



FCC Part 15C Test Report

FCC ID: 2AU7O-N126

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Manufacturer: Shenzhen Phaten Technology Co., Ltd.
Address: 602, Building 1, Aidimengtuo Industrial Park, 4th Industrial Zone, Matian Street, Guangming District, Shenzhen
EUT: Wireless network
Trade Mark: N/A
Model Number: FT1852BEV1, N126, LK-A61
Date of Receipt: Nov. 24, 2022
Test Date: Nov. 24, 2022 - Dec. 12, 2022
Date of Report: Dec. 12, 2022
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FCC PART 15 C 15.407
Applicable Standards: ANSI C63.10:2013
KDB 789033 D02 General UNII Test Procedures New Rules v02r01
KDB 662911 D01 Multiple Transmitter Output v02r01
Test Result: Pass
Report Number: DL-20221212034E

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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.



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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.407) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.407(b), 15.209	Radiated Spurious Emission	PASS	
15.407 (b)	Band Edge Emission	PASS	
15.407 (a)	Output Power	PASS	
15.407 (a)	Power Spectral Density	PASS	
15.403(a) 15.407(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

1.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, 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	$\pm 2.56\text{dB}$
2	RF power,conducted	$\pm 0.42\text{dB}$
3	Spurious emissions,conducted	$\pm 2.76\text{dB}$
4	All emissions,radiated(<1G)	$\pm 3.65\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$
8	Bandwidth	$\pm 0.2\text{MHz}$
9	Frequency Stability	$\pm 0.3\text{MHz}$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name:	Wireless network
Trademark	N/A
Model No.:	FT1852BEV1, N126, LK-A61
Model Difference	The product's different for model number.
Operation Frequency:	5180-5240 (802.11a/ac/ax/n(HT20)) 5190-5230 (802.11ac/ax/n(HT40)) 5210MHz (802.11ac/ax80)
Channel numbers:	See channel list
Channel separation:	20MHz for 802.11a/ac/ax/n(HT20) 40MHz for 802.11ac/ax/n(HT40)
Modulation technology:	802.11a: OFDM 802.11n(20/40): OFDM 802.11ac(20/40/80):OFDM 802.11ax(20/40/80):OFDMA
Rate of Transmitter	802.11a: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps 802.11n: Up to 300Mbps 802.11ac: up to 867Mbps 802.11ax: up to 1200Mbps
Antenna Type:	External antenna*2
Antenna gain:	-4.62dBi MIMO Gain=-4.62dBi+10log(2)=-1.62dBi
Power supply:	DC 3.3V from PC

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.
3. The MIMO mode is only used for 802.11 ac/ax/n mode.
4. For 802.11ax, this device only supports SU mode.



2. Channel List

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

802.11ac/ax/n(HT40)				802.11ac/ax 80	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230	42	5210

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
Mode 1	802.11a /ac/ax/n HT20	CH36, CH44, CH48
Mode 2	802.11n/ac/ax HT40	CH38, CH46
Mode 3	802.11ac/ax HT80	CH42
Mode 4	Other	Link Mode

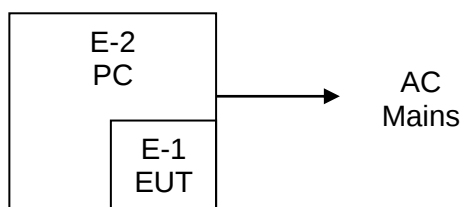
For Radiated Emission		
Pretest Mode	Channel	Band 1
Mode 1	802.11a/n/acHT20	CH36, CH44, CH48
Mode 2	802.11n/acHT40	CH38, CH46
Mode 3	802.11ac/ax HT80	CH42
Mode 4	Other	Link Mode

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

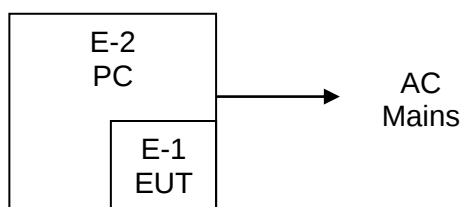


2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted Spurious 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	Wireless network	FT1900BE-20PW6BA22CD1	N/A	EUT
E-2	PC	SE2218HV	N/A	

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: AXDN-0002.0		
Mode	802.11a/ac/ax	802.11n HT20	802.11n HT40
Data Rate	MCS0	MSC0	MSC0
Power Setting of Softwave	45	45	45

**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. 06, 2022	Nov. 05, 2023
2	Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Nov. 06, 2022	Nov. 05, 2023
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Nov. 06, 2022	Nov. 05, 2023
4	Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Nov. 06, 2022	Nov. 05, 2023
5	Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Nov. 06, 2022	Nov. 05, 2023
6	Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Nov. 06, 2022	Nov. 05, 2023
7	Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Nov. 06, 2022	Nov. 05, 2023
8	Amplifier (18GHz-40GHz)	Quanjuda	DLE-161	97	Nov. 06, 2022	Nov. 05, 2023
9	Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Nov. 06, 2022	Nov. 05, 2023
10	RF cables1 (9kHz-1GHz)	ChengYu	966	004	Nov. 06, 2022	Nov. 05, 2023
11	RF cables2 (1GHz-40GHz)	ChengYu	966	003	Nov. 06, 2022	Nov. 05, 2023
12	Antenna connector	Florida RF Labs	N/A	RF 01#	Nov. 06, 2022	Nov. 05, 2023
13	Power probe	KEYSIGHT	U2021XA	MY55210018	Nov. 06, 2022	Nov. 05, 2023
14	Signal Analyzer 9kHz-26.5GHz	Agilent	N9020A	MY55370280	Nov. 06, 2022	Nov. 05, 2023
15	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	Nov. 06, 2022	Nov. 05, 2023
16	D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 06, 2022	Nov. 05, 2023

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	843 Shielded Room	ChengYu	843 Room	843	Nov. 06, 2022	Nov. 05, 2023
2	EMI Receiver	R&S	ESR	101421	Nov. 06, 2022	Nov. 05, 2023
3	LISN	R&S	ENV216	102417	Nov. 06, 2022	Nov. 05, 2023
4	843 Cable 1#	ChengYu	CE Cable	001	Nov. 06, 2022	Nov. 05, 2023

Other

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ_EMCC	EMC-CON 3A1.1
2	EMC radiation test system	FALA	EZ_EMCC	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

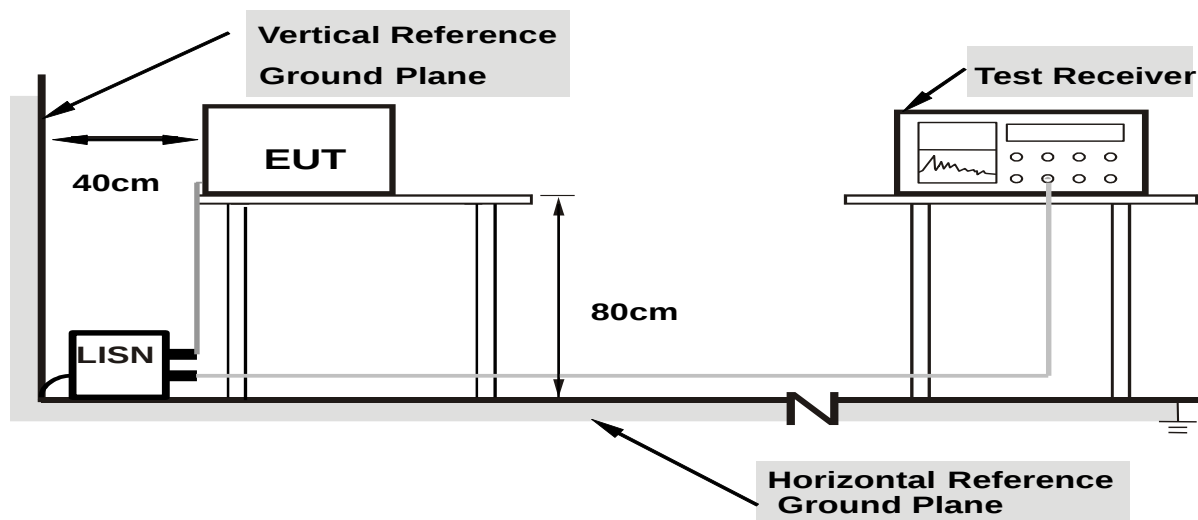
3.1.2 TEST PROCEDURE

- 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

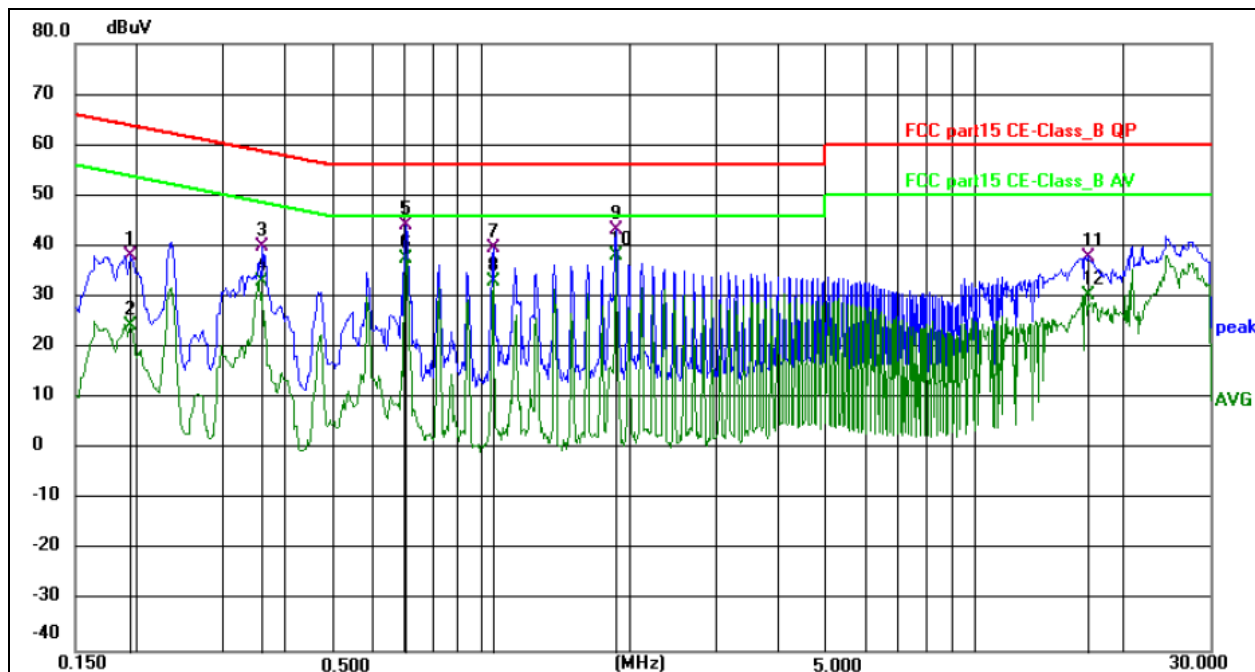
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

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



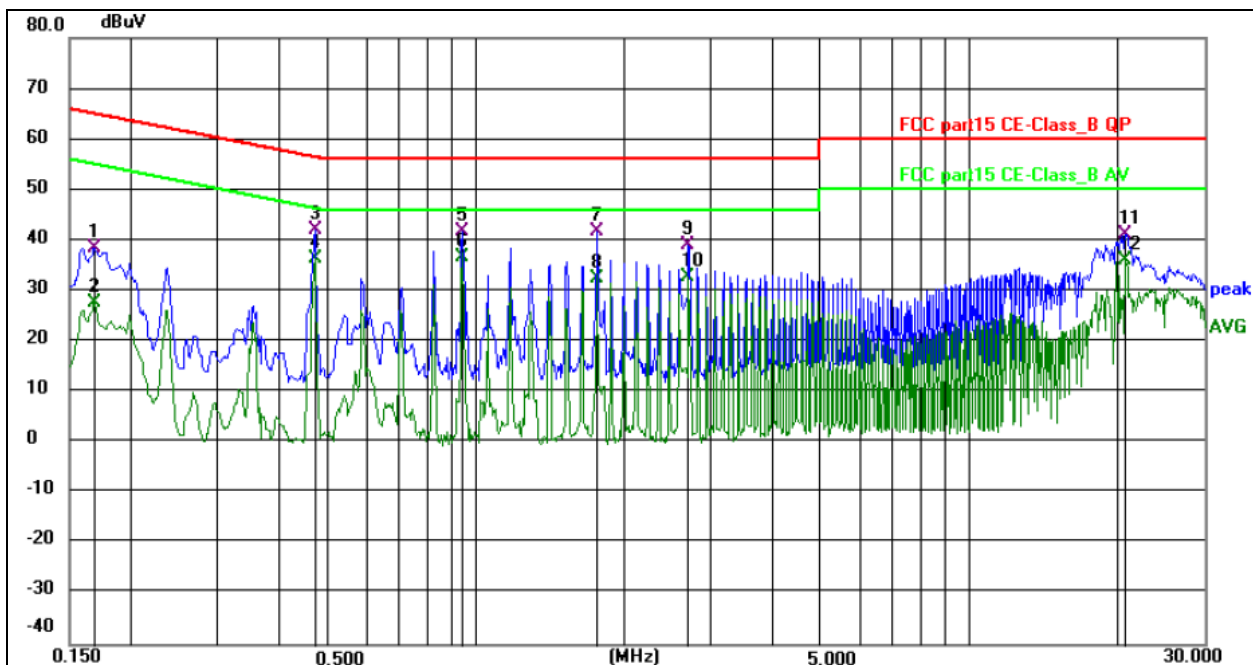
Remark:

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	0.194300	28.60	9.59	38.19	63.85	-25.66	QP	P	
2	0.194300	14.84	9.59	24.43	53.85	-29.42	AVG	P	
3	0.359300	30.87	9.07	39.94	58.74	-18.80	QP	P	
4	0.359300	23.86	9.07	32.93	48.74	-15.81	AVG	P	
5	0.703500	34.84	9.39	44.23	56.00	-11.77	QP	P	
6	0.703500	28.19	9.39	37.58	46.00	-8.42	AVG	P	
7	1.058400	30.23	9.31	39.54	56.00	-16.46	QP	P	
8	1.058400	23.72	9.31	33.03	46.00	-12.97	AVG	P	
9	1.872900	33.56	9.80	43.36	56.00	-12.64	QP	P	
10 *	1.872900	28.36	9.80	38.16	46.00	-7.84	AVG	P	
11	16.939000	27.76	10.24	38.00	60.00	-22.00	QP	P	
12	16.939000	20.23	10.24	30.47	50.00	-19.53	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	0.168000	28.60	9.81	38.41	65.06	-26.65	QP	P	
2	0.168000	17.93	9.81	27.74	55.06	-27.32	AVG	P	
3	0.469200	32.62	9.34	41.96	56.53	-14.57	QP	P	
4	0.469200	27.16	9.34	36.50	46.53	-10.03	AVG	P	
5	0.941500	32.46	9.37	41.83	56.00	-14.17	QP	P	
6 *	0.941500	27.15	9.37	36.52	46.00	-9.48	AVG	P	
7	1.760500	32.03	9.74	41.77	56.00	-14.23	QP	P	
8	1.760500	22.75	9.74	32.49	46.00	-13.51	AVG	P	
9	2.705800	29.31	9.83	39.14	56.00	-16.86	QP	P	
10	2.705800	22.98	9.83	32.81	46.00	-13.19	AVG	P	
11	20.733000	30.70	10.56	41.26	60.00	-18.74	QP	P	
12	20.733000	25.42	10.56	35.98	50.00	-14.02	AVG	P	



3.2 RADIATED EMISSION MEASUREMENT

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

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	25GHz
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(Above 18GHz the distance is 1 meter and table is 1.5 metre).
- Test the EUT in the lowest channel, the middle channel, the Highest channel

Note:

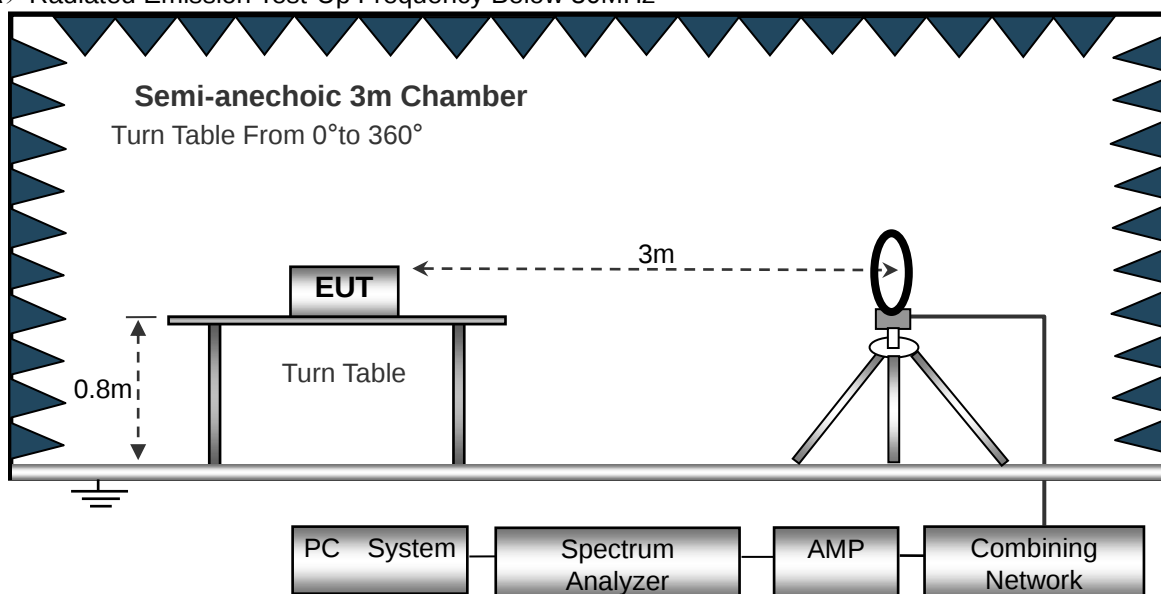
Both horizontal and vertical antenna polarities were tested and performed pretest to all antenna,. The worst case was antenna 1 and emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

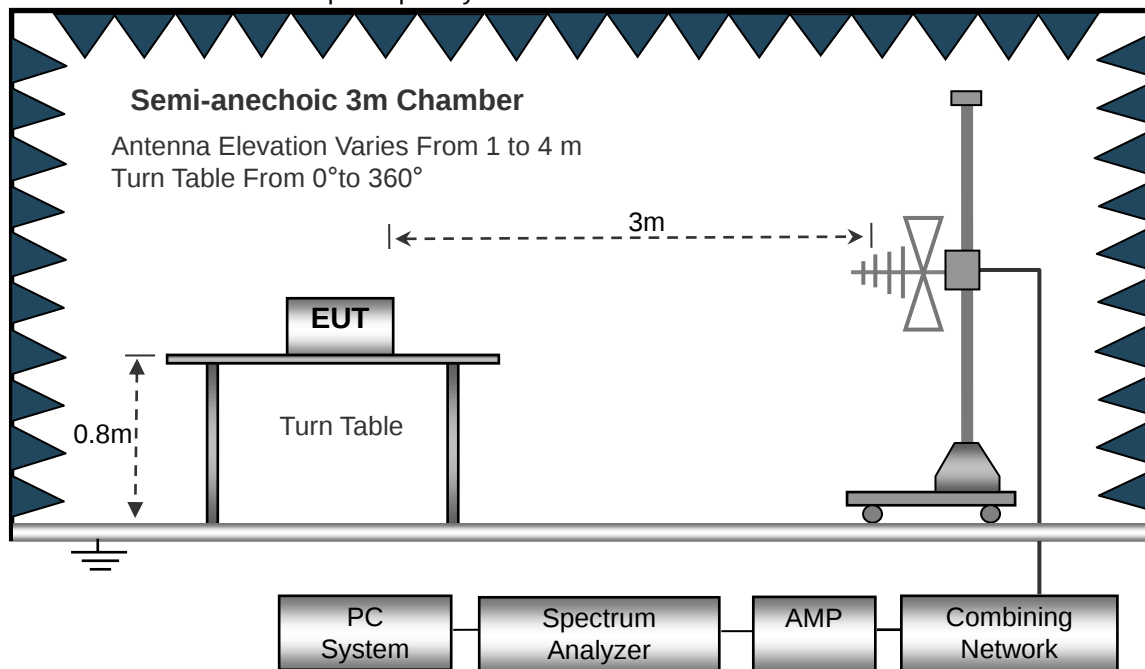
No deviation

3.2.4 TEST SETUP

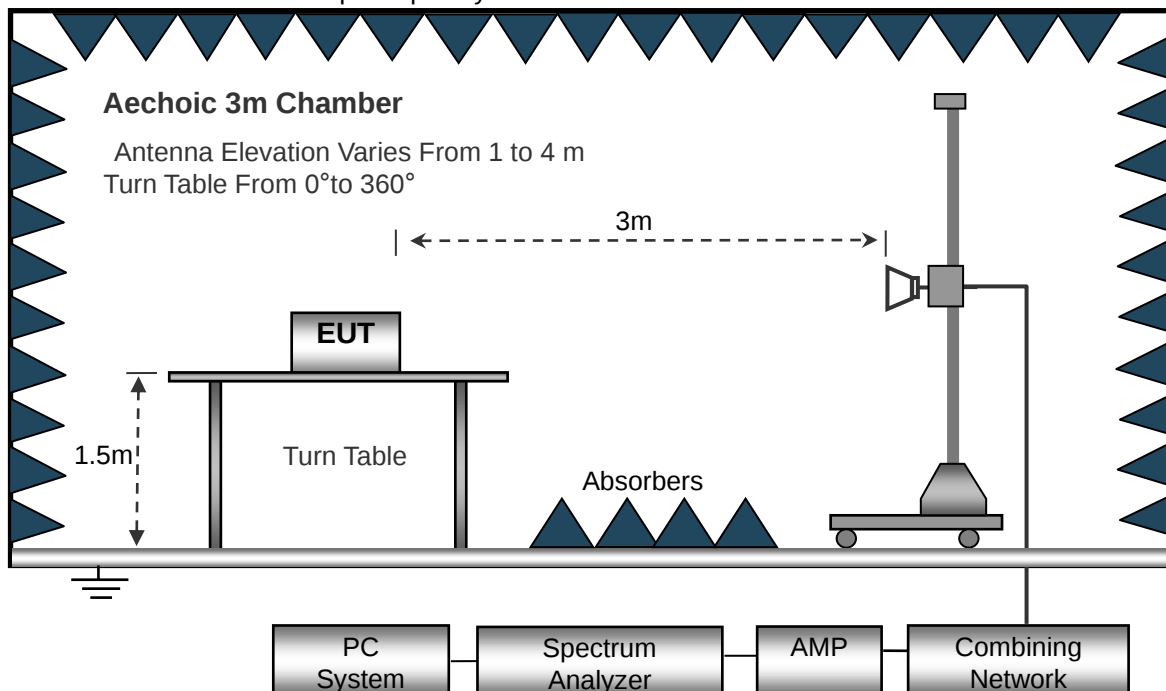
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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:

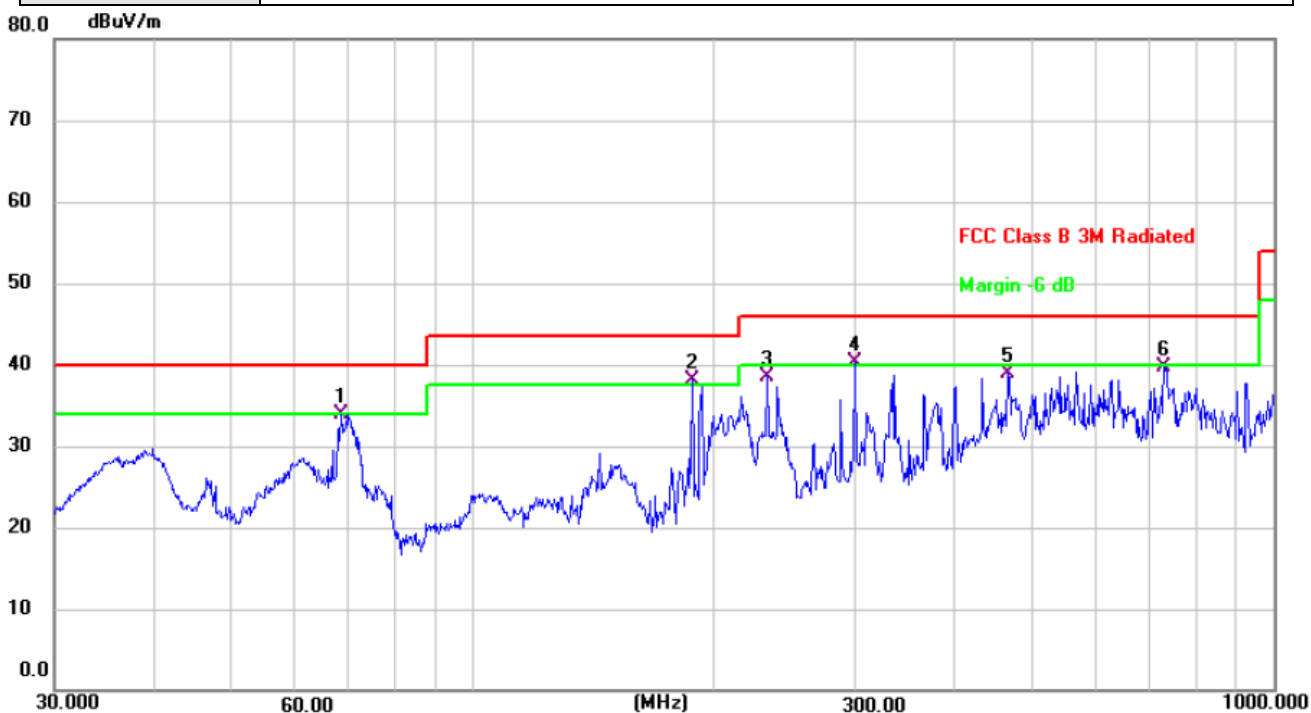
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance}/\text{test distance})$ (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.	Reading Level	Correct Factor	Measurement	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		68.3906	47.43	-13.48	33.95	40.00	-6.05	QP
2	*	187.7529	52.22	-14.07	38.15	43.50	-5.35	QP
3		233.3486	50.87	-12.27	38.60	46.00	-7.40	QP
4	!	300.3672	50.95	-10.69	40.26	46.00	-5.74	QP
5		465.5994	46.45	-7.64	38.81	46.00	-7.19	QP
6		729.3582	43.08	-3.33	39.75	46.00	-6.25	QP

