



FCC RADIO TEST REPORT

Applicant	: IGRS Engineering Lab (Shenzhen) Ltd
Address	: 6F, Block A3, Cyber-tech Zone, Gaoxin Ave. 7th. S. Hi-Tech Industrial Park, Nanshan District, Shenzhen, China
Equipment	: Wireless module
Model No.	: MW50A
Trade Name	: N/A
FCC ID.	: 2A3LP-MW50A
Standard	: FCC part 15 Subpart E §15.407

I HEREBY CERTIFY THAT :

The sample was received on Sept. 27, 2021 and the testing was completed on Dec. 23, 2021 at CerpPASS Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of CerpPASS Technology Corp., the test report shall not be reproduced except in full.

Approved by:


Leevin Li /Supervisor



CONTENTS

1.	Summary of Test Procedure and Test Results	5
1.1.	Applicable Standards	5
2.	Test Configuration of Equipment under Test	6
2.1.	Feature of Equipment and Model Description	6
2.2.	Carrier Frequency of Channels	7
2.3.	Test Mode and Test Software	8
2.4.	Description of Test System	9
2.5.	General Information of Test	10
2.6.	Measurement Uncertainty	10
3.	Test Equipment and Ancillaries Used for Tests	11
4.	Antenna Requirements	12
4.1.	Standard Applicable	12
4.2.	Antenna Construction and Directional Gain	12
5.	Test of AC Power Line Conducted Emission	13
5.1.	Test Limit	13
5.2.	Test Procedures	13
5.3.	Typical Test Setup	13
5.4.	Test Result and Data	14
6.	Test of Spurious Emission (Radiated)	16
6.1.	Test Limit	16
6.2.	Test Procedures	16
6.3.	Typical Test Setup	17
6.4.	Test Result and Data (9kHz ~ 30MHz)	18
6.5.	Test Result and Data (30MHz ~ 1GHz)	18
6.6.	Test Result and Data (1GHz ~ 40GHz)	20
6.7.	Restricted Bands of Operation	66
7.	On Time, Duty Cycle and Measurement methods	67
7.1.	Test Limit	67
7.2.	Test Procedure	67
7.3.	Test Setup Layout	67
7.4.	Test Result and Data	67
7.5.	Measurement Methods	67
8.	6dB Bandwidth & 99% Occupied Bandwidth	69
8.1.	Test Limit	69
8.2.	Test Procedure	69
8.3.	Test Setup Layout	69
8.4.	Test Result and Data (6dB Bandwidth)	69
8.5.	Test Result and Data (99% Occupied Bandwidth)	70
9.	26dB Bandwidth & 99% Occupied Bandwidth	79
9.1.	Test Limit	79
9.2.	Test Procedure	79
9.3.	Test Setup Layout	79
9.4.	Test Result and Data (26dB Bandwidth)	80



9.5.	Test Result and Data (99% Occupied Bandwidth).....	81
10.	Average Power.....	94
10.1.	Test Limit	94
10.2.	Test Procedure	95
10.3.	Test Setup Layout	95
10.4.	Test Result and Data.....	96
11.	Maximum Power Spectral Density	98
11.1.	Test Limit	98
11.2.	Test Procedure	98
11.3.	Test Setup Layout	98
11.4.	Test Result and Data.....	99
12.	Frequency Stability.....	116
12.1.	Test Procedure	116
12.2.	Test Setup Layout	116
12.3.	Test Result and Data.....	117



History of this test report

☒ Original.

☐ Additional attachment as following record:

Report No.	Issue Date	Description
DEDG2109065	Dec. 23, 2021	Initial Issue



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	Wireless module
Model Name	MW50A
Model Discrepancy	N/A
TPC Function	No TPC function
Frequency Range	BT/BLE/ WIFI 2.4G: 2402MHz-2483.5MHz WIFI 5G: 5150MHz-5350MHz, 5470-5725MHz, 5725MHz -5850MHz
Modulation Type	BT: GFSK, $\pi/4$ -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 802.11ac: 256-QAM, 64-QAM, 16-QAM, QPSK, BPSK
Data Rate	BT: GFSK: 1Mbps, $\pi/4$ -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 to 144.4Mbps, HT40 reach up to 300Mbps WIFI 5G: 802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: HT20 reach up to 144.4Mbps, HT40 reach up to 300Mbps 802.11ac: VHT20 reach up to 173.3Mbps, VHT40 reach up to 400Mbps, VHT80 reach up to 866.7Mbps
Antenna Type	BT/BLE: PIFA Antenna WIFI 2.4G/5G: PIFA Antenna
Operating Voltage	5 V $\pm$ 10%

Note: 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 : 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: 5250MHz -5350MHz

802.11a, 802.11n HT20, 802.11ac VHT20

Channel	Frequency(MHz)	Channel	Frequency(MHz)
*52	5260	*60	5300
56	5280	*64	5320

802.11n HT 40, 802.11ac VHT40

Channel	Frequency(MHz)	Channel	Frequency(MHz)
*54	5270	*62	5310

802.11ac VHT80

Channel	Frequency(MHz)
*58	5290

Band: 5470MHz -5725MHz

802.11a, 802.11n HT20, 802.11ac VHT20

Channel	Frequency(MHz)	Channel	Frequency(MHz)
*100	5500	*116	5580
104	5520	132	5660
108	5540	136	5680
112	5560	*140	5700

802.11n HT40, 802.11ac VHT40

Channel	Frequency(MHz)	Channel	Frequency(MHz)
*102	5510	*134	5670
*110	5550		

802.11ac VHT80

Channel	Frequency(MHz)
*106	5530

Band : 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

- During testing, the interface cables and equipment positions were varied according to ANSI C63.10.
- The complete test system included Notebook and EUT for RF test.
- An executive program, "REALTEK 11ac 8822CU USB WLAN NIC Massproduction Kit.exe" under Windows 7 system was executed to transmit and receive data via WLAN.
- 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	802.11n HT20 (6.5Mbps) for 120V
3	802.11n HT40 (13.5Mbps) for 120V
4	802.11ac VHT20 (6.5Mbps) for 120V
5	802.11ac VHT40 (13.5Mbps) for 120V
6	802.11ac VHT80 (29.3Mbps) for 120V
7	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 (9KHz ~30MHz & 30MHz ~ 1GHz)	
Test Mode	Operating Description
1	802.11a (6Mbps)
2	802.11n HT20 (6.5Mbps)
3	802.11n HT40 (13.5Mbps)
4	802.11ac VHT20 (6.5Mbps)
5	802.11ac VHT40 (13.5Mbps)
6	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	802.11n HT20 (6.5Mbps)
3	802.11n HT40 (13.5Mbps)
4	802.11ac VHT20 (6.5Mbps)
5	802.11ac VHT40 (13.5Mbps)
6	802.11ac VHT80 (29.3Mbps)
caused "Test Mode 1,4~6" generated the worst case, it was reported as the final data.	

The EUT incorporates a MIMO function

Modulation Type	TX CONFIGURATION
802.11a	2TX
802.11n HT20	2TX
802.11n HT40	2TX
802.11ac VHT20	2TX
802.11ac VHT40	2TX
802.11ac VHT80	2TX
* VHT20/VHT40 covers HT20/HT40, due to same modulation. 802.11ac mode is the worst case for final tests except RF output power test after pretesting all modulation type.	



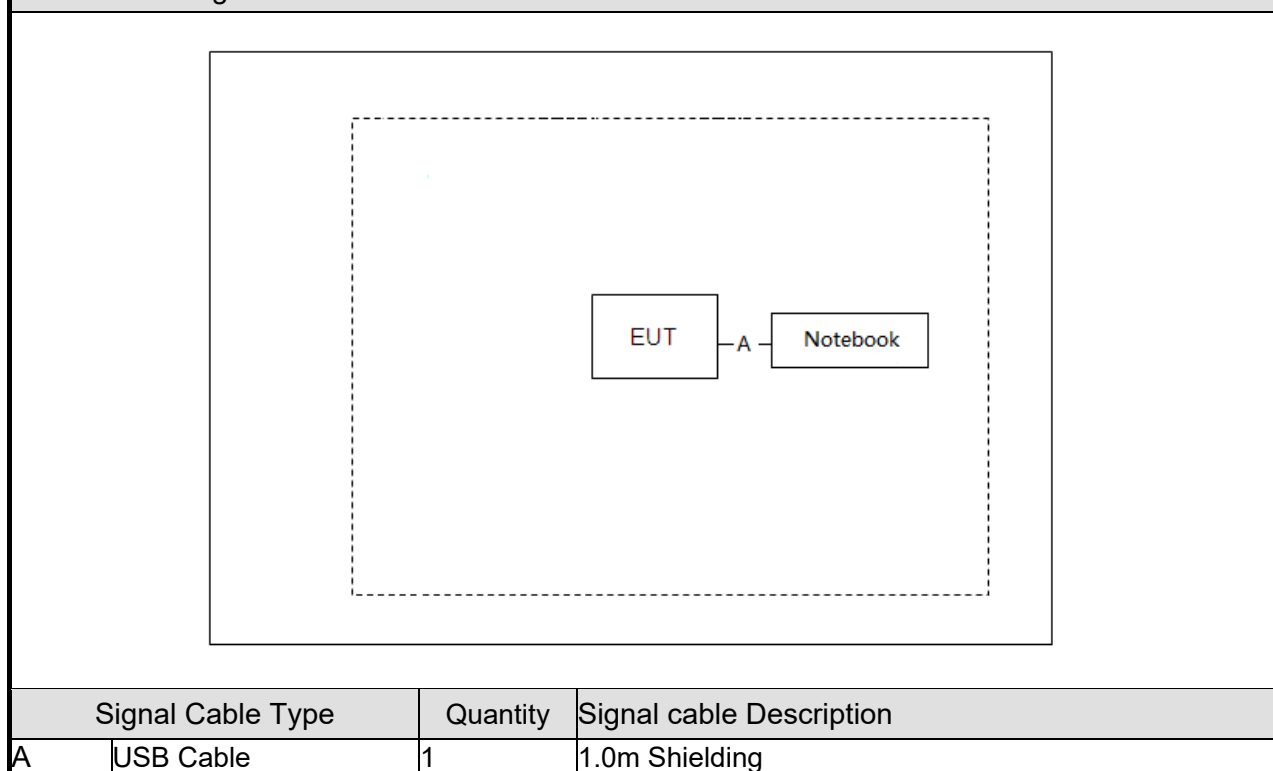
2.4. Power Parameter Value of the test software

Mode	Setting level			
	Ant 1	Ant 2	Ant 1+2	
			Ant 1	Ant 2
802.11a	N/A	N/A	Default	Default
802.11n HT20	N/A	N/A	Default	Default
802.11n HT20	N/A	N/A	Default	Default
802.11ac VHT20	N/A	N/A	Default	Default
802.11ac VHT40	N/A	N/A	Default	Default
802.11ac VHT80	N/A	N/A	Default	Default

2.5. Description of Test System

Product	Manufacturer	Model No.	Serial No.	Power Cord
1 Notebook	SONY	PCG-71811P	N/A	Non-Shielded, 1.8m

Connection Diagram





2.6. General Information of Test

Test Site	CerpPASS Technology Corporation(CerpPASS 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	2021/09/27~2021/12/23	22~25℃ / 50~60%	Amos Zhang
Radiated Emissions	3M02-DG	2021/09/27~2021/12/23	22~25℃ / 50~60%	Amos Zhang
AC Power Line Conducted Emission	CON01-DG	2021/09/27~2021/12/23	22~25℃ / 50~60%	Amos Zhang

2.7. Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

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

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	2021.08.17	2022.08.16

Radiated Emissions					
Test Site	3M02-DG				
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	2020.11.25	2022.11.24
Preamplifier	EMEC	EM01G18G	060739	2021.06.29	2022.06.28
Preamplifier	COM-POWER	PA-840	711885	2021.05.14	2022.05.13
Horn Antenna	Sunol	DRH-118	A072913	2021.08.22	2023.08.21
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	2021.08.17	2022.08.16

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

WIFI 5G:

Antenna Type	PIFA Antenna
Antenna Gain	5150MHz - 5250MHz: ANT A:5.35dBi; ANT B: 4.94dBi 5250MHz - 5350MHz: ANT A: 5.05dBi; ANT B:4.68dBi 5470MHz - 5725MHz: ANT A: 5.57dBi; ANT B: 4.88dBi 5725MHz - 5850MHz: ANT A: 5.59dBi; ANT B: 4.53dBi

(Non-Beamforming)

5150MHz - 5250MHz
For Power directional gain= $G_{ant} = 5.35 \text{ dBi}$ For PSD directional gain = $10 \log[(10G_1 / 20 + 10G_2 / 20 + \dots + 10G_N / 20)^2 / N_{ANT}]$ = 8.16 (dBi)
5250MHz - 5350MHz
For Power directional gain= $G_{ant} = 5.05 \text{ dBi}$ For PSD directional gain = $10 \log[(10G_1 / 20 + 10G_2 / 20 + \dots + 10G_N / 20)^2 / N_{ANT}]$ = 7.88(dBi)
5470MHz - 5725MHz
For Power directional gain= $G_{ant} = 5.57 \text{ dBi}$ For PSD directional gain = $10 \log[(10G_1 / 20 + 10G_2 / 20 + \dots + 10G_N / 20)^2 / N_{ANT}]$ = 8.24(dBi)
5725MHz - 5850MHz
For Power directional gain= $G_{ant} = 5.59 \text{ dBi}$ For PSD directional gain = $10 \log[(10G_1 / 20 + 10G_2 / 20 + \dots + 10G_N / 20)^2 / N_{ANT}]$ = 8.09 (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.

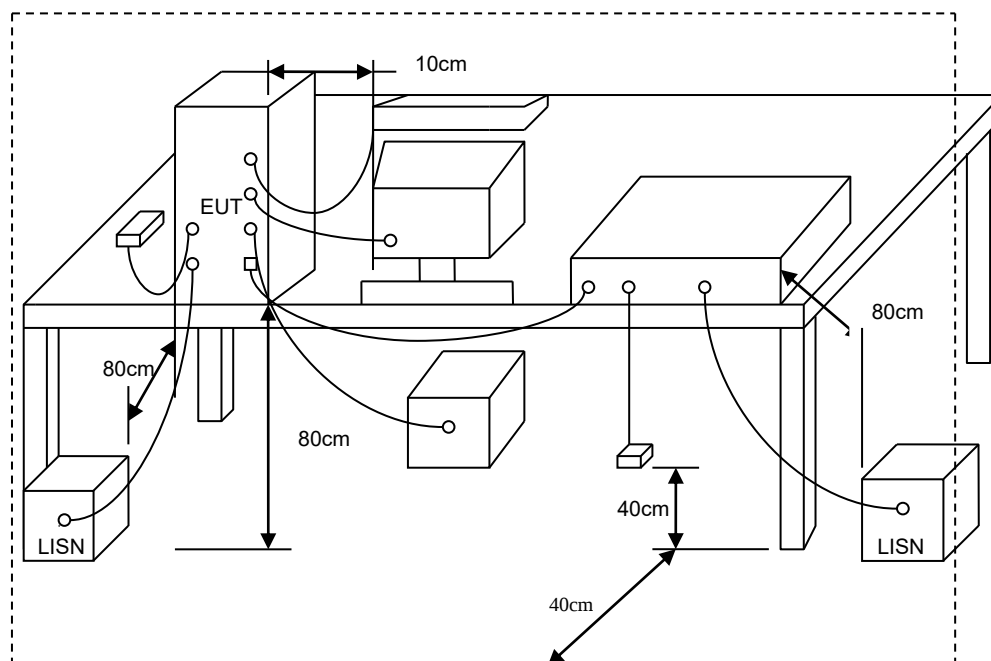
Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

5.2. Test Procedures

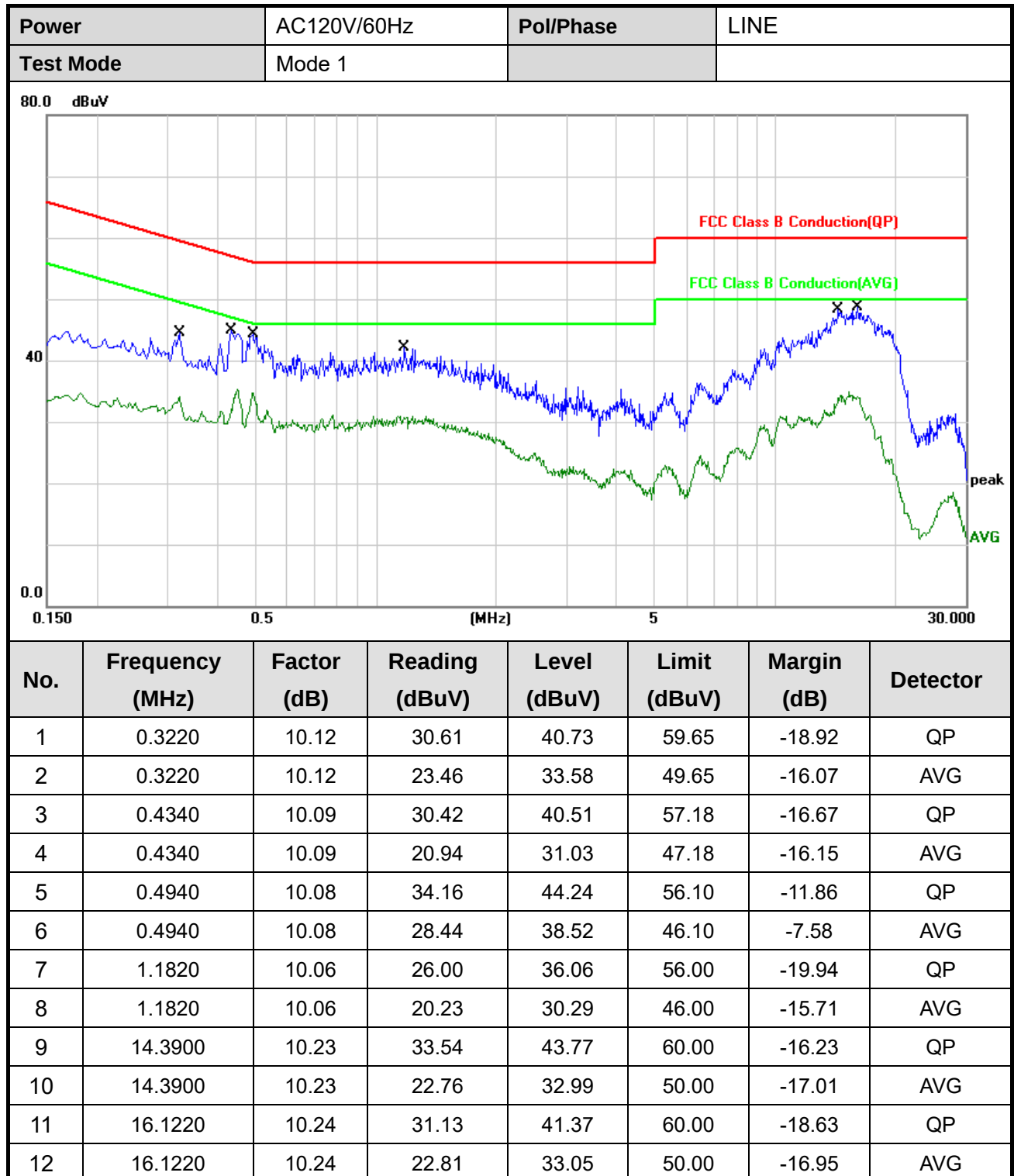
- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.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

5.3. Typical Test Setup

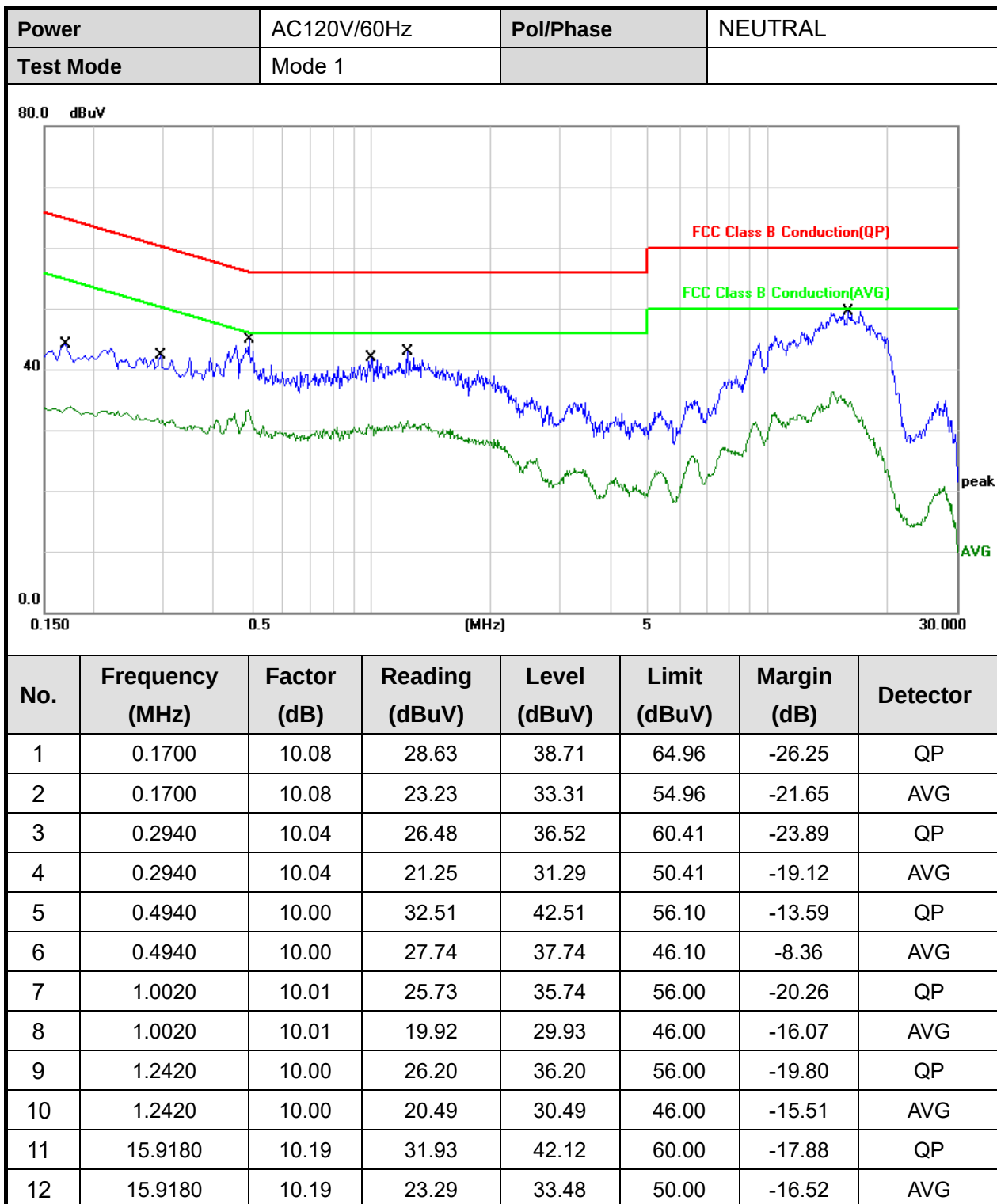




5.4. Test Result and Data



Note: Measurement Level = Reading Level + Correct Factor



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 15.407(b)(9)(10) 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.

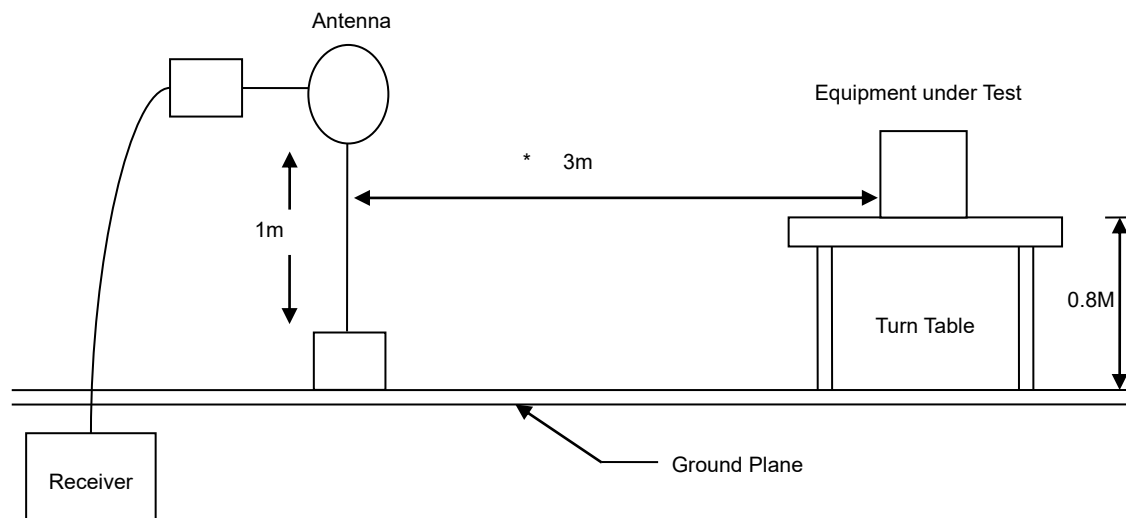
6.2. Test Procedures

- 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.
Note: The supporting fixture shall permit orientation of the EUT in each of three orthogonal axis positions sch that emissions from the EUT are maximized.(X-AXIS is the worst.)

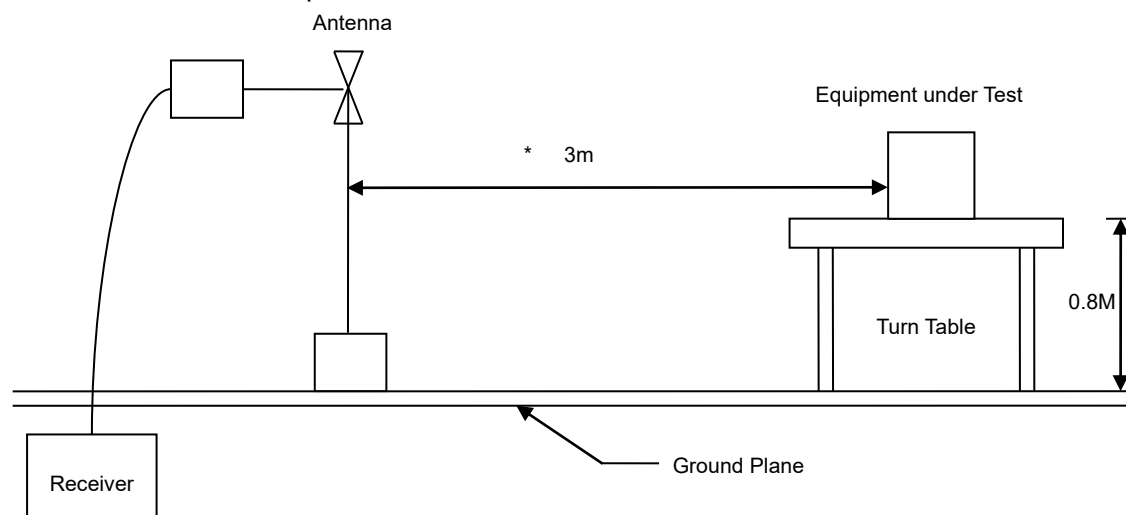


6.3. Typical Test Setup

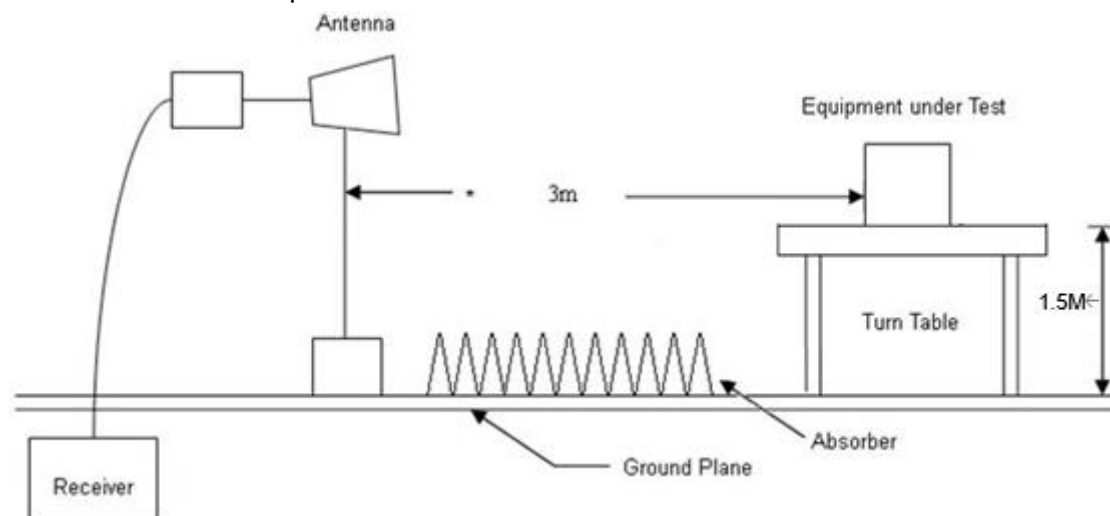
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup

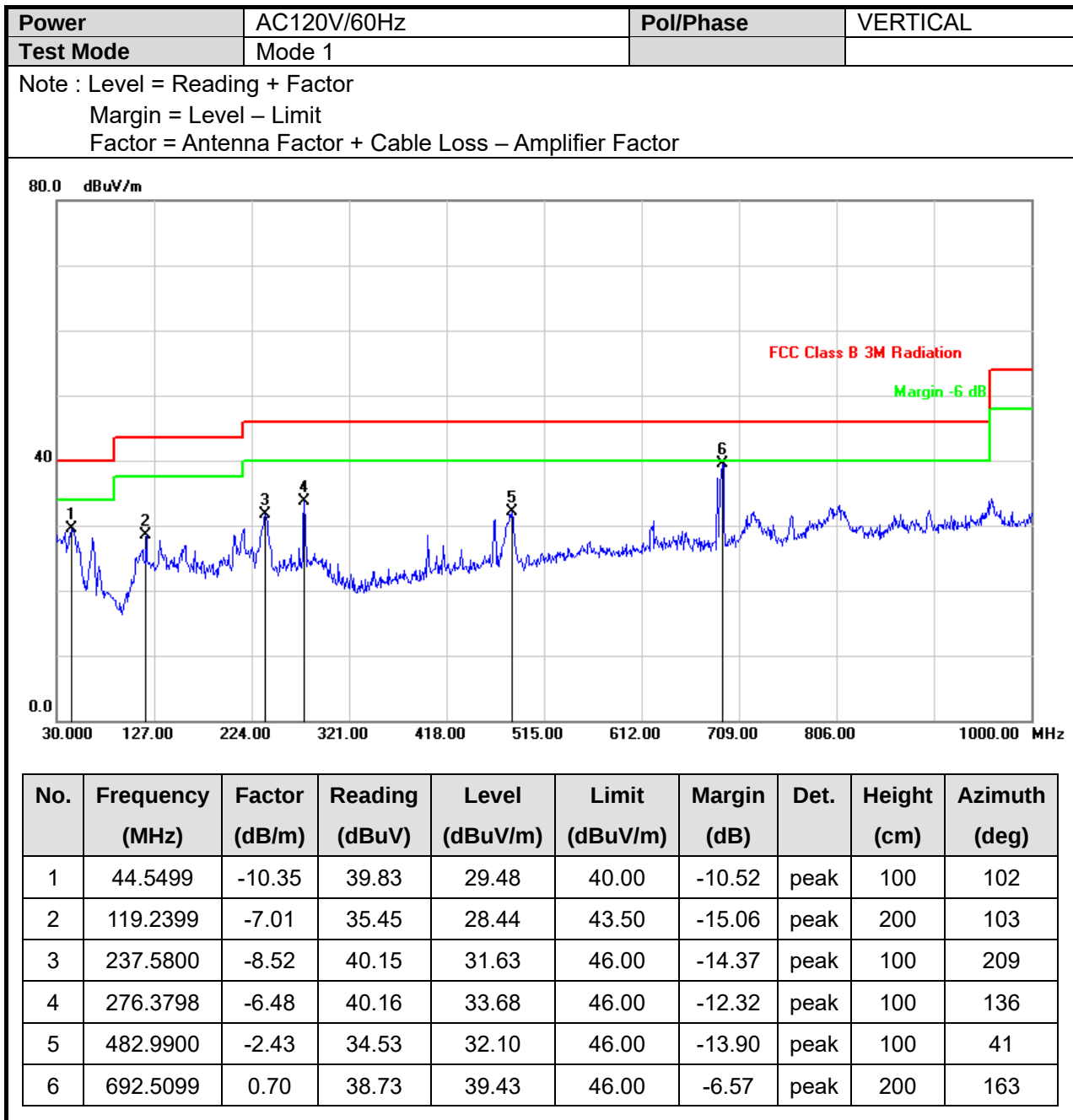


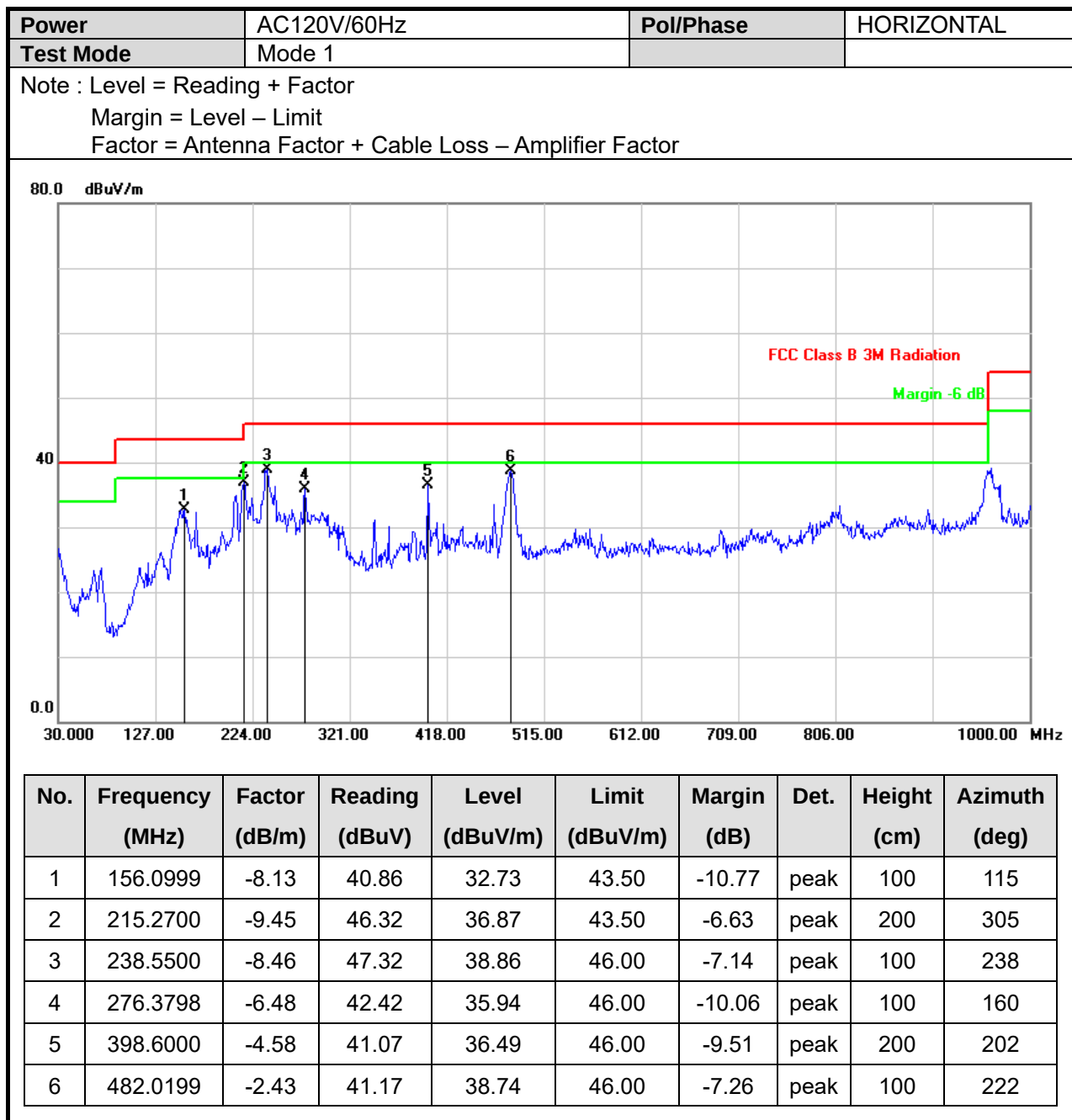


6.4. Test Result and Data (9kHz ~ 30MHz)

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

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





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

Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH36 UNII-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	49.42	51.15	74.00	-22.85	peak	H
2	5150.000	1.73	35.78	37.51	54.00	-16.49	AVG	H
3	10360.000	12.85	39.53	52.38	68.20	-15.82	peak	H
4	15540.000	25.25	27.43	52.68	74.00	-21.32	peak	H
5	15540.000	25.25	14.47	39.72	54.00	-14.28	AVG	H
1	5150.000	1.73	49.72	51.45	74.00	-22.55	peak	V
2	5150.000	1.73	35.39	37.12	54.00	-16.88	AVG	V
3	10360.000	12.85	38.77	51.62	68.20	-16.58	peak	V
4	15540.000	25.25	27.39	52.64	74.00	-21.36	peak	V
5	15540.000	25.25	15.10	40.35	54.00	-13.65	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH44 UNII-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	51.51	53.24	74.00	-20.76	peak	H
2	5150.000	1.73	37.59	39.32	54.00	-14.68	AVG	H
3	5350.000	1.89	51.39	53.28	74.00	-20.72	peak	H
4	5350.000	1.89	37.57	39.46	54.00	-14.54	AVG	H
5	10440.000	13.03	41.57	54.60	68.20	-13.60	peak	H
6	15660.000	25.30	27.34	52.64	74.00	-21.36	peak	H
7	15660.000	25.30	12.68	37.98	54.00	-16.02	AVG	H
1	5150.000	1.73	49.63	51.36	74.00	-22.64	peak	V
2	5150.000	1.73	36.58	38.31	54.00	-15.69	AVG	V
3	5350.000	1.89	50.75	52.64	74.00	-21.36	peak	V
4	5350.000	1.89	37.32	39.21	54.00	-14.79	AVG	V
5	10440.000	13.03	40.22	53.25	68.20	-14.95	peak	V
6	15660.000	25.30	27.77	53.07	74.00	-20.93	peak	V
7	15660.000	25.30	13.84	39.14	54.00	-14.86	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH48 UNII-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	50.83	52.72	74.00	-21.28	peak	H
2	5350.000	1.89	36.69	38.58	54.00	-15.42	AVG	H
3	10480.000	13.12	39.93	53.05	68.20	-15.15	peak	H
4	15720.000	25.33	31.02	56.35	74.00	-17.65	peak	H
5	15720.000	25.33	17.52	42.85	54.00	-11.15	AVG	H
1	5350.000	1.89	50.83	52.72	74.00	-21.28	peak	V
2	5350.000	1.89	36.69	38.58	54.00	-15.42	AVG	V
3	10480.000	13.12	39.93	53.05	68.20	-15.15	peak	V
4	15720.000	25.33	31.02	56.35	74.00	-17.65	peak	V
5	15720.000	25.33	17.52	42.85	54.00	-11.15	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 4, 802.11ac VHT20 CH36 UNII-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	65.86	67.59	74.00	-6.41	peak	H
2	5150.000	1.73	49.19	50.92	54.00	-3.08	AVG	H
3	10360.000	12.85	32.77	45.62	68.20	-22.58	peak	H
4	15540.000	25.25	25.70	50.95	74.00	-23.05	peak	H
5	15540.000	25.25	15.88	41.13	54.00	-12.87	AVG	H
1	5150.000	1.73	60.42	62.15	74.00	-11.85	peak	V
2	5150.000	1.73	45.59	47.32	54.00	-6.68	AVG	V
3	10360.000	12.85	32.83	45.68	68.20	-22.52	peak	V
4	15540.000	25.25	27.12	52.37	74.00	-21.63	peak	V
5	15540.000	25.25	16.01	41.26	54.00	-12.74	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 4, 802.11ac VHT20 CH44 UNII-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	52.58	54.31	74.00	-19.69	peak	H
2	5150.000	1.73	38.39	40.12	54.00	-13.88	AVG	H
3	10360.000	12.85	38.79	51.64	68.20	-16.56	peak	H
4	15540.000	25.25	28.81	54.06	74.00	-19.94	peak	H
5	15540.000	25.25	14.82	40.07	54.00	-13.93	AVG	H
1	5150.000	1.73	51.28	53.01	74.00	-20.99	peak	V
2	5150.000	1.73	37.39	39.12	54.00	-14.88	AVG	V
3	10360.000	12.85	38.40	51.25	68.20	-16.95	peak	V
4	15540.000	25.25	28.39	53.64	74.00	-20.36	peak	V
5	15540.000	25.25	14.33	39.58	54.00	-14.42	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 4, 802.11ac VHT20 CH48 UNII-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	50.62	52.35	74.00	-21.65	peak	H
2	5150.000	1.73	36.81	38.54	54.00	-15.46	AVG	H
3	5350.000	1.89	51.52	53.41	74.00	-20.59	peak	H
4	5350.000	1.89	37.95	39.84	54.00	-14.16	AVG	H
5	10440.000	13.03	38.50	51.53	68.20	-16.67	peak	H
6	15660.000	25.30	28.90	54.20	74.00	-19.80	peak	H
7	15660.000	25.30	15.02	40.32	54.00	-13.68	AVG	H
1	5150.000	1.73	48.63	50.36	74.00	-23.64	peak	V
2	5150.000	1.73	35.35	37.08	54.00	-16.92	AVG	V
3	5350.000	1.89	49.32	51.21	74.00	-22.79	peak	V
4	5350.000	1.89	35.93	37.82	54.00	-16.18	AVG	V
5	10440.000	13.03	39.12	52.15	68.20	-16.05	peak	V
6	15660.000	25.30	30.09	55.39	74.00	-18.61	peak	V
7	15660.000	25.30	16.76	42.06	54.00	-11.94	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 5, 802.11ac VHT40 CH38 UNII-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	52.32	54.05	74.00	-19.95	peak	H
2	5150.000	1.73	38.48	40.21	54.00	-13.79	AVG	H
3	10380.000	12.89	40.75	53.64	68.20	-14.56	peak	H
4	15570.000	25.26	26.92	52.18	74.00	-21.82	peak	H
5	15570.000	25.26	12.00	37.26	54.00	-16.74	AVG	H
1	5150.000	1.73	51.62	53.35	74.00	-20.65	peak	V
2	5150.000	1.73	37.41	39.14	54.00	-14.86	AVG	V
3	10380.000	12.89	41.43	54.32	68.20	-13.88	peak	V
4	15570.000	25.26	30.46	55.72	74.00	-18.28	peak	V
5	15570.000	25.26	16.09	41.35	54.00	-12.65	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 5, 802.11ac VHT40 CH46 UNII-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	50.49	52.22	74.00	-21.78	peak	H
2	5150.000	1.73	35.63	37.36	54.00	-16.64	AVG	H
3	5350.000	1.89	49.89	51.78	74.00	-22.22	peak	H
4	5350.000	1.89	34.45	36.34	54.00	-17.66	AVG	H
5	10460.000	13.07	40.14	53.21	68.20	-14.99	peak	H
6	15690.000	25.32	29.40	54.72	74.00	-19.28	peak	H
7	15690.000	25.32	16.13	41.45	54.00	-12.55	AVG	H
1	5150.000	1.73	49.83	51.56	74.00	-22.44	peak	V
2	5150.000	1.73	35.09	36.82	54.00	-17.18	AVG	V
3	5350.000	1.89	49.96	51.85	74.00	-22.15	peak	V
4	5350.000	1.89	34.90	36.79	54.00	-17.21	AVG	V
5	10460.000	13.07	39.58	52.65	68.20	-15.55	peak	V
6	15690.000	25.32	30.12	55.44	74.00	-18.56	peak	V
7	15690.000	25.32	15.84	41.16	54.00	-12.84	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 6, 802.11ac VHT80 CH42 UNII-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	53.65	55.38	74.00	-18.62	peak	H
2	5150.000	1.73	38.88	40.61	54.00	-13.39	AVG	H
3	5350.000	1.89	50.55	52.44	74.00	-21.56	peak	H
4	5350.000	1.89	35.39	37.28	54.00	-16.72	AVG	H
5	10420.000	12.98	38.30	51.28	68.20	-16.92	peak	H
6	15630.000	25.29	27.16	52.45	74.00	-21.55	peak	H
7	15630.000	25.29	13.49	38.78	54.00	-15.22	AVG	H
1	5150.000	1.73	53.60	55.33	74.00	-18.67	peak	V
2	5150.000	1.73	39.35	41.08	54.00	-12.92	AVG	V
3	5350.000	1.89	49.84	51.73	74.00	-22.27	peak	V
4	5350.000	1.89	35.26	37.15	54.00	-16.85	AVG	V
5	10420.000	12.98	39.48	52.46	68.20	-15.74	peak	V
6	15630.000	25.29	28.92	54.21	74.00	-19.79	peak	V
7	15630.000	25.29	15.05	40.34	54.00	-13.66	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH52 UNII-2A
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	54.95	56.84	74.00	-17.16	peak	H
2	5350.000	1.89	40.62	42.51	54.00	-11.49	AVG	H
3	10520.000	13.22	40.41	53.63	68.20	-14.57	peak	H
4	15780.000	25.36	29.91	55.27	74.00	-18.73	peak	H
5	15780.000	25.36	15.92	41.28	54.00	-12.72	AVG	H
1	5350.000	1.89	51.83	53.72	74.00	-20.28	peak	V
2	5350.000	1.89	37.38	39.27	54.00	-14.73	AVG	V
3	10520.000	13.22	40.42	53.64	68.20	-14.56	peak	V
4	15780.000	25.36	30.12	55.48	74.00	-18.52	peak	V
5	15780.000	25.36	26.28	51.64	54.00	-2.36	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH60 UNII-2A
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	51.38	53.27	74.00	-20.73	peak	H
2	5350.000	1.89	37.36	39.25	54.00	-14.75	AVG	H
3	10600.000	13.46	41.09	54.55	74.00	-19.45	peak	H
4	15900.000	25.41	30.91	56.32	74.00	-17.68	peak	H
5	15900.000	25.41	17.66	43.07	54.00	-10.93	AVG	H
1	5350.000	1.89	51.35	53.24	74.00	-20.76	peak	V
2	5350.000	1.89	36.80	38.69	54.00	-15.31	AVG	V
3	10640.000	13.58	39.14	52.72	74.00	-21.28	peak	V
4	15900.000	25.41	29.64	55.05	74.00	-18.95	peak	V
5	15900.000	25.41	16.27	41.68	54.00	-12.32	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH64 UNII-2A
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	50.46	52.35	74.00	-21.65	peak	H
2	5350.000	1.89	36.35	38.24	54.00	-15.76	AVG	H
3	10640.000	13.58	40.47	54.05	74.00	-19.95	peak	H
4	10640.000	13.58	26.69	40.27	74.00	-33.73	peak	H
5	15960.000	25.44	30.77	56.21	74.00	-17.79	peak	H
6	15960.000	25.44	16.40	41.84	54.00	-12.16	AVG	H
1	5350.000	1.89	51.28	53.17	74.00	-20.83	peak	V
2	5350.000	1.89	38.46	40.35	54.00	-13.65	AVG	V
3	10640.000	13.58	39.99	53.57	74.00	-20.43	peak	V
4	10640.000	13.58	25.96	39.54	54.00	-14.46	AVG	V
5	15960.000	25.44	29.94	55.38	74.00	-18.62	peak	V
6	15960.000	25.44	15.59	41.03	54.00	-12.97	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 4, 802.11ac VHT20 CH52 UNII-2A
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	53.79	55.68	74.00	-18.32	peak	H
2	5350.000	1.89	39.95	41.84	54.00	-12.16	AVG	H
3	10520.000	13.22	41.13	54.35	68.20	-13.85	peak	H
4	15780.000	25.36	31.33	56.69	74.00	-17.31	peak	H
5	15780.000	25.36	17.96	43.32	54.00	-10.68	AVG	H
1	5350.000	1.89	51.58	53.47	74.00	-20.53	peak	V
2	5350.000	1.89	37.65	39.54	54.00	-14.46	AVG	V
3	10520.000	13.22	38.36	51.58	68.20	-16.62	peak	V
4	15780.000	25.36	30.18	55.54	74.00	-18.46	peak	V
5	15780.000	25.36	15.99	41.35	54.00	-12.65	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 4, 802.11ac VHT20 CH60 UNII-2A
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	51.46	53.35	74.00	-20.65	peak	H
2	5350.000	1.89	37.02	38.91	54.00	-15.09	AVG	H
3	10600.000	13.46	41.12	54.58	74.00	-19.42	peak	H
4	10600.000	13.46	27.19	40.65	54.00	-13.35	AVG	H
5	15900.000	25.41	31.41	56.82	74.00	-17.18	peak	H
6	15900.000	25.41	16.63	42.04	54.00	-11.96	AVG	H
1	5350.000	1.89	51.75	53.64	74.00	-20.36	peak	V
2	5350.000	1.89	37.83	39.72	54.00	-14.28	AVG	V
3	10600.000	13.46	40.79	54.25	74.00	-19.75	peak	V
4	10600.000	13.46	26.60	40.06	54.00	-13.94	AVG	V
5	15900.000	25.41	31.14	56.55	74.00	-17.45	peak	V
6	15900.000	25.41	17.79	43.20	54.00	-10.80	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 4, 802.11ac VHT20 CH64 UNII-2A
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	51.59	53.48	74.00	-20.52	peak	H
2	5350.000	1.89	37.17	39.06	54.00	-14.94	AVG	H
3	10640.000	13.58	40.17	53.75	74.00	-20.25	peak	H
4	10640.000	13.58	25.97	39.55	54.00	-14.45	AVG	H
5	15960.000	25.44	30.27	55.71	74.00	-18.29	peak	H
6	15960.000	25.44	15.81	41.25	54.00	-12.75	AVG	H
1	5350.000	1.89	50.50	52.39	74.00	-21.61	peak	V
2	5350.000	1.89	36.65	38.54	54.00	-15.46	AVG	V
3	10640.000	13.58	40.16	53.74	74.00	-20.26	peak	V
4	10640.000	13.58	26.24	39.82	74.00	-34.18	peak	V
5	15810.000	25.37	30.34	55.71	74.00	-18.29	peak	V
6	15810.000	25.37	15.68	41.05	54.00	-12.95	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 5, 802.11ac VHT40 CH54 UNII-2A
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	51.64	53.37	74.00	-20.63	peak	H
2	5150.000	1.73	46.89	48.62	54.00	-5.38	AVG	H
3	5350.000	1.89	52.93	54.82	74.00	-19.18	peak	H
4	5350.000	1.89	47.15	49.04	54.00	-4.96	AVG	H
5	10540.000	13.28	33.63	46.91	68.20	-21.29	peak	H
6	15810.000	25.37	26.88	52.25	74.00	-21.75	peak	H
7	15810.000	25.37	16.89	42.26	54.00	-11.74	AVG	H
1	5150.000	1.73	52.78	54.51	74.00	-19.49	peak	V
2	5150.000	1.73	38.45	40.18	54.00	-13.82	AVG	V
3	5350.000	1.89	53.49	55.38	74.00	-18.62	peak	V
4	5350.000	1.89	41.16	43.05	54.00	-10.95	AVG	V
5	10540.000	13.28	40.39	53.67	68.20	-14.53	peak	V
6	15810.000	25.37	30.48	55.85	74.00	-18.15	peak	V
7	15810.000	25.37	16.01	41.38	54.00	-12.62	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 5, 802.11ac VHT40 CH62 UNII-2A
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	54.41	56.30	74.00	-17.70	peak	H
2	5350.000	1.89	40.75	42.64	54.00	-11.36	AVG	H
3	10620.000	13.52	40.76	54.28	74.00	-19.72	peak	H
4	10620.000	13.52	26.50	40.02	54.00	-13.98	AVG	H
5	15930.000	25.43	31.95	57.38	74.00	-16.62	peak	H
6	15930.000	25.43	18.18	43.61	54.00	-10.39	AVG	H
1	5350.000	1.89	61.67	63.56	74.00	-10.44	peak	V
2	5350.000	1.89	47.76	49.65	54.00	-4.35	AVG	V
3	10620.000	13.52	43.00	56.52	74.00	-17.48	peak	V
4	10620.000	13.52	28.56	42.08	54.00	-11.92	AVG	V
5	15930.000	25.43	30.34	55.77	74.00	-18.23	peak	V
6	15930.000	25.43	26.63	52.06	54.00	-1.94	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 6, 802.11ac VHT80 CH58 UNII-2A
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	50.43	52.16	74.00	-21.84	peak	H
2	5150.000	1.73	36.85	38.58	54.00	-15.42	AVG	H
3	5350.000	1.89	58.97	60.86	74.00	-13.14	peak	H
4	5350.000	1.89	44.43	46.32	54.00	-7.68	AVG	H
5	10580.000	13.40	40.18	53.58	68.20	-14.62	peak	H
6	15870.000	25.40	29.65	55.05	74.00	-18.95	peak	H
7	15870.000	25.40	17.22	42.62	54.00	-11.38	AVG	H
1	5150.000	1.73	49.83	51.56	74.00	-22.44	peak	V
2	5150.000	1.73	35.09	36.82	54.00	-17.18	AVG	V
3	5350.000	1.89	56.93	58.82	74.00	-15.18	peak	V
4	5350.000	1.89	42.76	44.65	54.00	-9.35	AVG	V
5	10580.000	13.40	40.38	53.78	68.20	-14.42	peak	V
6	15870.000	25.40	29.29	54.69	74.00	-19.31	peak	V
7	15870.000	25.40	14.96	40.36	54.00	-13.64	AVG	V



Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH100 UNII-2C
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	5460.000	1.99	50.19	52.18	74.00	-21.82	peak	H
2	5460.000	1.99	36.37	38.36	54.00	-15.64	AVG	H
3	5470.000	1.99	50.45	52.44	68.20	-15.76	peak	H
4	11000.000	14.67	39.00	53.67	74.00	-20.33	peak	H
5	11000.000	14.67	24.49	39.16	54.00	-14.84	AVG	H
6	16500.000	29.95	25.08	55.03	68.20	-13.17	peak	H
1	5460.000	1.99	50.23	52.22	74.00	-21.78	peak	V
2	5460.000	1.99	36.33	38.32	54.00	-15.68	AVG	V
3	5470.000	1.99	50.27	52.26	68.20	-15.94	peak	V
4	11000.000	14.67	41.00	55.67	74.00	-18.33	peak	V
5	11000.000	14.67	26.89	41.56	54.00	-12.44	AVG	V
6	16500.000	29.95	25.52	55.47	68.20	-12.73	peak	V



Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH116 UNII-2C
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	5460.000	1.99	51.56	53.55	74.00	-20.45	peak	H
2	5460.000	1.99	37.25	39.24	54.00	-14.76	AVG	H
3	5470.000	1.99	52.48	54.47	68.20	-13.73	peak	H
4	5725.000	2.58	51.17	53.75	68.20	-14.45	peak	H
5	11160.000	15.05	39.34	54.39	74.00	-19.61	peak	H
6	11160.000	15.05	25.60	40.65	54.00	-13.35	AVG	H
7	16740.000	29.65	23.60	53.25	68.20	-14.95	peak	H
1	5460.000	1.99	50.39	52.38	74.00	-21.62	peak	V
2	5460.000	1.99	36.65	38.64	54.00	-15.36	AVG	V
3	5470.000	1.99	51.46	53.45	68.20	-14.75	peak	V
4	5725.000	2.58	52.23	54.81	68.20	-13.39	peak	V
5	11160.000	15.05	38.62	53.67	74.00	-20.33	peak	V
6	11160.000	15.05	24.03	39.08	54.00	-14.92	AVG	V
7	16740.000	29.65	26.13	55.78	68.20	-12.42	peak	V



Power	AC120V/60Hz
Test Mode	Mode 1, 802.11a CH140 UNII-2C
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	5725.000	2.58	52.00	54.58	68.20	-13.62	peak	H
2	11400.000	15.62	39.72	55.34	74.00	-18.66	peak	H
3	11400.000	15.62	25.85	41.47	54.00	-12.53	AVG	H
4	17100.000	29.73	26.02	55.75	68.20	-12.45	peak	H
1	5725.000	2.58	50.87	53.45	68.20	-14.75	peak	V
2	11400.000	15.62	38.96	54.58	74.00	-19.42	peak	V
3	11400.000	15.62	25.04	40.66	54.00	-13.34	AVG	V
4	17100.000	29.73	26.99	56.72	68.20	-11.48	peak	V



Power	AC120V/60Hz
Test Mode	Mode 4, 802.11ac VHT20 CH100 UNII-2C
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	5460.000	1.99	52.27	54.26	74.00	-19.74	peak	H
2	5460.000	1.99	38.59	40.58	54.00	-13.42	AVG	H
3	5470.000	1.99	53.55	55.54	68.20	-12.66	peak	H
4	11000.000	14.67	42.04	56.71	74.00	-17.29	peak	H
5	11000.000	14.67	27.71	42.38	54.00	-11.62	AVG	H
6	16500.000	29.95	23.72	53.67	68.20	-14.53	peak	H
1	5460.000	1.99	51.76	53.75	74.00	-20.25	peak	V
2	5460.000	1.99	37.58	39.57	54.00	-14.43	AVG	V
3	5470.000	1.99	52.84	54.83	68.20	-13.37	peak	V
4	11000.000	14.67	38.60	53.27	74.00	-20.73	peak	V
5	11000.000	14.67	24.84	39.51	54.00	-14.49	AVG	V
6	16500.000	29.95	25.18	55.13	68.20	-13.07	peak	V



Power	AC120V/60Hz
Test Mode	Mode 4, 802.11ac VHT20 CH116 UNII-2C
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	5460.000	1.99	52.36	54.35	74.00	-19.65	peak	H
2	5460.000	1.99	38.63	40.62	54.00	-13.38	AVG	H
3	5470.000	1.99	52.63	54.62	68.20	-13.58	peak	H
4	5725.000	2.58	50.66	53.24	68.20	-14.96	peak	H
5	11160.000	15.05	40.61	55.66	74.00	-18.34	peak	H
6	11160.000	15.05	27.30	42.35	54.00	-11.65	AVG	H
7	16740.000	29.65	26.93	56.58	68.20	-11.62	peak	H
1	5460.000	1.99	52.36	54.35	74.00	-19.65	peak	V
2	5460.000	1.99	28.48	30.47	54.00	-23.53	AVG	V
3	5470.000	1.99	52.66	54.65	68.20	-13.55	peak	V
4	5725.000	2.58	52.79	55.37	68.20	-12.83	peak	V
5	11160.000	15.05	39.93	54.98	74.00	-19.02	peak	V
6	11160.000	15.05	26.20	41.25	54.00	-12.75	AVG	V
7	16740.000	29.65	23.77	53.42	68.20	-14.78	peak	V



Power	AC120V/60Hz
Test Mode	Mode 4, 802.11ac VHT20 CH140 UNII-2C
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	5725.000	2.58	50.66	53.24	68.20	-14.96	peak	H
2	11400.000	15.62	39.03	54.65	74.00	-19.35	peak	H
3	11400.000	15.62	24.92	40.54	54.00	-13.46	AVG	H
4	17100.000	29.73	25.92	55.65	68.20	-12.55	peak	H
1	5725.000	2.58	50.96	53.54	68.20	-14.66	peak	V
2	11400.000	15.62	38.76	54.38	74.00	-19.62	peak	V
3	11400.000	15.62	24.64	40.26	54.00	-13.74	AVG	V
4	17100.000	29.73	25.44	55.17	68.20	-13.03	peak	V



Power	AC120V/60Hz
Test Mode	Mode 5, 802.11ac VHT40 CH102 UNII-2C
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	5460.000	1.99	51.37	53.36	74.00	-20.64	peak	H
2	5460.000	1.99	35.99	37.98	54.00	-16.02	AVG	H
3	5470.000	1.99	54.09	56.08	68.20	-12.12	peak	H
4	11020.000	14.72	40.03	54.75	74.00	-19.25	peak	H
5	11020.000	14.72	25.34	40.06	54.00	-13.94	AVG	H
6	16530.000	29.91	26.57	56.48	68.20	-11.72	peak	H
1	5460.000	1.99	52.29	54.28	74.00	-19.72	peak	V
2	5460.000	1.99	37.87	39.86	54.00	-14.14	AVG	V
3	5470.000	1.99	53.28	55.27	68.20	-12.93	peak	V
4	11020.000	14.72	38.92	53.64	74.00	-20.36	peak	V
5	11020.000	14.72	24.82	39.54	54.00	-14.46	AVG	V
6	16530.000	29.91	25.57	55.48	68.20	-12.72	peak	V



Power	AC120V/60Hz
Test Mode	Mode 5, 802.11ac VHT40 CH110 UNII-2C
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	5460.000	1.99	53.43	55.42	74.00	-18.58	peak	H
2	5460.000	1.99	29.25	31.24	54.00	-22.76	AVG	H
3	5470.000	1.99	51.66	53.65	68.20	-14.55	peak	H
4	5725.000	2.58	52.18	54.76	68.20	-13.44	peak	H
5	11100.000	14.91	39.01	53.92	74.00	-20.08	peak	H
6	11100.000	14.91	23.55	38.46	54.00	-15.54	AVG	H
7	16650.000	29.76	24.92	54.68	68.20	-13.52	peak	H
1	5460.000	1.99	51.65	53.64	74.00	-20.36	peak	V
2	5460.000	1.99	37.22	39.21	54.00	-14.79	AVG	V
3	5470.000	1.99	51.65	53.64	68.20	-14.56	peak	V
4	5725.000	2.58	50.80	53.38	68.20	-14.82	peak	V
5	11100.000	14.91	39.73	54.64	74.00	-19.36	peak	V
6	11100.000	14.91	25.36	40.27	54.00	-13.73	AVG	V
7	16650.000	29.76	25.76	55.52	68.20	-12.68	peak	V



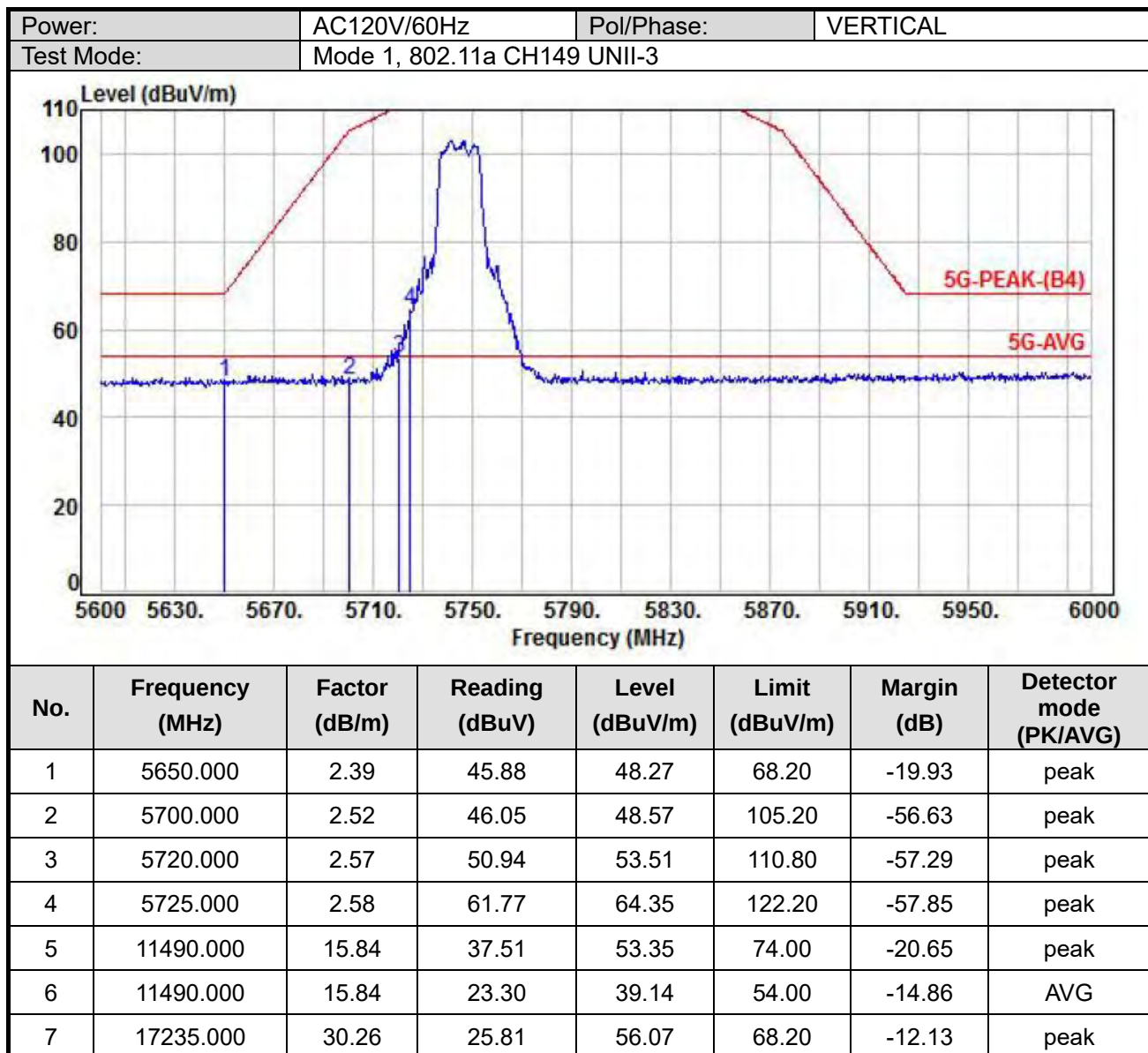
Power	AC120V/60Hz
Test Mode	Mode 5, 802.11ac VHT40 CH134 UNII-2C
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5725.000	2.58	50.56	53.14	68.20	-15.06	peak	H
2	11340.000	15.48	38.77	54.25	74.00	-19.75	peak	H
3	11340.000	15.48	24.80	40.28	54.00	-13.72	AVG	H
4	17010.000	29.37	25.49	54.86	68.20	-13.34	peak	H
1	5725.000	2.58	50.66	53.24	68.20	-14.96	peak	V
2	11340.000	15.48	39.87	55.35	74.00	-18.65	peak	V
3	11340.000	15.48	25.08	40.56	54.00	-13.44	AVG	V
4	17010.000	29.37	26.40	55.77	68.20	-12.43	peak	V



Power	AC120V/60Hz
Test Mode	Mode 6, 802.11ac VHT80 CH106 UNII-2C
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

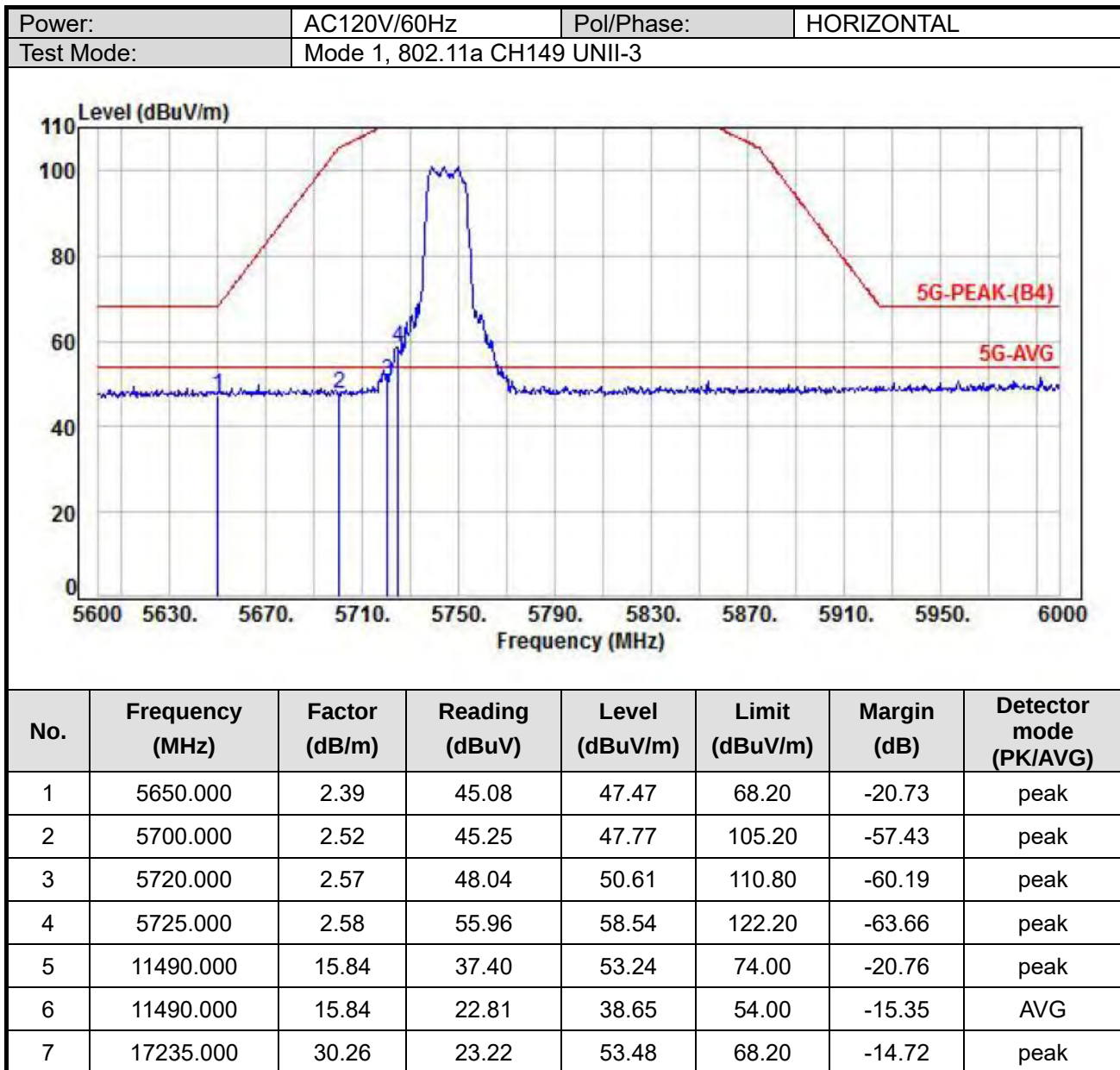
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5460.000	1.99	57.84	59.83	74.00	-14.17	peak	H
2	5460.000	1.99	43.36	45.35	54.00	-8.65	AVG	H
3	5470.000	1.99	59.09	61.08	68.20	-7.12	peak	H
4	5725.000	2.58	50.54	53.12	68.20	-15.08	peak	H
5	11060.000	14.81	40.66	55.47	74.00	-18.53	peak	H
6	11060.000	14.81	26.49	41.30	54.00	-12.70	AVG	H
7	16590.000	29.84	25.79	55.63	68.20	-12.57	peak	H
1	5460.000	1.99	57.68	59.67	74.00	-14.33	peak	V
2	5460.000	1.99	42.68	44.67	54.00	-9.33	AVG	V
3	5470.000	1.99	62.83	64.82	68.20	-3.38	peak	V
4	5725.000	2.58	50.94	53.52	68.20	-14.68	peak	V
5	11060.000	14.81	40.55	55.36	74.00	-18.64	peak	V
6	11060.000	14.81	26.87	41.68	54.00	-12.32	AVG	V
7	16590.000	29.84	25.63	55.47	68.20	-12.73	peak	V



Note : Level = Reading + Factor

Margin = Level – Limit

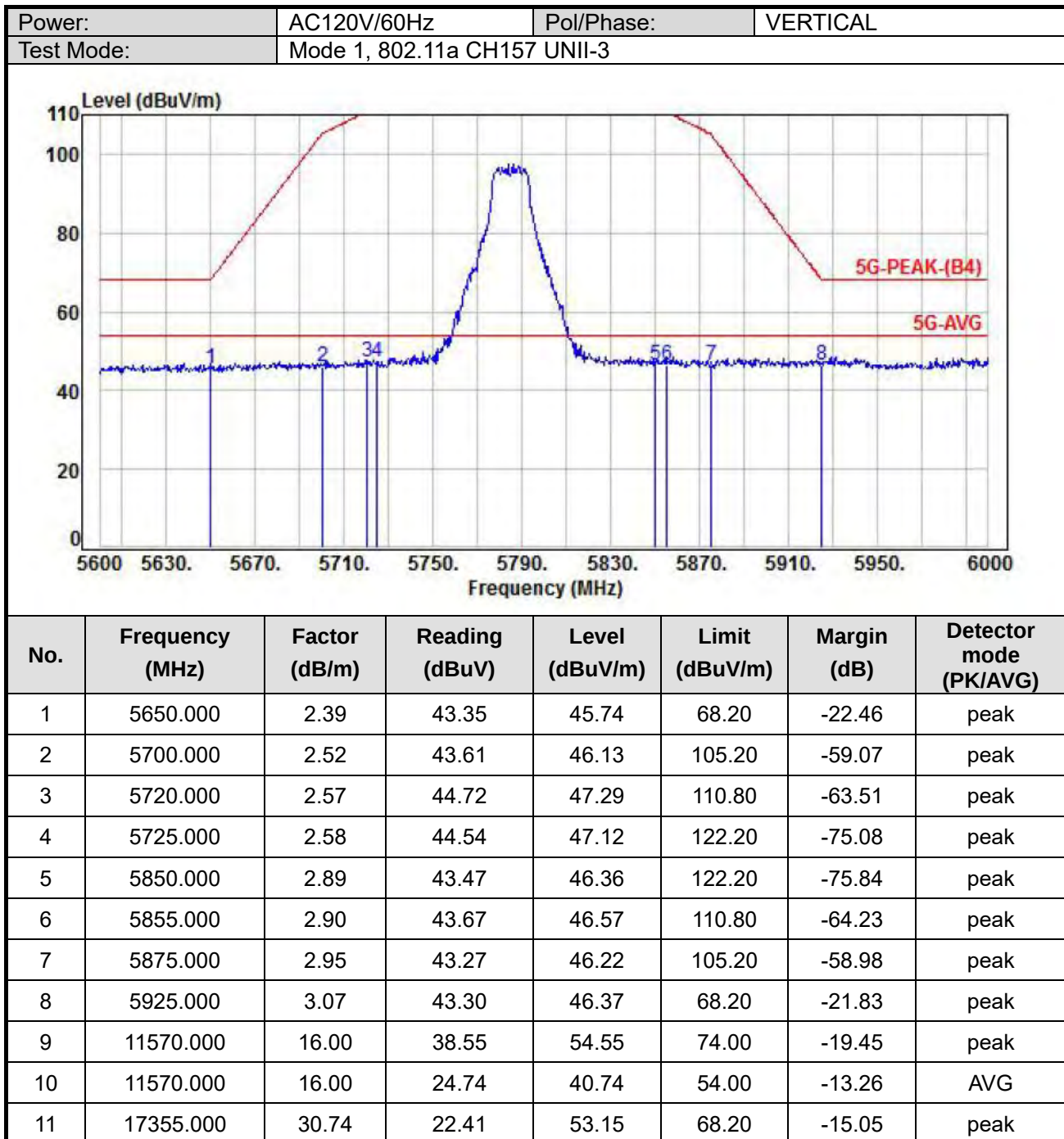
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

