FCC Part 15E Test Report
FCC ID: 2A54Y-HA109

Applicant:	Shenzhen TFIRETEK Technology Co., Ltd.
Address:	204, Building 2, Stech Park, Taoyuan Community, Dalang Street, LongHua District, ShenZhen
Manufacturer:	Shenzhen TFIRETEK Technology Co., Ltd.
Address:	204, Building 2, Stech Park, Taoyuan Community, Dalang Street, LongHua District, ShenZhen
EUT:	Projector
Trade Mark:	N/A
Model Number:	HA109 HA109-A, HA109-B
Date of Receipt:	Apr. 23, 2025
Test Date:	Apr. 23, 2025 - Apr. 30, 2025
Date of Report:	Apr. 30, 2025
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 C63.10:2013
Test Result:	Pass
Report Number:	DLE-250423026-3R

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 5
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 13
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
TEMPERATURE: 19
RELATIVE HUMIDTITY: 19
PRESSURE: 19
TEST VOLTAGE : 19
TEST MODE : 19
POLARIZATION : 19
3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ) 20
TEMPERATURE: 20
RELATIVE HUMIDITY: 20
PRESSURE: 20
POLARIZATION : 20

Table of Contents **Page**

TEST VOLTAGE : 20

TEST MODE : 20

TEST VOLTAGE 21

3.2.8 TEST RESULTS (1GHZ~40GHZ) 22

3.3 RADIATED BAND EMISSION MEASUREMENT 32

3.3.1 TEST REQUIREMENT: 32

3.3.2 TEST PROCEDURE 33

3.3.3 DEVIATION FROM TEST STANDARD 33

3.3.4 TEST SETUP 33

3.3.5 EUT OPERATING CONDITIONS 33

4 . AVERAGING OUTPUT POWER 44

4.1 APPLIED PROCEDURES / LIMIT 44

4.1.1 TEST PROCEDURE 44

4.1.2 DEVIATION FROM STANDARD 44

4.1.3 TEST SETUP 44

4.1.4 EUT OPERATION CONDITIONS 44

4.1.5 TEST RESULTS 45

5 . POWER SPECTRAL DENSITY TEST 52

5.1 APPLIED PROCEDURES / LIMIT 52

5.1.1 TEST PROCEDURE 52

5.1.2 DEVIATION FROM STANDARD 52

5.1.3 TEST SETUP 52

5.1.4 EUT OPERATION CONDITIONS 52

5.1.5 TEST RESULTS 53

6 . 6DB&26DB&99% BANDWIDTH TEST 60

6.1 APPLIED PROCEDURES / LIMIT 60

6.1.1 TEST PROCEDURE 60

6.1.2 DEVIATION FROM STANDARD 60

6.1.3 TEST SETUP 60

6.1.4 EUT OPERATION CONDITIONS 61

6.1.5 TEST RESULTS 61

7 . DUTY CYCLE TEST SIGNAL 68

7.1 APPLIED PROCEDURES / LIMIT 68

7.1.1 TEST PROCEDURE 68

7.1.2 DEVIATION FROM STANDARD 68

7.1.3 TEST SETUP 68

7.1.4 EUT OPERATION CONDITIONS 68

7.1.5 TEST RESULTS 69

8 . FREQUENCY STABILITY 76

Table of Contents **Page**

8.1 APPLIED PROCEDURES / LIMIT 76
8.1.1 TEST PROCEDURE 76
8.1.2 DEVIATION FROM STANDARD 76
8.1.3 TEST SETUP 76
8.1.4 EUT OPERATION CONDITIONS 76
8.1.5 TEST RESULTS 77
9 . TRANSMISSION IN THE ABSENCE OF DATA 79
9.1 STANDARD REQUIREMENT 79
9.2 TEST RESULT 79
10 . ANTENNA REQUIREMENT 79
10.1 STANDARD REQUIREMENT 79
10.2 EUT ANTENNA 79
11 . TEST SEUUP PHOTO 79
12 . EUT PHOTO 79

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)	Average 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.

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

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing DL Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the DL Testing, responsible for this Test Report.

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** ± **U**, where expended 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	±2.56dB
2	RF power,conducted	±0.42dB
3	Spurious emissions,conducted	±2.76dB
4	All emissions,radiated(<30MHz)	±3.54dB
5	All emissions,radiated(<1G)	±3.65dB
6	All emissions,radiated(>1G)	±4.89dB
7	Occupied bandwidth	±0.2MHz
8	PSD	±0.69dB
9	Temperature	±0.5°C
10	Humidity	±2%
11	Time	±2%

2.. GENERAL INFORMATION

2.1. GENERAL DESCRIPTION OF EUT

Product Name:	Projector
Trademark	N/A
Model No.:	HA109 HA109-A, HA109-B
Model Difference	All models are same as the samples except model name and appearance color, 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))
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:	5.53dBi
Power Supply:	AC100-240V~ 50/60Hz, 2.0A max

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

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)
151	5755	159	5795

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.

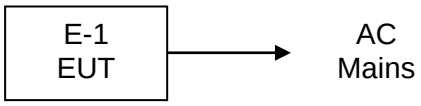
Description			
Pretest Mode	Channel	Band 1	Band 4
Mode 1	802.11a/n/acHT20	CH36, CH44, CH48	CH149, CH157, CH165
Mode 2	802.11n/acHT40	CH38, CH46	CH151, CH159
Mode 3	Link Mode		

For 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	Link Mode		

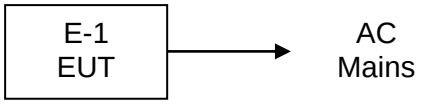
Note: 1. The measurements are performed at the highest, middle, lowest available channels.
2. During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's 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	Projector	HA109	N/A	EUT

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_V1.4			
Mode	802.11a	802.11n HT20	802.11n HT40	802.11ac HT20/HT40
Data Rate	6Mbps	MSC0	MSC0	MSC0
Power Setting of Softwave	60	60	66	66

2.6. EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation test, Band-edge test and 6db bandwidth test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Nov. 01, 2024	Oct. 31, 2025
2	Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Nov. 01, 2024	Oct. 31, 2025
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Nov. 01, 2024	Oct. 31, 2025
4	Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Nov. 01, 2024	Oct. 31, 2025
5	Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Nov. 01, 2024	Oct. 31, 2025
6	Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Nov. 01, 2024	Oct. 31, 2025
7	Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Nov. 01, 2024	Oct. 31, 2025
8	Amplifier (18GHz-40GHz)	Quanjuda	DLE-161	97	Nov. 01, 2024	Oct. 31, 2025
9	Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Nov. 01, 2024	Oct. 31, 2025
10	RF cables1 (9kHz-1GHz)	ChengYu	966	004	Nov. 01, 2024	Oct. 31, 2025
11	RF cables2 (1GHz-40GHz)	ChengYu	966	003	Nov. 01, 2024	Oct. 31, 2025
12	Antenna connector	Florida RF Labs	N/A	RF 01#	Nov. 01, 2024	Oct. 31, 2025
13	Power probe	KEYSIGHT	U2021XA	MY55210018	Nov. 01, 2024	Oct. 31, 2025
14	Signal Analyzer 9kHz-26.5GHz	Agilent	N9020A	MY55370280	Nov. 01, 2024	Oct. 31, 2025
15	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	Nov. 01, 2024	Oct. 31, 2025
16	D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 01, 2024	Oct. 31, 2025
17	Temperature & humidity chamber	Changfeng	CF-150-40-P	CF170802-01	Nov. 01, 2024	Oct. 31, 2025

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	Nov. 01, 2024	Oct. 31, 2025
3	LISN	R&S	ENV216	102417	Nov. 01, 2024	Oct. 31, 2025
4	843 Cable 1#	ChengYu	CE Cable	001	Nov. 01, 2024	Oct. 31, 2025

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

a. 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.

b. 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.

c. 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.

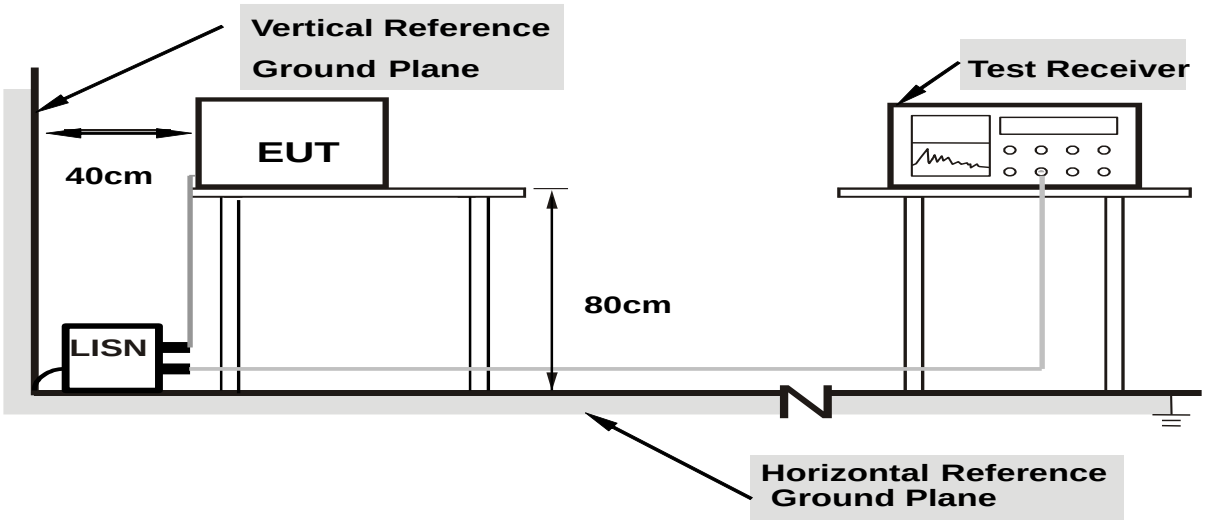
d. LISN at least 80 cm from nearest part of EUT chassis.

e. 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



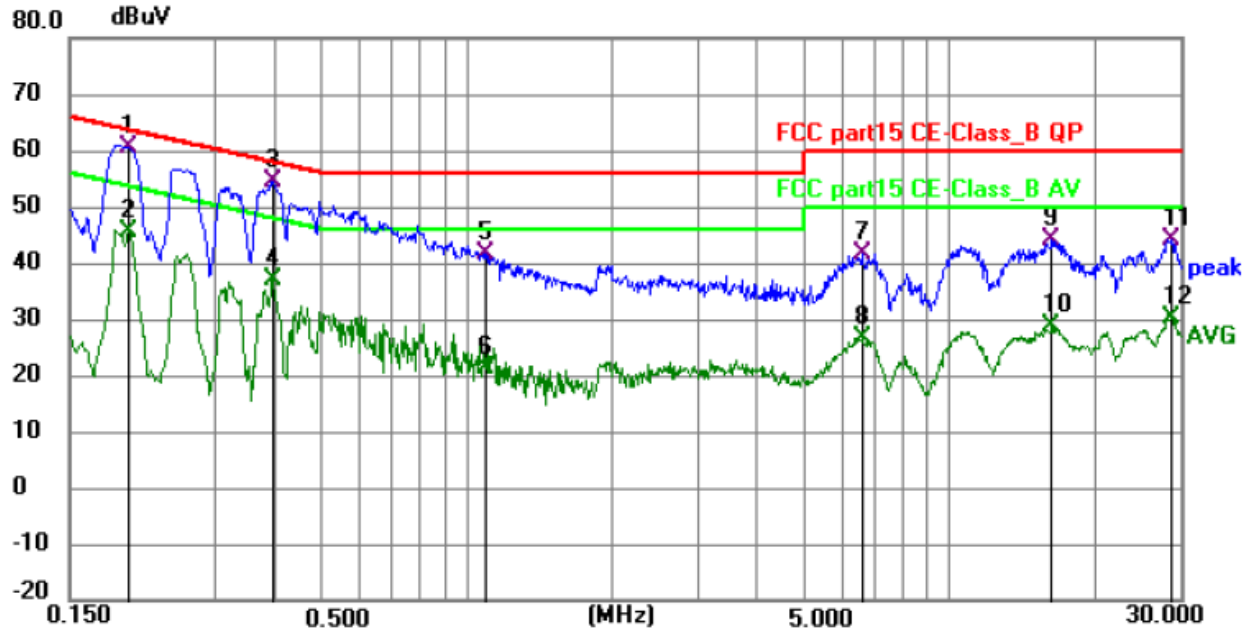
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

