RADIO TEST REPORT

Report No.:STS2010150W02

Issued for

Bowei Technology Co., Ltd

2F,Building No. 6C, 1658, Gumei Rd., Xuhui District, Shanghai, China

Product Name:	Wi-Fi 6 MESH AP
Brand Name:	AZORES
Model Name:	AX1800
Series Model:	N/A
FCC ID:	2AVWBAX1800
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,
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 RESULT CERTIFICATION

Applicant's Name	:	Bowei Technology Co., Ltd
Address	:	2F,Building No. 6C, 1658, Gumei Rd., Xuhui District, Shanghai, China
Manufacturer's Name	:	TDG Technology Co., Ltd
Address	:	No.1 Yatai Road, Jiaxing City, Zhejiang Province, P.R.C.

Product Description

Product Name	:	Wi-Fi 6 MESH AP
Brand Name	:	AZORES
Model Name	:	AX1800
Series Model	:	N/A
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	:	27 Oct. 2020
Date (s) of performance of tests	:	27 Oct. 2020 ~ 09 Nov. 2020
Date of Issue	:	09 Nov. 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	09 Nov. 2020	STS2010150W02	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>Wi-Fi 6 MESH AP</td></tr>
<tr><td>Trade Name</td><td>AZORES</td></tr>
<tr><td>Model Name</td><td>AX1800</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 a Wi-Fi 6 MESH AP
<table>
<tr><td>Operation Frequency:</td><td>IEEE 802.11a/ n(HT20)/ac(VHT20)/ax(VHT20): 5.180GHz-5.240GHz
IEEE 802.11n(HT40)/ac(VHT40)/ax(VHT40): 5.190GHz-5.230GHz
IEEE 802.11ac(VHT80)/ax(VHT80): 5.210GHz</td></tr>
<tr><td></td><td>IEEE 802.11a/ n(HT20)/ac(VHT20)/ax(VHT20): 5.745GHz-5.825GHz
IEEE 802.11n(HT40)/ac(VHT40)/ax(VHT40): 5.755GHz-5.795GHz
IEEE 802.11ac(VHT80)/ax(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
802.11ax(OFDM, OFDMA):
BPSK,QPSK,16-QAM,64-QAM,256-QAM,1024QAM</td></tr>
<tr><td>Antenna Designation:</td><td>See Note 2</td></tr>
<tr><td>Max.Output Power(Conducted):</td><td>13.14dBm</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: RD1201500-C55-153MG
Output: 100-240V AC, 50/60Hz,0.6A</td></tr>
<tr><td>Hardware version number</td><td>V1.0</td></tr>
<tr><td>Software version number</td><td>LAZV1.0.0R00</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the Note 1.</td></tr>
</table>

Note: For a more detailed features description, please refer to the manufacturer's specifications or the User 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, 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) /ax (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) /ax (VHT40)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
38	5190	151	5755
46	5230	159	5795

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

2. 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 : 4.5dBi
Antenna B gain : 4.5dBi
GANT + 10 log(NANT) dBi
Directional gain= 4.2+10log2=7.51dBi

Ant	Brand	Model Name	Ant Type	Connector	Gain (dBi)	NOTE
A	AZORES	AX1800	PIFA	N/A	Ant A: 4.5dBi, Ant B: 4.5dBi, MIMO: 7.51dBi	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 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 802.11ax VHT20 CH36&CH40&CH48	NSS1 MCS0
Mode 6	TX IEEE 802.11n HT20 CH149&CH157&CH165	MCS 0
Mode 7	TX IEEE 802.11ac VHT20 CH149&CH157&CH165	NSS1 MCS0
Mode 8	TX IEEE 802.11ax VHT20 CH149&CH157&CH165	NSS1 MCS0
Mode 9	TX IEEE 802.11n HT40 CH38&CH46	MCS 0
Mode 10	TX IEEE 802.11ac VHT40 CH38&CH46	NSS1 MCS0
Mode 11	TX IEEE 802.11ax VHT40 CH38&CH46	NSS1 MCS0
Mode 12	TX IEEE 802.11n HT40 CH151&CH159	MCS 0
Mode 13	TX IEEE 802.11ac VHT40 CH151&CH159	NSS1 MCS0
Mode 14	TX IEEE 802.11ax VHT40 CH151&CH159	NSS1 MCS0
Mode 15	TX IEEE 802.11ac VHT80 CH42	NSS1 MCS0
Mode 16	TX IEEE 802.11ax VHT80 CH42	NSS1 MCS0
Mode 17	TX IEEE 802.11ac VHT80 CH155	NSS1 MCS0
Mode 18	TX IEEE 802.11ax VHT80 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	Mode 19: Keeping TX + WLAN Link

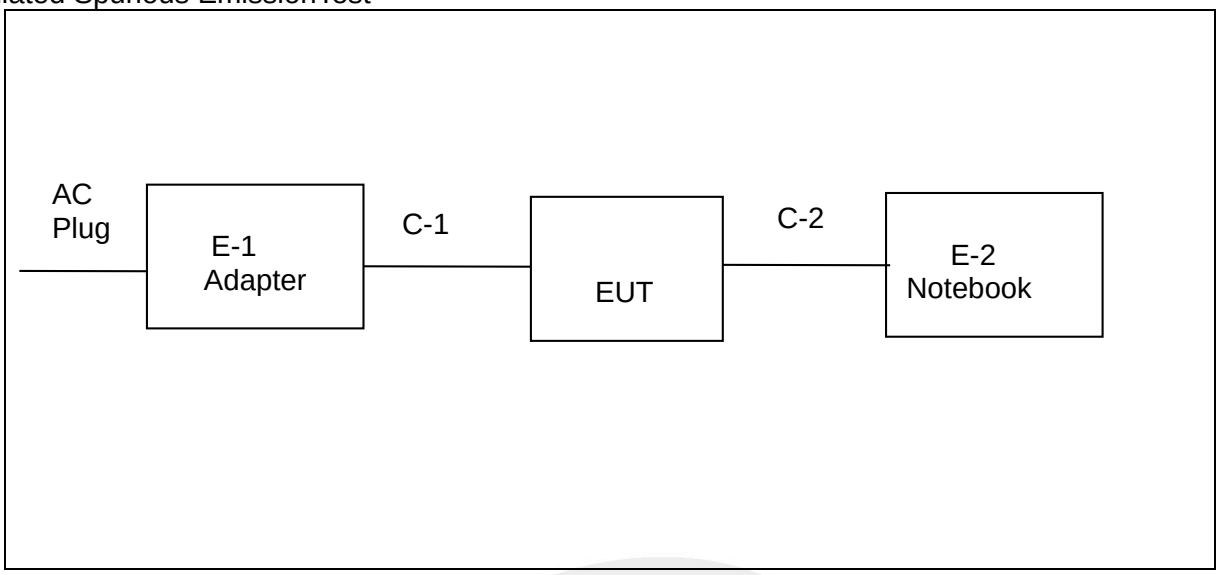
2.3 TEST SOFTWARE AND POWER LEVEL

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

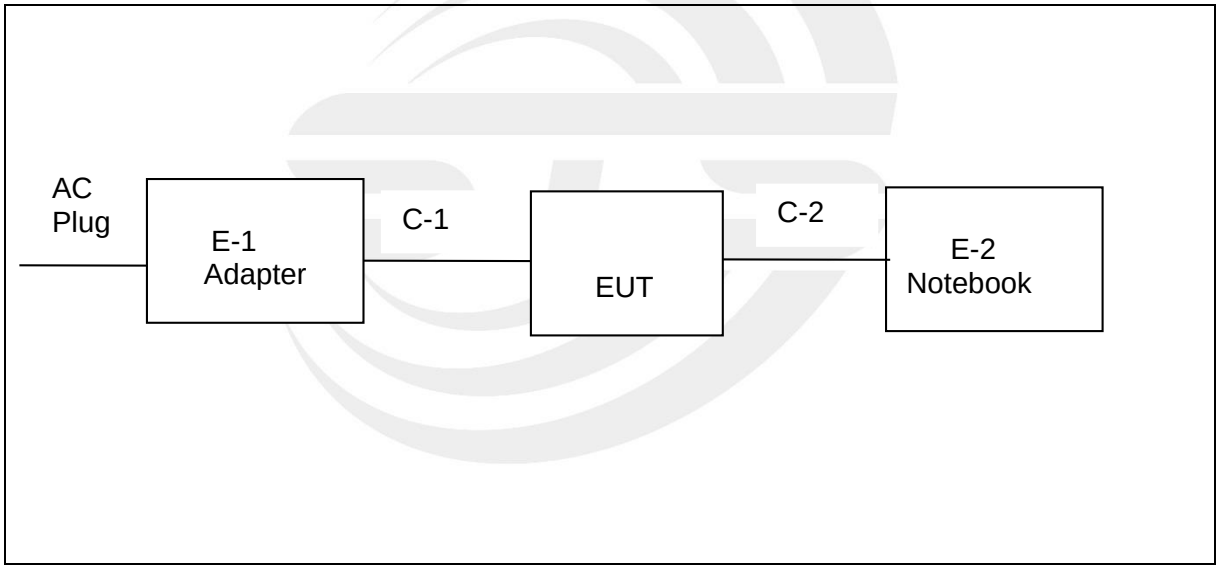
RF Function	Type	Mode Or Modulation type	Ant Gain(dBi)	Ant_A Power Class	Ant_B Power Class	Software For Testing
WIFI(5G)	5G WIFI Band1 (5150MHz-5250MHz)	802.11a	Ant A: 4.5 Ant B: 4.5 MIMO: 7.51	40	40	accessMTool_REL_3_1_0_4
		802.11n(HT20)		40	40	
		802.11n(HT40)		44	44	
		802.11ac(VHT20)		40	40	
		802.11ac(VHT40)		44	44	
		802.11ac(VHT80)		44	44	
		802.11ax(VHT20)		40	40	
		802.11ax(VHT40)		44	44	
		802.11ax(VHT80)		44	44	
RF Function	Type	Mode Or Modulation type	Ant Gain(dBi)	Ant_A Power Class	Ant_B Power Class	Software For Testing
WIFI(5G)	5G WIFI Band4 (5725MHz-5875MHz)	802.11a	Ant A: 4.5 Ant B: 4.5 MIMO: 7.51	40	40	accessMTool_REL_3_1_0_4
		802.11n(HT20)		40	40	
		802.11n(HT40)		44	44	
		802.11ac(VHT20)		40	40	
		802.11ac(VHT40)		44	44	
		802.11ac(VHT80)		44	44	
		802.11ax(VHT20)		40	40	
		802.11ax(VHT40)		44	44	
		802.11ax(VHT80)		44	44	

