




FCC PART 15.407  
TEST REPORT

For

**Winner Wave Limited**

Unit 1615 Peninsula Tower, 538 Castle Peak Road, Lai Chi Kok Kowloon, Hong Kong

**FCC ID: 2ADFS-WR02**

<b>Report Type:</b> Original Report	<b>Product Type:</b> ProAV
<b>Report Number:</b> SZ5210728-52752E-RF-00	
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## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

Product	ProAV
Tested Model	WR02
Multiple Model	WR01
Model Differences	Refer to the DoS letter
Frequency Range	5G Wi-Fi: 5150-5250MHz; 5725-5850MHz
Maximum Average Conducted Output Power	5150-5250MHz: 17.26dBm 5725-5850MHz: 18.18dBm
Modulation Technique	OFDM
Antenna Specification	5150-5250MHz: 2.52dBi 5725-5850MHz: 3.85dBi(It is provided by the manufacturer)
Voltage Range	DC 12V from adapter
Date of Test	2021-08-13 to 2021-11-09
Sample serial number	SZ5210728-52752E-RF-S1
Received date	2021-07-28
Sample/EUT Status	Good condition
Adapter information	Model: ICPI2-120-1000D Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 12.0V, 1.0A, 12.0W

### Objective

This type approval report is in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

### Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. And KDB789033D02 General U-NII Test Procedures New Rules v02r01.

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd.. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

## Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF output power, conducted		0.73dB
Unwanted Emission, conducted		1.6dB
Emissions, Radiated	30MHz - 1GHz	4.28dB
	1GHz- 18GHz	4.98dB
	18GHz- 26.5GHz	5.06dB
	26.5GHz- 40GHz	4.72dB
Temperature		1°C
Humidity		6%
Supply voltages		0.4%

*Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.*

## Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 429 7.01.

Listed by Innovation, Science and Economic Development Canada (ISED), the Registration Number is 5077A-2.

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

The system was configured for testing in an engineering mode, which was provided by manufacturer.

The device only supports 5G Wi-Fi 802.11a/n20/n40/ac20/ac40/ac80 modes, which was declared by manufacturer.

For 5150-5250MHz Band, 7 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240
42	5210	/	/

For 802.11a, 802.11n20, 802.11ac20 mode, channel 36, 40, 48 were tested;

For 802.11n40, 802.11ac40 mode, channel 38, 46 were tested;

For 802.11ac80 channel 42 was tested.

For 5725-5850MHz Band, 8 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785
151	5755	159	5795
153	5765	161	5805
155	5775	165	5825

For 802.11a, 802.11n20, 802.11ac20 mode, channel 149, 157, 165 were tested;

For 802.11n40, 802.11ac40 mode, channel 151, 159 were tested;

For 802.11ac80, channel 155 were tested.

### EUT Exercise Software

“REALTEK 11ac 8822BU USB WLAN NIC Massproduction” software was used to test, which provided by manufacturer and power level as below:

Mode	Data Rate (Mbps)	Power Level*
802.11a	6Mbps	Default
802.11n-HT20	MCS0	Default
802.11n-HT40	MCS0	Default
802.11ac20	MCS0	Default
802.11ac40	MCS0	Default
802.11ac80	MCS0	Default

Note: EUT have two antennas, for 802.11a mode only support SISO mode; for other modes, support SISO and MIMO mode, the SISO/MIMO mode has same parameter setting, the worst case MIMO mode was select to test.

### Equipment Modifications

No modification was made to the EUT tested.

### Support Equipment List and Details

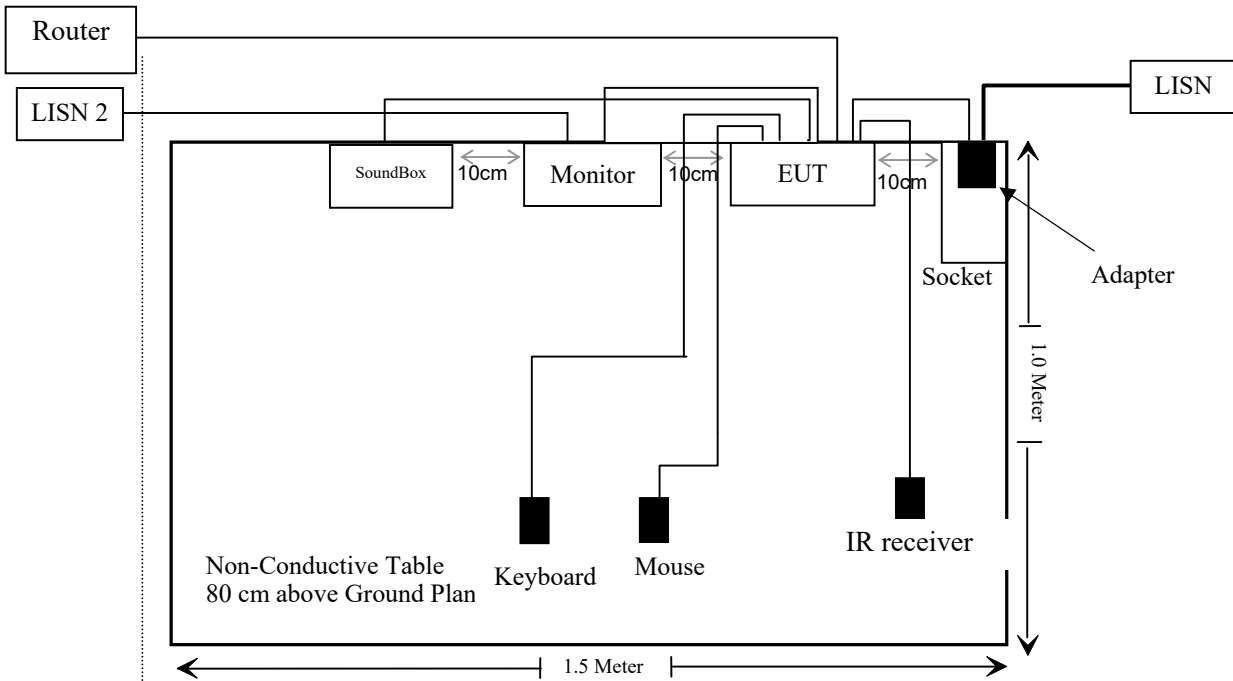
Manufacturer	Description	Model	Serial Number
DELL	Monitor	RVE A00	506250042400R
HUAWEI	Router	WS5100	A4933FEF1D01
LUOJI	mouse	MS111-L	CN-09RRC7-48729-38F-0 H8S
DELL	KeyBoard	KB212-B	0K6KPN
Aduro	SoundBox	R1-09	4981303822

**External I/O Cable**

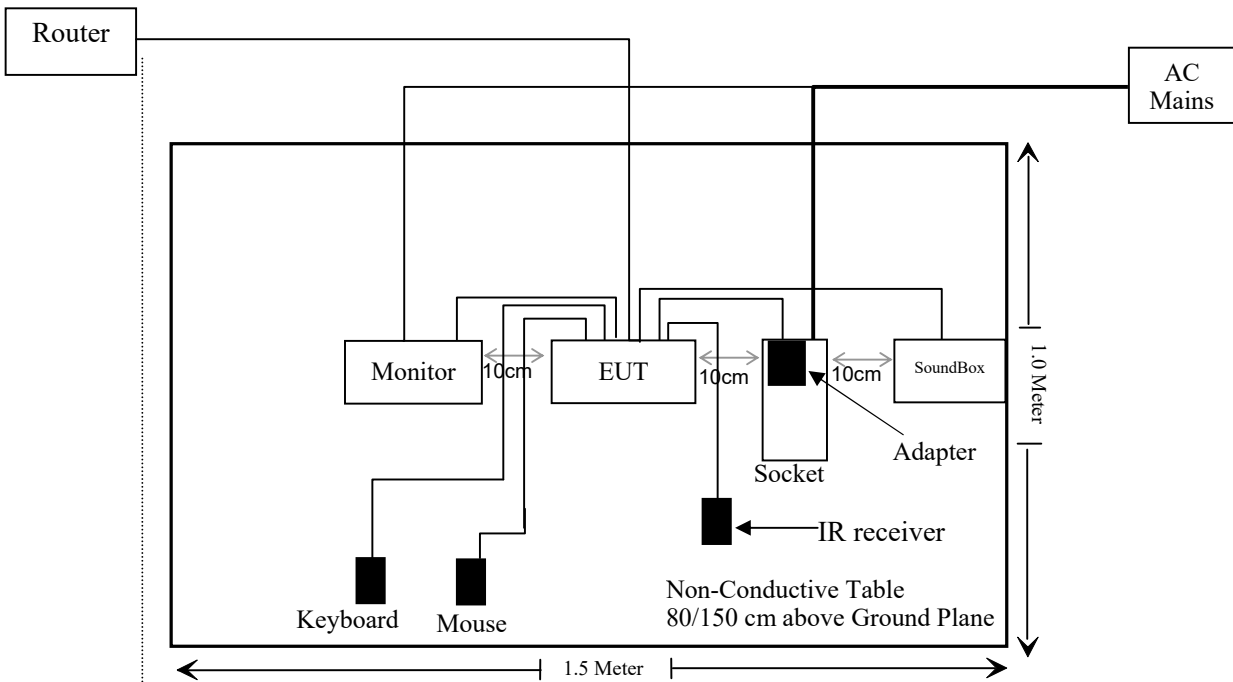
<b>Cable Description</b>	<b>Length (m)</b>	<b>From Port</b>	<b>To</b>
Un-shielded Un-detachable AC cable	1.0	Socket	LISN
Un-shielded Un-detachable DC cable	1.2	Adapter	EUT
Un-Shielded Detachable HDMI Cable	1.0	Monitor	EUT
Un-shielded Un-detachable AUX cable	0.5	SoundBox	EUT
Un-shielded Un-detachable DC cable	1.2	IR receiver	EUT
Un-shielded detachable DC cable	1.3	keyboard	EUT
Un-shielded detachable DC cable	1.3	Mouse	EUT
Un-shielded detachable RJ45 cable	4.0	EUT	Router

