TEST REPORT

Product	:	Smart Wi-Fi Plug Mini
Trade mark	:	meross
Model/Type reference	:	MSS110,MSS110S
Serial Number	:	N/A
Report Number	:	EED32L00091801
FCC ID	:	2AMUU-MSS110V2
Date of Issue	:	Jun. 18, 2019
Test Standards	:	47 CFR Part 15Subpart C
Test result	:	PASS

Prepared for:

Chengdu Meross Technology Co., Ltd.
No.1935, Floor 19, Unit 1, Building 7 No.1700 of Tianfu Avenue North, Gaoxin, Chengdu, 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:	Jay Zheng	Compiled by:	Kevin Lan
	Jay Zheng		Kevin Lan
Reviewed by:	Ware Xin	Approved by:	Kevin yang
	Ware Xin		
Date:	Jun. 18, 2019		Check No.:3757521338

CENTRE TESTING INTERNATIONAL GROUP CO.,LTD. CTI Report Seal

2 Version

Version No.	Date	Description
00	Jun. 18, 2019	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	PASS
6dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013	PASS
Power Spectral Density	47 CFR Part 15 Subpart C Section 15.247 (e)	ANSI C63.10-2013	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS
RF Conducted Spurious Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	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

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

Remark:

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

Model No：MSS110，MSS110S

Only the model MSS110 was tested, We the undersigned hereby confirm that any of our production units bearing the following model numbers are identical in circuitry and electrical,mechanical and physical construction; the only differences are the appearance and model no.for trading purpose.

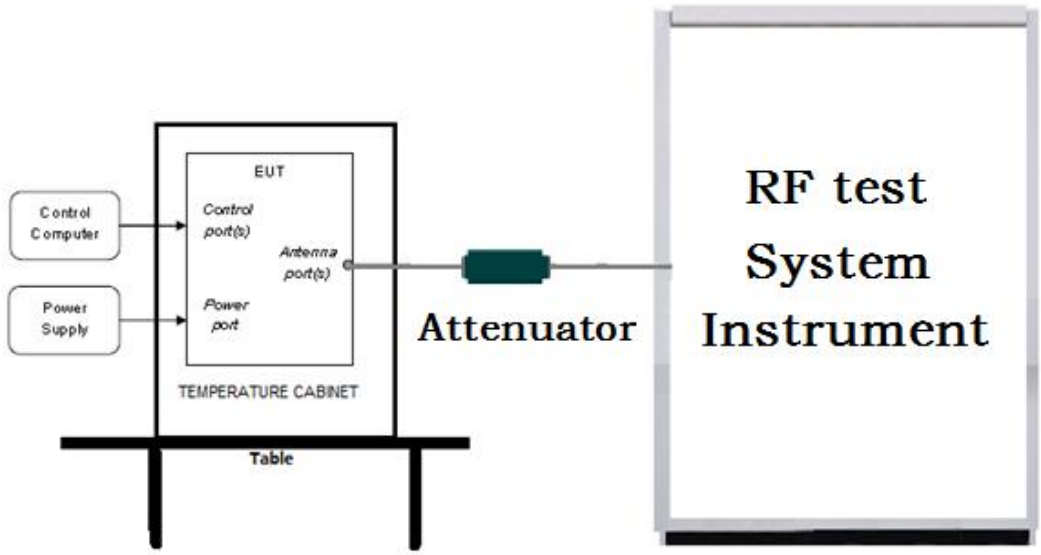
The above appearance is for pattern only.

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:

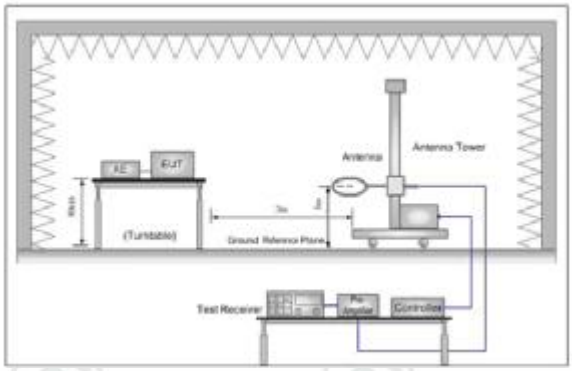


Figure 1. Below 30MHz

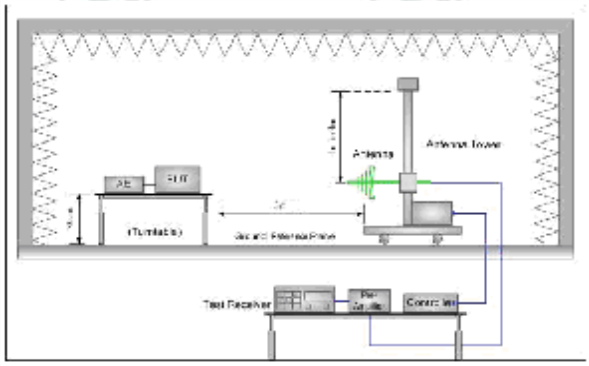


Figure 2. 30MHz to 1GHz

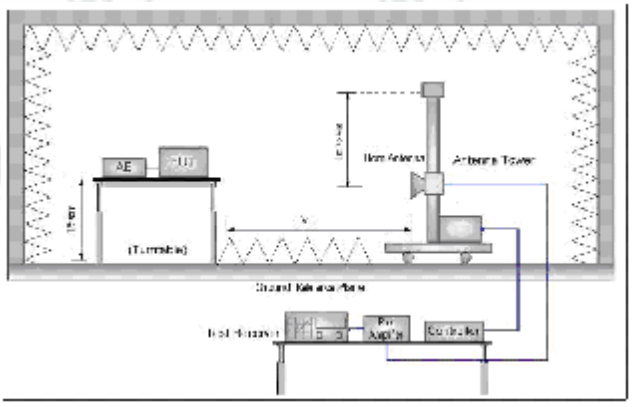
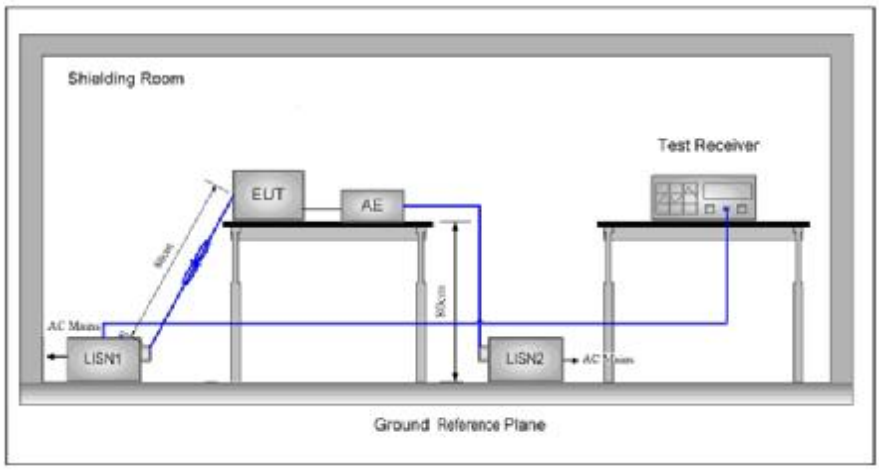


Figure 3. Above 1GHz

5.1.3 For Conducted Emissions test setup

Conducted Emissions setup



5.2 Test Environment

Operating Environment for RF Conducted:	
Temperature:	24.0 °C
Humidity:	55 % RH
Atmospheric Pressure:	101kPa

5.3 Test Condition

Test channel:

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
802.11b/g/n(HT20)	2412MHz ~2462 MHz	Channel 1	Channel 6	Channel11
		2412MHz	2437MHz	2462MHz
802.11n(HT40)	2422MHz ~2452 MHz	Channel 1	Channel 4	Channel7
		2422MHz	2437MHz	2452MHz
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.			

Test mode:

Pre-scan under all rate at lowest channel 1

Mode	**802.11b**				
Data Rate	**1Mbps**	**2Mbps**	**5.5Mbps**	**11Mbps**	
Power(dBm)	10.15	10.19	10.24	10.27	

Mode	**802.11g**							
Data Rate	**6Mbps**	**9Mbps**	**12Mbps**	**18Mbps**	**24Mbps**	**36Mbps**	**48Mbps**	**54Mbps**
Power(dBm)	17.85	17.83	17.80	17.74	17.72	17.54	17.51	17.43

Mode	**802.11n (HT20)**							
Data Rate	**6.5Mbps**	**13Mbps**	**19.5Mbps**	**26Mbps**	**39Mbps**	**52Mbps**	**58.5Mbps**	**65Mbps**
Power(dBm)	16.29	16.22	16.20	16.17	16.15	16.10	16.07	16.05
Mode	**802.11n (HT40)**							
Data Rate	**13.5Mbps**	**27Mbps**	**40.5Mbps**	**54Mbps**	**81Mbps**	**108Mbps**	**121.5Mbps**	**135Mbps**
Power(dBm)	15.01	15.00	14.97	14.91	14.87	14.81	14.79	14.76

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); 13.5Mbps of rate is the worst case of 802.11n(HT40).

6 General Information

6.1 Client Information

Applicant:	Chengdu Meross Technology Co., Ltd.
Address of Applicant:	No.1935, Floor 19, Unit 1, Building 7 No.1700 of Tianfu Avenue North, Gaoxin, Chengdu, China
Manufacturer:	Chengdu Meross Technology Co., Ltd.
Address of Manufacturer:	No.1935, Floor 19, Unit 1, Building 7 No.1700 of Tianfu Avenue North, Gaoxin, Chengdu, China
Factory:	CHENGDU XUGUANG TECHNOLOGY CO., LTD
Address of Factory:	2 Section of Park Road, Longquanyi, Chengdu, China

6.2 General Description of EUT

Product Name:	Smart Wi-Fi Plug Mini
Model No.(EUT):	MSS110,MSS110S
Test model	MSS110
Trade Mark:	meross
EUT Supports Radios application:	Wlan 2.4GHz 802.11b/g/n(HT20&HT40)
Sample Received Date:	Apr. 23, 2019
Sample tested Date:	May. 23, 2019 to Jun. 17, 2019

6.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 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 and HT40): OFDM (64QAM, 16QAM, QPSK, BPSK)
Hardware Version of EUT:	(manufacturer declare)V2.0
Firmware version of EUT:	(manufacturer declare)mss110-us-v2-rc0112
Antenna Type:	PCB antenna
Antenna Gain:	1.5dBi
Test Voltage:	AC 120V, 60Hz

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		

Operation Frequency each of channel(802.11n HT40)					
Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2422MHz	4	2437MHz	7	2452MHz
2	2427MHz	5	2442MHz		
3	2432MHz	6	2447MHz		

6.4 Description of Support Units

The EUT has been tested independently.

6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd
Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China
Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385
No tests were sub-contracted.
FCC 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	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.3dB (30MHz-1GHz)
		4.5dB (1GHz-12.75GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

7 Equipment List

RF test system					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. Date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Signal Generator	Keysight	E8257D	MY53401106	03-01-2019	02-28-2020
Spectrum Analyzer	Keysight	N9010A	MY54510339	03-01-2019	02-28-2020
Signal Generator	Keysight	N5182B	MY53051549	03-01-2019	02-28-2020
High-pass filter	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-09-2019	01-08-2020
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-09-2019	01-08-2020
DC Power	Keysight	E3642A	MY54426035	03-01-2019	02-28-2020
PC-1	Lenovo	R4960d	---	03-01-2019	02-28-2020
BT&WI-FI Automatic control	R&S	OSP120	101374	03-01-2019	02-28-2020
RF control unit	JS Tonscend	JS0806-2	15860006	03-01-2019	02-28-2020
RF control unit	JS Tonscend	JS0806-1	15860004	03-01-2019	02-28-2020
RF control unit	JS Tonscend	JS0806-4	158060007	03-01-2019	02-28-2020
BT&WI-FI Automatic test software	JS Tonscend	JS1120-2	---	03-01-2019	02-28-2020
Temperature/ Humidity Indicator	biaozhi	HM10	1804186	10-12-2018	10-11-2019

Conducted disturbance Test					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Receiver	R&S	ESCI	100435	05-20-2019	05-18-2020
Temperature/ Humidity Indicator	Defu	TH128	/	07-02-2018	07-01-2019
Communication test set	Agilent	E5515C	GB47050534	03-01-2019	02-28-2020
Communication test set	R&S	CMW500	102898	01-18-2019	01-17-2020
LISN	R&S	ENV216	100098	05-08-2019	05-06-2020
LISN	schwarzbeck	NNLK8121	8121-529	05-08-2019	05-06-2020
Voltage Probe	R&S	ESH2-Z3 0299.7810.56	100042	06-13-2017	06-11-2020
Current Probe	R&S	EZ-17 816.2063.03	100106	05-20-2019	05-18-2020
ISN	TESEQ	ISN T800	30297	01-06-2019	01-15-2020
Barometer	changchun	DYM3	1188	07-02-2018	07-01-2019

3M Semi/full-anechoic Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
3M Chamber & Accessory Equipment	TDK	SAC-3	---	06-04-2016 05-24-2019	06-03-2019 05-22-2022
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-401	12-21-2018	12-20-2019
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-618	07-30-2018	07-29-2019
Microwave Preamplifier	Agilent	8449B	3008A02425	08-21-2018	08-20-2019
Microwave Preamplifier	Tonscend	EMC051845SE	980380	01-16-2019	01-15-2020
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1869	04-25-2018	04-23-2021
Horn Antenna	ETS-LINDGREN	3117	00057410	06-05-2018	06-03-2021
Double ridge horn antenna	A.H.SYSTEMS	SAS-574	374	06-05-2018	06-04-2021
Pre-amplifier	A.H.SYSTEMS	PAP-1840-60	6041.6041	08-08-2018	08-07-2019
Loop Antenna	ETS	6502	00071730	06-22-2017	06-21-2019
Spectrum Analyzer	R&S	FSP40	100416	04-28-2019	04-26-2020
Receiver	R&S	ESCI	100435	05-20-2019	05-18-2020
Receiver	R&S	ESCI7	100938-003	11-23-2018	11-22-2019
Multi device Controller	maturo	NCD/070/10711112	---	01-09-2019	01-08-2020
LISN	schwarzbeck	NNBM8125	81251547	05-08-2019	05-06-2020
LISN	schwarzbeck	NNBM8125	81251548	05-08-2019	05-06-2020
Signal Generator	Agilent	E4438C	MY45095744	03-01-2019	02-28-2020
Signal Generator	Keysight	E8257D	MY53401106	03-01-2019	02-28-2020
Temperature/ Humidity Indicator	Shanghai qixiang	HM10	1804298	10-12-2018	10-11-2019
Communication test set	Agilent	E5515C	GB47050534	03-01-2019	02-28-2020
Cable line	Fulai(7M)	SF106	5219/6A	01-09-2019	01-08-2020
Cable line	Fulai(6M)	SF106	5220/6A	01-09-2019	01-08-2020
Cable line	Fulai(3M)	SF106	5216/6A	01-09-2019	01-08-2020
Cable line	Fulai(3M)	SF106	5217/6A	01-09-2019	01-08-2020
Communication test set	R&S	CMW500	104466	01-18-2019	01-17-2020
High-pass filter	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-09-2019	01-08-2020
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-09-2019	01-08-2020
band rejection filter	Sinoscite	FL5CX01CA09CL12-0395-001	---	01-09-2019	01-08-2020
band rejection filter	Sinoscite	FL5CX01CA08CL12-0393-001	---	01-09-2019	01-08-2020
band rejection filter	Sinoscite	FL5CX02CA04CL12-0396-002	---	01-09-2019	01-08-2020
band rejection filter	Sinoscite	FL5CX02CA03CL12-0394-001	---	01-09-2019	01-08-2020

3M full-anechoic Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
RSE Automatic test software	JS Tonscend	JS36-RSE	10166	06-20-2018 06-18-2019	06-19-2019 06-17-2020
Receiver	Keysight	N9038A	MY57290136	03-27-2019	03-25-2020
Spectrum Analyzer	Keysight	N9020B	MY57111112	03-27-2019	03-25-2020
Spectrum Analyzer	Keysight	N9030B	MY57140871	03-27-2019	03-25-2020
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-075	04-25-2018	04-23-2021
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-076	04-25-2018	04-23-2021
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	04-25-2018	04-23-2021
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-25-2018	04-23-2021
Horn Antenna	Schwarzbeck	BBHA 9170	9170-829	04-25-2018	04-23-2021
Communication Antenna	Schwarzbeck	CLSA 0110L	1014	02-14-2019	02-13-2020
Biconical antenna	Schwarzbeck	VUBA 9117	9117-381	04-25-2018	04-23-2021
Horn Antenna	ETS-LINDGREN	3117	00057407	07-10-2018	07-08-2021
Preamplifier	EMCI	EMC184055SE	980596	06-20-2018	06-19-2019
Communication test set	R&S	CMW500	102898	01-18-2019	01-17-2020
Preamplifier	EMCI	EMC001330	980563	06-20-2018	06-19-2019
Preamplifier	Agilent	8449B	3008A02425	08-21-2018	08-20-2019
Temperature/ Humidity Indicator	biaozhi	GM1360	EE1186631	05-01-2019	04-30-2020
Signal Generator	KEYSIGHT	E8257D	MY53401106	03-01-2019	02-28-2020
Fully Anechoic Chamber	TDK	FAC-3	---	01-17-2018	01-15-2021
Filter bank	JS Tonscend	JS0806-F	188060094	04-10-2018	04-08-2021
Cable line	Times	SFT205-NMSM-2.50M	394812-0001	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-2.50M	394812-0002	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-2.50M	394812-0003	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-2.50M	393495-0001	01-09-2019	01-08-2020
Cable line	Times	EMC104-NMNM-1000	SN160710	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-3.00M	394813-0001	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMNM-1.50M	381964-0001	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-7.00M	394815-0001	01-09-2019	01-08-2020
Cable line	Times	HF160-KMKM-3.00M	393493-0001	01-09-2019	01-08-2020

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:

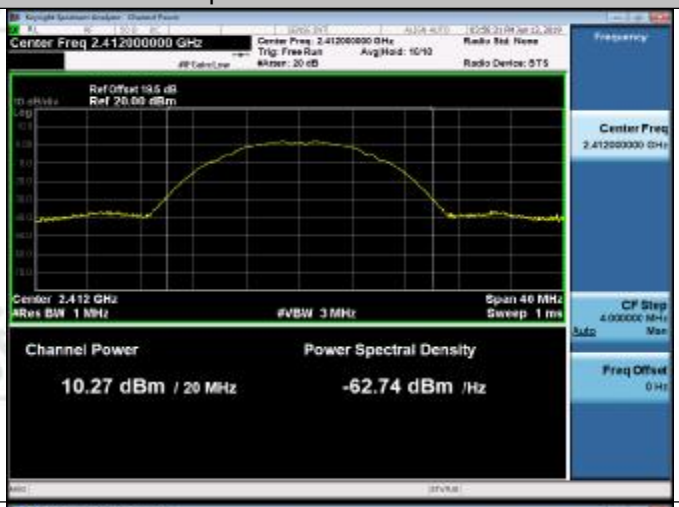
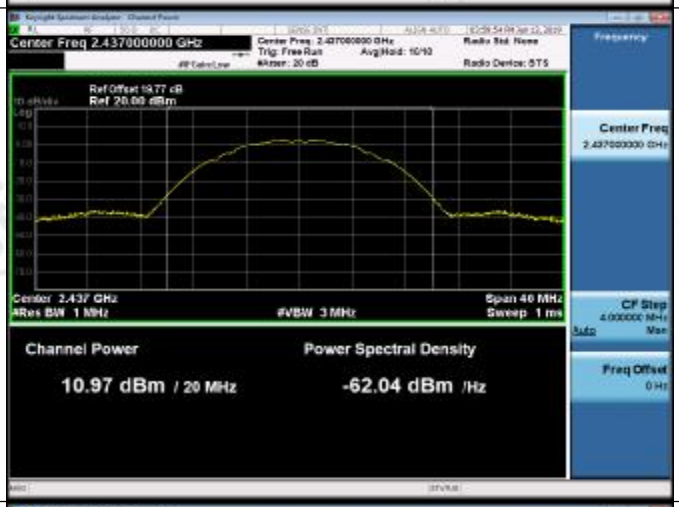
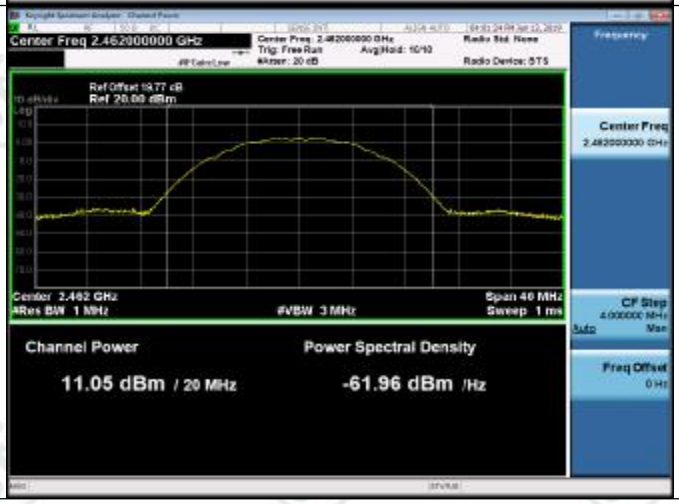
Test Requirement	Test method	Test item	Verdict	Note
Part15C Section 15.247 (b)(3)	ANSI C63.10	Conducted Peak Output Power	PASS	Appendix A)
Part15C Section 15.247 (a)(2)	ANSI C63.10	6dB Occupied Bandwidth	PASS	Appendix B)
Part15C Section 15.247(d)	ANSI C63.10	Band-edge for RF Conducted Emissions	PASS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