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-1	Adapter	RUIDE	RD1201500-C55-153MG	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
E-2	Notebook	LENOVO	ThinkPad E470	N/A	N/A
C-2	LAN Cable	N/A	N/A	100cm	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	2020.10.12	2021.10.11
Signal Analyzer	R&S	FSV 40-N	101823	2020.10.10	2021.10.09
Active loop Antenna	ZHINAN	ZN30900C	16035	2019.07.11	2021.07.10
Bilog Antenna	TESEQ	CBL6111D	34678	2020.10.12	2022.10.11
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2019.10.15	2021.10.14
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	J211020657	2020.10.12	2022.10.11
Pre-Amplifier (0.1M-3GHz)	EM	EM330	060665	2020.10.12	2021.10.11
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2020.10.12	2021.10.11
Pre-Amplifier (18G-40GHz)	SKET	LNPA-1840-50	SK2018101801	2020.10.10	2021.10.09
Temperature & Humidity	HH660	Mieo	N/A	2020.10.13	2021.10.12
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	2020.10.12	2021.10.11
LISN	R&S	ENV216	101242	2020.10.12	2021.10.11
LISN	EMCO	3810/2NM	23625	2020.10.12	2021.10.11
Temperature & Humidity	HH660	Mieo	N/A	2020.10.13	2021.10.12
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 CE)			

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
MIMO Power measurement test Set	Keysight	U2021XA	MY55520005	2020.10.10	2021.10.09
			MY55520006	2020.10.10	2021.10.09
			MY56120038	2020.10.10	2021.10.09
			MY56280002	2020.10.10	2021.10.09
Signal Analyzer	Agilent	N9020A	MY51110105	2020.03.05	2021.03.04
Temperature & Humidity	HH660	Mieo	N/A	2020.10.13	2021.10.12
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

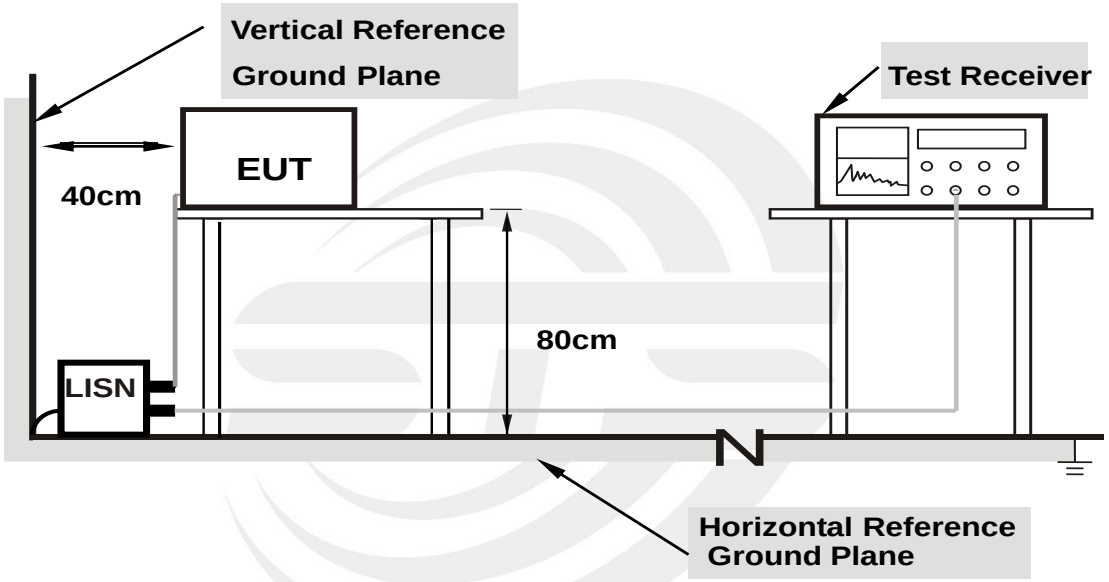
3.1.2 TEST PROCEDURE

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 support units.

3.1.5 EUT OPERATING CONDITIONS

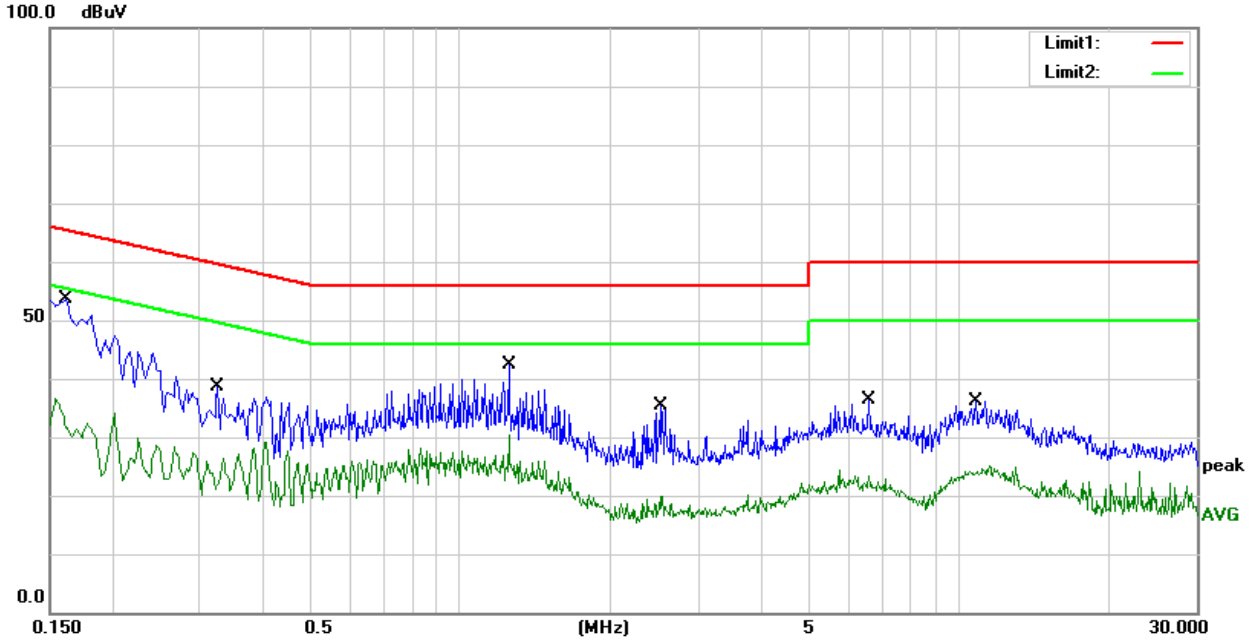
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6 TEST RESULTS

Temperature:	23.5(C)	Relative Humidity:	59%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	0.1620	33.33	20.22	53.55	65.36	-11.81	QP
2	0.1620	13.86	20.22	34.08	55.36	-21.28	AVG
3	0.3260	18.00	20.70	38.70	59.55	-20.85	QP
4	0.3260	5.57	20.70	26.27	49.55	-23.28	AVG
5	1.2540	22.29	20.16	42.45	56.00	-13.55	QP
6	1.2540	10.23	20.16	30.39	46.00	-15.61	AVG
7	2.5220	15.32	20.12	35.44	56.00	-20.56	QP
8	2.5220	-0.28	20.12	19.84	46.00	-26.16	AVG
9	6.6260	16.38	19.92	36.30	60.00	-23.70	QP
10	6.6260	3.51	19.92	23.43	50.00	-26.57	AVG
11	10.8020	16.24	19.85	36.09	60.00	-23.91	QP
12	10.8020	5.29	19.85	25.14	50.00	-24.86	AVG

