



FCC Part 15E Test Report

FCC ID: 2A9PI-LIXELL3

Applicant: SHENZHEN XGRIDS-INNOVATION CO., LTD

Address: 2401-2404, Building3, Shenzhen International Innovation Valley, Nanshan District, Shenzhen

Manufacturer: SHENZHEN XGRIDS-INNOVATION CO., LTD

Address: 2401-2404, Building3, Shenzhen International Innovation Valley, Nanshan District, Shenzhen

Product Name: Mobile Lidar Scanner

Trade Mark: XGRIDS

Model No.: Lixel L3, Lixel L3-16/120, Lixel L3-32/120, Lixel L3-32/300

Date of Receipt: Sep. 01, 2026

Test Date: Sep. 01, 2026 - Sep. 18, 2026

Date of Report: Sep. 18, 2026

Prepared By: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China

Applicable Standards: FCC PART 15 E 15.407
ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
KDB 662911 D01 Multiple Transmitter Output v02r01
KDB 789033 D02 General U-NII Test Procedures New Rules v02r01

Test Result: Pass

Report Number: DLE-260831029R

Prepared (Test Engineer): Ken Tan

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



Table of Contents	Page
1 . SUMMARY OF TEST RESULTS	4
1.1 MEASUREMENT UNCERTAINTY	5
2 . GENERAL INFORMATION	6
2.1 GENERAL DESCRIPTION OF EUT	6
2.2 DESCRIPTION OF TEST MODES	8
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	9
2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	9
2.5 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING	9
2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS	10
3 . EMC EMISSION TEST	11
3.1 CONDUCTED EMISSION MEASUREMENT	11
3.1.1 POWER LINE CONDUCTED EMISSION Limits	11
3.1.2 TEST PROCEDURE	11
3.1.3 DEVIATION FROM TEST STANDARD	11
3.1.4 TEST SETUP	12
3.1.5 EUT OPERATING CONDITIONS	12
3.1.6 TEST RESULTS	12
3.2 RADIATED EMISSION MEASUREMENT	15
3.2.1 Radiated Emission Limits	15
3.2.2 TEST PROCEDURE	16
3.2.3 DEVIATION FROM TEST STANDARD	16
3.2.4 TEST SETUP	17
3.2.5 EUT OPERATING CONDITIONS	18
3.2.6 TEST RESULTS (Between 9KHz – 30 MHz)	19
3.2.7 TEST RESULTS (Between 30MHz – 1GHz)	20
3.2.8 TEST RESULTS (1ghz~40ghZ)	22
3.3 RADIATED BAND EMISSION MEASUREMENT	33
3.3.1 Test Requirement:	33
3.3.2 TEST PROCEDURE	34
3.3.3 DEVIATION FROM TEST STANDARD	34
3.3.4 TEST SETUP	34
3.3.5 EUT OPERATING CONDITIONS	34
3.4 Conducted Band EMISSION MEASUREMENT	47
3.4.1 Test Requirement:	47
3.4.2 TEST PROCEDURE	47
3.4.3 DEVIATION FROM TEST STANDARD	47
3.4.4 TEST SETUP	47
3.4.5 EUT OPERATING CONDITIONS	47
4 . Conducted Output Power	48
4.1 Applied procedures / limit	48
4.1.1 TEST PROCEDURE	48
4.1.2 DEVIATION FROM STANDARD	48
4.1.3 TEST SETUP	48
4.1.4 EUT OPERATION CONDITIONS	48
4.1.5 TEST RESULTS	48
5 . POWER SPECTRAL DENSITY TEST	49
5.1 Applied procedures / limit	49



Table of Contents	Page
5.1.1 TEST PROCEDURE	49
5.1.2 DEVIATION FROM STANDARD	49
5.1.3 TEST SETUP	49
5.1.4 EUT OPERATION CONDITIONS	49
5.1.5 TEST RESULTS	49
6 . 6Db&26Db&99% BANDWIDTH TEST	50
6.1 Applied procedures / limit	50
6.1.1 TEST PROCEDURE	50
6.1.2 DEVIATION FROM STANDARD	50
6.1.3 TEST SETUP	50
6.1.4 EUT OPERATION CONDITIONS	51
6.1.5 TEST RESULTS	51
7 . DUTY CYCLE TEST SIGNAL	52
7.1 Applied procedures / limit	52
7.1.1 TEST PROCEDURE	52
7.1.2 DEVIATION FROM STANDARD	52
7.1.3 TEST SETUP	52
7.1.4 EUT OPERATION CONDITIONS	52
7.1.5 TEST RESULTS	52
8 . FREQUENCY STABILITY	53
8.1 Applied procedures / limit	53
8.1.1 TEST PROCEDURE	53
8.1.2 DEVIATION FROM STANDARD	53
8.1.3 TEST SETUP	53
8.1.4 EUT OPERATION CONDITIONS	53
8.1.5 TEST RESULTS	54
9 . TRANSMISSION IN THE ABSENCE OF DATA	56
9.1 STANDARD REQUIREMENT	56
9.2 tEST Result	56
10 . ANTENNA REQUIREMENT	56
10.1 STANDARD REQUIREMENT	56
10.2 EUT ANTENNA	56
11 . TEST SETUP PHOTO	56
12 . EUT PHOTO	56



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.407) , Subpart E			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.407(b), 15.205, 15.209	Radiated Spurious Emission	PASS	
15.407(b), 15.205, 15.209	Band Edge Emission	PASS	
15.407 (a)	Maximum Conducted Output Power	PASS	
15.407 (a)	Power Spectral Density	PASS	
15.407(a) (e)	26dB bandwidth and 99%dB Bandwidth 6dB bandwidth and 99%dB Bandwidth	PASS	
15.407(g)	Frequency Stability	PASS	
15.407(c)	Transmission in case of Absence of Information	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

Test lab: Shenzhen DL Testing Technology Co., Ltd.

101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1

Address: Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China

FCC Test Firm Registration Number: 854456

Designation Number: CN1307

IC Registered No.: 27485

CAB ID.: CN0118



1.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 2.56\text{dB}$
2	RF power,conducted	$\pm 0.42\text{dB}$
3	Spurious emissions,conducted	$\pm 2.76\text{dB}$
4	All emissions,radiated(<30MHz)	$\pm 3.54\text{dB}$
5	All emissions,radiated(<1G)	$\pm 3.65\text{dB}$
6	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
7	Occupied bandwidth	$\pm 0.2\%$
8	PSD	$\pm 0.69\text{dB}$
9	Temperature	$\pm 0.5^{\circ}\text{C}$
10	Humidity	$\pm 2\%$
11	Time	$\pm 2\%$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name:	Mobile Lidar Scanner
Trademark	XGRIDS
Model No.:	Lixel L3, Lixel L3-16/120, Lixel L3-32/120, Lixel L3-32/300
Model Difference	All models are same as the samples except model name, they have the same structure and circuit.
Operation Frequency:	5180-5240, 5745-5825MHz(802.11a/n/ac(HT20)) 5190-5230, 5755-5795MHz(802.11n/ac(HT40)) 5210MHz , 5775MHz (802.11ac(HT80))
Channel numbers:	See channel list
Channel separation:	5MHz
Modulation technology:	64QAM, 16QAM, QPSK, BPSK for OFDM
Rate of Transmitter	802.11a: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps 802.11n: Up to 300Mbps 802.11ac: up to 867Mbps
Antenna Type:	Internal Antenna
Antenna gain:	1.89dBi(ANT1), 1.89dBi(ANT2)
Power Supply:	DC 14.4V from battery TYPE-C Port from adapter
Adapter:	Model:GS-W45A0954 Input: 100-240V~50/60Hz,1.2A Output USB-C1/C2: 5V/3A or 9V/3A or 12V/3A or 15V/3A or 20V/2.25A (PPS)3.3V-16V/3A 45W Max Manufacturer: Shenzhen good-she technology Co., Ltd.
Note:	The MIMO mode only support external Internal Antenna1 and Internal Antenna2 the 802.11n mode, the Directional Gain= $1.89\text{dBi}+10\log(2)=4.9\text{dBi}$.

Note:

- 1.For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2.The EUT's all information provided by client.



2. Channel List

Channel List for 802.11a/n(HT20)/ac(HT20)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

Channel List for 802.11a/n(HT20)/ac(HT20)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	161	5805
153	5765	165	5825
157	5785		

Channel List for 802.11n(HT40)/ac(HT40)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

Channel List for 802.11n(HT40)/ac(HT40)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

Channel List for 802.11ac(HT80)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	/	/

Channel List for 802.11ac(HT80)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
155	5775	/	/



2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Description			
Pretest Mode	Channel	Band 1	Band 4
Mode 1	802.11a/n/acHT20	CH36, CH44, CH48	CH149, CH157, CH165
Mode 2	802.11n/acHT40	CH38, CH46	CH151, CH159
Mode 3	802.11acHT80	CH42	CH155
Mode 4	MIMO Mode		
Mode 5	Link Mode		

For Conducted & Radiated Emission			
Pretest Mode	Channel	Band 1	Band 4
Mode 1	802.11a/n/acHT20	CH36, CH44, CH48	CH149, CH157, CH165
Mode 2	802.11n/acHT40	CH38, CH46	CH151, CH159
Mode 3	802.11acHT80	CH42	CH155
Mode 4	MIMO Mode		
Mode 5	Link Mode		

Note: 1. The measurements are performed at the highest, middle, lowest available channels.

2. During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

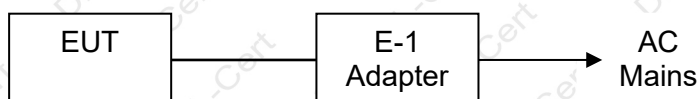


2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Power line conducted emission Test



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Model/Type No.	Series No.	Note
E-1	Adapter	GS-W45A0954	N/A	Shenzhen good-she technology Co., Ltd.

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the end product.

Max output power Setting				
Test software Version	Test program: RF Test_V2.1			
Mode	802.11a	802.11n HT20	802.11n HT40	802.11ac HT20/ HT40/HT80
Data Rate	6Mbps	MSC0	MSC0	MSC0
Power Setting of Software	60	60	66	66



2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation test, Band-edge test and 20db bandwidth test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Oct. 25, 2025	Oct. 24, 2026
2	Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Oct. 25, 2025	Oct. 24, 2026
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Oct. 25, 2025	Oct. 24, 2026
4	Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Oct. 26, 2025	Oct. 25, 2026
5	Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Oct. 25, 2025	Oct. 24, 2026
6	Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Oct. 25, 2025	Oct. 24, 2026
7	Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Oct. 25, 2025	Oct. 24, 2026
8	Amplifier (18GHz-40GHz)	Quanjuda	DLE-161	97	Oct. 25, 2025	Oct. 24, 2026
9	Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Oct. 25, 2025	Oct. 24, 2026
10	RF cables1 (9kHz-1GHz)	ChengYu	966	004	Oct. 25, 2025	Oct. 24, 2026
11	RF cables2 (1GHz-40GHz)	ChengYu	966	003	Oct. 25, 2025	Oct. 24, 2026
12	Antenna connector	Florida RF Labs	N/A	RF 01#	Oct. 25, 2025	Oct. 24, 2026
13	Power probe	KEYSIGHT	U2021XA	MY55210018	Oct. 25, 2025	Oct. 24, 2026
14	Signal Analyzer 9kHz-26.5GHz	Agilent	N9020A	MY55370280	Oct. 25, 2025	Oct. 24, 2026
15	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	Oct. 25, 2025	Oct. 24, 2026
16	D.C. Power Supply	LongWei	PS-305D	010964729	Oct. 25, 2025	Oct. 24, 2026
17	Temperature & humidity chamber	Changfeng	CF-150-40-P	CF170802-01	Oct. 25, 2025	Oct. 24, 2026
18	966 chamber	YIHENG	966 Room	966	Nov. 06, 2023	Nov. 05, 2026