Appendix A): Conducted Peak Output Power

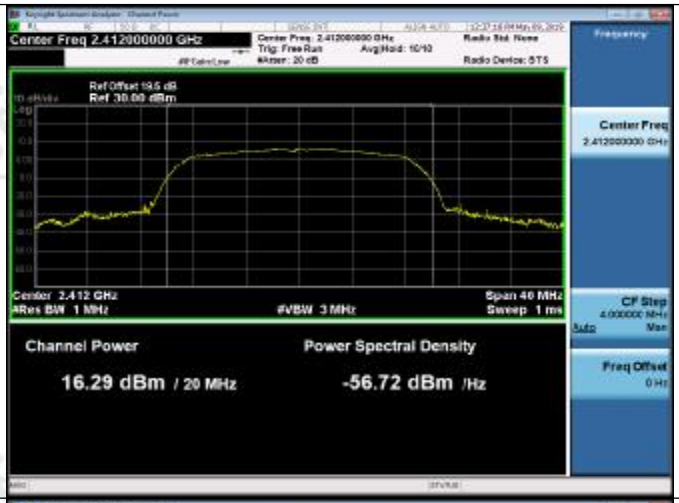
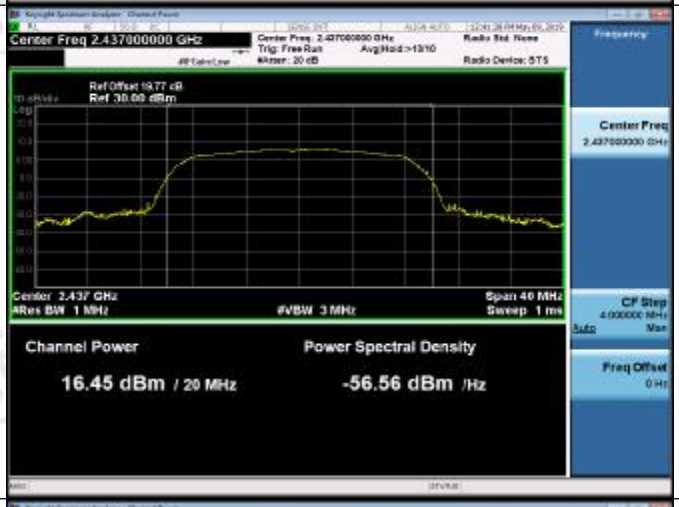
Result Table

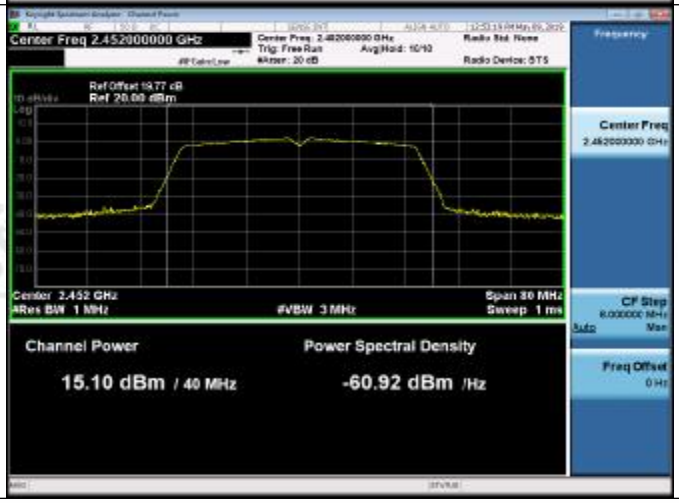
Mode	Channel	Conducted Peak Output Power [dBm]	Verdict
11B	LCH	10.27	PASS
11B	MCH	10.97	PASS
11B	HCH	11.05	PASS
11G	LCH	17.85	PASS
11G	MCH	17.96	PASS
11G	HCH	17.4	PASS
11N20SISO	LCH	16.29	PASS
11N20SISO	MCH	16.45	PASS
11N20SISO	HCH	16.59	PASS
11N40SISO	LCH	15.01	PASS
11N40SISO	MCH	15.11	PASS
11N40SISO	HCH	15.1	PASS

Test Graph

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

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

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

11N40SISO/LCH			
11N40SISO/MCH			
11N40SISO/HCH			

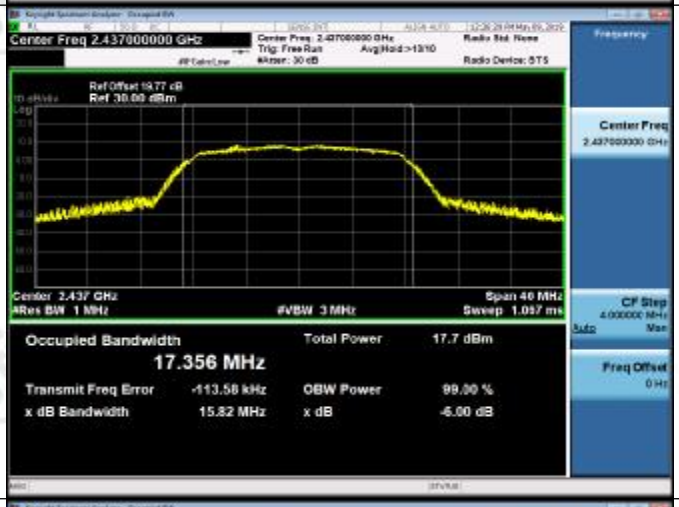
Appendix B): 6dB Occupied Bandwidth

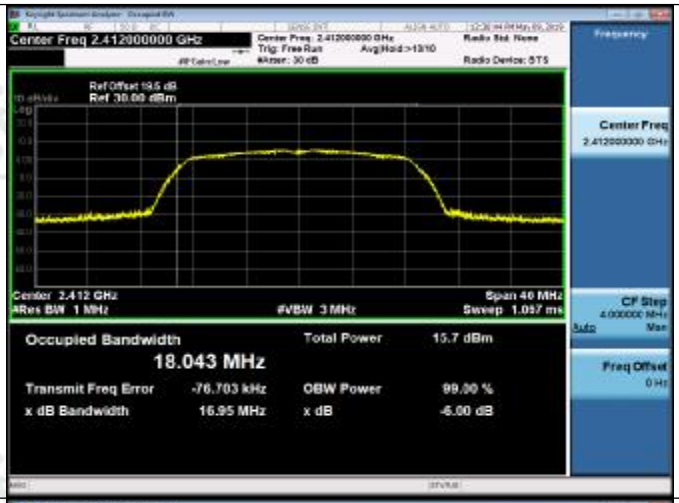
Result Table

Mode	Channel	6dB Bandwidth [MHz]	99% OBW [MHz]	Verdict
11B	LCH	9.667	14.722	PASS
11B	MCH	9.620	14.670	PASS
11B	HCH	9.669	14.676	PASS
11G	LCH	15.70	17.448	PASS
11G	MCH	15.82	17.356	PASS
11G	HCH	15.71	17.418	PASS
11N20SISO	LCH	16.95	18.043	PASS
11N20SISO	MCH	16.94	18.077	PASS
11N20SISO	HCH	16.95	18.061	PASS
11N40SISO	LCH	35.47	36.076	PASS
11N40SISO	MCH	35.36	36.042	PASS
11N40SISO	HCH	35.38	36.016	PASS

Test Graph

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

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

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

11N40SISO/LCH			
11N40SISO/MCH			
11N40SISO/HCH			

Appendix C): Band-edge for RF Conducted Emissions

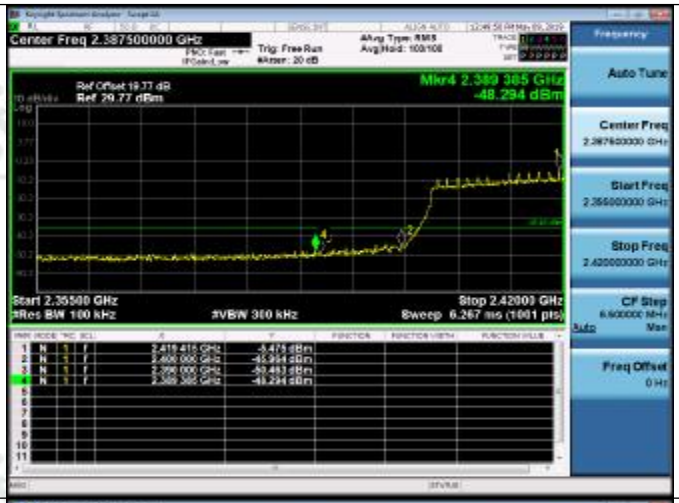
Result Table

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-2.308	-49.997	-32.31	PASS
11B	HCH	-1.694	-49.481	-31.69	PASS
11G	LCH	-0.183	-49.225	-30.18	PASS
11G	HCH	-0.610	-48.063	-30.61	PASS
11N20SISO	LCH	-1.387	-49.596	-31.39	PASS
11N20SISO	HCH	-1.296	-48.422	-31.3	PASS
11N40SISO	LCH	-5.475	-48.294	-35.48	PASS
11N40SISO	HCH	-5.626	-49.544	-35.63	PASS

Test Graph

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

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

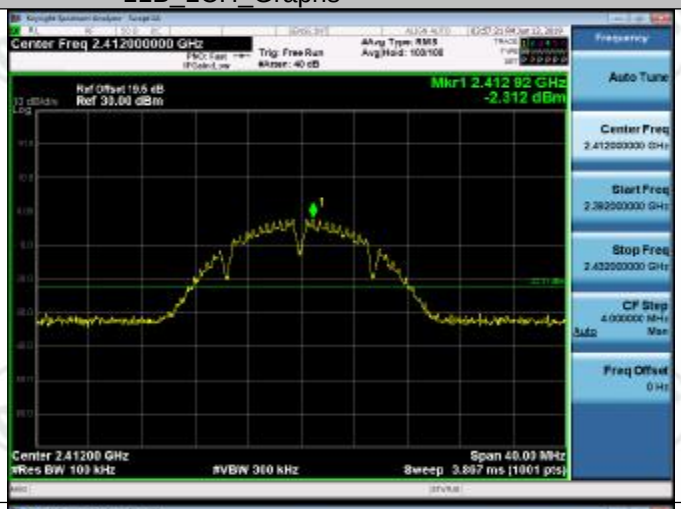
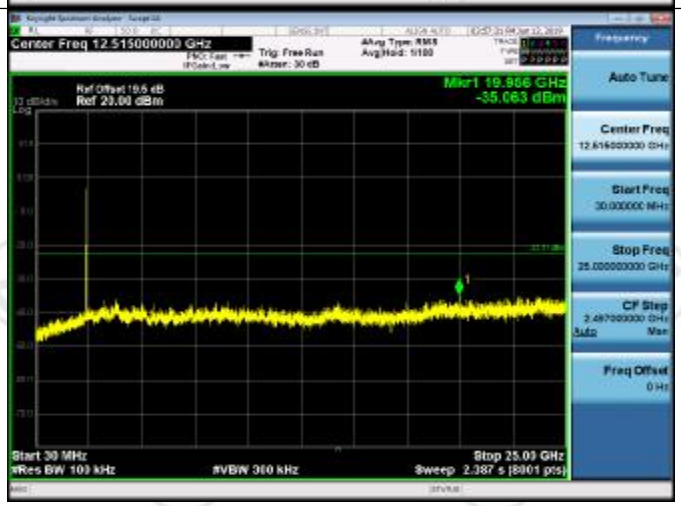
11N40SISO/LCH			
11N40SISO/HCH			

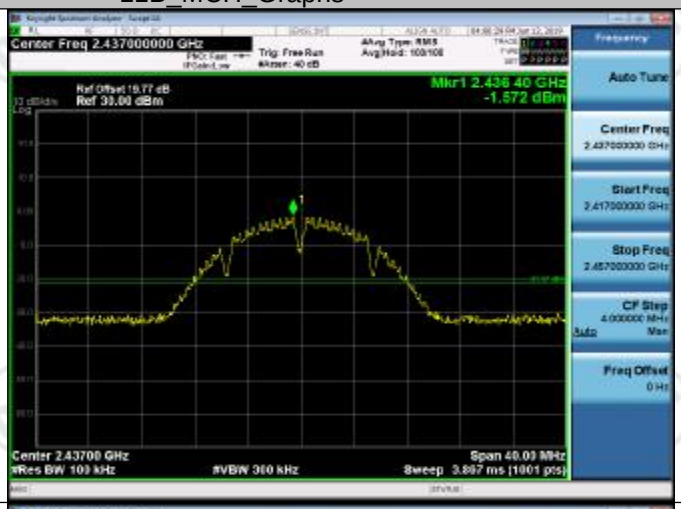
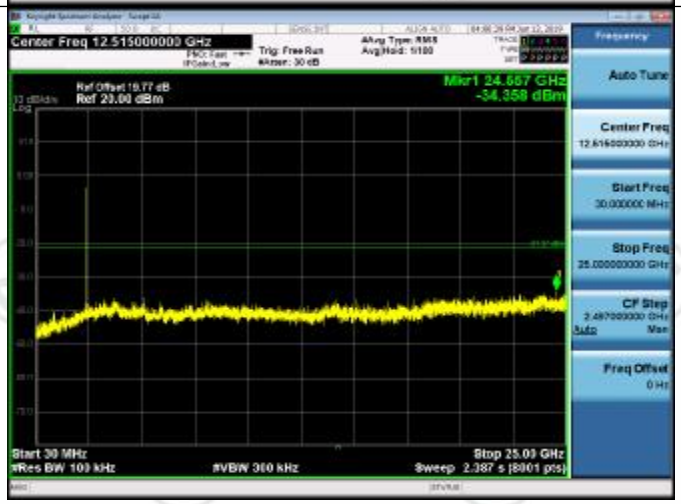
Appendix D): RF Conducted Spurious Emissions

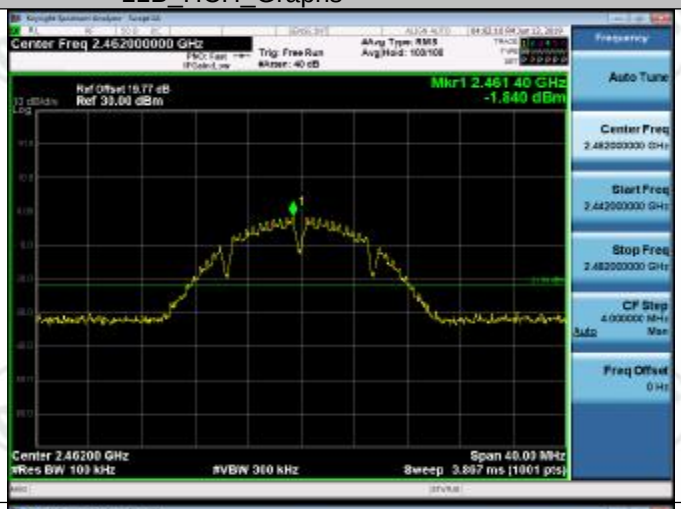
Result Table

Mode	Channel	Pref [dBm]	Puw[dBm]	Verdict
11B	LCH	-2.312	<Limit	PASS
11B	MCH	-1.572	<Limit	PASS
11B	HCH	-1.84	<Limit	PASS
11G	LCH	-0.362	<Limit	PASS
11G	MCH	0.159	<Limit	PASS
11G	HCH	-0.42	<Limit	PASS
11N20SISO	LCH	-1.41	<Limit	PASS
11N20SISO	MCH	-1.366	<Limit	PASS
11N20SISO	HCH	-0.848	<Limit	PASS
11N40SISO	LCH	-5.781	<Limit	PASS
11N40SISO	MCH	-5.221	<Limit	PASS
11N40SISO	HCH	-5.589	<Limit	PASS

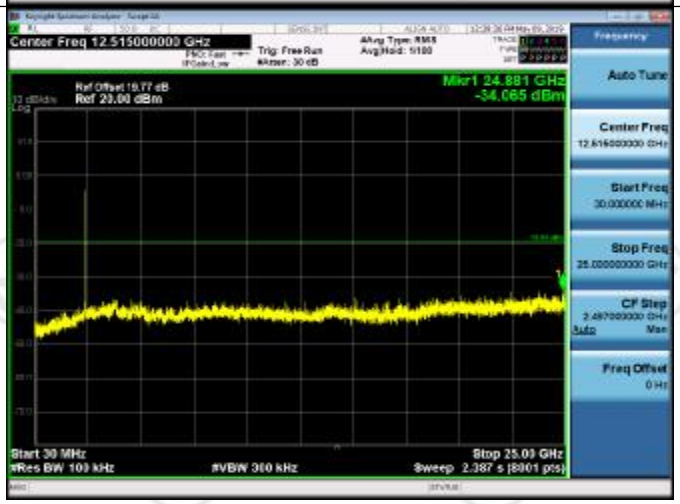
Test Graph

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

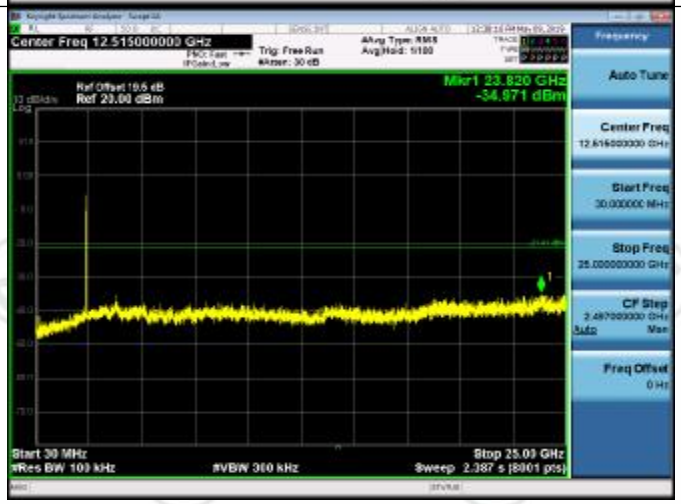
11B_MCH_Graphs	
Pref/11B/MCH	
Puw/11B/MCH	

