

# TEST REPORT

**Applicant:** Botslab, Inc.  
**Address:** 919 North Market Street, Suite 950, Wilmington,  
New Castle, Delaware 19801, USA  
**Equipment Type:** Botslab Indoor Cam 2 Pro  
**Model Name:** C221 (refer section 2.4)  
**Brand Name:** Botslab  
**FCC ID:** 2A22Z-C221  
**Test Standard:** 47 CFR Part 15 Subpart E  
(refer section 3.1)  
**Sample Arrival Date:** May 15, 2023  
**Test Date:** May 17, 2023 - May 23, 2023  
**Date of Issue:** Jun. 06, 2023

**ISSUED BY:**

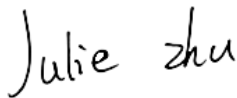
Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Julie Zhu

**Checked by:** Ye Hongji

**Approved by:** Liao Jianming

(Technical Director)



<b>Revision History</b>		
Version	Issue Date	Revisions
Rev. 01	Jun. 02, 2023	Initial Issue
Rev. 02	Jun. 07, 2023	Updated antenna gain of U-NII-3 in the Section 2.5.

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# 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	<input checked="" type="checkbox"/> Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	<input type="checkbox"/> 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.

## 2 PRODUCT INFORMATION

### 2.1 Applicant Information

Applicant	Botslab, Inc.
Address	919 North Market Street, Suite 950, Wilmington, New Castle, Delaware 19801, USA

### 2.2 Manufacturer Information

Manufacturer	Botslab, Inc.
Address	919 North Market Street, Suite 950, Wilmington, New Castle, Delaware 19801, USA

### 2.3 Factory Information

Factory	N/A
Address	N/A

### 2.4 General Description for Equipment under Test (EUT)

EUT Name	Botslab Indoor Cam 2 Pro
Model Name Under Test	C221
Series Model Name	C221lite, C221pro, C221s, C223, C223lite, C223pro, C223s
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in model name (this information provided by the customer).
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

## 2.5 Technical Information

Network and Wireless connectivity	WIFI 802.11a, 802.11b, 802.11g and 802.11n U-NII-1/3
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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 U-NII-3: 5725 MHz to 5850 MHz
Product Type	<input checked="" type="checkbox"/> Mobile <input type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Modulation technology	OFDM
Modulation Type	64QAM, 16QAM, BPSK, QPSK
Product Type	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
Channel Bandwidth	802.11a: 20 MHz 802.11n: 20 MHz, 40 MHz
Maximum Output Power	U-NII-1: 16.86 dBm U-NII-3: 16.43 dBm
Antenna System (eg., MIMO, Smart Antenna)	N/A
Categorization as Correlated or Completely Uncorrelated	N/A
Antenna Type	PCB Antenna
Antenna Gain	U-NII-1: 5150 MHz to 5250 MHz: 1.2 dBi U-NII-3: 5725 MHz to 5850 MHz: 1.5 dBi
About the Product	The equipment is Botslab Indoor Cam 2 Pro, intended for used with information technology equipment.

## 2.6 Channel List

20 MHz		40 MHz	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
<b>36</b>	<b>5180</b>	<b>38</b>	<b>5190</b>
40	5200	<b>46</b>	<b>5230</b>
<b>44</b>	<b>5220</b>	<b>151</b>	<b>5755</b>
<b>48</b>	<b>5240</b>	<b>159</b>	<b>5795</b>
<b>149</b>	<b>5745</b>		
153	5765		
<b>157</b>	<b>5785</b>		
161	5805		
<b>165</b>	<b>5825</b>		

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)

U-NII-1 (5150 - 5250 MHz)			U-NII-3 (5725 - 5850 MHz)		
Channel Number	Channel	Frequency (MHz)	Channel Number	Channel	Frequency (MHz)
36	Low	5180	149	Low	5745
44	Mid	5220	157	Mid	5785
48	High	5240	165	High	5825

For 802.11n(HT40)

U-NII-1 (5150 - 5250 MHz)			U-NII-3 (5725 - 5850 MHz)		
Channel Number	Channel	Frequency (MHz)	Channel Number	Channel	Frequency (MHz)
38	Low	5190	151	Low	5755
46	High	5230	159	High	5795

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	U-NII-3
				Channel	Channel
RF Output Power	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
Emission Bandwidth & 99% Occupied Bandwidth	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
6 dB bandwidth	11a	6	BPSK	N/A	165/157/149
	11n(20 MHz)	6.5		N/A	165/157/149
	11n(40 MHz)	13.5		N/A	159/151
Power Spectral Density	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
Radiated Spurious Emissions	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
Band Edge (Restricted-band)	11a	6	BPSK	48/36	165/149
	11n(20 MHz)	6.5		48/36	165/149
	11n(40 MHz)	13.5		46/38	159/151



### 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	KDB Publication 789033 D02v02r01	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
3	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

#### 3.2 Test Verdict

No.	Description	FCC Part No.	Test Result	Verdict
1	Antenna Requirement	15.203	--	Pass <sup>Note1</sup>
2	RF Output Power	15.407(a)	ANNEX A.1	Pass
3	Emission Bandwidth & 99% Occupied Bandwidth	15.407(a)	ANNEX A.2	Pass
4	6 dB bandwidth	15.407(e)	ANNEX A.3	Pass
5	Power Spectral Density	15.407(a)	ANNEX A.4	Pass
6	Conducted Emission	15.207	ANNEX A.5	Pass
7	Radiated Spurious Emissions and Band Edge (Restricted-band)	15.407(b)	ANNEX A.6	Pass
8	Receiver Spurious Emissions	--	--	N/A <sup>Note2</sup>

Note <sup>1</sup>: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.

Note <sup>2</sup>: 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.

Note <sup>3</sup>: Under all normal operating conditions specified in the user manual, frequency stability can keep radiation within the operating frequency band.

## 4 GENERAL TEST CONFIGURATIONS

### 4.1 Test Environments

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

Relative Humidity	52% to 61%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+21.0°C to +23.6°C
	LT (Low Temperature)	-10°C
	HT (High Temperature)	+40°C
Working Voltage of the EUT	NV (Normal Voltage)	5.0 V
	LV (Low Voltage)	4.5 V
	HV (High Voltage)	5.5 V

### 4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	KEYSIGHT	N9020A	MY50330200	2023.05.16	2024.05.15
Power Sensor	KEYSIGHT	U2063XA	MY58000251	2022.07.28	2023.07.27
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-40	101544	2022.12.28	2023.12.27
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
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2022.09.09	2023.09.08
LISN	SCHWARZBECK	NSLK 8127	8127-687	2022.06.01	2023.05.31
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.5m*3.1m*2.8m	112	2022.02.19	2025.02.18
Amplifier	COM-MV	LSCX_LNA1-12G-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%

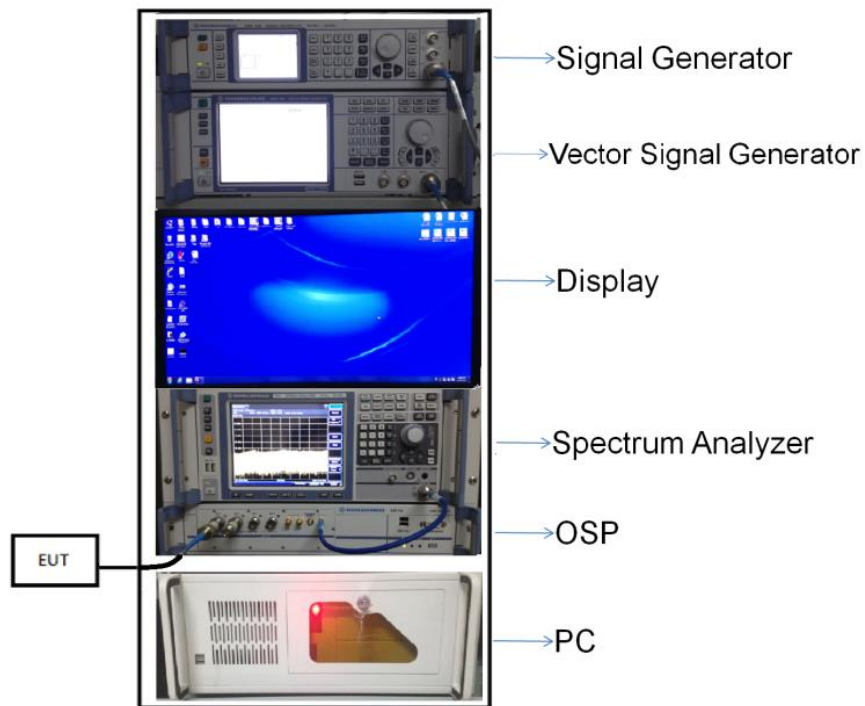
## 4.5 Description of Test Setup

### 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



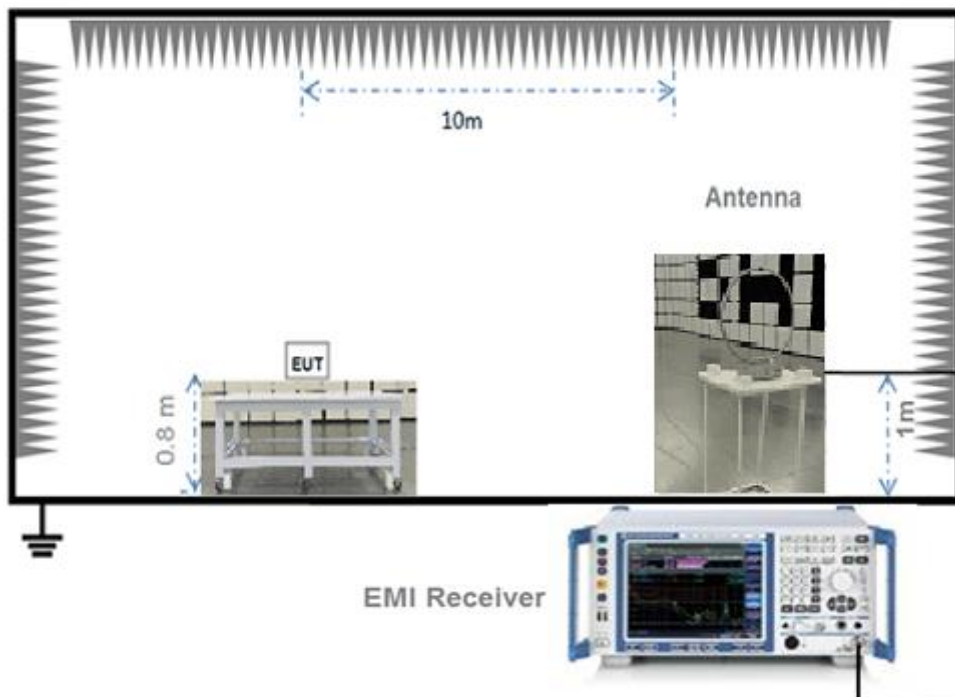
(Diagram 1)

### 4.5.2 For AC Power Supply Port Test



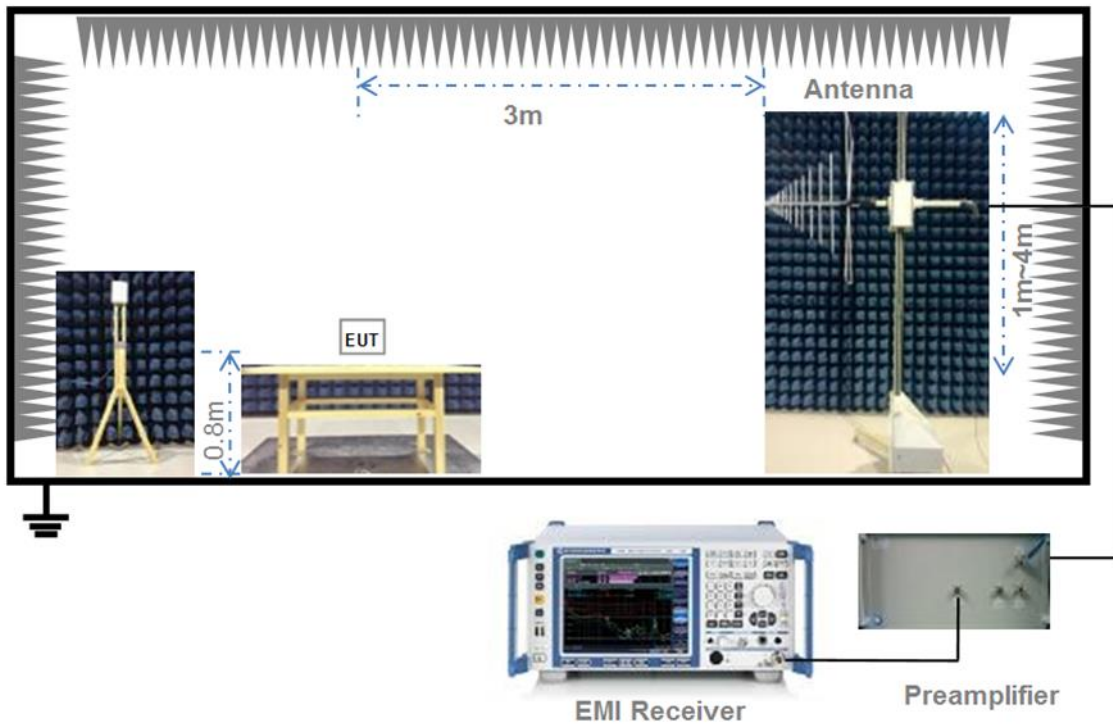
(Diagram 2)

