



TEST REPORT

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Address of Applicant: Bldg1,Fanshan Chaoneng Venture Park,900 N.Panyu Ave.,Donghuan St.,Panyu Dist.,GZ,Guangdong,China
Manufacturer: Guangzhou SONBS Electronic Technology Co., Ltd.
Address of Manufacturer: Bldg1,Fanshan Chaoneng Venture Park,900 N.Panyu Ave.,Donghuan St.,Panyu Dist.,GZ,Guangdong,China
Product Name: Wireless conference discussion unit
Model No.: SC-6243D,SC-6242C,SC-6242D,SC-6243C,SC-6240D,
SC-6241C,SC-6241D,SC-6240D2,SC-6241D2,SC-6540D,
SC-6542C,SC-6542D,SC-6543C,SC-6543D,SC-6541D,
SC-6540D2,SC-6541D2,SC-108U,SC-208U,SC-A208U,
SA-200U,SA-300U,SC-3601D,SC-3602D,SC-6211,SC-6511
Trade Mark: SONBS
FCC ID: 2BR3L-SC-6243D
Applicable standards: FCC CFR Title 47 Part 15 Subpart E Section 15.407
Date of Test: Aug.15, 2025- Aug.28, 2025
Date of report issued: Aug.29, 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

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Report Revision History		
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1 Test Summary

Test Item	Section in CFR 47	Result	Test by
Antenna requirement	47CRF part 15.203	Pass	/
AC Power Line Conducted Emission	47CRF part 15.207	Pass	Jason Huang
Conducted Output Power	47CRF part 15.407 (a)(1)/(a)(3)	Pass	Kara Wu
26dB Bandwidth	47CRF part 15.407 (a)(12)	Pass	Kara Wu
6dB Bandwidth	47CRF part 15.407 (e)	Pass	Kara Wu
Power Spectral Density	47CRF part 15.407(a)(1)/(a)(3)	Pass	Kara Wu
Band Edge	47CRF part 15.407(b)(1)/(b)(4)	Pass	Kara Wu
Spurious Emission	47CRF part 15.205/15.209 47CRF part 15.407(b)(1)/(b)(4)/(b)(8)	Pass	Jason Huang
Frequency Stability	47CRF 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 C63.10:2013 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:	Wireless conference discussion unit
Model No.:	SC-6243D,SC-6242C,SC-6242D,SC-6243C,SC-6240D,SC-6241C,SC-6241D,SC-6240D2,SC-6241D2,SC-6540D,SC-6542C,SC-6542D,SC-6543C,SC-6543D,SC-6541D,SC-6540D2,SC-6541D2,SC-108U,SC-208U,SC-A208U,SA-200U,SA-300U,SC-3601D,SC-3602D,SC-6211,SC-6511
Difference of model(s)	All the model are the same circuit and RF module, except the model names
Test Model:	SC-6243D
Hardware Version:	V4.2
Software Version:	1.0
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 in the 5210(VHT80)MHz 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 5210(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:	3.3dBi(Declare by applicant) Note: Antenna information is provided by applicant, Testing lab is not responsible for the accuracy of the information.
Battery	DC 3.7V 5200mAh
Power supply:	DC 3.7V from Battery or 5VDC from adapter with 100-240Vac
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: For battery operated equipment, the EUT was performed using a new DC 3.7V battery.</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	Adapter	Xiaomi	MDY-11-EM	/

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	COM special commands(V1.0.0.0)
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	MWRFTes	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).

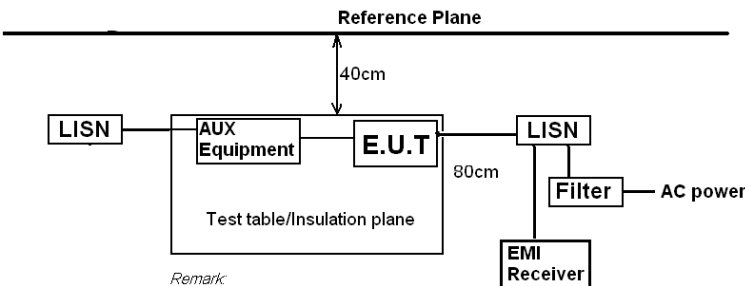
Software Name	Manufacturer	Model	Version
RF test software	MWRFTes	MTS 8310	V2.0.0.0
Conducted test software	EZ-EMC	Farad	Ver.EMC-CON 3A1.1
Radiated test software	EZ-EMC	Farad	Ver.FA-03A2 RE

4 Test results and Measurement Data

4.1 Antenna requirement

Standard requirement:	47CRF 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:	
<i>The antenna is FPCB antenna, the best case gain of the antenna is 3.3dBi, reference to the appendix II for details.</i>	

4.2 Conducted Emissions

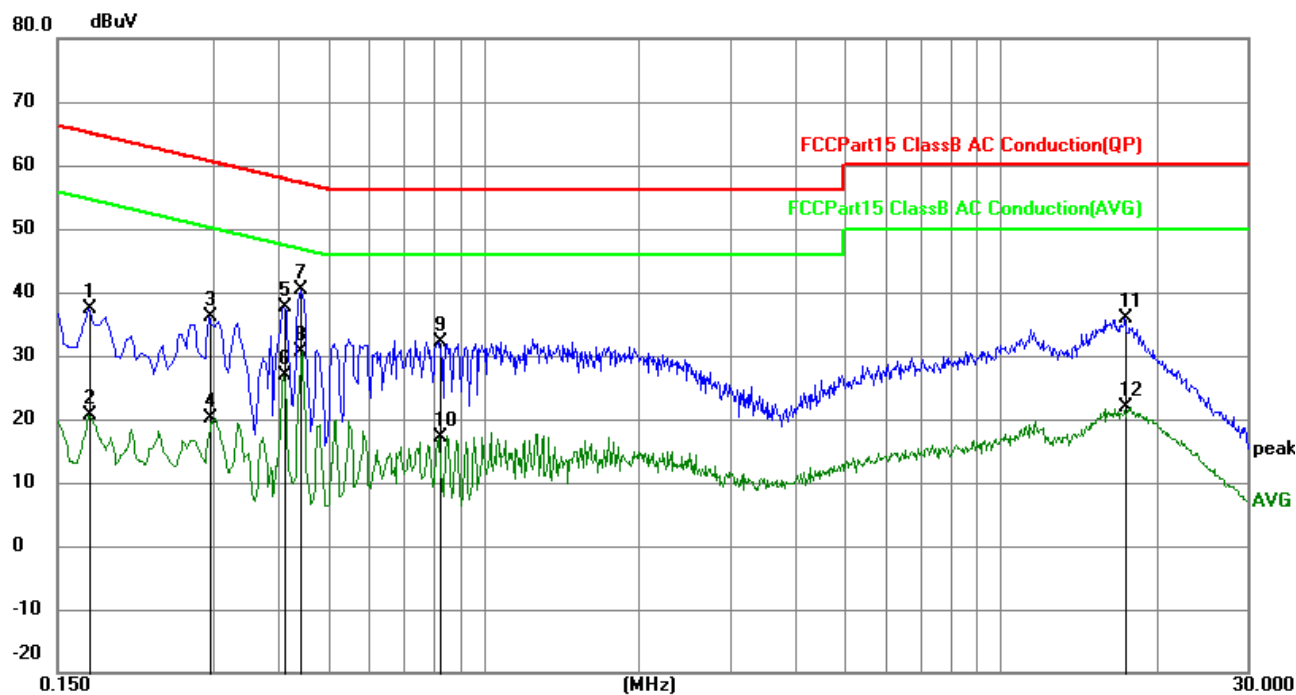
Test Requirement:	47CRF Part 15.207					
Test Method:	ANSI C63.10:2013					
Test Frequency Range:	150KHz to 30MHz					
Class / Severity:	Class B					
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto					
Limit:	Frequency range (MHz)		Limit (dBuV)			
			Quasi-peak		Average	
	0.15-0.5		66 to 56*		56 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 table height=0.8m					
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 C63.10:2013 on conducted measurement.					
Test Instruments:	Refer to section 3.0 for details					
Test mode:	Refer to section 2.2 for details					
Test environment:	Temp.:	23.4°C	Humid.:	55%	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 (802.11n20 5180MHz)

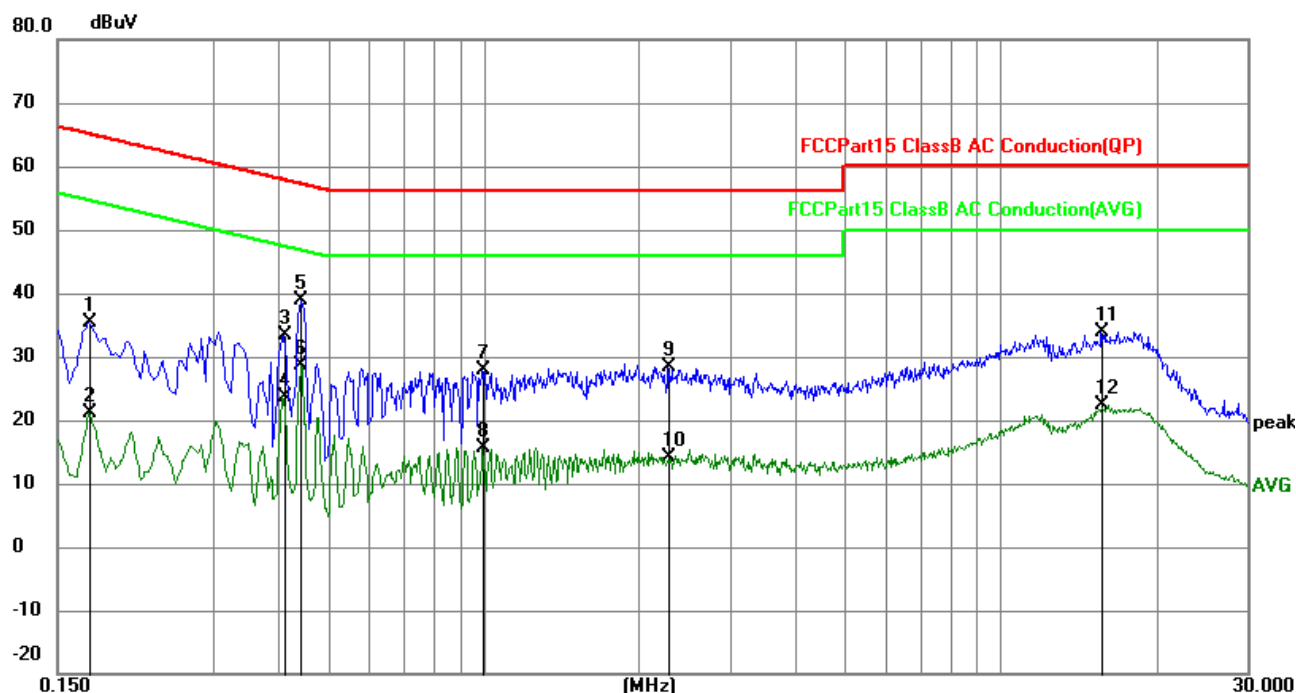
Measurement Result

Line:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1725	27.47	9.81	37.28	64.84	-27.56	QP
2	0.1725	10.76	9.81	20.57	54.84	-34.27	AVG
3	0.2940	26.35	9.84	36.19	60.41	-24.22	QP
4	0.2940	10.39	9.84	20.23	50.41	-30.18	AVG
5	0.4110	27.83	9.90	37.73	57.63	-19.90	QP
6	0.4110	17.07	9.90	26.97	47.63	-20.66	AVG
7	0.4425	30.52	9.92	40.44	57.01	-16.57	QP
8	0.4425	20.66	9.92	30.58	47.01	-16.43	AVG
9	0.8249	22.26	9.96	32.22	56.00	-23.78	QP
10	0.8249	7.20	9.96	17.16	46.00	-28.84	AVG
11	17.3895	26.08	9.71	35.79	60.00	-24.21	QP
12	17.3895	12.16	9.71	21.87	50.00	-28.13	AVG