### Block Diagram of Test Setup

For conducted emission:



For Radiated emission:





## SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §1.1307 (b) (1), §2.1091	Maximum Permissible Exposure(MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.407(b)(8) & §15.207(a)	Conducted Emissions	Compliant
§15.205 & §15.209 & §15.407(b) (1), (4), (8), (9), (10)	Undesirable Emission& Restricted Bands	Compliant
§15.407(a) (12), (e)	Bandwidth	Compliant*
§15.407(a) (1), (3)	Conducted Transmitter Output Power	Compliant
§15.407 (a) (1), (3)	Power Spectral Density	Compliant*

Compliant\*: The Wi-Fi module used in EUT is electrical identical with the one used in Winner Wave Limited's product ProAV(model: WT02, FCC ID: 2ADFS-WT02), the output power was tested and verified, it's remain within the tune-up tolerance range, so test data please refer to the report : SZ5210728-52737E-RF-00.

**TEST EQUIPMENT LIST**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted emission test					
Rohde & Schwarz	Test Receiver	ESCS30	100307	2020/12/25	2021/12/24
Schwarzbeck	L.I.S.N.	NLSK8126	8126431	2020/12/25	2021/12/24
Rohde & Schwarz	Pulse Limiter	ESH3-Z2	100815	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-2m	No.2	2020/12/25	2021/12/24
Conducted Emission Test Software: ES-K1 V1.71					
Radiated emission test					
Rohde& Schwarz	Test Receiver	ESR	101817	2020/12/24	2021/12/23
Rohde&Schwarz	Spectrum Analyzer	FSV40	101495	2020/12/24	2021/12/23
SONOMA INSTRUMENT	Amplifier	310 N	186131	2020/12/25	2021/12/24
A.H. Systems, inc.	Preamplifier	PAM-0118P	531	2021/07/08	2022/07/07
Quinstar	Amplifier	QLW-184055 36-J0	15964001002	2020/11/28	2021/11/27
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2020/12/25	2021/12/24
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2020/01/05	2023/01/04
Unknown	RF Coaxial Cable	N-5m	No.3	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-5m	No.4	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-1m	No.5	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-1m	No.6	2020/12/25	2021/12/24
Radiated Emission Test Software: EZ_EMV V 1.1.4.2					
RF conducted test					
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101495	2020/12/24	2021/12/23
Tonscend	RF Control Unit	JS0806-2	19G8060182	2021/07/06	2022/07/05

\* **Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

## FCC §1.1307 (b) (1) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

### Applicable Standard

According to subpart 1.1307 (b) (1) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

#### Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (Minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

\* = Plane-wave equivalent power density

### Result

#### Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm<sup>2</sup>)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For worst case:

Mode	Frequency (MHz)	Antenna Gain		Tune up conducted power		Evaluation Distance (cm)	Power Density (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )
		(dBi)	(numeric)	(dBm)	(mW)			
5G Wi-Fi	5150-5250	2.52	1.79	17.5	56.23	20	0.020	1
5G Wi-Fi	5725-5850	3.85	2.43	18.5	70.79	20	0.034	1

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliance

## FCC §15.203 – ANTENNA REQUIREMENT

### Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.407 (a), if the transmitting antennas of directional gain greater than 6dBi are used, the transmit power and power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### Antenna Connector Construction

The EUT has two external antennas with unique antenna connector. Please refer to the EUT photos.

Antenna No.	Type	Antenna Gain	Impedance
Antenna 1	Omni-Directional	5150-5250MHz: 2.52dBi 5725-5850MHz: 3.85dBi	50Ω
Antenna 2	Omni-Directional	5150-5250MHz: 2.52dBi 5725-5850MHz: 3.85dBi	50Ω

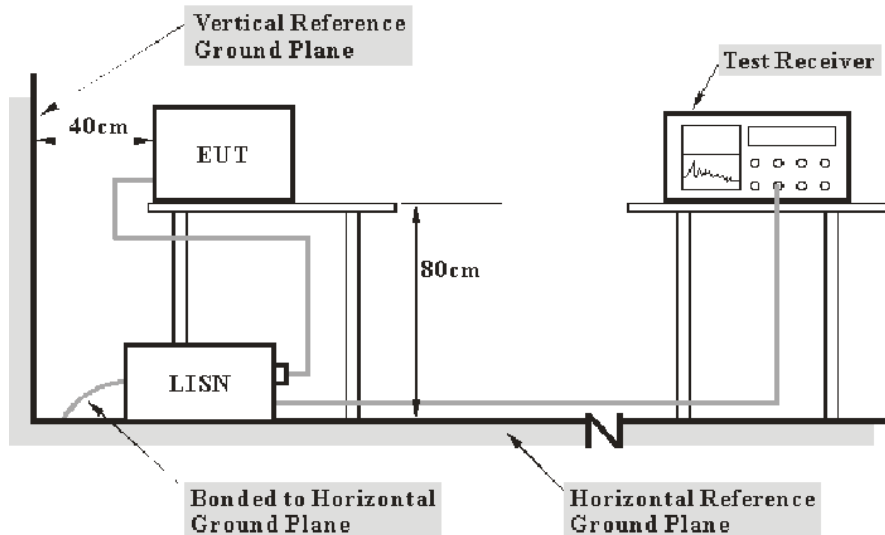
**Result:** Compliance.

## FCC §15.407 (B) (8) §15.207 (A) – CONDUCTED EMISSIONS

### Applicable Standard

FCC §15.207, §15.407(b) (8)

### EUT Setup



- Note: 1. Support units were connected to second LISN.  
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

### EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

### Test Procedure

During the conducted emission test, the adapter was connected to the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

## Transd Factor & Margin Calculation

The Transd factor is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

$$\text{Transd Factor} = \text{LISN VDF} + \text{Cable Loss}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

$$\begin{aligned} \text{Margin} &= \text{Limit} - \text{level} \\ \text{Level} &= \text{reading level} + \text{Transd Factor} \end{aligned}$$

## Test Data

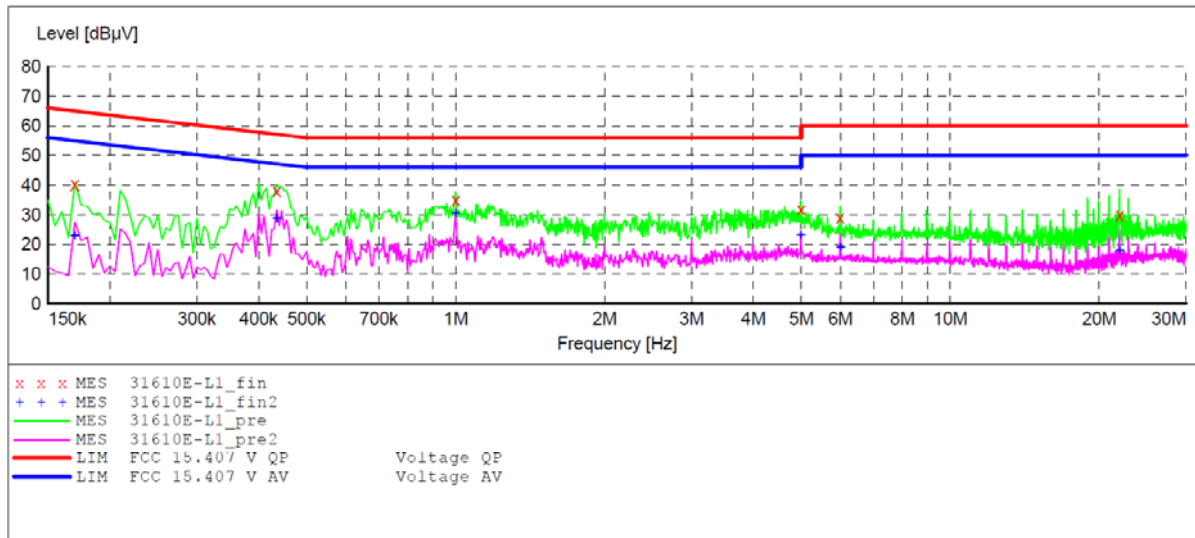
### Environmental Conditions

<b>Temperature:</b>	25 °C
<b>Relative Humidity:</b>	65 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by BIN on 2021-10-22*

