TEST REPORT

Product	:	E-POS
Trade mark	:	RONGTA
Model/Type reference	:	AP02, AP02A, AP02B, RP02, TP02, TP02A, TP02B, SP02, SP02A, SP02B
Serial Number	:	N/A
Report Number	:	EED32J00230703
FCC ID	:	2AD6G-AP02
Date of Issue	:	Jan. 26, 2018
Test Standards	:	47 CFR Part 15 Subpart C
Test result	:	PASS

Prepared for:

XIAMEN RONGTA TECHNOLOGY CO., LTD.
3F-1/E Building, No.195 Gaoqishe, Gaodian Village,
Dianqian Street Office, Huli District, Xiamen City, China

Prepared by:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385

Tested By:	Tom chen (Test Project)	Compiled by:	Mill chen (Project Engineer)
Reviewed by:	Kevin yang (Reviewer)	Approved by:	Sheek Luo (Lab supervisor)
Date:	Jan. 26, 2018		Check No.:2447672866

CENTRE TESTING INTERNATIONAL GROUP CO.,LTD. Report Seal

2 Version

Version No.	Date	Description
00	Jan. 26, 2018	Original

3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203/15.247 (c)	ANSI C63.10-2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013	PASS
Conducted Peak Output Power	47 CFR Part 15 Subpart C Section 15.247 (b)(3)	ANSI C63.10-2013/ KDB 558074 D01v04	PASS
6dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013/ KDB 558074 D01v04	PASS
Power Spectral Density	47 CFR Part 15 Subpart C Section 15.247 (e)	ANSI C63.10-2013/ KDB 558074 D01v04	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013/ KDB 558074 D01v04	PASS
RF Conducted Spurious Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013/ KDB 558074 D01v04	PASS
Duty cycle	47 CFR Part 15 Subpart C Section 15.35(c)	ANSI C63.10-2013	PASS
Radiated Spurious Emissions	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS

Remark:

Test according to ANSI C63.4-2014 & ANSI C63.10-2013.

The tested sample(s) and the sample information are provided by the client.

Model No.:AP02, AP02A, AP02B, RP02, TP02, TP02A, TP02B, SP02, SP02A, SP02B

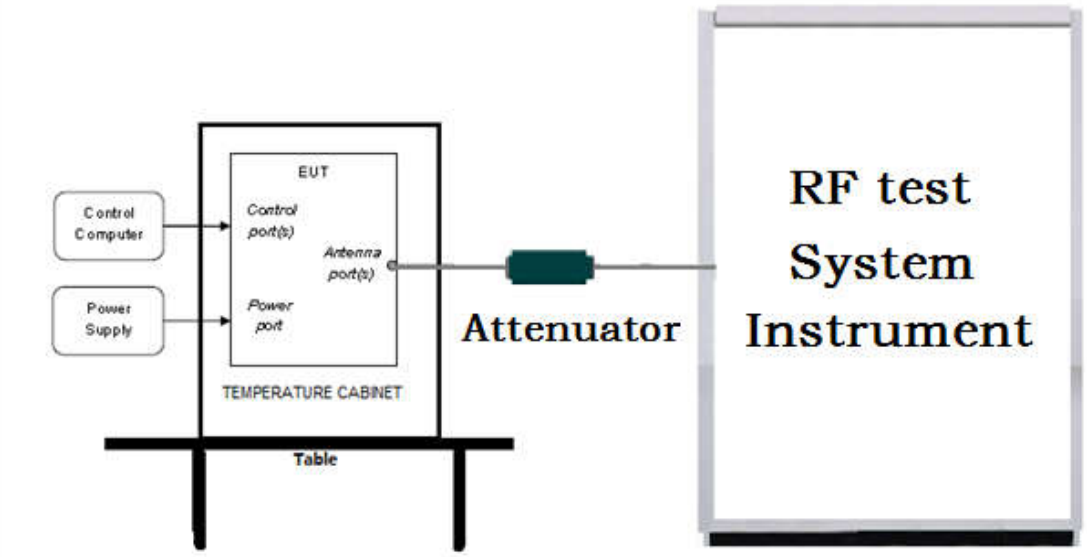
Only the model AP02 was tested, since their electrical circuit design, layout, components and internal wiring are identical. Only the model name and color are different.

4 Content

5 Test Requirement

5.1 Test setup

5.1.1 For Conducted test setup



5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

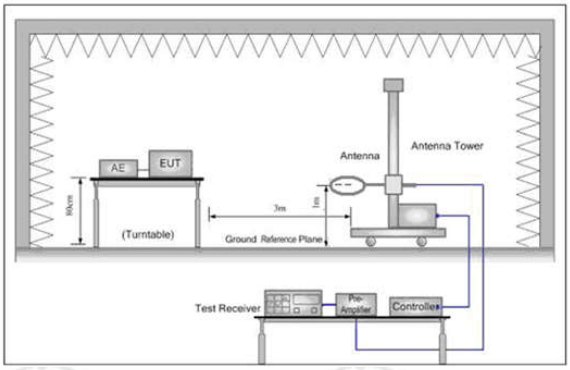


Figure 1. Below 30MHz

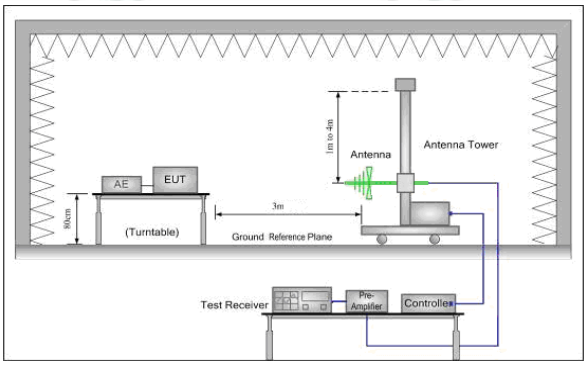


Figure 2. 30MHz to 1GHz

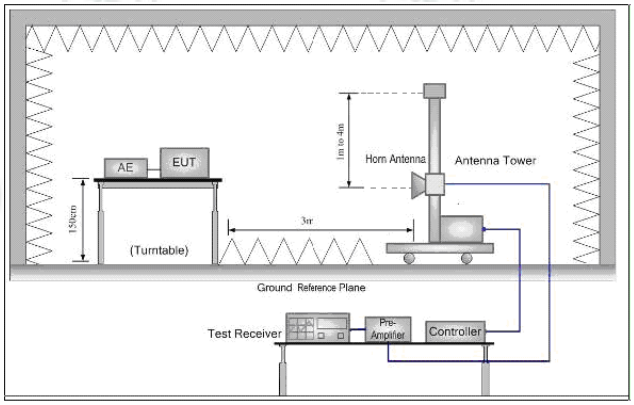
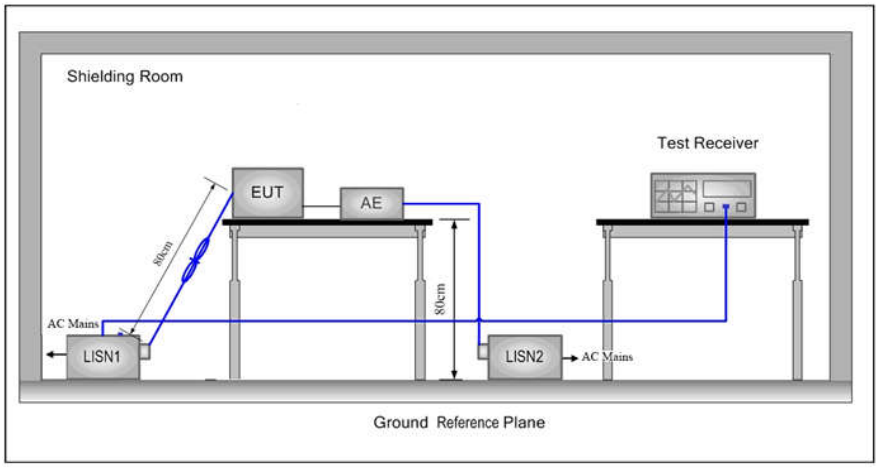


Figure 3. Above 1GHz

5.1.3 For Conducted Emissions test setup

Conducted Emissions setup



5.2 Test Environment

Operating Environment:	
Temperature:	23°C
Humidity:	55 % RH
Atmospheric Pressure:	1010 mbar

5.3 Test Condition

Test channel:

Test Mode	Tx	RF Channel		
		Low(L)	Middle(M)	High(H)
802.11b/g/n(HT20)	2412MHz ~2462 MHz	Channel 1	Channel 6	Channel11
		2412MHz	2437MHz	2462MHz
Transmitting mode:	Keep the EUT transmitted the continuous modulation test signal at the specific channel(s).			

Test mode:

Pre-scan under all rate at lowest channel 1

Mode	**802.11b**			
Data Rate	**1Mbps**	**2Mbps**	**5.5Mbps**	**11Mbps**
Power(dBm)	13.02	12.98	12.56	13.09

Mode	**802.11g**							
Data Rate	**6Mbps**	**9Mbps**	**12Mbps**	**18Mbps**	**24Mbps**	**36Mbps**	**48Mbps**	**54Mbps**
Power(dBm)	13.18	13.02	12.73	12.26	12.68	12.37	12.31	12.37

Mode	**802.11n (HT20)**							
Data Rate	**6.5Mbps**	**13Mbps**	**19.5Mbps**	**26Mbps**	**39Mbps**	**52Mbps**	**58.5Mbps**	**65Mbps**
Power(dBm)	14.45	14.13	14.18	14.36	14.21	14.18	13.77	13.86

Through Pre-scan, 11Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20);

6 General Information

6.1 Client Information

Applicant:	XIAMEN RONGTA TECHNOLOGY CO., LTD.
Address of Applicant:	3F-1/E Building, No.195 Gaoqishe, Gaodian Village, Dianqian Street Office, Huli District, Xiamen City, China
Manufacturer:	XIAMEN RONGTA TECHNOLOGY CO., LTD.
Address of Manufacturer:	3F-1/E Building, No.195 Gaoqishe, Gaodian Village, Dianqian Street Office, Huli District, Xiamen City, China
Factory:	XIAMEN RONGTA TECHNOLOGY CO., LTD.
Address of Factory:	4,5F, G Plant, Gaoqi Industrial Zones, Huli District, Xiamen City, China

6.2 General Description of EUT

Product Name:	E-POS
Mode No.(EUT):	AP02, AP02A, AP02B, RP02, TP02, TP02A, TP02B, SP02, SP02A, SP02B
Test Mode:	AP02
Trade Mark:	RONGTA
EUT Supports Radios application	BT4.0, BT3.0 2402-2480MHz, WiFi b/g/n(HT20) 2.4G wifi 2412-2462MHz, GPRS 850/1900 , UMTS（3G）WCDMA Band II/WCDMA Band V
Hardware version:	C(Manufacturer declare)
Software version :	1.0.0(Manufacturer declare)
Power Supply:	DC 5V by Adapter
	Adapter: Input AC 100-240V,50/60Hz,0.5A. Output DC5V 1A
	DC 3.7V by Battery
	Battery: 3.7V, 6000mAh, 22.2Wh
Sample Received Date:	Oct. 19, 2017
Sample tested Date:	Oct. 19, 2017 to Jan. 26, 2018

6.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20) : OFDM (64QAM, 16QAM, QPSK,BPSK)
Sample Type:	Portable
Test Power Grade:	N/A
Test software of EUT	Engineering mode
Antenna Type:	Integral
Antenna Gain:	1.95dBi
Test Voltage:	AC 120V, 60Hz DC 3.7V

Operation Frequency each of channel(802.11b/g/n HT20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

6.4 Description of Support Units

The EUT has been tested independently.

6.5 Test Facility

Test location

The test site a is located on *Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China.* Test site at Centre Testing International Group Co., Ltd has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 06, 2014. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

FCC-Designation No.: CN1164

Centre Testing International Group Co., Ltd EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The American association for Centre Testing International Group Co., Ltd. EMC laboratory accreditation Designation No.:CN1164

6.6 Deviation from Standards

None.

6.7 Abnormalities from Standard Conditions

None.

6.8 Other Information Requested by the Customer

None.

6.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.31dB (30MHz-1GHz)
		0.57dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-12.75GHz)
4	Conduction emission	3.6dB (9kHz to 150kHz)
		3.2dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	2.8%
7	DC power voltages	0.025%

7 Equipment List

RF test system					
Equipment	**Manufacturer**	**Mode No.**	**Serial Number**	**Cal. Date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Signal Generator	Keysight	E8257D	MY53401106	04-01-2016	03-13-2018
Spectrum Analyzer	Keysight	N9010A	MY54510339	04-01-2016	03-13-2018
Signal Generator	Keysight	N5182B	MY53051549	04-01-2016	03-13-2018
High-pass filter	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-12-2017	01-11-2018
High-pass filter	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-11-2018	01-10-2019
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2017	01-11-2018
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-11-2018	01-10-2019
DC Power	Keysight	E3642A	MY54436035	04-01-2016	03-31-2018
PC-1	Lenovo	R4960d	---	04-01-2016	03-31-2018
power meter & power sensor	R&S	OSP120	101374	04-01-2016	03-13-2018
RF control unit	JS Tonscend	JS0806-2	158060006	04-01-2016	03-13-2018
BT&WI-FI Automatic test software	JS Tonscend	JS1120-2	---	04-01-2016	03-31-2018

Conducted disturbance Test					
Equipment	**Manufacturer**	**Mode No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Receiver	R&S	ESCI	100009	06-14-2017	06-13-2018
Temperature/ Humidity Indicator	TAYLOR	1451	1905	05-08-2017	05-07-2018
LISN	R&S	ENV216	100098	06-13-2017	06-12-2018
LISN	schwarzbeck	NNLK8121	8121-529	06-13-2017	06-12-2018
Voltage Probe	R&S	ESH2-Z3	--	06-13-2017	06-12-2018
Current Probe	R&S	EZ17	100106	06-13-2017	06-12-2018
ISN	TESEQ GmbH	ISN T800	30297	02-23-2017	02-22-2018

3M Semi/full-anechoic Chamber					
Equipment	**Manufacturer**	**Mode No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
3M Chamber & Accessory Equipment	TDK	SAC-3	---	06-05-2016	06-05-2019
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-484	05-23-2017	05-22-2018
Horn Antenna	ETS-LINDGREN	3117	00057410	06-30-2015	06-28-2018
Loop Antenna	ETS	6502	00071730	06-22-2017	06-21-2019
Spectrum Analyzer	R&S	FSP40	100416	06-13-2017	06-12-2018
Receiver	R&S	ESCI	100435	06-14-2017	06-13-2018
Multi device Controller	maturo	NCD/070/10711112	---	01-12-2017	01-11-2018
Multi device Controller	maturo	NCD/070/10711112	---	01-11-2018	01-10-2019
LISN	schwarzbeck	NNBM8125	81251547	06-13-2017	06-12-2018
LISN	schwarzbeck	NNBM8125	81251548	06-13-2017	06-12-2018
Signal Generator	Agilent	E4438C	MY45095744	03-14-2017	03-13-2018
Signal Generator	Keysight	E8257D	MY53401106	03-14-2017	03-13-2018
Temperature/ Humidity Indicator	TAYLOR	1451	1905	05-08-2017	05-07-2018
Cable line	Fulai(7M)	SF106	5219/6A	01-12-2017	01-11-2018
Cable line	Fulai(6M)	SF106	5220/6A	01-12-2017	01-11-2018
Cable line	Fulai(3M)	SF106	5216/6A	01-12-2017	01-11-2018
Cable line	Fulai(3M)	SF106	5217/6A	01-12-2017	01-11-2018
High-pass filter	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-12-2017	01-11-2018
High-pass filter	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-11-2018	01-10-2019
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2017	01-11-2018
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-11-2018	01-10-2019
band rejection filter	Sinoscite	FL5CX01CA09CL12-0395-001	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX01CA09CL12-0395-001	---	01-11-2018	01-10-2019
band rejection filter	Sinoscite	FL5CX01CA08CL12-0393-001	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX01CA08CL12-0393-001	---	01-11-2018	01-10-2019
band rejection filter	Sinoscite	FL5CX02CA04CL12-0396-002	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX02CA04CL12-0396-002	---	01-11-2018	01-10-2019
band rejection filter	Sinoscite	FL5CX02CA03CL12-0394-001	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX02CA03CL12-0394-001	---	01-11-2018	01-10-2019

8 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15C	Subpart C-Intentional Radiators
2	ANSI C63.10-2013	American National Standard for Testing Unlicesed Wireless Devices

Test Results List:

Test Requirement	Test method	Test item	Verdict	Note
Part15C Section 15.247 (b)(3)	ANSI C63.10/ KDB 558074	Conducted Peak Output Power	PASS	Appendix A)
Part15C Section 15.247 (a)(2)	ANSI C63.10/ KDB 558074	6dB Occupied Bandwidth	PASS	Appendix B)
Part15C Section 15.247(d)	ANSI C63.10/ KDB 558074	Band-edge for RF Conducted Emissions	PASS	Appendix C)
Part15C Section 15.247(d)	ANSI C63.10/ KDB 558074	RF Conducted Spurious Emissions	PASS	Appendix D)
Part15C Section 15.247 (e)	ANSI C63.10/ KDB 558074	Power Spectral Density	PASS	Appendix E)
Part15C Section 15.35 (c)	ANSI 63.10	Duty cycle	PASS	Appendix F)
Part15C Section 15.203/15.247 (c)	ANSI C63.10	Antenna Requirement	PASS	Appendix G)
Part15C Section 15.207	ANSI C63.10	AC Power Line Conducted Emission	PASS	Appendix H)
Part15C Section 15.205/15.209	ANSI C63.10	Restricted bands around fundamental frequency (Radiated Emission)	PASS	Appendix I)
Part15C Section 15.205/15.209	ANSI C63.10	Radiated Spurious Emissions	PASS	Appendix J)

Appendix A): Conducted Peak Output Power

Test Procedure

1. 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.
2. Set to the maximum power setting and measure the duty cycle D of the transmitter output signal.
3. Adjust the measurement by adding 10 log(1/D) and record the results in the test report.