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	843 Shielded Room	YIHENG	843 Room	843	Nov. 05, 2023	Nov. 04, 2026
2	EMI Receiver	R&S	ESR	101421	Oct. 25, 2025	Oct. 24, 2026
3	LISN	R&S	ENV216	102417	Oct. 25, 2025	Oct. 24, 2026
4	843 Cable 1#	ChengYu	CE Cable	001	Oct. 25, 2025	Oct. 24, 2026

Other

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ EMC	EMC-CON 3A1.1
2	EMC radiation test system	FALA	EZ EMC	FA-03A2
3	RF test system	MAIWEI	MTS8310	2.0.0.0
4	RF communication test system	MAIWEI	MTS8200	2.0.0.0



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0 5	66 - 56 *	56 - 46 *	FCC
0.5 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

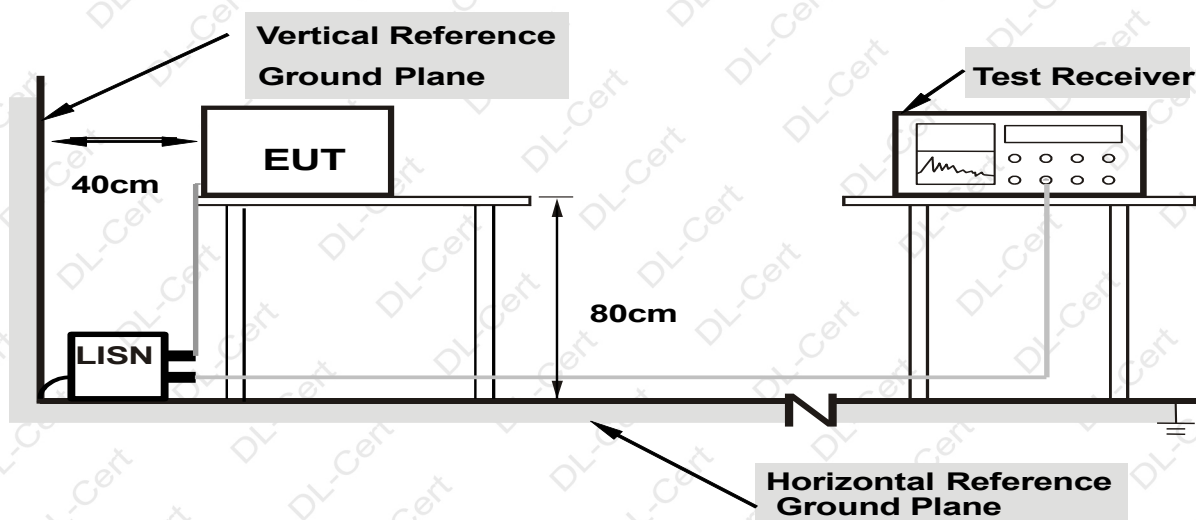
- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation



3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

We pretest AC 120V and AC 230V, the worst voltage was AC 120V and the data recording in the report.

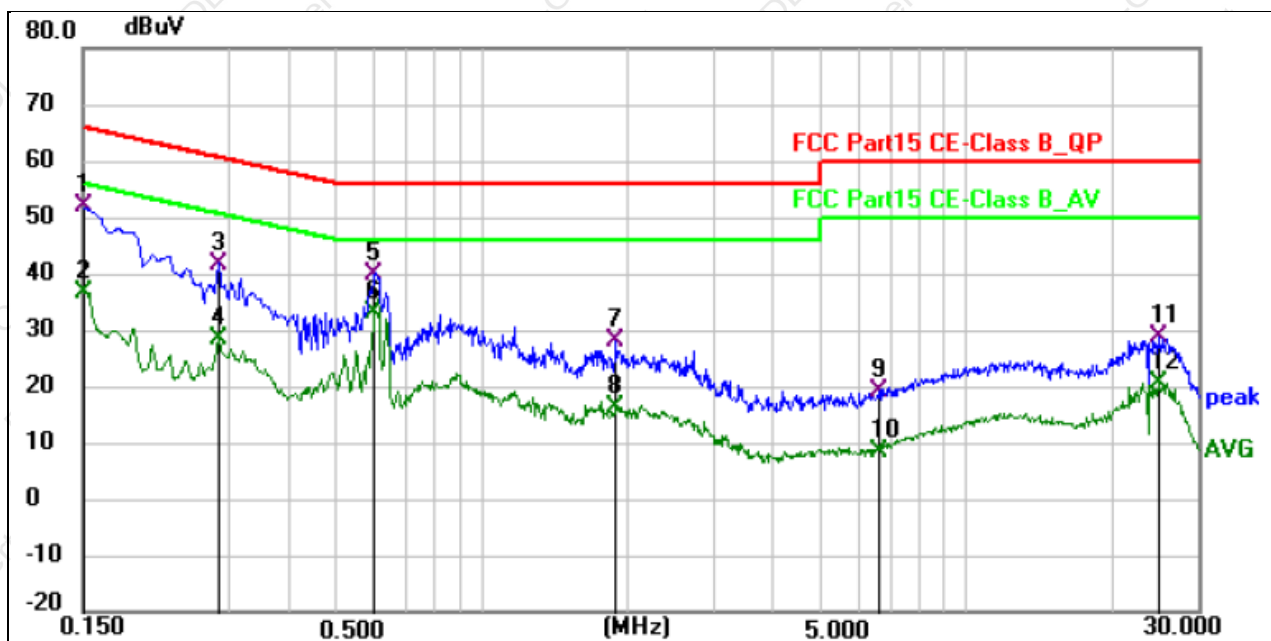
3.1.6 TEST RESULTS

PASS

Please refer to the following page.



Temperature:	25 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 4



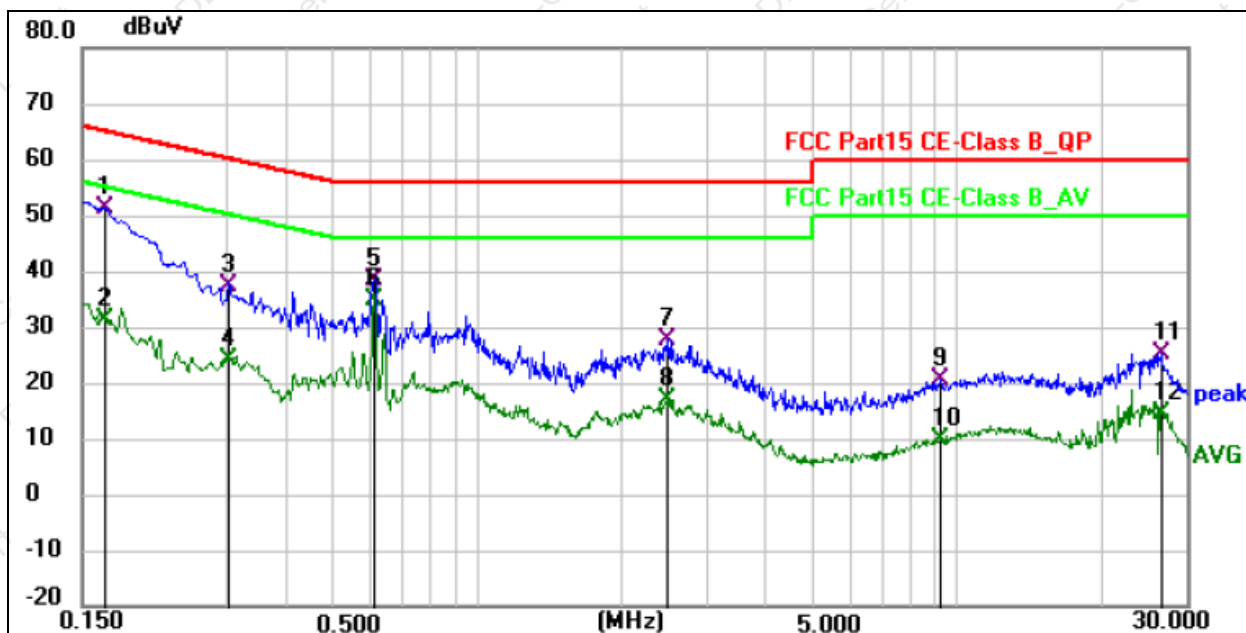
Remark:

Margin = Limit – Level, Correct Factor = Cable lose + LISN insertion loss, Level= Reading + Correct factor

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	42.35	9.44	51.79	66.00	-14.21	QP	P	
2	0.1500	27.33	9.44	36.77	56.00	-19.23	AVG	P	
3	0.2850	32.19	9.41	41.60	60.67	-19.07	QP	P	
4	0.2850	18.81	9.41	28.22	50.67	-22.45	AVG	P	
5	0.6000	30.26	9.43	39.69	56.00	-16.31	QP	P	
6 *	0.6000	23.77	9.43	33.20	46.00	-12.80	AVG	P	
7	1.8914	18.51	9.50	28.01	56.00	-27.99	QP	P	
8	1.8914	6.87	9.50	16.37	46.00	-29.63	AVG	P	
9	6.5760	9.04	10.08	19.12	60.00	-40.88	QP	P	
10	6.5760	-1.51	10.08	8.57	50.00	-41.43	AVG	P	
11	24.8550	17.48	11.27	28.75	60.00	-31.25	QP	P	
12	24.8550	9.34	11.27	20.61	50.00	-29.39	AVG	P	



Temperature:	25 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 4



Remark:

Margin = Limit – Level, Correct Factor = Cable lose + LISN insertion loss, Level= Reading + Correct factor

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1680	41.88	9.36	51.24	65.06	-13.82	QP	P	
2	0.1680	21.82	9.36	31.18	55.06	-23.88	AVG	P	
3	0.3030	27.79	9.39	37.18	60.16	-22.98	QP	P	
4	0.3030	14.71	9.39	24.10	50.16	-26.06	AVG	P	
5	0.6090	28.96	9.41	38.37	56.00	-17.63	QP	P	
6 *	0.6090	25.25	9.41	34.66	46.00	-11.34	AVG	P	
7	2.4810	18.20	9.55	27.75	56.00	-28.25	QP	P	
8	2.4810	7.44	9.55	16.99	46.00	-29.01	AVG	P	
9	9.2445	9.89	10.52	20.41	60.00	-39.59	QP	P	
10	9.2445	-0.52	10.52	10.00	50.00	-40.00	AVG	P	
11	26.6100	14.13	11.21	25.34	60.00	-34.66	QP	P	
12	26.6100	3.35	11.21	14.56	50.00	-35.44	AVG	P	



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

15.407(b)Undesirable emission limits. Except as shown in paragraph (b) (10) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1)For transmitters operating in the 5.15-5.25GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2)For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3)For transmitters operating in the 5.47-5.725GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4)For transmitters operating solely in the 5.725-5.850GHz band:

All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to10dBm/MHzat25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micровolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40GHz
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average



Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

Below 1GHz test procedure as below:

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

Above 1GHz test procedure as below:

- Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre.
- Test the EUT in the lowest channel, the middle channel, the Highest channel

