FCC Test Report

Client Name	:	Cloud Cover Media, Inc. a subsidiary of Sirius XM Radio, Inc.
Address	:	999 North Pacific Coast Highway, Suite 500, El Segundo, California, 90245 United States
Product Name	:	Music Player
Date	:	May 13, 2022

Shenzhen Anbotek Compliance Laboratory Limited

Shenzhen Anbotek Compliance Laboratory Limited
Address: 1/F., Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
Tel:(86) 755-26066440 Fax: (86) 755-26014772 Email: service@anbotek.com
Hotline 400-003-0500
www.anbotek.com

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Hotline 400-003-0500
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TEST REPORT

Applicant	:	Cloud Cover Media, Inc. a subsidiary of Sirius XM Radio, Inc.
Manufacturer	:	Huaren Technology Company Limited
Product Name	:	Music Player
Model No.	:	G9CX
Trade Mark	:	Cloud Cover Music
Rating(s)	:	Input: DC 5V, 2000mA(via adapter input: 100-240V~ 50/60Hz, 0.5A)
Test Standard(s)	**:**	**FCC Part15 Subpart E, Paragraph 15.407**
Test Method(s)	**:**	**ANSI C63.10: 2020, KDB 789033 D02 General UNII Test Procedures New Rules v02r01**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart E requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt	Apr. 21, 2022
Date of Test	Apr. 21~May 10, 2022
Prepared By	Nian xiu Chen (Nianxiu Chen)
Approved & Authorized Signer	Kingkong Jin (Kingkong Jin)

Address: 1/F., Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
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1. General Information

1.1. Client Information

Applicant	:	Cloud Cover Media, Inc. a subsidiary of Sirius XM Radio, Inc.
Address	:	999 North Pacific Coast Highway, Suite 500, El Segundo, California, 90245 United States
Manufacturer	:	Huaren Technology Company Limited
Address	:	1203-1206, Yingfengnian Building, No.49, Xiangyin Road, Nanlian Community, Longgang District, Shenzhen, 518116, China
Factory	:	Huaren Technology Company Limited
Address	:	1203-1206, Yingfengnian Building, No.49, Xiangyin Road, Nanlian Community, Longgang District, Shenzhen, 518116, China

1.2. Description of Device (EUT)

Product Name	:	Music Player	
Model No.	:	G9CX	
Trade Mark	:	Cloud Cover Music	
Test Power Supply	:	AC 120V, 60Hz for adapter/ AC 240V, 60Hz for adapter	
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)	
Product Description	:	Operation Frequency:	BT: 2402-2480MHz WiFi 2.4G: 2412~2462MHz for 802.11b/g/n(HT20) WiFi 5.2G: 5180~5240MHz WiFi 5.8G: 5745~5825MHz
		Number of Channel:	BT BDR+EDR: 79 Channels BT BLE: 40 Channels WiFi 2.4G: 13 Channels for 802.11b/g/n(HT20) WiFi 5.2G: 4 Channels for 802.11a/n(HT20)/ac(HT20) 2 Channels for 802.11n(HT40)/ac(HT40) 1 Channels for 802.11ac(HT80) WiFi 5.8G: 5 Channels for 802.11a/n(HT20)/ac(HT20) 2 Channels for 802.11n(HT40)/ac(HT40) 1 Channels for 802.11ac(HT80)
		Modulation Type:	BT BDR+EDR: GFSK, π/4-DQPSK, 8DPSK BT BLE: GFSK WiFi 2.4G: CCK, DQPSK, DBPSK for DSSS; 64QAM, 16QAM, QPSK, BPSK for OFDM WiFi 5G: OFDM with BPSK, QPSK, 16QAM, 64QAM, 256QAM

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		Antenna Type:	BT & WiFi 2.4G & WiFi 5G: FPC Antenna
		Antenna Gain(Peak):	BT/ WiFi 2.4G/ WiFi 5G: 1 dBi(Provided by customer)
		Adapter:	Model: GKYZA0200050US Input: 100-240V~50/60Hz, 0.5A Max. Output: DC 5V, 2000mA
Remark: 1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 2) This report is for WiFi 5.2G & WiFi 5.8G module.			

1.3. Auxiliary Equipment Used During Test

N.A		

1.4. Description of Test Modes

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

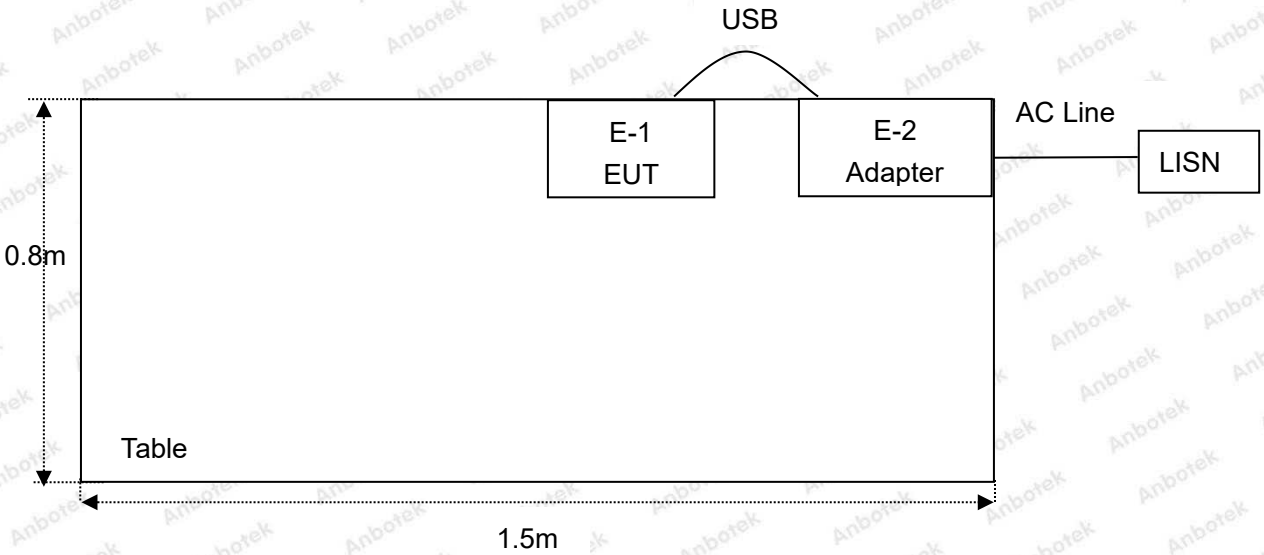
Frequency Band	Mode	Test channel	Frequency (MHz)
5.2GHz	OFDM(802.11a/n20/ac20)	CH 36	5180MHz
		CH 40	5200MHz
		CH 48	5240MHz
	OFDM(802.11n40/ac40)	CH 38	5190MHz
		CH 46	5230MHz
	OFDM(802.11ac80)	CH 42	5210MHz
5.8GHz	OFDM(802.11a/n20/ac20)	CH 149	5745MHz
		CH 157	5785MHz
		CH 165	5825MHz
	OFDM(802.11n40/ac40)	CH 151	5755MHz
		CH 159	5795MHz
	OFDM(802.11ac80)	CH 155	5775MHz

Note:

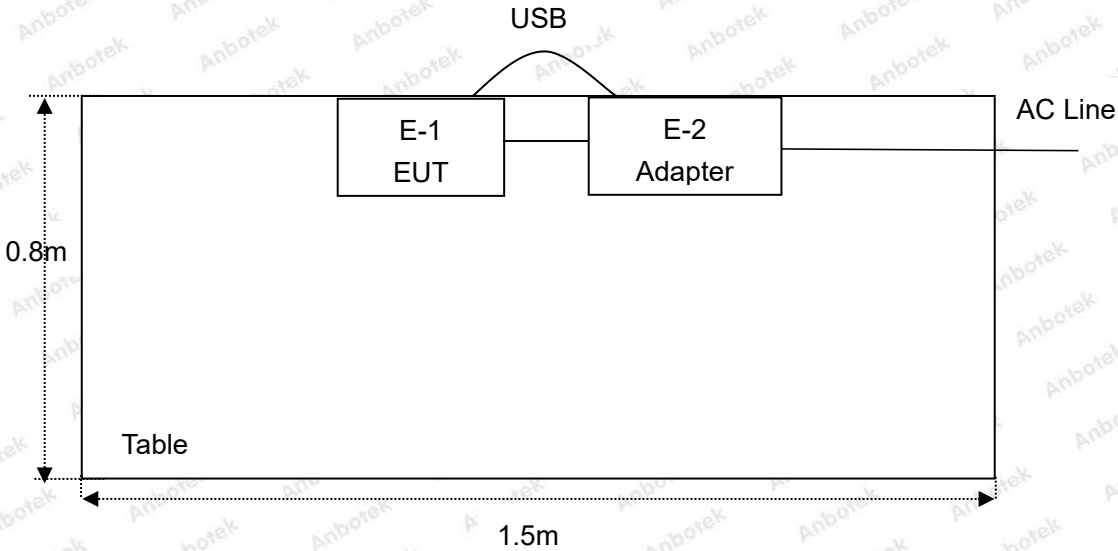
1. The measurements are performed at the highest, middle, lowest available channels.
2. The EUT has been tested as an independent unit. And Continual Transmitting in maximum power.
3. For the relevant Conducted Measurement, the temporary antenna connector is used during the measurement. Antenna Connector Impedance: 50Ω, Cable Loss: 1.0 dB
4. The EUT was programmed to be in continuously transmitting mode

1.5. Description Of Test Setup

CE



RE



1.6. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040DT001	Jul 05, 2021	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Oct. 22, 2021	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	Oct. 22, 2021	1 Year
4.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Oct. 22, 2021	1 Year
5.	MAX Spectrum Analysis	Agilent	N9020A	MY51170037	Oct. 22, 2021	1 Year
6.	Preamplifier	SKET Electronic	BK1G18G30D	KD17503	Oct. 22, 2021	1 Year
7.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Oct. 22, 2021	2 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Oct. 22, 2021	2 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Oct. 22, 2021	2 Year
10.	Horn Antenna	A-INFO	LB-180400-KF	J211060628	Oct. 22, 2021	2 Year
11.	Pre-amplifier	SONOMA	310N	186860	Oct. 22, 2021	1 Year
12.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
13.	RF Test Control System	YIHENG	YH3000	2017430	Oct. 22, 2021	1 Year
14.	Power Sensor	DAER	RPR3006W	15I00041SN045	Oct. 22, 2021	1 Year
15.	Power Sensor	DAER	RPR3006W	15I00041SN046	Oct. 22, 2021	1 Year
16.	MXA Spectrum Analysis	KEYSIGHT	N9020A	MY53280032	Oct. 22, 2021	1 Year
17.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Oct. 22, 2021	1 Year
18.	Signal Generator	Agilent	E4421B	MY41000743	Oct. 22, 2021	1 Year
19.	DC Power Supply	IVYTECH	IV3605	1804D360510	Oct. 22, 2021	1 Year
20.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	Oct. 22, 2021	1 Year

1.7. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 3.9 dB (Horizontal)
		Ur = 3.8 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4 dB

1.8. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.
1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102

2. Summary of Test Results

Standard	Test Type	Result
15.207 & 15.407	Conducted Emission	PASS
15.205/15.209	Spurious Emission	PASS
15.407(b)	Band Edge	PASS
15.407(a)(5)	Occupy Bandwidth	PASS
15.407(a)(1)(ii)	Maximum Conducted Output Power	PASS
15.407(a)(1)	Peak Power Spectral Density	PASS
15.203	Antenna Requirement	PASS
15.407(g)	Frequency Stability	PASS

Remark: “N/A” is an abbreviation for Not Applicable.

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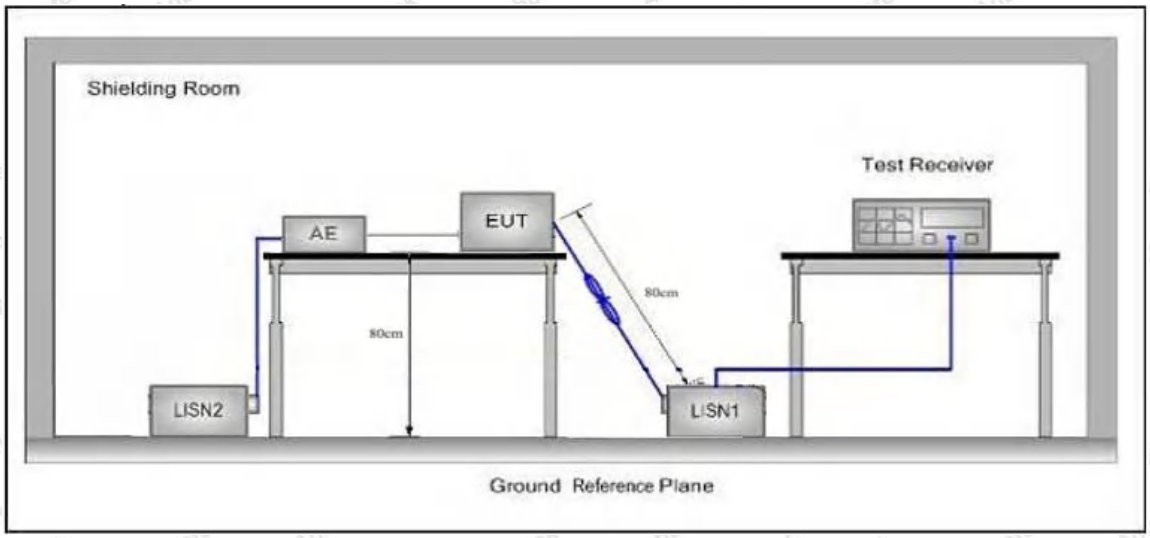
3. Conducted Emission Test

3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.207&15.407		
Test Limit	Frequency	Maximum RF Line Voltage (dBuV)	
		Quasi-peak Level	Average Level
	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
	500kHz~5MHz	56	46
	5MHz~30MHz	60	50
Remark: (1) *Decreasing linearly with logarithm of the frequency. (2) The lower limit shall apply at the transition frequency.			