*EUT operation mode: Transmitting (worst case is 802.11 n20, 5785MHz)*

**AC 120V/60 Hz, Line**



**MEASUREMENT RESULT: "31610E-L1\_fin"**

2021-10-22 09:36

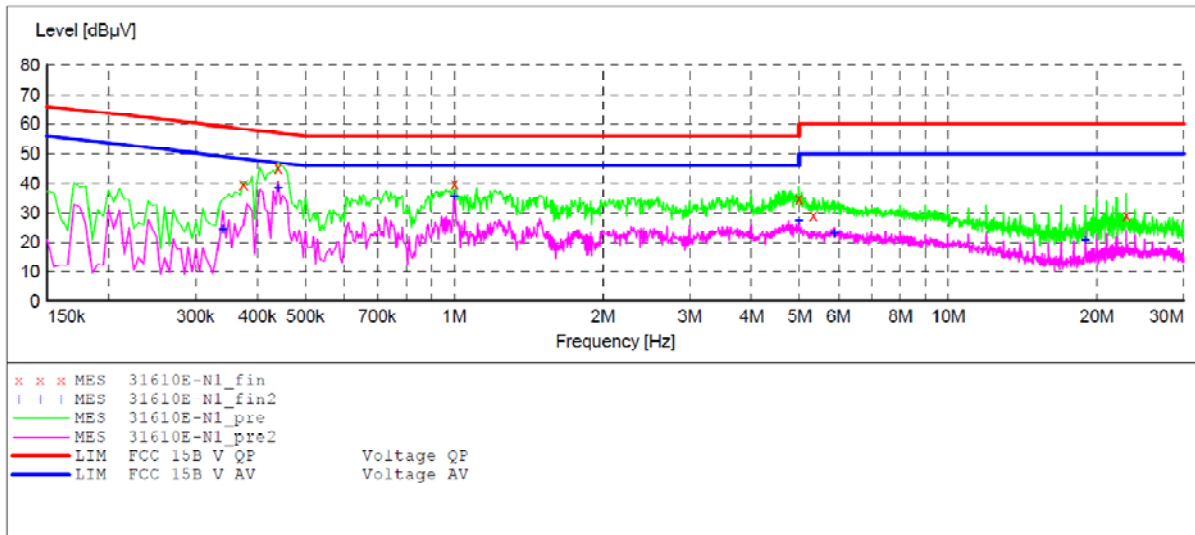
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.170000	40.80	10.8	65	24.2	QP	L1	GND
0.435000	38.00	11.0	57	19.0	QP	L1	GND
1.000000	34.90	11.1	56	21.1	QP	L1	GND
4.990000	31.80	11.4	56	24.2	QP	L1	GND
5.990000	29.10	11.5	60	30.9	QP	L1	GND
22.000000	29.80	11.7	60	30.2	QP	L1	GND

**MEASUREMENT RESULT: "31610E-L1\_fin2"**

2021-10-22 09:36

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.170000	22.90	10.8	55	32.1	AV	L1	GND
0.435000	28.90	11.0	47	18.1	AV	L1	GND
1.000000	30.40	11.1	46	15.6	AV	L1	GND
4.990000	23.20	11.4	46	22.8	AV	L1	GND
6.000000	18.90	11.5	50	31.1	AV	L1	GND
22.000000	17.90	11.7	50	32.1	AV	L1	GND

**AC 120V/60 Hz, Neutral**



**MEASUREMENT RESULT: "31610E-N1\_fin"**

2021-10-22 09:34

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.360000	40.40	10.9	59	18.6	QP	N	GND
0.440000	45.40	11.0	57	11.6	QP	N	GND
1.000000	40.00	11.1	56	16.0	QP	N	GND
4.990000	34.70	11.4	56	21.3	QP	N	GND
5.330000	29.20	11.4	60	30.8	QP	N	GND
22.925000	29.20	11.7	60	30.8	QP	N	GND

**MEASUREMENT RESULT: "31610E-N1\_fin2"**

2021-10-22 09:34

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.340000	24.20	10.9	49	25.8	AV	N	GND
0.440000	38.40	11.0	47	8.6	AV	N	GND
1.000000	35.20	11.1	46	10.8	AV	N	GND
4.990000	27.10	11.4	46	18.9	AV	N	GND
5.880000	22.90	11.5	50	27.1	AV	N	GND
18.975000	20.80	11.7	50	29.2	AV	N	GND



## §15.205 & §15.209 & §15.407(B) (1), (4), (8), (9), (10) – UNDESIRABLE EMISSION

### Applicable Standard

FCC §15.407 (b) (1), (4), (8), (9), (10); §15.209; §15.205;

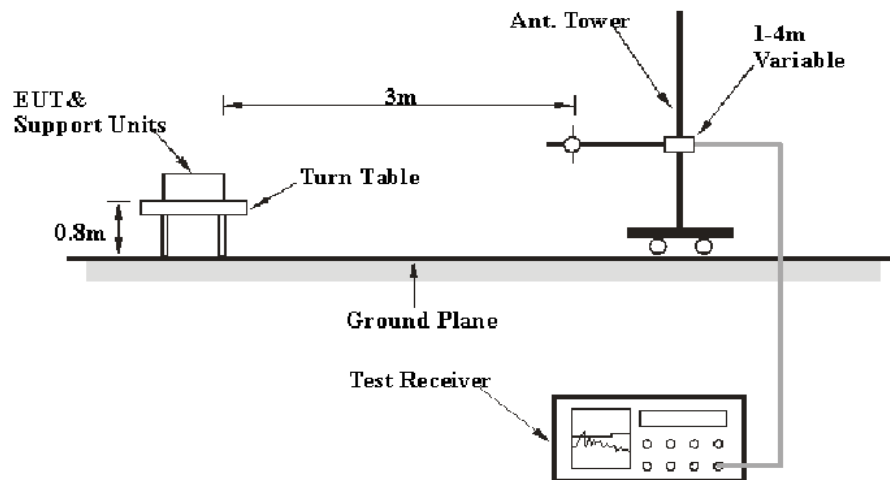
(b) Undesirable emission limits. Except as shown in paragraph (b) (7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

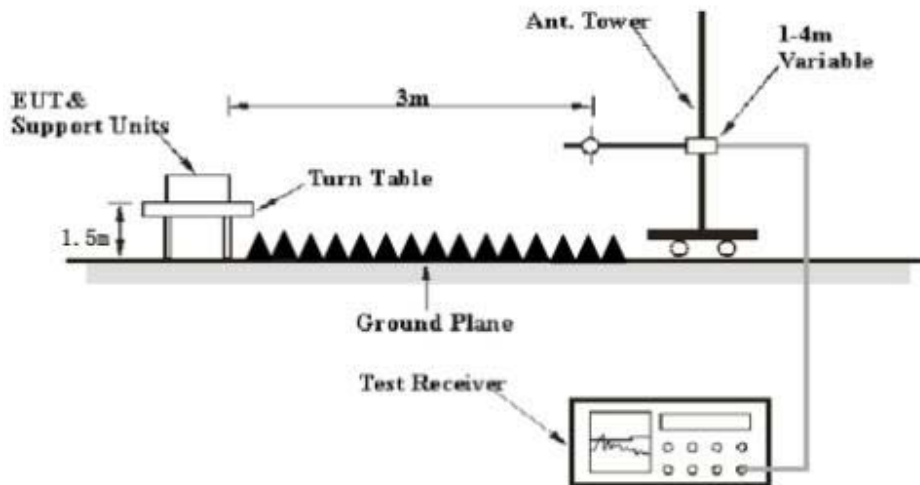
- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:
- (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

### EUT Setup

#### Below 1 GHz:



**Above 1 GHz:**

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC 15.209 and FCC 15.407 limits.

**EMI Test Receiver & Spectrum Analyzer Setup**

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	PK
	1MHz	10 Hz <sup>Note 1</sup>	/	Average
	1MHz	> 1/T <sup>Note 2</sup>	/	Average

Note 1: when duty cycle is no less than 98%

Note 2: when duty cycle is less than 98%

**Test Procedure****Radiated Spurious Emission**

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all the installation combinations.

