



TEST REPORT

Applicant: Jiumao (Shenzhen) Industrial Co., LTD.
Address of Applicant: 2nd Floor, Building 9, Jingxuan Industrial Park, Donghuan Road, Longhua District, Shenzhen
Manufacturer: Jiumao (Shenzhen) Industrial Co., LTD.
Address of Manufacturer: 2nd Floor, Building 9, Jingxuan Industrial Park, Donghuan Road, Longhua District, Shenzhen
Product Name: TV BOX
Model No.: M98PRO,M98-H6,XIAOIM,M98-H313TS,M98TS,M98MAX,M98Max,M98-A4,M98-X10,M98-Q1,M98PRO,M98PLUS,M98H618,M98H618TS,M98H313,M98ktv
Trade Mark: JIUMAO
FCC ID: 2BB8K-M98PRO
Applicable standards: CFR Title 47 Part 15.407
Date of Test: Jul.30, 2025-Aug.13, 2025
Date of report issued: Aug.14, 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	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 and 99% Occupied 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 and 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"

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:	TV BOX
Model No.:	M98PRO,M98-H6,XIAOIM,M98-H313TS,M98TS,M98MAX,M98Max,M98-A4,M98-X10,M98-Q1,M98PRO,M98PLUS,M98H618,M98H618TS,M98H313,M98ktv
Difference of model(s)	All models have the same circuit and RF module, except for the model name and housing design
Test Model:	M98PRO
Hardware Version:	REV1.5
Software Version:	1.0
Sample(s) Status:	Engineer sample
Operation Frequency:	☒ 5180-5240MHz for 802.11a/n20/ac20; 5190-5230MHz for 802.11n40/ac40; ☒ 5745-5825 MHz for 802.11a/n20/ac20; 5755-5795 MHz for 802.11n40)ac40;
Channel numbers:	☒ 4 channels for 802.11a/n20/ac20 in the 5180-5240MHz band; 2 channels for 802.11 n40/ac40 in the 5190-5230MHz band ; ☒ 5 channels for 802.11a/n20/ac20 in the 5745-5825MHz band ; 2 channels for 802.11 n40/ac40 in the 5755-5795MHz band ;
Channel bandwidth:	802.11a/802.11n20/ 802.11ac20/ : 20MHz 802.11n(HT40)/ 802.11ac40 : 40MHz
Data Rate	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(20/40):MCS0-MCS15; 802.11ac(20/40):NSS1, MCS0-MCS9
Modulation technology:	Orthogonal Frequency Division Multiplexing (OFDM) with BPSK/QPSK/16QAM/64QAM/
Antenna Type:	PCB antenna
Antenna gain:	3.25dBi(Declare by applicant) Note: Antenna information is provided by applicant, Testing lab is not responsible for the accuracy of the information.
Power supply:	DC 5V From Adapter
Battery	N/A
Adapter Model:	N/A

For more details, refer to the user's manual of the EUT.

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 /n20/ac20/	802.11 n40/ac40/	/
Lowest channel	5180	5190	/
Middle channel	5200	X	
Highest channel	5240		

Test channel	Frequency (MHz)		
	802.11 a /n20/ac20	802.11 n40/ac40	/
Lowest channel	5745	5755	/
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 20CH36/CH40/CH48 802.11a / n 20/ac 20CH149/CH157/CH165
Mode 2	802.11n40/CH38/CH46 802.11n 40CH 151/CH159
Mode 3	/
Mode 4	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/ac20CH36/ CH40/ CH 48 802.11a/n 20/ac 20CH149/ CH157/ CH165
Mode 2	802.11n40CH38/ CH46 802.11n40CH 151/CH159
Mode 3	/

Note: 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	MOUSE	DELL	MS116	/
2	KEYBOARD	DELL	KB216T	/
3	MONITOR	SKYWORTH	2BU1	/
4	ADAPTER	/	YBJ-220502	/

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	Manufacturer's special orders
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	ESCI3	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	ESCI7	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:	47CRF Part 15.203
15.203 requirement: <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>	
EUT Antenna:	
The antenna is pcb Antenna, the best case gain of the is 3.25dBi, reference to the Internal photos for details.	

4.2 Conducted Emissions

Test Requirement:	47CRF Part 15.207					
Test Method:	ANSI C63.10:2013					
Test Frequency Range:	150KHz to 30MHz					
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 40cm LISN AUX Equipment E.U.T 80cm LISN Filter EMI Receiver AC power Test table/Insulation plane <i>Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</i>					
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.:	23.2°C	Humid.:	53%	Press.:	1012mbar
Test voltage:	AC 120V 60Hz					
Test results:	Pass					

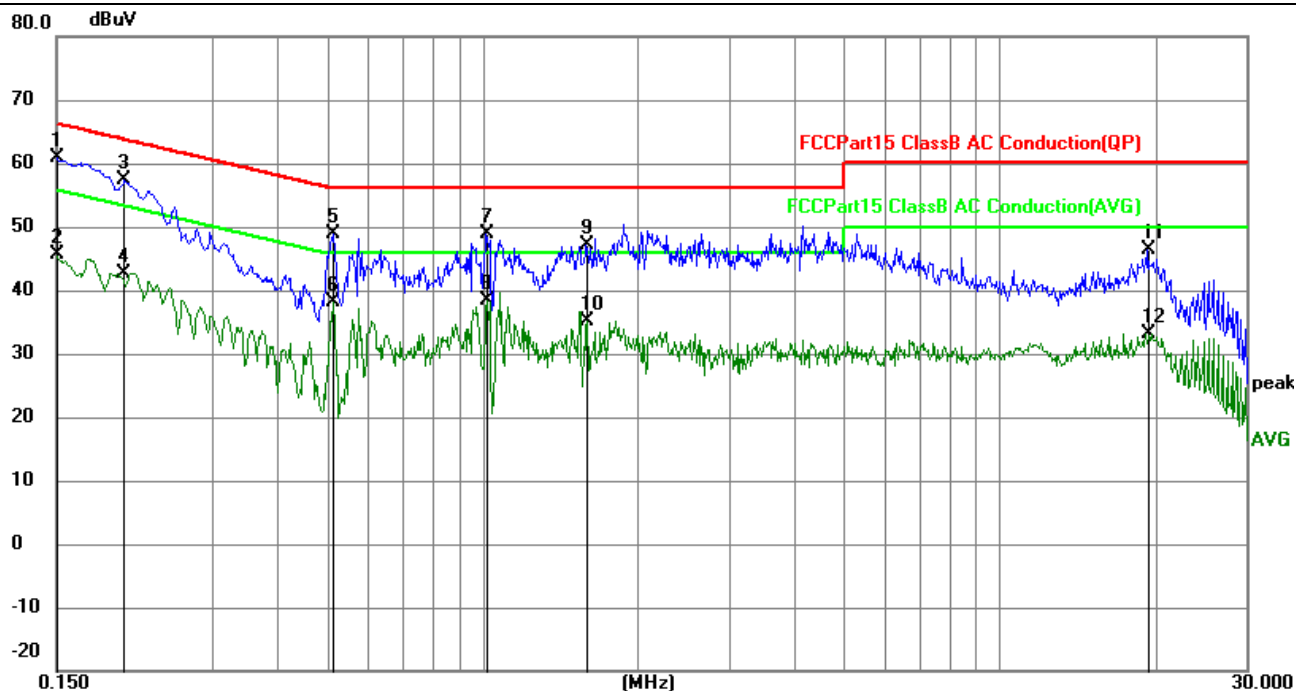
Remark:

