



FCC TEST REPORT

Report No: STS1903051W01

Issued for

Justice Tech Solutions, LLC

13530 Fifth Street, Chino, CA 91710 United States

Product Name:	Securebook 5.0
Brand Name:	Justice Tech Solutions
Model Name:	JTS-SB50W
Series Model:	JTS-SB50W-A, JTS-SB50W-B JTS-SB50W-C, JTS-SB50W-D JTS-SB50W-E, JTS-SB50W-F
FCC ID:	2AS4KJTS-SB50W
Test Standard:	FCC Part 15.407

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TEST RESULT CERTIFICATION

Applicant's name : Justice Tech Solutions, LLC
 Address : 13530 Fifth Street, Chino, CA 91710 United States
Manufacture's Name..... : Justice Tech Solutions, LLC
 Address : 13530 Fifth Street, Chino, CA 91710 United States

Product description

Product Name..... : Securebook 5.0
 Brand Name : Justice Tech Solutions
 Model Name : JTS-SB50W
 Series Model..... : JTS-SB50W-A, JTS-SB50W-B, JTS-SB50W-C,
 JTS-SB50W-D, JTS-SB50W-E, JTS-SB50W-F


Test Standards..... : FCC Part15.407

Test procedure..... ANSI C63.10-2013

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

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Date of Test..... :
 Date (s) of performance of tests..... : 12 Mar. 2019~26 Mar. 2019
 Date of Issue..... : 27 Mar. 2019
 Test Result..... : **Pass**

Testing Engineer : 

 (Chris Chen)

Technical Manager : 

 (Sunday Hu)

Authorized Signatory : 

 (Vita Li)





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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	27 Mar. 2019	STS1903051W02	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 (2) (26 dB) / § 15.407 (e) (6 dB) / § 15.407 (a) (99%)	26dB/6dB & 99% Bandwidth	PASS
15.407(a) (1).(2).(3).(4).(5)	Maximum Conducted Output Power	PASS
15.407(b)	Peak Excursion Ratio	PASS
15.407(b) & 15.209	Radiated Emission And (bandedge Emissions) Measurement	PASS
15.407(b)7	Conducted Emission And (bandedge Emissions) Measurement	PASS
15.407(a) (1).(2).(3).(4).(5)	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 STS Test Services Co., Ltd.

Add. : 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road,
Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

FCC Registration No.: 625569

A2LA Certificate No.: 4338.01

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 %**.

No.	Item	Uncertainty
1	RF output power, conducted	$\pm 0.71\text{dB}$
2	Unwanted Emissions, conducted	$\pm 0.63\text{dB}$
3	All emissions, radiated 30-200MHz	$\pm 3.43\text{dB}$
4	All emissions, radiated 200MHz-1GHz	$\pm 3.57\text{dB}$
5	All emissions, radiated >1G	$\pm 4.13\text{dB}$
6	Conducted Emission (9KHz-150KHz)	$\pm 3.18\text{dB}$
7	Conducted Emission (150KHz-30MHz)	$\pm 2.70\text{dB}$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Securebook 5.0																					
Trade Name	Justice Tech Solutions																					
Model Name	JTS-SB50W																					
Series Model	JTS-SB50W-A, JTS-SB50W-B, JTS-SB50W-C, JTS-SB50W-D, JTS-SB50W-E, JTS-SB50W-F																					
Model Difference	Just different in CPU and memory capacity JTS-SB50W-A: DDR 4GB change to 8GB; JTS-SB50W-B: CPU N3450 change to N3350; JTS-SB50W-C: CPU N3450 change to J3455 JTS-SB50W-D: SSD 120GB changed to SSD 128GB JTS-SB50W-E: SSD 120GB changed to SSD 240GB JTS-SB50W-F: SSD 120GB changed to SSD 480GB																					
Product Description	The EUT is a Securebook 5.0																					
	<table border="1"> <tr> <td rowspan="6">Operation Frequency:</td> <td>IEEE 802.11a/ n(HT20)/ac(VHT20): 5.180GHz-5.240GHz</td> </tr> <tr> <td>IEEE 802.11n(HT40)/ac(VHT40): 5.190GHz-5.230GHz</td> </tr> <tr> <td>IEEE 802.11ac(VHT80): 5.210GHz</td> </tr> <tr> <td>IEEE 802.11a/ n(HT20)/ac(VHT20): 5.260GHz-5.320GHz</td> </tr> <tr> <td>IEEE 802.11 n(HT40)/ac(VHT40): 5.270GHz-5.310GHz</td> </tr> <tr> <td>IEEE 802.11ac(VHT80): 5.290GHz</td> </tr> <tr> <td rowspan="3">Modulation Type:</td> <td>IEEE 802.11a/ n(HT20)/ac(VHT20): 5.500GHz-5.700GHz</td> </tr> <tr> <td>IEEE 802.11 n(HT40)/ac(VHT40): 5.510GHz-5.670GHz</td> </tr> <tr> <td>IEEE 802.11ac(VHT80): 5.530GHz-5.610GHz</td> </tr> <tr> <td rowspan="3">Antenna Designation:</td> <td>802.11a(OFDM): BPSK,QPSK,16-QAM,64-QAM</td> </tr> <tr> <td>802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM</td> </tr> <tr> <td>802.11ac(OFDM): BPSK,QPSK,16-QAM,64-QAM,256-QAM</td> </tr> <tr> <td>Max.Output Power(Conducted):</td> <td>See Note 3</td> </tr> <tr> <td>Duty Cycle:</td> <td>5.12 dBm</td> </tr> <tr> <td></td> <td>>98%</td> </tr> </table>	Operation Frequency:	IEEE 802.11a/ n(HT20)/ac(VHT20): 5.180GHz-5.240GHz	IEEE 802.11n(HT40)/ac(VHT40): 5.190GHz-5.230GHz	IEEE 802.11ac(VHT80): 5.210GHz	IEEE 802.11a/ n(HT20)/ac(VHT20): 5.260GHz-5.320GHz	IEEE 802.11 n(HT40)/ac(VHT40): 5.270GHz-5.310GHz	IEEE 802.11ac(VHT80): 5.290GHz	Modulation Type:	IEEE 802.11a/ n(HT20)/ac(VHT20): 5.500GHz-5.700GHz	IEEE 802.11 n(HT40)/ac(VHT40): 5.510GHz-5.670GHz	IEEE 802.11ac(VHT80): 5.530GHz-5.610GHz	Antenna Designation:	802.11a(OFDM): BPSK,QPSK,16-QAM,64-QAM	802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM	802.11ac(OFDM): BPSK,QPSK,16-QAM,64-QAM,256-QAM	Max.Output Power(Conducted):	See Note 3	Duty Cycle:	5.12 dBm		>98%
	Operation Frequency:		IEEE 802.11a/ n(HT20)/ac(VHT20): 5.180GHz-5.240GHz																			
			IEEE 802.11n(HT40)/ac(VHT40): 5.190GHz-5.230GHz																			
			IEEE 802.11ac(VHT80): 5.210GHz																			
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Max.Output Power(Conducted):	See Note 3																					
Duty Cycle:	5.12 dBm																					
	>98%																					
More details of EUT technical specification, please refer to the User's Manual.																						
Test Channel	Please refer to the Note 2.																					
Adapter	JHD-AP045U-120300-AS: Input: AC100-240V, 50/60Hz, 1.5A Output: DC12V, 3000mA SOY-1200300US-214: Input: AC100-240V, 50/60Hz, 1.5A Max Output: DC12V, 3A																					



Battery	Capacity: 7000mAh Rated Voltage: 7.6V Charge Limit: 8.7V
Hardware version number	APL09_MB_V10
Software version number	N/A
Connecting I/O Port(s)	Please refer to the User's Manual

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

Antenna A, Antenna B can't transmit on the same time.





1. 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	108	5540
44	5220	110	5550
46	5230	112	5560
48	5240	116	5580
		118	5590
		120	5600
5.260GHz-5.320GHz			
Channel	Frequency		
52	5260	124	5620
54	5270	126	5630
56	5280	128	5640
58	5290	132	5660
60	5300	134	5670
62	5310	136	5680
64	5320	140	5700

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 802.11a/n(HT20)/ac(VHT20)

Channel	Freq.(MHz)	Channel	Freq.(MHz)
36	5180	52	5260
40	5200	60	5300
48	5240	64	5320

For 802.11a/n(HT20)/ac(VHT20)

Channel	Freq.(MHz)	Channel	Freq.(MHz)
100	5500	116	5580
140	5700		

For 802.11 n(HT40)/ac(VHT40)

Channel	Freq.(MHz)	Channel	Freq.(MHz)
38	5190	54	5270
46	5230	62	5310



For 802.11 n(HT40)/ac(VHT40)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
102	5510	110	5550
134	5670		

For 802.11ac (VHT80)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
42	5210	58	5290

For 802.11ac (VHT80)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
106	5530	122	5610

2.

Ant.	Brand	Model Name	Ant Type	Connector	Gain (dBi)	NOTE
A.B	Justice Tech Solutions	JTS-SB50W	PIFA Ant.	N/A	Ant. A gain : 0dBi Ant. B gain : 0dBi	WLAN Ant.



2.2 DESCRIPTION OF THE 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.

Worst Mode	Description	Data Rate
Mode 1	TX IEEE 802.11a HT20 CH36&CH40&CH48	6 Mbps
Mode 2	TX IEEE 802.11a HT20 CH52&CH60&CH64	6 Mbps
Mode 3	TX IEEE 802.11a HT20 CH100&CH116&CH140	6 Mbps
Mode 4	TX IEEE 802.11n HT20 CH36&CH40&CH48	MCS 0
Mode 5	TX IEEE 802.11ac HT20 CH36&CH40&CH48	NSS1 MCS0
Mode 6	TX IEEE 802.11n HT20 CH52&CH60&CH64	MCS 0
Mode 7	TX IEEE 802.11ac HT20 CH52&CH60&CH64	NSS1 MCS0
Mode 8	TX IEEE 802.11n HT20 CH100&CH116&CH140	MCS 0
Mode 9	TX IEEE 802.11ac HT20 CH100&CH116&CH140	NSS1 MCS0
Mode 10	TX IEEE 802.11n HT40 CH38&CH46	MCS 0
Mode 11	TX IEEE 802.11ac HT40 CH38&CH46	NSS1 MCS0
Mode 12	TX IEEE 802.11n HT40 CH54 &CH62	MCS 0
Mode 13	TX IEEE 802.11ac HT40 CH54 &CH62	NSS1 MCS0
Mode 14	TX IEEE 802.11n HT40 CH102&CH110&CH134	MCS 0
Mode 15	TX IEEE 802.11ac HT40 CH102&CH110&CH134	NSS1 MCS0
Mode 16	TX IEEE 802.11ac HT80 CH42	NSS1 MCS0
Mode 17	TX IEEE 802.11ac HT80 CH58	NSS1 MCS0
Mode 18	TX IEEE 802.11ac HT80 CH106&122	NSS1 MCS0

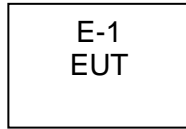
- Note: (1) The measurements are performed at the highest, middle, lowest available channels.
 (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported
 (3) We have be tested for all avaiable U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which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

AC Conducted Emission

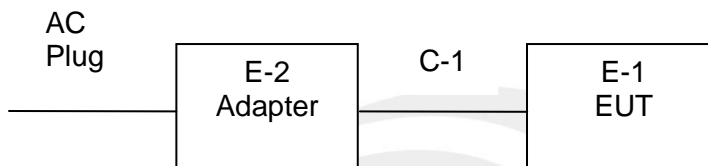
Test Case	
AC Conducted Emission	Mode 18: Keeping TX + WLAN Link

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted Emission Test



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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

Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note
E-2	Adapter	N/A	JHD-AP045U-120300-AS	N/A	N/A
C-1	USB Cable	N/A	100cm	N/A	N/A

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	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) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.5 EQUIPMENTS LIST

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESCI	101427	2018.10.13	2019.10.12
Signal Analyzer	Agilent	N9020A	MY51110105	2019.03.02	2010.03.01
Active loop Antenna	ZHINAN	ZN30900C	16035	2018.03.11	2021.03.10
Bilog Antenna	TESEQ	CBL6111D	34678	2017.11.02	2020.11.1
Horn Antenna	SCHWARZBECK	BBHA 9120D(1201)	9120D-1343	2018.10.19	2021.10.18
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	J211020657	2018.03.11	2021.03.10
Pre-Amplifier (0.1M-3GHz)	EM	EM330	060665	2018.10.13	2019.10.12
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-4 5	SK2018080901	2018.10.13	2019.10.12
Temperature & Humidity	HH660	Mieo	N/A	2018.10.11	2019.10.10
turn table	EM	SC100_1	60531	N/A	N/A
Antenna mast	EM	SC100	N/A	N/A	N/A

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2018.10.13	2019.10.12
LISN	R&S	ENV216	101242	2018.10.11	2019.10.10
LISN	EMCO	3810/2NM	23625	2018.10.11	2019.10.10
Temperature & Humidity	HH660	Mieo	N/A	2018.10.11	2019.10.10

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
USB RF power sensor	DARE	RPR3006W	15I00041SNO03	2018.10.13	2019.10.12
Signal Analyzer	Agilent	N9020A	MY49100060	2018.10.13	2019.10.12
Temperature & Humidity	HH660	Mieo	N/A	2018.10.11	2019.10.10



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

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

FREQUENCY (MHz)	Class B (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	56.00	46.00	CISPR
5.0 -30.0	60.00	50.00	CISPR

0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -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

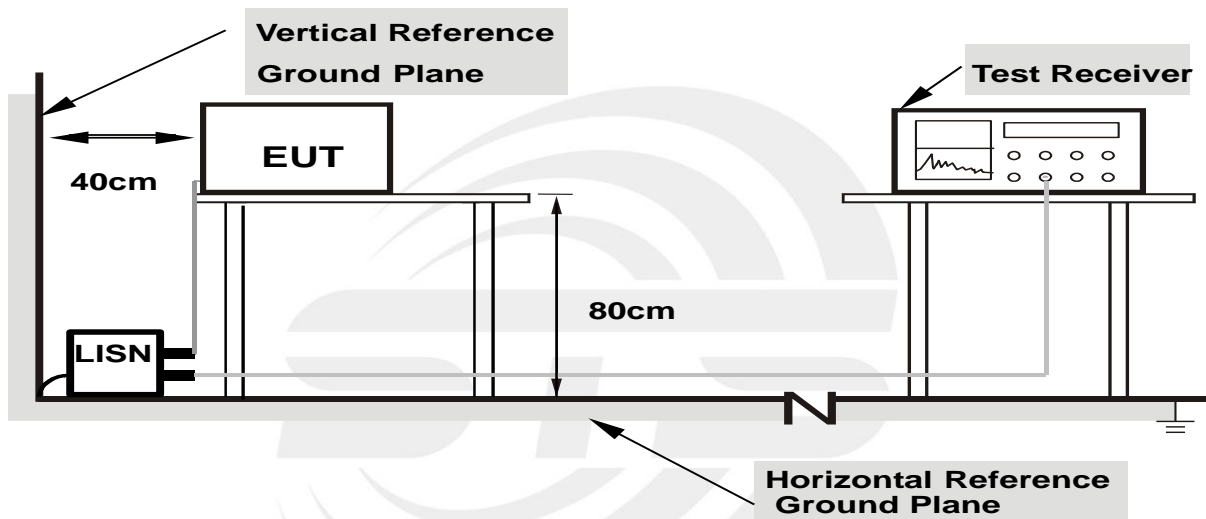
3.1.2 TEST PROCEDURE

- 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 cm 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.