Neutral:

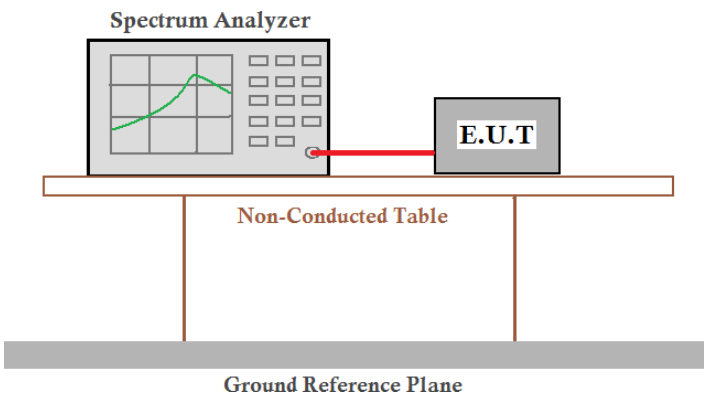


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1725	25.54	9.81	35.35	64.84	-29.49	QP
2	0.1725	11.41	9.81	21.22	54.84	-33.62	AVG
3	0.4110	23.44	9.90	33.34	57.63	-24.29	QP
4	0.4110	13.72	9.90	23.62	47.63	-24.01	AVG
5	0.4425	29.07	9.92	38.99	57.01	-18.02	QP
6	0.4425	18.78	9.92	28.70	47.01	-18.31	AVG
7	0.9959	17.90	9.96	27.86	56.00	-28.14	QP
8	0.9959	5.69	9.96	15.65	46.00	-30.35	AVG
9	2.2739	18.58	9.85	28.43	56.00	-27.57	QP
10	2.2739	4.35	9.85	14.20	46.00	-31.80	AVG
11	15.6975	24.17	9.74	33.91	60.00	-26.09	QP
12	15.6975	12.71	9.74	22.45	50.00	-27.55	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 C63.10:2013	
Limit:	/	
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is 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.: 27.1°C	Humid.: 57%RH
Test voltage:	DC 3.7V	
Test results:	Pass	

Measurement Result

5180-5240MHz

Mode	Duty cycle (%)	Correction Factor (dB)
TX 802.11a Mode	93.71	0.28
TX 802.11n20 Mode	82.41	0.84
TX 802.11ac20 Mode	82.52	0.83
TX 802.11n40 Mode	70.00	1.55
TX 802.11a40 Mode	70.17	1.54
TX 802.11ac80 Mode	53.85	2.69

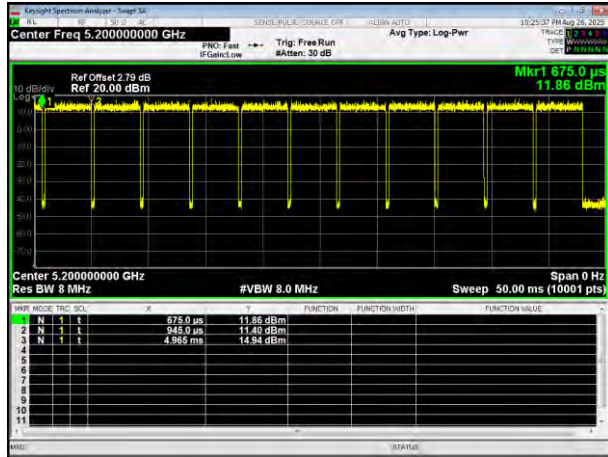
5745-5825 MHz

Mode	Duty cycle (%)	Correction Factor (dB)
TX 802.11a Mode	93.02	0.31
TX 802.11n20 Mode	83.87	0.76
TX 802.11ac20 Mode	83.87	0.76
TX 802.11n40 Mode	72.22	1.41
TX 802.11a40 Mode	66.67	1.76
TX 802.11ac80 Mode	58.33	2.34