1. Both high voltage and low voltage have been tested, and the report only shows the worst case data with AC 120V/60Hz.

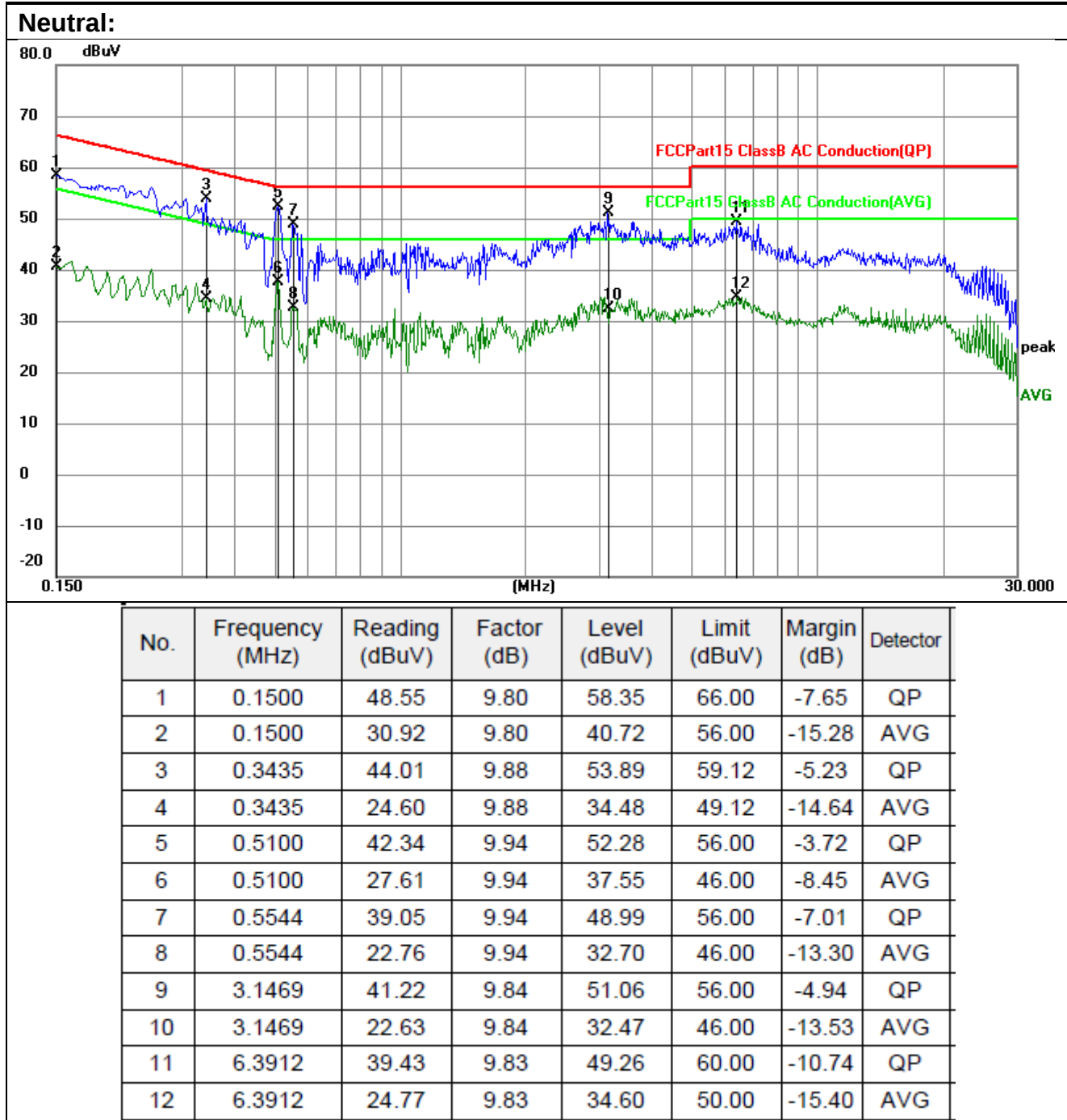
2. All mode have been tested, the report only shows the worst mode (802.11ac20 5200MHz)

Measurement Result

Line:



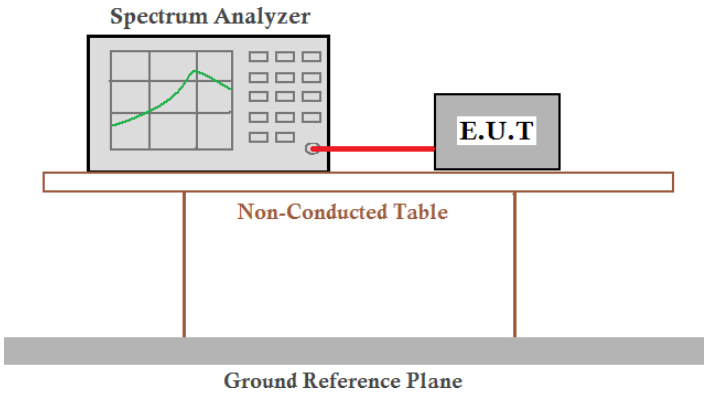
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1507	51.15	9.80	60.95	65.96	-5.01	QP
2	0.1507	35.75	9.80	45.55	55.96	-10.41	AVG
3	0.2028	47.45	9.81	57.26	63.50	-6.24	QP
4	0.2028	32.75	9.81	42.56	53.50	-10.94	AVG
5	0.5141	38.82	9.94	48.76	56.00	-7.24	QP
6	0.5141	28.07	9.94	38.01	46.00	-7.99	AVG
7	1.0181	38.96	9.96	48.92	56.00	-7.08	QP
8	1.0181	28.31	9.96	38.27	46.00	-7.73	AVG
9	1.5900	37.23	9.90	47.13	56.00	-8.87	QP
10	1.5900	25.24	9.90	35.14	46.00	-10.86	AVG
11	19.4009	36.78	9.68	46.46	60.00	-13.54	QP
12	19.4009	23.33	9.68	33.01	50.00	-16.99	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 to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. The table 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.: 22.6°C	Humid.: 61%RH
Test voltage:	DC 5V	
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	93.39	0.30
TX 802.11ac20 Mode	93.71	0.28
TX 802.11n40 Mode	87.11	0.60
TX 802.11a40 Mode	85.48	0.68

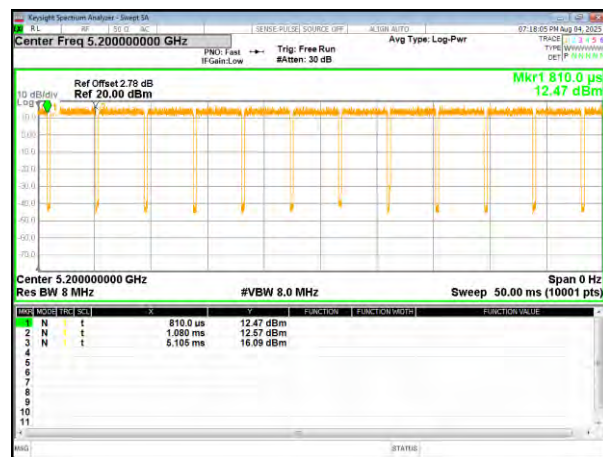
5745-5825 MHz

Mode	Duty cycle (%)	Correction Factor (dB)
TX 802.11a Mode	93.10	0.31
TX 802.11n20 Mode	93.75	0.28
TX 802.11ac20 Mode	94.12	0.26
TX 802.11n40 Mode	87.80	0.56
TX 802.11ac40 Mode	88.10	0.55

