TEST REPORT

Product	:	Open Frame
Trade mark	:	OUTFORM
Model/Type reference	:	UIO0421B-C02,UIO0418X-XYY, UIO0424X-XYY, UIO0421X-XYY,The 1st X is “A” or “B” represents the agent or the client; The 2nd X is A-Z represents the color; YY is client number from “01” to “90”
Serial Number	:	N/A
Report Number	:	EED32L00017401
FCC ID	:	2AO9X-UIO0421BC02
Date of Issue	:	May 14, 2019
Test Standards	:	47 CFR Part 15Subpart C
Test result	:	PASS

Prepared for:

Outform Science and Technology Ltd.
No. A103 Medical Appliance and Industry Garden, #1019, Nanhai Road.
Nanshan district ,Shenzhen 518035 China

Prepared by:

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Date:	May 14, 2019		Check No.:3096381924

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

2 Version

Version No.	Date	Description
00	May 14, 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

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.: UIO0421B-C02,UIO0418X-XYY, UIO0424X-XYY, UIO0421X-XYY,The 1st X is “A” or “B” represents the agent or the client; The 2nd X is A-Z represents the color; YY is client number from “01” to “90”

Only the model UIO0421B-C02 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being the color and model names due to difference agent and marketing pruposes.

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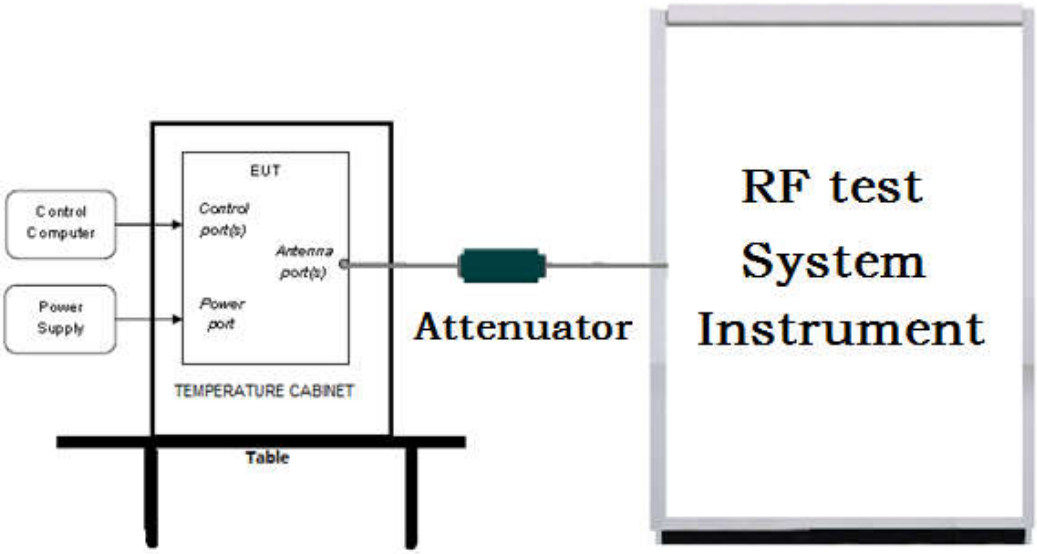
5 Test Requirement

5.1 Test setup

5.1.1 For Conducted test setup



5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

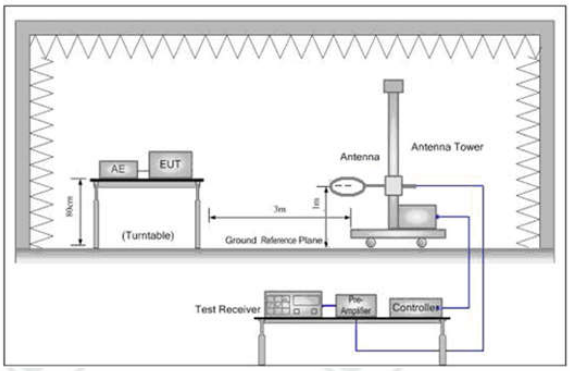


Figure 1. Below 30MHz

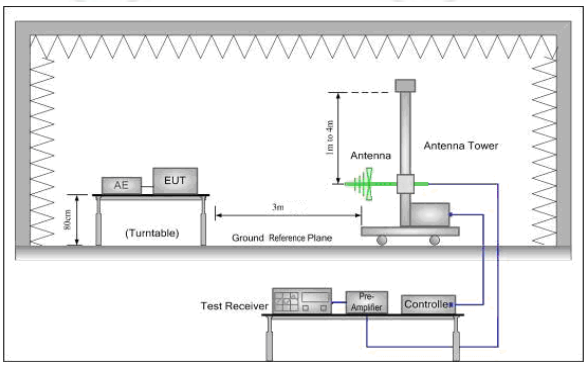


Figure 2. 30MHz to 1GHz

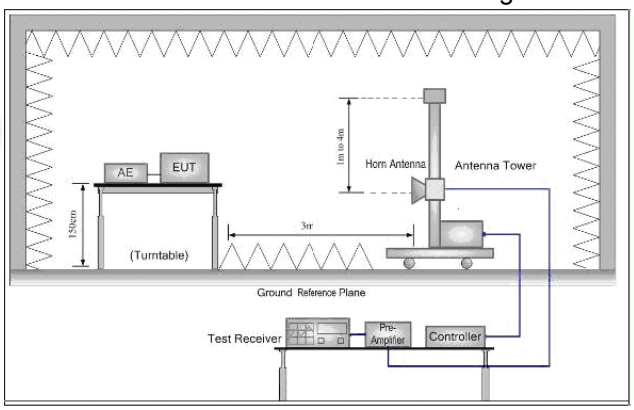
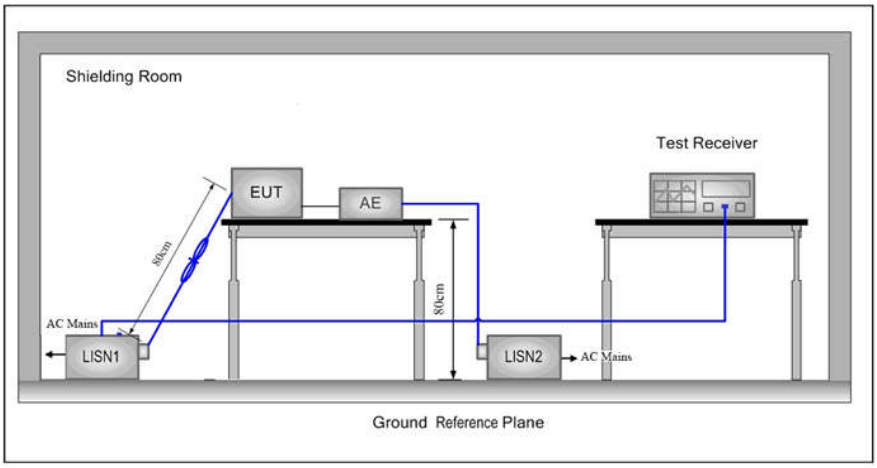


Figure 3. Above 1GHz

5.1.3 For Conducted Emissions test setup

Conducted Emissions setup



5.2 Test Environment

Operating Environment:	
Temperature:	25.0 °C
Humidity:	53 % RH
Atmospheric Pressure:	1010mbar

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
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)	13.88	14.90	14.99	15.07

Mode	**802.11g**							
Data Rate	**6Mbps**	**9Mbps**	**12Mbps**	**18Mbps**	**24Mbps**	**36Mbps**	**48Mbps**	**54Mbps**
Power(dBm)	15.05	14.95	14.85	14.80	14.72	14.63	14.59	14.51

Mode	**802.11n (HT20)**							
Data Rate	**6.5Mbps**	**13Mbps**	**19.5Mbps**	**26Mbps**	**39Mbps**	**52Mbps**	**58.5Mbps**	**65Mbps**
Power(dBm)	14.58	14.51	14.42	14.33	14.27	14.22	14.19	14.08

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:	Outform Science and Technology Ltd.
Address of Applicant:	No. A103 Medical Appliance and Industry Garden, #1019, Nanhai Road. Nanshan district ,Shenzhen 518035 China
Manufacturer:	Outform Science and Technology Ltd.
Address of Manufacturer:	No. A103 Medical Appliance and Industry Garden, #1019, Nanhai Road. Nanshan district ,Shenzhen 518035 China
Factory:	Outform Science and Technology Ltd.
Address of Factory:	No. A103 Medical Appliance and Industry Garden, #1019, Nanhai Road. Nanshan district ,Shenzhen 518035 China

6.2 General Description of EUT

Product Name:	Open Frame	
Model No.(EUT):	UIO0421B-C02,UIO0418X-XYY, UIO0424X-XYY, UIO0421X-XYY,The 1st X is “A” or “B” represents the agent or the client; The 2nd X is A-Z represents the color; YY is client number from “01” to “90”	
Test Model No.:	UIO0421B-C02	
Trade Mark:	OUTFORM	
EUT Supports Radios application:	BT: 4.0 BT single mode, 2402MHz to 2480MHz WiFi: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz	
Power Supply:	Adapter	Model: EA10681U-120 Input: 100-240VAC~2.0A, 50~60Hz Output: 12V⎓6A
Sample Received Date:	Jan. 24, 2019	
Sample tested Date:	May 08, 2019 to May 09, 2019	

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)
Antenna Type and Gain:	Type: omnidirectional antenna Gain: 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		

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	05-25-2018	05-24-2019
Temperature/ Humidity Indicator	Defu	TH128	/	07-02-2018	07-01-2019
Communication test set	Agilent	E5515C	GB47050 534	03-01-2019	02-28-2020
Communication test set	R&S	CMW500	102898	01-18-2019	01-17-2020
LISN	R&S	ENV216	100098	05-10-2018	05-10-2019
LISN	schwarzbeck	NNLK8121	8121-529	05-10-2018	05-10-2019
Voltage Probe	R&S	ESH2-Z3 0299.7810.5 6	100042	06-13-2017	06-11-2020
Current Probe	R&S	EZ-17 816.2063.03	100106	05-30-2018	05-29-2019
ISN	TESEQ	ISN T800	30297	01-06-2019	01-15-2020

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	06-03-2019
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	05-11-2018	05-10-2019
Receiver	R&S	ESCI	100435	05-25-2018	05-24-2019
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	05-11-2018	05-10-2019
LISN	schwarzbeck	NNBM8125	81251548	05-11-2018	05-10-2019
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

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:

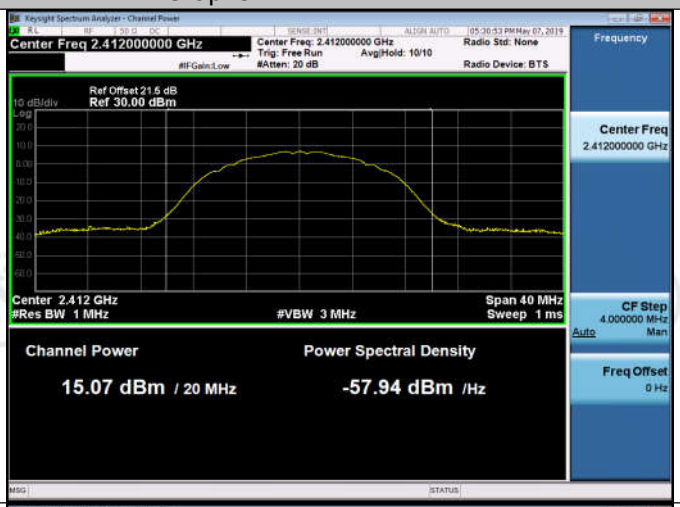
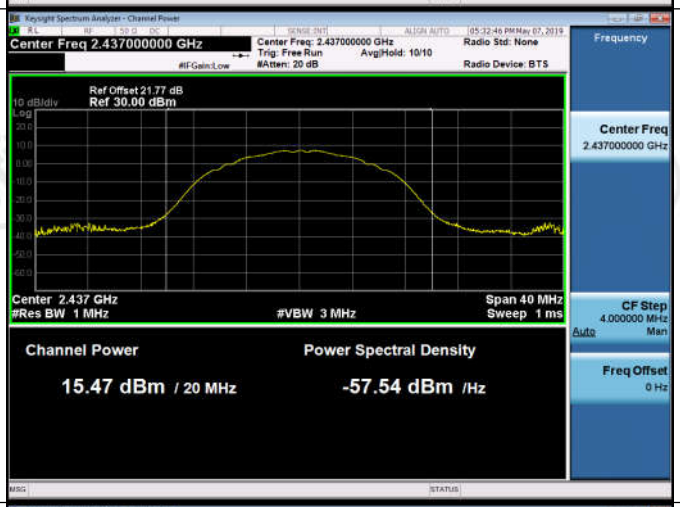
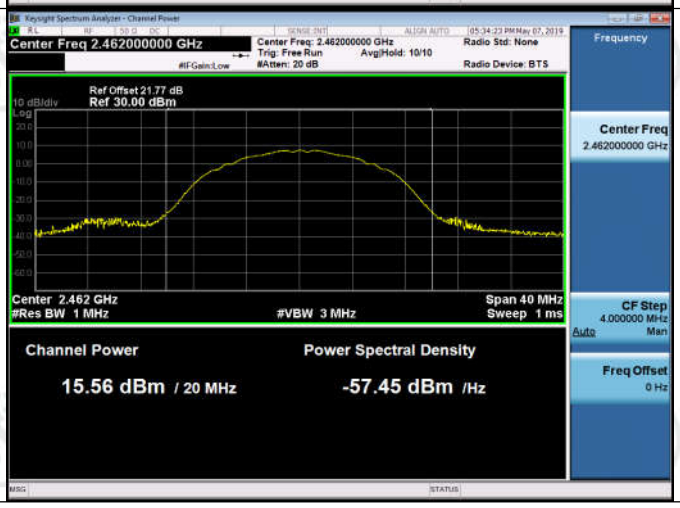
Test Requirement	Test method	Test item	Verdict	Note
Part15C Section 15.247 (b)(3)	ANSI C63.10	Conducted Peak Output Power	PASS	Appendix A)
Part15C Section 15.247 (a)(2)	ANSI C63.10	6dB Occupied Bandwidth	PASS	Appendix B)
Part15C Section 15.247(d)	ANSI C63.10	Band-edge for RF Conducted Emissions	PASS	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)