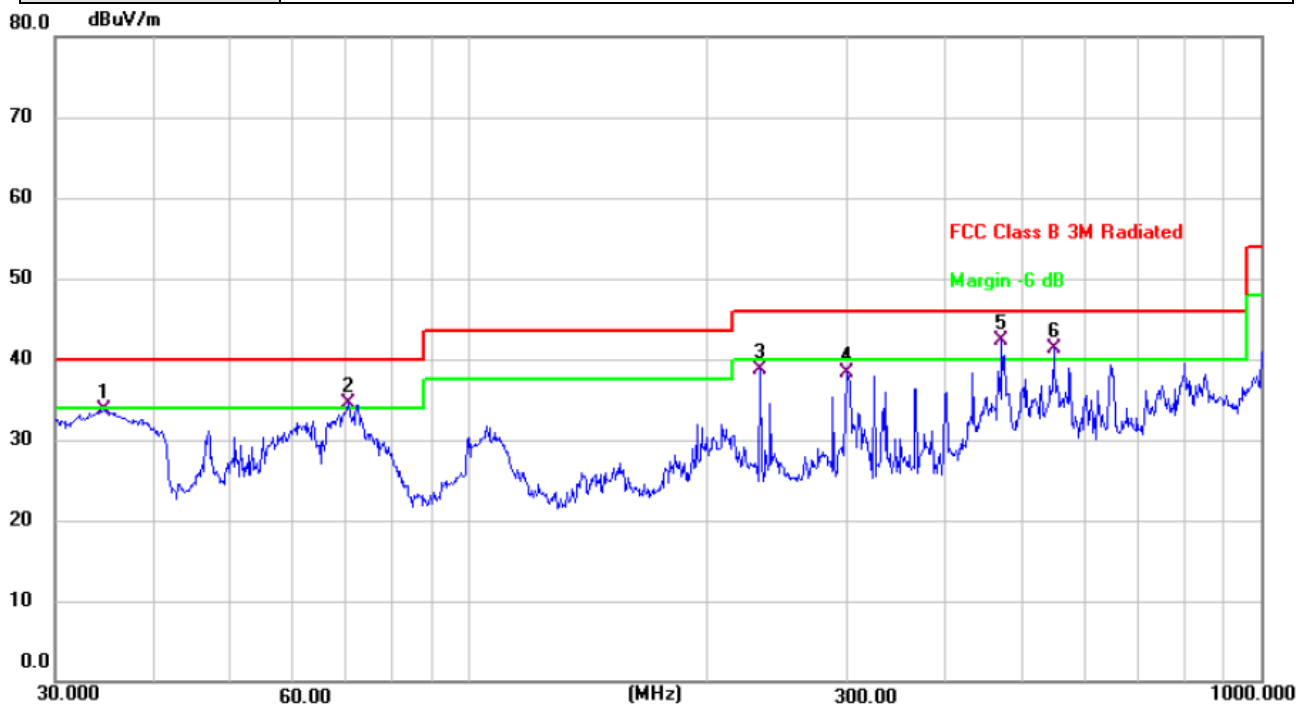
Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

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



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	Margin	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		34.5172	47.46	-13.80	33.66	40.00	-6.34	QP
2	!	70.3365	49.51	-15.09	34.42	40.00	-5.58	QP
3		232.5318	50.40	-11.67	38.73	46.00	-7.27	QP
4		299.3158	47.86	-9.62	38.24	46.00	-7.76	QP
5	*	470.5230	48.87	-6.57	42.30	46.00	-3.70	QP
6	!	547.0976	46.55	-5.31	41.24	46.00	-4.76	QP

Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

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

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

Antenna 1

802.11a band 1

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	56.39	49.05	15.3	37.39	60.03	74	-13.97	PK
V	10360	41.16	49.05	15.3	37.39	44.8	54	-9.20	AV
V	15540	56.68	49.16	15.27	40.45	63.24	74	-10.76	PK
V	15540	39.13	49.16	15.27	40.45	45.69	54	-8.31	AV
H	10360	56.04	49.05	15.3	37.39	59.68	74	-14.32	PK
H	10360	40.49	49.05	15.3	37.39	44.13	54	-9.87	AV
H	15540	59.11	49.16	15.27	40.45	65.67	74	-8.33	PK
H	15540	38.05	49.16	15.27	40.45	44.61	54	-9.39	AV
operation frequency:5220									
V	10400	57.42	49.09	15.34	37.42	61.09	74	-12.91	PK
V	10400	39.34	49.09	15.34	37.42	43.01	54	-10.99	AV
V	15600	59.46	49.18	15.29	40.47	66.04	74	-7.96	PK
V	15600	38.18	49.18	15.29	40.47	44.76	54	-9.24	AV
H	10400	56.96	49.09	15.34	37.42	60.63	74	-13.37	PK
H	10400	39.74	49.09	15.34	37.42	43.41	54	-10.59	AV
H	15600	59.45	49.18	15.29	40.47	66.03	74	-7.97	PK
H	15600	38.33	49.18	15.29	40.47	44.91	54	-9.09	AV
operation frequency:5240									
V	10480	58.54	49.11	15.37	37.46	62.26	74	-11.74	PK
V	10480	39.26	49.11	15.37	37.46	42.98	54	-11.02	AV
V	15720	59.18	49.21	15.34	40.51	65.82	74	-8.18	PK
V	15720	38.33	49.21	15.34	40.51	44.97	54	-9.03	AV
H	10480	57.27	49.11	15.37	31.31	54.84	74	-19.16	PK
H	10480	45.56	49.11	15.37	31.31	43.13	54	-10.87	AV
H	15720	57.48	49.21	15.34	40.51	64.12	74	-9.88	PK
H	15720	37.53	49.21	15.34	40.51	44.17	54	-9.83	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.



802.11ac20 band 1

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	56.14	49.05	15.3	37.39	59.78	74	-14.22	PK
V	10360	38.63	49.05	15.3	37.39	42.27	54	-11.73	AV
V	15540	56.58	49.16	15.27	40.45	63.14	74	-10.86	PK
V	15540	38.26	49.16	15.27	40.45	44.82	54	-9.18	AV
H	10360	56.61	49.05	15.3	37.39	60.25	74	-13.75	PK
H	10360	39.38	49.05	15.3	37.39	43.02	54	-10.98	AV
H	15540	54.12	49.16	15.27	40.45	60.68	74	-13.32	PK
H	15540	38.39	49.16	15.27	40.45	44.95	54	-9.05	AV
operation frequency:5220									
V	10400	56.25	49.09	15.34	37.42	59.92	74	-14.08	PK
V	10400	39.73	49.09	15.34	37.42	43.4	54	-10.60	AV
V	15600	55.38	49.18	15.29	40.47	61.96	74	-12.04	PK
V	15600	38.35	49.18	15.29	40.47	44.93	54	-9.07	AV
H	10400	55.56	49.09	15.34	37.42	59.23	74	-14.77	PK
H	10400	40.38	49.09	15.34	37.42	44.05	54	-9.95	AV
H	15600	55.01	49.18	15.29	40.47	61.59	74	-12.41	PK
H	15600	39.26	49.18	15.29	40.47	45.84	54	-8.16	AV
operation frequency:5240									
V	10480	57.16	49.11	15.37	37.46	60.88	74	-13.12	PK
V	10480	40.53	49.11	15.37	37.46	44.25	54	-9.75	AV
V	15720	54.34	49.21	15.34	40.51	60.98	74	-13.02	PK
V	15720	38.68	49.21	15.34	40.51	45.32	54	-8.68	AV
H	10480	57.13	49.11	15.37	31.31	54.7	74	-19.30	PK
H	10480	44.65	49.11	15.37	31.31	42.22	54	-11.78	AV
H	15720	55.31	49.21	15.34	40.51	61.95	74	-12.05	PK
H	15720	39.29	49.21	15.34	40.51	45.93	54	-8.07	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.



802.11ax20 band 1

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	56.73	49.07	15.33	37.41	60.4	74	-13.60	PK
V	10360	39.28	49.07	15.33	37.41	42.95	54	-11.05	AV
V	15540	56.23	49.17	15.28	40.46	62.8	74	-11.20	PK
V	15540	38.35	49.17	15.28	40.46	44.92	54	-9.08	AV
H	10360	56.69	49.07	15.33	37.41	60.36	74	-13.64	PK
H	10360	40.37	49.07	15.33	37.41	44.04	54	-9.96	AV
H	15540	54.65	49.17	15.28	40.46	61.22	74	-12.78	PK
H	15540	38.23	49.17	15.28	40.46	44.8	54	-9.20	AV
operation frequency:5220									
V	10400	57.15	49.11	15.37	37.46	60.87	74	-13.13	PK
V	10400	39.66	49.11	15.37	37.46	43.38	54	-10.62	AV
V	15600	54.48	49.21	15.34	40.51	61.12	74	-12.88	PK
V	15600	38.34	49.21	15.34	40.51	44.98	54	-9.02	AV
H	10400	57.26	49.11	15.37	31.31	54.83	74	-19.17	PK
H	10400	44.89	49.11	15.37	31.31	42.46	54	-11.54	AV
H	15600	55.38	49.21	15.34	40.51	62.02	74	-11.98	PK
H	15600	39.04	49.21	15.34	40.51	45.68	54	-8.32	AV
operation frequency:5240									
V	10480	56.76	49.05	15.3	37.39	60.4	74	-13.60	PK
V	10480	39.58	49.05	15.3	37.39	43.22	54	-10.78	AV
V	15720	56.16	49.16	15.27	40.45	62.72	74	-11.28	PK
V	15720	38.34	49.16	15.27	40.45	44.9	54	-9.10	AV
H	10480	56.12	49.05	15.3	37.39	59.76	74	-14.24	PK
H	10480	38.28	49.05	15.3	37.39	41.92	54	-12.08	AV
H	15720	54.26	49.16	15.27	40.45	60.82	74	-13.18	PK
H	15720	39.38	49.16	15.27	40.45	45.94	54	-8.06	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	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	56.56	49.09	15.34	37.42	60.23	74	-13.77	PK
V	10360	41.74	49.09	15.34	37.42	45.41	54	-8.59	AV
V	15540	55.53	49.18	15.29	40.47	62.11	74	-11.89	PK
V	15540	40.38	49.18	15.29	40.47	46.96	54	-7.04	AV
H	10360	55.14	49.09	15.34	37.42	58.81	74	-15.19	PK
H	10360	40.56	49.09	15.34	37.42	44.23	54	-9.77	AV
H	15540	55.08	49.18	15.29	40.47	61.66	74	-12.34	PK
H	15540	41.23	49.18	15.29	40.47	47.81	54	-6.19	AV
operation frequency:5220									
V	10400	57.48	49.11	15.37	37.46	61.2	74	-12.80	PK
V	10400	40.36	49.11	15.37	37.46	44.08	54	-9.92	AV
V	15600	54.14	49.21	15.34	40.51	60.78	74	-13.22	PK
V	15600	39.96	49.21	15.34	40.51	46.6	54	-7.40	AV
H	10400	57.13	49.11	15.37	31.31	54.7	74	-19.30	PK
H	10400	44.85	49.11	15.37	31.31	42.42	54	-11.58	AV
H	15600	55.67	49.21	15.34	40.51	62.31	74	-11.69	PK
H	15600	40.04	49.21	15.34	40.51	46.68	54	-7.32	AV
operation frequency:5240									
V	10480	56.76	49.07	15.33	37.41	60.43	74	-13.57	PK
V	10480	40.29	49.07	15.33	37.41	43.96	54	-10.04	AV
V	15720	56.34	49.17	15.28	40.46	62.91	74	-11.09	PK
V	15720	39.73	49.17	15.28	40.46	46.3	54	-7.70	AV
H	10480	56.57	49.07	15.33	37.41	60.24	74	-13.76	PK
H	10480	40.46	49.07	15.33	37.41	44.13	54	-9.87	AV
H	15720	54.18	49.17	15.28	40.46	60.75	74	-13.25	PK
H	15720	39.34	49.17	15.28	40.46	45.91	54	-8.09	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	57.13	49.11	15.37	37.46	60.85	74	-13.15	PK
V	10380	41.25	49.11	15.37	37.46	44.97	54	-9.03	AV
V	15570	54.49	49.21	15.34	40.51	61.13	74	-12.87	PK
V	15570	39.38	49.21	15.34	40.51	46.02	54	-7.98	AV
H	10380	57.14	49.11	15.37	31.31	54.71	74	-19.29	PK
H	10380	44.63	49.11	15.37	31.31	42.2	54	-11.80	AV
H	15570	55.11	49.21	15.34	40.51	61.75	74	-12.25	PK
H	15570	40.07	49.21	15.34	40.51	46.71	54	-7.29	AV
operation frequency:5230									
V	10460	56.26	49.07	15.33	37.41	59.93	74	-14.07	PK
V	10460	41.67	49.07	15.33	37.41	45.34	54	-8.66	AV
V	15690	56.13	49.17	15.28	40.46	62.7	74	-11.30	PK
V	15690	39.11	49.17	15.28	40.46	45.68	54	-8.32	AV
H	10460	56.39	49.07	15.33	37.41	60.06	74	-13.94	PK
H	10460	41.28	49.07	15.33	37.41	44.95	54	-9.05	AV
H	15690	54.03	49.17	15.28	40.46	60.6	74	-13.40	PK
H	15690	40.38	49.17	15.28	40.46	46.95	54	-7.05	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.									

802.11ac HT80

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	56.29	49.07	15.33	37.41	59.96	74	-14.04	PK
V	10420	41.67	49.07	15.33	37.41	45.34	54	-8.66	AV
V	15630	56.12	49.17	15.28	40.46	62.69	74	-11.31	PK
V	15630	39.13	49.17	15.28	40.46	45.7	54	-8.30	AV
H	10420	56.38	49.07	15.33	37.41	60.05	74	-13.95	PK
H	10420	41.24	49.07	15.33	37.41	44.91	54	-9.09	AV
H	15630	54.06	49.17	15.28	40.46	60.63	74	-13.37	PK
H	15630	40.38	49.17	15.28	40.46	46.95	54	-7.05	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.									