3.2. Test Setup



3.3. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.10: 2020 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

3.4. Test Data

During the test, pre-scan all modes, and found the 802.11ac(HT80) CH42 and 802.11ac(HT80) CH155 which is the worst case, only the worst case is recorded in the report.

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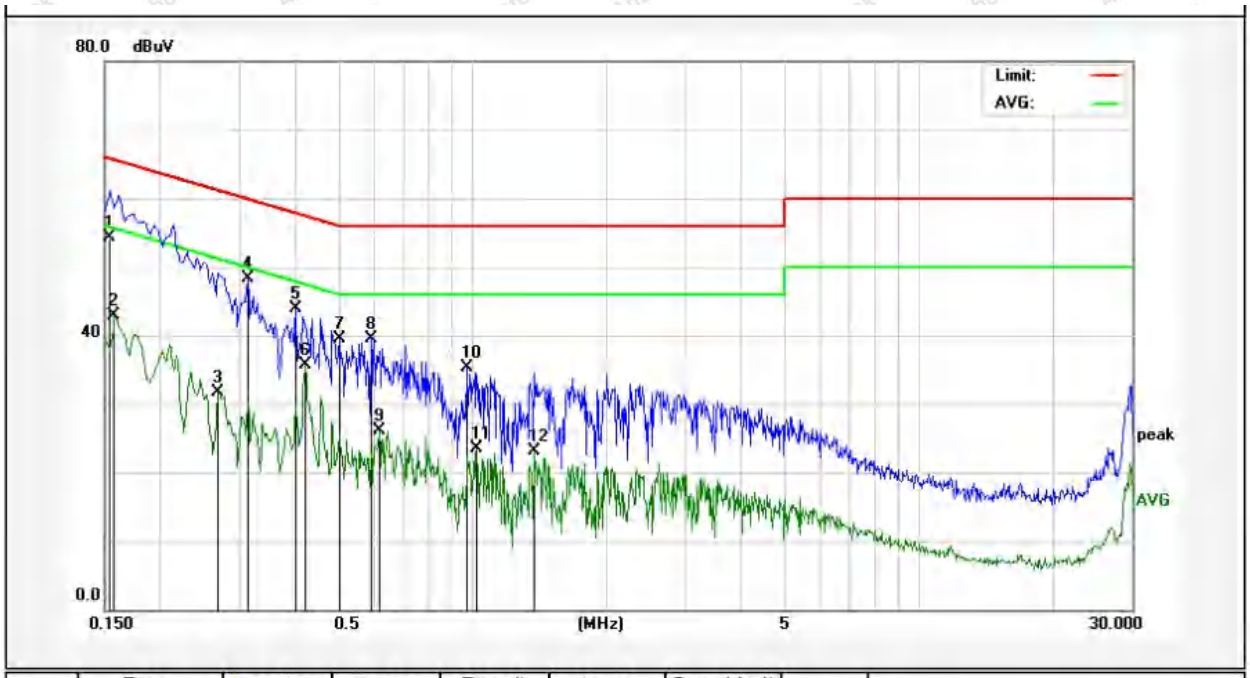
Conducted Emission Test Data

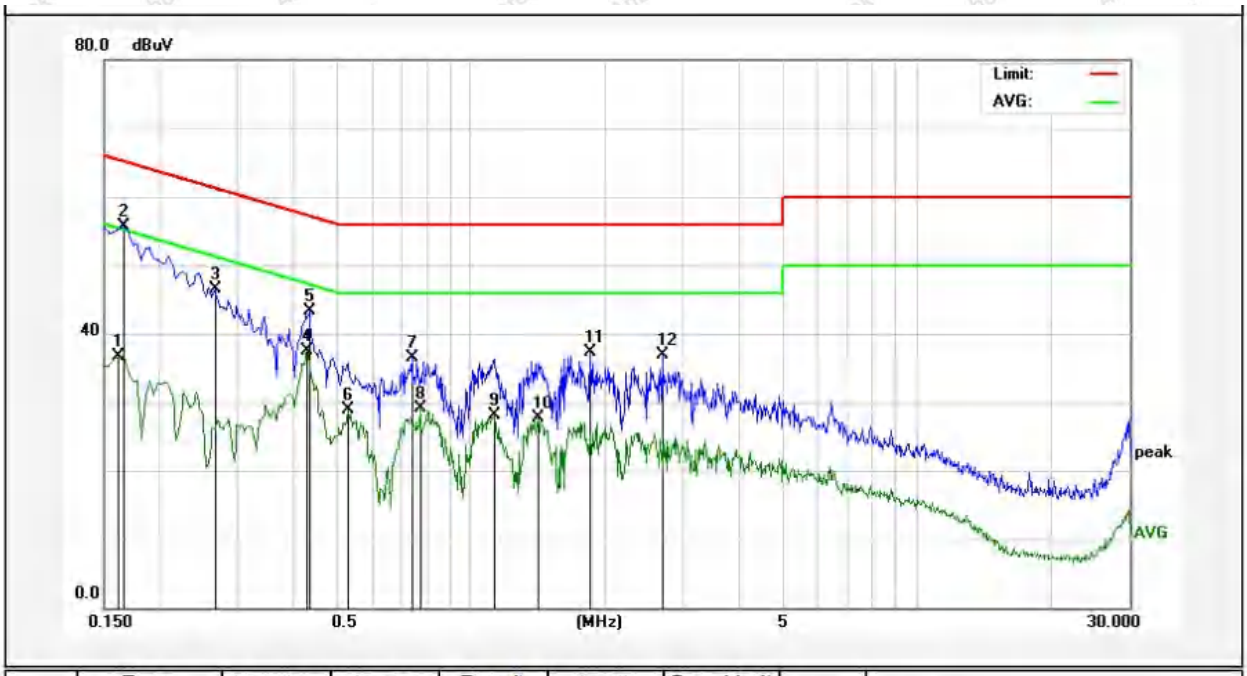
Test Site: 1# Shielded Room
Operating Condition: 802.11ac(HT80) CH42
Test Specification: AC 120V, 60Hz for Adapter
Comment: Live Line
Tem.: 22.8℃ Hum.: 48%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1539	54.24	0.12	54.36	65.78	-11.42	QP	
2	0.1580	42.79	0.12	42.91	55.56	-12.65	AVG	
3	0.2700	31.51	0.13	31.64	51.12	-19.48	AVG	
4	0.3140	48.13	0.13	48.26	59.86	-11.60	QP	
5	0.4020	43.78	0.11	43.89	57.81	-13.92	QP	
6	0.4220	35.53	0.12	35.65	47.41	-11.76	AVG	
7	0.5020	39.28	0.15	39.43	56.00	-16.57	QP	
8	0.5940	39.45	0.15	39.60	56.00	-16.40	QP	
9	0.6180	26.03	0.15	26.18	46.00	-19.82	AVG	
10	0.9780	35.23	0.15	35.38	56.00	-20.62	QP	
11	1.0220	23.40	0.15	23.55	46.00	-22.45	AVG	
12	1.3740	23.03	0.14	23.17	46.00	-22.83	AVG	

Conducted Emission Test Data

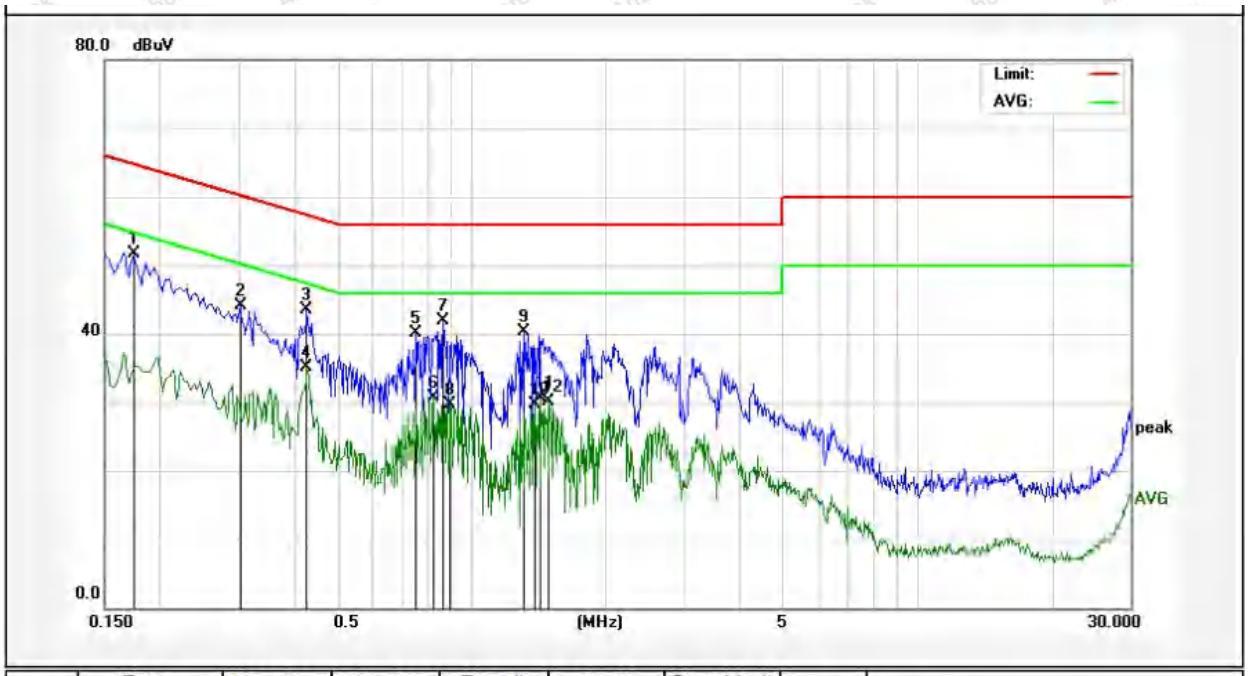
Test Site: 1# Shielded Room
Operating Condition: 802.11ac(HT80) CH42
Test Specification: AC 120V, 60Hz for Adapter
Comment: Neutral Line
Tem.: 22.8℃ Hum.: 48%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1620	36.58	0.12	36.70	55.36	-18.66	AVG	
2	0.1660	55.54	0.12	55.66	65.15	-9.49	QP	
3	0.2660	46.44	0.13	46.57	61.24	-14.67	QP	
4	0.4300	37.40	0.12	37.52	47.25	-9.73	AVG	
5	0.4340	43.10	0.12	43.22	57.18	-13.96	QP	
6	0.5299	28.70	0.15	28.85	46.00	-17.15	AVG	
7	0.7380	36.41	0.15	36.56	56.00	-19.44	QP	
8	0.7700	28.90	0.15	29.05	46.00	-16.95	AVG	
9	1.1300	27.93	0.15	28.08	46.00	-17.92	AVG	
10	1.4140	27.59	0.14	27.73	46.00	-18.27	AVG	
11	1.8580	37.22	0.12	37.34	56.00	-18.66	QP	
12	2.6820	36.87	0.12	36.99	56.00	-19.01	QP	

Conducted Emission Test Data

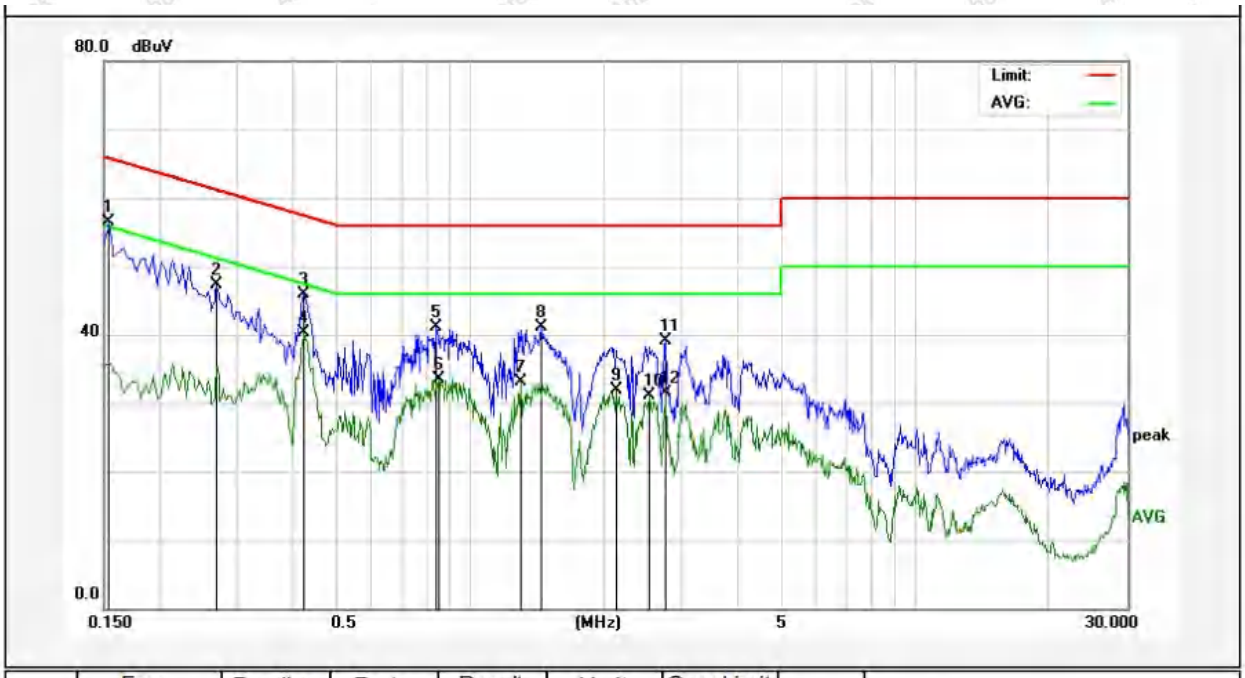
Test Site: 1# Shielded Room
Operating Condition: 802.11ac(HT80) CH42
Test Specification: AC 240V, 60Hz for Adapter
Comment: Live Line
Tem.: 22.8℃ Hum.: 48%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1740	51.62	0.12	51.74	64.76	-13.02	QP	
2	0.3020	44.05	0.13	44.18	60.19	-16.01	QP	
3	0.4260	43.44	0.12	43.56	57.33	-13.77	QP	
4	0.4260	34.95	0.12	35.07	47.33	-12.26	AVG	
5	0.7500	39.91	0.15	40.06	56.00	-15.94	QP	
6	0.8260	30.63	0.15	30.78	46.00	-15.22	AVG	
7	0.8620	41.78	0.15	41.93	56.00	-14.07	QP	
8	0.8900	29.61	0.15	29.76	46.00	-16.24	AVG	
9	1.3099	40.26	0.14	40.40	56.00	-15.60	QP	
10	1.3860	29.59	0.14	29.73	46.00	-16.27	AVG	
11	1.4260	30.51	0.14	30.65	46.00	-15.35	AVG	
12	1.4900	29.89	0.14	30.03	46.00	-15.97	AVG	

