



RADIO TEST REPORT

Report No.:STS2202146W26

Issued for

Shanghai Unihertz E-Commerce Co., Ltd

Room 308, Building C, 508 Chundong Rd, Minhang district
Shanghai, China 201108

Product Name:	Smart phone
Brand Name:	Unihertz
Model Name:	UNIA62_S01
Series Model:	N/A
FCC ID:	2AK6CTICKTOCK-E
Test Standard:	FCC Part 15.407

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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..... : Shanghai Unihertz E-Commerce Co., Ltd
Address : Room 308, Building C, 508 Chundong Rd, Minhang district
Shanghai, China 201108
Manufacturer's Name : OBLUE Communication Technology Co.,Ltd.
Address : 7th floor, building B, dayou industrial and trade industrial park,
heping yonghe road, fuyong street, baoan district, Shenzhen,
China

Product Description

Product Name..... : Smart phone
Brand Name : Unihertz
Model Name : UNIA62_S01
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 : 28 Feb. 2022

Date (s) of performance of tests : 28 Feb. 2022 ~ 14 Apr. 2022

Date of Issue..... : 26 Apr. 2022

Test Result..... : **Pass**

Testing Engineer :

(Chris Chen)

Technical Manager :

(Sean she)

Authorized Signatory :

(Bovey Yang)





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**Revision History**

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	26 Apr. 2022	STS2202146W26	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	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 $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95 %**.

No.	Item	Uncertainty
1	RF output power, conducted	$\pm 0.87\text{dB}$
2	Unwanted Emissions, conducted	$\pm 2.895\text{dB}$
3	All emissions, radiated 9K-30MHz	$\pm 3.80\text{dB}$
4	All emissions, radiated 30M-1GHz	$\pm 4.09\text{dB}$
5	All emissions, radiated 1G-6GHz	$\pm 4.92\text{dB}$
6	All emissions, radiated >6G	$\pm 5.49\text{dB}$
7	Conducted Emission (9KHz-30MHz)	$\pm 2.73\text{dB}$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Smart phone											
Trade Name	Unihertz											
Model Name	UNIA62_S01											
Series Model	N/A											
Model Difference	N/A											
Product Description	The EUT is a Smart phone <table><tr><td rowspan="4">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 802.11n(HT40)/ac(VHT40): 5.270GHz-5.310GHz IEEE 802.11ac(VHT80): 5.290GHz</td></tr><tr><td>IEEE 802.11a/ n(HT20)/ac(VHT20): 5.500GHz-5.700GHz IEEE 802.11n(HT40)/ac(VHT40): 5.510GHz-5.670GHz IEEE 802.11ac(VHT80): 5.530GHz-5.610GHz</td></tr><tr><td>IEEE 802.11a/ n(HT20)/ac(VHT20): 5.745GHz-5.825GHz IEEE 802.11n(HT40)/ac(VHT40): 5.755GHz-5.795GHz IEEE 802.11ac(VHT80): 5.775GHz</td></tr><tr><td>Modulation Type:</td><td>802.11a(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11ac(OFDM): BPSK,QPSK,16-QAM,64-QAM,256-QAM</td></tr><tr><td>Antenna Designation:</td><td>Please refer to the Note 3.</td></tr><tr><td>Max.Output Power(Conducted):</td><td>4.53 dBm</td></tr></table> More details of EUT technical specification, please refer to the User Manual.	Operation Frequency:	IEEE 802.11a/ n(HT20)/ac(VHT20): 5.180GHz-5.240GHz IEEE 802.11n(HT40)/ac(VHT40): 5.190GHz-5.230GHz IEEE 802.11ac(VHT80): 5.210GHz	IEEE 802.11a/ n(HT20)/ac(VHT20): 5.260GHz-5.320GHz IEEE 802.11n(HT40)/ac(VHT40): 5.270GHz-5.310GHz IEEE 802.11ac(VHT80): 5.290GHz	IEEE 802.11a/ n(HT20)/ac(VHT20): 5.500GHz-5.700GHz IEEE 802.11n(HT40)/ac(VHT40): 5.510GHz-5.670GHz IEEE 802.11ac(VHT80): 5.530GHz-5.610GHz	IEEE 802.11a/ n(HT20)/ac(VHT20): 5.745GHz-5.825GHz IEEE 802.11n(HT40)/ac(VHT40): 5.755GHz-5.795GHz IEEE 802.11ac(VHT80): 5.775GHz	Modulation Type:	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	Antenna Designation:	Please refer to the Note 3.	Max.Output Power(Conducted):	4.53 dBm
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Antenna Designation:	Please refer to the Note 3.											
Max.Output Power(Conducted):	4.53 dBm											
Test Channel	Please refer to the Note 2.											
Adapter	Model: HJ-FC010K7-US Input: 100-240V~ 50/60Hz 0.6A Output: 5V---2A 9V---2A 12V---1.5A											
Battery	Rated Voltage:3.85V Charge Limit Voltage:4.4V Capacity: 6000mAh											
Hardware version number	G62_V1.1											



Software version number	TickTock-E_20220307
Connecting I/O Port(s)	Please refer to the Note 1.

Note:

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

Operation Frequency of channel			
5.180GHz-5.240GHz		5.500GHz-5.720GHz	
Channel	Frequency	Channel	Frequency
36	5180	100	5500
38	5190	102	5510
40	5200	104	5520
42	5210	106	5530
44	5220	108	5540
46	5230	110	5550
48	5240	112	5560
		116	5580
		118	5590
5.260GHz-5.320GHz		120	5600
Channel	Frequency	122	5610
52	5260	124	5620
54	5270	126	5630
56	5280	128	5640
58	5290	132	5660
60	5300	134	5670
62	5310	136	5680
64	5320	140	5700
5.745GHz-5.825GHz			
Channel	Frequency		
149	5745		
151	5755		
153	5765		
155	5775		
157	5785		
159	5795		
161	5805		
165	5825		

Note:

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

Carrier Frequency Channel

5GHz:

For 802.11a/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 802.11n(HT40) /ac (VHT40)

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

For 802.11n(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	155	5775

For 802.11ac (VHT80)

Channel	Freq.(MHz)	Channel	Freq.(MHz)
106	5530	155	5775
122	5610		

3. Ant	Brand	Model Name	Ant Type	Connector	Gain (dBi)	NOTE
A	N/A	A62	PIFA	N/A	U-NII-1: 1.2dBi, U-NII-2A: 1.2dBi, U-NII-2C: 1.2dBi, U-NII-3: 1.1dBi	WLAN Ant

Note: The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.



2.2 DESCRIPTION OF TEST MODES

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

Worst Mode	Description	Data Rate
Mode 1	TX IEEE 802.11a HT20 CH36&CH40&CH48	6 Mbps
Mode 2	TX IEEE 802.11a HT20 CH52&CH60&CH64	6 Mbps
Mode 3	TX IEEE 802.11a HT20 CH100&CH116&CH140	6 Mbps
Mode 4	TX IEEE 802.11a HT20 CH149&CH157&CH165	6 Mbps
Mode 5	TX IEEE 802.11n HT20 CH36&CH40&CH48	MCS 0
Mode 6	TX IEEE 802.11ac HT20 CH36&CH40&CH48	NSS1 MCS0
Mode 7	TX IEEE 802.11n HT20 CH52&CH60&CH64	MCS 0
Mode 8	TX IEEE 802.11ac HT20 CH52&CH60&CH64	NSS1 MCS0
Mode 9	TX IEEE 802.11n HT20 CH100&CH116&CH140	MCS 0
Mode 10	TX IEEE 802.11ac HT20 CH100&CH116&CH140	NSS1 MCS0
Mode 11	TX IEEE 802.11n HT20 CH149&CH157&CH165	MCS 0
Mode 12	TX IEEE 802.11ac HT20 CH149&CH157&CH165	NSS1 MCS0
Mode 13	TX IEEE 802.11n HT40 CH38&CH46	MCS 0
Mode 14	TX IEEE 802.11ac HT40 CH38&CH46	NSS1 MCS0
Mode 15	TX IEEE 802.11n HT40 CH54 &CH62	MCS 0
Mode 16	TX IEEE 802.11ac HT40 CH54 &CH62	NSS1 MCS0
Mode 17	TX IEEE 802.11n HT40 CH102&CH110&CH134	MCS 0
Mode 18	TX IEEE 802.11ac HT40 CH102&CH110&CH134	NSS1 MCS0
Mode 19	TX IEEE 802.11n HT40 CH151&CH159	MCS 0
Mode 20	TX IEEE 802.11ac HT40 CH151&CH159	NSS1 MCS0
Mode 21	TX IEEE 802.11ac HT80 CH42	NSS1 MCS0
Mode 22	TX IEEE 802.11ac HT80 CH58	NSS1 MCS0
Mode 23	TX IEEE 802.11ac HT80 CH106&122	NSS1 MCS0
Mode 24	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 been tested for all available U.S. voltage and frequencies (For 120V, 50/60Hz and 240V, 50/60Hz) for which the device is capable of operation.
(4) The battery is fully-charged during the radiated and RF conducted test.



AC Conducted Emission

Test Case	
AC Conducted Emission	Mode 25: Keeping TX + WLAN Link

2.3 TEST SOFTWARE AND POWER LEVEL

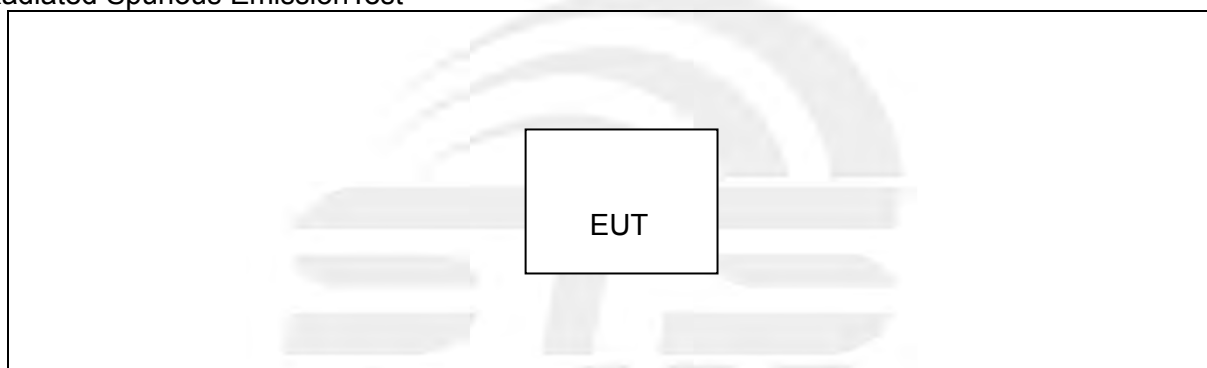
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
WIFI(5G)	U-NII-1 (5150MHz-5250MHz)	802.11a	1.2	6	Engineering mode
		802.11n(HT20)		5	
		802.11n(HT40)		5	
		802.11ac(VHT20)		5	
		802.11ac(VHT40)		5	
		802.11ac(VHT80)		5	
RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
WIFI(5G)	U-NII-2A (5250MHz-5350MHz)	802.11a	1.2	6	Engineering mode
		802.11n(HT20)		5	
		802.11n(HT40)		5	
		802.11ac(VHT20)		5	
		802.11ac(VHT40)		5	
		802.11ac(VHT80)		5	
RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
WIFI(5G)	U-NII-2C (5470MHz-5725MHz)	802.11a	1.2	6	Engineering mode
		802.11n(HT20)		5	
		802.11n(HT40)		5	
		802.11ac(VHT20)		5	
		802.11ac(VHT40)		5	
		802.11ac(VHT80)		5	

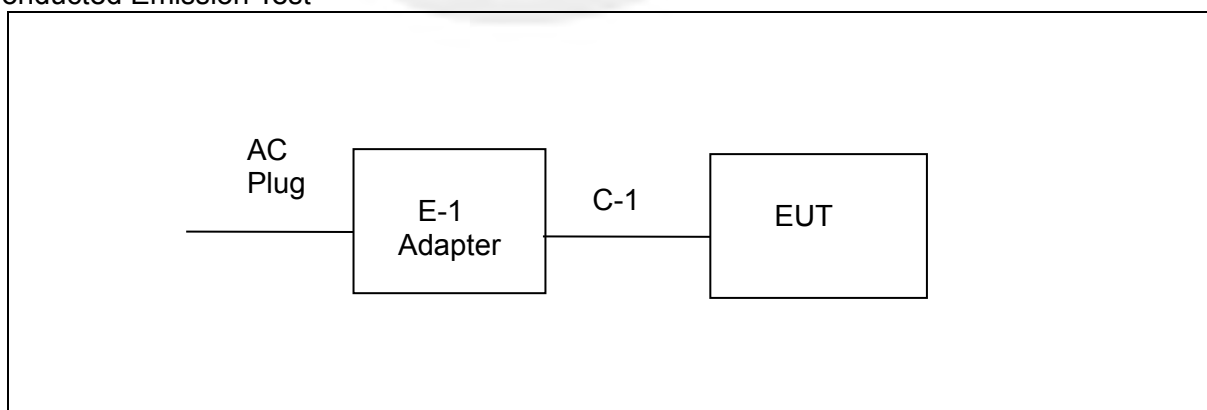
RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
WIFI(5G)	U-NII-3 (5725MHz-5875MHz)	802.11a	1.1	6	Engineering mode
		802.11n(HT20)		5	
		802.11n(HT40)		5	
		802.11ac(VHT20)		5	
		802.11ac(VHT40)		5	
		802.11ac(VHT80)		5	

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted Emission Test





2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

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

Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
E-1	Adapter	Unihertz	HJ-FC010K7-US	N/A	N/A
C-1	Type-C Cable	N/A	N/A	100cm	NO

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) “YES” is means “with core”; “NO” is means “without core”.



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	2021.09.30	2022.09.29
Signal Analyzer	R&S	FSV 40-N	101823	2021.09.30	2022.09.29
Active loop Antenna	ZHINAN	ZN30900C	16035	2021.04.11	2023.04.10
Bilog Antenna	TESEQ	CBL6111D	34678	2020.10.12	2022.10.11
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2021.10.11	2023.10.10
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	J211020657	2020.10.12	2022.10.11
Pre-Amplifier(0.1M-3G Hz)	EM	EM330	060665	2021.10.08	2022.10.07
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2021.09.30	2022.09.29
Pre-Amplifier (18G-40GHz)	SKET	LNPA-1840-50	SK2018101801	2021.09.28	2022.09.27
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
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	2021.09.30	2022.09.29
LISN	R&S	ENV216	101242	2021.09.30	2022.09.29
LISN	EMCO	3810/2NM	23625	2021.09.30	2022.09.29
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 CE)			

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Power Sensor	Keysight	U2021XA	MY55520005	2021.09.30	2022.09.29
			MY55520006	2021.09.30	2022.09.29
			MY56120038	2021.09.30	2022.09.29
			MY56280002	2021.09.30	2022.09.29
Signal Analyzer	Agilent	N9020A	MY51110105	2022.03.01	2023.02.28
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08



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

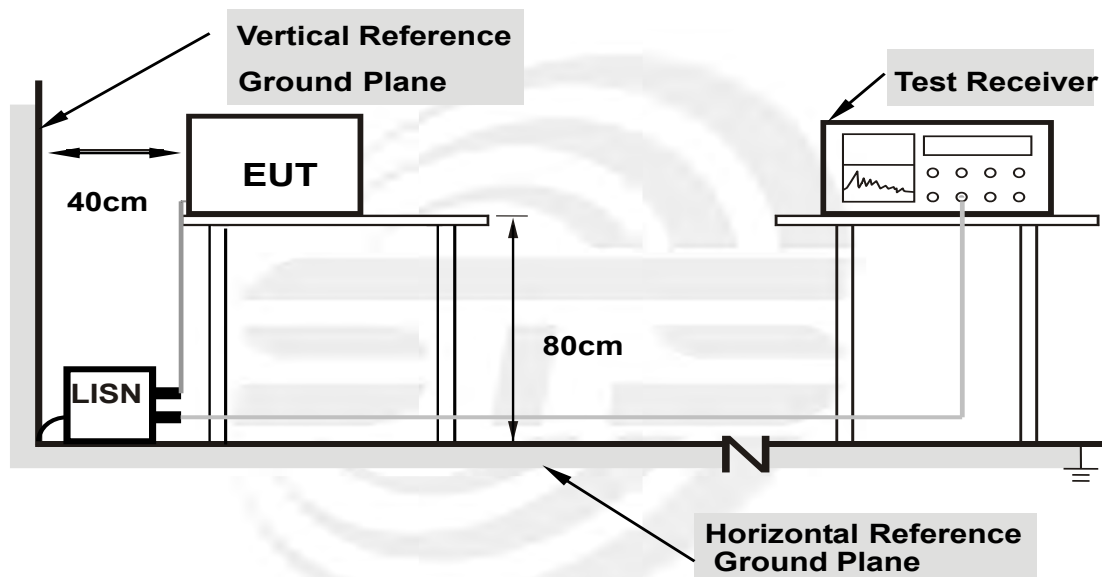
3.1.2 TEST PROCEDURE

- 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.
- 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.
- 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.
- LISN is at least 80 cm from the nearest part of EUT chassis.
- 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

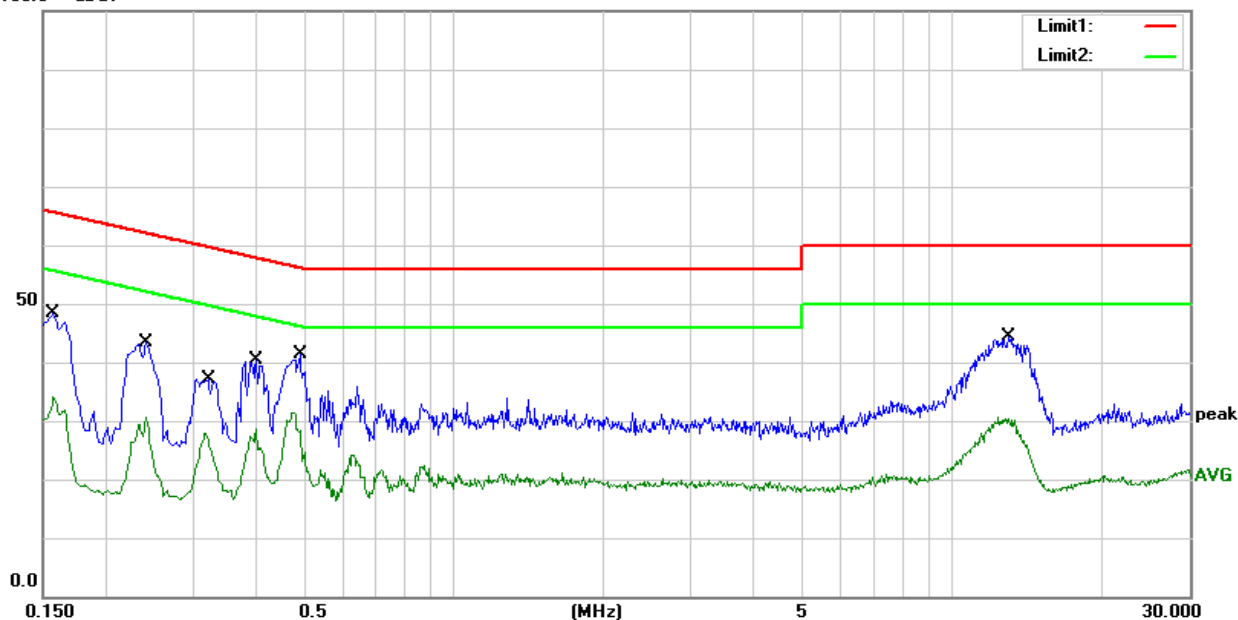
Temperature:	23.2(C)	Relative Humidity:	44%RH
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode :	Mode 25		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1580	28.00	20.33	48.33	65.57	-17.24	QP
2	0.1580	13.73	20.33	34.06	55.57	-21.51	AVG
3	0.2420	22.90	20.50	43.40	62.03	-18.63	QP
4	0.2420	10.22	20.50	30.72	52.03	-21.31	AVG
5	0.3220	16.51	20.70	37.21	59.66	-22.45	QP
6	0.3220	7.26	20.70	27.96	49.66	-21.70	AVG
7	0.4020	19.75	20.54	40.29	57.81	-17.52	QP
8	0.4020	9.49	20.54	30.03	47.81	-17.78	AVG
9	0.4940	20.93	20.54	41.47	56.10	-14.63	QP
10	0.4940	10.77	20.54	31.31	46.10	-14.79	AVG
11	13.0420	22.75	21.52	44.27	60.00	-15.73	QP
12	13.0420	9.14	21.52	30.66	50.00	-19.34	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)

100.0 dBuV



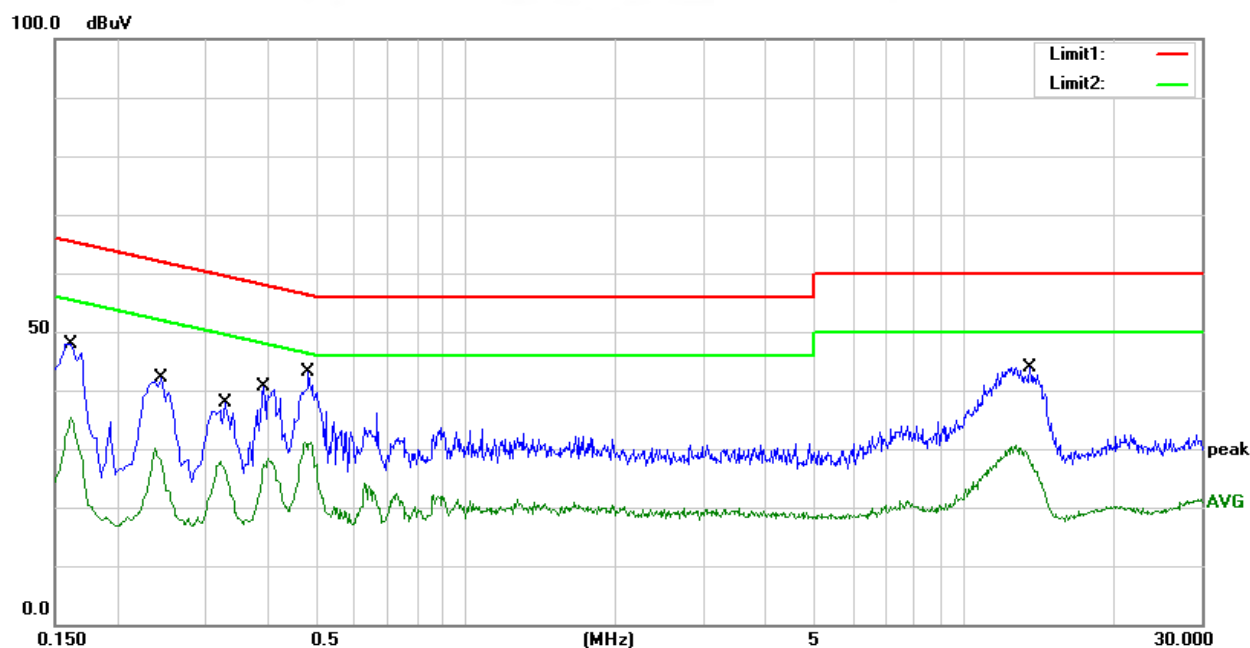


Temperature:	23.2(C)	Relative Humidity:	44%RH
Test Voltage	AC 120V/60Hz	Phase:	N
Test Mode	Mode 25		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1580	28.82	20.33	49.15	65.57	-16.42	QP
2	0.1580	14.83	20.33	35.16	55.57	-20.41	AVG
3	0.2260	23.21	20.43	43.64	62.60	-18.96	QP
4	0.2260	7.91	20.43	28.34	52.60	-24.26	AVG
5	0.3820	20.19	20.58	40.77	58.24	-17.47	QP
6	0.3820	4.37	20.58	24.95	48.24	-23.29	AVG
7	0.4740	20.37	20.54	40.91	56.44	-15.53	QP
8	0.4740	6.09	20.54	26.63	46.44	-19.81	AVG
9	7.2380	16.68	20.62	37.30	60.00	-22.70	QP
10	7.2380	1.00	20.62	21.62	50.00	-28.38	AVG
11	11.9700	24.01	21.41	45.42	60.00	-14.58	QP
12	11.9700	5.68	21.41	27.09	50.00	-22.91	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 (microvolt/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) + 95.2.