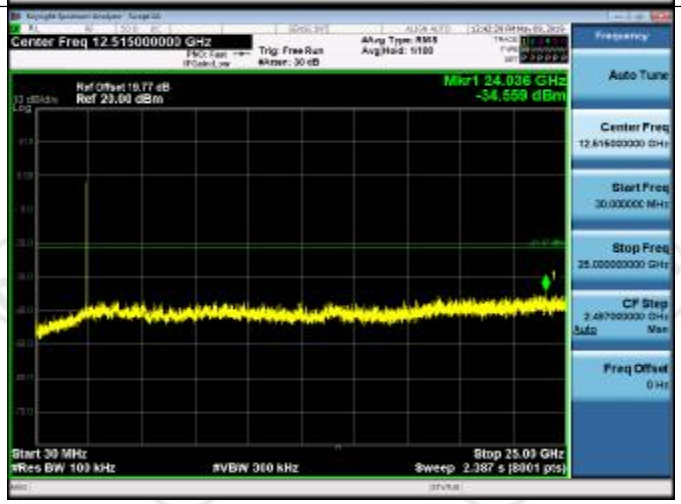
11B_HCH_Graphs	
Pref/11B/HCH	
Puw/11B/HCH	

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

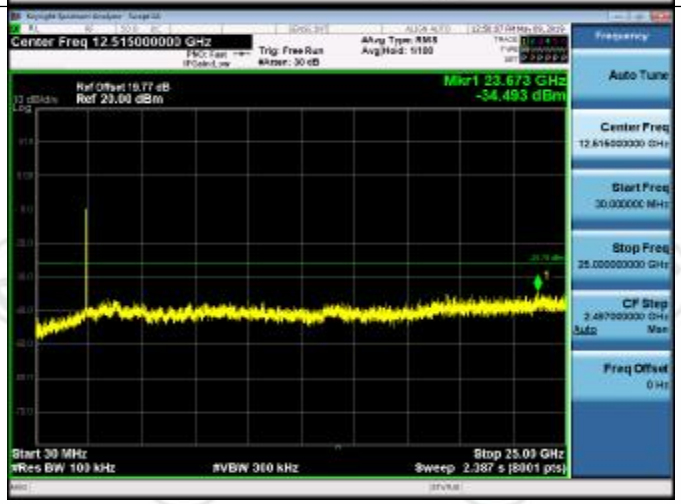
11G_MCH_Graphs	
Pref/11G/MCH	
Puw/11G/MCH	

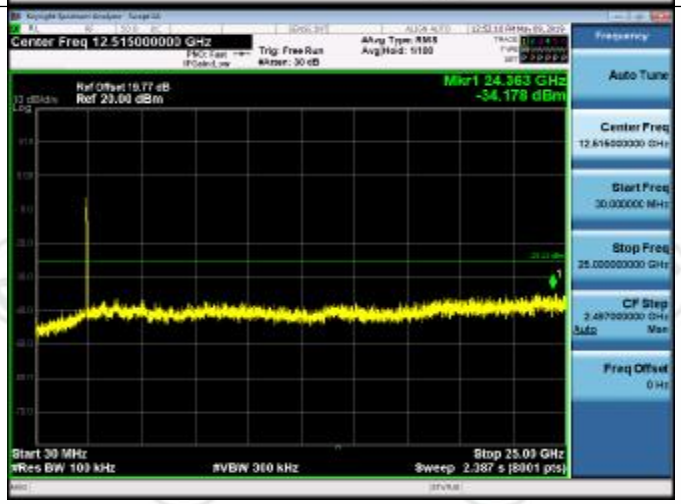
11G_HCH_Graphs	
Pref/11G/HCH	
Puw/11G/HCH	

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	

11N40SISO_LCH_Graphs	
Pref/11N40SISO/LCH	
Puw/11N40SISO/LCH	

11N40SISO_MCH_Graphs	
Pref/11N40SISO/MCH	
Puw/11N40SISO/MCH	

11N40SISO_HCH_Graphs	
Pref/11N40SISO/HCH	
Puw/11N40SISO/HCH	

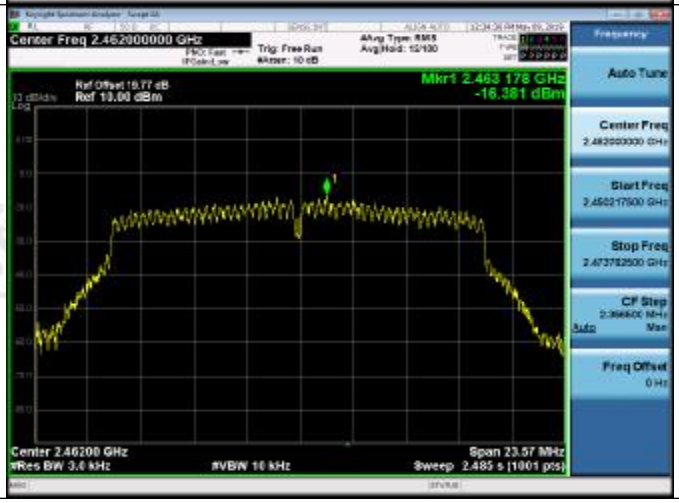
Appendix E): Power Spectral Density

Result Table

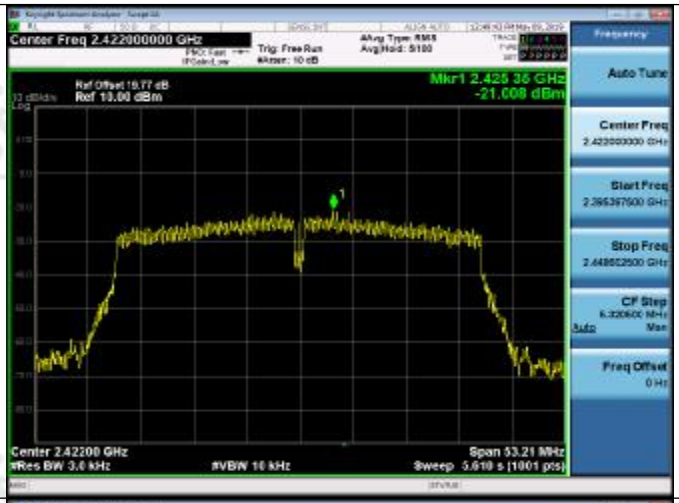
Mode	Channel	Power Spectral Density [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	LCH	-16.878	8	PASS
11B	MCH	-16.789	8	PASS
11B	HCH	-17.429	8	PASS
11G	LCH	-15.474	8	PASS
11G	MCH	-16.058	8	PASS
11G	HCH	-16.381	8	PASS
11N20SISO	LCH	-17.057	8	PASS
11N20SISO	MCH	-16.907	8	PASS
11N20SISO	HCH	-17.314	8	PASS
11N40SISO	LCH	-21.008	8	PASS
11N40SISO	MCH	-21.559	8	PASS
11N40SISO	HCH	-22.143	8	PASS

Test Graph

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

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

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

11N40SISO/LCH			
11N40SISO/MCH			
11N40SISO/HCH			

Appendix F): Antenna Requirement

15.203 requirement:

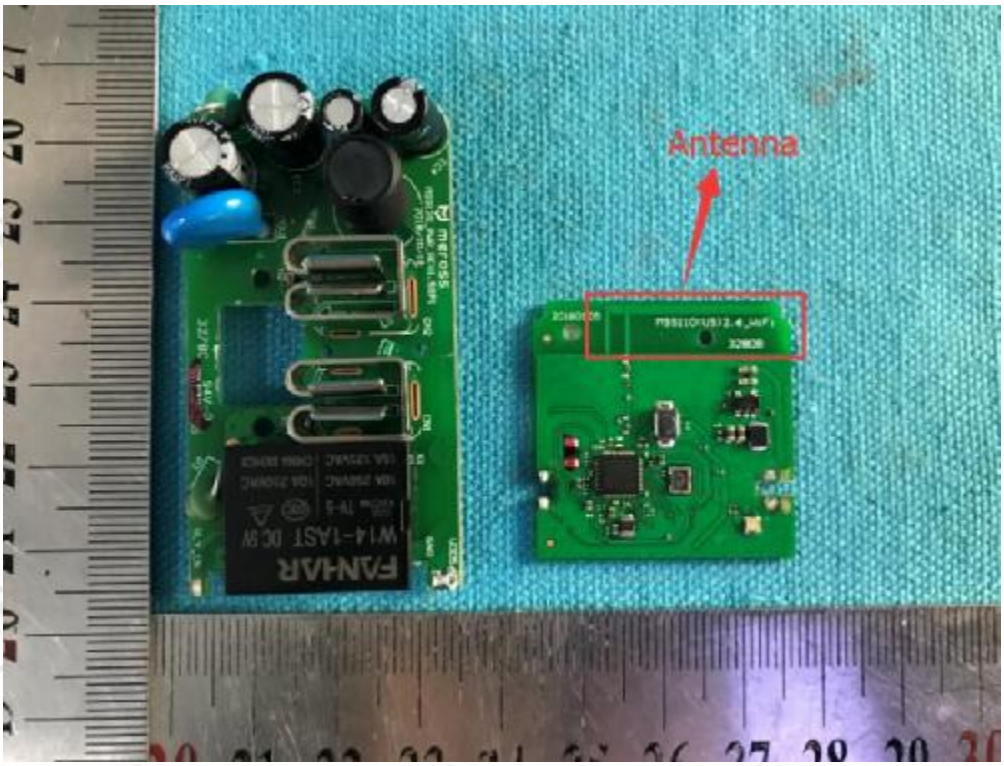
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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 PCB antenna and no consideration of replacement. The best case gain of the antenna is 1.5dBi.



Appendix G): AC Power Line Conducted Emission

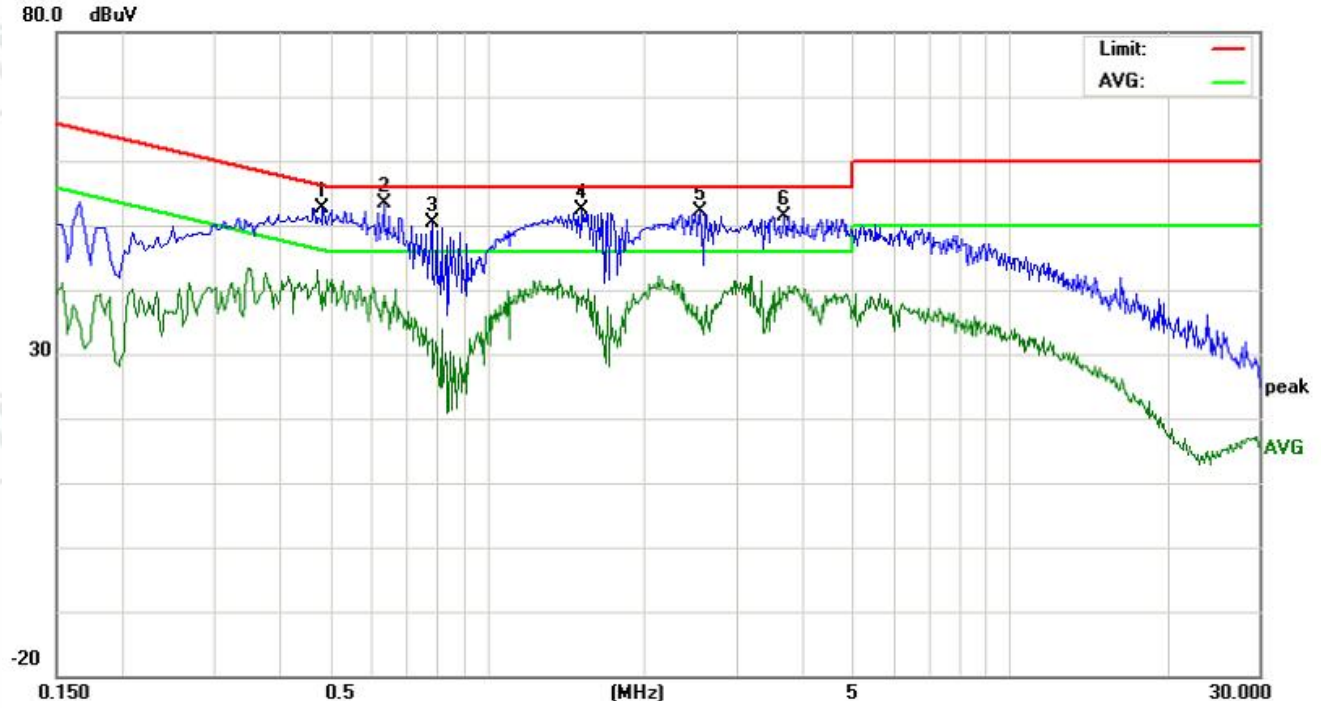
<table>
<tr><td>Test Procedure:</td><td>Test frequency range :150KHz-30MHz
1)The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. 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><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBμV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></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>
<tr><td>Test Ambient:</td><td>Temp.: 22°C</td><td>Humid.: 53%</td><td>Press.: 101kPa</td></tr>
</table>

Measurement Data

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

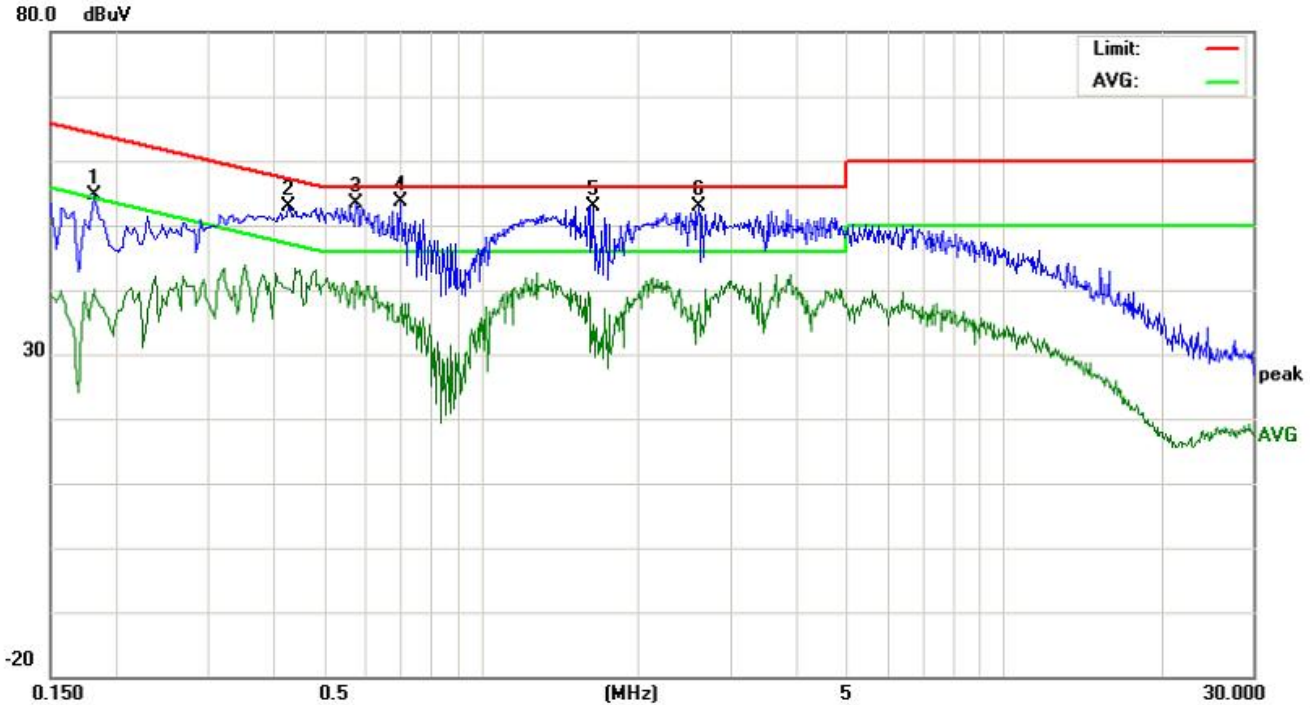
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

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	0.4860	42.83	39.42	28.12	9.89	52.72	49.31	38.01	56.24	46.24	-6.93	-8.23	P	
2	0.6340	43.45	38.50	27.70	9.97	53.42	48.47	37.67	56.00	46.00	-7.53	-8.33	P	
3	0.7860	40.51	34.40	19.84	9.80	50.31	44.20	29.64	56.00	46.00	-11.80	-16.36	P	
4	1.5180	42.50	37.93	27.04	9.76	52.26	47.69	36.80	56.00	46.00	-8.31	-9.20	P	
5	2.5620	42.48	36.43	21.77	9.72	52.20	46.15	31.49	56.00	46.00	-9.85	-14.51	P	
6	3.7180	41.58	37.99	28.25	9.73	51.31	47.72	37.98	56.00	46.00	-8.28	-8.02	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	0.1819	44.72	38.70	27.92	9.91	54.63	48.61	37.83	64.39	54.39	-15.78	-16.56	P	
2	0.4300	42.94	39.87	28.23	9.89	52.83	49.76	38.12	57.25	47.25	-7.49	-9.13	P	
3	0.5780	43.29	39.87	29.89	10.02	53.31	49.89	39.91	56.00	46.00	-6.11	-6.09	P	
4	0.7019	43.92	37.51	26.07	9.82	53.74	47.33	35.89	56.00	46.00	-8.67	-10.11	P	
5	1.6380	43.22	37.15	23.01	9.75	52.97	46.90	32.76	56.00	46.00	-9.10	-13.24	P	
6	2.6140	43.08	36.84	22.63	9.72	52.80	46.56	32.35	56.00	46.00	-9.44	-13.65	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.

