



TEST REPORT

Applicant Name : VTech Telecommunications Ltd
Address : 23/F Tai Ping Ind Center Block 1 57 Ting Kok Rd
Tai Po NT, Hong Kong
Report Number : SZ1211009-52658E-RF-00
FCC ID: EW780-S110-00

Test Standard (s)
FCC PART 15.407

Sample Description

Product Type: SIP Phone corded
Model No.: D865
Trade Mark: SNOM
Date Received: 2021/10/09
Date of Test: 2021/11/03~2021/12/30
Report Date: 2021/12/30

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Ting Lü
EMC Engineer

Approved By:

Candy Li
EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "*" .

Shenzhen Accurate Technology Co., Ltd. is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk "**". Customer model name, addresses, names, trademarks etc. are not considered data.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	5G Wi-Fi: 5150-5250MHz; 5250-5350MHz; 5470-5725MHz; 5725-5850MHz
Mode	802.11a/n20/n40/ac20/ac40/ac80
Maximum Conducted Average Output Power	5150-5250 MHz: 17.5dBm 5250-5350MHz: 17.3dBm 5470-5725MHz: 19.7dBm 5725-5850 MHz: 19.4dBm
Modulation Technique	OFDM
Antenna Specification*	Antenna gain: 2 dBi (It is provided by the manufacturer)
Voltage Range	DC 5.0V from adapter and DC 48V from POE
Sample serial number	SZ1211009-52658E-RF-S1 for RF conducted SZ1211009-52658E-RF-S2 for Radiated test (Assigned by ATC)
Sample/EUT Status	Good condition
Adapter 1 information	Model: NBS12E050200UV Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 5.0V,2.0A, 10.0W
Adapter 2 information	Model: R122-0502000ID Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 5.0V,2.0A, 10.0W

Objective

This test 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 KDB789033 D02 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.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF output power, conducted		0.73dB
Unwanted Emission, conducted		1.6dB
AC Power Lines Conducted Emissions		2.72dB
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.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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/ac20 mode: channel 36, 40, 48 were tested; For 802.11n40/ac40 mode: channel 38, 46 were tested. For 802.11ac80 mode, channel 42 was tested.

For 5250-5350MHz Band, 7 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
54	5270	62	5310
56	5280	64	5320
58	5290	/	/

For 802.11a, 802.11n20/ac20 mode: channel 52, 56, 64 were tested; For 802.11n40/ac40 mode: channel 54, 62 were tested. For 802.11ac80 mode, channel 58 was tested.

For 5470-5725MHz Band, 18 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	120	5600
102	5510	122	5610
104	5520	124	5620
106	5530	126	5630
108	5540	128	5640
110	5550	132	5660
112	5560	134	5670
116	5580	136	5680
118	5590	140	5700

For 802.11a, 802.11n20/ac20 mode: channel 100, 116, 140 were tested; For 802.11n40/ac40 mode: channel 102, 110, 134 were tested. For 802.11ac80 mode, channel 106, 122 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/ac20 mode: channel 149, 157, 165 were tested; For 802.11n40/ac40 mode: channel 151, 159 were tested. For 802.11ac80 mode, channel 155 was tested.

EUT Exercise Software

“Tear Term.exe”* exercise software was used. The software and power level was provided by the manufacturer.

The worst case was performed under:

U-NII	Mode	Frequency (MHz)	Data Rate	Power Level*
5150-5250MHz	802.11 a	5180	6Mbps	70
		5200	6Mbps	70
		5240	6Mbps	70
	802.11 n20	5180	MCS0	60
		5200	MCS0	60
		5240	MCS0	60
	802.11 n40	5190	MCS0	70
		5230	MCS0	70
	802.11 ac20	5180	MCS0	60
		5200	MCS0	60
		5240	MCS0	60
	802.11 ac40	5190	MCS0	70
		5230	MCS0	70
	802.11 ac80	5210	MCS0	70

U-NII	Mode	Frequency (MHz)	Data Rate	Power Level*
5250-5350MHz	802.11 a	5260	6Mbps	70
		5280	6Mbps	70
		5320	6Mbps	70
	802.11 n20	5260	MCS0	70
		5280	MCS0	70
		5320	MCS0	70
	802.11 n40	5270	MCS0	70
		5310	MCS0	70
	802.11 ac20	5260	MCS0	70
		5280	MCS0	70
		5320	MCS0	70
	802.11 ac40	5270	MCS0	70
5310		MCS0	70	
802.11 ac80	5290	MCS0	70	

U-NII	Mode	Frequency (MHz)	Data Rate set	Power Level*
5470-5725MHz	802.11 a	5500	6Mbps	70
		5580	6Mbps	70
		5700	6Mbps	70
	802.11 n20	5500	MCS0	70
		5580	MCS0	70
		5700	MCS0	70
	802.11 n40	5510	MCS0	60
		5550	MCS0	60
		5670	MCS0	60
	802.11 ac20	5500	MCS0	70
		5580	MCS0	70
		5700	MCS0	70
	802.11 ac40	5510	MCS0	60
		5550	MCS0	60
		5670	MCS0	60
	802.11 ac80	5530	MCS0	70
		5610	MCS0	70

U-NII	Mode	Frequency (MHz)	Data Rate	Power Level*
5725-5850MHz	802.11 a	5745	6Mbps	70
		5785	6Mbps	70
		5825	6Mbps	70
	802.11 n20	5745	MCS0	70
		5785	MCS0	70
		5825	MCS0	70
	802.11 n40	5755	MCS0	70
		5795	MCS0	70
	802.11 ac20	5745	MCS0	70
		5785	MCS0	70
		5825	MCS0	70
	802.11 ac40	5755	MCS0	70
		5795	MCS0	70
	802.11 ac80	5775	MCS0	70

The worse-case data rates are determined to be as above for each mode based upon investigations by measuring the output power and PSD across all data rates, bandwidths and modulations. The device supports SISO for all modes, and MIMO for 802.11 n and 802.11 ac modes, per pretest, the MIMO mode was the worst mode for 802.11 n and 802.11 ac modes. All the antenna ports have the same power level for SISO and MIMO modes.

Duty cycle

Test Result: Pass. Please refer to the Appendix.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Sandisk	U disk	SDCZ33-016G-Z35	Unknown
Lenovo	U disk	L3C	Unknown
DELL	PC	Latitude E5430	JG3NLV1
DELL	PC	Latitude E5430	590NLV1
HIKVISION	Router	DS-3WR03	10021642429
Vtech	IP phone	D862	Unknown
N/A	POE	VX-PI1000GB	1712086039
Unknown	Load	CX5122	Unknown
Unknown	Earphone	D02	Unknown

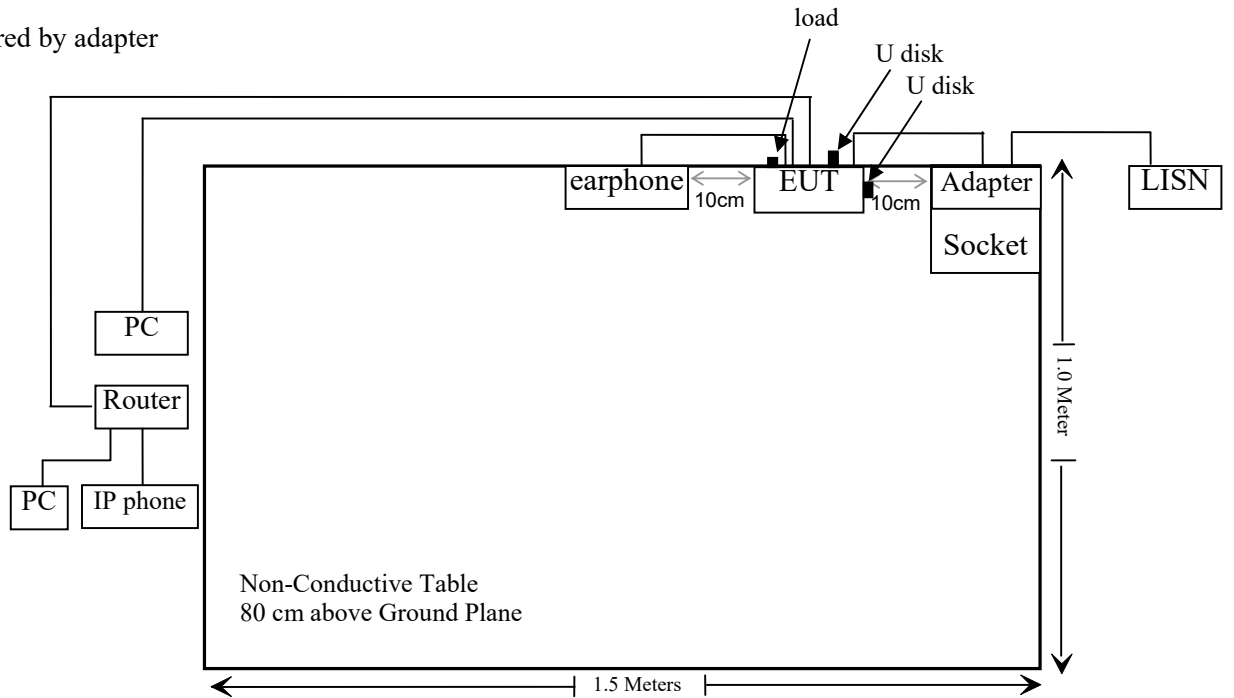
External I/O Cable

Cable Description	Length (m)	From Port	To
Un-shielded un-detachable AC cable	1.0	Socket	LISN
Un-shielded un-detachable DC cable	1.5	EUT	Adapter
Un-shielded detachable RJ45 cable	8.0	EUT	PC
Un-shielded detachable RJ45 cable	8.0	EUT	Router
Un-shielded detachable RJ45 cable	1.5	Router	PC
Un-shielded detachable RJ45 cable	1.5	Router	IP phone
Un-shielded detachable AC cable	1.0	POE	LISN
Un-shielded detachable RJ45 cable	1.5	POE	EUT
Un-shielded detachable RJ45 cable	8.0	POE	Router

