RF TEST REPORT

Report No.: SET2015-03812

Product Name: Industrial Handheld Terminal

FCC ID: 2AC68-AUTOID9

Model No. : AUTOID9 AUTOID9HC

Applicant: Jiangsu SEUIC Technology Co.,Ltd

Address: No 23, Wenzhu Road, Yuhuatai District, Nanjing, Jiangsu, China

Issued by: CCIC-SET

Lab Location: Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen, 518055, P. R. China

Tel: 86 755 26627338 **Fax:** 86 755 26627238

Test Report

Product Name ..... :	Industrial Handheld Terminal
Model No. ……..:	AUTOID9 AUTOID9HC
Brand Name ..... :	AUTOID
Trade Name ..... :	SEUIC
Applicant ..... :	Jiangsu SEUIC Technology Co.,Ltd
Applicant Address ..... :	No 23, Wenzhu Road, Yuhuatai District, Nanjing, Jiangsu, China
Manufacturer ..... :	Jiangsu SEUIC Technology CO.,Ltd
Manufacturer Address ..... :	Nanjing High-tech Development Zone software center 406#.
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 DTS Meas Guidance v03r02
Test Result ..... :	PASS
Tested by ..... :	Haigang He 2015.03.27 Haigang He, Test Engineer
Reviewed by..... :	Zhu Qi 2015.03.27 Zhu Qi, Senior Egineer
Approved by ..... :	Wu Li'an 2015.03.27 Wu Li'an, Manager

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Change History		
Issue	Date	Reason for change
1.0	Mar 27,2015	First edition

GENERAL INFORMATION

1.1 EUT Description

EUT Type	:	Industrial Handheld Terminal
Serial No.	:	P16E709D4784010
IMEI	:	352482033215041
FCC ID	:	2AC68-AUTOID9
Hardware Version	:	D500_Main
Software Version	:	3.4.0
Frequency Range	:	802.11a: 5.745 GHz – 5.825GHz 802.11b/g/n-20MHz: 2.412GHz - 2.462GHz 802.11n-40MHz:2.422GHz – 2.452GHz
Channel Number	:	802.11a:5 802.11b/g/n-20MHz: 11 802.11n-40MHz:9
Modulation Type	:	DSSS (802.11b), OFDM (802.11a/g/n)
Antenna Type	:	PIFA Antenna
Antenna Gain	:	-1 dBi

Note 1: The EUT is a Industrial Handheld Terminal, it contains WIFI operating at 2.4GHz and 5GHz band; it supports 802.11a, 802.11b, 802.11g, 802.11n and they are all tested in this report.

Note 2: The frequencies allocated is F (MHz) =2412+5*(n-1) (1<=n<=11) for 2.4GHz band and F (MHz) =5745+5*(n-149) (149<=n<=165) for 5GHz band. The lowest, middle, highest channel numbers of the EUT used and tested in this report are separately 1 (2412MHz), 6 (2437MHz) and 11 (2462MHz) for 802.11b/g/n-20MHz, 3(2422MHz), 6 (2437MHz) and 9 (2452MHz) for 802.11n-40MHz and 149(5745MHz), 157 (5785MHz), 165 (5825MHz) for 802.11a

Note 3: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

Note 3: The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

Note4: The EUT has two models: AUTOID 9 and AUTOID9HC.They have the same size, internal structure, PCB, material and function. Only one is different for key board. One button is seventeen (which is model AUTOID 9), the other button is twenty two (which is model AUTOID9HC).So all the test is in the model AUTOID9HC and add different test of AUTOID 9.

1.2 Test Standards and Results

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

No.	Identity	Document Title
1	47 CFR Part 15 Subpart C 2014	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	Description	Result
1	15.203	Antenna Requirement	PASS
2	15.247(b)	Peak Output Power	PASS
3	15.247(a)	Bandwidth	PASS
4	15.247(d)	Conducted Spurious Emission	PASS
5	15.247(d)	Band Edge	PASS
6	15.207	Conducted Emission	PASS
7	15.209 ,15.247(c)	Radiated Emission	PASS
8	15.247(e)	Power spectral density (PSD)	PASS

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

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.

Test Items	Mode	Data Rate	Channel
Peak Conducted Output Power Power Spectral Density 6dB Bandwidth Spurious RF conducted emission Radiated Emission 9kHz~1GHz& Radiated Emission 1GHz~10th Harmonic	11b/DSSS	11 Mbps	1/6/11
	11g/OFDM	54 Mbps	1/6/11
	11a/OFDM	54 Mbps	149/157/165
	11n(20MHz)/OFDM	72Mbps	1/6/11
	11n(40MHz)/OFDM	150Mbps	3/6/9
Band Edge	11b/DSSS	11 Mbps	1/11
	11g/OFDM	54 Mbps	1/11
	11n(20MHz)/OFDM	72Mbps	1/11
	11n(40MHz)/OFDM	150 Mbps	3/9

1.3 Facilities and Accreditations

1.3.1 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.

1.3.2 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (℃):	15℃ - 35℃
Relative Humidity (%):	30% -60%
Atmospheric Pressure (kPa):	86KPa-106KPa

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: External antenna

An External antenna was soldered to the antenna port of EUT via an RF cable, can be removed.

Antenna General Information:

No.	EUT Model	Ant. Cat.	Ant. Type	Gain(dBi)
1	Industrial Handheld Terminal	External	PIFA	-1.0

2.1.3 Result: comply

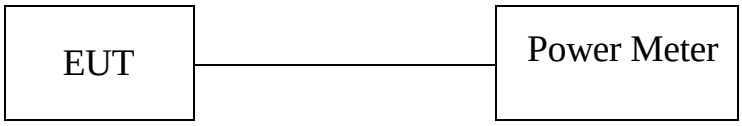
The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

2.2 Peak Output Power

2.2.1 Requirement

According to FCC section 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: The maximum peak conducted output power of the intentional radiator shall not exceed1 Watt.

2.2.2 Test Description



The measured output power was calculated by the reading of the spectrum analyzer and calibration.

A. Test Setup:

The EUT was directly connected to the power meter by 20dB Atten and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due Date
Power Meter	R&S	NRVS	1020.1809.02	2014.06.07	2015.06.06
Power Sensor	R&S	NRV-Z4	823.3618.03	2014.06.07	2015.06.06

2.2.3 Test Result

The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output peak power of the Module.

2.2.3.1 802.11b Test mode

Test Verdict:

Channel	Frequency (MHz)	Measured Output Peak Power(dBm)	Limits (dBm)	Result
1	2412	16.17	30	PASS
6	2437	16.06	30	PASS
11	2462	15.99	30	PASS

Note: 1. For 802.11b mode at finial test to get the worst-case emission at 11Mbps.
2. The test results including the cable lose.

2.2.3.2 802.11g Test mode

Test Verdict:

Channel	Frequency (MHz)	Measured Output Peak Power (dBm)	Limits (dBm)	Result
1	2412	15.55	30	PASS
6	2437	15.36	30	PASS
11	2462	15.39	30	PASS

Note: 1. For 802.11g mode at finial test to get the worst-case emission at 54Mbps.
2. The test results including the cable lose.

2.2.3.3 802.11n-20MHz Test mode

Test Verdict:

Channel	Frequency (MHz)	Measured Output Peak Power(dBm)	Limits (dBm)	Result
1	2412	14.49	30	PASS
6	2437	14.59	30	PASS
11	2462	14.49	30	PASS

Note: 1. For 802.11n-20 mode at finial test to get the worst-case emission at 72Mbps.
2. The test results including the cable lose.

2.2.3.4 802.11n-40MHz Test mode

Test Verdict:

Channel	Frequency (MHz)	Measured Output Peak Power(dBm)	Limits (dBm)	Result
3	2422	13.42	30	PASS
6	2437	13.33	30	PASS
9	2452	13.28	30	PASS

Note: 1. For 802.11n-40 mode at finial test to get the worst-case emission at 150Mbps.
2. The test results including the cable lose.

2.2.3.5 802.11aMHz Test mode

Test Verdict:

Channel	Frequency (MHz)	Measured Output Peak Power(dBm)	Limits (dBm)	Result
149	5745	15.26	30	PASS
157	5785	15.38	30	PASS
165	5825	15.15	30	PASS

Note: 1. For 802.11a mode at finial test to get the worst-case emission at 54Mbps.
2. The test results including the cable lose.

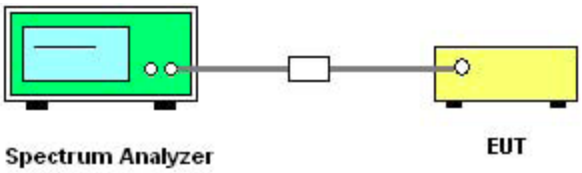
2.3 Bandwidth

2.3.1 Requirement

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

2.3.2 Test Description

A. Test Set:



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss and Atten as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	R&S	FSP40	1164.4391.40	2014.07.07	2015.07.06

2.3.3 Test Result

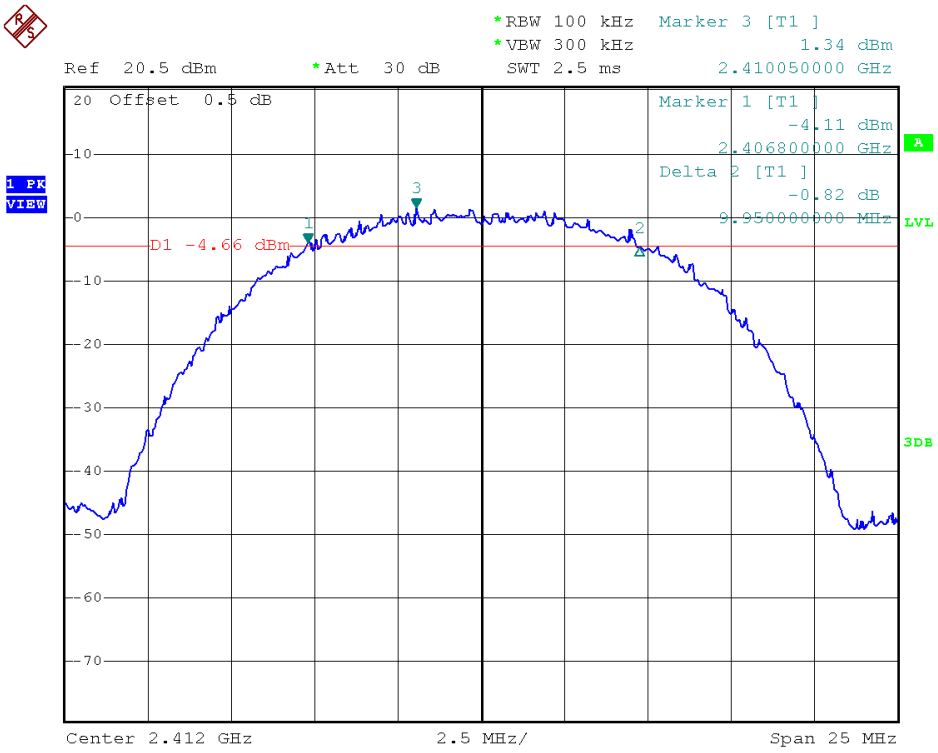
The lowest, middle and highest channels are selected to perform testing to record the 6 dB bandwidth of the Module.

2.3.3.1 802.11b Test mode

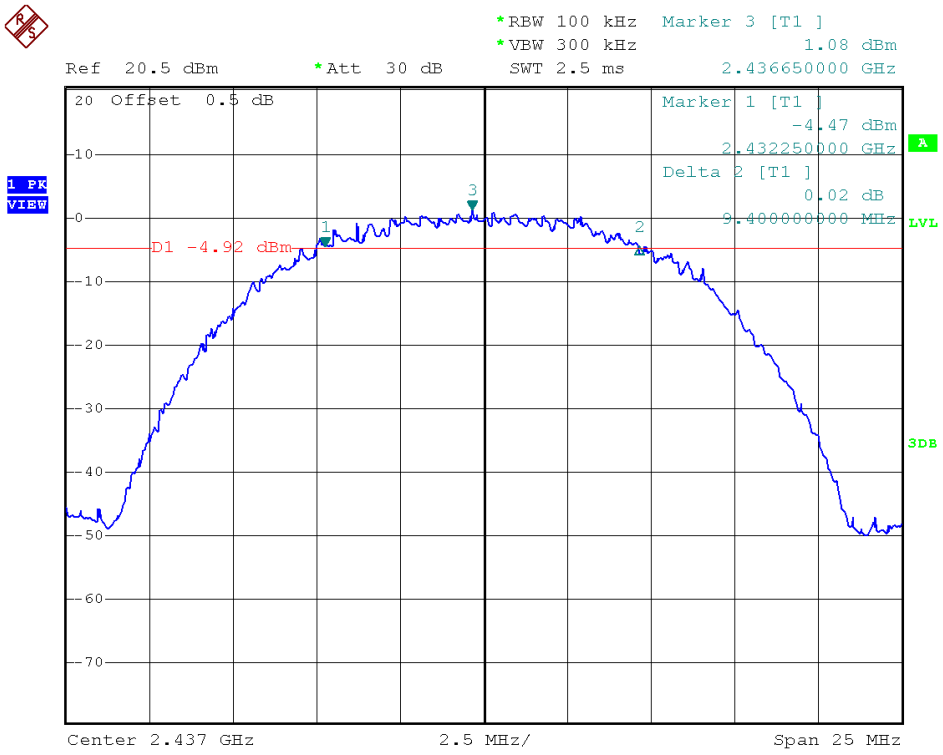
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Refer to Plot	Limits(kHz)	Result
1	2412	9.95	Plot 2.3 A	≥500	PASS
6	2437	9.40	Plot 2.3 B	≥500	PASS
11	2462	9.50	Plot 2.3 C	≥500	PASS

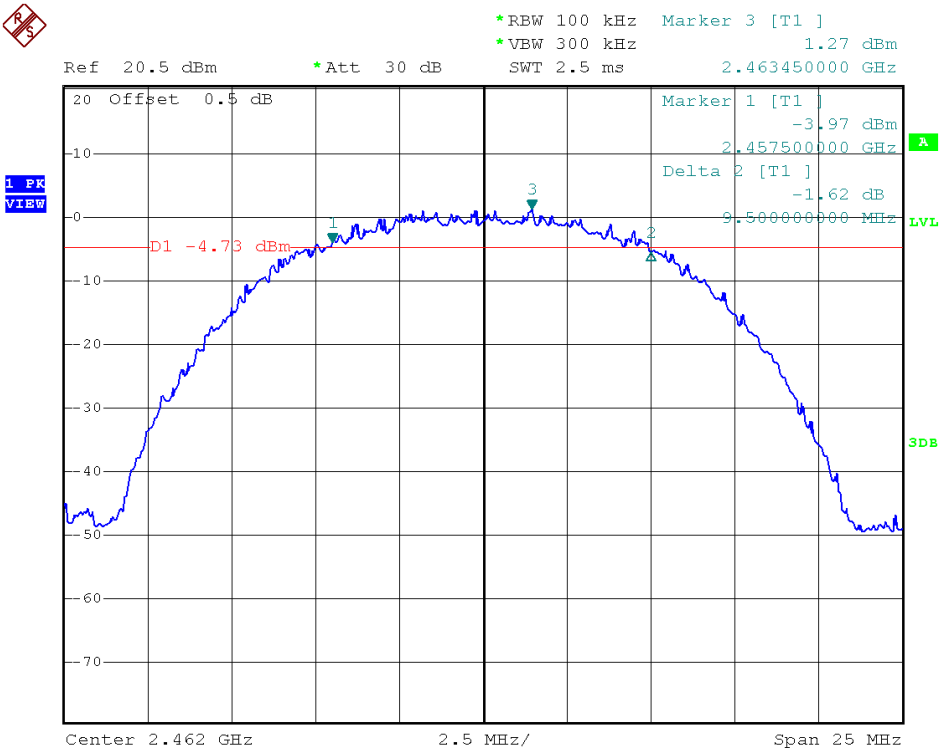
B. Test Plots:



(Plot 2.3 A: Channel 1: 2412MHz @ 802.11b)



(Plot 2.3 B: Channel 6: 2437 MHz @ 802.11b)



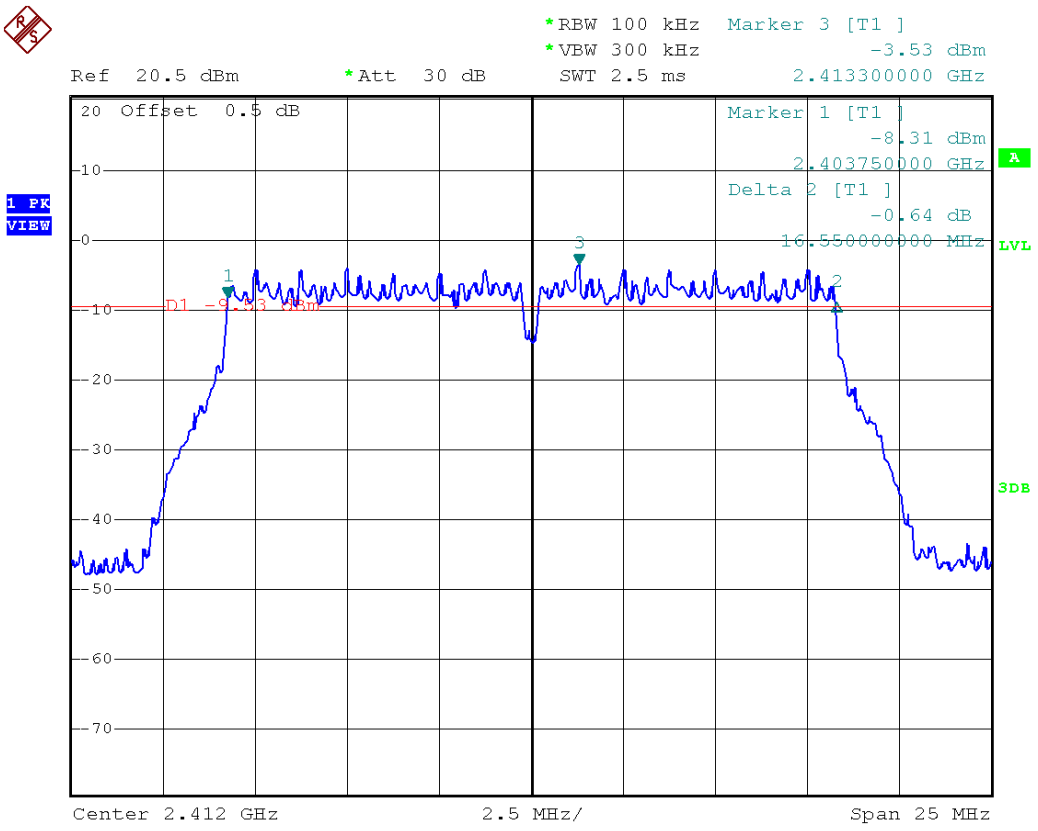
(Plot 2.3 C: Channel 11: 2462MHz @ 802.11b)

2.3.3.2 802.11g Test mode

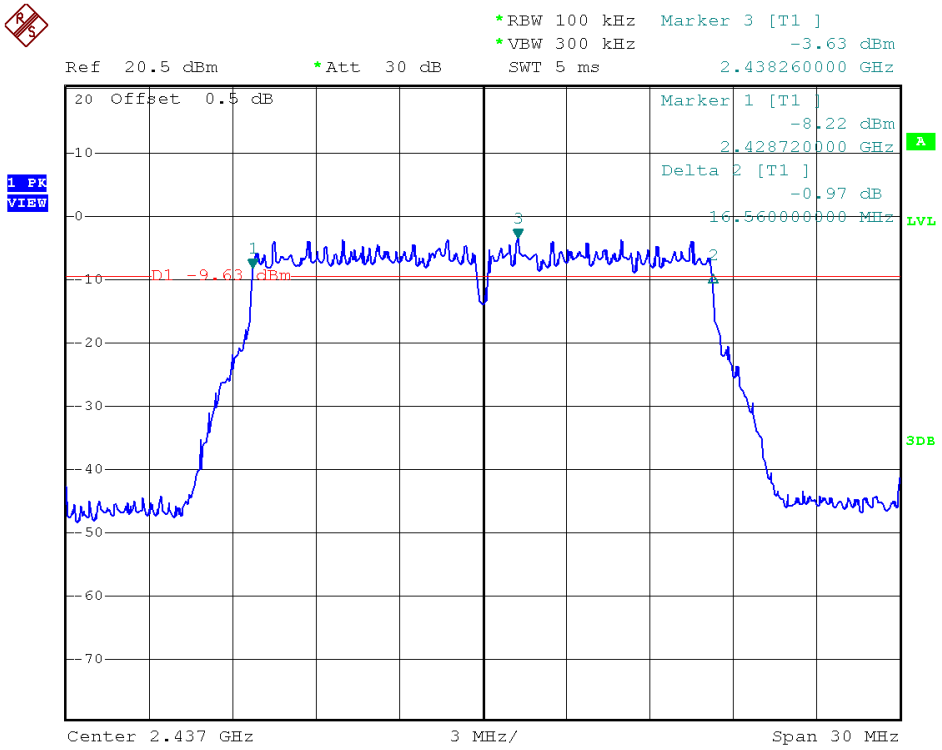
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Refer to Plot	Limits (kHz)	Result
1	2412	16.55	Plot 2.3 D	≥500	PASS
6	2437	16.56	Plot 2.3 E	≥500	PASS
11	2462	16.55	Plot 2.3 F	≥500	PASS

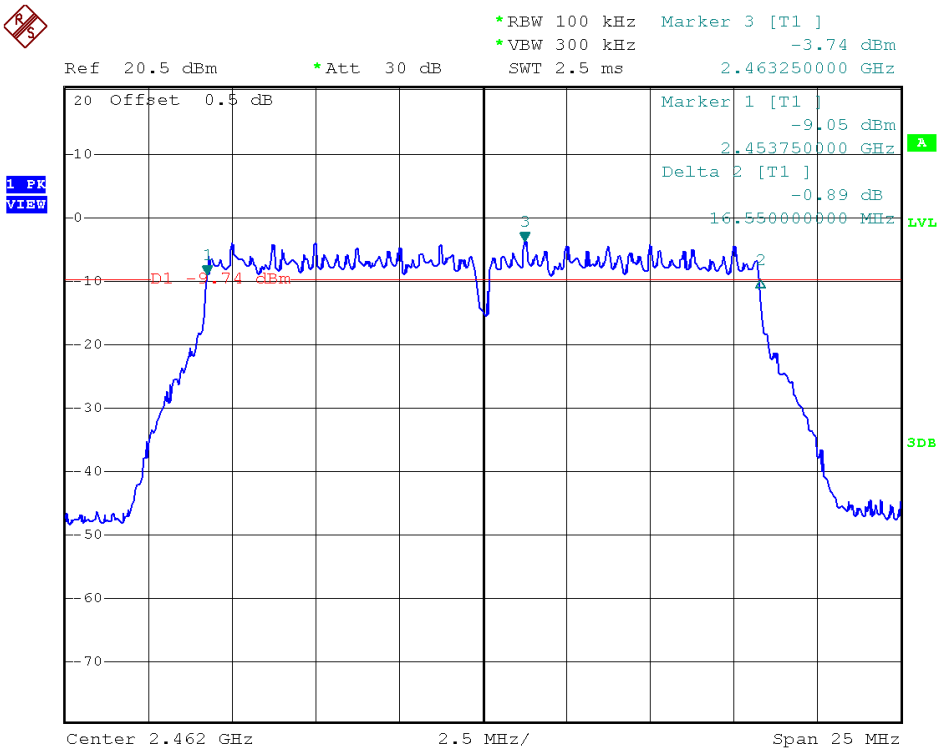
B. Test Plots:



(Plot 2.3 D: Channel 1: 2412MHz @ 802.11g)



(Plot 2.3 E: Channel 6: 2437MHz @ 802.11g)



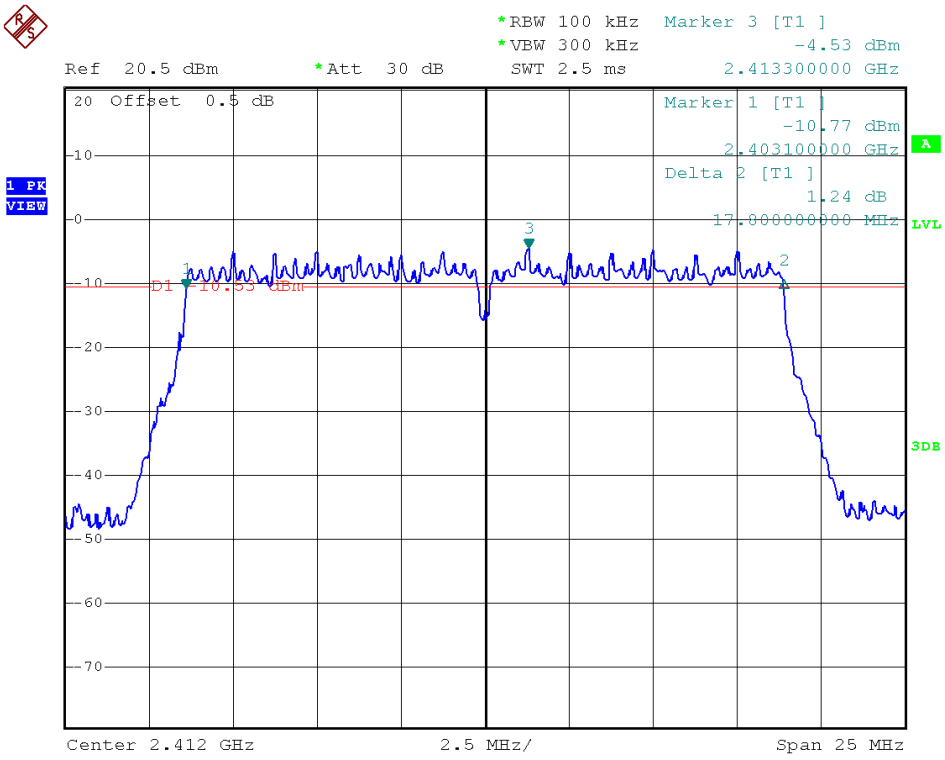
(Plot 2.3 F: Channel 11: 2462MHz @ 802.11g)

2.3.3.3 802.11n-20 Test mode

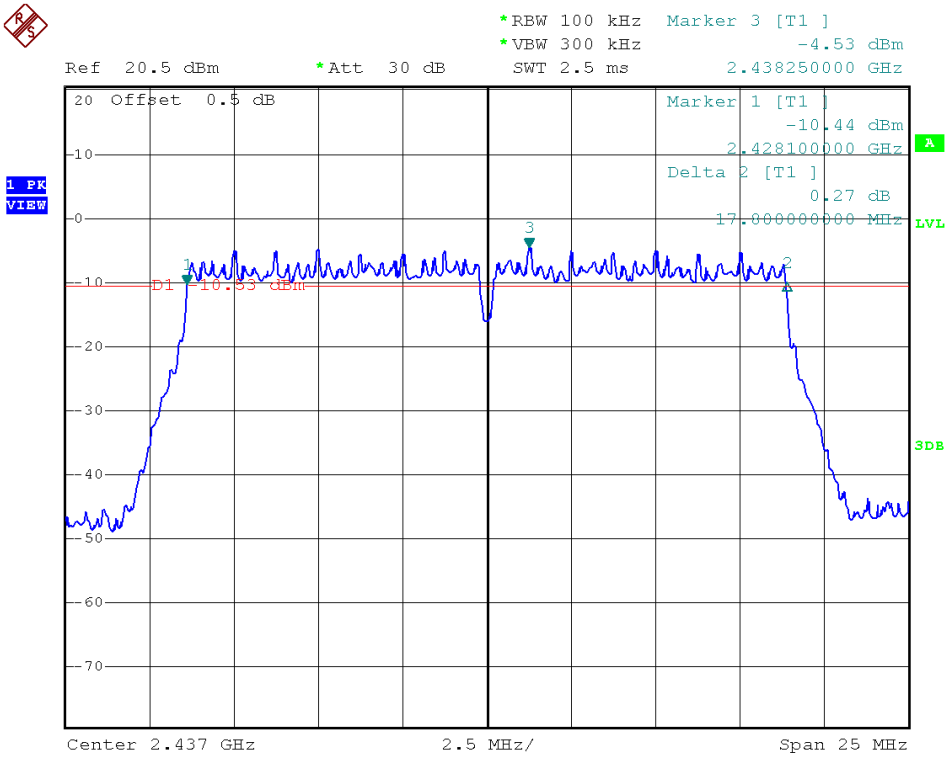
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Refer to Plot	Limits (kHz)	Result
1	2412	17.80	Plot 2.3 G	≥500	PASS
6	2437	17.80	Plot 2.3 H	≥500	PASS
11	2462	17.75	Plot 2.3 I	≥500	PASS

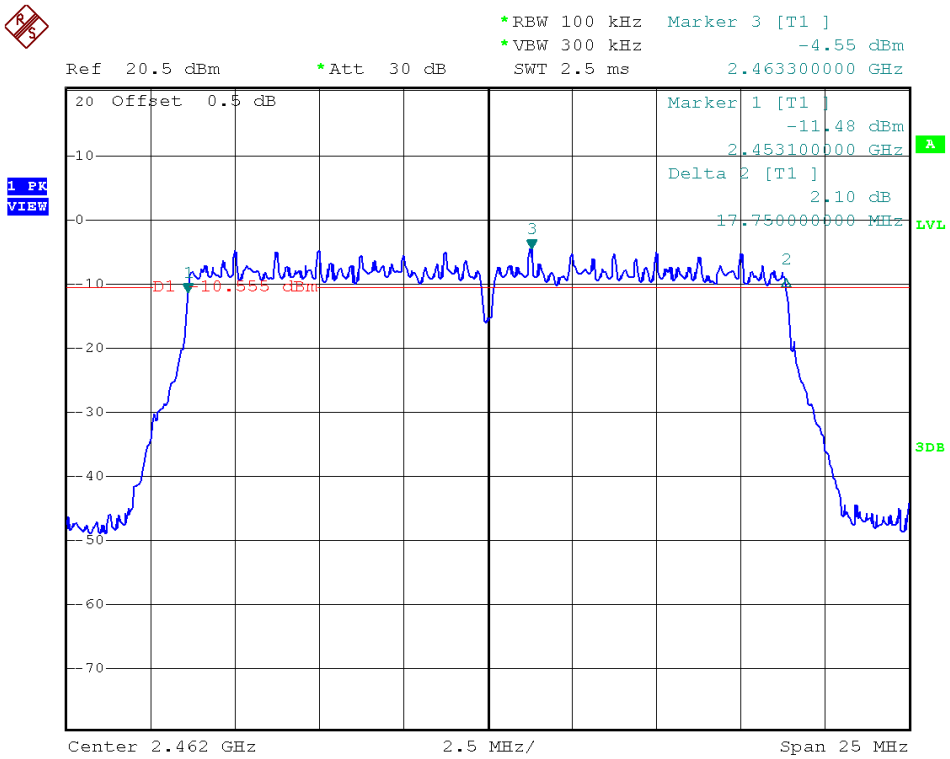
B. Test Plots:



(Plot 2.3 G: Channel 1: 2412MHz @ 802.11n-20)



(Plot 2.3 H: Channel 6: 2437MHz @ 802.11n-20)



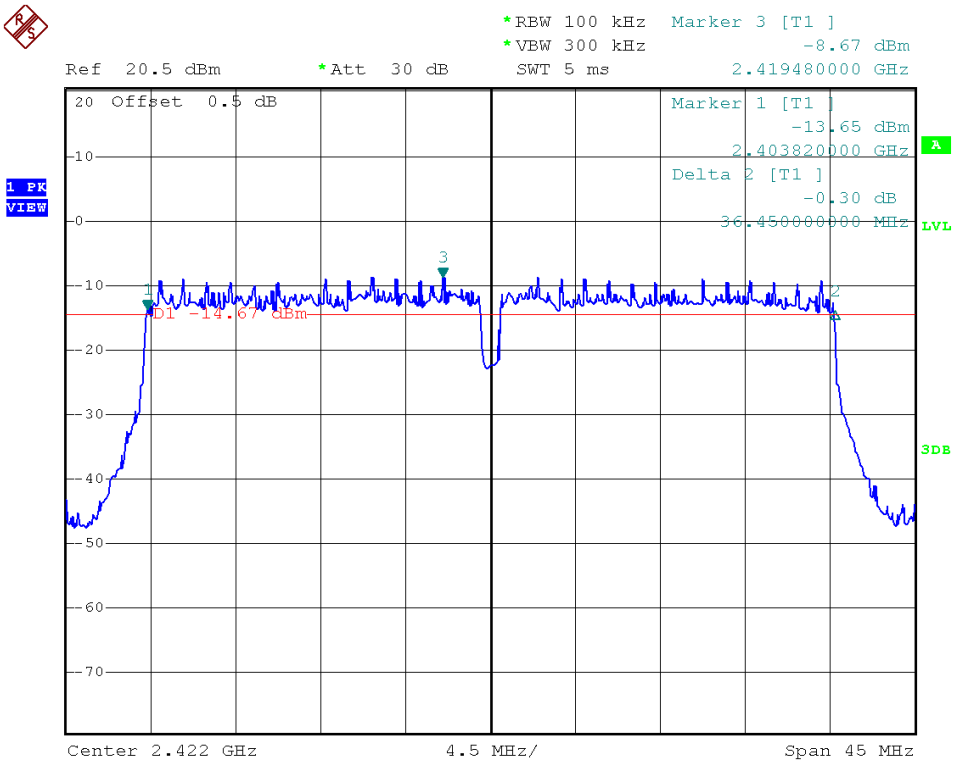
(Plot 2.3 I: Channel 11: 2462MHz @ 802.11n-20)

2.3.3.4 802.11n-40 Test mode

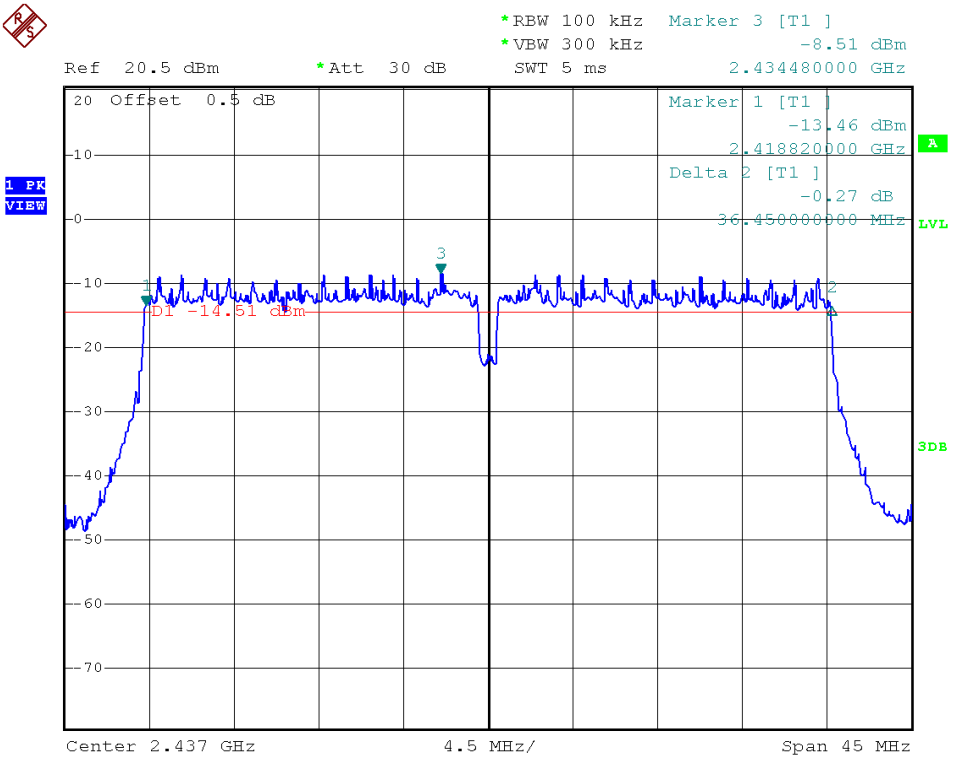
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Refer to Plot	Limits (kHz)	Result
3	2422	36.45	Plot 2.3 J	≥500	PASS
6	2437	36.45	Plot 2.3 K	≥500	PASS
9	2452	35.54	Plot 2.3 L	≥500	PASS

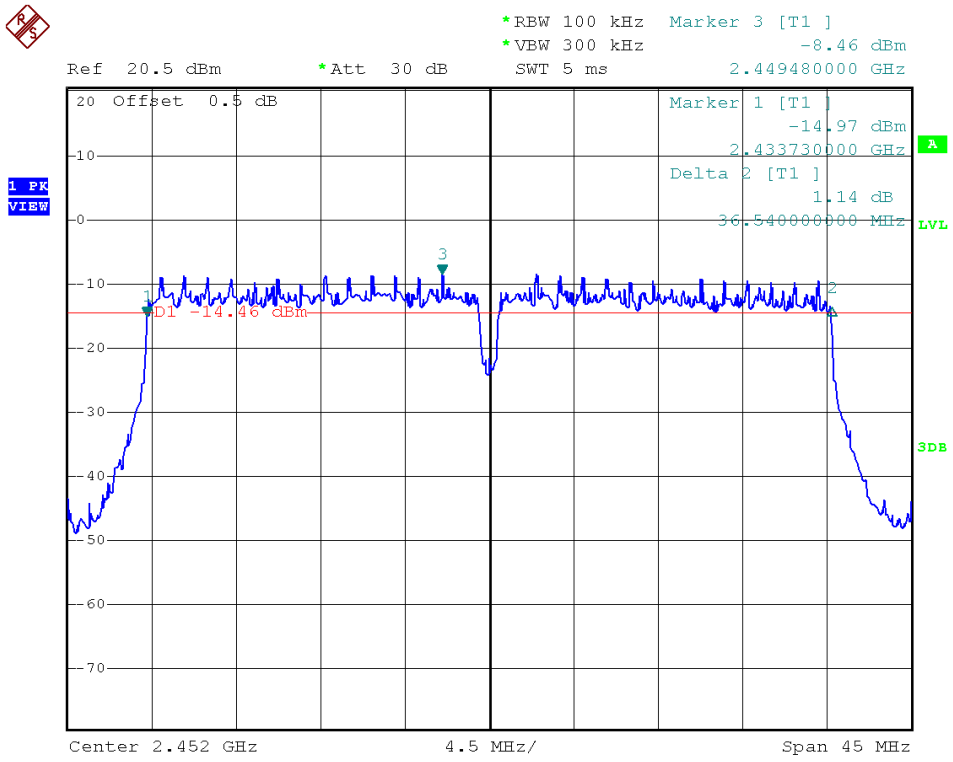
B. Test Plots:



(Plot 2.3 J: Channel 1: 2422MHz @ 802.11n-40)



(Plot 2.3 K: Channel 1: 2437MHz @ 802.11n-40)



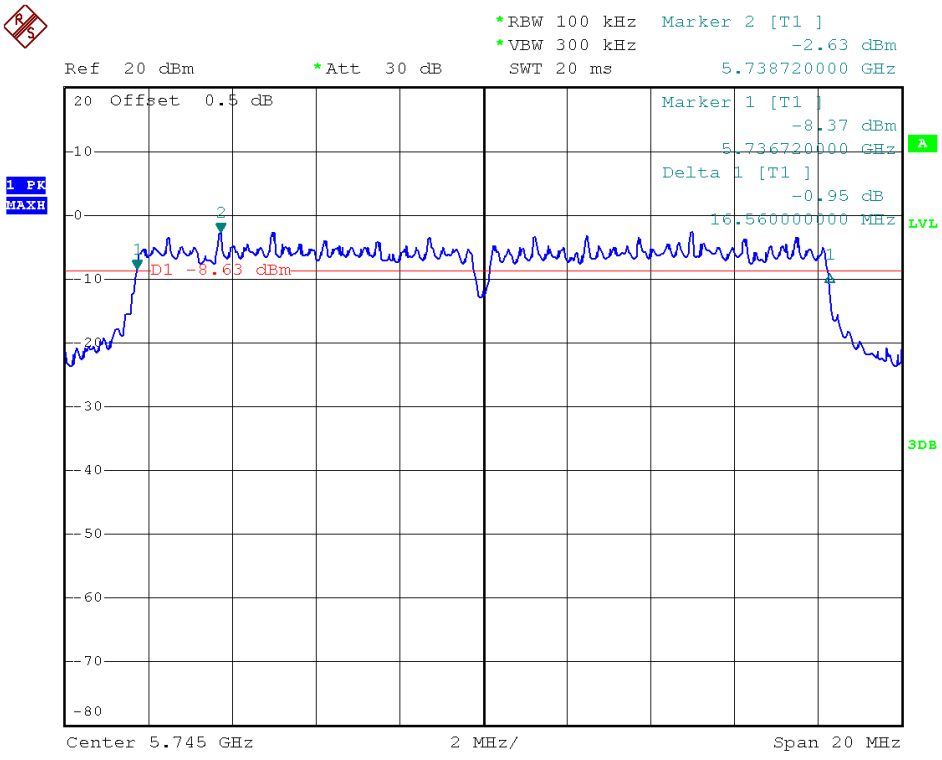
(Plot 2.3 L: Channel 1: 2452MHz @ 802.11n-40)

2.3.3.5 802.11a Test mode

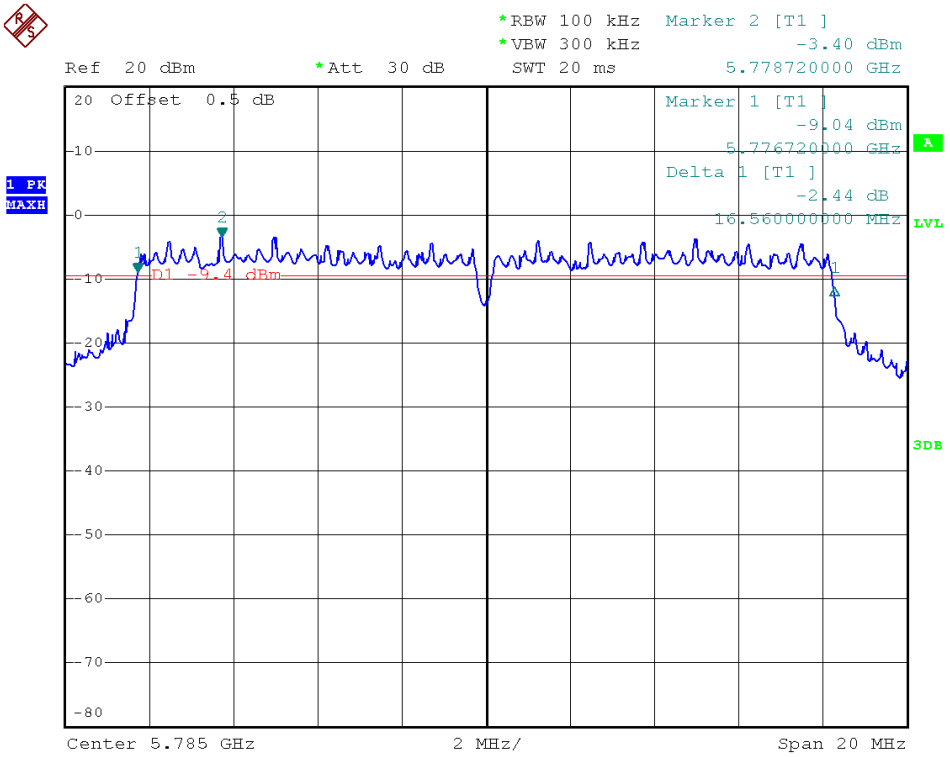
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Refer to Plot	Limits (kHz)	Result
149	5745	16.56	Plot 2.3 M	≥500	PASS
157	5785	16.56	Plot 2.3 N	≥500	PASS
165	5825	16.48	Plot 2.3 O	≥500	PASS

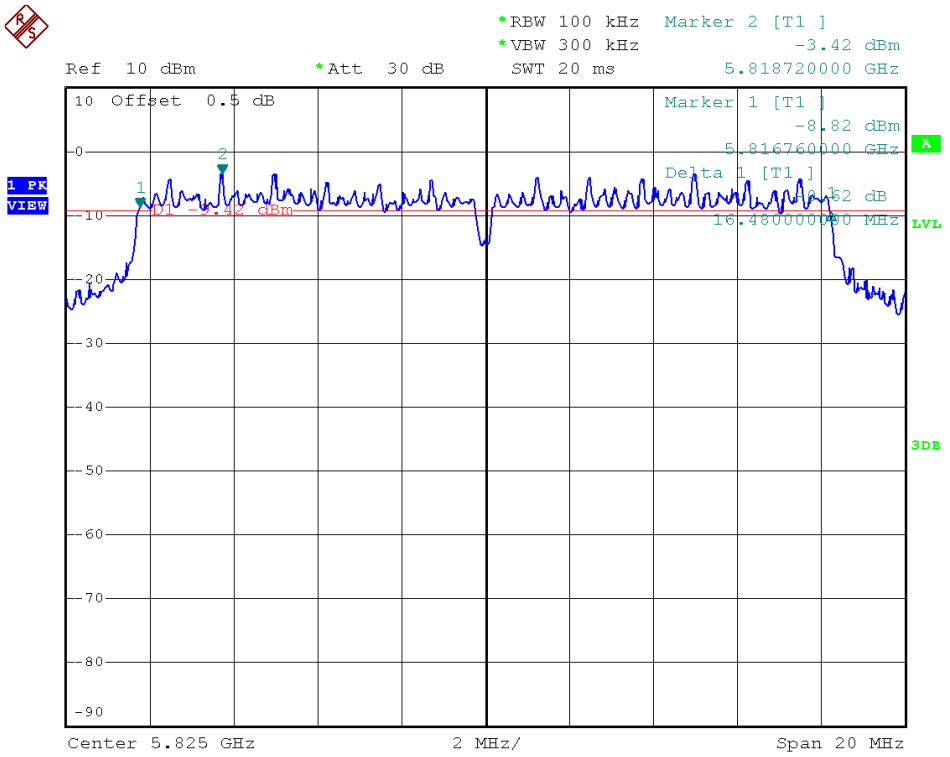
B. Test Plots:



(Plot 2.3 M: Channel 1: 5745MHz @ 802.11a)



(Plot 2.3 N: Channel 1: 5785MHz @ 802.11a)



(Plot 2.3 O: Channel 1: 5825MHz @ 802.11a)

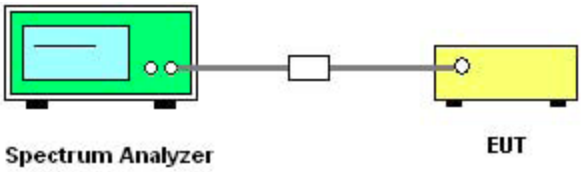
2.4 Conducted Spurious Emissions

2.4.1 Requirement

According to FCC section 15.247(c), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

2.4.2 Test Description

A. Test Set:



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss and Atten as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	R&S	FSP40	1164.4391.40	2014.07.07	2015.07.06

2.4.3 Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions.

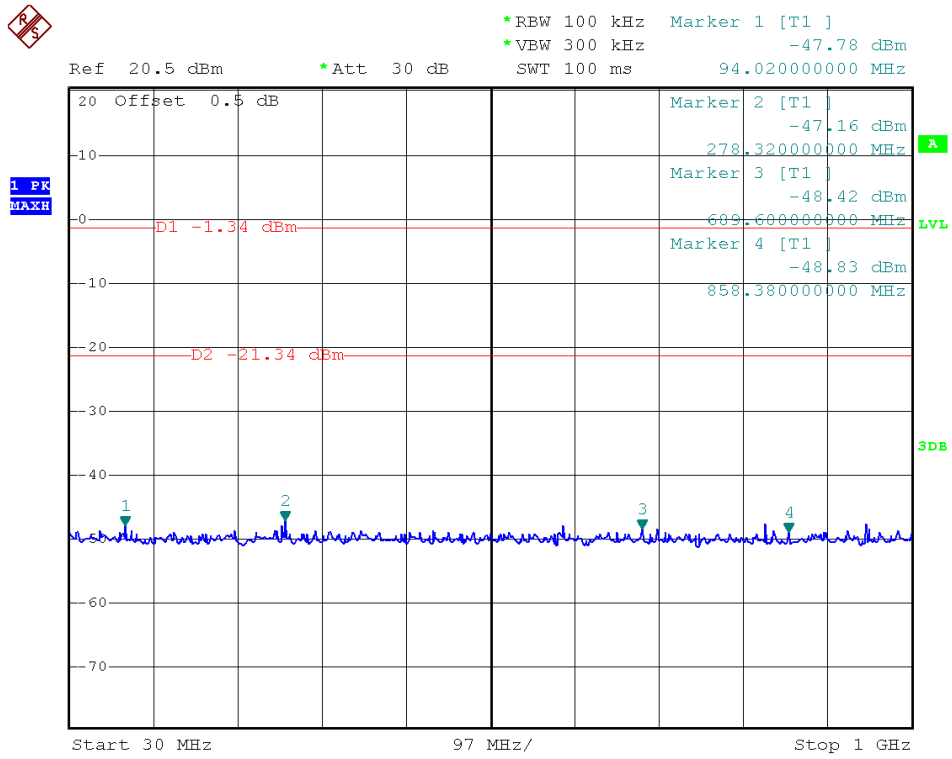
2.4.3.1 802.11b Test mode

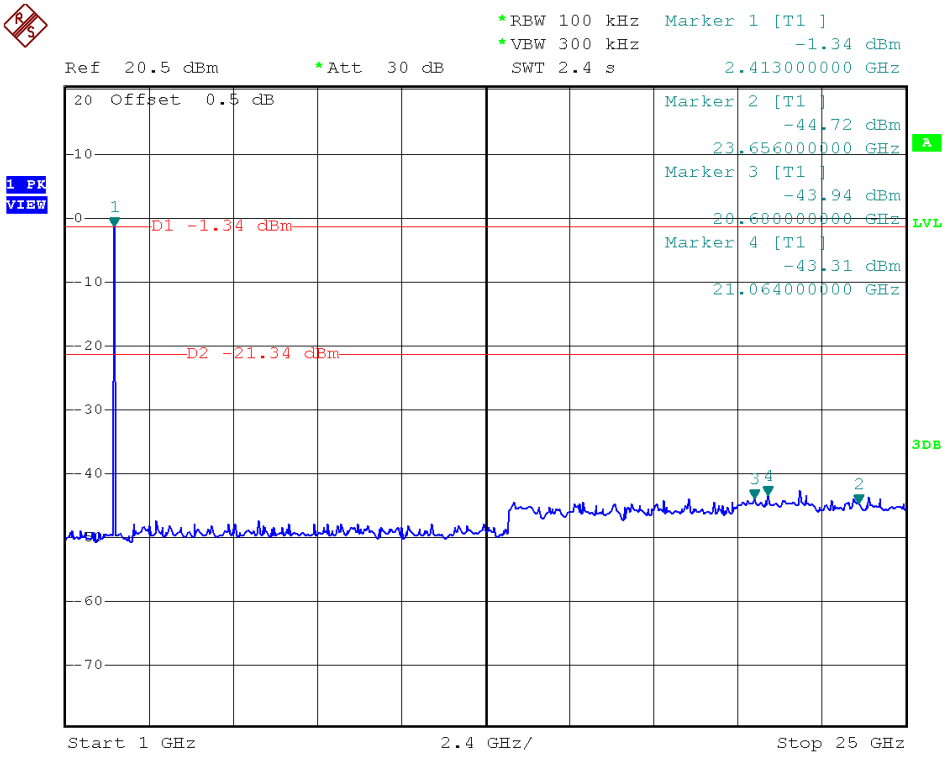
A. Test Verdict:

Channel	Frequency (MHz)	Refer to Plot	Limit (dBc)	Verdict
1	2412	Plot 2.4 A	-20	PASS
6	2437	Plot 2.4 B	-20	PASS
11	2462	Plot 2.4 C	-20	PASS

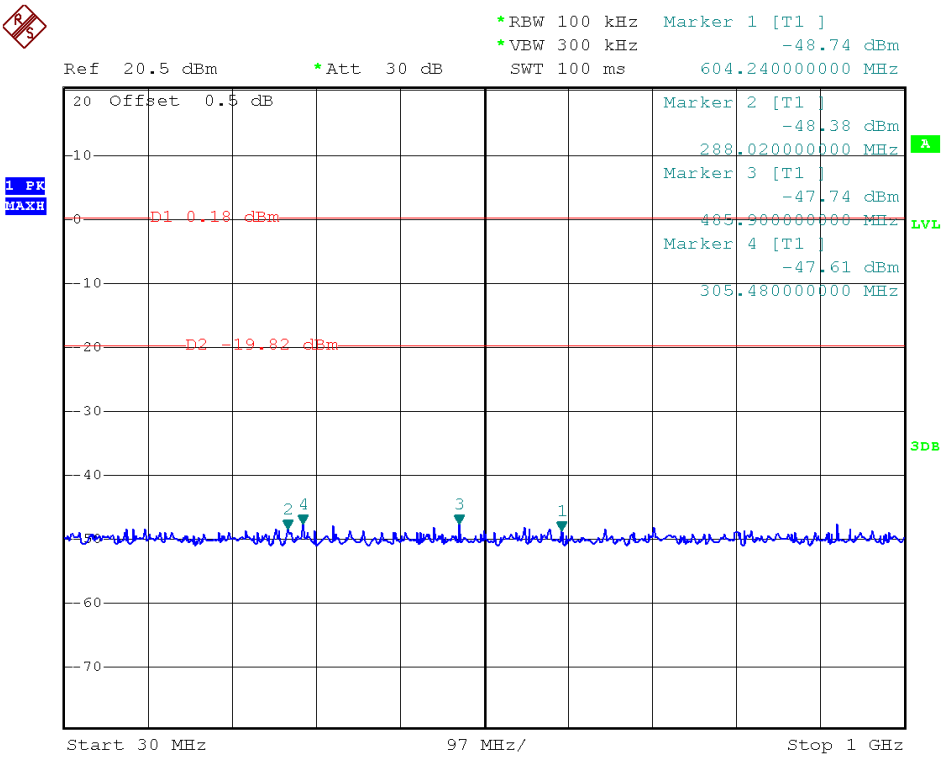
B. Test Plots:

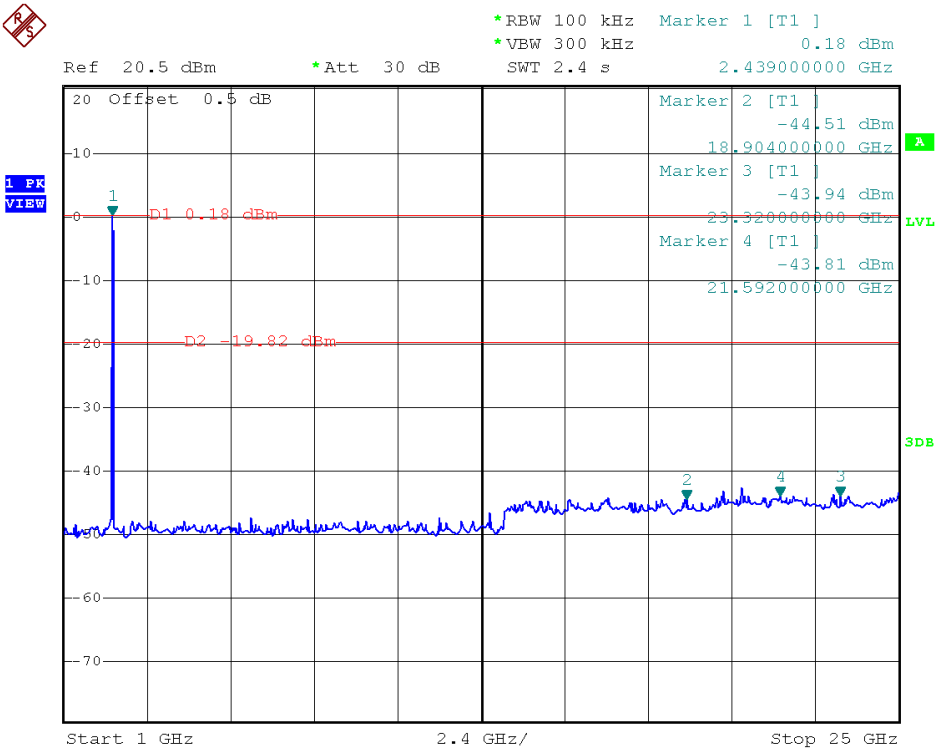
Note: the power of the Module transmitting frequency should be ignored.