802.11ax 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	56.73	49.07	15.33	37.41	60.4	74	-13.60	PK
V	10380	40.24	49.07	15.33	37.41	43.91	54	-10.09	AV
V	15570	56.36	49.17	15.28	40.46	62.93	74	-11.07	PK
V	15570	39.78	49.17	15.28	40.46	46.35	54	-7.65	AV
H	10380	56.56	49.07	15.33	37.41	60.23	74	-13.77	PK
H	10380	40.44	49.07	15.33	37.41	44.11	54	-9.89	AV
H	15570	54.12	49.17	15.28	40.46	60.69	74	-13.31	PK
H	15570	39.38	49.17	15.28	40.46	45.95	54	-8.05	AV
operation frequency:5230									
V	10460	57.15	49.11	15.37	37.46	60.87	74	-13.13	PK
V	10460	41.23	49.11	15.37	37.46	44.95	54	-9.05	AV
V	15690	54.44	49.21	15.34	40.51	61.08	74	-12.92	PK
V	15690	39.38	49.21	15.34	40.51	46.02	54	-7.98	AV
H	10460	57.13	49.11	15.37	31.31	54.7	74	-19.30	PK
H	10460	44.68	49.11	15.37	31.31	42.25	54	-11.75	AV
H	15690	55.16	49.21	15.34	40.51	61.8	74	-12.20	PK
H	15690	40.04	49.21	15.34	40.51	46.68	54	-7.32	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.									

802.11ax HT80

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	56.25	49.07	15.33	37.41	59.92	74	-14.08	PK
V	10420	41.61	49.07	15.33	37.41	45.28	54	-8.72	AV
V	15630	56.16	49.17	15.28	40.46	62.73	74	-11.27	PK
V	15630	39.18	49.17	15.28	40.46	45.75	54	-8.25	AV
H	10420	56.34	49.07	15.33	37.41	60.01	74	-13.99	PK
H	10420	41.26	49.07	15.33	37.41	44.93	54	-9.07	AV
H	15630	54.03	49.17	15.28	40.46	60.6	74	-13.40	PK
H	15630	40.37	49.17	15.28	40.46	46.94	54	-7.06	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 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:5190									
V	10380	56.79	49.07	15.33	37.41	60.46	74	-13.54	PK
V	10380	40.22	49.07	15.33	37.41	43.89	54	-10.11	AV
V	15570	56.34	49.17	15.28	40.46	62.91	74	-11.09	PK
V	15570	39.73	49.17	15.28	40.46	46.3	54	-7.70	AV
H	10380	56.51	49.07	15.33	37.41	60.18	74	-13.82	PK
H	10380	40.48	49.07	15.33	37.41	44.15	54	-9.85	AV
H	15570	54.16	49.17	15.28	40.46	60.73	74	-13.27	PK
H	15570	39.34	49.17	15.28	40.46	45.91	54	-8.09	AV
operation frequency:5230									
V	10460	57.12	49.11	15.37	37.46	60.84	74	-13.16	PK
V	10460	41.29	49.11	15.37	37.46	45.01	54	-8.99	AV
V	15690	54.47	49.21	15.34	40.51	61.11	74	-12.89	PK
V	15690	39.33	49.21	15.34	40.51	45.97	54	-8.03	AV
H	10460	57.15	49.11	15.37	31.31	54.72	74	-19.28	PK
H	10460	44.64	49.11	15.37	31.31	42.21	54	-11.79	AV
H	15690	55.13	49.21	15.34	40.51	61.77	74	-12.23	PK
H	15690	40.05	49.21	15.34	40.51	46.69	54	-7.31	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.



For MIMO mode

802.11ac20

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	56.33	49.05	15.3	37.39	59.97	74	-14.03	PK
V	10360	41.15	49.05	15.3	37.39	44.79	54	-9.21	AV
V	15540	56.67	49.16	15.27	40.45	63.23	74	-10.77	PK
V	15540	39.15	49.16	15.27	40.45	45.71	54	-8.29	AV
H	10360	56.06	49.05	15.3	37.39	59.7	74	-14.30	PK
H	10360	40.44	49.05	15.3	37.39	44.08	54	-9.92	AV
H	15540	59.18	49.16	15.27	40.45	65.74	74	-8.26	PK
H	15540	38.03	49.16	15.27	40.45	44.59	54	-9.41	AV
operation frequency:5220									
V	10400	57.45	49.09	15.34	37.42	61.12	74	-12.88	PK
V	10400	39.36	49.09	15.34	37.42	43.03	54	-10.97	AV
V	15600	59.44	49.18	15.29	40.47	66.02	74	-7.98	PK
V	15600	38.13	49.18	15.29	40.47	44.71	54	-9.29	AV
H	10400	56.97	49.09	15.34	37.42	60.64	74	-13.36	PK
H	10400	39.75	49.09	15.34	37.42	43.42	54	-10.58	AV
H	15600	59.46	49.18	15.29	40.47	66.04	74	-7.96	PK
H	15600	38.34	49.18	15.29	40.47	44.92	54	-9.08	AV
operation frequency:5240									
V	10480	58.56	49.11	15.37	37.46	62.28	74	-11.72	PK
V	10480	39.28	49.11	15.37	37.46	43	54	-11.00	AV
V	15720	59.13	49.21	15.34	40.51	65.77	74	-8.23	PK
V	15720	38.34	49.21	15.34	40.51	44.98	54	-9.02	AV
H	10480	57.22	49.11	15.37	31.31	54.79	74	-19.21	PK
H	10480	45.57	49.11	15.37	31.31	43.14	54	-10.86	AV
H	15720	57.42	49.21	15.34	40.51	64.06	74	-9.94	PK
H	15720	37.55	49.21	15.34	40.51	44.19	54	-9.81	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.



802.11ax20 band 1

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	56.39	49.05	15.3	37.39	60.03	74	-13.97	PK
V	10360	41.13	49.05	15.3	37.39	44.77	54	-9.23	AV
V	15540	56.65	49.16	15.27	40.45	63.21	74	-10.79	PK
V	15540	39.17	49.16	15.27	40.45	45.73	54	-8.27	AV
H	10360	56.02	49.05	15.3	37.39	59.66	74	-14.34	PK
H	10360	40.49	49.05	15.3	37.39	44.13	54	-9.87	AV
H	15540	59.14	49.16	15.27	40.45	65.7	74	-8.30	PK
H	15540	38.01	49.16	15.27	40.45	44.57	54	-9.43	AV
operation frequency:5220									
V	10400	57.43	49.09	15.34	37.42	61.1	74	-12.90	PK
V	10400	39.35	49.09	15.34	37.42	43.02	54	-10.98	AV
V	15600	59.46	49.18	15.29	40.47	66.04	74	-7.96	PK
V	15600	38.18	49.18	15.29	40.47	44.76	54	-9.24	AV
H	10400	56.96	49.09	15.34	37.42	60.63	74	-13.37	PK
H	10400	39.74	49.09	15.34	37.42	43.41	54	-10.59	AV
H	15600	59.42	49.18	15.29	40.47	66	74	-8.00	PK
H	15600	38.36	49.18	15.29	40.47	44.94	54	-9.06	AV
operation frequency:5240									
V	10480	58.51	49.11	15.37	37.46	62.23	74	-11.77	PK
V	10480	39.26	49.11	15.37	37.46	42.98	54	-11.02	AV
V	15720	59.18	49.21	15.34	40.51	65.82	74	-8.18	PK
V	15720	38.36	49.21	15.34	40.51	45	54	-9.00	AV
H	10480	57.23	49.11	15.37	31.31	54.8	74	-19.20	PK
H	10480	45.54	49.11	15.37	31.31	43.11	54	-10.89	AV
H	15720	57.49	49.21	15.34	40.51	64.13	74	-9.87	PK
H	15720	37.54	49.21	15.34	40.51	44.18	54	-9.82	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 HT20

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	56.33	49.05	15.3	37.39	59.97	74	-14.03	PK
V	10360	41.18	49.05	15.3	37.39	44.82	54	-9.18	AV
V	15540	56.64	49.16	15.27	40.45	63.2	74	-10.80	PK
V	15540	39.12	49.16	15.27	40.45	45.68	54	-8.32	AV
H	10360	56.06	49.05	15.3	37.39	59.7	74	-14.30	PK
H	10360	40.44	49.05	15.3	37.39	44.08	54	-9.92	AV
H	15540	59.11	49.16	15.27	40.45	65.67	74	-8.33	PK
H	15540	38.09	49.16	15.27	40.45	44.65	54	-9.35	AV
operation frequency:5220									
V	10400	57.47	49.09	15.34	37.42	61.14	74	-12.86	PK
V	10400	39.36	49.09	15.34	37.42	43.03	54	-10.97	AV
V	15600	59.43	49.18	15.29	40.47	66.01	74	-7.99	PK
V	15600	38.14	49.18	15.29	40.47	44.72	54	-9.28	AV
H	10400	56.92	49.09	15.34	37.42	60.59	74	-13.41	PK
H	10400	39.76	49.09	15.34	37.42	43.43	54	-10.57	AV
H	15600	59.48	49.18	15.29	40.47	66.06	74	-7.94	PK
H	15600	38.33	49.18	15.29	40.47	44.91	54	-9.09	AV
operation frequency:5240									
V	10480	58.59	49.11	15.37	37.46	62.31	74	-11.69	PK
V	10480	39.24	49.11	15.37	37.46	42.96	54	-11.04	AV
V	15720	59.13	49.21	15.34	40.51	65.77	74	-8.23	PK
V	15720	38.35	49.21	15.34	40.51	44.99	54	-9.01	AV
H	10480	57.26	49.11	15.37	31.31	54.83	74	-19.17	PK
H	10480	45.58	49.11	15.37	31.31	43.15	54	-10.85	AV
H	15720	57.43	49.21	15.34	40.51	64.07	74	-9.93	PK
H	15720	37.57	49.21	15.34	40.51	44.21	54	-9.79	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.



802.11ac 40

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	10380	56.73	49.07	15.33	37.41	60.4	74	-13.60	PK
V	10380	40.28	49.07	15.33	37.41	43.95	54	-10.05	AV
V	15570	56.31	49.17	15.28	40.46	62.88	74	-11.12	PK
V	15570	39.76	49.17	15.28	40.46	46.33	54	-7.67	AV
H	10380	56.58	49.07	15.33	37.41	60.25	74	-13.75	PK
H	10380	40.43	49.07	15.33	37.41	44.1	54	-9.90	AV
H	15570	54.19	49.17	15.28	40.46	60.76	74	-13.24	PK
H	15570	39.31	49.17	15.28	40.46	45.88	54	-8.12	AV
operation frequency:5230									
V	10460	57.15	49.11	15.37	37.46	60.87	74	-13.13	PK
V	10460	41.23	49.11	15.37	37.46	44.95	54	-9.05	AV
V	15690	54.45	49.21	15.34	40.51	61.09	74	-12.91	PK
V	15690	39.31	49.21	15.34	40.51	45.95	54	-8.05	AV
H	10460	57.16	49.11	15.37	31.31	54.73	74	-19.27	PK
H	10460	44.68	49.11	15.37	31.31	42.25	54	-11.75	AV
H	15690	55.11	49.21	15.34	40.51	61.75	74	-12.25	PK
H	15690	40.06	49.21	15.34	40.51	46.7	54	-7.30	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

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	10420	56.29	49.07	15.33	37.41	59.96	74	-14.04	PK
V	10420	41.67	49.07	15.33	37.41	45.34	54	-8.66	AV
V	15630	56.15	49.17	15.28	40.46	62.72	74	-11.28	PK
V	15630	39.11	49.17	15.28	40.46	45.68	54	-8.32	AV
H	10420	56.39	49.07	15.33	37.41	60.06	74	-13.94	PK
H	10420	41.23	49.07	15.33	37.41	44.9	54	-9.10	AV
H	15630	54.07	49.17	15.28	40.46	60.64	74	-13.36	PK
H	15630	40.38	49.17	15.28	40.46	46.95	54	-7.05	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.									



802.11ax 40

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	10380	56.76	49.07	15.33	37.41	60.43	74	-13.57	PK
V	10380	40.27	49.07	15.33	37.41	43.94	54	-10.06	AV
V	15570	56.36	49.17	15.28	40.46	62.93	74	-11.07	PK
V	15570	39.71	49.17	15.28	40.46	46.28	54	-7.72	AV
H	10380	56.52	49.07	15.33	37.41	60.19	74	-13.81	PK
H	10380	40.49	49.07	15.33	37.41	44.16	54	-9.84	AV
H	15570	54.15	49.17	15.28	40.46	60.72	74	-13.28	PK
H	15570	39.36	49.17	15.28	40.46	45.93	54	-8.07	AV
operation frequency:5230									
V	10460	57.14	49.11	15.37	37.46	60.86	74	-13.14	PK
V	10460	41.22	49.11	15.37	37.46	44.94	54	-9.06	AV
V	15690	54.49	49.21	15.34	40.51	61.13	74	-12.87	PK
V	15690	39.38	49.21	15.34	40.51	46.02	54	-7.98	AV
H	10460	57.14	49.11	15.37	31.31	54.71	74	-19.29	PK
H	10460	44.66	49.11	15.37	31.31	42.23	54	-11.77	AV
H	15690	55.18	49.21	15.34	40.51	61.82	74	-12.18	PK
H	15690	40.03	49.21	15.34	40.51	46.67	54	-7.33	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.									