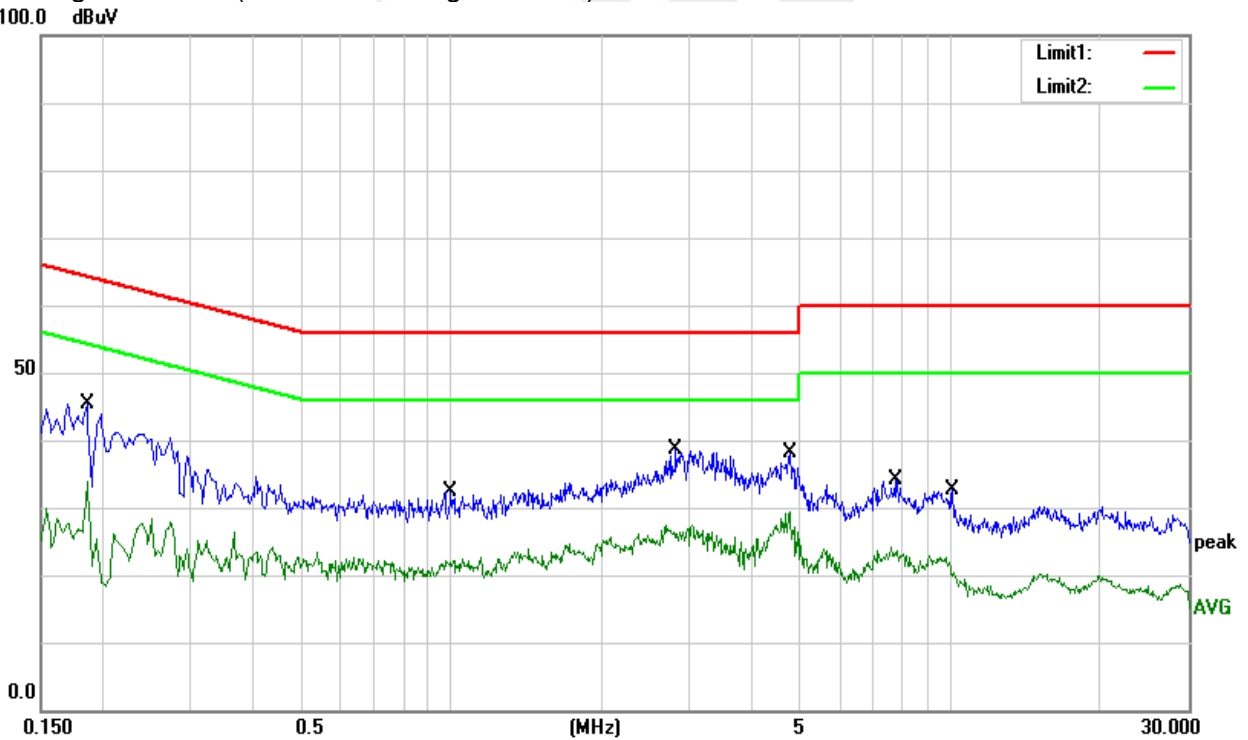
3.1.6 TEST RESULTS

Temperature:	21.9 °C	Relative Humidity:	64%
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode :	Mode 18		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1860	25.26	20.23	45.49	64.21	-18.72	QP
0.1860	13.62	20.23	33.85	54.21	-20.36	AVG
0.9980	12.31	20.16	32.47	56.00	-23.53	QP
0.9980	2.01	20.16	22.17	46.00	-23.83	AVG
2.8220	18.53	20.00	38.53	56.00	-17.47	QP
2.8220	6.32	20.00	26.32	46.00	-19.68	AVG
4.7780	18.09	19.95	38.04	56.00	-17.96	QP
4.7780	5.47	19.95	25.42	46.00	-20.58	AVG
7.7420	14.26	19.96	34.22	60.00	-25.78	QP
7.7420	3.08	19.96	23.04	50.00	-26.96	AVG
10.0980	12.40	20.13	32.53	60.00	-27.47	QP
10.0980	0.27	20.13	20.40	50.00	-29.60	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result = Reading + Factor) - Limit



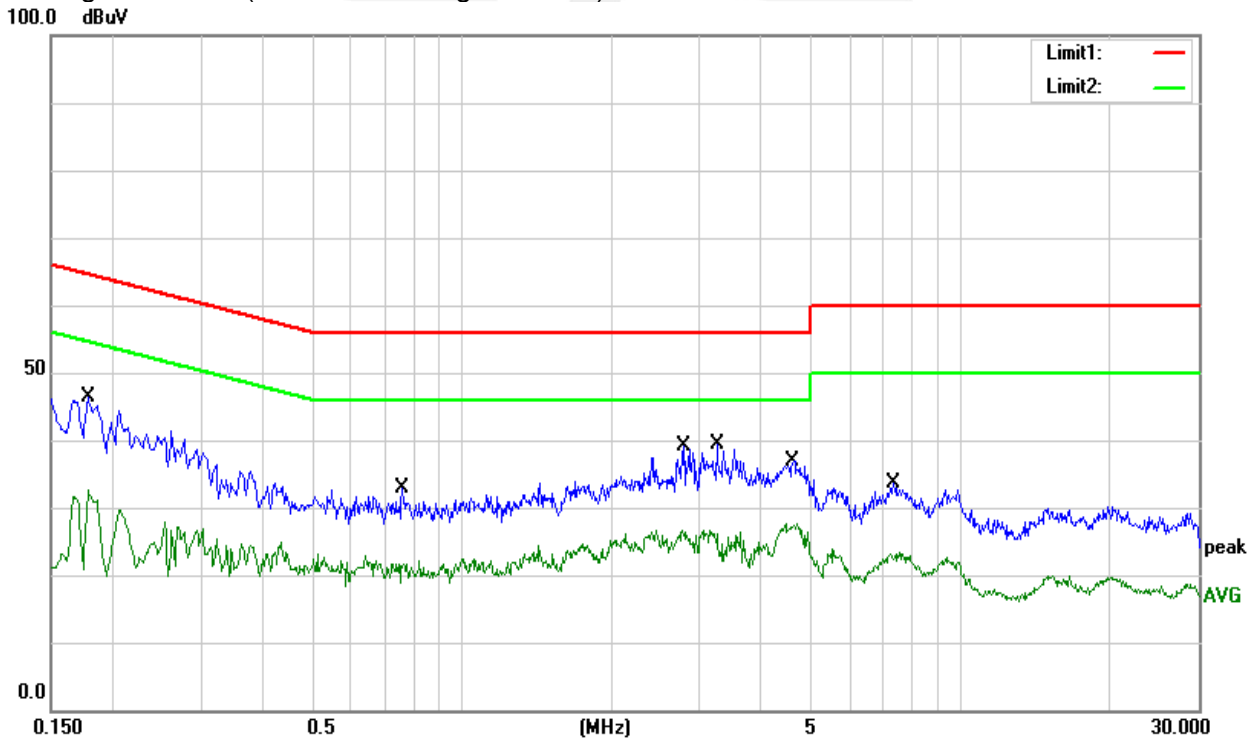


Temperature:	21.9 °C	Relative Humidity:	64%
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode	Mode 18		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1780	26.03	20.23	46.26	64.58	-18.32	QP
0.1780	10.64	20.23	30.87	54.58	-23.71	AVG
0.7620	12.55	20.24	32.79	56.00	-23.21	QP
0.7620	-0.56	20.24	19.68	46.00	-26.32	AVG
2.7860	19.10	20.00	39.10	56.00	-16.90	QP
2.7860	5.16	20.00	25.16	46.00	-20.84	AVG
3.2460	19.41	19.97	39.38	56.00	-16.62	QP
3.2460	2.08	19.97	22.05	46.00	-23.95	AVG
4.6300	17.04	19.95	36.99	56.00	-19.01	QP
4.6300	7.03	19.95	26.98	46.00	-19.02	AVG
7.3420	13.68	19.94	33.62	60.00	-26.38	QP
7.3420	2.77	19.94	22.71	50.00	-27.29	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



3.2 RADIATED EMISSION AND (BANDEDGE) MEASUREMENT

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

In case the emission fall within the restricted band specified on 15.407(b)7& 15.205/209(a), then the (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)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	68.2	54

Notes:

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

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier harmonic(Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 1 MHz, AV=1 MHz /3 MHz

For Band edge

Spectrum Parameter	Setting
Detector	Peak
RB / VB (emission in restricted band)	1 MHz / 1 MHz, AV=1 MHz /3 MHz



Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

- a. The measuring distance of at 3 m shall be used for measurements at frequency 0.009MHz 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 meters(above 1GHz is 1.5 m) above the ground at a 3 meter anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment shall be 0.8 m(above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. 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:

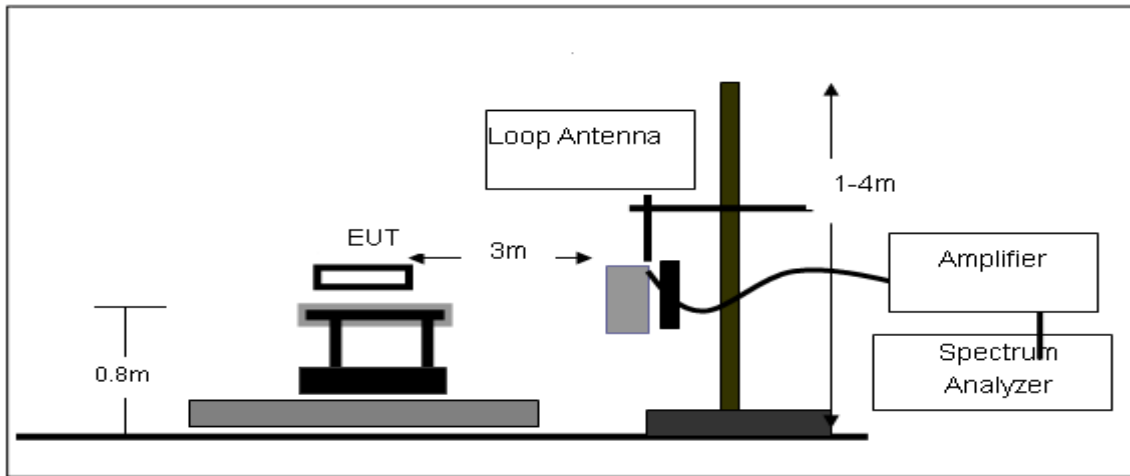
Both horizontal and vertical antenna polarities were tested and performed test to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

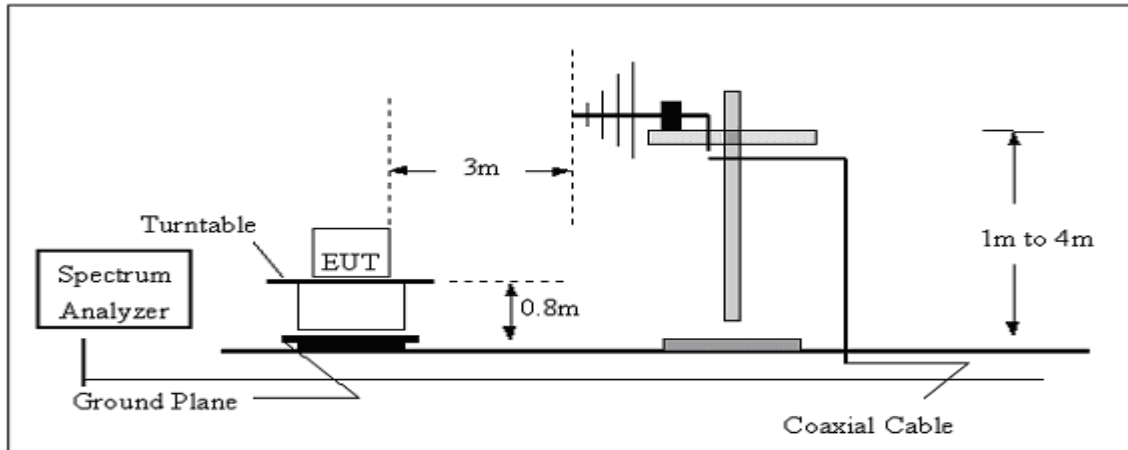
No deviation

3.2.4 TEST SETUP

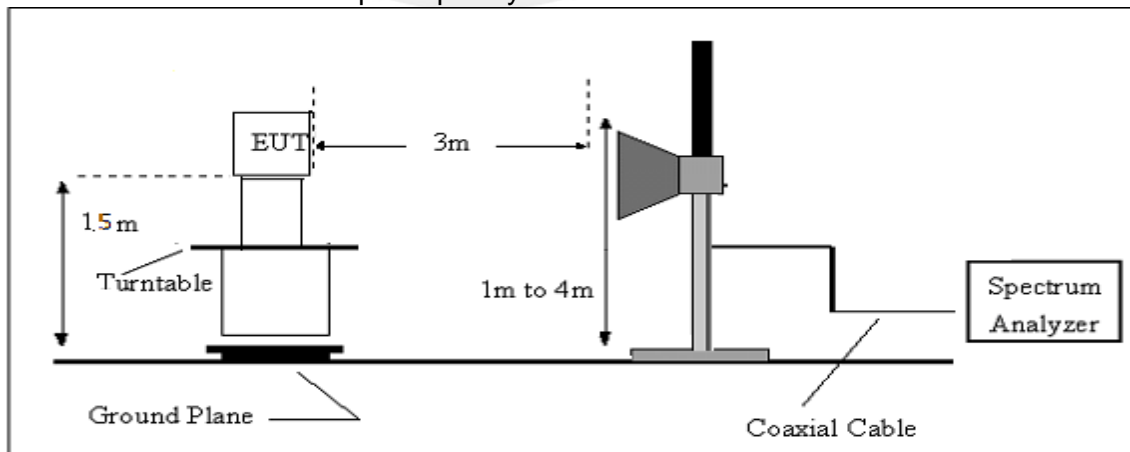
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.5 EUT OPERATING CONDITIONS