Conducted Emission Test Data

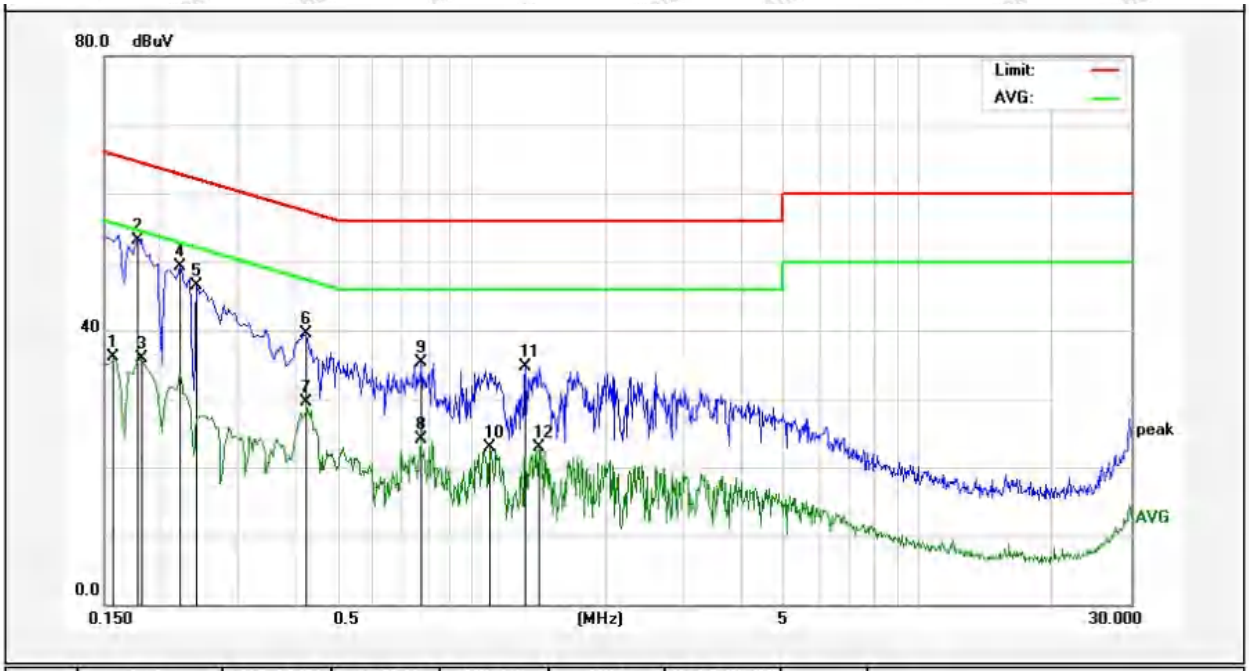
Test Site: 1# Shielded Room
Operating Condition: 802.11ac(HT80) CH42
Test Specification: AC 240V, 60Hz for Adapter
Comment: Neutral Line
Tem.: 22.8℃ Hum.: 48%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1539	56.30	0.12	56.42	65.78	-9.36	QP	
2	0.2700	47.08	0.13	47.21	61.12	-13.91	QP	
3	0.4220	45.75	0.12	45.87	57.41	-11.54	QP	
4	0.4220	40.21	0.12	40.33	47.41	-7.08	AVG	
5	0.8380	41.01	0.15	41.16	56.00	-14.84	QP	
6	0.8500	33.36	0.15	33.51	46.00	-12.49	AVG	
7	1.3020	33.03	0.14	33.17	46.00	-12.83	AVG	
8	1.4460	40.95	0.14	41.09	56.00	-14.91	QP	
9	2.1300	31.78	0.12	31.90	46.00	-14.10	AVG	
10	2.5340	30.90	0.12	31.02	46.00	-14.98	AVG	
11	2.7500	38.95	0.12	39.07	56.00	-16.93	QP	
12	2.7540	31.47	0.12	31.59	46.00	-14.41	AVG	

Conducted Emission Test Data

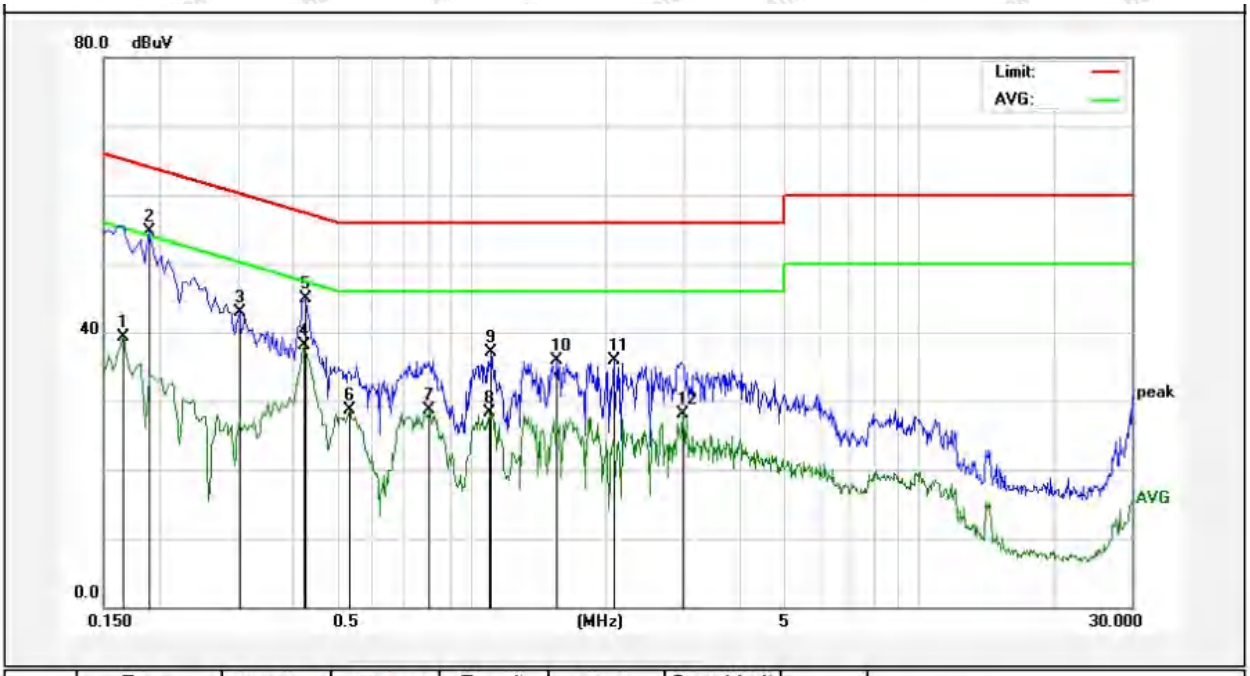
Test Site: 1# Shielded Room
Operating Condition: 802.11ac(HT80) CH155
Test Specification: AC 120V, 60Hz for Adapter
Comment: Live Line
Tem.: 22.8℃ Hum.: 48%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1580	36.01	0.12	36.13	55.56	-19.43	AVG	
2	0.1780	53.08	0.12	53.20	64.57	-11.37	QP	
3	0.1819	35.86	0.12	35.98	54.39	-18.41	AVG	
4	0.2220	49.12	0.12	49.24	62.74	-13.50	QP	
5	0.2420	46.29	0.12	46.41	62.02	-15.61	QP	
6	0.4260	39.43	0.12	39.55	57.33	-17.78	QP	
7	0.4260	29.42	0.12	29.54	47.33	-17.79	AVG	
8	0.7700	24.05	0.15	24.20	46.00	-21.80	AVG	
9	0.7740	35.21	0.15	35.36	56.00	-20.64	QP	
10	1.0980	22.85	0.15	23.00	46.00	-23.00	AVG	
11	1.3220	34.59	0.14	34.73	56.00	-21.27	QP	
12	1.4140	22.81	0.14	22.95	46.00	-23.05	AVG	

Conducted Emission Test Data

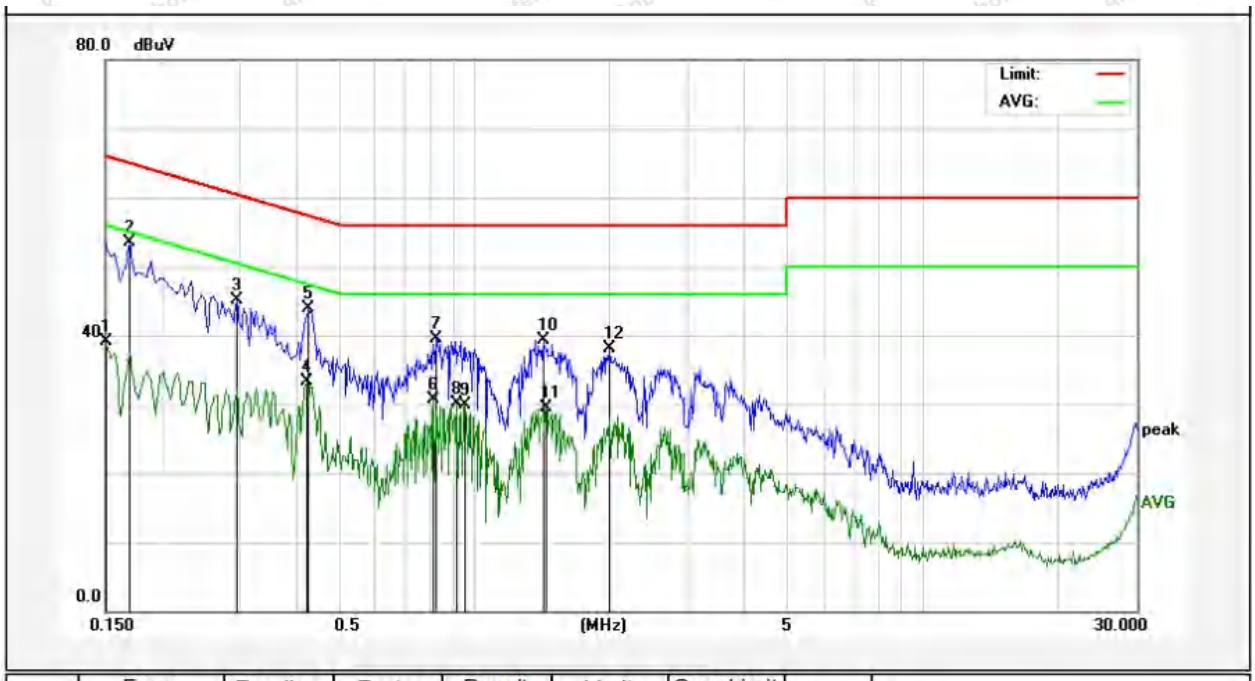
Test Site: 1# Shielded Room
Operating Condition: 802.11ac(HT80) CH155
Test Specification: AC 120V, 60Hz for Adapter
Comment: Neutral Line
Tem.: 22.8℃ Hum.: 48%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1660	39.28	0.12	39.40	55.15	-15.75	AVG	
2	0.1900	54.62	0.12	54.74	64.03	-9.29	QP	
3	0.3020	42.68	0.13	42.81	60.19	-17.38	QP	
4	0.4220	37.96	0.12	38.08	47.41	-9.33	AVG	
5	0.4260	44.87	0.12	44.99	57.33	-12.34	QP	
6	0.5340	28.53	0.15	28.68	46.00	-17.32	AVG	
7	0.8059	28.47	0.15	28.62	46.00	-17.38	AVG	
8	1.0980	28.15	0.15	28.30	46.00	-17.70	AVG	
9	1.1060	36.86	0.15	37.01	56.00	-18.99	QP	
10	1.5540	35.85	0.13	35.98	56.00	-20.02	QP	
11	2.0860	35.81	0.12	35.93	56.00	-20.07	QP	
12	2.9620	28.05	0.12	28.17	46.00	-17.83	AVG	

