TEST REPORT

Product	:	INTELLIGENT AUTOMOTIVE DIAGNOSTIC ANALYZER, INTELLIGENT KEY PROGRAMMING TOOL
Trade mark	:	OTOFIX
Model/Type reference	:	D1 Lite, D1, IM1
Serial Number	:	N/A
Report Number	:	EED32M80160303
FCC ID	:	WQ8MAXIBASBT609
Date of Issue	:	Feb. 25, 2021
Test Standards	:	47 CFR Part 15 Subpart C
Test result	:	PASS

Prepared for:

Autel Intelligent Tech. Corp., Ltd.
7th-8th, 10th Floor, Bldg. B1, Zhiyuan,
Xueyuan Rd. Xili, Nanshan, Shenzhen, 518055,China

Prepared by:

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Check No.:7427291220

2 Content

3 Version

Version No.	Date	Description
00	Feb. 25, 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.: D1 Lite, D1, IM1
Three models are the same except model name since the applicant changed for different market and customer, Only the model IM1 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models.

5 General Information

5.1 Client Information

Applicant:	Autel Intelligent Tech. Corp., Ltd.
Address of Applicant:	7th-8th, 10th Floor, Bldg. B1, Zhiyuan,Xueyuan Rd. Xili, Nanshan, Shenzhen, 518055, China
Manufacturer:	Autel Intelligent Tech. Corp., Ltd.
Address of Manufacturer:	7th-8th, 10th Floor, Bldg. B1, Zhiyuan,Xueyuan Rd. Xili, Nanshan, Shenzhen, 518055, China
Factory 1:	Autel Intelligent Technology Corp., Ltd. Guangming Branch
Address of Factory 1:	7F&6F, East Wing, Building 2, and 6F of Electronical Building, Yanxiang Industrial Zone, Gaoxin Rd, Dongzhou Community of Guangming New District, Shenzhen
Factory 2:	AUTEL VIETNAM COMPANY LIMITED
Address of Factory 2:	4th Floor, Factory#6, Land#CN1, An Duong Industrial Zone, Hong Phong Township, An Duong County, Hai Phong, Viet Nam

5.2 General Description of EUT

Product Name:	INTELLIGENT AUTOMOTIVE DIAGNOSTIC ANALYZER, INTELLIGENT KEY PROGRAMMING TOOL	
Model No.:	IM1	
Add Model No.:	D1 Lite, D1	
Trade mark:	OTOFIX	
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:	FPC antenna	
Antenna Gain:	3.8dBi	
Power Supply:	SWITCHING AC/DC POWER ADAPTER	MODEL:GME10C-050200FUu INPUT:100-240V~,50/60Hz ,0.28A OUTPUT:5V⎓2A,10W
	Battery	Model: TB2021 Capacity: 5800mAh/22.33Wh Nominal Voltage: 3.85V
Test Voltage:	Battery 3.85V	
Sample Received Date:	Dec. 29, 2020	
Sample tested Date:	Dec. 29, 2020 to Feb. 25, 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:	CMD
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	02-16-2021 02-15-2022
Signal Generator	Keysight	N5182B	MY53051549	02-17-2020 02-16-2021	02-16-2021 02-15-2022
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	02-16-2021 02-15-2022
PC-1	Lenovo	R4960d	---	---	---
Power unit	R&S	OSP120	101374	02-17-2020 02-16-2021	02-16-2021 02-15-2022
RF control unit	JS Tonscend	JS0806-2	158060006	02-17-2020 02-16-2021	02-16-2021 02-15-2022
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/070/10711112	---	---	---
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	---	---

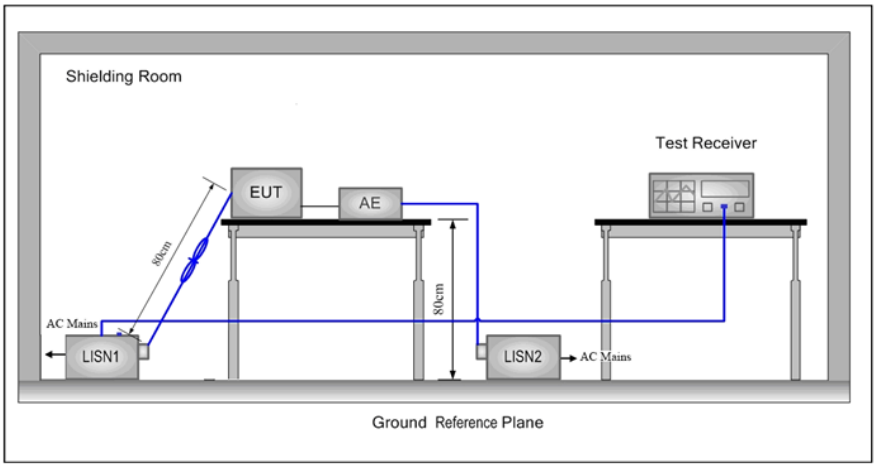
3M full-anechoic Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
RSE Automatic test software	JS Tonscend	JS36-RSE	10166	---	---
Receiver	Keysight	N9038A	MY57290136	03-05-2020	03-04-2021
Spectrum Analyzer	Keysight	N9020B	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

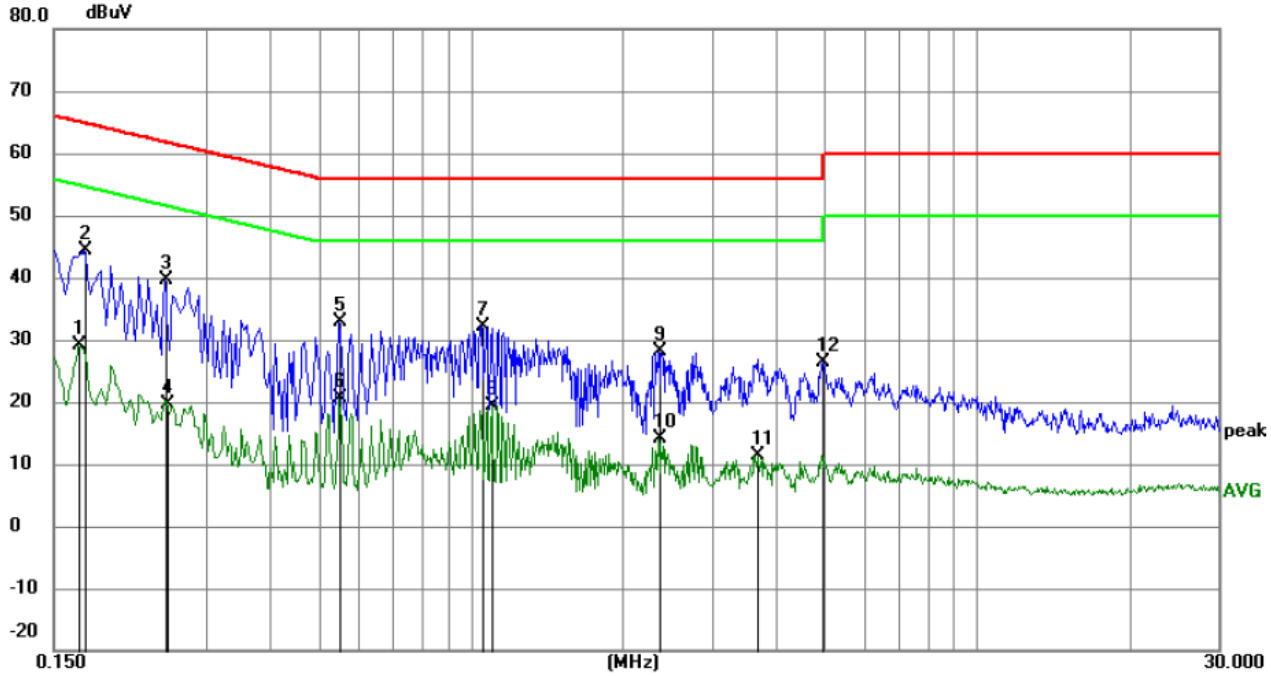
Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a 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 FPC antenna. The best case gain of the antenna is 3.85dBi.	

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:

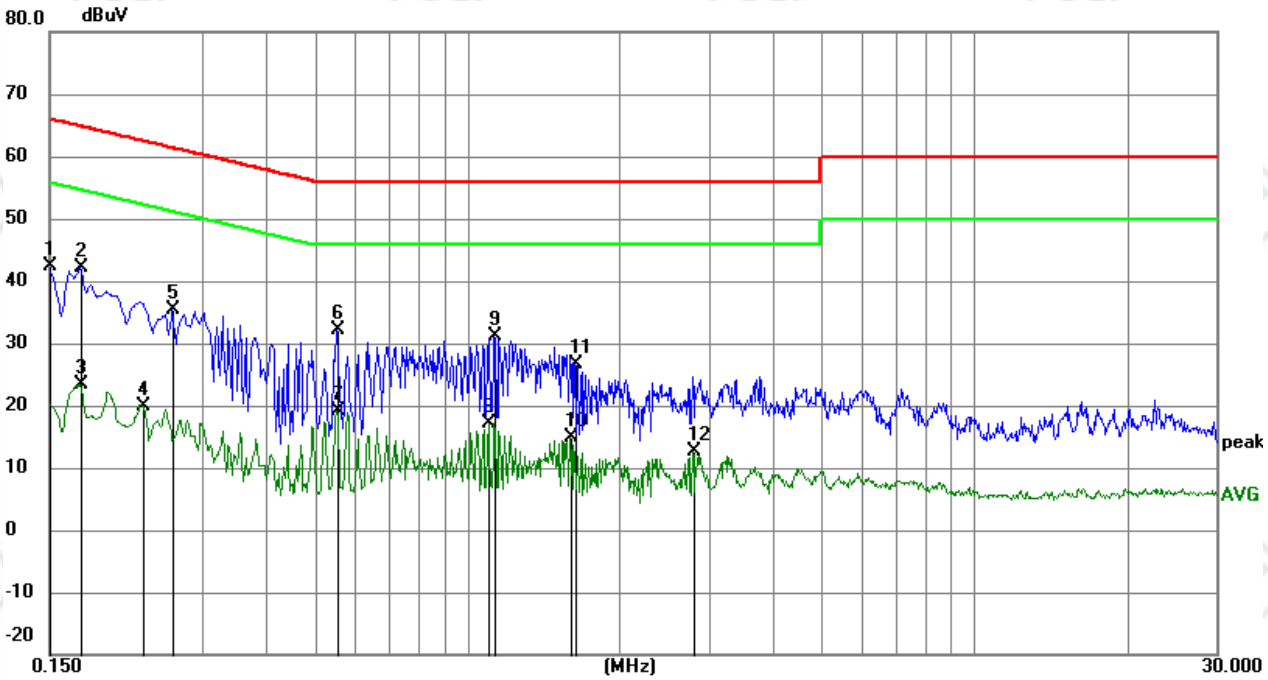


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1680	19.22	9.87	29.09	55.06	-25.97	AVG	
2	*	0.1725	34.55	9.87	44.42	64.84	-20.42	peak	
3		0.2490	29.54	9.97	39.51	61.79	-22.28	peak	
4		0.2508	9.59	9.97	19.56	51.73	-32.17	AVG	
5		0.5505	22.99	10.01	33.00	56.00	-23.00	peak	
6		0.5505	10.74	10.01	20.75	46.00	-25.25	AVG	
7		1.0500	22.34	9.83	32.17	56.00	-23.83	peak	
8		1.1040	9.45	9.83	19.28	46.00	-26.72	AVG	
9		2.3460	18.39	9.79	28.18	56.00	-27.82	peak	
10		2.3460	4.45	9.79	14.24	46.00	-31.76	AVG	
11		3.6915	1.66	9.78	11.44	46.00	-34.56	AVG	
12		4.9605	16.68	9.78	26.46	56.00	-29.54	peak	

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:

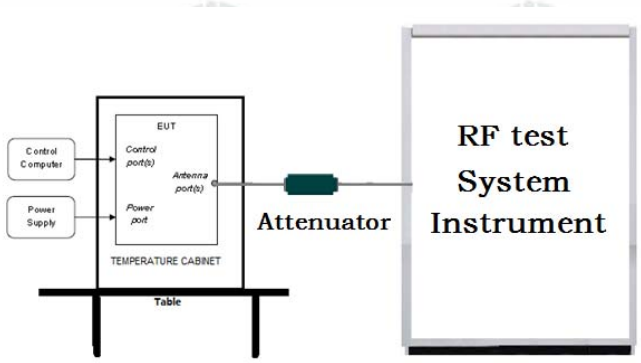


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	32.51	9.87	42.38	66.00	-23.62	peak	
2	*	0.1725	32.37	9.87	42.24	64.84	-22.60	peak	
3		0.1725	13.52	9.87	23.39	54.84	-31.45	AVG	
4		0.2280	10.07	9.93	20.00	52.52	-32.52	AVG	
5		0.2625	25.48	10.00	35.48	61.35	-25.87	peak	
6		0.5550	22.01	10.02	32.03	56.00	-23.97	peak	
7		0.5550	9.01	10.02	19.03	46.00	-26.97	AVG	
8		1.1040	7.31	9.83	17.14	46.00	-28.86	AVG	
9		1.1310	21.32	9.82	31.14	56.00	-24.86	peak	
10		1.5990	5.02	9.81	14.83	46.00	-31.17	AVG	
11		1.6305	16.94	9.80	26.74	56.00	-29.26	peak	
12		2.7869	2.76	9.79	12.55	46.00	-33.45	AVG	

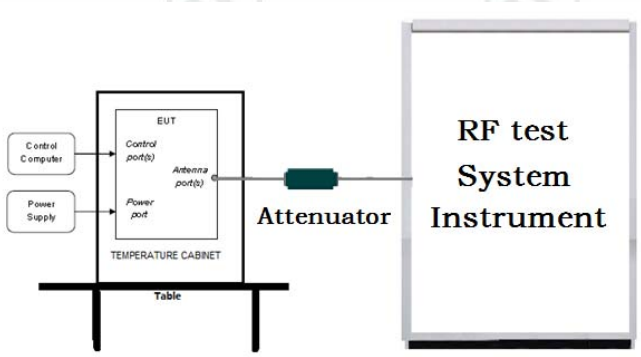
Remark:

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.

