TEST REPORT

Product	:	Projector
Trade mark	:	N/A
Model/Type reference	:	A3, A1, A2, A4, A5, A6, A7, A8, A9, A10, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14
Serial Number	:	N/A
Report Number	:	EED32M80097102
FCC ID	:	2AYUS-A3
Date of Issue	:	Mar. 17, 2021
Test Standards	:	47 CFR Part 15 Subpart C
Test result	:	PASS

Prepared for:

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3 Version

Version No.	Date	Description
00	Mar. 17, 2021	Original

4 Test Summary

Test Item	Test Requirement	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203/15.247 (c)	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	PASS
DTS Bandwidth	47 CFR Part 15 Subpart C Section 15.247 (a)(2)	PASS
Maximum Conducted Output Power	47 CFR Part 15 Subpart C Section 15.247 (b)(3)	PASS
Maximum Power Spectral Density	47 CFR Part 15 Subpart C Section 15.247 (e)	PASS
Band edge measurements	47 CFR Part 15 Subpart C Section 15.247(d)	PASS
Conducted Spurious Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	PASS
Radiated Spurious Emission & Restricted bands	47 CFR Part 15 Subpart C Section 15.205/15.209	PASS

Remark:
Company Name and Address shown on Report, the sample(s) and sample Information were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

Model No.: A3, A1, A2, A4, A5, A6, A7, A8, A9, A10, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14
Only the model A3 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, Only model number and colors difference for market reason.

5 General Information

5.1 Client Information

Applicant:	Shenzhen Bonage Technology Co., Ltd.
Address of Applicant:	Room 601, No.6, Jianghao Industrial Zone, No. 430, Jihua Road, Bantian, Longgang, Shenzhen,China
Manufacturer:	Shenzhen Bonage Technology Co., Ltd.
Address of Manufacturer:	Room 601, No.6, Jianghao Industrial Zone, No. 430, Jihua Road, Bantian, Longgang, Shenzhen,China
Factory:	Shenzhen Bonage Technology Co., Ltd.
Address of Factory:	Room 601, No.6, Jianghao Industrial Zone, No. 430, Jihua Road, Bantian, Longgang, Shenzhen,China

5.2 General Description of EUT

Product Name:	Projector
Model No.:	A3
Add Model No.:	A1, A2, A4, A5, A6, A7, A8, A9, A10, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14
Trade mark:	N/A
Product Type:	☐ Mobile ☐ Portable ☒ Fix Location
Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	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)
Number of Channel:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels
Channel Separation:	5MHz
Antenna Type:	Internal antenna
Antenna Gain:	2 dBi
Power Supply:	AC 120V/60Hz
Test Voltage:	AC 120V/60Hz
Sample Received Date:	Nov. 26, 2020
Sample tested Date:	Nov. 29, 2020 to Feb. 01, 2021

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
3	2422MHz	6	2437MHz	9	2452MHz
4	2427MHz	7	2442MHz		
5	2432MHz	8	2447MHz		

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

802.11b/g/n (HT20)

Channel	Frequency
The lowest channel	2412MHz
The middle channel	2437MHz
The highest channel	2462MHz

802.11n (HT40)

Channel	Frequency
The lowest channel	2422MHz
The middle channel	2437MHz
The highest channel	2452MHz

5.3 Test Configuration

EUT Test Software Settings:	
Software:	RTL11n_8188FU
EUT Power Grade:	Default
Use test software to set the lowest frequency, the middle frequency and the highest frequency keep transmitting of the EUT.	
Test Mode:	
We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:	
Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.	
Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)	6.5Mbps
802.11n(HT40)	13.5Mbps
According to ANSI C63.10 standards, the test results are both the “worst case” and “worst setup” 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(HT20) and 6.5Mbps for 802.11n(HT40).	

5.4 Test Environment

Operating Environment:	
Radiated Spurious Emissions:	
Temperature:	22~25.0 °C
Humidity:	50~55 % RH
Atmospheric Pressure:	1010mbar
Conducted Emissions:	
Temperature:	22~25.0 °C
Humidity:	50~55 % RH
Atmospheric Pressure:	1010mbar
RF Conducted:	
Temperature:	22~25.0 °C
Humidity:	50~55 % RH
Atmospheric Pressure:	1010mbar

5.5 Description of Support Units

The EUT has been tested with associated equipment below.

Associated equipment name		Manufacture	model	S/N serial number	Supplied by	Certification
AE	Notebook	DELL	DELL 3490	D245DX2	DELL	CE&FCC

5.6 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

5.7 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	3.3dB (9kHz-30MHz)
		4.3dB (30MHz-1GHz)
		4.5dB (1GHz-18GHz)
		3.4dB (18GHz-40GHz)
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%

6 Equipment List

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	04-28-2020	04-27-2021
Temperature/ Humidity Indicator	Defu	TH128	/	---	---
LISN	R&S	ENV216	100098	03-05-2020	03-04-2021
Barometer	changchun	DYM3	1188	---	---

RF test system					
Equipment	**Manufacturer**	**Mode No.**	**Serial Number**	**Cal. Date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Spectrum Analyzer	Keysight	N9010A	MY54510339	02-17-2020	02-16-2021
Signal Generator	Keysight	N5182B	MY53051549	02-17-2020	02-16-2021
Temperature/ Humidity Indicator	biaozhi	HM10	1804186	06-29-2020	06-28-2021
High-pass filter	Sinoscite	FL3CX03WG18 NM12-0398-002	---	---	---
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	---	---
DC Power	Keysight	E3642A	MY56376072	02-17-2020	02-16-2021
PC-1	Lenovo	R4960d	---	---	---
Power unit	R&S	OSP120	101374	02-17-2020	02-16-2021
RF control unit	JS Tonscend	JS0806-2	158060006	02-17-2020	02-16-2021
BT&WI-FI Automatic test software	JS Tonscend	JS1120-3	---	---	---

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	---	05-24-2019	05-23-2022
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-618	05-16-2020	05-15-2021
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-076	04-25-2018	04-24-2021
Receiver	R&S	ESCI7	100938-003	10-16-2020	10-15-2021
Multi device Controller	maturo	NCD/070/10711 112	---	---	---
Temperature/ Humidity Indicator	Shanghai qixiang	HM10	1804298	06-29-2020	06-28-2021
Cable line	Fulai(7M)	SF106	5219/6A	---	---
Cable line	Fulai(6M)	SF106	5220/6A	---	---
Cable line	Fulai(3M)	SF106	5216/6A	---	---
Cable line	Fulai(3M)	SF106	5217/6A	---	---

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	---	---
Receiver	Keysight	N9038A	MY57290136	03-05-2020	03-04-2021
Spectrum Analyzer	Keysight	N9020B	MY57111112	03-05-2020	03-04-2021
Spectrum Analyzer	Keysight	N9030B	MY57140871	03-05-2020	03-04-2021
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	04-25-2018	04-24-2021
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-25-2018	04-24-2021
Horn Antenna	ETS-LINDGREN	3117	00057407	07-10-2018	07-09-2021
Preamplifier	EMCI	EMC184055SE	980596	05-20-2020	05-19-2021
Preamplifier	EMCI	EMC001330	980563	04-22-2020	04-21.2021
Preamplifier	JS Tonscend	980380	EMC051845 SE	01-09-2020 01-08-2021	01-08-2021 01-07-2022
Temperature/ Humidity Indicator	biaozhi	GM1360	EE1186631	04-27-2020	04.26-2021
Fully Anechoic Chamber	TDK	FAC-3	---	01-17-2018 01-09-2021	01-16-2021 01-08-2024
Filter bank	JS Tonscend	JS0806-F	188060094	04-10-2018	04-09-2021
Cable line	Times	SFT205-NMSM-2.50M	394812-0001	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0002	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0003	---	---
Cable line	Times	SFT205-NMSM-2.50M	393495-0001	---	---
Cable line	Times	EMC104-NMNM-1000	SN160710	---	---
Cable line	Times	SFT205-NMSM-3.00M	394813-0001	---	---
Cable line	Times	SFT205-NMNM-1.50M	381964-0001	---	---
Cable line	Times	SFT205-NMSM-7.00M	394815-0001	---	---
Cable line	Times	HF160-KMKM-3.00M	393493-0001	---	---

7 Test results and Measurement Data

7.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
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:	Please see Internal photos
The antenna is Internal antenna. The best case gain of the antenna is 2dBi.	

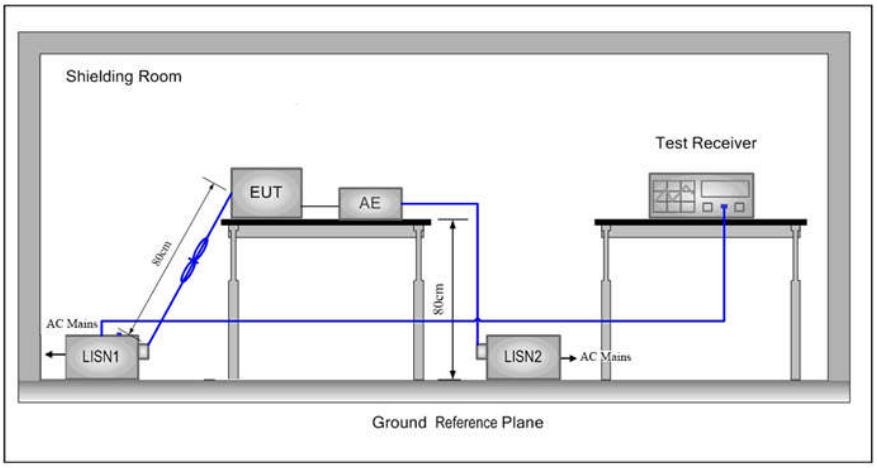
7.2 AC Power Line Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207
Test Method:	ANSI C63.10: 2013
Test Frequency Range:	150kHz to 30MHz
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto
Limit:	

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

Test Setup:



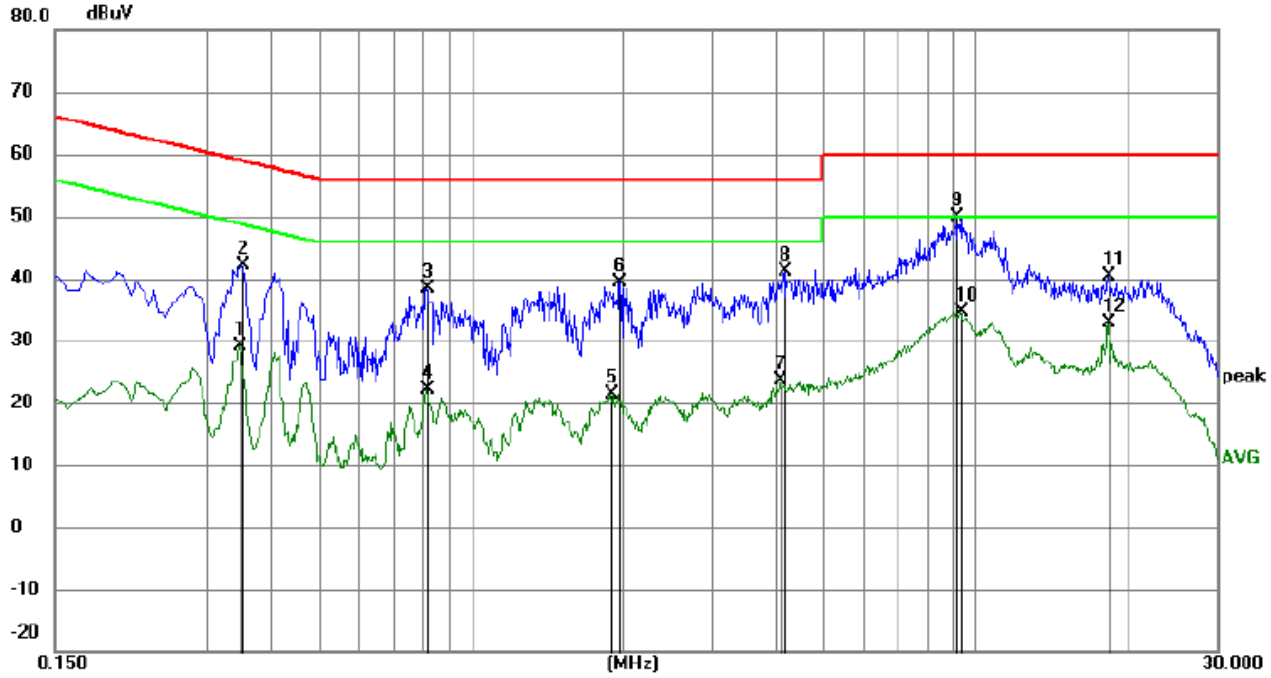
Test Procedure:

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: 2013 on conducted measurement.

Test Mode:	All modes were tested, only the worse case lowest channel of 1Mbps for 802.11b was recorded in the report.
Test Results:	Pass

Measurement Data

Live line:

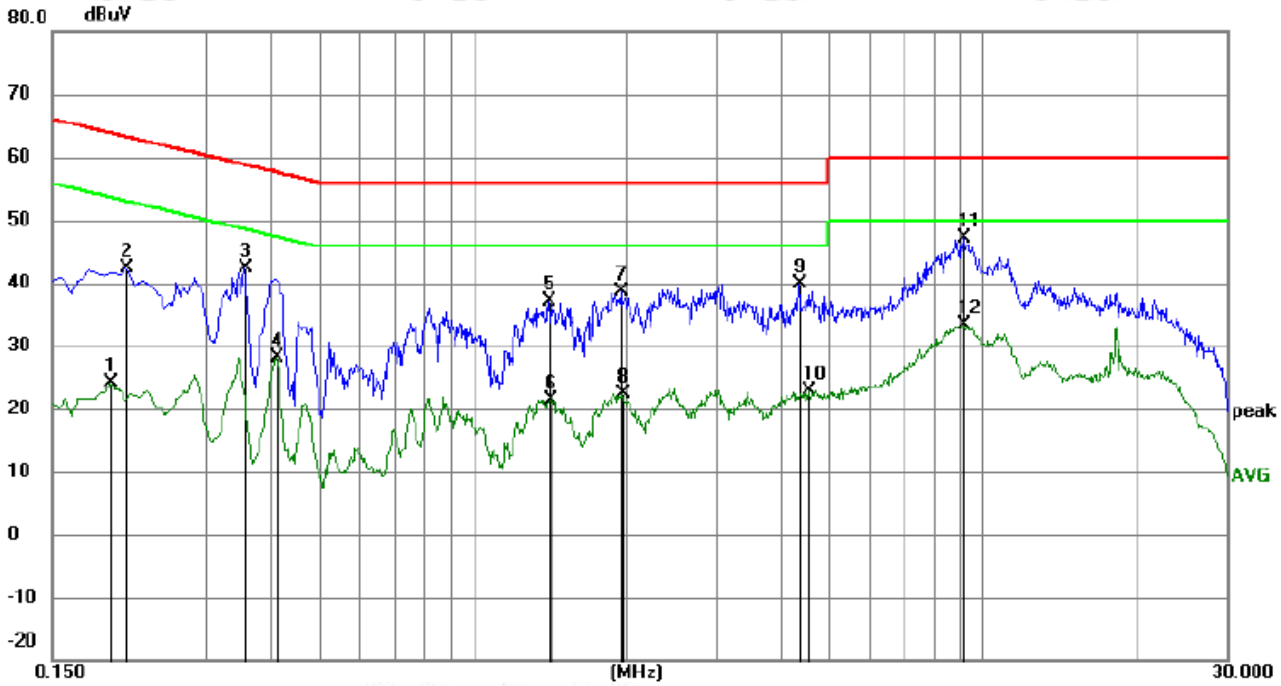


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3480	19.07	10.02	29.09	49.01	-19.92	AVG	
2		0.3525	32.20	10.02	42.22	58.90	-16.68	peak	
3		0.8160	28.61	9.85	38.46	56.00	-17.54	peak	
4		0.8160	12.35	9.85	22.20	46.00	-23.80	AVG	
5		1.8960	11.62	9.79	21.41	46.00	-24.59	AVG	
6		1.9680	29.50	9.79	39.29	56.00	-16.71	peak	
7		4.1010	13.77	9.78	23.55	46.00	-22.45	AVG	
8		4.1820	31.34	9.78	41.12	56.00	-14.88	peak	
9	*	9.1545	40.21	9.78	49.99	60.00	-10.01	peak	
10		9.3120	24.82	9.78	34.60	50.00	-15.40	AVG	
11		18.3120	30.44	9.96	40.40	60.00	-19.60	peak	
12		18.3120	23.00	9.96	32.96	50.00	-17.04	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:

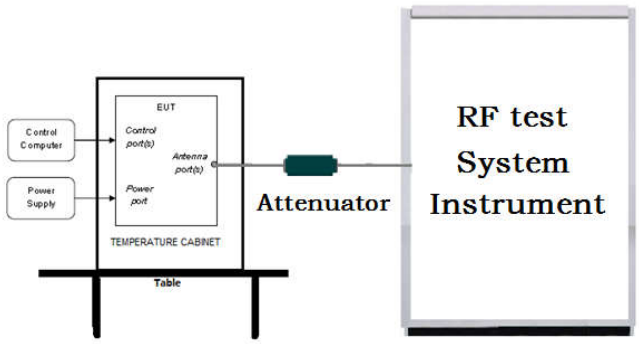


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1949	14.20	9.87	24.07	53.83	-29.76	AVG	
2		0.2085	32.43	9.89	42.32	63.26	-20.94	peak	
3		0.3570	32.43	10.01	42.44	58.80	-16.36	peak	
4		0.4110	18.20	9.97	28.17	47.63	-19.46	AVG	
5		1.4100	27.37	9.81	37.18	56.00	-18.82	peak	
6		1.4190	11.69	9.81	21.50	46.00	-24.50	AVG	
7		1.9545	28.89	9.79	38.68	56.00	-17.32	peak	
8		1.9635	12.71	9.79	22.50	46.00	-23.50	AVG	
9		4.3395	30.07	9.78	39.85	56.00	-16.15	peak	
10		4.5734	13.11	9.78	22.89	46.00	-23.11	AVG	
11	*	9.1950	37.30	9.78	47.08	60.00	-12.92	peak	
12		9.1950	23.57	9.78	33.35	50.00	-16.65	AVG	

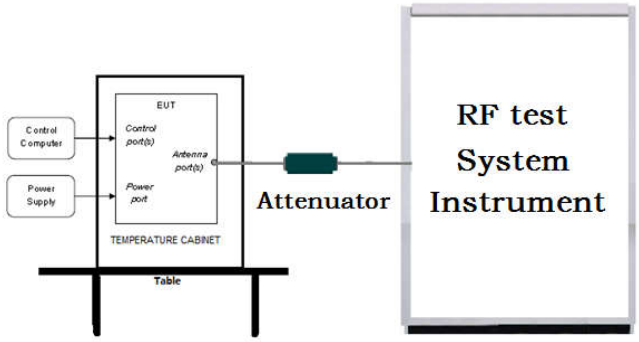
Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

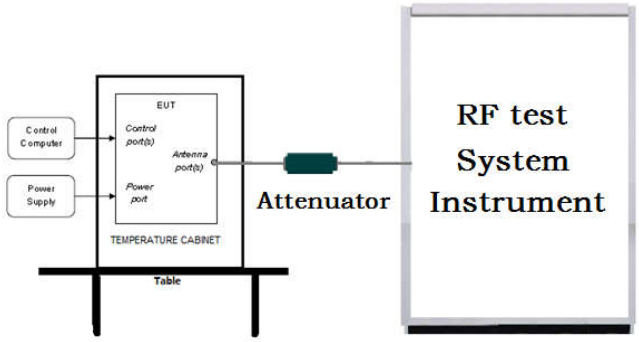
7.3 Maximum Conducted Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	ANSI C63.10 2013
Test Setup:	
Test Procedure:	1. PKPM1 Peak power meter measurement The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector. 2. Method AVGPM-G Average power measurement Method AVGPM-G is a measurement using a gated RF average power meter. Alternatively, measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Because the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.
Limit:	30dBm
Test Mode:	Refer to clause 5.3
Test Results:	Refer to Appendix A

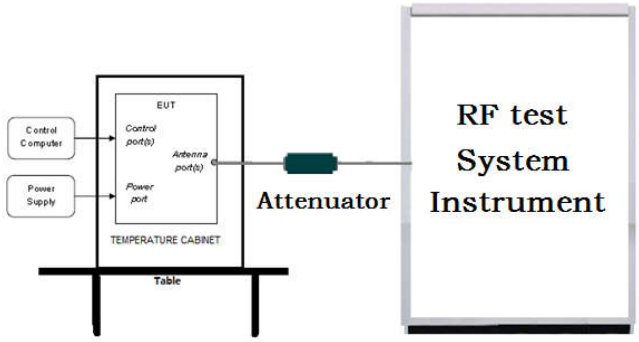
7.4 DTS Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(2)
Test Method:	ANSI C63.10 2013
Test Setup:	 Remark: Offset=Cable loss+ attenuation factor.
Test Procedure:	a) Set RBW = 100 kHz. b) Set the VBW ⩾[3 × RBW]. c) Detector = peak. d) Trace mode = max hold. e) Sweep = auto couple. f) Allow the trace to stabilize. g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
Limit:	≥ 500 kHz
Test Mode:	Refer to clause 5.3
Test Results:	Refer to Appendix A

7.5 Maximum Power Spectral Density

Test Requirement:	47 CFR Part 15C Section 15.247 (e)
Test Method:	ANSI C63.10 2013
Test Setup:	 Remark: Offset=Cable loss+ attenuation factor.
Test Procedure:	a) Set analyzer center frequency to DTS channel center frequency. b) Set the span to 1.5 times the DTS bandwidth. c) Set the RBW to 3 kHz < RBW < 100 kHz. d) Set the VBW > [3 × RBW]. e) Detector = peak. f) Sweep time = auto couple. g) Trace mode = max hold. h) Allow trace to fully stabilize. i) Use the peak marker function to determine the maximum amplitude level within the RBW. j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.
Limit:	≤8.00dBm/3kHz
Test Mode:	Refer to clause 5.3
Test Results:	Refer to Appendix A

7.6 Band Edge Measurements and Conducted Spurious Emission

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10 2013
Test Setup:	 Remark: Offset=Cable loss+ attenuation factor.
Test Procedure:	a) Set RBW = 100KHz. b) Set VBW = 300KHz. c) Sweep time = auto couple. d) Detector = peak. e) Trace mode = max hold. f) Allow trace to fully stabilize. g) Use peak marker function to determine the peak amplitude level.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test Mode:	Refer to clause 5.3
Test Results:	Refer to Appendix A

7.7 Radiated Spurious Emission & Restricted bands

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205
Test Method:	ANSI C63.10 2013
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
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	100 kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10kHz	Average

Limit:

Frequency	Field strength (microvolt/meter)	Limit (dBuV/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 Setup:	

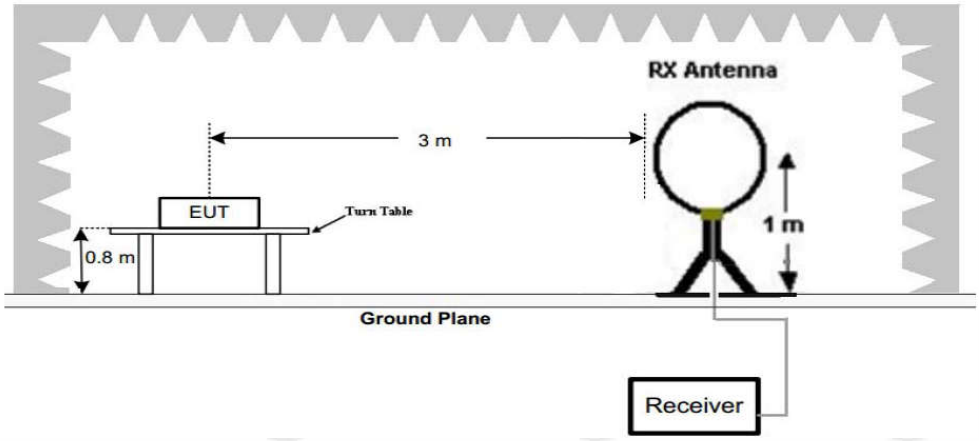


Figure 1. Below 30MHz

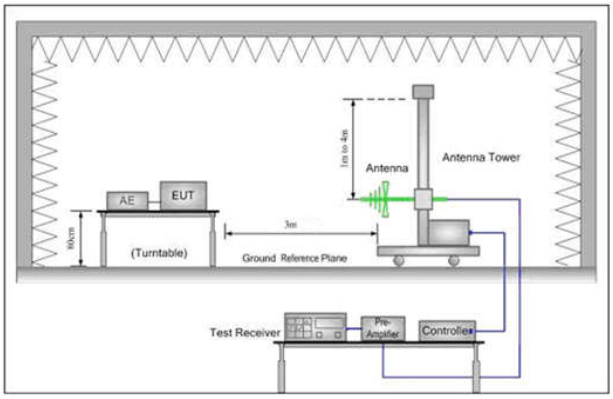


Figure 2. 30MHz to 1GHz

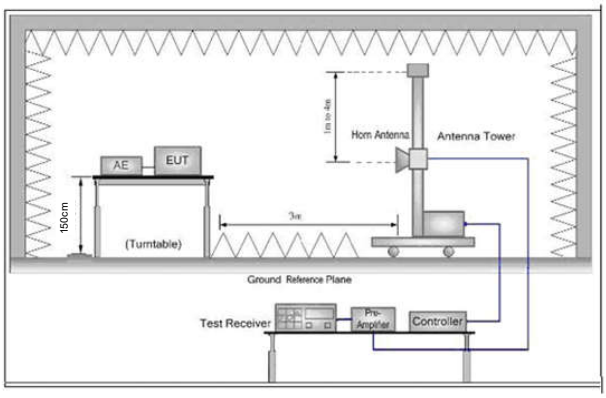


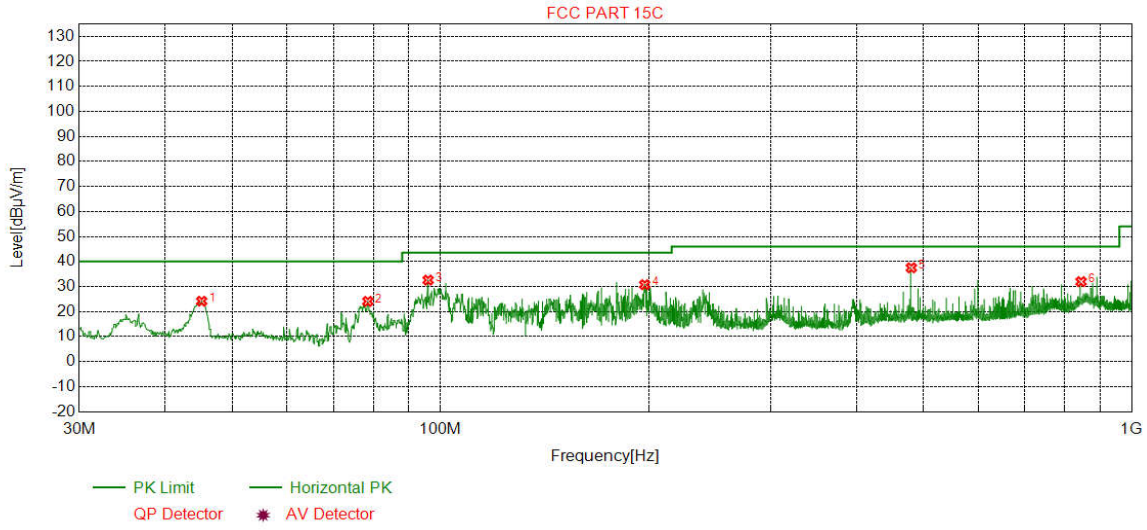
Figure 3. Above 1 GHz

Test Procedure:	a. 1) Below 1G: 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. 2) Above 1G: The EUT was placed on the top of a rotating table 1.5 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. Note: For the radiated emission test above 1GHz: Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. 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

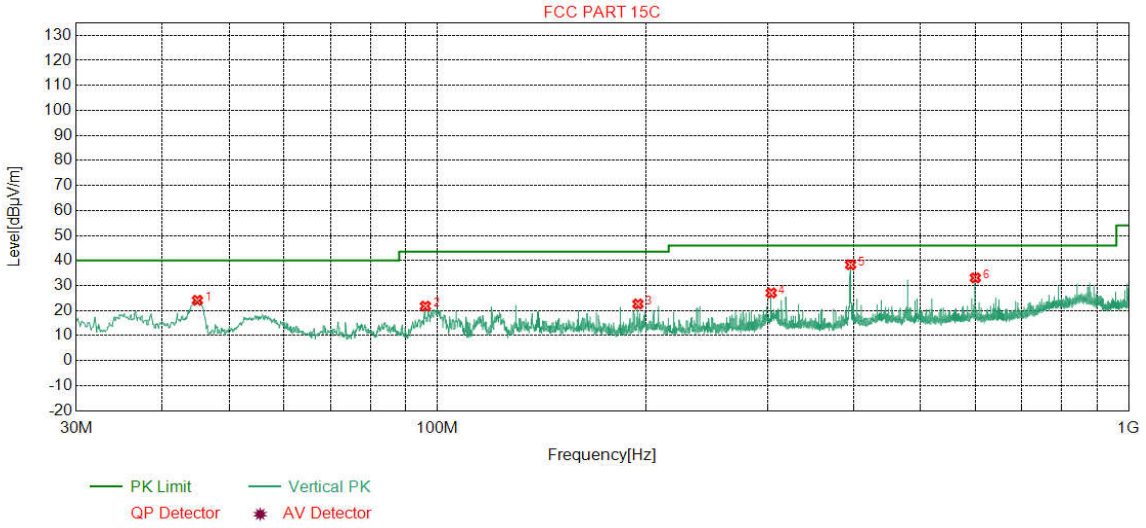
	horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table 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. g. Test the EUT in the lowest channel (2402MHz),the middle channel (2440MHz),the Highest channel (2480MHz) h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete.
Test Mode:	Refer to clause 5.3
Test Results:	Pass

Radiated Spurious Emission below 1GHz:

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes, only the worse case middle channel of 1Mbps for 802.11b was recorded in the report.



