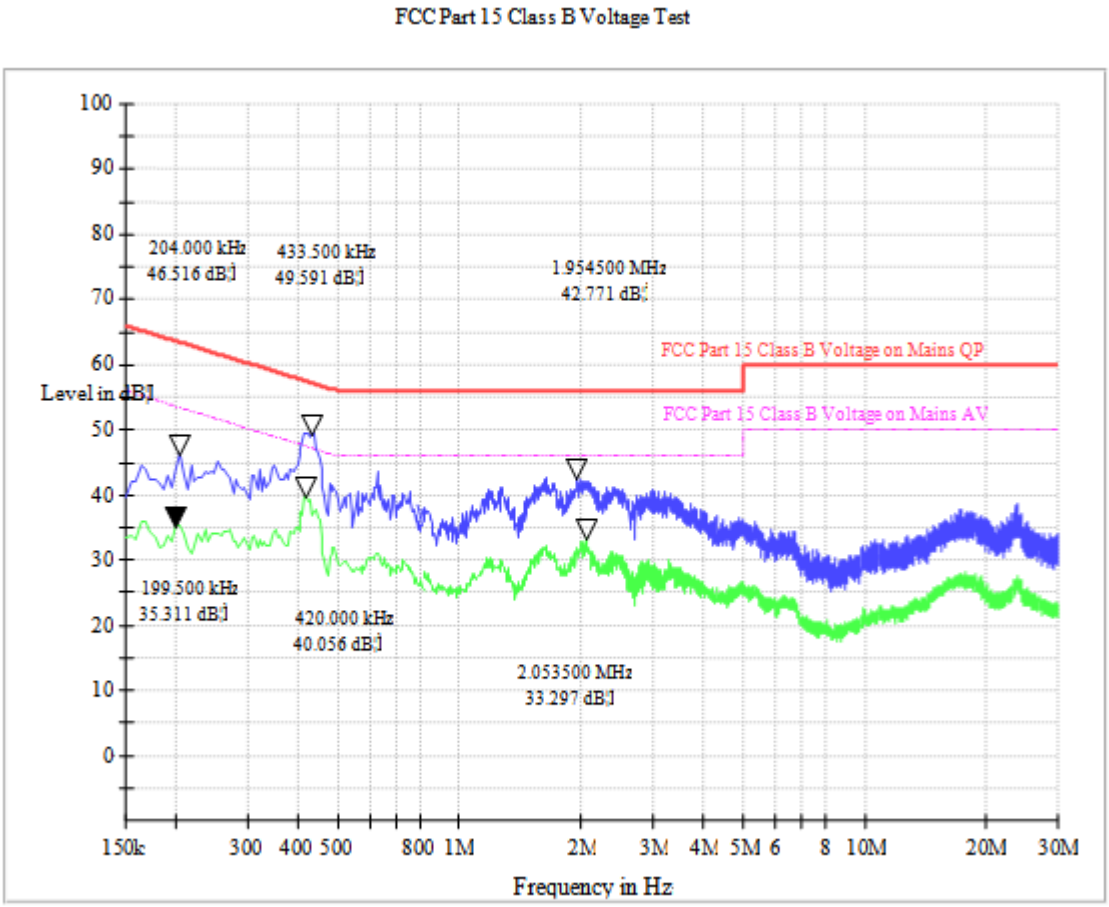
Conducted Disturbance at Mains Terminals					
N Test Data					
QP			**AV**		
Frequency (MHz)	**Limits (dBµV)**	**Measurement Value (dBµV)**	**Frequency (MHz)**	**Limits (dBµV)**	**Measurement Value (dBµV)**
0.425	57.3	50.208	0.416	47.5	39.881
2.076	56.0	42.717	2.081	46.0	32.658
17.858	60.0	38.943	17.588	50.0	28.241