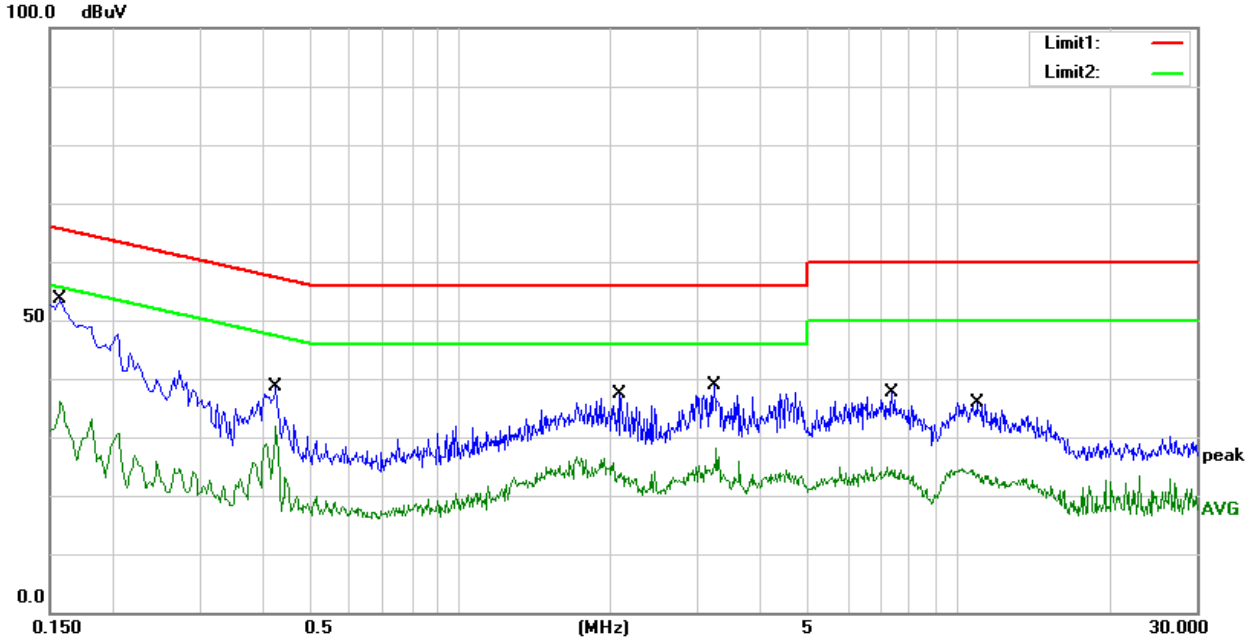
Remark:
1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor=LISN factor+Cable loss+Limiter (10dB)



Temperature:	23.5(C)	Relative Humidity:	59%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	0.1580	33.40	20.21	53.61	65.57	-11.96	QP
2	0.1580	15.91	20.21	36.12	55.57	-19.45	AVG
3	0.4260	18.07	20.50	38.57	57.33	-18.76	QP
4	0.4260	11.43	20.50	31.93	47.33	-15.40	AVG
5	2.0900	17.13	20.14	37.27	56.00	-18.73	QP
6	2.0900	3.72	20.14	23.86	46.00	-22.14	AVG
7	3.2340	18.76	20.08	38.84	56.00	-17.16	QP
8	3.2340	8.01	20.08	28.09	46.00	-17.91	AVG
9	7.3540	17.70	19.90	37.60	60.00	-22.40	QP
10	7.3540	4.53	19.90	24.43	50.00	-25.57	AVG
11	10.8580	15.96	19.85	35.81	60.00	-24.19	QP
12	10.8580	3.73	19.85	23.58	50.00	-26.42	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:

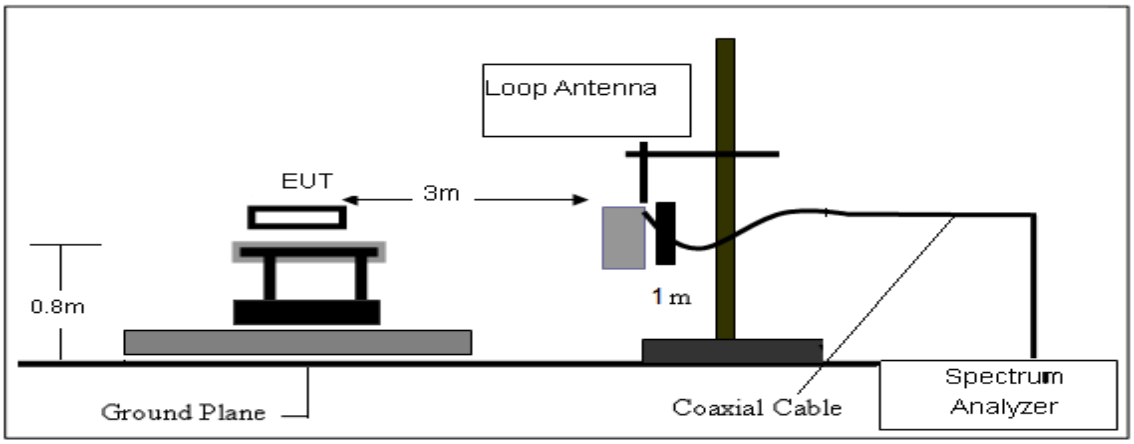
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.2 DEVIATION FROM TEST STANDARD

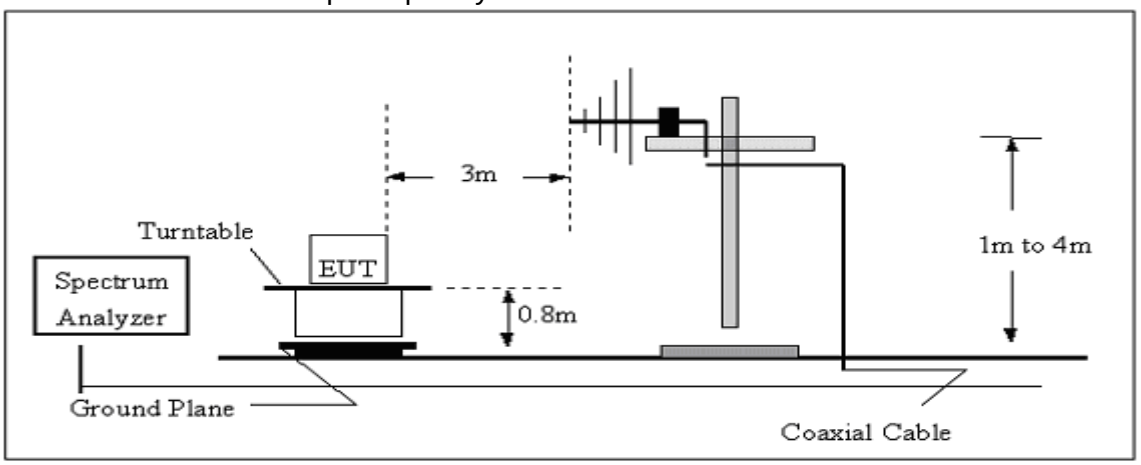
No deviation

3.2.3 TEST SETUP

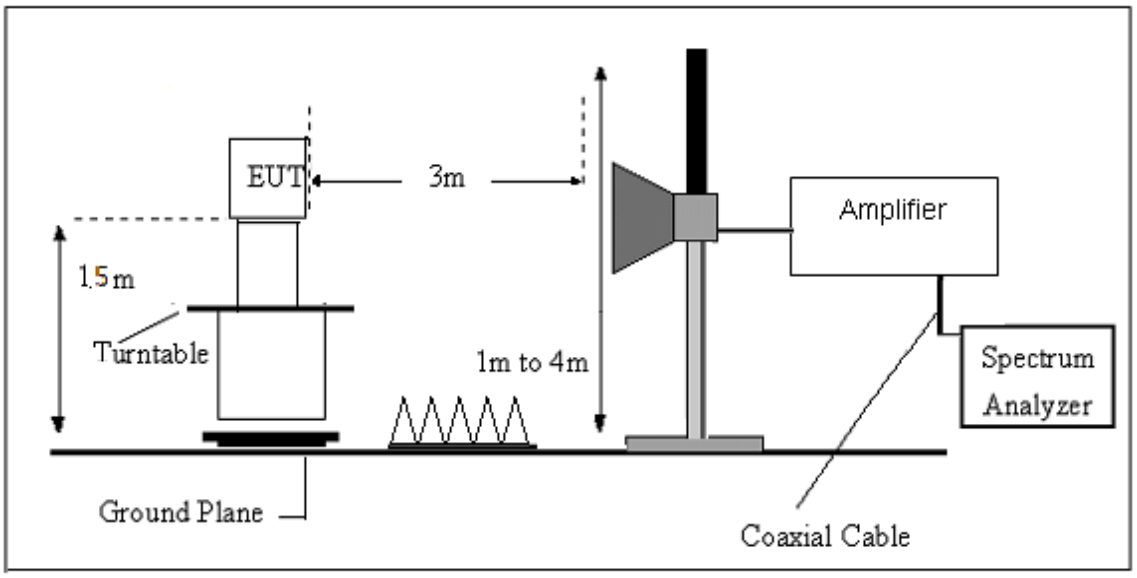
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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:	23.0(C)	Relative Humidtity:	59%RH
Test Voltage:	AC 120V/60Hz	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);