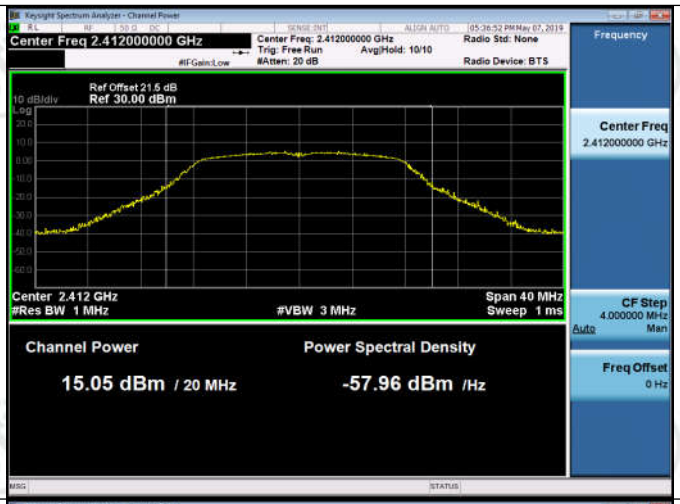
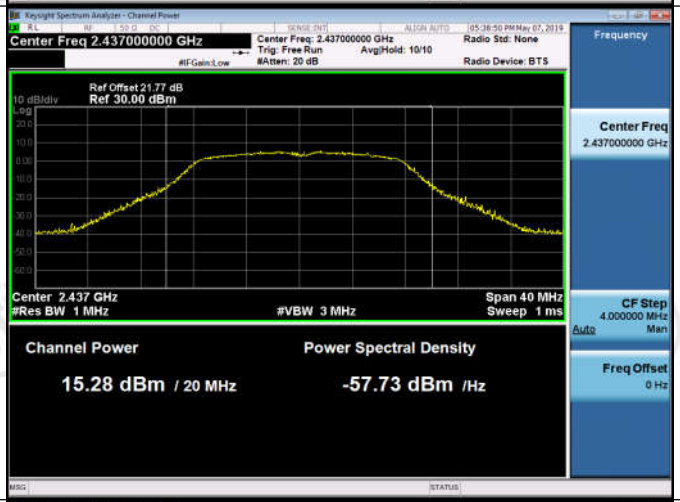
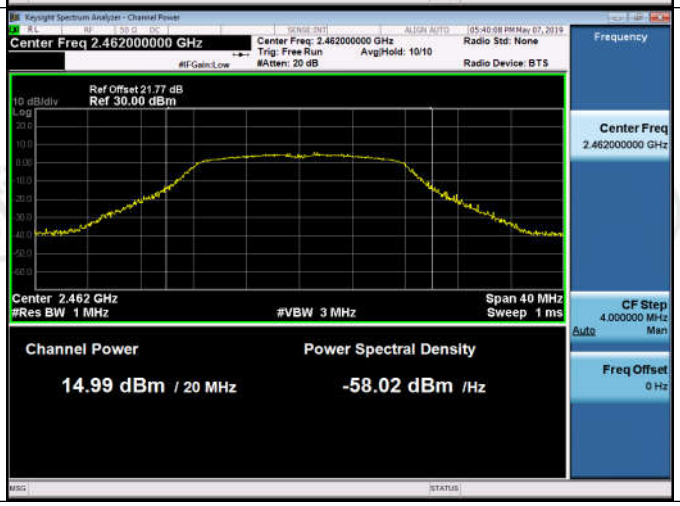
Appendix A): Conducted Peak Output Power

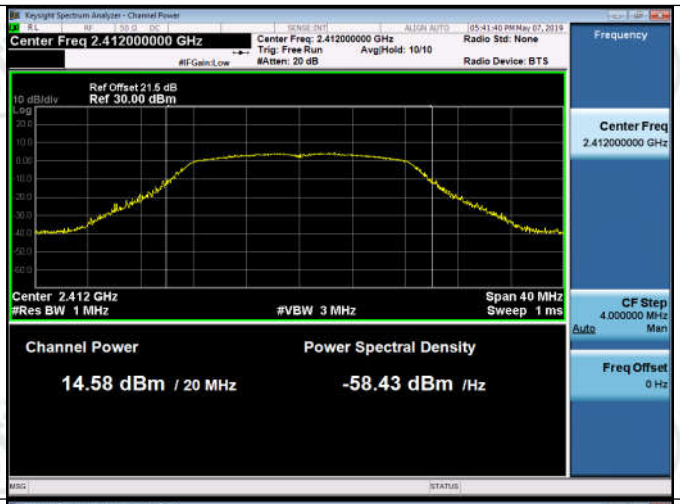
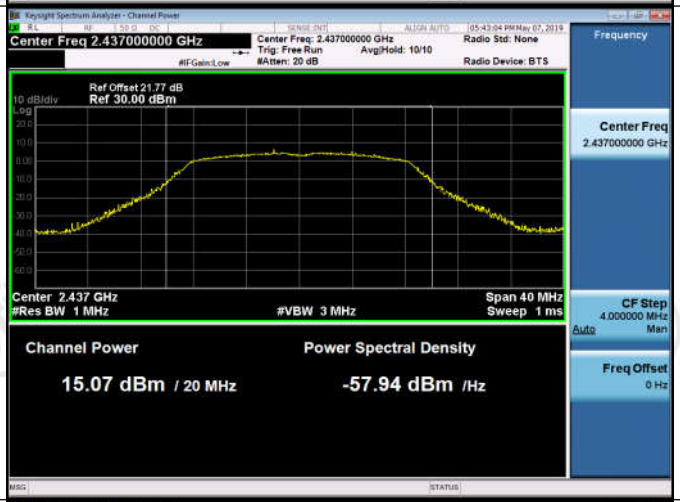
Result Table

Mode	Channel	Conducted Peak Output Power [dBm]	Verdict
11B	LCH	15.07	PASS
11B	MCH	15.47	PASS
11B	HCH	15.56	PASS
11G	LCH	15.05	PASS
11G	MCH	15.28	PASS
11G	HCH	14.99	PASS
11N20SISO	LCH	14.58	PASS
11N20SISO	MCH	15.07	PASS
11N20SISO	HCH	14.73	PASS

Test Graph

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

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

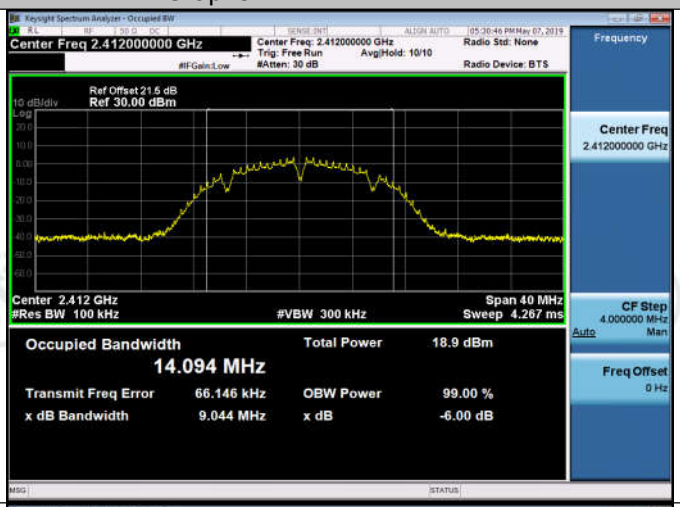
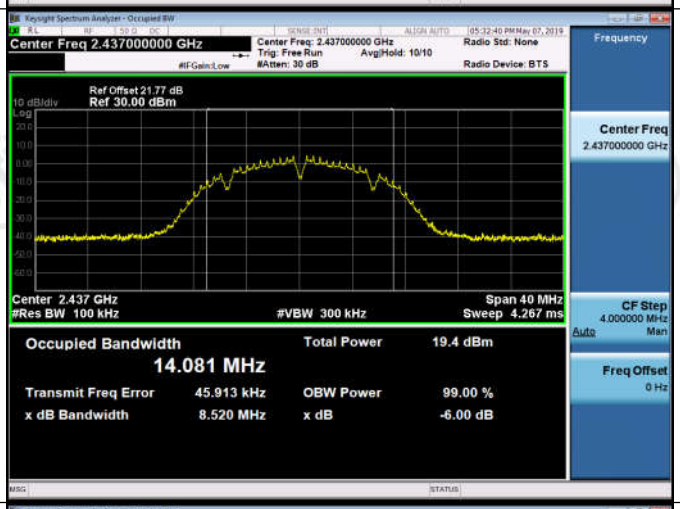
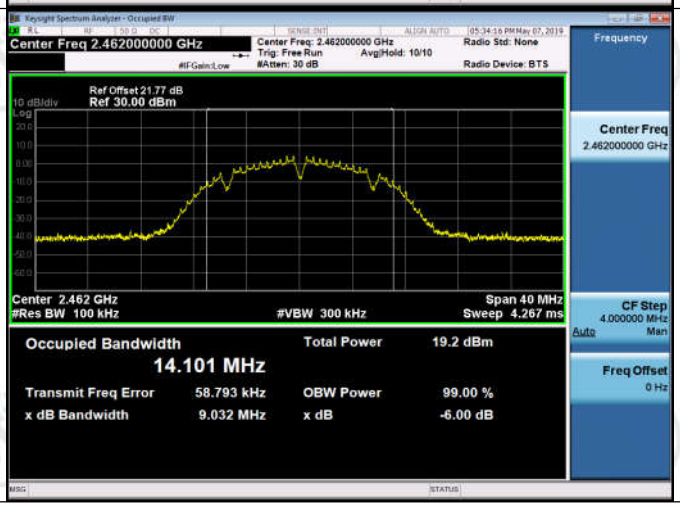
11N20SISO/LCH			
11N20SISO/MCH			
11N20SISO/HCH			

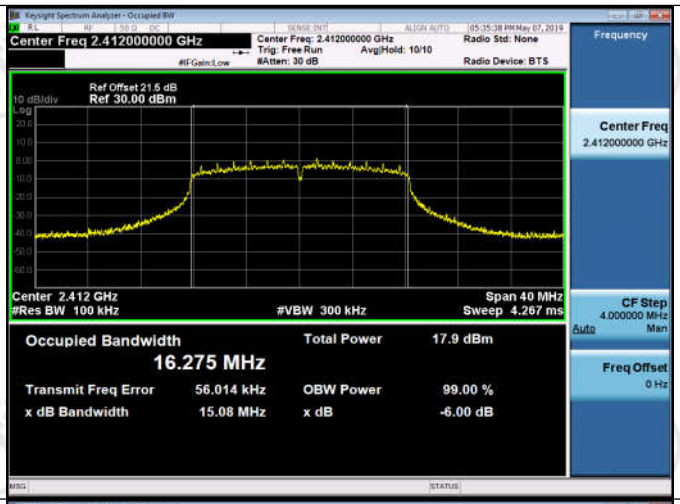
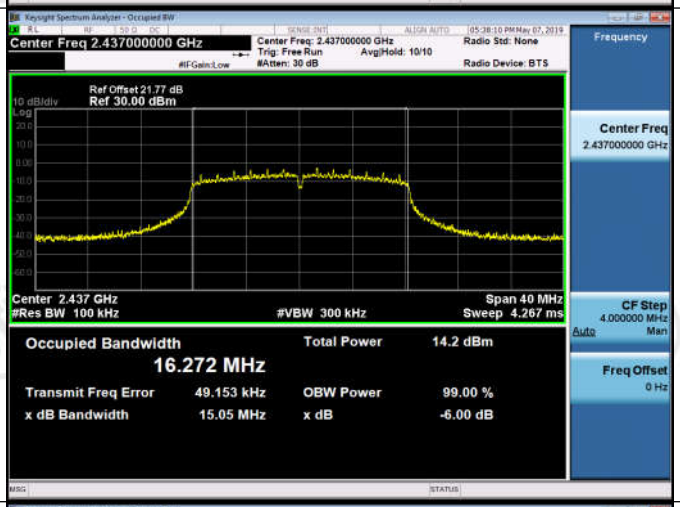
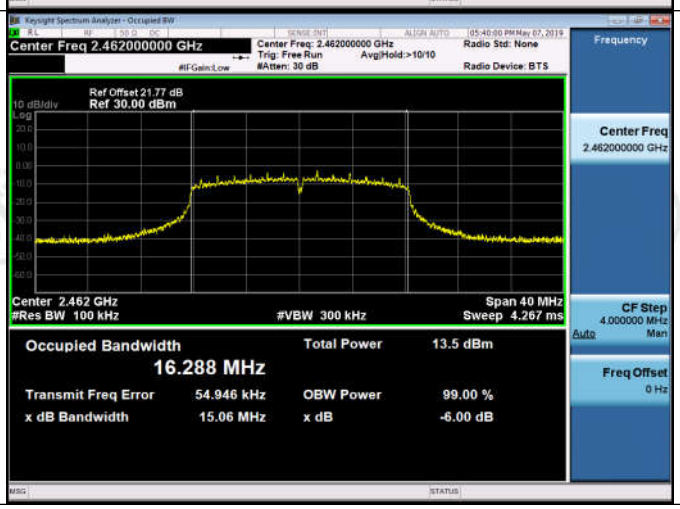
Appendix B): 6dB Occupied Bandwidth

