



TEST REPORT

Applicant: Shenzhen AZW Technology Co., Ltd.
Address of Applicant: 701, Building 8, Hengda Shishang Huigu, next to Fulong Road, Shanghenglang Community, Dalang Street, Longhua District, ShenZhen, China
Manufacturer: Shenzhen AZW Technology Co., Ltd.
Address of Manufacturer: 701, Building 8, Hengda Shishang Huigu, next to Fulong Road, Shanghenglang Community, Dalang Street, Longhua District, ShenZhen, China
Product Name: Mini PC
Model No.: GTR Pro, GTR, GTR Max, GTR Pro, GTR Ultra, GTI, GTI Ultra, GTI MaX, GTR8, GTR9, GTR10, GTR8 Pro, GTR9 Pro, GTR10 Pro
Trade Mark: Beelink
FCC ID: 2A4J2-GTRPRO
Applicable standards: FCC CFR Title 47 Part 15 Subpart E Section 15.407
Date of Test: Sep.01, 2025-Nov.17, 2025
Date of report issued: Nov.18, 2025

Remark:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full without prior written permission of the company.

The report would be invalid without specific stamp of test institute and the signatures of compiler and approver

Prepared By

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1 Test Summary

Test Item	Section in CFR 47	Result	Test by
Antenna requirement	47CFR part 15.203	Pass	/
AC Power Line Conducted Emission	47CFR part 15.207	Pass	Jason Huang
Conducted Output Power	47CFR part 15.407 (a)(1)/(a)(3)	Pass	Kara Wu
26dB Bandwidth and 99% Occupied Bandwidth	47CFR part 15.407 (a)(12)	Pass	Kara Wu
6dB Bandwidth	47CFR part 15.407 (e)	Pass	Kara Wu
Power Spectral Density	47CFR part 15.407(a)(1)/(a)(3)	Pass	Kara Wu
Band Edge	47CFR part 15.407(b)(1)/(b)(4)	Pass	Kara Wu
Spurious Emission	47CFR part 15.205/15.209 47CFR part 15.407(b)(1)/(b)(4)/(b)(8)	Pass	Jason Huang
Frequency Stability	47CFR part 15.407(g)	Pass	Kara Wu

Remarks:

1. Pass: The EUT complies with the essential requirements in the standard.
2. Test according to ANSI C63.10-2020 KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
3. Note: Compliance determination rules
 - 1).The Compliance determination of test results does not take into account measurement uncertainty. Measurement results are determined based on regulatory limitations or requirements specified by the applicant/manufacturer. If measurement uncertainty is taken into account, the applicant/manufacturer will bear all possible risks of non-compliance.
 - 2).The measurement uncertainty please refer to each test result in the "Measurement Uncertainty"

1.1 Measurement Uncertainty

Test Item	Measurement Uncertainty	Notes
Occupied Channel Bandwidth	0.55%	(1)
RF output power, conducted	±0.57 dB	(1)
Power Spectral Density, conducted	±0.61 dB	(1)
Unwanted Emissions, conducted	±0.64 dB	(1)
AC Power Line Conducted Emission	± 2.55 dB	(1)
Radiated emissions 9K-30MHz	±3.79 dB	(1)
Radiated emissions 30M- 1GHz	± 4.24 dB	(1)
Radiated emissions 1GHz-18GHz	± 4.26 dB	(1)
Radiated emissions 18GHz-40GHz	±4.17 dB	(1)
Frequency error	Uc=1X10 ⁻⁷	(1)
Duty Cycle	0.03%	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

2 General Information

2.1 General Description of EUT

Product Name:	Mini PC
Model No.:	GTR Pro,GTR,GTR Max,GTR Pro,GTR Ultra,GTI,GTI Ultra,GTI MaX,GTR8,GTR9,GTR10,GTR8 Pro,GTR9 Pro,GTR10 Pro
Difference of model(s)	All models have the same circuit and RF module, except for the model name
Test Model:	GTR Pro
Hardware Version:	N/A
Software Version:	N/A
Sample(s) Status:	Engineer sample
Operation Frequency:	☒ 5180-5240MHz for 802.11a/n(HT20)/ac20(VHT20); 5190-5230MHz for 802.11n(HT40)/ac40(VHT40); 5210MHz for 802.11 ac80(VHT80); ☒ 5745-5825 MHz for 802.11a/n(HT20)/ac20(VHT20); 5755-5795 MHz for 802.11n(HT40)/ac40(VHT40); 5775MHz for 802.11 ac80(VHT80);
Channel numbers:	☒ 4 channels for 802.11a/n20(HT20)/ac20(VHT20) in the 5180-5240MHz band; 2 channels for 802.11 n40(HT40)/ac40(VHT40) in the 5190-5230MHz band ; 1 channels for 802.11 ac80(VHT80) in the 5210MHz band ; ☒ 5 channels for 802.11802.11a/n20(HT20)/ac20(VHT20) in the 5745-5825MHz band ; 2 channels for 802.11 n40(HT40)/ac40(VHT40) in the 5755-5795MHz band ; 1 channels for 802.11 ac80(VHT80) in the 5775MHz band
Channel bandwidth:	802.11a/802.11n(HT20)/ 802.11ac(VHT20): 20MHz 802.11n(HT40)/ 802.11ac(VHT40) : 40MHz 802.11ac(VHT80) : 80MHz
Data Rate	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40):MCS0-MCS15; 802.11ac(VHT/20/40/80):NSS1, MCS0-MCS9
Modulation technology:	Orthogonal Frequency Division Multiplexing (OFDM) with BPSK/QPSK/16QAM/64QAM/256QAM
Antenna Type:	FPCB antenna
Antenna gain:	UNII-1:3.67dBi UNII-3:2.38dBi (Note: Antenna information is provided by applicant, Testing lab is not responsible for the accuracy of the information.)
Battery	N/A
Power supply:	AC 100-240V 50/60Hz 2.5A
Adapter Model:	N/A

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180MHz	38	5190MHz	40	5200MHz	42	5210MHz
44	5220MHz	46	5230MHz	48	5240MHz	/	/
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	151	5755MHz	153	5765MHz	155	5775MHz
157	5785MHz	159	5795MHz	161	5805MHz	/	/
165	5825MHz	/					

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency (MHz)		
	802.11 a /n(HT20)/ac(VHT20)	802.11 n(HT40)/ac(VHT40)	802.11ac(VHT80)
Lowest channel	5180	5190	5210
Middle channel	5200	X	
Highest channel	5240		

Test channel	Frequency (MHz)		
	802.11 a /n(HT20)/ac(VHT20)	802.11 n(HT40)/ac(VHT40)	802.11ac(VHT80)
Lowest channel	5745	5755	5775
Middle channel	5785	X	
Highest channel	5825		

2.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
<i>Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.</i>	

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Pretest Mode	Description
Mode 1	802.11a / n 20/ ac 20 CH36/ CH40/ CH 48 802.11a /n 20/ac 20 CH149/ CH157/ CH 165
Mode 2	802.11n 40/ac 40 CH38/ CH 46 802.11n 40/ac 40 CH 151 / CH 159
Mode 3	802.11 ac80 CH 42/CH 155
Mode 4	/
Mode 5	Link Mode

Conducted Emission	
Final Test Mode	Description
Mode 5	Link Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11a / n 20/ ac 20 CH36/ CH40/ CH 48 802.11a /n 20/ac 20 CH149/ CH157/ CH 165
Mode 2	802.11n 40/ac 40 CH38/ CH 46 802.11n 40/ac 40 CH 151 / CH 159
Mode 3	802.11 ac80 CH 42/CH 155
Mode 4	/

Note:

(1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

2.3 Description of Support Units

No.	Description	Manufacturer	Model	Serial Number
1	Monitor	SKYWORTH	2BU1	/
2	Mouse	DELL	MS116	/
3	Keyboard	DELL	KB216t	/

2.4 Test Facility

Test laboratory:	Shenzhen ETR Standard Technology Co., Ltd.
CNAS Registration Number:	L11864
A2LA Certificate Number:	6640.01
FCC Designation Number:	CN1326
FCC Test Firm Registration:	183064
IC Company Number:	28440
IC CAB identifier:	CN0132
Laboratory location:	No.103, No.10, Phase I, Zone 3, Xinxing Industrial Park, Xinhe, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

2.5 Additional Instructions

Test Software	QATool_Dbg.exe
Power level setup	Default

3 Test Instruments list

Conducted Emission

Item	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	EMI Test Receiver	Rohde&schwarz	ESC13	100605	2025.3.06	2026.3.05
2	Artificial power network	schwarabeck	NSLK8127	8127483	2025.3.06	2026.3.05
3	Artificial power network	ETS	3186/2NM	1132	2025.3.06	2026.3.05
4	10dB attenuator	HUBER+SUHNER	10dB	/	2025.3.06	2026.3.05
5	Cable 4	HUBER SUNNER	3M	/	2025.3.06	2026.3.05
6	Absorbing Clamp	schwarabeck	MDS21	D69250	2025.3.06	2026.3.05

Radiated Emission &RF Conducted test:

Item	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	EMI Test Receiver	Rohde&schwarz	ESC17	101032	2025.3.06	2026.3.05
2	Broadband antenna	schwarabeck	VULB9168	1064	2024.3.26	2026.3.25
3	Horn antenna	schwarabeck	BBHA9120D	9120D-1145	2024.3.22	2026.3.21
4	Amplifier	EMtrace	RP01A	50117	2025.3.06	2026.3.05
5	Amplifier	Space-Dtronic	EWLAN0118G-P40	19113001	2025.3.06	2026.3.05
6	Spectrum analyzer	KEYSIGHT	N9020A	MY55370280	2025.3.06	2026.3.05
7	Power detector meter	MWRFtest	MW100-PSB	MW201020JYT	2025.3.06	2026.3.05
8	Signal generator	Agilent	N5182A	MY49060455	2025.3.06	2026.3.05
9	Spectrum analyzer	Rohde&schwarz	FSV-40N	101321	2025.3.06	2026.3.05
10	Amplifier	SKET	LNPA_1840-50	SK2019040302	2025.3.06	2026.3.05
11	Horn antenna	schwarabeck	BBHA 9170	946	2024.3.22	2026.3.21
12	Loop antenna	schwarabeck	FMZB 1519 B	1519	2024.3.22	2026.3.21
13	Cable 6	HUBER SUNNER	0.5M	/	2025.3.06	2026.3.05
14	Cable7	HUBER SUNNER	2.0M	/	2025.3.06	2026.3.05
15	Cable8	HUBER SUNNER	6.0M	/	2025.3.06	2026.3.05
16	Filter	Xin bo	XBLBQ-GTA29	210410-3-2	2025.3.06	2026.3.05
17	Power Sensor	Keysight	U2021XA	MY54111006	2025.3.06	2026.3.05
18	Temp. & Humidity Chamber	Jiecheng Instrument	QA-LP-80	20160705001	2025/3/07	2026/3/06

Note: the calibration interval of the above test instruments is 12 or 24 months and the calibrations are traceable to international system unit (SI).

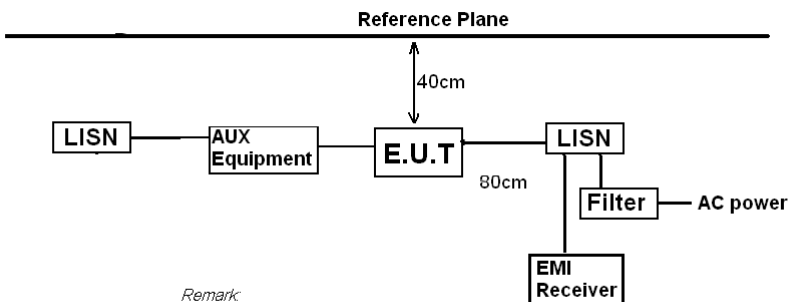
Software Name	Manufacturer	Model	Version
RF test software	MWRFtest	MTS 8310	V2.0.0.0
Conducted test software	EZ-EMC	Farad	Ver.EMC-CON 3A1.1
Radiated test software	EZ-EMC	Farad	Ver.FA-03A2 RE

4 Test results and Measurement Data

4.1 Antenna requirement

Standard requirement:	47CFR Part 15.203
<i>15.203 requirement:</i> <i>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</i>	
E.U.T Antenna:	
The antenna is FPCB antenna, the best case gain of the antenna is UNII-1:3.67dBi UNII-3:2.38dBi, reference to the ET-25093208IP for details.	