Result Table

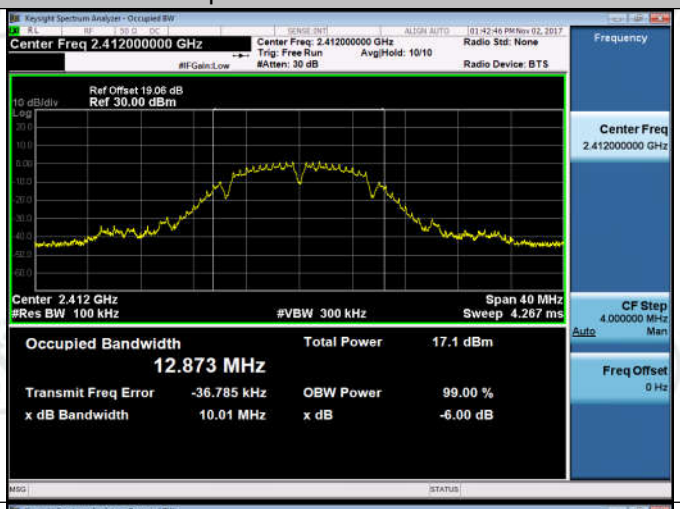
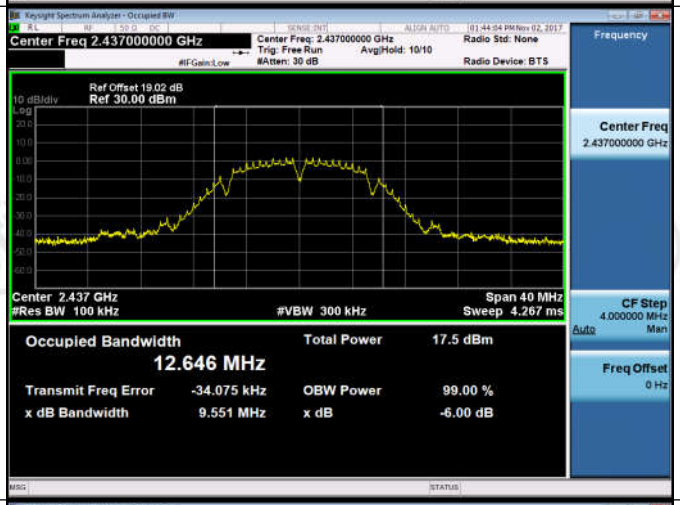
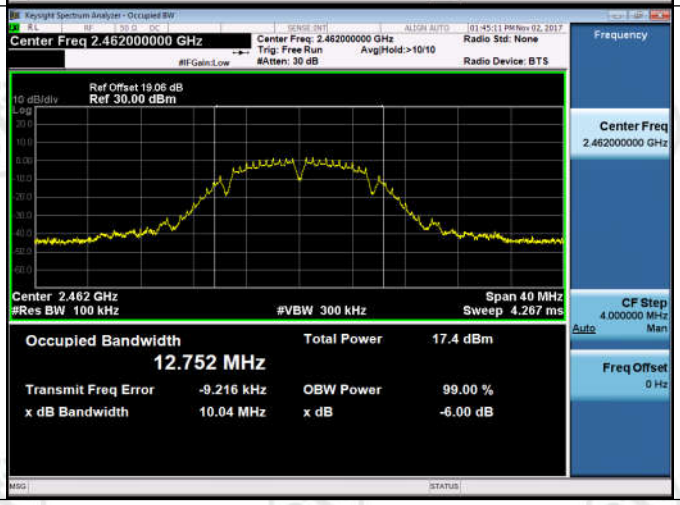
Mode	Channel	Conducted Peak Output Power [dBm]	Verdict
11B	LCH	13.0986	PASS
11B	MCH	13.5888	PASS
11B	HCH	13.3687	PASS
11G	LCH	13.2323	PASS
11G	MCH	14.7923	PASS
11G	HCH	12.9023	PASS
11N20SISO	LCH	14.5122	PASS
11N20SISO	MCH	15.7850	PASS
11N20SISO	HCH	15.0922	PASS

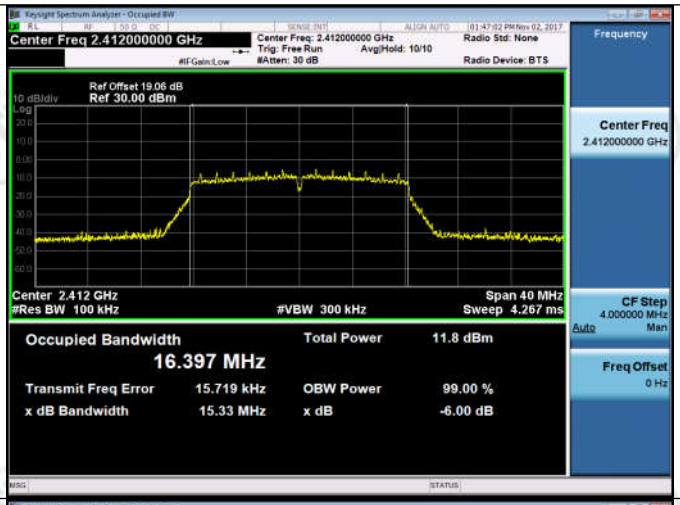
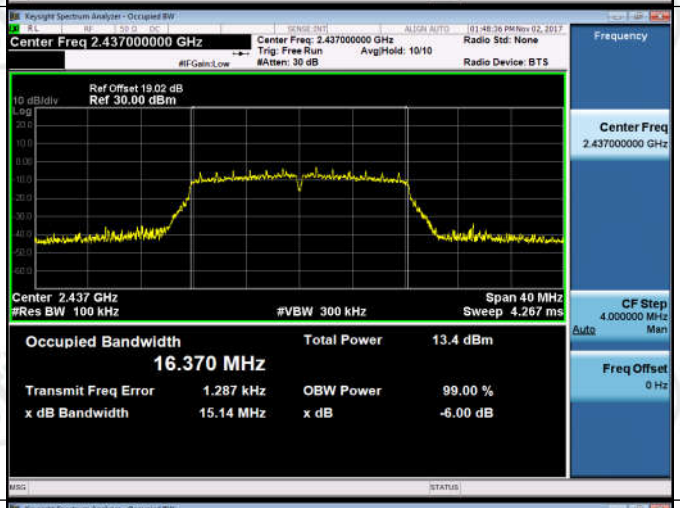
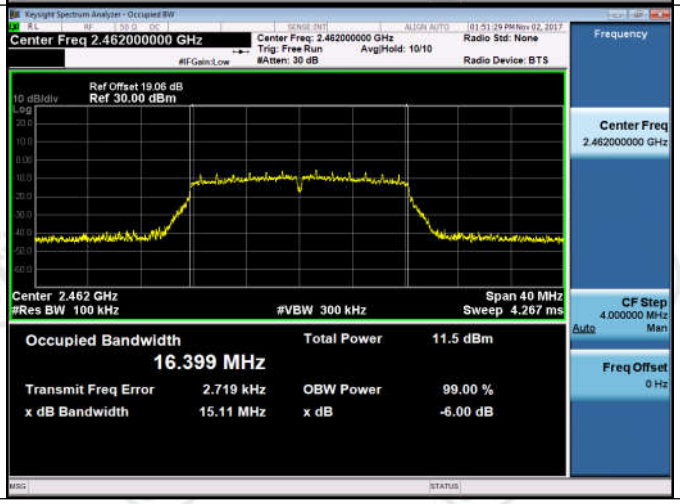
Appendix B): 6dB Occupied Bandwidth

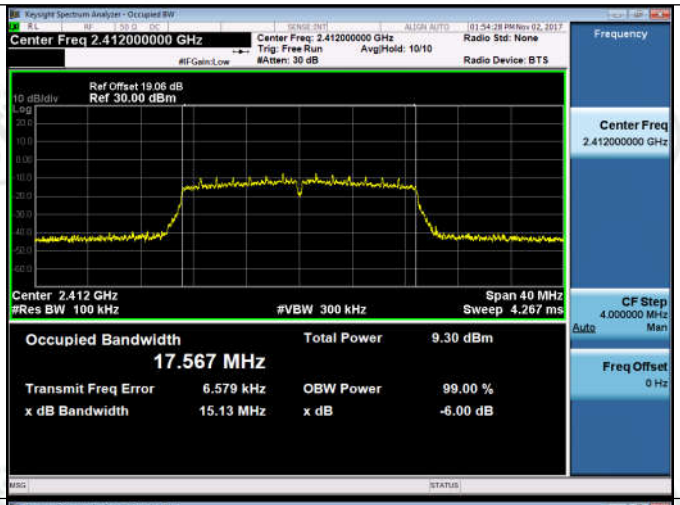
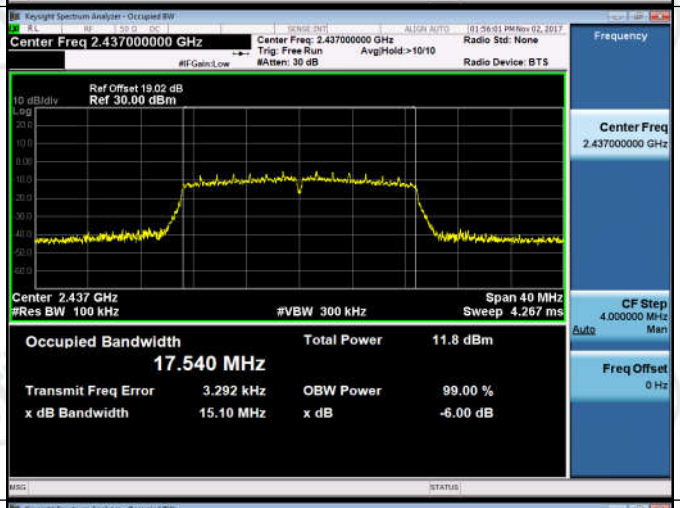
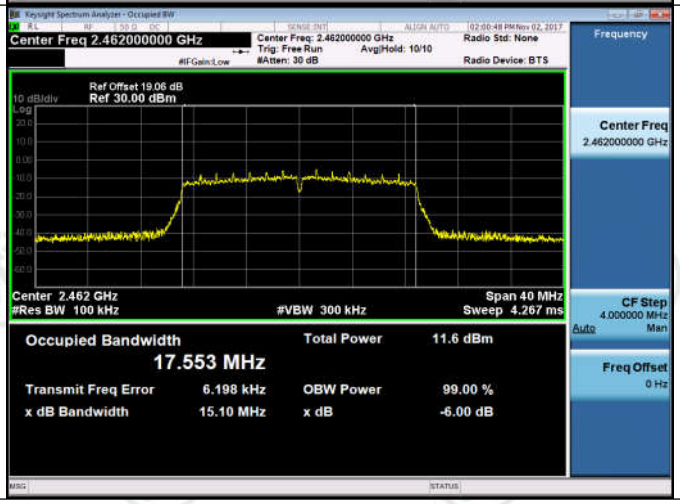
Result Table

Mode	Channel	6dB Bandwidth [MHz]	99% OBW [MHz]	Verdict	Remark
11B	LCH	10.01	12.873	PASS	Peak detector
11B	MCH	9.551	12.646	PASS	
11B	HCH	10.04	12.752	PASS	
11G	LCH	15.33	16.397	PASS	
11G	MCH	15.14	16.370	PASS	
11G	HCH	15.11	16.399	PASS	
11N20SISO	LCH	15.13	17.567	PASS	
11N20SISO	MCH	15.10	17.540	PASS	
11N20SISO	HCH	15.10	17.553	PASS	

Test Graph

Graphs			
11B/LCH			
11B/MCH			
11B/HCH			

11G/LCH			
11G/MCH			
11G/HCH			

11N20SISO/LCH			
11N20SISO/MCH			
11N20SISO/HCH			

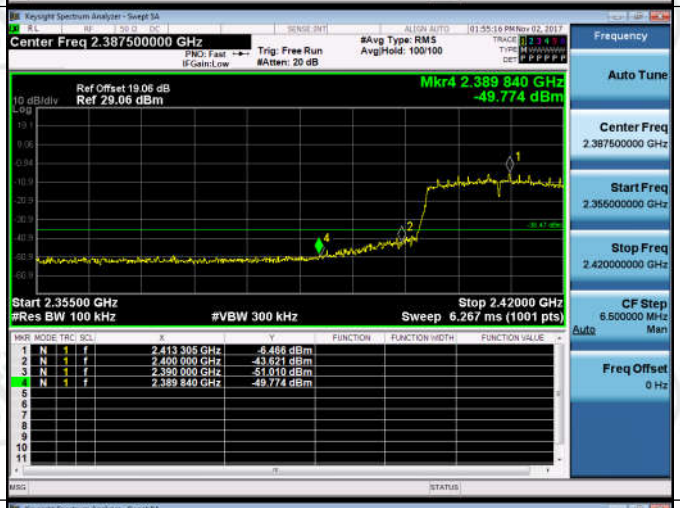
Appendix C): Band-edge for RF Conducted Emissions

Result Table

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	1.106	-49.802	-28.89	PASS
11B	HCH	1.154	-49.819	-28.85	PASS
11G	LCH	-4.739	-49.581	-34.74	PASS
11G	HCH	-5.147	-46.498	-35.15	PASS
11N20SISO	LCH	-6.466	-49.774	-36.47	PASS
11N20SISO	HCH	-5.723	-46.514	-35.72	PASS

Test Graph

Graphs			
11B/LCH			
11B/HCH			
11G/LCH			

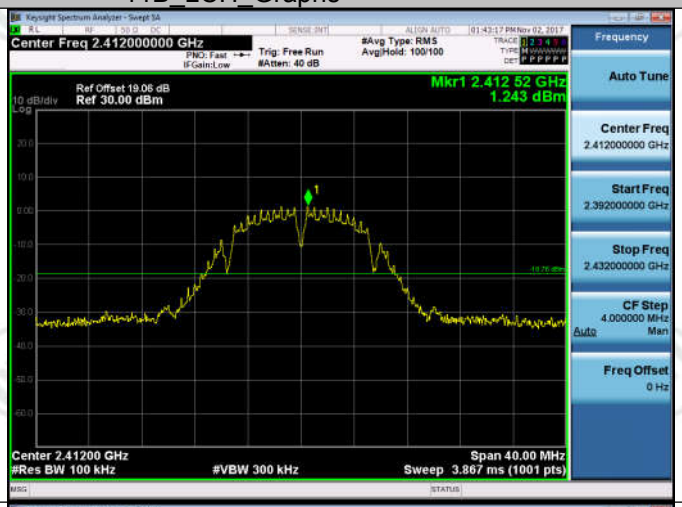
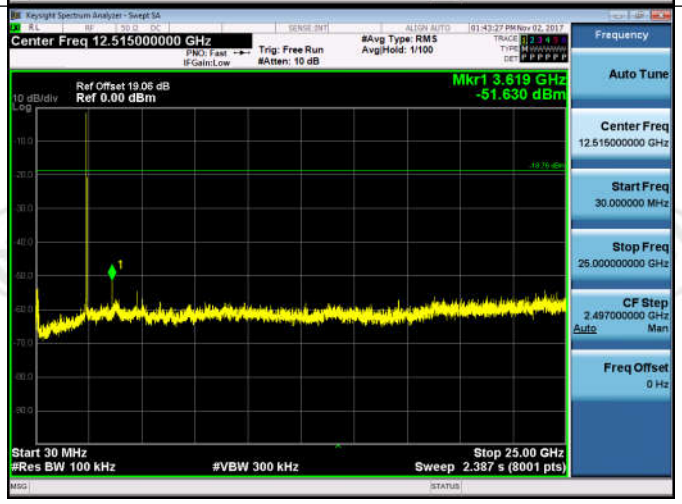
11G/HCH			
11N20SISO/LCH			
11N20SISO/HCH			

