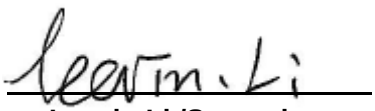
FCC RADIO TEST REPORT

Applicant	:	Beijing Xiaomi Electronics Co.,Ltd
Address	:	Room 707,7F,Building 5,No 58,Jinghai Wulu Road, Beijing economic and Technological Development Zone,100176 Beijing City,China
Equipment	:	Mi TV Stick
Model No.	:	MDZ-24-AB
Trade Name	:	MI
FCC ID.	:	2AIMRMITVMDZ24AB
Standard	:	FCC part 15 Subpart E §15.407

I HEREBY CERTIFY THAT :

The sample was received on Jun. 10, 2021 and the testing was completed on Jul. 02, 2021 at Cerpass Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of Cerpass Technology Corp., the test report shall not be reproduced except in full.

Approved by:



Leevin Li /Supervisor

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History of this test report

Report No.	Issue Date	Description
DEDG2106033	Jul. 05, 2021	Original

1. Summary of Test Procedure and Test Results

1.1. Applicable Standards

ANSI C63.10:2013
FCC Rules and Regulations Part 15 Subpart E §15.407
KDB 789033

FCC Rule	Description of Test	Result
15.203	Antenna Requirement	PASS
15.207(a)	AC Power Line Conducted Emission	PASS
15.407(b) 15.209	Radiated Spurious Emission	PASS
15.407(a)	26 dB & Occupied Bandwidth	PASS
15.407 (a) & (a)(3)	Average Power	PASS
15.407(a)	Power Spectral Density	PASS
15.407(g)	Frequency Stability	PASS
15.407(c)	Automatically Discontinue Transmission	PASS
Note: Deviations Yes ☐ No ■ *The lab has reduced the uncertainty risk factor from test equipment, environment and staff technicians which according to the standard on contract. Therefore, the test result will only be determined by standard requirement.		

2. Test Configuration of Equipment under Test

2.1. Feature of Equipment and Model Description

Equipment	Mi TV Stick
Model Name	MDZ-24-AB
Model Discrepancy	N/A
Frequency Range	5150MHz-5250MHz, 5725MHz-5850MHz
Modulation Type	BT: GFSK, π/4-DQPSK, 8DPSK BLE: GFSK 802.11b: CCK, DQPSK, DBPSK 802.11a/g: 64-QAM,16-QAM, QPSK, BPSK 802.11n: 64-QAM,16-QAM, QPSK, BPSK, HT20/40 802.11ac: 256-QAM,64-QAM,16-QAM, QPSK, BPSK
Data Rate	BT: GFSK:1Mbps, π/4-DQPSK: 2Mbps, 8DPSK:3Mbps BLE: GFSK: 1Mbps&2Mbps WIFI 2.4G: 802.11b: 1, 2 ,5.5,11Mbps 802.11g: 6,9,12,18,24,36,48,54Mbps 802.11n: HT20 reach up to72.2Mbps, HT40 reach up to150Mbps WIFI 5G: 802.11a: 6,9,12,18,24,36,48,54Mbps 802.11n: HT20 reach up to72.2Mbps, HT40 reach up to150Mbps 802.11ac: VHT20 reach up to 86.7Mbps, VHT40 reach up to 200Mbps, VHT80 reach up to 433.3Mbps
Antenna Type	FPC Antenna
Power Source	Power Adapter TPA-46B05100UU Input:100-240V~ 50/60Hz 0.2A Output:5.0V⎓1.0A

Note:

1. The Equipment support 2.4G Wi- Fi, 5G Wi-Fi, BR/EDR and BLE function. The 2.4G Wi-Fi, BR/EDR and BLE operated at 2400MHz to 2483.5MHz, The 5G Wi-Fi operation 5150MHz to 5250MHz, and 5725MHz to 5850MHz.
2. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.2. Carrier Frequency of Channels

Band 1: 5150MHz-5250MHz

802.11a, 802.11n HT 20, 802.11ac VHT20

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***36**	**5180**	***44**	**5220**
40	5200	***48**	**5240**

802.11n HT 40, 802.11ac VHT40

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***38**	**5190**	***46**	**5230**

802.11ac VHT80

Channel	Frequency(MHz)
***42**	**5210**

Band 4: 5725MHz -5850MHz

802.11a, 802.11n HT 20, 802.11ac VHT20

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***149**	**5745**	161	5805
153	5765	***165**	**5825**
***157**	**5785**		

802.11n HT 40, 802.11ac VHT40

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***151**	**5755**	***159**	**5795**

802.11ac VHT80

Channel	Frequency(MHz)
***155**	**5775**

Note: Channels remarked * are selected to perform test.

2.3. Test Mode and Test Software

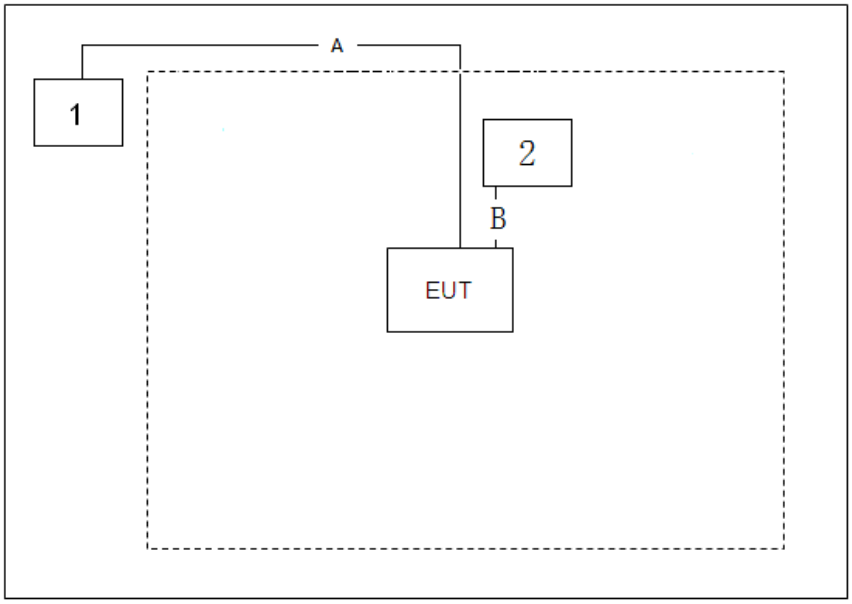
a. During testing, the interface cables and equipment positions were varied according to ANSI C63.10.
b. The complete test system included remote workstation and EUT for RF test. The remote workstation included Notebook.
c. An executive program, ” SecureCRT.exe” under Windows 7 system was executed to transmit and receive data via WLAN.
d. The following test modes were performed for the test:

Conducted Emissions from the AC mains power ports	
Test Mode	Operating Description
1	802.11a (6Mbps) for 120V
2	802.11ac VHT20 (6.5Mbps) for 120V
3	802.11ac VHT40 (13.5Mbps) for 120V
4	802.11ac VHT80 (29.3Mbps) for 120V
5	802.11a (6Mbps) for 240V
caused “Test Mode 1 at CH36:5180MHz” generated the worst case, it was reported as the final data.	
Radiation Emissions (30MHz ~ 1GHz)	
Test Mode	Operating Description
1	802.11a (6Mbps)
2	802.11ac VHT20 (6.5Mbps)
3	802.11ac VHT40 (13.5Mbps)
4	802.11ac VHT80 (29.3Mbps)
caused “Test Mode 1 at CH36:5180MHz” generated the worst case, it was reported as the final data.	
Radiation Emissions (1GHz ~ 40GHz)	
Test Mode	Operating Description
1	802.11a (6Mbps)
2	802.11ac VHT20 (6.5Mbps)
3	802.11ac VHT40 (13.5Mbps)
4	802.11ac VHT80 (29.3Mbps)
caused “Test Mode 1~4” generated the worst case, they were reported as the final data.	

2.4. Description of Test System

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	Dell	Latitude 3500	N/A	Non-Shielded, 1.8m
2	Adapter	TIANYIN	TPA-46B050100UU	N/A	N/A

Connection Diagram



Signal Cable Type		Quantity	Signal cable Description
A	USB Cable	1	5.0m Shielding
B	Micro USB Cable	1	0.8m Non Shielding

2.5. General Information of Test

Test Site	**Cerpass Technology Corporation(Cerpass Laboratory)** Address: Room 102, No. 5, Xing'an Road, Chang'an Town, Dongguan City, Guangdong Province Tel: +86-769-8547-1212 Fax: +86-769-8547-1912
FCC Designation No.:	CN1288
Frequency Range Investigated:	Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 40,000MHz
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Conducted	RFCON01-DG	2021/06/10~2021/06/24	22~25℃ / 50~60%	Amos Zhang
Radiated Emissions	3M02-DG	2021/06/10~2021/06/29	22~25℃ / 50~60%	Amos Zhang
AC Power Line Conducted Emission	CON01-DG	2021/06/10~2021/06/29	22~25℃ / 50~60%	Amos Zhang

2.6. Measurement Uncertainty

Measurement Item	Uncertainty
AC Power Line Conduction(150K~30MHz)	±2.88dB
Radiated Spurious Emission(9KHz~30MHz)	±2.15dB
Radiated Spurious Emission(30MHz~1GHz)	±4.95dB
Radiated Spurious Emission(1GHz~18GHz)	±3.24dB
Radiated Spurious Emission(18GHz~40GHz)	±5.43dB
6dB Bandwidth&26dB Bandwidth	±4.422%
Occupied Bandwidth	±4.244%
Peak Output Power(Conducted Power Meter)	±1.4 dB
Power Spectral Density	±1.387 dB
Frequency Stability	±0.6338Hz

3. Test Equipment and Ancillaries Used for Tests

Test Item	AC Power Line Conducted Emission				
Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
Test Receiver	R&S	ESCI	100564	2021.01.07	2022.01.06
LISN	SCHWARZBECK	NSLK 8127	8127748	2021.01.07	2022.01.06
LISN	SCHWARZBECK	NSLK 8127	8127749	2021.01.07	2022.01.06
ISN	TESEQ	ISN T800	42809	2021.05.10	2022.05.09
Pulse Limiter with 10dB Attenuation	SCHWARZBECK	VTSD 9561-F	9561-F106	2021.01.07	2022.01.06
Temperature/ Humidity Meter	GEMLEAD	STH200A	N/A	2020.08.20	2021.08.19

Test Item	Radiated Emissions				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
EMI Test Receiver	R&S	ESCI	100563	2021.05.14	2022.05.13
H64 Preamplifier	HP	8447F	3113A05582	2021.01.07	2022.01.06
Loop Antenna	R&S	HFH2-Z2	100150	2020.06.08	2022.06.07
Bilog Antenna	Sunol Science	JB1	A072414-1	2020.06.08	2022.06.07
Preamplifier	EMEC	EM01G18G	060739	2021.05.14	2022.05.13
Preamplifier	COM-POWER	PA-840	711885	2021.05.14	2022.05.13
Horn Antenna	Sunol	DRH-118	A072913	2019.09.07	2021.09.06
Standard Gain Horn Antenna	TRC	HA-2640	18050	2020.06.08	2022.06.07
Standard Gain Horn Antenna	TRC	HA-1726	18051	2020.06.08	2022.06.07
FSQ Signal Analyzer	R&S	FSQ40	200012	2021.05.14	2022.05.13
Temperature/ Humidity Meter	GEMLEAD	STH200A	N/A	2020.08.20	2021.08.19

Test Item	RF Conducted				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
MXA Signal Analyzer	KEYSIGHT	N9020A	US46220290	2021.05.14	2022.05.13
ESG VECTOR SIGNAL GENERATOR	Agilent	E4438C	MY45092582	2021.05.14	2022.05.13
MXG VECTOR SIGNAL GENERATOR	Agilent	N5182B	MY53050127	2021.05.14	2022.05.13
USB Wideband Power Sensor	Boonton	55006	9778	2021.01.07	2022.01.06
Temperature/ Humidity Meter	mingle	ETH529	N/A	2021.01.07	2022.01.06

4. Antenna Requirements

4.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 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.

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

4.2. Antenna Construction and Directional Gain

Antenna Type	FPC Antenna
Antenna Gain	4.7dBi

(Non-Beamforming)

5150MHz - 5250MHz
For Power directional gain= Gant= 4.70 dBi For PSD directional gain = 10 log[(10G1 /20 + 10G2 /20 + … + 10GN /20)2 /NANT] = 4.70 (dBi)
5725MHz - 5850MHz
For Power directional gain= Gant= 4.70 dBi For PSD directional gain = 10 log[(10G1 /20 + 10G2 /20 + … + 10GN /20)2 /NANT] = 4.70 (dBi)

5. Test of AC Power Line Conducted Emission

5.1. Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz, according to the methods defined in ANSI C63.4-2014. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

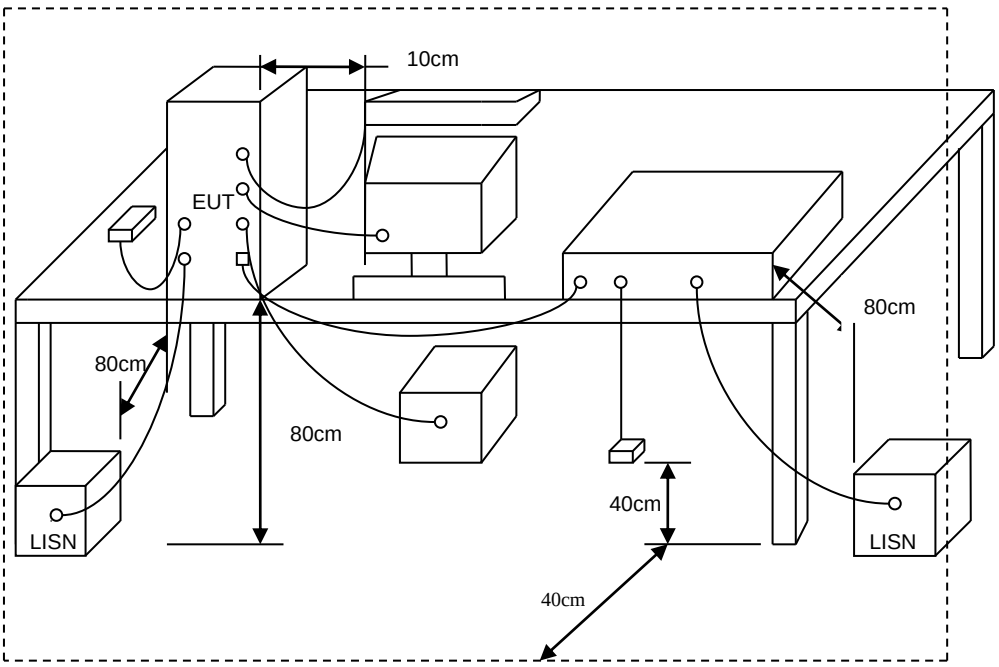
Frequency (MHz)	Quasi Peak (dBμV)	Average (dBμV)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