Mode:			802.11 n(HT20) Transmitting					Channel:		2437MHz	
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	45.1335	13.20	0.75	-31.72	41.91	24.14	40.00	15.86	Pass	H	PK
2	78.5049	7.38	1.03	-31.92	47.58	24.07	40.00	15.93	Pass	H	PK
3	95.9666	10.35	1.13	-31.97	53.06	32.57	43.50	10.93	Pass	H	PK
4	197.4387	10.66	1.65	-31.92	50.36	30.75	43.50	12.75	Pass	H	PK
5	480.0280	16.68	2.61	-31.90	50.10	37.49	46.00	8.51	Pass	H	PK
6	844.9785	21.44	3.50	-31.82	38.83	31.95	46.00	14.05	Pass	H	PK



Mode:			802.11 n(HT20) Transmitting					Channel:		2437MHz	
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	44.9395	13.19	0.75	-31.71	41.88	24.11	40.00	15.89	Pass	H	PK
2	96.0636	10.37	1.13	-31.97	42.25	21.78	43.50	21.72	Pass	H	PK
3	195.0135	10.43	1.64	-31.94	42.51	22.64	43.50	20.86	Pass	H	PK
4	304.0524	13.29	2.07	-31.60	43.28	27.04	46.00	18.96	Pass	H	PK
5	396.0176	15.31	2.37	-31.74	52.38	38.32	46.00	7.68	Pass	H	PK
6	600.0290	19.00	2.96	-31.50	42.60	33.06	46.00	12.94	Pass	H	PK

Radiated Spurious Emission above 1GHz:

Mode:			802.11 b Transmitting					Channel:		2412MHz	
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	1650.6651	29.39	3.14	-42.77	49.10	38.86	74.00	35.14	Pass	H	PK
2	2778.9779	32.85	4.20	-43.10	49.23	43.18	74.00	30.82	Pass	H	PK
3	3896.0597	33.72	4.34	-43.02	49.55	44.59	74.00	29.41	Pass	H	PK
4	5010.1340	34.51	4.83	-42.79	50.44	46.99	74.00	27.01	Pass	H	PK
5	7362.2908	36.46	5.85	-42.13	48.94	49.12	74.00	24.88	Pass	H	PK
6	9226.4151	37.65	6.52	-42.04	49.38	51.51	74.00	22.49	Pass	H	PK
7	1188.2188	28.09	2.67	-42.91	60.84	48.69	74.00	25.31	Pass	V	PK
8	1798.0798	30.37	3.32	-42.72	55.30	46.27	74.00	27.73	Pass	V	PK
9	3564.0376	33.45	4.41	-43.08	54.56	49.34	74.00	24.66	Pass	V	PK
10	4824.1216	34.50	4.61	-42.80	54.36	50.67	74.00	23.33	Pass	V	PK
11	7237.2825	36.34	5.79	-42.16	53.63	53.60	74.00	20.40	Pass	V	PK
12	9648.4432	37.66	6.72	-42.10	51.15	53.43	74.00	20.57	Pass	V	PK

Mode:			802.11 b Transmitting					Channel:		2437MHz	
NO	Freq. [MHz]	Ant Factor [dB]	Cabl e loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1296.4296	28.20	2.75	-42.80	50.42	38.57	74.00	35.43	Pass	H	PK
2	1707.0707	29.77	3.20	-42.66	49.50	39.81	74.00	34.19	Pass	H	PK
3	3918.0612	33.73	4.34	-43.01	49.83	44.89	74.00	29.11	Pass	H	PK
4	5012.1341	34.51	4.83	-42.79	50.57	47.12	74.00	26.88	Pass	H	PK
5	6326.2217	35.87	5.46	-42.54	48.97	47.76	74.00	26.24	Pass	H	PK
6	9660.4440	37.66	6.69	-42.09	49.36	51.62	74.00	22.38	Pass	H	PK
7	1187.8188	28.09	2.67	-42.91	59.84	47.69	74.00	26.31	Pass	V	PK
8	1796.6797	30.36	3.31	-42.71	54.10	45.06	74.00	28.94	Pass	V	PK
9	3564.0376	33.45	4.41	-43.08	53.14	47.92	74.00	26.08	Pass	V	PK
10	5004.1336	34.50	4.82	-42.79	51.03	47.56	74.00	26.44	Pass	V	PK
11	7311.2874	36.41	5.85	-42.14	51.00	51.12	74.00	22.88	Pass	V	PK
12	9725.4484	37.69	6.69	-42.10	50.39	52.67	74.00	21.33	Pass	V	PK

Mode:			802.11 b Transmitting					Channel:		2462MHz	
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	1387.8388	28.29	2.88	-42.69	50.23	38.71	74.00	35.29	Pass	H	PK
2	2951.5952	33.12	4.40	-43.09	49.51	43.94	74.00	30.06	Pass	H	PK
3	5005.1337	34.51	4.83	-42.81	50.97	47.50	74.00	26.50	Pass	H	PK
4	5963.1975	35.74	5.33	-42.60	47.97	46.44	74.00	27.56	Pass	H	PK
5	7295.2864	36.40	5.84	-42.14	49.29	49.39	74.00	24.61	Pass	H	PK
6	9619.4413	37.65	6.65	-42.10	49.35	51.55	74.00	22.45	Pass	H	PK
7	1188.2188	28.09	2.67	-42.91	61.50	49.35	74.00	24.65	Pass	V	PK
8	1799.0799	30.37	3.32	-42.71	53.84	44.82	74.00	29.18	Pass	V	PK
9	3564.0376	33.45	4.41	-43.08	54.60	49.38	74.00	24.62	Pass	V	PK
10	4924.1283	34.50	4.85	-42.80	51.69	48.24	74.00	25.76	Pass	V	PK
11	7387.2925	36.49	5.85	-42.13	51.49	51.70	74.00	22.30	Pass	V	PK
12	9781.4521	37.71	6.63	-42.10	49.77	52.01	74.00	21.99	Pass	V	PK

Mode:			802.11 g Transmitting					Channel:		2412MHz	
NO	Freq. [MHz]	Ant Factor [dB]	Cabl e loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1810.6811	30.45	3.33	-42.73	50.09	41.14	74.00	32.86	Pass	H	PK
2	2311.1311	32.14	3.81	-43.14	50.66	43.47	74.00	30.53	Pass	H	PK
3	3821.0547	33.66	4.37	-43.04	49.43	44.42	74.00	29.58	Pass	H	PK
4	5021.1347	34.52	4.85	-42.80	50.76	47.33	74.00	26.67	Pass	H	PK
5	7542.3028	36.58	5.87	-42.11	49.11	49.45	74.00	24.55	Pass	H	PK
6	10641.509	38.53	6.99	-42.00	49.62	53.14	74.00	20.86	Pass	H	PK
7	1187.8188	28.09	2.67	-42.91	63.25	51.10	74.00	22.90	Pass	V	PK
8	1798.4798	30.37	3.32	-42.71	53.40	44.38	74.00	29.62	Pass	V	PK
9	3564.0376	33.45	4.41	-43.08	53.18	47.96	74.00	26.04	Pass	V	PK
10	4822.1215	34.50	4.60	-42.80	52.15	48.45	74.00	25.55	Pass	V	PK
11	7241.2828	36.34	5.79	-42.15	53.13	53.11	74.00	20.89	Pass	V	PK
12	9648.4432	37.66	6.72	-42.10	50.39	52.67	74.00	21.33	Pass	V	PK

Mode:			802.11 g Transmitting					Channel:		2437MHz	
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	1621.0621	29.20	3.10	-42.85	49.47	38.92	74.00	35.08	Pass	H	PK
2	2278.7279	32.09	3.80	-43.15	49.93	42.67	74.00	31.33	Pass	H	PK
3	3221.0147	33.29	4.57	-43.11	48.37	43.12	74.00	30.88	Pass	H	PK
4	4997.1331	34.50	4.82	-42.80	50.57	47.09	74.00	26.91	Pass	H	PK
5	7656.3104	36.54	6.16	-42.13	48.57	49.14	74.00	24.86	Pass	H	PK
6	10727.515	38.55	7.04	-42.01	48.67	52.25	74.00	21.75	Pass	H	PK
7	1187.8188	28.09	2.67	-42.91	62.05	49.90	74.00	24.10	Pass	V	PK
8	1981.4982	31.58	3.45	-43.16	58.41	50.28	74.00	23.72	Pass	V	PK
9	3564.0376	33.45	4.41	-43.08	54.11	48.89	74.00	25.11	Pass	V	PK
10	6120.2080	35.82	5.26	-42.58	49.91	48.41	74.00	25.59	Pass	V	PK
11	7311.2874	36.41	5.85	-42.14	51.96	52.08	74.00	21.92	Pass	V	PK
12	9748.4499	37.70	6.77	-42.10	50.83	53.20	74.00	20.80	Pass	V	PK

Mode:			802.11 g Transmitting					Channel:		2462MHz	
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	2338.5339	32.17	3.84	-43.12	50.53	43.42	74.00	30.58	Pass	H	PK
2	3449.0299	33.38	4.43	-43.10	48.04	42.75	74.00	31.25	Pass	H	PK
3	5012.1341	34.51	4.83	-42.79	50.47	47.02	74.00	26.98	Pass	H	PK
4	6331.2221	35.87	5.46	-42.54	49.55	48.34	74.00	25.66	Pass	H	PK
5	8867.3912	37.41	6.41	-42.00	48.10	49.92	74.00	24.08	Pass	H	PK
6	11250.550	38.75	7.24	-42.00	49.01	53.00	74.00	21.00	Pass	H	PK
7	1188.2188	28.09	2.67	-42.91	59.32	47.17	74.00	26.83	Pass	V	PK
8	1979.4980	31.56	3.45	-43.15	52.19	44.05	74.00	29.95	Pass	V	PK
9	3564.0376	33.45	4.41	-43.08	53.98	48.76	74.00	25.24	Pass	V	PK
10	5004.1336	34.50	4.82	-42.79	50.81	47.34	74.00	26.66	Pass	V	PK
11	7388.2926	36.49	5.85	-42.12	52.14	52.36	74.00	21.64	Pass	V	PK
12	11308.553	38.79	7.34	-42.01	48.77	52.89	74.00	21.11	Pass	V	PK

Mode:			802.11 n(HT20) Transmitting					Channel:		2412MHz	
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	2064.5065	31.79	3.57	-43.19	49.37	41.54	74.00	32.46	Pass	H	PK
2	2577.3577	32.52	4.10	-43.10	50.49	44.01	74.00	29.99	Pass	H	PK
3	3955.0637	33.76	4.34	-43.01	49.00	44.09	74.00	29.91	Pass	H	PK
4	5040.1360	34.54	4.87	-42.79	50.53	47.15	74.00	26.85	Pass	H	PK
5	7827.3218	36.47	6.04	-42.17	49.35	49.69	74.00	24.31	Pass	H	PK
6	9648.4432	37.66	6.72	-42.10	49.30	51.58	74.00	22.42	Pass	H	PK
7	1188.0188	28.09	2.67	-42.91	63.98	51.83	74.00	22.17	Pass	V	PK
8	1979.8980	31.57	3.45	-43.15	60.15	52.02	74.00	21.98	Pass	V	PK
9	3564.0376	33.45	4.41	-43.08	53.60	48.38	74.00	25.62	Pass	V	PK
10	5034.1356	34.53	4.86	-42.78	50.37	46.98	74.00	27.02	Pass	V	PK
11	7231.2821	36.33	5.79	-42.15	53.19	53.16	74.00	20.84	Pass	V	PK
12	9743.4496	37.70	6.76	-42.11	50.28	52.63	74.00	21.37	Pass	V	PK

Mode:			802.11 n(HT20) Transmitting					Channel:		2437MHz	
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	1846.8847	30.69	3.38	-42.83	49.00	40.24	74.00	33.76	Pass	H	PK
2	3821.0547	33.66	4.37	-43.04	49.73	44.72	74.00	29.28	Pass	H	PK
3	5004.1336	34.50	4.82	-42.79	50.52	47.05	74.00	26.95	Pass	H	PK
4	6352.2235	35.87	5.45	-42.53	49.78	48.57	74.00	25.43	Pass	H	PK
5	7572.3048	36.57	5.96	-42.11	49.47	49.89	74.00	24.11	Pass	H	PK
6	10217.481	38.10	6.85	-42.06	49.53	52.42	74.00	21.58	Pass	H	PK
7	1188.2188	28.09	2.67	-42.91	60.68	48.53	74.00	25.47	Pass	V	PK
8	1979.4980	31.56	3.45	-43.15	52.03	43.89	74.00	30.11	Pass	V	PK
9	3564.0376	33.45	4.41	-43.08	52.84	47.62	74.00	26.38	Pass	V	PK
10	5011.1341	34.51	4.83	-42.79	50.55	47.10	74.00	26.90	Pass	V	PK
11	7301.2868	36.40	5.85	-42.14	53.11	53.22	74.00	20.78	Pass	V	PK
12	9748.4499	37.70	6.77	-42.10	50.03	52.40	74.00	21.60	Pass	V	PK

Mode:			802.11 n(HT20) Transmitting					Channel:		2462MHz	
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	1712.0712	29.80	3.21	-42.67	49.53	39.87	74.00	34.13	Pass	H	PK
2	2578.7579	32.53	4.10	-43.11	50.00	43.52	74.00	30.48	Pass	H	PK
3	3774.0516	33.62	4.36	-43.05	50.46	45.39	74.00	28.61	Pass	H	PK
4	5012.1341	34.51	4.83	-42.79	50.30	46.85	74.00	27.15	Pass	H	PK
5	7400.2934	36.50	5.85	-42.12	49.51	49.74	74.00	24.26	Pass	H	PK
6	9813.4542	37.73	6.62	-42.10	49.23	51.48	74.00	22.52	Pass	H	PK
7	1188.0188	28.09	2.67	-42.91	64.39	52.24	74.00	21.76	Pass	V	PK
8	1799.8800	30.38	3.32	-42.71	54.60	45.59	74.00	28.41	Pass	V	PK
9	3565.0377	33.45	4.41	-43.09	53.15	47.92	74.00	26.08	Pass	V	PK
10	5004.1336	34.50	4.82	-42.79	50.36	46.89	74.00	27.11	Pass	V	PK
11	7380.2920	36.48	5.85	-42.12	50.57	50.78	74.00	23.22	Pass	V	PK
12	9847.4565	37.74	6.82	-42.10	49.82	52.28	74.00	21.72	Pass	V	PK