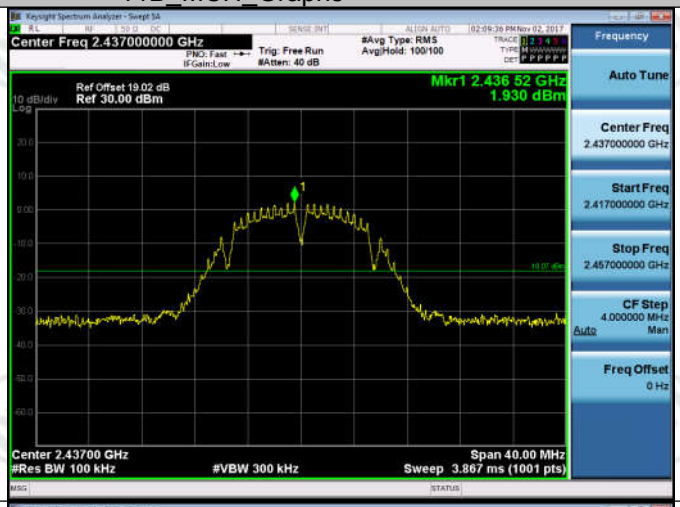
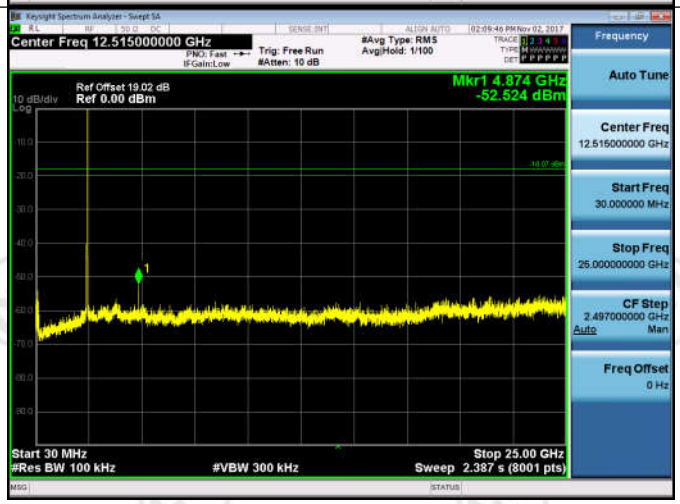
Appendix D): RF Conducted Spurious Emissions

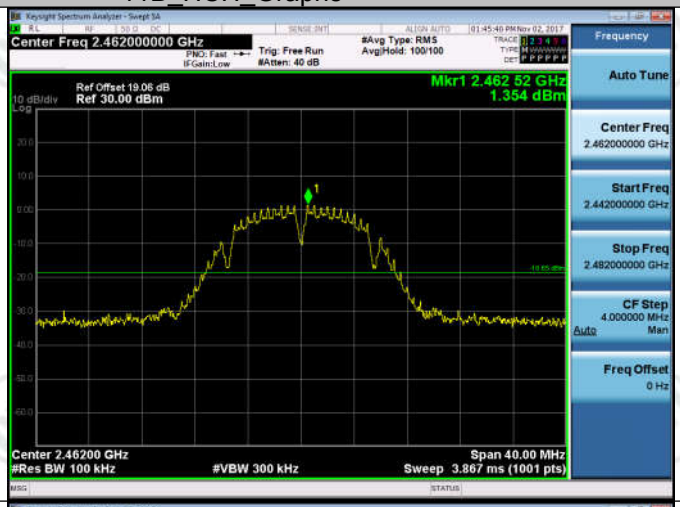
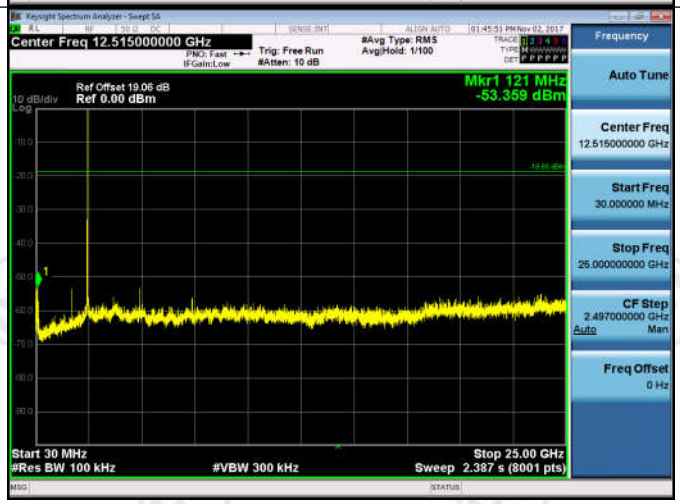
Result Table

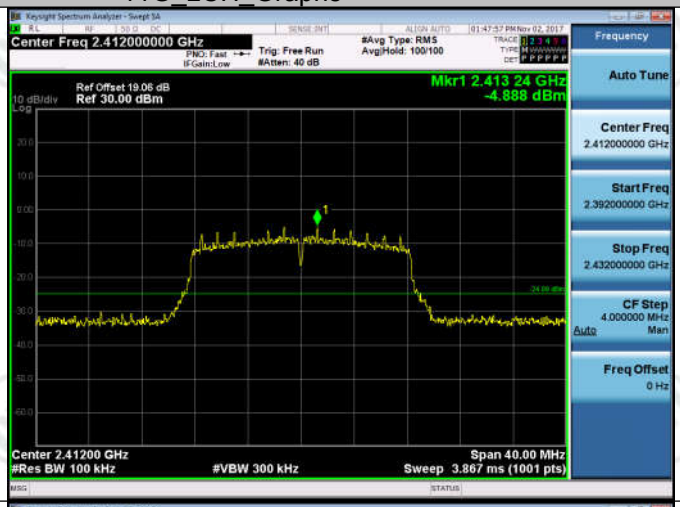
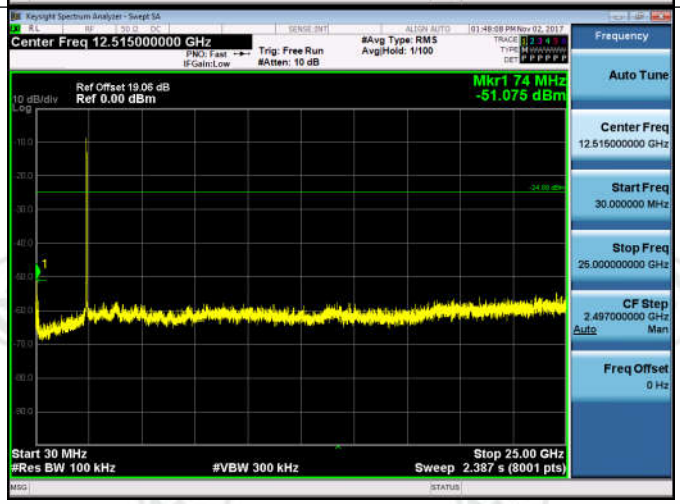
Mode	Channel	Pref [dBm]	Puw[dBm]	Verdict
11B	LCH	1.243	<Limit	PASS
11B	MCH	1.93	<Limit	PASS
11B	HCH	1.354	<Limit	PASS
11G	LCH	-4.888	<Limit	PASS
11G	MCH	-4.115	<Limit	PASS
11G	HCH	-4.981	<Limit	PASS
11N20SISO	LCH	-6.929	<Limit	PASS
11N20SISO	MCH	-4.739	<Limit	PASS
11N20SISO	HCH	-5.518	<Limit	PASS

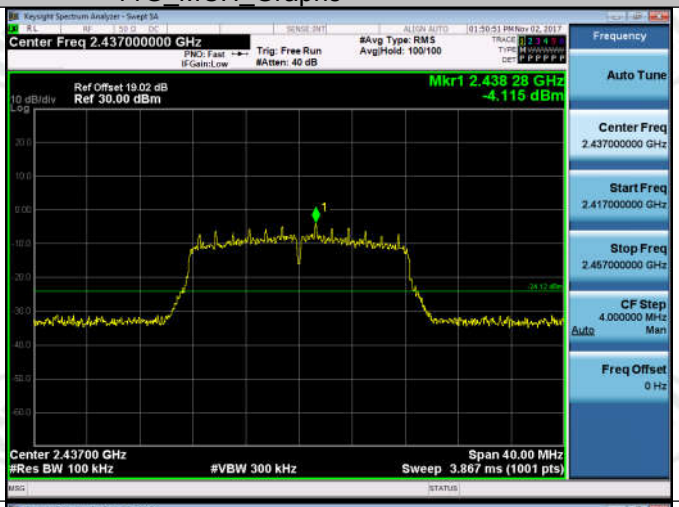
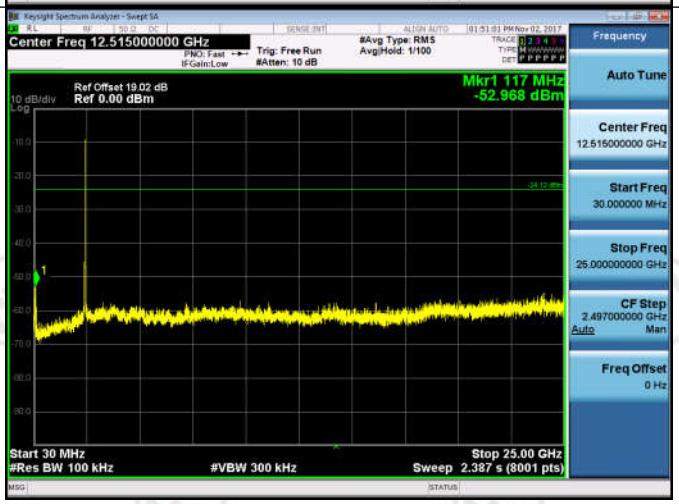
Test Graph

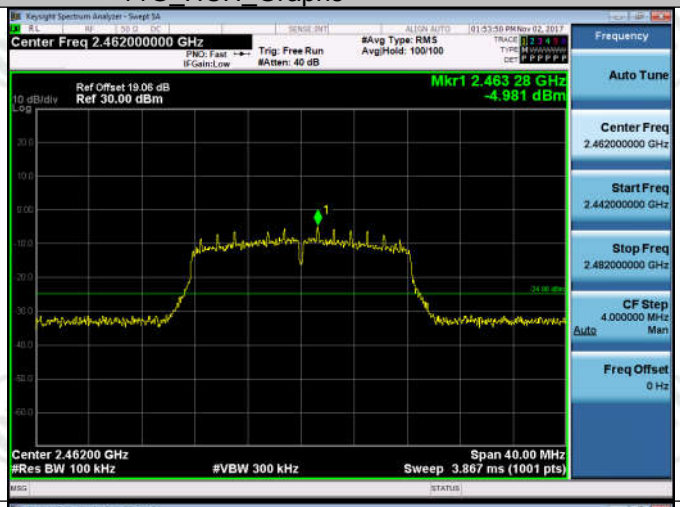
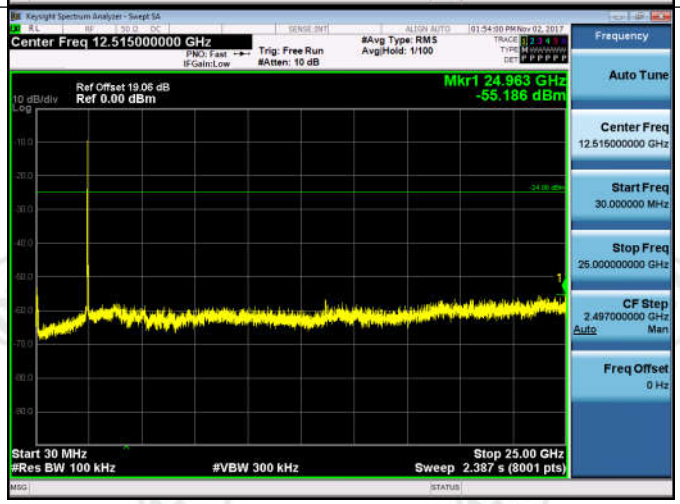
11B_LCH_Graphs	
Pref/11B/LCH	
Puw/11B/LCH	

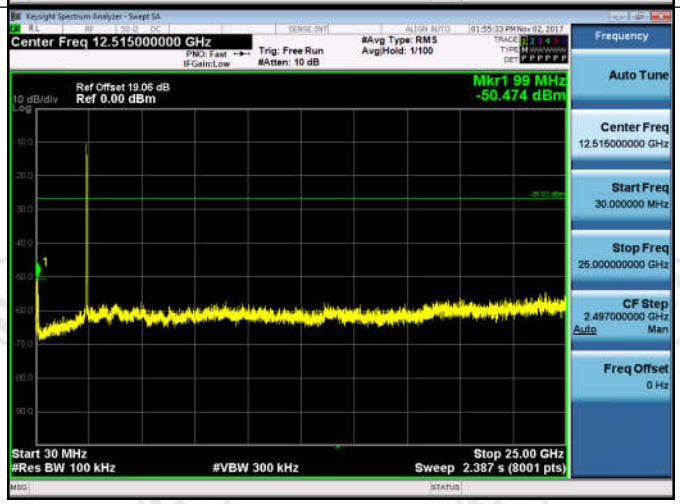
11B_MCH_Graphs	
Pref/11B/MCH	
Puw/11B/MCH	

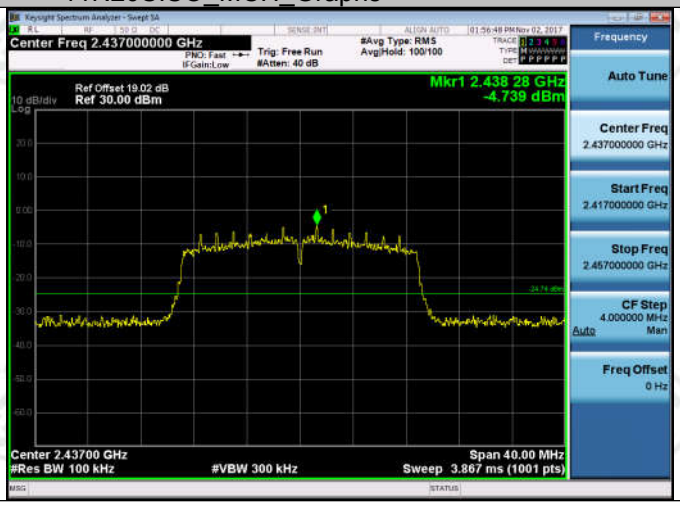
11B_HCH_Graphs	
Pref/11B/HCH	
Puw/11B/HCH	

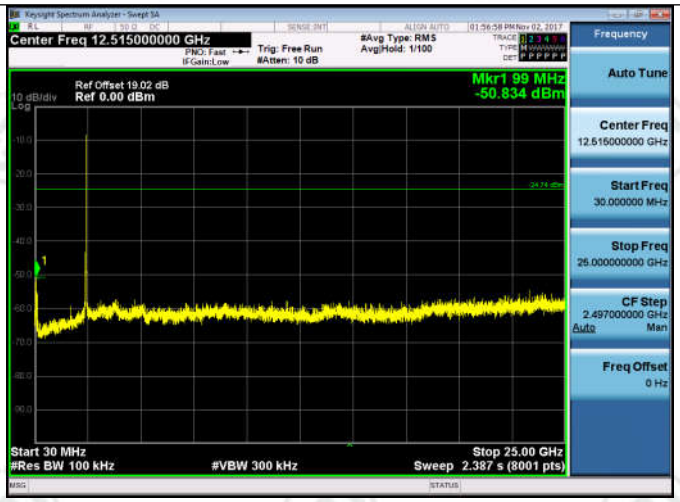
11G_LCH_Graphs	
Pref/11G/LCH	
Puw/11G/LCH	

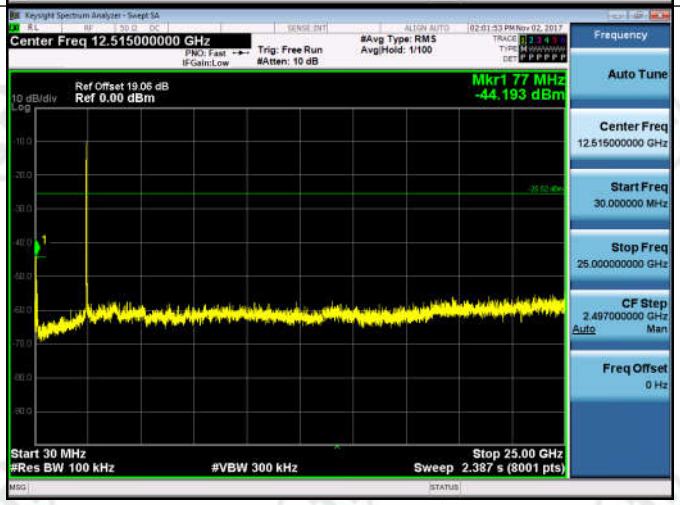
11G_MCH_Graphs	
Pref/11G/MCH	
Puw/11G/MCH	