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

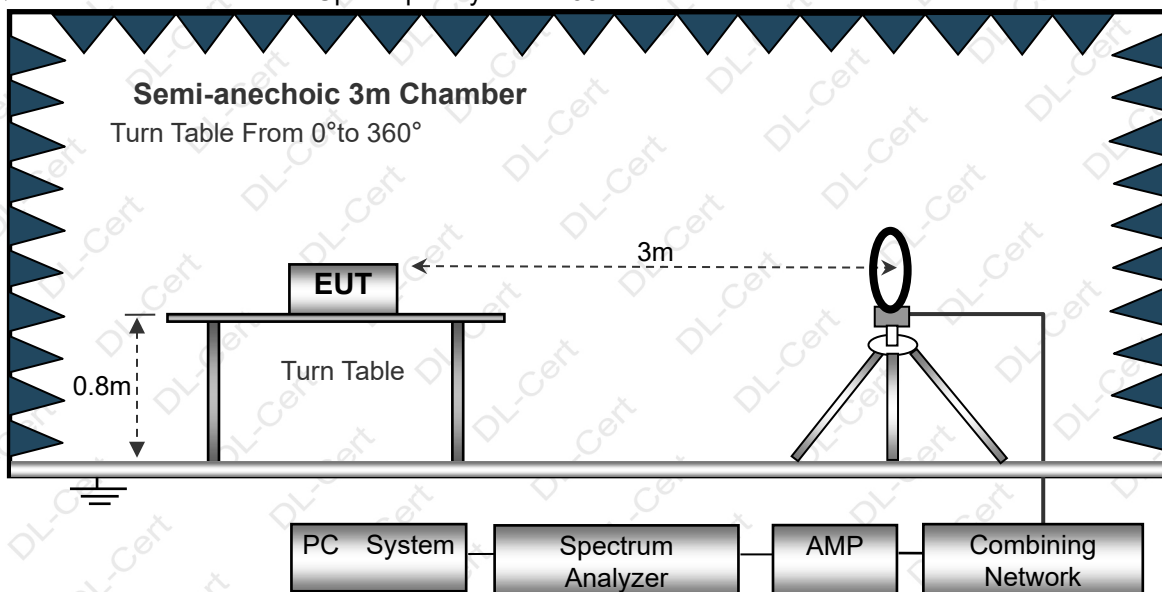
3.2.3 DEVIATION FROM TEST STANDARD

No deviation

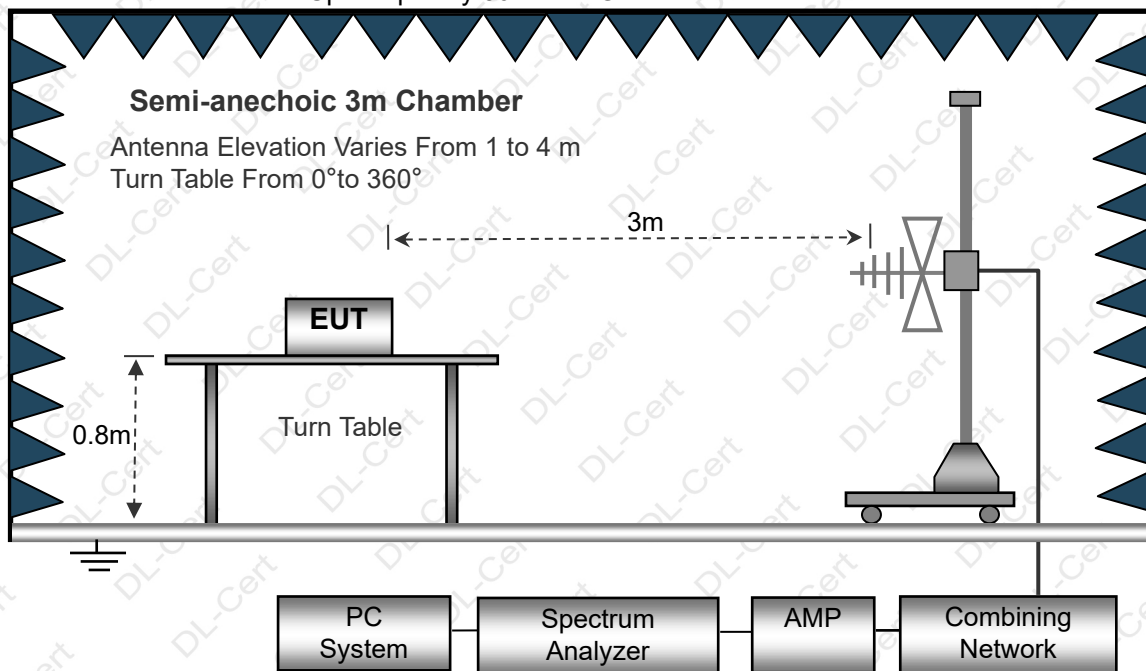


3.2.4 TEST SETUP

(A) Radiated Emission Test-Up Frequency Below 30MHz

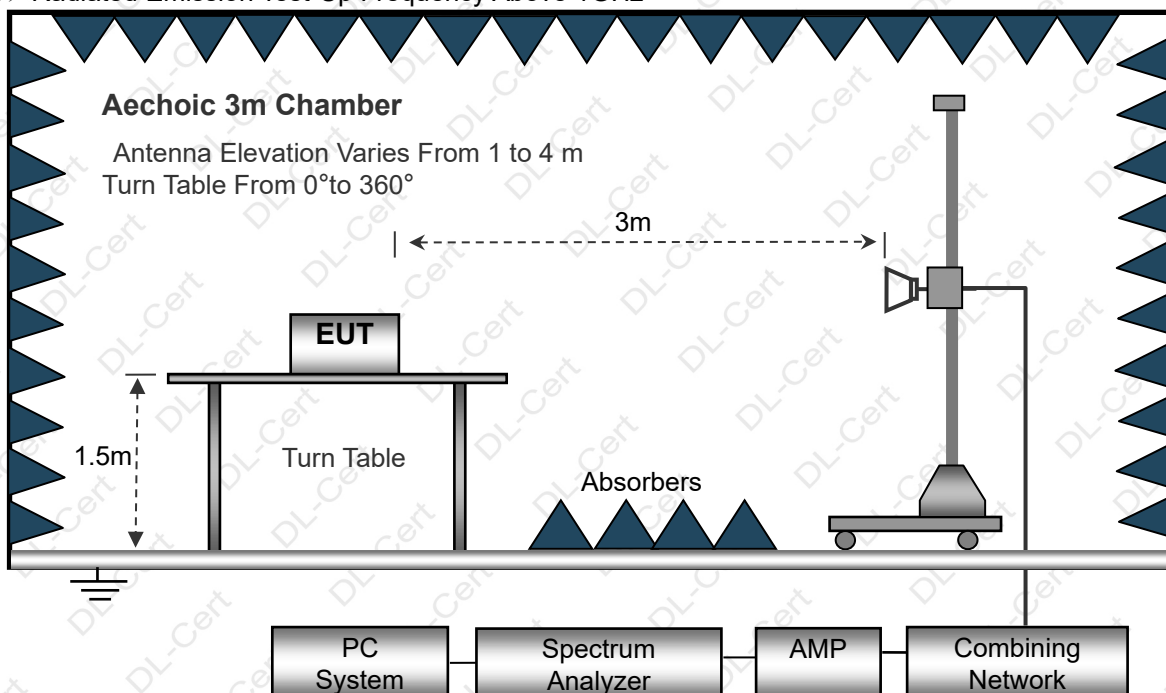


(B) Radiated Emission Test-Up Frequency 30MHz~1GHz





(C) Radiated Emission Test-Up Frequency Above 1GHz

**3.2.5 EUT OPERATING CONDITIONS**

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

**3.2.6 TEST RESULTS (Between 9KHz – 30 MHz)**

Temperature:	20°C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode 4	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

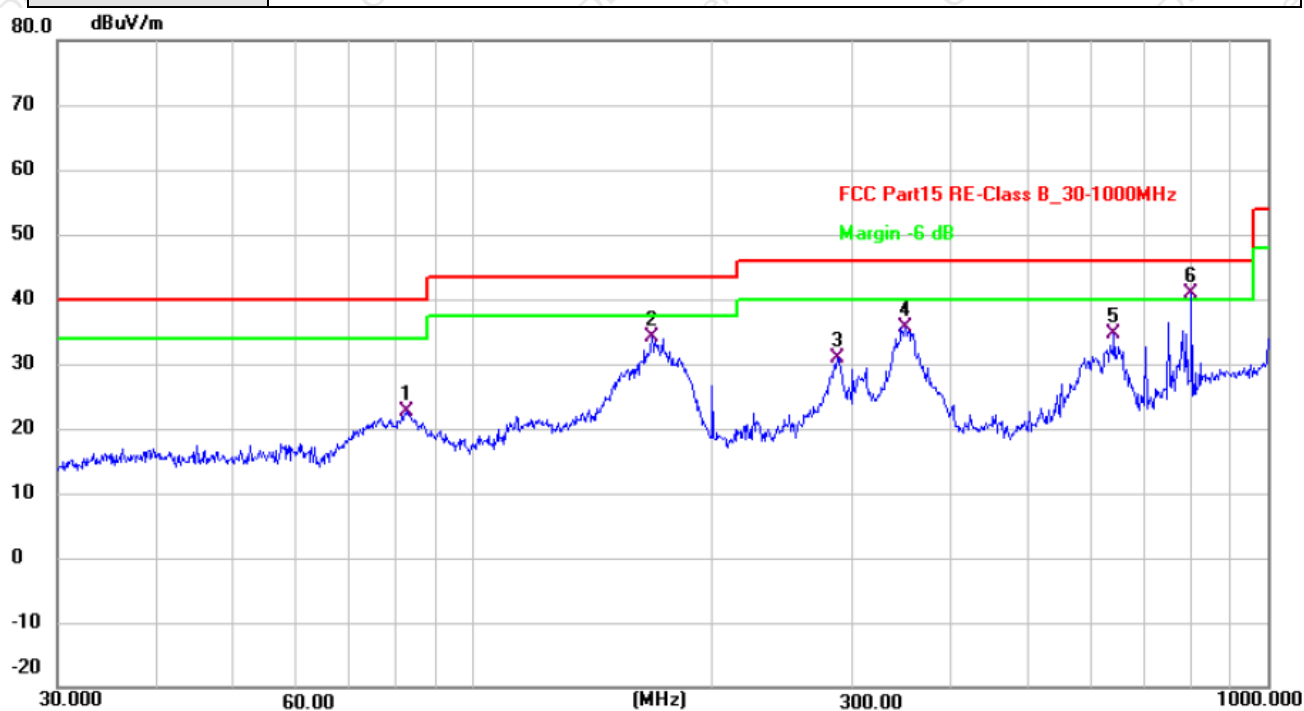
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance/test distance})$ (dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

**3.2.7 TEST RESULTS (Between 30MHz – 1GHz)**

Temperature:	26°C	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage:	AC 120V/60Hz		
Test Mode:	Mode 4		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		82.6478	36.49	-13.85	22.64	40.00	-17.36	QP
2		167.8240	44.57	-10.43	34.14	43.50	-9.36	QP
3		287.9904	41.17	-10.17	31.00	46.00	-15.00	QP
4		350.4766	44.51	-8.77	35.74	46.00	-10.26	QP
5		640.6109	37.84	-3.31	34.53	46.00	-11.47	QP
6	*	801.7862	42.44	-1.51	40.93	46.00	-5.07	QP