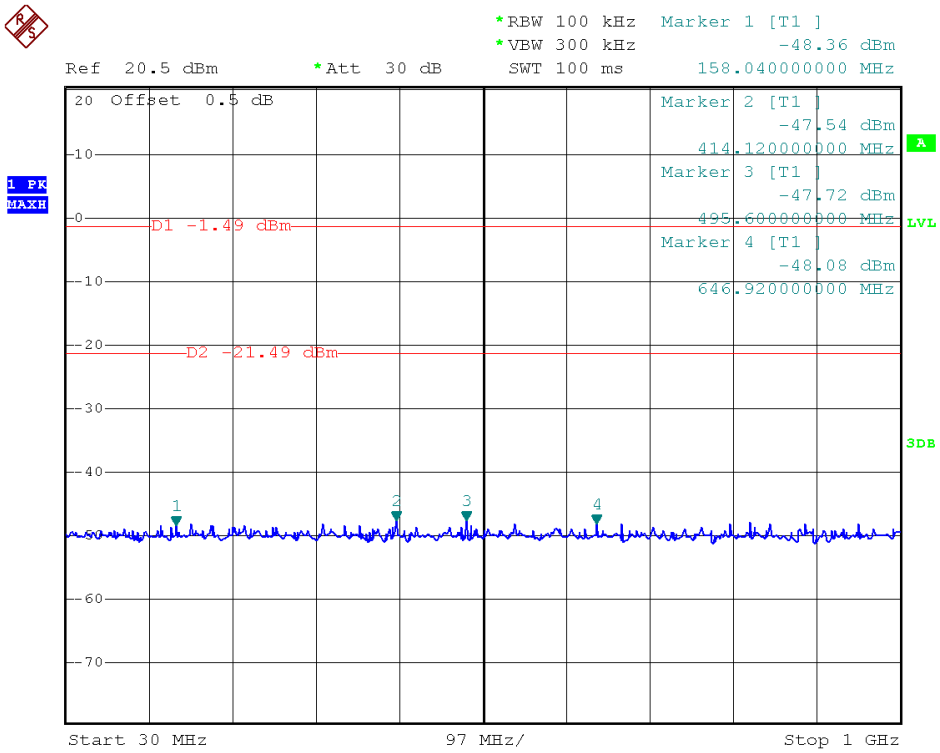


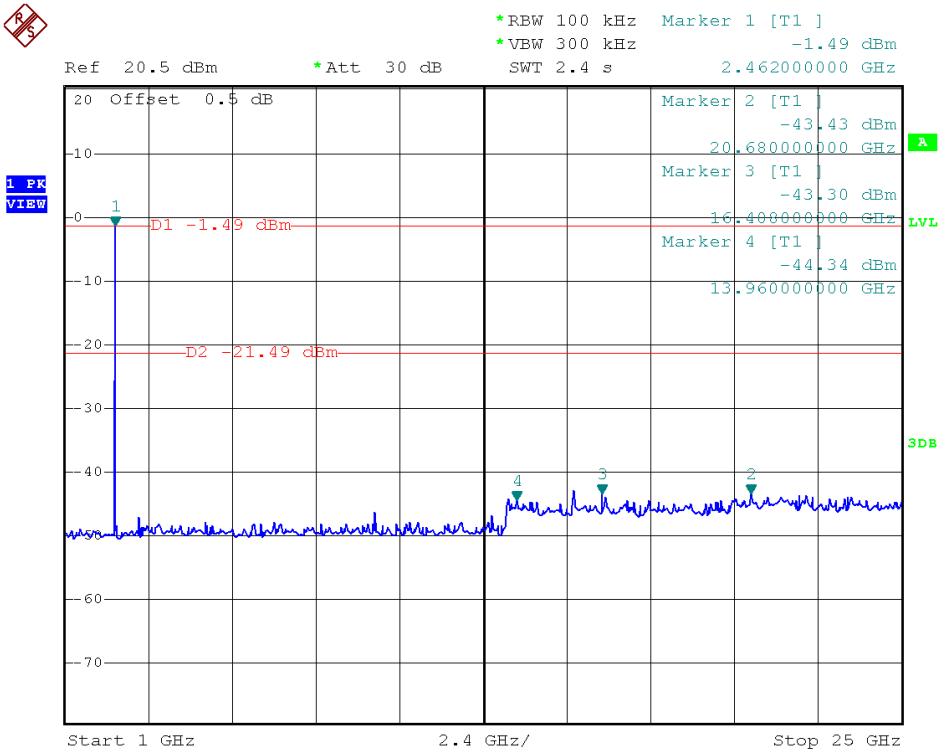
(Plot 2.4 A: Channel = 1, 30MHz to 25GHz@ 802.11b)





(Plot 2.4 B: Channel = 6, 30MHz to 25GHz@ 802.11b)





(Plot 2.4 C: Channel = 11, 30MHz to 25GHz@ 802.11b)

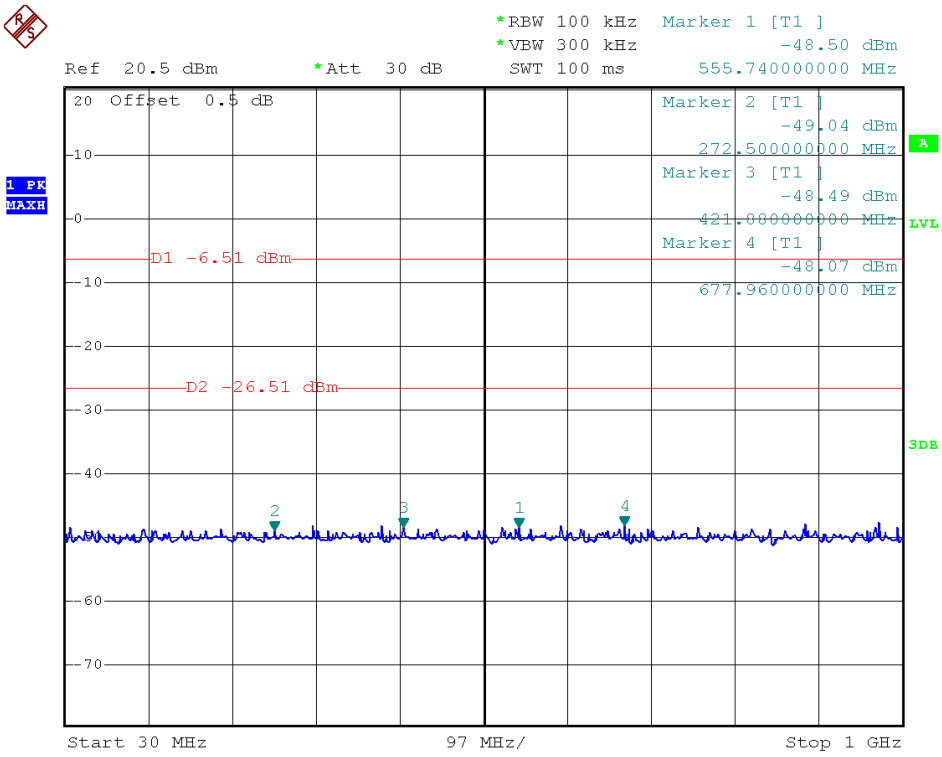
2.4.3.2 802.11g Test mode

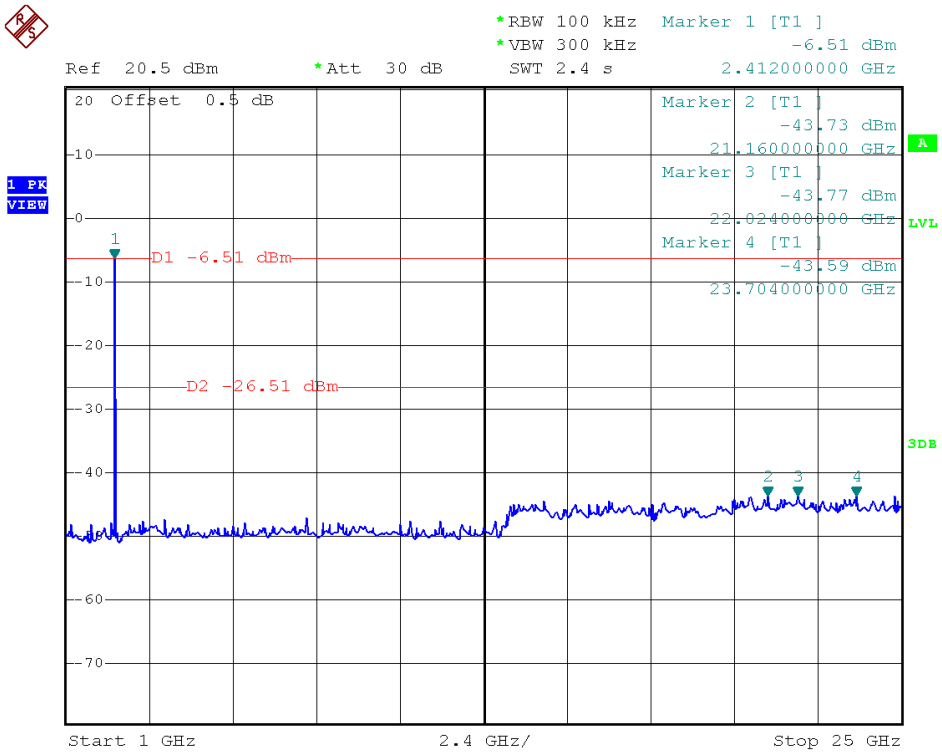
A. Test Verdict:

Channel	Frequency (MHz)	Refer to Plot	Limit (dBc)	Verdict
1	2412	Plot 2.4 D	-20	PASS
6	2437	Plot 2.4 E	-20	PASS
11	2462	Plot 2.4 F	-20	PASS

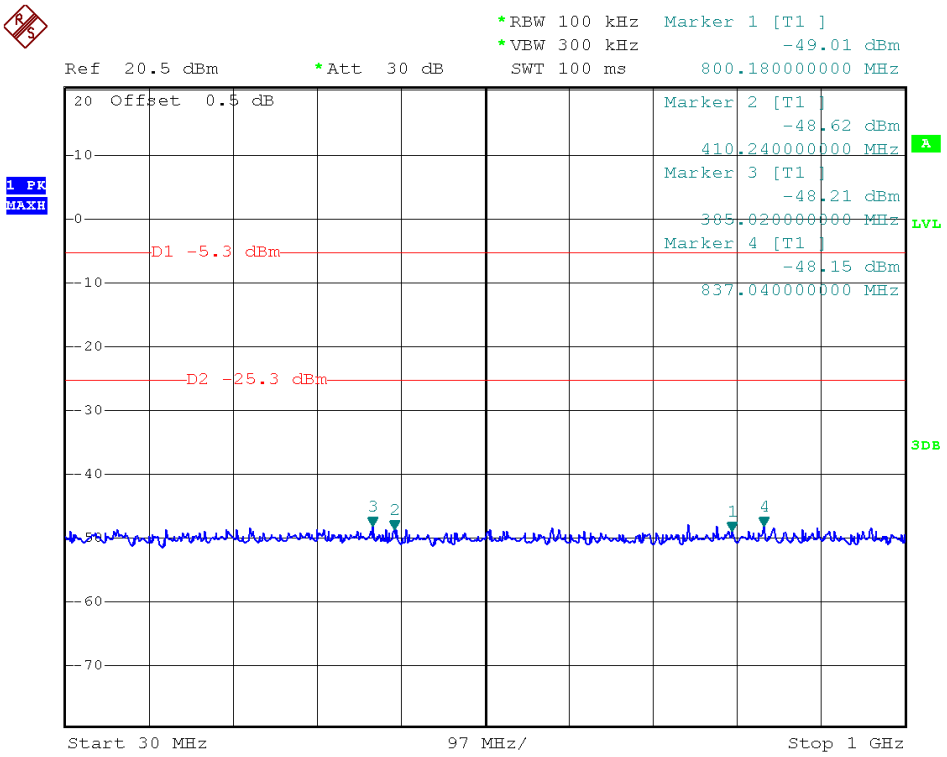
B. Test Plots:

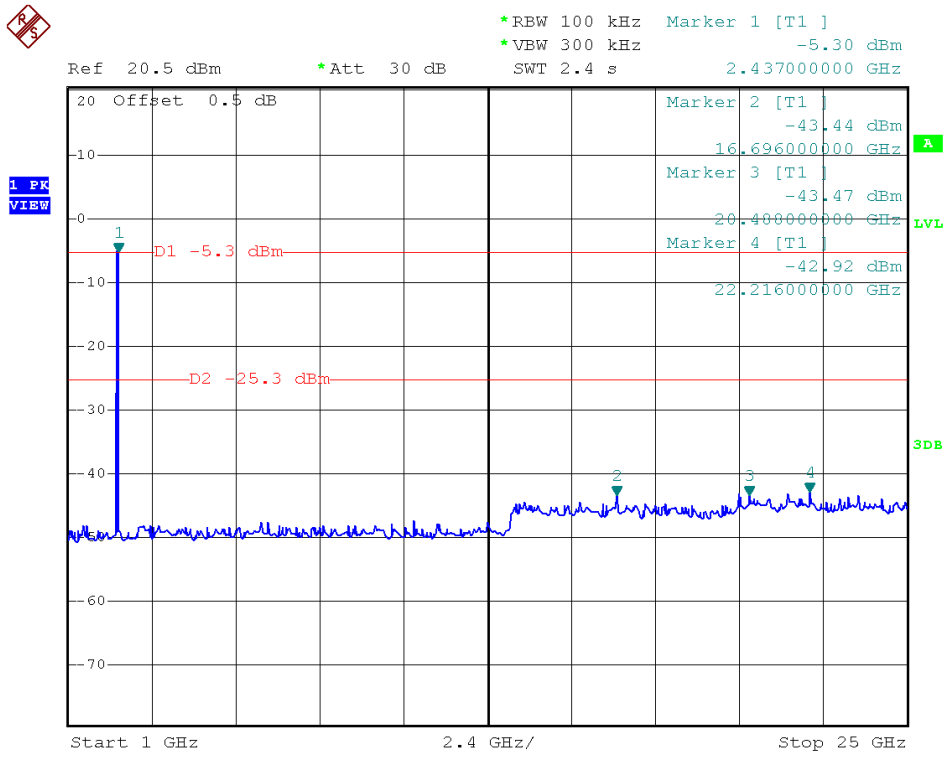
Note: the power of the Module transmitting frequency should be ignored.



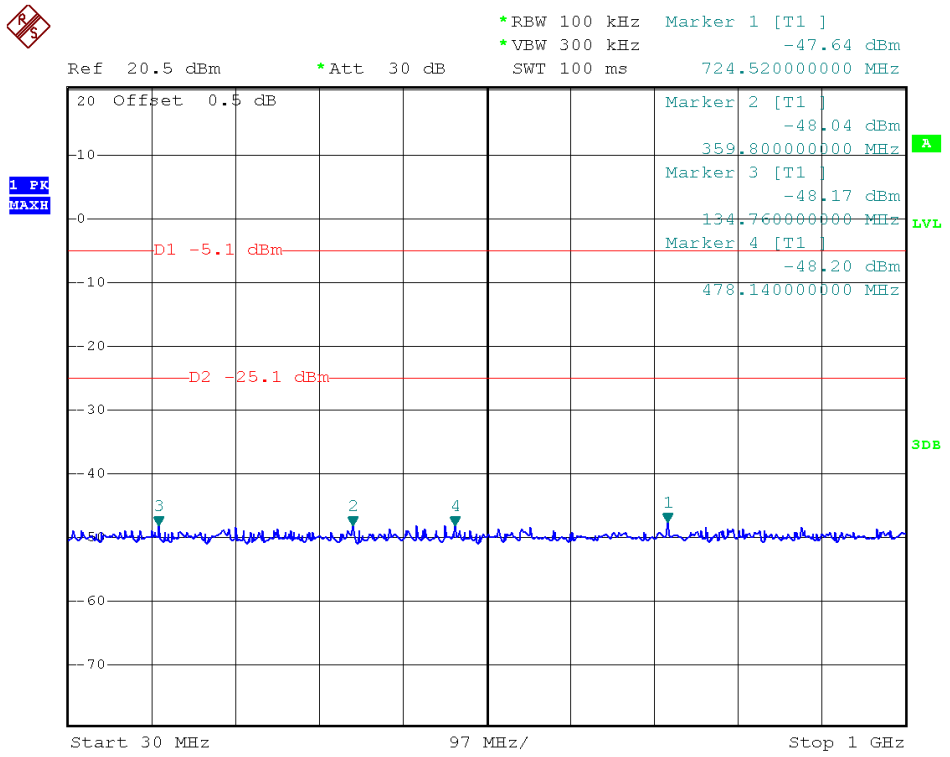


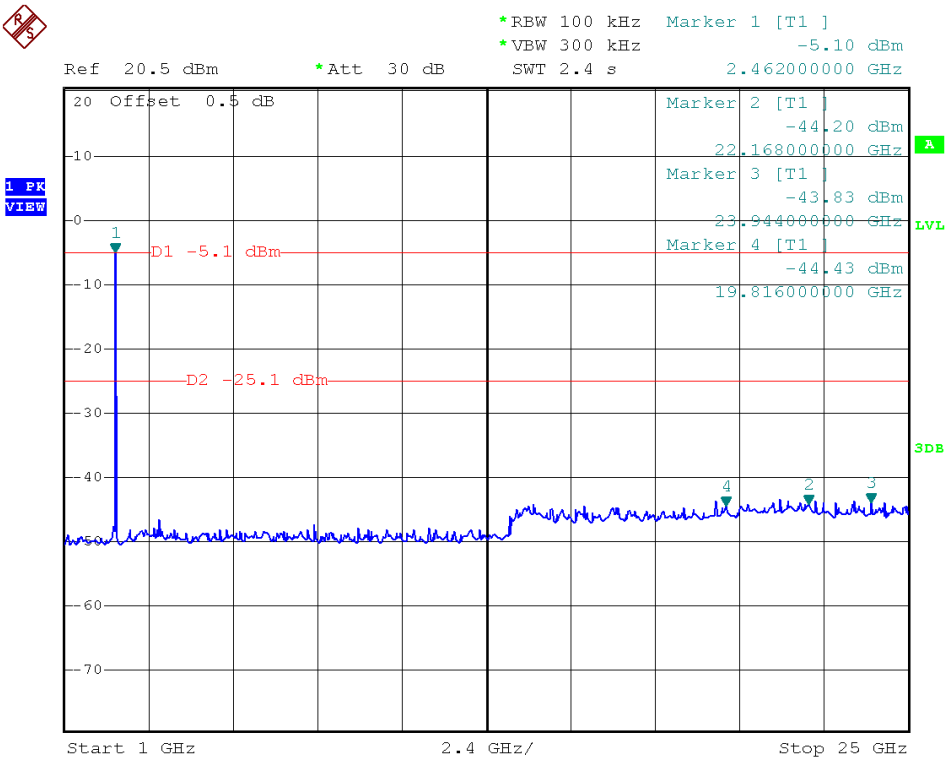
(Plot 2.4 D: Channel = 1, 30MHz to 25GHz@ 802.11g)





(Plot 2.4 E: Channel = 6, 30MHz to 25GHz@ 802.11g)





(Plot 2.4 F: Channel = 11, 30MHz to 25GHz@ 802.11g)

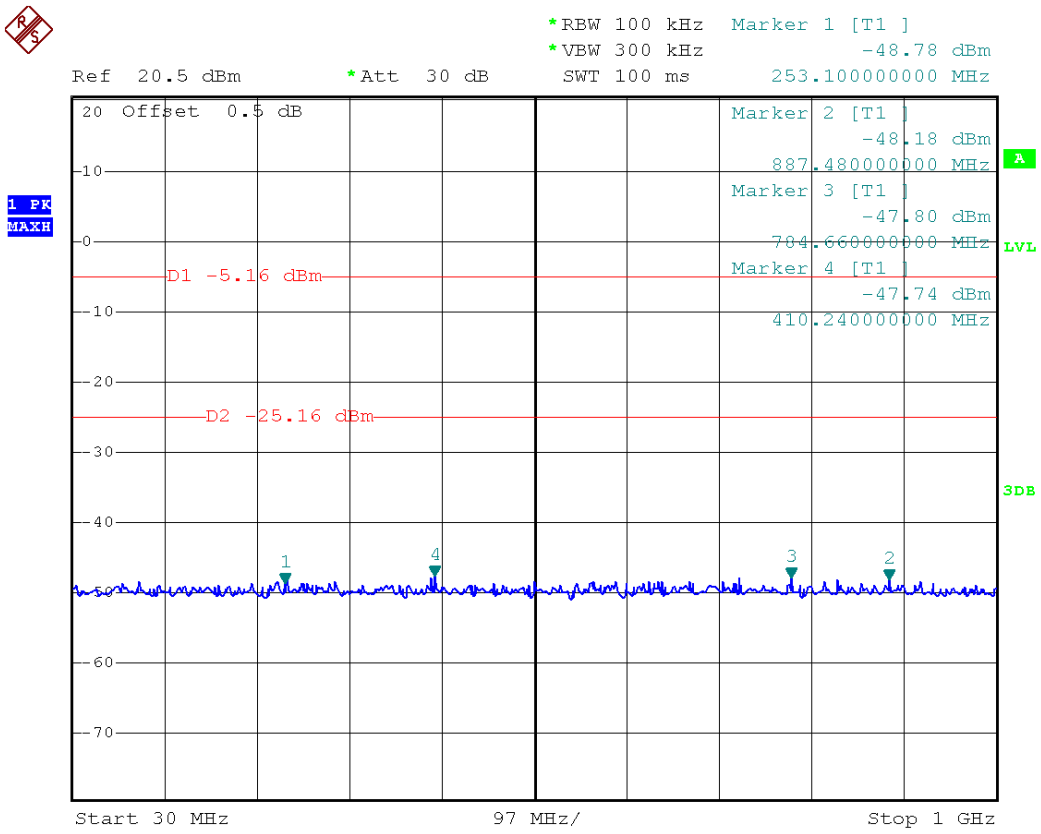
2.4.3.3 802.11n -20MHz Test mode

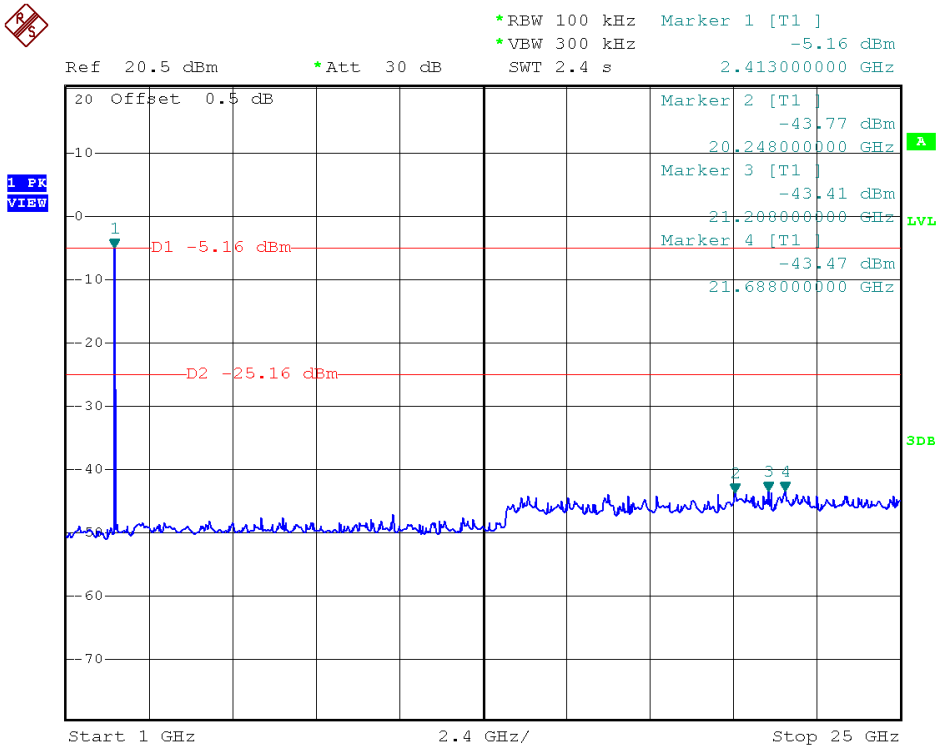
A. Test Verdict:

Channel	Frequency (MHz)	Refer to Plot	Limit (dBc)	Verdict
1	2412	Plot 2.4 G	-20	PASS
6	2437	Plot 2.4 H	-20	PASS
11	2462	Plot 2.4 I	-20	PASS

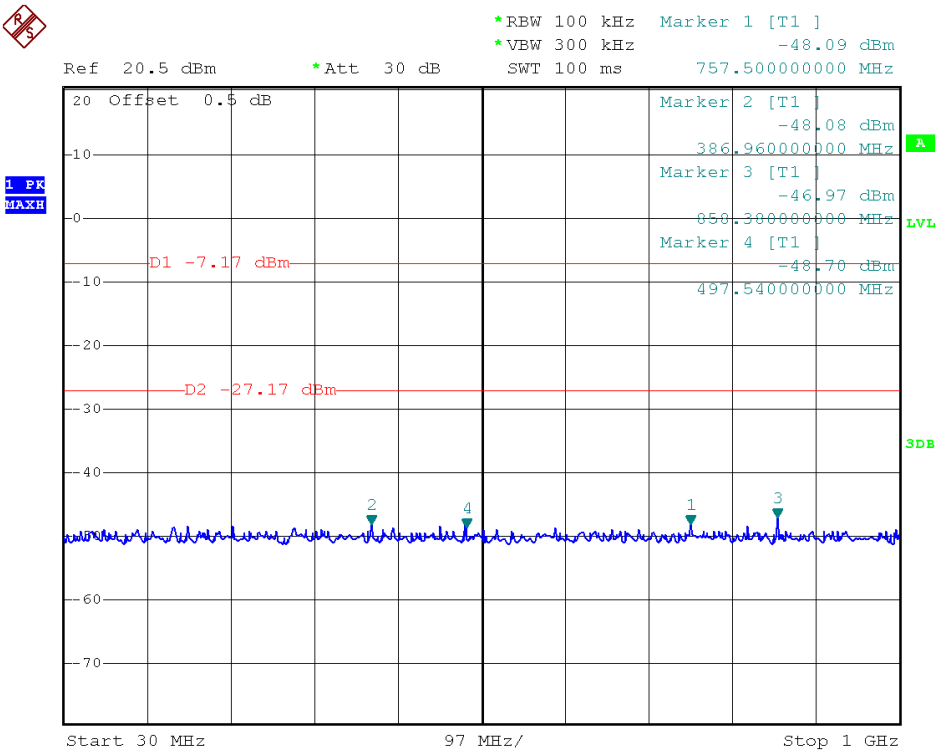
B. Test Plots:

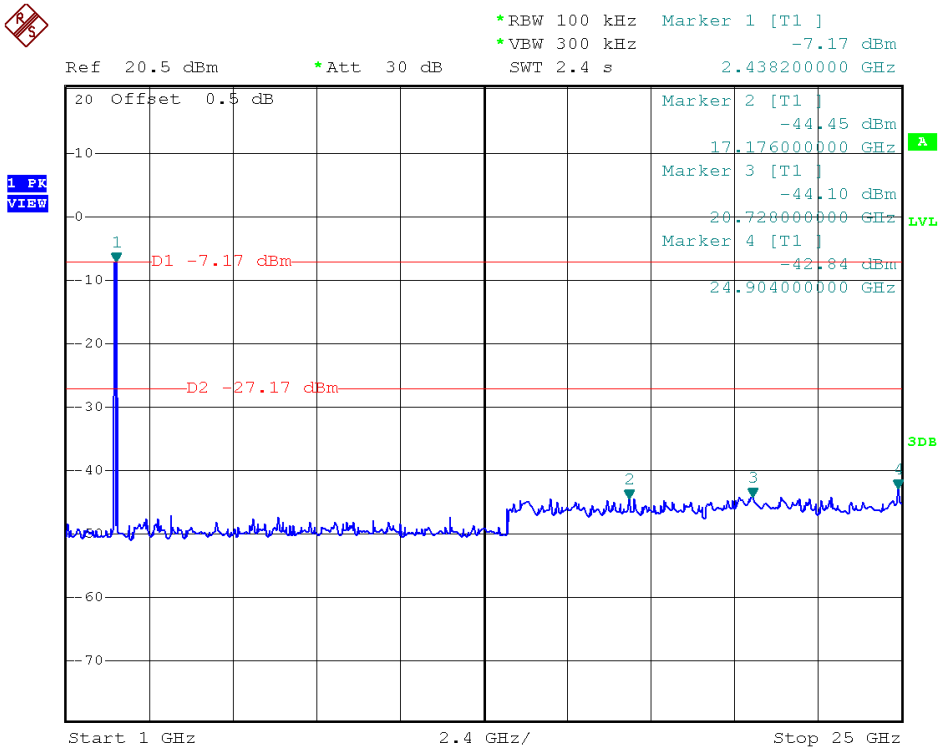
Note: the power of the Module transmitting frequency should be ignored.



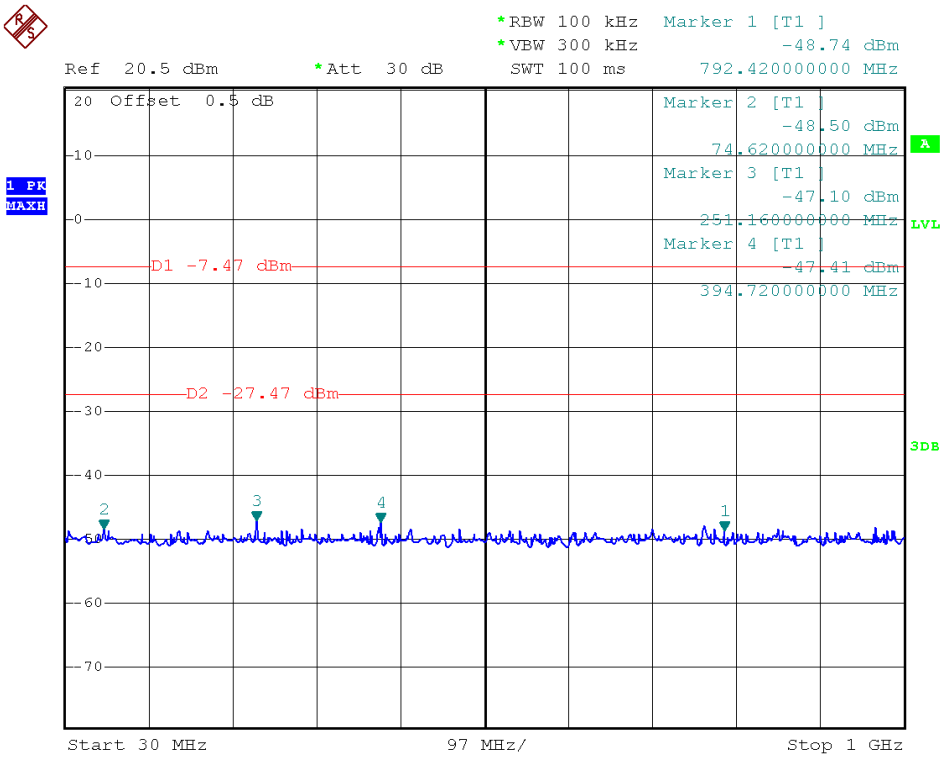


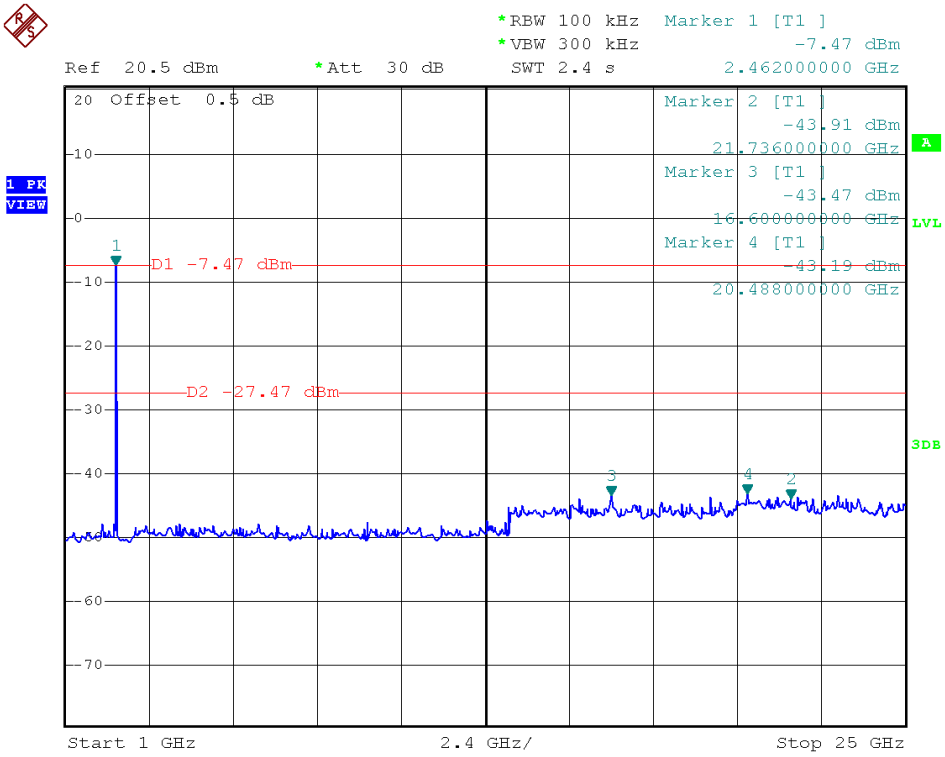
(Plot 2.4 G: Channel = 1, 30MHz to 25GHz@ 802.11n-20)





(Plot 2.4 H: Channel = 6, 30MHz to 25GHz@ 802.11n-20)