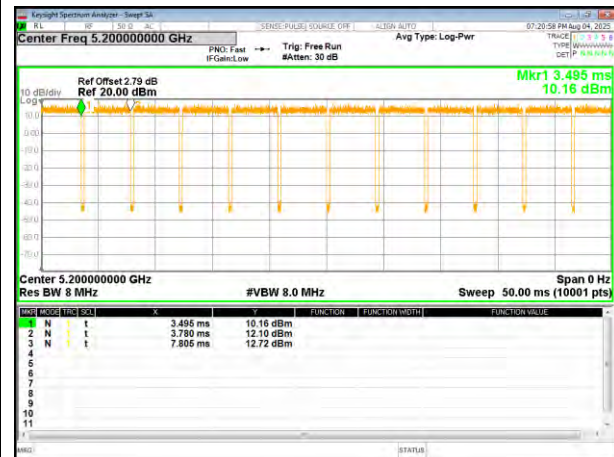
Test plot

5180-5240MHz

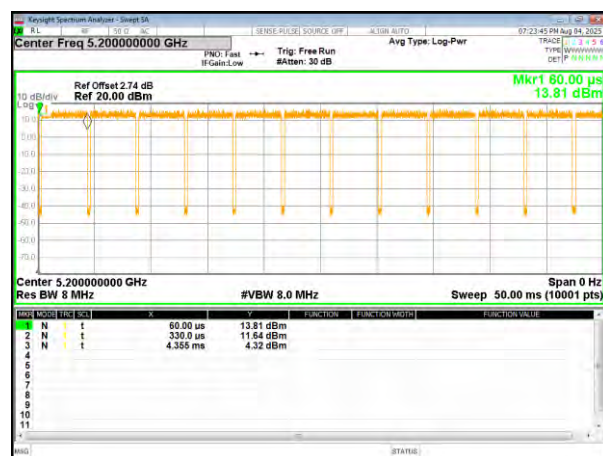
(802.11a) plot



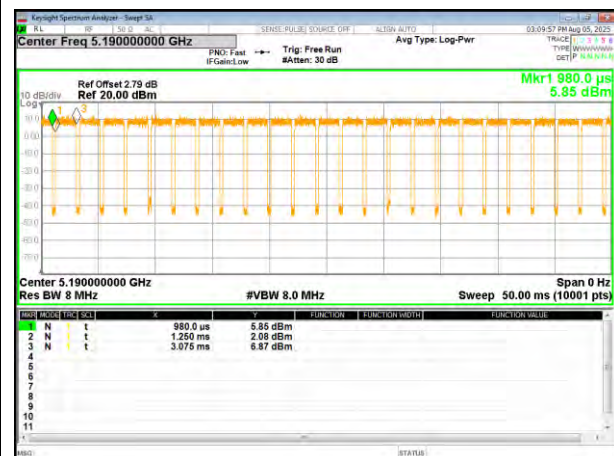
(802.11 n20) plot



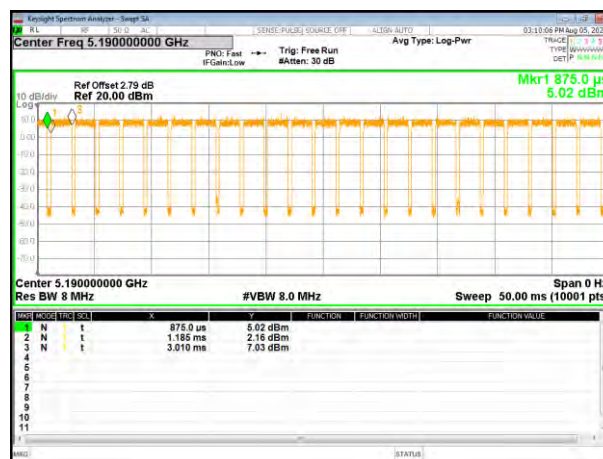
(802.11 ac20) plot



(802.11 n40) plot



(802.11 ac40) plot



/

/

5745-5825 MHz

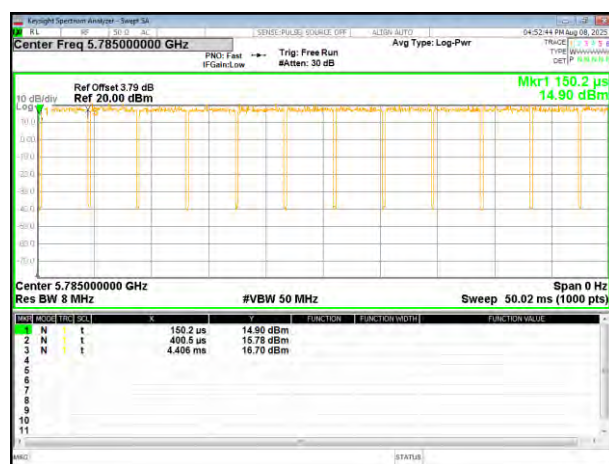
(802.11a) plot



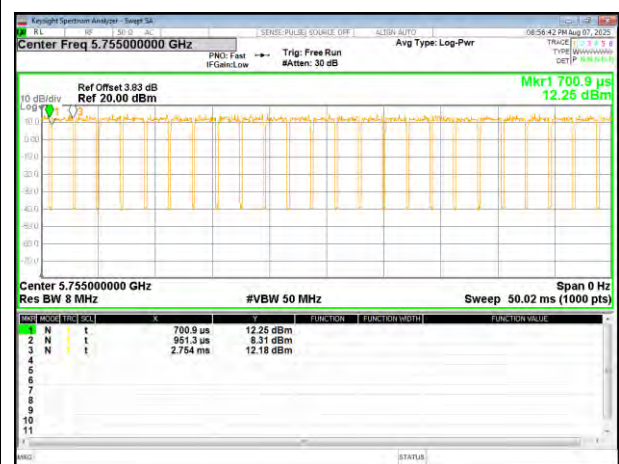
(802.11 n20) plot



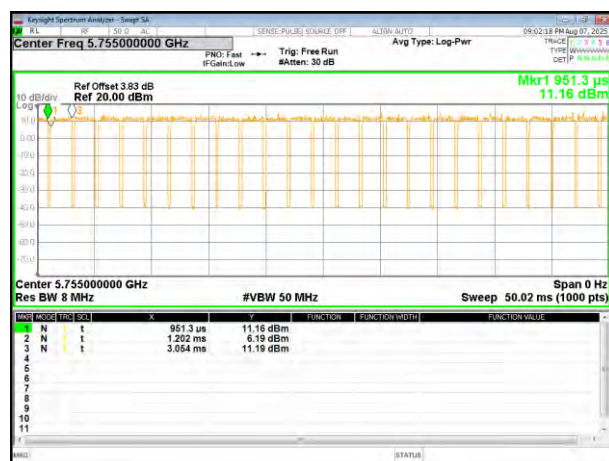
(802.11ac20) plot



(802.11 n40) plot



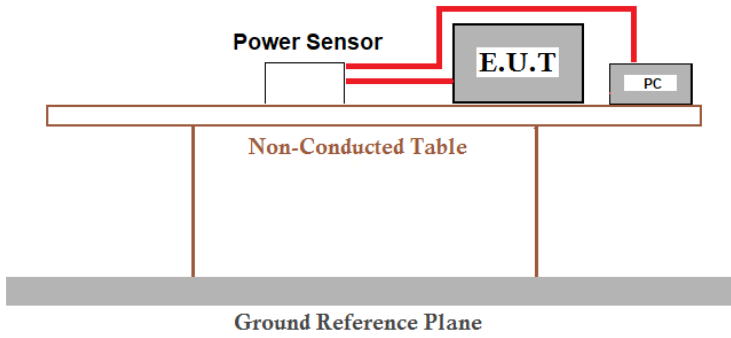
(802.11 ac40) plot



/

/

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:		
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 22.6°C	Humid.: 61%RH
Test voltage:	DC 5V	
Test results:	Pass	



Measurement Result

5180-5240MHz

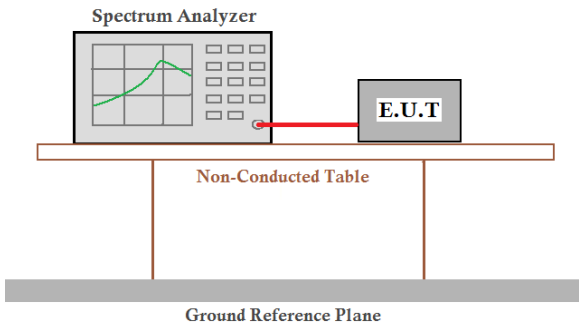
Test Channel	Frequency	Correction Factor	Maximum output power	Total Power	LIMIT	Result
	(MHz)	(dB)	(dBm)	(dBm)	dBm	
TX 802.11a Mode						
CH36	5180	0.28	13.98	14.26	23.98	Pass
CH40	5200	0.28	13.90	14.18	23.98	Pass
CH48	5240	0.28	13.70	13.98	23.98	Pass
TX 802.11 n20 Mode						
CH36	5180	0.30	13.56	13.86	23.98	Pass
CH40	5200	0.30	13.43	13.73	23.98	Pass
CH48	5240	0.30	13.12	13.42	23.98	Pass
TX 802.11 ac20 Mode						
CH36	5180	0.28	13.60	13.88	23.98	Pass
CH40	5200	0.28	15.53	15.81	23.98	Pass
CH48	5240	0.28	13.11	13.39	23.98	Pass
TX 802.11 n40 Mode						
CH38	5190	0.60	12.96	13.56	23.98	Pass
CH46	5230	0.60	12.62	13.22	23.98	Pass
TX 802.11 ac40 Mode						
CH38	5190	0.68	12.86	13.54	23.98	Pass
CH46	5230	0.68	12.39	13.07	23.98	Pass