5.2. Test Procedures

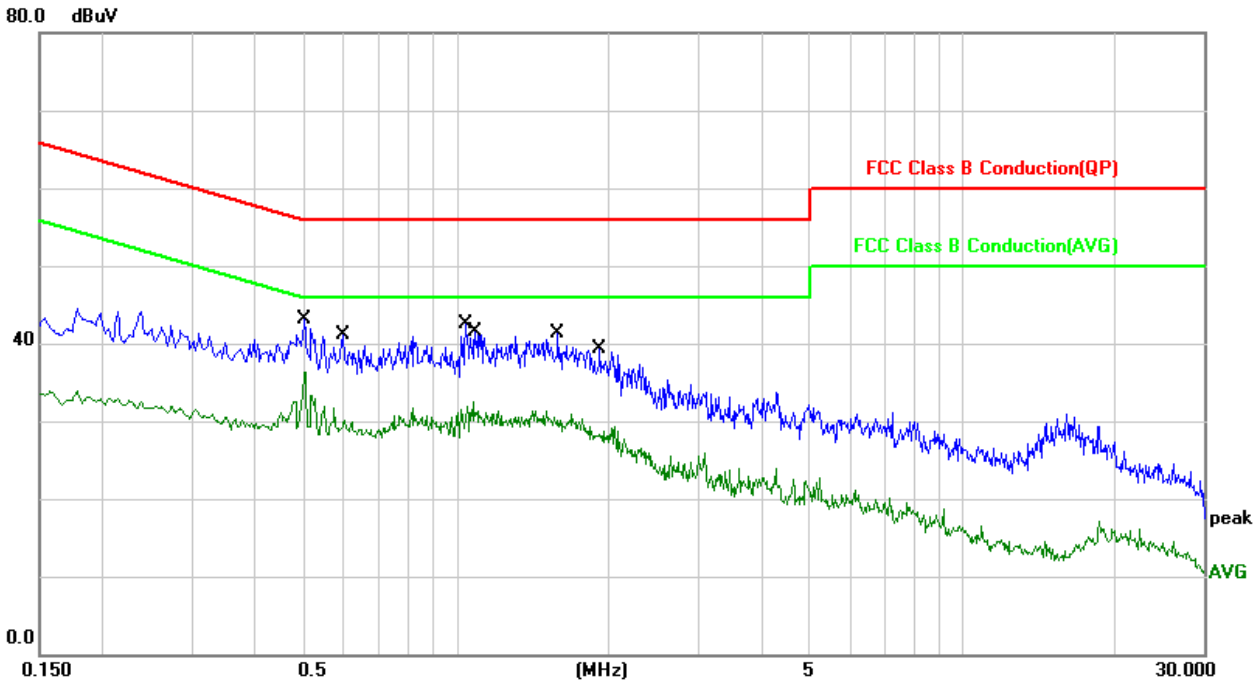
a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
c. All the support units are connecting to the other LISN.
d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
f. Both sides of AC line were checked for maximum conducted interference.
g. The frequency range from 150 kHz to 30 MHz was searched.
h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

5.3. Typical Test Setup



5.4. Test Result and Data

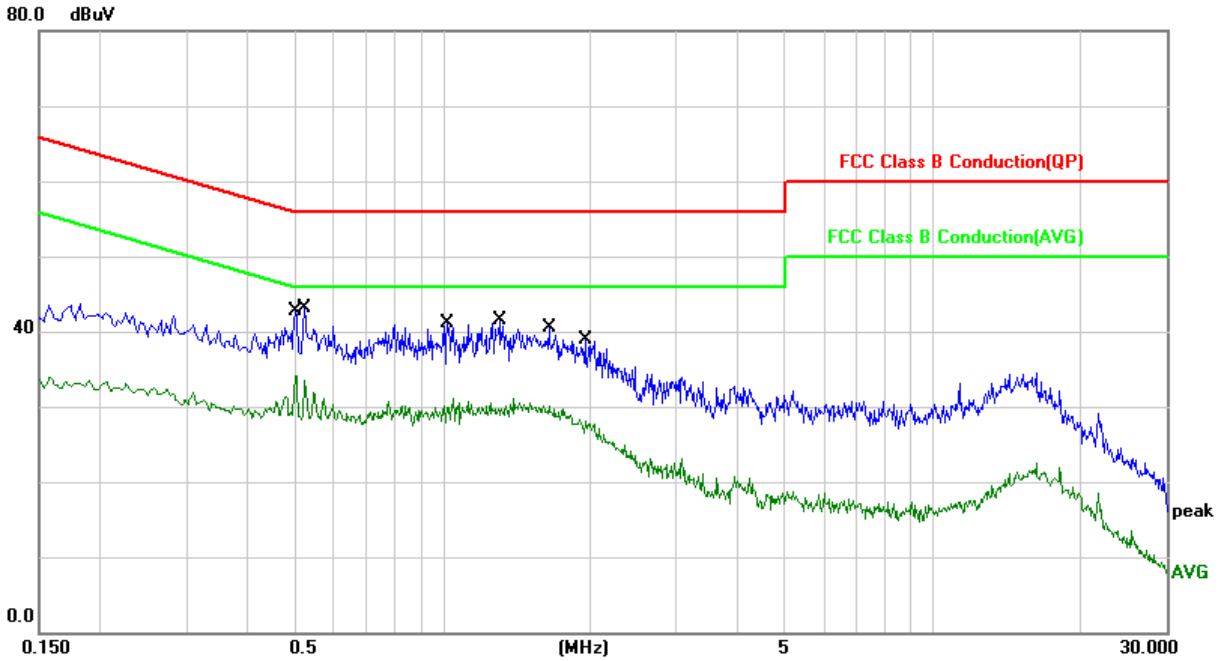
Test Mode :	Mode 1		
AC Power :	AC 120V/60Hz	Phase:	LINE
Temperature :	26°C	Humidity:	55%
Pressure :	1010hpa	Date:	2021-06-29



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.5020	10.10	30.33	40.43	56.00	-15.57	QP
2	0.5020	10.10	24.97	35.07	46.00	-10.93	AVG
3	0.5980	10.09	25.40	35.49	56.00	-20.51	QP
4	0.5980	10.09	20.19	30.28	46.00	-15.72	AVG
5	1.0460	10.04	25.80	35.84	56.00	-20.16	QP
6	1.0460	10.04	20.20	30.24	46.00	-15.76	AVG
7	1.0900	10.04	25.87	35.91	56.00	-20.09	QP
8	1.0900	10.04	20.05	30.09	46.00	-15.91	AVG
9	1.5859	10.00	25.10	35.10	56.00	-20.90	QP
10	1.5859	10.00	19.62	29.62	46.00	-16.38	AVG
11	1.9260	9.97	23.25	33.22	56.00	-22.78	QP
12	1.9260	9.97	18.05	28.02	46.00	-17.98	AVG

Note: Measurement Level = Reading Level + Correct Factor

Test Mode :	Mode 1		
AC Power :	AC 120V/60Hz	Phase:	NEUTRAL
Temperature :	26°C	Humidity:	60%
Pressure :	1010hpa	Date:	2021-06-29



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.5020	10.14	30.29	40.43	56.00	-15.57	QP
2	0.5020	10.14	23.20	33.34	46.00	-12.66	AVG
3	0.5220	10.14	28.59	38.73	56.00	-17.27	QP
4	0.5220	10.14	21.48	31.62	46.00	-14.38	AVG
5	1.0220	10.06	24.95	35.01	56.00	-20.99	QP
6	1.0220	10.06	19.18	29.24	46.00	-16.76	AVG
7	1.3060	10.07	24.85	34.92	56.00	-21.08	QP
8	1.3060	10.07	19.31	29.38	46.00	-16.62	AVG
9	1.6500	10.07	24.51	34.58	56.00	-21.42	QP
10	1.6500	10.07	19.14	29.21	46.00	-16.79	AVG
11	1.9580	10.08	22.43	32.51	56.00	-23.49	QP
12	1.9580	10.08	17.04	27.12	46.00	-18.88	AVG

Note: Measurement Level = Reading Level + Correct Factor

6. Test of Spurious Emission (Radiated)

6.1. Test Limit

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:
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 25MHz 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 27dBm/MHz at the band edge.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

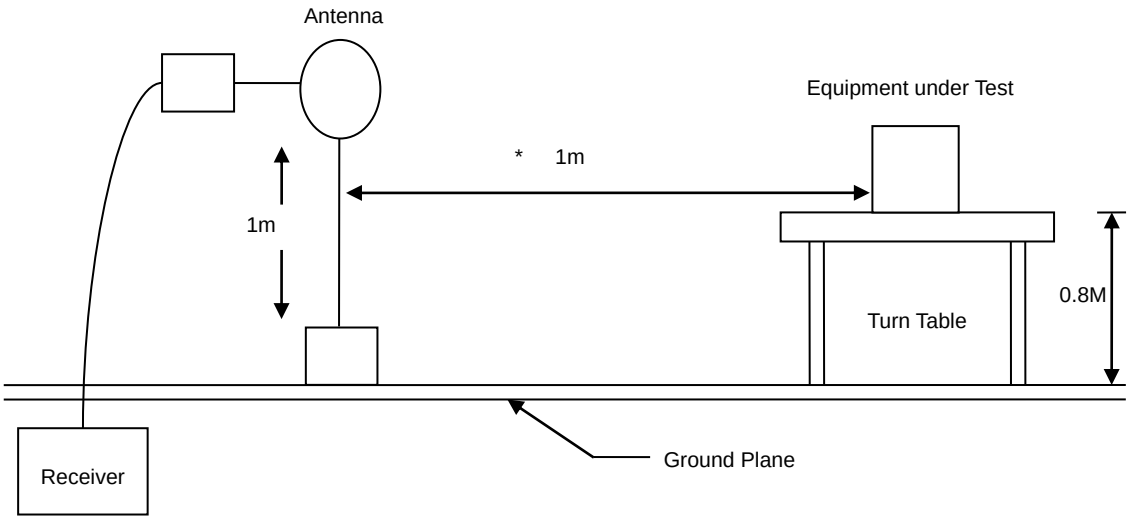
(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

6.2. Test Procedures

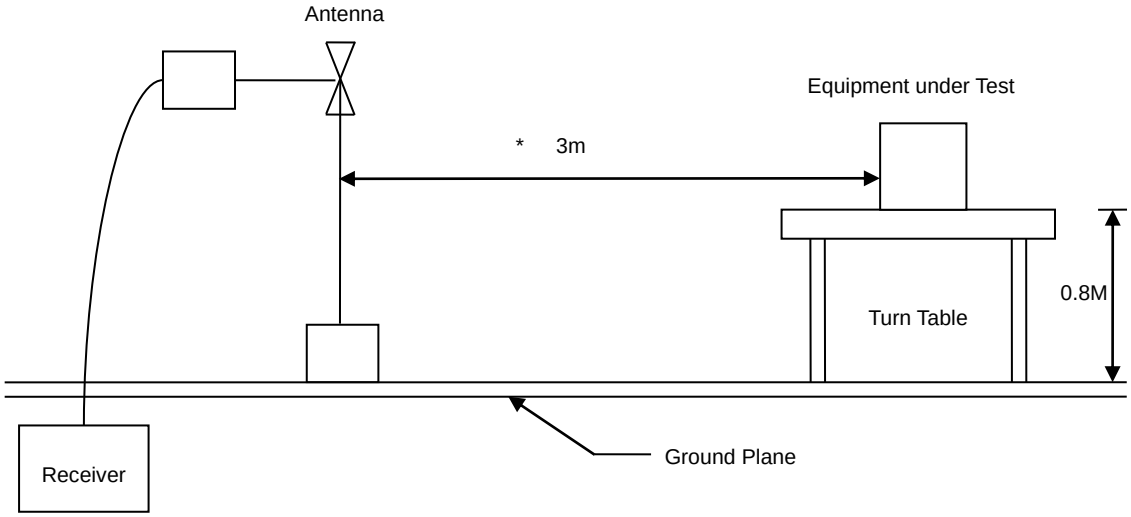
a. The EUT was placed on a rotatable table top 0.8 meter above ground.
b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
c. The table was rotated 360 degrees to determine the position of the highest radiation.
d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
i. “Cone of radiation” has been considered to be 3dB bandwidth of the measurement antenna.

6.3. Typical Test Setup

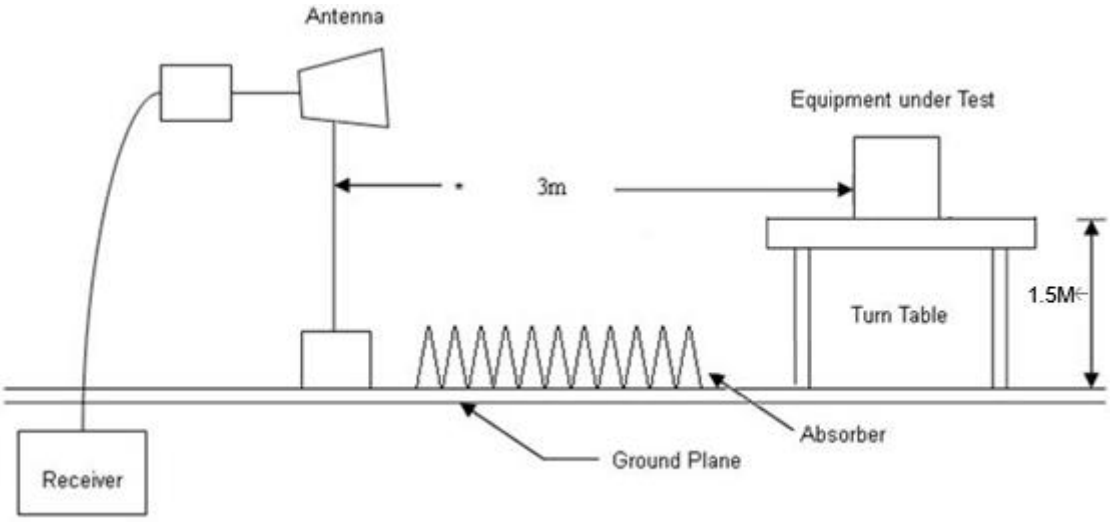
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup



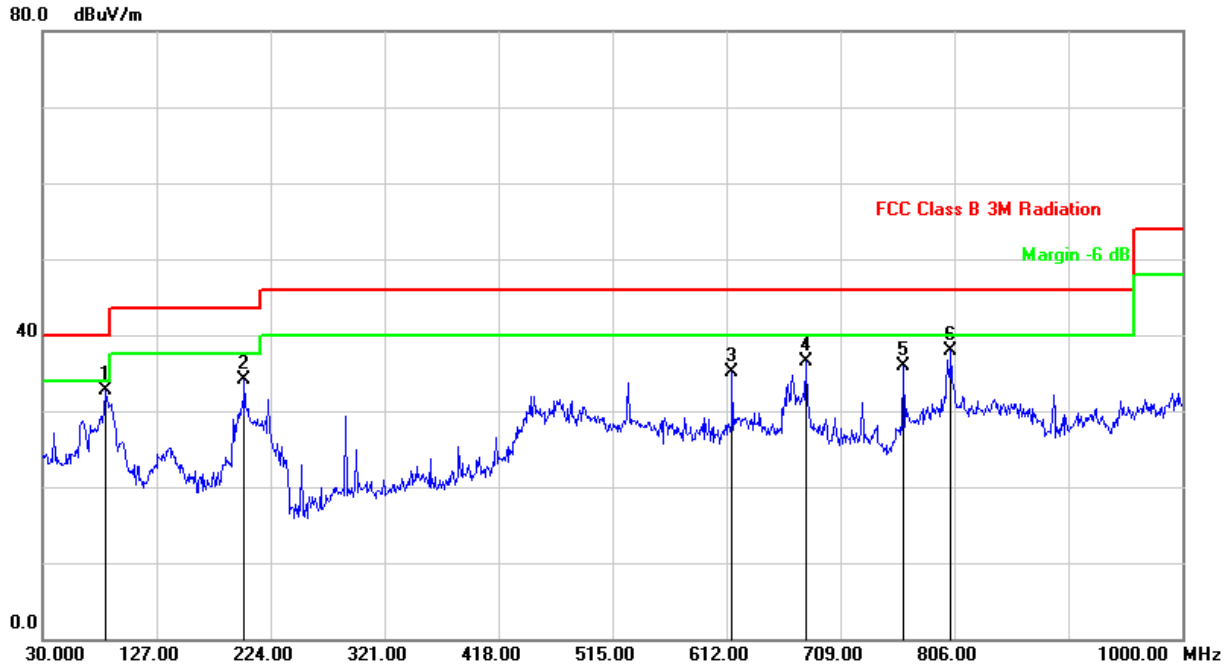
6.4. Test Result and Data (9kHz ~ 30MHz)

The 9kHz - 30MHz spurious emission is under limit 20dB more.

6.5. Test Result and Data (30MHz ~ 1GHz)

Power	AC120V/60Hz	Pol/Phase	VERTICAL
Test Mode	Mode 1		

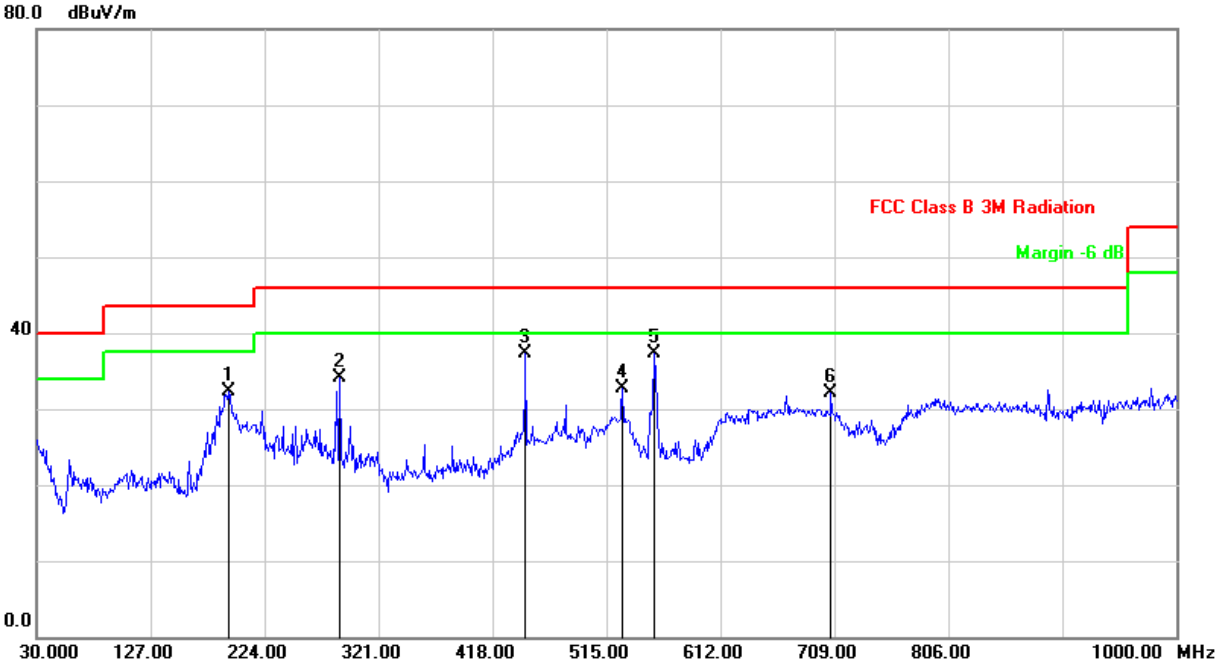
Note : Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	83.3499	-21.40	54.06	32.66	40.00	-7.34	peak	100	328
2	201.6896	-20.21	54.31	34.10	43.50	-9.40	peak	100	206
3	616.8500	1.42	33.62	35.04	46.00	-10.96	peak	200	118
4	679.8999	0.67	35.79	36.46	46.00	-9.54	peak	100	263
5	762.3500	-19.01	54.96	35.95	46.00	-10.05	peak	200	152
6	803.0900	-18.80	56.80	38.00	46.00	-8.00	peak	100	319

Power	AC120V/60Hz	Pol/Phase	HORIZONTAL
Test Mode	Mode 1		

Note : Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	192.9600	-20.32	52.59	32.27	43.50	-11.23	peak	100	275
2	288.0199	-5.87	39.94	34.07	46.00	-11.93	peak	200	134
3	446.1299	-1.61	38.88	37.27	46.00	-8.73	peak	200	76
4	528.5800	-2.95	35.60	32.65	46.00	-13.35	peak	200	328
5	555.7400	-1.90	39.19	37.29	46.00	-8.71	peak	200	214
6	706.0900	-19.32	51.40	32.08	46.00	-13.92	peak	100	357

6.6. Test Result and Data (1GHz ~ 40GHz)

Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH36 Band 1
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5150.000	1.73	60.86	62.59	74.00	-11.41	peak	H
2	5150.000	1.73	45.62	47.35	54.00	-6.65	AVG	H
3	10360.000	12.85	31.32	44.17	68.20	-24.03	peak	H
4	15540.000	25.25	27.58	52.83	74.00	-21.17	peak	H
5	15540.000	25.25	15.47	40.72	54.00	-13.28	AVG	H
1	5150.000	1.73	60.16	61.89	74.00	-12.11	peak	V
2	5150.000	1.73	45.65	47.38	54.00	-6.62	AVG	V
3	10360.000	12.85	33.29	46.14	68.20	-22.06	peak	V
4	15540.000	25.25	28.02	53.27	74.00	-20.73	peak	V
5	15540.000	25.25	17.83	43.08	54.00	-10.92	AVG	V

Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH44 Band 1
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5150.000	1.73	41.99	43.72	74.00	-30.28	peak	H
2	5150.000	1.73	28.30	30.03	54.00	-23.97	AVG	H
3	5350.000	1.89	42.43	44.32	74.00	-29.68	peak	H
4	5350.000	1.89	28.86	30.75	54.00	-23.25	AVG	H
5	10440.000	13.03	33.89	46.92	68.20	-21.28	peak	H
6	15660.000	25.30	26.57	51.87	74.00	-22.13	peak	H
7	15660.000	25.30	16.31	41.61	54.00	-12.39	AVG	H
1	5150.000	1.73	41.81	43.54	74.00	-30.46	peak	V
2	5150.000	1.73	27.40	29.13	54.00	-24.87	AVG	V
3	5350.000	1.89	41.64	43.53	74.00	-30.47	peak	V
4	5350.000	1.89	28.39	30.28	54.00	-23.72	AVG	V
5	10440.000	13.03	34.25	47.28	68.20	-20.92	peak	V
6	15660.000	25.30	26.76	52.06	74.00	-21.94	peak	V
7	15660.000	25.30	12.99	38.29	54.00	-15.71	AVG	V

Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH48 band 1
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5350.000	1.89	41.25	43.14	74.00	-30.86	peak	H
2	5350.000	1.89	29.39	31.28	54.00	-22.72	AVG	H
3	10480.000	13.12	33.26	46.38	68.20	-21.82	peak	H
4	15720.000	25.33	25.96	51.29	74.00	-22.71	peak	H
5	15720.000	25.33	4.84	30.17	54.00	-23.83	AVG	H
1	5350.000	1.89	41.09	42.98	74.00	-31.02	peak	V
2	5350.000	1.89	26.73	28.62	54.00	-25.38	AVG	V
3	10480.000	13.12	33.15	46.27	68.20	-21.93	peak	V
4	15720.000	25.33	27.34	52.67	74.00	-21.33	peak	V
5	15720.000	25.33	17.61	42.94	54.00	-11.06	AVG	V

Power	AC120V/60Hz
Test Mode	Mode 2, 802.11ac VHT20 CH36 Band 1

Note : Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5150.000	1.73	66.19	67.92	74.00	-6.08	peak	H
2	5150.000	1.73	49.30	51.03	54.00	-2.97	AVG	H
3	10360.000	12.85	32.97	45.82	68.20	-22.38	peak	H
4	15540.000	25.25	26.50	51.75	74.00	-22.25	peak	H
5	15540.000	25.25	16.93	42.18	54.00	-11.82	AVG	H
1	5150.000	1.73	59.31	61.04	74.00	-12.96	peak	V
2	5150.000	1.73	45.56	47.29	54.00	-6.71	AVG	V
3	10360.000	12.85	33.07	45.92	68.20	-22.28	peak	V
4	15540.000	25.25	28.20	53.45	74.00	-20.55	peak	V
5	15540.000	25.25	16.82	42.07	54.00	-11.93	AVG	V

Power	AC120V/60Hz
Test Mode	Mode 2, 802.11ac VHT20 CH44 Band 1
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5150.000	1.73	44.15	45.88	74.00	-28.12	peak	H
2	5150.000	1.73	29.45	31.18	54.00	-22.82	AVG	H
3	5350.000	1.89	41.30	43.19	74.00	-30.81	peak	H
4	5350.000	1.89	27.73	29.62	54.00	-24.38	AVG	H
5	10440.000	13.03	33.69	46.72	68.20	-21.48	peak	H
6	15660.000	25.30	27.98	53.28	74.00	-20.72	peak	H
7	15660.000	25.30	15.76	41.06	54.00	-12.94	AVG	H
1	5150.000	1.73	43.94	45.67	74.00	-28.33	peak	V
2	5150.000	1.73	30.13	31.86	54.00	-22.14	AVG	V
3	5350.000	1.89	40.97	42.86	74.00	-31.14	peak	V
4	5350.000	1.89	25.83	27.72	54.00	-26.28	AVG	V
5	10440.000	13.03	33.20	46.23	68.20	-21.97	peak	V
6	15660.000	25.30	30.35	55.65	74.00	-18.35	peak	V
7	15660.000	25.30	18.97	44.27	54.00	-9.73	AVG	V

Power	AC120V/60Hz
Test Mode	Mode 2, 802.11ac VHT20 CH48 band 1

Note : Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5350.000	1.89	42.05	43.94	74.00	-30.06	peak	H
2	5350.000	1.89	27.76	29.65	54.00	-24.35	AVG	H
3	10480.000	13.12	33.15	46.27	68.20	-21.93	peak	H
4	15720.000	25.33	27.92	53.25	74.00	-20.75	peak	H
5	15720.000	25.33	16.58	41.91	54.00	-12.09	AVG	H
1	5350.000	1.89	41.19	43.08	74.00	-30.92	peak	V
2	5350.000	1.89	28.18	30.07	54.00	-23.93	AVG	V
3	10480.000	13.12	33.05	46.17	68.20	-22.03	peak	V
4	15720.000	25.33	27.95	53.28	74.00	-20.72	peak	V
5	15720.000	25.33	17.01	42.34	54.00	-11.66	AVG	V

Power	AC120V/60Hz
Test Mode	Mode 3, 802.11ac VHT40 CH38 Band 1
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5150.000	1.73	60.86	62.59	74.00	-11.41	peak	H
2	5150.000	1.73	47.03	48.76	54.00	-5.24	AVG	H
3	10380.000	12.89	33.26	46.15	68.20	-22.05	peak	H
4	15570.000	25.26	26.56	51.82	74.00	-22.18	peak	H
5	15570.000	25.26	16.11	41.37	54.00	-12.63	AVG	H
1	5150.000	1.73	55.89	57.62	74.00	-16.38	peak	V
2	5150.000	1.73	41.64	43.37	54.00	-10.63	AVG	V
3	10380.000	12.89	33.49	46.38	68.20	-21.82	peak	V
4	15570.000	25.26	28.01	53.27	74.00	-20.73	peak	V
5	15570.000	25.26	17.58	42.84	54.00	-11.16	AVG	V

Power	AC120V/60Hz
Test Mode	Mode 3, 802.11ac VHT40 CH46 Band 1
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5150.000	1.73	47.06	48.79	74.00	-25.21	peak	H
2	5150.000	1.73	31.97	33.70	54.00	-20.30	AVG	H
3	5350.000	1.89	41.47	43.36	74.00	-30.64	peak	H
4	5350.000	1.89	26.47	28.36	54.00	-25.64	AVG	H
5	10460.000	13.07	32.05	45.12	68.20	-23.08	peak	H
6	15690.000	25.32	27.05	52.37	74.00	-21.63	peak	H
7	15690.000	25.32	16.74	42.06	54.00	-11.94	AVG	H
1	5150.000	1.73	45.09	46.82	74.00	-27.18	peak	V
2	5150.000	1.73	30.94	32.67	54.00	-21.33	AVG	V
3	5350.000	1.89	41.28	43.17	74.00	-30.83	peak	V
4	5350.000	1.89	27.19	29.08	54.00	-24.92	AVG	V
5	10460.000	13.07	33.01	46.08	68.20	-22.12	peak	V
6	15690.000	25.32	27.85	53.17	74.00	-20.83	peak	V
7	15690.000	25.32	16.30	41.62	54.00	-12.38	AVG	V

