RADIOTESTREPORT

Report No:STS2004070W09

Issued for

Chengdu Vantron Technology, Ltd.

No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China 610045

Product Name:	Module
Brand Name:	N/A
Model Name:	AP6255
Series Model:	N/A
FCC ID:	2AAGEAP6255
IC:	11152A-AP6255
Test Standard:	FCC Part 15.407 RSS-247 Issue 2, February 2017

Shenzhen STS Test Services Co., Ltd.
A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ,
Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China
TEL: +86-755 3688 6288 FAX: +86-755 3688 6277 E-mail:sts@stsapp.com

TEST RESULTCERTIFICATION

Applicant's Name	:	Chengdu Vantron Technology, Ltd.
Address	:	No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China 610045
Manufacture's Name	:	Chengdu Vantron Technology, Ltd.
Address	:	No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China 610045
ProductDescription		
Product Name	:	Module
Brand Name	:	N/A
Model Name	:	AP6255
SeriesModel	:	N/A
Test Standards	:	FCC Part15.407 RSS-247 Issue 2, February 2017 RSS-Gen Issue 5 ,March 2019
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 of receipt of test item	:	27 Apr. 2020
Date (s) of performance of tests	:	27 Apr. 2020 ~ 02 June 2020
Date of Issue	:	03 June 2020
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	03 June 2020	STS2004070W09	ALL	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

§ 15.407,KDB789033 D02 General U-NII Test Procedures New Rules v02r01.

FCC Part 15.407 RSS-247 Issue 2, February 2017		
FCC standard	Test Item	Results
15.207 RSS-Gen Issue 5, Amendment 1, March 2019	AC Conducted Emission	PASS
§ 15.407 (2) (26 dB) / § 15.407 (e) (6 dB)/ § 15.407 (a) (99%) RSS-Gen Issue 5, Amendment 1, March 2019	26dB/6dB&99% Bandwidth	PASS
15.407(a) (1).(2).(3).(4).(5) RSS-247 Issue 2, February 2017	Maximum Conducted Output Power	PASS
15.407(b)& 15.209 RSS-247 Issue 2, February 2017	Radiated Emission And (bandedge Emissions) Measurement	PASS
15.407(b)7 RSS-247 Issue 2, February 2017	Conducted Emission And (bandedge Emissions) Measurement	PASS
15.407(a)(1).(2).(3).(4).(5) RSS-247 Issue 2, February 2017	Power Spectral Density	PASS
15.407(c)	Automatically Discontinue Transmission	PASS
15.203/15.204 RSS-Gen Issue 5, Amendment 1, March 2019	Antenna Requirement	PASS
RSS-Gen Issue 5, Amendment 1, March 2019	Frequency Stability	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. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District,Bao'an District, Shenzhen, Guang Dong, China
FCC test Firm Registration Number: 625569
IC test Firm Registration Number: 12108A
A2LA Certificate No.: 4338.01

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ±U**,where expended uncertainty **U** is based on astandard 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	±0.68dB
2	Unwanted Emissions, conducted	±2.988dB
3	All emissions, radiated 30-1GHz	±6.7dB
4	All emissions, radiated1G-6GHz	±5.5dB
5	All emissions, radiated>6G	±5.8dB
6	Conducted Emission (9KHz-150KHz)	±4.43dB
7	Conducted Emission (150KHz-30MHz)	±5dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

<table>
<tr><td>Product Name</td><td>Module</td></tr>
<tr><td>Trade Name</td><td>N/A</td></tr>
<tr><td>Model Name</td><td>AP6255</td></tr>
<tr><td>Series Model</td><td>N/A</td></tr>
<tr><td>Model Difference</td><td>N/A</td></tr>
<tr><td>Product Description</td><td>The EUT is aModule
<table>
<tr><td>Operation Frequency:</td><td>IEEE 802.11a/ n(HT20)/ac(VHT20): 5.180GHz-5.240GHz
IEEE 802.11n(HT40)/ac(VHT40): 5.190GHz-5.310GHz
IEEE 802.11ac(VHT80): 5.210GHz</td></tr>
<tr><td></td><td>IEEE 802.11a/ n(HT20)/ac(VHT20): 5.745GHz-5.825GHz
IEEE 802.11n(HT40)/ac(VHT40): 5.755GHz-5.795GHz
IEEE 802.11ac(VHT80): 5.775GHz</td></tr>
<tr><td>Modulation Type:</td><td>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</td></tr>
<tr><td>Antenna Designation:</td><td>See Note 2.</td></tr>
<tr><td>Max.Output Power(Conducted):</td><td>9.32dBm</td></tr>
</table>
More details of EUT technical specification, please refer to the User's Manual.</td></tr>
<tr><td>Test Channel</td><td>Please refer to the Note 1.</td></tr>
<tr><td>Power Rating</td><td>Input:DC 3.3V</td></tr>
<tr><td>Hardware version number</td><td>V3.0</td></tr>
<tr><td>Software versionnumber</td><td>nftm_sma-userdebug 9 1.1FCC 200416 test-keys</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr>
</table>

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

1.

Operation Frequency of channel			
5.180GHz-5.240GHz		5.745GHz-5.825GHz	
Channel	Frequency	Channel	Frequency
36	5180	149	5745
38	5190	151	5755
40	5200	153	5765
42	5210	157	5785
44	5220	159	5795
46	5230	161	5805
48	5240	165	5825

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

5GHz:

For 802.11a/n(HT20) /ac (VHT20)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
36	5180	149	5745
40	5200	157	5785
48	5240	165	5825

For 802.11n(HT40) /ac (VHT40)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
38	5190	151	5755
46	5230	159	5795

For 802.11ac (VHT80)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
42	5210	155	5775

2.

Ant	Brand	Model Name	Ant Type	Connector	Gain (dBi)	NOTE
A	N/A	AP6255	PIFA	N/A	2.9dBi	WLANAnt.

2.2 DESCRIPTION OF TEST MODES

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

Worst Mode	Description	Data Rate
Mode 1	TX IEEE 802.11a HT20 CH36&CH40&CH48	6 Mbps
Mode 2	TX IEEE 802.11a HT20 CH149&CH157&CH165	6 Mbps
Mode 3	TX IEEE 802.11n HT20 CH36&CH40&CH48	MCS 0
Mode 4	TX IEEE 802.11ac VHT20 CH36&CH40&CH48	NSS1 MCS0
Mode 5	TX IEEE 802.11n HT20 CH149&CH157&CH165	MCS 0
Mode 6	TX IEEE 802.11acVHT20 CH149&CH157&CH165	NSS1 MCS0
Mode 7	TX IEEE 802.11n HT40 CH38&CH46	MCS 0
Mode 8	TX IEEE 802.11ac VHT40 CH38&CH46	NSS1 MCS0
Mode 9	TX IEEE 802.11n HT40 CH151&CH159	MCS 0
Mode 10	TX IEEE 802.11ac VHT40 CH151&CH159	NSS1 MCS0
Mode 11	TX IEEE 802.11acVHT80 CH42	NSS1 MCS0
Mode 12	TX IEEE 802.11acVHT80 CH155	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	Mode13: Keeping TX + WLAN Link

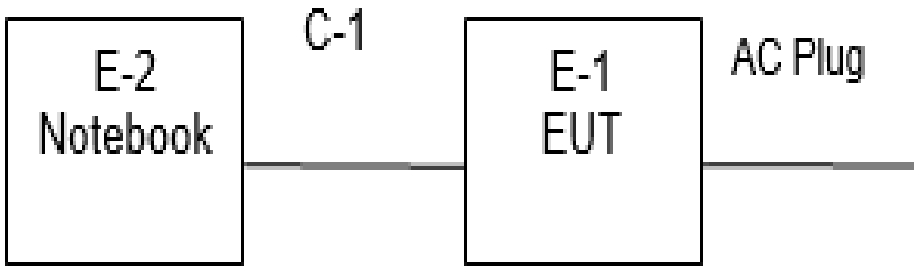
2.3TEST SOFTWARE AND POWER LEVEL

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

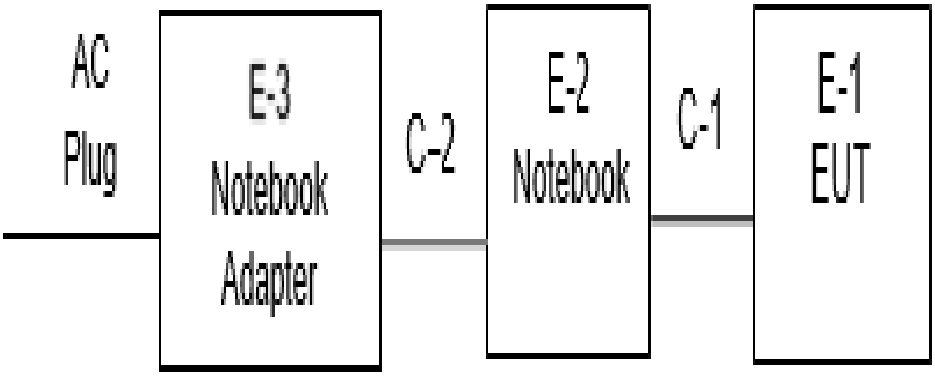
RF Function	Type	Mode Or Modulation type	Ant Gain(dBi)	Power Class	Software For Testing
WIFI(5G)	5G WIFI Band1 (5150MHz-5250MHz)	802.11a	2.9	7	RFTools
		802.11n(HT20)		7	
		802.11n(HT40)		7	
		802.11ac(VHT20)		7	
		802.11ac(VHT40)		7	
		802.11ac(VHT80)		7	
	5G WIFI Band4 (5725MHz-5875MHz)	802.11a	2.9	3	
		802.11n(HT20)		3	
		802.11n(HT40)		3	
		802.11ac(VHT20)		3	
		802.11ac(VHT40)		3	
		802.11ac(VHT80)		3	

2.4BLOCKDIGRAMSHOWINGTHECONFIGURATIONOFSYSTEMTESTED

Radiated Spurious EmissionTest



Conducted Emission Test



2.5DESCRIPTION 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.	Serial No.	Note
E-3	Notebook Adapter	N/A	N/A	N/A	N/A
C-2	DC Cable	N/A	100cm	N/A	N/A

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note
E-2	Notebook	DELL	VOSTRO.3800	N/A	N/A
C-1	USB Cable	N/A	100cm	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.

