

TEST REPORT

Applicant: Portable Multimedia Limited
Address: Unit 2, Caerphilly Business Park, Caerphilly, Mid Glamorgan CF83 3ED, United Kingdom
Equipment Type: DashCam
Model Name: NBIQ2KUS
Brand Name: NEXTBASE
FCC ID: 2AOT9-NBIQ2KUS
ISED Number: 28201-NBIQ2KUS
Test Standard: 47 CFR Part 15 Subpart E
RSS-Gen Issue 5
RSS-247 Issue 2
(refer section 3.1)
Sample Arrival Date: Apr. 12, 2023
Test Date: Apr. 18, 2023 – Apr. 24, 2023
Date of Issue: Jun. 13, 2023

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Julie Zhu**Checked by:** Ye Hongji**Approved by:** Liao Jianming
(Technical Director)

Revision History

Version	Issue Date	Revisions
<u>Rev. 01</u>	<u>Jun. 13, 2023</u>	<u>Initial Issue</u>

TABLE OF CONTENTS

1	GENERAL INFORMATION	4
1.1	Test Laboratory	4
1.2	Test Location	4
2	PRODUCT INFORMATION	5
2.1	Applicant Information	5
2.2	Manufacturer Information	5
2.3	Factory Information	5
2.4	General Description for Equipment under Test (EUT)	5
2.5	Technical Information	6
2.6	Channel List	7
3	SUMMARY OF TEST RESULTS	10
3.1	Test Standards	10
3.2	Test Verdict	10
4	GENERAL TEST CONFIGURATIONS	11
4.1	Test Environments	11
4.2	Test Equipment List	11
4.3	Test Software List	12
4.4	Measurement Uncertainty	12
4.5	Description of Test Setup	13
5	TEST ITEMS	16
5.1	RF Output Power	16
5.2	Emission Bandwidth and 6 dB Bandwidth	18
5.3	Power Spectral density (PSD)	19
5.4	Conducted Emission	20

5.5	Radiated Spurious Emissions and Band Edge (Restricted-band)	21
ANNEX A	TEST RESULT	26
A.1	RF Output Power	26
A.2	Emission Bandwidth & 99% Bandwidth	28
A.3	6 dB Bandwidth	29
A.4	Power Spectral Density	30
A.5	Conducted Emissions	31
A.6	Radiated Spurious Emissions and Band Edge (Restricted-band)	32
ANNEX B	TEST SETUP PHOTOS	61
ANNEX C	EUT EXTERNAL PHOTOS	61
ANNEX D	EUT INTERNAL PHOTOS	61

1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☒ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☐ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Portable Multimedia Limited
Address	Unit 2, Caerphilly Business Park, Caerphilly, Mid Glamorgan CF83 3ED, United Kingdom

2.2 Manufacturer Information

Manufacturer	Shenzhen Samoon Technology Co., Ltd
Address	9th Floor, 6th Floor west, Block7, ZhongYunTai Industry Park, Songbai Road, Shiyan Town, ShenZhen, China

2.3 Factory Information

Factory	Shenzhen Samoon Technology Co., Ltd
Address	9th Floor, 6th Floor west, Block7, ZhongYunTai Industry Park, Songbai Road, Shiyan Town, ShenZhen, China

2.4 General Description for Equipment under Test (EUT)

EUT Name	DashCam
Model Name Under Test	NBIQ2KUS
Series Model Name	N/A
Description of Model name differentiation	N/A
Serial Number	2KU030008
Hardware Version	A3_003
Software Version	0.6.6
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Technical Information

Network and Wireless connectivity	4G Network LTE FDD Band 2/4/5/12/66/71 Bluetooth (BR+EDR) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80) U-NII-1, GPS, GNSS, 24GHz Radar
-----------------------------------	--

The requirement for the following technical information of the EUT was tested in this report:

Frequency Range	U-NII-1: 5150 MHz to 5250 MHz
Product Type	☒ Mobile ☐ Portable ☐ Fix Location
Modulation technology	OFDM
Modulation Type	256QAM, 64QAM, 16QAM, BPSK, QPSK
Product Type	Indoor for IC standard Mobile for FCC standard
Transfer Rate (Mbps) (Single RF path)	802.11a: 54/ 48/ 36/ 24/ 18/ 12/ 9/ 6 Mbps 802.11n: up to 150 Mbps 802.11ac: up to VHT-MCS9
Channel Bandwidth	802.11a: 20 MHz 802.11n: 20 MHz, 40 MHz 802.11ac: 20 MHz, 40 MHz, 80 MHz
Maximum Output Power	U-NII-1: 16.16 dBm
Antenna System (eg., MIMO, Smart Antenna)	N/A
Categorization as Correlated or Completely Uncorrelated	N/A
Antenna Type	PIFA Antenna
Antenna Gain	U-NII-1: 5150 MHz to 5250 MHz: 2.09 dBi
About the Product	The equipment is DashCam, intended for used with information technology equipment.

2.6 Channel List

20 MHz		40 MHz		80 MHz	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230	58	5290
44	5220	54	5270	106	5530
48	5240	62	5310	138	5690
52	5260	102	5510	155	5775
56	5280	110	5550		
60	5300	142	5710		
64	5320	151	5755		
100	5500	159	5795		
104	5520				
108	5540				
112	5560				
116	5580				
136	5680				
140	5700				
144	5720				
149	5745				
153	5765				
157	5785				
161	5805				
165	5825				

The Lowest frequency, the middle frequency and the highest frequency of channel were selected to perform the test, and the selected channel see below:

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

U-NII-1 (5150 - 5250 MHz)		
Channel Number	Channel	Frequency (MHz)
36	Low	5180
44	Mid	5220
48	High	5240

For 802.11n(HT40)/ac(VHT40)

U-NII-1 (5150 - 5250 MHz)		
Channel Number	Channel	Frequency (MHz)
38	Low	5190
46	High	5230

For 802.11ac(VHT80)

U-NII-1 (5150 - 5250 MHz)		
Channel Number	Channel	Frequency (MHz)
42	Mid	5210

Note: Preliminary tests were performed in different data rate in above table to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Modulation Type	U-NII-1
				Channel
RF Output Power	11a	6	BPSK	48/44/36
	11n(20 MHz)	6.5		48/44/36
	11n(40 MHz)	13.5		46/38
	11ac(20 MHz)	6.5		48/44/36
	11ac(40 MHz)	13.5		46/38
	11ac(80 MHz)	29.3		42
Emission Bandwidth & 99% Occupied Bandwidth	11a	6	BPSK	48/44/36
	11n(20 MHz)	6.5		48/44/36
	11n(40 MHz)	13.5		46/38
	11ac(20 MHz)	6.5		48/44/36
	11ac(40 MHz)	13.5		46/38
	11ac(80 MHz)	29.3		42
6 dB bandwidth	11a	6	BPSK	N/A
	11n(20 MHz)	6.5		N/A
	11n(40 MHz)	13.5		N/A
	11ac(20 MHz)	6.5		N/A
	11ac(40 MHz)	13.5		N/A

	11ac(80 MHz)	29.3		N/A
Power Spectral Density	11a	6	BPSK	48/44/36
	11n(20 MHz)	6.5		48/44/36
	11n(40 MHz)	13.5		46/38
	11ac(20 MHz)	6.5		48/44/36
	11ac(40 MHz)	13.5		46/38
	11ac(80 MHz)	29.3		42
Radiated Spurious Emissions	11a	6	BPSK	48/44/36
	11n(20 MHz)	6.5		48/44/36
	11n(40 MHz)	13.5		46/38
	11ac(20 MHz)	6.5		48/44/36
	11ac(40 MHz)	13.5		46/38
	11ac(80 MHz)	29.3		42
Band Edge (Restricted-band)	11a	6	BPSK	48/36
	11n(20 MHz)	6.5		48/36
	11n(40 MHz)	13.5		46/38
	11ac(20 MHz)	6.5		48/36
	11ac(40 MHz)	13.5		46/38
	11ac(80 MHz)	29.3		42

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15 Subpart E	Unlicensed National Information Infrastructure Devices
2	RSS-Gen Issue 5	General Requirements for Compliance of Radio Apparatus
3	RSS-247 Issue 2	Digital Transmission Systems (DTSs), Frequency Hopping Systems(FHSs) and Licence-Exemp Local Area Network (LE-LAN) Devices
4	KDB Publication 789033 D02v02r01	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
5	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

3.2 Test Verdict

No.	Description	FCC Part No.	RSS Part No.	Test Result	Verdict
1	Antenna Requirement	15.203	RSS-247, 6.2	--	Pass ^{Note1}
2	RF Output Power	15.407(a)	RSS-247, 6.2	ANNEX A.1	Pass
3	Emission Bandwidth & 99% Occupied Bandwidth	15.407(a)	RSS-247, 6.2	ANNEX A.2	Pass
4	6 dB bandwidth	15.407(e)	RSS-247, 6.2	ANNEX A.3	N/A
5	Power Spectral Density	15.407(a)	RSS-247, 6.2	ANNEX A.4	Pass
6	Conducted Emission	15.207	RSS-GEN, 8.8	ANNEX A.5	N/A ^{Note4}
7	Radiated Spurious Emissions and Band Edge (Restricted-band)	15.407(b)	RSS-247, 6.2	ANNEX A.6	Pass
8	Receiver Spurious Emissions	--	RSS-Gen, 7.1.2	--	N/A ^{Note2}

Note¹: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.

Note²: Only radio communication receivers operating in stand-alone mode within the U-NII-30-960 MHz, as well as scanner receivers, are subject to Industry Canada requirements, so this test is not applicable.

Note³: Under all normal operating conditions specified in the user manual, frequency stability can keep radiation within the operating frequency band.

Note⁴: On-board equipment is not applicable.

Note⁵: Compared with the EUT of test report BL-SZ2340426-603, the changes of the EUT of this report as below:

1. Different from the model name, SOC chip, front sensor, cabin sensor and front lens.

Other hardware circuit and software are the same as EUT referred in test report BL-SZ2340426-603.

Therefore, all the test data please refer to report BL-SZ2340426-603, which was issued by Shenzhen BALUN Technology Co., Ltd. on Jun. 07, 2023.

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity	52% to 66%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+20.4°C to +23.5°C
	LT (Low Temperature)	-10°C
	HT (High Temperature)	50°C
Working Voltage of the EUT	NV (Normal Voltage)	14 V
	LV (Low Voltage)	12 V
	HV (High Voltage)	16 V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-40	101544	2022.12.28	2023.12.27
Power Sensor	KEYSIGHT	U2063XA	MY58000251	2022.07.28	2023.07.27
Spectrum Analyzer	KEYSIGHT	N9020A	MY52510065	2022.09.06	2023.09.05
Signaling Unit	ROHDE&SCHWARZ	CMW500	171150	2022.06.29	2023.06.28
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	01631	2022.02.03	2025.02.02
Test Antenna-Horn	A-INFO	LB- 180400KF	J211060273	2021.07.02	2024.07.01
Anechoic Chamber	RAINFORD	9m*6m*6m	144	2022.02.19	2024.09.03
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2022.09.09	2023.09.08
Test Antenna-Loop	SCHWARZBECK	FMZB 1519	1519-037	2021.04.16	2024.04.15
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60 *7.35m	130	2021.08.15	2024.08.14
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2021.08.20	2024.08.19
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2022.09.08	2023.09.07
Anechoic Chamber	RAINFORD	9m*6m*6m	101	2023.03.26	2026.03.03
Amplifier	COM-MV	LSCX_LNA 1-12G-01	180602	2020.09.08	2023.09.07
Amplifier	COM-MV	XKu_LNA7- 18G-01	180601	2020.09.08	2023.09.07
Amplifier	COM-MV	KA_LNA18- 40G-01	18050001	2020.09.08	2023.09.07
Amplifier	COM-MV	ZT30- 1000M	B2017119082	2022.12.07	2023.12.06

4.3 Test Software List

Description	Manufacturer	Software Version	Serial No.	Applicable test Setup
BL410R	BALUN	V2.1.1.488	N/A	The section 4.5.1
BL410E	BALUN	V19.8.28.435	N/A	The section 4.5.2&4.5.3&4.5.4&4.5.5

4.4 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Parameters	Uncertainty
Occupied Channel Bandwidth	2.8%
RF output power, conducted	1.28 dB
Power Spectral Density, conducted	1.30 dB
Unwanted Emissions, conducted	1.84 dB
All emissions, radiated	5.36 dB
Temperature	0.82°C
Humidity	4.1%

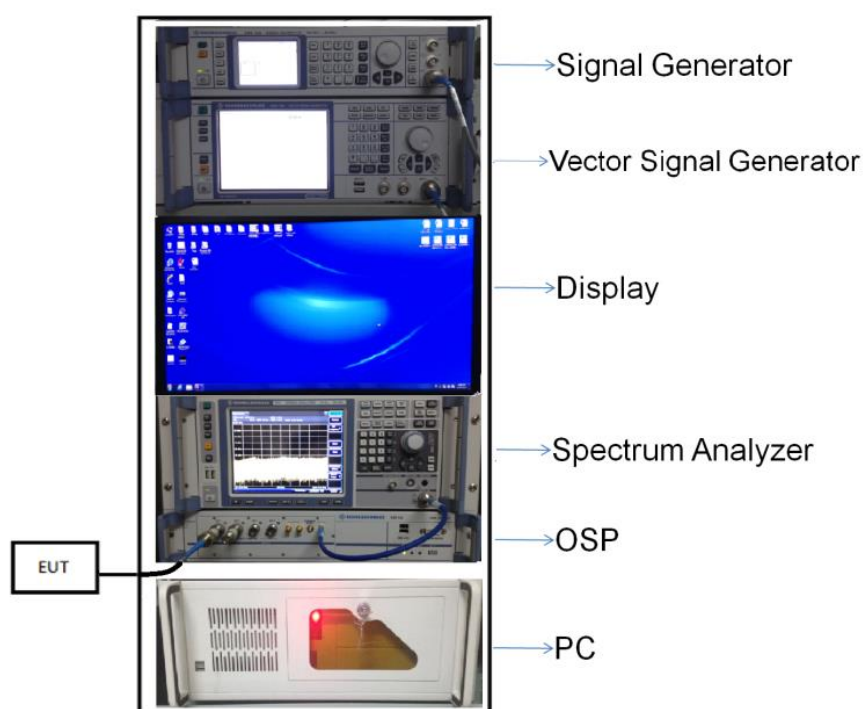
4.5 Description of Test Setup

4.5.1 For Antenna Port Test

Conducted value (dBm) = Measurement value (dBm) + cable loss (dB)