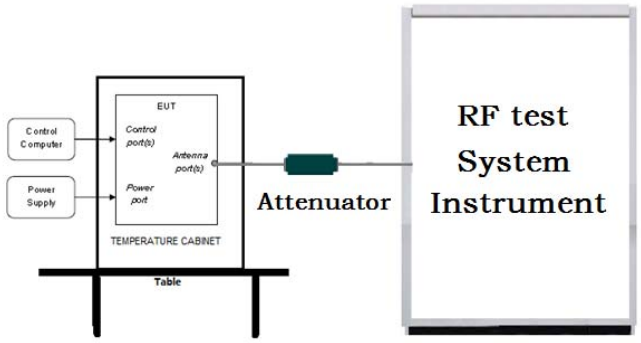
7.3 Maximum Conducted Output Power

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

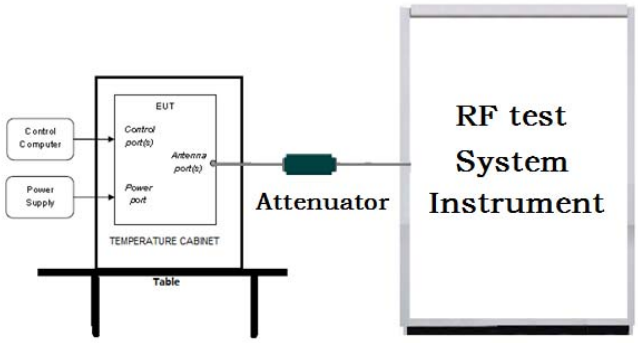
7.4 DTS Bandwidth

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:	

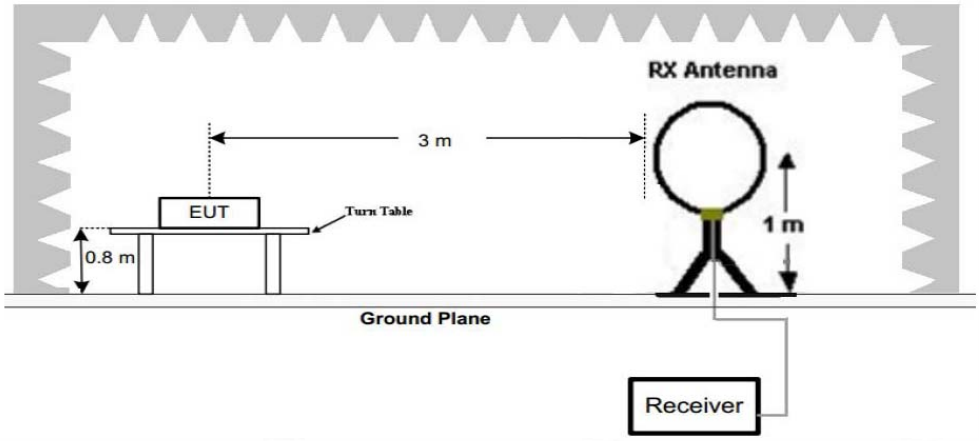


Figure 1. Below 30MHz

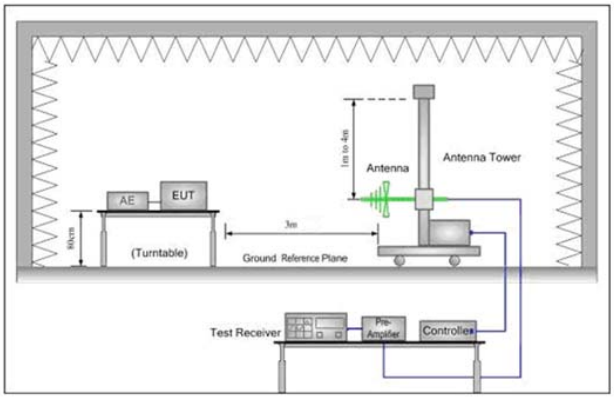


Figure 2. 30MHz to 1GHz

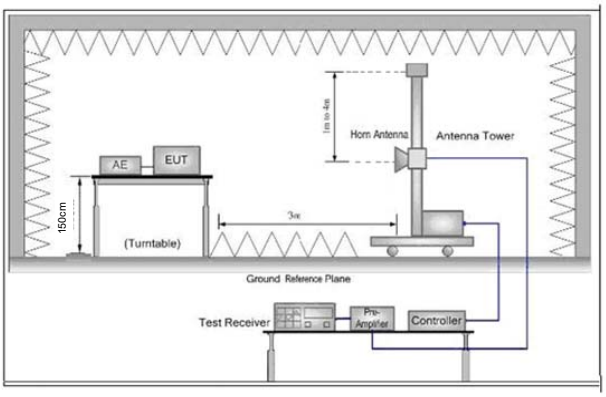


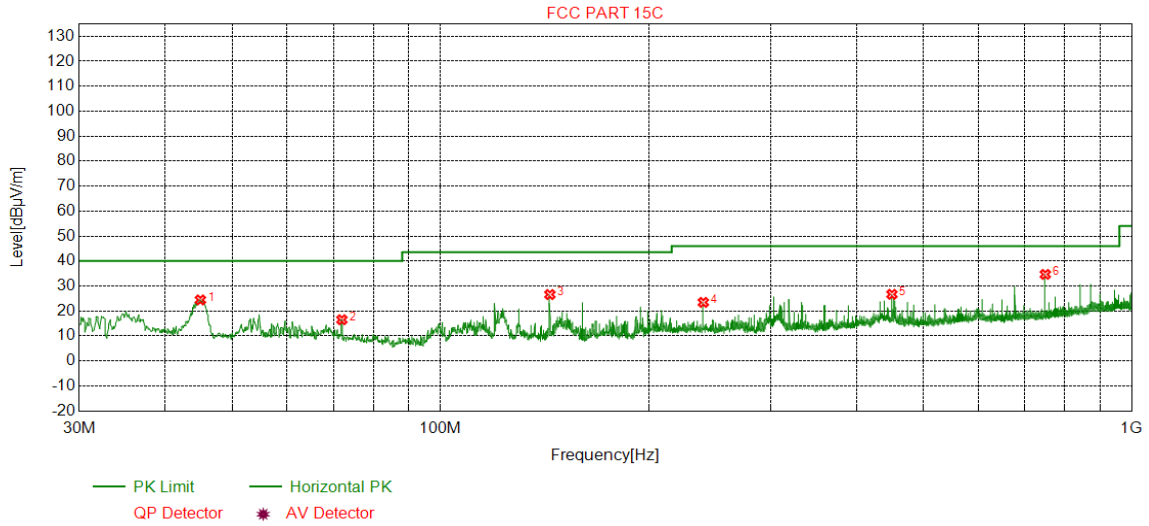
Figure 3. Above 1 GHz

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

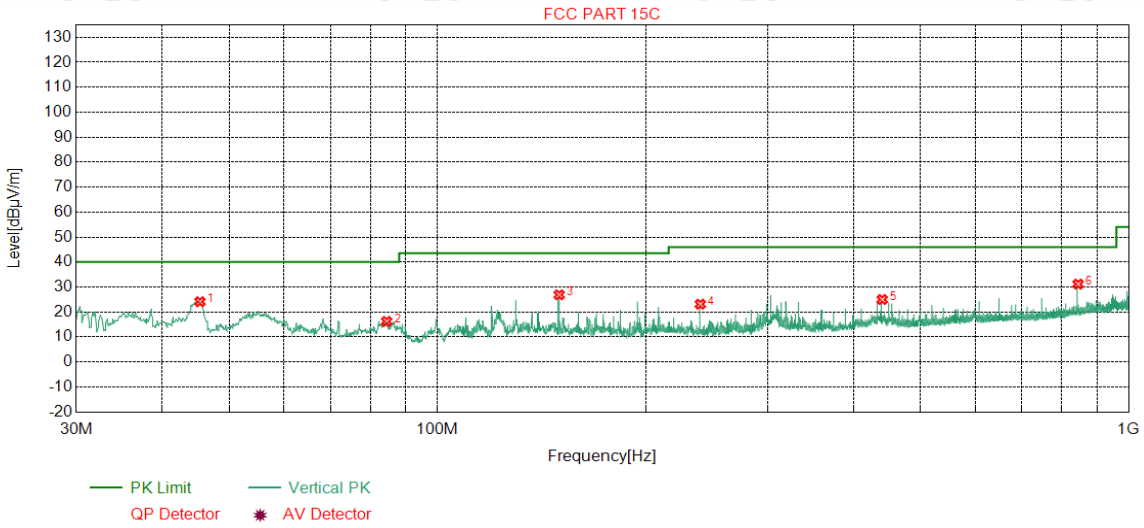
	horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) 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	44.9395	13.19	0.75	-31.71	42.20	24.43	40.00	15.57	Pass	H	PK
2	72.0052	8.62	0.97	-32.02	38.93	16.50	40.00	23.50	Pass	H	PK
3	143.9864	7.34	1.41	-31.99	49.82	26.58	43.50	16.92	Pass	H	PK
4	240.0260	11.94	1.84	-31.90	41.56	23.44	46.00	22.56	Pass	H	PK
5	449.9550	16.20	2.51	-31.89	39.85	26.67	46.00	19.33	Pass	H	PK
6	750.0060	20.35	3.29	-32.04	43.06	34.66	46.00	11.34	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	45.3275	13.20	0.75	-31.73	41.89	24.11	40.00	15.89	Pass	V	PK
2	84.4224	8.12	1.06	-31.99	39.04	16.23	40.00	23.77	Pass	V	PK
3	150.0010	7.55	1.45	-32.01	49.89	26.88	43.50	16.62	Pass	V	PK
4	240.0260	11.94	1.84	-31.90	41.24	23.12	46.00	22.88	Pass	V	PK
5	439.9630	16.04	2.48	-31.88	38.36	25.00	46.00	21.00	Pass	V	PK
6	844.9785	21.44	3.50	-31.82	38.04	31.16	46.00	14.84	Pass	V	PK

Radiated Spurious Emission above 1GHz:

Mode:			802.11 b Transmitting					Channel:		2412MHz	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Preamp gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1125.8126	28.03	2.63	-42.97	50.52	38.21	74.00	35.79	Pass	H	PK
2	1693.6694	29.68	3.19	-42.67	49.66	39.86	74.00	34.14	Pass	H	PK
3	2253.5254	32.05	3.79	-43.14	49.68	42.38	74.00	31.62	Pass	H	PK
4	3303.0202	33.32	4.58	-43.10	49.01	43.81	74.00	30.19	Pass	H	PK
5	5020.1347	34.52	4.84	-42.79	50.41	46.98	74.00	27.02	Pass	H	PK
6	7476.2984	36.58	5.91	-42.11	49.13	49.51	74.00	24.49	Pass	H	PK
7	1190.4190	28.09	2.67	-42.90	50.19	38.05	74.00	35.95	Pass	V	PK
8	1996.4997	31.68	3.47	-43.20	52.80	44.75	74.00	29.25	Pass	V	PK
9	3809.0539	33.65	4.37	-43.04	49.98	44.96	74.00	29.04	Pass	V	PK
10	5034.1356	34.53	4.86	-42.78	50.63	47.24	74.00	26.76	Pass	V	PK
11	6365.2243	35.87	5.41	-42.52	49.70	48.46	74.00	25.54	Pass	V	PK
12	8476.3651	36.59	6.45	-42.01	49.30	50.33	74.00	23.67	Pass	V	PK

Mode:			802.11 b Transmitting					Channel:		2437MHz	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Preamp gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1131.6132	28.03	2.64	-42.96	50.95	38.66	74.00	35.34	Pass	H	PK
2	1738.8739	29.98	3.22	-42.68	49.27	39.79	74.00	34.21	Pass	H	PK
3	2435.5436	32.31	3.96	-43.12	51.41	44.56	74.00	29.44	Pass	H	PK
4	3497.0331	33.40	4.49	-43.10	49.46	44.25	74.00	29.75	Pass	H	PK
5	4997.1331	34.50	4.82	-42.80	50.30	46.82	74.00	27.18	Pass	H	PK
6	7353.2902	36.45	5.85	-42.13	49.13	49.30	74.00	24.70	Pass	H	PK
7	1191.4191	28.09	2.67	-42.90	50.25	38.11	74.00	35.89	Pass	V	PK
8	1792.4792	30.33	3.31	-42.71	52.44	43.37	74.00	30.63	Pass	V	PK
9	3188.0125	33.28	4.63	-43.10	49.09	43.90	74.00	30.10	Pass	V	PK
10	5030.1353	34.53	4.86	-42.79	50.29	46.89	74.00	27.11	Pass	V	PK
11	6101.2067	35.82	5.26	-42.58	49.25	47.75	74.00	26.25	Pass	V	PK
12	7297.2865	36.40	5.85	-42.15	48.80	48.90	74.00	25.10	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	1139.2139	28.04	2.66	-42.95	49.26	37.01	74.00	36.99	Pass	H	PK
2	1692.4692	29.67	3.19	-42.68	49.38	39.56	74.00	34.44	Pass	H	PK
3	2351.7352	32.19	3.86	-43.13	49.12	42.04	74.00	31.96	Pass	H	PK
4	3271.0181	33.31	4.50	-43.10	48.60	43.31	74.00	30.69	Pass	H	PK
5	5010.1340	34.51	4.83	-42.79	50.86	47.41	74.00	26.59	Pass	H	PK
6	6354.2236	35.87	5.45	-42.53	48.86	47.65	74.00	26.35	Pass	H	PK
7	1195.8196	28.10	2.66	-42.90	50.46	38.32	74.00	35.68	Pass	V	PK
8	1742.8743	30.00	3.23	-42.68	48.97	39.52	74.00	34.48	Pass	V	PK
9	2964.1964	33.14	4.44	-43.09	48.27	42.76	74.00	31.24	Pass	V	PK
10	3928.0619	33.74	4.34	-43.01	49.03	44.10	74.00	29.90	Pass	V	PK
11	5010.1340	34.51	4.83	-42.79	51.04	47.59	74.00	26.41	Pass	V	PK
12	7584.3056	36.57	6.02	-42.12	48.13	48.60	74.00	25.40	Pass	V	PK