Peak Limit = -27dBm/MHz + 95.2 = 68.2 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:

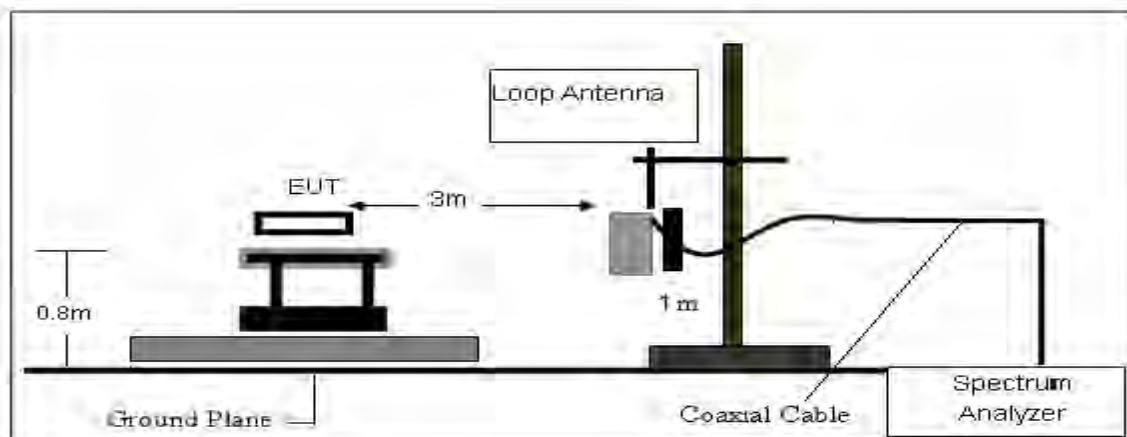
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.2 DEVIATION FROM TEST STANDARD

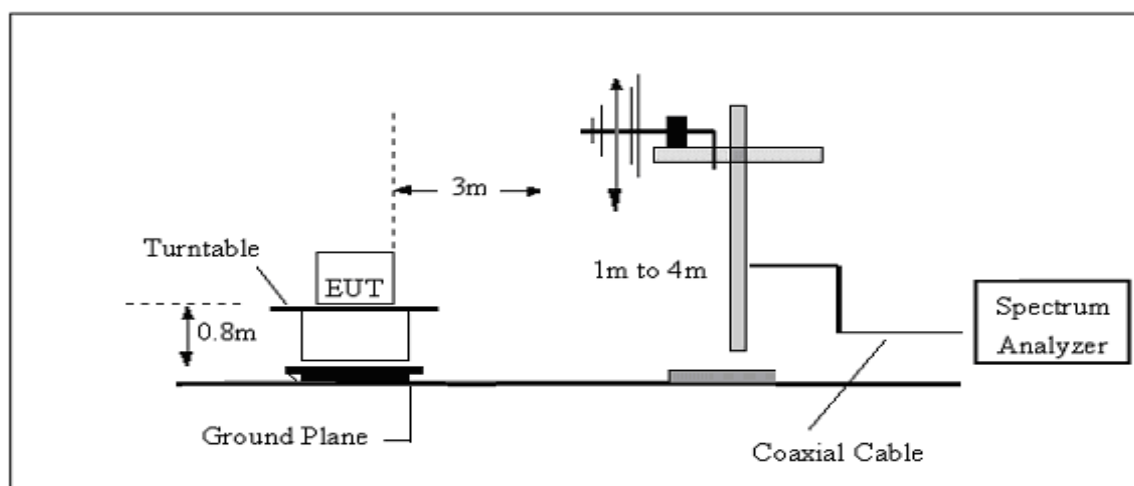
No deviation

3.2.3 TEST SETUP

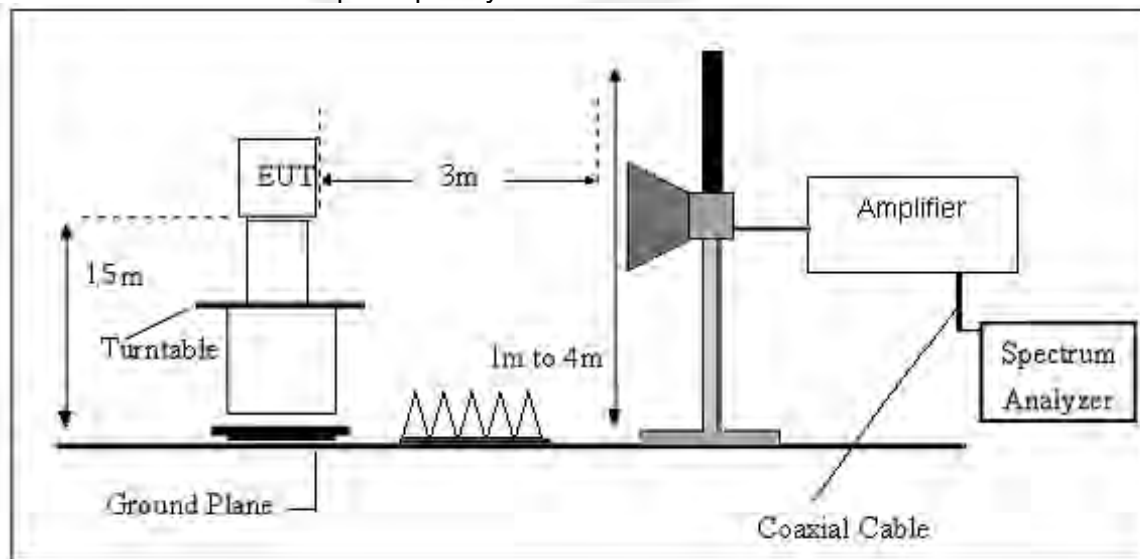
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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

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

**3.2.6 TEST RESULTS (Between 9KHz – 30 MHz)**

Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage :	DC 3.85V	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 = $40 \log (\text{specific distance/test distance})$ (dB);

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

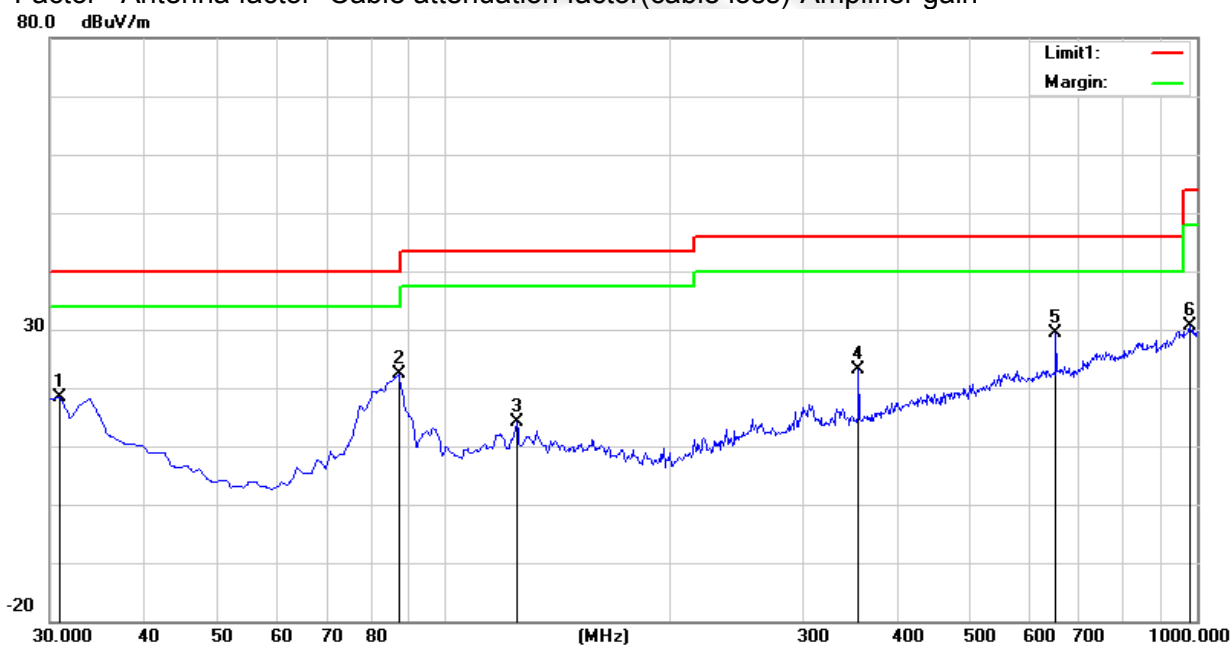
**3.2.7 TEST RESULTS (Between 30MHz – 1GHz)**

Temperature	23.1(C)	Relative Humidity:	60%RH
Test Voltage	DC 3.85V	Polarization:	Horizontal
Test Mode	Mode 1~24(Mode 2 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.9700	31.73	-13.35	18.38	40.00	-21.62	QP
2	87.2300	44.15	-21.84	22.31	40.00	-17.69	QP
3	125.0600	32.33	-18.22	14.11	43.50	-29.39	QP
4	355.9200	36.11	-12.95	23.16	46.00	-22.84	QP
5	649.8300	34.35	-4.90	29.45	46.00	-16.55	QP
6	980.6000	28.07	2.63	30.70	54.00	-23.30	QP

Remark:

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



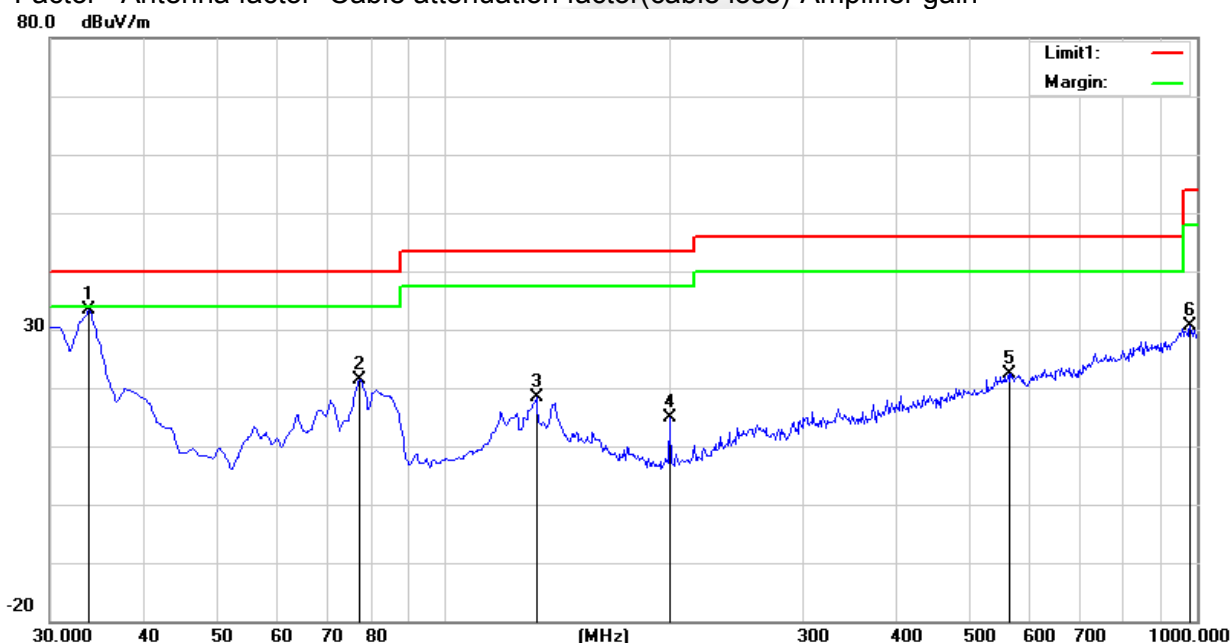


Temperature	23.1(C)	Relative Humidity:	60%RH
Test Voltage	DC 3.85V	Polarization:	Vertical
Test Mode	Mode 1~24(Mode 2 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	33.8800	48.08	-14.80	33.28	40.00	-6.72	QP
2	77.5300	44.94	-23.49	21.45	40.00	-18.55	QP
3	132.8200	36.48	-18.17	18.31	43.50	-25.19	QP
4	199.7500	35.95	-21.11	14.84	43.50	-28.66	QP
5	564.4700	27.95	-5.54	22.41	46.00	-23.59	QP
6	982.5400	28.04	2.52	30.56	54.00	-23.44	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)

U-NII-1 5150-5250MHz

Frequency (MHz)	Reading (dBuV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Corrected Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
Low Channel (802.11a/ 5180 MHz)										
3264.34	44.01	44.70	6.70	28.20	-9.80	34.21	74.00	-39.79	Pk	Vertical
3264.34	40.78	44.70	6.70	28.20	-9.80	30.98	54.00	-23.02	AV	Vertical
3245.39	43.87	44.70	6.70	28.20	-9.80	34.07	68.20	-34.13	Pk	Horizontal
3245.39	40.96	44.70	6.70	28.20	-9.80	31.16	54.00	-22.84	AV	Horizontal
3985.68	39.23	44.20	7.90	29.70	-6.60	32.63	74.00	-41.37	Pk	Vertical
3985.68	36.52	44.20	7.90	29.70	-6.60	29.92	54.00	-24.08	AV	Vertical
3999.84	39.37	44.20	7.90	29.70	-6.60	32.77	74.00	-41.23	Pk	Horizontal
3999.84	35.91	44.20	7.90	29.70	-6.60	29.31	54.00	-24.69	AV	Horizontal
7234.11	37.09	43.50	11.40	35.50	3.40	40.49	68.20	-27.71	Pk	Vertical
7234.11	34.56	43.50	11.40	35.50	3.40	37.96	54.00	-16.04	AV	Vertical
7227.09	37.47	43.50	11.40	35.50	3.40	40.87	68.20	-27.33	Pk	Horizontal
7227.09	33.66	43.50	11.40	35.50	3.40	37.06	54.00	-16.94	AV	Horizontal
10360.16	39.77	44.50	13.80	38.80	8.10	47.87	68.20	-20.33	Pk	Vertical
10360.16	36.79	44.50	13.80	38.80	8.10	44.89	54.00	-9.11	AV	Vertical
10360.40	39.21	44.50	13.80	38.80	8.10	47.31	68.20	-20.89	Pk	Horizontal
10360.40	36.13	44.50	13.80	38.80	8.10	44.23	54.00	-9.77	AV	Horizontal
11033.76	33.12	43.60	14.30	39.50	10.20	43.32	74.00	-30.68	Pk	Vertical
11033.76	30.37	43.60	14.30	39.50	10.20	40.57	54.00	-13.43	AV	Vertical
11036.40	33.69	43.60	14.30	39.50	10.20	43.89	74.00	-30.11	Pk	Horizontal
11036.40	30.78	43.60	14.30	39.50	10.20	40.98	54.00	-13.02	AV	Horizontal
13287.00	31.81	42.60	15.90	38.90	12.20	44.01	74.00	-29.99	Pk	Vertical
13287.00	28.74	42.60	15.90	38.90	12.20	40.94	54.00	-13.06	AV	Vertical
13287.31	32.52	42.60	15.90	38.90	12.20	44.72	74.00	-29.28	Pk	Horizontal
13287.31	28.96	42.60	15.90	38.90	12.20	41.16	54.00	-12.84	AV	Horizontal
Mid Channel (802.11a/ 5200 MHz)										
3259.82	44.23	44.70	6.70	28.20	-9.80	34.43	68.20	-33.77	Pk	Vertical
3259.82	41.43	44.70	6.70	28.20	-9.80	31.63	54.00	-22.37	AV	Vertical
3259.37	44.35	44.70	6.70	28.20	-9.80	34.55	68.20	-33.65	Pk	Horizontal
3259.37	42.13	44.70	6.70	28.20	-9.80	32.33	54.00	-21.67	AV	Horizontal
3984.72	39.57	44.20	7.90	29.70	-6.60	32.97	74.00	-41.03	Pk	Vertical
3984.72	37.02	44.20	7.90	29.70	-6.60	30.42	54.00	-23.58	AV	Vertical
3999.48	39.37	44.20	7.90	29.70	-6.60	32.77	74.00	-41.23	Pk	Horizontal
3999.48	36.34	44.20	7.90	29.70	-6.60	29.74	54.00	-24.26	AV	Horizontal
7229.58	36.81	43.50	11.40	35.50	3.40	40.21	68.20	-27.99	Pk	Vertical
7229.58	34.05	43.50	11.40	35.50	3.40	37.45	54.00	-16.55	AV	Vertical
7225.43	37.57	43.50	11.40	35.50	3.40	40.97	68.20	-27.23	Pk	Horizontal
7225.43	34.23	43.50	11.40	35.50	3.40	37.63	54.00	-16.37	AV	Horizontal
10399.99	39.08	44.50	13.80	38.80	8.10	47.18	68.20	-21.02	Pk	Vertical
10399.99	35.94	44.50	13.80	38.80	8.10	44.04	54.00	-9.96	AV	Vertical
10400.07	38.94	44.50	13.80	38.80	8.10	47.04	68.20	-21.16	Pk	Horizontal
10400.07	36.58	44.50	13.80	38.80	8.10	44.68	54.00	-9.32	AV	Horizontal
11033.51	33.58	43.60	14.30	39.50	10.20	43.78	74.00	-30.22	Pk	Vertical
11033.51	29.75	43.60	14.30	39.50	10.20	39.95	54.00	-14.05	AV	Vertical
11028.04	32.81	43.60	14.30	39.50	10.20	43.01	74.00	-30.99	Pk	Horizontal
11028.04	31.05	43.60	14.30	39.50	10.20	41.25	54.00	-12.75	AV	Horizontal
13288.96	31.70	42.60	15.90	38.90	12.20	43.90	74.00	-30.10	Pk	Vertical
13288.96	28.78	42.60	15.90	38.90	12.20	40.98	54.00	-13.02	AV	Vertical
13282.80	32.13	42.60	15.90	38.90	12.20	44.33	74.00	-29.67	Pk	Horizontal
13282.80	28.61	42.60	15.90	38.90	12.20	40.81	54.00	-13.19	AV	Horizontal



High Channel (802.11a/ 5240 MHz)										
3254.62	44.22	44.70	6.70	28.20	-9.80	34.42	68.20	-33.78	Pk	Vertical
3254.62	40.88	44.70	6.70	28.20	-9.80	31.08	54.00	-22.92	AV	Vertical
3257.81	44.45	44.70	6.70	28.20	-9.80	34.65	68.20	-33.55	Pk	Horizontal
3257.81	41.72	44.70	6.70	28.20	-9.80	31.92	54.00	-22.08	AV	Horizontal
3991.26	39.48	44.20	7.90	29.70	-6.60	32.88	74.00	-41.12	Pk	Vertical
3991.26	35.94	44.20	7.90	29.70	-6.60	29.34	54.00	-24.66	AV	Vertical
3984.08	39.91	44.20	7.90	29.70	-6.60	33.31	74.00	-40.69	Pk	Horizontal
3984.08	36.89	44.20	7.90	29.70	-6.60	30.29	54.00	-23.71	AV	Horizontal
7225.94	36.56	43.50	11.40	35.50	3.40	39.96	68.20	-28.24	Pk	Vertical
7225.94	33.82	43.50	11.40	35.50	3.40	37.22	54.00	-16.78	AV	Vertical
7219.01	37.15	43.50	11.40	35.50	3.40	40.55	68.20	-27.65	Pk	Horizontal
7219.01	34.70	43.50	11.40	35.50	3.40	38.10	54.00	-15.90	AV	Horizontal
10480.19	39.26	44.50	13.80	38.80	8.10	47.36	68.20	-20.84	Pk	Vertical
10480.19	36.36	44.50	13.80	38.80	8.10	44.46	54.00	-9.54	AV	Vertical
10480.40	39.98	44.50	13.80	38.80	8.10	48.08	68.20	-20.12	Pk	Horizontal
10480.40	35.95	44.50	13.80	38.80	8.10	44.05	54.00	-9.95	AV	Horizontal
11018.78	32.97	43.60	14.30	39.50	10.20	43.17	74.00	-30.83	Pk	Vertical
11018.78	29.84	43.60	14.30	39.50	10.20	40.04	54.00	-13.96	AV	Vertical
11023.36	33.71	43.60	14.30	39.50	10.20	43.91	74.00	-30.09	Pk	Horizontal
11023.36	31.11	43.60	14.30	39.50	10.20	41.31	54.00	-12.69	AV	Horizontal
13296.99	32.37	42.60	15.90	38.90	12.20	44.57	74.00	-29.43	Pk	Vertical
13296.99	29.93	42.60	15.90	38.90	12.20	42.13	54.00	-11.87	AV	Vertical
13281.43	32.31	42.60	15.90	38.90	12.20	44.51	74.00	-29.49	Pk	Horizontal
13281.43	29.40	42.60	15.90	38.90	12.20	41.60	54.00	-12.40	AV	Horizontal

Remark:

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



U-NII-2A 5250-5350MHz

Frequency (MHz)	Reading (dBuV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Orrected Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
Low Channel (802.11a/ 5260 MHz)										
3248.70	44.85	44.70	6.70	28.20	-9.80	35.05	68.20	-33.15	Pk	Vertical
3248.70	41.61	44.70	6.70	28.20	-9.80	31.81	54.00	-22.19	AV	Vertical
3246.18	43.81	44.70	6.70	28.20	-9.80	34.01	68.20	-34.19	Pk	Horizontal
3246.18	41.06	44.70	6.70	28.20	-9.80	31.26	54.00	-22.74	AV	Horizontal
3998.83	39.70	44.20	7.90	29.70	-6.60	33.10	74.00	-40.90	Pk	Vertical
3998.83	36.86	44.20	7.90	29.70	-6.60	30.26	54.00	-23.74	AV	Vertical
3994.72	39.95	44.20	7.90	29.70	-6.60	33.35	74.00	-40.65	Pk	Horizontal
3994.72	36.52	44.20	7.90	29.70	-6.60	29.92	54.00	-24.08	AV	Horizontal
7231.23	37.77	43.50	11.40	35.50	3.40	41.17	68.20	-27.03	Pk	Vertical
7231.23	33.79	43.50	11.40	35.50	3.40	37.19	54.00	-16.81	AV	Vertical
7219.37	37.00	43.50	11.40	35.50	3.40	40.40	68.20	-27.80	Pk	Horizontal
7219.37	34.30	43.50	11.40	35.50	3.40	37.70	54.00	-16.30	AV	Horizontal
10519.94	38.77	44.50	13.90	38.80	8.20	46.97	68.20	-21.23	Pk	Vertical
10519.94	37.00	44.50	13.90	38.80	8.20	45.20	54.00	-8.80	AV	Vertical
10520.44	39.06	44.50	13.90	38.80	8.20	47.26	68.20	-20.94	Pk	Horizontal
10520.44	36.78	44.50	13.90	38.80	8.20	44.98	54.00	-9.02	AV	Horizontal
11024.25	33.48	43.60	14.30	39.50	10.20	43.68	74.00	-30.32	Pk	Vertical
11024.25	30.64	43.60	14.30	39.50	10.20	40.84	54.00	-13.16	AV	Vertical
11025.46	32.87	43.60	14.30	39.50	10.20	43.07	74.00	-30.93	Pk	Horizontal
11025.46	31.05	43.60	14.30	39.50	10.20	41.25	54.00	-12.75	AV	Horizontal
13290.43	31.96	42.60	15.90	38.90	12.20	44.16	74.00	-29.84	Pk	Vertical
13290.43	29.74	42.60	15.90	38.90	12.20	41.94	54.00	-12.06	AV	Vertical
13293.12	32.81	42.60	15.90	38.90	12.20	45.01	74.00	-28.99	Pk	Horizontal
13293.12	28.76	42.60	15.90	38.90	12.20	40.96	54.00	-13.04	AV	Horizontal
Mid Channel (802.11a/ 5300 MHz)										
3261.63	44.30	44.70	6.70	28.20	-9.80	34.50	74.00	-39.50	Pk	Vertical
3261.63	40.96	44.70	6.70	28.20	-9.80	31.16	54.00	-22.84	AV	Vertical
3251.83	44.29	44.70	6.70	28.20	-9.80	34.49	68.20	-33.71	Pk	Horizontal
3251.83	40.84	44.70	6.70	28.20	-9.80	31.04	54.00	-22.96	AV	Horizontal
3988.86	39.33	44.20	7.90	29.70	-6.60	32.73	74.00	-41.27	Pk	Vertical
3988.86	37.00	44.20	7.90	29.70	-6.60	30.40	54.00	-23.60	AV	Vertical
3995.30	39.12	44.20	7.90	29.70	-6.60	32.52	74.00	-41.48	Pk	Horizontal
3995.30	36.39	44.20	7.90	29.70	-6.60	29.79	54.00	-24.21	AV	Horizontal
7226.17	36.89	43.50	11.40	35.50	3.40	40.29	68.20	-27.91	Pk	Vertical
7226.17	33.90	43.50	11.40	35.50	3.40	37.30	54.00	-16.70	AV	Vertical
7218.26	37.52	43.50	11.40	35.50	3.40	40.92	68.20	-27.28	Pk	Horizontal
7218.26	34.29	43.50	11.40	35.50	3.40	37.69	54.00	-16.31	AV	Horizontal
10600.26	38.87	44.50	13.80	38.80	8.10	46.97	74.00	-27.03	Pk	Vertical
10600.26	36.32	44.50	13.80	38.80	8.10	44.42	54.00	-9.58	AV	Vertical
10600.00	39.91	44.50	13.80	38.80	8.10	48.01	74.00	-25.99	Pk	Horizontal
10600.00	37.03	44.50	13.80	38.80	8.10	45.13	54.00	-8.87	AV	Horizontal
11033.17	34.04	43.60	14.30	39.50	10.20	44.24	74.00	-29.76	Pk	Vertical
11033.17	30.93	43.60	14.30	39.50	10.20	41.13	54.00	-12.87	AV	Vertical
11022.81	33.60	43.60	14.30	39.50	10.20	43.80	74.00	-30.20	Pk	Horizontal
11022.81	30.47	43.60	14.30	39.50	10.20	40.67	54.00	-13.33	AV	Horizontal
13283.61	31.60	42.60	15.90	38.90	12.20	43.80	74.00	-30.20	Pk	Vertical
13283.61	29.52	42.60	15.90	38.90	12.20	41.72	54.00	-12.28	AV	Vertical
13295.75	32.54	42.60	15.90	38.90	12.20	44.74	74.00	-29.26	Pk	Horizontal
13295.75	30.00	42.60	15.90	38.90	12.20	42.20	54.00	-11.80	AV	Horizontal



High Channel (802.11a/ 5320 MHz)										
3255.09	44.67	44.70	6.70	28.20	-9.80	34.87	68.20	-33.33	Pk	Vertical
3255.09	42.01	44.70	6.70	28.20	-9.80	32.21	54.00	-21.79	AV	Vertical
3250.62	44.47	44.70	6.70	28.20	-9.80	34.67	68.20	-33.53	Pk	Horizontal
3250.62	41.12	44.70	6.70	28.20	-9.80	31.32	54.00	-22.68	AV	Horizontal
3992.09	38.68	44.20	7.90	29.70	-6.60	32.08	74.00	-41.92	Pk	Vertical
3992.09	36.92	44.20	7.90	29.70	-6.60	30.32	54.00	-23.68	AV	Vertical
3992.11	38.70	44.20	7.90	29.70	-6.60	32.10	74.00	-41.90	Pk	Horizontal
3992.11	36.93	44.20	7.90	29.70	-6.60	30.33	54.00	-23.67	AV	Horizontal
7231.79	37.51	43.50	11.40	35.50	3.40	40.91	68.20	-27.29	Pk	Vertical
7231.79	34.73	43.50	11.40	35.50	3.40	38.13	54.00	-15.87	AV	Vertical
7220.50	37.00	43.50	11.40	35.50	3.40	40.40	68.20	-27.80	Pk	Horizontal
7220.50	34.11	43.50	11.40	35.50	3.40	37.51	54.00	-16.49	AV	Horizontal
10640.08	40.03	44.50	13.80	38.80	8.10	48.13	74.00	-25.87	Pk	Vertical
10640.08	36.99	44.50	13.80	38.80	8.10	45.09	54.00	-8.91	AV	Vertical
10640.12	39.58	44.50	13.80	38.80	8.10	47.68	74.00	-26.32	Pk	Horizontal
10640.12	36.26	44.50	13.80	38.80	8.10	44.36	54.00	-9.64	AV	Horizontal
11032.18	32.95	43.60	14.30	39.50	10.20	43.15	74.00	-30.85	Pk	Vertical
11032.18	30.59	43.60	14.30	39.50	10.20	40.79	54.00	-13.21	AV	Vertical
11024.94	33.96	43.60	14.30	39.50	10.20	44.16	74.00	-29.84	Pk	Horizontal
11024.94	31.01	43.60	14.30	39.50	10.20	41.21	54.00	-12.79	AV	Horizontal
13281.45	32.81	42.70	18.00	37.10	12.40	45.21	74.00	-28.79	Pk	Vertical
13281.45	29.74	42.70	18.00	37.10	12.40	42.14	54.00	-11.86	AV	Vertical
13297.74	31.84	42.70	18.00	37.10	12.40	44.24	74.00	-29.76	Pk	Horizontal
13297.74	29.79	42.70	18.00	37.10	12.40	42.19	54.00	-11.81	AV	Horizontal

Remark:

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



U-NII-2C 5470-5725MHz

Frequency (MHz)	Reading (dBuV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Corrected Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
Low Channel (802.11a/ 5500 MHz)										
3252.10	43.86	44.70	6.70	28.20	-9.80	34.06	68.20	-34.14	Pk	Vertical
3252.10	41.26	44.70	6.70	28.20	-9.80	31.46	54.00	-22.54	AV	Vertical
3246.69	44.23	44.70	6.70	28.20	-9.80	34.43	68.20	-33.77	Pk	Horizontal
3246.69	41.16	44.70	6.70	28.20	-9.80	31.36	54.00	-22.64	AV	Horizontal
3992.19	40.03	44.20	7.90	29.70	-6.60	33.43	74.00	-40.57	Pk	Vertical
3992.19	36.29	44.20	7.90	29.70	-6.60	29.69	54.00	-24.31	AV	Vertical
3991.71	39.36	44.20	7.90	29.70	-6.60	32.76	74.00	-41.24	Pk	Horizontal
3991.71	36.79	44.20	7.90	29.70	-6.60	30.19	54.00	-23.81	AV	Horizontal
7223.31	37.33	43.50	11.40	35.50	3.40	40.73	68.20	-27.47	Pk	Vertical
7223.31	34.67	43.50	11.40	35.50	3.40	38.07	54.00	-15.93	AV	Vertical
7233.01	37.88	43.50	11.40	35.50	3.40	41.28	68.20	-26.92	Pk	Horizontal
7233.01	33.45	43.50	11.40	35.50	3.40	36.85	54.00	-17.15	AV	Horizontal
10354.04	39.73	44.50	13.80	38.80	8.10	47.83	68.20	-20.37	Pk	Vertical
10354.04	36.19	44.50	13.80	38.80	8.10	44.29	54.00	-9.71	AV	Vertical
10348.20	38.76	44.50	13.80	38.80	8.10	46.86	68.20	-21.34	Pk	Horizontal
10348.20	36.18	44.50	13.80	38.80	8.10	44.28	54.00	-9.72	AV	Horizontal
11000.30	32.72	43.60	14.30	39.50	10.20	42.92	74.00	-31.08	Pk	Vertical
11000.30	30.48	43.60	14.30	39.50	10.20	40.68	54.00	-13.32	AV	Vertical
11000.38	34.13	43.60	14.30	39.50	10.20	44.33	74.00	-29.67	Pk	Horizontal
11000.38	30.80	43.60	14.30	39.50	10.20	41.00	54.00	-13.00	AV	Horizontal
13287.66	32.49	42.60	15.90	38.90	12.20	44.69	74.00	-29.31	Pk	Vertical
13287.66	29.71	42.60	15.90	38.90	12.20	41.91	54.00	-12.09	AV	Vertical
13288.86	32.59	42.60	15.90	38.90	12.20	44.79	74.00	-29.21	Pk	Horizontal
13288.86	28.78	42.60	15.90	38.90	12.20	40.98	54.00	-13.02	AV	Horizontal
Mid Channel (802.11a/ 5580 MHz)										
3256.36	43.90	44.70	6.70	28.20	-9.80	34.10	68.20	-34.10	Pk	Vertical
3256.36	40.86	44.70	6.70	28.20	-9.80	31.06	54.00	-22.94	AV	Vertical
3256.81	45.15	44.70	6.70	28.20	-9.80	35.35	68.20	-32.85	Pk	Horizontal
3256.81	41.40	44.70	6.70	28.20	-9.80	31.60	54.00	-22.40	AV	Horizontal
3980.99	39.75	44.20	7.90	29.70	-6.60	33.15	74.00	-40.85	Pk	Vertical
3980.99	37.13	44.20	7.90	29.70	-6.60	30.53	54.00	-23.47	AV	Vertical
3982.10	39.43	44.20	7.90	29.70	-6.60	32.83	74.00	-41.17	Pk	Horizontal
3982.10	36.28	44.20	7.90	29.70	-6.60	29.68	54.00	-24.32	AV	Horizontal
7223.53	37.33	43.50	11.40	35.50	3.40	40.73	68.20	-27.47	Pk	Vertical
7223.53	33.75	43.50	11.40	35.50	3.40	37.15	54.00	-16.85	AV	Vertical
7219.71	36.60	43.50	11.40	35.50	3.40	40.00	68.20	-28.20	Pk	Horizontal
7219.71	34.46	43.50	11.40	35.50	3.40	37.86	54.00	-16.14	AV	Horizontal
10386.20	39.16	44.50	13.80	38.80	8.10	47.26	68.20	-20.94	Pk	Vertical
10386.20	35.90	44.50	13.80	38.80	8.10	44.00	54.00	-10.00	AV	Vertical
10396.98	39.03	44.50	13.80	38.80	8.10	47.13	68.20	-21.07	Pk	Horizontal
10396.98	35.83	44.50	13.80	38.80	8.10	43.93	54.00	-10.07	AV	Horizontal
11160.04	33.20	43.60	14.30	39.50	10.20	43.40	74.00	-30.60	Pk	Vertical
11160.04	29.79	43.60	14.30	39.50	10.20	39.99	54.00	-14.01	AV	Vertical
11160.35	32.78	43.60	14.30	39.50	10.20	42.98	74.00	-31.02	Pk	Horizontal
11160.35	30.63	43.60	14.30	39.50	10.20	40.83	54.00	-13.17	AV	Horizontal
13281.61	32.42	42.60	15.90	38.90	12.20	44.62	74.00	-29.38	Pk	Vertical
13281.61	28.73	42.60	15.90	38.90	12.20	40.93	54.00	-13.07	AV	Vertical
13295.23	32.08	42.60	15.90	38.90	12.20	44.28	74.00	-29.72	Pk	Horizontal
13295.23	29.85	42.60	15.90	38.90	12.20	42.05	54.00	-11.95	AV	Horizontal



High Channel (802.11a/ 5700 MHz)										
3259.20	43.90	44.70	6.70	28.20	-9.80	34.10	68.20	-34.10	Pk	Vertical
3259.20	41.69	44.70	6.70	28.20	-9.80	31.89	54.00	-22.11	AV	Vertical
3256.56	44.08	44.70	6.70	28.20	-9.80	34.28	68.20	-33.92	Pk	Horizontal
3256.56	41.11	44.70	6.70	28.20	-9.80	31.31	54.00	-22.69	AV	Horizontal
3996.13	38.72	44.20	7.90	29.70	-6.60	32.12	74.00	-41.88	Pk	Vertical
3996.13	36.07	44.20	7.90	29.70	-6.60	29.47	54.00	-24.53	AV	Vertical
3982.82	39.69	44.20	7.90	29.70	-6.60	33.09	74.00	-40.91	Pk	Horizontal
3982.82	35.73	44.20	7.90	29.70	-6.60	29.13	54.00	-24.87	AV	Horizontal
7230.22	37.74	43.50	11.40	35.50	3.40	41.14	68.20	-27.06	Pk	Vertical
7230.22	33.59	43.50	11.40	35.50	3.40	36.99	54.00	-17.01	AV	Vertical
7234.40	37.78	43.50	11.40	35.50	3.40	41.18	68.20	-27.02	Pk	Horizontal
7234.40	34.01	43.50	11.40	35.50	3.40	37.41	54.00	-16.59	AV	Horizontal
10471.24	38.86	44.50	13.80	38.80	8.10	46.96	68.20	-21.24	Pk	Vertical
10471.24	36.89	44.50	13.80	38.80	8.10	44.99	54.00	-9.01	AV	Vertical
10470.59	39.87	44.50	13.80	38.80	8.10	47.97	68.20	-20.23	Pk	Horizontal
10470.59	36.41	44.50	13.80	38.80	8.10	44.51	54.00	-9.49	AV	Horizontal
11400.30	33.65	43.60	14.30	39.50	10.20	43.85	74.00	-30.15	Pk	Vertical
11400.30	30.25	43.60	14.30	39.50	10.20	40.45	54.00	-13.55	AV	Vertical
11400.34	34.15	43.60	14.30	39.50	10.20	44.35	74.00	-29.65	Pk	Horizontal
11400.34	30.76	43.60	14.30	39.50	10.20	40.96	54.00	-13.04	AV	Horizontal
13296.80	31.69	42.60	15.90	38.90	12.20	43.89	74.00	-30.11	Pk	Vertical
13296.80	29.98	42.60	15.90	38.90	12.20	42.18	54.00	-11.82	AV	Vertical
13299.06	32.60	42.60	15.90	38.90	12.20	44.80	74.00	-29.20	Pk	Horizontal
13299.06	29.50	42.60	15.90	38.90	12.20	41.70	54.00	-12.30	AV	Horizontal

Remark:

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



U-NII-3(5.725-5.850) GHz

Frequency (MHz)	Reading (dBuV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Orrected Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
Low Channel (802.11a/ 5745 MHz)										
3263.16	44.97	44.70	6.70	28.20	-9.80	35.17	74.00	-38.83	Pk	Vertical
3263.16	41.03	44.70	6.70	28.20	-9.80	31.23	54.00	-22.77	AV	Vertical
3264.41	45.05	44.70	6.70	28.20	-9.80	35.25	74.00	-38.75	Pk	Horizontal
3264.41	41.28	44.70	6.70	28.20	-9.80	31.48	54.00	-22.52	AV	Horizontal
3983.67	40.00	44.20	7.90	29.70	-6.60	33.40	74.00	-40.60	Pk	Vertical
3983.67	36.42	44.20	7.90	29.70	-6.60	29.82	54.00	-24.18	AV	Vertical
3984.11	39.05	44.20	7.90	29.70	-6.60	32.45	74.00	-41.55	Pk	Horizontal
3984.11	36.27	44.20	7.90	29.70	-6.60	29.67	54.00	-24.33	AV	Horizontal
7221.16	36.99	43.50	11.40	35.50	3.40	40.39	68.20	-27.81	Pk	Vertical
7221.16	34.78	43.50	11.40	35.50	3.40	38.18	54.00	-15.82	AV	Vertical
7219.99	37.66	43.50	11.40	35.50	3.40	41.06	68.20	-27.14	Pk	Horizontal
7219.99	34.03	43.50	11.40	35.50	3.40	37.43	54.00	-16.57	AV	Horizontal
10519.51	38.94	44.50	13.90	38.80	8.20	47.14	68.20	-21.06	Pk	Vertical
10519.51	35.81	44.50	13.90	38.80	8.20	44.01	54.00	-9.99	AV	Vertical
10516.36	38.84	44.50	13.90	38.80	8.20	47.04	68.20	-21.16	Pk	Horizontal
10516.36	35.80	44.50	13.90	38.80	8.20	44.00	54.00	-10.00	AV	Horizontal
11490.06	32.76	43.60	14.30	39.50	10.20	42.96	74.00	-31.04	Pk	Vertical
11490.06	30.21	43.60	14.30	39.50	10.20	40.41	54.00	-13.59	AV	Vertical
11490.01	33.92	43.60	14.30	39.50	10.20	44.12	74.00	-29.88	Pk	Horizontal
11490.01	31.16	43.60	14.30	39.50	10.20	41.36	54.00	-12.64	AV	Horizontal
13294.49	32.40	42.60	15.90	38.90	12.20	44.60	74.00	-29.40	Pk	Vertical
13294.49	28.85	42.60	15.90	38.90	12.20	41.05	54.00	-12.95	AV	Vertical
13291.67	31.55	42.60	15.90	38.90	12.20	43.75	74.00	-30.25	Pk	Horizontal
13291.67	29.28	42.60	15.90	38.90	12.20	41.48	54.00	-12.52	AV	Horizontal
Mid Channel (802.11a/ 5785 MHz)										
3249.32	44.94	44.70	6.70	28.20	-9.80	35.14	68.20	-33.06	Pk	Vertical
3249.32	41.54	44.70	6.70	28.20	-9.80	31.74	54.00	-22.26	AV	Vertical
3251.32	44.72	44.70	6.70	28.20	-9.80	34.92	68.20	-33.28	Pk	Horizontal
3251.32	41.61	44.70	6.70	28.20	-9.80	31.81	54.00	-22.19	AV	Horizontal
3992.79	38.74	44.20	7.90	29.70	-6.60	32.14	74.00	-41.86	Pk	Vertical
3992.79	36.10	44.20	7.90	29.70	-6.60	29.50	54.00	-24.50	AV	Vertical
3996.54	39.06	44.20	7.90	29.70	-6.60	32.46	74.00	-41.54	Pk	Horizontal
3996.54	36.29	44.20	7.90	29.70	-6.60	29.69	54.00	-24.31	AV	Horizontal
7224.89	37.03	43.50	11.40	35.50	3.40	40.43	68.20	-27.77	Pk	Vertical
7224.89	34.16	43.50	11.40	35.50	3.40	37.56	54.00	-16.44	AV	Vertical
7221.78	36.53	43.50	11.40	35.50	3.40	39.93	68.20	-28.27	Pk	Horizontal
7221.78	33.70	43.50	11.40	35.50	3.40	37.10	54.00	-16.90	AV	Horizontal
10594.81	40.09	44.50	13.80	38.80	8.10	48.19	68.20	-20.01	Pk	Vertical
10594.81	37.14	44.50	13.80	38.80	8.10	45.24	54.00	-8.76	AV	Vertical
10591.67	38.85	44.50	13.80	38.80	8.10	46.95	68.20	-21.25	Pk	Horizontal
10591.67	36.92	44.50	13.80	38.80	8.10	45.02	54.00	-8.98	AV	Horizontal
11570.16	32.82	43.60	14.30	39.50	10.20	43.02	74.00	-30.98	Pk	Vertical
11570.16	29.78	43.60	14.30	39.50	10.20	39.98	54.00	-14.02	AV	Vertical
11570.02	33.70	43.60	14.30	39.50	10.20	43.90	74.00	-30.10	Pk	Horizontal
11570.02	29.76	43.60	14.30	39.50	10.20	39.96	54.00	-14.04	AV	Horizontal
13294.64	32.34	42.60	15.90	38.90	12.20	44.54	74.00	-29.46	Pk	Vertical
13294.64	28.97	42.60	15.90	38.90	12.20	41.17	54.00	-12.83	AV	Vertical
13282.25	31.72	42.60	15.90	38.90	12.20	43.92	74.00	-30.08	Pk	Horizontal
13282.25	28.61	42.60	15.90	38.90	12.20	40.81	54.00	-13.19	AV	Horizontal



High Channel (802.11a/ 5825 MHz)										
3249.35	43.94	44.70	6.70	28.20	-9.80	34.14	68.20	-34.06	Pk	Vertical
3249.35	41.03	44.70	6.70	28.20	-9.80	31.23	54.00	-22.77	AV	Vertical
3256.88	43.92	44.70	6.70	28.20	-9.80	34.12	68.20	-34.08	Pk	Horizontal
3256.88	41.33	44.70	6.70	28.20	-9.80	31.53	54.00	-22.47	AV	Horizontal
3989.32	38.90	44.20	7.90	29.70	-6.60	32.30	74.00	-41.70	Pk	Vertical
3989.32	36.85	44.20	7.90	29.70	-6.60	30.25	54.00	-23.75	AV	Vertical
3999.87	39.88	44.20	7.90	29.70	-6.60	33.28	74.00	-40.72	Pk	Horizontal
3999.87	36.68	44.20	7.90	29.70	-6.60	30.08	54.00	-23.92	AV	Horizontal
7218.80	37.47	43.50	11.40	35.50	3.40	40.87	68.20	-27.33	Pk	Vertical
7218.80	34.67	43.50	11.40	35.50	3.40	38.07	54.00	-15.93	AV	Vertical
7217.06	37.84	43.50	11.40	35.50	3.40	41.24	68.20	-26.96	Pk	Horizontal
7217.06	33.58	43.50	11.40	35.50	3.40	36.98	54.00	-17.02	AV	Horizontal
10634.99	39.69	44.50	13.80	38.80	8.10	47.79	74.00	-26.21	Pk	Vertical
10634.99	37.14	44.50	13.80	38.80	8.10	45.24	54.00	-8.76	AV	Vertical
10640.28	39.90	44.50	13.80	38.80	8.10	48.00	74.00	-26.00	Pk	Horizontal
10640.28	36.80	44.50	13.80	38.80	8.10	44.90	54.00	-9.10	AV	Horizontal
11650.07	33.06	43.60	14.30	39.50	10.20	43.26	74.00	-30.74	Pk	Vertical
11650.07	29.97	43.60	14.30	39.50	10.20	40.17	54.00	-13.83	AV	Vertical
11650.37	32.90	43.60	14.30	39.50	10.20	43.10	74.00	-30.90	Pk	Horizontal
11650.37	30.15	43.60	14.30	39.50	10.20	40.35	54.00	-13.65	AV	Horizontal
13299.93	31.86	42.70	18.00	37.10	12.40	44.26	74.00	-29.74	Pk	Vertical
13299.93	29.24	42.70	18.00	37.10	12.40	41.64	54.00	-12.36	AV	Vertical
13293.61	31.99	42.70	18.00	37.10	12.40	44.39	74.00	-29.61	Pk	Horizontal
13293.61	29.73	42.70	18.00	37.10	12.40	42.13	54.00	-11.87	AV	Horizontal

Remark:

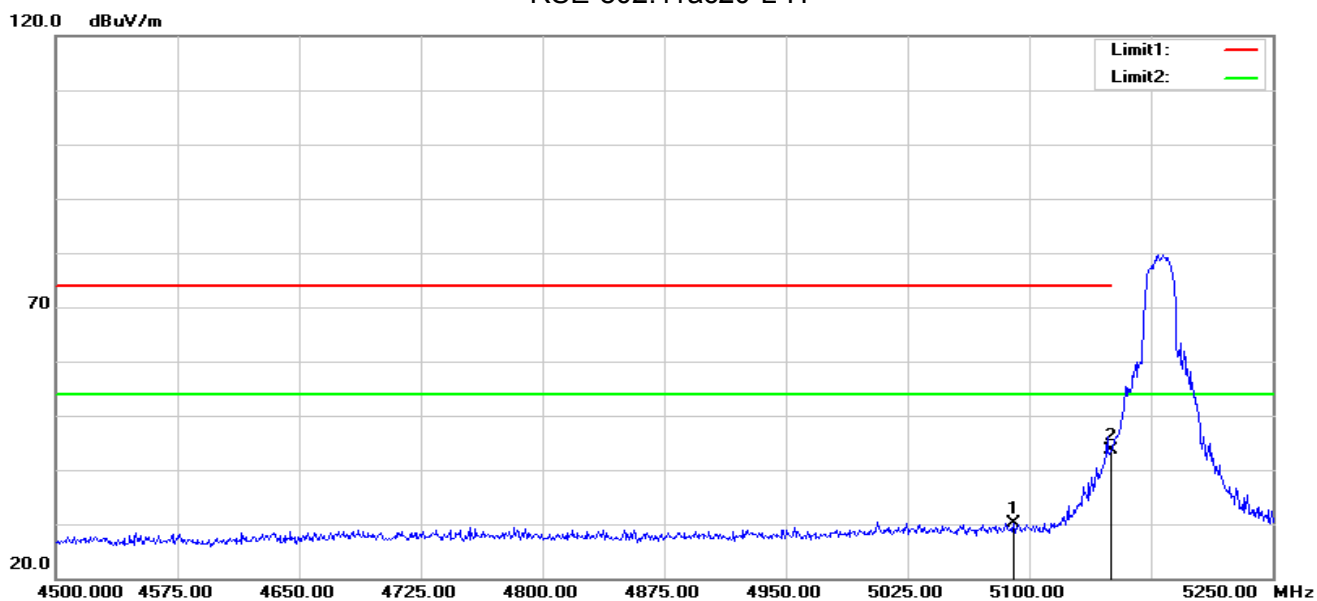
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Scan with 802.11a,802.11n (HT-20),802.11n (HT-40), 802.11ac (VHT-20),802.11ac (VHT-40), 802.11ac (VHT-80) the worst case is 802.11a.
3. The frequency emission of peak points that did not show above the forms are at least 20dB below the limit,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



3.2.9 RESTRICTED FREQUENCY BANDS AND BAND EDGE

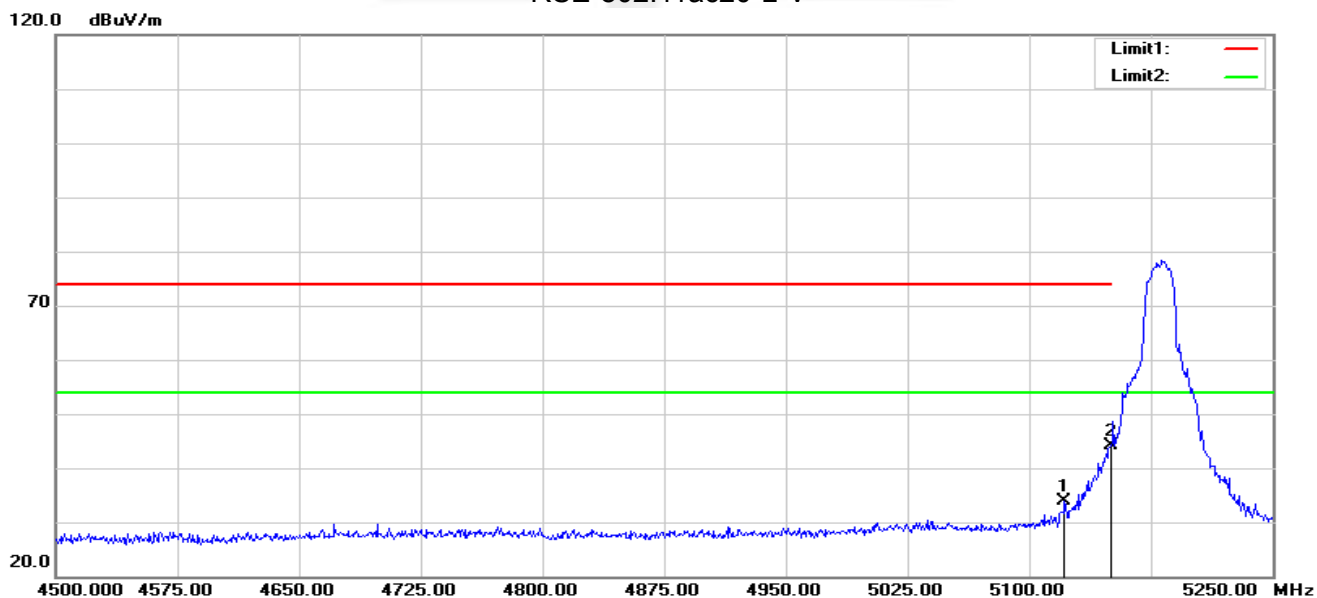
U-NII-1 5150-5250MHz

RSE-802.11ac20-L-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5090.250	35.90	-5.79	30.11	74.00	-43.89	peak
2	5150.000	49.44	-5.73	43.71	74.00	-30.29	peak

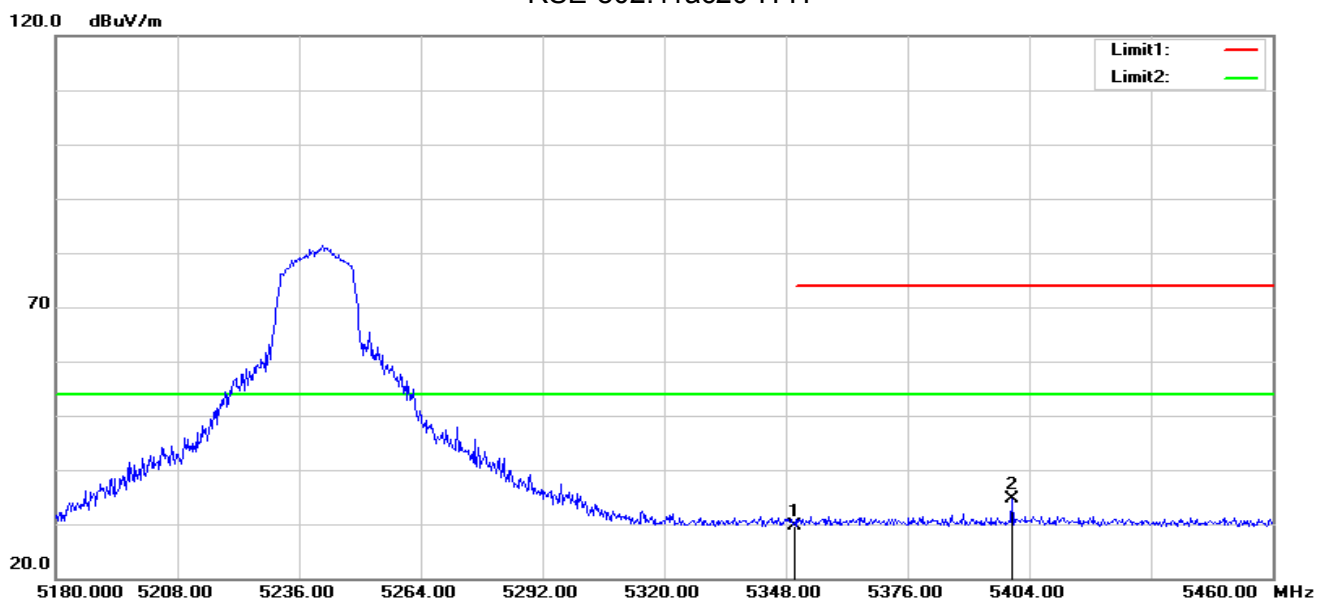
RSE-802.11ac20-L-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5121.750	39.65	-5.74	33.91	74.00	-40.09	peak
2	5150.000	49.75	-5.73	44.02	74.00	-29.98	peak

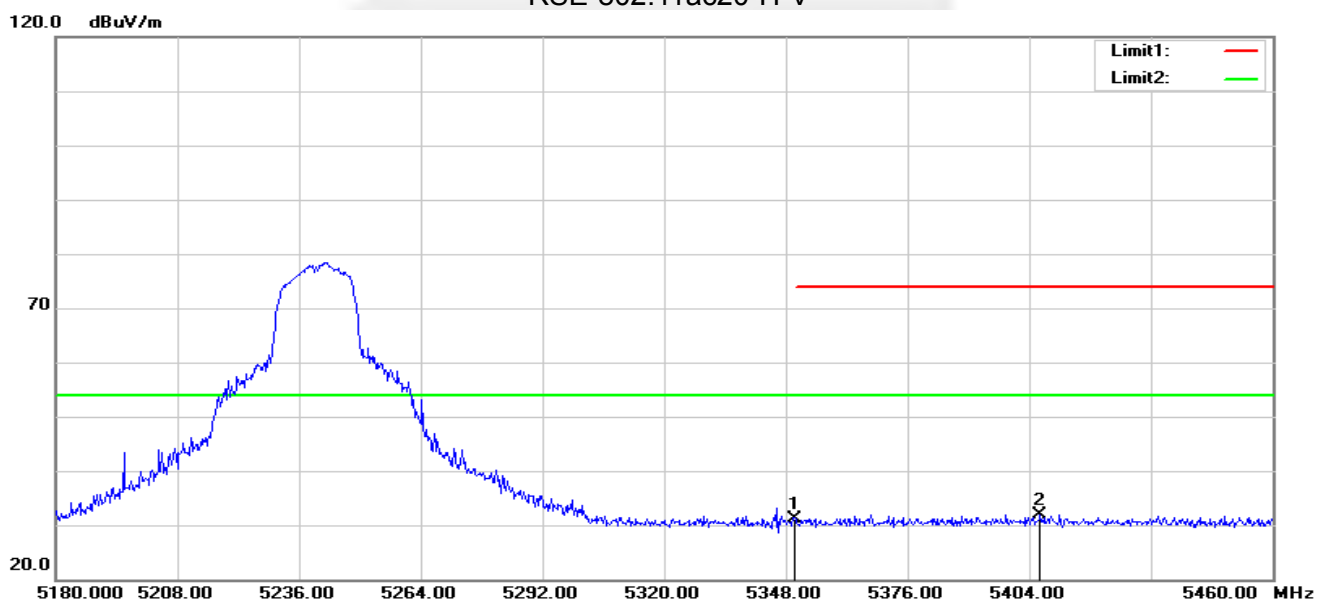


RSE-802.11ac20-H-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	34.93	-5.23	29.70	74.00	-44.30	peak
2	5400.080	39.92	-5.25	34.67	74.00	-39.33	peak

