



FCC TEST REPORT

FCC ID: 2A96I-GTW8103

Report Number.....: **ZKT-260724L1709E-1**

Date of Test June 09, 2026 ~ July 06, 2026

Date of issue: July 06, 2026

Total number of pages..... 24

Test Result: PASS

Testing Laboratory.....: Shenzhen ZKT Technology Co., Ltd.Address: 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue,
Fuhai Street, Bao'an District, Shenzhen, China**Applicant's name: Shanghai UniOne Science&Technology CO., Ltd.**

Address: Building 4, No. 651 Wanfang Road, Pujiang Town, Minhang District, Shanghai, China.

Manufacturer's name: Shanghai UniOne Science&Technology CO., Ltd.

Address: Building 4, No. 651 Wanfang Road, Pujiang Town, Minhang District, Shanghai, China.

Test specification:

Standard.....: FCC CFR Title 47 Part 15 Subpart E Section 15.407
ANSI C63.10-2020+Cor 1-2023
KDB 789033 D02 v02r01

Test procedure: /

Non-standard test method: N/A

Test Report Form No.....: TRF-EL-111_V0**Test Report Form(s) Originator.....: ZKT Testing****Master TRF: Dated: 2020-01-06**

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Product name: Rugged Windows Tablet

Trademark: N/A

Model/Type reference: GTW8103(Standard)

Ratings: Input: DC 19V 3.42A



Testing procedure and testing location:

Testing Laboratory.....: Shenzhen ZKT Technology Co., Ltd.

Address.....: 1/F, No. 101, Building B, No. 6, Tangwei Community
Industrial Avenue, Fuhai Street, Bao'an District,
Shenzhen, China

Tested by (name + signature).....: Jim Liu

Reviewer (name + signature).....: Jackson Fang

Approved (name + signature).....: Lake Xie





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1. VERSION

Report No.	Version	Description	Approved
STS2407338W10	Rev.01	Initial Issue	Aug. 27, 2024
ZKT-260724L1709E-1	Rev.02	Add series model GTW8103	July 06, 2026

Remark: The differences in the additional models do not affect the RF performance, so there is no need to test the RF conduction items. The relevant data can be referred to in the original report STS2407338W10.



2. 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(a)	AC Power Line Conducted Emission	N/A	
§15.205(a)/§15.209(a) §15.407(b)(1) §15.407(b)(4) §15.407(b)(8)	Radiated Emissions and Band Edge	PASS	
§15.407 (e) 789033 D02 General U-NII	26dB Emission Bandwidth and 6dB Occupied Bandwidth	N/A	
§15.407(a)(1) §15.407 (a)(3) i	Power Spectral Density	N/A	
§15.407(a)(1) §15.407 (a)(3) i §15.407(a)(12)	Maximum Conducted Output Power	N/A	
§15.407(b)(1) §15.407(b)(4) §15.407(b)(8)	Conducted Band Edge	N/A	
§15.407(g)	Frequency Stability	N/A	
789033 D02 General U-NII	Duty Cycle	N/A	
§15.203	Antenna Requirement	PASS	

NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report
- (2) The differences in the additional models do not affect the RF performance, so there is no need to test the RF conduction items. The relevant data can be referred to in the original report.



2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.

Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 927491

Designation Number: CN1431

IC Registered No.: 27033

CAB identifier: CN0110

2.2 MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	3m chamber Radiated spurious Emission (9KHz-30MHz)	$U=4.5\text{dB}$
2	3m chamber Radiated spurious emission (30MHz-1GHz)	$U=4.8\text{dB}$
3	3m chamber Radiated spurious emission (1GHz-6GHz)	$U=4.9\text{dB}$
4	3m chamber Radiated spurious emission (6GHz-40GHz)	$U=5.0\text{dB}$
5	Conducted Disturbance	$U=3.2\text{dB}$
6	RF Band Edge	$U=1.68\text{dB}$
7	RF Power Conducted	$U=1.86\text{dB}$
8	RF Conducted Spurious Emission	$U=2.2\text{dB}$
9	RF Occupied Bandwidth	$U=1.8\text{MHz}$
10	RF Power Spectral Density	$U=1.75\text{dB}$
11	Humidity Uncertainty	$U=5.3\%$
12	Temperature Uncertainty	$U=0.59^\circ\text{C}$



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	Rugged Windows Tablet		
Model No.:	GTW8103(Standard)		
Serial No.:	GTW8103(Handle), GTW8103(RJ45A), GTW8103(RJ45AH) , GTW8103		
Model Different.:	GTW8103(Standard) Only the host; GTW8103(Handle) Host with handle; GTW8103(RJ45A) Host with RJ45+USB 2 in 1 module; GTW8103(RJ45AH) Host with handle and RJ45+USB 2 in 1 module; The USB interface of GTW8103 is modified to an aviation connector form based on GTW8103(RJ45AH), while all other aspects remain unchanged.		
Sample(s) Status:	Engineer sample		
Sample Number:	E3		
Product Description:	IEEE 802.11 WLAN Mode Supported	☒ 802.11a/n/ac	
	Data Rate	802.11a: 6/9/12/24/18/36/48/54Mbit/s 802.11n: MCS0-MCS7 802.11ac: MCS0-MCS9	
	Modulation	802.11a/n/ac: Orthogonal Frequency Division Multiplexing (OFDM) 802.11n/ac Support MIMO	
	Frequency Range	☒ 5180-5240MHz for 802.11a/n/ac (20M) ☒ 5180-5240MHz for 802.11n/ac (40M) ☒ 5210MHz for 802.11ac (80M) ☒ 5745-5825MHz for 802.11a/n/ac (20M) ☒ 5745-5825MHz for 802.11n/ac (40M) ☒ 5775MHz for 802.11ac (80M)	
	Number of Channels	☒ 4 channels for 802.11a/n/ac (20M) in the 5180-5240MHz band ☒ 2 channels for 802.11n/ac (40M) in the 5190-5230MHz band ☒ 1 channels for 802.11ac (80M) in the 5210MHz band ☒ 5 channels for 802.11a/n/ac (20M) in the 5745-5825MHz band ☒ 2 channels for 802.11n/ac (40M) in the 5755-5795MHz band ☒ 1 channels for 802.11ac (80M) in the 5775MHz band	
Channel List:	Please refer to the Note 2.		
Antenna Type:	FPC Antenna		
Antenna Gain:	Band	5.2G	5.8G
	Gain (dBi)	ANT1 :3.45 ANT2 :3.45 MIMO:6.46	ANT1 :3.45 ANT2 :3.45 MIMO:6.46
Power Supply:	Input: DC 19V 3.42A		
Battery Capacity:	Model: BA6000 Rated Voltage:11.01V Charge Limit Voltage: 12.6V Capacity: 6000mAh		