802.11ax HT80

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	10420	56.25	49.07	15.33	37.41	59.92	74	-14.08	PK
V	10420	41.66	49.07	15.33	37.41	45.33	54	-8.67	AV
V	15630	56.17	49.17	15.28	40.46	62.74	74	-11.26	PK
V	15630	39.15	49.17	15.28	40.46	45.72	54	-8.28	AV
H	10420	56.36	49.07	15.33	37.41	60.03	74	-13.97	PK
H	10420	41.27	49.07	15.33	37.41	44.94	54	-9.06	AV
H	15630	54.04	49.17	15.28	40.46	60.61	74	-13.39	PK
H	15630	40.39	49.17	15.28	40.46	46.96	54	-7.04	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 HT40

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	10380	56.72	49.07	15.33	37.41	60.39	74	-13.61	PK
V	10380	40.29	49.07	15.33	37.41	43.96	54	-10.04	AV
V	15570	56.34	49.17	15.28	40.46	62.91	74	-11.09	PK
V	15570	39.72	49.17	15.28	40.46	46.29	54	-7.71	AV
H	10380	56.55	49.07	15.33	37.41	60.22	74	-13.78	PK
H	10380	40.46	49.07	15.33	37.41	44.13	54	-9.87	AV
H	15570	54.17	49.17	15.28	40.46	60.74	74	-13.26	PK
H	15570	39.34	49.17	15.28	40.46	45.91	54	-8.09	AV
operation frequency:5230									
V	10460	57.13	49.11	15.37	37.46	60.85	74	-13.15	PK
V	10460	41.25	49.11	15.37	37.46	44.97	54	-9.03	AV
V	15690	54.46	49.21	15.34	40.51	61.1	74	-12.90	PK
V	15690	39.34	49.21	15.34	40.51	45.98	54	-8.02	AV
H	10460	57.12	49.11	15.37	31.31	54.69	74	-19.31	PK
H	10460	44.69	49.11	15.37	31.31	42.26	54	-11.74	AV
H	15690	55.14	49.21	15.34	40.51	61.78	74	-12.22	PK
H	15690	40.01	49.21	15.34	40.51	46.65	54	-7.35	AV

Remark:

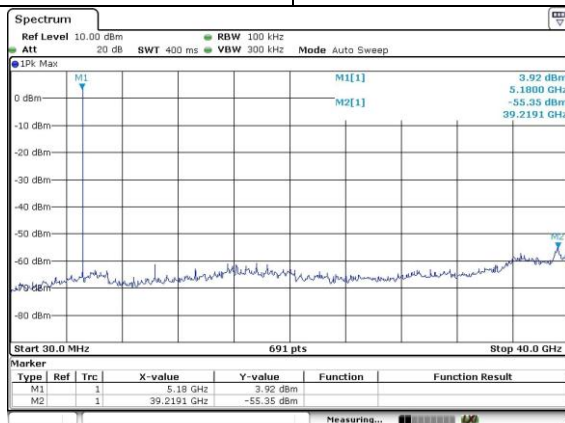
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to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



For Conducted

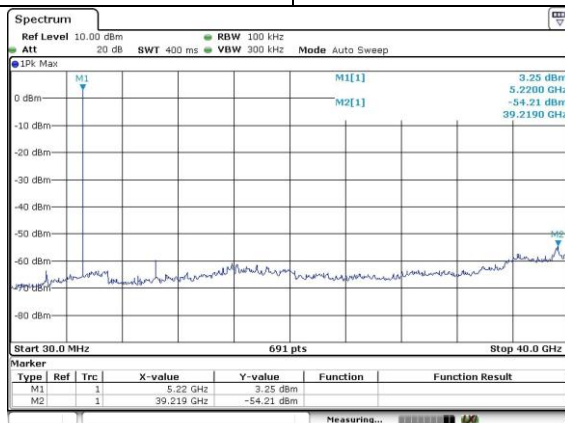
During the test, pre-scan the all modulation, the modulation below were found to have the worst test results, as reflected in the report.

Test channel:	Band 1/802.11a Lowest channel
Limits(dB/m):	-27



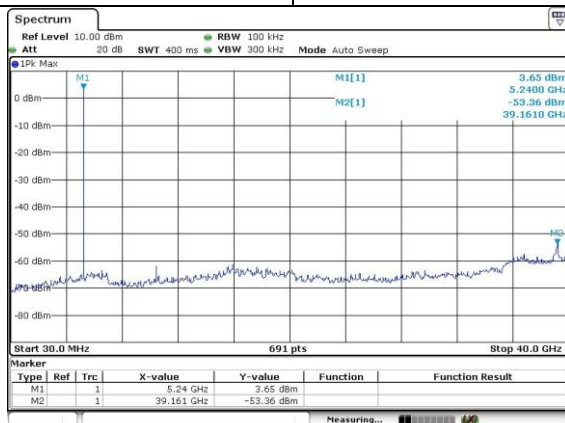
0.03Hz~40GHz

Test channel:	Band 1/802.11a Middle channel
Limits(dB/m):	-27



0.03GHz~40GHz

Test channel:	Band 1/802.11a Highest channel
Limits(dB/m):	-27



0.03GHz~40GHz



3.3 RADIATED BAND EMISSION MEASUREMENT

3.3.1 TEST REQUIREMENT:

RSS-247 Section 5.5

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	5000MHz
Stop Frequency	5420MHz
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 0.1 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:

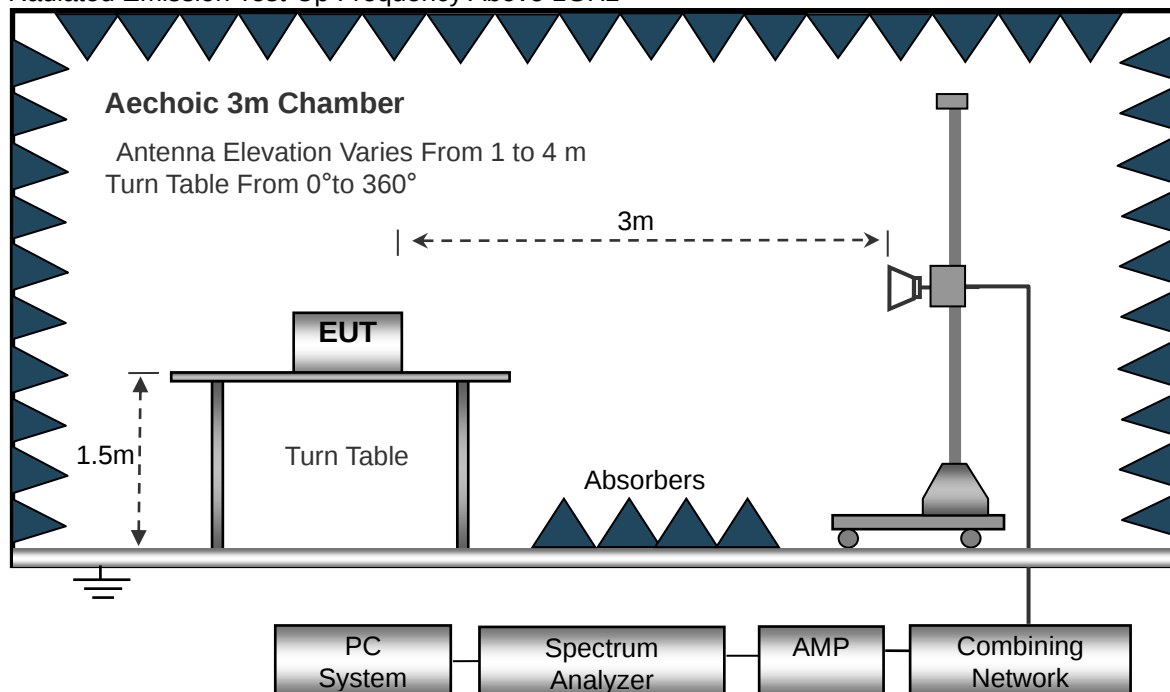
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

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

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:5180									
V	5150	53.19	49.12	15.6	37.34	57.01	74	-16.99	PK
V	5150	39.33	49.12	15.6	37.34	43.15	54	-10.85	AV
V	5145	54.28	49.19	15.24	40.43	60.76	74	-13.24	PK
V	5145	36.34	49.19	15.24	40.43	42.82	54	-11.18	AV
H	5150	52.36	49.12	15.6	37.34	56.18	74	-17.82	PK
H	5150	37.57	49.12	15.6	37.34	41.39	54	-12.61	AV
H	5145	54.35	49.19	15.24	40.43	60.83	74	-13.17	PK
H	5145	33.14	49.19	15.24	40.43	39.62	54	-14.38	AV
operation frequency:5240									
V	5350	53.86	49.13	15.32	37.46	57.51	74	-16.49	PK
V	5350	35.47	49.13	15.32	37.46	39.12	54	-14.88	AV
V	5370	53.15	49.24	15.36	40.51	59.78	74	-14.22	PK
V	5370	32.16	49.24	15.36	40.51	38.79	54	-15.21	AV
H	5350	52.18	49.13	15.32	31.31	49.68	74	-24.32	PK
H	5350	40.24	49.13	15.32	31.31	37.74	54	-16.26	AV
H	5370	52.16	49.24	15.36	40.51	58.79	74	-15.21	PK
H	5370	32.58	49.24	15.36	40.51	39.21	54	-14.79	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.



802.11n HT20

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	51.26	49.12	15.6	37.34	55.08	74	-18.92	PK
V	5150	33.05	49.12	15.6	37.34	36.87	54	-17.13	AV
V	5145	51.58	49.19	15.24	40.43	58.06	74	-15.94	PK
V	5145	33.14	49.19	15.24	40.43	39.62	54	-14.38	AV
H	5150	51.96	49.12	15.6	37.34	55.78	74	-18.22	PK
H	5150	33.46	49.12	15.6	37.34	37.28	54	-16.72	AV
H	5145	50.15	49.19	15.24	40.43	56.63	74	-17.37	PK
H	5145	32.36	49.19	15.24	40.43	38.84	54	-15.16	AV
operation frequency:5240									
V	5350	53.68	49.13	15.32	37.46	57.33	74	-16.67	PK
V	5350	34.15	49.13	15.32	37.46	37.8	54	-16.2	AV
V	5370	50.23	49.24	15.36	40.51	56.86	74	-17.14	PK
V	5370	33.58	49.24	15.36	40.51	40.21	54	-13.79	AV
H	5350	54.15	49.13	15.32	31.31	51.65	74	-22.35	PK
H	5350	36.26	49.13	15.32	31.31	33.76	54	-20.24	AV
H	5370	51.27	49.24	15.36	40.51	57.9	74	-16.1	PK
H	5370	33.55	49.24	15.36	40.51	40.18	54	-13.82	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.									



802.11ac HT20

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	52.16	49.12	15.33	37.41	55.78	74	-18.22	PK
V	5150	34.58	49.12	15.33	37.41	38.2	54	-15.8	AV
V	5145	51.25	49.19	15.28	40.46	57.8	74	-16.2	PK
V	5145	33.63	49.19	15.28	40.46	40.18	54	-13.82	AV
H	5150	52.41	49.12	15.33	37.41	56.03	74	-17.97	PK
H	5150	34.68	49.12	15.33	37.41	38.3	54	-15.7	AV
H	5145	50.64	49.19	15.28	40.46	57.19	74	-16.81	PK
H	5145	33.57	49.19	15.28	40.46	40.12	54	-13.88	AV
operation frequency:5240									
V	5350	53.66	49.13	15.32	37.46	57.31	74	-16.69	PK
V	5350	36.31	49.13	15.32	37.46	39.96	54	-14.04	AV
V	5370	50.15	49.24	15.36	40.51	56.78	74	-17.22	PK
V	5370	33.66	49.24	15.36	40.51	40.29	54	-13.71	AV
H	5350	53.18	49.13	15.32	31.31	50.68	74	-23.32	PK
H	5350	40.25	49.13	15.32	31.31	37.75	54	-16.25	AV
H	5370	51.86	49.24	15.36	40.51	58.49	74	-15.51	PK
H	5370	35.67	49.24	15.36	40.51	42.3	54	-11.7	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.									



802.11ax HT20

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	52.15	49.12	15.6	37.39	56.02	74	-17.98	PK
V	5150	35.66	49.12	15.6	37.39	39.53	54	-14.47	AV
V	5145	51.58	49.19	15.24	40.45	58.08	74	-15.92	PK
V	5145	34.64	49.19	15.24	40.45	41.14	54	-12.86	AV
H	5150	52.66	49.12	15.6	37.39	56.53	74	-17.47	PK
H	5150	34.78	49.12	15.6	37.39	38.65	54	-15.35	AV
H	5145	50.15	49.19	15.24	40.45	56.65	74	-17.35	PK
H	5145	35.66	49.19	15.24	40.45	42.16	54	-11.84	AV
operation frequency:5240									
V	5350	53.67	49.13	15.34	37.46	57.34	74	-16.66	PK
V	5350	37.56	49.13	15.34	37.46	41.23	54	-12.77	AV
V	5370	50.25	49.24	15.35	40.51	56.87	74	-17.13	PK
V	5370	36.36	49.24	15.35	40.51	42.98	54	-11.02	AV
H	5350	54.27	49.13	15.34	31.31	51.79	74	-22.21	PK
H	5350	41.25	49.13	15.34	31.31	38.77	54	-15.23	AV
H	5370	52.66	49.24	15.35	40.51	59.28	74	-14.72	PK
H	5370	36.88	49.24	15.35	40.51	43.5	54	-10.5	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	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	52.86	49.12	15.32	37.41	56.47	74	-17.53	PK
V	5150	37.68	49.12	15.32	37.41	41.29	54	-12.71	AV
V	5145	52.44	49.19	15.36	40.46	59.07	74	-14.93	PK
V	5145	36.56	49.19	15.36	40.46	43.19	54	-10.81	AV
H	5150	52.98	49.12	15.32	37.41	56.59	74	-17.41	PK
H	5150	37.65	49.12	15.32	37.41	41.26	54	-12.74	AV
H	5145	51.28	49.19	15.36	40.46	57.91	74	-16.09	PK
H	5145	36.36	49.19	15.36	40.46	42.99	54	-11.01	AV
operation frequency:5230									
V	5350	54.68	49.13	15.34	37.34	58.23	74	-15.77	PK
V	5350	36.66	49.13	15.34	37.34	40.21	54	-13.79	AV
V	5370	51.45	49.24	15.35	40.43	57.99	74	-16.01	PK
V	5370	36.96	49.24	15.35	40.43	43.5	54	-10.5	AV
H	5350	54.14	49.13	15.34	37.34	57.69	74	-16.31	PK
H	5350	41.33	49.13	15.34	37.34	44.88	54	-9.12	AV
H	5370	50.27	49.24	15.35	40.43	56.81	74	-17.19	PK
H	5370	35.66	49.24	15.35	40.43	42.2	54	-11.8	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	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	52.83	49.12	15.32	37.41	56.44	74	-17.56	PK
V	5150	37.61	49.12	15.32	37.41	41.22	54	-12.78	AV
V	5145	52.46	49.19	15.36	40.46	59.09	74	-14.91	PK
V	5145	36.58	49.19	15.36	40.46	43.21	54	-10.79	AV
H	5150	52.94	49.12	15.32	37.41	56.55	74	-17.45	PK
H	5150	37.62	49.12	15.32	37.41	41.23	54	-12.77	AV
H	5145	51.23	49.19	15.36	40.46	57.86	74	-16.14	PK
H	5145	36.34	49.19	15.36	40.46	42.97	54	-11.03	AV
operation frequency:5230									
V	5350	54.63	49.13	15.34	37.34	58.18	74	-15.82	PK
V	5350	36.67	49.13	15.34	37.34	40.22	54	-13.78	AV
V	5370	51.41	49.24	15.35	40.43	57.95	74	-16.05	PK
V	5370	36.93	49.24	15.35	40.43	43.47	54	-10.53	AV
H	5350	54.18	49.13	15.34	37.34	57.73	74	-16.27	PK
H	5350	41.35	49.13	15.34	37.34	44.9	54	-9.1	AV
H	5370	50.26	49.24	15.35	40.43	56.8	74	-17.2	PK
H	5370	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.									