### 4.5.3 For Radiated Test (Below 30 MHz)



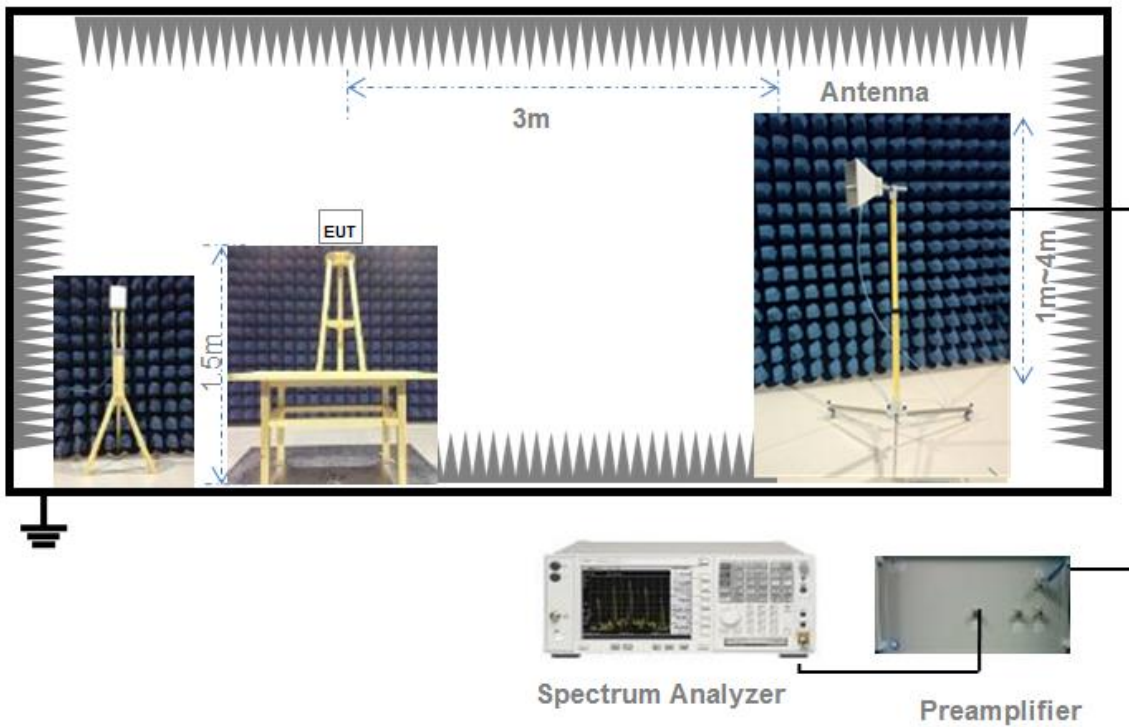
(Diagram 3)

#### 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.	

#### 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)

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

### 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

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 $\mu$ H/50 $\Omega$  line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB $\mu$ 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)

Frequency (MHz)	Field Strength (µV/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

Note<sup>1</sup>: The Limit for radiated test was performed according to FCC Part 15C

Note<sup>2</sup>: 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	<p>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.</p>

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  $\leq 30$  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 $\mu$ 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  $\geq 98$  percent) cannot be achieved and the duty cycle is constant (i.e., duty cycle variations are less than  $\pm 2$  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 ( $\geq 98$  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

Note: For FCC standard, if transmitting antennas of directional gain greater than 6 dBi are used, all band maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### Duty Cycle

Test Mode	On Time (ms)	On+Off time (ms)	Duty Cycle
11a	1.39	1.46	95.47%
11n (HT20)	5.08	5.15	98.62%
11n (HT40)	2.47	2.54	97.32%

#### Test Data

##### Conducted Power

U-NII-1 (5150 - 5250 MHz)					
Mode	Channel	Conducted Power (dBm)	Conducted Power (mW)	FCC Limit (mW)	Verdict
11a	CH36	15.60	36.31	250	Pass
11a	CH44	16.64	46.13	250	Pass
11a	CH48	16.41	43.75	250	Pass
11n (HT20)	CH36	15.92	39.08	250	Pass
11n (HT20)	CH44	16.53	44.98	250	Pass
11n (HT20)	CH48	16.33	42.95	250	Pass
11n (HT40)	CH38	5.23	3.33	250	Pass
11n (HT40)	CH46	16.86	48.53	250	Pass

U-NII-3 (5725 - 5850 MHz)					
Mode	Channel	Conducted Power (dBm)	Conducted Power (mW)	FCC Limit (mW)	Verdict
11a	CH149	15.82	38.19	1000	Pass
11a	CH157	16.02	39.99	1000	Pass
11a	CH165	16.22	41.88	1000	Pass
11n (HT20)	CH149	15.67	36.90	1000	Pass
11n (HT20)	CH157	15.92	39.08	1000	Pass
11n (HT20)	CH165	16.13	41.02	1000	Pass
11n (HT40)	CH151	16.28	42.46	1000	Pass
11n (HT40)	CH159	16.43	43.95	1000	Pass



## A.2 Emission Bandwidth & 99% Bandwidth

Note: Test plots please refer to the document "Annex No.: BL-SZ2350589-602 Data Part 1.pdf".

### Test Data

U-NII-1 (5150 - 5250 MHz)			
Mode	Channel	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11a	CH36	30.05	17.20
11a	CH44	34.39	18.15
11a	CH48	34.38	18.10
11n (HT20)	CH36	32.12	18.07
11n (HT20)	CH44	37.09	18.87
11n (HT20)	CH48	37.08	18.80
11n (HT40)	CH38	40.69	36.69
11n (HT40)	CH46	80.00	41.10

U-NII-3 (5725 - 5850 MHz)			
Mode	Channel	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11a	CH149	32.93	17.76
11a	CH157	33.30	17.92
11a	CH165	33.92	18.17
11n (HT20)	CH149	35.42	18.41
11n (HT20)	CH157	35.63	18.64
11n (HT20)	CH165	35.94	19.04
11n (HT40)	CH151	72.50	37.54
11n (HT40)	CH159	73.99	38.20

### A.3 6 dB Bandwidth

Note: Test plots please refer to the document "Annex No.: BL-SZ2350589-602 Data Part 2.pdf".

#### Test Data

U-NII-3 (5725 - 5850 MHz)				
Mode	Channel	6 dB Bandwidth (MHz)	Limit (kHz)	Verdict
11a	CH149	16.45	500.00	Pass
11a	CH157	16.45	500.00	Pass
11a	CH165	16.45	500.00	Pass
11n (HT20)	CH149	17.70	500.00	Pass
11n (HT20)	CH157	17.70	500.00	Pass
11n (HT20)	CH165	17.70	500.00	Pass
11n (HT40)	CH151	36.15	500.00	Pass
11n (HT40)	CH159	36.10	500.00	Pass

## A.4 Power Spectral Density

Note<sup>1</sup>: Test plots please refer to the document "Annex No.: BL-SZ2350589-602 Data Part 3.pdf".

Note<sup>2</sup>: The RBW used in U-NII-3 is 1 MHz, and the PSD factor is:  $10 \cdot \log(500 \text{ kHz/RBW}) = -3 \text{ dBm}$ .

### Test Data

U-NII-1 (5150 - 5250 MHz)				
Mode	Channel	PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
11a	CH36	4.03	11.00	Pass
11a	CH44	5.60	11.00	Pass
11a	CH48	5.40	11.00	Pass
11n (HT20)	CH36	4.18	11.00	Pass
11n (HT20)	CH44	5.16	11.00	Pass
11n (HT20)	CH48	5.03	11.00	Pass
11n (HT40)	CH38	-9.36	11.00	Pass
11n (HT40)	CH46	2.80	11.00	Pass

U-NII-3 (5725 - 5850 MHz)				
Mode	Channel	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Verdict
11a	CH149	1.45	30.00	Pass
11a	CH157	1.47	30.00	Pass
11a	CH165	1.96	30.00	Pass
11n (HT20)	CH149	1.17	30.00	Pass
11n (HT20)	CH157	1.12	30.00	Pass
11n (HT20)	CH165	1.63	30.00	Pass
11n (HT40)	CH151	-1.40	30.00	Pass
11n (HT40)	CH159	-1.23	30.00	Pass

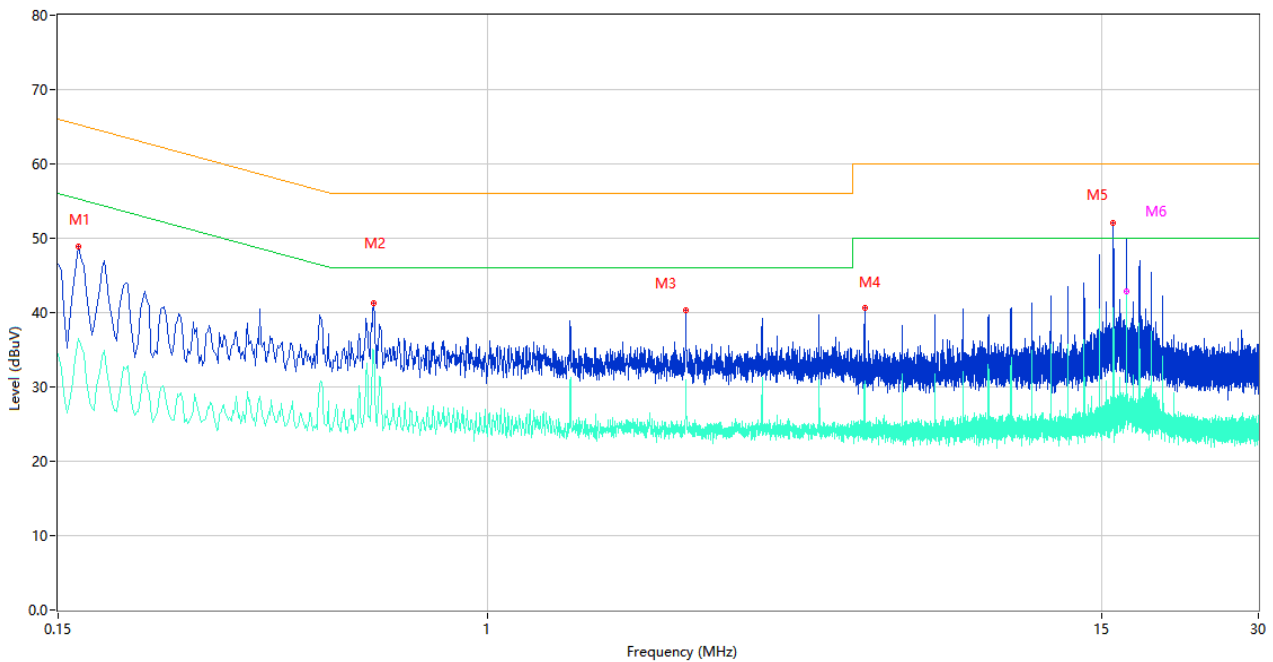
## A.5 Conducted Emissions

Note <sup>1</sup>: The EUT is working in the Normal link mode. All modes have been tested and normal link mode is worst.

Note <sup>2</sup>: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

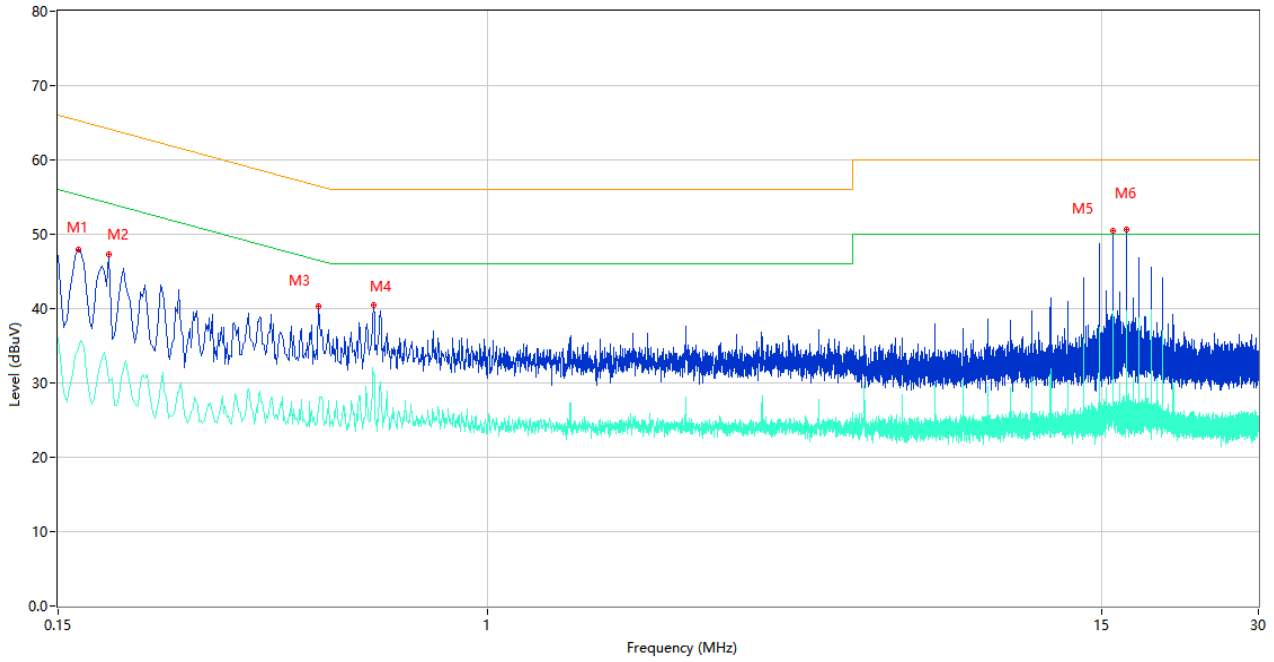
### Test Data and Plots

#### PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.164	48.96	10.08	65.26	16.30	Peak	L	Pass
1**	0.164	36.53	10.08	55.26	18.73	AV	L	Pass
2	0.604	41.21	10.34	56.00	14.79	Peak	L	Pass
2**	0.604	35.00	10.34	46.00	11.00	AV	L	Pass
3	2.398	40.29	10.38	56.00	15.71	Peak	L	Pass
3**	2.398	31.00	10.38	46.00	15.00	AV	L	Pass
4	5.274	40.67	10.41	60.00	19.33	Peak	L	Pass
4**	5.274	30.78	10.41	50.00	19.22	AV	L	Pass
5	15.822	52.09	10.27	60.00	7.91	Peak	L	Pass
5**	15.822	39.08	10.27	50.00	10.92	AV	L	Pass
6	16.790	49.78	10.32	60.00	10.22	Peak	L	Pass
6**	16.790	42.92	10.32	50.00	7.08	AV	L	Pass

PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.164	47.97	10.08	65.26	17.29	Peak	N	Pass
1**	0.164	34.82	10.08	55.26	20.44	AV	N	Pass
2	0.188	47.27	10.06	64.12	16.85	Peak	N	Pass
2**	0.188	30.19	10.06	54.12	23.93	AV	N	Pass
3	0.474	40.26	10.20	56.44	16.18	Peak	N	Pass
3**	0.474	26.11	10.20	46.44	20.33	AV	N	Pass
4	0.604	40.42	10.34	56.00	15.58	Peak	N	Pass
4**	0.604	31.10	10.34	46.00	14.90	AV	N	Pass
5	15.814	50.43	10.30	60.00	9.57	Peak	N	Pass
5**	15.814	35.74	10.30	50.00	14.26	AV	N	Pass
6	16.758	50.63	10.32	60.00	9.37	Peak	N	Pass
6**	16.758	25.15	10.32	50.00	24.85	AV	N	Pass

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

Note<sup>1</sup>: The symbol of "--" in the table which means not application.