## Factor & Margin Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Factor} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\begin{aligned}\text{Margin} &= \text{Result} - \text{Limit} \\ \text{Result} &= \text{Reading} + \text{Factor}\end{aligned}$$

## Test Data

### Environmental Conditions

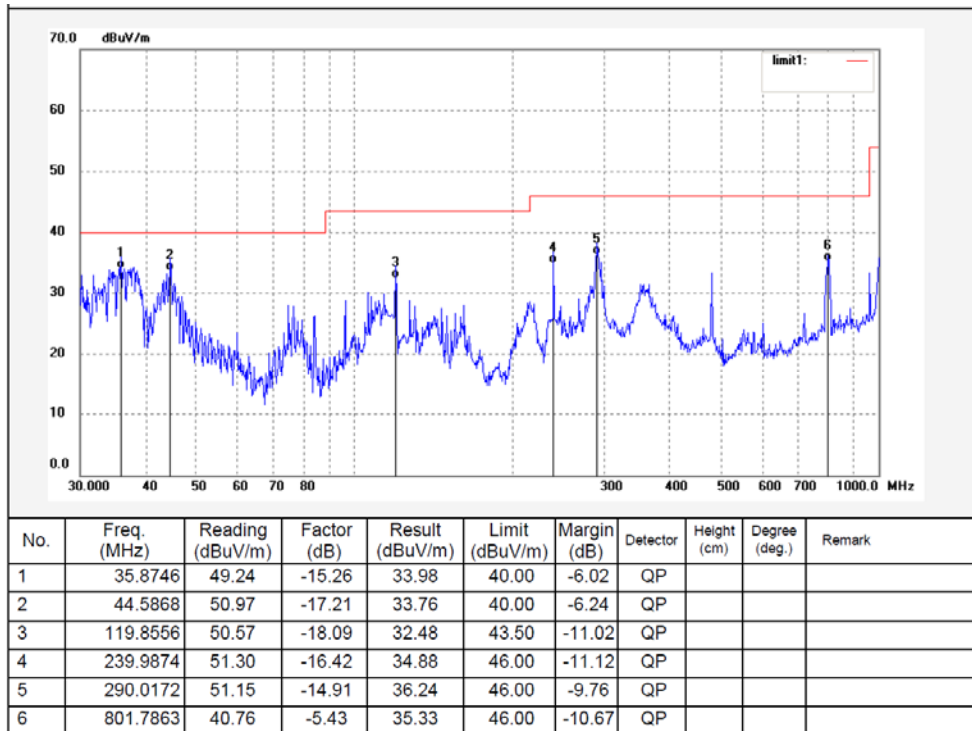
<b>Temperature:</b>	20~28.1 °C
<b>Relative Humidity:</b>	45~52 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Caro hu on 2021-10-23 for below 1GHz and 2021-08-13 for above 1GHz.*

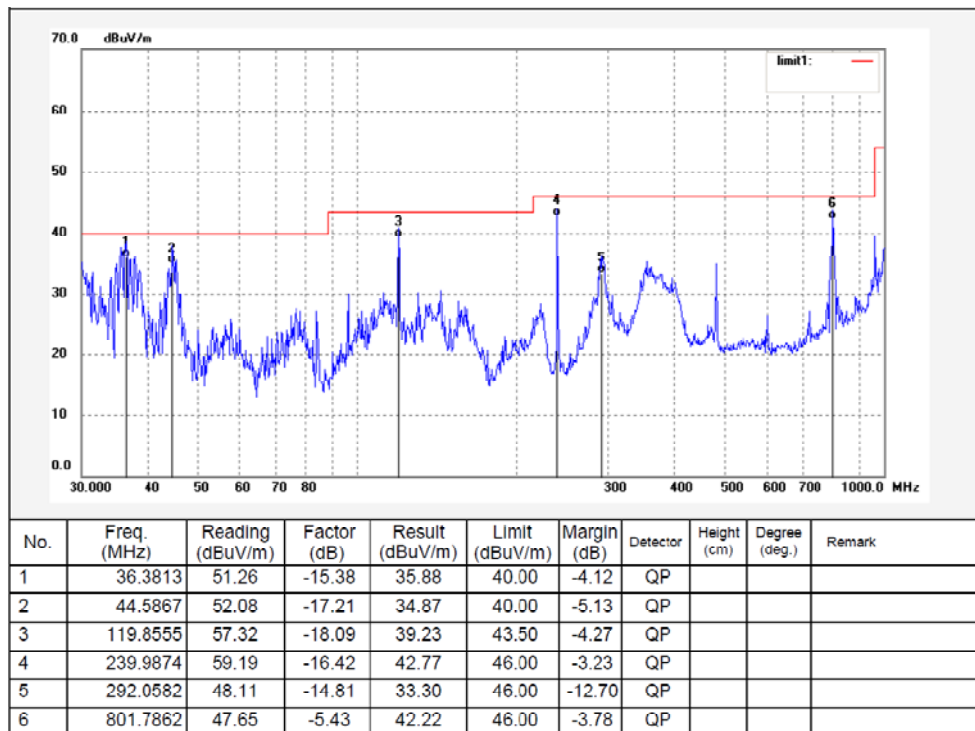
*EUT operation mode: Transmitting*

30 MHz~1 GHz: (worst case is 802.11 n20, 5785MHz)

**Horizontal**



**Vertical**



**1 ~ 40 GHz:****5150-5250MHz:**

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15.407/205/209	
	Reading (dB $\mu$ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB $\mu$ V/m)	Margin (dB)
802.11a SISO-Ant1									
Low Channel, 5180MHz									
4500	57.92	PK	150	1.7	H	1.89	59.81	74	-14.19
4500	43.75	Ave	150	1.7	H	1.89	45.64	54	-8.36
4500	58.95	PK	51	1.7	V	1.89	60.84	74	-13.16
4500	44.90	Ave	51	1.7	V	1.89	46.79	54	-7.21
5150	54.26	PK	51	2.0	H	3.37	57.63	74	-16.37
5150	41.48	Ave	51	2.0	H	3.37	44.85	54	-9.15
5150	55.46	PK	175	2.0	V	3.37	58.83	74	-15.17
5150	42.48	Ave	175	2.0	V	3.37	45.85	54	-8.15
10360	41.77	PK	144	2.0	H	14.41	56.18	68.2	-12.02
10360	42.79	PK	89	1.9	V	14.41	57.20	68.2	-11.00
Middle Channel, 5200MHz									
10400	42.79	PK	142	1.5	H	11.46	54.25	68.2	-13.95
10400	43.93	PK	275	1.6	V	11.46	55.39	68.2	-12.81
High Channel, 5240MHz									
5350	55.01	PK	149	1.7	H	3.43	58.44	74	-15.56
5350	41.19	Ave	149	1.7	H	3.43	44.62	54	-9.38
5350	56.39	PK	198	2.0	V	3.43	59.82	74	-14.18
5350	42.38	Ave	198	2.0	V	3.43	45.81	54	-8.19
5460	56.06	PK	103	1.9	H	3.58	59.64	74	-14.36
5460	41.89	Ave	103	1.9	H	3.58	45.47	54	-8.53
5460	57.51	PK	330	1.6	V	3.58	61.09	74	-12.91
5460	43.22	Ave	330	1.6	V	3.58	46.80	54	-7.20
10480	45.23	PK	164	1.6	H	11.53	56.76	68.2	-11.44
10480	46.47	PK	332	2.0	V	11.53	58.00	68.2	-10.20

Note: for 802.11a modem pre-scan ANT 1 and ANT 2, the worst case is ANT 1 was recorded

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11N20, MIMO mode									
Low Channel, 5180MHz									
4500	55.79	PK	189	1.8	H	1.89	57.68	74	-16.32
4500	42.24	Ave	189	1.8	H	1.89	44.13	54	-9.87
4500	57.25	PK	315	1.5	V	1.89	59.14	74	-14.86
4500	43.59	Ave	315	1.5	V	1.89	45.48	54	-8.52
5150	56.59	PK	62	1.5	H	3.37	59.96	74	-14.04
5150	42.18	Ave	62	1.5	H	3.37	45.55	54	-8.45
5150	57.85	PK	340	2.0	V	3.37	61.22	74	-12.78
5150	43.32	Ave	340	2.0	V	3.37	46.69	54	-7.31
10360	39.88	PK	229	1.6	H	14.41	54.29	68.2	-13.91
10360	41.07	PK	311	2.1	V	14.41	55.48	68.2	-12.72
Middle Channel, 5200MHz									
10400	42.22	PK	107	1.9	H	11.46	53.68	68.2	-14.52
10400	43.58	PK	230	2.0	V	11.46	55.04	68.2	-13.16
High Channel, 5240MHz									
5350	56.50	PK	175	2.0	H	3.43	59.93	74	-14.07
5350	42.11	Ave	175	2.0	H	3.43	45.54	54	-8.46
5350	57.97	PK	239	1.6	V	3.43	61.40	74	-12.60
5350	43.35	Ave	239	1.6	V	3.43	46.78	54	-7.22
5460	54.59	PK	135	1.8	H	3.58	58.17	74	-15.83
5460	41.07	Ave	135	1.8	H	3.58	44.65	54	-9.35
5460	55.97	PK	219	1.7	V	3.58	59.55	74	-14.45
5460	42.10	Ave	219	1.7	V	3.58	45.68	54	-8.32
10480	44.13	PK	109	1.6	H	11.53	55.66	68.2	-12.54
10480	45.49	PK	37	2.1	V	11.53	57.02	68.2	-11.18