2.6EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESCI	101427	2019.7.29	2020.7.28
Signal Analyzer	Agilent	N9020A	MY51110105	2019.03.02	2020.03.01
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
Horn Antenna (18-40GHz)	A-INFO	LB-180400-KF	J211020657	2018.03.11	2021.03.10
Pre-mplifier (18G-40G)	SKET	LNPA_1840-50	SK2018101801	2019.10.22	2020.10.21
Spectrum Analyzer	R&S	FSV40-N	101823	2019.06.05	2020.06.04
Pre-Amplifier(0.1 M-3GHz)	EM	EM330	060665	2019.10.9	2020.10.8
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2019.10.12	2020.10.11
Temperature & Humidity	HH660	Mieo	N/A	2019.10.12	2020.10.11
Trn table	EM	SC100_1	60531	N/A	N/A
Antenna mast	EM	SC100	N/A	N/A	N/A
Test SW	BULUN	BL410-E/18.905			

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2019.7.29	2020.7.28
LISN	R&S	ENV216	101242	2019.10.9	2020.10.8
LISN	EMCO	3810/2NM	23625	2019.10.9	2020.10.8
Temperature & Humidity	HH660	Mieo	N/A	2019.10.12	2020.10.11
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 CE)			

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
USB RF power sensor	DARE	RPR3006W	15I00041SNO03	2019.10.9	2020.10.8
Signal Analyzer	Agilent	N9020A	MY49100060	2019.10.9	2020.10.8
Temperature & Humidity	HH660	Mieo	N/A	2019.10.12	2020.10.11
Test SW	FARAD	LZ-RF /LzRf-3A3			

3.EMC EMISSION TEST

3.1CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (FrequencyRange 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

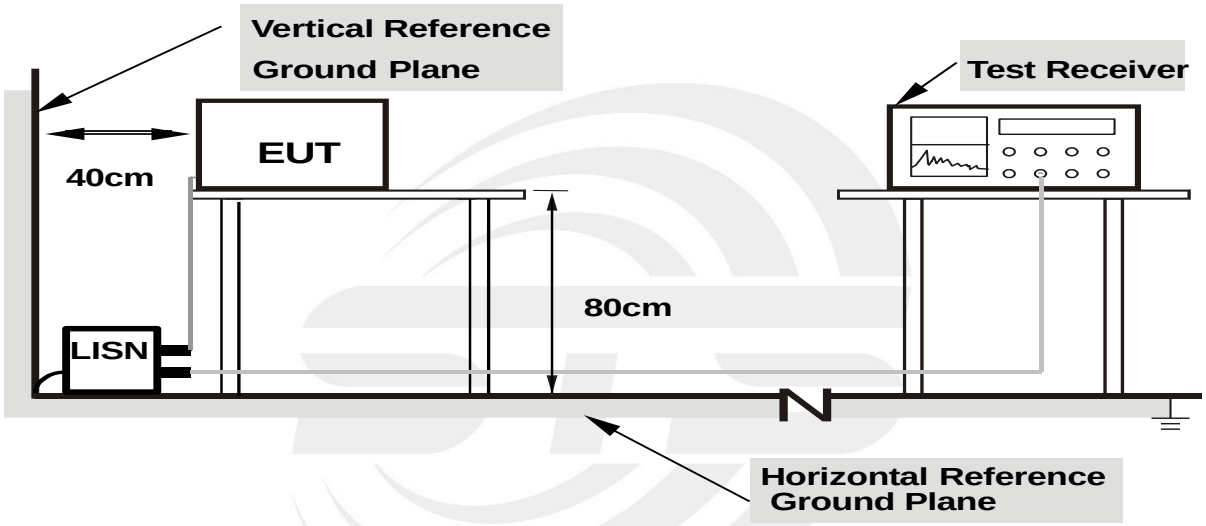
3.1.2 TEST PROCEDURE

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 equipmentspowered 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 groundplane 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.

3.1.3DEVIATIONFROMTESTSTANDARD

No deviation

3.1.4 TESTSETUP



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

3.1.5EUT OPERATING CONDITIONS

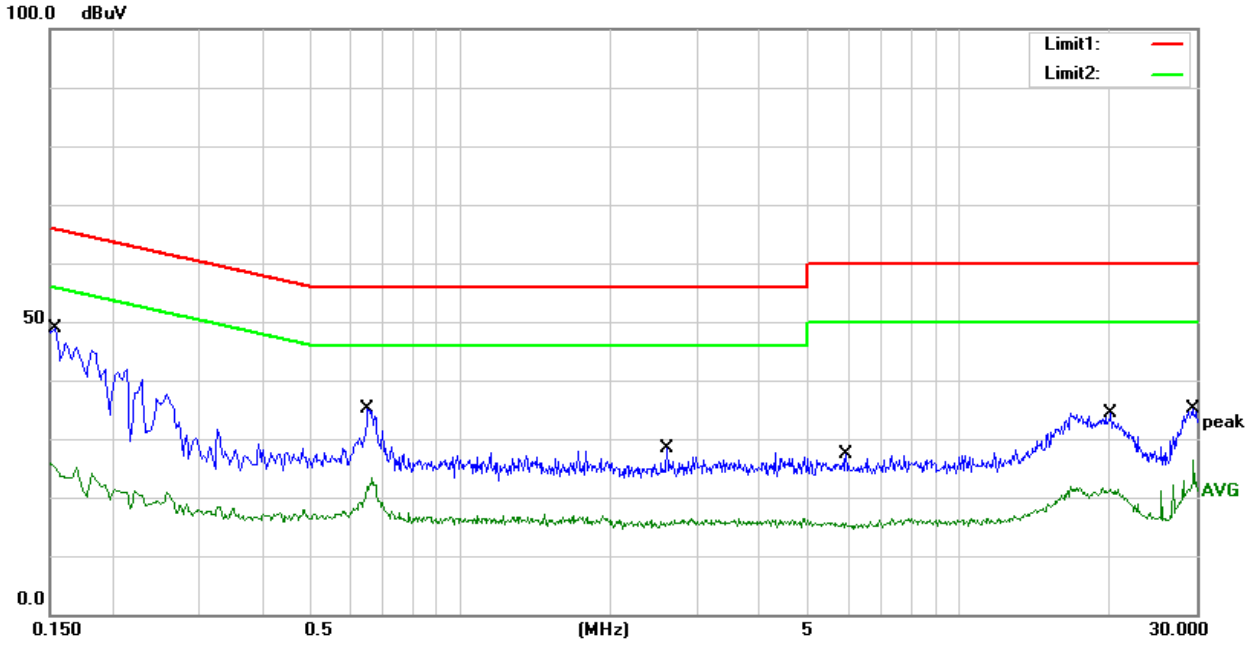
The EUT was configured for testing in a typical fashion (as a customer would normally use it).The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6TEST RESULTS

Temperature:	25.7(C)	Relative Humidity:	53%RH
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode：	Mode 13		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1540	28.67	20.20	48.87	65.78	-16.91	QP
2	0.1540	4.90	20.20	25.10	55.78	-30.68	AVG
3	0.6540	14.74	20.31	35.05	56.00	-20.95	QP
4	0.6540	1.10	20.31	21.41	46.00	-24.59	AVG
5	2.6060	8.14	20.11	28.25	56.00	-27.75	QP
6	2.6060	-4.61	20.11	15.50	46.00	-30.50	AVG
7	5.9500	7.52	19.93	27.45	60.00	-32.55	QP
8	5.9500	-4.40	19.93	15.53	50.00	-34.47	AVG
9	20.1660	14.47	19.93	34.40	60.00	-25.60	QP
10	20.1660	1.12	19.93	21.05	50.00	-28.95	AVG
11	29.4780	15.44	19.61	35.05	60.00	-24.95	QP
12	29.4780	2.76	19.61	22.37	50.00	-27.63	AVG

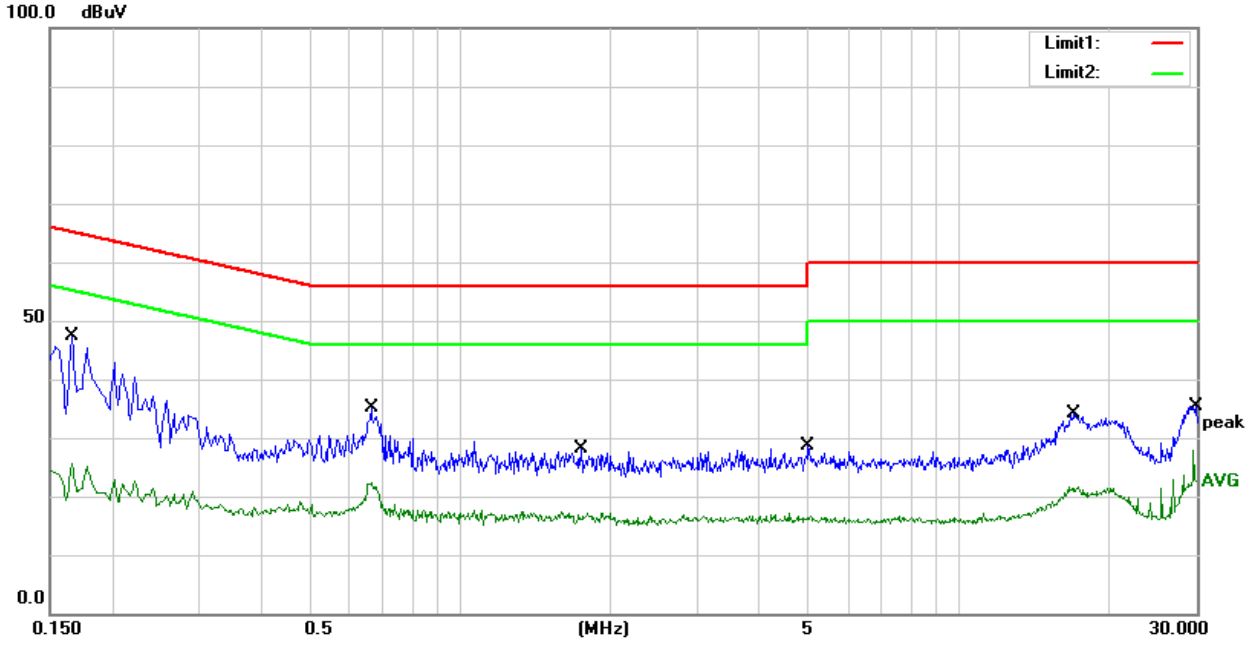
Remark:
1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	25.7(C)	Relative Humidity:	53%RH
Test Voltage	AC 120V/60Hz	Phase:	N
Test Mode	Mode 13		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1660	27.15	20.23	47.38	65.16	-17.78	QP
2	0.1660	5.46	20.23	25.69	55.16	-29.47	AVG
3	0.6620	14.75	20.30	35.05	56.00	-20.95	QP
4	0.6620	2.08	20.30	22.38	46.00	-23.62	AVG
5	1.7460	8.07	20.15	28.22	56.00	-27.78	QP
6	1.7460	-4.11	20.15	16.04	46.00	-29.96	AVG
7	4.9900	8.57	20.02	28.59	56.00	-27.41	QP
8	4.9900	-3.73	20.02	16.29	46.00	-29.71	AVG
9	17.0420	14.22	19.88	34.10	60.00	-25.90	QP
10	17.0420	1.56	19.88	21.44	50.00	-28.56	AVG
11	29.9060	15.80	19.62	35.42	60.00	-24.58	QP
12	29.9060	2.95	19.62	22.57	50.00	-27.43	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

3.2.1RADIATED EMISSION LIMITS (FrequencyRange9kHz-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).