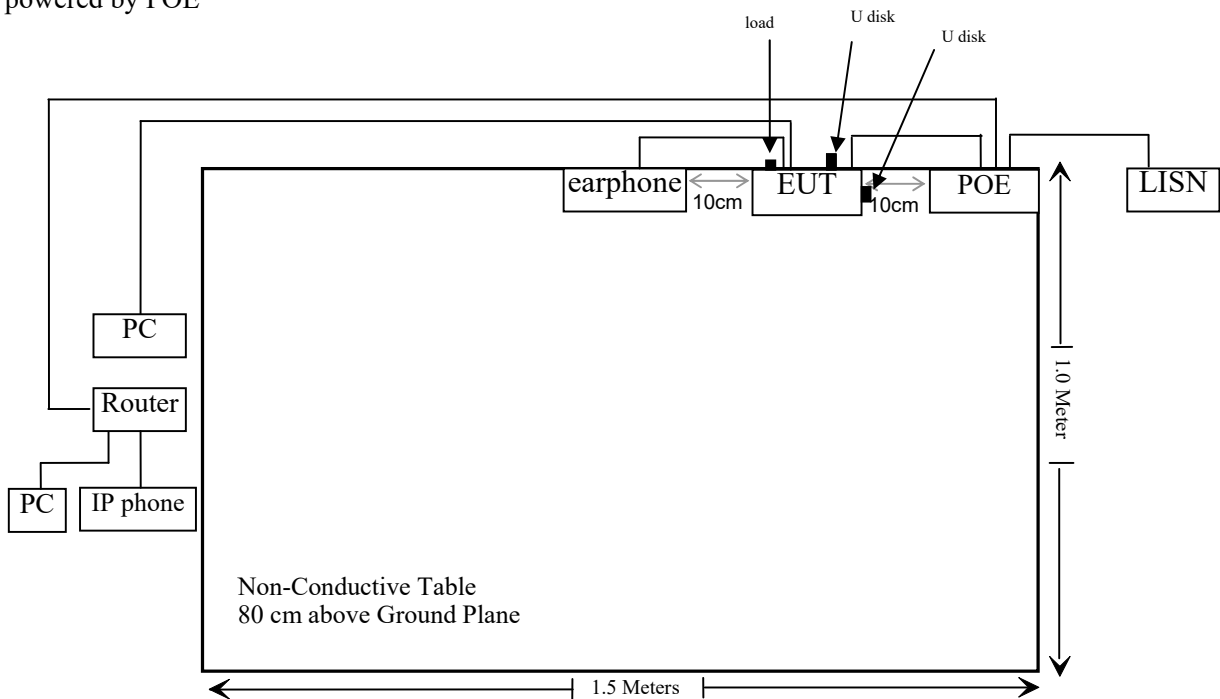
Block Diagram of Test Setup

For conducted emission

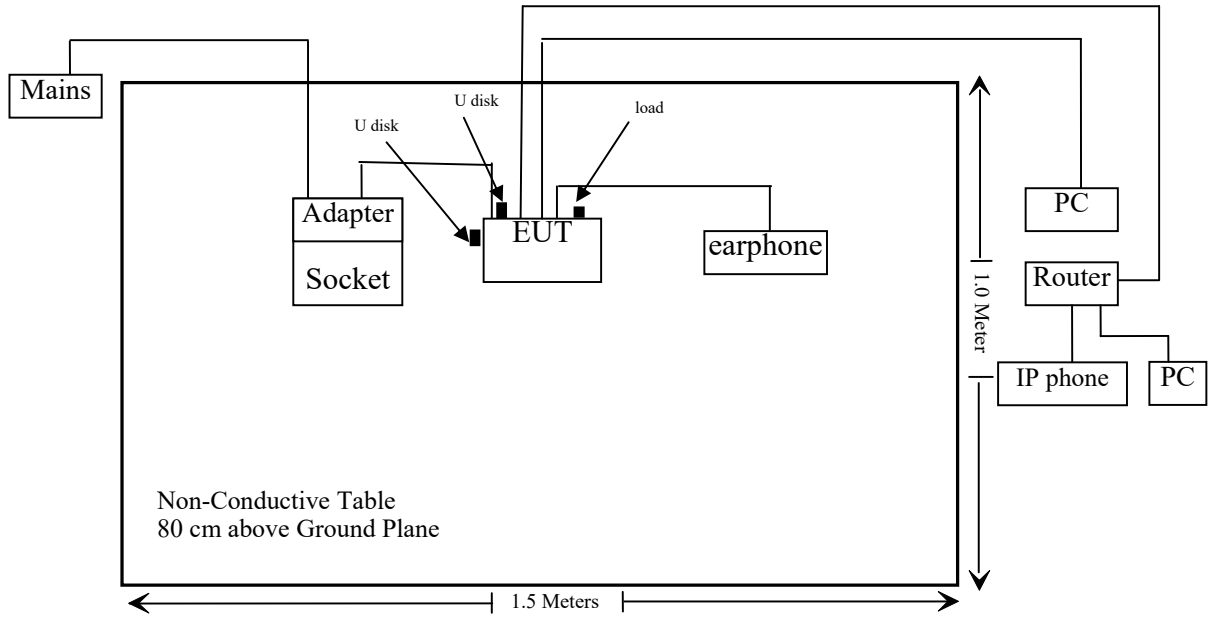
powered by adapter



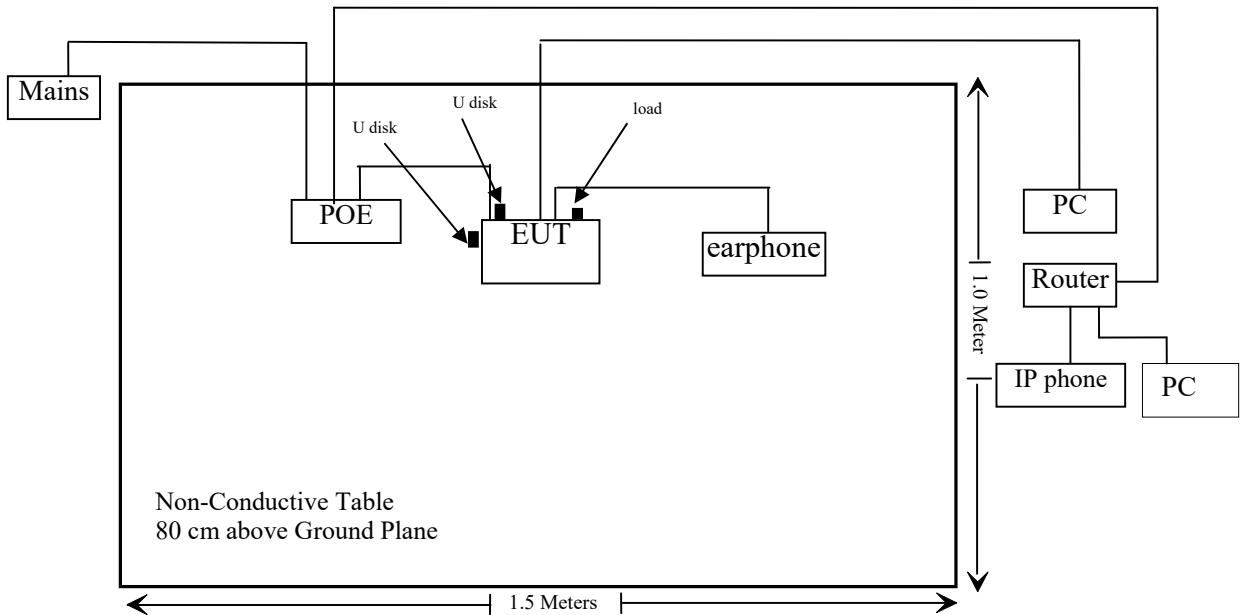
powered by POE



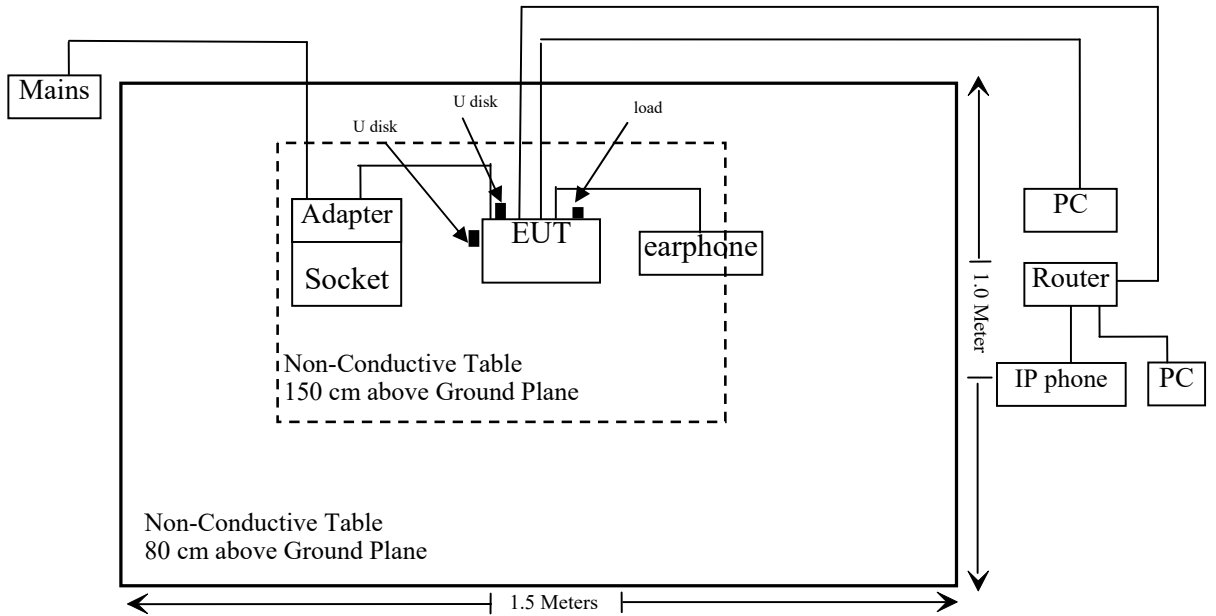
For re below 1 G
powered by adapter



powered by POE



For RE above 1 G
powered by adapter



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b) (1) & §2.1091	Maximum Permissible exposure (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.407(b)(9)& §15.207(a)	Conducted Emissions	Compliant
§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliant
§15.407(a) (e)	26 dB Emission Bandwidth & 6dB Bandwidth 99% Occupied Bandwidth	Compliant
§15.407(a)	Conducted Transmitter Output Power	Compliant
§15.407 (a)	Power Spectral Density	Compliant
§15.407 (h)	Transmit Power Control (TPC)	Not Applicable
§15.407 (h)	Dynamic Frequency Selection (DFS)	Compliant*

Not Applicable: the EUT has no TPC function which was declared by the applicant.

Compliant*: Please refer to the DFS report: SZ1211009-52658E-RFC.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde& Schwarz	EMI Test Receiver	ESCI	100784	2021/02/03	2022/02/02
R & S	L.I.S.N.	ENV216	101314	2020/12/25	2021/12/24
Anritsu Corp	50ΩCoaxial Switch	MP59B	6200506474	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-2m	No.2	2020/12/25	2021/12/24
Conducted Emission Test Software: e3 19821b (V9)					
Radiated Emissions 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	2021/11/09	2022/11/08
Quinstar	Amplifier	QLW-18405536-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: e3 19821b (V9)					

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
CD	Band Reject Filter	BRM-5.15/5.35g-45	075	2020/12/25	2021/12/24
CD	Band Reject Filter	BRM-5.47/5.725G-45	075	2020/12/25	2021/12/24
CD	Band Reject Filter	BRM-5.725/5.875G-45	065	2020/12/25	2021/12/24
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
HP	20dB Attenuator	8491A	53857	2020/12/25	2021/12/24
HP	20dB Attenuator	8491A	53857	2021/12/25	2022/12/24
Unknown	RF Cable	RF Cable1	RF Cable1	Each Time	

* **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).

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

Applicable Standard

According to subpart 1.1307 (b)(1), 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 ²)	Averaging Time (Minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	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

a)

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/cm²)

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 simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Mode	Frequency (MHz)	Antenna Gain		Tune up conducted power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
BT	2402-2480	0	1.00	8.5	7.08	20	0.0014	1
BLE	2402-2480	0	1.00	8.5	7.08	20	0.0014	1
2.4GHz Wi-Fi	2412-2462	2	1.58	18.0	63.10	20	0.0199	1
5GHz Wi-Fi	5150-5250	2	1.58	18.0	63.10	20	0.0199	1
	5250-5350	2	1.58	18.0	63.10	20	0.0199	1
	5470-5725	2	1.58	20.0	100.00	20	0.0315	1
	5725-5850	2	1.58	20.0	100.00	20	0.0315	1

Note: 1. The tune up conducted power was declared by the applicant.

2. The BT and Wi-Fi can transmit at the same time.

Simultaneous transmitting consideration (worst case):

The ratio= $MPE_{BT}/limit + MPE_{Wi-Fi}/limit = 0.0014/1 + 0.0315/1 = 0.0329 < 1.0$

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

Result: Compliant.

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:

- b. Antenna must be permanently attached to the unit.
- c. 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 internal PCB antennas arrangement for Wi-Fi, which was permanently attached, fulfill the requirement of this section. Please refer to the EUT photos.

ANT	Type	Antenna Gain	Impedance	Frequency Range
Wi-Fi	PCB	2 dBi	50 Ω	2.4~2.5GHz / 5150-5850 GHz

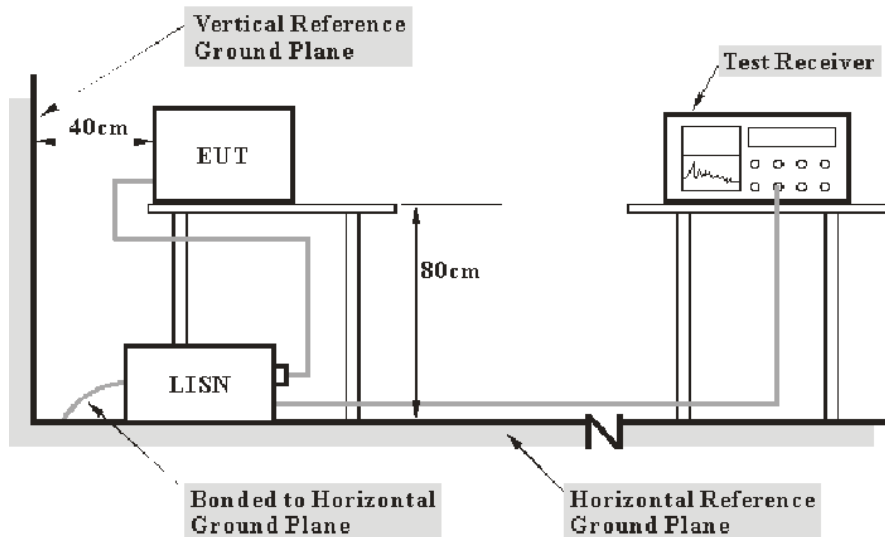
Result: Compliant.

FCC §15.407 (b) (6) §15.207 (a) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (6)

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.

Corrected Factor & Margin Calculation

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

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

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

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

Test Data

Environmental Conditions

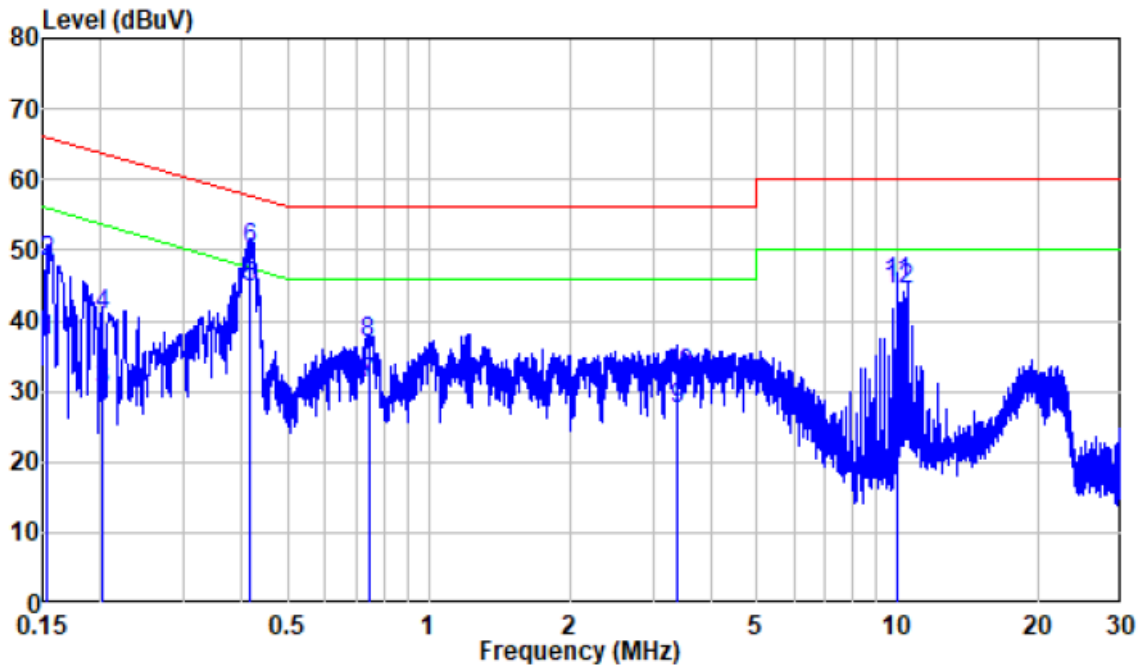
Temperature:	25 °C
Relative Humidity:	64 %
ATM Pressure:	101.0 kPa

The testing was performed by Bin Duan from 2021-11-15 to 2021-11-23.

EUT operation mode: Transmitting (Worst case: 802.11ac80, 5775MHz)

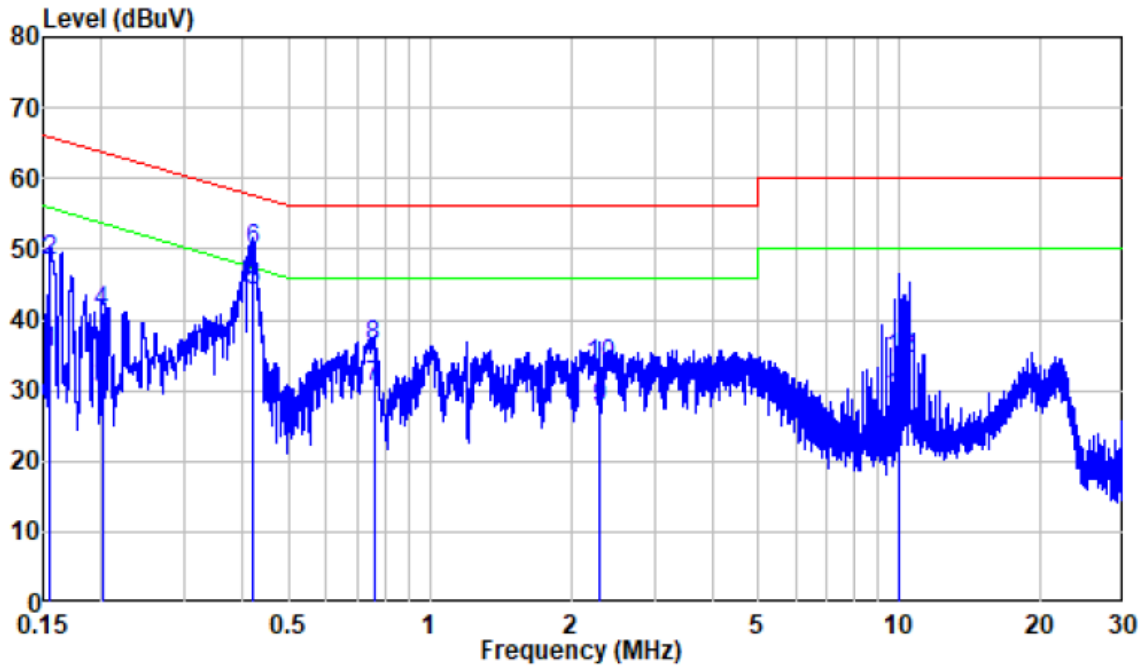
For POE:

AC 120V/60 Hz, Line



	Freq	Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.153	9.89	27.35	37.24	55.83	-18.59	Average
2	0.153	9.89	38.55	48.44	65.83	-17.39	QP
3	0.202	9.80	20.32	30.12	53.55	-23.43	Average
4	0.202	9.80	30.95	40.75	63.55	-22.80	QP
5	0.416	9.80	34.92	44.72	47.53	-2.81	Average
6	0.416	9.80	40.41	50.21	57.53	-7.32	QP
7	0.743	9.81	21.40	31.21	46.00	-14.79	Average
8	0.743	9.81	27.06	36.87	56.00	-19.13	QP
9	3.393	9.93	17.44	27.37	46.00	-18.63	Average
10	3.393	9.93	22.37	32.30	56.00	-23.70	QP
11	9.946	10.10	35.08	45.18	50.00	-4.82	Average
12	9.946	10.10	34.43	44.53	60.00	-15.47	QP

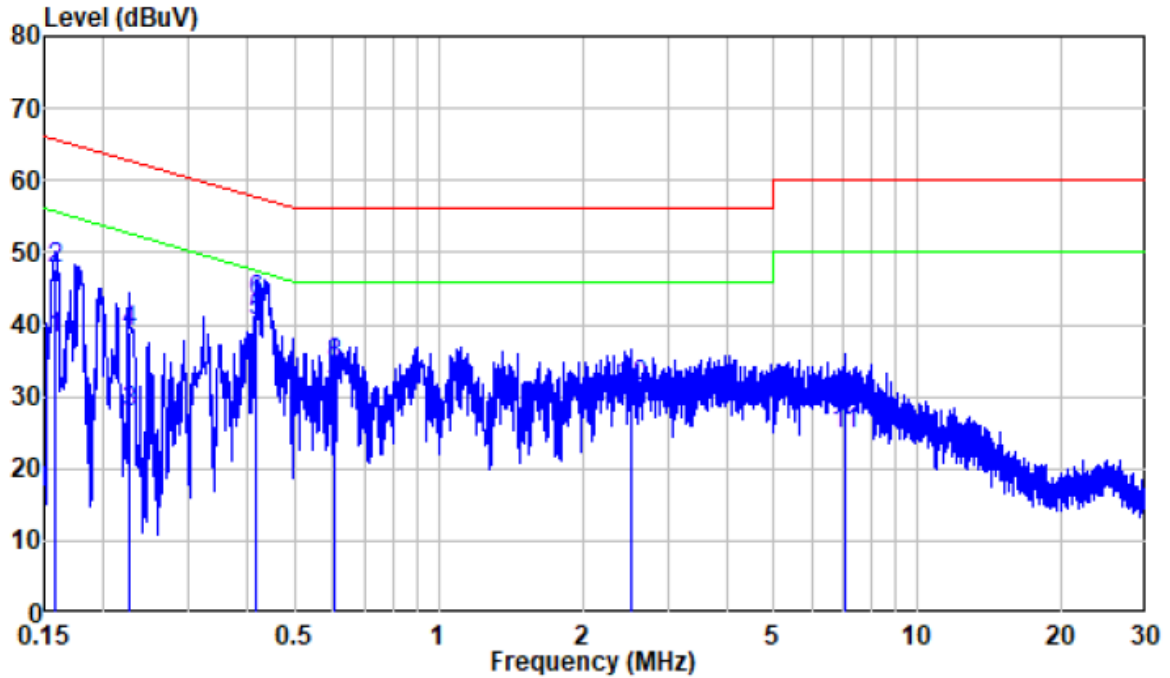
AC 120V/60 Hz, Neutral



	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.156	9.91	25.36	35.27	55.70	-20.43	Average
2	0.156	9.91	38.40	48.31	65.70	-17.39	QP
3	0.200	10.00	20.28	30.28	53.60	-23.32	Average
4	0.200	10.00	31.01	41.01	63.60	-22.59	QP
5	0.419	9.92	34.30	44.22	47.46	-3.24	Average
6	0.419	9.92	39.84	49.76	57.46	-7.70	QP
7	0.759	9.91	20.48	30.39	46.00	-15.61	Average
8	0.759	9.91	26.34	36.25	56.00	-19.75	QP
9	2.298	9.94	17.59	27.53	46.00	-18.47	Average
10	2.298	9.94	23.57	33.51	56.00	-22.49	QP
11	9.952	10.10	18.88	28.98	50.00	-21.02	Average
12	9.952	10.10	24.23	34.33	60.00	-25.67	QP