Appendix H): 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:

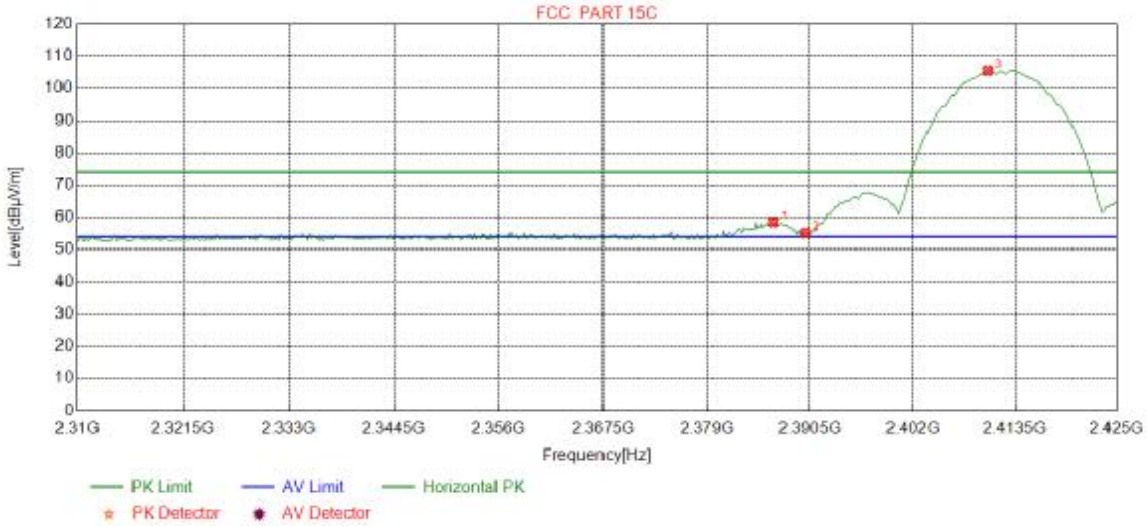
Frequency	Limit (dBμV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

Test Ambient:	Temp.: 23°C	Humid.: 56%	Press.: 101kPa

Test plot as follows:

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2412
Remark:	Peak		

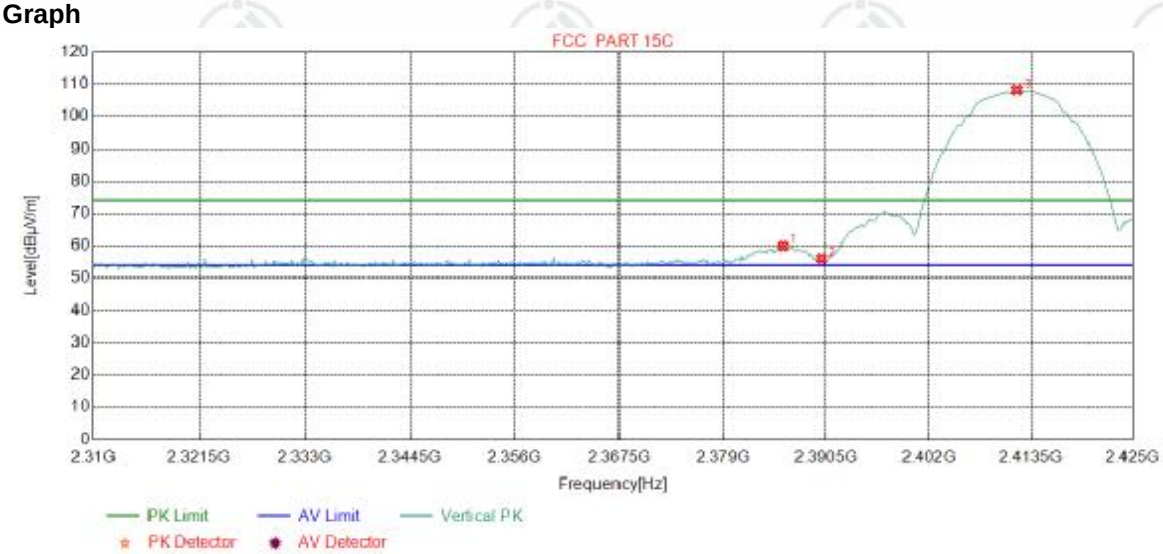
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2386.4268	32.24	13.40	-42.44	55.28	58.48	74.00	15.52	Pass	Horizontal
2	2390.0000	32.25	13.37	-42.44	51.95	55.13	74.00	18.87	Pass	Horizontal
3	2410.4631	32.27	13.35	-42.43	102.21	105.40	74.00	-31.40	Pass	Horizontal

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2412
Remark:	Peak		

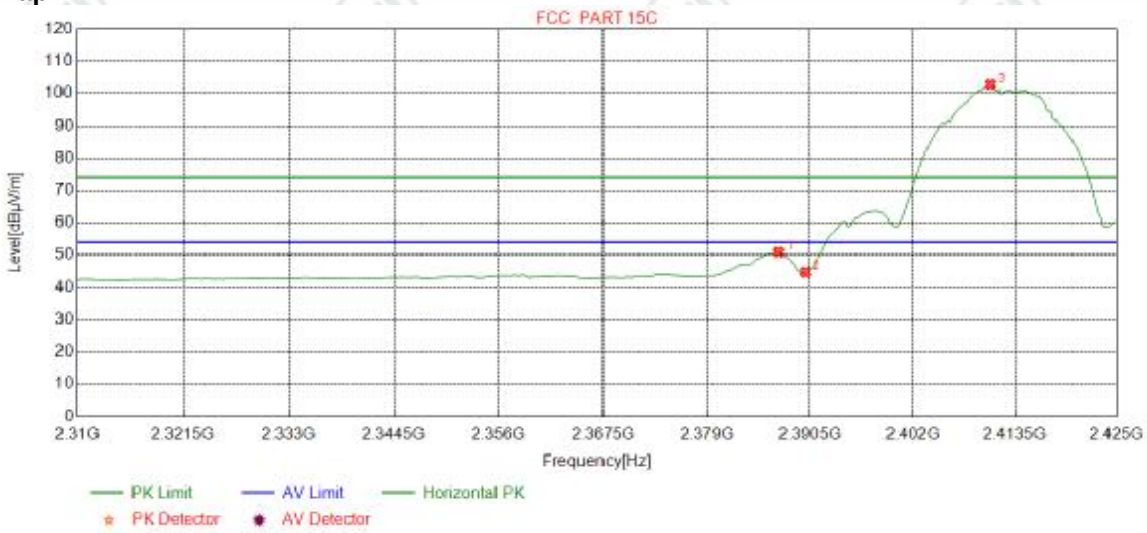
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2385.7071	32.24	13.41	-42.44	56.71	59.92	74.00	14.08	Pass	Vertical
2	2390.0000	32.25	13.37	-42.44	52.86	56.04	74.00	17.96	Pass	Vertical
3	2411.9024	32.28	13.35	-42.43	105.03	108.23	74.00	-34.23	Pass	Vertical

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2412
Remark:	Average		

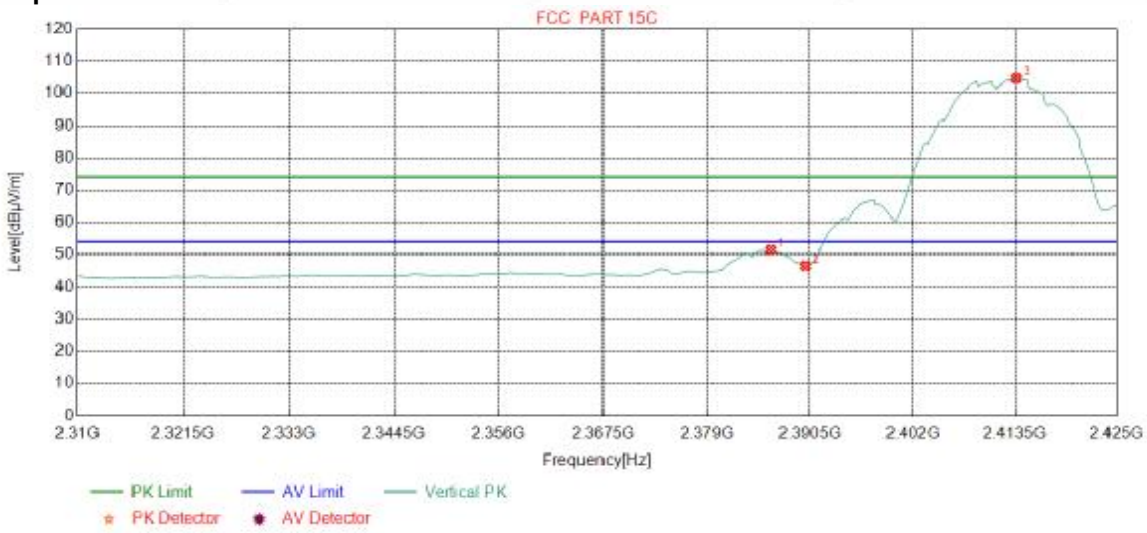
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2387.0025	32.24	13.40	-42.44	47.77	50.97	54.00	3.03	Pass	Horizontal
2	2390.0000	32.25	13.37	-42.44	41.51	44.69	54.00	9.31	Pass	Horizontal
3	2410.7509	32.28	13.35	-42.43	99.59	102.79	54.00	-48.79	Pass	Horizontal

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2412
Remark:	Average		

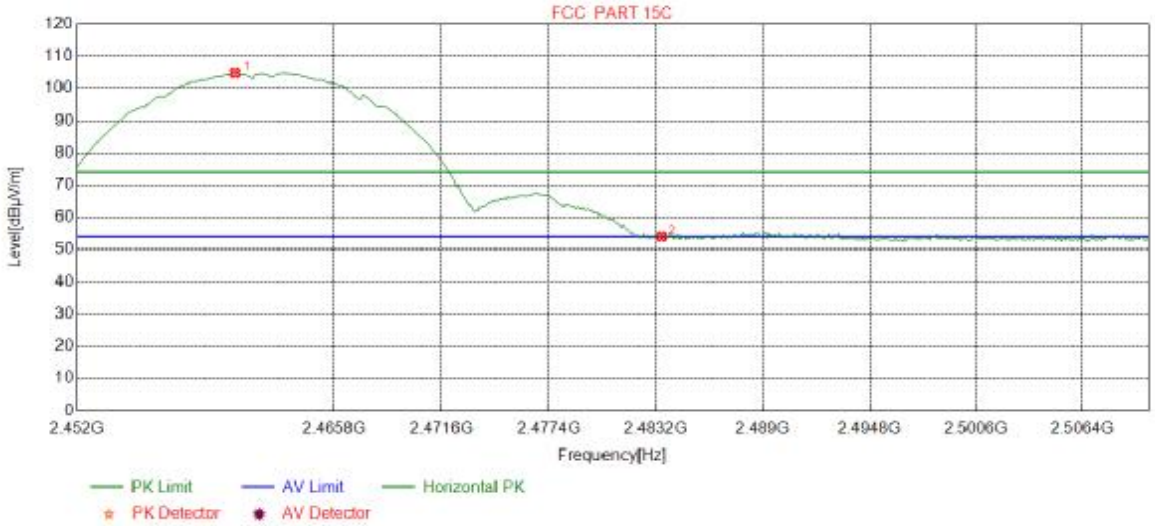
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2386.1389	32.24	13.40	-42.44	48.28	51.48	54.00	2.52	Pass	Vertical
2	2390.0000	32.25	13.37	-42.44	43.36	46.54	54.00	7.46	Pass	Vertical
3	2413.6295	32.28	13.36	-42.43	101.46	104.67	54.00	-50.67	Pass	Vertical

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2462
Remark:	Peak		

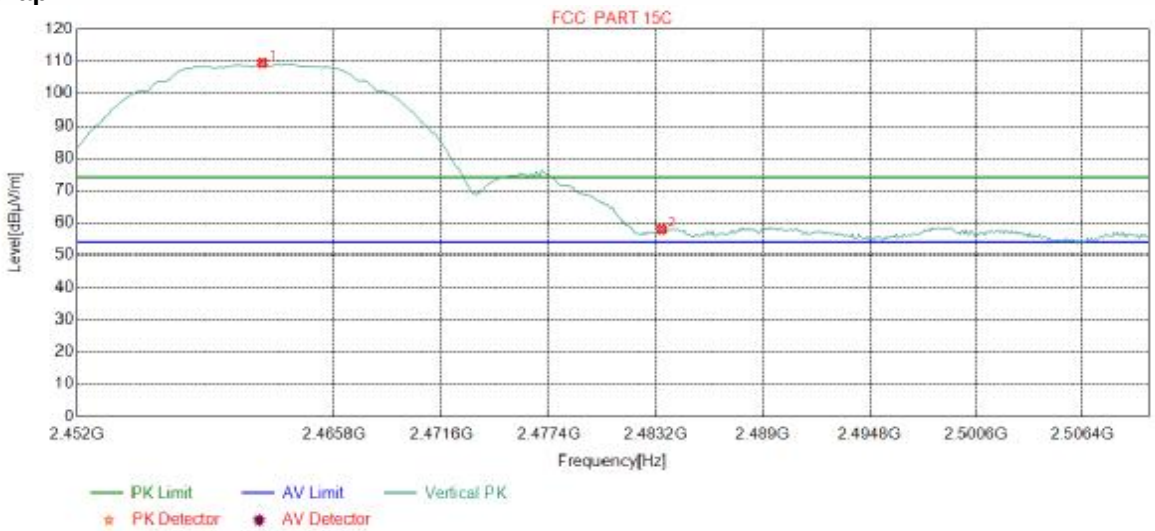
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2460.4931	32.34	13.48	-42.40	101.30	104.72	74.00	-30.72	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	50.67	54.03	74.00	19.97	Pass	Horizontal

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2462
Remark:	Peak		

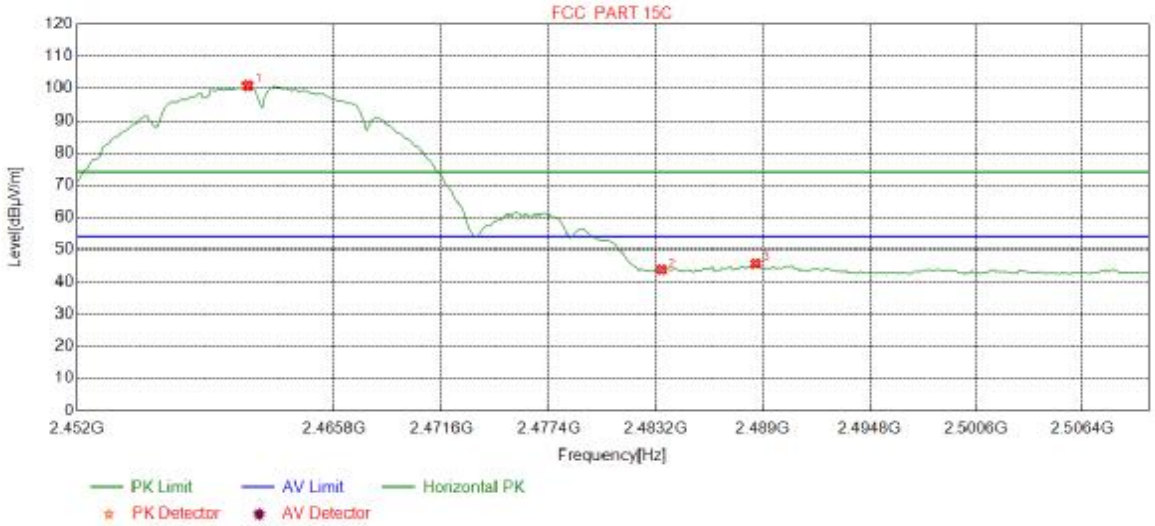
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2461.9449	32.35	13.48	-42.41	106.10	109.52	74.00	-35.52	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	54.67	58.03	74.00	15.97	Pass	Vertical

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2462
Remark:	Average		

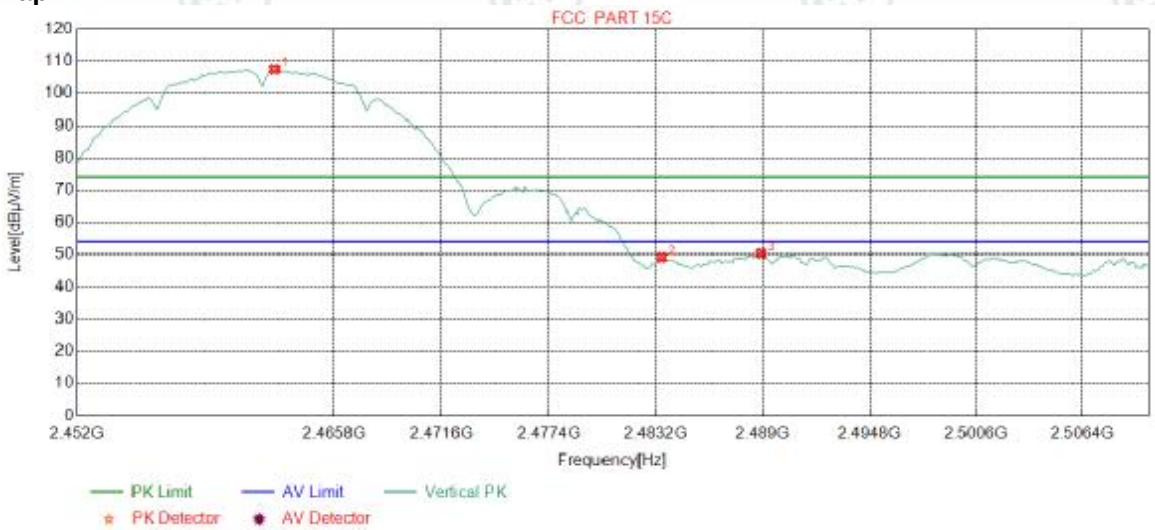
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2461.1464	32.35	13.48	-42.41	97.36	100.78	54.00	-46.78	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	40.40	43.76	54.00	10.24	Pass	Horizontal
3	2488.5857	32.38	13.35	-42.39	42.33	45.67	54.00	8.33	Pass	Horizontal

Mode:	802.11 b(11Mbps) Transmitting	Channel:	2462
Remark:	Average		

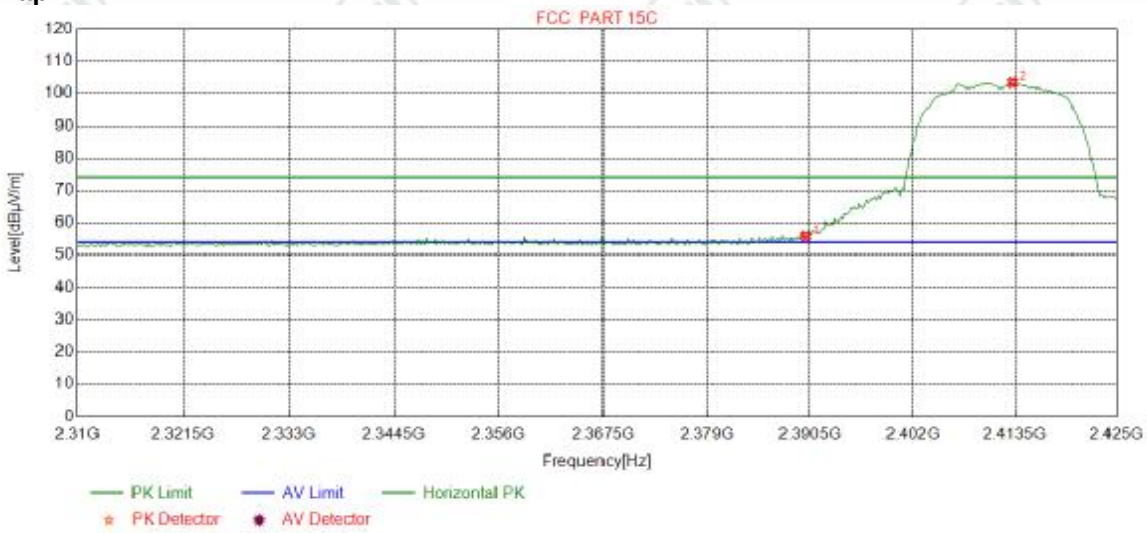
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2462.5982	32.35	13.47	-42.41	104.05	107.46	54.00	-53.46	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	45.82	49.18	54.00	4.82	Pass	Vertical
3	2488.8761	32.38	13.35	-42.39	47.02	50.36	54.00	3.64	Pass	Vertical

Mode:	802.11 g(6Mbps) Transmitting	Channel:	2412
Remark:	Peak		

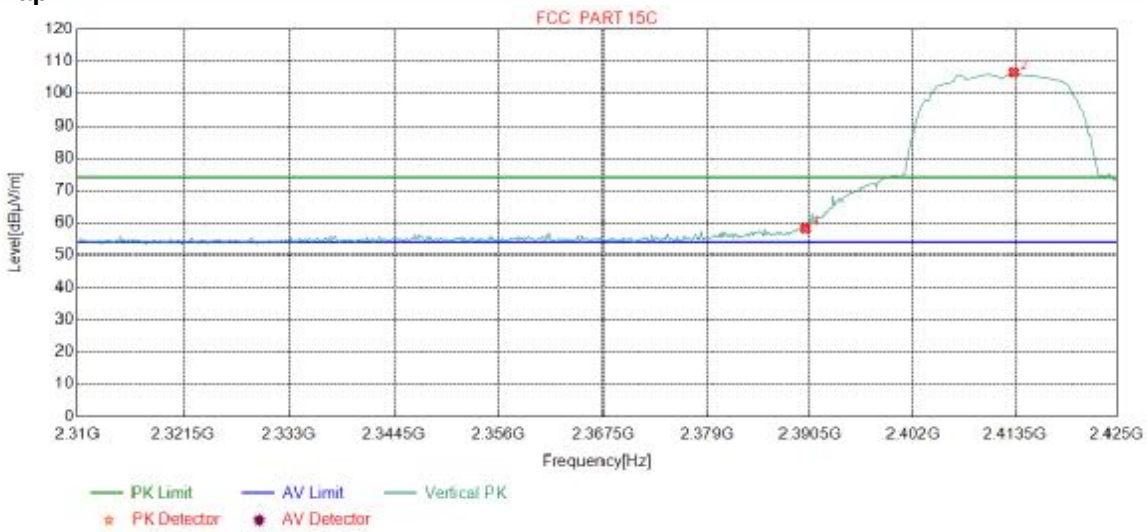
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	52.69	55.87	74.00	18.13	Pass	Horizontal
2	2413.1977	32.28	13.36	-42.43	100.10	103.31	74.00	-29.31	Pass	Horizontal

