

RF TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
UHF Mobile RFID Reader

ISSUED TO
Megabyte Limited

Units 507, 5/F, Building 12W, No. 12 Science Park West Avenue, Hong Kong Science Park, Pak Shek Kok, Shatin, NT Hong Kong



Tested by:

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Date:

Aug. 09, 2021

Approved by:

Wei Yanquan
Wei Yanquan
(Chief Engineer)

Date:

Aug. 09, 2021

Report No.: BL-SZ20C0502-604
EUT Name: UHF Mobile RFID Reader
Model Name: MTRAY-F1-MB-BW
Brand Name: Myndar
Test Standard: 47 CFR Part 15 Subpart E
FCC ID: XEK-MTRAYF1MB

Test Conclusion: Pass
Test Date: Jan. 23, 2021 ~ Jun. 22, 2021
Date of Issue: Aug. 09, 2021

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Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>Aug. 09, 2021</u>	<u>Initial Issue</u>

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1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

1.1 Identification of the Testing Laboratory

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

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, 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.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20°C to 25°C
Ambient Relative Humidity	45% to 55%
Ambient Pressure	100 kPa to 102 kPa

1.4 Announce

- (1) The test report reference to the report template version v4.4.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (7) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 PRODUCT INFORMATION

2.1 Applicant

Applicant	Megabyte Limited
Address	Units 507, 5/F, Building 12W, No. 12 Science Park West Avenue, Hong Kong Science Park, Pak Shek Kok, Shatin, NT Hong Kong

2.2 Manufacturer

Manufacturer	N/A
Address	N/A

2.3 Factory

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	UHF Mobile RFID Reader
Model Name Under Test	MTRAY-F1-MB-BW
Series Model Name	N/A
Description of Model Name Differentiation	N/A
Serial Number	N/A
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Technical Information

Network and Wireless connectivity	Bluetooth (BR+EDR+BLE) WIFI 802.11a, 802.11b, 802.11g, 802.11n U-NII-1/3 RFID
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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 type="checkbox"/> Mobile <input type="checkbox"/> Portable <input checked="" type="checkbox"/> Fix Location
Modulation technology	OFDM
Modulation Type	64QAM, 16QAM, BPSK, QPSK
Product Type	Fix Location 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: 12.80 dBm U-NII-3: 12.74 dBm
Antenna System (eg., MIMO, Smart Antenna)	N/A
Categorization as Correlated or Completely Uncorrelated	N/A
Antenna Type	PIFA Antenna
Antenna Gain	4.0 dBi (In test items related to antenna gain, the final results reflect this figure. This value is provided by the applicant.)
About the Product	The equipment is UHF Mobile RFID Reader, intended for used with information technology equipment.

2.6 Additional Instructions

EUT Software Settings:

Mode	<input checked="" type="checkbox"/> Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.
------	--

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Test Software Version	Tera Term VT		
Support Units (Software installation media)	Description	Manufacturer	Model
	Notebook	Lenovo	X220

U-NII-1 (5150 - 5250 MHz) Power level setup in software			
Mode	Channel	Frequency (MHz)	Soft Set
11a	CH36	5180	13.0
11a	CH44	5220	13.0
11a	CH48	5240	13.0
11n (HT20)	CH36	5180	13.0
11n (HT20)	CH44	5220	13.0
11n (HT20)	CH48	5240	13.0
11n (HT40)	CH38	5190	12.0
11n (HT40)	CH46	5230	12.0

U-NII-3 (5725 - 5850 MHz) Power level setup in software			
Mode	Channel	Frequency (MHz)	Soft Set
11a	CH149	5745	13.0
11a	CH157	5785	13.0
11a	CH165	5825	13.0
11n (HT20)	CH149	5745	13.0
11n (HT20)	CH157	5785	13.0
11n (HT20)	CH165	5825	13.0
11n (HT40)	CH151	5755	13.0
11n (HT40)	CH159	5795	13.0

Run Software:

```
COM5 - Tera Term VT
File Edit Setup Control Window Help
INFO: Initializing network
NOTE: Starting nfgtest on wlan station
INFO: wlan0: Found MAC 00:80:A3:E3:8E:65
Starting the cert console
CLI:cert> wl down
CLI:cert> wl mpc 0
CLI:cert> wl phy_txpurctrl 1
CLI:cert> wl phy_watchdog 0
CLI:cert> wl country ALL
CLI:cert> wl PM 0
CLI:cert> wl band a
CLI:cert> wl 5g_rate -h 0 -s 0 -b 20
CLI:cert> wl chanspec -c 44 -b 5 -u 20 -s 0
Chanspec set to 0xd02c
CLI:cert> wl up
CLI:cert> wl antdiv 0
CLI:cert> wl txant 0
CLI:cert> wl txpur1 13
CLI:cert> wl phy_forcecal 1
CLI:cert> wl phy_activecal
0
CLI:cert> wl scansuppress 1
CLI:cert> wl pkteng_start 00:90:4c:aa:bb:cc tx 100 2048 0
CLI:cert> █
```

2.7 Channel List

20 MHz		40 MHz	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	151	5755
48	5240	159	5795
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)

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 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	Pass
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	Pass
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.

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

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

Relative Humidity	45% to 55%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+22°C to +25°C
	LT (Low Temperature)	0°C
	HT (High Temperature)	+40°C
Working Voltage of the EUT	NV (Normal Voltage)	3.7 V
	LV (Low Voltage)	3.5 V
	HV (High Voltage)	4.2 V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-40	101544	2021.04.01	2022.03.31
Bluetooth Signaling Unit	ROHDE&SCHWARZ	CMW500	142028	2021.06.01	2022.05.31
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-30	103118	2021.06.01	2022.05.31
Vector Signal Generator	ROHDE&SCHWARZ	SMBV100A	260592	2021.06.01	2022.05.31
Signal Generator	ROHDE&SCHWARZ	SMB100A	177746	2021.06.01	2022.05.31
Switch Unit with OSP-B157	ROHDE&SCHWARZ	OSP120	101270	2021.06.01	2022.05.31
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2021.06.01	2022.05.31
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2021.06.01	2022.05.31
LISN	SCHWARZBECK	NSLK 8127	8127-687	2021.06.01	2022.05.31
Test Antenna-Loop(9 kHz-30 MHz)	SCHWARZBECK	FMZB 1519	1519-037	2019.10.29	2021.10.28
Test Antenna-Bi-Log(30 MHz-3 GHz)	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2021.07.01
Test Antenna-Horn(1-18 GHz)	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2021.07.01
Test Antenna-Horn (18-40 GHz)	A-INFO	LB-180400KF	J211060273	2021.01.05	2023.01.04
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2022.02.20
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60*7.35m	N/A	2018.08.08	2021.08.07
Shielded Enclosure	ChangNing	CN-130701	130703	--	--

4.3 Measurement Uncertainty

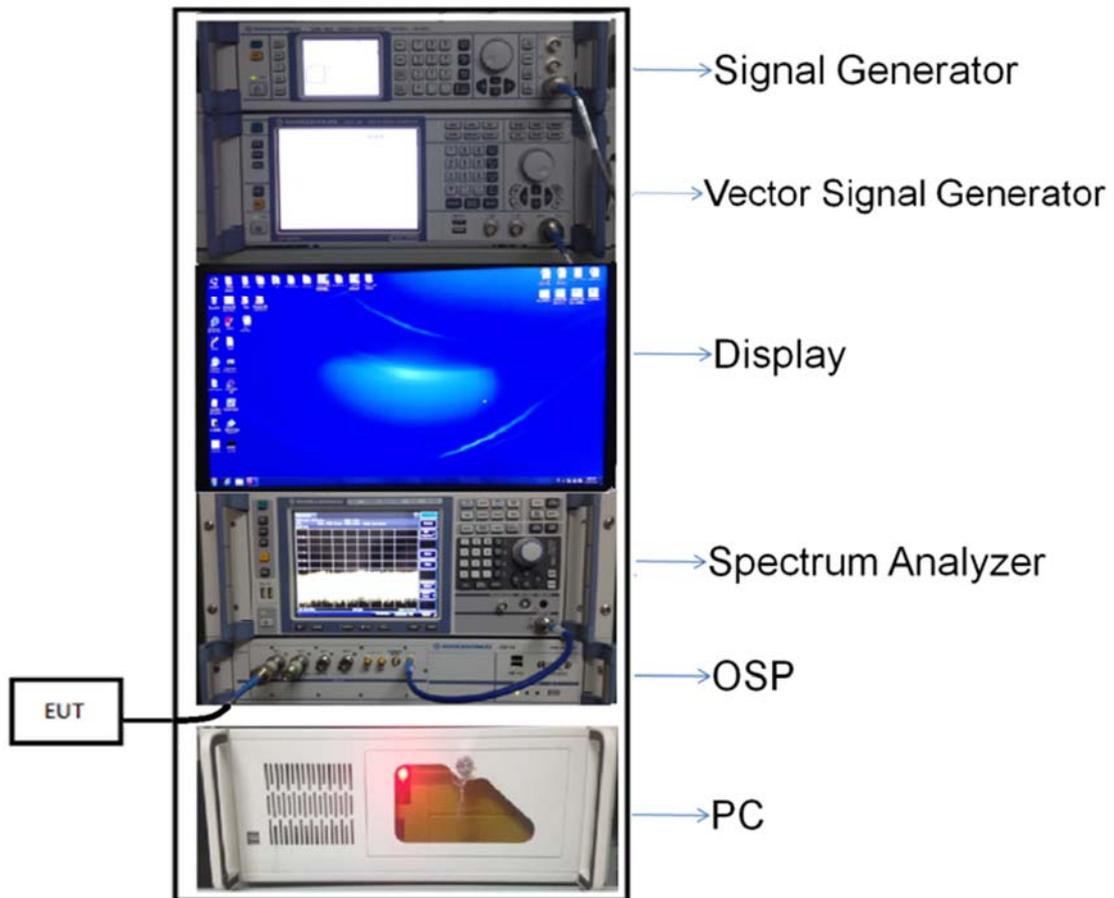
The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

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

Measurement	Value
Occupied Channel Bandwidth	±4%
RF output power, conducted	±1.21 dB
Power Spectral Density, conducted	±1.25 dB
Unwanted Emissions, conducted	±1.26 dB
All emissions, radiated	±3.86 dB
Temperature	±1°C
Humidity	±4%