Mode:			802.11 g 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	1170.0170	28.07	2.68	-42.92	49.85	37.68	74.00	36.32	Pass	H	PK
2	1491.8492	28.39	2.98	-43.06	50.54	38.85	74.00	35.15	Pass	H	PK
3	2351.9352	32.19	3.86	-43.13	51.10	44.02	74.00	29.98	Pass	H	PK
4	3252.0168	33.30	4.46	-43.10	48.52	43.18	74.00	30.82	Pass	H	PK
5	4469.0979	34.46	4.75	-42.81	48.65	45.05	74.00	28.95	Pass	H	PK
6	6381.2254	35.88	5.37	-42.53	48.63	47.35	74.00	26.65	Pass	H	PK
7	1240.4240	28.14	2.68	-42.85	49.96	37.93	74.00	36.07	Pass	V	PK
8	1799.2799	30.38	3.32	-42.72	50.58	41.56	74.00	32.44	Pass	V	PK
9	2549.9550	32.48	4.09	-43.10	50.32	43.79	74.00	30.21	Pass	V	PK
10	3857.0571	33.69	4.36	-43.04	49.41	44.42	74.00	29.58	Pass	V	PK
11	5026.1351	34.53	4.85	-42.79	50.59	47.18	74.00	26.82	Pass	V	PK
12	6400.2267	35.88	5.31	-42.52	48.88	47.55	74.00	26.45	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	1193.2193	28.09	2.66	-42.89	49.75	37.61	74.00	36.39	Pass	H	PK
2	2058.3058	31.78	3.56	-43.18	49.15	41.31	74.00	32.69	Pass	H	PK
3	2839.1839	32.94	4.23	-43.10	49.54	43.61	74.00	30.39	Pass	H	PK
4	3928.0619	33.74	4.34	-43.01	48.49	43.56	74.00	30.44	Pass	H	PK
5	5016.1344	34.52	4.84	-42.80	50.48	47.04	74.00	26.96	Pass	H	PK
6	6058.2039	35.81	5.22	-42.59	48.32	46.76	74.00	27.24	Pass	H	PK
7	1272.2272	28.17	2.71	-42.81	49.82	37.89	74.00	36.11	Pass	V	PK
8	1627.4627	29.24	3.11	-42.83	49.67	39.19	74.00	34.81	Pass	V	PK
9	2827.3827	32.92	4.23	-43.09	50.12	44.18	74.00	29.82	Pass	V	PK
10	3767.0511	33.61	4.36	-43.05	49.17	44.09	74.00	29.91	Pass	V	PK
11	5015.1343	34.52	4.84	-42.80	51.23	47.79	74.00	26.21	Pass	V	PK
12	7389.2926	36.49	5.85	-42.12	49.33	49.55	74.00	24.45	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	1351.4351	28.25	2.82	-42.73	50.00	38.34	74.00	35.66	Pass	H	PK
2	1815.2815	30.48	3.34	-42.75	48.74	39.81	74.00	34.19	Pass	H	PK
3	2646.9647	32.64	4.09	-43.10	49.24	42.87	74.00	31.13	Pass	H	PK
4	3595.0397	33.48	4.35	-43.09	48.90	43.64	74.00	30.36	Pass	H	PK
5	4895.1263	34.50	4.86	-42.80	49.45	46.01	74.00	27.99	Pass	H	PK
6	5983.1989	35.77	5.33	-42.59	49.63	48.14	74.00	25.86	Pass	H	PK
7	1148.4148	28.05	2.69	-42.95	49.79	37.58	74.00	36.42	Pass	V	PK
8	1669.6670	29.52	3.16	-42.73	49.57	39.52	74.00	34.48	Pass	V	PK
9	2268.3268	32.08	3.79	-43.15	49.21	41.93	74.00	32.07	Pass	V	PK
10	3059.0039	33.22	4.81	-43.10	48.29	43.22	74.00	30.78	Pass	V	PK
11	4112.0741	33.96	4.37	-42.96	47.33	42.70	74.00	31.30	Pass	V	PK
12	5450.1633	34.95	4.93	-42.62	46.82	44.08	74.00	29.92	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	1297.8298	28.20	2.75	-42.79	50.44	38.60	74.00	35.40	Pass	H	PK
2	1744.6745	30.01	3.23	-42.68	48.97	39.53	74.00	34.47	Pass	H	PK
3	2447.5448	32.33	3.97	-43.11	50.96	44.15	74.00	29.85	Pass	H	PK
4	3207.0138	33.28	4.62	-43.10	48.39	43.19	74.00	30.81	Pass	H	PK
5	4171.0781	34.04	4.50	-42.93	47.91	43.52	74.00	30.48	Pass	H	PK
6	5987.1991	35.78	5.33	-42.60	48.80	47.31	74.00	26.69	Pass	H	PK
7	1205.4205	28.11	2.66	-42.89	50.23	38.11	74.00	35.89	Pass	V	PK
8	1473.8474	28.37	2.97	-42.99	50.46	38.81	74.00	35.19	Pass	V	PK
9	2454.9455	32.34	3.98	-43.11	50.20	43.41	74.00	30.59	Pass	V	PK
10	3062.0041	33.22	4.80	-43.09	48.86	43.79	74.00	30.21	Pass	V	PK
11	3881.0587	33.70	4.35	-43.02	49.25	44.28	74.00	29.72	Pass	V	PK
12	5532.1688	35.05	5.16	-42.60	48.24	45.85	74.00	28.15	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	1173.2173	28.07	2.68	-42.92	50.44	38.27	74.00	35.73	Pass	H	PK
2	1744.0744	30.01	3.23	-42.68	49.33	39.89	74.00	34.11	Pass	H	PK
3	2440.1440	32.32	3.96	-43.11	50.75	43.92	74.00	30.08	Pass	H	PK
4	3844.0563	33.68	4.36	-43.03	49.15	44.16	74.00	29.84	Pass	H	PK
5	5651.1767	35.24	4.97	-42.60	48.88	46.49	74.00	27.51	Pass	H	PK
6	7598.3066	36.56	6.09	-42.12	49.10	49.63	74.00	24.37	Pass	H	PK
7	1212.0212	28.11	2.66	-42.87	50.03	37.93	74.00	36.07	Pass	V	PK
8	1794.4794	30.34	3.31	-42.70	52.19	43.14	74.00	30.86	Pass	V	PK
9	2937.9938	33.10	4.40	-43.10	49.74	44.14	74.00	29.86	Pass	V	PK
10	4498.0999	34.50	4.64	-42.81	48.28	44.61	74.00	29.39	Pass	V	PK
11	5991.1994	35.79	5.34	-42.61	48.92	47.44	74.00	26.56	Pass	V	PK
12	7430.2954	36.53	5.85	-42.11	48.97	49.24	74.00	24.76	Pass	V	PK

Mode:			802.11 n(HT20) Transmitting					Channel:		2462MHz	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Preamp gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1344.6345	28.24	2.81	-42.73	50.64	38.96	74.00	35.04	Pass	H	PK
2	1830.2830	30.58	3.36	-42.79	49.66	40.81	74.00	33.19	Pass	H	PK
3	2567.9568	32.51	4.09	-43.10	50.57	44.07	74.00	29.93	Pass	H	PK
4	3791.0527	33.63	4.37	-43.04	49.85	44.81	74.00	29.19	Pass	H	PK
5	5011.1341	34.51	4.83	-42.79	51.37	47.92	74.00	26.08	Pass	H	PK
6	6349.2233	35.87	5.46	-42.53	48.99	47.79	74.00	26.21	Pass	H	PK
7	1319.6320	28.22	2.78	-42.77	50.08	38.31	74.00	35.69	Pass	V	PK
8	1794.0794	30.34	3.31	-42.71	50.98	41.92	74.00	32.08	Pass	V	PK
9	2588.3588	32.54	4.10	-43.10	51.15	44.69	74.00	29.31	Pass	V	PK
10	3423.0282	33.37	4.50	-43.10	49.18	43.95	74.00	30.05	Pass	V	PK
11	4982.1321	34.50	4.82	-42.80	50.17	46.69	74.00	27.31	Pass	V	PK
12	6423.2282	35.88	5.41	-42.51	49.50	48.28	74.00	25.72	Pass	V	PK

Mode:			802.11 n(HT40) Transmitting					Channel:		2422MHz	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Preamp gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1148.0148	28.05	2.68	-42.94	50.01	37.80	74.00	36.20	Pass	H	PK
2	1551.6552	28.74	3.03	-42.99	48.89	37.67	74.00	36.33	Pass	H	PK
3	2368.7369	32.22	3.88	-43.13	50.45	43.42	74.00	30.58	Pass	H	PK
4	3068.0045	33.23	4.79	-43.10	48.37	43.29	74.00	30.71	Pass	H	PK
5	4396.0931	34.35	4.55	-42.84	47.97	44.03	74.00	29.97	Pass	H	PK
6	6272.2181	35.85	5.40	-42.54	48.23	46.94	74.00	27.06	Pass	H	PK
7	1218.6219	28.12	2.67	-42.87	49.11	37.03	74.00	36.97	Pass	V	PK
8	2004.1004	31.71	3.48	-43.21	49.23	41.21	74.00	32.79	Pass	V	PK
9	2867.5868	32.99	4.28	-43.10	48.52	42.69	74.00	31.31	Pass	V	PK
10	3955.0637	33.76	4.34	-43.01	48.13	43.22	74.00	30.78	Pass	V	PK
11	5539.1693	35.06	5.16	-42.60	48.48	46.10	74.00	27.90	Pass	V	PK
12	7018.2679	36.12	5.69	-42.20	48.82	48.43	74.00	25.57	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	1135.4135	28.04	2.65	-42.96	49.78	37.51	74.00	36.49	Pass	H	PK
2	1727.2727	29.90	3.22	-42.68	49.48	39.92	74.00	34.08	Pass	H	PK
3	2439.1439	32.31	3.96	-43.11	50.66	43.82	74.00	30.18	Pass	H	PK
4	3074.0049	33.23	4.78	-43.10	48.45	43.36	74.00	30.64	Pass	H	PK
5	4346.0897	34.28	4.50	-42.86	47.48	43.40	74.00	30.60	Pass	H	PK
6	6374.2249	35.87	5.39	-42.52	49.55	48.29	74.00	25.71	Pass	H	PK
7	1295.4295	28.20	2.74	-42.79	51.00	39.15	74.00	34.85	Pass	V	PK
8	1883.2883	30.93	3.41	-42.92	51.18	42.60	74.00	31.40	Pass	V	PK
9	2959.7960	33.14	4.43	-43.10	49.35	43.82	74.00	30.18	Pass	V	PK
10	3875.0583	33.70	4.35	-43.02	49.39	44.42	74.00	29.58	Pass	V	PK
11	4999.1333	34.50	4.82	-42.80	50.99	47.51	74.00	26.49	Pass	V	PK
12	7265.2844	36.37	5.80	-42.15	49.55	49.57	74.00	24.43	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	1152.4152	28.05	2.69	-42.94	50.20	38.00	74.00	36.00	Pass	H	PK
2	1617.4617	29.18	3.09	-42.86	49.43	38.84	74.00	35.16	Pass	H	PK
3	2292.9293	32.11	3.80	-43.14	50.00	42.77	74.00	31.23	Pass	H	PK
4	3522.0348	33.42	4.47	-43.10	48.53	43.32	74.00	30.68	Pass	H	PK
5	5021.1347	34.52	4.85	-42.80	50.15	46.72	74.00	27.28	Pass	H	PK
6	6331.2221	35.87	5.46	-42.54	49.34	48.13	74.00	25.87	Pass	H	PK
7	1135.4135	28.04	2.65	-42.96	50.14	37.87	74.00	36.13	Pass	V	PK
8	1554.2554	28.76	3.03	-42.99	49.97	38.77	74.00	35.23	Pass	V	PK
9	2436.9437	32.31	3.96	-43.11	51.58	44.74	74.00	29.26	Pass	V	PK
10	3585.0390	33.47	4.37	-43.09	48.86	43.61	74.00	30.39	Pass	V	PK
11	4574.1049	34.50	4.89	-42.80	48.07	44.66	74.00	29.34	Pass	V	PK
12	7654.3103	36.54	6.16	-42.13	48.76	49.33	74.00	24.67	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

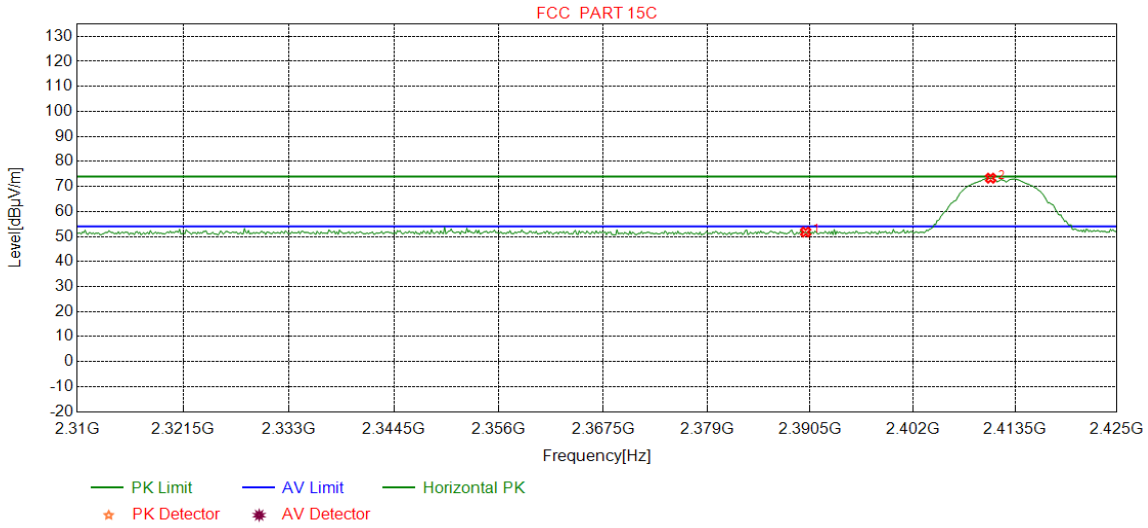
2) Scan from 9kHz to 25GHz, the disturbance above 10GHz and below 30MHz was very low. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified 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		