4.2 Conducted Emissions

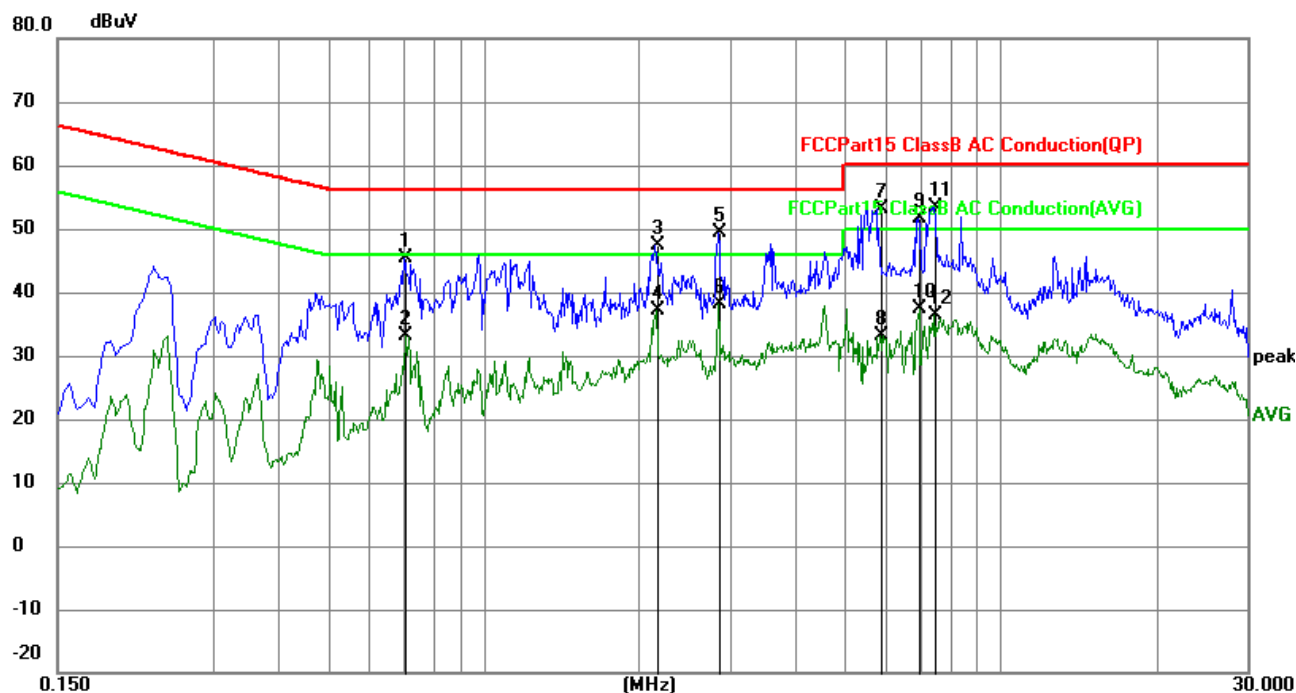
Test Requirement:	47CFR Part 15.207					
Test Method:	ANSI C63.10-2020 §6.2					
Test Frequency Range:	150KHz to 30MHz					
Class / Severity:	Class B					
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto					
Limit:	Frequency range (MHz)		Limit (dBuV)			
			Quasi-peak		Average	
	0.15-0.5		66 to 56*		56 to 46*	
	0.5-5		56		46	
	5-30		60		50	
* Decreases with the logarithm of the frequency.						
Test setup:	Reference Plane  Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network					
Test procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10-2020 on conducted measurement.					
Test Instruments:	Refer to section 3.0 for details					
Test mode:	Refer to section 2.2 for details					
Test environment:	Temp.:	24.6°C	Humid.:	41%	Press.:	1012mbar
Test voltage:	AC 120V 60Hz					
Test results:	Pass					

Remark:

1. Both high voltage and low voltage have been tested, and the report only shows the worst case data with AC 120V/60Hz.
2. All mode have been tested, the report only shows the worst mode (802.11ac20 5785MHz)

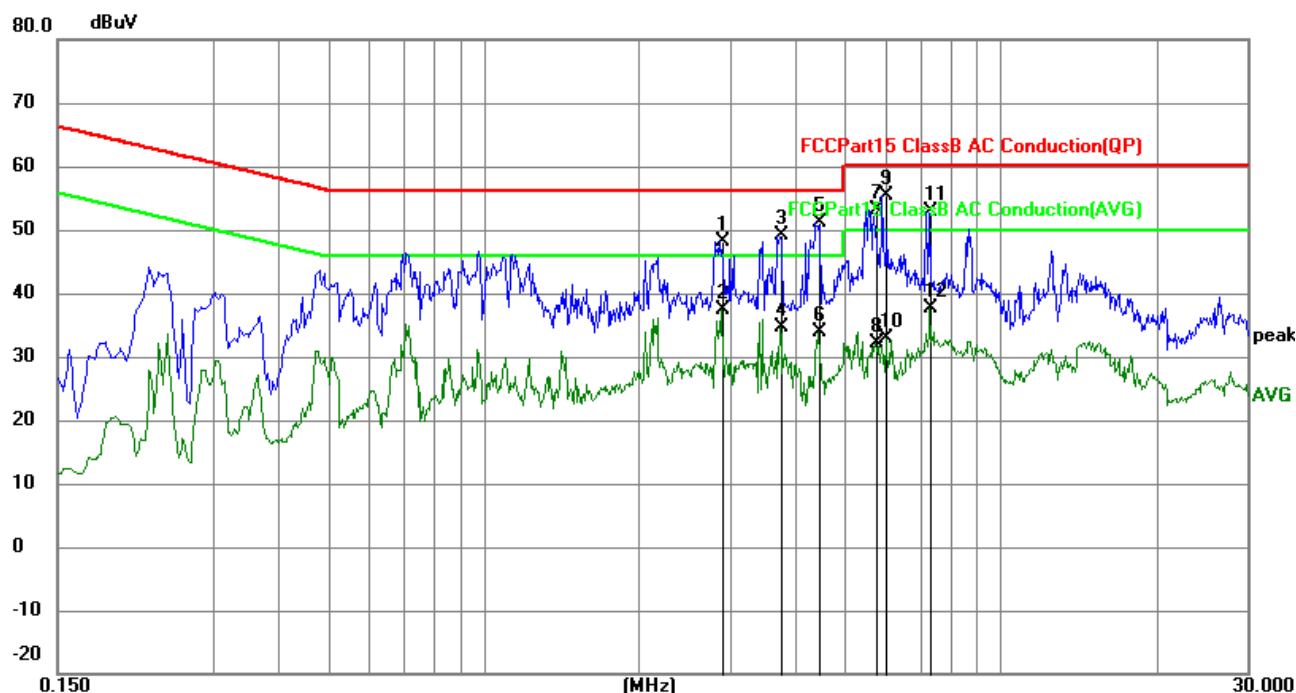
Measurement Result

Line:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.7075	35.47	9.94	45.41	56.00	-10.59	QP
2	0.7075	23.19	9.94	33.13	46.00	-12.87	AVG
3	2.1613	37.47	9.85	47.32	56.00	-8.68	QP
4	2.1613	27.32	9.85	37.17	46.00	-8.83	AVG
5	2.8454	39.46	9.85	49.31	56.00	-6.69	QP
6	2.8454	28.38	9.85	38.23	46.00	-7.77	AVG
7	5.8513	43.39	9.83	53.22	60.00	-6.78	QP
8	5.8513	23.33	9.83	33.16	50.00	-16.84	AVG
9	6.9538	41.75	9.83	51.58	60.00	-8.42	QP
10	6.9538	27.43	9.83	37.26	50.00	-12.74	AVG
11	7.4580	43.61	9.83	53.44	60.00	-6.56	QP
12	7.4580	26.48	9.83	36.31	50.00	-13.69	AVG

Neutral:

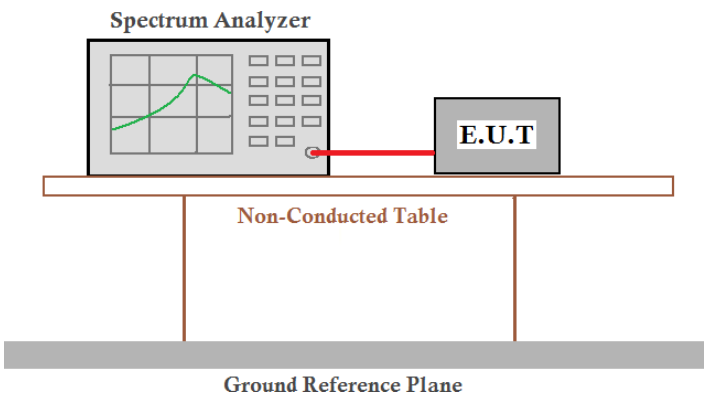


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	2.8860	38.33	9.85	48.18	56.00	-7.82	QP
2	2.8860	27.45	9.85	37.30	46.00	-8.70	AVG
3	3.7500	39.21	9.84	49.05	56.00	-6.95	QP
4	3.7500	24.87	9.84	34.71	46.00	-11.29	AVG
5	4.4428	41.23	9.83	51.06	56.00	-4.94	QP
6	4.4428	24.03	9.83	33.86	46.00	-12.14	AVG
7	5.7389	43.32	9.83	53.15	60.00	-6.85	QP
8	5.7389	22.25	9.83	32.08	50.00	-17.92	AVG
9	6.0179	45.63	9.83	55.46	60.00	-4.54	QP
10	6.0179	22.94	9.83	32.77	50.00	-17.23	AVG
11	7.2915	43.09	9.83	52.92	60.00	-7.08	QP
12	7.2915	27.76	9.83	37.59	50.00	-12.41	AVG

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

4.3 Duty cycle

Test Method :	ANSI C63.10-2020§11.6	
Limit:	/	
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.	
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 27.0°C	Humid.: 63%RH
Test voltage:	AC 120V 60Hz	
Test results:	Pass	

Measurement Result

5180-5240MHz

Mode	Duty cycle (%)	Correction Factor (dB)
TX 802.11a Mode	97.48	0.11
TX 802.11n20 Mode	93.15	0.31
TX 802.11ac20 Mode	92.93	0.32
TX 802.11n40 Mode	91.03	0.41
TX 802.11a40 Mode	95.20	0.21
TX 802.11ac80 Mode	90.81	0.42

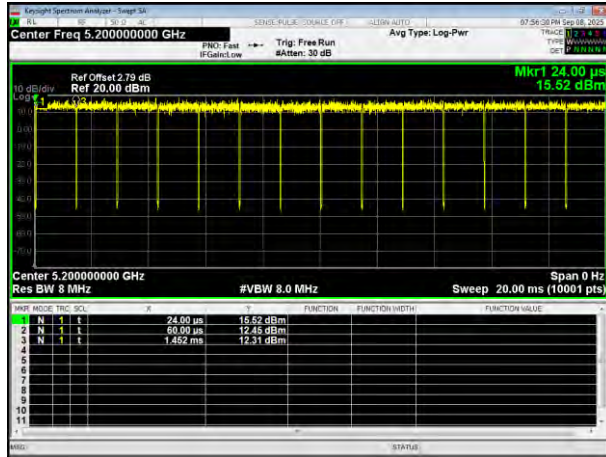
5745-5825 MHz

Mode	Duty cycle (%)	Correction Factor (dB)
TX 802.11a Mode	97.18	0.12
TX 802.11n20 Mode	97.89	0.09
TX 802.11ac20 Mode	92.00	0.36
TX 802.11n40 Mode	95.59	0.20
TX 802.11a40 Mode	92.31	0.35
TX 802.11ac80 Mode	91.67	0.38

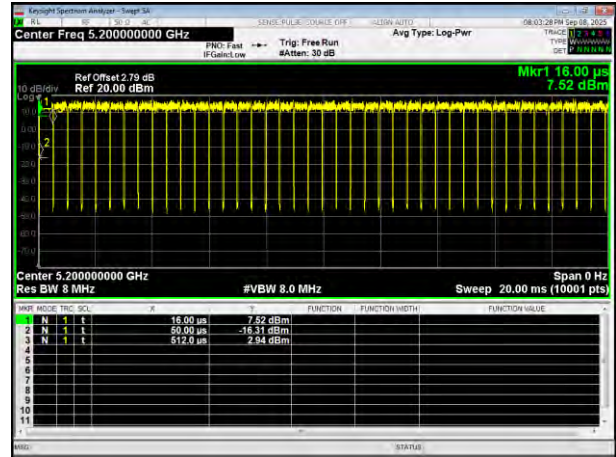
Test plot

5180-5240MHz

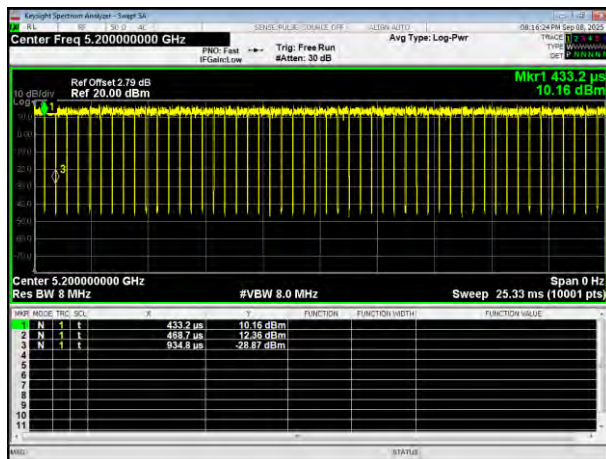
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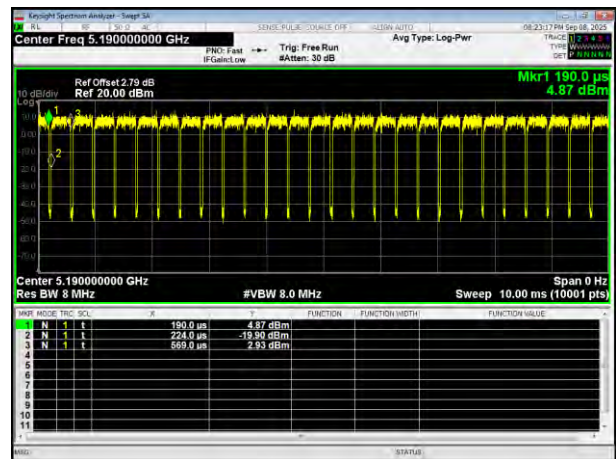
(802.11 n20) plot



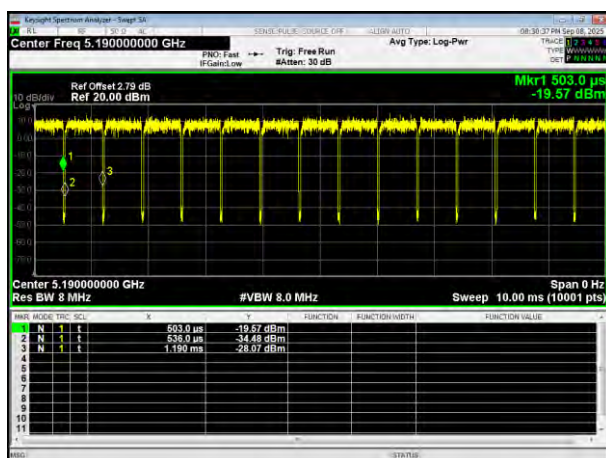
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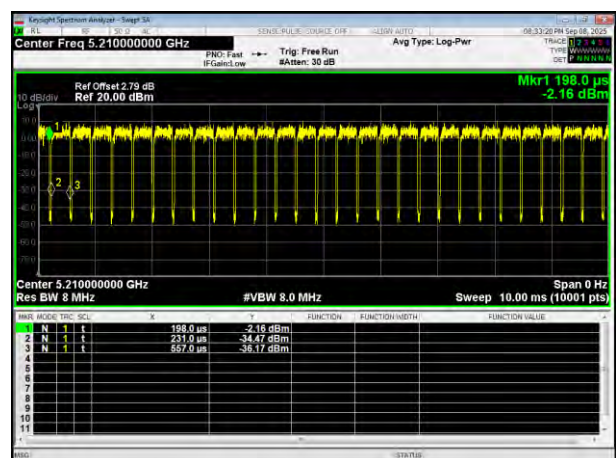
(802.11 n40) plot