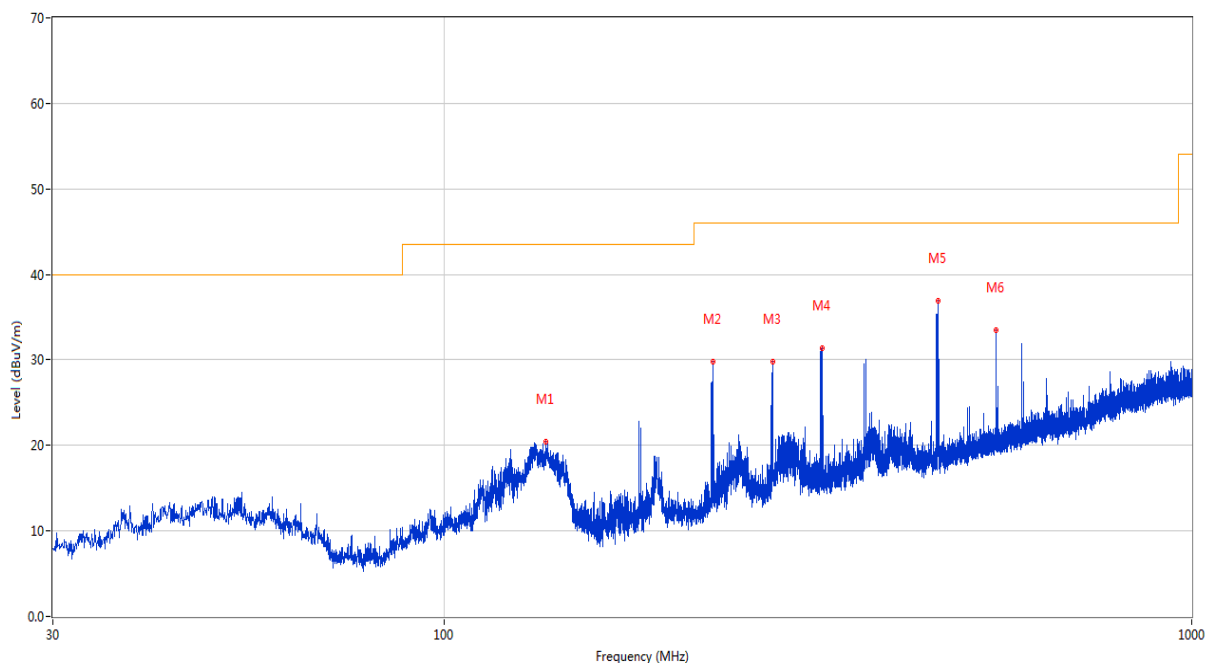
Note<sup>2</sup>: For the test data above 1 GHz, According the ANSI C63.4, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note<sup>3</sup>: 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.

Note<sup>4</sup>: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and normal link mode is worst.