Test Mode 3



L Phase

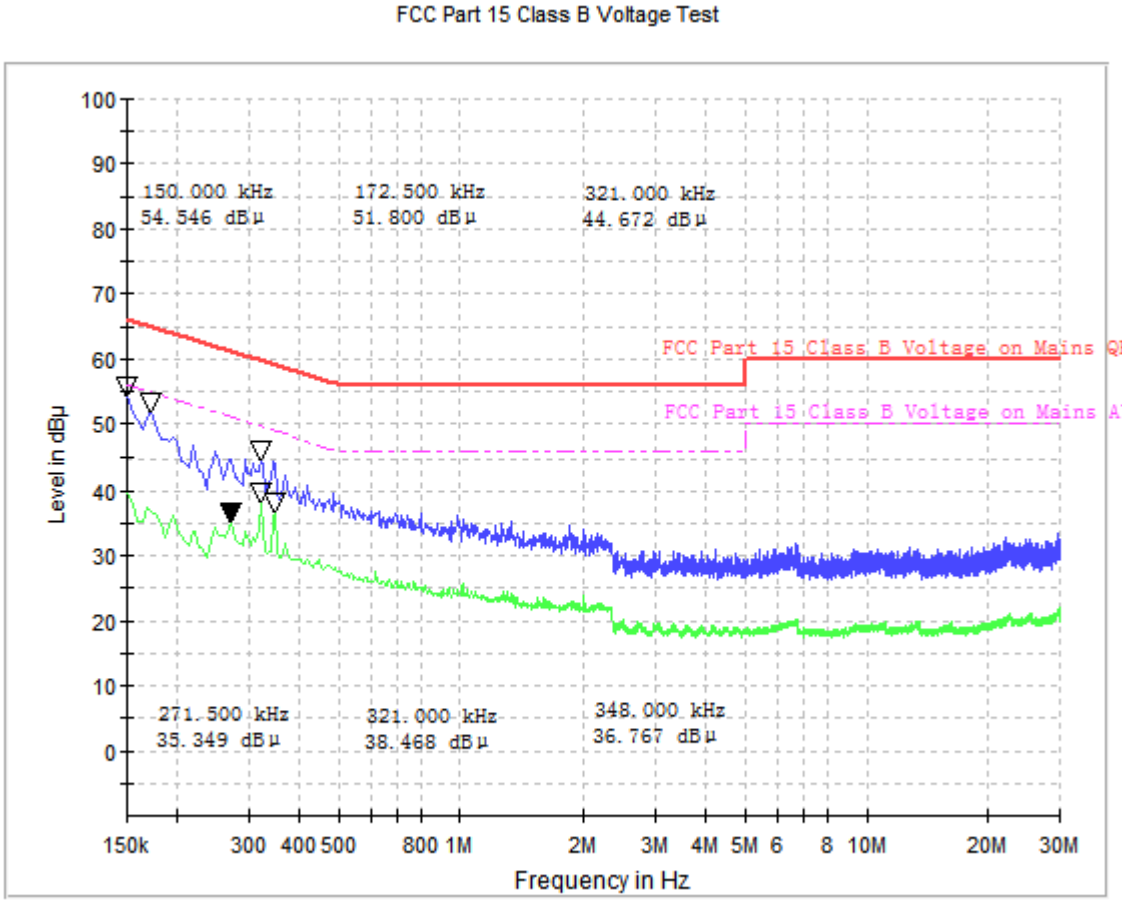
Conducted Disturbance at Mains Terminals					
L Test Data					
QP			**AV**		
Frequency (MHz)	**Limits (dBµV)**	**Measurement Value (dBµV)**	**Frequency (MHz)**	**Limits (dBµV)**	**Measurement Value (dBµV)**
0.249	61.8	45.363	0.263	51.3	34.726
0.438	57.1	49.767	0.443	47.0	39.226
3.035	56.0	39.696	2.927	46.0	29.630