(Plot 2.4 I: Channel = 11, 30MHz to 25GHz@ 802.11n-20)

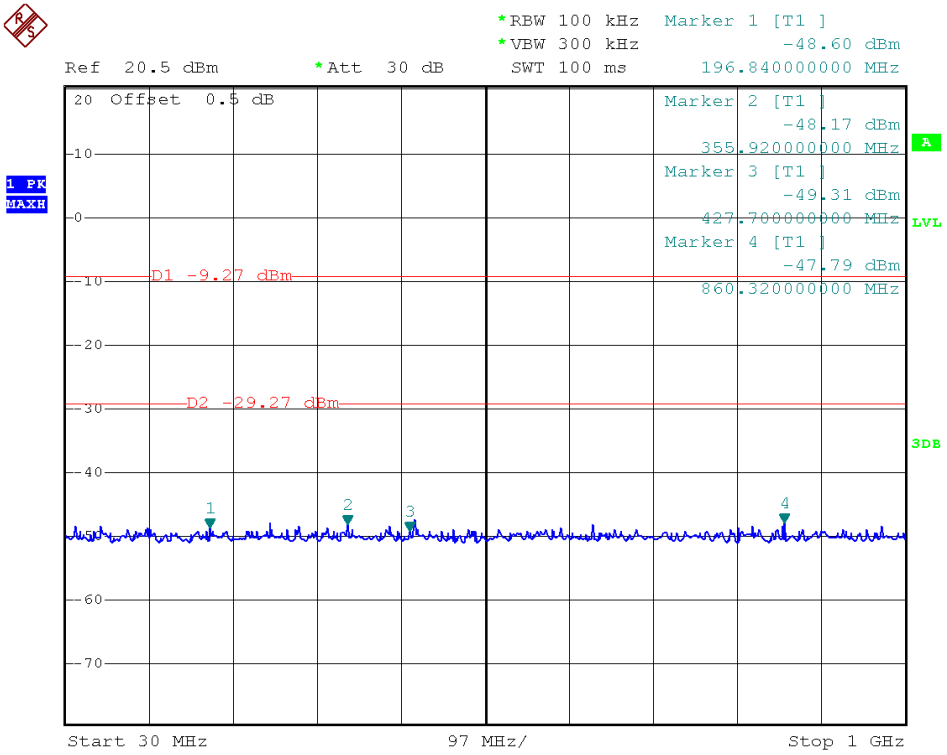
2.4.3.4 802.11n -40MHz Test mode

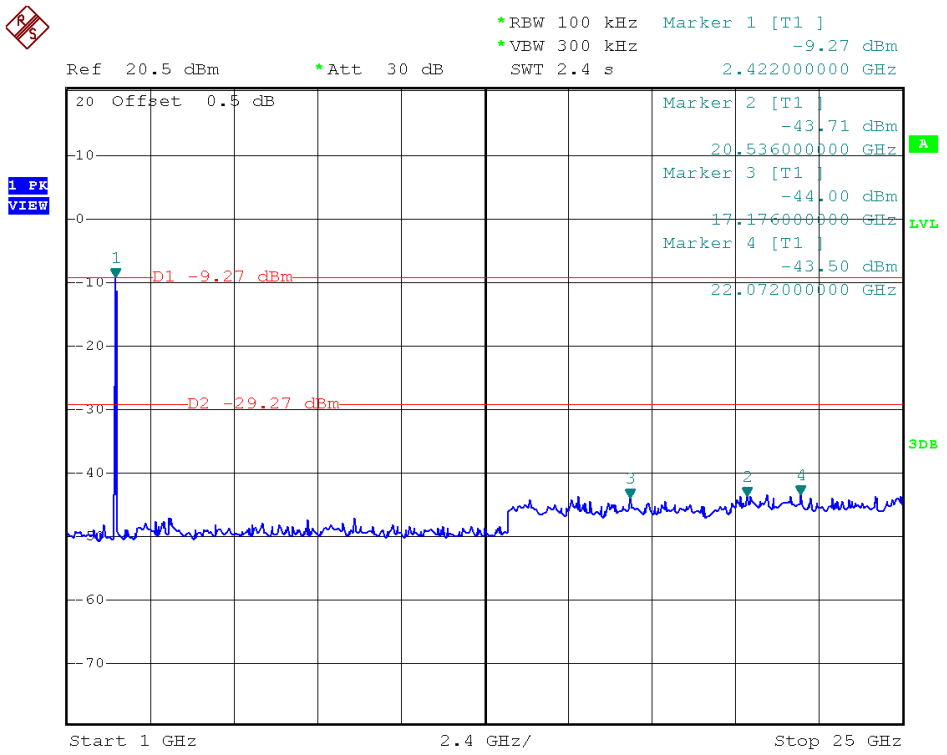
A. Test Verdict:

Channel	Frequency (MHz)	Refer to Plot	Limit (dBc)	Verdict
3	2422	Plot 2.4 J	-20	PASS
6	2437	Plot 2.4 K	-20	PASS
9	2452	Plot 2.4 L	-20	PASS

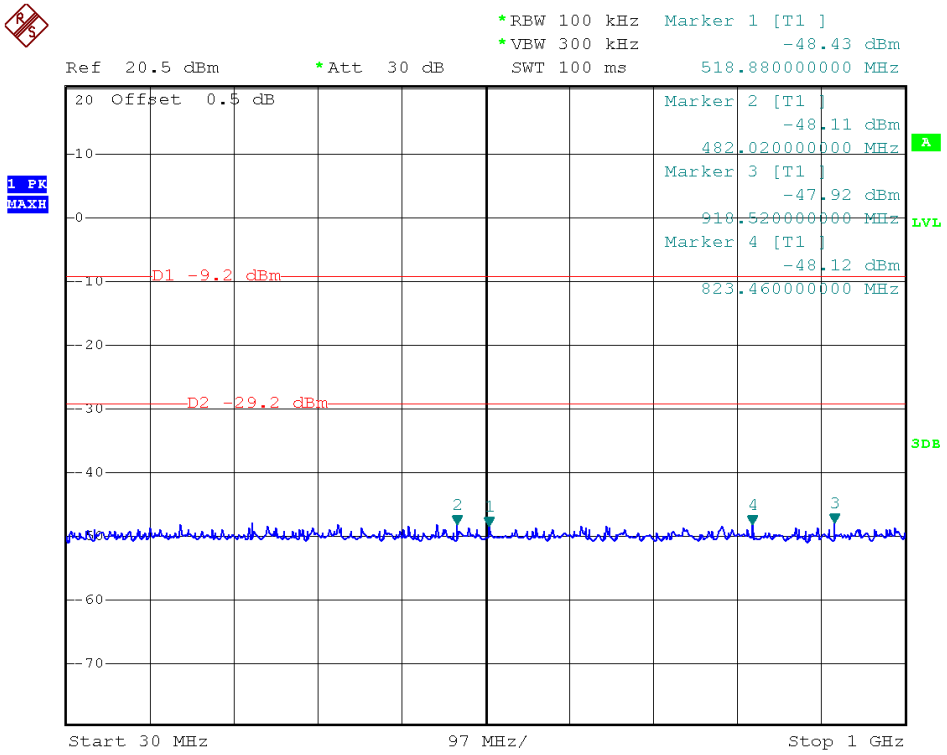
B. Test Plots:

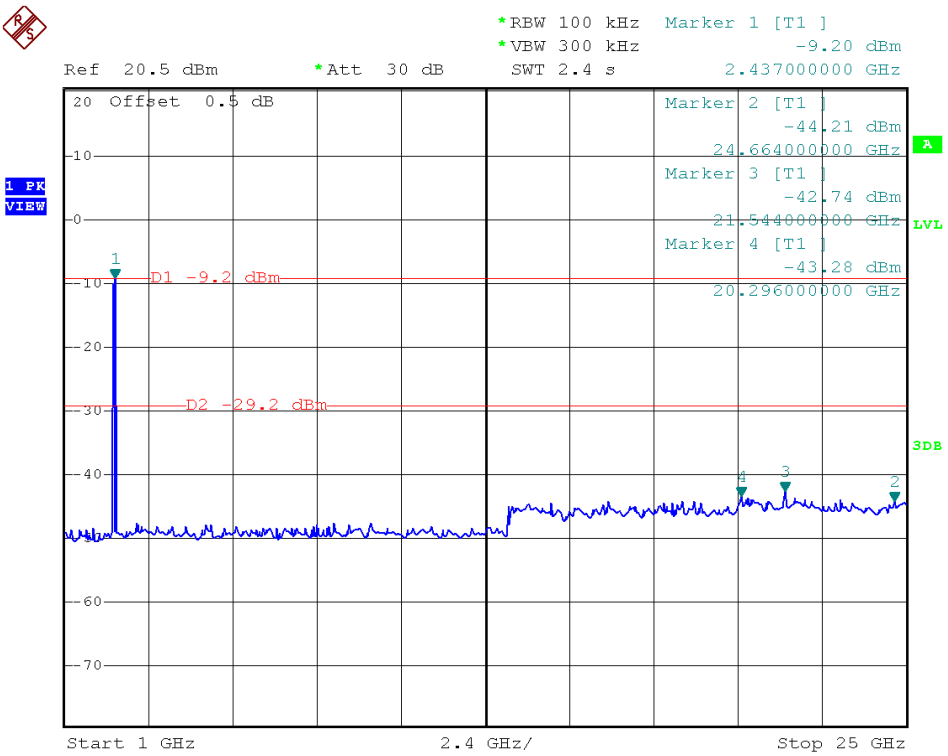
Note: the power of the Module transmitting frequency should be ignored.



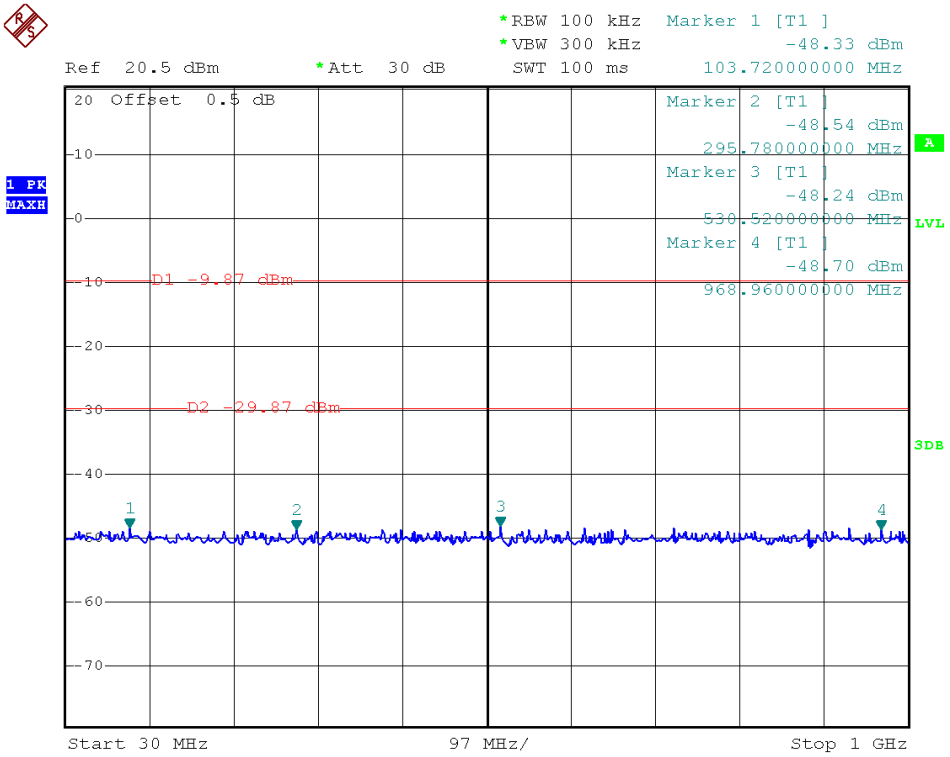


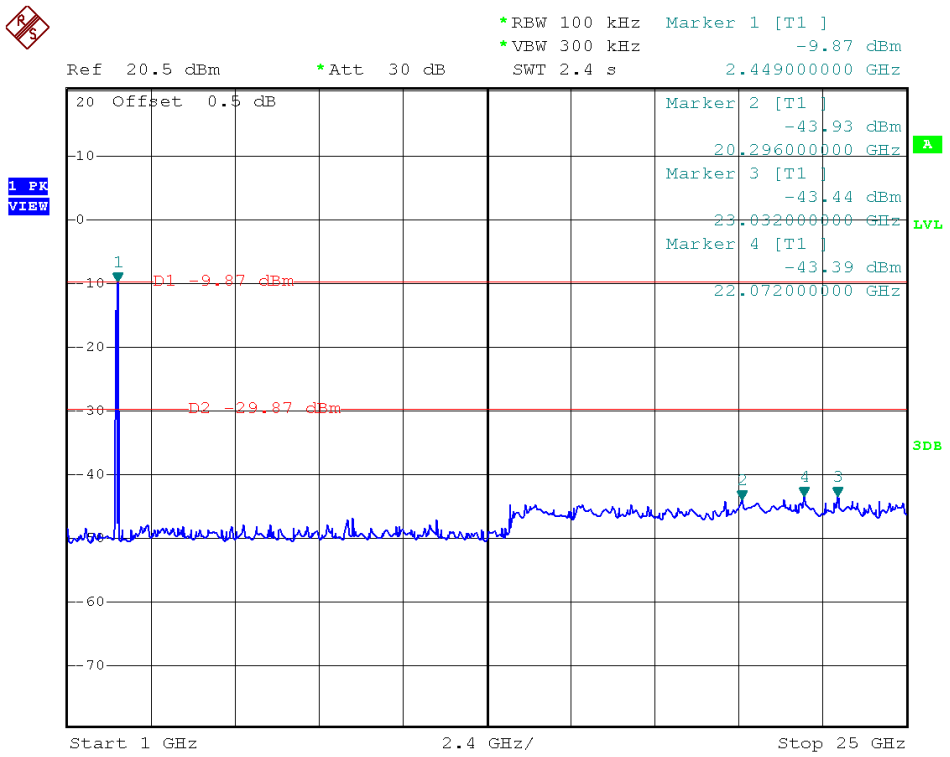
(Plot 2.4 J: Channel = 3, 30MHz to 25GHz@ 802.11n-40)





(Plot 2.4 K: Channel = 6, 30MHz to 25GHz@ 802.11n-40)





(Plot 2.4 L: Channel = 9, 30MHz to 25GHz@ 802.11n-40)

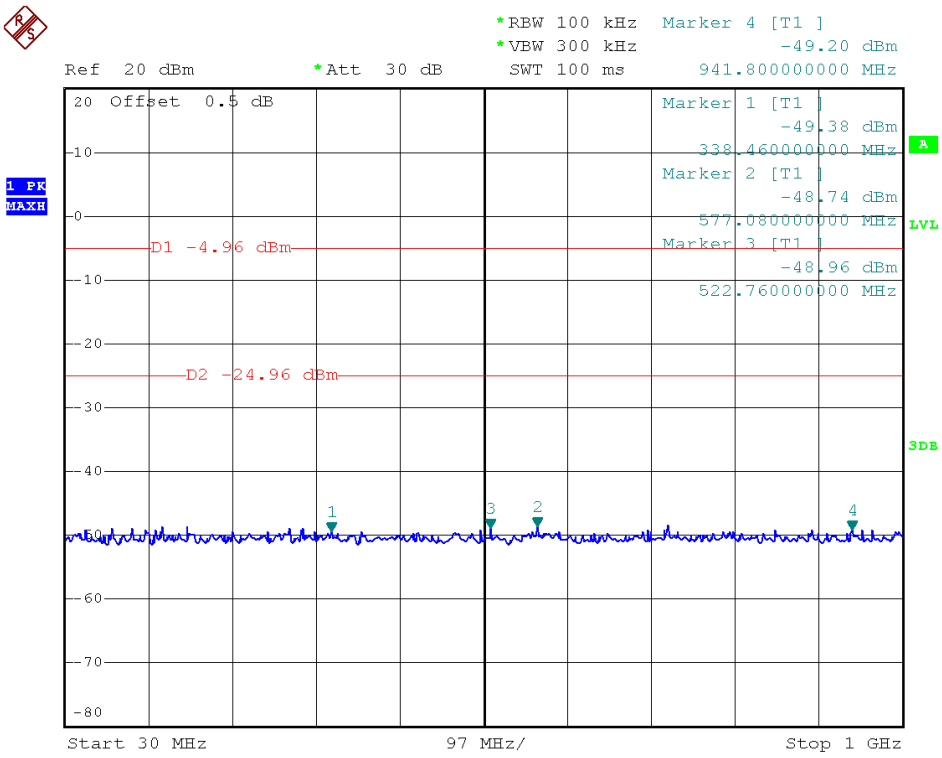
2.4.3.5 802.11a MHz Test mode

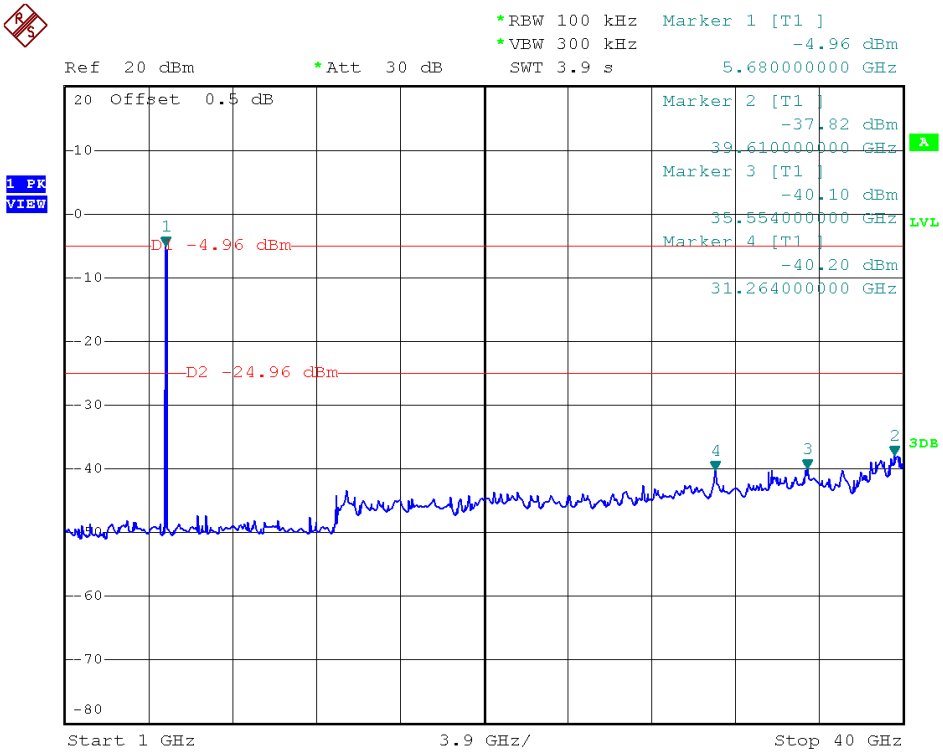
A. Test Verdict:

Channel	Frequency (MHz)	Refer to Plot	Limit (dBc)	Verdict
149	5745	Plot 2.4 M	-20	PASS
157	5785	Plot 2.4 N	-20	PASS
165	5825	Plot 2.4 O	-20	PASS

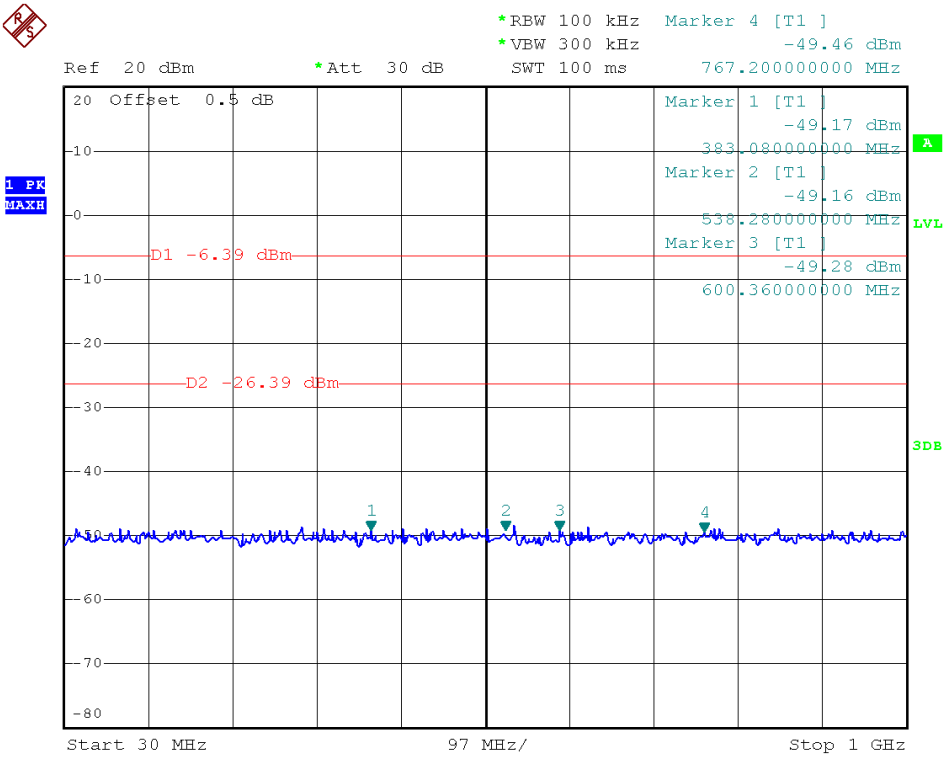
B. Test Plots:

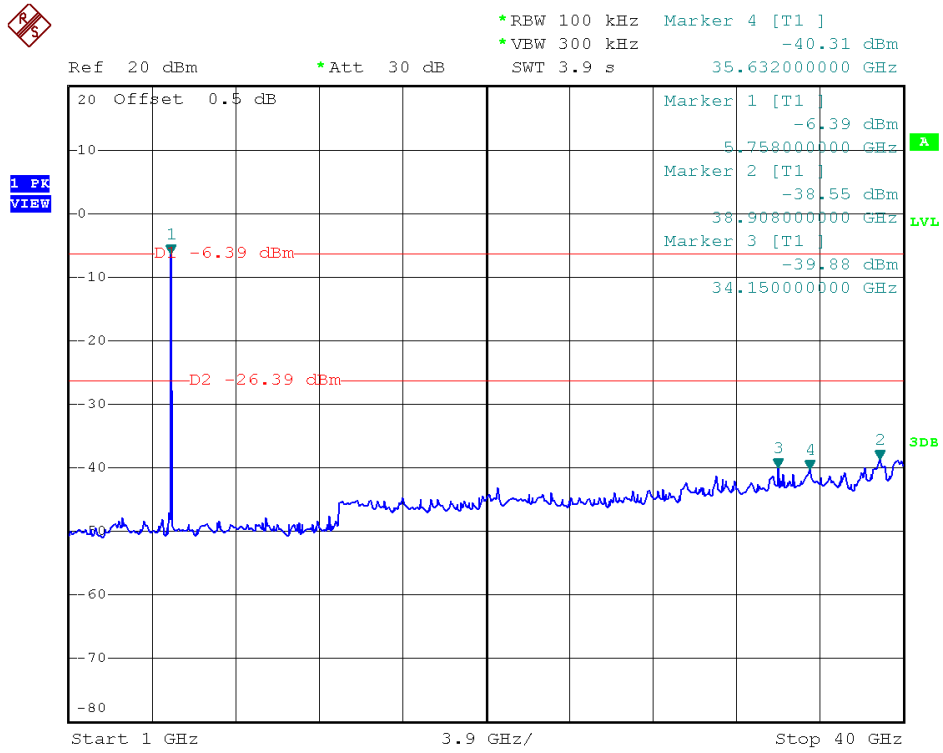
Note: the power of the Module transmitting frequency should be ignored.



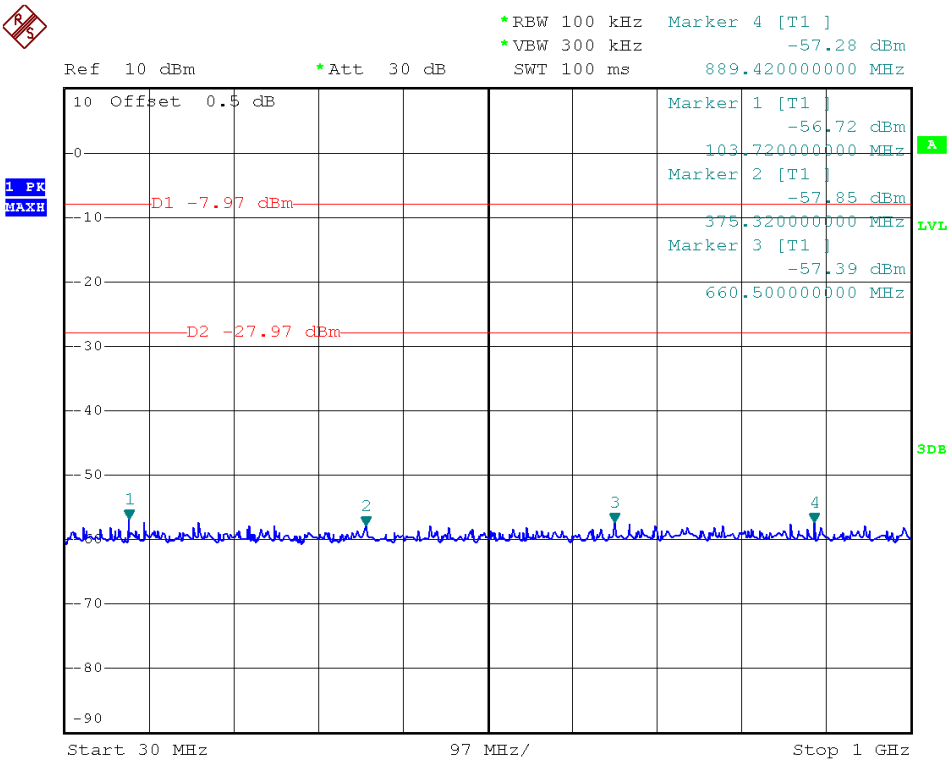


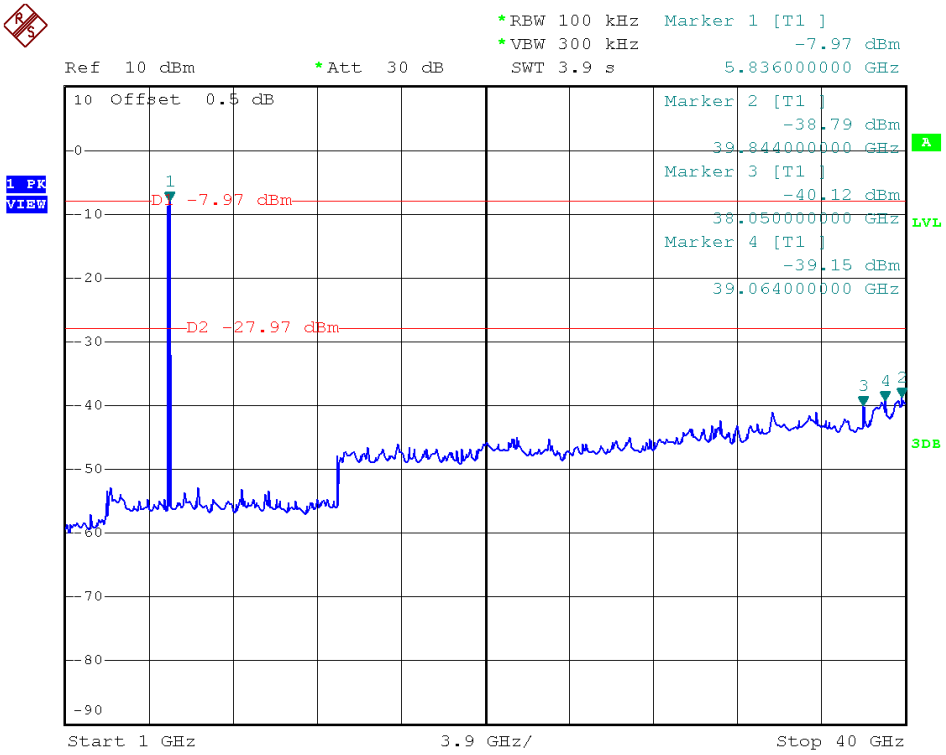
(Plot 2.4 M: Channel = 149, 30MHz to 40GHz@ 802.11a)





(Plot 2.4 N: Channel = 157, 30MHz to 40GHz@ 802.11a)





(Plot 2.4 O: Channel = 165, 30MHz to 40GHz@ 802.11a)

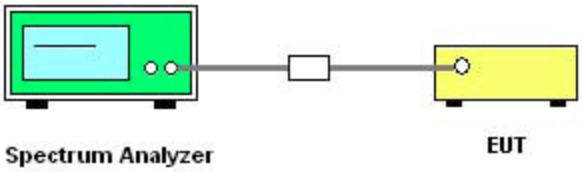
2.5 Power spectral density (PSD)

2.5.1 Requirement

According to FCC section 15.247(d), the same method of determining the conducted output power shall be used to determine the power spectral density. If a peak output power is measured, then a peak power spectral density measurement is required. If an average output power is measured, then an average power spectral density measurement should be used.

2.5.2 Test Description

A. Test Set:



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss and Atten as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

B. Test Procedure

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW ≥ 3 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

C. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	R&S	FSP40	1164.4391.40	2014.07.07	2015.07.06

2.5.3 Test Result

The lowest, middle and highest channels are tested to verify the band edge emissions.