Mode:	802.11 g(6Mbps) Transmitting	Channel:	2412
Remark:	Peak		

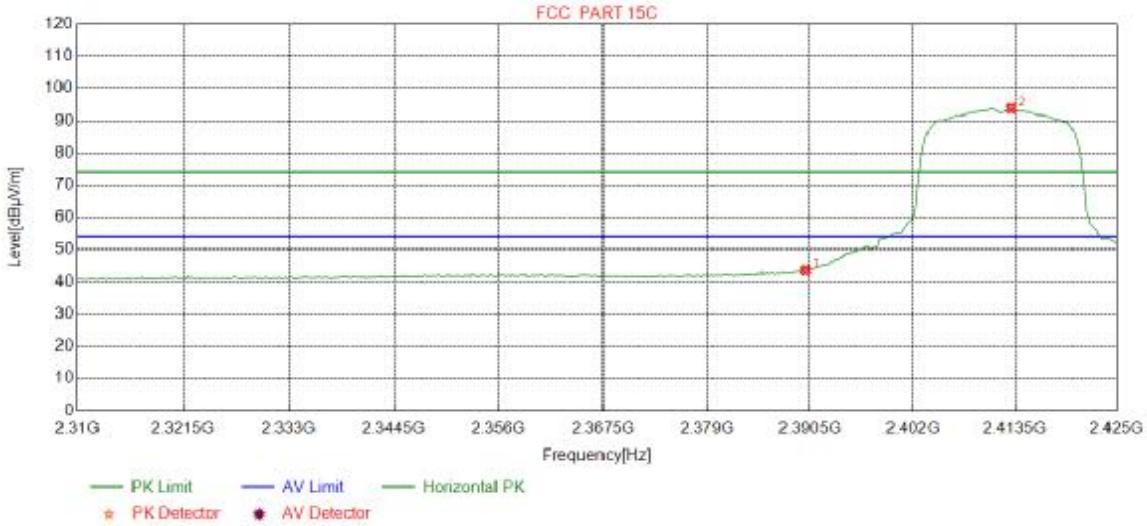
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	55.13	58.31	74.00	15.69	Pass	Vertical
2	2413.3417	32.28	13.36	-42.43	103.30	106.51	74.00	-32.51	Pass	Vertical

Mode:	802.11 g(6Mbps) Transmitting	Channel:	2412
Remark:	Average		

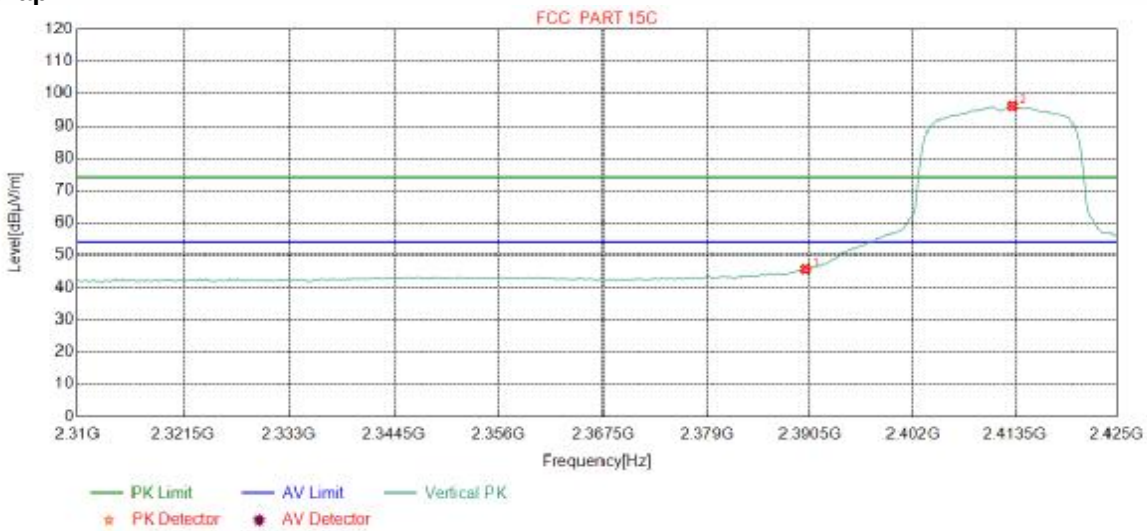
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	40.39	43.57	54.00	10.43	Pass	Horizontal
2	2413.0538	32.28	13.36	-42.43	90.60	93.81	54.00	-39.81	Pass	Horizontal

Mode:	802.11 g(6Mbps) Transmitting	Channel:	2412
Remark:	Average		

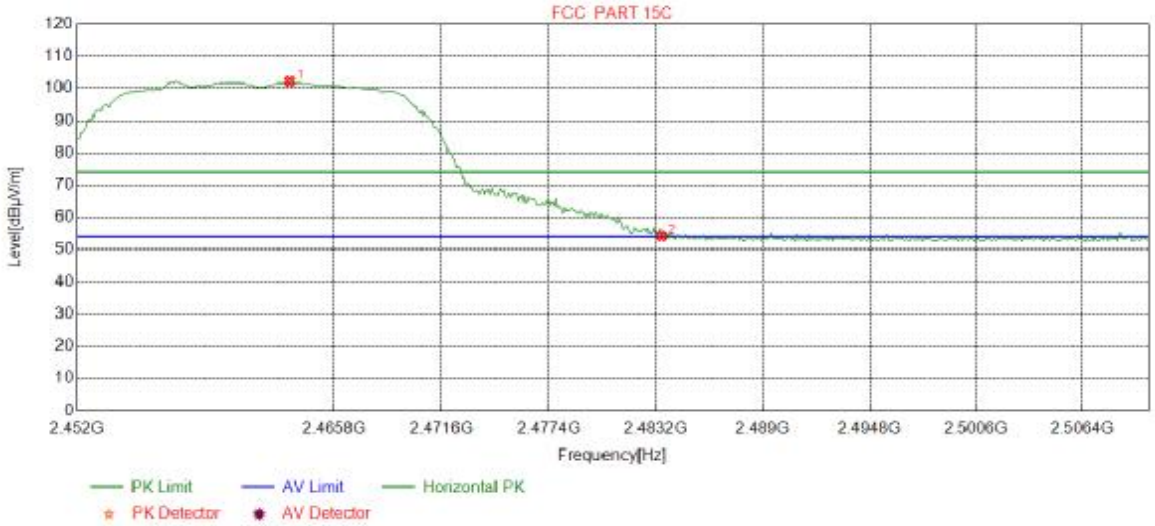
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	42.46	45.64	54.00	8.36	Pass	Vertical
2	2413.1977	32.28	13.36	-42.43	92.90	96.11	54.00	-42.11	Pass	Vertical

Mode:	802.11 g(6Mbps) Transmitting	Channel:	2462
Remark:	Peak		

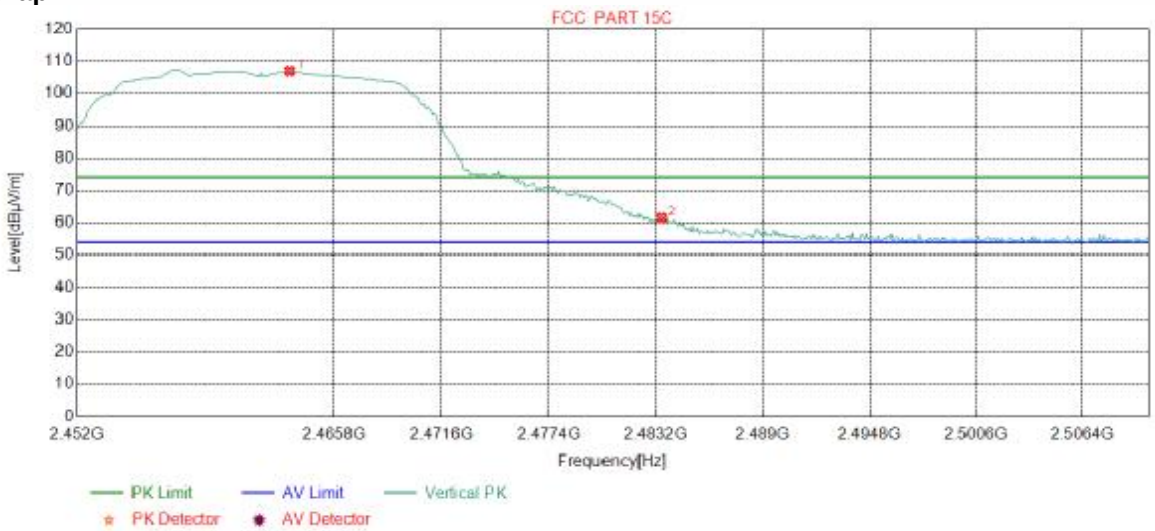
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2463.3967	32.35	13.47	-42.41	98.78	102.19	74.00	-28.19	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	50.82	54.18	74.00	19.82	Pass	Horizontal

Mode:	802.11 g(6Mbps) Transmitting	Channel:	2462
Remark:	Peak		

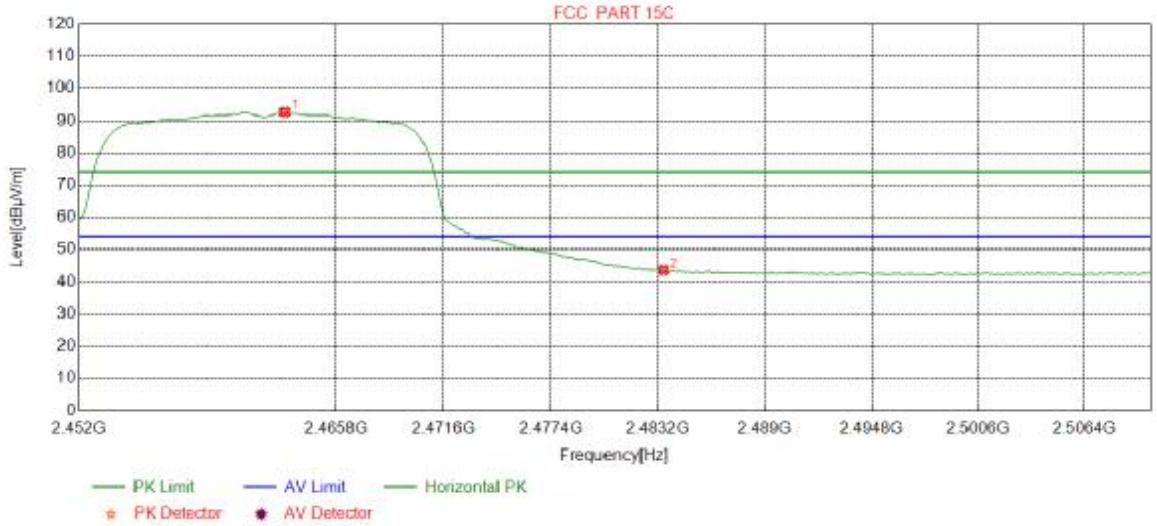
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2463.3967	32.35	13.47	-42.41	103.50	106.91	74.00	-32.91	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	58.19	61.55	74.00	12.45	Pass	Vertical

Mode:	802.11 g(6Mbps) Transmitting	Channel:	2462
Remark:	Average		

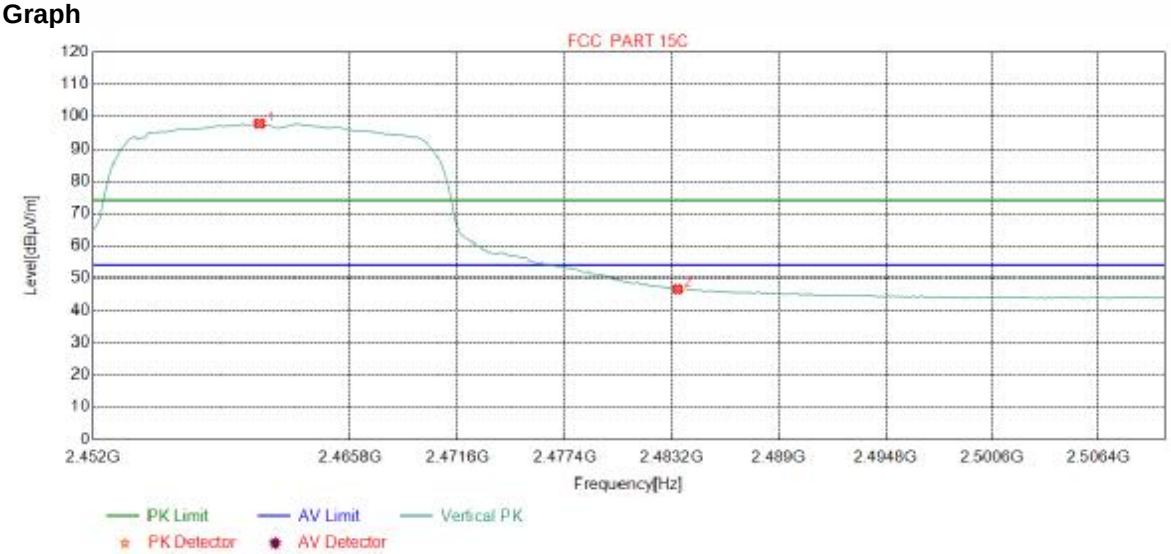
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2463.0338	32.35	13.47	-42.41	89.22	92.63	54.00	-38.63	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	40.27	43.63	54.00	10.37	Pass	Horizontal

Mode:	802.11 g(6Mbps) Transmitting	Channel:	2462
Remark:	Average		

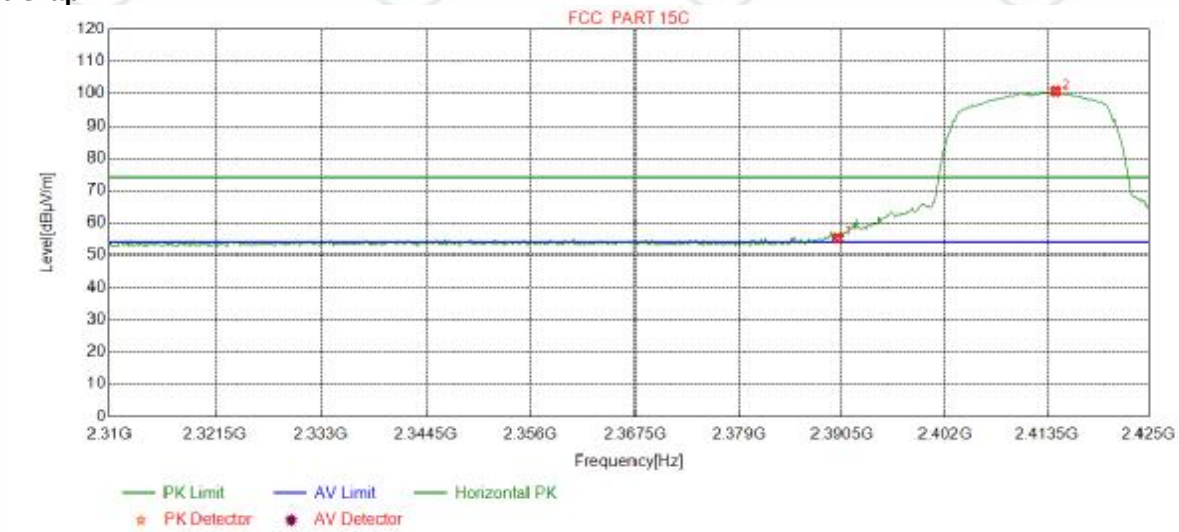
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2460.9287	32.35	13.48	-42.41	94.43	97.85	54.00	-43.85	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	43.25	46.61	54.00	7.39	Pass	Vertical

Mode:	802.11 n(HT20) (6.5Mbps) Transmitting	Channel:	2412
Remark:	Peak		

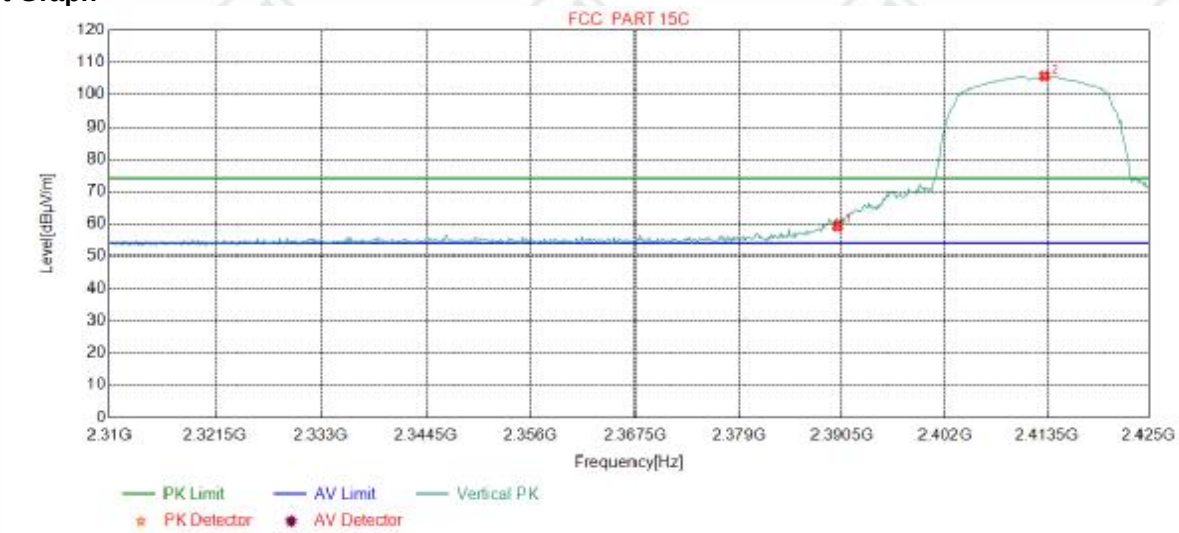
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	52.11	55.29	74.00	18.71	Pass	Horizontal
2	2414.4931	32.28	13.37	-42.43	97.41	100.63	74.00	-26.63	Pass	Horizontal

Mode:	802.11 n(HT20) (6.5Mbps) Transmitting	Channel:	2412
Remark:	Peak		

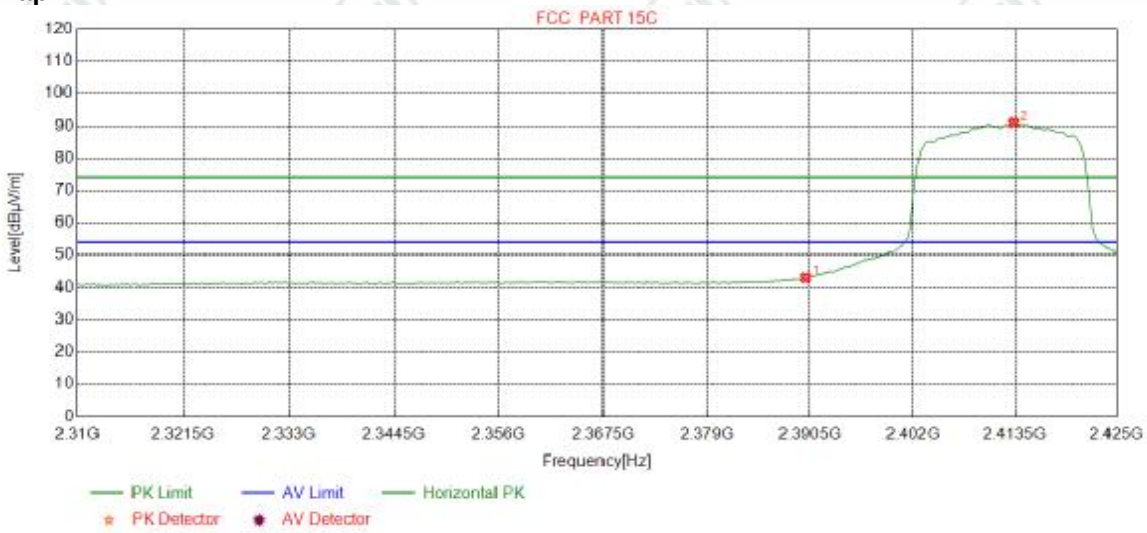
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	56.16	59.34	74.00	14.66	Pass	Vertical
2	2413.1977	32.28	13.36	-42.43	102.43	105.64	74.00	-31.64	Pass	Vertical