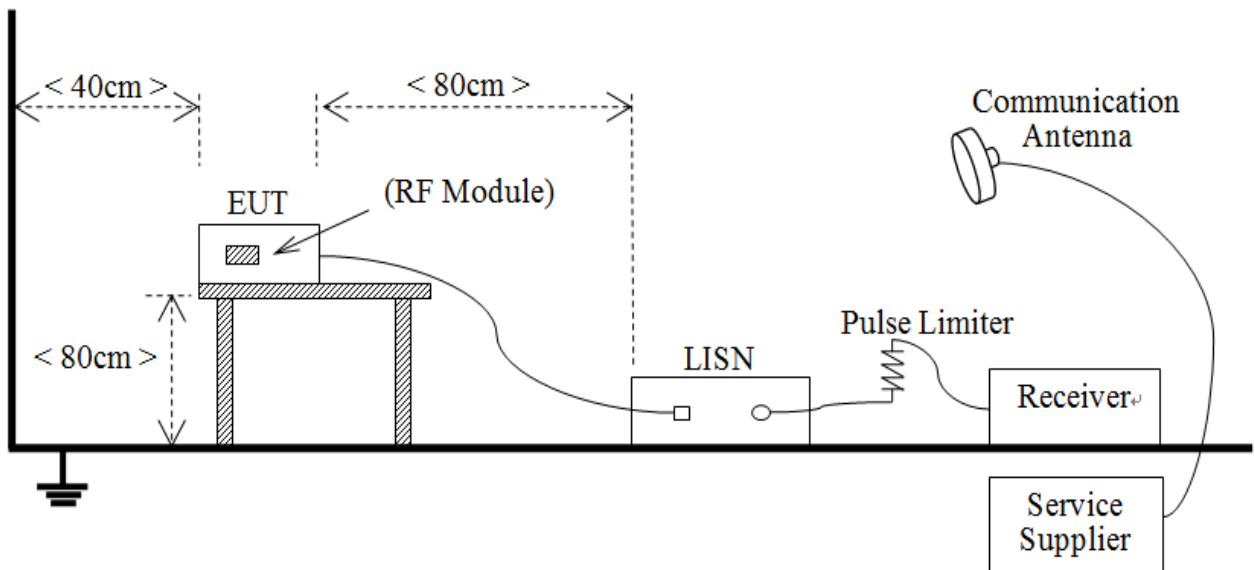
For example: the measurement value is 10 dBm and the cable 0.5dBm used, then the final result of EUT:

Conducted value (dBm) = 10 dBm + 0.5 dB = 10.5 dBm



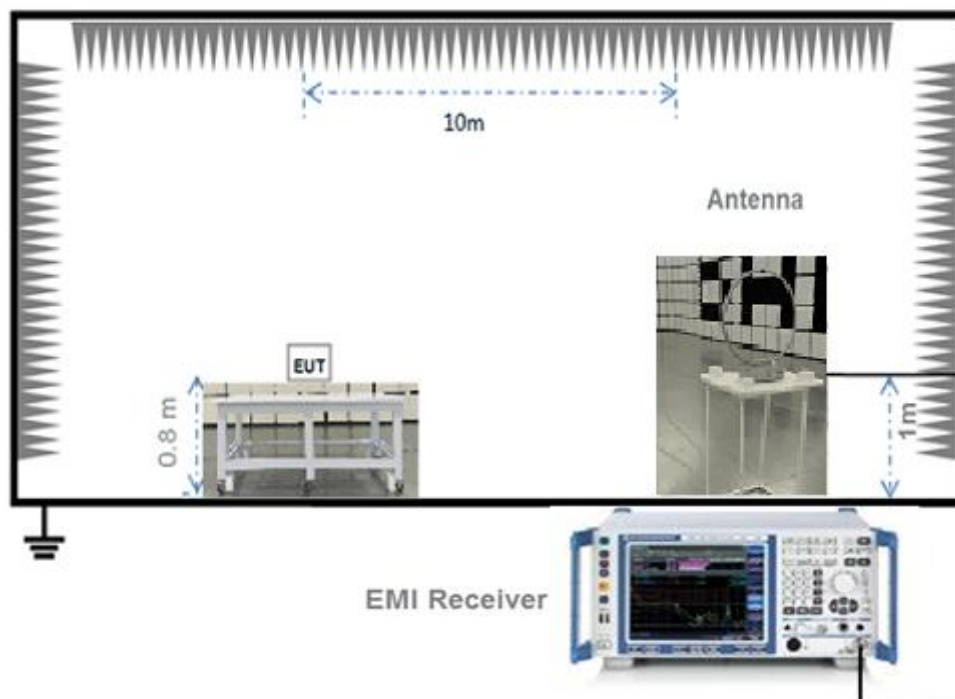
(Diagram 1)

4.5.2 For AC Power Supply Port Test



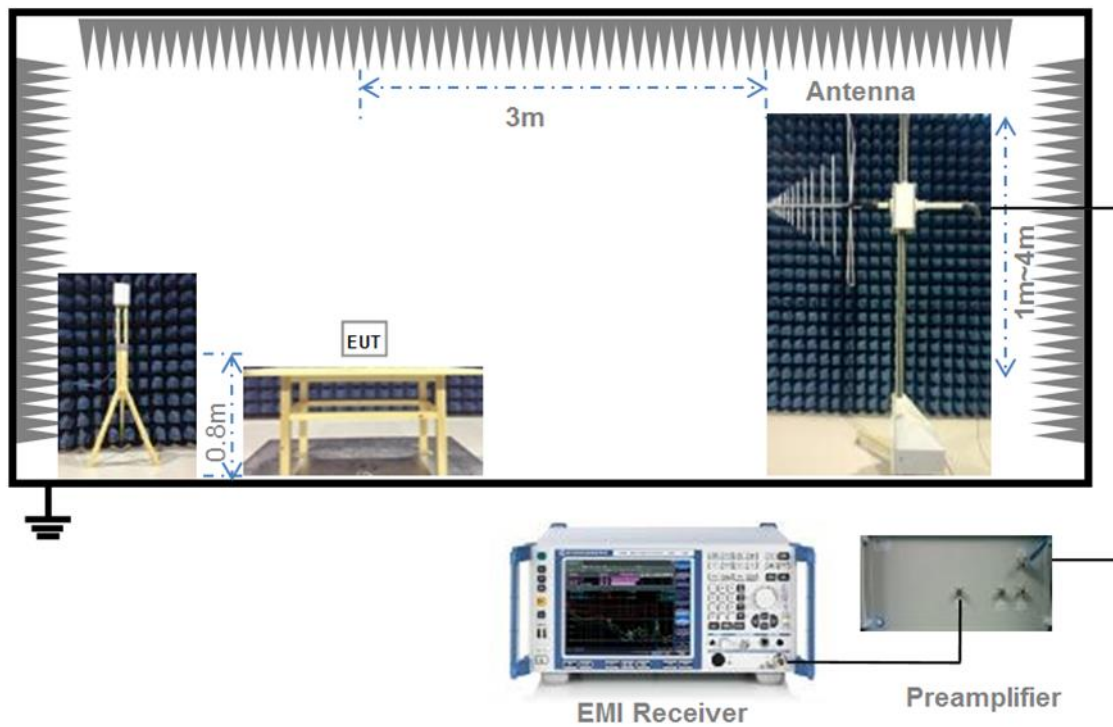
(Diagram 2)

4.5.3 For Radiated Test (Below 30 MHz)



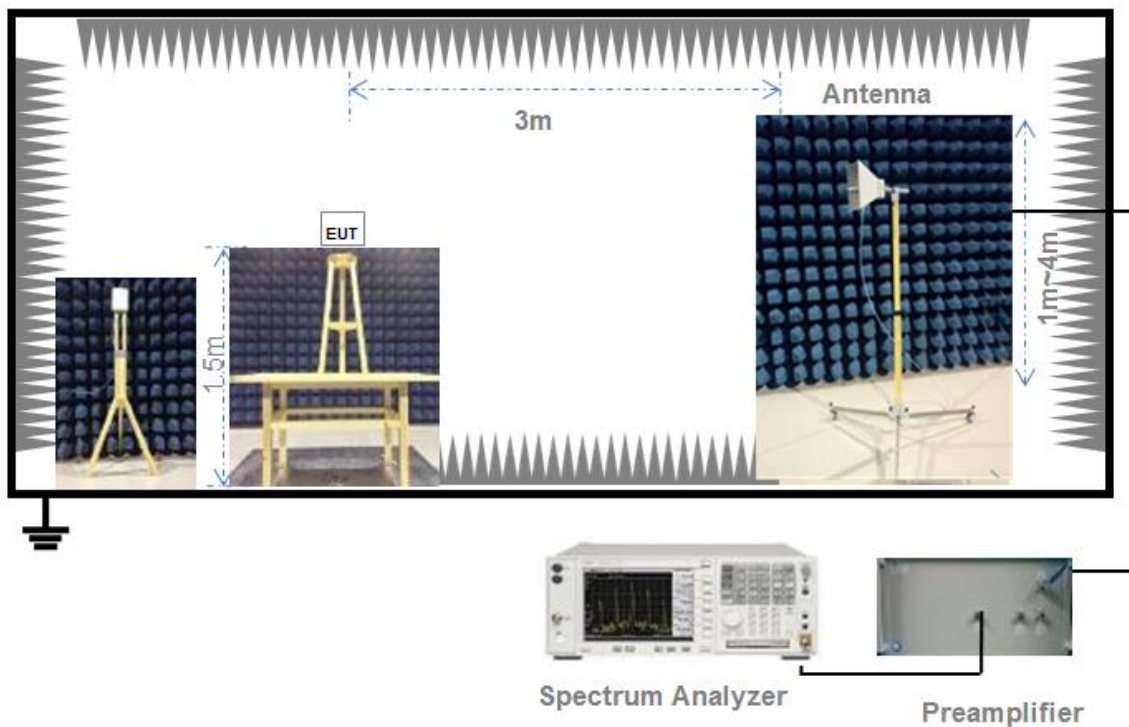
(Diagram 3)

4.5.4 For Radiated Test (30 MHz-1 GHz)



(Diagram 4)

4.5.5 For Radiated Test (Above 1 GHz)



(Diagram 5)

5 TEST ITEMS

5.1 RF Output Power

5.1.1 Test Limit

FCC §15.407(a)

The maximum conducted output power should not exceed:

Frequency Band (MHz)	Limit
5150-5250	250 mW
5250-5350	250 mW or 11 dBm + 10log B, whichever is less.
5470-5725	250 mW or 11 dBm + 10log B, whichever is less.
5725-5850	1 W
Note: Where “B” is the 26 dB emissions bandwidth in MHz.	

RSS-247, 6.2

The maximum conducted output power shall not exceed:

Frequency Band (MHz)	Limit
5150-5250	N/A
5250-5350	250 mW or 11 dBm + 10log B, whichever is less.
5470-5725	250 mW or 11 dBm + 10log B, whichever is less.
5725-5850	1 W
Note: Where “B” is the 99% emissions bandwidth in MHz.	

The maximum e.i.r.p. shall not exceed:

Frequency Band (MHz)	Limit
5150-5250	200 mW or 10 dBm + 10log B, whichever is less.
5250-5350	1W or 17 dBm + 10log B, whichever is less.
5470-5725	1W or 17 dBm + 10log B, whichever is less.
5725-5850	N/A
Note: Where “B” is the 99% emissions bandwidth in MHz.	

5.1.2 Test Setup

The section 4.5.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.1.3 Test Procedure

The maximum peak conducted output power may be measured using a broadband Average RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector.

The E.I.R.P used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.

5.1.4 Test Result

Please refer to ANNEX A.1.

5.2 Emission Bandwidth and 6 dB Bandwidth

5.2.1 Limit

FCC §15.407(a), RSS-247, 6.2

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

5.2.2 Test Setup

The test setup photo please refer to 4.5.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

Emission bandwidth

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set VBW $\geq 3 \times$ RBW,
3. Detector = Peak.
4. Trace mode = Max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

Occupied Bandwidth

1. Set Span = 1.5 times to 5.0 times the OBW
2. Set RBW = 1% to 5% of the OBW.
3. Set VBW $\geq 3 \times$ RBW, Detector = Peak.
4. Trace mode = Max hold.
5. Use the 99% power bandwidth function of the instrument.

6 dB bandwidth

1. Set RBW = 100 kHz, VBW = 300 kHz.
2. Detector = Peak. Trace mode = Max hold.
3. Allow the trace to stabilize.
4. 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.

5.2.4 Test Result

Please refer to ANNEX A.2 and ANNEX A.3.

5.3 Power Spectral density (PSD)

5.3.1 Limit

FCC §15.407(a)

The maximum power spectral density should not exceed:

Frequency Band (MHz)	Limit
5150-5250	11 dBm/MHz
5250-5350	11 dBm/MHz
5470-5725	11 dBm/MHz
5725-5850	30 dBm/500kHz

RSS-247, 6.2

The maximum power spectral density should not exceed:

Frequency Band (MHz)	Limit
5150-5250	N/A
5250-5350	11 dBm/MHz
5470-5725	11 dBm/MHz
5725-5850	30 dBm/500kHz

The e.i.r.p. spectral density should not exceed:

Frequency Band (MHz)	Limit
5150-5250	10 dBm/MHz
5250-5350	N/A
5470-5725	N/A
5725-5850	N/A

5.3.2 Test Setup

The section 4.5.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth.

1. Set RBW = 510 kHz/1 MHz, VBW $\geq 3 \times$ RBW, Sweep time = Auto, Detector = RMS.
2. Allow the sweeps to continue until the trace stabilizes.
3. Use the peak marker function to determine the maximum amplitude level.
4. The E.I.R.P spectral density used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.

5.3.4 Test Result

Please refer to ANNEX A.4.

5.4 Conducted Emission

5.4.1 Limit

FCC §15.207, RSS-GEN, 8.8

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the U-NII-150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

5.4.2 Test Setup

The section 4.5.2 (Diagram 2) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

5.4.4 Test Result

Please refer to ANNEX A.5.

5.5 Radiated Spurious Emissions and Band Edge (Restricted-band)

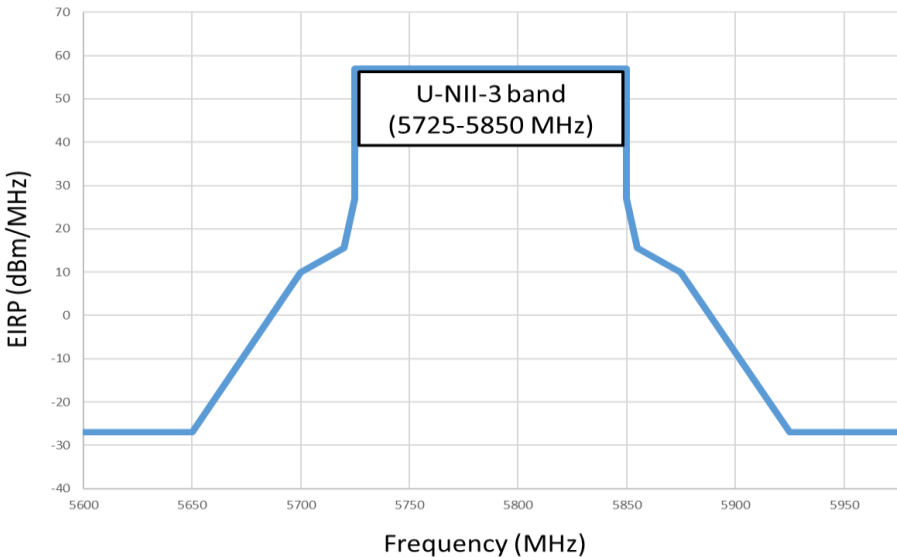
5.5.1 Limit

FCC §15.209 & 15.407(b), RSS-247, 6.2

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
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

Note¹: The Limit for radiated test was performed according to FCC Part 15C

Note²: The tighter limit applies at the band edge.

Un-restricted band emissions	
Out Operating Band (MHz)	Limit
5150 - 5250	e.i.r.p. -27 dBm (68.2 dBuV/m@3m)
5250 - 5350	e.i.r.p. -27 dBm (68.2 dBuV/m@3m)
5470 - 5725	e.i.r.p. -27 dBm (68.2 dBuV/m@3m)
5725 - 5850	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: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength.