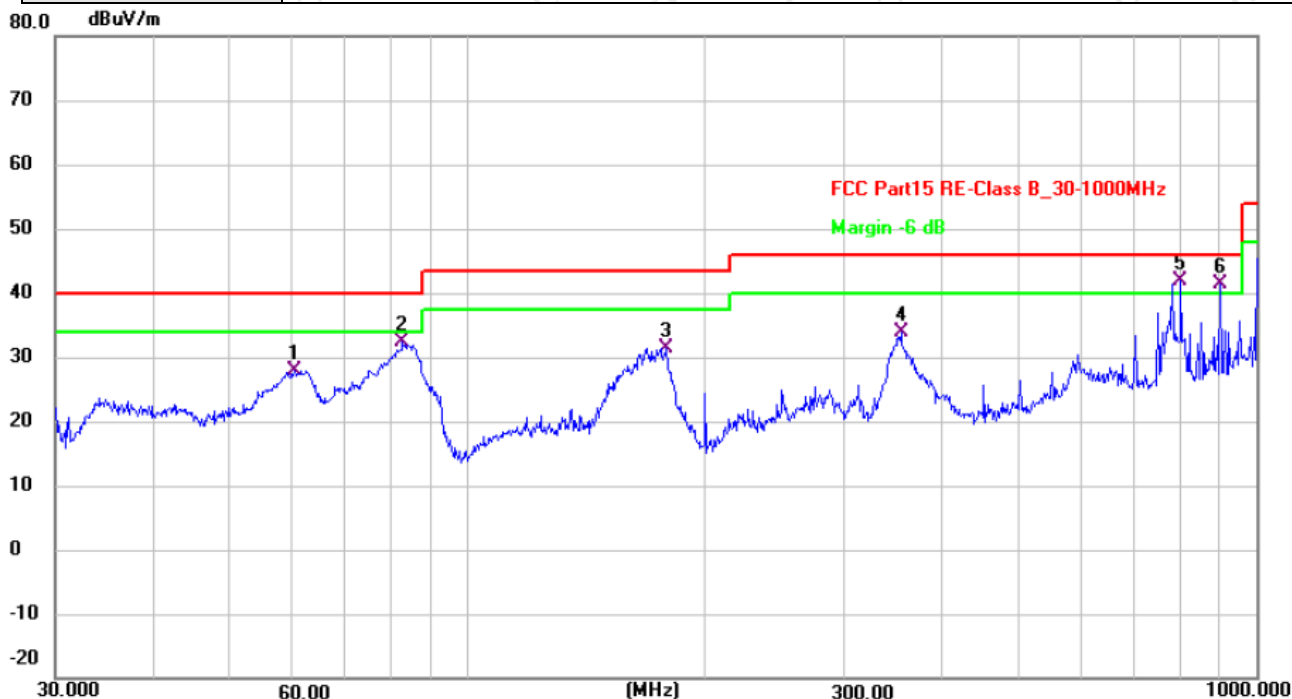
Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Correct Factor; Margin = Level - Limit;



Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Vertical
Test Voltage:	AC 120V/60Hz		
Test Mode:	Mode 4		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over
		MHz	dBuV	dB	dBuV/m	dB/m	dB
1		60.2800	39.16	-11.17	27.99	40.00	-12.01
2		82.6478	46.14	-13.85	32.29	40.00	-7.71
3		178.7581	43.00	-11.73	31.27	43.50	-12.23
4		354.1831	42.52	-8.71	33.81	46.00	-12.19
5	*	801.7862	43.45	-1.51	41.94	46.00	-4.06
6	!	900.1471	41.59	-0.11	41.48	46.00	-4.52

Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Correct Factor; Margin = Level - Limit;

**3.2.8 TEST RESULTS (1ghz~40ghz)**

802.11a band 1

We test all antenna's data, the data only show the antenna1 worst mode.

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5180									
V	10360	57.72	49.05	15.3	37.39	61.36	68.2	-6.84	PK
V	10360	42.92	49.05	15.3	37.39	46.56	54	-7.44	AV
V	15540	53.22	49.16	15.27	40.45	59.78	74	-14.22	PK
V	15540	40.67	49.16	15.27	40.45	47.23	54	-6.77	AV
H	10360	57.3	49.05	15.3	37.39	60.94	68.2	-7.26	PK
H	10360	42.02	49.05	15.3	37.39	45.66	54	-8.34	AV
H	15540	52.53	49.16	15.27	40.45	59.09	74	-14.91	PK
H	15540	39.24	49.16	15.27	40.45	45.8	54	-8.20	AV
operation frequency:5200									
V	10400	58.78	49.09	15.34	37.42	62.45	68.2	-5.75	PK
V	10400	40.88	49.09	15.34	37.42	44.55	54	-9.45	AV
V	15600	53.76	49.18	15.29	40.47	60.34	74	-13.66	PK
V	15600	39.29	49.18	15.29	40.47	45.87	54	-8.13	AV
H	10400	57.45	49.09	15.34	37.42	61.12	68.2	-7.08	PK
H	10400	40.85	49.09	15.34	37.42	44.52	54	-9.48	AV
H	15600	54.95	49.18	15.29	40.47	61.53	74	-12.47	PK
H	15600	39.55	49.18	15.29	40.47	46.13	54	-7.87	AV
operation frequency:5240									
V	10480	59.3	49.11	15.37	37.46	63.02	68.2	-5.18	PK
V	10480	40.73	49.11	15.37	37.46	44.45	54	-9.55	AV
V	15720	54.6	49.21	15.34	40.51	61.24	74	-12.76	PK
V	15720	39.34	49.21	15.34	40.51	45.98	54	-8.02	AV
H	10480	58.72	49.11	15.37	31.31	56.29	68.2	-11.91	PK
H	10480	46.64	49.11	15.37	31.31	44.21	54	-9.79	AV
H	15720	55.32	49.21	15.34	40.51	61.96	74	-12.04	PK
H	15720	38.26	49.21	15.34	40.51	44.9	54	-9.10	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11n HT20

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5180									
V	10360	57.13	49.05	15.3	37.39	60.77	68.2	-7.43	PK
V	10360	39.08	49.05	15.3	37.39	42.72	54	-11.28	AV
V	15540	53.3	49.16	15.27	40.45	59.86	74	-14.14	PK
V	15540	39.44	49.16	15.27	40.45	46	54	-8.00	AV
H	10360	57.55	49.05	15.3	37.39	61.19	68.2	-7.01	PK
H	10360	40.2	49.05	15.3	37.39	43.84	54	-10.16	AV
H	15540	52.26	49.16	15.27	40.45	58.82	74	-15.18	PK
H	15540	39.55	49.16	15.27	40.45	46.11	54	-7.89	AV
operation frequency:5200									
V	10400	57.43	49.09	15.34	37.42	61.1	68.2	-7.10	PK
V	10400	40.6	49.09	15.34	37.42	44.27	54	-9.73	AV
V	15600	53.38	49.18	15.29	40.47	59.96	74	-14.04	PK
V	15600	39.13	49.18	15.29	40.47	45.71	54	-8.29	AV
H	10400	56.55	49.09	15.34	37.42	60.22	68.2	-7.98	PK
H	10400	41.77	49.09	15.34	37.42	45.44	54	-8.56	AV
H	15600	54.33	49.18	15.29	40.47	60.91	74	-13.09	PK
H	15600	40.18	49.18	15.29	40.47	46.76	54	-7.24	AV
operation frequency:5240									
V	10480	58.44	49.11	15.37	37.46	62.16	68.2	-6.04	PK
V	10480	41.53	49.11	15.37	37.46	45.25	54	-8.75	AV
V	15720	53.58	49.21	15.34	40.51	60.22	74	-13.78	PK
V	15720	39.19	49.21	15.34	40.51	45.83	54	-8.17	AV
H	10480	58.13	49.11	15.37	31.31	55.7	68.2	-12.50	PK
H	10480	45.78	49.11	15.37	31.31	43.35	54	-10.65	AV
H	15720	52.9	49.21	15.34	40.51	59.54	74	-14.46	PK
H	15720	40.76	49.21	15.34	40.51	47.4	54	-6.60	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11n HT40

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5190									
V	10380	57.64	49.07	15.33	37.41	61.31	68.2	-6.89	PK
V	10380	41.04	49.07	15.33	37.41	44.71	54	-9.29	AV
V	15570	54.3	49.17	15.28	40.46	60.87	74	-13.13	PK
V	15570	39.71	49.17	15.28	40.46	46.28	54	-7.72	AV
H	10380	58.06	49.07	15.33	37.41	61.73	68.2	-6.47	PK
H	10380	42.22	49.07	15.33	37.41	45.89	54	-8.11	AV
H	15570	54.31	49.17	15.28	40.46	60.88	74	-13.12	PK
H	15570	39.82	49.17	15.28	40.46	46.39	54	-7.61	AV
operation frequency:5230									
V	10460	58.54	49.11	15.37	37.46	62.26	68.2	-5.94	PK
V	10460	41.01	49.11	15.37	37.46	44.73	54	-9.27	AV
V	15690	53.7	49.21	15.34	40.51	60.34	74	-13.66	PK
V	15690	40.02	49.21	15.34	40.51	46.66	54	-7.34	AV
H	10460	58.74	49.11	15.37	31.31	56.31	68.2	-11.89	PK
H	10460	45.72	49.11	15.37	31.31	43.29	54	-10.71	AV
H	15690	53.63	49.21	15.34	40.51	60.27	74	-13.73	PK
H	15690	40.67	49.21	15.34	40.51	47.31	54	-6.69	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11ac HT20

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5180									
V	10360	58.01	49.05	15.3	37.39	61.65	68.2	-6.55	PK
V	10360	41.01	49.05	15.3	37.39	44.65	54	-9.35	AV
V	15540	52.82	49.16	15.27	40.45	59.38	74	-14.62	PK
V	15540	39.58	49.16	15.27	40.45	46.14	54	-7.86	AV
H	10360	58.12	49.05	15.3	37.39	61.76	68.2	-6.44	PK
H	10360	39.89	49.05	15.3	37.39	43.53	54	-10.47	AV
H	15540	53.58	49.16	15.27	40.45	60.14	74	-13.86	PK
H	15540	40.9	49.16	15.27	40.45	47.46	54	-6.54	AV
operation frequency:5200									
V	10400	57.93	49.09	15.34	37.42	61.6	68.2	-6.60	PK
V	10400	42.72	49.09	15.34	37.42	46.39	54	-7.61	AV
V	15600	53.49	49.18	15.29	40.47	60.07	74	-13.93	PK
V	15600	41.6	49.18	15.29	40.47	48.18	54	-5.82	AV
H	10400	57.11	49.09	15.34	37.42	60.78	68.2	-7.42	PK
H	10400	41.52	49.09	15.34	37.42	45.19	54	-8.81	AV
H	15600	54.47	49.18	15.29	40.47	61.05	74	-12.95	PK
H	15600	42.92	49.18	15.29	40.47	49.5	54	-4.50	AV
operation frequency:5240									
V	10480	59.32	49.11	15.37	37.46	63.04	68.2	-5.16	PK
V	10480	42.02	49.11	15.37	37.46	45.74	54	-8.26	AV
V	15720	52.82	49.21	15.34	40.51	59.46	74	-14.54	PK
V	15720	41.01	49.21	15.34	40.51	47.65	54	-6.35	AV
H	10480	59.21	49.11	15.37	31.31	56.78	68.2	-11.42	PK
H	10480	46.05	49.11	15.37	31.31	43.62	54	-10.38	AV
H	15720	54.27	49.21	15.34	40.51	60.91	74	-13.09	PK
H	15720	42.07	49.21	15.34	40.51	48.71	54	-5.29	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11ac HT40