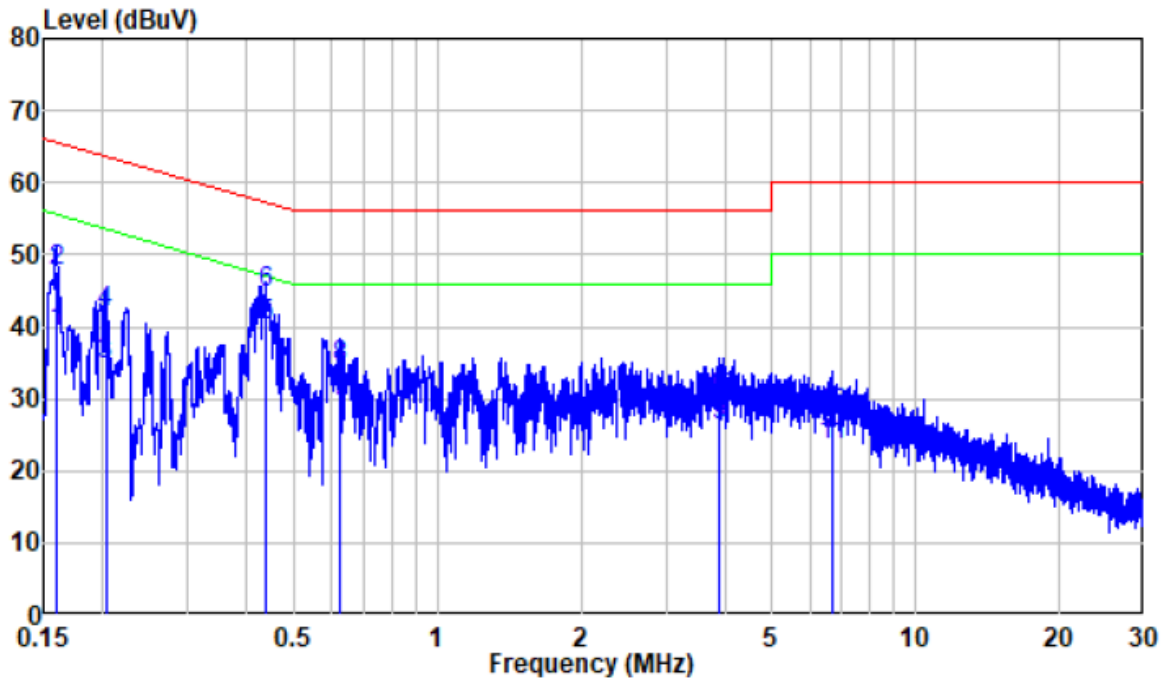
For Adapter NBS12E050200UV

AC 120V/60 Hz, Line



	Freq	Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.158	9.88	28.04	37.92	55.55	-17.63	Average
2	0.158	9.88	37.68	47.56	65.55	-17.99	QP
3	0.226	9.80	18.07	27.87	52.61	-24.74	Average
4	0.226	9.80	29.16	38.96	62.61	-23.65	QP
5	0.417	9.80	30.62	40.42	47.51	-7.09	Average
6	0.417	9.80	33.37	43.17	57.51	-14.34	QP
7	0.608	9.81	20.12	29.93	46.00	-16.07	Average
8	0.608	9.81	24.51	34.32	56.00	-21.68	QP
9	2.527	9.93	18.27	28.20	46.00	-17.80	Average
10	2.527	9.93	21.43	31.36	56.00	-24.64	QP
11	7.030	10.07	14.65	24.72	50.00	-25.28	Average
12	7.030	10.07	19.09	29.16	60.00	-30.84	QP

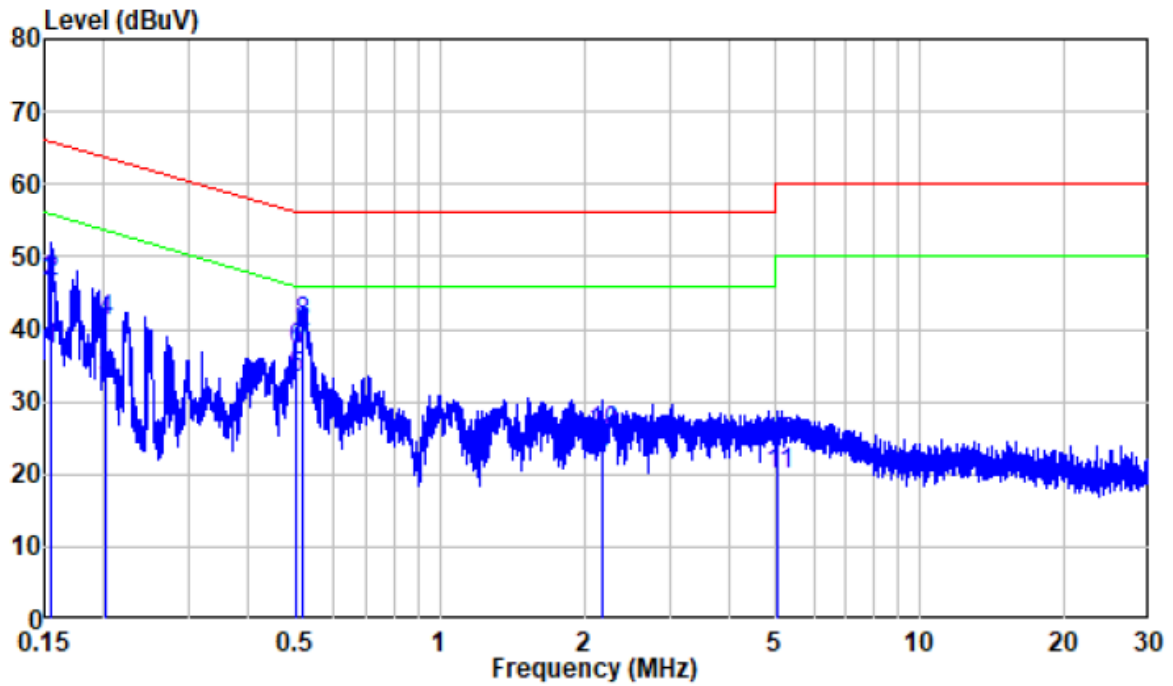
AC 120V/60 Hz, Neutral



	Freq	Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.159	9.92	29.21	39.13	55.51	-16.38	Average
2	0.159	9.92	37.76	47.68	65.51	-17.83	QP
3	0.202	10.00	24.85	34.85	53.51	-18.66	Average
4	0.202	10.00	31.83	41.83	63.51	-21.68	QP
5	0.437	9.91	30.14	40.05	47.12	-7.07	Average
6	0.437	9.91	34.67	44.58	57.12	-12.54	QP
7	0.626	9.91	19.71	29.62	46.00	-16.38	Average
8	0.626	9.91	24.42	34.33	56.00	-21.67	QP
9	3.876	10.04	16.19	26.23	46.00	-19.77	Average
10	3.876	10.04	19.79	29.83	56.00	-26.17	QP
11	6.658	10.07	13.37	23.44	50.00	-26.56	Average
12	6.658	10.07	17.79	27.86	60.00	-32.14	QP

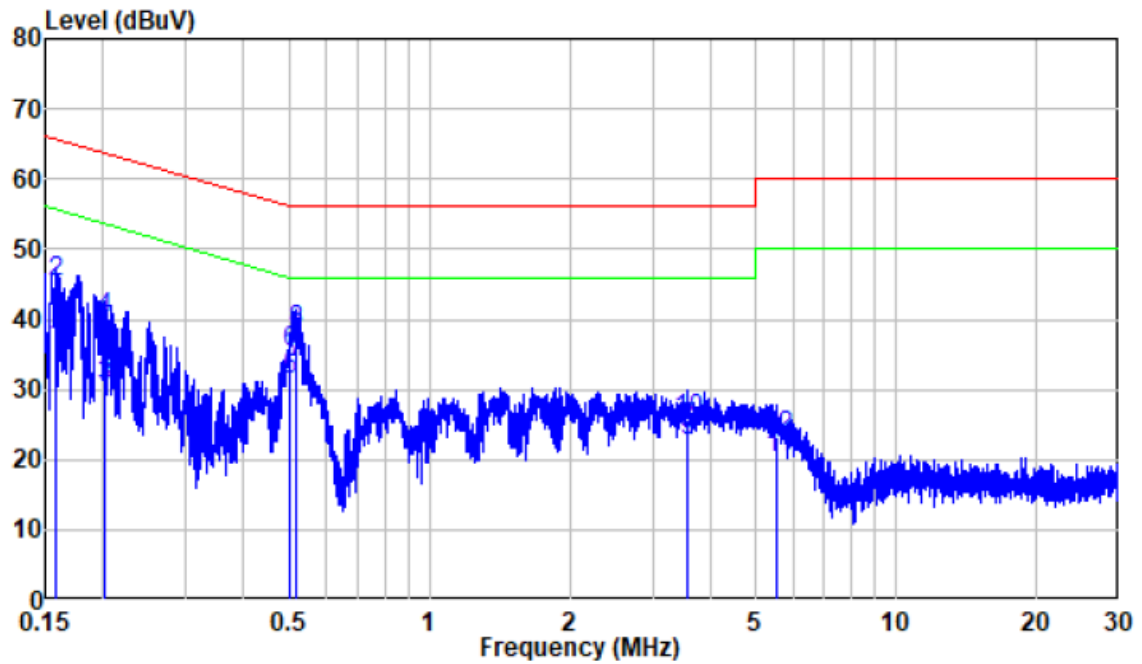
For Adapter R122-0502000ID

AC 120V/60 Hz, Line



	Freq	Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.155	9.89	27.30	37.19	55.70	-18.51	Average
2	0.155	9.89	36.68	46.57	65.70	-19.13	QP
3	0.201	9.80	23.31	33.11	53.57	-20.46	Average
4	0.201	9.80	31.25	41.05	63.57	-22.52	QP
5	0.499	9.80	23.51	33.31	46.01	-12.70	Average
6	0.499	9.80	27.24	37.04	56.01	-18.97	QP
7	0.516	9.81	27.33	37.14	46.00	-8.86	Average
8	0.516	9.81	30.94	40.75	56.00	-15.25	QP
9	2.177	9.92	12.64	22.56	46.00	-23.44	Average
10	2.177	9.92	15.77	25.69	56.00	-30.31	QP
11	5.058	9.99	9.94	19.93	50.00	-30.07	Average
12	5.058	9.99	14.03	24.02	60.00	-35.98	QP

AC 120V/60 Hz, Neutral



	Freq	Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.158	9.92	26.12	36.04	55.56	-19.52	Average
2	0.158	9.92	35.27	45.19	65.56	-20.37	QP
3	0.202	10.00	20.36	30.36	53.52	-23.16	Average
4	0.202	10.00	30.25	40.25	63.52	-23.27	QP
5	0.500	9.90	21.40	31.30	46.00	-14.70	Average
6	0.500	9.90	25.41	35.31	56.00	-20.69	QP
7	0.518	9.91	24.25	34.16	46.00	-11.84	Average
8	0.518	9.91	28.28	38.19	56.00	-17.81	QP
9	3.568	10.02	12.51	22.53	46.00	-23.47	Average
10	3.568	10.02	15.53	25.55	56.00	-30.45	QP
11	5.553	10.06	10.13	20.19	50.00	-29.81	Average
12	5.553	10.06	13.20	23.26	60.00	-36.74	QP

§15.205 & §15.209 & §15.407(B)– UNDESIRABLE EMISSION

Applicable Standard

FCC §15.407 (b); §15.209; §15.205;

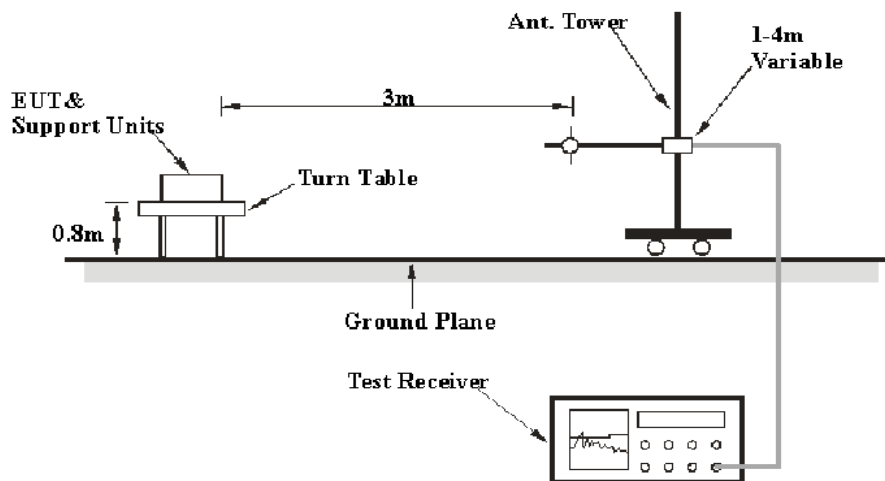
(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

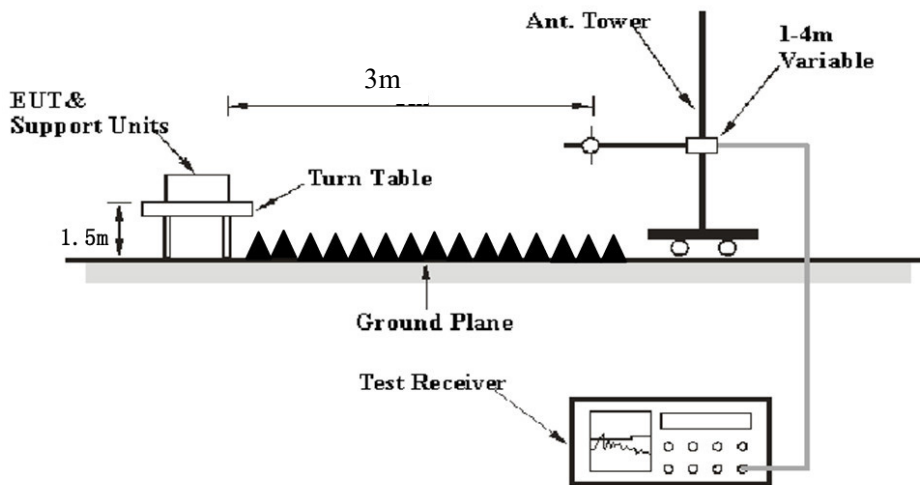
- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:
 - (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

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 ^{Note 1}	/	Average
	1MHz	> 1/T ^{Note 2}	/	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**

During the radiated emission test, the adapter was connected to the AC floor outlet.

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

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz, peak and Average detection modes for frequencies above 1GHz.