Temperature:	25 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 3

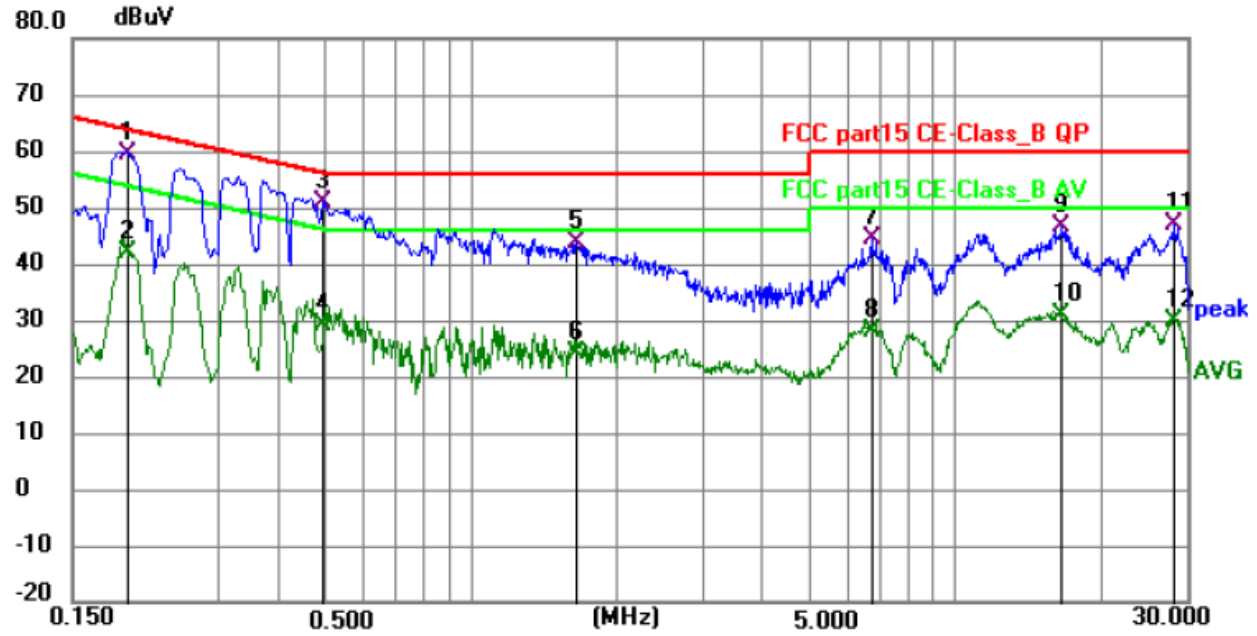


Remark:

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 *	0.1995	50.60	9.91	60.51	63.63	-3.12	QP	P	
2	0.1995	35.71	9.91	45.62	53.63	-8.01	AVG	P	
3	0.3975	44.52	9.87	54.39	57.91	-3.52	QP	P	
4	0.3975	27.25	9.87	37.12	47.91	-10.79	AVG	P	
5	1.0993	31.66	9.97	41.63	56.00	-14.37	QP	P	
6	1.0993	11.40	9.97	21.37	46.00	-24.63	AVG	P	
7	6.5760	31.73	10.01	41.74	60.00	-18.26	QP	P	
8	6.5760	16.72	10.01	26.73	50.00	-23.27	AVG	P	
9	16.2509	33.99	9.99	43.98	60.00	-16.02	QP	P	
10	16.2509	18.88	9.99	28.87	50.00	-21.13	AVG	P	
11	28.8870	33.88	10.35	44.23	60.00	-15.77	QP	P	
12	28.8870	19.82	10.35	30.17	50.00	-19.83	AVG	P	

Temperature:	25 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 3



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 *	0.1949	49.79	9.85	59.64	63.83	-4.19	QP	P	
2	0.1949	32.01	9.85	41.86	53.83	-11.97	AVG	P	
3	0.4964	41.16	9.88	51.04	56.06	-5.02	QP	P	
4	0.4964	19.20	9.88	29.08	46.06	-16.98	AVG	P	
5	1.6530	33.70	9.99	43.69	56.00	-12.31	QP	P	
6	1.6530	14.17	9.99	24.16	46.00	-21.84	AVG	P	
7	6.7244	34.35	10.01	44.36	60.00	-15.64	QP	P	
8	6.7244	18.13	10.01	28.14	50.00	-21.86	AVG	P	
9	16.6335	36.52	10.00	46.52	60.00	-13.48	QP	P	
10	16.6335	20.85	10.00	30.85	50.00	-19.15	AVG	P	
11	28.2120	36.56	10.33	46.89	60.00	-13.11	QP	P	
12	28.2120	19.67	10.33	30.00	50.00	-20.00	AVG	P	

3.2. RADIATED EMISSION MEASUREMENT

3.2.1. RADIATED EMISSION LIMITS

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 (micorvolts/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:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable 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.

Above 1GHz test procedure as below:

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

Note:

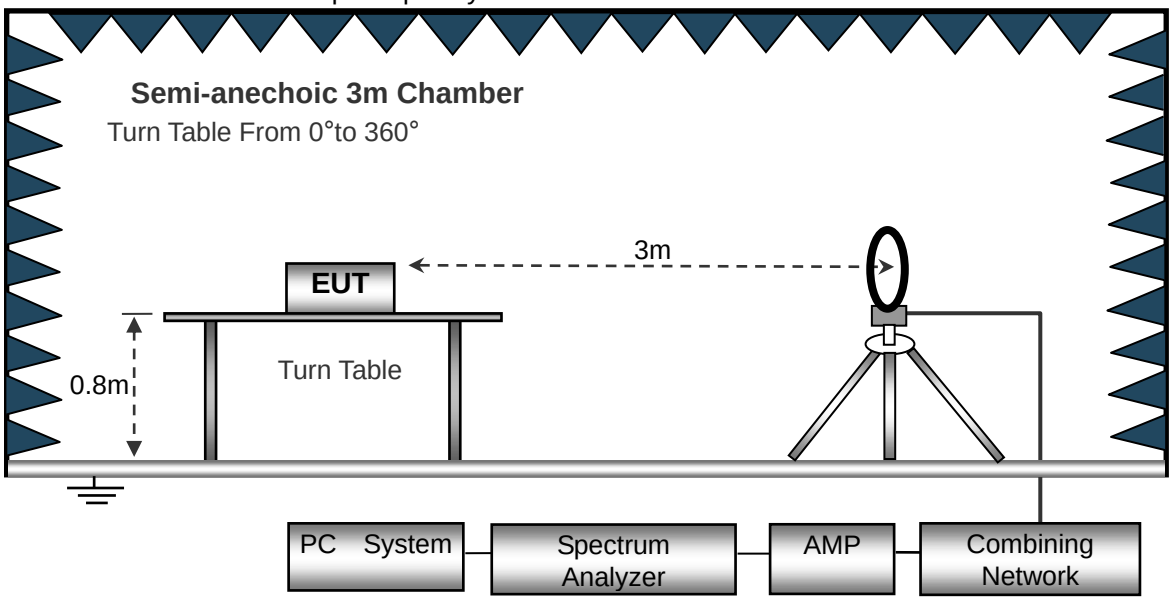
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3. DEVIATION FROM TEST STANDARD

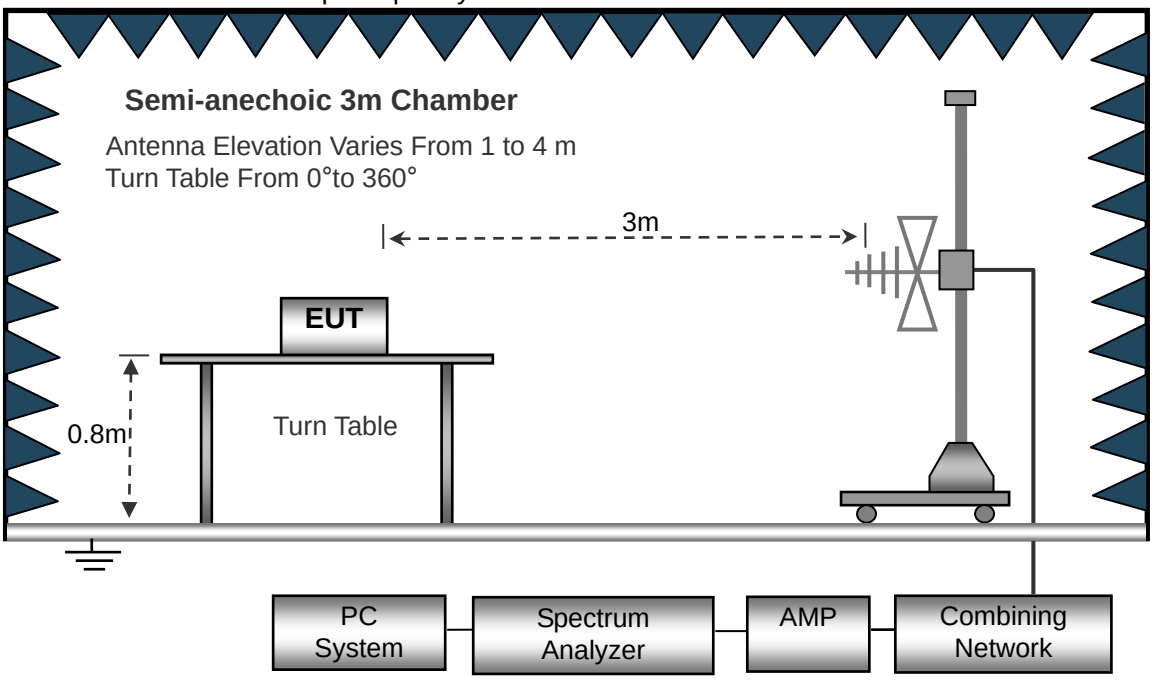
No deviation

3.2.4. TEST SETUP

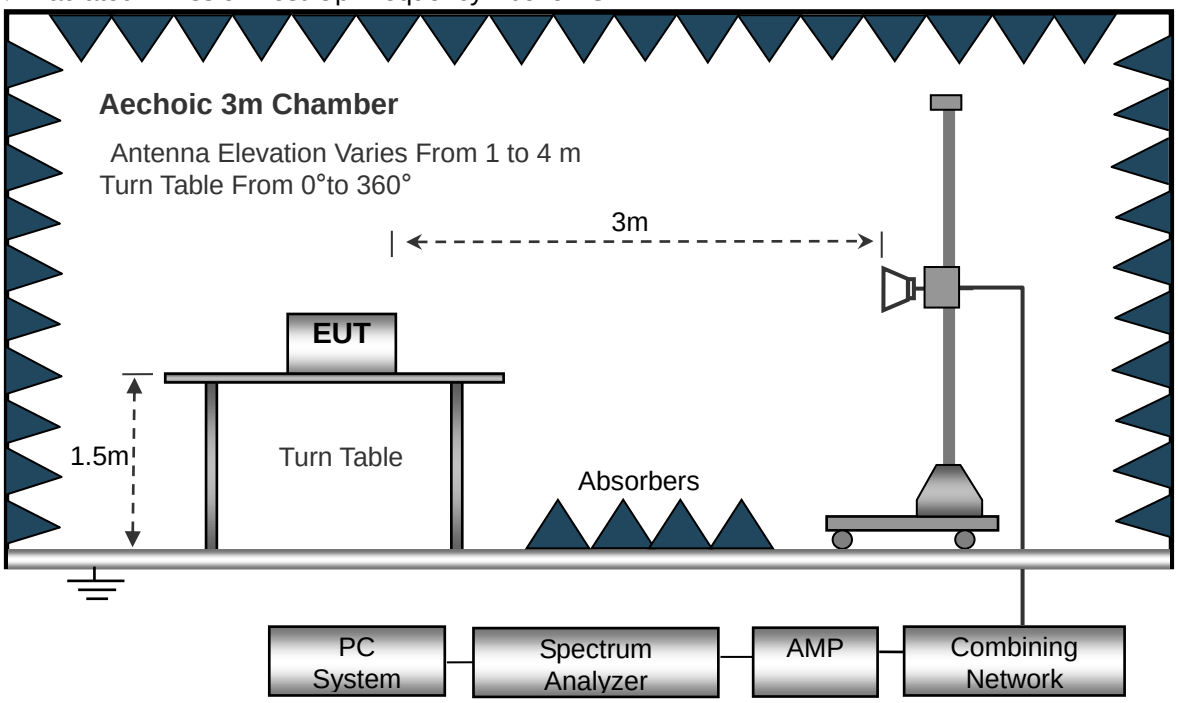
（A）Radiated Emission Test-Up Frequency Below 30MHz



