

Radio Test Report

Report No.:CTA231129002W07

Issued for

Chengdu Accsoon Technology Co., LTD.

Rm. 2502, Bld. A, Tianxiang Plaza, Tianfu 2nd St., High-tech
Zone, Chengdu, Sichuan, China

Product Name: Wireless Video Transmission System

Brand Name: Accsoon

Model Name: WIT04-HE

Series Model(s): WIT04-QS, WIT04-SE

FCC ID: 2AOH404WIT2C

Test Standards: FCC Part15.407

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Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

TEST REPORT

Applicant's Name : Chengdu Accsoon Technology Co., LTD.
Address : Rm. 2502, Bld. A, Tianxiang Plaza, Tianfu 2nd St., High-tech Zone, Chengdu, Sichuan, China
Manufacturer's Name : Shenzhen Accsoon Technology Co., LTD.
Address : Rm. 302-305, 3F, Bld. 10, Baozhi Industrial Rd., Guancheng Shequ, Guanhu St., Longhua District, Shenzhen, China

Product Description

Product Name..... : Wireless Video Transmission System
Brand Name..... : Accsoon
Model Name : WIT04-HE
Series Model(s) : WIT04-QS, WIT04-SE
Test Standards..... : FCC Part15.407

Test Procedure..... ANSI C63.10-2013

This device described above has been tested by CTA, 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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Date of Test..... :
Date of receipt of test item : 26 Sept. 2023
Date (s) of performance of tests : 26 Sept. 2023 ~ 18 Oct. 2023
Date of Issue..... : 18 Oct. 2023
Test Result..... : **Pass**

Testing Engineer : *Zoey Cao*

 (Zoey Cao)

Technical Manager : *Amy Wen*

 (Amy Wen)

Authorized Signatory : *Eric Wang*

 (Eric Wang)

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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	18 Oct. 2023	CTA231129002W07	ALL	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

§ 15.407, KDB 789033 D02 General U-NII Test Procedures New Rules v02r01

FCC Part 15.407		
FCC standard	Test Item	Results
15.207	AC Conducted Emission	PASS
15.407 (a) /15.407 (e)	26dB/6dB &99% Bandwidth	PASS
15.407(a)	Maximum Conducted Output Power	PASS
15.407(b)/15.205/15.209	Radiated Emission And (bandedge Emissions) Measurement	PASS
15.407(a)	Power Spectral Density	PASS
15.407(c)	Automatically Discontinue Transmission	PASS
15.203/15.204	Antenna Requirement	PASS

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report.
- (2) All tests are according to ANSI C63.10-2013.

1.1 TEST FACTORY

Shenzhen CTA Testing Technology Co., Ltd.
 Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China
 FCC test Firm Registration Number: 517856
 IC test Firm Registration Number: 27890
 A2LA Certificate No.: 6534.01
 IC CAB ID: CN0127

1.2 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 %**.

Test	Range	Measurement Uncertainty
Radiated Emission	30~1000MHz	4.06 dB
Radiated Emission	1~18GHz	5.14 dB
Radiated Emission	18-40GHz	5.38 dB
Conducted Disturbance	0.15~30MHz	2.14 dB
Output Peak power	30MHz~18GHz	0.55 dB
Power spectral density	/	0.57 dB
Spectrum bandwidth	/	1.1%
Radiated spurious emission (30MHz-1GHz)	30~1000MHz	4.10 dB
Radiated spurious emission (1GHz-18GHz)	1~18GHz	4.32 dB
Radiated spurious emission (18GHz-40GHz)	18-40GHz	5.54 dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Wireless Video Transmission System	
Brand Name	Accsoon	
Model Name	WIT04-HE	
Series Model(s)	WIT04-QS, WIT04-SE	
Model Difference	WIT04-QS and WIT04-HE only have different model names, The video input interfaces of WIT04-SE and WIT04-HE are different	
Product Description	The EUT is a Wireless Video Transmission System	
	Operation Frequency:	IEEE 802.11n(HT20): 5.180GHz-5.240GHz
		IEEE 802.11 n(HT20):5.280GHz-5.320GHz
		IEEE 802.11 n(HT20):5.500GHz-5.700GHz
		IEEE 802.11 n(HT20):5.745GHz-5.825GHz
	Modulation Type:	802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM
	Antenna Type:	External antenna
Antenna Gain (dBi):	5G WLAN: ANT 1: 2.5 dBi ANT 2: 2.5 dBi MIMO 1+2: 5.51dBi	
Max.Output Power(Conducted):	17.59 dBm	
More details of EUT technical specification, please refer to the User Manual.		
Test Channel	Please refer to the Note 3.	
Rating	Input:7.4V~16.8V 1.5A	
Hardware version number	V1.1	
Software version number	V1.28	
Connecting I/O Port(s)	Please refer to the Note 1.	

Note

- For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
- The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.

3. Operation Frequency of channel

5.180GHz-5.240GHz		5.500GHz-5.720GHz	
Channel	Frequency	Channel	Frequency
36	5180	100	5500
38	5190	102	5510
40	5200	104	5520
42	5210	106	5530
44	5220	108	5540
46	5230	110	5550
48	5240	112	5560
		116	5580
		118	5590
5.260GHz-5.320GHz			
Channel	Frequency		
56	5280	120	5600
58	5290	122	5610
60	5300	124	5620
62	5310	126	5630
64	5320	128	5640
		132	5660
		134	5670
5.745GHz-5.825GHz			
Channel	Frequency		
149	5745	136	5680
151	5755	140	5700
153	5765		
157	5785		
159	5795		
161	5805		
165	5825		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Carrier Frequency Channel

5GHz:

For 802.11n(HT20)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
36	5180	56	5280
40	5200	60	5300
48	5240	64	5320

For 802.11n(HT20)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
100	5500	149	5745
116	5580	157	5785
140	5700	165	5825

3. KDB 662911 D01 Multiple Transmitter Output v02r01
- 2) Directional Gain Calculations for In-Band Measurements
- a) Basic methodology with NANT transmit antennas, each with the same directional gain G_{ANT} dBi, being driven by NANT transmitter outputs of equal power. Directional gain is to be computed as follows:
- (i) If any transmit signals are correlated with each other,

Directional gain = GANT + 10 log(NANT) dBi

- (ii) If all transmit signals are completely uncorrelated with each other,
Directional gain = GANT

2.2 DESCRIPTION OF TEST MODES

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

Worst Mode	Description	Data Rate
Mode 1	TX IEEE 802.11n HT20 CH36&CH40&CH48	MCS 0
Mode 2	TX IEEE 802.11n HT20 CH56&CH60&CH64	MCS 0
Mode 3	TX IEEE 802.11n HT20 CH100&CH116&CH140	MCS 0
Mode 4	TX IEEE 802.11n HT20 CH149&CH157&CH165	MCS 0

- Note: (1) The measurements are performed at the highest, middle, lowest available channels.
 (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.
 (3) We have been tested for all available U.S. voltage and frequencies (For 120V, 50/60Hz and 240V, 50/60Hz) for which the device is capable of operation.
 (4) The battery is fully-charged during the radiated and RF conducted test.