FCC:

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

IC:

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 – 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 – 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 – 8500	
108 – 138		

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)	1MHz / 1MHz, AV=1 MHz /3 MHz

For Band edge

Spectrum Parameter	Setting
Detector	Peak
RB / VB (emission in restricted band)	1MHz / 1MHz, 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 QuasiPeak 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:

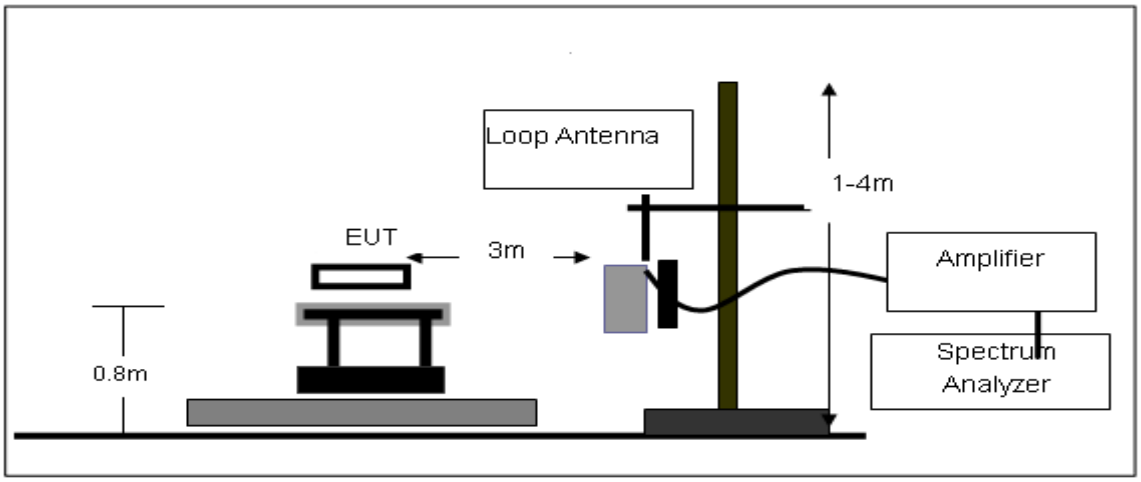
Both horizontal and vertical antenna polarities were testedand performed test to three orthogonal axis. The worst case emissions were reported.

3.2.2DEVIATIONFROMTESTSTANDARD

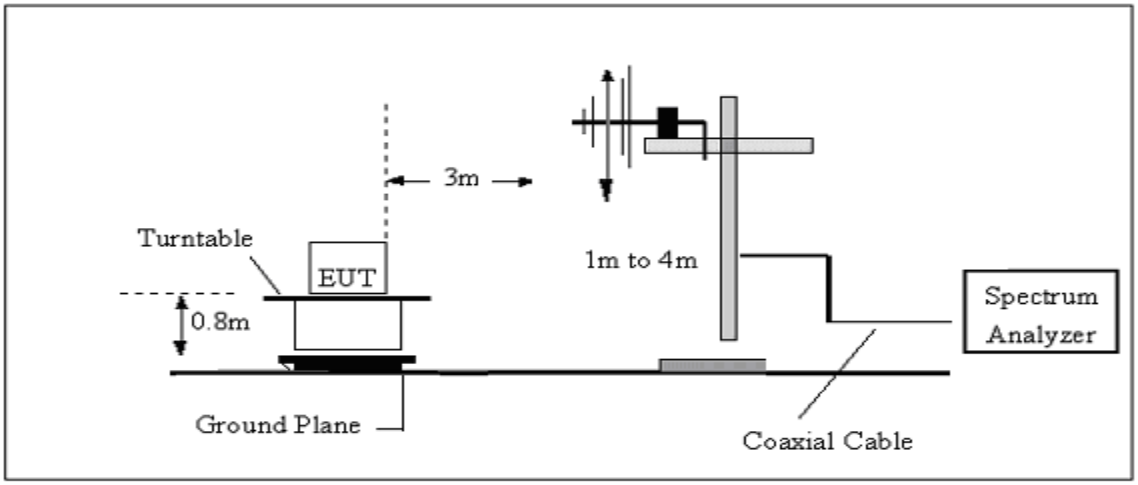
No deviation

3.2.3 TESTSETUP

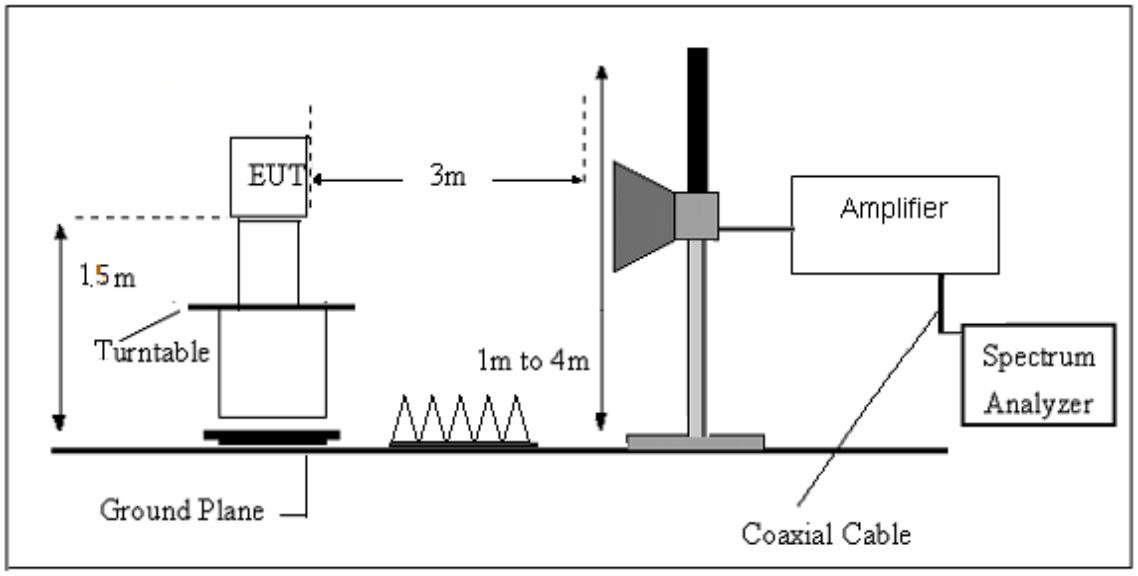
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.4EUT 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.

3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting theAmplifier 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	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

Factor=AF+CL-AG

3.2.6 TEST RESULTS (Between 9KHz – 30 MHz)

Temperature：	23.5(C)	Relative Humidtity:	63%RH
Test Voltage：	DC 3.3V	Polarization:	--
Test Mode：	TX Mode		

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

Note:

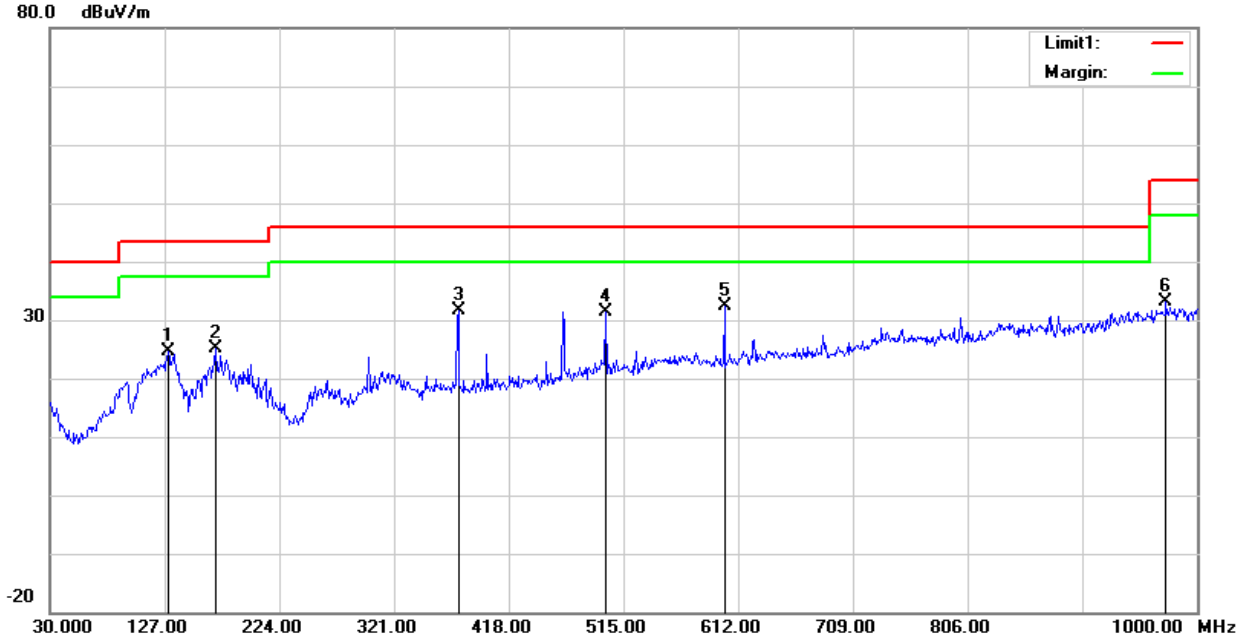
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

3.2.7 TEST RESULTS(Between 30MHz – 1GHz)

Temperature	23.5(C)	Relative Humidtity:	63%RH
Test Voltage	DC 3.3V	Polarization:	Horizontal
Test Mode	Mode 1~12(Mode 1 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	129.9100	42.80	-18.27	24.53	43.50	-18.97	QP
2	169.6800	44.94	-19.76	25.18	43.50	-18.32	QP
3	375.3200	43.97	-12.37	31.60	46.00	-14.40	QP
4	500.4500	39.39	-8.01	31.38	46.00	-14.62	QP
5	600.3600	38.12	-5.84	32.28	46.00	-13.72	QP
6	973.8100	30.91	2.25	33.16	54.00	-20.84	QP