N Phase

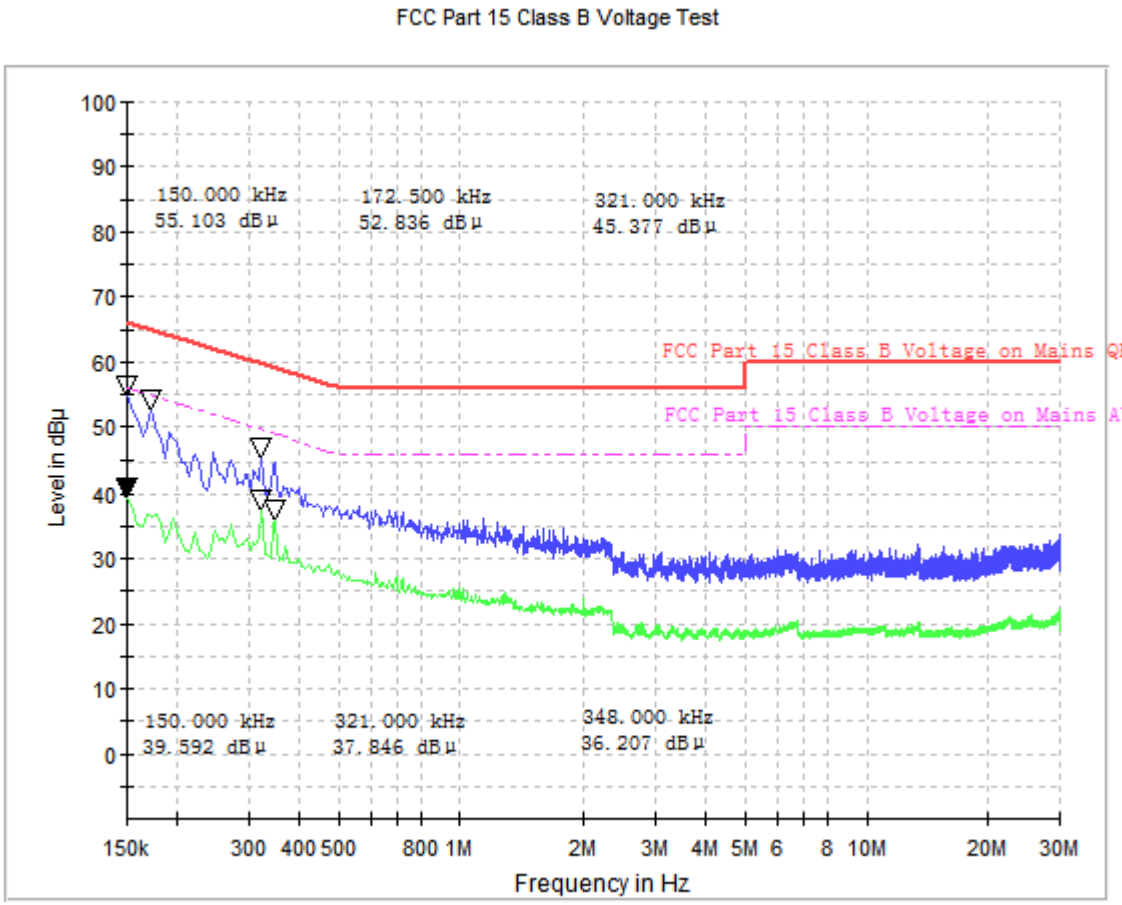
Conducted Disturbance at Mains Terminals					
N Test Data					
QP			AV		
Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)	Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)
0.204	63.4	46.516	0.200	53.6	35.311
0.434	57.2	49.591	0.420	47.4	40.056
1.955	56.0	42.771	2.054	46.0	33.297