AC Conducted Emission

Test Case	
AC Conducted Emission	Mode 5: Keeping TX + WLAN Link

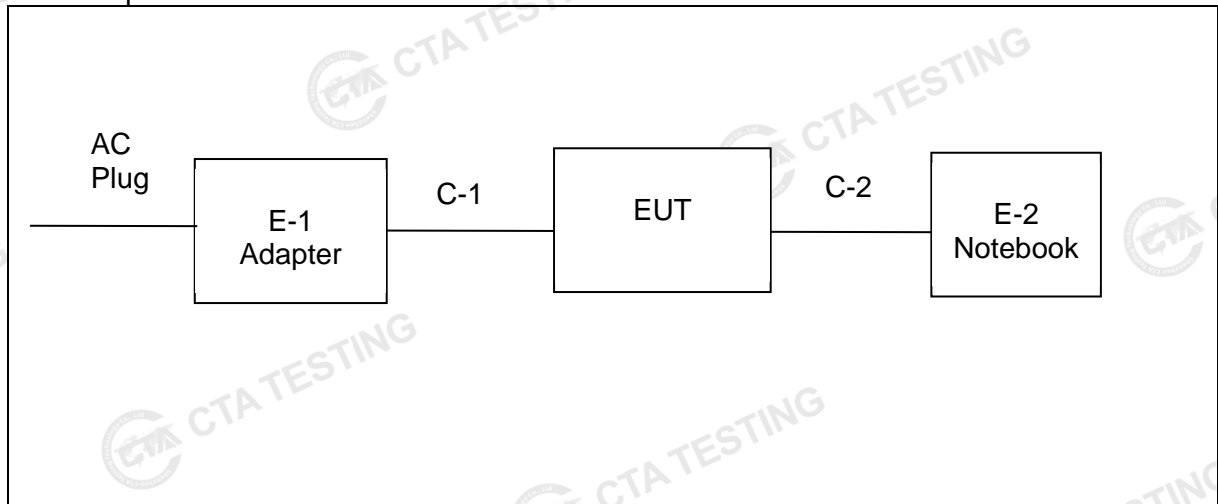
2.3 TEST SOFTWARE AND POWER LEVEL

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

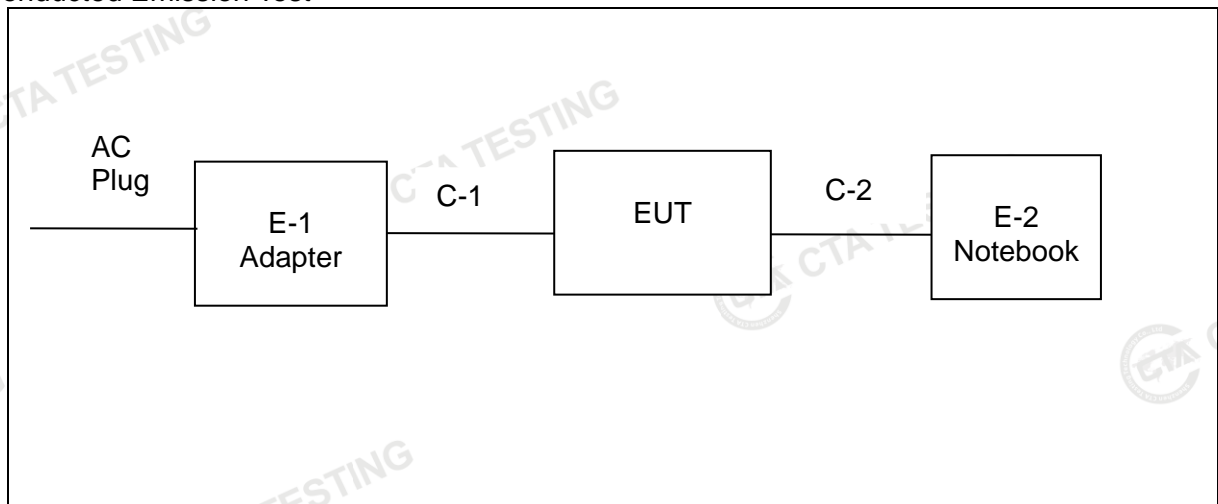
RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	ANT_1 Power Class	ANT_2 Power Class	Software For Testing
WIFI(5G)	U-NII-1 (5150MHz-5250MHz)	802.11n(HT20)	ANT 1: 2.5 ANT 2: 2.5 MIMO 1+2: 5.51	70	70	REALTEK 11ac 8822CU USB WLAN NIC Massproduction Kit
RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	ANT_1 Power Class	ANT_2 Power Class	Software For Testing
WIFI(5G)	U-NII-2A (5250MHz-5350MHz)	802.11n(HT20)	ANT 1: 2.5 ANT 2: 2.5 MIMO 1+2: 5.51	50	50	REALTEK 11ac 8822CU USB WLAN NIC Massproduction Kit
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-2C (5470MHz-5725MHz)	802.11n(HT20)	ANT 1: 2.5 ANT 2: 2.5 MIMO 1+2: 5.51	35	35	REALTEK 11ac 8822CU USB WLAN NIC Massproduction Kit
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)	802.11n(HT20)	ANT 1: 2.5 ANT 2: 2.5 MIMO 1+2: 5.51	70	70	REALTEK 11ac 8822CU USB WLAN NIC Massproduction Kit

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted Emission Test



2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

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.

Necessary accessories

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

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
	Adapter	HUAWEI	HW-050450C00	N/A	N/A
	USB Cable	N/A	N/A	110cm	NO
	DC Supply	HONGSHENGFENC	QJ6005E	N/A	N/A

Note:

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

2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Test Equipment	Manufacturer	Model No.	Equipment No.	Calibration Date	Calibration Due Date
LISN	R&S	ENV216	CTA-308	2023/08/02	2024/08/01
LISN	R&S	ENV216	CTA-314	2023/08/02	2024/08/01
EMI Test Receiver	R&S	ESPI	CTA-307	2023/08/02	2024/08/01
EMI Test Receiver	R&S	ESCI	CTA-306	2023/08/02	2024/08/01
Spectrum Analyzer	Agilent	N9020A	CTA-301	2023/08/02	2024/08/01
Spectrum Analyzer	R&S	FSP	CTA-337	2023/08/02	2024/08/01
Vector Signal generator	Agilent	N5182A	CTA-305	2023/08/02	2024/08/01
Analog Signal Generator	R&S	SML03	CTA-304	2023/08/02	2024/08/01
WIDEBAND RADIO COMMUNICATION TESTER	CMW500	R&S	CTA-302	2023/08/02	2024/08/01
Temperature and humidity meter	Chigo	ZG-7020	CTA-326	2023/08/02	2024/08/01
Ultra-Broadband Antenna	Schwarzbeck	VULB9163	CTA-310	2023/10/17	2024/10/16
Horn Antenna	Schwarzbeck	BBHA 9120D	CTA-309	2023/10/13	2024/10/12
Loop Antenna	Zhinan	ZN30900C	CTA-311	2023/10/17	2024/10/16
Horn Antenna	Beijing Hangwei Dayang	OBH100400	CTA-336	2021/08/07	2024/08/06
Amplifier	Schwarzbeck	BBV 9745	CTA-312	2023/08/02	2024/08/01
Amplifier	Taiwan chengyi	EMC051845B	CTA-313	2023/08/02	2024/08/01
Directional coupler	NARDA	4226-10	CTA-303	2023/08/02	2024/08/01
High-Pass Filter	XingBo	XBLBQ-GTA18	CTA-402	2023/08/02	2024/08/01
High-Pass Filter	XingBo	XBLBQ-GTA27	CTA-403	2023/08/02	2024/08/01
Automated filter bank	Tonscend	JS0806-F	CTA-404	2023/08/02	2024/08/01
Power Sensor	Agilent	U2021XA	CTA-405	2023/08/02	2024/08/01
Amplifier	Schwarzbeck	BBV9719	CTA-406	2023/08/02	2024/08/01
Test Equipment	Manufacturer	Model No.	Version number	Calibration	Calibration Due Date

				Date	
EMI Test Software	Tonscend	TS@JS32-RE	5.0.0.2	N/A	N/A
EMI Test Software	Tonscend	TS@JS32-CE	5.0.0.1	N/A	N/A
RF Test Software	Tonscend	TS@JS1120-3	3.1.65	N/A	N/A
RF Test Software	Tonscend	TS@JS1120	3.1.46	N/A	N/A

3. EMC EMISSION TEST

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

Note:

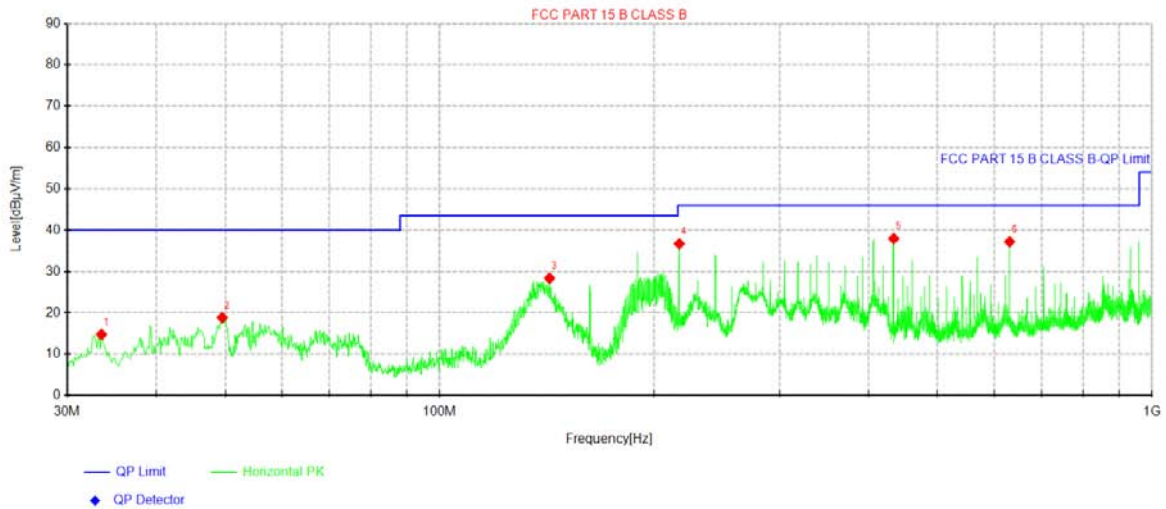
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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	23.1(C)	Relative Humidity:	60%RH
Test Voltage	DC 12V	Polarization:	Horizontal
Test Mode	Mode 1~4(Mode 1 worst mode)		



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	33.5162	32.88	14.76	-18.12	40.00	25.24	100	360	Horizontal
2	49.5212	34.94	18.84	-16.10	40.00	21.16	100	301	Horizontal
3	142.641	50.16	28.38	-21.78	43.50	15.12	100	359	Horizontal
4	216.967	55.63	36.73	-18.90	46.00	9.27	100	301	Horizontal
5	434.005	53.16	37.98	-15.18	46.00	8.02	100	74	Horizontal
6	631.157	49.37	37.22	-12.15	46.00	8.78	100	147	Horizontal

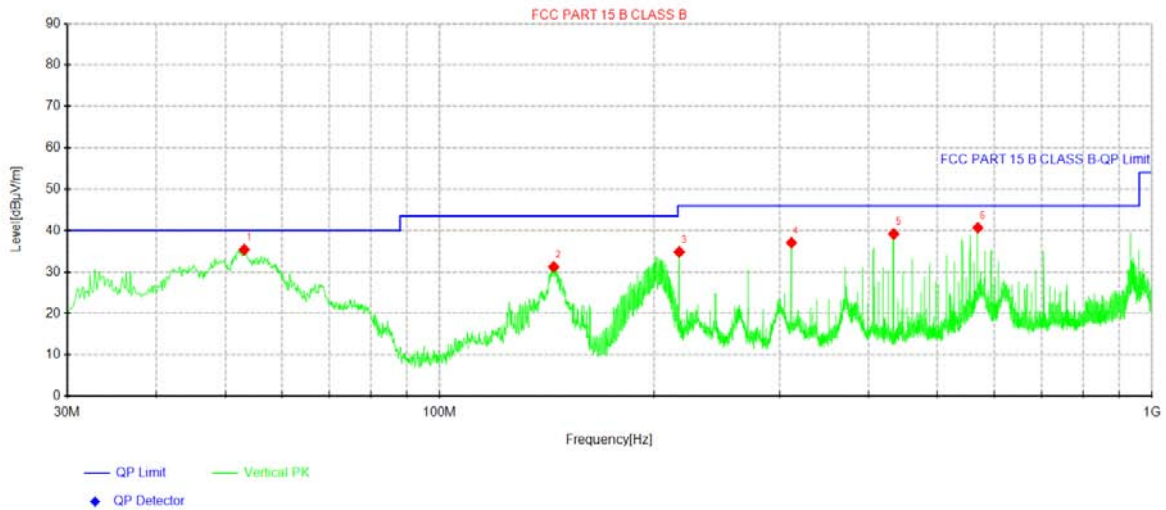
Note:1).Level (dBµV/m)= Reading (dBµV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBµV/m) - Level (dBµV/m)

4). All modes have been tested,only show the worst case.

Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 12V	Phase:	Vertical
Test Mode:	Mode 1~4(Mode 1 worst mode)		



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	53.1588	52.15	35.41	-16.74	40.00	4.59	100	358	Vertical
2	144.581	53.02	31.25	-21.77	43.50	12.25	100	248	Vertical
3	216.967	53.76	34.86	-18.90	46.00	11.14	100	358	Vertical
4	311.785	54.25	37.09	-17.16	46.00	8.91	100	248	Vertical
5	433.883	54.38	39.19	-15.19	46.00	6.81	100	312	Vertical
6	569.562	53.71	40.71	-13.00	46.00	5.29	100	125	Vertical

Note:1).Level (dBµV/m)= Reading (dBµV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBµV/m) - Level (dBµV/m)

4). All modes have been tested,only show the worst case.

3.2.8 TEST RESULTS (Above 1000 MHz)

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)										
3256.41	44.10	44.70	6.70	28.20	-9.80	34.30	68.20	-33.90	Pk	Vertical
3256.41	41.04	44.70	6.70	28.20	-9.80	31.24	54.00	-22.76	AV	Vertical
3261.95	44.26	44.70	6.70	28.20	-9.80	34.46	74.00	-39.54	Pk	Horizontal
3261.95	42.03	44.70	6.70	28.20	-9.80	32.23	54.00	-21.77	AV	Horizontal
3990.90	39.59	44.20	7.90	29.70	-6.60	32.99	74.00	-41.01	Pk	Vertical
3990.90	36.76	44.20	7.90	29.70	-6.60	30.16	54.00	-23.84	AV	Vertical
3989.91	39.73	44.20	7.90	29.70	-6.60	33.13	74.00	-40.87	Pk	Horizontal
3989.91	35.94	44.20	7.90	29.70	-6.60	29.34	54.00	-24.66	AV	Horizontal
7231.58	37.89	43.50	11.40	35.50	3.40	41.29	68.20	-26.91	Pk	Vertical
7231.58	33.62	43.50	11.40	35.50	3.40	37.02	54.00	-16.98	AV	Vertical
7226.20	36.89	43.50	11.40	35.50	3.40	40.29	68.20	-27.91	Pk	Horizontal
7226.20	33.58	43.50	11.40	35.50	3.40	36.98	54.00	-17.02	AV	Horizontal
10360.33	38.90	44.50	13.80	38.80	8.10	47.00	68.20	-21.20	Pk	Vertical
10360.33	37.07	44.50	13.80	38.80	8.10	45.17	54.00	-8.83	AV	Vertical
10359.96	39.22	44.50	13.80	38.80	8.10	47.32	68.20	-20.88	Pk	Horizontal
10359.96	36.10	44.50	13.80	38.80	8.10	44.20	54.00	-9.80	AV	Horizontal
11033.36	33.18	43.60	14.30	39.50	10.20	43.38	74.00	-30.62	Pk	Vertical
11033.36	30.01	43.60	14.30	39.50	10.20	40.21	54.00	-13.79	AV	Vertical
11024.30	33.71	43.60	14.30	39.50	10.20	43.91	74.00	-30.09	Pk	Horizontal
11024.30	30.25	43.60	14.30	39.50	10.20	40.45	54.00	-13.55	AV	Horizontal
13296.86	32.74	42.60	15.90	38.90	12.20	44.94	74.00	-29.06	Pk	Vertical
13296.86	29.97	42.60	15.90	38.90	12.20	42.17	54.00	-11.83	AV	Vertical
13293.87	32.39	42.60	15.90	38.90	12.20	44.59	74.00	-29.41	Pk	Horizontal
13293.87	29.46	42.60	15.90	38.90	12.20	41.66	54.00	-12.34	AV	Horizontal
Mid Channel (802.11n20/ 5200 MHz)										
3246.59	44.94	44.70	6.70	28.20	-9.80	35.14	68.20	-33.06	Pk	Vertical
3246.59	41.44	44.70	6.70	28.20	-9.80	31.64	54.00	-22.36	AV	Vertical
3257.81	43.97	44.70	6.70	28.20	-9.80	34.17	68.20	-34.03	Pk	Horizontal
3257.81	41.20	44.70	6.70	28.20	-9.80	31.40	54.00	-22.60	AV	Horizontal
3984.97	39.26	44.20	7.90	29.70	-6.60	32.66	74.00	-41.34	Pk	Vertical
3984.97	36.61	44.20	7.90	29.70	-6.60	30.01	54.00	-23.99	AV	Vertical
3981.22	39.73	44.20	7.90	29.70	-6.60	33.13	74.00	-40.87	Pk	Horizontal
3981.22	35.90	44.20	7.90	29.70	-6.60	29.30	54.00	-24.70	AV	Horizontal
7217.00	37.80	43.50	11.40	35.50	3.40	41.20	68.20	-27.00	Pk	Vertical
7217.00	33.96	43.50	11.40	35.50	3.40	37.36	54.00	-16.64	AV	Vertical
7217.00	37.11	43.50	11.40	35.50	3.40	40.51	68.20	-27.69	Pk	Horizontal
7217.00	33.65	43.50	11.40	35.50	3.40	37.05	54.00	-16.95	AV	Horizontal
10400.03	39.29	44.50	13.80	38.80	8.10	47.39	68.20	-20.81	Pk	Vertical
10400.03	36.47	44.50	13.80	38.80	8.10	44.57	54.00	-9.43	AV	Vertical
10400.01	39.67	44.50	13.80	38.80	8.10	47.77	68.20	-20.43	Pk	Horizontal
10400.01	35.81	44.50	13.80	38.80	8.10	43.91	54.00	-10.09	AV	Horizontal
11026.61	32.77	43.60	14.30	39.50	10.20	42.97	74.00	-31.03	Pk	Vertical
11026.61	30.06	43.60	14.30	39.50	10.20	40.26	54.00	-13.74	AV	Vertical
11024.35	32.80	43.60	14.30	39.50	10.20	43.00	74.00	-31.00	Pk	Horizontal
11024.35	30.45	43.60	14.30	39.50	10.20	40.65	54.00	-13.35	AV	Horizontal
13285.94	32.50	42.60	15.90	38.90	12.20	44.70	74.00	-29.30	Pk	Vertical
13285.94	29.09	42.60	15.90	38.90	12.20	41.29	54.00	-12.71	AV	Vertical
13293.30	31.62	42.60	15.90	38.90	12.20	43.82	74.00	-30.18	Pk	Horizontal
13293.30	29.86	42.60	15.90	38.90	12.20	42.06	54.00	-11.94	AV	Horizontal