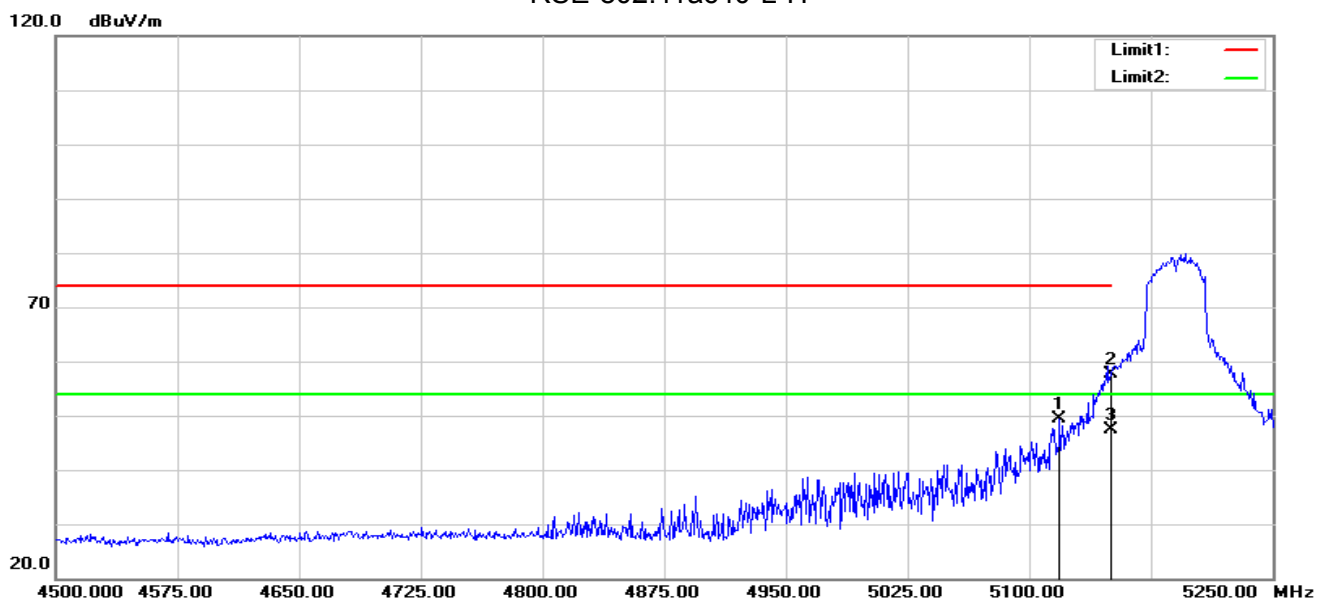
RSE-802.11ac20-H-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	36.33	-5.23	31.10	74.00	-42.90	peak
2	5406.520	37.12	-5.23	31.89	74.00	-42.11	peak

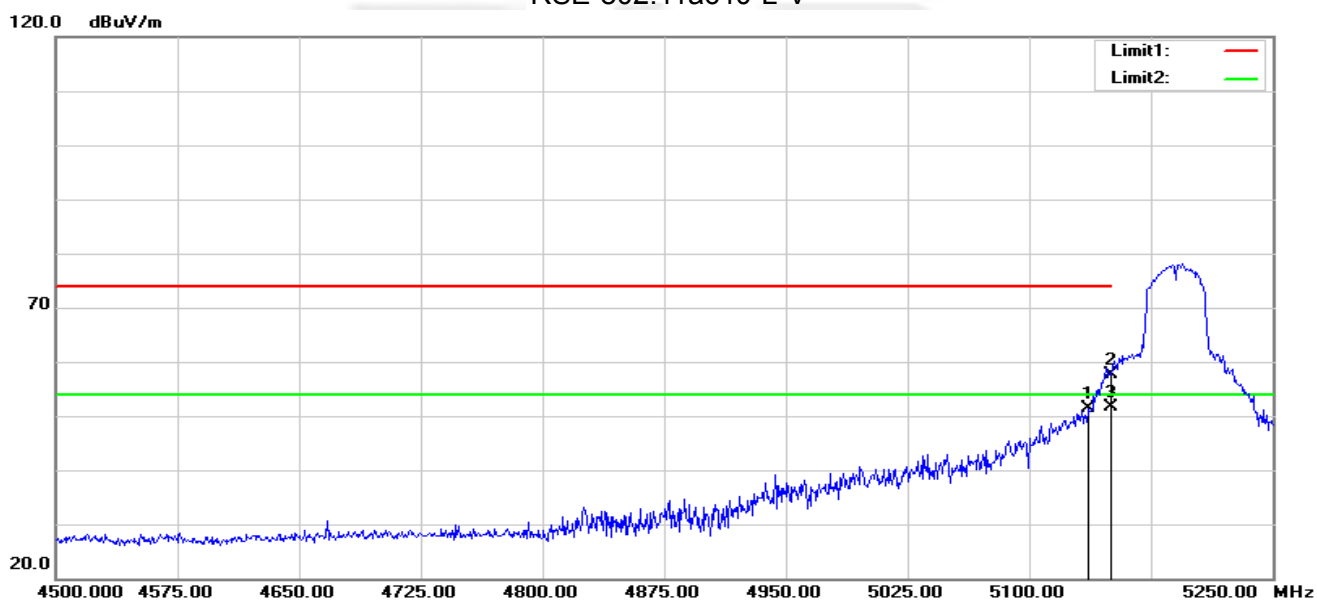


RSE-802.11ac40-L-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5118.750	55.14	-5.73	49.41	74.00	-24.59	peak
2	5150.000	63.36	-5.73	57.63	74.00	-16.37	peak
3	5150.000	53.00	-5.73	47.27	54.00	-6.73	AVG

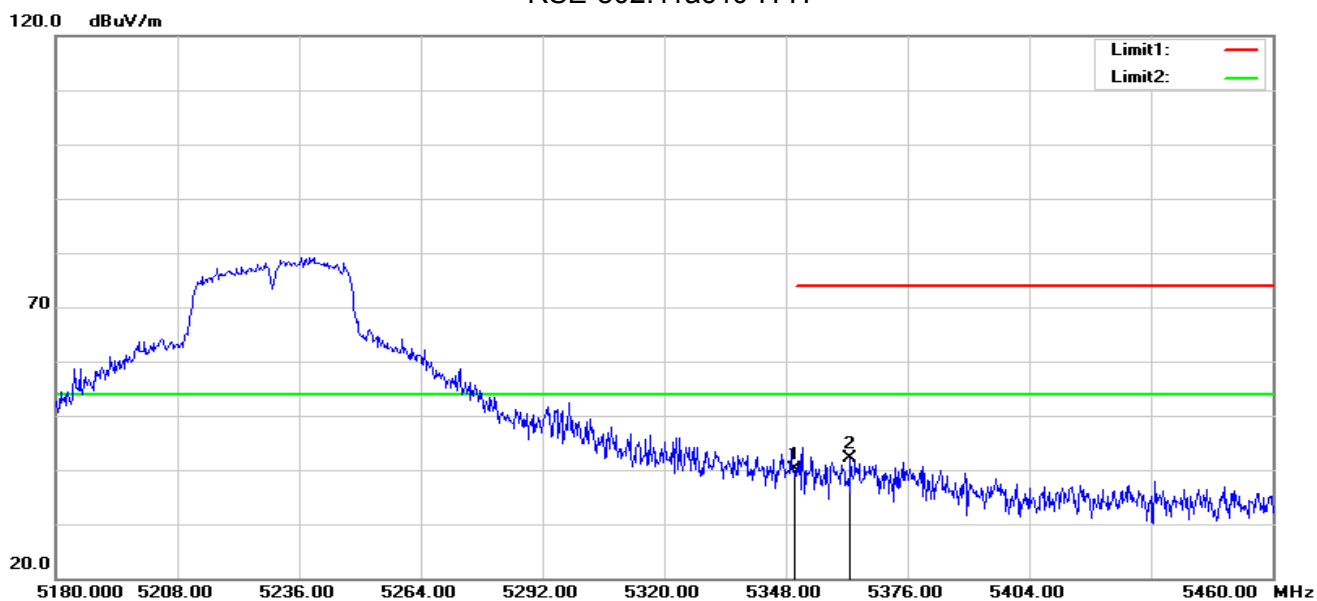
RSE-802.11ac40-L-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5136.750	57.16	-5.74	51.42	74.00	-22.58	peak
2	5150.000	63.36	-5.73	57.63	74.00	-16.37	peak
3	5150.000	57.32	-5.73	51.59	54.00	-2.41	AVG

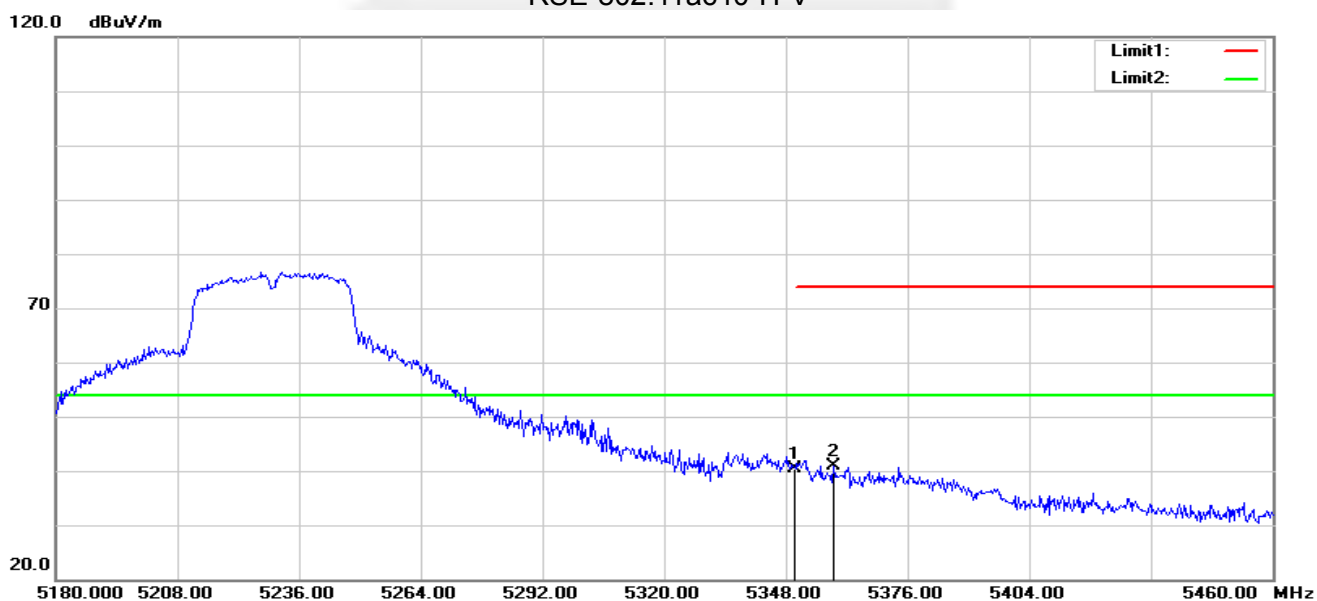


RSE-802.11ac40-H-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	45.34	-5.23	40.11	74.00	-33.89	peak
2	5362.840	47.47	-5.24	42.23	74.00	-31.77	peak

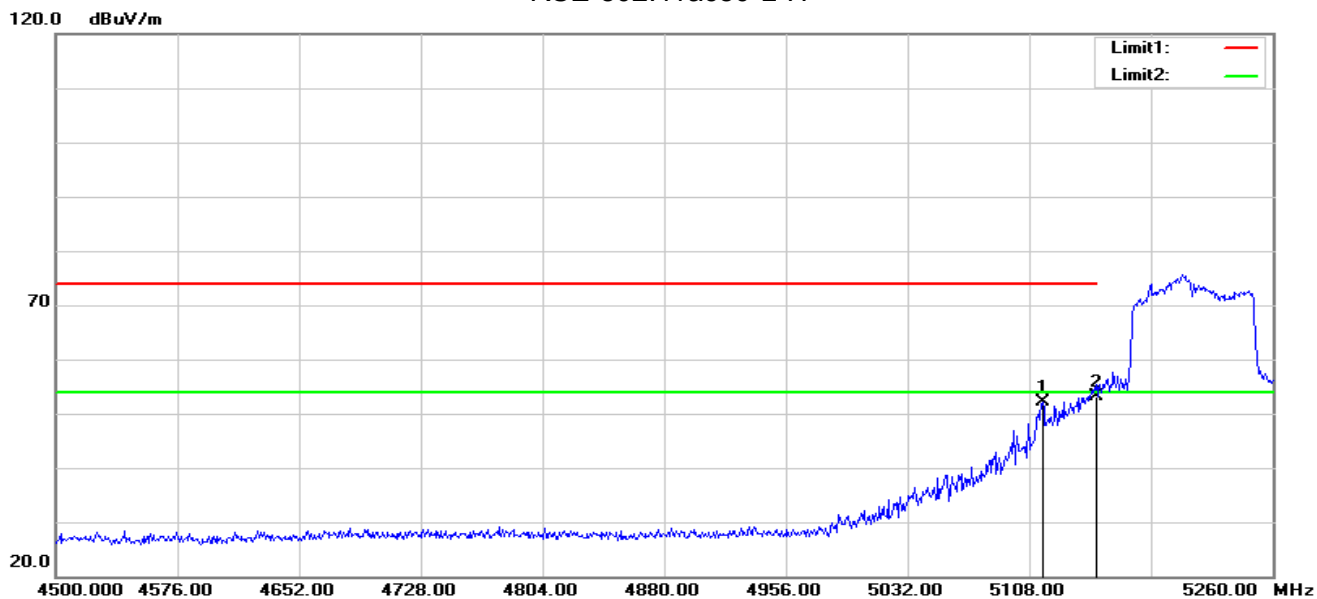
RSE-802.11ac40-H-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	45.73	-5.23	40.50	74.00	-33.50	peak
2	5358.920	46.20	-5.23	40.97	74.00	-33.03	peak

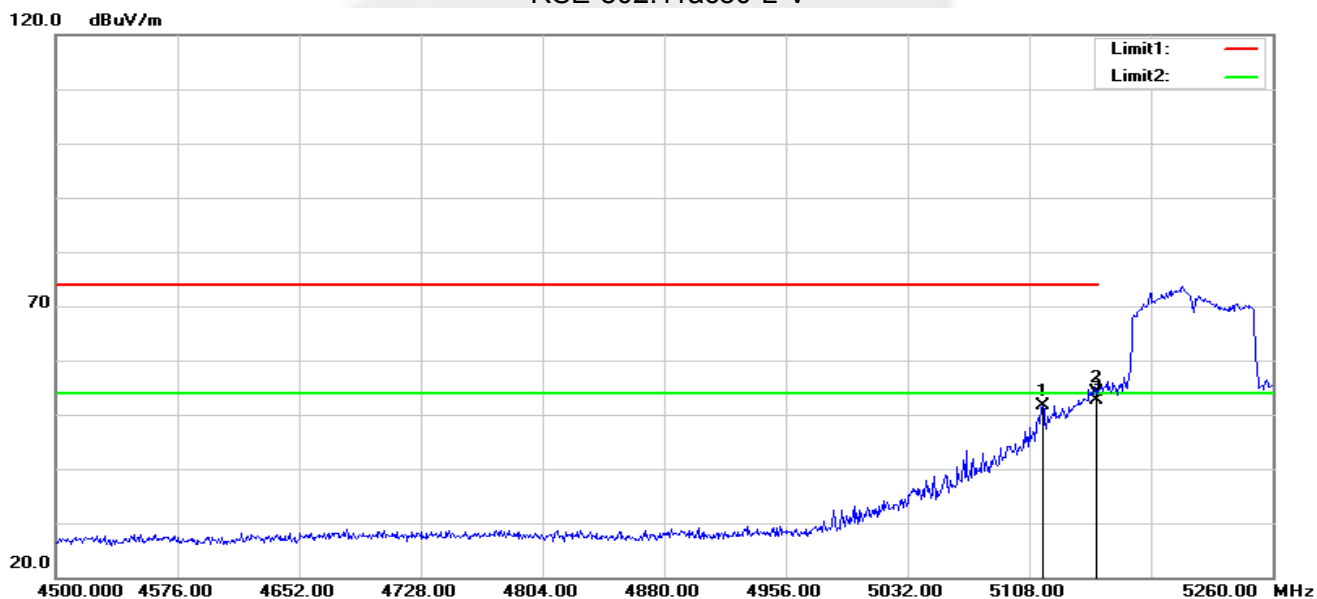


RSE-802.11ac80-L-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5116.360	57.96	-5.74	52.22	74.00	-21.78	peak
2	5150.000	58.90	-5.73	53.17	74.00	-20.83	peak

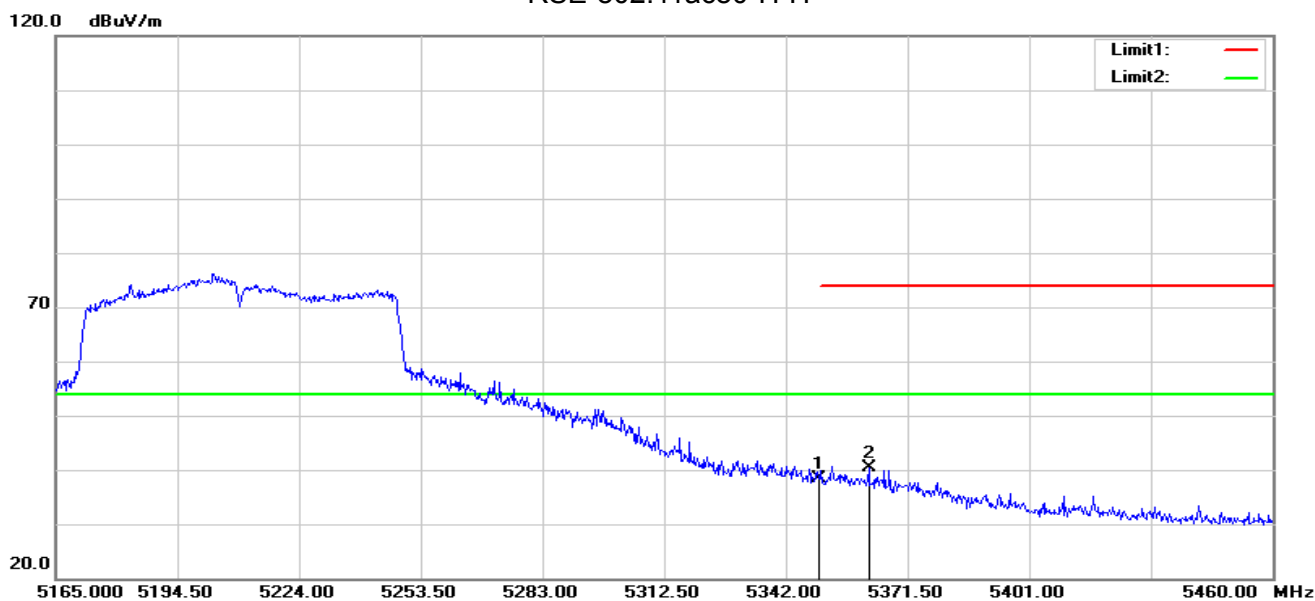
RSE-802.11ac80-L-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5116.360	57.42	-5.74	51.68	74.00	-22.32	peak
2	5150.000	59.89	-5.73	54.16	74.00	-19.84	peak
3	5150.000	58.35	-5.73	52.62	54.00	-1.38	AVG

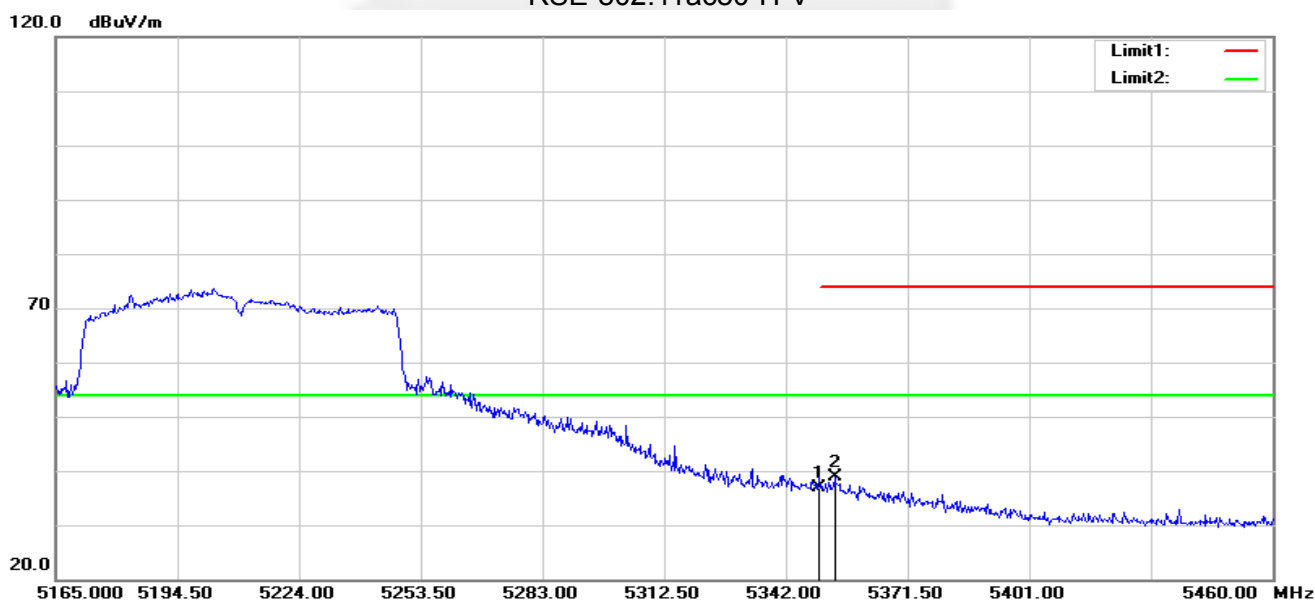


RSE-802.11ac80-H-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	43.69	-5.23	38.46	74.00	-35.54	peak
2	5362.060	45.65	-5.23	40.42	74.00	-33.58	peak

RSE-802.11ac80-H-V



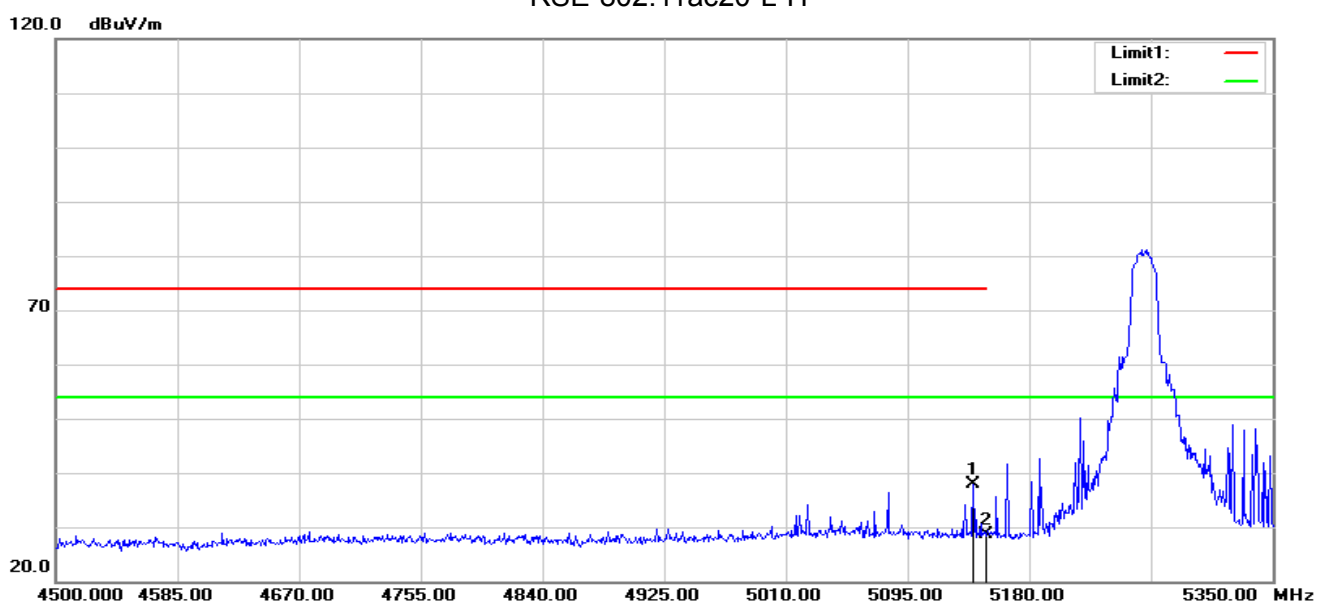
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	42.03	-5.23	36.80	74.00	-37.20	peak
2	5353.800	44.02	-5.23	38.79	74.00	-35.21	peak

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



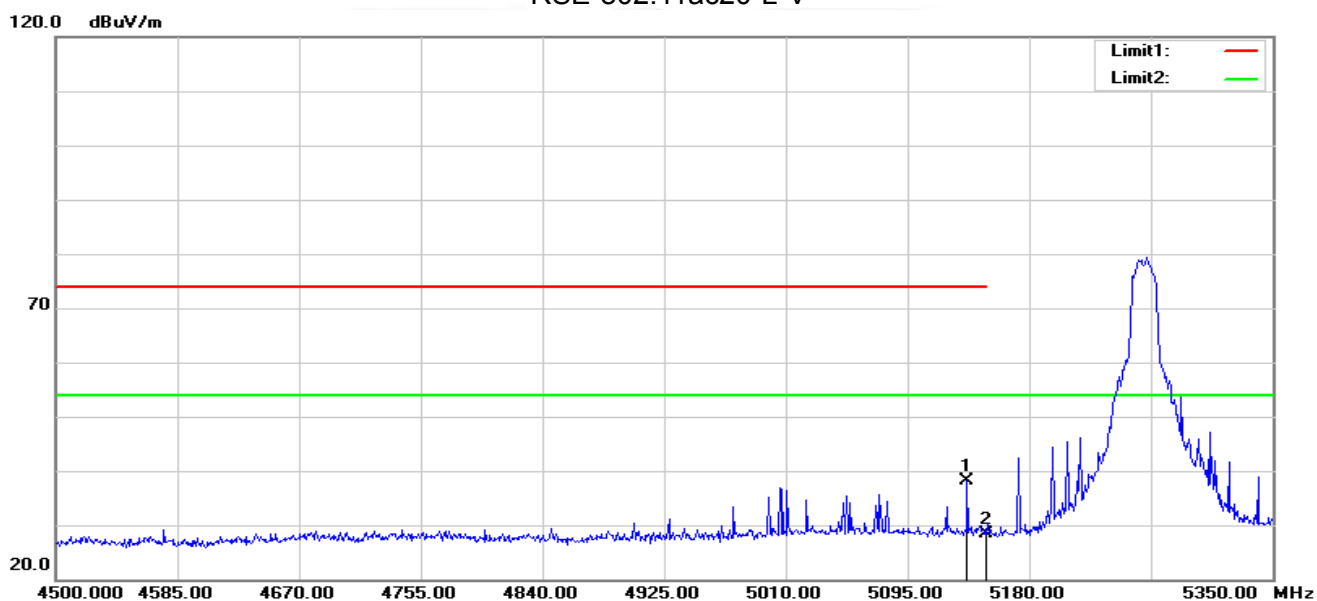
U-NII-2A 5250-5350MHz

RSE-802.11ac20-L-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5140.900	43.71	-5.74	37.97	74.00	-36.03	peak
2	5150.000	34.29	-5.73	28.56	74.00	-45.44	peak