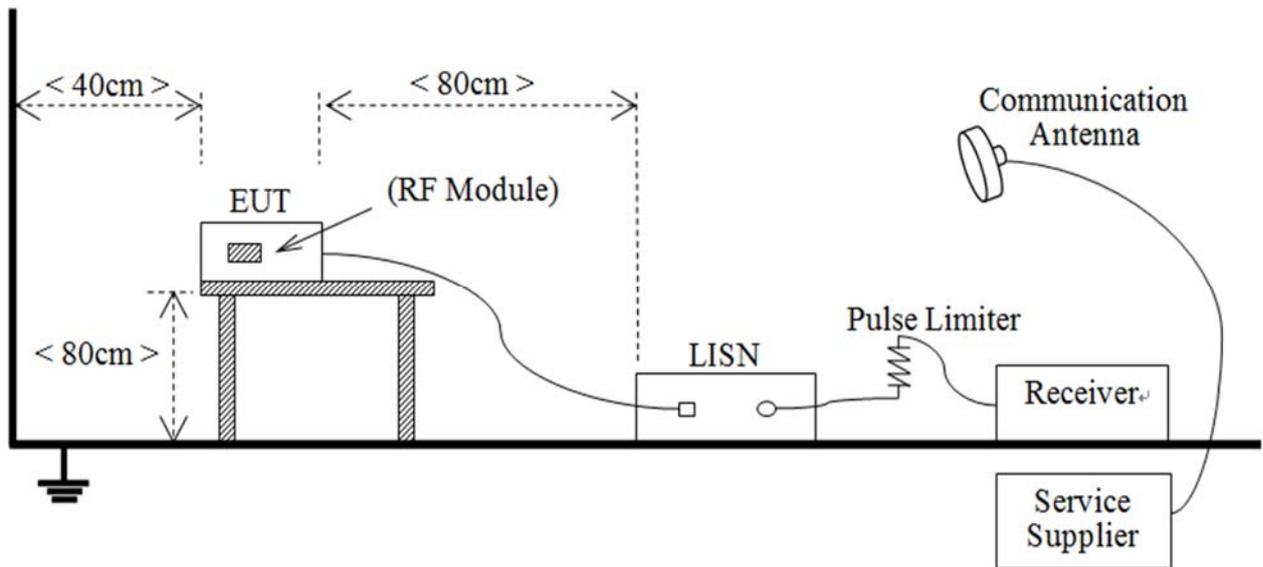
4.4 Description of Test Setup

4.4.1 For Antenna Port Test



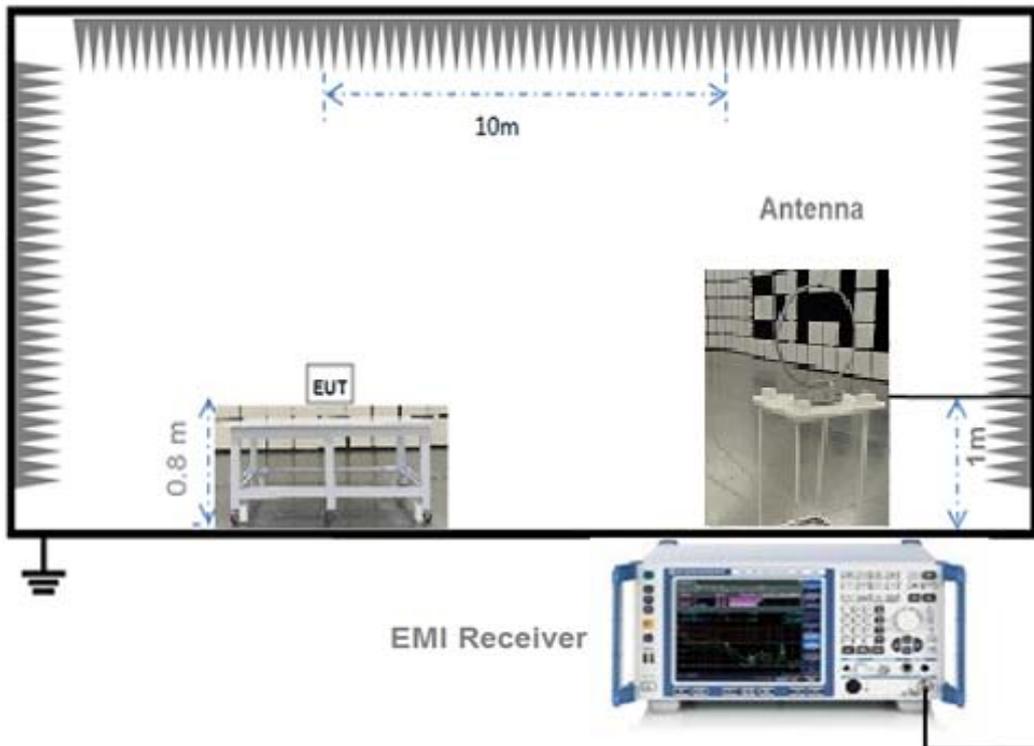
(Diagram 1)

4.4.2 For AC Power Supply Port Test



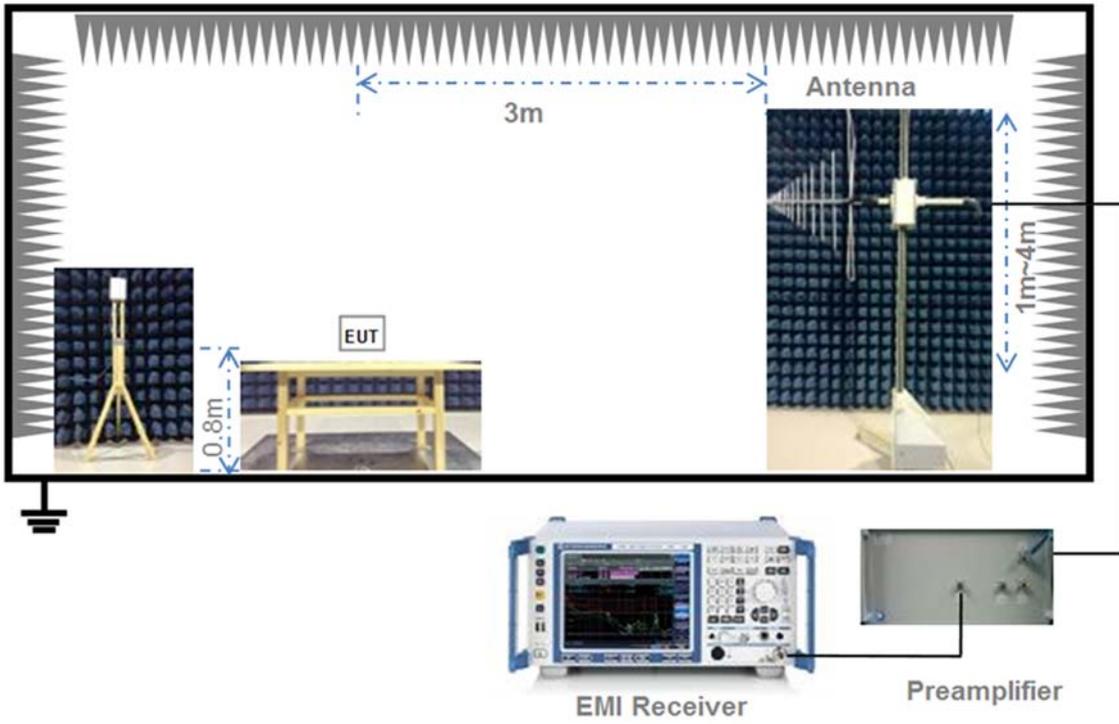
(Diagram 2)

4.4.3 For Radiated Test (Below 30 MHz)



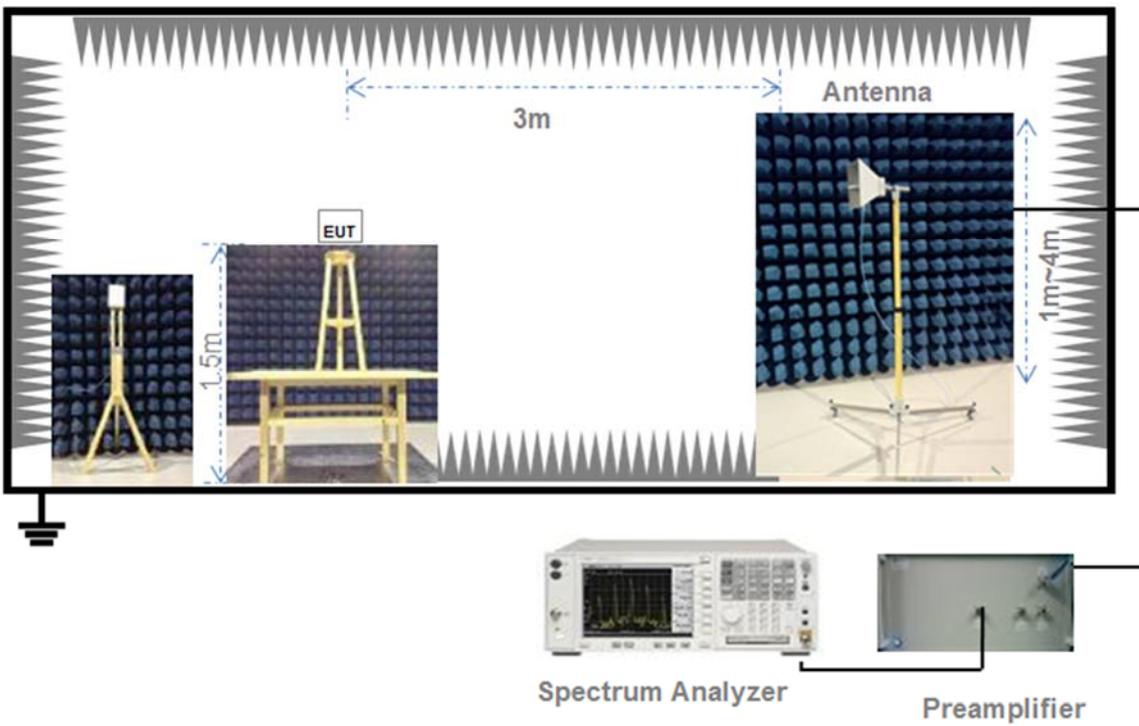
(Diagram 3)

4.4.4 For Radiated Test (30 MHz-1 GHz)



(Diagram 4)

4.4.5 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 4.4.1 (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 4.4.1 (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 4.4.1 (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 ≥ 3*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 4.4.2 (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 ($\mu\text{V}/\text{m}$)	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	<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 4.4.3-4.4.5 (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 maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see guidance on determining the applicable antenna gain)
- c) 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).
- d) 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).
- e) 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.

- f) Compare the resultant electric field strength level to the applicable limit.
- g) 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 span/(# of points in sweep) \leq (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

Note 1: 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.

Test Data

Conducted Power

U-NII-1 (5150 - 5250 MHz)					
Mode	Channel	Conducted Power (dBm)	Conducted Power (mW)	FCC Limit (mW)	Verdict
11a	CH36	12.39	17.34	250	Pass
11a	CH44	12.45	17.58	250	Pass
11a	CH48	12.39	17.34	250	Pass
11n (HT20)	CH36	12.80	19.05	250	Pass
11n (HT20)	CH44	12.74	18.79	250	Pass
11n (HT20)	CH48	12.59	18.16	250	Pass
11n (HT40)	CH38	11.47	14.03	250	Pass
11n (HT40)	CH46	11.43	13.90	250	Pass

U-NII-3 (5725 - 5850 MHz)					
Mode	Channel	Conducted Power (dBm)	Conducted Power (mW)	FCC Limit (mW)	Verdict
11a	CH149	12.74	18.79	1000	Pass
11a	CH157	12.48	17.70	1000	Pass
11a	CH165	12.12	16.29	1000	Pass
11n (HT20)	CH149	12.56	18.03	1000	Pass
11n (HT20)	CH157	12.24	16.75	1000	Pass
11n (HT20)	CH165	12.05	16.03	1000	Pass
11n (HT40)	CH151	12.69	18.58	1000	Pass
11n (HT40)	CH159	12.45	17.58	1000	Pass

A.2 Emission Bandwidth & 99% Bandwidth

Note: Test plots please refer to the document "Annex No.: BL-SZ20C0502-604 Data Part 1.pdf".

Test Data

U-NII-1 (5150 - 5250 MHz)			
Mode	Channel	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11a	CH36	21.82	16.93
11a	CH44	21.72	16.90
11a	CH48	21.73	16.90
11n (HT20)	CH36	27.06	18.11
11n (HT20)	CH44	26.45	18.09
11n (HT20)	CH48	26.19	18.07
11n (HT40)	CH38	56.28	36.55
11n (HT40)	CH46	45.30	36.52

U-NII-3 (5725 - 5850 MHz)			
Mode	Channel	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11a	CH149	23.43	17.03
11a	CH157	22.11	17.10
11a	CH165	23.32	17.00
11n (HT20)	CH149	28.95	18.19
11n (HT20)	CH157	26.37	18.23
11n (HT20)	CH165	27.10	18.14
11n (HT40)	CH151	65.49	36.69
11n (HT40)	CH159	67.27	36.83

A.3 6 dB Bandwidth

Note: Test plots please refer to the document "Annex No.: BL-SZ20C0502-604 Data Part 2.pdf".

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	17.65	500.00	Pass
11n (HT20)	CH157	17.65	500.00	Pass
11n (HT20)	CH165	17.65	500.00	Pass
11n (HT40)	CH151	36.35	500.00	Pass
11n (HT40)	CH159	36.40	500.00	Pass

A.4 Power Spectral Density

Note: Test plots please refer to the document "Annex No.: BL-SZ20C0502-604 Data Part 3.pdf".

Test Data

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

U-NII-1 (5150 - 5250 MHz)				
Mode	Channel	PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
11a	CH36	1.413	11.00	Pass
11a	CH44	1.549	11.00	Pass
11a	CH48	1.735	11.00	Pass
11n (HT20)	CH36	0.897	11.00	Pass
11n (HT20)	CH44	1.075	11.00	Pass
11n (HT20)	CH48	1.404	11.00	Pass
11n (HT40)	CH38	-3.098	11.00	Pass
11n (HT40)	CH46	-2.879	11.00	Pass

U-NII-3 (5725 - 5850 MHz)				
Mode	Channel	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Verdict
11a	CH149	-0.665	30.00	Pass
11a	CH157	-1.051	30.00	Pass
11a	CH165	-0.720	30.00	Pass
11n (HT20)	CH149	-1.308	30.00	Pass
11n (HT20)	CH157	-1.559	30.00	Pass
11n (HT20)	CH165	-1.274	30.00	Pass
11n (HT40)	CH151	-4.221	30.00	Pass