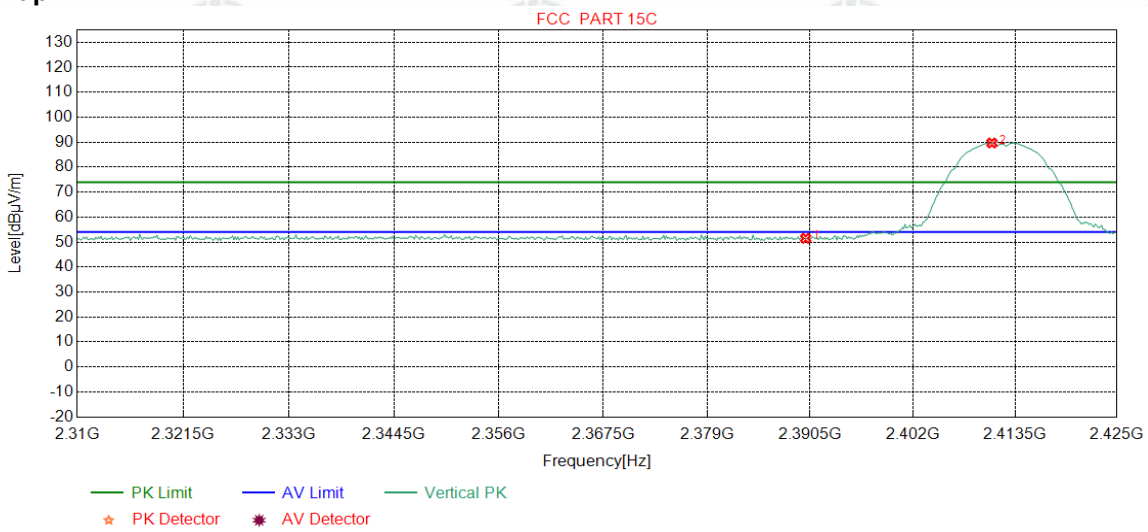
Test Graph



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	49.29	51.79	74.00	22.21	Pass	Horizontal
2	2410.7509	32.28	13.35	-43.12	70.80	73.31	74.00	0.69	Pass	Horizontal

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

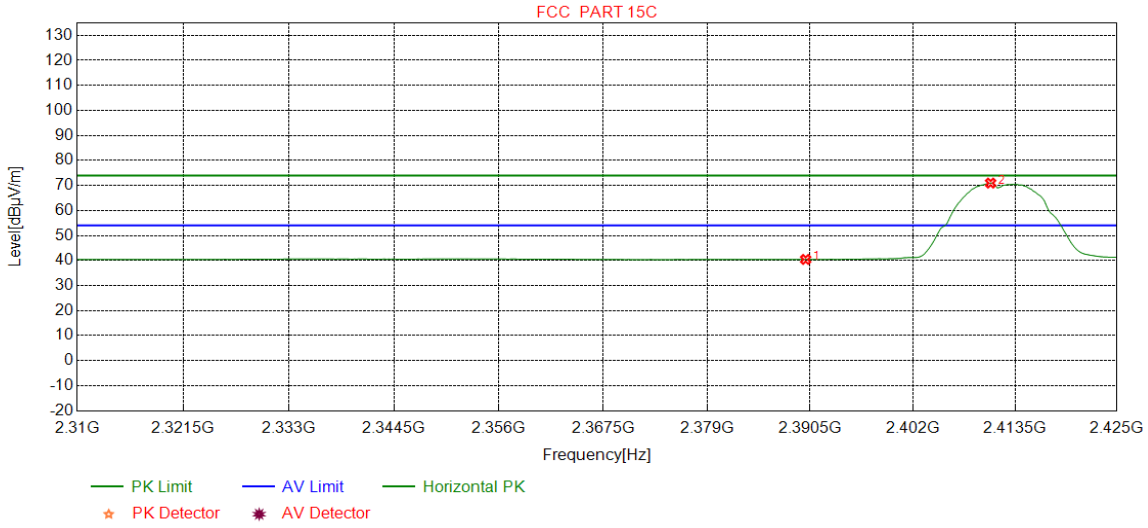
Test Graph



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	48.99	51.49	74.00	22.51	Pass	Vertical
2	2410.8949	32.28	13.35	-43.12	87.16	89.67	74.00	-15.67	Pass	Vertical

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

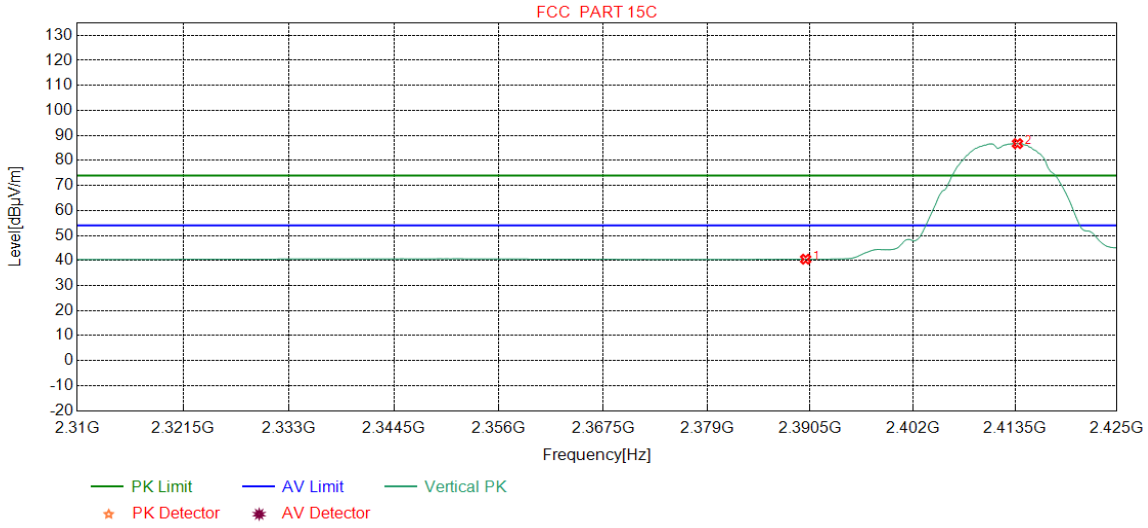
Test Graph



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	37.94	40.44	54.00	13.56	Pass	Horizontal
2	2410.7509	32.28	13.35	-43.12	68.45	70.96	54.00	-16.96	Pass	Horizontal

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

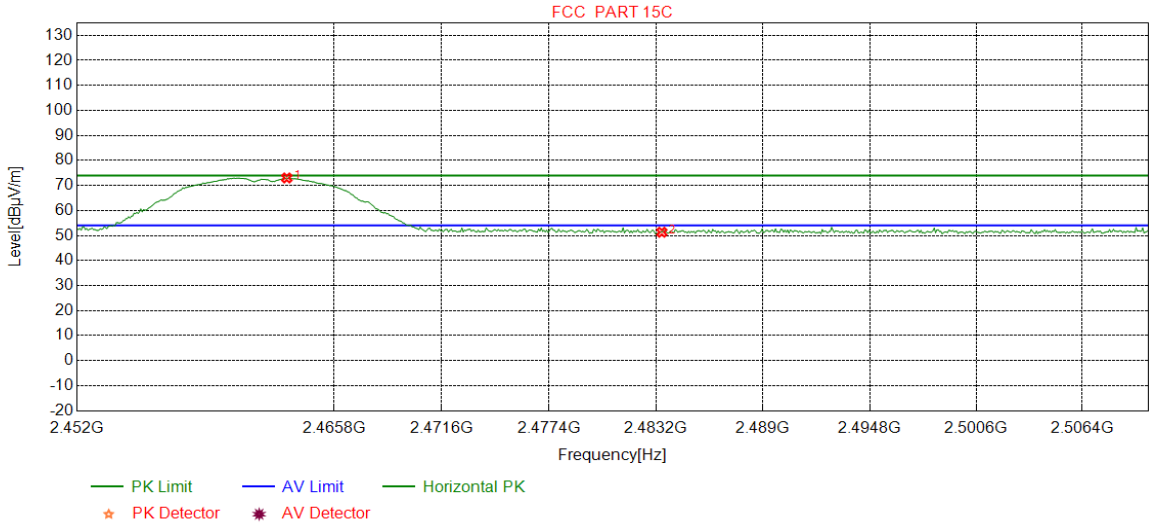
Test Graph



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	38.04	40.54	54.00	13.46	Pass	Vertical
2	2413.7735	32.28	13.36	-43.11	84.19	86.72	54.00	-32.72	Pass	Vertical

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

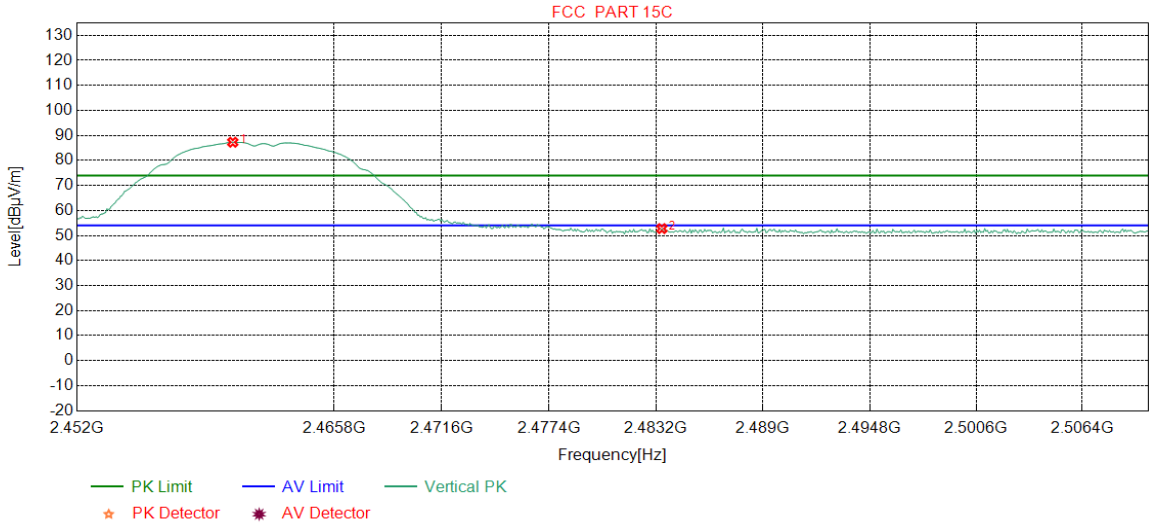
Test Graph



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	2463.2516	32.35	13.47	-43.11	70.29	73.00	74.00	1.00	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	48.66	51.31	74.00	22.69	Pass	Horizontal

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

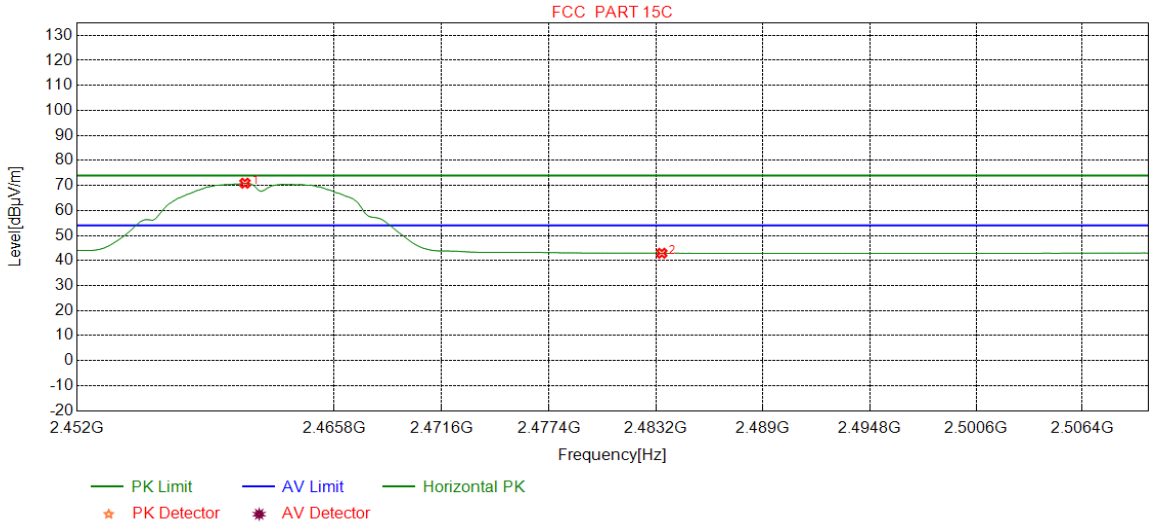
Test Graph



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	2460.3479	32.34	13.48	-43.10	84.56	87.28	74.00	-13.28	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	50.11	52.76	74.00	21.24	Pass	Vertical

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

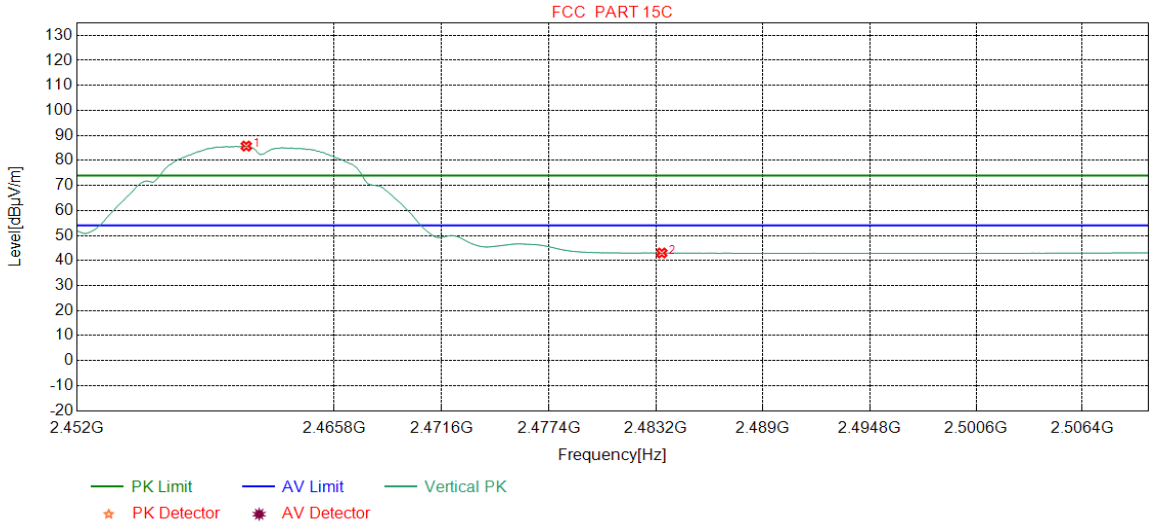
Test Graph



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	2461.0013	32.35	13.48	-43.11	68.19	70.91	54.00	-16.91	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	40.25	42.90	54.00	11.10	Pass	Horizontal