11G_HCH_Graphs	
Pref/11G/HCH	
Puw/11G/HCH	

11N20SISO_LCH_Graphs	
Pref/11N20SISO/LCH	
/11N20SISO/LCH	

11N20SISO_MCH_Graphs	
Pref/11N20SISO/MCH	

Puw/11N20SISO /MCH	

11N20SISO_HCH_Graphs	
Pref/11N20SISO/ HCH	
Puw/11N20SISO/ HCH	

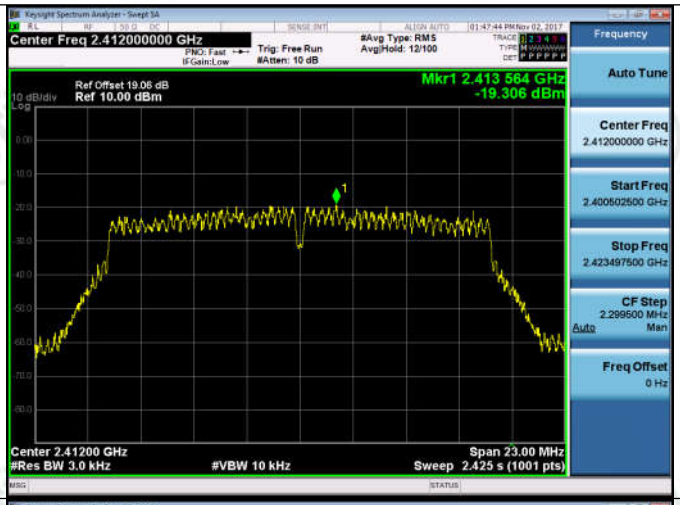
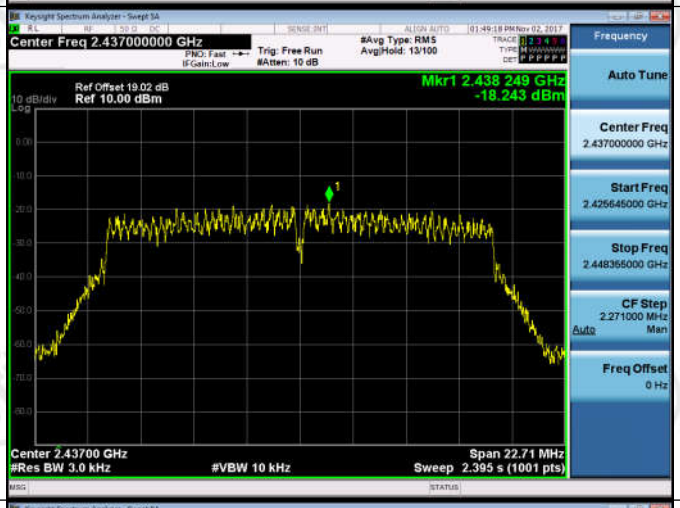
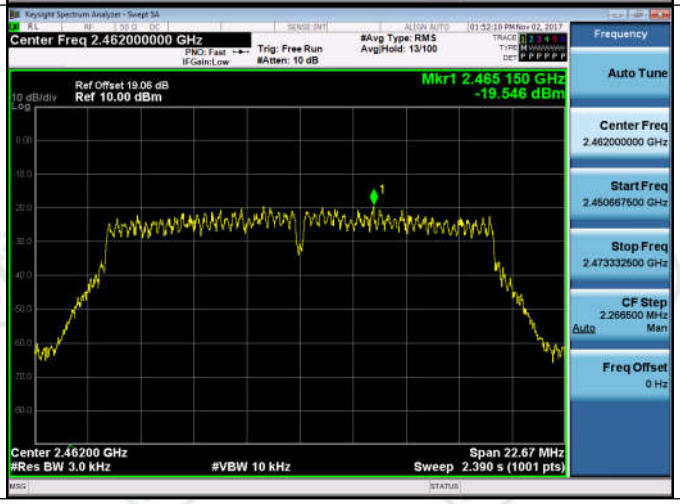
Appendix E): Power Spectral Density

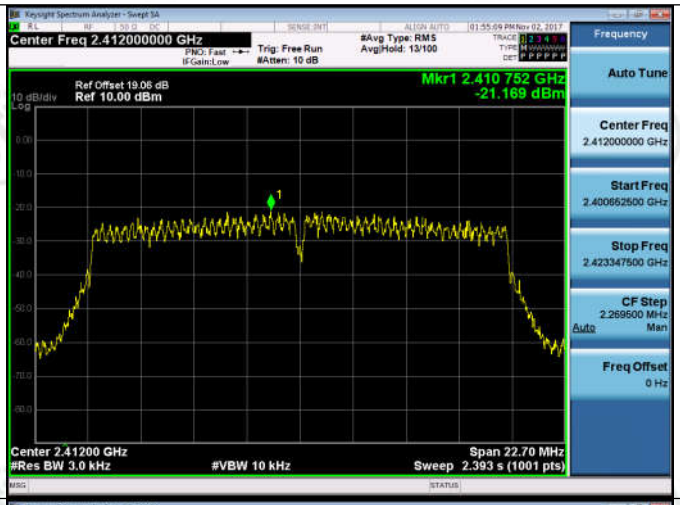
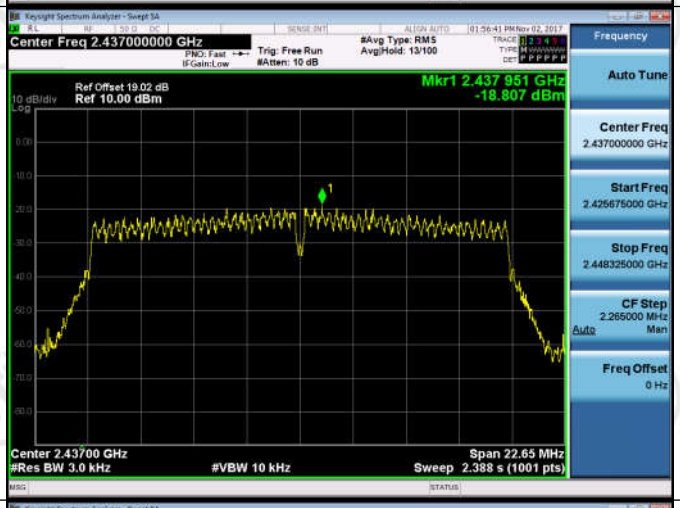
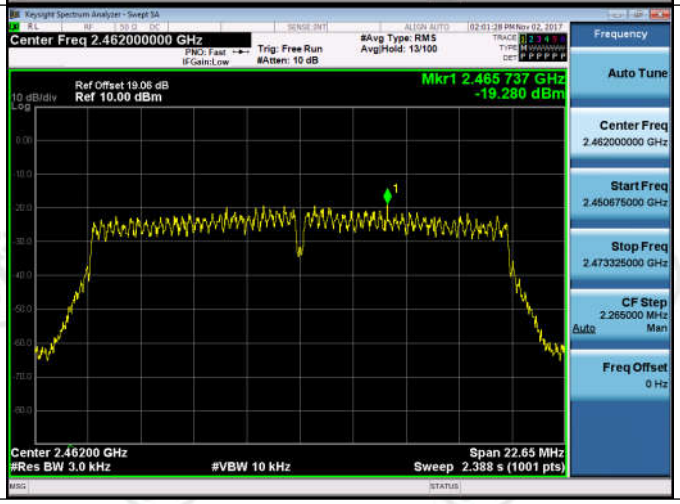
Result Table

Mode	Channel	Power Spectral Density [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	LCH	-11.590	8	PASS
11B	MCH	-11.969	8	PASS
11B	HCH	-12.079	8	PASS
11G	LCH	-19.306	8	PASS
11G	MCH	-18.243	8	PASS
11G	HCH	-19.546	8	PASS
11N20SISO	LCH	-21.169	8	PASS
11N20SISO	MCH	-18.807	8	PASS
11N20SISO	HCH	-19.280	8	PASS

Test Graph

Graphs			
11B/LCH			
11B/MCH			
11B/HCH			

11G/LCH			
11G/MCH			
11G/HCH			

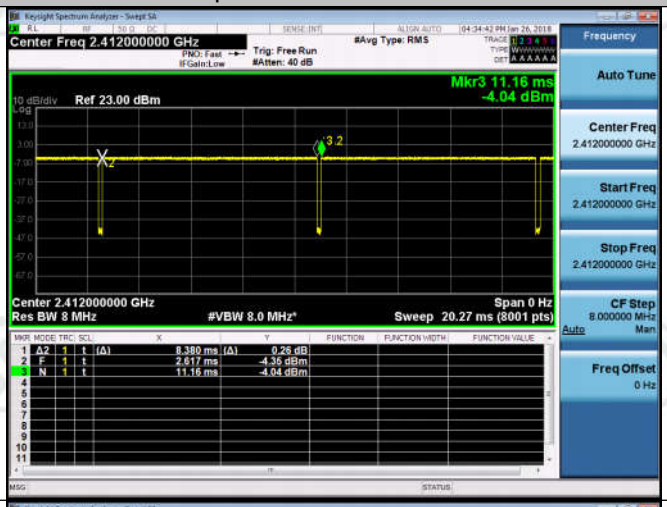
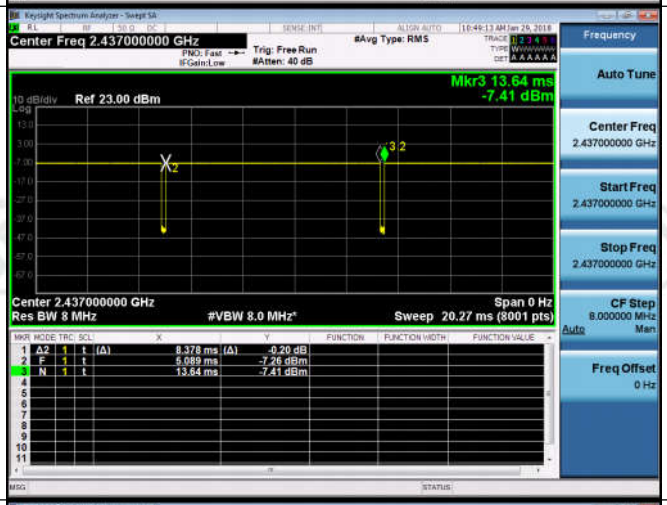
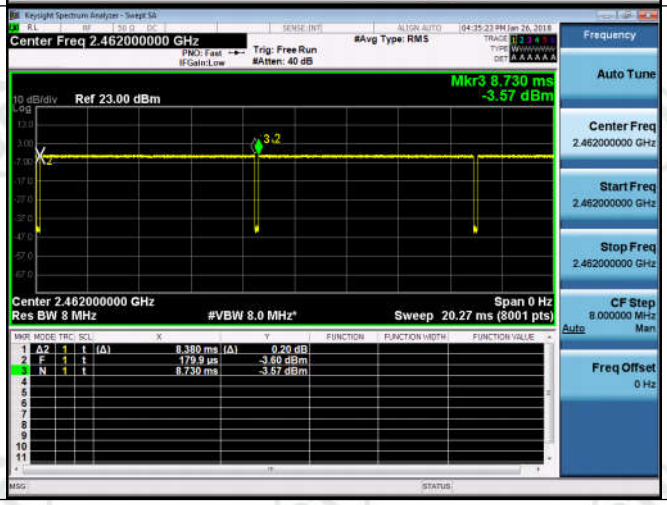
11N20SISO/LCH			
11N20SISO/MCH			
11N20SISO/HCH			

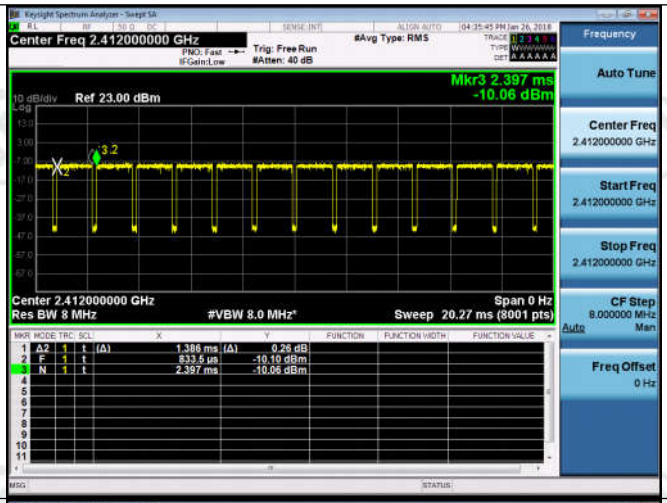
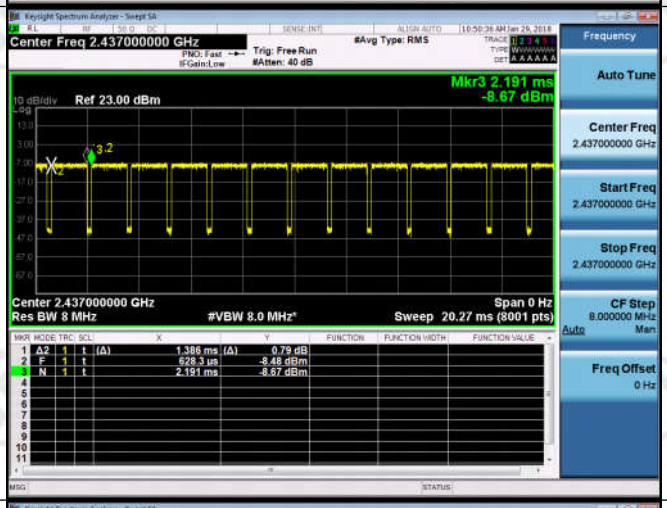
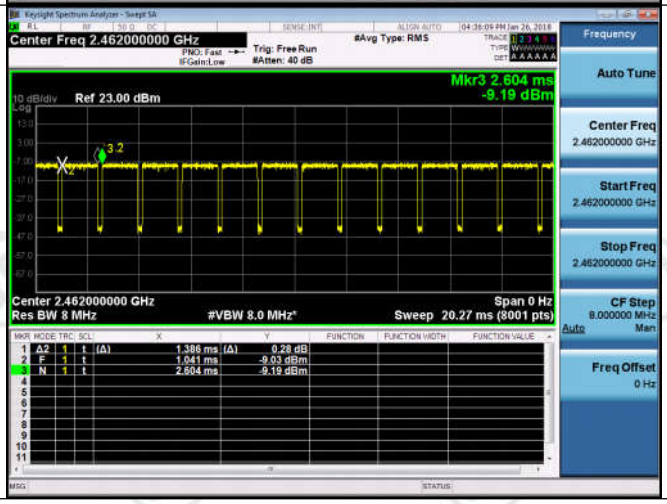
Appendix F): Duty Cycle

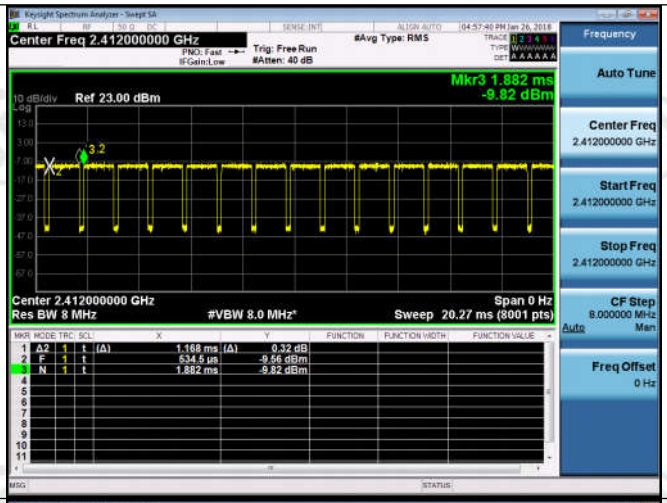
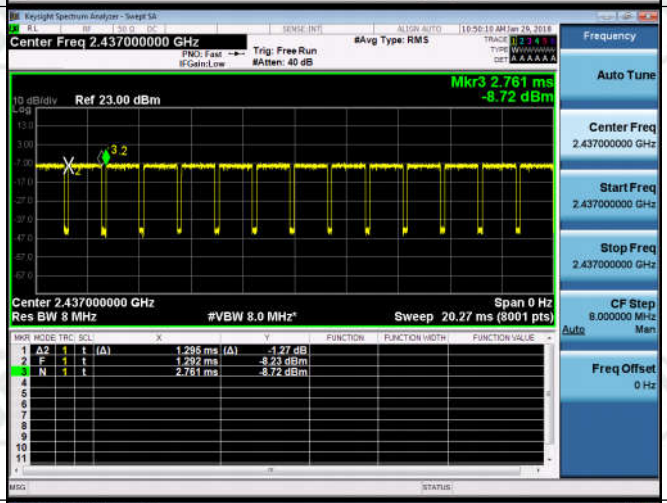
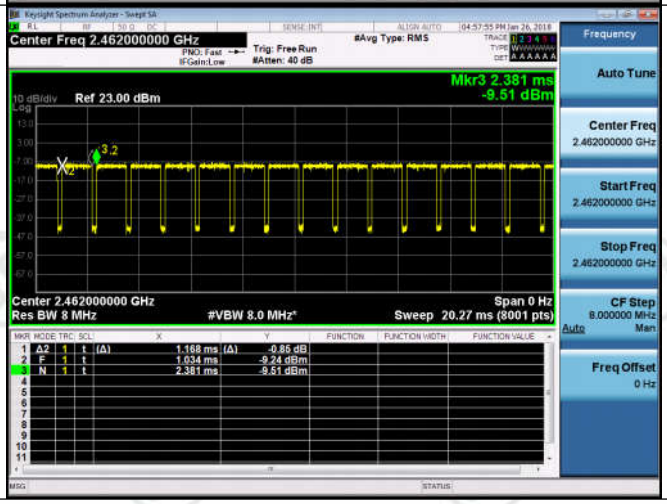
Result Table