5.5.2 Test Setup

The section 4.5.3-4.5.5 (Diagram 3 - Diagram 5) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

Since the emission limits are specified in terms of radiated field strength levels, measurements performed to demonstrate compliance have traditionally relied on a radiated test configuration. Radiated measurements remain the principal method for demonstrating compliance to the specified limits; however antenna-port conducted measurements are also now acceptable to demonstrate compliance (see below for details). When radiated measurements are utilized, test site requirements and procedures for maximizing and measuring radiated emissions that are described in ANSI C63.10 shall be followed.

Antenna-port conducted measurements may also be used as an alternative to radiated measurements for demonstrating compliance in the restricted frequency bands. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case spurious emissions is required.

General Procedure for conducted measurements in restricted bands

- a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).
- b) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies ≤ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).
- c) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).
- d) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$$E = \text{EIRP} - 20\log D + 104.8$$

where:

E = electric field strength in dB μ V/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

- e) Compare the resultant electric field strength level to the applicable limit.
- f) Perform radiated spurious emission test.

Quasi-Peak measurement procedure

The specifications for measurements using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable

emission limits using a peak detector.

Peak power measurement procedure

Peak emission levels are measured by setting the instrument as follows:

- a) RBW = as specified in Table 1.
- b) VBW $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Sweep time = auto.
- e) Trace mode = max hold.
- f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be longer for low duty cycle applications).

Table 1—RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Trace averaging across on and off times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT (i.e., duty cycle ≥ 98 percent) cannot be achieved and the duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent), then the following procedure shall be used:

- a) The EUT shall be configured to operate at the maximum achievable duty cycle.
- b) Measure the duty cycle, x , of the transmitter output signal as described in section 6.0.
- c) RBW = 1 MHz (unless otherwise specified).
- d) VBW $\geq 3 \times$ RBW.
- e) Detector = RMS, if $\text{span}/(\# \text{ of points in sweep}) \leq (\text{RBW}/2)$. Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
- f) Averaging type = power (i.e., RMS).
 - 1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
 - 2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.
- g) Sweep time = auto.

h) Perform a trace average of at least 100 traces.

i) A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

1) If power averaging (RMS) mode was used in step f), then the applicable correction factor is $10 \log(1/x)$, where x is the duty cycle.

2) If linear voltage averaging mode was used in step f), then the applicable correction factor is $20 \log(1/x)$, where x is the duty cycle.

3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

NOTE: Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission - not on an average across on and off times of the transmitter.

Determining the applicable transmit antenna gain

A conducted power measurement will determine the maximum output power associated with a restricted band emission; however, in order to determine the associated EIRP level, the gain of the transmitting antenna (in dBi) must be added to the measured output power (in dBm).

Since the out-of-band characteristics of the EUT transmit antenna will often be unknown, the use of a conservative antenna gain value is necessary. Thus, when determining the EIRP based on the measured conducted power, the upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands, or 2 dBi, whichever is greater. However, for devices that operate in multiple frequency bands while using the same transmit antenna, the highest gain of the antenna within the operating band nearest in frequency to the restricted band emission being measured may be used in lieu of the overall highest gain when the emission is at a frequency that is within 20 percent of the nearest band edge frequency, but in no case shall a value less than 2 dBi be used.

See KDB 662911 for guidance on calculating the additional array gain term when determining the effective antenna gain for a EUT with multiple outputs occupying the same or overlapping frequency ranges in the same band.

Radiated spurious emission test

An additional consideration when performing conducted measurements of restricted band emissions is that unwanted emissions radiating from the EUT cabinet, control circuits, power leads, or intermediate circuit elements will likely go undetected in a conducted measurement configuration. To address this concern, a radiated test shall be performed to ensure that emissions emanating from the EUT cabinet (rather than the antenna port) also comply with the applicable limits.

For these cabinet radiated spurious emission measurements the EUT transmit antenna may be replaced with a termination matching the nominal impedance of the antenna. Procedures for performing radiated measurements are specified in ANSI C63.10. All detected emissions shall comply with the applicable limits.

The measurement frequency range is from 30 MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

5.5.4 Test Result

Please refer to ANNEX A.6.

ANNEX A TEST RESULT

A.1 RF Output Power

Duty Cycle

Test Mode	On Time (ms)	On+Off time (ms)	Duty Cycle
11a	1.39	1.43	97.06%
11n (HT20)/11ac (VHT20)	1.31	1.35	96.89%
11n (HT40)/11ac (VHT40)	0.66	0.70	93.98%
11ac (VHT80)	0.32	0.37	88.77%

Test Data

Conducted Power

U-NII-1 (5150 - 5250 MHz)					
Mode	Channel	Conducted Power (dBm)	Conducted Power (mW)	FCC Limit (mW)	Verdict
11a	CH36	14.95	31.26	250	Pass
11a	CH44	15.41	34.75	250	Pass
11a	CH48	15.35	34.28	250	Pass
11n (HT20)	CH36	13.63	23.07	250	Pass
11n (HT20)	CH44	16.16	41.30	250	Pass
11n (HT20)	CH48	16.13	41.02	250	Pass
11n (HT40)	CH38	11.14	13.00	250	Pass
11n (HT40)	CH46	15.65	36.73	250	Pass
11ac (VHT20)	CH36	13.56	22.70	250	Pass
11ac (VHT20)	CH44	16.09	40.64	250	Pass
11ac (VHT20)	CH48	15.96	39.45	250	Pass
11ac (VHT40)	CH38	11.22	13.24	250	Pass
11ac (VHT40)	CH46	15.65	36.73	250	Pass
11ac (VHT80)	CH42	9.73	9.40	250	Pass

E.I.R.P

U-NII-1 (5150 - 5250 MHz)					
Mode	Channel	E.I.R.P (dBm)	E.I.R.P (mW)	E.I.R.P Limit (mW)	Verdict
11a	CH36	17.04	50.58	166	Pass
11a	CH44	17.50	56.23	166	Pass
11a	CH48	17.44	55.46	167	Pass
11n (HT20)	CH36	15.72	37.33	178	Pass
11n (HT20)	CH44	18.25	66.83	179	Pass
11n (HT20)	CH48	18.22	66.37	179	Pass
11n (HT40)	CH38	13.23	21.04	200	Pass
11n (HT40)	CH46	17.74	59.43	200	Pass
11ac (VHT20)	CH36	15.65	36.73	178	Pass
11ac (VHT20)	CH44	18.18	65.77	178	Pass
11ac (HVT20)	CH48	18.05	63.83	179	Pass
11ac (VHT40)	CH38	13.31	21.43	200	Pass
11ac (VHT40)	CH46	17.74	59.43	200	Pass
11ac (VHT80)	CH42	11.82	15.21	200	Pass

A.2 Emission Bandwidth & 99% Bandwidth

Note: Test plots please refer to the document “Annex No.: BL-SZ2340426-609 Data Part 1.pdf”.

Test Data

U-NII-1 (5150 - 5250 MHz)			
Mode	Channel	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11a	CH36	21.26	16.61
11a	CH44	21.08	16.61
11a	CH48	21.12	16.67
11n (HT20)	CH36	21.36	17.77
11n (HT20)	CH44	21.64	17.89
11n (HT20)	CH48	21.84	17.89
11n (HT40)	CH38	40.00	36.35
11n (HT40)	CH46	41.00	36.58
11ac (VHT20)	CH36	21.28	17.77
11ac (VHT20)	CH44	21.40	17.83
11ac (VHT20)	CH48	21.60	17.89
11ac (VHT40)	CH38	40.00	36.12
11ac (VHT40)	CH46	41.20	36.47
11ac (VHT80)	CH42	81.60	75.48

A.3 6 dB Bandwidth

Note: Not applicable.

A.4 Power Spectral Density

Note: Test plots please refer to the document "Annex No.: BL-SZ2340426-609 Data Part 2.pdf".

Test Data

U-NII-1 (5150 - 5250 MHz)				
Mode	Channel	PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
11a	CH36	5.00	11.00	Pass
11a	CH44	5.72	11.00	Pass
11a	CH48	5.52	11.00	Pass
11n (HT20)	CH36	3.26	11.00	Pass
11n (HT20)	CH44	6.05	11.00	Pass
11n (HT20)	CH48	5.86	11.00	Pass
11n (HT40)	CH38	-2.83	11.00	Pass
11n (HT40)	CH46	1.28	11.00	Pass
11ac (VHT20)	CH36	3.05	11.00	Pass
11ac (VHT20)	CH44	6.00	11.00	Pass
11ac (VHT20)	CH48	5.66	11.00	Pass
11ac (VHT40)	CH38	-2.68	11.00	Pass
11ac (VHT40)	CH46	1.33	11.00	Pass
11ac (VHT80)	CH42	-8.52	11.00	Pass

E.I.R.P PSD

U-NII-1 (5150 - 5250 MHz)				
Mode	Channel	PSD (dBm/MHz)	E.I.R.P Limit (dBm/MHz)	Verdict
11a	CH36	7.09	10.00	Pass
11a	CH44	7.81	10.00	Pass
11a	CH48	7.61	10.00	Pass
11n (HT20)	CH36	5.35	10.00	Pass
11n (HT20)	CH44	8.14	10.00	Pass
11n (HT20)	CH48	7.95	10.00	Pass
11n (HT40)	CH38	-0.74	10.00	Pass
11n (HT40)	CH46	3.37	10.00	Pass
11ac (VHT20)	CH36	5.14	10.00	Pass
11ac (VHT20)	CH44	8.09	10.00	Pass
11ac (VHT20)	CH48	7.75	10.00	Pass
11ac (VHT40)	CH38	-0.59	10.00	Pass
11ac (VHT40)	CH46	3.42	10.00	Pass
11ac (VHT80)	CH42	-6.43	10.00	Pass

A.5 Conducted Emissions

Note: Not applicable.

A.6 Radiated Spurious Emissions and Band Edge (Restricted-band)

Note¹: The symbol of "--" in the table which means not application.

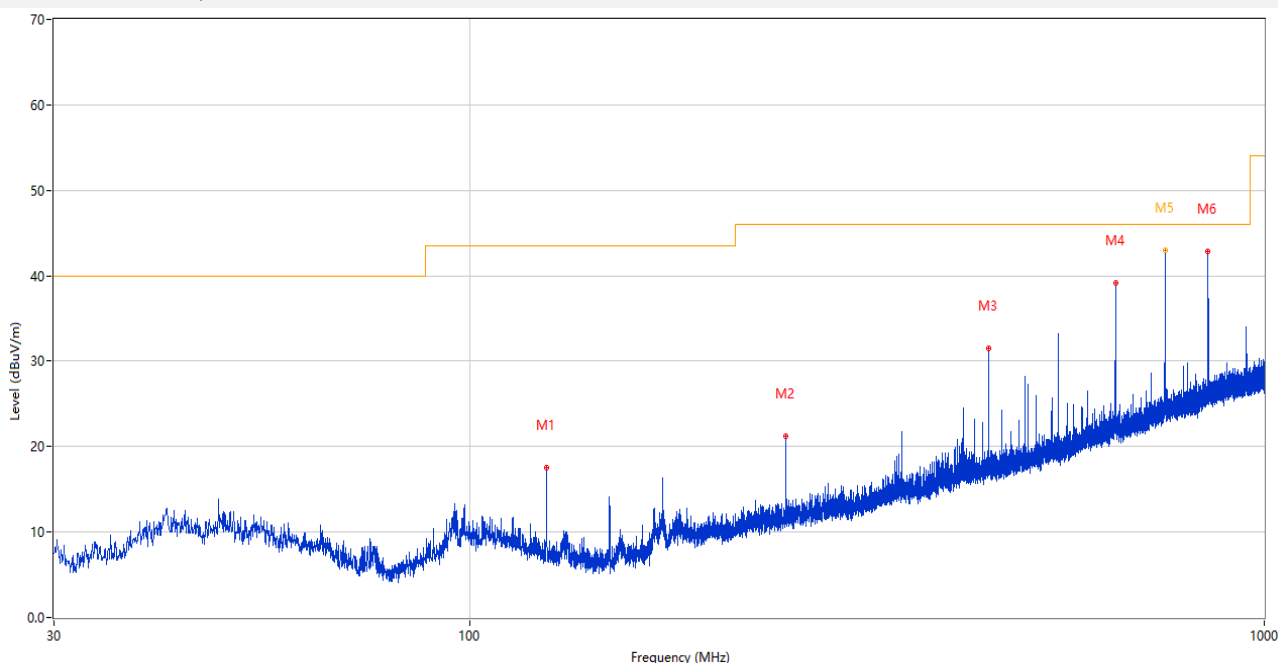
Note²: For the test data above 1 GHz, According the ANSI C63.4, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note³: The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

Note⁴: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and normal link mode is worst.

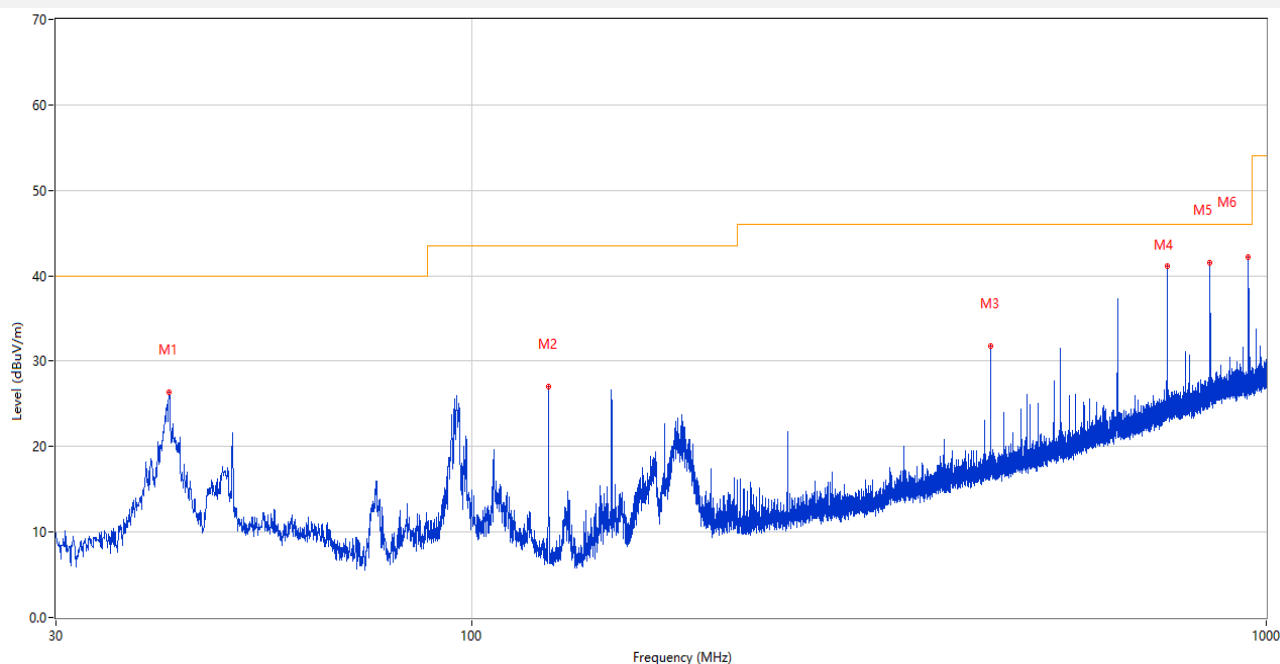
Test Data and Plots

30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	125.011	17.53	-29.47	43.5	25.97	Peak	127.00	200	Horizontal	Pass
2	249.996	21.17	-24.87	46.0	24.83	Peak	210.00	100	Horizontal	Pass
3	450.010	31.52	-19.87	46.0	14.48	Peak	5.00	100	Horizontal	Pass
4	650.024	39.11	-14.98	46.0	6.89	Peak	7.00	100	Horizontal	Pass
5	750.000	43.48	-12.82	46.0	2.52	Peak	360.00	101	Horizontal	N/A
5*	750.000	42.92	-12.82	46.0	3.08	QP	360.00	101	Horizontal	Pass
6	849.990	42.89	-10.87	46.0	3.11	Peak	187.00	200	Horizontal	Pass

30 MHz to 1 GHz, ANT V



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	41.640	26.36	-26.07	40.0	13.64	Peak	71.00	100	Vertical	Pass
2	125.011	27.00	-29.47	43.5	16.50	Peak	124.00	100	Vertical	Pass
3	450.010	31.78	-19.87	46.0	14.22	Peak	83.00	100	Vertical	Pass
4	749.982	41.13	-12.82	46.0	4.87	Peak	125.00	200	Vertical	Pass
5	849.990	41.53	-10.87	46.0	4.47	Peak	68.00	100	Vertical	Pass
6	949.997	42.20	-9.44	46.0	3.80	Peak	341.00	100	Vertical	Pass

Note: The spurious above 18G is noise only, do not show on the report.