Conducted Emission Test Data

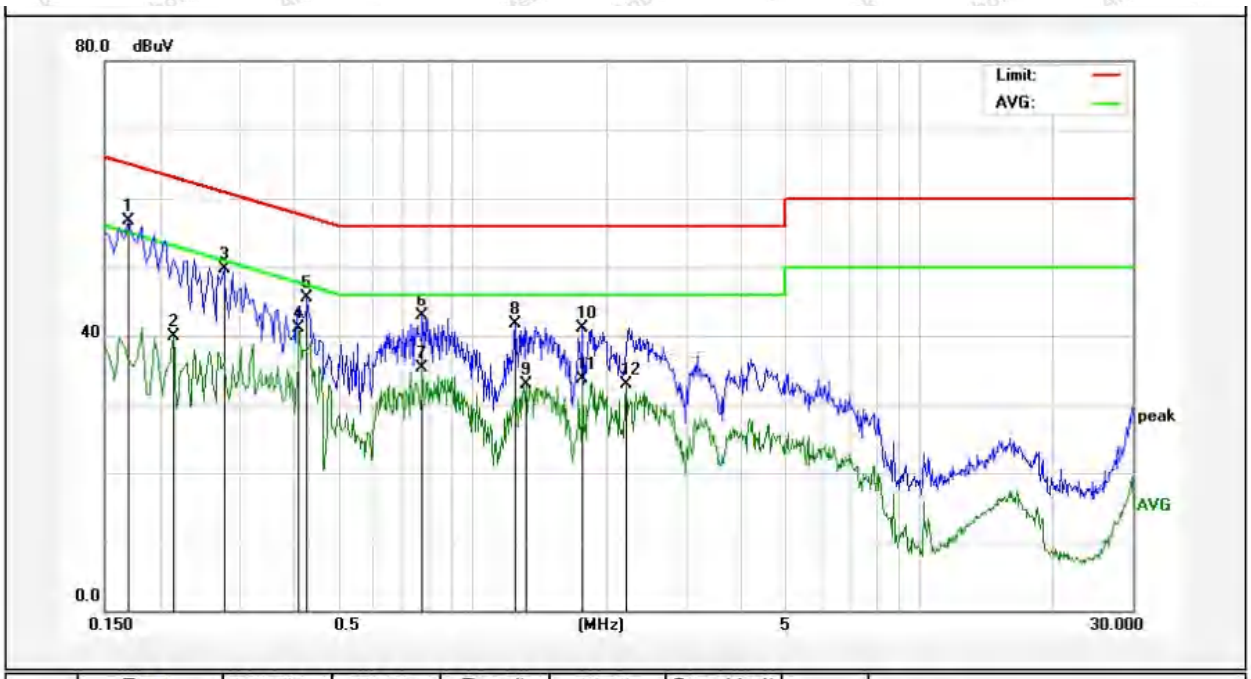
Test Site: 1# Shielded Room
Operating Condition: 802.11ac(HT80) CH155
Test Specification: AC 240V, 60Hz for Adapter
Comment: Live Line
Tem.: 22.8℃ Hum.: 48%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1500	39.04	0.11	39.15	55.99	-16.84	AVG	
2	0.1700	53.33	0.12	53.45	64.96	-11.51	QP	
3	0.2940	44.95	0.13	45.08	60.41	-15.33	QP	
4	0.4220	33.22	0.12	33.34	47.41	-14.07	AVG	
5	0.4260	43.82	0.12	43.94	57.33	-13.39	QP	
6	0.8100	30.52	0.15	30.67	46.00	-15.33	AVG	
7	0.8180	39.32	0.15	39.47	56.00	-16.53	QP	
8	0.9180	29.87	0.15	30.02	46.00	-15.98	AVG	
9	0.9500	29.85	0.15	30.00	46.00	-16.00	AVG	
10	1.4220	39.24	0.14	39.38	56.00	-16.62	QP	
11	1.4420	29.35	0.14	29.49	46.00	-16.51	AVG	
12	2.0100	37.99	0.12	38.11	56.00	-17.89	QP	

Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: 802.11ac(HT80) CH155
Test Specification: AC 240V, 60Hz for Adapter
Comment: Neutral Line
Tem.: 22.8℃ Hum.: 48%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1700	56.68	0.12	56.80	64.96	-8.16	QP	
2	0.2140	39.71	0.12	39.83	53.04	-13.21	AVG	
3	0.2779	49.64	0.13	49.77	60.88	-11.11	QP	
4	0.4100	41.00	0.11	41.11	47.65	-6.54	AVG	
5	0.4260	45.47	0.12	45.59	57.33	-11.74	QP	
6	0.7740	42.68	0.15	42.83	56.00	-13.17	QP	
7	0.7740	35.24	0.15	35.39	46.00	-10.61	AVG	
8	1.2460	41.48	0.14	41.62	56.00	-14.38	QP	
9	1.3220	32.86	0.14	33.00	46.00	-13.00	AVG	
10	1.7700	41.03	0.13	41.16	56.00	-14.84	QP	
11	1.7700	33.48	0.13	33.61	46.00	-12.39	AVG	
12	2.2060	32.77	0.12	32.89	46.00	-13.11	AVG	

4. Radiation Spurious Emission and Band Edge

4.1. Test Standard and Limit

Radiated Spurious Emission					
Test Standard	FCC Part15 C Section 15.209, 15.205 and 15.407				
Test Limit	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz~0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz~88MHz	100	40.0	Quasi-peak	3
	88MHz~216MHz	150	43.5	Quasi-peak	3
	216MHz~960MHz	200	46.0	Quasi-peak	3
	960MHz~1000MHz	500	54.0	Quasi-peak	3
	Above 1000MHz	500	54.0	Average	3
		-	68.2	Peak	3

Band Edge				
Test Standard	15.407(b)			
Test Limit	Operating Band	Frequency	EIRP Limit	Remark
	5150-5250MHz	Above 1GHz	-27dBm/MHz(68.2dBuV/m)@3m	Peak
	5250-5350MHz	Above 1GHz	-27dBm/MHz(68.2dBuV/m)@3m	Peak
	5470-5725MHz	Above 1GHz	-27dBm/MHz(68.2dBuV/m)@3m	Peak
	5725-5850 MHz	Above 1GHz	-27dBm/MHz(68.2dBuV/m)@3m	Peak
		1GHz-5.65GHz	-27*dBm/MHz to 10dBm/MHz (68.2* dBuV/m to 105.6dBuV/m)	Peak
		5.65GHz-5.7GHz	10*dBm/MHz to 15.6dBm/MHz (105.6*dBuV/m to 110.8dBuV/m)	Peak
		5.7GHz-5.72GHz	15.6*dBm/MHz to 27dBm/MHz (110.8dBuV/m to* 122.2dBuV/m)	Peak
		5.72GHz-5.725GHz	27dBm/MHz to 15.6*dBm/MHz (122.2dBuV/m to110.8* dBuV/m)	Peak

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		5.85GHz-5.855GHz	15.6dBm/MHz to 10*dBm/MHz (110.8dBuV/m to 105.6* dBuV/m	Peak
		5.855GHz-5.875GHz	10dBm/MHz to -27*dBm/MHz (105.6dBuV/m to 68.2* dBuV/m)	Peak
		5.875GHz-5.925GHz	-27 dBm/MHz(68.2dBuV/m)@3m	Peak

Remark:
(1)The lower limit shall apply at the transition frequency.
(2) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.
(3)Above 1GHz limit:E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m, for EIPR[dBm]=-27dBm.

4.2. Test Setup

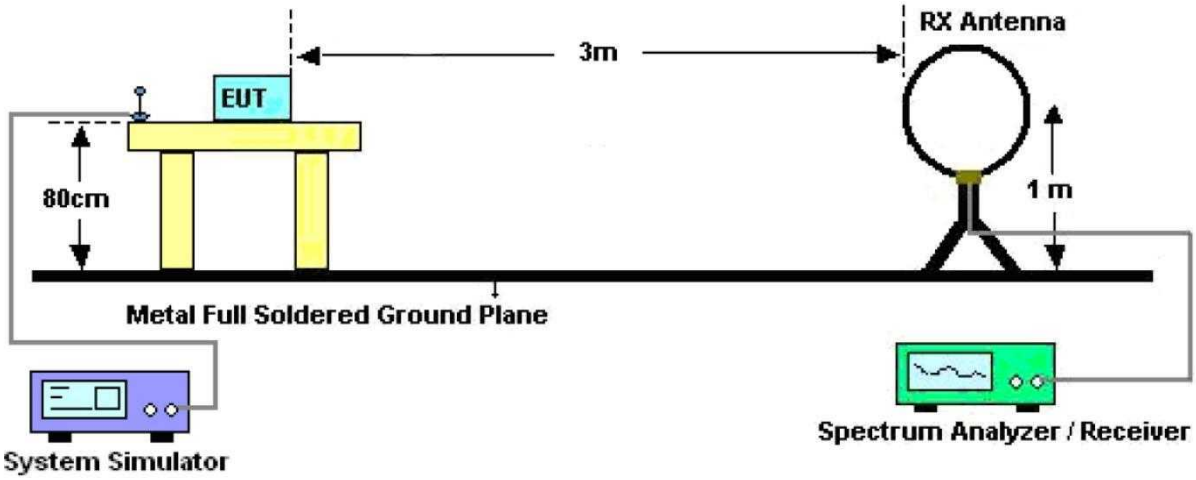


Figure 1. Below 30MHz

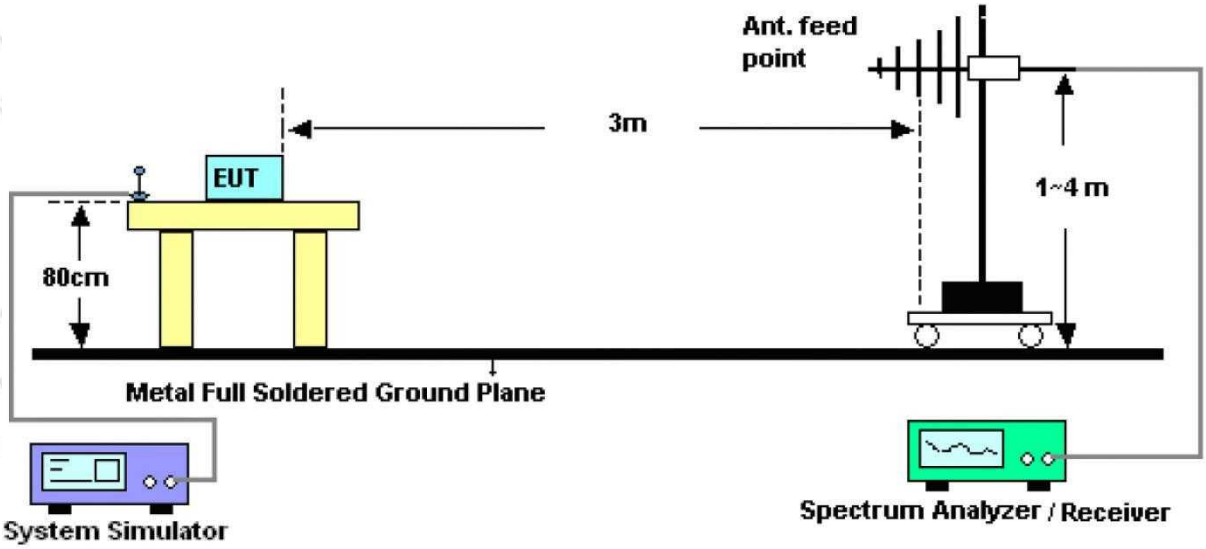


Figure 2. 30MHz to 1GHz

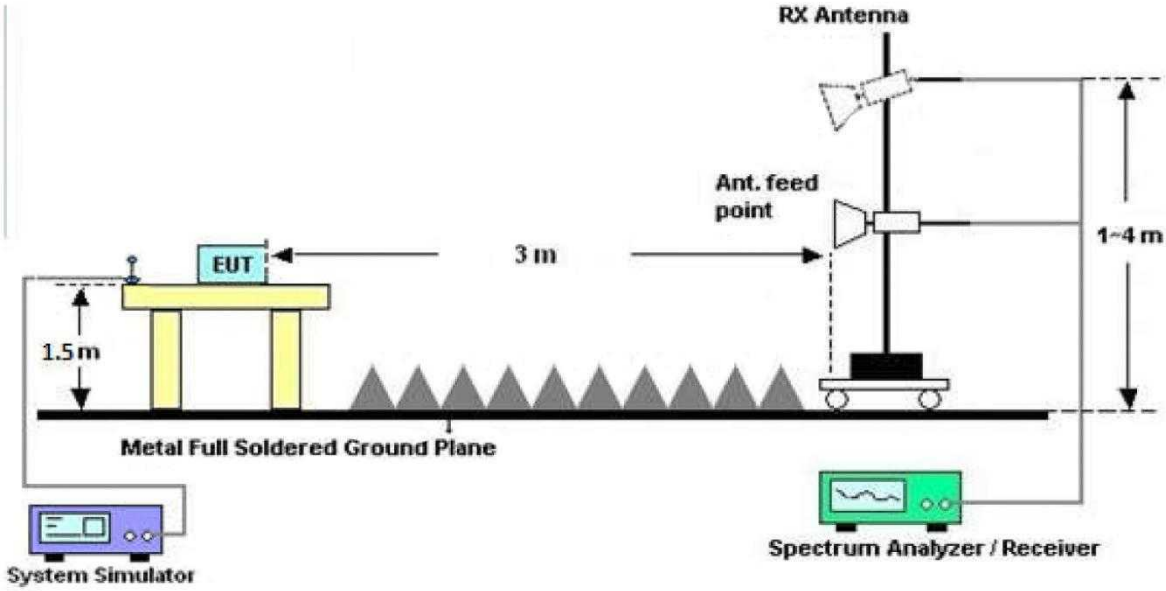


Figure 3. Above 1 GHz

4.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.
For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.
The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Rotated the EUT through three orthogonal axes to determine the maximum emissions, both horizontal and vertical polarization of the antenna are set on test. The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation.