High Channel (802.11n20/ 5240 MHz)										
3254.37	43.99	44.70	6.70	28.20	-9.80	34.19	68.20	-34.01	Pk	Vertical
3254.37	40.94	44.70	6.70	28.20	-9.80	31.14	54.00	-22.86	AV	Vertical
3258.02	43.97	44.70	6.70	28.20	-9.80	34.17	68.20	-34.03	Pk	Horizontal
3258.02	41.53	44.70	6.70	28.20	-9.80	31.73	54.00	-22.27	AV	Horizontal
3991.17	39.42	44.20	7.90	29.70	-6.60	32.82	74.00	-41.18	Pk	Vertical
3991.17	36.94	44.20	7.90	29.70	-6.60	30.34	54.00	-23.66	AV	Vertical
3997.22	39.98	44.20	7.90	29.70	-6.60	33.38	74.00	-40.62	Pk	Horizontal
3997.22	35.89	44.20	7.90	29.70	-6.60	29.29	54.00	-24.71	AV	Horizontal
7230.56	36.89	43.50	11.40	35.50	3.40	40.29	68.20	-27.91	Pk	Vertical
7230.56	33.66	43.50	11.40	35.50	3.40	37.06	54.00	-16.94	AV	Vertical
7223.26	37.01	43.50	11.40	35.50	3.40	40.41	68.20	-27.79	Pk	Horizontal
7223.26	33.88	43.50	11.40	35.50	3.40	37.28	54.00	-16.72	AV	Horizontal
10480.12	40.05	44.50	13.80	38.80	8.10	48.15	68.20	-20.05	Pk	Vertical
10480.12	36.65	44.50	13.80	38.80	8.10	44.75	54.00	-9.25	AV	Vertical
10480.25	39.75	44.50	13.80	38.80	8.10	47.85	68.20	-20.35	Pk	Horizontal
10480.25	35.85	44.50	13.80	38.80	8.10	43.95	54.00	-10.05	AV	Horizontal
11032.06	34.17	43.60	14.30	39.50	10.20	44.37	74.00	-29.63	Pk	Vertical
11032.06	30.95	43.60	14.30	39.50	10.20	41.15	54.00	-12.85	AV	Vertical
11017.66	33.62	43.60	14.30	39.50	10.20	43.82	74.00	-30.18	Pk	Horizontal
11017.66	30.58	43.60	14.30	39.50	10.20	40.78	54.00	-13.22	AV	Horizontal
13294.26	31.95	42.60	15.90	38.90	12.20	44.15	74.00	-29.85	Pk	Vertical
13294.26	29.78	42.60	15.90	38.90	12.20	41.98	54.00	-12.02	AV	Vertical
13296.12	32.04	42.60	15.90	38.90	12.20	44.24	74.00	-29.76	Pk	Horizontal
13296.12	29.02	42.60	15.90	38.90	12.20	41.22	54.00	-12.78	AV	Horizontal

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Scan with 802.11n (HT-20) all have been tested the antenna 1, antenna 2 and antenna 1+2, the worst case is 802.11n(HT20) of the antenna 1+2.
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-2A 5250-5350MHz