5745-5825 MHz

CH 165 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	14.52	14.83	30	Pass
CH157	5785	0.31	14.49	14.80	30	Pass
CH165	5825	0.31	14.79	15.10	30	Pass
TX 802.11 n20 Mode						
CH149	5745	0.28	14.83	15.11	30	Pass
CH157	5785	0.28	14.76	15.04	30	Pass
CH165	5825	0.28	15.22	15.50	30	Pass
TX 802.11 ac20 Mode						
CH149	5745	0.26	15.34	15.60	30	Pass
CH157	5785	0.26	14.93	15.19	30	Pass
CH165	5825	0.26	15.23	15.49	30	Pass
TX 802.11 n40 Mode						
CH151	5755	0.56	14.23	14.79	30	Pass
CH159	5795	0.56	14.45	15.01	30	Pass
TX 802.11 ac40 Mode						
CH151	5755	0.55	13.82	14.37	30	Pass
CH159	5795	0.55	13.95	14.50	30	Pass

4.5 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.: 22.6°C	Humid.: 61%RH
Test voltage:	DC 5V	
Test results:	Pass	

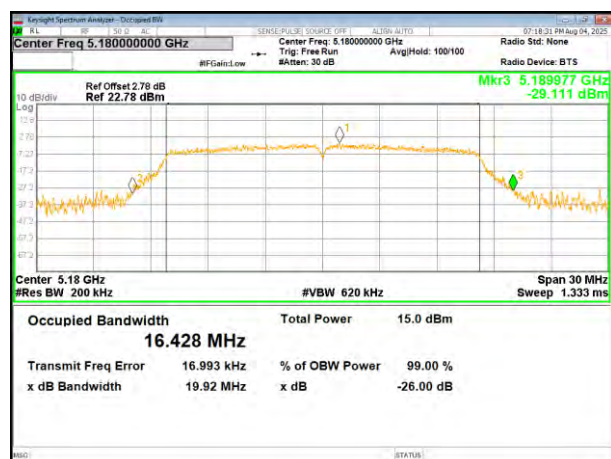
Measurement Result

5180-5240MHz

Test CH	-26dB Channel Bandwidth (MHz)						Result
	802.11a	802.11n20	802.11ac20	802.11n40	802.11ac40	802.11ac80	
Lowest	19.92	19.77	19.82	39.86	40.24	--	Pass
Middle	19.63	19.84	19.74	--	--	--	
Highest	19.69	19.90	19.70	39.65	39.51	--	