Mode:	802.11 n(HT20) (6.5Mbps) Transmitting	Channel:	2412
Remark:	Average		

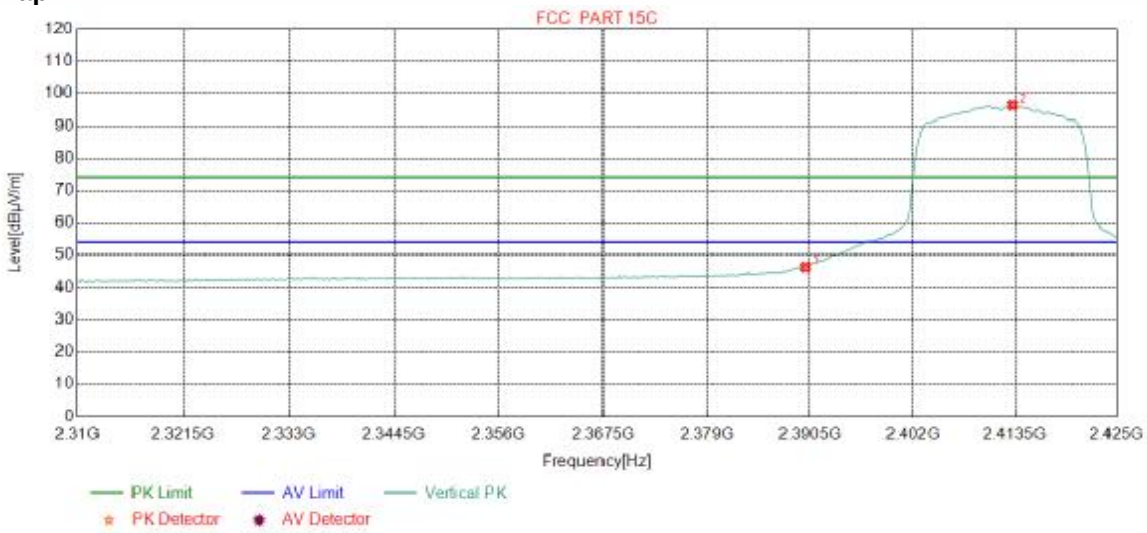
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	39.78	42.96	54.00	11.04	Pass	Horizontal
2	2413.3417	32.28	13.36	-42.43	87.77	90.98	54.00	-36.98	Pass	Horizontal

Mode:	802.11 n(HT20) (6.5Mbps) Transmitting	Channel:	2412
Remark:	Average		

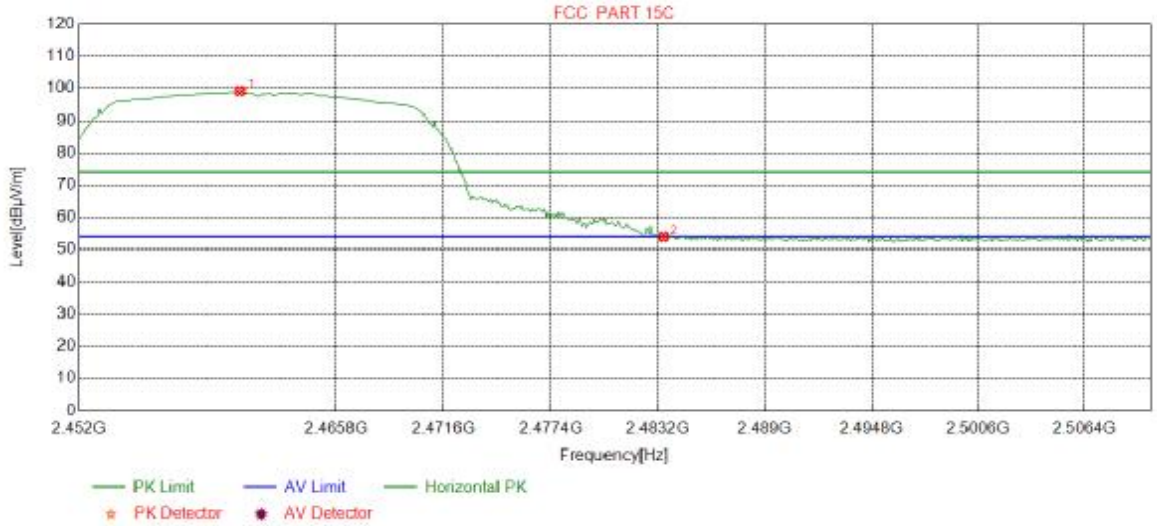
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	43.11	46.29	54.00	7.71	Pass	Vertical
2	2413.1977	32.28	13.36	-42.43	93.20	96.41	54.00	-42.41	Pass	Vertical

Mode:	802.11 n(HT20) (6.5Mbps) Transmitting	Channel:	2462
Remark:	Peak		

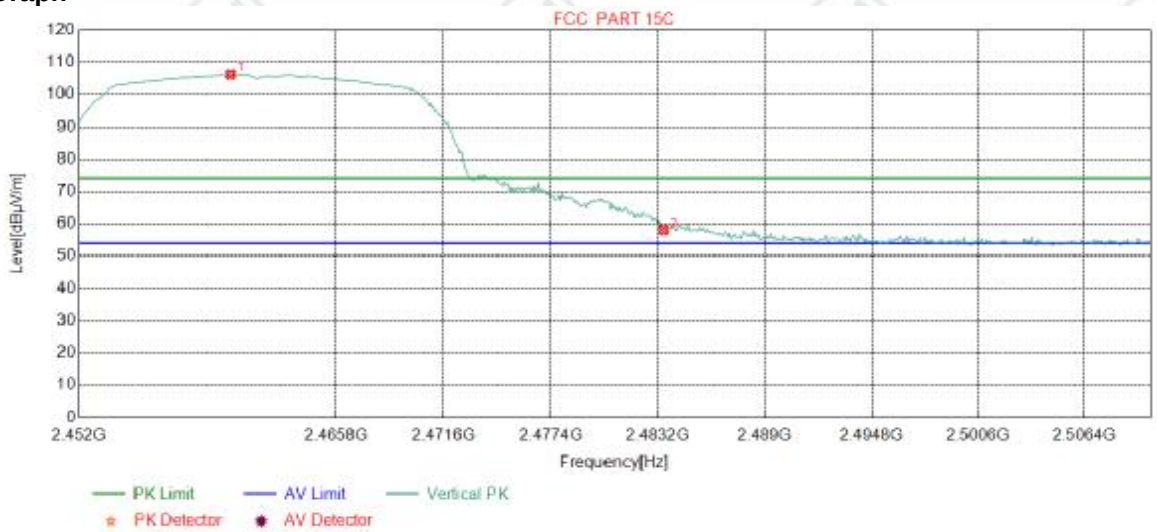
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2460.6383	32.34	13.48	-42.40	95.79	99.21	74.00	-25.21	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	50.57	53.93	74.00	20.07	Pass	Horizontal

Mode:	802.11 n(HT20) (6.5Mbps) Transmitting	Channel:	2462
Remark:	Peak		

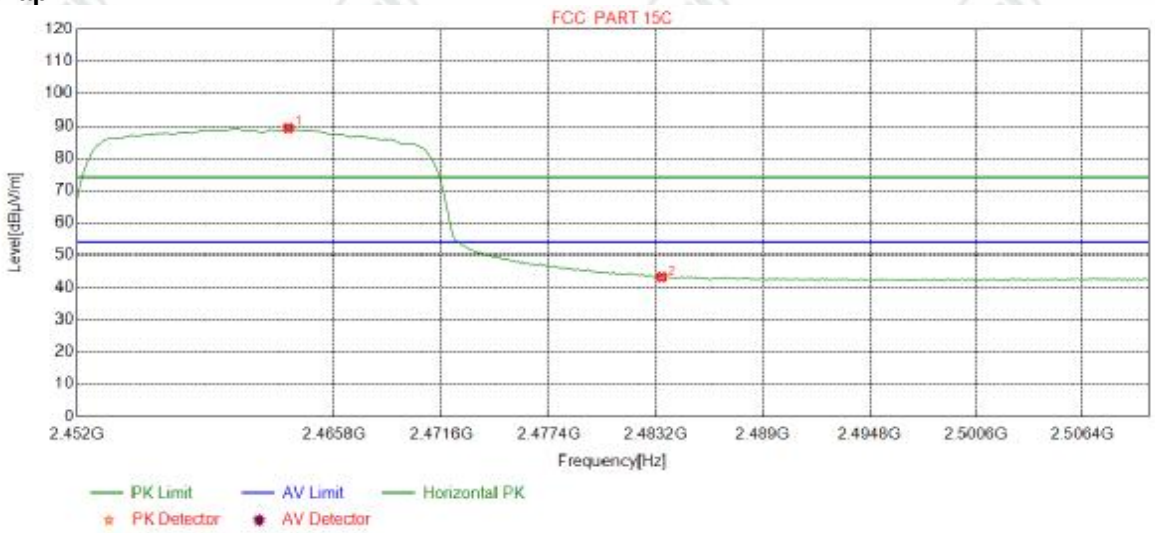
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2460.1302	32.34	13.48	-42.40	102.75	106.17	74.00	-32.17	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	54.77	58.13	74.00	15.87	Pass	Vertical

Mode:	802.11 n(HT20) (6.5Mbps) Transmitting	Channel:	2462
Remark:	Average		

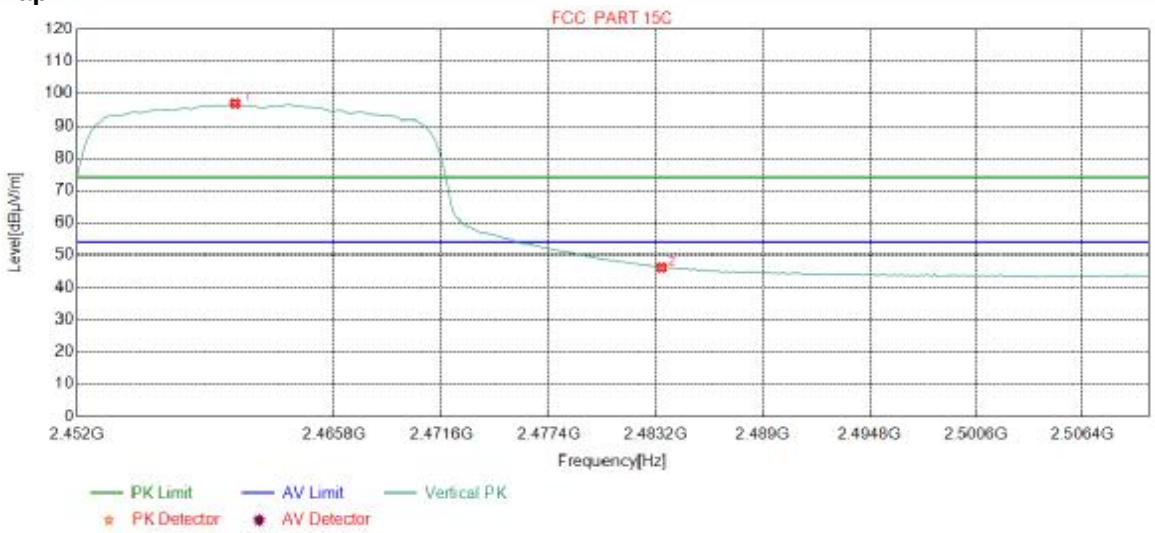
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2463.3242	32.35	13.47	-42.41	85.95	89.36	54.00	-35.36	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	39.80	43.16	54.00	10.84	Pass	Horizontal

Mode:	802.11 n(HT20) (6.5Mbps) Transmitting	Channel:	2462
Remark:	Average		

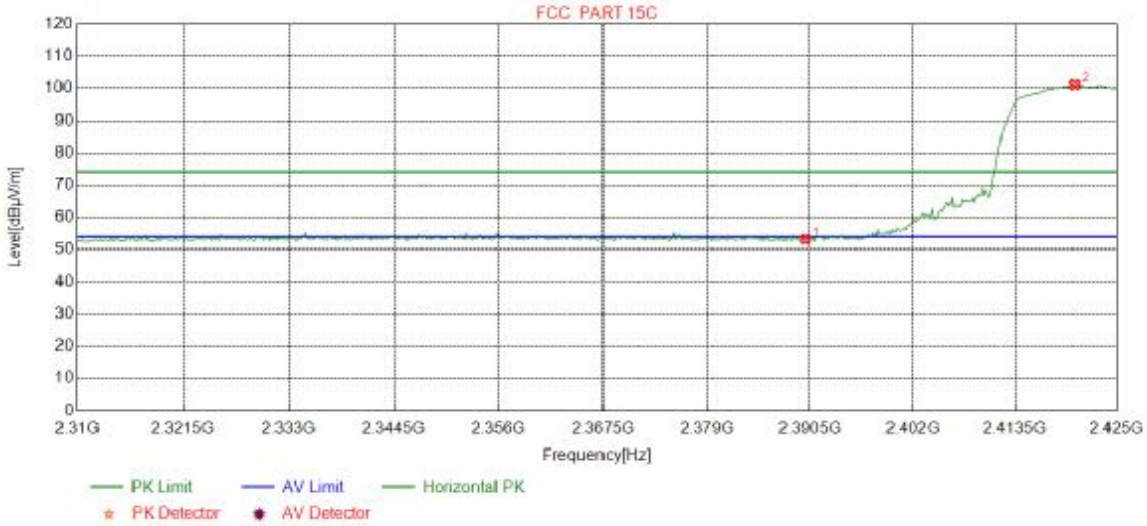
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2460.4931	32.34	13.48	-42.40	93.48	96.90	54.00	-42.90	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	42.82	46.18	54.00	7.82	Pass	Vertical

Mode:	802.11 n(HT40) (13.5Mbps) Transmitting	Channel:	2422
Remark:	Peak		

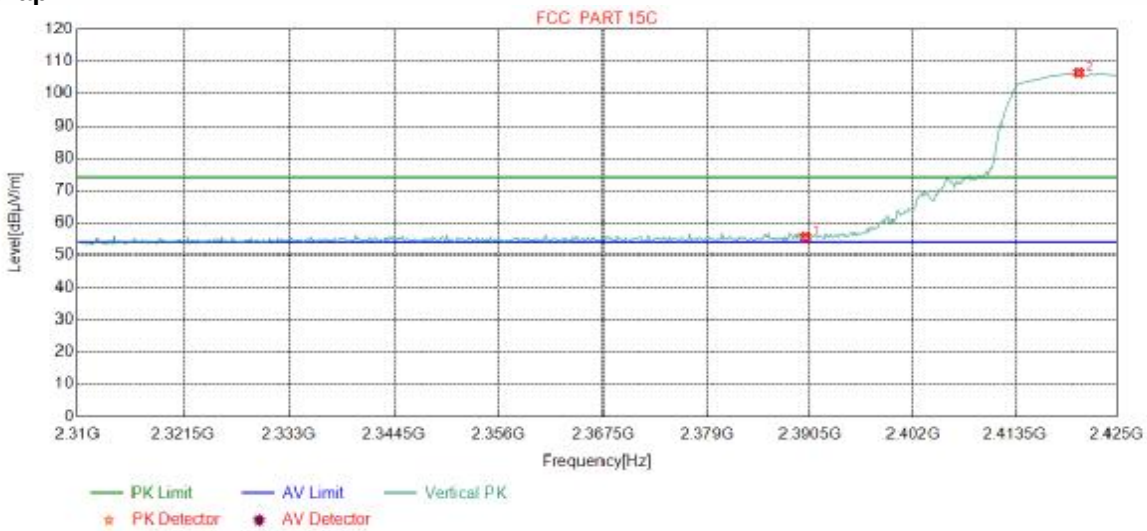
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	50.04	53.22	74.00	20.78	Pass	Horizontal
2	2420.2503	32.29	13.39	-42.42	97.87	101.13	74.00	-27.13	Pass	Horizontal

Mode:	802.11 n(HT40) (13.5Mbps) Transmitting	Channel:	2422
Remark:	Peak		

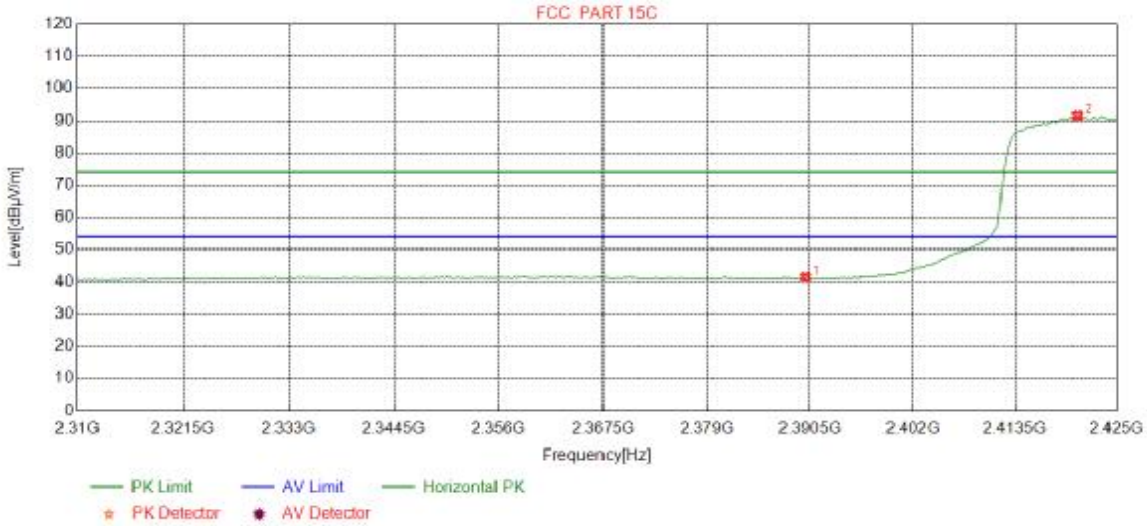
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	52.38	55.56	74.00	18.44	Pass	Vertical
2	2420.6821	32.29	13.40	-42.43	103.14	106.40	74.00	-32.40	Pass	Vertical

Mode:	802.11 n(HT40) (13.5Mbps) Transmitting	Channel:	2422
Remark:	Average		

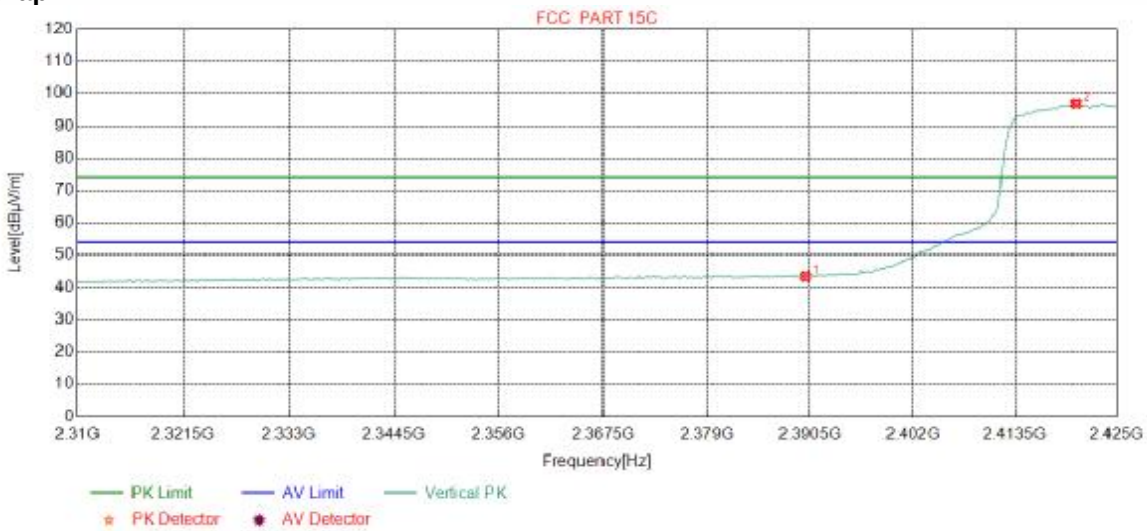
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	38.17	41.35	54.00	12.65	Pass	Horizontal
2	2420.5382	32.29	13.39	-42.42	88.21	91.47	54.00	-37.47	Pass	Horizontal