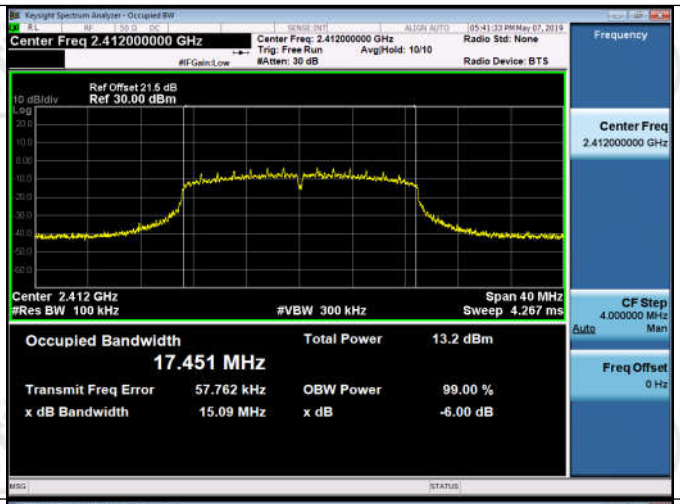
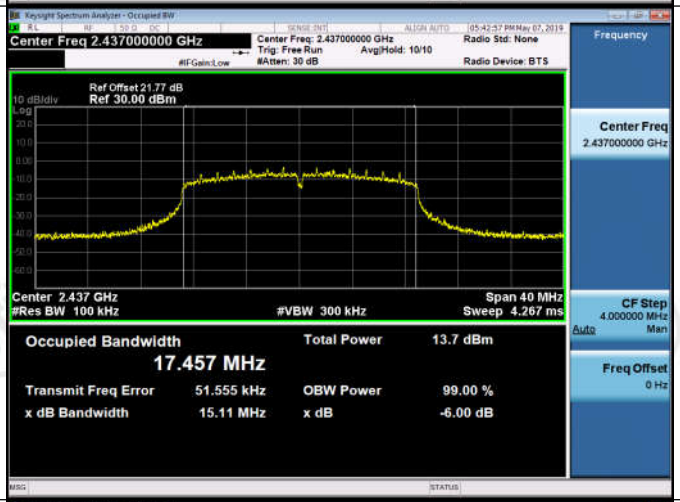
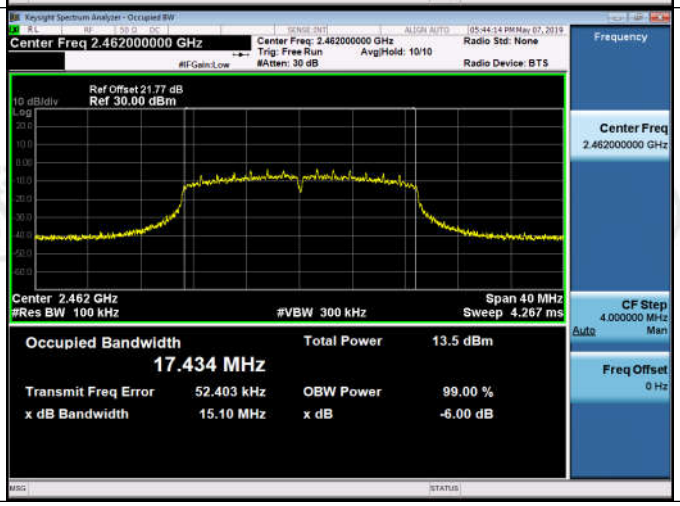
Result Table

Mode	Channel	6dB Bandwidth [MHz]	99% OBW [MHz]	Verdict
11B	LCH	9.044	14.094	PASS
11B	MCH	8.520	14.081	PASS
11B	HCH	9.032	14.101	PASS
11G	LCH	15.08	16.275	PASS
11G	MCH	15.05	16.272	PASS
11G	HCH	15.06	16.288	PASS
11N20SISO	LCH	15.09	17.451	PASS
11N20SISO	MCH	15.11	17.457	PASS
11N20SISO	HCH	15.10	17.434	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	3.409	-46.852	-26.59	PASS
11B	HCH	4.255	-46.960	-25.75	PASS
11G	LCH	-2.804	-47.978	-32.8	PASS
11G	HCH	-2.831	-47.787	-32.83	PASS
11N20SISO	LCH	-3.147	-46.416	-33.15	PASS
11N20SISO	HCH	-3.071	-47.187	-33.07	PASS

Test Graph

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

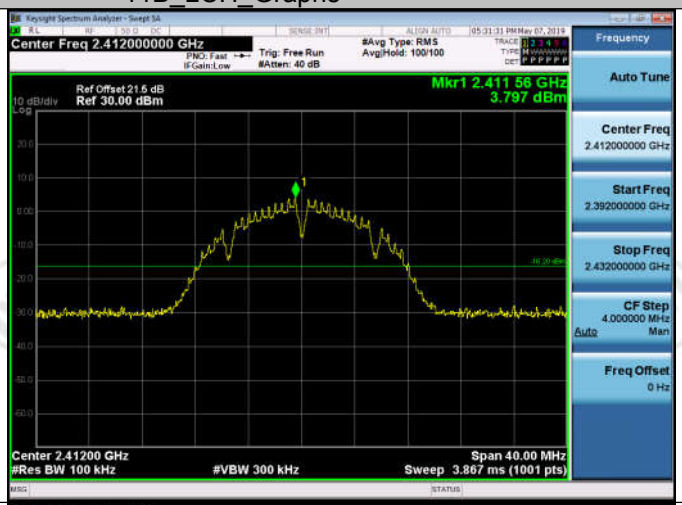
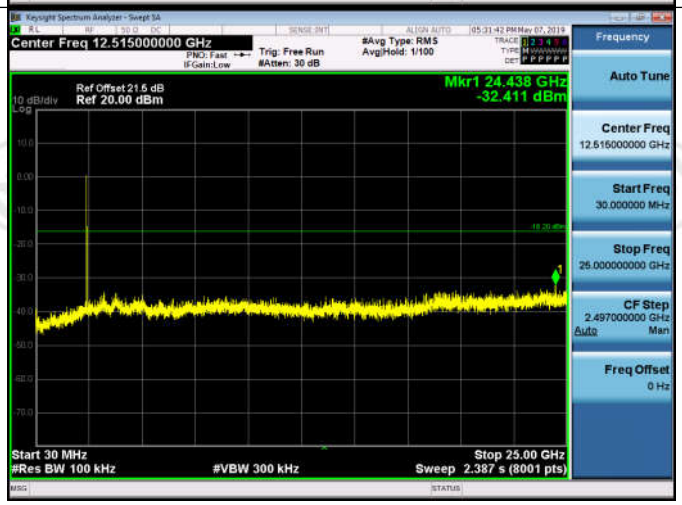
11G/HCH			
11N20SISO/LCH			
11N20SISO/HCH			

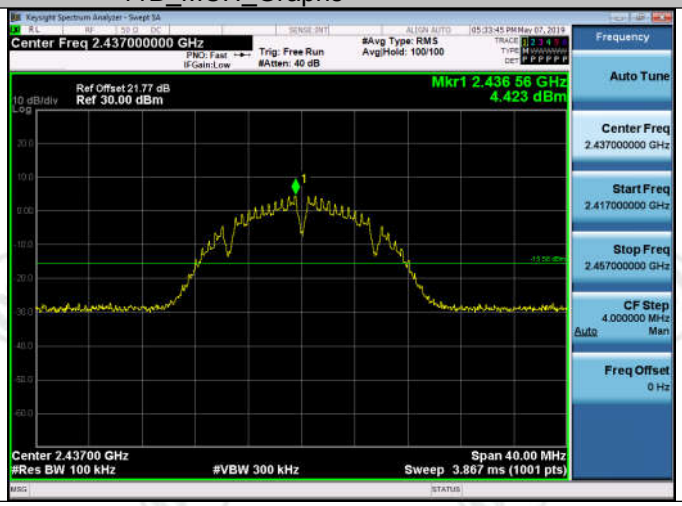
Appendix D): RF Conducted Spurious Emissions

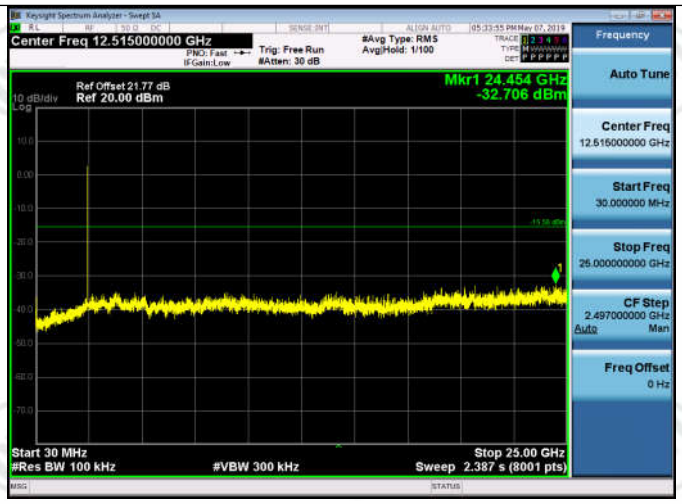
Result Table

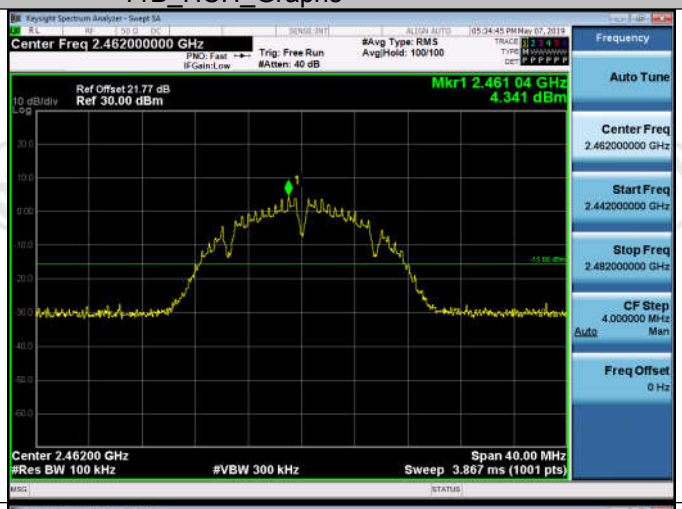
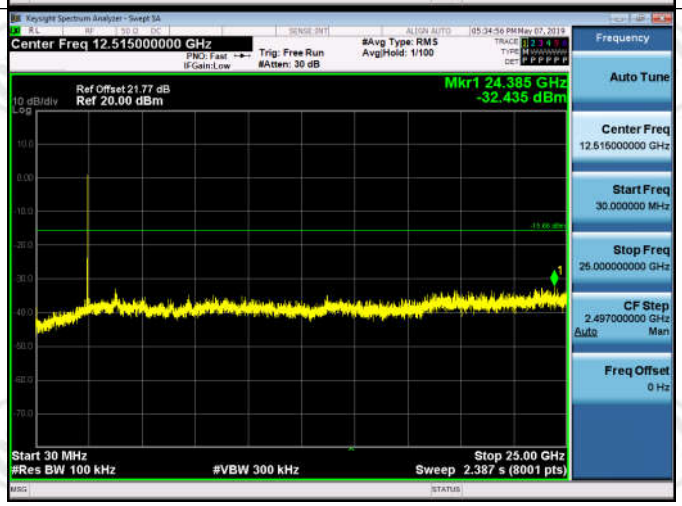
Mode	Channel	Pref [dBm]	Puw[dBm]	Verdict
11B	LCH	3.797	<Limit	PASS
11B	MCH	4.423	<Limit	PASS
11B	HCH	4.341	<Limit	PASS
11G	LCH	-2.533	<Limit	PASS
11G	MCH	-3.397	<Limit	PASS
11G	HCH	-2.894	<Limit	PASS
11N20SISO	LCH	-3.369	<Limit	PASS
11N20SISO	MCH	-3.291	<Limit	PASS
11N20SISO	HCH	-2.766	<Limit	PASS