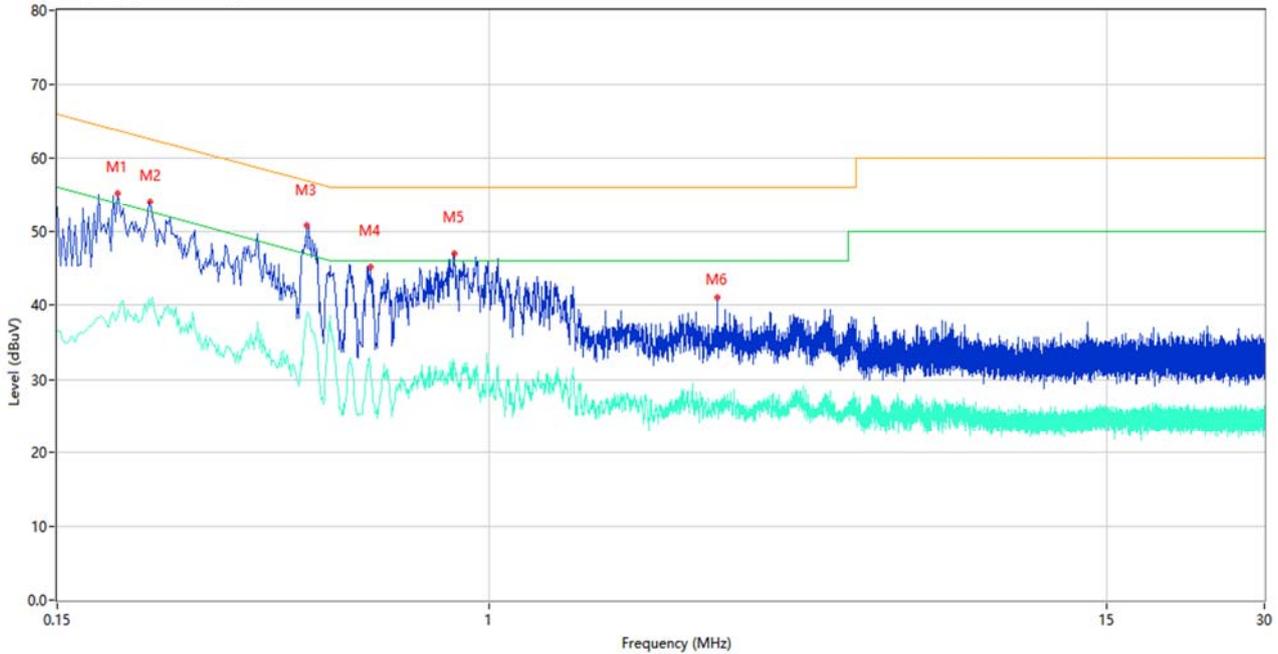
A.5 Conducted Emissions

Note¹: The EUT is working in the Normal link mode. All modes have been tested and normal link mode is worst.
 Note²: 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

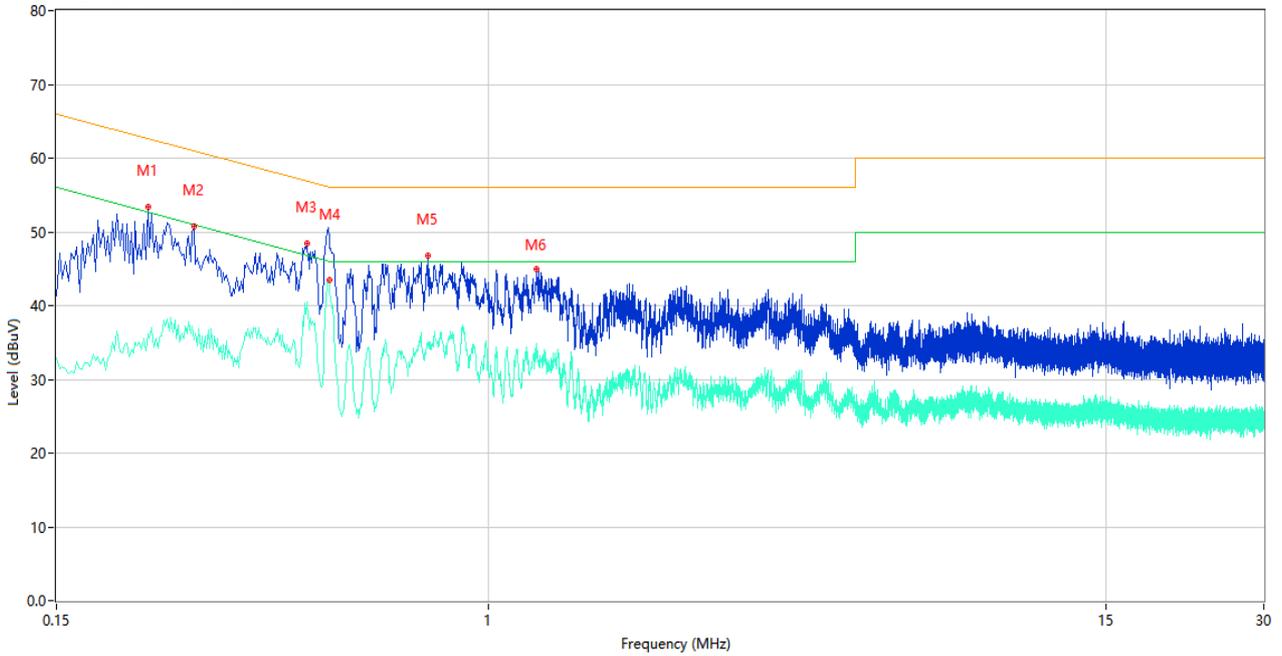
CE Test case_FCC_CE_FCC PART 15B_Class B



No.	Frequency (MHz)	Results (dBUV)	Factor (dB)	Limit (dBUV)	Over Limit (dB)	Detector	Line	Verdict
1	0.196	55.27	10.38	63.78	-8.51	Peak	L	Pass
1**	0.196	38.36	10.38	53.78	-15.42	AV	L	Pass
2	0.226	54.03	10.36	62.60	-8.57	Peak	L	Pass
2**	0.226	39.84	10.36	52.60	-12.76	AV	L	Pass
3	0.448	50.71	10.30	56.91	-6.20	Peak	L	Pass
3**	0.448	38.52	10.30	46.91	-8.39	AV	L	Pass
4	0.592	45.16	10.28	56.00	-10.84	Peak	L	Pass
4**	0.592	31.85	10.28	46.00	-14.15	AV	L	Pass
5	0.856	46.93	10.24	56.00	-9.07	Peak	L	Pass
5**	0.856	31.45	10.24	46.00	-14.55	AV	L	Pass
6	2.814	41.76	10.29	56.00	-14.24	Peak	L	Pass
6**	2.814	27.35	10.29	46.00	-18.65	AV	L	Pass

PHASE N

CE Test case_FCC_CE_FCC PART 15B_Class B



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.224	53.37	10.37	62.67	-9.30	Peak	N	Pass
1**	0.224	36.13	10.37	52.67	-16.54	AV	N	Pass
2	0.274	50.68	10.34	61.00	-10.32	Peak	N	Pass
2**	0.274	35.32	10.34	51.00	-15.68	AV	N	Pass
3	0.450	48.46	10.30	56.88	-8.42	Peak	N	Pass
3**	0.450	40.54	10.30	46.88	-6.34	AV	N	Pass
4	0.496	49.13	10.29	56.07	-6.94	Peak	N	Pass
4**	0.496	43.42	10.29	46.07	-2.65	AV	N	Pass
5	0.764	46.82	10.26	56.00	-9.18	Peak	N	Pass
5**	0.764	35.09	10.26	46.00	-10.91	AV	N	Pass
6	1.232	44.94	10.25	56.00	-11.06	Peak	N	Pass
6**	1.232	34.81	10.25	46.00	-11.19	AV	N	Pass

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

Test Data

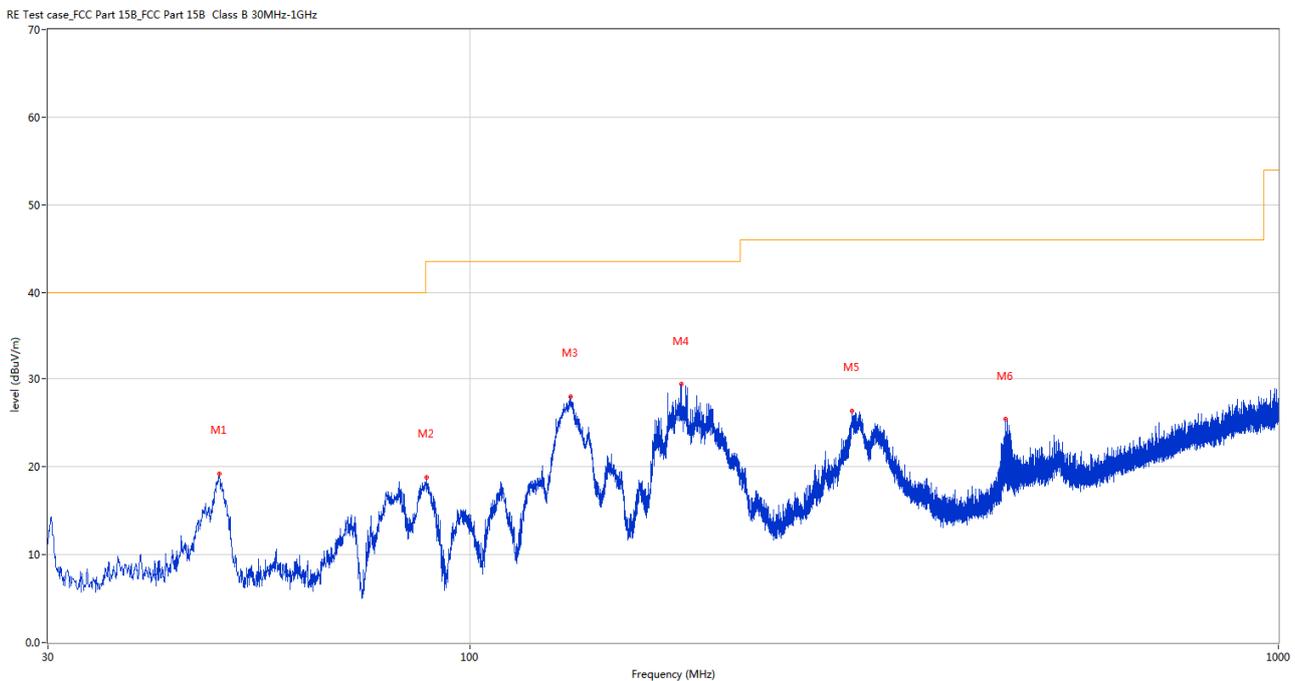
Note 1: The symbol of "--" in the table which means not application.

Note 2: 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 3: 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 4: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and normal link mode is worst.

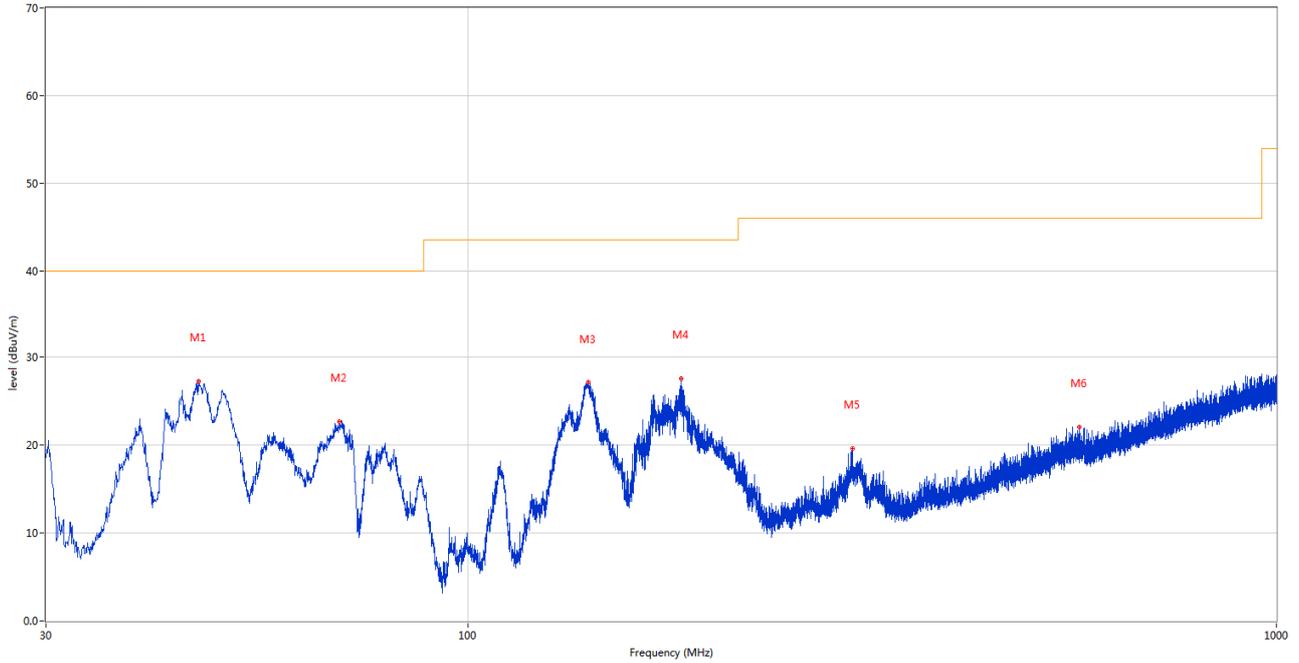
30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	48.867	19.25	-26.61	40.0	-20.75	Peak	0.00	200	Horizontal	Pass
2	88.248	18.77	-30.29	43.5	-24.73	Peak	151.00	200	Horizontal	Pass
3	132.917	28.03	-26.27	43.5	-15.47	Peak	151.00	200	Horizontal	Pass
4	182.290	29.46	-27.10	43.5	-14.04	Peak	135.00	200	Horizontal	Pass
5	296.604	26.33	-23.99	46.0	-19.67	Peak	189.00	100	Horizontal	Pass
6	459.953	25.40	-19.49	46.0	-20.60	Peak	0.00	200	Horizontal	Pass