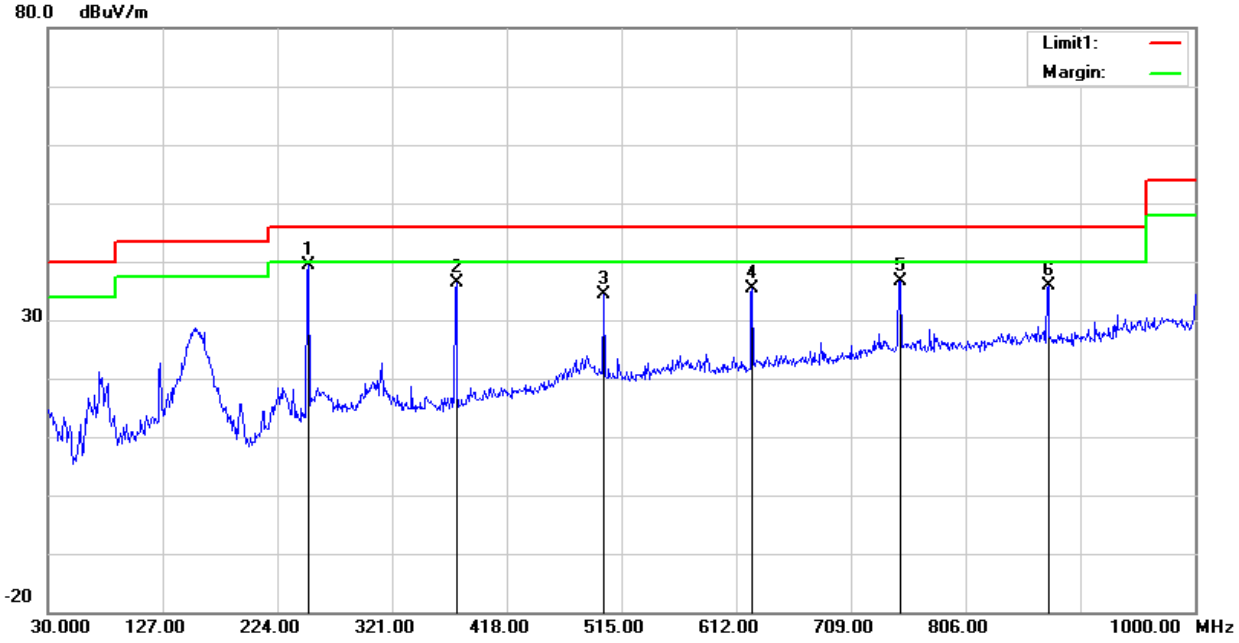
Limit line = specific limits(dBuv) + distance extrapolation factor.

3.2.7 TEST RESULTS (Between 30MHz – 1GHz)

Temperature	23.0(C)	Relative Humidtity:	59%RH
Test Voltage	AC 120V/60Hz	Polarization:	Horizontal
Test Mode	Mode 1~18(Mode 9 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.1900	55.50	-16.10	39.40	46.00	-6.60	QP
2	375.3200	48.69	-12.37	36.32	46.00	-9.68	QP
3	500.4500	42.43	-8.01	34.42	46.00	-11.58	QP
4	625.5800	40.65	-5.25	35.40	46.00	-10.60	QP
5	750.7100	38.90	-2.16	36.74	46.00	-9.26	QP
6	875.8400	36.49	-0.61	35.88	46.00	-10.12	QP

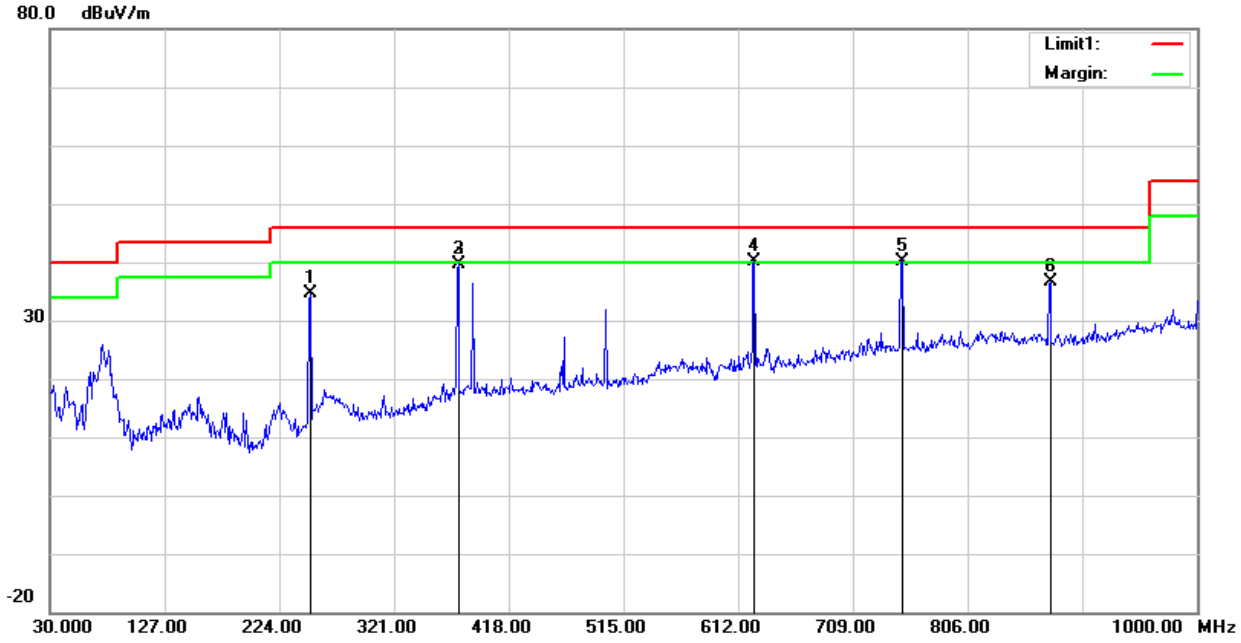
Remark:
1. Margin = Result (Result =Reading + Factor)–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain



Temperature	23.0(C)	Relative Humidtity:	59%RH
Test Voltage	AC 120V/60Hz	Polarization:	Vertical
Test Mode	Mode 1~18(Mode 9 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.1900	50.63	-16.10	34.53	46.00	-11.47	QP
2	375.3200	52.12	-12.37	39.75	46.00	-6.25	QP
3	375.3200	52.12	-12.37	39.75	46.00	-6.25	QP
4	625.5800	45.29	-5.25	40.04	46.00	-5.96	QP
5	750.7100	42.40	-2.16	40.24	46.00	-5.76	QP
6	875.8400	37.28	-0.61	36.67	46.00	-9.33	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 (802.11n40/ 5190 MHz)										
3263.54	44.03	44.70	6.70	28.20	-9.80	34.23	68.20	-33.97	Pk	Vertical
3263.54	40.91	44.70	6.70	28.20	-9.80	31.11	54.00	-22.89	AV	Vertical
3269.51	45.17	44.70	6.70	28.20	-9.80	35.37	68.20	-32.83	Pk	Horizontal
3269.51	41.88	44.70	6.70	28.20	-9.80	32.08	54.00	-21.92	AV	Horizontal
4003.04	38.86	44.20	7.90	29.70	-6.60	32.26	68.20	-35.94	Pk	Vertical
4003.04	36.12	44.20	7.90	29.70	-6.60	29.52	54.00	-24.48	AV	Vertical
3988.18	40.04	44.20	7.90	29.70	-6.60	33.44	68.20	-34.76	Pk	Horizontal
3988.18	35.66	44.20	7.90	29.70	-6.60	29.06	54.00	-24.94	AV	Horizontal
7246.69	36.53	43.50	11.40	35.50	3.40	39.93	68.20	-28.27	Pk	Vertical
7246.69	34.31	43.50	11.40	35.50	3.40	37.71	54.00	-16.29	AV	Vertical
7241.67	36.57	43.50	11.40	35.50	3.40	39.97	68.20	-28.23	Pk	Horizontal
7241.67	34.67	43.50	11.40	35.50	3.40	38.07	54.00	-15.93	AV	Horizontal
10380.17	38.95	44.50	13.80	38.80	8.10	47.05	68.20	-21.15	Pk	Vertical
10380.17	37.08	44.50	13.80	38.80	8.10	45.18	54.00	-8.82	AV	Vertical
10380.14	38.73	44.50	13.80	38.80	8.10	46.83	68.20	-21.37	Pk	Horizontal
10380.14	36.47	44.50	13.80	38.80	8.10	44.57	54.00	-9.43	AV	Horizontal
11044.86	33.06	43.60	14.30	39.50	10.20	43.26	68.20	-24.94	Pk	Vertical
11044.86	30.01	43.60	14.30	39.50	10.20	40.21	54.00	-13.79	AV	Vertical
11052.41	34.14	43.60	14.30	39.50	10.20	44.34	68.20	-23.86	Pk	Horizontal
11052.41	29.70	43.60	14.30	39.50	10.20	39.90	54.00	-14.10	AV	Horizontal
13314.30	32.20	42.60	15.90	38.90	12.20	44.40	68.20	-23.80	Pk	Vertical
13314.30	29.26	42.60	15.90	38.90	12.20	41.46	54.00	-12.54	AV	Vertical
13316.01	32.55	42.60	15.90	38.90	12.20	44.75	68.20	-23.45	Pk	Horizontal
13316.01	28.58	42.60	15.90	38.90	12.20	40.78	54.00	-13.22	AV	Horizontal