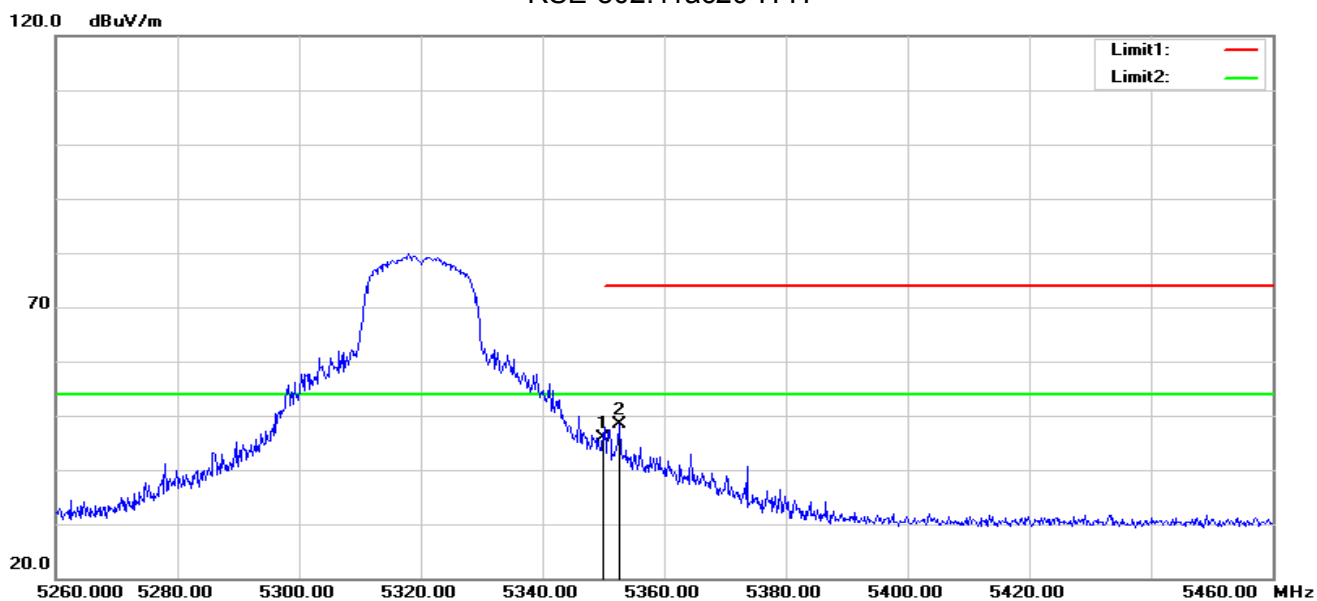
RSE-802.11ac20-L-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5136.650	43.94	-5.74	38.20	74.00	-35.80	peak
2	5150.000	34.03	-5.73	28.30	74.00	-45.70	peak

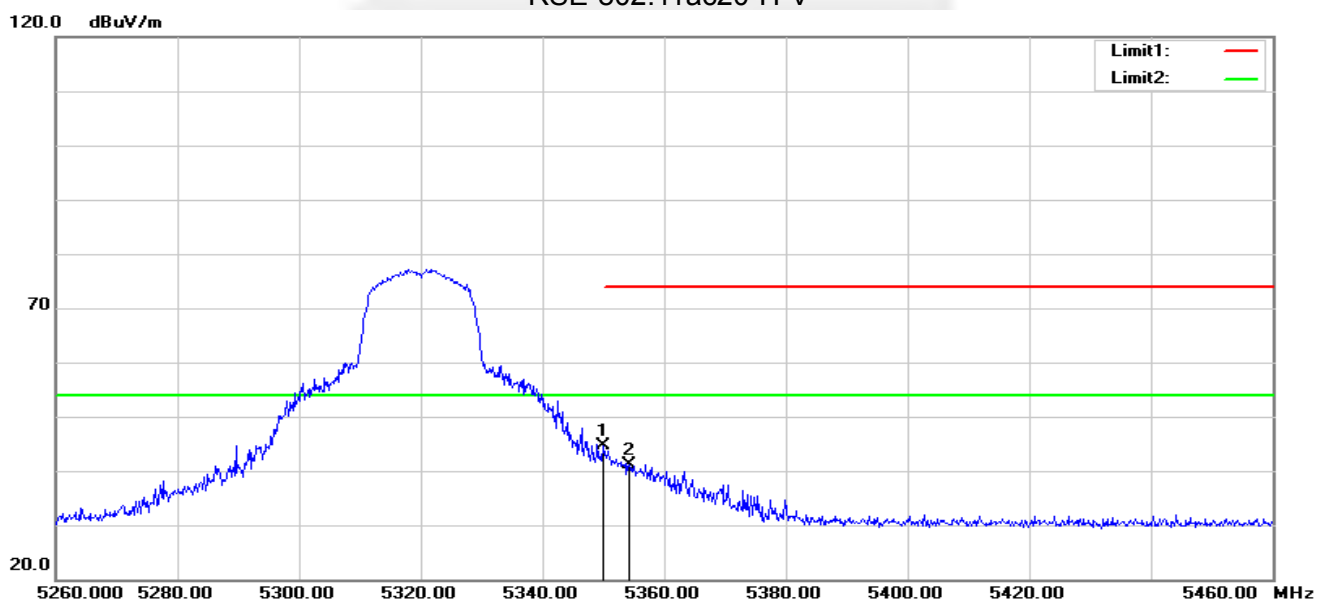


RSE-802.11ac20-H-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	50.99	-5.23	45.76	74.00	-28.24	peak
2	5352.600	53.59	-5.23	48.36	74.00	-25.64	peak

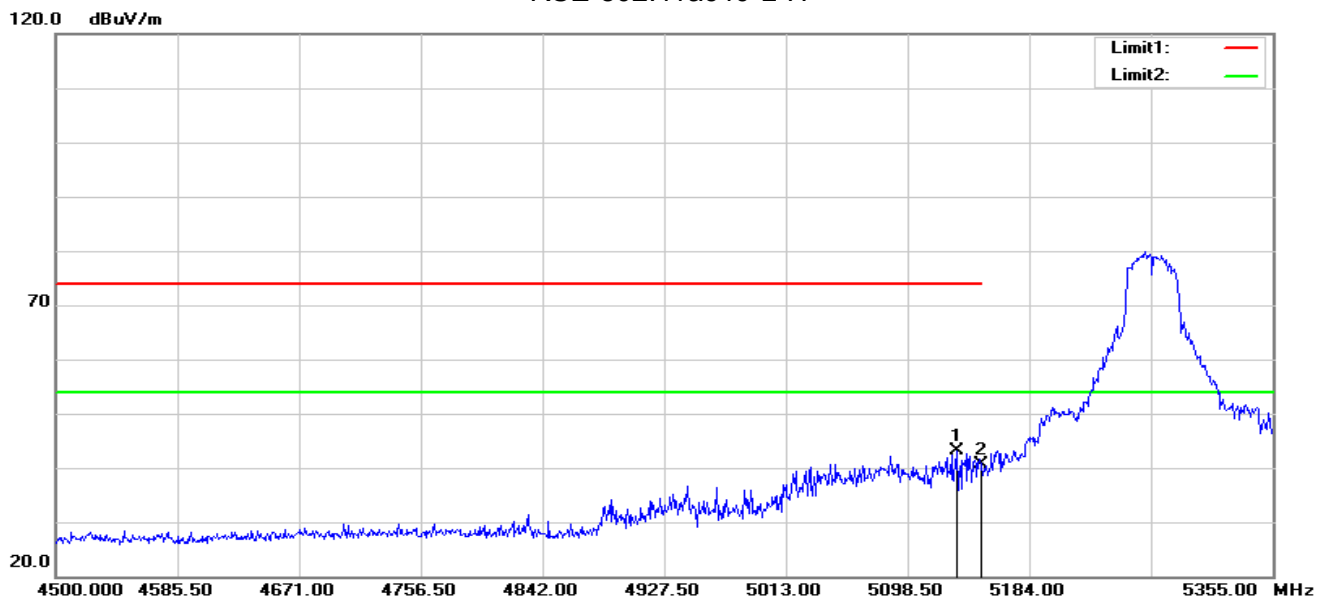
RSE-802.11ac20-H-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	49.88	-5.23	44.65	74.00	-29.35	peak
2	5354.200	46.36	-5.24	41.12	74.00	-32.88	peak

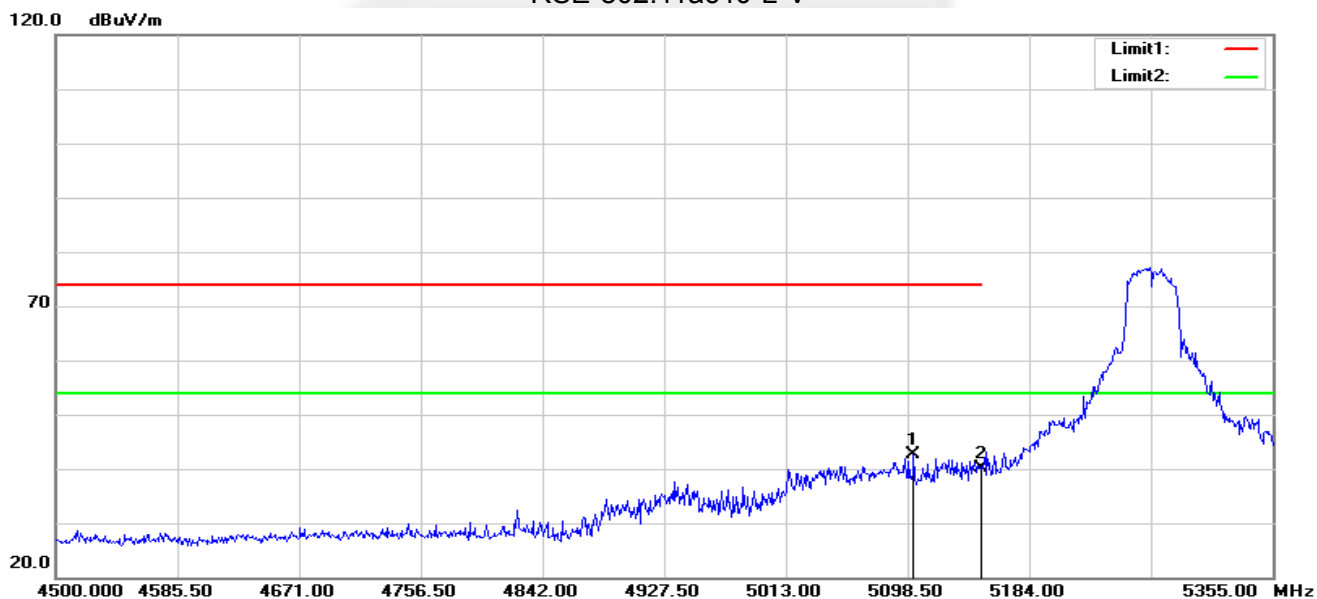


RSE-802.11ac40-L-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5133.555	48.83	-5.73	43.10	74.00	-30.90	peak
2	5150.000	46.24	-5.73	40.51	74.00	-33.49	peak

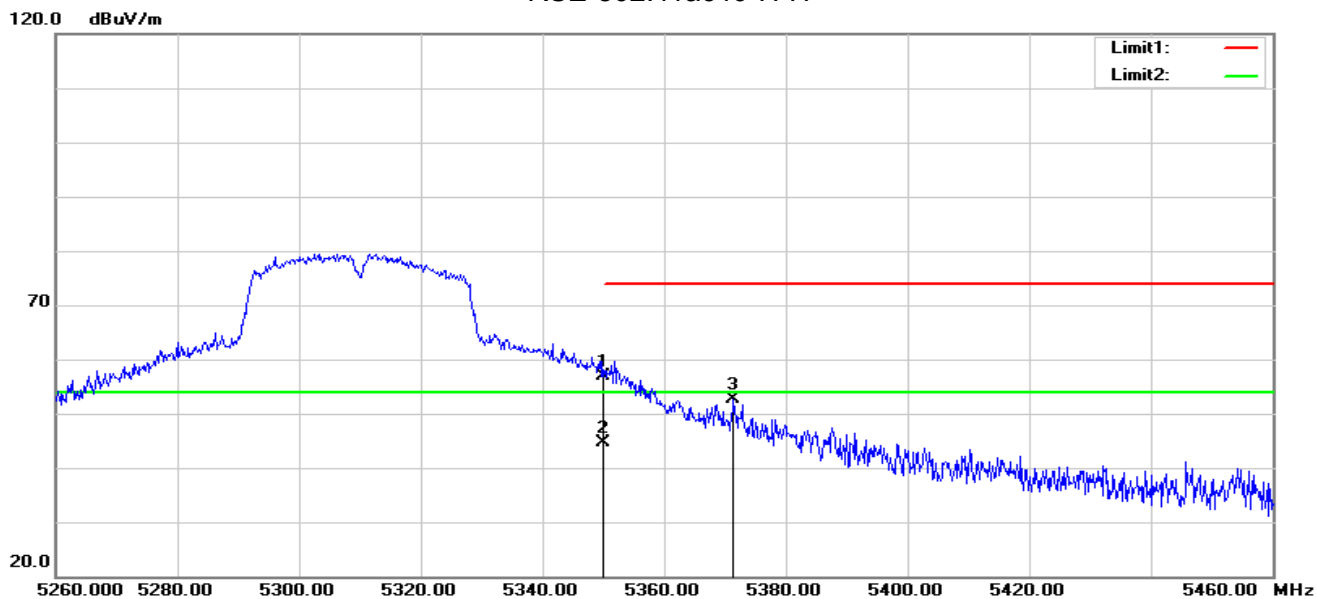
RSE-802.11ac40-L-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5102.775	48.47	-5.74	42.73	74.00	-31.27	peak
2	5150.000	45.85	-5.73	40.12	74.00	-33.88	peak

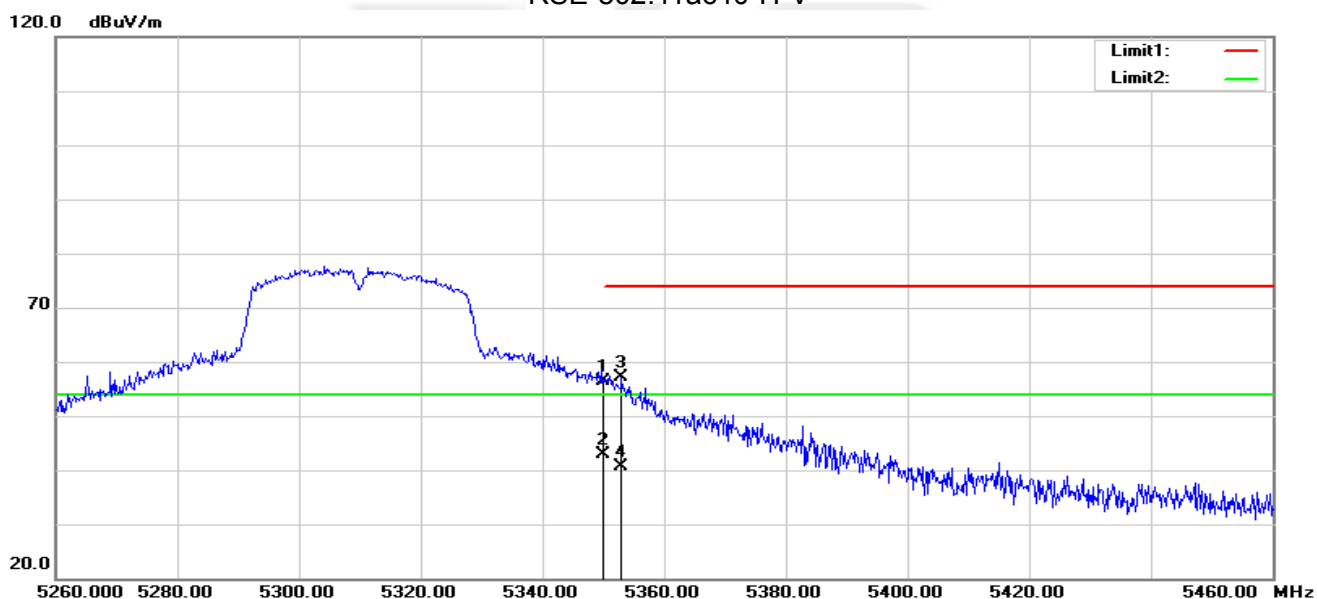


RSE-802.11ac40-H-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	62.15	-5.23	56.92	74.00	-17.08	peak
2	5350.000	49.85	-5.23	44.62	54.00	-9.38	AVG
3	5371.400	57.99	-5.24	52.75	74.00	-21.25	peak

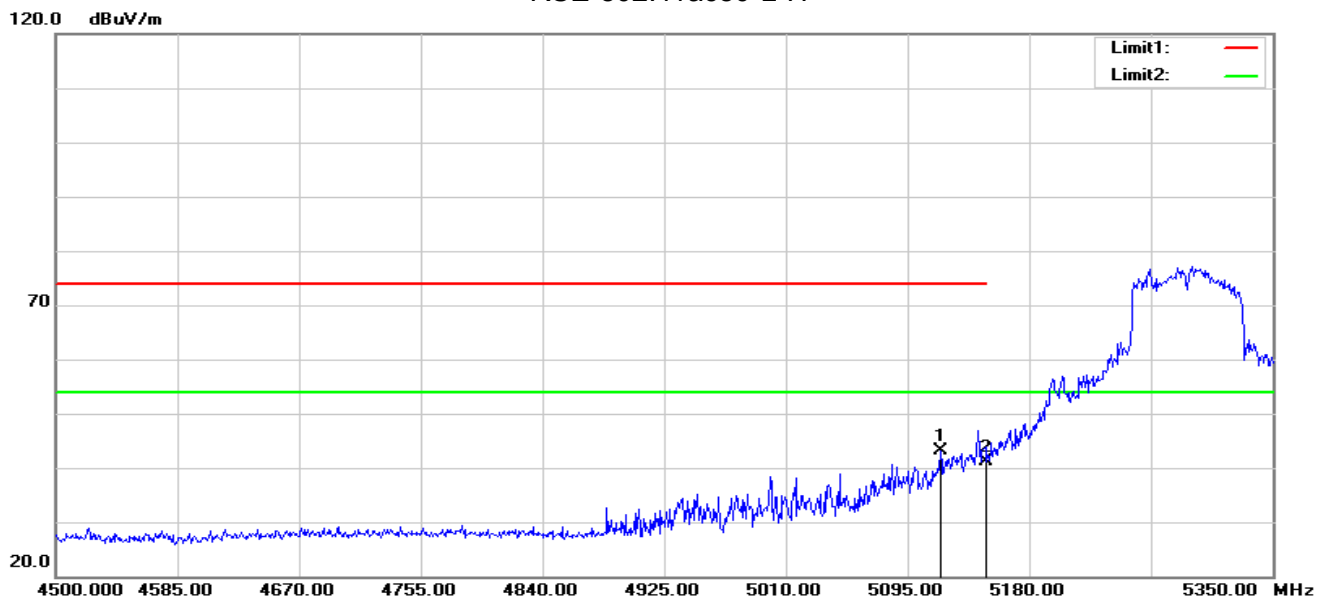
RSE-802.11ac40-H-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	61.56	-5.23	56.33	74.00	-17.67	peak
2	5350.000	48.04	-5.23	42.81	54.00	-11.19	AVG
3	5353.000	62.46	-5.23	57.23	74.00	-16.77	peak
4	5353.000	45.86	-5.23	40.63	54.00	-13.37	AVG

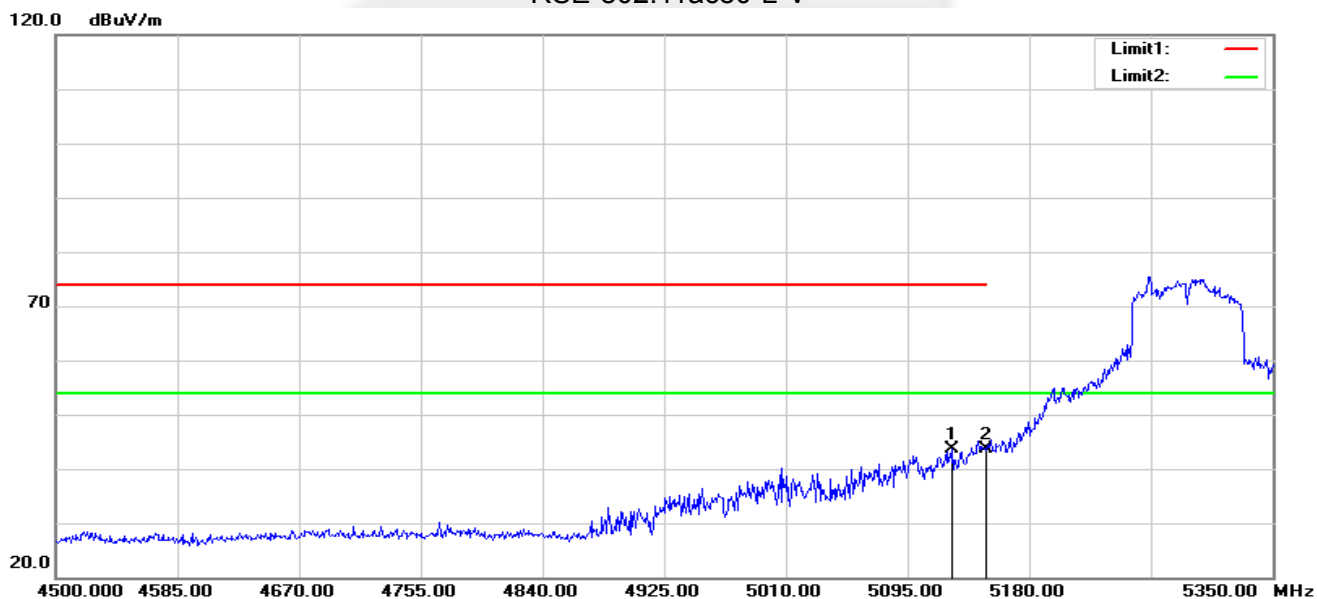


RSE-802.11ac80-L-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5117.950	48.86	-5.74	43.12	74.00	-30.88	peak
2	5150.000	46.92	-5.73	41.19	74.00	-32.81	peak

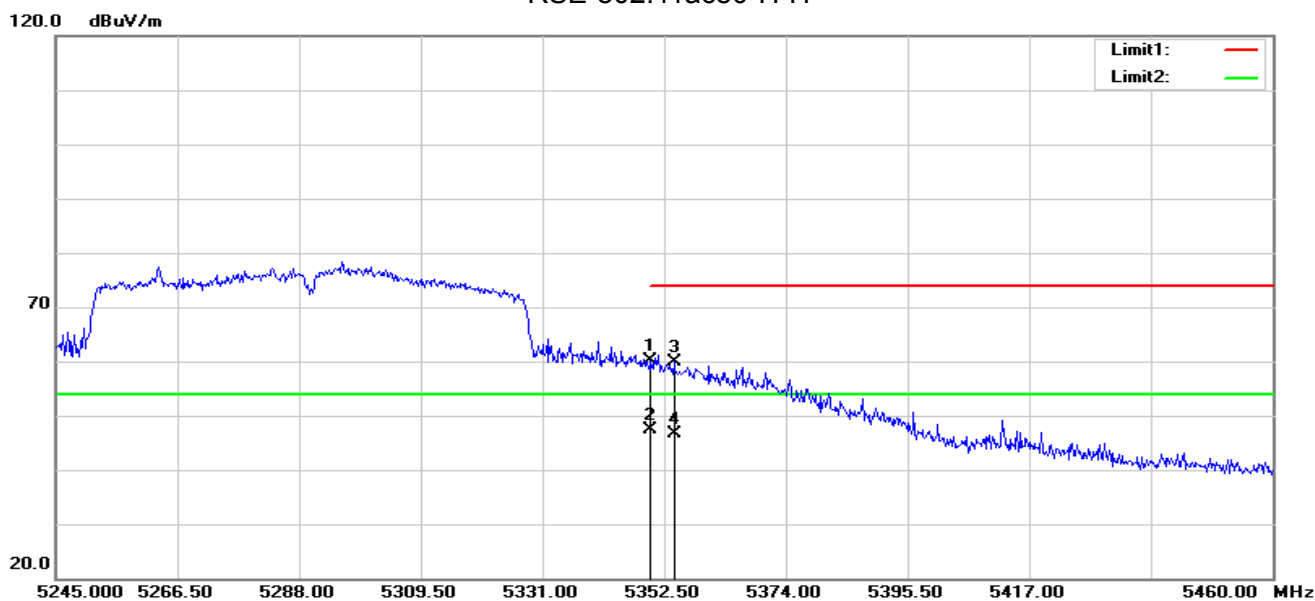
RSE-802.11ac80-L-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5126.450	49.39	-5.74	43.65	74.00	-30.35	peak
2	5150.000	49.43	-5.73	43.70	74.00	-30.30	peak

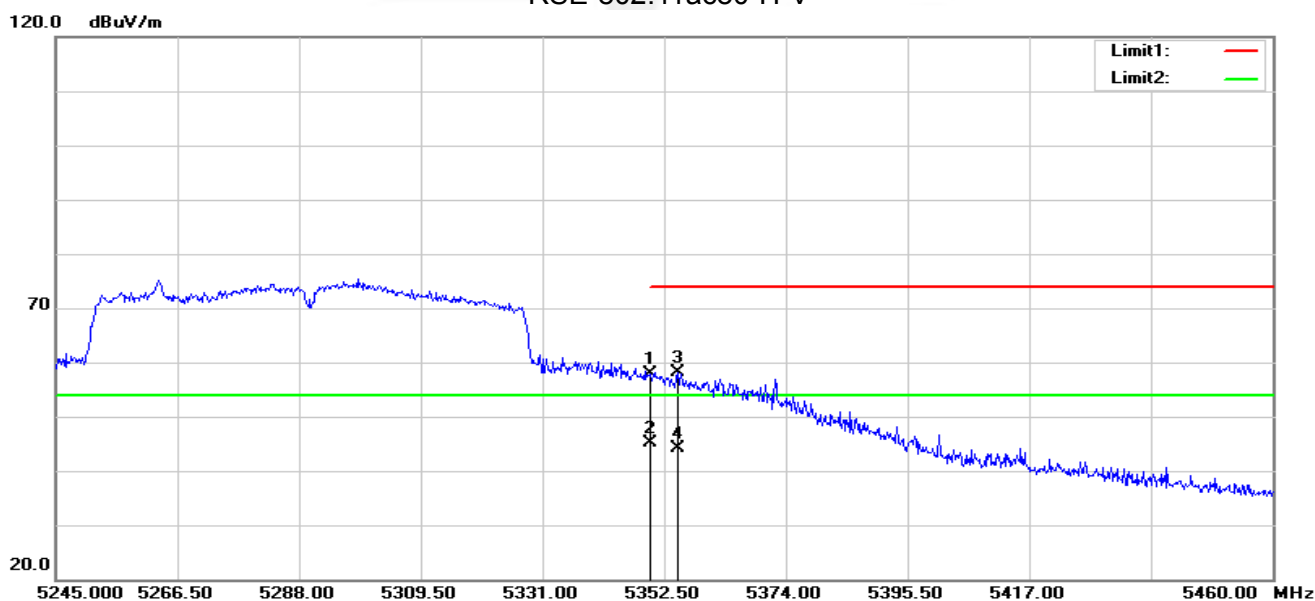


RSE-802.11ac80-H-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	65.44	-5.23	60.21	74.00	-13.79	peak
2	5350.000	52.71	-5.23	47.48	54.00	-6.52	AVG
3	5354.220	65.17	-5.24	59.93	74.00	-14.07	peak
4	5354.220	51.76	-5.24	46.52	54.00	-7.48	AVG