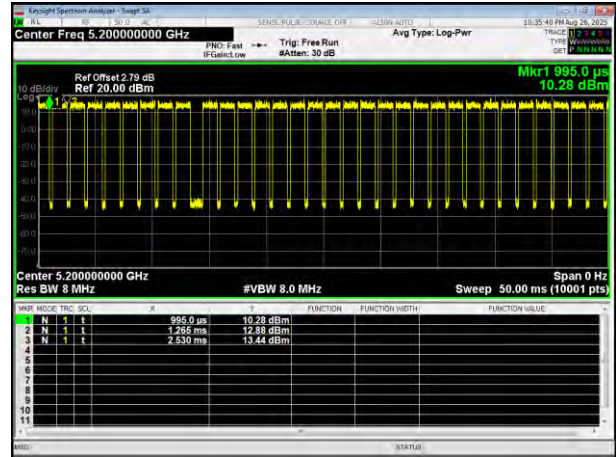
Test plot

5180-5240MHz

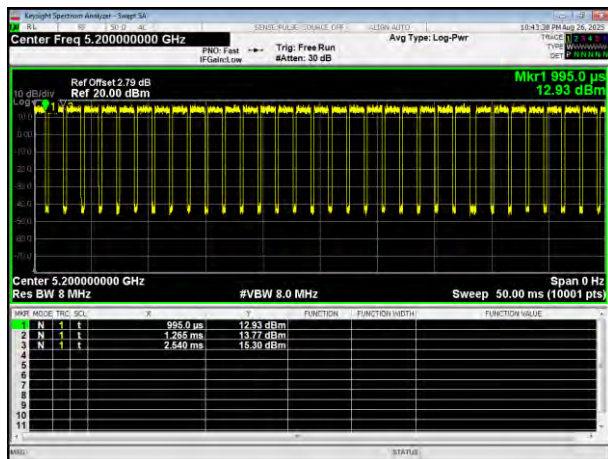
(802.11a) plot



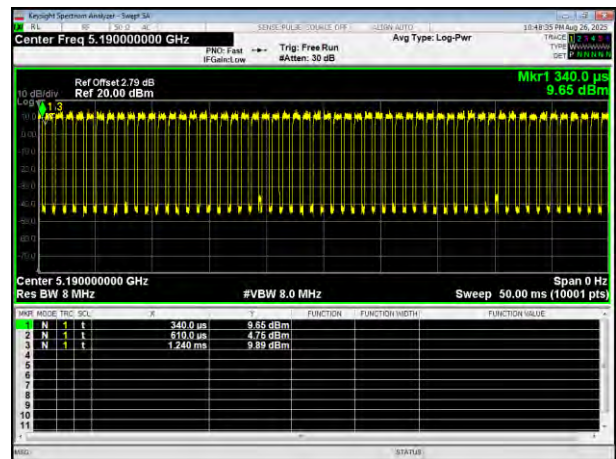
(802.11 n20) plot



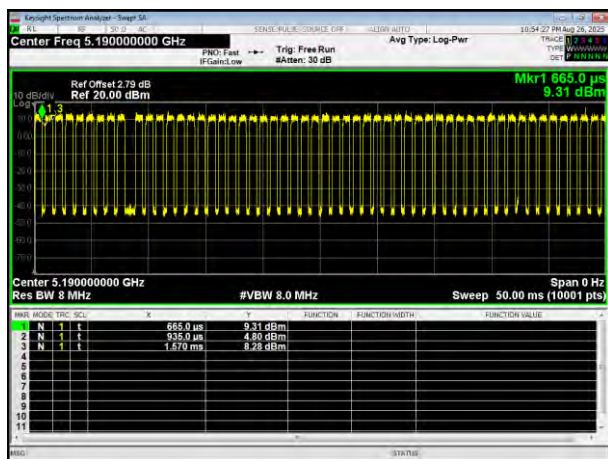
(802.11ac20) plot



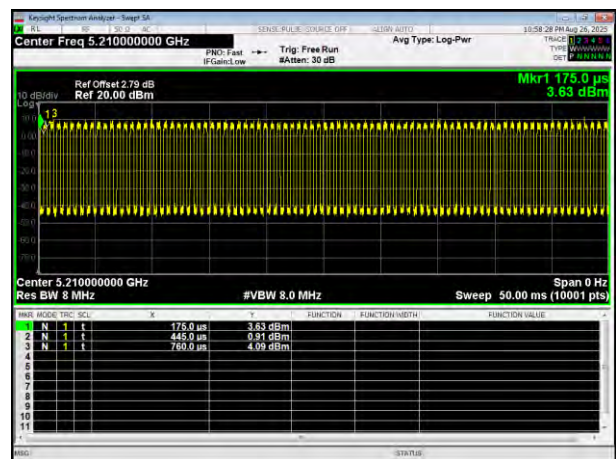
(802.11 n40) plot



(802.11ac40) plot

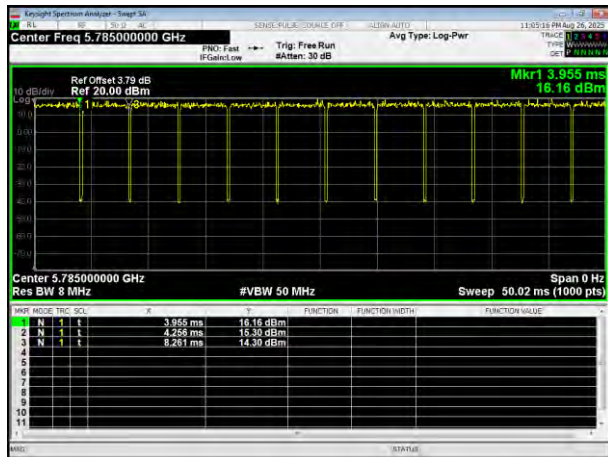


(802.11ac80) plot

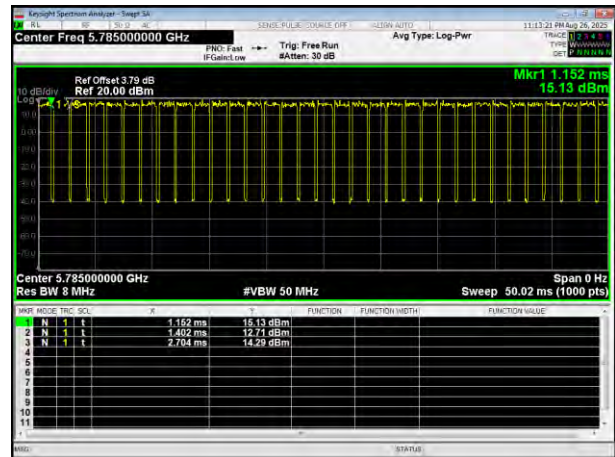


5745-5825 MHz

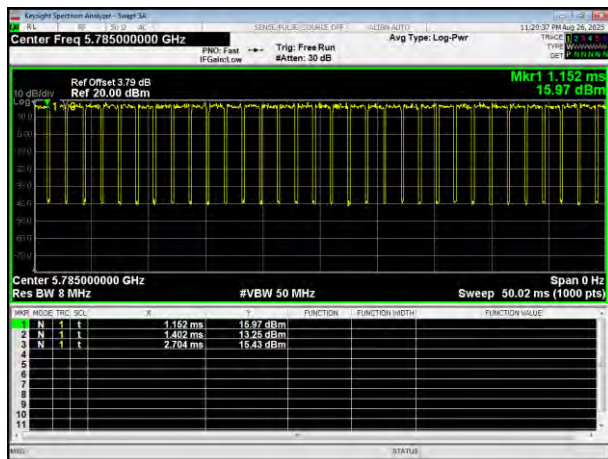
(802.11a) plot



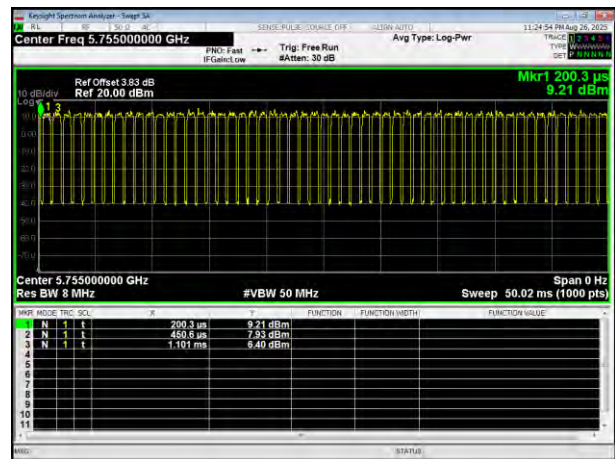
(802.11 n20) plot



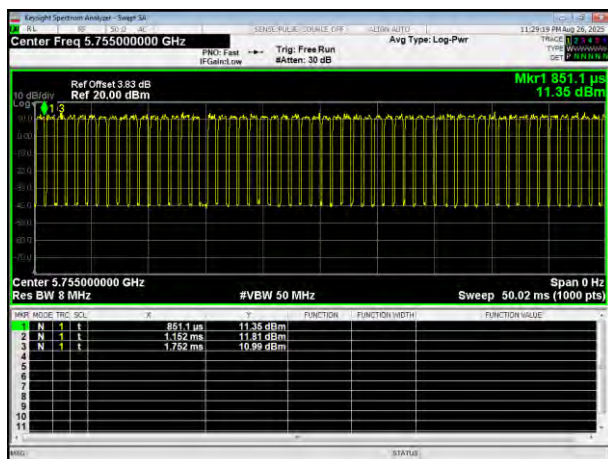
(802.11ac20) plot



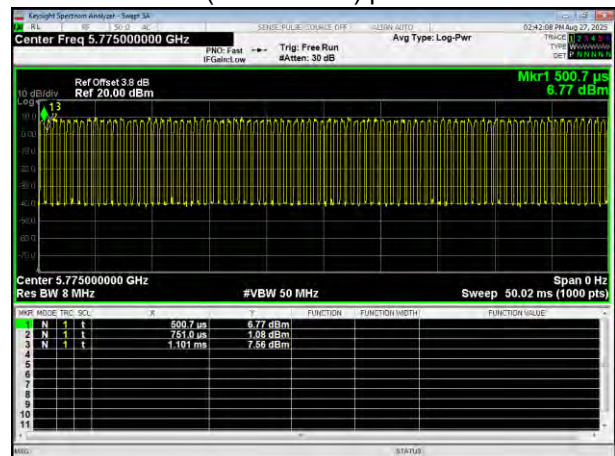
(802.11 n40) plot



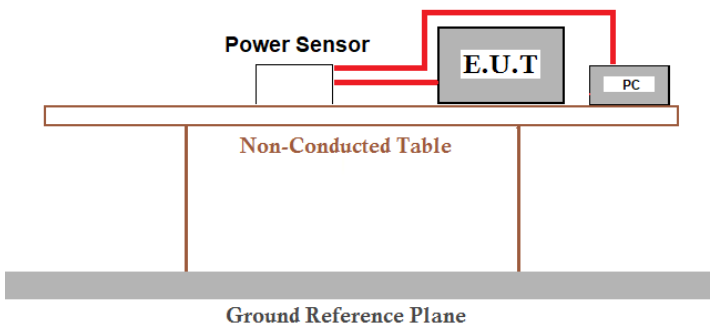
(802.11ac40) plot



(802.11ac80) plot



4.4 Conducted Output Power

Test Requirement:	47CRF Part 15.407 (a)(1)/(a)(3)	
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 ANSI C63.10-2013	
Limit:	5150-5250MHz : 250mW 5725~5850MHz : 1W	
Test setup:	 The diagram illustrates the test setup. A 'Power Sensor' is connected via red lines to an 'E.U.T.' (Equipment Under Test) and a 'PC'. Both the E.U.T. and the PC are placed on a 'Non-Conducted Table'. This table is supported by two vertical legs and sits on a 'Ground Reference Plane', which is represented by a thick grey bar at the bottom.	
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 27.1°C	Humid.: 57%RH
Test voltage:	DC 3.7V	
Test results:	Pass	

Measurement Result

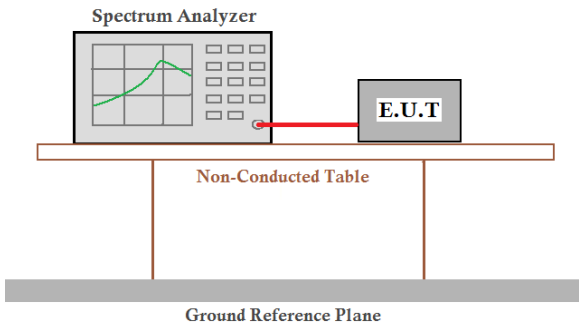
5180-5240MHz

Test Channel	Frequency	Correction Factor	Maximum output power	Total Power	LIMIT	Result
	(MHz)	(dB)	(dBm)	(dBm)	dBm	
TX 802.11a Mode						
CH36	5180	0.28	14.75	15.03	24	Pass
CH40	5200	0.28	14.78	15.06	24	Pass
CH48	5240	0.28	14.28	14.56	24	Pass
TX 802.11 n20 Mode						
CH36	5180	0.84	14.79	15.63	24	Pass
CH40	5200	0.84	14.24	15.08	24	Pass
CH48	5240	0.84	14.05	14.89	24	Pass
TX 802.11 ac20 Mode						
CH36	5180	0.83	14.35	15.18	24	Pass
CH40	5200	0.83	14.76	15.59	24	Pass
CH48	5240	0.83	14.45	15.28	24	Pass
TX 802.11 n40 Mode						
CH38	5190	1.55	13.75	15.30	24	Pass
CH46	5230	1.55	13.25	14.80	24	Pass
TX 802.11 ac40 Mode						
CH38	5190	1.54	13.70	15.24	24	Pass
CH46	5230	1.54	13.18	14.72	24	Pass
TX 802.11 ac80 Mode						
CH42	5210	2.69	12.33	15.02	24	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	0.31	14.76	15.07	30	Pass
CH157	5785	0.31	14.48	14.79	30	Pass
CH165	5825	0.31	14.42	14.73	30	Pass
TX 802.11 n20 Mode						
CH149	5745	0.76	14.41	15.17	30	Pass
CH157	5785	0.76	14.66	15.42	30	Pass
CH165	5825	0.76	14.69	15.45	30	Pass
TX 802.11 ac20 Mode						
CH149	5745	0.76	14.45	15.21	30	Pass
CH157	5785	0.76	14.81	15.57	30	Pass
CH165	5825	0.76	14.68	15.44	30	Pass
TX 802.11 n40 Mode						
CH151	5755	1.41	13.14	14.55	30	Pass
CH159	5795	1.41	13.24	14.65	30	Pass
TX 802.11 ac40 Mode						
CH151	5755	1.76	12.68	14.44	30	Pass
CH159	5795	1.76	12.95	14.71	30	Pass
TX 802.11 ac80 Mode						
CH155	5775	2.34	11.80	14.14	30	Pass

4.5 Occupancy Bandwidth

Test Requirement:	47CRF Part 15.407(a)(12)&15.407(e),	
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01, ANSI C63.10:2013	
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.: 27.1°C	Humid.: 57%RH
Test voltage:	DC 3.7V	
Test results:	Pass	

Measurement Result

5180-5240MHz

Test CH	-26dB Channel Bandwidth (MHz)						Result
	802.11a	802.11n (HT20)	802.11ac (HT20)	802.11n (HT40)	802.11ac (HT40)	802.11ac (HT80)	
Lowest	19.75	19.87	19.72	40.10	39.95	--	Pass
Middle	19.32	19.81	20.03	--	--	79.77	
Highest	19.61	19.99	20.15	39.91	40.05	--	

Test plot -26dB Occupy Bandwidth

(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

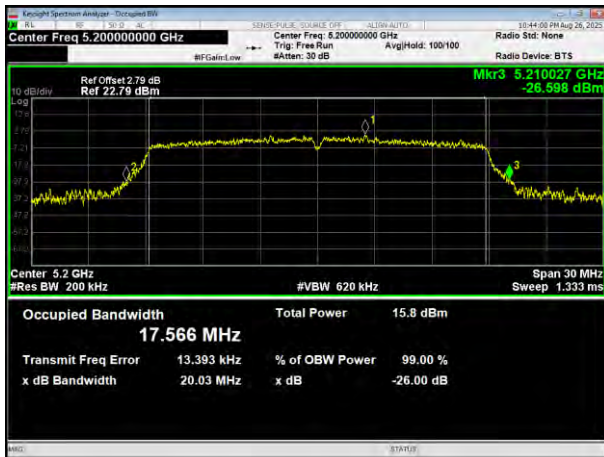
(802.11ac20) plot on channel 36



(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 (HT20)	802.11n (HT40)	802.11ac (HT40)	802.11ac (HT80)		
Lowest	15.27	15.12	15.06	35.11	35.09	--	>500	Pass
Middle	16.31	15.07	15.02	--	--	75.04		
Highest	16.34	14.98	16.37	35.04	33.86	--		