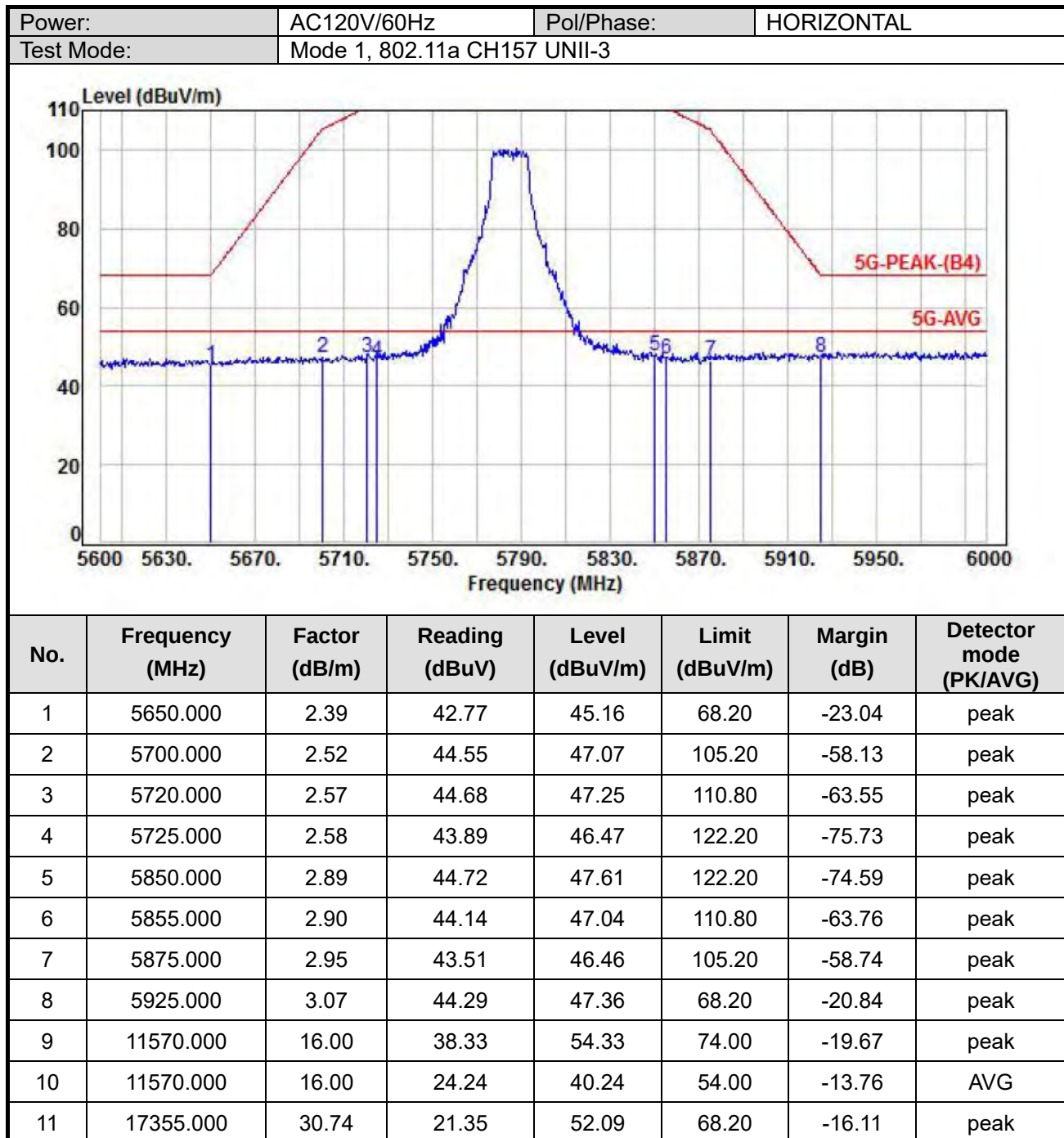
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

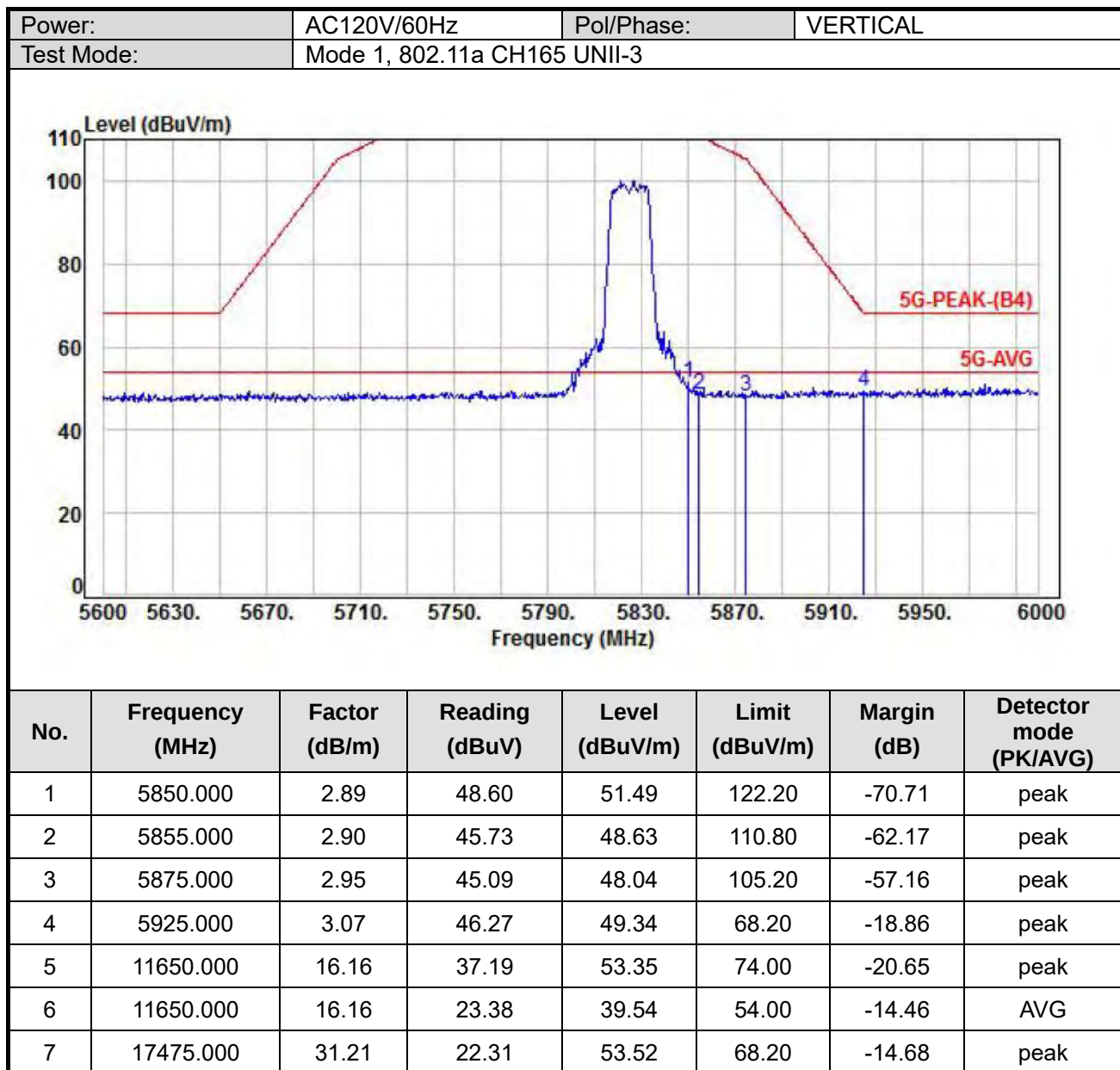
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

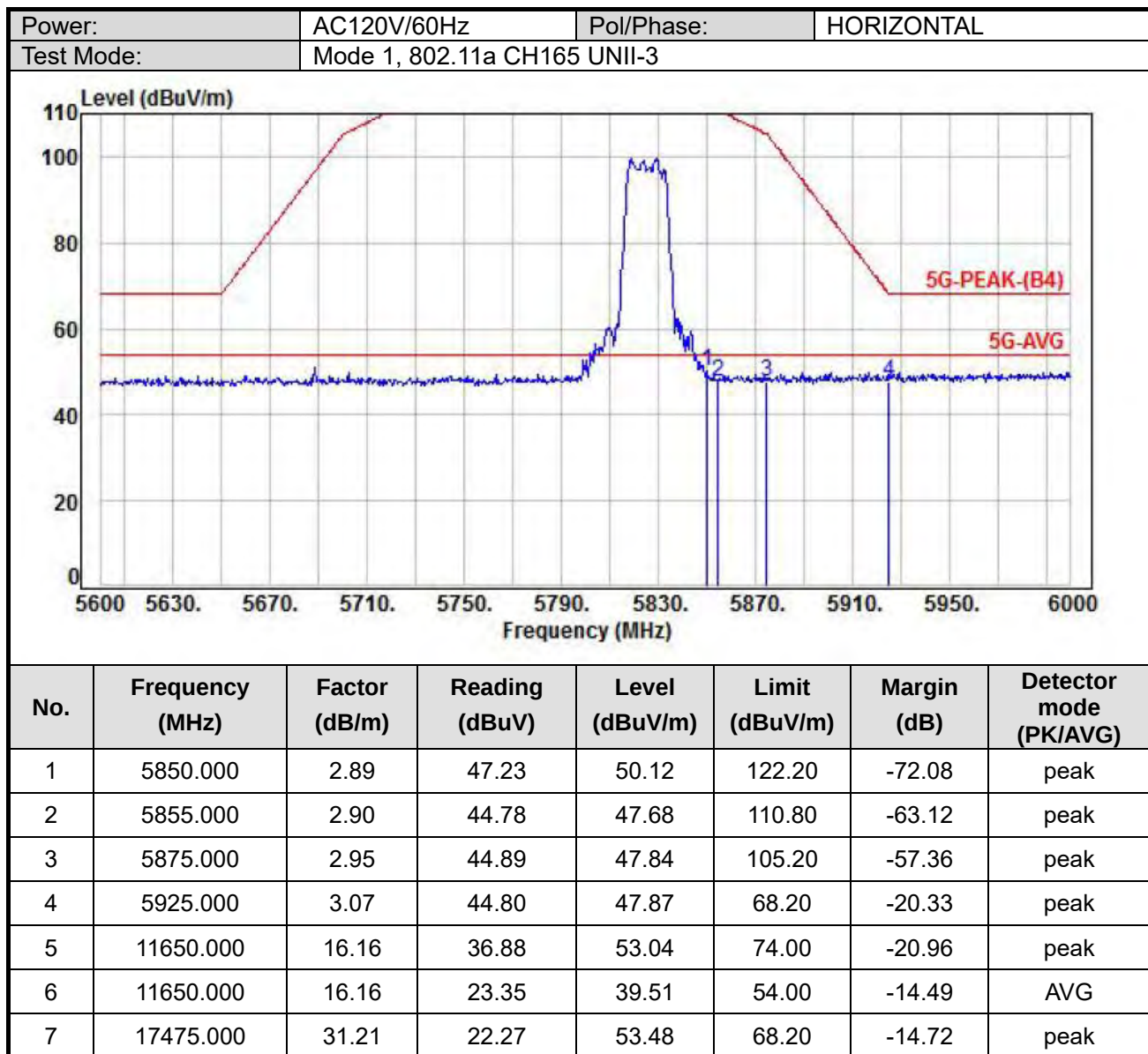
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

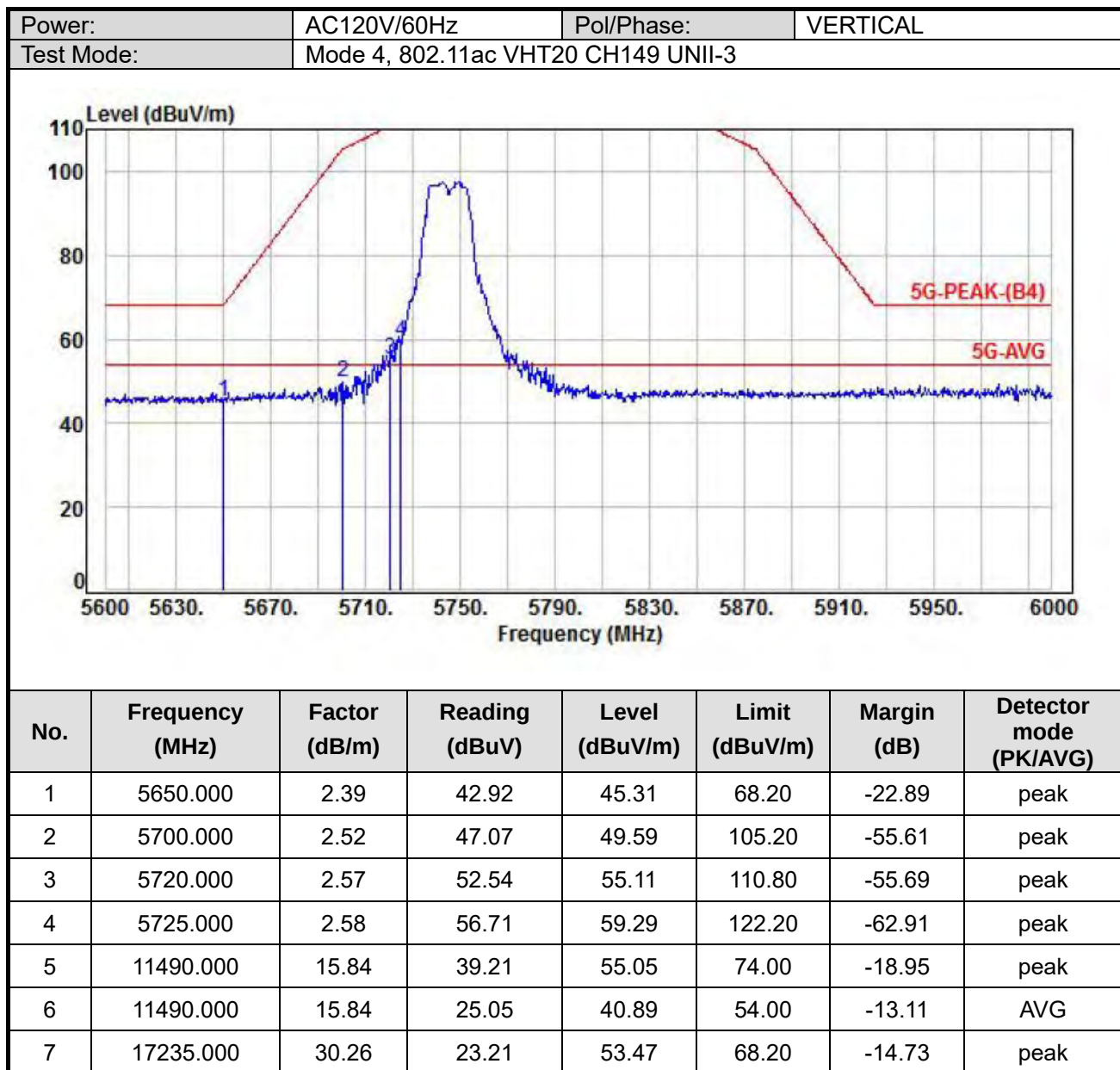
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

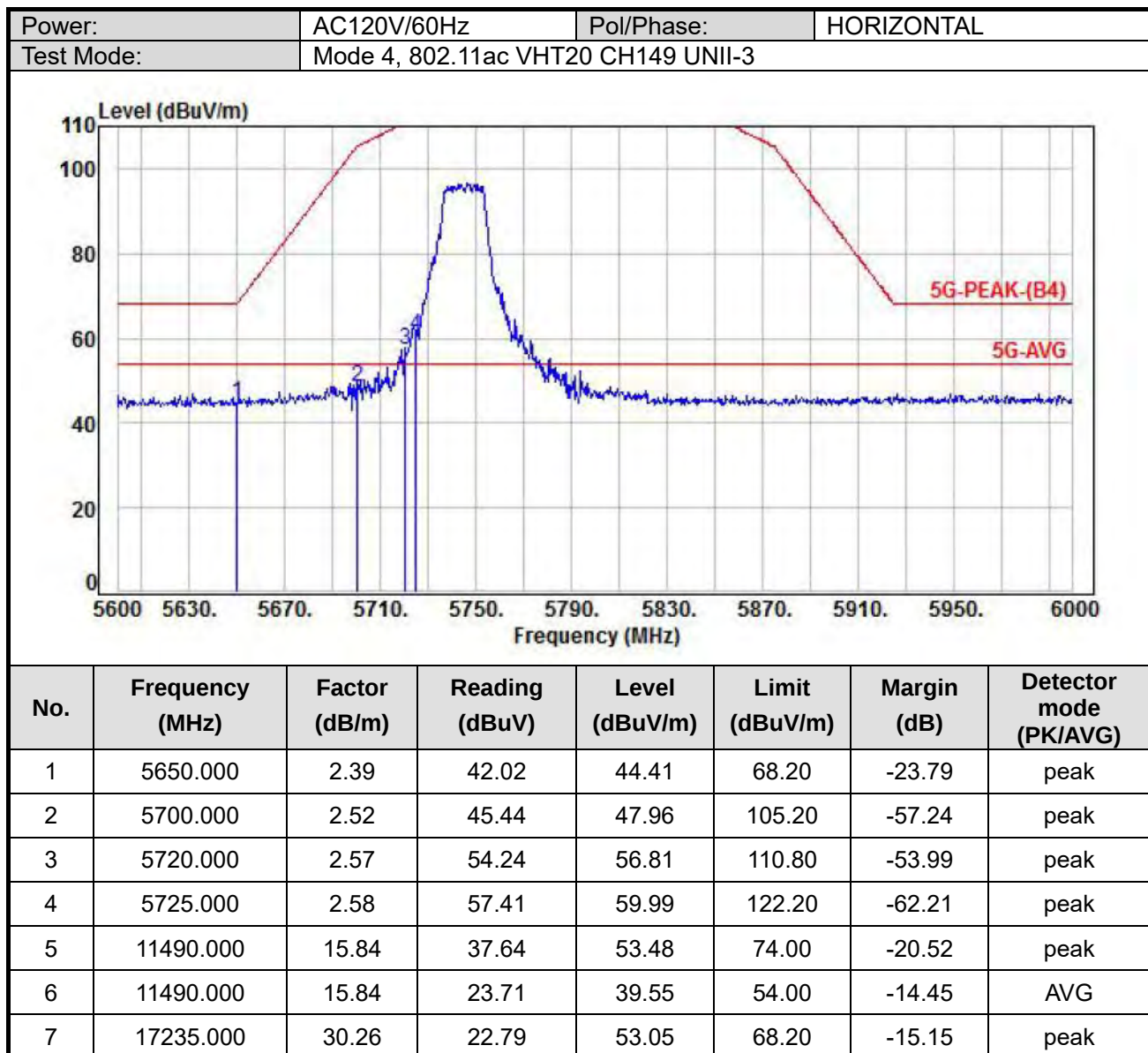
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

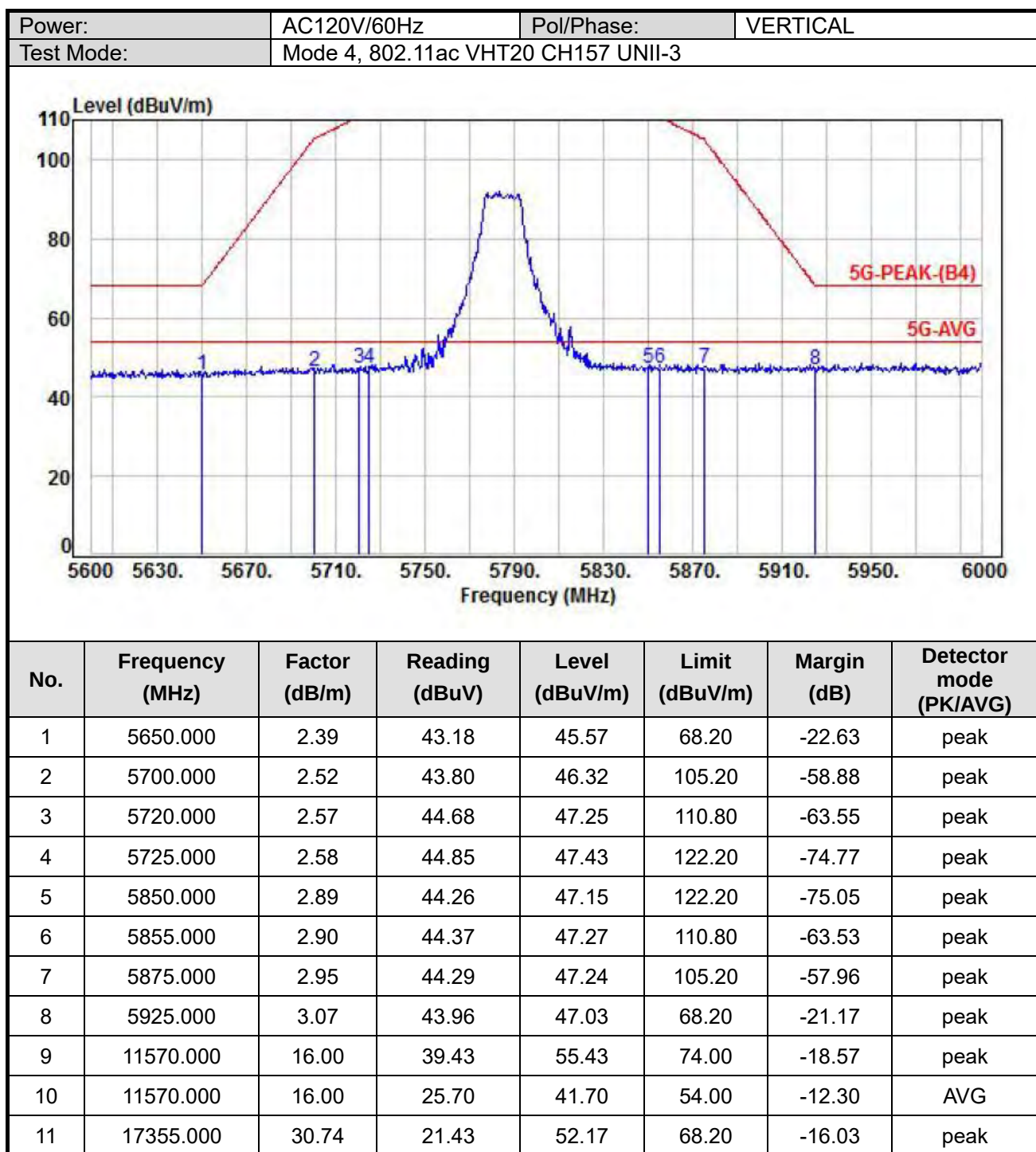
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

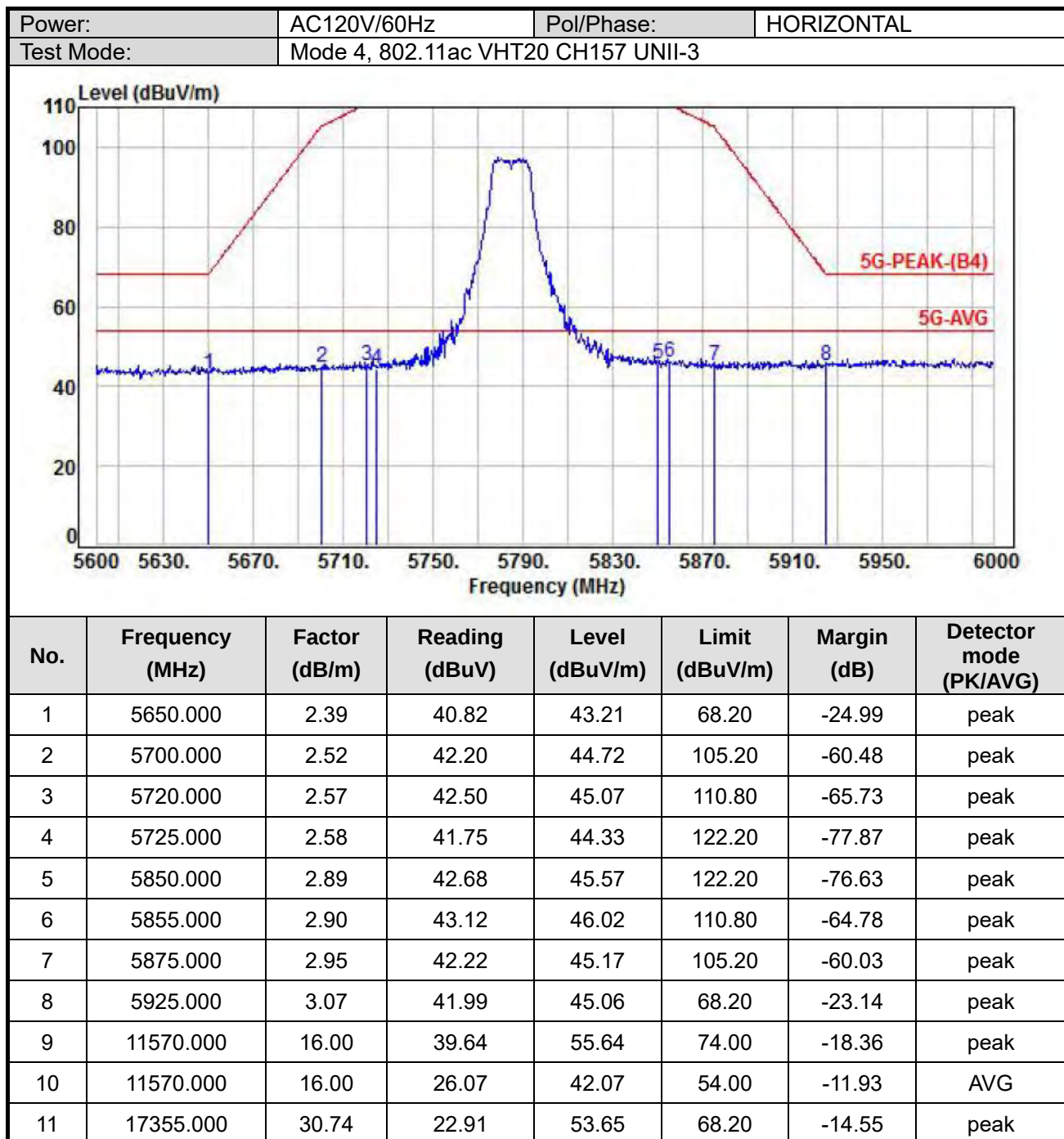
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

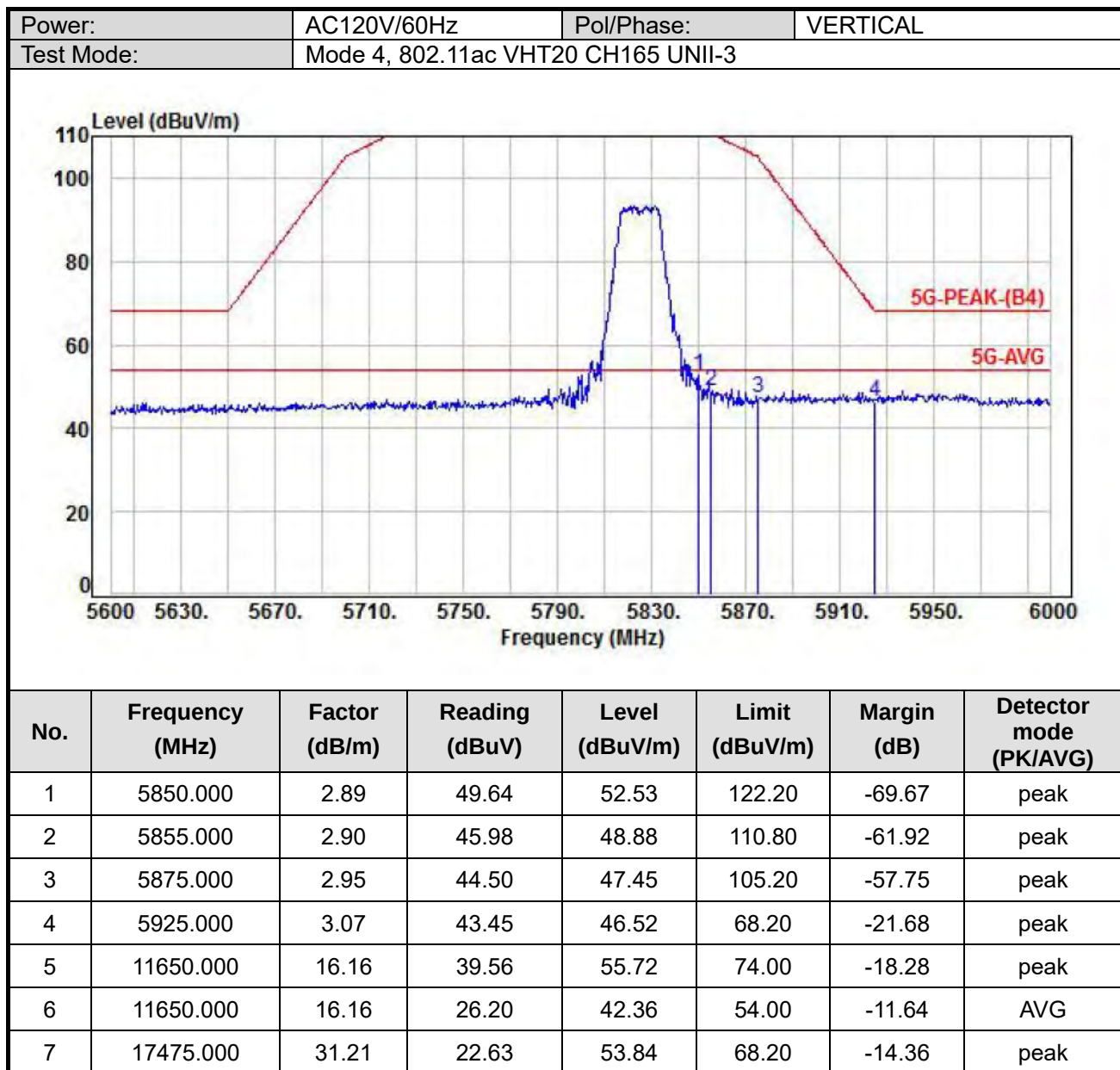
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

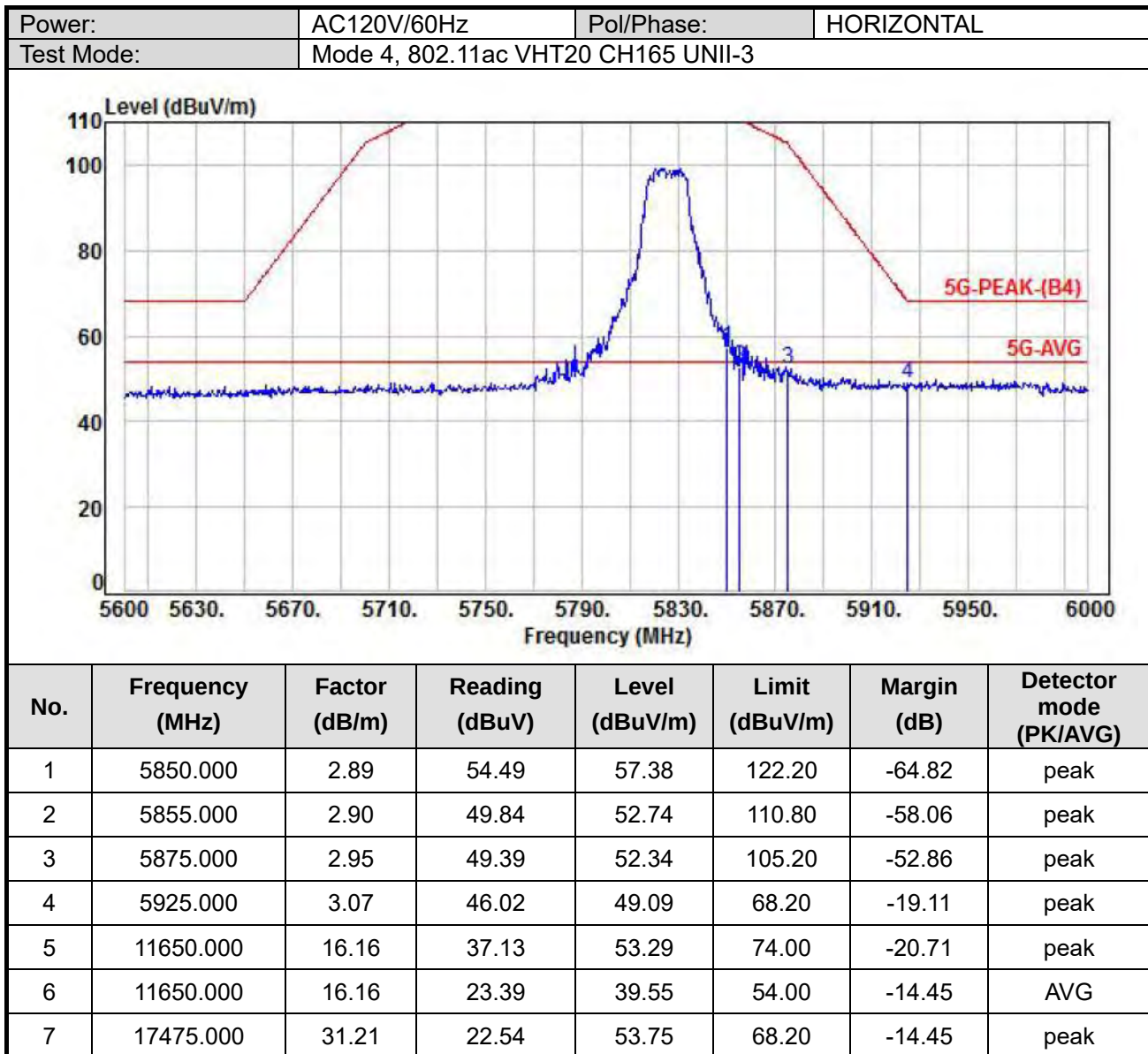
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

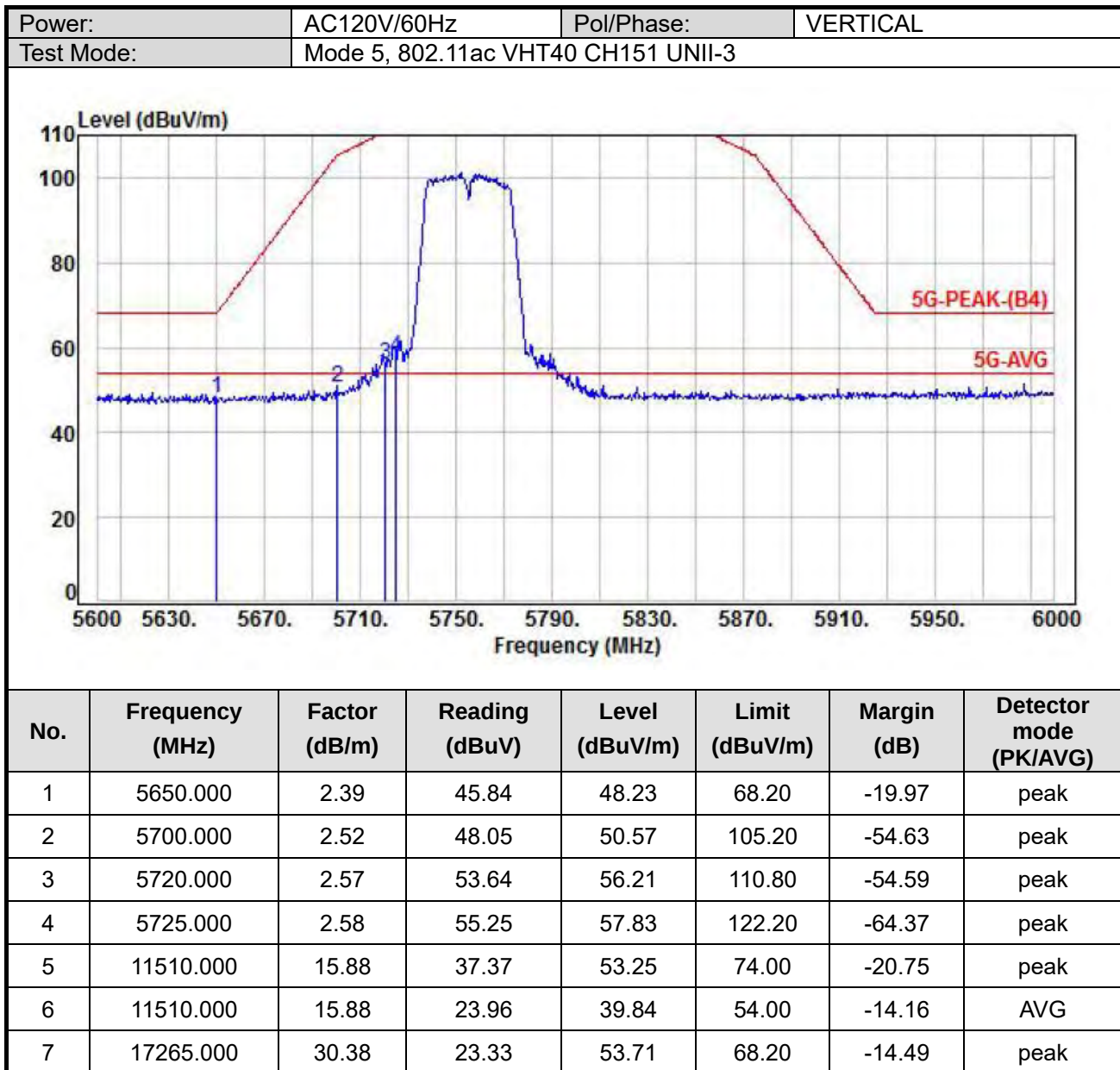
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