RSE-802.11ac80-H-V



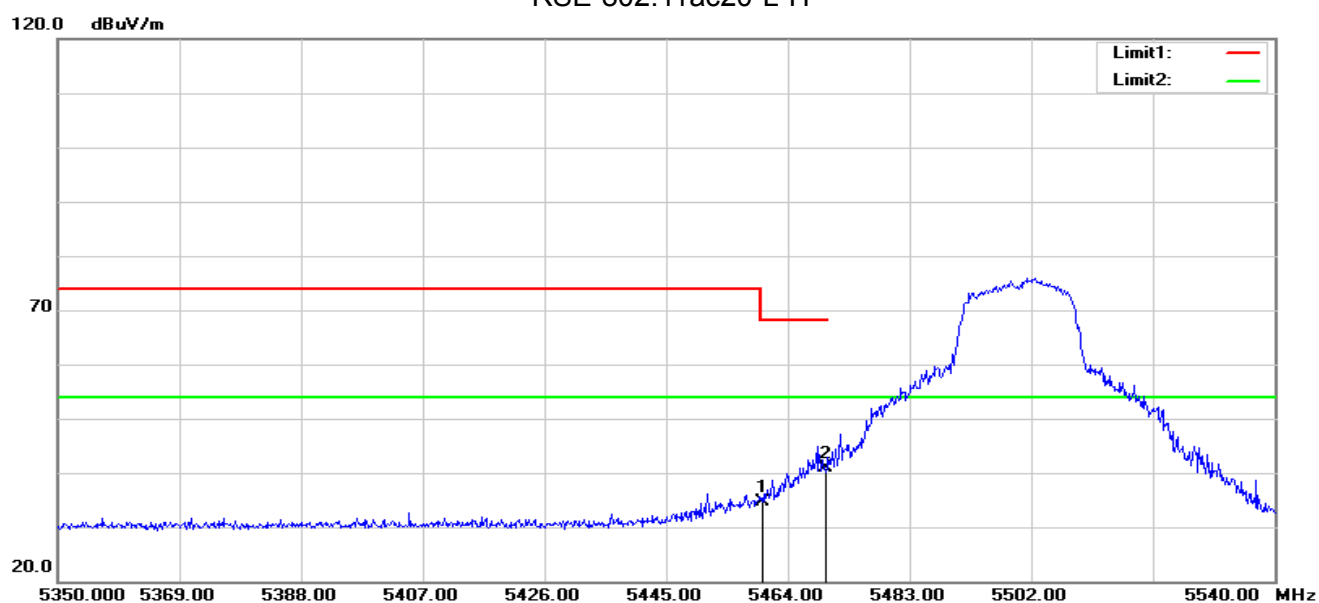
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5350.000	63.19	-5.23	57.96	74.00	-16.04	peak
2	5350.000	50.27	-5.23	45.04	54.00	-8.96	AVG
3	5354.865	63.28	-5.24	58.04	74.00	-15.96	peak
4	5354.865	49.37	-5.24	44.13	54.00	-9.87	AVG

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



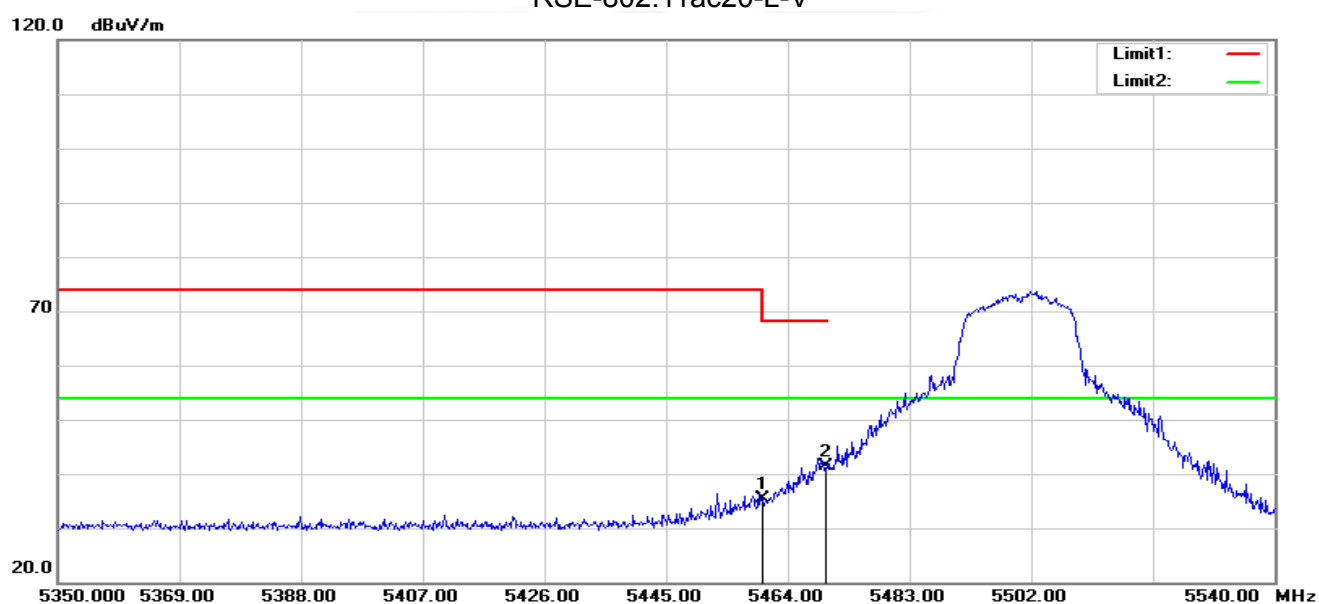
U-NII-2C 5470-5725MHz

RSE-802.11ac20-L-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5460.000	39.81	-5.11	34.70	68.20	-33.50	peak
2	5470.000	45.87	-5.09	40.78	68.20	-27.42	peak

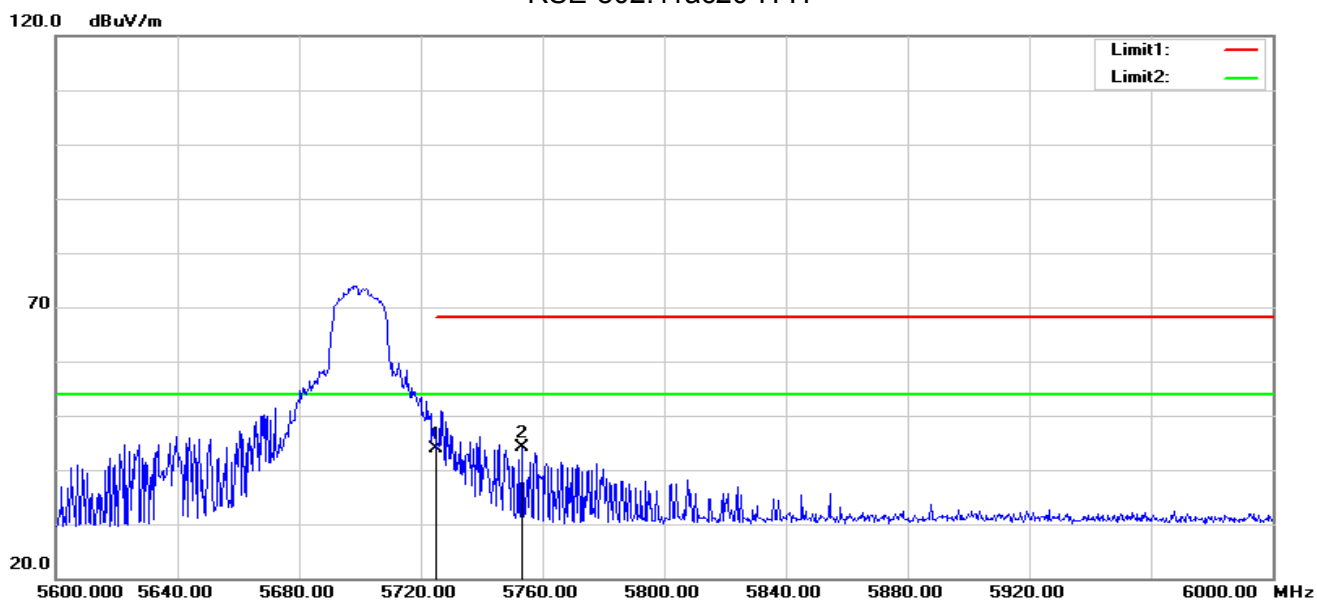
RSE-802.11ac20-L-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5460.000	40.55	-5.11	35.44	68.20	-32.76	peak
2	5470.000	46.47	-5.09	41.38	68.20	-26.82	peak

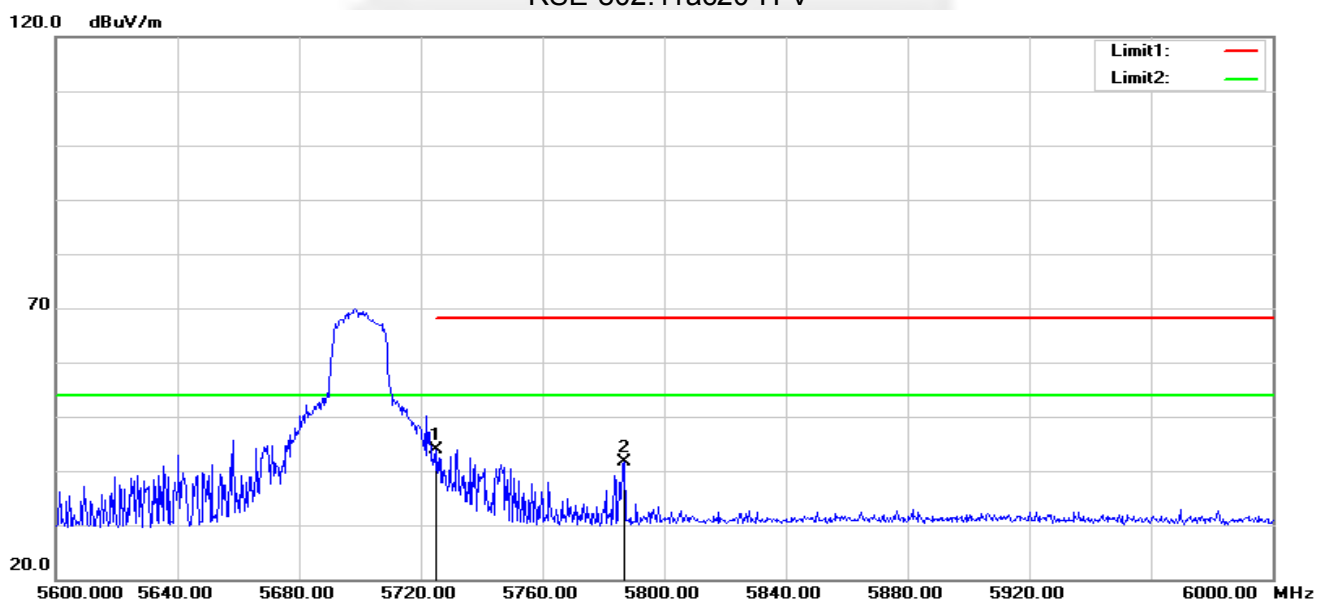


RSE-802.11ac20-H-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	48.47	-4.57	43.90	68.20	-24.30	peak
2	5753.200	48.72	-4.47	44.25	68.20	-23.95	peak

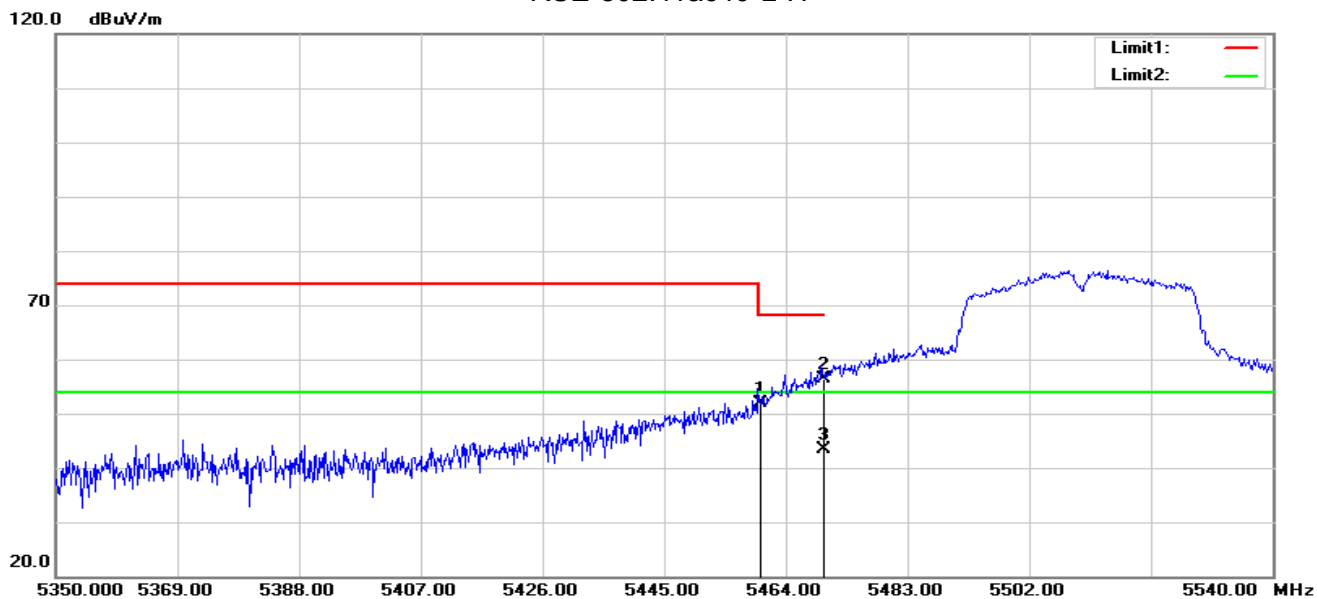
RSE-802.11ac20-H-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	48.46	-4.57	43.89	68.20	-24.31	peak
2	5786.800	45.89	-4.36	41.53	68.20	-26.67	peak

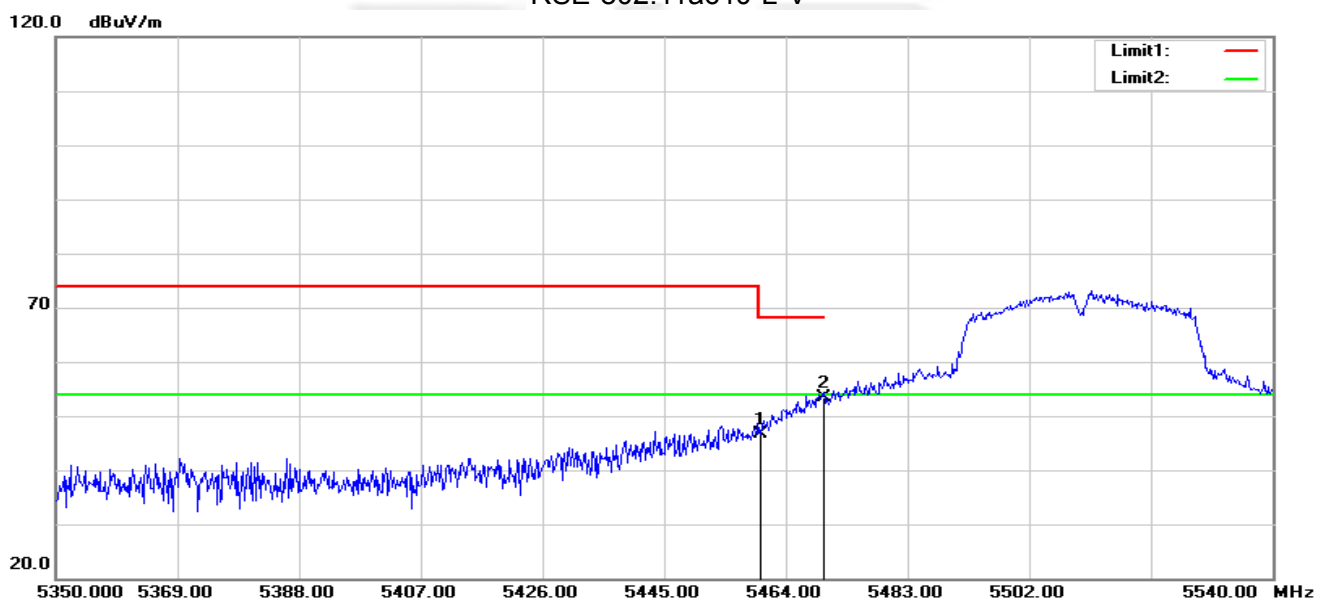


RSE-802.11ac40-L-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5460.000	56.90	-5.11	51.79	68.20	-16.41	peak
2	5470.000	61.54	-5.09	56.45	68.20	-11.75	peak
3	5470.000	48.47	-5.09	43.38	54.00	-10.62	AVG

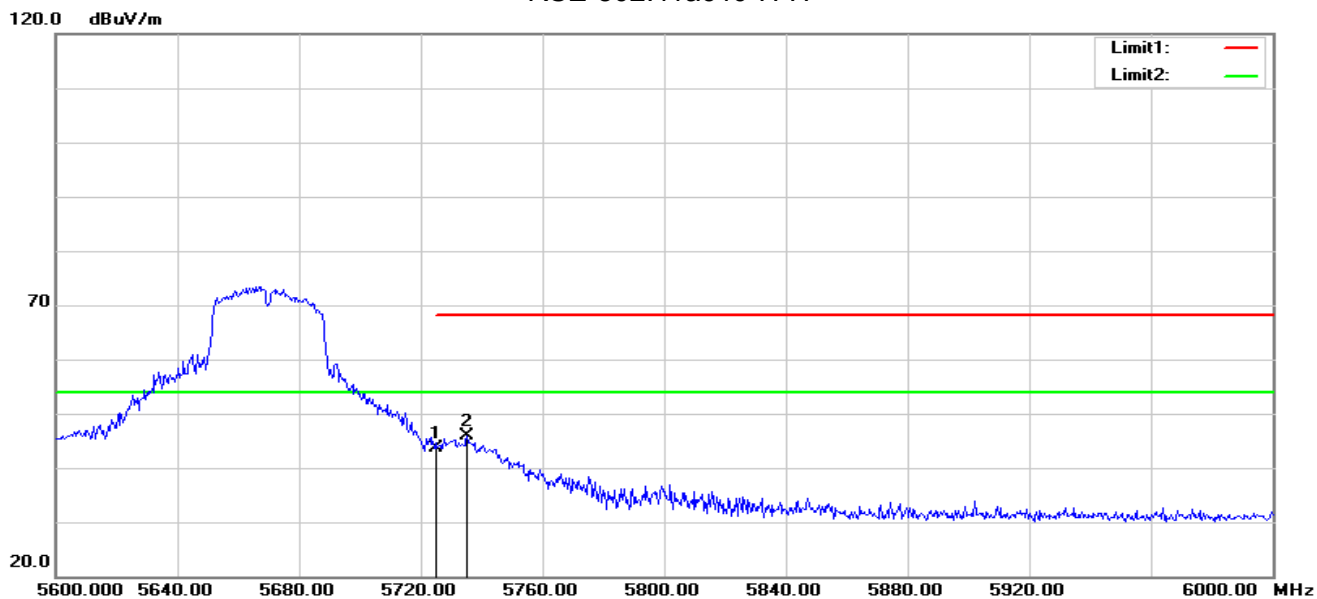
RSE-802.11ac40-L-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5460.000	51.82	-5.11	46.71	68.20	-21.49	peak
2	5470.000	58.47	-5.09	53.38	68.20	-14.82	peak

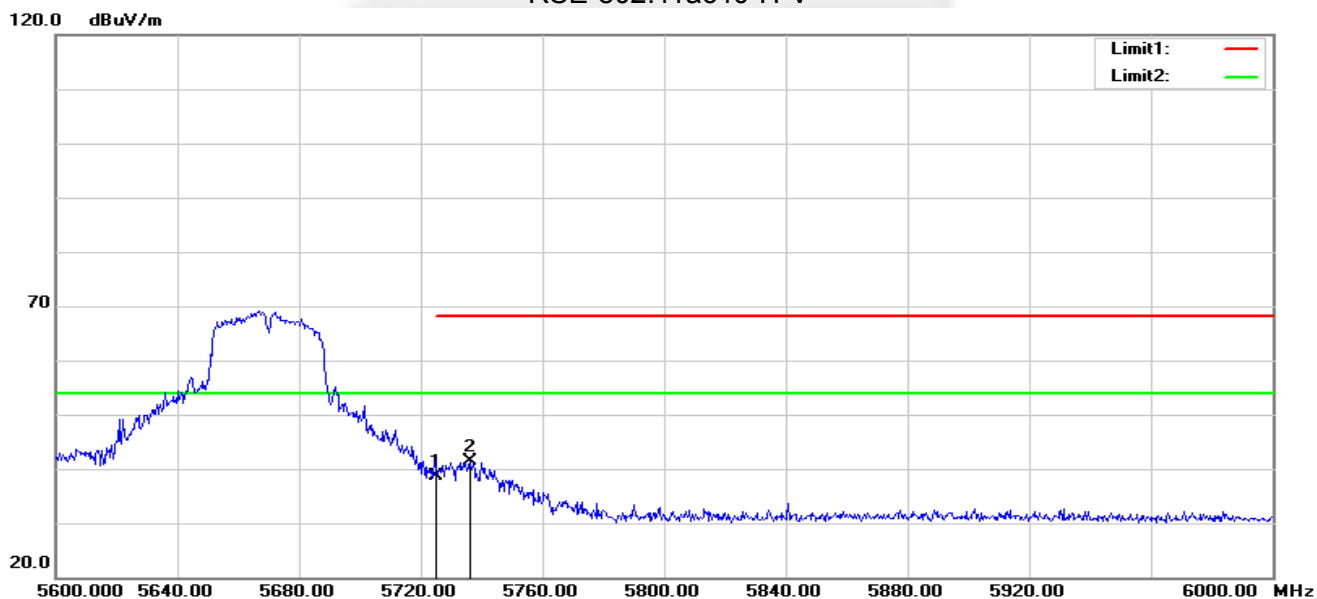


RSE-802.11ac40-H-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	48.19	-4.57	43.62	68.20	-24.58	peak
2	5735.200	50.41	-4.54	45.87	68.20	-22.33	peak

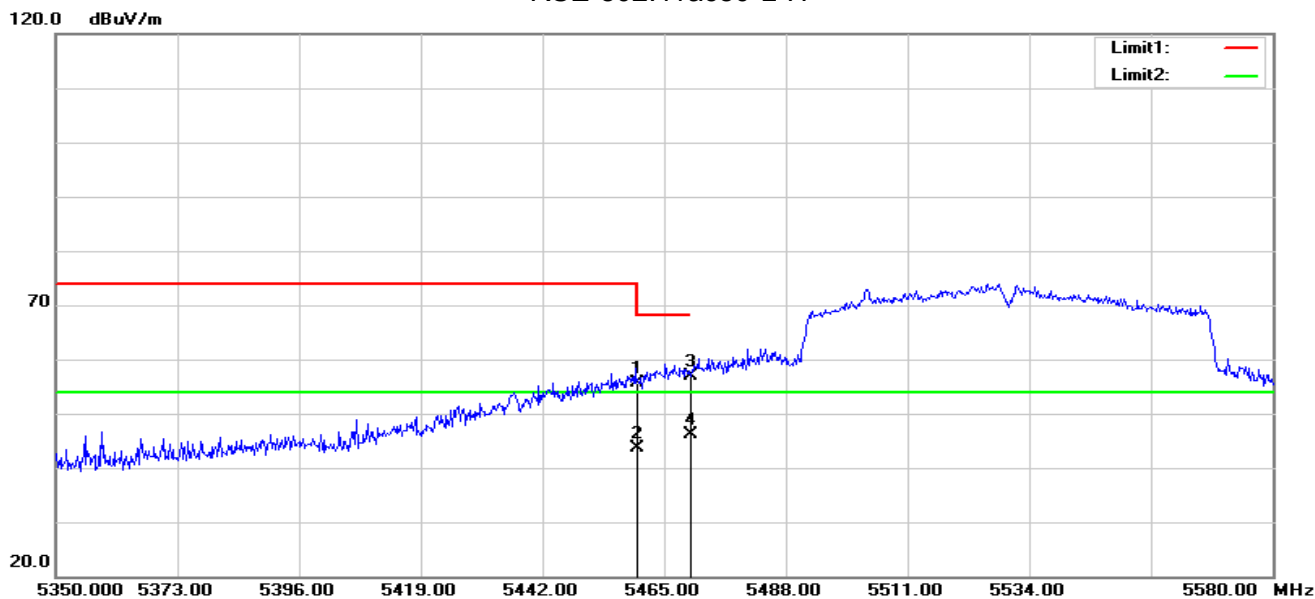
RSE-802.11ac40-H-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	43.08	-4.57	38.51	68.20	-29.69	peak
2	5736.000	45.90	-4.54	41.36	68.20	-26.84	peak

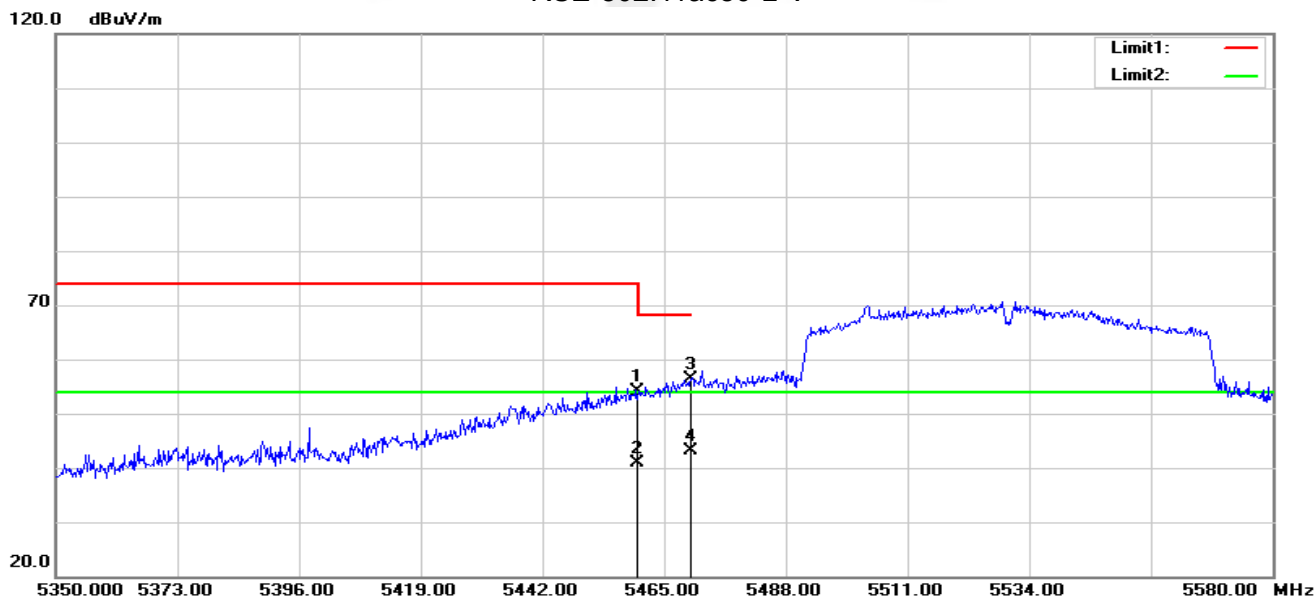


RSE-802.11ac80-L-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5460.000	60.76	-5.11	55.65	68.20	-12.55	peak
2	5460.000	48.71	-5.11	43.60	54.00	-10.40	AVG
3	5470.000	62.00	-5.09	56.91	68.20	-11.29	peak
4	5470.000	51.10	-5.09	46.01	54.00	-7.99	AVG

RSE-802.11ac80-L-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5460.000	59.14	-5.11	54.03	68.20	-14.17	peak
2	5460.000	45.98	-5.11	40.87	54.00	-13.13	AVG
3	5470.000	61.42	-5.09	56.33	68.20	-11.87	peak
4	5470.000	48.24	-5.09	43.15	54.00	-10.85	AVG