Corrected Amplitude & Margin Calculation

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

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

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

$$\begin{aligned} \text{Margin/Over Limit} &= \text{Corrected Amplitude/Level-Limit} \\ \text{Corrected Amplitude/Level} &= \text{Reading} + \text{Corrected Factor} \end{aligned}$$

Test Data

Environmental Conditions

Temperature:	25~26.9 °C
Relative Humidity:	51~64 %
ATM Pressure:	101.0~101.2 kPa

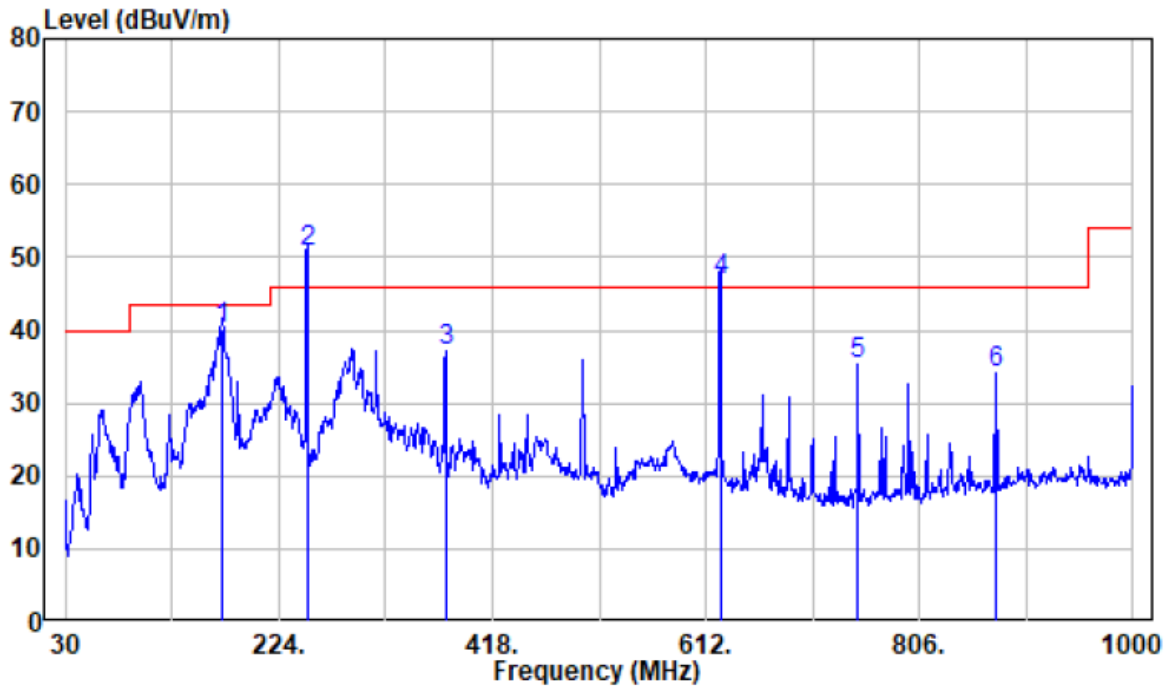
The testing was performed by Bin Deng and Caro hu from 2021-11-18 to 2021-11-23.

Test mode: Transmitting (Pre-scan in the X,Y and Z axes of orientation, the worst case X-axis of orientation was recorded)

30 MHz – 1 GHz: (Worst case: 802.11ac80, 5775MHz)

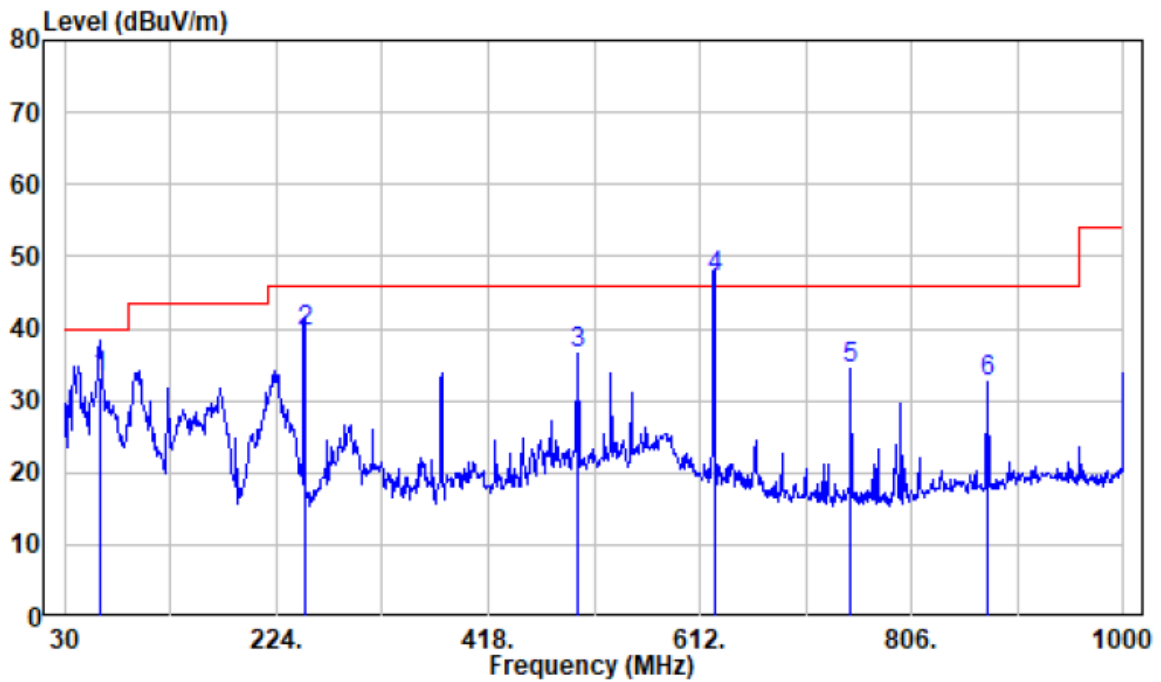
For POE

Horizontal



	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	171.62	-21.03	61.32	40.29	43.50	-3.21	QP
2	250.19	-18.53	69.10	50.57	46.00	4.57	QP*
3	375.32	-15.70	52.84	37.14	46.00	-8.86	Peak
4	625.58	-11.49	58.30	46.81	46.00	0.81	QP*
5	750.71	-11.05	46.50	35.45	46.00	-10.55	Peak
6	875.84	-9.12	43.25	34.13	46.00	-11.87	Peak

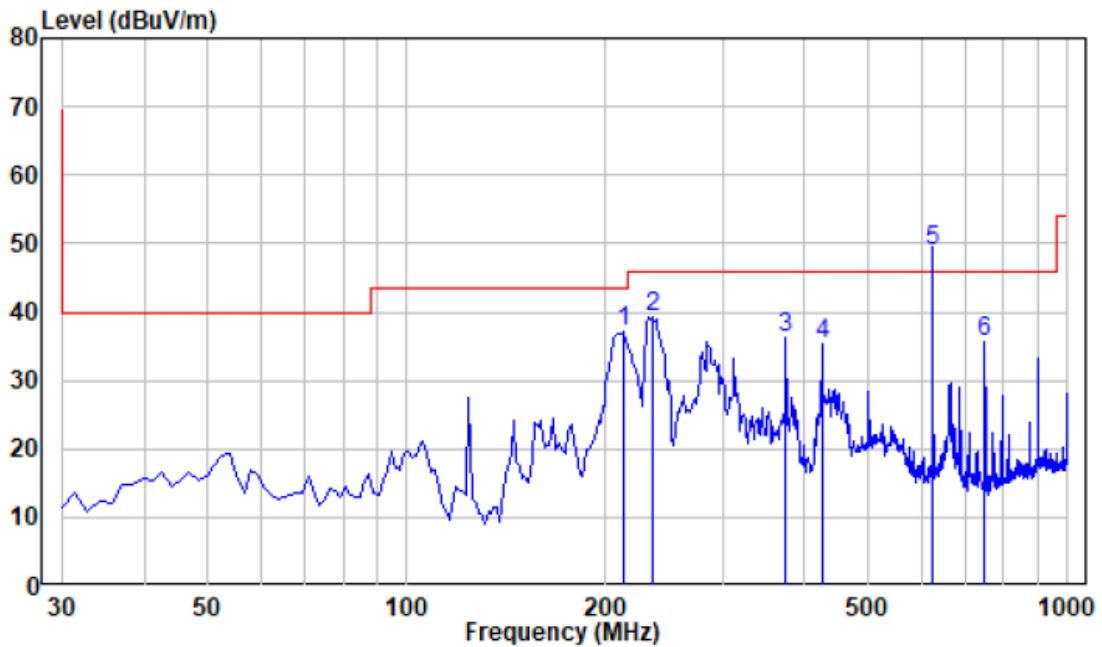
Vertical



	Freq	Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	62.01	-19.87	53.09	33.22	40.00	-6.78	QP
2	250.19	-18.53	58.21	39.68	46.00	-6.32	QP
3	500.45	-14.18	50.83	36.65	46.00	-9.35	Peak
4	625.58	-11.49	58.70	47.21	46.00	1.21	QP*
5	750.71	-11.05	45.35	34.30	46.00	-11.70	Peak
6	875.84	-9.12	41.87	32.75	46.00	-13.25	Peak

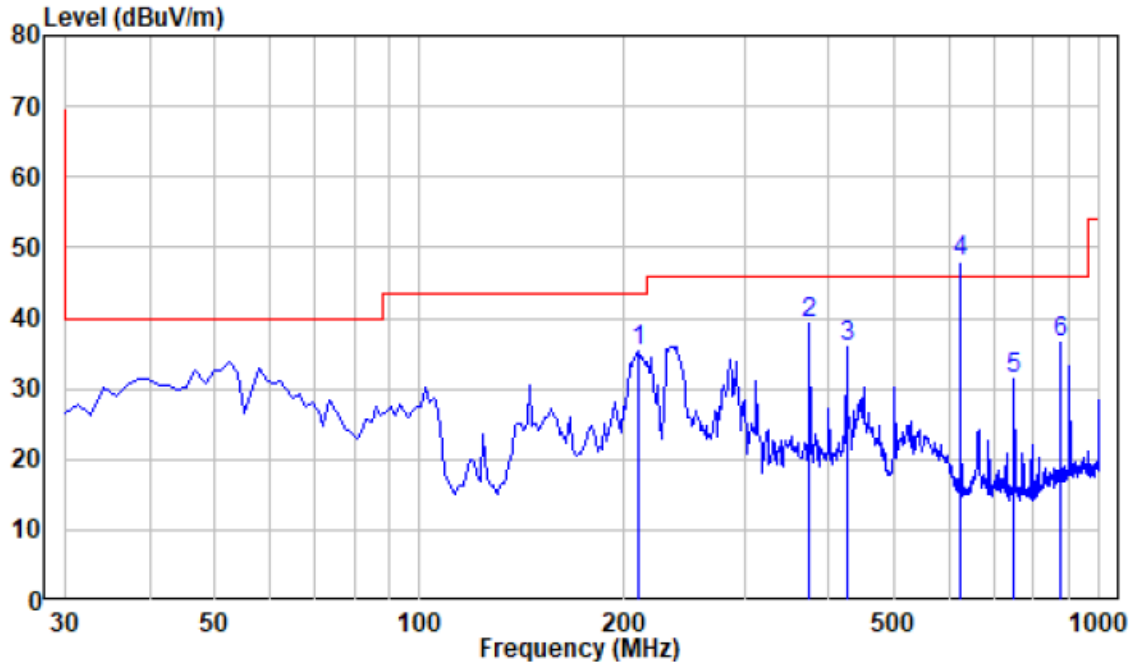
For Adapter NBS12E050200UV

Horizontal



	Freq	Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	212.75	-19.00	56.14	37.14	43.50	-6.36	Peak
2	235.25	-18.78	57.91	39.13	46.00	-6.87	Peak
3	374.42	-15.71	51.93	36.22	46.00	-9.78	Peak
4	425.03	-14.40	49.80	35.40	46.00	-10.60	Peak
5	624.65	-11.50	60.37	48.87	46.00	2.87	QP *
6	749.77	-11.05	46.60	35.55	46.00	-10.45	Peak

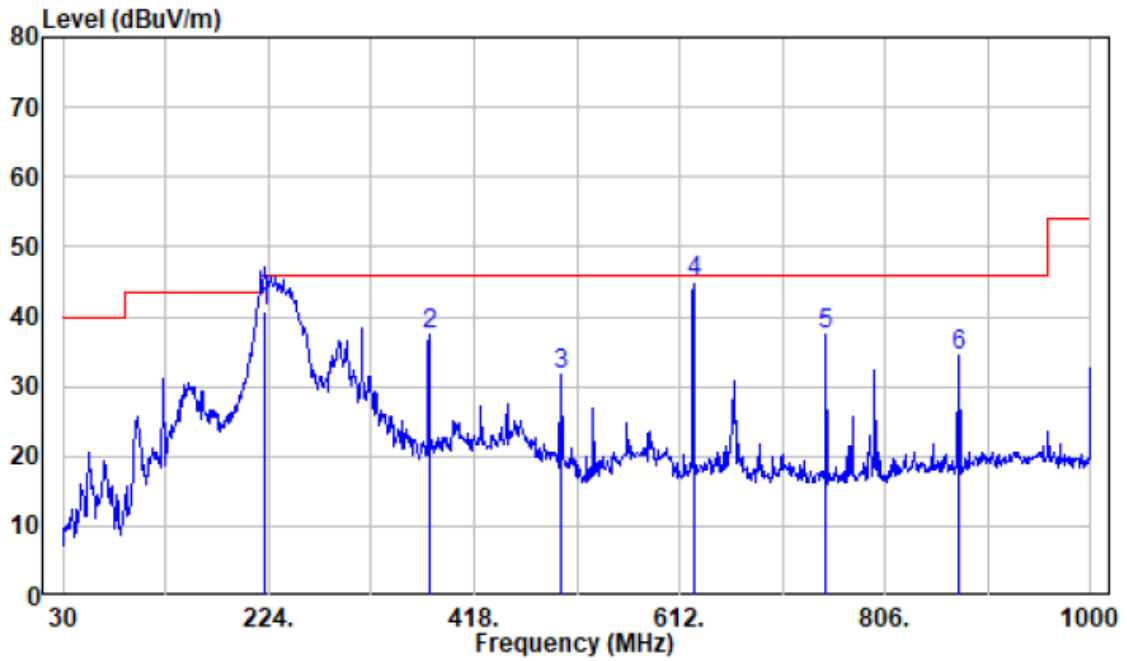
Vertical



	Freq	Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	209.94	-19.01	54.36	35.35	43.50	-8.15	Peak
2	374.42	-15.71	54.96	39.25	46.00	-6.75	Peak
3	425.03	-14.40	50.38	35.98	46.00	-10.02	Peak
4	624.65	-11.50	59.61	48.11	46.00	2.11	QP *
5	749.77	-11.05	42.37	31.32	46.00	-14.68	Peak
6	874.88	-9.17	45.62	36.45	46.00	-9.55	Peak

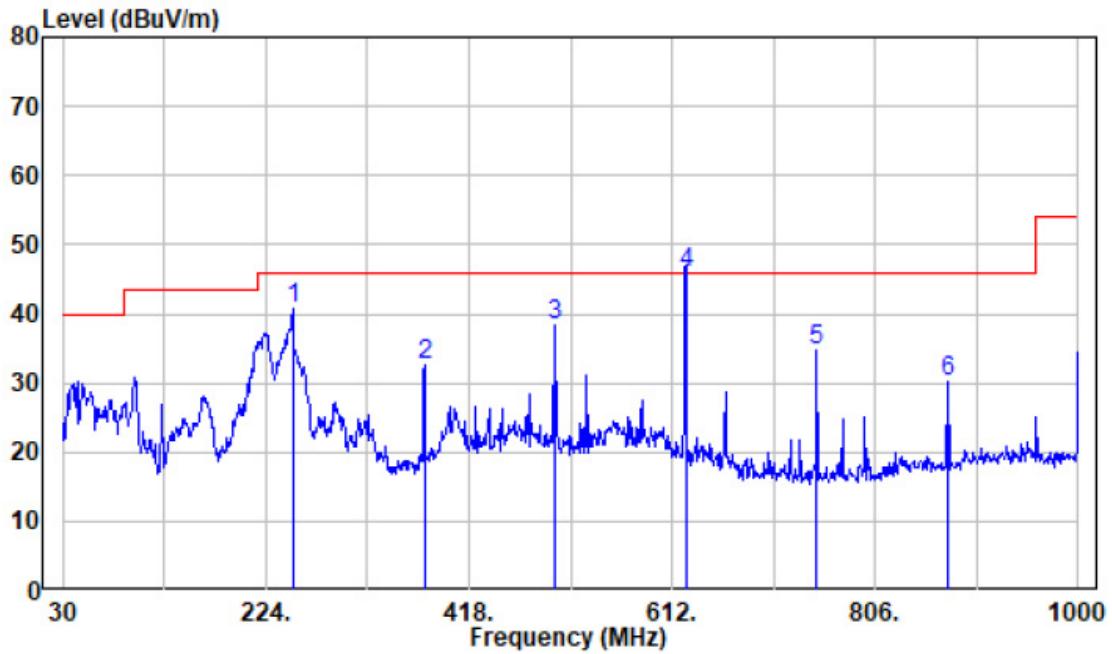
For Adapter R122-0502000ID

Horizontal



	Freq	Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	221.09	-18.96	59.65	40.69	46.00	-5.31	QP
2	375.32	-15.70	53.04	37.34	46.00	-8.66	Peak
3	500.45	-14.18	45.82	31.64	46.00	-14.36	Peak
4	625.58	-11.49	56.37	44.88	46.00	-1.12	QP
5	750.71	-11.05	48.42	37.37	46.00	-8.63	Peak
6	875.84	-9.12	43.63	34.51	46.00	-11.49	Peak

Vertical



			Read		Limit	Over	
	Freq	Factor	Level	Level	Line	Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	250.19	-18.53	59.42	40.89	46.00	-5.11	QP
2	375.32	-15.70	48.42	32.72	46.00	-13.28	Peak
3	500.45	-14.18	52.51	38.33	46.00	-7.67	Peak
4	625.58	-11.49	57.32	45.83	46.00	-0.17	QP
5	750.71	-11.05	45.85	34.80	46.00	-11.20	Peak
6	875.84	-9.12	39.36	30.24	46.00	-15.76	Peak

Note *: The data recorded above represents the worst case for all supported operating modes, there were no spurious emission in the range 30MHz -1GHz over the limit in §15.209 caused by radio, the emission list at above table was investigated and was not caused by the radio, the emission was present when the radio was disabled. Those emissions comply with the FCC Part 15, Subpart B-Unintentional radiators §15.109(b) limit set for Class A digital device as the EUT is declared as a Class A equipment according the user manual.