Remark: "---" is not applicable

Test plot

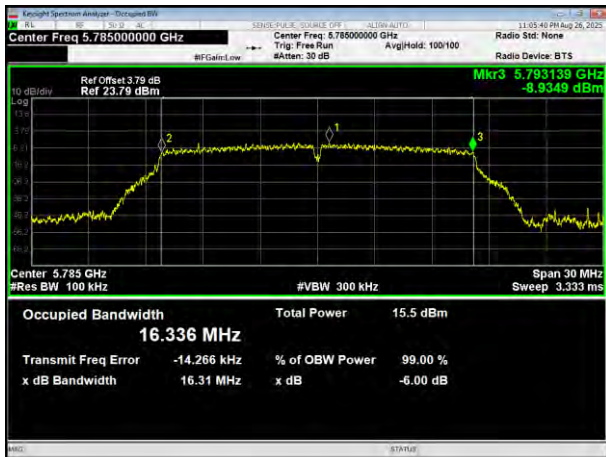
(802.11a) plot on channel 149



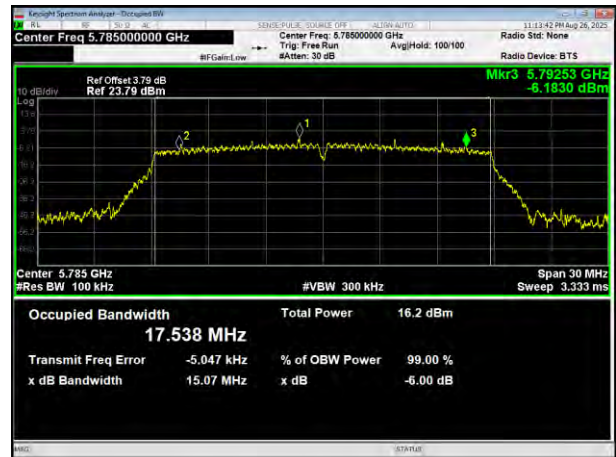
(802.11 n20) plot on channel 149



(802.11a) plot on channel 157



(802.11 n20) plot on channel 157



(802.11a) plot on channel 165

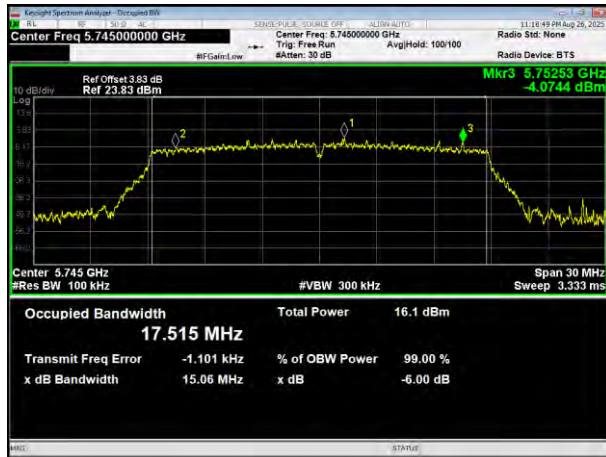


(802.11 n20) plot on channel 165

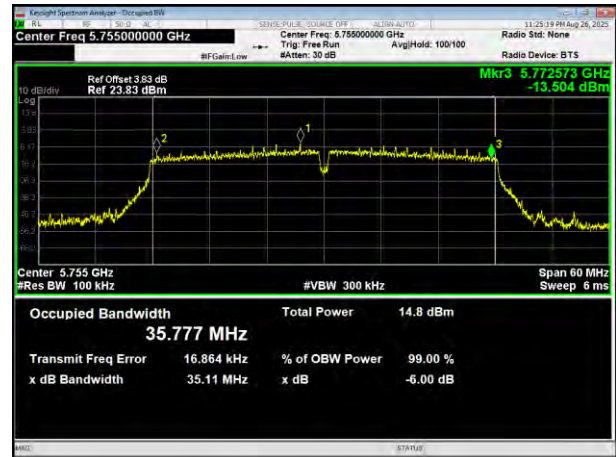


Test plot

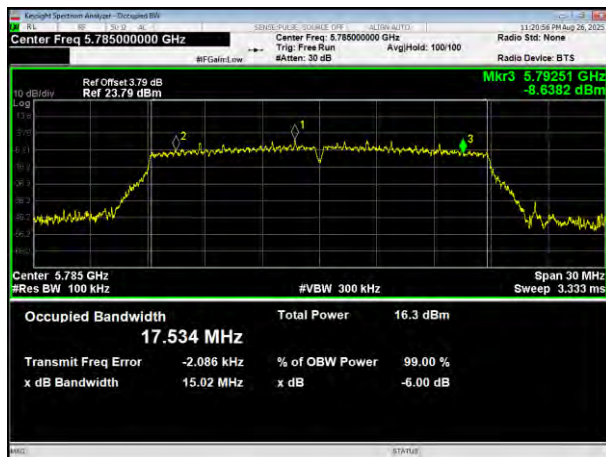
(802.11ac20) plot on channel 149



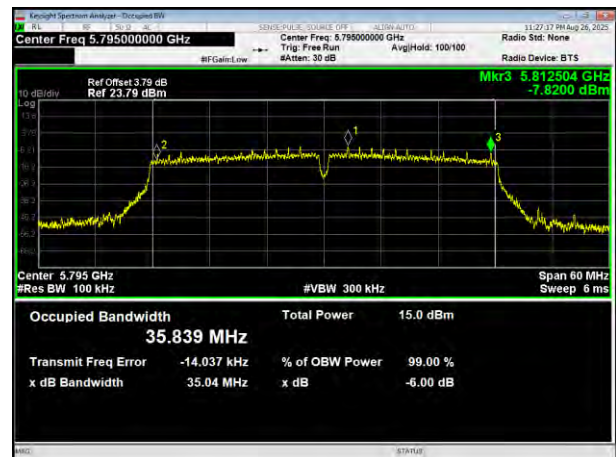
(802.11 n40) plot on channel 151



(802.11ac20) plot on channel 157



(802.11 n40) plot on channel 159

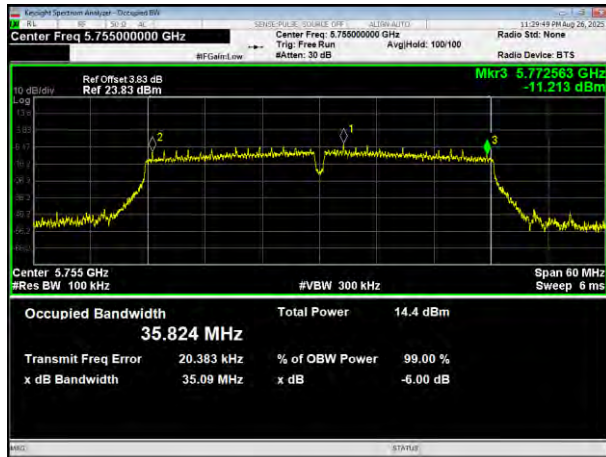


(802.11ac20) plot on channel 165

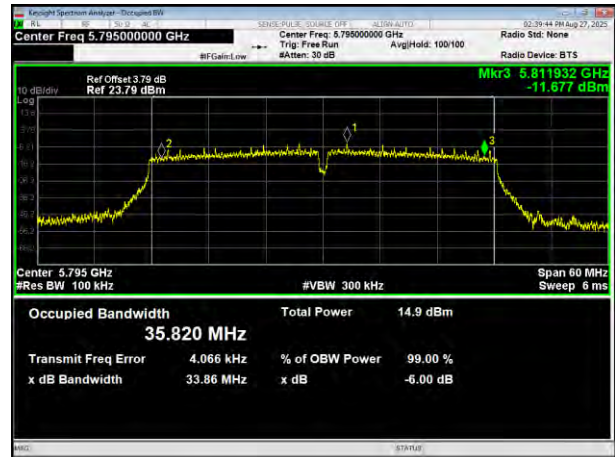


Test plot

(802.11 ac40) plot on channel 151



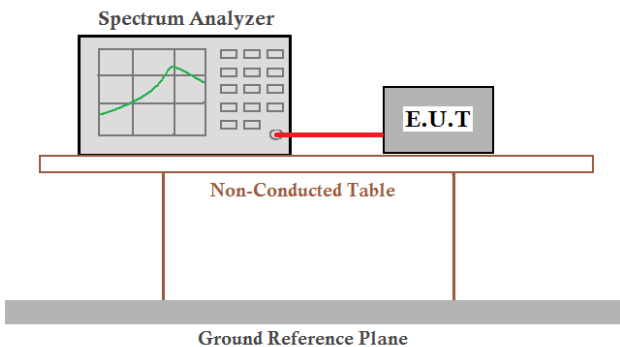
(802.11 ac80) plot on channel 155



(802.11 ac40) plot on channel 159



4.6 Power Spectral Density

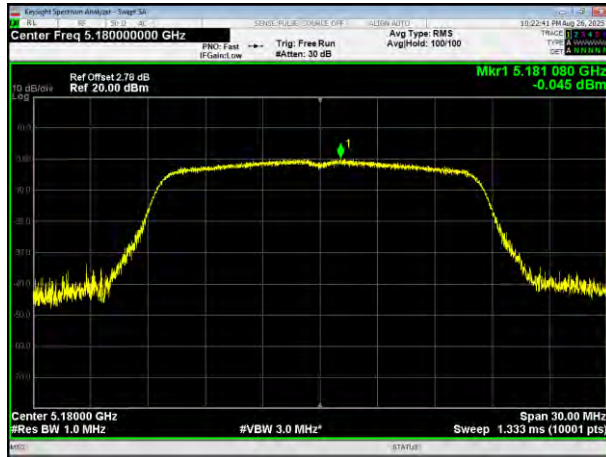
Test Requirement:	47CRF Part 15.407(a)(1)/ (a)(3)	
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01, ANSI C63.10:2013	
Limit:	Frequency band (MHz)	Limit
	5150-5250	≤17dBm/1MHz for master device
		≤11dBm/1MHz for client device
	5250-5350	≤11dBm/1MHz for client device
	5470-5725	≤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.: 27.1°C	Humid.: 57%RH
Test voltage:	DC 3.7V	
Test results:	Pass	