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



3.2.6 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency (MHz)	FS (dB μ V/m)	RA (dB μ V/m)	AF (dB)	CL (dB)	AG (dB)	Factor (dB)
300	40	58.1	12.2	1.6	31.9	-18.1

$$\text{Factor} = \text{AF} + \text{CL} - \text{AG}$$

3.2.7 TEST RESULTS (Between 9KHz – 30 MHz)

Temperature:	21.8 °C	Relative Humidity:	59%
Test Voltage :	DC 7.6V from Battery	Polarization :	--
Test Mode :	TX Mode		

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

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



3.2.8 TEST RESULTS (Between 30MHz – 1GHz)

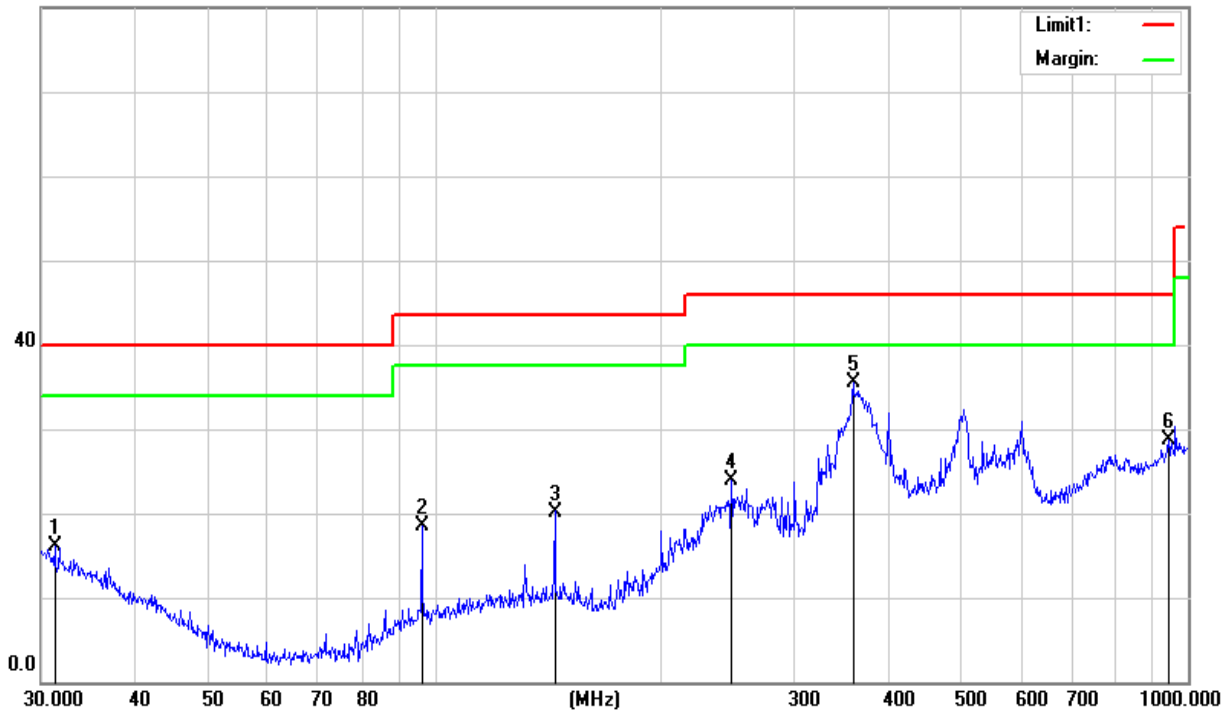
Temperature	21.8 °C	Relative Humidity:	59%
Test Voltage	DC 7.6V from Battery	Polarization	Horizontal
Test Mode	Mode 1-17(Mode 5 worst mode)		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
31.2893	27.97	-11.85	16.12	40.00	-23.88	QP
96.0986	38.11	-19.58	18.53	43.50	-24.97	QP
144.3348	37.92	-17.72	20.20	43.50	-23.30	QP
247.6820	40.52	-16.66	23.86	46.00	-22.14	QP
359.1860	48.64	-13.17	35.47	46.00	-10.53	QP
942.1305	29.26	-0.65	28.61	46.00	-17.39	QP

Remark:

1. Margin = Result (Result =Reading + Factor)–Limit

80.0 dBuV/m





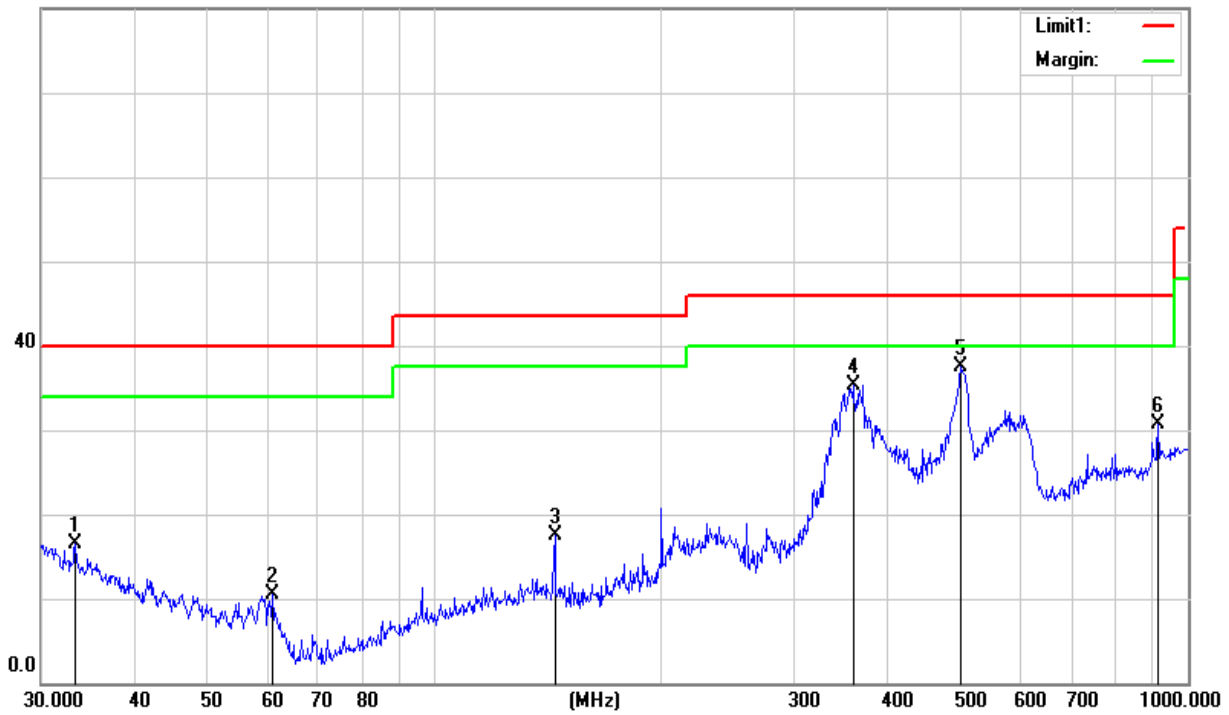
Temperature	21.8 °C	Relative Humidity:	59%
Test Voltage	DC 7.6V from Battery	Polarization	Vertical
Test Mode	Mode 1-17(Mode 5 worst mode)		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
33.3278	29.49	-12.90	16.59	40.00	-23.41	QP
60.9176	34.81	-24.32	10.49	40.00	-29.51	QP
144.3348	35.30	-17.72	17.58	43.50	-25.92	QP
359.1860	48.54	-13.17	35.37	46.00	-10.63	QP
499.4246	46.41	-8.91	37.50	46.00	-8.50	QP
912.8620	32.60	-1.82	30.78	46.00	-15.22	QP

Remark:

1. Margin = Result (Result =Reading + Factor) –Limit

80.0 dBuV/m





3.2.9 TEST RESULTS (Above 1000 MHz)
Band I 5150-5250MHz

Band I(5.15-5.25) GHz										
Frequency (MHz)	Reading	Amplifier	Loss	Antenna	Orrected	Emission	Limit (dBuV/m)	Margin	Detector	Comment
	(dBuV)	(dB)	(dB)	Factor (dB/m)	Factor (dB)	Level (dBuV/m)		(dB)		
Low Channel (802.11ac20/ 5180 MHz)										
3245.80	44.59	44.70	6.70	28.20	-9.80	34.79	68.20	-33.41	PK	Vertical
3245.80	41.71	44.70	6.70	28.20	-9.80	31.91	54.00	-22.09	AV	Vertical
3258.92	44.68	44.70	6.70	28.20	-9.80	34.88	68.20	-33.32	PK	Horizontal
3258.92	41.76	44.70	6.70	28.20	-9.80	31.96	54.00	-22.04	AV	Horizontal
3999.65	39.27	44.20	7.90	29.70	-6.60	32.67	68.20	-35.53	PK	Vertical
3999.65	37.11	44.20	7.90	29.70	-6.60	30.51	54.00	-23.49	AV	Vertical
3993.97	38.98	44.20	7.90	29.70	-6.60	32.38	68.20	-35.82	PK	Horizontal
3993.97	35.96	44.20	7.90	29.70	-6.60	29.36	54.00	-24.64	AV	Horizontal
7231.13	37.77	43.50	11.40	35.50	3.40	41.17	68.20	-27.03	PK	Vertical
7231.13	34.05	43.50	11.40	35.50	3.40	37.45	54.00	-16.55	AV	Vertical
7234.78	37.00	43.50	11.40	35.50	3.40	40.40	68.20	-27.80	PK	Horizontal
7234.78	34.16	43.50	11.40	35.50	3.40	37.56	54.00	-16.44	AV	Horizontal
10359.99	39.24	44.50	13.80	38.80	8.10	47.34	68.20	-20.86	PK	Vertical
10359.99	36.95	44.50	13.80	38.80	8.10	45.05	54.00	-8.95	AV	Vertical
10360.12	39.69	44.50	13.80	38.80	8.10	47.79	68.20	-20.41	PK	Horizontal
10360.12	37.13	44.50	13.80	38.80	8.10	45.23	54.00	-8.77	AV	Horizontal
11027.47	33.02	43.60	14.30	39.50	10.20	43.22	68.20	-24.98	PK	Vertical
11027.47	29.90	43.60	14.30	39.50	10.20	40.10	54.00	-13.90	AV	Vertical
11031.08	33.37	43.60	14.30	39.50	10.20	43.57	68.20	-24.63	PK	Horizontal
11031.08	30.35	43.60	14.30	39.50	10.20	40.55	54.00	-13.45	AV	Horizontal
13293.36	31.65	42.60	15.90	38.90	12.20	43.85	68.20	-24.35	PK	Vertical
13293.36	29.28	42.60	15.90	38.90	12.20	41.48	54.00	-12.52	AV	Vertical
13294.65	32.84	42.60	15.90	38.90	12.20	45.04	68.20	-23.16	PK	Horizontal
13294.65	28.84	42.60	15.90	38.90	12.20	41.04	54.00	-12.96	AV	Horizontal



Mid Channel (802.11 ac20/ 5200 MHz)										
3259.96	44.19	44.70	6.70	28.20	-9.80	34.39	68.20	-33.81	PK	Vertical
3259.96	41.81	44.70	6.70	28.20	-9.80	32.01	54.00	-21.99	AV	Vertical
3252.05	44.79	44.70	6.70	28.20	-9.80	34.99	68.20	-33.21	PK	Horizontal
3252.05	41.28	44.70	6.70	28.20	-9.80	31.48	54.00	-22.52	AV	Horizontal
3995.51	39.11	44.20	7.90	29.70	-6.60	32.51	68.20	-35.69	PK	Vertical
3995.51	36.56	44.20	7.90	29.70	-6.60	29.96	54.00	-24.04	AV	Vertical
3986.70	38.79	44.20	7.90	29.70	-6.60	32.19	68.20	-36.01	PK	Horizontal
3986.70	36.46	44.20	7.90	29.70	-6.60	29.86	54.00	-24.14	AV	Horizontal
7228.03	37.53	43.50	11.40	35.50	3.40	40.93	68.20	-27.27	PK	Vertical
7228.03	33.59	43.50	11.40	35.50	3.40	36.99	54.00	-17.01	AV	Vertical
7234.47	37.92	43.50	11.40	35.50	3.40	41.32	68.20	-26.88	PK	Horizontal
7234.47	33.68	43.50	11.40	35.50	3.40	37.08	54.00	-16.92	AV	Horizontal
10400.09	40.06	44.50	13.80	38.80	8.10	48.16	68.20	-20.04	PK	Vertical
10400.09	36.93	44.50	13.80	38.80	8.10	45.03	54.00	-8.97	AV	Vertical
10400.33	39.42	44.50	13.80	38.80	8.10	47.52	68.20	-20.68	PK	Horizontal
10400.33	35.69	44.50	13.80	38.80	8.10	43.79	54.00	-10.21	AV	Horizontal
11016.48	33.85	43.60	14.30	39.50	10.20	44.05	68.20	-24.15	PK	Vertical
11016.48	30.23	43.60	14.30	39.50	10.20	40.43	54.00	-13.57	AV	Vertical
11020.26	33.20	43.60	14.30	39.50	10.20	43.40	68.20	-24.80	PK	Horizontal
11020.26	31.12	43.60	14.30	39.50	10.20	41.32	54.00	-12.68	AV	Horizontal
13284.18	32.67	42.60	15.90	38.90	12.20	44.87	68.20	-23.33	PK	Vertical
13284.18	29.72	42.60	15.90	38.90	12.20	41.92	54.00	-12.08	AV	Vertical
13284.18	32.58	42.60	15.90	38.90	12.20	44.78	68.20	-23.42	PK	Horizontal
13284.18	29.79	42.60	15.90	38.90	12.20	41.99	54.00	-12.01	AV	Horizontal