Above 1GHz (Worst case: Powered by adapter 1)**5150-5250 MHz:**

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11a Antenna 0									
5180MHz									
4500	58.00	PK	45	1.1	H	1.89	59.89	74	-14.11
4500	45.47	AV	45	1.1	H	1.89	47.36	54	-6.64
4500	60.28	PK	51	1.7	V	1.89	62.17	74	-11.83
4500	47.54	AV	51	1.7	V	1.89	49.43	54	-4.57
5150	58.01	PK	201	1.7	H	3.37	61.38	74	-12.62
5150	43.77	AV	201	1.7	H	3.37	47.14	54	-6.86
5150	58.98	PK	107	1.8	V	3.37	62.35	74	-11.65
5150	45.93	AV	107	1.8	V	3.37	49.30	54	-4.7
10360	36.13	PK	356	2.3	H	14.41	50.54	68.2	-17.66
10360	35.78	PK	146	2.3	V	14.41	50.19	68.2	-18.01
5200MHz									
10400	38.95	PK	140	1.2	H	11.46	50.41	68.2	-17.79
10400	38.76	PK	112	1.2	V	11.46	50.22	68.2	-17.98
5240MHz									
5350	57.53	PK	123	2.4	H	3.43	60.96	74	-13.04
5350	43.92	AV	123	2.4	H	3.43	47.35	54	-6.65
5350	58.26	PK	297	1.2	V	3.43	61.69	74	-12.31
5350	45.86	AV	297	1.2	V	3.43	49.29	54	-4.71
5460	57.98	PK	103	1.7	H	3.58	61.56	74	-12.44
5460	43.65	AV	103	1.7	H	3.58	47.23	54	-6.77
5460	58.90	PK	232	2.2	V	3.58	62.48	74	-11.52
5460	45.71	AV	232	2.2	V	3.58	49.29	54	-4.71
10480	38.65	PK	106	1.7	H	11.53	50.18	68.2	-18.02
10480	38.41	PK	284	1.7	V	11.53	49.94	68.2	-18.26

Frequency (MHz)	Receiver		Turn- Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11a Antenna 1									
5180MHz									
4500	58.00	PK	301	1.8	H	1.89	59.89	74	-14.11
4500	45.47	AV	301	1.8	H	1.89	47.36	54	-6.64
4500	60.28	PK	240	1.2	V	1.89	62.17	74	-11.83
4500	47.54	AV	240	1.2	V	1.89	49.43	54	-4.57
5150	58.01	PK	255	1.5	H	3.37	61.38	74	-12.62
5150	43.77	AV	255	1.5	H	3.37	47.14	54	-6.86
5150	58.98	PK	135	1.1	V	3.37	62.35	74	-11.65
5150	45.93	AV	135	1.1	V	3.37	49.30	54	-4.7
10360	36.13	PK	75	2.3	H	14.41	50.54	68.2	-17.66
10360	35.78	PK	61	2.3	V	14.41	50.19	68.2	-18.01
5200MHz									
10400	38.95	PK	191	1.7	H	11.46	50.41	68.2	-17.79
10400	38.76	PK	224	1.7	V	11.46	50.22	68.2	-17.98
5240MHz									
5350	57.53	PK	124	1.2	H	3.43	60.96	74	-13.04
5350	43.92	AV	124	1.2	H	3.43	47.35	54	-6.65
5350	58.26	PK	192	1.3	V	3.43	61.69	74	-12.31
5350	45.86	AV	192	1.3	V	3.43	49.29	54	-4.71
5460	57.98	PK	46	1.7	H	3.58	61.56	74	-12.44
5460	43.65	AV	46	1.7	H	3.58	47.23	54	-6.77
5460	58.90	PK	43	2.1	V	3.58	62.48	74	-11.52
5460	45.71	AV	43	2.1	V	3.58	49.29	54	-4.71
10480	38.65	PK	315	1.7	H	11.53	50.18	68.2	-18.02
10480	38.41	PK	170	1.7	V	11.53	49.94	68.2	-18.26

Frequency (MHz)	Receiver		Turn- Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11n20 2TX									
5180MHz									
4500	59.73	PK	322	1.7	H	1.89	61.62	74	-12.38
4500	45.94	AV	322	1.7	H	1.89	47.83	54	-6.17
4500	60.69	PK	272	2.4	V	1.89	62.58	74	-11.42
4500	46.30	AV	272	2.4	V	1.89	48.19	54	-5.81
5150	58.06	PK	78	1.4	H	3.37	61.43	74	-12.57
5150	44.23	AV	78	1.4	H	3.37	47.60	54	-6.4
5150	59.15	PK	34	1.8	V	3.37	62.52	74	-11.48
5150	44.99	AV	34	1.8	V	3.37	48.36	54	-5.64
10360	36.22	PK	68	1.4	H	14.41	50.63	68.2	-17.57
10360	35.57	PK	93	1.4	V	14.41	49.98	68.2	-18.22
5200MHz									
10400	39.34	PK	103	2.3	H	11.46	50.8	68.2	-17.4
10400	39.48	PK	190	2.3	V	11.46	50.94	68.2	-17.26
5240MHz									
5350	57.78	PK	191	1.3	H	3.43	61.21	74	-12.79
5350	44.09	AV	191	1.3	H	3.43	47.52	54	-6.48
5350	58.94	PK	121	2	V	3.43	62.37	74	-11.63
5350	44.87	AV	121	2	V	3.43	48.3	54	-5.7
5460	58.15	PK	347	1.7	H	3.58	61.73	74	-12.27
5460	43.94	AV	347	1.7	H	3.58	47.52	54	-6.48
5460	58.18	PK	2	2.5	V	3.58	61.76	74	-12.24
5460	45.05	AV	2	2.5	V	3.58	48.63	54	-5.37
10480	38.37	PK	256	1.7	H	11.53	49.90	68.2	-18.3
10480	38.79	PK	275	1.7	V	11.53	50.32	68.2	-17.88

Frequency (MHz)	Receiver		Turn-Table	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV.	Angle Degree	Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11n40 2TX									
5190 MHz									
4500	59.23	PK	274	2.3	H	1.89	61.12	74	-12.88
4500	47.25	AV	274	2.3	H	1.89	49.14	54	-4.86
4500	60.31	PK	92	2.2	V	1.89	62.20	74	-11.8
4500	47.74	AV	92	2.2	V	1.89	49.63	54	-4.37
5150	58.24	PK	320	1.5	H	3.37	61.61	74	-12.39
5150	45.67	AV	320	1.5	H	3.37	49.04	54	-4.96
5150	58.78	PK	78	1.2	V	3.37	62.15	74	-11.85
5150	46.21	AV	78	1.2	V	3.37	49.58	54	-4.42
10380	38.65	PK	130	1.3	H	11.43	50.08	68.2	-18.12
10380	39.05	PK	18	1.3	V	11.43	50.48	68.2	-17.72
5230MHz									
5350	58.34	PK	313	1.5	H	3.43	61.77	74	-12.23
5350	45.29	AV	313	1.5	H	3.43	48.72	54	-5.28
5350	58.22	PK	332	2.5	V	3.43	61.65	74	-12.35
5350	45.80	AV	332	2.5	V	3.43	49.23	54	-4.77
5460	58.20	PK	93	1.2	H	3.58	61.78	74	-12.22
5460	45.19	AV	93	1.2	H	3.58	48.77	54	-5.23
5460	58.19	PK	244	1.5	V	3.58	61.77	74	-12.23
5460	45.77	AV	244	1.5	V	3.58	49.35	54	-4.65
10460	38.13	PK	280	1.7	H	11.5	49.63	68.2	-18.57
10460	38.21	PK	77	1.7	V	11.5	49.71	68.2	-18.49

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11AC20 2TX									
5180MHz									
4500	62.67	PK	348	2.3	H	1.89	64.56	74	-9.44
4500	47.07	AV	348	2.3	H	1.89	48.96	54	-5.04
4500	60.40	PK	142	1.6	V	1.89	62.29	74	-11.71
4500	47.21	AV	142	1.6	V	1.89	49.10	54	-4.9
5150	61.00	PK	169	2.1	H	3.37	64.37	74	-9.63
5150	45.79	AV	169	2.1	H	3.37	49.16	54	-4.84
5150	58.97	PK	36	1.6	V	3.37	62.34	74	-11.66
5150	45.57	AV	36	1.6	V	3.37	48.94	54	-5.06
10360	35.74	PK	259	1.8	H	14.41	50.15	68.2	-18.05
10360	36.11	PK	275	1.8	V	14.41	50.52	68.2	-17.68
5200MHz									
10400	38.98	PK	170	2.3	H	11.46	50.44	68.2	-17.76
10400	38.58	PK	104	2.3	V	11.46	50.04	68.2	-18.16
5240MHz									
5350	57.62	PK	309	2	H	3.43	61.05	74	-12.95
5350	45.06	AV	309	2	H	3.43	48.49	54	-5.51
5350	61.24	PK	165	2.4	V	3.43	64.67	74	-9.33
5350	46.25	AV	165	2.4	V	3.43	49.68	54	-4.32
5460	57.77	PK	249	2	H	3.58	61.35	74	-12.65
5460	44.73	AV	249	2	H	3.58	48.31	54	-5.69
5460	61.53	PK	291	2.4	V	3.58	65.11	74	-8.89
5460	46.27	AV	291	2.4	V	3.58	49.85	54	-4.15
10480	38.26	PK	303	1.7	H	11.53	49.79	68.2	-18.41
10480	38.66	PK	53	1.7	V	11.53	50.19	68.2	-18.01

Frequency (MHz)	Receiver		Turn-Table	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV	Angle Degree	Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11AC40 TX									
5190MHz									
4500	62.70	PK	93	2.5	H	1.89	64.59	74	-9.41
4500	47.12	AV	93	2.5	H	1.89	49.01	54	-4.99
4500	60.05	PK	223	1.4	V	1.89	61.94	74	-12.06
4500	47.03	AV	223	1.4	V	1.89	48.92	54	-5.08
5150	61.47	PK	36	1.9	H	3.37	64.84	74	-9.16
5150	45.91	AV	36	1.9	H	3.37	49.28	54	-4.72
5150	58.58	PK	144	1.5	V	3.37	61.95	74	-12.05
5150	45.80	AV	144	1.5	V	3.37	49.17	54	-4.83
10380	39.26	PK	336	2.4	H	11.43	50.69	68.2	-17.51
10380	39.17	PK	92	2.4	V	11.43	50.60	68.2	-17.6
5230MHz									
5350	58.39	PK	148	1	H	3.43	61.82	74	-12.18
5350	45.07	AV	148	1	H	3.43	48.5	54	-5.5
5350	61.72	PK	292	1.1	V	3.43	65.15	74	-8.85
5350	46.37	AV	292	1.1	V	3.43	49.8	54	-4.2
5460	58.18	PK	290	1.3	H	3.58	61.76	74	-12.24
5460	44.77	AV	290	1.3	H	3.58	48.35	54	-5.65
5460	61.36	PK	217	1.3	V	3.58	64.94	74	-9.06
5460	46.41	AV	217	1.3	V	3.58	49.99	54	-4.01
10460	38.86	PK	39	1.7	H	11.5	50.36	68.2	-17.84
10460	38.52	PK	329	1.7	V	11.5	50.02	68.2	-18.18

Frequency (MHz)	Receiver		Turn-Table	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV	Angle Degree	Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11AC80 2TX									
5210MHz									
4500	58.30	PK	249	1.7	H	1.89	60.19	74	-13.81
4500	45.36	AV	249	1.7	H	1.89	47.25	54	-6.75
4500	57.25	PK	132	1.8	V	1.89	59.14	74	-14.86
4500	44.98	AV	132	1.8	V	1.89	46.87	54	-7.13
5150	58.47	PK	208	1.5	H	3.37	61.84	74	-12.16
5150	44.99	AV	208	1.5	H	3.37	48.36	54	-5.64
5150	57.14	PK	233	1	V	3.37	60.51	74	-13.49
5150	43.81	AV	233	1	V	3.37	47.18	54	-6.82
5350	58.67	PK	110	2.1	H	3.43	62.1	74	-11.9
5350	45.47	AV	110	2.1	H	3.43	48.9	54	-5.1
5350	56.61	PK	136	1.4	V	3.43	60.04	74	-13.96
5350	43.85	AV	136	1.4	V	3.43	47.28	54	-6.72
5460	56.14	PK	220	1.1	H	3.58	59.72	74	-14.28
5460	43.96	AV	220	1.1	H	3.58	47.54	54	-6.46
5460	55.26	PK	77	1.3	V	3.58	58.84	74	-15.16
5460	43.31	AV	77	1.3	V	3.58	46.89	54	-7.11
10420	38.99	PK	99	2	H	11.49	50.48	68.2	-17.72
10420	39.14	PK	234	2	V	11.49	50.63	68.2	-17.57

5250-5350 MHz:

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11a Antenna 0									
5260MHz									
4500	58.70	PK	187	1.8	H	1.89	60.59	74	-13.41
4500	45.43	AV	187	1.8	H	1.89	47.32	54	-6.68
4500	60.11	PK	135	2.1	V	1.89	62.00	74	-12
4500	46.48	AV	135	2.1	V	1.89	48.37	54	-5.63
5150	57.64	PK	196	1.8	H	3.37	61.01	74	-12.99
5150	44.10	AV	196	1.8	H	3.37	47.47	54	-6.53
5150	58.77	PK	316	1.7	V	3.37	62.14	74	-11.86
5150	45.39	AV	316	1.7	V	3.37	48.76	54	-5.24
10520	35.23	PK	305	2	H	14.60	49.83	68.2	-18.37
10520	35.69	PK	190	2	V	14.60	50.29	68.2	-17.91
5280MHz									
10560	36.13	PK	148	1.1	H	14.72	50.85	68.2	-17.35
10560	35.84	PK	14	1.1	V	14.72	50.56	68.2	-17.64
5320MHz									
5350	57.29	PK	177	2.4	H	3.33	60.62	74	-13.38
5350	44.09	AV	177	2.4	H	3.33	47.42	54	-6.58
5350	58.88	PK	181	1.9	V	3.33	62.21	74	-11.79
5350	45.21	AV	181	1.9	V	3.33	48.54	54	-5.46
5460	56.77	PK	333	2.2	H	3.31	60.08	74	-13.92
5460	44.04	AV	333	2.2	H	3.31	47.35	54	-6.65
5460	59.23	PK	218	2.2	V	3.31	62.54	74	-11.46
5460	45.51	AV	218	2.2	V	3.31	48.82	54	-5.18
10640	35.94	PK	219	1.7	H	15.07	51.01	74	-22.99
10640	35.85	PK	172	1.7	V	15.07	50.92	74	-23.08

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11a Antenna 1									
5260MHz									
4500	59.09	PK	187	2.2	H	1.89	60.98	74	-13.02
4500	45.51	AV	187	2.2	H	1.89	47.40	54	-6.6
4500	60.61	PK	16	1.5	V	1.89	62.50	74	-11.5
4500	46.66	AV	16	1.5	V	1.89	48.55	54	-5.45
5150	57.04	PK	85	1.2	H	3.37	60.41	74	-13.59
5150	43.98	AV	85	1.2	H	3.37	47.35	54	-6.65
5150	59.06	PK	25	2.1	V	3.37	62.43	74	-11.57
5150	45.27	AV	25	2.1	V	3.37	48.64	54	-5.36
10520	35.28	PK	42	2.3	H	14.60	49.88	68.2	-18.32
10520	36.37	PK	277	2.3	V	14.60	50.97	68.2	-17.23
5280MHz									
10560	35.97	PK	48	2.5	H	14.72	50.69	68.2	-17.51
10560	36.80	PK	341	2.5	V	14.72	51.52	68.2	-16.68
5320MHz									
5350	57.13	PK	234	2.1	H	3.33	60.46	74	-13.54
5350	43.75	AV	234	2.1	H	3.33	47.08	54	-6.92
5350	59.21	PK	266	2.5	V	3.33	62.54	74	-11.46
5350	45.26	AV	266	2.5	V	3.33	48.59	54	-5.41
5460	56.69	PK	91	1.4	H	3.31	60	74	-14
5460	43.93	AV	91	1.4	H	3.31	47.24	54	-6.76
5460	59.32	PK	108	2.2	V	3.31	62.63	74	-11.37
5460	45.24	AV	108	2.2	V	3.31	48.55	54	-5.45
10640	35.78	PK	159	1.7	H	15.07	50.85	74	-23.15
10640	36.19	PK	204	1.7	V	15.07	51.26	74	-22.74