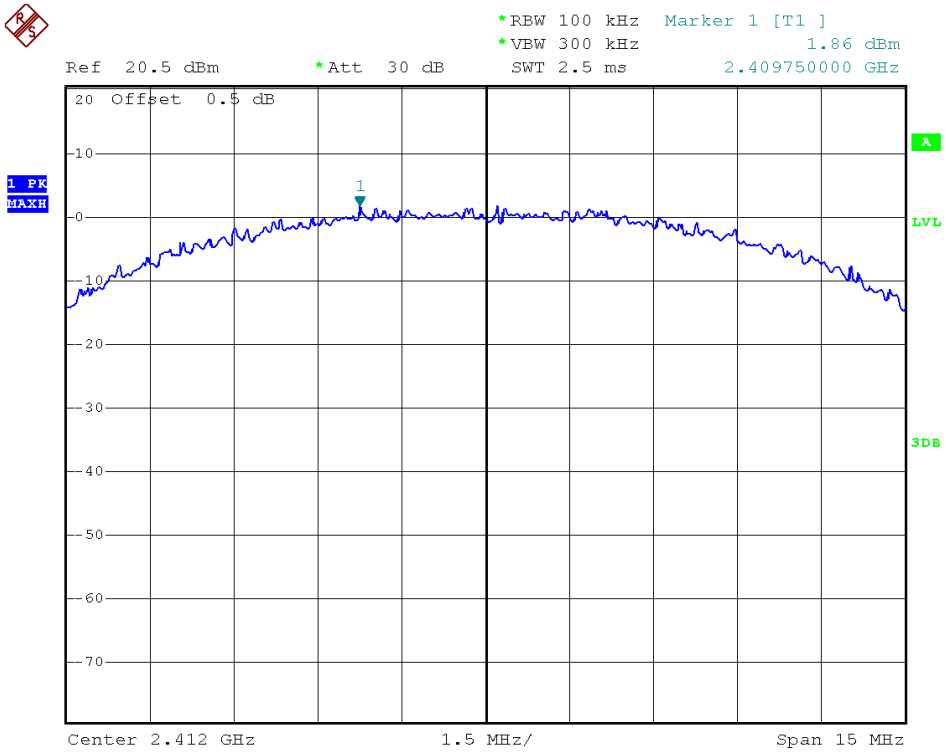
2.5.3.1 802.11b Test mode

A. Test Verdict:

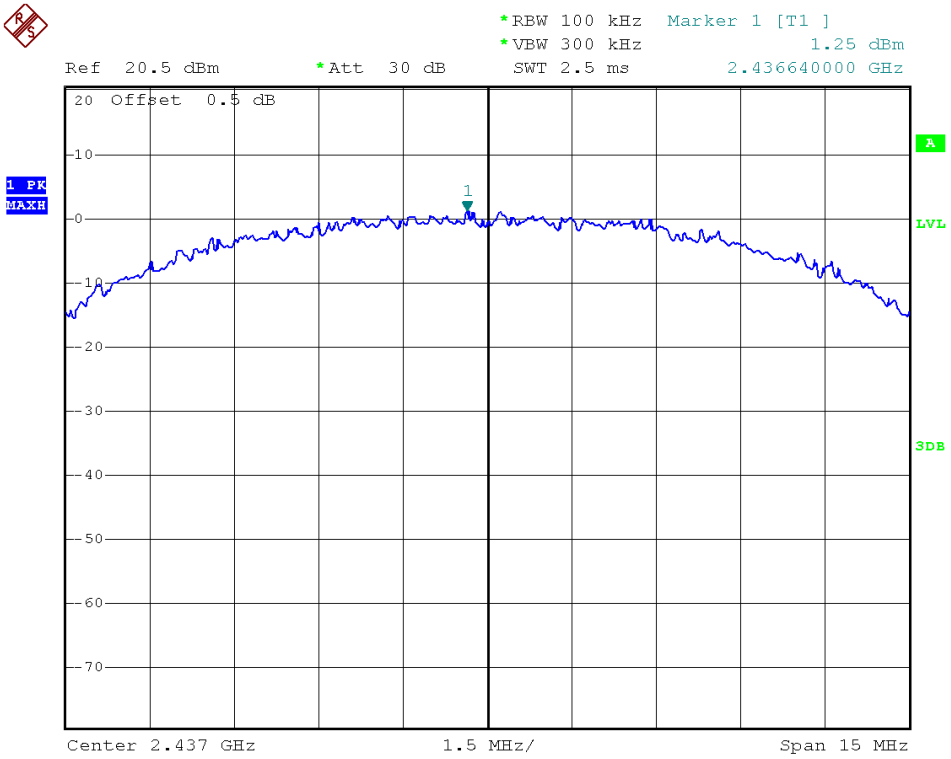
Spectral power density (dBm/3kHz)					
Channel	Frequency (MHz)	Measured PSD (dBm)	Refer to Plot	Limit (dBm/3kHz)	Verdict
1	2412	1.86	Plot 2.5 A	8	PASS
6	2437	1.25	Plot 2.5 B	8	PASS
11	2462	0.91	Plot 2.5 C	8	PASS
Measurement uncertainty: ±1.3dB					

Note: 1. For 802.11b mode at finial test to get the worst-case emission at 11Mbps.
2. The test results including the cable lose.

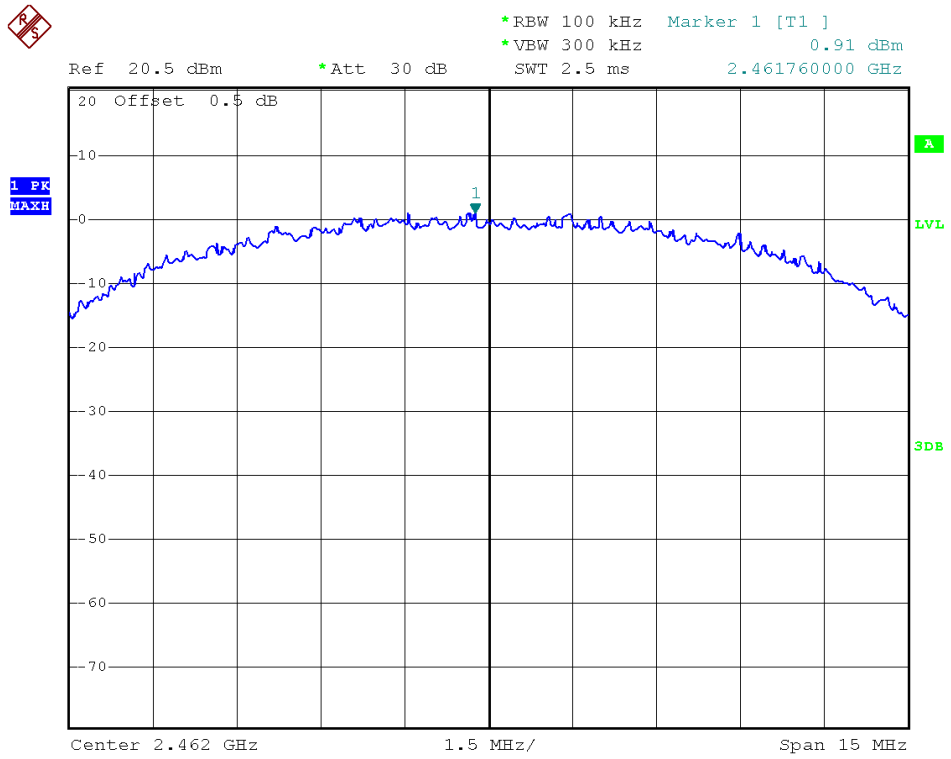
B. Test Plots:



(Plot 2.5 A: Channel = 1 @ 802.11b)



(Plot 2.5 B: Channel = 6 @ 802.11b)



(Plot 2.5 C: Channel = 11 @ 802.11b)

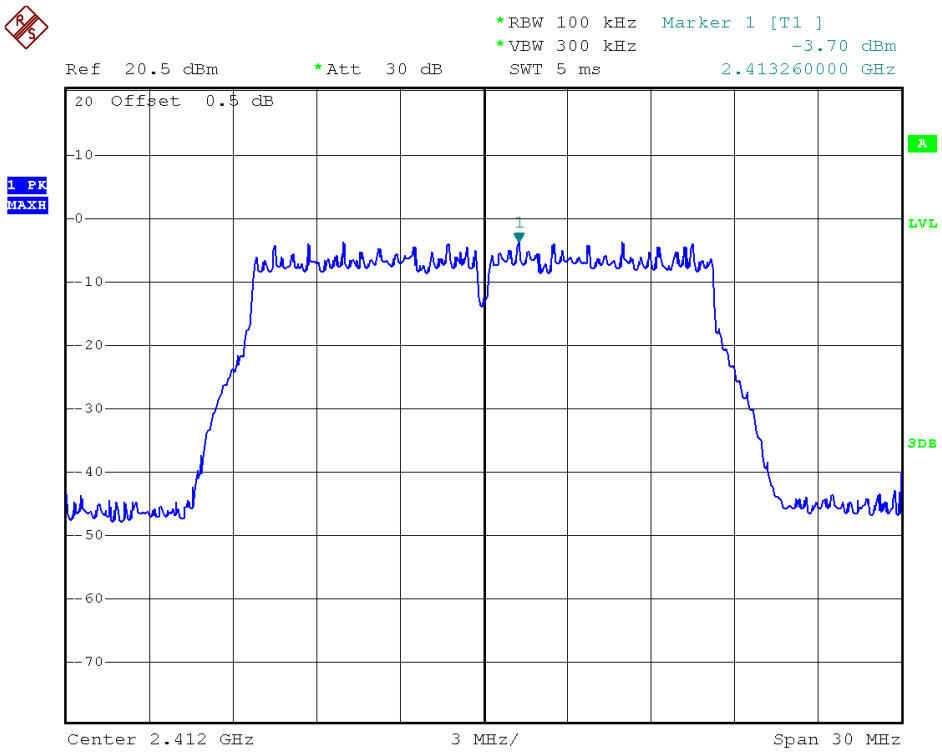
2.5.3.2 802.11g Test mode

A. Test Verdict:

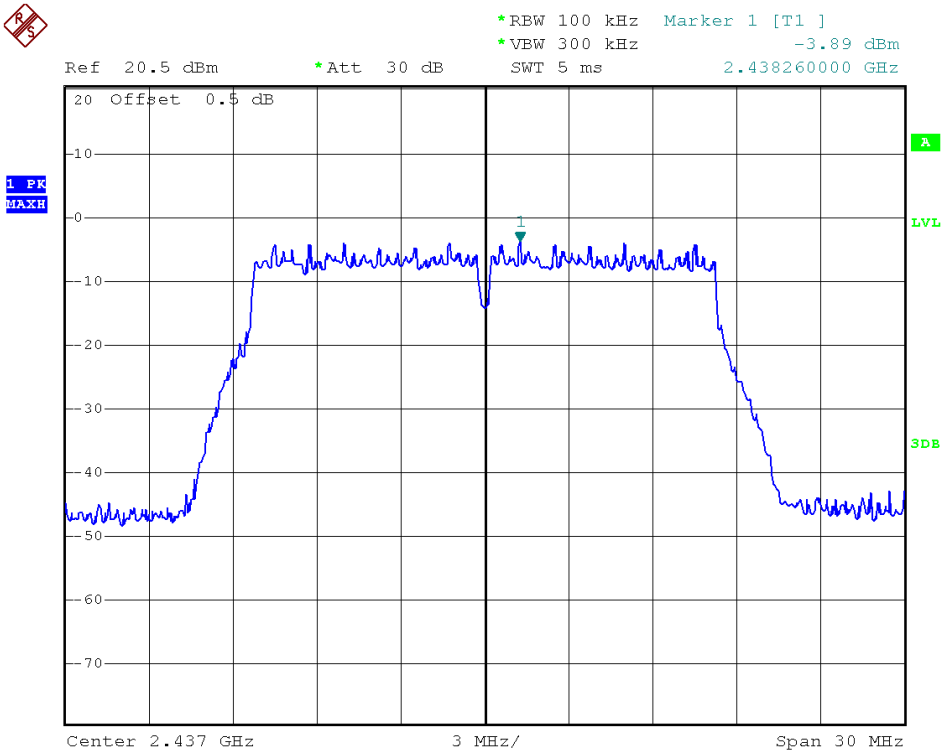
Spectral power density (dBm/3kHz)					
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Refer to Plot	Limit (dBm/3kHz)	Verdict
1	2412	-3.70	Plot 2.5 D	8	PASS
6	2437	-3.89	Plot 2.5 E	8	PASS
11	2462	-3.86	Plot 2.5 F	8	PASS
Measurement uncertainty: ±1.3dB					

Note: 1. For 802.11g mode at finial test to get the worst-case emission at 54 Mbps.
2. The test results including the cable lose.

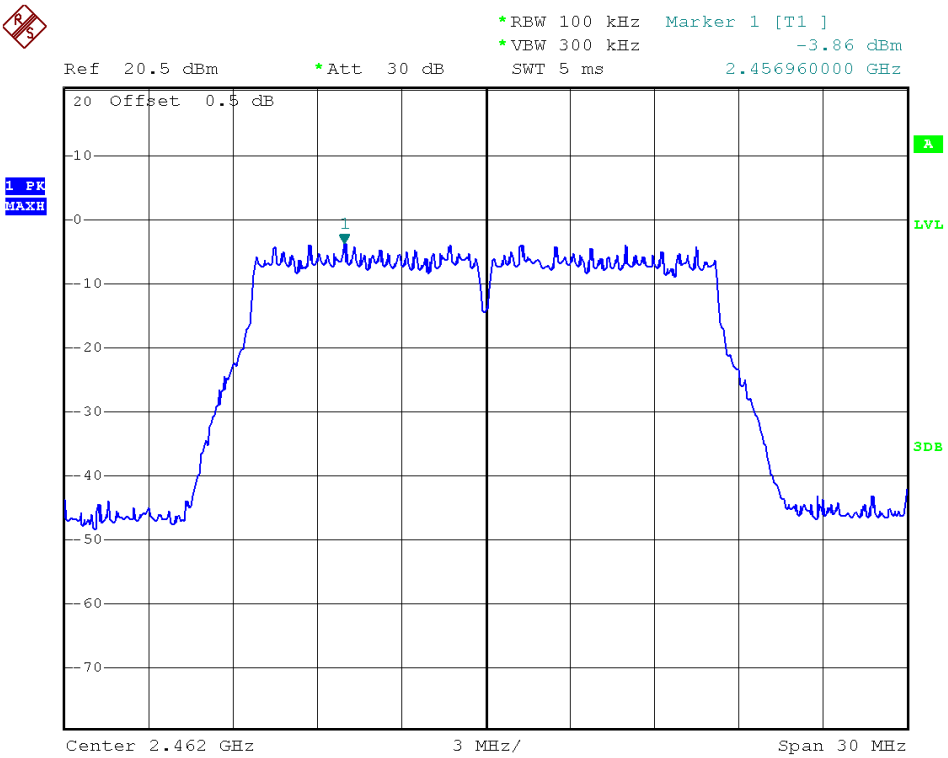
B. Test Plots:



(Plot 2.5 D: Channel = 1 @ 802.11g)



(Plot 2.5 E: Channel = 6 @ 802.11g)



(Plot 2.5 F: Channel = 11 @ 802.11g)

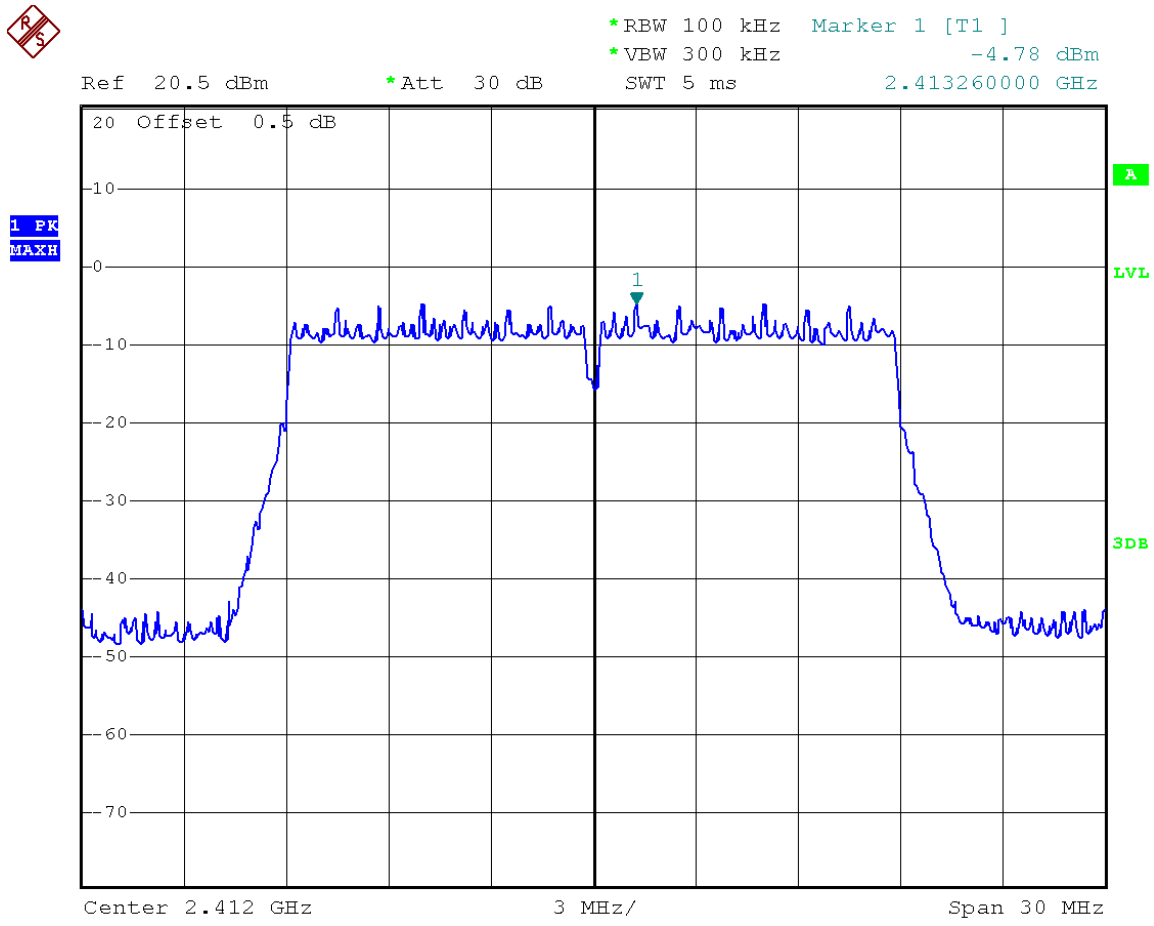
2.5.3.3 802.11n-20 Test mode

A. Test Verdict:

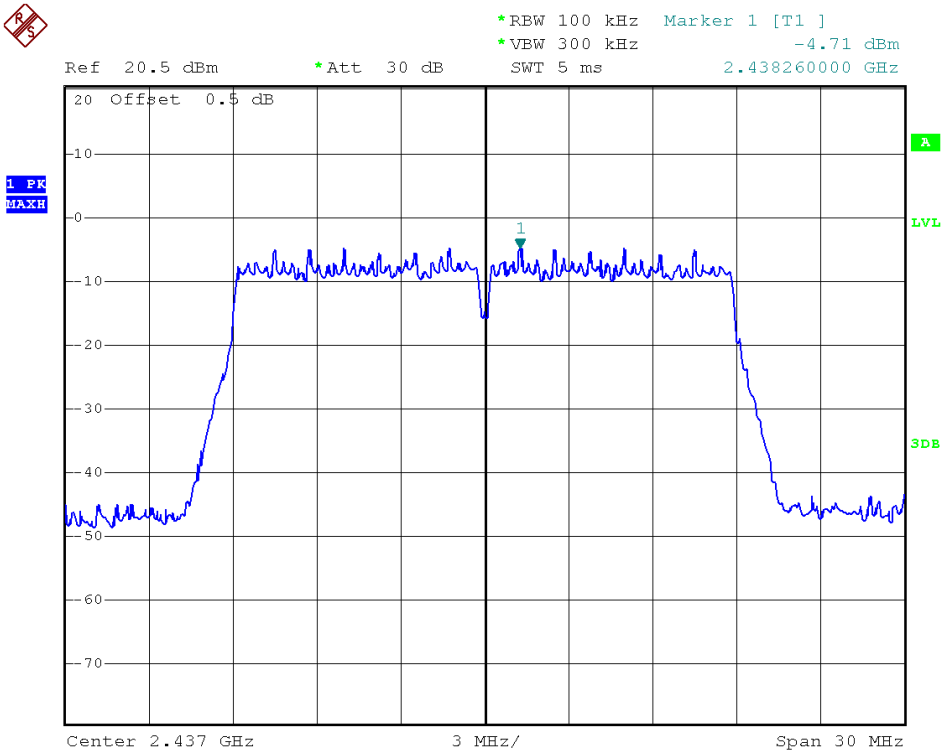
Spectral power density (dBm/3kHz)					
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Refer to Plot	Limit (dBm/3kHz)	Verdict
1	2412	-4.78	Plot2.5 G	8	PASS
6	2437	-4.71	Plot2.5 H	8	PASS
11	2462	-4.76	Plot2.5 I	8	PASS
Measurement uncertainty: ±1.3dB					

Note: 1. For 802.11n(20MHz) mode at finial test to get the worst-case emission at 72 Mbps.
2. The test results including the cable lose.

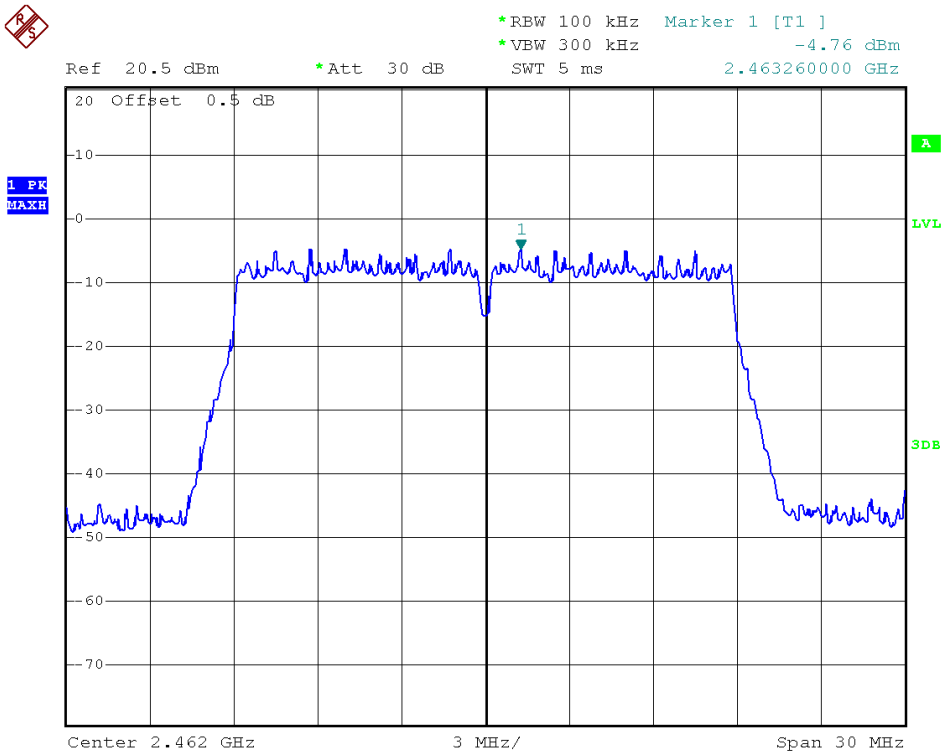
B. Test Plots:



(Plot 2.5 G: Channel = 1 @ 802.11n-20



(Plot 2.5 H: Channel = 6 @ 802.11n-20



(Plot 2.5 I: Channel = 11 @ 802.11n-20

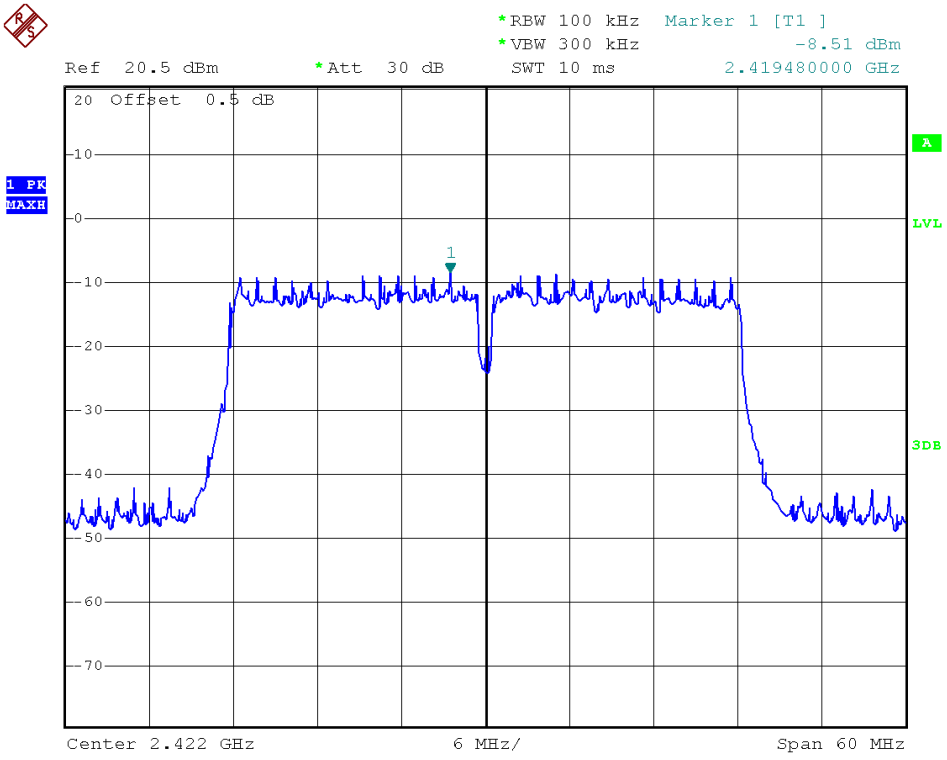
2.5.3.4 802.11n-40 Test mode

A. Test Verdict:

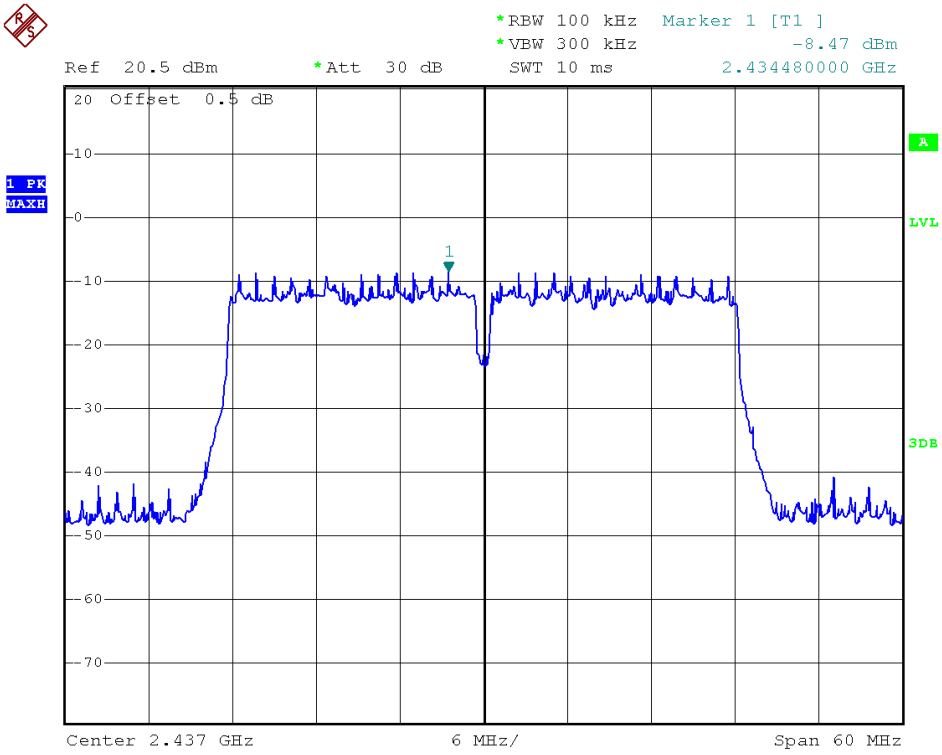
Spectral power density (dBm/3kHz)					
Channel	Frequency (MHz)	Measured PSD (dBm)	Refer to Plot	Limit (dBm/3kHz)	Verdict
3	2422	-8.51	Plot 2.5 J	8	PASS
6	2437	-8.47	Plot 2.5 K	8	PASS
9	2452	-8.38	Plot 2.5 L	8	PASS
Measurement uncertainty: ±1.3dB					

Note: 1. For 802.11n-40 mode at finial test to get the worst-case emission at 150Mbps.
2. The test results including the cable lose.