High Channel (802.11 ac20/ 5240 MHz)										
3248.92	44.02	44.70	6.70	28.20	-9.80	34.22	68.20	-33.98	PK	Vertical
3248.92	41.61	44.70	6.70	28.20	-9.80	31.81	54.00	-22.19	AV	Vertical
3250.04	45.18	44.70	6.70	28.20	-9.80	35.38	68.20	-32.82	PK	Horizontal
3250.04	41.62	44.70	6.70	28.20	-9.80	31.82	54.00	-22.18	AV	Horizontal
3981.39	39.36	44.20	7.90	29.70	-6.60	32.76	68.20	-35.44	PK	Vertical
3981.39	36.49	44.20	7.90	29.70	-6.60	29.89	54.00	-24.11	AV	Vertical
3989.50	39.67	44.20	7.90	29.70	-6.60	33.07	68.20	-35.13	PK	Horizontal
3989.50	36.58	44.20	7.90	29.70	-6.60	29.98	54.00	-24.02	AV	Horizontal
7221.77	36.53	43.50	11.40	35.50	3.40	39.93	68.20	-28.27	PK	Vertical
7221.77	33.59	43.50	11.40	35.50	3.40	36.99	54.00	-17.01	AV	Vertical
7225.91	37.04	43.50	11.40	35.50	3.40	40.44	68.20	-27.76	PK	Horizontal
7225.91	33.56	43.50	11.40	35.50	3.40	36.96	54.00	-17.04	AV	Horizontal
10480.36	39.34	44.50	13.80	38.80	8.10	47.44	68.20	-20.76	PK	Vertical
10480.36	35.69	44.50	13.80	38.80	8.10	43.79	54.00	-10.21	AV	Vertical
10480.01	38.80	44.50	13.80	38.80	8.10	46.90	68.20	-21.30	PK	Horizontal
10480.01	36.33	44.50	13.80	38.80	8.10	44.43	54.00	-9.57	AV	Horizontal
11018.52	33.98	43.60	14.30	39.50	10.20	44.18	68.20	-24.02	PK	Vertical
11018.52	29.99	43.60	14.30	39.50	10.20	40.19	54.00	-13.81	AV	Vertical
11017.35	33.11	43.60	14.30	39.50	10.20	43.31	68.20	-24.89	PK	Horizontal
11017.35	30.28	43.60	14.30	39.50	10.20	40.48	54.00	-13.52	AV	Horizontal
13285.24	32.92	42.60	15.90	38.90	12.20	45.12	68.20	-23.08	PK	Vertical
13285.24	29.20	42.60	15.90	38.90	12.20	41.40	54.00	-12.60	AV	Vertical
13296.04	32.02	42.60	15.90	38.90	12.20	44.22	68.20	-23.98	PK	Horizontal
13296.04	29.73	42.60	15.90	38.90	12.20	41.93	54.00	-12.07	AV	Horizontal

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Scan with 802.11a, 802.11n (HT-20), 802.11n (HT-40), 802.11ac (VHT-20), 802.11ac (VHT-40), 802.11ac (VHT-80) the worst case is 802.11ac (VHT-20).
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.
4. Antenna A and Antenna B all has been tested, the worst case is Antenna B, only the worst-case results were reported



Band II 5250-5350MHz

Band II(5.25-5.35) GHz										
Frequency (MHz)	Reading	Amplifier	Loss	Antenna Factor	Orrected Factor	Emission Level	Limit (dBuV/m)	Margin	Detector	Comment
	(dBuV)	(dB)	(dB)	(dB/m)	(dB)	(dBuV/m)		(dB)		
Low Channel (802.11 n20/ 5260 MHz)										
3253.73	44.28	44.70	6.70	28.20	-9.80	34.48	68.20	-33.72	PK	Vertical
3253.73	41.65	44.70	6.70	28.20	-9.80	31.85	54.00	-22.15	AV	Vertical
3248.76	44.80	44.70	6.70	28.20	-9.80	35.00	68.20	-33.20	PK	Horizontal
3248.76	41.39	44.70	6.70	28.20	-9.80	31.59	54.00	-22.41	AV	Horizontal
3982.92	39.27	44.20	7.90	29.70	-6.60	32.67	68.20	-35.53	PK	Vertical
3982.92	35.84	44.20	7.90	29.70	-6.60	29.24	54.00	-24.76	AV	Vertical
3987.72	38.99	44.20	7.90	29.70	-6.60	32.39	68.20	-35.81	PK	Horizontal
3987.72	36.56	44.20	7.90	29.70	-6.60	29.96	54.00	-24.04	AV	Horizontal
7230.28	36.48	43.50	11.40	35.50	3.40	39.88	68.20	-28.32	PK	Vertical
7230.28	33.50	43.50	11.40	35.50	3.40	36.90	54.00	-17.10	AV	Vertical
7235.13	37.02	43.50	11.40	35.50	3.40	40.42	68.20	-27.78	PK	Horizontal
7235.13	34.72	43.50	11.40	35.50	3.40	38.12	54.00	-15.88	AV	Horizontal
10359.98	38.94	44.50	13.80	38.80	8.10	47.04	68.20	-21.16	PK	Vertical
10359.98	35.86	44.50	13.80	38.80	8.10	43.96	54.00	-10.04	AV	Vertical
10360.10	39.43	44.50	13.80	38.80	8.10	47.53	68.20	-20.67	PK	Horizontal
10360.10	36.33	44.50	13.80	38.80	8.10	44.43	54.00	-9.57	AV	Horizontal
11031.51	33.79	43.60	14.30	39.50	10.20	43.99	68.20	-24.21	PK	Vertical
11031.51	30.31	43.60	14.30	39.50	10.20	40.51	54.00	-13.49	AV	Vertical
11035.01	33.22	43.60	14.30	39.50	10.20	43.42	68.20	-24.78	PK	Horizontal
11035.01	31.01	43.60	14.30	39.50	10.20	41.21	54.00	-12.79	AV	Horizontal
13282.10	31.79	42.60	15.90	38.90	12.20	43.99	68.20	-24.21	PK	Vertical
13282.10	29.99	42.60	15.90	38.90	12.20	42.19	54.00	-11.81	AV	Vertical
13284.99	32.83	42.60	15.90	38.90	12.20	45.03	68.20	-23.17	PK	Horizontal
13284.99	29.58	42.60	15.90	38.90	12.20	41.78	54.00	-12.22	AV	Horizontal



Mid Channel (802.11 n20/ 5300 MHz)										
3257.73	44.77	44.70	6.70	28.20	-9.80	34.97	68.20	-33.23	PK	Vertical
3257.73	40.87	44.70	6.70	28.20	-9.80	31.07	54.00	-22.93	AV	Vertical
3259.63	44.60	44.70	6.70	28.20	-9.80	34.80	68.20	-33.40	PK	Horizontal
3259.63	41.69	44.70	6.70	28.20	-9.80	31.89	54.00	-22.11	AV	Horizontal
3996.48	38.97	44.20	7.90	29.70	-6.60	32.37	68.20	-35.83	PK	Vertical
3996.48	36.33	44.20	7.90	29.70	-6.60	29.73	54.00	-24.27	AV	Vertical
3987.92	39.22	44.20	7.90	29.70	-6.60	32.62	68.20	-35.58	PK	Horizontal
3987.92	36.49	44.20	7.90	29.70	-6.60	29.89	54.00	-24.11	AV	Horizontal
7216.89	36.58	43.50	11.40	35.50	3.40	39.98	68.20	-28.22	PK	Vertical
7216.89	34.88	43.50	11.40	35.50	3.40	38.28	54.00	-15.72	AV	Vertical
7234.43	36.54	43.50	11.40	35.50	3.40	39.94	68.20	-28.26	PK	Horizontal
7234.43	34.14	43.50	11.40	35.50	3.40	37.54	54.00	-16.46	AV	Horizontal
10399.95	39.08	44.50	13.80	38.80	8.10	47.18	68.20	-21.02	PK	Vertical
10399.95	35.88	44.50	13.80	38.80	8.10	43.98	54.00	-10.02	AV	Vertical
10399.95	39.87	44.50	13.80	38.80	8.10	47.97	68.20	-20.23	PK	Horizontal
10399.95	35.75	44.50	13.80	38.80	8.10	43.85	54.00	-10.15	AV	Horizontal
11020.19	33.98	43.60	14.30	39.50	10.20	44.18	68.20	-24.02	PK	Vertical
11020.19	29.91	43.60	14.30	39.50	10.20	40.11	54.00	-13.89	AV	Vertical
11030.85	33.01	43.60	14.30	39.50	10.20	43.21	68.20	-24.99	PK	Horizontal
11030.85	29.79	43.60	14.30	39.50	10.20	39.99	54.00	-14.01	AV	Horizontal
13295.03	32.59	42.60	15.90	38.90	12.20	44.79	68.20	-23.41	PK	Vertical
13295.03	28.65	42.60	15.90	38.90	12.20	40.85	54.00	-13.15	AV	Vertical
13285.42	32.76	42.60	15.90	38.90	12.20	44.96	68.20	-23.24	PK	Horizontal
13285.42	29.30	42.60	15.90	38.90	12.20	41.50	54.00	-12.50	AV	Horizontal



High Channel (802.11 n20/ 5320 MHz)										
3256.66	44.62	44.70	6.70	28.20	-9.80	34.82	68.20	-33.38	PK	Vertical
3256.66	40.91	44.70	6.70	28.20	-9.80	31.11	54.00	-22.89	AV	Vertical
3258.38	44.81	44.70	6.70	28.20	-9.80	35.01	68.20	-33.19	PK	Horizontal
3258.38	40.89	44.70	6.70	28.20	-9.80	31.09	54.00	-22.91	AV	Horizontal
3995.78	39.06	44.20	7.90	29.70	-6.60	32.46	68.20	-35.74	PK	Vertical
3995.78	36.86	44.20	7.90	29.70	-6.60	30.26	54.00	-23.74	AV	Vertical
3988.13	39.04	44.20	7.90	29.70	-6.60	32.44	68.20	-35.76	PK	Horizontal
3988.13	35.99	44.20	7.90	29.70	-6.60	29.39	54.00	-24.61	AV	Horizontal
7217.10	36.83	43.50	11.40	35.50	3.40	40.23	68.20	-27.97	PK	Vertical
7217.10	33.96	43.50	11.40	35.50	3.40	37.36	54.00	-16.64	AV	Vertical
7220.19	37.60	43.50	11.40	35.50	3.40	41.00	68.20	-27.20	PK	Horizontal
7220.19	33.80	43.50	11.40	35.50	3.40	37.20	54.00	-16.80	AV	Horizontal
10480.27	39.41	44.50	13.80	38.80	8.10	47.51	68.20	-20.69	PK	Vertical
10480.27	36.87	44.50	13.80	38.80	8.10	44.97	54.00	-9.03	AV	Vertical
10480.12	38.85	44.50	13.80	38.80	8.10	46.95	68.20	-21.25	PK	Horizontal
10480.12	36.13	44.50	13.80	38.80	8.10	44.23	54.00	-9.77	AV	Horizontal
11034.89	33.64	43.60	14.30	39.50	10.20	43.84	68.20	-24.36	PK	Vertical
11034.89	30.14	43.60	14.30	39.50	10.20	40.34	54.00	-13.66	AV	Vertical
11021.11	33.74	43.60	14.30	39.50	10.20	43.94	68.20	-24.26	PK	Horizontal
11021.11	31.14	43.60	14.30	39.50	10.20	41.34	54.00	-12.66	AV	Horizontal
13287.76	32.49	42.60	15.90	38.90	12.20	44.69	68.20	-23.51	PK	Vertical
13287.76	29.50	42.60	15.90	38.90	12.20	41.70	54.00	-12.30	AV	Vertical
13297.55	32.53	42.60	15.90	38.90	12.20	44.73	68.20	-23.47	PK	Horizontal
13297.55	29.86	42.60	15.90	38.90	12.20	42.06	54.00	-11.94	AV	Horizontal

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Scan with 802.11a, 802.11n (HT-20), 802.11n (HT-40), 802.11ac (VHT-20), 802.11ac (VHT-40), 802.11ac (VHT-80) the worst case is 802.11n (HT-20).
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.
4. Antenna A and Antenna B all has been tested, the worst case is Antenna B, only the worst-case results were reported



Band III 5470-5725MHz

Band III(5.47-5.725) GHz										
Frequency (MHz)	Reading	Amplifier	Loss	Antenna Factor	Orrected Factor	Emission Level	Limit (dBuV/m)	Margin	Detector	Comment
	(dBuV)	(dB)	(dB)	(dB/m)	(dB)	(dBμV/m)		(dB)		
Low Channel (802.11 n20/ 5500 MHz)										
3253.41	44.97	44.70	6.70	28.20	-9.80	35.17	68.20	-33.03	PK	Vertical
3253.41	41.52	44.70	6.70	28.20	-9.80	31.72	54.00	-22.28	AV	Vertical
3250.41	45.16	44.70	6.70	28.20	-9.80	35.36	68.20	-32.84	PK	Horizontal
3250.41	41.17	44.70	6.70	28.20	-9.80	31.37	54.00	-22.63	AV	Horizontal
3993.88	39.10	44.20	7.90	29.70	-6.60	32.50	68.20	-35.70	PK	Vertical
3993.88	36.52	44.20	7.90	29.70	-6.60	29.92	54.00	-24.08	AV	Vertical
3984.53	39.65	44.20	7.90	29.70	-6.60	33.05	68.20	-35.15	PK	Horizontal
3984.53	36.81	44.20	7.90	29.70	-6.60	30.21	54.00	-23.79	AV	Horizontal
7225.13	37.83	43.50	11.40	35.50	3.40	41.23	68.20	-26.97	PK	Vertical
7225.13	34.53	43.50	11.40	35.50	3.40	37.93	54.00	-16.07	AV	Vertical
7235.48	37.42	43.50	11.40	35.50	3.40	40.82	68.20	-27.38	PK	Horizontal
7235.48	33.46	43.50	11.40	35.50	3.40	36.86	54.00	-17.14	AV	Horizontal
10360.03	39.77	44.50	13.80	38.80	8.10	47.87	68.20	-20.33	PK	Vertical
10360.03	36.44	44.50	13.80	38.80	8.10	44.54	54.00	-9.46	AV	Vertical
10360.17	38.95	44.50	13.80	38.80	8.10	47.05	68.20	-21.15	PK	Horizontal
10360.17	36.49	44.50	13.80	38.80	8.10	44.59	54.00	-9.41	AV	Horizontal
11025.75	32.77	43.60	14.30	39.50	10.20	42.97	68.20	-25.23	PK	Vertical
11025.75	31.13	43.60	14.30	39.50	10.20	41.33	54.00	-12.67	AV	Vertical
11032.58	34.04	43.60	14.30	39.50	10.20	44.24	68.20	-23.96	PK	Horizontal
11032.58	30.08	43.60	14.30	39.50	10.20	40.28	54.00	-13.72	AV	Horizontal
13281.80	32.12	42.60	15.90	38.90	12.20	44.32	68.20	-23.88	PK	Vertical
13281.80	28.71	42.60	15.90	38.90	12.20	40.91	54.00	-13.09	AV	Vertical
13299.05	32.73	42.60	15.90	38.90	12.20	44.93	68.20	-23.27	PK	Horizontal
13299.05	29.75	42.60	15.90	38.90	12.20	41.95	54.00	-12.05	AV	Horizontal