11a, U-NII-1, 1 GHz to 18 GHz, Low Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1440.000	41.96	-17.43	74.0	32.04	Peak	108.00	400	Horizontal	Pass
1**	1440.000	34.31	-17.43	54.0	19.69	AV	108.00	400	Horizontal	Pass
2	4380.600	50.43	-4.54	74.0	23.57	Peak	238.00	400	Horizontal	Pass
2**	4380.600	40.36	-4.54	54.0	13.64	AV	238.00	400	Horizontal	Pass
3	5181.400	104.17	-2.58	--	--	Peak	358.00	150	Horizontal	N/A
3**	5181.400	97.09	-2.58	--	--	AV	358.00	150	Horizontal	N/A
4	7398.188	49.31	-3.98	74.0	24.69	Peak	252.00	400	Horizontal	Pass
4**	7398.188	40.13	-3.98	54.0	13.87	AV	252.00	400	Horizontal	Pass
5	12283.963	53.20	1.78	74.0	20.80	Peak	346.00	150	Horizontal	Pass
5**	12283.963	44.34	1.78	54.0	9.66	AV	346.00	150	Horizontal	Pass
6	15832.800	56.12	1.47	74.0	17.88	Peak	40.00	200	Horizontal	Pass
6**	15832.800	46.50	1.47	54.0	7.50	AV	40.00	200	Horizontal	Pass

11a, U-NII-1, 1 GHz to 18 GHz, Low Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1440.200	39.62	-17.42	74.0	34.38	Peak	351.00	300	Vertical	Pass
1**	1440.200	33.36	-17.42	54.0	20.64	AV	351.00	300	Vertical	Pass
2	4391.600	50.04	-4.76	74.0	23.96	Peak	339.00	100	Vertical	Pass
2**	4391.600	40.79	-4.76	54.0	13.21	AV	339.00	100	Vertical	Pass
3	5179.400	109.75	-2.62	--	--	Peak	188.00	100	Vertical	N/A
3**	5179.400	102.32	-2.62	--	--	AV	188.00	100	Vertical	N/A
4	7677.638	49.83	-2.46	74.0	24.17	Peak	326.00	400	Vertical	Pass
4**	7677.638	40.21	-2.46	54.0	13.79	AV	326.00	400	Vertical	Pass
5	12296.901	53.40	1.54	74.0	20.60	Peak	98.00	150	Vertical	Pass
5**	12296.901	43.78	1.54	54.0	10.22	AV	98.00	150	Vertical	Pass
6	15523.049	56.00	1.39	74.0	18.00	Peak	195.00	100	Vertical	Pass
6**	15523.049	45.92	1.39	54.0	8.08	AV	195.00	100	Vertical	Pass

11a, U-NII-1, 1 GHz to 18 GHz, Middle Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.900	40.14	-17.44	74.0	33.86	Peak	110.00	200	Horizontal	Pass
1**	1439.900	35.13	-17.44	54.0	18.87	AV	110.00	200	Horizontal	Pass
2	4350.600	49.50	-3.69	74.0	24.50	Peak	58.00	400	Horizontal	Pass
2**	4350.600	41.62	-3.69	54.0	12.38	AV	58.00	400	Horizontal	Pass
3	5219.000	106.07	-2.66	--	--	Peak	360.00	150	Horizontal	N/A
3**	5219.000	99.10	-2.66	--	--	AV	360.00	150	Horizontal	N/A
4	7745.487	49.50	-3.32	74.0	24.50	Peak	78.00	300	Horizontal	Pass
4**	7745.487	40.22	-3.32	54.0	13.78	AV	78.00	300	Horizontal	Pass
5	12425.987	54.17	1.46	74.0	19.83	Peak	211.00	200	Horizontal	Pass
5**	12425.987	43.64	1.46	54.0	10.36	AV	211.00	200	Horizontal	Pass
6	15492.338	55.85	0.99	74.0	18.15	Peak	284.00	100	Horizontal	Pass
6**	15492.338	46.37	0.99	54.0	7.63	AV	284.00	100	Horizontal	Pass

11a, U-NII-1, 1 GHz to 18 GHz, Middle Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.200	39.73	-17.48	74.0	34.27	Peak	243.00	200	Vertical	Pass
1**	1439.200	33.88	-17.48	54.0	20.12	AV	243.00	200	Vertical	Pass
2	4348.400	49.75	-3.87	74.0	24.25	Peak	308.00	400	Vertical	Pass
2**	4348.400	40.74	-3.87	54.0	13.26	AV	308.00	400	Vertical	Pass
3	5218.000	110.38	-2.63	--	--	Peak	189.00	100	Vertical	N/A
3**	5218.000	102.38	-2.63	--	--	AV	189.00	100	Vertical	N/A
4	7344.138	49.58	-3.28	74.0	24.42	Peak	308.00	400	Vertical	Pass
4**	7344.138	41.10	-3.28	54.0	12.90	AV	308.00	400	Vertical	Pass
5	12448.125	53.42	1.86	74.0	20.58	Peak	0.00	200	Vertical	Pass
5**	12448.125	44.48	1.86	54.0	9.52	AV	0.00	200	Vertical	Pass
6	15846.974	56.34	1.35	74.0	17.66	Peak	360.00	400	Vertical	Pass
6**	15846.974	46.99	1.35	54.0	7.01	AV	360.00	400	Vertical	Pass

11a, U-NII-1, 1 GHz to 18 GHz, High Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.900	41.02	-17.44	74.0	32.98	Peak	113.00	100	Horizontal	Pass
1**	1439.900	33.98	-17.44	54.0	20.02	AV	113.00	100	Horizontal	Pass
2	4271.600	49.48	-4.40	74.0	24.52	Peak	70.00	300	Horizontal	Pass
2**	4271.600	39.99	-4.40	54.0	14.01	AV	70.00	300	Horizontal	Pass
3	5241.800	106.43	-2.19	--	--	Peak	360.00	200	Horizontal	N/A
3**	5241.800	97.78	-2.19	--	--	AV	360.00	200	Horizontal	N/A
4	7391.575	49.73	-3.81	74.0	24.27	Peak	29.00	300	Horizontal	Pass
4**	7391.575	40.33	-3.81	54.0	13.67	AV	29.00	300	Horizontal	Pass
5	11512.025	53.36	-0.27	74.0	20.64	Peak	139.00	100	Horizontal	Pass
5**	11512.025	43.93	-0.27	54.0	10.07	AV	139.00	100	Horizontal	Pass
6	15826.763	56.17	1.59	74.0	17.83	Peak	64.00	200	Horizontal	Pass
6**	15826.763	47.38	1.59	54.0	6.62	AV	64.00	200	Horizontal	Pass

11a, U-NII-1, 1 GHz to 18 GHz, High Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1440.300	39.95	-17.41	74.0	34.05	Peak	248.00	300	Vertical	Pass
1**	1440.300	32.53	-17.41	54.0	21.47	AV	248.00	300	Vertical	Pass
2	4360.400	50.29	-4.17	74.0	23.71	Peak	276.00	300	Vertical	Pass
2**	4360.400	40.07	-4.17	54.0	13.93	AV	276.00	300	Vertical	Pass
3	5241.800	110.75	-2.19	--	--	Peak	182.00	100	Vertical	N/A
3**	5241.800	102.54	-2.19	--	--	AV	182.00	100	Vertical	N/A
4	7614.962	49.79	-2.87	74.0	24.21	Peak	0.00	100	Vertical	Pass
4**	7614.962	40.10	-2.87	54.0	13.90	AV	0.00	100	Vertical	Pass
5	12234.512	54.36	1.17	74.0	19.64	Peak	155.00	200	Vertical	Pass
5**	12234.512	43.24	1.17	54.0	10.76	AV	155.00	200	Vertical	Pass
6	15834.375	56.31	1.46	74.0	17.69	Peak	290.00	100	Vertical	Pass
6**	15834.375	47.94	1.46	54.0	6.06	AV	290.00	100	Vertical	Pass

11n20, U-NII-1, 1 GHz to 18 GHz, Low Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1438.700	40.11	-17.49	74.0	33.89	Peak	108.00	400	Horizontal	Pass
1**	1438.700	33.92	-17.49	54.0	20.08	AV	108.00	400	Horizontal	Pass
2	4351.400	49.36	-3.64	74.0	24.64	Peak	288.00	200	Horizontal	Pass
2**	4351.400	41.24	-3.64	54.0	12.76	AV	288.00	200	Horizontal	Pass
3	5179.200	103.89	-2.63	--	--	Peak	358.00	100	Horizontal	N/A
3**	5179.200	97.18	-2.63	--	--	AV	358.00	100	Horizontal	N/A
4	7344.425	50.40	-3.29	74.0	23.60	Peak	167.00	400	Horizontal	Pass
4**	7344.425	40.60	-3.29	54.0	13.40	AV	167.00	400	Horizontal	Pass
5	12419.662	53.44	1.39	74.0	20.56	Peak	128.00	150	Horizontal	Pass
5**	12419.662	44.36	1.39	54.0	9.64	AV	128.00	150	Horizontal	Pass
6	16100.025	56.50	1.20	74.0	17.50	Peak	302.00	300	Horizontal	Pass
6**	16100.025	47.11	1.20	54.0	6.89	AV	302.00	300	Horizontal	Pass

11n20, U-NII-1, 1 GHz to 18 GHz, Low Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1499.300	40.15	-17.52	74.0	33.85	Peak	82.00	200	Vertical	Pass
1**	1499.300	29.13	-17.52	54.0	24.87	AV	82.00	200	Vertical	Pass
2	4391.000	49.61	-4.80	74.0	24.39	Peak	353.00	100	Vertical	Pass
2**	4391.000	41.30	-4.80	54.0	12.70	AV	353.00	100	Vertical	Pass
3	5181.000	109.48	-2.57	--	--	Peak	178.00	200	Vertical	N/A
3**	5181.000	102.26	-2.57	--	--	AV	178.00	200	Vertical	N/A
4	7348.738	50.21	-3.18	74.0	23.79	Peak	0.00	200	Vertical	Pass
4**	7348.738	40.72	-3.18	54.0	13.28	AV	0.00	200	Vertical	Pass
5	12282.812	53.42	1.79	74.0	20.58	Peak	288.00	100	Vertical	Pass
5**	12282.812	44.74	1.79	54.0	9.26	AV	288.00	100	Vertical	Pass
6	16079.025	55.83	1.62	74.0	18.17	Peak	347.00	400	Vertical	Pass
6**	16079.025	46.54	1.62	54.0	7.46	AV	347.00	400	Vertical	Pass

11n20, U-NII-1, 1 GHz to 18 GHz, Middle Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1440.300	40.28	-17.41	74.0	33.72	Peak	110.00	300	Horizontal	Pass
1**	1440.300	32.37	-17.41	54.0	21.63	AV	110.00	300	Horizontal	Pass
2	4382.400	49.45	-4.62	74.0	24.55	Peak	360.00	300	Horizontal	Pass
2**	4382.400	40.12	-4.62	54.0	13.88	AV	360.00	300	Horizontal	Pass
3	5218.800	106.95	-2.66	--	--	Peak	359.00	150	Horizontal	N/A
3**	5218.800	99.80	-2.66	--	--	AV	359.00	150	Horizontal	N/A
4	7344.138	50.86	-3.28	74.0	23.14	Peak	229.00	200	Horizontal	Pass
4**	7344.138	40.97	-3.28	54.0	13.03	AV	229.00	200	Horizontal	Pass
5	12627.812	53.38	1.50	74.0	20.62	Peak	112.00	150	Horizontal	Pass
5**	12627.812	44.05	1.50	54.0	9.95	AV	112.00	150	Horizontal	Pass
6	16089.787	56.64	1.44	74.0	17.36	Peak	308.00	100	Horizontal	Pass
6**	16089.787	46.62	1.44	54.0	7.38	AV	308.00	100	Horizontal	Pass

11n20, U-NII-1, 1 GHz to 18 GHz, Middle Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.700	39.66	-17.45	74.0	34.34	Peak	241.00	200	Vertical	Pass
1**	1439.700	32.97	-17.45	54.0	21.03	AV	241.00	200	Vertical	Pass
2	4396.000	49.62	-4.79	74.0	24.38	Peak	302.00	300	Vertical	Pass
2**	4396.000	40.53	-4.79	54.0	13.47	AV	302.00	300	Vertical	Pass
3	5220.400	111.09	-2.74	--	--	Peak	190.00	200	Vertical	N/A
3**	5220.400	103.53	-2.74	--	--	AV	190.00	200	Vertical	N/A
4	7394.737	50.32	-3.74	74.0	23.68	Peak	288.00	400	Vertical	Pass
4**	7394.737	40.46	-3.74	54.0	13.54	AV	288.00	400	Vertical	Pass
5	12599.349	53.26	1.89	74.0	20.74	Peak	288.00	150	Vertical	Pass
5**	12599.349	44.68	1.89	54.0	9.32	AV	288.00	150	Vertical	Pass
6	15798.150	56.70	2.27	74.0	17.30	Peak	21.00	300	Vertical	Pass
6**	15798.150	46.99	2.27	54.0	7.01	AV	21.00	300	Vertical	Pass

11n20, U-NII-1, 1 GHz to 18 GHz, High Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.400	40.59	-17.46	74.0	33.41	Peak	119.00	400	Horizontal	Pass
1**	1439.400	34.07	-17.46	54.0	19.93	AV	119.00	400	Horizontal	Pass
2	4338.400	49.68	-4.55	74.0	24.32	Peak	21.00	100	Horizontal	Pass
2**	4338.400	40.09	-4.55	54.0	13.91	AV	21.00	100	Horizontal	Pass
3	5241.400	107.10	-2.21	--	--	Peak	1.00	200	Horizontal	N/A
3**	5241.400	100.50	-2.21	--	--	AV	1.00	200	Horizontal	N/A
4	7736.575	49.33	-2.88	74.0	24.67	Peak	0.00	400	Horizontal	Pass
4**	7736.575	40.02	-2.88	54.0	13.98	AV	0.00	400	Horizontal	Pass
5	11518.638	53.29	-0.40	74.0	20.71	Peak	285.00	200	Horizontal	Pass
5**	11518.638	43.82	-0.40	54.0	10.18	AV	285.00	200	Horizontal	Pass
6	15818.888	56.57	1.92	74.0	17.43	Peak	19.00	300	Horizontal	Pass
6**	15818.888	46.95	1.92	54.0	7.05	AV	19.00	300	Horizontal	Pass