Measurement Result

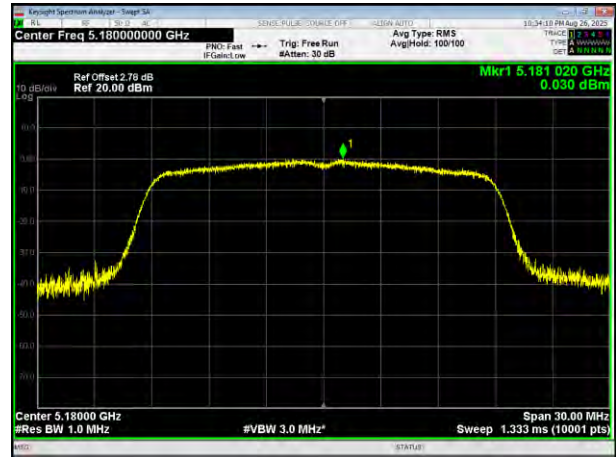
5180-5240MHz

Mode	Frequency	Measured Power Density (dBm/MHz)	Correction Factor (dB)	Total Measured Power Density (dBm/MHz)	Limit (dBm/MHz)
802.11 a	5180 MHz	-0.045	0.280	0.235	11
	5200 MHz	0.304	0.280	0.584	11
	5240 MHz	-0.121	0.280	0.159	11
802.11 n20	5180 MHz	0.030	0.840	0.870	11
	5200 MHz	-0.422	0.840	0.418	11
	5240 MHz	-0.869	0.840	-0.029	11
802.11 ac20	5180 MHz	-0.800	0.830	0.030	11
	5200 MHz	0.094	0.830	0.924	11
	5240 MHz	-0.269	0.830	0.561	11
802.11 n40	5190 MHz	-4.977	1.550	-3.427	11
	5230 MHz	-4.200	1.550	-2.650	11
802.11 ac40	5190 MHz	-4.565	1.540	-3.025	11
	5230 MHz	-4.987	1.540	-3.447	11
802.11 ac80	5210 MHz	-9.893	2.690	-7.203	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/MHz)
802.11 a	5745 MHz	-2.643	-2.729	0.310	-2.419	30
	5785 MHz	-2.878	-2.964	0.310	-2.654	30
	5825 MHz	-3.026	-3.112	0.310	-2.802	30
802.11 n20	5745 MHz	-2.951	-3.037	0.760	-2.277	30
	5785 MHz	-2.762	-2.848	0.760	-2.088	30
	5825 MHz	-3.120	-3.206	0.760	-2.446	30
802.11ac20	5745 MHz	-3.510	-3.596	0.760	-2.836	30
	5785 MHz	-3.107	-3.193	0.760	-2.433	30
	5825 MHz	-3.014	-3.100	0.760	-2.340	30
802.11 n40	5755 MHz	-7.897	-7.983	1.410	-6.573	30
	5795 MHz	-8.488	-8.574	1.410	-7.164	30
802.11ac40	5755 MHz	-8.092	-8.178	1.760	-6.418	30
	5795 MHz	-8.893	-8.979	1.760	-7.219	30
802.11ac80	5775 MHz	-12.575	-12.661	2.340	-10.321	30

Note:

1. Measured Power Density (dBm/500KHz)= Measured Power Density (dBm/510KHz)+(10log(500/510))
2. Correction Factor (dB)= duty cycle factor
3. Total PSD= Measured PSD (dBm/500kHz) + Correction factor (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

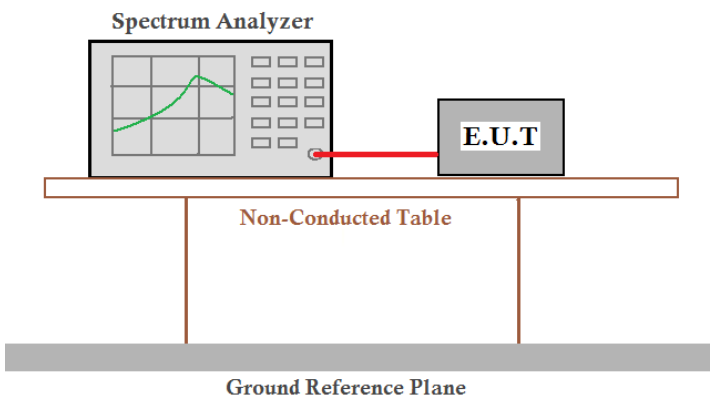


(802.11ac40) PSD plot on channel 159



4.7 Band edge

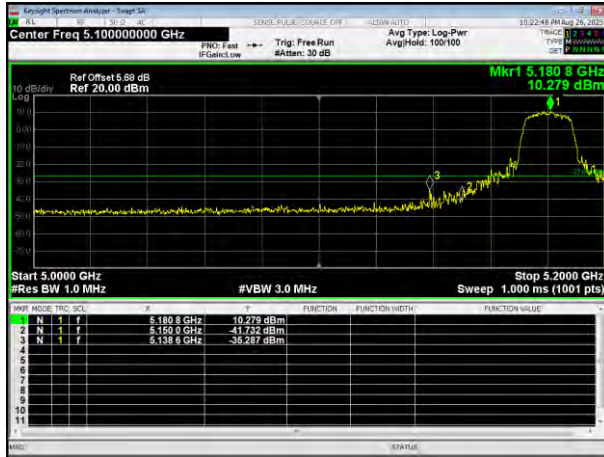
4.7.1 Conducted test Method

Test Requirement:	47CRF Part 15.209 and 15.205	
Test Method:	ANSI C63.10: 2013	
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.: 27.1°C	Humid.: 57%RH
Test voltage:	DC 3.7V	
Test results:	Pass	

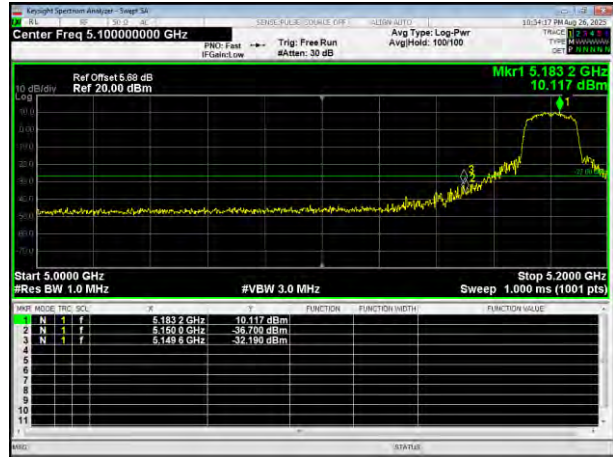
Remark: Due to the margin value of the sideband test being greater than the antenna gain value, the test meets the requirements