	Model: BA880 Rated Voltage:7.4V Charge Limit Voltage: 8.4V Capacity: 880mAh
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Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2. Channel List

802.11a/n/ac (20M) Frequency Channel for 5.2G							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	40	5200	44	5220	48	5240

802.11n/ac (40M) Frequency Channel For 5.2G							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230	-	-	-	-

802.11ac (80M) Frequency Channel For 5.2G							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	-	-	-	-	-	-

802.11a/n/ac (20M) Frequency Channel for 5.8G							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	153	5765	157	5785	161	5805
165	5825	-	-	-	-	-	-

802.11n/ac (40M) Frequency Channel for 5.8G							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795	-	-	-	-

802.11ac (80M) Frequency Channel For 5.8G							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
155	5775	-	-	-	-	-	-



3.2 DESCRIPTION OF TEST MODES

Pretest Mode	Description
Mode 1	802.11a/n/ac (20M) CH 36 / CH 40 / CH 48 For 5.2G 802.11a/n/ac (20M) CH149 / CH157 / CH 165 For 5.8G
Mode 2	802.11n/ac(40M) CH 38 / CH 46 For 5.2G 802.11n/ac (40M) CH 151 / CH 159 For 5.8G
Mode 3	802.11ac (80M) CH42 For 5.2G 802.11ac (80M) CH 155 For 5.8G

Final Test Mode	For Conducted
	Description
Mode 1	802.11a/n/ac (20M) CH 36 / CH 40 / CH 48 For 5.2G 802.11a/n/ac (20M) CH149 / CH157 / CH 165 For 5.8G
Mode 2	802.11n/ac(40M) CH 38 / CH 46 For 5.2G 802.11n/ac (40M) CH 151 / CH 159 For 5.8G
Mode 3	802.11ac (80M) CH42 For 5.2G 802.11ac (80M) CH 155 For 5.8G

Final Test Mode	For Radiated
	Description
Mode 1	802.11a/n/ac (20M) CH 36 / CH 40 / CH 48 For 5.2G 802.11a/n/ac (20M) CH149 / CH157 / CH 165 For 5.8G
Mode 2	802.11n/ac(40M) CH 38 / CH 46 For 5.2G 802.11n/ac (40M) CH 151 / CH 159 For 5.8G
Mode 3	802.11ac (80M) CH42 For 5.2G 802.11ac (80M) CH 155 For 5.8G

Transmitting mode	Keep the EUT in continuously transmitting mode
Remark: 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.	

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:			
Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.			
Mode	802.11a	802.11n20/n40	802.11ac20/ac40/ac80
Data rate	6Mbps	MCS0(HT0)	MCS0(VHT0)

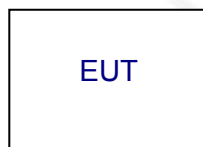


RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	ANT_1 Power Class	ANT_2 Power Class	Software For Testing
WIFI(5G)	U-NII-1 (5150MHz-5250MHz)	802.11a	ANT1 :3.45 ANT2 :3.45 MIMO:6.46	15	15	DRTU
		802.11n(HT20)		15	15	
		802.11n(HT40)		13.75	13.75	
		802.11ac(VHT20)		15	15	
		802.11ac(VHT40)		13.75	13.75	
		802.11ac(VHT80)		13.75	13.75	
RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	ANT_1 Power Class	ANT_2 Power Class	Software For Testing
WIFI(5G)	U-NII-3 (5725MHz-5895MHz)	802.11a	ANT1 :3.45 ANT2 :3.45 MIMO:6.46	15	16	DRTU
		802.11n(HT20)		14.75	14.75	
		802.11n(HT40)		14.75	14.75	
		802.11ac(VHT20)		14.75	14.75	
		802.11ac(VHT40)		14.75	14.75	
		802.11ac(VHT80)		14.75	14.75	



3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Emission



3.4 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	Mfr/Brand	Model/Type No.	Length	Note
N/A	N/A	N/A	N/A	N/A	N/A