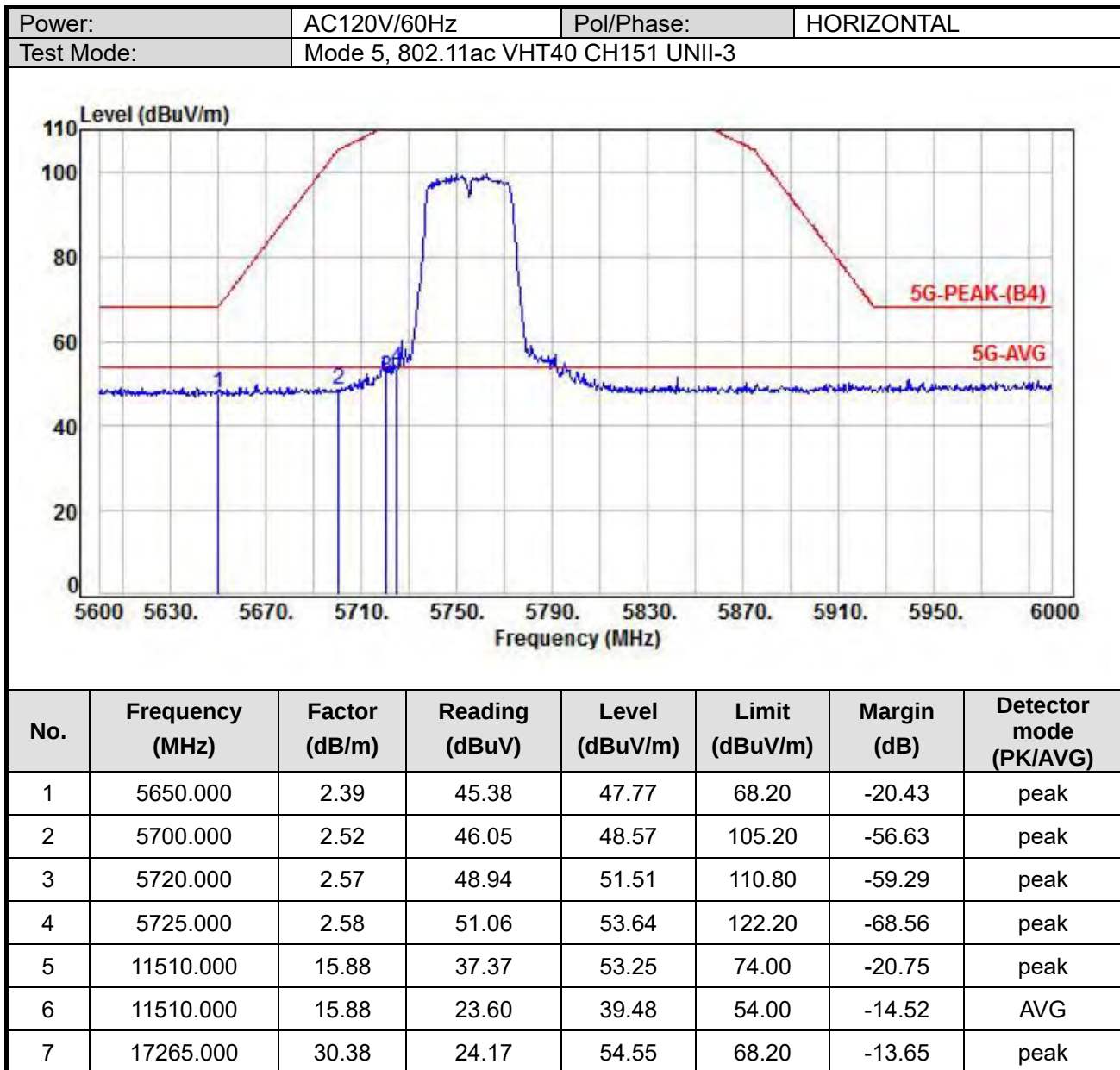
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

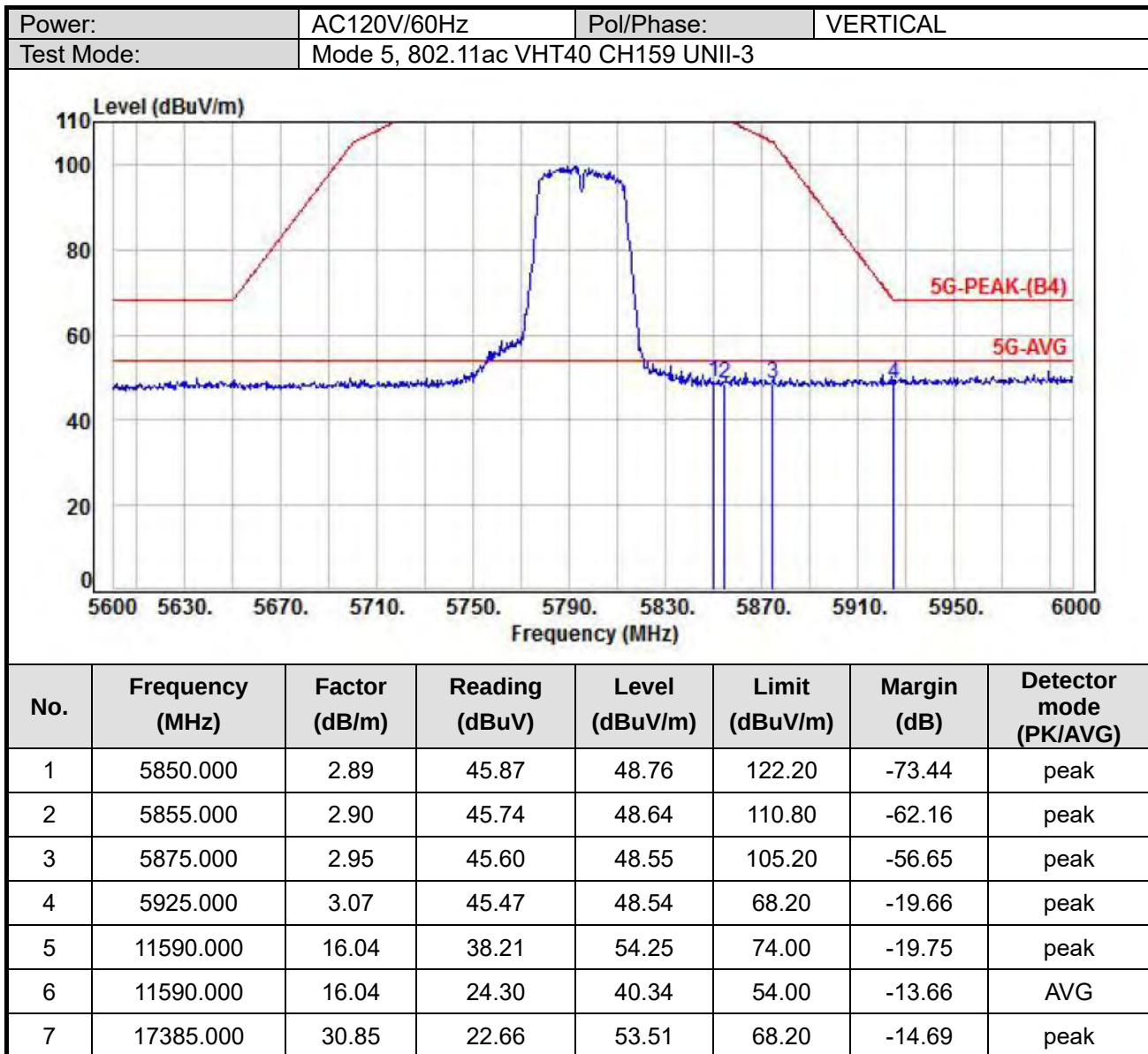
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

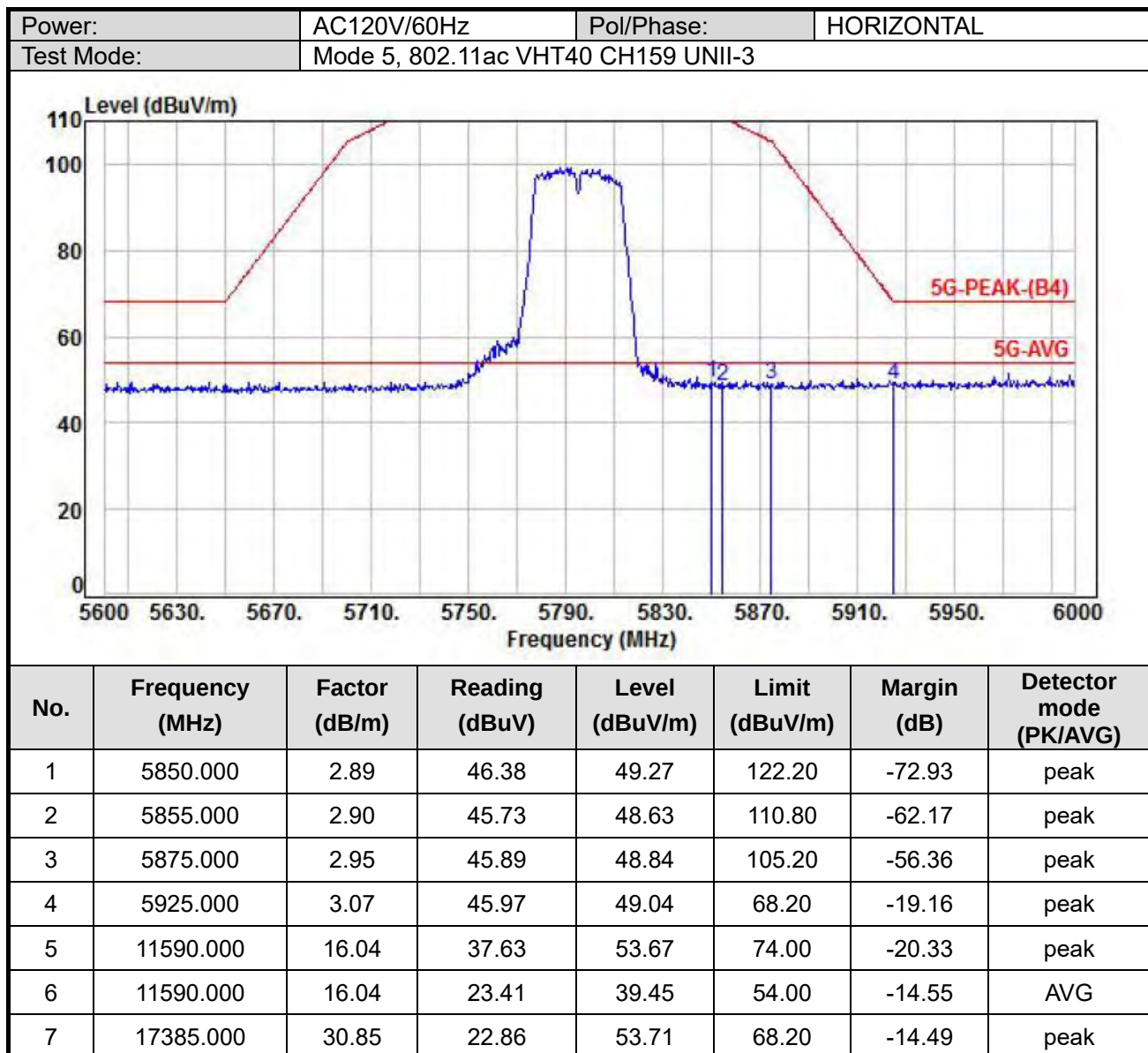
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

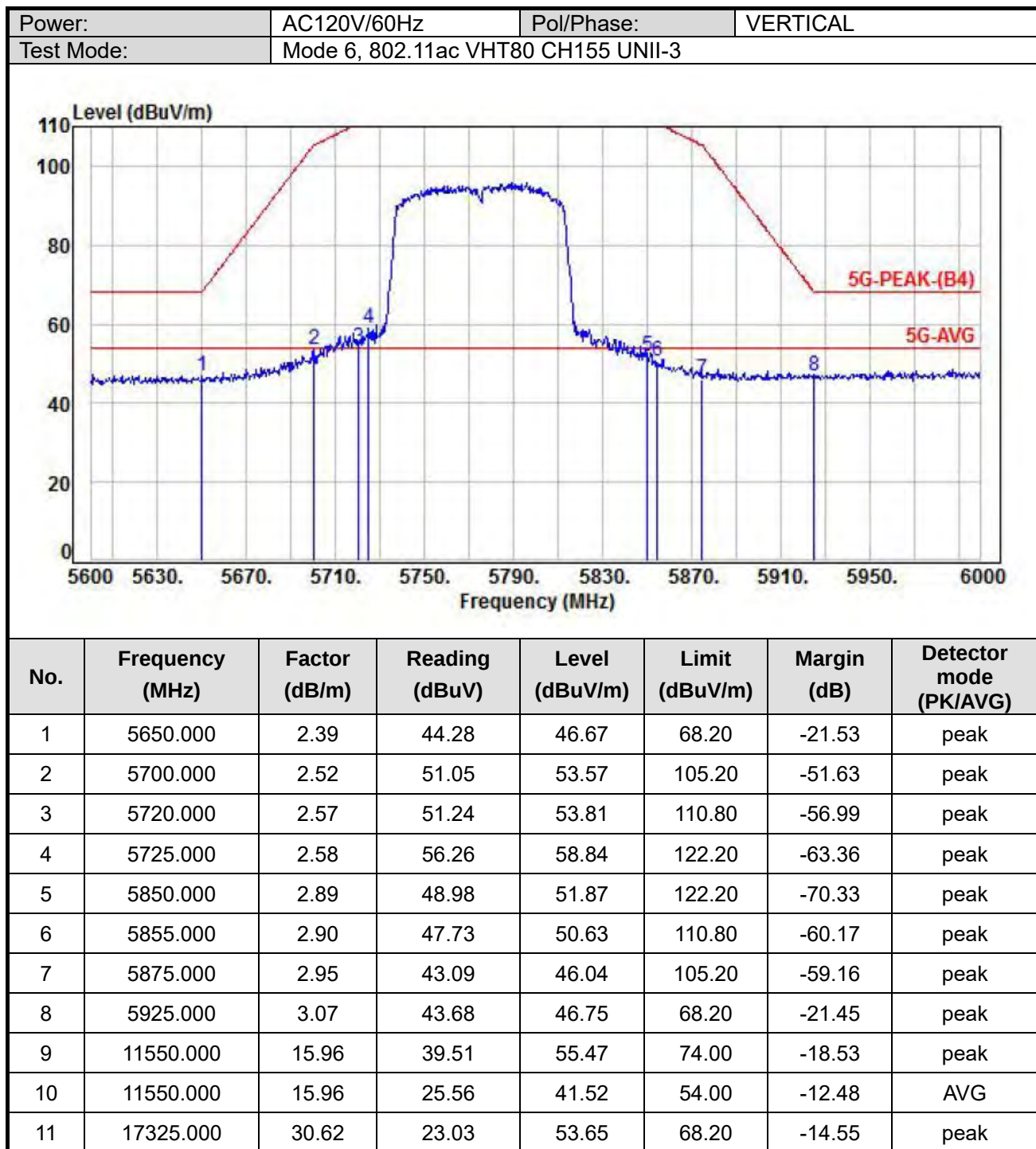
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

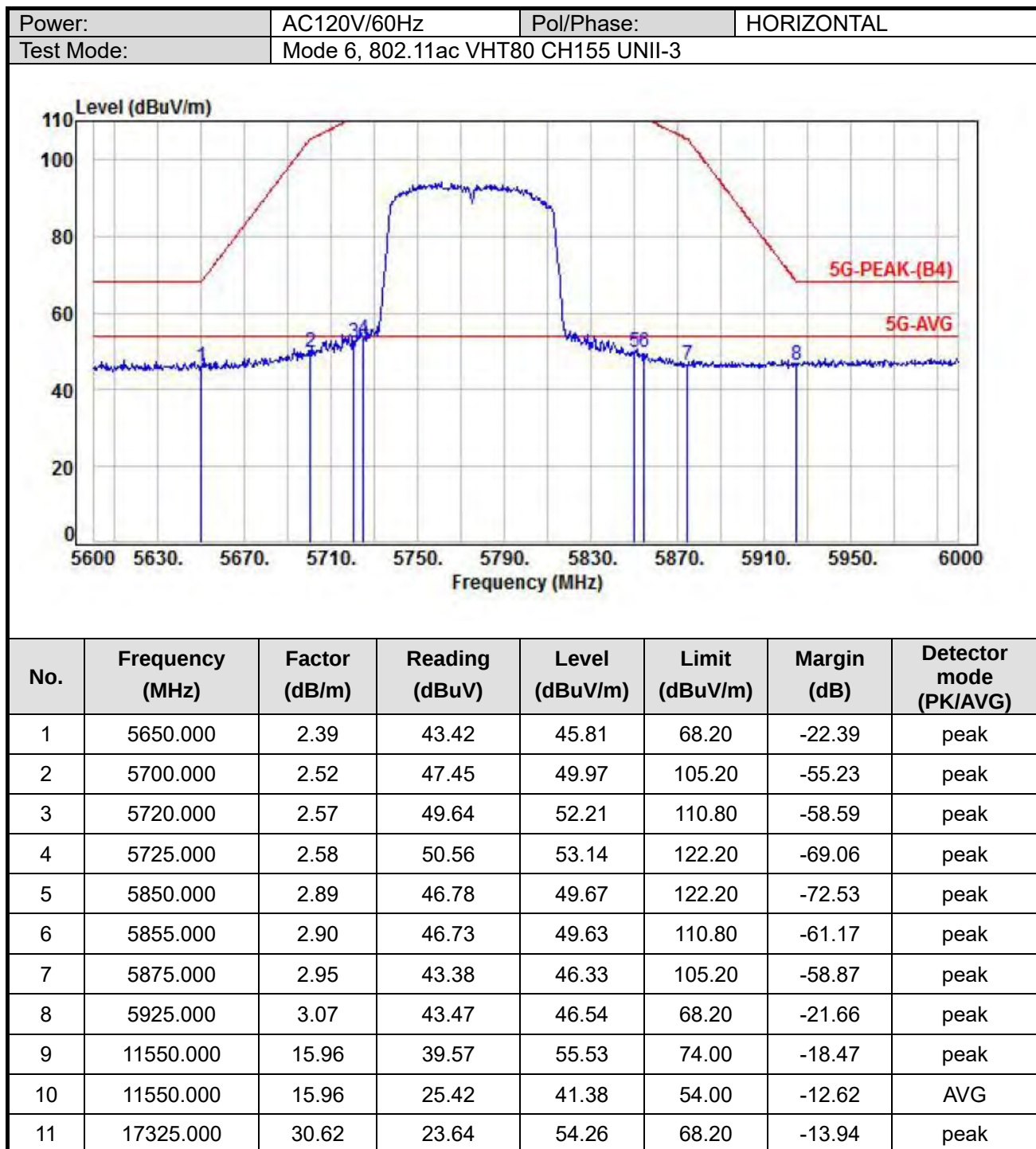
Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

Factor = Antenna Factor + Cable Loss – Amplifier Factor



Note : Level = Reading + Factor

Margin = Level – Limit

Factor = Antenna Factor + Cable Loss – Amplifier Factor



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

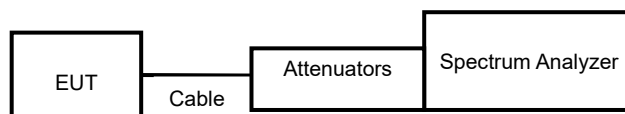
7.1. Test Limit

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

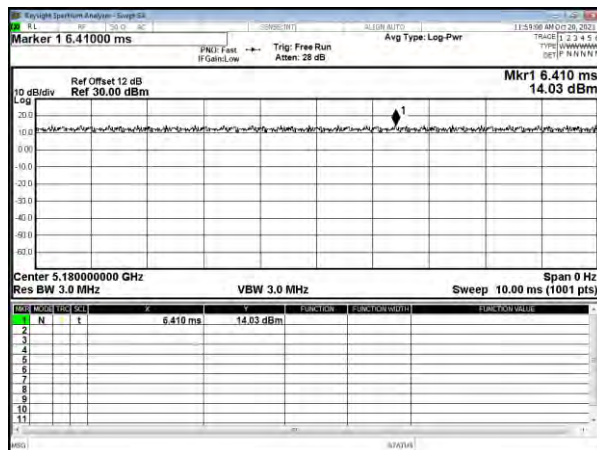
Modulation Mode	On Time (msec)	Period Time (msec)	Duty Cycle (%)
802.11a	100.00	100.00	100.00%
802.11ac VHT20	100.00	100.00	100.00%
802.11ac VHT40	100.00	100.00	100.00%
802.11ac VHT80	100.00	100.00	100.00%

7.5. Measurement Methods

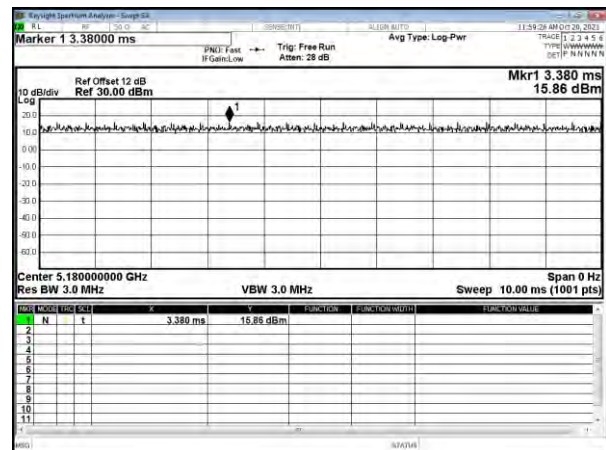
26 dB and 6dB Emission BW	KDB 789033 v02r01, Section C
99% Occupied BW	KDB 789033 v02r01, Section D
Conducted Output Power	KDB 789033 v02r01, Section E.2.d and E.3.b (Method PM-G)
Power Spectral Density	KDB 789033 v02r01, Section F
Unwanted emissions in restricted bands	KDB 789033 v02r01, Sections G and H
Unwanted emissions in non-restricted bands	KDB 789033 v02r01, Sections G and H



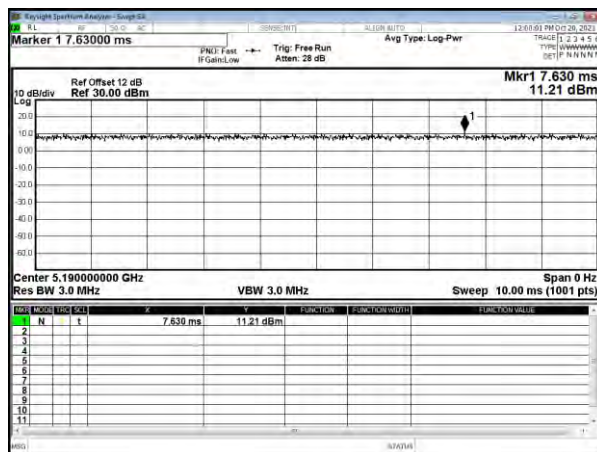
Modulation Type: 802.11a (6Mbps)



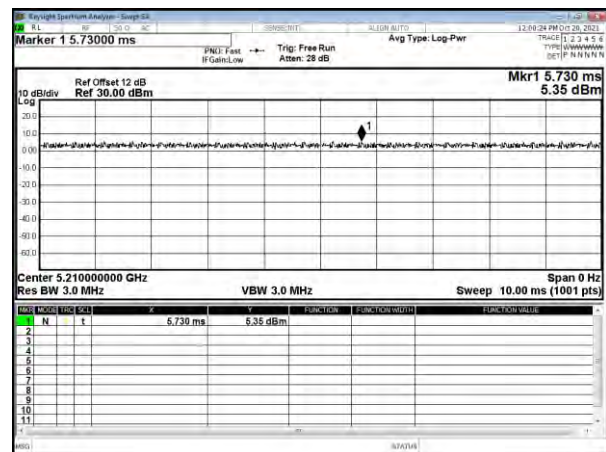
Modulation Type: 802.11ac VHT20 (6.5Mbps)



Modulation Type: 802.11ac VHT40 (13.5Mbps)



Modulation Type: 802.11ac VHT80 (29.3Mbps)





8. 6dB Bandwidth & 99% Occupied Bandwidth

8.1. Test Limit

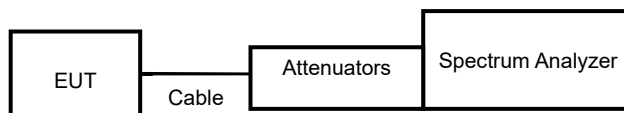
FCC §15.407

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

8.2. Test Procedure

Reference to 789033 v02r01 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW set to 100KHz, the VBW $\geq 3 \times$ RBW, peak detector and max hold.

8.3. Test Setup Layout



8.4. Test Result and Data (6dB Bandwidth)

In the 5.8GHz Band

Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)
			ANT A	ANT B	
802.11a	149	5745	16.54	16.52	0.50
	157	5785	16.53	16.49	0.50
	165	5825	16.54	16.49	0.50
802.11ac VHT20	149	5745	17.69	17.76	0.50
	157	5785	17.72	17.73	0.50
	165	5825	17.72	17.71	0.50
802.11ac VHT40	155	5755	36.42	36.41	0.50
	159	5795	36.45	36.42	0.50
802.11ac VHT80	155	5775	76.00	76.00	0.50

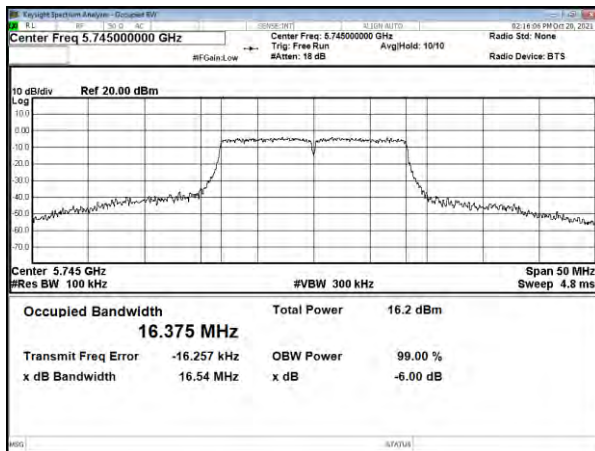
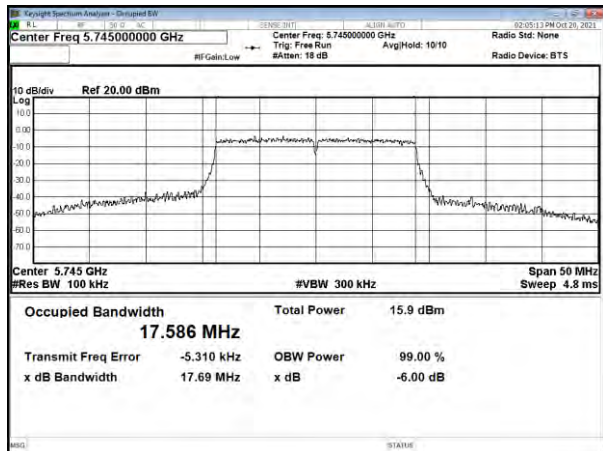
**8.5. Test Result and Data (99% Occupied Bandwidth)****In the 5.8GHz Band**

Mode	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT A	ANT B
802.11a	149	5745	16.41	16.39
	157	5785	16.41	16.43
	165	5825	16.40	16.41
802.11ac VHT20	149	5745	17.59	17.59
	157	5785	17.60	17.61
	165	5825	17.58	17.58
802.11ac VHT40	155	5755	36.10	36.11
	159	5795	36.10	36.12
802.11ac VHT80	155	5775	74.79	74.70

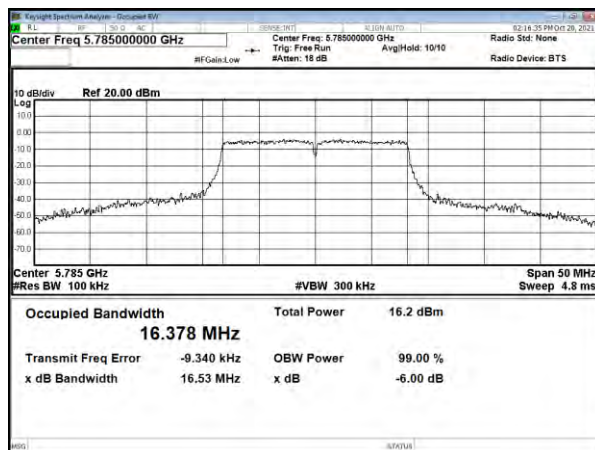


ANT A

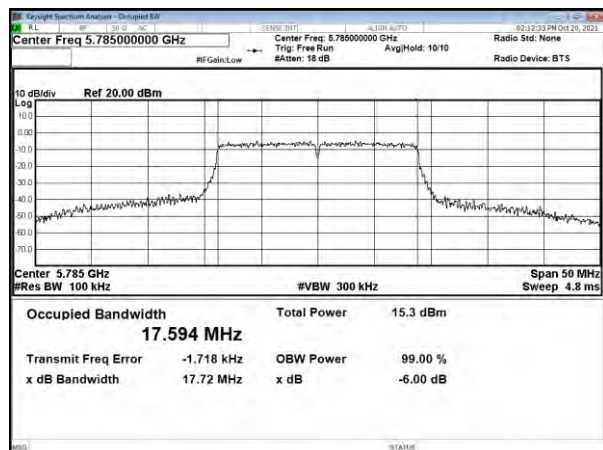
6dB Bandwidth

Modulation Type: 802.11a (6Mbps)
CH149Modulation Type: 802.11ac, VHT20 (6.5Mbps)
CH149

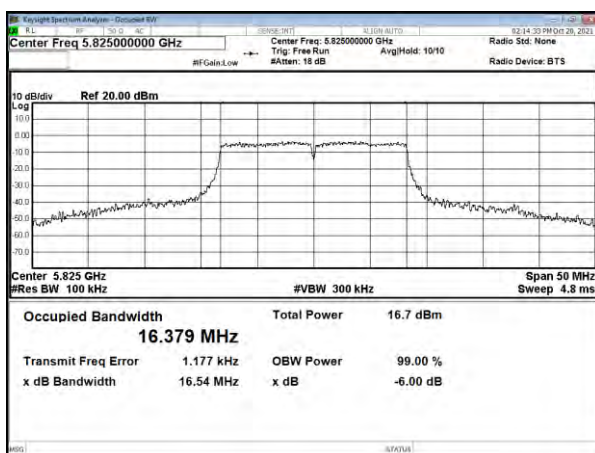
CH157



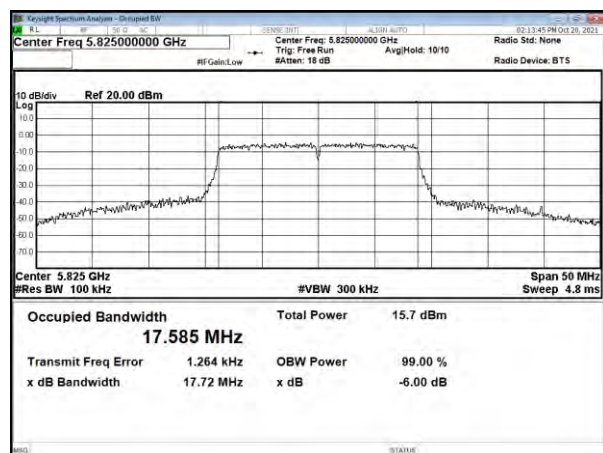
CH157



CH165



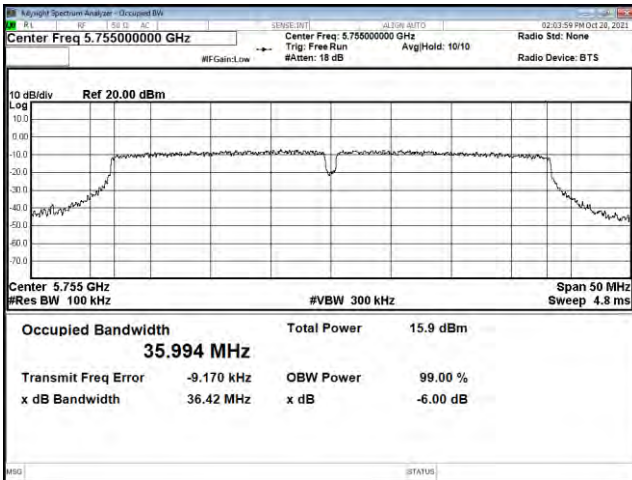
CH165



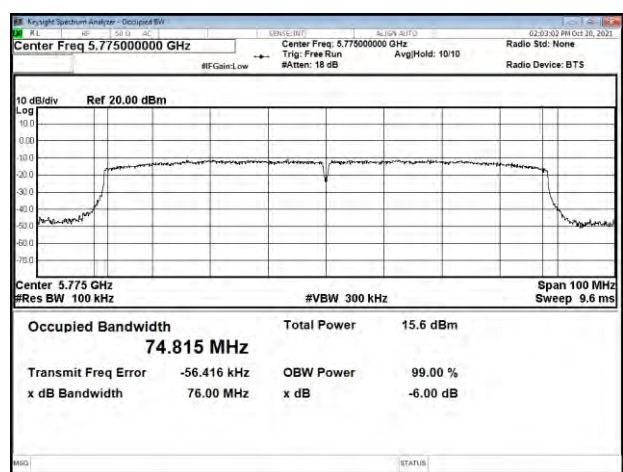


6dB Bandwidth

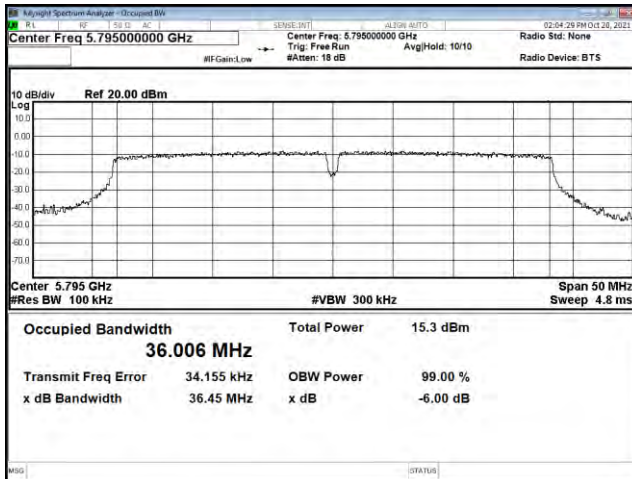
Modulation Type: 802.11ac, VHT40 (13.5Mbps)
CH151



Modulation Type: 802.11ac, VHT80 (29.3Mbps)
CH155



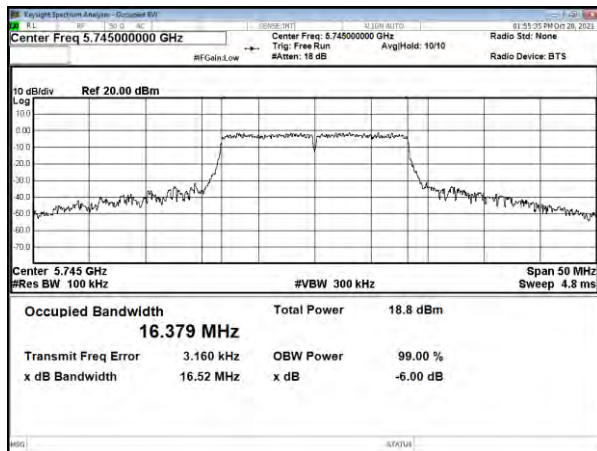
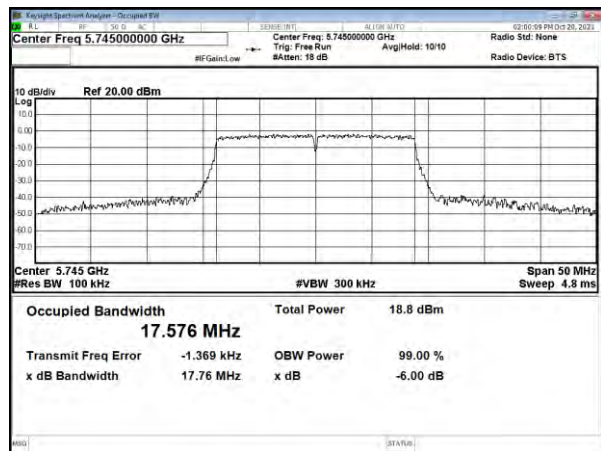
CH159



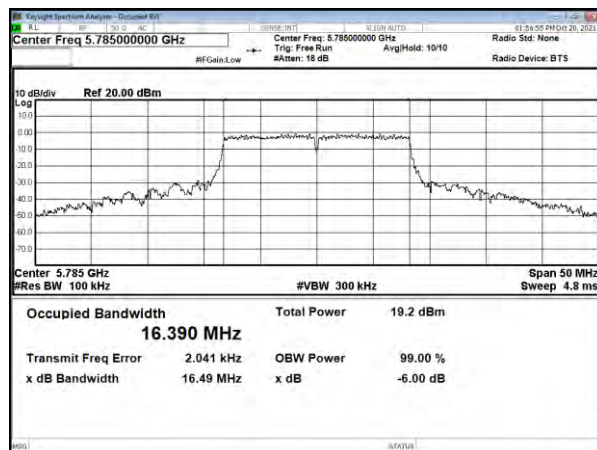


ANT B

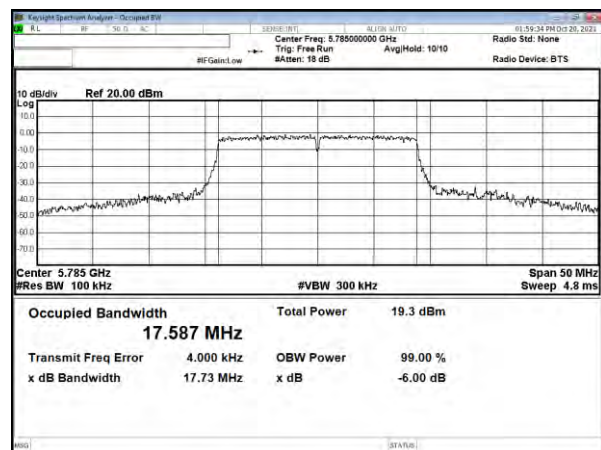
6dB Bandwidth

Modulation Type: 802.11a (6Mbps)
CH149Modulation Type: 802.11ac, VHT20 (6.5Mbps)
CH149