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15.407/205/209	
	Reading (dB $\mu$ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB $\mu$ V/m)	Margin (dB)
802.11N40, MIMO mode									
Low Channel, 5190MHz									
4500	57.18	PK	360	1.9	H	1.89	59.07	74	-14.93
4500	42.46	Ave	360	1.9	H	1.89	44.35	54	-9.65
4500	58.40	PK	232	1.8	V	1.89	60.29	74	-13.71
4500	43.70	Ave	232	1.8	V	1.89	45.59	54	-8.41
5150	56.36	PK	323	1.9	H	3.37	59.73	74	-14.27
5150	42.34	Ave	323	1.9	H	3.37	45.71	54	-8.29
5150	57.84	PK	272	1.7	V	3.37	61.21	74	-12.79
5150	43.40	Ave	272	1.7	V	3.37	46.77	54	-7.23
10380	39.04	PK	235	1.6	H	11.43	50.47	68.2	-17.73
10380	40.50	PK	150	1.9	V	11.43	51.93	68.2	-16.27
High Channel, 5230MHz									
5350	57.21	PK	79	1.8	H	3.43	60.64	74	-13.36
5350	42.23	Ave	79	1.8	H	3.43	45.66	54	-8.34
5350	58.31	PK	273	1.6	V	3.43	61.74	74	-12.26
5350	43.24	Ave	273	1.6	V	3.43	46.67	54	-7.33
5460	54.36	PK	343	1.8	H	3.58	57.94	74	-16.06
5460	41.20	Ave	343	1.8	H	3.58	44.78	54	-9.22
5460	55.78	PK	103	2.0	V	3.58	59.36	74	-14.64
5460	42.24	Ave	103	2.0	V	3.58	45.82	54	-8.18
10460	39.56	PK	275	2.0	H	11.5	51.06	68.2	-17.14
10460	41.03	PK	66	1.6	V	11.5	52.53	68.2	-15.67

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15.407/205/209	
	Reading (dB $\mu$ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB $\mu$ V/m)	Margin (dB)
802.11AC20, MIMO mode									
Low Channel, 5180MHz									
4500	56.20	PK	281	1.7	H	1.89	58.09	74	-15.91
4500	41.88	Ave	281	1.7	H	1.89	43.77	54	-10.23
4500	57.28	PK	79	1.5	V	1.89	59.17	74	-14.83
4500	43.27	Ave	79	1.5	V	1.89	45.16	54	-8.84
5150	56.87	PK	37	1.5	H	3.37	60.24	74	-13.76
5150	42.20	Ave	37	1.5	H	3.37	45.57	54	-8.43
5150	57.87	PK	275	1.8	V	3.37	61.24	74	-12.76
5150	43.63	Ave	275	1.8	V	3.37	47.00	54	-7.00
10360	39.57	PK	159	1.9	H	14.41	53.98	68.2	-14.22
10360	40.71	PK	312	1.9	V	14.41	55.12	68.2	-13.08
Middle Channel, 5200MHz									
10400	41.88	PK	74	2.1	H	11.46	53.34	68.2	-14.86
10400	43.32	PK	149	1.9	V	11.46	54.78	68.2	-13.42
High Channel, 5240MHz									
5350	55.79	PK	82	2.0	H	3.43	59.22	74	-14.78
5350	41.86	Ave	82	2.0	H	3.43	45.29	54	-8.71
5350	57.26	PK	252	1.6	V	3.43	60.69	74	-13.31
5350	43.35	Ave	252	1.6	V	3.43	46.78	54	-7.22
5460	54.62	PK	64	1.6	H	3.58	58.20	74	-15.80
5460	40.74	Ave	64	1.6	H	3.58	44.32	54	-9.68
5460	55.81	PK	166	1.7	V	3.58	59.39	74	-14.61
5460	41.78	Ave	166	1.7	V	3.58	45.36	54	-8.64
10480	43.68	PK	22	1.9	H	11.53	55.21	68.2	-12.99
10480	44.97	PK	22	2.0	V	11.53	56.50	68.2	-11.70



Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15.407/205/209	
	Reading (dB $\mu$ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB $\mu$ V/m)	Margin (dB)
802.11AC40, MIMO mode									
Low Channel, 5190MHz									
4500	56.54	PK	292	2.0	H	1.89	58.43	74	-15.57
4500	42.78	Ave	292	2.0	H	1.89	44.67	54	-9.33
4500	57.82	PK	305	1.8	V	1.89	59.71	74	-14.29
4500	43.82	Ave	305	1.8	V	1.89	45.71	54	-8.29
5150	56.48	PK	318	1.7	H	3.37	59.85	74	-14.15
5150	42.02	Ave	318	1.7	H	3.37	45.39	54	-8.61
5150	57.97	PK	94	1.9	V	3.37	61.34	74	-12.66
5150	43.44	Ave	94	1.9	V	3.37	46.81	54	-7.19
10380	39.45	PK	145	1.5	H	11.43	50.88	68.2	-17.32
10380	40.50	PK	357	2.0	V	11.43	51.93	68.2	-16.27
802.11AC40, High Channel									
5350	56.53	PK	232	1.8	H	3.43	59.96	74	-14.04
5350	42.07	Ave	232	1.8	H	3.43	45.50	54	-8.50
5350	57.58	PK	151	2.0	V	3.43	61.01	74	-12.99
5350	43.35	Ave	151	2.0	V	3.43	46.78	54	-7.22
5460	54.58	PK	333	1.8	H	3.58	58.16	74	-15.84
5460	40.65	Ave	333	1.8	H	3.58	44.23	54	-9.77
5460	55.63	PK	157	1.9	V	3.58	59.21	74	-14.79
5460	42.12	Ave	157	1.9	V	3.58	45.70	54	-8.3
10460	38.82	PK	210	2.0	H	11.5	50.32	68.2	-17.88
10460	39.84	PK	98	2.1	V	11.5	51.34	68.2	-16.86
802.11AC80, MIMO mode									
Middle Channel, 5210MHz									
4500	54.48	PK	314	1.7	H	1.89	56.37	74	-17.63
4500	40.46	Ave	314	1.7	H	1.89	42.35	54	-11.65
4500	55.59	PK	71	1.5	V	1.89	57.48	74	-16.52
4500	41.90	Ave	71	1.5	V	1.89	43.79	54	-10.21
5150	54.97	PK	102	2.0	H	3.37	58.34	74	-15.66
5150	40.55	Ave	102	2.0	H	3.37	43.92	54	-10.08
5150	55.99	PK	353	1.8	V	3.37	59.36	74	-14.64
5150	41.81	Ave	353	1.8	V	3.37	45.18	54	-8.82
5350	56.45	PK	34	2.1	H	3.43	59.88	74	-14.12
5350	42.25	Ave	34	2.1	H	3.43	45.68	54	-8.32
5350	57.62	PK	48	1.7	V	3.43	61.05	74	-12.95
5350	43.27	Ave	48	1.7	V	3.43	46.70	54	-7.3
5460	54.31	PK	344	1.9	H	3.58	57.89	74	-16.11
5460	40.12	Ave	344	1.9	H	3.58	43.70	54	-10.30
5460	55.54	PK	344	1.9	V	3.58	59.12	74	-14.88
5460	41.40	Ave	344	1.9	V	3.58	44.98	54	-9.02
10420	39.47	PK	231	2.1	H	11.49	50.96	68.2	-17.24
10420	40.55	PK	29	1.6	V	11.49	52.04	68.2	-16.16

**5725-5850MHz:**

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11a SISO-Ant1									
Low Channel, 5745MHz									
5725	66.34	PK	342	1.7	H	3.97	70.31	122.2	-51.89
5725	67.49	PK	85	1.9	V	3.97	71.46	122.2	-50.74
5720	59.54	PK	313	1.6	H	3.95	63.49	110.8	-47.31
5720	60.35	PK	63	1.6	V	3.95	64.3	110.8	-46.5
5700	58.87	PK	308	2.1	H	3.89	62.76	105.2	-42.44
5700	59.86	PK	335	1.7	V	3.89	63.75	105.2	-41.45
5650	56.95	PK	193	2.0	H	3.75	60.7	68.2	-7.5
5650	58	PK	38	1.7	V	3.75	61.75	68.2	-6.45
11490	36.51	PK	103	1.5	H	14.74	51.25	74	-22.75
11490	38	PK	261	1.6	V	14.74	52.74	74	-21.26
Middle Channel,5785MHz									
11570	39.22	PK	68	1.7	H	14.74	53.96	74	-20.04
11570	21.95	Ave	68	1.7	H	14.74	36.69	54	-17.31
11570	40.42	PK	318	1.5	V	14.74	55.16	74	-18.84
11570	23.28	Ave	318	1.5	V	14.74	38.02	54	-15.98
High Channel, 5825MHz									
5850	61.6	PK	350	1.7	H	4.33	65.93	122.2	-56.27
5850	62.82	PK	102	1.5	V	4.33	67.15	122.2	-55.05
5855	60.83	PK	247	1.5	H	4.35	65.18	110.8	-45.62
5855	61.95	PK	159	1.6	V	4.35	66.3	110.8	-44.5
5875	59.18	PK	175	2.0	H	4.41	63.59	105.2	-41.61
5875	60.25	PK	319	1.6	V	4.41	64.66	105.2	-40.54
5925	58.27	PK	230	1.9	H	4.55	62.82	68.2	-5.38
5925	59.29	PK	349	1.7	V	4.55	63.84	68.2	-4.36
11650	41.37	PK	222	2.1	H	14.79	56.16	74	-17.84
11650	24.41	Ave	222	2.1	H	14.79	39.2	54	-14.8
11650	42.56	PK	74	2.0	V	14.79	57.35	74	-16.65
11650	25.62	Ave	74	2.0	V	14.79	40.41	54	-13.59