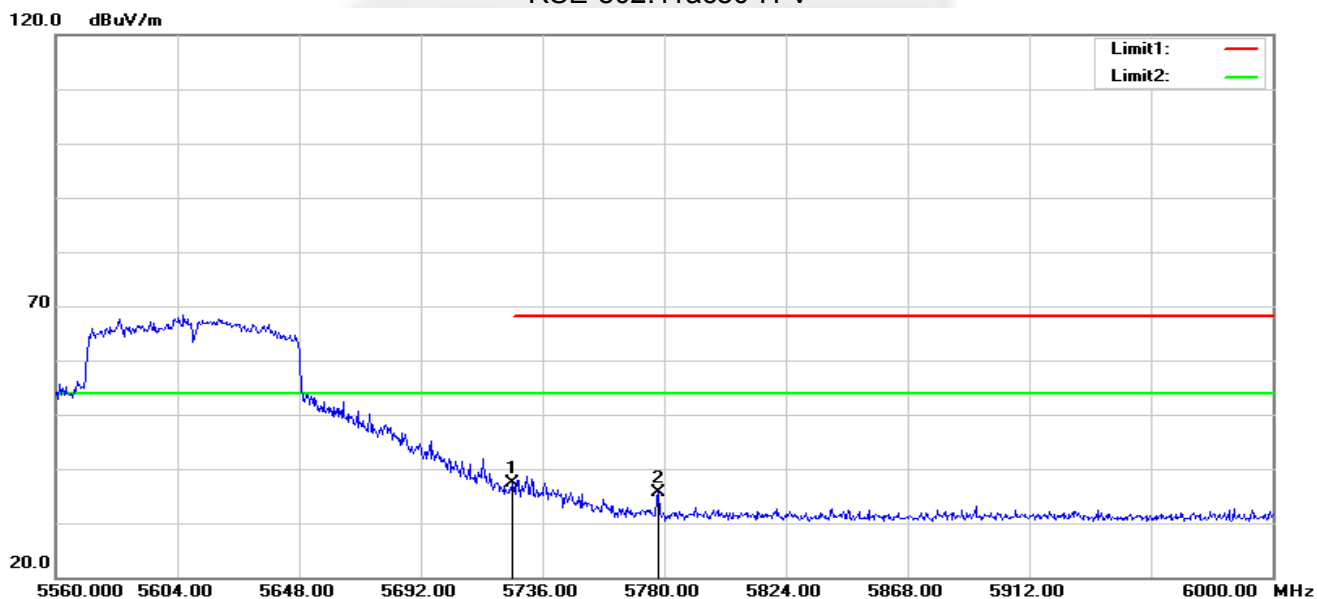


RSE-802.11ac80-H-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	45.93	-4.57	41.36	68.20	-26.84	peak
2	5803.760	48.83	-4.30	44.53	68.20	-23.67	peak

RSE-802.11ac80-H-V



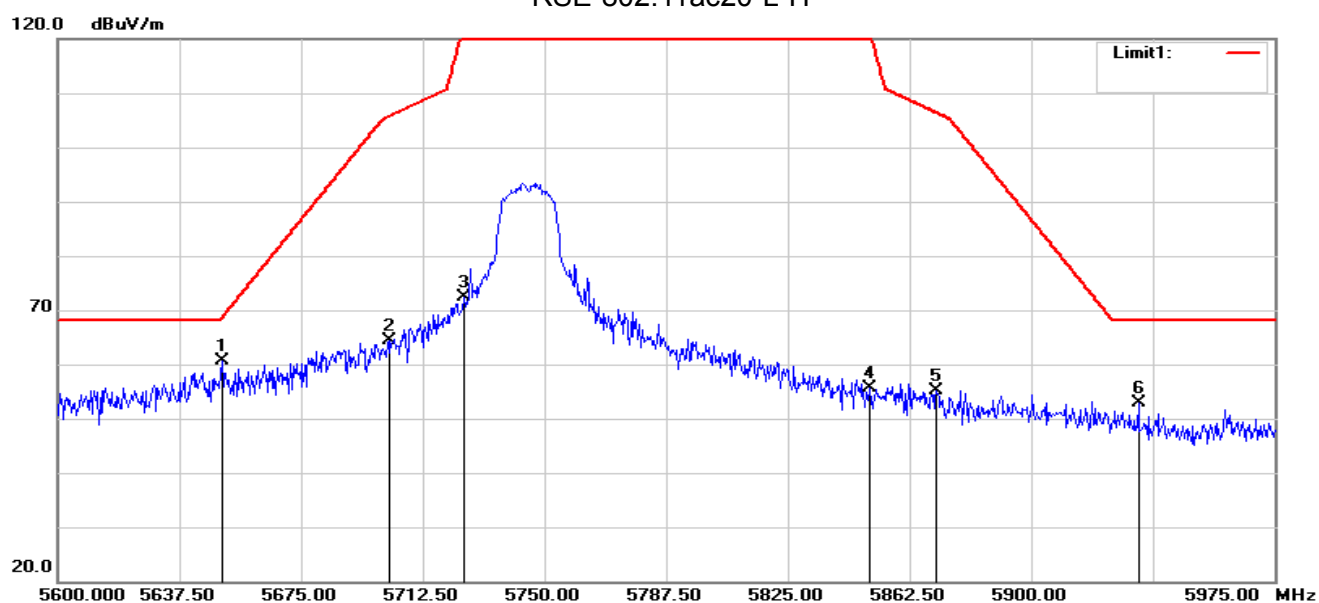
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5725.000	41.90	-4.57	37.33	68.20	-30.87	peak
2	5777.800	40.06	-4.40	35.66	68.20	-32.54	peak

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



U-NII-3 (5.725-5.85 GHz)

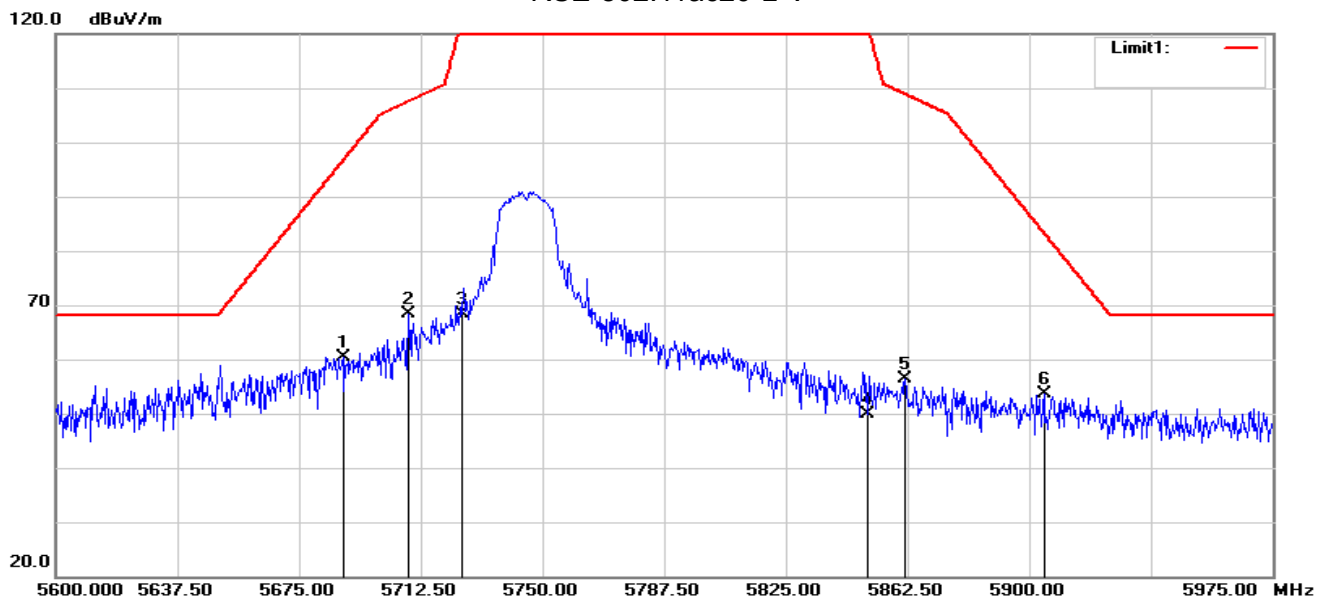
RSE-802.11ac20-L-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.625	65.42	-4.68	60.74	68.66	-7.92	peak
2	5702.000	68.94	-4.66	64.28	105.76	-41.48	peak
3	5725.000	77.06	-4.57	72.49	122.20	-49.71	peak
4	5850.000	59.61	-4.10	55.51	122.20	-66.69	peak
5	5870.750	59.06	-4.01	55.05	106.39	-51.34	peak
6	5933.000	56.74	-3.94	52.80	68.20	-15.40	peak



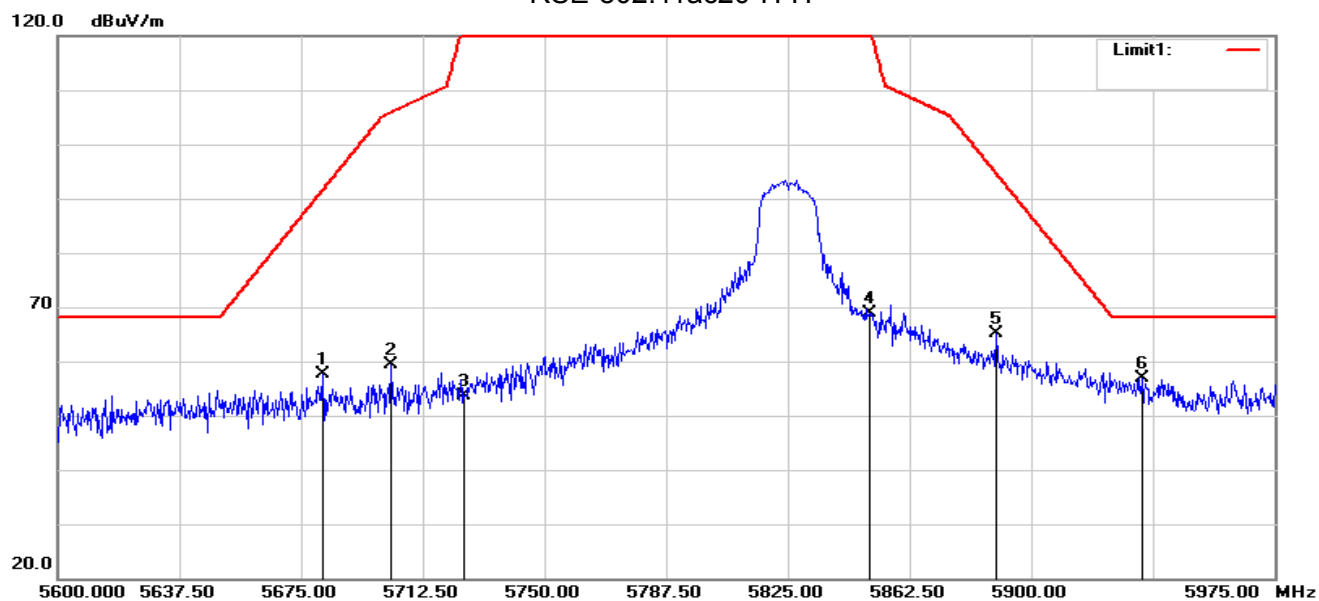
RSE-802.11ac20-L-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5688.500	65.14	-4.67	60.47	96.69	-36.22	peak
2	5708.750	73.12	-4.63	68.49	107.65	-39.16	peak
3	5725.000	72.87	-4.57	68.30	122.20	-53.90	peak
4	5850.000	54.03	-4.10	49.93	122.20	-72.27	peak
5	5861.750	60.52	-4.05	56.47	108.91	-52.44	peak
6	5904.500	57.46	-3.88	53.58	83.37	-29.79	peak



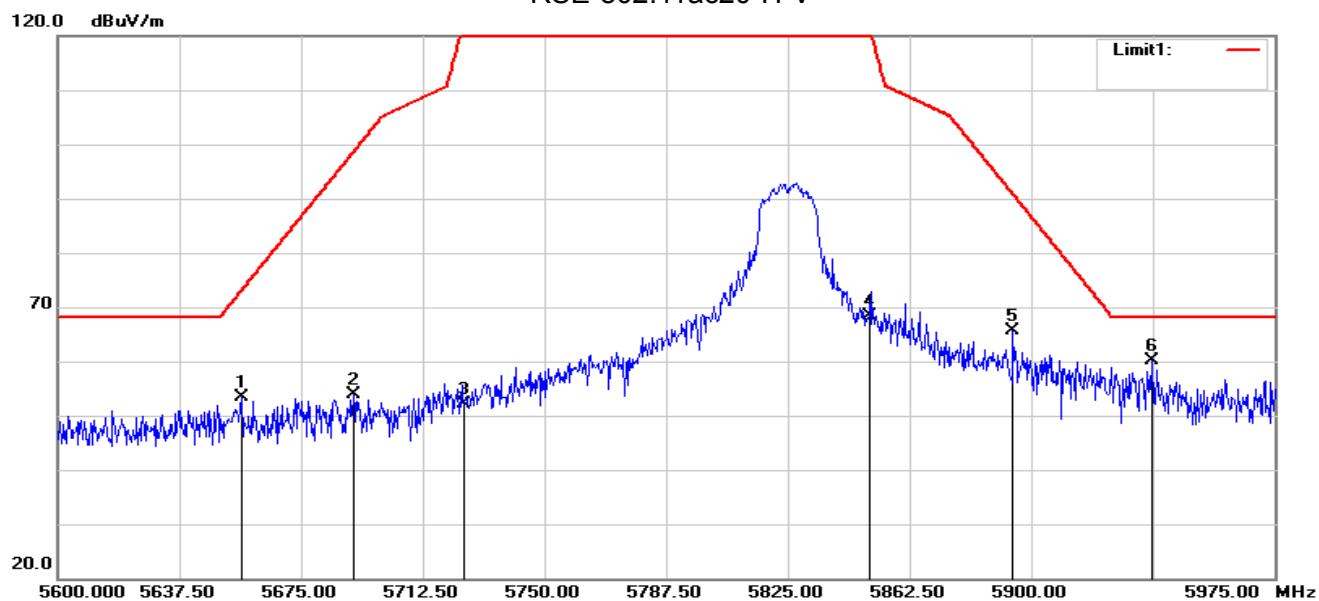
RSE-802.11ac20-H-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5681.750	62.24	-4.67	57.57	91.70	-34.13	peak
2	5702.750	64.09	-4.66	59.43	105.97	-46.54	peak
3	5725.000	58.08	-4.57	53.51	122.20	-68.69	peak
4	5850.000	73.02	-4.10	68.92	122.20	-53.28	peak
5	5889.125	68.97	-3.93	65.04	94.75	-29.71	peak
6	5934.125	60.91	-3.94	56.97	68.20	-11.23	peak



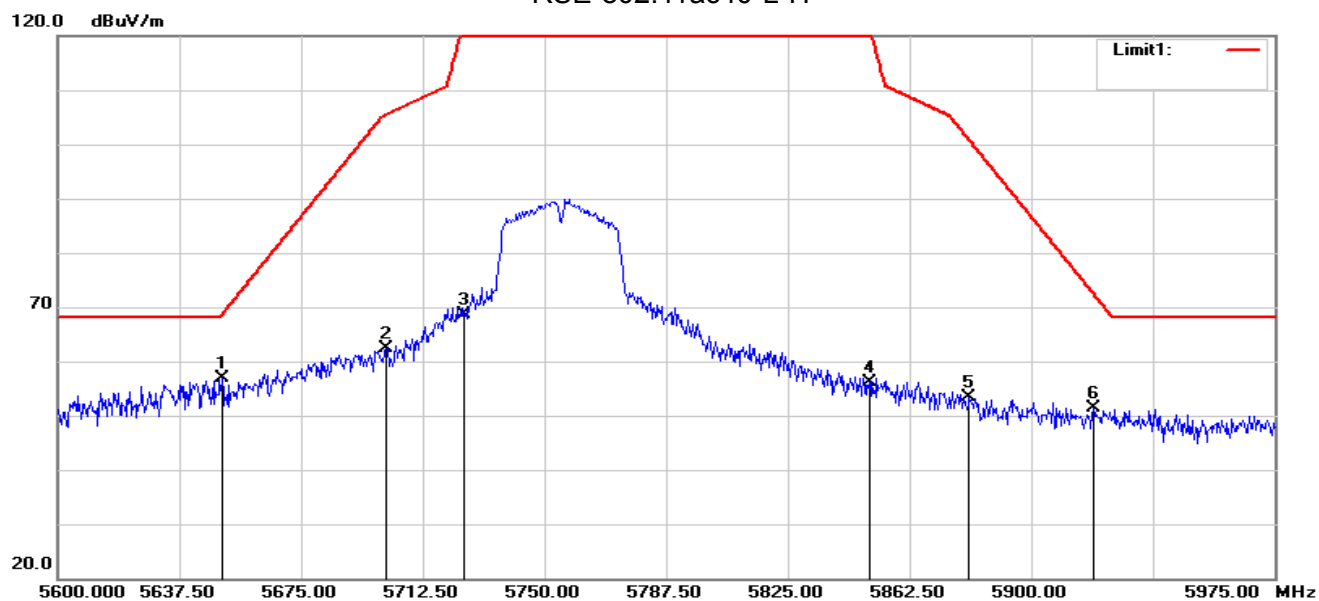
RSE-802.11ac20-H-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5656.625	57.99	-4.68	53.31	73.10	-19.79	peak
2	5691.125	58.62	-4.66	53.96	98.63	-44.67	peak
3	5725.000	56.62	-4.57	52.05	122.20	-70.15	peak
4	5850.000	72.52	-4.10	68.42	122.20	-53.78	peak
5	5894.375	69.66	-3.91	65.75	90.86	-25.11	peak
6	5937.125	64.02	-3.94	60.08	68.20	-8.12	peak



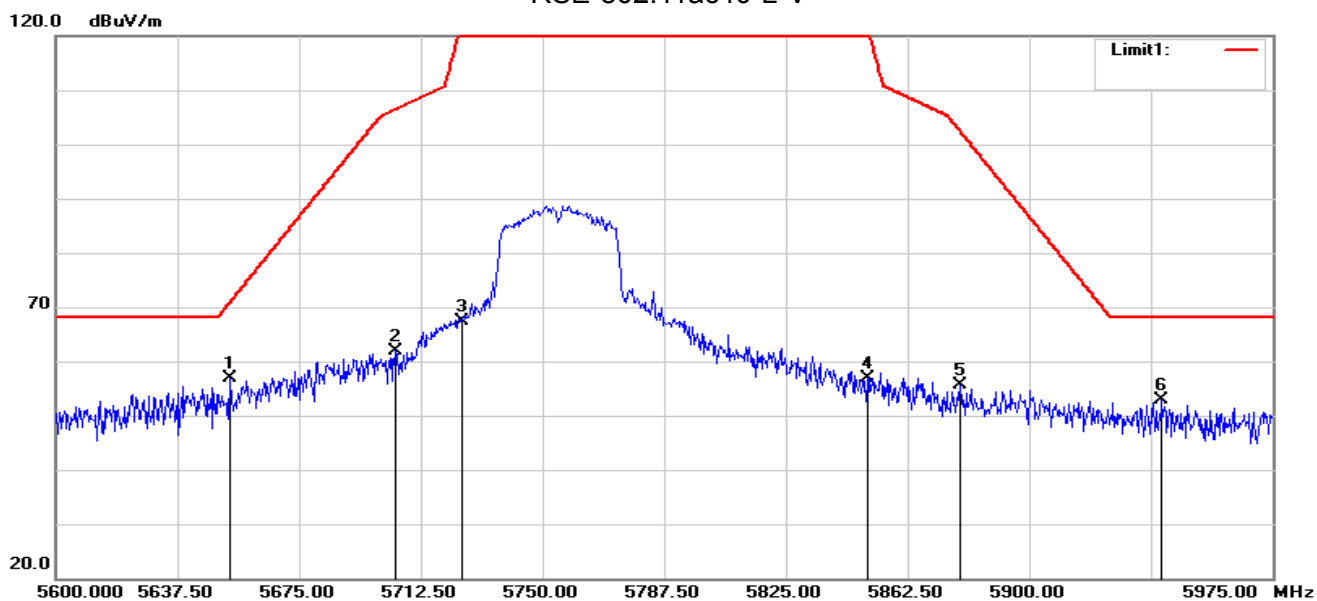
RSE-802.11ac40-L-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.625	61.53	-4.68	56.85	68.66	-11.81	peak
2	5701.250	67.12	-4.66	62.46	105.55	-43.09	peak
3	5725.000	73.18	-4.57	68.61	122.20	-53.59	peak
4	5850.000	60.20	-4.10	56.10	122.20	-66.10	peak
5	5880.875	57.41	-3.96	53.45	100.85	-47.40	peak
6	5919.125	55.20	-3.91	51.29	72.55	-21.26	peak



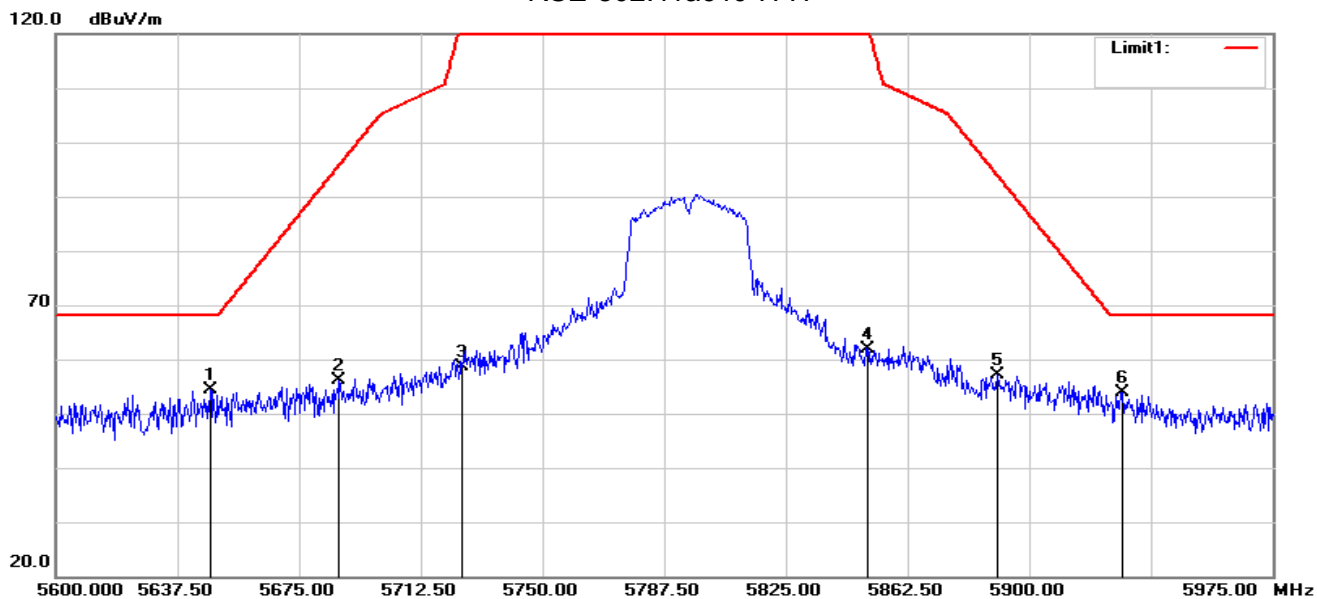
RSE-802.11ac40-L-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5653.625	61.55	-4.67	56.88	70.88	-14.00	peak
2	5704.625	66.48	-4.64	61.84	106.50	-44.66	peak
3	5725.000	71.88	-4.57	67.31	122.20	-54.89	peak
4	5850.000	60.88	-4.10	56.78	122.20	-65.42	peak
5	5878.625	59.70	-3.97	55.73	102.52	-46.79	peak
6	5940.875	56.87	-3.94	52.93	68.20	-15.27	peak



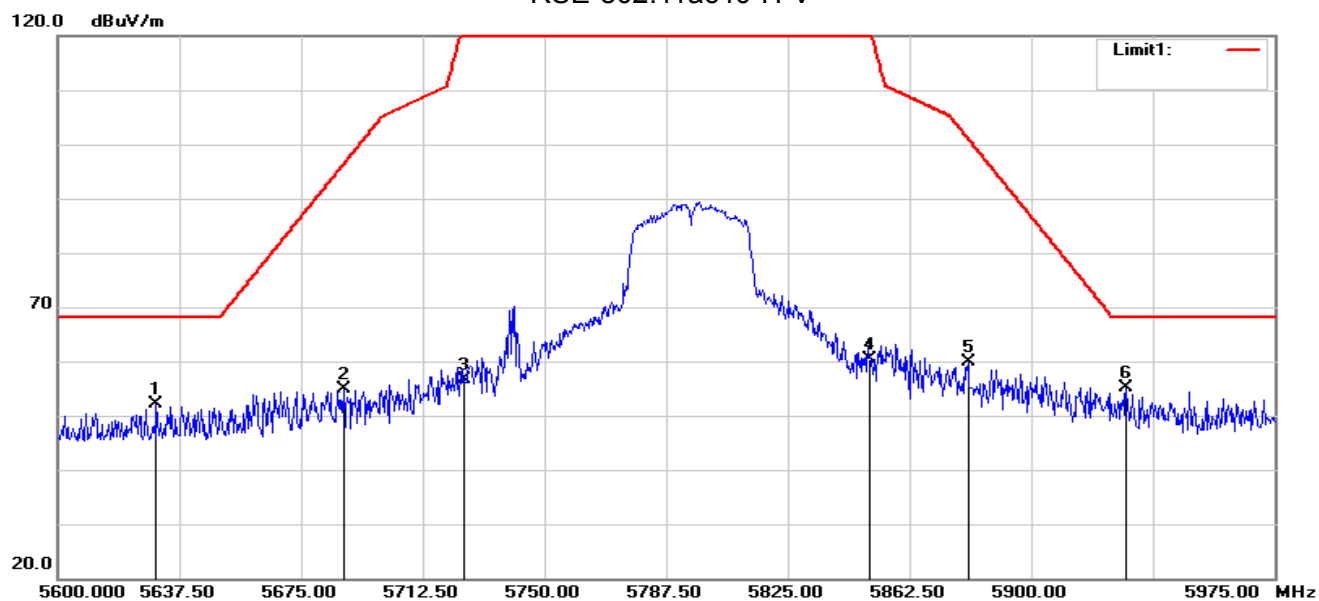
RSE-802.11ac40-H-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5647.625	59.17	-4.68	54.49	68.20	-13.71	peak
2	5687.375	60.67	-4.66	56.01	95.86	-39.85	peak
3	5725.000	63.29	-4.57	58.72	122.20	-63.48	peak
4	5850.000	66.07	-4.10	61.97	122.20	-60.23	peak
5	5890.250	61.16	-3.93	57.23	93.92	-36.69	peak
6	5928.875	57.81	-3.93	53.88	68.20	-14.32	peak



