RADIO TEST REPORT

Report No.:STS2008302W04

Issued for

DMAI (Guangzhou) Co, Ltd.

16/F, No.37, Jinlong Road, Nansha District, Guangzhou City, China.

Product Name:	AILA Sit & Play™
Brand Name:	Animal Island Learning Adventure™
Model Name:	X4C-US20
Series Model:	X4C-US21, X4C-US22
FCC ID:	2AU9S-X4C-US20
Test Standard:	FCC Part 15.407

Shenzhen STS Test Services Co., Ltd.
A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ,
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TEST RESULT CERTIFICATION

Applicant's Name	:	DMAI (Guangzhou) Co, Ltd.
Address	:	16/F, No.37, Jinlong Road, Nansha District, Guangzhou City, China.
Manufacturer's Name	:	DMAI (Guangzhou) Co, Ltd.
Address	:	16/F, No.37, Jinlong Road, Nansha District, Guangzhou City, China.

Product Description

Product Name	:	AILA Sit & Play™
Brand Name	:	Animal Island Learning Adventure™
Model Name	:	X4C-US20
Series Model	:	X4C-US21, X4C-US22
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 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	:	25 Aug. 2020
Date (s) of performance of tests	:	25 Aug. 2020 ~ 19 Sept. 2020
Date of Issue	:	19 Sept. 2020
Test Result	:	**Pass**

Testing Engineer : Chris Chen

(Chris Chen)

Technical Manager : Sean She

(Sean she)

Authorized Signatory : Vita Li

(Vita Li)

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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	19 Sept. 2020	STS2008302W04	ALL	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:
§ 15.407,KDB 789033 D02 General U-NII Test Procedures New Rules v02r01

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

NOTE:

(1) 'N/A' denotes test is not applicable in this Test Report.

(2) All tests are according to ANSI C63.10-2013.

1.1 TEST FACTORY

SHENZHEN 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 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	±0.68dB
2	Unwanted Emissions, conducted	±2.988dB
3	All emissions, radiated 30-1GHz	±5.6dB
4	All emissions, radiated 1G-6GHz	±5.5dB
5	All emissions, radiated>6G	±5.8dB
6	Conducted Emission (9KHz-150KHz)	±3.37dB
7	Conducted Emission (150KHz-30MHz)	±3.83dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

<table>
<tr><td>Product Name</td><td>AILA Sit & Play™</td></tr>
<tr><td>Trade Name</td><td>Animal Island Learning Adventure™</td></tr>
<tr><td>Model Name</td><td>X4C-US20</td></tr>
<tr><td>Series Model</td><td>X4C-US21, X4C-US22</td></tr>
<tr><td>Model Difference</td><td>Only different in model name.</td></tr>
<tr><td>Product Description</td><td>The EUT is a AILA Sit & Play™
<table>
<tr><td rowspan="3">Operation Frequency:</td><td>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</td></tr>
<tr><td>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</td></tr>
<tr><td>IEEE 802.11a/ n(HT20)/ac(VHT20):
5.745GHz-5.825GHz
IEEE 802.11a/ n(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>Please refer to the Note 3.</td></tr>
<tr><td>Max.Output Power(Conducted):</td><td>13.42 dBm</td></tr>
</table>
More details of EUT technical specification, please refer to the User Manual.</td></tr>
<tr><td>Test Channel</td><td>Please refer to the Note 2.</td></tr>
<tr><td>Adapter</td><td>Input: AC100-240V 50/60Hz 0.3A
Output: DC5V 2.0A</td></tr>
<tr><td>Battery</td><td>Rated Voltage: 3.6V
Charge Limit: 4.2V
Capacity: 6000mAh</td></tr>
<tr><td>Hardware version number</td><td>X4C-RK3288-D3(216)-V0.1</td></tr>
<tr><td>Software version number</td><td>Rk3288-userdebug 8.1.0 oc 205802 test-keys</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the Note 1.</td></tr>
</table>

Note

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

2.

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
5.260GHz-5.320GHz			
Channel	Frequency		
52	5260		
54	5270		
56	5280		
58	5290		
60	5300		
62	5310		
64	5320		

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	149	5745
116	5580	157	5785
140	5700	165	5825

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	151	5755
110	5550	159	5795
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	155	5775
122	5610		

3. KDB 662911 D01 Multiple Transmitter Output v02r01
2) Directional Gain Calculations for In-Band Measurements
a) Basic methodology with NANT transmit antennas, each with the same directional gain GA NT dBi, being driven by NANT transmitter outputs of equal power. Directional gain is to be co mputed as follows:
(i) If any transmit signals are correlated with each other,
Directional gain = GANT + 10 log(NANT) dBi
(ii) If all transmit signals are completely uncorrelated with each other,
Directional gain = GANT

Antenna number: 2
Antenna A gain : 0.8dBi
Antenna B gain : 0.8dBi
GANT + 10 log(NANT) dBi
Directional gain= 0.8+10log2=3.81dBi

Ant	Brand	Model Name	Ant Type	Connector	Gain (dBi)	NOTE
A	Animal Island Learning Adventure ™	X4C-US20	PIFA Antenna	N/A	Ant A gain: 0.8dBi Ant B gain: 0.8dBi MIMO: 3.81dBi	WLAN Ant

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 CH52&CH60&CH64	6 Mbps
Mode 3	TX IEEE 802.11a HT20 CH149&CH157&CH165	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 CH149&CH157&CH165	MCS 0
Mode 9	TX IEEE 802.11ac HT20 CH149&CH157&CH165	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 CH151&CH159	MCS 0
Mode 15	TX IEEE 802.11ac HT40 CH151&CH159	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 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.

(4) The battery is fully-charged during the radited and RF conducted test.

AC Conducted Emission

Test Case	
AC Conducted Emission	Mode 19: Keeping TX + WLAN Link

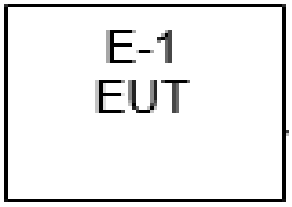
2.3 TEST SOFTWARE AND POWER LEVEL

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

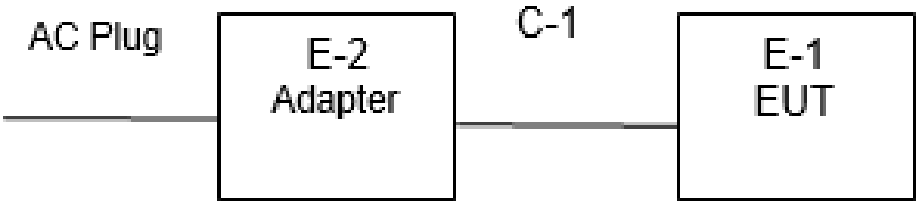
RF Function	Type	Mode Or Modulation type	Ant Gain(dBi)	Power Class	Software For Testing
WIFI(5G)	5G WIFI Band1 (5150MHz-5250MHz)	802.11a	Ant A: 0.8dBi Ant B: 0.8dBi MIMO: 3.81dBi	70	adb command
		802.11n(HT20)		70	
		802.11n(HT40)		55	
		802.11ac(VHT20)		70	
		802.11ac(VHT40)		55	
		802.11ac(VHT80)		45	
RF Function	Type	Mode Or Modulation type	Ant Gain(dBi)	Power Class	Software For Testing
WIFI(5G)	5G WIFI Band2 (5250MHz-5350MHz)	802.11a	Ant A: 0.8dBi Ant B: 0.8dBi MIMO: 3.81dBi	70	adb command
		802.11n(HT20)		70	
		802.11n(HT40)		55	
		802.11ac(VHT20)		70	
		802.11ac(VHT40)		55	
		802.11ac(VHT80)		45	
RF Function	Type	Mode Or Modulation type	Ant Gain(dBi)	Power Class	Software For Testing
WIFI(5G)	5G WIFI Band4 (5725MHz-5875MHz)	802.11a	Ant A: 0.8dBi Ant B: 0.8dBi MIMO: 3.81dBi	50	adb command
		802.11n(HT20)		50	
		802.11n(HT40)		50	
		802.11ac(VHT20)		50	
		802.11ac(VHT40)		50	
		802.11ac(VHT80)		45	

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious EmissionTest



Conducted Emission Test



2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

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

Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
E-2	Adapter	N/A	GEO101UA-050200	N/A	N/A
C-1	DC Cable	N/A	N/A	150cm	N/A

Support units

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

Note:

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

2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2019.10.09	2020.10.08
Signal Analyzer	Agilent	N9020A	MY51110105	2020.03.05	2021.03.04
Active loop Antenna	ZHINAN	ZN30900C	16035	2018.03.11	2021.03.10
Bilog Antenna	TESEQ	CBL6111D	34678	2017.11.02	2020.11.01
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	2019.10.09	2020.10.08
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2019.10.12	2020.10.11
Pre-Amplifier (18G-40GHz)	SKET	LNPA-1840-50	SK2018101801	2019.10.12	2020.10.11
Temperature & Humidity	HH660	Mieo	N/A	2019.10.17	2020.10.16
turn table	EM	SC100_1	60531	N/A	N/A
Antenna mast	EM	SC100	N/A	N/A	N/A
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 RE)			

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2019.10.09	2020.10.08
LISN	R&S	ENV216	101242	2019.10.09	2020.10.08
LISN	EMCO	3810/2NM	23625	2019.10.09	2020.10.08
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	2019.10.09	2020.10.08
Signal Analyzer	Agilent	N9020A	MY49100060	2019.10.09	2020.10.08
Temperature & Humidity	HH660	Mieo	N/A	2019.10.12	2020.10.11
Test SW	FARAD	LZ-RF /LzRf-3A3			

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

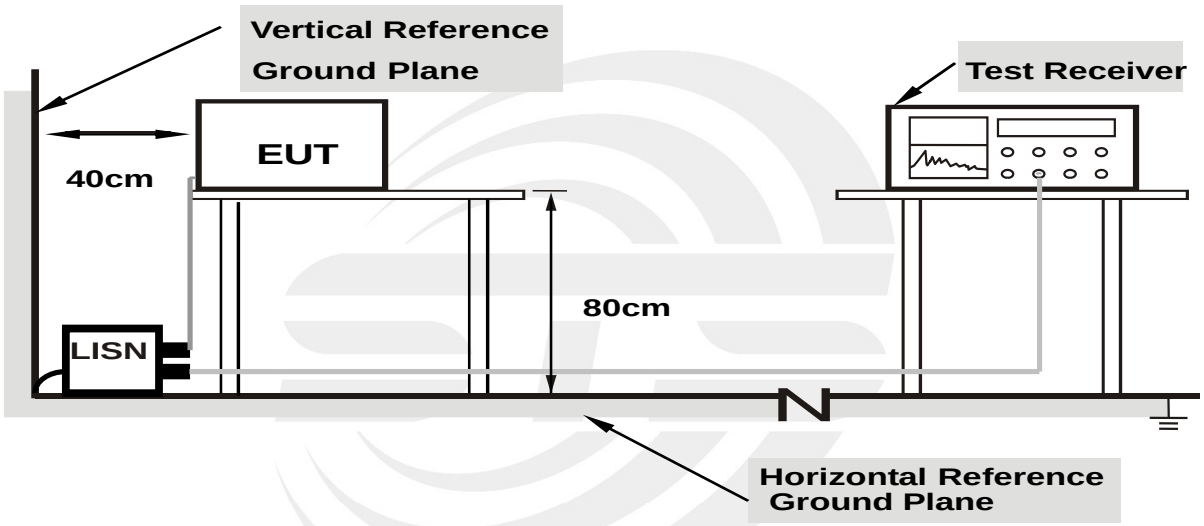
3.1.2 TEST PROCEDURE

a. The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 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 is at least 80 cm from the 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

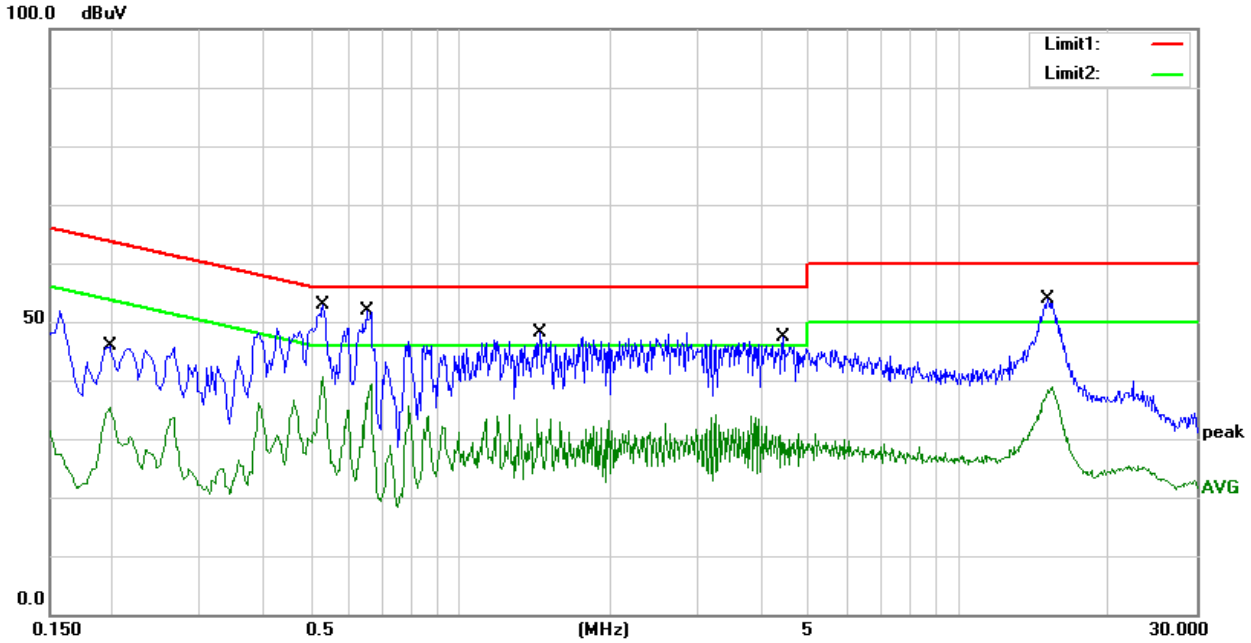
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6 TEST RESULTS

Temperature:	26.9(C)	Relative Humidity:	69%RH
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode :	Mode 19		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1980	25.49	20.32	45.81	63.69	-17.88	QP
2	0.1980	14.96	20.32	35.28	53.69	-18.41	AVG
3	0.5300	32.48	20.40	52.88	56.00	-3.12	QP
4	0.5300	20.25	20.40	40.65	46.00	-5.35	AVG
5	0.6500	31.62	20.31	51.93	56.00	-4.07	QP
6	0.6500	19.11	20.31	39.42	46.00	-6.58	AVG
7	1.4460	28.06	20.15	48.21	56.00	-7.79	QP
8	1.4460	13.24	20.15	33.39	46.00	-12.61	AVG
9	4.4340	27.20	20.05	47.25	56.00	-8.75	QP
10	4.4340	9.72	20.05	29.77	46.00	-16.23	AVG
11	15.0780	33.76	20.08	53.84	60.00	-6.16	QP
12	15.0780	18.84	20.08	38.92	50.00	-11.08	AVG

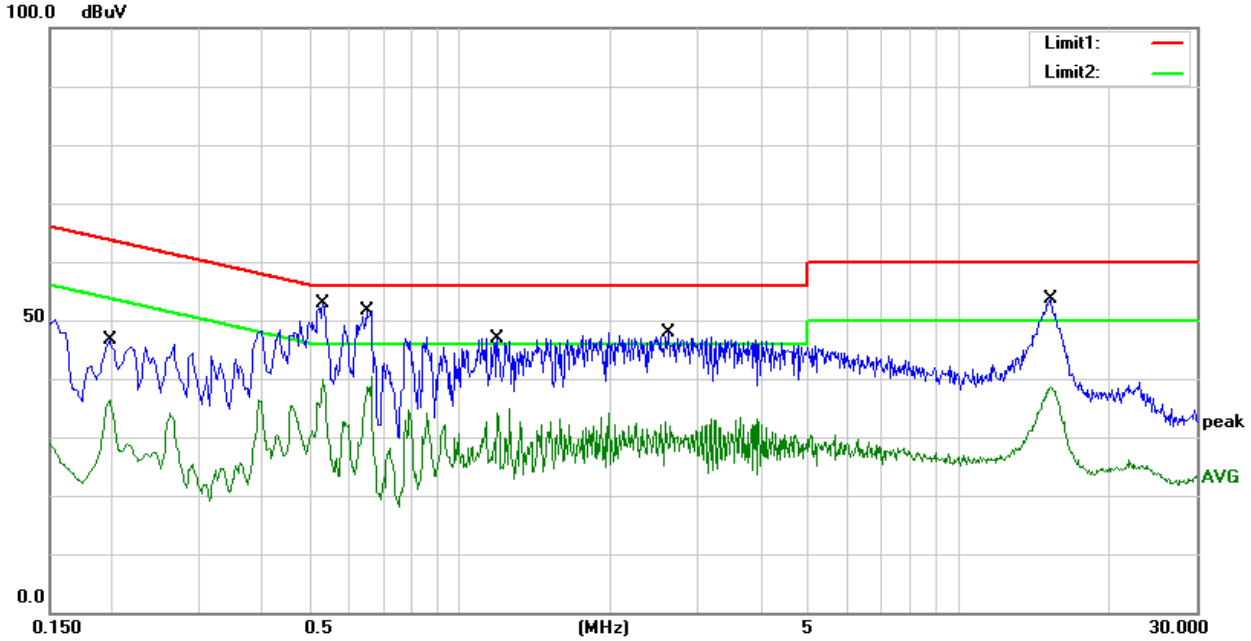
Remark:
1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor=LISN factor+Cable loss+Limiter (10dB)



Temperature:	26.9(C)	Relative Humidity:	69%RH
Test Voltage	AC 120V/60Hz	Phase:	N
Test Mode	Mode 19		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1980	26.26	20.32	46.58	63.69	-17.11	QP
2	0.1980	16.16	20.32	36.48	53.69	-17.21	AVG
3	0.5300	32.43	20.40	52.83	56.00	-3.17	QP
4	0.5300	19.58	20.40	39.98	46.00	-6.02	AVG
5	0.6500	31.35	20.31	51.66	56.00	-4.34	QP
6	0.6500	20.17	20.31	40.48	46.00	-5.52	AVG
7	1.1900	26.73	20.15	46.88	56.00	-9.12	QP
8	1.1900	13.94	20.15	34.09	46.00	-11.91	AVG
9	2.6220	27.88	20.11	47.99	56.00	-8.01	QP
10	2.6220	11.72	20.11	31.83	46.00	-14.17	AVG
11	15.2340	33.58	20.10	53.68	60.00	-6.32	QP
12	15.2340	18.53	20.10	38.63	50.00	-11.37	AVG

Remark:
1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor=LISN factor+Cable loss+Limiter (10dB)



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 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).

LIMITS OF RESTRICTED FREQUENCY BANDS

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			

Note: In case the emission radiated emission above 1000MHz fall within the restricted band the restricted frequency bands, the peak limit is 74 dBuV/m.

LIMITS OF EMISSIONS OUTSIDE OF THE FREQUENCY BANDS

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.

Note: dBuV/m(at 3M) = EIRP(dBm) + 95.3.

Peak Limit = -27dBm/MHz + 95.3 = 68.3 dBuV/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 at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree 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 polarization 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 QuasiPeak detector mode will be re-measured.
e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

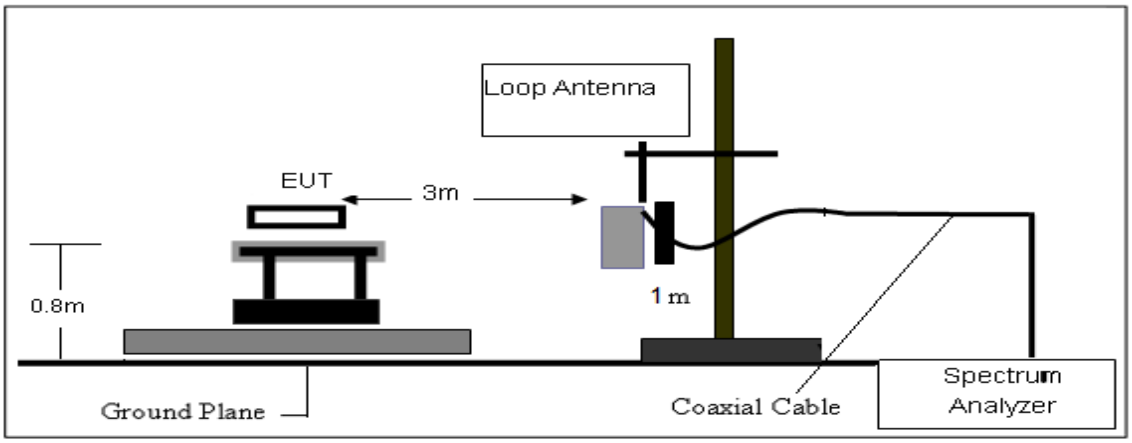
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.2 DEVIATION FROM TEST STANDARD

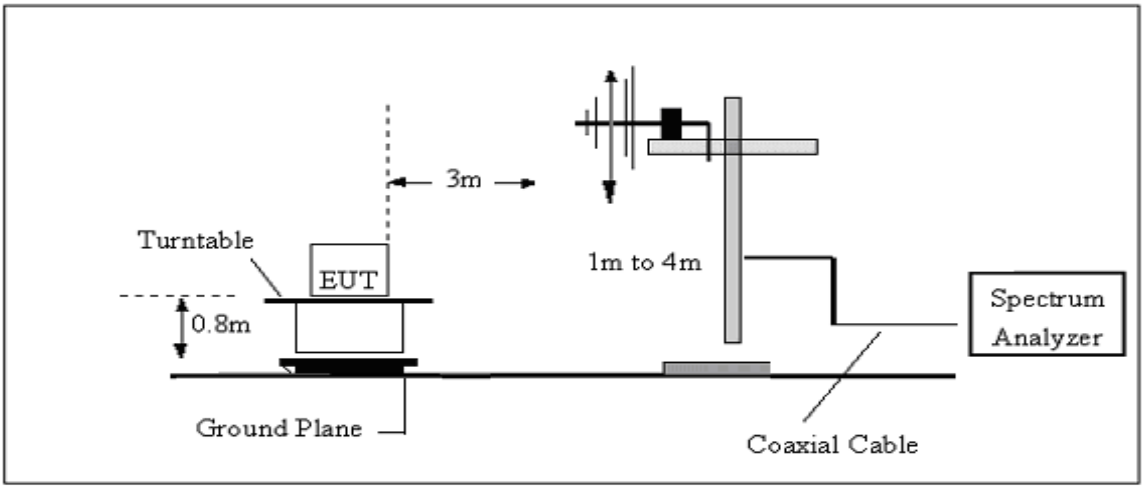
No deviation

3.2.3 TEST SETUP

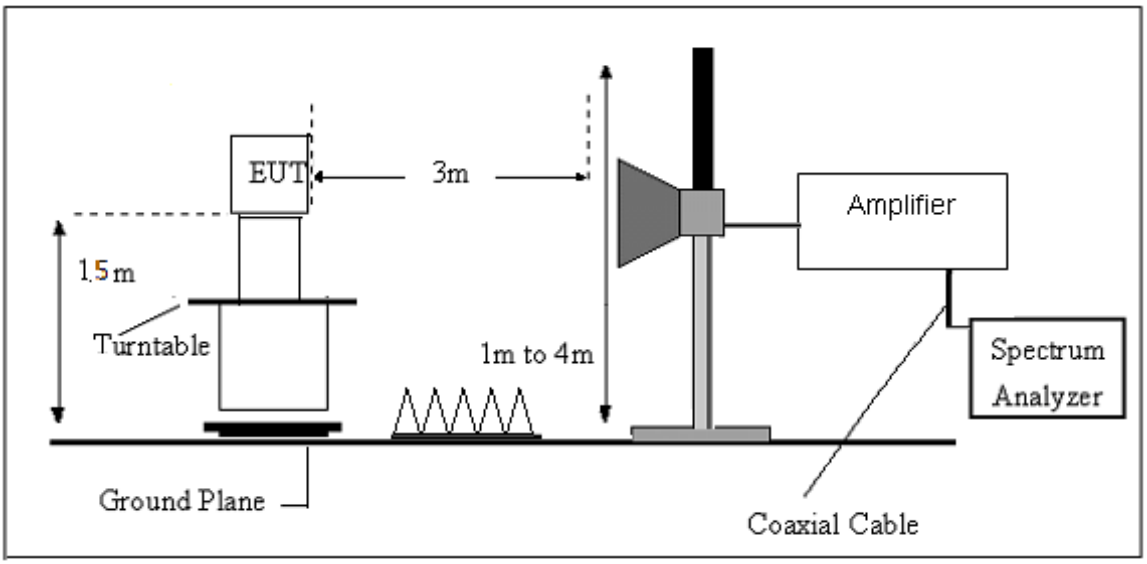
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.4 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.