11n20, U-NII-1, 1 GHz to 18 GHz, High Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1598.300	39.70	-17.90	74.0	34.30	Peak	110.00	100	Vertical	Pass
1**	1598.300	29.19	-17.90	54.0	24.81	AV	110.00	100	Vertical	Pass
2	3814.400	48.36	-5.31	74.0	25.64	Peak	194.00	100	Vertical	Pass
2**	3814.400	38.36	-5.31	54.0	15.64	AV	194.00	100	Vertical	Pass
3	5242.400	110.86	-2.18	--	--	Peak	182.00	200	Vertical	N/A
3**	5242.400	103.17	-2.18	--	--	AV	182.00	200	Vertical	N/A
4	7691.725	50.15	-1.94	74.0	23.85	Peak	208.00	200	Vertical	Pass
4**	7691.725	40.77	-1.94	54.0	13.23	AV	208.00	200	Vertical	Pass
5	12316.450	53.44	1.41	74.0	20.56	Peak	0.00	150	Vertical	Pass
5**	12316.450	43.53	1.41	54.0	10.47	AV	0.00	150	Vertical	Pass
6	15798.412	55.84	2.28	74.0	18.16	Peak	243.00	100	Vertical	Pass
6**	15798.412	47.46	2.28	54.0	6.54	AV	243.00	100	Vertical	Pass

11n40, U-NII-1, 1 GHz to 18 GHz, Low Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.800	40.56	-17.44	74.0	33.44	Peak	117.00	400	Horizontal	Pass
1**	1439.800	34.85	-17.44	54.0	19.15	AV	117.00	400	Horizontal	Pass
2	4347.600	50.84	-3.94	74.0	23.16	Peak	7.00	100	Horizontal	Pass
2**	4347.600	40.86	-3.94	54.0	13.14	AV	7.00	100	Horizontal	Pass
3	5191.600	103.48	-2.69	--	--	Peak	7.00	150	Horizontal	N/A
3**	5191.600	96.19	-2.69	--	--	AV	7.00	150	Horizontal	N/A
4	7690.000	49.87	-1.93	74.0	24.13	Peak	22.00	300	Horizontal	Pass
4**	7690.000	41.20	-1.93	54.0	12.80	AV	22.00	300	Horizontal	Pass
5	12323.063	53.05	1.42	74.0	20.95	Peak	22.00	200	Horizontal	Pass
5**	12323.063	44.02	1.42	54.0	9.98	AV	22.00	200	Horizontal	Pass
6	16106.325	55.87	0.92	74.0	18.13	Peak	244.00	200	Horizontal	Pass
6**	16106.325	47.84	0.92	54.0	6.16	AV	244.00	200	Horizontal	Pass

11n40, U-NII-1, 1 GHz to 18 GHz, Low Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1438.700	39.67	-17.49	74.0	34.33	Peak	258.00	300	Vertical	Pass
1**	1438.700	32.84	-17.49	54.0	21.16	AV	258.00	300	Vertical	Pass
2	4384.000	49.57	-4.65	74.0	24.43	Peak	168.00	200	Vertical	Pass
2**	4384.000	40.22	-4.65	54.0	13.78	AV	168.00	200	Vertical	Pass
3	5186.400	107.63	-2.62	--	--	Peak	192.00	150	Vertical	N/A
3**	5186.400	99.77	-2.62	--	--	AV	192.00	150	Vertical	N/A
4	7403.075	51.18	-3.88	74.0	22.82	Peak	343.00	300	Vertical	Pass
4**	7403.075	40.45	-3.88	54.0	13.55	AV	343.00	300	Vertical	Pass
5	12266.138	53.84	1.33	74.0	20.16	Peak	135.00	150	Vertical	Pass
5**	12266.138	43.51	1.33	54.0	10.49	AV	135.00	150	Vertical	Pass
6	15813.112	55.87	2.10	74.0	18.13	Peak	0.00	300	Vertical	Pass
6**	15813.112	47.09	2.10	54.0	6.91	AV	0.00	300	Vertical	Pass

11n40, U-NII-1, 1 GHz to 18 GHz, High Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.000	40.36	-17.49	74.0	33.64	Peak	113.00	300	Horizontal	Pass
1**	1439.000	33.93	-17.49	54.0	20.07	AV	113.00	300	Horizontal	Pass
2	4387.200	49.71	-4.68	74.0	24.29	Peak	64.00	200	Horizontal	Pass
2**	4387.200	41.02	-4.68	54.0	12.98	AV	64.00	200	Horizontal	Pass
3	5232.200	103.93	-2.29	--	--	Peak	359.00	200	Horizontal	N/A
3**	5232.200	95.86	-2.29	--	--	AV	359.00	200	Horizontal	N/A
4	7305.900	49.84	-2.72	74.0	24.16	Peak	183.00	400	Horizontal	Pass
4**	7305.900	40.31	-2.72	54.0	13.69	AV	183.00	400	Horizontal	Pass
5	12284.537	53.13	1.78	74.0	20.87	Peak	118.00	200	Horizontal	Pass
5**	12284.537	45.05	1.78	54.0	8.95	AV	118.00	200	Horizontal	Pass
6	16107.900	55.81	0.86	74.0	18.19	Peak	217.00	100	Horizontal	Pass
6**	16107.900	46.96	0.86	54.0	7.04	AV	217.00	100	Horizontal	Pass

11n40, U-NII-1, 1 GHz to 18 GHz, High Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.200	39.49	-17.48	74.0	34.51	Peak	242.00	100	Vertical	Pass
1**	1439.200	33.98	-17.48	54.0	20.02	AV	242.00	100	Vertical	Pass
2	4378.600	49.90	-4.55	74.0	24.10	Peak	178.00	200	Vertical	Pass
2**	4378.600	40.93	-4.55	54.0	13.07	AV	178.00	200	Vertical	Pass
3	5228.400	107.15	-2.49	--	--	Peak	178.00	150	Vertical	N/A
3**	5228.400	99.33	-2.49	--	--	AV	178.00	150	Vertical	N/A
4	7730.825	50.03	-2.97	74.0	23.97	Peak	309.00	200	Vertical	Pass
4**	7730.825	39.97	-2.97	54.0	14.03	AV	309.00	200	Vertical	Pass
5	12281.950	53.68	1.79	74.0	20.32	Peak	29.00	150	Vertical	Pass
5**	12281.950	44.03	1.79	54.0	9.97	AV	29.00	150	Vertical	Pass
6	15844.350	55.93	1.38	74.0	18.07	Peak	19.00	300	Vertical	Pass
6**	15844.350	46.99	1.38	54.0	7.01	AV	19.00	300	Vertical	Pass

11ac20, U-NII-1, 1 GHz to 18 GHz, Low Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.000	40.14	-17.49	74.0	33.86	Peak	112.00	400	Horizontal	Pass
1**	1439.000	36.20	-17.49	54.0	17.80	AV	112.00	400	Horizontal	Pass
2	4267.600	50.09	-4.72	74.0	23.91	Peak	265.00	100	Horizontal	Pass
2**	4267.600	40.33	-4.72	54.0	13.67	AV	265.00	100	Horizontal	Pass
3	5181.000	105.30	-2.57	--	--	Peak	348.00	150	Horizontal	N/A
3**	5181.000	98.28	-2.57	--	--	AV	348.00	150	Horizontal	N/A
4	7359.950	50.18	-3.78	74.0	23.82	Peak	289.00	100	Horizontal	Pass
4**	7359.950	41.11	-3.78	54.0	12.89	AV	289.00	100	Horizontal	Pass
5	11997.038	53.04	1.24	74.0	20.96	Peak	289.00	150	Horizontal	Pass
5**	11997.038	43.20	1.24	54.0	10.80	AV	289.00	150	Horizontal	Pass
6	15855.901	56.35	1.15	74.0	17.65	Peak	19.00	300	Horizontal	Pass
6**	15855.901	45.96	1.15	54.0	8.04	AV	19.00	300	Horizontal	Pass

11ac20, U-NII-1, 1 GHz to 18 GHz, Low Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1438.600	40.24	-17.49	74.0	33.76	Peak	68.00	300	Vertical	Pass
1**	1438.600	32.83	-17.49	54.0	21.17	AV	68.00	300	Vertical	Pass
2	4347.200	50.35	-3.97	74.0	23.65	Peak	114.00	100	Vertical	Pass
2**	4347.200	40.83	-3.97	54.0	13.17	AV	114.00	100	Vertical	Pass
3	5181.000	108.36	-2.57	--	--	Peak	182.00	150	Vertical	N/A
3**	5181.000	101.66	-2.57	--	--	AV	182.00	150	Vertical	N/A
4	7443.612	49.82	-3.88	74.0	24.18	Peak	105.00	200	Vertical	Pass
4**	7443.612	40.19	-3.88	54.0	13.81	AV	105.00	200	Vertical	Pass
5	12103.987	53.43	0.59	74.0	20.57	Peak	50.00	150	Vertical	Pass
5**	12103.987	44.47	0.59	54.0	9.53	AV	50.00	150	Vertical	Pass
6	15845.137	56.11	1.37	74.0	17.89	Peak	230.00	300	Vertical	Pass
6**	15845.137	47.06	1.37	54.0	6.94	AV	230.00	300	Vertical	Pass

11ac20, U-NII-1, 1 GHz to 18 GHz, Middle Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1440.000	40.51	-17.43	74.0	33.49	Peak	115.00	100	Horizontal	Pass
1**	1440.000	35.51	-17.43	54.0	18.49	AV	115.00	100	Horizontal	Pass
2	4345.200	49.75	-4.13	74.0	24.25	Peak	82.00	100	Horizontal	Pass
2**	4345.200	40.97	-4.13	54.0	13.03	AV	82.00	100	Horizontal	Pass
3	5219.200	106.63	-2.67	--	--	Peak	351.00	100	Horizontal	N/A
3**	5219.200	99.31	-2.67	--	--	AV	351.00	100	Horizontal	N/A
4	7715.013	50.23	-2.56	74.0	23.77	Peak	2.00	400	Horizontal	Pass
4**	7715.013	39.61	-2.56	54.0	14.39	AV	2.00	400	Horizontal	Pass
5	12210.362	53.59	1.03	74.0	20.41	Peak	172.00	150	Horizontal	Pass
5**	12210.362	43.82	1.03	54.0	10.18	AV	172.00	150	Horizontal	Pass
6	15613.875	56.15	1.44	74.0	17.85	Peak	360.00	400	Horizontal	Pass
6**	15613.875	46.83	1.44	54.0	7.17	AV	360.00	400	Horizontal	Pass

11ac20, U-NII-1, 1 GHz to 18 GHz, Middle Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.200	41.01	-17.48	74.0	32.99	Peak	69.00	100	Vertical	Pass
1**	1439.200	34.42	-17.48	54.0	19.58	AV	69.00	100	Vertical	Pass
2	4311.800	50.40	-4.98	74.0	23.60	Peak	356.00	400	Vertical	Pass
2**	4311.800	39.99	-4.98	54.0	14.01	AV	356.00	400	Vertical	Pass
3	5218.800	109.90	-2.66	--	--	Peak	122.00	200	Vertical	N/A
3**	5218.800	102.50	-2.66	--	--	AV	122.00	200	Vertical	N/A
4	7338.387	49.87	-3.35	74.0	24.13	Peak	269.00	100	Vertical	Pass
4**	7338.387	41.02	-3.35	54.0	12.98	AV	269.00	100	Vertical	Pass
5	12247.737	53.38	0.98	74.0	20.62	Peak	231.00	200	Vertical	Pass
5**	12247.737	44.49	0.98	54.0	9.51	AV	231.00	200	Vertical	Pass
6	15817.050	56.12	1.98	74.0	17.88	Peak	360.00	200	Vertical	Pass
6**	15817.050	46.92	1.98	54.0	7.08	AV	360.00	200	Vertical	Pass

11ac20, U-NII-1, 1 GHz to 18 GHz, High Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.500	40.06	-17.46	74.0	33.94	Peak	111.00	200	Horizontal	Pass
1**	1439.500	33.66	-17.46	54.0	20.34	AV	111.00	200	Horizontal	Pass
2	4201.400	49.62	-4.85	74.0	24.38	Peak	0.00	100	Horizontal	Pass
2**	4201.400	39.79	-4.85	54.0	14.21	AV	0.00	100	Horizontal	Pass
3	5241.400	106.58	-2.21	--	--	Peak	356.00	100	Horizontal	N/A
3**	5241.400	99.44	-2.21	--	--	AV	356.00	100	Horizontal	N/A
4	7343.563	49.84	-3.31	74.0	24.16	Peak	186.00	100	Horizontal	Pass
4**	7343.563	41.06	-3.31	54.0	12.94	AV	186.00	100	Horizontal	Pass
5	12457.037	53.04	1.85	74.0	20.96	Peak	14.00	200	Horizontal	Pass
5**	12457.037	43.44	1.85	54.0	10.56	AV	14.00	200	Horizontal	Pass
6	15498.112	56.28	1.12	74.0	17.72	Peak	302.00	200	Horizontal	Pass
6**	15498.112	46.02	1.12	54.0	7.98	AV	302.00	200	Horizontal	Pass

11ac20, U-NII-1, 1 GHz to 18 GHz, High Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.300	39.74	-17.47	74.0	34.26	Peak	255.00	200	Vertical	Pass
1**	1439.300	33.15	-17.47	54.0	20.85	AV	255.00	200	Vertical	Pass
2	4346.400	49.57	-4.04	74.0	24.43	Peak	30.00	300	Vertical	Pass
2**	4346.400	41.23	-4.04	54.0	12.77	AV	30.00	300	Vertical	Pass
3	5238.000	109.74	-2.27	--	--	Peak	130.00	100	Vertical	N/A
3**	5238.000	101.83	-2.27	--	--	AV	130.00	100	Vertical	N/A
4	7290.950	49.54	-3.13	74.0	24.46	Peak	290.00	300	Vertical	Pass
4**	7290.950	40.50	-3.13	54.0	13.50	AV	290.00	300	Vertical	Pass
5	12483.775	53.14	1.63	74.0	20.86	Peak	116.00	150	Vertical	Pass
5**	12483.775	43.54	1.63	54.0	10.46	AV	116.00	150	Vertical	Pass
6	15847.238	56.67	1.35	74.0	17.33	Peak	42.00	300	Vertical	Pass
6**	15847.238	47.42	1.35	54.0	6.58	AV	42.00	300	Vertical	Pass

11ac40, U-NII-1, 1 GHz to 18 GHz, Low Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.600	39.57	-17.45	74.0	34.43	Peak	51.00	100	Horizontal	Pass
1**	1439.600	34.45	-17.45	54.0	19.55	AV	51.00	100	Horizontal	Pass
2	4341.600	50.30	-4.45	74.0	23.70	Peak	251.00	200	Horizontal	Pass
2**	4341.600	40.32	-4.45	54.0	13.68	AV	251.00	200	Horizontal	Pass
3	5188.200	103.08	-2.65	--	--	Peak	338.00	150	Horizontal	N/A
3**	5188.200	95.08	-2.65	--	--	AV	338.00	150	Horizontal	N/A
4	7392.150	49.77	-3.83	74.0	24.23	Peak	187.00	200	Horizontal	Pass
4**	7392.150	41.01	-3.83	54.0	12.99	AV	187.00	200	Horizontal	Pass
5	12426.849	53.55	1.48	74.0	20.45	Peak	248.00	150	Horizontal	Pass
5**	12426.849	43.69	1.48	54.0	10.31	AV	248.00	150	Horizontal	Pass
6	16093.463	55.87	1.36	74.0	18.13	Peak	57.00	400	Horizontal	Pass
6**	16093.463	46.18	1.36	54.0	7.82	AV	57.00	400	Horizontal	Pass