Test Mode	Channel	Duty Cycle[%]	Verdict
11B	LCH	98.04	PASS
11B	MCH	98.00	PASS
11B	HCH	98.01	PASS
11G	LCH	88.65	PASS
11G	MCH	88.65	PASS
11G	HCH	88.65	PASS
11N20SISO	LCH	86.65	PASS
11N20SISO	MCH	88.10	PASS
11N20SISO	HCH	86.65	PASS

Test Graph

Graphs			
11B/LCH			
11B/MCH			
11B/HCH			

11G/LCH			
11G/MCH			
11G/HCH			

11N20SISO/LCH			
11N20SISO/MCH			
11N20SISO/HCH			

Appendix G): Antenna Requirement

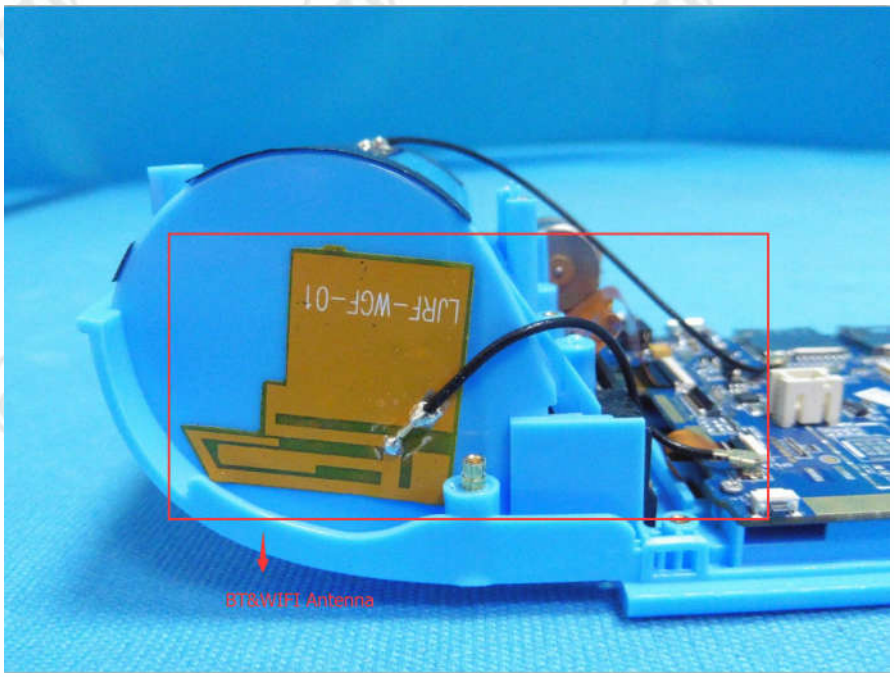
15.203 requirement:

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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

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

EUT Antenna:



The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 1.95dBi.

Appendix H): AC Power Line Conducted Emission

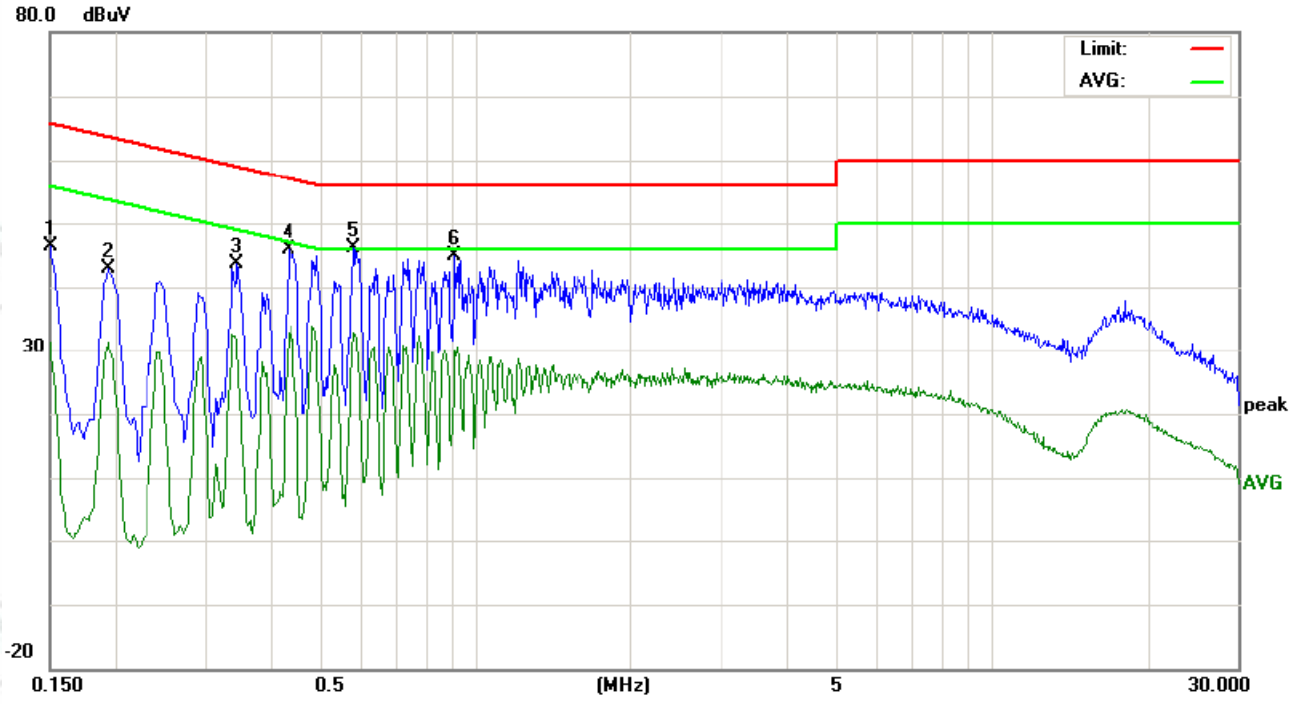
<table>
<tr><td>Test Procedure:</td><td>Test frequency range :150KHz-30MHz
1)The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3)The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBμV)</th></tr>
<tr><th>Quasi-peak</th><th>Average</th></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.
NOTE : The lower limit is applicable at the transition frequency</td></tr>
</table>

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

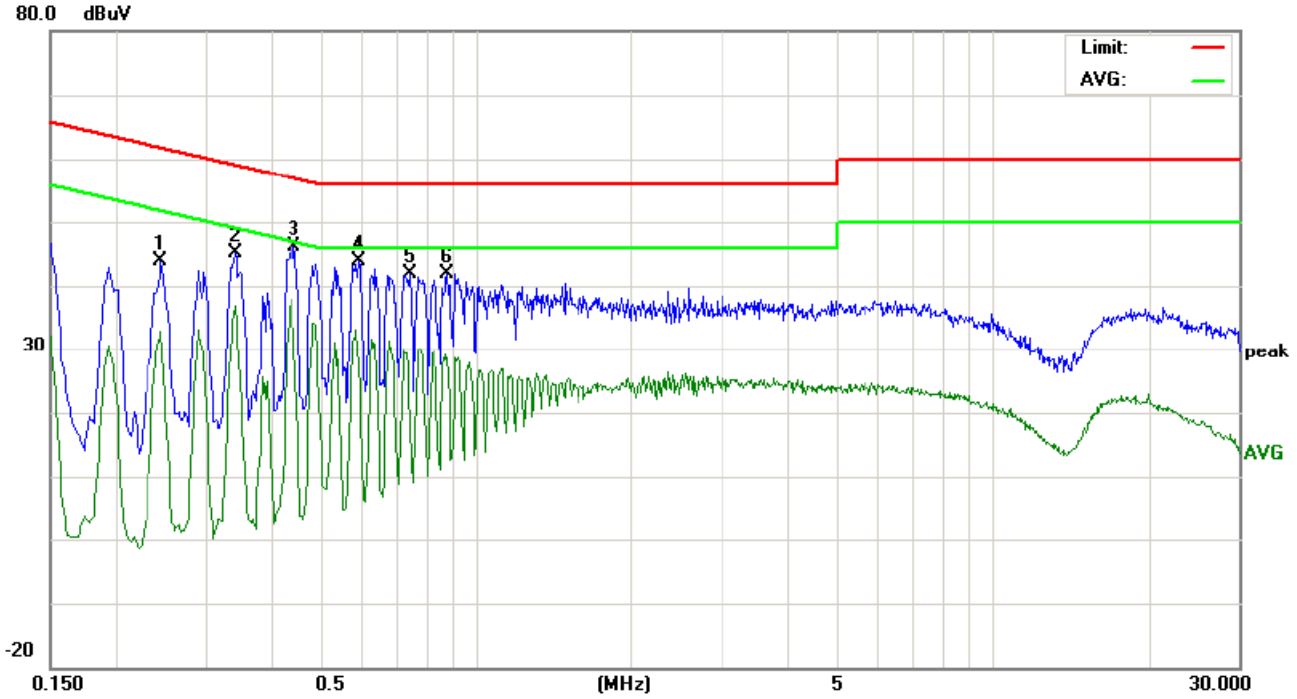
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live line:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1500	36.50	33.16	21.61	9.77	46.27	42.93	31.38	65.99	55.99	-23.06	-24.61	P	
2	0.1940	33.07	30.66	21.60	9.72	42.79	40.38	31.32	63.86	53.86	-23.48	-22.54	P	
3	0.3460	33.80	31.05	21.04	9.77	43.57	40.82	30.81	59.06	49.06	-18.24	-18.25	P	
4	0.4340	36.11	33.24	23.25	9.74	45.85	42.98	32.99	57.18	47.18	-14.20	-14.19	P	
5	0.5820	36.27	34.51	23.17	9.74	46.01	44.25	32.91	56.00	46.00	-11.75	-13.09	P	
6	0.9180	35.16	33.18	20.45	9.74	44.90	42.92	30.19	56.00	46.00	-13.08	-15.81	P	

Neutral line:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.2460	34.03	31.21	23.24	9.74	43.77	40.95	32.98	61.89	51.89	-20.94	-18.91	P	
2	0.3420	35.25	32.25	27.20	9.77	45.02	42.02	36.97	59.15	49.15	-17.13	-12.18	P	
3	0.4460	36.32	33.47	21.18	9.73	46.05	43.20	30.91	56.95	46.95	-13.75	-16.04	P	
4	0.5940	34.00	31.27	17.90	9.75	43.75	41.02	27.65	56.00	46.00	-14.98	-18.35	P	
5	0.7460	32.08	30.74	8.95	9.75	41.83	40.49	18.70	56.00	46.00	-15.51	-27.30	P	
6	0.8820	32.21	30.66	18.74	9.75	41.96	40.41	28.49	56.00	46.00	-15.59	-17.51	P	

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

3. AC120V and 240V are tested and found the worst case is 120V, So only the 120V data were shown in the above.

Appendix I): Restricted bands around fundamental frequency (Radiated)

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height 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.
d. 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 was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel

Above 1GHz test procedure as below:

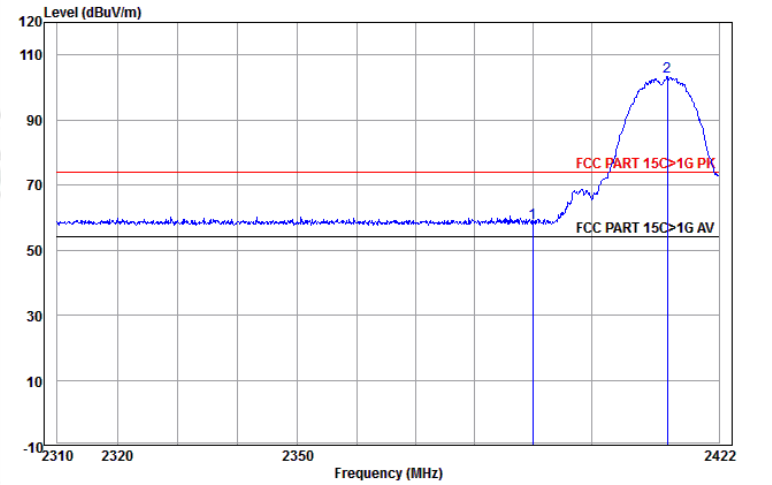
g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
h. Test the EUT in the lowest channel , the Highest channel
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
j. Repeat above procedures until all frequencies measured was complete.

Limit:

Frequency	Limit (dBμV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

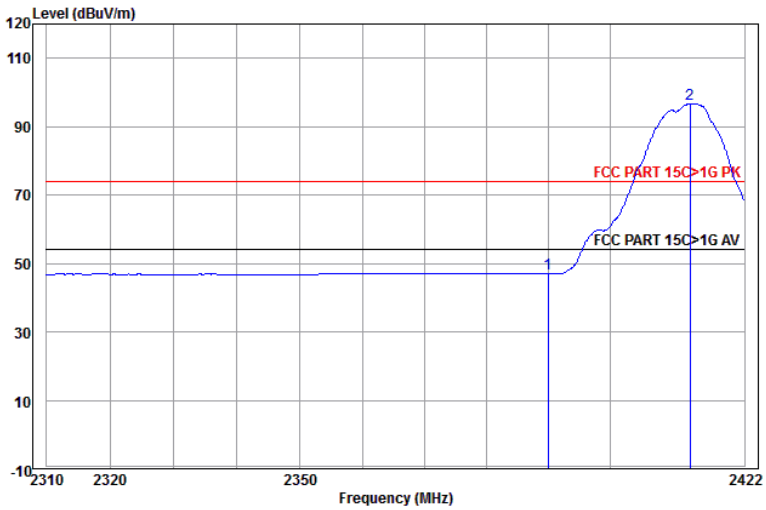
Test plot as follows:

Worse case mode:	802.11b (11Mbps)		
Frequency: 2412.MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Peak



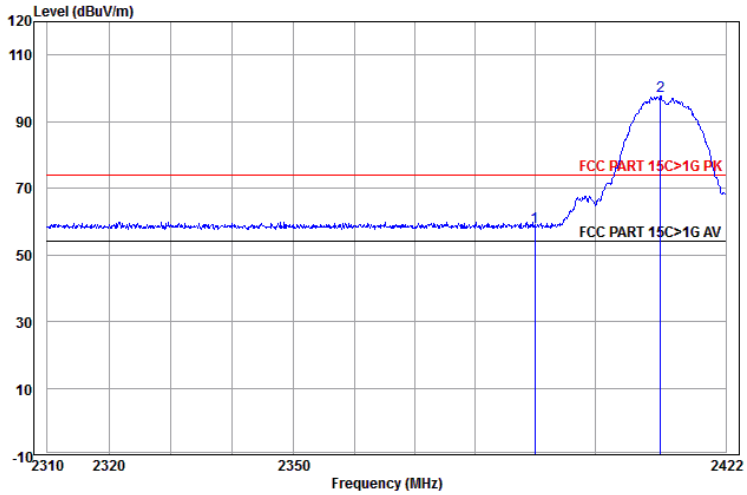
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	22.72	58.32	74.00	-15.68	Horizontal	Peak
2 pp	2413.072	32.58	3.08	67.67	103.33	74.00	29.33	Horizontal	Peak

Worse case mode:	802.11b (11Mbps)		
Frequency: 2412.MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Average



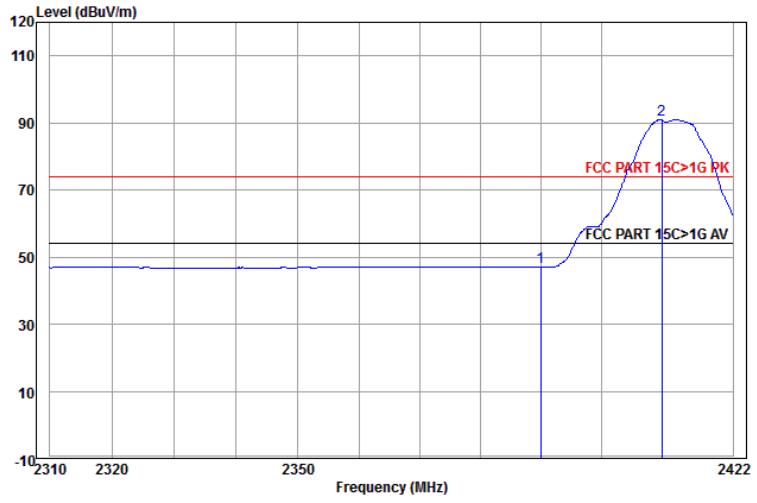
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	11.48	47.08	54.00	-6.92	Horizontal	Average
2 pp	2413.072	32.58	3.08	60.99	96.65	54.00	42.65	Horizontal	Average