Power	AC120V/60Hz
Test Mode	Mode 4, 802.11ac VHT80 CH42 band 1

Note : Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5150.000	1.73	60.52	62.25	74.00	-11.75	peak	H
2	5150.000	1.73	45.33	47.06	54.00	-6.94	AVG	H
3	5350.000	1.89	53.89	55.78	74.00	-18.22	peak	H
4	5350.000	1.89	38.23	40.12	54.00	-13.88	AVG	H
5	10420.000	12.98	31.19	44.17	68.20	-24.03	peak	H
6	15630.000	25.29	24.06	49.35	74.00	-24.65	peak	H
7	15630.000	25.29	14.83	40.12	54.00	-13.88	AVG	H
1	5150.000	1.73	64.52	66.25	74.00	-7.75	peak	V
2	5150.000	1.73	49.34	51.07	54.00	-2.93	AVG	V
3	5350.000	1.89	55.85	57.74	74.00	-16.26	peak	V
4	5350.000	1.89	41.28	43.17	54.00	-10.83	AVG	V
5	10420.000	12.98	31.27	44.25	68.20	-23.95	peak	V
6	15630.000	25.29	25.88	51.17	74.00	-22.83	peak	V
7	15630.000	25.29	17.07	42.36	54.00	-11.64	AVG	V

Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH149 Band 4

Note : Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5650.000	2.39	41.99	44.38	68.20	-23.82	peak	H
2	5700.000	2.52	44.73	47.25	105.20	-57.95	peak	H
3	5720.000	2.57	57.05	59.62	110.80	-51.18	peak	H
4	5725.000	2.58	61.51	64.09	122.20	-58.11	peak	H
5	11490.000	15.84	32.53	48.37	74.00	-25.63	peak	H
6	11490.000	15.84	20.44	36.28	54.00	-17.72	AVG	H
7	17235.000	30.26	18.91	49.17	68.20	-19.03	peak	H
1	5650.000	2.39	42.65	45.04	68.20	-23.16	peak	V
2	5700.000	2.52	45.97	48.49	105.20	-56.71	peak	V
3	5720.000	2.57	56.77	59.34	110.80	-51.46	peak	V
4	5725.000	2.58	62.11	64.69	122.20	-57.51	peak	V
5	11490.000	15.84	33.29	49.13	74.00	-24.87	peak	V
6	11490.000	15.84	22.77	38.61	54.00	-15.39	AVG	V
7	17235.000	30.26	21.49	51.75	68.20	-16.45	peak	V

Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH157 Band 4
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5650.000	2.39	41.85	44.24	68.20	-23.96	peak	H
2	5700.000	2.52	43.70	46.22	105.20	-58.98	peak	H
3	5720.000	2.57	44.02	46.59	110.80	-64.21	peak	H
4	5725.000	2.58	43.00	45.58	122.20	-76.62	peak	H
5	5850.000	2.89	43.93	46.82	122.20	-75.38	peak	H
6	5855.000	2.90	44.35	47.25	110.80	-63.55	peak	H
7	5875.000	2.95	42.98	45.93	105.20	-59.27	peak	H
8	5925.000	3.07	43.45	46.52	68.20	-21.68	peak	H
9	11570.000	16.00	28.17	44.17	74.00	-29.83	peak	H
10	11570.000	16.00	18.62	34.62	54.00	-19.38	AVG	H
11	17355.000	30.74	19.54	50.28	68.20	-17.92	peak	H
1	5650.000	2.39	42.29	44.68	68.20	-23.52	peak	V
2	5700.000	2.52	42.73	45.25	105.20	-59.95	peak	V
3	5720.000	2.57	44.13	46.70	110.80	-64.10	peak	V
4	5725.000	2.58	43.61	46.19	122.20	-76.01	peak	V
5	5850.000	2.89	42.71	45.60	122.20	-76.60	peak	V
6	5855.000	2.90	43.00	45.90	110.80	-64.90	peak	V
7	5875.000	2.95	42.19	45.14	105.20	-60.06	peak	V
8	5925.000	3.07	42.73	45.80	68.20	-22.40	peak	V
9	11570.000	16.00	29.37	45.37	74.00	-28.63	peak	V
10	11570.000	16.00	19.18	35.18	54.00	-18.82	AVG	V
11	17355.000	30.74	21.02	51.76	68.20	-16.44	peak	V

Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH165 band 4

Note : Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5850.000	2.89	59.44	62.33	122.20	-59.87	peak	H
2	5855.000	2.90	50.56	53.46	110.80	-57.34	peak	H
3	5875.000	2.95	46.58	49.53	105.20	-55.67	peak	H
4	5925.000	3.07	43.21	46.28	68.20	-21.92	peak	H
5	11650.000	16.16	30.11	46.27	74.00	-27.73	peak	H
6	11650.000	16.16	19.30	35.46	54.00	-18.54	AVG	H
7	17475.000	31.21	16.38	47.59	68.20	-20.61	peak	H
1	5850.000	2.89	56.06	58.95	122.20	-63.25	peak	V
2	5855.000	2.90	49.85	52.75	110.80	-58.05	peak	V
3	5875.000	2.95	44.68	47.63	105.20	-57.57	peak	V
4	5925.000	3.07	44.10	47.17	68.20	-21.03	peak	V
5	11650.000	16.16	31.98	48.14	74.00	-25.86	peak	V
6	11650.000	16.16	19.65	35.81	54.00	-18.19	AVG	V
7	17475.000	31.21	20.06	51.27	68.20	-16.93	peak	V

Power	AC120V/60Hz
Test Mode	Mode 2, 802.11ac VHT20 CH149 Band 4

Note : Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5650.000	2.39	42.56	44.95	68.20	-23.25	peak	H
2	5700.000	2.52	48.08	50.60	105.20	-54.60	peak	H
3	5720.000	2.57	63.20	65.77	110.80	-45.03	peak	H
4	5725.000	2.58	64.01	66.59	122.20	-55.61	peak	H
5	11490.000	15.84	33.44	49.28	74.00	-24.72	peak	H
6	11490.000	15.84	19.29	35.13	54.00	-18.87	AVG	H
7	17235.000	30.26	20.36	50.62	68.20	-17.58	peak	H
1	5650.000	2.39	41.97	44.36	68.20	-23.84	peak	V
2	5700.000	2.52	50.34	52.86	105.20	-52.34	peak	V
3	5720.000	2.57	61.04	63.61	110.80	-47.19	peak	V
4	5725.000	2.58	67.39	69.97	122.20	-52.23	peak	V
5	11490.000	15.84	30.44	46.28	74.00	-27.72	peak	V
6	11490.000	15.84	16.20	32.04	54.00	-21.96	AVG	V
7	17235.000	30.26	19.46	49.72	68.20	-18.48	peak	V

Power	AC120V/60Hz
Test Mode	Mode 2, 802.11ac VHT20 CH157 Band 4
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5650.000	2.39	42.07	44.46	68.20	-23.74	peak	H
2	5700.000	2.52	43.39	45.91	105.20	-59.29	peak	H
3	5720.000	2.57	43.68	46.25	110.80	-64.55	peak	H
4	5725.000	2.58	43.25	45.83	122.20	-76.37	peak	H
5	5850.000	2.89	43.99	46.88	122.20	-75.32	peak	H
6	5855.000	2.90	44.23	47.13	110.80	-63.67	peak	H
7	5875.000	2.95	43.29	46.24	105.20	-58.96	peak	H
8	5925.000	3.07	43.15	46.22	68.20	-21.98	peak	H
9	11570.000	16.00	31.29	47.29	74.00	-26.71	peak	H
10	11570.000	16.00	19.07	35.07	54.00	-18.93	AVG	H
11	17355.000	30.74	18.64	49.38	68.20	-18.82	peak	H
1	5650.000	2.39	42.32	44.71	68.20	-23.49	peak	V
2	5700.000	2.52	43.01	45.53	105.20	-59.67	peak	V
3	5720.000	2.57	43.76	46.33	110.80	-64.47	peak	V
4	5725.000	2.58	44.12	46.70	122.20	-75.50	peak	V
5	5850.000	2.89	43.37	46.26	122.20	-75.94	peak	V
6	5855.000	2.90	43.42	46.32	110.80	-64.48	peak	V
7	5875.000	2.95	43.42	46.37	105.20	-58.83	peak	V
8	5925.000	3.07	43.02	46.09	68.20	-22.11	peak	V
9	11570.000	16.00	29.28	45.28	74.00	-28.72	peak	V
10	11570.000	16.00	16.34	32.34	54.00	-21.66	AVG	V
11	17355.000	30.74	20.55	51.29	68.20	-16.91	peak	V

Power	AC120V/60Hz
Test Mode	Mode 2, 802.11ac VHT20 CH165 band 4

Note : Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5850.000	2.89	59.00	61.89	122.20	-60.31	peak	H
2	5855.000	2.90	53.10	56.00	110.80	-54.80	peak	H
3	5875.000	2.95	45.61	48.56	105.20	-56.64	peak	H
4	5925.000	3.07	44.04	47.11	68.20	-21.09	peak	H
5	11650.000	16.16	30.21	46.37	74.00	-27.63	peak	H
6	11650.000	16.16	19.01	35.17	54.00	-18.83	AVG	H
7	17475.000	31.21	17.97	49.18	68.20	-19.02	peak	H
1	5850.000	2.89	55.71	58.60	122.20	-63.60	peak	V
2	5855.000	2.90	49.93	52.83	110.80	-57.97	peak	V
3	5875.000	2.95	43.66	46.61	105.20	-58.59	peak	V
4	5925.000	3.07	42.66	45.73	68.20	-22.47	peak	V
5	11650.000	16.16	30.21	46.37	74.00	-27.63	peak	V
6	11650.000	16.16	17.56	33.72	54.00	-20.28	AVG	V
7	17475.000	31.21	20.05	51.26	68.20	-16.94	peak	V

Power	AC120V/60Hz
Test Mode	Mode 3, 802.11ac VHT40 CH151 Band 4
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5650.000	2.39	42.17	44.56	68.20	-23.64	peak	H
2	5700.000	2.52	45.13	47.65	105.20	-57.55	peak	H
3	5720.000	2.57	59.37	61.94	110.80	-48.86	peak	H
4	5725.000	2.58	64.53	67.11	122.20	-55.09	peak	H
5	11510.000	15.88	30.40	46.28	74.00	-27.72	peak	H
6	11510.000	15.88	18.28	34.16	54.00	-19.84	AVG	H
7	17265.000	30.38	19.19	49.57	68.20	-18.63	peak	H
1	5650.000	2.39	43.71	46.10	68.20	-22.10	peak	V
2	5700.000	2.52	44.70	47.22	105.20	-57.98	peak	V
3	5720.000	2.57	56.12	58.69	110.80	-52.11	peak	V
4	5725.000	2.58	61.52	64.10	122.20	-58.10	peak	V
5	11510.000	15.88	31.46	47.34	74.00	-26.66	peak	V
6	11510.000	15.88	19.49	35.37	54.00	-18.63	AVG	V
7	17265.000	30.38	19.94	50.32	68.20	-17.88	peak	V

Power	AC120V/60Hz
Test Mode	Mode 3, 802.11ac VHT40 CH159 Band 4
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5850.000	2.89	47.77	50.66	122.20	-71.54	peak	H
2	5855.000	2.90	44.83	47.73	110.80	-63.07	peak	H
3	5875.000	2.95	44.96	47.91	105.20	-57.29	peak	H
4	5925.000	3.07	43.21	46.28	68.20	-21.92	peak	H
5	11590.000	16.04	31.28	47.32	74.00	-26.68	peak	H
6	11590.000	16.04	18.11	34.15	54.00	-19.85	AVG	H
7	17385.000	30.85	20.57	51.42	68.20	-16.78	peak	H
1	5850.000	2.89	44.36	47.25	122.20	-74.95	peak	V
2	5855.000	2.90	43.19	46.09	110.80	-64.71	peak	V
3	5875.000	2.95	42.88	45.83	105.20	-59.37	peak	V
4	5925.000	3.07	42.57	45.64	68.20	-22.56	peak	V
5	11590.000	16.04	32.33	48.37	74.00	-25.63	peak	V
6	11590.000	16.04	18.25	34.29	54.00	-19.71	AVG	V
7	17385.000	30.85	23.00	53.85	68.20	-14.35	peak	V

Power	AC120V/60Hz
Test Mode	Mode 4, 802.11ac VHT80 CH55 band 4

Note : Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5650.000	2.39	49.84	52.23	68.20	-15.97	peak	H
2	5700.000	2.52	59.18	61.70	105.20	-43.50	peak	H
3	5720.000	2.57	63.83	66.40	110.80	-44.40	peak	H
4	5725.000	2.58	68.92	71.50	122.20	-50.70	peak	H
5	5850.000	2.89	61.83	64.72	122.20	-57.48	peak	H
6	5855.000	2.90	60.10	63.00	110.80	-47.80	peak	H
7	5875.000	2.95	55.83	58.78	105.20	-46.42	peak	H
8	5925.000	3.07	47.05	50.12	68.20	-18.08	peak	H
9	11550.000	15.96	32.20	48.16	74.00	-25.84	peak	H
10	11550.000	15.96	19.41	35.37	54.00	-18.63	AVG	H
11	17325.000	30.62	19.72	50.34	68.20	-17.86	peak	H
1	5650.000	2.39	48.92	51.31	68.20	-16.89	peak	V
2	5700.000	2.52	58.00	60.52	105.20	-44.68	peak	V
3	5720.000	2.57	63.42	65.99	110.80	-44.81	peak	V
4	5725.000	2.58	65.47	68.05	122.20	-54.15	peak	V
5	5850.000	2.89	58.77	61.66	122.20	-60.54	peak	V
6	5855.000	2.90	55.54	58.44	110.80	-52.36	peak	V
7	5875.000	2.95	49.79	52.74	105.20	-52.46	peak	V
8	5925.000	3.07	43.53	46.60	68.20	-21.60	peak	V
9	11550.000	15.96	31.17	47.13	74.00	-26.87	peak	V
10	11550.000	15.96	17.96	33.92	54.00	-20.08	AVG	V
11	17325.000	30.62	19.64	50.26	68.20	-17.94	peak	V

6.7. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.150
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

**: Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

7. On Time, Duty Cycle and Measurement methods

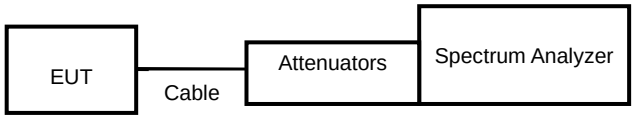
7.1. Test Limit

None; for reporting purposes only.

7.2. Test Procedure

KDB 789033 Zero-Span Spectrum Analyzer Method.