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
operation frequency:5190									
V	10380	57.75	49.07	15.33	37.41	61.42	68.2	-6.78	PK
V	10380	40.79	49.07	15.33	37.41	44.46	54	-9.54	AV
V	15570	52.97	49.17	15.28	40.46	59.54	74	-14.46	PK
V	15570	40.23	49.17	15.28	40.46	46.8	54	-7.20	AV
H	10380	58.06	49.07	15.33	37.41	61.73	68.2	-6.47	PK
H	10380	39.52	49.07	15.33	37.41	43.19	54	-10.81	AV
H	15570	53.56	49.17	15.28	40.46	60.13	74	-13.87	PK
H	15570	41.12	49.17	15.28	40.46	47.69	54	-6.31	AV
operation frequency:5230									
V	10460	58.06	49.11	15.37	37.46	61.78	68.2	-6.42	PK
V	10460	42.82	49.11	15.37	37.46	46.54	54	-7.46	AV
V	15690	53.7	49.21	15.34	40.51	60.34	74	-13.66	PK
V	15690	41.74	49.21	15.34	40.51	48.38	54	-5.62	AV
H	10460	57.18	49.11	15.37	31.31	54.75	68.2	-13.45	PK
H	10460	41.62	49.11	15.37	31.31	39.19	54	-14.81	AV
H	15690	55.1	49.21	15.34	40.51	61.74	74	-12.26	PK
H	15690	43.01	49.21	15.34	40.51	49.65	54	-4.35	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11ac HT80

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5210									
V	10420	57.75	49.07	15.33	37.41	61.42	68.2	-6.78	PK
V	10420	40.79	49.07	15.33	37.41	44.46	54	-9.54	AV
V	15630	52.97	49.17	15.28	40.46	59.54	74	-14.46	PK
V	15630	40.23	49.17	15.28	40.46	46.8	54	-7.20	AV
H	10420	58.06	49.07	15.33	37.41	61.73	68.2	-6.47	PK
H	10420	39.52	49.07	15.33	37.41	43.19	54	-10.81	AV
H	15630	53.56	49.17	15.28	40.46	60.13	74	-13.87	PK
H	15630	41.12	49.17	15.28	40.46	47.69	54	-6.31	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11a band 4

We test all antenna's data, the data only show the antenna1 worst mode.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
operation frequency:5745									
V	11490	55.68	49.05	15.3	37.39	59.32	74	-14.68	PK
V	11490	43.36	49.05	15.3	37.39	47	54	-7.00	AV
V	17235	56.68	49.16	15.27	40.45	63.24	68.2	-4.96	PK
V	17235	42	49.16	15.27	40.45	48.56	54	-5.44	AV
H	11490	54.11	49.05	15.3	37.39	57.75	74	-16.25	PK
H	11490	43.56	49.05	15.3	37.39	47.2	54	-6.80	AV
H	17235	52.94	49.16	15.27	40.45	59.5	68.2	-8.70	PK
H	17235	41.53	49.16	15.27	40.45	48.09	54	-5.91	AV
operation frequency:5785									
V	11570	52.78	49.09	15.34	37.42	56.45	74	-17.55	PK
V	11570	42.67	49.09	15.34	37.42	46.34	54	-7.66	AV
V	17355	51.83	49.18	15.29	40.47	58.41	68.2	-9.79	PK
V	17355	41.82	49.18	15.29	40.47	48.4	54	-5.60	AV
H	11570	51.67	49.09	15.34	37.42	55.34	74	-18.66	PK
H	11570	43.61	49.09	15.34	37.42	47.28	54	-6.72	AV
H	17355	49.68	49.18	15.29	40.47	56.26	68.2	-11.94	PK
H	17355	41.95	49.18	15.29	40.47	48.53	54	-5.47	AV
operation frequency:5825									
V	11650	53.64	49.11	15.37	37.46	57.36	74	-16.64	PK
V	11650	42.68	49.11	15.37	37.46	46.4	54	-7.60	AV
V	17475	50.94	49.21	15.34	40.51	57.58	68.2	-10.62	PK
V	17475	42.23	49.21	15.34	40.51	48.87	54	-5.13	AV
H	11650	58.8	49.11	15.37	31.31	56.37	74	-17.63	PK
H	11650	49.93	49.11	15.37	31.31	47.5	54	-6.50	AV
H	17475	51	49.21	15.34	40.51	57.64	68.2	-10.56	PK
H	17475	41.82	49.21	15.34	40.51	48.46	54	-5.54	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11n HT20

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
operation frequency:5745									
V	11490	51.28	49.05	15.3	37.39	54.92	74	-19.08	PK
V	11490	43.94	49.05	15.3	37.39	47.58	54	-6.42	AV
V	17235	50.17	49.16	15.27	40.45	56.73	68.2	-11.47	PK
V	17235	42.36	49.16	15.27	40.45	48.92	54	-5.08	AV
H	11490	50.95	49.05	15.3	37.39	54.59	74	-19.41	PK
H	11490	42.68	49.05	15.3	37.39	46.32	54	-7.68	AV
H	17235	49.78	49.16	15.27	40.45	56.34	68.2	-11.86	PK
H	17235	41.94	49.16	15.27	40.45	48.5	54	-5.50	AV
operation frequency:5785									
V	11570	53.49	49.09	15.34	37.42	57.16	74	-16.84	PK
V	11570	43.97	49.09	15.34	37.42	47.64	54	-6.36	AV
V	17355	50.8	49.18	15.29	40.47	57.38	68.2	-10.82	PK
V	17355	41.51	49.18	15.29	40.47	48.09	54	-5.91	AV
H	11570	50.86	49.09	15.34	37.42	54.53	74	-19.47	PK
H	11570	44.49	49.09	15.34	37.42	48.16	54	-5.84	AV
H	17355	51.24	49.18	15.29	40.47	57.82	68.2	-10.38	PK
H	17355	41.49	49.18	15.29	40.47	48.07	54	-5.93	AV
operation frequency:5825									
V	11650	53.13	49.11	15.37	37.46	56.85	74	-17.15	PK
V	11650	42.91	49.11	15.37	37.46	46.63	54	-7.37	AV
V	17475	49.49	49.21	15.34	40.51	56.13	68.2	-12.07	PK
V	17475	41.91	49.21	15.34	40.51	48.55	54	-5.45	AV
H	11650	58.82	49.11	15.37	31.31	56.39	74	-17.61	PK
H	11650	46.13	49.11	15.37	31.31	43.7	54	-10.30	AV
H	17475	50.91	49.21	15.34	40.51	57.55	68.2	-10.65	PK
H	17475	41.62	49.21	15.34	40.51	48.26	54	-5.74	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11n HT40

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5755									
V	11510	50.95	49.07	15.33	37.41	54.62	74	-19.38	PK
V	11510	43.03	49.07	15.33	37.41	46.7	54	-7.30	AV
V	17265	51.28	49.17	15.28	40.46	57.85	68.2	-10.35	PK
V	17265	41.55	49.17	15.28	40.46	48.12	54	-5.88	AV
H	11510	50.26	49.07	15.33	37.41	53.93	74	-20.07	PK
H	11510	43.25	49.07	15.33	37.41	46.92	54	-7.08	AV
H	17265	50.64	49.17	15.28	40.46	57.21	68.2	-10.99	PK
H	17265	42.09	49.17	15.28	40.46	48.66	54	-5.34	AV
operation frequency:5795									
V	11590	50.84	49.11	15.37	37.46	54.56	74	-19.44	PK
V	11590	43.03	49.11	15.37	37.46	46.75	54	-7.25	AV
V	17385	49.54	49.21	15.34	40.51	56.18	68.2	-12.02	PK
V	17385	41.87	49.21	15.34	40.51	48.51	54	-5.49	AV
H	11590	59.01	49.11	15.37	31.31	56.58	74	-17.42	PK
H	11590	45.99	49.11	15.37	31.31	43.56	54	-10.44	AV
H	17385	49.57	49.21	15.34	40.51	56.21	68.2	-11.99	PK
H	17385	41.76	49.21	15.34	40.51	48.4	54	-5.60	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11ac HT20

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5745									
V	11490	51.12	49.05	15.3	37.39	54.76	74	-19.24	PK
V	11490	43.66	49.05	15.3	37.39	47.3	54	-6.70	AV
V	17235	49.93	49.16	15.27	40.45	56.49	68.2	-11.71	PK
V	17235	41.74	49.16	15.27	40.45	48.3	54	-5.70	AV
H	11490	50.31	49.05	15.3	37.39	53.95	74	-20.05	PK
H	11490	43.03	49.05	15.3	37.39	46.67	54	-7.33	AV
H	17235	49.63	49.16	15.27	40.45	56.19	68.2	-12.01	PK
H	17235	42.36	49.16	15.27	40.45	48.92	54	-5.08	AV
operation frequency:5785									
V	11570	50.8	49.09	15.34	37.42	54.47	74	-19.53	PK
V	11570	43.62	49.09	15.34	37.42	47.29	54	-6.71	AV
V	17355	49.85	49.18	15.29	40.47	56.43	68.2	-11.77	PK
V	17355	41.64	49.18	15.29	40.47	48.22	54	-5.78	AV
H	11570	49.8	49.09	15.34	37.42	53.47	74	-20.53	PK
H	11570	42.42	49.09	15.34	37.42	46.09	54	-7.91	AV
H	17355	49.51	49.18	15.29	40.47	56.09	68.2	-12.11	PK
H	17355	42.13	49.18	15.29	40.47	48.71	54	-5.29	AV
operation frequency:5825									
V	11650	49.91	49.11	15.37	37.46	53.63	74	-20.37	PK
V	11650	42.42	49.11	15.37	37.46	46.14	54	-7.86	AV
V	17475	51.06	49.21	15.34	40.51	57.7	68.2	-10.50	PK
V	17475	41.64	49.21	15.34	40.51	48.28	54	-5.72	AV
H	11650	50.49	49.11	15.37	31.31	48.06	74	-25.94	PK
H	11650	44.71	49.11	15.37	31.31	42.28	54	-11.72	AV
H	17475	51.13	49.21	15.34	40.51	57.77	68.2	-10.43	PK
H	17475	42.24	49.21	15.34	40.51	48.88	54	-5.12	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11ac HT40

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
operation frequency:5755									
V	11510	50.49	49.07	15.33	37.41	54.16	74	-19.84	PK
V	11510	44.11	49.07	15.33	37.41	47.78	54	-6.22	AV
V	17265	50.13	49.17	15.28	40.46	56.7	68.2	-11.50	PK
V	17265	42.94	49.17	15.28	40.46	49.51	54	-4.49	AV
H	11510	49.8	49.07	15.33	37.41	53.47	74	-20.53	PK
H	11510	44.22	49.07	15.33	37.41	47.89	54	-6.11	AV
H	17265	49.49	49.17	15.28	40.46	56.06	68.2	-12.14	PK
H	17265	42.07	49.17	15.28	40.46	48.64	54	-5.36	AV
operation frequency:5795									
V	11590	51.06	49.11	15.37	37.46	54.78	74	-19.22	PK
V	11590	42.61	49.11	15.37	37.46	46.33	54	-7.67	AV
V	17385	49.98	49.21	15.34	40.51	56.62	68.2	-11.58	PK
V	17385	41.61	49.21	15.34	40.51	48.25	54	-5.75	AV
H	11590	58.99	49.11	15.37	31.31	56.56	74	-17.44	PK
H	11590	45.78	49.11	15.37	31.31	43.35	54	-10.65	AV
H	17385	49.85	49.21	15.34	40.51	56.49	68.2	-11.71	PK
H	17385	41.92	49.21	15.34	40.51	48.56	54	-5.44	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT80

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
operation frequency:5775									
V	11550	50.64	49.07	15.33	37.41	54.31	74	-19.69	PK
V	11550	44.24	49.07	15.33	37.41	47.91	54	-6.09	AV
V	17325	50.28	49.17	15.28	40.46	56.85	68.2	-11.35	PK
V	17325	43.06	49.17	15.28	40.46	49.63	54	-4.37	AV
H	11550	49.94	49.07	15.33	37.41	53.61	74	-20.39	PK
H	11550	44.35	49.07	15.33	37.41	48.02	54	-5.98	AV
H	17325	49.63	49.17	15.28	40.46	56.2	68.2	-12.00	PK
H	17325	42.19	49.17	15.28	40.46	48.76	54	-5.24	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**3.3 RADIATED BAND EMISSION MEASUREMENT****3.3.1 TEST REQUIREMENT:**