Mode:	802.11 n(HT40) (13.5Mbps) Transmitting	Channel:	2422
Remark:	Average		

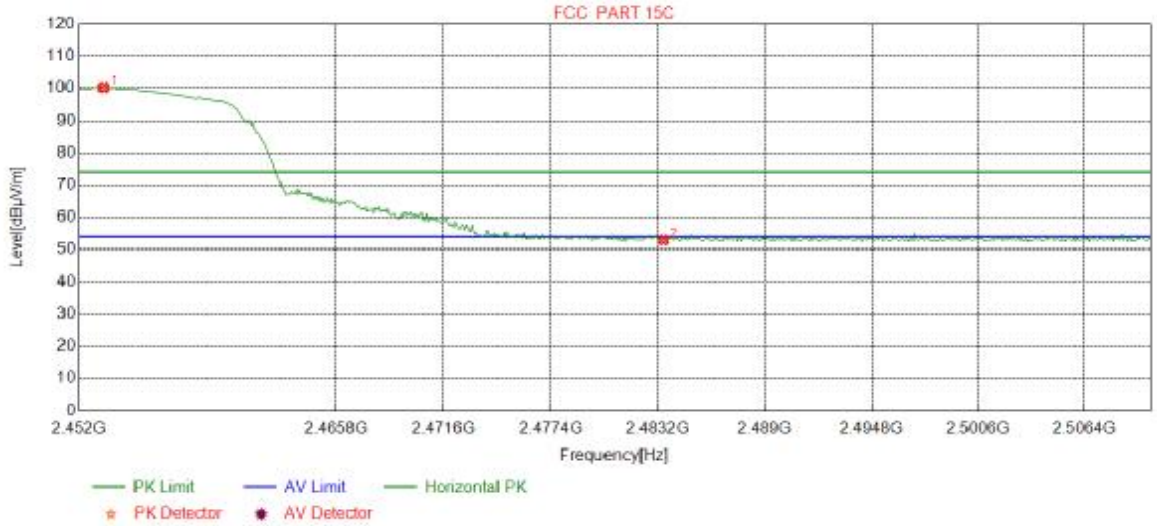
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	40.18	43.36	54.00	10.64	Pass	Vertical
2	2420.3942	32.29	13.39	-42.42	93.61	96.87	54.00	-42.87	Pass	Vertical

Mode:	802.11 n(HT40) (13.5Mbps) Transmitting	Channel:	2452
Remark:	Peak		

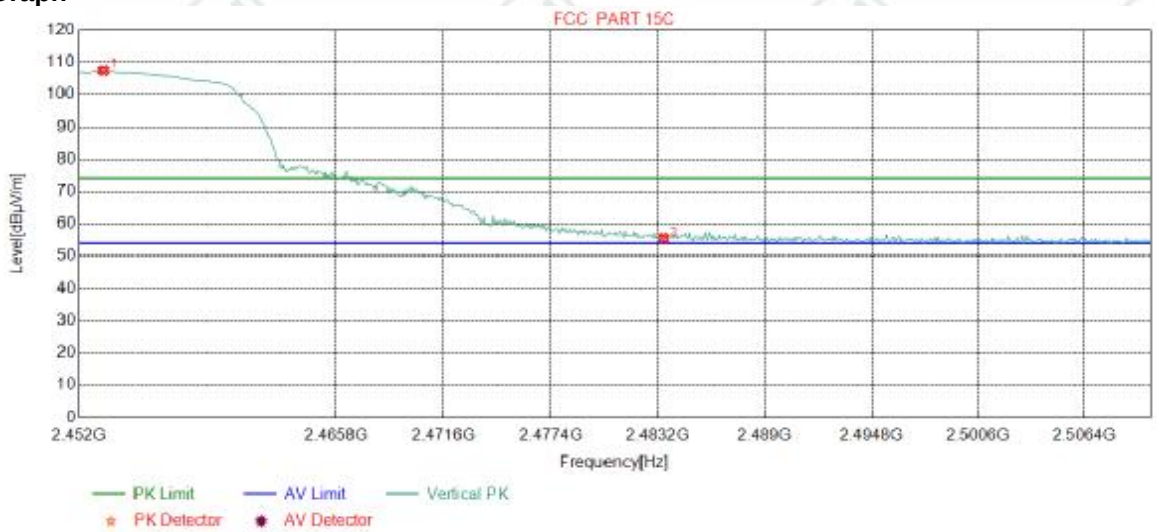
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2453.3066	32.33	13.51	-42.40	96.76	100.20	74.00	-26.20	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	49.60	52.96	74.00	21.04	Pass	Horizontal

Mode:	802.11 n(HT40) (13.5Mbps) Transmitting	Channel:	2452
Remark:	Peak		

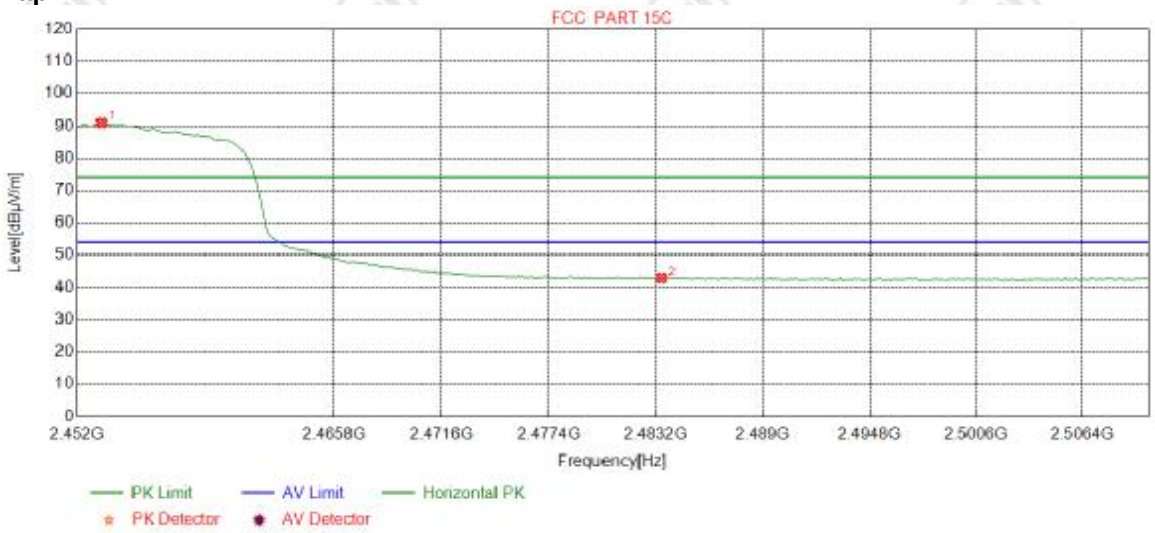
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2453.3066	32.33	13.51	-42.40	103.98	107.42	74.00	-33.42	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	52.17	55.53	74.00	18.47	Pass	Vertical

Mode:	802.11 n(HT40) (13.5Mbps) Transmitting	Channel:	2452
Remark:	Average		

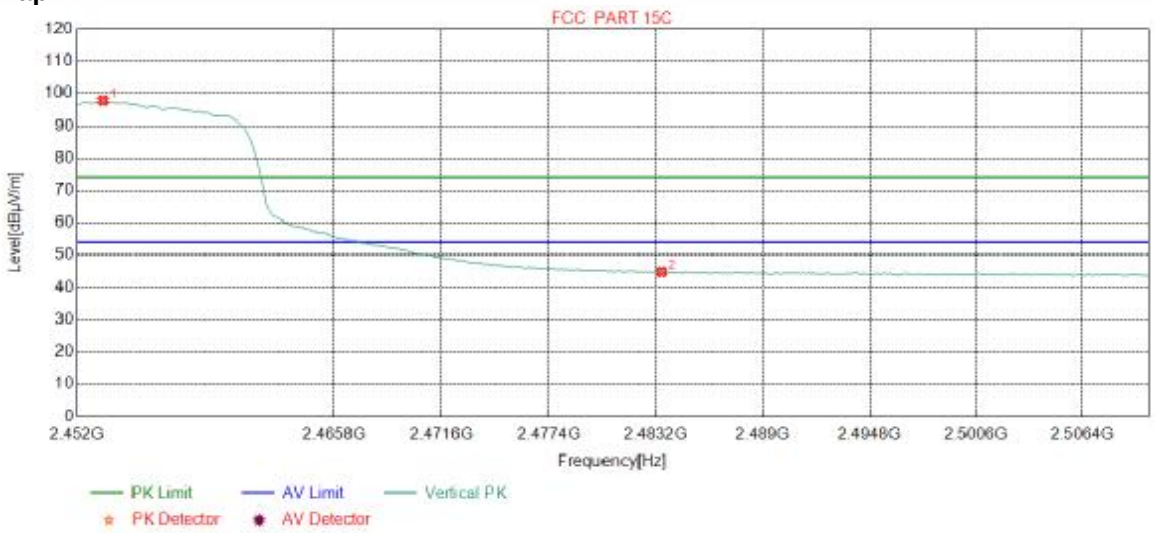
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2453.3066	32.33	13.51	-42.40	87.48	90.92	54.00	-36.92	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	39.51	42.87	54.00	11.13	Pass	Horizontal

Mode:	802.11 n(HT40) (13.5Mbps) Transmitting	Channel:	2452
Remark:	Average		

Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2453.3792	32.33	13.51	-42.40	94.40	97.84	54.00	-43.84	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	41.43	44.79	54.00	9.21	Pass	Vertical

Note:

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) ; 13.5Mbps of rate is the worst case of 802.11n(HT40),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 I): 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.

Test Ambient:	Temp.: 23°C	Humid.: 56%	Press.: 101kPa

Radiated Spurious Emissions test Data:

Radiated Emission below 1GHz

Mode:			802.11 b(11Mbps) Transmitting				Channel:		2412	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Magin [dB]	Result	Polarity
1	36.0146	11.02	0.66	-32.11	45.52	25.09	40.00	14.91	Pass	Horizontal
2	84.0344	8.03	1.06	-32.08	54.11	31.12	40.00	8.88	Pass	Horizontal
3	120.0250	9.20	1.30	-32.07	57.48	35.91	43.50	7.59	Pass	Horizontal
4	228.0938	11.63	1.79	-31.91	52.66	34.17	46.00	11.83	Pass	Horizontal
5	276.0166	12.72	1.98	-31.91	55.90	38.69	46.00	7.31	Pass	Horizontal
6	396.0176	15.31	2.37	-31.78	54.78	40.68	46.00	5.32	Pass	Horizontal

Mode:			802.11 b(11Mbps) Transmitting				Channel:		2412	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Magin [dB]	Result	Polarity
1	35.7236	10.93	0.66	-32.11	45.02	24.50	40.00	15.50	Pass	Vertical
2	60.0730	11.58	0.90	-32.04	44.51	24.95	40.00	15.05	Pass	Vertical
3	84.0344	8.03	1.06	-32.08	50.54	27.55	40.00	12.45	Pass	Vertical
4	96.0636	10.37	1.13	-32.07	49.72	29.15	43.50	14.35	Pass	Vertical
5	324.0364	13.73	2.14	-31.81	48.32	32.38	46.00	13.62	Pass	Vertical
6	372.0562	14.79	2.30	-31.88	50.14	35.35	46.00	10.65	Pass	Vertical

Mode:			802.11 g(6Mbps) Transmitting				Channel:		2412	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Magin [dB]	Result	Polarity
1	47.9468	13.20	0.78	-32.12	43.47	25.33	40.00	14.67	Pass	Horizontal
2	84.0344	8.03	1.06	-32.08	53.15	30.16	40.00	9.84	Pass	Horizontal
3	122.1592	8.88	1.31	-32.07	53.64	31.76	43.50	11.74	Pass	Horizontal
4	155.5306	7.74	1.46	-31.99	55.03	32.24	43.50	11.26	Pass	Horizontal
5	252.0552	12.24	1.89	-31.89	52.35	34.59	46.00	11.41	Pass	Horizontal
6	347.9978	14.26	2.22	-31.86	54.29	38.91	46.00	7.09	Pass	Horizontal

Mode:			802.11 g(6Mbps) Transmitting				Channel:		2412	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Magin [dB]	Result	Polarity
1	48.0438	13.20	0.78	-32.12	43.05	24.91	40.00	15.09	Pass	Vertical
2	78.5049	7.38	1.03	-32.06	54.86	31.21	40.00	8.79	Pass	Vertical
3	143.9864	7.34	1.41	-31.99	52.87	29.63	43.50	13.87	Pass	Vertical
4	252.0552	12.24	1.89	-31.89	48.48	30.72	46.00	15.28	Pass	Vertical
5	347.9978	14.26	2.22	-31.86	49.43	34.05	46.00	11.95	Pass	Vertical
6	396.0176	15.31	2.37	-31.78	48.66	34.56	46.00	11.44	Pass	Vertical

Mode:			802.11 n(HT20) (6.5Mbps) Transmitting				Channel:		2437	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Magin [dB]	Result	Polarity
1	48.0438	13.20	0.78	-32.12	42.27	24.13	40.00	15.87	Pass	Horizontal
2	96.0636	10.37	1.13	-32.07	52.09	31.52	43.50	11.98	Pass	Horizontal
3	120.0250	9.20	1.30	-32.07	57.18	35.61	43.50	7.89	Pass	Horizontal
4	252.0552	12.24	1.89	-31.89	52.31	34.55	46.00	11.45	Pass	Horizontal
5	324.0364	13.73	2.14	-31.81	55.05	39.11	46.00	6.89	Pass	Horizontal
6	396.0176	15.31	2.37	-31.78	52.25	38.15	46.00	7.85	Pass	Horizontal

Mode:			802.11 n(HT20) (6.5Mbps) Transmitting				Channel:		2437	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Magin [dB]	Result	Polarity
1	36.0146	11.02	0.66	-32.11	44.26	23.83	40.00	16.17	Pass	Vertical
2	96.0636	10.37	1.13	-32.07	49.82	29.25	43.50	14.25	Pass	Vertical
3	208.8859	11.13	1.71	-31.94	47.84	28.74	43.50	14.76	Pass	Vertical
4	300.0750	13.20	2.06	-31.85	48.67	32.08	46.00	13.92	Pass	Vertical
5	372.0562	14.79	2.30	-31.88	49.10	34.31	46.00	11.69	Pass	Vertical
6	420.0760	15.72	2.45	-31.84	47.63	33.96	46.00	12.04	Pass	Vertical

Mode:			802.11 n(HT40) (13.5Mbps) Transmitting				Channel:		2462	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Magin [dB]	Result	Polarity
1	35.5296	10.87	0.66	-32.12	36.17	15.58	40.00	24.42	Pass	Horizontal
2	71.4231	8.73	0.97	-32.06	34.37	12.01	40.00	27.99	Pass	Horizontal
3	96.9367	10.51	1.14	-32.07	37.44	17.02	43.50	26.48	Pass	Horizontal
4	226.0566	11.58	1.78	-31.92	47.35	28.79	46.00	17.21	Pass	Horizontal
5	290.3740	13.01	2.03	-31.88	45.70	28.86	46.00	17.14	Pass	Horizontal
6	687.5318	19.70	3.14	-32.06	36.38	27.16	46.00	18.84	Pass	Horizontal

Mode:			802.11 n(HT40) (13.5Mbps) Transmitting				Channel:		2462	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Magin [dB]	Result	Polarity
1	55.1255	12.38	0.84	-32.08	38.63	19.77	40.00	20.23	Pass	Vertical
2	71.9082	8.64	0.97	-32.05	41.02	18.58	40.00	21.42	Pass	Vertical
3	208.8859	11.13	1.71	-31.94	47.13	28.03	43.50	15.47	Pass	Vertical
4	290.5681	13.01	2.03	-31.88	45.77	28.93	46.00	17.07	Pass	Vertical
5	354.7885	14.41	2.25	-31.86	39.05	23.85	46.00	22.15	Pass	Vertical
6	600.0290	19.00	2.96	-31.99	36.94	26.91	46.00	19.09	Pass	Vertical

Remark : All the channels are tested, only the worst data were reported.

Transmitter Emission above 1GHz

Mode:		802.11 b(11Mbps) Transmitting					Channel:		2412		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1499.8500	28.40	2.99	-42.67	56.41	45.13	74.00	28.87	Pass	H	PK
2	3366.0244	33.35	4.53	-41.90	51.09	47.07	74.00	26.93	Pass	H	PK
3	4824.1216	34.50	4.61	-40.65	56.94	55.40	74.00	18.60	Pass	H	PK
4	4823.4446	34.50	4.61	-40.64	51.36	49.83	54.00	4.17	Pass	H	AV
5	7237.2825	36.34	5.79	-40.99	47.48	48.62	74.00	25.38	Pass	H	PK
6	8192.3462	36.48	6.37	-40.83	46.07	48.09	74.00	25.91	Pass	H	PK
7	11677.5785	39.04	7.47	-41.32	46.33	51.52	74.00	22.48	Pass	H	PK
8	1500.0500	28.40	2.99	-42.67	57.36	46.08	74.00	27.92	Pass	V	PK
9	3187.0125	33.27	4.63	-42.00	50.80	46.70	74.00	27.30	Pass	V	PK
10	4824.1216	34.50	4.61	-40.65	56.13	54.59	74.00	19.41	Pass	V	PK
11	4823.4432	34.50	4.61	-40.64	49.86	48.33	54.00	5.67	Pass	V	AV
12	7638.3092	36.54	6.14	-40.83	46.03	47.88	74.00	26.12	Pass	V	PK
13	11251.5501	38.75	7.24	-41.24	44.99	49.74	74.00	24.26	Pass	V	PK
14	12423.6282	39.55	7.76	-41.11	45.12	51.32	74.00	22.68	Pass	V	PK

Mode:		802.11 b(11Mbps) Transmitting					Channel:		2437		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1200.0200	28.10	2.66	-42.89	58.90	46.77	74.00	27.23	Pass	H	PK
2	2999.8000	33.20	4.55	-42.12	50.49	46.12	74.00	27.88	Pass	H	PK
3	4874.1249	34.50	4.78	-40.61	57.88	56.55	74.00	17.45	Pass	H	PK
4	4873.2745	34.50	4.77	-40.60	52.08	50.75	54.00	3.25	Pass	H	AV
5	7309.2873	36.41	5.85	-40.93	49.98	51.31	74.00	22.69	Pass	H	PK
6	8414.3610	36.57	6.35	-40.64	45.42	47.70	74.00	26.30	Pass	H	PK
7	12535.6357	39.60	7.72	-41.14	44.68	50.86	74.00	23.14	Pass	V	PK
8	2153.1153	31.91	3.65	-42.54	56.38	49.40	74.00	24.60	Pass	V	PK
9	3000.0000	33.20	4.93	-42.12	53.59	49.60	74.00	24.40	Pass	V	PK
10	4874.1249	34.50	4.78	-40.61	57.82	56.49	74.00	17.51	Pass	V	PK
11	4873.4412	34.50	4.77	-40.60	51.60	50.27	54.00	3.73	Pass	V	AV
12	7309.2873	36.41	5.85	-40.93	51.40	52.73	74.00	21.27	Pass	V	PK
13	7312.6265	36.41	5.85	-40.93	44.91	46.24	54.00	7.76	Pass	V	AV
14	10478.4986	38.47	7.05	-41.15	44.06	48.43	74.00	25.57	Pass	V	PK
15	11812.5875	39.15	7.44	-41.27	44.54	49.86	74.00	24.14	Pass	V	PK