30 MHz to 1 GHz, ANT V

RE Test case_FCC Part 15B_FCC Part 15B Class B 30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	46.393	27.30	-26.62	40.0	-12.70	Peak	213.00	100	Vertical	Pass
2	69.237	22.66	-28.94	40.0	-17.34	Peak	117.00	100	Vertical	Pass
3	140.677	27.16	-25.57	43.5	-16.34	Peak	250.00	100	Vertical	Pass
4	183.406	27.64	-27.22	43.5	-15.86	Peak	213.00	100	Vertical	Pass
5	298.544	19.61	-24.00	46.0	-26.39	Peak	54.00	100	Vertical	Pass
6	569.951	22.12	-17.43	46.0	-23.88	Peak	0.00	200	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1380.200	37.41	-15.00	74.0	-36.59	Peak	17.00	150	Horizontal	Pass
1**	1380.200	27.81	-15.00	54.0	-26.19	AV	17.00	150	Horizontal	Pass
2	2805.200	41.89	-8.82	74.0	-32.11	Peak	175.00	150	Horizontal	Pass
2**	2805.200	32.15	-8.82	54.0	-21.85	AV	175.00	150	Horizontal	Pass
3	4028.000	47.29	-3.91	74.0	-26.71	Peak	360.00	150	Horizontal	Pass
3**	4028.000	36.81	-3.91	54.0	-17.19	AV	360.00	150	Horizontal	Pass
4	5174.200	104.69	-0.58	--	--	Peak	200.00	150	Horizontal	N/A
4**	5174.200	98.45	-0.58	--	--	AV	200.00	150	Horizontal	N/A
5	11748.638	51.31	18.96	74.0	-22.69	Peak	219.00	150	Horizontal	Pass
5**	11748.638	39.50	18.96	54.0	-14.50	AV	219.00	150	Horizontal	Pass
6	15898.162	55.39	23.27	74.0	-18.61	Peak	255.00	150	Horizontal	Pass
6**	15898.162	43.43	23.27	54.0	-10.57	AV	255.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1526.400	36.92	-14.99	74.0	-37.08	Peak	236.00	150	Vertical	Pass
1**	1526.400	27.71	-14.99	54.0	-26.29	AV	236.00	150	Vertical	Pass
2	2802.000	41.63	-8.69	74.0	-32.37	Peak	313.00	150	Vertical	Pass
2**	2802.000	32.24	-8.69	54.0	-21.76	AV	313.00	150	Vertical	Pass
3	4212.200	47.61	-3.83	74.0	-26.39	Peak	360.00	150	Vertical	Pass
3**	4212.200	38.26	-3.83	54.0	-15.74	AV	360.00	150	Vertical	Pass
4	5175.600	94.02	-0.55	--	--	Peak	239.00	150	Vertical	N/A
4**	5175.600	86.75	-0.55	--	--	AV	239.00	150	Vertical	N/A
5	11008.900	50.84	18.98	74.0	-23.16	Peak	265.00	150	Vertical	Pass
5**	11008.900	37.62	18.98	54.0	-16.38	AV	265.00	150	Vertical	Pass
6	15566.363	55.21	23.58	74.0	-18.79	Peak	362.00	150	Vertical	Pass
6**	15566.363	43.51	23.58	54.0	-10.49	AV	362.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1580.600	37.39	-15.20	74.0	-36.61	Peak	255.00	150	Horizontal	Pass
1**	1580.600	27.95	-15.20	54.0	-26.05	AV	255.00	150	Horizontal	Pass
2	2868.100	42.42	-7.84	74.0	-31.58	Peak	64.00	150	Horizontal	Pass
2**	2868.100	33.29	-7.84	54.0	-20.71	AV	64.00	150	Horizontal	Pass
3	4032.400	48.10	-3.98	74.0	-25.90	Peak	58.00	150	Horizontal	Pass
3**	4032.400	36.55	-3.98	54.0	-17.45	AV	58.00	150	Horizontal	Pass
4	5213.000	104.98	-0.47	--	--	Peak	197.00	150	Horizontal	N/A
4**	5213.000	97.63	-0.47	--	--	AV	197.00	150	Horizontal	N/A
5	11558.887	50.48	19.77	74.0	-23.52	Peak	303.00	150	Horizontal	Pass
5**	11558.887	39.06	19.77	54.0	-14.94	AV	303.00	150	Horizontal	Pass
6	15848.287	54.50	23.49	74.0	-19.50	Peak	362.00	150	Horizontal	Pass
6**	15848.287	43.24	23.49	54.0	-10.76	AV	362.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1513.800	36.68	-14.84	74.0	-37.32	Peak	-2.00	150	Vertical	Pass
1**	1513.800	27.60	-14.84	54.0	-26.40	AV	-2.00	150	Vertical	Pass
2	2847.300	42.72	-7.87	74.0	-31.28	Peak	-2.00	150	Vertical	Pass
2**	2847.300	33.53	-7.87	54.0	-20.47	AV	-2.00	150	Vertical	Pass
3	4066.400	47.33	-3.90	74.0	-26.67	Peak	241.00	150	Vertical	Pass
3**	4066.400	36.73	-3.90	54.0	-17.27	AV	241.00	150	Vertical	Pass
4	5216.800	95.00	-0.30	--	--	Peak	241.00	150	Vertical	N/A
4**	5216.800	88.66	-0.30	--	--	AV	241.00	150	Vertical	N/A
5	11612.650	50.91	20.20	74.0	-23.09	Peak	300.00	150	Vertical	Pass
5**	11612.650	39.08	20.20	54.0	-14.92	AV	300.00	150	Vertical	Pass
6	15433.538	55.54	23.22	74.0	-18.46	Peak	0.00	150	Vertical	Pass
6**	15433.538	43.14	23.22	54.0	-10.86	AV	0.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1499.200	37.56	-15.18	74.0	-36.44	Peak	360.00	150	Horizontal	Pass
1**	1499.200	27.88	-15.18	54.0	-26.12	AV	360.00	150	Horizontal	Pass
2	2783.500	41.15	-8.76	74.0	-32.85	Peak	336.00	150	Horizontal	Pass
2**	2783.500	33.22	-8.76	54.0	-20.78	AV	336.00	150	Horizontal	Pass
3	4151.200	47.52	-3.47	74.0	-26.48	Peak	321.00	150	Horizontal	Pass
3**	4151.200	35.37	-3.47	54.0	-18.63	AV	321.00	150	Horizontal	Pass
4	5235.600	105.35	-0.77	--	--	Peak	198.00	150	Horizontal	N/A
4**	5235.600	99.07	-0.77	--	--	AV	198.00	150	Horizontal	N/A
5	11614.662	50.45	20.21	74.0	-23.55	Peak	10.00	150	Horizontal	Pass
5**	11614.662	38.88	20.21	54.0	-15.12	AV	10.00	150	Horizontal	Pass
6	15541.425	55.18	23.69	74.0	-18.82	Peak	0.00	150	Horizontal	Pass
6**	15541.425	44.14	23.69	54.0	-9.86	AV	0.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1127.600	36.81	-15.28	74.0	-37.19	Peak	360.00	150	Vertical	Pass
1**	1127.600	26.37	-15.28	54.0	-27.63	AV	360.00	150	Vertical	Pass
2	2802.900	42.53	-8.65	74.0	-31.47	Peak	168.00	150	Vertical	Pass
2**	2802.900	32.91	-8.65	54.0	-21.09	AV	168.00	150	Vertical	Pass
3	4022.600	47.42	-4.05	74.0	-26.58	Peak	360.00	150	Vertical	Pass
3**	4022.600	35.23	-4.05	54.0	-18.77	AV	360.00	150	Vertical	Pass
4	5233.600	95.62	-0.70	--	--	Peak	243.00	150	Vertical	N/A
4**	5233.600	88.68	-0.70	--	--	AV	243.00	150	Vertical	N/A
5	11636.513	50.64	20.34	74.0	-23.36	Peak	115.00	150	Vertical	Pass
5**	11636.513	38.50	20.34	54.0	-15.50	AV	115.00	150	Vertical	Pass
6	15656.662	55.10	23.48	74.0	-18.90	Peak	0.00	150	Vertical	Pass
6**	15656.662	43.95	23.48	54.0	-10.05	AV	0.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1536.900	37.92	-14.84	74.0	-36.08	Peak	129.00	150	Horizontal	Pass
1**	1536.900	29.31	-14.84	54.0	-24.69	AV	129.00	150	Horizontal	Pass
2	2810.500	41.72	-8.60	74.0	-32.28	Peak	188.00	150	Horizontal	Pass
2**	2810.500	31.86	-8.60	54.0	-22.14	AV	188.00	150	Horizontal	Pass
3	4099.800	47.35	-4.30	74.0	-26.65	Peak	36.00	150	Horizontal	Pass
3**	4099.800	36.03	-4.30	54.0	-17.97	AV	36.00	150	Horizontal	Pass
4	5174.400	104.29	-0.58	--	--	Peak	201.00	150	Horizontal	N/A
4**	5174.400	97.48	-0.58	--	--	AV	201.00	150	Horizontal	N/A
5	11594.250	50.17	20.06	74.0	-23.83	Peak	67.00	150	Horizontal	Pass
5**	11594.250	38.46	20.06	54.0	-15.54	AV	67.00	150	Horizontal	Pass
6	15885.825	55.22	23.33	74.0	-18.78	Peak	118.00	150	Horizontal	Pass
6**	15885.825	43.43	23.33	54.0	-10.57	AV	118.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1061.300	37.15	-14.87	74.0	-36.85	Peak	212.00	150	Vertical	Pass
1**	1061.300	27.02	-14.87	54.0	-26.98	AV	212.00	150	Vertical	Pass
2	2852.300	42.13	-7.67	74.0	-31.87	Peak	123.00	150	Vertical	Pass
2**	2852.300	32.58	-7.67	54.0	-21.42	AV	123.00	150	Vertical	Pass
3	4125.000	47.02	-3.98	74.0	-26.98	Peak	266.00	150	Vertical	Pass
3**	4125.000	36.08	-3.98	54.0	-17.92	AV	266.00	150	Vertical	Pass
4	5183.600	93.19	-0.60	--	--	Peak	245.00	150	Vertical	N/A
4**	5183.600	86.47	-0.60	--	--	AV	245.00	150	Vertical	N/A
5	11594.537	50.71	20.06	74.0	-23.29	Peak	341.00	150	Vertical	Pass
5**	11594.537	38.76	20.06	54.0	-15.24	AV	341.00	150	Vertical	Pass
6	15633.299	55.17	23.52	74.0	-18.83	Peak	321.00	150	Vertical	Pass
6**	15633.299	43.76	23.52	54.0	-10.24	AV	321.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1039.700	37.21	-14.97	74.0	-36.79	Peak	160.00	150	Horizontal	Pass
1**	1039.700	28.42	-14.97	54.0	-25.58	AV	160.00	150	Horizontal	Pass
2	2756.400	42.57	-9.09	74.0	-31.43	Peak	47.00	150	Horizontal	Pass
2**	2756.400	32.79	-9.09	54.0	-21.21	AV	47.00	150	Horizontal	Pass
3	4066.800	46.53	-3.91	74.0	-27.47	Peak	359.00	150	Horizontal	Pass
3**	4066.800	36.00	-3.91	54.0	-18.00	AV	359.00	150	Horizontal	Pass
4	5215.200	106.17	-0.27	--	--	Peak	188.00	150	Horizontal	N/A
4**	5215.200	97.91	-0.27	--	--	AV	188.00	150	Horizontal	N/A
5	12365.038	52.01	19.58	74.0	-21.99	Peak	125.00	150	Horizontal	Pass
5**	12365.038	39.24	19.58	54.0	-14.76	AV	125.00	150	Horizontal	Pass
6	15927.037	55.14	23.74	74.0	-18.86	Peak	60.00	150	Horizontal	Pass
6**	15927.037	45.11	23.74	54.0	-8.89	AV	60.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1312.300	38.46	-14.68	74.0	-35.54	Peak	272.00	150	Vertical	Pass
1**	1312.300	31.01	-14.68	54.0	-22.99	AV	272.00	150	Vertical	Pass
2	2860.300	42.62	-7.72	74.0	-31.38	Peak	157.00	150	Vertical	Pass
2**	2860.300	33.24	-7.72	54.0	-20.76	AV	157.00	150	Vertical	Pass
3	4188.800	47.01	-3.92	74.0	-26.99	Peak	150.00	150	Vertical	Pass
3**	4188.800	35.88	-3.92	54.0	-18.12	AV	150.00	150	Vertical	Pass
4	5218.400	94.45	-0.23	--	--	Peak	234.00	150	Vertical	N/A
4**	5218.400	88.71	-0.23	--	--	AV	234.00	150	Vertical	N/A
5	12206.913	50.50	20.44	74.0	-23.50	Peak	360.00	150	Vertical	Pass
5**	12206.913	39.10	20.44	54.0	-14.90	AV	360.00	150	Vertical	Pass
6	15710.737	54.87	23.51	74.0	-19.13	Peak	337.00	150	Vertical	Pass