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

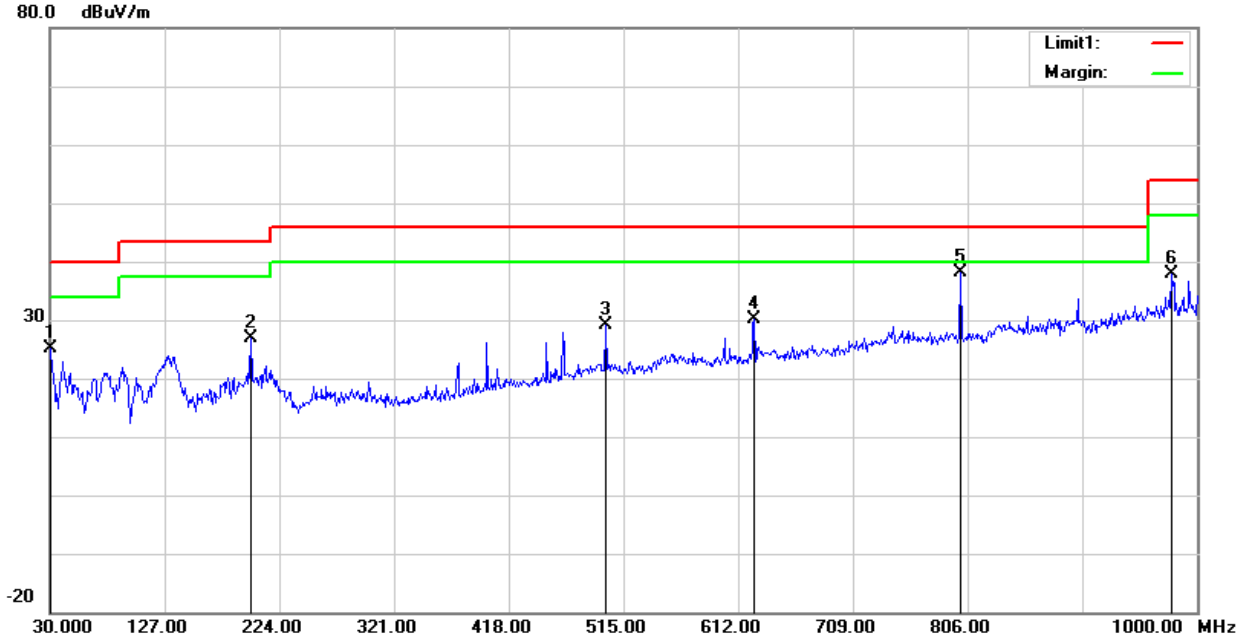


Temperature	23.5(C)	Relative Humidtity:	63%RH
Test Voltage	DC 3.3V	Polarization:	Vertical
Test Mode	Mode 1~12(Mode 1 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.9700	38.54	-13.35	25.19	40.00	-14.81	QP
2	199.7500	47.91	-21.11	26.80	43.50	-16.70	QP
3	500.4500	37.12	-8.01	29.11	46.00	-16.89	QP
4	625.5800	35.42	-5.25	30.17	46.00	-15.83	QP
5	800.1800	40.17	-2.05	38.12	46.00	-7.88	QP
6	978.6600	35.25	2.58	37.83	54.00	-16.17	QP

Remark:

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



3.2.8 TEST RESULTS(Above 1000 MHz)

Band I 5150-5250MHz

Frequency (MHz)	Reading (dBuV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Orrected Factor (dB)	Emission Level (dBμV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
Low Channel (802.11a/ 5180 MHz)										
3246.32	43.82	44.70	6.70	28.20	-9.80	34.02	68.20	-34.18	Pk	Vertical
3246.32	41.73	44.70	6.70	28.20	-9.80	31.93	54.00	-22.07	AV	Vertical
3257.09	44.15	44.70	6.70	28.20	-9.80	34.35	68.20	-33.85	Pk	Horizontal
3257.09	41.26	44.70	6.70	28.20	-9.80	31.46	54.00	-22.54	AV	Horizontal
3985.74	40.10	44.20	7.90	29.70	-6.60	33.50	68.20	-34.70	Pk	Vertical
3985.74	36.91	44.20	7.90	29.70	-6.60	30.31	54.00	-23.69	AV	Vertical
3993.96	39.79	44.20	7.90	29.70	-6.60	33.19	68.20	-35.01	Pk	Horizontal
3993.96	36.22	44.20	7.90	29.70	-6.60	29.62	54.00	-24.38	AV	Horizontal
7218.17	36.52	43.50	11.40	35.50	3.40	39.92	68.20	-28.28	Pk	Vertical
7218.17	34.35	43.50	11.40	35.50	3.40	37.75	54.00	-16.25	AV	Vertical
7230.49	37.66	43.50	11.40	35.50	3.40	41.06	68.20	-27.14	Pk	Horizontal
7230.49	33.67	43.50	11.40	35.50	3.40	37.07	54.00	-16.93	AV	Horizontal
10360.20	39.95	44.50	13.80	38.80	8.10	48.05	68.20	-20.15	Pk	Vertical
10360.20	36.78	44.50	13.80	38.80	8.10	44.88	54.00	-9.12	AV	Vertical
10359.98	40.10	44.50	13.80	38.80	8.10	48.20	68.20	-20.00	Pk	Horizontal
10359.98	37.04	44.50	13.80	38.80	8.10	45.14	54.00	-8.86	AV	Horizontal
11019.52	33.85	43.60	14.30	39.50	10.20	44.05	68.20	-24.15	Pk	Vertical
11019.52	30.46	43.60	14.30	39.50	10.20	40.66	54.00	-13.34	AV	Vertical
11029.51	33.73	43.60	14.30	39.50	10.20	43.93	68.20	-24.27	Pk	Horizontal
11029.51	30.87	43.60	14.30	39.50	10.20	41.07	54.00	-12.93	AV	Horizontal
13284.59	32.38	42.60	15.90	38.90	12.20	44.58	68.20	-23.62	Pk	Vertical
13284.59	28.82	42.60	15.90	38.90	12.20	41.02	54.00	-12.98	AV	Vertical
13289.06	32.40	42.60	15.90	38.90	12.20	44.60	68.20	-23.60	Pk	Horizontal
13289.06	29.60	42.60	15.90	38.90	12.20	41.80	54.00	-12.20	AV	Horizontal
Mid Channel (802.11a/ 5200 MHz)										
3259.33	45.25	44.70	6.70	28.20	-9.80	35.45	68.20	-32.75	Pk	Vertical
3259.33	41.53	44.70	6.70	28.20	-9.80	31.73	54.00	-22.27	AV	Vertical
3264.41	44.04	44.70	6.70	28.20	-9.80	34.24	68.20	-33.96	Pk	Horizontal
3264.41	40.97	44.70	6.70	28.20	-9.80	31.17	54.00	-22.83	AV	Horizontal
3996.07	39.42	44.20	7.90	29.70	-6.60	32.82	68.20	-35.38	Pk	Vertical
3996.07	35.77	44.20	7.90	29.70	-6.60	29.17	54.00	-24.83	AV	Vertical
3996.02	38.76	44.20	7.90	29.70	-6.60	32.16	68.20	-36.04	Pk	Horizontal
3996.02	37.02	44.20	7.90	29.70	-6.60	30.42	54.00	-23.58	AV	Horizontal
7223.89	36.49	43.50	11.40	35.50	3.40	39.89	68.20	-28.31	Pk	Vertical
7223.89	34.41	43.50	11.40	35.50	3.40	37.81	54.00	-16.19	AV	Vertical
7221.41	37.48	43.50	11.40	35.50	3.40	40.88	68.20	-27.32	Pk	Horizontal
7221.41	33.52	43.50	11.40	35.50	3.40	36.92	54.00	-17.08	AV	Horizontal
10400.09	39.02	44.50	13.80	38.80	8.10	47.12	68.20	-21.08	Pk	Vertical
10400.09	36.43	44.50	13.80	38.80	8.10	44.53	54.00	-9.47	AV	Vertical
10400.43	39.75	44.50	13.80	38.80	8.10	47.85	68.20	-20.35	Pk	Horizontal
10400.43	35.99	44.50	13.80	38.80	8.10	44.09	54.00	-9.91	AV	Horizontal
11019.82	33.45	43.60	14.30	39.50	10.20	43.65	68.20	-24.55	Pk	Vertical
11019.82	30.18	43.60	14.30	39.50	10.20	40.38	54.00	-13.62	AV	Vertical
11019.40	33.91	43.60	14.30	39.50	10.20	44.11	68.20	-24.09	Pk	Horizontal
11019.40	30.86	43.60	14.30	39.50	10.20	41.06	54.00	-12.94	AV	Horizontal
13296.41	31.75	42.60	15.90	38.90	12.20	43.95	68.20	-24.25	Pk	Vertical
13296.41	28.59	42.60	15.90	38.90	12.20	40.79	54.00	-13.21	AV	Vertical
13298.20	32.93	42.60	15.90	38.90	12.20	45.13	68.20	-23.07	Pk	Horizontal
13298.20	28.95	42.60	15.90	38.90	12.20	41.15	54.00	-12.85	AV	Horizontal

High Channel (802.11a/ 5240 MHz)										
3253.35	44.29	44.70	6.70	28.20	-9.80	34.49	68.20	-33.71	Pk	Vertical
3253.35	42.14	44.70	6.70	28.20	-9.80	32.34	54.00	-21.66	AV	Vertical
3248.41	44.25	44.70	6.70	28.20	-9.80	34.45	68.20	-33.75	Pk	Horizontal
3248.41	41.85	44.70	6.70	28.20	-9.80	32.05	54.00	-21.95	AV	Horizontal
3982.02	40.09	44.20	7.90	29.70	-6.60	33.49	68.20	-34.71	Pk	Vertical
3982.02	35.72	44.20	7.90	29.70	-6.60	29.12	54.00	-24.88	AV	Vertical
3980.28	38.96	44.20	7.90	29.70	-6.60	32.36	68.20	-35.84	Pk	Horizontal
3980.28	36.80	44.20	7.90	29.70	-6.60	30.20	54.00	-23.80	AV	Horizontal
7225.08	37.50	43.50	11.40	35.50	3.40	40.90	68.20	-27.30	Pk	Vertical
7225.08	34.54	43.50	11.40	35.50	3.40	37.94	54.00	-16.06	AV	Vertical
7222.05	37.15	43.50	11.40	35.50	3.40	40.55	68.20	-27.65	Pk	Horizontal
7222.05	34.44	43.50	11.40	35.50	3.40	37.84	54.00	-16.16	AV	Horizontal
10480.14	38.89	44.50	13.80	38.80	8.10	46.99	68.20	-21.21	Pk	Vertical
10480.14	36.92	44.50	13.80	38.80	8.10	45.02	54.00	-8.98	AV	Vertical
10480.03	40.13	44.50	13.80	38.80	8.10	48.23	68.20	-19.97	Pk	Horizontal
10480.03	36.67	44.50	13.80	38.80	8.10	44.77	54.00	-9.23	AV	Horizontal
11019.35	34.05	43.60	14.30	39.50	10.20	44.25	68.20	-23.95	Pk	Vertical
11019.35	30.50	43.60	14.30	39.50	10.20	40.70	54.00	-13.30	AV	Vertical
11028.27	33.18	43.60	14.30	39.50	10.20	43.38	68.20	-24.82	Pk	Horizontal
11028.27	30.18	43.60	14.30	39.50	10.20	40.38	54.00	-13.62	AV	Horizontal
13295.30	32.93	42.60	15.90	38.90	12.20	45.13	68.20	-23.07	Pk	Vertical
13295.30	28.81	42.60	15.90	38.90	12.20	41.01	54.00	-12.99	AV	Vertical
13289.84	31.71	42.60	15.90	38.90	12.20	43.91	68.20	-24.29	Pk	Horizontal
13289.84	28.56	42.60	15.90	38.90	12.20	40.76	54.00	-13.24	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 802.11a.
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.