Test Mode 4



L Phase

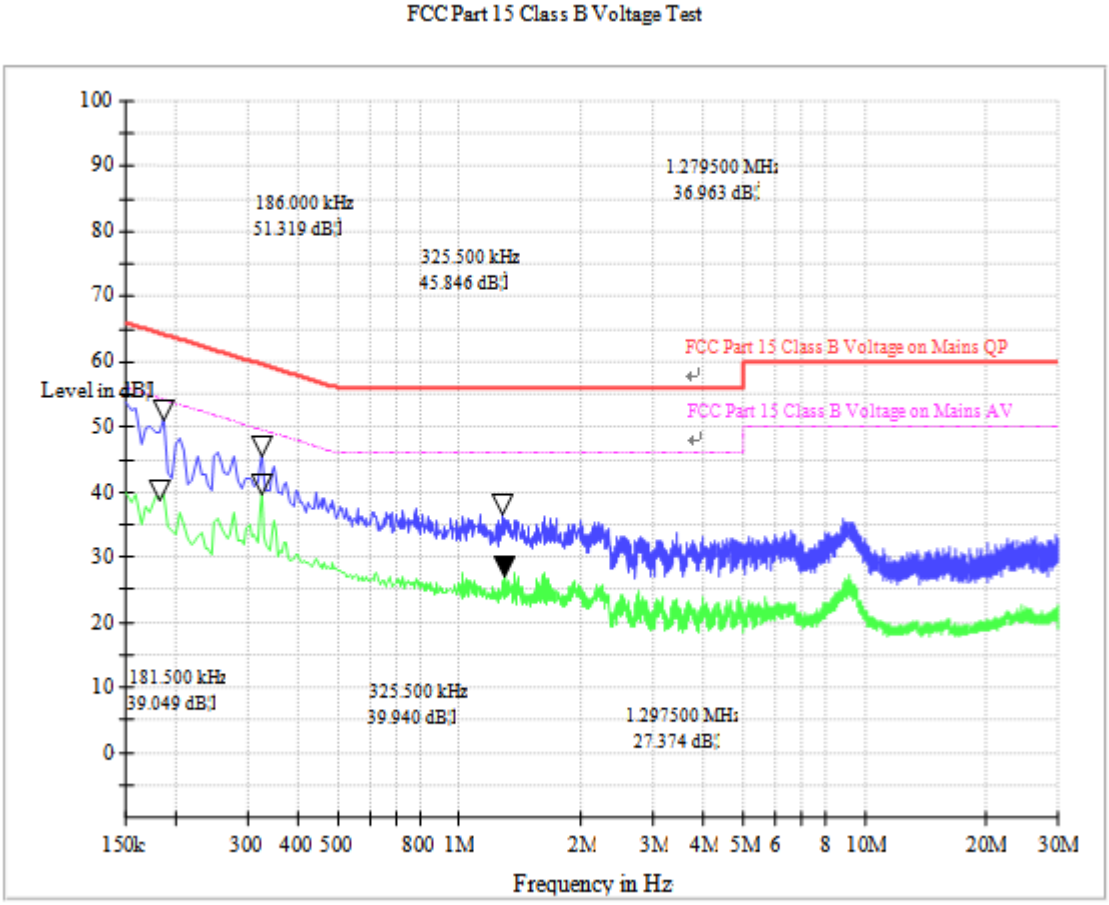
Conducted Disturbance at Mains Terminals					
L Test Data					
QP			**AV**		
Frequency (MHz)	**Limits (dBµV)**	**Measurement Value (dBµV)**	**Frequency (MHz)**	**Limits (dBµV)**	**Measurement Value (dBµV)**
0.150	66.0	54.546	0.272	51.1	35.349
0.173	64.8	51.800	0.321	49.7	38.468
0.321	59.7	44.672	0.348	49.0	36.767