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
N/A	N/A	N/A	N/A	N/A	N/A

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Emissions Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	N9020A	MY55370835	A.17.05	Sep. 20, 2025	Sep. 19, 2026
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Sep. 20, 2025	Sep. 19, 2026
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	100969	4.32	Oct. 24, 2025	Oct. 23, 2026
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	00877	N/A	Sep. 20, 2025	Sep. 19, 2026
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	N/A	Sep. 20, 2025	Sep. 19, 2026
6	Horn Antenna (15GHz-40GHz)	A.H.System	SAS-574	588	N/A	Sep. 30, 2025	Sep. 29, 2026
7	Loop Antenna	TESEQ	HLA6121	58357	N/A	Sep. 20, 2025	Sep. 19, 2026
8	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	60747	N/A	Sep. 19, 2025	Sep. 18, 2026
9	Amplifier (1GHz-26.5GHz)	HuiPu	8449B	3008A00315	N/A	Sep. 19, 2025	Sep. 18, 2026
10	Amplifier (500MHz-40GHz)	QuanJuDa	DLE-161	097	N/A	Oct. 24, 2025	Oct. 23, 2026
11	Test Cable	N/A	R-01	N/A	N/A	May 25, 2026	May 24, 2027
12	Test Cable	N/A	R-02	N/A	N/A	May 25, 2026	May 24, 2027
13	Test Cable	N/A	R-03	N/A	N/A	May 25, 2026	May 24, 2027
14	D.C. Power Supply	LongWei	TPR-6405D	N/A	N/A	\	\
15	EMC Software	Frad	EZ-EMC	Ver.EMC-CO N 3A1.1	N/A	\	\
16	Turntable	MF	MF-7802BS	N/A	N/A	\	\
17	Antenna tower	MF	MF-7802BS	N/A	N/A	\	\



4. EMC EMISSION TEST

4.1 RADIATED EMISSION AND BAND EDGE MEASUREMENT

4.1.1 APPLICABLE STANDARD

According to FCC Part 15.407(b)(1) and 15.407(b)(4)(i) and 15.205(a) and 15.209(a).

4.1.2 CONFORMANCE LIMIT

According to FCC Part 15.407(b)(1) 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 5.15-5.25 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.

Frequency Range	Peak	Average
All emissions outside of the 5.15-5.35 GHz band shall not exceed	68.20 (dBuV/m)	54 (dBuV/m)

(4) 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.

Frequency Range	Peak	Average
All emissions shall be limited	68.20 (dBuV/m)	54 (dBuV/m)
Band edge $\pm$ 75 MHz	105.20 (dBuV/m)	54 (dBuV/m)
Band edge $\pm$ 25 MHz	110.80 (dBuV/m)	54 (dBuV/m)
Band edge $\pm$ 5 MHz	122.20 (dBuV/m)	54 (dBuV/m)

According to FCC Part 15.407(b)(10): Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

According to FCC Part 15.205, Restricted bands:

(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			



Restricted Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Field Strength ($\text{dB}\mu\text{V/m}$)	Measurement Distance
0.009~0.490	2400/F(KHz)	$20 \log (\mu\text{V/m})$	300
0.490~1.705	2400/F(KHz)	$20 \log (\mu\text{V/m})$	30
1.705~30.0	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Limits of Radiated Emission Measurement(Above 1000MHz)

Frequency (MHz)	Class B ($\text{dB}\mu\text{V/m}$) (at 3M)	
	Peak	Average
Above 1000	74	54

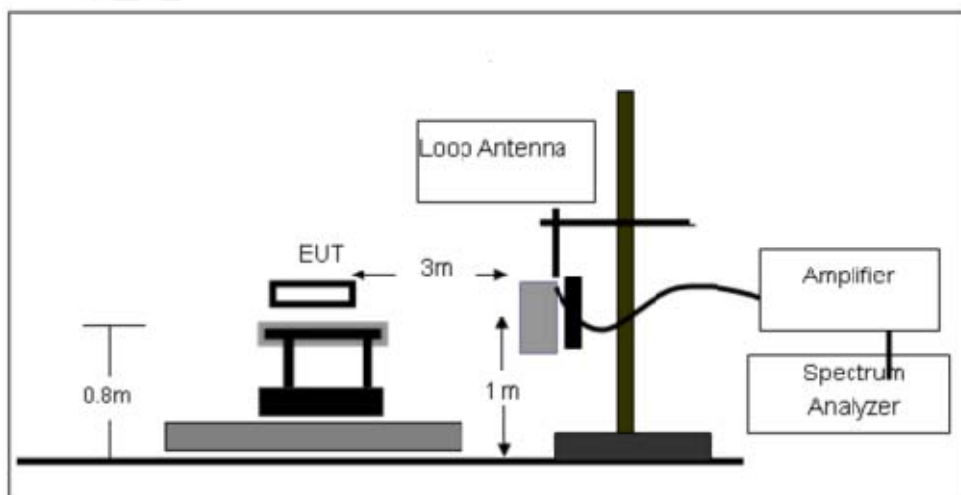
Remark: 1. Emission level in $\text{dB}\mu\text{V/m} = 20 \log (\mu\text{V/m})$;
2. Measurement was performed at an antenna to the closed point of EUT distance of meters;
3. Distance extrapolation factor $= 40 \log (\text{Specific distance/ test distance})$ (dB);
4. Limit line=Specific limits($\text{dB}\mu\text{V}$) + distance extrapolation factor;
5. Emission level in $\text{dB}\mu\text{V/m} = (\text{dBm}) + 95.2$.

4.1.3 MEASURING INSTRUMENTS

The Measuring equipment is listed in the section 3.5 of this test report.