U-NII 2A										
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/ 5260 MHz)										
3249.48	44.27	44.70	6.70	28.20	-9.80	34.47	68.20	-33.73	Pk	Vertical
3249.48	41.61	44.70	6.70	28.20	-9.80	31.81	54.00	-22.19	AV	Vertical
3255.33	43.82	44.70	6.70	28.20	-9.80	34.02	68.20	-34.18	Pk	Horizontal
3255.33	41.88	44.70	6.70	28.20	-9.80	32.08	54.00	-21.92	AV	Horizontal
3981.17	38.72	44.20	7.90	29.70	-6.60	32.12	74.00	-41.88	Pk	Vertical
3981.17	36.31	44.20	7.90	29.70	-6.60	29.71	54.00	-24.29	AV	Vertical
3990.42	39.66	44.20	7.90	29.70	-6.60	33.06	74.00	-40.94	Pk	Horizontal
3990.42	36.12	44.20	7.90	29.70	-6.60	29.52	54.00	-24.48	AV	Horizontal
7230.42	36.96	43.50	11.40	35.50	3.40	40.36	68.20	-27.84	Pk	Vertical
7230.42	34.70	43.50	11.40	35.50	3.40	38.10	54.00	-15.90	AV	Vertical
7218.68	36.96	43.50	11.40	35.50	3.40	40.36	68.20	-27.84	Pk	Horizontal
7218.68	34.29	43.50	11.40	35.50	3.40	37.69	54.00	-16.31	AV	Horizontal
10360.18	39.90	44.50	13.80	38.80	8.10	48.00	68.20	-20.20	Pk	Vertical
10360.18	36.18	44.50	13.80	38.80	8.10	44.28	54.00	-9.72	AV	Vertical
10360.20	39.94	44.50	13.80	38.80	8.10	48.04	68.20	-20.16	Pk	Horizontal
10360.20	36.99	44.50	13.80	38.80	8.10	45.09	54.00	-8.91	AV	Horizontal
11026.50	33.30	43.60	14.30	39.50	10.20	43.50	74.00	-30.50	Pk	Vertical
11026.50	29.77	43.60	14.30	39.50	10.20	39.97	54.00	-14.03	AV	Vertical
11025.04	33.32	43.60	14.30	39.50	10.20	43.52	74.00	-30.48	Pk	Horizontal
11025.04	31.14	43.60	14.30	39.50	10.20	41.34	54.00	-12.66	AV	Horizontal
13286.45	31.89	42.60	15.90	38.90	12.20	44.09	74.00	-29.91	Pk	Vertical
13286.45	29.92	42.60	15.90	38.90	12.20	42.12	54.00	-11.88	AV	Vertical
13298.77	32.75	42.60	15.90	38.90	12.20	44.95	74.00	-29.05	Pk	Horizontal
13298.77	30.01	42.60	15.90	38.90	12.20	42.21	54.00	-11.79	AV	Horizontal
Mid Channel (802.11n20/ 5300 MHz)										
3252.13	44.45	44.70	6.70	28.20	-9.80	34.65	68.20	-33.55	Pk	Vertical
3252.13	41.52	44.70	6.70	28.20	-9.80	31.72	54.00	-22.28	AV	Vertical
3264.76	45.01	44.70	6.70	28.20	-9.80	35.21	74.00	-38.79	Pk	Horizontal
3264.76	41.83	44.70	6.70	28.20	-9.80	32.03	54.00	-21.97	AV	Horizontal
3997.72	39.28	44.20	7.90	29.70	-6.60	32.68	74.00	-41.32	Pk	Vertical
3997.72	37.13	44.20	7.90	29.70	-6.60	30.53	54.00	-23.47	AV	Vertical
3982.51	39.94	44.20	7.90	29.70	-6.60	33.34	74.00	-40.66	Pk	Horizontal
3982.51	36.14	44.20	7.90	29.70	-6.60	29.54	54.00	-24.46	AV	Horizontal
7229.53	37.03	43.50	11.40	35.50	3.40	40.43	68.20	-27.77	Pk	Vertical
7229.53	34.07	43.50	11.40	35.50	3.40	37.47	54.00	-16.53	AV	Vertical
7235.07	36.81	43.50	11.40	35.50	3.40	40.21	68.20	-27.99	Pk	Horizontal
7235.07	34.53	43.50	11.40	35.50	3.40	37.93	54.00	-16.07	AV	Horizontal
10400.32	39.97	44.50	13.80	38.80	8.10	48.07	68.20	-20.13	Pk	Vertical
10400.32	36.81	44.50	13.80	38.80	8.10	44.91	54.00	-9.09	AV	Vertical
10400.41	39.73	44.50	13.80	38.80	8.10	47.83	68.20	-20.37	Pk	Horizontal
10400.41	36.71	44.50	13.80	38.80	8.10	44.81	54.00	-9.19	AV	Horizontal
11025.19	33.34	43.60	14.30	39.50	10.20	43.54	74.00	-30.46	Pk	Vertical
11025.19	31.16	43.60	14.30	39.50	10.20	41.36	54.00	-12.64	AV	Vertical
11026.03	32.89	43.60	14.30	39.50	10.20	43.09	74.00	-30.91	Pk	Horizontal
11026.03	30.04	43.60	14.30	39.50	10.20	40.24	54.00	-13.76	AV	Horizontal
13290.75	32.72	42.60	15.90	38.90	12.20	44.92	74.00	-29.08	Pk	Vertical
13290.75	28.63	42.60	15.90	38.90	12.20	40.83	54.00	-13.17	AV	Vertical
13282.66	32.85	42.60	15.90	38.90	12.20	45.05	74.00	-28.95	Pk	Horizontal
13282.66	28.62	42.60	15.90	38.90	12.20	40.82	54.00	-13.18	AV	Horizontal

High Channel (802.11 n20/ 5320 MHz)										
3251.78	44.78	44.70	6.70	28.20	-9.80	34.98	68.20	-33.22	Pk	Vertical
3251.78	41.61	44.70	6.70	28.20	-9.80	31.81	54.00	-22.19	AV	Vertical
3247.55	44.14	44.70	6.70	28.20	-9.80	34.34	68.20	-33.86	Pk	Horizontal
3247.55	41.85	44.70	6.70	28.20	-9.80	32.05	54.00	-21.95	AV	Horizontal
3982.35	39.00	44.20	7.90	29.70	-6.60	32.40	74.00	-41.60	Pk	Vertical
3982.35	37.06	44.20	7.90	29.70	-6.60	30.46	54.00	-23.54	AV	Vertical
3981.71	39.36	44.20	7.90	29.70	-6.60	32.76	74.00	-41.24	Pk	Horizontal
3981.71	36.28	44.20	7.90	29.70	-6.60	29.68	54.00	-24.32	AV	Horizontal
7232.50	37.90	43.50	11.40	35.50	3.40	41.30	68.20	-26.90	Pk	Vertical
7232.50	33.80	43.50	11.40	35.50	3.40	37.20	54.00	-16.80	AV	Vertical
7223.26	37.08	43.50	11.40	35.50	3.40	40.48	68.20	-27.72	Pk	Horizontal
7223.26	34.54	43.50	11.40	35.50	3.40	37.94	54.00	-16.06	AV	Horizontal
10480.13	39.12	44.50	13.80	38.80	8.10	47.22	68.20	-20.98	Pk	Vertical
10480.13	36.74	44.50	13.80	38.80	8.10	44.84	54.00	-9.16	AV	Vertical
10480.15	39.79	44.50	13.80	38.80	8.10	47.89	68.20	-20.31	Pk	Horizontal
10480.15	35.70	44.50	13.80	38.80	8.10	43.80	54.00	-10.20	AV	Horizontal
11020.13	33.29	43.60	14.30	39.50	10.20	43.49	74.00	-30.51	Pk	Vertical
11020.13	31.09	43.60	14.30	39.50	10.20	41.29	54.00	-12.71	AV	Vertical
11019.75	34.17	43.60	14.30	39.50	10.20	44.37	74.00	-29.63	Pk	Horizontal
11019.75	30.47	43.60	14.30	39.50	10.20	40.67	54.00	-13.33	AV	Horizontal
13292.40	32.09	42.60	15.90	38.90	12.20	44.29	74.00	-29.71	Pk	Vertical
13292.40	29.95	42.60	15.90	38.90	12.20	42.15	54.00	-11.85	AV	Vertical
13291.80	32.95	42.60	15.90	38.90	12.20	45.15	74.00	-28.85	Pk	Horizontal
13291.80	28.64	42.60	15.90	38.90	12.20	40.84	54.00	-13.16	AV	Horizontal

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Scan with 802.11n (HT-20) all have been tested the antenna 1, antenna 2 and antenna 1+2, the worst case is 802.11n(HT20) of the antenna 1+2.
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-2C 5470-5725MHz