(802.11ac40) plot

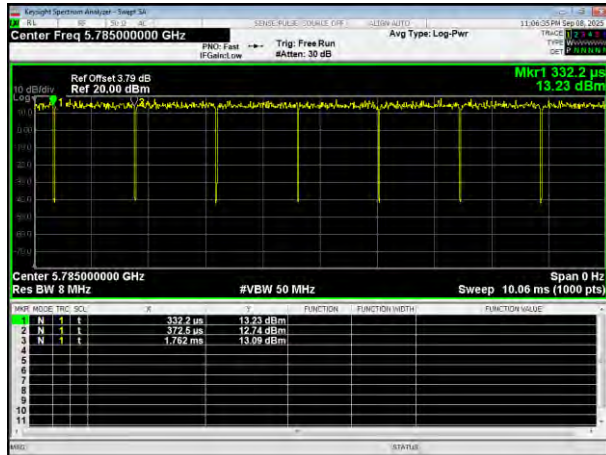


(802.11ac80) plot

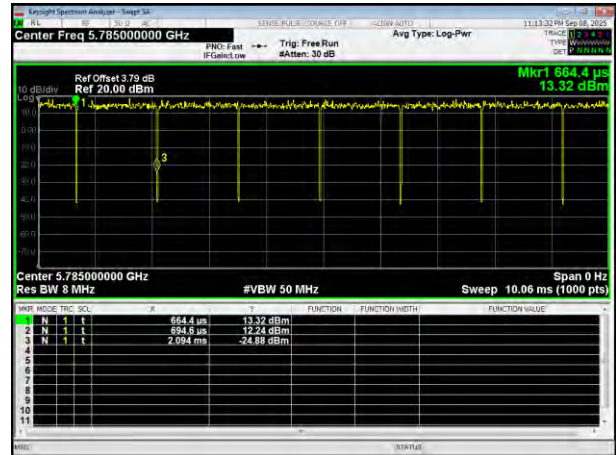


5745-5825 MHz

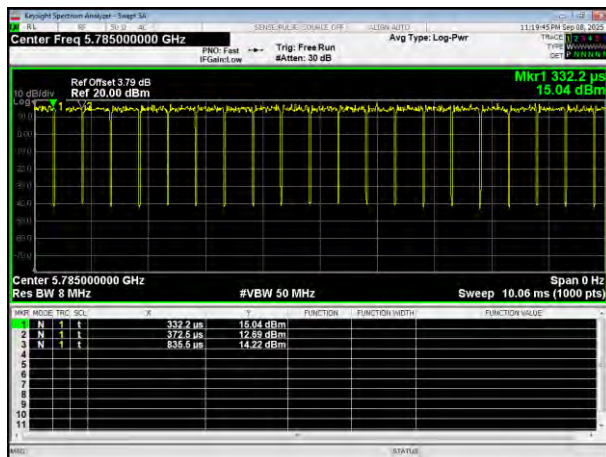
(802.11a) plot



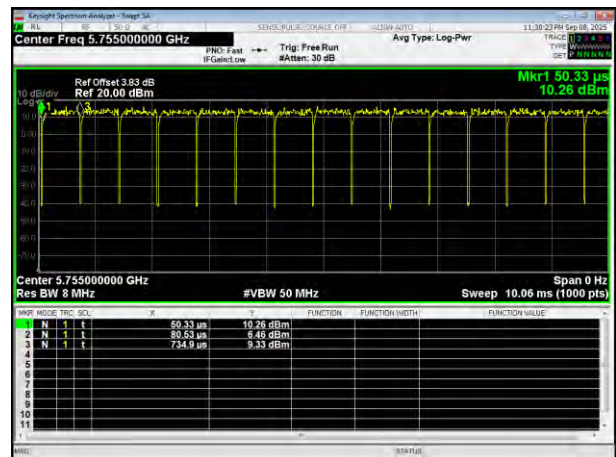
(802.11 n20) plot



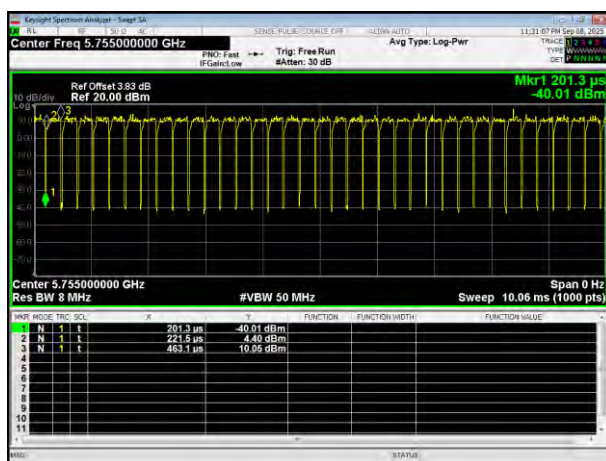
(802.11ac20) plot



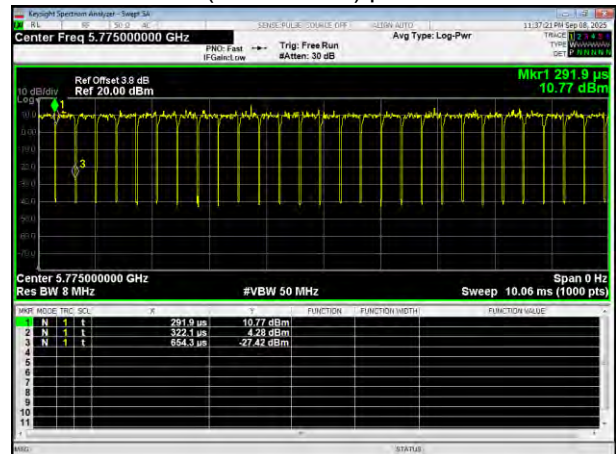
(802.11 n40) plot



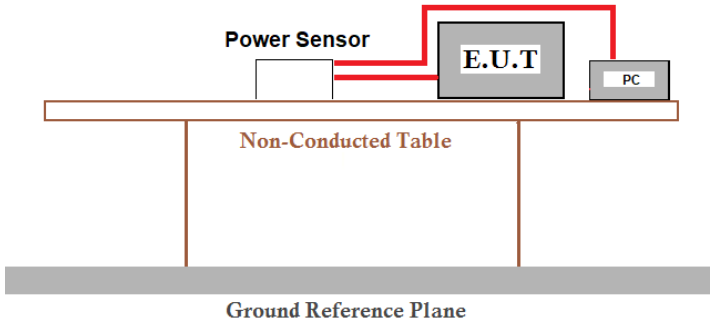
(802.11ac40) plot



(802.11ac80) plot



4.4 Conducted Output Power

Test Requirement:	47CFR Part 15.407 (a)(1)/(a)(3)	
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 ANSI C63.10-2020 § 12.4	
Limit:	5150-5250MHz : 250mW 5725~5850MHz : 1W	
Test setup:		
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 27.0°C	Humid.: 63%RH
Test voltage:	AC 120V 60Hz	
Test results:	Pass	

Measurement Result

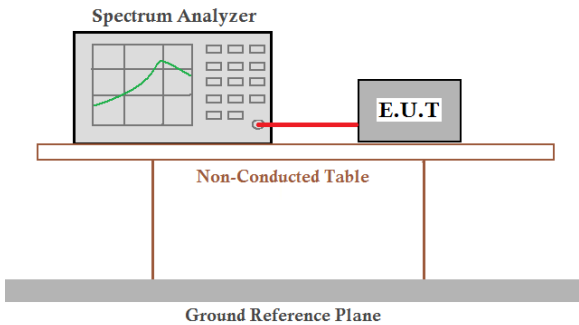
5180-5240MHz

Test Channel	Frequency	Correction Factor	Maximum output power	Total Power	Result
	(MHz)	(dB)	(dBm)	(dBm)	
TX 802.11a Mode					
CH36	5180	0.11	14.33	14.44	Pass
CH40	5200	0.11	14.76	14.87	Pass
CH48	5240	0.11	14.44	14.55	Pass
TX 802.11 n20 Mode					
CH36	5180	0.31	14.47	14.78	Pass
CH40	5200	0.31	14.84	15.15	Pass
CH48	5240	0.31	14.11	14.42	Pass
TX 802.11 ac20 Mode					
CH36	5180	0.32	14.57	14.89	Pass
CH40	5200	0.32	14.49	14.81	Pass
CH48	5240	0.32	14.10	14.42	Pass
TX 802.11 n40 Mode					
CH38	5190	0.41	13.14	13.55	Pass
CH46	5230	0.41	13.56	13.97	Pass
TX 802.11 ac40 Mode					
CH38	5190	0.21	13.20	13.41	Pass
CH46	5230	0.21	13.53	13.74	Pass
TX 802.11 ac80 Mode					
CH42	5210	0.42	12.45	12.87	Pass

5745-5825 MHz

Test Channel	Frequency	Correction Factor	Maximum output power	Total Power	Limit	Result
	(MHz)	(dB)	(dBm)	(dBm)	dBm	
TX 802.11a Mode						
CH149	5745	0.12	14.27	14.39	30	Pass
CH157	5785	0.12	14.21	14.33	30	Pass
CH165	5825	0.12	14.19	14.31	30	Pass
TX 802.11 n20 Mode						
CH149	5745	0.09	14.18	14.27	30	Pass
CH157	5785	0.09	14.38	14.47	30	Pass
CH165	5825	0.09	14.69	14.78	30	Pass
TX 802.11 ac20 Mode						
CH149	5745	0.36	14.22	14.58	30	Pass
CH157	5785	0.36	14.55	14.91	30	Pass
CH165	5825	0.36	14.46	14.82	30	Pass
TX 802.11 n40 Mode						
CH151	5755	0.20	13.47	13.67	30	Pass
CH159	5795	0.20	13.66	13.86	30	Pass
TX 802.11 ac40 Mode						
CH151	5755	0.35	13.58	13.93	30	Pass
CH159	5795	0.35	13.65	14.00	30	Pass
TX 802.11 ac80 Mode						
CH155	5775	0.38	12.53	12.91	30	Pass

4.5 Bandwidth &99% Occupy Bandwidth

Test Requirement:	47CFR Part 15.407(a)(12)&15.407(e),	
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01, ANSI C63.10-2020§12.5	
Limit:	Measurements in the 5.725-5.85 GHz band, the minimum bandwidth 6 dB bandwidth of U-NII devices shall be at least 500KHz. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.	
Test setup:		
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 27.0°C	Humid.: 63%RH
Test voltage:	AC 120V 60Hz	
Test results:	Pass	

Measurement Result

5180-5240MHz

Test CH	-26dB Channel Bandwidth (MHz)						Result
	802.11a	802.11n (HT20)	802.11ac (VHT20)	802.11n (HT40)	802.11ac (VHT40)	802.11ac (VHT80)	
Lowest	19.44	19.78	19.91	39.57	40.28	--	Pass
Middle	19.58	19.87	19.73	--	--	79.59	
Highest	19.63	19.85	19.84	39.68	39.91	--	

(802.11a) plot on channel 36



(802.11 n20) plot on channel 36



(802.11a) plot on channel 40



(802.11 n20) plot on channel 40



(802.11a) plot on channel 48



(802.11 n20) plot on channel 48



Test plot

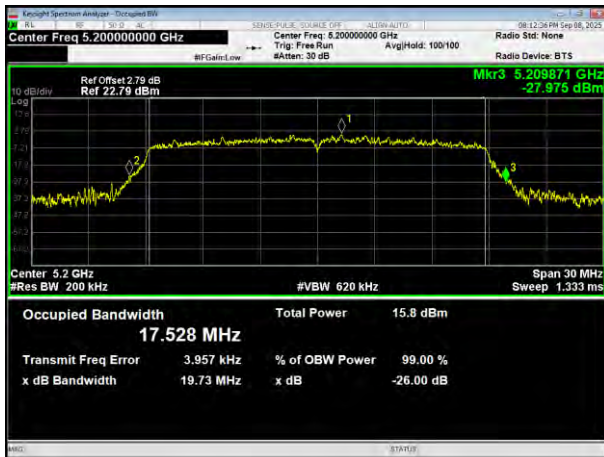
(802.11ac20) plot on channel 36



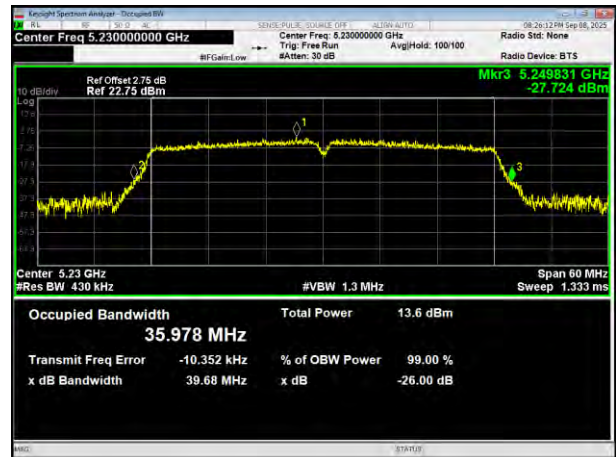
(802.11 n40) plot on channel 38



(802.11ac20) plot on channel 40



(802.11 n40) plot on channel 46



(802.11ac20) plot on channel 48

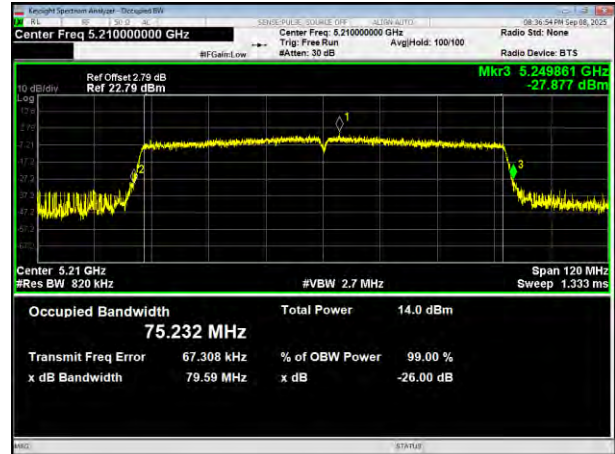


Test plot

(802.11ac40) plot on channel 38



(802.11ac80) plot on channel 42



(802.11ac40) plot on channel 46



5745-5825MHz

Test CH	-6dB Channel Bandwidth (MHz)						Limit (KHz)	Result
	802.11a	802.11n (HT20)	802.11ac (VHT20)	802.11n (HT40)	802.11ac (VHT40)	802.11ac (VHT80)		
Lowest	15.27	15.11	15.08	35.08	35.11	--	>500	Pass
Middle	15.30	15.07	15.06	--	--	75.07		
Highest	15.02	15.03	15.06	35.09	35.07	--		