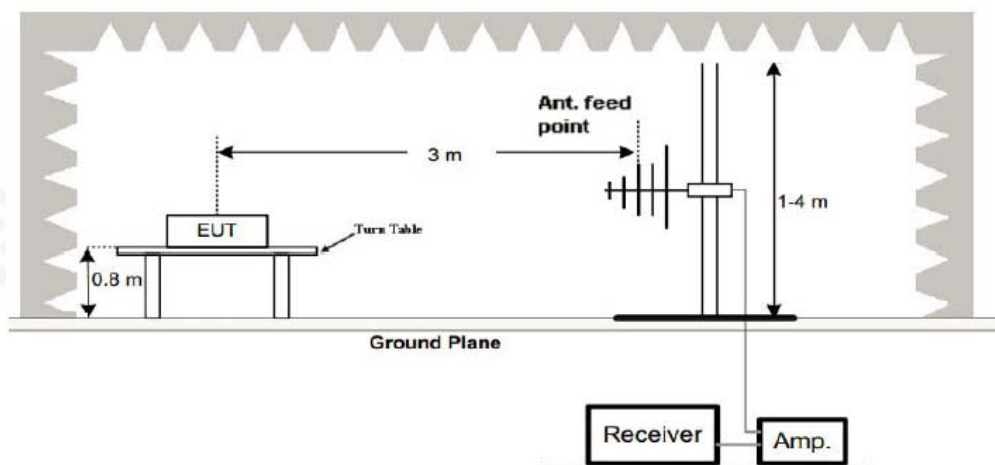
4.1.4 TEST CONFIGURATION

1.For radiated emissions below 30MHz

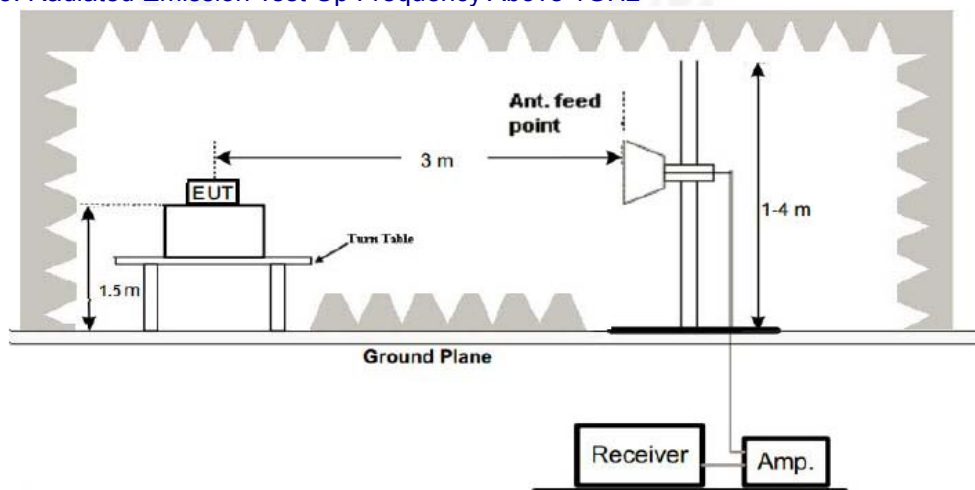




2. For radiated emissions from 30MHz to 1000MHz



3. Radiated Emission Test-Up Frequency Above 1GHz



4.1.5 TEST PROCEDURE

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2020+Cor 1-2023. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2020+Cor 1-2023 and CAN/CSA-CEI/IEC CISPR 22. This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
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



- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item – EUT Test Photos.

Note:

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

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Frequency Band (MHz)	Function	Resolution Bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Average	1 MHz	10 Hz

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where $RBWCF [dB] = 10 \cdot \lg(100 [kHz] / \text{narrower RBW [kHz]})$. , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