3.2.5 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	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 3.6V	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.

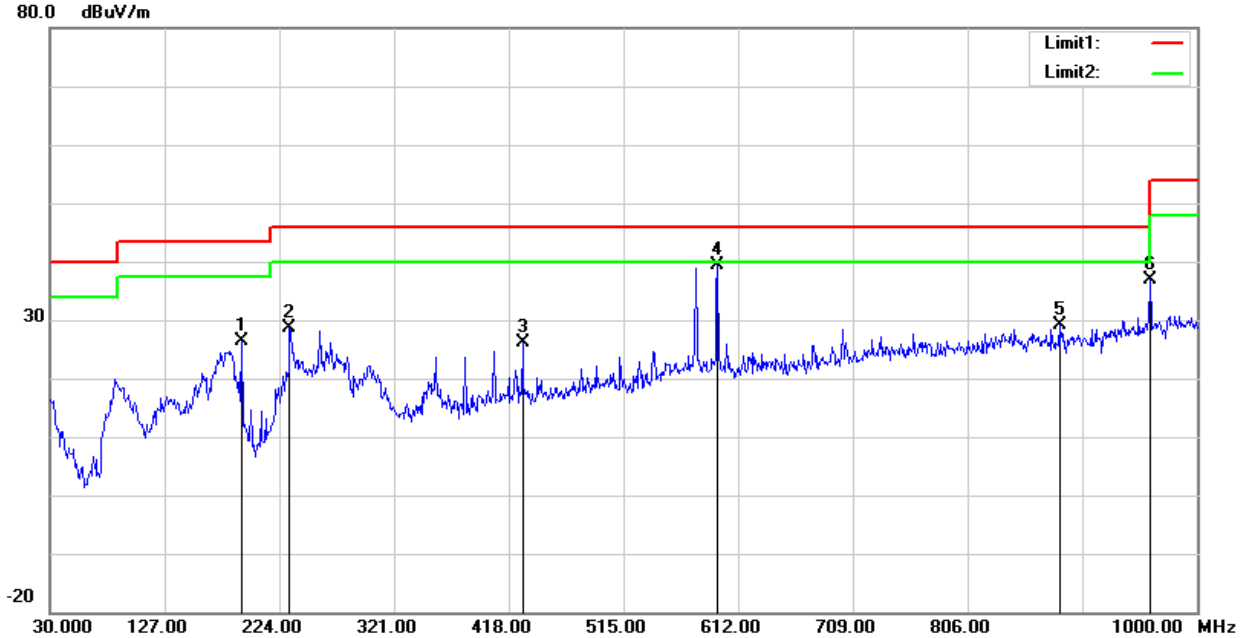
3.2.7 TEST RESULTS (Between 30MHz – 1GHz)

Temperature	23.5(C)	Relative Humidtity:	63%RH
Test Voltage	DC 3.6V	Polarization:	Horizontal
Test Mode	Mode 1~18 (Mode 6 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	191.9900	47.36	-21.04	26.32	43.50	-17.18	QP
2	232.7300	47.64	-18.89	28.75	46.00	-17.25	QP
3	429.6400	36.39	-10.14	26.25	46.00	-19.75	QP
4	594.5400	45.24	-5.84	39.40	46.00	-6.60	QP
5	883.6000	29.76	-0.67	29.09	46.00	-16.91	QP
6	960.2300	35.11	1.76	36.87	54.00	-17.13	QP

Remark:

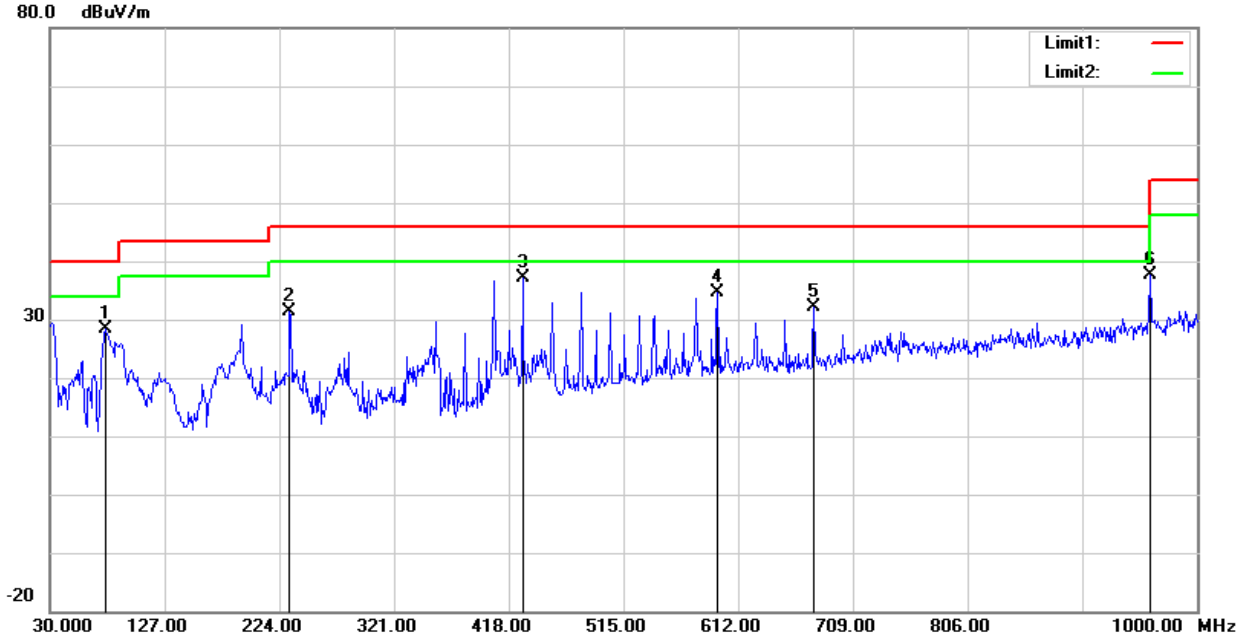
1. Margin = Result (Result =Reading + Factor)–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain



Temperature	23.5(C)	Relative Humidtity:	63%RH
Test Voltage	DC 3.6V	Polarization:	Vertical
Test Mode	Mode 1~18(Mode 6 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	76.5600	52.02	-23.61	28.41	40.00	-11.59	QP
2	232.7300	50.21	-18.89	31.32	46.00	-14.68	QP
3	429.6400	47.15	-10.14	37.01	46.00	-8.99	QP
4	594.5400	40.49	-5.84	34.65	46.00	-11.35	QP
5	676.0200	36.65	-4.40	32.25	46.00	-13.75	QP
6	960.2300	35.95	1.76	37.71	54.00	-16.29	QP

Remark:
1. Margin = Result (Result =Reading + Factor)–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain



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 (802.11n20/ 5180 MHz)										
3248.53	44.42	44.70	6.70	28.20	-9.80	34.62	68.20	-33.58	Pk	Vertical
3248.53	41.49	44.70	6.70	28.20	-9.80	31.69	54.00	-22.31	AV	Vertical
3251.87	44.90	44.70	6.70	28.20	-9.80	35.10	68.20	-33.10	Pk	Horizontal
3251.87	41.93	44.70	6.70	28.20	-9.80	32.13	54.00	-21.87	AV	Horizontal
3983.51	39.17	44.20	7.90	29.70	-6.60	32.57	68.20	-35.63	Pk	Vertical
3983.51	36.86	44.20	7.90	29.70	-6.60	30.26	54.00	-23.74	AV	Vertical
3991.34	38.84	44.20	7.90	29.70	-6.60	32.24	68.20	-35.96	Pk	Horizontal
3991.34	37.02	44.20	7.90	29.70	-6.60	30.42	54.00	-23.58	AV	Horizontal
7231.77	37.84	43.50	11.40	35.50	3.40	41.24	68.20	-26.96	Pk	Vertical
7231.77	34.58	43.50	11.40	35.50	3.40	37.98	54.00	-16.02	AV	Vertical
7230.07	37.32	43.50	11.40	35.50	3.40	40.72	68.20	-27.48	Pk	Horizontal
7230.07	34.31	43.50	11.40	35.50	3.40	37.71	54.00	-16.29	AV	Horizontal
10360.32	39.74	44.50	13.80	38.80	8.10	47.84	68.20	-20.36	Pk	Vertical
10360.32	36.01	44.50	13.80	38.80	8.10	44.11	54.00	-9.89	AV	Vertical
10360.09	39.25	44.50	13.80	38.80	8.10	47.35	68.20	-20.85	Pk	Horizontal
10360.09	37.10	44.50	13.80	38.80	8.10	45.20	54.00	-8.80	AV	Horizontal
11030.34	33.45	43.60	14.30	39.50	10.20	43.65	68.20	-24.55	Pk	Vertical
11030.34	30.37	43.60	14.30	39.50	10.20	40.57	54.00	-13.43	AV	Vertical
11035.86	33.83	43.60	14.30	39.50	10.20	44.03	68.20	-24.17	Pk	Horizontal
11035.86	29.91	43.60	14.30	39.50	10.20	40.11	54.00	-13.89	AV	Horizontal
13281.10	32.97	42.60	15.90	38.90	12.20	45.17	68.20	-23.03	Pk	Vertical
13281.10	29.87	42.60	15.90	38.90	12.20	42.07	54.00	-11.93	AV	Vertical
13281.18	31.62	42.60	15.90	38.90	12.20	43.82	68.20	-24.38	Pk	Horizontal
13281.18	29.68	42.60	15.90	38.90	12.20	41.88	54.00	-12.12	AV	Horizontal
Mid Channel (802.11n20/ 5200 MHz)										
3264.81	44.44	44.70	6.70	28.20	-9.80	34.64	68.20	-33.56	Pk	Vertical
3264.81	41.23	44.70	6.70	28.20	-9.80	31.43	54.00	-22.57	AV	Vertical
3248.94	44.86	44.70	6.70	28.20	-9.80	35.06	68.20	-33.14	Pk	Horizontal
3248.94	41.66	44.70	6.70	28.20	-9.80	31.86	54.00	-22.14	AV	Horizontal
3983.73	39.71	44.20	7.90	29.70	-6.60	33.11	68.20	-35.09	Pk	Vertical
3983.73	35.82	44.20	7.90	29.70	-6.60	29.22	54.00	-24.78	AV	Vertical
3987.64	39.60	44.20	7.90	29.70	-6.60	33.00	68.20	-35.20	Pk	Horizontal
3987.64	36.98	44.20	7.90	29.70	-6.60	30.38	54.00	-23.62	AV	Horizontal
7230.03	37.46	43.50	11.40	35.50	3.40	40.86	68.20	-27.34	Pk	Vertical
7230.03	33.51	43.50	11.40	35.50	3.40	36.91	54.00	-17.09	AV	Vertical
7224.48	36.61	43.50	11.40	35.50	3.40	40.01	68.20	-28.19	Pk	Horizontal
7224.48	34.25	43.50	11.40	35.50	3.40	37.65	54.00	-16.35	AV	Horizontal
10399.95	39.23	44.50	13.80	38.80	8.10	47.33	68.20	-20.87	Pk	Vertical
10399.95	36.83	44.50	13.80	38.80	8.10	44.93	54.00	-9.07	AV	Vertical
10400.08	38.76	44.50	13.80	38.80	8.10	46.86	68.20	-21.34	Pk	Horizontal
10400.08	36.21	44.50	13.80	38.80	8.10	44.31	54.00	-9.69	AV	Horizontal
11033.00	33.58	43.60	14.30	39.50	10.20	43.78	68.20	-24.42	Pk	Vertical
11033.00	31.00	43.60	14.30	39.50	10.20	41.20	54.00	-12.80	AV	Vertical
11022.49	33.70	43.60	14.30	39.50	10.20	43.90	68.20	-24.30	Pk	Horizontal
11022.49	30.59	43.60	14.30	39.50	10.20	40.79	54.00	-13.21	AV	Horizontal
13282.85	31.99	42.60	15.90	38.90	12.20	44.19	68.20	-24.01	Pk	Vertical
13282.85	28.69	42.60	15.90	38.90	12.20	40.89	54.00	-13.11	AV	Vertical
13281.41	33.02	42.60	15.90	38.90	12.20	45.22	68.20	-22.98	Pk	Horizontal
13281.41	29.94	42.60	15.90	38.90	12.20	42.14	54.00	-11.86	AV	Horizontal

High Channel (802.11n20/ 5240 MHz)										
3258.98	44.56	44.70	6.70	28.20	-9.80	34.76	68.20	-33.44	Pk	Vertical
3258.98	40.82	44.70	6.70	28.20	-9.80	31.02	54.00	-22.98	AV	Vertical
3259.48	44.48	44.70	6.70	28.20	-9.80	34.68	68.20	-33.52	Pk	Horizontal
3259.48	42.14	44.70	6.70	28.20	-9.80	32.34	54.00	-21.66	AV	Horizontal
3986.53	39.63	44.20	7.90	29.70	-6.60	33.03	68.20	-35.17	Pk	Vertical
3986.53	36.25	44.20	7.90	29.70	-6.60	29.65	54.00	-24.35	AV	Vertical
3992.71	39.32	44.20	7.90	29.70	-6.60	32.72	68.20	-35.48	Pk	Horizontal
3992.71	35.84	44.20	7.90	29.70	-6.60	29.24	54.00	-24.76	AV	Horizontal
7224.82	37.57	43.50	11.40	35.50	3.40	40.97	68.20	-27.23	Pk	Vertical
7224.82	33.98	43.50	11.40	35.50	3.40	37.38	54.00	-16.62	AV	Vertical
7218.10	36.99	43.50	11.40	35.50	3.40	40.39	68.20	-27.81	Pk	Horizontal
7218.10	34.91	43.50	11.40	35.50	3.40	38.31	54.00	-15.69	AV	Horizontal
10479.99	39.48	44.50	13.80	38.80	8.10	47.58	68.20	-20.62	Pk	Vertical
10479.99	36.18	44.50	13.80	38.80	8.10	44.28	54.00	-9.72	AV	Vertical
10480.32	40.16	44.50	13.80	38.80	8.10	48.26	68.20	-19.94	Pk	Horizontal
10480.32	36.76	44.50	13.80	38.80	8.10	44.86	54.00	-9.14	AV	Horizontal
11020.02	33.92	43.60	14.30	39.50	10.20	44.12	68.20	-24.08	Pk	Vertical
11020.02	30.22	43.60	14.30	39.50	10.20	40.42	54.00	-13.58	AV	Vertical
11022.02	33.90	43.60	14.30	39.50	10.20	44.10	68.20	-24.10	Pk	Horizontal
11022.02	30.37	43.60	14.30	39.50	10.20	40.57	54.00	-13.43	AV	Horizontal
13281.69	31.56	42.60	15.90	38.90	12.20	43.76	68.20	-24.44	Pk	Vertical
13281.69	29.79	42.60	15.90	38.90	12.20	41.99	54.00	-12.01	AV	Vertical
13288.19	31.79	42.60	15.90	38.90	12.20	43.99	68.20	-24.21	Pk	Horizontal
13288.19	29.75	42.60	15.90	38.90	12.20	41.95	54.00	-12.05	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.

Band II 5250-5350MHz

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 (802.11n20/ 5260 MHz)										
3253.55	44.99	44.70	6.70	28.20	-9.80	35.19	68.20	-33.01	Pk	Vertical
3253.55	40.75	44.70	6.70	28.20	-9.80	30.95	54.00	-23.05	AV	Vertical
3260.67	43.85	44.70	6.70	28.20	-9.80	34.05	68.20	-34.15	Pk	Horizontal
3260.67	40.83	44.70	6.70	28.20	-9.80	31.03	54.00	-22.97	AV	Horizontal
3983.48	38.87	44.20	7.90	29.70	-6.60	32.27	68.20	-35.93	Pk	Vertical
3983.48	36.72	44.20	7.90	29.70	-6.60	30.12	54.00	-23.88	AV	Vertical
3980.64	39.30	44.20	7.90	29.70	-6.60	32.70	68.20	-35.50	Pk	Horizontal
3980.64	36.44	44.20	7.90	29.70	-6.60	29.84	54.00	-24.16	AV	Horizontal
7218.17	37.36	43.50	11.40	35.50	3.40	40.76	68.20	-27.44	Pk	Vertical
7218.17	33.52	43.50	11.40	35.50	3.40	36.92	54.00	-17.08	AV	Vertical
7234.89	37.78	43.50	11.40	35.50	3.40	41.18	68.20	-27.02	Pk	Horizontal
7234.89	34.62	43.50	11.40	35.50	3.40	38.02	54.00	-15.98	AV	Horizontal
10520.20	39.00	44.50	13.80	38.80	8.10	47.10	68.20	-21.10	Pk	Vertical
10520.20	35.92	44.50	13.80	38.80	8.10	44.02	54.00	-9.98	AV	Vertical
10519.97	39.78	44.50	13.80	38.80	8.10	47.88	68.20	-20.32	Pk	Horizontal
10519.97	37.10	44.50	13.80	38.80	8.10	45.20	54.00	-8.80	AV	Horizontal
11035.95	33.87	43.60	14.30	39.50	10.20	44.07	68.20	-24.13	Pk	Vertical
11035.95	30.22	43.60	14.30	39.50	10.20	40.42	54.00	-13.58	AV	Vertical
11018.36	32.86	43.60	14.30	39.50	10.20	43.06	68.20	-25.14	Pk	Horizontal
11018.36	31.09	43.60	14.30	39.50	10.20	41.29	54.00	-12.71	AV	Horizontal
13285.81	32.60	42.60	15.90	38.90	12.20	44.80	68.20	-23.40	Pk	Vertical
13285.81	28.81	42.60	15.90	38.90	12.20	41.01	54.00	-12.99	AV	Vertical
13295.58	32.90	42.60	15.90	38.90	12.20	45.10	68.20	-23.10	Pk	Horizontal
13295.58	29.32	42.60	15.90	38.90	12.20	41.52	54.00	-12.48	AV	Horizontal
Mid Channel (802.11n20/ 5300 MHz)										
3260.43	43.96	44.70	6.70	28.20	-9.80	34.16	68.20	-34.04	Pk	Vertical
3260.43	40.76	44.70	6.70	28.20	-9.80	30.96	54.00	-23.04	AV	Vertical
3246.81	44.60	44.70	6.70	28.20	-9.80	34.80	68.20	-33.40	Pk	Horizontal
3246.81	41.29	44.70	6.70	28.20	-9.80	31.49	54.00	-22.51	AV	Horizontal
3994.93	39.80	44.20	7.90	29.70	-6.60	33.20	68.20	-35.00	Pk	Vertical
3994.93	36.22	44.20	7.90	29.70	-6.60	29.62	54.00	-24.38	AV	Vertical
3986.20	39.88	44.20	7.90	29.70	-6.60	33.28	68.20	-34.92	Pk	Horizontal
3986.20	35.83	44.20	7.90	29.70	-6.60	29.23	54.00	-24.77	AV	Horizontal
7223.35	37.42	43.50	11.40	35.50	3.40	40.82	68.20	-27.38	Pk	Vertical
7223.35	33.57	43.50	11.40	35.50	3.40	36.97	54.00	-17.03	AV	Vertical
7222.01	36.51	43.50	11.40	35.50	3.40	39.91	68.20	-28.29	Pk	Horizontal
7222.01	34.82	43.50	11.40	35.50	3.40	38.22	54.00	-15.78	AV	Horizontal
10600.19	39.31	44.50	13.80	38.80	8.10	47.41	68.20	-20.79	Pk	Vertical
10600.19	36.82	44.50	13.80	38.80	8.10	44.92	54.00	-9.08	AV	Vertical
10600.20	39.74	44.50	13.80	38.80	8.10	47.84	68.20	-20.36	Pk	Horizontal
10600.20	36.16	44.50	13.80	38.80	8.10	44.26	54.00	-9.74	AV	Horizontal
11029.17	33.22	43.60	14.30	39.50	10.20	43.42	68.20	-24.78	Pk	Vertical
11029.17	29.96	43.60	14.30	39.50	10.20	40.16	54.00	-13.84	AV	Vertical
11021.12	33.89	43.60	14.30	39.50	10.20	44.09	68.20	-24.11	Pk	Horizontal
11021.12	30.04	43.60	14.30	39.50	10.20	40.24	54.00	-13.76	AV	Horizontal
13281.36	32.66	42.60	15.90	38.90	12.20	44.86	68.20	-23.34	Pk	Vertical
13281.36	29.32	42.60	15.90	38.90	12.20	41.52	54.00	-12.48	AV	Vertical
13293.84	32.81	42.60	15.90	38.90	12.20	45.01	68.20	-23.19	Pk	Horizontal
13293.84	28.76	42.60	15.90	38.90	12.20	40.96	54.00	-13.04	AV	Horizontal