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

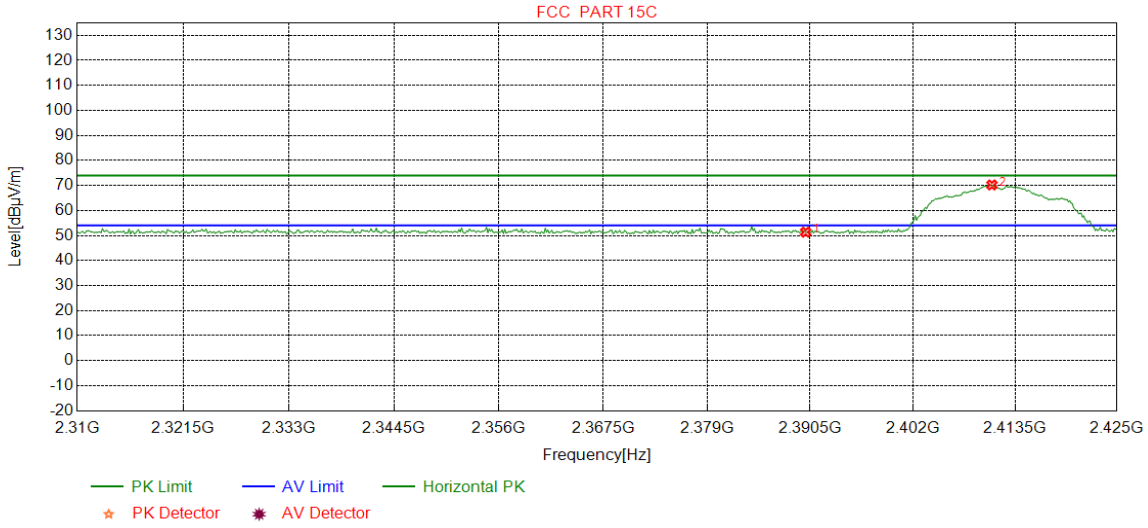
Test Graph



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	2461.0738	32.35	13.48	-43.11	83.03	85.75	54.00	-31.75	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	40.35	43.00	54.00	11.00	Pass	Vertical

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

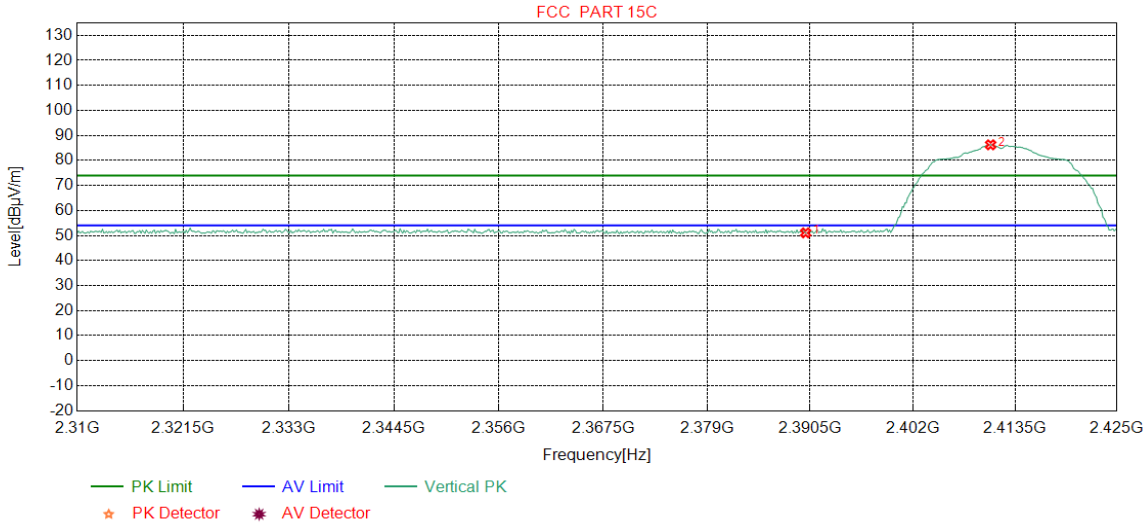
Test Graph



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	48.84	51.34	74.00	22.66	Pass	Horizontal
2	2410.8949	32.28	13.35	-43.12	67.70	70.21	74.00	3.79	Pass	Horizontal

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

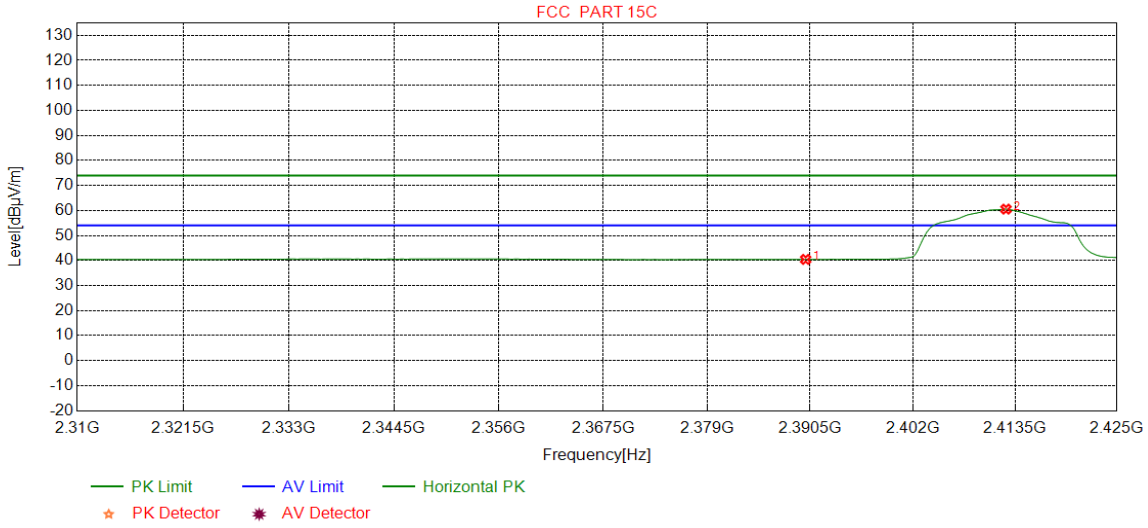
Test Graph



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	48.56	51.06	74.00	22.94	Pass	Vertical
2	2410.7509	32.28	13.35	-43.12	83.74	86.25	74.00	-12.25	Pass	Vertical

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

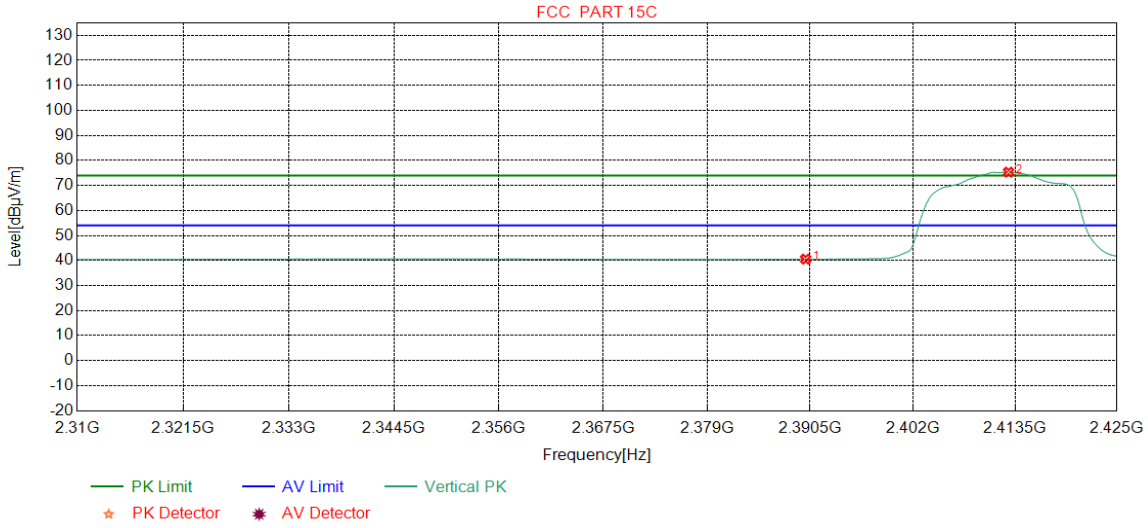
Test Graph



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	37.95	40.45	54.00	13.55	Pass	Horizontal
2	2412.4781	32.28	13.36	-43.12	58.02	60.54	54.00	-6.54	Pass	Horizontal

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

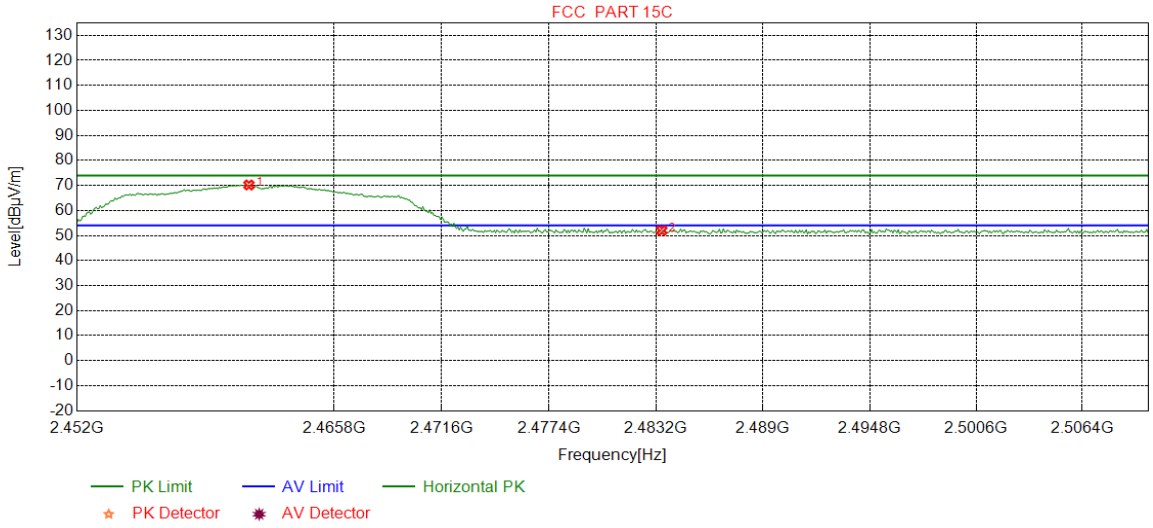
Test Graph



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	38.07	40.57	54.00	13.43	Pass	Vertical
2	2412.7660	32.28	13.36	-43.12	72.81	75.33	54.00	-21.33	Pass	Vertical

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

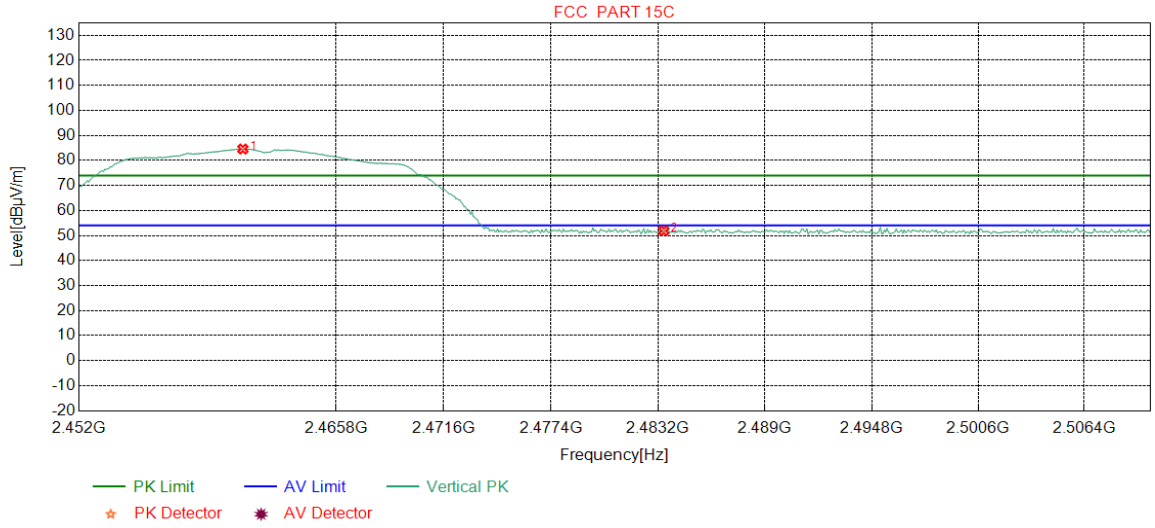
Test Graph



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	2461.2190	32.35	13.48	-43.11	67.47	70.19	74.00	3.81	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	49.34	51.99	74.00	22.01	Pass	Horizontal

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

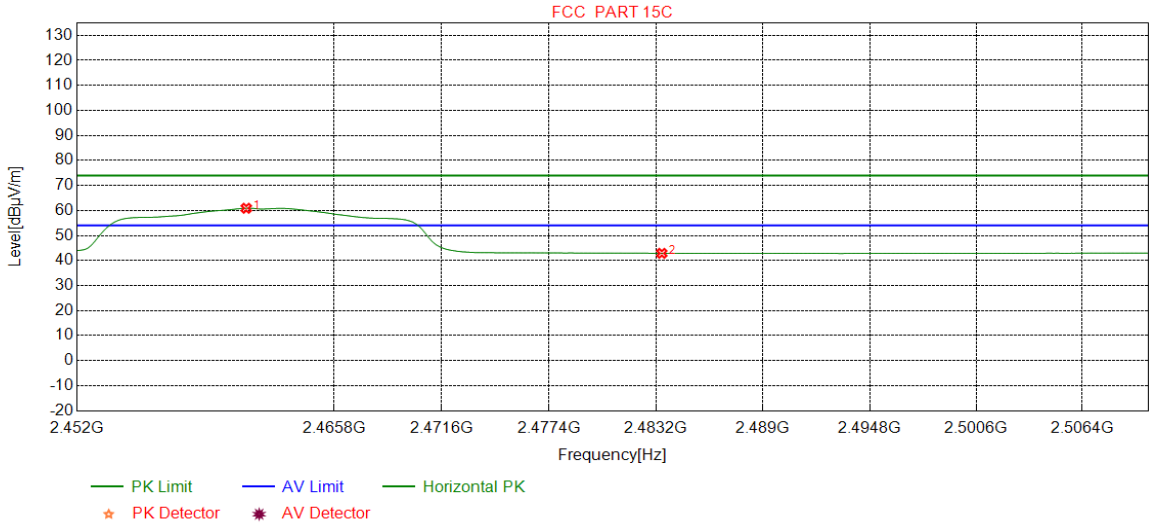
Test Graph



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	2460.7835	32.35	13.48	-43.11	81.85	84.57	74.00	-10.57	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	49.23	51.88	74.00	22.12	Pass	Vertical