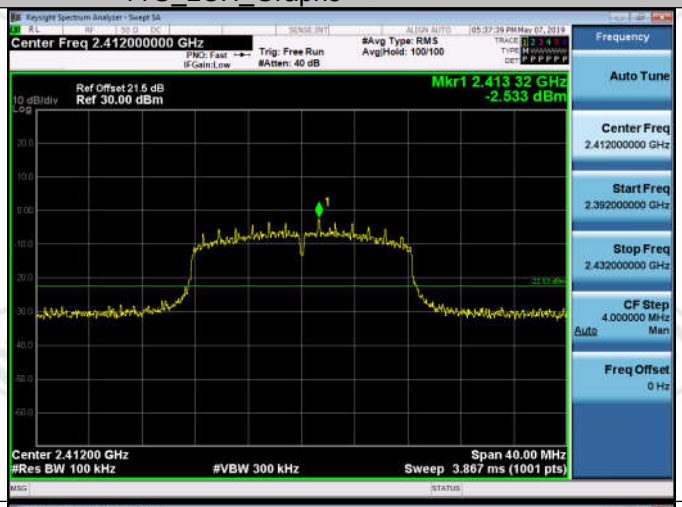
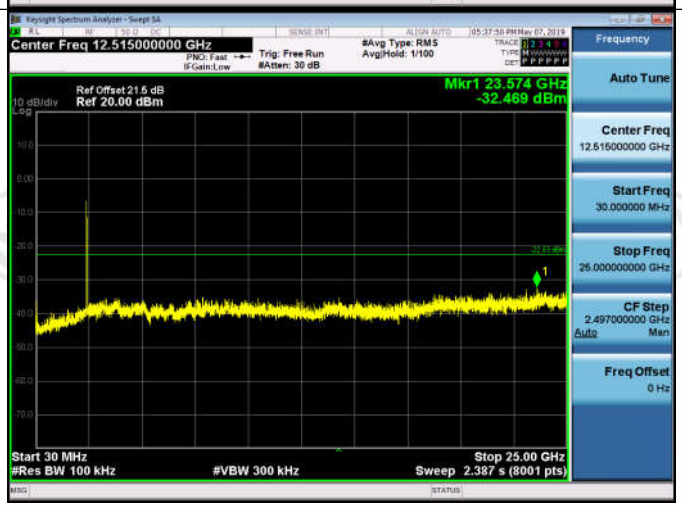
Test Graph

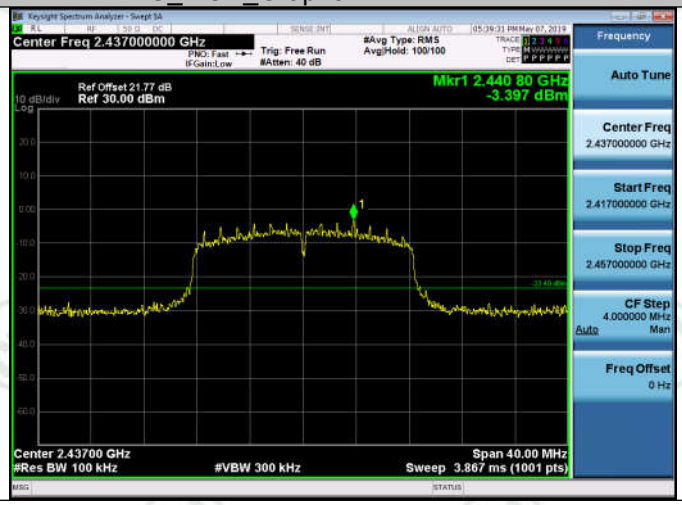
11B_LCH_Graphs		
Pref/11B/LCH		
Puw/11B/LCH		

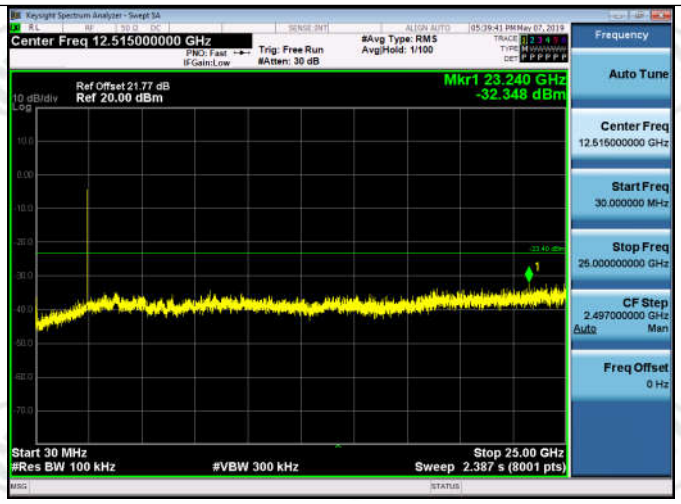
11B_MCH_Graphs		
Pref/11B/MCH		

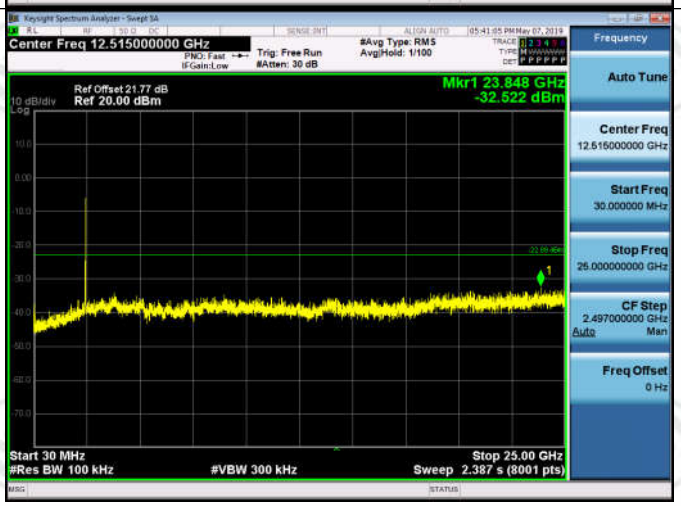
Puw/11B/MCH	

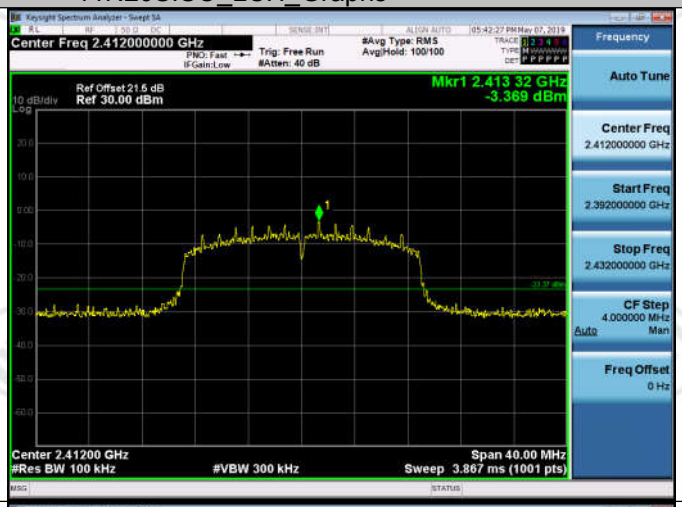
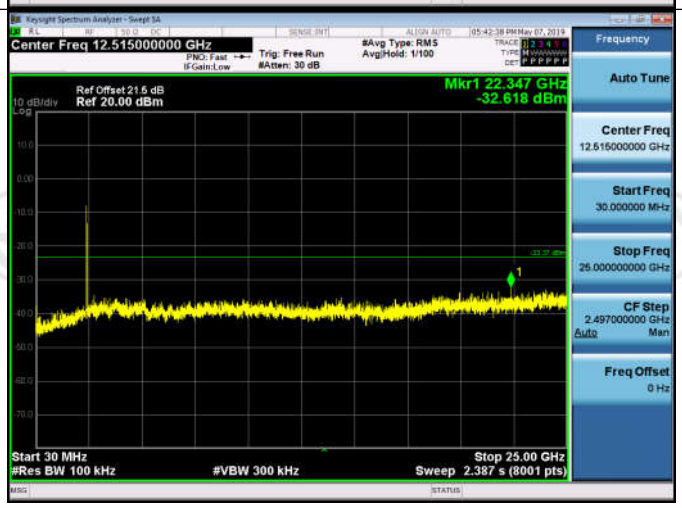
11B_HCH_Graphs	
Pref/11B/HCH	
Puw/11B/HCH	

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

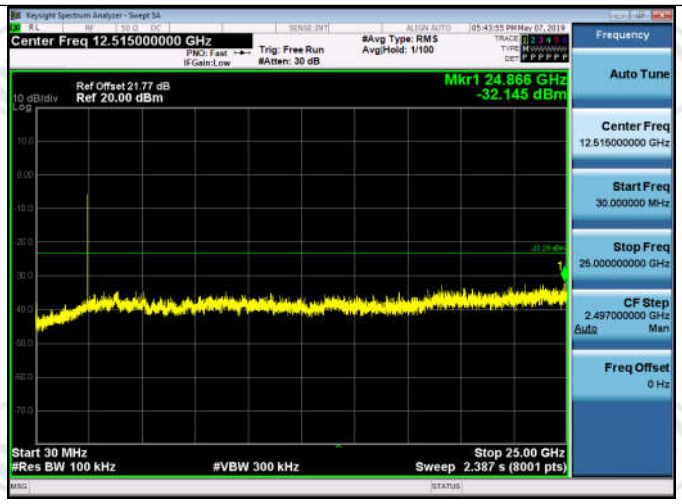
11G_MCH_Graphs	
Pref/11G/MCH	

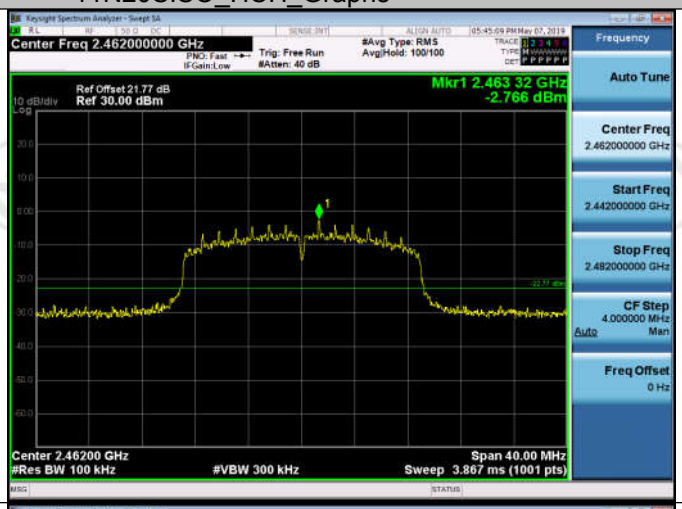
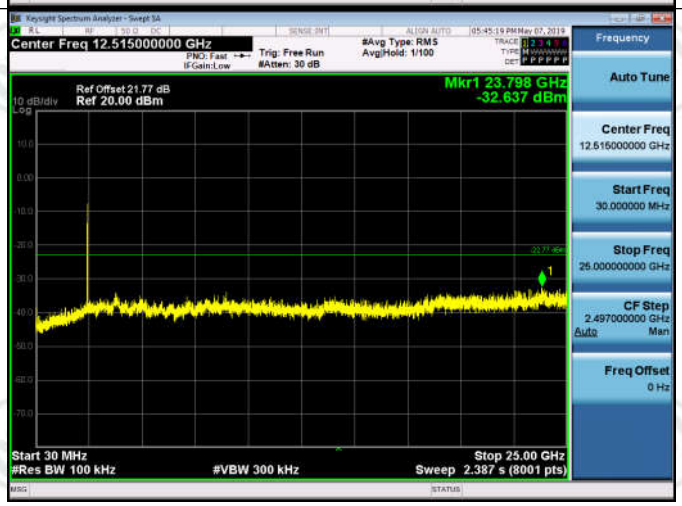
Puw/11G/MCH	

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	

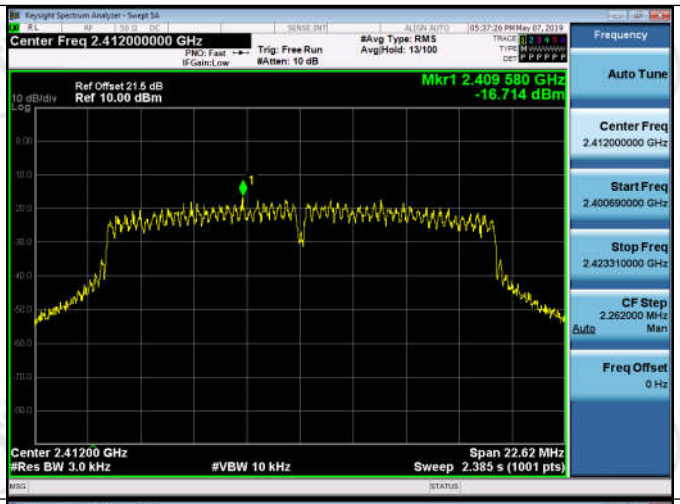
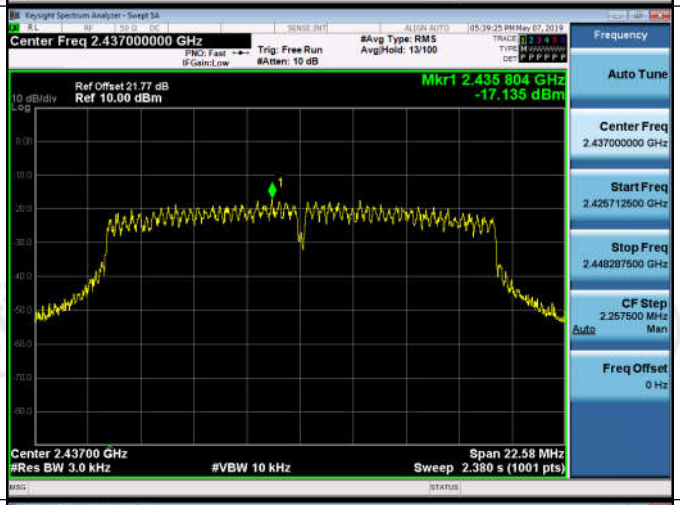
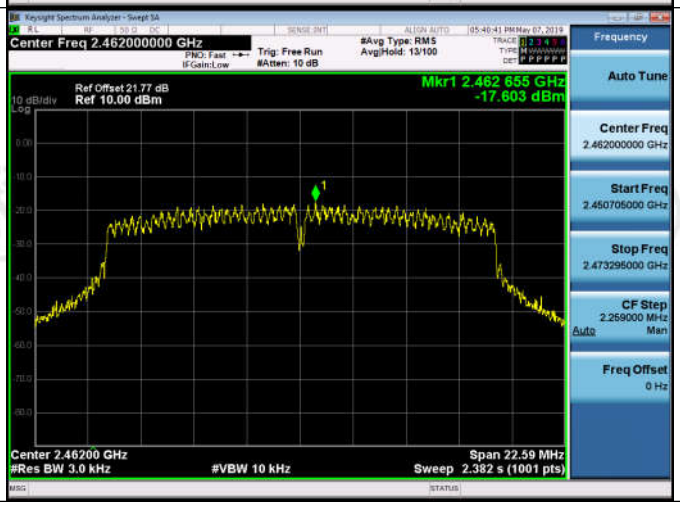
Appendix E): Power Spectral Density