Frequency (MHz)	Receiver		Turn- Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11n20 2TX									
5260MHz									
4500	58.53	PK	57	2.4	H	1.89	60.42	74	-13.58
4500	45.71	AV	57	2.4	H	1.89	47.60	54	-6.4
4500	60.23	PK	328	1.6	V	1.89	62.12	74	-11.88
4500	46.91	AV	328	1.6	V	1.89	48.80	54	-5.2
5150	56.98	PK	168	2.5	H	3.37	60.35	74	-13.65
5150	44.15	AV	168	2.5	H	3.37	47.52	54	-6.48
5150	59.14	PK	61	2.4	V	3.37	62.51	74	-11.49
5150	45.62	AV	61	2.4	V	3.37	48.99	54	-5.01
10520	35.12	PK	243	2	H	14.60	49.72	68.2	-18.48
10520	35.20	PK	250	2	V	14.60	49.80	68.2	-18.4
5280MHz									
10560	36.13	PK	9	1.5	H	14.72	50.85	68.2	-17.35
10560	35.71	PK	120	1.5	V	14.72	50.43	68.2	-17.77
5320MHz									
5350	57.41	PK	144	2.3	H	3.33	60.74	74	-13.26
5350	44.45	AV	144	2.3	H	3.33	47.78	54	-6.22
5350	58.88	PK	335	2.2	V	3.33	62.21	74	-11.79
5350	45.67	AV	335	2.2	V	3.33	49	54	-5
5460	56.33	PK	225	1.6	H	3.31	59.64	74	-14.36
5460	43.44	AV	225	1.6	H	3.31	46.75	54	-7.25
5460	58.86	PK	283	1.3	V	3.31	62.17	74	-11.83
5460	45.46	AV	283	1.3	V	3.31	48.77	54	-5.23
10640	35.65	PK	313	1.7	H	15.07	50.72	74	-23.28
10640	35.89	PK	68	1.7	V	15.07	50.96	74	-23.04

Frequency (MHz)	Receiver		Turn- Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11N40 2TX									
5270MHz									
4500	58.54	PK	305	1.3	H	1.89	60.43	74	-13.57
4500	46.58	AV	305	1.3	H	1.89	48.47	54	-5.53
4500	60.61	PK	294	1.8	V	1.89	62.50	74	-11.5
4500	48.10	AV	294	1.8	V	1.89	49.99	54	-4.01
5150	57.03	PK	328	1.8	H	3.37	60.40	74	-13.6
5150	44.97	AV	328	1.8	H	3.37	48.34	54	-5.66
5150	58.34	PK	347	1.5	V	3.37	61.71	74	-12.29
5150	45.97	AV	347	1.5	V	3.37	49.34	54	-4.66
10540	34.82	PK	309	1.2	H	14.72	49.54	68.2	-18.66
10540	34.68	PK	314	1.2	V	14.72	49.40	68.2	-18.8
5310MHz									
5350	56.99	PK	250	1.2	H	3.33	60.32	74	-13.68
5350	45.10	AV	250	1.2	H	3.33	48.43	54	-5.57
5350	58.81	PK	230	1.7	V	3.33	62.14	74	-11.86
5350	46.15	AV	230	1.7	V	3.33	49.48	54	-4.52
5460	57.67	PK	316	1.1	H	3.31	60.98	74	-13.02
5460	45.06	AV	316	1.1	H	3.31	48.37	54	-5.63
5460	59.21	PK	148	1.5	V	3.31	62.52	74	-11.48
5460	46.15	AV	148	1.5	V	3.31	49.46	54	-4.54
10620	35.89	PK	76	1.7	H	15	50.89	74	-23.11
10620	36.07	PK	66	1.7	V	15	51.07	74	-22.93

Frequency (MHz)	Receiver		Turn- Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11AC20 2TX									
5260MHz									
4500	58.56	PK	187	1.9	H	1.89	60.45	74	-13.55
4500	46.21	AV	187	1.9	H	1.89	48.10	54	-5.9
4500	60.94	PK	255	1.5	V	1.89	62.83	74	-11.17
4500	47.46	AV	255	1.5	V	1.89	49.35	54	-4.65
5150	56.60	PK	272	2.4	H	3.37	59.97	74	-14.03
5150	44.63	AV	272	2.4	H	3.37	48.00	54	-6
5150	59.05	PK	208	2.2	V	3.37	62.42	74	-11.58
5150	45.83	AV	208	2.2	V	3.37	49.20	54	-4.8
10520	35.70	PK	102	1.4	H	14.60	50.30	68.2	-17.9
10520	35.31	PK	317	1.4	V	14.60	49.91	68.2	-18.29
5280MHz									
10560	36.15	PK	213	2.3	H	14.72	50.87	68.2	-17.33
10560	36.68	PK	41	2.3	V	14.72	51.4	68.2	-16.8
5320MHz									
5350	57.08	PK	307	1.2	H	3.33	60.41	74	-13.59
5350	44.61	AV	307	1.2	H	3.33	47.94	54	-6.06
5350	58.87	PK	38	2	V	3.33	62.2	74	-11.8
5350	46.10	AV	38	2	V	3.33	49.43	54	-4.57
5460	57.10	PK	130	2.2	H	3.31	60.41	74	-13.59
5460	44.57	AV	130	2.2	H	3.31	47.88	54	-6.12
5460	59.46	PK	134	1.6	V	3.31	62.77	74	-11.23
5460	46.21	AV	134	1.6	V	3.31	49.52	54	-4.48
10640	35.55	PK	210	1.7	H	15.07	50.62	74	-23.38
10640	35.69	PK	181	1.7	V	15.07	50.76	74	-23.24

Frequency (MHz)	Receiver		Turn- Table	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV	Angle Degree	Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11AC40 2TX									
5270MHz									
4500	58.39	PK	168	1.8	H	1.89	60.28	74	-13.72
4500	46.46	AV	168	1.8	H	1.89	48.35	54	-5.65
4500	60.15	PK	37	1.9	V	1.89	62.04	74	-11.96
4500	47.74	AV	37	1.9	V	1.89	49.63	54	-4.37
5150	57.14	PK	310	2	H	3.37	60.51	74	-13.49
5150	45.05	AV	310	2	H	3.37	48.42	54	-5.58
5150	58.81	PK	229	2.1	V	3.37	62.18	74	-11.82
5150	46.47	AV	229	2.1	V	3.37	49.84	54	-4.16
10540	34.51	PK	293	1.5	H	14.72	49.23	68.2	-18.97
10540	34.89	PK	120	1.5	V	14.72	49.61	68.2	-18.59
5310MHz									
5350	57.00	PK	185	1	H	3.33	60.33	74	-13.67
5350	44.98	AV	185	1	H	3.33	48.31	54	-5.69
5350	59.31	PK	126	1.9	V	3.33	62.64	74	-11.36
5350	46.05	AV	126	1.9	V	3.33	49.38	54	-4.62
5460	57.24	PK	286	2.2	H	3.31	60.55	74	-13.45
5460	45.18	AV	286	2.2	H	3.31	48.49	54	-5.51
5460	59.38	PK	59	1.4	V	3.31	62.69	74	-11.31
5460	46.34	AV	59	1.4	V	3.31	49.65	54	-4.35
10620	35.40	PK	334	1.7	H	15	50.40	74	-23.6
10620	35.75	PK	63	1.7	V	15	50.75	74	-23.25

Frequency (MHz)	Receiver		Turn- Table	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV	Angle Degree	Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11AC80 2TX									
5290MHz									
4500	57.45	PK	229	1.2	H	1.89	59.34	74	-14.66
4500	45.39	AV	229	1.2	H	1.89	47.28	54	-6.72
4500	56.62	PK	305	1.3	V	1.89	58.51	74	-15.49
4500	45.01	AV	305	1.3	V	1.89	46.90	54	-7.1
5150	57.22	PK	247	2.5	H	3.37	60.59	74	-13.41
5150	45.53	AV	247	2.5	H	3.37	48.90	54	-5.1
5150	56.52	PK	336	1.9	V	3.37	59.89	74	-14.11
5150	44.25	AV	336	1.9	V	3.37	47.62	54	-6.38
5350	59.18	PK	216	1.5	H	3.33	62.51	74	-11.49
5350	47.04	AV	216	1.5	H	3.33	50.37	54	-3.63
5350	56.86	PK	190	2	V	3.33	60.19	74	-13.81
5350	45.38	AV	190	2	V	3.33	48.71	54	-5.29
5460	58.84	PK	86	1.7	H	3.31	62.15	74	-11.85
5460	46.89	AV	86	1.7	H	3.31	50.2	54	-3.8
5460	58.56	PK	241	1.9	V	3.31	61.87	74	-12.13
5460	46.09	AV	241	1.9	V	3.31	49.4	54	-4.6
10580	35.58	PK	194	1.7	H	14.9	50.48	68.2	-17.72
10580	35.50	PK	254	1.7	V	14.9	50.40	68.2	-17.8

5470-5725 MHz:

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11a Antenna 0									
5500MHz									
5400	66.47	PK	307	1.5	H	3.33	69.80	74	-4.2
5400	46.91	AV	307	1.5	H	3.33	50.24	54	-3.76
5400	66.01	PK	55	2.1	V	3.33	69.34	74	-4.66
5400	46.72	AV	55	2.1	V	3.33	50.05	54	-3.95
5470	60.43	PK	243	1.2	H	3.31	63.74	68.2	-4.46
5470	60.87	PK	326	2.4	V	3.31	64.18	68.2	-4.02
11000	33.73	PK	101	1.3	H	16.30	50.03	74	-23.97
11000	34.74	PK	112	2	V	16.30	51.04	74	-22.96
5580MHz									
11160	34.18	PK	80	2.4	H	15.84	50.02	74	-23.98
11160	35.00	PK	212	2.4	V	15.84	50.84	74	-23.16
5700MHz									
5725	59.85	PK	185	1.1	H	3.89	63.74	68.2	-4.46
5725	60.62	PK	38	1.7	V	3.89	64.51	68.2	-3.69
5745	60.15	PK	149	2.1	H	4.03	64.18	68.2	-4.02
5745	60.64	PK	84	2.3	V	4.03	64.67	68.2	-3.53
11400	35.62	PK	25	1.7	H	15.06	50.68	74	-23.32
11400	36.39	PK	103	1.7	V	15.06	51.45	74	-22.55

Frequency (MHz)	Receiver		Turn- Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11a Antenna 1									
5500MHz									
5400	66.28	PK	161	1.5	H	3.33	69.61	74	-4.39
5400	47.27	AV	161	1.5	H	3.33	50.60	54	-3.4
5400	66.52	PK	160	2.3	V	3.33	69.85	74	-4.15
5400	47.18	AV	160	2.3	V	3.33	50.51	54	-3.49
5470	60.01	PK	175	1.5	H	3.31	63.32	68.2	-4.88
5470	61.03	PK	62	2	V	3.31	64.34	68.2	-3.86
11000	33.95	PK	359	1.7	H	16.30	50.25	74	-23.75
11000	34.65	PK	333	2.4	V	16.30	50.95	74	-23.05
5580MHz									
11160	34.37	PK	50	2	H	15.84	50.21	74	-23.79
11160	34.96	PK	132	2	V	15.84	50.8	74	-23.2
5700MHz									
5725	60.26	PK	194	2.2	H	3.89	64.15	68.2	-4.05
5725	60.83	PK	262	1.5	V	3.89	64.72	68.2	-3.48
5745	60.21	PK	153	1.5	H	4.03	64.24	68.2	-3.96
5745	60.65	PK	263	2	V	4.03	64.68	68.2	-3.52
11400	35.55	PK	346	1.7	H	15.06	50.61	74	-23.39
11400	36.31	PK	15	1.7	V	15.06	51.37	74	-22.63

Frequency (MHz)	Receiver		Turn- Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11n20 2TX									
5500MHz									
5400	65.53	PK	348	1.9	H	3.33	68.86	74	-5.14
5400	47.18	AV	348	1.9	H	3.33	50.51	54	-3.49
5400	65.48	PK	71	1.6	V	3.33	68.81	74	-5.19
5400	46.35	AV	71	1.6	V	3.33	49.68	54	-4.32
5470	58.86	PK	239	2	H	3.31	62.17	68.2	-6.03
5470	60.08	PK	24	1.7	V	3.31	63.39	68.2	-4.81
11000	33.82	PK	48	2	H	16.30	50.12	74	-23.88
11000	34.15	PK	219	2.3	V	16.30	50.45	74	-23.55
5580MHz									
11160	34.21	PK	215	1.7	H	15.84	50.05	74	-23.95
11160	34.53	PK	207	1.7	V	15.84	50.37	74	-23.63
5700MHz									
5725	59.32	PK	226	2.1	H	3.89	63.21	68.2	-4.99
5725	60.26	PK	51	1.6	V	3.89	64.15	68.2	-4.05
5745	59.46	PK	106	2.2	H	4.03	63.49	68.2	-4.71
5745	60.77	PK	27	2.2	V	4.03	64.8	68.2	-3.4
11400	35.52	PK	222	1.7	H	15.06	50.58	74	-23.42
11400	36.24	PK	16	1.7	V	15.06	51.3	74	-22.7

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11N40 2TX									
5510MHz									
5400	68.47	PK	101	2.2	H	3.33	71.80	74	-2.2
5400	46.31	AV	101	2.2	H	3.33	49.64	54	-4.36
5400	68.67	PK	295	1.8	V	3.33	72.00	74	-2
5400	46.48	AV	295	1.8	V	3.33	49.81	54	-4.19
5470	61.83	PK	136	2.1	H	3.31	65.14	68.2	-3.06
5470	59.97	PK	316	1.9	V	3.31	63.28	68.2	-4.92
11020	33.94	PK	124	1.9	H	16.15	50.09	74	-23.91
11020	34.33	PK	203	1.7	V	16.15	50.48	74	-23.52
5550MHz									
11100	33.38	PK	61	2	H	15.99	49.37	74	-24.63
11100	34.07	PK	190	2.3	V	15.99	50.06	74	-23.94
5670MHz									
5725	59.51	PK	66	1.6	H	3.89	63.4	68.2	-4.8
5725	60.69	PK	105	1.4	V	3.89	64.58	68.2	-3.62
5745	59.11	PK	294	2.4	H	4.03	63.14	68.2	-5.06
5745	60.17	PK	109	1.9	V	4.03	64.2	68.2	-4
11340	35.17	PK	318	1.7	H	15.21	50.38	74	-23.62
11340	35.93	PK	290	1.7	V	15.21	51.14	74	-22.86

Frequency (MHz)	Receiver		Turn- Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11AC20 2TX									
5500MHz									
5400	65.38	PK	333	1.4	H	3.33	68.71	74	-5.29
5400	46.92	AV	333	1.4	H	3.33	50.25	54	-3.75
5400	65.34	PK	244	1.7	V	3.33	68.67	74	-5.33
5400	46.78	AV	244	1.7	V	3.33	50.11	54	-3.89
5470	58.76	PK	318	1.4	H	3.31	62.07	68.2	-6.13
5470	60.88	PK	197	2.2	V	3.31	64.19	68.2	-4.01
11000	34.02	PK	21	2.1	H	16.30	50.32	74	-23.68
11000	34.34	PK	273	1.5	V	16.30	50.64	74	-23.36
5580MHz									
11160	34.40	PK	41	2	H	15.84	50.24	74	-23.76
11160	34.77	PK	312	2	V	15.84	50.61	74	-23.39
5700MHz									
5725	59.11	PK	340	1.7	H	3.89	63	68.2	-5.2
5725	60.66	PK	313	1.8	V	3.89	64.55	68.2	-3.65
5745	59.34	PK	299	1.2	H	4.03	63.37	68.2	-4.83
5745	60.83	PK	149	1.2	V	4.03	64.86	68.2	-3.34
11400	35.96	PK	349	1.7	H	15.06	51.02	74	-22.98
11400	36.31	PK	25	1.7	V	15.06	51.37	74	-22.63