6**	15710.737	44.77	23.51	54.0	-9.23	AV	337.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1513.300	37.20	-14.79	74.0	-36.80	Peak	102.00	150	Horizontal	Pass
1**	1513.300	28.01	-14.79	54.0	-25.99	AV	102.00	150	Horizontal	Pass
2	2827.800	41.75	-8.50	74.0	-32.25	Peak	-2.00	150	Horizontal	Pass
2**	2827.800	31.37	-8.50	54.0	-22.63	AV	-2.00	150	Horizontal	Pass
3	4101.200	47.51	-4.23	74.0	-26.49	Peak	307.00	150	Horizontal	Pass
3**	4101.200	36.12	-4.23	54.0	-17.88	AV	307.00	150	Horizontal	Pass
4	5237.400	104.94	-0.87	--	--	Peak	193.00	150	Horizontal	N/A
4**	5237.400	98.12	-0.87	--	--	AV	193.00	150	Horizontal	N/A
5	11613.225	50.89	20.20	74.0	-23.11	Peak	64.00	150	Horizontal	Pass
5**	11613.225	39.23	20.20	54.0	-14.77	AV	64.00	150	Horizontal	Pass
6	15523.838	55.33	23.76	74.0	-18.67	Peak	362.00	150	Horizontal	Pass
6**	15523.838	43.05	23.76	54.0	-10.95	AV	362.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1485.300	37.70	-15.14	74.0	-36.30	Peak	182.00	150	Vertical	Pass
1**	1485.300	28.53	-15.14	54.0	-25.47	AV	182.00	150	Vertical	Pass
2	2809.800	41.82	-8.61	74.0	-32.18	Peak	-2.00	150	Vertical	Pass
2**	2809.800	32.37	-8.61	54.0	-21.63	AV	-2.00	150	Vertical	Pass
3	4166.600	46.69	-3.82	74.0	-27.31	Peak	359.00	150	Vertical	Pass
3**	4166.600	35.08	-3.82	54.0	-18.92	AV	359.00	150	Vertical	Pass
4	5237.000	94.20	-0.84	--	--	Peak	233.00	150	Vertical	N/A
4**	5237.000	88.02	-0.84	--	--	AV	233.00	150	Vertical	N/A
5	11700.625	50.81	19.81	74.0	-23.19	Peak	0.00	150	Vertical	Pass
5**	11700.625	39.31	19.81	54.0	-14.69	AV	0.00	150	Vertical	Pass
6	15440.625	54.88	23.26	74.0	-19.12	Peak	362.00	150	Vertical	Pass
6**	15440.625	43.22	23.26	54.0	-10.78	AV	362.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1569.200	37.69	-15.31	74.0	-36.31	Peak	216.00	150	Horizontal	Pass
1**	1569.200	27.19	-15.31	54.0	-26.81	AV	216.00	150	Horizontal	Pass
2	2743.200	42.05	-9.05	74.0	-31.95	Peak	360.00	150	Horizontal	Pass
2**	2743.200	32.90	-9.05	54.0	-21.10	AV	360.00	150	Horizontal	Pass
3	4295.200	47.89	-3.81	74.0	-26.11	Peak	45.00	150	Horizontal	Pass
3**	4295.200	35.64	-3.81	54.0	-18.36	AV	45.00	150	Horizontal	Pass
4	5196.400	101.19	-0.76	--	--	Peak	178.00	150	Horizontal	N/A
4**	5196.400	94.11	-0.76	--	--	AV	178.00	150	Horizontal	N/A
5	12347.500	52.23	19.73	74.0	-21.77	Peak	338.00	150	Horizontal	Pass
5**	12347.500	39.71	19.73	54.0	-14.29	AV	338.00	150	Horizontal	Pass
6	15886.612	54.91	23.32	74.0	-19.09	Peak	123.00	150	Horizontal	Pass
6**	15886.612	43.07	23.32	54.0	-10.93	AV	123.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1485.600	37.43	-15.14	74.0	-36.57	Peak	360.00	150	Vertical	Pass
1**	1485.600	27.95	-15.14	54.0	-26.05	AV	360.00	150	Vertical	Pass
2	2789.600	41.70	-8.99	74.0	-32.30	Peak	211.00	150	Vertical	Pass
2**	2789.600	32.33	-8.99	54.0	-21.67	AV	211.00	150	Vertical	Pass
3	4273.800	47.48	-3.62	74.0	-26.52	Peak	40.00	150	Vertical	Pass
3**	4273.800	35.74	-3.62	54.0	-18.26	AV	40.00	150	Vertical	Pass
4	5196.400	91.62	-0.76	--	--	Peak	241.00	150	Vertical	N/A
4**	5196.400	83.95	-0.76	--	--	AV	241.00	150	Vertical	N/A
5	11762.437	50.60	18.83	74.0	-23.40	Peak	110.00	150	Vertical	Pass
5**	11762.437	39.07	18.83	54.0	-14.93	AV	110.00	150	Vertical	Pass
6	15951.713	55.86	23.96	74.0	-18.14	Peak	339.00	150	Vertical	Pass
6**	15951.713	43.24	23.96	54.0	-10.76	AV	339.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1499.900	36.71	-15.19	74.0	-37.29	Peak	4.00	150	Horizontal	Pass
1**	1499.900	27.89	-15.19	54.0	-26.11	AV	4.00	150	Horizontal	Pass
2	2802.500	42.08	-8.67	74.0	-31.92	Peak	22.00	150	Horizontal	Pass
2**	2802.500	31.57	-8.67	54.0	-22.43	AV	22.00	150	Horizontal	Pass
3	4134.000	45.74	-4.15	74.0	-28.26	Peak	322.00	150	Horizontal	Pass
3**	4134.000	35.92	-4.15	54.0	-18.08	AV	322.00	150	Horizontal	Pass
4	5236.400	100.56	-0.80	--	--	Peak	180.00	150	Horizontal	N/A
4**	5236.400	93.66	-0.80	--	--	AV	180.00	150	Horizontal	N/A
5	11561.187	47.79	19.78	74.0	-26.21	Peak	89.00	150	Horizontal	Pass
5**	11561.187	36.27	19.78	54.0	-17.73	AV	89.00	150	Horizontal	Pass
6	15670.050	53.38	23.52	74.0	-20.62	Peak	281.00	150	Horizontal	Pass
6**	15670.050	41.52	23.52	54.0	-12.48	AV	281.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1491.500	42.49	-15.13	74.0	-31.51	Peak	356.00	150	Vertical	Pass
1**	1491.500	28.16	-15.13	54.0	-25.84	AV	356.00	150	Vertical	Pass
2	2754.800	41.31	-9.09	74.0	-32.69	Peak	11.00	150	Vertical	Pass
2**	2754.800	31.36	-9.09	54.0	-22.64	AV	11.00	150	Vertical	Pass
3	4054.200	46.51	-3.80	74.0	-27.49	Peak	0.00	150	Vertical	Pass
3**	4054.200	34.29	-3.80	54.0	-19.71	AV	0.00	150	Vertical	Pass
4	5233.400	90.25	-0.68	--	--	Peak	228.00	150	Vertical	N/A
4**	5233.400	83.52	-0.68	--	--	AV	228.00	150	Vertical	N/A
5	11595.112	48.13	20.07	74.0	-25.87	Peak	360.00	150	Vertical	Pass
5**	11595.112	37.32	20.07	54.0	-16.68	AV	360.00	150	Vertical	Pass
6	15642.750	53.09	23.55	74.0	-20.91	Peak	217.00	150	Vertical	Pass
6**	15642.750	42.33	23.55	54.0	-11.67	AV	217.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.800	42.48	-14.56	74.0	-31.52	Peak	213.00	150	Horizontal	Pass
1**	1329.800	28.29	-14.56	54.0	-25.71	AV	213.00	150	Horizontal	Pass
2	2782.500	41.58	-8.76	74.0	-32.42	Peak	302.00	150	Horizontal	Pass
2**	2782.500	32.97	-8.76	54.0	-21.03	AV	302.00	150	Horizontal	Pass
3	3826.600	45.57	-5.31	74.0	-28.43	Peak	306.00	150	Horizontal	Pass
3**	3826.600	32.71	-5.31	54.0	-21.29	AV	306.00	150	Horizontal	Pass
4	5741.000	103.47	-0.01	--	--	Peak	199.00	150	Horizontal	N/A
4**	5741.000	96.71	-0.01	--	--	AV	199.00	150	Horizontal	N/A
5	11685.100	48.35	20.00	74.0	-25.65	Peak	8.00	150	Horizontal	Pass
5**	11685.100	37.38	20.00	54.0	-16.62	AV	8.00	150	Horizontal	Pass
6	15933.075	53.01	23.81	74.0	-20.99	Peak	123.00	150	Horizontal	Pass
6**	15933.075	42.04	23.81	54.0	-11.96	AV	123.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1574.400	36.36	-15.32	74.0	-37.64	Peak	308.00	150	Vertical	Pass
1**	1574.400	27.00	-15.32	54.0	-27.00	AV	308.00	150	Vertical	Pass
2	2780.900	40.86	-8.73	74.0	-33.14	Peak	203.00	150	Vertical	Pass
2**	2780.900	32.39	-8.73	54.0	-21.61	AV	203.00	150	Vertical	Pass
3	3830.000	44.85	-5.43	74.0	-29.15	Peak	120.00	150	Vertical	Pass
3**	3830.000	39.79	-5.43	54.0	-14.21	AV	120.00	150	Vertical	Pass
4	5740.600	98.77	-0.02	--	--	Peak	147.00	150	Vertical	N/A
4**	5740.600	91.16	-0.02	--	--	AV	147.00	150	Vertical	N/A
5	11787.450	48.18	18.65	74.0	-25.82	Peak	227.00	150	Vertical	Pass
5**	11787.450	37.57	18.65	54.0	-16.43	AV	227.00	150	Vertical	Pass
6	15934.913	52.80	23.84	74.0	-21.20	Peak	360.00	150	Vertical	Pass
6**	15934.913	39.69	23.84	54.0	-14.31	AV	360.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.300	45.24	-14.60	74.0	-28.76	Peak	346.00	150	Horizontal	Pass
1**	1329.300	27.27	-14.60	54.0	-26.73	AV	346.00	150	Horizontal	Pass
2	2835.500	41.61	-8.53	74.0	-32.39	Peak	251.00	150	Horizontal	Pass
2**	2835.500	32.17	-8.53	54.0	-21.83	AV	251.00	150	Horizontal	Pass
3	4125.000	46.40	-3.98	74.0	-27.60	Peak	250.00	150	Horizontal	Pass
3**	4125.000	34.91	-3.98	54.0	-19.09	AV	250.00	150	Horizontal	Pass
4	5780.600	102.58	1.04	--	--	Peak	207.00	150	Horizontal	N/A
4**	5780.600	95.57	1.04	--	--	AV	207.00	150	Horizontal	N/A
5	11686.537	48.56	19.99	74.0	-25.44	Peak	20.00	150	Horizontal	Pass
5**	11686.537	36.92	19.99	54.0	-17.08	AV	20.00	150	Horizontal	Pass
6	15907.350	53.65	23.41	74.0	-20.35	Peak	19.00	150	Horizontal	Pass
6**	15907.350	41.28	23.41	54.0	-12.72	AV	19.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.700	47.09	-14.70	74.0	-26.91	Peak	233.00	150	Vertical	Pass
1**	1327.700	30.69	-14.70	54.0	-23.31	AV	233.00	150	Vertical	Pass
2	2796.600	41.23	-8.94	74.0	-32.77	Peak	242.00	150	Vertical	Pass
2**	2796.600	31.91	-8.94	54.0	-22.09	AV	242.00	150	Vertical	Pass
3	4213.000	45.99	-3.89	74.0	-28.01	Peak	223.00	150	Vertical	Pass
3**	4213.000	34.02	-3.89	54.0	-19.98	AV	223.00	150	Vertical	Pass
4	5782.200	98.34	1.04	--	--	Peak	154.00	150	Vertical	N/A
4**	5782.200	92.02	1.04	--	--	AV	154.00	150	Vertical	N/A
5	11631.337	48.08	20.31	74.0	-25.92	Peak	55.00	150	Vertical	Pass
5**	11631.337	37.57	20.31	54.0	-16.43	AV	55.00	150	Vertical	Pass
6	15714.675	52.54	23.49	74.0	-21.46	Peak	195.00	150	Vertical	Pass
6**	15714.675	42.75	23.49	54.0	-11.25	AV	195.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.700	44.76	-14.70	74.0	-29.24	Peak	299.00	150	Horizontal	Pass
1**	1327.700	30.43	-14.70	54.0	-23.57	AV	299.00	150	Horizontal	Pass
2	2851.800	42.30	-7.66	74.0	-31.70	Peak	316.00	150	Horizontal	Pass
2**	2851.800	32.20	-7.66	54.0	-21.80	AV	316.00	150	Horizontal	Pass
3	3883.000	46.89	-5.21	74.0	-27.11	Peak	196.00	150	Horizontal	Pass
3**	3883.000	35.68	-5.21	54.0	-18.32	AV	196.00	150	Horizontal	Pass