（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℃	Relative Humidtity:	48%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode 3	Polarization :	--

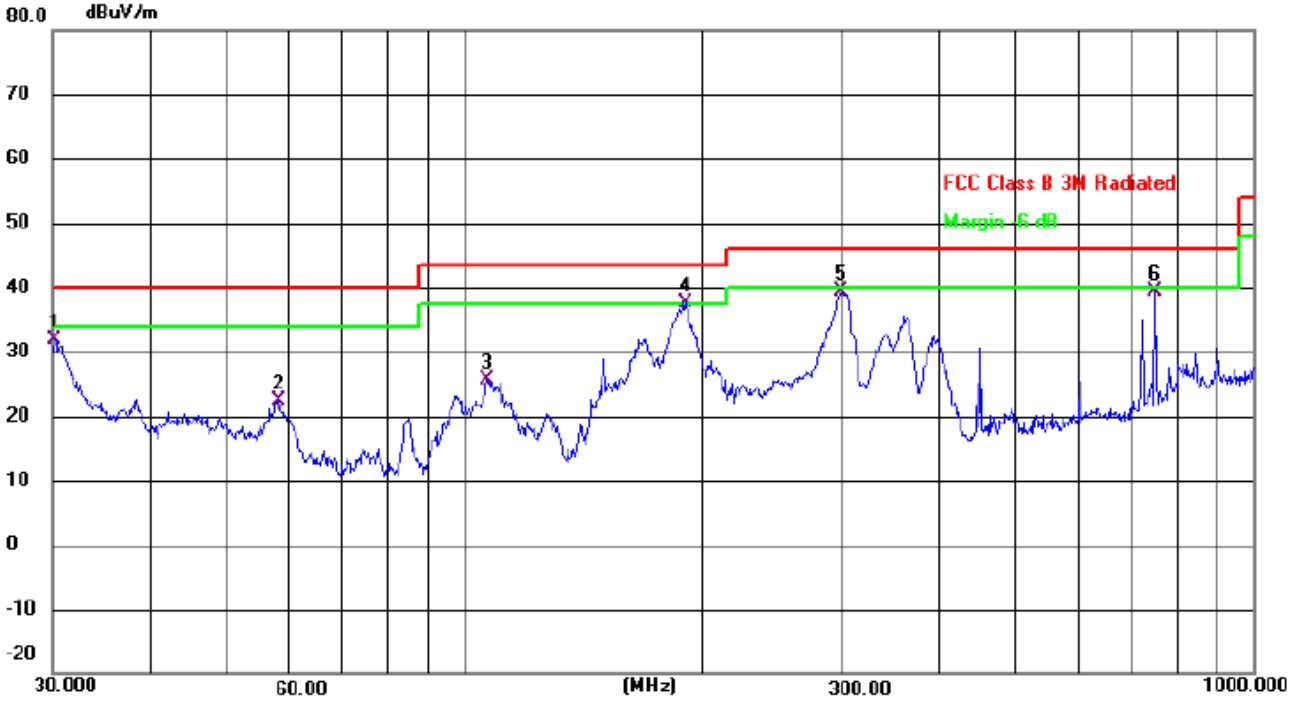
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

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 (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

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

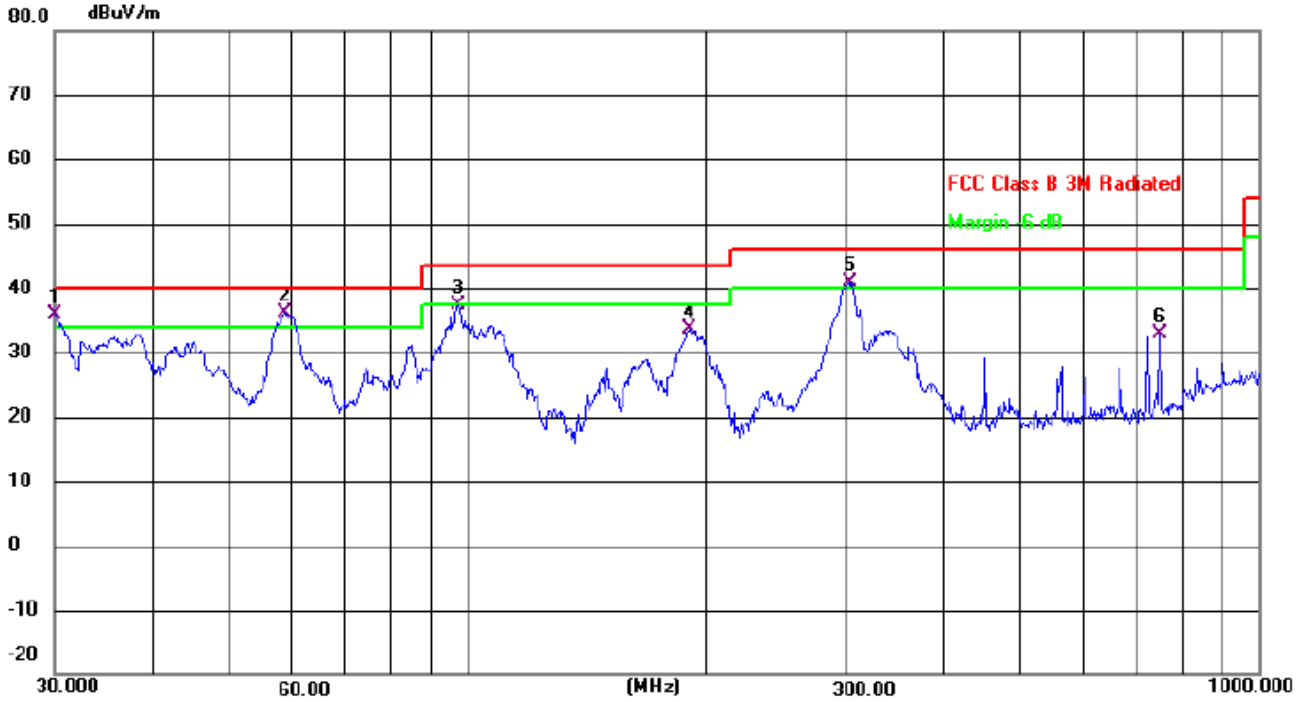
Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	AC 120V/60Hz		
Test Mode :	Mode 3		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		30.2111	48.82	-16.86	31.96	40.00	-8.04	QP
2		58.2030	37.22	-14.75	22.47	40.00	-17.53	QP
3		106.7587	41.96	-16.35	25.61	43.50	-17.89	QP
4	*	190.4050	55.40	-17.73	37.67	43.50	-5.83	QP
5		299.3158	53.93	-14.45	39.48	46.00	-6.52	QP
6		750.1083	46.89	-7.47	39.42	46.00	-6.58	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 3		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	!	30.1051	52.66	-16.88	35.78	40.00	-4.22	QP
2	*	58.6126	50.96	-14.79	36.17	40.00	-3.83	QP
3		97.1148	54.49	-17.07	37.42	43.50	-6.08	QP
4		190.4050	51.44	-17.72	33.72	43.50	-9.78	QP
5	!	304.6099	55.28	-14.49	40.79	46.00	-5.21	QP
6		750.1082	40.33	-7.47	32.86	46.00	-13.14	QP

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

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	56.25	49.05	15.3	37.39	59.89	68.2	-8.31	PK
V	10360	41.88	49.05	15.3	37.39	45.52	54	-8.48	AV
V	15540	52.14	49.16	15.27	40.45	58.7	74	-15.30	PK
V	15540	39.66	49.16	15.27	40.45	46.22	54	-7.78	AV
H	10360	56.38	49.05	15.3	37.39	60.02	68.2	-8.18	PK
H	10360	40.14	49.05	15.3	37.39	43.78	54	-10.22	AV
H	15540	51.46	49.16	15.27	40.45	58.02	74	-15.98	PK
H	15540	38.82	49.16	15.27	40.45	45.38	54	-8.62	AV
operation frequency:5200									
V	10400	57.21	49.09	15.34	37.42	60.88	68.2	-7.32	PK
V	10400	39.68	49.09	15.34	37.42	43.35	54	-10.65	AV
V	15600	52.81	49.18	15.29	40.47	59.39	74	-14.61	PK
V	15600	38.66	49.18	15.29	40.47	45.24	54	-8.76	AV
H	10400	56.52	49.09	15.34	37.42	60.19	68.2	-8.01	PK
H	10400	39.91	49.09	15.34	37.42	43.58	54	-10.42	AV
H	15600	53.16	49.18	15.29	40.47	59.74	74	-14.26	PK
H	15600	38.74	49.18	15.29	40.47	45.32	54	-8.68	AV
operation frequency:5240									
V	10480	58.51	49.11	15.37	37.46	62.23	68.2	-5.97	PK
V	10480	39.67	49.11	15.37	37.46	43.39	54	-10.61	AV
V	15720	53.63	49.21	15.34	40.51	60.27	74	-13.73	PK
V	15720	38.32	49.21	15.34	40.51	44.96	54	-9.04	AV
H	10480	57.51	49.11	15.37	31.31	55.08	68.2	-13.12	PK
H	10480	45.63	49.11	15.37	31.31	43.2	54	-10.80	AV
H	15720	54.84	49.21	15.34	40.51	61.48	74	-12.52	PK
H	15720	37.85	49.21	15.34	40.51	44.49	54	-9.51	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