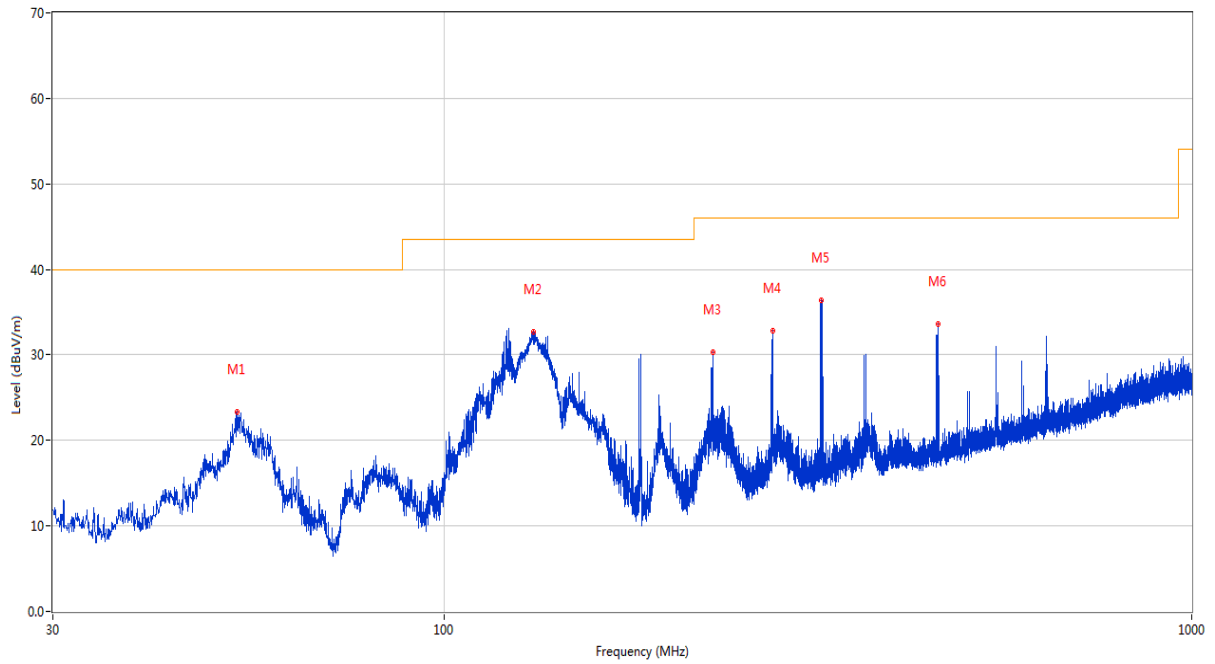
### Test Data and Plots

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	136.797	20.40	-27.59	43.5	23.10	Peak	35.40	200	Horizontal	Pass
2	229.190	29.79	-23.54	46.0	16.21	Peak	0.10	200	Horizontal	Pass
3	275.022	29.75	-22.33	46.0	16.25	Peak	238.40	100	Horizontal	Pass
4	320.854	31.32	-21.14	46.0	14.68	Peak	114.80	100	Horizontal	Pass
5	458.352	36.92	-17.83	46.0	9.08	Peak	147.20	100	Horizontal	Pass
6	547.204	33.48	-15.28	46.0	12.52	Peak	175.50	100	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	52.941	23.39	-23.01	40.0	16.61	Peak	227.60	100	Vertical	Pass
2	131.801	32.74	-27.24	43.5	10.76	Peak	10.90	100	Vertical	Pass
3	229.190	30.31	-23.54	46.0	15.69	Peak	351.70	100	Vertical	Pass
4	275.022	32.89	-22.33	46.0	13.11	Peak	125.60	200	Vertical	Pass
5	319.206	36.38	-21.24	46.0	9.62	Peak	138.10	100	Vertical	Pass
6	458.352	33.57	-17.83	46.0	12.43	Peak	32.20	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	1503.700	38.80	-17.41	74.0	35.20	Peak	340.00	200	Horizontal	Pass
1**	1503.700	30.27	-17.41	54.0	23.73	AV	340.00	200	Horizontal	Pass
2	4382.000	50.02	-4.62	74.0	23.98	Peak	162.00	100	Horizontal	Pass
2**	4382.000	40.92	-4.62	54.0	13.08	AV	162.00	100	Horizontal	Pass
3	5176.200	107.74	-2.70	--	--	Peak	121.00	100	Horizontal	N/A
3**	5176.200	100.09	-2.70	--	--	AV	121.00	100	Horizontal	N/A
4	7305.612	49.50	-2.70	74.0	24.50	Peak	348.00	100	Horizontal	Pass
4**	7305.612	39.75	-2.70	54.0	14.25	AV	348.00	100	Horizontal	Pass
5	12281.088	53.04	1.80	74.0	20.96	Peak	332.00	150	Horizontal	Pass
5**	12281.088	43.85	1.80	54.0	10.15	AV	332.00	150	Horizontal	Pass
6	15524.625	56.89	1.39	74.0	17.11	Peak	107.00	400	Horizontal	Pass
6**	15524.625	46.90	1.39	54.0	7.10	AV	107.00	400	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	1496.600	38.80	-17.39	74.0	35.20	Peak	63.00	300	Vertical	Pass
1**	1496.600	28.92	-17.39	54.0	25.08	AV	63.00	300	Vertical	Pass
2	3995.400	50.13	-5.24	74.0	23.87	Peak	121.00	300	Vertical	Pass
2**	3995.400	40.95	-5.24	54.0	13.05	AV	121.00	300	Vertical	Pass
3	5178.200	106.06	-2.65	--	--	Peak	100.00	100	Vertical	N/A
3**	5178.200	97.41	-2.65	--	--	AV	100.00	100	Vertical	N/A
4	7343.563	49.91	-3.31	74.0	24.09	Peak	170.00	300	Vertical	Pass
4**	7343.563	40.80	-3.31	54.0	13.20	AV	170.00	300	Vertical	Pass
5	11758.987	53.13	1.19	74.0	20.87	Peak	298.00	200	Vertical	Pass
5**	11758.987	42.99	1.19	54.0	11.01	AV	298.00	200	Vertical	Pass
6	16115.775	56.47	0.67	74.0	17.53	Peak	71.00	400	Vertical	Pass
6**	16115.775	46.41	0.67	54.0	7.59	AV	71.00	400	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	1501.100	38.84	-17.46	74.0	35.16	Peak	51.00	400	Horizontal	Pass
1**	1501.100	29.57	-17.46	54.0	24.43	AV	51.00	400	Horizontal	Pass
2	4388.200	49.73	-4.68	74.0	24.27	Peak	202.00	400	Horizontal	Pass
2**	4388.200	40.42	-4.68	54.0	13.58	AV	202.00	400	Horizontal	Pass
3	5214.000	108.46	-2.48	--	--	Peak	121.00	150	Horizontal	N/A
3**	5214.000	101.32	-2.48	--	--	AV	121.00	150	Horizontal	N/A
4	7334.938	49.61	-3.37	74.0	24.39	Peak	105.00	100	Horizontal	Pass
4**	7334.938	40.61	-3.37	54.0	13.39	AV	105.00	100	Horizontal	Pass
5	12693.650	53.80	0.83	74.0	20.20	Peak	88.00	150	Horizontal	Pass
5**	12693.650	43.30	0.83	54.0	10.70	AV	88.00	150	Horizontal	Pass
6	15654.038	56.93	1.19	74.0	17.07	Peak	127.00	100	Horizontal	Pass
6**	15654.038	48.47	1.19	54.0	5.53	AV	127.00	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	1497.300	40.06	-17.46	74.0	33.94	Peak	220.00	200	Vertical	Pass
1**	1497.300	29.24	-17.46	54.0	24.76	AV	220.00	200	Vertical	Pass
2	4382.200	49.48	-4.62	74.0	24.52	Peak	162.00	200	Vertical	Pass
2**	4382.200	41.15	-4.62	54.0	12.85	AV	162.00	200	Vertical	Pass
3	5216.200	105.58	-2.56	--	--	Peak	111.00	200	Vertical	N/A
3**	5216.200	98.45	-2.56	--	--	AV	111.00	200	Vertical	N/A
4	7318.550	49.79	-3.31	74.0	24.21	Peak	316.00	100	Vertical	Pass
4**	7318.550	39.60	-3.31	54.0	14.40	AV	316.00	100	Vertical	Pass
5	11667.562	52.81	0.20	74.0	21.19	Peak	234.00	150	Vertical	Pass
5**	11667.562	43.09	0.20	54.0	10.91	AV	234.00	150	Vertical	Pass
6	15817.575	56.17	1.97	74.0	17.83	Peak	275.00	100	Vertical	Pass
6**	15817.575	47.01	1.97	54.0	6.99	AV	275.00	100	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	1526.100	38.24	-17.44	74.0	35.76	Peak	341.00	300	Horizontal	Pass
1**	1526.100	28.94	-17.44	54.0	25.06	AV	341.00	300	Horizontal	Pass
2	4275.800	49.96	-4.44	74.0	24.04	Peak	285.00	100	Horizontal	Pass
2**	4275.800	40.53	-4.44	54.0	13.47	AV	285.00	100	Horizontal	Pass
3	5242.000	109.37	-2.19	--	--	Peak	120.00	100	Horizontal	N/A
3**	5242.000	101.53	-2.19	--	--	AV	120.00	100	Horizontal	N/A
4	7671.888	50.25	-2.27	74.0	23.75	Peak	332.00	100	Horizontal	Pass
4**	7671.888	40.82	-2.27	54.0	13.18	AV	332.00	100	Horizontal	Pass
5	12253.776	53.85	0.98	74.0	20.15	Peak	187.00	150	Horizontal	Pass
5**	12253.776	43.69	0.98	54.0	10.31	AV	187.00	150	Horizontal	Pass
6	16069.049	55.43	1.30	74.0	18.57	Peak	348.00	300	Horizontal	Pass
6**	16069.049	45.95	1.30	54.0	8.05	AV	348.00	300	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	1624.700	38.53	-17.59	74.0	35.47	Peak	240.00	300	Vertical	Pass
1**	1624.700	28.73	-17.59	54.0	25.27	AV	240.00	300	Vertical	Pass
2	4275.200	49.51	-4.43	74.0	24.49	Peak	0.00	200	Vertical	Pass
2**	4275.200	40.18	-4.43	54.0	13.82	AV	0.00	200	Vertical	Pass
3	5242.000	105.80	-2.19	--	--	Peak	81.00	200	Vertical	N/A
3**	5242.000	98.34	-2.19	--	--	AV	81.00	200	Vertical	N/A
4	7354.775	49.74	-3.44	74.0	24.26	Peak	0.00	400	Vertical	Pass
4**	7354.775	41.22	-3.44	54.0	12.78	AV	0.00	400	Vertical	Pass
5	12607.112	53.15	1.91	74.0	20.85	Peak	188.00	150	Vertical	Pass
5**	12607.112	43.86	1.91	54.0	10.14	AV	188.00	150	Vertical	Pass
6	16085.850	56.10	1.51	74.0	17.90	Peak	256.00	400	Vertical	Pass
6**	16085.850	45.86	1.51	54.0	8.14	AV	256.00	400	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	1495.300	38.80	-17.49	74.0	35.20	Peak	351.00	400	Horizontal	Pass
1**	1495.300	29.06	-17.49	54.0	24.94	AV	351.00	400	Horizontal	Pass
2	4395.400	49.58	-4.76	74.0	24.42	Peak	112.00	200	Horizontal	Pass
2**	4395.400	40.67	-4.76	54.0	13.33	AV	112.00	200	Horizontal	Pass
3	5177.200	107.45	-2.67	--	--	Peak	123.00	150	Horizontal	N/A
3**	5177.200	99.69	-2.67	--	--	AV	123.00	150	Horizontal	N/A
4	7333.788	49.76	-3.66	74.0	24.24	Peak	117.00	300	Horizontal	Pass
4**	7333.788	39.94	-3.66	54.0	14.06	AV	117.00	300	Horizontal	Pass
5	12253.200	53.18	0.97	74.0	20.82	Peak	19.00	200	Horizontal	Pass
5**	12253.200	43.49	0.97	54.0	10.51	AV	19.00	200	Horizontal	Pass
6	15544.838	57.07	0.65	74.0	16.93	Peak	126.00	300	Horizontal	Pass
6**	15544.838	47.87	0.65	54.0	6.13	AV	126.00	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	1542.000	38.47	-17.35	74.0	35.53	Peak	103.00	100	Vertical	Pass
1**	1542.000	28.93	-17.35	54.0	25.07	AV	103.00	100	Vertical	Pass
2	4212.200	49.16	-4.99	74.0	24.84	Peak	6.00	200	Vertical	Pass
2**	4212.200	39.86	-4.99	54.0	14.14	AV	6.00	200	Vertical	Pass
3	5175.600	105.26	-2.73	--	--	Peak	100.00	150	Vertical	N/A
3**	5175.600	97.28	-2.73	--	--	AV	100.00	150	Vertical	N/A
4	7313.087	49.43	-2.87	74.0	24.57	Peak	331.00	300	Vertical	Pass
4**	7313.087	40.15	-2.87	54.0	13.85	AV	331.00	300	Vertical	Pass
5	12262.400	53.09	1.18	74.0	20.91	Peak	360.00	200	Vertical	Pass
5**	12262.400	43.75	1.18	54.0	10.25	AV	360.00	200	Vertical	Pass
6	15841.988	55.77	1.42	74.0	18.23	Peak	16.00	400	Vertical	Pass
6**	15841.988	46.66	1.42	54.0	7.34	AV	16.00	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	1499.800	38.66	-17.49	74.0	35.34	Peak	360.00	400	Horizontal	Pass
1**	1499.800	28.88	-17.49	54.0	25.12	AV	360.00	400	Horizontal	Pass
2	4219.000	49.84	-5.08	74.0	24.16	Peak	193.00	100	Horizontal	Pass
2**	4219.000	39.90	-5.08	54.0	14.10	AV	193.00	100	Horizontal	Pass
3	5216.800	108.49	-2.59	--	--	Peak	120.00	150	Horizontal	N/A
3**	5216.800	100.98	-2.59	--	--	AV	120.00	150	Horizontal	N/A
4	7673.038	49.68	-2.36	74.0	24.32	Peak	267.00	200	Horizontal	Pass
4**	7673.038	41.12	-2.36	54.0	12.88	AV	267.00	200	Horizontal	Pass
5	12616.025	53.73	1.86	74.0	20.27	Peak	153.00	150	Horizontal	Pass
5**	12616.025	44.57	1.86	54.0	9.43	AV	153.00	150	Horizontal	Pass
6	15664.800	56.95	1.34	74.0	17.05	Peak	127.00	100	Horizontal	Pass
6**	15664.800	47.67	1.34	54.0	6.33	AV	127.00	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	1496.700	40.80	-17.40	74.0	33.20	Peak	65.00	100	Vertical	Pass
1**	1496.700	32.78	-17.40	54.0	21.22	AV	65.00	100	Vertical	Pass
2	4399.600	49.85	-4.87	74.0	24.15	Peak	163.00	200	Vertical	Pass
2**	4399.600	40.20	-4.87	54.0	13.80	AV	163.00	200	Vertical	Pass
3	5214.800	105.34	-2.48	--	--	Peak	111.00	200	Vertical	N/A
3**	5214.800	97.76	-2.48	--	--	AV	111.00	200	Vertical	N/A
4	7338.387	49.51	-3.35	74.0	24.49	Peak	188.00	200	Vertical	Pass
4**	7338.387	41.25	-3.35	54.0	12.75	AV	188.00	200	Vertical	Pass
5	11592.526	52.87	-0.19	74.0	21.13	Peak	10.00	200	Vertical	Pass
5**	11592.526	43.34	-0.19	54.0	10.66	AV	10.00	200	Vertical	Pass
6	15786.863	56.08	1.88	74.0	17.92	Peak	360.00	300	Vertical	Pass
6**	15786.863	46.10	1.88	54.0	7.90	AV	360.00	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	1448.100	38.73	-17.32	74.0	35.27	Peak	105.00	300	Horizontal	Pass
1**	1448.100	29.15	-17.32	54.0	24.85	AV	105.00	300	Horizontal	Pass
2	4203.800	49.74	-4.84	74.0	24.26	Peak	241.00	400	Horizontal	Pass
2**	4203.800	40.30	-4.84	54.0	13.70	AV	241.00	400	Horizontal	Pass
3	5245.600	108.37	-2.41	--	--	Peak	118.00	150	Horizontal	N/A
3**	5245.600	100.43	-2.41	--	--	AV	118.00	150	Horizontal	N/A
4	7352.475	49.32	-3.56	74.0	24.68	Peak	235.00	100	Horizontal	Pass
4**	7352.475	40.59	-3.56	54.0	13.41	AV	235.00	100	Horizontal	Pass
5	12611.713	53.99	1.89	74.0	20.01	Peak	172.00	200	Horizontal	Pass
5**	12611.713	43.45	1.89	54.0	10.55	AV	172.00	200	Horizontal	Pass
6	16128.375	55.66	0.95	74.0	18.34	Peak	292.00	300	Horizontal	Pass
6**	16128.375	46.67	0.95	54.0	7.33	AV	292.00	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	1447.500	38.75	-17.28	74.0	35.25	Peak	249.00	100	Vertical	Pass
1**	1447.500	29.52	-17.28	54.0	24.48	AV	249.00	100	Vertical	Pass
2	3997.800	50.14	-5.09	74.0	23.86	Peak	145.00	400	Vertical	Pass
2**	3997.800	39.51	-5.09	54.0	14.49	AV	145.00	400	Vertical	Pass
3	5243.600	104.91	-2.31	--	--	Peak	81.00	200	Vertical	N/A
3**	5243.600	97.83	-2.31	--	--	AV	81.00	200	Vertical	N/A
4	7463.450	49.65	-3.73	74.0	24.35	Peak	171.00	100	Vertical	Pass
4**	7463.450	39.87	-3.73	54.0	14.13	AV	171.00	100	Vertical	Pass
5	11927.463	53.15	1.54	74.0	20.85	Peak	283.00	200	Vertical	Pass
5**	11927.463	43.72	1.54	54.0	10.28	AV	283.00	200	Vertical	Pass
6	15835.688	56.05	1.45	74.0	17.95	Peak	239.00	300	Vertical	Pass
6**	15835.688	46.98	1.45	54.0	7.02	AV	239.00	300	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	1542.500	38.91	-17.33	74.0	35.09	Peak	230.00	200	Horizontal	Pass
1**	1542.500	29.68	-17.33	54.0	24.32	AV	230.00	200	Horizontal	Pass
2	4368.800	49.93	-4.56	74.0	24.07	Peak	0.00	300	Horizontal	Pass
2**	4368.800	40.20	-4.56	54.0	13.80	AV	0.00	300	Horizontal	Pass
3	5196.600	105.94	-2.52	--	--	Peak	121.00	150	Horizontal	N/A
3**	5196.600	98.23	-2.52	--	--	AV	121.00	150	Horizontal	N/A
4	7338.675	49.74	-3.36	74.0	24.26	Peak	220.00	300	Horizontal	Pass
4**	7338.675	41.81	-3.36	54.0	12.19	AV	220.00	300	Horizontal	Pass
5	12603.375	53.25	1.91	74.0	20.75	Peak	268.00	150	Horizontal	Pass
5**	12603.375	44.45	1.91	54.0	9.55	AV	268.00	150	Horizontal	Pass
6	15570.562	56.54	1.41	74.0	17.46	Peak	108.00	200	Horizontal	Pass
6**	15570.562	46.08	1.41	54.0	7.92	AV	108.00	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	1540.300	39.12	-17.38	74.0	34.88	Peak	228.00	400	Vertical	Pass
1**	1540.300	30.44	-17.38	54.0	23.56	AV	228.00	400	Vertical	Pass
2	4310.200	49.21	-4.84	74.0	24.79	Peak	299.00	400	Vertical	Pass
2**	4310.200	39.35	-4.84	54.0	14.65	AV	299.00	400	Vertical	Pass
3	5188.200	102.57	-2.65	--	--	Peak	111.00	200	Vertical	N/A
3**	5188.200	95.51	-2.65	--	--	AV	111.00	200	Vertical	N/A
4	7338.962	49.38	-3.37	74.0	24.62	Peak	332.00	400	Vertical	Pass
4**	7338.962	40.37	-3.37	54.0	13.63	AV	332.00	400	Vertical	Pass
5	12325.363	53.19	1.42	74.0	20.81	Peak	154.00	200	Vertical	Pass
5**	12325.363	43.90	1.42	54.0	10.10	AV	154.00	200	Vertical	Pass
6	15387.076	56.57	0.44	74.0	17.43	Peak	309.00	400	Vertical	Pass
6**	15387.076	46.42	0.44	54.0	7.58	AV	309.00	400	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	1560.400	38.55	-17.53	74.0	35.45	Peak	14.00	400	Horizontal	Pass
1**	1560.400	28.68	-17.53	54.0	25.32	AV	14.00	400	Horizontal	Pass
2	4378.400	49.44	-4.56	74.0	24.56	Peak	302.00	300	Horizontal	Pass
2**	4378.400	40.53	-4.56	54.0	13.47	AV	302.00	300	Horizontal	Pass
3	5223.000	105.63	-2.67	--	--	Peak	121.00	100	Horizontal	N/A
3**	5223.000	98.15	-2.67	--	--	AV	121.00	100	Horizontal	N/A
4	7336.088	49.61	-3.25	74.0	24.39	Peak	0.00	300	Horizontal	Pass
4**	7336.088	40.65	-3.25	54.0	13.35	AV	0.00	300	Horizontal	Pass
5	12313.000	53.06	1.39	74.0	20.94	Peak	300.00	150	Horizontal	Pass
5**	12313.000	43.42	1.39	54.0	10.58	AV	300.00	150	Horizontal	Pass
6	15682.912	55.65	1.50	74.0	18.35	Peak	90.00	200	Horizontal	Pass
6**	15682.912	45.65	1.50	54.0	8.35	AV	90.00	200	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	1619.700	39.09	-17.60	74.0	34.91	Peak	340.00	200	Vertical	Pass
1**	1619.700	29.94	-17.60	54.0	24.06	AV	340.00	200	Vertical	Pass
2	4386.600	49.71	-4.68	74.0	24.29	Peak	296.00	300	Vertical	Pass
2**	4386.600	40.16	-4.68	54.0	13.84	AV	296.00	300	Vertical	Pass
3	5241.200	102.27	-2.21	--	--	Peak	101.00	100	Vertical	N/A
3**	5241.200	94.26	-2.21	--	--	AV	101.00	100	Vertical	N/A
4	7339.250	49.65	-3.38	74.0	24.35	Peak	300.00	100	Vertical	Pass
4**	7339.250	40.85	-3.38	54.0	13.15	AV	300.00	100	Vertical	Pass
5	12323.637	53.09	1.42	74.0	20.91	Peak	267.00	200	Vertical	Pass
5**	12323.637	44.39	1.42	54.0	9.61	AV	267.00	200	Vertical	Pass
6	15839.625	56.31	1.45	74.0	17.69	Peak	128.00	100	Vertical	Pass
6**	15839.625	46.54	1.45	54.0	7.46	AV	128.00	100	Vertical	Pass

## 11a, U-NII-3, 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	1606.700	38.58	-17.90	74.0	35.42	Peak	183.00	200	Horizontal	Pass
1**	1606.700	28.87	-17.90	54.0	25.13	AV	183.00	200	Horizontal	Pass
2	4370.800	49.52	-4.25	74.0	24.48	Peak	123.00	100	Horizontal	Pass
2**	4370.800	40.22	-4.25	54.0	13.78	AV	123.00	100	Horizontal	Pass
3	5742.000	105.36	-1.93	--	--	Peak	102.00	150	Horizontal	N/A
3**	5742.000	98.33	-1.93	--	--	AV	102.00	150	Horizontal	N/A
4	7270.538	49.35	-2.61	74.0	24.65	Peak	201.00	100	Horizontal	Pass
4**	7270.538	39.50	-2.61	54.0	14.50	AV	201.00	100	Horizontal	Pass
5	12063.162	52.90	0.90	74.0	21.10	Peak	168.00	100	Horizontal	Pass
5**	12063.162	43.32	0.90	54.0	10.68	AV	168.00	100	Horizontal	Pass
6	16177.463	56.33	1.41	74.0	17.67	Peak	360.00	300	Horizontal	Pass
6**	16177.463	45.93	1.41	54.0	8.07	AV	360.00	300	Horizontal	Pass

## 11a, U-NII-3, 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	1496.300	39.91	-17.37	74.0	34.09	Peak	63.00	100	Vertical	Pass
1**	1496.300	29.77	-17.37	54.0	24.23	AV	63.00	100	Vertical	Pass
2	4372.000	49.51	-4.33	74.0	24.49	Peak	360.00	200	Vertical	Pass
2**	4372.000	40.04	-4.33	54.0	13.96	AV	360.00	200	Vertical	Pass
3	5750.600	105.22	-2.08	--	--	Peak	80.00	100	Vertical	N/A
3**	5750.600	98.15	-2.08	--	--	AV	80.00	100	Vertical	N/A
4	7265.937	49.70	-2.42	74.0	24.30	Peak	22.00	400	Vertical	Pass
4**	7265.937	39.73	-2.42	54.0	14.27	AV	22.00	400	Vertical	Pass
5	12244.287	53.11	1.02	74.0	20.89	Peak	283.00	200	Vertical	Pass
5**	12244.287	43.70	1.02	54.0	10.30	AV	283.00	200	Vertical	Pass
6	15840.412	55.54	1.44	74.0	18.46	Peak	360.00	400	Vertical	Pass
6**	15840.412	46.54	1.44	54.0	7.46	AV	360.00	400	Vertical	Pass