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

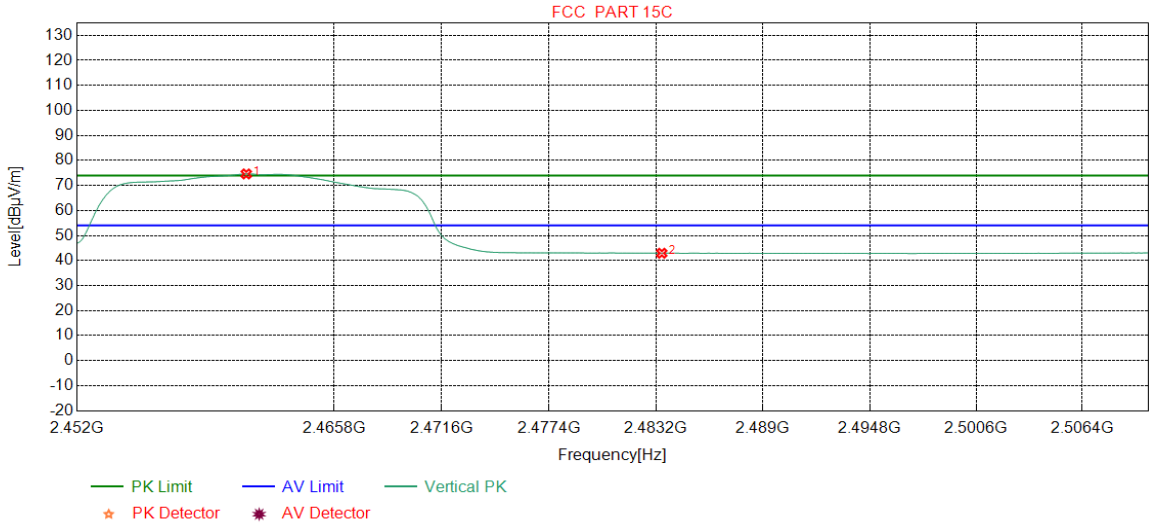
Test Graph



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	2461.0738	32.35	13.48	-43.11	58.17	60.89	54.00	-6.89	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	40.23	42.88	54.00	11.12	Pass	Horizontal

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

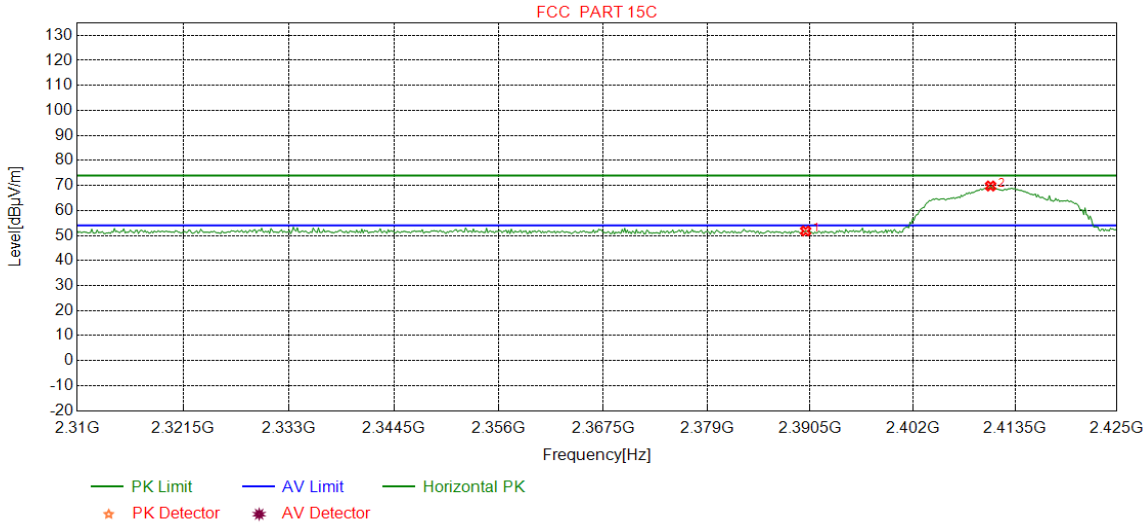
Test Graph



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	2461.0738	32.35	13.48	-43.11	71.89	74.61	54.00	-20.61	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	40.27	42.92	54.00	11.08	Pass	Vertical

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

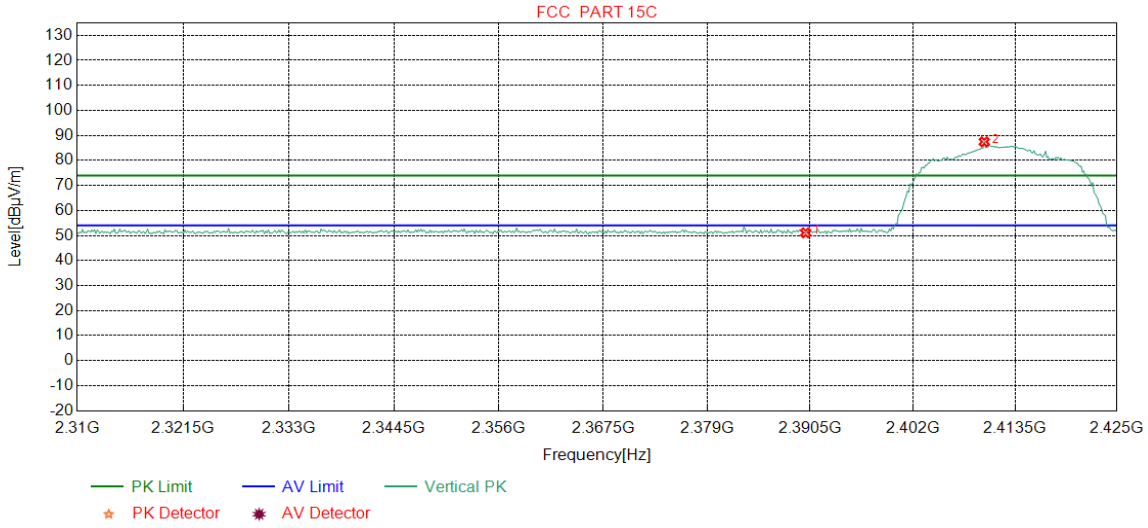
Test Graph



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	49.31	51.81	74.00	22.19	Pass	Horizontal
2	2410.7509	32.28	13.35	-43.12	67.28	69.79	74.00	4.21	Pass	Horizontal

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

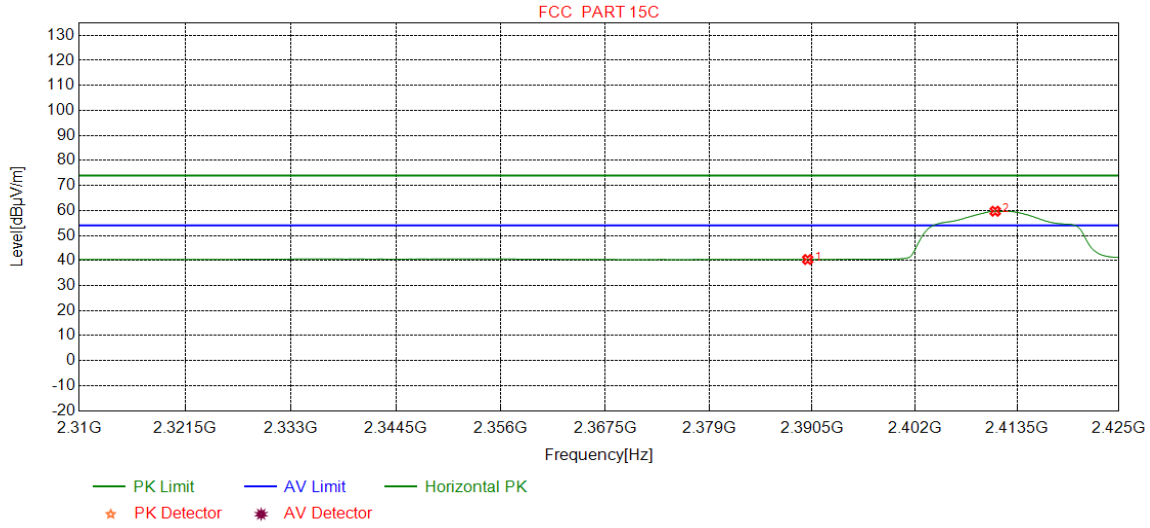
Test Graph



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	48.57	51.07	74.00	22.93	Pass	Vertical
2	2410.0313	32.27	13.35	-43.12	84.96	87.46	74.00	-13.46	Pass	Vertical

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

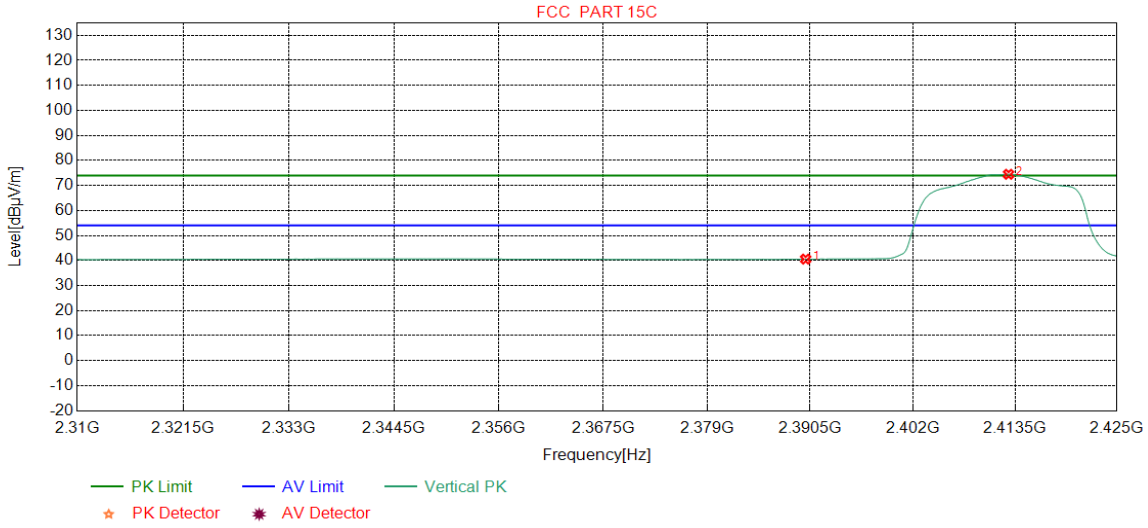
Test Graph



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	37.92	40.42	54.00	13.58	Pass	Horizontal
2	2411.0388	32.28	13.35	-43.12	57.20	59.71	54.00	-5.71	Pass	Horizontal

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

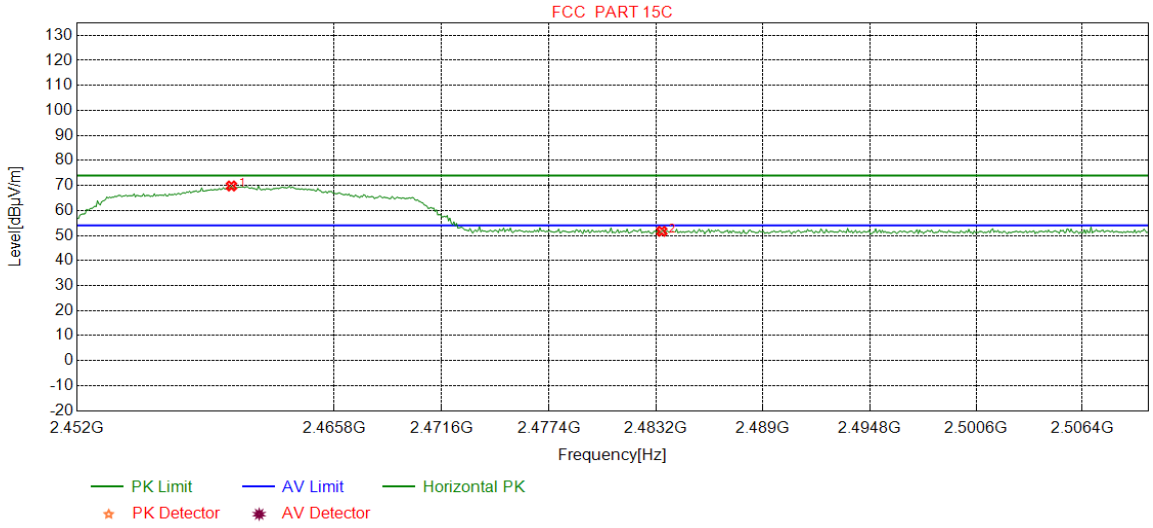
Test Graph



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	38.07	40.57	54.00	13.43	Pass	Vertical
2	2412.7660	32.28	13.36	-43.12	71.95	74.47	54.00	-20.47	Pass	Vertical

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

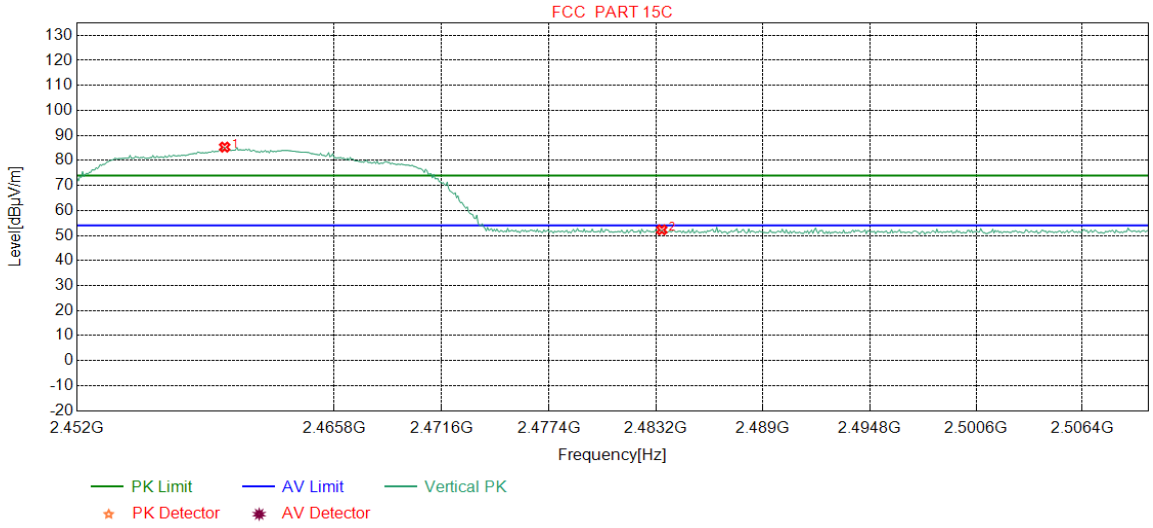
Test Graph



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	2460.2753	32.34	13.48	-43.10	67.08	69.80	74.00	4.20	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	49.03	51.68	74.00	22.32	Pass	Horizontal