15.407 (b)

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating solely in the 5.725-5.850 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in § 15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in § 15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

The provisions of §15.205 apply to intentional radiators operating under this section, 15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	Band 1:5000MHz-5150MHz, Band 4:5600MHz-5785MHz
Stop Frequency	Band 1:5350MHz-5460MHz, Band 4:5780MHz-6000MHz
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average



3.3.2 TEST PROCEDURE

Above 1GHz test procedure as below:

1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. 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.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. 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.
7. Test the EUT in the lowest channel, the Highest channel

Note:

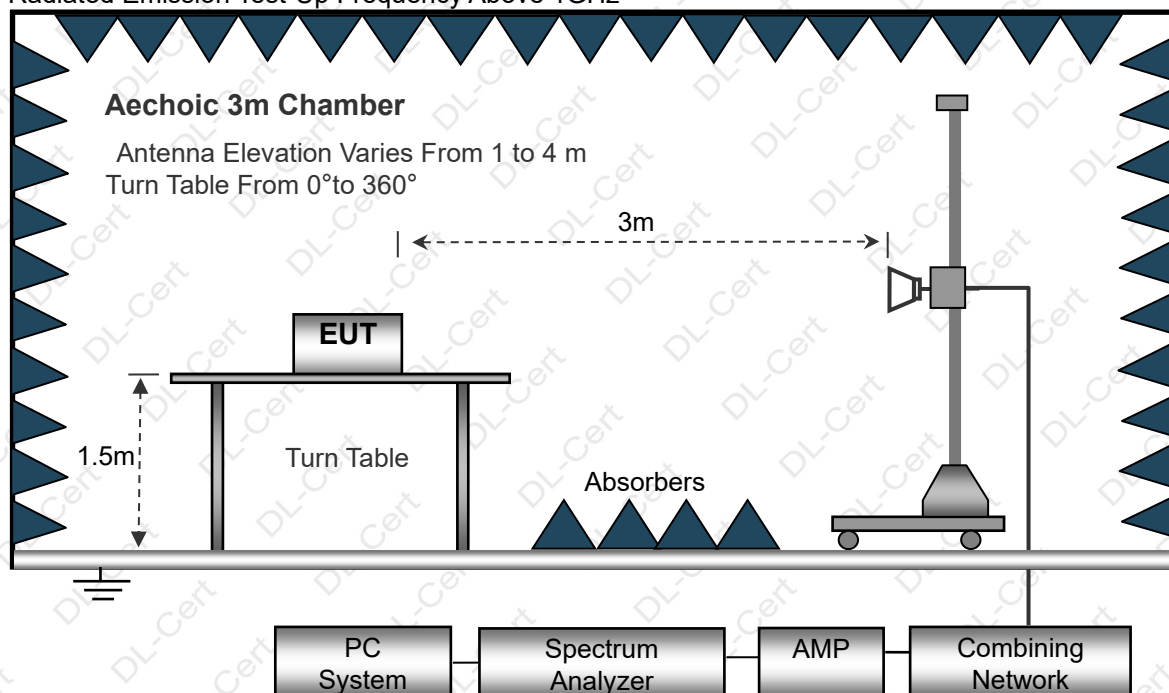
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.3.3 DEVIATION FROM TEST STANDARD

No deviation

3.3.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



3.3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



3.3.6 TEST RESULT

802.11a(Band 1)

We test all antenna's data, the data only show the antenna1 worst mode.

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5180									
V	5150	54.94	49.12	15.6	37.34	58.76	74	-15.24	PK
V	5150	41.17	49.12	15.6	37.34	44.99	54	-9.01	AV
V	5145	56.22	49.19	15.24	40.43	62.7	74	-11.3	PK
V	5145	37.4	49.19	15.24	40.43	43.88	54	-10.12	AV
H	5150	53.78	49.12	15.6	37.34	57.6	74	-16.4	PK
H	5150	39.05	49.12	15.6	37.34	42.87	54	-11.13	AV
H	5145	55.8	49.19	15.24	40.43	62.28	74	-11.72	PK
H	5145	34.77	49.19	15.24	40.43	41.25	54	-12.75	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5240									
V	5350	54.36	49.13	15.32	37.46	58.01	74	-15.99	PK
V	5350	36.45	49.13	15.32	37.46	40.1	54	-13.9	AV
V	5370	54.52	49.24	15.36	40.51	61.15	74	-12.85	PK
V	5370	33.63	49.24	15.36	40.51	40.26	54	-13.74	AV
H	5350	53.14	49.13	15.32	31.31	50.64	74	-23.36	PK
H	5350	41.16	49.13	15.32	31.31	38.66	54	-15.34	AV
H	5370	53.28	49.24	15.36	40.51	59.91	74	-14.09	PK
H	5370	33.36	49.24	15.36	40.51	39.99	54	-14.01	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**802.11n HT20**

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5180									
V	5150	52.84	49.12	15.6	37.34	56.66	74	-17.34	PK
V	5150	34.42	49.12	15.6	37.34	38.24	54	-15.76	AV
V	5145	52.86	49.19	15.24	40.43	59.34	74	-14.66	PK
V	5145	34.91	49.19	15.24	40.43	41.39	54	-12.61	AV
H	5150	52.49	49.12	15.6	37.34	56.31	74	-17.69	PK
H	5150	34.74	49.12	15.6	37.34	38.56	54	-15.44	AV
H	5145	51.8	49.19	15.24	40.43	58.28	74	-15.72	PK
H	5145	34.11	49.19	15.24	40.43	40.59	54	-13.41	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5240									
V	5350	54.45	49.13	15.32	37.46	58.1	74	-15.9	PK
V	5350	36.63	49.13	15.32	37.46	40.28	54	-13.72	AV
V	5370	55.04	49.24	15.36	40.51	61.67	74	-12.33	PK
V	5370	33.82	49.24	15.36	40.51	40.45	54	-13.55	AV
H	5350	53.71	49.13	15.32	31.31	51.21	74	-22.79	PK
H	5350	41.61	49.13	15.32	31.31	39.11	54	-14.89	AV
H	5370	53.51	49.24	15.36	40.51	60.14	74	-13.86	PK
H	5370	33.72	49.24	15.36	40.51	40.35	54	-13.65	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**802.11ac HT20**

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5180									
V	5150	53.78	49.12	15.33	37.41	57.4	74	-16.6	PK
V	5150	35.89	49.12	15.33	37.41	39.51	54	-14.49	AV
V	5145	53.15	49.19	15.28	40.46	59.7	74	-14.3	PK
V	5145	34.51	49.19	15.28	40.46	41.06	54	-12.94	AV
H	5150	54.12	49.12	15.33	37.41	57.74	74	-16.26	PK
H	5150	35.47	49.12	15.33	37.41	39.09	54	-14.91	AV
H	5145	52.1	49.19	15.28	40.46	58.65	74	-15.35	PK
H	5145	34.69	49.19	15.28	40.46	41.24	54	-12.76	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5240									
V	5350	55.11	49.13	15.32	37.46	58.76	74	-15.24	PK
V	5350	37.51	49.13	15.32	37.46	41.16	54	-12.84	AV
V	5370	51.59	49.24	15.36	40.51	58.22	74	-15.78	PK
V	5370	34.9	49.24	15.36	40.51	41.53	54	-12.47	AV
H	5350	55.11	49.13	15.32	31.31	52.61	74	-21.39	PK
H	5350	42.09	49.13	15.32	31.31	39.59	54	-14.41	AV
H	5370	52.61	49.24	15.36	40.51	59.24	74	-14.76	PK
H	5370	36.82	49.24	15.36	40.51	43.45	54	-10.55	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**802.11n HT40**

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5190									
V	5150	53.49	49.12	15.6	37.39	57.36	74	-16.64	PK
V	5150	36.91	49.12	15.6	37.39	40.78	54	-13.22	AV
V	5145	52.73	49.19	15.24	40.45	59.23	74	-14.77	PK
V	5145	36.17	49.19	15.24	40.45	42.67	54	-11.33	AV
H	5150	53.53	49.12	15.6	37.39	57.4	74	-16.6	PK
H	5150	35.92	49.12	15.6	37.39	39.79	54	-14.21	AV
H	5145	51.84	49.19	15.24	40.45	58.34	74	-15.66	PK
H	5145	37.13	49.19	15.24	40.45	43.63	54	-10.37	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5230									
V	5350	54.4	49.13	15.34	37.46	58.07	74	-15.93	PK
V	5350	38.55	49.13	15.34	37.46	42.22	54	-11.78	AV
V	5370	52.04	49.24	15.35	40.51	58.66	74	-15.34	PK
V	5370	37.85	49.24	15.35	40.51	44.47	54	-9.53	AV
H	5350	55.33	49.13	15.34	31.31	52.85	74	-21.15	PK
H	5350	43.08	49.13	15.34	31.31	40.6	54	-13.4	AV
H	5370	53.44	49.24	15.35	40.51	60.06	74	-13.94	PK
H	5370	37.45	49.24	15.35	40.51	44.07	54	-9.93	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**802.11ac HT40**

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5190									
V	5150	53.49	49.12	15.32	37.41	57.1	74	-16.9	PK
V	5150	38.71	49.12	15.32	37.41	42.32	54	-11.68	AV
V	5145	53.96	49.19	15.36	40.46	60.59	74	-13.41	PK
V	5145	37.91	49.19	15.36	40.46	44.54	54	-9.46	AV
H	5150	54.13	49.12	15.32	37.41	57.74	74	-16.26	PK
H	5150	39.12	49.12	15.32	37.41	42.73	54	-11.27	AV
H	5145	52.91	49.19	15.36	40.46	59.54	74	-14.46	PK
H	5145	37.43	49.19	15.36	40.46	44.06	54	-9.94	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5230									
V	5350	54.54	49.13	15.34	37.34	58.09	74	-15.91	PK
V	5350	38.65	49.13	15.34	37.34	42.2	54	-11.8	AV
V	5370	52.12	49.24	15.35	40.43	58.66	74	-15.34	PK
V	5370	37.91	49.24	15.35	40.43	44.45	54	-9.55	AV
H	5350	55.43	49.13	15.34	37.34	58.98	74	-15.02	PK
H	5350	43.1	49.13	15.34	37.34	46.65	54	-7.35	AV
H	5370	53.57	49.24	15.35	40.43	60.11	74	-13.89	PK
H	5370	37.52	49.24	15.35	40.43	44.06	54	-9.94	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**802.11ac HT80**

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5210									
V	5150	53.49	49.13	15.32	37.48	57.16	74	-16.84	PK
V	5150	38.71	49.13	15.32	37.48	42.38	54	-11.62	AV
V	5145	53.96	49.24	15.36	40.42	60.5	74	-13.5	PK
V	5145	37.91	49.24	15.36	40.42	44.45	54	-9.55	AV
H	5150	54.13	49.13	15.32	37.48	57.8	74	-16.2	PK
H	5150	39.12	49.13	15.32	37.48	42.79	54	-11.21	AV
H	5145	52.91	49.24	15.36	40.42	59.45	74	-14.55	PK
H	5145	37.43	49.24	15.36	40.42	43.97	54	-10.03	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5210									
V	5350	54.54	48.32	15.24	37.37	58.83	68.2	-9.37	PK
V	5350	38.65	48.32	15.24	37.37	42.94	54	-11.06	AV
V	5370	52.12	48.36	15.27	37.39	56.42	68.2	-11.78	PK
V	5370	37.91	48.36	15.27	37.39	42.21	54	-11.79	AV
H	5350	55.43	48.32	15.24	37.37	59.72	68.2	-8.48	PK
H	5350	43.1	48.32	15.24	37.37	47.39	54	-6.61	AV
H	5370	53.57	48.36	15.27	37.39	57.87	68.2	-10.33	PK
H	5370	37.52	48.36	15.27	37.39	41.82	54	-12.18	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**802.11a(Band 4)**

We test all antenna's data, the data only show the antenna1 worst mode.