5.180~5.240 GHz

(802.11a) Band Edge, Left Side



(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

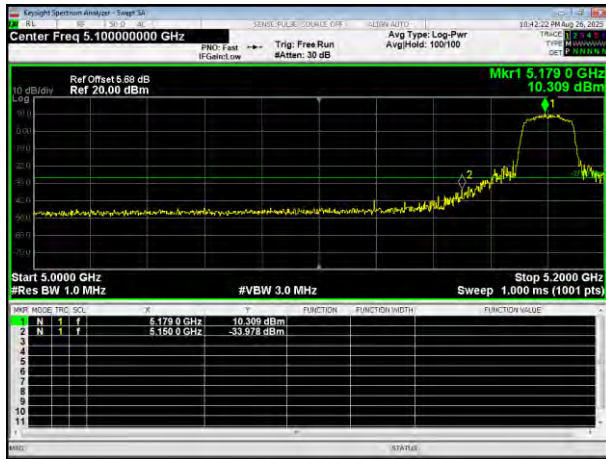


(802.11n20) Band Edge, Right Side

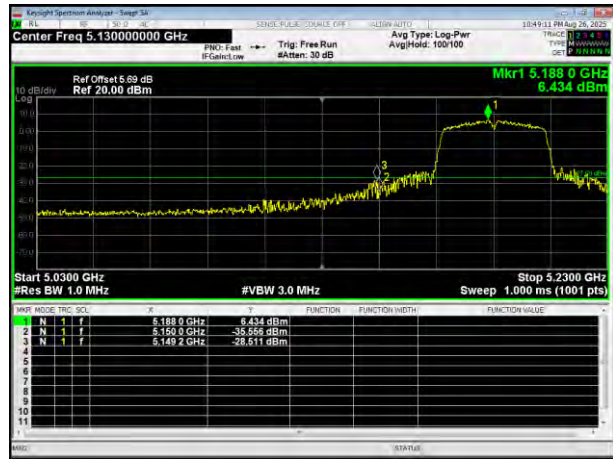


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

(802.11ac20) Band Edge, Left Side



(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

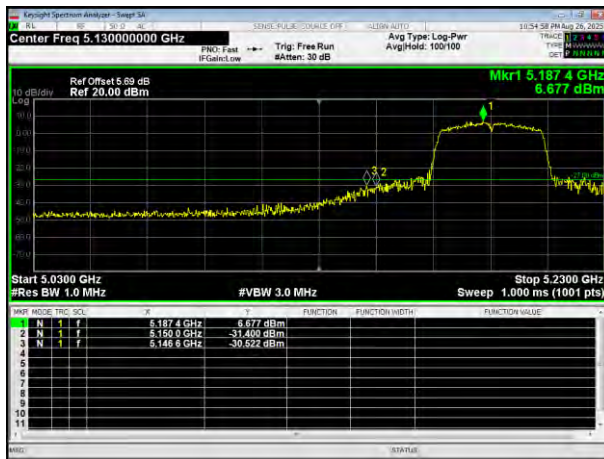


(802.11n40) Band Edge, Right Side

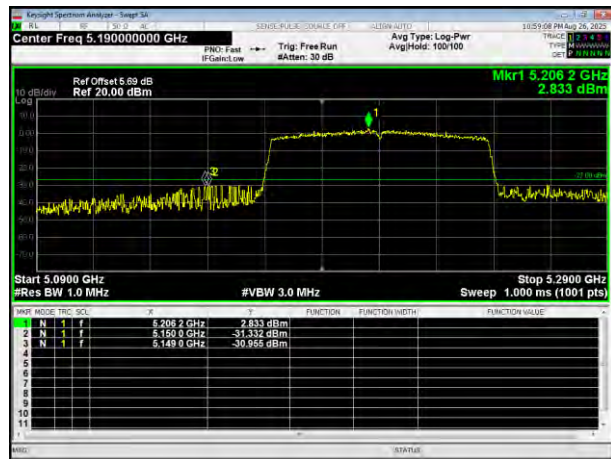


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



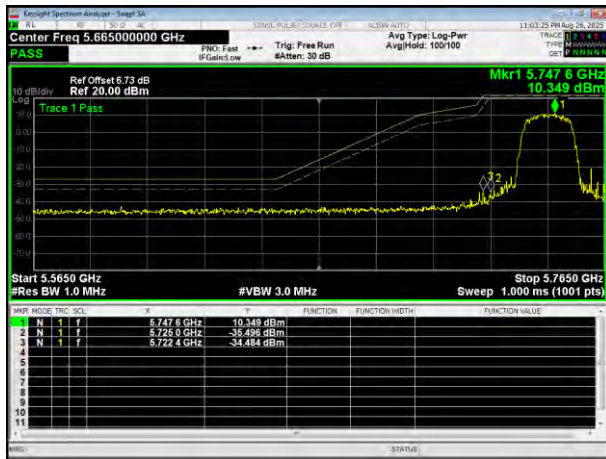
(802.11ac40) Band Edge, Right Side



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

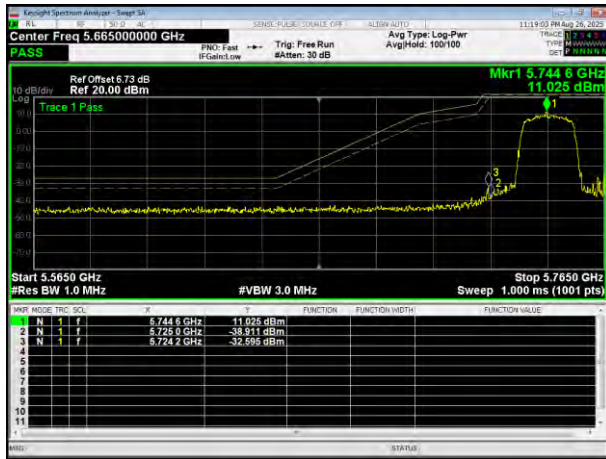


(802.11n20) Band Edge, Right Side

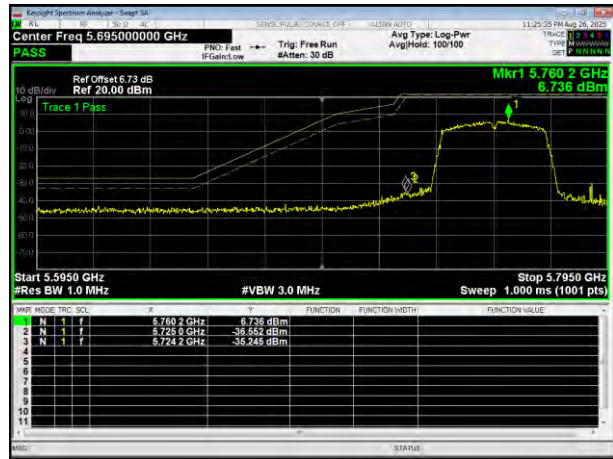


Remark: Antenna gain and cable loss data included in Offset.

(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.

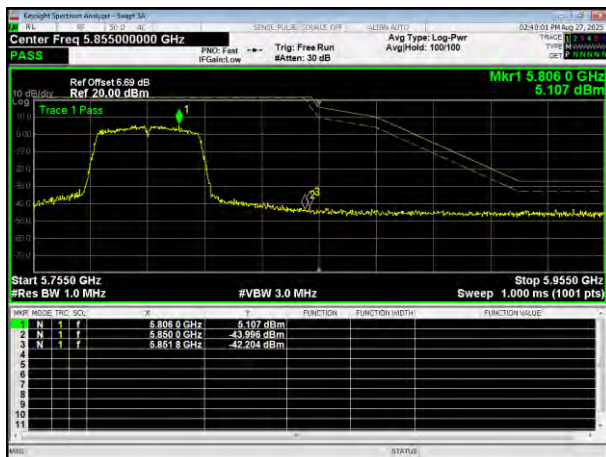
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



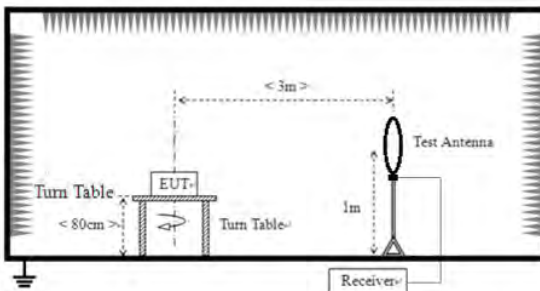
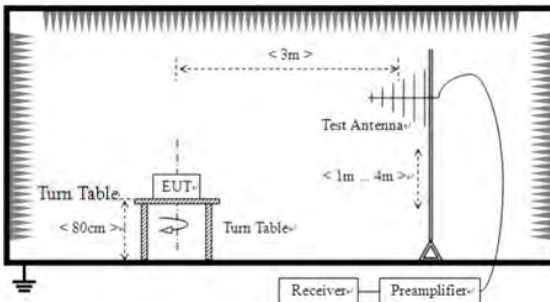
(802.11ac40) Band Edge, Right Side

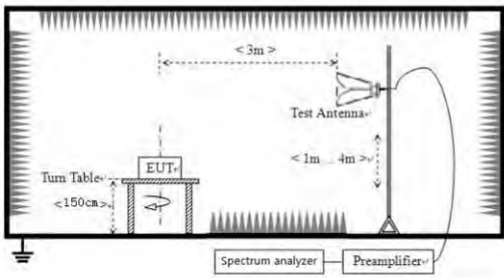


Remark: Antenna gain and cable loss data included in Offset.

4.8 Spurious Emission

4.8.1 Radiated Emission Method

Test Requirement:	47CRF Part 15.209, Part 15E Section 15.407(b)(4)				
Test Method:	ANSI C63.10:2013				
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.

Measurement Data:

9 kHz ~ 30 MHz

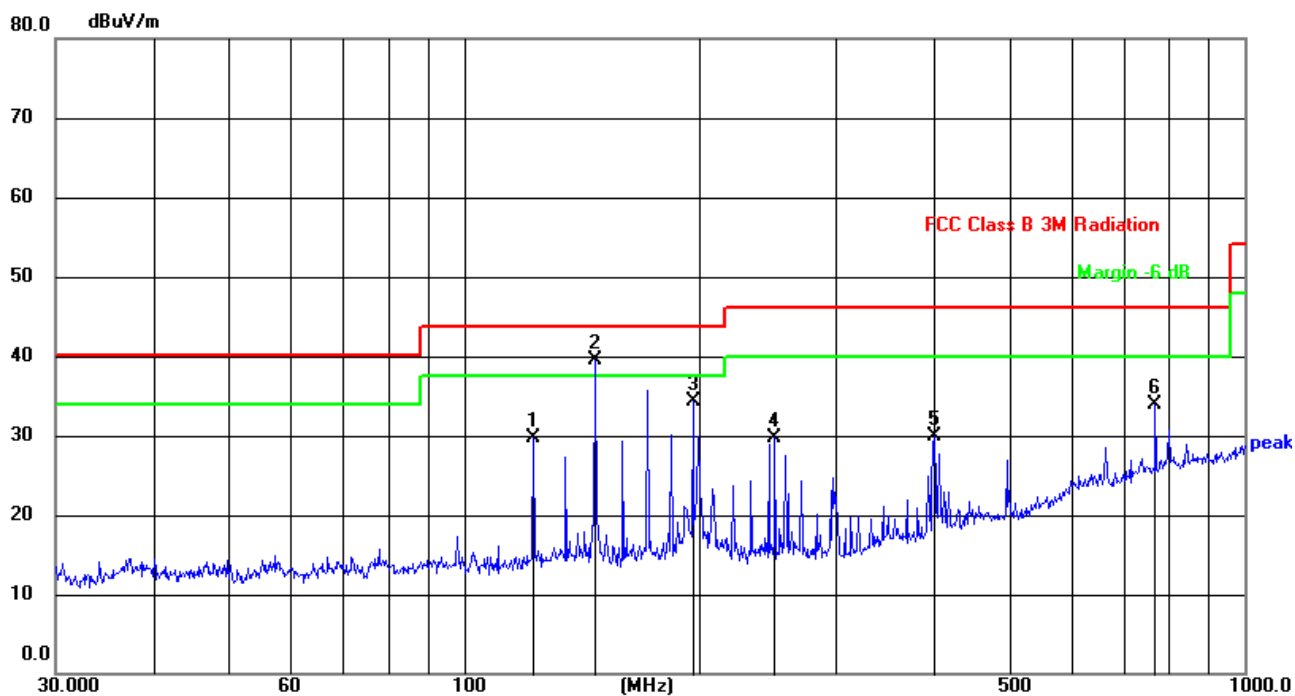
The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Below 1GHz

Remark: The test data shows only the worst case 802.11n20 mode.

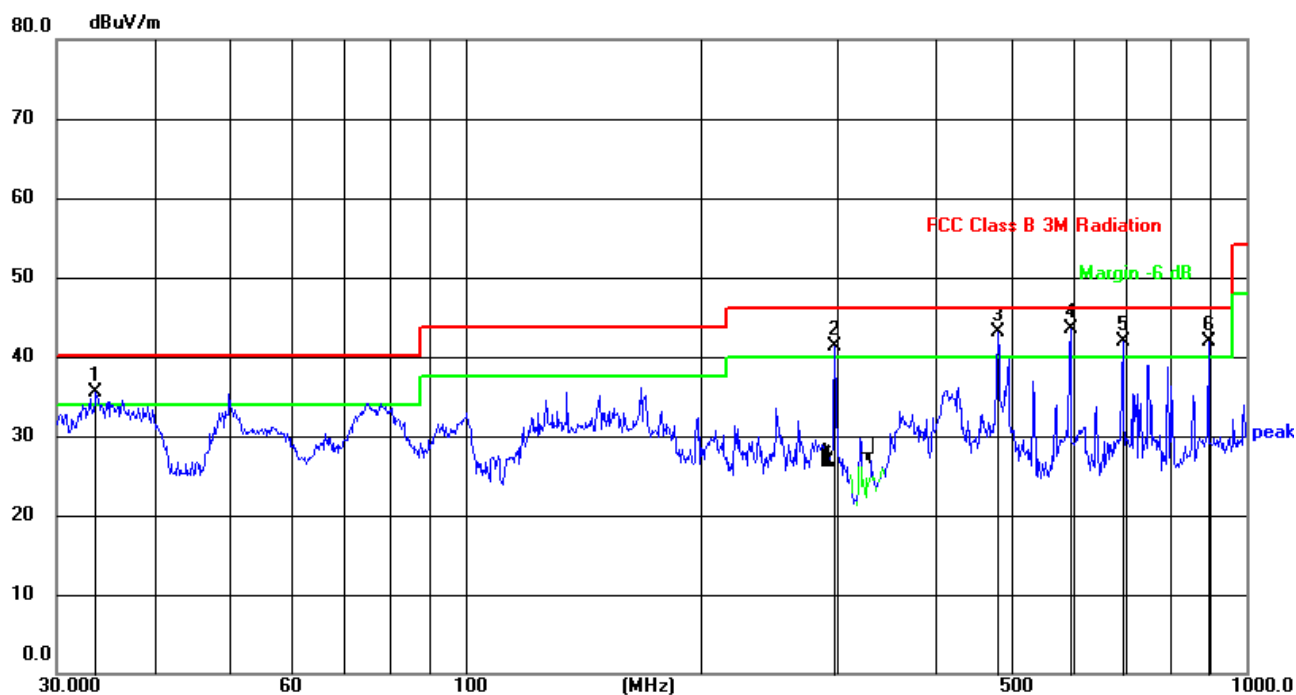
Temperature:	27.1°C	Relative Humidity:	57%
Pressure:	101.2kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	5.2G TX- 802.11n20 (5180MHz)		

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	122.8338	48.90	-19.22	29.68	43.50	-13.82	QP
2	147.4036	58.20	-18.72	39.48	43.50	-4.02	QP
3	196.5098	52.79	-18.42	34.37	43.50	-9.13	QP
4	250.3010	47.91	-18.25	29.66	46.00	-16.34	QP
5	400.4318	46.39	-16.44	29.95	46.00	-16.05	QP
6	768.7481	41.86	-7.96	33.90	46.00	-12.10	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	33.6802	56.86	-21.37	35.49	40.00	-4.51	QP
2	297.2238	59.38	-18.03	41.35	46.00	-4.65	QP
3	480.5276	57.27	-14.21	43.06	46.00	-2.94	QP
4	595.1326	54.90	-11.36	43.54	46.00	-2.46	QP
5	694.4174	50.99	-9.12	41.87	46.00	-4.13	QP
6	893.8564	47.86	-6.00	41.86	46.00	-4.14	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 802.11n20 mode.