Band IV(5.725-5.850) GHz

Frequency (MHz)	Reading (dBuV)	Amplifier （dB）	Loss （dB）	Antenna Factor （dB/m）	Orrected Factor （dB）	Emission Level (dBμV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
Low Channel (802.11ac（VHT20）/ 5745 MHz)										
3257.60	44.13	44.70	6.70	28.20	-9.80	34.33	68.20	-33.87	Pk	Vertical
3257.60	40.80	44.70	6.70	28.20	-9.80	31.00	54.00	-23.00	AV	Vertical
3265.27	44.47	44.70	6.70	28.20	-9.80	34.67	68.20	-33.53	Pk	Horizontal
3265.27	41.76	44.70	6.70	28.20	-9.80	31.96	54.00	-22.04	AV	Horizontal
3992.03	38.90	44.20	7.90	29.70	-6.60	32.30	68.20	-35.90	Pk	Vertical
3992.03	36.98	44.20	7.90	29.70	-6.60	30.38	54.00	-23.62	AV	Vertical
3983.00	39.49	44.20	7.90	29.70	-6.60	32.89	68.20	-35.31	Pk	Horizontal
3983.00	36.34	44.20	7.90	29.70	-6.60	29.74	54.00	-24.26	AV	Horizontal
7223.98	37.23	43.50	11.40	35.50	3.40	40.63	68.20	-27.57	Pk	Vertical
7223.98	33.45	43.50	11.40	35.50	3.40	36.85	54.00	-17.15	AV	Vertical
7224.36	37.49	43.50	11.40	35.50	3.40	40.89	68.20	-27.31	Pk	Horizontal
7224.36	33.62	43.50	11.40	35.50	3.40	37.02	54.00	-16.98	AV	Horizontal
10504.83	39.50	44.50	13.90	38.80	8.20	47.70	68.20	-20.50	Pk	Vertical
10504.83	37.16	44.50	13.90	38.80	8.20	45.36	54.00	-8.64	AV	Vertical
10504.82	39.08	44.50	13.90	38.80	8.20	47.28	68.20	-20.92	Pk	Horizontal
10504.82	35.97	44.50	13.90	38.80	8.20	44.17	54.00	-9.83	AV	Horizontal
11490.32	33.26	43.60	14.30	39.50	10.20	43.46	68.20	-24.74	Pk	Vertical
11490.32	30.90	43.60	14.30	39.50	10.20	41.10	54.00	-12.90	AV	Vertical
11490.06	33.73	43.60	14.30	39.50	10.20	43.93	68.20	-24.27	Pk	Horizontal
11490.06	30.52	43.60	14.30	39.50	10.20	40.72	54.00	-13.28	AV	Horizontal
13282.08	32.52	42.60	15.90	38.90	12.20	44.72	68.20	-23.48	Pk	Vertical
13282.08	29.17	42.60	15.90	38.90	12.20	41.37	54.00	-12.63	AV	Vertical
13280.18	32.12	42.60	15.90	38.90	12.20	44.32	68.20	-23.88	Pk	Horizontal
13280.18	29.36	42.60	15.90	38.90	12.20	41.56	54.00	-12.44	AV	Horizontal
Mid Channel (802.11ac（VHT20）/ 5785 MHz)										
3256.83	44.47	44.70	6.70	28.20	-9.80	34.67	68.20	-33.53	Pk	Vertical
3256.83	41.45	44.70	6.70	28.20	-9.80	31.65	54.00	-22.35	AV	Vertical
3246.54	44.78	44.70	6.70	28.20	-9.80	34.98	68.20	-33.22	Pk	Horizontal
3246.54	41.94	44.70	6.70	28.20	-9.80	32.14	54.00	-21.86	AV	Horizontal
3991.12	40.13	44.20	7.90	29.70	-6.60	33.53	68.20	-34.67	Pk	Vertical
3991.12	36.79	44.20	7.90	29.70	-6.60	30.19	54.00	-23.81	AV	Vertical
3999.71	38.70	44.20	7.90	29.70	-6.60	32.10	68.20	-36.10	Pk	Horizontal
3999.71	36.43	44.20	7.90	29.70	-6.60	29.83	54.00	-24.17	AV	Horizontal
7219.59	37.55	43.50	11.40	35.50	3.40	40.95	68.20	-27.25	Pk	Vertical
7219.59	34.50	43.50	11.40	35.50	3.40	37.90	54.00	-16.10	AV	Vertical
7233.16	37.00	43.50	11.40	35.50	3.40	40.40	68.20	-27.80	Pk	Horizontal
7233.16	34.25	43.50	11.40	35.50	3.40	37.65	54.00	-16.35	AV	Horizontal
10589.93	39.31	44.50	13.80	38.80	8.10	47.41	68.20	-20.79	Pk	Vertical
10589.93	36.01	44.50	13.80	38.80	8.10	44.11	54.00	-9.89	AV	Vertical
10581.46	39.74	44.50	13.80	38.80	8.10	47.84	68.20	-20.36	Pk	Horizontal
10581.46	36.62	44.50	13.80	38.80	8.10	44.72	54.00	-9.28	AV	Horizontal
11570.02	32.86	43.60	14.30	39.50	10.20	43.06	68.20	-25.14	Pk	Vertical
11570.02	30.81	43.60	14.30	39.50	10.20	41.01	54.00	-12.99	AV	Vertical
11570.10	33.20	43.60	14.30	39.50	10.20	43.40	68.20	-24.80	Pk	Horizontal
11570.10	30.83	43.60	14.30	39.50	10.20	41.03	54.00	-12.97	AV	Horizontal
13280.55	32.36	42.60	15.90	38.90	12.20	44.56	68.20	-23.64	Pk	Vertical
13280.55	29.02	42.60	15.90	38.90	12.20	41.22	54.00	-12.78	AV	Vertical
13283.38	33.02	42.60	15.90	38.90	12.20	45.22	68.20	-22.98	Pk	Horizontal
13283.38	28.66	42.60	15.90	38.90	12.20	40.86	54.00	-13.14	AV	Horizontal

High Channel (802.11ac（VHT20）/ 5825 MHz)										
3246.90	45.07	44.70	6.70	28.20	-9.80	35.27	68.20	-32.93	Pk	Vertical
3246.90	41.27	44.70	6.70	28.20	-9.80	31.47	54.00	-22.53	AV	Vertical
3257.85	44.07	44.70	6.70	28.20	-9.80	34.27	68.20	-33.93	Pk	Horizontal
3257.85	41.15	44.70	6.70	28.20	-9.80	31.35	54.00	-22.65	AV	Horizontal
3997.35	39.03	44.20	7.90	29.70	-6.60	32.43	68.20	-35.77	Pk	Vertical
3997.35	36.37	44.20	7.90	29.70	-6.60	29.77	54.00	-24.23	AV	Vertical
3988.26	39.91	44.20	7.90	29.70	-6.60	33.31	68.20	-34.89	Pk	Horizontal
3988.26	36.27	44.20	7.90	29.70	-6.60	29.67	54.00	-24.33	AV	Horizontal
7227.06	36.59	43.50	11.40	35.50	3.40	39.99	68.20	-28.21	Pk	Vertical
7227.06	34.89	43.50	11.40	35.50	3.40	38.29	54.00	-15.71	AV	Vertical
7233.48	36.82	43.50	11.40	35.50	3.40	40.22	68.20	-27.98	Pk	Horizontal
7233.48	34.25	43.50	11.40	35.50	3.40	37.65	54.00	-16.35	AV	Horizontal
10625.83	39.89	44.50	13.80	38.80	8.10	47.99	68.20	-20.21	Pk	Vertical
10625.83	36.53	44.50	13.80	38.80	8.10	44.63	54.00	-9.37	AV	Vertical
10640.22	40.05	44.50	13.80	38.80	8.10	48.15	68.20	-20.05	Pk	Horizontal
10640.22	36.70	44.50	13.80	38.80	8.10	44.80	54.00	-9.20	AV	Horizontal
11650.00	32.85	43.60	14.30	39.50	10.20	43.05	68.20	-25.15	Pk	Vertical
11650.00	30.26	43.60	14.30	39.50	10.20	40.46	54.00	-13.54	AV	Vertical
11650.38	33.60	43.60	14.30	39.50	10.20	43.80	68.20	-24.40	Pk	Horizontal
11650.38	31.12	43.60	14.30	39.50	10.20	41.32	54.00	-12.68	AV	Horizontal
13289.21	33.01	42.70	18.00	37.10	12.40	45.41	68.20	-22.79	Pk	Vertical
13289.21	29.47	42.70	18.00	37.10	12.40	41.87	54.00	-12.13	AV	Vertical
13295.02	33.00	42.70	18.00	37.10	12.40	45.40	68.20	-22.80	Pk	Horizontal
13295.02	28.94	42.70	18.00	37.10	12.40	41.34	54.00	-12.66	AV	Horizontal