N Phase

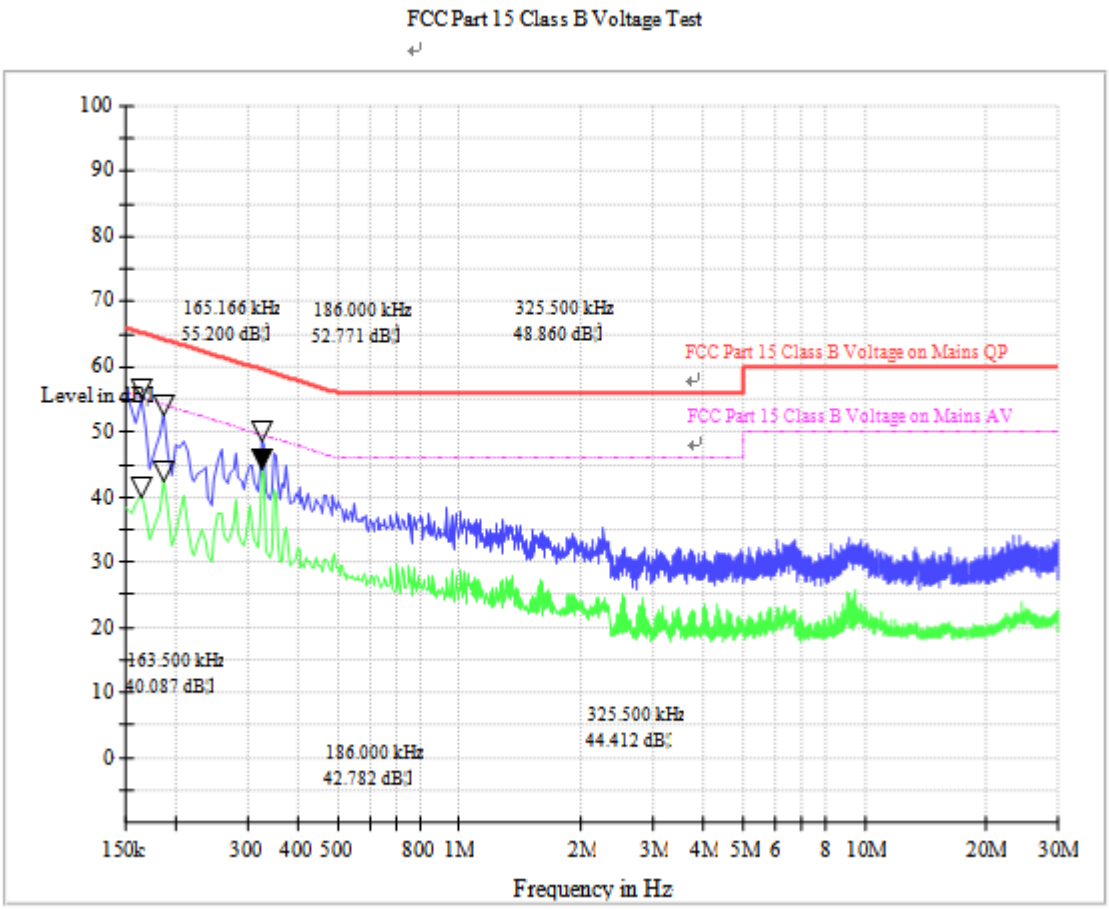
Conducted Disturbance at Mains Terminals					
N Test Data					
QP			AV		
Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)	Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)
0.150	66.0	55.103	0.150	56.0	39.592
0.173	64.8	52.836	0.321	49.7	37.846
0.321	59.7	45.377	0.348	49.0	36.207

Test Mode 5



L Phase

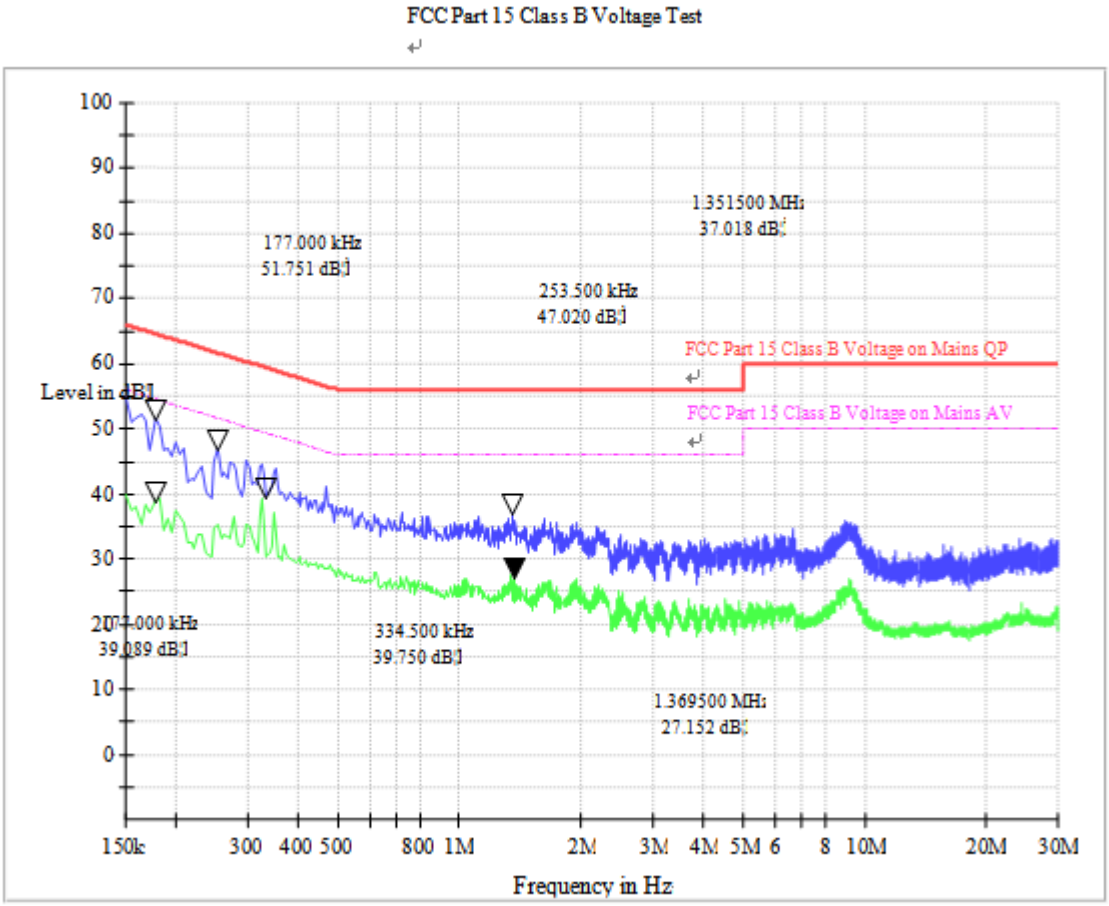
Conducted Disturbance at Mains Terminals					
L Test Data					
QP			**AV**		
Frequency (MHz)	**Limits (dBµV)**	**Measurement Value (dBµV)**	**Frequency (MHz)**	**Limits (dBµV)**	**Measurement Value (dBµV)**
0.186	64.2	51.319	0.182	54.4	39.049
0.326	59.6	45.846	0.326	49.6	39.940
1.280	56.0	36.963	1.298	46.0	27.374