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

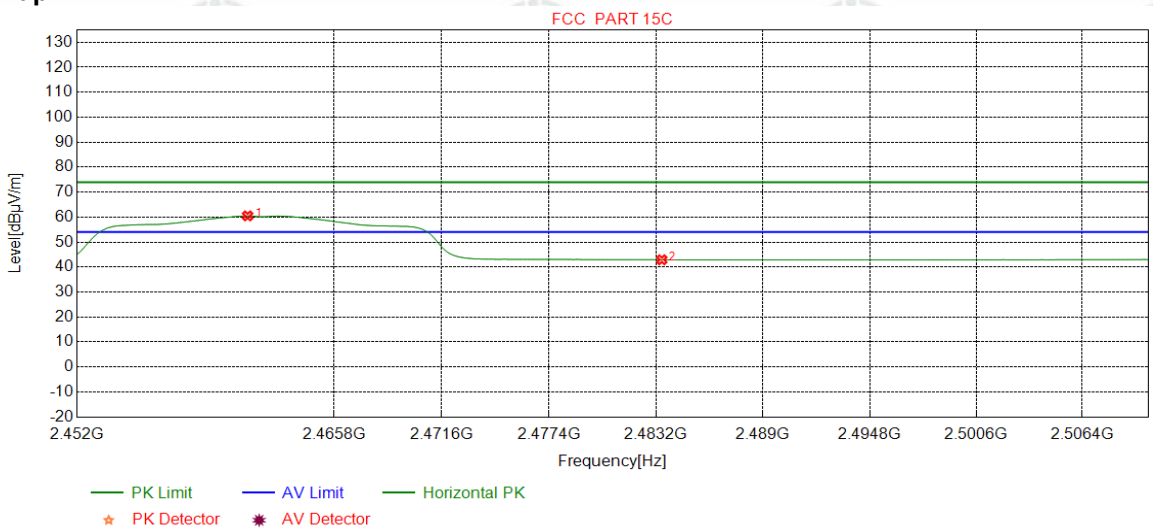
Test Graph



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	2459.9124	32.34	13.48	-43.10	82.61	85.33	74.00	-11.33	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	49.62	52.27	74.00	21.73	Pass	Vertical

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

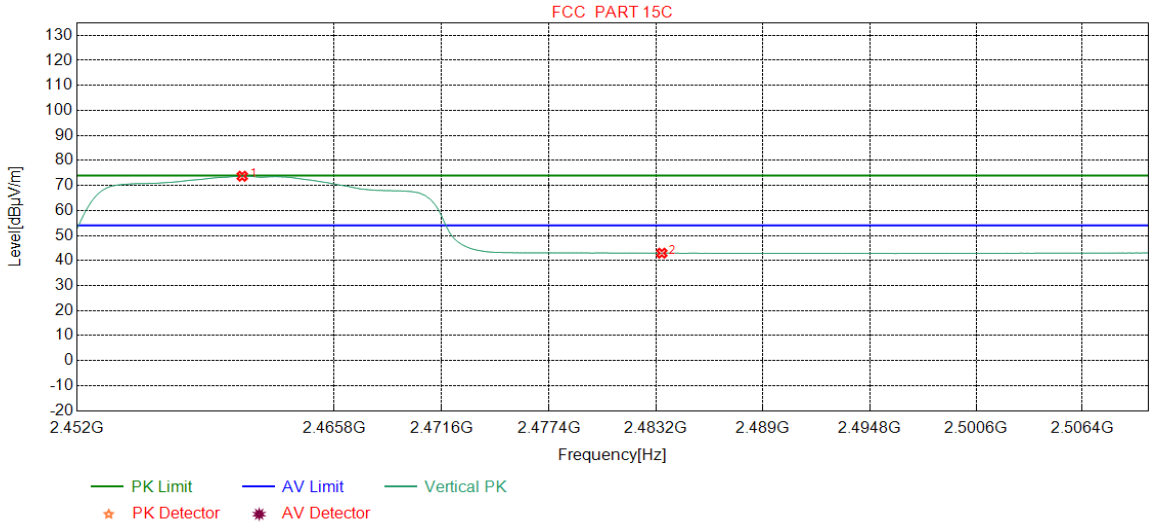
Test Graph



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	2461.1464	32.35	13.48	-43.11	57.76	60.48	54.00	-6.48	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	40.26	42.91	54.00	11.09	Pass	Horizontal

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

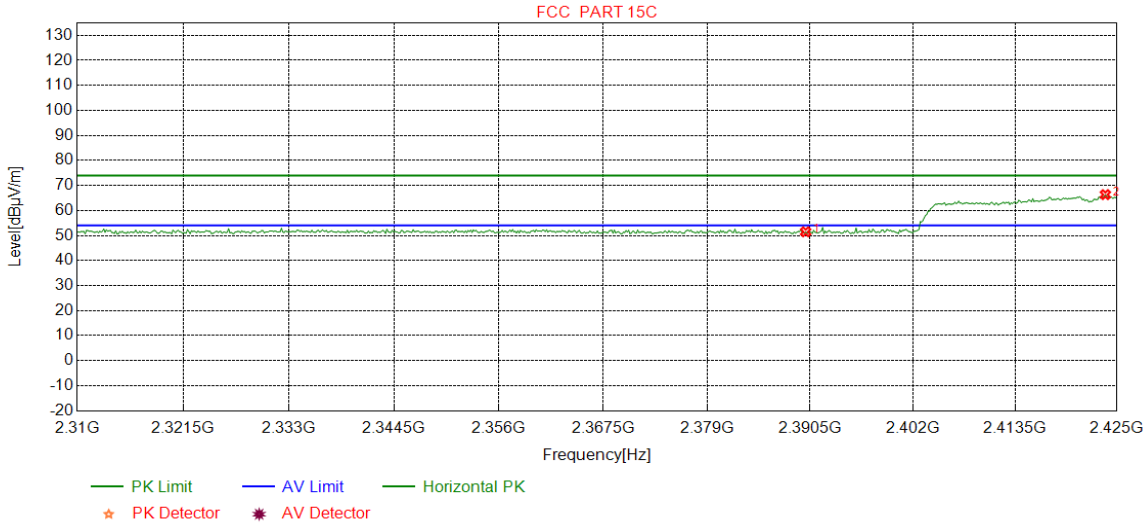
Test Graph



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	2460.8561	32.35	13.48	-43.11	70.97	73.69	54.00	-19.69	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	40.29	42.94	54.00	11.06	Pass	Vertical

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

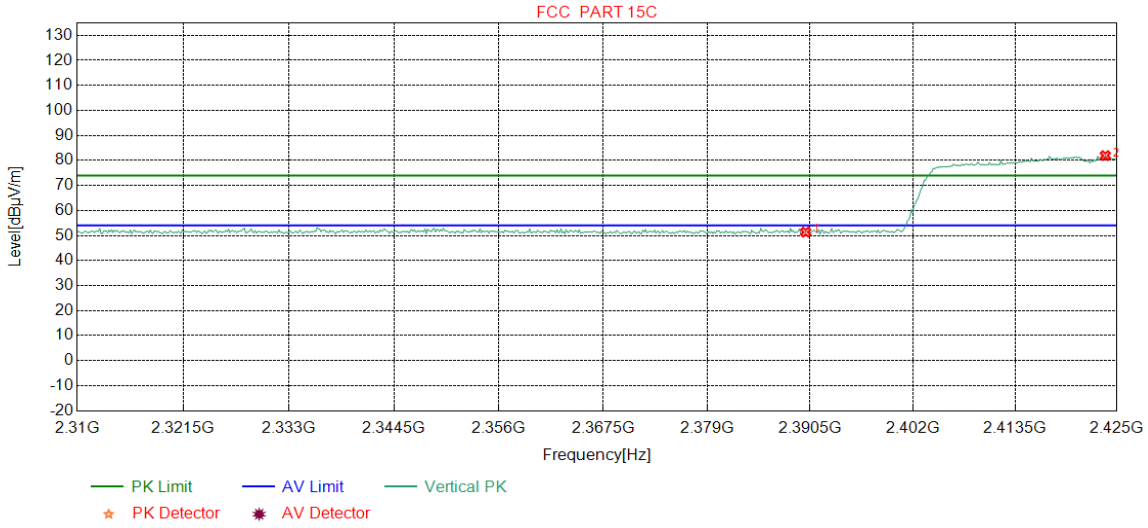
Test Graph



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	48.98	51.48	74.00	22.52	Pass	Horizontal
2	2423.7046	32.29	13.41	-43.11	63.75	66.34	74.00	7.66	Pass	Horizontal

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

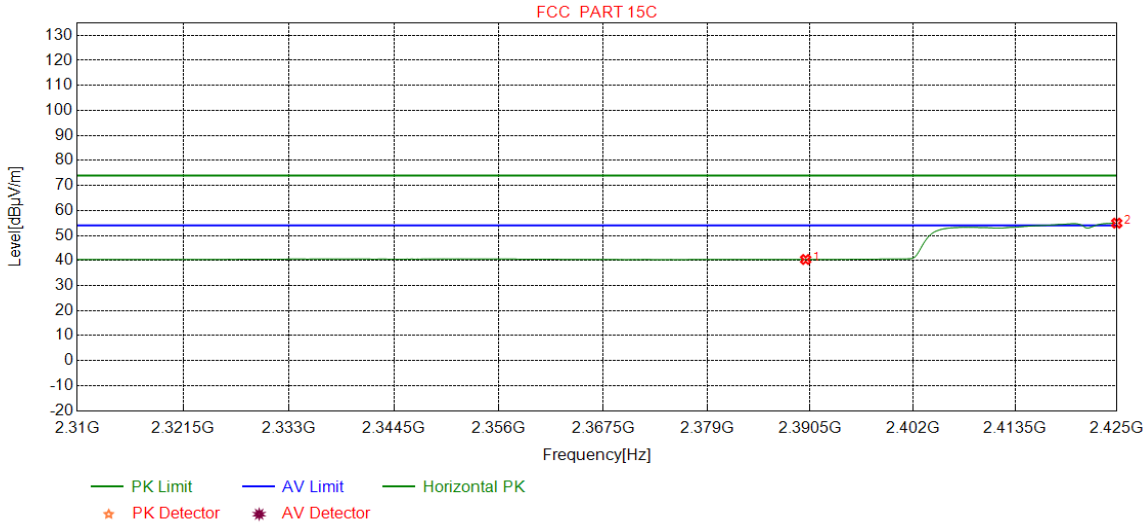
Test Graph



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	48.85	51.35	74.00	22.65	Pass	Vertical
2	2423.7046	32.29	13.41	-43.11	79.33	81.92	74.00	-7.92	Pass	Vertical

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

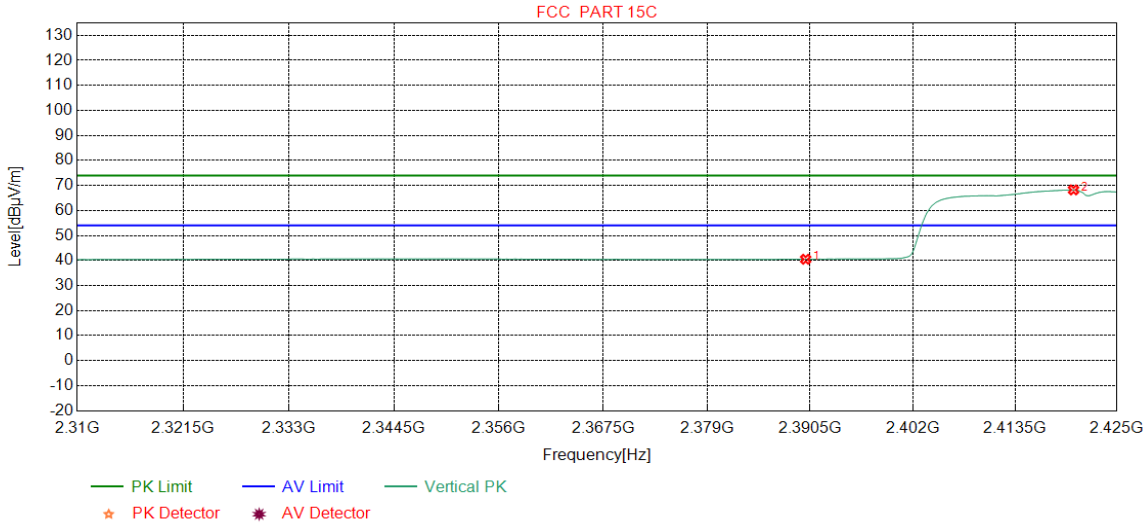
Test Graph



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	37.91	40.41	54.00	13.59	Pass	Horizontal
2	2425.0000	32.30	13.42	-43.12	52.34	54.94	54.00	-0.94	Pass	Horizontal