Remark: "---" is not applicable

Test plot

(802.11a) plot on channel 149



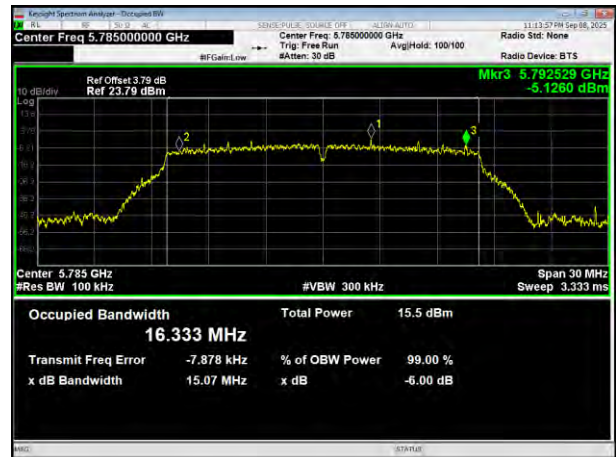
(802.11 n20) plot on channel 149



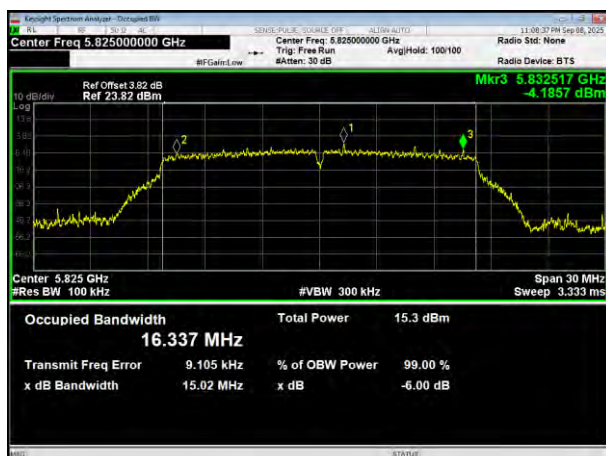
(802.11a) plot on channel 157



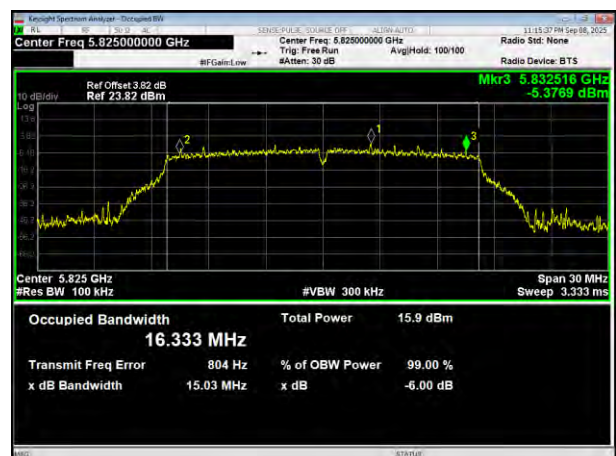
(802.11 n20) plot on channel 157



(802.11a) plot on channel 165



(802.11 n20) plot on channel 165

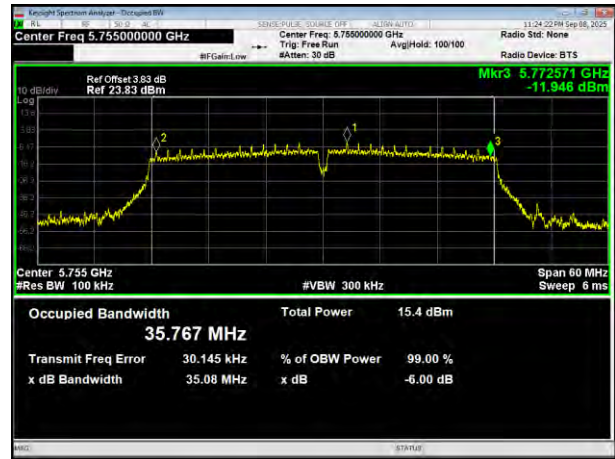


Test plot

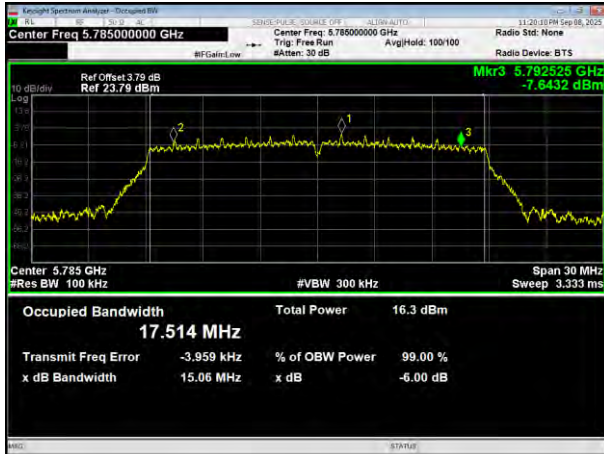
(802.11ac20) plot on channel 149



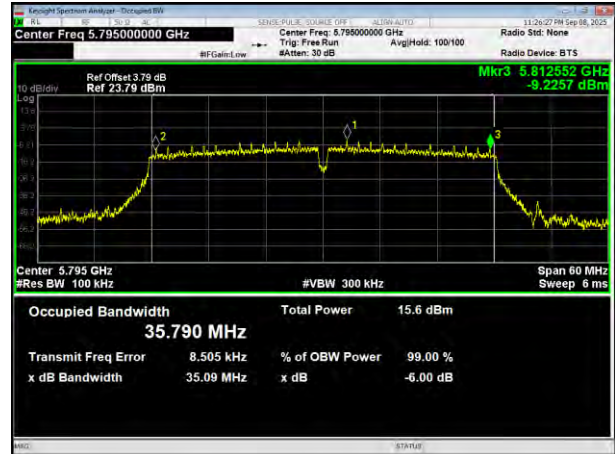
(802.11 n40) plot on channel 151



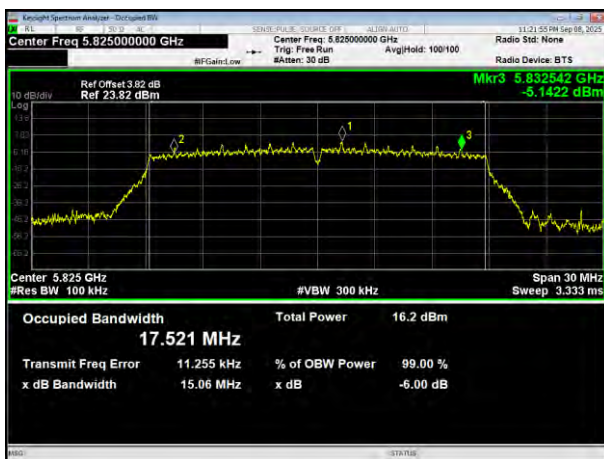
(802.11ac20) plot on channel 157



(802.11 n40) plot on channel 159

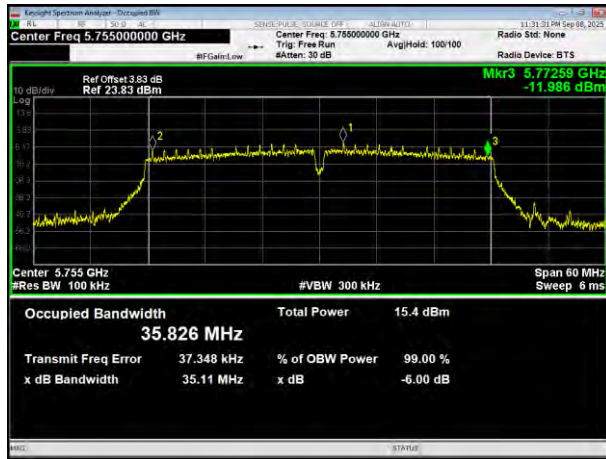


(802.11ac20) plot on channel 165

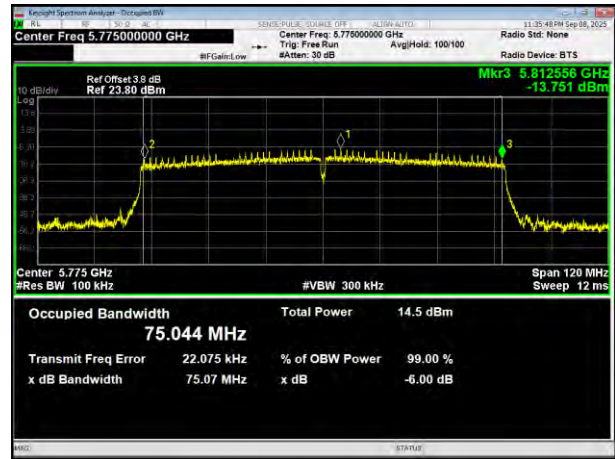


Test plot

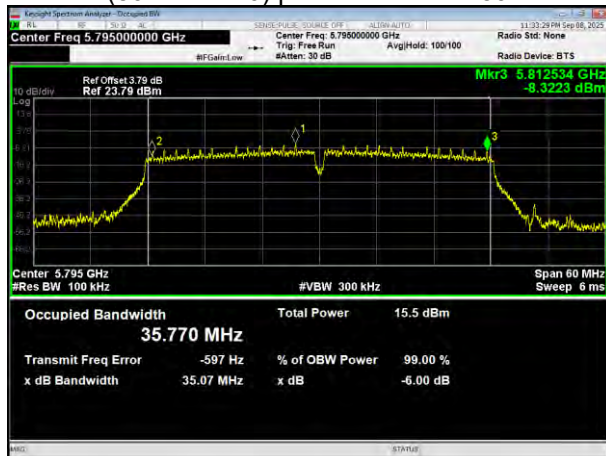
(802.11 ac40) plot on channel 151



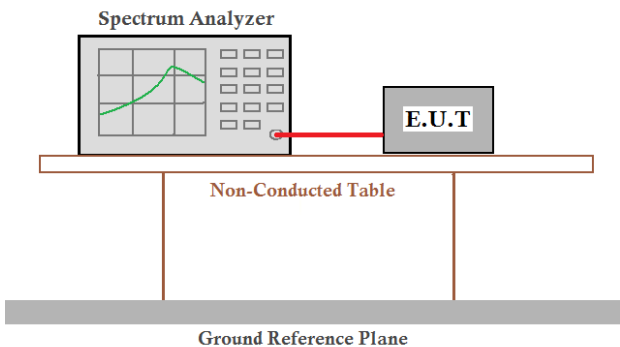
(802.11 ac80) plot on channel 155



(802.11 ac40) plot on channel 159



4.6 Power Spectral Density

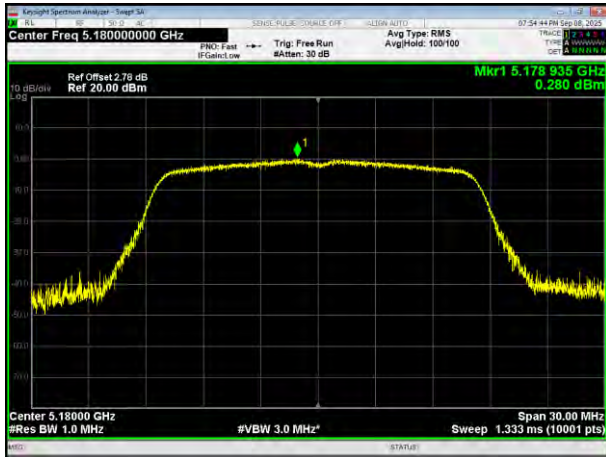
Test Requirement:	47CFR Part 15.407(a)(1)/ (a)(3)	
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01, ANSI C63.10-2020§12.6	
Limit:	Frequency band (MHz)	Limit
	5150-5250	≤17dBm/1MHz for master device
		≤11dBm/1MHz for client device
	5250-5350	≤11dBm/1MHz for client device
	5470-5725	≤11dBm/1MHz for client device
	5725-5850	≤30dBm/500kHz
Test setup:		
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 23.3°C	Humid.: 60%RH
Test voltage:	AC 120V 60Hz	
Test results:	Pass	

Measurement Result

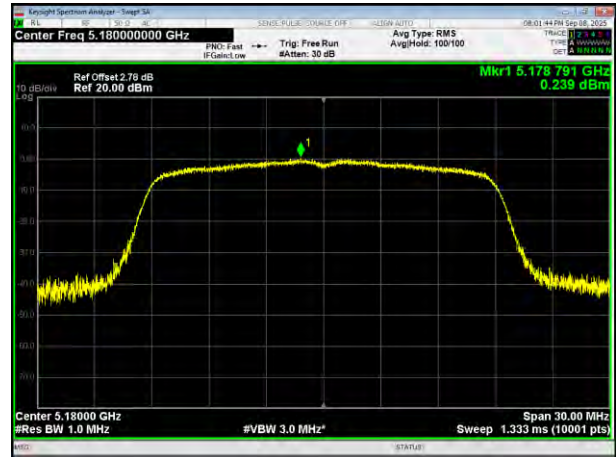
5180-5240MHz

Mode	Frequency	Measured Power Density (dBm/MHz)	Correction Factor (dB)	Total Measured Power Density (dBm/MHz)	Limit (dBm/MHz)
802.11 a	5180 MHz	0.280	0.110	0.390	11
	5200 MHz	0.524	0.110	0.634	11
	5240 MHz	0.085	0.110	0.195	11
802.11 n20	5180 MHz	0.239	0.310	0.549	11
	5200 MHz	0.388	0.310	0.698	11
	5240 MHz	-0.377	0.310	-0.067	11
802.11 ac20	5180 MHz	0.351	0.320	0.671	11
	5200 MHz	-0.101	0.320	0.219	11
	5240 MHz	-0.291	0.320	0.029	11
802.11 n40	5190 MHz	-5.607	0.410	-5.197	11
	5230 MHz	-3.688	0.410	-3.278	11
802.11 ac40	5190 MHz	-4.090	0.210	-3.880	11
	5230 MHz	-4.294	0.210	-4.084	11
802.11 ac80	5210 MHz	-8.437	0.420	-8.017	11