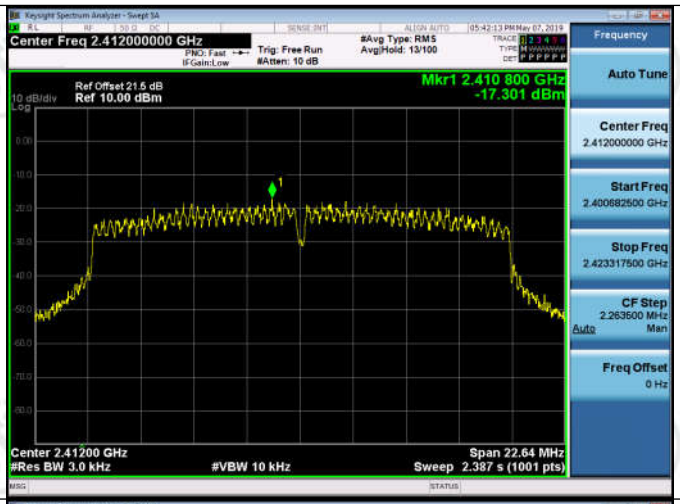
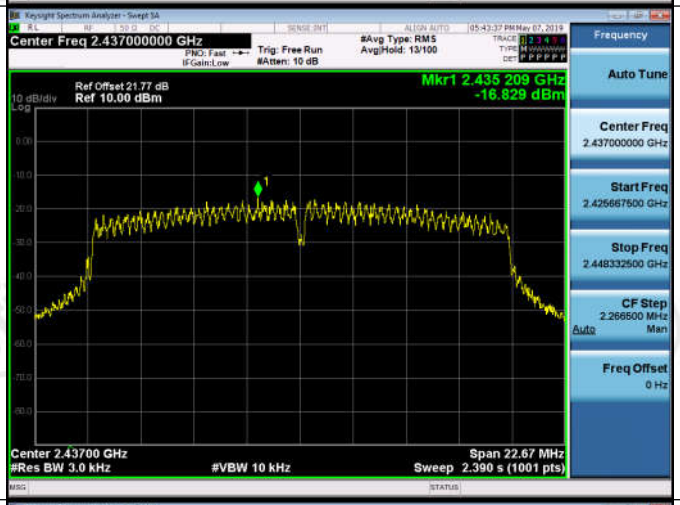
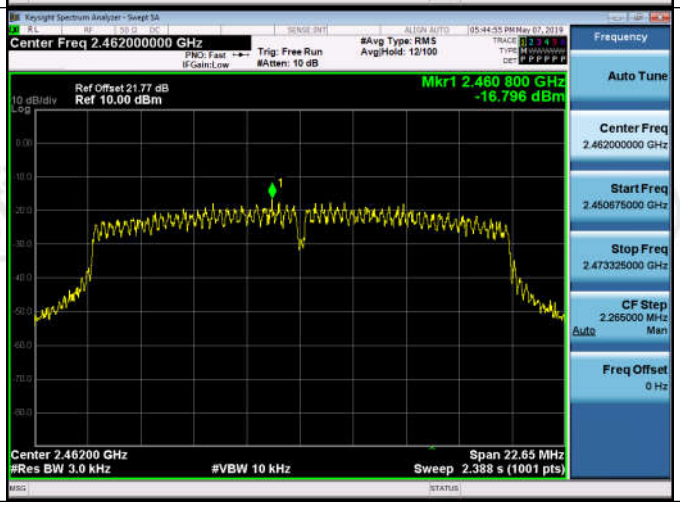
Result Table

Mode	Channel	Power Spectral Density [dBm]	Verdict
11B	LCH	-11.019	PASS
11B	MCH	-10.433	PASS
11B	HCH	-10.262	PASS
11G	LCH	-16.714	PASS
11G	MCH	-17.135	PASS
11G	HCH	-17.603	PASS
11N20SISO	LCH	-17.301	PASS
11N20SISO	MCH	-16.829	PASS
11N20SISO	HCH	-16.796	PASS

Test Graph

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

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

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

Appendix F): Antenna Requirement

15.203 requirement:

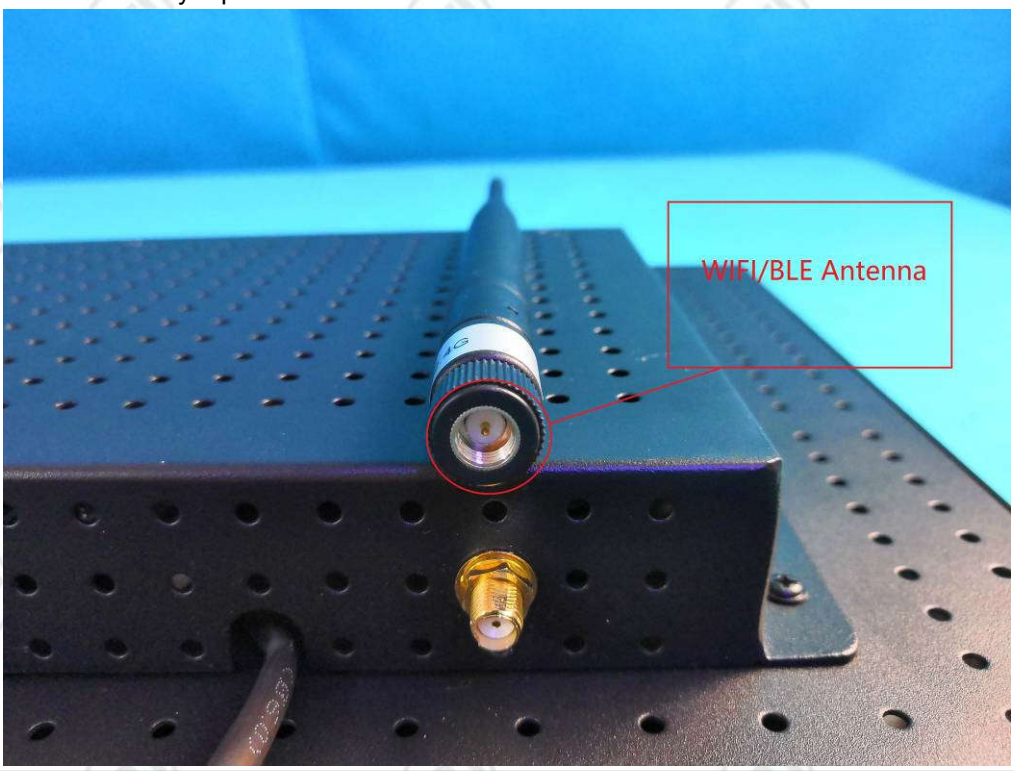
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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:

WIFI and BLE use the same external omnidirectional antenna with 5 dBi gain and manufacturer declare the antenna must be installed by a professional installer.



Appendix G): AC Power Line Conducted Emission

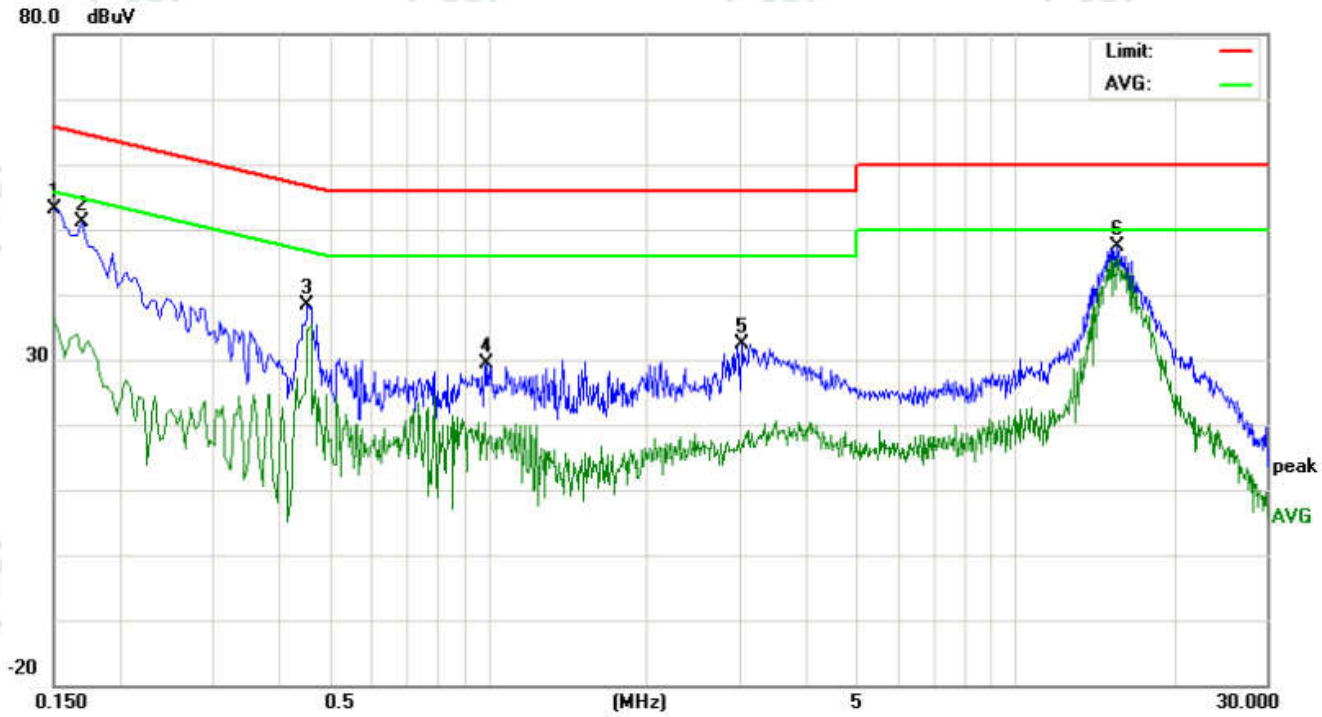
<table>
<tr><td>Test Procedure:</td><td>Test frequency range :150KHz-30MHz
1)The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. 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>Temperature:</td><td>22℃ | Humidity: | 51%</td></tr>
</table>

Measurement Data

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

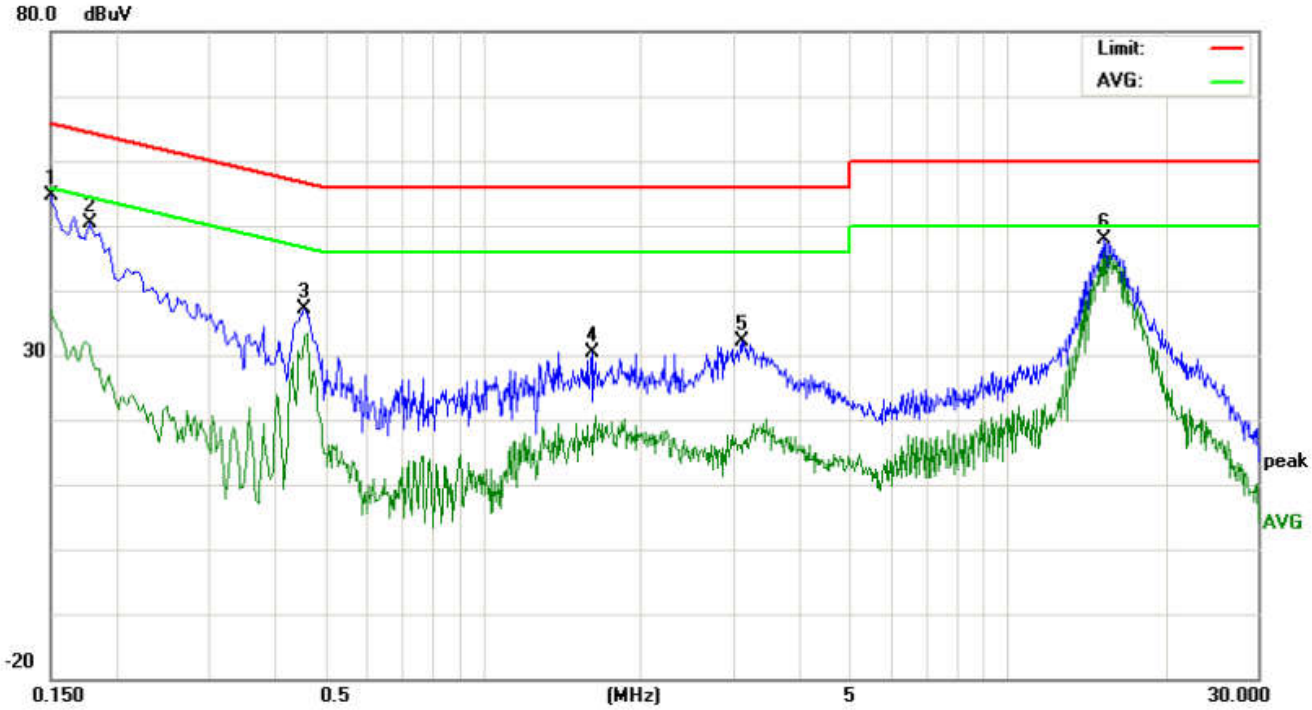
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