Mid Channel (802.11 n20/ 5580 MHz)										
3250.14	44.49	44.70	6.70	28.20	-9.80	34.69	68.20	-33.51	PK	Vertical
3250.14	41.48	44.70	6.70	28.20	-9.80	31.68	54.00	-22.32	AV	Vertical
3257.76	45.19	44.70	6.70	28.20	-9.80	35.39	68.20	-32.81	PK	Horizontal
3257.76	41.83	44.70	6.70	28.20	-9.80	32.03	54.00	-21.97	AV	Horizontal
3985.89	39.21	44.20	7.90	29.70	-6.60	32.61	68.20	-35.59	PK	Vertical
3985.89	36.93	44.20	7.90	29.70	-6.60	30.33	54.00	-23.67	AV	Vertical
3995.26	38.92	44.20	7.90	29.70	-6.60	32.32	68.20	-35.88	PK	Horizontal
3995.26	36.52	44.20	7.90	29.70	-6.60	29.92	54.00	-24.08	AV	Horizontal
7232.71	36.96	43.50	11.40	35.50	3.40	40.36	68.20	-27.84	PK	Vertical
7232.71	34.35	43.50	11.40	35.50	3.40	37.75	54.00	-16.25	AV	Vertical
7229.44	36.65	43.50	11.40	35.50	3.40	40.05	68.20	-28.15	PK	Horizontal
7229.44	34.69	43.50	11.40	35.50	3.40	38.09	54.00	-15.91	AV	Horizontal
10399.96	39.99	44.50	13.80	38.80	8.10	48.09	68.20	-20.11	PK	Vertical
10399.96	37.12	44.50	13.80	38.80	8.10	45.22	54.00	-8.78	AV	Vertical
10400.05	40.05	44.50	13.80	38.80	8.10	48.15	68.20	-20.05	PK	Horizontal
10400.05	36.85	44.50	13.80	38.80	8.10	44.95	54.00	-9.05	AV	Horizontal
11035.13	33.23	43.60	14.30	39.50	10.20	43.43	68.20	-24.77	PK	Vertical
11035.13	30.61	43.60	14.30	39.50	10.20	40.81	54.00	-13.19	AV	Vertical
11019.13	33.19	43.60	14.30	39.50	10.20	43.39	68.20	-24.81	PK	Horizontal
11019.13	30.11	43.60	14.30	39.50	10.20	40.31	54.00	-13.69	AV	Horizontal
13292.39	33.01	42.60	15.90	38.90	12.20	45.21	68.20	-22.99	PK	Vertical
13292.39	29.72	42.60	15.90	38.90	12.20	41.92	54.00	-12.08	AV	Vertical
13282.07	32.73	42.60	15.90	38.90	12.20	44.93	68.20	-23.27	PK	Horizontal
13282.07	28.98	42.60	15.90	38.90	12.20	41.18	54.00	-12.82	AV	Horizontal



Mid Channel (802.11 n20/ 5700 MHz)										
3251.41	44.73	44.70	6.70	28.20	-9.80	34.93	68.20	-33.27	PK	Vertical
3251.41	42.06	44.70	6.70	28.20	-9.80	32.26	54.00	-21.74	AV	Vertical
3258.26	44.81	44.70	6.70	28.20	-9.80	35.01	68.20	-33.19	PK	Horizontal
3258.26	42.00	44.70	6.70	28.20	-9.80	32.20	54.00	-21.80	AV	Horizontal
3993.35	39.16	44.20	7.90	29.70	-6.60	32.56	68.20	-35.64	PK	Vertical
3993.35	37.07	44.20	7.90	29.70	-6.60	30.47	54.00	-23.53	AV	Vertical
3995.24	39.85	44.20	7.90	29.70	-6.60	33.25	68.20	-34.95	PK	Horizontal
3995.24	37.03	44.20	7.90	29.70	-6.60	30.43	54.00	-23.57	AV	Horizontal
7219.70	36.42	43.50	11.40	35.50	3.40	39.82	68.20	-28.38	PK	Vertical
7219.70	34.19	43.50	11.40	35.50	3.40	37.59	54.00	-16.41	AV	Vertical
7236.09	36.75	43.50	11.40	35.50	3.40	40.15	68.20	-28.05	PK	Horizontal
7236.09	34.90	43.50	11.40	35.50	3.40	38.30	54.00	-15.70	AV	Horizontal
10480.02	39.94	44.50	13.80	38.80	8.10	48.04	68.20	-20.16	PK	Vertical
10480.02	36.44	44.50	13.80	38.80	8.10	44.54	54.00	-9.46	AV	Vertical
10480.32	40.07	44.50	13.80	38.80	8.10	48.17	68.20	-20.03	PK	Horizontal
10480.32	36.22	44.50	13.80	38.80	8.10	44.32	54.00	-9.68	AV	Horizontal
11028.94	33.53	43.60	14.30	39.50	10.20	43.73	68.20	-24.47	PK	Vertical
11028.94	30.60	43.60	14.30	39.50	10.20	40.80	54.00	-13.20	AV	Vertical
11033.89	33.35	43.60	14.30	39.50	10.20	43.55	68.20	-24.65	PK	Horizontal
11033.89	31.10	43.60	14.30	39.50	10.20	41.30	54.00	-12.70	AV	Horizontal
13288.37	32.14	42.60	15.90	38.90	12.20	44.34	68.20	-23.86	PK	Vertical
13288.37	28.82	42.60	15.90	38.90	12.20	41.02	54.00	-12.98	AV	Vertical
13282.77	31.90	42.60	15.90	38.90	12.20	44.10	68.20	-24.10	PK	Horizontal
13282.77	28.77	42.60	15.90	38.90	12.20	40.97	54.00	-13.03	AV	Horizontal

Remark:

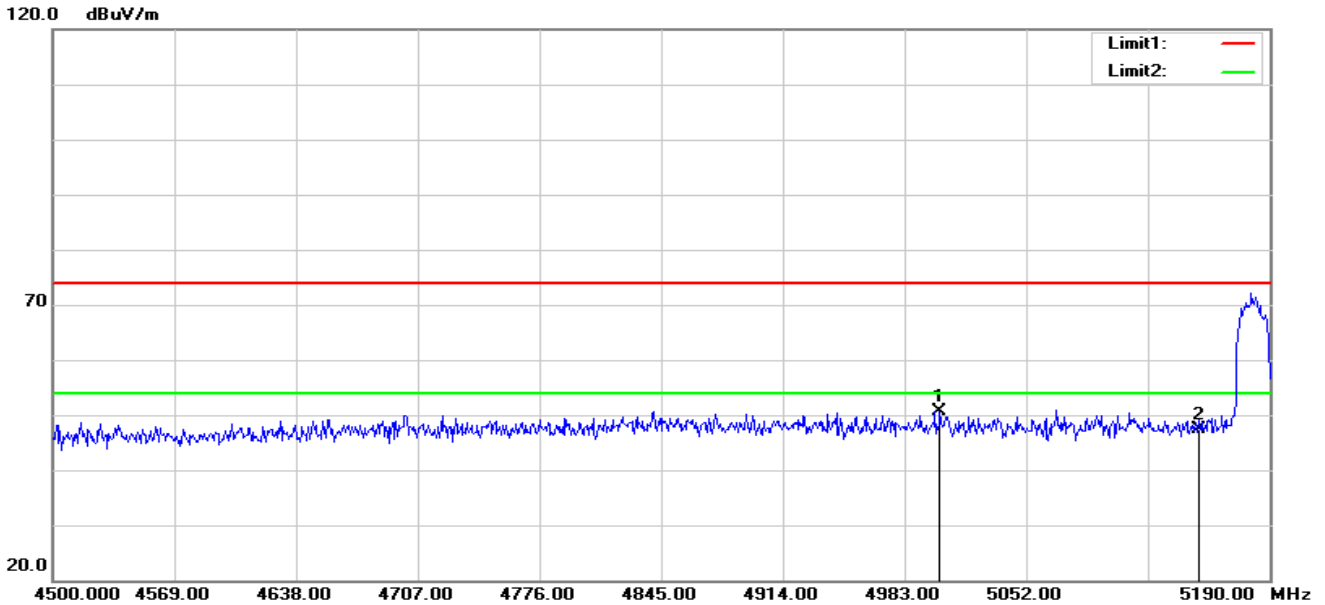
- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Scan with 802.11a,802.11n (HT-20),802.11n (HT-40), 802.11ac (VHT-20),802.11ac (VHT-40), 802.11ac (VHT-80) the worst case is 802.11n (HT-20).
- The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.
- Antenna A and Antenna B all has been tested, the worst case is Antenna B, only the worst-case results were reported



3.2.10 Band Edge

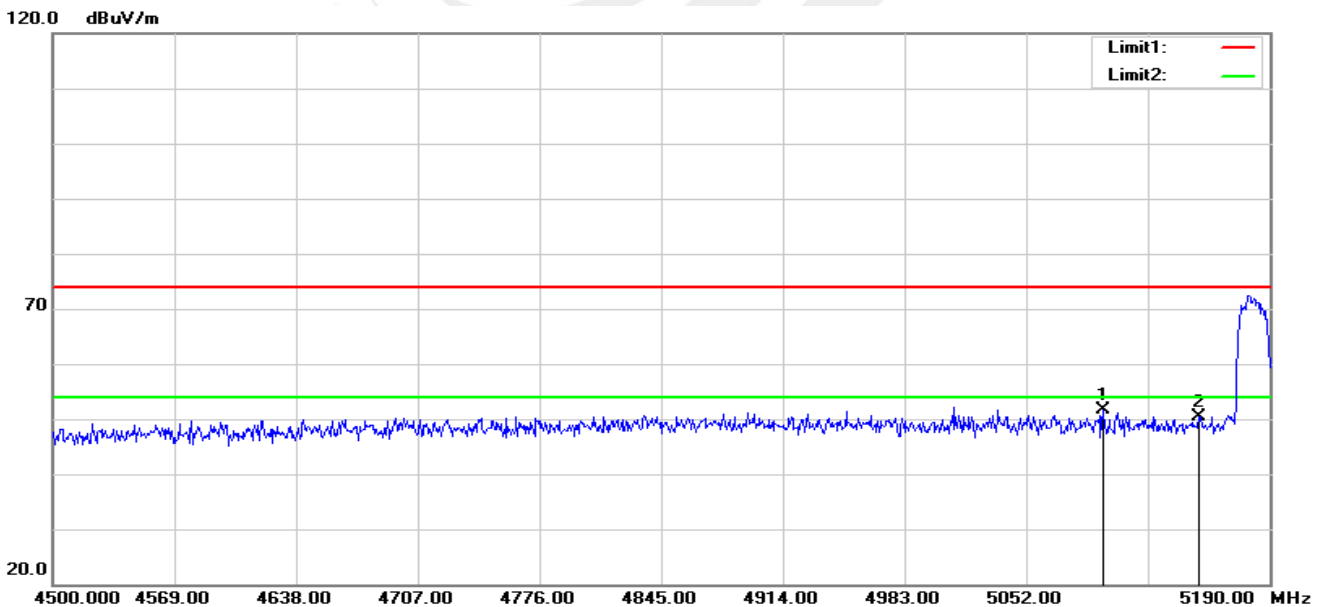
Band I 5150-5250MHz

802.11a-Low Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5003.010	53.44	-2.76	50.68	68.20	-17.52	peak
2	5150.000	49.57	-2.22	47.35	68.20	-20.85	peak

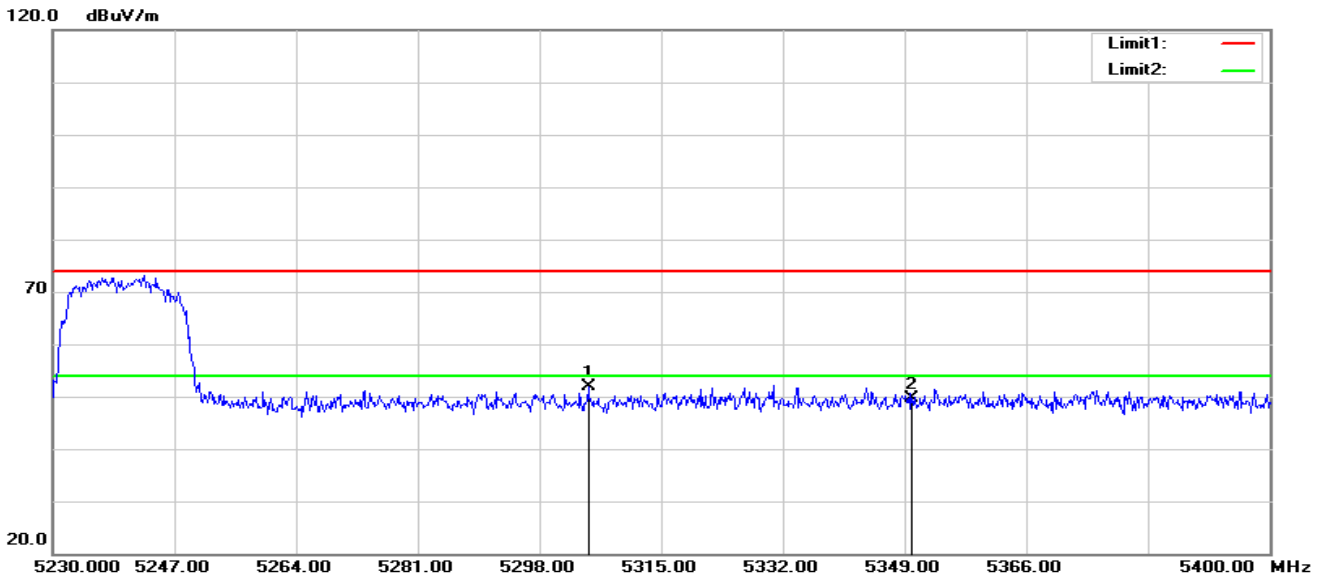
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5095.470	54.07	-2.41	51.66	68.20	-16.54	peak
2	5150.000	52.50	-2.22	50.28	68.20	-17.92	peak