4	5820.600	102.93	0.92	--	--	Peak	196.00	150	Horizontal	N/A
4**	5820.600	96.57	0.92	--	--	AV	196.00	150	Horizontal	N/A
5	11619.262	48.13	20.23	74.0	-25.87	Peak	208.00	150	Horizontal	Pass
5**	11619.262	36.30	20.23	54.0	-17.70	AV	208.00	150	Horizontal	Pass
6	15684.487	52.80	23.59	74.0	-21.20	Peak	241.00	150	Horizontal	Pass
6**	15684.487	41.42	23.59	54.0	-12.58	AV	241.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.900	46.37	-14.69	74.0	-27.63	Peak	243.00	150	Vertical	Pass
1**	1327.900	30.91	-14.69	54.0	-23.09	AV	243.00	150	Vertical	Pass
2	2822.400	41.71	-8.55	74.0	-32.29	Peak	164.00	150	Vertical	Pass
2**	2822.400	31.47	-8.55	54.0	-22.53	AV	164.00	150	Vertical	Pass
3	3883.400	46.44	-5.22	74.0	-27.56	Peak	242.00	150	Vertical	Pass
3**	3883.400	40.95	-5.22	54.0	-13.05	AV	242.00	150	Vertical	Pass
4	5817.800	98.55	0.96	--	--	Peak	149.00	150	Vertical	N/A
4**	5817.800	91.63	0.96	--	--	AV	149.00	150	Vertical	N/A
5	11689.987	48.27	19.94	74.0	-25.73	Peak	169.00	150	Vertical	Pass
5**	11689.987	37.12	19.94	54.0	-16.88	AV	169.00	150	Vertical	Pass
6	15926.776	53.59	23.73	74.0	-20.41	Peak	265.00	150	Vertical	Pass
6**	15926.776	42.91	23.73	54.0	-11.09	AV	265.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.900	40.26	-14.69	74.0	-33.74	Peak	336.00	150	Horizontal	Pass
1**	1327.900	30.18	-14.69	54.0	-23.82	AV	336.00	150	Horizontal	Pass
2	2828.200	41.60	-8.53	74.0	-32.40	Peak	362.00	150	Horizontal	Pass
2**	2828.200	31.37	-8.53	54.0	-22.63	AV	362.00	150	Horizontal	Pass
3	4250.000	47.94	-3.18	74.0	-26.06	Peak	176.00	150	Horizontal	Pass
3**	4250.000	36.64	-3.18	54.0	-17.36	AV	176.00	150	Horizontal	Pass
4	5740.000	102.13	-0.05	--	--	Peak	203.00	150	Horizontal	N/A
4**	5740.000	95.15	-0.05	--	--	AV	203.00	150	Horizontal	N/A
5	11708.100	47.62	19.67	74.0	-26.38	Peak	147.00	150	Horizontal	Pass
5**	11708.100	36.89	19.67	54.0	-17.11	AV	147.00	150	Horizontal	Pass
6	15787.650	53.47	23.17	74.0	-20.53	Peak	361.00	150	Horizontal	Pass
6**	15787.650	41.73	23.17	54.0	-12.27	AV	361.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.400	44.17	-14.59	74.0	-29.83	Peak	232.00	150	Vertical	Pass
1**	1329.400	30.45	-14.59	54.0	-23.55	AV	232.00	150	Vertical	Pass
2	2801.100	42.11	-8.73	74.0	-31.89	Peak	223.00	150	Vertical	Pass
2**	2801.100	31.03	-8.73	54.0	-22.97	AV	223.00	150	Vertical	Pass
3	3829.600	45.84	-5.48	74.0	-28.16	Peak	121.00	150	Vertical	Pass
3**	3829.600	33.97	-5.48	54.0	-20.03	AV	121.00	150	Vertical	Pass
4	5740.400	98.05	-0.03	--	--	Peak	149.00	150	Vertical	N/A
4**	5740.400	90.11	-0.03	--	--	AV	149.00	150	Vertical	N/A
5	11556.588	48.19	19.75	74.0	-25.81	Peak	0.00	150	Vertical	Pass
5**	11556.588	35.79	19.75	54.0	-18.21	AV	0.00	150	Vertical	Pass
6	15811.013	53.48	23.22	74.0	-20.52	Peak	-2.00	150	Vertical	Pass
6**	15811.013	41.54	23.22	54.0	-12.46	AV	-2.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1330.200	43.57	-14.53	74.0	-30.43	Peak	166.00	150	Horizontal	Pass
1**	1330.200	29.54	-14.53	54.0	-24.46	AV	166.00	150	Horizontal	Pass
2	2788.600	41.58	-8.92	74.0	-32.42	Peak	0.00	150	Horizontal	Pass
2**	2788.600	31.20	-8.92	54.0	-22.80	AV	0.00	150	Horizontal	Pass
3	4044.800	45.92	-3.92	74.0	-28.08	Peak	301.00	150	Horizontal	Pass
3**	4044.800	34.36	-3.92	54.0	-19.64	AV	301.00	150	Horizontal	Pass
4	5780.400	102.05	1.04	--	--	Peak	207.00	150	Horizontal	N/A
4**	5780.400	95.68	1.04	--	--	AV	207.00	150	Horizontal	N/A
5	11599.138	47.73	20.12	74.0	-26.27	Peak	93.00	150	Horizontal	Pass
5**	11599.138	36.61	20.12	54.0	-17.39	AV	93.00	150	Horizontal	Pass
6	15681.599	52.45	23.59	74.0	-21.55	Peak	107.00	150	Horizontal	Pass
6**	15681.599	41.64	23.59	54.0	-12.36	AV	107.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1328.500	44.86	-14.65	74.0	-29.14	Peak	4.00	150	Vertical	Pass
1**	1328.500	30.11	-14.65	54.0	-23.89	AV	4.00	150	Vertical	Pass
2	2785.100	41.38	-8.82	74.0	-32.62	Peak	57.00	150	Vertical	Pass
2**	2785.100	31.38	-8.82	54.0	-22.62	AV	57.00	150	Vertical	Pass
3	3856.800	45.92	-5.35	74.0	-28.08	Peak	214.00	150	Vertical	Pass
3**	3856.800	40.93	-5.35	54.0	-13.07	AV	214.00	150	Vertical	Pass
4	5788.600	97.72	1.02	--	--	Peak	151.00	150	Vertical	N/A
4**	5788.600	90.77	1.02	--	--	AV	151.00	150	Vertical	N/A
5	12196.850	49.42	20.41	74.0	-24.58	Peak	144.00	150	Vertical	Pass
5**	12196.850	36.97	20.41	54.0	-17.03	AV	144.00	150	Vertical	Pass
6	15562.424	53.39	23.58	74.0	-20.61	Peak	245.00	150	Vertical	Pass
6**	15562.424	41.25	23.58	54.0	-12.75	AV	245.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.200	43.05	-14.60	74.0	-30.95	Peak	240.00	150	Horizontal	Pass
1**	1329.200	27.39	-14.60	54.0	-26.61	AV	240.00	150	Horizontal	Pass
2	2815.300	41.67	-8.59	74.0	-32.33	Peak	346.00	150	Horizontal	Pass
2**	2815.300	31.13	-8.59	54.0	-22.87	AV	346.00	150	Horizontal	Pass
3	3883.400	45.90	-5.22	74.0	-28.10	Peak	216.00	150	Horizontal	Pass
3**	3883.400	41.99	-5.22	54.0	-12.01	AV	216.00	150	Horizontal	Pass
4	5828.400	102.35	0.91	--	--	Peak	189.00	150	Horizontal	N/A
4**	5828.400	96.03	0.91	--	--	AV	189.00	150	Horizontal	N/A
5	11796.362	48.03	18.58	74.0	-25.97	Peak	307.00	150	Horizontal	Pass
5**	11796.362	35.75	18.58	54.0	-18.25	AV	307.00	150	Horizontal	Pass
6	15970.875	53.34	24.00	74.0	-20.66	Peak	53.00	150	Horizontal	Pass
6**	15970.875	41.86	24.00	54.0	-12.14	AV	53.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1328.800	47.46	-14.63	74.0	-26.54	Peak	238.00	150	Vertical	Pass
1**	1328.800	30.53	-14.63	54.0	-23.47	AV	238.00	150	Vertical	Pass
2	2860.500	42.01	-7.73	74.0	-31.99	Peak	42.00	150	Vertical	Pass
2**	2860.500	33.41	-7.73	54.0	-20.59	AV	42.00	150	Vertical	Pass
3	3883.400	47.00	-5.22	74.0	-27.00	Peak	196.00	150	Vertical	Pass
3**	3883.400	40.61	-5.22	54.0	-13.39	AV	196.00	150	Vertical	Pass
4	5826.600	98.38	0.80	--	--	Peak	149.00	150	Vertical	N/A
4**	5826.600	90.68	0.80	--	--	AV	149.00	150	Vertical	N/A
5	11018.100	47.88	18.94	74.0	-26.12	Peak	96.00	150	Vertical	Pass
5**	11018.100	35.52	18.94	54.0	-18.48	AV	96.00	150	Vertical	Pass
6	15760.349	53.26	23.29	74.0	-20.74	Peak	333.00	150	Vertical	Pass
6**	15760.349	41.15	23.29	54.0	-12.85	AV	333.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1110.000	41.50	-15.23	74.0	-32.50	Peak	343.00	150	Horizontal	Pass
1**	1110.000	32.70	-15.23	54.0	-21.30	AV	343.00	150	Horizontal	Pass
2	2774.300	41.72	-8.64	74.0	-32.28	Peak	269.00	150	Horizontal	Pass
2**	2774.300	33.37	-8.64	54.0	-20.63	AV	269.00	150	Horizontal	Pass
3	3838.000	45.02	-5.25	74.0	-28.98	Peak	75.00	150	Horizontal	Pass
3**	3838.000	32.77	-5.25	54.0	-21.23	AV	75.00	150	Horizontal	Pass
4	5745.800	98.73	0.38	--	--	Peak	199.00	150	Horizontal	N/A
4**	5745.800	92.36	0.38	--	--	AV	199.00	150	Horizontal	N/A
5	11537.325	47.89	19.59	74.0	-26.11	Peak	114.00	150	Horizontal	Pass
5**	11537.325	35.80	19.59	54.0	-18.20	AV	114.00	150	Horizontal	Pass
6	15548.512	53.62	23.62	74.0	-20.38	Peak	255.00	150	Horizontal	Pass
6**	15548.512	41.79	23.62	54.0	-12.21	AV	255.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1328.300	47.79	-14.67	74.0	-26.21	Peak	242.00	150	Vertical	Pass
1**	1328.300	31.91	-14.67	54.0	-22.09	AV	242.00	150	Vertical	Pass
2	2844.300	41.83	-8.05	74.0	-32.17	Peak	331.00	150	Vertical	Pass
2**	2844.300	32.27	-8.05	54.0	-21.73	AV	331.00	150	Vertical	Pass
3	3837.000	46.44	-5.28	74.0	-27.56	Peak	73.00	150	Vertical	Pass
3**	3837.000	41.00	-5.28	54.0	-13.00	AV	73.00	150	Vertical	Pass
4	5740.400	94.13	-0.03	--	--	Peak	151.00	150	Vertical	N/A
4**	5740.400	87.27	-0.03	--	--	AV	151.00	150	Vertical	N/A
5	11685.963	48.75	19.99	74.0	-25.25	Peak	134.00	150	Vertical	Pass
5**	11685.963	36.04	19.99	54.0	-17.96	AV	134.00	150	Vertical	Pass
6	15744.862	53.01	23.42	74.0	-20.99	Peak	103.00	150	Vertical	Pass
6**	15744.862	40.87	23.42	54.0	-13.13	AV	103.00	150	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)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.500	44.18	-14.58	74.0	-29.82	Peak	226.00	150	Horizontal	Pass
1**	1329.500	30.80	-14.58	54.0	-23.20	AV	226.00	150	Horizontal	Pass
2	2826.800	41.59	-8.45	74.0	-32.41	Peak	262.00	150	Horizontal	Pass
2**	2826.800	31.39	-8.45	54.0	-22.61	AV	262.00	150	Horizontal	Pass
3	3863.200	46.60	-5.11	74.0	-27.40	Peak	196.00	150	Horizontal	Pass
3**	3863.200	38.10	-5.11	54.0	-15.90	AV	196.00	150	Horizontal	Pass
4	5781.200	98.84	1.04	--	--	Peak	196.00	150	Horizontal	N/A
4**	5781.200	93.13	1.04	--	--	AV	196.00	150	Horizontal	N/A
5	11519.213	48.57	19.43	74.0	-25.43	Peak	93.00	150	Horizontal	Pass
5**	11519.213	36.11	19.43	54.0	-17.89	AV	93.00	150	Horizontal	Pass
6	15631.725	53.75	23.52	74.0	-20.25	Peak	-2.00	150	Horizontal	Pass
6**	15631.725	43.09	23.52	54.0	-10.91	AV	-2.00	150	Horizontal	Pass