Worse case mode:	802.11b (11Mbps)		
Frequency: 2412.MHz	Test channel: Lowest	Polarization: Vertical	Remark: Peak



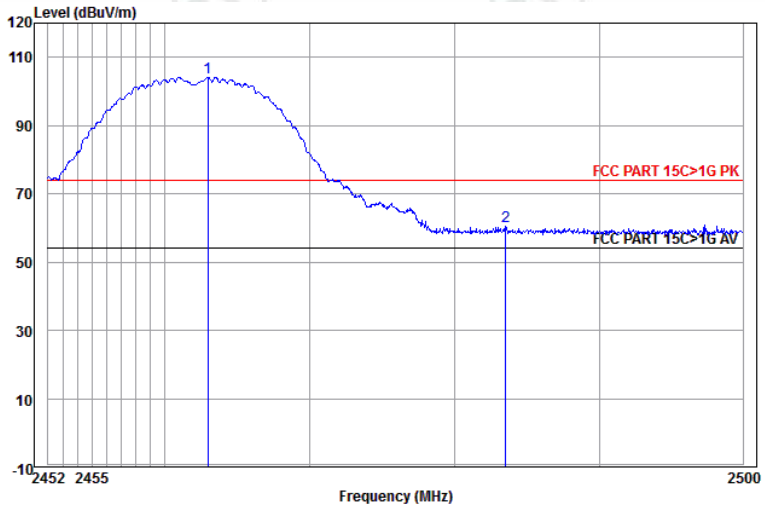
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	22.71	58.31	74.00	-15.69	Vertical	
2 pp	2411.016	32.58	3.08	61.90	97.56	74.00	23.56	Vertical	

Worse case mode:	802.11b (11Mbps)		
Frequency: 2412.MHz	Test channel: Lowest	Polarization: Vertical	Remark: Average



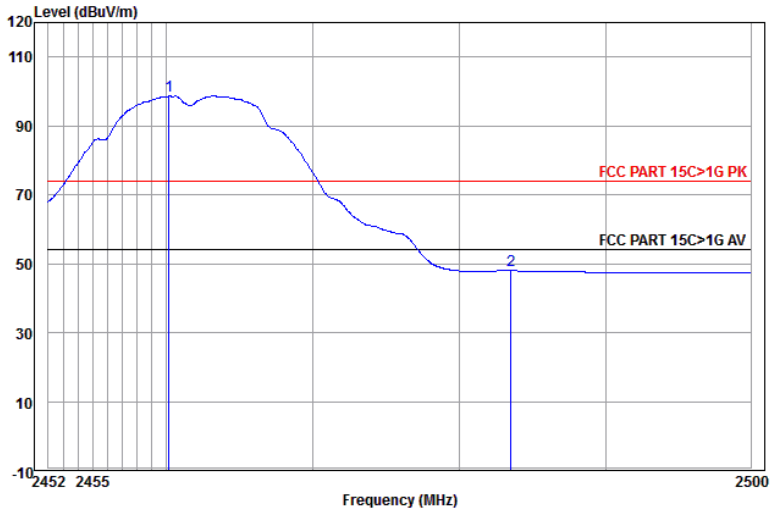
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	11.46	47.06	54.00	-6.94	Vertical	Average
2 pp	2410.104	32.57	3.08	55.35	91.00	54.00	37.00	Vertical	Average

Worse case mode:	802.11b (11Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Horizontal	Remark: Peak



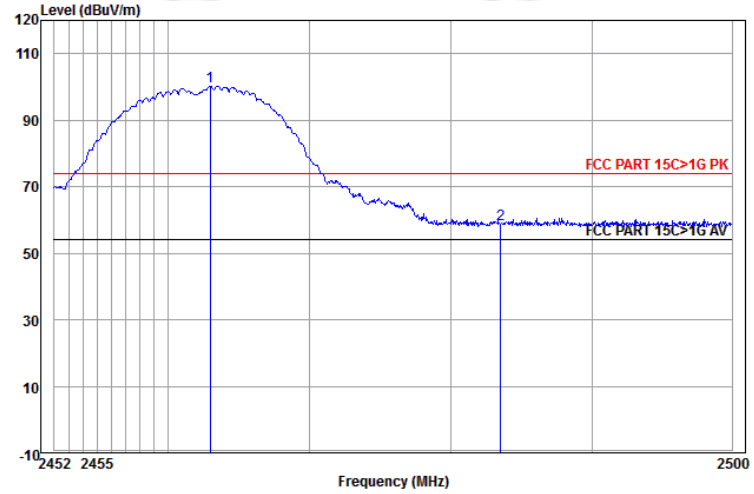
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2462.958	32.68	3.11	68.41	104.20	74.00	30.20	Horizontal	Peak
2	2483.500	32.71	3.12	24.55	60.38	74.00	-13.62	Horizontal	Peak

Worse case mode:	802.11b (11Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Horizontal	Remark: Average



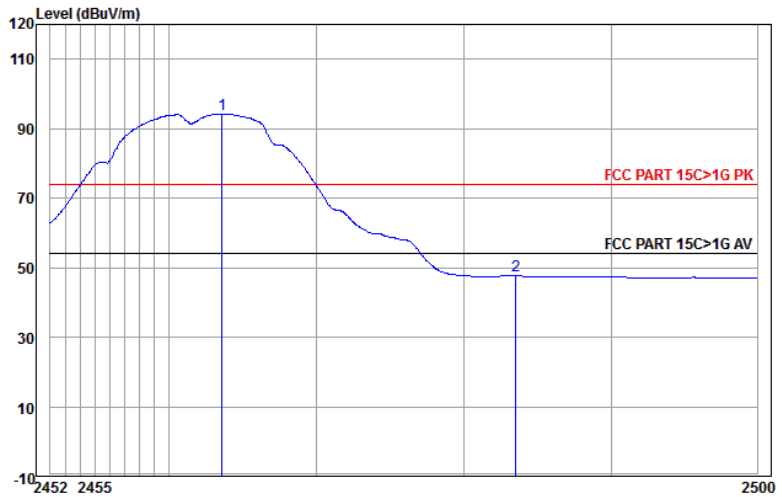
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2460.190	32.67	3.11	62.90	98.68	54.00	44.68	Horizontal	Average
2	2483.500	32.71	3.12	12.19	48.02	54.00	-5.98	Horizontal	Average

Worse case mode:	802.11b (11Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Vertical	Remark: Peak



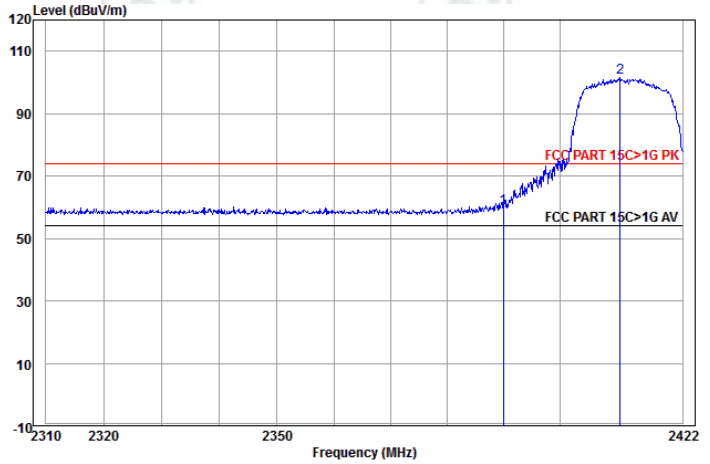
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2462.958	32.68	3.11	64.54	100.33	74.00	26.33	Vertical	Peak
2	2483.500	32.71	3.12	22.83	58.66	74.00	-15.34	Vertical	Peak

Worse case mode:	802.11b (11Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Vertical	Remark: Average



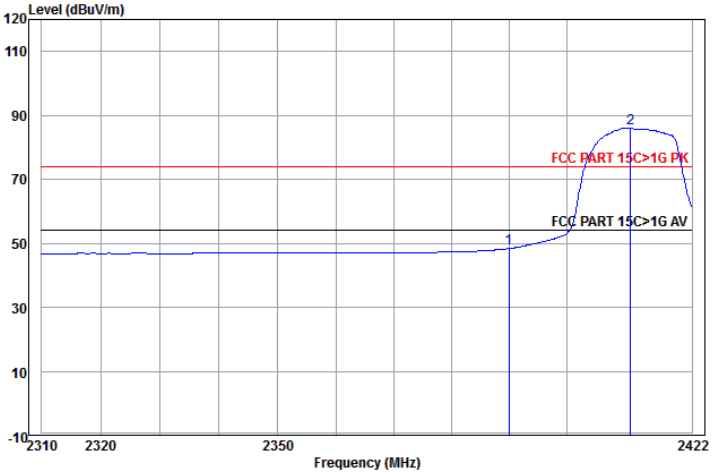
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2463.579	32.68	3.11	58.42	94.21	54.00	40.21	Vertical	Average
2	2483.500	32.71	3.12	11.81	47.64	54.00	-6.36	Vertical	Average

Worse case mode:	802.11g (6Mbps)		
Frequency: 2412.MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Peak



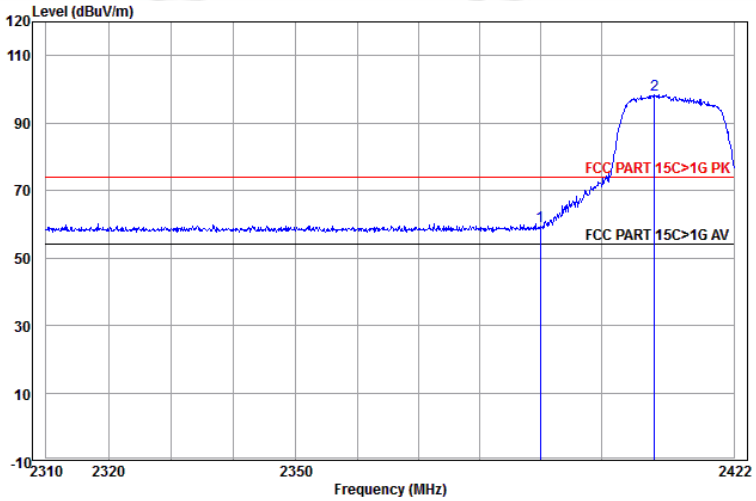
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	24.06	59.66	74.00	-14.34	Horizontal	Peak
2 pp	2410.788	32.58	3.08	65.79	101.45	74.00	27.45	Horizontal	Peak

Worse case mode:	802.11g (6Mbps)		
Frequency: 2412.MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Average



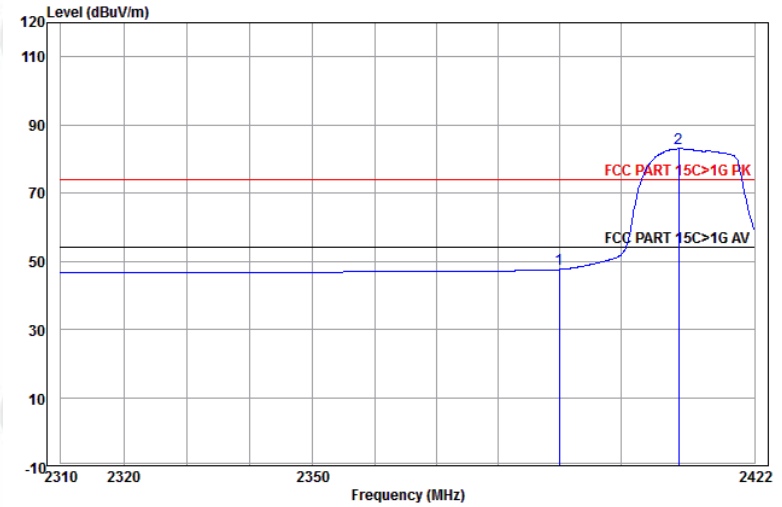
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	12.80	48.40	54.00	-5.60	Horizontal	Average
2 pp	2411.245	32.58	3.08	50.44	86.10	54.00	32.10	Horizontal	Average

Worse case mode:	802.11g (6Mbps)		
Frequency: 2412.MHz	Test channel: Lowest	Polarization: Vertical	Remark: Peak



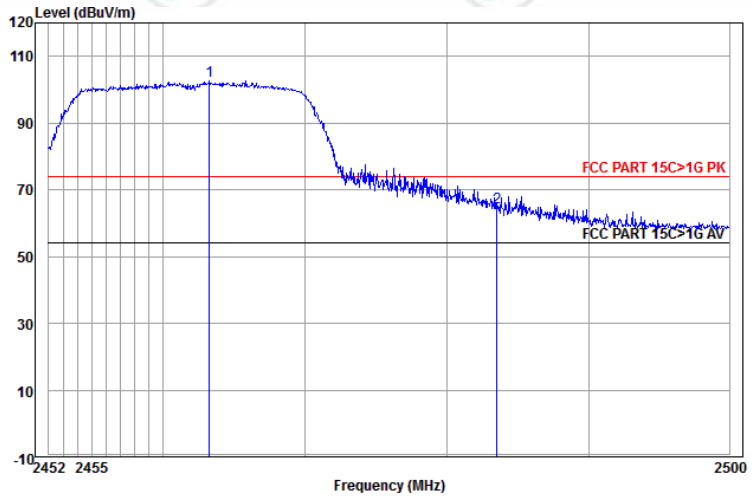
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	23.72	59.32	74.00	-14.68	Vertical	Peak
2 pp	2408.849	32.57	3.08	62.85	98.50	74.00	24.50	Vertical	Peak

Worse case mode:	802.11g (6Mbps)		
Frequency: 2412.MHz	Test channel: Lowest	Polarization: Vertical	Remark:Average



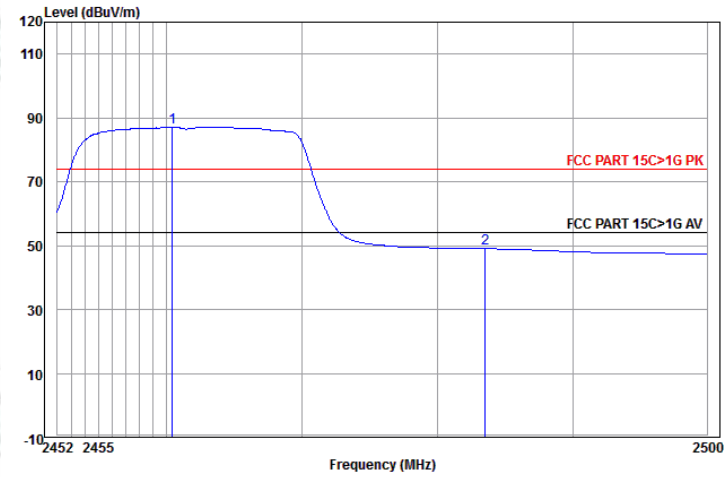
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	11.97	47.57	54.00	-6.43	Vertical	Average
2 pp	2409.533	32.57	3.08	47.46	83.11	54.00	29.11	Vertical	Average

Worse case mode:	802.11g (6Mbps)		
Frequency: 2462.MHz	Test channel: Lowest	Polarization: Vertical	Remark: Peak



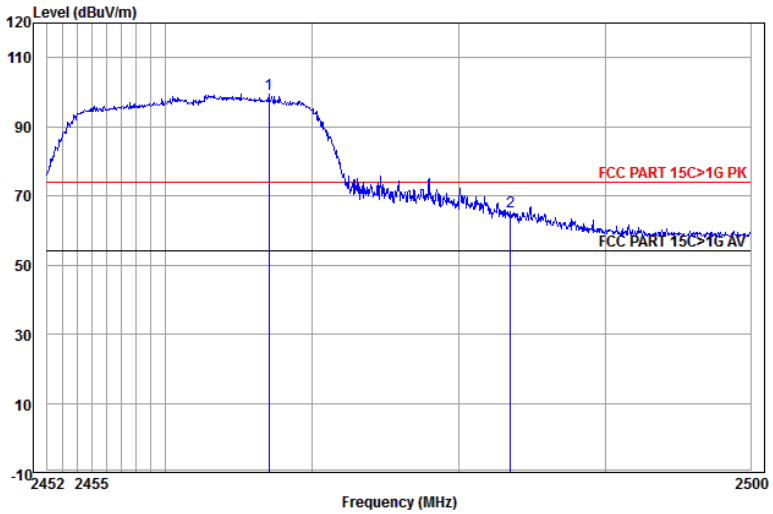
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2463.244	32.68	3.11	66.79	102.58	74.00	28.58	Horizontal	Peak
2	2483.500	32.71	3.12	28.88	64.71	74.00	-9.29	Horizontal	Peak

Worse case mode:	802.11g (6Mbps)		
Frequency: 2462.MHz	Test channel: Highest	Polarization: Horizontal	Remark: Average