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	56.21	49.05	15.3	37.39	59.85	68.2	-8.35	PK
V	10360	38.36	49.05	15.3	37.39	42	54	-12.00	AV
V	15540	52.52	49.16	15.27	40.45	59.08	74	-14.92	PK
V	15540	38.51	49.16	15.27	40.45	45.07	54	-8.93	AV
H	10360	56.24	49.05	15.3	37.39	59.88	68.2	-8.32	PK
H	10360	39.96	49.05	15.3	37.39	43.6	54	-10.40	AV
H	15540	51.31	49.16	15.27	40.45	57.87	74	-16.13	PK
H	15540	38.28	49.16	15.27	40.45	44.84	54	-9.16	AV
operation frequency:5200									
V	10400	56.63	49.09	15.34	37.42	60.3	68.2	-7.90	PK
V	10400	39.61	49.09	15.34	37.42	43.28	54	-10.72	AV
V	15600	52.87	49.18	15.29	40.47	59.45	74	-14.55	PK
V	15600	38.95	49.18	15.29	40.47	45.53	54	-8.47	AV
H	10400	55.36	49.09	15.34	37.42	59.03	68.2	-9.17	PK
H	10400	40.55	49.09	15.34	37.42	44.22	54	-9.78	AV
H	15600	53.41	49.18	15.29	40.47	59.99	74	-14.01	PK
H	15600	39.83	49.18	15.29	40.47	46.41	54	-7.59	AV
operation frequency:5240									
V	10480	57.52	49.11	15.37	37.46	61.24	68.2	-6.96	PK
V	10480	40.63	49.11	15.37	37.46	44.35	54	-9.65	AV
V	15720	52.85	49.21	15.34	40.51	59.49	74	-14.51	PK
V	15720	38.21	49.21	15.34	40.51	44.85	54	-9.15	AV
H	10480	57.53	49.11	15.37	31.31	55.1	68.2	-13.10	PK
H	10480	44.84	49.11	15.37	31.31	42.41	54	-11.59	AV
H	15720	51.96	49.21	15.34	40.51	58.6	74	-15.40	PK
H	15720	39.54	49.21	15.34	40.51	46.18	54	-7.82	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

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	56.21	49.07	15.33	37.41	59.88	68.2	-8.32	PK
V	10380	39.63	49.07	15.33	37.41	43.3	54	-10.70	AV
V	15570	52.21	49.17	15.28	40.46	58.78	74	-15.22	PK
V	15570	38.36	49.17	15.28	40.46	44.93	54	-9.07	AV
H	10380	56.27	49.07	15.33	37.41	59.94	68.2	-8.26	PK
H	10380	40.85	49.07	15.33	37.41	44.52	54	-9.48	AV
H	15570	52.63	49.17	15.28	40.46	59.2	74	-14.80	PK
H	15570	38.52	49.17	15.28	40.46	45.09	54	-8.91	AV
operation frequency:5230									
V	10460	57.14	49.11	15.37	37.46	60.86	68.2	-7.34	PK
V	10460	39.63	49.11	15.37	37.46	43.35	54	-10.65	AV
V	15690	52.85	49.21	15.34	40.51	59.49	74	-14.51	PK
V	15690	38.63	49.21	15.34	40.51	45.27	54	-8.73	AV
H	10460	57.34	49.11	15.37	31.31	54.91	68.2	-13.29	PK
H	10460	44.55	49.11	15.37	31.31	42.12	54	-11.88	AV
H	15690	52.63	49.21	15.34	40.51	59.27	74	-14.73	PK
H	15690	39.25	49.21	15.34	40.51	45.89	54	-8.11	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

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	56.63	49.05	15.3	37.39	60.27	68.2	-7.93	PK
V	10360	39.18	49.05	15.3	37.39	42.82	54	-11.18	AV
V	15540	51.34	49.16	15.27	40.45	57.9	74	-16.10	PK
V	15540	38.26	49.16	15.27	40.45	44.82	54	-9.18	AV
H	10360	56.52	49.05	15.3	37.39	60.16	68.2	-8.04	PK
H	10360	38.14	49.05	15.3	37.39	41.78	54	-12.22	AV
H	15540	52.63	49.16	15.27	40.45	59.19	74	-14.81	PK
H	15540	39.85	49.16	15.27	40.45	46.41	54	-7.59	AV
operation frequency:5200									
V	10400	56.63	49.09	15.34	37.42	60.3	68.2	-7.90	PK
V	10400	41.55	49.09	15.34	37.42	45.22	54	-8.78	AV
V	15600	52.21	49.18	15.29	40.47	58.79	74	-15.21	PK
V	15600	40.56	49.18	15.29	40.47	47.14	54	-6.86	AV
H	10400	55.74	49.09	15.34	37.42	59.41	68.2	-8.79	PK
H	10400	40.52	49.09	15.34	37.42	44.19	54	-9.81	AV
H	15600	53.63	49.18	15.29	40.47	60.21	74	-13.79	PK
H	15600	41.55	49.18	15.29	40.47	48.13	54	-5.87	AV
operation frequency:5240									
V	10480	57.64	49.11	15.37	37.46	61.36	68.2	-6.84	PK
V	10480	40.66	49.11	15.37	37.46	44.38	54	-9.62	AV
V	15720	51.47	49.21	15.34	40.51	58.11	74	-15.89	PK
V	15720	39.14	49.21	15.34	40.51	45.78	54	-8.22	AV
H	10480	57.25	49.11	15.37	31.31	54.82	68.2	-13.38	PK
H	10480	44.36	49.11	15.37	31.31	41.93	54	-12.07	AV
H	15720	52.41	49.21	15.34	40.51	59.05	74	-14.95	PK
H	15720	40.85	49.21	15.34	40.51	47.49	54	-6.51	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 40

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	56.21	49.07	15.33	37.41	59.88	68.2	-8.32	PK
V	10380	40.26	49.07	15.33	37.41	43.93	54	-10.07	AV
V	15570	52.74	49.17	15.28	40.46	59.31	74	-14.69	PK
V	15570	39.48	49.17	15.28	40.46	46.05	54	-7.95	AV
H	10380	56.26	49.07	15.33	37.41	59.93	68.2	-8.27	PK
H	10380	40.54	49.07	15.33	37.41	44.21	54	-9.79	AV
H	15570	51.37	49.17	15.28	40.46	57.94	74	-16.06	PK
H	15570	39.63	49.17	15.28	40.46	46.2	54	-7.80	AV
operation frequency:5230									
V	10460	57.21	49.11	15.37	37.46	60.93	68.2	-7.27	PK
V	10460	41.52	49.11	15.37	37.46	45.24	54	-8.76	AV
V	15690	52.16	49.21	15.34	40.51	58.8	74	-15.20	PK
V	15690	39.85	49.21	15.34	40.51	46.49	54	-7.51	AV
H	10460	57.94	49.11	15.37	31.31	55.51	68.2	-12.69	PK
H	10460	44.74	49.11	15.37	31.31	42.31	54	-11.69	AV
H	15690	52.63	49.21	15.34	40.51	59.27	74	-14.73	PK
H	15690	40.75	49.21	15.34	40.51	47.39	54	-6.61	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

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	54.24	49.05	15.3	37.39	57.88	74	-16.12	PK
V	11490	41.63	49.05	15.3	37.39	45.27	54	-8.73	AV
V	17235	55.28	49.16	15.27	40.45	61.84	68.2	-6.36	PK
V	17235	40.65	49.16	15.27	40.45	47.21	54	-6.79	AV
H	11490	52.14	49.05	15.3	37.39	55.78	74	-18.22	PK
H	11490	42.63	49.05	15.3	37.39	46.27	54	-7.73	AV
H	17235	51.48	49.16	15.27	40.45	58.04	68.2	-10.16	PK
H	17235	40.14	49.16	15.27	40.45	46.7	54	-7.30	AV
operation frequency:5785									
V	11570	51.36	49.09	15.34	37.42	55.03	74	-18.97	PK
V	11570	41.85	49.09	15.34	37.42	45.52	54	-8.48	AV
V	17355	50.61	49.18	15.29	40.47	57.19	68.2	-11.01	PK
V	17355	40.48	49.18	15.29	40.47	47.06	54	-6.94	AV
H	11570	50.63	49.09	15.34	37.42	54.3	74	-19.70	PK
H	11570	42.85	49.09	15.34	37.42	46.52	54	-7.48	AV
H	17355	48.25	49.18	15.29	40.47	54.83	68.2	-13.37	PK
H	17355	40.69	49.18	15.29	40.47	47.27	54	-6.73	AV
operation frequency:5825									
V	11650	52.21	49.11	15.37	37.46	55.93	74	-18.07	PK
V	11650	41.26	49.11	15.37	37.46	44.98	54	-9.02	AV
V	17475	49.57	49.21	15.34	40.51	56.21	68.2	-11.99	PK
V	17475	40.25	49.21	15.34	40.51	46.89	54	-7.11	AV
H	11650	57.22	49.11	15.37	31.31	54.79	74	-19.21	PK
H	11650	48.63	49.11	15.37	31.31	46.2	54	-7.80	AV
H	17475	49.52	49.21	15.34	40.51	56.16	68.2	-12.04	PK
H	17475	40.64	49.21	15.34	40.51	47.28	54	-6.72	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

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	49.69	49.05	15.3	37.39	53.33	74	-20.67	PK
V	11490	42.52	49.05	15.3	37.39	46.16	54	-7.84	AV
V	17235	48.63	49.16	15.27	40.45	55.19	68.2	-13.01	PK
V	17235	40.14	49.16	15.27	40.45	46.7	54	-7.30	AV
H	11490	49.65	49.05	15.3	37.39	53.29	74	-20.71	PK
H	11490	41.63	49.05	15.3	37.39	45.27	54	-8.73	AV
H	17235	48.52	49.16	15.27	40.45	55.08	68.2	-13.12	PK
H	17235	40.67	49.16	15.27	40.45	47.23	54	-6.77	AV
operation frequency:5785									
V	11570	52.21	49.09	15.34	37.42	55.88	74	-18.12	PK
V	11570	42.63	49.09	15.34	37.42	46.3	54	-7.70	AV
V	17355	49.85	49.18	15.29	40.47	56.43	68.2	-11.77	PK
V	17355	40.14	49.18	15.29	40.47	46.72	54	-7.28	AV
H	11570	49.85	49.09	15.34	37.42	53.52	74	-20.48	PK
H	11570	43.83	49.09	15.34	37.42	47.5	54	-6.50	AV
H	17355	49.27	49.18	15.29	40.47	55.85	68.2	-12.35	PK
H	17355	40.63	49.18	15.29	40.47	47.21	54	-6.79	AV
operation frequency:5825									
V	11650	51.21	49.11	15.37	37.46	54.93	74	-19.07	PK
V	11650	41.85	49.11	15.37	37.46	45.57	54	-8.43	AV
V	17475	48.63	49.21	15.34	40.51	55.27	68.2	-12.93	PK
V	17475	40.52	49.21	15.34	40.51	47.16	54	-6.84	AV
H	11650	57.57	49.11	15.37	31.31	55.14	74	-18.86	PK
H	11650	44.14	49.11	15.37	31.31	41.71	54	-12.29	AV
H	17475	49.83	49.21	15.34	40.51	56.47	68.2	-11.73	PK
H	17475	40.85	49.21	15.34	40.51	47.49	54	-6.51	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

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	49.63	49.07	15.33	37.41	53.3	74	-20.70	PK
V	11510	41.95	49.07	15.33	37.41	45.62	54	-8.38	AV
V	17265	49.41	49.17	15.28	40.46	55.98	68.2	-12.22	PK
V	17265	40.85	49.17	15.28	40.46	47.42	54	-6.58	AV
H	11510	48.63	49.07	15.33	37.41	52.3	74	-21.70	PK
H	11510	41.23	49.07	15.33	37.41	44.9	54	-9.10	AV
H	17265	49.85	49.17	15.28	40.46	56.42	68.2	-11.78	PK
H	17265	40.64	49.17	15.28	40.46	47.21	54	-6.79	AV
operation frequency:5795									
V	11590	49.69	49.11	15.37	37.46	53.41	74	-20.59	PK
V	11590	41.62	49.11	15.37	37.46	45.34	54	-8.66	AV
V	17385	48.25	49.21	15.34	40.51	54.89	68.2	-13.31	PK
V	17385	40.41	49.21	15.34	40.51	47.05	54	-6.95	AV
H	11590	57.21	49.11	15.37	31.31	54.78	74	-19.22	PK
H	11590	44.58	49.11	15.37	31.31	42.15	54	-11.85	AV
H	17385	48.16	49.21	15.34	40.51	54.8	68.2	-13.40	PK
H	17385	40.41	49.21	15.34	40.51	47.05	54	-6.95	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