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

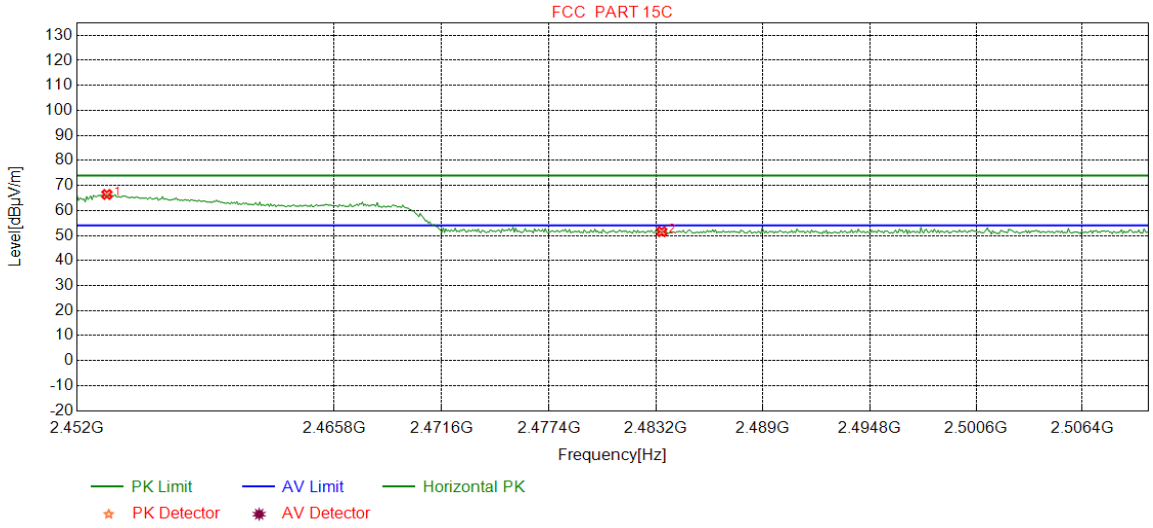
Test Graph



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	38.02	40.52	54.00	13.48	Pass	Vertical
2	2420.1064	32.29	13.39	-43.12	65.67	68.23	54.00	-14.23	Pass	Vertical

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

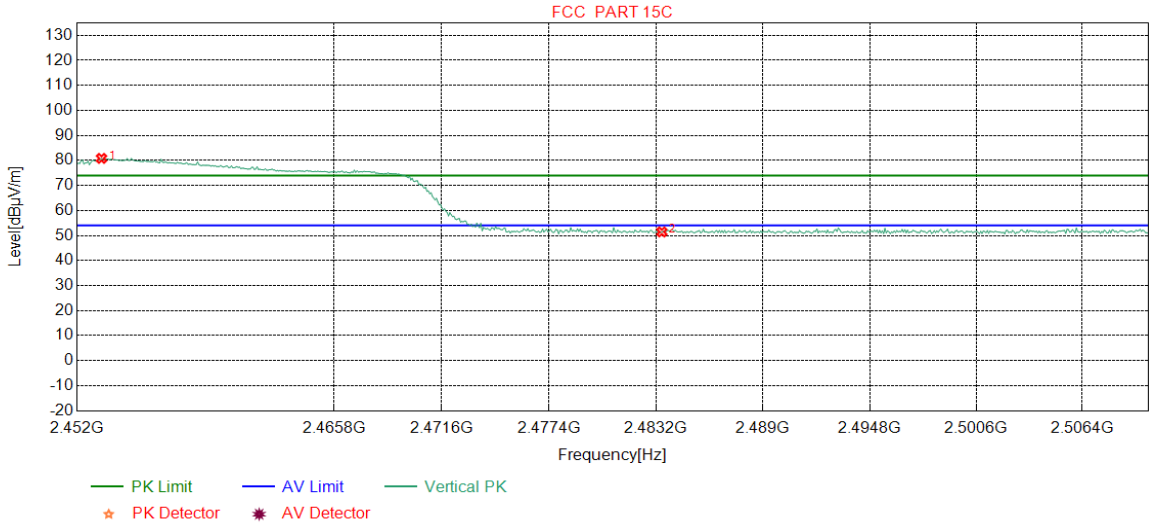
Test Graph



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	2453.5970	32.34	13.51	-43.11	63.68	66.42	74.00	7.58	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	48.89	51.54	74.00	22.46	Pass	Horizontal

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

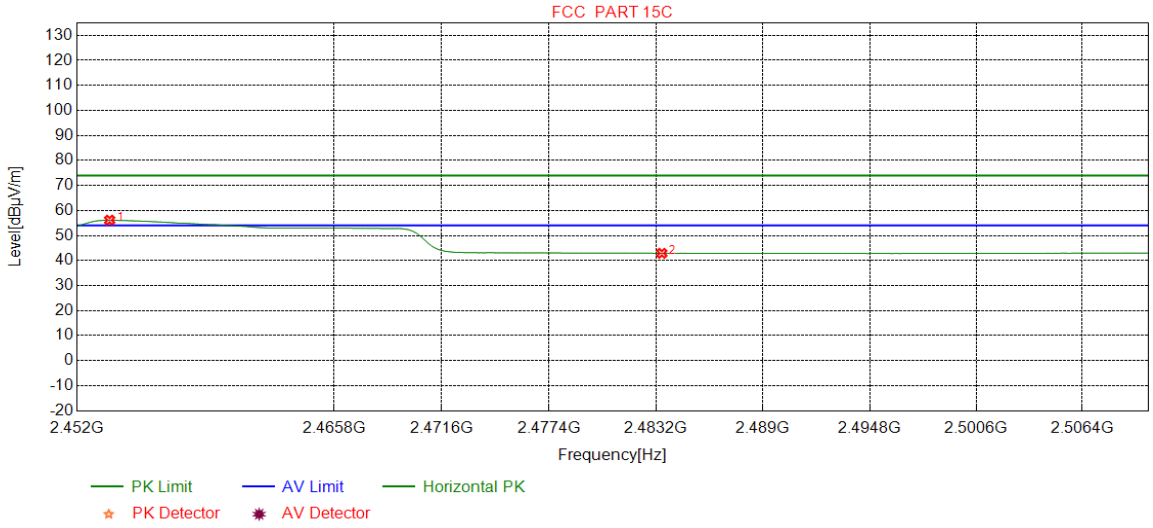
Test Graph



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	2453.3066	32.33	13.51	-43.10	78.08	80.82	74.00	-6.82	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	48.78	51.43	74.00	22.57	Pass	Vertical

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

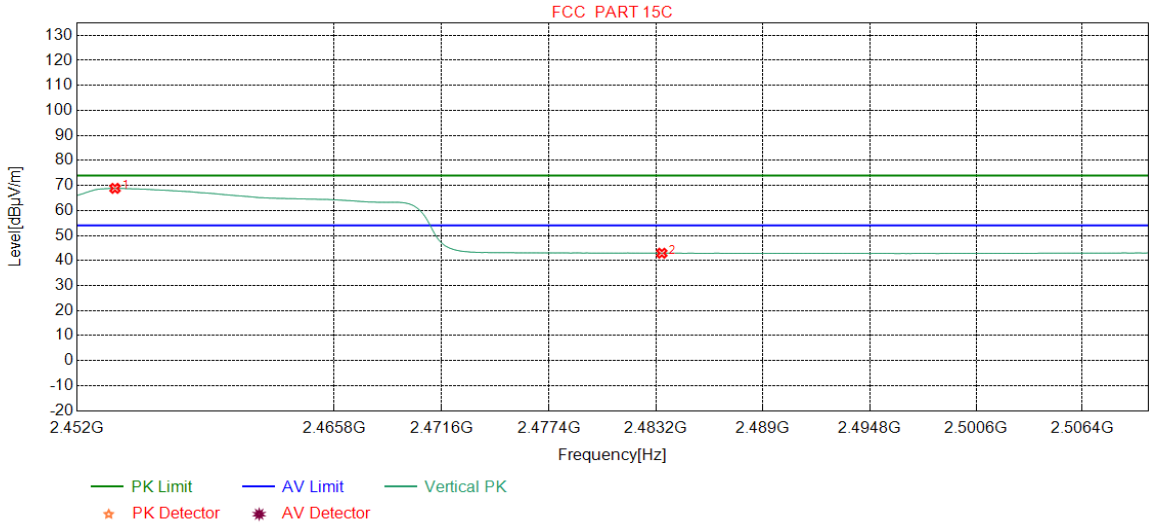
Test Graph



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	2453.7422	32.34	13.51	-43.11	53.40	56.14	54.00	-2.14	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	40.24	42.89	54.00	11.11	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]	Readin g [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margi n [dB]	Result	Polarity
1	2454.0325	32.34	13.51	-43.11	66.11	68.85	54.00	-14.85	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	40.28	42.93	54.00	11.07	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

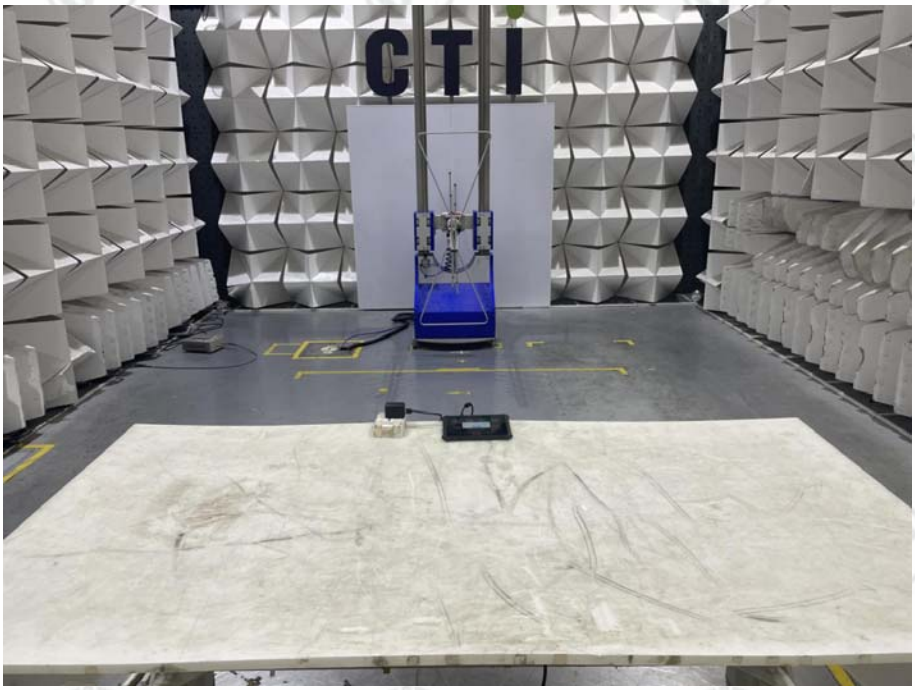
Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

8 Appendix A

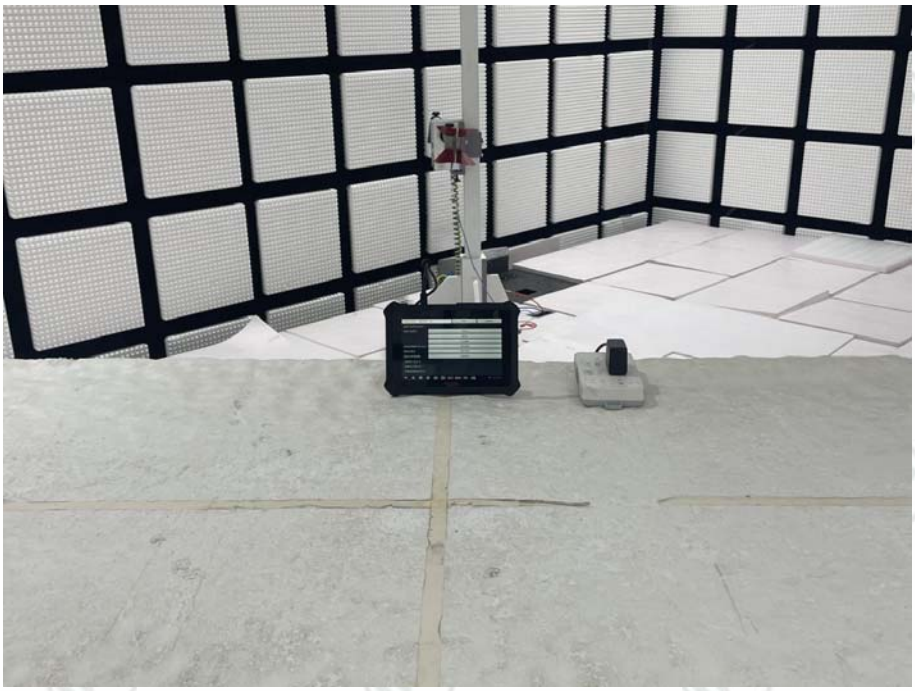
Refer to Appendix: 2.4G WIFI of EED32M80160303.

9 PHOTOGRAPHS OF TEST SETUP

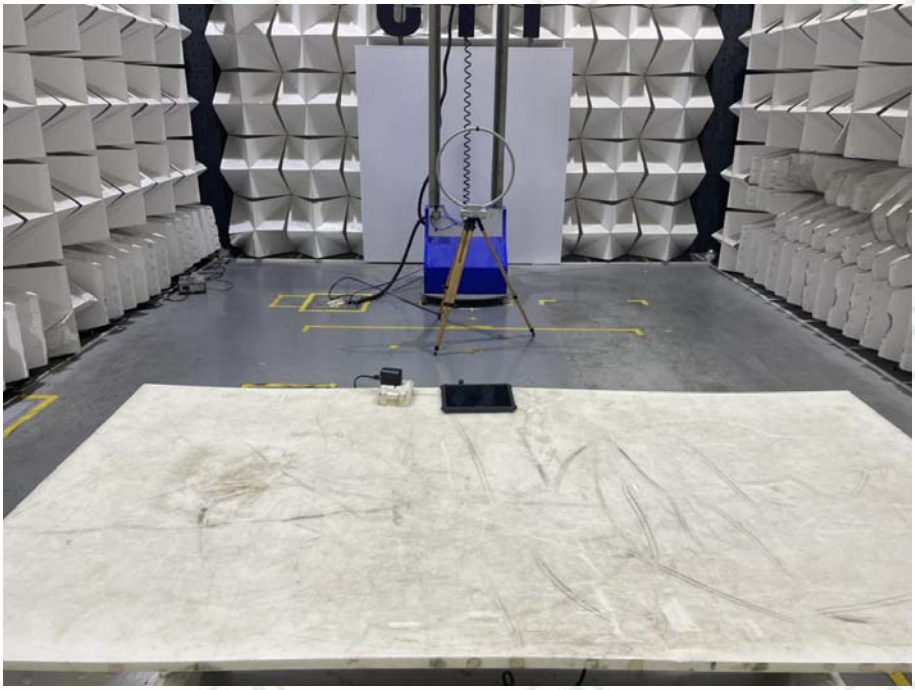
Test model No.:IM1



Radiated spurious emission Test Setup-1(Below 1GHz)



Radiated spurious emission Test Setup-2(Above 1GHz)



Radiated spurious emission Test Setup-3(Below 30MHz)

Conducted Emissions Test Setup

10 PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32M80160301 for EUT external and internal photos.

*** End of Report ***