High Channel (802.11n20/ 5320 MHz)										
3259.41	44.44	44.70	6.70	28.20	-9.80	34.64	68.20	-33.56	Pk	Vertical
3259.41	41.57	44.70	6.70	28.20	-9.80	31.77	54.00	-22.23	AV	Vertical
3260.82	43.97	44.70	6.70	28.20	-9.80	34.17	68.20	-34.03	Pk	Horizontal
3260.82	41.47	44.70	6.70	28.20	-9.80	31.67	54.00	-22.33	AV	Horizontal
3984.27	38.70	44.20	7.90	29.70	-6.60	32.10	68.20	-36.10	Pk	Vertical
3984.27	36.97	44.20	7.90	29.70	-6.60	30.37	54.00	-23.63	AV	Vertical
3988.88	39.39	44.20	7.90	29.70	-6.60	32.79	68.20	-35.41	Pk	Horizontal
3988.88	36.54	44.20	7.90	29.70	-6.60	29.94	54.00	-24.06	AV	Horizontal
7224.84	37.83	43.50	11.40	35.50	3.40	41.23	68.20	-26.97	Pk	Vertical
7224.84	34.39	43.50	11.40	35.50	3.40	37.79	54.00	-16.21	AV	Vertical
7226.44	37.23	43.50	11.40	35.50	3.40	40.63	68.20	-27.57	Pk	Horizontal
7226.44	33.46	43.50	11.40	35.50	3.40	36.86	54.00	-17.14	AV	Horizontal
10639.98	39.25	44.50	13.80	38.80	8.10	47.35	68.20	-20.85	Pk	Vertical
10639.98	36.93	44.50	13.80	38.80	8.10	45.03	54.00	-8.97	AV	Vertical
10640.16	39.70	44.50	13.80	38.80	8.10	47.80	68.20	-20.40	Pk	Horizontal
10640.16	36.54	44.50	13.80	38.80	8.10	44.64	54.00	-9.36	AV	Horizontal
11034.89	33.40	43.60	14.30	39.50	10.20	43.60	68.20	-24.60	Pk	Vertical
11034.89	31.15	43.60	14.30	39.50	10.20	41.35	54.00	-12.65	AV	Vertical
11019.40	33.16	43.60	14.30	39.50	10.20	43.36	68.20	-24.84	Pk	Horizontal
11019.40	30.19	43.60	14.30	39.50	10.20	40.39	54.00	-13.61	AV	Horizontal
13289.73	32.61	42.60	15.90	38.90	12.20	44.81	68.20	-23.39	Pk	Vertical
13289.73	28.94	42.60	15.90	38.90	12.20	41.14	54.00	-12.86	AV	Vertical
13288.30	32.92	42.60	15.90	38.90	12.20	45.12	68.20	-23.08	Pk	Horizontal
13288.30	29.74	42.60	15.90	38.90	12.20	41.94	54.00	-12.06	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. Pre-scan both the SISO and MIMO mode, only the worst-case results were reported.

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 (802.11n20/ 5745 MHz)										
3259.05	44.38	44.70	6.70	28.20	-9.80	34.58	68.20	-33.62	Pk	Vertical
3259.05	42.08	44.70	6.70	28.20	-9.80	32.28	54.00	-21.72	AV	Vertical
3257.59	45.18	44.70	6.70	28.20	-9.80	35.38	68.20	-32.82	Pk	Horizontal
3257.59	41.34	44.70	6.70	28.20	-9.80	31.54	54.00	-22.46	AV	Horizontal
3991.91	38.66	44.20	7.90	29.70	-6.60	32.06	68.20	-36.14	Pk	Vertical
3991.91	36.26	44.20	7.90	29.70	-6.60	29.66	54.00	-24.34	AV	Vertical
3999.29	39.91	44.20	7.90	29.70	-6.60	33.31	68.20	-34.89	Pk	Horizontal
3999.29	36.32	44.20	7.90	29.70	-6.60	29.72	54.00	-24.28	AV	Horizontal
7220.78	36.85	43.50	11.40	35.50	3.40	40.25	68.20	-27.95	Pk	Vertical
7220.78	34.48	43.50	11.40	35.50	3.40	37.88	54.00	-16.12	AV	Vertical
7220.49	37.74	43.50	11.40	35.50	3.40	41.14	68.20	-27.06	Pk	Horizontal
7220.49	34.08	43.50	11.40	35.50	3.40	37.48	54.00	-16.52	AV	Horizontal
10501.51	39.58	44.50	13.80	38.80	8.10	47.68	68.20	-20.52	Pk	Vertical
10501.51	36.20	44.50	13.80	38.80	8.10	44.30	54.00	-9.70	AV	Vertical
10520.30	39.35	44.50	13.80	38.80	8.10	47.45	68.20	-20.75	Pk	Horizontal
10520.30	35.73	44.50	13.80	38.80	8.10	43.83	54.00	-10.17	AV	Horizontal
11490.13	33.41	43.60	14.30	39.50	10.20	43.61	68.20	-24.59	Pk	Vertical
11490.13	30.23	43.60	14.30	39.50	10.20	40.43	54.00	-13.57	AV	Vertical
11489.97	32.96	43.60	14.30	39.50	10.20	43.16	68.20	-25.04	Pk	Horizontal
11489.97	30.12	43.60	14.30	39.50	10.20	40.32	54.00	-13.68	AV	Horizontal
13293.89	32.71	42.60	15.90	38.90	12.20	44.91	68.20	-23.29	Pk	Vertical
13293.89	28.77	42.60	15.90	38.90	12.20	40.97	54.00	-13.03	AV	Vertical
13290.68	32.19	42.60	15.90	38.90	12.20	44.39	68.20	-23.81	Pk	Horizontal
13290.68	29.31	42.60	15.90	38.90	12.20	41.51	54.00	-12.49	AV	Horizontal
Mid Channel (802.11n20/ 5785 MHz)										
3250.75	44.22	44.70	6.70	28.20	-9.80	34.42	68.20	-33.78	Pk	Vertical
3250.75	41.10	44.70	6.70	28.20	-9.80	31.30	54.00	-22.70	AV	Vertical
3256.42	44.80	44.70	6.70	28.20	-9.80	35.00	68.20	-33.20	Pk	Horizontal
3256.42	41.84	44.70	6.70	28.20	-9.80	32.04	54.00	-21.96	AV	Horizontal
3991.61	40.05	44.20	7.90	29.70	-6.60	33.45	68.20	-34.75	Pk	Vertical
3991.61	36.66	44.20	7.90	29.70	-6.60	30.06	54.00	-23.94	AV	Vertical
3984.52	39.61	44.20	7.90	29.70	-6.60	33.01	68.20	-35.19	Pk	Horizontal
3984.52	36.16	44.20	7.90	29.70	-6.60	29.56	54.00	-24.44	AV	Horizontal
7223.27	37.48	43.50	11.40	35.50	3.40	40.88	68.20	-27.32	Pk	Vertical
7223.27	34.66	43.50	11.40	35.50	3.40	38.06	54.00	-15.94	AV	Vertical
7226.34	36.98	43.50	11.40	35.50	3.40	40.38	68.20	-27.82	Pk	Horizontal
7226.34	33.61	43.50	11.40	35.50	3.40	37.01	54.00	-16.99	AV	Horizontal
10585.78	39.60	44.50	13.80	38.80	8.10	47.70	68.20	-20.50	Pk	Vertical
10585.78	36.63	44.50	13.80	38.80	8.10	44.73	54.00	-9.27	AV	Vertical
10584.79	40.09	44.50	13.80	38.80	8.10	48.19	68.20	-20.01	Pk	Horizontal
10584.79	36.04	44.50	13.80	38.80	8.10	44.14	54.00	-9.86	AV	Horizontal
11570.07	33.44	43.60	14.30	39.50	10.20	43.64	68.20	-24.56	Pk	Vertical
11570.07	29.88	43.60	14.30	39.50	10.20	40.08	54.00	-13.92	AV	Vertical
11570.18	33.48	43.60	14.30	39.50	10.20	43.68	68.20	-24.52	Pk	Horizontal
11570.18	30.50	43.60	14.30	39.50	10.20	40.70	54.00	-13.30	AV	Horizontal
13299.77	32.94	42.60	15.90	38.90	12.20	45.14	68.20	-23.06	Pk	Vertical
13299.77	29.59	42.60	15.90	38.90	12.20	41.79	54.00	-12.21	AV	Vertical
13285.92	32.82	42.60	15.90	38.90	12.20	45.02	68.20	-23.18	Pk	Horizontal
13285.92	29.10	42.60	15.90	38.90	12.20	41.30	54.00	-12.70	AV	Horizontal

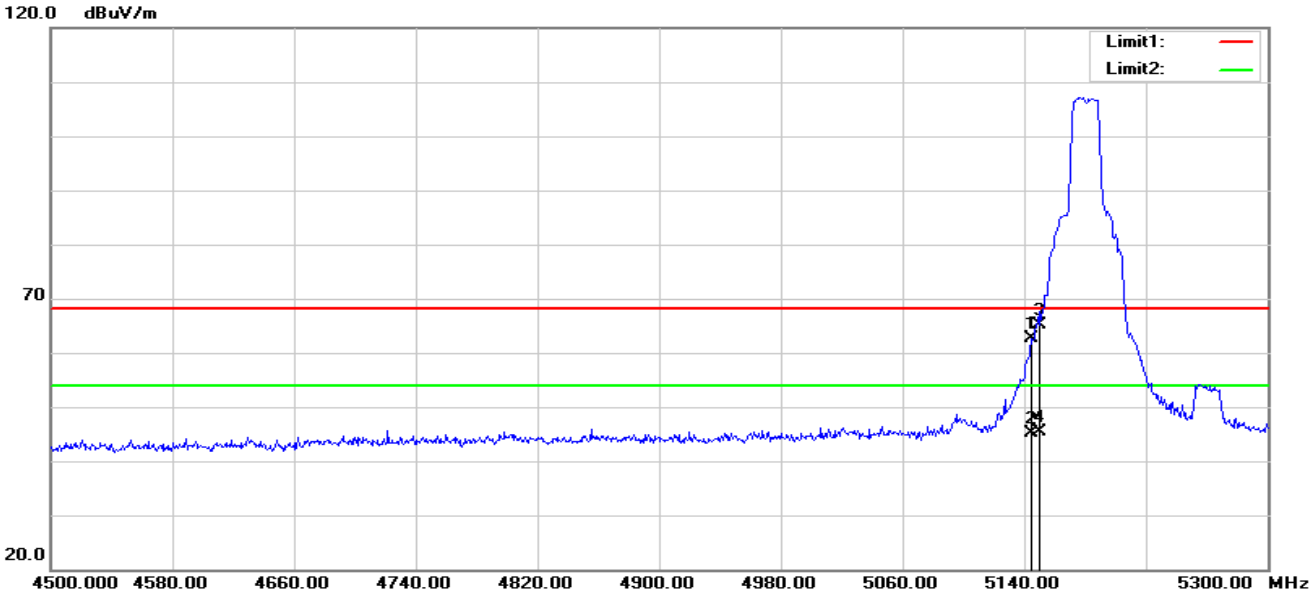
High Channel (802.11n20/ 5825 MHz)										
3250.35	44.34	44.70	6.70	28.20	-9.80	34.54	68.20	-33.66	Pk	Vertical
3250.35	41.10	44.70	6.70	28.20	-9.80	31.30	54.00	-22.70	AV	Vertical
3252.85	44.96	44.70	6.70	28.20	-9.80	35.16	68.20	-33.04	Pk	Horizontal
3252.85	42.23	44.70	6.70	28.20	-9.80	32.43	54.00	-21.57	AV	Horizontal
3983.93	39.53	44.20	7.90	29.70	-6.60	32.93	68.20	-35.27	Pk	Vertical
3983.93	36.72	44.20	7.90	29.70	-6.60	30.12	54.00	-23.88	AV	Vertical
3990.16	39.76	44.20	7.90	29.70	-6.60	33.16	68.20	-35.04	Pk	Horizontal
3990.16	36.41	44.20	7.90	29.70	-6.60	29.81	54.00	-24.19	AV	Horizontal
7231.00	37.87	43.50	11.40	35.50	3.40	41.27	68.20	-26.93	Pk	Vertical
7231.00	33.59	43.50	11.40	35.50	3.40	36.99	54.00	-17.01	AV	Vertical
7225.38	37.50	43.50	11.40	35.50	3.40	40.90	68.20	-27.30	Pk	Horizontal
7225.38	33.86	43.50	11.40	35.50	3.40	37.26	54.00	-16.74	AV	Horizontal
10636.02	39.50	44.50	13.80	38.80	8.10	47.60	68.20	-20.60	Pk	Vertical
10636.02	36.07	44.50	13.80	38.80	8.10	44.17	54.00	-9.83	AV	Vertical
10640.34	39.17	44.50	13.80	38.80	8.10	47.27	68.20	-20.93	Pk	Horizontal
10640.34	36.54	44.50	13.80	38.80	8.10	44.64	54.00	-9.36	AV	Horizontal
11650.28	33.94	43.60	14.30	39.50	10.20	44.14	68.20	-24.06	Pk	Vertical
11650.28	29.98	43.60	14.30	39.50	10.20	40.18	54.00	-13.82	AV	Vertical
11650.33	33.34	43.60	14.30	39.50	10.20	43.54	68.20	-24.66	Pk	Horizontal
11650.33	30.27	43.60	14.30	39.50	10.20	40.47	54.00	-13.53	AV	Horizontal
13297.93	32.67	42.60	15.90	38.90	12.20	44.87	68.20	-23.33	Pk	Vertical
13297.93	28.61	42.60	15.90	38.90	12.20	40.81	54.00	-13.19	AV	Vertical
13297.78	32.84	42.60	15.90	38.90	12.20	45.04	68.20	-23.16	Pk	Horizontal
13297.78	29.71	42.60	15.90	38.90	12.20	41.91	54.00	-12.09	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. Pre-scan both the SISO and MIMO mode, only the worst-case results were reported.

3.2.9 RESTRICTED FREQUENCY BANDS AND BAND EDGE

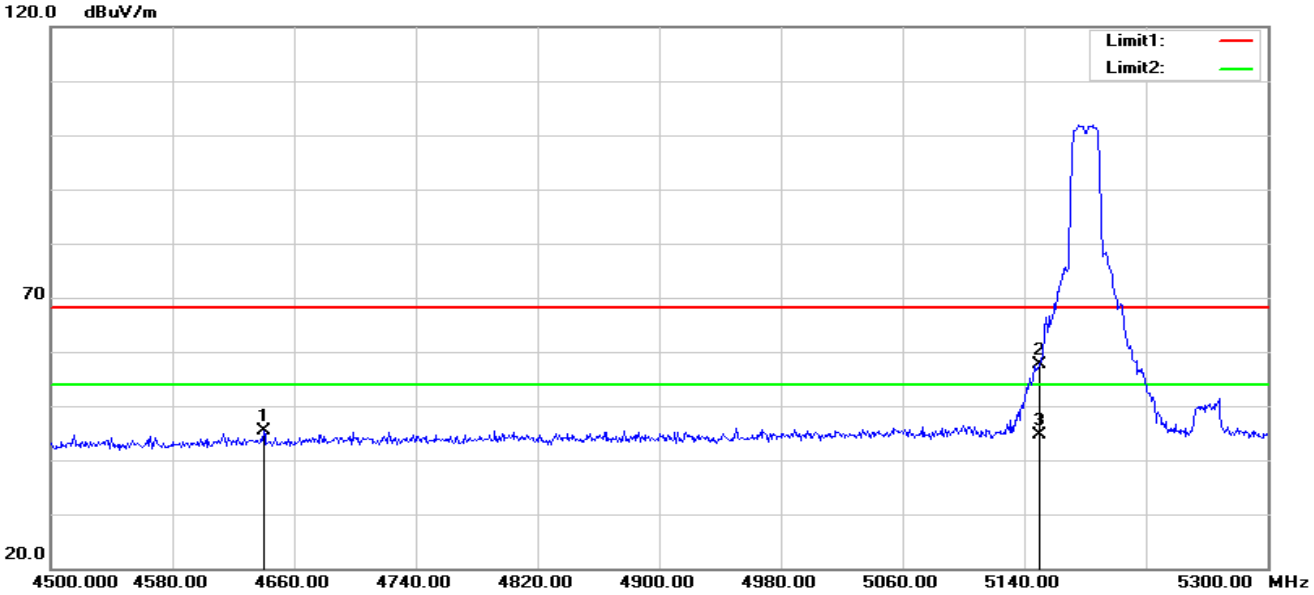
Band I 5150-5250MHz

802.11n20-L-H



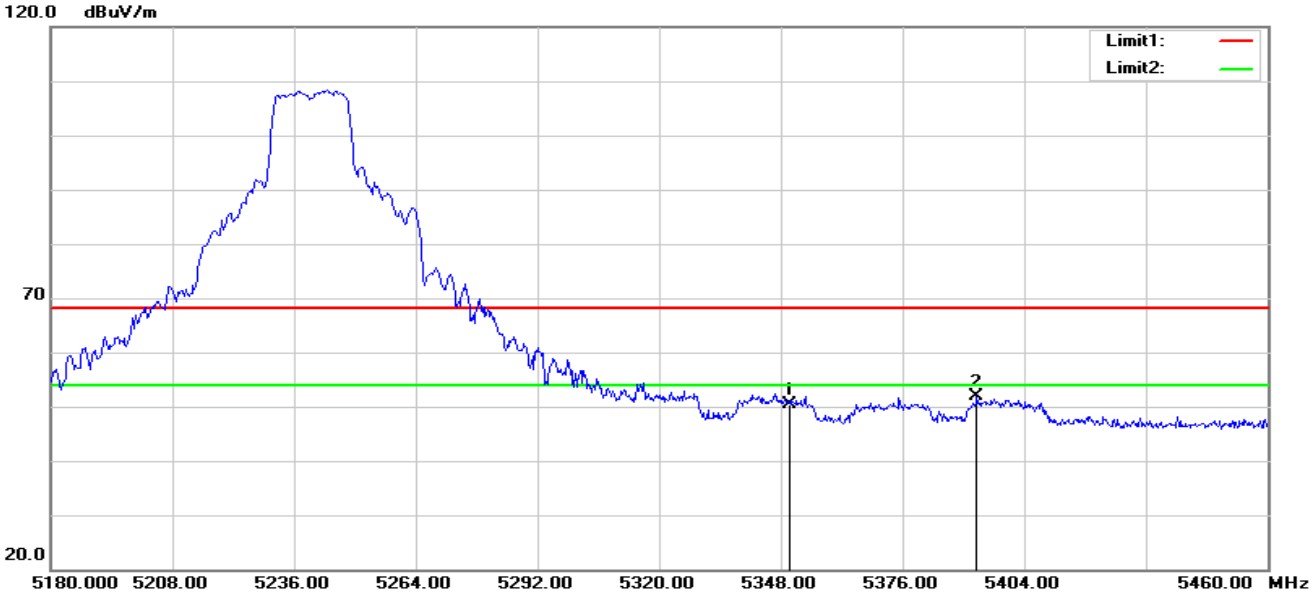
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5144.800	68.37	-5.73	62.64	68.20	-5.56	peak
2	5144.800	50.91	-5.73	45.18	54.00	-8.82	AVG
3	5150.000	70.96	-5.73	65.23	68.20	-2.97	peak
4	5150.000	51.09	-5.73	45.36	54.00	-8.64	AVG

802.11n20-L-V



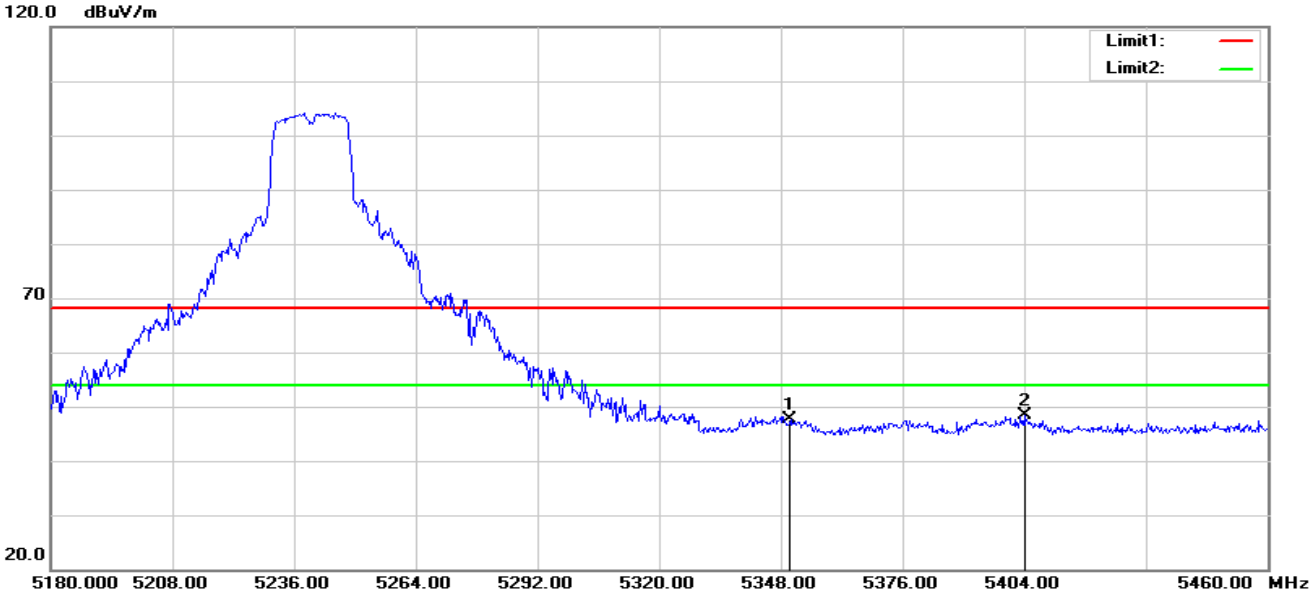
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4640.000	53.00	-7.67	45.33	68.20	-22.87	peak
2	5150.000	63.36	-5.73	57.63	68.20	-10.57	peak
3	5150.000	50.41	-5.73	44.68	54.00	-9.32	AVG