11ac40, U-NII-1, 1 GHz to 18 GHz, Low Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1438.800	39.74	-17.49	74.0	34.26	Peak	69.00	400	Vertical	Pass
1**	1438.800	33.54	-17.49	54.0	20.46	AV	69.00	400	Vertical	Pass
2	4340.000	50.32	-4.38	74.0	23.68	Peak	304.00	200	Vertical	Pass
2**	4340.000	41.25	-4.38	54.0	12.75	AV	304.00	200	Vertical	Pass
3	5191.400	106.95	-2.68	--	--	Peak	114.00	150	Vertical	N/A
3**	5191.400	99.71	-2.68	--	--	AV	114.00	150	Vertical	N/A
4	7350.750	50.00	-3.40	74.0	24.00	Peak	52.00	100	Vertical	Pass
4**	7350.750	41.52	-3.40	54.0	12.48	AV	52.00	100	Vertical	Pass
5	12448.987	53.32	1.87	74.0	20.68	Peak	126.00	100	Vertical	Pass
5**	12448.987	44.45	1.87	54.0	9.55	AV	126.00	100	Vertical	Pass
6	15461.625	55.90	1.47	74.0	18.10	Peak	360.00	300	Vertical	Pass
6**	15461.625	45.64	1.47	54.0	8.36	AV	360.00	300	Vertical	Pass

11ac40, U-NII-1, 1 GHz to 18 GHz, High Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1439.500	39.55	-17.46	74.0	34.45	Peak	121.00	400	Horizontal	Pass
1**	1439.500	34.11	-17.46	54.0	19.89	AV	121.00	400	Horizontal	Pass
2	4275.600	49.64	-4.44	74.0	24.36	Peak	0.00	300	Horizontal	Pass
2**	4275.600	41.02	-4.44	54.0	12.98	AV	0.00	300	Horizontal	Pass
3	5232.000	103.25	-2.29	--	--	Peak	336.00	100	Horizontal	N/A
3**	5232.000	96.63	-2.29	--	--	AV	336.00	100	Horizontal	N/A
4	7677.925	49.96	-2.48	74.0	24.04	Peak	0.00	300	Horizontal	Pass
4**	7677.925	40.46	-2.48	54.0	13.54	AV	0.00	300	Horizontal	Pass
5	12329.675	54.02	1.42	74.0	19.98	Peak	115.00	200	Horizontal	Pass
5**	12329.675	44.50	1.42	54.0	9.50	AV	115.00	200	Horizontal	Pass
6	15814.425	56.65	2.07	74.0	17.35	Peak	9.00	300	Horizontal	Pass
6**	15814.425	47.13	2.07	54.0	6.87	AV	9.00	300	Horizontal	Pass

11ac40, U-NII-1, 1 GHz to 18 GHz, High Channel, ANT V

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1495.500	40.03	-17.46	74.0	33.97	Peak	68.00	300	Vertical	Pass
1**	1495.500	28.70	-17.46	54.0	25.30	AV	68.00	300	Vertical	Pass
2	4329.400	49.54	-4.42	74.0	24.46	Peak	218.00	200	Vertical	Pass
2**	4329.400	40.46	-4.42	54.0	13.54	AV	218.00	200	Vertical	Pass
3	5228.000	107.14	-2.48	--	--	Peak	172.00	100	Vertical	N/A
3**	5228.000	99.40	-2.48	--	--	AV	172.00	100	Vertical	N/A
4	7720.475	50.33	-2.67	74.0	23.67	Peak	242.00	300	Vertical	Pass
4**	7720.475	40.31	-2.67	54.0	13.69	AV	242.00	300	Vertical	Pass
5	12326.225	53.21	1.42	74.0	20.79	Peak	330.00	200	Vertical	Pass
5**	12326.225	44.23	1.42	54.0	9.77	AV	330.00	200	Vertical	Pass
6	15637.238	56.14	1.46	74.0	17.86	Peak	360.00	100	Vertical	Pass
6**	15637.238	46.04	1.46	54.0	7.96	AV	360.00	100	Vertical	Pass

11ac80, U-NII-1, 1 GHz to 18 GHz, Middle Channel, ANT H

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1440.000	40.45	-17.43	74.0	33.55	Peak	194.00	400	Horizontal	Pass
1**	1440.000	33.50	-17.43	54.0	20.50	AV	194.00	400	Horizontal	Pass
2	4380.000	49.55	-4.50	74.0	24.45	Peak	126.00	400	Horizontal	Pass
2**	4380.000	39.51	-4.50	54.0	14.49	AV	126.00	400	Horizontal	Pass
3	5212.200	99.63	-2.48	--	--	Peak	353.00	100	Horizontal	N/A
3**	5212.200	91.89	-2.48	--	--	AV	353.00	100	Horizontal	N/A
4	7352.187	49.33	-3.53	74.0	24.67	Peak	339.00	100	Horizontal	Pass
4**	7352.187	40.01	-3.53	54.0	13.99	AV	339.00	100	Horizontal	Pass
5	12330.825	52.85	1.40	74.0	21.15	Peak	240.00	150	Horizontal	Pass
5**	12330.825	43.60	1.40	54.0	10.40	AV	240.00	150	Horizontal	Pass
6	15521.738	56.01	1.38	74.0	17.99	Peak	39.00	200	Horizontal	Pass
6**	15521.738	46.18	1.38	54.0	7.82	AV	39.00	200	Horizontal	Pass

11ac80, U-NII-1, 1 GHz to 18 GHz, Middle Channel, ANT V

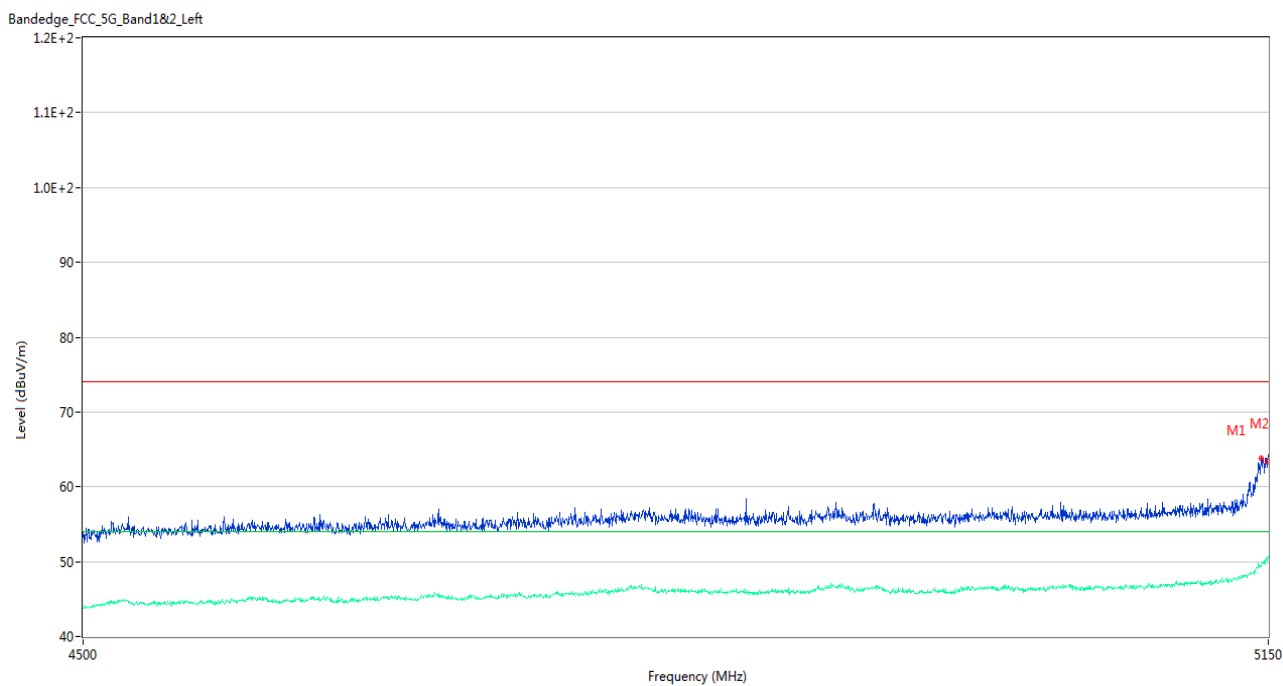
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1440.300	40.05	-17.41	74.0	33.95	Peak	264.00	300	Vertical	Pass
1**	1440.300	32.27	-17.41	54.0	21.73	AV	264.00	300	Vertical	Pass
2	4350.400	49.74	-3.70	74.0	24.26	Peak	133.00	200	Vertical	Pass
2**	4350.400	40.26	-3.70	54.0	13.74	AV	133.00	200	Vertical	Pass
3	5211.600	104.95	-2.47	--	--	Peak	332.00	200	Vertical	N/A
3**	5211.600	97.41	-2.47	--	--	AV	332.00	200	Vertical	N/A
4	7349.600	49.49	-3.28	74.0	24.51	Peak	271.00	400	Vertical	Pass
4**	7349.600	40.48	-3.28	54.0	13.52	AV	271.00	400	Vertical	Pass
5	12288.275	53.13	1.70	74.0	20.87	Peak	255.00	150	Vertical	Pass
5**	12288.275	44.92	1.70	54.0	9.08	AV	255.00	150	Vertical	Pass
6	15847.763	55.74	1.35	74.0	18.26	Peak	213.00	400	Vertical	Pass
6**	15847.763	46.86	1.35	54.0	7.14	AV	213.00	400	Vertical	Pass

A.6.2 Band Edge (Restricted-band)

Test Band	Mode	Channel	Verdict
U-NII-1	802.11a	Low	Pass
		High	Pass
	802.11n(HT20)	Low	Pass
		High	Pass
	802.11n(HT40)	Low	Pass
		High	Pass
	802.11ac(VHT20)	Low	Pass
		High	Pass
	802.11ac(VHT40)	Low	Pass
		High	Pass
	802.11ac(VHT80)	Middle	Pass

Test Data and Plots

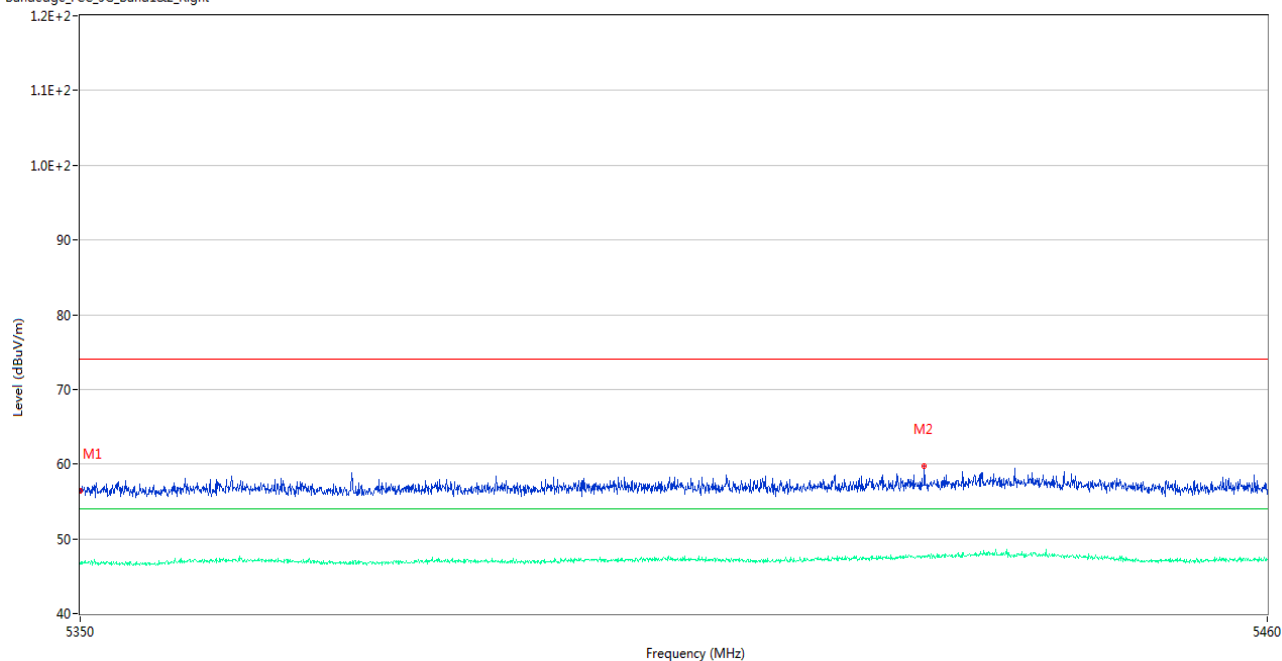
U-NII-1 11a Low Channel



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5146.100	63.85	3.62	74.0	10.15	Peak	340.00	100	Vertical	Pass
1**	5146.100	49.50	3.62	54.0	4.50	AV	340.00	100	Vertical	Pass
2	5149.675	63.38	3.43	74.0	10.62	Peak	0.00	100	Vertical	Pass
2**	5149.675	50.06	3.43	54.0	3.94	AV	0.00	100	Vertical	Pass

U-NII-1 11a High Channel

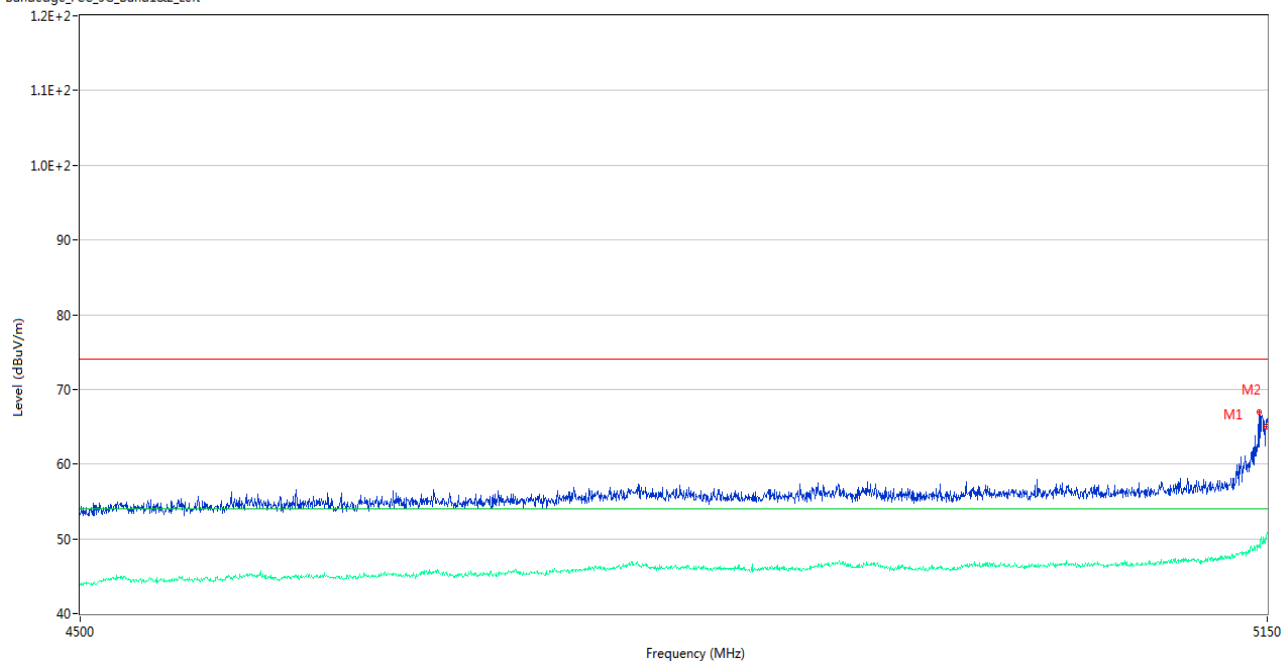
Bandedge_FCC_5G_Band1&2_Right



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5350.000	56.46	3.26	74.0	17.54	Peak	169.00	100	Vertical	Pass
1**	5350.000	46.63	3.26	54.0	7.37	AV	169.00	100	Vertical	Pass
2	5427.990	59.74	4.04	74.0	14.26	Peak	222.00	200	Vertical	Pass
2**	5427.990	47.57	4.04	54.0	6.43	AV	222.00	200	Vertical	Pass