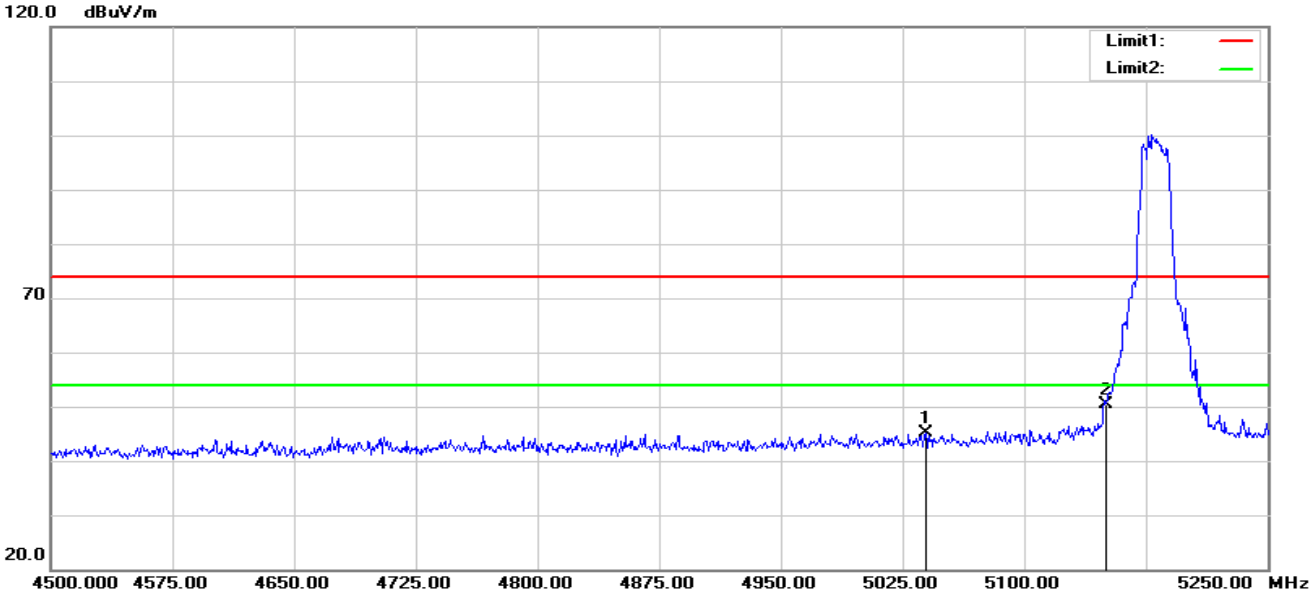
Remark:
1.Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Scan with 802.11a,802.11n (HT-20),802.11n (HT-40), 802.11ac (VHT-20),802.11ac (VHT-40), 802.11ac (VHT-80) the worst case is 802.11ac (VHT-20).
3. The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.

3.2.9 Band Edge

Band I 5150-5250MHz

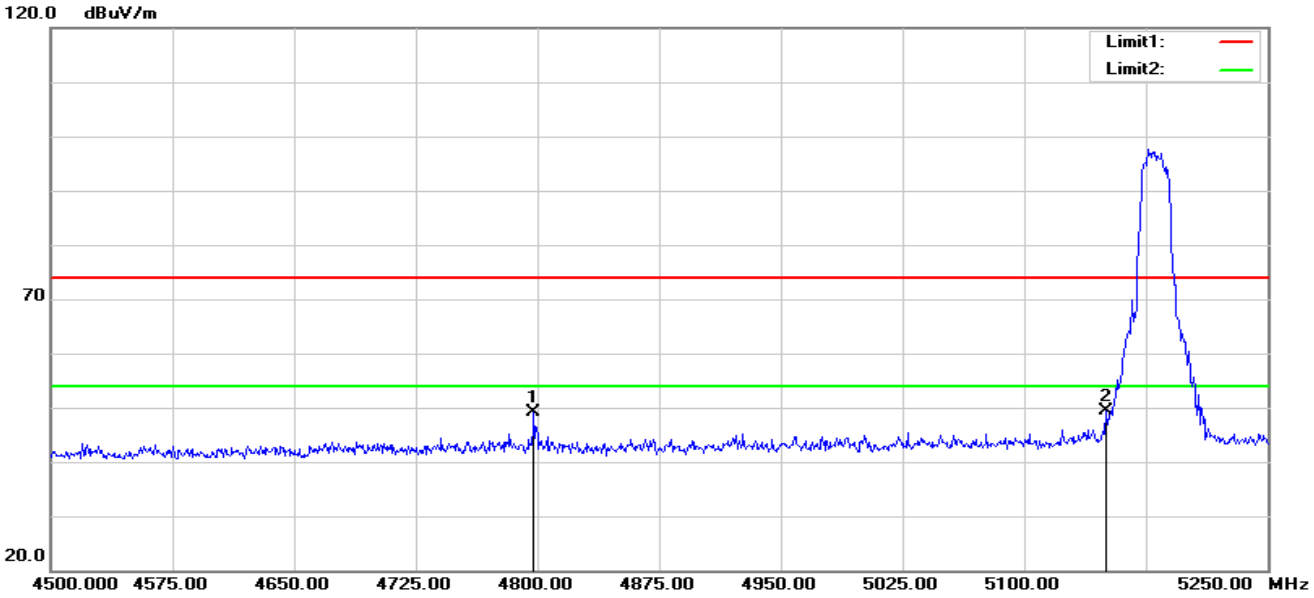
802.11a Low

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5039.250	51.07	-6.01	45.06	74.00	-28.94	peak
2	5150.000	56.23	-5.73	50.50	74.00	-23.50	peak

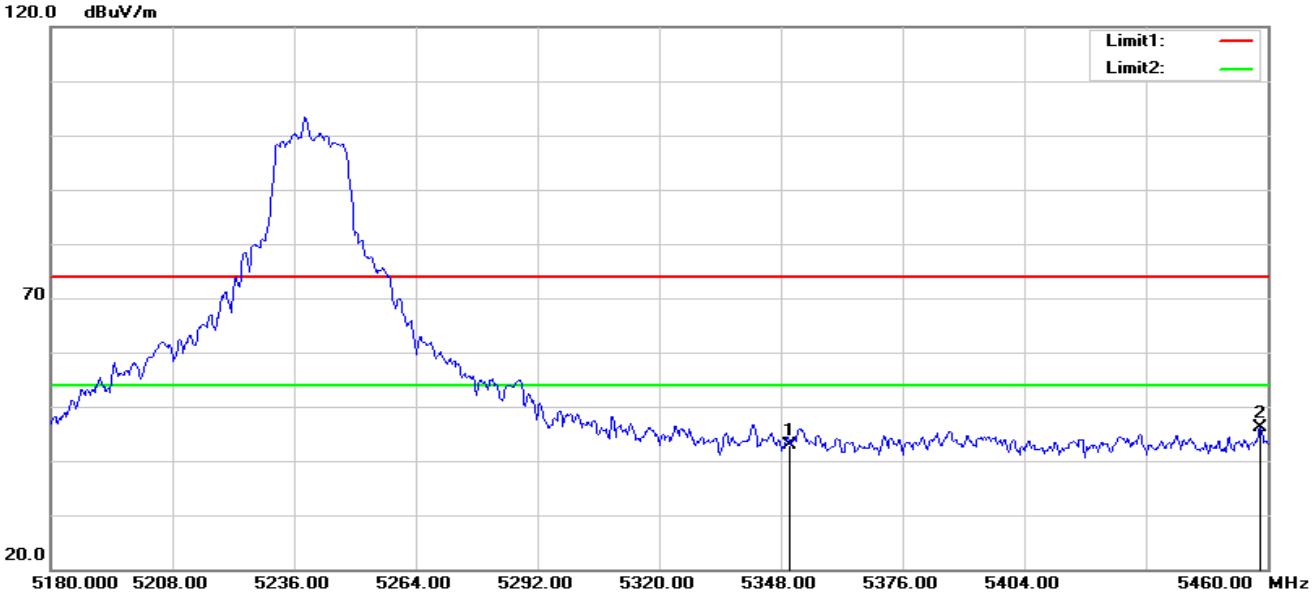
Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4797.750	56.41	-7.22	49.19	74.00	-24.81	peak
2	5150.000	55.20	-5.73	49.47	74.00	-24.53	peak

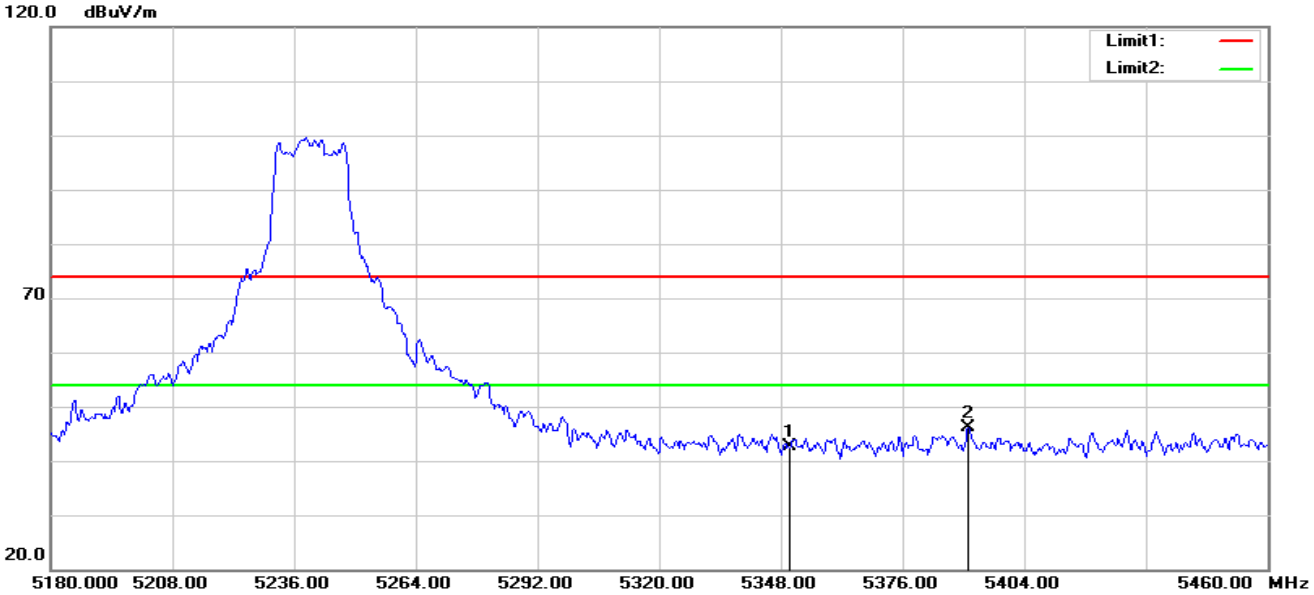
802.11a High

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	48.06	-5.23	42.83	74.00	-31.17	peak
2	5458.320	51.21	-5.11	46.10	74.00	-27.90	peak

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	47.95	-5.23	42.72	74.00	-31.28	peak
2	5391.120	51.35	-5.25	46.10	74.00	-27.90	peak

Note: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.

Band IV(5.725-5.85 GHz)

Note: The main frequency is too far away from the restricted band and does not require testing.

4. CONDUCTED SPURIOUS EMISSIONS AND BANDEDGE

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

.

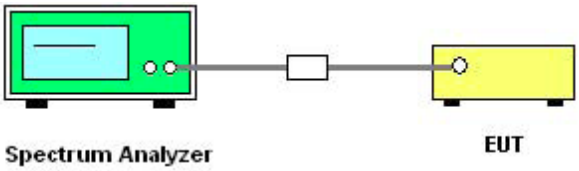
For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 5700to5725 MHz Upper Band Edge: 5850to5870 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.