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5745									
V	5725	52.65	46.38	12.43	35.65	54.35	68.2	-13.85	PK
V	5725	42.24	46.38	12.43	35.65	43.94	54	-10.06	AV
V	5720	53.43	46.56	12.47	35.76	55.1	68.2	-13.1	PK
V	5720	42.98	46.56	12.47	35.76	44.65	54	-9.35	AV
H	5725	52.96	46.38	12.43	35.65	54.66	68.2	-13.54	PK
H	5725	42.07	46.38	12.43	35.65	43.77	54	-10.23	AV
H	5720	51.59	46.56	12.47	35.76	53.26	68.2	-14.94	PK
H	5720	42.07	46.56	12.47	35.76	43.74	54	-10.26	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5825									
V	5850	52.44	46.55	12.65	35.87	54.41	68.2	-13.79	PK
V	5850	42.16	46.55	12.65	35.87	44.13	54	-9.87	AV
V	5870	52.42	46.58	12.67	35.93	54.44	68.2	-13.76	PK
V	5870	41.91	46.58	12.67	35.93	43.93	54	-10.07	AV
H	5850	51.86	46.55	12.65	35.87	53.83	68.2	-14.37	PK
H	5850	41.91	46.55	12.65	35.87	43.88	54	-10.12	AV
H	5870	52.42	46.58	12.67	35.93	54.44	68.2	-13.76	PK
H	5870	41.64	46.58	12.67	35.93	43.66	54	-10.34	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**802.11n HT20**

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5745									
V	5725	57.09	47.36	13.18	36.26	59.17	68.2	-9.03	PK
V	5725	44.76	47.36	13.18	36.26	46.84	54	-7.16	AV
V	5720	57.69	47.38	13.2	36.29	59.8	68.2	-8.4	PK
V	5720	44.15	47.38	13.2	36.29	46.26	54	-7.74	AV
H	5725	57.47	47.36	13.18	36.26	59.55	68.2	-8.65	PK
H	5725	44.21	47.36	13.18	36.26	46.29	54	-7.71	AV
H	5720	57.02	47.38	13.2	36.29	59.13	68.2	-9.07	PK
H	5720	44.16	47.38	13.2	36.29	46.27	54	-7.73	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5825									
V	5850	51.96	48.32	15.24	37.37	56.25	68.2	-11.95	PK
V	5850	42.17	48.32	15.24	37.37	46.46	54	-7.54	AV
V	5870	53.25	48.36	15.27	37.39	57.55	68.2	-10.65	PK
V	5870	42.93	48.36	15.27	37.39	47.23	54	-6.77	AV
H	5850	53.01	48.32	15.24	37.37	57.3	68.2	-10.9	PK
H	5850	43.44	48.32	15.24	37.37	47.73	54	-6.27	AV
H	5870	53.18	48.36	15.27	37.39	57.48	68.2	-10.72	PK
H	5870	42.36	48.36	15.27	37.39	46.66	54	-7.34	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**802.11ac HT20**

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5745									
V	5725	52.07	46.38	12.43	35.65	53.77	68.2	-14.43	PK
V	5725	43.31	46.38	12.43	35.65	45.01	54	-8.99	AV
V	5720	52.96	46.56	12.47	35.76	54.63	68.2	-13.57	PK
V	5720	42.98	46.56	12.47	35.76	44.65	54	-9.35	AV
H	5725	52.34	46.38	12.43	35.65	54.04	68.2	-14.16	PK
H	5725	42	46.38	12.43	35.65	43.7	54	-10.3	AV
H	5720	53.46	46.56	12.47	35.76	55.13	68.2	-13.07	PK
H	5720	42.64	46.56	12.47	35.76	44.31	54	-9.69	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5825									
V	5850	52.94	46.55	12.65	35.87	54.91	68.2	-13.29	PK
V	5850	42.43	46.55	12.65	35.87	44.4	54	-9.6	AV
V	5870	53.59	46.58	12.67	35.93	55.61	68.2	-12.59	PK
V	5870	42.64	46.58	12.67	35.93	44.66	54	-9.34	AV
H	5850	52.94	46.55	12.65	35.87	54.91	68.2	-13.29	PK
H	5850	42.63	46.55	12.65	35.87	44.6	54	-9.4	AV
H	5870	53.59	46.58	12.67	35.93	55.61	68.2	-12.59	PK
H	5870	42.53	46.58	12.67	35.93	44.55	54	-9.45	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**802.11n HT40**

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5755									
V	5725	58.42	47.36	13.18	36.26	60.5	68.2	-7.7	PK
V	5725	45.49	47.36	13.18	36.26	47.57	54	-6.43	AV
V	5720	58.58	47.38	13.2	36.29	60.69	68.2	-7.51	PK
V	5720	45.01	47.38	13.2	36.29	47.12	54	-6.88	AV
H	5725	57.47	47.36	13.18	36.26	59.55	68.2	-8.65	PK
H	5725	44.14	47.36	13.18	36.26	46.22	54	-7.78	AV
H	5720	57.2	47.38	13.2	36.29	59.31	68.2	-8.89	PK
H	5720	44.47	47.38	13.2	36.29	46.58	54	-7.42	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5795									
V	5850	53.03	48.32	15.24	37.37	57.32	68.2	-10.88	PK
V	5850	43.43	48.32	15.24	37.37	47.72	54	-6.28	AV
V	5870	53.03	48.36	15.27	37.39	57.33	68.2	-10.87	PK
V	5870	43.65	48.36	15.27	37.39	47.95	54	-6.05	AV
H	5850	53.03	48.32	15.24	37.37	57.32	68.2	-10.88	PK
H	5850	43.31	48.32	15.24	37.37	47.6	54	-6.4	AV
H	5870	53.09	48.36	15.27	37.39	57.39	68.2	-10.81	PK
H	5870	41.94	48.36	15.27	37.39	46.24	54	-7.76	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**802.11ac HT40**

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5755									
V	5725	52.96	46.38	12.43	35.65	54.66	68.2	-13.54	PK
V	5725	43.12	46.38	12.43	35.65	44.82	54	-9.18	AV
V	5720	53.2	46.56	12.47	35.76	54.87	68.2	-13.33	PK
V	5720	43.45	46.56	12.47	35.76	45.12	54	-8.88	AV
H	5725	53.35	46.38	12.43	35.65	55.05	68.2	-13.15	PK
H	5725	41.93	46.38	12.43	35.65	43.63	54	-10.37	AV
H	5720	53	46.56	12.47	35.76	54.67	68.2	-13.53	PK
H	5720	42.15	46.56	12.47	35.76	43.82	54	-10.18	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5795									
V	5850	53.03	46.55	12.65	35.87	55	68.2	-13.2	PK
V	5850	41.97	46.55	12.65	35.87	43.94	54	-10.06	AV
V	5870	53.41	46.58	12.67	35.93	55.43	68.2	-12.77	PK
V	5870	42.42	46.58	12.67	35.93	44.44	54	-9.56	AV
H	5850	53.23	46.55	12.65	35.87	55.2	68.2	-13	PK
H	5850	42.62	46.55	12.65	35.87	44.59	54	-9.41	AV
H	5870	53	46.58	12.67	35.93	55.02	68.2	-13.18	PK
H	5870	42.1	46.58	12.67	35.93	44.12	54	-9.88	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**802.11ac HT80**

We test all antenna's data, the data only show the mode 4 worst mode.

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency: 5775									
V	5725	52.96	47.36	13.18	36.26	55.04	68.2	-13.16	PK
V	5725	43.12	47.36	13.18	36.26	45.2	54	-8.8	AV
V	5720	53.2	47.38	13.2	36.29	55.31	68.2	-12.89	PK
V	5720	43.45	47.38	13.2	36.29	45.56	54	-8.44	AV
H	5725	53.35	47.36	13.18	36.26	55.43	68.2	-12.77	PK
H	5725	41.93	47.36	13.18	36.26	44.01	54	-9.99	AV
H	5720	53	47.38	13.2	36.29	55.11	68.2	-13.09	PK
H	5720	42.15	47.38	13.2	36.29	44.26	54	-9.74	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency: 5775									
V	5850	53.03	48.32	15.24	37.37	57.32	68.2	-10.88	PK
V	5850	41.97	48.32	15.24	37.37	46.26	54	-7.74	AV
V	5870	53.41	48.36	15.27	37.39	57.71	68.2	-10.49	PK
V	5870	42.42	48.36	15.27	37.39	46.72	54	-7.28	AV
H	5850	53.23	48.32	15.24	37.37	57.52	68.2	-10.68	PK
H	5850	42.62	48.32	15.24	37.37	46.91	54	-7.09	AV
H	5870	53	48.36	15.27	37.39	57.3	68.2	-10.9	PK
H	5870	42.1	48.36	15.27	37.39	46.4	54	-7.6	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



3.4 CONDUCTED BAND EMISSION MEASUREMENT

3.4.1 TEST REQUIREMENT:

FCC Part15 C Section 15.209 and 15.407

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Spectrum Parameter	Setting	
Attenuation	Auto	
Start Frequency	5150MHz	5725MHz
Stop Frequency	5250MHz	5850MHz
RB / VB (emission in restricted band)	1 MHz / 3 MHz for Peak, 1 MHz / 10Hz for Average	

3.4.2 TEST PROCEDURE

Test method: FCC KDB 789033 G)& Parts 15.407(b)(4) & 15.209(a)

3.4.3 DEVIATION FROM TEST STANDARD

No deviation

3.4.4 TEST SETUP



3.4.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.4.6 TEST RESULT

The antenna gain is compensated in the test data.

For the measurement records, refer to the appendix I.



4. CONDUCTED OUTPUT POWER

4.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E/ RSS-247		
Test Item	Limit	Frequency Range (MHz)
Conducted Output Power	For FCC client devices: 250mW (24dBm)	5150-5250
	For RSS: e.i.r.p. power: not exceed 200 mW(23dBm) or $10 + 10 \log_{10} B$	
	250mW (24dBm) or $11 + 10 \log_{10} B$	5250-5350
	250mW (24dBm) or $11 + 10 \log_{10} B$	For FCC:5470-5725 For IC:5470-5600 5650-5725
	1 Watt (30dBm)	5725-5850
Note: For ISCED: B=99% bandwidth.		

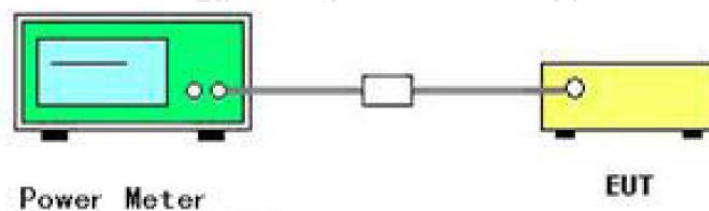
4.1.1 TEST PROCEDURE

- Connect each EUT's antenna output to power meter by RF cable and attenuator
- Get each antenna port's output power of EUT.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



4.1.4 EUT OPERATION CONDITIONS

- The EUT is configured to transmit continuously.
- At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
- The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

4.1.5 TEST RESULTS

For the measurement records, refer to the appendix I.