(802.11a) PSD plot on channel 36



(802.11n20) PSD plot on channel 36



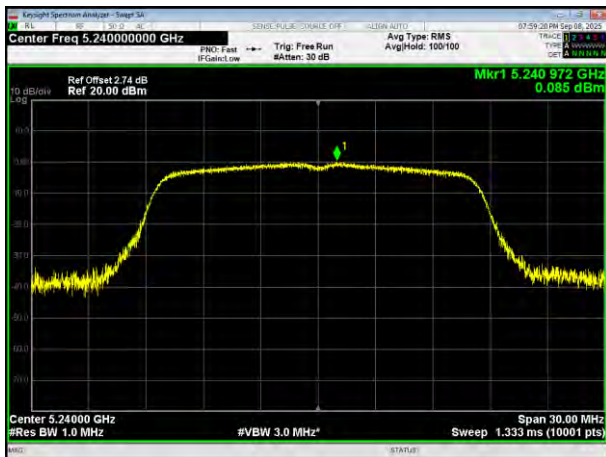
(802.11a) PSD plot on channel 40



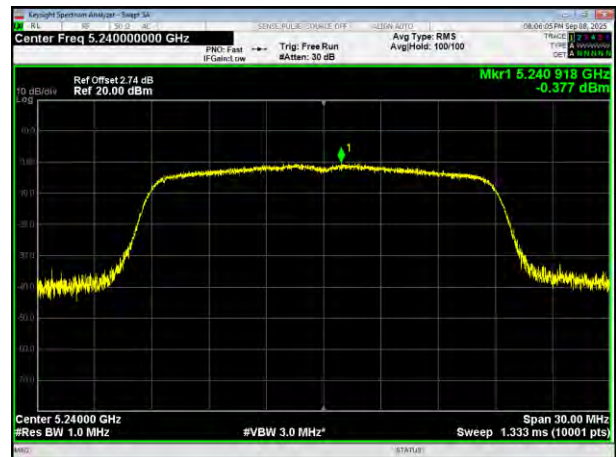
(802.11n20) PSD plot on channel 40



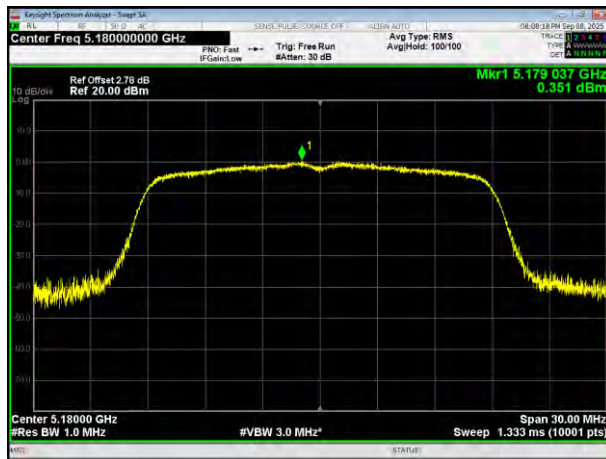
(802.11a) PSD plot on channel 48



(802.11n20) PSD plot on channel 48



(802.11ac20) PSD plot on channel 36



(802.11n40) PSD plot on channel 38



(802.11ac20) PSD plot on channel 40



(802.11n40) PSD plot on channel 46



(802.11ac20) PSD plot on channel 48



(802.11ac40) PSD plot on channel 38



(802.11ac80) PSD plot on channel 42



(802.11ac40) PSD plot on channel 46



Mode	Frequency	Measured Power Density (dBm/510KHz)	Measured Power Density (dBm/500KHz)	Correction Factor (dB)	Total Measured Power Density (dBm/500KHz)	Limit (dBm/500kHz)
802.11 a	5745 MHz	-2.896	-2.982	0.120	-2.862	30
	5785 MHz	-2.720	-2.806	0.120	-2.686	30
	5825 MHz	-2.845	-2.931	0.120	-2.811	30
802.11 n20	5745 MHz	-3.055	-3.141	0.090	-3.051	30
	5785 MHz	-2.728	-2.814	0.090	-2.724	30
	5825 MHz	-2.443	-2.529	0.090	-2.439	30
802.11ac20	5745 MHz	-3.165	-3.251	0.360	-2.891	30
	5785 MHz	-2.747	-2.833	0.360	-2.473	30
	5825 MHz	-3.011	-3.097	0.360	-2.737	30
802.11 n40	5755 MHz	-6.790	-6.876	0.200	-6.676	30
	5795 MHz	-6.936	-7.022	0.200	-6.822	30
802.11ac40	5755 MHz	-7.112	-7.198	0.350	-6.848	30
	5795 MHz	-6.641	-6.727	0.350	-6.377	30
802.11ac80	5775 MHz	-11.096	-11.182	0.380	-10.802	30

Note: 1. If the measurement is X dBm/510kHz, thus $X \text{ dBm/510kHz} = (10^{X/10}) \cdot (500 / 510) \text{ dBm/500kHz}$

2. Correction Factor (dB)= duty cycle factor

3. Total PSD= Measured PSD (dBm/510kHz) + Correction factor duty cycle (dB)

(802.11a) PSD plot on channel 149



(802.11n20) PSD plot on channel 149



(802.11a) PSD plot on channel 157



(802.11n20) PSD plot on channel 157



(802.11a) PSD plot on channel 165



(802.11n20) PSD plot on channel 165



(802.11ac20) PSD plot on channel 149



(802.11n40) PSD plot on channel 151



(802.11ac20) PSD plot on channel 157



(802.11n40) PSD plot on channel 159



(802.11ac20) PSD plot on channel 165



(802.11ac40) PSD plot on channel 151



(802.11ac80) PSD plot on channel 155

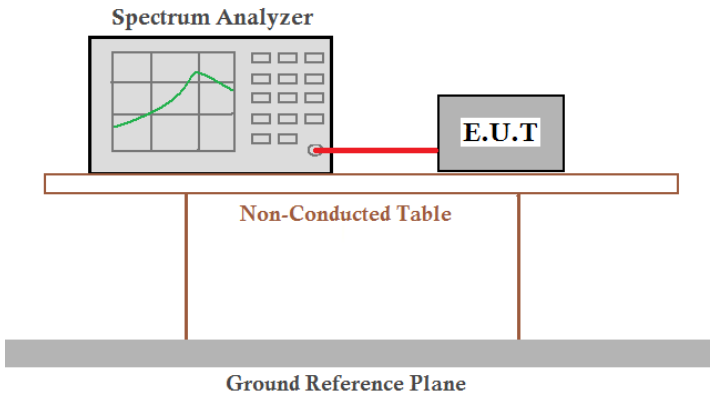


(802.11ac40) PSD plot on channel 159



4.7 Band edge

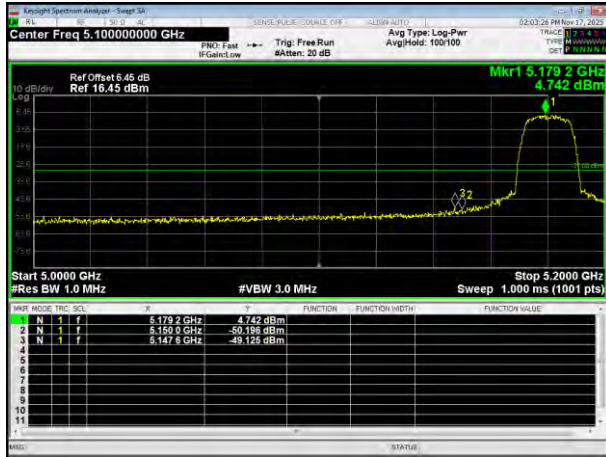
4.7.1 Conducted test Method

Test Requirement:	47CFR Part 15.209 and 15.205	
Test Method:	ANSI C63.10-2020 § 6.10	
Limit:	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.	
Test Procedure:	1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator. 2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range. 3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span. 4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency. 5. Repeat above procedures until all measured frequencies were complete..	
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 27.0°C	Humid.: 63%RH
Test voltage:	AC 120V 60Hz	
Test results:	Pass	

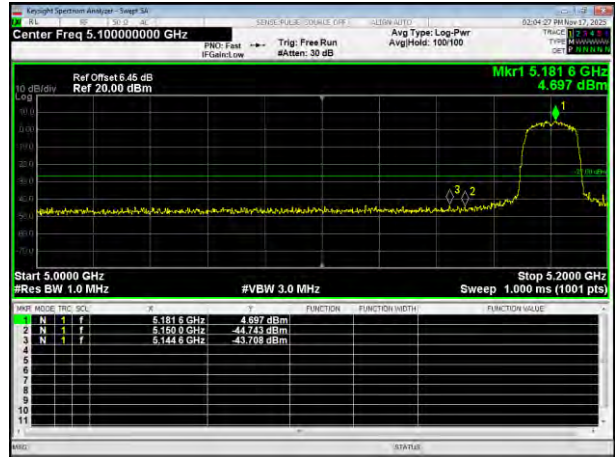
Remark: Due to the margin value of the sideband test being greater than the antenna gain value, the test meets the requirements

5.180~5.240 GHz

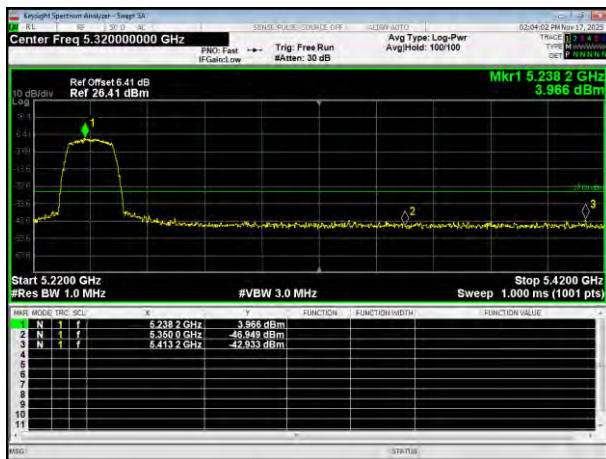
(802.11a) Band Edge, Left Side



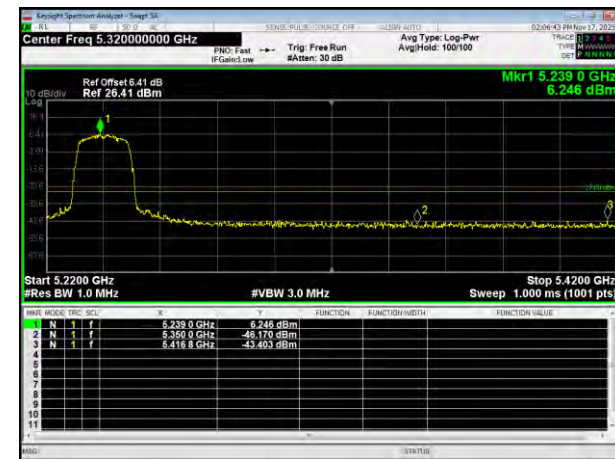
(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

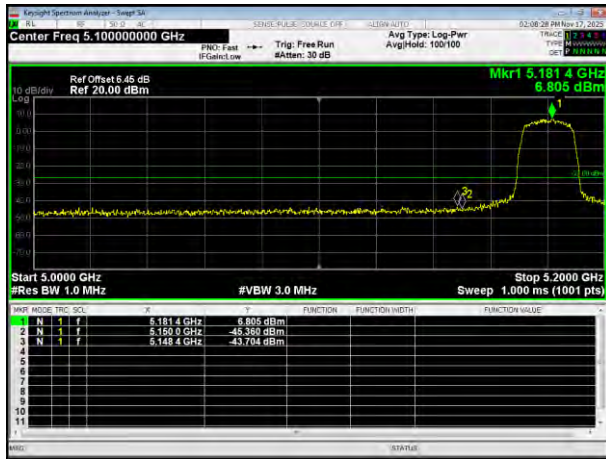


(802.11n20) Band Edge, Right Side

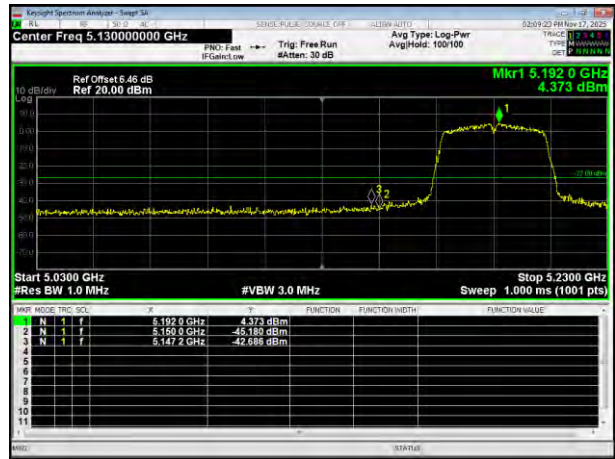


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

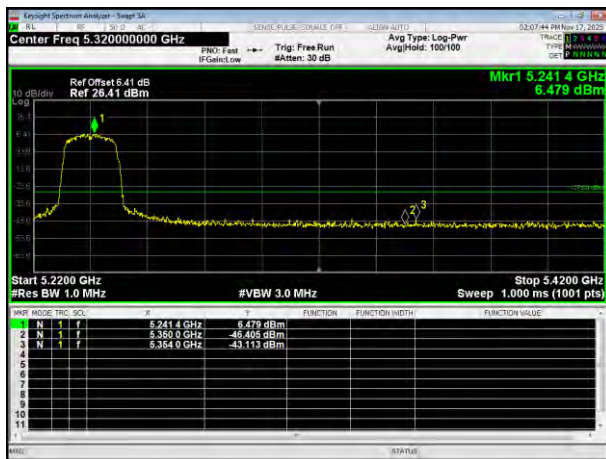
(802.11ac20) Band Edge, Left Side



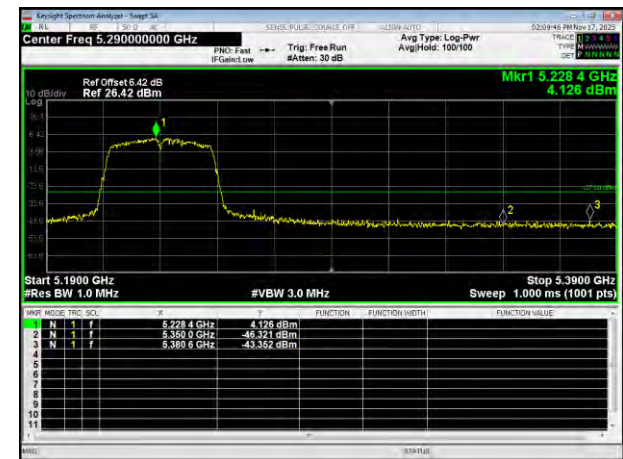
(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