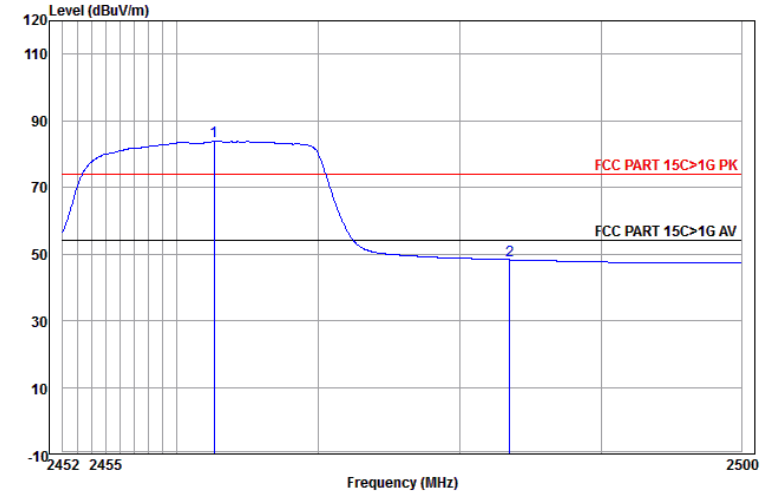
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2460.428	32.67	3.11	51.39	87.17	54.00	33.17	Horizontal	Average
2	2483.500	32.71	3.12	13.22	49.05	54.00	-4.95	Horizontal	Average

Worse case mode:	802.11g (6Mbps)		
Frequency: 2462.MHz	Test channel: Highest	Polarization:Vertical	Remark:Peak



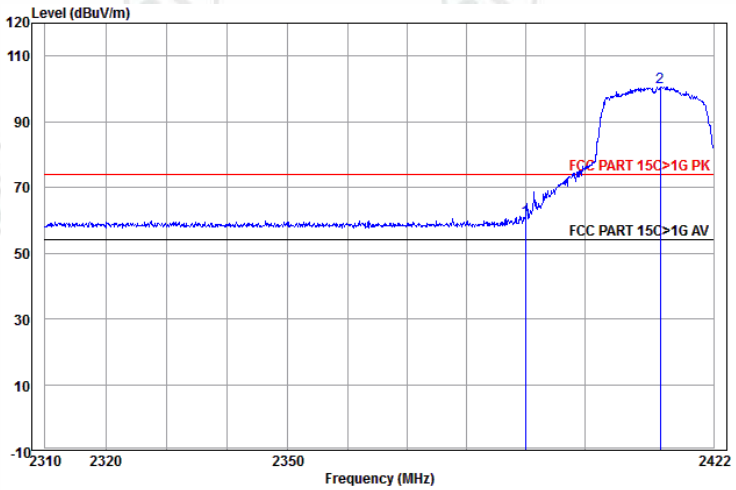
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2467.020	32.68	3.11	63.75	99.54	74.00	25.54	Vertical	Peak
2	2483.500	32.71	3.12	29.51	65.34	74.00	-8.66	Vertical	Peak

Worse case mode:	802.11g (6Mbps)		
Frequency: 2462.MHz	Test channel: Highest	Polarization: Vertical	Remark:Average



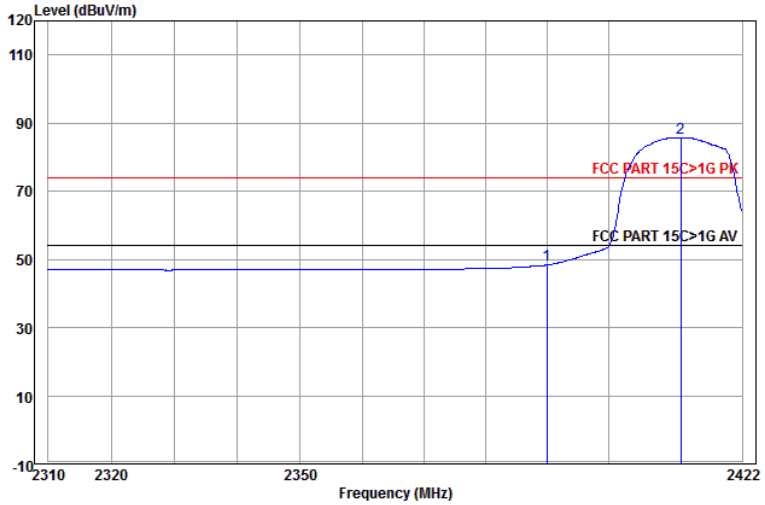
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2462.624	32.68	3.11	48.01	83.80	54.00	29.80	Vertical	Average
2	2483.500	32.71	3.12	12.44	48.27	54.00	-5.73	Vertical	Average

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Peak



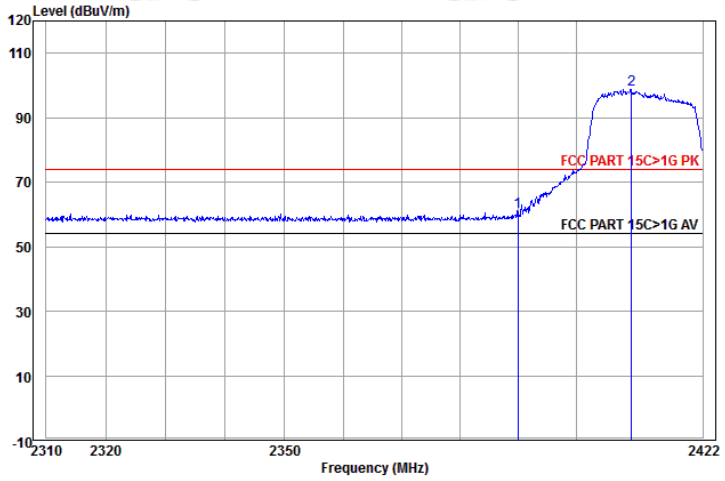
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	24.53	60.13	74.00	-13.87	Horizontal	Peak
2 pp	2412.844	32.58	3.08	64.99	100.65	74.00	26.65	Horizontal	Peak

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Average



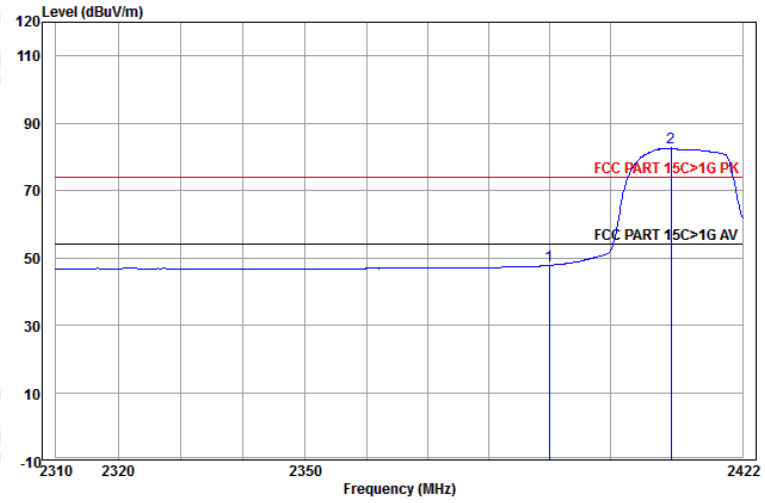
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	12.77	48.37	54.00	-5.63	Horizontal	Average
2 pp	2411.930	32.58	3.08	50.13	85.79	54.00	31.79	Horizontal	Average

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Vertical	Remark: Peak



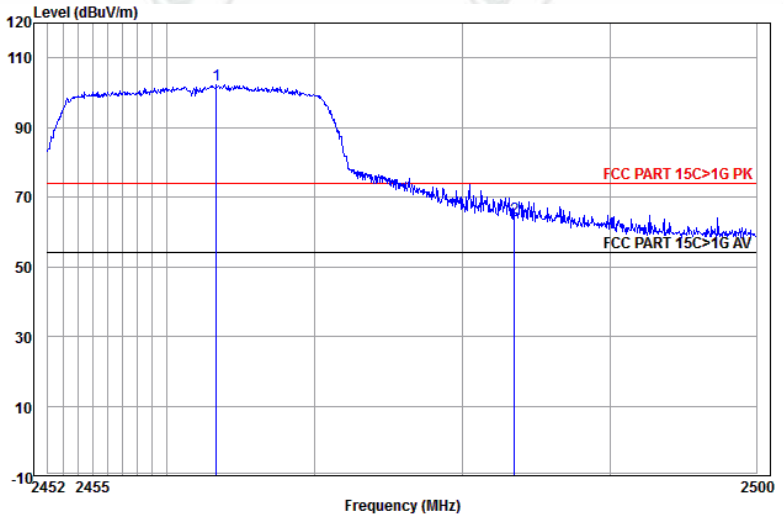
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	25.20	60.80	74.00	-13.20	Vertical	Peak
2 pp	2409.647	32.57	3.08	63.12	98.77	74.00	24.77	Vertical	Peak

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Vertical	Remark: Average



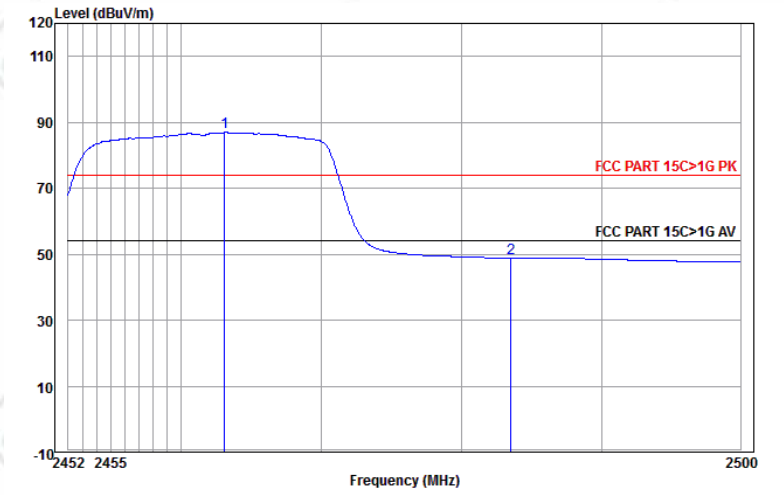
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	12.19	47.79	54.00	-6.21	Vertical	Average
2 pp	2410.104	32.57	3.08	47.02	82.67	54.00	28.67	Vertical	Average

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Horizontal	Remark: Peak



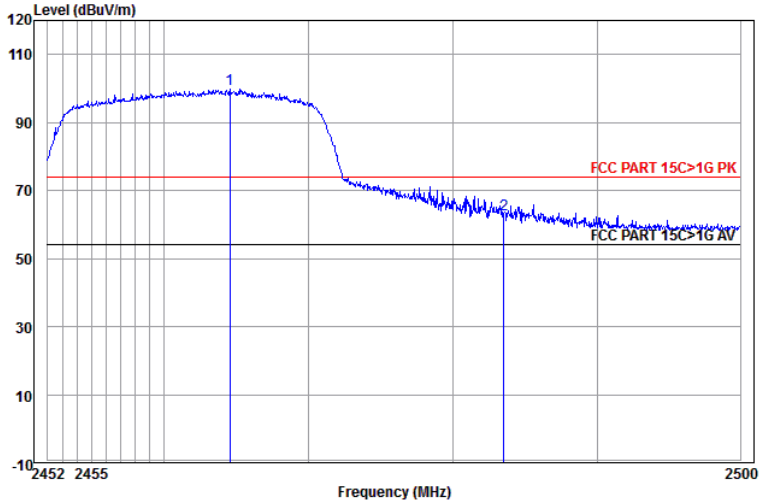
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2463.340	32.68	3.11	66.52	102.31	74.00	28.31	Horizontal	Peak
2	2483.500	32.71	3.12	28.03	63.86	74.00	-10.14	Horizontal	Peak

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Horizontal	Remark: Average



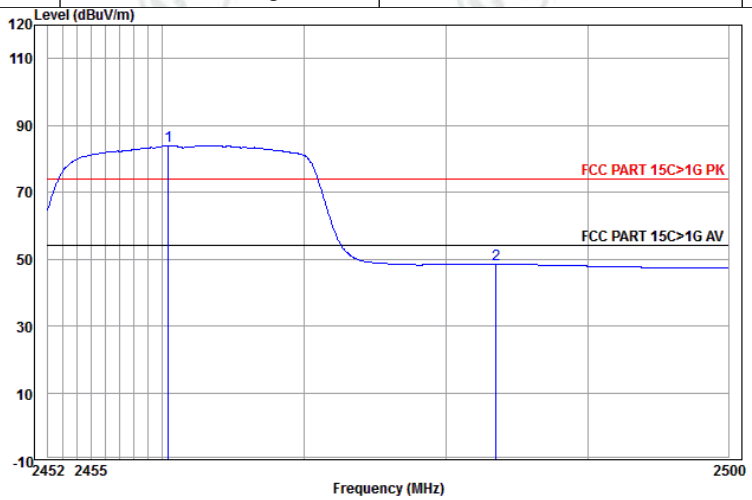
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2463.101	32.68	3.11	51.16	86.95	54.00	32.95	Horizontal	Average
2	2483.500	32.71	3.12	13.04	48.87	54.00	-5.13	Horizontal	Average

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Vertical	Remark: Peak



	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2464.534	32.68	3.11	64.06	99.85	74.00	25.85	Vertical	Peak
2	2483.500	32.71	3.12	27.08	62.91	74.00	-11.09	Vertical	Peak

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Vertical	Remark: Average



	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2460.428	32.67	3.11	48.23	84.01	54.00	30.01	Vertical	Average
2	2483.500	32.71	3.12	12.57	48.40	54.00	-5.60	Vertical	Average

1) Through Pre-scan transmitter mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbpsof rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) , and then Only the worst case is recorded in the report.
2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading - Correct Factor
Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

Appendix J): Radiated Spurious Emissions

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height 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.
d. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter)..
h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
j. Repeat above procedures until all frequencies measured was complete.

Limit:

Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

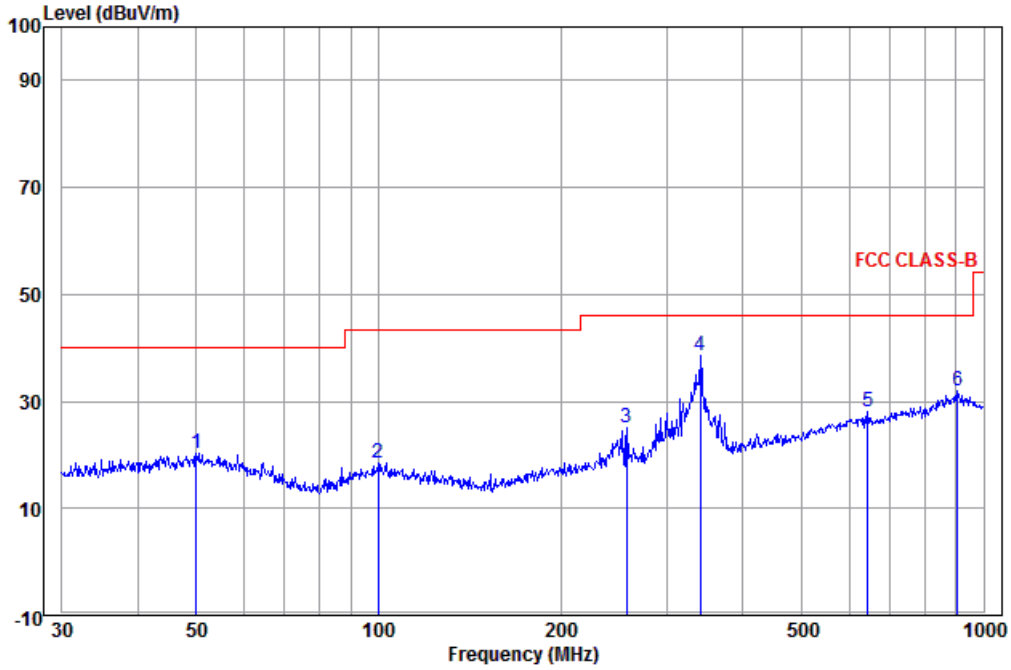
Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Radiated Spurious Emissions test Data:

Radiated Emission below 1GHz

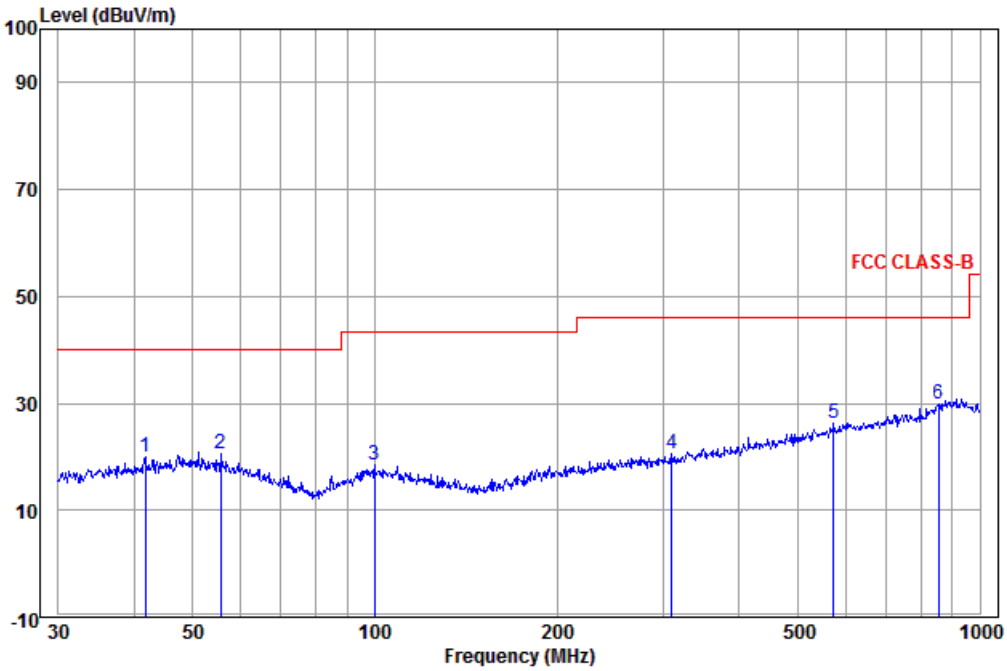
30MHz~1GHz (QP)

Horizontal



	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	50.057	14.59	0.11	5.60	20.30	40.00	-19.70	Horizontal	QP
2	99.878	12.48	0.59	5.35	18.42	43.50	-25.08	Horizontal	QP
3	257.422	12.73	1.30	11.06	25.09	46.00	-20.91	Horizontal	QP
4 pp	340.782	14.23	1.28	23.05	38.56	46.00	-7.44	Horizontal	QP
5	642.861	18.87	1.83	7.28	27.98	46.00	-18.02	Horizontal	QP
6	906.482	22.09	2.47	7.35	31.91	46.00	-14.09	Horizontal	QP

Vertical



	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	41.713	13.95	0.06	5.93	19.94	40.00	-20.06	Vertical	QP
2	55.609	13.73	0.17	6.60	20.50	40.00	-19.50	Vertical	QP
3	99.878	12.48	0.59	5.26	18.33	43.50	-25.17	Vertical	QP
4	309.998	13.61	1.12	5.87	20.60	46.00	-25.40	Vertical	QP
5	572.614	18.22	1.67	6.25	26.14	46.00	-19.86	Vertical	QP
6 pp	854.025	21.37	2.45	6.00	29.82	46.00	-16.18	Vertical	QP

Transmitter Emission above 1GHz

Test mode: 802.11b(11Mbps)	Test Frequency: 2412MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1326.513	30.52	2.05	44.21	47.36	35.72	74.00	-38.28	Pass	Horizontal
1706.700	31.24	2.54	43.77	46.02	36.03	74.00	-37.97	Pass	Horizontal
4824.000	34.73	6.02	44.60	47.97	44.12	74.00	-29.88	Pass	Horizontal
6428.771	36.12	7.33	44.54	45.53	44.44	74.00	-29.56	Pass	Horizontal
7236.000	36.42	6.94	44.80	43.46	42.02	74.00	-31.98	Pass	Horizontal
9648.000	37.93	7.01	45.57	41.92	41.29	74.00	-32.71	Pass	Horizontal
1435.431	30.74	2.20	44.07	46.45	35.32	74.00	-38.68	Pass	Vertical
1755.164	31.32	2.59	43.73	46.64	36.82	74.00	-37.18	Pass	Vertical
4824.000	34.73	6.02	44.60	47.20	43.35	74.00	-30.65	Pass	Vertical
5821.207	35.77	7.26	44.52	45.84	44.35	74.00	-29.65	Pass	Vertical
7236.000	36.42	6.94	44.80	46.20	44.76	74.00	-29.24	Pass	Vertical
9648.000	37.93	7.01	45.57	41.15	40.52	74.00	-33.48	Pass	Vertical

Test mode: 802.11b(11Mbps)	Test Frequency: 2437MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1204.210	30.24	1.87	44.38	46.96	34.69	74.00	-39.31	Pass	Horizontal
1545.405	30.96	2.35	43.95	46.99	36.35	74.00	-37.65	Pass	Horizontal
4874.000	34.84	6.12	44.60	49.40	45.76	74.00	-28.24	Pass	Horizontal
5865.832	35.80	7.31	44.51	45.34	43.94	74.00	-30.06	Pass	Horizontal
7311.000	36.43	6.86	44.86	44.14	42.57	74.00	-31.43	Pass	Horizontal
9748.000	38.03	7.10	45.55	42.06	41.64	74.00	-32.36	Pass	Horizontal
1371.145	30.61	2.12	44.15	47.27	35.85	74.00	-38.15	Pass	Vertical
1805.005	31.40	2.64	43.68	45.97	36.33	74.00	-37.67	Pass	Vertical
4874.000	34.84	6.12	44.60	49.09	45.45	74.00	-28.55	Pass	Vertical
6412.427	36.12	7.33	44.54	45.37	44.28	74.00	-29.72	Pass	Vertical
7311.000	36.43	6.86	44.86	46.26	44.69	74.00	-29.31	Pass	Vertical
9748.000	38.03	7.10	45.55	41.38	40.96	74.00	-33.04	Pass	Vertical

Test mode: 802.11b(11Mbps)	Test Frequency: 2462MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1107.186	29.99	1.71	44.52	47.82	35.00	74.00	-39.00	Pass	Horizontal
1642.761	31.13	2.46	43.84	46.10	35.85	74.00	-38.15	Pass	Horizontal
4924.000	34.94	6.22	44.60	52.17	48.73	74.00	-25.27	Pass	Horizontal
5850.919	35.79	7.29	44.51	46.14	44.71	74.00	-29.29	Pass	Horizontal
7386.000	36.44	6.78	44.92	45.41	43.71	74.00	-30.29	Pass	Horizontal
9848.000	38.14	7.19	45.53	41.79	41.59	74.00	-32.41	Pass	Horizontal
1241.562	30.32	1.93	44.33	46.96	34.88	74.00	-39.12	Pass	Vertical
1782.177	31.37	2.62	43.70	46.30	36.59	74.00	-37.41	Pass	Vertical
4924.000	34.94	6.22	44.60	49.77	46.33	74.00	-27.67	Pass	Vertical
5895.771	35.82	7.34	44.51	45.36	44.01	74.00	-29.99	Pass	Vertical
7386.000	36.44	6.78	44.92	48.30	46.60	74.00	-27.40	Pass	Vertical
9848.000	38.14	7.19	45.53	42.53	42.33	74.00	-31.67	Pass	Vertical

Test mode: 802.11g(6Mbps)	Test Frequency: 2412MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1360.714	30.59	2.10	44.17	46.84	35.36	74.00	-38.64	Pass	Horizontal
1837.456	31.46	2.68	43.65	46.43	36.92	74.00	-37.08	Pass	Horizontal
4824.000	34.73	6.02	44.60	44.01	40.16	74.00	-33.84	Pass	Horizontal
6412.427	36.12	7.33	44.54	45.34	44.25	74.00	-29.75	Pass	Horizontal
7236.000	36.42	6.94	44.80	43.02	41.58	74.00	-32.42	Pass	Horizontal
9648.000	37.93	7.01	45.57	41.56	40.93	74.00	-33.07	Pass	Horizontal
1257.465	30.36	1.95	44.30	47.05	35.06	74.00	-38.94	Pass	Vertical
1549.344	30.96	2.35	43.94	47.43	36.80	74.00	-37.20	Pass	Vertical
4824.000	34.73	6.02	44.60	44.91	41.06	74.00	-32.94	Pass	Vertical
5791.646	35.74	7.23	44.52	45.30	43.75	74.00	-30.25	Pass	Vertical
7236.000	36.42	6.94	44.80	42.75	41.31	74.00	-32.69	Pass	Vertical
9648.000	37.93	7.01	45.57	42.20	41.57	74.00	-32.43	Pass	Vertical

Test mode: 802.11g(6Mbps)	Test Frequency: 2437MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1260.670	30.37	1.95	44.30	46.23	34.25	74.00	-39.75	Pass	Horizontal
1461.238	30.79	2.24	44.04	46.91	35.90	74.00	-38.10	Pass	Horizontal
1875.258	31.51	2.72	43.61	46.01	36.63	74.00	-37.37	Pass	Horizontal
4874.000	34.84	6.12	44.60	44.63	40.99	74.00	-33.01	Pass	Horizontal
7311.000	36.43	6.86	44.86	44.48	42.91	74.00	-31.09	Pass	Horizontal
9748.000	38.03	7.10	45.55	41.10	40.68	74.00	-33.32	Pass	Horizontal
1176.935	30.17	1.82	44.42	47.47	35.04	74.00	-38.96	Pass	Vertical
1406.496	30.68	2.16	44.11	48.44	37.17	74.00	-36.83	Pass	Vertical
1638.585	31.12	2.46	43.85	47.07	36.80	74.00	-37.20	Pass	Vertical
4874.000	34.84	6.12	44.60	45.83	42.19	74.00	-31.81	Pass	Vertical
7311.000	36.43	6.86	44.86	45.19	43.62	74.00	-30.38	Pass	Vertical
9748.000	38.03	7.10	45.55	40.52	40.10	74.00	-33.90	Pass	Vertical

Test mode: 802.11g(6Mbps)	Test Frequency: 2462MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1244.726	30.33	1.93	44.32	47.18	35.12	74.00	-38.88	Pass	Horizontal
1809.605	31.41	2.65	43.67	46.61	37.00	74.00	-37.00	Pass	Horizontal
4924.000	34.94	6.22	44.60	44.54	41.10	74.00	-32.90	Pass	Horizontal
5850.919	35.79	7.29	44.51	46.08	44.65	74.00	-29.35	Pass	Horizontal
7386.000	36.44	6.78	44.92	41.72	40.02	74.00	-33.98	Pass	Horizontal
9848.000	38.14	7.19	45.53	42.49	42.29	74.00	-31.71	Pass	Horizontal
1296.469	30.45	2.01	44.25	47.30	35.51	74.00	-38.49	Pass	Vertical
1795.839	31.39	2.63	43.69	46.10	36.43	74.00	-37.57	Pass	Vertical
4924.000	34.94	6.22	44.60	44.30	40.86	74.00	-33.14	Pass	Vertical
5865.832	35.80	7.31	44.51	45.38	43.98	74.00	-30.02	Pass	Vertical
7386.000	36.44	6.78	44.92	45.70	44.00	74.00	-30.00	Pass	Vertical
9848.000	38.14	7.19	45.53	41.76	41.56	74.00	-32.44	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2412MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1144.437	30.09	1.77	44.47	46.68	34.07	74.00	-39.93	Pass	Horizontal
1601.472	31.06	2.41	43.88	46.18	35.77	74.00	-38.23	Pass	Horizontal
4824.000	34.73	6.02	44.60	43.77	39.92	74.00	-34.08	Pass	Horizontal
5910.798	35.83	7.35	44.51	44.82	43.49	74.00	-30.51	Pass	Horizontal
7236.000	36.42	6.94	44.80	44.92	43.48	74.00	-30.52	Pass	Horizontal
9648.000	37.93	7.01	45.57	42.63	42.00	74.00	-32.00	Pass	Horizontal
1257.465	30.36	1.95	44.30	46.76	34.77	74.00	-39.23	Pass	Vertical
1537.557	30.94	2.34	43.96	46.29	35.61	74.00	-38.39	Pass	Vertical
4824.000	34.73	6.02	44.60	44.90	41.05	74.00	-32.95	Pass	Vertical
5850.919	35.79	7.29	44.51	44.91	43.48	74.00	-30.52	Pass	Vertical
7236.000	36.42	6.94	44.80	44.86	43.42	74.00	-30.58	Pass	Vertical
9648.000	37.93	7.01	45.57	41.97	41.34	74.00	-32.66	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2437MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1273.572	30.40	1.97	44.28	47.35	35.44	74.00	-38.56	Pass	Horizontal
1541.476	30.95	2.34	43.95	46.61	35.95	74.00	-38.05	Pass	Horizontal
4874.000	34.84	6.12	44.60	45.87	42.23	74.00	-31.77	Pass	Horizontal
6251.257	36.03	7.37	44.53	45.24	44.11	74.00	-29.89	Pass	Horizontal
7311.000	36.43	6.86	44.86	42.64	41.07	74.00	-32.93	Pass	Horizontal
9748.000	38.03	7.10	45.55	40.53	40.11	74.00	-33.89	Pass	Horizontal
1244.726	30.33	1.93	44.32	46.84	34.78	74.00	-39.22	Pass	Vertical
1605.554	31.07	2.42	43.88	46.09	35.70	74.00	-38.30	Pass	Vertical
4874.000	34.84	6.12	44.60	44.41	40.77	74.00	-33.23	Pass	Vertical
5850.919	35.79	7.29	44.51	45.38	43.95	74.00	-30.05	Pass	Vertical
7311.000	36.43	6.86	44.86	45.41	43.84	74.00	-30.16	Pass	Vertical
9748.000	38.03	7.10	45.55	40.43	40.01	74.00	-33.99	Pass	Vertical

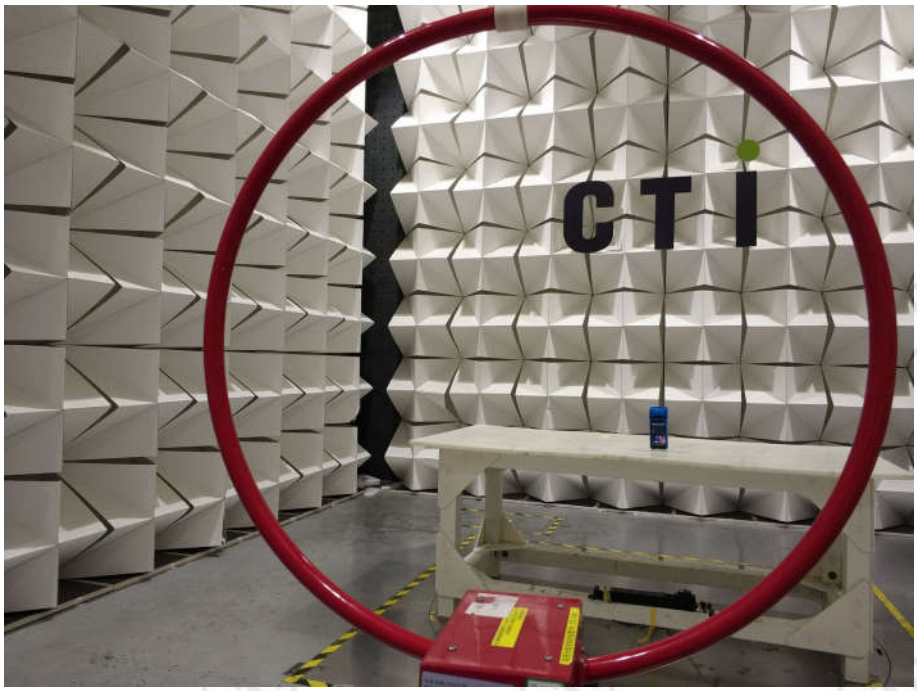
Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2462MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1198.095	30.22	1.86	44.39	47.03	34.72	74.00	-39.28	Pass	Horizontal
1533.648	30.93	2.33	43.96	46.11	35.41	74.00	-38.59	Pass	Horizontal
4924.000	34.94	6.22	44.60	42.66	39.22	74.00	-34.78	Pass	Horizontal
5836.044	35.78	7.28	44.52	45.47	44.01	74.00	-29.99	Pass	Horizontal
7386.000	36.44	6.78	44.92	42.36	40.66	74.00	-33.34	Pass	Horizontal
9848.000	38.14	7.19	45.53	41.58	41.38	74.00	-32.62	Pass	Horizontal
1273.572	30.40	1.97	44.28	46.77	34.86	74.00	-39.14	Pass	Vertical
1601.472	31.06	2.41	43.88	46.10	35.69	74.00	-38.31	Pass	Vertical
4924.000	34.94	6.22	44.60	44.47	41.03	74.00	-32.97	Pass	Vertical
6219.512	36.02	7.38	44.52	45.25	44.13	74.00	-29.87	Pass	Vertical
7386.000	36.44	6.78	44.92	41.96	40.26	74.00	-33.74	Pass	Vertical
9848.000	38.14	7.19	45.53	41.94	41.74	74.00	-32.26	Pass	Vertical

Remark:
1) Through Pre-scan transmitting mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbpsof rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) ,and then Only the worst case is recorded in the report.
2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading - Correct Factor
Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor
3) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

PHOTOGRAPHS OF TEST SETUP

Test mode No.: AP02



Radiated spurious emission Test Setup-1(Below 30MHz)

Radiated spurious emission Test Setup-2(Below 1G)

Radiated spurious emission Test Setup-3(Above 1G)

Conducted Emissions Test Setup

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32J00230701 for EUT external and internal photos.

*** End of Report ***