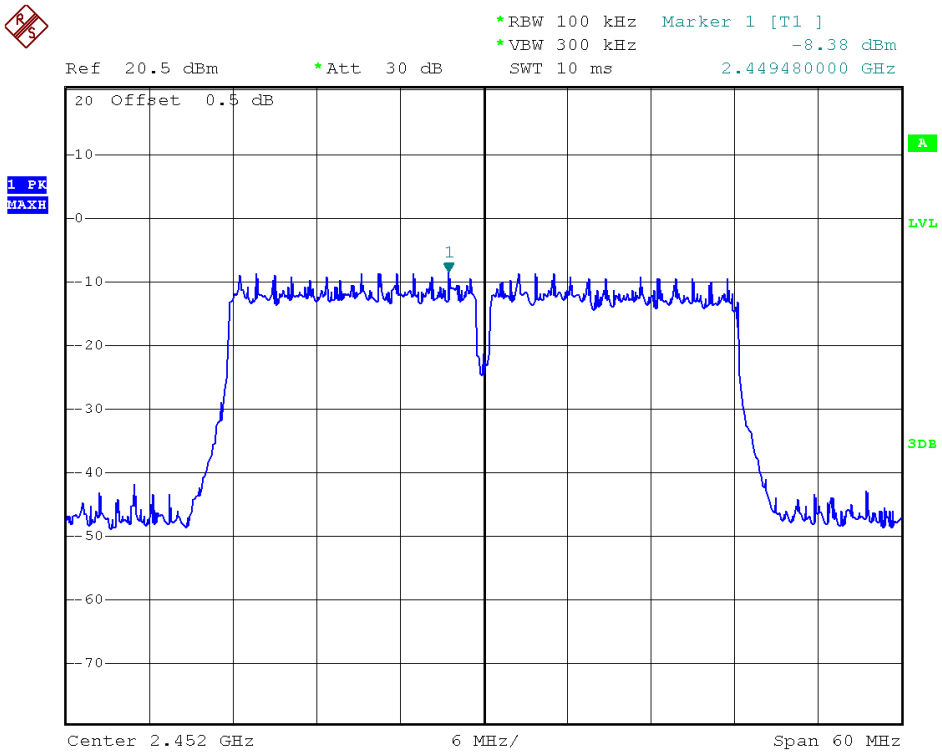
B. Test Plots:



(Plot 2.5 J: Channel = 3 @ 802.11n-40



(Plot 2.5 K: Channel = 6 @ 802.11n-40



(Plot 2.5 L: Channel = 9 @ 802.11n-40

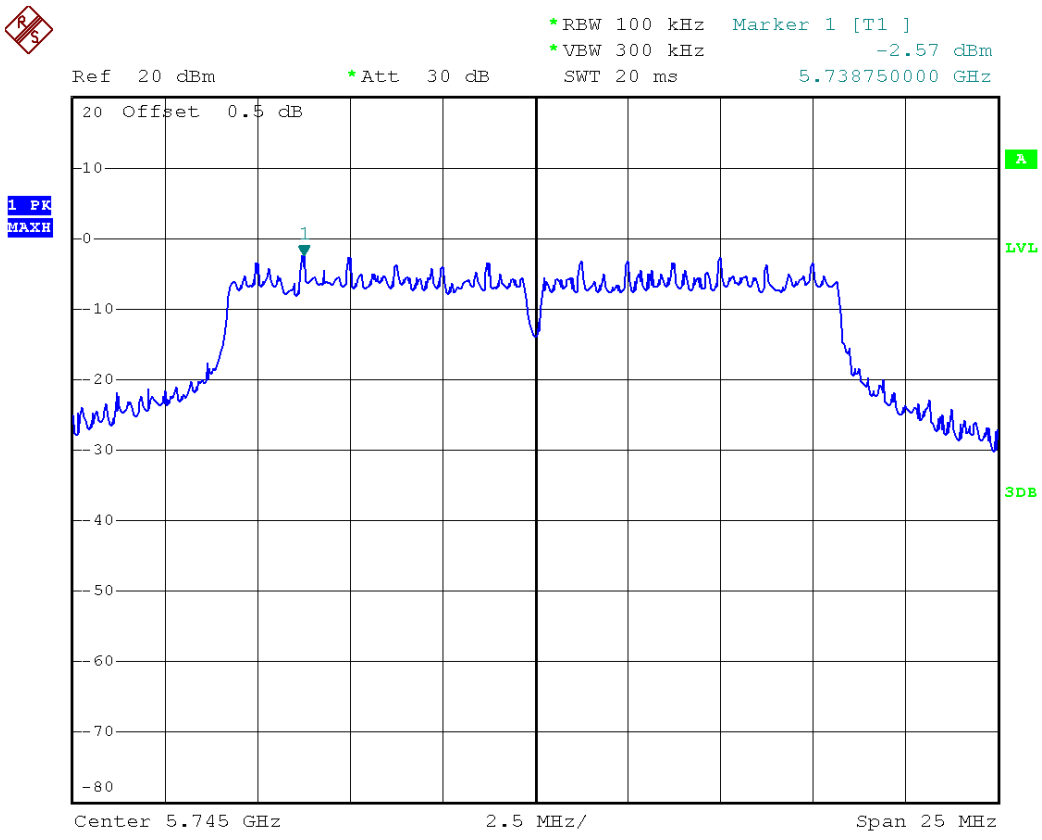
2.5.3.5 802.11a Test mode

A. Test Verdict:

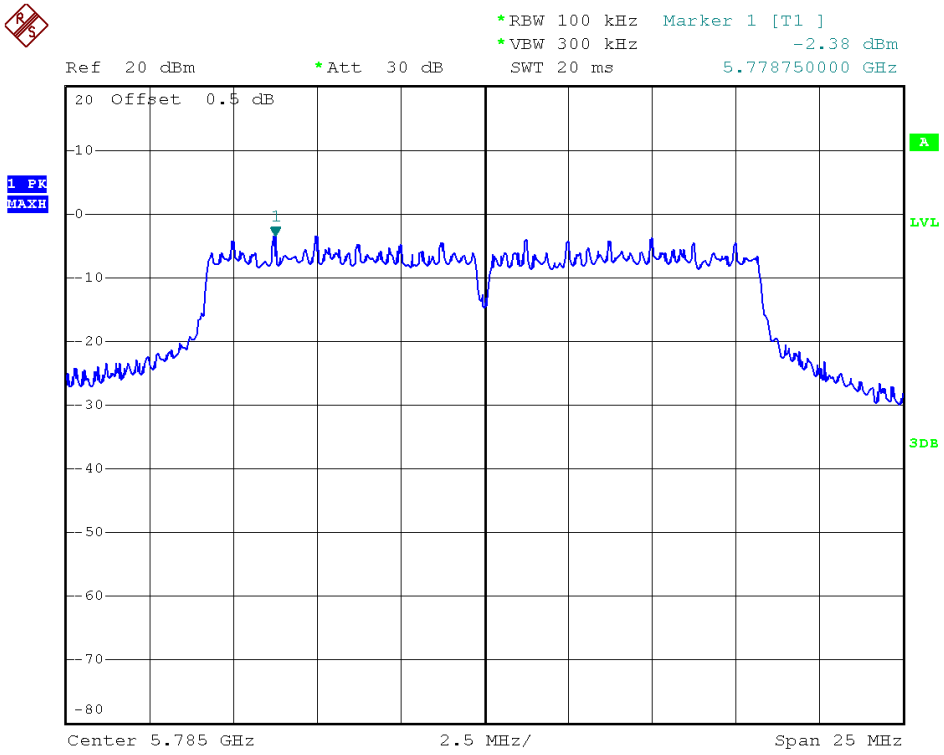
Spectral power density (dBm/3kHz)					
Channel	Frequency (MHz)	Measured PSD (dBm)	Refer to Plot	Limit (dBm/3kHz)	Verdict
149	5745	-2.57	Plot 2.5 M	8	PASS
157	5785	-2.38	Plot 2.5 N	8	PASS
165	5825	-3.42	Plot 2.5 O	8	PASS
Measurement uncertainty: ±1.3dB					

Note: 1. For 802.11a mode at finial test to get the worst-case emission at 54Mbps.
2. The test results including the cable lose.

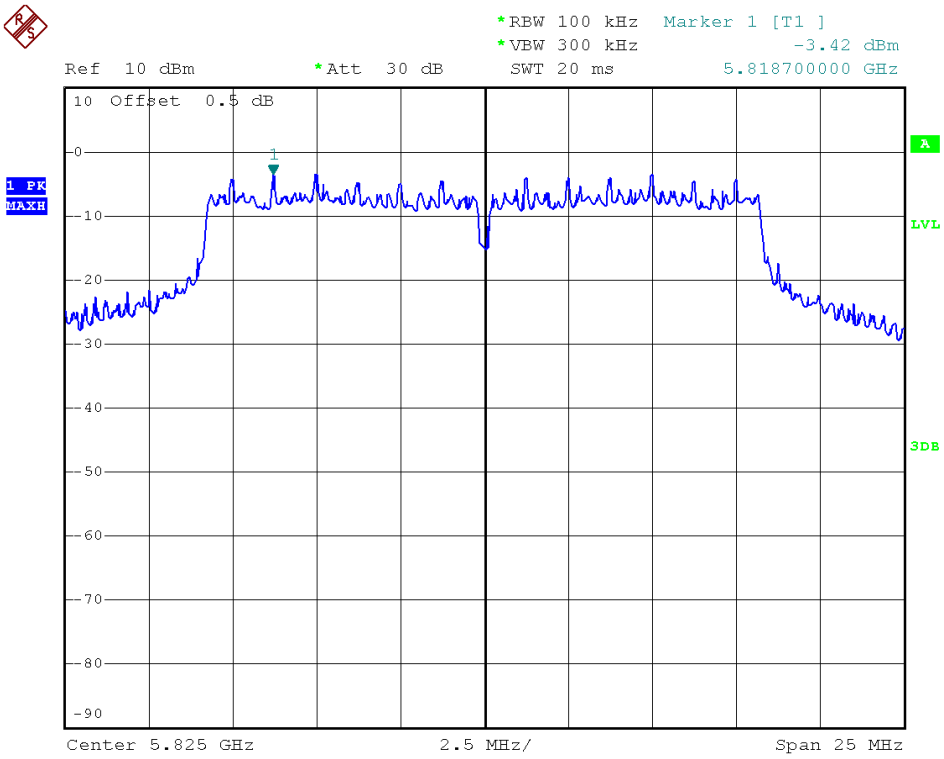
B. Test Plots:



(Plot 2.5 M: Channel = 149 @ 802.11a



(Plot 2.5 N: Channel = 157 @ 802.11a



(Plot 2.5 O: Channel = 165 @ 802.11a

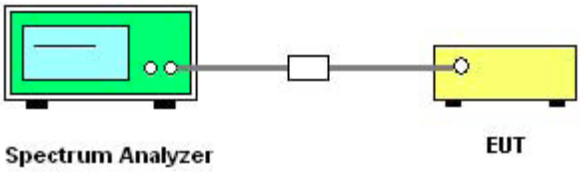
2.6 Band Edge

2.6.1 Requirement

According to FCC section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

2.6.2 Test Description

A. Test Setup



B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	R&S	FSP40	1164.4391.40	2014.07.07	2015.07.06

2.6.3 Test Procedure

The following procedures may be used to determine the peak or average field strength or power of an unwanted emission that is within 2 MHz of the authorized band edge. If a peak detector is utilized, use the procedure described in 13.2.1. Use the procedure described in 13.2.2 when using an average detector and the EUT can be configured to transmit continuously (i.e., duty cycle ≥ 98%). Use the procedure described in 13.2.3 when using an average detector and the EUT cannot be configured to transmit continuously but the duty cycle is constant (i.e., duty cycle variations are less than ±2 percent). Use the procedure described in 13.2.4 when using an average detector for those cases where the EUT cannot be configured to transmit continuously and the duty cycle is not constant (duty cycle variations equal or exceed 2 percent).

When using a peak detector to measure unwanted emissions at or near the band edge (within 2 MHz of the authorized band), the following integration procedure can be used.

Set instrument center frequency to the frequency of the emission to be measured (must be within 2 MHz of the authorized band edge).

RBW = 100 kHz.
VBW ≥ 3 x RBW.

Detector = peak.
Sweep time = auto.
Trace mode = max hold.
Allow sweep to continue until the trace stabilizes (required measurement time may increase for low duty cycle applications)

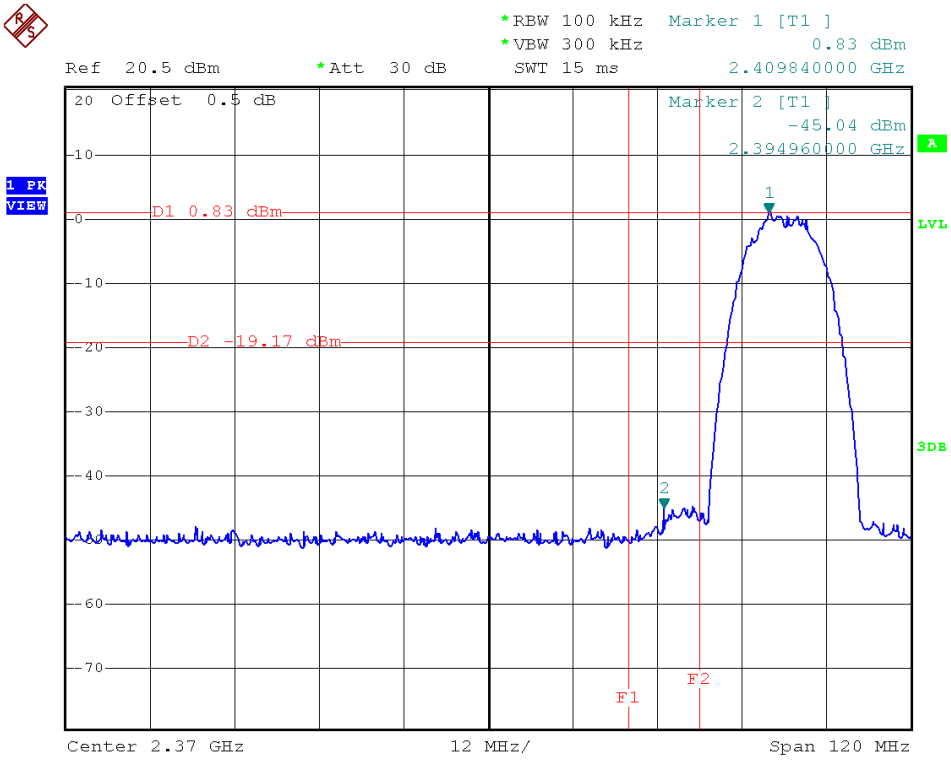
Compute the power by integrating the spectrum over 1 MHz using the analyzer's band power measurement function with band limits set equal to the emission frequency (femission) ±0.5 MHz. If the instrument does not have a band power function, then sum the amplitude levels (in power units) at 100 kHz intervals extending across the 1 MHz spectrum defined by femission ±0.5 MHz.

2.6.4 Test Result

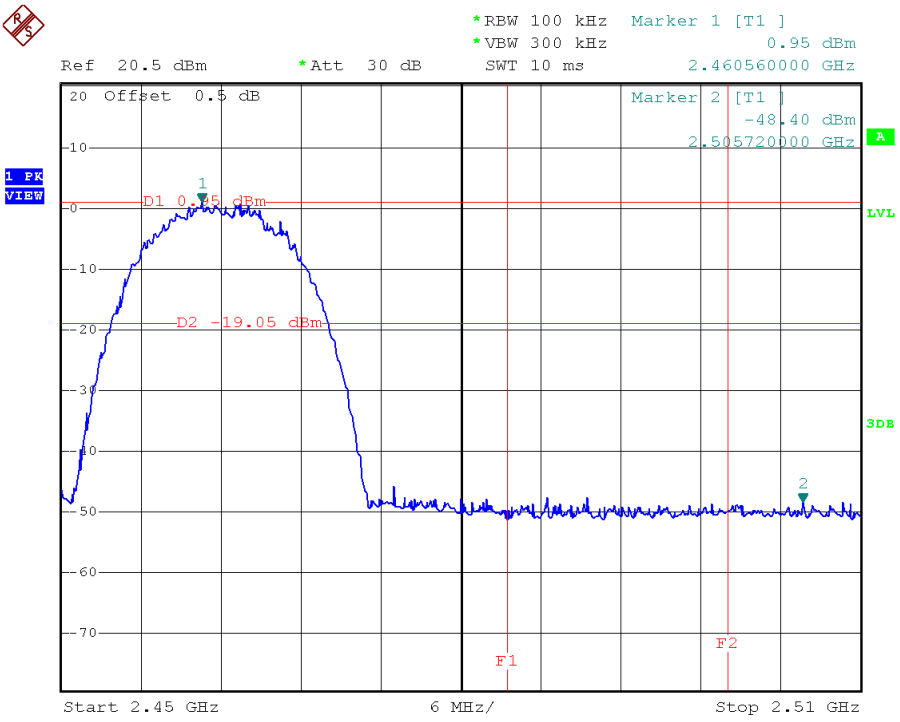
Band edge were measurement for 802.11a,802.11b,802.11g, 802.11n(20MHz) and 802.11n(40MHz) mode at difference date, recording worst case in test report.

802.11b

B. Test Plots:



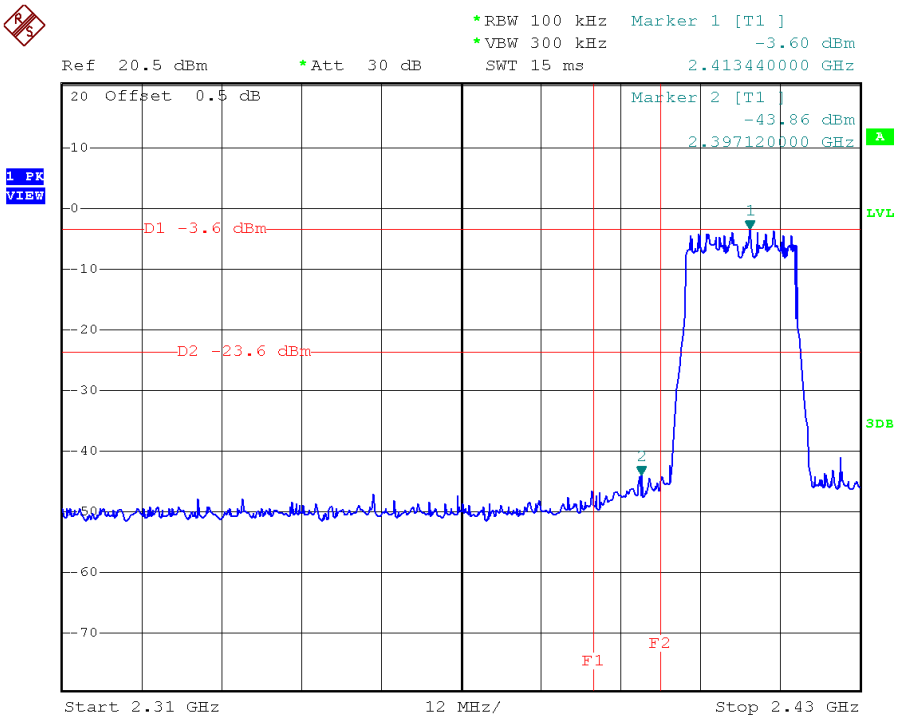
(Plot 2.6 A1: Channel = 1 @ 802.11b)



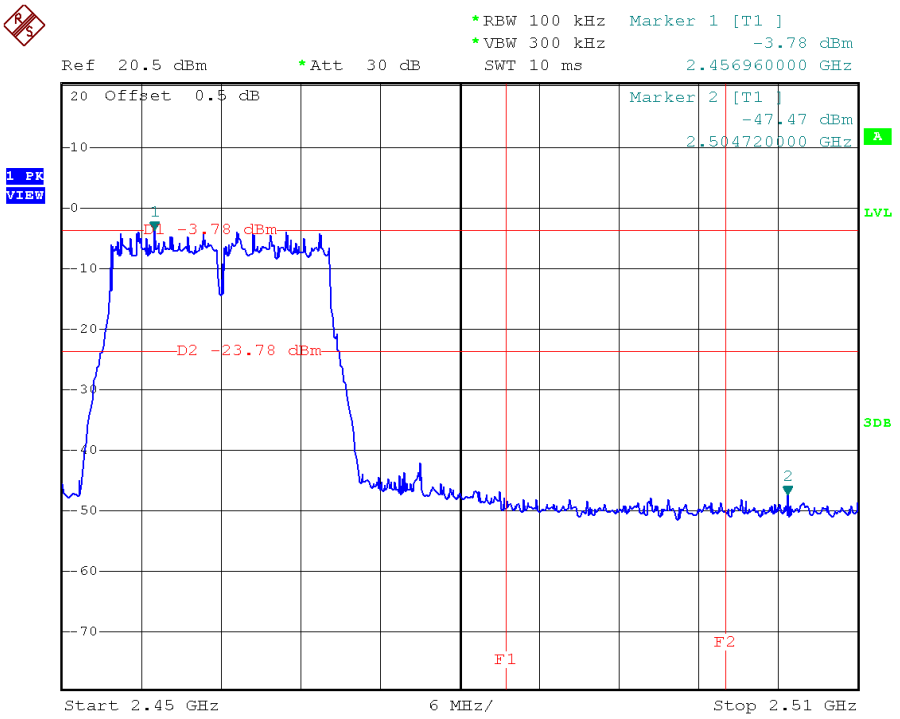
(Plot 2.6 A2: Channel = 11 @ 802.11b)

802.11g

A. Test Plots:



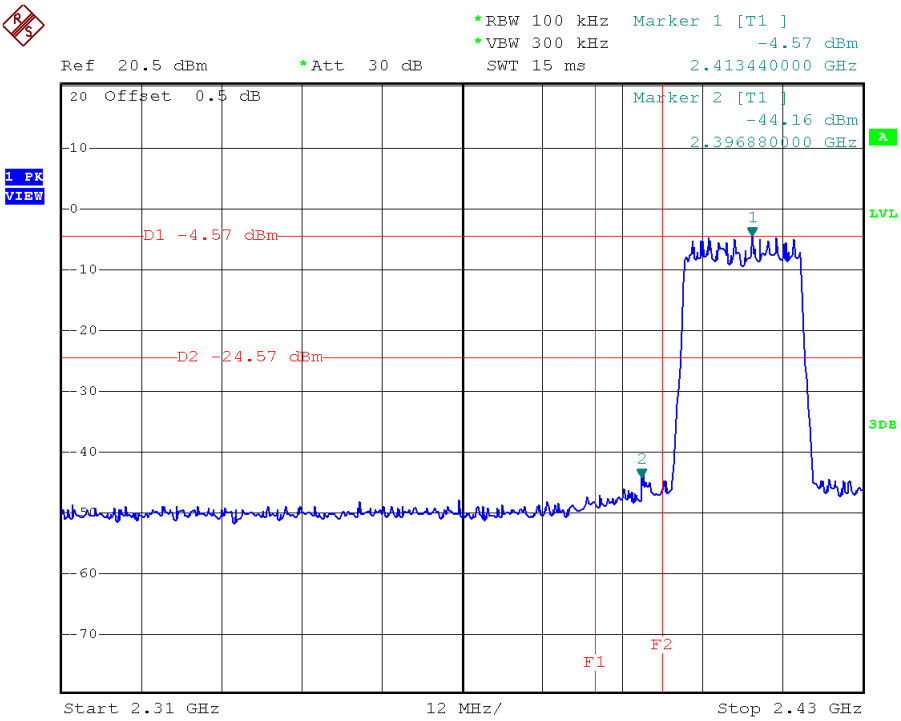
(Plot 2.6 B1: Channel = 1 @ 802.11g)



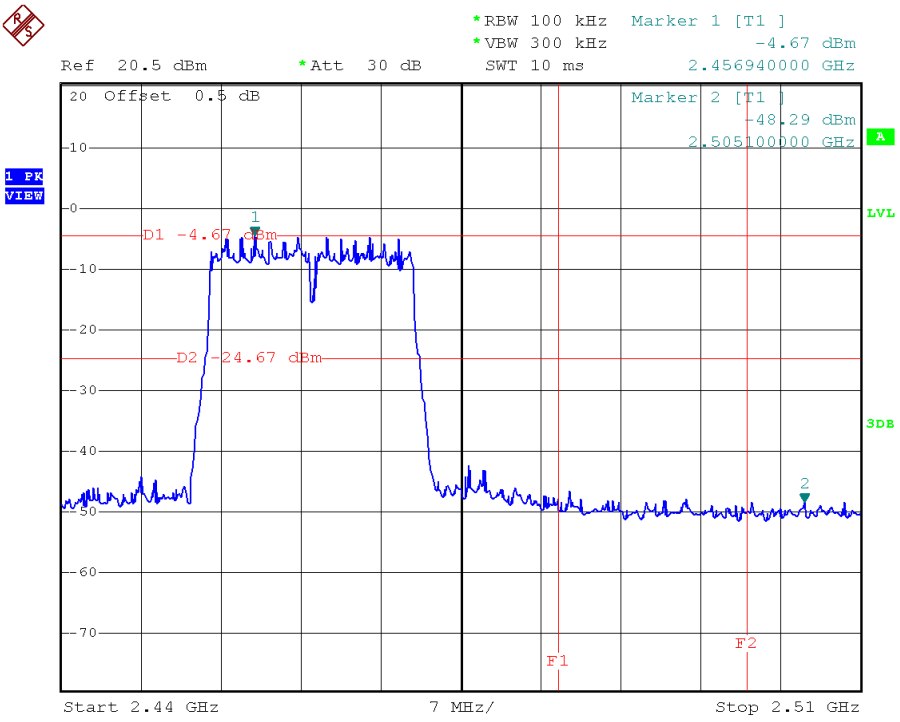
(Plot 2.6 B2: Channel = 11 @ 802.11g)

802.11n-20

A. Test Plots:



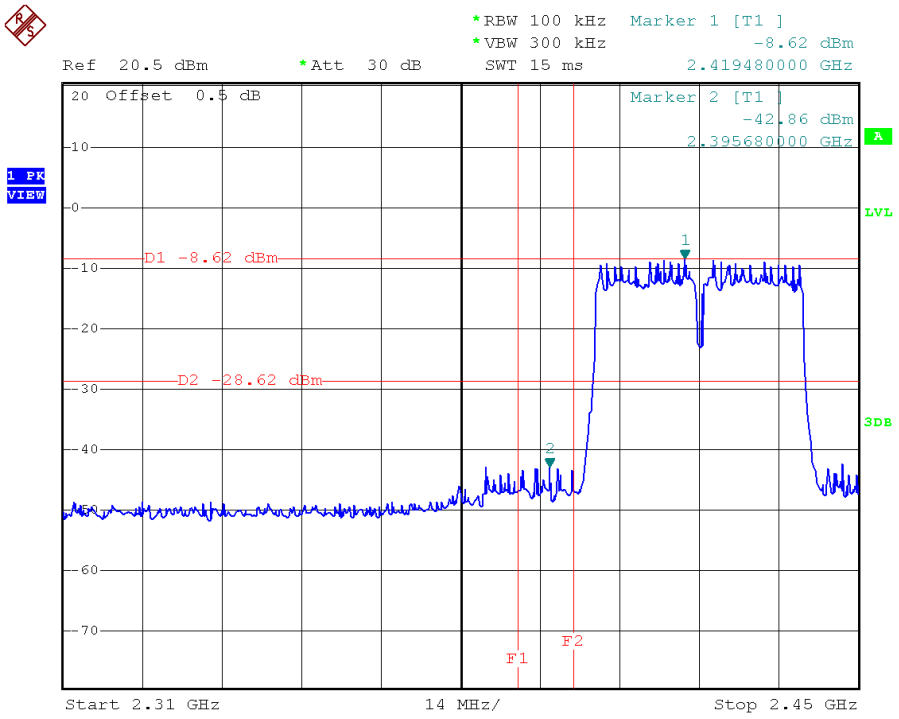
(Plot 2.6 C1: Channel = 1 @ 802.11n-20)



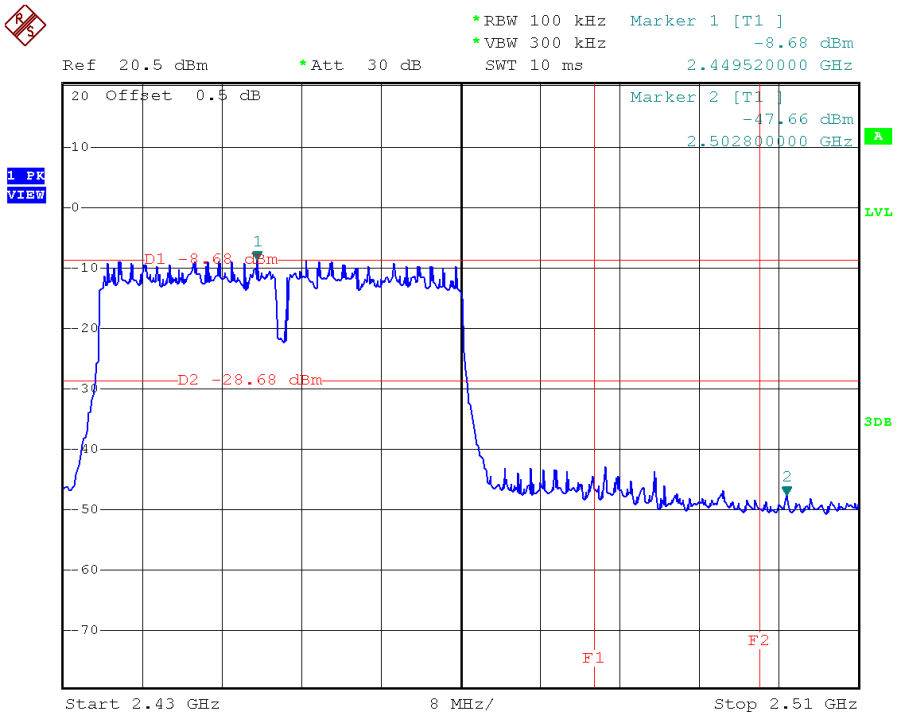
(Plot 2.6 C2: Channel = 11 @ 802.11n-20)

802.11n-40

A. Test Plots:

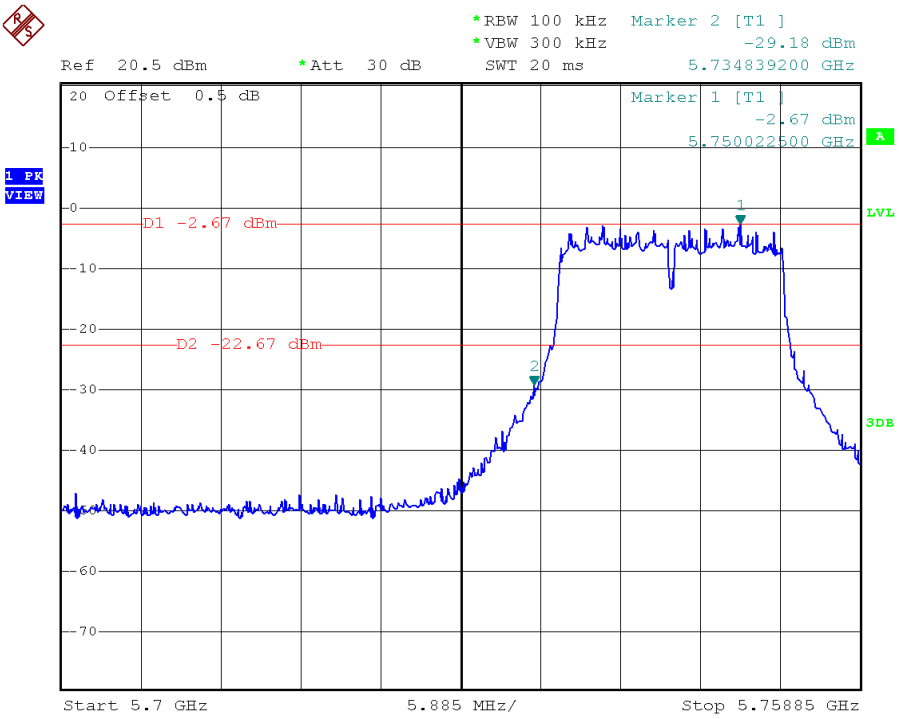


(Plot 2.6 D1: Channel = 3 @ 802.11n-40)