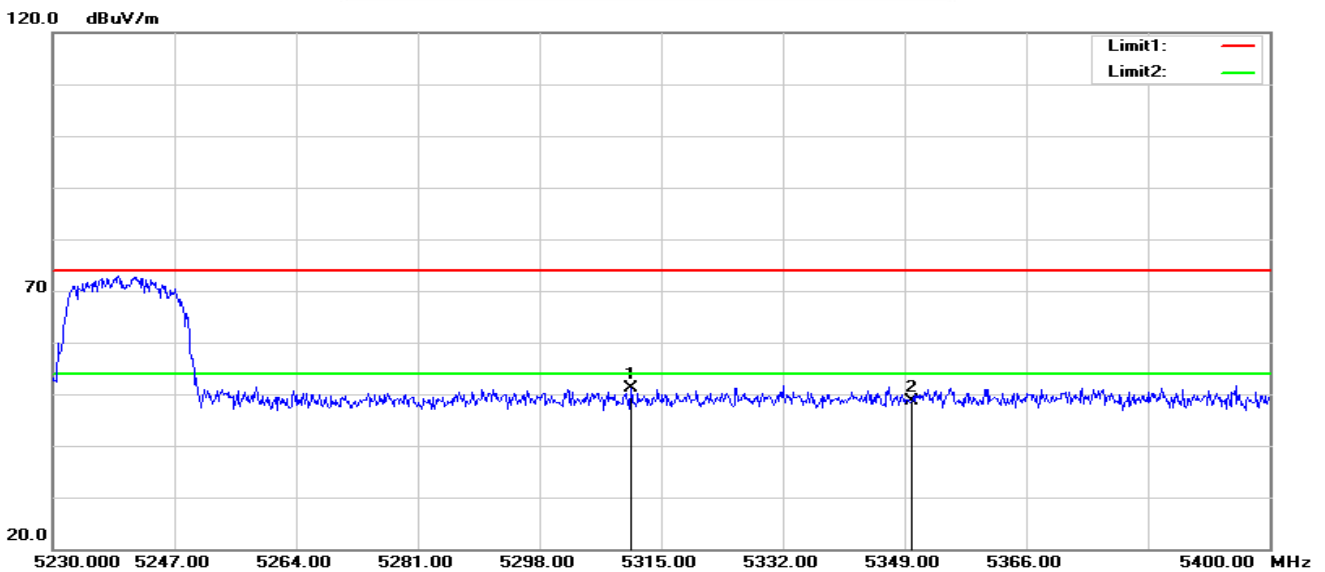


802.11a-High
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5304.800	53.81	-1.91	51.90	68.20	-16.30	peak
2	5350.000	51.54	-1.84	49.70	68.20	-18.50	peak

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5310.750	53.03	-1.89	51.14	68.20	-17.06	peak
2	5350.000	50.45	-1.84	48.61	68.20	-19.59	peak

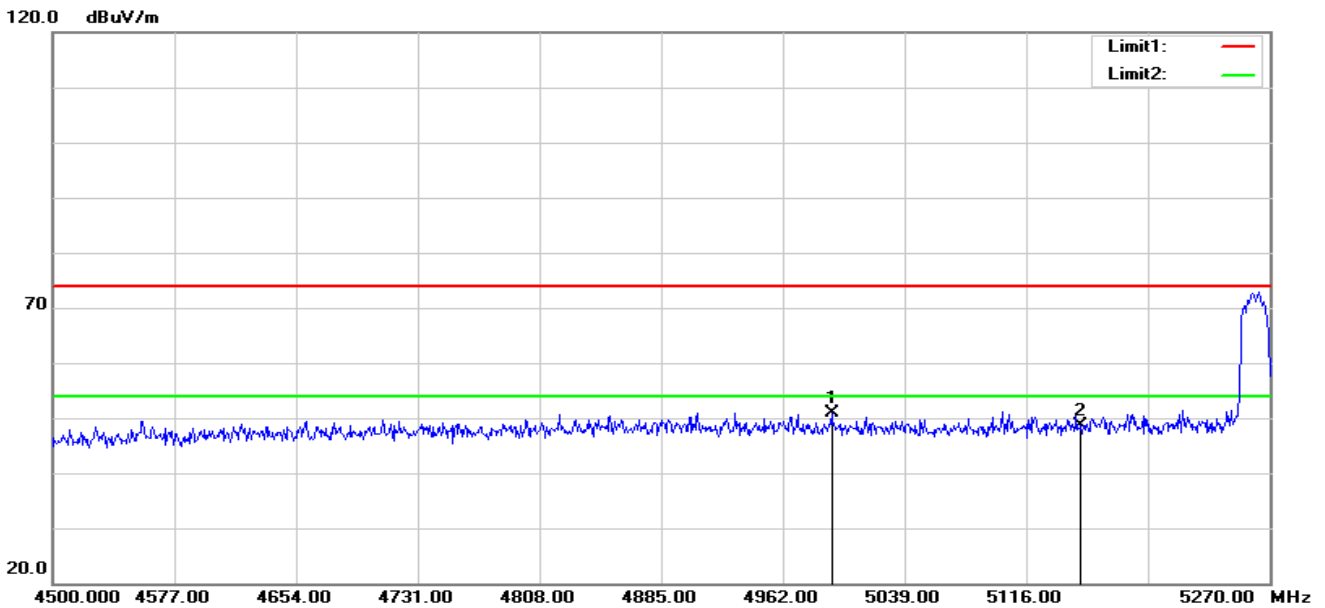
Note:1. 802.11a,802.11n (HT-20),802.11n (HT-40), 802.11ac (VHT-20),802.11ac (VHT-40), 802.11ac (VHT-80) all has been tested, the worst case is 802.11a, only shown the worst case.

2. Antenna A and Antenna B all has been tested, the worst case is Antenna B, only the worst-case results were reported



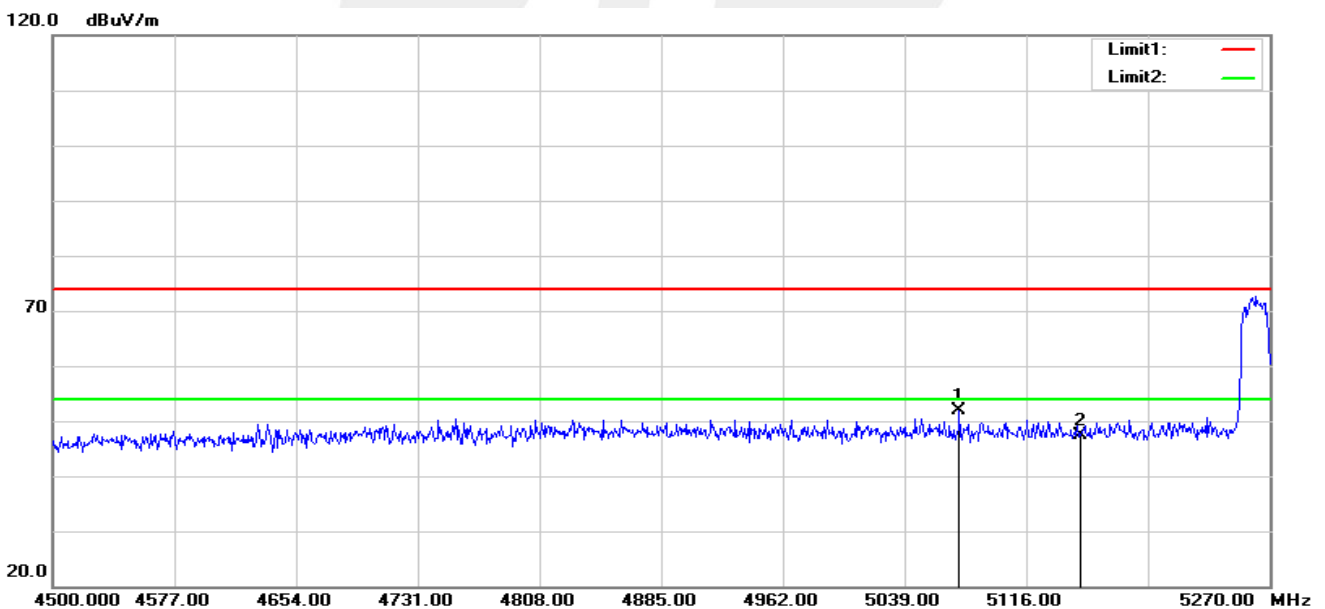
Band II 5250-5350MHz

802.11a-Low
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4992.800	53.67	-2.79	50.88	68.20	-17.32	peak
2	5150.000	50.77	-2.22	48.55	68.20	-19.65	peak

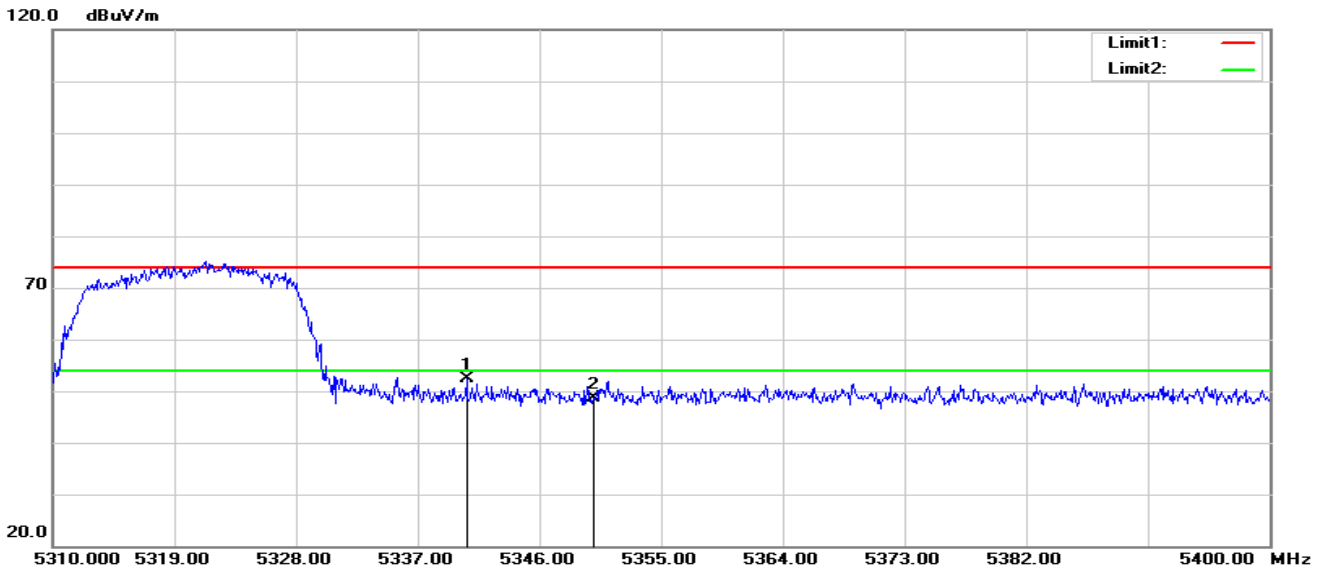
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5073.650	54.30	-2.50	51.80	68.20	-16.40	peak
2	5150.000	49.68	-2.22	47.46	68.20	-20.74	peak

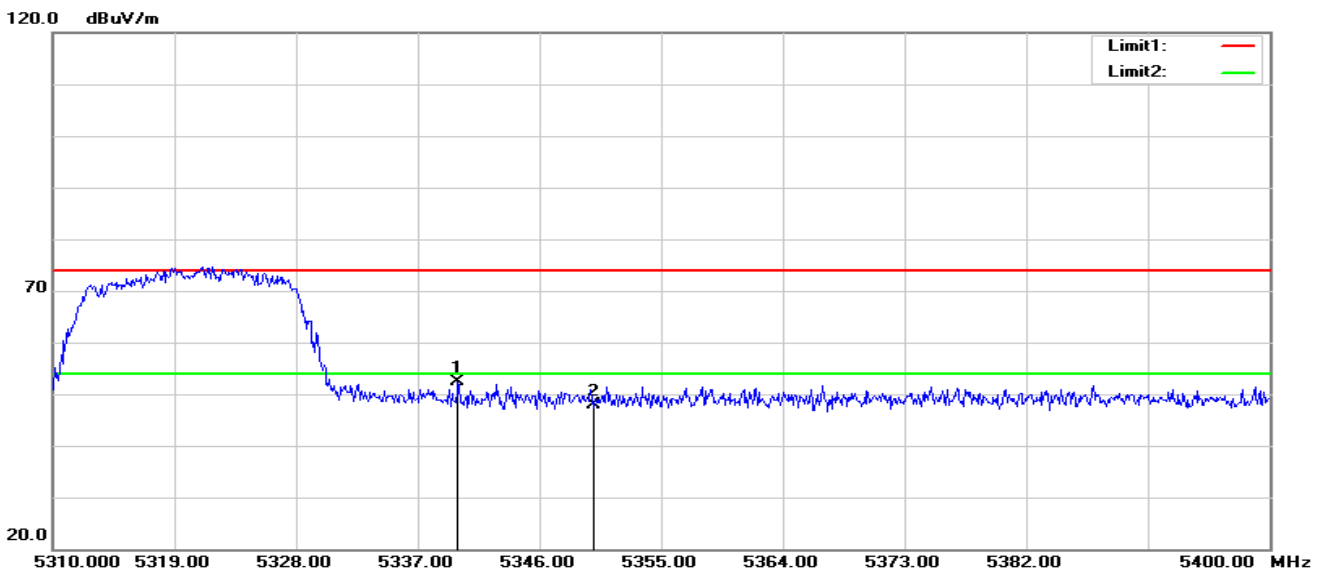


802.11a-High
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5340.600	54.18	-1.85	52.33	68.20	-15.87	peak
2	5350.000	50.40	-1.84	48.56	68.20	-19.64	peak