High Channel (802.11n40/ 5230 MHz)										
3241.42	44.72	44.70	6.70	28.20	-9.80	34.92	68.20	-33.28	Pk	Vertical
3241.42	41.49	44.70	6.70	28.20	-9.80	31.69	54.00	-22.31	AV	Vertical
3248.77	44.11	44.70	6.70	28.20	-9.80	34.31	68.20	-33.89	Pk	Horizontal
3248.77	42.04	44.70	6.70	28.20	-9.80	32.24	54.00	-21.76	AV	Horizontal
3977.13	39.98	44.20	7.90	29.70	-6.60	33.38	68.20	-34.82	Pk	Vertical
3977.13	35.79	44.20	7.90	29.70	-6.60	29.19	54.00	-24.81	AV	Vertical
3989.29	39.74	44.20	7.90	29.70	-6.60	33.14	68.20	-35.06	Pk	Horizontal
3989.29	36.50	44.20	7.90	29.70	-6.60	29.90	54.00	-24.10	AV	Horizontal
7205.19	36.83	43.50	11.40	35.50	3.40	40.23	68.20	-27.97	Pk	Vertical
7205.19	34.24	43.50	11.40	35.50	3.40	37.64	54.00	-16.36	AV	Vertical
7216.75	37.01	43.50	11.40	35.50	3.40	40.41	68.20	-27.79	Pk	Horizontal
7216.75	34.68	43.50	11.40	35.50	3.40	38.08	54.00	-15.92	AV	Horizontal
10460.04	39.61	44.50	13.80	38.80	8.10	47.71	68.20	-20.49	Pk	Vertical
10460.04	36.15	44.50	13.80	38.80	8.10	44.25	54.00	-9.75	AV	Vertical
10460.37	38.75	44.50	13.80	38.80	8.10	46.85	68.20	-21.35	Pk	Horizontal
10460.37	36.18	44.50	13.80	38.80	8.10	44.28	54.00	-9.72	AV	Horizontal
10997.47	32.98	43.60	14.30	39.50	10.20	43.18	68.20	-25.02	Pk	Vertical
10997.47	31.11	43.60	14.30	39.50	10.20	41.31	54.00	-12.69	AV	Vertical
10999.94	33.59	43.60	14.30	39.50	10.20	43.79	68.20	-24.41	Pk	Horizontal
10999.94	30.72	43.60	14.30	39.50	10.20	40.92	54.00	-13.08	AV	Horizontal
13256.31	32.21	42.60	15.90	38.90	12.20	44.41	68.20	-23.79	Pk	Vertical
13256.31	29.35	42.60	15.90	38.90	12.20	41.55	54.00	-12.45	AV	Vertical
13268.87	32.82	42.60	15.90	38.90	12.20	45.02	68.20	-23.18	Pk	Horizontal
13268.87	29.13	42.60	15.90	38.90	12.20	41.33	54.00	-12.67	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), 802.11ax (VHT-20),802.11ax (VHT-40), 802.11ax (VHT-80) the worst case is 802.11n (HT-40).
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 (802.11ax40/ 5755 MHz)										
3254.21	44.94	44.70	6.70	28.20	-9.80	35.14	68.20	-33.06	Pk	Vertical
3254.21	41.47	44.70	6.70	28.20	-9.80	31.67	54.00	-22.33	AV	Vertical
3265.93	44.04	44.70	6.70	28.20	-9.80	34.24	68.20	-33.96	Pk	Horizontal
3265.93	41.09	44.70	6.70	28.20	-9.80	31.29	54.00	-22.71	AV	Horizontal
4003.04	38.75	44.20	7.90	29.70	-6.60	32.15	68.20	-36.05	Pk	Vertical
4003.04	36.95	44.20	7.90	29.70	-6.60	30.35	54.00	-23.65	AV	Vertical
3990.83	39.91	44.20	7.90	29.70	-6.60	33.31	68.20	-34.89	Pk	Horizontal
3990.83	35.69	44.20	7.90	29.70	-6.60	29.09	54.00	-24.91	AV	Horizontal
7241.73	37.64	43.50	11.40	35.50	3.40	41.04	68.20	-27.16	Pk	Vertical
7241.73	33.67	43.50	11.40	35.50	3.40	37.07	54.00	-16.93	AV	Vertical
7239.62	36.88	43.50	11.40	35.50	3.40	40.28	68.20	-27.92	Pk	Horizontal
7239.62	34.36	43.50	11.40	35.50	3.40	37.76	54.00	-16.24	AV	Horizontal
10378.30	40.12	44.50	13.80	38.80	8.10	48.22	68.20	-19.98	Pk	Vertical
10378.30	37.02	44.50	13.80	38.80	8.10	45.12	54.00	-8.88	AV	Vertical
10377.99	38.96	44.50	13.80	38.80	8.10	47.06	68.20	-21.14	Pk	Horizontal
10377.99	36.61	44.50	13.80	38.80	8.10	44.71	54.00	-9.29	AV	Horizontal
11045.89	34.15	43.60	14.30	39.50	10.20	44.35	68.20	-23.85	Pk	Vertical
11045.89	30.00	43.60	14.30	39.50	10.20	40.20	54.00	-13.80	AV	Vertical
11054.84	33.36	43.60	14.30	39.50	10.20	43.56	68.20	-24.64	Pk	Horizontal
11054.84	29.75	43.60	14.30	39.50	10.20	39.95	54.00	-14.05	AV	Horizontal
13316.14	32.97	42.60	15.90	38.90	12.20	45.17	68.20	-23.03	Pk	Vertical
13316.14	28.66	42.60	15.90	38.90	12.20	40.86	54.00	-13.14	AV	Vertical
13304.53	32.18	42.60	15.90	38.90	12.20	44.38	68.20	-23.82	Pk	Horizontal
13304.53	28.98	42.60	15.90	38.90	12.20	41.18	54.00	-12.82	AV	Horizontal

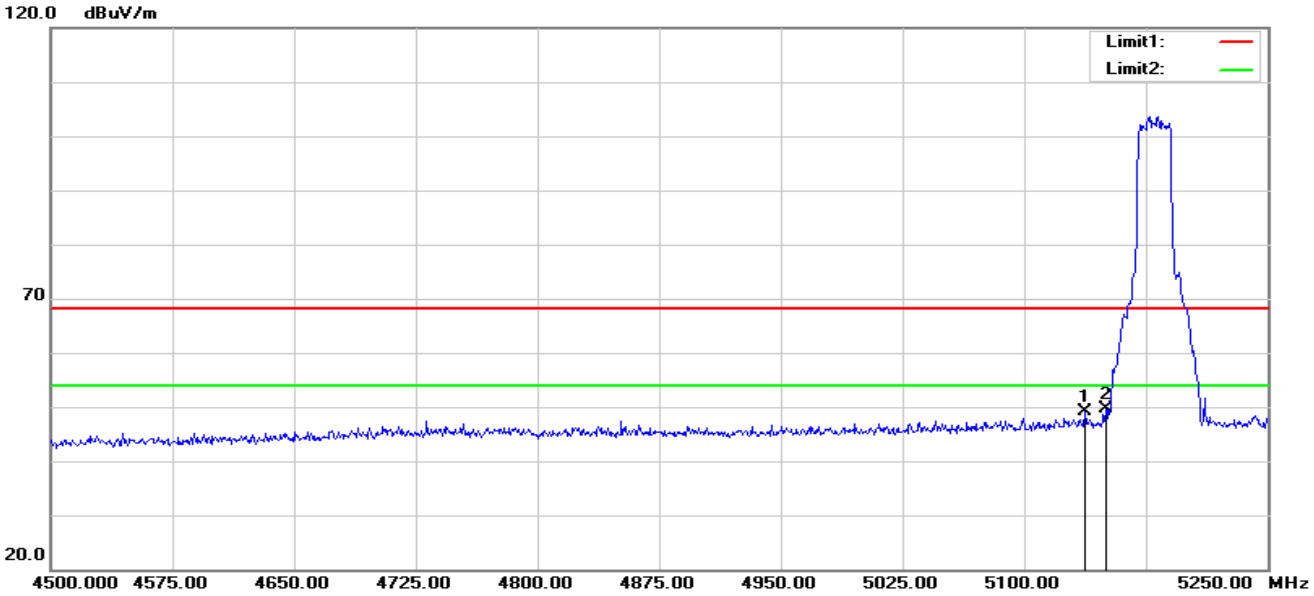
High Channel (802.11ax40/ 5795 MHz)										
3231.61	44.66	44.70	6.70	28.20	-9.80	34.86	68.20	-33.34	Pk	Vertical
3231.61	41.95	44.70	6.70	28.20	-9.80	32.15	54.00	-21.85	AV	Vertical
3232.13	44.72	44.70	6.70	28.20	-9.80	34.92	68.20	-33.28	Pk	Horizontal
3232.13	40.81	44.70	6.70	28.20	-9.80	31.01	54.00	-22.99	AV	Horizontal
3963.74	38.65	44.20	7.90	29.70	-6.60	32.05	68.20	-36.15	Pk	Vertical
3963.74	36.13	44.20	7.90	29.70	-6.60	29.53	54.00	-24.47	AV	Vertical
3966.28	39.32	44.20	7.90	29.70	-6.60	32.72	68.20	-35.48	Pk	Horizontal
3966.28	36.93	44.20	7.90	29.70	-6.60	30.33	54.00	-23.67	AV	Horizontal
7193.26	37.82	43.50	11.40	35.50	3.40	41.22	68.20	-26.98	Pk	Vertical
7193.26	34.22	43.50	11.40	35.50	3.40	37.62	54.00	-16.38	AV	Vertical
7189.67	36.64	43.50	11.40	35.50	3.40	40.04	68.20	-28.16	Pk	Horizontal
7189.67	34.58	43.50	11.40	35.50	3.40	37.98	54.00	-16.02	AV	Horizontal
10426.06	38.86	44.50	13.80	38.80	8.10	46.96	68.20	-21.24	Pk	Vertical
10426.06	36.25	44.50	13.80	38.80	8.10	44.35	54.00	-9.65	AV	Vertical
10426.46	38.68	44.50	13.80	38.80	8.10	46.78	68.20	-21.42	Pk	Horizontal
10426.46	36.74	44.50	13.80	38.80	8.10	44.84	54.00	-9.16	AV	Horizontal
10965.03	34.19	43.60	14.30	39.50	10.20	44.39	68.20	-23.81	Pk	Vertical
10965.03	31.17	43.60	14.30	39.50	10.20	41.37	54.00	-12.63	AV	Vertical
10970.06	33.44	43.60	14.30	39.50	10.20	43.64	68.20	-24.56	Pk	Horizontal
10970.06	30.18	43.60	14.30	39.50	10.20	40.38	54.00	-13.62	AV	Horizontal
13212.61	31.64	42.60	15.90	38.90	12.20	43.84	68.20	-24.36	Pk	Vertical
13212.61	29.29	42.60	15.90	38.90	12.20	41.49	54.00	-12.51	AV	Vertical
13215.23	31.84	42.60	15.90	38.90	12.20	44.04	68.20	-24.16	Pk	Horizontal
13215.23	30.00	42.60	15.90	38.90	12.20	42.20	54.00	-11.80	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), 802.11ax (VHT-20),802.11ax (VHT-40), 802.11ax (VHT-80) the worst case is 802.11ax (VHT-40).
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