Mode:			802.11 n(HT40) Transmitting					Channel:		2422MHz	
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	1933.0933	31.26	3.42	-43.04	49.12	40.76	74.00	33.24	Pass	H	PK
2	2709.5710	32.74	4.13	-43.11	50.58	44.34	74.00	29.66	Pass	H	PK
3	3846.0564	33.68	4.36	-43.03	49.58	44.59	74.00	29.41	Pass	H	PK
4	5015.1343	34.52	4.84	-42.80	50.28	46.84	74.00	27.16	Pass	H	PK
5	7366.2911	36.47	5.85	-42.13	48.82	49.01	74.00	24.99	Pass	H	PK
6	9725.4484	37.69	6.69	-42.10	50.43	52.71	74.00	21.29	Pass	H	PK
7	1188.0188	28.09	2.67	-42.91	60.82	48.67	74.00	25.33	Pass	V	PK
8	1985.6986	31.61	3.46	-43.17	50.77	42.67	74.00	31.33	Pass	V	PK
9	3713.0475	33.57	4.27	-43.06	57.74	52.52	74.00	21.48	Pass	V	PK
10	4901.1267	34.50	4.88	-42.80	57.39	53.97	74.00	20.03	Pass	V	PK
11	7672.3115	36.53	6.20	-42.13	48.98	49.58	74.00	24.42	Pass	V	PK
12	9687.4458	37.67	6.62	-42.09	50.14	52.34	74.00	21.66	Pass	V	PK

Mode:			802.11 n(HT40) Transmitting					Channel:		2437MHz	
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	2563.5564	32.50	4.09	-43.10	51.20	44.69	74.00	29.31	Pass	H	PK
2	3869.0579	33.70	4.35	-43.03	50.04	45.06	74.00	28.94	Pass	H	PK
3	5034.1356	34.53	4.86	-42.78	50.72	47.33	74.00	26.67	Pass	H	PK
4	6253.2169	35.85	5.36	-42.55	48.72	47.38	74.00	26.62	Pass	H	PK
5	7626.3084	36.55	6.13	-42.13	48.31	48.86	74.00	25.14	Pass	H	PK
6	9747.4498	37.70	6.77	-42.10	49.80	52.17	74.00	21.83	Pass	H	PK
7	1188.0188	28.09	2.67	-42.91	61.97	49.82	74.00	24.18	Pass	V	PK
8	1798.8799	30.37	3.32	-42.71	54.13	45.11	74.00	28.89	Pass	V	PK
9	3713.0475	33.57	4.27	-43.06	58.31	53.09	74.00	20.91	Pass	V	PK
10	4901.1267	34.50	4.88	-42.80	56.24	52.82	74.00	21.18	Pass	V	PK
11	7406.2938	36.51	5.85	-42.12	49.00	49.24	74.00	24.76	Pass	V	PK
12	9771.4514	37.71	6.68	-42.10	48.92	51.21	74.00	22.79	Pass	V	PK

Mode:			802.11 n(HT40) Transmitting					Channel:		2452MHz	
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	1581.4581	28.94	3.06	-42.94	50.46	39.52	74.00	34.48	Pass	H	PK
2	2079.5080	31.81	3.57	-43.18	49.39	41.59	74.00	32.41	Pass	H	PK
3	3894.0596	33.72	4.34	-43.02	50.03	45.07	74.00	28.93	Pass	H	PK
4	5061.1374	34.56	4.86	-42.78	50.19	46.83	74.00	27.17	Pass	H	PK
5	7767.3178	36.49	6.19	-42.15	49.00	49.53	74.00	24.47	Pass	H	PK
6	9810.4540	37.72	6.60	-42.09	49.65	51.88	74.00	22.12	Pass	H	PK
7	1188.2188	28.09	2.67	-42.91	60.07	47.92	74.00	26.08	Pass	V	PK
8	1975.8976	31.54	3.45	-43.14	53.95	45.80	74.00	28.20	Pass	V	PK
9	3712.0475	33.57	4.27	-43.06	57.28	52.06	74.00	21.94	Pass	V	PK
10	4901.1267	34.50	4.88	-42.80	56.88	53.46	74.00	20.54	Pass	V	PK
11	7221.2814	36.32	5.80	-42.15	49.66	49.63	74.00	24.37	Pass	V	PK
12	9807.4538	37.72	6.58	-42.09	49.82	52.03	74.00	21.97	Pass	V	PK

Remark:

1) 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 + Antenna Factor + Cable Factor – Preamplifier Factor

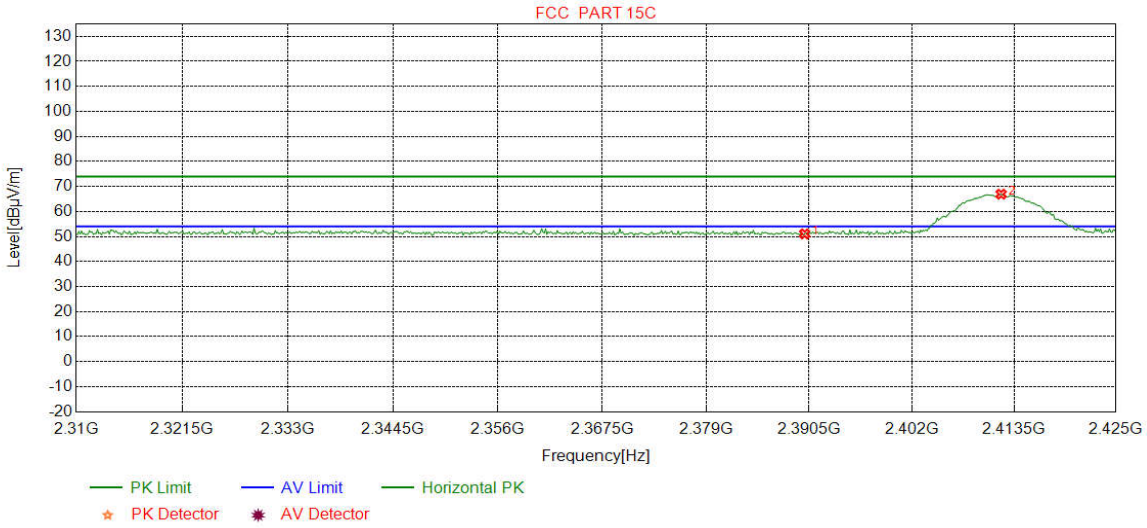
2) Scan from 9kHz to 25GHz, the disturbance above 10GHz and below 30MHz was very low. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.

Restricted bands:

Test plot as follows:

Mode:	802.11 b Transmitting	Channel:	2412MHz
Remark:	PK		

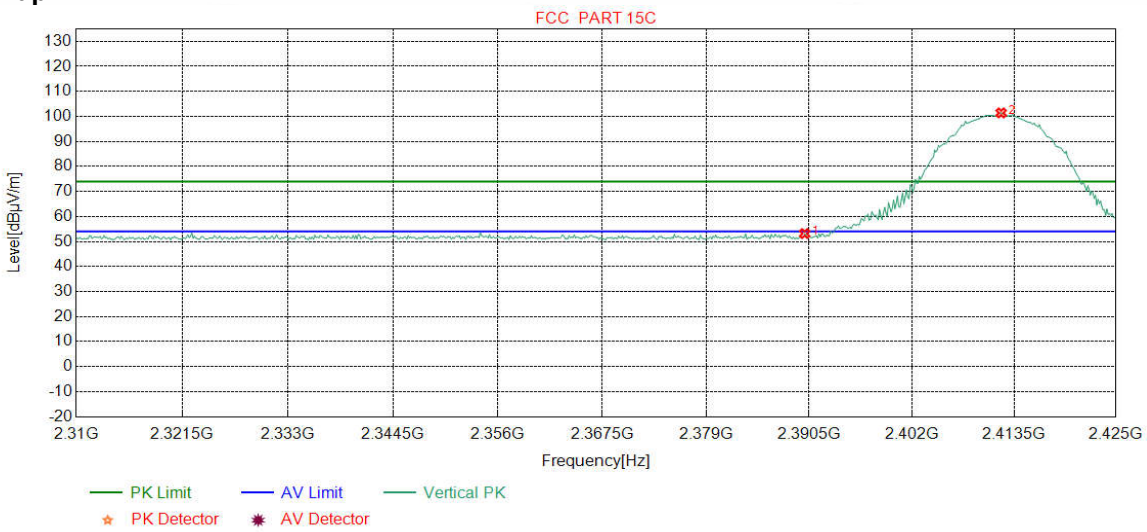
Test Graph



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	-43.12	48.54	51.04	74.00	22.96	Pass	Horizontal
2	2412.0463	32.28	13.36	-43.13	64.42	66.93	74.00	7.07	Pass	Horizontal

Mode:	802.11 b Transmitting	Channel:	2412MHz
Remark:	PK		

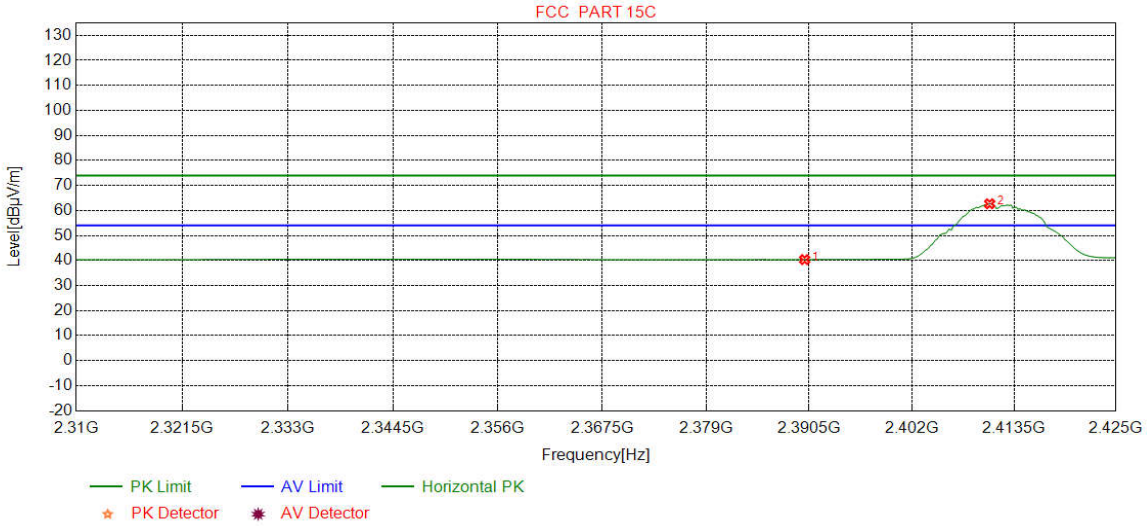
Test Graph



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	-43.12	50.67	53.17	74.00	20.83	Pass	Vertical
2	2412.0463	32.28	13.36	-43.13	98.89	101.40	74.00	-27.40	Pass	Vertical

Mode:	802.11 b Transmitting	Channel:	2412MHz
Remark:	AV		

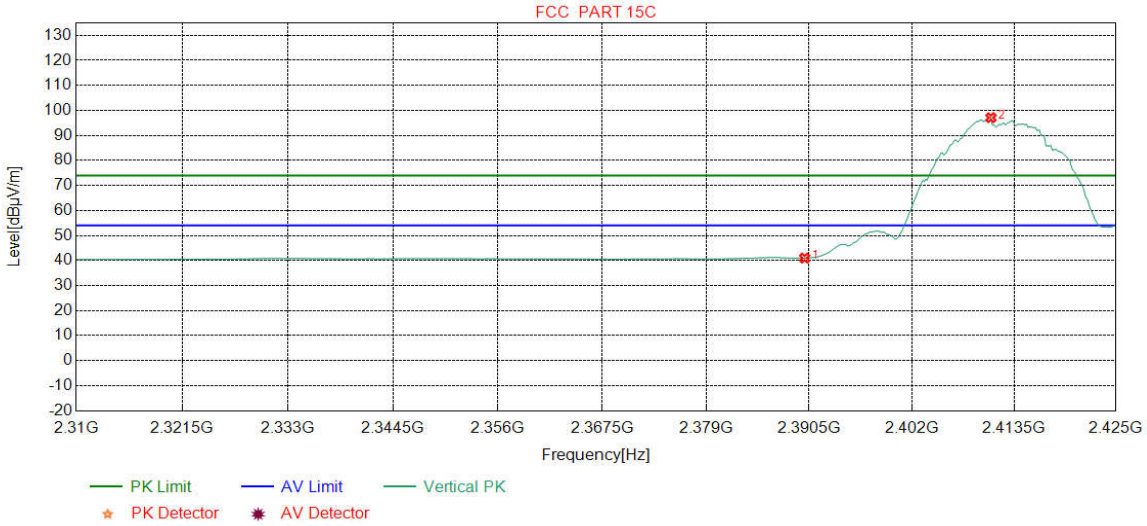
Test Graph



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	-43.12	37.87	40.37	54.00	13.63	Pass	Horizontal
2	2410.7509	32.28	13.35	-43.12	60.17	62.68	54.00	-8.68	Pass	Horizontal

Mode:	802.11 b Transmitting	Channel:	2412MHz
Remark:	AV		

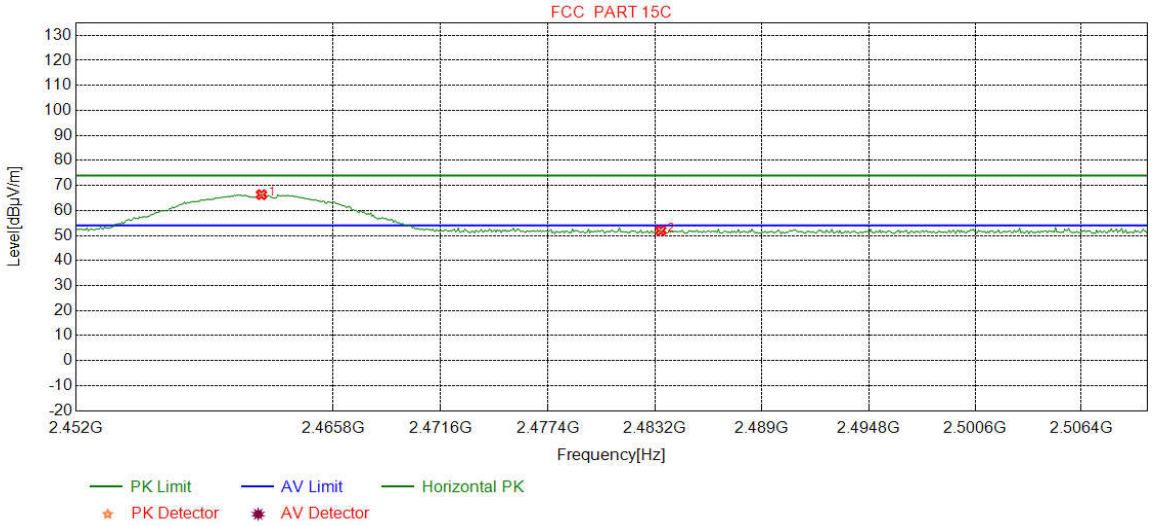
Test Graph



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	-43.12	38.47	40.97	54.00	13.03	Pass	Vertical
2	2410.8949	32.28	13.35	-43.12	94.59	97.10	54.00	-43.10	Pass	Vertical