4.5EUT 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

5.POWER SPECTRAL DENSITY TEST

5.1LIMIT

FCC:

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 30dBm in any500KHz 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.

IC:

1. For the 5.15-5.25 GHz, The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.
3. The output power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-pointoperations exclude the use of point-to-multipoint systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

5.2 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 ≥ 1/*T*, where *T* is defined in section II.B.I.a).

b) Set VBW ≥ 3 RBW.

c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500kHz/RBW) to the measured result, whereas RBW (< 500 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 (1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.

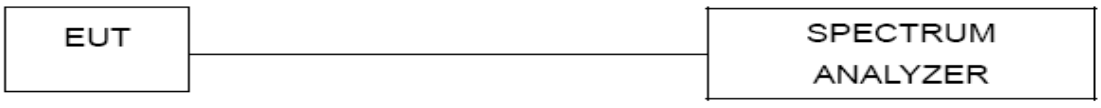
e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the sections5.c) and 5.d) above, since RBW=100 KHZ is available on nearly all spectrum analyzers.

5.3DEVIATION FROM STANDARD

No deviation.

5.4TEST SETUP



5.5EUT 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.

5.6TEST RESULTS

5150-5250MHz					
Frequency	Direct measurement Power Density (dBm)	Duty cycle factor (dB)	Final Power Density (dBm)	Limit	Result
802.11a					
5180	-1.409	0.098	-1.311	11	PASS
5200	-1.701	0.098	-1.603	11	PASS
5240	-1.525	0.098	-1.427	11	PASS
802.11n20					
5180	-2.488	0.104	-2.384	11	PASS
5200	-2.244	0.104	-2.140	11	PASS
5240	-2.262	0.104	-2.158	11	PASS
802.11n40					
5190	-5.489	0.456	-5.033	11	PASS
5230	-5.582	0.456	-5.126	11	PASS
802.11ac20					
5180	-2.070	0.104	-1.966	11	PASS
5200	-2.246	0.104	-2.142	11	PASS
5240	-2.469	0.104	-2.365	11	PASS
802.11ac40					
5190	-5.505	0.326	-5.179	11	PASS
5230	-6.065	0.326	-5.739	11	PASS
802.11ac80					
5210	-8.569	0.905	-7.664	11	PASS

5725-5850MHz						
Frequency	Use RBW 510KHz direct measurement Direct measurement Power Density (dBm)	Convert to RBW 500KHz direct measurement Power Density (dBm)	Duty cycle factor (dB)	Final Power Density (dBm)	Limit (dBm)	Result
802.11a						
5745	-6.709	-6.881	0.107	-6.774	30	PASS
5785	-6.876	-7.048	0.107	-6.941	30	PASS
5825	-6.895	-7.067	0.107	-6.960	30	PASS
802.11n20						
5745	-7.530	-7.702	0.104	-7.598	30	PASS
5785	-7.392	-7.564	0.104	-7.460	30	PASS
5825	-7.858	-8.030	0.104	-7.926	30	PASS
802.11n40						
5755	-10.307	-10.479	0.451	-10.028	30	PASS
5795	-10.568	-10.740	0.451	-10.289	30	PASS
802.11ac20						
5745	-7.132	-7.304	0.673	-6.631	30	PASS
5785	-7.642	-7.814	0.673	-7.141	30	PASS
5825	-7.945	-8.117	0.673	-7.444	30	PASS
802.11ac40						
5755	-10.088	-10.260	0.451	-9.809	30	PASS
5795	-10.677	-10.849	0.451	-10.398	30	PASS
802.11ac80						
5775	-12.520	-12.692	0.905	-11.787	30	PASS

RB conversion formula:20*LOG(510KHz/500KHz)

EIRP PSD

5150-5250MHz					
Frequency	Power Density (dBm)	Ant Gain (dBi)	EIRP Power Density (dBm)	Limit	Result
802.11a					
5180	-1.311	2.90	1.59	10	PASS
5200	-1.603	2.90	1.30	10	PASS
5240	-1.427	2.90	1.47	10	PASS
802.11n20					
5180	-2.384	2.90	0.52	10	PASS
5200	-2.140	2.90	0.76	10	PASS
5240	-2.158	2.90	0.74	10	PASS
802.11n40					
5190	-5.033	2.90	-2.13	10	PASS
5230	-5.126	2.90	-2.23	10	PASS
802.11ac20					
5180	-1.966	2.90	0.93	10	PASS
5200	-2.142	2.90	0.76	10	PASS
5240	-2.365	2.90	0.54	10	PASS
802.11ac40					
5190	-5.179	2.90	-2.28	10	PASS
5230	-5.739	2.90	-2.84	10	PASS
802.11ac80					
5210	-7.664	2.90	-4.76	10	PASS

Test plot see Attachment B

6.BANDWIDTH MEASUREMENT

6.1EMISSION BANDWIDTH (EBW) 26 BANDWID PROCEDURES / LIMIT

The following procedure shall be used for measuring 26 bandwidth.

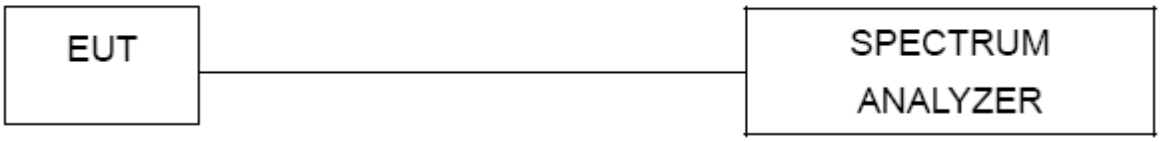
6.1.1TEST PROCEDURE

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 >=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%.

6.1.2DEVIATION FROM STANDARD

No deviation.

6.1.3TEST SETUP



6.1.4EUT 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.

6.1.5TEST RESULTS

Frequency (MHz)	26dB Bandwidth (MHz)	Pass/Fail
802.11a		
5180	21.70	Pass
5200	21.31	Pass
5240	21.12	Pass
802.11n(HT20)		
5180	21.31	Pass
5200	21.41	Pass
5240	21.40	Pass
802.11n(HT40)		
5190	40.14	Pass
5230	39.86	Pass
802.11ac(VHT20)		
5180	21.52	Pass
5200	21.75	Pass
5240	21.71	Pass
802.11ac(VHT40)		
5190	40.23	Pass
5230	40.33	Pass
802.11ac(VHT80)		
5210	81.57	Pass

Frequency (MHz)	26dB Bandwidth (MHz)	Pass/Fail
802.11a		
5745	21.18	Pass
5785	21.17	Pass
5825	21.10	Pass
802.11n(HT20)		
5745	21.34	Pass
5785	21.30	Pass
5825	21.22	Pass
802.11n(HT40)		
5755	39.81	Pass
5795	39.56	Pass
802.11ac(VHT20)		
5745	21.47	Pass
5785	21.57	Pass
5825	21.30	Pass
802.11ac(VHT40)		
5755	39.64	Pass
5795	39.42	Pass
802.11ac(VHT80)		
5775	80.70	Pass

Test plot see AttachmentC

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

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

6.2.1TEST 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 ≥ 3 · 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.

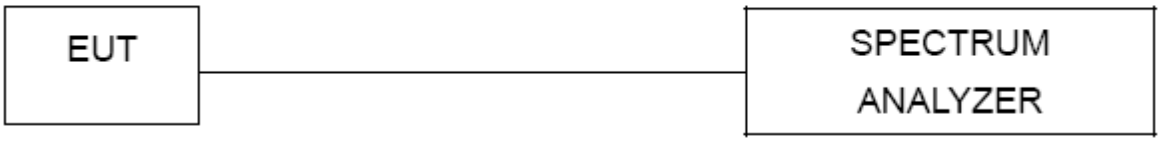
6. Use the 99 % power bandwidth function of the instrument (if available).

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.

6.2.2DEVIATION FROM STANDARD

No deviation.

6.2.3TEST SETUP



6.2.4EUT 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.

6.2.5TEST RESULTS

Frequency (MHz)	99% Bandwidth (MHz)	Pass/Fail
802.11a		
5180	16.64	Pass
5200	16.60	Pass
5240	16.61	Pass
802.11n(HT20)		
5180	17.72	Pass
5200	17.74	Pass
5240	17.77	Pass
802.11n(HT40)		
5190	36.22	Pass
5230	36.22	Pass
802.11ac(VHT20)		
5180	17.75	Pass
5200	17.79	Pass
5240	17.76	Pass
802.11ac(VHT40)		
5190	36.21	Pass
5230	36.22	Pass
802.11ac(VHT80)		
5210	75.62	Pass

Frequency (MHz)	99% Bandwidth (MHz)	Pass/Fail
802.11a		
5745	16.57	Pass
5785	16.58	Pass
5825	16.57	Pass
802.11n(HT20)		
5745	17.74	Pass
5785	17.75	Pass
5825	17.76	Pass
802.11n(HT40)		
5755	36.16	Pass
5795	36.18	Pass
802.11ac(VHT20)		
5745	17.74	Pass
5785	17.77	Pass
5825	17.73	Pass
802.11ac(VHT40)		
5755	36.18	Pass
5795	36.19	Pass
802.11ac(VHT80)		
5775	75.61	Pass

Test plot 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:

6.3.1TEST 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) ≥ 3 × RBW.

c) Detector = Peak.

d) Trace mode = max hold.

e) Sweep = auto couple.

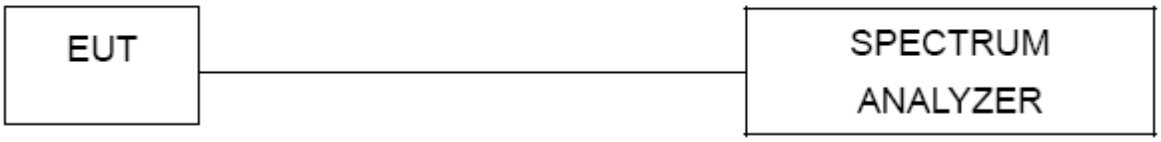
f) Allow the trace to stabilize.

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.

6.3.2DEVIATION FROM STANDARD

No deviation.