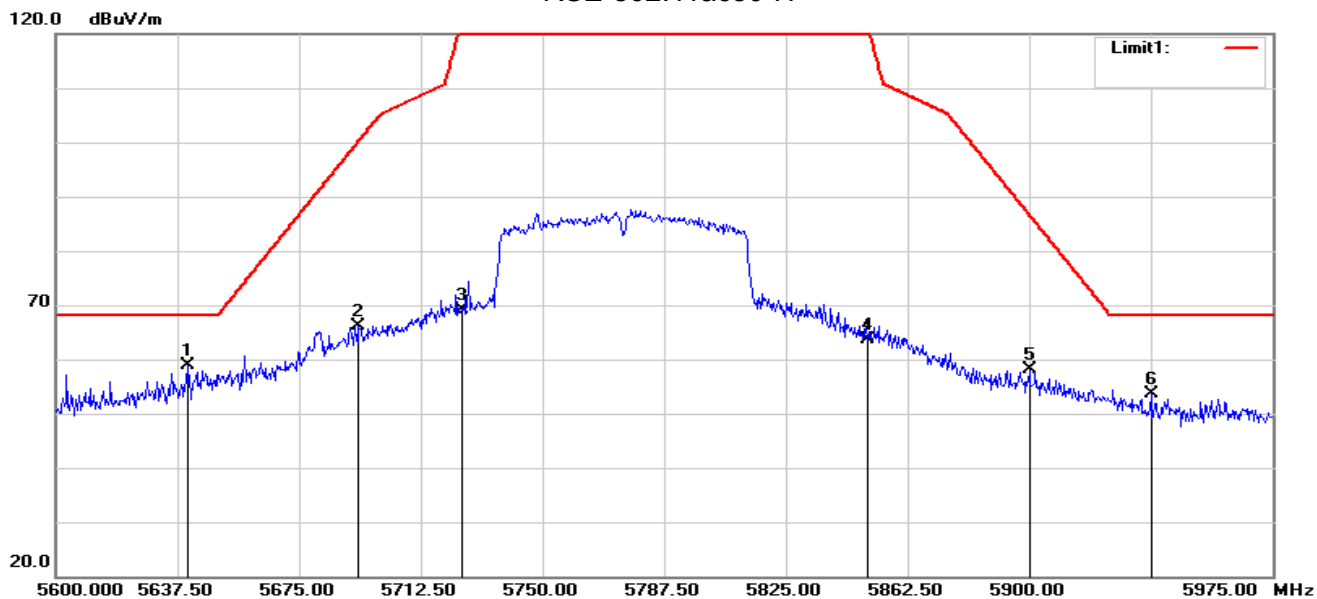
RSE-802.11ac40-H-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5630.375	56.79	-4.69	52.10	68.20	-16.10	peak
2	5688.125	59.61	-4.67	54.94	96.41	-41.47	peak
3	5725.000	61.15	-4.57	56.58	122.20	-65.62	peak
4	5850.000	64.60	-4.10	60.50	122.20	-61.70	peak
5	5880.500	63.76	-3.96	59.80	101.13	-41.33	peak
6	5929.250	59.03	-3.93	55.10	68.20	-13.10	peak



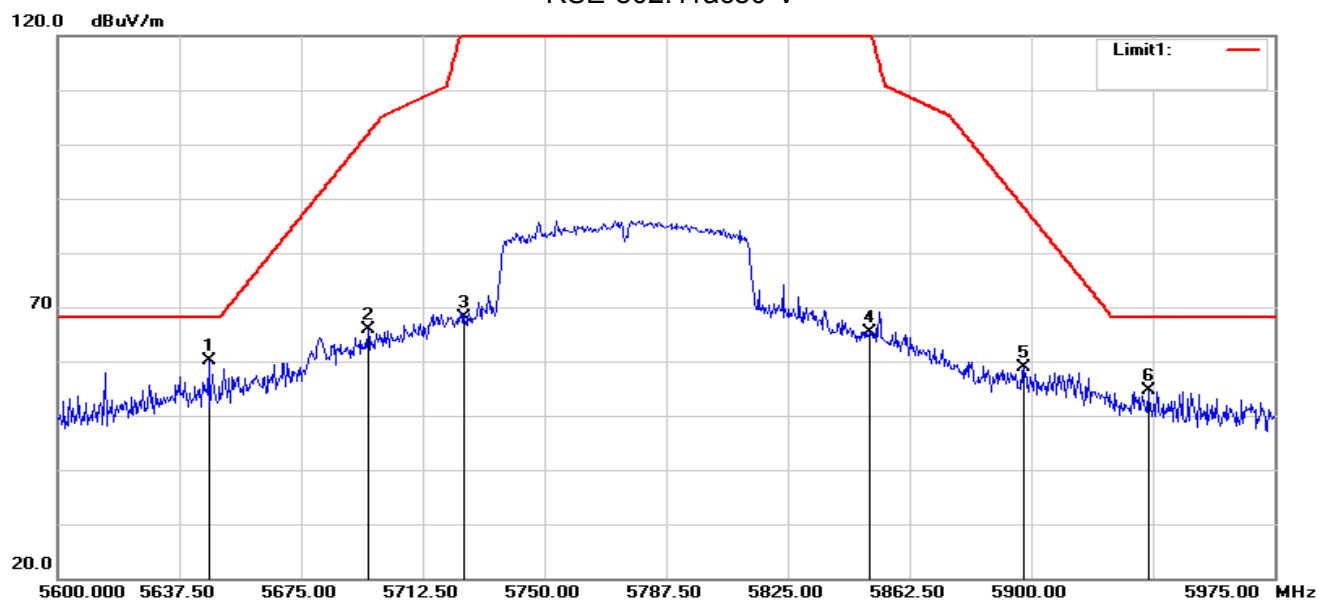
RSE-802.11ac80-H



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5640.500	63.45	-4.69	58.76	68.20	-9.44	peak
2	5693.375	70.74	-4.66	66.08	100.30	-34.22	peak
3	5725.000	73.71	-4.57	69.14	122.20	-53.06	peak
4	5850.000	67.85	-4.10	63.75	122.20	-58.45	peak
5	5900.000	62.03	-3.88	58.15	86.70	-28.55	peak
6	5937.500	57.46	-3.94	53.52	68.20	-14.68	peak



RSE-802.11ac80-V



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5646.500	64.80	-4.69	60.11	68.20	-8.09	peak
2	5695.625	70.47	-4.66	65.81	101.96	-36.15	peak
3	5725.000	72.79	-4.57	68.22	122.20	-53.98	peak
4	5850.000	69.50	-4.10	65.40	122.20	-56.80	peak
5	5897.750	62.65	-3.89	58.76	88.37	-29.61	peak
6	5936.000	58.48	-3.94	54.54	68.20	-13.66	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-2 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set span to encompass the EBW
3. Set RBW = 1MHz.
4. Set the VBW $\geq$ 3MHz.
5. Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$. (This ensures that bin-to-bin spacing is $\leq \text{RBW}/2$, so that narrowband signals are not lost between frequency bins.)
6. Sweep time = auto.
7. Detector = power averaging (rms), if available. Otherwise, use sample detector mode
8. Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.

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 Power Density (dBm)	Duty cycle factor (dB)	Final Power Density (dBm)	Limit (dBm)	Result
802.11a					
5180	-7.420	0.083	-7.337	11	PASS
5200	-7.390	0.083	-7.307	11	PASS
5240	-6.205	0.083	-6.122	11	PASS
802.11n20					
5180	-7.822	0.108	-7.714	11	PASS
5200	-7.599	0.108	-7.491	11	PASS
5240	-7.434	0.108	-7.326	11	PASS
802.11n40					
5190	-10.740	0.204	-10.536	11	PASS
5230	-10.595	0.204	-10.391	11	PASS
802.11ac20					
5180	-7.509	0.087	-7.422	11	PASS
5200	-7.246	0.087	-7.159	11	PASS
5240	-7.549	0.087	-7.462	11	PASS
802.11ac40					
5190	-10.406	0.218	-10.188	11	PASS
5230	-10.498	0.218	-10.280	11	PASS
802.11ac80					
5210	-14.179	0.459	-13.720	11	PASS

5250-5350MHz					
Frequency	Direct measurement Power Density (dBm)	Duty cycle factor (dB)	Final Power Density (dBm)	Limit (dBm)	Result
802.11a					
5260	-6.152	0.088	-6.064	11	PASS
5300	-6.056	0.088	-5.968	11	PASS
5320	-6.707	0.088	-6.619	11	PASS
802.11n20					
5260	-7.373	0.107	-7.266	11	PASS
5300	-7.382	0.107	-7.275	11	PASS
5320	-6.892	0.107	-6.785	11	PASS
802.11n40					
5270	-10.653	0.212	-10.441	11	PASS
5310	-10.207	0.212	-9.995	11	PASS
802.11ac20					
5260	-7.510	0.078	-7.432	11	PASS
5300	-7.105	0.078	-7.027	11	PASS
5320	-7.395	0.078	-7.317	11	PASS
802.11ac40					
5270	-10.503	0.204	-10.299	11	PASS
5310	-10.273	0.204	-10.069	11	PASS
802.11ac80					
5290	-13.562	0.469	-13.093	11	PASS



5470-5725MHz					
Frequency	Direct measurement Power Density (dBm)	Duty cycle factor (dB)	Final Power Density (dBm)	Limit (dBm)	Result
802.11a					
5500	-7.541	0.061	-7.480	11	PASS
5580	-7.390	0.061	-7.329	11	PASS
5700	-7.525	0.061	-7.464	11	PASS
802.11n20					
5500	-7.502	0.078	-7.424	11	PASS
5580	-7.992	0.078	-7.914	11	PASS
5700	-7.881	0.078	-7.803	11	PASS
802.11n40					
5510	-10.643	0.230	-10.413	11	PASS
5550	-10.557	0.230	-10.327	11	PASS
5670	-11.179	0.230	-10.949	11	PASS
802.11ac20					
5500	-7.440	0.058	-7.382	11	PASS
5580	-7.881	0.058	-7.823	11	PASS
5700	-7.873	0.058	-7.815	11	PASS
802.11ac40					
5510	-10.384	0.191	-10.193	11	PASS
5550	-10.806	0.191	-10.615	11	PASS
5670	-10.753	0.191	-10.562	11	PASS
802.11ac80					
5530	-13.804	0.472	-13.332	11	PASS
5610	-13.649	0.472	-13.177	11	PASS



5725-5850MHz						
Frequency	Use RBW 510KHz direct measurement Direct measurement Power Density (dBm)	Convert to RBW 500KHz direct measurement Power Density (dBm)	Duty cycle factor (dB)	Final Power Density (dBm)	Limit (dBm/500KHz)	Result
802.11a						
5745	-9.211	-9.297	0.073	-9.224	30	PASS
5785	-10.223	-10.309	0.073	-10.236	30	PASS
5825	-10.082	-10.168	0.073	-10.095	30	PASS
802.11n20						
5745	-10.824	-10.910	0.098	-10.812	30	PASS
5785	-10.310	-10.396	0.098	-10.298	30	PASS
5825	-10.428	-10.514	0.098	-10.416	30	PASS
802.11n40						
5755	-13.337	-13.423	0.192	-13.231	30	PASS
5795	-13.016	-13.102	0.192	-12.910	30	PASS
802.11ac20						
5745	-10.589	-10.675	0.104	-10.571	30	PASS
5785	-10.307	-10.393	0.104	-10.289	30	PASS
5825	-10.506	-10.592	0.104	-10.488	30	PASS
802.11ac40						
5755	-14.543	-14.629	0.217	-14.412	30	PASS
5795	-14.339	-14.425	0.217	-14.208	30	PASS
802.11ac80						
5775	-16.802	-16.888	0.448	-16.440	30	PASS

Note: 1. RB conversion formula: $10 \cdot \log(500\text{KHz}/\text{RBW})$

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 $\geq$ RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

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

**5.1.5 TEST RESULTS**

Frequency (MHz)	26dB Bandwidth (MHz)	Pass/Fail
802.11a		
5180	19.75	Pass
5200	19.70	Pass
5240	19.79	Pass
802.11n(HT20)		
5180	20.07	Pass
5200	20.09	Pass
5240	20.19	Pass
802.11n(HT40)		
5190	40.17	Pass
5230	40.28	Pass
802.11ac(VHT20)		
5180	20.02	Pass
5200	19.97	Pass
5240	20.21	Pass
802.11ac(VHT40)		
5190	40.16	Pass
5230	39.99	Pass
802.11ac(VHT80)		
5210	80.46	Pass

Frequency (MHz)	26dB Bandwidth (MHz)	Pass/Fail
802.11a		
5260	19.78	Pass
5300	19.63	Pass
5320	19.80	Pass
802.11n(HT20)		
5260	20.12	Pass
5300	20.11	Pass
5320	20.08	Pass
802.11n(HT40)		
5270	40.32	Pass
5310	40.19	Pass
802.11ac(VHT20)		
5260	19.94	Pass
5300	20.17	Pass
5320	20.22	Pass
802.11ac(VHT40)		
5270	39.98	Pass
5310	40.39	Pass
802.11ac(VHT80)		
5290	80.12	Pass



Frequency (MHz)	26dB Bandwidth (MHz)	Pass/Fail
802.11a		
5500	19.83	Pass
5580	19.72	Pass
5700	19.72	Pass
802.11n(HT20)		
5500	20.09	Pass
5580	20.06	Pass
5700	20.12	Pass
802.11n(HT40)		
5510	40.02	Pass
5550	40.13	Pass
5670	40.27	Pass
802.11ac(VHT20)		
5500	20.19	Pass
5580	20.00	Pass
5700	20.06	Pass
802.11ac(VHT40)		
5510	40.28	Pass
5550	40.10	Pass
5670	40.25	Pass
802.11ac(VHT80)		
5530	80.76	Pass
5610	80.61	Pass

Frequency (MHz)	26dB Bandwidth (MHz)	Pass/Fail
802.11a		
5745	19.87	Pass
5785	19.61	Pass
5825	19.75	Pass
802.11n(HT20)		
5745	20.02	Pass
5785	20.05	Pass
5825	20.23	Pass
802.11n(HT40)		
5755	39.79	Pass
5795	40.26	Pass
802.11ac(VHT20)		
5745	20.09	Pass
5785	20.01	Pass
5825	20.22	Pass
802.11ac(VHT40)		
5755	40.01	Pass
5795	40.13	Pass
802.11ac(VHT80)		
5775	80.63	Pass

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

5.2.2 DEVIATION FROM STANDARD

No deviation.

5.2.3 TEST SETUP



5.2.4 EUT OPERATION CONDITIONS

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

**5.2.5 TEST RESULTS**

Frequency (MHz)	99% Bandwidth (MHz)	Pass/Fail
802.11a		
5180	16.43	Pass
5200	16.39	Pass
5240	16.40	Pass
802.11n(HT20)		
5180	17.53	Pass
5200	17.54	Pass
5240	17.53	Pass
802.11n(HT40)		
5190	35.95	Pass
5230	35.94	Pass
802.11ac(VHT20)		
5180	17.53	Pass
5200	17.53	Pass
5240	17.53	Pass
802.11ac(VHT40)		
5190	35.93	Pass
5230	35.95	Pass
802.11ac(VHT80)		
5210	75.37	Pass

Frequency (MHz)	99% Bandwidth (MHz)	Pass/Fail
802.11a		
5260	16.40	Pass
5300	16.41	Pass
5320	16.39	Pass
802.11n(HT20)		
5260	17.53	Pass
5300	17.52	Pass
5320	17.54	Pass
802.11n(HT40)		
5270	35.96	Pass
5310	35.96	Pass
802.11ac(VHT20)		
5260	17.53	Pass
5300	17.56	Pass
5320	17.54	Pass
802.11ac(VHT40)		
5270	35.95	Pass
5310	35.94	Pass
802.11ac(VHT80)		
5290	75.23	Pass



Frequency (MHz)	99% Bandwidth (MHz)	Pass/Fail
802.11a		
5500	16.41	Pass
5580	16.39	Pass
5700	16.40	Pass
802.11n(HT20)		
5500	17.53	Pass
5580	17.52	Pass
5700	17.53	Pass
802.11n(HT40)		
5510	35.95	Pass
5550	35.96	Pass
5670	35.98	Pass
802.11ac(VHT20)		
5500	17.54	Pass
5580	17.52	Pass
5700	17.53	Pass
802.11ac(VHT40)		
5510	35.93	Pass
5550	35.93	Pass
5670	35.96	Pass
802.11ac(VHT80)		
5530	75.40	Pass
5610	75.21	Pass

Frequency (MHz)	99% Bandwidth (MHz)	Pass/Fail
802.11a		
5745	16.39	Pass
5785	16.40	Pass
5825	16.38	Pass
802.11n(HT20)		
5745	17.54	Pass
5785	17.52	Pass
5825	17.51	Pass
802.11n(HT40)		
5755	35.96	Pass
5795	35.97	Pass
802.11ac(VHT20)		
5745	17.55	Pass
5785	17.52	Pass
5825	17.54	Pass
802.11ac(VHT40)		
5755	35.95	Pass
5795	35.93	Pass
802.11ac(VHT80)		
5775	75.34	Pass

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) $\geq 3 \times$ RBW.
 - c) Detector = Peak.
 - d) Trace mode = max hold.
 - e) Sweep = auto couple.
 - f) Allow the trace to stabilize.
 - g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.3.2 DEVIATION FROM STANDARD

No deviation.

5.3.3 TEST SETUP



5.3.4 EUT OPERATION CONDITIONS

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

**5.3.5 TEST RESULTS**

Frequency (MHz)	6dB Bandwidth (MHz)	Pass/Fail
802.11a		
5745	15.28	Pass
5785	15.49	Pass
5825	15.11	Pass
802.11n(HT20)		
5745	15.09	Pass
5785	15.09	Pass
5825	15.06	Pass
802.11n(HT40)		
5755	35.07	Pass
5795	35.10	Pass
802.11ac(VHT20)		
5745	15.70	Pass
5785	15.10	Pass
5825	15.43	Pass
802.11ac(VHT40)		
5755	35.08	Pass
5795	35.11	Pass
802.11ac(VHT80)		
5775	75.16	Pass

Test plots 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	

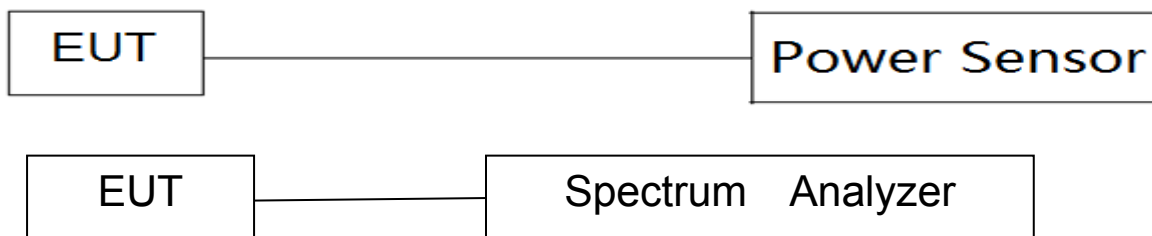
6.2 TEST PROCEDURE

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

U-NII-1 (5.15-5.25GHz)					
Test Channel	Frequency (MHz)	Direct measurement AV Power (dBm)	Duty cycle factor (dB)	Final AV Power (dBm)	LIMIT (dBm)
802.11a					
36	5180	3.50	0.083	3.58	23.98
40	5200	3.15	0.083	3.23	23.98
48	5240	3.56	0.083	3.64	23.98
802.11n(HT20)					
36	5180	3.28	0.108	3.39	23.98
40	5200	3.24	0.108	3.35	23.98
48	5240	3.38	0.108	3.49	23.98
802.11n(HT40)					
38	5190	1.96	0.204	2.16	23.98
46	5230	1.99	0.204	2.19	23.98
802.11ac(VHT20)					
36	5180	2.32	0.087	2.41	23.98
40	5200	2.37	0.087	2.46	23.98
48	5240	2.40	0.087	2.49	23.98
802.11ac(VHT40)					
38	5190	1.70	0.218	1.92	23.98
46	5230	1.78	0.218	2.00	23.98
802.11ac(VHT80)					
42	5210	1.51	0.459	1.97	23.98



U-NII-2A(5.25-5.35GHz)					
Test Channel	Frequency (MHz)	Direct measurement AV Power (dBm)	Duty cycle factor (dB)	Final AV Power (dBm)	LIMIT (dBm)
802.11a					
52	5260	4.42	0.088	4.51	23.96
60	5300	4.44	0.088	4.53	23.93
64	5320	3.69	0.088	3.78	23.97
802.11n(HT20)					
52	5260	2.37	0.107	2.48	23.98
60	5300	2.12	0.107	2.23	23.98
64	5320	2.19	0.107	2.30	23.98
802.11n(HT40)					
54	5270	1.86	0.212	2.07	23.98
62	5310	2.20	0.212	2.41	23.98
802.11ac(VHT20)					
52	5260	2.21	0.078	2.29	23.98
60	5300	2.66	0.078	2.74	23.98
64	5320	2.32	0.078	2.40	23.98
802.11ac(VHT40)					
54	5270	2.11	0.204	2.31	23.98
62	5310	2.30	0.204	2.50	23.98
802.11ac(VHT80)					
58	5290	1.71	0.469	2.18	23.98



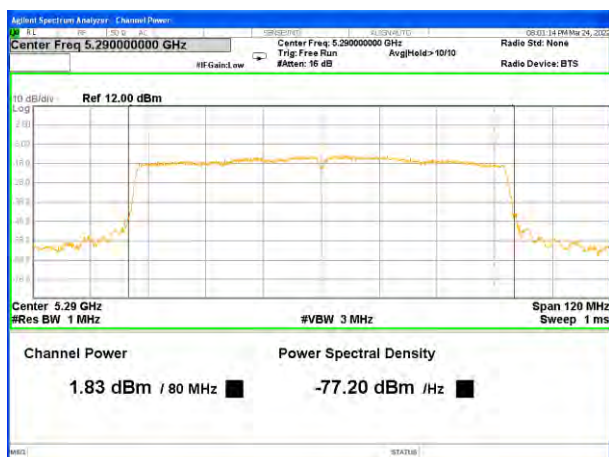
U-NII-2C(5.47-5.725GHz)					
Test Channel	Frequency (MHz)	Direct measurement AV Power (dBm)	Duty cycle factor (dB)	Final AV Power (dBm)	LIMIT (dBm)
802.11a					
100	5500	4.13	0.061	4.19	23.97
116	5580	4.10	0.061	4.16	23.95
140	5700	3.82	0.061	3.88	23.95
802.11n(HT20)					
100	5500	2.00	0.078	2.08	23.98
116	5580	2.62	0.078	2.70	23.98
140	5700	2.13	0.078	2.21	23.98
802.11n(HT40)					
102	5510	2.62	0.230	2.85	23.98
110	5550	2.52	0.230	2.75	23.98
134	5670	2.28	0.230	2.51	23.98
802.11ac(VHT20)					
100	5500	2.90	0.058	2.96	23.98
116	5580	2.89	0.058	2.95	23.98
140	5700	2.70	0.058	2.76	23.98
802.11ac(VHT40)					
102	5510	2.42	0.191	2.61	23.98
110	5550	2.44	0.191	2.63	23.98
134	5670	2.40	0.191	2.59	23.98
802.11ac(VHT80)					
106	5530	1.93	0.472	2.40	23.98
122	5610	1.97	0.472	2.44	23.98



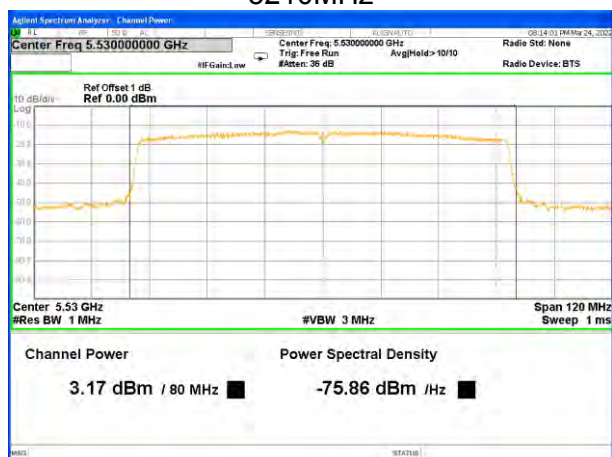
U-NII-3 (5.725-5.85GHz)					
Test Channel	Frequency (MHz)	Direct measurement AV Power (dBm)	Duty cycle factor (dB)	Final AV Power (dBm)	LIMIT (dBm)
802.11a					
149	5745	3.74	0.073	3.81	30.00
157	5785	3.69	0.073	3.76	30.00
165	5825	3.59	0.073	3.66	30.00
802.11n(HT20)					
149	5745	2.42	0.098	2.52	30.00
157	5785	2.70	0.098	2.80	30.00
165	5825	2.49	0.098	2.59	30.00
802.11n(HT40)					
151	5755	2.48	0.192	2.67	30.00
159	5795	2.15	0.192	2.34	30.00
802.11ac(VHT20)					
149	5745	2.87	0.104	2.97	30.00
157	5785	2.41	0.104	2.51	30.00
165	5825	2.61	0.104	2.71	30.00
802.11ac(VHT40)					
151	5755	2.14	0.217	2.36	30.00
159	5795	2.34	0.217	2.56	30.00
802.11ac(VHT80)					
155	5775	1.61	0.448	2.06	30.00



5210MHz



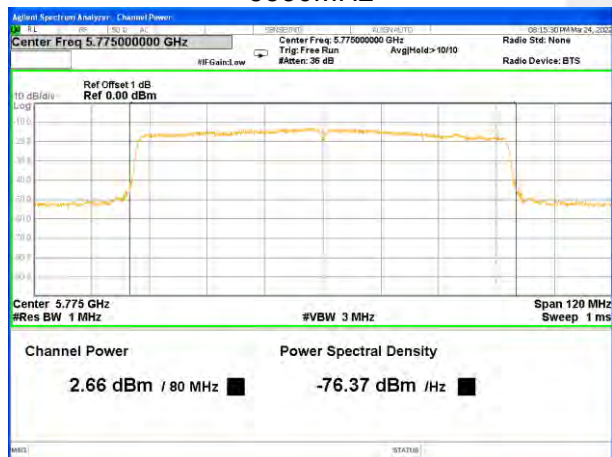
5290MHz



5530MHz



5610MHz



5775MHz



Duty Cycle

Band1				
Mode	Ton(ms)	Tp(ms)	Duty cycle(%)	Duty factor(dB)
a	1.401	1.428	98.11%	0.083
n20	1.311	1.344	97.54%	0.108
n40	0.666	0.698	95.42%	0.204
ac20	1.332	1.359	98.01%	0.087
ac40	0.662	0.696	95.11%	0.218
ac80	0.332	0.369	89.97%	0.459
Band2				
Mode	Ton(ms)	Tp(ms)	Duty cycle(%)	Duty factor(dB)
a	1.411	1.440	97.99%	0.088
n20	1.317	1.350	97.56%	0.107
n40	0.659	0.692	95.23%	0.212
ac20	1.329	1.353	98.23%	0.078
ac40	0.664	0.696	95.40%	0.204
ac80	0.333	0.371	89.76%	0.469
Band3				
Mode	Ton(ms)	Tp(ms)	Duty cycle(%)	Duty factor(dB)
a	1.416	1.436	98.61%	0.061
n20	1.328	1.352	98.22%	0.078
n40	0.662	0.698	94.84%	0.230
ac20	1.335	1.353	98.67%	0.058
ac40	0.666	0.696	95.69%	0.191
ac80	0.331	0.369	89.70%	0.472
Band4				
Mode	Ton(ms)	Tp(ms)	Duty cycle(%)	Duty factor(dB)
a	1.412	1.436	98.33%	0.073
n20	1.317	1.347	97.77%	0.098
n40	0.662	0.692	95.66%	0.192
ac20	1.320	1.352	97.63%	0.104
ac40	0.664	0.698	95.13%	0.217
ac80	0.331	0.367	90.19%	0.448



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 3-n20



Band 3-n40



Band 3-ac20



Band 3-ac40



Band 3-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. 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※※※※※