U-NII-1 11n20 Low Channel

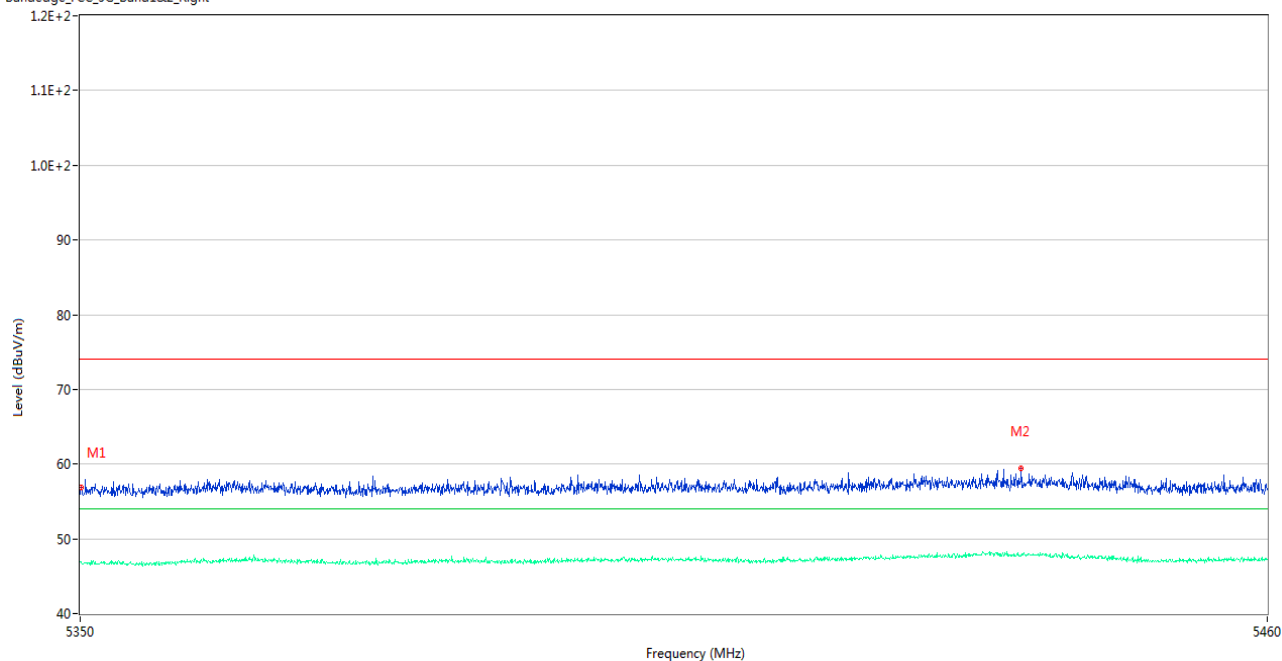
Bandedge_FCC_5G_Band1&2_Left



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5145.125	67.01	3.67	74.0	6.99	Peak	360.00	200	Vertical	Pass
1**	5145.125	48.92	3.67	54.0	5.08	AV	360.00	200	Vertical	Pass
2	5149.675	65.01	3.43	74.0	8.99	Peak	338.00	200	Vertical	Pass
2**	5149.675	50.36	3.43	54.0	3.64	AV	338.00	200	Vertical	Pass

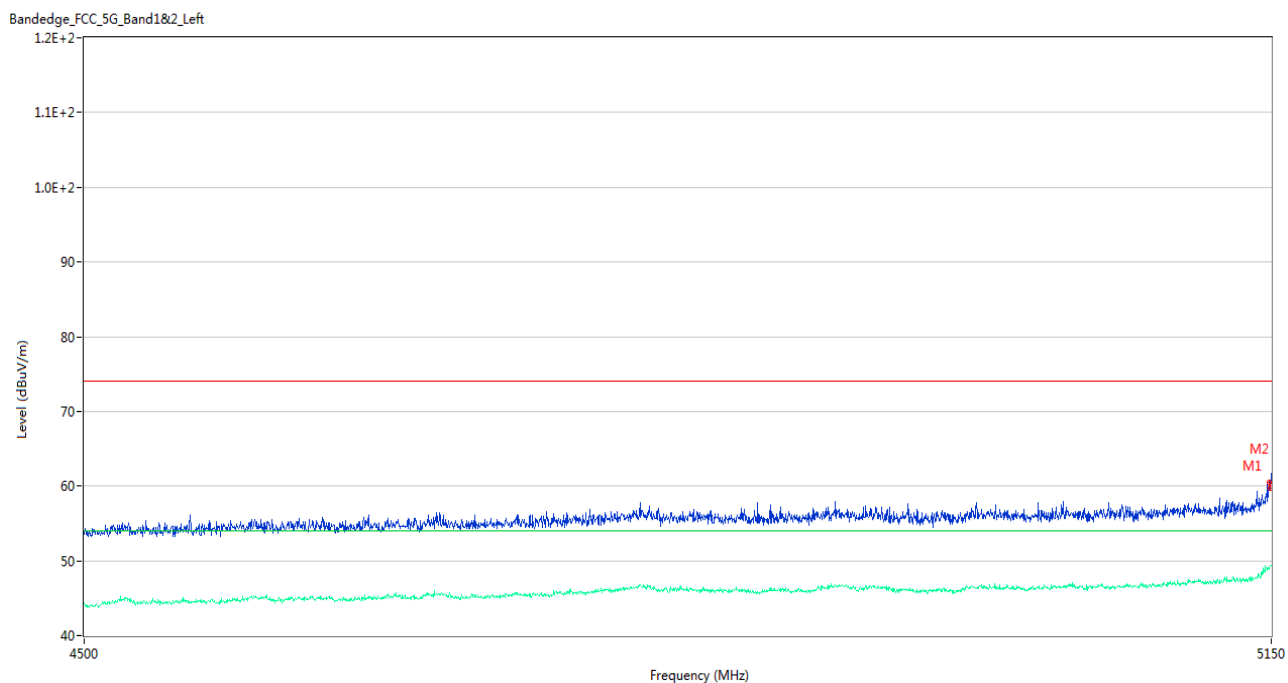
U-NII-1 11n20 High Channel

Bandedge_FCC_5G_Band1&2_Right



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5350.055	56.88	3.25	74.0	17.12	Peak	316.00	100	Vertical	Pass
1**	5350.055	46.78	3.25	54.0	7.22	AV	316.00	100	Vertical	Pass
2	5437.010	59.39	4.41	74.0	14.61	Peak	192.00	150	Vertical	Pass
2**	5437.010	47.75	4.41	54.0	6.25	AV	192.00	150	Vertical	Pass

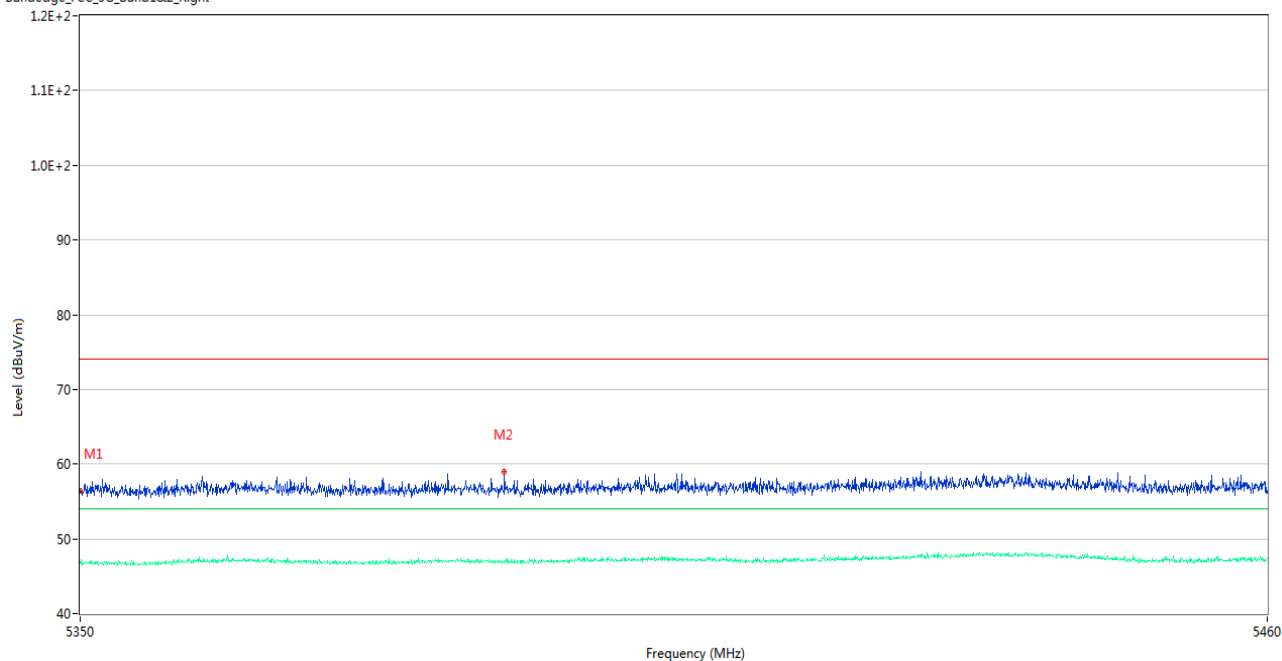
U-NII-1 11n40 Low Channel



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5148.700	60.52	3.49	74.0	13.48	Peak	358.00	100	Vertical	Pass
1**	5148.700	48.96	3.49	54.0	5.04	AV	358.00	100	Vertical	Pass
2	5149.675	59.69	3.43	74.0	14.31	Peak	348.00	100	Vertical	Pass
2**	5149.675	49.32	3.43	54.0	4.68	AV	348.00	100	Vertical	Pass

U-NII-1 11n40 High Channel

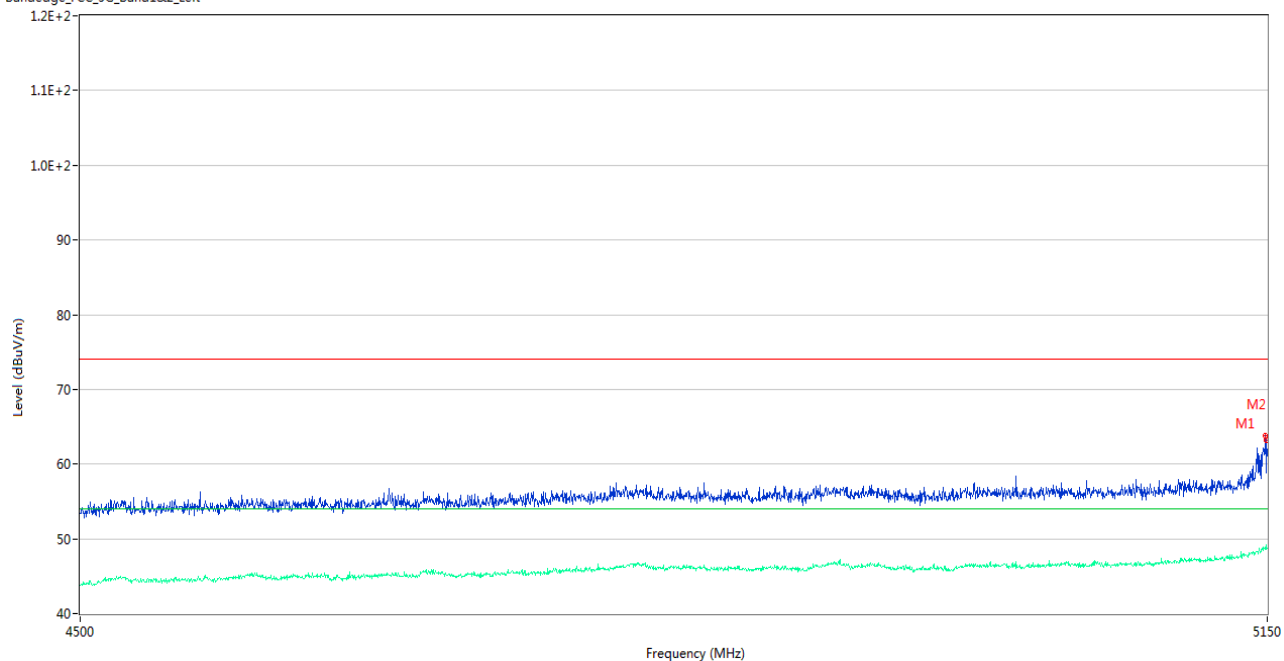
Bandedge_FCC_5G_Band1&2_Right



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5350.000	56.49	3.26	74.0	17.51	Peak	217.00	200	Vertical	Pass
1**	5350.000	46.74	3.26	54.0	7.26	AV	217.00	200	Vertical	Pass
2	5389.050	58.96	3.60	74.0	15.04	Peak	58.00	150	Vertical	Pass
2**	5389.050	46.84	3.60	54.0	7.16	AV	58.00	150	Vertical	Pass

U-NII-1 11ac20 Low Channel

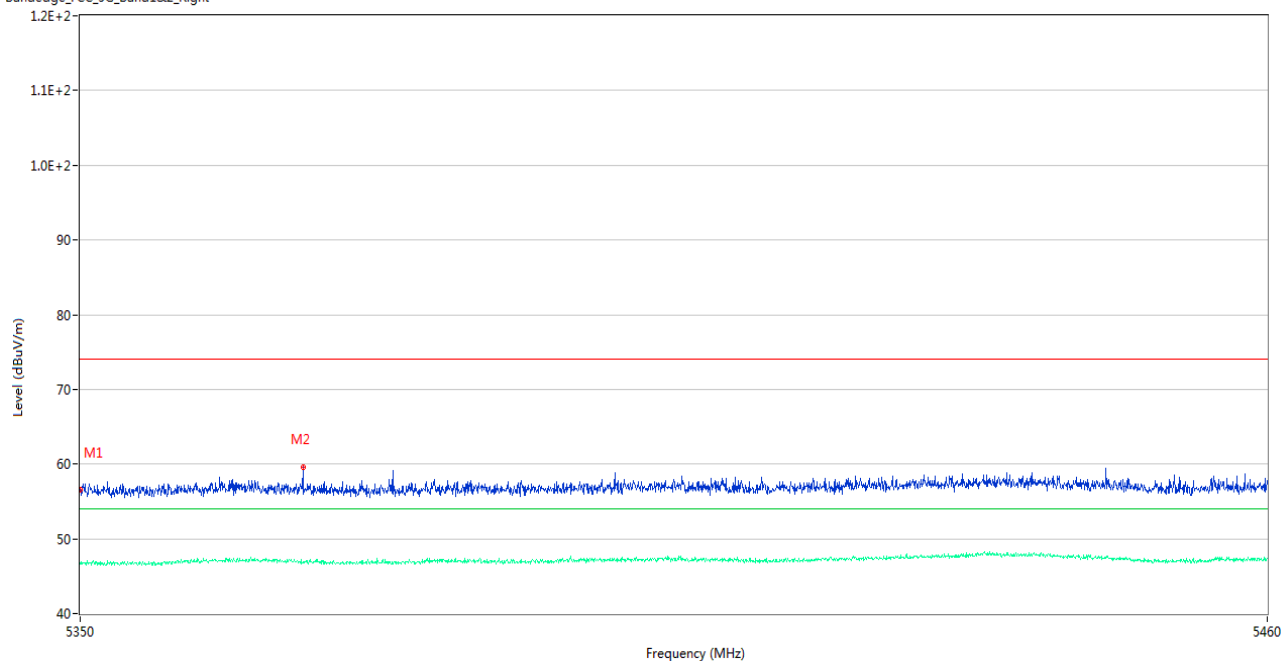
Bandedge_FCC_5G_Band1&2_Left



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5149.025	63.85	3.47	74.0	10.15	Peak	346.00	150	Vertical	Pass
1**	5149.025	48.70	3.47	54.0	5.30	AV	346.00	150	Vertical	Pass
2	5149.675	63.24	3.43	74.0	10.76	Peak	0.00	100	Vertical	Pass
2**	5149.675	48.65	3.43	54.0	5.35	AV	0.00	100	Vertical	Pass