For the radiated emission test above 1GHz:
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

For 9kHz to 150kHz, Set the spectrum analyzer as:
RBW = 200Hz, VBW =1kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 150kHz to 30MHz, Set the spectrum analyzer as:
RBW = 9KHz, VBW =30kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:
RBW = 100kHz, VBW =300kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.
.
For above 1GHz, Set the spectrum analyzer as:
RBW =1MHz, VBW =1MHz, Detector= Peak, Trace mode= Max hold, Sweep- auto couple.
RBW =1MHz, VBW =10Hz, Detector= Average, Trace mode= Max hold, Sweep- auto couple.

4.4. Test Data

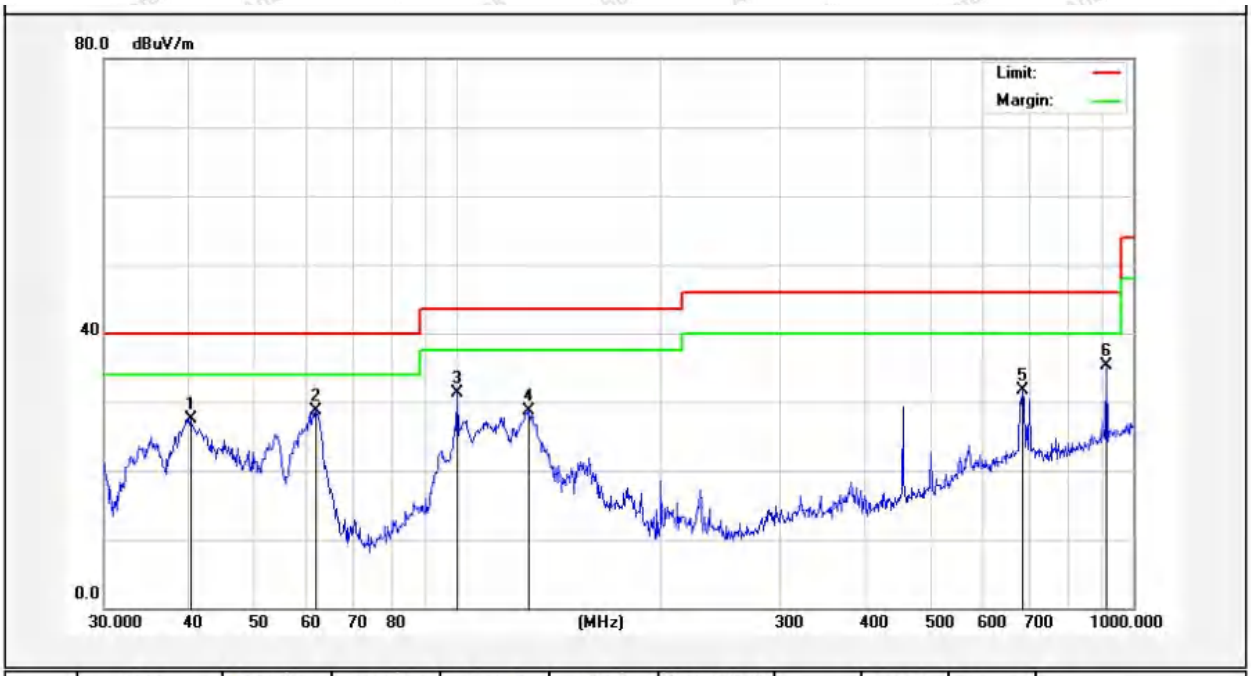
PASS

The test results of 9kHz-30MHz was attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Note: During the test, pre-scan all modes, and found the 802.11ac(HT80) CH42 and 802.11ac(HT80) CH155 which is the worst case, only the worst case is recorded in the report.

Test Results (30~1000MHz)

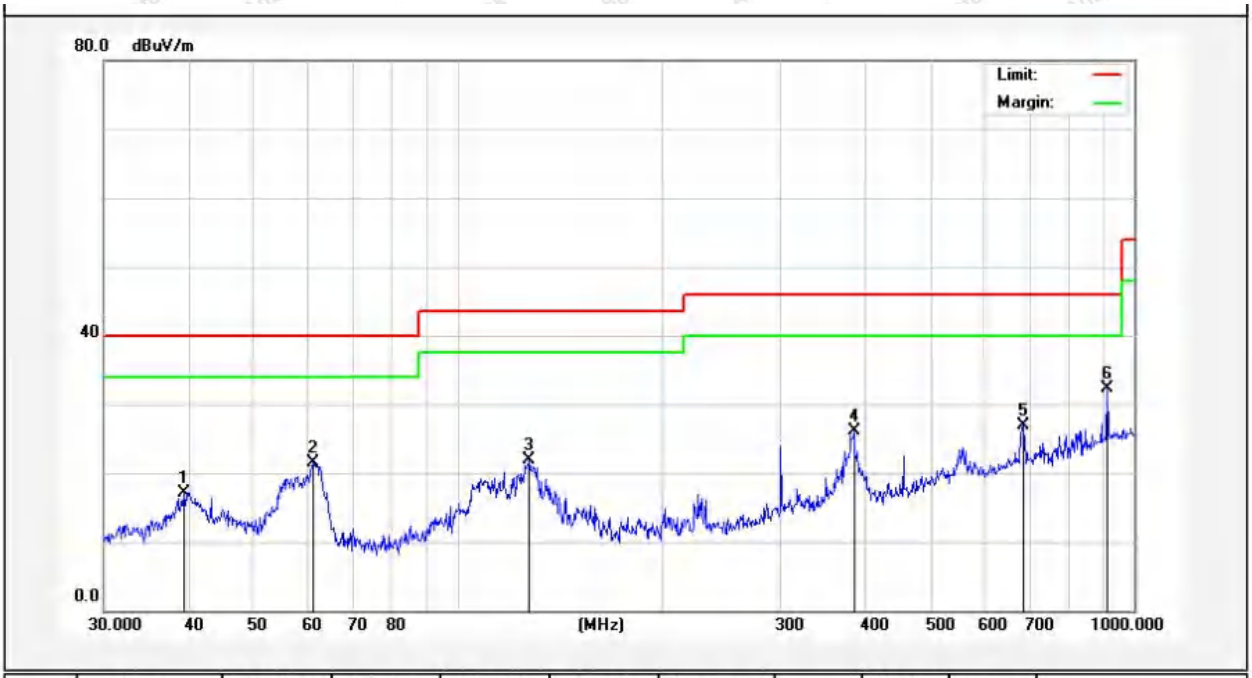
Test Mode:	802.11ac(HT80) CH42
Power Source:	AC 120V, 60Hz for Adapter
Polarization:	Vertical
Temp.(℃)/Hum.(%RH):	24.1℃/48%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	40.2757	42.04	-14.59	27.45	40.00	-12.55	QP			
2	61.7781	46.89	-18.13	28.76	40.00	-11.24	QP			
3	99.8777	47.91	-16.59	31.32	43.50	-12.18	QP			
4	127.6645	49.87	-21.11	28.76	43.50	-14.74	QP			
5	684.7454	41.92	-10.14	31.78	46.00	-14.22	QP			
6	912.8620	41.42	-6.08	35.34	46.00	-10.66	QP			

Test Results (30~1000MHz)

Test Mode:	802.11ac(HT80) CH42
Power Source:	AC 120V, 60Hz for Adapter
Polarization:	Horizontal
Temp.(℃)/Hum.(%RH):	24.1℃/48%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	39.4371	33.50	-16.30	17.20	40.00	-22.80	QP			
2	61.1316	39.41	-17.90	21.51	40.00	-18.49	QP			
3	127.6645	44.70	-22.83	21.87	43.50	-21.63	QP			
4	385.2805	42.14	-16.09	26.05	46.00	-19.95	QP			
5	684.7454	36.95	-10.14	26.81	46.00	-19.19	QP			
6	912.8620	38.43	-6.08	32.35	46.00	-13.65	QP			

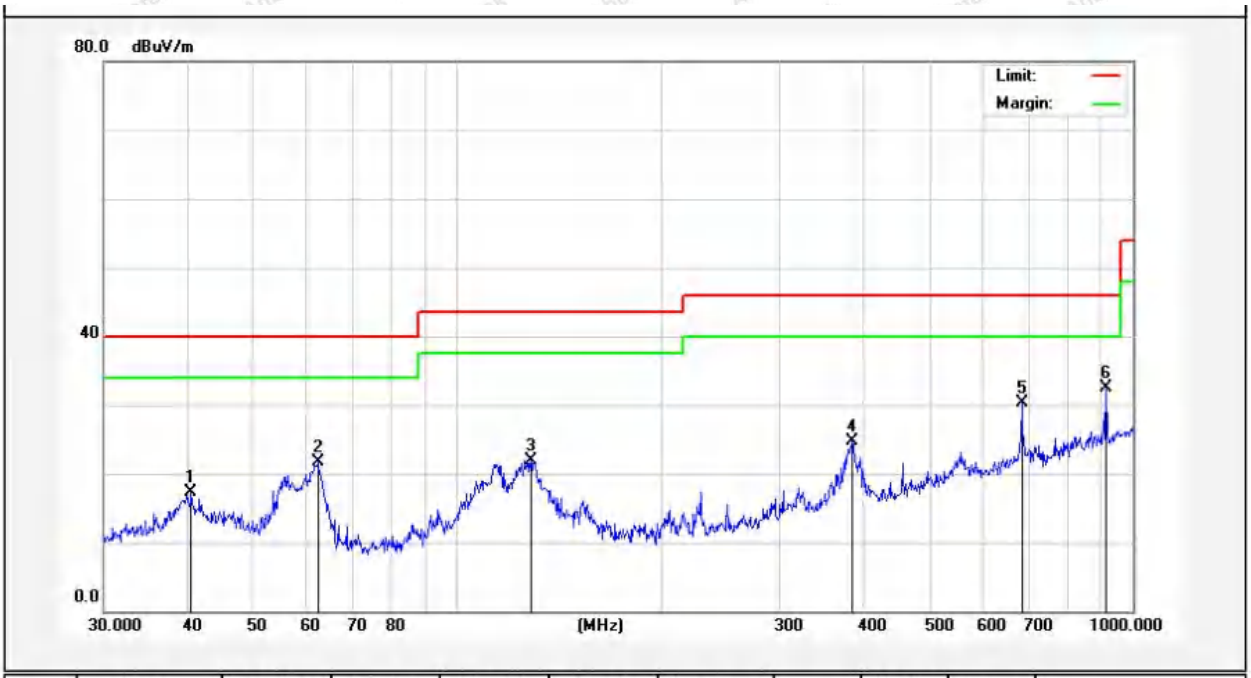
Test Results (30~1000MHz)

Test Mode:	802.11ac(HT80) CH155
Power Source:	AC 120V, 60Hz for Adapter
Polarization:	Vertical
Temp.(℃)/Hum.(%RH):	24.1℃/48%RH

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	39.9942	41.14	-14.56	26.58	40.00	-13.42	QP			
2	61.3463	43.93	-17.98	25.95	40.00	-14.05	QP			
3	102.0014	44.94	-16.89	28.05	43.50	-15.45	QP			
4	125.4457	50.29	-20.77	29.52	43.50	-13.98	QP			
5	501.1790	41.82	-12.22	29.60	46.00	-16.40	QP			
6	912.8620	38.44	-6.08	32.36	46.00	-13.64	QP			

Test Results (30~1000MHz)

Test Mode:	802.11ac(HT80) CH155
Power Source:	AC 120V, 60Hz for Adapter
Polarization:	Horizontal
Temp.(℃)/Hum.(%RH):	24.1℃/48%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	40.4172	33.31	-15.96	17.35	40.00	-22.65	QP			
2	62.2128	39.95	-18.30	21.65	40.00	-18.35	QP			
3	128.5630	44.66	-22.71	21.95	43.50	-21.55	QP			
4	383.9318	40.80	-16.10	24.70	46.00	-21.30	QP			
5	684.7454	40.53	-10.14	30.39	46.00	-15.61	QP			
6	912.8620	38.60	-6.08	32.52	46.00	-13.48	QP			

Test Results (Above 1000MHz)

5.2G:

Test Mode: IEEE 802.11ac (HT80)						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	polarization
10420.00	29.57	23.81	53.38	68.20	-14.82	V
15630.00	29.98	29.36	59.34	68.20	-8.86	V
10420.00	30.16	23.81	53.97	68.20	-14.23	H
15630.00	31.41	29.36	60.77	68.20	-7.43	H
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	polarization
10420.00	19.99	23.81	43.80	54.00	-10.20	V
15630.00	20.72	29.36	50.08	54.00	-3.92	V
10420.00	20.19	23.81	44.00	54.00	-10.00	H
15630.00	21.04	29.36	50.40	54.00	-3.60	H

Remark:

1. During the test, pre-scan the 802.11a, 802.11n(HT20), ac(HT20), n(HT40), ac(HT40), ac(HT80) mode, and found the 802.11ac (HT80) mode is worse case , the report only record this mode.
2. Result =Reading + Factor

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Test Results (Above 1000MHz)

5.8G:

Test Mode: IEEE 802.11ac (HT80)						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	polarization
11550.000	29.86	23.40	53.26	68.20	-14.94	V
17325.000	30.45	32.13	62.58	68.20	-5.62	V
11550.000	30.67	23.40	54.07	68.20	-14.13	H
17325.000	30.92	32.13	63.05	68.20	-5.15	H
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	polarization
11550.000	17.33	23.40	40.73	54.00	-13.27	V
17325.000	17.79	32.13	49.92	54.00	-4.08	V
11550.000	17.48	23.40	40.88	54.00	-13.12	H
17325.000	18.42	32.13	50.55	54.00	-3.45	H

Remark:

2. During the test, pre-scan the 802.11a, 802.11n(HT20), ac(HT20), n(HT40), ac(HT40), ac(HT80) mode, and found the 802.11ac (HT80) mode is worse case , the report only record this mode.