4.1.6 RADIATED EMISSION TEST RESULT

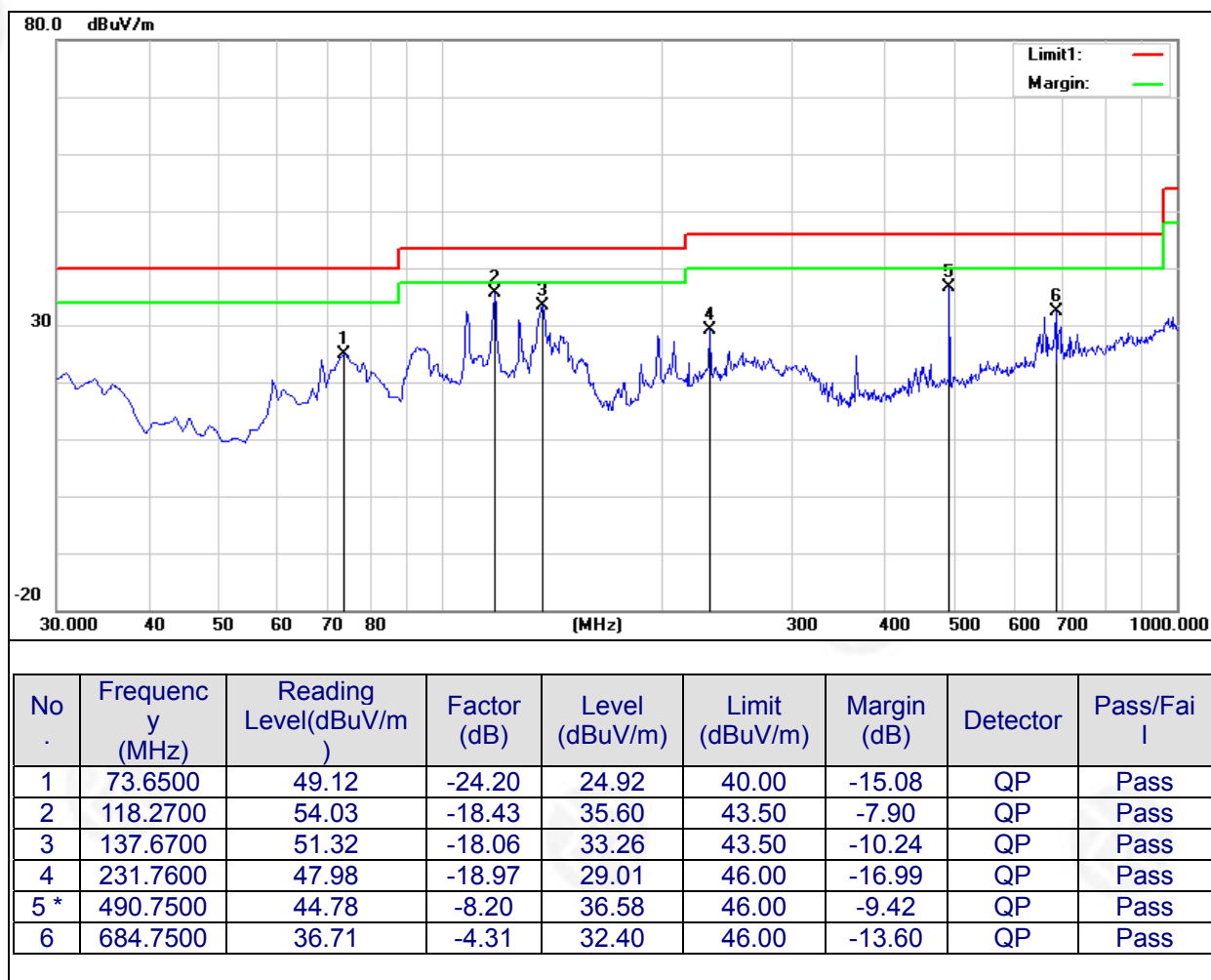
Between 9KHz – 30MHz

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o), the test result no need to reported.



Between 30MHz – 1GHz:

Temperature:	24.1℃	Relative Humidity:	55%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 11.01V	Test Mode :	TX 802.11n20- 5180MHz
Test Band:	5.2G		

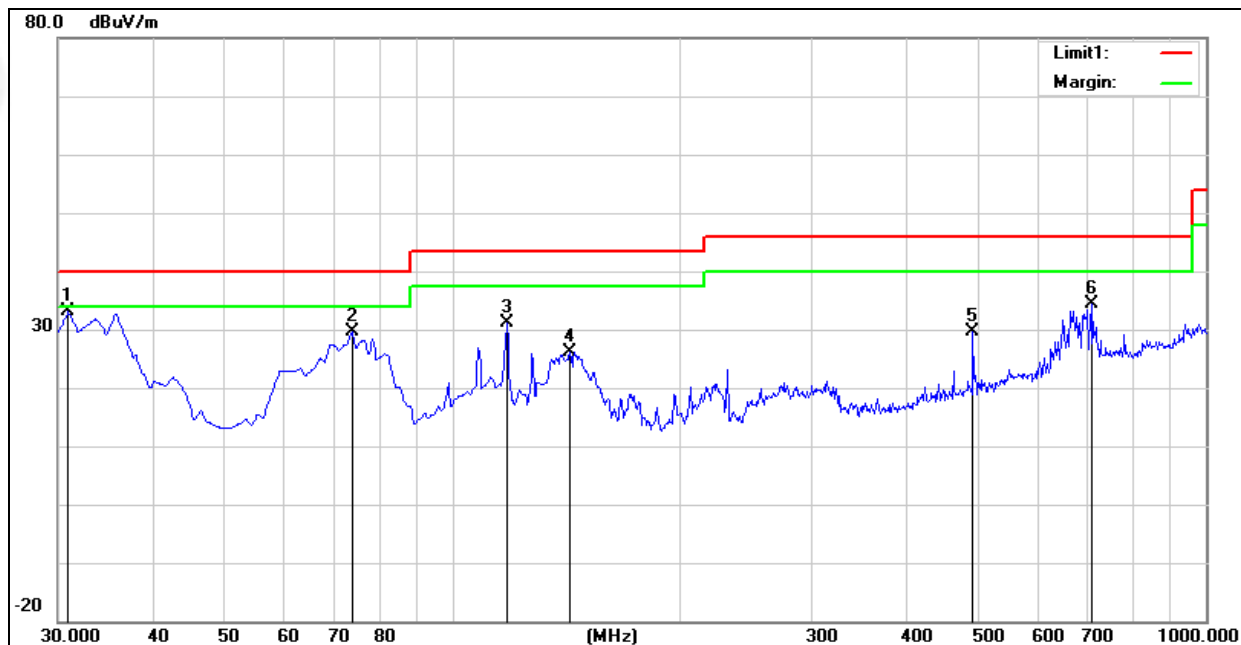


Notes:

- 1.An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2.Quasi - Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Lisen factor+ Cable loss factor + limiter factor.
- 5.Margin = Measurement Level-Limit.
- 6.The test data shows only the worst case TX 802.11n - 5180MHz.



Temperature:	24.1℃	Relative Humidity:	55%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage	DC 11.01V	Test Mode :	TX 802.11n - 5180MHz
Test Band:	5.2G		



No	Frequenc y (MHz)	Reading Level(dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Pass/Fai l
1	30.9700	46.39	-13.35	33.04	40.00	-6.96	QP	Pass
2	73.6500	53.86	-24.20	29.66	40.00	-10.34	QP	Pass
3	118.2700	49.57	-18.43	31.14	43.50	-12.36	QP	Pass
4	143.4900	44.31	-18.23	26.08	43.50	-17.42	QP	Pass
5 *	490.7500	37.85	-8.20	29.65	46.00	-16.35	QP	Pass
6	708.0300	38.21	-3.92	34.29	46.00	-11.71	QP	Pass

Notes:

- 1.An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2.Quasi - Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Liss factor+ Cable loss factor + limiter factor.
- 5.Margin = Measurement Level-Limit.
- 6.The test data shows only the worst case TX 802.11n - 5180MHz.