## 11a, U-NII-3, 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	1504.400	38.24	-17.38	74.0	35.76	Peak	63.00	200	Horizontal	Pass
1**	1504.400	28.67	-17.38	54.0	25.33	AV	63.00	200	Horizontal	Pass
2	4353.600	49.47	-3.75	74.0	24.53	Peak	225.00	100	Horizontal	Pass
2**	4353.600	40.21	-3.75	54.0	13.79	AV	225.00	100	Horizontal	Pass
3	5779.800	104.83	-1.69	--	--	Peak	111.00	150	Horizontal	N/A
3**	5779.800	97.26	-1.69	--	--	AV	111.00	150	Horizontal	N/A
4	7343.563	49.08	-3.31	74.0	24.92	Peak	69.00	300	Horizontal	Pass
4**	7343.563	41.25	-3.31	54.0	12.75	AV	69.00	300	Horizontal	Pass
5	12421.963	53.09	1.41	74.0	20.91	Peak	315.00	100	Horizontal	Pass
5**	12421.963	43.64	1.41	54.0	10.36	AV	315.00	100	Horizontal	Pass
6	16126.276	55.73	0.86	74.0	18.27	Peak	238.00	400	Horizontal	Pass
6**	16126.276	46.32	0.86	54.0	7.68	AV	238.00	400	Horizontal	Pass

## 11a, U-NII-3, 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	1436.200	39.11	-17.47	74.0	34.89	Peak	106.00	300	Vertical	Pass
1**	1436.200	29.05	-17.47	54.0	24.95	AV	106.00	300	Vertical	Pass
2	4344.000	49.65	-4.21	74.0	24.35	Peak	174.00	400	Vertical	Pass
2**	4344.000	39.97	-4.21	54.0	14.03	AV	174.00	400	Vertical	Pass
3	5780.200	105.26	-1.74	--	--	Peak	70.00	100	Vertical	N/A
3**	5780.200	96.72	-1.74	--	--	AV	70.00	100	Vertical	N/A
4	7335.513	50.05	-3.23	74.0	23.95	Peak	266.00	300	Vertical	Pass
4**	7335.513	40.30	-3.23	54.0	13.70	AV	266.00	300	Vertical	Pass
5	12614.587	53.54	1.88	74.0	20.46	Peak	281.00	100	Vertical	Pass
5**	12614.587	43.39	1.88	54.0	10.61	AV	281.00	100	Vertical	Pass
6	15806.287	56.25	2.24	74.0	17.75	Peak	0.00	400	Vertical	Pass
6**	15806.287	46.31	2.24	54.0	7.69	AV	0.00	400	Vertical	Pass

## 11a, U-NII-3, 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	1612.000	38.71	-17.70	74.0	35.29	Peak	91.00	200	Horizontal	Pass
1**	1612.000	28.80	-17.70	54.0	25.20	AV	91.00	200	Horizontal	Pass
2	4367.200	49.00	-4.23	74.0	25.00	Peak	144.00	400	Horizontal	Pass
2**	4367.200	40.05	-4.23	54.0	13.95	AV	144.00	400	Horizontal	Pass
3	5820.000	104.58	-2.32	--	--	Peak	112.00	150	Horizontal	N/A
3**	5820.000	95.83	-2.32	--	--	AV	112.00	150	Horizontal	N/A
4	7256.450	48.93	-3.04	74.0	25.07	Peak	315.00	100	Horizontal	Pass
4**	7256.450	40.20	-3.04	54.0	13.80	AV	315.00	100	Horizontal	Pass
5	12244.575	53.22	1.02	74.0	20.78	Peak	73.00	150	Horizontal	Pass
5**	12244.575	44.34	1.02	54.0	9.66	AV	73.00	150	Horizontal	Pass
6	16056.188	55.55	0.82	74.0	18.45	Peak	280.00	100	Horizontal	Pass
6**	16056.188	45.76	0.82	54.0	8.24	AV	280.00	100	Horizontal	Pass

## 11a, U-NII-3, 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	1529.200	38.45	-17.45	74.0	35.55	Peak	259.00	200	Vertical	Pass
1**	1529.200	29.31	-17.45	54.0	24.69	AV	259.00	200	Vertical	Pass
2	4357.200	49.24	-4.07	74.0	24.76	Peak	8.00	100	Vertical	Pass
2**	4357.200	40.00	-4.07	54.0	14.00	AV	8.00	100	Vertical	Pass
3	5830.800	102.94	-2.06	--	--	Peak	92.00	150	Vertical	N/A
3**	5830.800	95.09	-2.06	--	--	AV	92.00	150	Vertical	N/A
4	7287.788	49.36	-3.20	74.0	24.64	Peak	157.00	400	Vertical	Pass
4**	7287.788	40.69	-3.20	54.0	13.31	AV	157.00	400	Vertical	Pass
5	12280.800	52.82	1.80	74.0	21.18	Peak	62.00	100	Vertical	Pass
5**	12280.800	43.76	1.80	54.0	10.24	AV	62.00	100	Vertical	Pass
6	15802.613	56.16	2.30	74.0	17.84	Peak	90.00	400	Vertical	Pass
6**	15802.613	46.42	2.30	54.0	7.58	AV	90.00	400	Vertical	Pass

## 11n20, U-NII-3, 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	1528.300	38.84	-17.43	74.0	35.16	Peak	358.00	200	Horizontal	Pass
1**	1528.300	29.31	-17.43	54.0	24.69	AV	358.00	200	Horizontal	Pass
2	3830.000	50.04	-4.68	74.0	23.96	Peak	112.00	200	Horizontal	Pass
2**	3830.000	42.12	-4.68	54.0	11.88	AV	112.00	200	Horizontal	Pass
3	5748.800	105.54	-2.02	--	--	Peak	112.00	100	Horizontal	N/A
3**	5748.800	97.49	-2.02	--	--	AV	112.00	100	Horizontal	N/A
4	7623.300	49.82	-3.09	74.0	24.18	Peak	0.00	300	Horizontal	Pass
4**	7623.300	39.54	-3.09	54.0	14.46	AV	0.00	300	Horizontal	Pass
5	12609.412	52.86	1.89	74.0	21.14	Peak	0.00	150	Horizontal	Pass
5**	12609.412	44.38	1.89	54.0	9.62	AV	0.00	150	Horizontal	Pass
6	15842.513	55.39	1.41	74.0	18.61	Peak	291.00	400	Horizontal	Pass
6**	15842.513	46.86	1.41	54.0	7.14	AV	291.00	400	Horizontal	Pass

## 11n20, U-NII-3, 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	1560.000	38.56	-17.53	74.0	35.44	Peak	292.00	300	Vertical	Pass
1**	1560.000	28.68	-17.53	54.0	25.32	AV	292.00	300	Vertical	Pass
2	4366.600	49.48	-4.22	74.0	24.52	Peak	91.00	400	Vertical	Pass
2**	4366.600	41.04	-4.22	54.0	12.96	AV	91.00	400	Vertical	Pass
3	5748.400	105.28	-2.00	--	--	Peak	91.00	100	Vertical	N/A
3**	5748.400	97.58	-2.00	--	--	AV	91.00	100	Vertical	N/A
4	7268.525	49.76	-2.54	74.0	24.24	Peak	314.00	300	Vertical	Pass
4**	7268.525	39.92	-2.54	54.0	14.08	AV	314.00	300	Vertical	Pass
5	12045.912	52.85	0.94	74.0	21.15	Peak	330.00	200	Vertical	Pass
5**	12045.912	44.08	0.94	54.0	9.92	AV	330.00	200	Vertical	Pass
6	16175.362	55.72	1.34	74.0	18.28	Peak	275.00	100	Vertical	Pass
6**	16175.362	46.23	1.34	54.0	7.77	AV	275.00	100	Vertical	Pass

## 11n20, U-NII-3, 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	1551.300	38.73	-17.45	74.0	35.27	Peak	170.00	100	Horizontal	Pass
1**	1551.300	28.44	-17.45	54.0	25.56	AV	170.00	100	Horizontal	Pass
2	4351.800	49.63	-3.61	74.0	24.37	Peak	226.00	200	Horizontal	Pass
2**	4351.800	40.49	-3.61	54.0	13.51	AV	226.00	200	Horizontal	Pass
3	5778.000	104.83	-1.41	--	--	Peak	93.00	150	Horizontal	N/A
3**	5778.000	97.04	-1.41	--	--	AV	93.00	150	Horizontal	N/A
4	7333.212	49.39	-3.76	74.0	24.61	Peak	220.00	100	Horizontal	Pass
4**	7333.212	39.49	-3.76	54.0	14.51	AV	220.00	100	Horizontal	Pass
5	12450.425	53.47	1.89	74.0	20.53	Peak	360.00	200	Horizontal	Pass
5**	12450.425	44.62	1.89	54.0	9.38	AV	360.00	200	Horizontal	Pass
6	15849.338	55.56	1.34	74.0	18.44	Peak	182.00	300	Horizontal	Pass
6**	15849.338	47.01	1.34	54.0	6.99	AV	182.00	300	Horizontal	Pass

## 11n20, U-NII-3, 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	1554.600	38.87	-17.34	74.0	35.13	Peak	107.00	400	Vertical	Pass
1**	1554.600	28.36	-17.34	54.0	25.64	AV	107.00	400	Vertical	Pass
2	4294.200	48.87	-5.37	74.0	25.13	Peak	187.00	200	Vertical	Pass
2**	4294.200	39.14	-5.37	54.0	14.86	AV	187.00	200	Vertical	Pass
3	5780.400	103.98	-1.75	--	--	Peak	72.00	200	Vertical	N/A
3**	5780.400	96.47	-1.75	--	--	AV	72.00	200	Vertical	N/A
4	7340.687	48.85	-3.41	74.0	25.15	Peak	76.00	100	Vertical	Pass
4**	7340.687	40.01	-3.41	54.0	13.99	AV	76.00	100	Vertical	Pass
5	12281.950	52.98	1.79	74.0	21.02	Peak	268.00	100	Vertical	Pass
5**	12281.950	44.07	1.79	54.0	9.93	AV	268.00	100	Vertical	Pass
6	16149.112	56.03	1.00	74.0	17.97	Peak	180.00	200	Vertical	Pass
6**	16149.112	46.22	1.00	54.0	7.78	AV	180.00	200	Vertical	Pass

## 11n20, U-NII-3, 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	1517.600	38.17	-17.50	74.0	35.83	Peak	67.00	200	Horizontal	Pass
1**	1517.600	29.50	-17.50	54.0	24.50	AV	67.00	200	Horizontal	Pass
2	4352.600	49.90	-3.64	74.0	24.10	Peak	147.00	300	Horizontal	Pass
2**	4352.600	40.14	-3.64	54.0	13.86	AV	147.00	300	Horizontal	Pass
3	5821.000	103.43	-2.28	--	--	Peak	105.00	200	Horizontal	N/A
3**	5821.000	96.08	-2.28	--	--	AV	105.00	200	Horizontal	N/A
4	7322.288	50.01	-3.56	74.0	23.99	Peak	205.00	300	Horizontal	Pass
4**	7322.288	39.67	-3.56	54.0	14.33	AV	205.00	300	Horizontal	Pass
5	12602.512	52.58	1.91	74.0	21.42	Peak	12.00	150	Horizontal	Pass
5**	12602.512	44.19	1.91	54.0	9.81	AV	12.00	150	Horizontal	Pass
6	15857.475	55.37	1.06	74.0	18.63	Peak	90.00	100	Horizontal	Pass
6**	15857.475	46.11	1.06	54.0	7.89	AV	90.00	100	Horizontal	Pass

## 11n20, U-NII-3, 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	1493.100	38.75	-17.58	74.0	35.25	Peak	131.00	200	Vertical	Pass
1**	1493.100	29.69	-17.58	54.0	24.31	AV	131.00	200	Vertical	Pass
2	4384.600	49.17	-4.66	74.0	24.83	Peak	267.00	300	Vertical	Pass
2**	4384.600	39.98	-4.66	54.0	14.02	AV	267.00	300	Vertical	Pass
3	5819.400	103.52	-2.34	--	--	Peak	73.00	100	Vertical	N/A
3**	5819.400	95.87	-2.34	--	--	AV	73.00	100	Vertical	N/A
4	7320.275	49.58	-3.40	74.0	24.42	Peak	360.00	300	Vertical	Pass
4**	7320.275	40.05	-3.40	54.0	13.95	AV	360.00	300	Vertical	Pass
5	12267.575	52.72	1.37	74.0	21.28	Peak	219.00	100	Vertical	Pass
5**	12267.575	43.90	1.37	54.0	10.10	AV	219.00	100	Vertical	Pass
6	15827.025	55.71	1.58	74.0	18.29	Peak	327.00	100	Vertical	Pass
6**	15827.025	46.49	1.58	54.0	7.51	AV	327.00	100	Vertical	Pass

## 11n40, U-NII-3, 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	1572.200	38.57	-17.62	74.0	35.43	Peak	288.00	200	Horizontal	Pass
1**	1572.200	28.94	-17.62	54.0	25.06	AV	288.00	200	Horizontal	Pass
2	4390.000	49.71	-4.82	74.0	24.29	Peak	196.00	300	Horizontal	Pass
2**	4390.000	39.71	-4.82	54.0	14.29	AV	196.00	300	Horizontal	Pass
3	5757.200	103.09	-2.00	--	--	Peak	101.00	100	Horizontal	N/A
3**	5757.200	94.97	-2.00	--	--	AV	101.00	100	Horizontal	N/A
4	7362.537	49.66	-3.72	74.0	24.34	Peak	285.00	100	Horizontal	Pass
4**	7362.537	39.66	-3.72	54.0	14.34	AV	285.00	100	Horizontal	Pass
5	12288.562	53.10	1.70	74.0	20.90	Peak	300.00	150	Horizontal	Pass
5**	12288.562	44.44	1.70	54.0	9.56	AV	300.00	150	Horizontal	Pass
6	15844.875	56.03	1.37	74.0	17.97	Peak	121.00	100	Horizontal	Pass
6**	15844.875	46.52	1.37	54.0	7.48	AV	121.00	100	Horizontal	Pass