Temperature:	27.1°C	Relative Humidity:	57%
Pressure:	101.2kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	5.2G TX- 802.11n20		

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	43.12	1.77	44.89	68.20	-23.31	PK
V	10360.00	38.35	1.77	40.12	54.00	-13.88	AV
V	15540.00	47.85	7.72	55.57	74.00	-18.43	PK
V	15540.00	36.87	7.72	44.59	54.00	-9.41	AV
V	20720.00	53.54	-5.73	47.81	68.20	-20.39	PK
V	20720.00	48.88	-5.73	43.15	54.00	-10.85	AV
V	25900.00	50.07	-2.89	47.18	68.20	-21.02	PK
V	25900.00	44.66	-2.89	41.77	54.00	-12.23	AV
V	31080.00	46.96	1.66	48.62	68.20	-19.58	PK
V	31080.00	42.08	1.66	43.74	54.00	-10.27	AV
V	36260.00	43.94	4.63	48.57	68.20	-19.63	PK
V	36260.00	39.00	4.63	43.63	54.00	-10.37	AV
H	10360.00	42.56	1.77	44.33	68.20	-23.87	PK
H	10360.00	37.82	1.77	39.59	54.00	-14.41	AV
H	15540.00	47.63	7.72	55.35	74.00	-18.65	PK
H	15540.00	37.28	7.72	45.00	54.00	-9.00	AV
H	20720.00	53.31	-5.73	47.58	68.20	-20.62	PK
H	20720.00	47.97	-5.73	42.24	54.00	-11.76	AV
H	25900.00	50.06	-2.89	47.17	68.20	-21.03	PK
H	25900.00	45.06	-2.89	42.17	54.00	-11.83	AV
H	31080.00	46.19	1.66	47.85	68.20	-20.35	PK
H	31080.00	40.88	1.66	42.54	54.00	-11.46	AV
H	36260.00	43.81	4.63	48.44	68.20	-19.76	PK
H	36260.00	39.49	4.63	44.12	54.00	-9.88	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.

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	42.55	1.85	44.40	68.20	-23.80	PK
V	10400.00	38.20	1.85	40.05	54.00	-13.95	AV
V	15600.00	47.34	7.64	54.98	74.00	-19.02	PK
V	15600.00	36.53	7.64	44.17	54.00	-9.83	AV
V	20800.00	53.30	-5.67	47.63	68.20	-20.58	PK
V	20800.00	48.15	-5.67	42.48	54.00	-11.52	AV
V	26000.00	50.22	-2.85	47.37	68.20	-20.83	PK
V	26000.00	44.85	-2.85	42.00	54.00	-12.00	AV
V	31200.00	46.31	1.57	47.88	68.20	-20.32	PK
V	31200.00	41.24	1.57	42.81	54.00	-11.19	AV
V	36400.00	43.94	4.93	48.87	68.20	-19.33	PK
V	36400.00	39.50	4.93	44.43	54.00	-9.57	AV
H	10400.00	43.02	1.85	44.87	68.20	-23.33	PK
H	10400.00	38.89	1.85	40.74	54.00	-13.26	AV
H	15600.00	49.06	7.64	56.70	74.00	-17.30	PK
H	15600.00	38.37	7.64	46.01	54.00	-7.99	AV
H	20800.00	54.30	-5.67	48.63	68.20	-19.57	PK
H	20800.00	48.86	-5.67	43.19	54.00	-10.81	AV
H	26000.00	48.04	-2.85	45.19	68.20	-23.01	PK
H	26000.00	35.33	-2.85	32.48	54.00	-21.52	AV
H	31200.00	46.16	1.57	47.73	68.20	-20.48	PK
H	31200.00	40.86	1.57	42.43	54.00	-11.57	AV
H	36400.00	43.67	4.93	48.60	68.20	-19.60	PK
H	36400.00	38.61	4.93	43.54	54.00	-10.46	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	44.22	2.02	46.24	68.20	-21.96	PK
V	10480.00	39.31	2.02	41.33	54.00	-12.67	AV
V	15720.00	46.37	7.46	53.83	74.00	-20.17	PK
V	15720.00	36.08	7.46	43.54	54.00	-10.46	AV
V	20960.00	53.63	-5.56	48.07	68.20	-20.13	PK
V	20960.00	48.47	-5.56	42.91	54.00	-11.09	AV
V	26200.00	49.42	-2.50	46.92	68.20	-21.28	PK
V	26200.00	45.03	-2.50	42.53	54.00	-11.47	AV
V	31440.00	46.47	1.39	47.86	68.20	-20.34	PK
V	31440.00	41.42	1.39	42.81	54.00	-11.19	AV
V	36680.00	43.39	5.25	48.64	68.20	-19.56	PK
V	36680.00	39.05	5.25	44.30	54.00	-9.70	AV
H	10480.00	43.37	2.02	45.39	68.20	-22.81	PK
H	10480.00	38.32	2.02	40.34	54.00	-13.66	AV
H	15720.00	47.78	7.46	55.24	74.00	-18.76	PK
H	15720.00	37.09	7.46	44.55	54.00	-9.45	AV
H	20960.00	54.41	-5.56	48.85	68.20	-19.35	PK
H	20960.00	48.82	-5.56	43.26	54.00	-10.74	AV
H	26200.00	49.87	-2.50	47.37	68.20	-20.83	PK
H	26200.00	45.76	-2.50	43.26	54.00	-10.74	AV
H	31440.00	46.73	1.39	48.12	68.20	-20.08	PK
H	31440.00	42.49	1.39	43.88	54.00	-10.12	AV
H	36680.00	44.44	5.15	49.59	68.20	-18.61	PK
H	36680.00	44.22	5.15	49.37	54.00	-4.63	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:	23.1°C	Relative Humidity:	51%
Pressure:	101.2kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	5.8G TX- 802.11a		

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	47.05	3.31	50.36	74.00	-23.64	PK
V	11490.00	37.52	3.31	40.83	54.00	-13.17	AV
V	17235.00	43.40	10.10	53.50	68.20	-14.70	PK
V	17235.00	38.10	10.10	48.20	54.00	-5.80	AV
V	22980.00	55.54	-4.61	50.93	74.00	-23.07	PK
V	22980.00	46.02	-4.61	41.41	54.00	-12.59	AV
V	28725.00	47.98	0.87	48.85	68.20	-19.35	PK
V	28725.00	42.77	0.87	43.64	54.00	-10.36	AV
V	34470.00	44.08	3.82	47.90	68.20	-20.30	PK
V	34470.00	39.44	3.82	43.26	54.00	-10.74	AV
H	11490.00	47.35	3.31	50.66	74.00	-23.34	PK
H	11490.00	36.84	3.31	40.15	54.00	-13.85	AV
H	17235.00	41.91	10.10	52.01	68.20	-16.19	PK
H	17235.00	36.76	10.10	46.86	54.00	-7.14	AV
H	22980.00	57.84	-4.61	53.23	74.00	-20.77	PK
H	22980.00	46.92	-4.61	42.31	54.00	-11.69	AV
H	28725.00	47.96	0.87	48.83	68.20	-19.37	PK
H	28725.00	43.59	0.87	44.46	54.00	-9.54	AV
H	34470.00	44.48	3.82	48.30	68.20	-19.90	PK
H	34470.00	40.23	3.82	44.05	54.00	-9.95	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:5785MHz							
V	11570.00	47.74	3.34	51.08	74.00	-22.92	PK
V	11570.00	37.25	3.34	40.59	54.00	-13.41	AV
V	17355.00	43.37	10.52	53.89	68.20	-14.31	PK
V	17355.00	38.67	10.52	49.19	54.00	-4.81	AV
V	23140.00	55.19	-4.66	50.53	74.00	-23.47	PK
V	23140.00	45.34	-4.66	40.68	54.00	-13.32	AV
V	28925.00	47.47	1.36	48.83	68.20	-19.37	PK
V	28925.00	43.71	1.36	45.07	54.00	-8.93	AV
V	34710.00	43.87	3.95	47.82	68.20	-20.38	PK
V	34710.00	39.06	3.95	43.01	54.00	-10.99	AV
H	11570.00	48.54	3.34	51.88	74.00	-22.12	PK
H	11570.00	38.22	3.34	41.56	54.00	-12.44	AV
H	17355.00	41.71	10.52	52.23	68.20	-15.97	PK
H	17355.00	34.71	10.52	45.23	54.00	-8.77	AV
H	23140.00	54.56	-4.66	49.90	74.00	-24.10	PK
H	23140.00	43.19	-4.66	38.53	54.00	-15.47	AV
H	28925.00	53.31	1.36	54.67	68.20	-13.53	PK
H	28925.00	47.77	1.36	49.13	54.00	-4.87	AV
H	34710.00	53.59	3.95	57.54	68.20	-10.66	PK
H	34710.00	42.43	3.95	46.38	54.00	-7.62	AV

Remark:

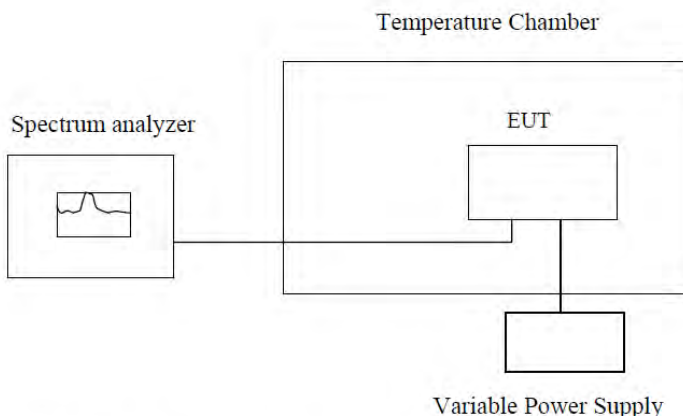
1. Emission Level = Meter Reading + Factor,
Factor=Antenna Factor + Cable Loss – Pre-amplifier
Margin= Emission Level – Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value 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	46.09	3.36	49.45	74.00	-24.55	PK
V	11650.00	36.61	3.36	39.97	54.00	-14.03	AV
V	17475.00	42.68	10.93	53.61	68.20	-14.59	PK
V	17475.00	38.16	10.93	49.09	54.00	-4.91	AV
V	23300.00	53.41	-4.77	48.64	68.20	-19.56	PK
V	23300.00	48.04	-4.77	43.27	54.00	-10.73	AV
V	29125.00	47.94	1.65	49.59	68.20	-18.61	PK
V	29125.00	42.43	1.65	44.08	54.00	-9.92	AV
V	34950.00	42.41	4.09	46.50	68.20	-21.70	PK
V	34950.00	38.65	4.09	42.74	54.00	-11.26	AV
H	11650.00	48.99	3.36	52.35	74.00	-21.65	PK
H	11650.00	38.07	3.36	41.43	54.00	-12.57	AV
H	17475.00	40.80	10.93	51.73	68.20	-16.47	PK
H	17475.00	37.05	10.93	47.98	54.00	-6.02	AV
H	23300.00	52.38	-4.77	47.61	68.20	-20.59	PK
H	23300.00	48.88	-4.77	44.11	54.00	-9.89	AV
H	29125.00	48.82	1.65	50.47	68.20	-17.73	PK
H	29125.00	44.30	1.65	45.95	54.00	-8.05	AV
H	34950.00	46.09	4.09	50.18	68.20	-18.02	PK
H	34950.00	36.61	4.09	40.70	54.00	-13.30	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.