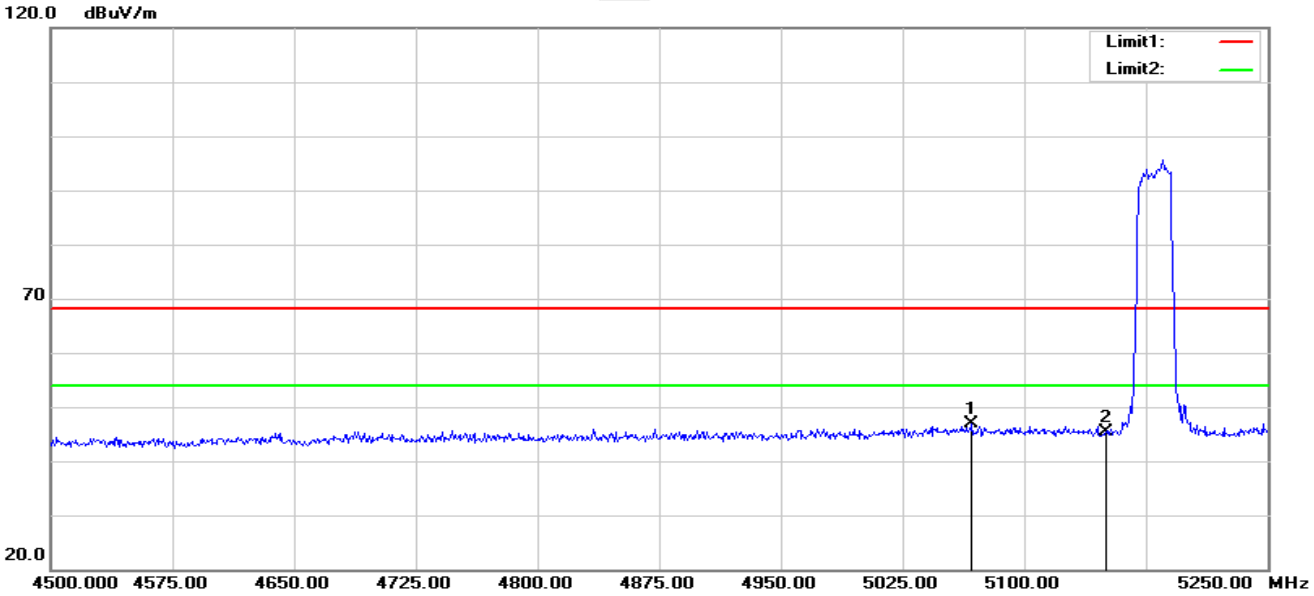
Band I 5150-5250MHz

802.11ax20-L-H



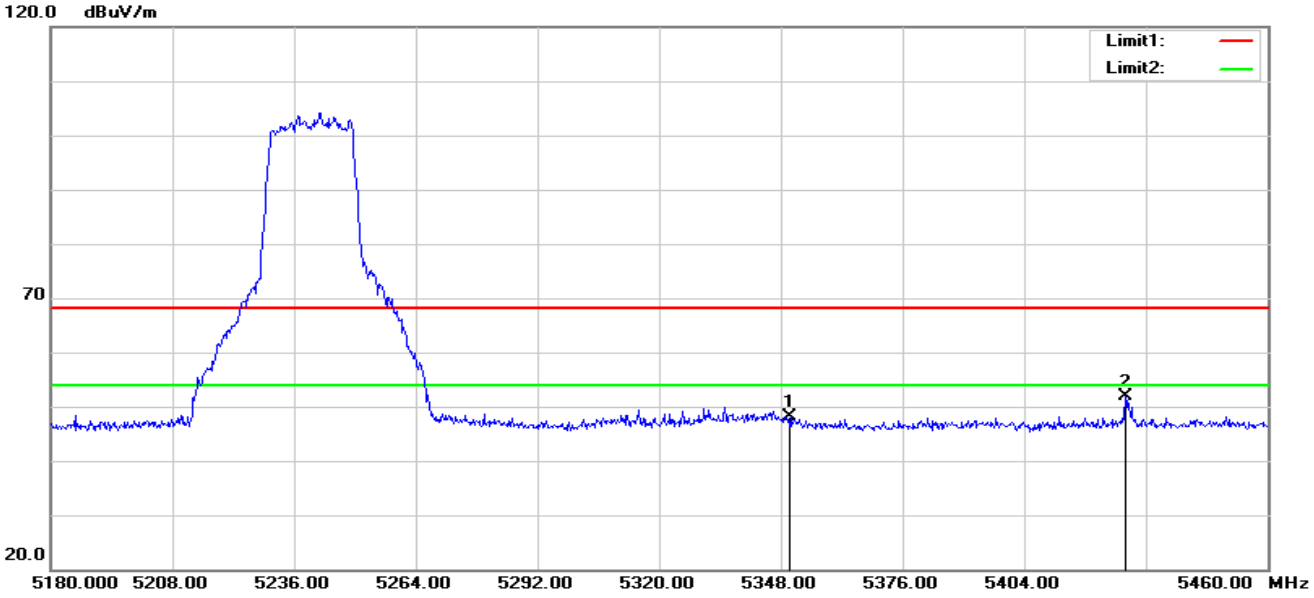
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5137.500	54.83	-5.74	49.09	68.20	-19.11	peak
2	5150.000	55.37	-5.73	49.64	68.20	-18.56	peak