2. Result =Reading + Factor

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5.2G:

Radiated Band Edge:

Test Mode: 802.11a	Test channel: Lowest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	36.58	15.99	52.57	68.20	-15.63	Horizontal
5150.00	38.58	15.99	54.57	68.20	-13.63	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5150.00	26.63	15.99	42.62	54.00	-11.38	Horizontal
5150.00	28.57	15.99	44.56	54.00	-9.44	Vertical

Test Mode: 802.11a	Test channel: Highest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5250.00	37.14	16.43	53.57	68.20	-14.63	Horizontal
5250.00	39.83	16.43	56.26	68.20	-11.94	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5250.00	28.32	16.43	44.75	54.00	-9.25	Horizontal
5250.00	29.36	16.43	45.79	54.00	-8.21	Vertical

Remark: 1. Result =Reading + Factor

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Radiated Band Edge:

Test Mode: 802.11n20	Test channel: Lowest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	35.67	15.99	51.66	68.20	-16.54	Horizontal
5150.00	36.96	15.99	52.95	68.20	-15.25	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5150.00	26.39	15.99	42.38	54.00	-11.62	Horizontal
5150.00	27.42	15.99	43.41	54.00	-10.59	Vertical

Test Mode: 802.11n20	Test channel: Highest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5250.00	37.42	16.43	53.85	68.20	-14.35	Horizontal
5250.00	38.53	16.43	54.96	68.20	-13.24	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5250.00	27.42	16.43	43.85	54.00	-10.15	Horizontal
5250.00	28.76	16.43	45.19	54.00	-8.81	Vertical

Remark: 1. Result =Reading + Factor

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Radiated Band Edge:

Test Mode: 802.11n40	Test channel: Lowest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	36.04	15.99	52.03	68.20	-16.17	Horizontal
5150.00	37.92	15.99	53.91	68.20	-14.29	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5150.00	26.57	15.99	42.56	54.00	-11.44	Horizontal
5150.00	28.56	15.99	44.55	54.00	-9.45	Vertical

Test Mode: 802.11n40	Test channel: Highest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5250.00	37.79	16.43	54.22	68.20	-13.98	Horizontal
5250.00	36.76	16.43	53.19	68.20	-15.01	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5250.00	27.82	16.43	44.25	54.00	-9.75	Horizontal
5250.00	28.95	16.43	45.38	54.00	-8.62	Vertical

Remark: 1. Result =Reading + Factor

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Hotline 400-003-0500
www.anbotek.com

Radiated Band Edge:

Test Mode: 802.11ac(HT20)	Test channel: Lowest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	36.46	15.99	52.45	68.20	-15.75	Horizontal
5150.00	38.14	15.99	54.13	68.20	-14.07	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5150.00	26.30	15.99	42.29	54.00	-11.71	Horizontal
5150.00	28.35	15.99	44.34	54.00	-9.66	Vertical

Test Mode: 802.11ac(HT20)	Test channel: Highest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5250.00	37.62	16.43	54.05	68.20	-14.15	Horizontal
5250.00	37.91	16.43	54.34	68.20	-13.86	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5250.00	27.46	16.43	43.89	54.00	-10.11	Horizontal
5250.00	27.88	16.43	44.31	54.00	-9.69	Vertical

Remark: 1. Result =Reading + Factor

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Radiated Band Edge:

Test Mode: 802.11ac(HT40)	Test channel: Lowest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	35.45	15.99	51.44	68.20	-16.76	Horizontal
5150.00	36.04	15.99	52.03	68.20	-16.17	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5150.00	25.45	15.99	41.44	54.00	-12.56	Horizontal
5150.00	26.37	15.99	42.36	54.00	-11.64	Vertical

Test Mode: 802.11ac(HT40)	Test channel: Highest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5250.00	37.67	16.43	54.10	68.20	-14.10	Horizontal
5250.00	36.92	16.43	53.35	68.20	-14.85	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5250.00	27.23	16.43	43.66	54.00	-10.34	Horizontal
5250.00	26.89	16.43	43.32	54.00	-10.68	Vertical

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Radiated Band Edge:

Test Mode: 802.11ac(HT80)	Test channel: Lowest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	35.76	15.99	51.75	68.20	-16.45	Horizontal
5150.00	35.88	15.99	51.87	68.20	-16.33	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5150.00	25.99	15.99	41.98	54.00	-12.02	Horizontal
5150.00	26.43	15.99	42.42	54.00	-11.58	Vertical

Test Mode: 802.11ac(HT80)	Test channel: Highest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5250.00	37.74	16.43	54.17	68.20	-14.03	Horizontal
5250.00	37.00	16.43	53.43	68.20	-14.77	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5250.00	28.13	16.43	44.56	54.00	-9.44	Horizontal
5250.00	27.70	16.43	44.13	54.00	-9.87	Vertical

Remark: 1. Result =Reading + Factor

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Hotline 400-003-0500
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5.8G:

Radiated Band Edge:

Test Mode: 802.11a	Test channel: Lowest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	38.79	17.05	55.84	68.20	-12.36	Horizontal
5725.00	39.41	17.05	56.46	68.20	-11.74	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5725.00	28.80	17.05	45.85	54.00	-8.15	Horizontal
5725.00	29.89	17.05	46.94	54.00	-7.06	Vertical

Test Mode: 802.11a	Test channel: Highest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	38.74	17.21	55.95	68.20	-12.25	Horizontal
5850.00	39.05	17.21	56.26	68.20	-11.94	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5850.00	28.79	17.21	46.00	54.00	-8.00	Horizontal
5850.00	28.86	17.21	46.07	54.00	-7.93	Vertical

Remark: 1. Result =Reading + Factor

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Radiated Band Edge:

Test Mode: 802.11n20	Test channel: Lowest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	37.91	17.05	54.96	68.20	-13.24	Horizontal
5725.00	38.24	17.05	55.29	68.20	-12.91	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5725.00	27.42	17.05	44.47	54.00	-9.53	Horizontal
5725.00	27.87	17.05	44.92	54.00	-9.08	Vertical

Test Mode: 802.11n20	Test channel: Highest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5850.00	36.98	17.21	54.19	68.20	-14.01	Horizontal
5850.00	37.68	17.21	54.89	68.20	-13.31	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5850.00	27.17	17.21	44.38	54.00	-9.62	Horizontal
5850.00	28.11	17.21	45.32	54.00	-8.68	Vertical

Remark: 1. Result =Reading + Factor

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Radiated Band Edge:

Test Mode: 802.11n40				Test channel: Lowest		
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	38.21	17.05	55.26	68.20	-12.94	Horizontal
5725.00	38.78	17.05	55.83	68.20	-12.37	Vertical
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5725.00	26.79	17.05	43.84	54.00	-10.16	Horizontal
5725.00	28.22	17.05	45.27	54.00	-8.73	Vertical

Test Mode: 802.11n40				Test channel: Highest		
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	37.74	17.21	54.95	68.20	-13.25	Horizontal
5850.00	38.21	17.21	55.42	68.20	-12.78	Vertical
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5850.00	27.88	17.21	45.09	54.00	-8.91	Horizontal
5850.00	29.06	17.21	46.27	54.00	-7.73	Vertical

Remark: 1. Result =Reading + Factor

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Radiated Band Edge:

Test Mode: 802.11ac(HT20)	Test channel: Lowest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5725.00	37.66	17.05	54.71	68.20	-13.49	Horizontal
5725.00	38.18	17.05	55.23	68.20	-12.97	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5725.00	28.09	17.05	45.14	54.00	-8.86	Horizontal
5725.00	28.75	17.05	45.80	54.00	-8.20	Vertical

Test Mode: 802.11ac(HT20)	Test channel: Highest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5850.00	37.82	17.21	55.03	68.20	-13.17	Horizontal
5850.00	38.76	17.21	55.97	68.20	-12.23	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5850.00	27.75	17.21	44.96	54.00	-9.04	Horizontal
5850.00	28.71	17.21	45.92	54.00	-8.08	Vertical

Remark: 1. Result =Reading + Factor

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Radiated Band Edge:

Test Mode: 802.11ac(HT40)	Test channel: Lowest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5725.00	36.49	17.05	53.54	68.20	-14.66	Horizontal
5725.00	38.00	17.05	55.05	68.20	-13.15	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5725.00	27.37	17.05	44.42	54.00	-9.58	Horizontal
5725.00	28.08	17.05	45.13	54.00	-8.87	Vertical

Test Mode: 802.11ac(HT40)	Test channel: Highest

Peak value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5850.00	37.43	17.21	54.64	68.20	-13.56	Horizontal
5850.00	38.15	17.21	55.36	68.20	-12.84	Vertical

Average value:

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5850.00	27.41	17.21	44.62	54.00	-9.38	Horizontal
5850.00	26.94	17.21	44.15	54.00	-9.85	Vertical

Remark: 1. Result =Reading + Factor

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Radiated Band Edge:

Test Mode: 802.11ac(HT80)				Test channel: Lowest		
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5725.00	35.72	17.05	52.77	68.20	-15.43	Horizontal
5725.00	37.76	17.05	54.81	68.20	-13.39	Vertical
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5725.00	26.23	17.05	43.28	54.00	-10.72	Horizontal
5725.00	26.95	17.05	44.00	54.00	-10.00	Vertical

Test Mode: 802.11ac(HT80)				Test channel: Highest		
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5850.00	37.16	17.21	54.37	68.20	-13.83	Horizontal
5850.00	37.57	17.21	54.78	68.20	-13.42	Vertical
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization
5850.00	27.41	17.21	44.62	54.00	-9.38	Horizontal
5850.00	27.98	17.21	45.19	54.00	-8.81	Vertical

Remark: 1. Result =Reading + Factor

Conducted Measurement:

Please refer to Appendix D of the Appendix Test Data.

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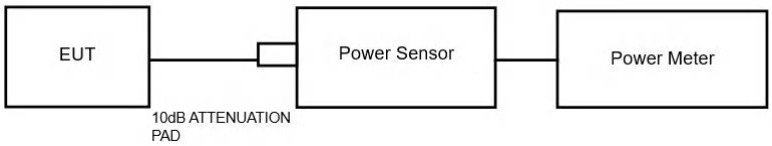
5. Maximum conducted output power Test

5.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.407(a)	
Test Limit	5.15 - 5.25GHz	1) Outdoor AP The maximum conducted output power (Pout) shall not exceed the lesser of 1W (30dBm). if GTx>6dBi, then Pout =30-(GTx-6). e.i.r.p. at any elevation angle above 30 degrees≤125mW (21dBm) 2) Indoor AP The maximum conducted output power (Pout) shall not exceed the lesser of 1W (30dBm). if GTx>6dBi, then Pout =30-(GTx-6). 3) Point-to-point AP The maximum conducted output power (Pout) shall not exceed the lesser of 1W (30dBm). if GTx>23dBi, then Pout =30-(GTx-23). 4) Client devices The maximum conducted output power (Pout) shall not exceed the lesser of 250W (24dBm). if GTx>6dBi, then Pout =24-(GTx-6).
	5.725 - 5.85GHz	1) Point-to-multipoint systems (P2M) The maximum conducted output power (Pout) shall not exceed the lesser of 1W (30dBm). if GTx>6dBi, then Pout =30-(GTx-6). 2) Point-to-point systems (P2P) The maximum conducted output power (Pout) shall not exceed the lesser of 1W (30dBm).

5.2. Test Setup



5.3. Test Procedure

1. The Transmitter output (antenna port) was connected to the power meter.
2. Turn on the EUT and power meter and then record the power value.
3. Repeat above procedures on all channels needed to be tested.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

5.4. Test Data

Pass

Please refer to Appendix B of the Appendix Test Data.

Additional test for duty cycle.

Please refer to Appendix E of the Appendix Test Data.

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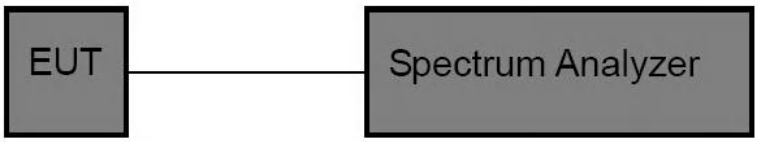
6. Occupy Bandwidth Test

6.1. Test Standard

Test Standard	FCC Part15 C Section 15.407 (a)(5)

6.2. Test Setup



6.3. Test Procedure

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

3. Set the spectrum analyzer as:

26 dB &99%bandwidth

RBW = approximately 1% of the emission bandwidth;
Set the VBW＞RBW;
Detector= Peak
Trace mode= Max hold.
Sweep- auto couple.

6 dB bandwidth

RBW = approximately 1% of the emission bandwidth;
Set the VBW＞RBW;
Detector= Peak
Trace mode= Max hold.
Sweep- auto couple.

4. Measure the maximum width of the emission that is 26dB /6dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer.

5. Repeat until all the rest channels are investigated.

6.4. Test Data

Pass

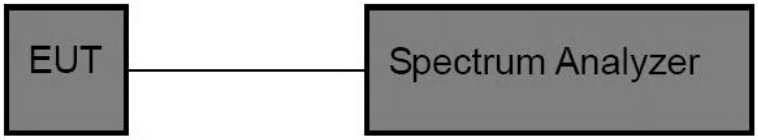
Please refer to Appendix A1&A2&A3 of the Appendix Test Data.