Frequency (MHz)	Receiver		Turn- Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11AC40 2TX									
5510MHz									
5400	66.98	PK	237	1.9	H	3.33	70.31	74	-3.69
5400	46.11	AV	237	1.9	H	3.33	49.44	54	-4.56
5400	67.54	PK	330	2.3	V	3.33	70.87	74	-3.13
5400	46.03	AV	330	2.3	V	3.33	49.36	54	-4.64
5470	60.73	PK	265	1.4	H	3.31	64.04	68.2	-4.16
5470	59.56	PK	359	2.1	V	3.31	62.87	68.2	-5.33
11020	34.37	PK	262	1.8	H	16.15	50.52	74	-23.48
11020	34.63	PK	152	2.4	V	16.15	50.78	74	-23.22
5550MHz									
11100	33.78	PK	171	1	H	15.99	49.77	74	-24.23
11100	34.12	PK	191	2	V	15.99	50.11	74	-23.89
5670MHz									
5725	59.57	PK	90	2	H	3.89	63.46	68.2	-4.74
5725	60.58	PK	114	1.4	V	3.89	64.47	68.2	-3.73
5745	59.31	PK	72	1.4	H	4.03	63.34	68.2	-4.86
5745	60.29	PK	286	2.2	V	4.03	64.32	68.2	-3.88
11340	35.40	PK	2	1.7	H	15.21	50.61	74	-23.39
11340	35.85	PK	49	1.7	V	15.21	51.06	74	-22.94

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15.407	
	Reading (dB μ V)	PK/QP/AV.		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11AC80 2TX									
5530MHz									
5400	67.39	PK	181	2.4	H	3.33	70.72	74	-3.28
5400	46.14	AV	181	2.4	H	3.33	49.47	54	-4.53
5400	67.23	PK	285	1.1	V	3.33	70.56	74	-3.44
5400	45.92	AV	285	1.1	V	3.33	49.25	54	-4.75
5470	60.73	PK	272	1.9	H	3.31	64.04	68.2	-4.16
5470	59.56	PK	184	2	V	3.31	62.87	68.2	-5.33
11060	40.01	PK	272	2.2	H	16.15	56.16	74	-17.84
11060	21.17	AV	272	1.7	H	16.15	37.32	54	-16.68
11060	40.06	PK	7	1.4	V	16.15	56.21	74	-17.79
11060	21.50	AV	7	2.2	V	16.15	37.65	54	-16.35
5610MHz									
5725	59.66	PK	349	2.4	H	3.89	63.55	68.2	-4.65
5725	59.62	PK	286	1.5	V	3.89	63.51	68.2	-4.69
5745	59.33	PK	235	1.6	H	4.03	63.36	68.2	-4.84
5745	59.68	PK	194	1.3	V	4.03	63.71	68.2	-4.49
11220	35.52	PK	279	1.7	H	15.68	51.20	74	-22.8
11220	35.62	PK	200	1.7	V	15.68	51.30	74	-22.7

5725-5850 MHz:

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m)	FCC Part15.407	
	Reading (dBµV)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11a Antenna 0									
5745MHz									
5650	59.54	PK	17	1.1	H	3.75	63.29	68.2	-4.91
5650	59.36	PK	248	2.5	V	3.75	63.11	68.2	-5.09
5700	89.83	PK	37	1.1	H	3.89	93.72	105.2	-11.48
5700	67.20	PK	11	2	V	3.89	71.09	105.2	-34.11
5720	63.51	PK	63	2.1	H	3.95	67.46	110.8	-43.34
5720	64.18	PK	216	1.6	V	3.95	68.13	110.8	-42.67
5725	63.24	PK	324	1.3	H	3.97	67.21	122.2	-54.99
5725	62.68	PK	140	1.2	V	3.97	66.65	122.2	-55.55
11490	35.36	PK	270	2	H	14.74	50.10	74	-23.9
11490	35.80	PK	233	1.9	V	14.74	50.54	74	-23.46
5785MHz									
11570	36.23	PK	4	2.2	H	14.74	50.97	74	-23.03
11570	36.62	PK	356	1.5	V	14.74	51.36	74	-22.64
5825MHz									
5850	70.62	PK	284	1.6	H	4.33	74.95	122.2	-47.25
5850	68.70	PK	115	1.7	V	4.33	73.03	122.2	-49.17
5855	62.68	PK	154	1.3	H	4.35	67.03	110.8	-43.77
5855	66.24	PK	54	2.3	V	4.35	70.59	110.8	-40.21
5875	60.65	PK	217	2.3	H	4.41	65.06	105.2	-40.14
5875	65.72	PK	45	1.6	V	4.41	70.13	105.2	-35.07
5925	59.36	PK	270	1.7	H	4.55	63.91	68.2	-4.29
5925	59.91	PK	343	1.5	V	4.55	64.46	68.2	-3.74
11650	34.76	PK	170	2.5	H	14.79	49.55	74	-24.45
11650	35.05	PK	78	1.7	V	14.79	49.84	74	-24.16

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part15.407	
	Reading (dBμV)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11a Antenna 1									
5745MHz									
5650	59.02	PK	318	1.5	H	3.75	62.77	68.2	-5.43
5650	59.18	PK	5	1.9	V	3.75	62.93	68.2	-5.27
5700	63.07	PK	296	1.5	H	3.89	66.96	105.2	-38.24
5700	64.30	PK	257	1.4	V	3.89	68.19	105.2	-37.01
5720	62.77	PK	97	1.8	H	3.95	66.72	110.8	-44.08
5720	64.38	PK	194	1.7	V	3.95	68.33	110.8	-42.47
5725	62.64	PK	139	1.9	H	3.97	66.61	122.2	-55.59
5725	62.70	PK	18	2.4	V	3.97	66.67	122.2	-55.53
11490	34.70	PK	276	1.6	H	14.74	49.44	74	-24.56
11490	35.28	PK	314	1.2	V	14.74	50.02	74	-23.98
5785MHz									
11570	36.15	PK	189	2	H	14.74	50.89	74	-23.11
11570	36.49	PK	61	1.9	V	14.74	51.23	74	-22.77
5825MHz									
5850	67.36	PK	295	1.6	H	4.33	71.69	122.2	-50.51
5850	68.06	PK	3	2.2	V	4.33	72.39	122.2	-49.81
5855	65.13	PK	79	1.9	H	4.35	69.48	110.8	-41.32
5855	65.27	PK	280	2	V	4.35	69.62	110.8	-41.18
5875	73.15	PK	302	2.5	H	4.41	77.56	105.2	-27.64
5875	60.29	PK	86	2.3	V	4.41	64.70	105.2	-40.5
5925	59.86	PK	229	1.7	H	4.55	64.41	68.2	-3.79
5925	59.73	PK	225	1.8	V	4.55	64.28	68.2	-3.92
11650	34.62	PK	50	1	H	14.79	49.41	74	-24.59
11650	34.91	PK	118	1.8	V	14.79	49.70	74	-24.3

Frequency (MHz)	Receiver		Turn- Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11n20 2TX									
5745MHz									
5650	59.58	PK	257	2.3	H	3.75	63.33	68.2	-4.87
5650	59.10	PK	332	1.2	V	3.75	62.85	68.2	-5.35
5700	75.18	PK	41	2	H	3.89	79.07	105.2	-26.13
5700	79.68	PK	255	1.9	V	3.89	83.57	105.2	-21.63
5720	61.80	PK	100	1.5	H	3.95	65.75	110.8	-45.05
5720	60.53	PK	109	1.6	V	3.95	64.48	110.8	-46.32
5725	64.98	PK	298	1.8	H	3.97	68.95	122.2	-53.25
5725	62.78	PK	299	1.9	V	3.97	66.75	122.2	-55.45
11490	34.71	PK	90	1.1	H	14.74	49.45	74	-24.55
11490	34.87	PK	259	1.1	V	14.74	49.61	74	-24.39
5785MHz									
11570	35.85	PK	126	2.3	H	14.74	50.59	74	-23.41
11570	36.83	PK	155	1.2	V	14.74	51.57	74	-22.43
5825MHz									
5850	61.62	PK	23	1.4	H	4.33	65.95	122.2	-56.25
5850	68.33	PK	64	2	V	4.33	72.66	122.2	-49.54
5855	65.70	PK	310	1.2	H	4.35	70.05	110.8	-40.75
5855	62.88	PK	230	1.8	V	4.35	67.23	110.8	-43.57
5875	61.09	PK	219	2.2	H	4.41	65.50	105.2	-39.7
5875	57.22	PK	260	1.8	V	4.41	61.63	105.2	-43.57
5925	59.63	PK	348	1.2	H	4.55	64.18	68.2	-4.02
5925	59.79	PK	341	2.3	V	4.55	64.34	68.2	-3.86
11650	34.64	PK	215	1.4	H	14.79	49.43	74	-24.57
11650	35.92	PK	225	2.4	V	14.79	50.71	74	-23.29

Frequency (MHz)	Receiver		Turn- Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11N40 2TX									
5755MHz									
5650	59.44	PK	30	1.1	H	3.75	63.19	68.2	-5.01
5650	59.14	PK	107	1.3	V	3.75	62.89	68.2	-5.31
5700	64.30	PK	8	1.6	H	3.89	68.19	105.2	-37.01
5700	68.77	PK	136	1.4	V	3.89	72.66	105.2	-32.54
5720	59.89	PK	248	2.5	H	3.95	63.84	110.8	-46.96
5720	60.90	PK	225	1.9	V	3.95	64.85	110.8	-45.95
5725	66.62	PK	307	2.1	H	3.97	70.59	122.2	-51.61
5725	68.93	PK	195	1	V	3.97	72.90	122.2	-49.3
11510	36.11	PK	269	1.5	H	14.74	50.85	74	-23.15
11510	35.48	PK	283	1.8	V	14.74	50.22	74	-23.78
5795MHz									
5850	68.70	PK	342	1.7	H	4.33	73.03	122.2	-49.17
5850	71.31	PK	311	2.1	V	4.33	75.64	122.2	-46.56
5855	63.49	PK	46	2	H	4.35	67.84	110.8	-42.96
5855	65.37	PK	88	2.4	V	4.35	69.72	110.8	-41.08
5875	63.22	PK	266	1.1	H	4.41	67.63	105.2	-37.57
5875	62.06	PK	349	1	V	4.41	66.47	105.2	-38.73
5925	60.13	PK	140	2.4	H	4.55	64.68	68.2	-3.52
5925	60.27	PK	282	1.6	V	4.55	64.82	68.2	-3.38
11590	35.62	PK	321	2.3	H	14.74	50.36	74	-23.64
11590	35.51	PK	83	2.4	V	14.74	50.25	74	-23.75

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m)	FCC Part15.407	
	Reading (dBµV)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11AC20 2TX									
5745MHz									
5650	59.50	PK	346	1.3	H	3.75	63.25	68.2	-4.95
5650	59.25	PK	208	1.1	V	3.75	63.00	68.2	-5.2
5700	62.34	PK	121	1.3	H	3.89	66.23	105.2	-38.97
5700	63.79	PK	286	1.5	V	3.89	67.68	105.2	-37.52
5720	59.78	PK	51	1.9	H	3.95	63.73	110.8	-47.07
5720	64.45	PK	207	1.5	V	3.95	68.40	110.8	-42.4
5725	63.04	PK	88	1.2	H	3.97	67.01	122.2	-55.19
5725	69.87	PK	146	1.9	V	3.97	73.84	122.2	-48.36
11490	34.66	PK	52	1.5	H	14.74	49.40	74	-24.6
11490	35.19	PK	326	1.5	V	14.74	49.93	74	-24.07
5785MHz									
11570	36.19	PK	320	1.9	H	14.74	50.93	74	-23.07
11570	35.95	PK	349	1.6	V	14.74	50.69	74	-23.31
5825MHz									
5850	62.42	PK	324	1.2	H	4.33	66.75	122.2	-55.45
5850	66.69	PK	46	1.9	V	4.33	71.02	122.2	-51.18
5855	60.98	PK	104	2.2	H	4.35	65.33	110.8	-45.47
5855	61.40	PK	24	2.3	V	4.35	65.75	110.8	-45.05
5875	82.53	PK	89	1.8	H	4.41	86.94	105.2	-18.26
5875	90.75	PK	170	2	V	4.41	95.16	105.2	-10.04
5925	60.17	PK	94	2.2	H	4.55	64.72	68.2	-3.48
5925	60.08	PK	275	1.9	V	4.55	64.63	68.2	-3.57
11650	34.00	PK	10	1.3	H	14.79	48.79	74	-25.21
11650	34.21	PK	89	1.8	V	14.79	49.00	74	-25

Frequency (MHz)	Receiver		Turn- Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part15.407	
	Reading (dB μ V)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
802.11AC40 2TX									
5755MHz									
5650	59.50	PK	115	1.6	H	3.75	63.25	68.2	-4.95
5650	59.06	PK	63	2.2	V	3.75	62.81	68.2	-5.39
5700	66.10	PK	109	1.8	H	3.89	69.99	105.2	-35.21
5700	71.82	PK	135	1.9	V	3.89	75.71	105.2	-29.49
5720	61.47	PK	38	1.3	H	3.95	65.42	110.8	-45.38
5720	60.83	PK	137	1.8	V	3.95	64.78	110.8	-46.02
5725	64.28	PK	46	1.5	H	3.97	68.25	122.2	-53.95
5725	61.47	PK	113	2	V	3.97	65.44	122.2	-56.76
11510	35.12	PK	111	2.3	H	14.74	49.86	74	-24.14
11510	36.03	PK	238	1.2	V	14.74	50.77	74	-23.23
5795MHz									
5850	68.55	PK	73	2	H	4.33	72.88	122.2	-49.32
5850	66.59	PK	86	2	V	4.33	70.92	122.2	-51.28
5855	65.44	PK	10	1.2	H	4.35	69.79	110.8	-41.01
5855	62.57	PK	287	1.8	V	4.35	66.92	110.8	-43.88
5875	77.88	PK	132	2.3	H	4.41	82.29	105.2	-22.91
5875	60.01	PK	54	1.5	V	4.41	64.42	105.2	-40.78
5925	59.75	PK	279	1.8	H	4.55	64.30	68.2	-3.9
5925	59.98	PK	275	1.5	V	4.55	64.53	68.2	-3.67
11590	36.24	PK	91	2.2	H	14.74	50.98	74	-23.02
11590	35.45	PK	235	1	V	14.74	50.19	74	-23.81

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part15.407	
	Reading (dBμV)	PK/QP/AV		Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11AC80 2TX									
5775MHz									
5650	59.81	PK	216	2	H	3.75	63.56	68.2	-4.64
5650	58.99	PK	276	2.3	V	3.75	62.74	68.2	-5.46
5700	78.76	PK	47	1.5	H	3.89	82.65	105.2	-22.55
5700	59.83	PK	225	1.4	V	3.89	63.72	105.2	-41.48
5720	61.09	PK	225	1.3	H	3.95	65.04	110.8	-45.76
5720	60.50	PK	123	2.2	V	3.95	64.45	110.8	-46.35
5725	69.48	PK	63	1.7	H	3.97	73.45	122.2	-48.75
5725	67.44	PK	333	1.1	V	3.97	71.41	122.2	-50.79
5850	64.27	PK	187	2.5	H	4.33	68.60	122.2	-53.6
5850	62.31	PK	270	1.9	V	4.33	66.64	122.2	-55.56
5855	64.25	PK	78	2	H	4.35	68.60	110.8	-42.2
5855	63.40	PK	269	2.1	V	4.35	67.75	110.8	-43.05
5875	67.36	PK	254	1.7	H	4.41	71.77	105.2	-33.43
5875	86.62	PK	154	1.8	V	4.41	91.03	105.2	-14.17
5925	60.00	PK	199	2.4	H	4.55	64.55	68.2	-3.65
5925	60.36	PK	139	1.3	V	4.55	64.91	68.2	-3.29
11550	35.54	PK	248	2.4	H	14.74	50.28	74	-23.72
11550	35.71	PK	358	1.7	V	14.74	50.45	74	-23.55

Note:

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

Corrected Amplitude = Corrected Factor + Reading

Margin = Corrected. Amplitude - Limit

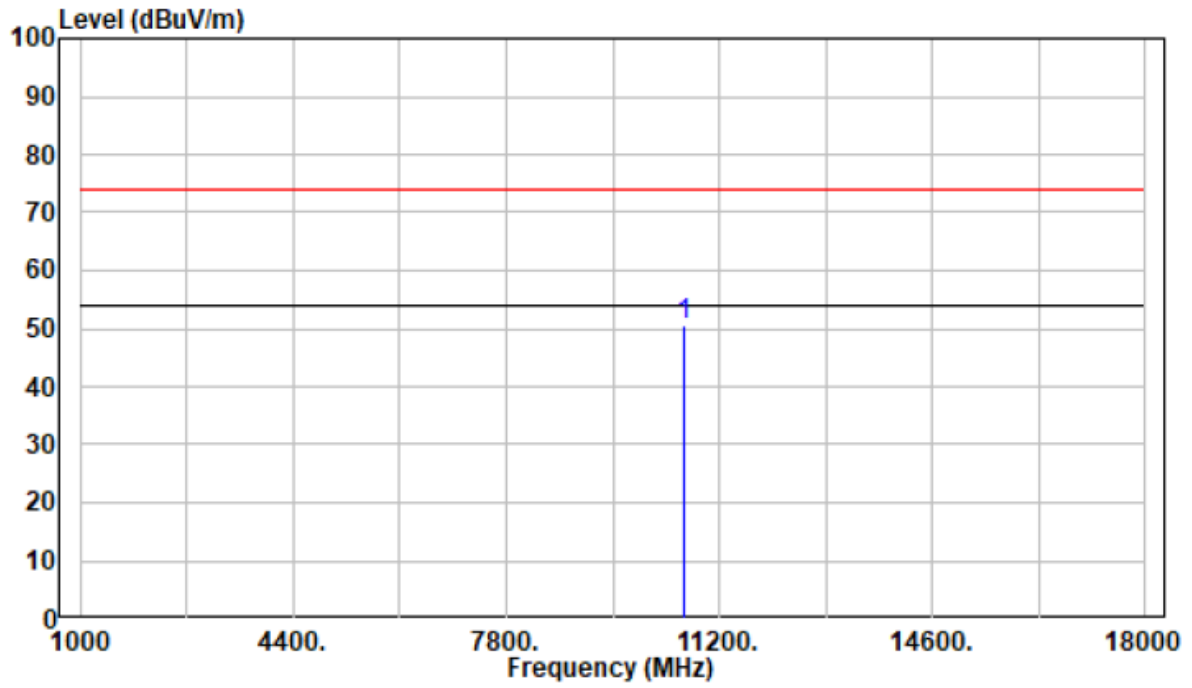
The other spurious emission which is in the noise floor level was not recorded.