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5339.970	54.29	-1.85	52.44	68.20	-15.76	peak
2	5350.000	49.74	-1.84	47.90	68.20	-20.30	peak

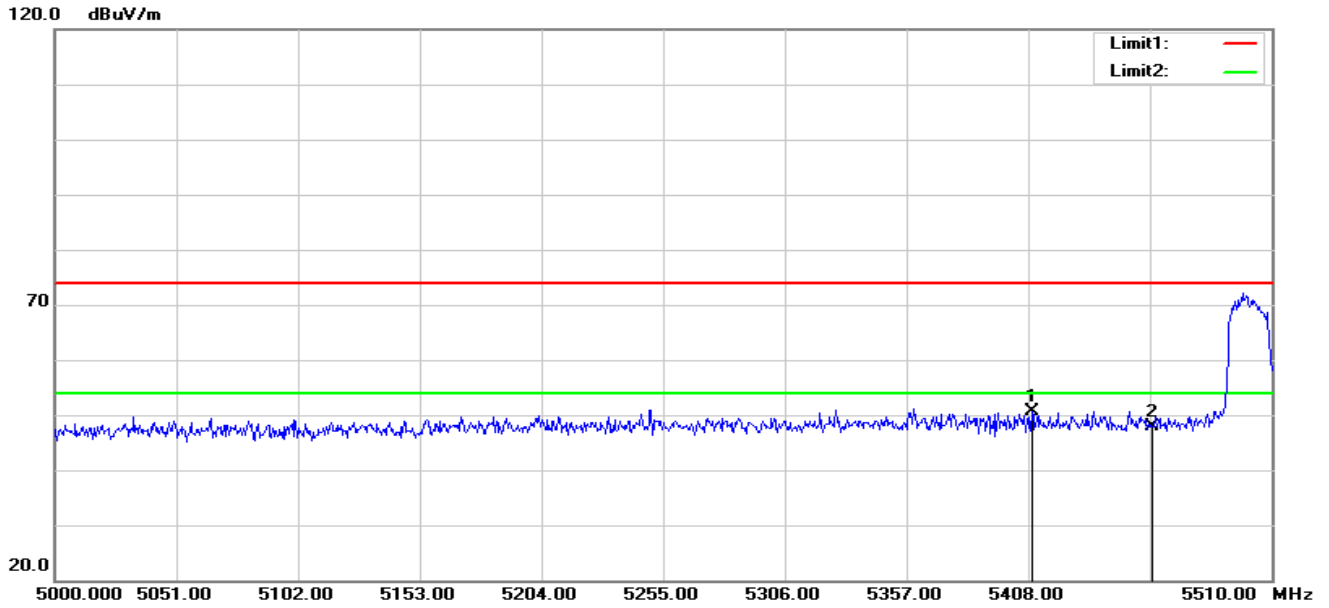
Note:1. 802.11a,802.11n (HT-20),802.11n (HT-40), 802.11ac (VHT-20),802.11ac (VHT-40), 802.11ac (VHT-80) all has been tested, the worst case is 802.11a, only shown the worst case.

2. Antenna A and Antenna B all has been tested, the worst case is Antenna B, only the worst-case results were reported



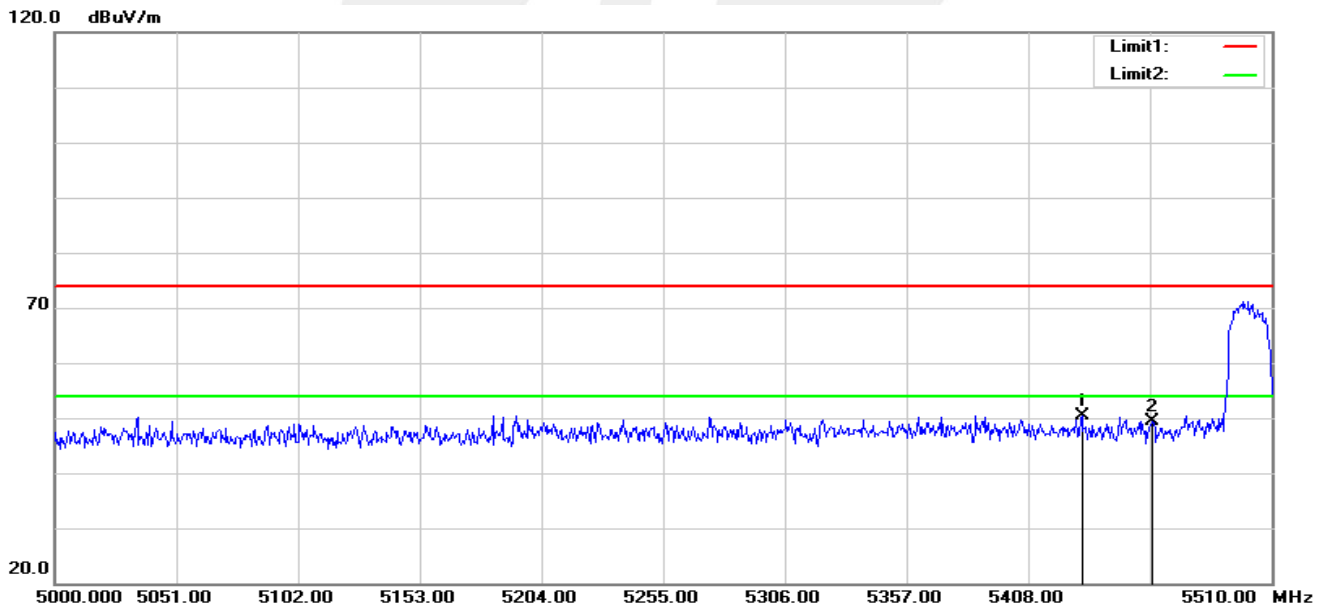
Band III 5470-5725MHz

802.11a-Low
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5409.530	52.34	-1.73	50.61	68.20	-17.59	peak
2	5460.000	49.55	-1.56	47.99	68.20	-20.21	peak

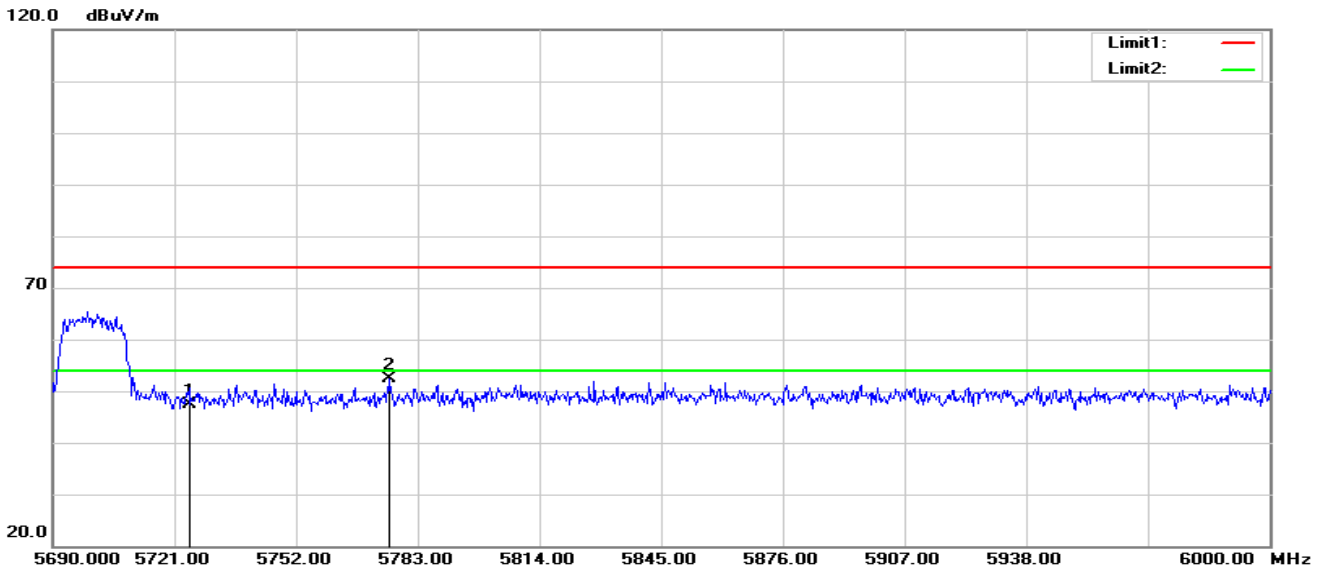
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5430.440	52.04	-1.67	50.37	68.20	-17.83	peak
2	5460.000	50.89	-1.56	49.33	68.20	-18.87	peak

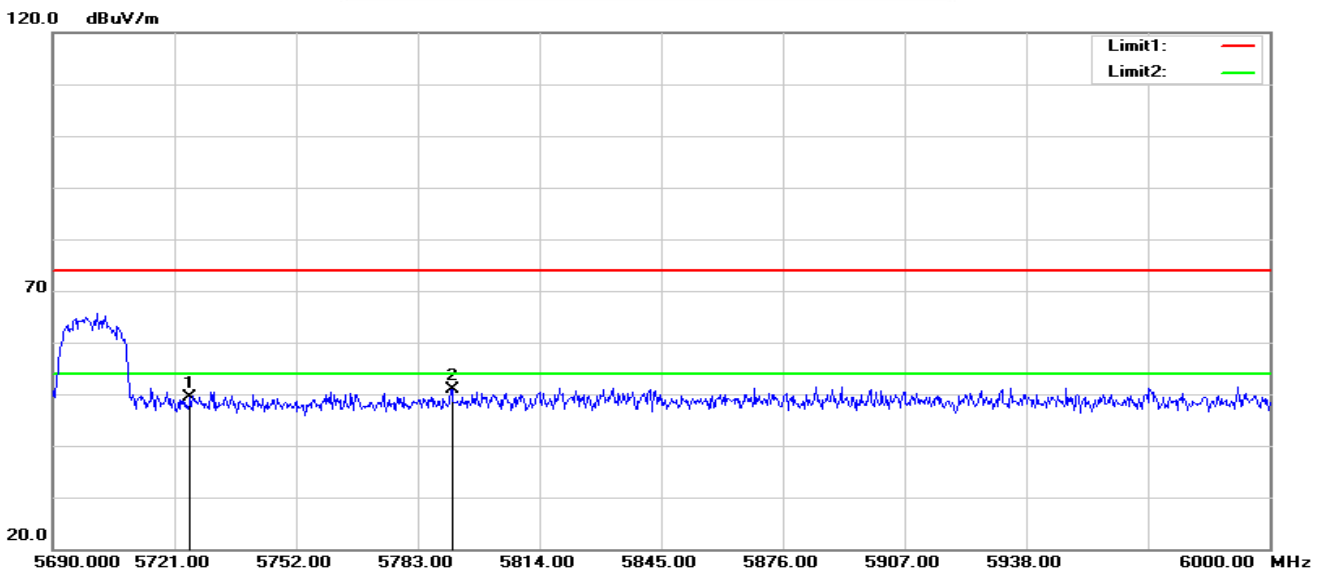


802.11a-High
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	48.14	-0.70	47.44	68.20	-20.76	peak
2	5775.870	52.87	-0.57	52.30	68.20	-15.90	peak

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	50.03	-0.70	49.33	68.20	-18.87	peak
2	5791.680	51.41	-0.53	50.88	68.20	-17.32	peak

Note:1. 802.11a,802.11n (HT-20),802.11n (HT-40), 802.11ac (VHT-20),802.11ac (VHT-40), 802.11ac (VHT-80) all has been tested, the worst case is 802.11a, only shown the worst case.

2. Antenna A and Antenna B all has been tested, the worst case is Antenna B, only the worst-case results were reported



4. CONDUCTED SPURIOUS EMISSIONS AND BANDEGE

4.1 LIMIT

Undesirable emission limits. Except as shown in paragraph (b)(7) 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.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 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.

4.2 TEST PROCEDURE

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	1000 KHz/3000 KHz
Trace-Mode:	Max hold

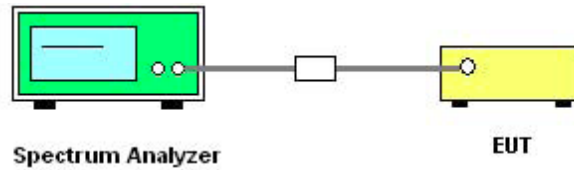
For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 5700 to 5725 MHz Upper Band Edge: 5850 to 5870 MHz
RB / VB (emission in restricted band)	1000 KHz/3000 KHz
Trace-Mode:	Max hold

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 1000 kHz. In order to make an accurate measurement, set the span greater than RBW.

4.5 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.

4.6 TEST RESULTS

Data See Attachment A.

Note:

1. The test results contain power + antenna Gain
2. Only floor noise for frequency above 26.5GHz.



5. POWER SPECTRAL DENSITY TEST

5.1 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.

5.2 TEST PROCEDURE

1. The setting follows Method SA-1 of FCC KDB D02 General UNII Test Procedures New Rules v01r03.

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.



5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 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.

5.6 TEST RESULTS

Data see Attachment B



6. BANDWIDTH MEASUREMENT

6.1 EMISSION BANDWIDTH (EBW) 26 BANDWID PROCEDURES / LIMIT

See list of measuring instruments of this test report.

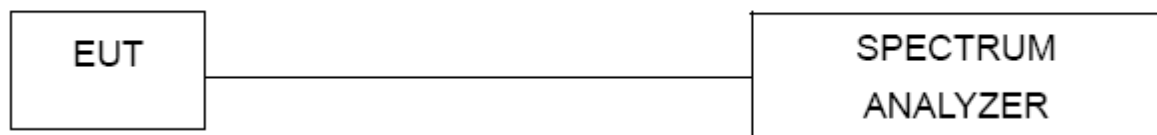
6.1.1 TEST PROCEDURE

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%.