802.11n20-H-H



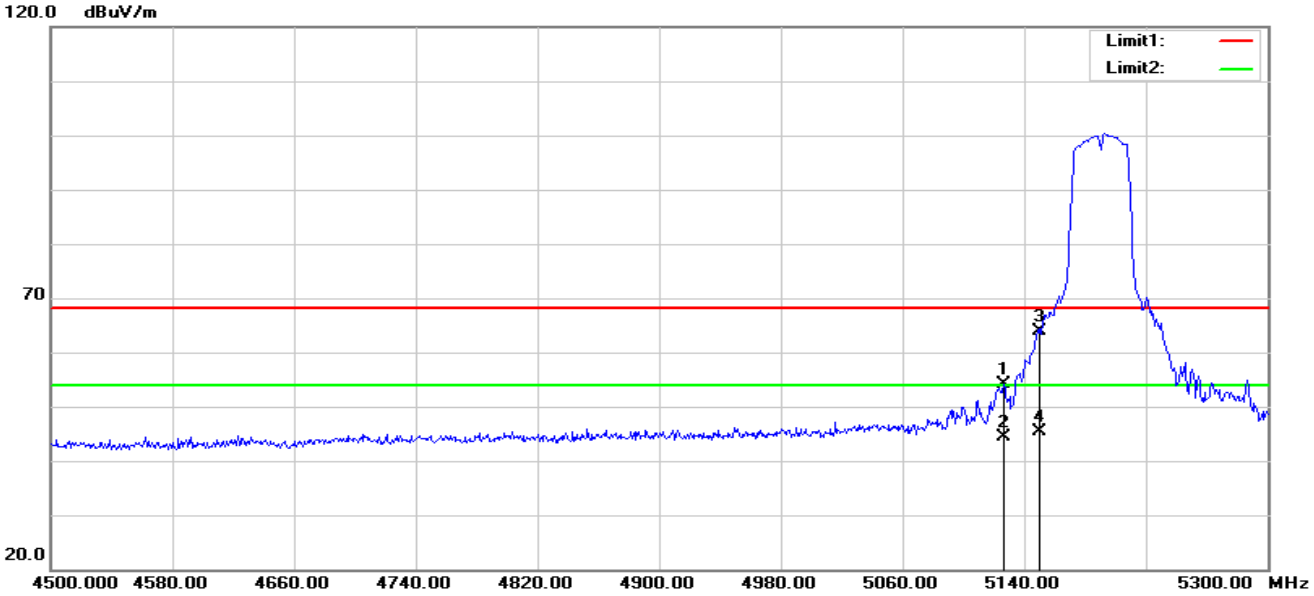
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	55.67	-5.23	50.44	68.20	-17.76	peak
2	5393.080	57.22	-5.25	51.97	68.20	-16.23	peak

802.11n20-H-V



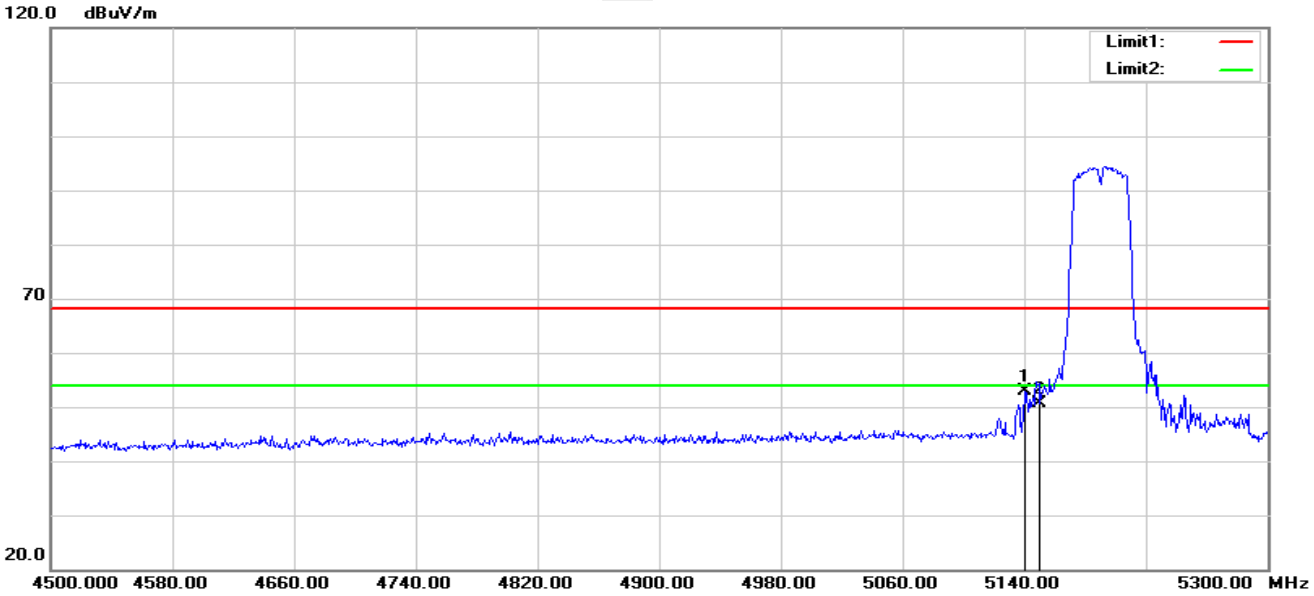
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	52.97	-5.23	47.74	68.20	-20.46	peak
2	5404.000	53.53	-5.24	48.29	68.20	-19.91	peak

802.11n40-L-H



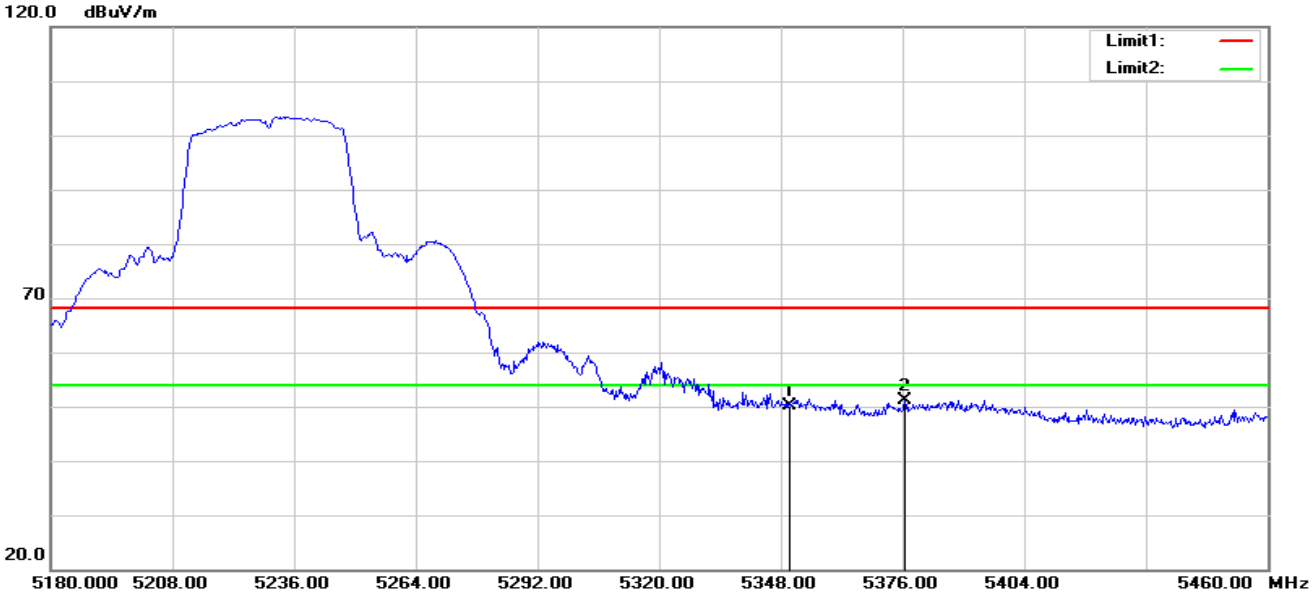
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5126.400	59.91	-5.74	54.17	68.20	-14.03	peak
2	5126.400	50.11	-5.74	44.37	54.00	-9.63	AVG
3	5150.000	69.72	-5.73	63.99	68.20	-4.21	peak
4	5150.000	50.99	-5.73	45.26	54.00	-8.74	AVG

802.11n40-L-V



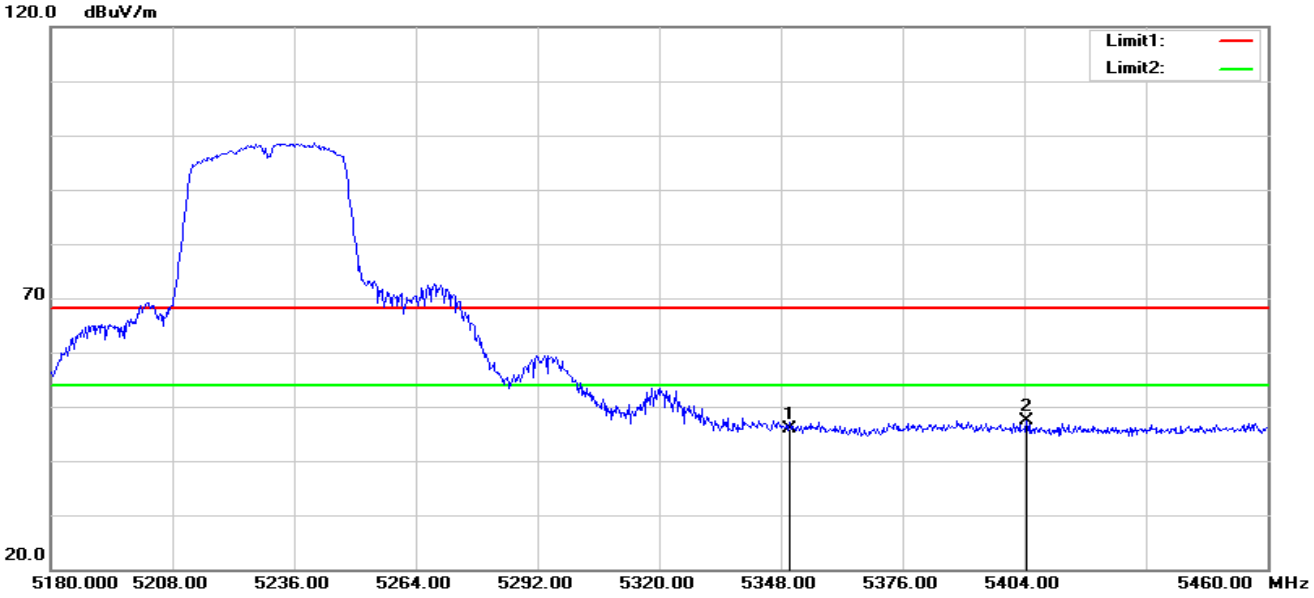
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5140.800	58.52	-5.74	52.78	68.20	-15.42	peak
2	5150.000	56.44	-5.73	50.71	68.20	-17.49	peak

802.11n40-H-H



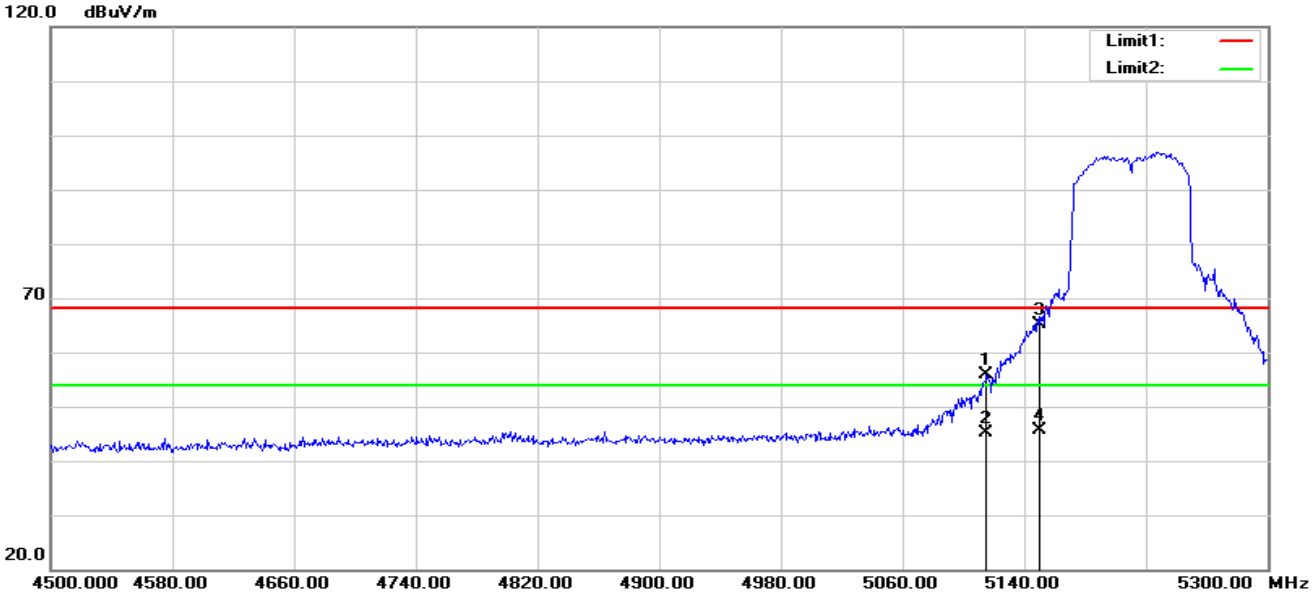
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	55.28	-5.23	50.05	68.20	-18.15	peak
2	5376.560	56.46	-5.24	51.22	68.20	-16.98	peak

802.11n40-H-V



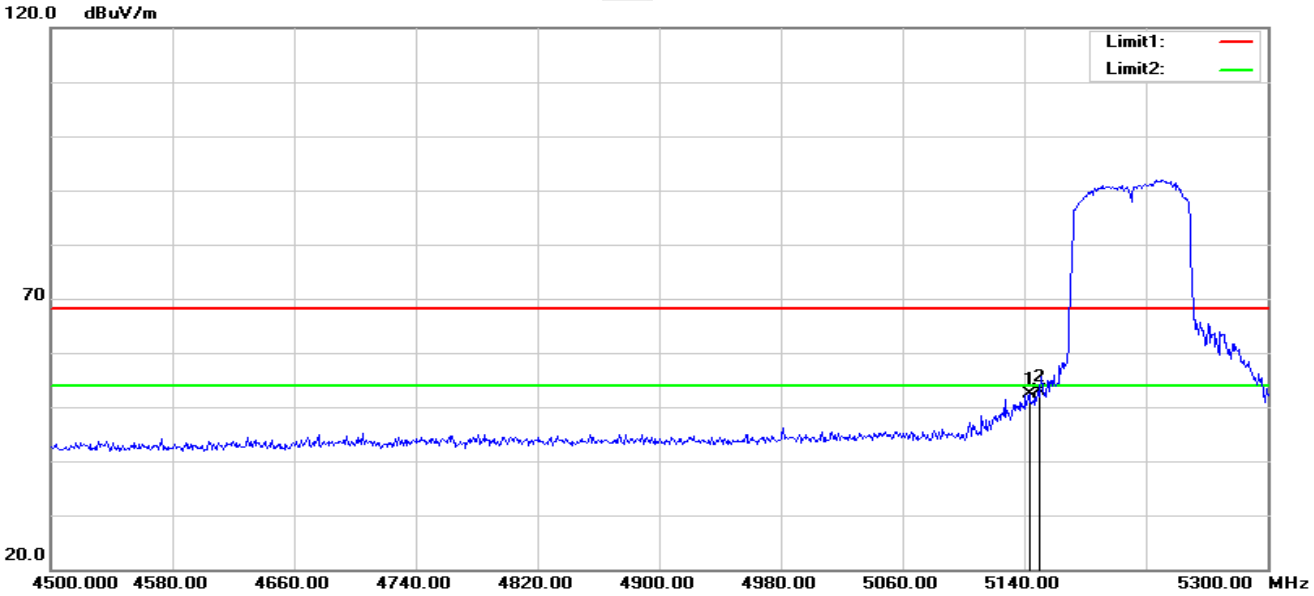
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	51.07	-5.23	45.84	68.20	-22.36	peak
2	5404.560	52.56	-5.24	47.32	68.20	-20.88	peak

802.11ac80-L-H



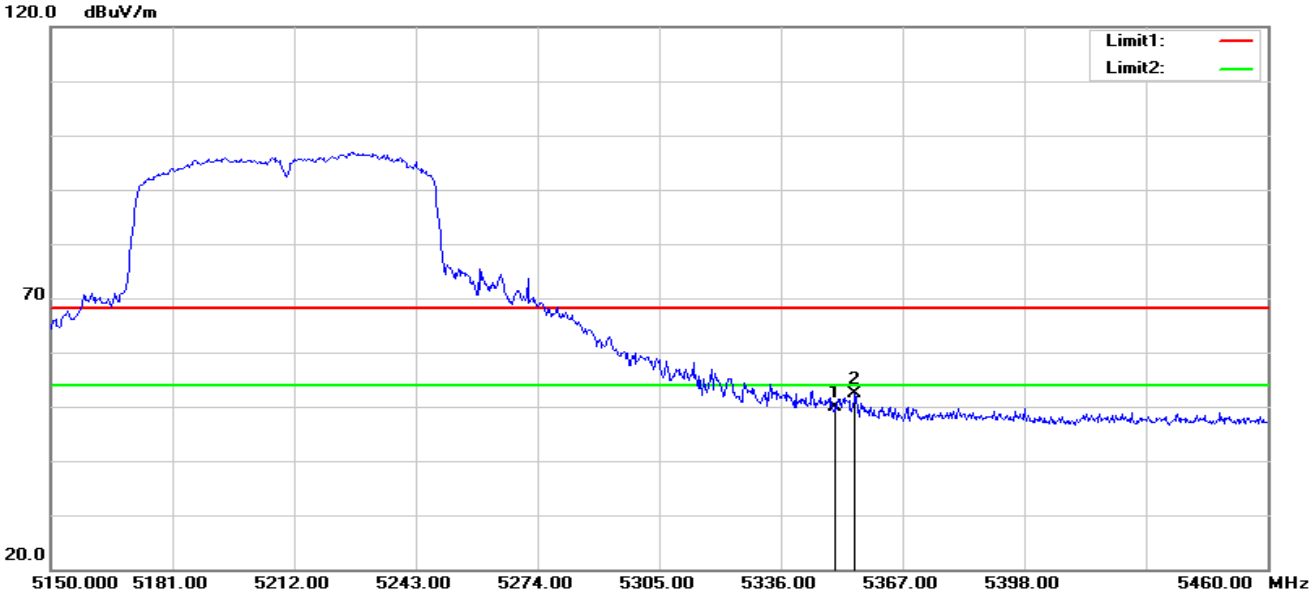
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5115.200	61.68	-5.74	55.94	68.20	-12.26	peak
2	5115.200	50.84	-5.74	45.10	54.00	-8.90	AVG
3	5150.000	70.95	-5.73	65.22	68.20	-2.98	peak
4	5150.000	51.41	-5.73	45.68	54.00	-8.32	AVG

802.11ac80-L-V



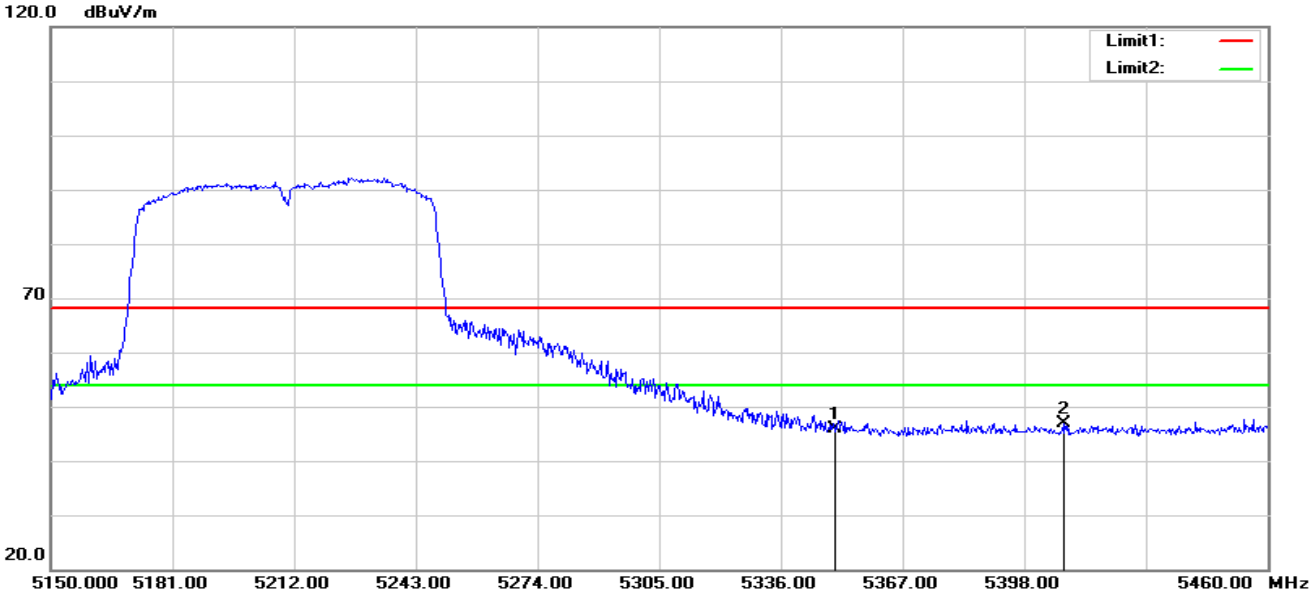
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5143.200	58.18	-5.74	52.44	68.20	-15.76	peak
2	5150.000	58.49	-5.73	52.76	68.20	-15.44	peak

802.11ac80-H-H



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	55.23	-5.23	50.00	68.20	-18.20	peak
2	5354.910	57.60	-5.24	52.36	68.20	-15.84	peak