Mode:	802.11 b Transmitting	Channel:	2462MHz
Remark:	PK		

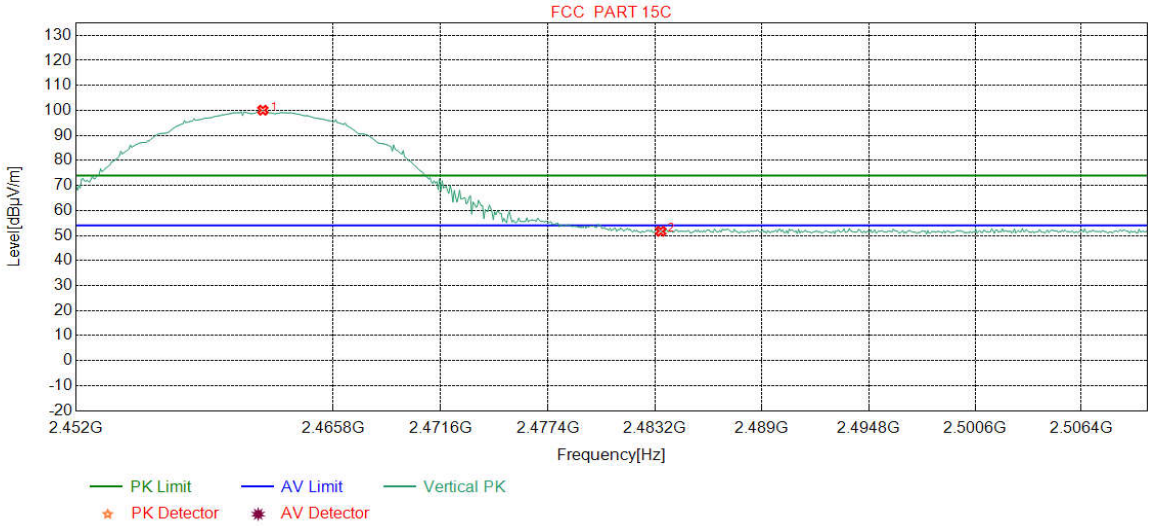
Test Graph



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	-43.12	63.62	66.33	74.00	7.67	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	49.32	51.97	74.00	22.03	Pass	Horizontal

Mode:	802.11 b Transmitting	Channel:	2462MHz
Remark:	PK		

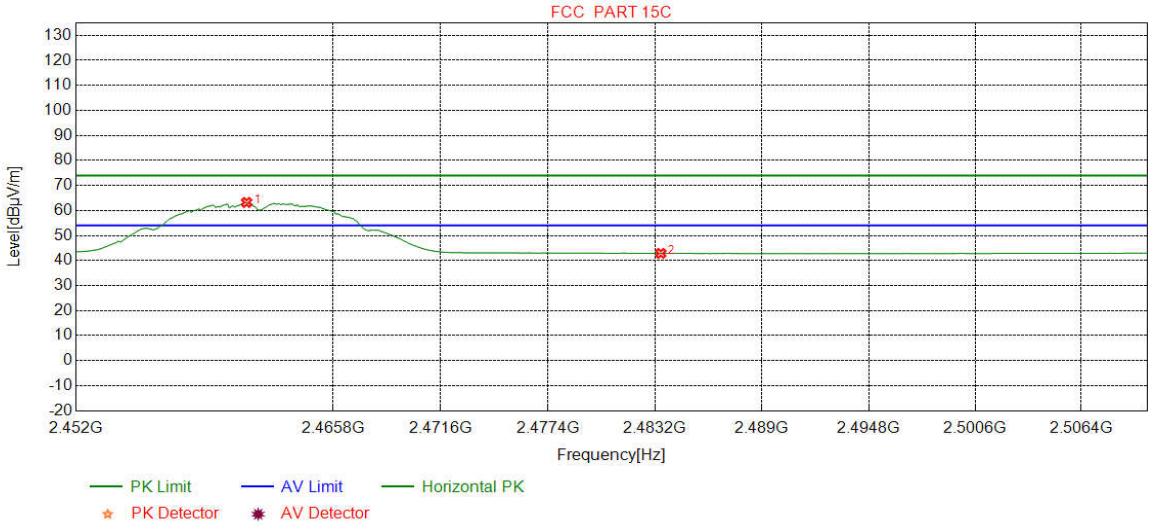
Test Graph



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	-43.11	97.36	100.07	74.00	-26.07	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	49.06	51.71	74.00	22.29	Pass	Vertical

Mode:	802.11 b Transmitting	Channel:	2462MHz
Remark:	AV		

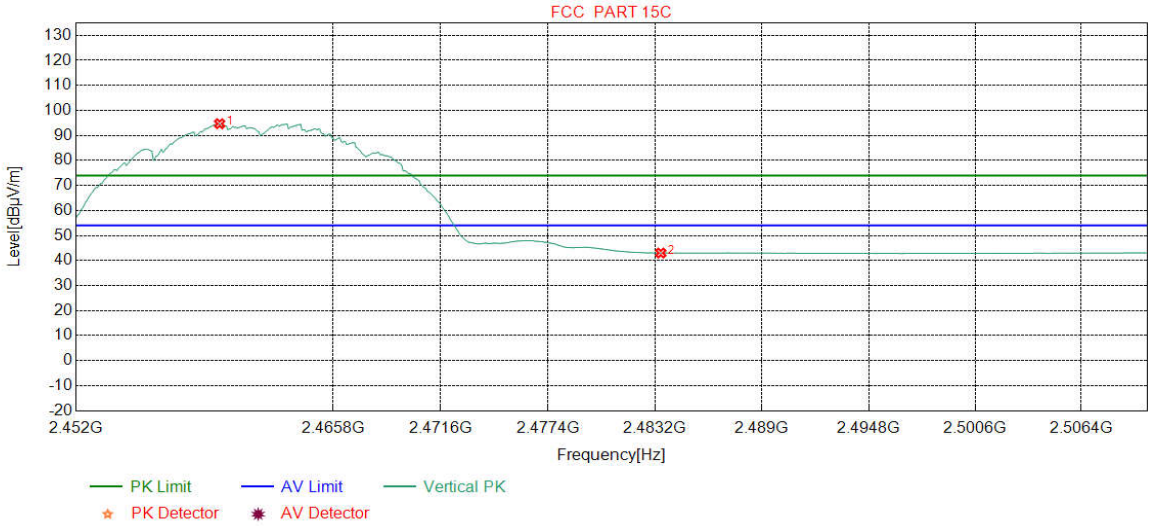
Test Graph



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	-43.11	60.50	63.22	54.00	-9.22	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	40.20	42.85	54.00	11.15	Pass	Horizontal

Mode:	802.11 b Transmitting	Channel:	2462MHz
Remark:	AV		

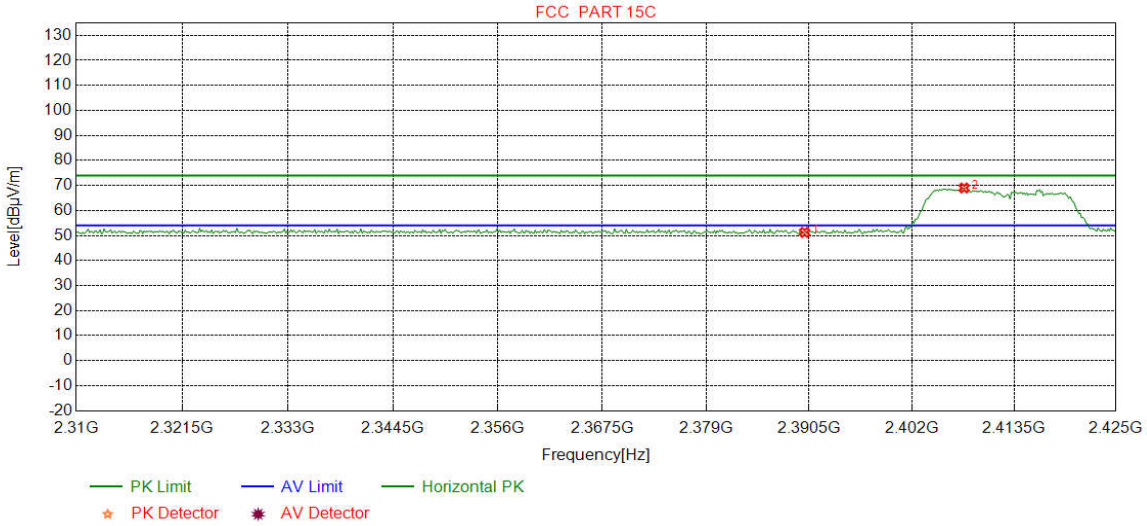
Test Graph



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	2459.6946	32.34	13.49	-43.11	91.96	94.68	54.00	-40.68	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	40.34	42.99	54.00	11.01	Pass	Vertical

Mode:	802.11 g Transmitting	Channel:	2412MHz
Remark:	PK		

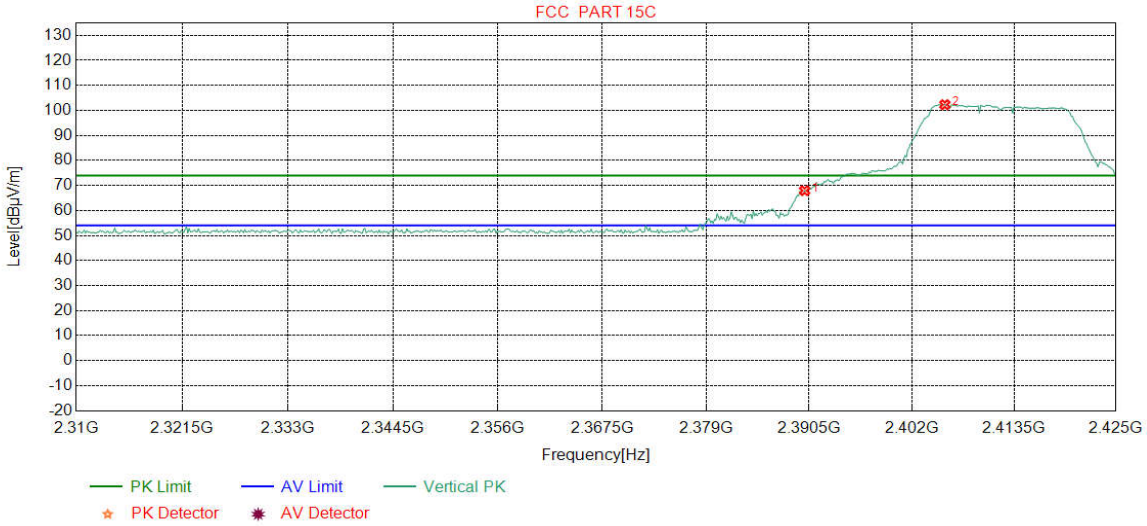
Test Graph



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	-43.12	48.74	51.24	74.00	22.76	Pass	Horizontal
2	2407.8723	32.27	13.34	-43.12	66.52	69.01	74.00	4.99	Pass	Horizontal

Mode:	802.11 g Transmitting	Channel:	2412MHz
Remark:	PK		

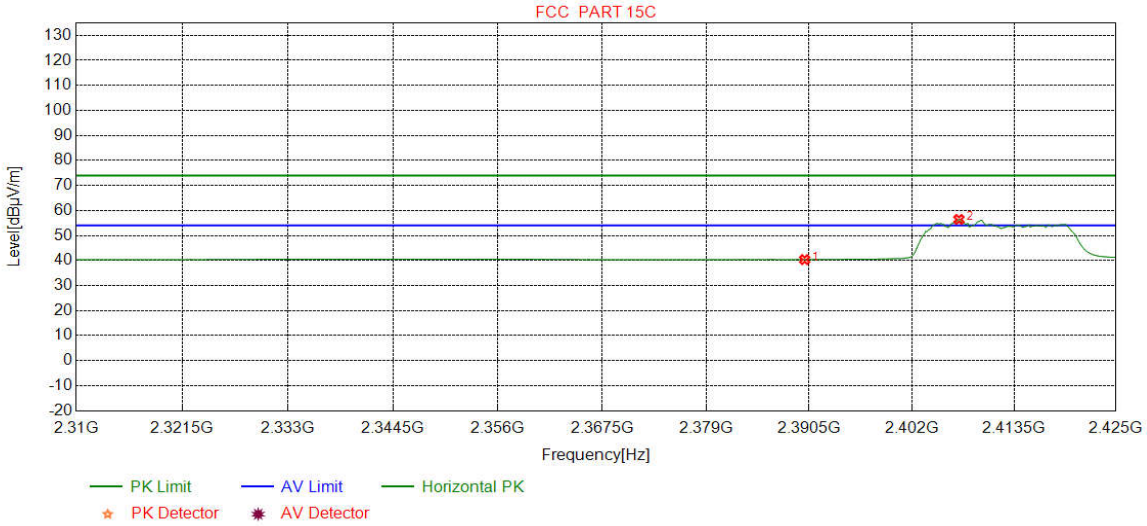
Test Graph



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	-43.12	65.43	67.93	74.00	6.07	Pass	Vertical
2	2405.7134	32.27	13.33	-43.12	99.81	102.29	74.00	-28.29	Pass	Vertical

Mode:	802.11 g Transmitting	Channel:	2412MHz
Remark:	AV		

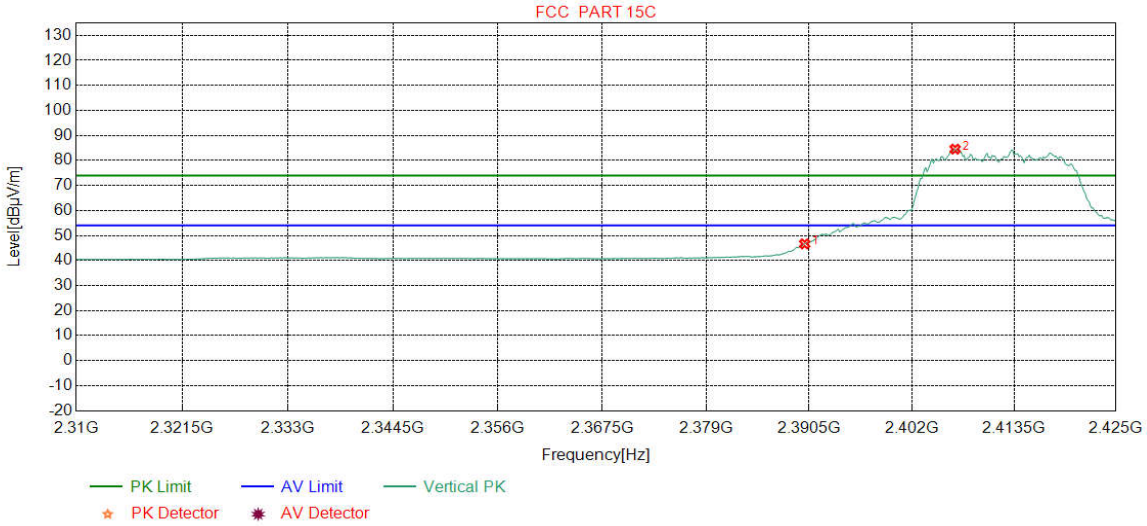
Test Graph



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	-43.12	37.87	40.37	54.00	13.63	Pass	Horizontal
2	2407.2966	32.27	13.33	-43.11	53.94	56.43	54.00	-2.43	Pass	Horizontal