CH157



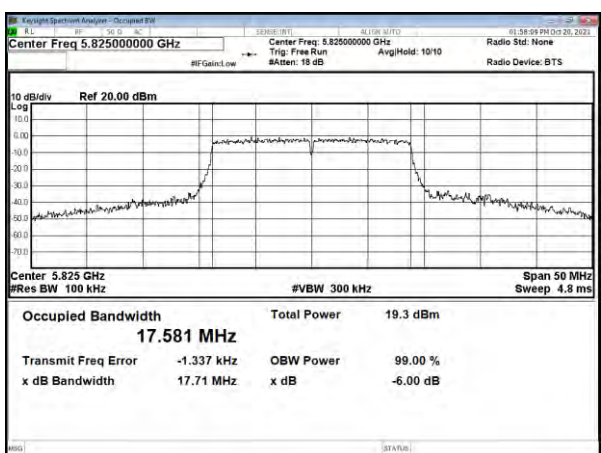
CH157



CH165

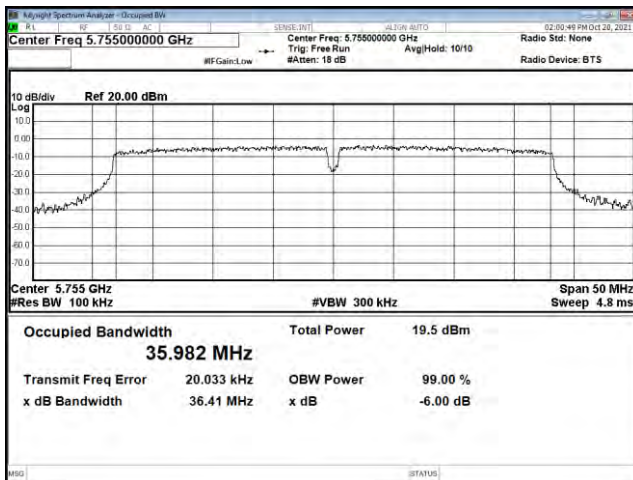


CH165

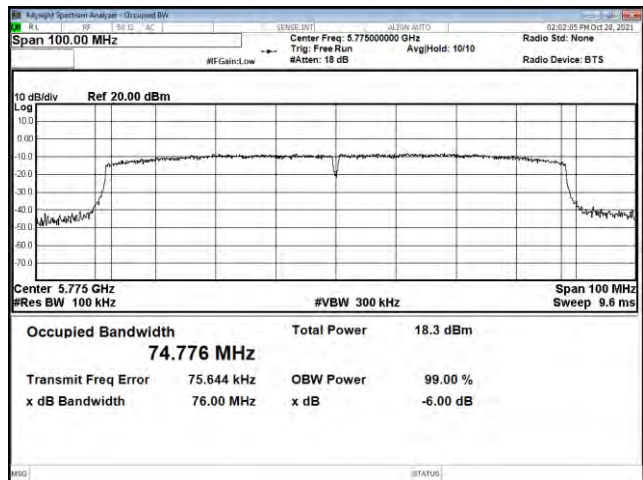




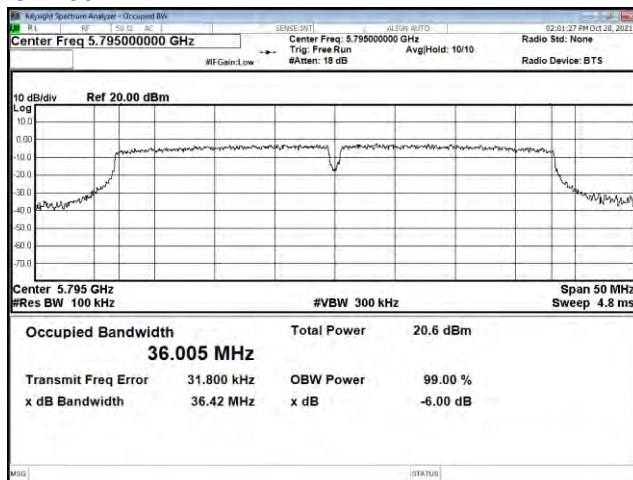
6dB Bandwidth
Modulation Type: 802.11ac, VHT40 (13.5Mbps)
CH151



Modulation Type: 802.11ac, VHT80 (29.3Mbps)
CH155



CH159



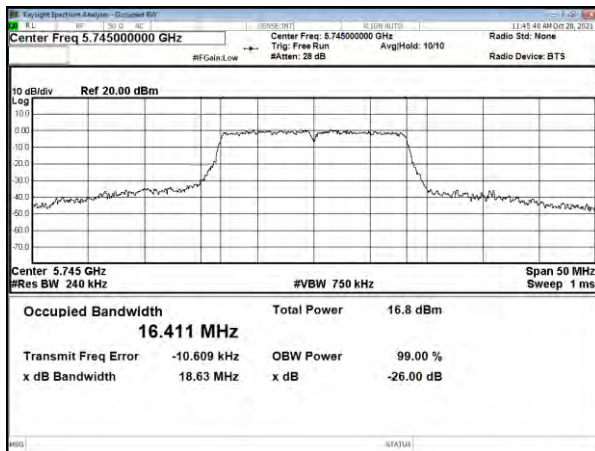


ANTA

99% Occupied Bandwidth

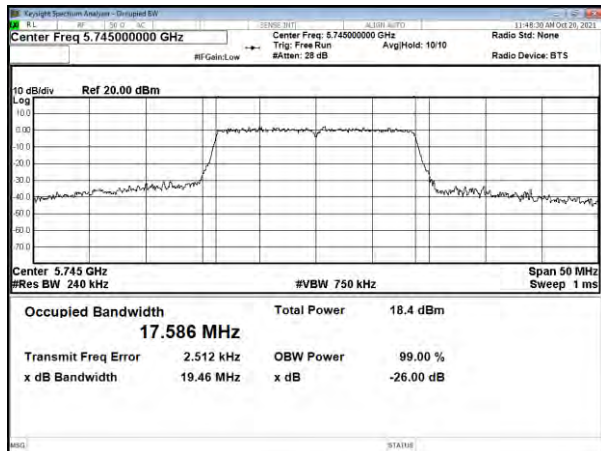
Modulation Type: 802.11a (6Mbps)

CH149

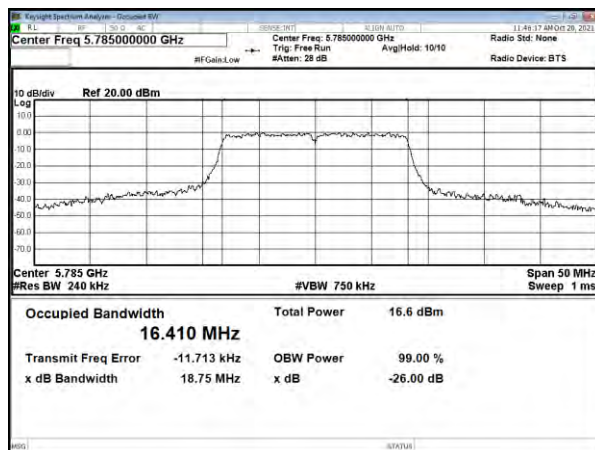


Modulation Type: 802.11ac, VHT20 (6.5Mbps)

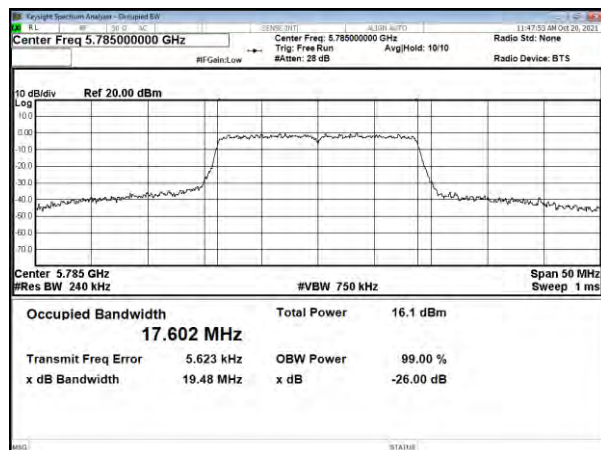
CH149



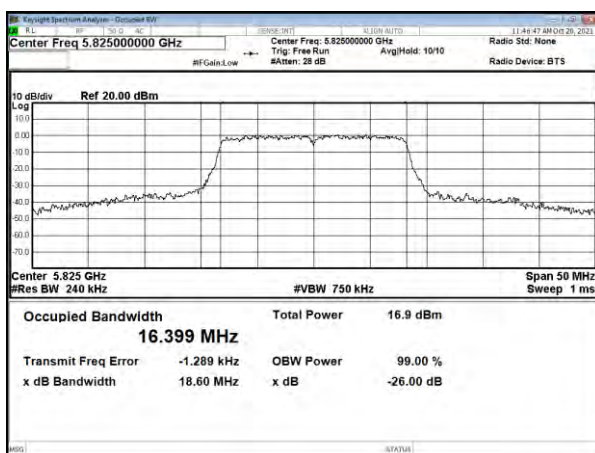
CH157



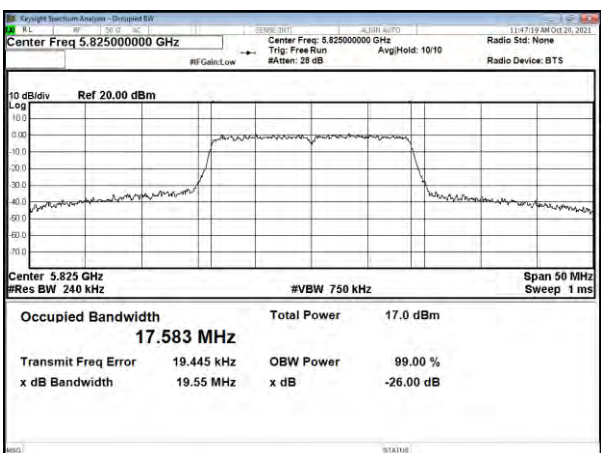
CH157



CH165

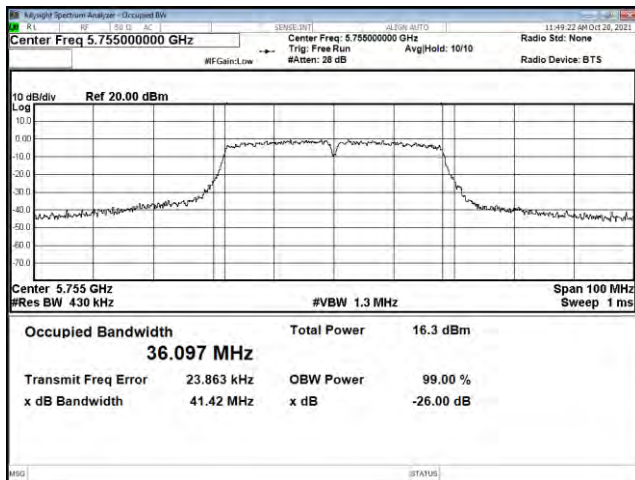


CH165

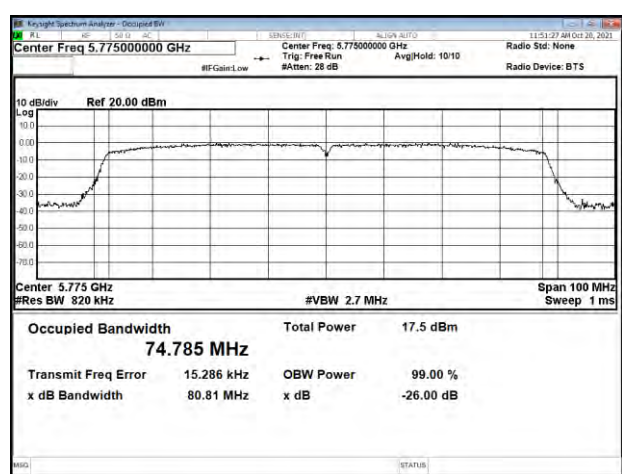




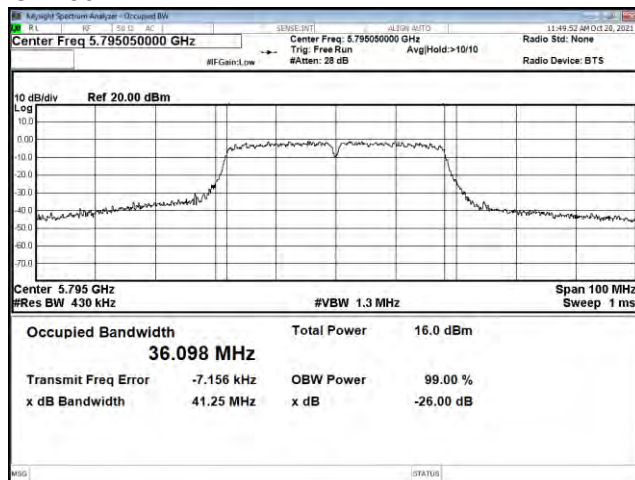
99% Occupied Bandwidth
Modulation Type: 802.11ac, VHT40 (13.5Mbps)
CH151



Modulation Type: 802.11ac, VHT80 (29.3Mbps)
CH155



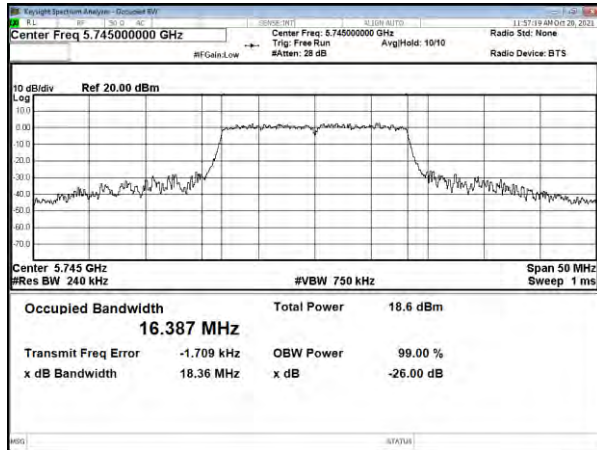
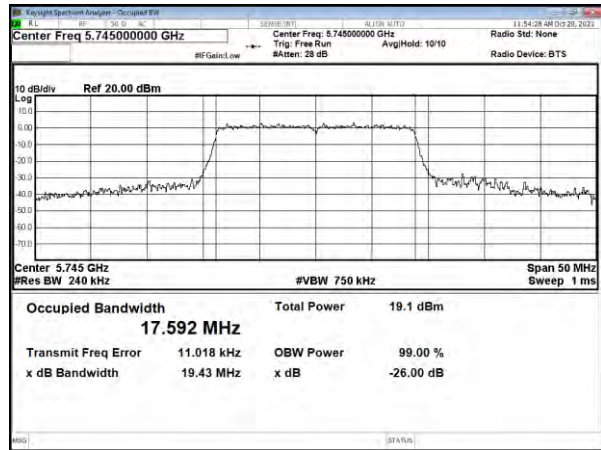
CH159



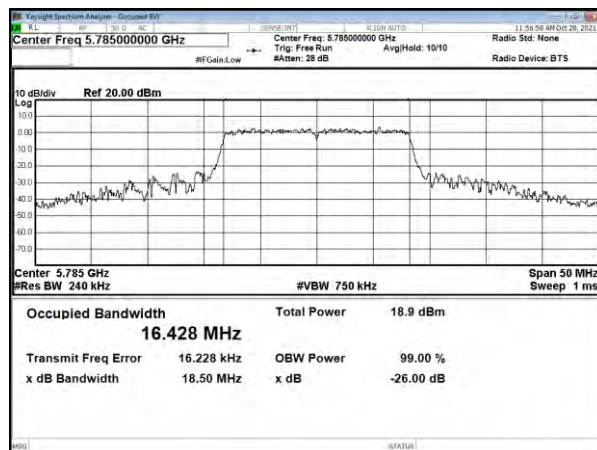


ANT B

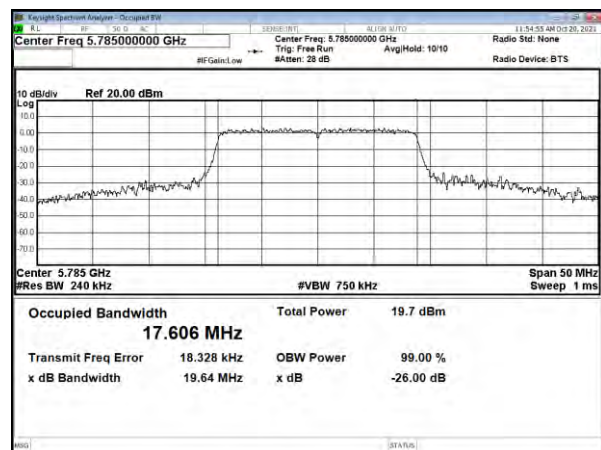
99% Occupied Bandwidth

Modulation Type: 802.11a (6Mbps)
CH149Modulation Type: 802.11ac, VHT20 (6.5Mbps)
CH149

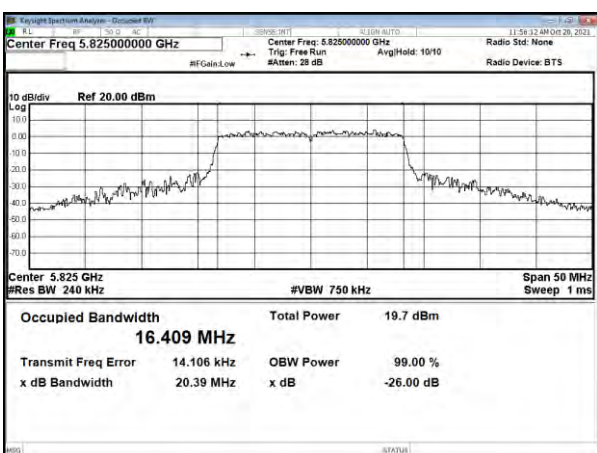
CH157



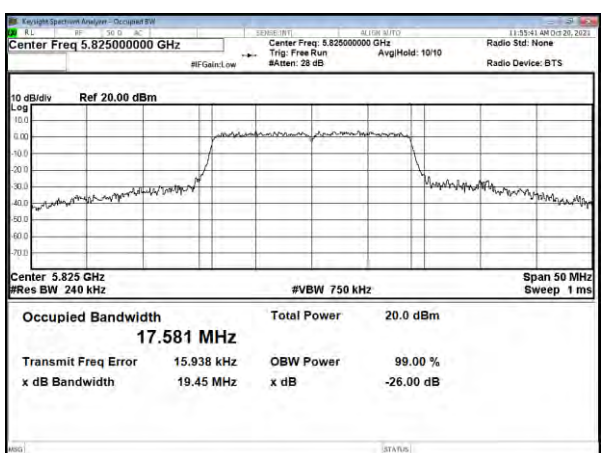
CH157



CH165

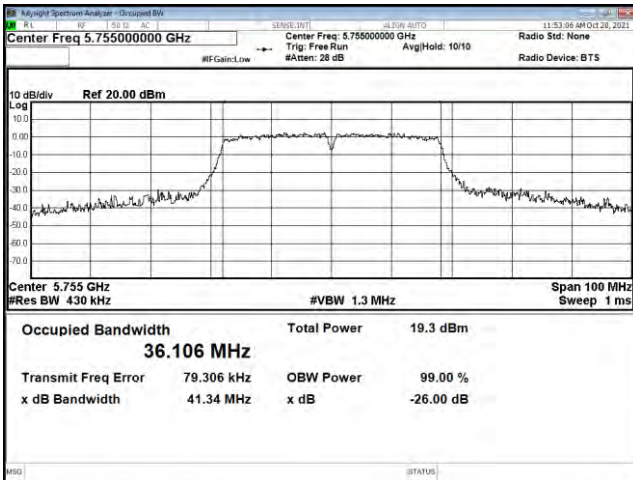


CH165

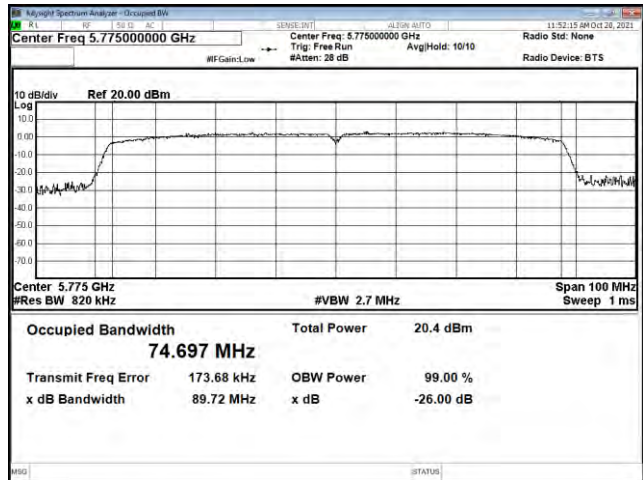




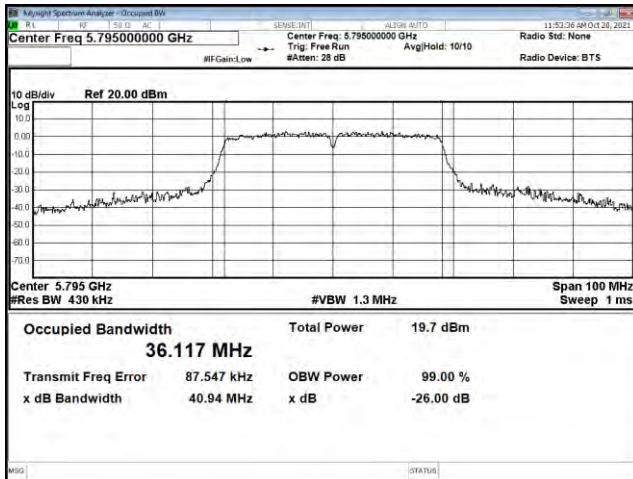
99% Occupied Bandwidth
Modulation Type: 802.11ac, VHT40 (13.5Mbps)
CH151



Modulation Type: 802.11ac, VHT80 (29.3Mbps)
CH155



CH159





9. 26dB Bandwidth & 99% Occupied Bandwidth

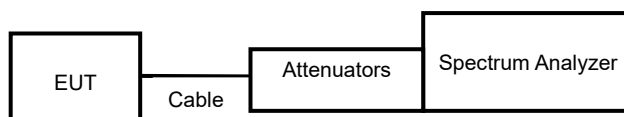
9.1. Test Limit

None; for reporting purposes only.

9.2. Test Procedure

Reference to 789033 v02r01 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 $\geq 3 \times$ RBW, peak detector and max hold.

9.3. Test Setup Layout





9.4. Test Result and Data (26dB Bandwidth)

In the 5.2G Band

Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT A	ANT B
802.11a	36	5180	18.49	18.49
	44	5220	18.58	18.44
	48	5240	18.51	18.37
802.11ac VHT20	36	5180	19.38	19.52
	44	5220	19.45	19.46
	48	5240	19.58	19.45
802.11ac VHT40	38	5190	41.26	41.29
	46	5230	40.75	40.79
802.11ac VHT80	42	5210	81.06	80.5

In the 5.3G Band

Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT A	ANT B
802.11a	52	5260	18.48	18.53
	60	5300	18.64	18.51
	64	5320	18.33	18.47
802.11ac VHT20	52	5260	19.53	19.48
	60	5300	19.55	19.54
	64	5320	19.6	19.42
802.11ac VHT40	54	5270	41.03	41.1
	62	5310	40.87	40.96
802.11ac VHT80	58	5290	80.99	80.71

In the 5.5G Band

Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT A	ANT B
802.11a	100	5500	18.51	18.4
	116	5580	18.6	18.48
	140	5700	18.53	18.38
802.11ac VHT20	100	5500	19.46	19.46
	116	5580	19.57	19.42
	140	5700	19.46	19.41
802.11ac VHT40	102	5510	40.6	41.06
	110	5550	40.93	40.95
	134	5670	41.24	40.98
802.11ac VHT80	106	5530	81.01	81.01



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

In the 5.2G Band

Mode	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT A	ANT B
802.11a	36	5180	16.38	16.39
	44	5220	16.42	16.40
	48	5240	16.42	16.40
802.11ac VHT20	36	5180	17.57	17.57
	44	5220	17.57	17.56
	48	5240	17.58	17.57
802.11ac VHT40	38	5190	36.06	36.05
	46	5230	36.10	36.06
802.11ac VHT80	42	5210	74.56	74.50

In the 5.3G Band

Mode	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT A	ANT B
802.11a	52	5260	16.39	16.39
	60	5300	16.41	16.39
	64	5320	16.40	16.39
802.11ac VHT20	52	5260	17.58	17.58
	60	5300	17.59	17.58
	64	5320	17.61	17.56
802.11ac VHT40	54	5270	36.07	36.04
	62	5310	36.10	36.11
802.11ac VHT80	58	5290	74.65	74.68

In the 5.5G Band

Mode	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT A	ANT B
802.11a	100	5500	16.41	16.39
	116	5580	16.40	16.39
	140	5700	16.40	16.39
802.11ac VHT20	100	5500	17.57	17.58
	116	5580	17.59	17.57
	140	5700	17.58	17.58
802.11ac VHT40	102	5510	36.10	36.07
	110	5550	36.11	36.07
	134	5670	36.03	36.06
802.11ac VHT80	106	5530	74.64	74.70

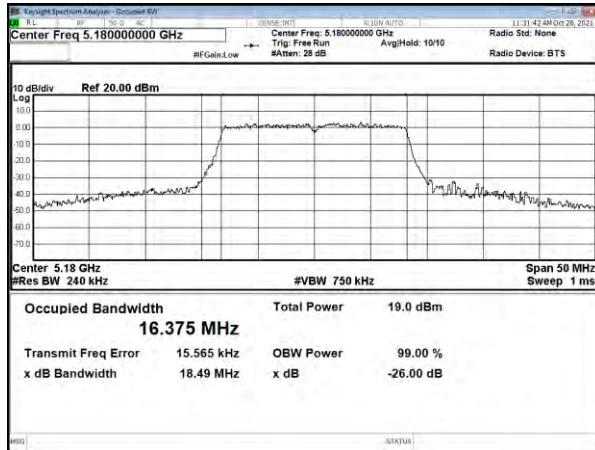


ANT A

26dB Bandwidth & 99% Occupied Bandwidth, UNII-1

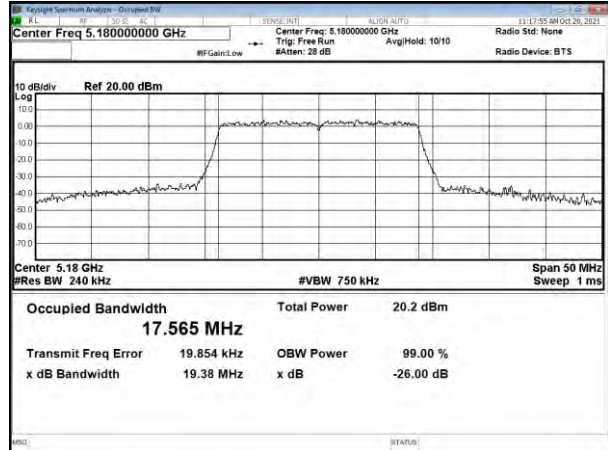
Modulation Standard: 802.11a (6Mbps)

CH36



Modulation Standard: 802.11ac VHT20 (6.5Mbps)

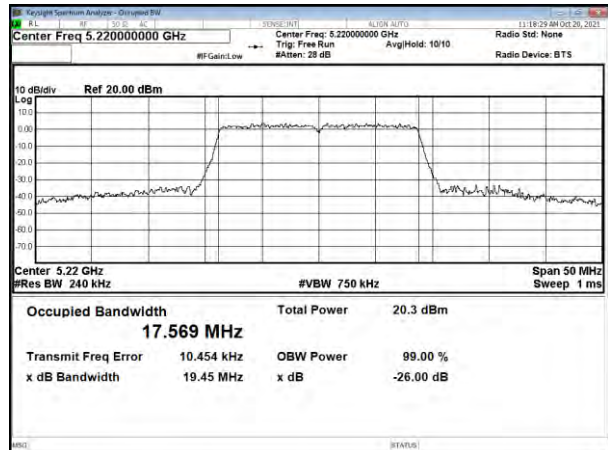
CH36



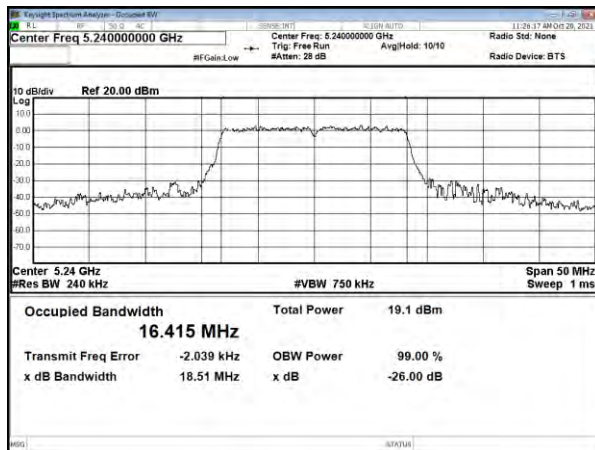
CH44



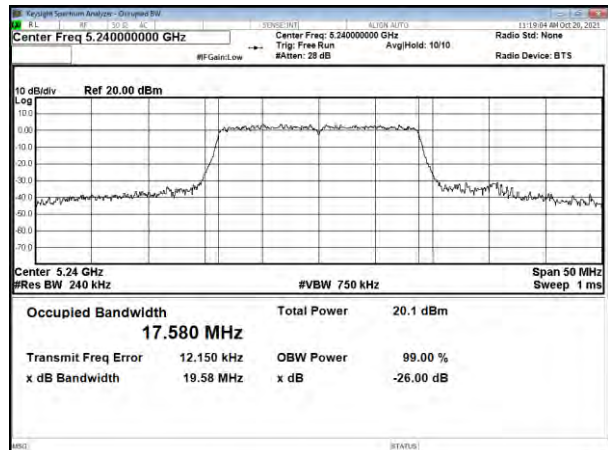
CH44



CH48



CH48

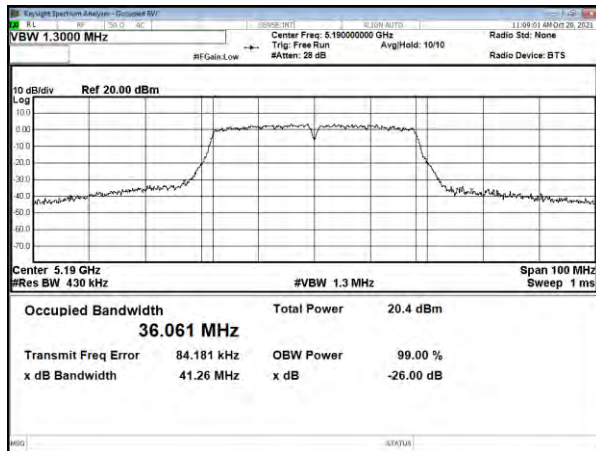




26dB Bandwidth & 99% Occupied Bandwidth, UNII-1

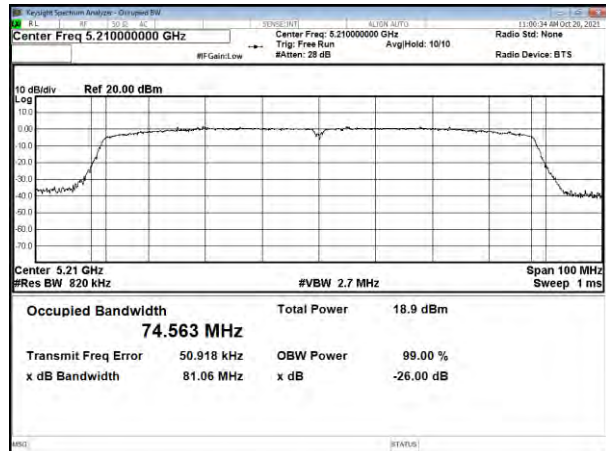
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH38

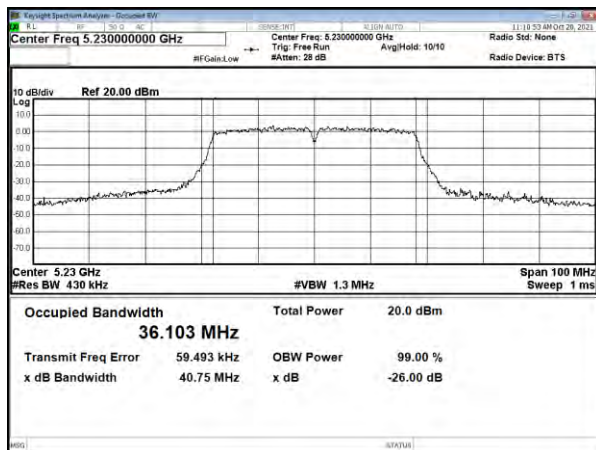


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH42



CH46

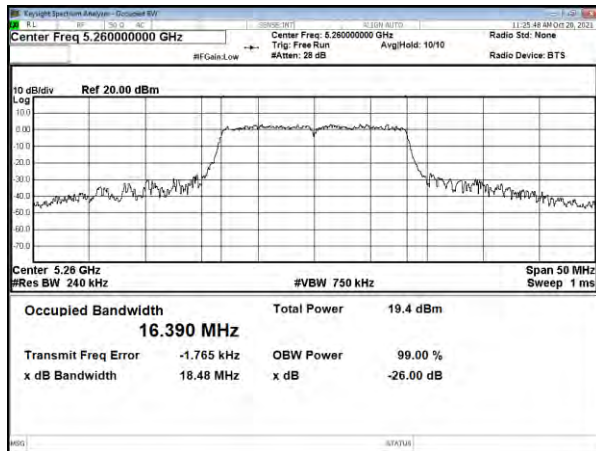




26dB Bandwidth & 99% Occupied Bandwidth, UNII-2A

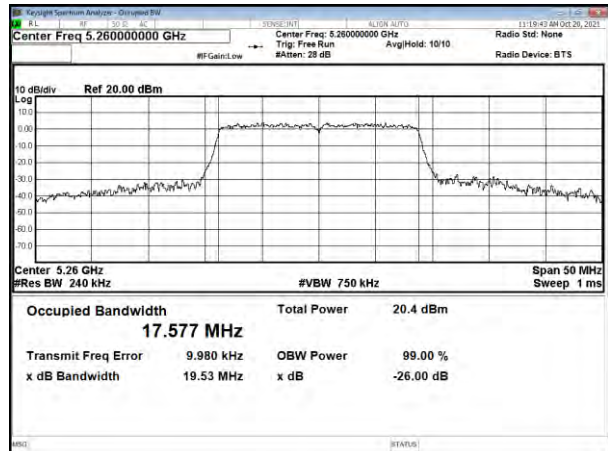
Modulation Standard: 802.11a (6Mbps)

CH52



Modulation Standard: 802.11ac VHT20 (6.5Mbps)

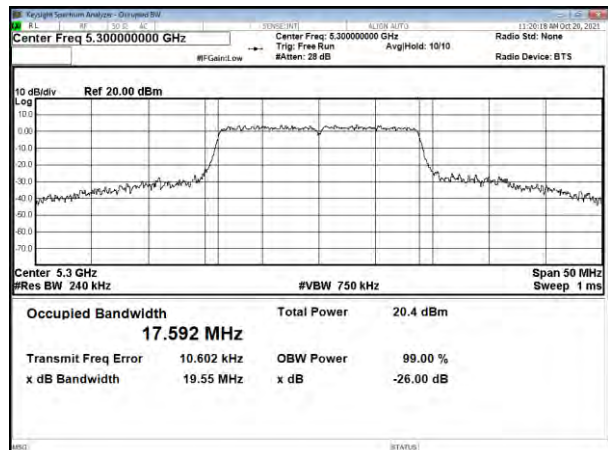
CH52



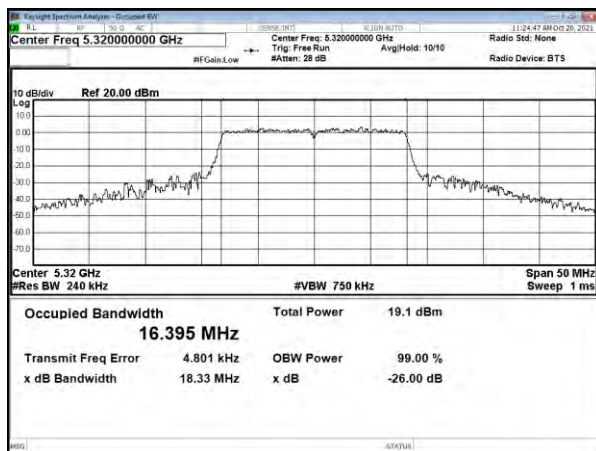
CH60



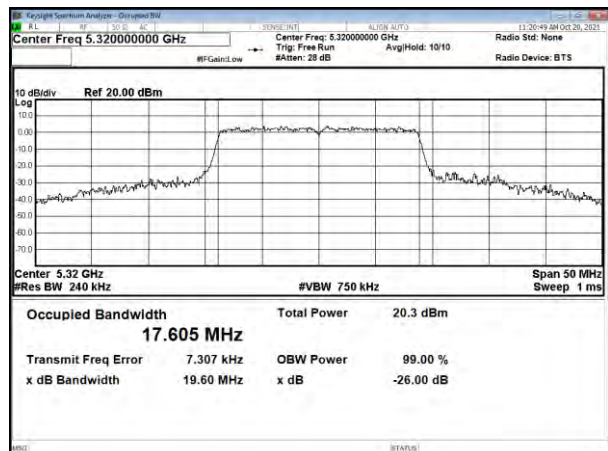
CH60



CH64



CH64

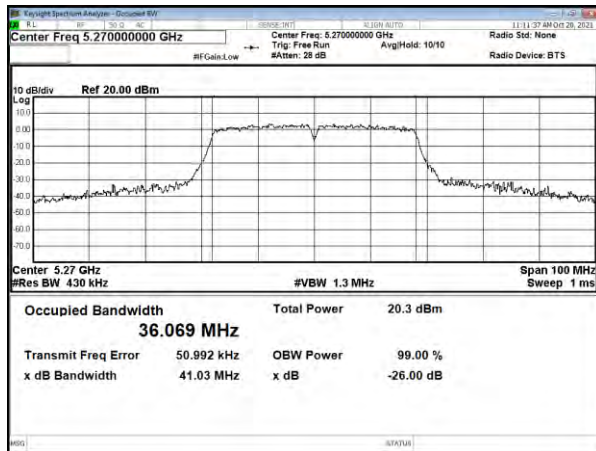




26dB Bandwidth & 99% Occupied Bandwidth, UNII-2A

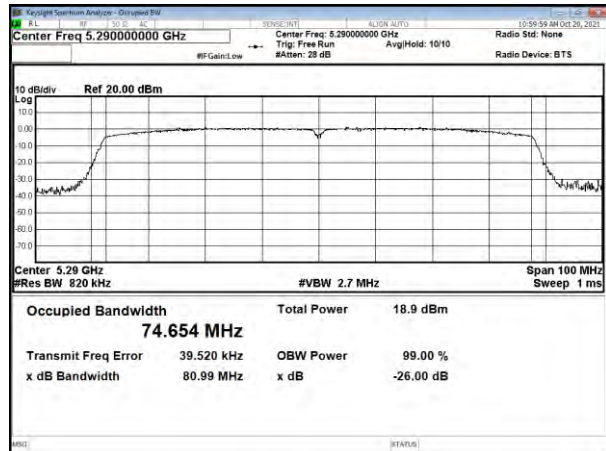
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH54