7.3. Test Setup Layout



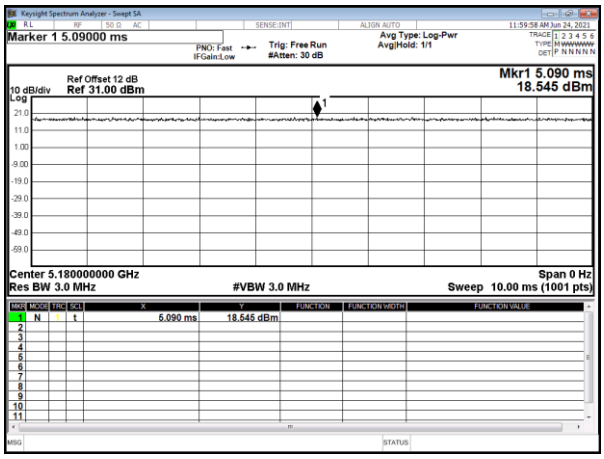
7.4. Test Result and Data

Modulation Mode	On Time (msec)	Period Time (msec)	Duty Cycle (%)
802.11a	100.00	100.00	100.00%
802.11ac VHT20	100.00	100.00	100.00%
802.11ac VHT40	100.00	100.00	100.00%
802.11ac VHT80	100.00	100.00	100.00%

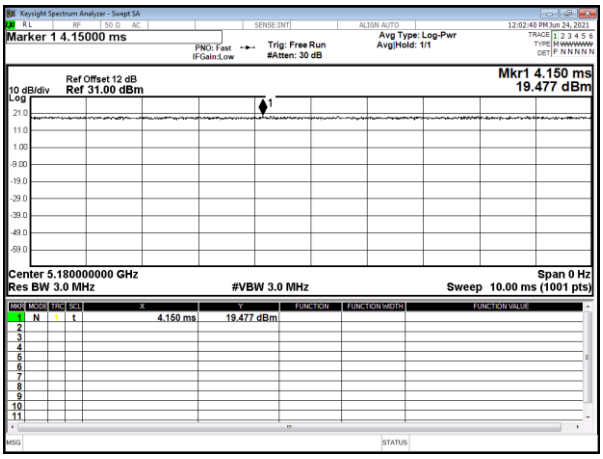
7.5. Measurement Methods

26 dB and 6dB Emission BW	KDB 789033 D02 v01, Section C
99% Occupied BW	KDB 789033 D02 v01, Section D
Conducted Output Power	KDB 789033 D02 v01, Section E.2.d and E.3.b (Method PM-G)
Power Spectral Density	KDB 789033 D02 v01, Section F
Unwanted emissions in restricted bands	KDB 789033 D02 v01, Sections G and H
Unwanted emissions in non-restricted bands	KDB 789033 D02 v01, Sections G and H

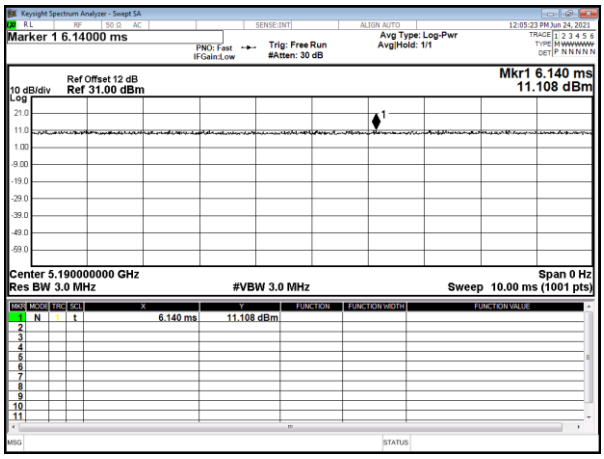
Modulation Type: 802.11a (6Mbps)



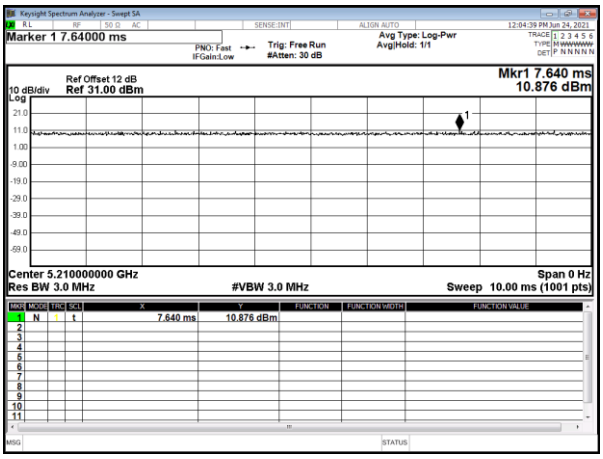
Modulation Type: 802.11ac VHT20 (6.5Mbps)



Modulation Type: 802.11ac VHT40 (13.5Mbps)



Modulation Type: 802.11ac VHT80 (29.3Mbps)



8. 6dB Bandwidth & 99% Occupied Bandwidth

8.1. Test Limit

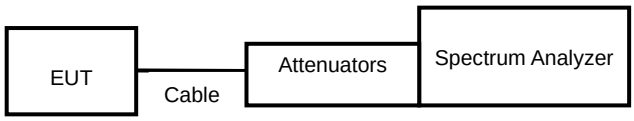
FCC §15.407

The minimum 6 dB bandwidth shall be at least 500 kHz.

8.2. Test Procedure

Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW set to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

8.3. Test Setup Layout



8.4. Test Result and Data (6dB Bandwidth)

In the 5.8GHz Band

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)
			ANT A
802.11a	149	5745	16.38
	157	5785	16.44
	165	5825	16.49
802.11ac VHT20	149	5745	17.64
	157	5785	17.83
	165	5825	17.61
802.11ac VHT40	151	5755	36.45
	159	5795	36.45
802.11ac VHT80	155	5775	76.38

8.5. Test Result and Data (99% Occupied Bandwidth)

In the 5.8GHz Band

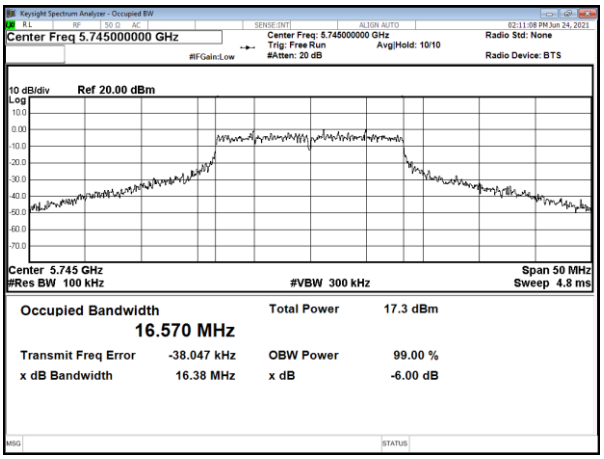
Modulation Type	Channel	Frequency (MHz)	99% Bandwidth (MHz)
			ANT A
802.11a	149	5745	16.93
	157	5785	16.65
	165	5825	16.76
802.11ac VHT20	149	5745	18.07
	157	5785	18.08
	165	5825	18.35
802.11ac VHT40	151	5755	38.79
	159	5795	37.85
802.11ac VHT80	155	5775	76.29

6dB Bandwidth

5.8G Band: ANT A

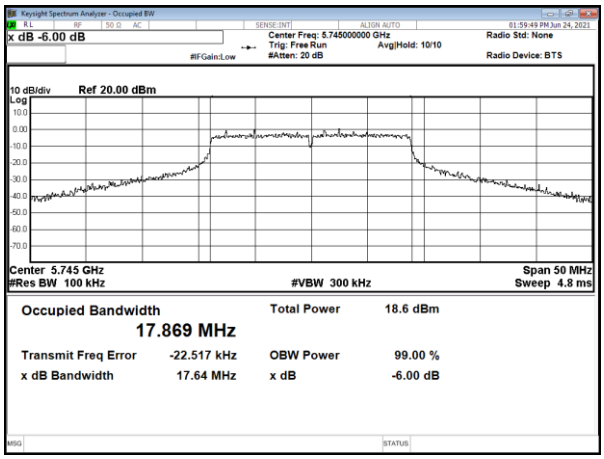
Modulation Standard: 802.11a

CH149

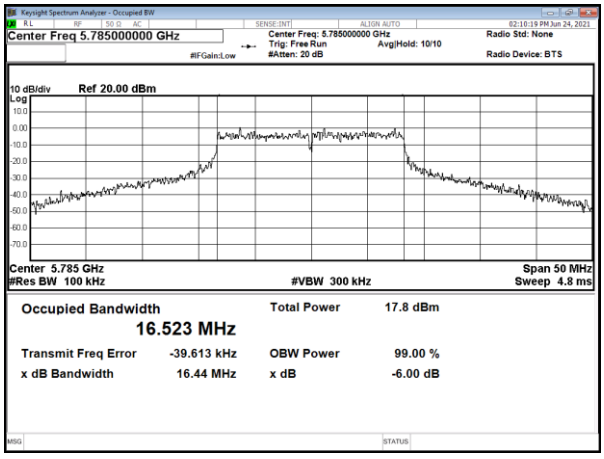


Modulation Standard: 802.11ac VHT20

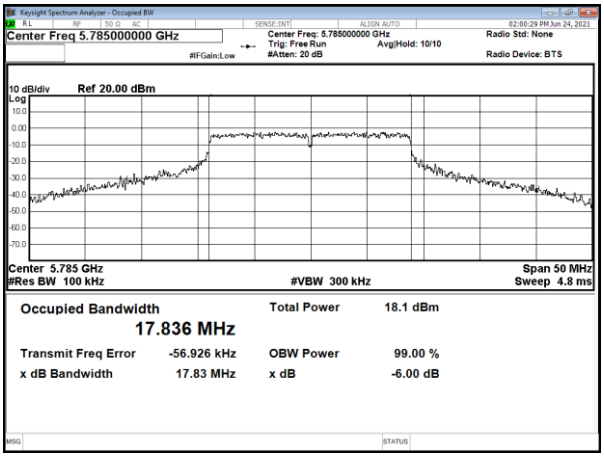
CH149



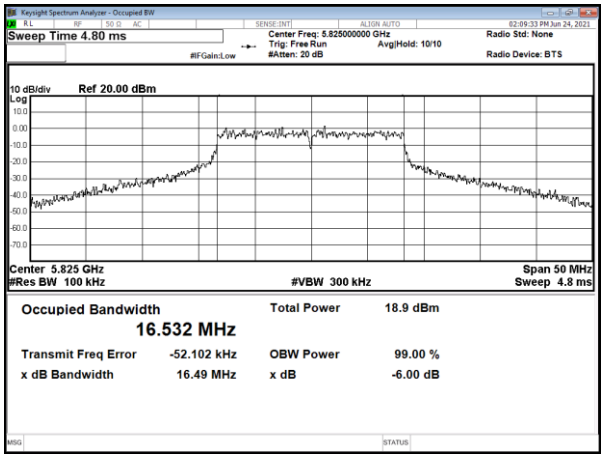
CH157



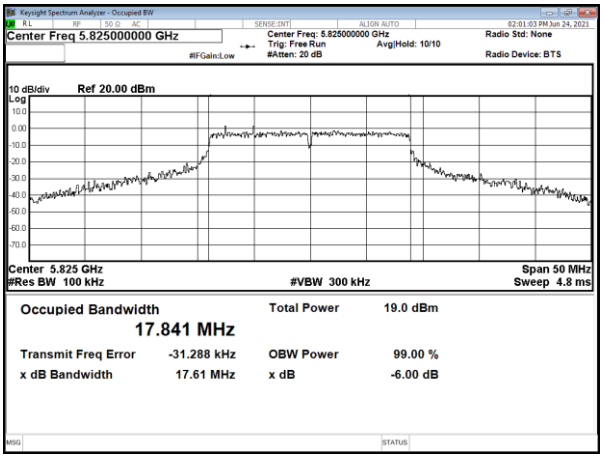
CH157



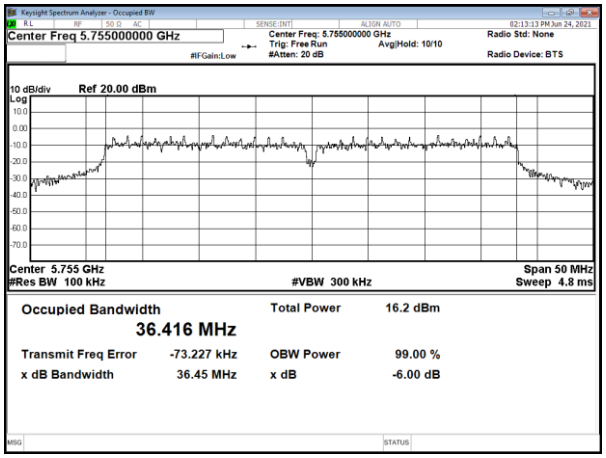
CH165



CH165

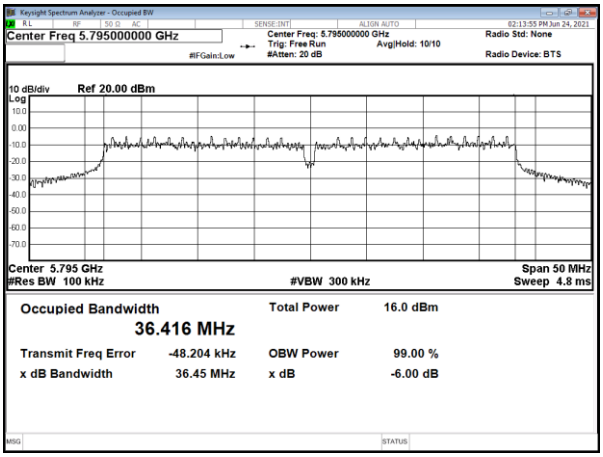


Modulation Standard: 802.11ac VHT40
CH151



Modulation Standard: 802.11ac VHT80
CH155

CH159

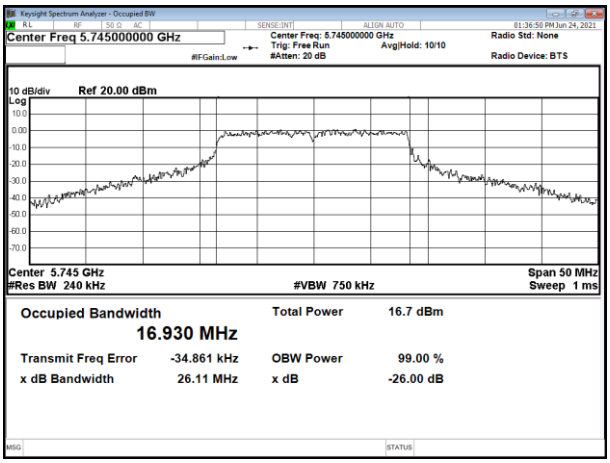


99% Bandwidth

5.8G Band: ANT A

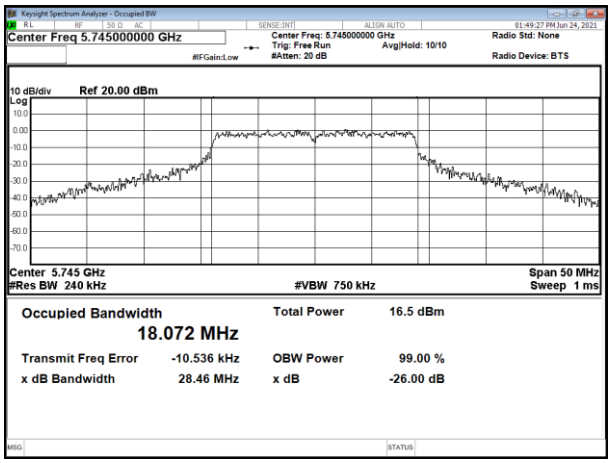
Modulation Standard: 802.11a

CH149



Modulation Standard: 802.11ac VHT20

CH149



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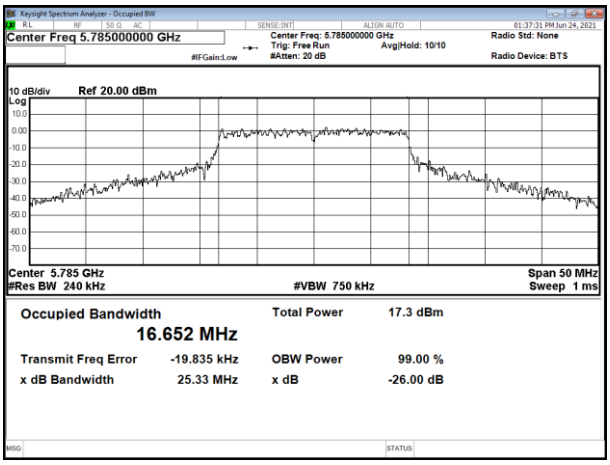