Mode:	802.11 g Transmitting	Channel:	2412MHz
Remark:	AV		

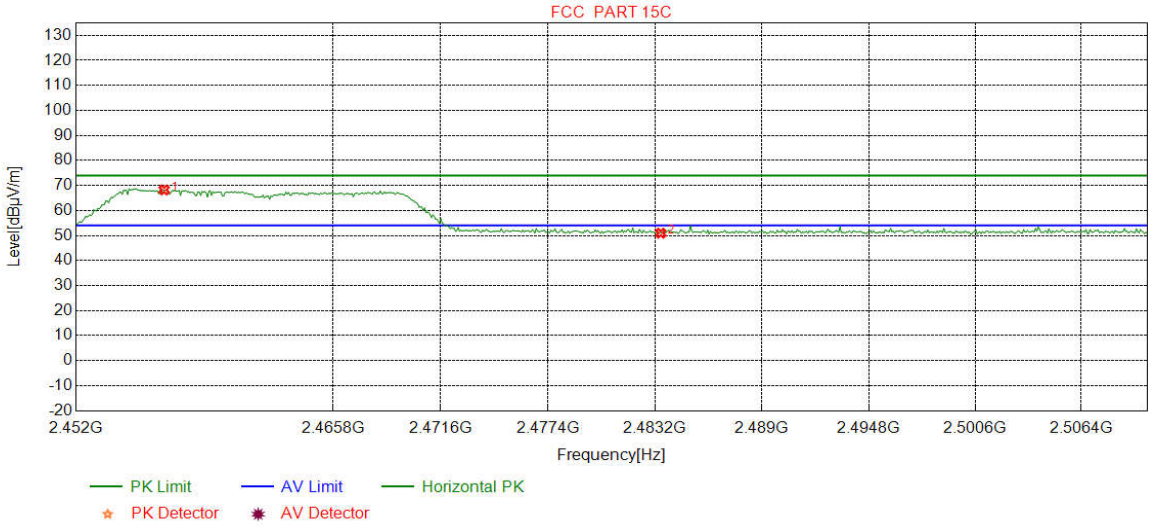
Test Graph



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	-43.12	44.16	46.66	54.00	7.34	Pass	Vertical
2	2406.8648	32.27	13.33	-43.12	82.04	84.52	54.00	-30.52	Pass	Vertical

Mode:	802.11 g Transmitting	Channel:	2462MHz
Remark:	PK		

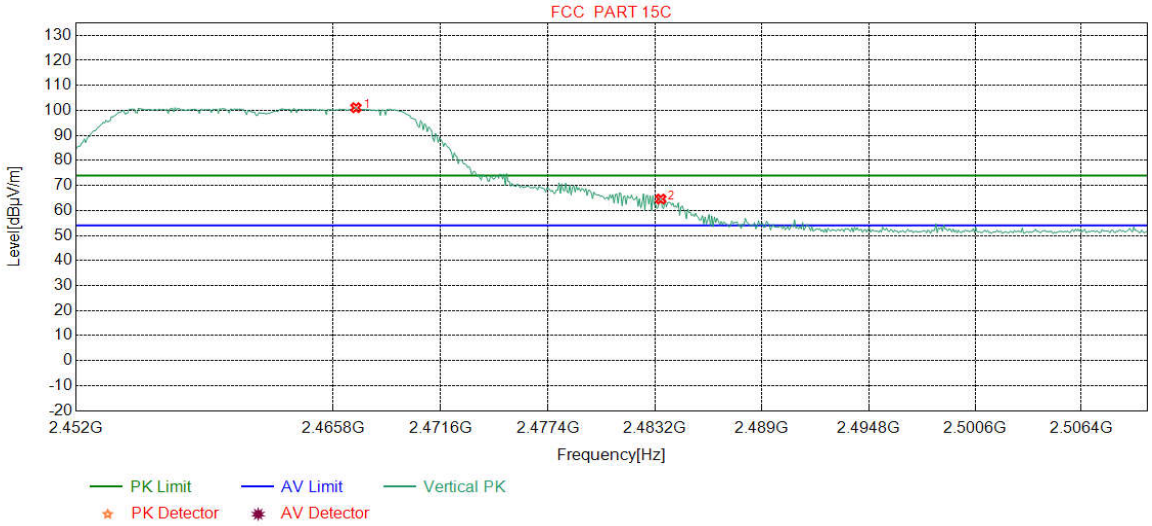
Test Graph



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	2456.7184	32.34	13.50	-43.11	65.49	68.22	74.00	5.78	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	48.29	50.94	74.00	23.06	Pass	Horizontal

Mode:	802.11 g Transmitting	Channel:	2462MHz
Remark:	PK		

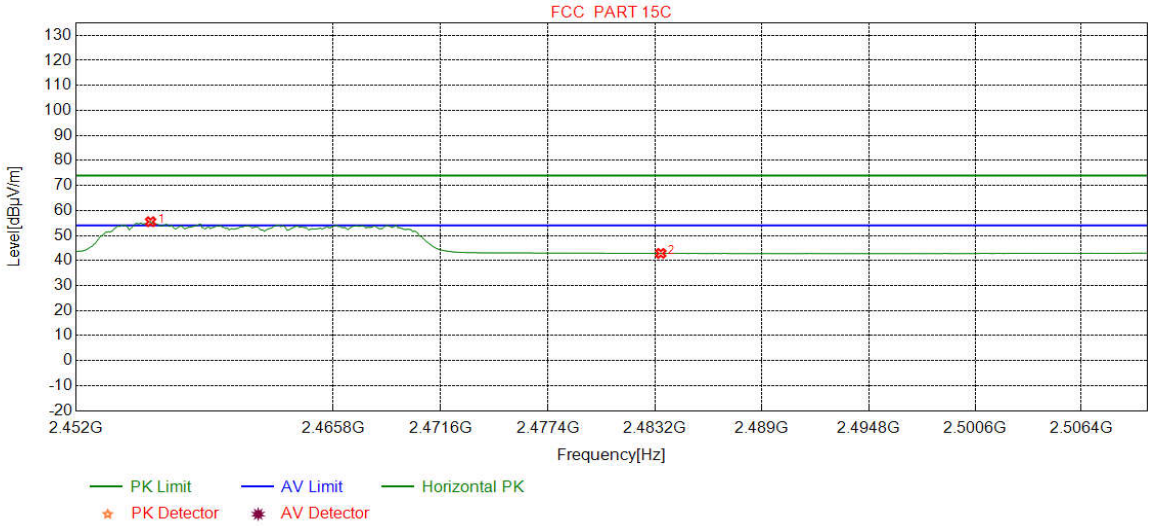
Test Graph



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	2467.0263	32.35	13.45	-43.10	98.38	101.08	74.00	-27.08	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	61.92	64.57	74.00	9.43	Pass	Vertical

Mode:	802.11 g Transmitting	Channel:	2462MHz
Remark:	AV		

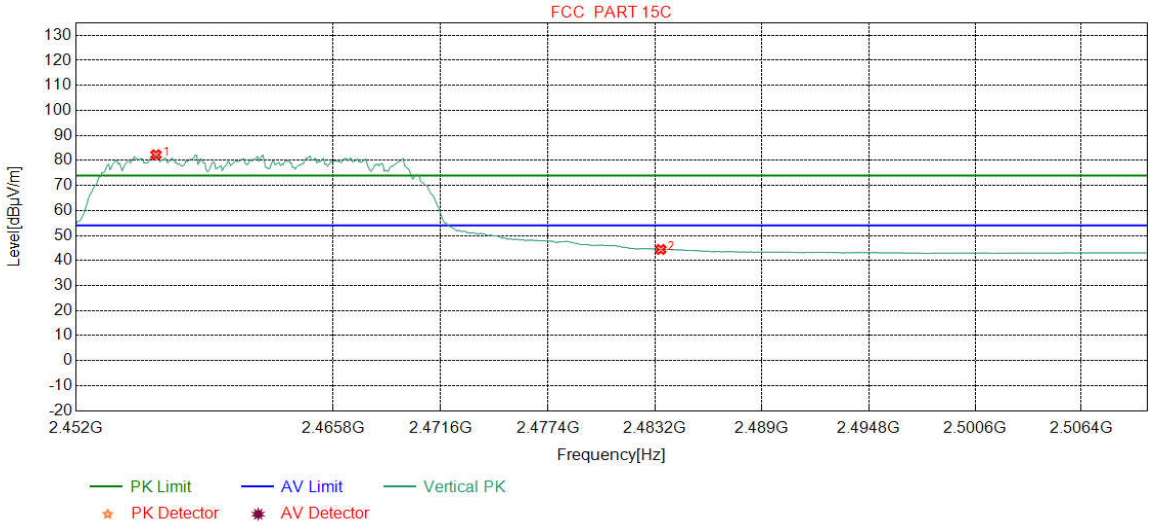
Test Graph



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	2455.9925	32.34	13.50	-43.11	52.77	55.50	54.00	-1.50	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	40.20	42.85	54.00	11.15	Pass	Horizontal

Mode:	802.11 g Transmitting	Channel:	2462MHz
Remark:	AV		

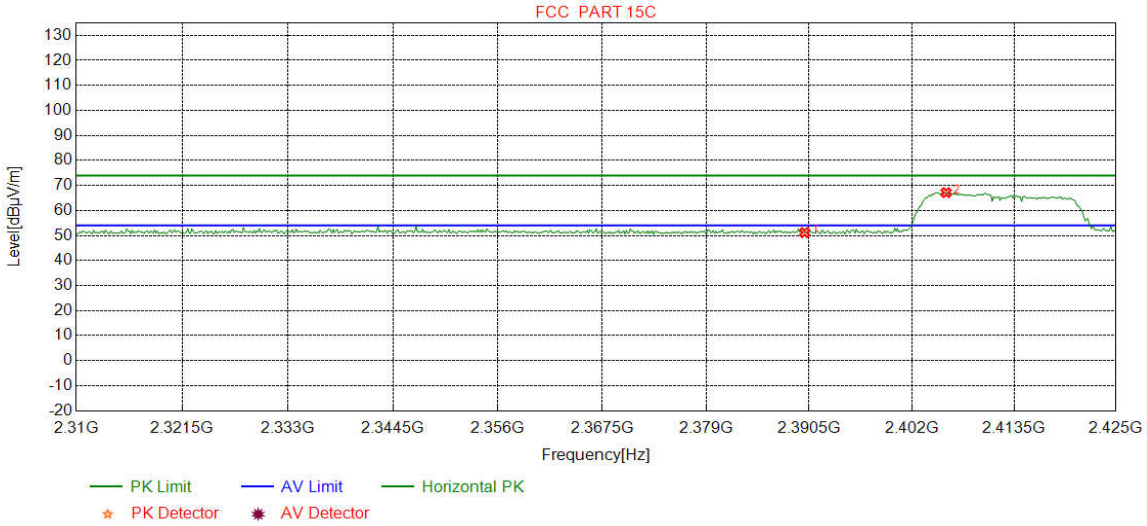
Test Graph



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	2456.2829	32.34	13.50	-43.11	79.55	82.28	54.00	-28.28	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	41.77	44.42	54.00	9.58	Pass	Vertical

Mode:	802.11 n(HT20) Transmitting	Channel:	2412MHz
Remark:	PK		

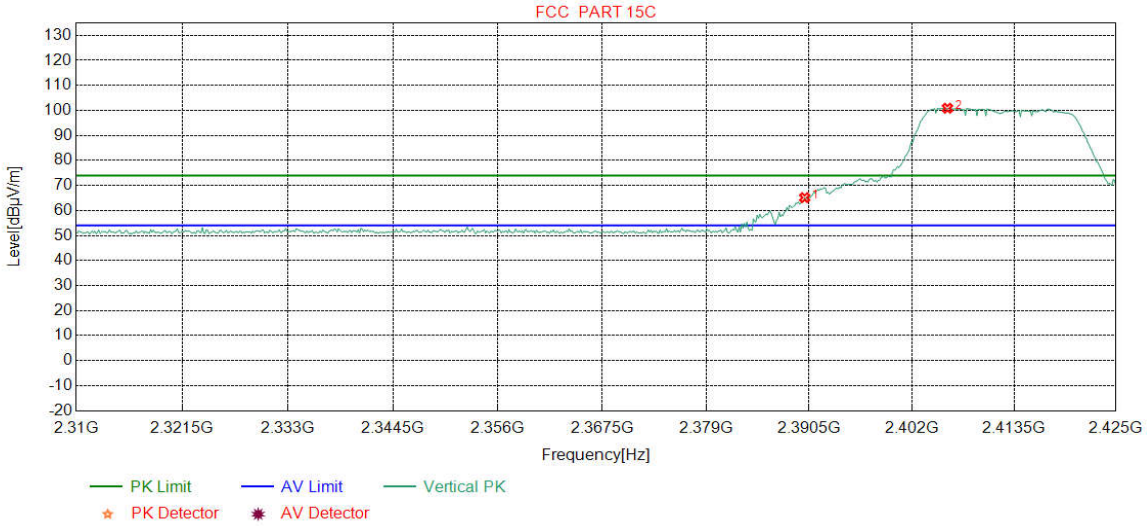
Test Graph



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	-43.12	48.67	51.17	74.00	22.83	Pass	Horizontal
2	2405.8573	32.27	13.33	-43.12	64.66	67.14	74.00	6.86	Pass	Horizontal

Mode:	802.11 n(HT20) Transmitting	Channel:	2412MHz
Remark:	PK		

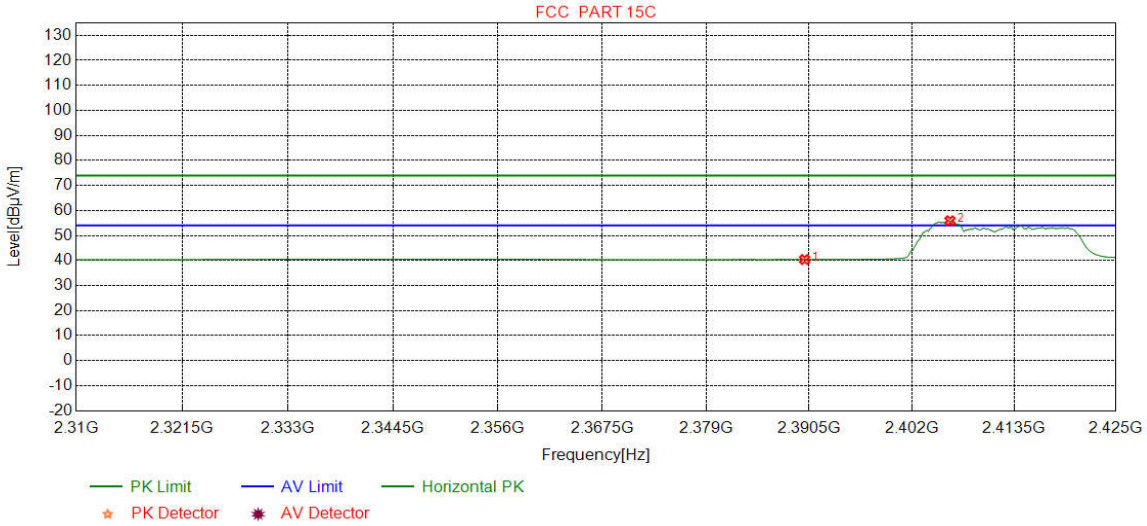
Test Graph



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	-43.12	62.63	65.13	74.00	8.87	Pass	Vertical
2	2406.0013	32.27	13.33	-43.12	98.39	100.87	74.00	-26.87	Pass	Vertical