Between 1GHz – 40GHz:

U-NII-1 5150-5250MHz

U-NII 1										
Frequency (MHz)	Reading (dBuV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Orrected Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
Low Channel (802.11N20/ 5180 MHz)										
3261.60	45.10	44.70	6.70	28.20	-9.80	35.30	74.00	-38.70	Pk	Vertical
3261.60	40.77	44.70	6.70	28.20	-9.80	30.97	54.00	-23.03	AV	Vertical
3256.71	44.36	44.70	6.70	28.20	-9.80	34.56	68.20	-33.64	Pk	Horizontal
3256.71	41.60	44.70	6.70	28.20	-9.80	31.80	54.00	-22.20	AV	Horizontal
3984.37	38.93	44.20	7.90	29.70	-6.60	32.33	74.00	-41.67	Pk	Vertical
3984.37	36.18	44.20	7.90	29.70	-6.60	29.58	54.00	-24.42	AV	Vertical
3981.86	40.10	44.20	7.90	29.70	-6.60	33.50	74.00	-40.50	Pk	Horizontal
3981.86	37.02	44.20	7.90	29.70	-6.60	30.42	54.00	-23.58	AV	Horizontal
7226.87	37.03	43.50	11.40	35.50	3.40	40.43	68.20	-27.77	Pk	Vertical
7226.87	33.47	43.50	11.40	35.50	3.40	36.87	54.00	-17.13	AV	Vertical
7225.88	37.31	43.50	11.40	35.50	3.40	40.71	68.20	-27.49	Pk	Horizontal
7225.88	34.25	43.50	11.40	35.50	3.40	37.65	54.00	-16.35	AV	Horizontal
10360.06	39.63	44.50	13.80	38.80	8.10	47.73	68.20	-20.47	Pk	Vertical
10360.06	36.54	44.50	13.80	38.80	8.10	44.64	54.00	-9.36	AV	Vertical
10360.17	38.89	44.50	13.80	38.80	8.10	46.99	68.20	-21.21	Pk	Horizontal
10360.17	36.32	44.50	13.80	38.80	8.10	44.42	54.00	-9.58	AV	Horizontal
11021.87	34.08	43.60	14.30	39.50	10.20	44.28	74.00	-29.72	Pk	Vertical
11021.87	31.05	43.60	14.30	39.50	10.20	41.25	54.00	-12.75	AV	Vertical
11027.37	32.93	43.60	14.30	39.50	10.20	43.13	74.00	-30.87	Pk	Horizontal
11027.37	30.79	43.60	14.30	39.50	10.20	40.99	54.00	-13.01	AV	Horizontal
13287.42	32.50	42.60	15.90	38.90	12.20	44.70	74.00	-29.30	Pk	Vertical
13287.42	29.62	42.60	15.90	38.90	12.20	41.82	54.00	-12.18	AV	Vertical
13290.22	32.50	42.60	15.90	38.90	12.20	44.70	74.00	-29.30	Pk	Horizontal
13290.22	29.86	42.60	15.90	38.90	12.20	42.06	54.00	-11.94	AV	Horizontal
Mid Channel (802.11N20/ 5200 MHz)										
3255.40	44.00	44.70	6.70	28.20	-9.80	34.20	68.20	-34.00	Pk	Vertical
3255.40	41.93	44.70	6.70	28.20	-9.80	32.13	54.00	-21.87	AV	Vertical
3252.66	45.21	44.70	6.70	28.20	-9.80	35.41	68.20	-32.79	Pk	Horizontal
3252.66	41.97	44.70	6.70	28.20	-9.80	32.17	54.00	-21.83	AV	Horizontal
4000.24	39.73	44.20	7.90	29.70	-6.60	33.13	74.00	-40.87	Pk	Vertical
4000.24	36.57	44.20	7.90	29.70	-6.60	29.97	54.00	-24.03	AV	Vertical
3980.34	39.76	44.20	7.90	29.70	-6.60	33.16	74.00	-40.84	Pk	Horizontal
3980.34	36.43	44.20	7.90	29.70	-6.60	29.83	54.00	-24.17	AV	Horizontal
7232.33	37.64	43.50	11.40	35.50	3.40	41.04	68.20	-27.16	Pk	Vertical
7232.33	34.26	43.50	11.40	35.50	3.40	37.66	54.00	-16.34	AV	Vertical
7233.01	36.81	43.50	11.40	35.50	3.40	40.21	68.20	-27.99	Pk	Horizontal
7233.01	34.30	43.50	11.40	35.50	3.40	37.70	54.00	-16.30	AV	Horizontal
10400.22	38.92	44.50	13.80	38.80	8.10	47.02	68.20	-21.18	Pk	Vertical
10400.22	36.95	44.50	13.80	38.80	8.10	45.05	54.00	-8.95	AV	Vertical
10400.38	39.45	44.50	13.80	38.80	8.10	47.55	68.20	-20.65	Pk	Horizontal
10400.38	36.95	44.50	13.80	38.80	8.10	45.05	54.00	-8.95	AV	Horizontal
11029.25	34.13	43.60	14.30	39.50	10.20	44.33	74.00	-29.67	Pk	Vertical
11029.25	30.57	43.60	14.30	39.50	10.20	40.77	54.00	-13.23	AV	Vertical
11034.02	33.77	43.60	14.30	39.50	10.20	43.97	74.00	-30.03	Pk	Horizontal
11034.02	29.93	43.60	14.30	39.50	10.20	40.13	54.00	-13.87	AV	Horizontal
13287.86	31.56	42.60	15.90	38.90	12.20	43.76	74.00	-30.24	Pk	Vertical
13287.86	28.98	42.60	15.90	38.90	12.20	41.18	54.00	-12.82	AV	Vertical
13297.50	32.29	42.60	15.90	38.90	12.20	44.49	74.00	-29.51	Pk	Horizontal
13297.50	29.65	42.60	15.90	38.90	12.20	41.85	54.00	-12.15	AV	Horizontal