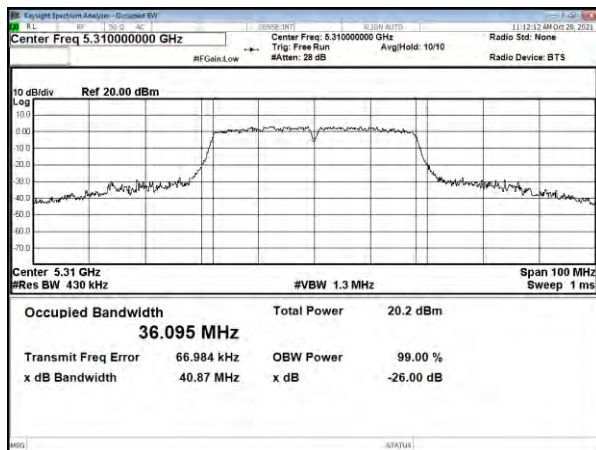


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH58



CH62





26dB Bandwidth & 99% Occupied Bandwidth, UNII-2C

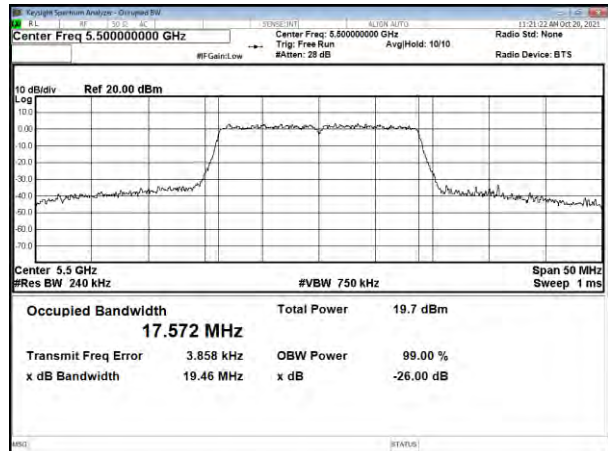
Modulation Standard: 802.11a (6Mbps)

CH100

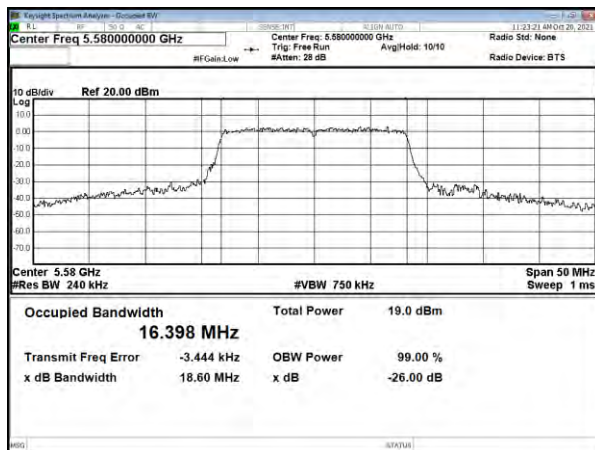


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

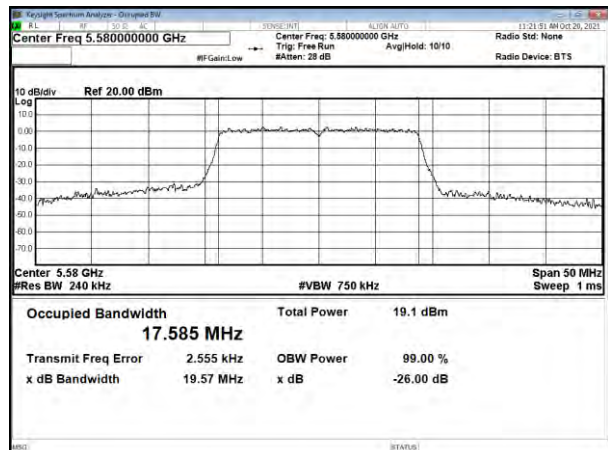
CH100



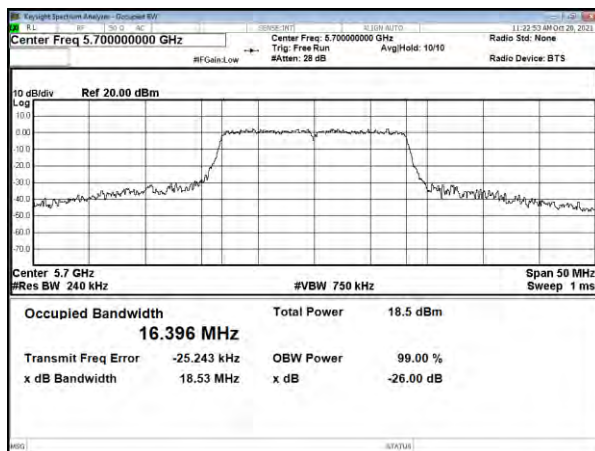
CH116



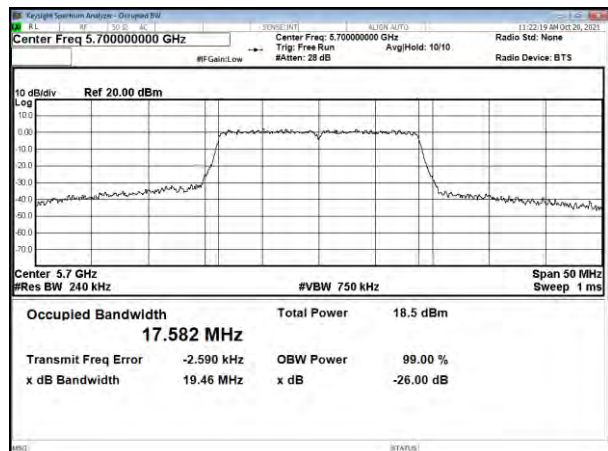
CH116



CH140



CH140





26dB Bandwidth & 99% Occupied Bandwidth, UNII-2C

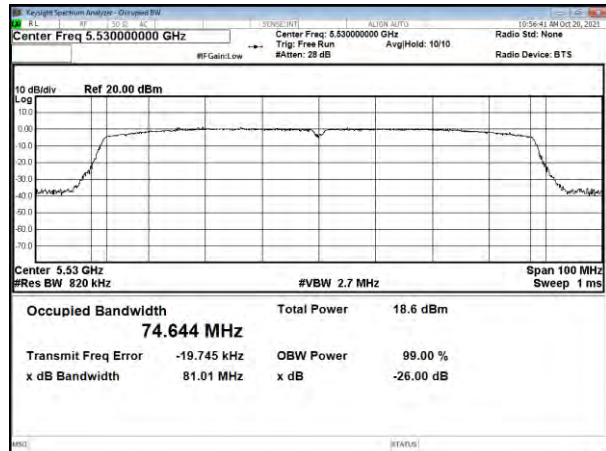
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH102

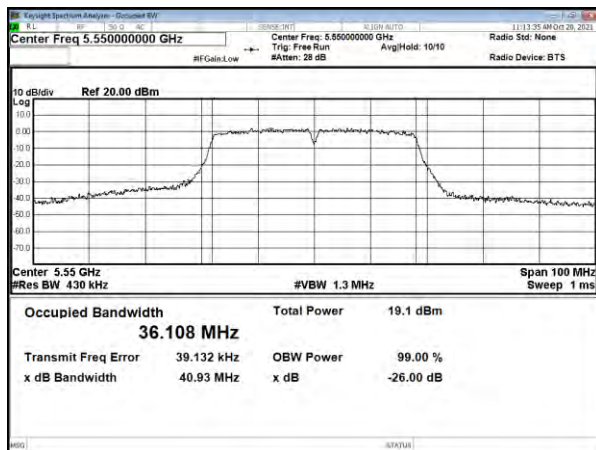


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

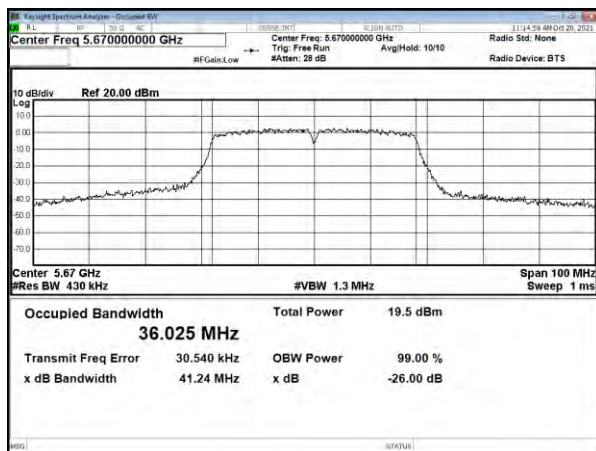
CH106



CH1110



CH134



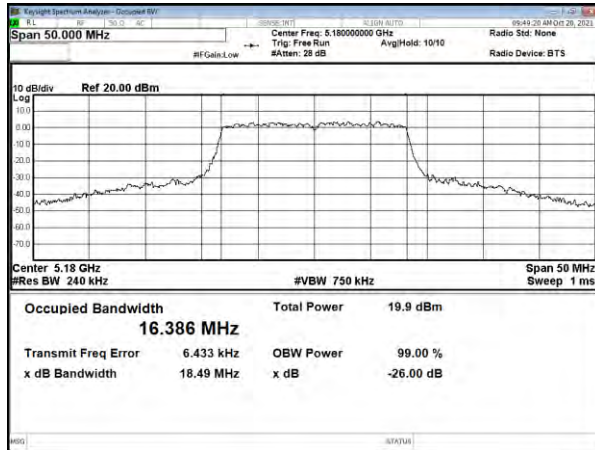


ANT B

26dB Bandwidth & 99% Occupied Bandwidth, UNII-1

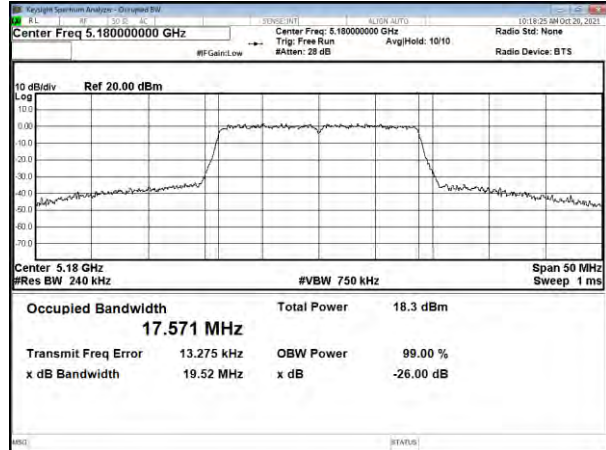
Modulation Standard: 802.11a (6Mbps)

CH36

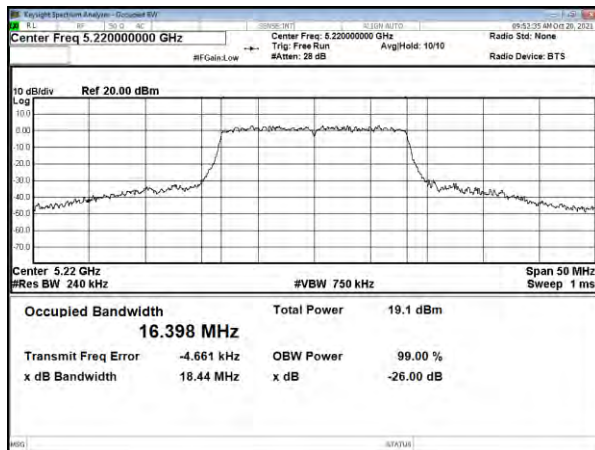


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

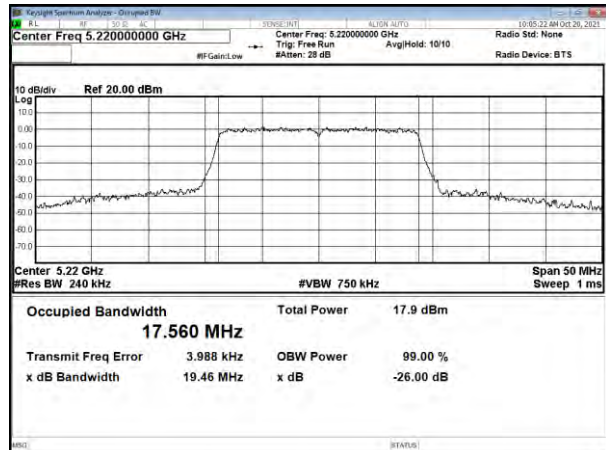
CH36



CH44



CH44



CH48



CH48

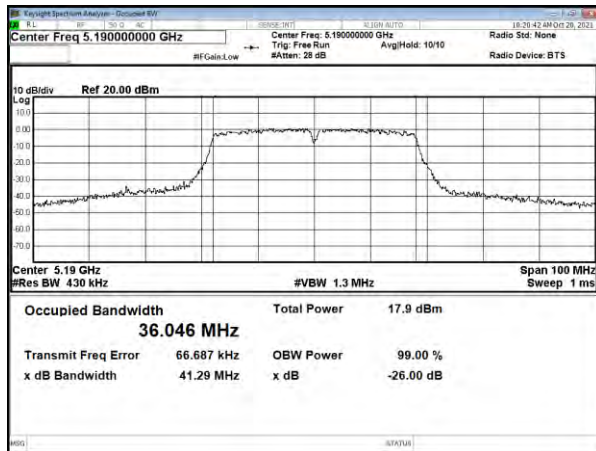




26dB Bandwidth & 99% Occupied Bandwidth, UNII-1

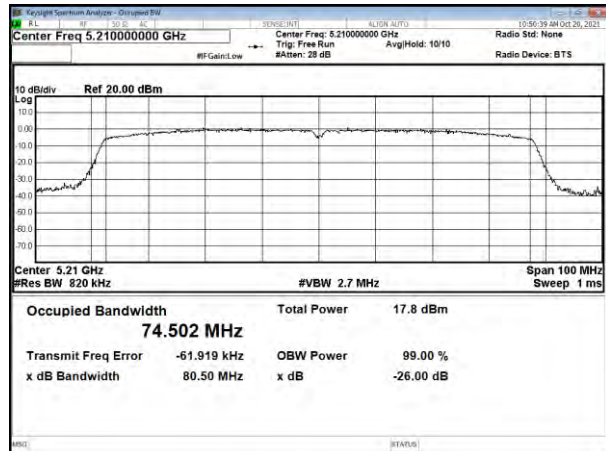
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH38

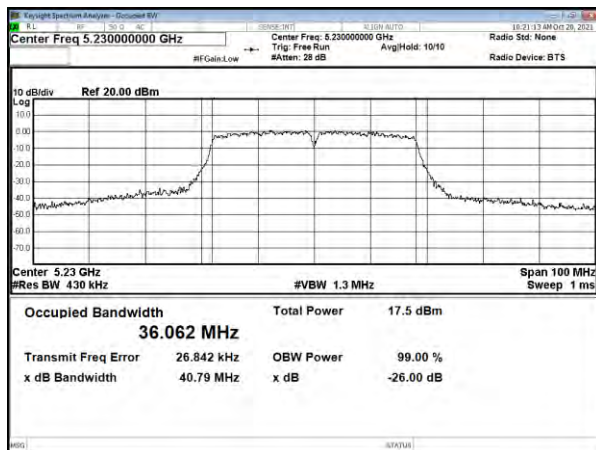


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH42



CH46

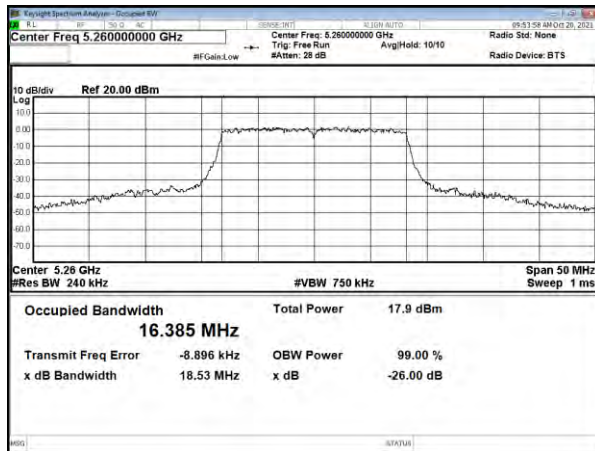




26dB Bandwidth & 99% Occupied Bandwidth, UNII-2A

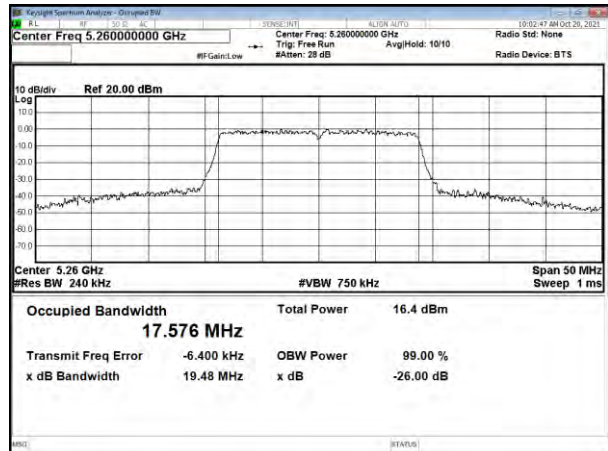
Modulation Standard: 802.11a (6Mbps)

CH52

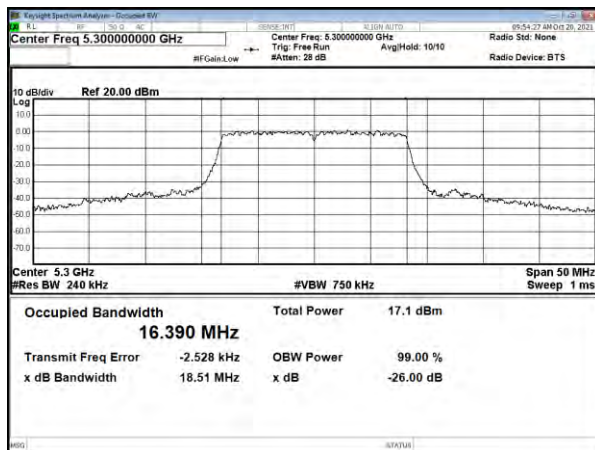


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

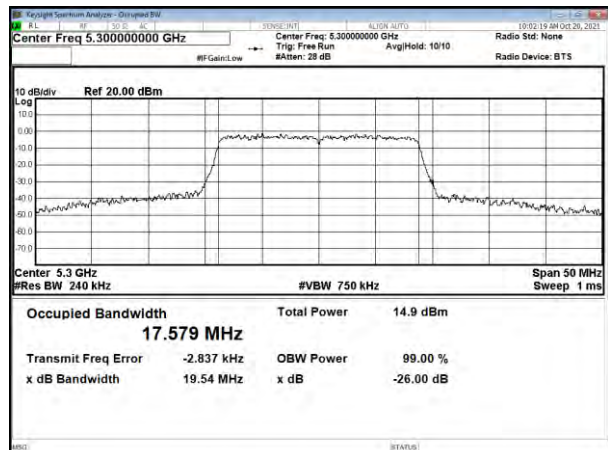
CH52



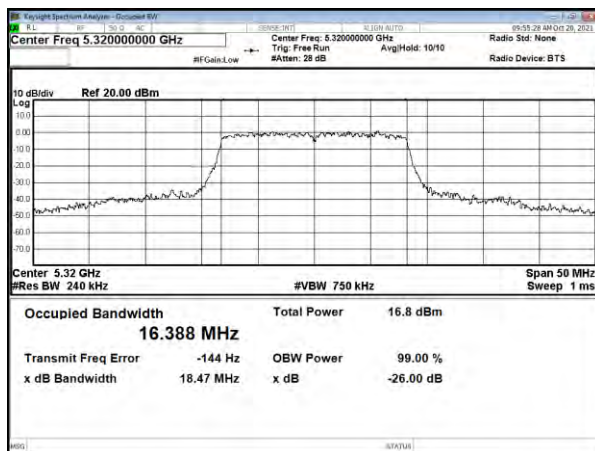
CH60



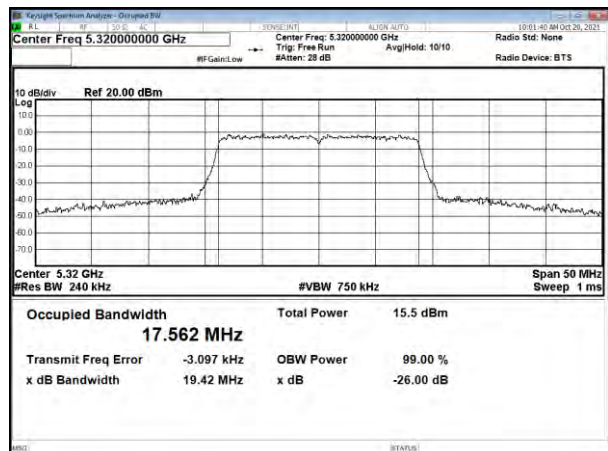
CH60



CH64



CH64





26dB Bandwidth & 99% Occupied Bandwidth, UNII-2A

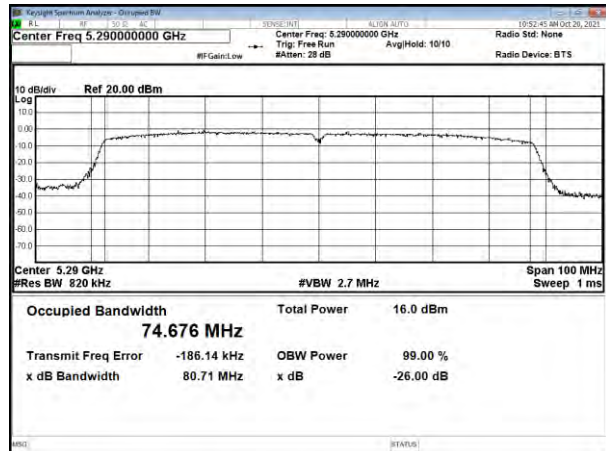
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH54

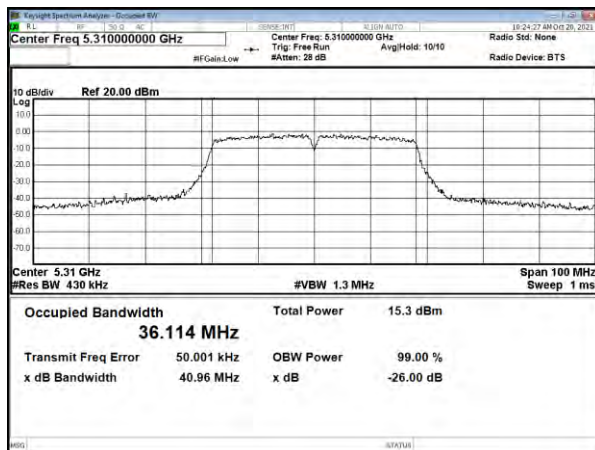


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH58



CH62

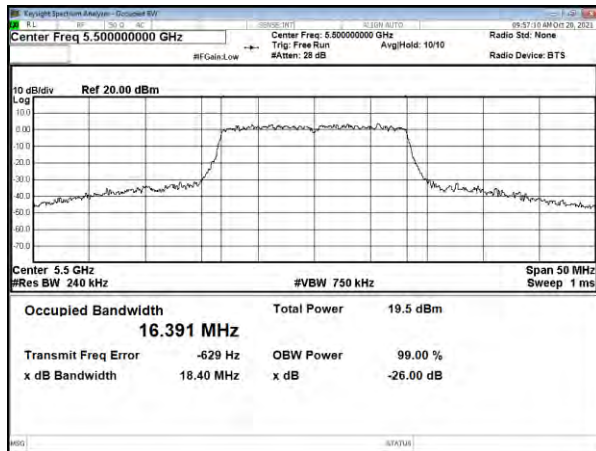




26dB Bandwidth & 99% Occupied Bandwidth, UNII-2C

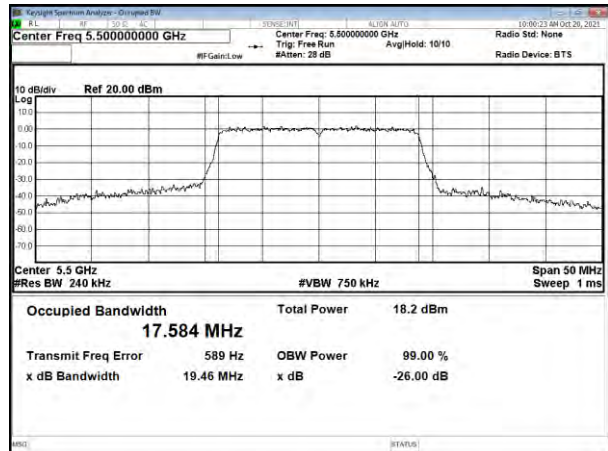
Modulation Standard: 802.11a (6Mbps)

CH100

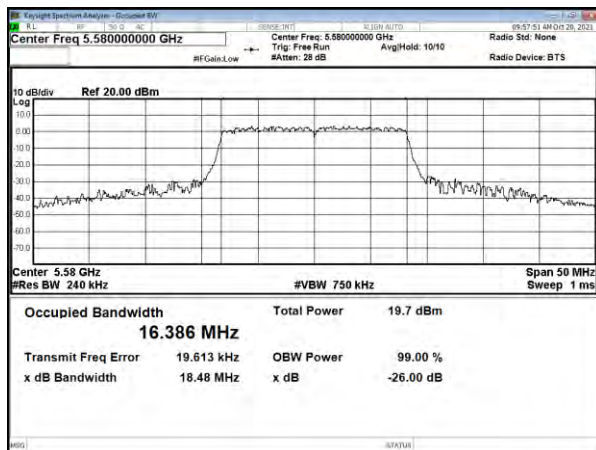


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

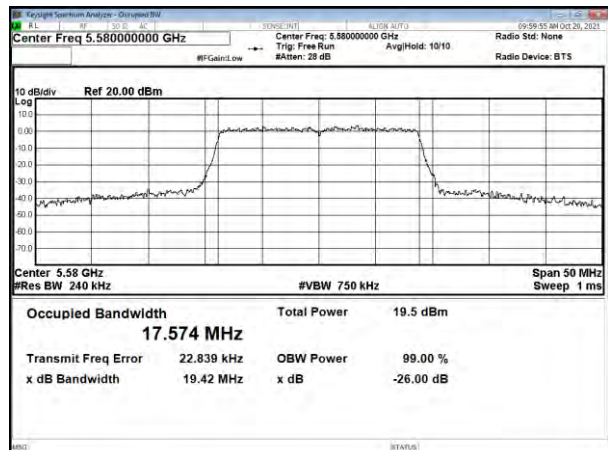
CH100



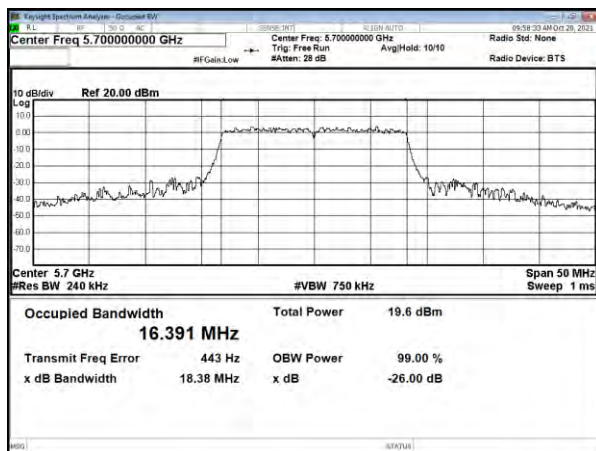
CH116



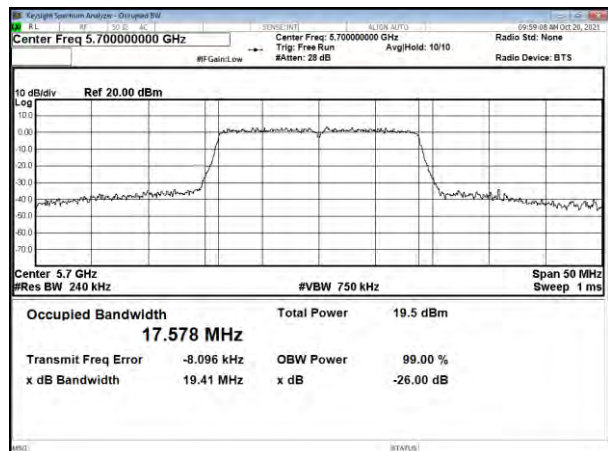
CH116



CH140



CH140





26dB Bandwidth & 99% Occupied Bandwidth, UNII-2C

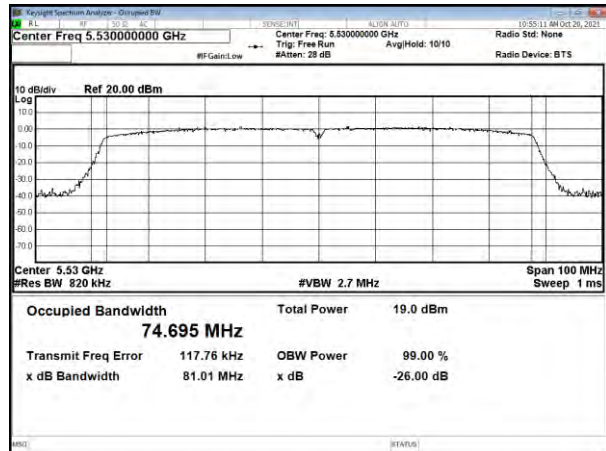
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH102



Modulation Standard: 802.11ac VHT80 (29.3Mbps)

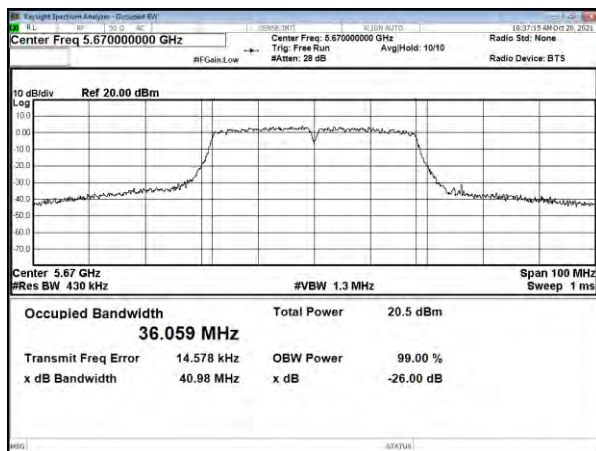
CH106



CH1110



CH134





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 exceed 125 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.



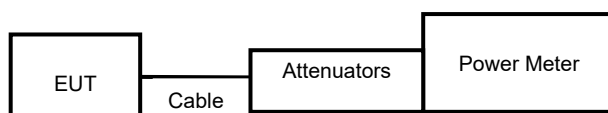
Frequency Band		Limit
☒	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm $10 \log B$, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are 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 5.2G Band**

Modulation Type	Data Rate	Setting	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
					ANT A	ANT B	A+B	A+B	
11a	6 Mbps	75	36	5180	12.70	14.06	16.44	44.089	24.00
11a	6 Mbps	75	44	5220	13.57	14.13	16.87	50.335	24.00
11a	6 Mbps	75	48	5240	13.66	13.53	16.61	45.770	24.00
11n HT20	MCS 0	75	36	5180	13.04	13.67	16.38	43.418	24.00
11n HT20	MCS 0	75	44	5220	13.57	12.55	16.10	40.740	24.00
11n HT20	MCS 0	75	48	5240	13.21	12.31	15.79	37.963	24.00
11n HT40	MCS 0	75	38	5190	13.07	13.01	16.05	40.275	24.00
11n HT40	MCS 0	75	46	5230	11.88	12.16	15.03	31.861	24.00
11ac VHT20	NSS1-MCS0	75	36	5180	13.12	13.88	16.53	44.946	24.00
11ac VHT20	NSS1-MCS0	75	44	5220	13.63	12.58	16.15	41.181	24.00
11ac VHT20	NSS1-MCS0	75	48	5240	13.25	12.37	15.84	38.393	24.00
11ac VHT40	NSS1-MCS0	75	38	5190	13.12	13.02	16.08	40.556	24.00
11ac VHT40	NSS1-MCS0	75	46	5230	11.96	12.26	15.12	32.530	24.00
11ac VHT80	NSS1-MCS0	70	42	5210	11.62	11.25	14.45	27.856	24.00

In the 5.3G Band

Modulation Type	Data Rate	Setting	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
					ANT A	ANT B	A+B	A+B	
11a	6 Mbps	75	52	5260	13.54	12.98	16.28	42.455	23.14
11a	6 Mbps	75	60	5300	13.75	11.95	15.95	39.381	23.14
11a	6 Mbps	75	64	5320	14.02	11.34	15.89	38.849	23.14
11n HT20	MCS 0	75	52	5260	13.21	12.69	15.97	39.519	23.45
11n HT20	MCS 0	75	60	5300	13.53	12.02	15.85	38.464	23.45
11n HT20	MCS 0	75	64	5320	13.65	12.27	16.02	40.039	23.45
11n HT40	MCS 0	75	54	5270	12.97	10.79	15.03	31.810	24.00
11n HT40	MCS 0	75	62	5310	13.31	10.86	15.27	33.619	24.00
11ac VHT20	NSS1-MCS0	75	52	5260	13.23	12.74	16.00	39.831	23.45
11ac VHT20	NSS1-MCS0	75	60	5300	13.56	12.05	15.88	38.731	23.45
11ac VHT20	NSS1-MCS0	75	64	5320	13.69	12.36	16.09	40.607	23.45
11ac VHT40	NSS1-MCS0	75	54	5270	13.02	10.81	15.06	32.095	24.00
11ac VHT40	NSS1-MCS0	75	62	5310	13.35	11.01	15.35	34.245	24.00
11ac VHT80	NSS1-MCS0	70	58	5290	11.70	9.10	13.60	22.919	24.00

In the 5.5G Band

Modulation Type	Data Rate	Setting	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
					ANT A	ANT B	A+B	A+B	
11a	6 Mbps	75	100	5500	14.29	14.88	17.61	57.614	23.14
11a	6 Mbps	75	116	5580	13.52	14.58	17.09	51.198	23.14
11a	6 Mbps	75	140	5700	12.80	13.90	16.40	43.602	23.14
11n HT20	MCS 0	75	100	5500	13.84	13.24	16.56	45.297	23.45
11n HT20	MCS 0	75	116	5580	13.13	14.27	16.75	47.289	23.45
11n HT20	MCS 0	75	140	5700	12.20	14.06	16.24	42.064	23.45
11n HT40	MCS 0	75	102	5510	14.04	13.23	16.66	46.389	24.00
11n HT40	MCS 0	75	110	5550	13.18	13.47	16.34	43.030	24.00
11n HT40	MCS 0	75	134	5670	13.52	13.72	16.63	46.041	24.00
11ac VHT20	NSS1-MCS0	75	100	5500	13.88	13.28	16.60	45.716	23.45
11ac VHT20	NSS1-MCS0	75	116	5580	13.19	14.30	16.79	47.760	23.45
11ac VHT20	NSS1-MCS0	75	140	5700	12.22	14.11	16.28	42.436	23.45
11ac VHT40	NSS1-MCS0	75	102	5510	14.09	13.35	16.75	47.272	24.00
11ac VHT40	NSS1-MCS0	75	110	5550	13.19	13.53	16.37	43.387	24.00
11ac VHT40	NSS1-MCS0	75	134	5670	13.54	13.77	16.67	46.418	24.00
11ac VHT80	NSS1-MCS0	70	106	5530	12.60	12.09	15.36	34.378	24.00

**In the 5.8G Band**

Modulation Type	Data Rate	Setting	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
					ANT A	ANT B	A+B	A+B	
11a	6 Mbps	75	149	5745	11.67	11.07	14.39	27.483	30.00
11a	6 Mbps	75	157	5785	11.10	11.59	14.36	27.304	30.00
11a	6 Mbps	75	165	5825	11.63	12.81	15.27	33.653	30.00
11n HT20	MCS 0	75	149	5745	11.33	11.07	14.21	26.377	30.00
11n HT20	MCS 0	75	157	5785	11.16	11.02	14.10	25.709	30.00
11n HT20	MCS 0	75	165	5825	11.61	12.33	15.00	31.588	30.00
11n HT40	MCS 0	75	151	5755	11.08	11.14	14.12	25.825	30.00
11n HT40	MCS 0	75	159	5795	10.91	11.75	14.36	27.293	30.00
11ac VHT20	NSS1-MCS0	75	149	5745	11.38	11.13	14.27	26.712	30.00
11ac VHT20	NSS1-MCS0	75	157	5785	11.21	11.06	14.15	25.977	30.00
11ac VHT20	NSS1-MCS0	75	165	5825	11.63	12.36	15.02	31.773	30.00
11ac VHT40	NSS1-MCS0	75	151	5755	11.11	11.18	14.16	26.034	30.00
11ac VHT40	NSS1-MCS0	75	159	5795	10.93	11.77	14.38	27.419	30.00
11ac VHT80	NSS1-MCS0	70	155	5775	10.98	11.55	14.28	26.820	30.00



11. Maximum Power Spectral Density

11.1. Test Limit

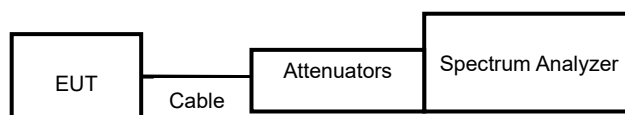
PSD:

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 v02r01 General UNII Test Procedures New Rules.