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 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 TEST RESULTS

Data see Attachment C



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

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

6.2.1 TEST PROCEDURE

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

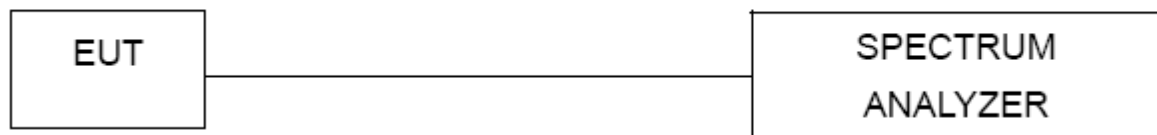
The following procedure shall be used for measuring (99 %) power bandwidth:

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.

6.2.2 DEVIATION FROM STANDARD

No deviation.

6.2.3 TEST SETUP



6.2.4 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.

6.2.5 TEST RESULTS

Data See Attachment C

6.3 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:

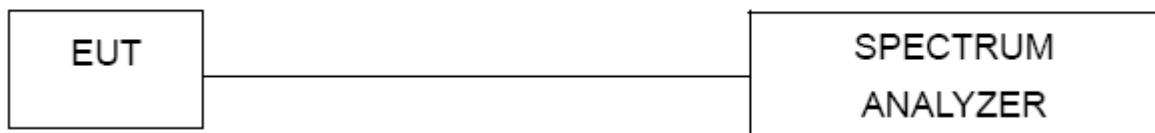
6.3.1 TEST PROCEDURE

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.

6.3.2 DEVIATION FROM STANDARD

No deviation.

6.3.3 TEST SETUP



6.3.4 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.

6.3.5 TEST RESULTS

Note: The EUT is not support Band 5.725-5.85 GHz, is not apply.

7. MAXIMUM CONDUCTED OUTPUT POWER

7.1 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	5725-5825	

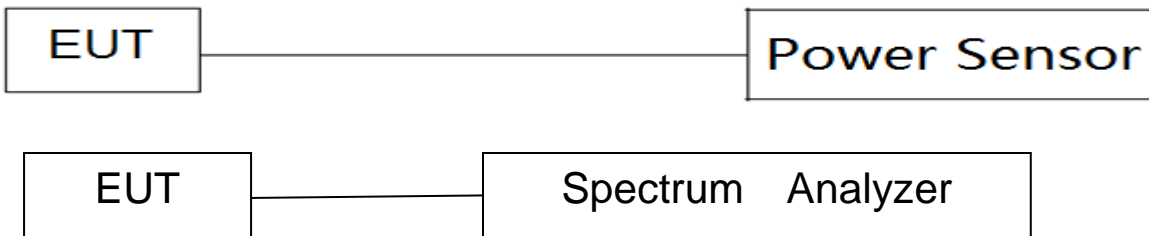
7.2 TEST PROCEDURE

The EUT was directly connected to the Power Sensor&PC

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.1.4 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.



7.5 TEST RESULTS

Band I (5.15-5.25GHz)

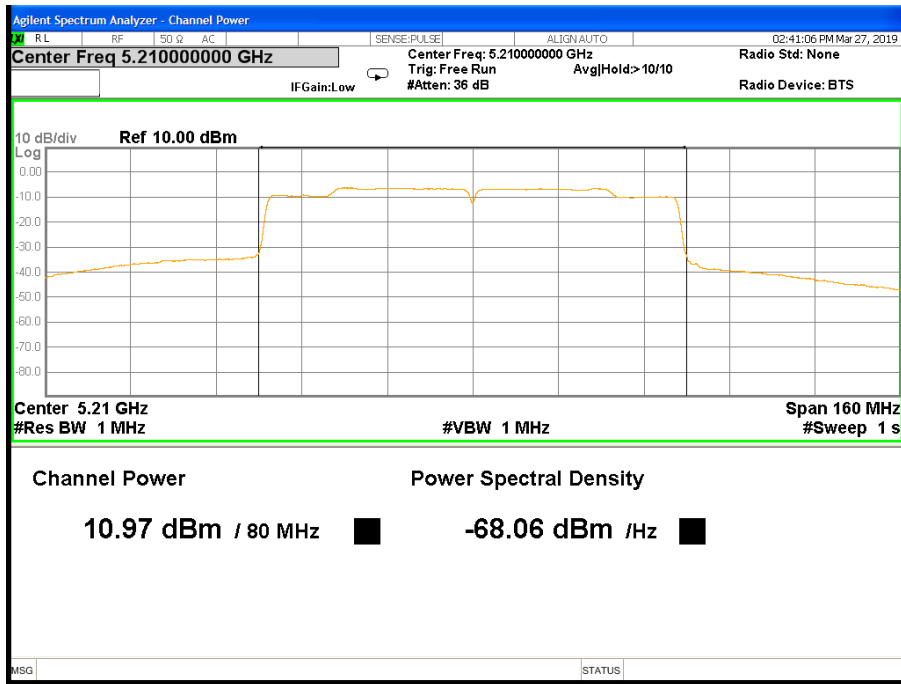
Band I (5.15-5.25GHz)				
Test Channel	Frequency (MHz)	AV Power A(dBm)	AVPower B(dBm)	LIMIT (dBm)
802.11a				
36	5180	10.58	12.16	23.98
40	5200	10.93	12.61	23.98
48	5240	10.80	12.48	23.98
802.11n(HT20)				
36	5180	9.91	11.02	23.98
40	5200	11.37	12.46	23.98
48	5240	11.26	12.38	23.98
802.11n(HT40)				
38	5190	7.31	9.74	23.98
46	5230	11.43	13.82	23.98
802.11ac(HT20)				
36	5180	9.93	11.54	23.98
40	5200	11.42	12.93	23.98
48	5240	11.38	12.83	23.98
802.11ac(HT40)				
38	5190	8.16	10.63	23.98
46	5230	11.32	13.80	23.98
802.11ac(HT80)				
42	5210	9.65	10.97	23.98

Note:

1. 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 the lesser of 0.25 W.



802.11ac VHT80(5210MHz)



**Band II (5.25-5.35GHz)**

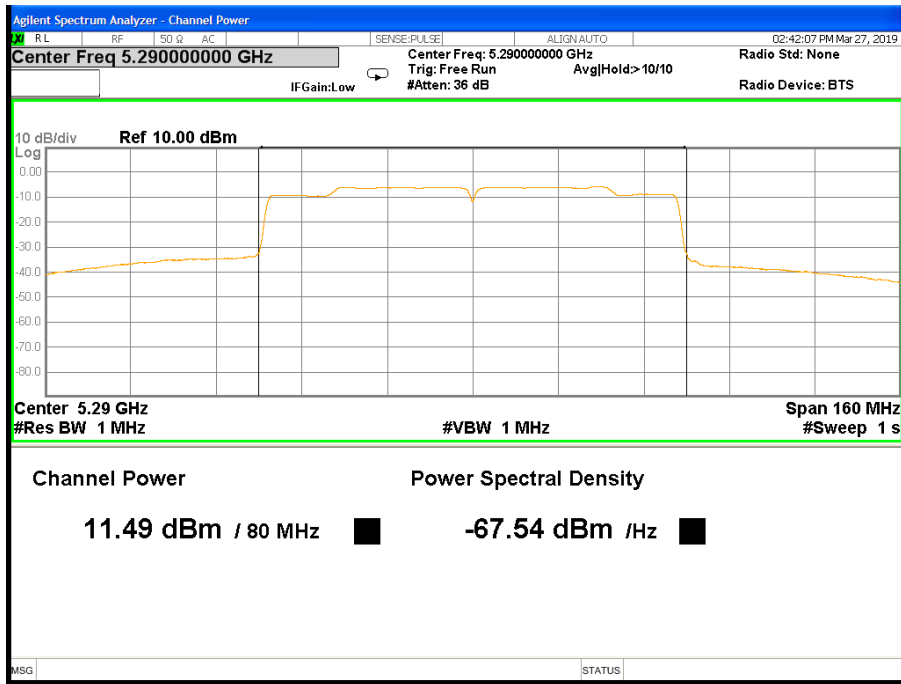
Band II(5.25-5.35GHz)				
Test Channel	Frequency (MHz)	AV Power A(dBm)	AV Power B(dBm)	LIMIT (dBm)
802.11a				
52	5260	11.40	12.93	23.98
60	5300	12.09	12.83	23.98
64	5320	11.97	12.31	23.98
802.11n(HT20)				
52	5260	8.56	9.86	23.98
60	5300	9.03	10.25	23.98
64	5320	9.15	9.71	23.98
802.11n(HT40)				
54	5270	13.13	13.77	23.98
62	5310	10.48	11.06	23.98
802.11ac(HT20)				
52	5260	11.33	12.39	23.98
60	5300	11.75	12.32	23.98
64	5320	11.73	12.75	23.98
802.11ac(HT40)				
54	5270	13.38	13.74	23.98
62	5310	10.58	10.96	23.98
802.11ac(HT80)				
58	5290	10.43	11.49	23.98

Note:

1. For mobile and portable client devices in the 5.25-5.35 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 0.25 W.



802.11ac HT80(5290MHz)



**Band III (5.47-5.725GHz)**

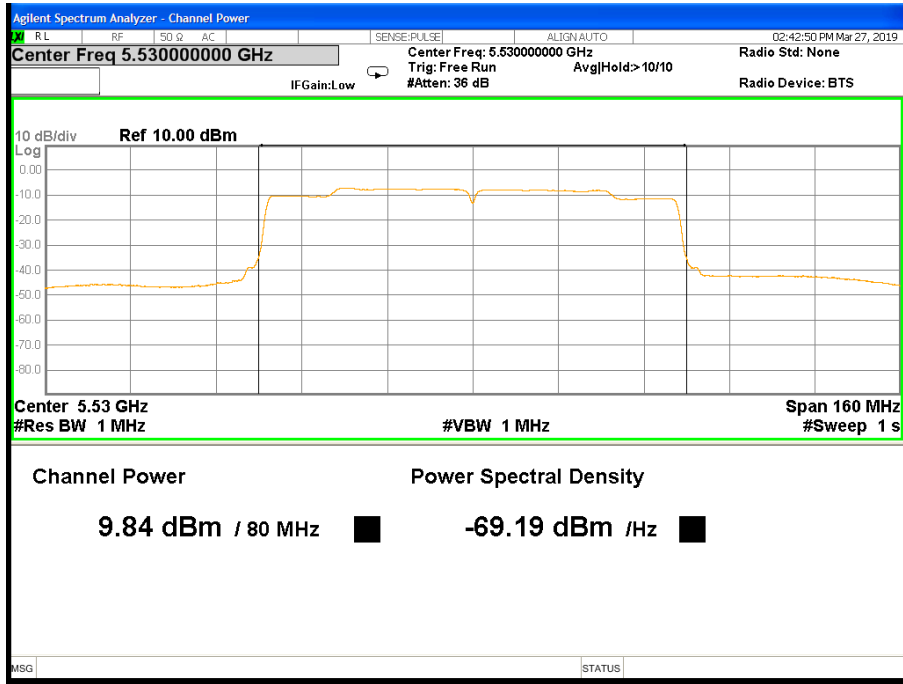
Band III(5.47-5.725GHz)				
Test Channel	Frequency (MHz)	AV Power A(dBm)	AV Power B(dBm)	LIMIT (dBm)
802.11a				
100	5500	9.61	10.67	23.98
116	5580	11.47	12.51	23.98
140	5700	9.12	10.21	23.98
802.11n(HT20)				
100	5500	9.48	10.56	23.98
116	5580	10.58	11.73	23.98
140	5700	9.47	10.13	23.98
802.11n(HT40)				
102	5510	8.23	10.31	23.98
110	5550	9.87	11.96	23.98
134	5670	10.92	12.74	23.98
802.11ac(HT20)				
100	5500	9.45	10.24	23.98
116	5580	10.63	11.70	23.98
140	5700	9.69	10.93	23.98
802.11ac(HT40)				
102	5510	8.02	10.73	23.98
110	5550	9.38	11.93	23.98
134	5670	10.89	13.47	23.98
802.11ac(HT80)				
106	5530	8.70	9.84	23.98
122	5610	11.42	12.29	23.98

Note:

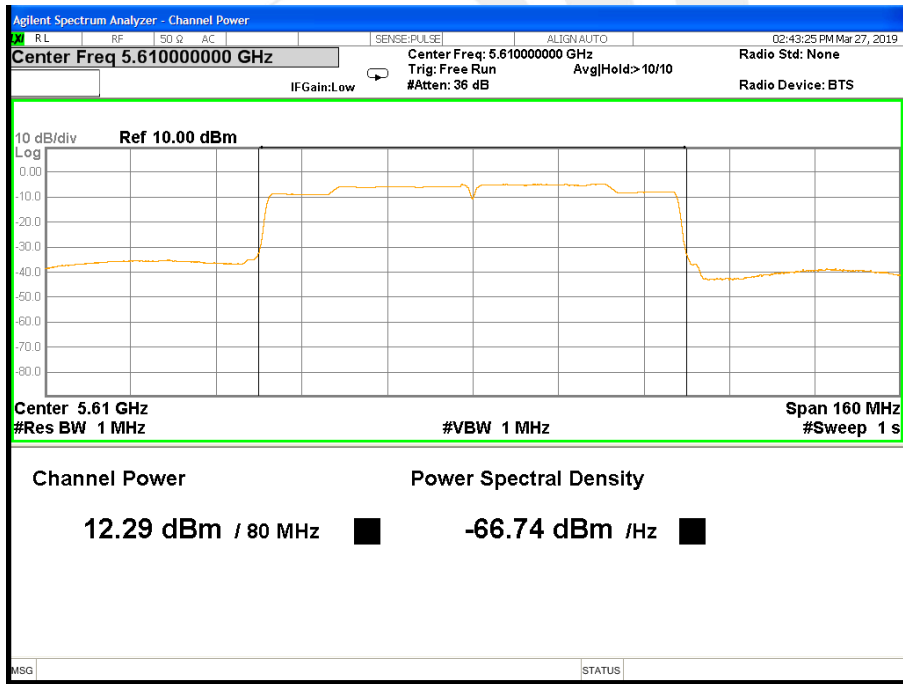
1. For mobile and portable client devices in the 5.47-5.725 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 0.25 W.



802.11ac HT80(5530MHz)



802.11ac HT80(5610MHz)





8. AUTOMATICALLY DISCONTINUE TRANSMISSION

8.1 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.

8.2 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





9. ANTENNA REQUIREMENT

9.1 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.

9.2 EUT ANTENNA

The EUT antenna is PIFA 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*****