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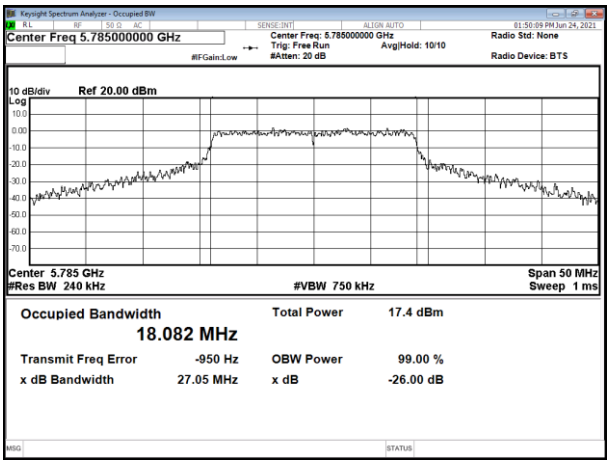
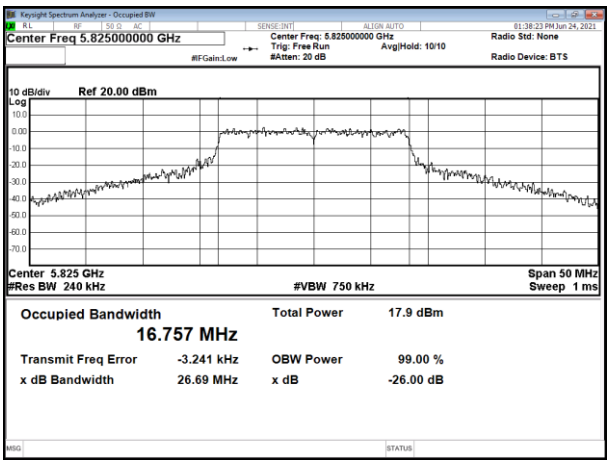
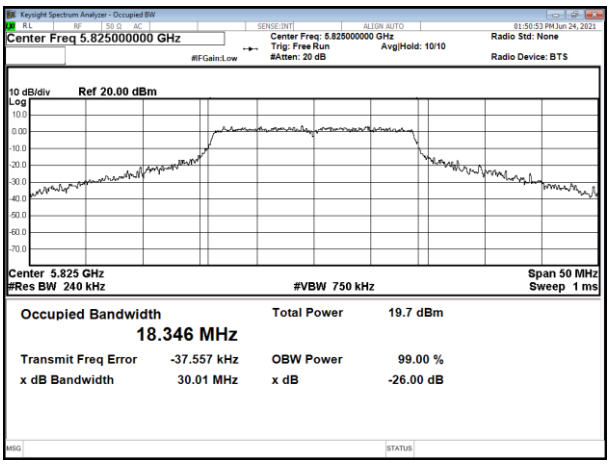


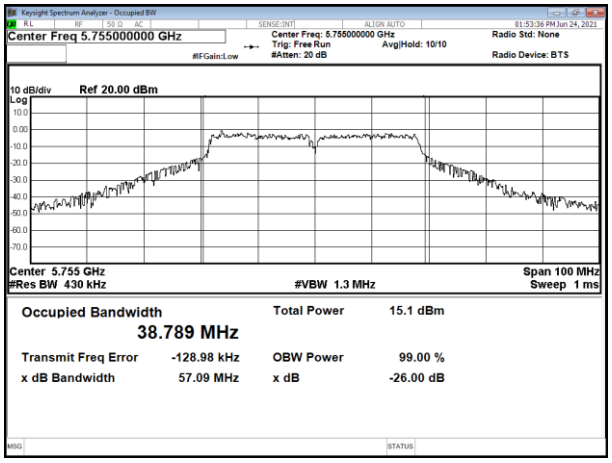
CH165



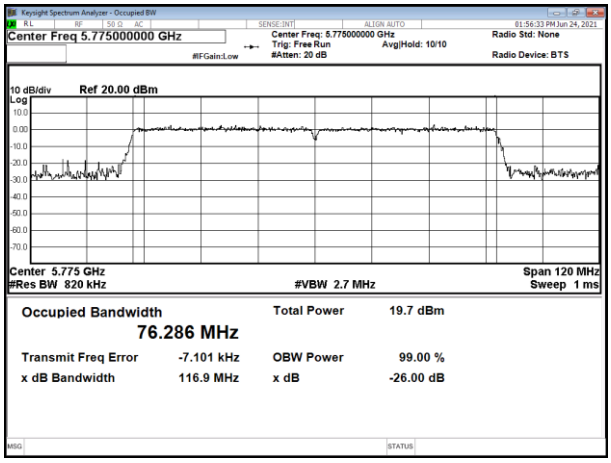
CH165



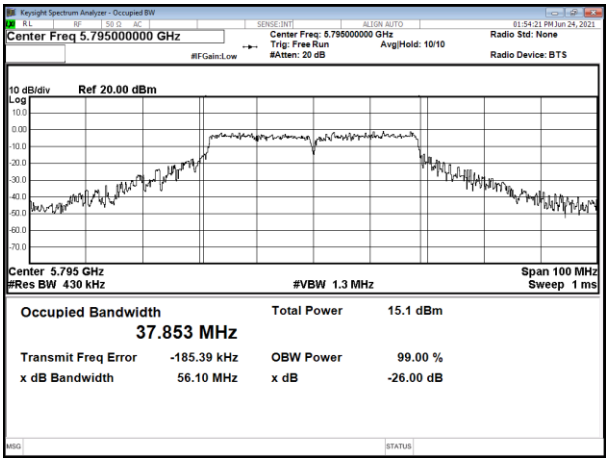
Modulation Standard: 802.11ac VHT40
CH151



Modulation Standard: 802.11ac VHT80
CH155



CH159



9. 26dB Bandwidth & 99% Occupied Bandwidth

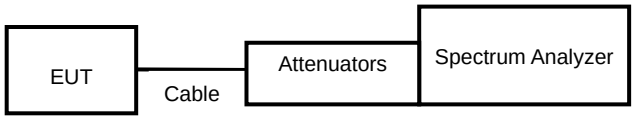
9.1. Test Limit

None; for reporting purposes only.

9.2. Test Procedure

Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW = approximately 1% of the emission bandwidth, the VBW >= 3 x RBW, peak detector and max hold.

9.3. Test Setup Layout



9.4. Test Result and Data (26dB Bandwidth)

In the 5.2GHz Band

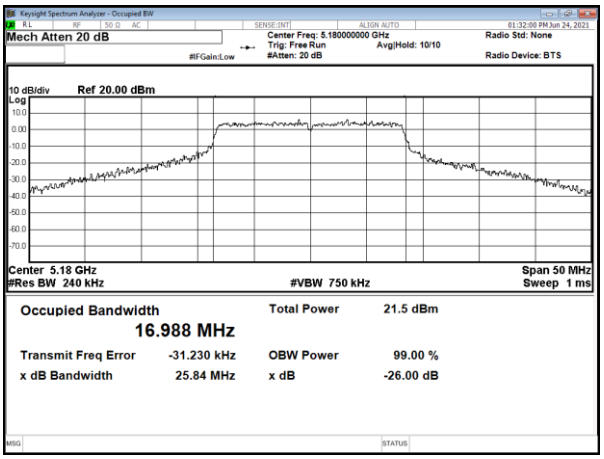
Modulation Type	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
			ANT A
802.11a	36	5180	25.84
	44	5220	27.11
	48	5240	26.37
802.11ac VHT20	36	5180	33.13
	44	5220	34.17
	48	5240	36.04
802.11ac VHT40	38	5190	56.13
	46	5230	55.92
802.11ac VHT80	42	5210	116.6

9.5. Test Result and Data (99% Occupied Bandwidth)

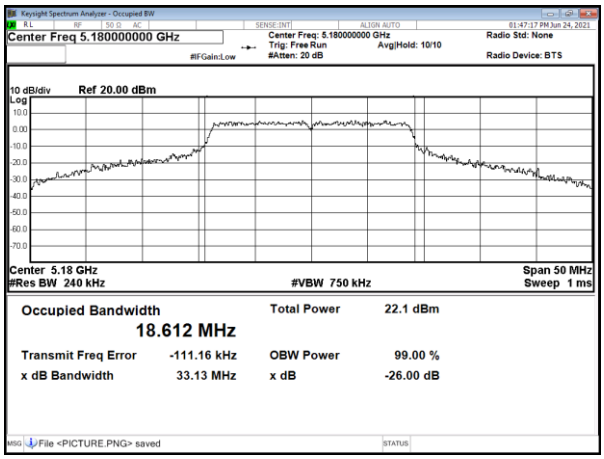
In the 5.2GHz Band

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth (MHz)
			ANT A
802.11a	36	5180	16.988
	44	5220	16.854
	48	5240	16.869
802.11ac VHT20	36	5180	18.612
	44	5220	18.448
	48	5240	18.624
802.11ac VHT40	38	5190	38.435
	46	5230	38.238
802.11ac VHT80	42	5210	76.237

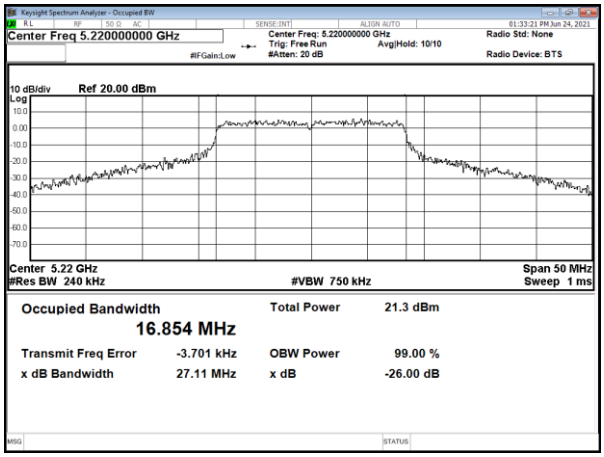
26dB &99%Bandwidth
5.2G Band: ANT A
Modulation Standard: 802.11a
CH36



Modulation Standard: 802.11ac VHT20
CH36



CH44



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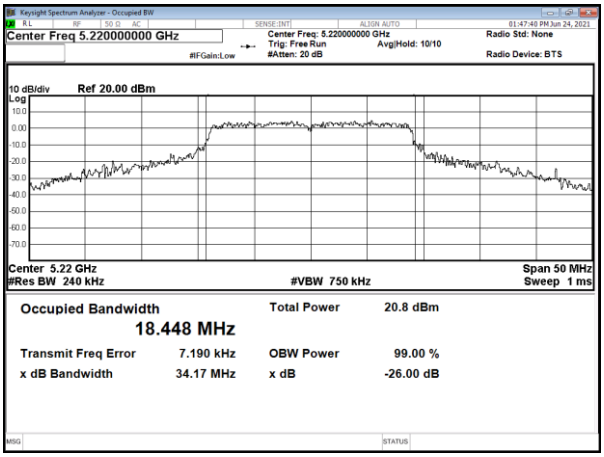
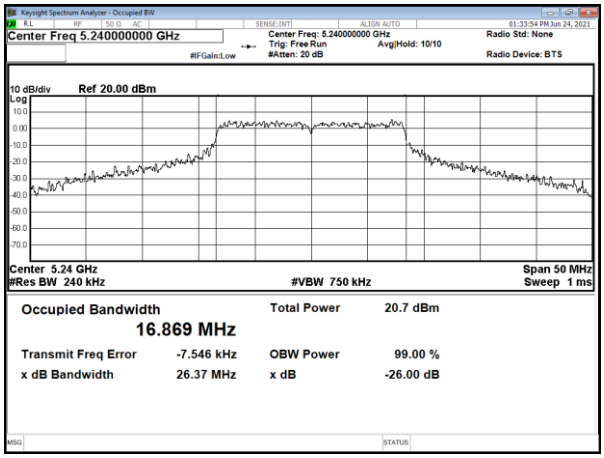