11.3. Test Setup Layout



**11.4. Test Result and Data****In the 5.2G Band**

Modulation Type	CH	Freq. (MHz)	Meas PPSPD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PPSPD (dBm/MHz)	PPSPD Limit (dBm/MHz)
			ANT A	ANT B				
11a	36	5180	2.06	1.57	4.83	0.00	4.83	8.84
11a	44	5220	2.21	1.13	4.71	0.00	4.71	8.84
11a	48	5240	2.38	0.95	4.73	0.00	4.73	8.84
11ac VHT20	36	5180	1.23	0.99	4.12	0.00	4.12	8.84
11ac VHT20	44	5220	1.41	0.63	4.05	0.00	4.05	8.84
11ac VHT20	48	5240	1.81	1.33	4.58	0.00	4.58	8.84
11ac VHT40	38	5190	-1.02	-1.18	1.91	0.00	1.91	8.84
11ac VHT40	46	5230	-0.71	-1.53	1.91	0.00	1.91	8.84
11ac VHT80	42	5210	-5.45	-6.22	-2.81	0.00	-2.81	8.84

In the 5.3G Band

Modulation Type	CH	Freq. (MHz)	Meas PPSPD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PPSPD (dBm/MHz)	PPSPD Limit (dBm/MHz)
			ANT A	ANT B				
11a	52	5260	1.94	0.38	4.24	0.00	4.24	9.12
11a	60	5300	2.05	-0.79	3.87	0.00	3.87	9.12
11a	64	5320	2.06	-0.91	3.83	0.00	3.83	9.12
11ac VHT20	52	5260	1.84	0.22	4.11	0.00	4.11	9.12
11ac VHT20	60	5300	1.87	-0.67	3.80	0.00	3.80	9.12
11ac VHT20	64	5320	2.05	-0.83	3.85	0.00	3.85	9.12
11ac VHT40	54	5270	-1.01	-2.27	1.41	0.00	1.41	9.12
11ac VHT40	62	5310	-0.92	-3.85	0.87	0.00	0.87	9.12
11ac VHT80	58	5290	-5.78	-7.80	-3.66	0.00	-3.66	9.12

In the 5.5G Band

Modulation Type	CH	Freq. (MHz)	Meas PPSPD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PPSPD (dBm/MHz)	PPSPD Limit (dBm/MHz)
			ANT A	ANT B				
11a	100	5500	2.48	1.55	5.05	0.00	5.05	8.76
11a	116	5580	2.22	2.16	5.20	0.00	5.20	8.76
11a	140	5700	1.59	1.61	4.61	0.00	4.61	8.76
11ac VHT20	100	5500	1.99	1.06	4.56	0.00	4.56	8.76
11ac VHT20	116	5580	2.07	0.81	4.50	0.00	4.50	8.76
11ac VHT20	140	5700	0.94	0.17	3.58	0.00	3.58	8.76
11ac VHT40	102	5510	-0.61	-0.70	2.36	0.00	2.36	8.76
11ac VHT40	110	5550	-0.31	-0.57	2.57	0.00	2.57	8.76
11ac VHT40	134	5670	-0.92	-0.18	2.48	0.00	2.48	8.76
11ac VHT80	106	5530	-6.11	-5.95	-3.02	0.00	-3.02	8.76

In the 5.8G Band

Modulation Type	CH	Freq. (MHz)	Meas PPSPD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	10log(500K Hz/RBW) CF (dB)	Total Corr'd PPSPD (dBm/500kHz)	PPSPD Limit (dBm/500kHz)
			ANT A	ANT B					
11a	149	5745	0.82	0.14	3.50	0.00	-3.01	0.49	27.91
11a	157	5785	0.05	0.49	3.29	0.00	-3.01	0.28	27.91
11a	165	5825	1.00	1.63	4.34	0.00	-3.01	1.33	27.91
11ac VHT20	149	5745	0.24	-0.24	3.01	0.00	-3.01	0.00	27.91
11ac VHT20	157	5785	-0.83	0.35	2.81	0.00	-3.01	-0.20	27.91
11ac VHT20	165	5825	-0.71	0.91	3.18	0.00	-3.01	0.17	27.91
11ac VHT40	151	5755	-2.47	-3.27	0.16	0.00	-3.01	-2.85	27.91
11ac VHT40	159	5795	-2.90	-2.55	0.29	0.00	-3.01	-2.72	27.91
11ac VHT80	155	5775	-8.26	-7.47	-4.84	0.00	-3.01	-7.85	27.91

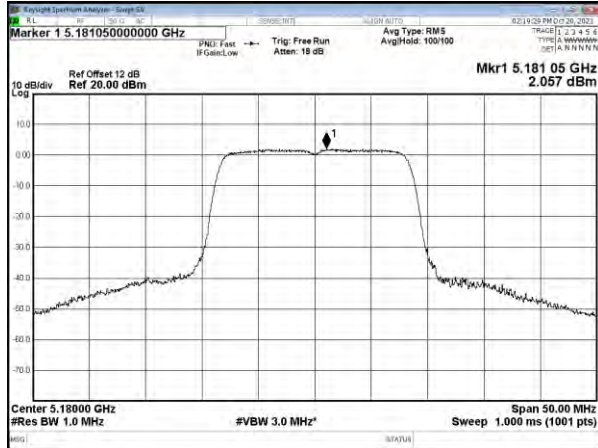


ANT A

5.2G, UNII-1

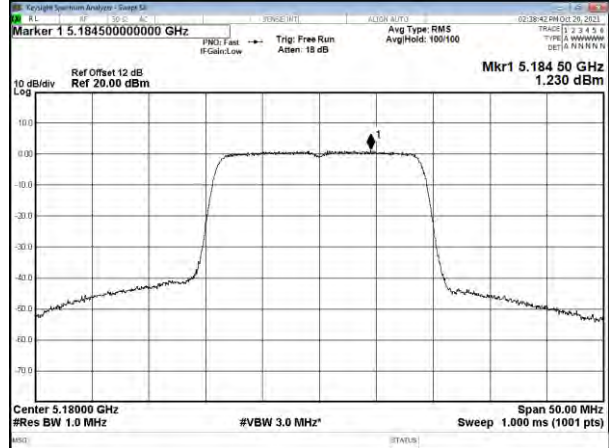
Modulation Standard: 802.11a (6Mbps)

CH36

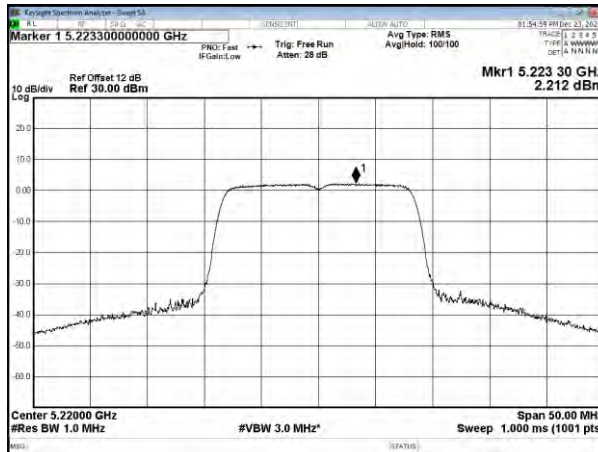


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

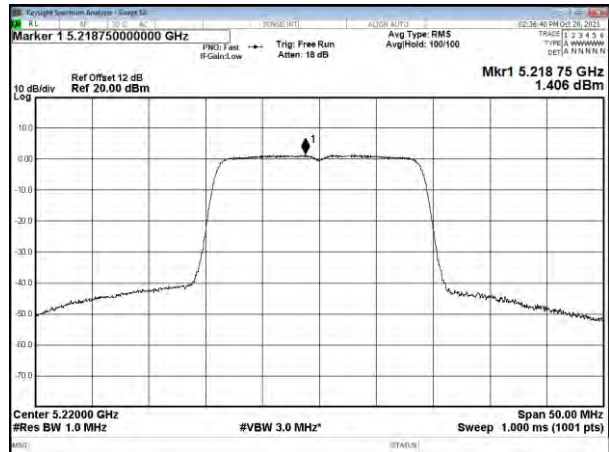
CH36



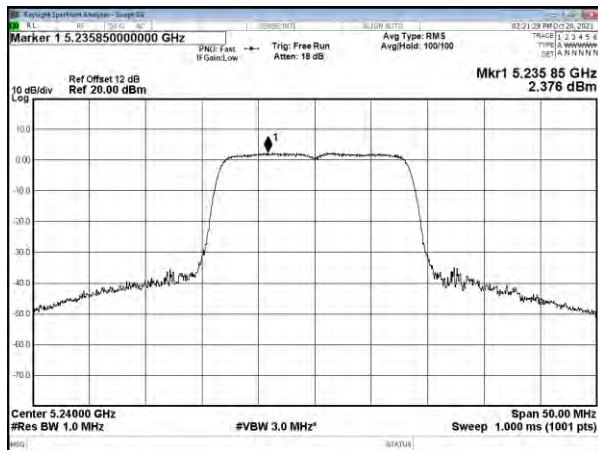
CH44



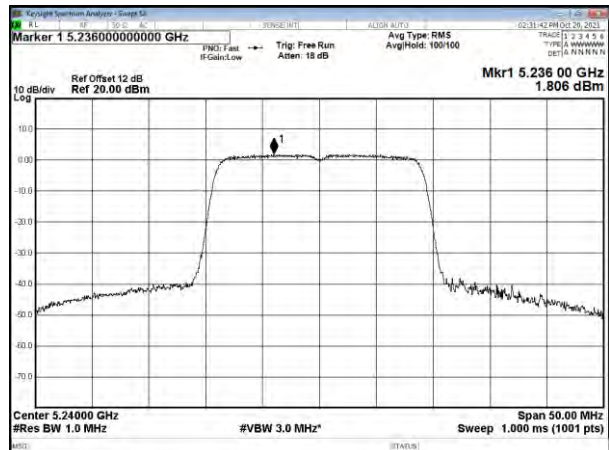
CH44



CH48



CH48

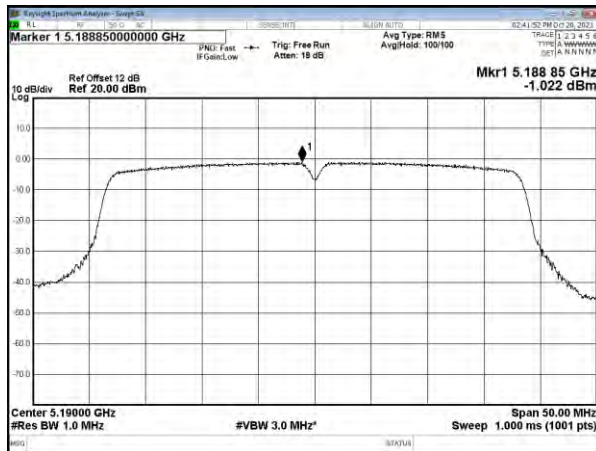




5.2G, UNII-1

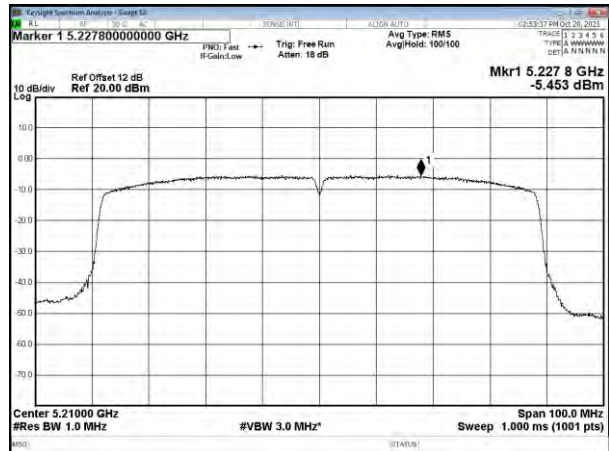
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH38

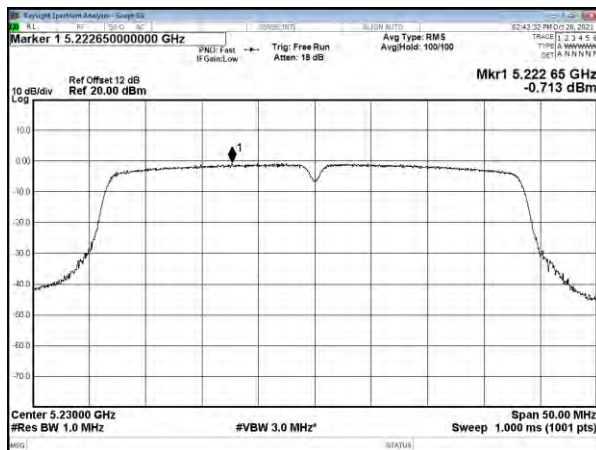


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH42



CH46

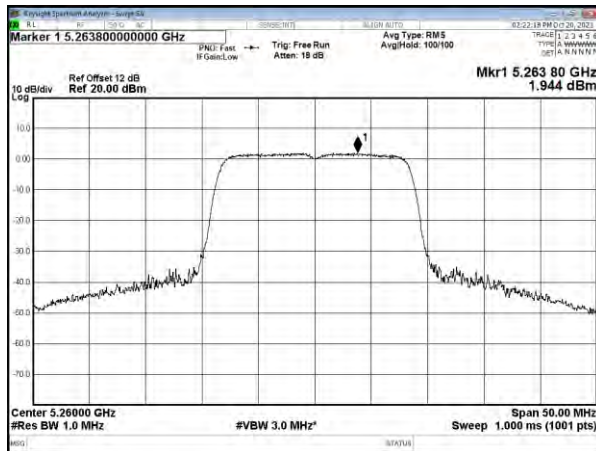




5.3G, UNII-2A

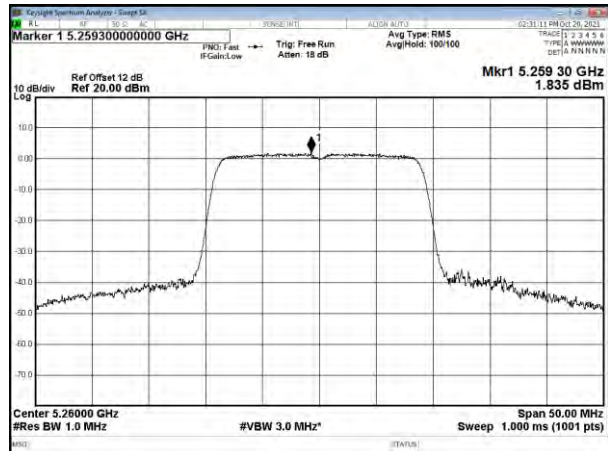
Modulation Standard: 802.11a (6Mbps)

CH52

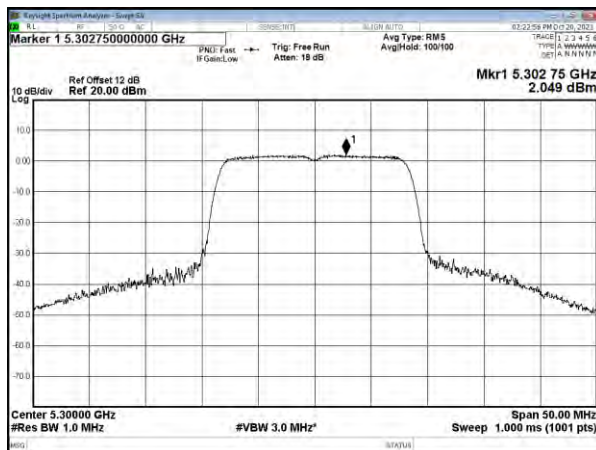


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

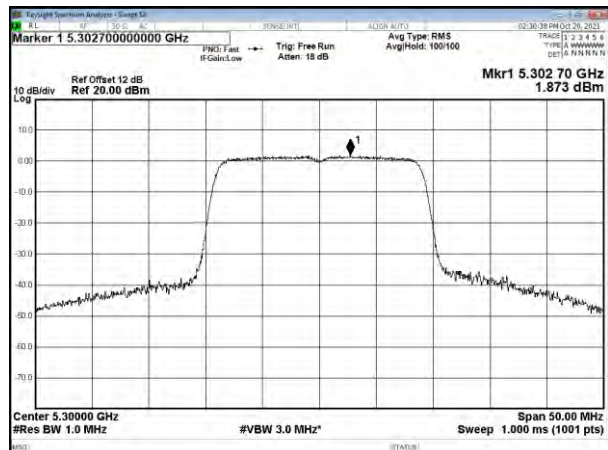
CH52



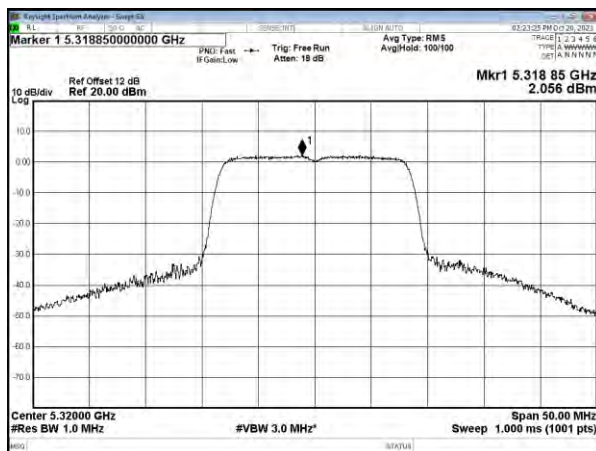
CH60



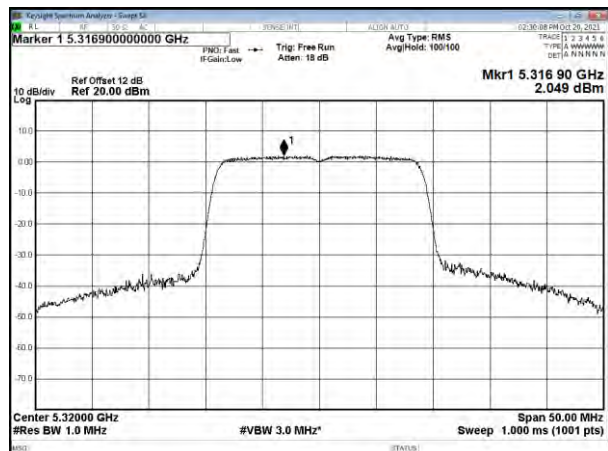
CH60



CH64



CH64

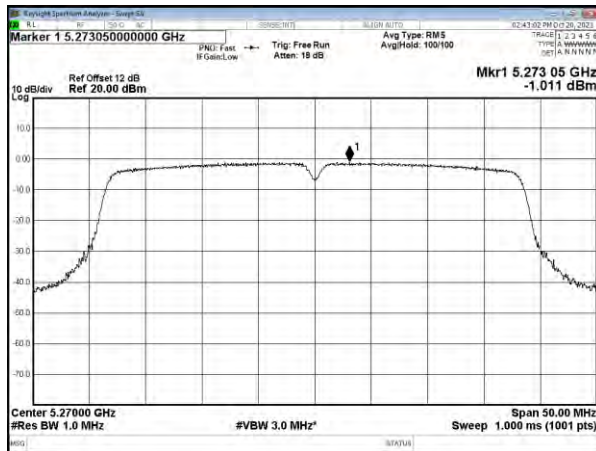




5.3G, UNII-2A

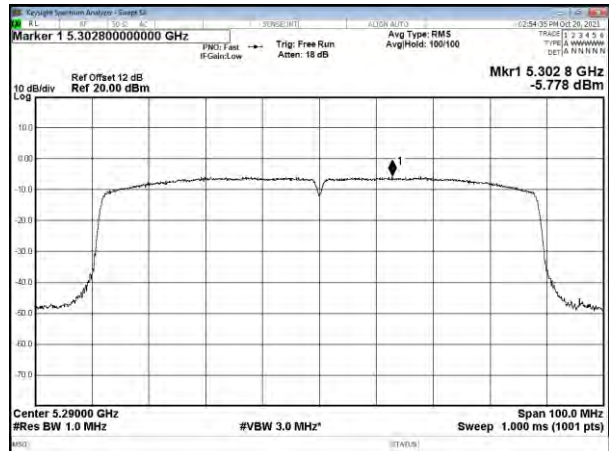
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH54

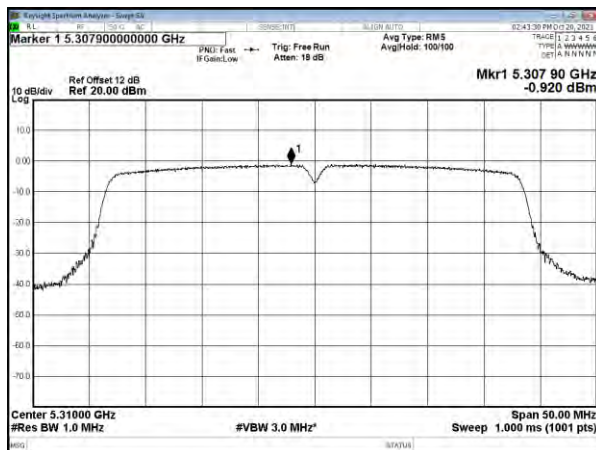


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH58



CH62

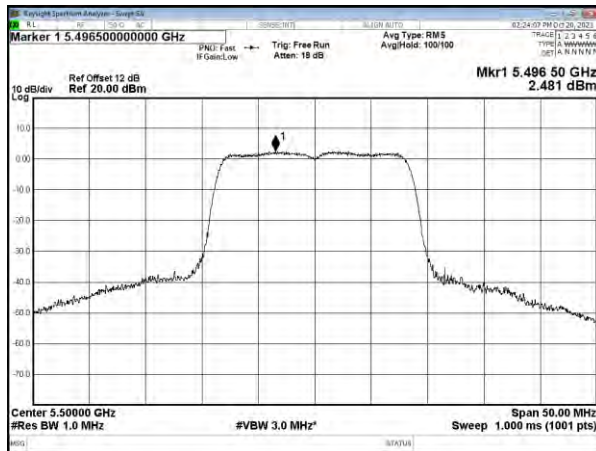




5.5G, UNII-2C

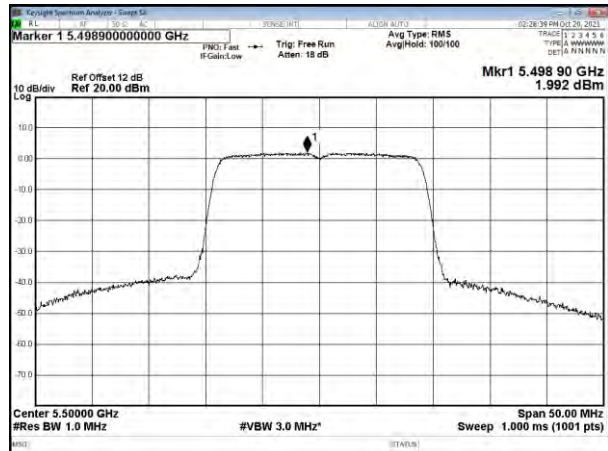
Modulation Standard: 802.11a (6Mbps)

CH100

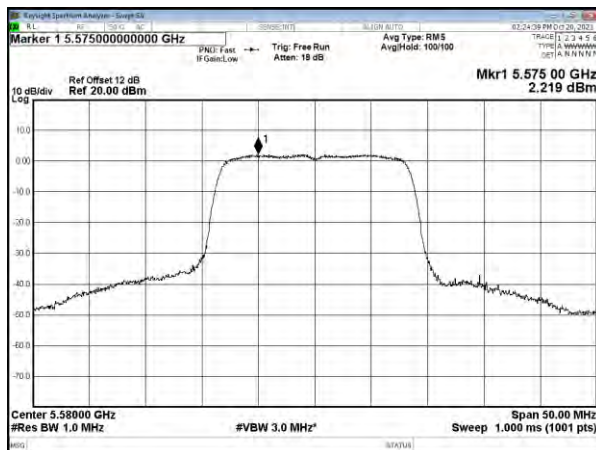


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

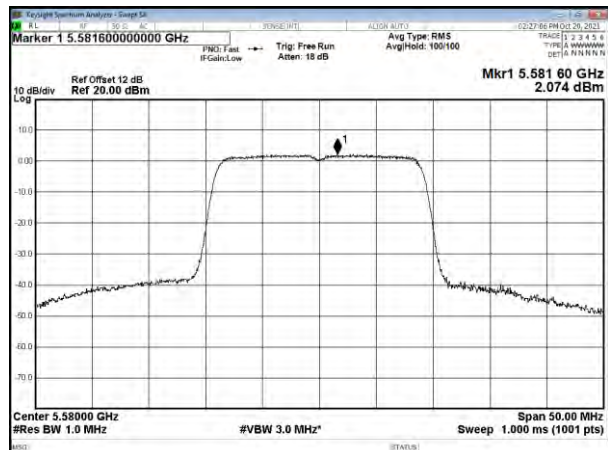
CH100



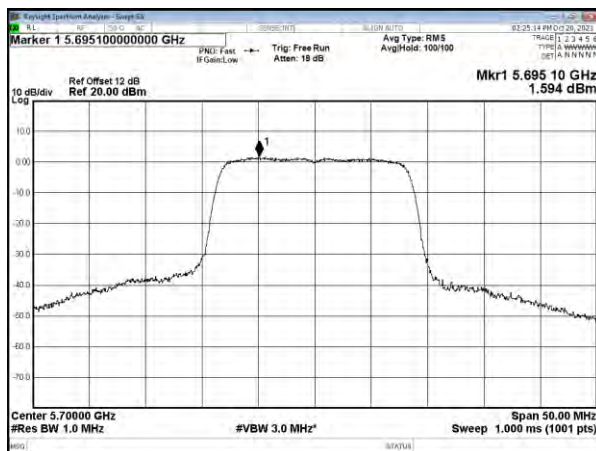
CH116



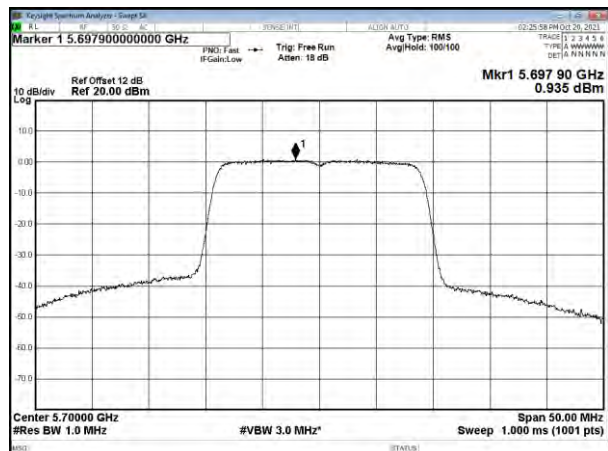
CH116



CH140



CH140

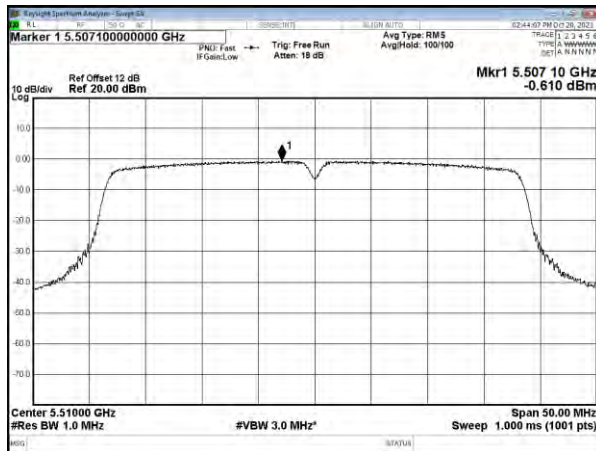




5.5G, UNII-2C

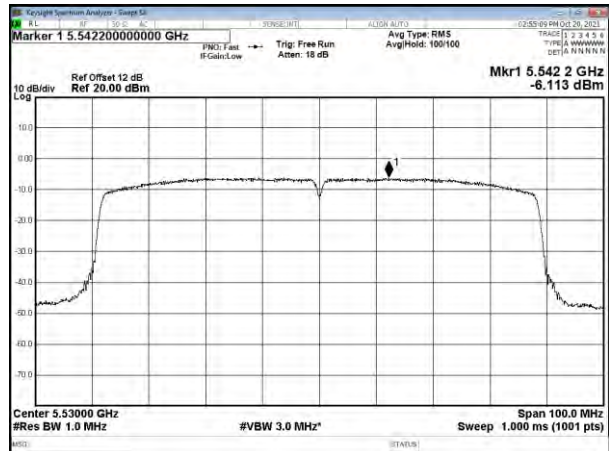
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH102

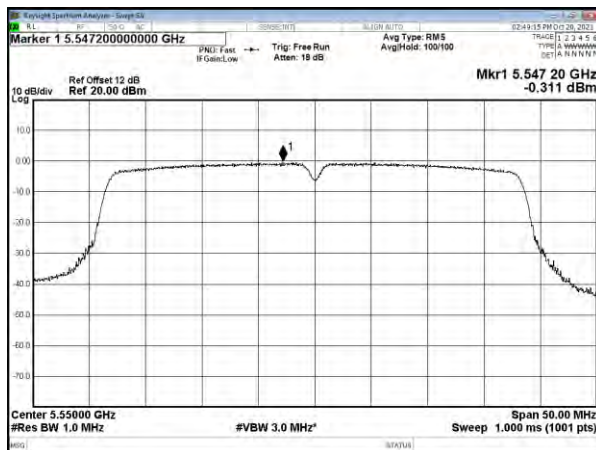


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

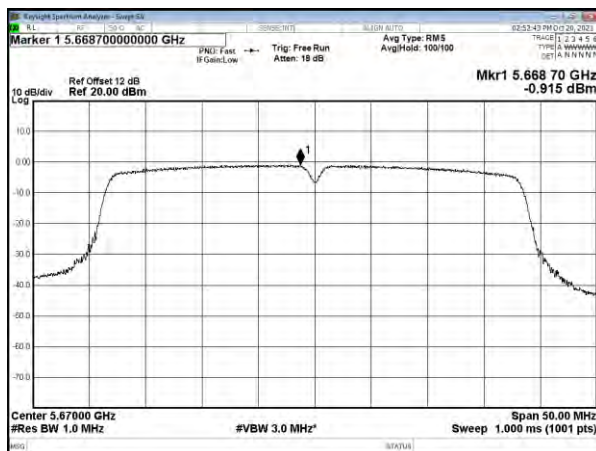
CH106



CH1110



CH134

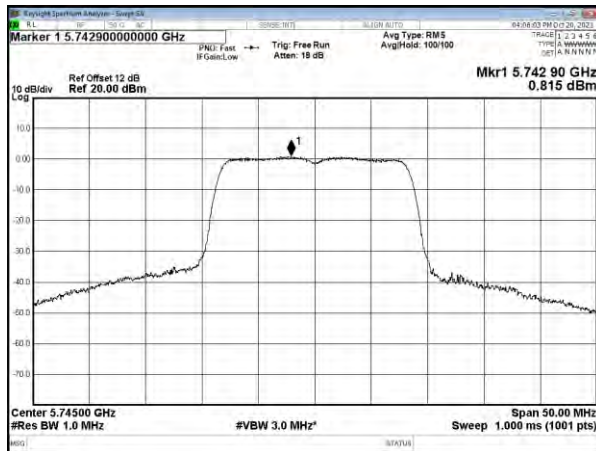




5.8G, UNII-3

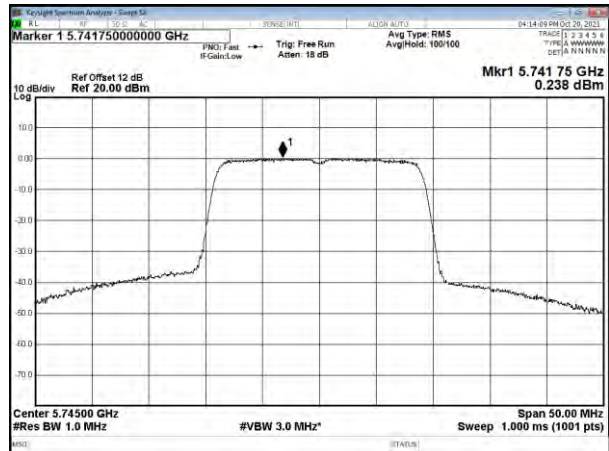
Modulation Standard: 802.11a (6Mbps)

CH149

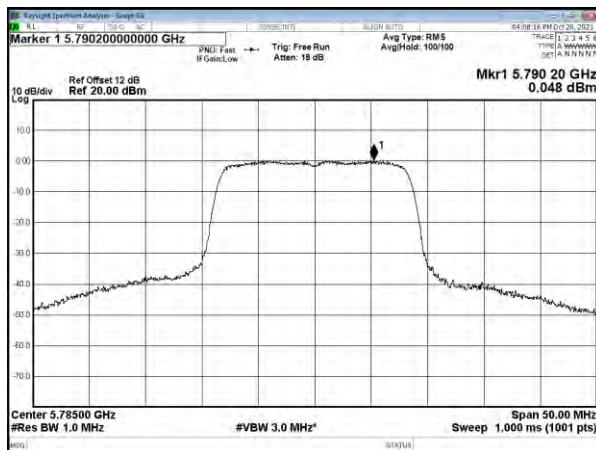


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

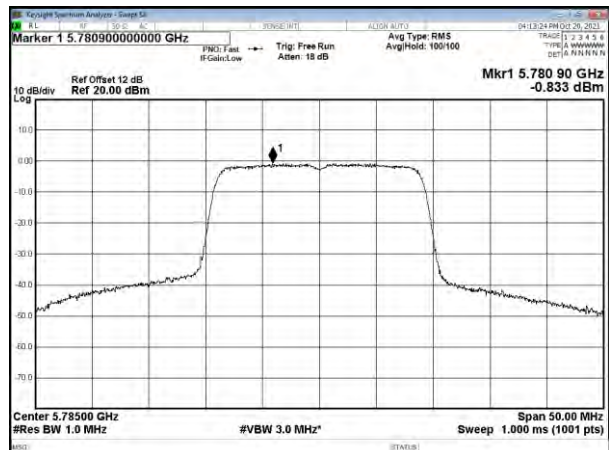
CH149



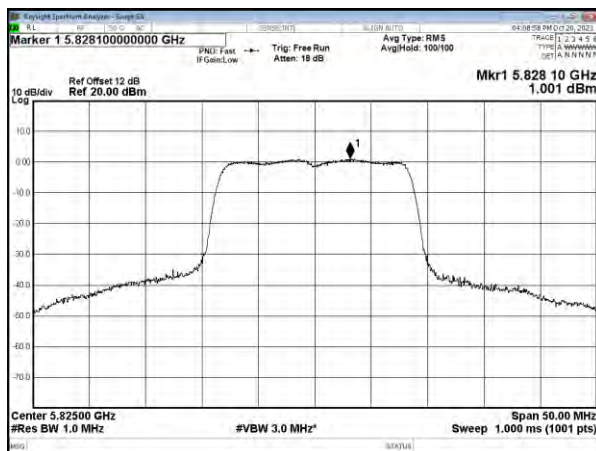
CH157



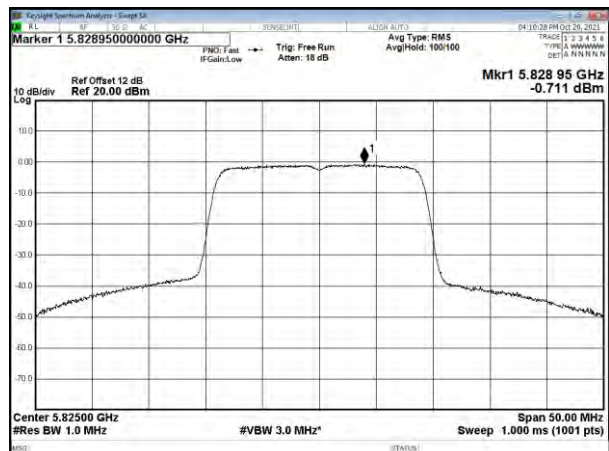
CH157



CH165



CH165

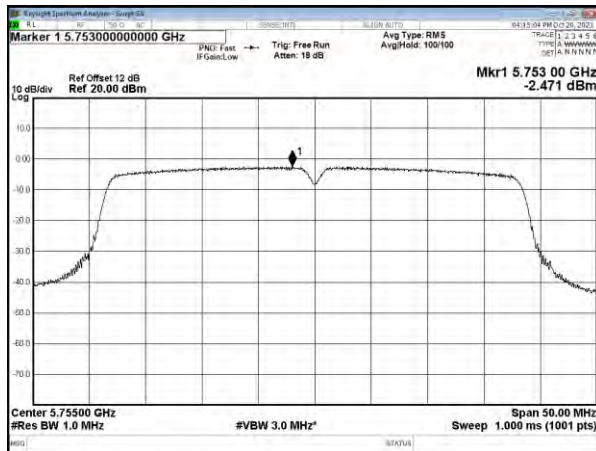




5.8G, UNII-3

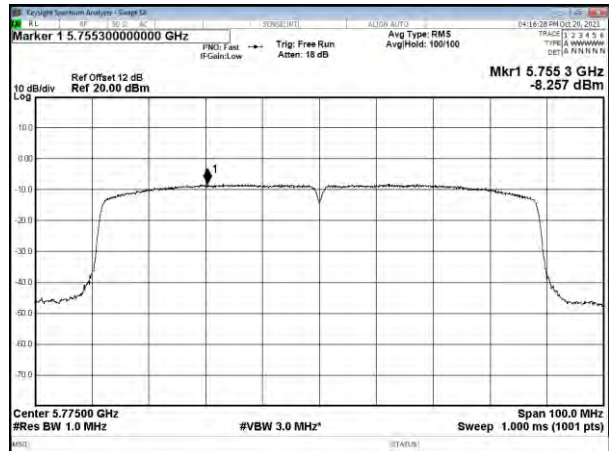
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH151