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	43.23	40.12	26.56	9.91	53.14	50.03	36.47	65.99	55.99	-15.96	-19.52	P	
2	0.1700	41.23	38.45	21.23	9.91	51.14	48.36	31.14	64.96	54.96	-16.60	-23.82	P	
3	0.4540	28.38	26.30	24.67	9.89	38.27	36.19	34.56	56.80	46.80	-20.61	-12.24	P	
4	0.9980	19.54	17.30	6.58	9.81	29.35	27.11	16.39	56.00	46.00	-28.89	-29.61	P	
5	3.0380	22.69	18.26	7.47	9.72	32.41	27.98	17.19	56.00	46.00	-28.02	-28.81	P	
6	15.5660	37.47	34.50	35.61	9.97	47.44	44.47	45.58	60.00	50.00	-15.53	-4.42	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	0.1500	44.62	42.30	26.92	9.91	54.53	52.21	36.83	65.99	55.99	-13.78	-19.16	P	
2	0.1780	40.47	37.50	21.48	9.91	50.38	47.41	31.39	64.57	54.57	-17.16	-23.18	P	
3	0.4580	27.23	25.46	22.99	9.89	37.12	35.35	32.88	56.73	46.73	-21.38	-13.85	P	
4	1.6180	20.63	18.45	7.82	9.75	30.38	28.20	17.57	56.00	46.00	-27.80	-28.43	P	
5	3.1180	22.43	19.30	5.07	9.72	32.15	29.02	14.79	56.00	46.00	-26.98	-31.21	P	
6	15.3460	37.97	34.52	35.86	9.98	47.95	44.50	45.84	60.00	50.00	-15.50	-4.16	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.

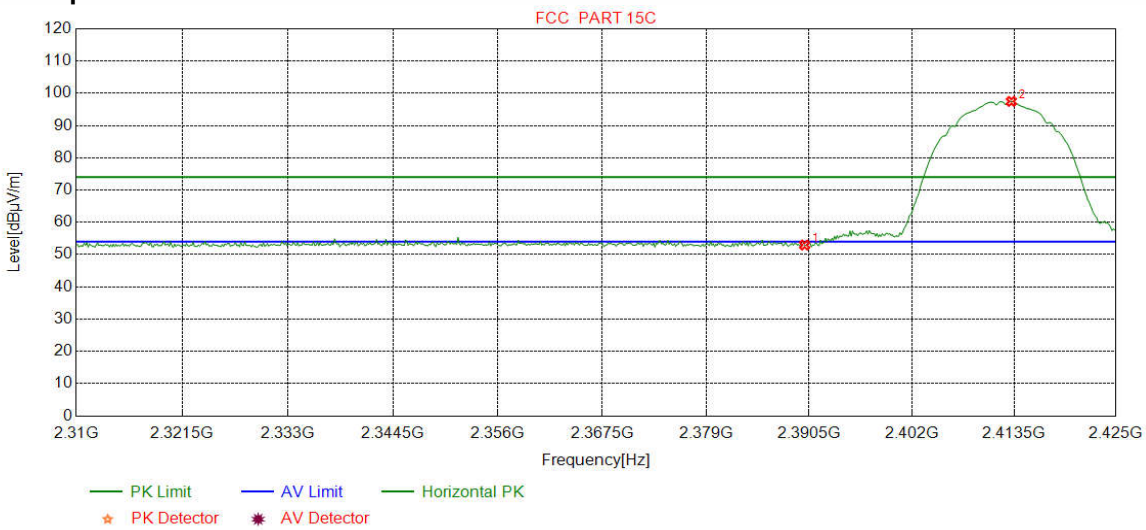
Limit:

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 plot as follows:

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

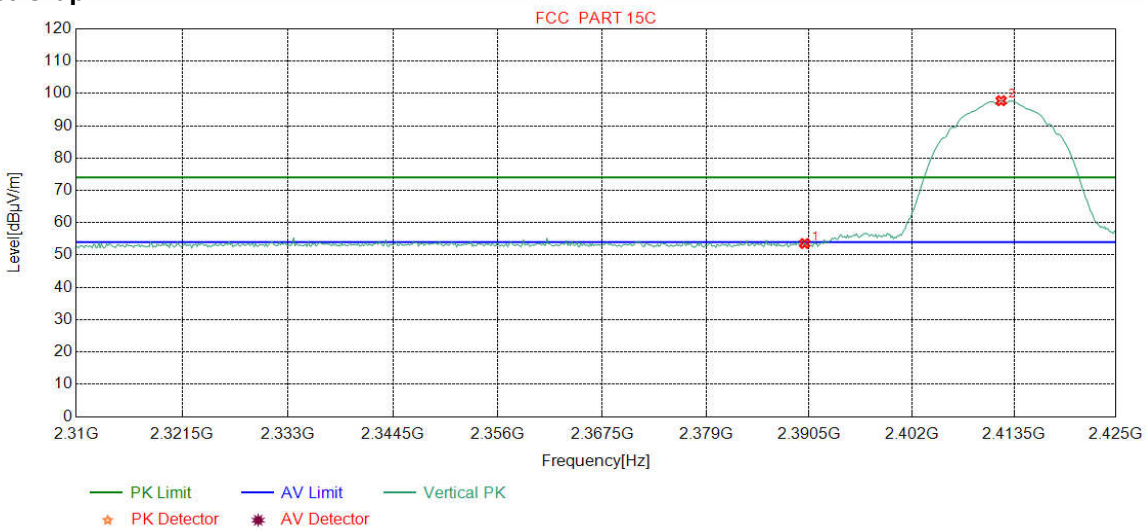
Test Graph



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	49.78	52.96	74.00	21.04	Pass	Horizontal
2	2413.1977	32.28	13.36	-42.43	94.28	97.49	74.00	-23.49	Pass	Horizontal

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

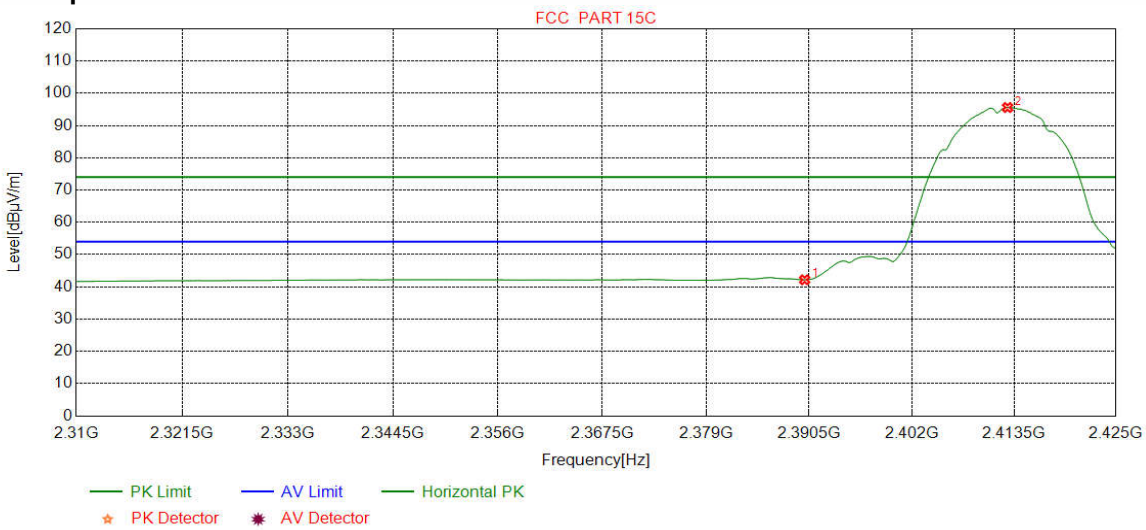
Test Graph



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	50.39	53.57	74.00	20.43	Pass	Vertical
2	2412.0463	32.28	13.36	-42.44	94.56	97.76	74.00	-23.76	Pass	Vertical

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

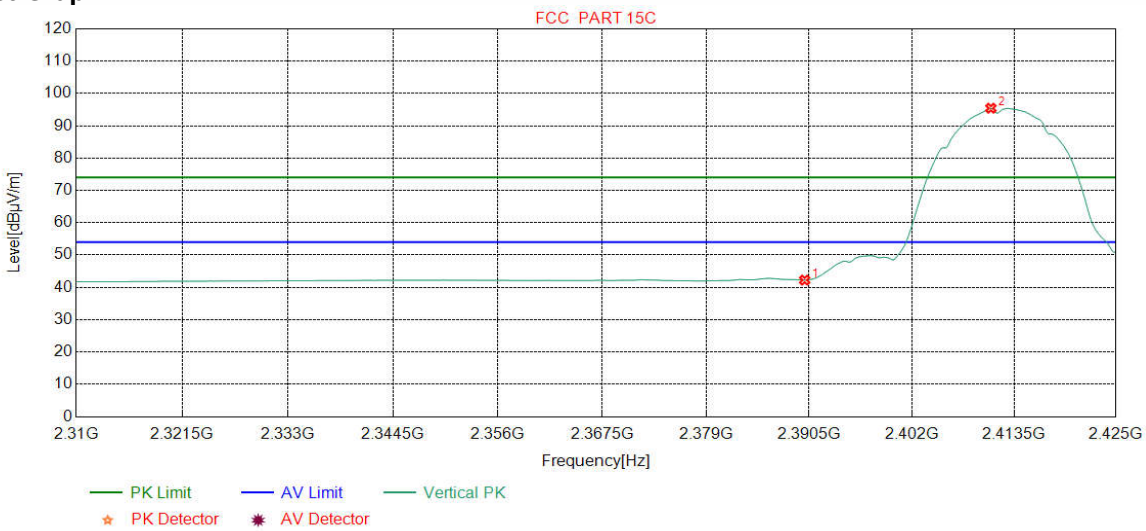
Test Graph



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	39.00	42.18	54.00	11.82	Pass	Horizontal
2	2412.7660	32.28	13.36	-42.43	92.39	95.60	54.00	-41.60	Pass	Horizontal

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

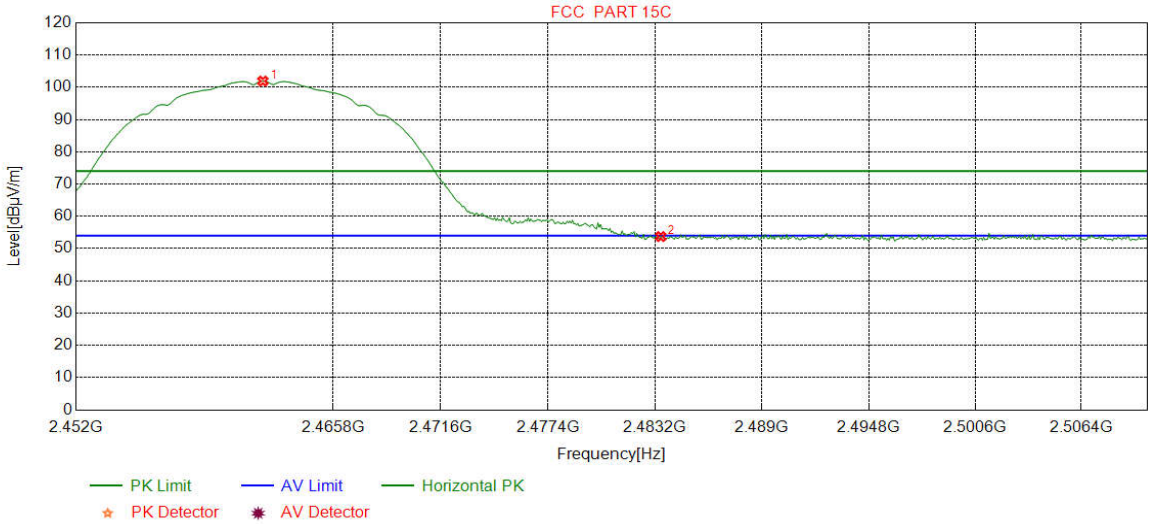
Test Graph



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	39.07	42.25	54.00	11.75	Pass	Vertical
2	2410.8949	32.28	13.35	-42.43	92.24	95.44	54.00	-41.44	Pass	Vertical