5. POWER SPECTRAL DENSITY TEST

5.1 APPLIED PROCEDURES / LIMIT

In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

In addition, the maximum power spectral density shall not exceed 30 dBm in any 500 kHz band.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	= the frequency band of operation
RB	RBW $\geq$ 1MHz for band 1 RBW $\geq$ 510KHz for band 4
VB	VBW $\geq$ 3RBW
Detector	RMS (i.e., power averaging).
Trace	Max Hold
Sweep Time	Auto

5.1.1 TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows FCC KDB 789033 D02.
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to Spectrum.
4. For U-NII1, U-NII-2A, U-NII-2C Band:
Set RBW=1MHz, VBW=3MHz, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)
For U-NII-3 Band:
Set RBW=510 kHz, VBW=3*RBW, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)
5. Use the cursor on spectrum to peak search the highest level of trace
6. Record the max. reading and add 10 log(1/duty cycle).
we test all antennas, the antenna 1 was worst mode and the data recording in the report.
7. Duty factor Reference is made to the test results in Section 7.1.5.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5 TEST RESULTS

For the measurement records, refer to the appendix I.

**6. 6DB&26DB&99% BANDWIDTH TEST****6.1 APPLIED PROCEDURES / LIMIT**

The 26 dB bandwidth is used to determine the conducted power limits.

There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C.

The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3

6.1.1 TEST PROCEDURE

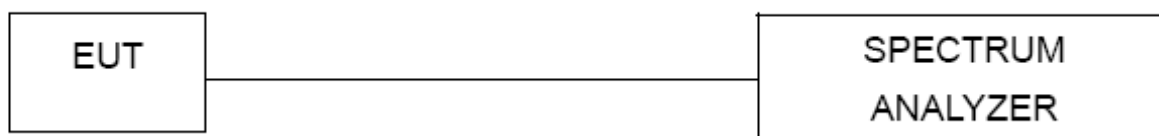
6dB Bandwidth	
Spectrum Parameters	Setting
RBW	100KHz
VBW	300KHz
Span	30MHz(20MHz Bandwidth mode) 60MHz(40MHz Bandwidth mode) 120MHz(80MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

26dB Bandwidth	
Spectrum Parameters	Setting
RBW	1% to 5% of the OBW
VBW	>RBW
Span	30MHz(20MHz Bandwidth mode) 60MHz(40MHz Bandwidth mode) 120MHz(80MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

99% Occupied Bandwidth	
Spectrum Parameters	Setting
RBW	1% to 5% of the OBW
VBW	Approximately three times the RBW
Span	between 1.5 times and 5.0 times the OBW
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 TEST RESULTS

For the measurement records, refer to the appendix I.



7. DUTY CYCLE TEST SIGNAL

7.1 APPLIED PROCEDURES / LIMIT

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle. All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

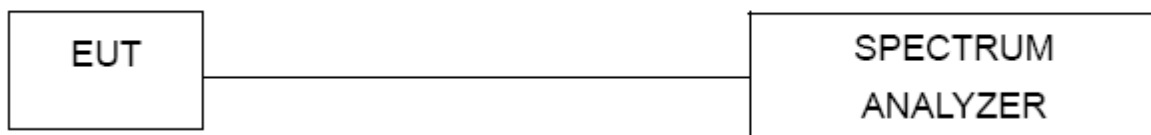
7.1.1 TEST PROCEDURE

1. Set RBW = 1 MHz.
2. Set the video bandwidth (VBW) $\geq$ RBW.
3. Detector = Peak.
4. Sweep = auto couple.
5. Allow the trace to stabilize.
6. Span=0

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.5 TEST RESULTS

For the measurement records, refer to the appendix I.



8. FREQUENCY STABILITY

8.1 APPLIED PROCEDURES / LIMIT

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

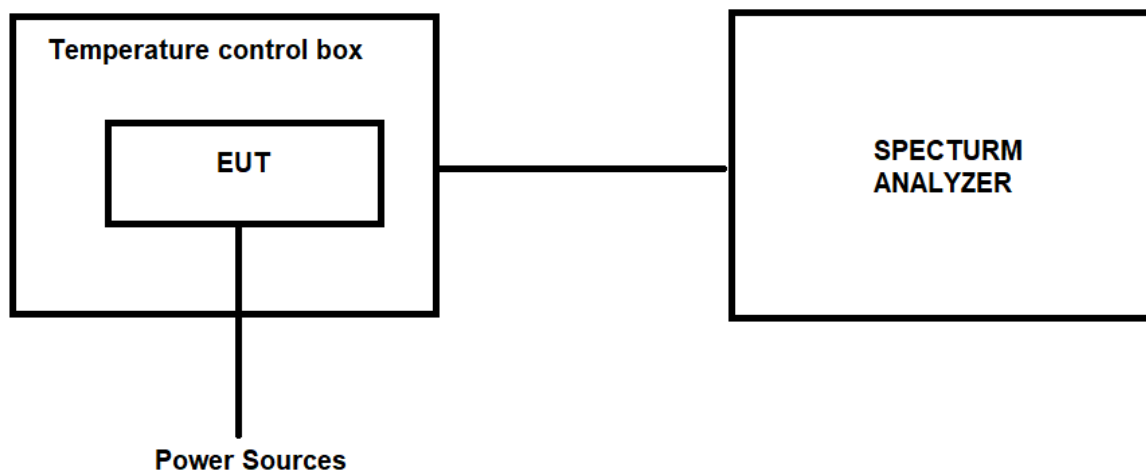
8.1.1 TEST PROCEDURE

1. The EUT was placed inside temperature chamber and powered and powered by nominal DC voltage.
2. Set EUT as normal operation.
3. Turn the EUT on and couple its output to spectrum.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT and measure the operating frequency.
6. Repeat step with the temperature chamber set to the lowest temperature.

8.1.2 DEVIATION FROM STANDARD

No deviation.

8.1.3 TEST SETUP



8.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



8.1.5 TEST RESULTS

We test all antenna's data, the data only show the antenna1 worst mode.

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)			Δ Frequency (PPM)		
			802.11a	802.11n HT20	802.11ac HT20	802.11a	802.11n HT20	802.11ac HT20
138V	-20℃	5180	5180.0062	5180.0085	5180.0052	0.0062	0.0085	0.0052
		5220	5220.0061	5220.0040	5220.0053	0.0061	0.0040	0.0053
		5240	5240.0050	5240.0055	5240.0042	0.0050	0.0055	0.0042
		5745	5745.0045	5745.0041	5745.0048	0.0045	0.0041	0.0048
		5785	5785.0050	5785.0053	5785.0055	0.0050	0.0053	0.0055
		5825	5825.0081	5825.0044	5825.0043	0.0081	0.0044	0.0043
102V	-20℃	5180	5180.0080	5180.0043	5180.0051	0.0080	0.0043	0.0051
		5220	5220.0044	5220.0079	5220.0059	0.0044	0.0079	0.0059
		5240	5240.0040	5240.0048	5240.0050	0.0040	0.0048	0.0050
		5745	5745.0038	5745.0046	5745.0041	0.0038	0.0046	0.0041
		5785	5785.0070	5785.0045	5785.0052	0.0070	0.0045	0.0052
		5825	5825.0043	5825.0079	5825.0040	0.0043	0.0079	0.0040
120V	25℃	5180	5180.0034	5180.0024	5180.0039	0.0034	0.0024	0.0039
		5220	5220.0027	5220.0048	5220.0026	0.0027	0.0048	0.0026
		5240	5240.0068	5240.0027	5240.0034	0.0068	0.0027	0.0034
		5745	5745.0066	5745.0036	5745.0058	0.0066	0.0036	0.0058
		5785	5785.0074	5785.0027	5785.0063	0.0074	0.0027	0.0063
		5825	5825.0023	5825.0028	5825.0057	0.0023	0.0028	0.0057
138V	50℃	5180	5180.0025	5180.0043	5180.0033	0.0025	0.0043	0.0033
		5220	5220.0048	5220.0052	5220.0035	0.0048	0.0052	0.0035
		5240	5240.0067	5240.0034	5240.0032	0.0067	0.0034	0.0032
		5745	5745.0036	5745.0058	5745.0034	0.0036	0.0058	0.0034
		5785	5785.0027	5785.0034	5785.0038	0.0027	0.0034	0.0038
		5825	5825.0075	5825.0064	5825.0048	0.0075	0.0064	0.0048
102V	50℃	5180	5180.0108	5180.0045	5180.0044	0.0108	0.0045	0.0044
		5220	5220.0079	5220.0036	5220.0046	0.0079	0.0036	0.0046
		5240	5240.0108	5240.0051	5240.0068	0.0108	0.0051	0.0068
		5745	5745.0035	5745.0052	5745.0049	0.0035	0.0052	0.0049
		5785	5785.0082	5785.0047	5785.0047	0.0082	0.0047	0.0047
		5825	5825.0044	5825.0060	5825.0065	0.0044	0.0060	0.0065

Note: The test result is PASS.



Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)		Δ Frequency (PPM)	
			802.11n HT40	802.11ac HT40	802.11n HT40	802.11ac HT40
138V	-20℃	5190	5190.0053	5190.0053	0.0053	0.0053
		5230	5230.0062	5230.0062	0.0062	0.0062
		5755	5755.0055	5755.0045	0.0055	0.0045
		5795	5795.0062	5795.0053	0.0062	0.0053
102V		5190	5190.0027	5190.0052	0.0027	0.0052
		5230	5230.0052	5230.0074	0.0052	0.0074
		5755	5755.0050	5755.0053	0.005	0.0053
		5795	5795.0056	5795.0054	0.0056	0.0054
120V	25℃	5190	5190.0033	5190.0063	0.0033	0.0063
		5230	5230.0057	5230.0047	0.0057	0.0047
		5755	5755.0034	5755.0026	0.0034	0.0026
		5795	5795.0024	5795.0042	0.0024	0.0042
138V	50℃	5190	5190.0025	5190.0039	0.0025	0.0039
		5230	5230.0029	5230.0027	0.0029	0.0027
		5755	5755.0059	5755.0036	0.0059	0.0036
		5795	5795.0044	5795.0044	0.0044	0.0044
102V		5190	5190.0050	5190.0029	0.005	0.0029
		5230	5230.0035	5230.0025	0.0035	0.0025
		5755	5755.0046	5755.0039	0.0046	0.0039
		5795	5795.0037	5795.0036	0.0037	0.0036

Note:The test result is PASS.

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)	Δ Frequency (PPM)
			802.11ac HT80	802.11ac HT80
138V	-20℃	5210	5210.0043	0.0043
		5775	5775.0055	0.0055
102V		5210	5210.0062	0.0062
		5775	5775.0064	0.0064
120V	25℃	5210	5210.0038	0.0038
		5775	5775.0056	0.0056
138V	50℃	5210	5210.0084	0.0084
		5775	5775.0034	0.0034
102V	50℃	5210	5210.0058	0.0058
		5775	5775.0066	0.0066

Note:The test result is PASS.



9. TRANSMISSION IN THE ABSENCE OF DATA

9.1 STANDARD REQUIREMENT

According to §15.407(c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

9.2 TEST RESULT

No non-compliance noted:
Refer to the theory of operation.

10. ANTENNA REQUIREMENT

10.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: 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.

10.2 EUT ANTENNA

The EUT antenna is Internal Antenna, It comply with the standard requirement.

11. TEST SETUP PHOTO

Reference to the appendix I for details.

12. EUT PHOTO

Reference to the appendix II for details.

***** END OF REPORT *****