7. Power Spectral Density Test

7.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.407(a)	
Test Limit	5.15 - 5.25GHz	1) Outdoor AP The peak power spectral density (PSD) shall not exceed the lesser of 17dBm/MHz. if GTx>6dBi, then PSD =17-(GTx-6). 2) Indoor AP The peak power spectral density (PSD) shall not exceed the lesser of 17dBm/MHz. if GTx>6dBi, then PSD =17-(GTx-6). 3) Point-to-point AP The peak power spectral density (PSD) shall not exceed the lesser of 17dBm/MHz. if GTx>23dBi, then PSD =17-(GTx-23). 4) Client devices The peak power spectral density (PSD) shall not exceed the lesser of 11dBm/MHz. if GTx>6dBi, then PSD =11-(GTx-6).
	5.725 - 5.85GHz	1) Point-to-multipoint systems (P2M) The peak power spectral density (PSD) shall not exceed the lesser of 30dBm/500kHz. if GTx>6dBi, then PSD =30-(GTx-6). 2) Point-to-point systems (P2P) The peak power spectral density (PSD) shall not exceed the lesser of 30dBm/500kHz.

7.2. Test Setup



7.3. Test Procedure

For devices operating in the bands 5.15-5.25 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).

1. The EUT is directly connected to the spectrum analyzer;
2. Set RBW =1MHz(for WIFI 5.2G) or Set RBW =300kHz(for WIFI 5.8G);

3. Set VBW ≥ 3 RBW=3MHz(for WIFI 5.2G) or Set VBW ≥ 3 RBW=1MHz (for WIFI 5.8G);
3. Set the span to encompass the entire emissions bandwidth (EBW) of the signal;
5. Detector=RMS;
6. Sweep time= auto couple;
7. Trace mode=max. hold;

7.4. Test Data

Pass

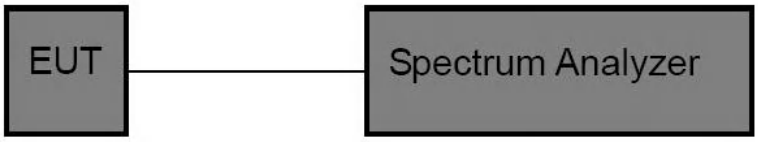
Please refer to Appendix C of the Appendix Test Data.

8. Frequency Stability

8.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.407(g) &Part2 J Section 2.1055
Test Limit	The frequency tolerance shall be maintained within the band of operation frequency over a temperature variation of 0 degrees to 35 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

8.2. Test Setup



8.3. Test Procedure

The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

8.4. Test Data

Pass

Please to see the following pages.

Test Mode: 5.2G							
Mode	TX Type	Frequency (MHz)	Temperature (°C)	Voltage (VAC)	Measured Frequency (MHz)	Limit	Verdict
802.11a	SISO	5180	20	102.00	5180.01	5172 to 5188	Pass
				120.00	5180.09	5172 to 5188	Pass
				138.00	5180.08	5172 to 5188	Pass
			-30	120.00	5180.10	5172 to 5188	Pass
			-20	120.00	5180.10	5150 to 5250	Pass
			-10	120.00	5180.06	5150 to 5250	Pass
			0	120.00	5180.12	5150 to 5250	Pass
			10	120.00	5180.12	5150 to 5250	Pass
			30	120.00	5180.09	5150 to 5250	Pass
			40	120.00	5180.06	5150 to 5250	Pass
			50	120.00	5180.12	5172 to 5188	Pass
		5200	20	102.00	5200.07	5192 to 5208	Pass
				120.00	5200.03	5192 to 5208	Pass
				138.00	5200.03	5192 to 5208	Pass
			-30	120.00	5200.10	5192 to 5208	Pass
			-20	120.00	5200.08	5150 to 5250	Pass
			-10	120.00	5200.08	5150 to 5250	Pass
			0	120.00	5200.12	5150 to 5250	Pass
			10	120.00	5200.07	5150 to 5250	Pass
			30	120.00	5200.09	5150 to 5250	Pass
			40	120.00	5200.10	5150 to 5250	Pass
			50	120.00	5200.05	5192 to 5208	Pass
		5240	20	102.00	5240.07	5232 to 5248	Pass
				120.00	5240.13	5232 to 5248	Pass
				138.00	5240.03	5232 to 5248	Pass
			-30	120.00	5240.05	5232 to 5248	Pass
			-20	120.00	5240.09	5150 to 5250	Pass
			-10	120.00	5240.05	5150 to 5250	Pass
			0	120.00	5240.11	5150 to 5250	Pass
			10	120.00	5240.05	5150 to 5250	Pass
			30	120.00	5240.07	5150 to 5250	Pass
			40	120.00	5240.11	5150 to 5250	Pass
			50	120.00	5240.11	5232 to 5248	Pass
802.11n (HT20)	SISO	5180	20	102.00	5180.06	5172 to 5188	Pass
				120.00	5180.11	5172 to 5188	Pass
				138.00	5180.09	5172 to 5188	Pass
			-30	120.00	5180.01	5172 to 5188	Pass
			-20	120.00	5180.04	5150 to 5250	Pass

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			-10	120.00	5180.12	5150 to 5250	Pass
			0	120.00	5180.11	5150 to 5250	Pass
			10	120.00	5180.00	5150 to 5250	Pass
			30	120.00	5180.01	5150 to 5250	Pass
			40	120.00	5180.03	5150 to 5250	Pass
			50	120.00	5180.05	5172 to 5188	Pass
		5200	20	102.00	5200.07	5192 to 5208	Pass
				120.00	5200.01	5192 to 5208	Pass
				138.00	5200.02	5192 to 5208	Pass
			-30	120.00	5200.13	5192 to 5208	Pass
			-20	120.00	5200.11	5150 to 5250	Pass
			-10	120.00	5200.09	5150 to 5250	Pass
			0	120.00	5200.05	5150 to 5250	Pass
			10	120.00	5200.09	5150 to 5250	Pass
			30	120.00	5200.06	5150 to 5250	Pass
			40	120.00	5200.10	5150 to 5250	Pass
			50	120.00	5200.04	5192 to 5208	Pass
		5240	20	102.00	5240.03	5232 to 5248	Pass
				120.00	5240.11	5232 to 5248	Pass
				138.00	5240.09	5232 to 5248	Pass
			-30	120.00	5240.07	5232 to 5248	Pass
			-20	120.00	5240.03	5150 to 5250	Pass
			-10	120.00	5240.03	5150 to 5250	Pass
			0	120.00	5240.09	5150 to 5250	Pass
			10	120.00	5240.09	5150 to 5250	Pass
			30	120.00	5240.04	5150 to 5250	Pass
			40	120.00	5240.12	5150 to 5250	Pass
			50	120.00	5240.08	5232 to 5248	Pass
802.11n (HT40)	SISO	5190	20	102.00	5190.09	5174 to 5206	Pass
				120.00	5190.12	5174 to 5206	Pass
				138.00	5190.07	5174 to 5206	Pass
			-30	120.00	5190.00	5174 to 5206	Pass
			-20	120.00	5190.01	5150 to 5250	Pass
			-10	120.00	5190.00	5150 to 5250	Pass
			0	120.00	5190.10	5150 to 5250	Pass
			10	120.00	5190.03	5150 to 5250	Pass
			30	120.00	5190.03	5150 to 5250	Pass
			40	120.00	5190.07	5150 to 5250	Pass
			50	120.00	5190.08	5174 to 5206	Pass
		5230	20	102.00	5230.01	5214 to 5246	Pass

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				120.00	5230.10	5214 to 5246	Pass
				138.00	5230.13	5214 to 5246	Pass
			-30	120.00	5230.10	5214 to 5246	Pass
			-20	120.00	5230.00	5150 to 5250	Pass
			-10	120.00	5230.04	5150 to 5250	Pass
			0	120.00	5230.07	5150 to 5250	Pass
			10	120.00	5230.10	5150 to 5250	Pass
			30	120.00	5230.12	5150 to 5250	Pass
			40	120.00	5230.06	5150 to 5250	Pass
			50	120.00	5230.09	5214 to 5246	Pass
802.11ac (VHT20)	SISO	5180	20	102.00	5180.00	5172 to 5188	Pass
				120.00	5180.05	5172 to 5188	Pass
				138.00	5180.11	5172 to 5188	Pass
			-30	120.00	5180.10	5172 to 5188	Pass
			-20	120.00	5180.03	5150 to 5250	Pass
			-10	120.00	5180.05	5150 to 5250	Pass
			0	120.00	5180.13	5150 to 5250	Pass
			10	120.00	5180.03	5150 to 5250	Pass
			30	120.00	5180.02	5150 to 5250	Pass
			40	120.00	5180.09	5150 to 5250	Pass
			50	120.00	5180.12	5172 to 5188	Pass
		5200	20	102.00	5200.10	5192 to 5208	Pass
				120.00	5200.07	5192 to 5208	Pass
				138.00	5200.03	5192 to 5208	Pass
			-30	120.00	5200.07	5192 to 5208	Pass
			-20	120.00	5200.05	5150 to 5250	Pass
			-10	120.00	5200.11	5150 to 5250	Pass
			0	120.00	5200.12	5150 to 5250	Pass
			10	120.00	5200.02	5150 to 5250	Pass
			30	120.00	5200.01	5150 to 5250	Pass
			40	120.00	5200.07	5150 to 5250	Pass
			50	120.00	5200.04	5192 to 5208	Pass
		5240	20	102.00	5240.05	5232 to 5248	Pass
				120.00	5240.12	5232 to 5248	Pass
				138.00	5240.05	5232 to 5248	Pass
			-30	120.00	5240.10	5232 to 5248	Pass
			-20	120.00	5240.10	5150 to 5250	Pass
			-10	120.00	5240.12	5150 to 5250	Pass
			0	120.00	5240.01	5150 to 5250	Pass
			10	120.00	5240.08	5150 to 5250	Pass

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			30	120.00	5240.12	5150 to 5250	Pass
			40	120.00	5240.09	5150 to 5250	Pass
			50	120.00	5240.09	5232 to 5248	Pass
802.11ac (VHT40)	SISO	5190	20	102.00	5190.04	5174 to 5206	Pass
				120.00	5190.02	5174 to 5206	Pass
				138.00	5190.04	5174 to 5206	Pass
			-30	120.00	5190.13	5174 to 5206	Pass
			-20	120.00	5190.12	5150 to 5250	Pass
			-10	120.00	5190.00	5150 to 5250	Pass
			0	120.00	5190.05	5150 to 5250	Pass
			10	120.00	5190.05	5150 to 5250	Pass
			30	120.00	5190.06	5150 to 5250	Pass
			40	120.00	5190.11	5150 to 5250	Pass
			50	120.00	5190.06	5174 to 5206	Pass
		5230	20	102.00	5230.12	5214 to 5246	Pass
				120.00	5230.11	5214 to 5246	Pass
				138.00	5230.01	5214 to 5246	Pass
			-30	120.00	5230.00	5214 to 5246	Pass
			-20	120.00	5230.12	5150 to 5250	Pass
			-10	120.00	5230.03	5150 to 5250	Pass
			0	120.00	5230.12	5150 to 5250	Pass
			10	120.00	5230.08	5150 to 5250	Pass
			30	120.00	5230.08	5150 to 5250	Pass
			40	120.00	5230.05	5150 to 5250	Pass
			50	120.00	5230.09	5214 to 5246	Pass
802.11ac (VHT80)	SISO	5210	20	102.00	5210.06	5178 to 5242	Pass
				120.00	5210.09	5178 to 5242	Pass
				138.00	5210.04	5178 to 5242	Pass
			-30	120.00	5210.08	5178 to 5242	Pass
			-20	120.00	5210.02	5150 to 5250	Pass
			-10	120.00	5210.07	5150 to 5250	Pass
			0	120.00	5210.07	5150 to 5250	Pass
			10	120.00	5210.01	5150 to 5250	Pass
			30	120.00	5210.04	5150 to 5250	Pass
			40	120.00	5210.09	5150 to 5250	Pass
			50	120.00	5210.08	5178 to 5242	Pass

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Test Mode: 5.8G							
Mode	TX Type	Frequency (MHz)	Temperature (°C)	Voltage (VAC)	Measured Frequency (MHz)	Limit	Verdict
802.11a	SISO	5745	20	102.00	5745.06	5737 to 5753	Pass
				120.00	5745.11	5737 to 5753	Pass
				138.00	5745.03	5737 to 5753	Pass
			-30	102.00	5745.01	5737 to 5753	Pass
			-20	120.00	5745.11	5725 to 5850	Pass
			-10	120.00	5745.12	5725 to 5850	Pass
			0	120.00	5745.11	5725 to 5850	Pass
			10	120.00	5745.10	5725 to 5850	Pass
			30	120.00	5745.06	5725 to 5850	Pass
			40	120.00	5745.10	5725 to 5850	Pass
			50	120.00	5745.08	5737 to 5753	Pass
		5785	20	102.00	5785.12	5777 to 5793	Pass
				120.00	5785.04	5777 to 5793	Pass
				138.00	5785.11	5777 to 5793	Pass
			-30	102.00	5785.10	5777 to 5793	Pass
			-20	120.00	5785.07	5725 to 5850	Pass
			-10	120.00	5785.08	5725 to 5850	Pass
			0	120.00	5785.03	5725 to 5850	Pass
			10	120.00	5785.02	5725 to 5850	Pass
			30	120.00	5785.12	5725 to 5850	Pass
			40	120.00	5785.09	5725 to 5850	Pass
			50	120.00	5785.01	5777 to 5793	Pass
		5825	20	102.00	5825.02	5817 to 5833	Pass
				120.00	5825.06	5817 to 5833	Pass
				138.00	5825.05	5817 to 5833	Pass
			-30	102.00	5825.12	5817 to 5833	Pass
			-20	120.00	5825.09	5725 to 5850	Pass
			-10	120.00	5825.12	5725 to 5850	Pass
			0	120.00	5825.00	5725 to 5850	Pass
			10	120.00	5825.12	5725 to 5850	Pass
			30	120.00	5825.11	5725 to 5850	Pass
			40	120.00	5825.12	5725 to 5850	Pass
			50	120.00	5825.06	5817 to 5833	Pass
802.11n (HT20)	SISO	5745	20	102.00	5745.08	5737 to 5753	Pass
				120.00	5745.09	5737 to 5753	Pass
				138.00	5745.00	5737 to 5753	Pass
			-30	102.00	5745.04	5737 to 5753	Pass
			-20	120.00	5745.05	5725 to 5850	Pass