CH48



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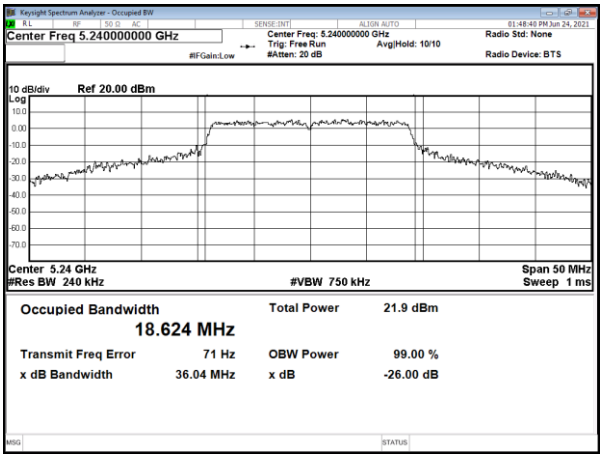
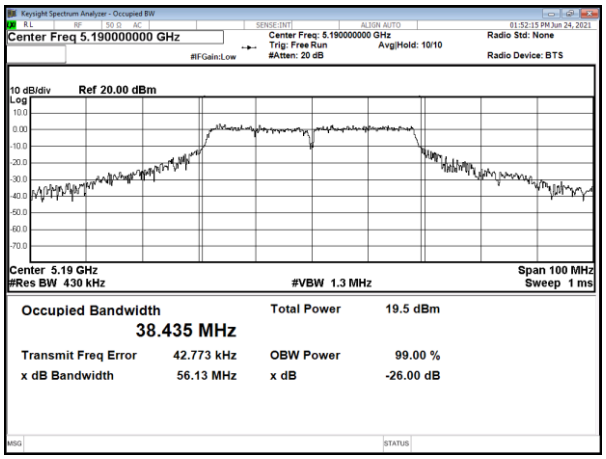
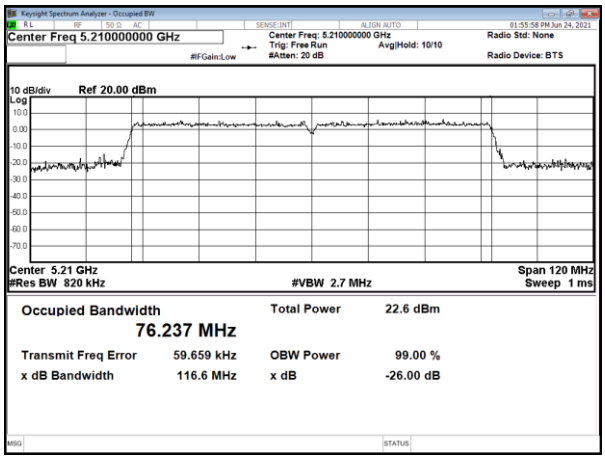


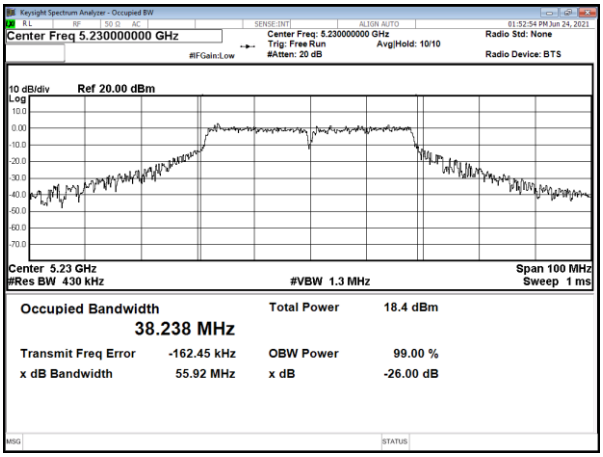
Modulation Standard: 802.11ac VHT40
CH38



Modulation Standard: 802.11ac VHT80
CH42



CH46



10. Average Power

10.1. Test Limit

Output Power:

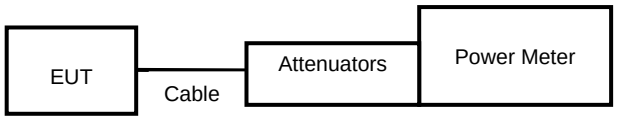
Frequency Band			Limit
☒	5.15~5.25GHz		
	Operating Mode		
	☐	Outdoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi 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. The maximum e.i.r.p. at any elevation angle above 30degrees as measured from the horizon must not exceed125 mW (21 dBm).
	☐	Indoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. 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.
	☐	Fixed point-to-point access points	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.
	☒	client devices	The maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24dBm) provided the maximum antenna gain does not exceed 6 dBi. 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.

Frequency Band		Limit
☐	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. 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.
☐	5.470-5.725 GHz	
☒	5.725~5.85 GHz	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). 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.

10.2. Test Procedure

The transmitter output is connected to a power meter.
The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

10.3. Test Setup Layout



10.4.Test Result and Data

In the 5.2GHz Band

Modulation Type	Setting	Channel	Frequency (MHz)	Avg Power Output (dBm) ANT A	Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
802.11a	11	36	5180	13.18	13.18	20.797	24.00
	11	44	5220	12.95	12.95	19.724	24.00
	11	48	5240	12.83	12.83	19.187	24.00
802.11n HT20	10	36	5180	14.45	14.45	27.861	24.00
	10	44	5220	14.82	14.82	30.339	24.00
	10	48	5240	14.71	14.71	29.580	24.00
802.11n HT40	10	38	5190	8.04	8.04	6.368	24.00
	10	46	5230	7.59	7.59	5.741	24.00
802.11ac VHT20	10	36	5180	14.49	14.49	28.119	24.00
	10	44	5220	14.85	14.85	30.549	24.00
	10	48	5240	14.77	14.77	29.992	24.00
802.11ac VHT40	10	38	5190	8.13	8.13	6.501	24.00
	10	46	5230	7.63	7.63	5.794	24.00
802.11ac VHT80	15	42	5210	14.43	14.43	27.733	24.00

In the 5.8GHz Band

Modulation Type	Setting	Channel	Frequency (MHz)	Avg Power Output (dBm) ANT A	Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
802.11a	11	149	5745	8.66	8.66	7.345	30.00
	11	157	5785	9.90	9.90	9.772	30.00
	11	165	5825	10.50	10.50	11.220	30.00
802.11n HT20	10	149	5745	11.37	11.37	13.709	30.00
	10	157	5785	11.62	11.62	14.521	30.00
	10	165	5825	12.04	12.04	15.996	30.00
802.11n HT40	10	151	5755	3.80	3.80	2.399	30.00
	10	159	5795	3.81	3.81	2.404	30.00
802.11ac VHT20	10	149	5745	11.41	11.41	13.836	30.00
	10	157	5785	11.65	11.65	14.622	30.00
	10	165	5825	12.08	12.08	16.144	30.00
802.11ac VHT40	10	151	5755	3.83	3.83	2.415	30.00
	10	159	5795	3.84	3.84	2.421	30.00
802.11ac VHT80	15	155	5775	11.22	11.22	13.243	30.00

11. Maximum Power Spectral Density

11.1. Test Limit

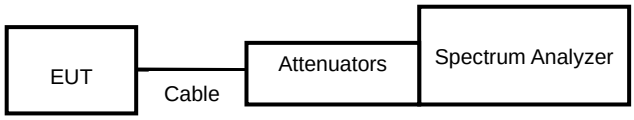
PSD:

Frequency Band			Limit
☒	5.15~5.25GHz		
	Operating Mode		
	☐	Outdoor access point	17 dBm/MHz
	☐	Indoor access point	17 dBm/MHz
	☐	Fixed point-to-point access points	17 dBm/MHz
	☒	client devices	11 dBm/MHz
☐	5.250~5.350 GHz		11 dBm/MHz
☐	5.470~5.725 GHz		11 dBm/MHz
☒	5.725~5.85 GHz		30 dBm/500kHz

11.2. Test Procedure

Reference to KDB789033 D02 General UNII Test Procedures New Rules v02r01

11.3. Test Setup Layout



11.4. Test Result and Data

In the 5.2G Band

Modulation Type	CH	Freq. (MHz)	Meas PPSD (dBm/MHz) ANT A	Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PPSD (dBm/MHz)	PPSD Limit (dBm/MHz)
802.11a	36	5180	3.61	3.61	0.00	3.61	11.00
	44	5220	3.20	3.20	0.00	3.20	11.00
	48	5240	3.25	3.25	0.00	3.25	11.00
802.11ac VHT20	36	5180	4.45	4.45	0.00	4.45	11.00
	44	5220	3.47	3.47	0.00	3.47	11.00
	48	5240	3.46	3.46	0.00	3.46	11.00
802.11ac VHT40	38	5190	-5.42	-5.42	0.00	-5.42	11.00
	46	5230	-4.82	-4.82	0.00	-4.82	11.00
802.11ac VHT80	42	5210	-2.52	-2.52	0.00	-2.52	11.00

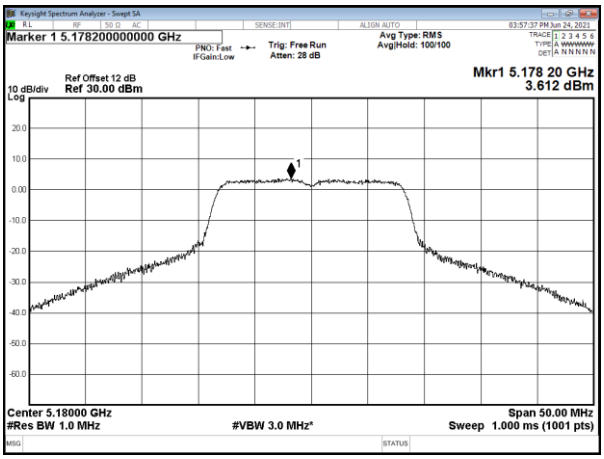
In the 5.8G Band

Modulation Type	CH	Freq. (MHz)	Meas PPSD (dBm/ MHz) ANT A	Sum chain (dBm)	Duty Cycle CF(dB)	10log(500K Hz/RBW) CF (dB)	Total Corr'd PPSD (dBm/ 500kHz)	PPSD Limit (dBm/ 500kHz)
802.11a	149	5745	0.03	0.03	0.00	-3.01	-2.98	30.00
	157	5785	0.01	0.01	0.00	-3.01	-3.00	30.00
	165	5825	0.33	0.33	0.00	-3.01	-2.68	30.00
802.11ac VHT20	149	5745	-0.36	-0.36	0.00	-3.01	-3.37	30.00
	157	5785	0.15	0.15	0.00	-3.01	-2.86	30.00
	165	5825	0.63	0.63	0.00	-3.01	-2.39	30.00
802.11ac VHT40	151	5755	-8.62	-8.62	0.00	-3.01	-11.63	30.00
	159	5795	-8.37	-8.37	0.00	-3.01	-11.38	30.00
802.11ac VHT80	155	5775	-5.98	-5.98	0.00	-3.01	-8.99	30.00

Band 1, ANT A

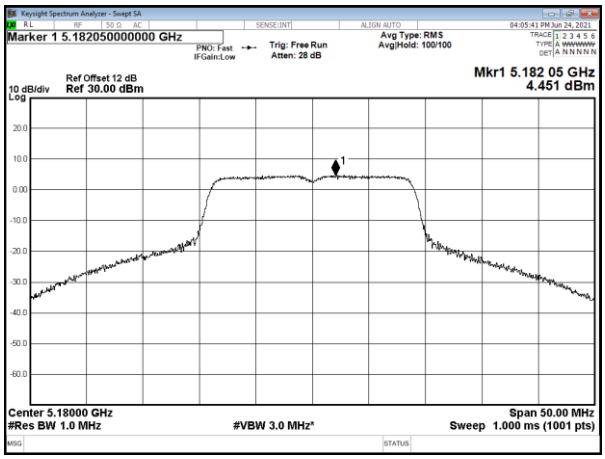
Modulation Standard: 802.11a (6Mbps)

CH36

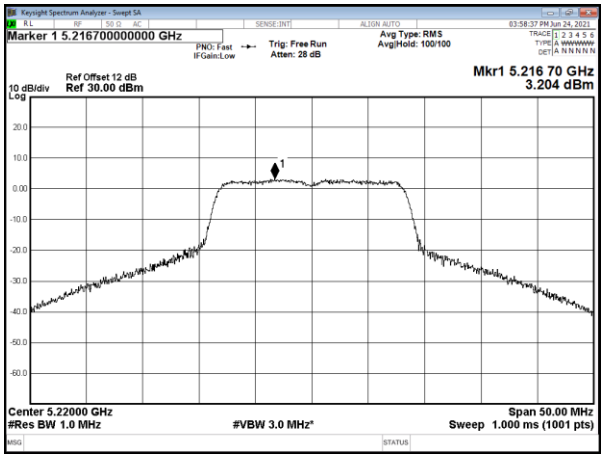


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

CH36



CH44



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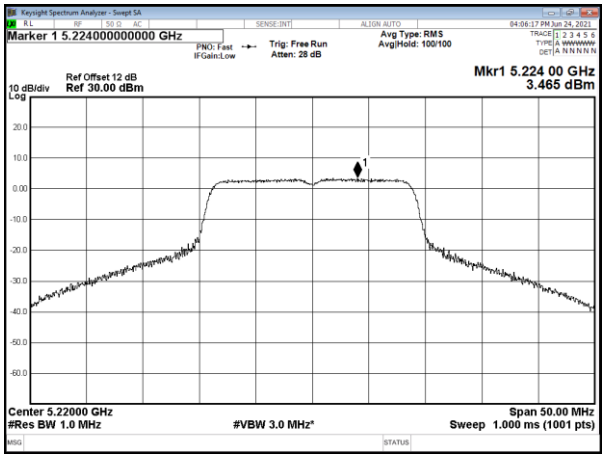
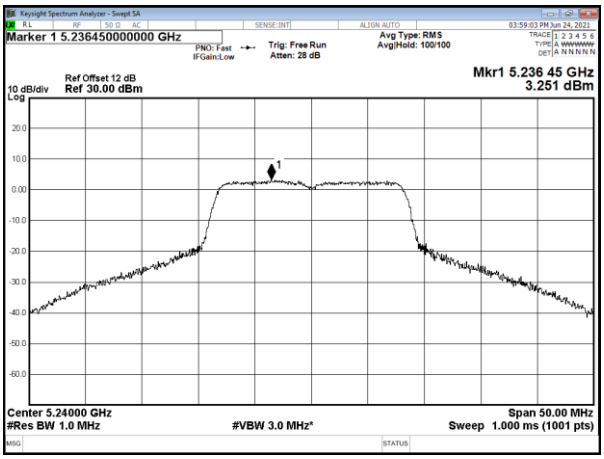


CH48



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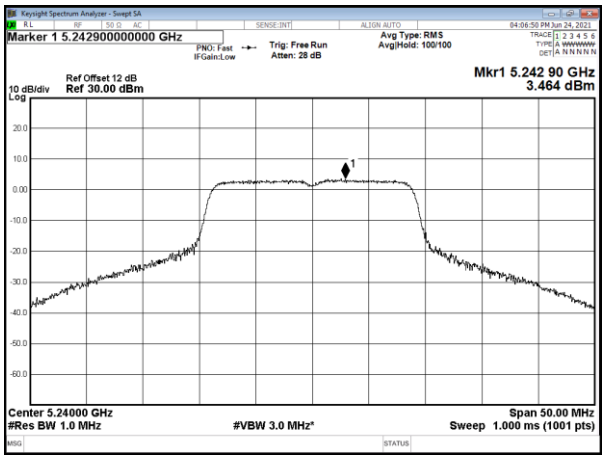
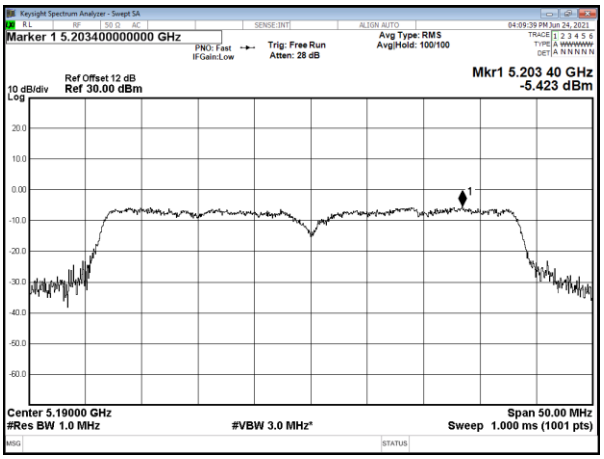