802.11ac80-H-V

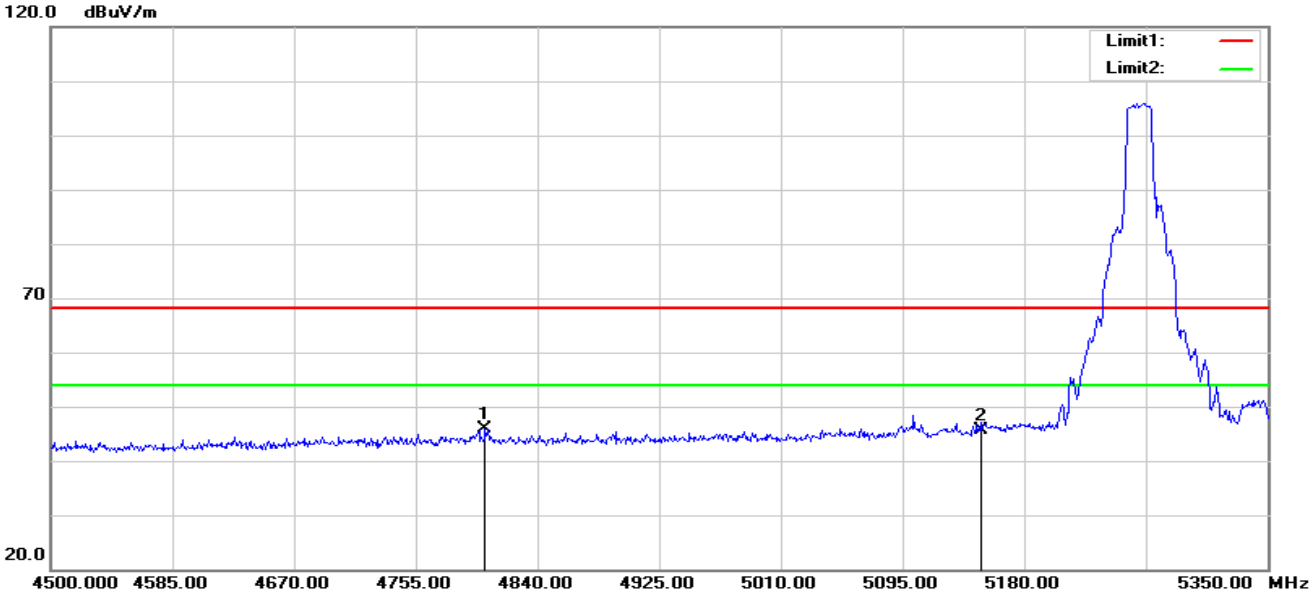


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	51.23	-5.23	46.00	68.20	-22.20	peak
2	5407.920	52.18	-5.23	46.95	68.20	-21.25	peak

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

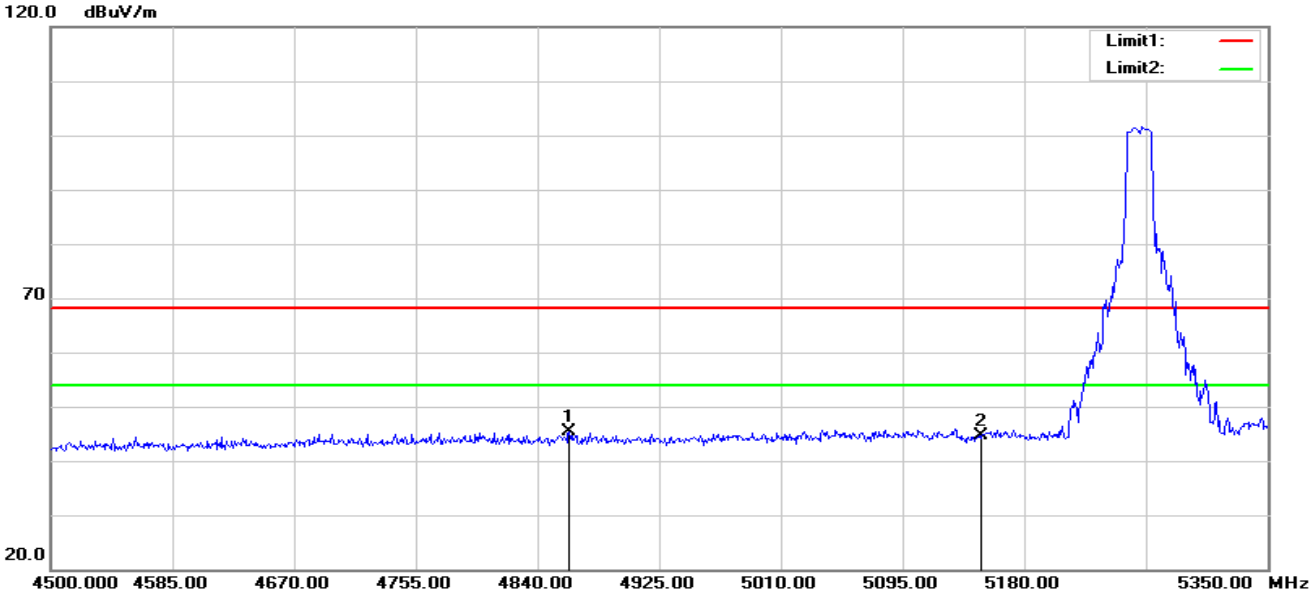
Band II 5250-5350MHz

802.11n20-L-H



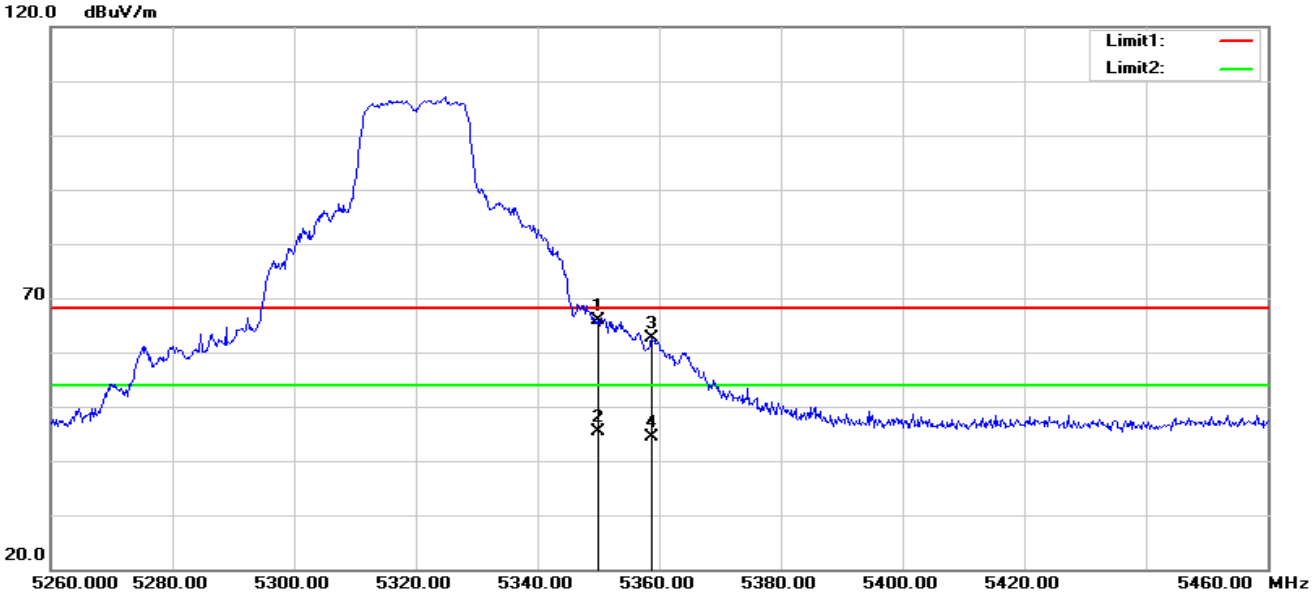
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4803.450	53.13	-7.20	45.93	68.20	-22.27	peak
2	5150.000	51.37	-5.73	45.64	68.20	-22.56	peak

802.11n20-L-V



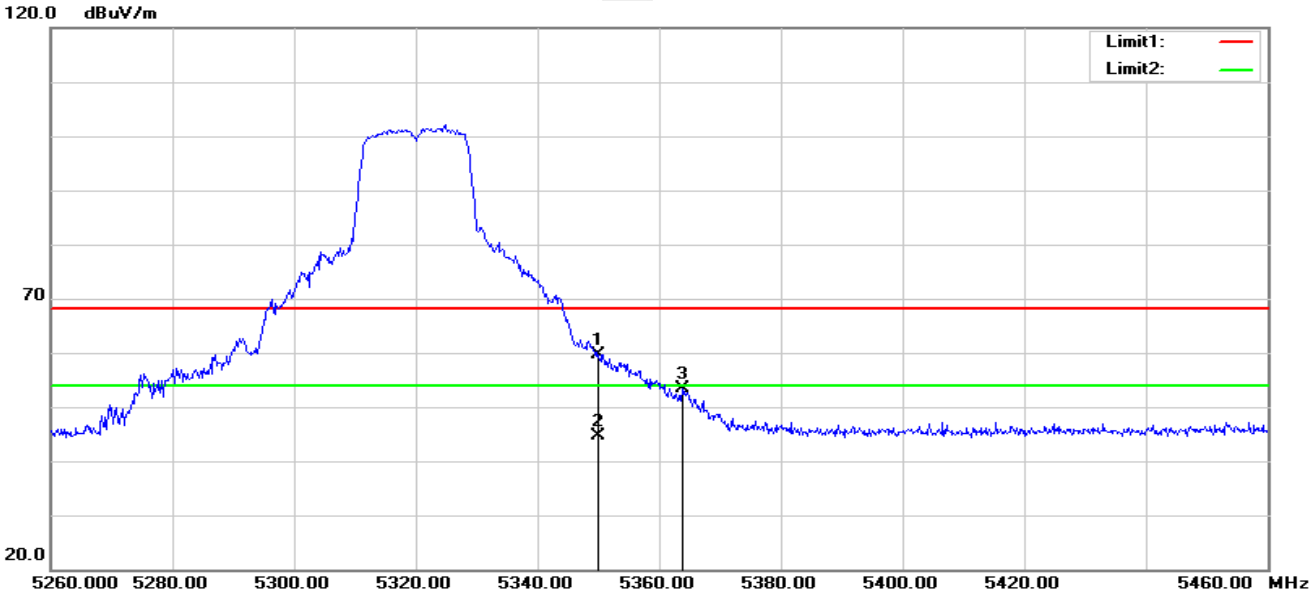
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4862.100	52.31	-6.99	45.32	68.20	-22.88	peak
2	5150.000	50.44	-5.73	44.71	68.20	-23.49	peak

802.11n20-H-H



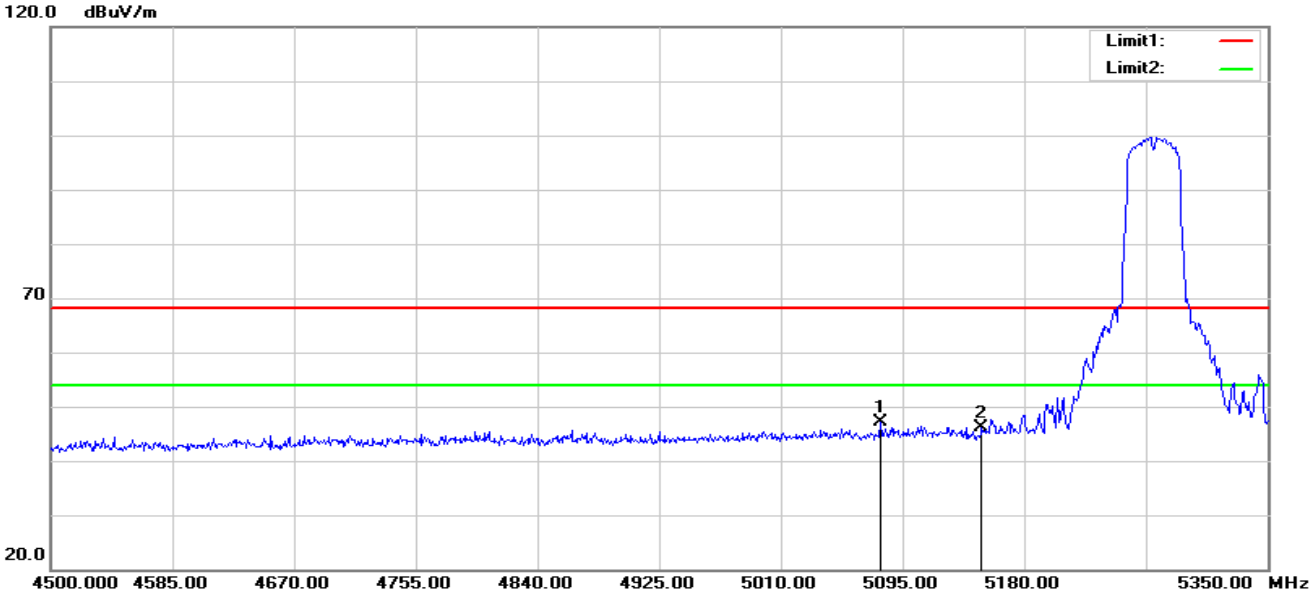
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	71.06	-5.23	65.83	68.20	-2.37	peak
2	5350.000	50.62	-5.23	45.39	54.00	-8.61	AVG
3	5358.800	67.74	-5.23	62.51	68.20	-5.69	peak
4	5358.800	49.50	-5.23	44.27	54.00	-9.73	AVG

802.11n20-H-V



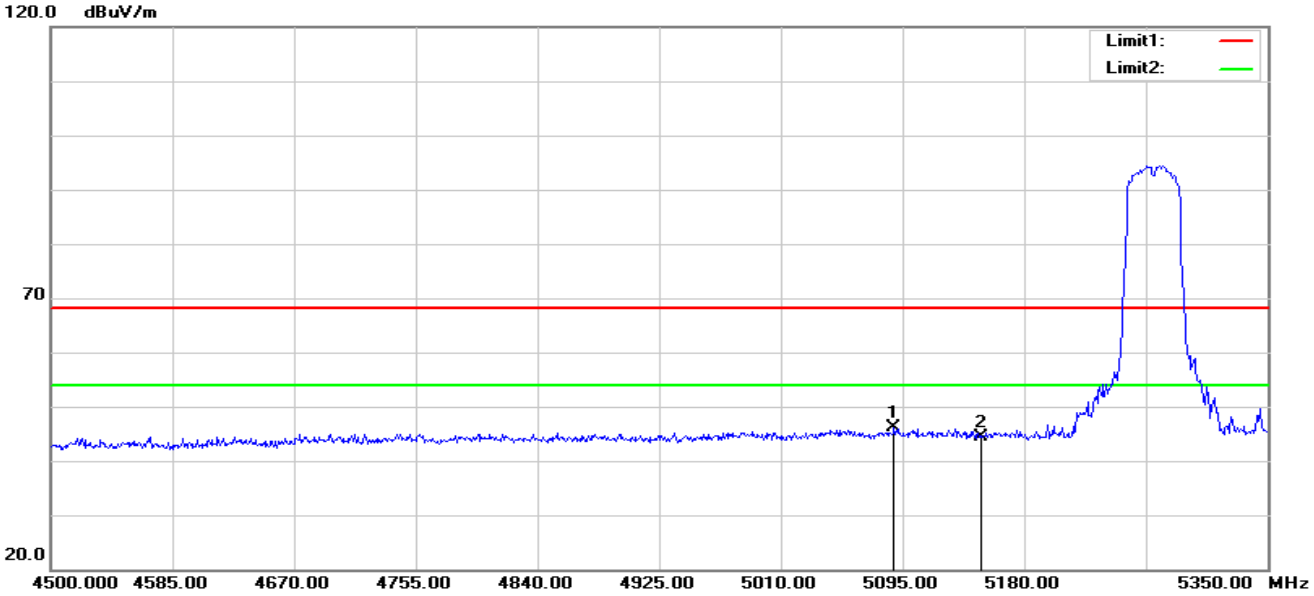
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	64.95	-5.23	59.72	68.20	-8.48	peak
2	5350.000	49.75	-5.23	44.52	54.00	-9.48	AVG
3	5363.800	58.52	-5.24	53.28	68.20	-14.92	peak

802.11n40-L-H



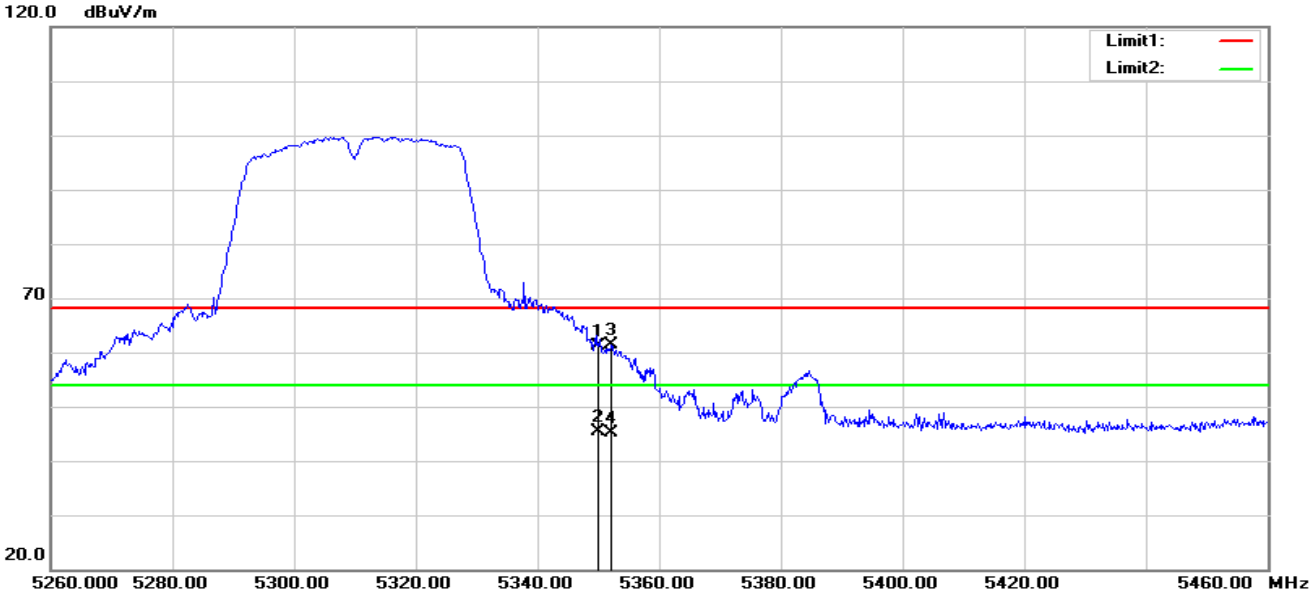
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5079.700	52.86	-5.84	47.02	68.20	-21.18	peak
2	5150.000	51.81	-5.73	46.08	68.20	-22.12	peak

802.11n40-L-V



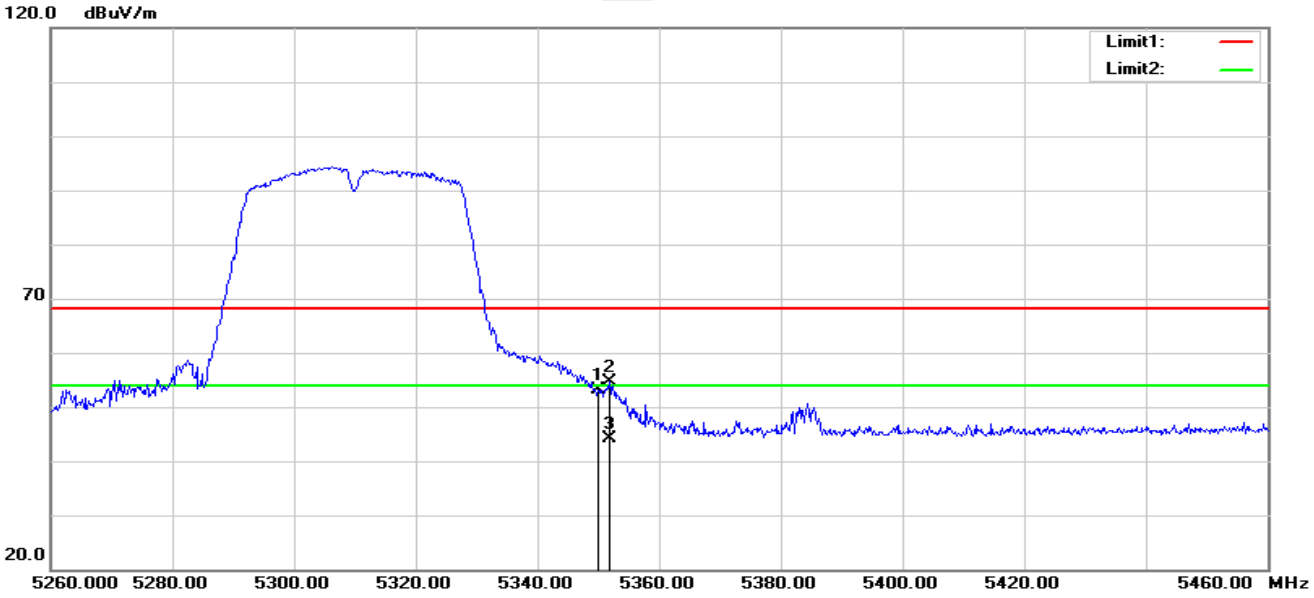
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5089.050	52.03	-5.79	46.24	68.20	-21.96	peak
2	5150.000	50.00	-5.73	44.27	68.20	-23.93	peak