802.11ac HT80

02:11:07.1700

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	52.13	49.13	15.32	37.48	55.8	74	-18.2	PK
V	5350	35.28	49.13	15.32	37.48	38.95	54	-15.05	AV
V	5370	51.24	49.24	15.36	40.42	57.78	74	-16.22	PK
V	5370	35.61	49.24	15.36	40.42	42.15	54	-11.85	AV
H	5350	52.49	49.13	15.32	37.48	56.16	74	-17.84	PK
H	5350	36.27	49.13	15.32	37.48	39.94	54	-14.06	AV
H	5370	50.25	49.24	15.36	40.42	56.79	74	-17.21	PK
H	5370	35.26	49.24	15.36	40.42	41.8	54	-12.2	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.									



802.11ax HT40

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	52.88	49.12	15.32	37.41	56.49	74	-17.51	PK
V	5150	37.66	49.12	15.32	37.41	41.27	54	-12.73	AV
V	5145	52.44	49.19	15.36	40.46	59.07	74	-14.93	PK
V	5145	36.53	49.19	15.36	40.46	43.16	54	-10.84	AV
H	5150	52.98	49.12	15.32	37.41	56.59	74	-17.41	PK
H	5150	37.66	49.12	15.32	37.41	41.27	54	-12.73	AV
H	5145	51.28	49.19	15.36	40.46	57.91	74	-16.09	PK
H	5145	36.32	49.19	15.36	40.46	42.95	54	-11.05	AV
operation frequency:5230									
V	5350	54.68	49.13	15.34	37.34	58.23	74	-15.77	PK
V	5350	36.66	49.13	15.34	37.34	40.21	54	-13.79	AV
V	5370	51.44	49.24	15.35	40.43	57.98	74	-16.02	PK
V	5370	36.92	49.24	15.35	40.43	43.46	54	-10.54	AV
H	5350	54.14	49.13	15.34	37.34	57.69	74	-16.31	PK
H	5350	41.33	49.13	15.34	37.34	44.88	54	-9.12	AV
H	5370	50.28	49.24	15.35	40.43	56.82	74	-17.18	PK
H	5370	35.61	49.24	15.35	40.43	42.15	54	-11.85	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.									

802.11ax HT80

02:11:00 1700

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	52.16	49.13	15.32	37.48	55.83	74	-18.17	PK
V	5350	35.27	49.13	15.32	37.48	38.94	54	-15.06	AV
V	5370	51.25	49.24	15.36	40.42	57.79	74	-16.21	PK
V	5370	35.66	49.24	15.36	40.42	42.2	54	-11.8	AV
H	5350	52.41	49.13	15.32	37.48	56.08	74	-17.92	PK
H	5350	36.28	49.13	15.32	37.48	39.95	54	-14.05	AV
H	5370	50.26	49.24	15.36	40.42	56.8	74	-17.2	PK
H	5370	35.24	49.24	15.36	40.42	41.78	54	-12.22	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 CONDUCTED BAND EMISSION MEASUREMENT

3.3.1 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.

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

3.3.2 TEST PROCEDURE

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

3.3.3 DEVIATION FROM TEST STANDARD

No deviation

3.3.4 TEST SETUP



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

For Conducted

Please see annex 2

The test result of ANT1 & ANT 2 are all attenuated 3dB below the limit. So the MIMO mode is passed.



4. OUTPUT POWER

4.1 APPLIED PROCEDURES / LIMIT

For 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.

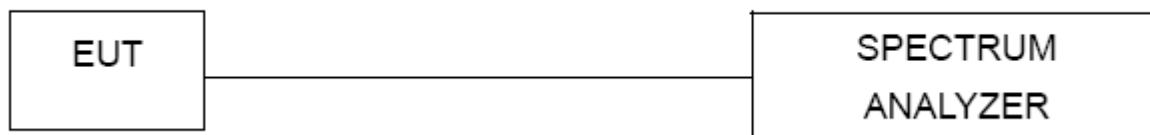
4.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
- b. (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
(ii) Set RBW = 1 MHz.
(iii) Set VBW $\geq$ 3 MHz.
(iv) Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$. (This ensures that bin-to-bin spacing is $\leq \text{RBW}/2$, so that narrowband signals are not lost between frequency bins.)
(v) Sweep time = auto.
(vi) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
(vii) If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle $\geq$ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."
(viii) Trace average at least 100 traces in power averaging (rms) mode.
(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

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

Please see annex 2



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. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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	AVG
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 $10 \log(1/\text{duty cycle})$.
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

Please see annex 2



6. 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.

6.1.1 TEST PROCEDURE

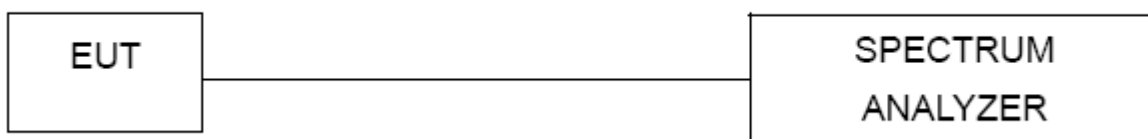
26dB Bandwidth	
Spectrum Parameters	Setting
RBW	approximately 1% of the emission bandwidth
VBW	>RBW
Span	30MHz(20MHz Bandwidth mode) 60MHz(40MHz Bandwidth mode) 120MHz(80MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

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

Please see annex 2



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

Please see annex 2



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.

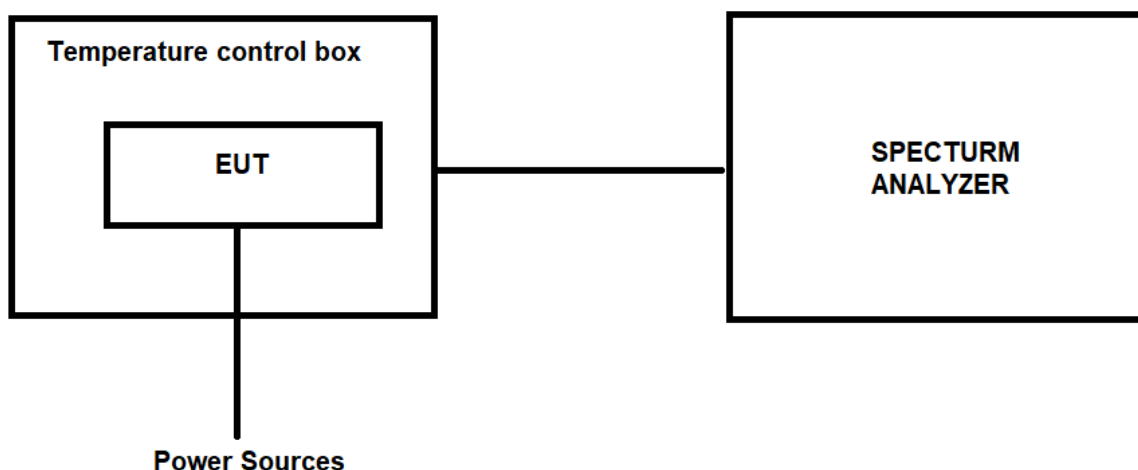
8.1.1 TEST PROCEDURE

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**

ANT1

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)		Δ Frequency (MHz)	
			802.11a	802.11n HT20	802.11a	802.11n HT20
3.6V	-20℃	5180.0000	5180.021	5180.011	-0.021	-0.011
		5220.0000	5220.035	5220.024	-0.035	-0.024
		5240.0000	5240.026	5240.019	-0.026	-0.019
3.1V		5180.0000	5180.038	5180.014	-0.038	-0.014
		5220.0000	5220.021	5220.073	-0.021	-0.073
		5240.0000	5240.025	5240.048	-0.025	-0.048
3.3V	25℃	5180.0000	5180.026	5180.031	-0.026	-0.031
		5220.0000	5220.031	5220.045	-0.031	-0.045
		5240.0000	5240.024	5240.036	-0.024	-0.036
3.6V	50℃	5180.0000	5180.026	5180.024	-0.026	-0.024
		5220.0000	5220.021	5220.011	-0.021	-0.011
		5240.0000	5240.027	5240.017	-0.027	-0.017
3.1V	50℃	5180.0000	5180.025	5180.036	-0.025	-0.036
		5220.0000	5220.026	5220.013	-0.026	-0.013
		5240.0000	5240.013	5240.012	-0.013	-0.012

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)		Δ Frequency (MHz)	
			802.11ac 20	802.11ax 20	802.11ac 20	802.11ax 20
3.6V	-20℃	5180.0000	5180.021	5180.014	-0.021	-0.014
		5220.0000	5220.022	5220.026	-0.022	-0.026
		5240.0000	5240.008	5240.017	-0.008	-0.017
3.1V		5180.0000	5180.011	5180.004	-0.011	-0.004
		5220.0000	5220.025	5220.011	-0.025	-0.011
		5240.0000	5240.026	5240.026	-0.026	-0.026
3.3V	25℃	5180.0000	5180.041	5180.048	-0.041	-0.048
		5220.0000	5220.925	5220.001	-0.925	-0.001
		5240.0000	5240.011	5240.016	-0.011	-0.016
3.6V	50℃	5180.0000	5180.026	5180.014	-0.026	-0.014
		5220.0000	5220.018	5220.001	-0.018	-0.001
		5240.0000	5240.031	5240.035	-0.031	-0.035
3.1V	50℃	5180.0000	5180.035	5180.036	-0.035	-0.036
		5220.0000	5220.026	5220.033	-0.026	-0.033
		5240.0000	5240.037	5240.021	-0.037	-0.021



Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)			Δ Frequency (MHz)		
			802.11ac 40	802.11ax 40	802.11n HT40	802.11ac 40	802.11ax 40	802.11n HT40
3.6V	-20℃	5190.000	5190.011	5190.026	5190.034	-0.011	-0.026	-0.034
		5230.000	5230.035	5230.025	5230.046	-0.035	-0.025	-0.046
3.1V		5190.000	5190.026	5190.028	5190.034	-0.026	-0.028	-0.034
		5230.000	5230.037	5230.034	5230.025	-0.037	-0.034	-0.025
3.3V	25℃	5190.000	5190.022	5190.041	5190.046	-0.022	-0.041	-0.046
		5230.000	5230.069	5230.066	5230.052	-0.069	-0.066	-0.052
3.6V	50℃	5190.000	5190.061	5190.057	5190.067	-0.061	-0.057	-0.067
		5230.000	5230.056	5230.053	5230.052	-0.056	-0.053	-0.052
3.1V	50℃	5190.000	5190.058	5190.054	5190.035	-0.058	-0.054	-0.035
		5230.000	5230.034	5230.039	5230.043	-0.034	-0.039	-0.043

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)		Δ Frequency (MHz)	
			802.11ac 80	802.11ax 80	802.11ac 80	802.11ax 80
3.6V	-20℃	5210.0000	5210.022	5210.042	-0.022	-0.042
3.1V		5210.0000	5210.034	5210.061	-0.034	-0.061
3.3V	25℃	5210.0000	5210.063	5210.066	-0.063	-0.066
3.6V	50℃	5210.0000	5210.067	5210.053	-0.067	-0.053
3.1V	50℃	5210.0000	5210.046	5210.057	-0.046	-0.057



ANT2

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)		Δ Frequency (MHz)	
			802.11a	802.11n HT20	802.11a	802.11n HT20
132V	-20℃	5180.0000	5180.036	5180.013	-0.036	-0.013
		5220.0000	5220.037	5220.025	-0.037	-0.025
		5240.0000	5240.022	5240.014	-0.022	-0.014
108V		5180.0000	5180.034	5180.016	-0.034	-0.016
		5220.0000	5220.026	5220.078	-0.026	-0.078
		5240.0000	5240.027	5240.044	-0.027	-0.044
120V	25℃	5180.0000	5180.029	5180.036	-0.029	-0.036
		5220.0000	5220.038	5220.047	-0.038	-0.047
		5240.0000	5240.022	5240.033	-0.022	-0.033
132V	50℃	5180.0000	5180.024	5180.025	-0.024	-0.025
		5220.0000	5220.063	5220.019	-0.063	-0.019
		5240.0000	5240.028	5240.015	-0.028	-0.015
108V	50℃	5180.0000	5180.024	5180.031	-0.024	-0.031
		5220.0000	5220.023	5220.019	-0.023	-0.019
		5240.0000	5240.018	5240.018	-0.018	-0.018