Mode:		802.11 b(11Mbps) Transmitting					Channel:		2462		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1499.8500	28.40	2.99	-42.67	60.09	48.81	74.00	25.19	Pass	H	PK
2	2263.5264	32.07	3.79	-42.49	56.59	49.96	74.00	24.04	Pass	H	PK
3	3448.0299	33.38	4.44	-41.86	49.70	45.66	74.00	28.34	Pass	H	PK
4	4924.1283	34.50	4.85	-40.56	56.19	54.98	74.00	19.02	Pass	H	PK
5	4923.4439	34.50	4.85	-40.56	52.30	51.09	54.00	2.91	Pass	H	AV
6	7385.2924	36.49	5.85	-40.87	49.66	51.13	74.00	22.87	Pass	H	PK
7	7386.6428	36.49	5.85	-40.87	36.94	38.41	54.00	15.59	Pass	H	AV
8	11672.5782	39.04	7.46	-41.32	45.23	50.41	74.00	23.59	Pass	H	PK
9	1976.2976	31.54	3.45	-42.62	55.67	48.04	74.00	25.96	Pass	V	PK
10	3000.0000	33.20	4.93	-42.12	54.43	50.44	74.00	23.56	Pass	V	PK
11	4924.1283	34.50	4.85	-40.56	52.18	50.97	74.00	23.03	Pass	V	PK
12	7384.2923	36.48	5.85	-40.86	49.22	50.69	74.00	23.31	Pass	V	PK
13	8382.3588	36.55	6.27	-40.66	45.71	47.87	74.00	26.13	Pass	V	PK
14	10998.5332	38.60	7.63	-41.11	43.89	49.01	74.00	24.99	Pass	V	PK

Mode:		802.11 g(6Mbps) Transmitting					Channel:		2412		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1595.4595	29.03	3.07	-42.89	53.80	43.01	74.00	30.99	Pass	H	PK
2	1797.2797	30.36	3.32	-42.71	59.25	50.22	74.00	23.78	Pass	H	PK
3	1994.8995	31.67	3.46	-42.61	59.61	52.13	74.00	21.87	Pass	H	PK
4	4820.1213	34.50	4.60	-40.65	57.46	55.91	74.00	18.09	Pass	H	PK
5	4824.9200	34.50	4.61	-40.64	43.74	42.21	54.00	11.79	Pass	H	AV
6	4825.1200	34.50	4.61	-40.64	43.77	42.24	54.00	11.76	Pass	H	AV
7	7236.0000	36.34	5.79	-40.99	53.84	54.98	74.00	19.02	Pass	H	PK
8	7235.1660	36.34	5.79	-40.99	42.25	43.39	54.00	10.61	Pass	H	AV
9	9648.0000	37.66	6.72	-40.73	44.76	48.41	74.00	25.59	Pass	H	PK
10	1199.6200	28.10	2.66	-42.89	56.49	44.36	74.00	29.64	Pass	V	PK
11	1593.4593	29.02	3.06	-42.88	58.39	47.59	74.00	26.41	Pass	V	PK
12	4822.1215	34.50	4.60	-40.64	54.96	53.42	74.00	20.58	Pass	V	PK
13	7230.2820	36.33	5.80	-41.00	57.32	58.45	74.00	15.55	Pass	V	PK
14	7235.1900	36.34	5.79	-40.99	43.33	44.47	54.00	9.53	Pass	V	AV
15	8523.3682	36.65	6.41	-40.56	43.41	45.91	74.00	28.09	Pass	V	PK
16	9648.0000	37.66	6.72	-40.73	44.84	48.49	74.00	25.51	Pass	V	PK

Mode:		802.11 g(6Mbps) Transmitting					Channel:		2437		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1597.0597	29.04	3.07	-42.89	54.17	43.39	74.00	30.61	Pass	H	PK
2	1796.6797	30.36	3.31	-42.71	57.27	48.23	74.00	25.77	Pass	H	PK
3	1997.6998	31.68	3.47	-42.61	57.94	50.48	74.00	23.52	Pass	H	PK
4	4875.1250	34.50	4.78	-40.60	58.08	56.76	74.00	17.24	Pass	H	PK
5	4875.1340	34.50	4.78	-40.60	45.08	43.76	54.00	10.24	Pass	H	AV
6	7310.2874	36.41	5.85	-40.93	55.53	56.86	74.00	17.14	Pass	H	PK
7	7309.7397	36.41	5.85	-40.93	42.49	43.82	54.00	10.18	Pass	H	AV
8	9748.0000	37.70	6.77	-40.63	44.77	48.61	74.00	25.39	Pass	H	PK
9	1398.6399	28.30	2.90	-42.68	56.05	44.57	74.00	29.43	Pass	V	PK
10	1599.8600	29.06	3.07	-42.90	58.27	47.50	74.00	26.50	Pass	V	PK
11	3198.0132	33.28	4.65	-42.01	53.14	49.06	74.00	24.94	Pass	V	PK
12	4870.1247	34.50	4.76	-40.61	57.65	56.30	74.00	17.70	Pass	V	PK
13	4874.5733	34.50	4.78	-40.60	43.79	42.47	54.00	11.53	Pass	V	AV
14	7311.0000	36.41	5.85	-40.93	53.65	54.98	74.00	19.02	Pass	V	PK
15	7309.6230	36.41	5.85	-40.93	43.14	44.47	54.00	9.53	Pass	V	AV
16	9748.0000	37.70	6.77	-40.63	44.98	48.82	74.00	25.18	Pass	V	PK

Mode:		802.11 g(6Mbps) Transmitting					Channel:		2462		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1592.8593	29.01	3.06	-42.88	54.49	43.68	74.00	30.32	Pass	H	PK
2	1798.2798	30.37	3.32	-42.71	58.53	49.51	74.00	24.49	Pass	H	PK
3	1992.8993	31.65	3.46	-42.61	58.85	51.35	74.00	22.65	Pass	H	PK
4	4924.0000	34.50	4.85	-40.56	57.28	56.07	74.00	17.93	Pass	H	PK
5	4925.1273	34.50	4.85	-40.56	45.21	44.00	54.00	10.00	Pass	H	AV
6	7386.0000	36.49	5.85	-40.87	55.16	56.63	74.00	17.37	Pass	H	PK
7	7387.9029	36.49	5.85	-40.86	42.75	44.23	54.00	9.77	Pass	H	PK
8	9848.0000	37.74	6.83	-40.54	43.77	47.80	74.00	26.20	Pass	H	AV
9	1200.2200	28.10	2.66	-42.89	53.10	40.97	74.00	33.03	Pass	V	PK
10	1394.6395	28.29	2.89	-42.68	55.94	44.44	74.00	29.56	Pass	V	PK
11	1596.8597	29.04	3.07	-42.90	58.73	47.94	74.00	26.06	Pass	V	PK
12	4924.0000	34.50	4.85	-40.56	55.97	54.76	74.00	19.24	Pass	V	PK
13	4925.1873	34.50	4.85	-40.56	45.07	43.86	54.00	10.14	Pass	V	AV
14	7386.0000	36.49	5.85	-40.87	53.95	55.42	74.00	18.58	Pass	V	PK
15	7385.3300	36.49	5.85	-40.87	42.43	43.90	54.00	10.10	Pass	V	AV
16	9848.0000	37.74	6.83	-40.54	43.97	48.00	74.00	26.00	Pass	V	PK

Mode:		802.11 n(HT20) (6.5Mbps) Transmitting					Channel:		2412		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1592.8593	29.01	3.06	-42.88	54.17	43.36	74.00	30.64	Pass	H	PK
2	1791.8792	30.33	3.31	-42.71	59.52	50.45	74.00	23.55	Pass	H	PK
3	1992.8993	31.65	3.46	-42.61	59.73	52.23	74.00	21.77	Pass	H	PK
4	4822.1215	34.50	4.60	-40.64	56.74	55.20	74.00	18.80	Pass	H	PK
5	4824.6653	34.50	4.61	-40.64	42.15	40.62	54.00	13.38	Pass	H	AV
6	7233.2822	36.33	5.79	-40.99	54.92	56.05	74.00	17.95	Pass	H	PK
7	7235.7647	36.34	5.79	-40.99	40.49	41.63	54.00	12.37	Pass	H	AV
8	9648.0000	37.66	6.72	-40.73	44.19	47.84	74.00	26.16	Pass	H	PK
9	1600.0600	29.06	3.07	-42.90	60.01	49.24	74.00	24.76	Pass	V	PK
10	1795.2795	30.35	3.31	-42.71	65.27	56.22	74.00	17.78	Pass	V	PK
11	1794.9558	30.35	3.31	-42.71	38.41	29.36	54.00	24.64	Pass	V	AV
12	1996.8997	31.68	3.47	-42.62	65.12	57.65	74.00	16.35	Pass	V	PK
13	1999.7969	31.70	3.47	-42.61	38.23	30.79	54.00	23.21	Pass	V	AV
14	4823.1215	34.50	4.60	-40.64	53.19	51.65	74.00	22.35	Pass	V	PK
15	7241.2828	36.34	5.79	-40.99	56.50	57.64	74.00	16.36	Pass	V	PK
16	7236.2895	36.34	5.79	-40.99	41.55	42.69	54.00	11.31	Pass	V	AV
17	9648.0000	37.66	6.72	-40.73	44.77	48.42	74.00	25.58	Pass	V	PK

Mode:		802.11 n(HT20) (6.5Mbps) Transmitting					Channel:		2437		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1593.0593	29.01	3.06	-42.88	53.77	42.96	74.00	31.04	Pass	H	PK
2	1796.2796	30.36	3.31	-42.71	59.87	50.83	74.00	23.17	Pass	H	PK
3	1997.8998	31.69	3.47	-42.62	61.42	53.96	74.00	20.04	Pass	H	PK
4	1998.6582	31.69	3.47	-42.61	36.34	28.89	54.00	25.11	Pass	H	AV
5	4869.1246	34.50	4.76	-40.61	57.91	56.56	74.00	17.44	Pass	H	PK
6	4873.1739	34.50	4.77	-40.60	44.03	42.70	54.00	11.30	Pass	H	AV
7	7307.2872	36.41	5.85	-40.93	53.90	55.23	74.00	18.77	Pass	H	PK
8	7309.9184	36.41	5.85	-40.93	40.21	41.54	54.00	12.46	Pass	H	AV
9	9748.0000	37.70	6.77	-40.63	44.23	48.07	74.00	25.93	Pass	H	PK
10	1795.0795	30.35	3.31	-42.71	66.58	57.53	74.00	16.47	Pass	V	PK
11	1994.6995	31.67	3.46	-42.61	64.46	56.98	74.00	17.02	Pass	V	PK
12	2992.5993	33.19	4.53	-42.13	60.70	56.29	74.00	17.71	Pass	V	PK
13	4874.0000	34.50	4.78	-40.61	53.92	52.59	74.00	21.41	Pass	V	PK
14	7307.2872	36.41	5.85	-40.93	54.67	56.00	74.00	18.00	Pass	V	PK
15	9748.0000	37.70	6.77	-40.63	43.90	47.74	74.00	26.26	Pass	V	PK
16	1794.2011	30.34	3.31	-42.71	37.18	28.12	54.00	25.88	Pass	V	AV
17	1995.5732	31.67	3.47	-42.61	41.24	33.77	54.00	20.23	Pass	V	AV
18	2993.9851	33.19	4.53	-42.12	37.27	32.87	54.00	21.13	Pass	V	AV
19	4873.2712	34.50	4.77	-40.60	42.16	40.83	54.00	13.17	Pass	V	AV
20	7309.8950	36.41	5.85	-40.93	41.07	42.40	54.00	11.60	Pass	V	AV

Mode:		802.11 n(HT20) (6.5Mbps) Transmitting					Channel:		2462		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1598.6599	29.05	3.07	-42.90	53.77	42.99	74.00	31.01	Pass	H	PK
2	1798.2798	30.37	3.32	-42.71	58.74	49.72	74.00	24.28	Pass	H	PK
3	1997.8998	31.69	3.47	-42.62	60.35	52.89	74.00	21.11	Pass	H	PK
4	4926.1284	34.50	4.85	-40.56	58.61	57.40	74.00	16.60	Pass	H	PK
5	4923.4686	34.50	4.85	-40.56	44.40	43.19	54.00	10.81	Pass	H	AV
6	7382.2922	36.48	5.85	-40.87	54.79	56.25	74.00	17.75	Pass	H	PK
7	7385.2467	36.49	5.85	-40.87	40.59	42.06	54.00	11.94	Pass	H	AV
8	9848.0000	37.74	6.83	-40.54	43.63	47.66	74.00	26.34	Pass	H	PK
9	1595.0595	29.03	3.07	-42.90	58.35	47.55	74.00	26.45	Pass	V	PK
10	1798.4798	30.37	3.32	-42.71	67.72	58.70	74.00	15.30	Pass	V	PK
11	1991.2991	31.64	3.46	-42.61	67.04	59.53	74.00	14.47	Pass	V	PK
12	4924.0000	34.50	4.85	-40.56	58.61	57.40	74.00	16.60	Pass	V	PK
13	7387.2925	36.49	5.85	-40.87	54.16	55.63	74.00	18.37	Pass	V	PK
14	9848.0000	37.74	6.83	-40.54	45.05	49.08	74.00	24.92	Pass	V	PK
15	1797.8414	30.37	3.32	-42.71	37.90	28.88	54.00	25.12	Pass	V	AV
16	1994.4483	31.66	3.46	-42.61	38.91	31.42	54.00	22.58	Pass	V	AV
17	4924.3933	34.50	4.85	-40.56	42.86	41.65	54.00	12.35	Pass	V	AV
18	7385.7521	36.49	5.85	-40.87	40.58	42.05	54.00	11.95	Pass	V	AV

Mode:		802.11 n(HT40) (13.5Mbps) Transmitting					Channel:		2422		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1599.0599	29.05	3.07	-42.89	54.42	43.65	74.00	30.35	Pass	H	PK
2	1795.0795	30.35	3.31	-42.71	59.34	50.29	74.00	23.71	Pass	H	PK
3	1995.8996	31.67	3.47	-42.61	61.28	53.81	74.00	20.19	Pass	H	PK
4	4843.1229	34.50	4.66	-40.63	57.68	56.21	74.00	17.79	Pass	H	PK
5	7268.2846	36.37	5.81	-40.97	54.85	56.06	74.00	17.94	Pass	H	PK
6	9688.0000	37.68	6.62	-40.69	43.68	47.29	74.00	26.71	Pass	H	PK
7	1996.3006	31.68	3.47	-42.61	36.53	29.07	54.00	24.93	Pass	H	AV
8	4845.8894	34.50	4.67	-40.63	43.17	41.71	54.00	12.29	Pass	H	AV
9	7267.1935	36.37	5.80	-40.97	40.42	41.62	54.00	12.38	Pass	H	AV
10	1595.0595	29.03	3.07	-42.90	59.60	48.80	74.00	25.20	Pass	V	PK
11	1795.4795	30.35	3.31	-42.71	66.12	57.07	74.00	16.93	Pass	V	PK
12	1992.4993	31.65	3.46	-42.61	65.94	58.44	74.00	15.56	Pass	V	PK
13	4844.0000	34.50	4.66	-40.62	55.86	54.40	74.00	19.60	Pass	V	PK
14	7266.0000	36.37	5.80	-40.97	53.99	55.19	74.00	18.81	Pass	V	PK
15	9688.0000	37.68	6.62	-40.69	43.98	47.59	74.00	26.41	Pass	V	PK
16	1799.0027	30.37	3.32	-42.71	37.85	28.83	54.00	25.17	Pass	V	AV
17	1996.8166	31.68	3.47	-42.61	36.95	29.49	54.00	24.51	Pass	V	AV
18	4845.2360	34.50	4.67	-40.63	40.96	39.50	54.00	14.50	Pass	V	AV
19	7265.5214	36.37	5.80	-40.97	42.10	43.30	54.00	10.70	Pass	V	AV

Mode:		802.11 n(HT40) (13.5Mbps) Transmitting					Channel:		2437		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1596.2596	29.04	3.07	-42.90	52.73	41.94	74.00	32.06	Pass	H	PK
2	1799.6800	30.38	3.32	-42.71	60.97	51.96	74.00	22.04	Pass	H	PK
3	1995.0995	31.67	3.47	-42.62	62.26	54.78	74.00	19.22	Pass	H	PK
4	4875.1250	34.50	4.78	-40.60	59.75	58.43	74.00	15.57	Pass	H	PK
5	7308.2872	36.41	5.85	-40.93	55.58	56.91	74.00	17.09	Pass	H	PK
6	9748.0000	37.70	6.77	-40.63	44.62	48.46	74.00	25.54	Pass	H	PK
7	1999.0328	31.69	3.47	-42.61	36.73	29.28	54.00	24.72	Pass	H	AV
8	4873.6132	34.50	4.77	-40.60	44.66	43.33	54.00	10.67	Pass	H	AV
9	7310.4690	36.41	5.85	-40.93	41.02	42.35	54.00	11.65	Pass	H	AV
10	1599.6600	29.06	3.07	-42.90	58.90	48.13	74.00	25.87	Pass	V	PK
11	1793.6794	30.34	3.31	-42.71	66.66	57.60	74.00	16.40	Pass	V	PK
12	1992.6993	31.65	3.46	-42.61	66.28	58.78	74.00	15.22	Pass	V	PK
13	4874.0000	34.50	4.78	-40.61	57.84	56.51	74.00	17.49	Pass	V	PK
14	7313.2876	36.41	5.85	-40.92	55.83	57.17	74.00	16.83	Pass	V	PK
15	9742.4495	37.70	6.75	-40.64	47.07	50.88	74.00	23.12	Pass	V	PK
16	1791.4703	30.32	3.30	-42.71	37.43	28.34	54.00	25.66	Pass	V	AV
17	1993.3983	31.66	3.46	-42.61	36.86	29.37	54.00	24.63	Pass	V	AV
18	4873.4265	34.50	4.77	-40.60	42.73	41.40	54.00	12.60	Pass	V	AV
19	7309.7724	36.41	5.85	-40.93	41.96	43.29	54.00	10.71	Pass	V	AV

Mode:		802.11 n(HT40) (13.5Mbps) Transmitting					Channel:		2452		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1032.2032	27.93	2.47	-42.62	54.08	41.86	74.00	32.14	Pass	H	PK
2	1795.2795	30.35	3.31	-42.71	58.58	49.53	74.00	24.47	Pass	H	PK
3	1995.2995	31.67	3.47	-42.62	58.42	50.94	74.00	23.06	Pass	H	PK
4	4902.1268	34.50	4.88	-40.58	59.14	57.94	74.00	16.06	Pass	H	PK
5	7361.2908	36.46	5.85	-40.89	56.06	57.48	74.00	16.52	Pass	H	PK
6	9808.0000	37.72	6.59	-40.57	44.50	48.24	74.00	25.76	Pass	H	PK
7	4904.3866	34.50	4.87	-40.58	45.07	43.86	54.00	10.14	Pass	H	AV
8	7356.3975	36.46	5.85	-40.89	41.62	43.04	54.00	10.96	Pass	H	AV
9	1596.2596	29.04	3.07	-42.90	59.30	48.51	74.00	25.49	Pass	V	PK
10	1796.8797	30.36	3.31	-42.70	66.24	57.21	74.00	16.79	Pass	V	PK
11	1994.4995	31.66	3.46	-42.60	66.10	58.62	74.00	15.38	Pass	V	PK
12	4905.1270	34.50	4.87	-40.57	58.69	57.49	74.00	16.51	Pass	V	PK
13	7354.2903	36.45	5.85	-40.89	56.75	58.16	74.00	15.84	Pass	V	PK
14	9808.0000	37.72	6.59	-40.57	44.84	48.58	74.00	25.42	Pass	V	PK
15	1794.4839	30.34	3.31	-42.71	38.58	29.52	54.00	24.48	Pass	V	AV
16	1992.4404	31.65	3.46	-42.61	37.06	29.56	54.00	24.44	Pass	V	AV
17	4902.9979	34.50	4.88	-40.58	43.36	42.16	54.00	11.84	Pass	V	AV
18	7354.9433	36.45	5.85	-40.89	42.48	43.89	54.00	10.11	Pass	V	AV

Note:

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) ; 13.5Mbps of rate is the worst case of 802.11n(HT40),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.