## 11n40, U-NII-3, 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	1498.300	38.91	-17.56	74.0	35.09	Peak	68.00	200	Vertical	Pass
1**	1498.300	28.84	-17.56	54.0	25.16	AV	68.00	200	Vertical	Pass
2	4348.600	49.57	-3.85	74.0	24.43	Peak	34.00	200	Vertical	Pass
2**	4348.600	40.27	-3.85	54.0	13.73	AV	34.00	200	Vertical	Pass
3	5759.600	102.20	-2.02	--	--	Peak	76.00	150	Vertical	N/A
3**	5759.600	94.96	-2.02	--	--	AV	76.00	150	Vertical	N/A
4	7315.962	48.86	-3.16	74.0	25.14	Peak	172.00	300	Vertical	Pass
4**	7315.962	39.63	-3.16	54.0	14.37	AV	172.00	300	Vertical	Pass
5	12608.550	52.99	1.90	74.0	21.01	Peak	77.00	200	Vertical	Pass
5**	12608.550	43.00	1.90	54.0	11.00	AV	77.00	200	Vertical	Pass
6	15804.713	56.06	2.27	74.0	17.94	Peak	88.00	300	Vertical	Pass
6**	15804.713	46.63	2.27	54.0	7.37	AV	88.00	300	Vertical	Pass

## 11n40, U-NII-3, 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	1552.200	38.41	-17.40	74.0	35.59	Peak	198.00	300	Horizontal	Pass
1**	1552.200	28.86	-17.40	54.0	25.14	AV	198.00	300	Horizontal	Pass
2	4357.400	50.10	-4.09	74.0	23.90	Peak	246.00	100	Horizontal	Pass
2**	4357.400	39.66	-4.09	54.0	14.34	AV	246.00	100	Horizontal	Pass
3	5798.800	101.49	-2.62	--	--	Peak	102.00	200	Horizontal	N/A
3**	5798.800	94.65	-2.62	--	--	AV	102.00	200	Horizontal	N/A
4	7337.238	49.46	-3.30	74.0	24.54	Peak	220.00	100	Horizontal	Pass
4**	7337.238	39.48	-3.30	54.0	14.52	AV	220.00	100	Horizontal	Pass
5	11940.975	52.91	1.66	74.0	21.09	Peak	285.00	100	Horizontal	Pass
5**	11940.975	43.61	1.66	54.0	10.39	AV	285.00	100	Horizontal	Pass
6	16037.812	56.25	0.78	74.0	17.75	Peak	158.00	300	Horizontal	Pass
6**	16037.812	46.46	0.78	54.0	7.54	AV	158.00	300	Horizontal	Pass

## 11n40, U-NII-3, 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	1609.000	38.36	-17.69	74.0	35.64	Peak	222.00	400	Vertical	Pass
1**	1609.000	29.21	-17.69	54.0	24.79	AV	222.00	400	Vertical	Pass
2	4200.600	49.13	-4.89	74.0	24.87	Peak	226.00	200	Vertical	Pass
2**	4200.600	40.86	-4.89	54.0	13.14	AV	226.00	200	Vertical	Pass
3	5788.200	100.50	-2.48	--	--	Peak	66.00	150	Vertical	N/A
3**	5788.200	93.05	-2.48	--	--	AV	66.00	150	Vertical	N/A
4	7348.163	48.92	-3.15	74.0	25.08	Peak	189.00	400	Vertical	Pass
4**	7348.163	40.33	-3.15	54.0	13.67	AV	189.00	400	Vertical	Pass
5	12349.513	52.91	1.23	74.0	21.09	Peak	238.00	200	Vertical	Pass
5**	12349.513	43.00	1.23	54.0	11.00	AV	238.00	200	Vertical	Pass
6	15842.250	56.82	1.41	74.0	17.18	Peak	199.00	400	Vertical	Pass
6**	15842.250	46.82	1.41	54.0	7.18	AV	199.00	400	Vertical	Pass

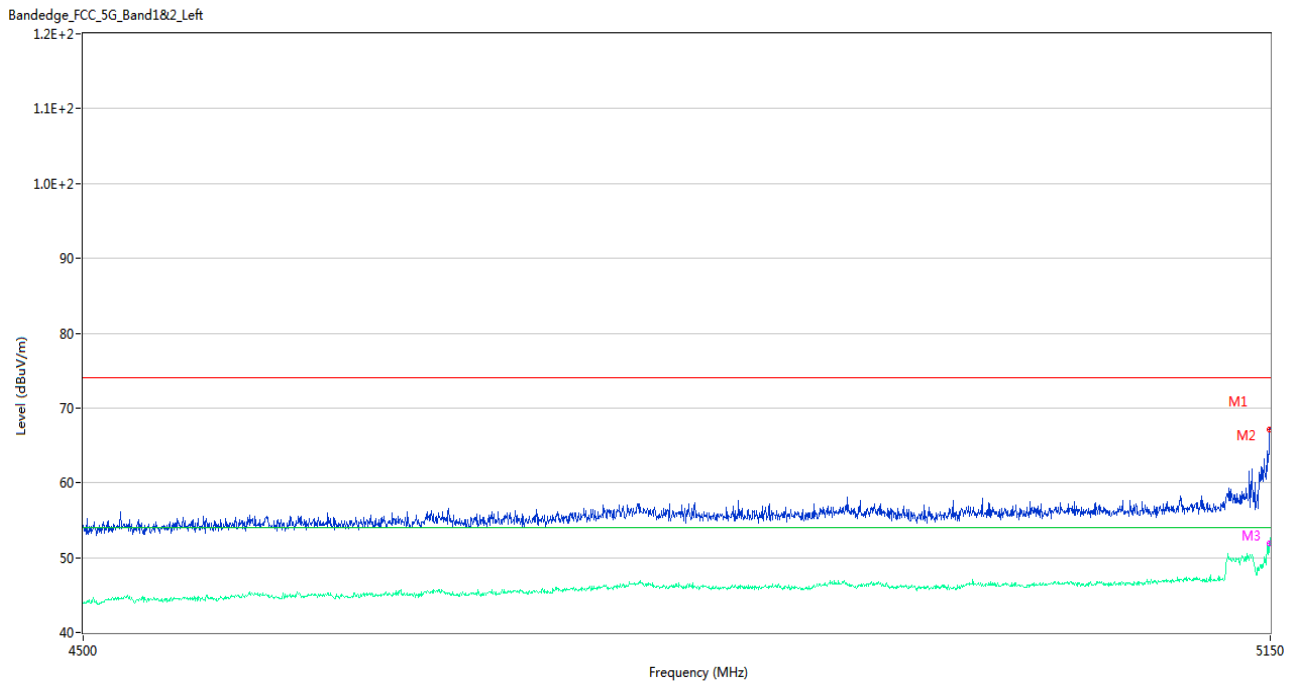
### A.6.2 Band Edge (Restricted-band)

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
U-NII-3	802.11a	Low	Pass
		High	Pass
	802.11n(HT20)	Low	Pass
		High	Pass
	802.11n(HT40)	Low	Pass
		High	Pass



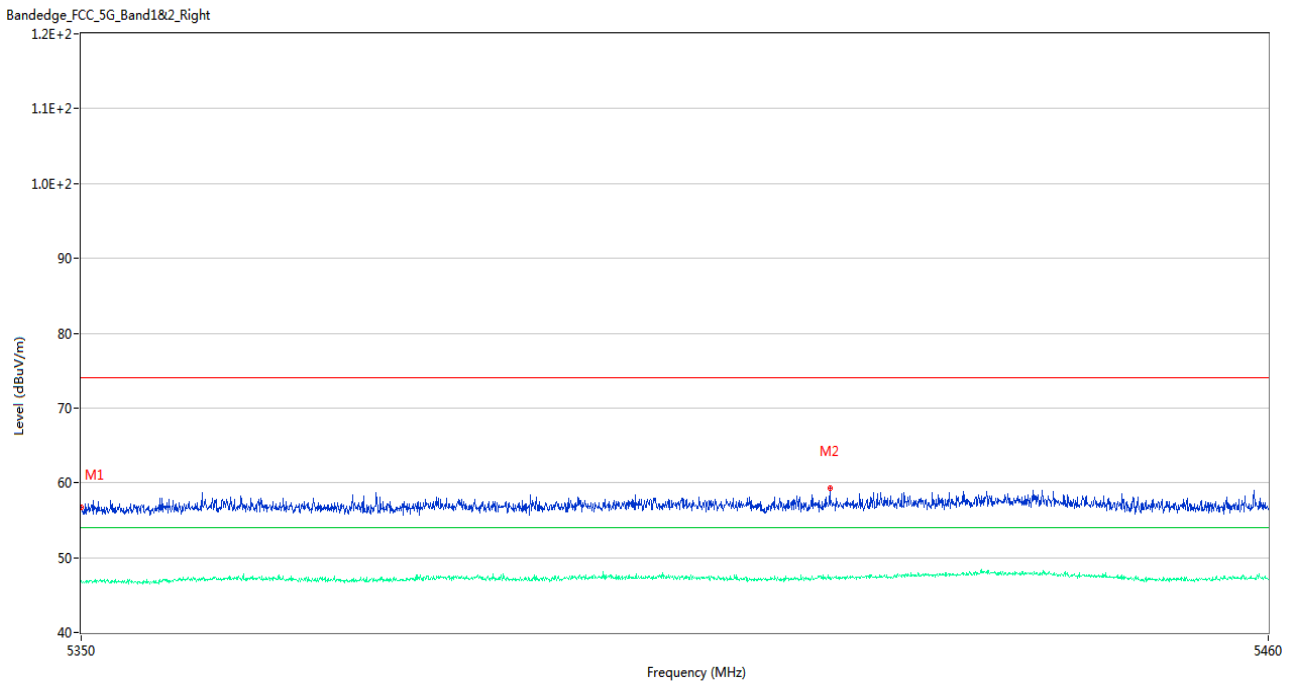
Test Data and Plots

U-NII-1 11a Low Channel



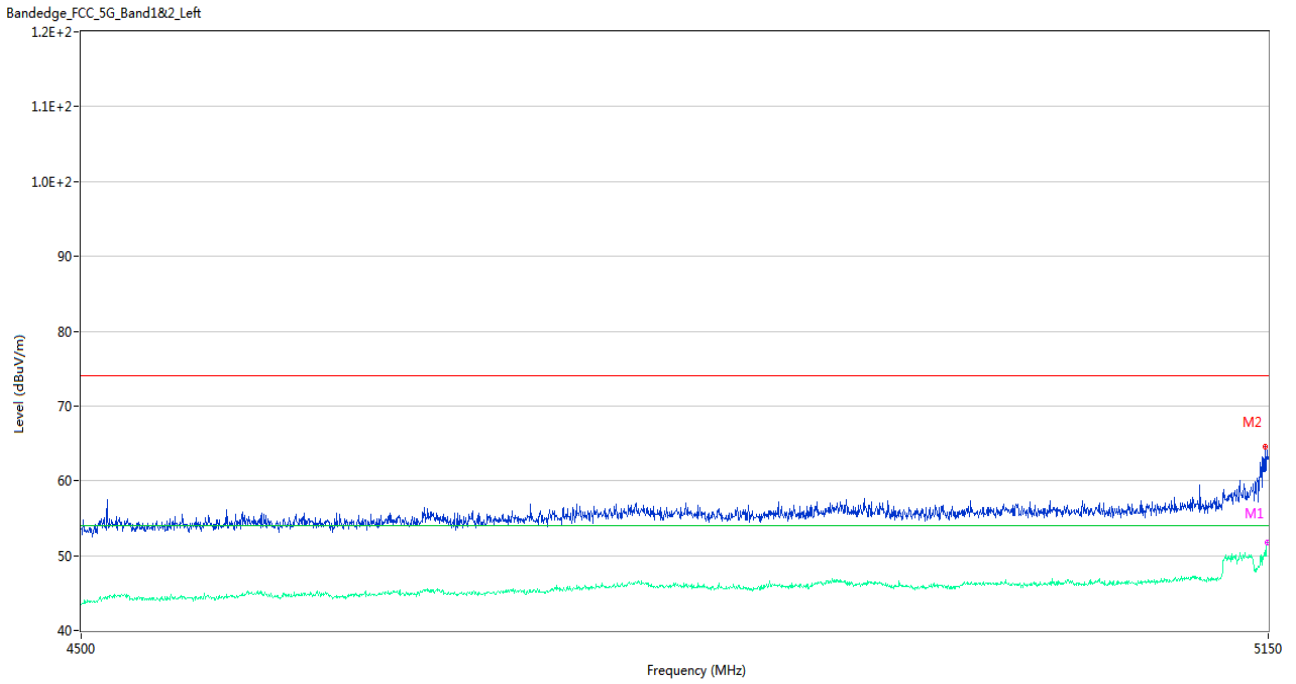
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5149.675	67.14	3.43	74.0	6.86	Peak	108.00	150	Horizontal	Pass
1**	5149.675	50.72	3.43	54.0	3.28	AV	108.00	150	Horizontal	Pass
2	5149.675	67.14	3.43	74.0	6.86	Peak	108.00	150	Horizontal	Pass
2**	5149.675	50.72	3.43	54.0	3.28	AV	108.00	150	Horizontal	Pass
3	5149.350	64.20	3.45	74.0	9.80	Peak	115.00	150	Horizontal	Pass
3**	5149.350	51.90	3.45	54.0	2.10	AV	115.00	150	Horizontal	Pass