High Channel (802.11N20/ 5240 MHz)										
3245.50	44.66	44.70	6.70	28.20	-9.80	34.86	68.20	-33.34	Pk	Vertical
3245.50	42.07	44.70	6.70	28.20	-9.80	32.27	54.00	-21.73	AV	Vertical
3245.51	44.21	44.70	6.70	28.20	-9.80	34.41	68.20	-33.79	Pk	Horizontal
3245.51	41.56	44.70	6.70	28.20	-9.80	31.76	54.00	-22.24	AV	Horizontal
3986.61	39.61	44.20	7.90	29.70	-6.60	33.01	74.00	-40.99	Pk	Vertical
3986.61	36.15	44.20	7.90	29.70	-6.60	29.55	54.00	-24.45	AV	Vertical
3980.37	39.61	44.20	7.90	29.70	-6.60	33.01	74.00	-40.99	Pk	Horizontal
3980.37	37.10	44.20	7.90	29.70	-6.60	30.50	54.00	-23.50	AV	Horizontal
7219.70	37.22	43.50	11.40	35.50	3.40	40.62	68.20	-27.58	Pk	Vertical
7219.70	33.68	43.50	11.40	35.50	3.40	37.08	54.00	-16.92	AV	Vertical
7234.83	36.75	43.50	11.40	35.50	3.40	40.15	68.20	-28.05	Pk	Horizontal
7234.83	33.96	43.50	11.40	35.50	3.40	37.36	54.00	-16.64	AV	Horizontal
10480.16	39.39	44.50	13.80	38.80	8.10	47.49	68.20	-20.71	Pk	Vertical
10480.16	35.71	44.50	13.80	38.80	8.10	43.81	54.00	-10.19	AV	Vertical
10480.31	38.72	44.50	13.80	38.80	8.10	46.82	68.20	-21.38	Pk	Horizontal
10480.31	36.80	44.50	13.80	38.80	8.10	44.90	54.00	-9.10	AV	Horizontal
11020.61	33.42	43.60	14.30	39.50	10.20	43.62	74.00	-30.38	Pk	Vertical
11020.61	31.11	43.60	14.30	39.50	10.20	41.31	54.00	-12.69	AV	Vertical
11021.33	32.78	43.60	14.30	39.50	10.20	42.98	74.00	-31.02	Pk	Horizontal
11021.33	30.06	43.60	14.30	39.50	10.20	40.26	54.00	-13.74	AV	Horizontal
13282.23	32.88	42.60	15.90	38.90	12.20	45.08	74.00	-28.92	Pk	Vertical
13282.23	29.55	42.60	15.90	38.90	12.20	41.75	54.00	-12.25	AV	Vertical
13294.99	32.98	42.60	15.90	38.90	12.20	45.18	74.00	-28.82	Pk	Horizontal
13294.99	29.99	42.60	15.90	38.90	12.20	42.19	54.00	-11.81	AV	Horizontal

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. All modes have been measured, only worst mode was reported.
3. The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.



U-NII-3 (5.725-5.850) GHz

U-NII 3										
Frequency (MHz)	Reading (dBuV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Corrected Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
Low Channel (802.11ac20/ 5745 MHz)										
3260.52	43.91	44.70	6.70	28.20	-9.80	34.11	74.00	-39.89	Pk	Vertical
3260.52	42.12	44.70	6.70	28.20	-9.80	32.32	54.00	-21.68	AV	Vertical
3245.65	44.20	44.70	6.70	28.20	-9.80	34.40	68.20	-33.80	Pk	Horizontal
3245.65	41.59	44.70	6.70	28.20	-9.80	31.79	54.00	-22.21	AV	Horizontal
3994.36	40.01	44.20	7.90	29.70	-6.60	33.41	74.00	-40.59	Pk	Vertical
3994.36	35.94	44.20	7.90	29.70	-6.60	29.34	54.00	-24.66	AV	Vertical
3981.33	39.38	44.20	7.90	29.70	-6.60	32.78	74.00	-41.22	Pk	Horizontal
3981.33	36.44	44.20	7.90	29.70	-6.60	29.84	54.00	-24.16	AV	Horizontal
7234.83	37.44	43.50	11.40	35.50	3.40	40.84	68.20	-27.36	Pk	Vertical
7234.83	34.47	43.50	11.40	35.50	3.40	37.87	54.00	-16.13	AV	Vertical
7228.99	36.54	43.50	11.40	35.50	3.40	39.94	68.20	-28.26	Pk	Horizontal
7228.99	33.86	43.50	11.40	35.50	3.40	37.26	54.00	-16.74	AV	Horizontal
10359.99	40.11	44.50	13.80	38.80	8.10	48.21	68.20	-19.99	Pk	Vertical
10359.99	35.93	44.50	13.80	38.80	8.10	44.03	54.00	-9.97	AV	Vertical
10360.15	38.98	44.50	13.80	38.80	8.10	47.08	68.20	-21.12	Pk	Horizontal
10360.15	36.69	44.50	13.80	38.80	8.10	44.79	54.00	-9.21	AV	Horizontal
11028.53	33.51	43.60	14.30	39.50	10.20	43.71	74.00	-30.29	Pk	Vertical
11028.53	30.13	43.60	14.30	39.50	10.20	40.33	54.00	-13.67	AV	Vertical
11030.99	33.67	43.60	14.30	39.50	10.20	43.87	74.00	-30.13	Pk	Horizontal
11030.99	30.28	43.60	14.30	39.50	10.20	40.48	54.00	-13.52	AV	Horizontal
13288.27	32.51	42.60	15.90	38.90	12.20	44.71	74.00	-29.29	Pk	Vertical
13288.27	28.98	42.60	15.90	38.90	12.20	41.18	54.00	-12.82	AV	Vertical
13299.03	32.65	42.60	15.90	38.90	12.20	44.85	74.00	-29.15	Pk	Horizontal
13299.03	29.01	42.60	15.90	38.90	12.20	41.21	54.00	-12.79	AV	Horizontal
Mid Channel (802.11ac20/ 5785MHz)										
3250.86	43.84	44.70	6.70	28.20	-9.80	34.04	68.20	-34.16	Pk	Vertical
3250.86	40.87	44.70	6.70	28.20	-9.80	31.07	54.00	-22.93	AV	Vertical
3264.40	44.62	44.70	6.70	28.20	-9.80	34.82	74.00	-39.18	Pk	Horizontal
3264.40	40.78	44.70	6.70	28.20	-9.80	30.98	54.00	-23.02	AV	Horizontal
3988.44	39.34	44.20	7.90	29.70	-6.60	32.74	74.00	-41.26	Pk	Vertical
3988.44	35.75	44.20	7.90	29.70	-6.60	29.15	54.00	-24.85	AV	Vertical
3985.94	40.02	44.20	7.90	29.70	-6.60	33.42	74.00	-40.58	Pk	Horizontal
3985.94	36.37	44.20	7.90	29.70	-6.60	29.77	54.00	-24.23	AV	Horizontal
7233.84	36.67	43.50	11.40	35.50	3.40	40.07	68.20	-28.13	Pk	Vertical
7233.84	33.63	43.50	11.40	35.50	3.40	37.03	54.00	-16.97	AV	Vertical
7230.40	37.19	43.50	11.40	35.50	3.40	40.59	68.20	-27.61	Pk	Horizontal
7230.40	34.57	43.50	11.40	35.50	3.40	37.97	54.00	-16.03	AV	Horizontal
10400.22	38.93	44.50	13.80	38.80	8.10	47.03	68.20	-21.17	Pk	Vertical
10400.22	36.68	44.50	13.80	38.80	8.10	44.78	54.00	-9.22	AV	Vertical
10400.04	39.95	44.50	13.80	38.80	8.10	48.05	68.20	-20.15	Pk	Horizontal
10400.04	36.40	44.50	13.80	38.80	8.10	44.50	54.00	-9.50	AV	Horizontal
11031.70	34.08	43.60	14.30	39.50	10.20	44.28	74.00	-29.72	Pk	Vertical
11031.70	30.20	43.60	14.30	39.50	10.20	40.40	54.00	-13.60	AV	Vertical
11033.89	33.49	43.60	14.30	39.50	10.20	43.69	74.00	-30.31	Pk	Horizontal
11033.89	29.69	43.60	14.30	39.50	10.20	39.89	54.00	-14.11	AV	Horizontal
13282.23	32.16	42.60	15.90	38.90	12.20	44.36	74.00	-29.64	Pk	Vertical
13282.23	29.84	42.60	15.90	38.90	12.20	42.04	54.00	-11.96	AV	Vertical
13292.40	32.43	42.60	15.90	38.90	12.20	44.63	74.00	-29.37	Pk	Horizontal
13292.40	28.91	42.60	15.90	38.90	12.20	41.11	54.00	-12.89	AV	Horizontal