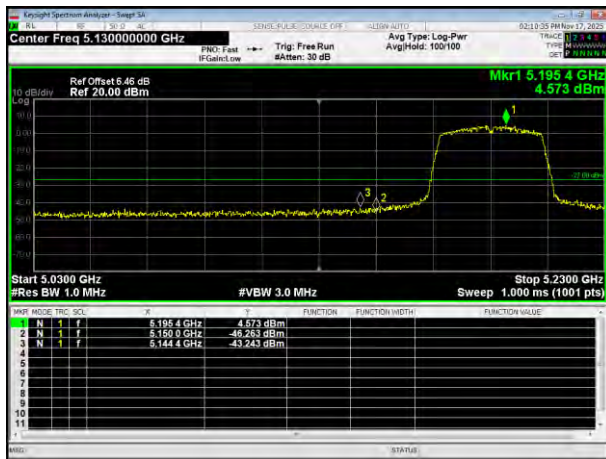


(802.11n40) Band Edge, Right Side

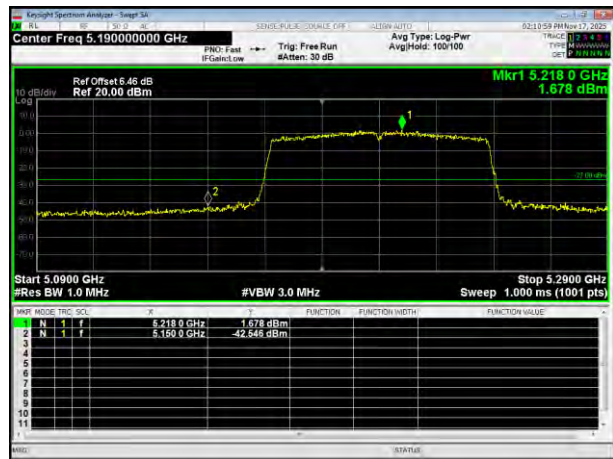


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

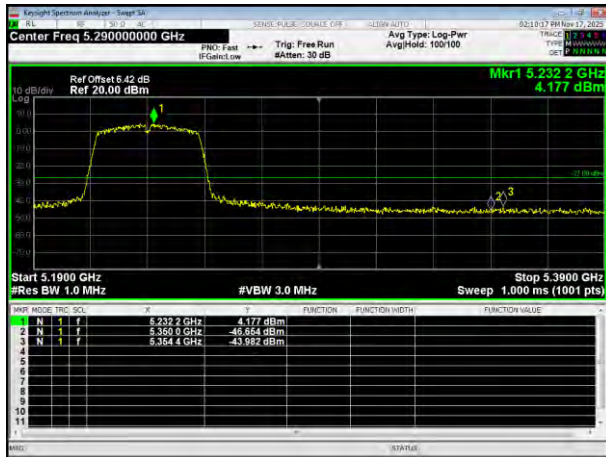
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



(802.11ac40) Band Edge, Right Side



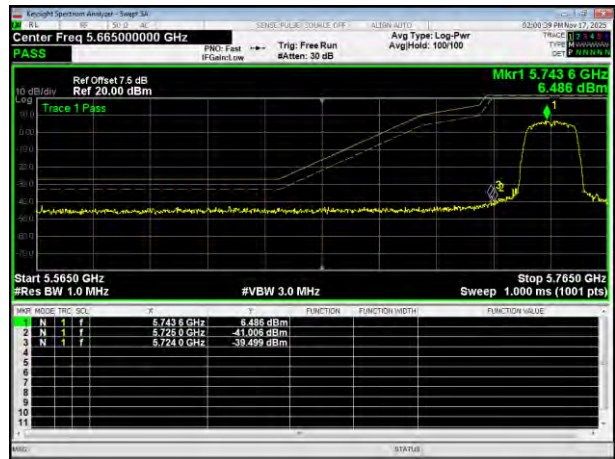
Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

5.745~5.825 GHz

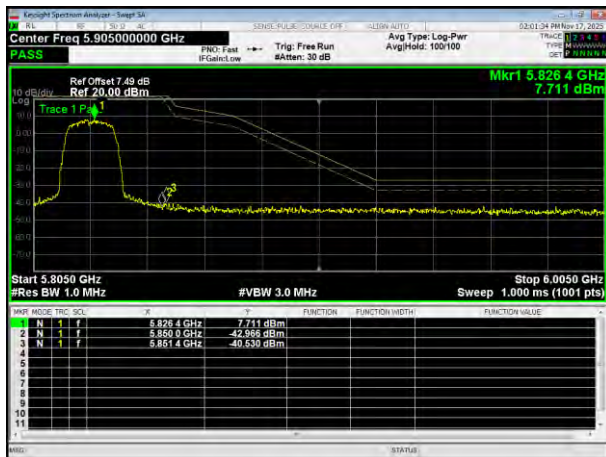
(802.11a) Band Edge, Left Side



(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

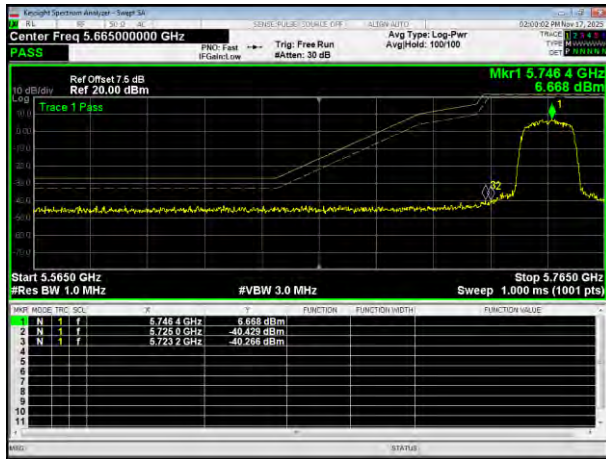


(802.11n20) Band Edge, Right Side

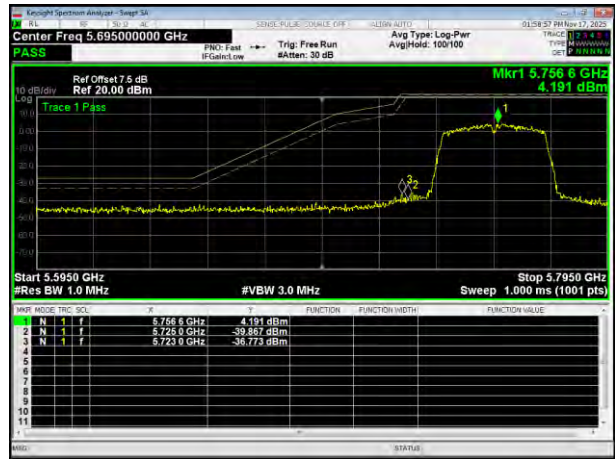


Remark: Antenna gain and cable loss data included in Offset.

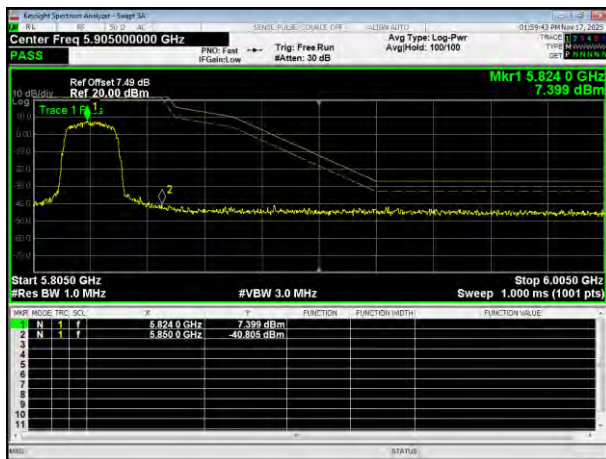
(802.11ac20) Band Edge, Left Side



(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side



(802.11n40) Band Edge, Right Side



Remark: Antenna gain and cable loss data included in Offset.

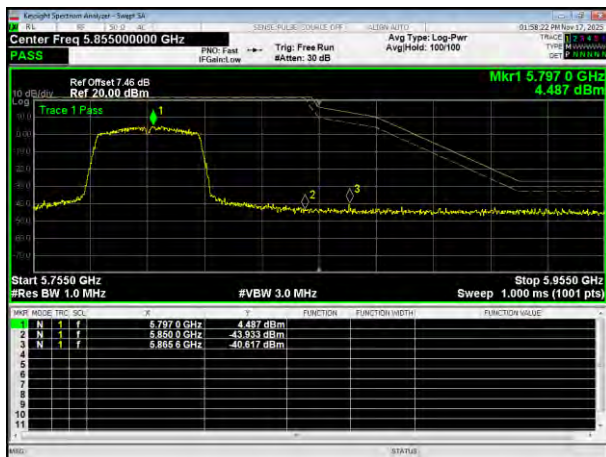
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



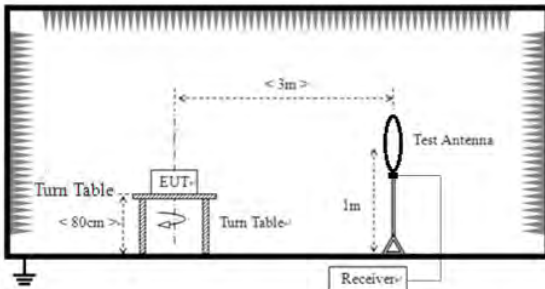
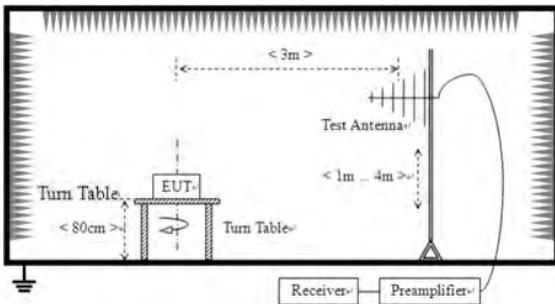
(802.11ac40) Band Edge, Right Side

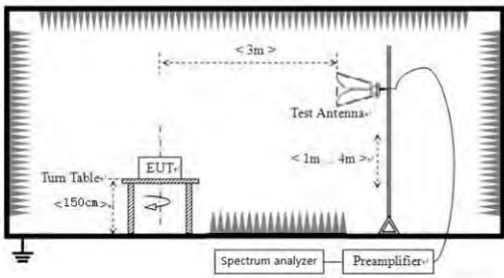


Remark: Antenna gain and cable loss data included in Offset.

4.8 Spurious Emission

4.8.1 Radiated Emission Method

Test Requirement:	47CFR Part 15.209, Part 15E Section 15.407(b)(4)				
Test Method:	ANSI C63.10-2020§6.4&6.5&6.6				
Test Frequency Range:	9kHz to 40GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9kHz-150KHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
	150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		AV	1MHz	3MHz	Average Value
Limit:	Frequency	Limit (uV/m)	Value	Measurement Distance	
	0.009MHz-0.490MHz	2400/F(KHz)	QP	300m	
	0.490MHz-1.705MHz	24000/F(KHz)	QP	300m	
	1.705MHz-30MHz	30	QP	30m	
	30MHz-88MHz	100	QP	3m	
	88MHz-216MHz	150	QP		
	216MHz-960MHz	200	QP		
	960MHz-1GHz	500	QP		
	Frequency	Limit (dBm/MHz)	Remark		
	Above 1GHz	-27.0	Peak Value		
Test setup:	For radiated emissions from 9kHz to 30MHz				
					
	For radiated emissions from 30MHz to 1GHz				
					
	For radiated emissions above 1GHz				

	
Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

Remarks:

1. The report only shows the worst mode.
2. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.
3. All models and modes have been tested, and the report only displays the worst mode 802.11ac20 (5785MHz) data

Measurement Data:

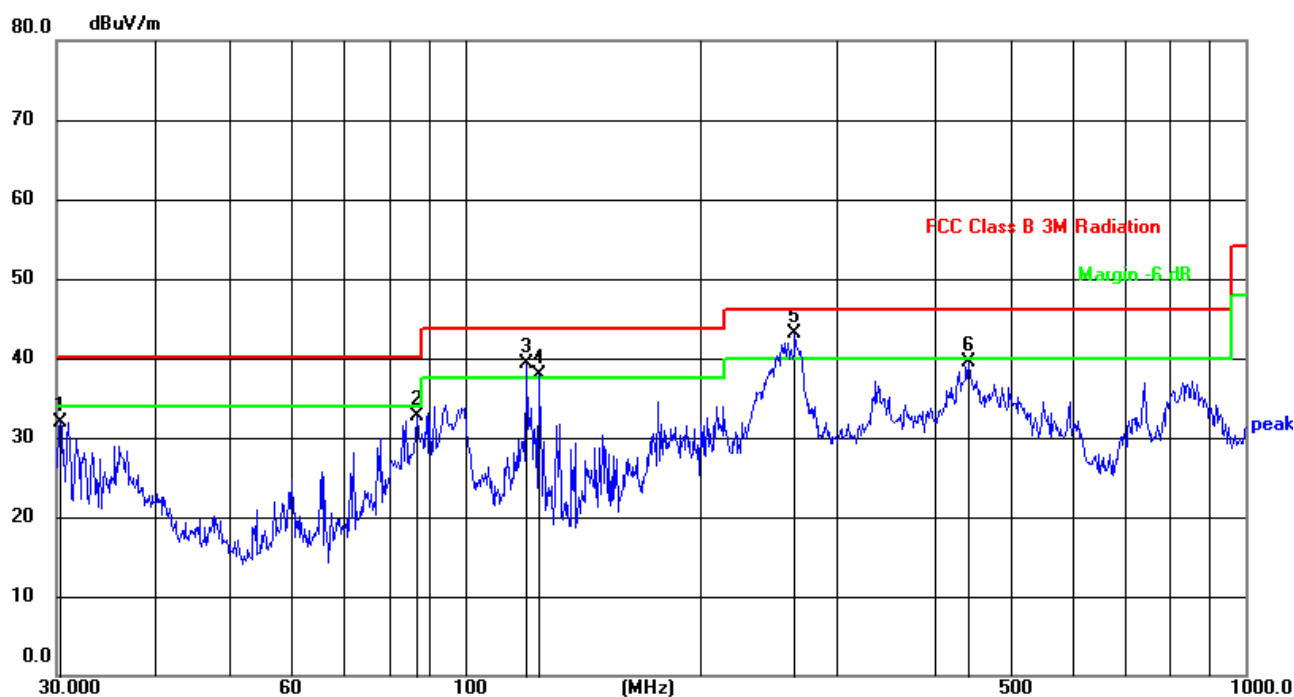
9 kHz ~ 30 MHz

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Below 1GHz

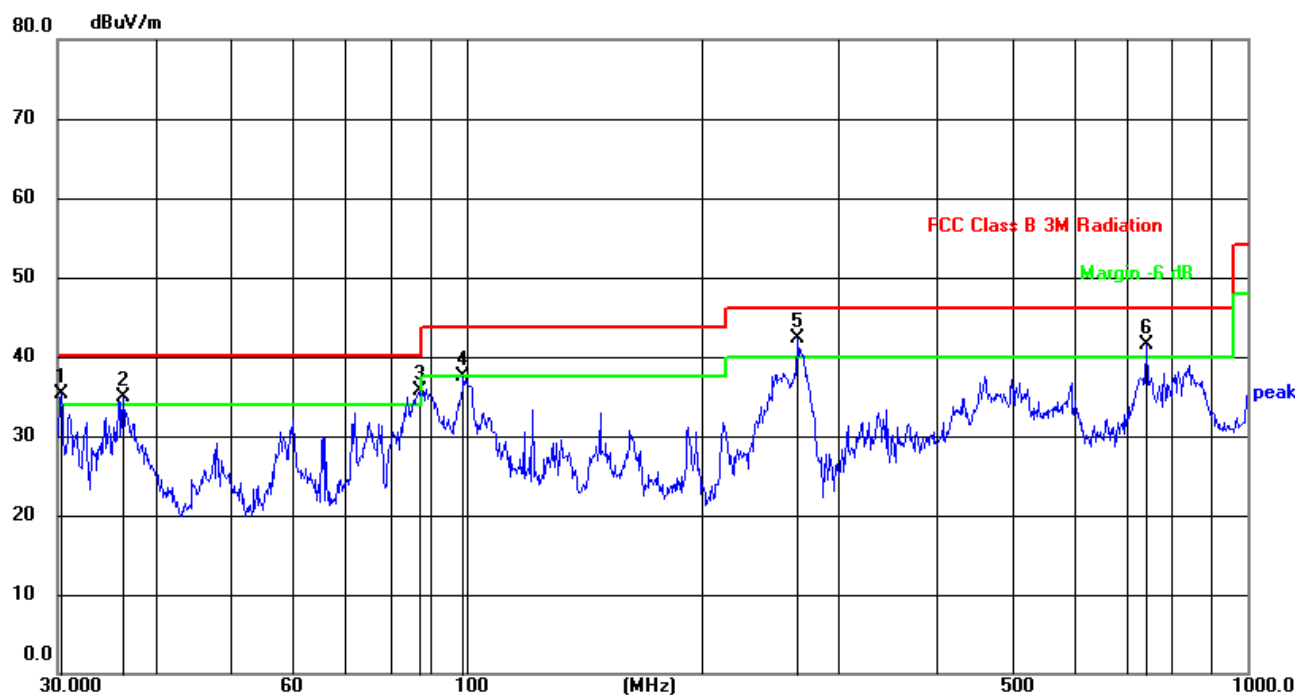
Temperature:	27.0℃	Relative Humidity:	63%RH
Pressure:	101.2kPa	Test Voltage :	AC 120V 60Hz
Test Mode :	TX- 802.11ac20 (5785MHz)		

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.3170	53.42	-21.54	31.88	40.00	-8.12	QP
2	86.8067	53.02	-20.33	32.69	40.00	-7.31	QP
3	119.8555	58.55	-19.32	39.23	43.50	-4.27	QP
4	124.5690	57.13	-19.16	37.97	43.50	-5.53	QP
5	264.7456	61.19	-18.19	43.00	46.00	-3.00	QP
6	441.7425	54.59	-15.05	39.54	46.00	-6.46	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.3170	56.82	-21.54	35.28	40.00	-4.72	QP
2	36.3813	56.08	-21.11	34.97	40.00	-5.03	QP
3	87.4175	55.92	-20.13	35.79	40.00	-4.21	QP
4	99.1795	57.46	-20.01	37.45	43.50	-6.05	QP
5	265.6757	60.32	-18.05	42.27	46.00	-3.73	QP
6	742.2586	49.92	-8.36	41.56	46.00	-4.44	QP

Remarks:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. The test data shows only the worst case 802.11a mode

Above 1GHz:

Remark: The test data shows only the worst case 802.11ac20 mode.

Temperature:	23.3°C	Relative Humidity:	60%
Pressure:	101.2kPa	Test Voltage :	AC 120V 60Hz
Test Mode :	5.2G TX- 802.11ac20		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detect or Type
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
Low Channel:5180MHz							
V	10360.00	39.28	1.77	41.05	68.20	-27.15	PK
V	10360.00	34.81	1.77	36.58	54.00	-17.42	AV
V	15540.00	41.54	7.72	49.26	74.00	-24.74	PK
V	15540.00	31.21	7.72	38.93	54.00	-15.07	AV
V	20720.00	45.73	-5.73	40.00	68.20	-28.20	PK
V	20720.00	40.59	-5.73	34.86	54.00	-19.14	AV
V	25900.00	43.07	-2.89	40.18	68.20	-28.02	PK
V	25900.00	38.58	-2.89	35.69	54.00	-18.31	AV
V	31080.00	44.55	1.66	46.21	68.20	-21.99	PK
V	31080.00	38.99	1.66	40.65	54.00	-13.35	AV
V	36260.00	41.75	4.63	46.38	68.20	-21.82	PK
V	36260.00	36.11	4.63	40.74	54.00	-13.26	AV
H	10360.00	39.59	1.77	41.36	68.20	-26.84	PK
H	10360.00	34.95	1.77	36.72	54.00	-17.28	AV
H	15540.00	40.98	7.72	48.70	74.00	-25.30	PK
H	15540.00	31.31	7.72	39.03	54.00	-14.97	AV
H	20720.00	44.92	-5.73	39.19	68.20	-29.01	PK
H	20720.00	39.44	-5.73	33.71	54.00	-20.29	AV
H	25900.00	43.04	-2.89	40.15	68.20	-28.05	PK
H	25900.00	37.85	-2.89	34.96	54.00	-19.04	AV
H	31080.00	43.65	1.66	45.31	68.20	-22.89	PK
H	31080.00	38.63	1.66	40.29	54.00	-13.71	AV
H	36260.00	41.32	4.63	45.95	68.20	-22.25	PK
H	36260.00	36.48	4.63	41.11	54.00	-12.89	AV

Remark:

1. Emission Level = Meter Reading + Factor,
Factor=Antenna Factor + Cable Loss – Pre-amplifier
Margin= Emission Level – Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detect or Type
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
Middle Channel:5200Hz							
V	10400.00	38.83	1.85	40.68	68.20	-27.52	PK
V	10400.00	34.30	1.85	36.15	54.00	-17.85	AV
V	15600.00	40.58	7.64	48.22	74.00	-25.78	PK
V	15600.00	30.03	7.64	37.67	54.00	-16.33	AV
V	20800.00	48.58	-5.67	42.91	68.20	-25.29	PK
V	20800.00	44.22	-5.67	38.55	54.00	-15.45	AV
V	26000.00	43.16	-2.85	40.31	68.20	-27.89	PK
V	26000.00	38.22	-2.85	35.37	54.00	-18.63	AV
V	31200.00	41.92	1.57	43.49	68.20	-24.71	PK
V	31200.00	38.24	1.57	39.81	54.00	-14.19	AV
V	36400.00	41.57	4.93	46.50	68.20	-21.70	PK
V	36400.00	36.83	4.93	41.76	54.00	-12.24	AV
H	10400.00	39.00	1.85	40.85	68.20	-27.35	PK
H	10400.00	34.68	1.85	36.53	54.00	-17.47	AV
H	15600.00	40.38	7.64	48.02	74.00	-25.98	PK
H	15600.00	30.24	7.64	37.88	54.00	-16.12	AV
H	20800.00	45.48	-5.67	39.81	68.20	-28.39	PK
H	20800.00	40.92	-5.67	35.25	54.00	-18.75	AV
H	26000.00	44.71	-2.85	41.86	68.20	-26.34	PK
H	26000.00	39.98	-2.85	37.13	54.00	-16.87	AV
H	31200.00	43.60	1.57	45.17	68.20	-23.03	PK
H	31200.00	38.39	1.57	39.96	54.00	-14.04	AV
H	36400.00	41.05	4.93	45.98	68.20	-22.22	PK
H	36400.00	36.68	4.93	41.61	54.00	-12.39	AV

Remark:

1. Emission Level = Meter Reading + Factor,
Factor=Antenna Factor + Cable Loss – Pre-amplifier
Margin= Emission Level – Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detect or Type
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
High Channel:5240MHz							
V	10480.00	38.08	2.02	40.10	68.20	-28.10	PK
V	10480.00	33.29	2.02	35.31	54.00	-18.69	AV
V	15720.00	38.48	7.46	45.94	74.00	-28.06	PK
V	15720.00	29.16	7.46	36.62	54.00	-17.38	AV
V	20960.00	43.78	-5.56	38.22	68.20	-29.98	PK
V	20960.00	39.30	-5.56	33.74	54.00	-20.26	AV
V	26200.00	41.64	-2.50	39.14	68.20	-29.06	PK
V	26200.00	37.74	-2.50	35.24	54.00	-18.76	AV
V	31440.00	42.80	1.39	44.19	68.20	-24.01	PK
V	31440.00	38.50	1.39	39.89	54.00	-14.11	AV
V	36680.00	39.25	5.25	44.50	68.20	-23.70	PK
V	36680.00	35.26	5.25	40.51	54.00	-13.49	AV
H	10480.00	38.47	2.02	40.49	68.20	-27.71	PK
H	10480.00	34.10	2.02	36.12	54.00	-17.88	AV
H	15720.00	38.73	7.46	46.19	74.00	-27.81	PK
H	15720.00	29.21	7.46	36.67	54.00	-17.33	AV
H	20960.00	43.59	-5.56	38.03	68.20	-30.17	PK
H	20960.00	39.40	-5.56	33.84	54.00	-20.16	AV
H	26200.00	43.47	-2.50	40.97	68.20	-27.23	PK
H	26200.00	40.44	-2.50	37.94	54.00	-16.06	AV
H	31440.00	42.20	1.39	43.59	68.20	-24.61	PK
H	31440.00	37.82	1.39	39.21	54.00	-14.79	AV
H	36680.00	39.51	5.15	44.66	68.20	-23.54	PK
H	36680.00	34.97	5.15	40.12	54.00	-13.88	AV

Remark:

1. Emission Level = Meter Reading + Factor,
Factor=Antenna Factor + Cable Loss – Pre-amplifier
Margin= Emission Level – Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Temperature:	27.0℃	Relative Humidity:	63%RH
Pressure:	101.2kPa	Test Voltage :	AC 120V 60Hz
Test Mode :	5.8G TX- 802.11ac20		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detect or Type
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
Low Channel:5745MHz							
V	11490.00	45.56	3.31	48.87	74.00	-25.13	PK
V	11490.00	35.89	3.31	39.20	54.00	-14.80	AV
V	17235.00	35.23	10.10	45.33	68.20	-22.87	PK
V	17235.00	30.40	10.10	40.50	54.00	-13.50	AV
V	22980.00	51.96	-4.61	47.35	74.00	-26.65	PK
V	22980.00	41.49	-4.61	36.88	54.00	-17.12	AV
V	28725.00	43.01	0.87	43.88	68.20	-24.32	PK
V	28725.00	38.79	0.87	39.66	54.00	-14.34	AV
V	34470.00	43.54	3.82	47.36	68.20	-20.84	PK
V	34470.00	38.37	3.82	42.19	54.00	-11.81	AV
H	11490.00	46.19	3.31	49.50	74.00	-24.50	PK
H	11490.00	36.08	3.31	39.39	54.00	-14.61	AV
H	17235.00	34.37	10.10	44.47	68.20	-23.73	PK
H	17235.00	29.70	10.10	39.80	54.00	-14.20	AV
H	22980.00	51.56	-4.61	46.95	74.00	-27.05	PK
H	22980.00	41.26	-4.61	36.65	54.00	-17.35	AV
H	28725.00	45.21	0.87	46.08	68.20	-22.12	PK
H	28725.00	41.15	0.87	42.02	54.00	-11.98	AV
H	34470.00	44.02	3.82	47.84	68.20	-20.36	PK
H	34470.00	39.64	3.82	43.46	54.00	-10.54	AV

Remark:

- Emission Level = Meter Reading + Factor,
Factor=Antenna Factor + Cable Loss – Pre-amplifier
Margin= Emission Level – Limit
- If peak below the average limit, the average emission was no test.
- The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detect or Type
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
Low Channel:5785MHz							
V	11570.00	45.34	3.34	48.68	74.00	-25.32	PK
V	11570.00	35.53	3.34	38.87	54.00	-15.13	AV
V	17355.00	33.86	10.52	44.38	68.20	-23.82	PK
V	17355.00	29.37	10.52	39.89	54.00	-14.11	AV
V	23140.00	51.63	-4.66	46.97	74.00	-27.03	PK
V	23140.00	41.78	-4.66	37.12	54.00	-16.88	AV
V	28925.00	44.75	1.36	46.11	68.20	-22.09	PK
V	28925.00	40.04	1.36	41.40	54.00	-12.60	AV
V	34710.00	44.34	3.95	48.29	68.20	-19.91	PK
V	34710.00	39.27	3.95	43.22	54.00	-10.78	AV
H	11570.00	46.36	3.34	49.70	74.00	-24.30	PK
H	11570.00	36.55	3.34	39.89	54.00	-14.11	AV
H	17355.00	33.03	10.52	43.55	68.20	-24.65	PK
H	17355.00	29.70	10.52	40.22	54.00	-13.78	AV
H	23140.00	52.16	-4.66	47.50	74.00	-26.50	PK
H	23140.00	41.65	-4.66	36.99	54.00	-17.01	AV
H	28925.00	45.50	1.36	46.86	68.20	-21.34	PK
H	28925.00	41.26	1.36	42.62	54.00	-11.38	AV
H	34710.00	44.91	3.95	48.86	68.20	-19.34	PK
H	34710.00	39.63	3.95	43.58	54.00	-10.42	AV

Remark:

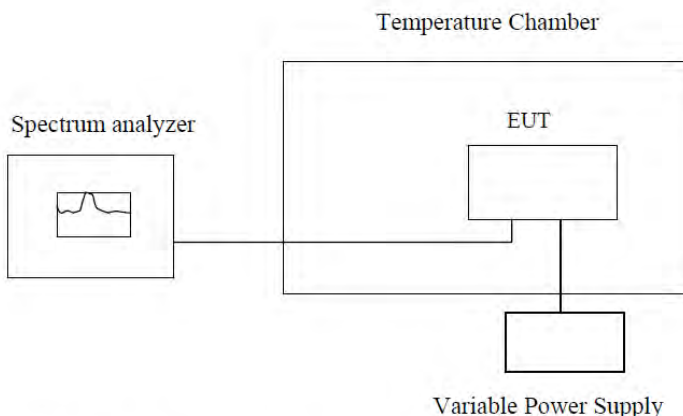
1. Emission Level = Meter Reading + Factor,
Factor=Antenna Factor + Cable Loss – Pre-amplifier
Margin= Emission Level – Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detect or Type
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
Low Channel:5825MHz							
V	11650.00	45.31	3.36	48.67	74.00	-25.33	PK
V	11650.00	35.28	3.36	38.64	54.00	-15.36	AV
V	17475.00	33.39	10.93	44.32	68.20	-23.88	PK
V	17475.00	29.76	10.93	40.69	54.00	-13.31	AV
V	23300.00	46.81	-4.77	42.04	68.20	-26.16	PK
V	23300.00	42.43	-4.77	37.66	54.00	-16.34	AV
V	29125.00	44.49	1.65	46.14	68.20	-22.06	PK
V	29125.00	39.28	1.65	40.93	54.00	-13.07	AV
V	34950.00	42.79	4.09	46.88	68.20	-21.32	PK
V	34950.00	38.66	4.09	42.75	54.00	-11.25	AV
H	11650.00	45.70	3.36	49.06	74.00	-24.94	PK
H	11650.00	35.79	3.36	39.15	54.00	-14.85	AV
H	17475.00	32.80	10.93	43.73	68.20	-24.47	PK
H	17475.00	28.03	10.93	38.96	54.00	-15.04	AV
H	23300.00	46.39	-4.77	41.62	68.20	-26.58	PK
H	23300.00	41.88	-4.77	37.11	54.00	-16.89	AV
H	29125.00	43.38	1.65	45.03	68.20	-23.17	PK
H	29125.00	40.24	1.65	41.89	54.00	-12.11	AV
H	34950.00	43.72	4.09	47.81	68.20	-20.39	PK
H	34950.00	38.84	4.09	42.93	54.00	-11.07	AV

Remark:

1. Emission Level = Meter Reading + Factor,
Factor=Antenna Factor + Cable Loss – Pre-amplifier
Margin= Emission Level – Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

4.9 Frequency stability

Test Requirement:	47CFR Part 15.407(g)
Test Method:	ANSI C63.10-2020§6.8
Limit:	Manufactures 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
Test Procedure:	a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minute s. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
Test setup:	 Note : Measurement setup for testing on Antenna connector
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

Remark: Set the EUT transmits at un-modulation mode to test frequency stability.

Measurement data:

Frequency stability versus Temp.					
Power Supply: 120V AC					
Temp. (°C)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
-30	5180	5179.979	5179.998	5179.999	5179.998
	5190	5189.975	5189.999	5189.990	5190.028
	5200	5199.970	5199.990	5199.998	5200.053
	5210	5209.976	5209.998	5209.990	5210.037
	5220	5219.971	5219.990	5220.011	5220.028
	5230	5229.969	5230.011	5229.989	5230.056
	5240	5239.982	5239.989	5240.007	5240.044
-20	5180	5179.931	5179.998	5179.987	5180.041
	5190	5189.961	5189.999	5189.998	5190.036
	5200	5199.956	5199.990	5199.989	5200.038
	5210	5209.970	5209.998	5209.990	5210.039
	5220	5219.961	5219.990	5219.997	5220.054
	5230	5229.969	5230.011	5230.005	5230.047
	5240	5239.977	5239.989	5239.987	5240.055
-10	5180	5179.969	5179.998	5179.999	5180.005
	5190	5189.970	5189.999	5189.990	5190.035
	5200	5199.961	5199.990	5199.998	5200.040
	5210	5209.969	5209.998	5209.990	5210.044
	5220	5219.961	5219.990	5220.011	5220.035
	5230	5229.982	5230.011	5229.989	5230.043
	5240	5239.960	5239.989	5240.007	5240.051
0	5180	5179.921	5180.001	5180.005	5180.043
	5190	5189.917	5189.997	5189.995	5190.043
	5200	5199.912	5199.992	5200.005	5200.054
	5210	5209.918	5209.998	5209.955	5210.055
	5220	5219.913	5220.003	5220.001	5220.040
	5230	5229.911	5230.007	5230.007	5230.057
	5240	5239.974	5240.007	5240.008	5240.042
10	5180	5179.958	5179.999	5179.999	5180.046
	5190	5189.969	5189.990	5189.990	5190.046
	5200	5199.960	5199.998	5199.998	5200.042
	5210	5209.961	5209.990	5209.990	5210.037

	5220	5219.968	5220.011	5220.011	5220.053
	5230	5229.976	5229.989	5229.989	5230.038
	5240	5239.958	5240.007	5240.007	5240.036
20	5180	5179.979	5179.998	5179.999	5179.998
	5190	5189.975	5189.999	5189.990	5190.028
	5200	5199.970	5199.990	5199.998	5200.053
	5210	5209.976	5299.998	5209.990	5210.037
	5220	5219.971	5219.990	5220.011	5220.028
	5230	5229.969	5230.011	5229.989	5230.056
	5240	5239.942	5239.989	5240.007	5240.044
30	5180	5179.909	5179.996	5179.998	5180.047
	5190	5189.905	5190.010	5189.829	5190.051
	5200	5199.900	5199.993	5199.997	5200.036
	5210	5209.906	5209.996	5209.999	5210.057
	5220	5219.901	5220.011	5220.000	5220.048
	5230	5229.898	5230.004	5229.997	5230.043
	5240	5239.871	5240.012	5240.001	5240.048
40	5180	5179.969	5179.987	5179.999	5180.036
	5190	5189.970	5189.998	5189.990	5190.037
	5200	5199.900	5199.998	5200.007	5200.036
	5210	5209.906	5209.996	5209.999	5210.044
	5220	5219.901	5220.003	5220.000	5220.048
	5230	5229.982	5230.005	5229.989	5230.049
	5240	5239.960	5239.987	5240.007	5240.027
50	5180	5179.931	5179.998	5179.987	5180.051
	5190	5189.961	5189.999	5189.998	5190.036
	5200	5199.976	5199.990	5199.989	5200.048
	5210	5209.906	5210.010	5209.999	5210.048
	5220	5219.901	5220.005	5220.006	5220.049
	5230	5229.898	5230.012	5230.001	5230.047
	5240	5239.971	5240.010	5239.995	5240.048

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VAC)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
102V AC	5180	5179.895	5180.011	5179.997	5180.042
	5190	5189.971	5190.001	5189.998	5190.040
	5200	5199.969	5200.003	5199.999	5200.044
	5210	5209.972	5209.988	5209.995	5210.054
	5220	5219.982	5219.996	5219.999	5220.043
	5230	5229.959	5230.001	5229.998	5300.047
	5240	5239.967	5240.010	5240.007	5240.044
120V AC	5180	5179.909	5180.006	5179.998	5180.047
	5190	5189.965	5190.000	5189.999	5190.031
	5200	5199.970	5199.988	5199.997	5200.036
	5210	5209.906	5209.996	5209.973	5210.054
	5220	5219.901	5220.011	5220.000	5220.048
	5230	5229.898	5230.003	5229.997	5230.040
	5240	5239.971	5240.010	5240.001	5240.048
138V AC	5180	5179.979	5180.008	5179.987	5180.025
	5190	5189.975	5190.004	5189.998	5190.036
	5200	5199.970	5199.999	5199.989	5200.026
	5210	5209.976	5210.005	5209.990	5210.028
	5220	5219.971	5220.000	5219.997	5220.035
	5230	5229.969	5229.998	5230.002	5230.058
	5240	5239.972	5240.001	5239.987	5240.025

Frequency stability versus Temp.					
Power Supply: 120V AC					
Temp. (°C)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
-30	5745	5744.982	5745.000	5745.000	5745.046
	5755	5754.970	5754.996	5755.004	5755.028
	5775	5774.962	5774.995	5775.005	5775.037
	5785	5784.971	5784.998	5785.008	5785.028
	5795	5794.962	5795.009	5794.991	5795.039
	5825	5824.973	5824.990	5824.987	5825.042
-20	5745	5744.876	5744.980	5745.001	5745.029
	5755	5754.901	5754.996	5755.003	5755.055
	5775	5774.881	5774.995	5775.006	5775.051
	5785	5784.890	5784.998	5784.998	5785.035
	5795	5794.968	5795.009	5794.989	5795.024
	5825	5824.973	5824.990	5824.998	5825.038
-10	5745	5744.962	5744.991	5744.985	5745.043
	5755	5754.969	5754.998	5755.010	5755.038
	5775	5774.961	5774.995	5774.991	5775.042
	5785	5784.953	5784.991	5785.000	5785.043
	5795	5794.960	5794.987	5794.998	5795.046
	5825	5824.969	5824.990	5825.008	5825.047
0	5745	5744.956	5744.990	5744.991	5745.048
	5755	5754.966	5754.997	5754.998	5755.047
	5775	5774.977	5774.989	5775.002	5775.038
	5785	5784.963	5784.981	5784.991	5785.035
	5795	5794.959	5794.988	5794.987	5795.053
	5825	5824.957	5824.997	5824.990	5825.045
10	5745	5744.953	5745.001	5744.985	5745.039
	5755	5754.968	5755.003	5755.010	5755.053
	5775	5774.967	5775.006	5774.991	5775.038
	5785	5784.970	5784.998	5785.000	5785.025
	5795	5794.980	5794.989	5794.998	5795.019
	5825	5824.962	5824.998	5825.008	5825.053
20	5745	5744.973	5744.990	5745.001	5745.028
	5755	5754.975	5755.007	5755.005	5755.047
	5775	5774.972	5775.008	5775.000	5775.027
	5785	5784.959	5784.990	5784.987	5785.054
	5795	5794.953	5795.007	5794.981	5795.046
	5825	5824.979	5825.005	5824.951	5825.055
30	5745	5744.952	5745.001	5744.985	5745.047
	5755	5754.968	5755.003	5755.010	5755.053
	5775	5774.967	5775.006	5774.991	5775.038
	5785	5784.970	5784.998	5785.000	5785.025
	5795	5794.981	5794.989	5794.998	5795.019
	5825	5824.962	5824.998	5825.008	5825.053
40	5745	5744.963	5744.990	5744.985	5745.023
	5755	5754.970	5755.007	5755.010	5755.048
	5775	5774.962	5775.008	5774.991	5775.029
	5785	5784.954	5784.990	5785.000	5785.038

50	5795	5794.961	5795.007	5794.998	5795.036
	5825	5824.980	5825.005	5825.008	5825.046
	5745	5744.957	5744.990	5744.990	5745.029
	5755	5754.982	5755.007	5754.997	5755.036
	5775	5774.963	5775.008	5774.989	5775.053
	5785	5784.972	5784.990	5784.981	5785.029
	5795	5794.970	5795.007	5794.988	5795.025
	5825	5824.980	5825.005	5824.917	5825.028

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VAC)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
102V AC	5745	5744.972	5745.000	5745.001	5745.043
	5755	5754.968	5754.997	5755.007	5755.048
	5775	5774.967	5774.989	5775.008	5775.029
	5785	5784.970	5784.981	5784.990	5785.038
	5795	5794.981	5794.988	5795.008	5795.036
	5825	5824.962	5825.007	5825.005	5825.046
120V AC	5745	5744.952	5745.001	5744.985	5745.039
	5755	5754.968	5755.003	5755.010	5755.053
	5775	5774.967	5775.006	5774.991	5775.038
	5785	5784.970	5784.998	5785.000	5785.025
	5795	5794.977	5794.989	5794.998	5795.019
	5825	5824.962	5824.998	5825.008	5825.053
138V AC	5745	5744.882	5744.998	5745.001	5745.056
	5755	5754.969	5755.010	5755.005	5755.044
	5775	5774.975	5774.994	5775.000	5775.054
	5785	5784.981	5785.994	5784.987	5785.050
	5795	5794.980	5794.989	5794.998	5795.019
	5825	5824.962	5824.998	5825.008	5825.053

5 Test Setup Photo

Reference to the file No.: ET-25093208SP for details.

6 EUT Constructional Details

Reference to the file No.: ET-25093208EP and ET-25093208IP for details

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