Mode:	802.11 n(HT20) Transmitting	Channel:	2412MHz
Remark:	AV		

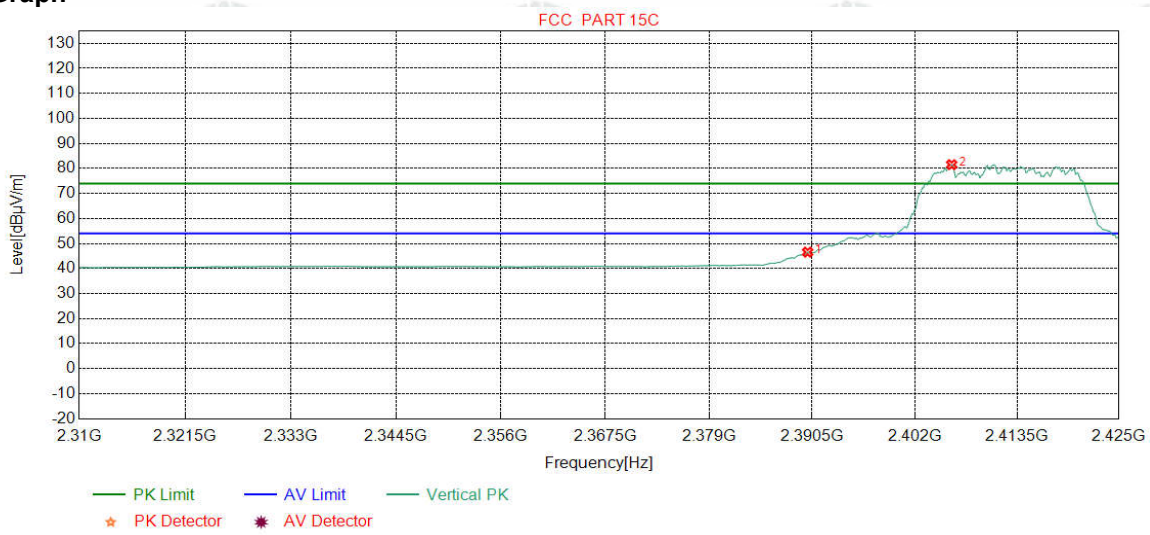
Test Graph



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	-43.12	37.90	40.40	54.00	13.60	Pass	Horizontal
2	2406.2891	32.27	13.33	-43.12	53.42	55.90	54.00	-1.90	Pass	Horizontal

Mode:	802.11 n(HT20) Transmitting	Channel:	2412MHz
Remark:	AV		

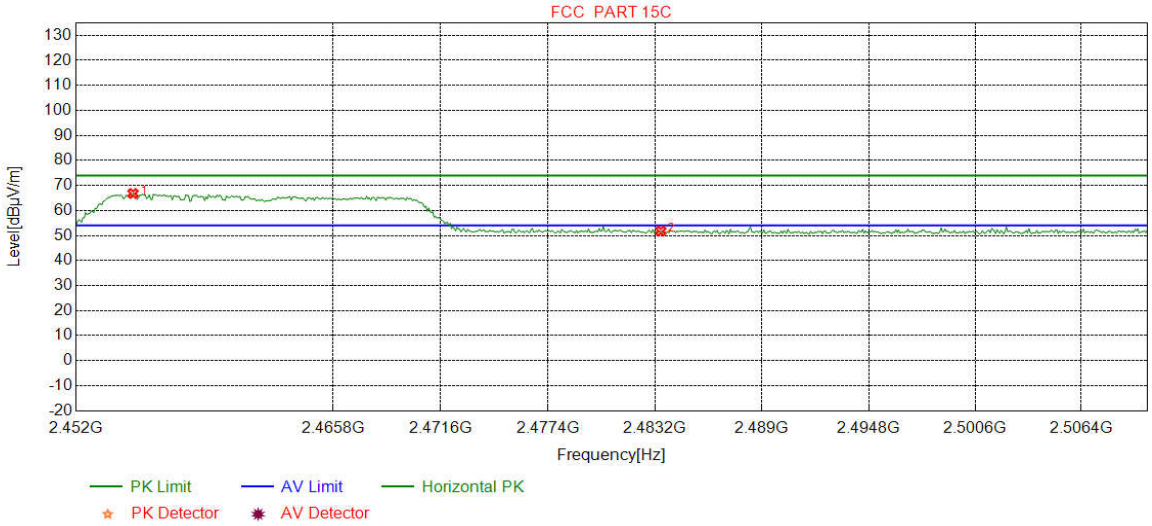
Test Graph



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	-43.12	44.05	46.55	54.00	7.45	Pass	Vertical
2	2406.1452	32.27	13.33	-43.12	79.03	81.51	54.00	-27.51	Pass	Vertical

Mode:	802.11 n(HT20) Transmitting	Channel:	2462MHz
Remark:	PK		

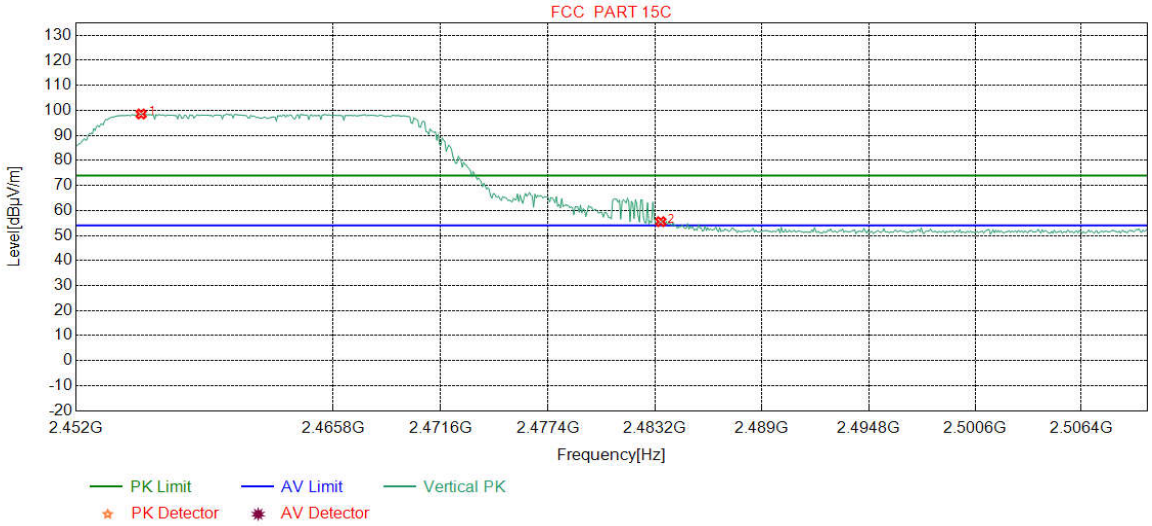
Test Graph



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	2455.0488	32.34	13.51	-43.12	64.08	66.81	74.00	7.19	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	49.14	51.79	74.00	22.21	Pass	Horizontal

Mode:	802.11 n(HT20) Transmitting	Channel:	2462MHz
Remark:	PK		

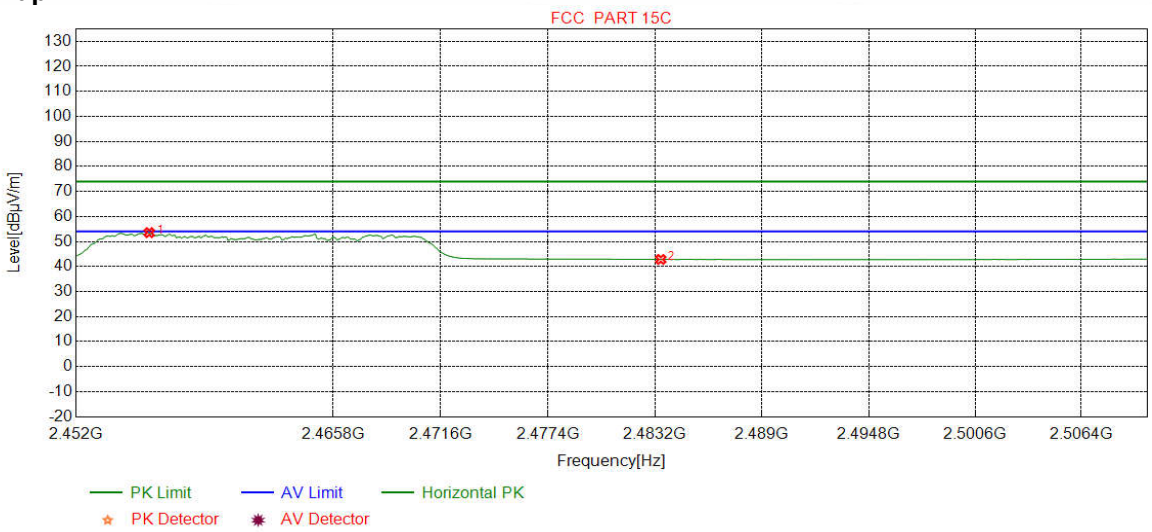
Test Graph



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	2455.4844	32.34	13.50	-43.11	95.83	98.56	74.00	-24.56	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	52.88	55.53	74.00	18.47	Pass	Vertical

Mode:	802.11 n(HT20) Transmitting	Channel:	2462MHz
Remark:	AV		

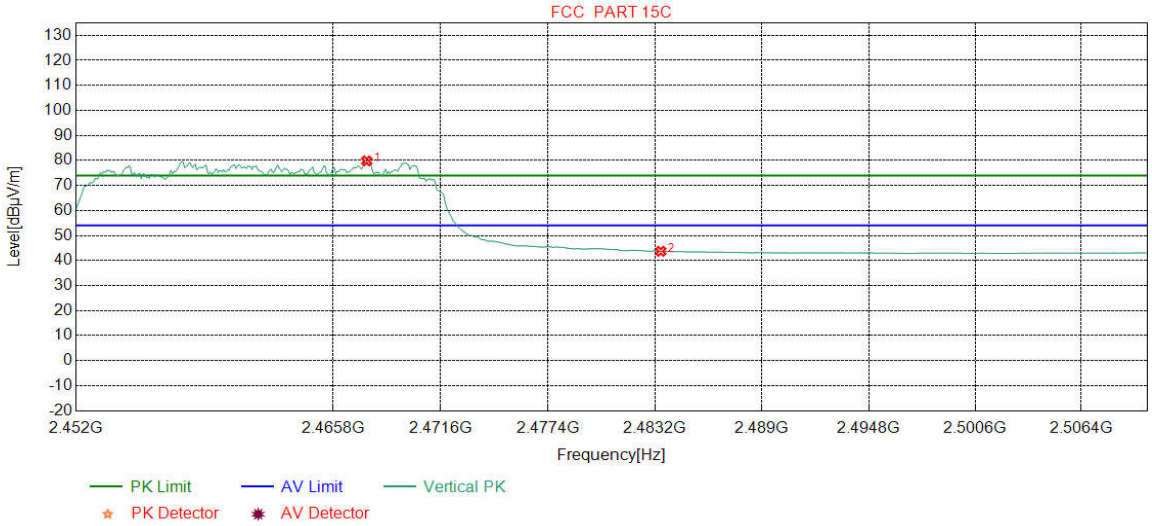
Test Graph



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	2455.9199	32.34	13.50	-43.11	50.82	53.55	54.00	0.45	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	40.18	42.83	54.00	11.17	Pass	Horizontal

Mode:	802.11 n(HT20) Transmitting	Channel:	2462MHz
Remark:	AV		

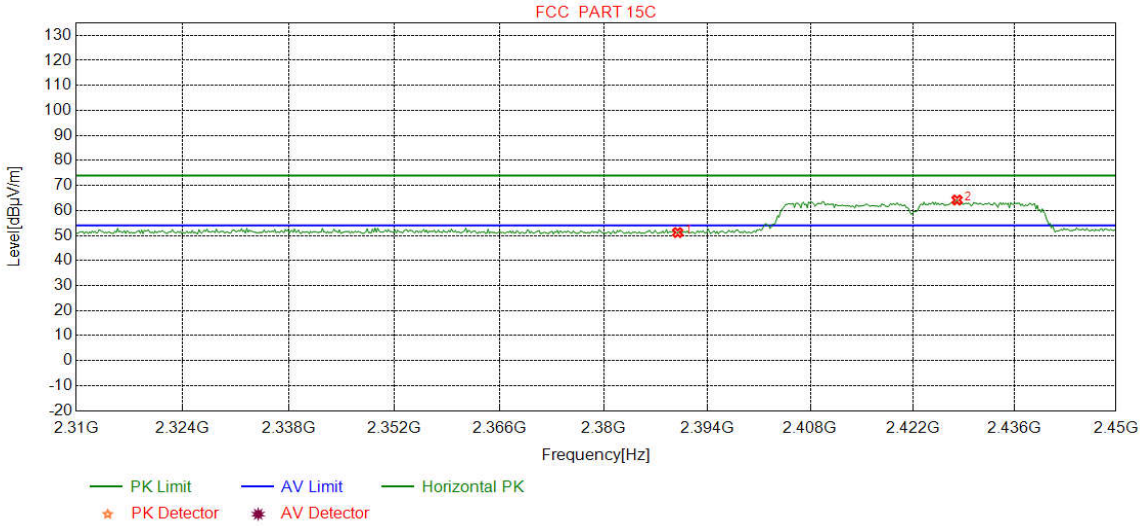
Test Graph



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	2467.6070	32.35	13.45	-43.10	77.13	79.83	54.00	-25.83	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	41.03	43.68	54.00	10.32	Pass	Vertical