N Phase

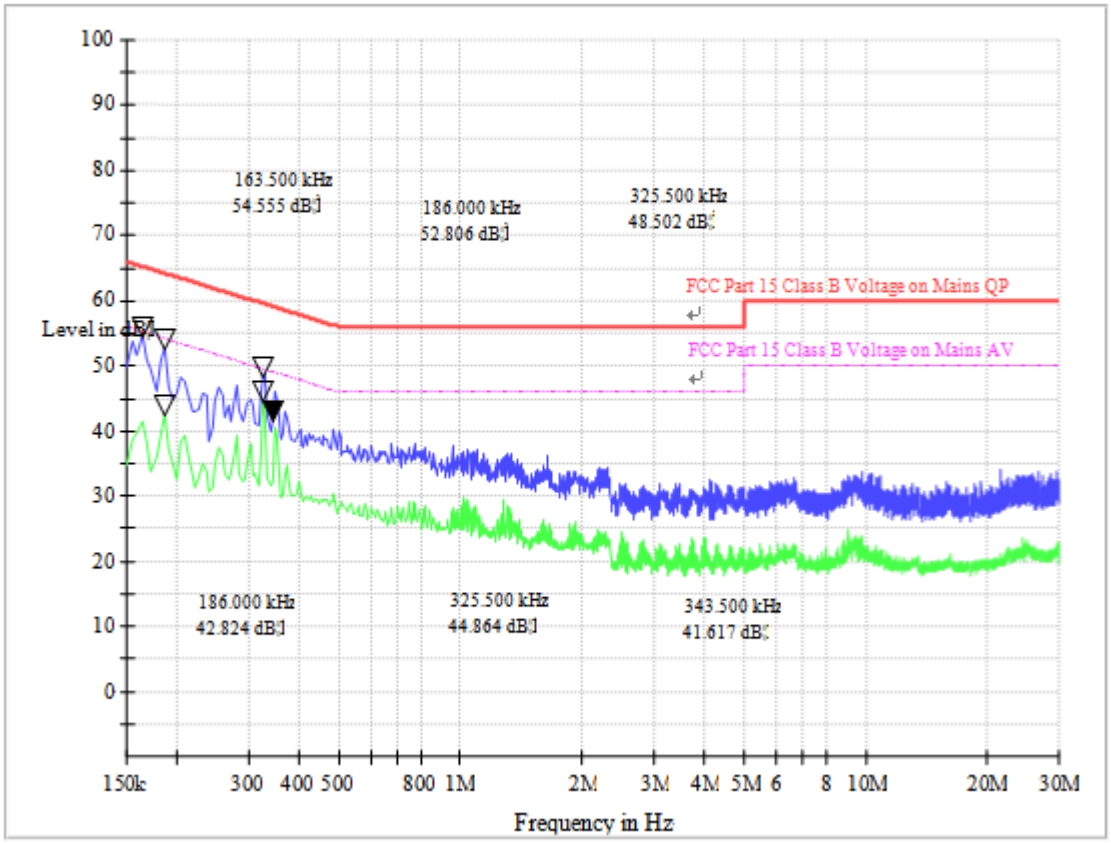
Conducted Disturbance at Mains Terminals					
N Test Data					
QP			AV		
Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)	Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)
0.165	65.2	55.200	0.164	55.3	40.087
0.186	64.2	52.771	0.186	54.2	42.782
0.326	59.6	48.860	0.326	46.0	44.412