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	49.21	49.05	15.3	37.39	52.85	74	-21.15	PK
V	11490	42.63	49.05	15.3	37.39	46.27	54	-7.73	AV
V	17235	48.52	49.16	15.27	40.45	55.08	68.2	-13.12	PK
V	17235	40.31	49.16	15.27	40.45	46.87	54	-7.13	AV
H	11490	48.88	49.05	15.3	37.39	52.52	74	-21.48	PK
H	11490	41.63	49.05	15.3	37.39	45.27	54	-8.73	AV
H	17235	48.91	49.16	15.27	40.45	55.47	68.2	-12.73	PK
H	17235	40.27	49.16	15.27	40.45	46.83	54	-7.17	AV
operation frequency:5785									
V	11570	48.63	49.09	15.34	37.42	52.3	74	-21.70	PK
V	11570	41.14	49.09	15.34	37.42	44.81	54	-9.19	AV
V	17355	49.38	49.18	15.29	40.47	55.96	68.2	-12.24	PK
V	17355	40.63	49.18	15.29	40.47	47.21	54	-6.79	AV
H	11570	49.52	49.09	15.34	37.42	53.19	74	-20.81	PK
H	11570	43.46	49.09	15.34	37.42	47.13	54	-6.87	AV
H	17355	49.52	49.18	15.29	40.47	56.1	68.2	-12.10	PK
H	17355	40.14	49.18	15.29	40.47	46.72	54	-7.28	AV
operation frequency:5825									
V	11650	49.63	49.11	15.37	37.46	53.35	74	-20.65	PK
V	11650	41.85	49.11	15.37	37.46	45.57	54	-8.43	AV
V	17475	48.14	49.21	15.34	40.51	54.78	68.2	-13.42	PK
V	17475	40.23	49.21	15.34	40.51	46.87	54	-7.13	AV
H	11650	57.52	49.11	15.37	31.31	55.09	74	-18.91	PK
H	11650	44.59	49.11	15.37	31.31	42.16	54	-11.84	AV
H	17475	48.41	49.21	15.34	40.51	55.05	68.2	-13.15	PK
H	17475	40.56	49.21	15.34	40.51	47.2	54	-6.80	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

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	49.52	49.07	15.33	37.41	53.19	74	-20.81	PK
V	11510	42.54	49.07	15.33	37.41	46.21	54	-7.79	AV
V	17265	48.22	49.17	15.28	40.46	54.79	68.2	-13.41	PK
V	17265	41.26	49.17	15.28	40.46	47.83	54	-6.17	AV
H	11510	48.85	49.07	15.33	37.41	52.52	74	-21.48	PK
H	11510	42.94	49.07	15.33	37.41	46.61	54	-7.39	AV
H	17265	48.56	49.17	15.28	40.46	55.13	68.2	-13.07	PK
H	17265	40.85	49.17	15.28	40.46	47.42	54	-6.58	AV
operation frequency:5795									
V	11590	49.21	49.11	15.37	37.46	52.93	74	-21.07	PK
V	11590	41.36	49.11	15.37	37.46	45.08	54	-8.92	AV
V	17385	48.71	49.21	15.34	40.51	55.35	68.2	-12.85	PK
V	17385	40.18	49.21	15.34	40.51	46.82	54	-7.18	AV
H	11590	57.52	49.11	15.37	31.31	55.09	74	-18.91	PK
H	11590	44.36	49.11	15.37	31.31	41.93	54	-12.07	AV
H	17385	48.41	49.21	15.34	40.51	55.05	68.2	-13.15	PK
H	17385	40.16	49.21	15.34	40.51	46.8	54	-7.20	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:

a. 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.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota 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,the Highest channel

Note:

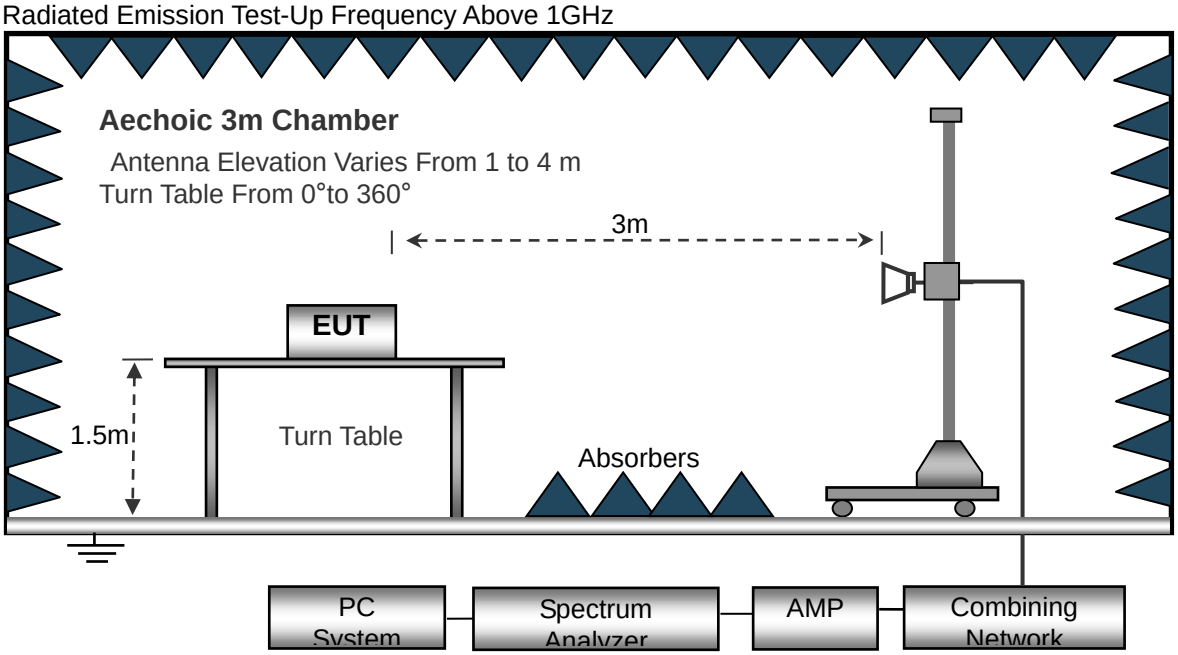
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

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)

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	5110	53.34	49.12	15.6	37.34	57.16	74	-16.84	PK
V	5110	39.58	49.12	15.6	37.34	43.4	54	-10.6	AV
H	5135	54.31	49.19	15.24	40.43	60.79	74	-13.21	PK
H	5135	36.65	49.19	15.24	40.43	43.13	54	-10.87	AV
V	5110	52.58	49.12	15.6	37.34	56.4	74	-17.6	PK
V	5110	37.52	49.12	15.6	37.34	41.34	54	-12.66	AV
H	5135	54.81	49.19	15.24	40.43	61.29	74	-12.71	PK
H	5135	33.68	49.19	15.24	40.43	40.16	54	-13.84	AV
operation frequency:5240									
V	5360	53.58	49.13	15.32	37.46	57.23	74	-16.77	PK
V	5360	35.45	49.13	15.32	37.46	39.1	54	-14.9	AV
H	5385	53.31	49.24	15.36	40.51	59.94	74	-14.06	PK
H	5385	32.87	49.24	15.36	40.51	39.5	54	-14.5	AV
V	5360	52.46	49.13	15.32	31.31	49.96	74	-24.04	PK
V	5360	40.85	49.13	15.32	31.31	38.35	54	-15.65	AV
H	5385	52.21	49.24	15.36	40.51	58.84	74	-15.16	PK
H	5385	32.33	49.24	15.36	40.51	38.96	54	-15.04	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

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	5110	51.52	49.12	15.6	37.34	55.34	74	-18.66	PK
V	5110	33.26	49.12	15.6	37.34	37.08	54	-16.92	AV
H	5135	51.54	49.19	15.24	40.43	58.02	74	-15.98	PK
H	5135	33.85	49.19	15.24	40.43	40.33	54	-13.67	AV
V	5110	51.83	49.12	15.6	37.34	55.65	74	-18.35	PK
V	5110	33.31	49.12	15.6	37.34	37.13	54	-16.87	AV
H	5135	50.57	49.19	15.24	40.43	57.05	74	-16.95	PK
H	5135	32.46	49.19	15.24	40.43	38.94	54	-15.06	AV
operation frequency:5240									
V	5360	53.21	49.13	15.32	37.46	56.86	74	-17.14	PK
V	5360	34.36	49.13	15.32	37.46	38.01	54	-15.99	AV
H	5385	50.85	49.24	15.36	40.51	57.48	74	-16.52	PK
H	5385	33.14	49.24	15.36	40.51	39.77	54	-14.23	AV
V	5360	54.33	49.13	15.32	31.31	51.83	74	-22.17	PK
V	5360	36.85	49.13	15.32	31.31	34.35	54	-19.65	AV
H	5385	51.63	49.24	15.36	40.51	58.26	74	-15.74	PK
H	5385	33.35	49.24	15.36	40.51	39.98	54	-14.02	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

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	5110	52.68	49.12	15.33	37.41	56.3	74	-17.7	PK
V	5110	34.24	49.12	15.33	37.41	37.86	54	-16.14	AV
H	5135	51.88	49.19	15.28	40.46	58.43	74	-15.57	PK
H	5135	33.26	49.19	15.28	40.46	39.81	54	-14.19	AV
V	5110	52.12	49.12	15.33	37.41	55.74	74	-18.26	PK
V	5110	34.83	49.12	15.33	37.41	38.45	54	-15.55	AV
H	5135	50.21	49.19	15.28	40.46	56.76	74	-17.24	PK
H	5135	33.33	49.19	15.28	40.46	39.88	54	-14.12	AV
operation frequency:5240									
V	5360	53.85	49.13	15.32	37.46	57.5	74	-16.5	PK
V	5360	36.13	49.13	15.32	37.46	39.78	54	-14.22	AV
H	5385	50.41	49.24	15.36	40.51	57.04	74	-16.96	PK
H	5385	33.63	49.24	15.36	40.51	40.26	54	-13.74	AV
V	5360	53.88	49.13	15.32	31.31	51.38	74	-22.62	PK
V	5360	40.63	49.13	15.32	31.31	38.13	54	-15.87	AV
H	5385	51.18	49.24	15.36	40.51	57.81	74	-16.19	PK
H	5385	35.55	49.24	15.36	40.51	42.18	54	-11.82	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

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	5110	52.21	49.12	15.6	37.39	56.08	74	-17.92	PK
V	5110	35.56	49.12	15.6	37.39	39.43	54	-14.57	AV
H	5135	51.41	49.19	15.24	40.45	57.91	74	-16.09	PK
H	5135	34.52	49.19	15.24	40.45	41.02	54	-12.98	AV
V	5110	52.53	49.12	15.6	37.39	56.4	74	-17.6	PK
V	5110	34.85	49.12	15.6	37.39	38.72	54	-15.28	AV
H	5135	50.21	49.19	15.24	40.45	56.71	74	-17.29	PK
H	5135	35.63	49.19	15.24	40.45	42.13	54	-11.87	AV
operation frequency:5230									
V	5360	53.52	49.13	15.34	37.46	57.19	74	-16.81	PK
V	5360	37.33	49.13	15.34	37.46	41	54	-13	AV
H	5385	50.68	49.24	15.35	40.51	57.3	74	-16.7	PK
H	5385	36.65	49.24	15.35	40.51	43.27	54	-10.73	AV
V	5360	54.14	49.13	15.34	31.31	51.66	74	-22.34	PK
V	5360	41.63	49.13	15.34	31.31	39.15	54	-14.85	AV
H	5385	52.52	49.24	15.35	40.51	59.14	74	-14.86	PK
H	5385	36.21	49.24	15.35	40.51	42.83	54	-11.17	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