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/ 5500 MHz)										
3261.24	44.30	44.70	6.70	28.20	-9.80	34.50	74.00	-39.50	Pk	Vertical
3261.24	42.16	44.70	6.70	28.20	-9.80	32.36	54.00	-21.64	AV	Vertical
3258.22	43.82	44.70	6.70	28.20	-9.80	34.02	68.20	-34.18	Pk	Horizontal
3258.22	41.27	44.70	6.70	28.20	-9.80	31.47	54.00	-22.53	AV	Horizontal
3985.70	39.90	44.20	7.90	29.70	-6.60	33.30	74.00	-40.70	Pk	Vertical
3985.70	36.48	44.20	7.90	29.70	-6.60	29.88	54.00	-24.12	AV	Vertical
3982.93	39.07	44.20	7.90	29.70	-6.60	32.47	74.00	-41.53	Pk	Horizontal
3982.93	35.83	44.20	7.90	29.70	-6.60	29.23	54.00	-24.77	AV	Horizontal
7235.51	37.40	43.50	11.40	35.50	3.40	40.80	68.20	-27.40	Pk	Vertical
7235.51	34.53	43.50	11.40	35.50	3.40	37.93	54.00	-16.07	AV	Vertical
7221.36	36.48	43.50	11.40	35.50	3.40	39.88	68.20	-28.32	Pk	Horizontal
7221.36	34.55	43.50	11.40	35.50	3.40	37.95	54.00	-16.05	AV	Horizontal
10360.21	38.76	44.50	13.80	38.80	8.10	46.86	68.20	-21.34	Pk	Vertical
10360.21	35.77	44.50	13.80	38.80	8.10	43.87	54.00	-10.13	AV	Vertical
10360.02	39.69	44.50	13.80	38.80	8.10	47.79	68.20	-20.41	Pk	Horizontal
10360.02	36.94	44.50	13.80	38.80	8.10	45.04	54.00	-8.96	AV	Horizontal
11025.05	33.08	43.60	14.30	39.50	10.20	43.28	74.00	-30.72	Pk	Vertical
11025.05	30.32	43.60	14.30	39.50	10.20	40.52	54.00	-13.48	AV	Vertical
11027.84	33.29	43.60	14.30	39.50	10.20	43.49	74.00	-30.51	Pk	Horizontal
11027.84	30.08	43.60	14.30	39.50	10.20	40.28	54.00	-13.72	AV	Horizontal
13293.17	32.24	42.60	15.90	38.90	12.20	44.44	74.00	-29.56	Pk	Vertical
13293.17	28.94	42.60	15.90	38.90	12.20	41.14	54.00	-12.86	AV	Vertical
13288.90	32.28	42.60	15.90	38.90	12.20	44.48	74.00	-29.52	Pk	Horizontal
13288.90	29.35	42.60	15.90	38.90	12.20	41.55	54.00	-12.45	AV	Horizontal
Mid Channel (802.11n20/ 5580 MHz)										
3254.06	45.25	44.70	6.70	28.20	-9.80	35.45	68.20	-32.75	Pk	Vertical
3254.06	41.58	44.70	6.70	28.20	-9.80	31.78	54.00	-22.22	AV	Vertical
3253.98	44.49	44.70	6.70	28.20	-9.80	34.69	68.20	-33.51	Pk	Horizontal
3253.98	41.96	44.70	6.70	28.20	-9.80	32.16	54.00	-21.84	AV	Horizontal
3999.80	39.19	44.20	7.90	29.70	-6.60	32.59	74.00	-41.41	Pk	Vertical
3999.80	36.11	44.20	7.90	29.70	-6.60	29.51	54.00	-24.49	AV	Vertical
3989.09	39.01	44.20	7.90	29.70	-6.60	32.41	74.00	-41.59	Pk	Horizontal
3989.09	35.73	44.20	7.90	29.70	-6.60	29.13	54.00	-24.87	AV	Horizontal
7234.54	37.23	43.50	11.40	35.50	3.40	40.63	68.20	-27.57	Pk	Vertical
7234.54	33.84	43.50	11.40	35.50	3.40	37.24	54.00	-16.76	AV	Vertical
7235.07	37.60	43.50	11.40	35.50	3.40	41.00	68.20	-27.20	Pk	Horizontal
7235.07	33.78	43.50	11.40	35.50	3.40	37.18	54.00	-16.82	AV	Horizontal
10400.20	39.24	44.50	13.80	38.80	8.10	47.34	68.20	-20.86	Pk	Vertical
10400.20	37.12	44.50	13.80	38.80	8.10	45.22	54.00	-8.78	AV	Vertical
10400.42	39.48	44.50	13.80	38.80	8.10	47.58	68.20	-20.62	Pk	Horizontal
10400.42	36.12	44.50	13.80	38.80	8.10	44.22	54.00	-9.78	AV	Horizontal
11033.34	33.92	43.60	14.30	39.50	10.20	44.12	74.00	-29.88	Pk	Vertical
11033.34	30.94	43.60	14.30	39.50	10.20	41.14	54.00	-12.86	AV	Vertical
11029.36	33.79	43.60	14.30	39.50	10.20	43.99	74.00	-30.01	Pk	Horizontal
11029.36	30.90	43.60	14.30	39.50	10.20	41.10	54.00	-12.90	AV	Horizontal
13292.94	32.46	42.60	15.90	38.90	12.20	44.66	74.00	-29.34	Pk	Vertical
13292.94	29.43	42.60	15.90	38.90	12.20	41.63	54.00	-12.37	AV	Vertical
13284.72	32.86	42.60	15.90	38.90	12.20	45.06	74.00	-28.94	Pk	Horizontal
13284.72	29.13	42.60	15.90	38.90	12.20	41.33	54.00	-12.67	AV	Horizontal

High Channel (802.11n20/ 5700 MHz)										
3251.43	44.67	44.70	6.70	28.20	-9.80	34.87	68.20	-33.33	Pk	Vertical
3251.43	41.41	44.70	6.70	28.20	-9.80	31.61	54.00	-22.39	AV	Vertical
3264.93	44.03	44.70	6.70	28.20	-9.80	34.23	74.00	-39.77	Pk	Horizontal
3264.93	42.16	44.70	6.70	28.20	-9.80	32.36	54.00	-21.64	AV	Horizontal
3991.40	39.46	44.20	7.90	29.70	-6.60	32.86	74.00	-41.14	Pk	Vertical
3991.40	36.00	44.20	7.90	29.70	-6.60	29.40	54.00	-24.60	AV	Vertical
3990.54	39.74	44.20	7.90	29.70	-6.60	33.14	74.00	-40.86	Pk	Horizontal
3990.54	36.38	44.20	7.90	29.70	-6.60	29.78	54.00	-24.22	AV	Horizontal
7230.98	36.78	43.50	11.40	35.50	3.40	40.18	68.20	-28.02	Pk	Vertical
7230.98	34.49	43.50	11.40	35.50	3.40	37.89	54.00	-16.11	AV	Vertical
7232.24	37.82	43.50	11.40	35.50	3.40	41.22	68.20	-26.98	Pk	Horizontal
7232.24	34.29	43.50	11.40	35.50	3.40	37.69	54.00	-16.31	AV	Horizontal
10480.35	39.09	44.50	13.80	38.80	8.10	47.19	68.20	-21.01	Pk	Vertical
10480.35	35.97	44.50	13.80	38.80	8.10	44.07	54.00	-9.93	AV	Vertical
10480.30	39.64	44.50	13.80	38.80	8.10	47.74	68.20	-20.46	Pk	Horizontal
10480.30	36.26	44.50	13.80	38.80	8.10	44.36	54.00	-9.64	AV	Horizontal
11026.28	32.74	43.60	14.30	39.50	10.20	42.94	74.00	-31.06	Pk	Vertical
11026.28	30.18	43.60	14.30	39.50	10.20	40.38	54.00	-13.62	AV	Vertical
11035.88	33.92	43.60	14.30	39.50	10.20	44.12	74.00	-29.88	Pk	Horizontal
11035.88	30.33	43.60	14.30	39.50	10.20	40.53	54.00	-13.47	AV	Horizontal
13291.11	32.50	42.60	15.90	38.90	12.20	44.70	74.00	-29.30	Pk	Vertical
13291.11	29.33	42.60	15.90	38.90	12.20	41.53	54.00	-12.47	AV	Vertical
13287.28	32.28	42.60	15.90	38.90	12.20	44.48	74.00	-29.52	Pk	Horizontal
13287.28	28.78	42.60	15.90	38.90	12.20	40.98	54.00	-13.02	AV	Horizontal

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Scan with 802.11n (HT-20) all have been tested the antenna 1, antenna 2 and antenna 1+2, the worst case is 802.11n(HT20) of the antenna 1+2.
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