Test Mode 6



L Phase

Conducted Disturbance at Mains Terminals					
L Test Data					
QP			**AV**		
Frequency (MHz)	**Limits (dBµV)**	**Measurement Value (dBµV)**	**Frequency (MHz)**	**Limits (dBµV)**	**Measurement Value (dBµV)**
0.177	64.6	51.751	0.177	54.6	39.089
0.254	61.6	47.020	0.335	49.3	39.750
1.352	56.0	37.018	1.370	46.0	27.152



N Phase

Conducted Disturbance at Mains Terminals					
N Test Data					
QP			**AV**		
Frequency (MHz)	**Limits (dBµV)**	**Measurement Value (dBµV)**	**Frequency (MHz)**	**Limits (dBµV)**	**Measurement Value (dBµV)**
0.164	65.3	54.555	0.186	54.2	42.824
0.186	64.2	52.806	0.326	49.6	44.864
0.326	59.6	48.502	0.344	49.1	41.617

3. List of measuring equipment

Description	Manufacturer	Model	Serial No.	Test Date	Due Date	Remark
EMI Test Receiver	R&S	ESIB26	A0304218	2015.06.02	2016.06.01	Radiation
Full-Anechoic Chamber	Albatross	12.8m*6.8m*6.4m	A0412372	2015.01.05	2016.01.04	Radiation
Loop Antenna	Schwarz beck	HFH2-Z2	100047	2015.06.02	2016.06.01	Radiation
Bilog Antenna	Schwarzbeck	VULB 9163	9163-274	2015.06.02	2016.06.01	Radiation
Double ridge horn antenna	R&S	HF906	100150	2015.06.02	2016.06.01	Radiation
Ultra-wideband antenna	R&S	HL562	100089	2015.06.02	2016.06.01	Radiation
Test Antenna – Horn (18-26.5GHz)	ETS	3160-09	A0902607	2015.06.02	2016.06.01	Radiation
Amplifier 20M~3GHz	R&S	PAP-0203H	22018	2015.06.02	2016.06.01	Radiation
Ampilier 1G~18GHz	R&S	MITEQ AFS42-00101800	25-S-42	2015.06.02	2016.06.01	Radiation
Ampilier 18G~40GHz	R&S	JS42-18002600-28-5A	12111.0980.00	2015.06.02	2016.06.01	Radiation
Spectrum Analyzer	R&S	FSP40	1164.4391.40	2015.07.07	2016.07.06	Conducted
Power Meter	R&S	NRVS	1020.1809.02	2015.06.02	2016.06.01	Conducted
Power Sensor	R&S	NRV-Z4	823.3618.03	2015.06.02	2016.06.01	Conducted
LISN	ROHDE&SCHWARZ	ESH2-Z5	A0304221	2015.06.02	2016.06.01	Conducted
Test Receiver	R&S	ESCS30	A0304260	2015.06.02	2016.06.01	Conducted
Cable	SUNHNER	SUCOFLEX 100	/	2015.06.02	2016.06.01	Radiation
Cable	SUNHNER	SUCOFLEX 104	/	2015.06.02	2016.06.01	Radiation

** END OF REPORT **