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	5110	52.63	49.12	15.32	37.41	56.24	74	-17.76	PK
V	5110	37.85	49.12	15.32	37.41	41.46	54	-12.54	AV
H	5135	52.21	49.19	15.36	40.46	58.84	74	-15.16	PK
H	5135	36.36	49.19	15.36	40.46	42.99	54	-11.01	AV
V	5110	52.82	49.12	15.32	37.41	56.43	74	-17.57	PK
V	5110	37.34	49.12	15.32	37.41	40.95	54	-13.05	AV
H	5135	51.66	49.19	15.36	40.46	58.29	74	-15.71	PK
H	5135	36.38	49.19	15.36	40.46	43.01	54	-10.99	AV
operation frequency:5230									
V	5360	54.63	49.13	15.34	37.34	58.18	74	-15.82	PK
V	5360	36.21	49.13	15.34	37.34	39.76	54	-14.24	AV
H	5385	51.52	49.24	15.35	40.43	58.06	74	-15.94	PK
H	5385	36.76	49.24	15.35	40.43	43.3	54	-10.7	AV
V	5360	54.58	49.13	15.34	37.34	58.13	74	-15.87	PK
V	5360	41.41	49.13	15.34	37.34	44.96	54	-9.04	AV
H	5385	50.63	49.24	15.35	40.43	57.17	74	-16.83	PK
H	5385	35.67	49.24	15.35	40.43	42.21	54	-11.79	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)

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	5650	51.35	46.38	12.43	35.65	53.05	68.2	-15.15	PK
V	5650	40.58	46.38	12.43	35.65	42.28	54	-11.72	AV
H	5720	51.44	46.56	12.47	35.76	53.11	68.2	-15.09	PK
H	5720	40.23	46.56	12.47	35.76	41.9	54	-12.1	AV
V	5650	51.58	46.38	12.43	35.65	53.28	68.2	-14.92	PK
V	5650	40.52	46.38	12.43	35.65	42.22	54	-11.78	AV
H	5720	51.16	46.56	12.47	35.76	52.83	68.2	-15.37	PK
H	5720	40.57	46.56	12.47	35.76	42.24	54	-11.76	AV
operation frequency:5825									
V	5855	56.21	46.55	12.65	35.87	58.18	68.2	-10.02	PK
V	5855	42.63	46.55	12.65	35.87	44.6	54	-9.4	AV
H	5875	56.21	46.58	12.67	35.93	58.23	68.2	-9.97	PK
H	5875	42.37	46.58	12.67	35.93	44.39	54	-9.61	AV
V	5855	56.63	46.55	12.65	35.87	58.6	68.2	-9.6	PK
V	5855	42.84	46.55	12.65	35.87	44.81	54	-9.19	AV
H	5875	55.21	46.58	12.67	35.93	57.23	68.2	-10.97	PK
H	5875	42.63	46.58	12.67	35.93	44.65	54	-9.35	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.

802.11n HT20

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	5650	50.25	47.36	13.18	36.26	52.33	68.2	-15.87	PK
V	5650	40.74	47.36	13.18	36.26	42.82	54	-11.18	AV
H	5720	51.66	47.38	13.2	36.29	53.77	68.2	-14.43	PK
H	5720	41.52	47.38	13.2	36.29	43.63	54	-10.37	AV
V	5650	51.84	47.36	13.18	36.26	53.92	68.2	-14.28	PK
V	5650	41.63	47.36	13.18	36.26	43.71	54	-10.29	AV
H	5720	51.85	47.38	13.2	36.29	53.96	68.2	-14.24	PK
H	5720	40.21	47.38	13.2	36.29	42.32	54	-11.68	AV
operation frequency:5825									
V	5855	51.63	48.32	15.24	37.37	55.92	68.2	-12.28	PK
V	5855	40.52	48.32	15.24	37.37	44.81	54	-9.19	AV
H	5875	51.54	48.36	15.27	37.39	55.84	74	-18.16	PK
H	5875	41.85	48.36	15.27	37.39	46.15	54	-7.85	AV
V	5855	51.73	48.32	15.24	37.37	56.02	68.2	-12.18	PK
V	5855	40.21	48.32	15.24	37.37	44.5	54	-9.5	AV
H	5875	50.63	48.36	15.27	37.39	54.93	74	-19.07	PK
H	5875	40.21	48.36	15.27	37.39	44.51	54	-9.49	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

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	5650	51.36	46.38	12.43	35.65	53.06	68.2	-15.14	PK
V	5650	40.41	46.38	12.43	35.65	42.11	54	-11.89	AV
H	5720	51.52	46.56	12.47	35.76	53.19	68.2	-15.01	PK
H	5720	40.88	46.56	12.47	35.76	42.55	54	-11.45	AV
V	5650	51.63	46.38	12.43	35.65	53.33	68.2	-14.87	PK
V	5650	40.52	46.38	12.43	35.65	42.22	54	-11.78	AV
H	5720	51.53	46.56	12.47	35.76	53.2	68.2	-15	PK
H	5720	40.17	46.56	12.47	35.76	41.84	54	-12.16	AV
operation frequency:5825									
V	5855	55.21	46.55	12.65	35.87	57.18	68.2	-11.02	PK
V	5855	43.13	46.55	12.65	35.87	45.1	54	-8.9	AV
H	5875	55.85	46.58	12.67	35.93	57.87	68.2	-10.33	PK
H	5875	43.94	46.58	12.67	35.93	45.96	54	-8.04	AV
V	5855	56.36	46.55	12.65	35.87	58.33	68.2	-9.87	PK
V	5855	43.52	46.55	12.65	35.87	45.49	54	-8.51	AV
H	5875	56.41	46.58	12.67	35.93	58.43	68.2	-9.77	PK
H	5875	43.03	46.58	12.67	35.93	45.05	54	-8.95	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

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	5650	51.52	47.36	13.18	36.26	53.6	68.2	-14.6	PK
V	5650	41.41	47.36	13.18	36.26	43.49	54	-10.51	AV
H	5720	51.63	47.38	13.2	36.29	53.74	68.2	-14.46	PK
H	5720	41.47	47.38	13.2	36.29	43.58	54	-10.42	AV
V	5650	51.45	47.36	13.18	36.26	53.53	68.2	-14.67	PK
V	5650	41.36	47.36	13.18	36.26	43.44	54	-10.56	AV
H	5720	51.52	47.38	13.2	36.29	53.63	68.2	-14.57	PK
H	5720	41.63	47.38	13.2	36.29	43.74	54	-10.26	AV
operation frequency:5825									
V	5855	51.21	48.32	15.24	37.37	55.5	68.2	-12.7	PK
V	5855	40.13	48.32	15.24	37.37	44.42	54	-9.58	AV
H	5875	51.78	48.36	15.27	37.39	56.08	74	-17.92	PK
H	5875	41.52	48.36	15.27	37.39	45.82	54	-8.18	AV
V	5855	51.46	48.32	15.24	37.37	55.75	68.2	-12.45	PK
V	5855	41.94	48.32	15.24	37.37	46.23	54	-7.77	AV
H	5875	51.45	48.36	15.27	37.39	55.75	74	-18.25	PK
H	5875	41.37	48.36	15.27	37.39	45.67	54	-8.33	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

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	5650	51.21	46.38	12.43	35.65	52.91	68.2	-15.29	PK
V	5650	40.63	46.38	12.43	35.65	42.33	54	-11.67	AV
H	5720	51.34	46.56	12.47	35.76	53.01	68.2	-15.19	PK
H	5720	41.18	46.56	12.47	35.76	42.85	54	-11.15	AV
V	5650	51.33	46.38	12.43	35.65	53.03	68.2	-15.17	PK
V	5650	40.55	46.38	12.43	35.65	42.25	54	-11.75	AV
H	5720	51.21	46.56	12.47	35.76	52.88	68.2	-15.32	PK
H	5720	40.36	46.56	12.47	35.76	42.03	54	-11.97	AV
operation frequency:5825									
V	5855	55.21	46.55	12.65	35.87	57.18	68.2	-11.02	PK
V	5855	43.73	46.55	12.65	35.87	45.7	54	-8.3	AV
H	5875	55.38	46.58	12.67	35.93	57.4	68.2	-10.8	PK
H	5875	42.34	46.58	12.67	35.93	44.36	54	-9.64	AV
V	5855	55.36	46.55	12.65	35.87	57.33	68.2	-10.87	PK
V	5855	43.62	46.55	12.65	35.87	45.59	54	-8.41	AV
H	5875	55.14	46.58	12.67	35.93	57.16	68.2	-11.04	PK
H	5875	42.93	46.58	12.67	35.93	44.95	54	-9.05	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.

4.. AVERAGING OUTPUT POWER

4.1. APPLIED PROCEDURES / LIMIT

For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

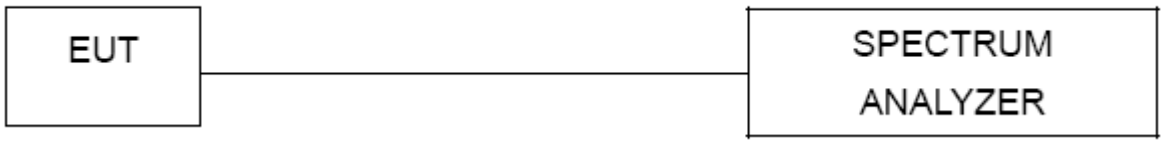
4.1.1. TEST PROCEDURE

Method SA-2 uses trace averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:
a)Measure the duty cycle D of the transmitter output signal as described in 12.2.
b)Set span to encompass the entire 26 dB EBW or 99% OBW of the signal.
c)Set RBW=1 MHz.
d)Set VBW ≥3 MHz.
e)Number of points in sweep ≥ [2 x span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
f)Sweep time = auto.
g) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
h) Do not use sweep triggering. Allow the sweep to "free run."
i) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.
j)Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument's band power measurement function with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.
k) Add [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and ofF times of the transmission). For example, add [10 log (1 / 0.25)] = 6 dB if the duty cycle is 25%.

4.1.2. DEVIATION FROM STANDARD

No deviation.