Mode:	802.11 n(HT40) Transmitting	Channel:	2422MHz
Remark:	PK		

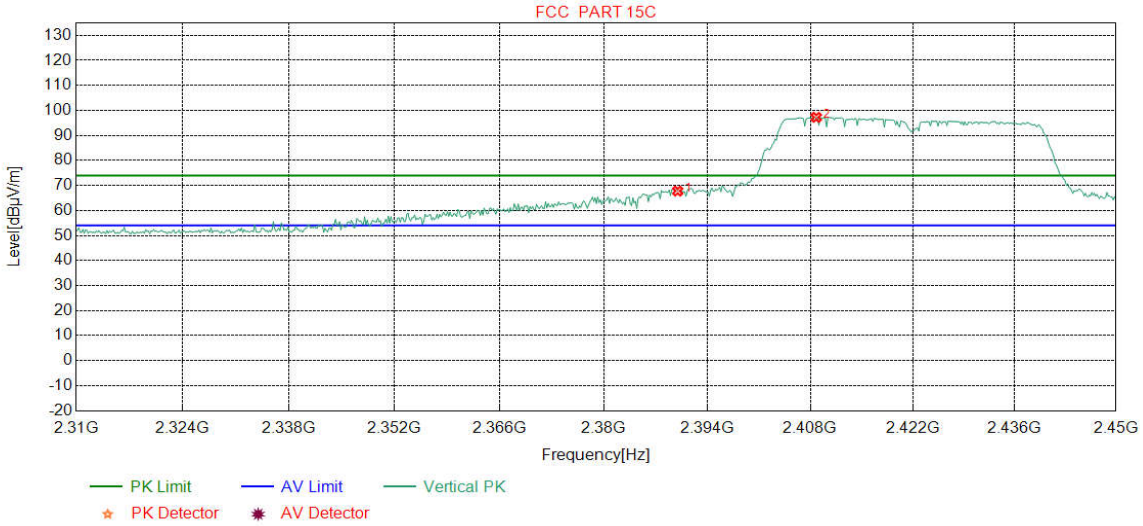
Test Graph



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	-43.12	48.69	51.19	74.00	22.81	Pass	Horizontal
2	2428.0976	32.30	13.43	-43.12	61.57	64.18	74.00	9.82	Pass	Horizontal

Mode:	802.11 n(HT40) Transmitting	Channel:	2422MHz
Remark:	PK		

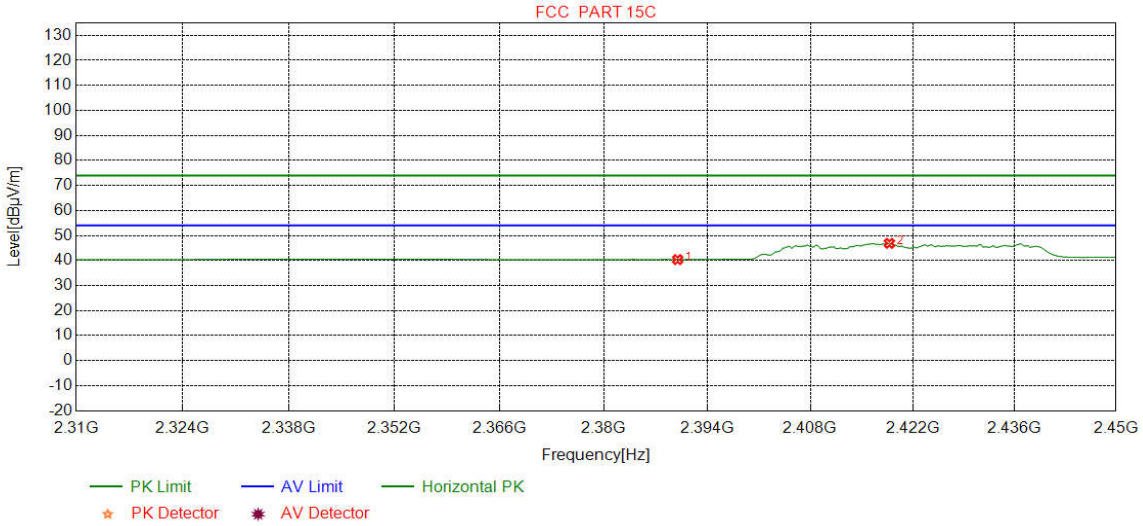
Test Graph



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	-43.12	65.27	67.77	74.00	6.23	Pass	Vertical
2	2408.8235	32.27	13.34	-43.12	94.75	97.24	74.00	-23.24	Pass	Vertical

Mode:	802.11 n(HT40) Transmitting	Channel:	2422MHz
Remark:	AV		

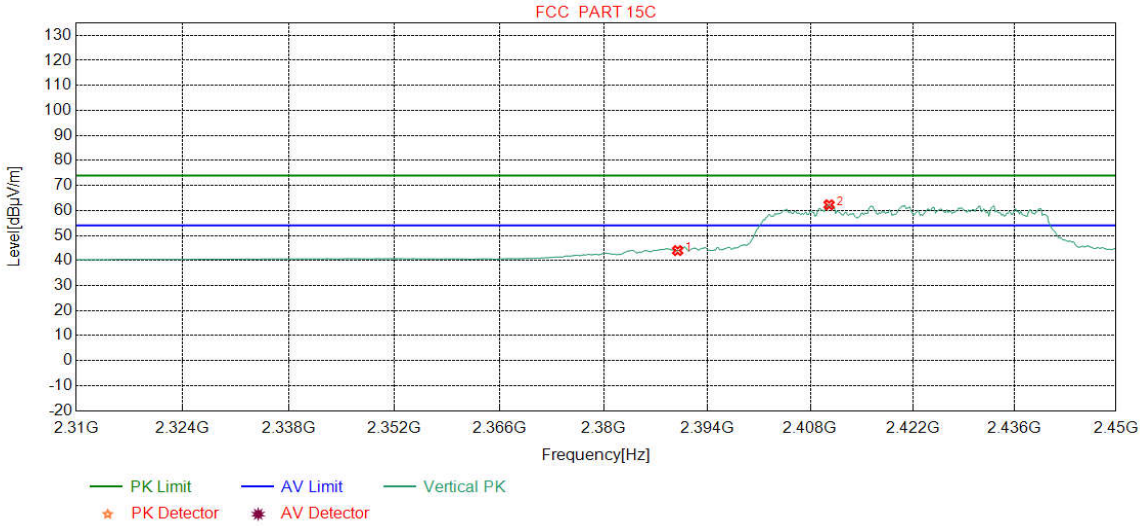
Test Graph



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	-43.12	37.88	40.38	54.00	13.62	Pass	Horizontal
2	2418.8110	32.29	13.39	-43.12	44.31	46.87	54.00	7.13	Pass	Horizontal

Mode:	802.11 n(HT40) Transmitting	Channel:	2422MHz
Remark:	AV		

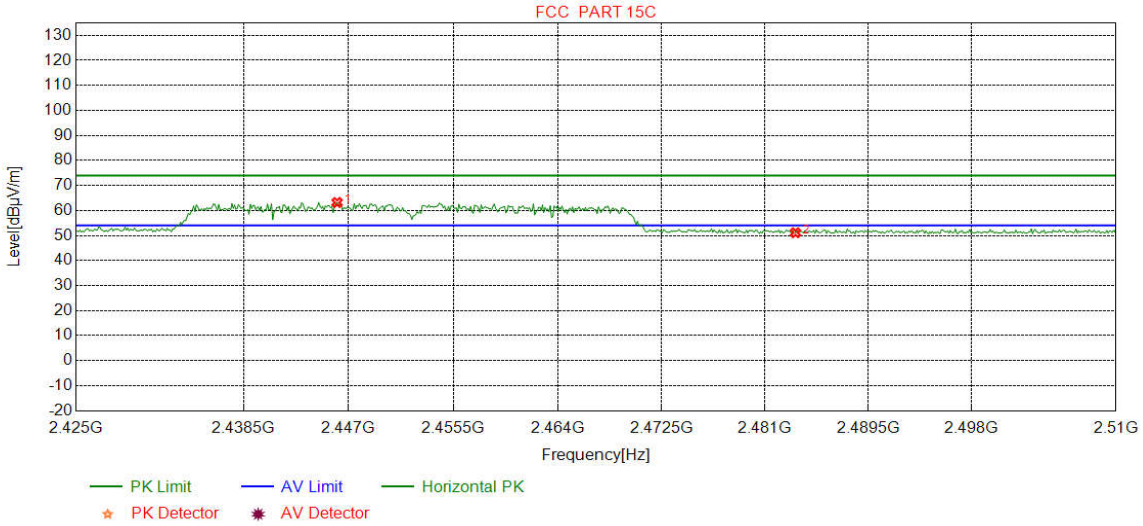
Test Graph



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	-43.12	41.48	43.98	54.00	10.02	Pass	Vertical
2	2410.5757	32.27	13.35	-43.11	59.77	62.28	54.00	-8.28	Pass	Vertical

Mode:	802.11 n(HT40)) Transmitting	Channel:	2452MHz
Remark:	PK		

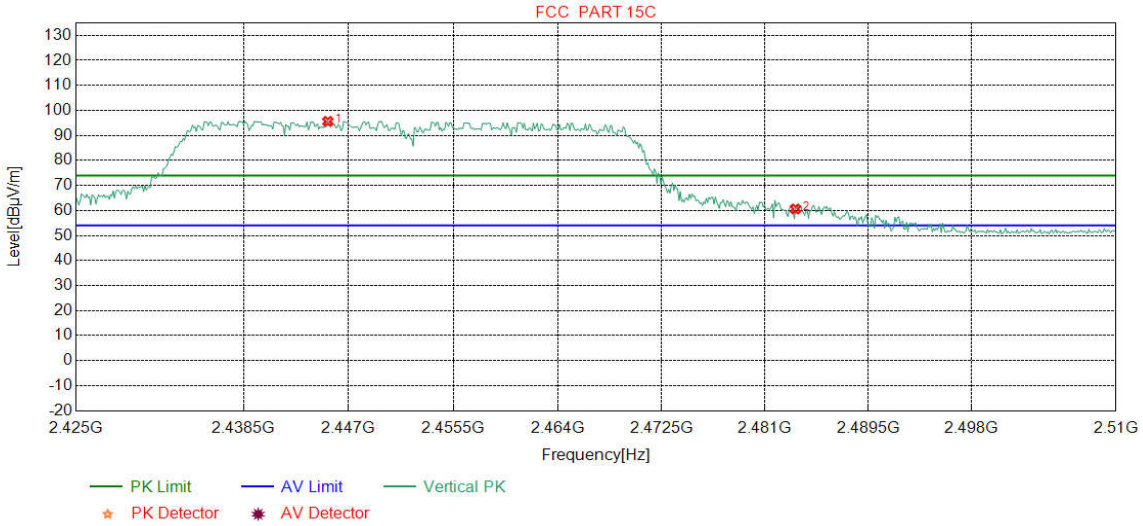
Test Graph



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	2446.0638	32.32	13.51	-43.10	60.46	63.19	74.00	10.81	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	48.45	51.10	74.00	22.90	Pass	Horizontal

Mode:	802.11 n(HT40) Transmitting	Channel:	2452MHz
Remark:	PK		

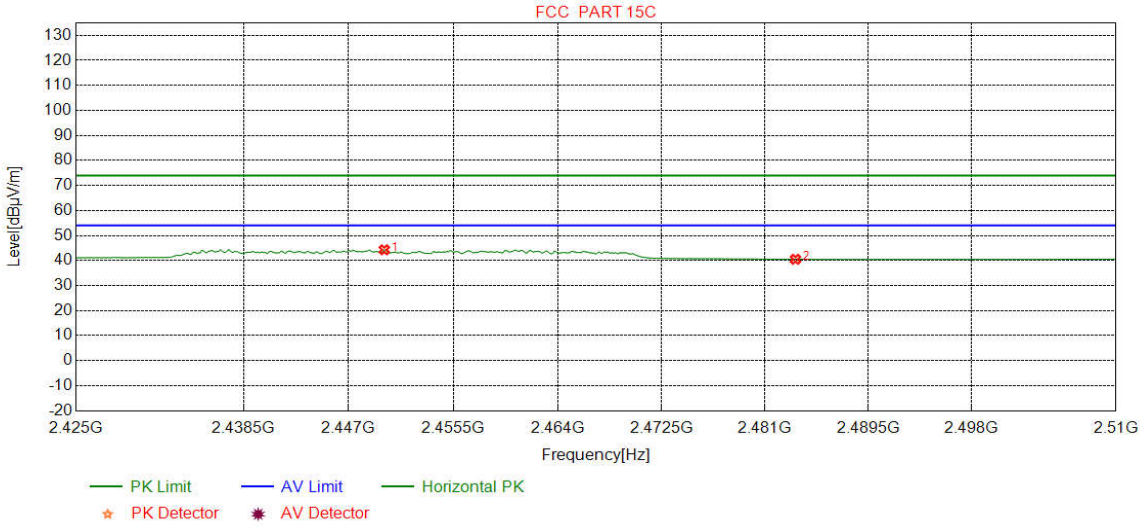
Test Graph



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	2445.3191	32.32	13.51	-43.11	92.86	95.58	74.00	-21.58	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	57.96	60.61	74.00	13.39	Pass	Vertical

Mode:	802.11 n(HT40) Transmitting	Channel:	2452MHz
Remark:	AV		

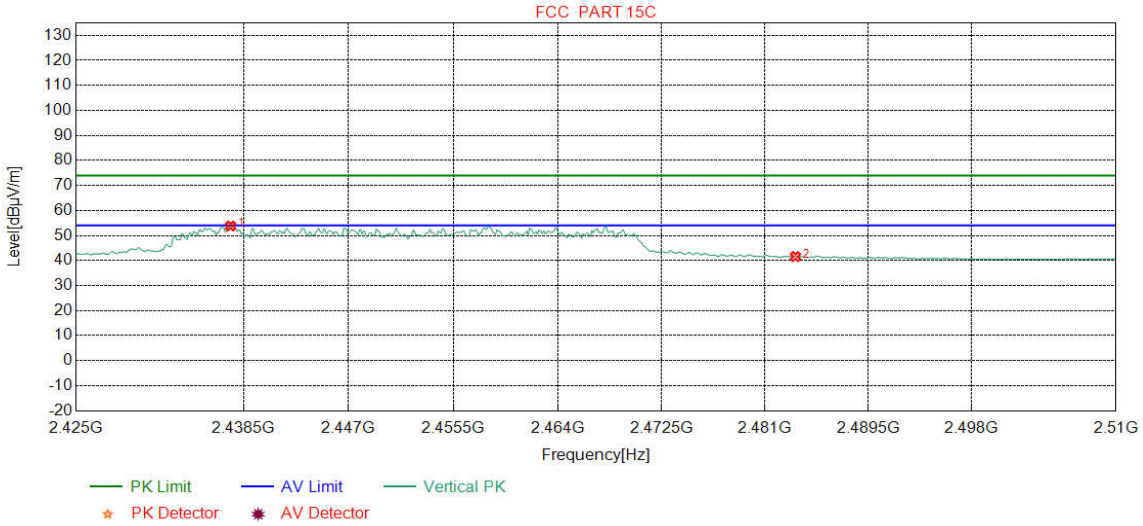
Test Graph



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	2449.8936	32.33	13.53	-43.11	41.54	44.29	54.00	9.71	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	37.85	40.50	54.00	13.50	Pass	Horizontal

Mode:	802.11 n(HT40) Transmitting	Channel:	2452MHz
Remark:	AV		

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	2437.4468	32.31	13.47	-43.11	51.13	53.80	54.00	0.20	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	38.92	41.57	54.00	12.43	Pass	Vertical

Note:

1) Through Pre-scan transmitting mode and charge+transmitter mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbpsof rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 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

8 Appendix A

Refer to Appendix: 2.4G WIFI of EED32M80097102.