Note: for 802.11a modem pre-scan ANT 1 and ANT 2, the worst case is ANT 1 was recorded

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15.407/205/209	
	Reading (dB $\mu$ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB $\mu$ V/m)	Margin (dB)
802.11N20, MIMO mode									
Low Channel, 5745MHz									
5725	65.55	PK	243	1.9	H	3.97	69.52	122.2	-52.68
5725	66.39	PK	298	1.9	V	3.97	70.36	122.2	-51.84
5720	60.16	PK	10	1.7	H	3.95	64.11	110.8	-46.69
5720	61.39	PK	72	2.0	V	3.95	65.34	110.8	-45.46
5700	59.58	PK	218	1.5	H	3.89	63.47	105.2	-41.73
5700	60.46	PK	112	1.9	V	3.89	64.35	105.2	-40.85
5650	57	PK	72	1.9	H	3.75	60.75	68.2	-7.45
5650	58.22	PK	258	2.0	V	3.75	61.97	68.2	-6.23
11490	34.94	PK	144	2.1	H	14.74	49.68	74	-24.32
11490	36.82	PK	101	1.5	V	14.74	51.56	74	-22.44
Middle Channel, 5785MHz									
11570	35.58	PK	333	2.0	H	14.74	50.32	74	-23.68
11570	37.17	PK	167	1.8	V	14.74	51.91	74	-22.09
High Channel, 5825MHz									
5850	62.63	PK	328	1.8	H	4.33	66.96	122.2	-55.24
5850	63.75	PK	153	2.1	V	4.33	68.08	122.2	-54.12
5855	61.05	PK	46	1.7	H	4.35	65.4	110.8	-45.4
5855	61.91	PK	160	1.8	V	4.35	66.26	110.8	-44.54
5875	59.22	PK	346	2.0	H	4.41	63.63	105.2	-41.57
5875	60.27	PK	76	1.9	V	4.41	64.68	105.2	-40.52
5925	58.2	PK	12	1.7	H	4.55	62.75	68.2	-5.45
5925	59.25	PK	53	1.5	V	4.55	63.8	68.2	-4.4
11650	37.37	PK	309	1.8	H	14.79	52.16	74	-21.84
11650	38.98	PK	94	1.7	V	14.79	53.77	74	-20.23

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15.407/205/209	
	Reading (dB $\mu$ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB $\mu$ V/m)	Margin (dB)
802.11N40, MIMO mode									
Low Channel, 5755MHz									
5725	65.15	PK	274	1.6	H	3.97	69.12	122.2	-53.08
5725	66.4	PK	335	2.0	V	3.97	70.37	122.2	-51.83
5720	60.74	PK	168	1.7	H	3.95	64.69	110.8	-46.11
5720	61.83	PK	339	2.0	V	3.95	65.78	110.8	-45.02
5700	59.56	PK	219	1.5	H	3.89	63.45	105.2	-41.75
5700	60.46	PK	252	2.0	V	3.89	64.35	105.2	-40.85
5650	57.53	PK	107	2.0	H	3.75	61.28	68.2	-6.92
5650	58.8	PK	125	1.8	V	3.75	62.55	68.2	-5.65
11510	35.31	PK	219	2.0	H	14.74	50.05	74	-23.95
11510	36.42	PK	239	1.8	V	14.74	51.16	74	-22.84
High Channel, 5795MHz									
5850	64.81	PK	79	1.8	H	4.33	69.14	122.2	-53.06
5850	66.11	PK	225	1.8	V	4.33	70.44	122.2	-51.76
5855	62.63	PK	334	1.8	H	4.35	66.98	110.8	-43.82
5855	63.66	PK	270	1.6	V	4.35	68.01	110.8	-42.79
5875	59.63	PK	15	2.1	H	4.41	64.04	105.2	-41.16
5875	60.54	PK	219	1.8	V	4.41	64.95	105.2	-40.25
5925	58.01	PK	74	1.9	H	4.55	62.56	68.2	-5.64
5925	59.14	PK	87	2.0	V	4.55	63.69	68.2	-4.51
11590	36.52	PK	83	1.9	H	14.74	51.26	74	-22.74
11590	37.7	PK	82	2.1	V	14.74	52.44	74	-21.56

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15.407/205/209	
	Reading (dB $\mu$ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB $\mu$ V/m)	Margin (dB)
802.11AC20, MIMO mode									
Low Channel, 5745MHz									
5725	70.32	PK	140	1.5	H	3.97	74.29	122.2	-47.91
5725	71.3	PK	148	1.5	V	3.97	75.27	122.2	-46.93
5720	61.57	PK	186	1.8	H	3.95	65.52	110.8	-45.28
5720	62.87	PK	234	1.8	V	3.95	66.82	110.8	-43.98
5700	61.3	PK	320	2.0	H	3.89	65.19	105.2	-40.01
5700	62.35	PK	359	1.6	V	3.89	66.24	105.2	-38.96
5650	57.67	PK	42	1.8	H	3.75	61.42	68.2	-6.78
5650	58.66	PK	267	2.0	V	3.75	62.41	68.2	-5.79
11490	36.08	PK	204	1.8	H	14.74	50.82	74	-23.18
11490	37.21	PK	145	1.9	V	14.74	51.95	74	-22.05
Middle Channel, 5785MHz									
11570	39.97	PK	326	1.5	H	14.74	54.71	74	-19.29
11570	23.07	Ave	326	1.5	H	14.74	37.81	54	-16.19
11570	40.78	PK	287	1.5	V	14.74	55.52	74	-18.48
11570	24.29	Ave	287	1.5	V	14.74	39.03	54	-14.97
High Channel, 5825MHz									
5850	61.08	PK	349	1.6	H	4.33	65.41	122.2	-56.79
5850	62.37	PK	290	2.0	V	4.33	66.7	122.2	-55.5
5855	59.34	PK	247	1.7	H	4.35	63.69	110.8	-47.11
5855	60.41	PK	44	1.9	V	4.35	64.76	110.8	-46.04
5875	58.87	PK	27	1.9	H	4.41	63.28	105.2	-41.92
5875	59.92	PK	163	1.9	V	4.41	64.33	105.2	-40.87
5925	58.32	PK	235	1.8	H	4.55	62.87	68.2	-5.33
5925	59.22	PK	330	1.8	V	4.55	63.77	68.2	-4.43
11650	41.27	PK	156	2.0	H	14.79	56.06	74	-17.94
11650	24.74	Ave	156	2.0	H	14.79	39.53	54	-14.47
11650	42.37	PK	189	2.0	V	14.79	57.16	74	-16.84
11650	25.84	Ave	189	2.0	V	14.79	40.63	54	-13.37

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15.407/205/209	
	Reading (dB $\mu$ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB $\mu$ V/m)	Margin (dB)
802.11AC40, MIMO mode									
Low Channel, 5755MHz									
5725	67.09	PK	254	1.7	H	3.97	71.06	122.2	-51.14
5725	68.09	PK	22	1.8	V	3.97	72.06	122.2	-50.14
5720	63.46	PK	211	1.9	H	3.95	67.41	110.8	-43.39
5720	64.29	PK	191	1.8	V	3.95	68.24	110.8	-42.56
5700	61.75	PK	42	1.7	H	3.89	65.64	105.2	-39.56
5700	62.65	PK	235	1.7	V	3.89	66.54	105.2	-38.66
5650	57.13	PK	50	1.7	H	3.75	60.88	68.2	-7.32
5650	58.11	PK	18	1.8	V	3.75	61.86	68.2	-6.34
11510	34.99	PK	210	2.1	H	14.74	49.73	74	-24.27
11510	36.94	PK	4	1.7	V	14.74	51.68	74	-22.32
High Channel, 5795MHz									
5850	63.68	PK	64	2.0	H	4.33	68.01	122.2	-54.19
5850	64.51	PK	225	2.0	V	4.33	68.84	122.2	-53.36
5855	59.29	PK	166	1.7	H	4.35	63.64	110.8	-47.16
5855	60.59	PK	231	2.0	V	4.35	64.94	110.8	-45.86
5875	59.59	PK	207	1.8	H	4.41	64	105.2	-41.2
5875	60.56	PK	293	1.9	V	4.41	64.97	105.2	-40.23
5925	57.64	PK	331	2.0	H	4.55	62.19	68.2	-6.01
5925	58.86	PK	193	1.6	V	4.55	63.41	68.2	-4.79
11590	35.69	PK	248	1.5	H	14.74	50.43	74	-23.57
11590	37.29	PK	353	1.9	V	14.74	52.03	74	-21.97