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

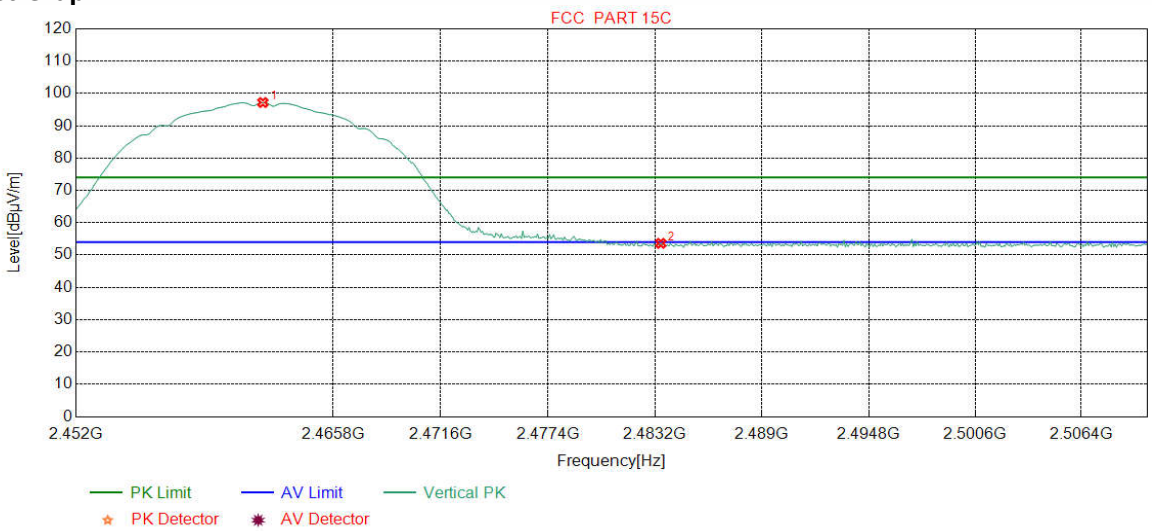
Test Graph



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	2462.0175	32.35	13.47	-42.41	98.51	101.92	74.00	-27.92	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	50.37	53.73	74.00	20.27	Pass	Horizontal

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

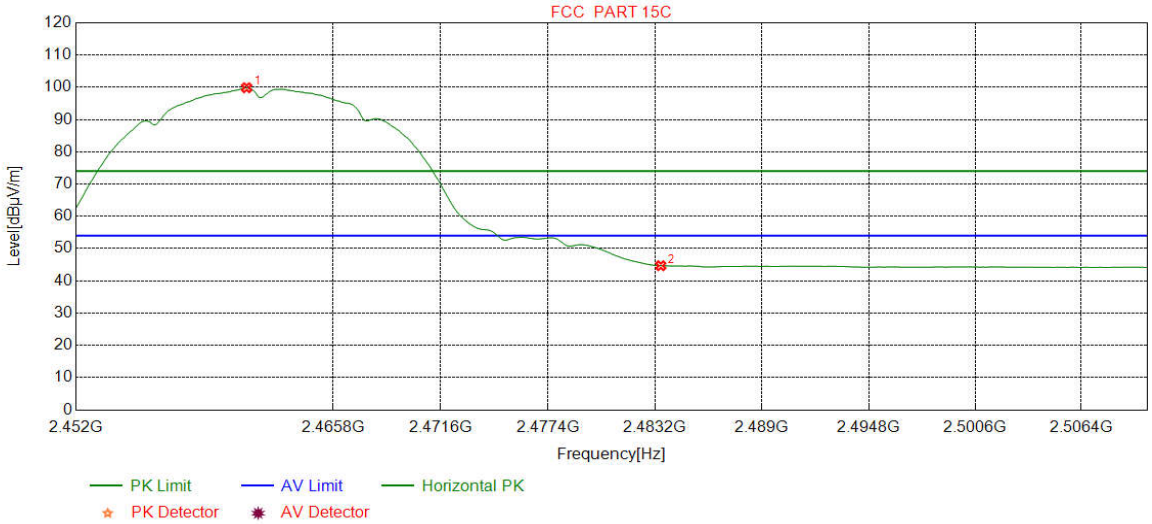
Test Graph



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	2462.0175	32.35	13.47	-42.41	93.79	97.20	74.00	-23.20	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	50.27	53.63	74.00	20.37	Pass	Vertical

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

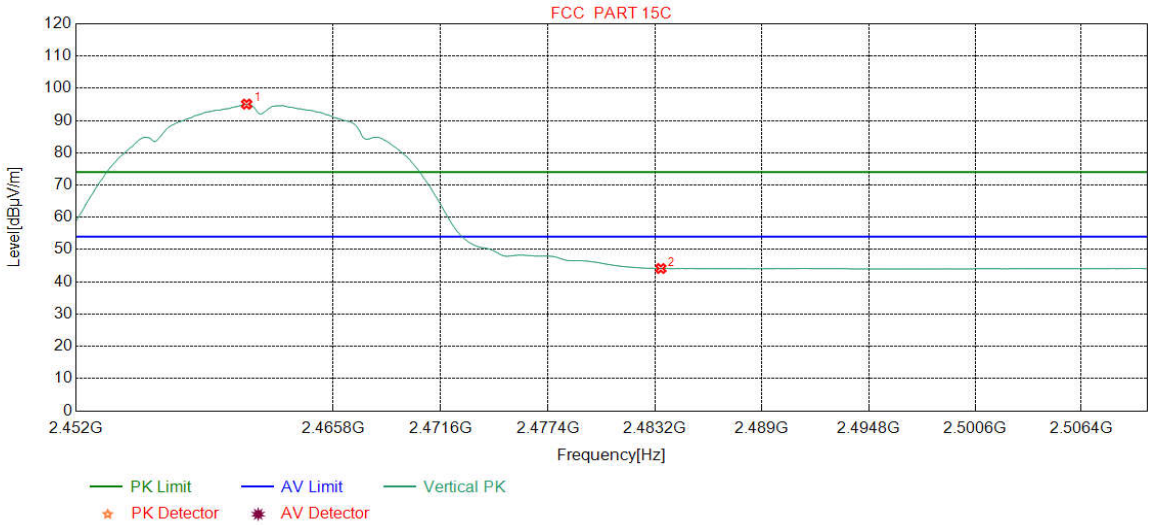
Test Graph



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	2461.1464	32.35	13.48	-42.41	96.45	99.87	54.00	-45.87	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	41.33	44.69	54.00	9.31	Pass	Horizontal

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

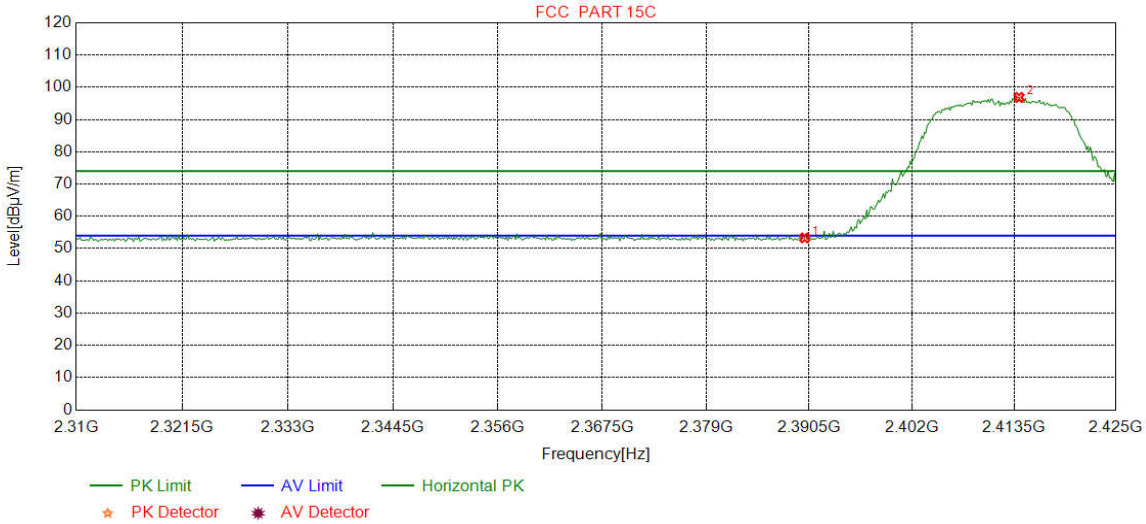
Test Graph



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	2461.1464	32.35	13.48	-42.41	91.68	95.10	54.00	-41.10	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	40.78	44.14	54.00	9.86	Pass	Vertical

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

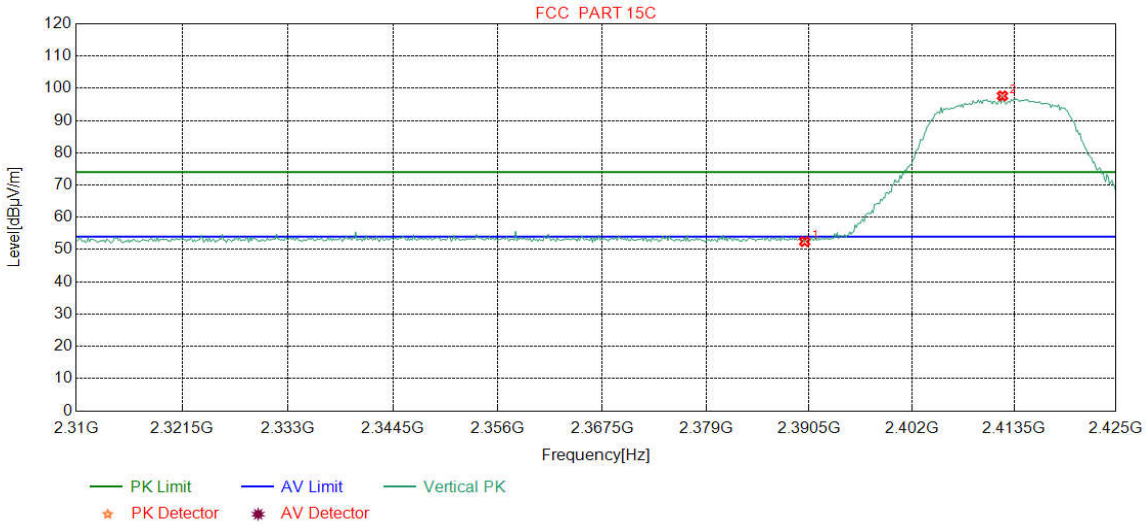
Test Graph



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	50.14	53.32	74.00	20.68	Pass	Horizontal
2	2414.0613	32.28	13.36	-42.42	93.67	96.89	74.00	-22.89	Pass	Horizontal

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

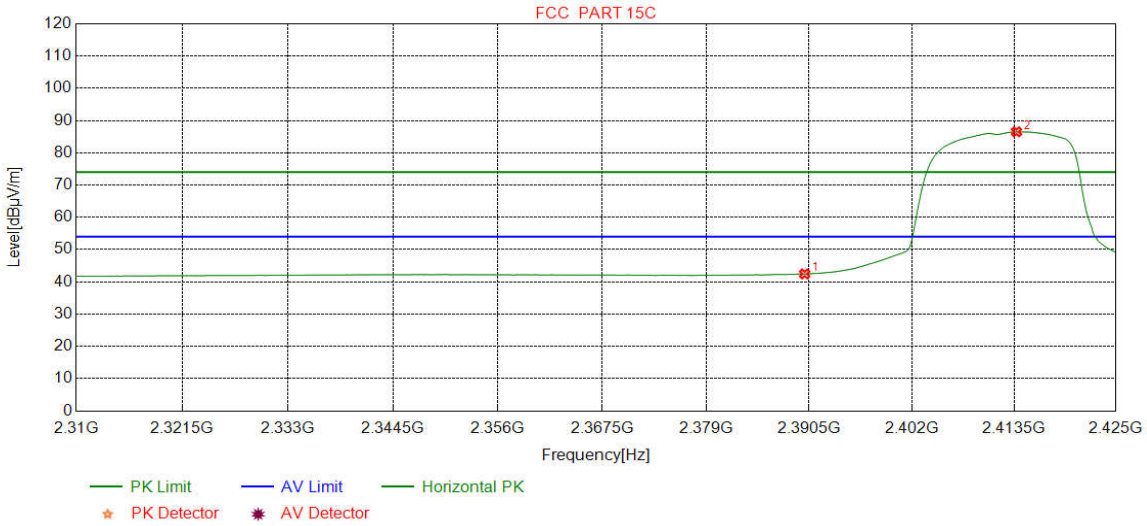
Test Graph



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	49.30	52.48	74.00	21.52	Pass	Vertical
2	2412.1902	32.28	13.36	-42.44	94.44	97.64	74.00	-23.64	Pass	Vertical

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

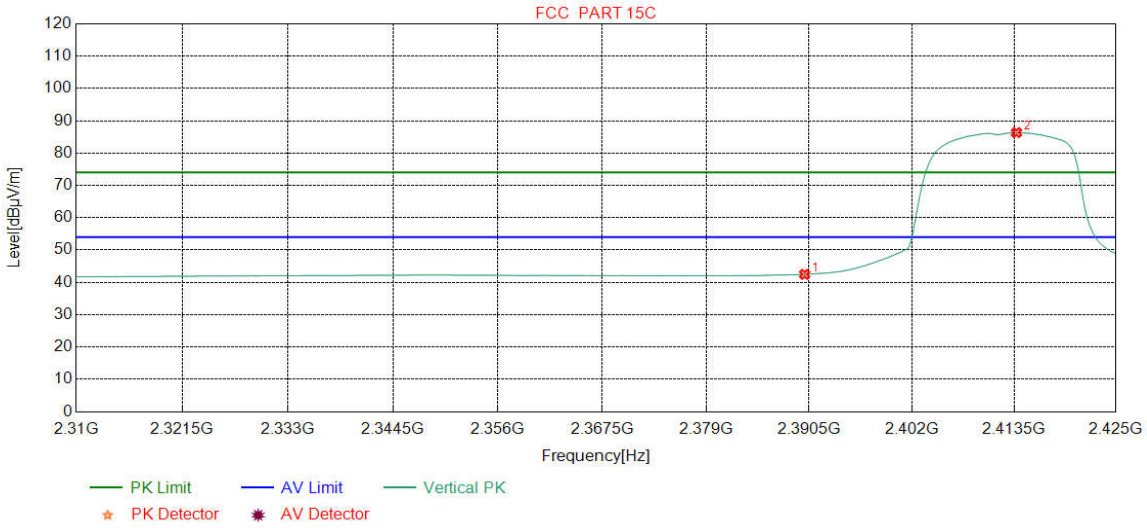
Test Graph



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	39.28	42.46	54.00	11.54	Pass	Horizontal
2	2413.7735	32.28	13.36	-42.43	83.30	86.51	54.00	-32.51	Pass	Horizontal