Remark: "---"is not applicable

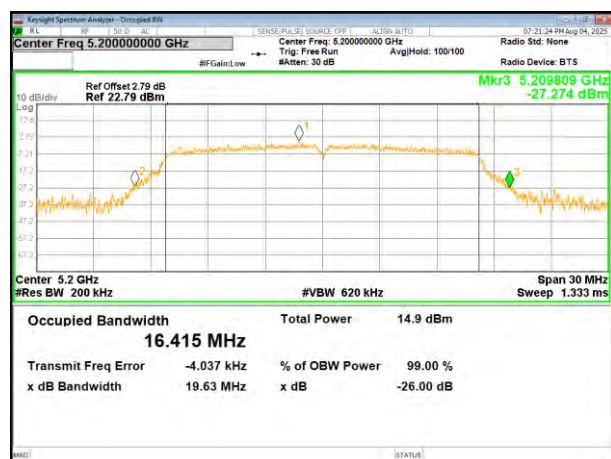
(802.11a) plot on channel 36



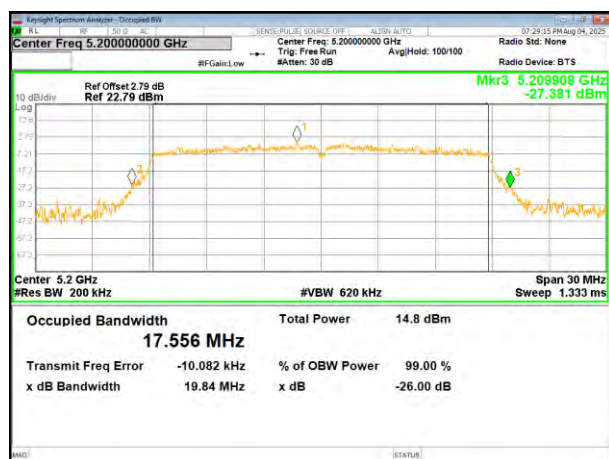
(802.11 n20) plot on channel 36



(802.11a) plot on channel 40



(802.11 n20) plot on channel 40



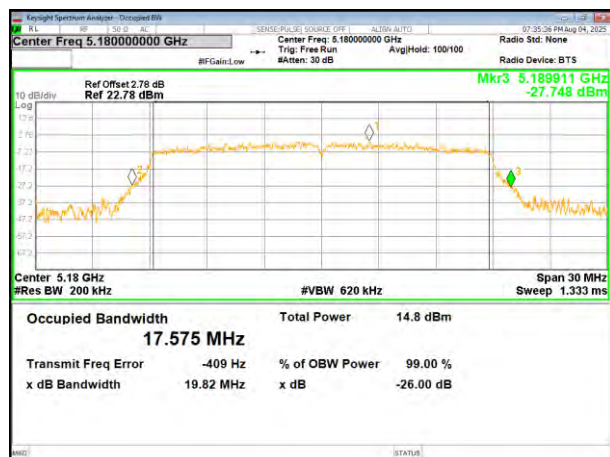
(802.11a) plot on channel 48



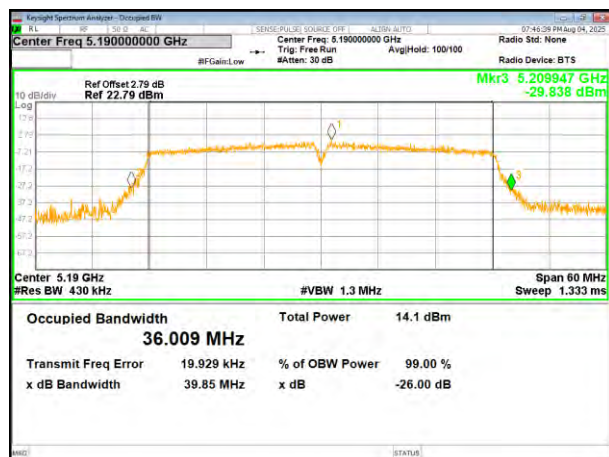
(802.11 n20) plot on channel 48



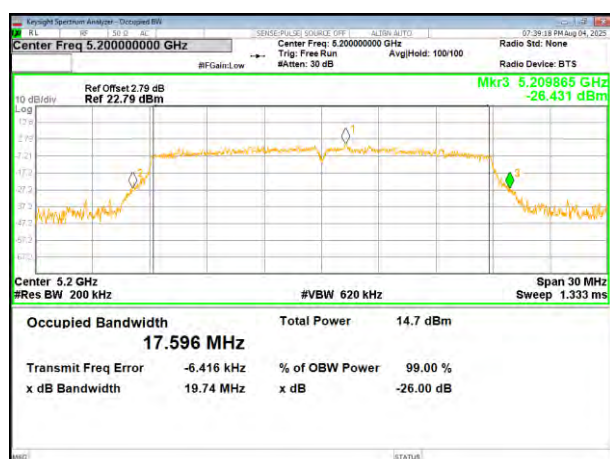
(802.11ac20) plot on channel 36



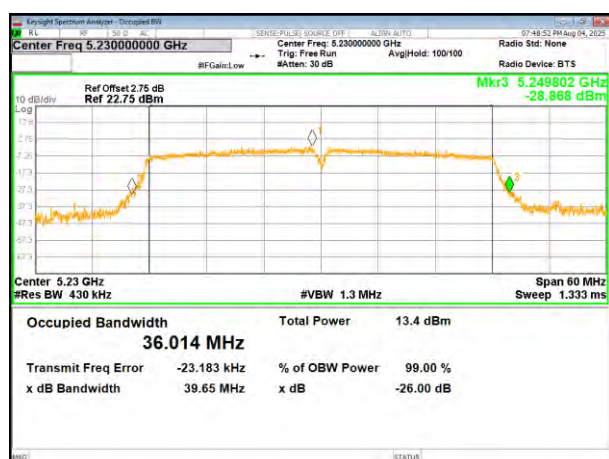
(802.11n40) plot on channel 38



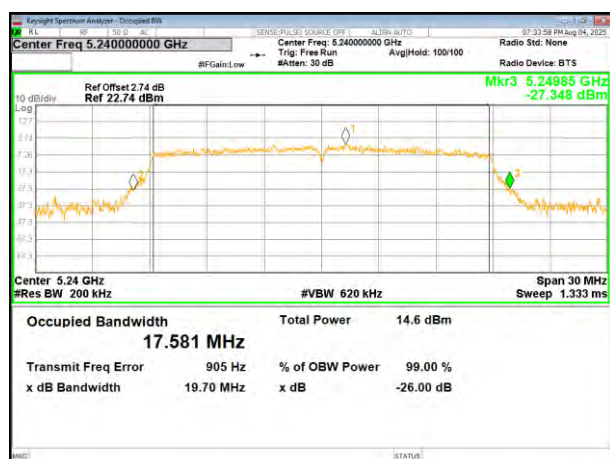
(802.11ac20) plot on channel 40



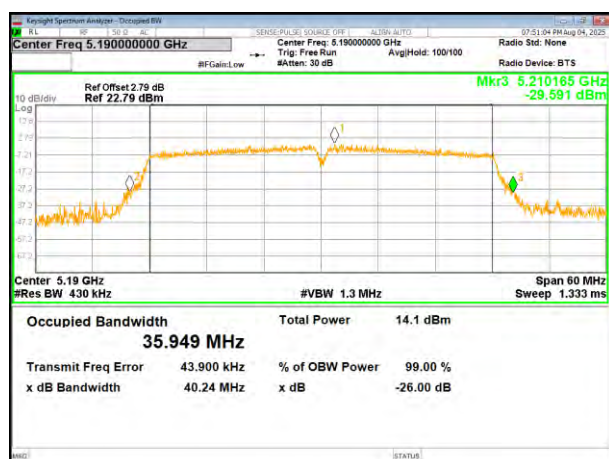
(802.11n40) plot on channel 46

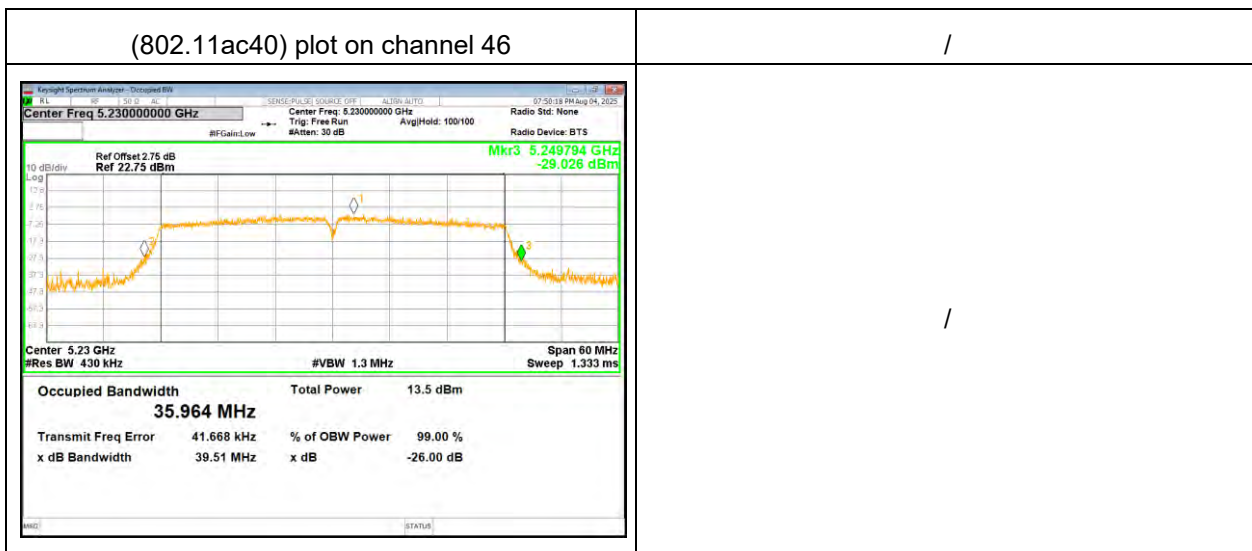


(802.11ac20) plot on channel 48



(802.11ac40) plot on channel 38







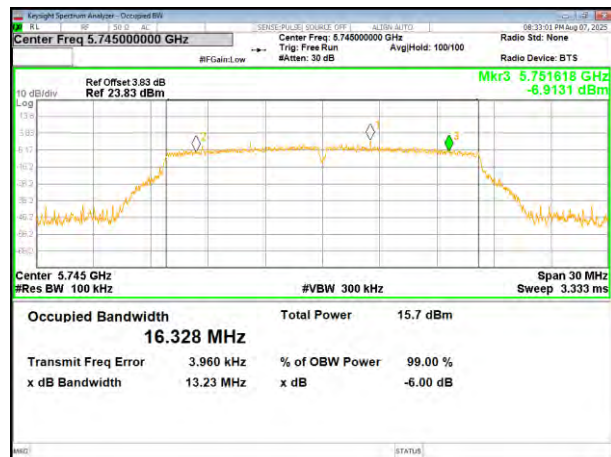
5745-5825MHz

Test CH	-6dB Channel Bandwidth (MHz)						Limit (KHz)	Result
	802.11a	802.11n 20	802.11ac 20	802.11n 40	802.11ac 40	802.11ac 80		
Lowest	13.23	14.96	15.07	35.09	33.87	--	>500	Pass
Middle	13.86	13.87	12.85	--	--	--		
Highest	12.34	15.99	15.03	33.74	27.57	--		