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/ 5745 MHz)										
3254.32	45.10	44.70	6.70	28.20	-9.80	35.30	68.20	-32.90	Pk	Vertical
3254.32	41.73	44.70	6.70	28.20	-9.80	31.93	54.00	-22.07	AV	Vertical
3245.52	44.80	44.70	6.70	28.20	-9.80	35.00	68.20	-33.20	Pk	Horizontal
3245.52	40.97	44.70	6.70	28.20	-9.80	31.17	54.00	-22.83	AV	Horizontal
3982.46	39.63	44.20	7.90	29.70	-6.60	33.03	74.00	-40.97	Pk	Vertical
3982.46	35.81	44.20	7.90	29.70	-6.60	29.21	54.00	-24.79	AV	Vertical
3986.10	39.74	44.20	7.90	29.70	-6.60	33.14	74.00	-40.86	Pk	Horizontal
3986.10	36.08	44.20	7.90	29.70	-6.60	29.48	54.00	-24.52	AV	Horizontal
7228.02	37.55	43.50	11.40	35.50	3.40	40.95	68.20	-27.25	Pk	Vertical
7228.02	34.20	43.50	11.40	35.50	3.40	37.60	54.00	-16.40	AV	Vertical
7229.86	37.22	43.50	11.40	35.50	3.40	40.62	68.20	-27.58	Pk	Horizontal
7229.86	34.49	43.50	11.40	35.50	3.40	37.89	54.00	-16.11	AV	Horizontal
10360.34	39.82	44.50	13.80	38.80	8.10	47.92	68.20	-20.28	Pk	Vertical
10360.34	36.82	44.50	13.80	38.80	8.10	44.92	54.00	-9.08	AV	Vertical
10360.02	39.06	44.50	13.80	38.80	8.10	47.16	68.20	-21.04	Pk	Horizontal
10360.02	36.05	44.50	13.80	38.80	8.10	44.15	54.00	-9.85	AV	Horizontal
11030.85	33.98	43.60	14.30	39.50	10.20	44.18	74.00	-29.82	Pk	Vertical
11030.85	30.61	43.60	14.30	39.50	10.20	40.81	54.00	-13.19	AV	Vertical
11033.45	33.82	43.60	14.30	39.50	10.20	44.02	74.00	-29.98	Pk	Horizontal
11033.45	30.84	43.60	14.30	39.50	10.20	41.04	54.00	-12.96	AV	Horizontal
13290.85	31.62	42.60	15.90	38.90	12.20	43.82	74.00	-30.18	Pk	Vertical
13290.85	28.73	42.60	15.90	38.90	12.20	40.93	54.00	-13.07	AV	Vertical
13282.20	32.45	42.60	15.90	38.90	12.20	44.65	74.00	-29.35	Pk	Horizontal
13282.20	28.68	42.60	15.90	38.90	12.20	40.88	54.00	-13.12	AV	Horizontal
Mid Channel (802.11n20/ 5785MHz)										
3263.76	43.94	44.70	6.70	28.20	-9.80	34.14	74.00	-39.86	Pk	Vertical
3263.76	42.07	44.70	6.70	28.20	-9.80	32.27	54.00	-21.73	AV	Vertical
3246.72	44.45	44.70	6.70	28.20	-9.80	34.65	68.20	-33.55	Pk	Horizontal
3246.72	41.11	44.70	6.70	28.20	-9.80	31.31	54.00	-22.69	AV	Horizontal
3997.64	39.92	44.20	7.90	29.70	-6.60	33.32	74.00	-40.68	Pk	Vertical
3997.64	36.21	44.20	7.90	29.70	-6.60	29.61	54.00	-24.39	AV	Vertical
3996.17	38.91	44.20	7.90	29.70	-6.60	32.31	74.00	-41.69	Pk	Horizontal
3996.17	36.52	44.20	7.90	29.70	-6.60	29.92	54.00	-24.08	AV	Horizontal
7229.83	37.04	43.50	11.40	35.50	3.40	40.44	68.20	-27.76	Pk	Vertical
7229.83	34.06	43.50	11.40	35.50	3.40	37.46	54.00	-16.54	AV	Vertical
7225.36	36.73	43.50	11.40	35.50	3.40	40.13	68.20	-28.07	Pk	Horizontal
7225.36	34.40	43.50	11.40	35.50	3.40	37.80	54.00	-16.20	AV	Horizontal
10400.01	39.27	44.50	13.80	38.80	8.10	47.37	68.20	-20.83	Pk	Vertical
10400.01	36.88	44.50	13.80	38.80	8.10	44.98	54.00	-9.02	AV	Vertical
10400.26	40.04	44.50	13.80	38.80	8.10	48.14	68.20	-20.06	Pk	Horizontal
10400.26	36.87	44.50	13.80	38.80	8.10	44.97	54.00	-9.03	AV	Horizontal
11030.84	33.61	43.60	14.30	39.50	10.20	43.81	74.00	-30.19	Pk	Vertical
11030.84	30.16	43.60	14.30	39.50	10.20	40.36	54.00	-13.64	AV	Vertical
11030.14	33.66	43.60	14.30	39.50	10.20	43.86	74.00	-30.14	Pk	Horizontal
11030.14	29.85	43.60	14.30	39.50	10.20	40.05	54.00	-13.95	AV	Horizontal
13289.55	32.52	42.60	15.90	38.90	12.20	44.72	74.00	-29.28	Pk	Vertical
13289.55	29.76	42.60	15.90	38.90	12.20	41.96	54.00	-12.04	AV	Vertical
13285.23	33.00	42.60	15.90	38.90	12.20	45.20	74.00	-28.80	Pk	Horizontal
13285.23	28.79	42.60	15.90	38.90	12.20	40.99	54.00	-13.01	AV	Horizontal

High Channel (802.11n20/ 5825 MHz)										
3261.70	44.68	44.70	6.70	28.20	-9.80	34.88	74.00	-39.12	Pk	Vertical
3261.70	41.59	44.70	6.70	28.20	-9.80	31.79	54.00	-22.21	AV	Vertical
3246.44	44.48	44.70	6.70	28.20	-9.80	34.68	68.20	-33.52	Pk	Horizontal
3246.44	41.51	44.70	6.70	28.20	-9.80	31.71	54.00	-22.29	AV	Horizontal
3980.96	38.69	44.20	7.90	29.70	-6.60	32.09	74.00	-41.91	Pk	Vertical
3980.96	36.64	44.20	7.90	29.70	-6.60	30.04	54.00	-23.96	AV	Vertical
3997.92	39.69	44.20	7.90	29.70	-6.60	33.09	74.00	-40.91	Pk	Horizontal
3997.92	35.92	44.20	7.90	29.70	-6.60	29.32	54.00	-24.68	AV	Horizontal
7225.19	36.91	43.50	11.40	35.50	3.40	40.31	68.20	-27.89	Pk	Vertical
7225.19	34.17	43.50	11.40	35.50	3.40	37.57	54.00	-16.43	AV	Vertical
7221.08	36.94	43.50	11.40	35.50	3.40	40.34	68.20	-27.86	Pk	Horizontal
7221.08	34.31	43.50	11.40	35.50	3.40	37.71	54.00	-16.29	AV	Horizontal
10480.25	39.51	44.50	13.80	38.80	8.10	47.61	68.20	-20.59	Pk	Vertical
10480.25	36.76	44.50	13.80	38.80	8.10	44.86	54.00	-9.14	AV	Vertical
10480.28	40.04	44.50	13.80	38.80	8.10	48.14	68.20	-20.06	Pk	Horizontal
10480.28	35.75	44.50	13.80	38.80	8.10	43.85	54.00	-10.15	AV	Horizontal
11030.76	33.34	43.60	14.30	39.50	10.20	43.54	74.00	-30.46	Pk	Vertical
11030.76	31.02	43.60	14.30	39.50	10.20	41.22	54.00	-12.78	AV	Vertical
11031.53	33.50	43.60	14.30	39.50	10.20	43.70	74.00	-30.30	Pk	Horizontal
11031.53	30.18	43.60	14.30	39.50	10.20	40.38	54.00	-13.62	AV	Horizontal
13283.28	31.61	42.60	15.90	38.90	12.20	43.81	74.00	-30.19	Pk	Vertical
13283.28	29.78	42.60	15.90	38.90	12.20	41.98	54.00	-12.02	AV	Vertical
13294.64	31.73	42.60	15.90	38.90	12.20	43.93	74.00	-30.07	Pk	Horizontal
13294.64	29.59	42.60	15.90	38.90	12.20	41.79	54.00	-12.21	AV	Horizontal

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Scan with 802.11n (HT-20) all have been tested the antenna 1, antenna 2 and antenna 1+2, the worst case is 802.11n(HT20) of the antenna 1+2.
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.