U-NII-1 11a High Channel



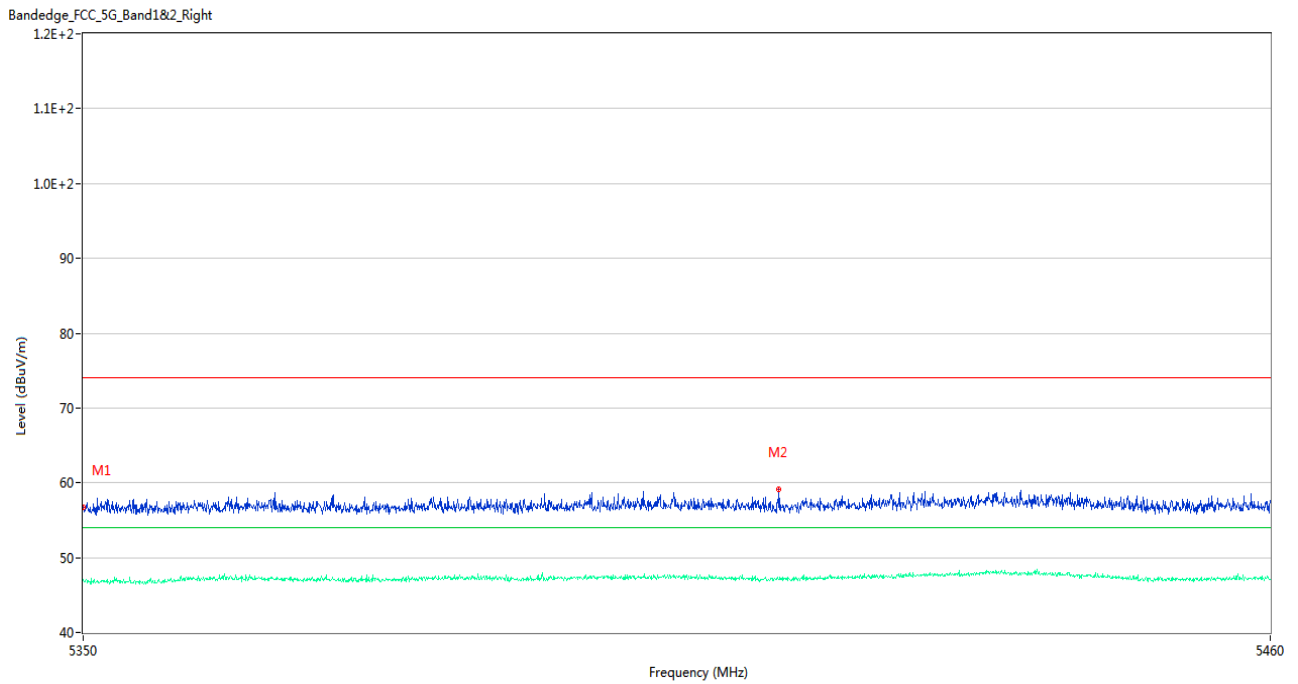
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5350.000	56.74	3.26	74.0	17.26	Peak	123.00	100	Horizontal	Pass
1**	5350.000	46.88	3.26	54.0	7.12	AV	123.00	100	Horizontal	Pass
2	5419.135	59.31	3.68	74.0	14.69	Peak	0.00	150	Horizontal	Pass
2**	5419.135	47.01	3.68	54.0	6.99	AV	0.00	150	Horizontal	Pass

U-NII-1 11n20 Low Channel



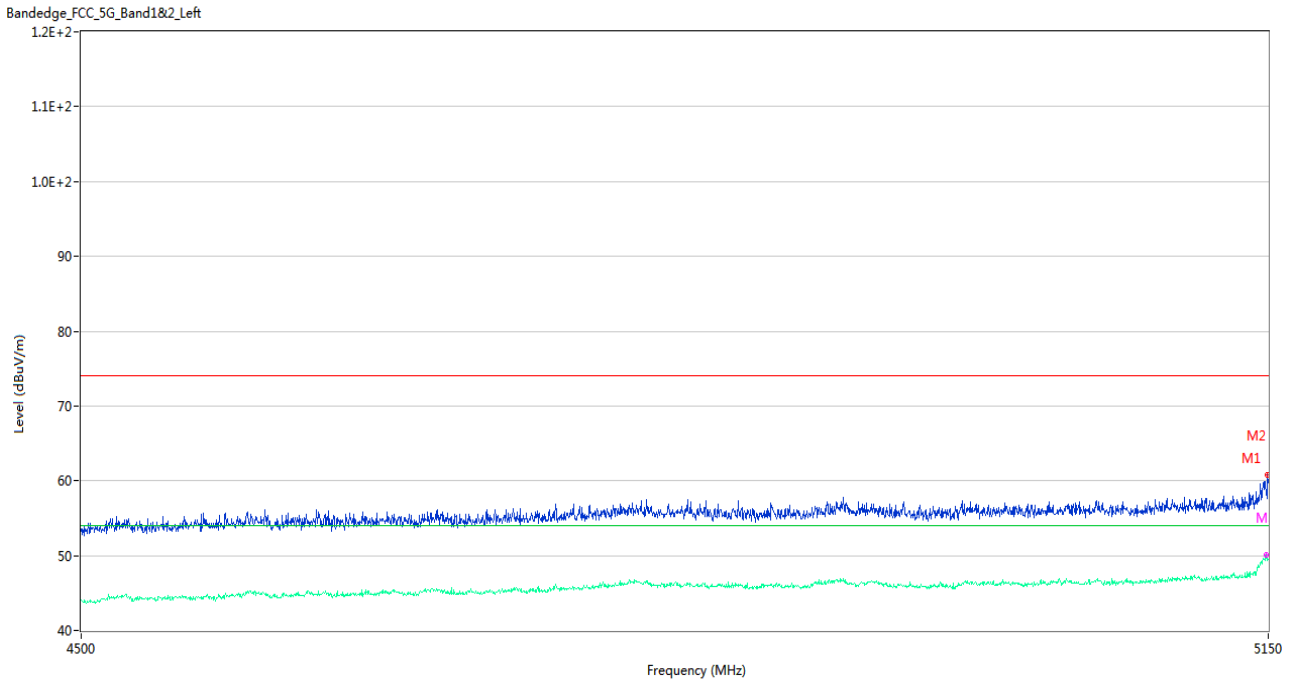
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5149.675	63.71	3.43	74.0	10.29	Peak	110.00	150	Horizontal	Pass
1**	5149.675	51.81	3.43	54.0	2.19	AV	110.00	150	Horizontal	Pass
2	5148.050	64.57	3.52	74.0	9.43	Peak	115.00	150	Horizontal	Pass
2**	5148.050	49.91	3.52	54.0	4.09	AV	115.00	150	Horizontal	Pass

U-NII-1 11n20 High Channel



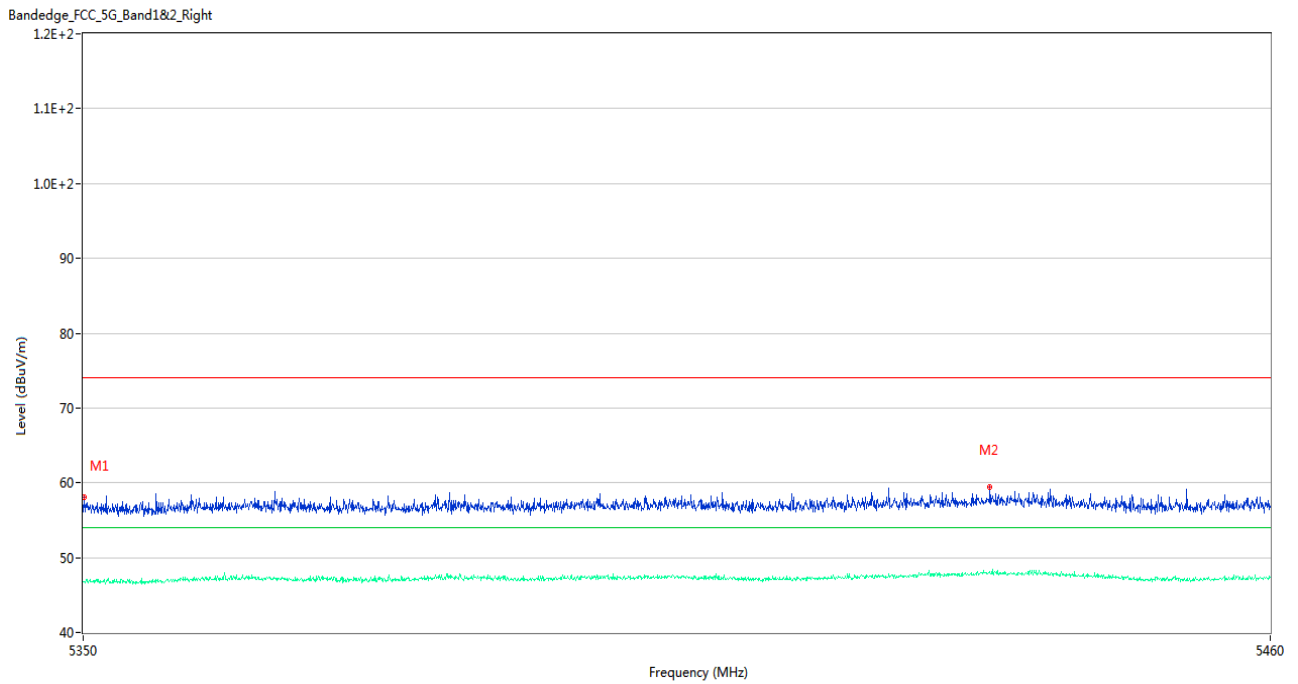
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5350.000	56.66	3.26	74.0	17.34	Peak	331.00	150	Horizontal	Pass
1**	5350.000	47.08	3.26	54.0	6.92	AV	331.00	150	Horizontal	Pass
2	5414.185	59.13	3.60	74.0	14.87	Peak	37.00	150	Horizontal	Pass
2**	5414.185	47.05	3.60	54.0	6.95	AV	37.00	150	Horizontal	Pass

U-NII-1 11n40 Low Channel



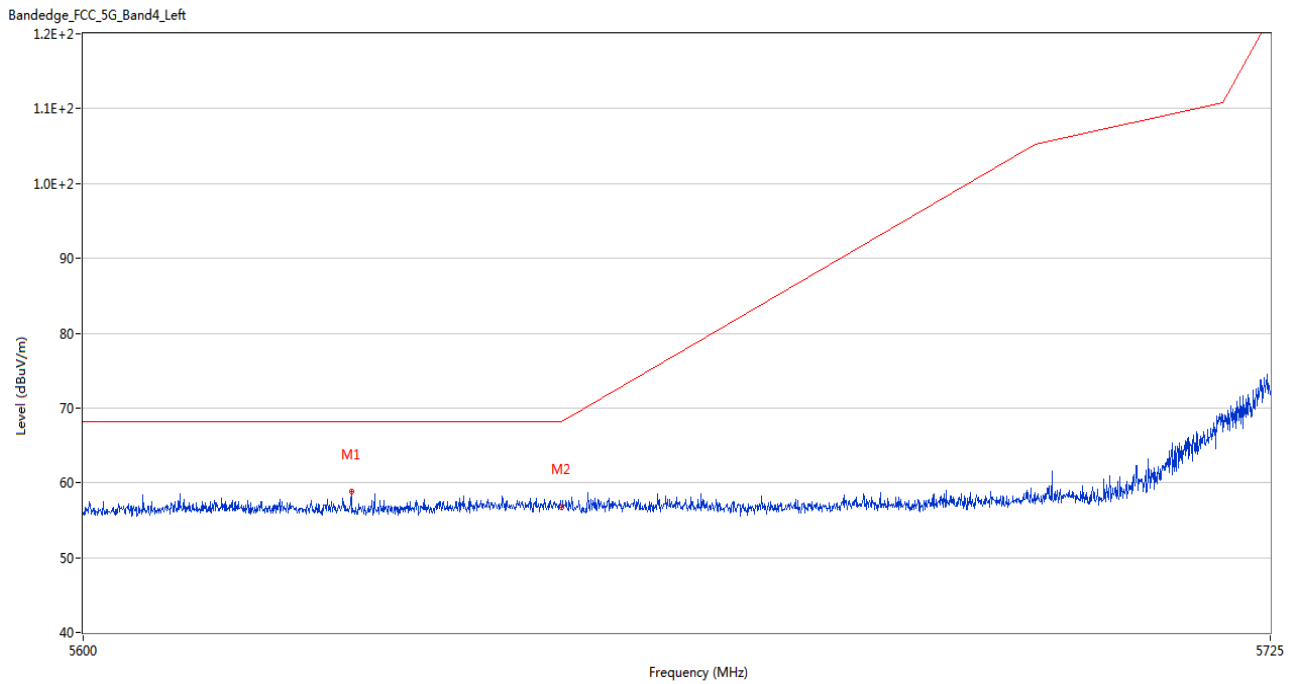
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5149.675	60.77	3.43	74.0	13.23	Peak	108.00	100	Horizontal	Pass
1**	5149.675	49.33	3.43	54.0	4.67	AV	108.00	100	Horizontal	Pass
2	5149.675	60.77	3.43	74.0	13.23	Peak	108.00	100	Horizontal	Pass
2**	5149.675	49.33	3.43	54.0	4.67	AV	108.00	100	Horizontal	Pass
3	5148.700	58.06	3.49	74.0	15.94	Peak	111.00	150	Horizontal	Pass
3**	5148.700	50.14	3.49	54.0	3.86	AV	111.00	150	Horizontal	Pass

U-NII-1 11n40 High Channel



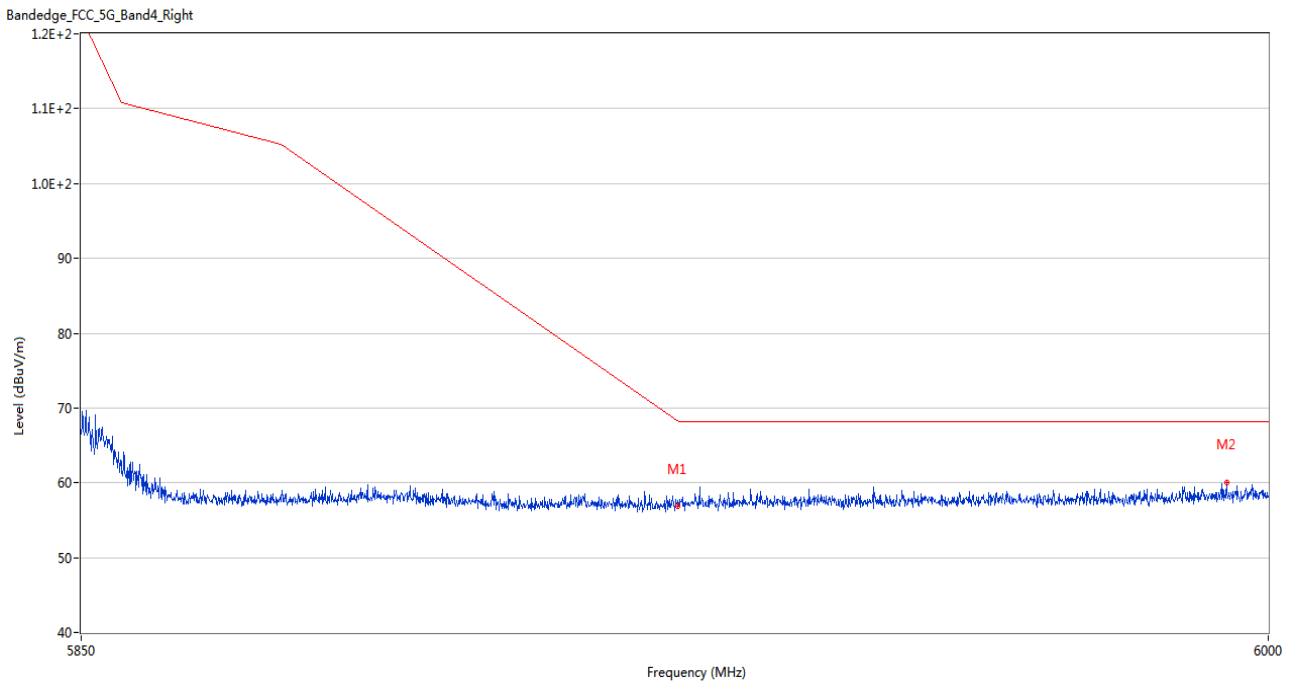
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5350.055	58.08	3.25	74.0	15.92	Peak	79.00	200	Horizontal	Pass
1**	5350.055	46.75	3.25	54.0	7.25	AV	79.00	200	Horizontal	Pass
2	5433.820	59.47	4.48	74.0	14.53	Peak	174.00	150	Horizontal	Pass
2**	5433.820	48.03	4.48	54.0	5.97	AV	174.00	150	Horizontal	Pass