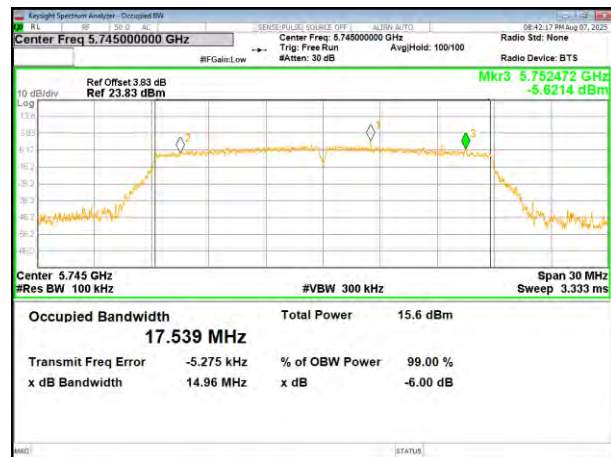
Remark: “---”is not applicable

Test plot -6dB Channel Bandwidth

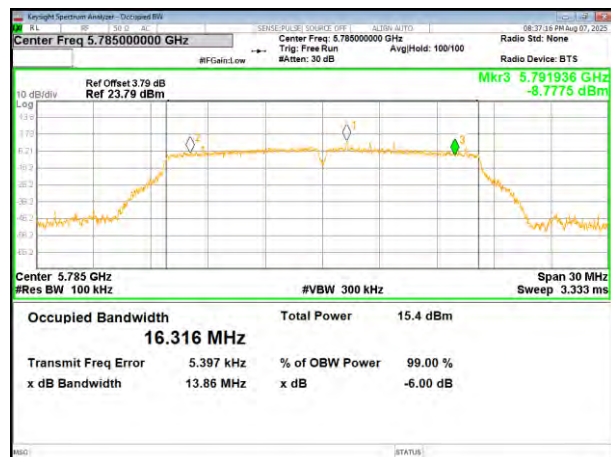
(802.11a) plot on channel 149



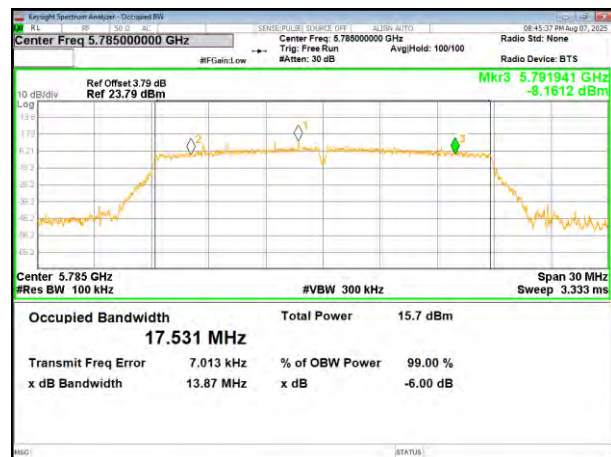
(802.11 n20) plot on channel 149



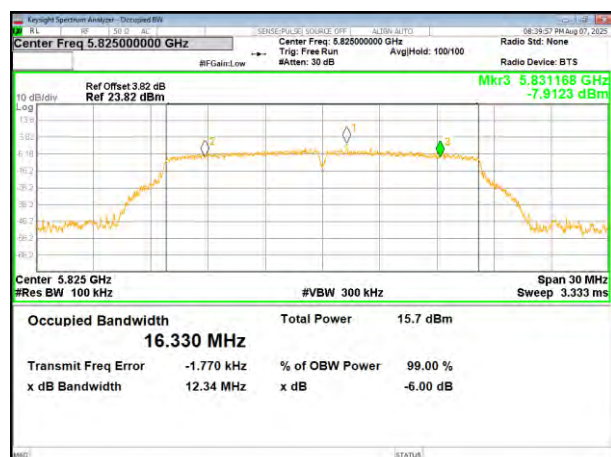
(802.11a) plot on channel 157



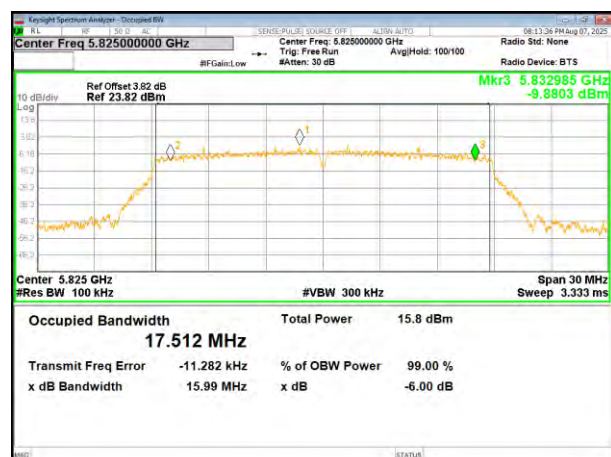
(802.11 n20) plot on channel 157



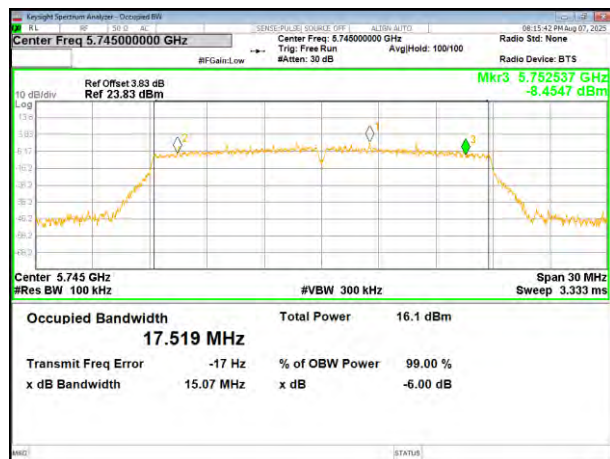
(802.11a) plot on channel 165



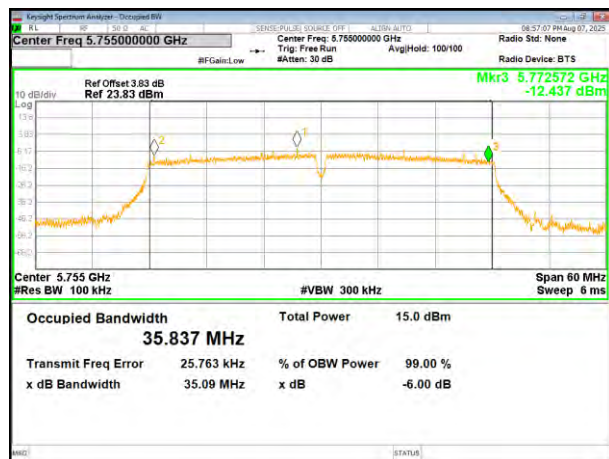
(802.11 n20) plot on channel 165



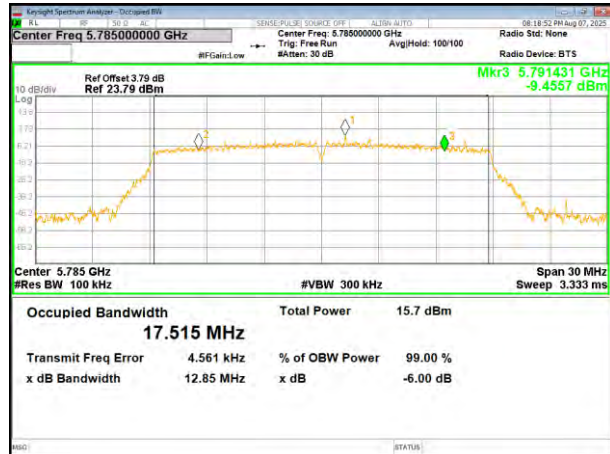
(802.11ac20) plot on channel 149



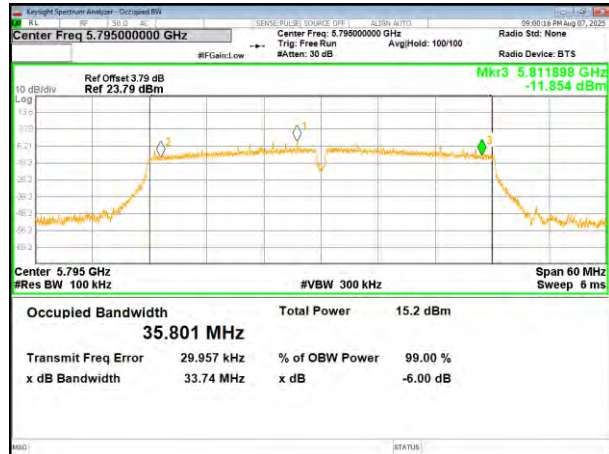
(802.11 n40) plot on channel 151



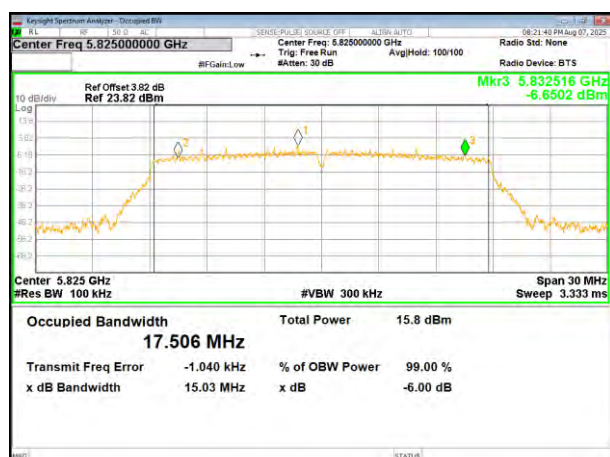
(802.11ac20) plot on channel 157



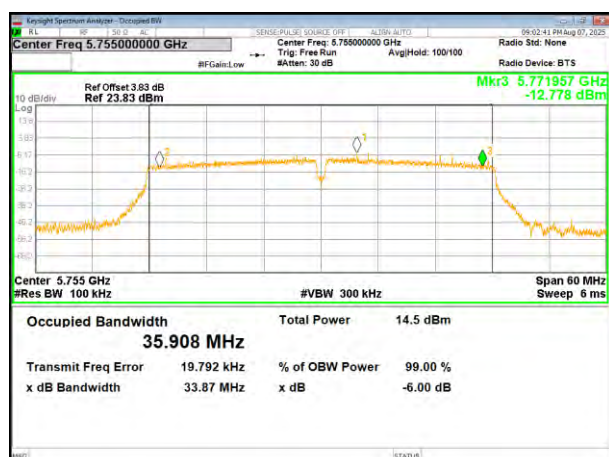
(802.11 n40) plot on channel 159



(802.11ac20) plot on channel 165

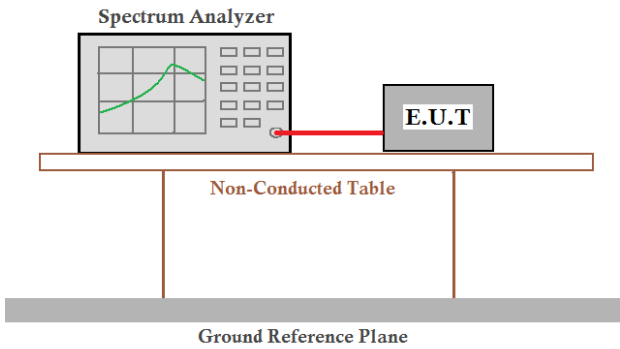


(802.11 ac40) plot on channel 151





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:	 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.: 22.6°C	Humid.: 61%RH
Test voltage:	DC 5V	
Test results:	Pass	