802.11ax20-L-V



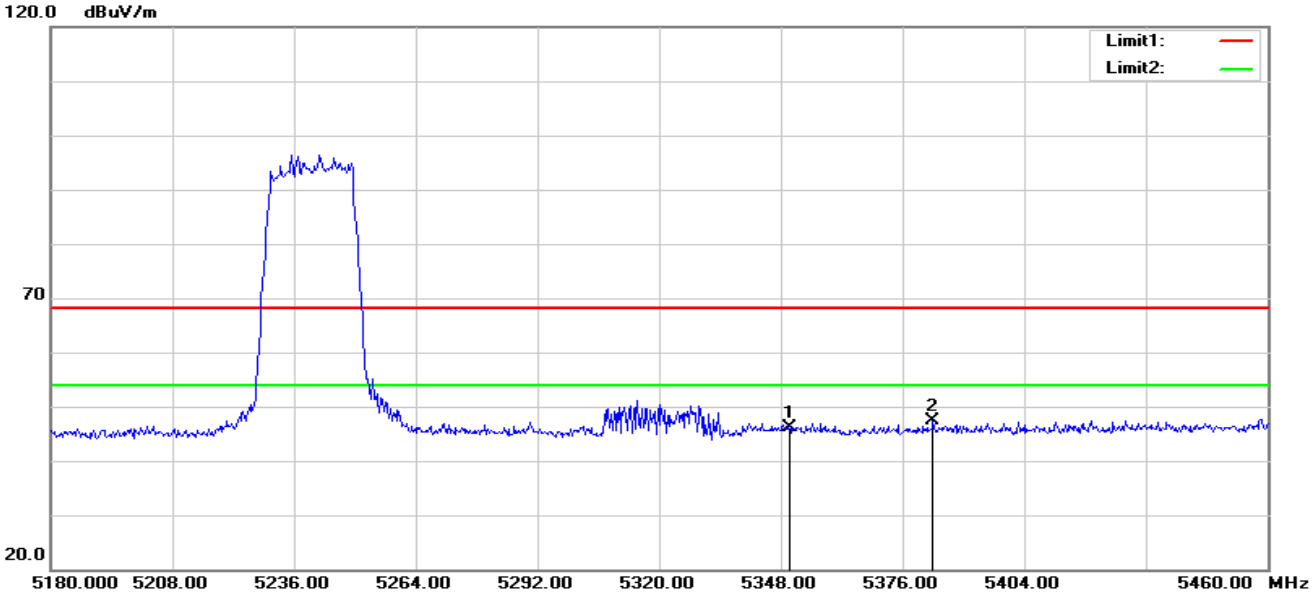
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5067.750	52.77	-5.89	46.88	68.20	-21.32	peak
2	5150.000	51.21	-5.73	45.48	68.20	-22.72	peak

802.11ax20-H-H



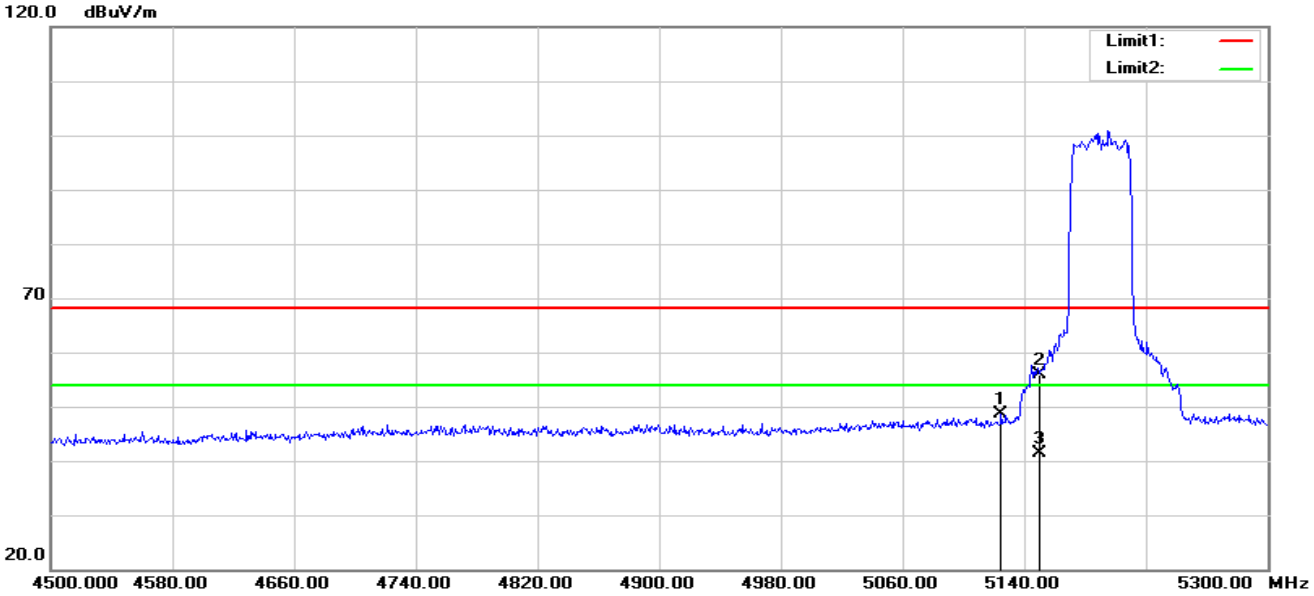
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	53.42	-5.23	48.19	68.20	-20.01	peak
2	5427.240	56.99	-5.19	51.80	68.20	-16.40	peak

802.11ax20-H-V



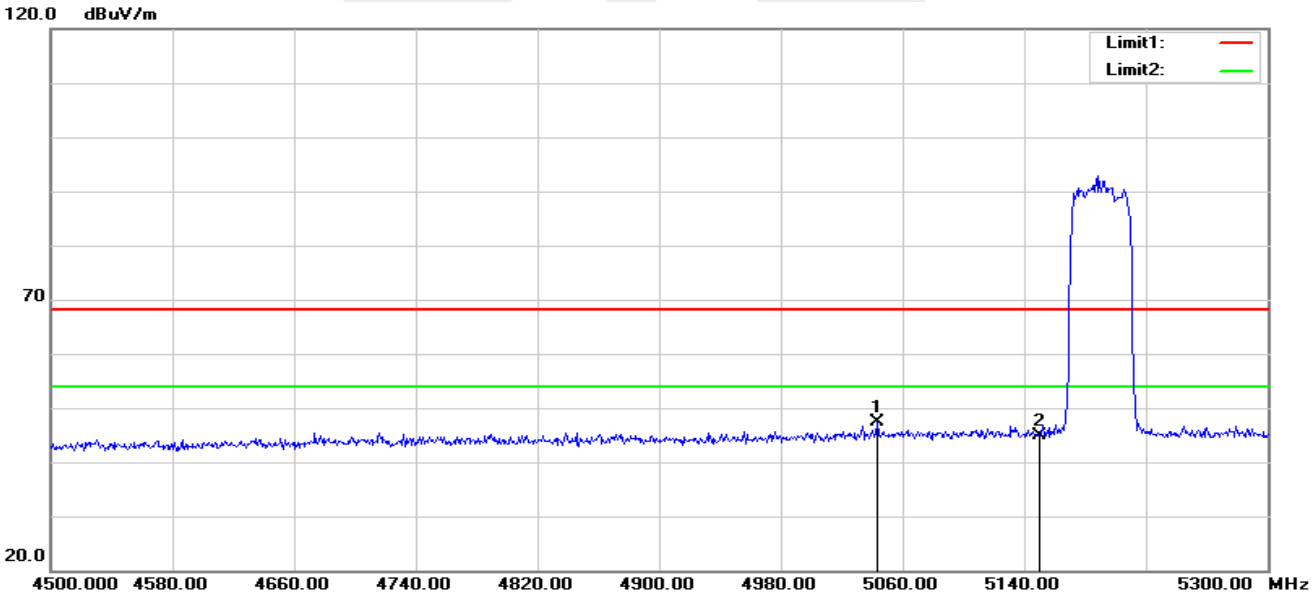
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	51.26	-5.23	46.03	68.20	-22.17	peak
2	5383.000	52.62	-5.24	47.38	68.20	-20.82	peak

802.11ax40-L-H



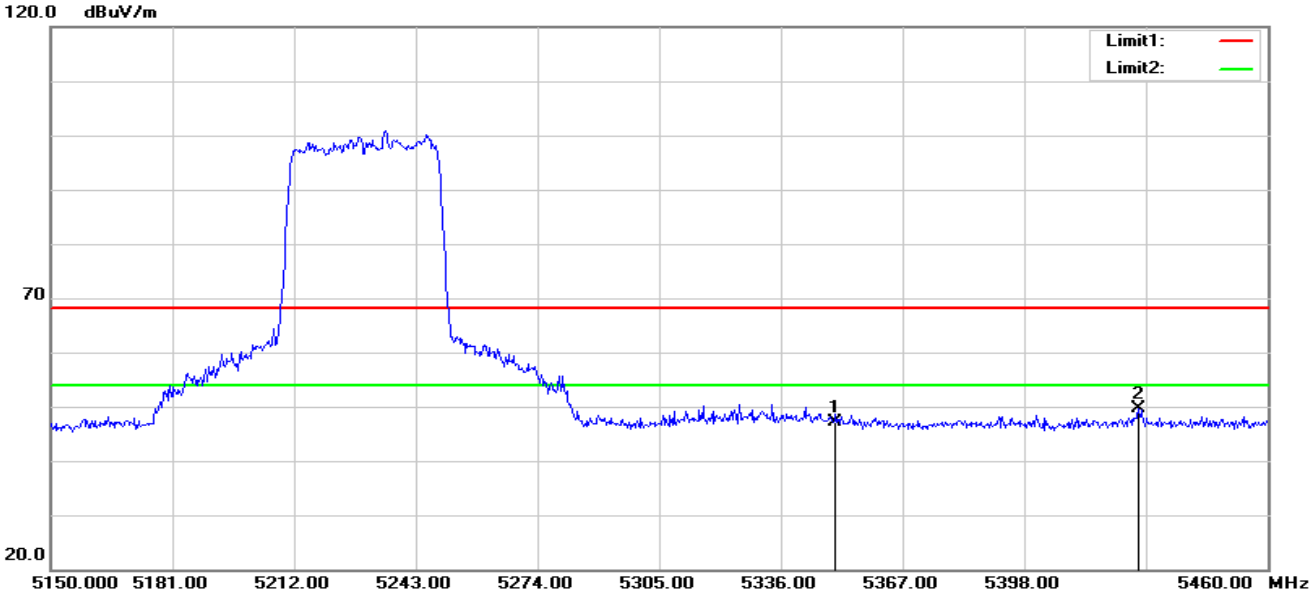
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5124.800	54.28	-5.74	48.54	68.20	-19.66	peak
2	5150.000	61.73	-5.73	56.00	68.20	-12.20	peak
3	5150.000	47.23	-5.73	41.50	54.00	-12.50	AVG