U-NII-3 11a Low Channel



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5628.000	58.87	3.43	68.2	9.33	Peak	213.00	150	Horizontal	Pass
2	5650.000	56.77	3.83	68.2	11.43	Peak	53.00	200	Horizontal	Pass

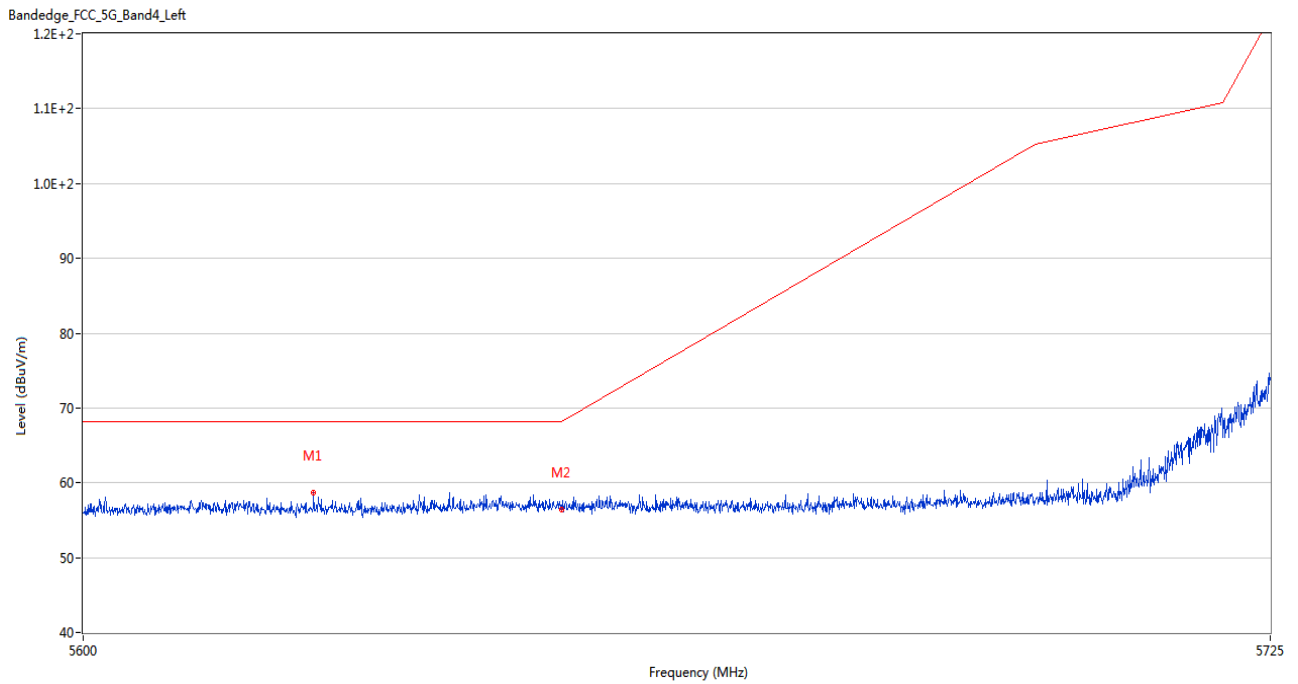
U-NII-3 11a High Channel



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5924.925	56.86	3.64	68.3	11.44	Peak	51.00	100	Horizontal	Pass
2	5994.675	60.11	5.68	68.2	8.09	Peak	218.00	150	Horizontal	Pass

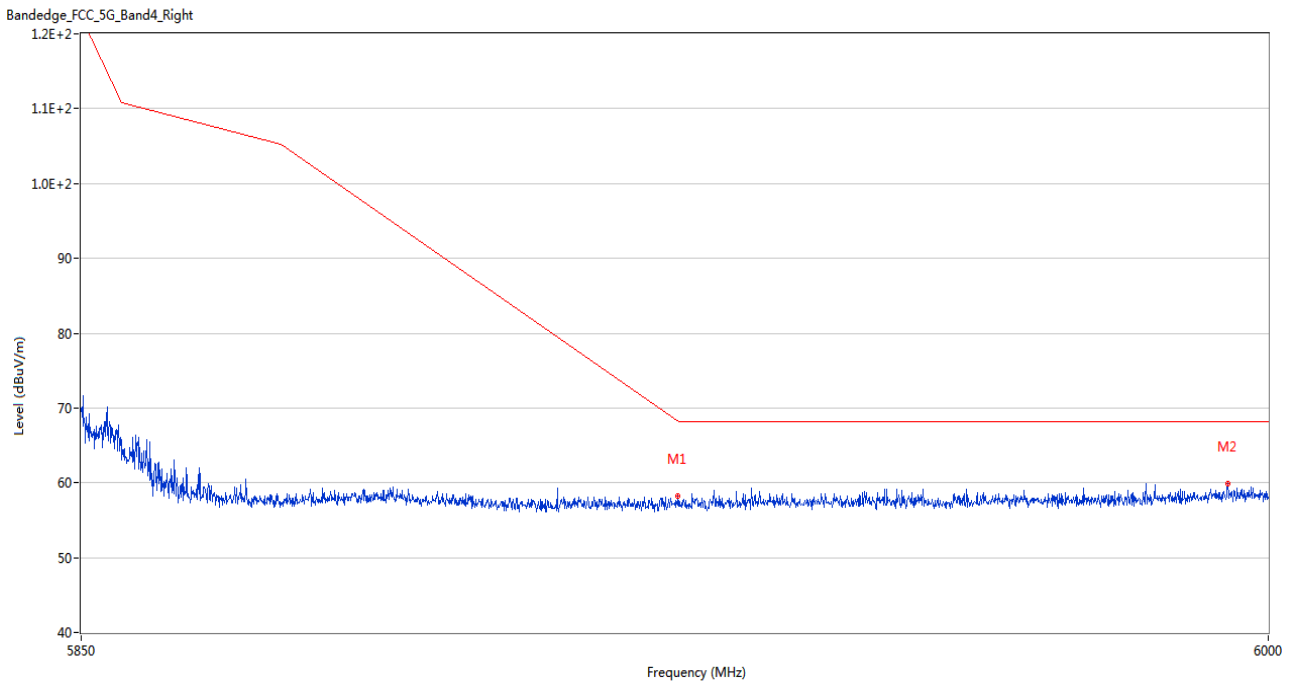


U-NII-3 11n20 Low Channel



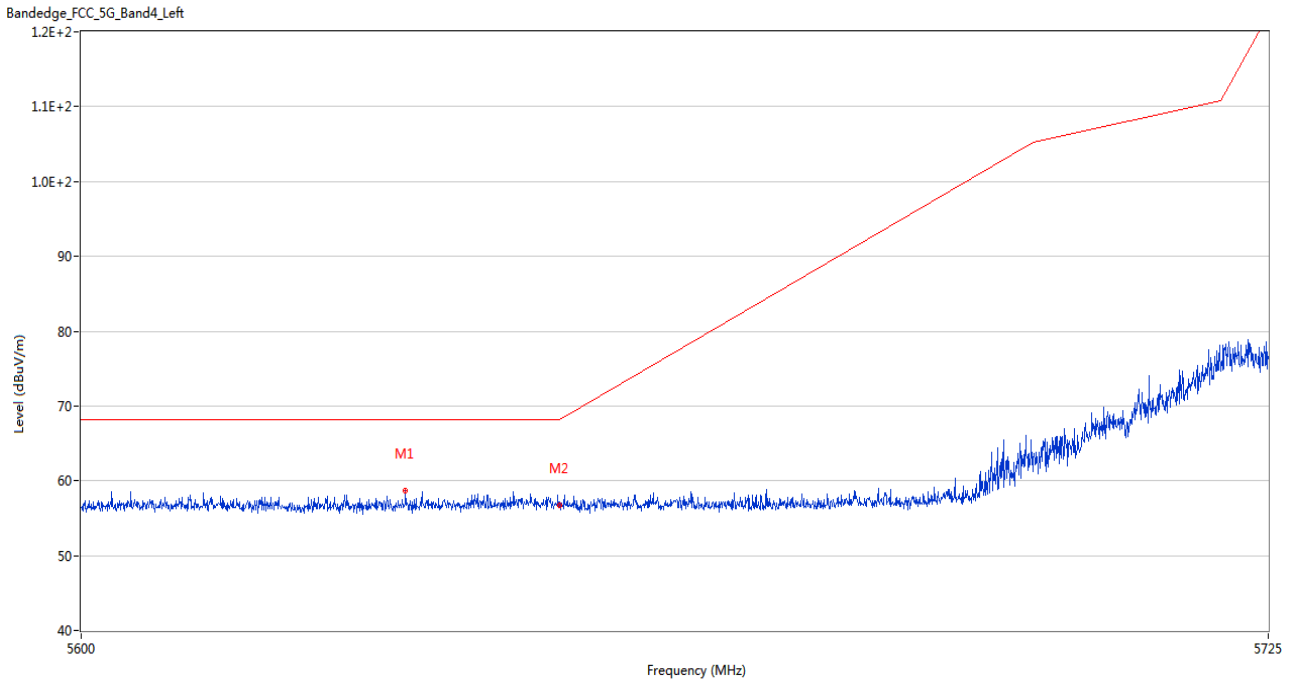
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5624.062	58.69	3.43	68.2	9.51	Peak	219.00	100	Horizontal	Pass
2	5650.000	56.46	3.83	68.2	11.74	Peak	163.00	150	Horizontal	Pass

U-NII-3 11n20 High Channel



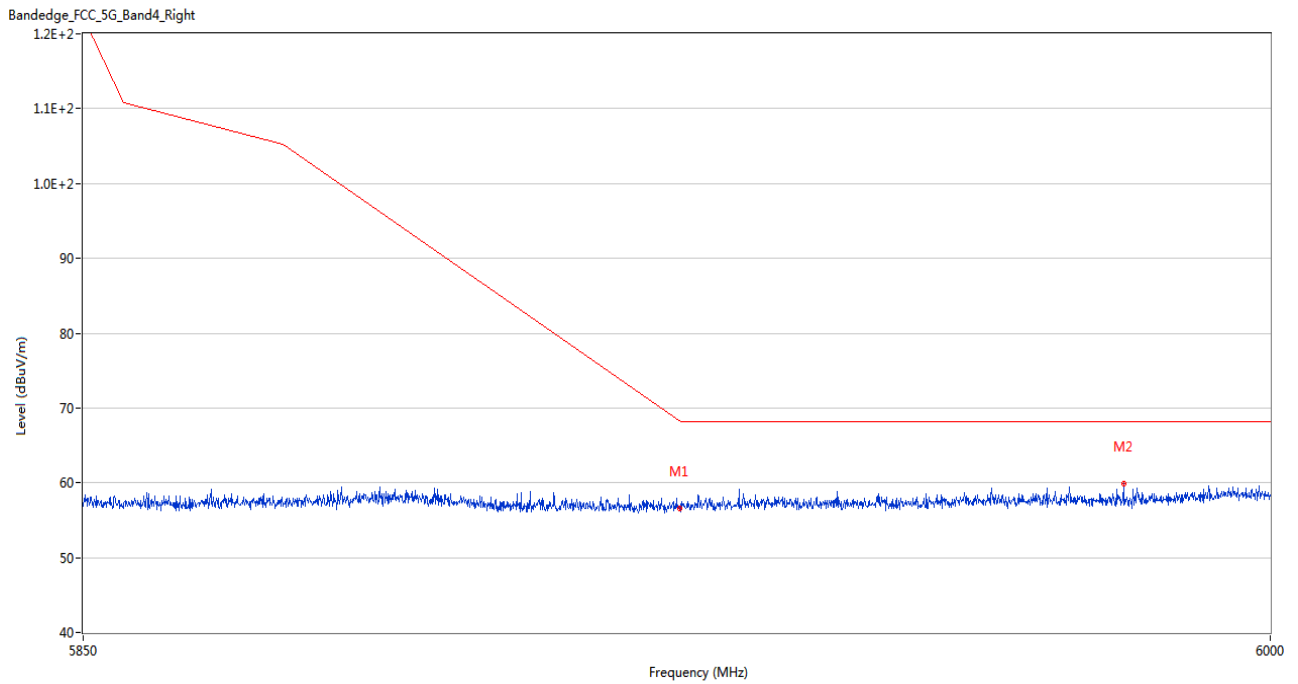
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5924.925	58.22	3.64	68.3	10.08	Peak	158.00	200	Horizontal	Pass
2	5994.825	59.87	5.69	68.2	8.33	Peak	3.00	100	Horizontal	Pass

U-NII-3 11n40 Low Channel



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5633.875	58.63	3.52	68.2	9.57	Peak	196.00	100	Horizontal	Pass
2	5650.000	56.74	3.83	68.2	11.46	Peak	101.00	100	Horizontal	Pass

U-NII-3 11n40 High Channel



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	5924.925	56.59	3.64	68.3	11.71	Peak	238.00	150	Horizontal	Pass
2	5981.250	59.86	4.69	68.2	8.34	Peak	297.00	100	Horizontal	Pass

## **ANNEX B TEST SETUP PHOTOS**

Please refer the document “BL-SZ2350589-AR.PDF”.

## **ANNEX C EUT EXTERNAL PHOTOS**

Please refer the document “BL-SZ2350589-AW.PDF”.

## **ANNEX D EUT INTERNAL PHOTOS**

Please refer the document “BL-SZ2350589-AI.PDF”.

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--END OF REPORT--