802.11n40-H-H



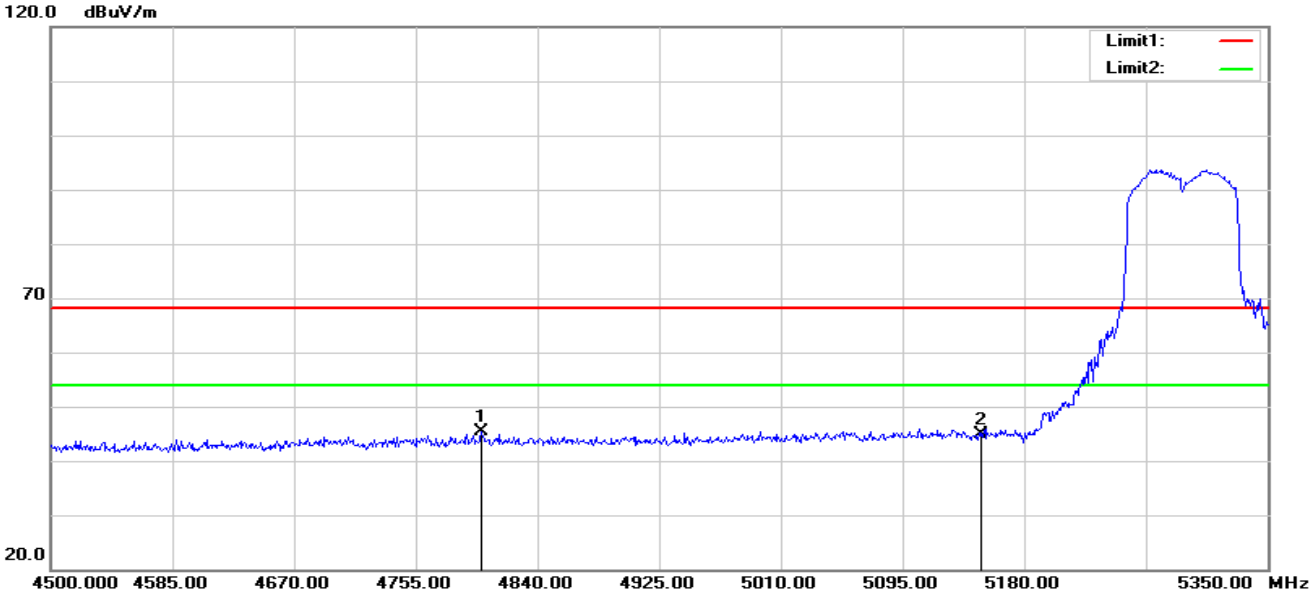
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	66.39	-5.23	61.16	68.20	-7.04	peak
2	5350.000	50.60	-5.23	45.37	54.00	-8.63	AVG
3	5352.200	66.68	-5.23	61.45	68.20	-6.75	peak
4	5352.200	50.31	-5.23	45.08	54.00	-8.92	AVG

802.11n40-H-V



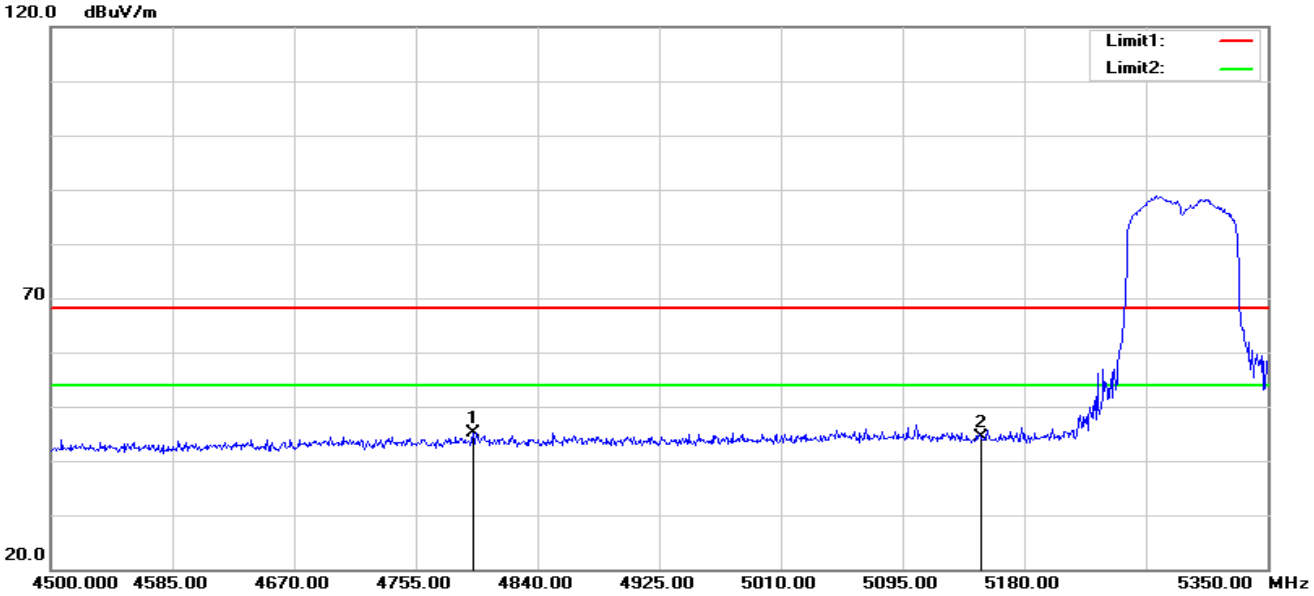
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	58.27	-5.23	53.04	68.20	-15.16	peak
2	5351.800	59.96	-5.23	54.73	68.20	-13.47	peak
3	5351.800	49.47	-5.23	44.24	54.00	-9.76	AVG

802.11ac80-L-H



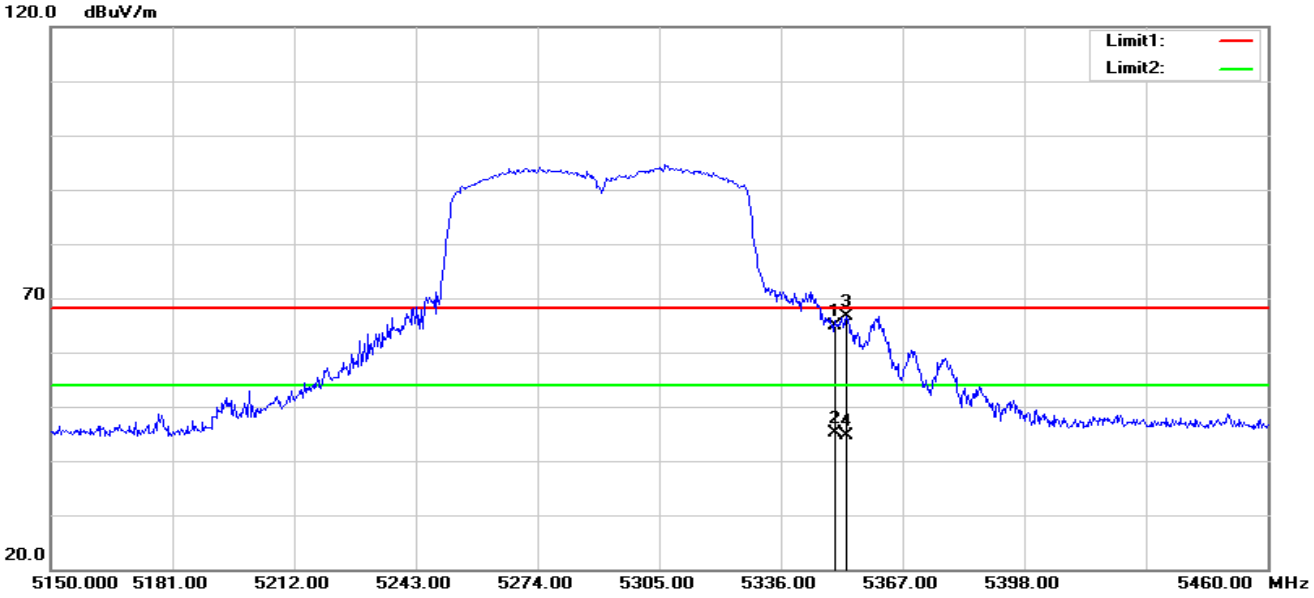
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4800.900	52.50	-7.22	45.28	68.20	-22.92	peak
2	5150.000	50.50	-5.73	44.77	68.20	-23.43	peak

802.11ac80-L-V



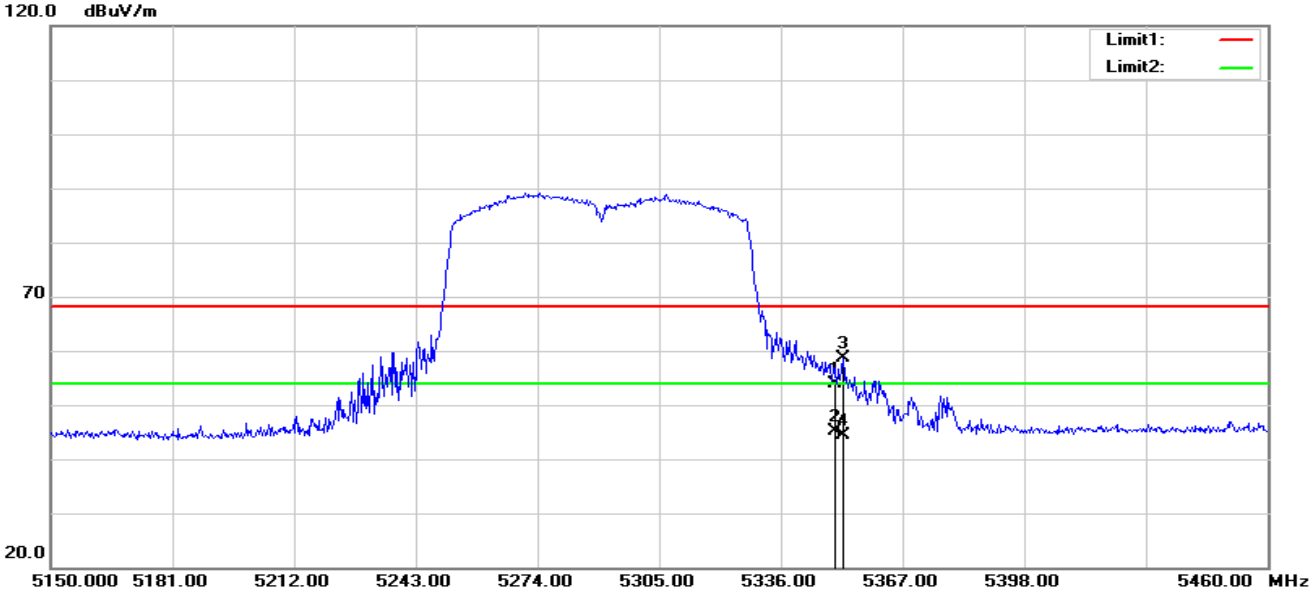
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4794.950	52.41	-7.23	45.18	68.20	-23.02	peak
2	5150.000	50.10	-5.73	44.37	68.20	-23.83	peak

802.11ac80-H-H



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	70.07	-5.23	64.84	68.20	-3.36	peak
2	5350.000	50.35	-5.23	45.12	54.00	-8.88	AVG
3	5352.740	71.83	-5.23	66.60	68.20	-1.60	peak
4	5352.740	49.94	-5.23	44.71	54.00	-9.29	AVG

802.11ac80-H-V

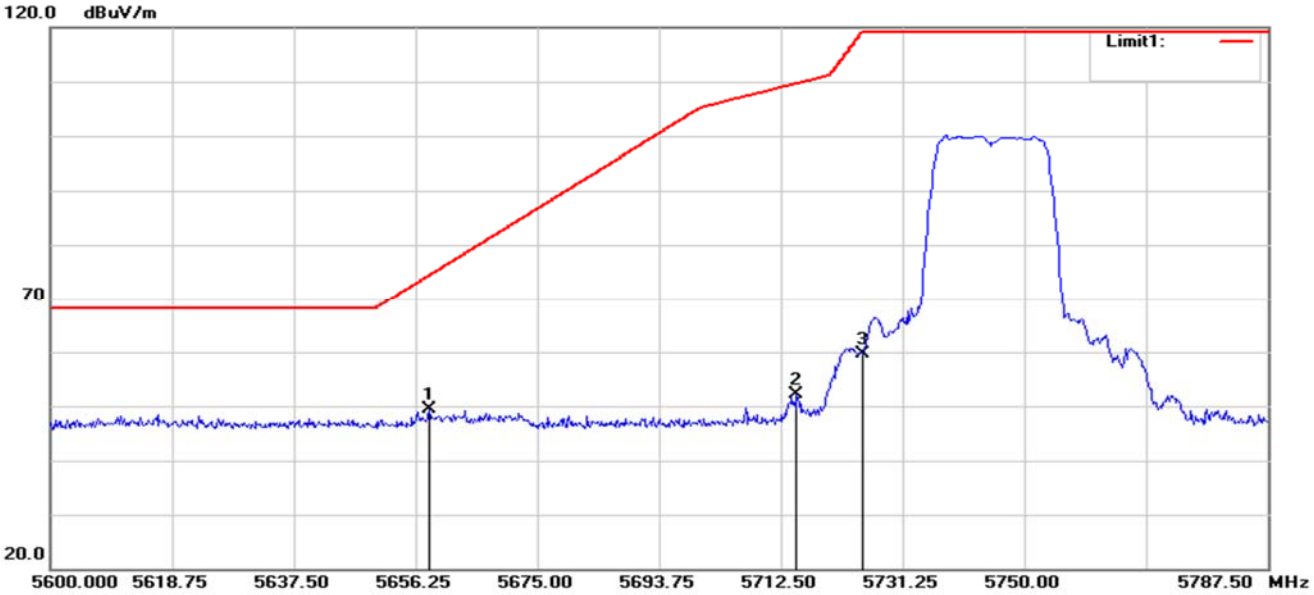


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	59.15	-5.23	53.92	68.20	-14.28	peak
2	5350.000	50.30	-5.23	45.07	54.00	-8.93	AVG
3	5351.810	63.86	-5.23	58.63	68.20	-9.57	peak
4	5351.810	49.72	-5.23	44.49	54.00	-9.51	AVG

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

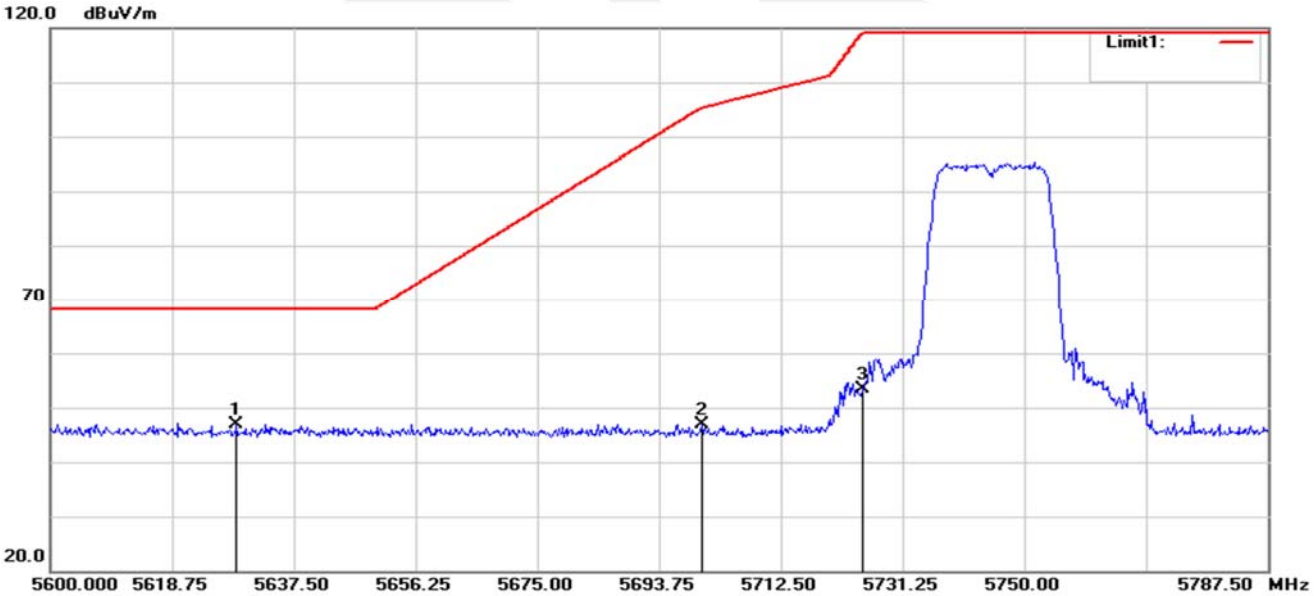
Band IV(5.725-5.85 GHz)

802.11n20-L-H



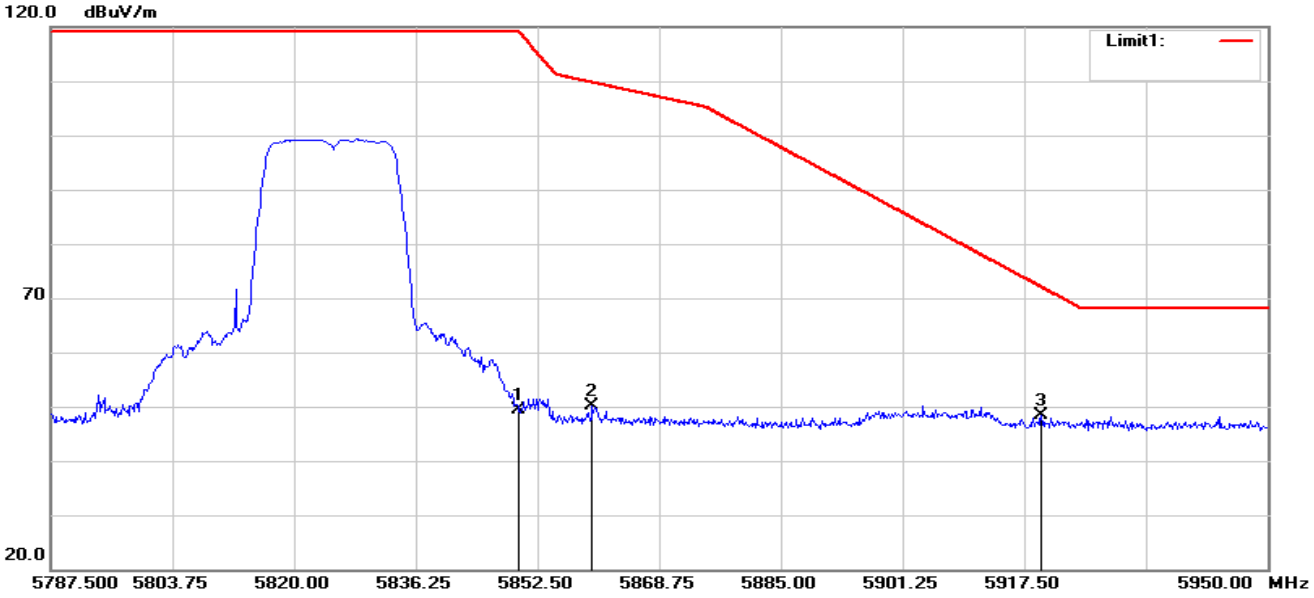
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5658.313	54.11	-4.68	49.43	74.35	-24.92	peak
2	5714.938	56.64	-4.61	52.03	109.68	-57.65	peak
3	5725.000	64.21	-4.57	59.64	119.20	-59.56	peak

802.11n20-L-V



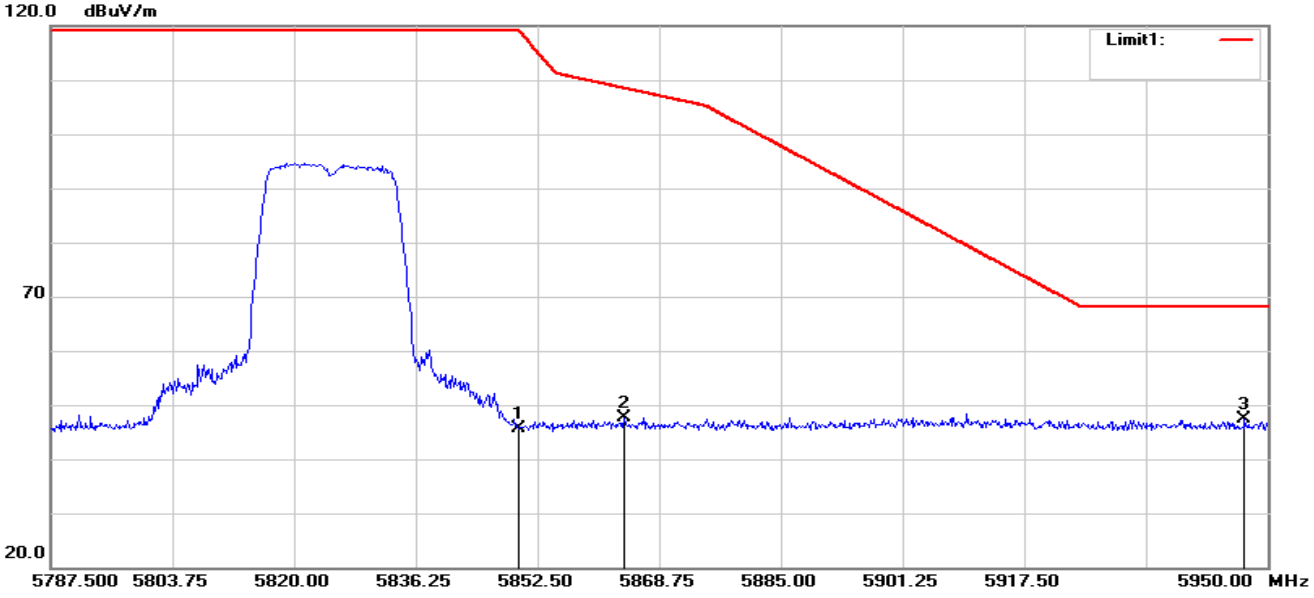
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5628.688	51.57	-4.68	46.89	68.20	-21.31	peak
2	5700.313	51.63	-4.66	46.97	105.29	-58.32	peak
3	5725.000	57.99	-4.57	53.42	119.20	-65.78	peak

802.11n20-H-H



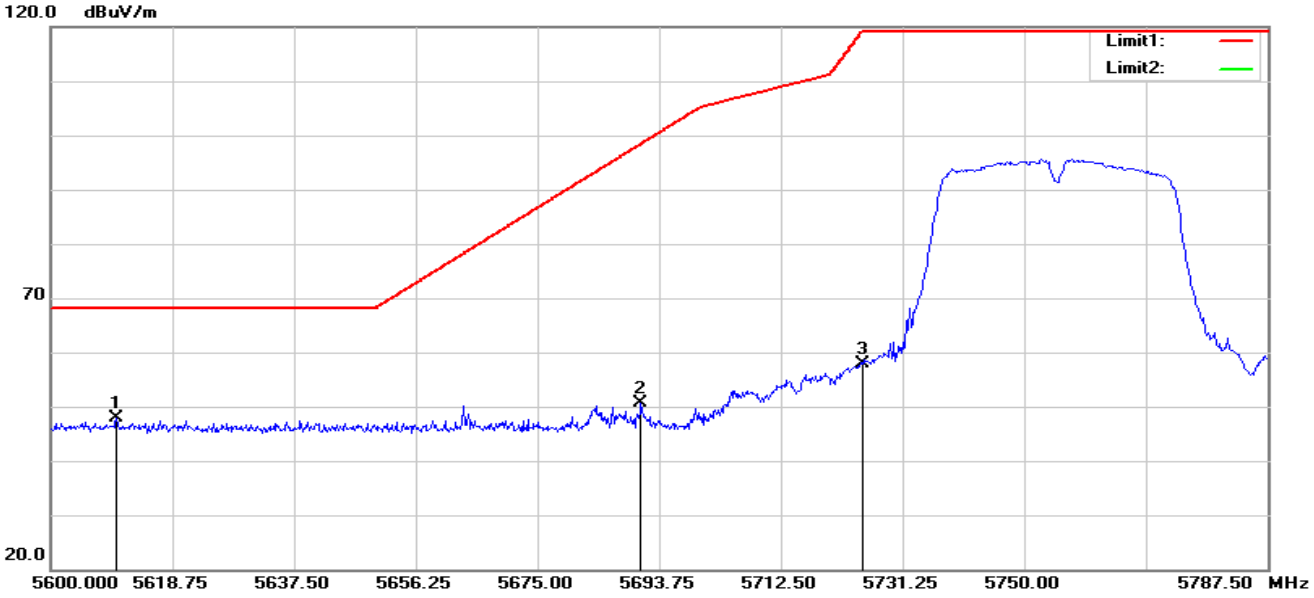
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5850.000	53.43	-4.10	49.33	119.20	-69.87	peak
2	5859.813	54.15	-4.05	50.10	109.76	-59.66	peak
3	5919.775	52.23	-3.92	48.31	72.07	-23.76	peak