802.11ax40-L-V



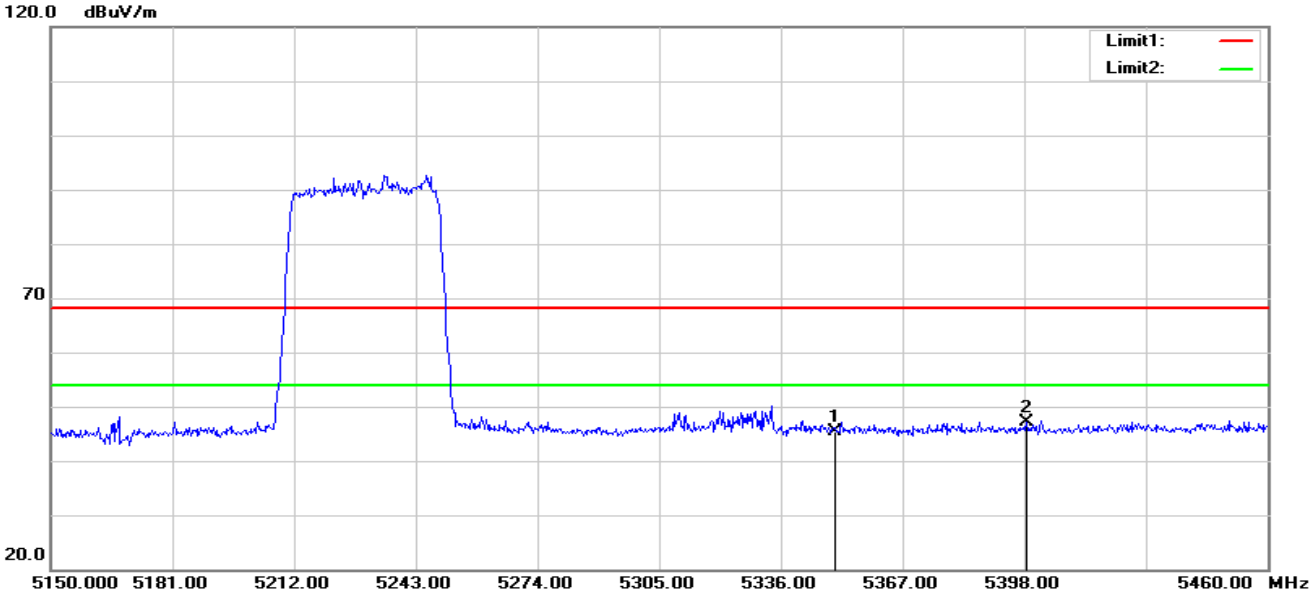
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5043.200	53.36	-6.00	47.36	68.20	-20.84	peak
2	5150.000	50.52	-5.73	44.79	68.20	-23.41	peak

802.11ax40-H-H



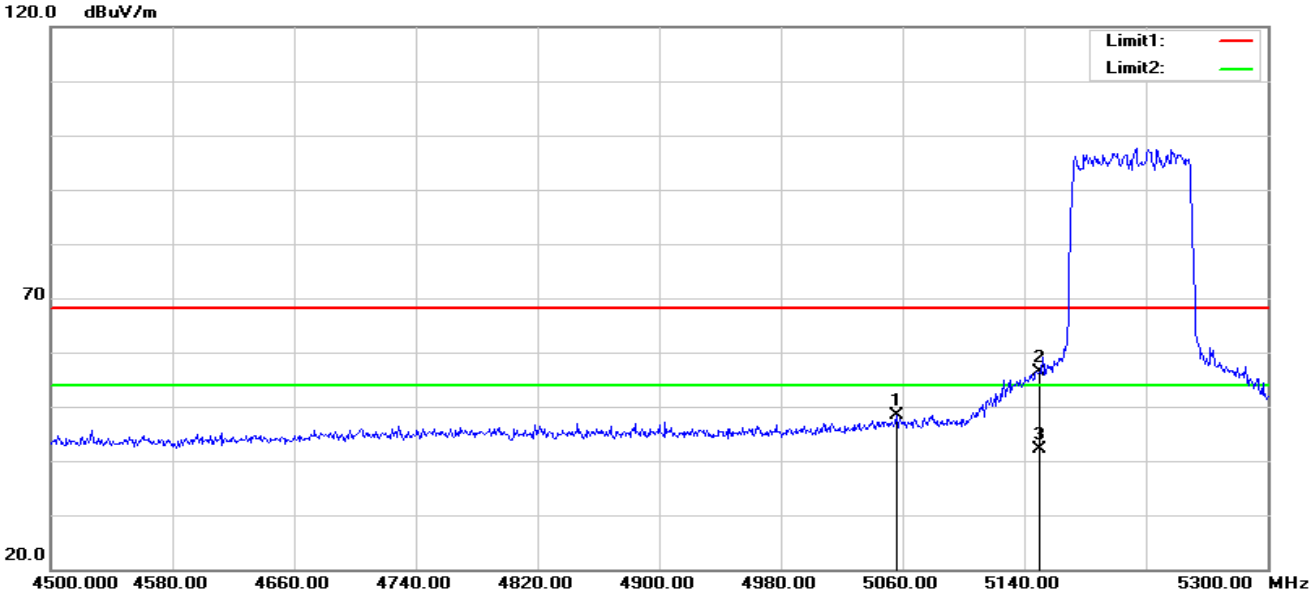
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	52.28	-5.23	47.05	68.20	-21.15	peak
2	5427.140	54.75	-5.19	49.56	68.20	-18.64	peak

802.11ax40-H-V



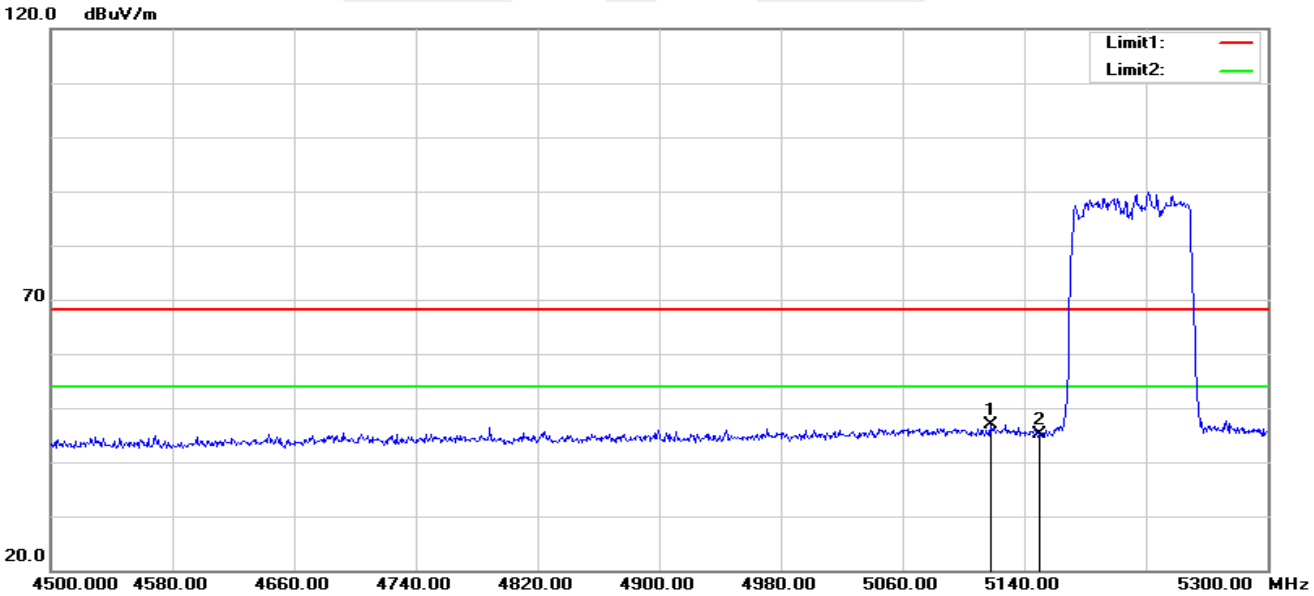
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	50.59	-5.23	45.36	68.20	-22.84	peak
2	5398.620	52.45	-5.25	47.20	68.20	-21.00	peak

802.11ax80-L-H



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5056.000	54.33	-5.94	48.39	68.20	-19.81	peak
2	5150.000	62.00	-5.73	56.27	68.20	-11.93	peak
3	5150.000	47.86	-5.73	42.13	54.00	-11.87	AVG

802.11ax80-L-V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5117.600	52.62	-5.74	46.88	68.20	-21.32	peak
2	5150.000	50.97	-5.73	45.24	68.20	-22.96	peak