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15.407/205/209	
	Reading (dB $\mu$ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB $\mu$ V/m)	Margin (dB)
802.11AC80, MIMO mode									
Middle Channel, 5775MHz									
5725	65.2	PK	32	1.8	H	3.97	69.17	122.2	-53.03
5725	66.16	PK	309	1.6	V	3.97	70.13	122.2	-52.07
5720	60.42	PK	225	2.0	H	3.95	64.37	110.8	-46.43
5720	61.64	PK	180	1.6	V	3.95	65.59	110.8	-45.21
5700	59.77	PK	96	1.9	H	3.89	63.66	105.2	-41.54
5700	61.06	PK	40	1.8	V	3.89	64.95	105.2	-40.25
5650	57.41	PK	289	1.7	H	3.75	61.16	68.2	-7.04
5650	58.46	PK	156	1.8	V	3.75	62.21	68.2	-5.99
5850	61.77	PK	242	1.7	H	4.33	66.1	122.2	-56.1
5850	62.88	PK	266	2.1	V	4.33	67.21	122.2	-54.99
5855	58.97	PK	327	1.8	H	4.35	63.32	110.8	-47.48
5855	60.18	PK	89	1.7	V	4.35	64.53	110.8	-46.27
5875	58.9	PK	243	1.6	H	4.41	63.31	105.2	-41.89
5875	59.86	PK	21	1.6	V	4.41	64.27	105.2	-40.93
5925	58.2	PK	137	1.9	H	4.55	62.75	68.2	-5.45
5925	59.2	PK	267	1.6	V	4.55	63.75	68.2	-4.45
11550	35.3	PK	266	2.1	H	14.74	50.04	74	-23.96
11550	37.28	PK	200	1.8	V	14.74	52.02	74	-21.98

**Note:**

Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

Corrected Amplitude = Corrected Factor + Reading

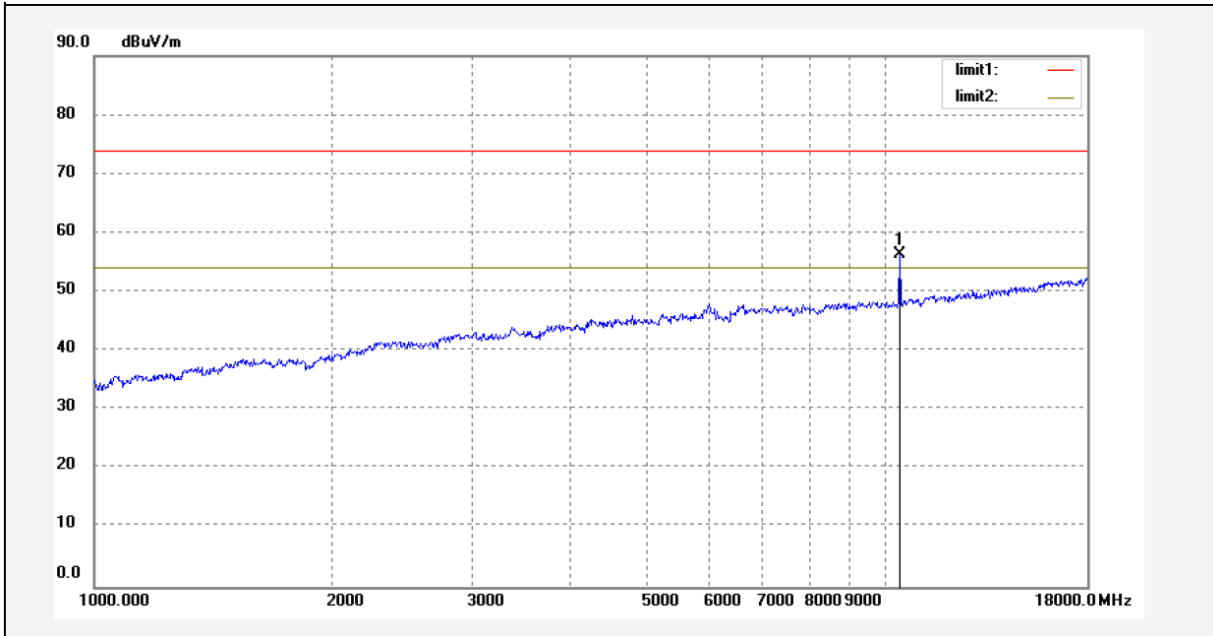
Margin = Limit - Corrected. Amplitude

The other spurious emission which is in the noise floor level was not recorded.

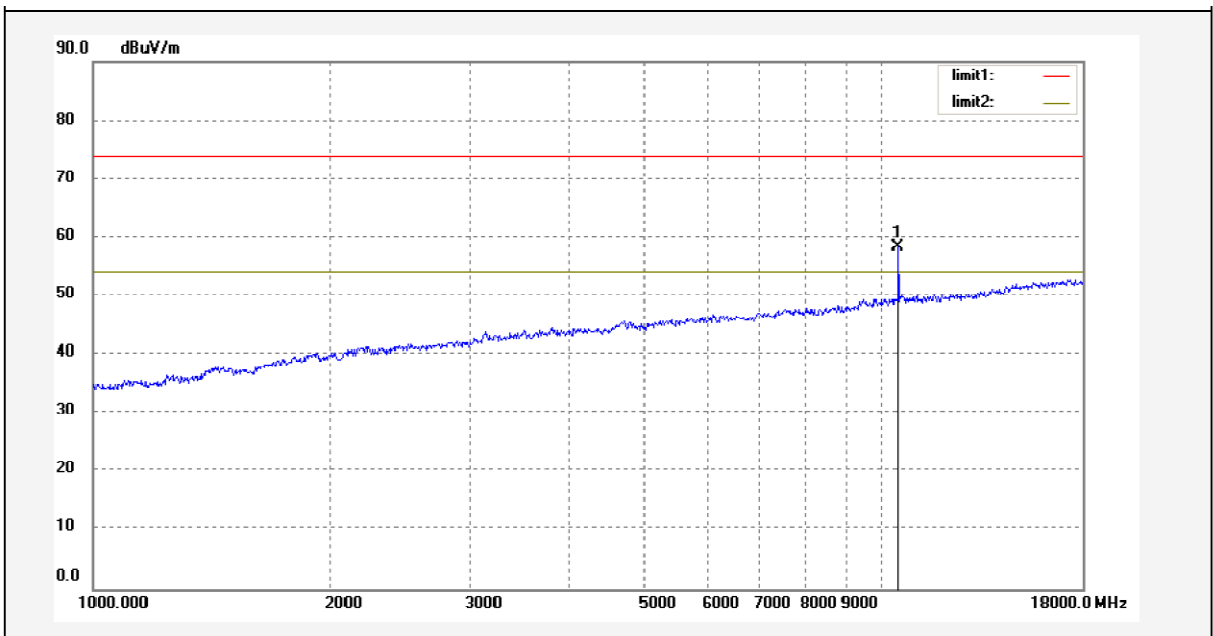
1-18 GHz:

Pre-scan for Peak  
802.11a 5240MHz

Horizontal:



Vertical:

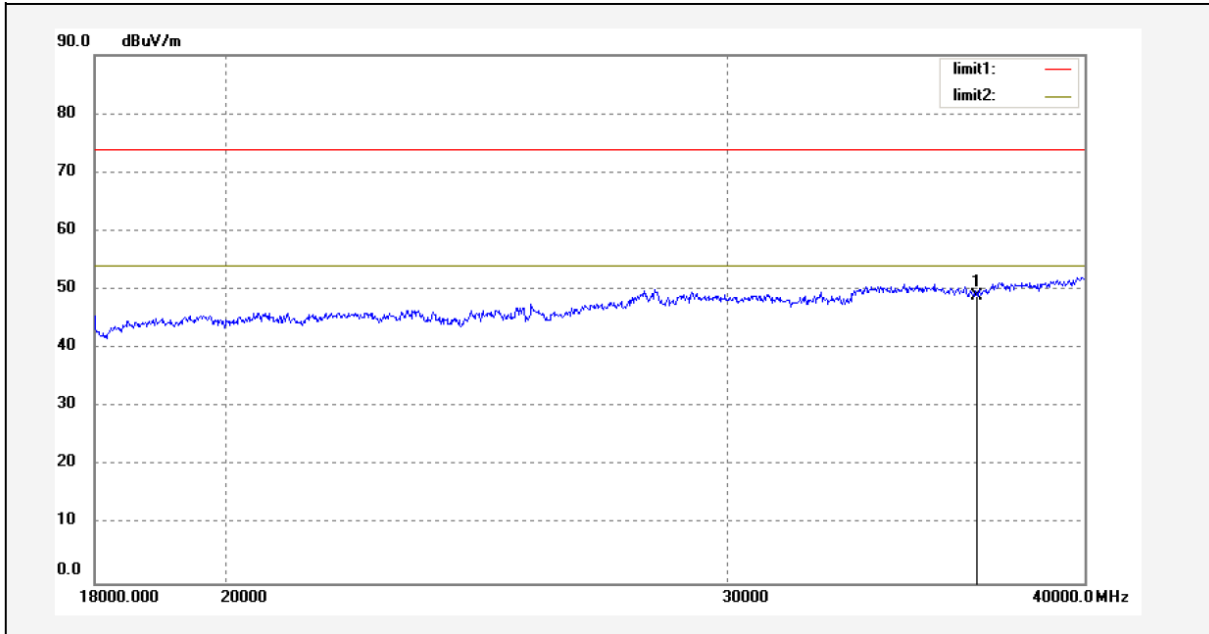




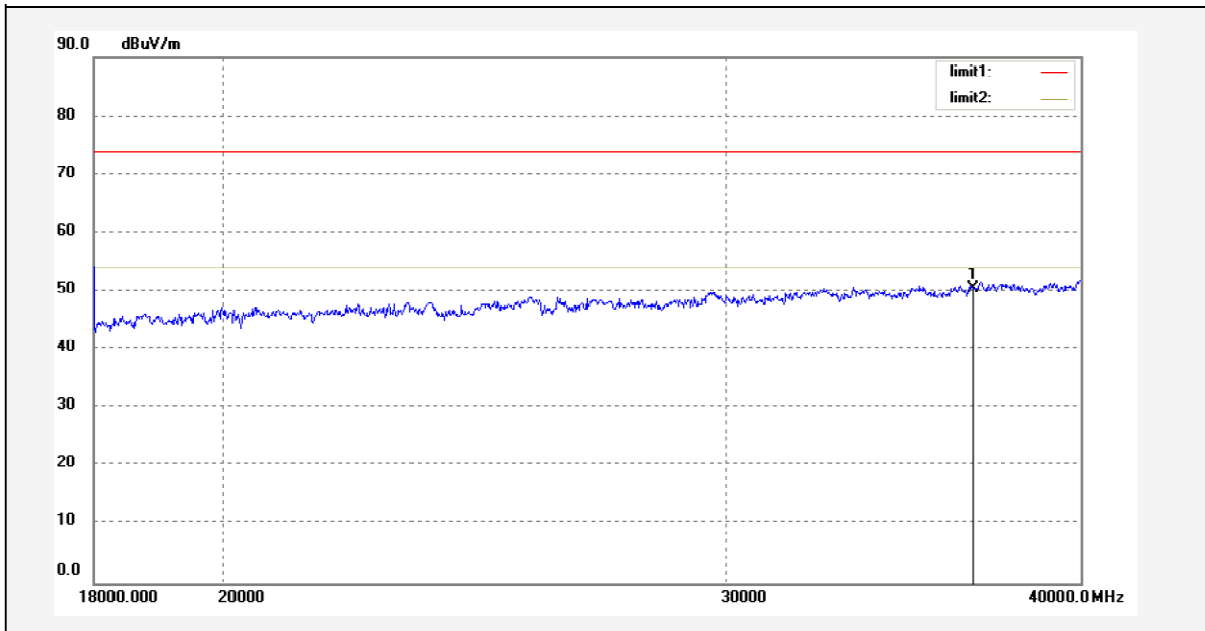
18-40 GHz:

Pre-scan for Peak  
802.11a 5240MHz

Horizontal:



Vertical:



## FCC §15.407(a) (1)(3) –CONDUCTED TRANSMITTER OUTPUT POWER

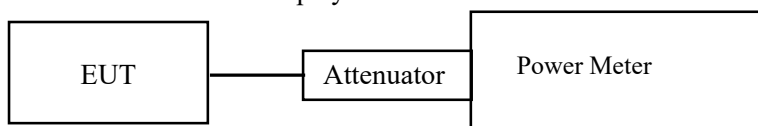
### Applicable Standard

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

### Test Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.



### Test Data

#### Environmental Conditions

<b>Temperature:</b>	27 °C
<b>Relative Humidity:</b>	56 %
<b>ATM Pressure:</b>	101.0kPa

*The testing was performed by Fan Yang on 2021-11-09.*

*EUT operation mode: Transmitting*

**Test Result: Pass**

*Please refer to the Appendix.*

**APPENDIX****Appendix A: Maximum conducted output power  
Test Result**

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	5180	13.77	≤23.98	PASS
	Ant2	5180	15.06	≤23.98	PASS
	Ant1	5200	14.63	≤23.98	PASS
	Ant2	5200	15.13	≤23.98	PASS
	Ant1	5240	15.72	≤23.98	PASS
	Ant2	5240	16.79	≤23.98	PASS
	Ant1	5745	16.34	≤30	PASS
	Ant2	5745	16.65	≤30	PASS
	Ant1	5785	16.85	≤30	PASS
	Ant2	5785	17.18	≤30	PASS
	Ant1	5825	17.21	≤30	PASS
	Ant2	5825	17.06	≤30	PASS
11N20MIMO	Ant1	5180	12.61	≤23.98	PASS
	Ant2	5180	12.78	≤23.98	PASS
	total	5180	15.71	≤23.98	PASS
	Ant1	5200	12.72	≤23.98	PASS
	Ant2	5200	13.35	≤23.98	PASS
	total	5200	16.06	≤23.98	PASS
	Ant1	5240	13.95	≤23.98	PASS
	Ant2	5240	14.53	≤23.98	PASS
	total	5240	17.26	≤23.98	PASS
	Ant1	5745	14.56	≤30	PASS
	Ant2	5745	14.63	≤30	PASS
	total	5745	17.61	≤30	PASS
	Ant1	5785	14.77	≤30	PASS
	Ant2	5785	15.50	≤30	PASS
	total	5785	18.16	≤30	PASS
	Ant1	5825	15.03	≤30	PASS
	Ant2	5825	15.10	≤30	PASS
	total	5825	18.08	≤30	PASS
11N40MIMO	Ant1	5190	11.79	≤23.98	PASS
	Ant2	5190	12.71	≤23.98	PASS
	total	5190	15.28	≤23.98	PASS
	Ant1	5230	13.29	≤23.98	PASS
	Ant2	5230	13.78	≤23.98	PASS
	total	5230	16.55	≤23.98	PASS
	Ant1	5755	14.17	≤30	PASS
	Ant2	5755	13.94	≤30	PASS
	total	5755	17.07	≤30	PASS
	Ant1	5795	14.62	≤30	PASS
	Ant2	5795	14.69	≤30	PASS
	total	5795	17.67	≤30	PASS
11AC20MIMO	Ant1	5180	12.62	≤23.98	PASS
	Ant2	5180	13.05	≤23.98	PASS
	total	5180	15.85	≤23.98	PASS
	Ant1	5200	13.10	≤23.98	PASS
	Ant2	5200	13.53	≤23.98	PASS
	total	5200	16.33	≤23.98	PASS
	Ant1	5240	13.55	≤23.98	PASS
	Ant2	5240	13.90	≤23.98	PASS
	total	5240	16.74	≤23.98	PASS
	Ant1	5745	13.78	≤30	PASS
Ant2	5745	14.77	≤30	PASS	

	total	5745	17.31	≤30	PASS
	Ant1	5785	14.39	≤30	PASS
	Ant2	5785	14.60	≤30	PASS
	total	5785	17.51	≤30	PASS
	Ant1	5825	14.97	≤30	PASS
	Ant2	5825	15.36	≤30	PASS
	total	5825	18.18	≤30	PASS
11AC40MIMO	Ant1	5190	12.43	≤23.98	PASS
	Ant2	5190	12.72	≤23.98	PASS
	total	5190	15.59	≤23.98	PASS
	Ant1	5230	13.43	≤23.98	PASS
	Ant2	5230	13.75	≤23.98	PASS
	total	5230	16.60	≤23.98	PASS
	Ant1	5755	14.08	≤30	PASS
	Ant2	5755	14.23	≤30	PASS
	total	5755	17.17	≤30	PASS
	Ant1	5795	14.00	≤30	PASS
	Ant2	5795	14.87	≤30	PASS
total	5795	17.47	≤30	PASS	
11AC80MIMO	Ant1	5210	11.02	≤23.98	PASS
	Ant2	5210	11.88	≤23.98	PASS
	total	5210	14.48	≤23.98	PASS
	Ant1	5775	13.01	≤30	PASS
	Ant2	5775	13.63	≤30	PASS
	total	5775	16.34	≤30	PASS

\*\*\*\*\* END OF REPORT \*\*\*\*\*