6.3.3TEST SETUP



6.3.4EUT 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 TESTRESULTS

Frequency (MHz)	6dB Bandwidth (MHz)	Pass/Fail
802.11a		
5745	16.32	Pass
5785	16.33	Pass
5825	16.32	Pass
802.11n(HT20)		
5745	17.54	Pass
5785	17.26	Pass
5825	17.56	Pass
802.11n(HT40)		
5755	36.27	Pass
5795	36.31	Pass
802.11ac(VHT20)		
5745	17.54	Pass
5785	17.53	Pass
5825	17.55	Pass
802.11ac(VHT40)		
5755	36.27	Pass
5795	36.07	Pass
802.11ac(VHT80)		
5775	76.28	Pass

Test plot see AttachmentD

7.MAXIMUM CONDUCTED OUTPUT POWER

7.1LIMIT

FCC:

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	FrequencyRange (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	

IC:

For devices in the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 $\log_{10}$B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, The maximum conducted output power shall not exceed 250 mW or 11 + 10 $\log_{10}$B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum conducted output power shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-pointoperations exclude the use of point-to-multipoint systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

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Section	Test Item	Limit	FrequencyRange (MHz)	Result
6.2.1.1	Peak Output Power	200 mW or 10 + 10 $\log_{10}$B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz	5150-5250	PASS
6.2.2.1 6.2.3.1		The lesser of 250 mW or 11 dBm + 10 log (26 dB emission bandwidth)	5250-5350 5470-5725	
6.2.4.1		1 watt	5725-5825	

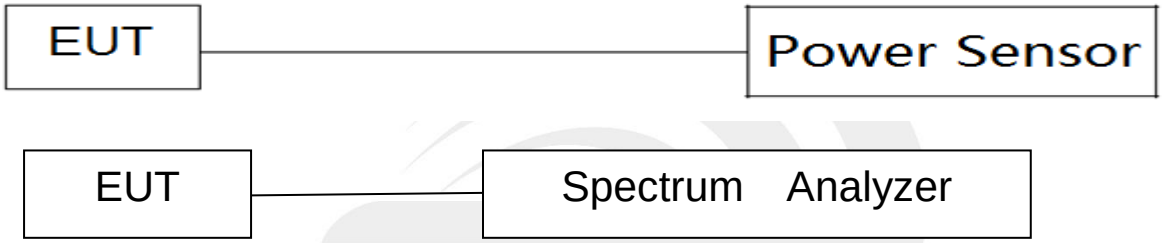
7.2TEST PROCEDURE

The EUT was directly connected to the Power Sensor&PC

7.3DEVIATION FROM STANDARD

No deviation.

7.4TEST SETUP



7.5EUT 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.

7.6TEST RESULTS

Note:

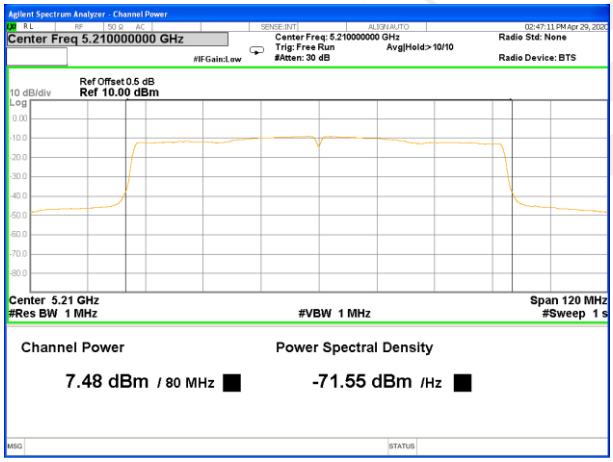
1. For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band ofoperation shall not exceed the lesser of 0.25 W.
2. For the band 5.745-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1 W.

Band I (5.15-5.25GHz)					
Test Channel	Frequency (MHz)	Direct measurement AV Power (dBm)	Duty cycle factor	Final AV Power (dBm)	LIMIT (dBm)
802.11a					
36	5180	9.22	0.098	9.32	23.98
40	5200	9.20	0.098	9.30	23.98
48	5240	9.12	0.098	9.22	23.98
802.11n(HT20)					
36	5180	8.87	0.104	8.97	23.98
40	5200	8.81	0.104	8.91	23.98
48	5240	8.65	0.104	8.75	23.98
802.11n(HT40)					
38	5190	8.10	0.456	8.56	23.98
46	5230	8.11	0.456	8.57	23.98
802.11ac(VHT20)					
36	5180	8.81	0.104	8.91	23.98
40	5200	8.68	0.104	8.78	23.98
48	5240	8.71	0.104	8.81	23.98
802.11ac(VHT40)					
38	5190	8.16	0.326	8.49	23.98
46	5230	7.94	0.326	8.27	23.98
802.11ac(VHT80)					
42	5210	7.48	0.905	8.39	23.98

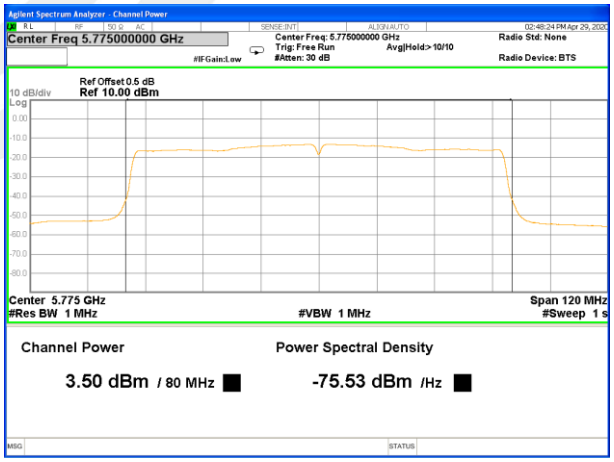
Band IV (5.725-5.85GHz)					
Test Channel	Frequency (MHz)	Direct measurement AV Power (dBm)	Duty cycle factor	Final AV Power (dBm)	LIMIT (dBm)
802.11a					
149	5745	4.48	0.107	4.59	30
157	5785	4.09	0.107	4.20	30
165	5825	4.17	0.107	4.28	30
802.11n(HT20)					
149	5745	4.04	0.104	4.14	30
157	5785	3.99	0.104	4.09	30
165	5825	3.97	0.104	4.07	30
802.11n(HT40)					
151	5755	4.23	0.451	4.68	30
159	5795	3.93	0.451	4.38	30
802.11ac(VHT20)					
149	5745	4.10	0.673	4.77	30
157	5785	3.86	0.673	4.53	30
165	5825	3.89	0.673	4.56	30
802.11ac(VHT40)					
151	5755	4.10	0.451	4.55	30
159	5795	4.10	0.451	4.55	30
802.11ac(VHT80)					
155	5775	3.50	0.905	4.41	30

EIRP Power

Band I (5.15-5.25GHz)-EIRP					
Test Channel	Frequency (MHz)	AV Power (dBm)	Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P LIMIT (dBm)
802.11a					
36	5180	9.32	2.90	12.22	22.21
40	5200	9.30	2.90	12.20	22.20
48	5240	9.22	2.90	12.12	22.20
802.11n(HT20)					
36	5180	8.97	2.90	11.87	22.48
40	5200	8.91	2.90	11.81	22.49
48	5240	8.75	2.90	11.65	22.50
802.11n(HT40)					
38	5190	8.56	2.90	11.46	23.01
46	5230	8.57	2.90	11.47	23.01
802.11ac(HT20)					
36	5180	8.91	2.90	11.81	22.49
40	5200	8.78	2.90	11.68	22.50
48	5240	8.81	2.90	11.71	22.49
802.11ac(HT40)					
36	5180	8.91	2.90	11.81	23.01
40	5200	8.78	2.90	11.68	23.01
802.11ac(HT80)					
42	5210	8.39	2.90	11.29	23.01



5210MHz



5775MHz

Duty cycle

Band1				
Mode	Ton(ms)	Tp(ms)	Duty cycle(%)	Duty factor(dB)
a	1.405	1.437	97.77%	0.098
n20	1.318	1.350	97.63%	0.104
n40	0.621	0.690	90.02%	0.456
ac20	1.325	1.357	97.64%	0.104
ac40	0.630	0.680	92.76%	0.326
ac80	0.297	0.366	81.18%	0.905
Band4				
Mode	Ton(ms)	Tp(ms)	Duty cycle(%)	Duty factor(dB)
a	1.405	1.440	97.57%	0.107
n20	1.318	1.350	97.63%	0.104
n40	0.622	0.690	90.14%	0.451
ac20	1.932	2.256	85.64%	0.673
ac40	0.629	0.698	90.14%	0.451
ac80	0.297	0.366	81.18%	0.905

Band 1-a20

Band 1-n20

Band 1-n40

Band 1-ac20

Band 1-ac40

Band 1-ac80

Band 4-a20

Band 4-n20

Band 4-n40

Band 4-ac20

Band 4-ac40

Band 4-ac80

8.AUTOMATICALLY DISCONTINUE TRANSMISSION

8.1LIMIT 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.

8.2TEST 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

9.1STANDARD REQUIREMENT

15.203&RSS GENrequirement: For intentional device, according to 15.203&RSS GEN:: an intentional radiator shallbe designed to ensure that no antenna other than that furnished by the responsible partyshall be used with the device.

9.2EUT ANTENNA

The EUT antenna is PIFAAntenna. It comply with the standard requirement.

10. FREQUENCY STABILITY

10.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within +/-0.02% of the operating frequency over a temperature variation of -30 degrees to 50 degrees C at normal supply voltage,and for a variation in primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees.

10.2 TEST PROCEDURE

1.The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2.Turn the EUT on and couple its output to spectrum analyzer.
3.Turn the EUT off and set the chamber to the highest temperature specified.
4.Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize,turn the EUT on and measure the operating frequency after 2,5,and 10 minutes.
5.Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6.The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes.The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

10.3 TEST RESULT

Channel 40 (5200MHz)

Voltage vs. Frequency Stability

Voltage(V)	Measurement Frequency(MHz)
3.80	5200.0042
3.3	5200.0032
2.81	5200.0040
Max.Deviation(MHz)	0.0042
Max.Deviation(ppm)	0.81

Rated working voltage:DC 3.3V

Temperature vs. Frequency Stability

Temperature(℃)	Measurement Frequency(MHz)
-30	5200.0046
-20	5200.0043
-10	5200.0043
0	5200.0041
10	5200.0040
20	5200.0040
30	5200.0037
40	5200.0041
50	5200.0038
Max.Deviation(MHz)	0.0046
Max.Deviation(ppm)	0.88

Channel 157 (5785MHz)

Voltage vs. Frequency Stability

Voltage(V)	Measurement Frequency(MHz)
3.80	5785.0036
3.3	5785.0032
2.81	5785.0031
Max.Deviation(MHz)	0.0036
Max.Deviation(ppm)	0.62

Rated working voltage:DC 3.3V

Temperature vs. Frequency Stability

Temperature(℃)	Measurement Frequency(MHz)
-30	5785.0051
-20	5785.0045
-10	5785.0044
0	5785.0046
10	5785.0046
20	5785.0049
30	5785.0042
40	5785.0043
50	5785.0041
Max.Deviation(MHz)	0.0051
Max.Deviation(ppm)	0.88

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※※※※※