U-NII-1 11ac20 High Channel

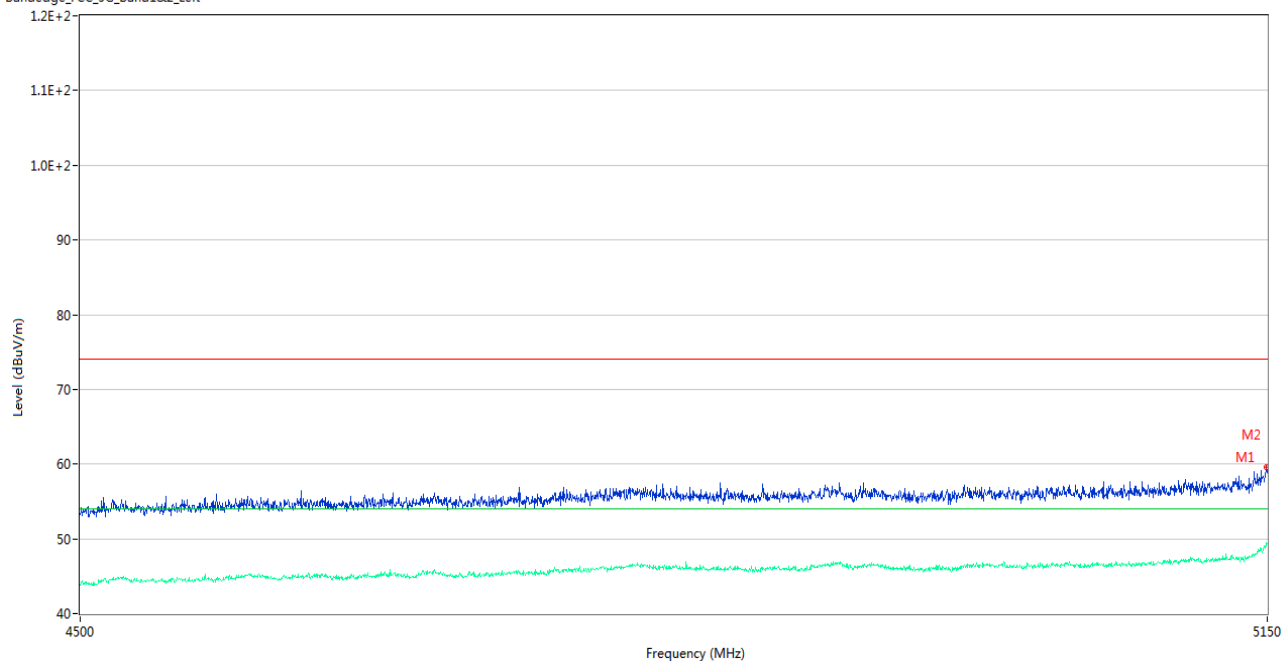
Bandedge_FCC_5G_Band1&2_Right



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5350.000	56.52	3.26	74.0	17.48	Peak	46.00	200	Vertical	Pass
1**	5350.000	46.57	3.26	54.0	7.43	AV	46.00	200	Vertical	Pass
2	5370.460	59.56	3.69	74.0	14.44	Peak	141.00	100	Vertical	Pass
2**	5370.460	46.91	3.69	54.0	7.09	AV	141.00	100	Vertical	Pass

U-NII-1 11ac40 Low Channel

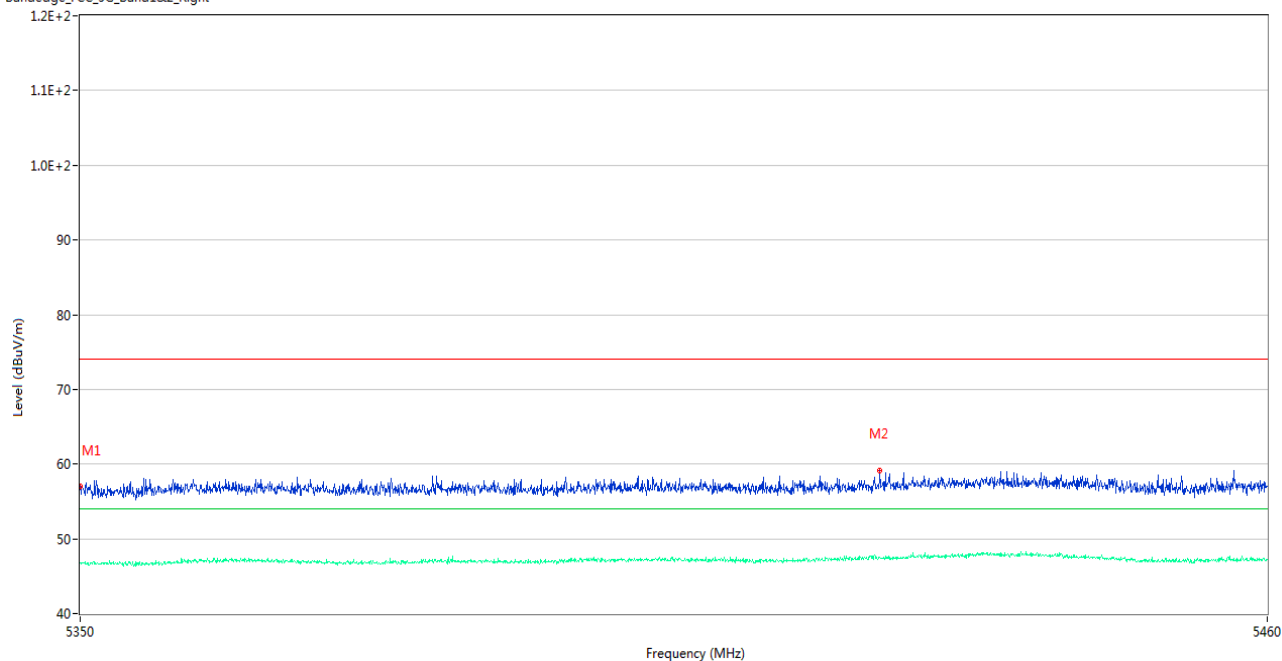
Bandedge_FCC_5G_Band1&2_Left



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5149.675	59.52	3.43	74.0	14.48	Peak	343.00	100	Vertical	Pass
1**	5149.675	49.51	3.43	54.0	4.49	AV	343.00	100	Vertical	Pass
2	5149.675	59.52	3.43	74.0	14.48	Peak	343.00	100	Vertical	Pass
2**	5149.675	49.51	3.43	54.0	4.49	AV	343.00	100	Vertical	Pass

U-NII-1 11ac40 High Channel

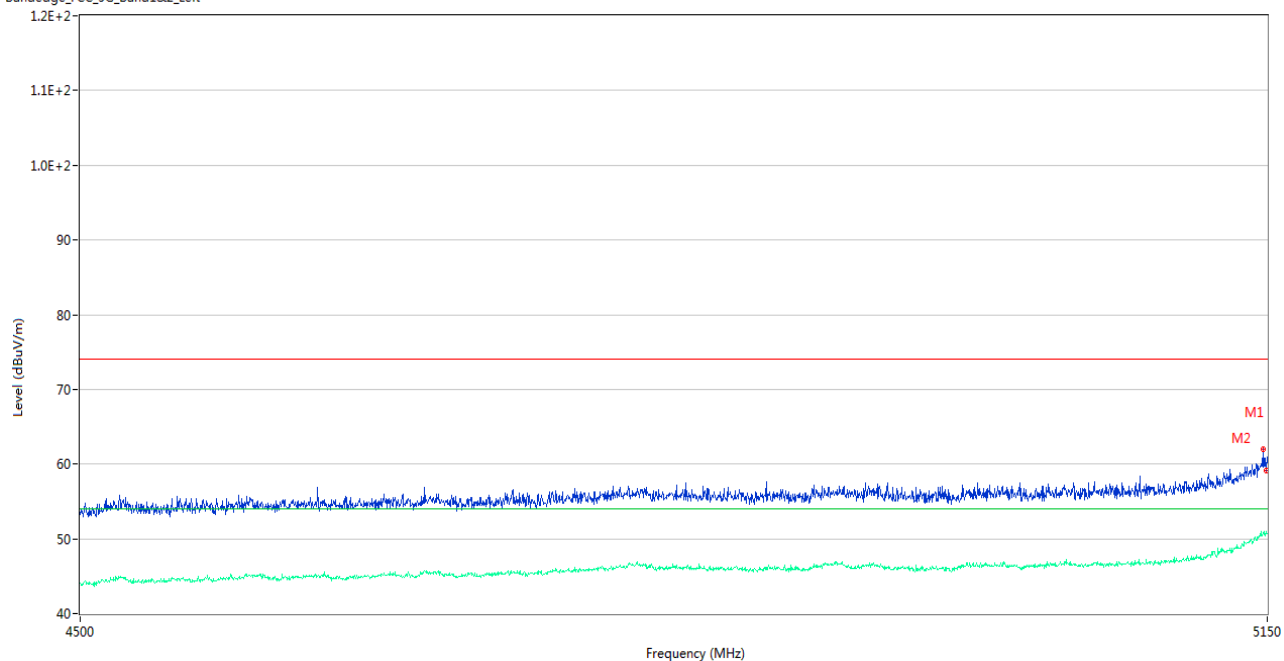
Bandedge_FCC_5G_Band1&2_Right



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5350.000	57.07	3.26	74.0	16.93	Peak	329.00	200	Vertical	Pass
1**	5350.000	46.75	3.26	54.0	7.25	AV	329.00	200	Vertical	Pass
2	5423.865	59.11	3.81	74.0	14.89	Peak	213.00	150	Vertical	Pass
2**	5423.865	47.59	3.81	54.0	6.41	AV	213.00	150	Vertical	Pass

U-NII-1 11ac80 Middle Channel

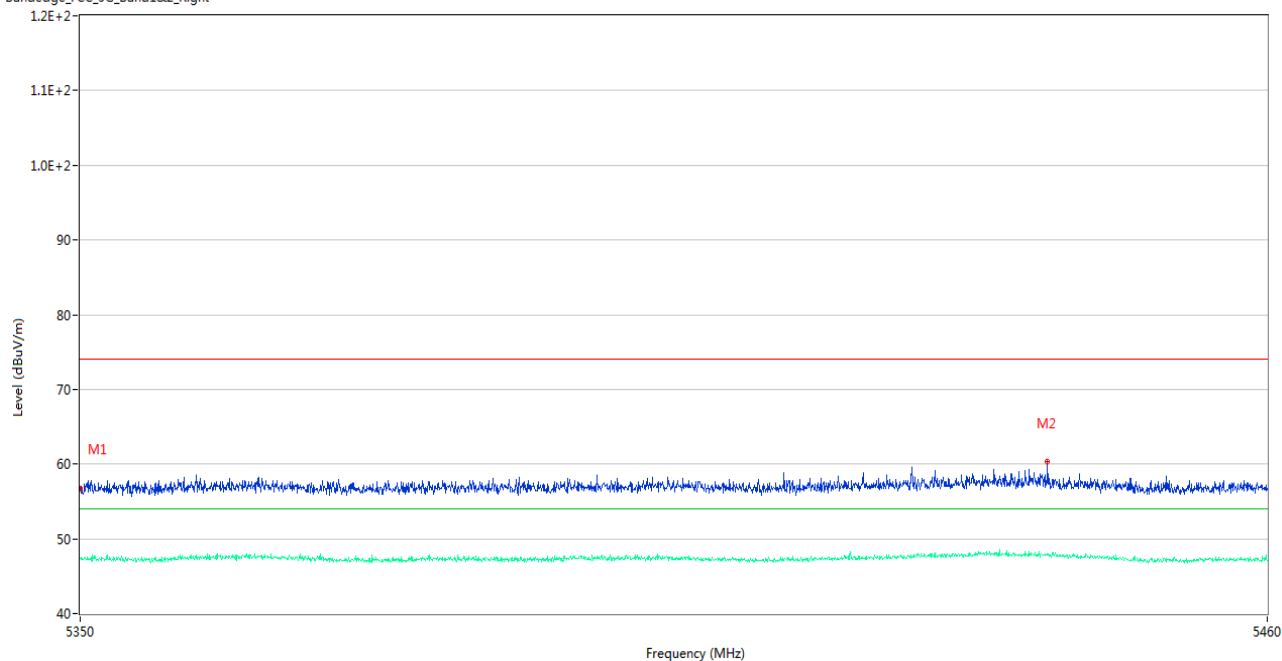
Bandedge_FCC_5G_Band1&2_Left



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5147.400	61.95	3.55	74.0	12.05	Peak	355.00	200	Vertical	Pass
1**	5147.400	50.86	3.55	54.0	3.14	AV	355.00	200	Vertical	Pass
2	5149.675	59.16	3.43	74.0	14.84	Peak	0.00	100	Vertical	Pass
2**	5149.675	50.94	3.43	54.0	3.06	AV	0.00	100	Vertical	Pass

U-NII-1 11ac80 Middle Channel

Bandedge_FCC_5G_Band1&2_Right



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5350.000	56.80	3.26	74.0	17.20	Peak	218.00	150	Vertical	Pass
1**	5350.000	47.32	3.26	54.0	6.68	AV	218.00	150	Vertical	Pass
2	5439.485	60.39	4.40	74.0	13.61	Peak	331.00	200	Vertical	Pass
2**	5439.485	48.05	4.40	54.0	5.95	AV	331.00	200	Vertical	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ2340426-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2340426-AW-3.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2340426-AI-3.PDF”.

Statement

1. The laboratory guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
2. The report without China inspection body and laboratory Mandatory Approval (CMA) mark has no effect of proving to the society.
3. For the report with CNAS mark or A2LA mark, the items marked with "☆" are not within the accredited scope.
4. This report is invalid if it is altered, without the signature of the testing and approval personnel, or without the "inspection and testing dedicated stamp" or test report stamp.
5. The test data and results are only valid for the tested samples provided by the customer.
6. This report shall not be partially reproduced without the written permission of the laboratory.
7. Any objection shall be raised to the laboratory within 30 days after receiving the report.

--END OF REPORT--