4.9 Frequency stability

Test Requirement:	47CRF Part 15.407(g)
Test Method:	ANSI C63.10:2013, FCC Part 2.1055
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: DC 3.7V					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5180	5179.997	5179.962	5179.985	5179.991
	5190	5189.988	5189.992	5189.986	5189.990
	5200	5199.996	5200.017	5199.977	5199.984
	5210	5209.988	5210.001	5299.985	5209.974
	5220	5220.009	5219.992	5219.977	5219.984
	5230	5229.987	5230.020	5229.998	5299.982
	5240	5240.005	5240.008	5239.976	5239.986
-20	5180	5180.006	5180.000	5179.986	5179.943
	5190	5190.002	5190.001	5189.977	5189.973
	5200	5199.997	5199.992	5199.985	5199.998
	5210	5210.003	5300.000	5209.977	5209.982
	5220	5219.998	5219.992	5219.998	5219.973
	5230	5229.996	5230.013	5229.976	5230.001
	5240	5239.969	5239.991	5239.994	5239.989
-10	5180	5179.958	5180.000	5179.986	5179.991
	5190	5189.988	5190.001	5189.977	5189.987
	5200	5200.013	5199.992	5199.985	5199.982
	5210	5209.997	5300.000	5209.977	5209.988
	5220	5219.988	5219.992	5219.998	5219.983
	5230	5230.016	5230.013	5229.976	5229.981
	5240	5240.004	5239.991	5239.994	5239.954
0	5180	5179.997	5179.962	5179.985	5179.991
	5190	5189.988	5189.992	5189.986	5189.990
	5200	5199.996	5200.017	5199.977	5199.984
	5210	5209.988	5210.001	5299.985	5209.974
	5220	5220.009	5219.992	5219.977	5219.984
	5230	5229.987	5230.020	5229.998	5299.982
	5240	5240.005	5240.008	5239.976	5239.986
10	5180	5179.985	5180.001	5179.986	5179.991
	5190	5189.996	5189.992	5189.977	5179.991
	5200	5199.987	5200.000	5199.985	5189.987
	5210	5209.988	5209.992	5209.977	5199.982
	5220	5219.995	5220.013	5219.998	5209.988
	5230	5230.013	5229.991	5229.976	5219.983
	5240	5239.985	5240.009	5239.994	5229.981

20	5180	5180.006	5180.000	5179.986	5179.943
	5190	5190.002	5190.001	5189.977	5189.973
	5200	5199.997	5199.992	5199.985	5199.998
	5210	5210.003	5300.000	5209.977	5209.982
	5220	5219.998	5219.992	5219.998	5219.973
	5230	5229.996	5230.013	5229.976	5230.001
	5240	5239.969	5239.991	5239.994	5239.989
30	5180	5180.006	5180.000	5179.986	5179.943
	5190	5190.002	5190.001	5189.977	5189.973
	5200	5199.997	5199.992	5199.985	5199.998
	5210	5210.003	5300.000	5209.977	5209.982
	5220	5219.998	5219.992	5219.998	5219.973
	5230	5229.996	5230.013	5229.976	5230.001
	5240	5239.969	5239.991	5239.994	5239.989
40	5180	5179.996	5179.989	5179.986	5179.981
	5190	5189.997	5190.000	5189.977	5189.982
	5200	5199.988	5199.991	5199.985	5199.973
	5210	5299.996	5209.992	5209.977	5299.981
	5220	5219.988	5219.999	5219.998	5219.973
	5230	5230.009	5230.017	5229.976	5229.994
	5240	5239.987	5239.989	5239.994	5239.972
50	5180	5179.958	5180.000	5179.974	5180.106
	5190	5189.988	5190.001	5189.985	5199.981
	5200	5200.013	5199.992	5199.976	5200.006
	5210	5209.997	5300.000	5209.977	5209.984
	5220	5219.988	5219.992	5219.984	5219.999
	5230	5230.016	5230.013	5230.002	5229.992
	5240	5240.004	5239.991	5239.974	5240.000

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)
DC 3.15V	5180	5179.991	5179.989	5179.995	5179.987
	5190	5189.985	5190.000	5189.991	5189.973
	5200	5199.998	5199.991	5199.986	5199.974
	5210	5210.002	5209.992	5209.992	5209.996
	5220	5219.988	5219.999	5219.987	5219.982
	5230	5229.981	5230.017	5229.985	5229.992
	5240	5180.121	5180.005	5179.986	5179.970
DC 3.7V	5180	5199.996	5189.999	5189.977	5189.981
	5190	5200.021	5199.999	5199.985	5199.972
	5200	5209.999	5210.011	5209.977	5209.973
	5210	5220.014	5220.002	5219.998	5219.980
	5220	5230.007	5300.005	5229.976	5229.998
	5230	5240.015	5240.002	5239.994	5239.983
	5240	5180.121	5180.005	5179.986	5179.970
DC 4.26V	5180	5180.006	5180.010	5179.974	5179.970
	5190	5190.002	5190.006	5189.985	5189.981
	5200	5199.997	5200.001	5199.976	5199.971
	5210	5210.003	5210.007	5209.977	5209.973
	5220	5219.998	5220.002	5219.984	5219.980
	5230	5229.996	5230.000	5230.002	5230.003
	5240	5239.969	5239.973	5239.974	5239.970

Frequency stability versus Temp.					
Power Supply: DC 3.7V					
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	5745.020	5744.983	5744.608	5744.951
	5755	5744.968	5754.999	5754.992	5754.973
	5775	5754.990	5774.998	5774.993	5774.982
	5785	5774.999	5785.001	5784.996	5784.973
	5795	5784.990	5795.012	5794.979	5794.984
	5825	5795.001	5824.993	5824.975	5824.988
-20	5745	5744.985	5744.983	5744.989	5744.974
	5755	5755.010	5754.999	5754.991	5755.000
	5775	5774.991	5774.998	5774.994	5774.996
	5785	5785.000	5785.001	5784.986	5784.980
	5795	5794.998	5795.012	5794.977	5794.969
	5825	5825.008	5824.993	5824.986	5824.905
-10	5745	5744.990	5744.994	5744.973	5745.038
	5755	5754.997	5755.001	5754.998	5744.603
	5775	5774.989	5775.018	5774.979	5754.987
	5785	5784.981	5784.994	5784.988	5774.988
	5795	5794.988	5794.990	5794.986	5784.991
	5825	5824.917	5824.993	5824.996	5794.974
0	5745	5744.984	5744.993	5744.979	5744.973
	5755	5754.994	5755.000	5754.986	5754.962
	5775	5775.015	5774.992	5775.003	5774.973
	5785	5784.991	5784.984	5784.979	5784.980
	5795	5794.987	5794.991	5794.975	5794.998
	5825	5824.985	5824.920	5824.978	5824.991
10	5745	5744.981	5745.004	5744.973	5744.984
	5755	5754.996	5755.006	5754.998	5754.998
	5775	5774.995	5775.009	5774.979	5774.983
	5785	5784.998	5785.001	5784.988	5784.970
	5795	5795.008	5794.992	5794.986	5794.964
	5825	5824.990	5825.001	5824.996	5824.999
20	5745	5745.001	5745.018	5744.989	5744.973
	5755	5755.015	5754.990	5755.003	5754.992
	5775	5775.000	5775.013	5774.988	5774.972
	5785	5784.987	5785.013	5784.975	5784.999
	5795	5794.981	5795.004	5794.969	5794.991
	5825	5825.015	5825.019	5825.003	5825.001
30	5745	5744.980	5745.004	5744.973	5744.984
	5755	5754.996	5755.006	5754.998	5754.998
	5775	5774.995	5775.009	5774.979	5774.983
	5785	5784.998	5785.001	5784.988	5784.970
	5795	5795.009	5794.992	5794.986	5794.964
	5825	5824.990	5825.001	5824.996	5824.999
40	5745	5745.001	5744.993	5744.973	5744.968
	5755	5755.003	5755.010	5754.998	5754.993
	5775	5775.006	5775.011	5774.979	5774.974

50	5785	5784.998	5784.993	5784.988	5784.983
	5795	5794.989	5795.010	5794.986	5794.981
	5825	5824.998	5825.008	5824.996	5824.992
	5745	5744.985	5744.993	5744.978	5744.974
	5755	5755.010	5755.010	5754.985	5754.981
	5775	5774.991	5775.011	5774.977	5774.998
50	5785	5785.000	5784.993	5784.969	5784.974
	5795	5794.998	5795.010	5794.976	5794.970
	5825	5825.008	5825.008	5824.905	5824.974

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)
DC 3.15V	5745	5744.980	5744.993	5744.978	5744.968
	5755	5754.996	5755.000	5754.995	5754.993
	5775	5774.995	5774.992	5774.996	5774.974
	5785	5784.998	5784.984	5784.978	5784.983
	5795	5795.009	5794.991	5794.996	5794.981
	5825	5824.990	5824.920	5824.993	5824.992
DC 3.7V	5745	5744.980	5745.004	5744.973	5744.984
	5755	5754.996	5755.006	5754.998	5754.998
	5775	5774.995	5775.009	5774.979	5774.983
	5785	5784.998	5785.001	5784.988	5784.970
	5795	5795.005	5794.992	5794.986	5794.964
	5825	5824.990	5825.001	5824.996	5824.999
DC 4.26V	5745	5745.001	5745.017	5744.989	5744.973
	5755	5755.015	5754.990	5755.003	5754.992
	5775	5775.000	5775.013	5774.988	5774.972
	5785	5784.987	5785.013	5784.975	5784.999
	5795	5794.981	5795.004	5794.969	5794.991
	5825	5825.015	5825.019	5825.003	5825.001

5 Test Setup Photo

Reference to the file No.: ET-25082935SP for details.

6 EUT Constructional Details

Reference to the file No.: ET-25082935EP and ET-25082935IP for details

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