The test result of peak was less than the limit of average, so just peak values were recorded.

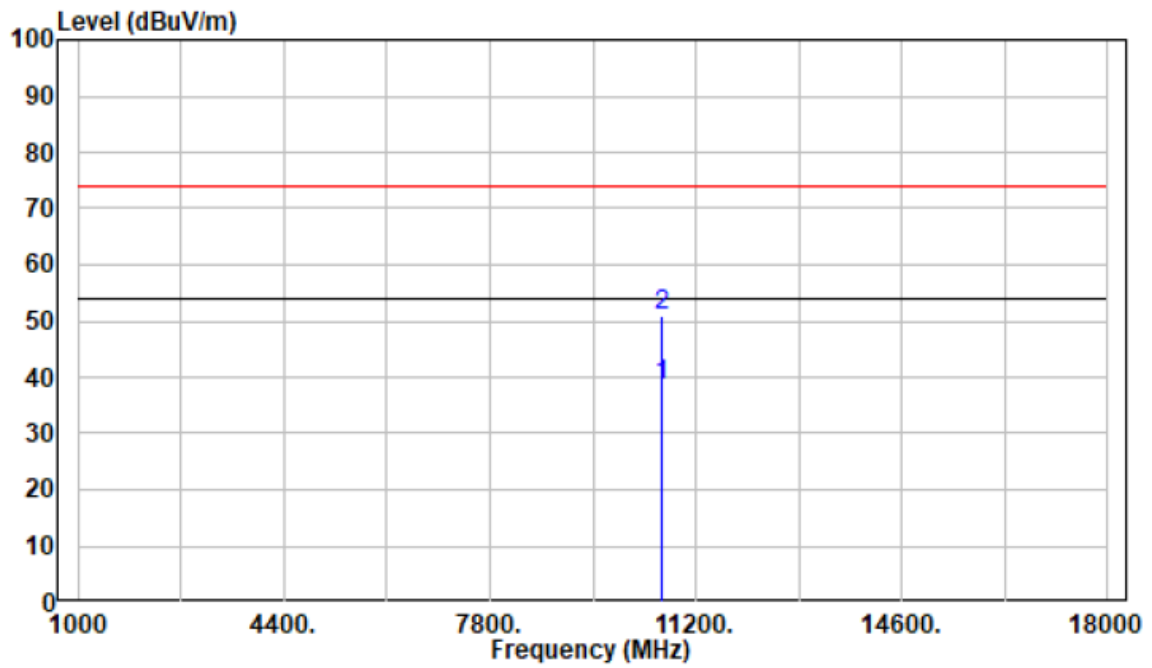
1 GHz - 18 GHz: (Pre-Scan plots)

802.11a mode, 5260MHz

Horizontal



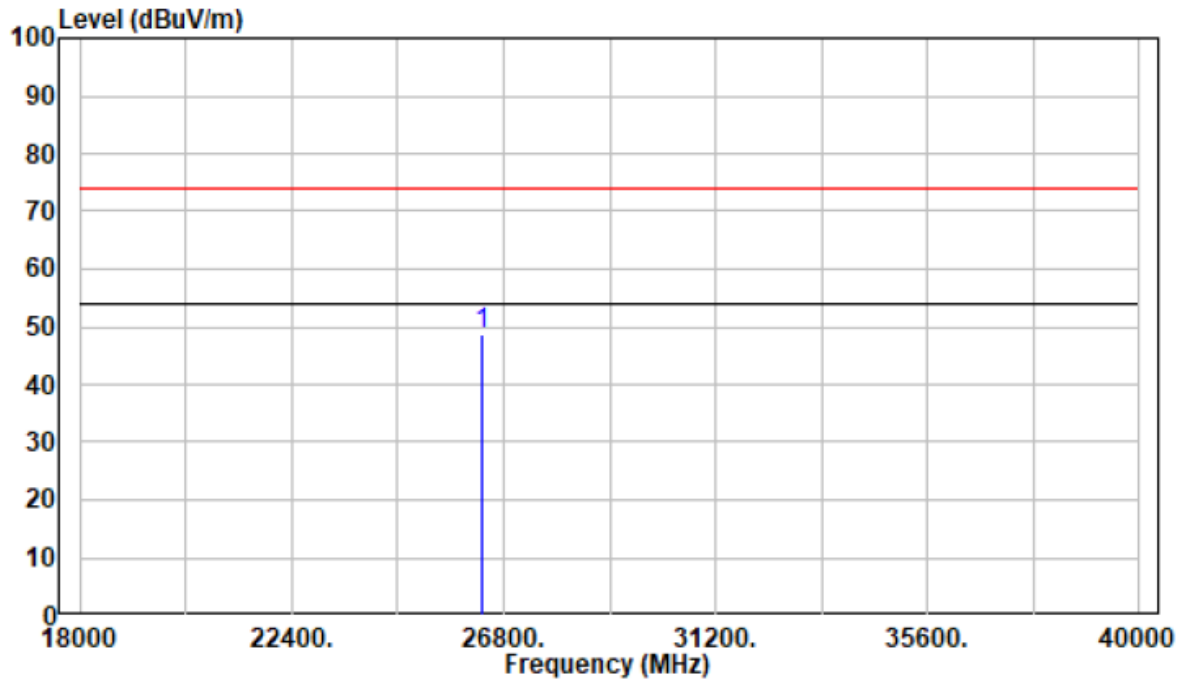
Vertical



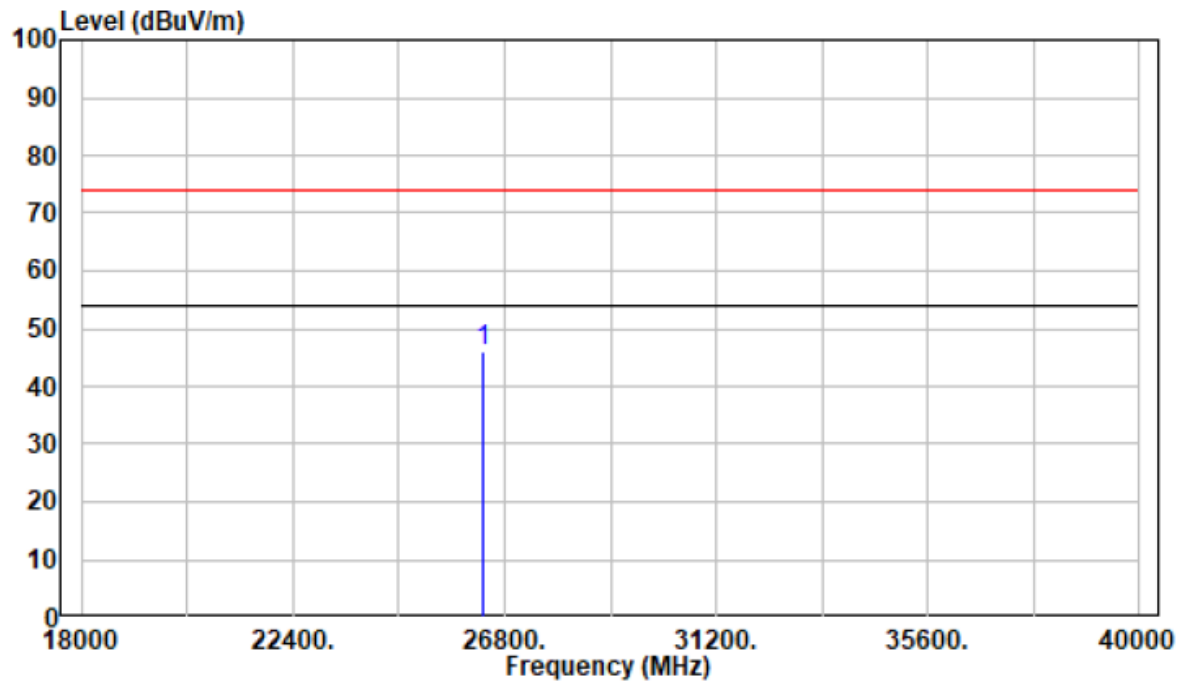
18-40GHz: (Pre-Scan plots)

802.11a mode, 5260MHz

Horizontal



Vertical



FCC §15.407(a),(e) – 26 dB & 6dB EMISSION BANDWIDTH & 99% OCCUPIED BANDWIDTH

Applicable Standard

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

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

Test Procedure

1. Emission Bandwidth (EBW)

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

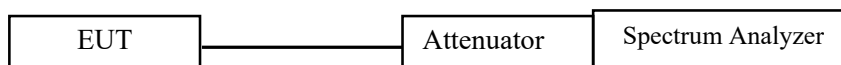
2. 99% Occupied Bandwidth (OBW)

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

3. Minimum Emission Bandwidth for the band 5.725-5.85 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



Test Data**Environmental Conditions**

Temperature:	23°C
Relative Humidity:	62 %
ATM Pressure:	101.0 kPa

The testing was performed by Paul liu on 2021-11-03 and 2021-12-30.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix.

FCC §15.407(a) – CONDUCTED TRANSMITTER OUTPUT POWER

Applicable Standard

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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.

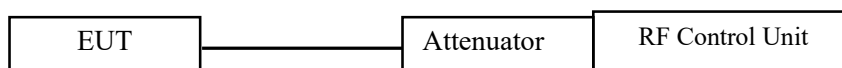
For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting 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 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. 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

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



Test Data**Environmental Conditions**

Temperature:	23°C
Relative Humidity:	62 %
ATM Pressure:	101.0 kPa

The testing was performed by Paul liu on 2021-11-03.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix.

FCC §15.407(a) - POWER SPECTRAL DENSITY

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.

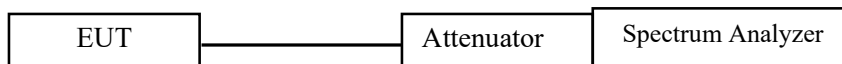
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not 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

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, "provided that the measured power is integrated over the full reference bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth ($< 1 \text{ MHz}$, or $< 500 \text{ kHz}$) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

- a) Set $\text{RBW} \geq 1/T$, where T is defined in section II.B.1.a).
- b) Set $\text{VBW} \geq 3 \text{ RBW}$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10 \log (500 \text{ kHz/RBW})$ to the measured result, whereas $\text{RBW} (< 500 \text{ kHz})$ is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10 \log (1\text{MHz/RBW})$ to the measured result, whereas $\text{RBW} (< 1 \text{ MHz})$ is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.



Test Data**Environmental Conditions**

Temperature:	23°C
Relative Humidity:	62 %
ATM Pressure:	101.0 kPa

The testing was performed by Paul liu on 2021-11-03 and 2021-12-30.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix.

APPENDIX**Appendix A1: Emission Bandwidth
Test Result**

Test Mode	Antenna	Channel	26db EBW [MHz]	Limit[MHz]	Verdict
11A	Ant0	5180	18.560	---	PASS
	Ant1	5180	18.560	---	PASS
	Ant0	5200	18.360	---	PASS
	Ant1	5200	18.560	---	PASS
	Ant0	5240	18.720	---	PASS
	Ant1	5240	18.640	---	PASS
	Ant0	5260	18.520	---	PASS
	Ant1	5260	18.720	---	PASS
	Ant0	5280	18.680	---	PASS
	Ant1	5280	18.400	---	PASS
	Ant0	5320	18.520	---	PASS
	Ant1	5320	18.600	---	PASS
	Ant0	5500	19.640	---	PASS
	Ant1	5500	18.680	---	PASS
	Ant0	5580	22.920	---	PASS
	Ant1	5580	18.640	---	PASS
	Ant0	5700	18.480	---	PASS
	Ant1	5700	18.760	---	PASS
11N20MIMO	Ant0	5180	19.440	---	PASS
	Ant1	5180	19.160	---	PASS
	Ant0	5200	19.480	---	PASS
	Ant1	5200	19.320	---	PASS
	Ant0	5240	19.320	---	PASS
	Ant1	5240	19.320	---	PASS
	Ant0	5260	19.280	---	PASS
	Ant1	5260	19.280	---	PASS
	Ant0	5280	19.440	---	PASS
	Ant1	5280	19.280	---	PASS
	Ant0	5320	19.400	---	PASS
	Ant1	5320	19.320	---	PASS
	Ant0	5500	19.320	---	PASS
	Ant1	5500	19.320	---	PASS
	Ant0	5580	21.720	---	PASS
	Ant1	5580	19.320	---	PASS
	Ant0	5700	19.480	---	PASS
	Ant1	5700	19.200	---	PASS
11N40MIMO	Ant0	5190	43.040	---	PASS
	Ant1	5190	41.360	---	PASS
	Ant0	5230	41.920	---	PASS
	Ant1	5230	41.040	---	PASS
	Ant0	5270	42.560	---	PASS
	Ant1	5270	40.800	---	PASS
	Ant0	5310	42.160	---	PASS
	Ant1	5310	41.280	---	PASS
	Ant0	5510	41.680	---	PASS
	Ant1	5510	40.400	---	PASS
	Ant0	5550	41.200	---	PASS
	Ant1	5550	41.040	---	PASS
Ant0	5670	41.520	---	PASS	

11AC20MIMO	Ant1	5670	41.120	---	PASS
	Ant0	5180	19.640	---	PASS
	Ant1	5180	19.320	---	PASS
	Ant0	5200	19.320	---	PASS
	Ant1	5200	19.320	---	PASS
	Ant0	5240	19.240	---	PASS
	Ant1	5240	19.200	---	PASS
	Ant0	5260	19.280	---	PASS
	Ant1	5260	19.360	---	PASS
	Ant0	5280	19.240	---	PASS
	Ant1	5280	19.320	---	PASS
	Ant0	5320	19.320	---	PASS
	Ant1	5320	19.160	---	PASS
	Ant0	5500	19.280	---	PASS
	Ant1	5500	19.280	---	PASS
	Ant0	5580	19.400	---	PASS
	Ant1	5580	19.320	---	PASS
	11AC40MIMO	Ant0	5700	19.360	---
Ant1		5700	19.360	---	PASS
Ant0		5190	42.560	---	PASS
Ant1		5190	40.960	---	PASS
Ant0		5230	42.160	---	PASS
Ant1		5230	40.720	---	PASS
Ant0		5270	42.160	---	PASS
Ant1		5270	40.560	---	PASS
Ant0		5310	42.400	---	PASS
Ant1		5310	40.480	---	PASS
Ant0		5510	41.840	---	PASS
Ant1		5510	40.640	---	PASS
Ant0		5550	48.720	---	PASS
Ant1		5550	40.640	---	PASS
11AC80MIMO	Ant0	5670	42.320	---	PASS
	Ant1	5670	41.040	---	PASS
	Ant0	5210	83.040	---	PASS
	Ant1	5210	81.760	---	PASS
	Ant0	5290	82.560	---	PASS
	Ant1	5290	81.760	---	PASS
	Ant0	5530	82.720	---	PASS
	Ant1	5530	82.400	---	PASS
	Ant0	5610	99.040	---	PASS
	Ant1	5610	81.280	---	PASS

Test Graphs