11n40, U-NII-3, 1 GHz to 18 GHz, High Channel, ANT V

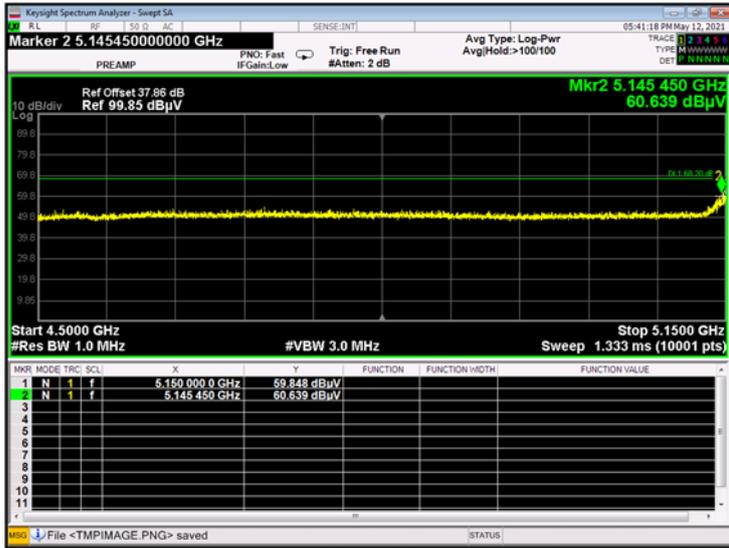
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1328.600	44.20	-14.65	74.0	-29.80	Peak	294.00	150	Vertical	Pass
1**	1328.600	30.82	-14.65	54.0	-23.18	AV	294.00	150	Vertical	Pass
2	2803.600	41.73	-8.70	74.0	-32.27	Peak	0.00	150	Vertical	Pass
2**	2803.600	31.64	-8.70	54.0	-22.36	AV	0.00	150	Vertical	Pass
3	3863.200	46.24	-5.11	74.0	-27.76	Peak	157.00	150	Vertical	Pass
3**	3863.200	40.17	-5.11	54.0	-13.83	AV	157.00	150	Vertical	Pass
4	5780.200	96.72	1.04	--	--	Peak	157.00	150	Vertical	N/A
4**	5780.200	88.37	1.04	--	--	AV	157.00	150	Vertical	N/A
5	11698.037	48.62	19.85	74.0	-25.38	Peak	244.00	150	Vertical	Pass
5**	11698.037	36.27	19.85	54.0	-17.73	AV	244.00	150	Vertical	Pass
6	15795.787	53.84	23.15	74.0	-20.16	Peak	297.00	150	Vertical	Pass
6**	15795.787	40.60	23.15	54.0	-13.40	AV	297.00	150	Vertical	Pass

A.6.2 Band Edge (Restricted-band)

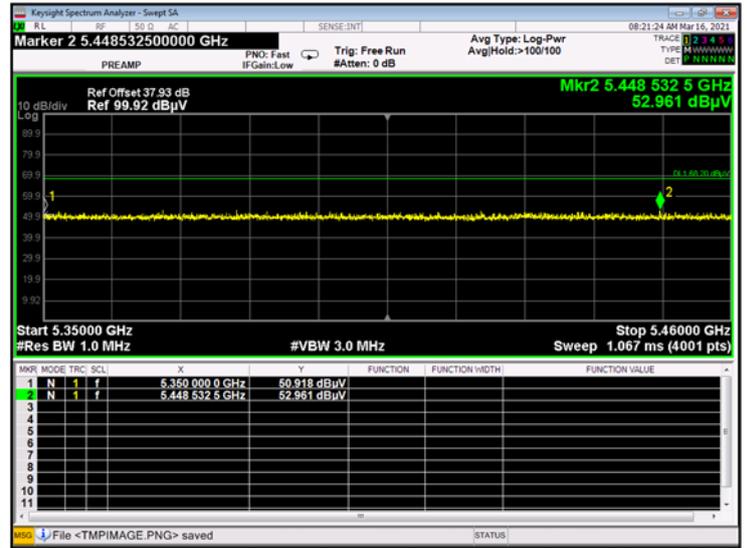
Test Band	Mode	Channel	Verdict
U-NII-1	802.11a	Low	Pass
		High	Pass
	802.11n(HT20)	Low	Pass
		High	Pass
	802.11n(HT40)	Low	Pass
		High	Pass
U-NII-3	802.11a	Low	Pass
		High	Pass
	802.11n(HT20)	Low	Pass
		High	Pass
	802.11n(HT40)	Low	Pass
		High	Pass

Test Plots

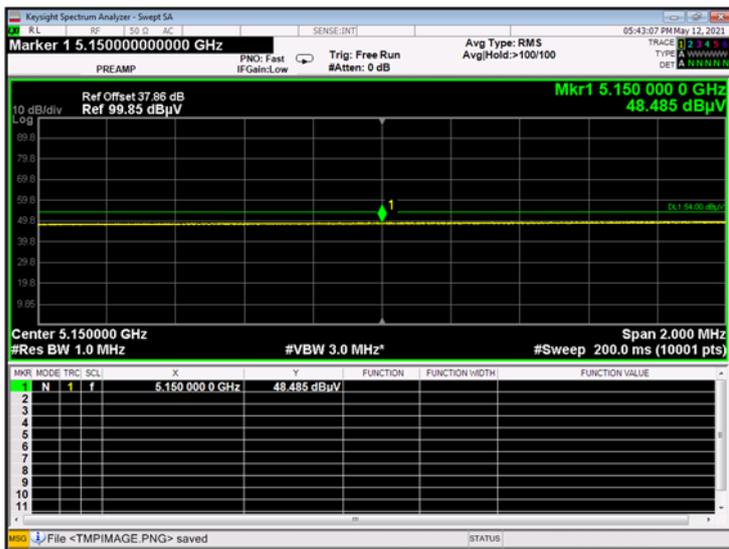
U-NII-1 11a CH36 Peak



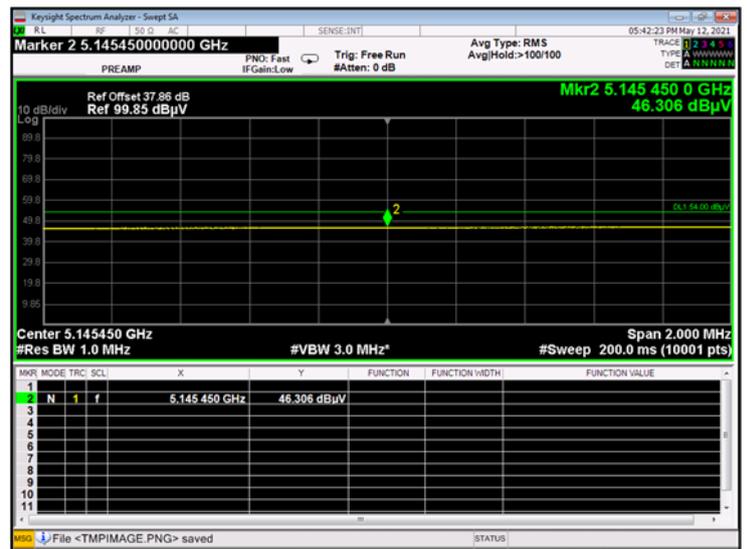
U-NII-1 11a CH48 Peak



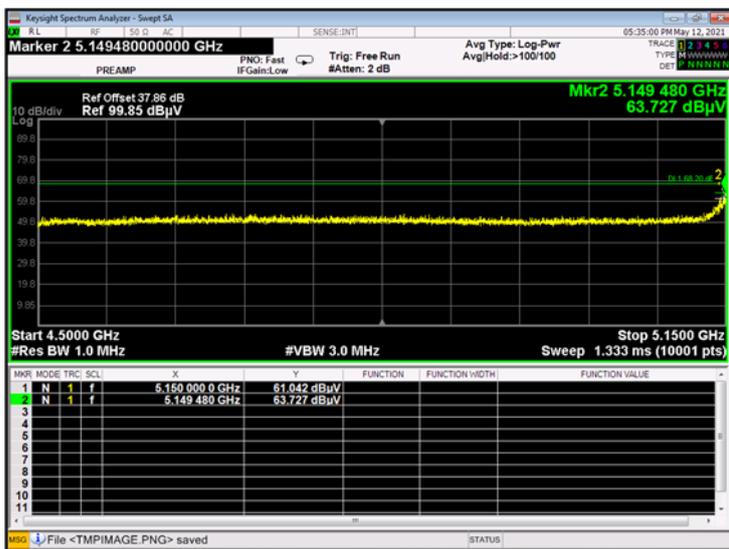
U-NII-1 11a CH36 AV



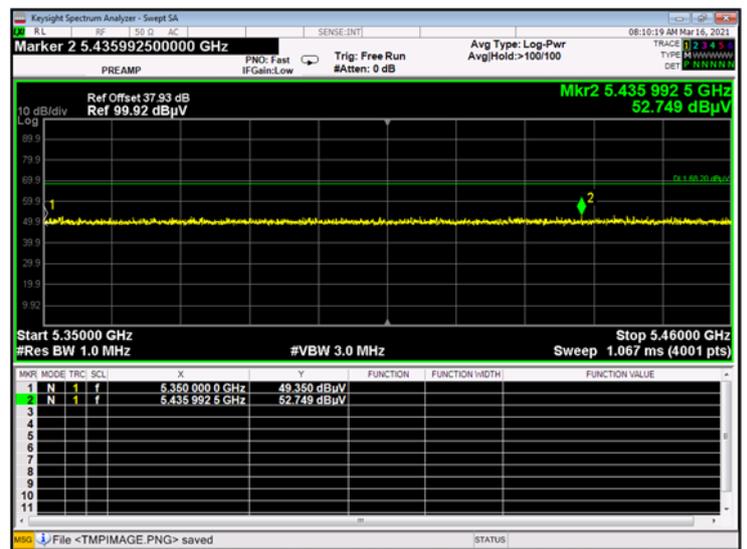
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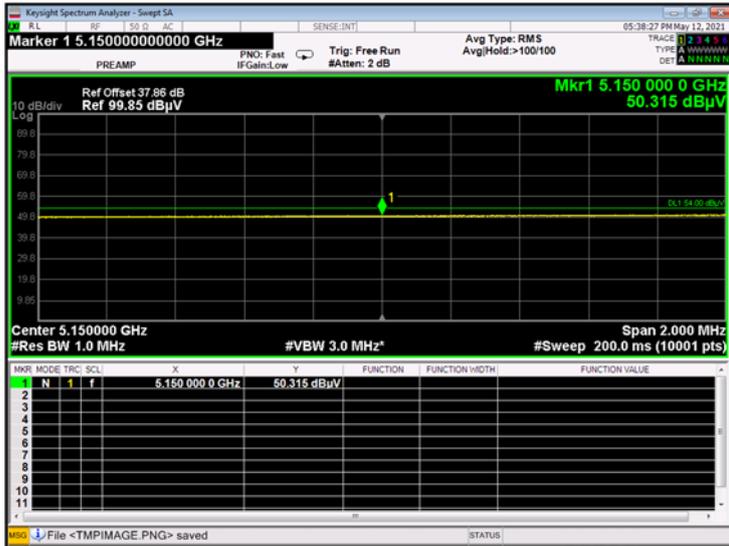
U-NII-1 11n20 CH36 Peak



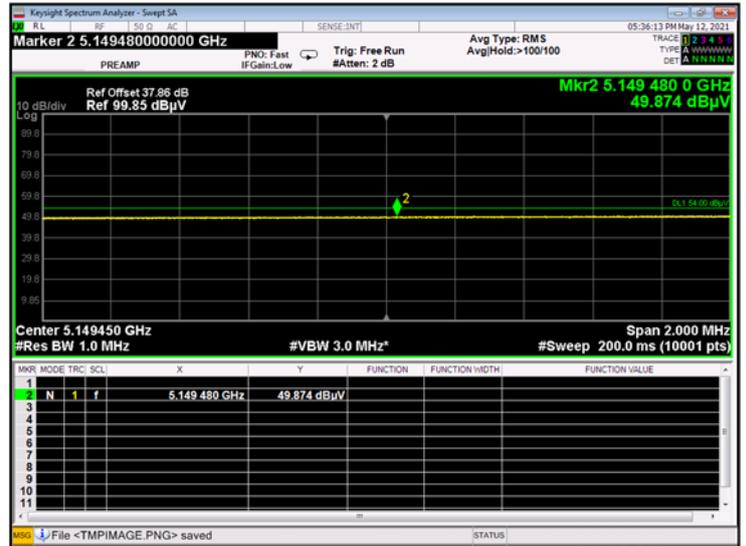
U-NII-1 11n20 CH48 Peak



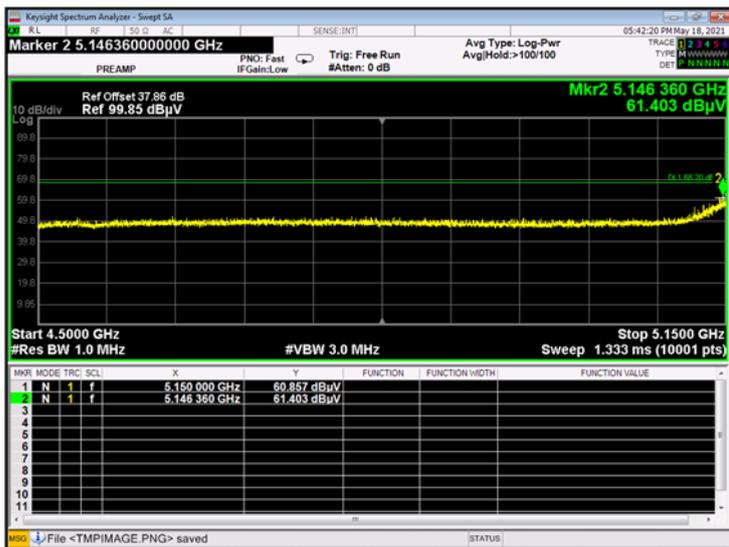
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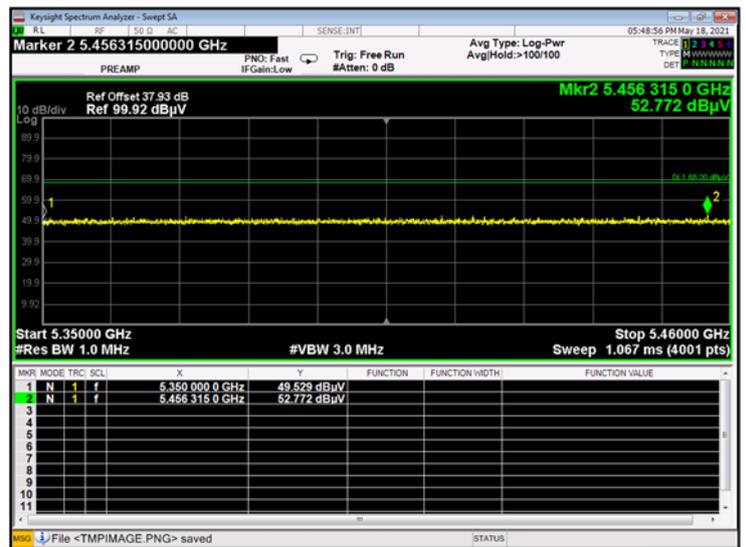
U-NII-1 11n20 CH36 AV