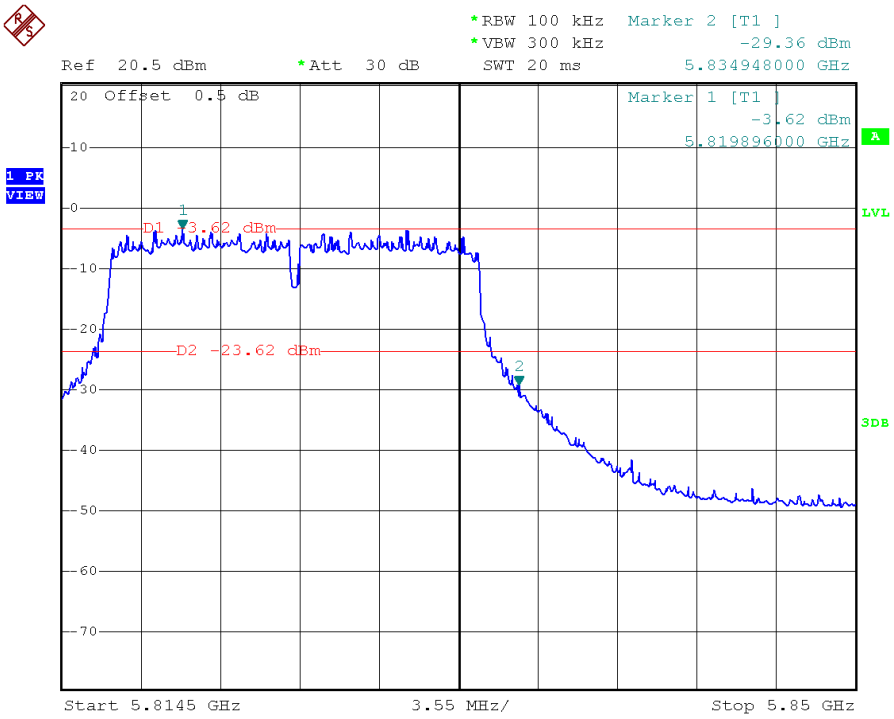


(Plot 2.6 D2: Channel = 9 @ 802.11n-40)

802.11a



(Plot 2.6 E1: Channel = 149 @ 802.11a)



(Plot 2.6 E2: Channel = 163 @ 802.11a)

2.7 Conducted Emission

2.7.1 Requirement

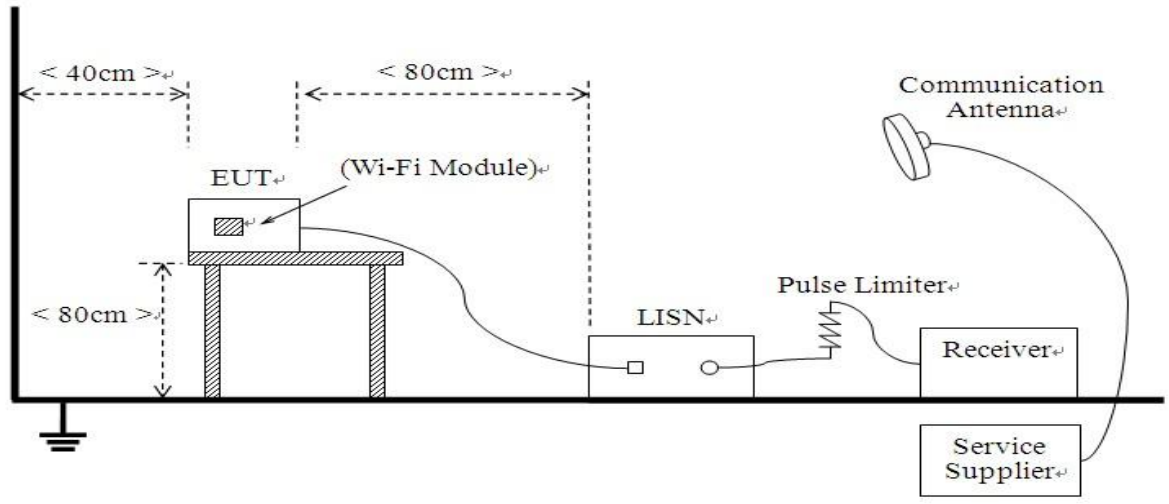
According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

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

NOTE:
(a) The lower limit shall apply at the band edges.
(b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

2.7.2 Test Description

A. Test Setup:



The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.4:2009

The EUT is powered by a PC. The factors of the site are calibrated to correct the reading. During the measurement, the EUT is activated and controlled by the Wi-Fi Service Supplier (SS) via a Common Antenna.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due Date
Test Receiver	ROHDE&SCHWARZ	ESCS30	A0304260	2014.06.10	2015.06.09
LISN	ROHDE&SCHWARZ	ESH2-Z5	A0304221	2014.06.10	2015.06.09
Cable	MATCHING PAD	W7	/	2014.06.05	2015.06.04

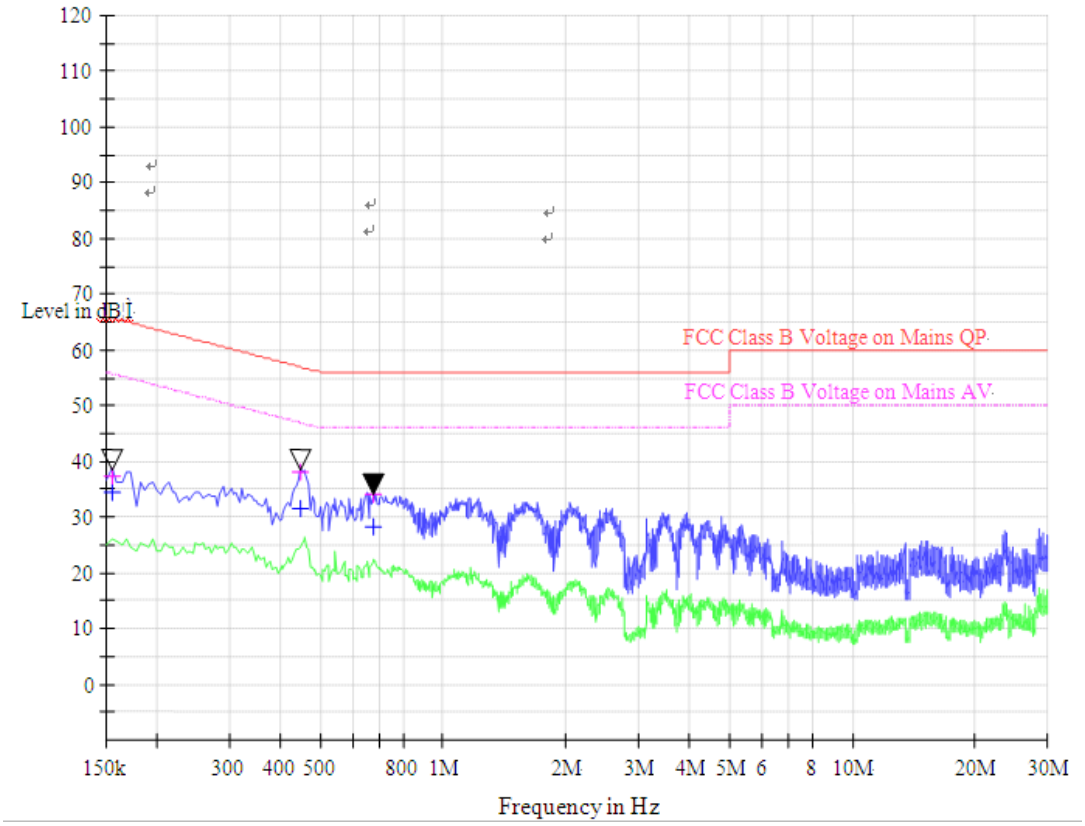
2.7.3 Test Result

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

A. Test setup:

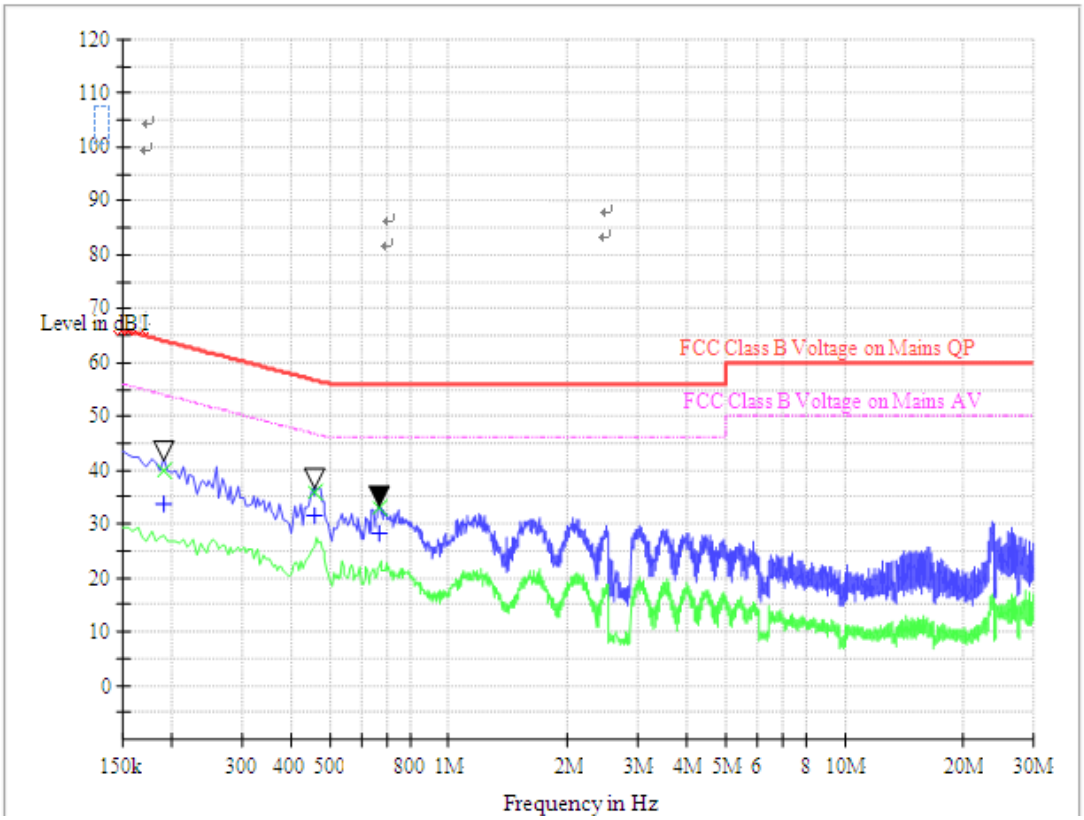
The EUT configuration of the emission tests is EUT + PC.

B. Test Plots:



Conducted Disturbance at Mains Terminals					
L Test Data					
QP			AV		
Frequency (MHz)	Limits (dBμV)	Measurement Value (dBμV)	Frequency (MHz)	Limits (dBμV)	Measurement Value (dBμV)
0.154500	65.8	29.42	0.154500	55.8	19.75
0.447000	56.9	20.57	0.447000	46.9	18.69
0.676500	56.0	24.11	0.676500	46.0	17.83

(Plot A: L 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)
0.190500	64.0	38.47	0.190500	54.0	32.15
0.460500	56.7	34.26	0.460500	46.7	30.33
0.667500	56.0	32.18	0.667500	46.0	27.08

(Plot B: N Phase)

Test Result: PASS

2.8 Radiated Emission

2.8.1 Requirement

According to FCC section 15.247(c), radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	20log(2400/F(KHz))+80	300
0.490 - 1.705	24000/F(kHz)	20log(24000/F(KHz))+40	30
1.705 - 30.0	30	20log(30)+40	30
30 - 88	100	40.0	3
88 - 216	150	43.5	3
216 - 960	200	46.0	3
Above 960	500	54.0	3

Note:

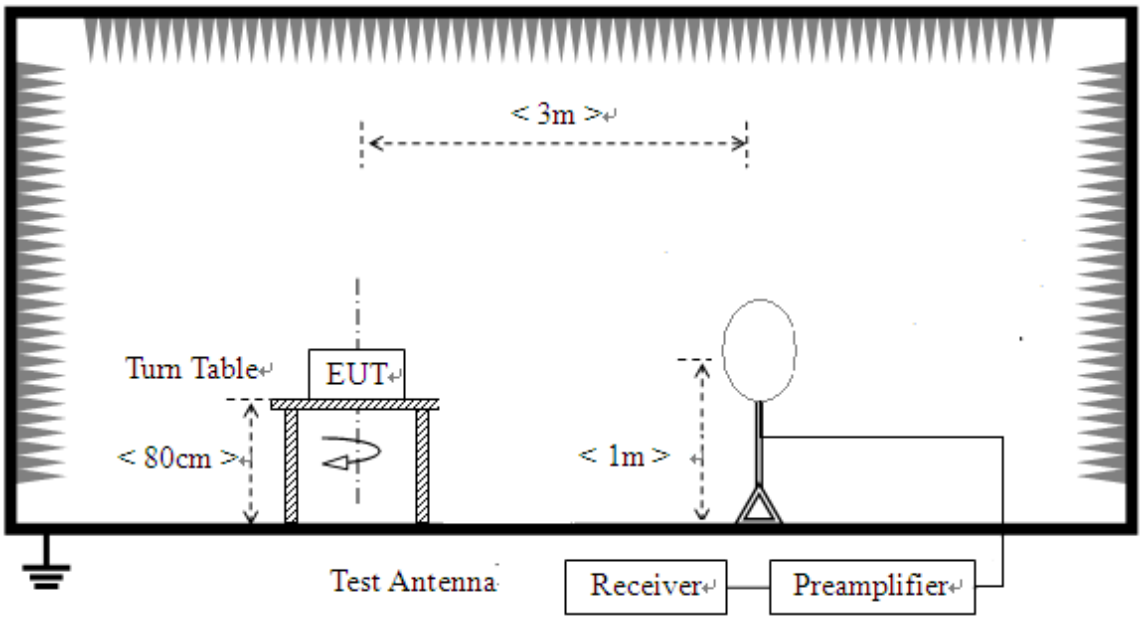
1. For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
2. For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK)

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table)

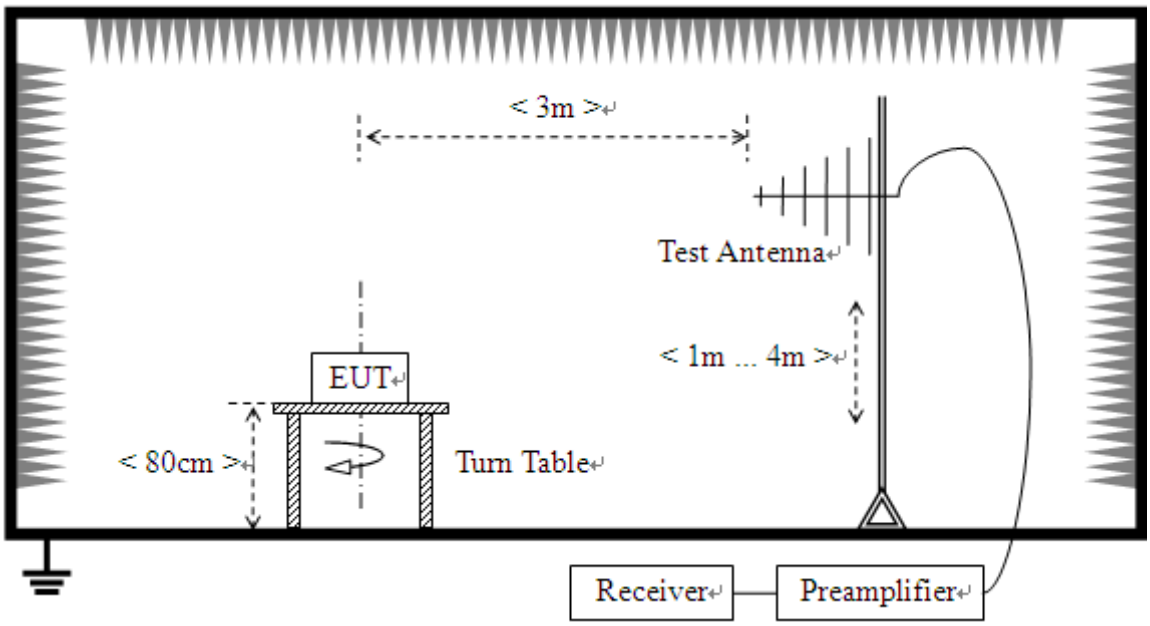
2.8.2 Test Description

A. Test Setup:

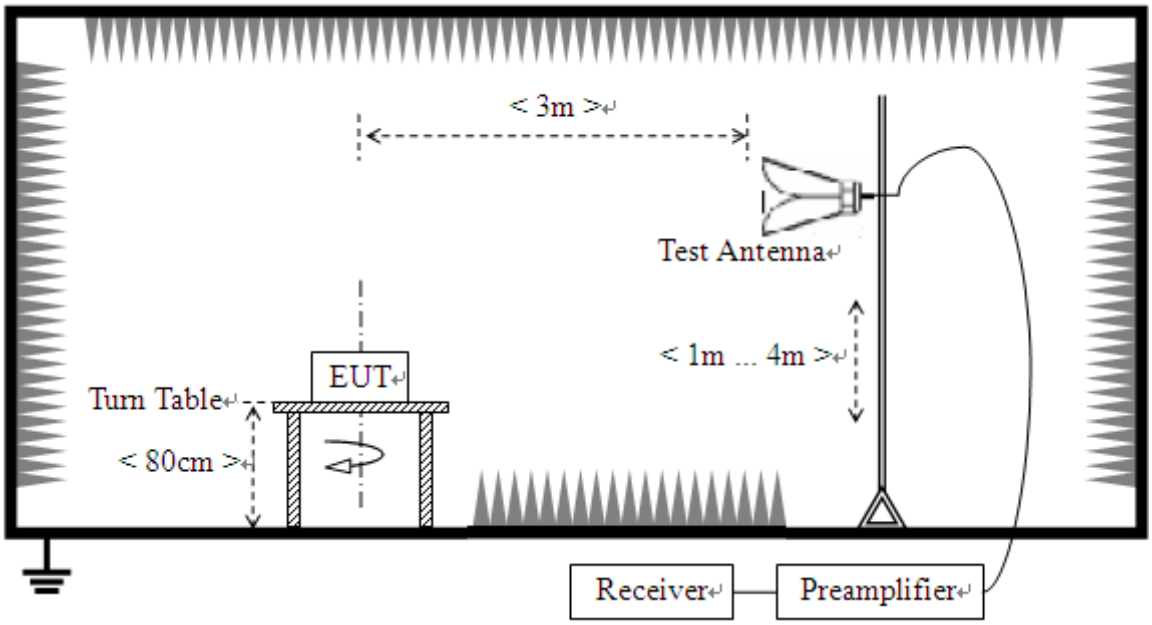
(1) For radiated emissions from 9kHz to 30MHz



(2) For radiated emissions from 30MHz to1GHz



(3) For radiated emissions above 1GHz



The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4 (2009). The EUT was set-up on insulator 80cm above the Ground Plane. The set-up and test methods were according to ANSI C63.4.

The EUT was powered by the PC. The Module is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading. During the measurement, the digital modulation operation of the hybrid system, with the frequency hopping operation turned off, the EUT is activated and controlled by the PC, set to operate under WIFI test mode.

For the Test Antenna:

(a) In the frequency range of 9kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
(b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due Date
Receiver	R&S	ESIB26	A0304218	2014.06.07	2015.06.06
Full-Anechoic Chamber	Albatross	12.8m*6.8m* 6.4m	A0412372	2014.06.07	2015.06.06
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2014.06.09	2015.06.08
Test Antenna - Horn	R&S	BBHA 9120D	9120C-963	2014.06.09	2015.06.08
Test Antenna - Horn	R&S	HF960	100150	2014.06.09	2015.06.08
Test Antenna – Horn (18-25GHz)	ETS	UG-596A/U	A0902607	2014.06.05	2015.06.04
Test Antenna -Loop	Schwarzbeck	HFH2-Z2	100047	2014.06.02	2015.06.01
Ampilier 1G~18GHz	R&S	MITEQ AFS42-0010 1800	25-S-42	2014.06.05	2015.06.04
Ampilier 18G~40GHz	R&S	JS42-180026 00-28-5A	12111.0980. 00	2014.06.05	2015.06.04
amplifier 20M~3GHz	R&S	PAP-0203H	22018	2014.06.10	2015.06.09
Cable	SUNHNER	SUCOFLEX 100	/	2014.06.05	2015.06.04
Cable	SUNHNER	SUCOFLEX 104	/	2014.06.05	2015.06.04

2.8.3 Test Result

According to ANSI C63.4 selection 4.2.2, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak limit, it is unnecessary to perform an quasi-peak measurement.
The measurement results are obtained as below:

$E\ [dB\mu\ V/m] = U_R + A_T + A_{Factor}\ [dB]$; $A_T = L_{Cable\ loss}\ [dB] - G_{preamp}\ [dB]$

A_T: Total correction Factor except Antenna

U_R: Receiver Reading

G_{preamp}: Preamplifier Gain

A_{Factor}: Antenna Factor at 3m

$L_{Cable\ loss}$: Cable loss

During the test, the total correction Factor AT and A_{Factor} were built in test software.

Note: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.
The minimum clock frequency was 24MHz,the radiated frequency range from 9KHz to 25GHz.

Note: 1.The radiated measurement are performed the each test mode (b/g/n) and channel (low/mid/high), the datum recorded below (802.11b mode, the middle channel) is the worst case for all the test mode and channel.

2. ULTRA-BROADBAND ANTENNA for the radiation emission test below 1G.

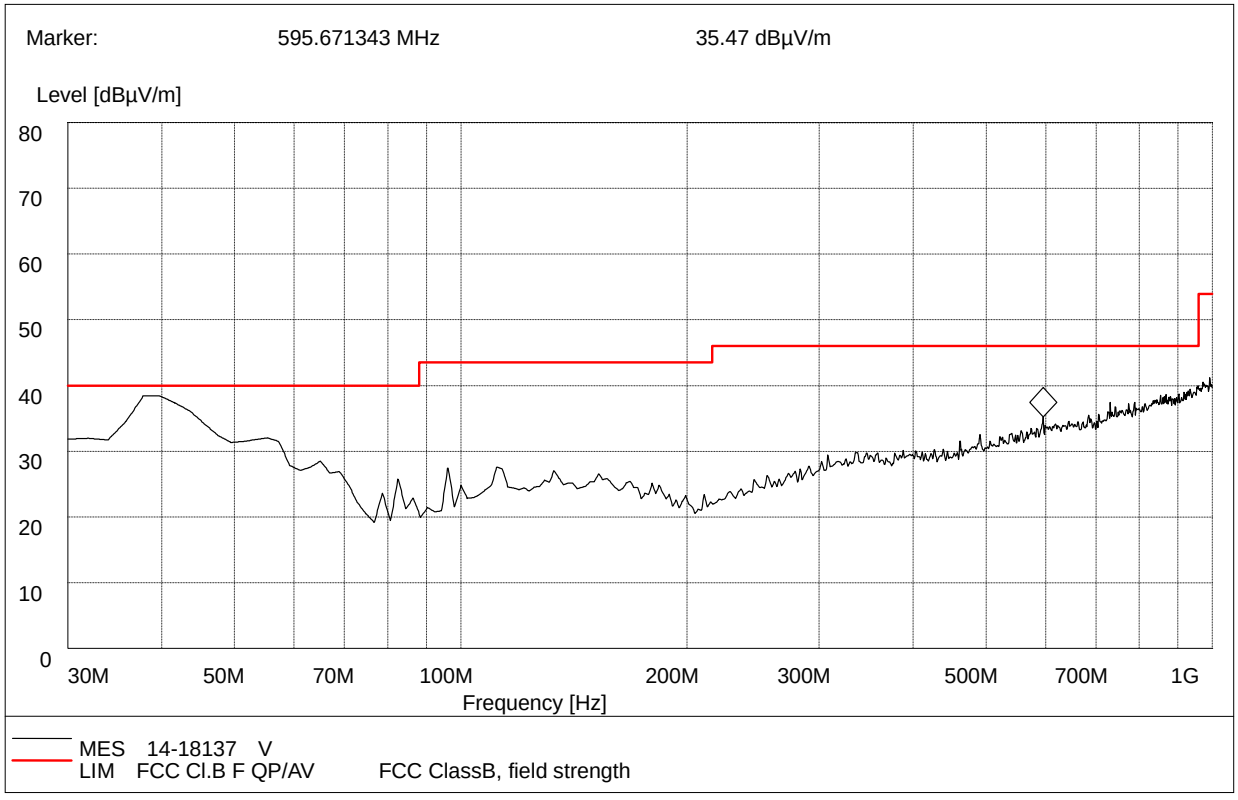
3. HORN ANTENNA for the radiation emission test above 1G.

Test plots for the whole measurement frequency range：

For 9KHz to 30MHz

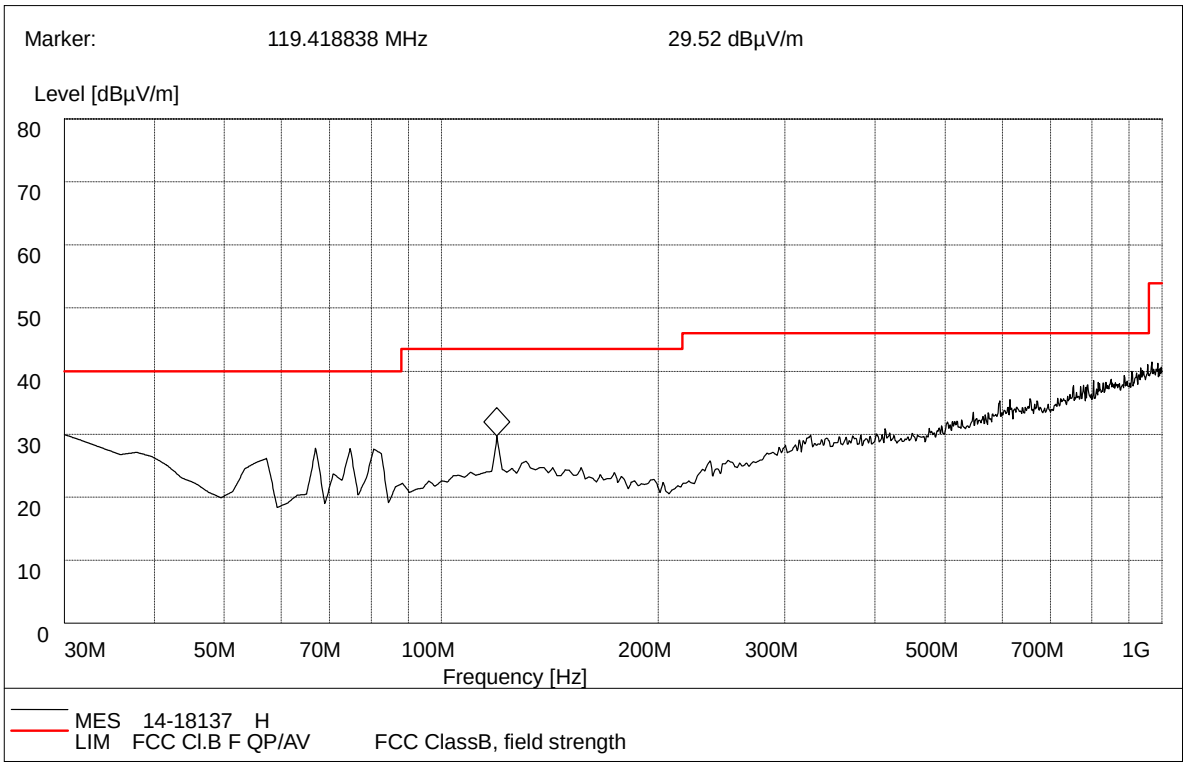
The test has been performed, and the Radiated Emission level is too low to the limit.