4.1.3. TEST SETUP



4.1.4. EUT OPERATION CONDITIONS

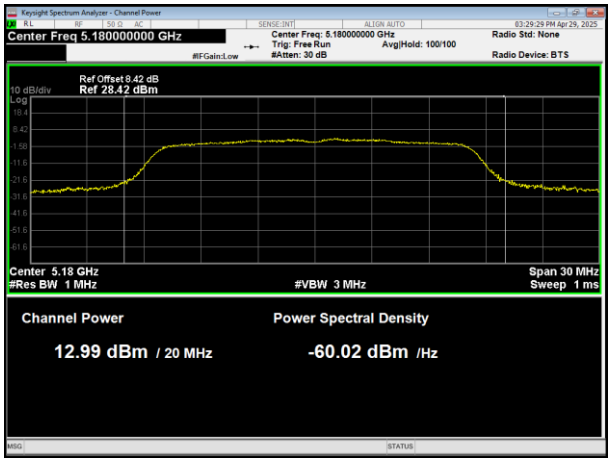
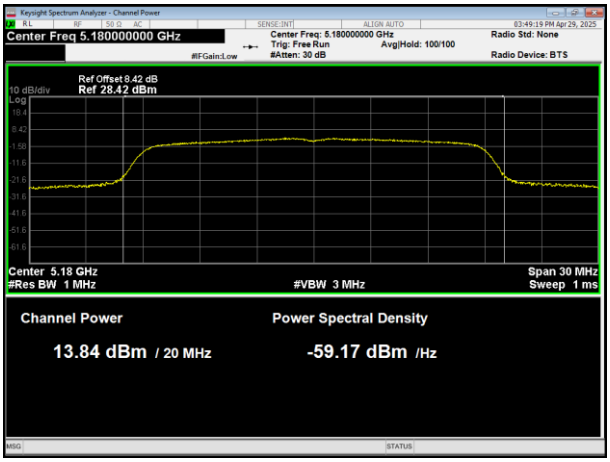
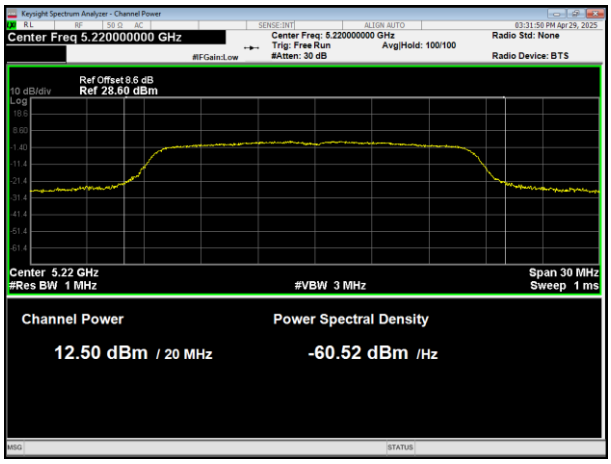
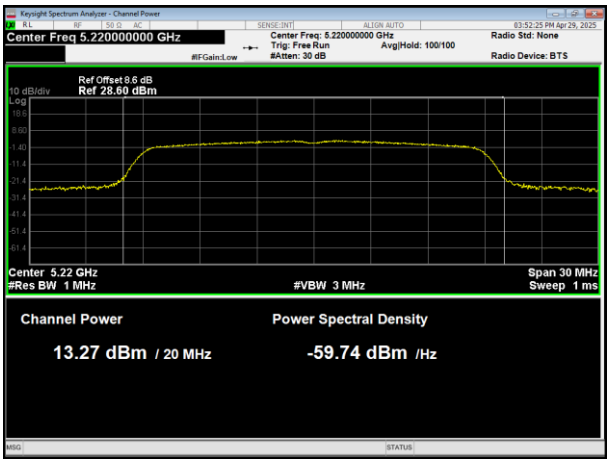
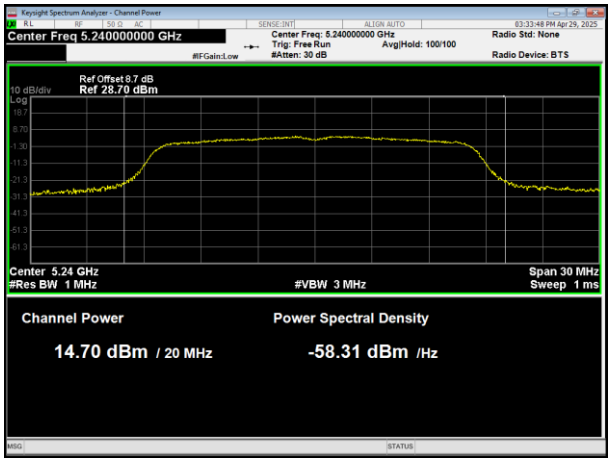
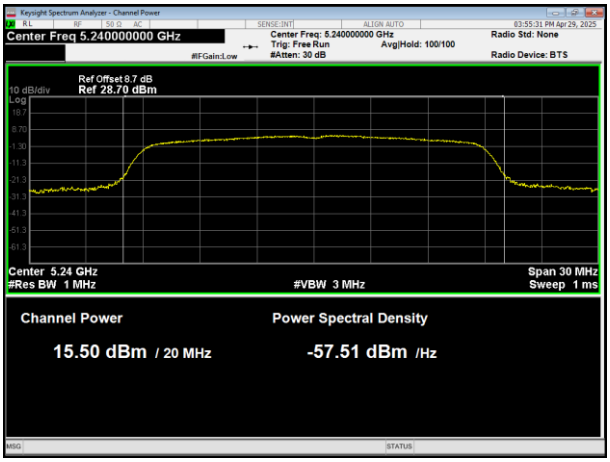
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

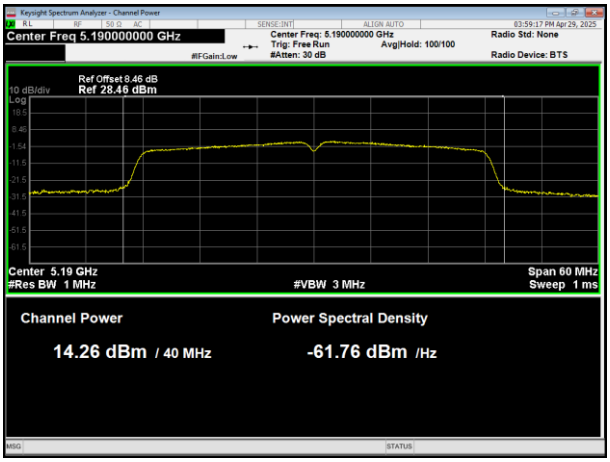
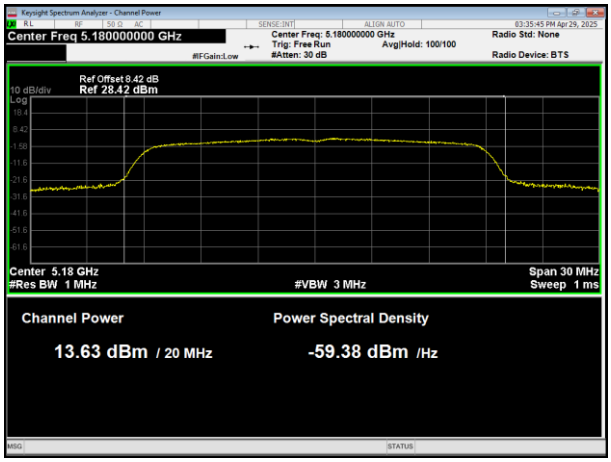
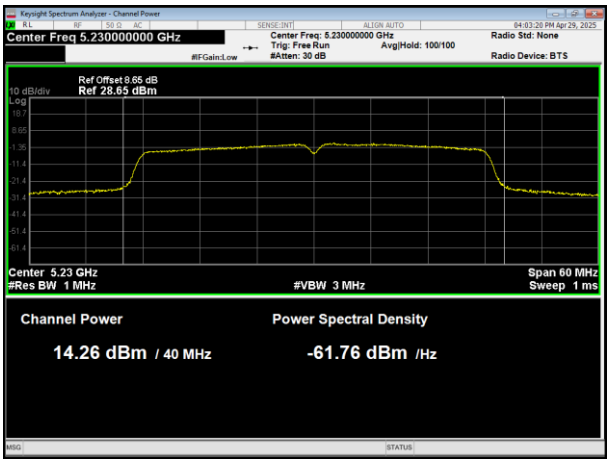
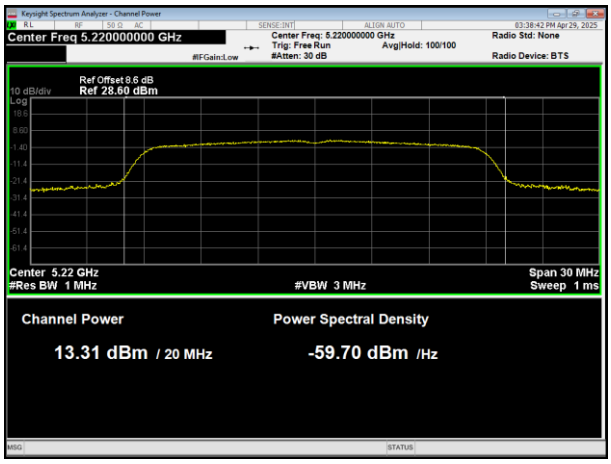
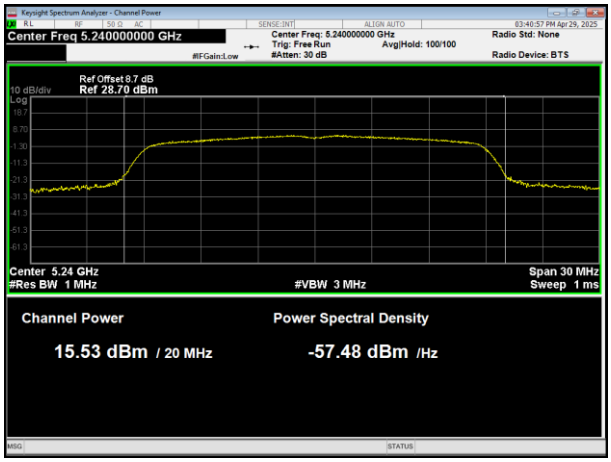
4.1.5. TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz

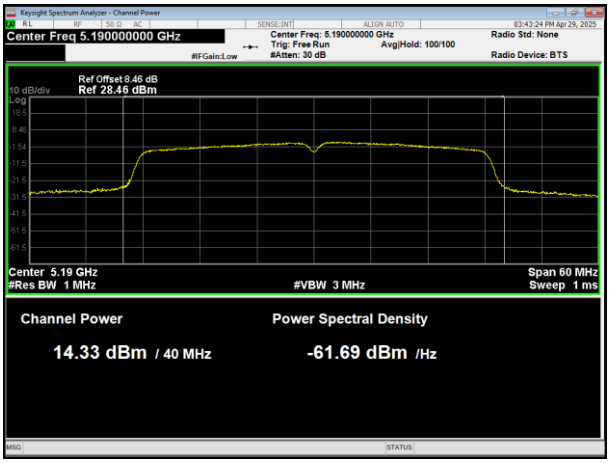
Band	Mode	Test Channel	Average Output Power (dBm)	Duty factor (dB)	Total Output Power(dBm)	LIMIT (dBm)
Band 1	802.11a	Low	12.99	0.87	13.86	23.98
		Middle	12.495	1.12	13.615	23.98
		High	14.705	0.87	15.575	23.98
	802.11ac HT20	Low	13.843	0.13	13.973	23.98
		Middle	13.267	0.13	13.397	23.98
		High	15.505	0.13	15.635	23.98
	802.11ac HT40	Low	14.256	0.32	14.576	23.98
		High	14.258	0.26	14.518	23.98
	802.11n HT20	Low	13.634	0.13	13.764	23.98
		Middle	13.313	0.16	13.473	23.98
		High	15.528	0.13	15.658	23.98
	802.11n HT40	Low	14.333	0.32	14.653	23.98
		High	14.048	0.32	14.368	23.98

Band	Mode	Test Channel	Average Output Power (dBm)	Duty factor (dB)	Total Output Power(dBm)	LIMIT (dBm)
Band 4	802.11a	Low	12.085	0.87	12.955	30
		Middle	11.647	0.87	12.517	30
		High	12.718	0.87	13.588	30
	802.11ac HT20	Low	13.68	0.16	13.84	30
		Middle	12.313	0.13	12.443	30
		High	13.346	0.16	13.506	30
	802.11ac HT40	Low	13.286	0.26	13.546	30
		High	13.52	0.32	13.84	30
	802.11n HT20	Low	12.79	0.16	12.95	30
		Middle	12.559	0.13	12.689	30
		High	13.44	0.13	13.57	30
	802.11n HT40	Low	13.123	0.26	13.383	30
		High	13.4	0.26	13.66	30