High Channel (802.11ac20/ 5825 MHz)										
3248.22	44.48	44.70	6.70	28.20	-9.80	34.68	68.20	-33.52	Pk	Vertical
3248.22	41.44	44.70	6.70	28.20	-9.80	31.64	54.00	-22.36	AV	Vertical
3246.61	43.76	44.70	6.70	28.20	-9.80	33.96	68.20	-34.24	Pk	Horizontal
3246.61	41.07	44.70	6.70	28.20	-9.80	31.27	54.00	-22.73	AV	Horizontal
3999.52	39.62	44.20	7.90	29.70	-6.60	33.02	74.00	-40.98	Pk	Vertical
3999.52	37.13	44.20	7.90	29.70	-6.60	30.53	54.00	-23.47	AV	Vertical
3982.74	39.95	44.20	7.90	29.70	-6.60	33.35	74.00	-40.65	Pk	Horizontal
3982.74	36.79	44.20	7.90	29.70	-6.60	30.19	54.00	-23.81	AV	Horizontal
7220.57	36.59	43.50	11.40	35.50	3.40	39.99	68.20	-28.21	Pk	Vertical
7220.57	34.80	43.50	11.40	35.50	3.40	38.20	54.00	-15.80	AV	Vertical
7218.69	36.72	43.50	11.40	35.50	3.40	40.12	68.20	-28.08	Pk	Horizontal
7218.69	34.92	43.50	11.40	35.50	3.40	38.32	54.00	-15.68	AV	Horizontal
10479.97	39.16	44.50	13.80	38.80	8.10	47.26	68.20	-20.94	Pk	Vertical
10479.97	35.82	44.50	13.80	38.80	8.10	43.92	54.00	-10.08	AV	Vertical
10480.13	40.18	44.50	13.80	38.80	8.10	48.28	68.20	-19.92	Pk	Horizontal
10480.13	36.39	44.50	13.80	38.80	8.10	44.49	54.00	-9.51	AV	Horizontal
11022.67	33.81	43.60	14.30	39.50	10.20	44.01	74.00	-29.99	Pk	Vertical
11022.67	30.86	43.60	14.30	39.50	10.20	41.06	54.00	-12.94	AV	Vertical
11033.58	33.26	43.60	14.30	39.50	10.20	43.46	74.00	-30.54	Pk	Horizontal
11033.58	30.11	43.60	14.30	39.50	10.20	40.31	54.00	-13.69	AV	Horizontal
13299.25	32.85	42.60	15.90	38.90	12.20	45.05	74.00	-28.95	Pk	Vertical
13299.25	29.25	42.60	15.90	38.90	12.20	41.45	54.00	-12.55	AV	Vertical
13296.10	31.64	42.60	15.90	38.90	12.20	43.84	74.00	-30.16	Pk	Horizontal
13296.10	28.54	42.60	15.90	38.90	12.20	40.74	54.00	-13.26	AV	Horizontal

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. All modes have been measured, only worst mode was reported.
3. The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.



5. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
EUT Antenna:	
The antenna is FPC Antenna, the best case gain of the antenna is ANT1 :3.45 dBi, ANT2 :3.45 dBi, MIMO:6.46 dBi, reference to the appendix II for details.	



6. TEST SETUP PHOTO

Reference to the appendix I for details.

7. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

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