Measurement Result See next page



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	-0.235	0.280	0.045	11
	5200 MHz	-0.023	0.280	0.257	11
	5240 MHz	-0.699	0.280	-0.419	11
802.11 n20	5180 MHz	-2.581	0.300	-2.281	11
	5200 MHz	-2.383	0.300	-2.083	11
	5240 MHz	-2.790	0.300	-2.490	11
802.11 ac20	5180 MHz	-2.097	0.280	-1.817	11
	5200 MHz	-2.851	0.280	-2.571	11
	5240 MHz	-2.703	0.280	-2.423	11
802.11 n40	5190 MHz	-7.187	0.600	-6.587	11
	5230 MHz	-7.391	0.600	-6.791	11
802.11 ac40	5190 MHz	-6.992	0.680	-6.312	11
	5230 MHz	-7.196	0.680	-6.516	11

(802.11a) PSD plot on channel 36



(802.11n20) PSD plot on channel 36



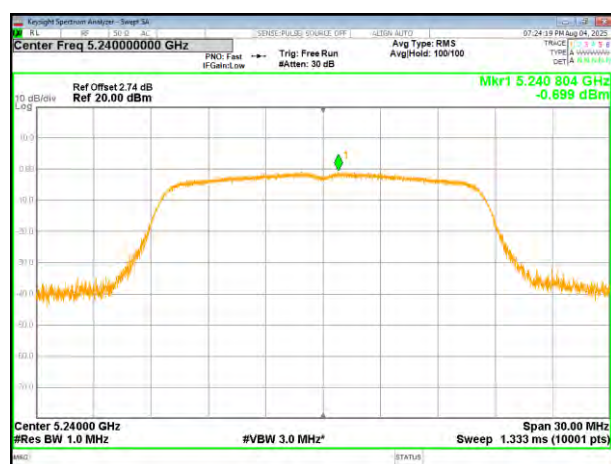
(802.11a) PSD plot on channel 40



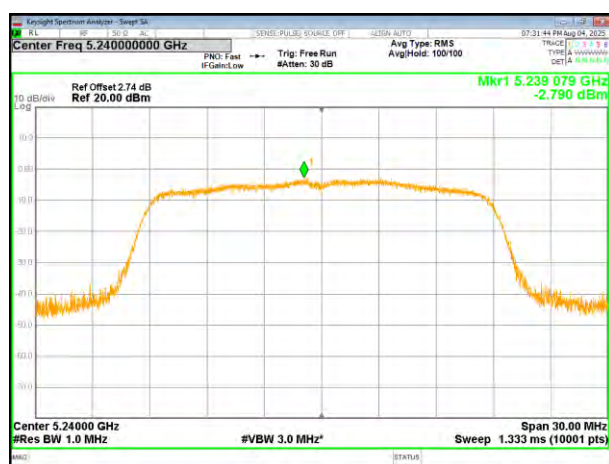
(802.11n20) PSD plot on channel 40



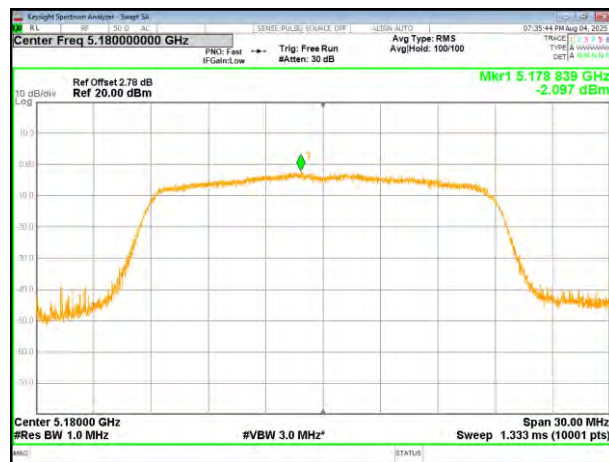
(802.11a) PSD plot on channel 48



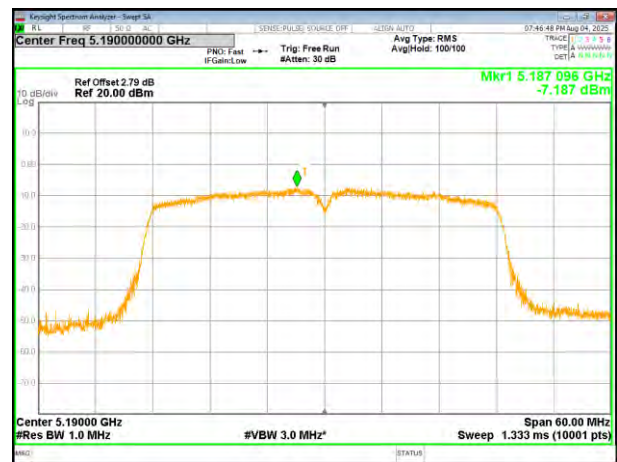
(802.11n20) PSD plot on channel 48



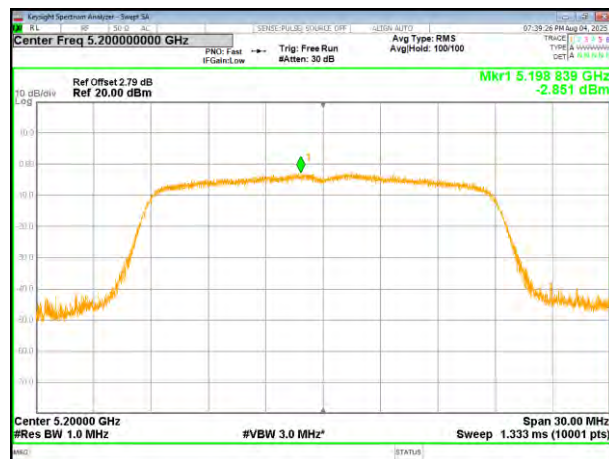
(802.11ac20) PSD plot on channel 36



(802.11n40) PSD plot on channel 38



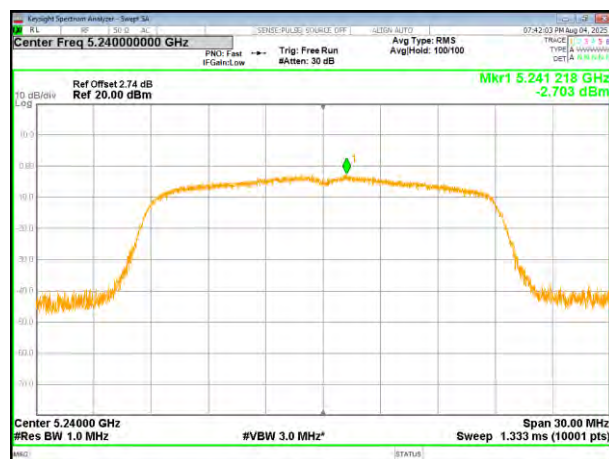
(802.11ac20) PSD plot on channel 40



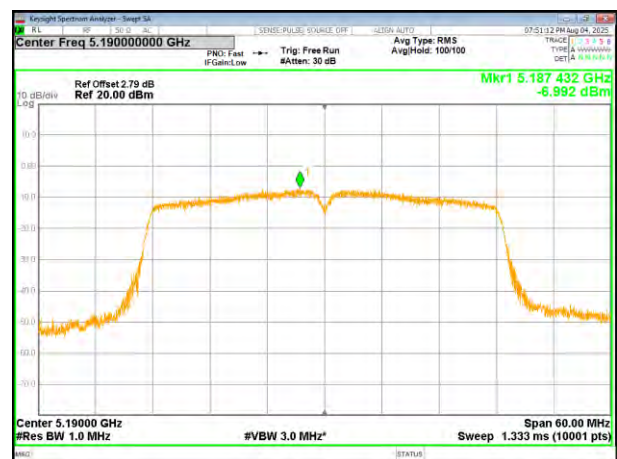
(802.11n40) PSD plot on channel 46

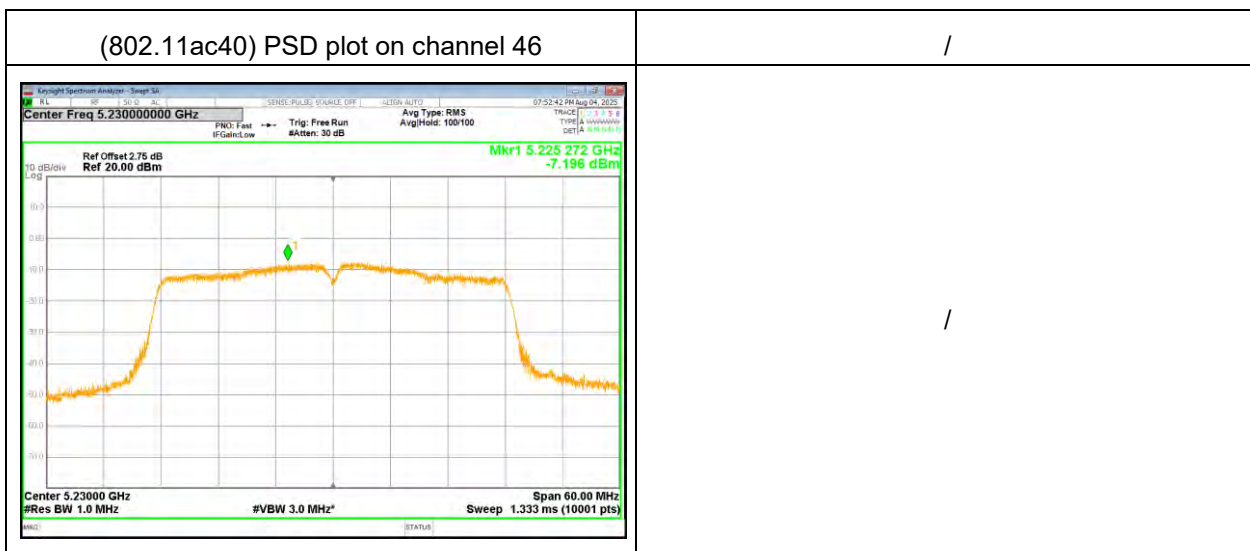