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)		Δ Frequency (MHz)	
			802.11ac 20	802.11ax 20	802.11ac 20	802.11ax 20
132V	-20℃	5180.0000	5180.026	5180.016	-0.026	-0.016
		5220.0000	5220.024	5220.024	-0.024	-0.024
		5240.0000	5240.008	5240.013	-0.008	-0.013
108V		5180.0000	5180.016	5180.008	-0.016	-0.008
		5220.0000	5220.021	5220.016	-0.021	-0.016
		5240.0000	5240.023	5240.024	-0.023	-0.024
120V	25℃	5180.0000	5180.048	5180.041	-0.048	-0.041
		5220.0000	5220.924	5220.052	-0.924	-0.052
		5240.0000	5240.016	5240.011	-0.016	-0.011
132V	50℃	5180.0000	5180.024	5180.016	-0.024	-0.016
		5220.0000	5220.013	5220.008	-0.013	-0.008
		5240.0000	5240.038	5240.034	-0.038	-0.034
108V	50℃	5180.0000	5180.034	5180.033	-0.034	-0.033
		5220.0000	5220.023	5220.034	-0.023	-0.034
		5240.0000	5240.038	5240.029	-0.038	-0.029



Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)			Δ Frequency (MHz)		
			802.11ac 40	802.11ax 40	802.11n HT40	802.11ac 40	802.11ax 40	802.11n HT40
132V	-20℃	5190.000	5190.016	5190.023	5190.033	-0.016	-0.023	-0.033
		5230.000	5230.037	5230.025	5230.044	-0.037	-0.025	-0.044
108V		5190.000	5190.023	5190.021	5190.036	-0.023	-0.021	-0.036
		5230.000	5230.035	5230.036	5230.023	-0.035	-0.036	-0.023
120V	25℃	5190.000	5190.024	5190.048	5190.044	-0.024	-0.048	-0.044
		5230.000	5230.065	5230.064	5230.056	-0.065	-0.064	-0.056
132V	50℃	5190.000	5190.066	5190.056	5190.068	-0.066	-0.056	-0.068
		5230.000	5230.057	5230.052	5230.054	-0.057	-0.052	-0.054
108V	50℃	5190.000	5190.054	5190.053	5190.032	-0.054	-0.053	-0.032
		5230.000	5230.039	5230.038	5230.048	-0.039	-0.038	-0.048

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)		Δ Frequency (MHz)	
			802.11ac 80	802.11ax 80	802.11ac 80	802.11ax 80
132V	-20℃	5210.0000	5210.026	5210.046	-0.026	-0.046
108V		5210.0000	5210.035	5210.068	-0.035	-0.068
120V	25℃	5210.0000	5210.066	5210.064	-0.066	-0.064
132V	50℃	5210.0000	5210.064	5210.056	-0.064	-0.056
108V	50℃	5210.0000	5210.041	5210.058	-0.041	-0.058



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.

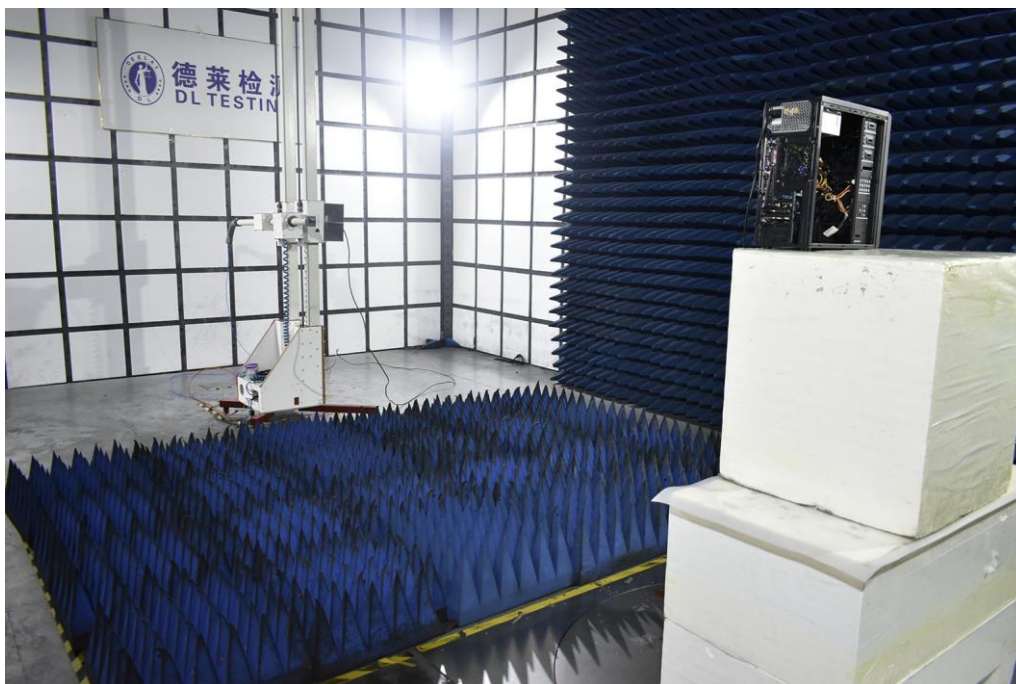
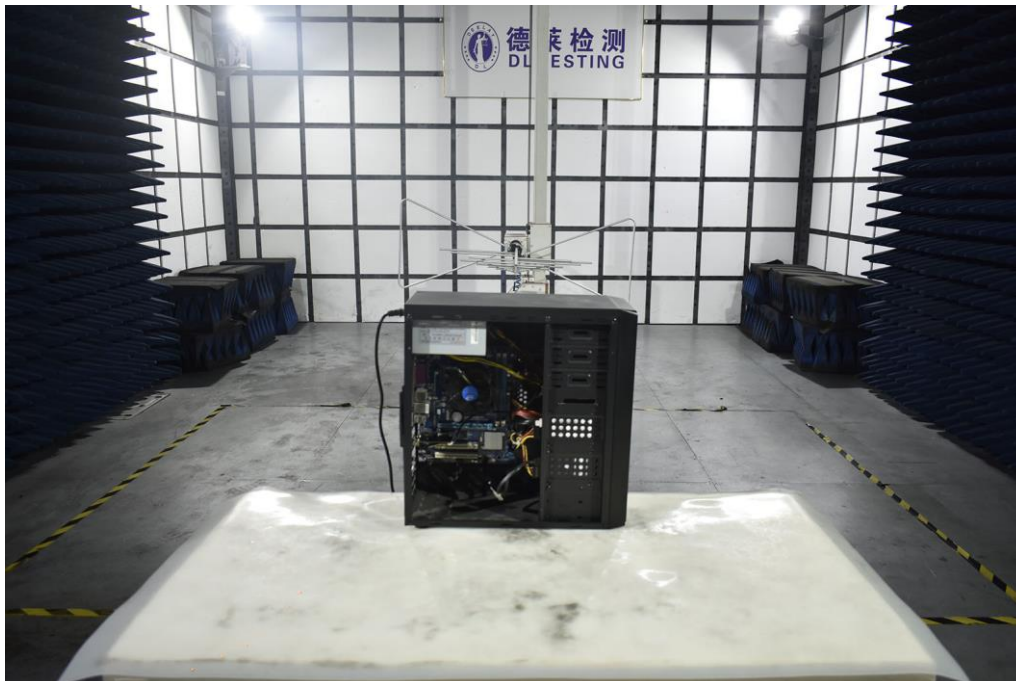
10.2 EUT ANTENNA

The EUT antenna is equipped unique antenna connector and antenna gain less than 6dBi, It comply with the standard requirement.



11. TEST SEUUP PHOTO

Radiated Measurement Photos



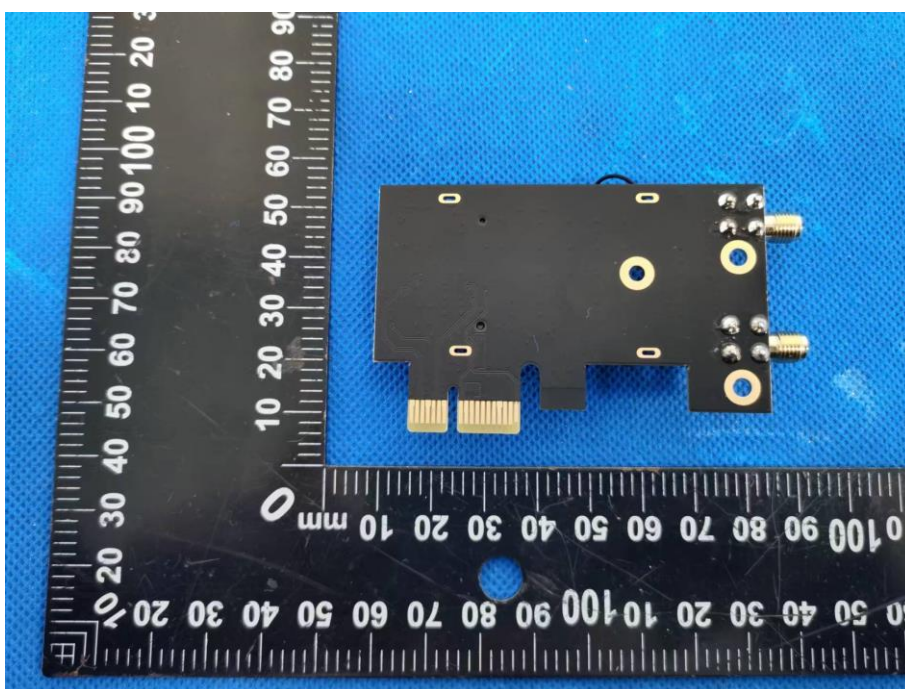
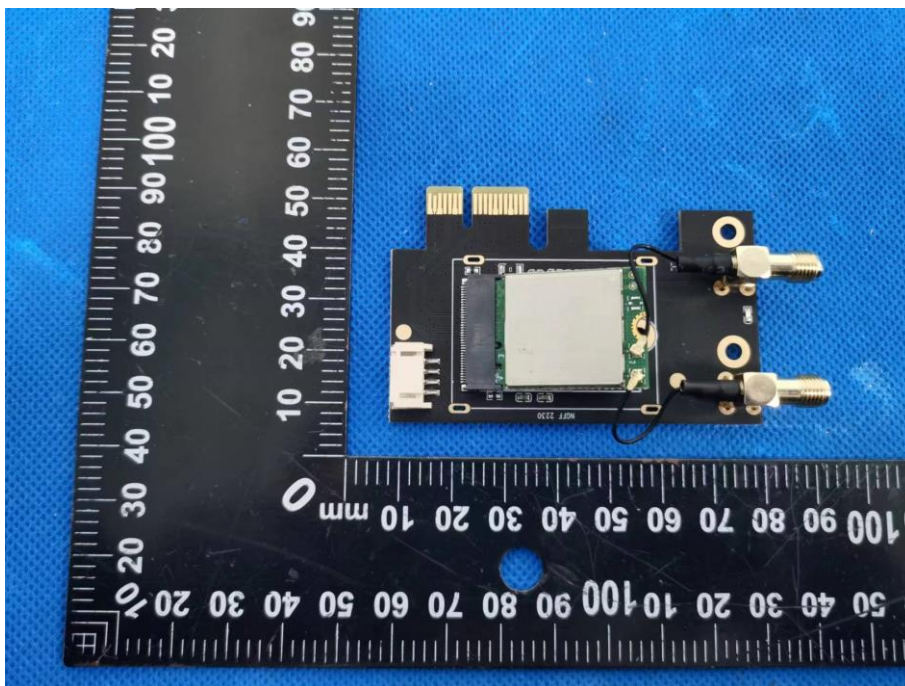


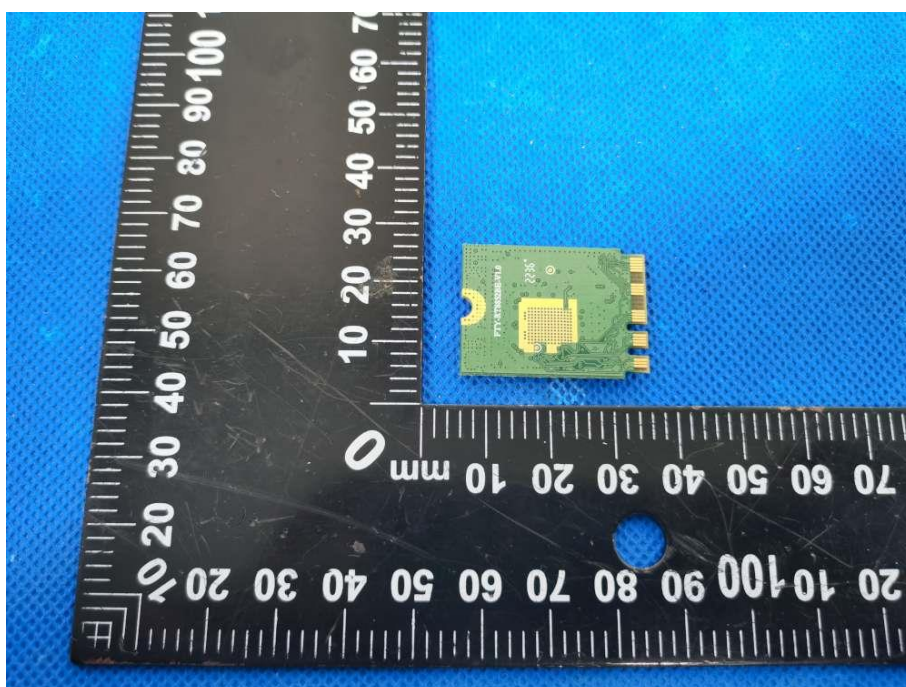
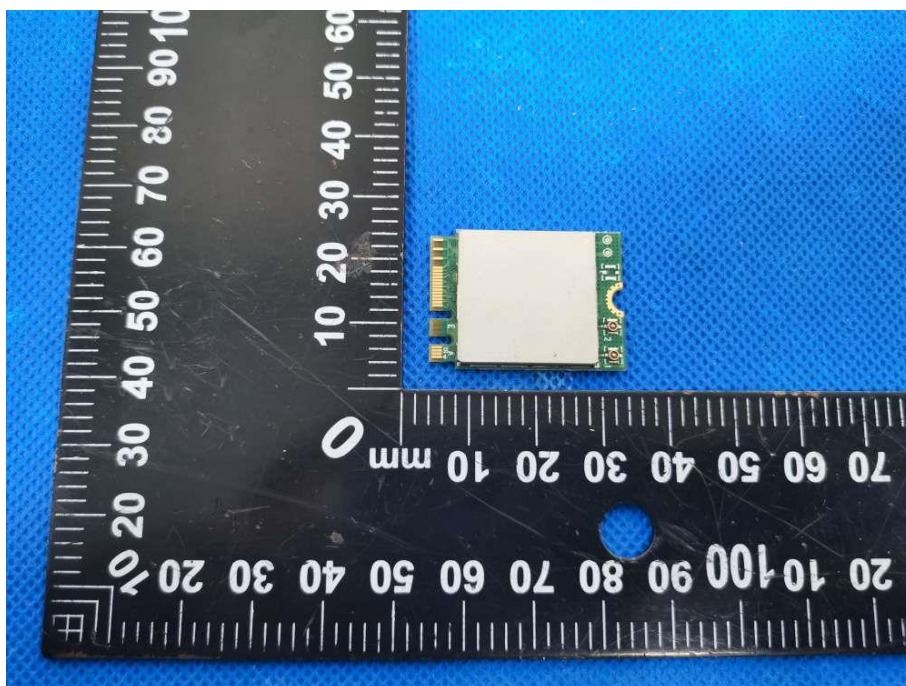
Conducted Measurement Photos