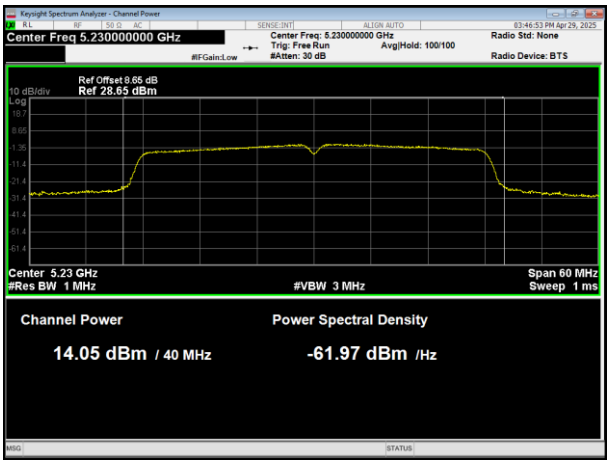
802.11a	802.11ac HT20
	
5180MHz	5180MHz
	
5200MHz	5200MHz
	
5240MHz	5240MHz

802.11ac HT40	802.11n HT20
	
5190MHz	5180MHz
	
5230MHz	5200MHz
	
	5240MHz

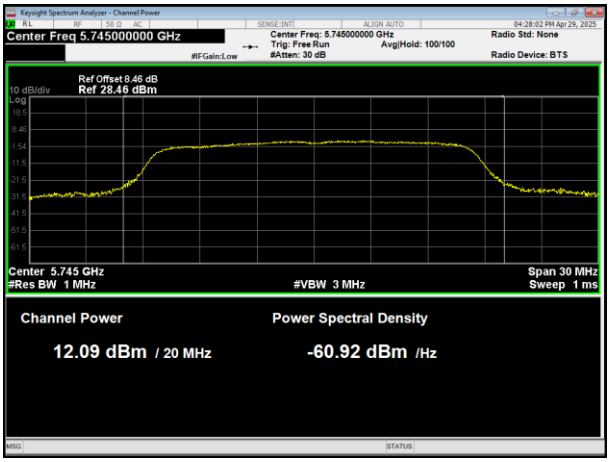
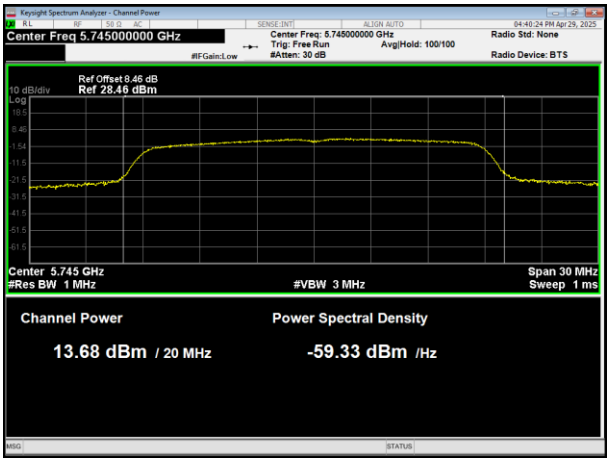
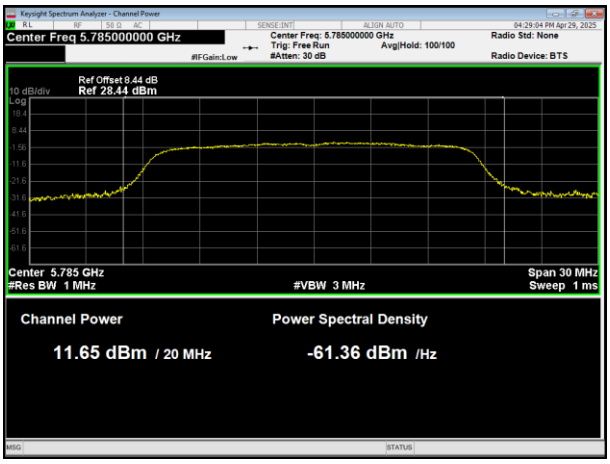
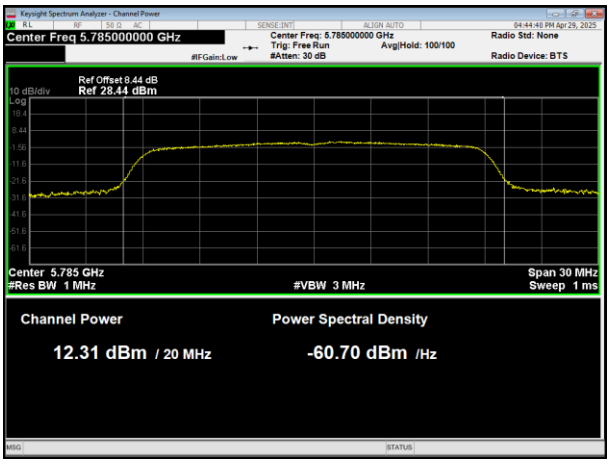
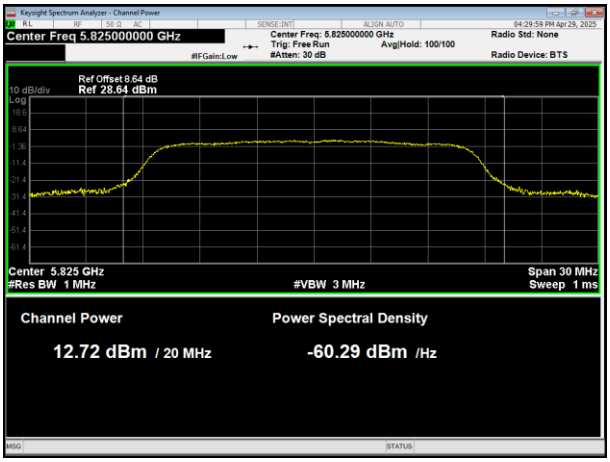
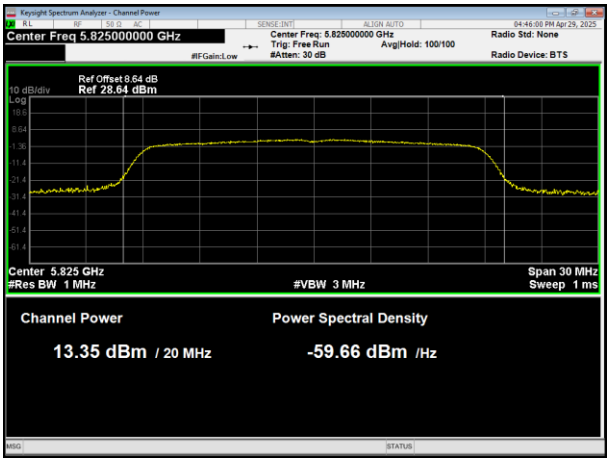
802.11n HT40

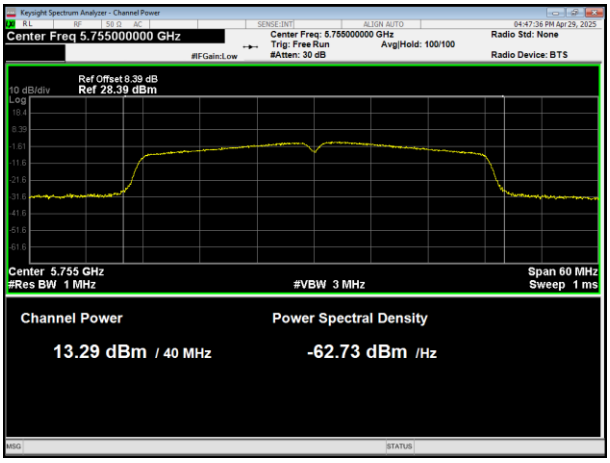
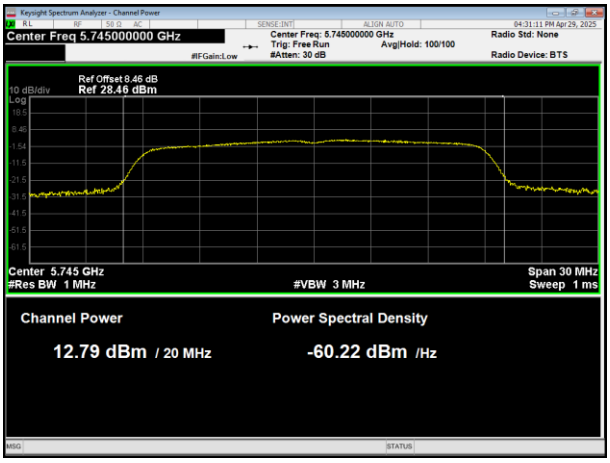
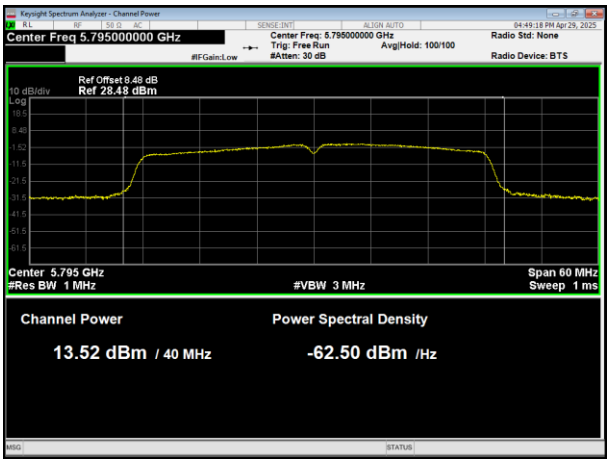
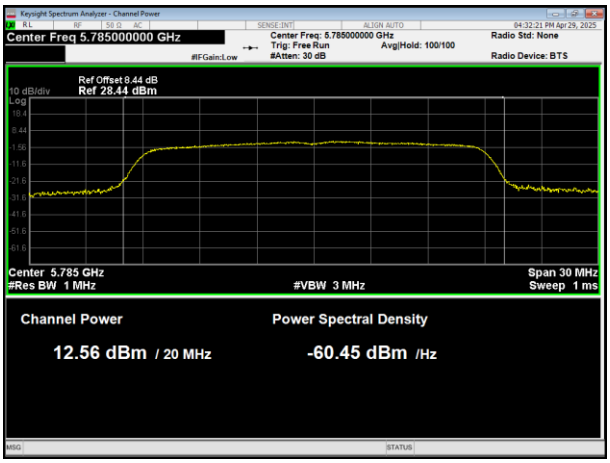
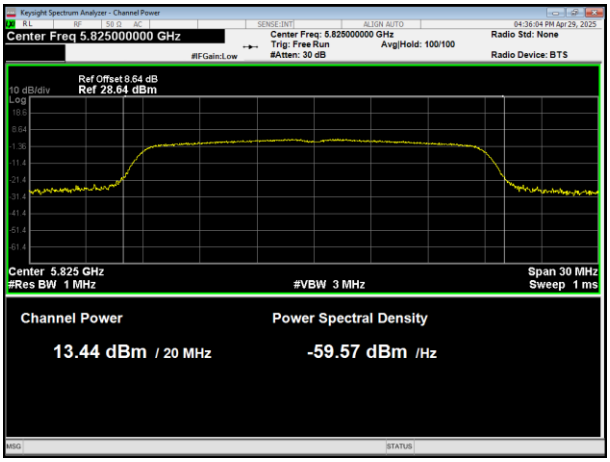


5190MHz



5230MHz

802.11a	802.11ac HT20
	
5745MHz	5745MHz
	
5785MHz	5785MHz
	
5825MHz	5825MHz

802.11ac HT40	802.11n HT20
	
5755MHz	5745MHz
	
5795MHz	5785MHz
	
	5825MHz