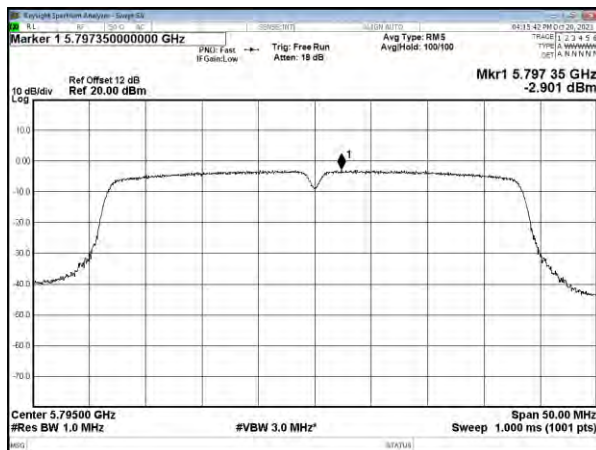


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH155



CH159



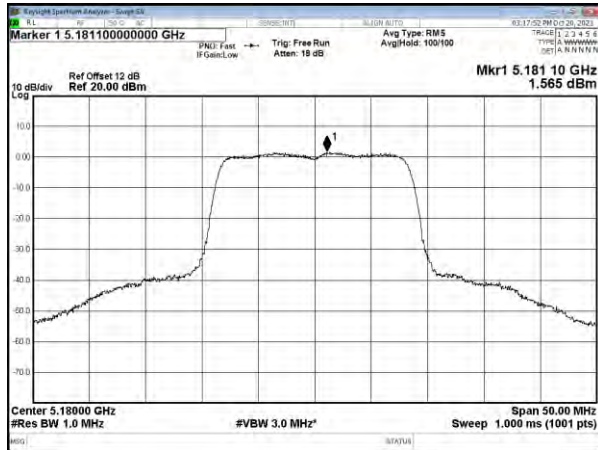


ANT B

5.2G, UNII-1

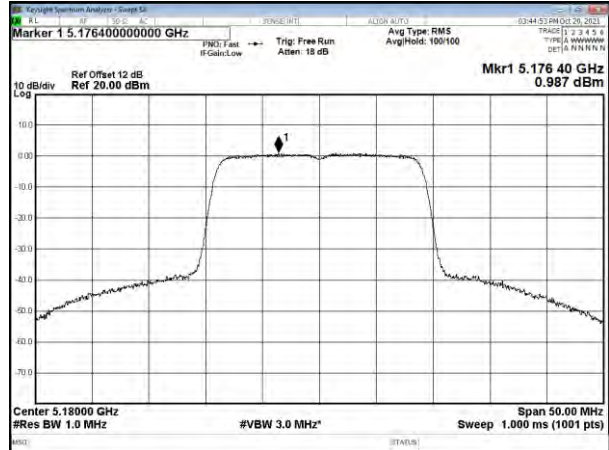
Modulation Standard: 802.11a (6Mbps)

CH36

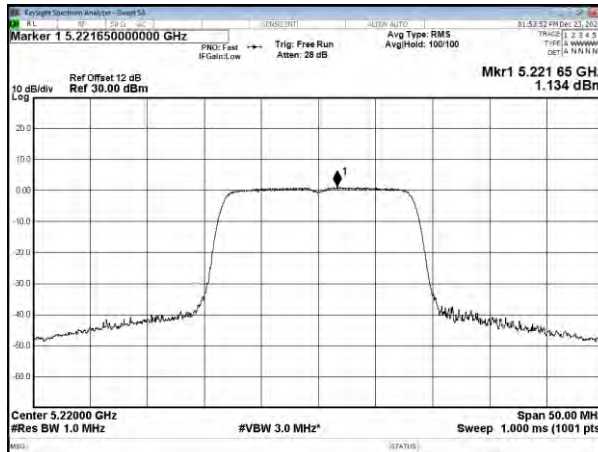


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

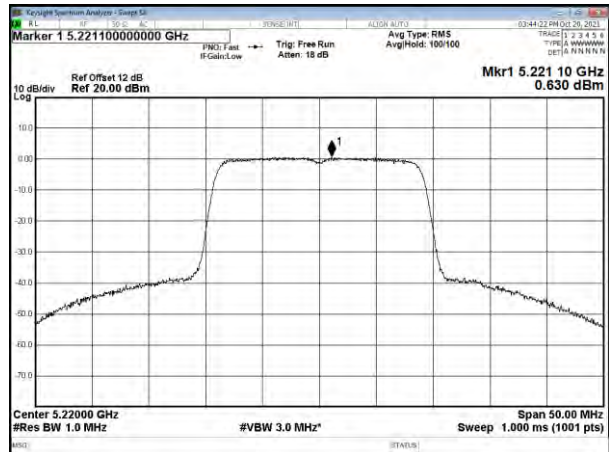
CH36



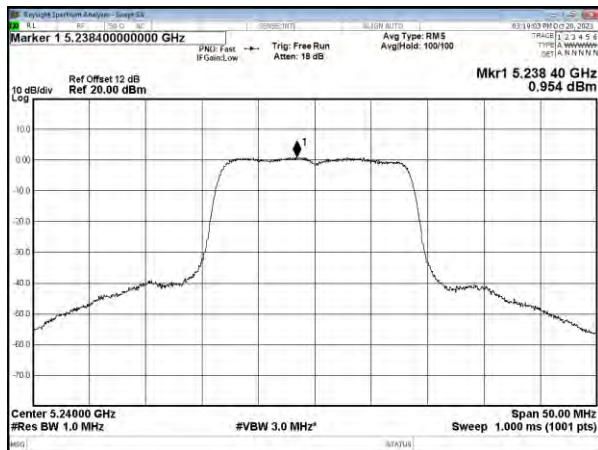
CH44



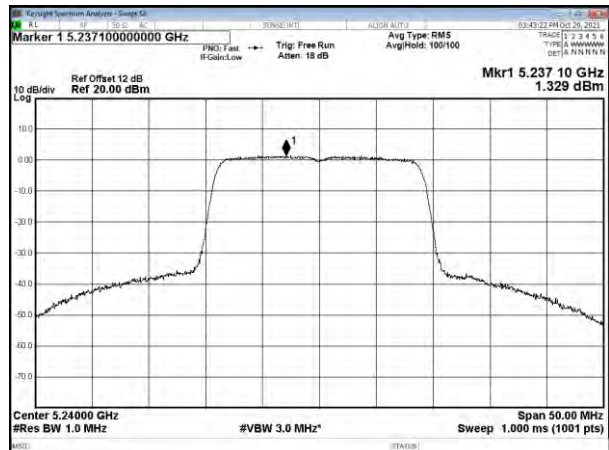
CH44



CH48



CH48

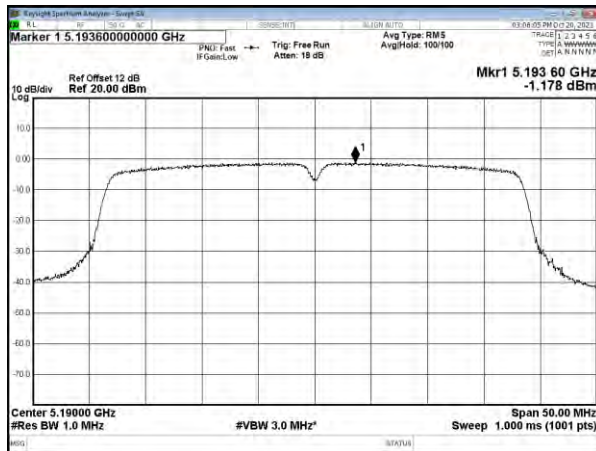




5.2G, UNII-1

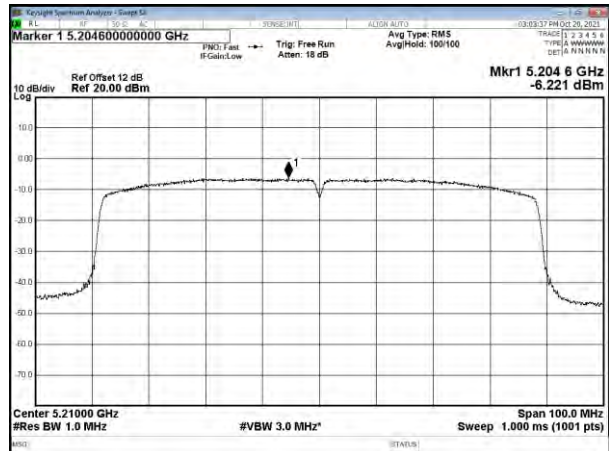
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH38

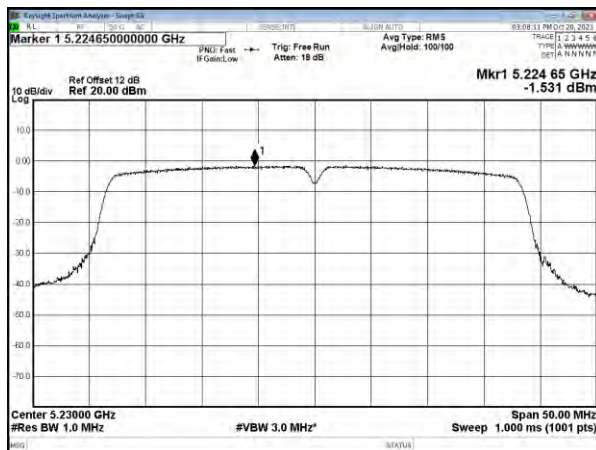


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH42



CH46

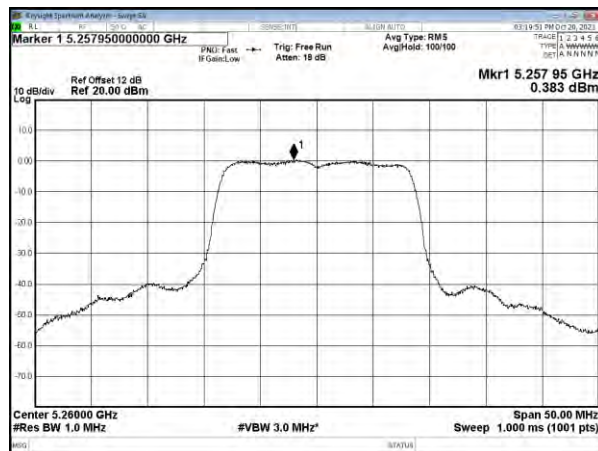




5.3G, UNII-2A

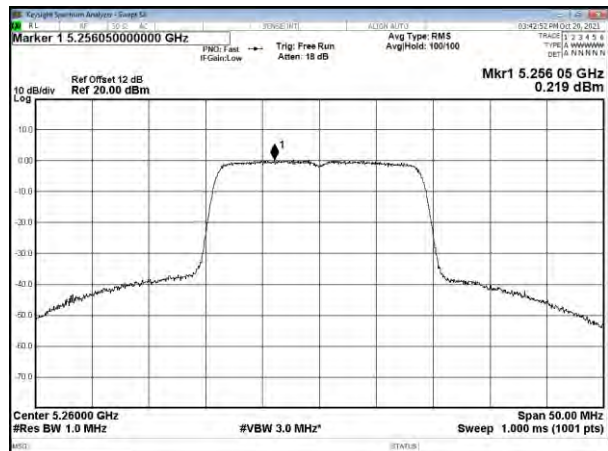
Modulation Standard: 802.11a (6Mbps)

CH52

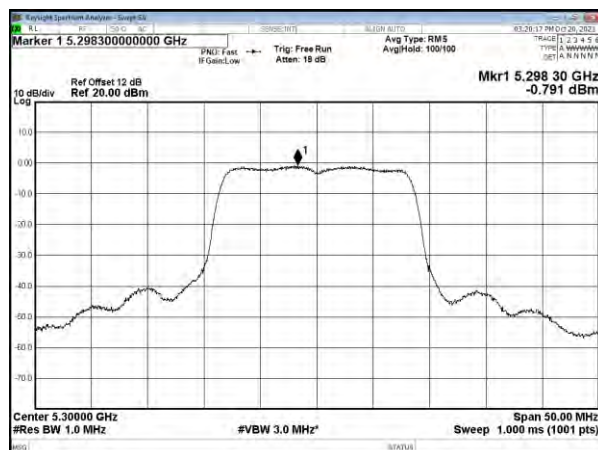


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

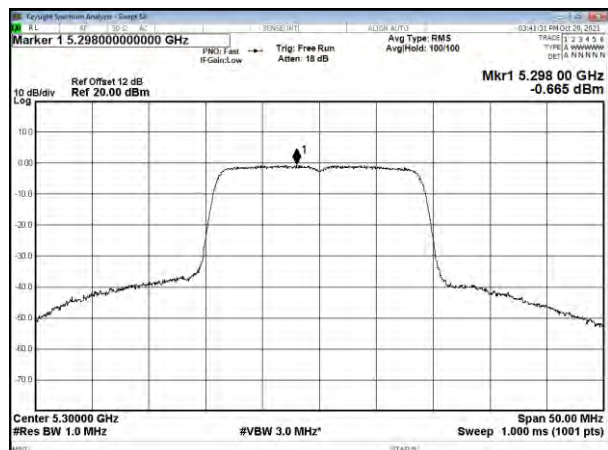
CH52



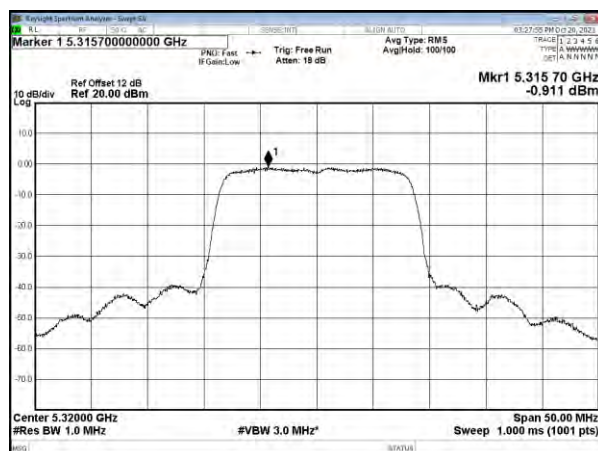
CH60



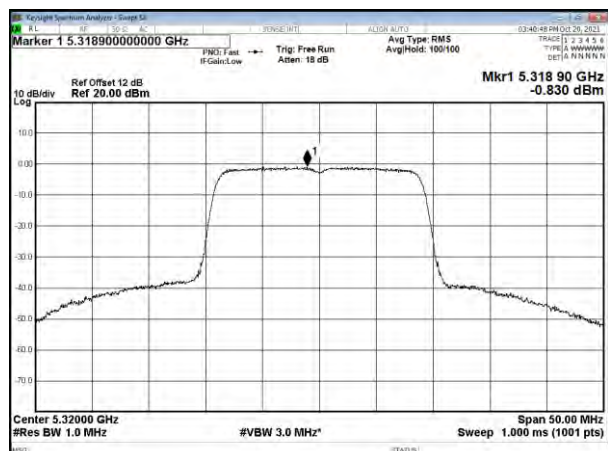
CH60



CH64



CH64

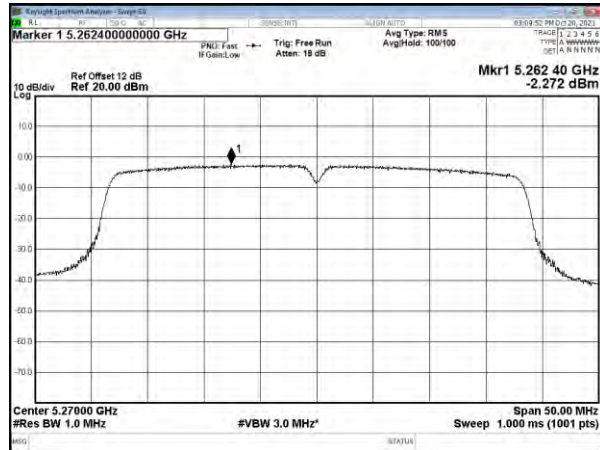




5.3G, UNII-2A

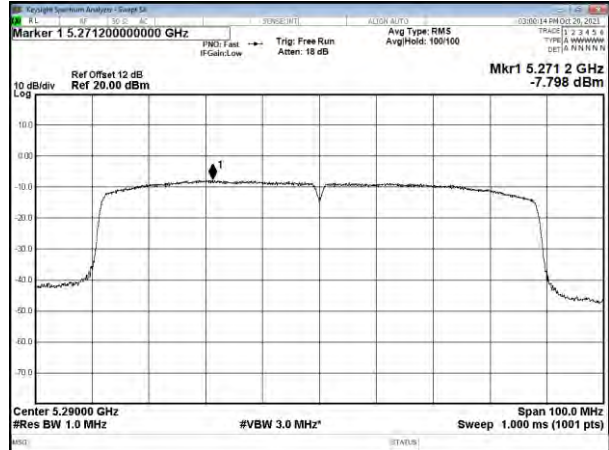
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH54

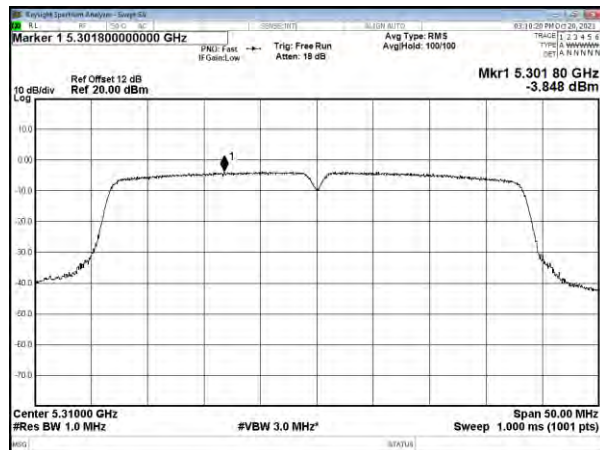


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH58



CH62

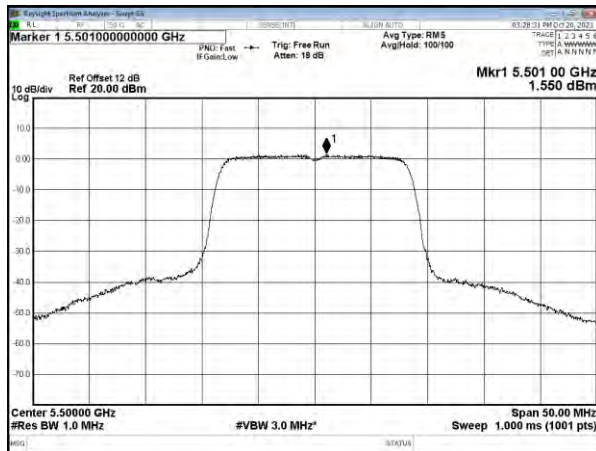




5.5G, UNII-2C

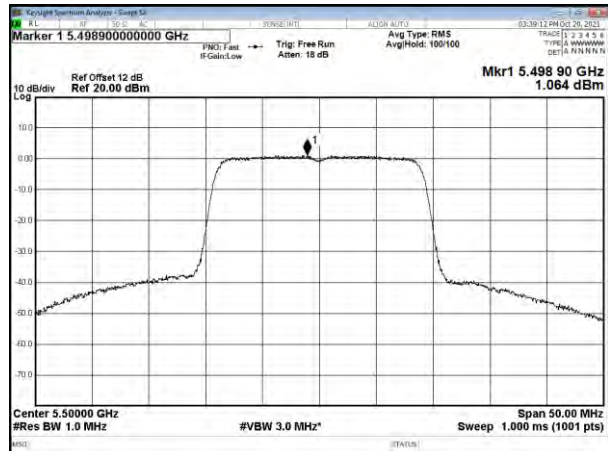
Modulation Standard: 802.11a (6Mbps)

CH100

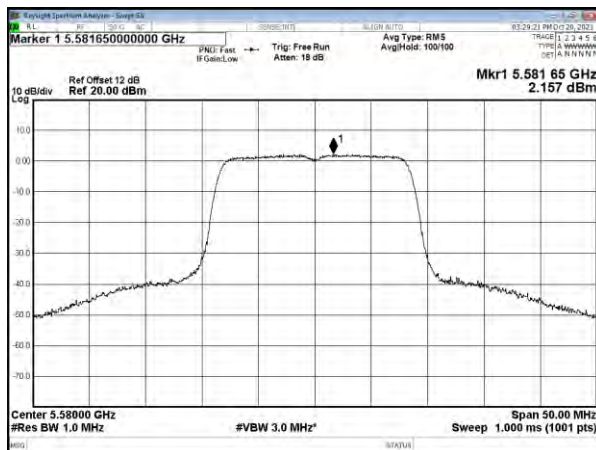


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

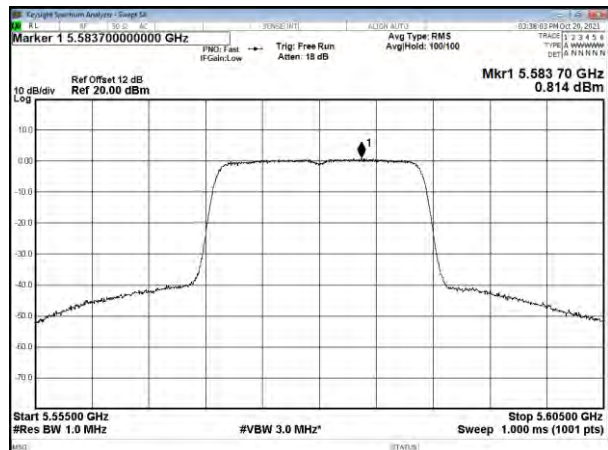
CH100



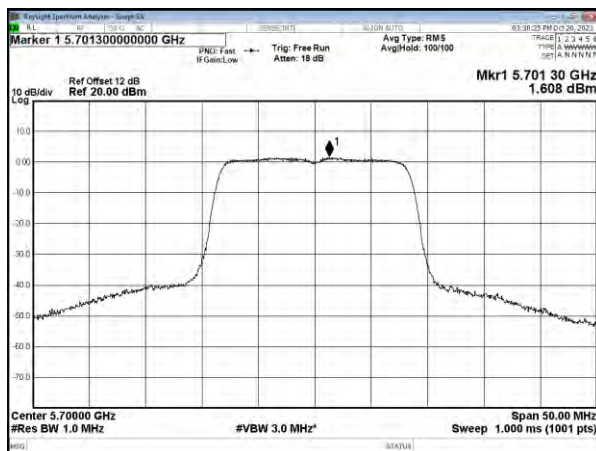
CH116



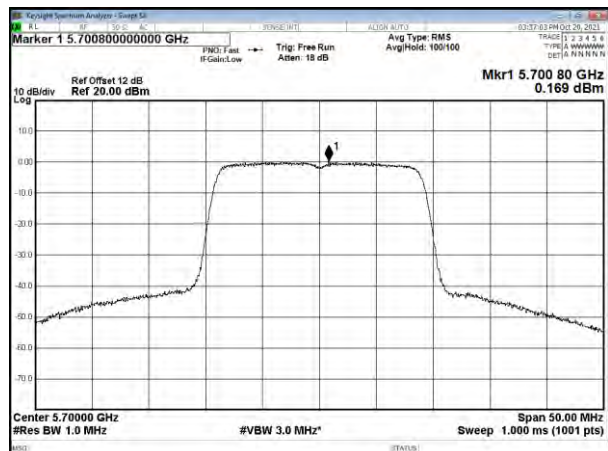
CH116



CH140



CH140

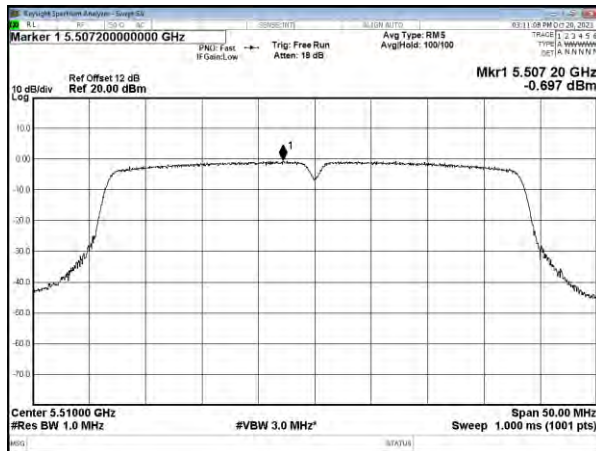




5.5G, UNII-2C

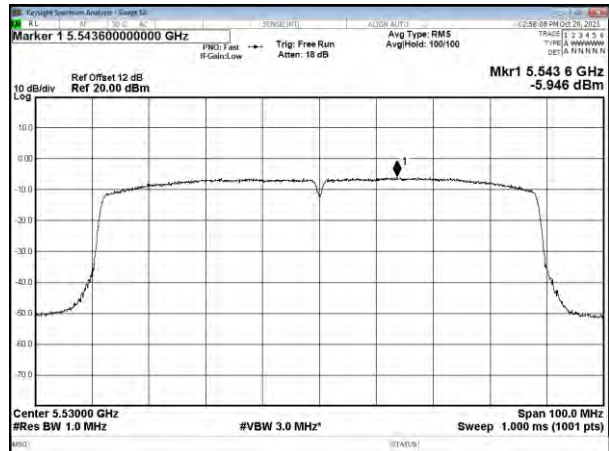
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH102

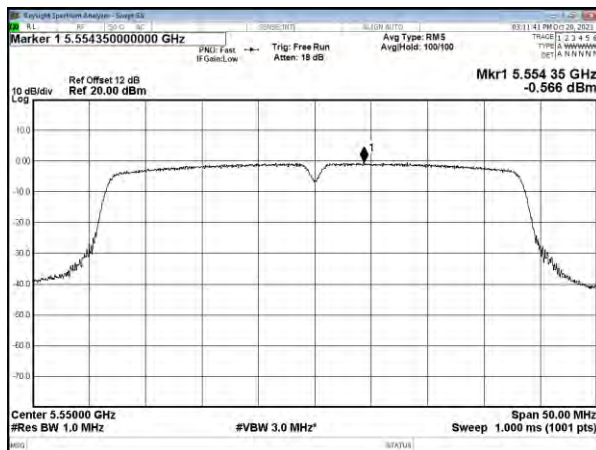


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

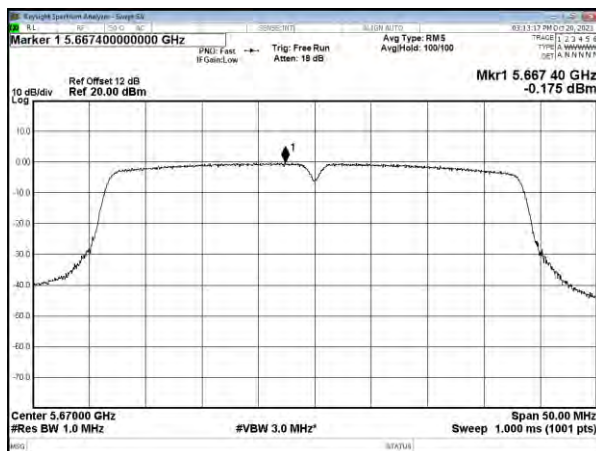
CH106



CH1110



CH134

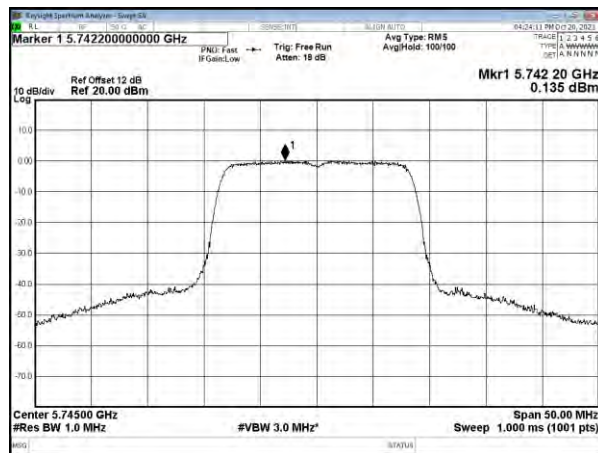




5.8G, UNII-3

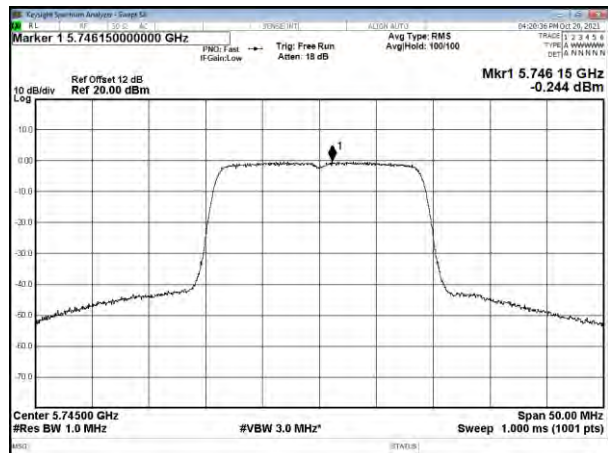
Modulation Standard: 802.11a (6Mbps)

CH149

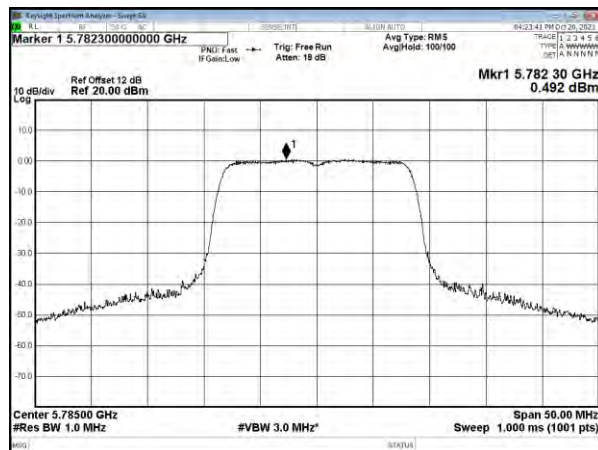


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

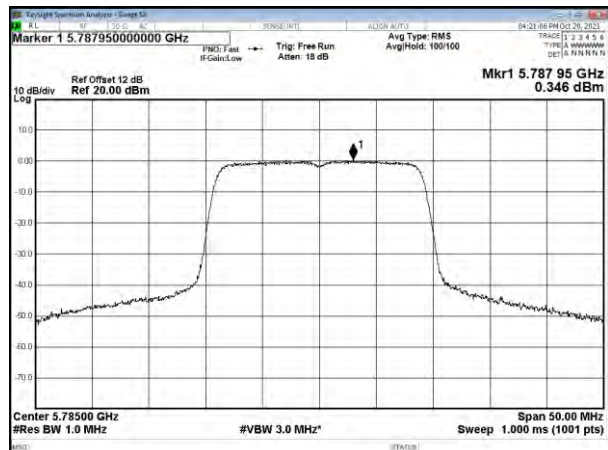
CH149



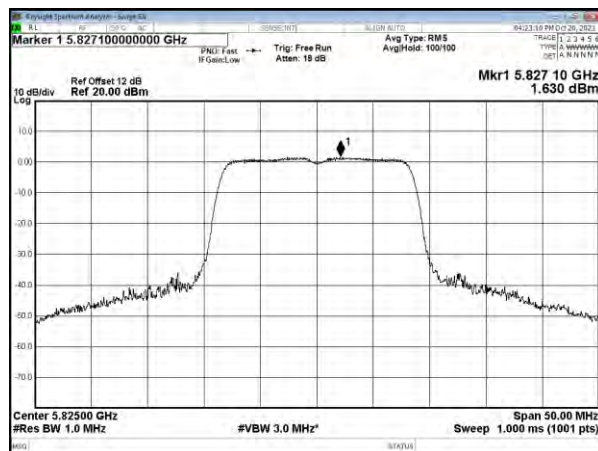
CH157



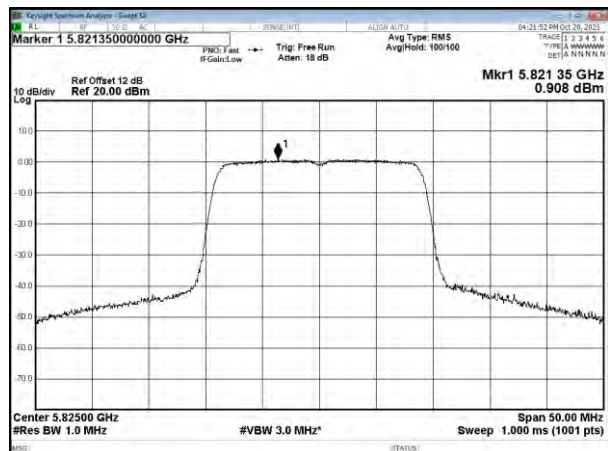
CH157



CH165



CH165

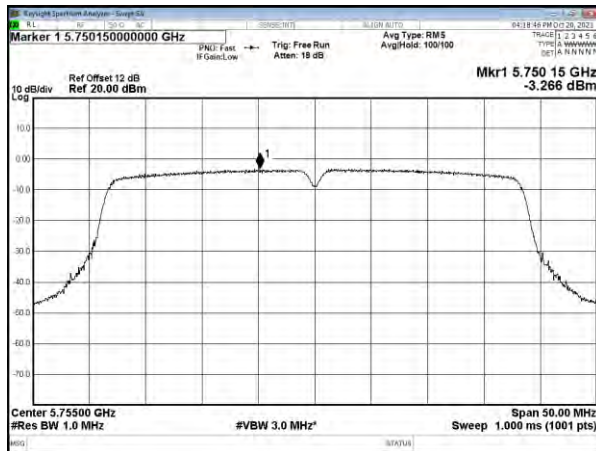




5.8G, UNII-3

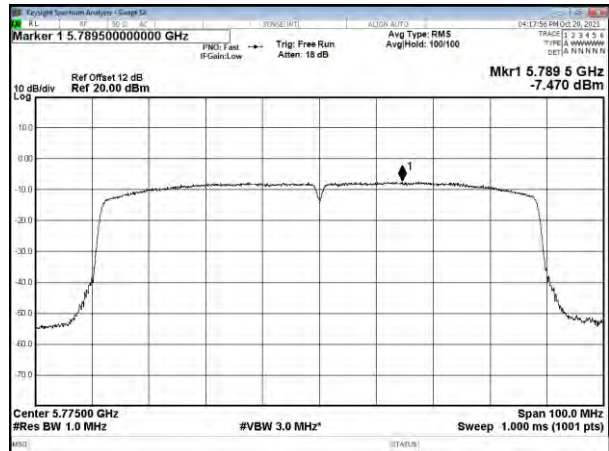
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH151

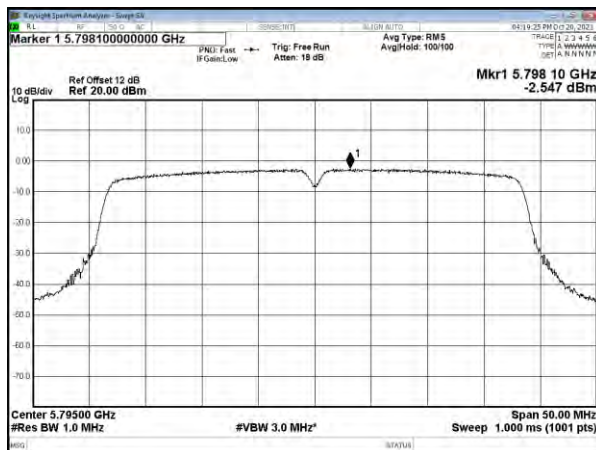


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH155



CH159



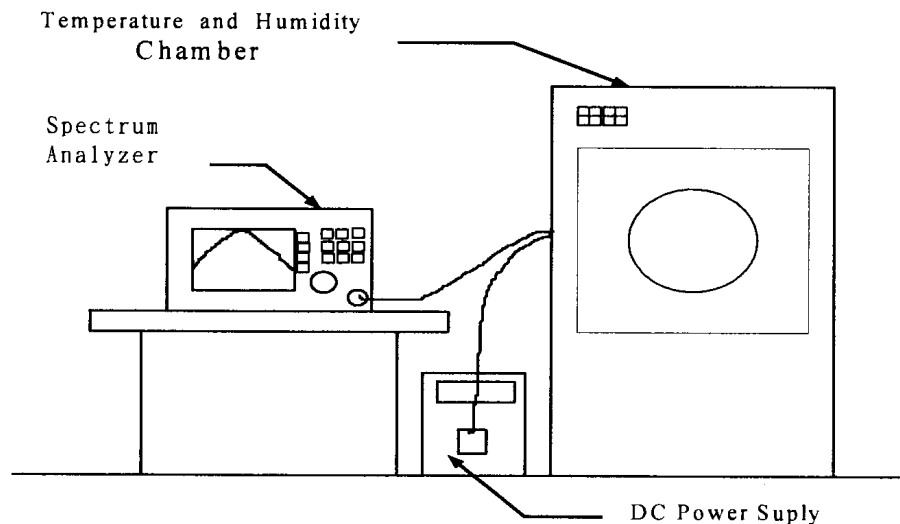


12. Frequency Stability

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	
(°C)	(V)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
70	5.75	5179.9954	-0.000089	5179.9973	-0.000052	5179.9994	-0.000012
	5.00	5179.9939	-0.000118	5179.9968	-0.000062	5179.9989	-0.000021
	4.25	5179.9957	-0.000083	5179.9966	-0.000066	5179.9975	-0.000048
60	5.75	5179.9936	-0.000124	5179.9951	-0.000095	5179.9963	-0.000071
	5.00	5179.9928	-0.000139	5179.9963	-0.000071	5179.9985	-0.000029
	4.25	5179.9972	-0.000054	5179.9937	-0.000122	5179.9944	-0.000108
50	5.75	5179.9955	-0.000087	5179.9928	-0.000139	5179.9961	-0.000075
	5.00	5179.9931	-0.000133	5179.9916	-0.000162	5179.9922	-0.000151
	4.25	5179.9929	-0.000137	5179.9965	-0.000068	5179.9918	-0.000158
40	5.75	5179.9951	-0.000095	5179.9942	-0.000112	5179.9935	-0.000125
	5.00	5179.9935	-0.000125	5179.9924	-0.000147	5179.9946	-0.000104
	4.25	5179.9923	-0.000149	5179.9977	-0.000044	5179.9922	-0.000151
30	5.75	5179.9928	-0.000139	5179.9936	-0.000124	5179.9957	-0.000083
	5.00	5179.9916	-0.000162	5179.9923	-0.000149	5179.9916	-0.000162
	4.25	5179.9948	-0.000100	5179.9956	-0.000085	5179.9928	-0.000139
20	5.75	5179.9955	-0.000087	5179.9933	-0.000129	5179.9947	-0.000102
	5.00	5179.9934	-0.000127	5179.9945	-0.000106	5179.992	-0.000154
	4.25	5179.9927	-0.000141	5179.9926	-0.000143	5179.9968	-0.000062
10	5.75	5179.9943	-0.000110	5179.9957	-0.000083	5179.9946	-0.000104
	5.00	5179.9939	-0.000118	5179.9925	-0.000145	5179.9932	-0.000131
	4.25	5179.9957	-0.000083	5179.9932	-0.000131	5179.9945	-0.000106
0	5.75	5179.9972	-0.000054	5179.9965	-0.000068	5179.9942	-0.000112
	5.00	5179.9928	-0.000139	5179.9958	-0.000081	5179.9938	-0.000120
	4.25	5179.9956	-0.000085	5179.9952	-0.000093	5179.9946	-0.000104

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 -----