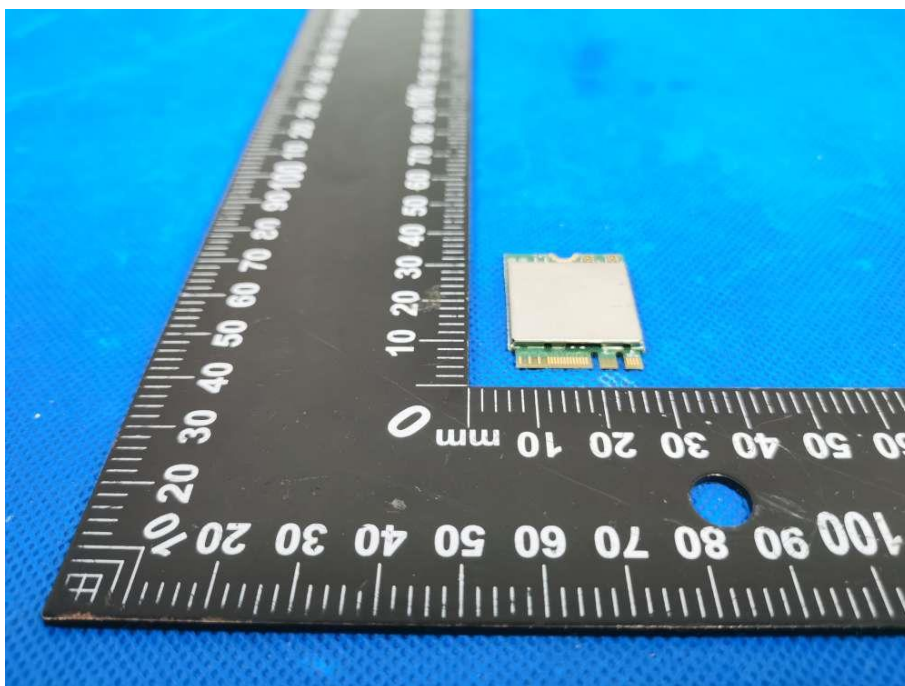
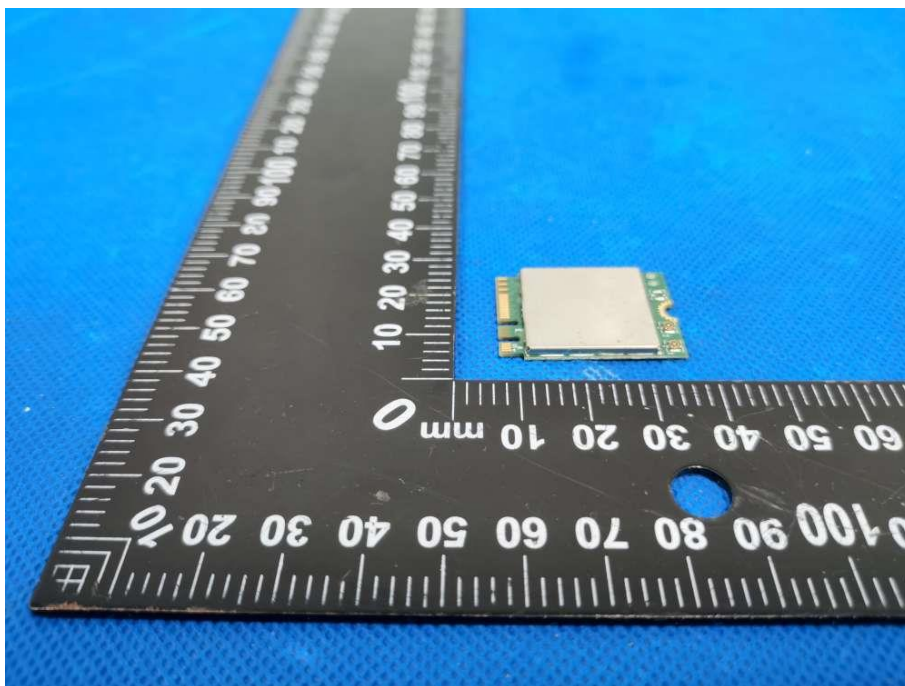


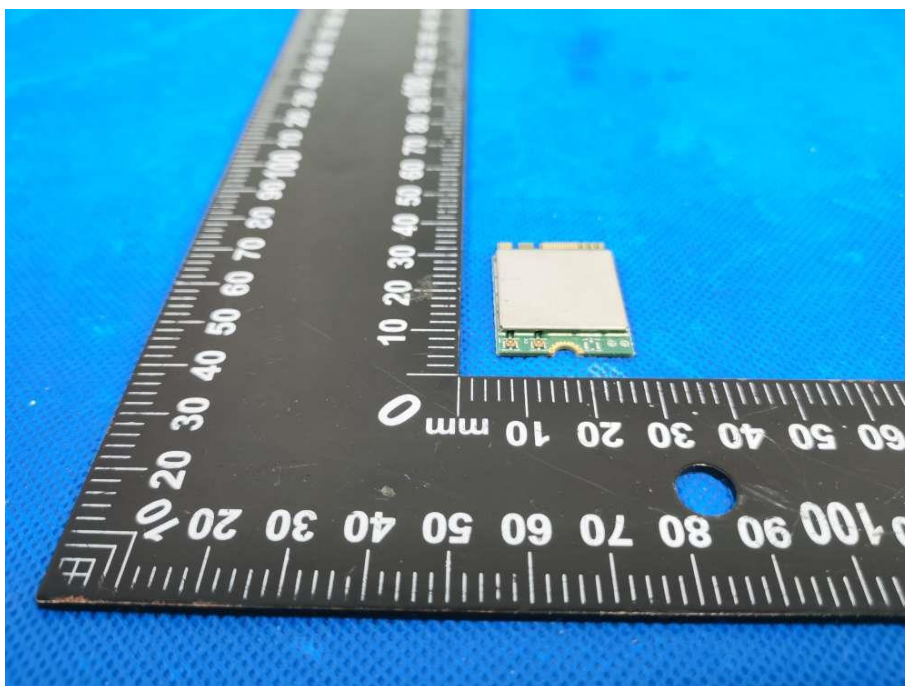
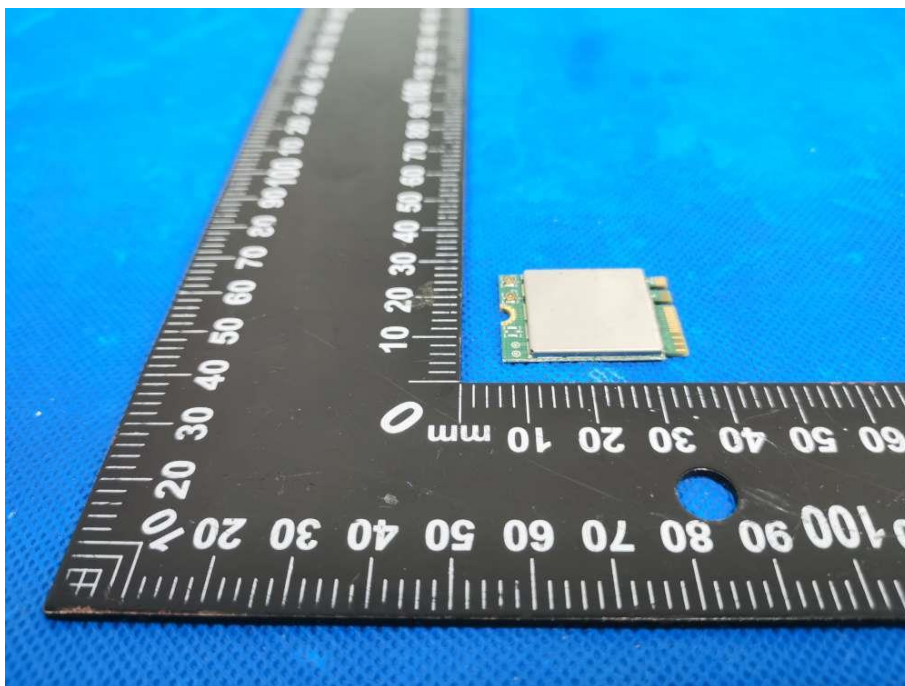


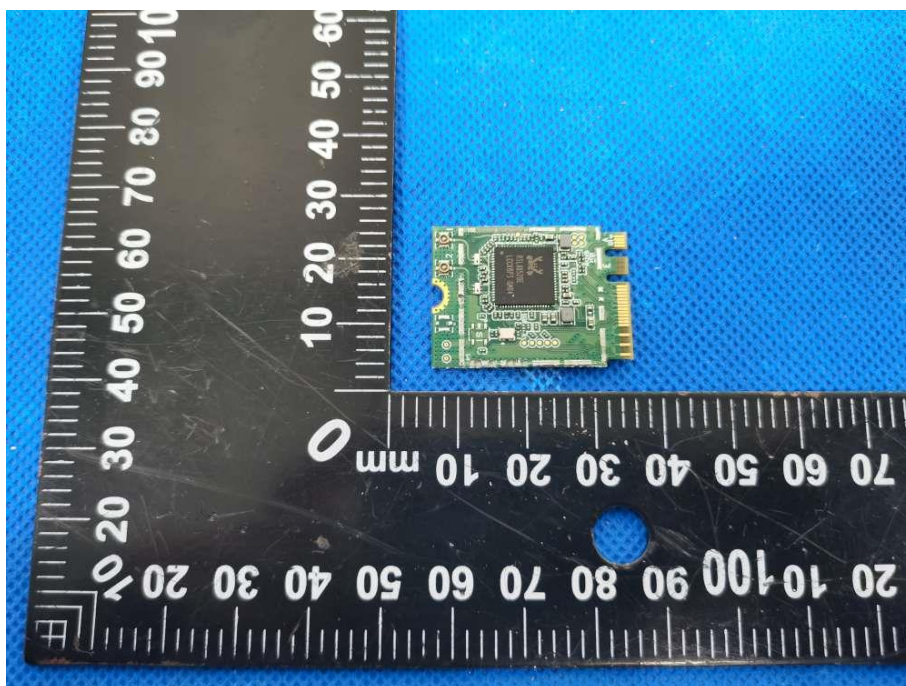
12. EUT PHOTO

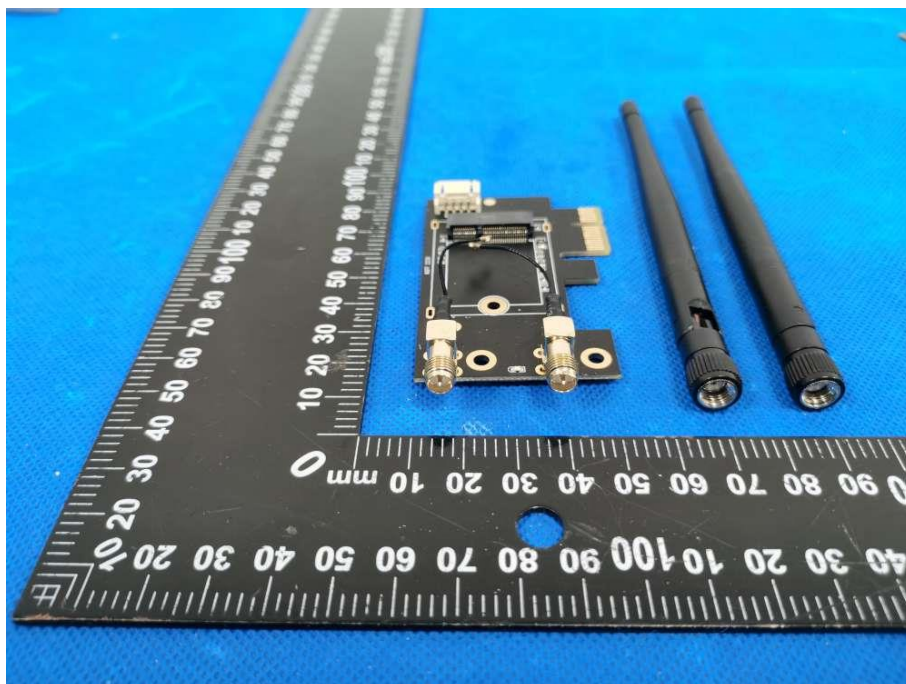












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