3.2.9 RESTRICTED FREQUENCY BANDS AND BAND EDGE

U-NII-1 5150-5250MHz

802.11n20

Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Corrected Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
5150	38.80	44.20	8.98	31.60	-3.62	35.18	74	-38.82	PK	Vertical
5150	28.88	44.20	8.98	31.60	-3.62	25.26	54	-28.74	AV	Vertical
5150	39.24	44.20	8.98	31.60	-3.62	35.62	74	-38.38	PK	Horizontal
5150	31.27	44.20	8.98	31.60	-3.62	27.65	54	-26.35	AV	Horizontal
5350	45.13	44.20	9.35	31.60	-3.25	41.88	74	-32.12	PK	Vertical
5350	28.81	44.20	9.35	31.60	-3.25	25.56	54	-28.44	AV	Vertical
5350	37.64	44.20	9.35	31.60	-3.25	34.39	74	-39.61	PK	Horizontal
5350	28.55	44.20	9.35	31.60	-3.25	25.30	54	-28.70	AV	Horizontal
5350	30.89	44.20	9.35	31.60	-3.25	27.64	54	-26.36	AV	Horizontal

U-NII-2A 5250-5350MHz

802.11n20

Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Corrected Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
5150	41.62	44.20	8.98	31.60	-3.62	38.00	74	-36.00	PK	Vertical
5150	30.43	44.20	8.98	31.60	-3.62	26.81	54	-27.19	AV	Vertical
5150	39.28	44.20	8.98	31.60	-3.62	35.66	74	-38.34	PK	Horizontal
5150	31.52	44.20	8.98	31.60	-3.62	27.90	54	-26.10	AV	Horizontal
5350	44.99	44.20	9.35	31.60	-3.25	41.74	74	-32.26	PK	Vertical
5350	31.90	44.20	9.35	31.60	-3.25	28.65	54	-25.35	AV	Vertical
5350	39.43	44.20	9.35	31.60	-3.25	36.18	74	-37.82	PK	Horizontal
5350	27.67	44.20	9.35	31.60	-3.25	24.42	54	-29.58	AV	Horizontal

U-NII-2C 5470-5725MHz

802.11n20

Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Corrected Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
5470	40.82	44.20	9.67	32.00	-2.53	38.28	74	-35.72	PK	Vertical
5470	31.85	44.20	9.67	32.00	-2.53	29.31	54	-24.69	AV	Vertical
5470	38.04	44.20	9.67	32.00	-2.53	35.50	74	-38.50	PK	Horizontal
5470	28.89	44.20	9.67	32.00	-2.53	26.36	54	-27.64	AV	Horizontal
5725	46.16	44.20	10.00	32.00	-2.20	43.96	74	-30.04	PK	Vertical
5725	30.35	44.20	10.00	32.00	-2.20	28.15	54	-25.85	AV	Vertical
5725	40.68	44.20	10.00	32.00	-2.20	38.48	74	-35.52	PK	Horizontal
5725	29.74	44.20	10.00	32.00	-2.20	27.54	54	-26.46	AV	Horizontal

U-NII-3 (5.725-5.85 GHz)

802.11n20

Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Corrected Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
5725	38.63	44.20	10.00	32.00	-2.20	36.43	74	-37.57	PK	Vertical
5725	27.93	44.20	10.00	32.00	-2.20	25.73	54	-28.27	AV	Vertical
5725	39.67	44.20	10.00	32.00	-2.20	37.47	74	-36.53	PK	Horizontal
5725	28.15	44.20	10.00	32.00	-2.20	25.95	54	-28.05	AV	Horizontal
5850	45.67	44.20	10.20	32.00	-2.00	43.67	74	-30.33	PK	Vertical
5850	31.10	44.20	10.20	32.00	-2.00	29.10	54	-24.90	AV	Vertical
5850	41.88	44.20	10.20	32.00	-2.00	39.88	74	-34.12	PK	Horizontal
5850	29.40	44.20	10.20	32.00	-2.00	27.40	54	-26.60	AV	Horizontal

Note: All modes have been tested. Only the worst mode shown in the report.

4. POWER SPECTRAL DENSITY TEST

4.1 LIMIT

1. For mobile and portable client devices in the 5.15-5.25 GHz band, , 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.
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, 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.
3. For the band 5.725-5.850 GHz, the peak power spectral density shall not exceed 30 dBm in any 500KHz band. If transmitting antenna directional gain is greater than 6 dBi, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.2 TEST PROCEDURE

1. The setting follows Method SA-1 of FCC KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

For devices operating in the band, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, "provided that the measured power is integrated over the full reference bandwidth" to show the total power over the specified measurement bandwidth (*i.e.*, 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

- a) Set $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3 RBW$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10 \log (500\text{kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ kHz})$ is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10 \log (1\text{MHz}/RBW)$ to the measured result, whereas $RBW (< 1 \text{ MHz})$ is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the sections 5.c) and 5.d) above, since $RBW=100 \text{ KHZ}$ is available on nearly all spectrum analyzers.

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP



4.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

4.6 TEST RESULTS

Note: The test data please reference to attachment "STS2309099W07_Appendix 5G WIFI".

5. BANDWIDTH MEASUREMENT

5.1 EMISSION BANDWIDTH (EBW) 26 BANDWID PROCEDURES / LIMIT

The following procedure shall be used for measuring 26 bandwidth.

5.1.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW \geq RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

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

Note: 1. ANT 1 Power > ANT 2 Power, Both ANT 1 and 2 have been test, Only show the worst data of ANT 1.

2. The test data please reference to attachment "STS2309099W07_Appendix 5G WIFI".

5.2 OCCUPIED BANDWIDTH (99%) TEST APPLIED PROCEDURES / LIMIT

The following procedure shall be used for measuring (99 %) power bandwidth.

5.2.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures v02r01.

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW $\geq 3 \cdot$ RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

5.2.2 DEVIATION FROM STANDARD

No deviation.

5.2.3 TEST SETUP



5.2.4 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.

5.2.5 TEST RESULTS

- Note: 1. ANT 1 Power > ANT 2 Power, Both ANT1 and 2 have been test, Only show the worst data of ANT 1.
2. The test data please reference to attachment "STS2309099W07_Appendix 5G WIFI".

5.3 MINIMUM EMISSION BANDWIDTH(6 DB) PROCEDURES / LIMIT

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth.

5.3.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures v02r01.
 - a) Set RBW = 100 kHz.
 - b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
 - c) Detector = Peak.
 - d) Trace mode = max hold.
 - e) Sweep = auto couple.
 - f) Allow the trace to stabilize.
 - g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.3.2 DEVIATION FROM STANDARD

No deviation.

5.3.3 TEST SETUP



5.3.4 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.

5.3.5 TEST RESULTS

Note: 1. ANT 1 Power > ANT 2 Power, Both ANT 1 and 2 have been test, Only show the worst data of ANT 1.

2. The test data please reference to attachment "STS2309099W07_Appendix 5G WIFI".

6. MAXIMUM CONDUCTED OUTPUT POWER

6.1 LIMIT

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

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz, If transmitting antennas of directional gain greater than 6 dBi are used.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used.

FCC Part15 (15.407) , Subpart E				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.407(a) (1) (iv)	Peak Output Power	0.25 watt	5150-5250	PASS
		The lesser of 250 mW or 11 dBm + 10 log (26 dB emission bandwidth)	5250-5350 5470-5725	
15.407(a) (3)		1 watt	5725-5895	

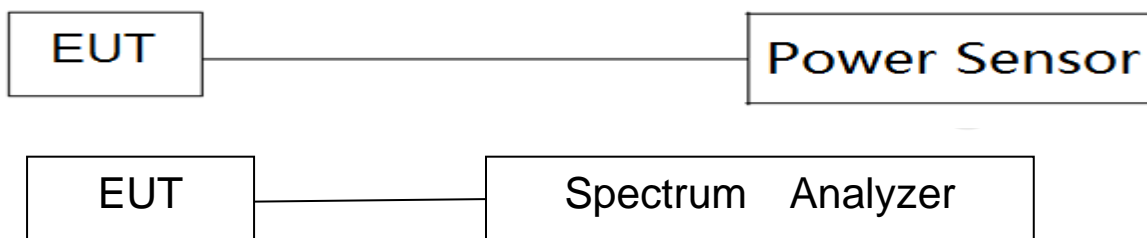
6.2 TEST PROCEDURE

The EUT was directly connected to the Power Sensor&PC

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 5 Unless otherwise a special operating condition is specified in the follows during the testing.

6.6 TEST RESULTS

Note: The test data please reference to attachment “STS2309099W07_Appendix 5G WIFI”.

7. AUTOMATICALLY DISCONTINUE TRANSMISSION

7.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

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 to describe how this requirement is met.

7.2 TEST RESULT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission

8. ANTENNA REQUIREMENT

8.1 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.

8.2 EUT ANTENNA

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

APPENDIX - PHOTOS OF TEST SETUP

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

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