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			-10	120.00	5745.02	5725 to 5850	Pass
			0	120.00	5745.08	5725 to 5850	Pass
			10	120.00	5745.12	5725 to 5850	Pass
			30	120.00	5745.03	5725 to 5850	Pass
			40	120.00	5745.09	5725 to 5850	Pass
			50	120.00	5745.11	5737 to 5753	Pass
		5785	20	102.00	5785.04	5777 to 5793	Pass
				120.00	5785.01	5777 to 5793	Pass
				138.00	5785.10	5777 to 5793	Pass
			-30	102.00	5785.09	5777 to 5793	Pass
			-20	120.00	5785.01	5725 to 5850	Pass
			-10	120.00	5785.10	5725 to 5850	Pass
			0	120.00	5785.07	5725 to 5850	Pass
			10	120.00	5785.08	5725 to 5850	Pass
			30	120.00	5785.07	5725 to 5850	Pass
			40	120.00	5785.09	5725 to 5850	Pass
			50	120.00	5785.03	5777 to 5793	Pass
		5825	20	102.00	5825.09	5817 to 5833	Pass
				120.00	5825.01	5817 to 5833	Pass
				138.00	5825.12	5817 to 5833	Pass
			-30	102.00	5825.00	5817 to 5833	Pass
			-20	120.00	5825.04	5725 to 5850	Pass
			-10	120.00	5825.04	5725 to 5850	Pass
			0	120.00	5825.00	5725 to 5850	Pass
			10	120.00	5825.10	5725 to 5850	Pass
			30	120.00	5825.13	5725 to 5850	Pass
			40	120.00	5825.00	5725 to 5850	Pass
			50	120.00	5825.07	5817 to 5833	Pass
802.11n (HT40)	SISO	5755	20	102.00	5755.03	5739 to 5771	Pass
				120.00	5755.07	5739 to 5771	Pass
				138.00	5755.05	5739 to 5771	Pass
			-30	102.00	5755.03	5739 to 5771	Pass
			-20	120.00	5755.08	5725 to 5850	Pass
			-10	120.00	5755.09	5725 to 5850	Pass
			0	120.00	5755.11	5725 to 5850	Pass
			10	120.00	5755.05	5725 to 5850	Pass
			30	120.00	5755.09	5725 to 5850	Pass
			40	120.00	5755.09	5725 to 5850	Pass
			50	120.00	5755.06	5739 to 5771	Pass
		5795	20	102.00	5795.05	5779 to 5811	Pass

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				120.00	5795.08	5779 to 5811	Pass
				138.00	5795.03	5779 to 5811	Pass
			-30	102.00	5795.10	5779 to 5811	Pass
			-20	120.00	5795.04	5725 to 5850	Pass
			-10	120.00	5795.04	5725 to 5850	Pass
			0	120.00	5795.02	5725 to 5850	Pass
			10	120.00	5795.08	5725 to 5850	Pass
			30	120.00	5795.04	5725 to 5850	Pass
			40	120.00	5795.06	5725 to 5850	Pass
			50	120.00	5795.11	5779 to 5811	Pass
802.11ac (VHT20)	SISO	5745	20	102.00	5745.04	5737 to 5753	Pass
				120.00	5745.11	5737 to 5753	Pass
				138.00	5745.04	5737 to 5753	Pass
			-30	102.00	5745.12	5737 to 5753	Pass
			-20	120.00	5745.07	5725 to 5850	Pass
			-10	120.00	5745.06	5725 to 5850	Pass
			0	120.00	5745.10	5725 to 5850	Pass
			10	120.00	5745.00	5725 to 5850	Pass
			30	120.00	5745.04	5725 to 5850	Pass
			40	120.00	5745.08	5725 to 5850	Pass
			50	120.00	5745.10	5737 to 5753	Pass
		5785	20	102.00	5785.03	5777 to 5793	Pass
				120.00	5785.05	5777 to 5793	Pass
				138.00	5785.07	5777 to 5793	Pass
			-30	102.00	5785.08	5777 to 5793	Pass
			-20	120.00	5785.02	5725 to 5850	Pass
			-10	120.00	5785.12	5725 to 5850	Pass
			0	120.00	5785.04	5725 to 5850	Pass
			10	120.00	5785.07	5725 to 5850	Pass
			30	120.00	5785.09	5725 to 5850	Pass
			40	120.00	5785.10	5725 to 5850	Pass
			50	120.00	5785.04	5777 to 5793	Pass
		5825	20	102.00	5825.09	5817 to 5833	Pass
				120.00	5825.13	5817 to 5833	Pass
				138.00	5825.06	5817 to 5833	Pass
			-30	102.00	5825.05	5817 to 5833	Pass
			-20	120.00	5825.10	5725 to 5850	Pass
			-10	120.00	5825.08	5725 to 5850	Pass
			0	120.00	5825.00	5725 to 5850	Pass
			10	120.00	5825.12	5725 to 5850	Pass

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			30	120.00	5825.07	5725 to 5850	Pass
			40	120.00	5825.04	5725 to 5850	Pass
			50	120.00	5825.09	5817 to 5833	Pass
802.11ac (VHT40)	SISO	5755	20	102.00	5755.11	5739 to 5771	Pass
				120.00	5755.00	5739 to 5771	Pass
				138.00	5755.06	5739 to 5771	Pass
			-30	102.00	5755.00	5739 to 5771	Pass
			-20	120.00	5755.02	5725 to 5850	Pass
			-10	120.00	5755.03	5725 to 5850	Pass
			0	120.00	5755.01	5725 to 5850	Pass
			10	120.00	5755.08	5725 to 5850	Pass
			30	120.00	5755.12	5725 to 5850	Pass
			40	120.00	5755.04	5725 to 5850	Pass
			50	120.00	5755.05	5739 to 5771	Pass
		5795	20	102.00	5795.09	5779 to 5811	Pass
				120.00	5795.09	5779 to 5811	Pass
				138.00	5795.00	5779 to 5811	Pass
			-30	102.00	5795.04	5779 to 5811	Pass
			-20	120.00	5795.02	5725 to 5850	Pass
			-10	120.00	5795.03	5725 to 5850	Pass
			0	120.00	5795.08	5725 to 5850	Pass
			10	120.00	5795.05	5725 to 5850	Pass
			30	120.00	5795.06	5725 to 5850	Pass
			40	120.00	5795.05	5725 to 5850	Pass
			50	120.00	5795.11	5779 to 5811	Pass
802.11ac (VHT80)	SISO	5775	20	102.00	5775.06	5743 to 5807	Pass
				120.00	5775.08	5743 to 5807	Pass
				138.00	5775.04	5743 to 5807	Pass
			-30	102.00	5775.10	5743 to 5807	Pass
			-20	120.00	5775.12	5725 to 5850	Pass
			-10	120.00	5775.01	5725 to 5850	Pass
			0	120.00	5775.04	5725 to 5850	Pass
			10	120.00	5775.06	5725 to 5850	Pass
			30	120.00	5775.00	5725 to 5850	Pass
			40	120.00	5775.09	5725 to 5850	Pass
			50	120.00	5775.03	5743 to 5807	Pass

Address: 1/F., Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
Tel:(86) 755-26066440 Fax: (86) 755-26014772 Email: service@anbotek.com
Hotline 400-003-0500
www.anbotek.com

9. Antenna Requirement

9.1. Test Standard and Requirement

Test Standard	FCC Part15 Section 15.203 /15.407
Requirement	1) 15.203 requirement: 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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 2) 15.407 requirement: 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 use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

9.2. Antenna Connected Construction

The antenna is FPC Antenna which permanently attached, and the best case gain of the antenna is 1dBi. It complies with the standard requirement.

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APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Measurement

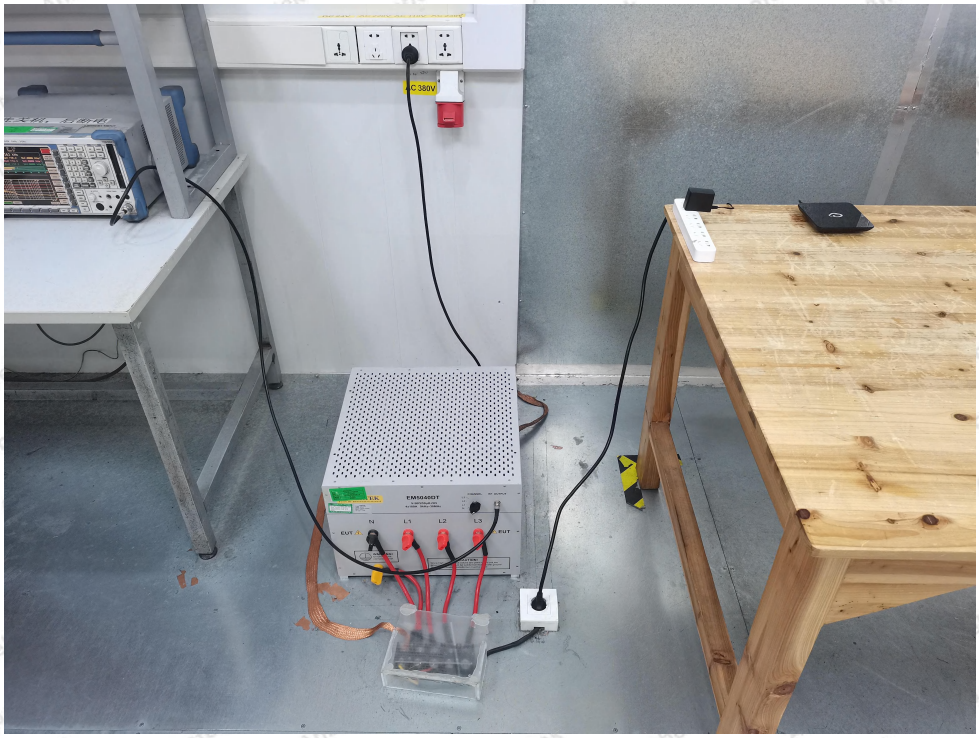
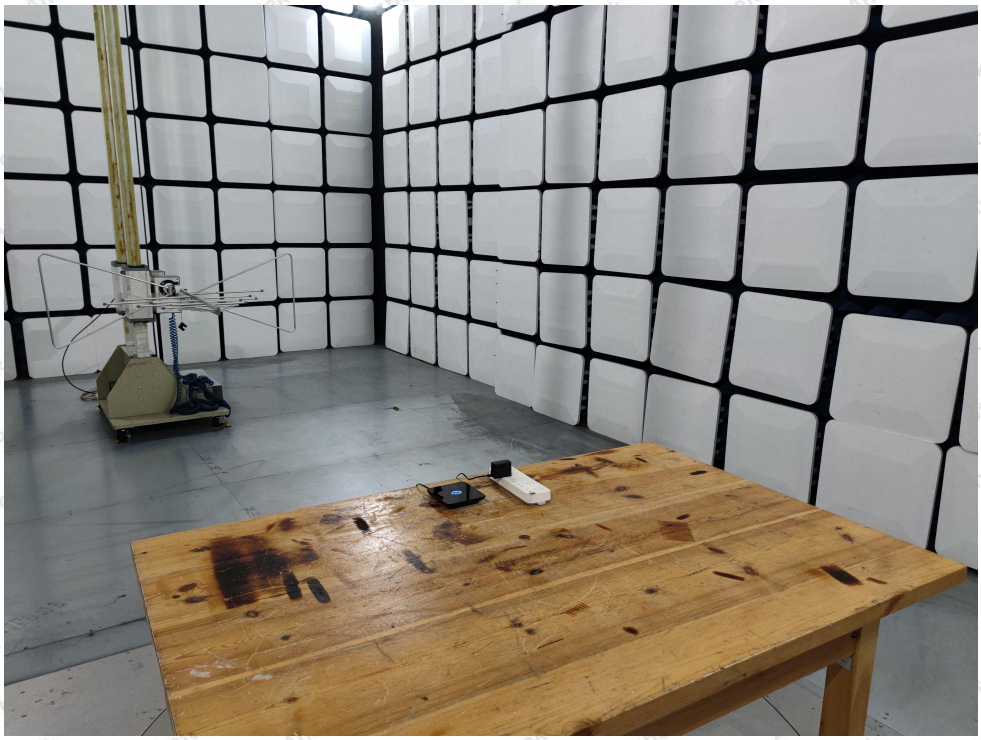


Photo of Radiation Emission Test



Shenzhen Anbotek Compliance Laboratory Limited
Address: 1/F., Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
Tel:(86) 755-26066440 Fax: (86) 755-26014772 Email: service@anbotek.com
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APPENDIX II -- EXTERNAL PHOTOGRAPH

Reference to the test report 18220WC20086301.

APPENDIX III -- INTERNAL PHOTOGRAPH

Reference to the test report 18220WC20086301.

APPENDIX IV – Appendix Test Data