For 30MHz to 1000 MHz



(Plot A: 30MHz to 1GHz, Antenna Vertical)

Frequency (MHz)	QuasiPeak (dBµ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµ V/m)	Antenna	Verdict
37.5900	37.21	120.000	100.0	40.00	Vertical	Pass
58.2769	31.12	120.000	100.0	40.00	Vertical	Pass
96.0922	28.30	120.000	100.0	43.50	Vertical	Pass
113.6203	27.27	120.000	100.0	43.50	Vertical	Pass
595.6713	34.67	120.000	100.0	46.00	Vertical	Pass
915.4689	37.43	120.000	100.0	46.00	Vertical	Pass



(Plot B: 30MHz to 1GHz, Antenna Horizontal)

Frequency (MHz)	QuasiPeak (dBµ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµ V/m)	Antenna	Verdict
30.2000	29.28	120.000	100.0	40.00	Horizontal	Pass
57.3694	27.03	120.000	100.0	40.00	Horizontal	Pass
119.4188	28.48	120.000	100.0	43.50	Horizontal	Pass
315.2348	29.29	120.000	100.0	46.00	Horizontal	Pass
599.9678	33.04	120.000	100.0	46.00	Horizontal	Pass
915.4689	36.17	120.000	100.0	46.00	Horizontal	Pass

For 1GHz to 40GHz

802.11b Mode

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2412.00	108.38	PK	/	/	1.00 H	118	111.78	28.30	4.90	-36.60
1	*2412.00	97.24	AV	/	/	1.00 H	118	100.64	28.30	4.90	-36.60
2	2387.48	44.15	PK	74.00	29.85	1.00 H	237	48.15	27.90	4.70	-36.60

2	2387.48	35.52	AV	54.00	18.48	1.00 H	237	39.52	27.90	4.70	-36.60
3	4824.00	50.63	PK	74.00	23.37	1.00 H	24	47.43	32.70	7.00	-36.50
3	4824.00	45.08	AV	54.00	8.92	1.00 H	24	41.88	32.70	7.00	-36.50
4	7236.00	49.83	PK	74.00	24.17	1.00 H	107	40.43	35.80	8.90	-35.30
4	7236.00	42.40	AV	54.00	11.60	1.00 H	107	33.00	35.80	8.90	-35.30
5	9648.00	49.44	PK	74.00	24.56	1.00 H	39	36.84	37.20	10.20	-34.80
5	9648.00	43.78	AV	54.00	10.22	1.00 H	39	31.18	37.20	10.20	-34.80

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2412.00	108.46	PK	/	/	1.00 V	109	111.86	28.30	4.90	-36.60
1	*2412.00	97.87	AV	/	/	1.00 V	109	101.27	28.30	4.90	-36.60
2	2382.57	41.26	PK	74.00	32.74	1.00 V	70	45.26	27.90	4.70	-36.60
2	2382.57	33.89	AV	54.00	20.11	1.00 V	70	37.89	27.90	4.70	-36.60
3	4824.00	51.46	PK	74.00	22.54	1.00 V	62	48.26	32.70	7.00	-36.50
3	4824.00	44.36	AV	54.00	9.64	1.00 V	62	41.16	32.70	7.00	-36.50
4	7236.00	50.12	PK	74.00	23.88	1.00 V	349	40.72	35.80	8.90	-35.30
4	7236.00	42.68	AV	54.00	11.32	1.00 V	349	33.28	35.80	8.90	-35.30
5	9648.00	53.84	PK	74.00	20.16	1.00 V	211	41.24	37.20	10.20	-34.80
5	9648.00	44.57	AV	54.00	9.43	1.00 V	211	31.97	37.20	10.20	-34.80

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2437.00	106.58	PK	/	/	1.00 H	202	109.78	28.30	5.10	-36.60
1	*2437.00	98.49	AV	/	/	1.00 H	202	101.69	28.30	5.10	-36.60
2	4874.00	52.34	PK	74.00	21.66	1.00 H	187	48.94	32.30	7.60	-36.50
2	4874.00	46.83	AV	54.00	7.17	1.00 H	187	43.43	32.30	7.60	-36.50
3	7311.00	53.27	PK	74.00	20.73	1.00 H	107	43.87	36.10	8.60	-35.30
3	7311.00	47.07	AV	54.00	6.93	1.00 H	107	37.67	36.10	8.60	-35.30
4	9748.00	48.50	PK	74.00	25.50	1.00 H	144	35.90	37.20	10.20	-34.80
4	9748.00	41.88	AV	54.00	12.12	1.00 H	144	29.28	37.20	10.20	-34.80

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2437.00	107.49	PK	/	/	1.00 V	104	110.69	28.30	5.10	-36.60

1	*2437.00	96.74	AV	/	/	1.00 V	104	99.94	28.30	5.10	-36.60
2	4874.00	49.73	PK	74.00	24.27	1.00 V	304	46.33	32.30	7.60	-36.50
2	4874.00	47.00	AV	54.00	7.00	1.00 V	304	43.60	32.30	7.60	-36.50
3	7311.00	48.51	PK	74.00	25.49	1.00 V	203	39.11	36.10	8.60	-35.30
3	7311.00	45.92	AV	54.00	8.08	1.00 V	203	36.52	36.10	8.60	-35.30
4	9748.00	48.30	PK	74.00	25.70	1.00 V	172	35.70	37.20	10.20	-34.80
4	9748.00	43.49	AV	54.00	10.51	1.00 V	172	30.89	37.20	10.20	-34.80

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2462.00	109.36	PK	/	/	1.00 H	325	112.66	28.60	4.70	-36.60
1	*2462.00	98.87	AV	/	/	1.00 H	325	102.17	28.60	4.70	-36.60
2	2486.59	45.69	PK	74.00	28.31	1.00 H	128	48.79	28.70	4.80	-36.60
2	2486.59	36.14	AV	54.00	17.86	1.00 H	128	39.24	28.70	4.80	-36.60
3	4924.00	51.47	PK	74.00	22.53	1.00 H	311	47.67	33.00	7.00	-36.20
3	4924.00	46.12	AV	54.00	7.88	1.00 H	311	42.32	33.00	7.00	-36.20
4	7386.00	49.29	PK	74.00	24.71	1.00 H	330	39.89	36.20	8.50	-35.30
4	7386.00	45.39	AV	54.00	8.61	1.00 H	330	35.99	36.20	8.50	-35.30
5	9848.00	50.61	PK	74.00	23.39	1.00 H	42	38.01	37.20	10.20	-34.80
5	9848.00	47.66	AV	54.00	6.34	1.00 H	42	35.06	37.20	10.20	-34.80

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2462.00	111.68	PK	/	/	1.00 V	34	114.98	28.60	4.70	-36.60
1	*2462.00	98.69	AV	/	/	1.00 V	34	101.99	28.60	4.70	-36.60
2	2493.15	44.82	PK	74.00	29.18	1.00 V	104	47.92	28.70	4.80	-36.60
2	2493.15	37.03	AV	54.00	16.97	1.00 V	104	40.13	28.70	4.80	-36.60
3	4924.00	49.75	PK	74.00	24.25	1.00 V	55	45.95	33.00	7.00	-36.20
3	4924.00	42.15	AV	54.00	11.85	1.00 V	55	38.35	33.00	7.00	-36.20
4	7386.00	49.99	PK	74.00	24.01	1.00 V	258	40.59	36.20	8.50	-35.30
4	7386.00	46.78	AV	54.00	7.22	1.00 V	258	37.38	36.20	8.50	-35.30
5	9848.00	49.72	PK	74.00	24.28	1.00 V	254	37.12	37.20	10.20	-34.80
5	9848.00	47.48	AV	54.00	6.52	1.00 V	254	34.88	37.20	10.20	-34.80

802.11g Mode

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2412.00	108.50	PK	/	/	1.00 H	19	111.80	28.30	5.00	-36.60
1	*2412.00	98.38	AV	/	/	1.00 H	19	101.68	28.30	5.00	-36.60
2	2375.68	42.89	PK	74.00	31.11	1.00 H	67	46.89	27.90	4.70	-36.60
2	2375.68	35.54	AV	54.00	18.46	1.00 H	67	39.54	27.90	4.70	-36.60
3	4824.00	51.74	PK	74.00	22.26	1.00 H	321	47.94	32.70	7.30	-36.20
3	4824.00	46.67	AV	54.00	7.33	1.00 H	321	42.87	32.70	7.30	-36.20
4	7236.00	50.72	PK	74.00	23.28	1.00 H	207	41.32	35.80	8.90	-35.30
4	7236.00	46.98	AV	54.00	7.02	1.00 H	207	37.58	35.80	8.90	-35.30
5	9648.00	49.56	PK	74.00	24.44	1.00 H	304	36.96	37.20	10.20	-34.80
5	9648.00	43.32	AV	54.00	10.68	1.00 H	304	30.72	37.20	10.20	-34.80
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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2412.00	105.48	PK	/	/	1.00 V	174	108.78	28.30	5.00	-36.60
1	*2412.00	95.32	AV	/	/	1.00 V	174	98.62	28.30	5.00	-36.60
2	2385.10	43.14	PK	74.00	30.86	1.00 V	53	47.14	27.90	4.70	-36.60
2	2385.10	36.33	AV	54.00	17.67	1.00 V	53	40.33	27.90	4.70	-36.60
3	4824.00	52.47	PK	74.00	21.53	1.00 V	68	48.67	32.70	7.30	-36.20
3	4824.00	46.69	AV	54.00	7.31	1.00 V	68	42.89	32.70	7.30	-36.20
4	7236.00	51.00	PK	74.00	23.00	1.00 V	169	41.60	35.80	8.90	-35.30
4	7236.00	46.05	AV	54.00	7.95	1.00 V	169	36.65	35.80	8.90	-35.30
5	9648.00	49.16	PK	74.00	24.84	1.00 V	298	36.56	37.20	10.20	-34.80
5	9648.00	46.05	AV	54.00	7.95	1.00 V	298	33.45	37.20	10.20	-34.80

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2437.00	107.16	PK	/	/	1.00 H	54	110.36	28.30	5.10	-36.60
1	*2437.00	96.86	AV	/	/	1.00 H	54	100.06	28.30	5.10	-36.60
2	4874.00	50.42	PK	74.00	23.58	1.00 H	117	47.02	32.80	7.10	-36.50
2	4874.00	45.56	AV	54.00	8.44	1.00 H	117	42.16	32.80	7.10	-36.50
3	7311.00	48.63	PK	74.00	25.37	1.00 H	328	39.23	36.10	8.60	-35.30
3	7311.00	43.86	AV	54.00	10.14	1.00 H	328	34.46	36.10	8.60	-35.30
4	9748.00	50.29	PK	74.00	23.71	1.00 H	19	37.69	37.20	10.20	-34.80
4	9748.00	44.09	AV	54.00	9.91	1.00 H	19	31.49	37.20	10.20	-34.80

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2437.00	107.19	PK	/	/	1.00 V	122	110.39	28.30	5.10	-36.60
1	*2437.00	96.49	AV	/	/	1.00 V	122	99.69	28.30	5.10	-36.60
2	4874.00	51.08	PK	74.00	22.92	1.00 V	156	47.68	32.80	7.10	-36.50
2	4874.00	46.25	AV	54.00	7.75	1.00 V	156	42.85	32.80	7.10	-36.50
3	7311.00	49.16	PK	74.00	24.84	1.00 V	98	39.76	36.10	8.60	-35.30
3	7311.00	44.76	AV	54.00	9.24	1.00 V	98	35.36	36.10	8.60	-35.30
4	9748.00	47.88	PK	74.00	26.12	1.00 V	197	35.28	37.20	10.20	-34.80
4	9748.00	43.77	AV	54.00	10.23	1.00 V	197	31.17	37.20	10.20	-34.80

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2462.00	106.11	PK	/	/	1.00 V	103	109.41	28.20	5.10	-36.60
1	*2462.00	99.07	AV	/	/	1.00 V	103	102.37	28.20	5.10	-36.60
2	2492.67	43.97	PK	74.00	30.03	1.00 V	10	47.07	28.70	4.80	-36.60
2	2492.67	37.02	AV	54.00	16.98	1.00 V	10	40.12	28.70	4.80	-36.60
3	4924.00	49.97	PK	74.00	24.03	1.00 V	342	46.17	33.00	7.00	-36.20
3	4924.00	42.85	AV	54.00	11.15	1.00 V	342	39.05	33.00	7.00	-36.20
4	7386.00	50.00	PK	74.00	24.00	1.00 V	179	40.60	36.20	8.50	-35.30
4	7386.00	44.99	AV	54.00	9.01	1.00 V	179	35.59	36.20	8.50	-35.30
5	9848.00	49.27	PK	74.00	24.73	1.00 V	293	36.67	37.30	10.10	-34.80
5	9848.00	44.63	AV	54.00	9.37	1.00 V	293	32.03	37.30	10.10	-34.80

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2462.00	106.54	PK	/	/	1.00 H	220	109.84	28.20	5.10	-36.60
1	*2462.00	97.26	AV	/	/	1.00 H	220	100.56	28.20	5.10	-36.60
2	2497.48	43.79	PK	74.00	30.21	1.00 V	52	46.89	28.70	4.80	-36.60
2	2497.48	35.97	AV	54.00	18.03	1.00 V	52	39.07	28.70	4.80	-36.60
3	4924.00	51.37	PK	74.00	22.63	1.00 H	343	47.57	33.00	7.00	-36.20
3	4924.00	45.96	AV	54.00	8.04	1.00 H	343	42.16	33.00	7.00	-36.20
4	7386.00	49.79	PK	74.00	24.21	1.00 H	135	40.39	36.20	8.50	-35.30
4	7386.00	45.72	AV	54.00	8.28	1.00 H	135	36.32	36.20	8.50	-35.30
5	9848.00	47.50	PK	74.00	26.50	1.00 H	177	34.90	37.30	10.10	-34.80
5	9848.00	43.28	AV	54.00	10.72	1.00 H	177	30.68	37.30	10.10	-34.80

802.11n-20 Mode

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11n-20--2412MHz）											
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2412.00	105.60	PK	/	/	1.00 H	71	108.90	28.30	5.00	-36.60
1	*2412.00	95.85	AV	/	/	1.00 H	71	99.15	28.30	5.00	-36.60
2	2380.23	42.29	PK	74.00	31.71	1.00 H	102	46.29	27.90	4.70	-36.60
2	2380.23	35.43	AV	54.00	18.57	1.00 H	102	39.43	27.90	4.70	-36.60
3	4824.00	50.83	PK	74.00	23.17	1.00 H	150	47.03	32.70	7.30	-36.20
3	4824.00	44.36	AV	54.00	9.64	1.00 H	150	40.56	32.70	7.30	-36.20
4	7236.00	49.53	PK	74.00	24.47	1.00 H	337	40.13	35.80	8.90	-35.30
4	7236.00	45.54	AV	54.00	8.46	1.00 H	337	36.14	35.80	8.90	-35.30
5	9648.00	49.34	PK	74.00	24.66	1.00 H	12	36.74	37.20	10.20	-34.80
5	9648.00	43.67	AV	54.00	10.33	1.00 H	12	31.07	37.20	10.20	-34.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11n-20--2412MHz）											
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2412.00	108.43	PK	/	/	1.00 V	189	111.73	28.30	5.00	-36.60
1	*2412.00	97.17	AV	/	/	1.00 V	189	100.47	28.30	5.00	-36.60
2	2385.49	41.67	PK	74.00	32.33	1.00 H	67	45.67	27.90	4.70	-36.60
2	2385.49	34.49	AV	54.00	19.51	1.00 H	67	38.49	27.90	4.70	-36.60
3	4824.00	50.03	PK	74.00	23.97	1.00 V	96	46.23	32.70	7.30	-36.20
3	4824.00	43.84	AV	54.00	10.16	1.00 V	96	40.04	32.70	7.30	-36.20
4	7236.00	50.22	PK	74.00	23.78	1.00 V	233	40.82	35.80	8.90	-35.30
4	7236.00	47.30	AV	54.00	6.70	1.00 V	233	37.90	35.80	8.90	-35.30
5	9648.00	48.07	PK	74.00	25.93	1.00 V	304	35.47	37.20	10.20	-34.80
5	9648.00	44.42	AV	54.00	9.58	1.00 V	304	31.82	37.20	10.20	-34.80

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11n-20--2437MHz）											
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2437.00	107.09	PK	/	/	1.00 H	349	110.29	28.30	5.10	-36.60
1	*2437.00	98.56	AV	/	/	1.00 H	349	101.76	28.30	5.10	-36.60
2	4874.00	51.71	PK	74.00	22.29	1.00 H	309	48.31	32.30	7.60	-36.50
2	4874.00	47.84	AV	54.00	6.16	1.00 H	309	44.44	32.30	7.60	-36.50
3	7311.00	50.56	PK	74.00	23.44	1.00 H	188	41.16	36.10	8.60	-35.30
3	7311.00	47.93	AV	54.00	6.07	1.00 H	188	38.53	36.10	8.60	-35.30

4	9748.00	49.24	PK	74.00	24.76	1.00 H	74	36.64	37.20	10.20	-34.80
4	9748.00	45.43	AV	54.00	8.57	1.00 H	74	32.83	37.20	10.20	-34.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11n-20--2437MHz）

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2437.00	108.46	PK	/	/	1.00 V	205	111.66	28.30	5.10	-36.60
1	*2437.00	97.76	AV	/	/	1.00 V	205	100.96	28.30	5.10	-36.60
2	4874.00	52.14	PK	74.00	21.86	1.00 V	262	48.74	32.30	7.60	-36.50
2	4874.00	48.14	AV	54.00	5.86	1.00 V	262	44.74	32.30	7.60	-36.50
3	7311.00	50.67	PK	74.00	23.33	1.00 V	338	41.27	36.10	8.60	-35.30
3	7311.00	45.32	AV	54.00	8.68	1.00 V	338	35.92	36.10	8.60	-35.30
4	9748.00	49.59	PK	74.00	24.41	1.00 V	152	36.99	37.20	10.20	-34.80
4	9748.00	41.82	AV	54.00	12.18	1.00 V	152	29.22	37.20	10.20	-34.80

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11n-20--2462MHz）

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2462.00	107.57	PK	/	/	1.00 H	235	110.87	28.20	5.10	-36.60
1	*2462.00	98.83	AV	/	/	1.00 H	235	102.13	28.20	5.10	-36.60
2	2384.17	42.02	PK	74.00	31.98	1.00 V	159	45.12	28.70	4.80	-36.60
2	2384.17	35.75	AV	54.00	18.25	1.00 V	159	38.85	28.70	4.80	-36.60
3	4924.00	51.41	PK	74.00	22.59	1.00 H	104	47.61	33.00	7.00	-36.20
3	4924.00	45.78	AV	54.00	8.22	1.00 H	104	41.98	33.00	7.00	-36.20
4	7386.00	50.57	PK	74.00	23.43	1.00 H	329	41.17	36.20	8.50	-35.30
4	7386.00	45.71	AV	54.00	8.29	1.00 H	329	36.31	36.20	8.50	-35.30
5	9848.00	51.60	PK	74.00	22.40	1.00 H	190	39.00	37.30	10.10	-34.80
5	9848.00	45.37	AV	54.00	8.63	1.00 H	190	32.77	37.30	10.10	-34.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11n-20--2462MHz）

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2462.00	108.53	PK	/	/	1.00 V	176	111.83	28.20	5.10	-36.60
1	*2462.00	99.00	AV	/	/	1.00 V	176	102.30	28.20	5.10	-36.60
2	2392.92	42.97	PK	74.00	31.03	1.00 V	237	46.07	28.70	4.80	-36.60
2	2392.92	35.77	AV	54.00	18.23	1.00 V	237	38.87	28.70	4.80	-36.60
3	4924.00	49.44	PK	74.00	24.56	1.00 V	117	45.64	33.00	7.00	-36.20
3	4924.00	43.64	AV	54.00	10.36	1.00 V	117	39.84	33.00	7.00	-36.20
4	7386.00	50.67	PK	74.00	23.33	1.00 V	294	41.27	36.20	8.50	-35.30

4	7386.00	46.35	AV	54.00	7.65	1.00 V	294	36.95	36.20	8.50	-35.30
5	9848.00	49.10	PK	74.00	24.90	1.00 V	84	36.50	37.30	10.10	-34.80
5	9848.00	43.01	AV	54.00	10.99	1.00 V	84	30.41	37.30	10.10	-34.80

802.11n-40 Mode

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11n-40--2422MHz）											
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2422.00	106.10	PK	/	/	1.00 H	71	109.40	28.30	5.00	-36.60
1	*2422.00	95.57	AV	/	/	1.00 H	71	98.87	28.30	5.00	-36.60
2	2374.56	42.21	PK	74.00	31.79	1.00 H	301	46.21	27.90	4.70	-36.60
2	2374.56	34.92	AV	54.00	19.08	1.00 H	301	38.92	27.90	4.70	-36.60
3	4844.00	50.76	PK	74.00	23.24	1.00 H	150	46.96	32.70	7.30	-36.20
3	4844.00	45.52	AV	54.00	8.48	1.00 H	150	41.72	32.70	7.30	-36.20
4	7266.00	50.12	PK	74.00	23.88	1.00 H	337	40.72	35.80	8.90	-35.30
4	7266.00	45.47	AV	54.00	8.53	1.00 H	337	36.07	35.80	8.90	-35.30
5	9688.00	49.02	PK	74.00	24.98	1.00 H	12	36.42	37.20	10.20	-34.80
5	9688.00	44.24	AV	54.00	9.76	1.00 H	12	31.64	37.20	10.20	-34.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11n-40--2422MHz）											
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2422.00	108.54	PK	/	/	1.00 V	189	111.84	28.30	5.00	-36.60
1	*2422.00	97.44	AV	/	/	1.00 V	189	100.74	28.30	5.00	-36.60
2	2319.96	42.93	PK	74.00	31.07	1.00 H	113	46.93	27.90	4.70	-36.60
2	2319.96	35.09	AV	54.00	18.91	1.00 H	113	39.09	27.90	4.70	-36.60
3	4844.00	50.51	PK	74.00	23.49	1.00 V	96	46.71	32.70	7.30	-36.20
3	4844.00	44.14	AV	54.00	9.86	1.00 V	96	40.34	32.70	7.30	-36.20
4	7266.00	50.35	PK	74.00	23.65	1.00 V	233	40.95	35.80	8.90	-35.30
4	7266.00	47.42	AV	54.00	6.58	1.00 V	233	38.02	35.80	8.90	-35.30
5	9688.00	48.30	PK	74.00	25.70	1.00 V	304	35.70	37.20	10.20	-34.80
5	9688.00	44.82	AV	54.00	9.18	1.00 V	304	32.22	37.20	10.20	-34.80

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11n-40--2437MHz）											
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2437.00	107.11	PK	/	/	1.00 H	349	110.31	28.30	5.10	-36.60
1	*2437.00	99.22	AV	/	/	1.00 H	349	102.42	28.30	5.10	-36.60

2	4874.00	51.34	PK	74.00	22.66	1.00 H	309	47.94	32.30	7.60	-36.50
2	4874.00	47.67	AV	54.00	6.33	1.00 H	309	44.27	32.30	7.60	-36.50
3	7311.00	51.26	PK	74.00	22.74	1.00 H	188	41.86	36.10	8.60	-35.30
3	7311.00	48.20	AV	54.00	5.80	1.00 H	188	38.80	36.10	8.60	-35.30
4	9748.00	49.67	PK	74.00	24.33	1.00 H	74	37.07	37.20	10.20	-34.80
4	9748.00	44.98	AV	54.00	9.02	1.00 H	74	32.38	37.20	10.20	-34.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11n-40--2437MHz）

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2437.00	108.29	PK	/	/	1.00 V	205	111.49	28.30	5.10	-36.60
1	*2437.00	98.14	AV	/	/	1.00 V	205	101.34	28.30	5.10	-36.60
2	4874.00	52.54	PK	74.00	21.46	1.00 V	262	49.14	32.30	7.60	-36.50
2	4874.00	48.55	AV	54.00	5.45	1.00 V	262	45.15	32.30	7.60	-36.50
3	7311.00	51.11	PK	74.00	22.89	1.00 V	338	41.71	36.10	8.60	-35.30
3	7311.00	45.08	AV	54.00	8.92	1.00 V	338	35.68	36.10	8.60	-35.30
4	9748.00	50.44	PK	74.00	23.56	1.00 V	152	37.84	37.20	10.20	-34.80
4	9748.00	42.11	AV	54.00	11.89	1.00 V	152	29.51	37.20	10.20	-34.80

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11n-40--2452MHz）

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2452.00	108.07	PK	/	/	1.00 H	235	111.37	28.20	5.10	-36.60
1	*2452.00	98.24	AV	/	/	1.00 H	235	101.54	28.20	5.10	-36.60
2	2494.46	44.02	PK	74.00	29.98	1.00 V	128	47.12	28.70	4.80	-36.60
2	2494.46	36.85	AV	54.00	17.15	1.00 V	128	39.95	28.70	4.80	-36.60
3	4904.00	51.69	PK	74.00	22.31	1.00 H	104	47.89	33.00	7.00	-36.20
3	4904.00	45.96	AV	54.00	8.04	1.00 H	104	42.16	33.00	7.00	-36.20
4	7356.00	50.90	PK	74.00	23.10	1.00 H	329	41.50	36.20	8.50	-35.30
4	7356.00	45.76	AV	54.00	8.24	1.00 H	329	36.36	36.20	8.50	-35.30
5	9808.00	52.22	PK	74.00	21.78	1.00 H	190	39.62	37.30	10.10	-34.80
5	9808.00	46.07	AV	54.00	7.93	1.00 H	190	33.47	37.30	10.10	-34.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11n-40--2452MHz）

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*2452.00	109.00	PK	/	/	1.00 V	176	112.30	28.20	5.10	-36.60

1	*2452.00	99.37	AV	/	/	1.00 V	176	102.67	28.20	5.10	-36.60
2	2488.89	43.83	PK	74.00	30.17	1.00 V	108	46.93	28.70	4.80	-36.60
2	2488.89	35.82	AV	54.00	18.18	1.00 V	108	38.92	28.70	4.80	-36.60
3	4904.00	49.50	PK	74.00	24.50	1.00 V	117	45.70	33.00	7.00	-36.20
3	4904.00	44.13	AV	54.00	9.87	1.00 V	117	40.33	33.00	7.00	-36.20
4	7356.00	50.98	PK	74.00	23.02	1.00 V	294	41.58	36.20	8.50	-35.30
4	7356.00	46.68	AV	54.00	7.32	1.00 V	294	37.28	36.20	8.50	-35.30
5	9808.00	48.93	PK	74.00	25.07	1.00 V	84	36.33	37.30	10.10	-34.80
5	9808.00	43.25	AV	54.00	10.75	1.00 V	84	30.65	37.30	10.10	-34.80

802.11a Mode

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11a--5745MHz）											
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*5745.00	106.16	PK	/	/	1.00 H	71	100.46	34.50	7.30	-36.10
1	*5745.00	96.22	AV	/	/	1.00 H	71	90.52	34.50	7.30	-36.10
2	5396.37	53.71	PK	74.00	20.29	1.00 V	34	48.12	34.40	7.29	-36.10
2	5396.37	41.70	AV	54.00	12.30	1.00 V	34	36.11	34.40	7.29	-36.10
3	11490.00	58.86	PK	74.00	15.14	1.00 H	150	40.36	38.40	11.30	-31.20
3	11490.00	47.62	AV	54.00	6.38	1.00 H	150	29.12	38.40	11.30	-31.20
4	17235.00	*	PK	74.00	*	*	*	*	*	*	*
4	17235.00	*	AV	54.00	*	*	*	*	*	*	*
5	22980.00	*	PK	74.00	*	*	*	*	*	*	*
5	22980.00	*	AV	54.00	*	*	*	*	*	*	*

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11a--5745MHz）											
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*5745.00	106.93	PK	/	/	1.00 V	189	101.23	34.50	7.30	-36.10
1	*5745.00	95.83	AV	/	/	1.00 V	189	90.13	34.50	7.30	-36.10
2	5389.72	53.15	PK	74.00	20.85	1.00 V	34	47.56	34.40	7.29	-36.10
2	5389.72	44.18	AV	54.00	9.82	1.00 V	34	38.59	34.40	7.29	-36.10
3	11490.00	58.98	PK	74.00	15.02	1.00 V	96	40.48	38.40	11.30	-31.20
3	11490.00	47.75	AV	54.00	6.25	1.00 V	96	29.25	38.40	11.30	-31.20
4	17235.00	*	PK	74.00	*	*	*	*	*	*	*
4	17235.00	*	AV	54.00	*	*	*	*	*	*	*
5	22980.00	*	PK	74.00	*	*	*	*	*	*	*
5	22980.00	*	AV	54.00	*	*	*	*	*	*	*

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11a--5785MHz）											
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*5785.00	106.37	PK	/	/	1.00 H	349	100.47	34.60	7.40	-36.10
1	*5785.00	95.97	AV	/	/	1.00 H	349	90.07	34.60	7.40	-36.10
2	11570.00	58.96	PK	74.00	15.04	1.00 H	309	40.26	38.50	11.40	-31.20
2	11570.00	47.77	AV	54.00	6.23	1.00 H	309	29.07	38.50	11.40	-31.20
3	17355.00	*	PK	74.00	*	*	*	*	*	*	*
3	17355.00	*	AV	54.00	*	*	*	*	*	*	*
4	23140.00	*	PK	74.00	*	*	*	*	*	*	*
4	23140.00	*	AV	54.00	*	*	*	*	*	*	*

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11a-5785MHz）											
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*5785.00	106.02	PK	/	/	1.00 V	205	100.12	34.60	7.40	-36.10
1	*5785.00	95.97	AV	/	/	1.00 V	205	90.07	34.60	7.40	-36.10
2	11570.00	58.73	PK	74.00	15.27	1.00 V	262	40.03	38.50	11.40	-31.20
2	11570.00	47.72	AV	54.00	6.28	1.00 V	262	29.02	38.50	11.40	-31.20
3	17355.00	*	PK	74.00	*	*	*	*	*	*	*
3	17355.00	*	AV	54.00	*	*	*	*	*	*	*
4	23140.00	*	PK	74.00	*	*	*	*	*	*	*
4	23140.00	*	AV	54.00	*	*	*	*	*	*	*

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M（802.11a--5825MHz）											
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*5825.00	106.33	PK	/	/	1.00 H	235	100.43	34.60	7.40	-36.10
1	*5825.00	96.14	AV	/	/	1.00 H	235	90.24	34.60	7.40	-36.10
2	11650.00	58.87	PK	74.00	15.13	1.00 H	104	40.17	38.50	11.40	-31.20
2	11650.00	47.93	AV	54.00	6.07	1.00 H	104	29.23	38.50	11.40	-31.20
3	17475.00	*	PK	74.00	*	*	*	*	*	*	*
3	17475.00	*	AV	54.00	*	*	*	*	*	*	*
4	23300.00	*	PK	74.00	*	*	*	*	*	*	*
4	23300.00	*	AV	54.00	*	*	*	*	*	*	*

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M（802.11a--5825MHz）											
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)
1	*5825.00	106.42	PK	/	/	1.00 V	176	100.52	34.60	7.40	-36.10
1	*5825.00	96.26	AV	/	/	1.00 V	176	90.36	34.60	7.40	-36.10
2	11650.00	58.93	PK	74.00	15.07	1.00 V	117	40.23	38.50	11.40	-31.20
2	11650.00	48.00	AV	54.00	6.00	1.00 V	117	29.30	38.50	11.40	-31.20
3	17475.00	*	PK	74.00	*	*	*	*	*	*	*
3	17475.00	*	AV	54.00	*	*	*	*	*	*	*
4	23300.00	*	PK	74.00	*	*	*	*	*	*	*
4	23300.00	*	AV	54.00	*	*	*	*	*	*	*

REMARKS: 1. Emission level (dBuV/m) =Raw Value (dBuV) +Antenna Factor (dB/m) + Cable Factor (dB) +Pre-amplifier Factor

2. The other emission levels were very low against the limit.

3. The other emission levels were very low against the limit.

4. Margin value = Limit value- Emission level.

5. The limit value is defined as per 15.247

6. " * " : means fundamental frequency and very low against the limit.

** END OF REPORT **