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

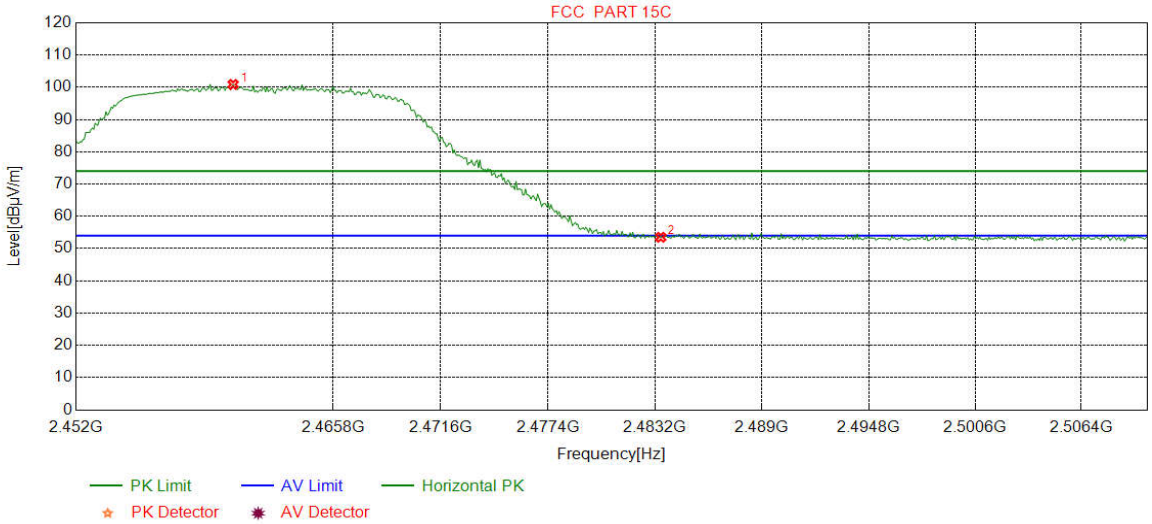
Test Graph



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	39.30	42.48	54.00	11.52	Pass	Vertical
2	2413.7735	32.28	13.36	-42.43	83.14	86.35	54.00	-32.35	Pass	Vertical

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

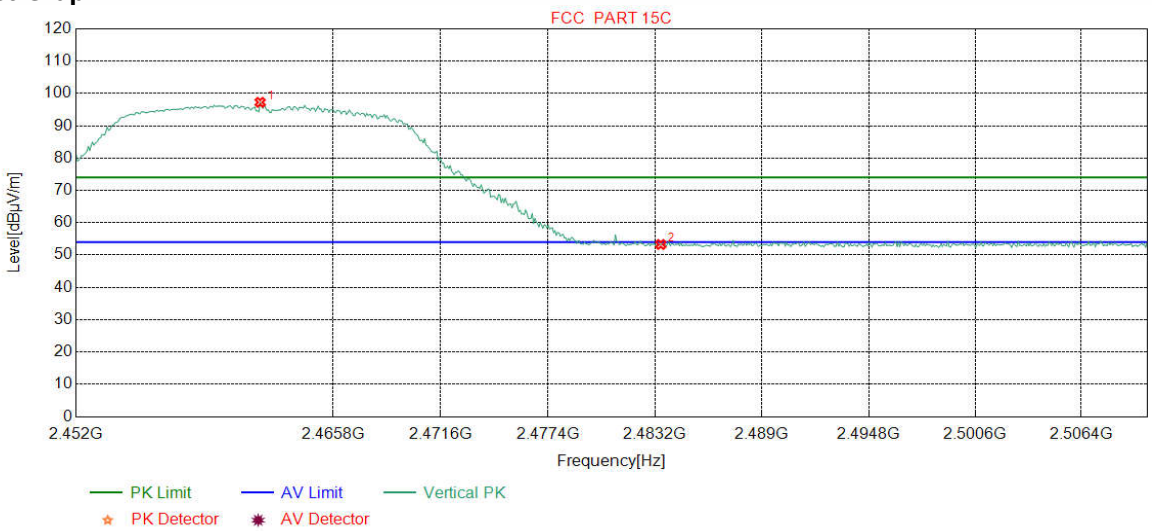
Test Graph



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	2460.4205	32.34	13.48	-42.40	97.47	100.89	74.00	-26.89	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	50.16	53.52	74.00	20.48	Pass	Horizontal

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

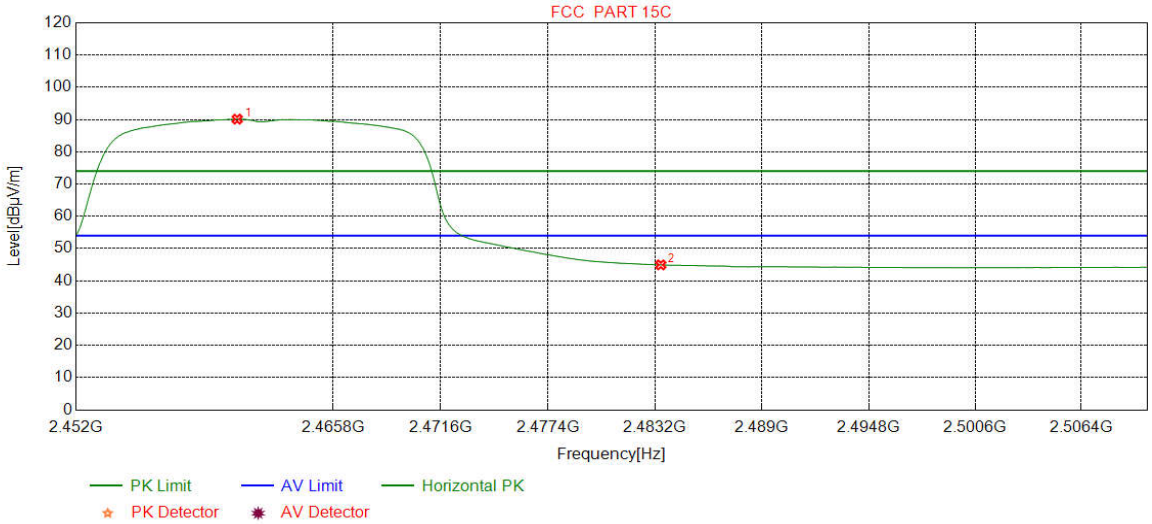
Test Graph



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	2461.8723	32.35	13.48	-42.41	93.84	97.26	74.00	-23.26	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	49.91	53.27	74.00	20.73	Pass	Vertical

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

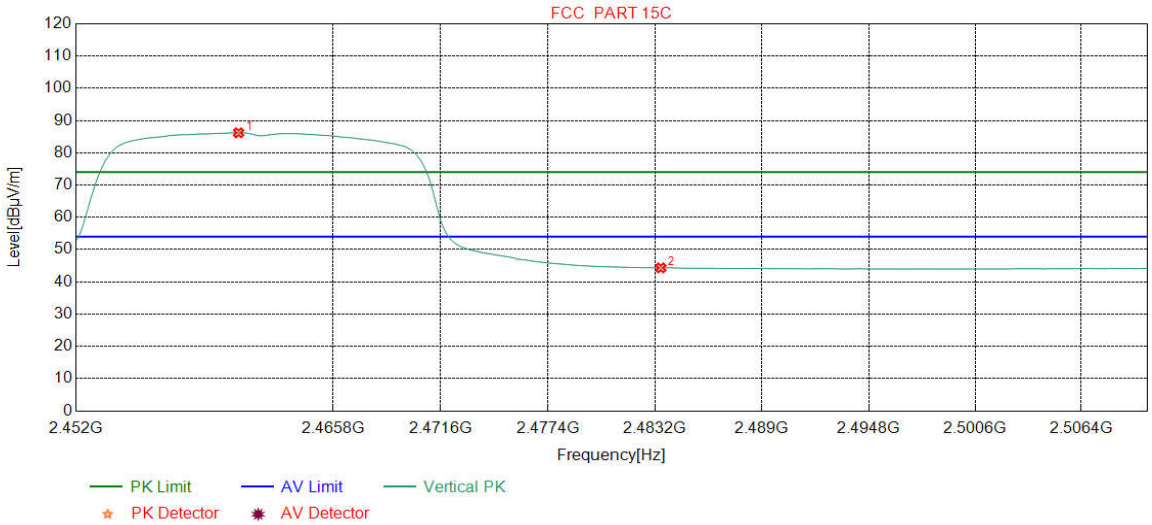
Test Graph



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	86.72	90.14	54.00	-36.14	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	41.60	44.96	54.00	9.04	Pass	Horizontal

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

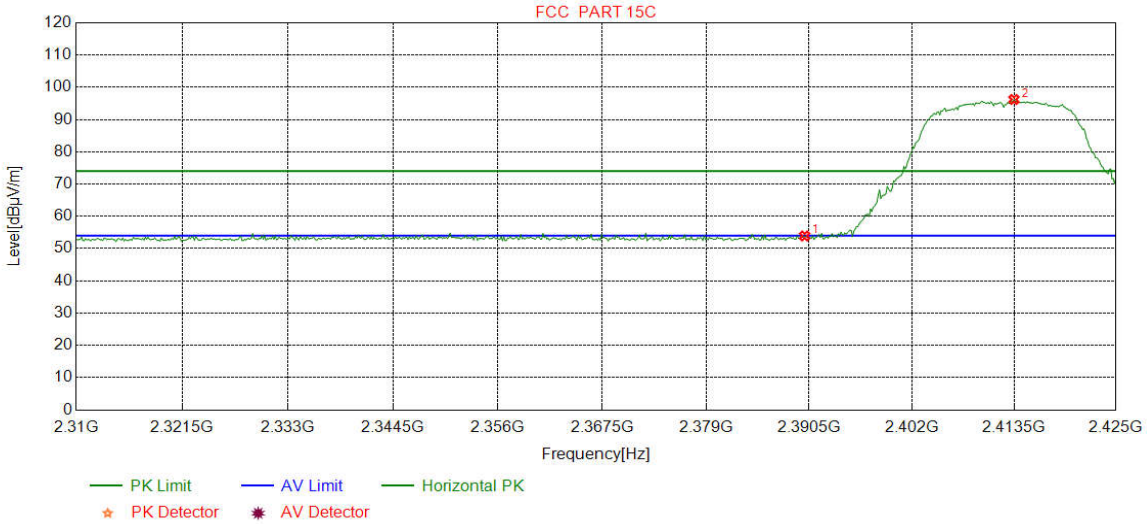
Test Graph



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	2460.7109	32.34	13.48	-42.40	82.78	86.20	54.00	-32.20	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	40.98	44.34	54.00	9.66	Pass	Vertical

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

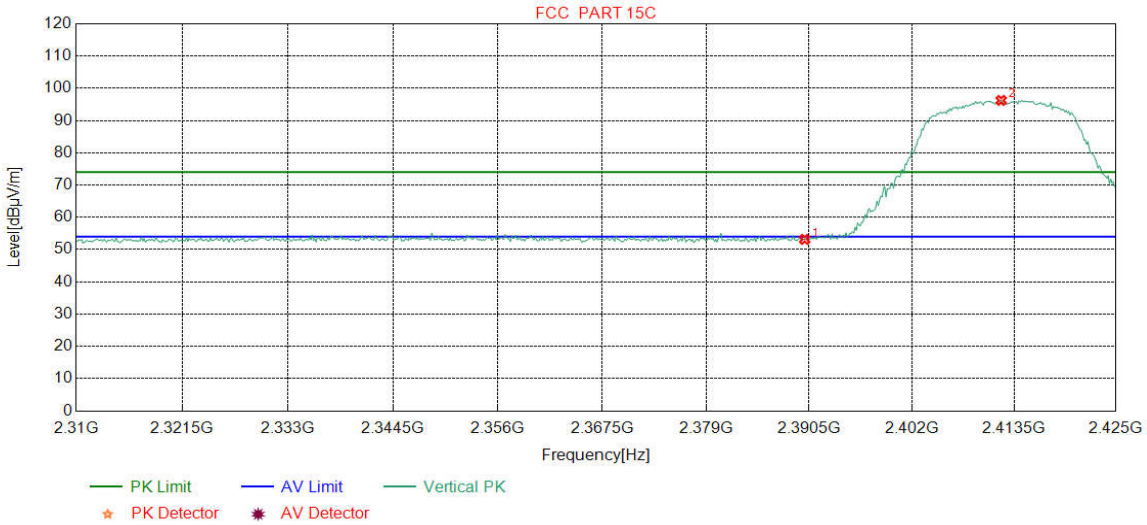
Test Graph



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	50.73	53.91	74.00	20.09	Pass	Horizontal
2	2413.4856	32.28	13.36	-42.43	93.01	96.22	74.00	-22.22	Pass	Horizontal

Mode:	802.11n(HT20) (6.5Mbps)	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	49.98	53.16	74.00	20.84	Pass	Vertical
2	2412.0463	32.28	13.36	-42.44	93.05	96.25	74.00	-22.25	Pass	Vertical