Band 1, ANT A

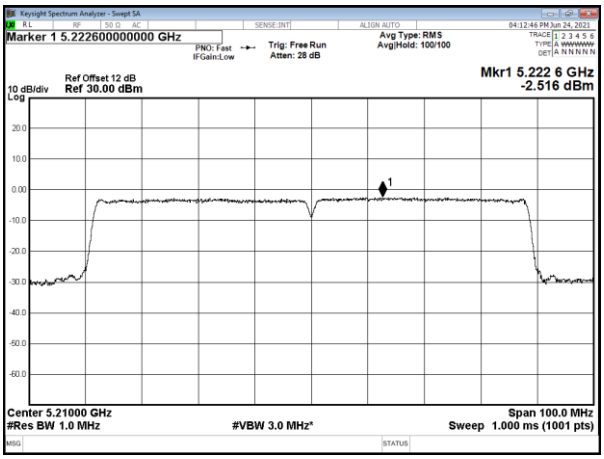
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH38

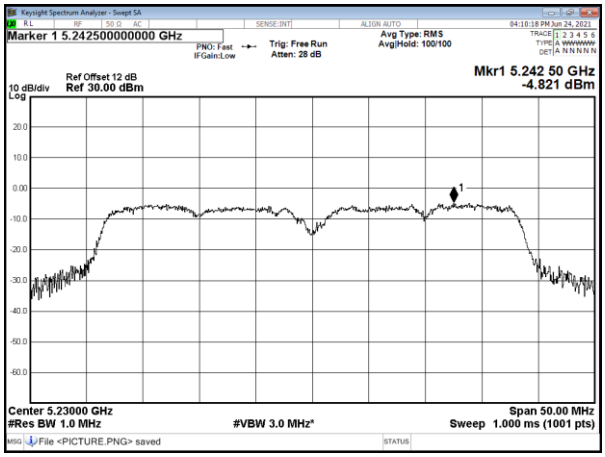


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH42



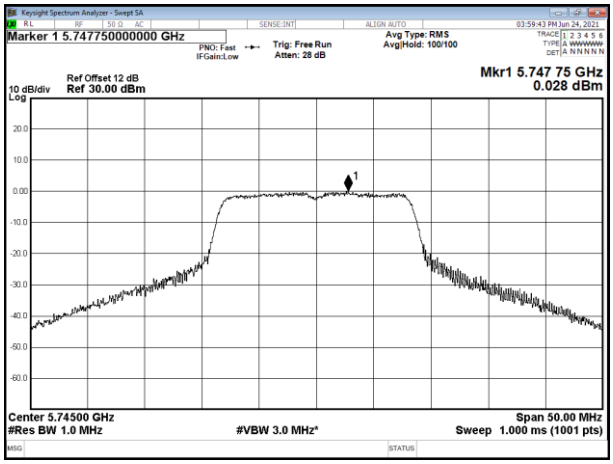
CH46



Band 4, ANT A

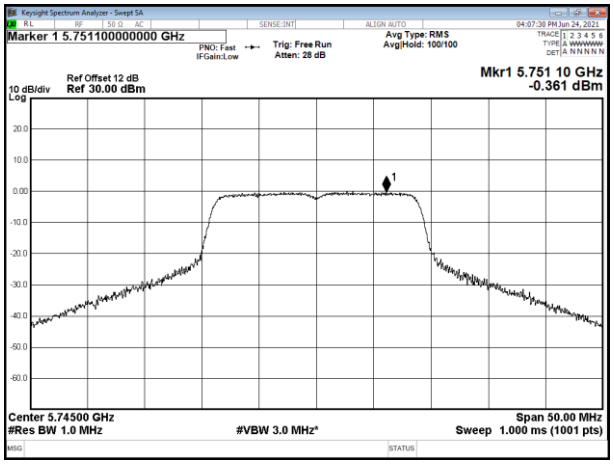
Modulation Standard: 802.11a (6Mbps)

CH149

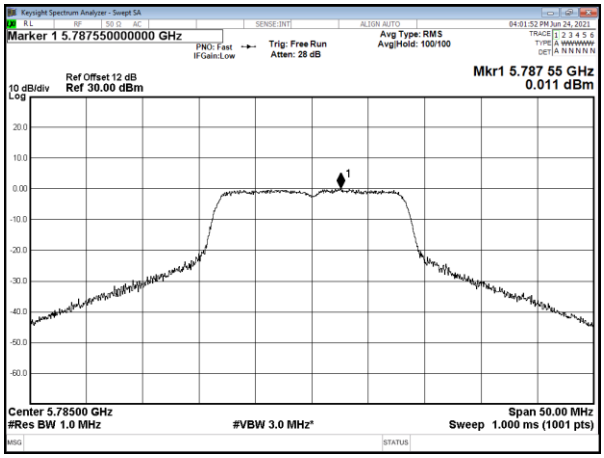


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

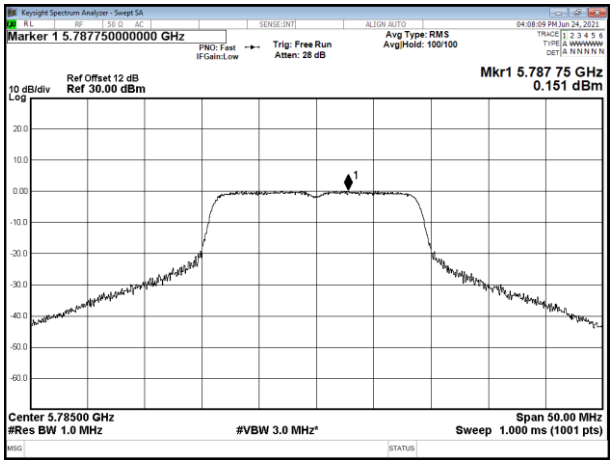
CH149



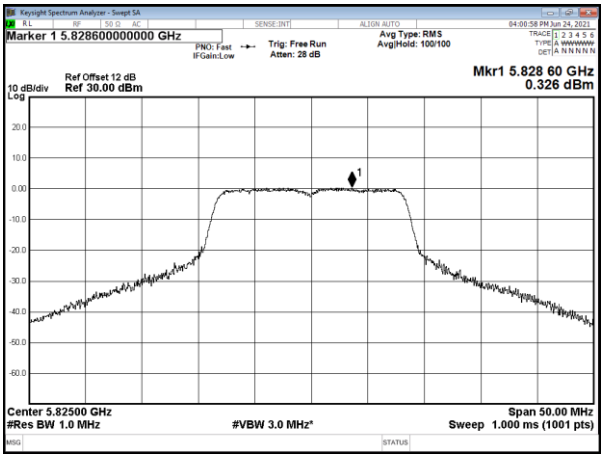
CH157



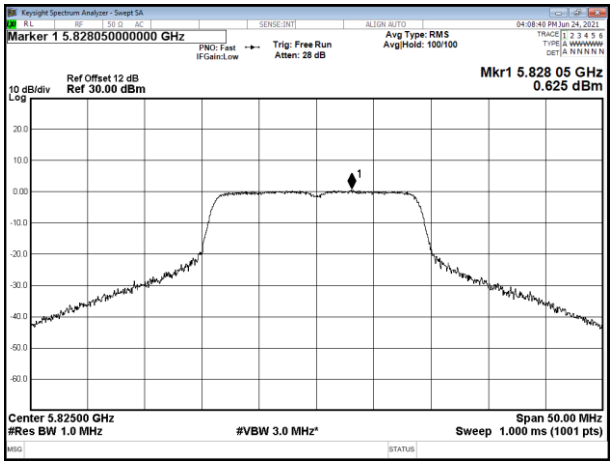
CH157



CH165

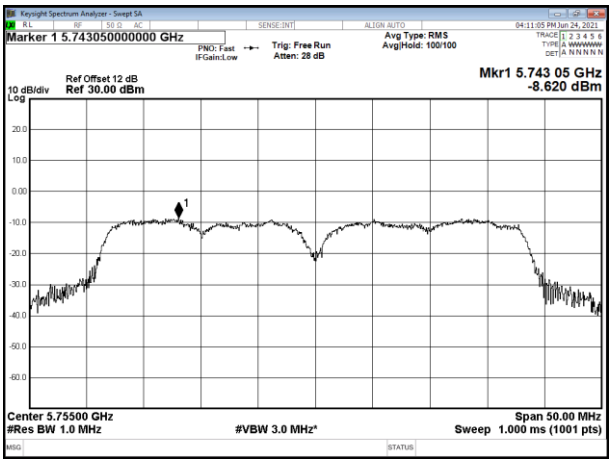


CH165

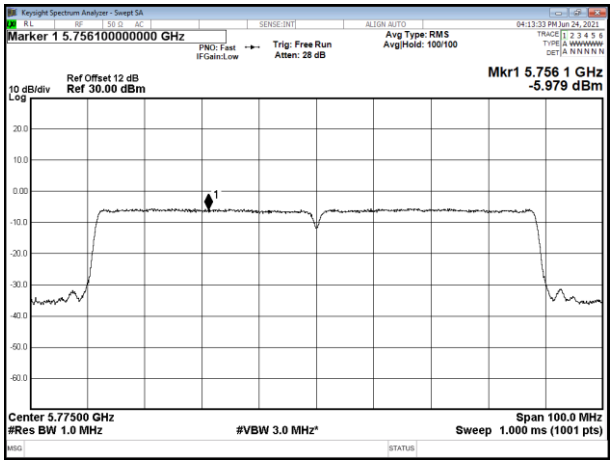


Band 4, ANT A

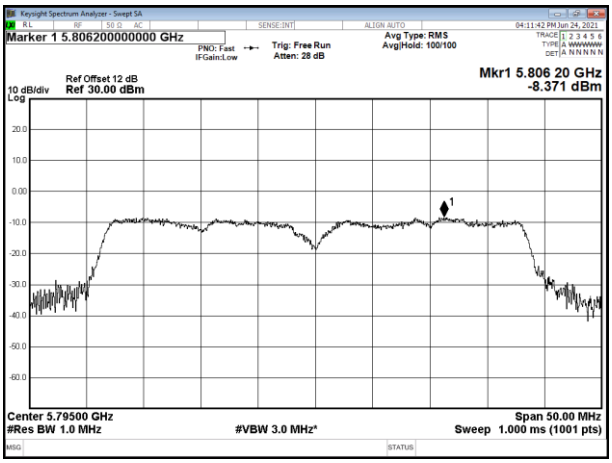
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH151



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH155



CH159

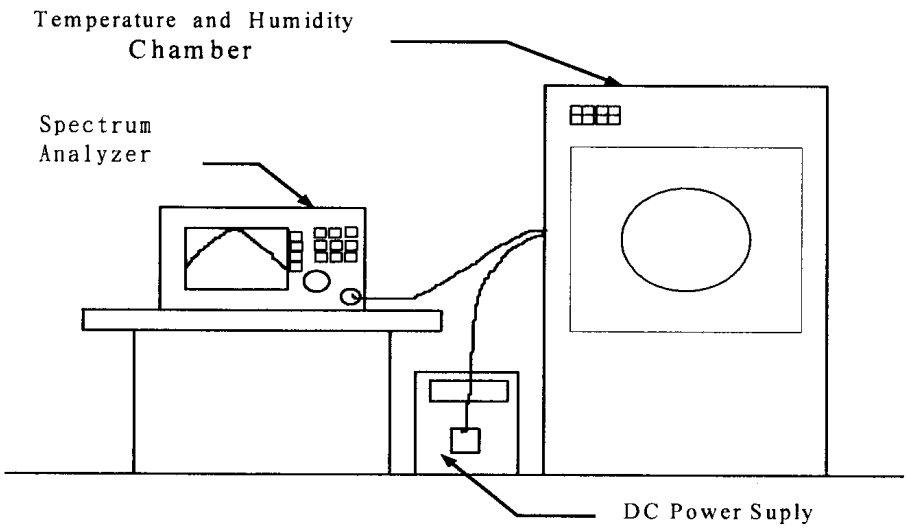


12. Frequency Stability

12.1.Test Procedure

1. The EUT was placed inside the Temperature and Humidity chamber.
2. The transmitter output was connected to spectrum analyzer.
3. Turn the EUT on and couple its output to a spectrum analyzer.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
6. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
7. 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.

12.2.Test Setup Layout



12.3.Test Result and Data

Operating frequency: 5180 MHz							
Temp	Power supply	2 minute		5 minute		10 minute	
(℃)	(V)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
45	138	5179.9942	-0.000112	5179.9954	-0.000089	5180.0013	0.000025
	120	5179.9937	-0.000122	5179.9941	-0.000114	5180.0037	0.000071
	102	5179.9928	-0.000139	5179.9932	-0.000131	5180.0062	0.000120
30	138	5179.9935	-0.000125	5179.9942	-0.000112	5180.0054	0.000104
	120	5179.9954	-0.000089	5179.9948	-0.000100	5180.0028	0.000054
	102	5179.9942	-0.000112	5179.9964	-0.000069	5180.0017	0.000033
20	138	5179.9962	-0.000073	5179.9981	-0.000037	5180.0026	0.000050
	120	5179.9953	-0.000091	5179.9968	-0.000062	5180.0042	0.000081
	102	5179.9938	-0.000120	5179.9972	-0.000054	5180.0032	0.000062
10	138	5179.9932	-0.000131	5179.9996	-0.000008	5180.0047	0.000091
	120	5179.9947	-0.000102	5179.9986	-0.000027	5180.0056	0.000108
	102	5179.9941	-0.000114	5179.9972	-0.000054	5180.0064	0.000124
0	138	5179.9938	-0.000120	5179.9987	-0.000025	5180.0043	0.000083
	120	5179.9947	-0.000102	5179.9983	-0.000033	5180.0037	0.000071
	102	5179.9935	-0.000125	5179.9994	-0.000012	5180.0061	0.000118

Limit:
Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

----------End of the report ----------