802.11n20-H-V



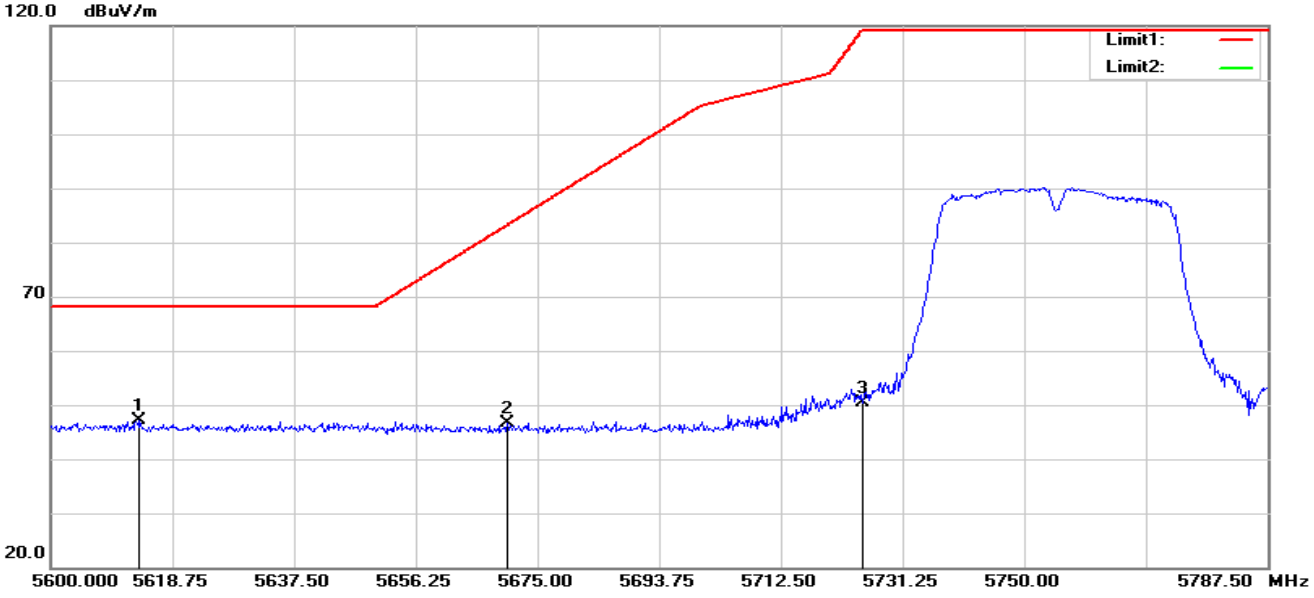
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5850.000	49.74	-4.10	45.64	119.20	-73.56	peak
2	5864.038	51.70	-4.04	47.66	108.49	-60.83	peak
3	5946.913	51.26	-3.95	47.31	68.20	-20.89	peak

802.11n40-L-H



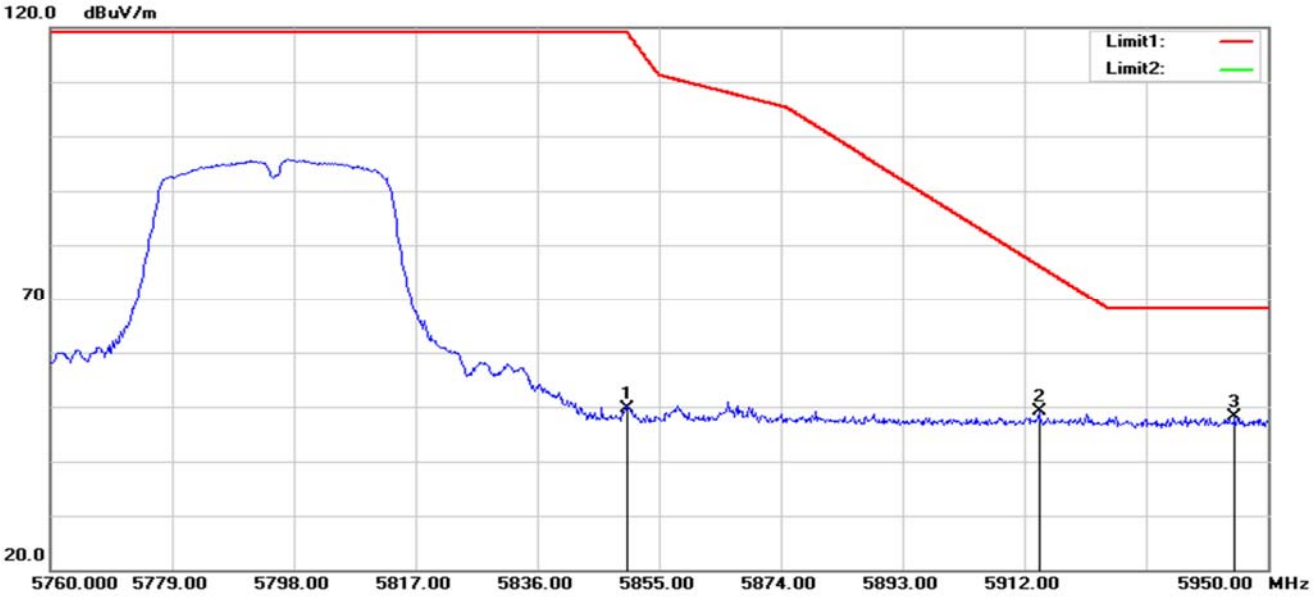
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5610.125	52.47	-4.69	47.78	68.20	-20.42	peak
2	5690.938	55.40	-4.66	50.74	98.49	-47.75	peak
3	5725.000	62.56	-4.57	57.99	119.20	-61.21	peak

802.11n40-L-V



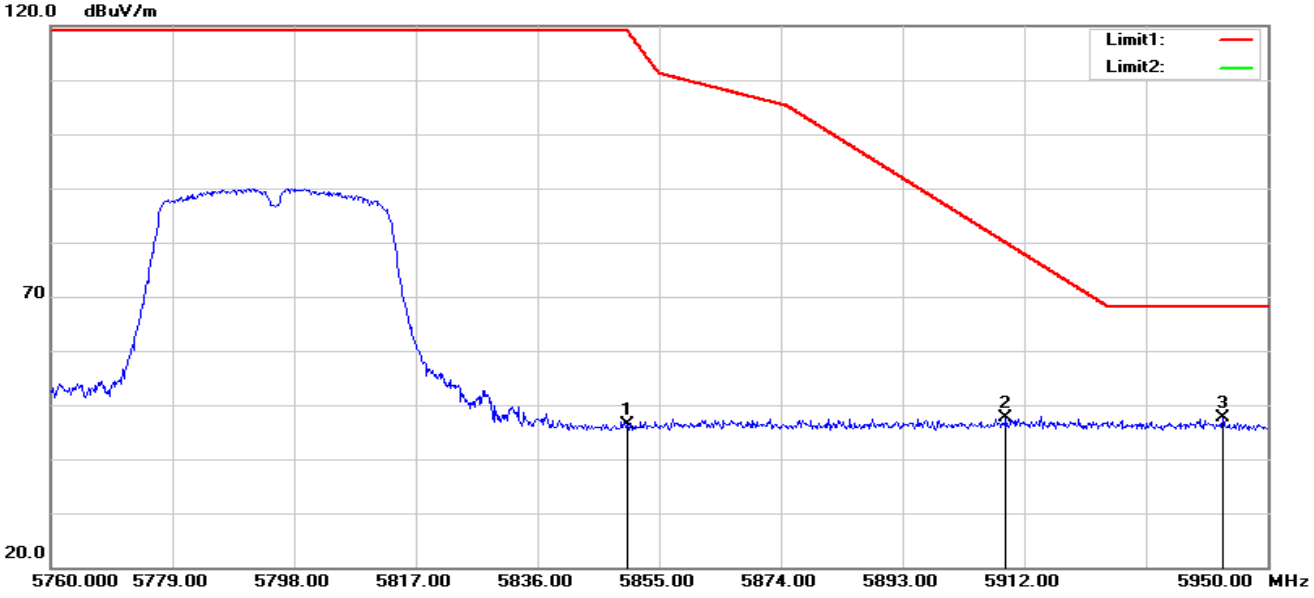
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5613.688	51.87	-4.70	47.17	68.20	-21.03	peak
2	5670.313	51.32	-4.67	46.65	83.23	-36.58	peak
3	5725.000	55.05	-4.57	50.48	119.20	-68.72	peak

802.11n40-H-H



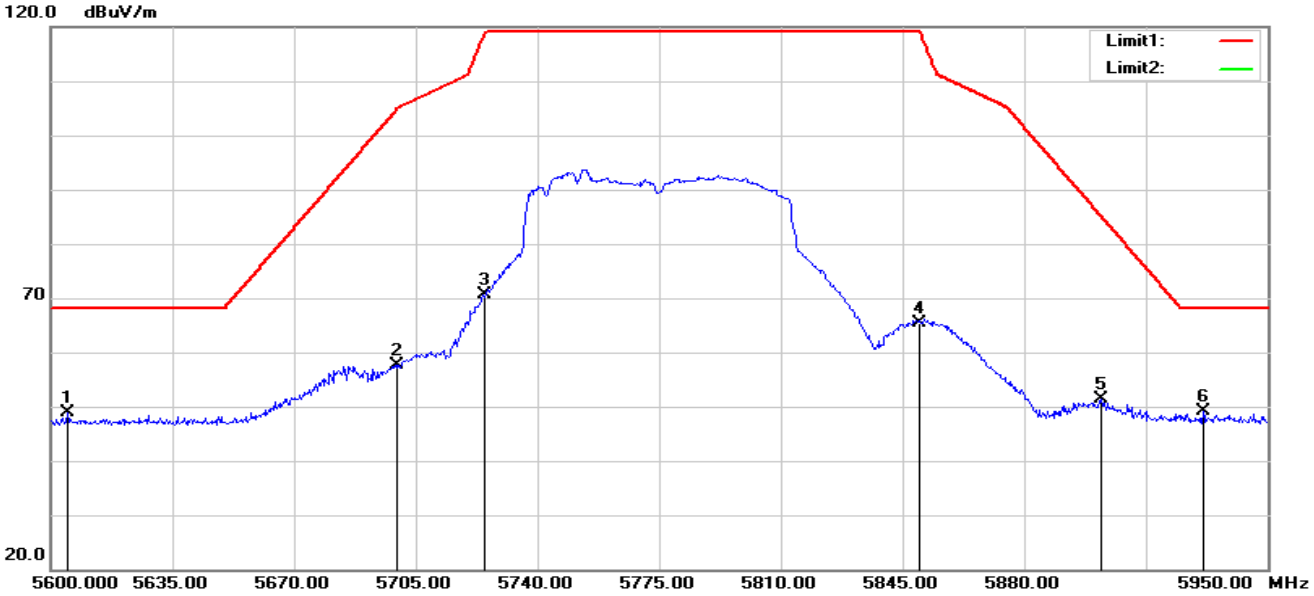
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5850.000	53.76	-4.10	49.66	119.20	-69.54	peak
2	5914.280	52.92	-3.91	49.01	76.13	-27.12	peak
3	5944.870	52.01	-3.96	48.05	68.20	-20.15	peak

802.11n40-H-V



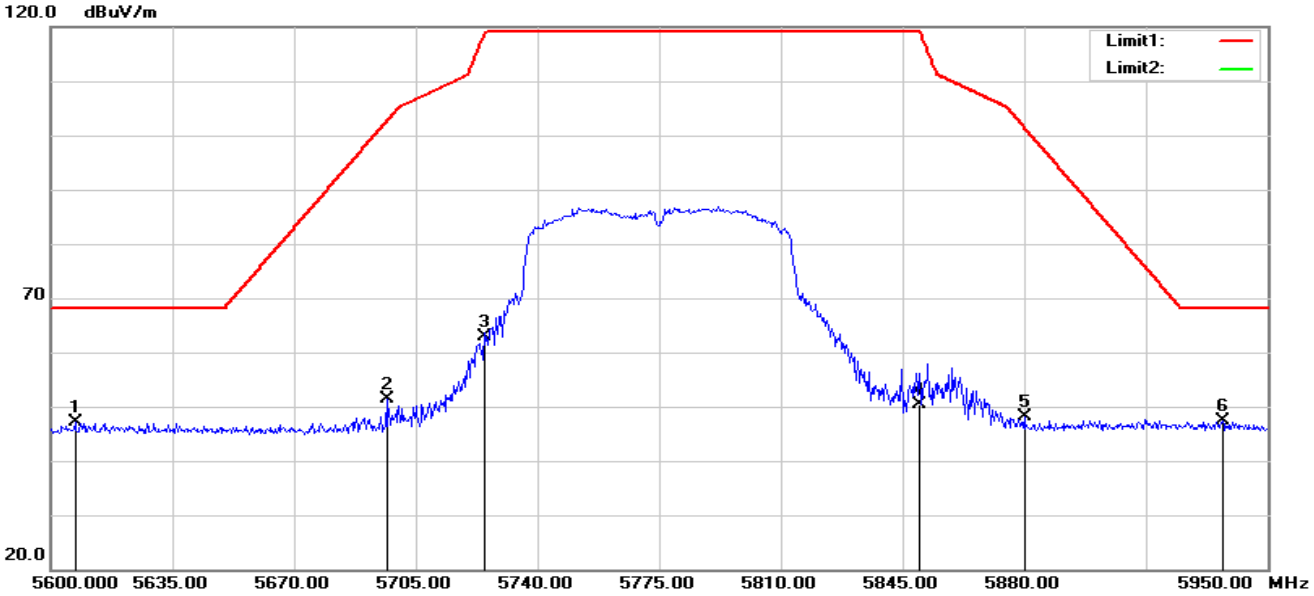
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5850.000	50.40	-4.10	46.30	119.20	-72.90	peak
2	5909.150	51.51	-3.90	47.61	79.93	-32.32	peak
3	5942.970	51.61	-3.95	47.66	68.20	-20.54	peak

802.11ac80-H



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5604.900	53.46	-4.70	48.76	68.20	-19.44	peak
2	5699.750	62.31	-4.66	57.65	105.02	-47.37	peak
3	5725.000	75.16	-4.57	70.59	119.20	-48.61	peak
4	5850.000	69.45	-4.10	65.35	119.20	-53.85	peak
5	5902.050	55.35	-3.89	51.46	85.18	-33.72	peak
6	5931.450	53.08	-3.93	49.15	68.20	-19.05	peak

802.11ac80-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5607.000	51.80	-4.70	47.10	68.20	-21.10	peak
2	5696.600	55.97	-4.67	51.30	102.68	-51.38	peak
3	5725.000	67.33	-4.57	62.76	119.20	-56.44	peak
4	5850.000	54.45	-4.10	50.35	119.20	-68.85	peak
5	5880.000	52.10	-3.97	48.13	101.50	-53.37	peak
6	5937.050	51.30	-3.94	47.36	68.20	-20.84	peak

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

4. POWER SPECTRAL DENSITY TEST

4.1 LIMIT

1. For mobile and portable client devices in the 5.15-5.25 GHz band, , the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
3. For the band 5.725-5.850 GHz, the peak power spectral density shall not exceed 30 dBm in any 500KHz band. If transmitting antenna directional gain is greater than 6 dBi, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.2 TEST PROCEDURE

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

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

a) Set RBW ≥ 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.

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP

4.5 EUT OPERATION CONDITIONS

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

4.6 TEST RESULTS

5150-5250MHz								
Frequency	Direct measurement Ant_A Power Density (dBm)	Direct measurement Ant_B Power Density (dBm)	Duty cycle factor	Final Ant_A Power Density (dBm)	Final Ant_B Power Density (dBm)	Power Density Total (dBm)	Limit (dBm)	Result
802.11a								
5180	2.130	-13.138	0.279	2.409	-12.859	--	11	PASS
5200	2.549	-12.986	0.279	2.828	-12.707	--	11	PASS
5240	2.319	-12.579	0.279	2.598	-12.300	--	11	PASS
802.11n20								
5180	1.736	-13.646	0.235	1.971	-13.411	2.095	11	PASS
5200	1.869	-13.234	0.235	2.104	-12.999	2.236	11	PASS
5240	2.002	-13.019	0.235	2.237	-12.784	2.371	11	PASS
802.11n40								
5190	-5.249	-16.964	0.477	-4.772	-16.487	-4.488	11	PASS
5230	-5.204	-16.190	0.477	-4.727	-15.713	-4.394	11	PASS
802.11ac20								
5180	1.389	-13.517	0.286	1.675	-13.231	1.813	11	PASS
5200	1.797	-13.642	0.286	2.083	-13.356	2.206	11	PASS
5240	1.914	-13.277	0.286	2.200	-12.991	2.330	11	PASS
802.11ac40								
5190	-5.206	-16.687	0.774	-4.432	-15.913	-4.134	11	PASS
5230	-5.048	-16.603	0.774	-4.274	-15.829	-3.981	11	PASS
802.11ac80								
5210	-10.951	-20.093	0.236	-10.715	-19.857	-10.216	11	PASS

5250-5350MHz								
Frequency	Direct measurement Ant_A Power Density (dBm)	Direct measurement Ant_B Power Density (dBm)	Duty cycle factor	Final Ant_A Power Density (dBm)	Final Ant_B Power Density (dBm)	Power Density Total (dBm)	Limit (dBm)	Result
802.11a								
5260	2.079	-12.651	0.280	2.359	-12.371	--	11	PASS
5300	2.157	-12.618	0.280	2.437	-12.338	--	11	PASS
5320	2.423	-12.311	0.280	2.703	-12.031	--	11	PASS
802.11n20								
5260	1.778	-13.454	0.309	2.087	-13.145	2.216	11	PASS
5300	1.884	-12.983	0.309	2.193	-12.674	2.333	11	PASS
5320	2.293	-12.582	0.309	2.602	-12.273	2.742	11	PASS
802.11n40								
5270	-4.380	-16.190	0.843	-3.537	-15.347	-3.260	11	PASS
5310	-3.907	-15.734	0.843	-3.064	-14.891	-2.788	11	PASS
802.11ac20								
5260	1.787	-13.380	0.296	2.083	-13.084	2.213	11	PASS
5300	1.925	-12.734	0.296	2.221	-12.438	2.367	11	PASS
5320	2.321	-12.486	0.296	2.617	-12.190	2.758	11	PASS
802.11ac40								
5270	-5.171	-16.836	0.546	-4.625	-16.290	-4.339	11	PASS
5310	-4.758	-16.103	0.546	-4.212	-15.557	-3.905	11	PASS
802.11ac80								
5290	-10.548	-19.333	0.248	-10.300	-19.085	-9.760	11	PASS

5725-5850MHz										
Frequency	Use RBW 510KHz direct measurement Ant_A Power Density (dBm)	Use RBW 510KHz direct measurement Ant_B Power Density (dBm)	Convert to RBW 500KHz direct measurement Ant_A Power Density (dBm)	Convert to RBW 500KHz direct measurement Ant_B Power Density (dBm)	Duty cycle factor (dB)	Final Ant_A Power Density (dBm)	Final Ant_B Power Density (dBm)	Power Density Total (dBm)	Limit (dBm)	Result
802.11a										
5745	-4.274	-15.231	-4.360	-15.317	0.243	-4.117	-15.074	--	30	PASS
5785	-5.327	-16.837	-5.413	-16.923	0.243	-5.170	-16.680	--	30	PASS
5825	-6.019	-16.977	-6.105	-17.063	0.243	-5.862	-16.820	--	30	PASS
802.11n20										
5745	-4.821	-15.813	-4.907	-15.899	0.242	-4.665	-15.657	-4.332	30	PASS
5785	-5.569	-16.776	-5.655	-16.862	0.242	-5.413	-16.620	-5.096	30	PASS
5825	-6.283	-16.933	-6.369	-17.019	0.242	-6.127	-16.777	-5.768	30	PASS
802.11n40										
5755	-7.838	-18.891	-7.924	-18.977	0.870	-7.054	-18.107	-6.726	30	PASS
5795	-9.679	-20.275	-9.765	-20.361	0.870	-8.895	-19.491	-8.532	30	PASS
802.11ac20										
5745	-4.774	-15.326	-4.860	-15.412	0.294	-4.566	-15.118	-4.200	30	PASS
5785	-5.735	-16.704	-5.821	-16.790	0.294	-5.527	-16.496	-5.193	30	PASS
5825	-6.644	-17.244	-6.730	-17.330	0.294	-6.436	-17.036	-6.074	30	PASS
802.11ac40										
5755	-8.055	-19.127	-8.141	-19.213	0.575	-7.566	-18.638	-7.239	30	PASS
5795	-8.987	-20.102	-9.073	-20.188	0.575	-8.498	-19.613	-8.174	30	PASS
802.11ac80										
5775	-13.211	-22.930	-13.297	-23.016	0.310	-12.987	-22.706	-12.546	30	PASS

Note: 1. RB conversion formula: 10*LOG(500KHz/RBW)
2. Test plots see Attachment A.

5. BANDWIDTH MEASUREMENT

5.1 EMISSION BANDWIDTH (EBW) 26 BANDWID PROCEDURES / LIMIT

The following procedure shall be used for measuring 26 bandwidth.