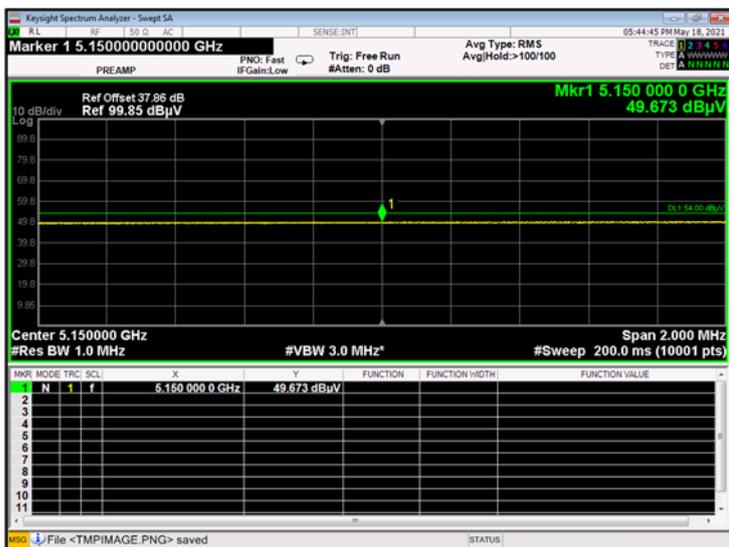
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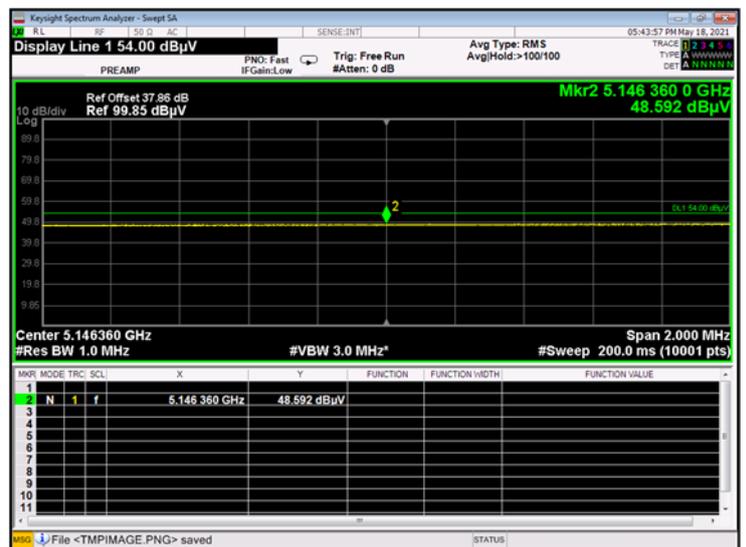
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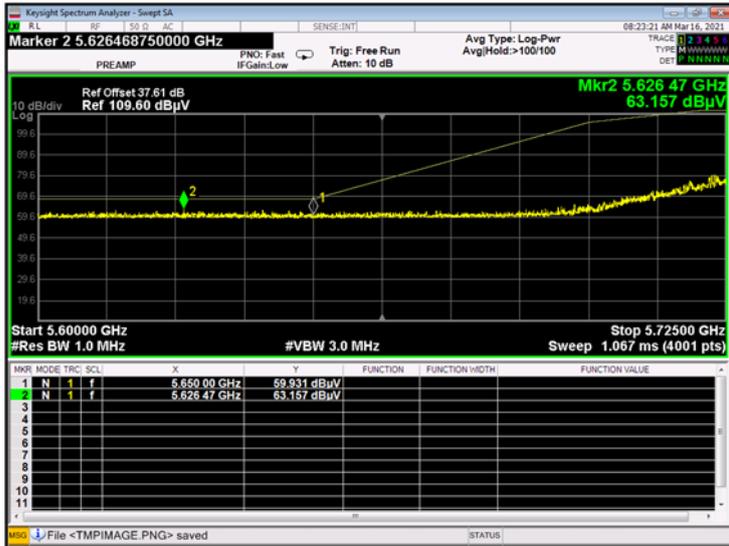
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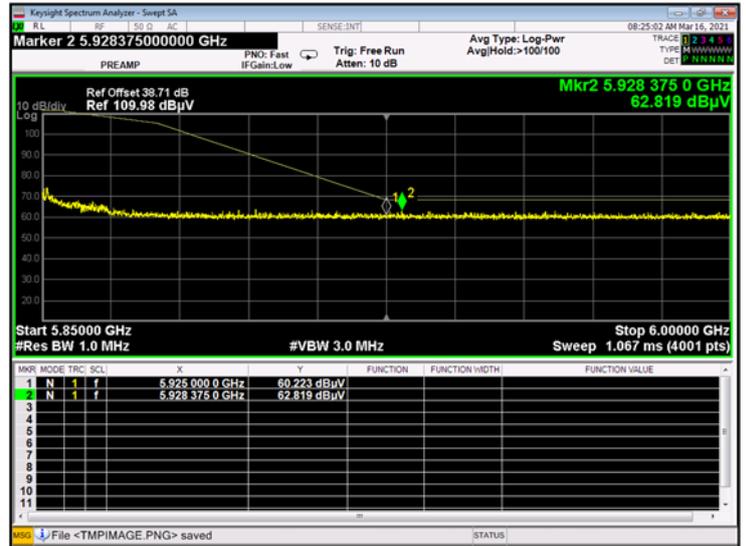
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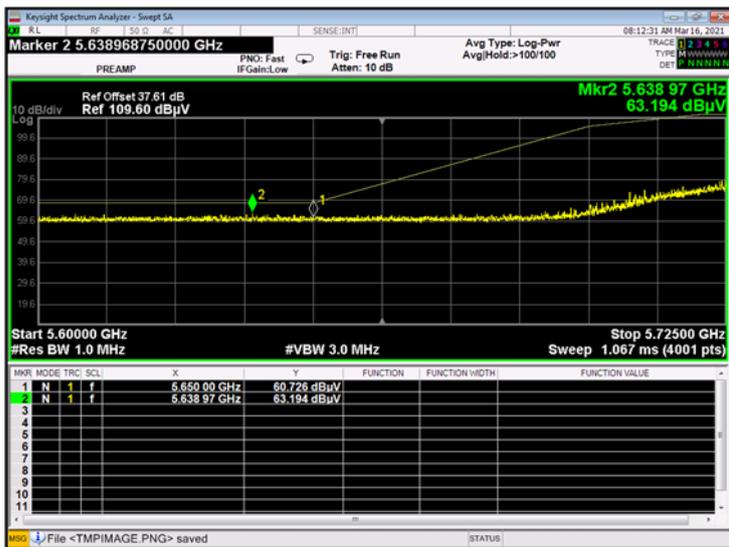
U-NII-3 11a CH149 Peak



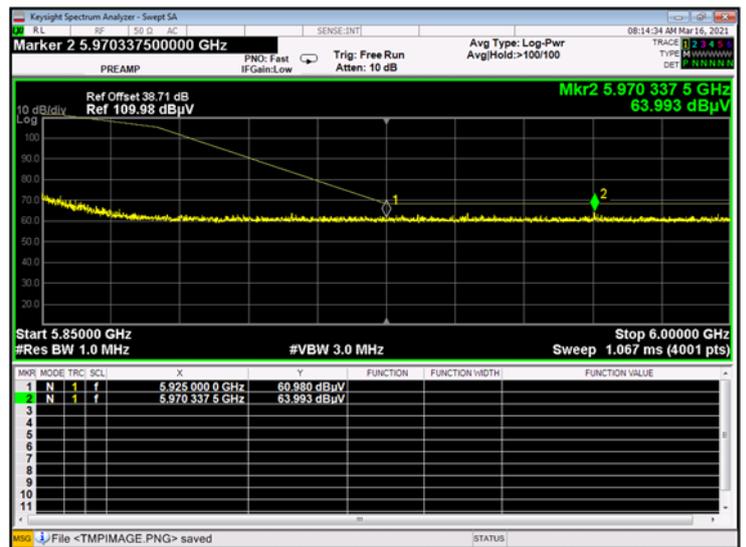
U-NII-3 11a CH165 Peak



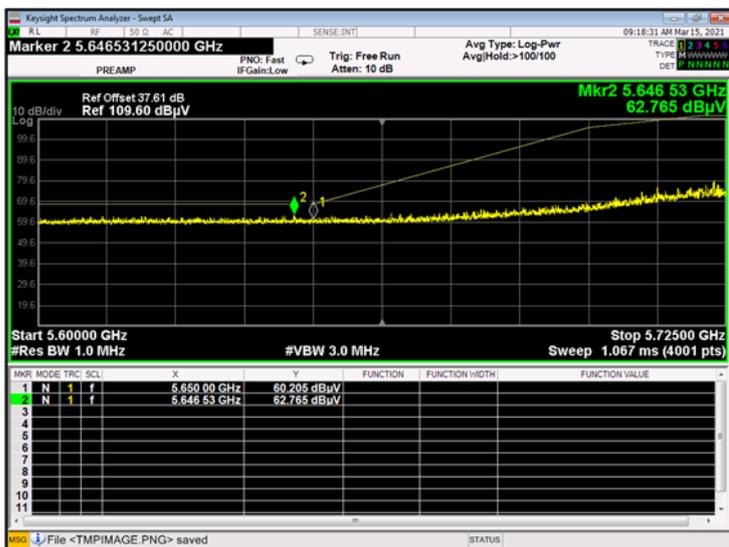
U-NII-3 11n20 CH149 Peak



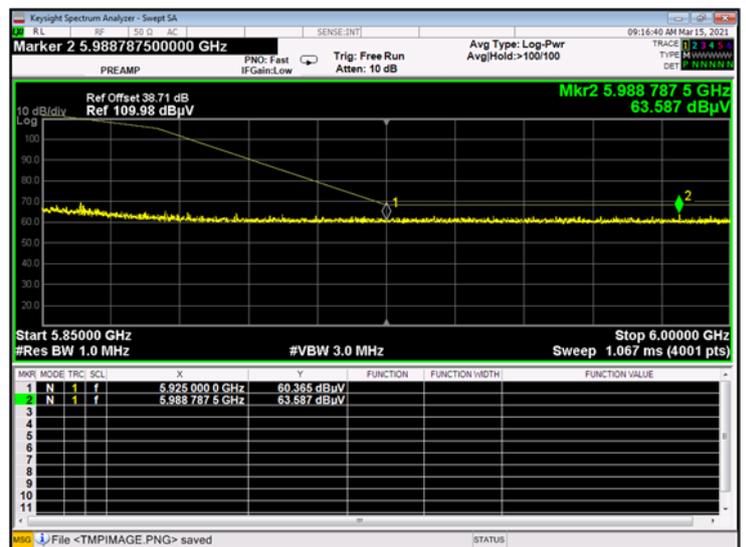
U-NII-3 11n20 CH165 Peak



U-NII-3 11n40 CH151 Peak



U-NII-3 11n40 CH159 Peak



ANNEX B TEST SETUP PHOTOS

Please refer the document "BL-SZ20C0502-AR.PDF".

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document "BL-SZ20C0502-AW.PDF".

ANNEX D EUT INTERNAL PHOTOS

Please refer the document "BL-SZ20C0502-AI.PDF".

--END OF REPORT--