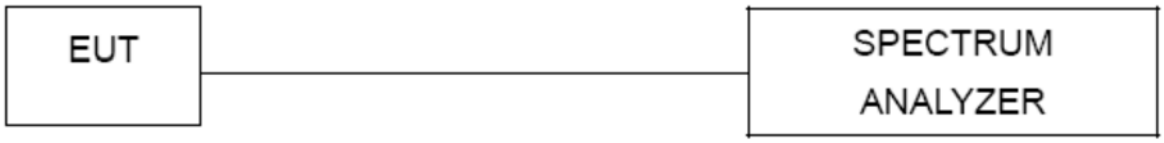
5.1.1 TEST PROCEDURE

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

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

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

5.1.5 TEST RESULTS

Frequency (MHz)	26dB Bandwidth (MHz)	Pass/Fail
802.11a		
5180	18.25	Pass
5200	18.37	Pass
5240	18.37	Pass
802.11n(HT20)		
5180	19.20	Pass
5200	19.35	Pass
5240	19.30	Pass
802.11n(HT40)		
5190	40.93	Pass
5230	40.29	Pass
802.11ac(VHT20)		
5180	19.29	Pass
5200	19.26	Pass
5240	19.26	Pass
802.11ac(VHT40)		
5190	40.79	Pass
5230	40.26	Pass
802.11ac(VHT80)		
5210	80.94	Pass

Frequency (MHz)	26dB Bandwidth (MHz)	Pass/Fail
802.11a		
5260	18.29	Pass
5300	18.38	Pass
5320	18.37	Pass
802.11n(HT20)		
5260	19.27	Pass
5300	19.28	Pass
5320	19.31	Pass
802.11n(HT40)		
5270	41.39	Pass
5310	40.65	Pass
802.11ac(VHT20)		
5260	19.24	Pass
5300	19.31	Pass
5320	19.22	Pass
802.11ac(VHT40)		
5270	40.97	Pass
5310	40.75	Pass
802.11ac(VHT80)		
5290	82.49	Pass

Frequency (MHz)	26dB Bandwidth (MHz)	Pass/Fail
802.11a		
5745	18.41	Pass
5785	18.46	Pass
5825	18.31	Pass
802.11n(HT20)		
5745	19.31	Pass
5785	19.27	Pass
5825	19.27	Pass
802.11n(HT40)		
5755	40.17	Pass
5795	41.21	Pass
802.11ac(VHT20)		
5745	19.31	Pass
5785	19.25	Pass
5825	19.28	Pass
802.11ac(VHT40)		
5755	40.39	Pass
5795	40.83	Pass
802.11ac(VHT80)		
5775	81.59	Pass

Note:

1. Antenna A Power> Antenna B Power, Both antenna A and B have been test, Only show the worst data of Antenna A.
2. Test plot see Attachment B.

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

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

5.2.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures v02r01.
The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.

2. Set span = 1.5 times to 5.0 times the OBW.

3. Set RBW = 1 % to 5 % of the OBW

4. Set VBW ≥ 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.

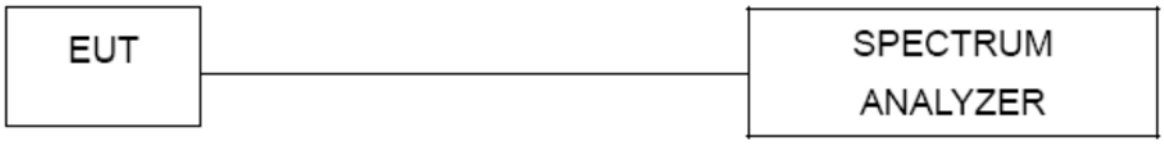
6. Use the 99 % power bandwidth function of the instrument (if available).

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.

5.2.2 DEVIATION FROM STANDARD

No deviation.

5.2.3 TEST SETUP



5.2.4 EUT OPERATION CONDITIONS

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

5.2.5 TEST RESULTS

Frequency (MHz)	99% Bandwidth (MHz)	Pass/Fail
802.11a		
5180	16.31	Pass
5200	16.32	Pass
5240	16.33	Pass
802.11n(HT20)		
5180	17.50	Pass
5200	17.50	Pass
5240	17.50	Pass
802.11n(HT40)		
5190	36.07	Pass
5230	36.02	Pass
802.11ac(VHT20)		
5180	17.50	Pass
5200	17.50	Pass
5240	17.50	Pass
802.11ac(VHT40)		
5190	36.08	Pass
5230	36.02	Pass
802.11ac(VHT80)		
5210	74.78	Pass

Frequency (MHz)	99% Bandwidth (MHz)	Pass/Fail
802.11a		
5260	16.33	Pass
5300	16.32	Pass
5320	16.32	Pass
802.11n(HT20)		
5260	17.49	Pass
5300	17.50	Pass
5320	17.49	Pass
802.11n(HT40)		
5270	36.11	Pass
5310	36.11	Pass
802.11ac(VHT20)		
5260	17.49	Pass
5300	17.50	Pass
5320	17.51	Pass
802.11ac(VHT40)		
5270	36.08	Pass
5310	36.03	Pass
802.11ac(VHT80)		
5290	74.90	Pass

Frequency (MHz)	99% Bandwidth (MHz)	Pass/Fail
802.11a		
5745	16.32	Pass
5785	16.32	Pass
5825	16.32	Pass
802.11n(HT20)		
5745	17.49	Pass
5785	17.50	Pass
5825	17.51	Pass
802.11n(HT40)		
5755	36.00	Pass
5795	36.04	Pass
802.11ac(VHT20)		
5745	17.50	Pass
5785	17.49	Pass
5825	17.50	Pass
802.11ac(VHT40)		
5755	36.07	Pass
5795	36.05	Pass
802.11ac(VHT80)		
5775	74.80	Pass

Note:

1. Antenna A Power> Antenna B Power, Both antenna A and B have been test, Only show the worst data of Antenna A.
2. Test plot see Attachment B.

5.3 MINIMUM EMISSION BANDWIDTH(6 DB) PROCEDURES / LIMIT

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

5.3.1 TEST PROCEDURE

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

a) Set RBW = 100 kHz.

b) Set the video bandwidth (VBW) ≥ 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.

5.3.2 DEVIATION FROM STANDARD

No deviation.

5.3.3 TEST SETUP

5.3.4 EUT OPERATION CONDITIONS

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

5.3.5 TEST RESULTS

Frequency (MHz)	6dB Bandwidth (MHz)	Pass/Fail
802.11a		
5745	16.32	Pass
5785	16.33	Pass
5825	16.34	Pass
802.11n(HT20)		
5745	17.56	Pass
5785	17.56	Pass
5825	17.54	Pass
802.11n(HT40)		
5755	35.16	Pass
5795	35.12	Pass
802.11ac(VHT20)		
5745	17.56	Pass
5785	17.56	Pass
5825	17.56	Pass
802.11ac(VHT40)		
5755	35.15	Pass
5795	35.15	Pass
802.11ac(VHT80)		
5775	71.41	Pass

Note:

1. Antenna A Power> Antenna B Power, Both antenna A and B have been test, Only show the worst data of Antenna A.
2. Test plot see Attachment C.

6. MAXIMUM CONDUCTED OUTPUT POWER

6.1 LIMIT

For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

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

FCC Part15 (15.407) , Subpart E				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.407(a) (1) (iv)	Peak Output Power	0.25 watt	5150-5250	PASS
		The lesser of 250 mW or 11 dBm + 10 log (26 dB emission bandwidth)	5250-5350 5470-5725	
15.407(a) (3)		1 watt	5725-5825	

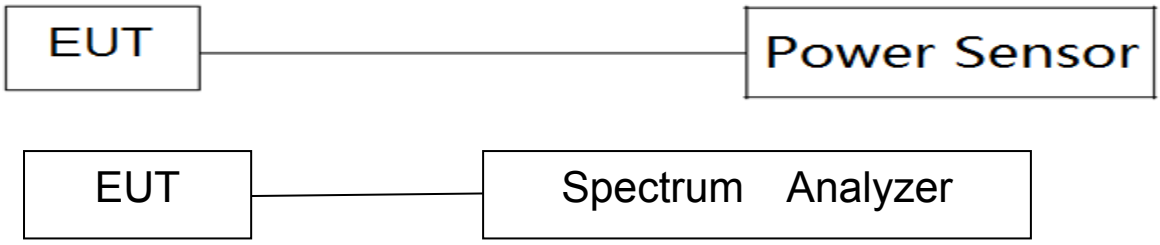
6.2 TEST PROCEDURE

The EUT was directly connected to the Power Sensor&PC

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

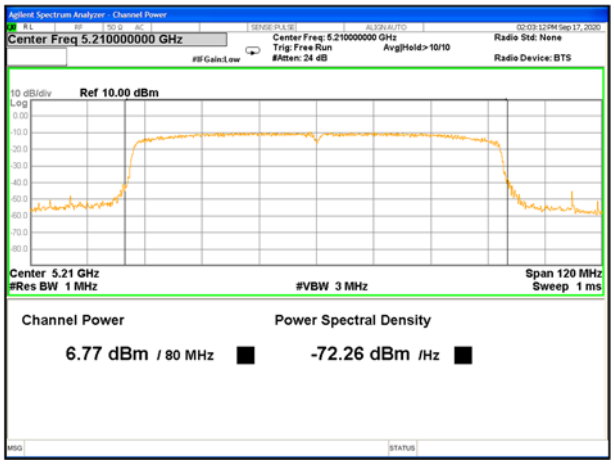
The EUT tested system was configured as the statements of 5 Unless otherwise a special operating condition is specified in the follows during the testing.

6.6 TEST RESULTS

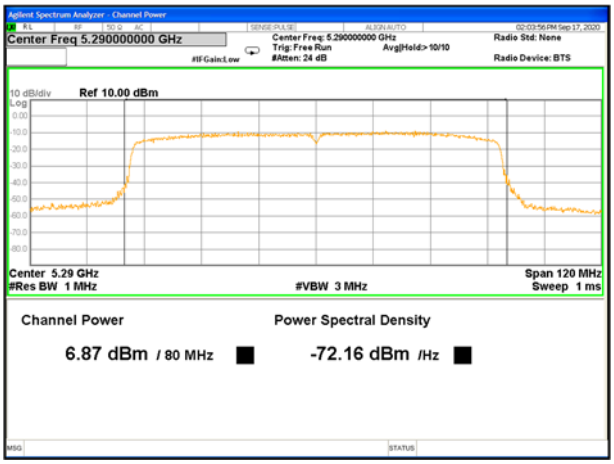
Band I (5.15-5.25GHz)								
Test Channel	Frequency (MHz)	Direct measurement Ant_A AV Power (dBm)	Direct measurement Ant B_AV Power (dBm)	Duty cycle factor (dB)	Final Ant_A AV Power (dBm)	Final Ant_B AV Power (dBm)	AV Power Total (dBm)	LIMIT (dBm)
802.11a								
36	5180	12.71	-2.56	0.279	12.99	-2.28	--	23.98
40	5200	12.81	-2.79	0.279	13.09	-2.51	--	23.98
48	5240	12.80	-3.23	0.279	13.08	-2.95	--	23.98
802.11n(HT20)								
36	5180	12.76	-2.13	0.235	12.99	-1.90	13.13	23.98
40	5200	12.83	-2.59	0.235	13.06	-2.36	13.19	23.98
48	5240	12.84	-3.01	0.235	13.07	-2.78	13.19	23.98
802.11n(HT40)								
38	5190	8.26	-2.84	0.477	8.74	-2.36	9.06	23.98
46	5230	8.39	-3.23	0.477	8.87	-2.75	9.16	23.98
802.11ac(VHT20)								
36	5180	12.74	-2.41	0.286	13.03	-2.12	13.16	23.98
40	5200	12.82	-2.68	0.286	13.11	-2.39	13.23	23.98
48	5240	12.83	-3.12	0.286	13.12	-2.83	13.23	23.98
-2.96								
38	5190	8.15	-2.96	0.774	8.92	-2.19	9.25	23.98
46	5230	8.27	-3.47	0.774	9.04	-2.70	9.33	23.98
802.11ac(VHT80)								
42	5210	7.42	-2.98	0.236	7.66	-2.74	8.03	23.98

Band II(5.25-5.35GHz)								
Test Channel	Frequency (MHz)	Direct measurement Ant_A AV Power (dBm)	Direct measurement Ant B_AV Power (dBm)	Duty cycle factor (dB)	Final Ant_A AV Power (dBm)	Final Ant_B AV Power (dBm)	AV Power Total (dBm)	LIMIT (dBm)
802.11a								
52	5260	12.71	-1.96	0.280	12.99	-1.68	--	23.62
60	5300	12.91	-2.32	0.280	13.19	-2.04	--	23.64
64	5320	12.92	-2.49	0.280	13.20	-2.21	--	23.64
802.11n(HT20)								
52	5260	12.77	-1.92	0.309	13.08	-1.61	13.22	23.85
60	5300	12.93	-2.27	0.309	13.24	-1.96	13.37	23.85
64	5320	12.98	-2.31	0.309	13.29	-2.00	13.42	23.86
802.11n(HT40)								
54	5270	8.43	-2.97	0.843	9.27	-2.13	9.58	23.98
62	5310	8.48	-3.46	0.843	9.32	-2.62	9.59	23.98
802.11ac(VHT20)								
52	5260	12.73	-2.06	0.296	13.03	-1.76	13.17	23.84
60	5300	12.90	-2.41	0.296	13.20	-2.11	13.32	23.86
64	5320	12.96	-2.59	0.296	13.26	-2.29	13.38	23.84
802.11ac(VHT40)								
54	5270	8.39	-3.02	0.546	8.94	-2.47	9.24	23.98
62	5310	8.41	-3.72	0.546	8.96	-3.17	9.21	23.98
802.11ac(VHT80)								
58	5290	6.87	-2.43	0.248	7.12	-2.18	7.60	23.98

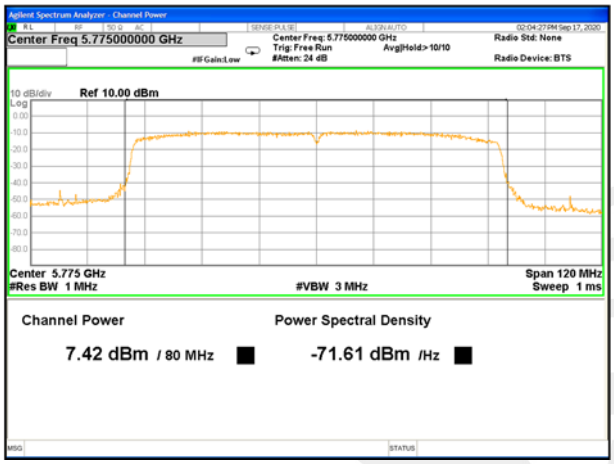
Band IV (5.725-5.85GHz)								
Test Channel	Frequency (MHz)	Direct measurement Ant_A AV Power (dBm)	Direct measurement Ant B_AV Power (dBm)	Duty cycle factor (dB)	Final Ant_A AV Power (dBm)	Final Ant_B AV Power (dBm)	AV Power Total (dBm)	LIMIT (dBm)
802.11a								
149	5745	10.09	-2.78	0.243	10.33	-2.54	--	30.00
157	5785	9.38	-3.23	0.243	9.62	-2.99	--	30.00
165	5825	9.12	-3.67	0.243	9.36	-3.43	--	30.00
802.11n(HT20)								
149	5745	10.19	-2.06	0.242	10.43	-1.82	10.684	30.00
157	5785	9.42	-3.09	0.242	9.66	-2.85	9.899	30.00
165	5825	9.33	-3.43	0.242	9.57	-3.19	9.796	30.00
802.11n(HT40)								
151	5755	8.74	-2.89	0.870	9.61	-2.02	9.898	30.00
159	5795	8.76	-3.32	0.870	9.63	-2.45	9.891	30.00
802.11ac(VHT20)								
149	5745	9.39	-2.59	0.294	9.68	-2.30	9.951	30.00
157	5785	8.98	-3.29	0.294	9.27	-3.00	9.524	30.00
165	5825	9.01	-3.58	0.294	9.30	-3.29	9.537	30.00
802.11ac(VHT40)								
151	5755	8.71	-3.29	0.575	9.29	-2.71	9.551	30.00
159	5795	8.72	-3.88	0.575	9.30	-3.30	9.528	30.00
802.11ac(VHT80)								
155	5775	6.87	-3.15	0.310	7.18	-2.84	7.592	30.00



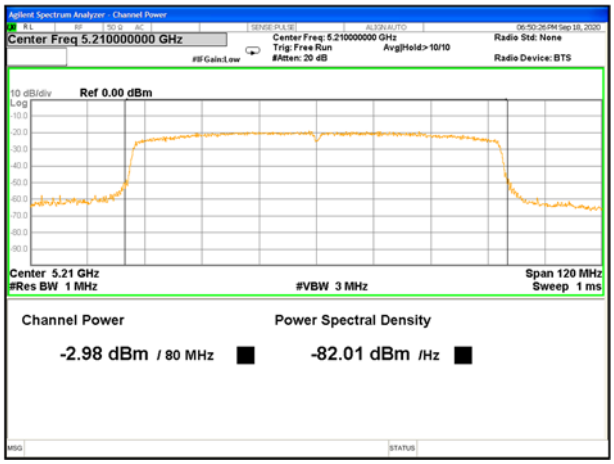
5210MHz-Ant A



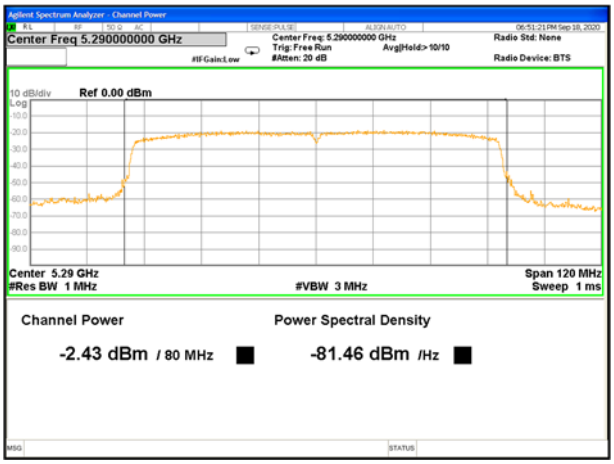
5290MHz-Ant A



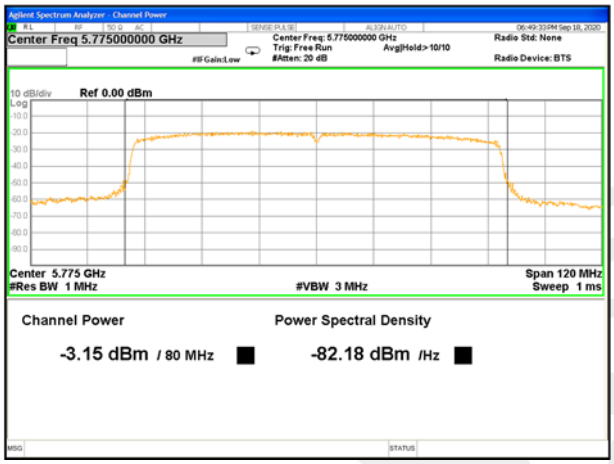
5775MHz-Ant A



5210MHz-Ant B



5290MHz-Ant B



5775MHz-Ant B

Duty cycle

Band1				
Mode	Ton(ms)	Tp(ms)	Duty cycle(%)	Duty factor(dB)
a	2.082	2.220	93.78%	0.279
n20	1.944	2.052	94.74%	0.235
n40	0.964	1.076	89.59%	0.477
ac20	1.938	2.070	93.62%	0.286
ac40	0.964	1.152	83.68%	0.774
ac80	1.938	2.046	94.72%	0.236
Band2				
Mode	Ton(ms)	Tp(ms)	Duty cycle(%)	Duty factor(dB)
a	2.076	2.214	93.77%	0.280
n20	1.950	2.094	93.12%	0.309
n40	0.952	1.156	82.35%	0.843
ac20	1.956	2.094	93.41%	0.296
ac40	0.956	1.084	88.19%	0.546
ac80	1.938	2.052	94.44%	0.248
Band4				
Mode	Ton(ms)	Tp(ms)	Duty cycle(%)	Duty factor(dB)
a	2.082	2.202	94.55%	0.243
n20	1.952	2.064	94.57%	0.242
n40	0.956	1.168	81.85%	0.870
ac20	1.944	2.080	93.46%	0.294
ac40	0.960	1.096	87.59%	0.575
ac80	1.944	2.088	93.10%	0.310

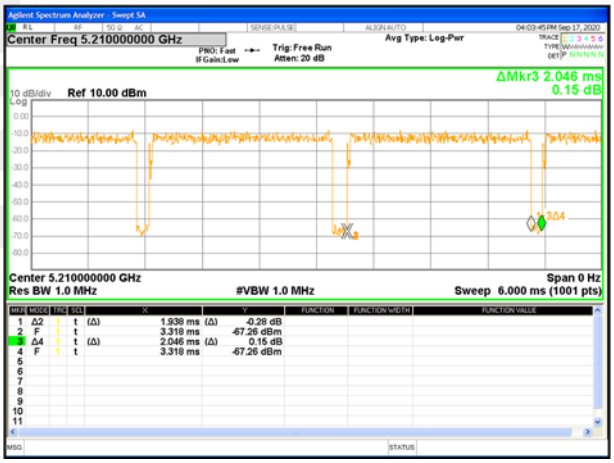
Band 1-a20

Band 1-n20

Band 1-n40

Band 1-ac20

Band 1-ac40



Band 1-ac80

Band 2-a20

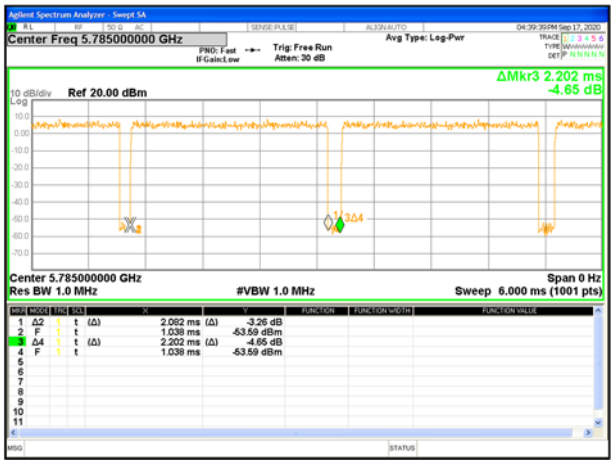
Band 2-n20

Band 2-n40

Band 2-ac20

Band 2-ac40

Band 2-ac80



Band 4-a20

Band 4-n20

Band 4-n40

Band 4-ac20

Band 4-ac40

Band 4-ac80

7. AUTOMATICALLY DISCONTINUE TRANSMISSION

7.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

7.2 TEST RESULT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

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

8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

8.2 EUT ANTENNA

The EUT antenna is PIFA Antenna 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※※※※※