(802.11ac20) PSD plot on channel 48



(802.11ac40) PSD plot on channel 38





5745-5825MHz

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	-2.487	-2.573	0.310	-2.263	30
	5785 MHz	-3.180	-3.266	0.310	-2.956	30
	5825 MHz	-2.822	-2.908	0.310	-2.598	30
802.11 n20	5745 MHz	-3.036	-3.122	0.280	-2.842	30
	5785 MHz	-3.252	-3.338	0.280	-3.058	30
	5825 MHz	-3.207	-3.293	0.280	-3.013	30
802.11ac20	5745 MHz	-2.841	-2.927	0.260	-2.667	30
	5785 MHz	-3.211	-3.297	0.260	-3.037	30
	5825 MHz	-3.300	-3.386	0.260	-3.126	30
802.11 n40	5755 MHz	-7.497	-7.583	0.560	-7.023	30
	5795 MHz	-6.575	-6.661	0.560	-6.101	30
802.11ac40	5755 MHz	-7.465	-7.551	0.550	-7.001	30
	5795 MHz	-7.266	-7.352	0.550	-6.802	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



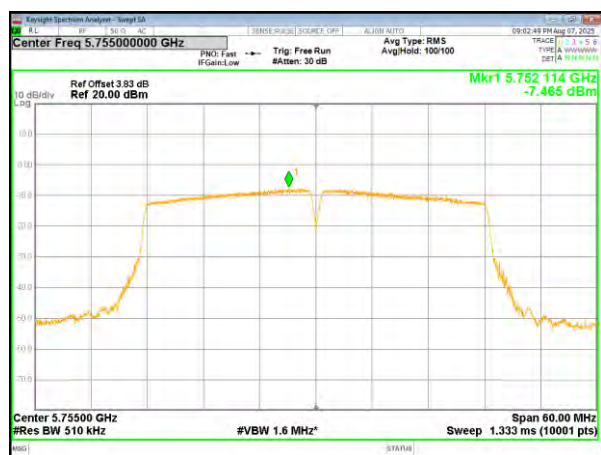
(802.11n40) PSD plot on channel 159



(802.11ac20) PSD plot on channel 165



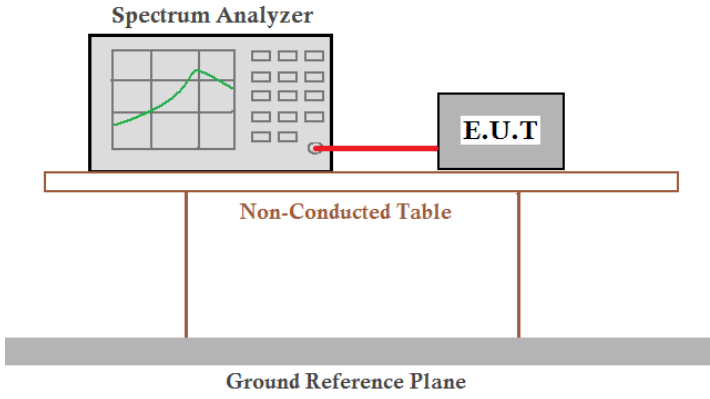
(802.11ac40) PSD plot on channel 151





4.7 Band edge

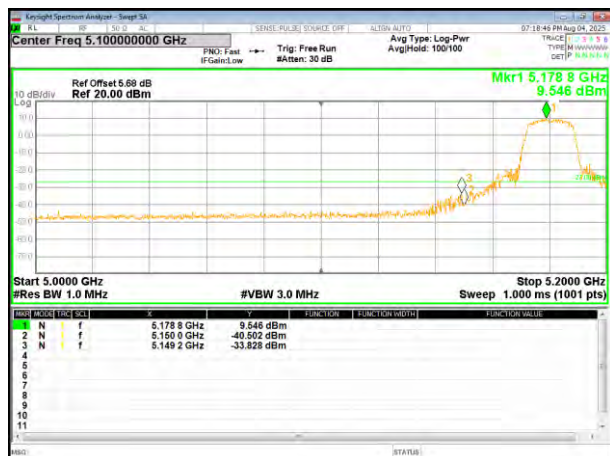
4.7.1 Conducted test Method

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, which 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.: 22.6°C	Humid.: 61%RH
Test voltage:	DC 5V	
Test results:	Pass	

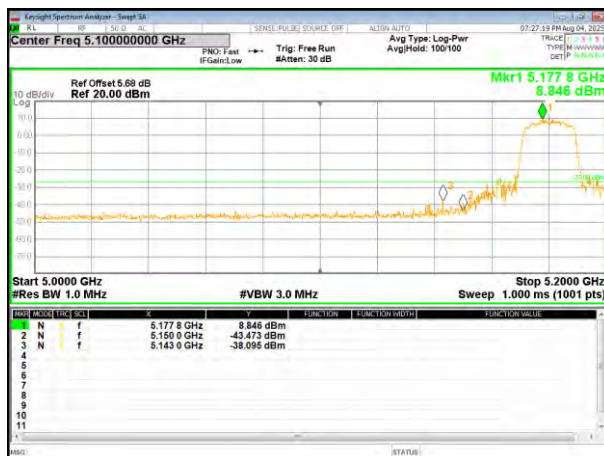


5.180~5.240 GHz

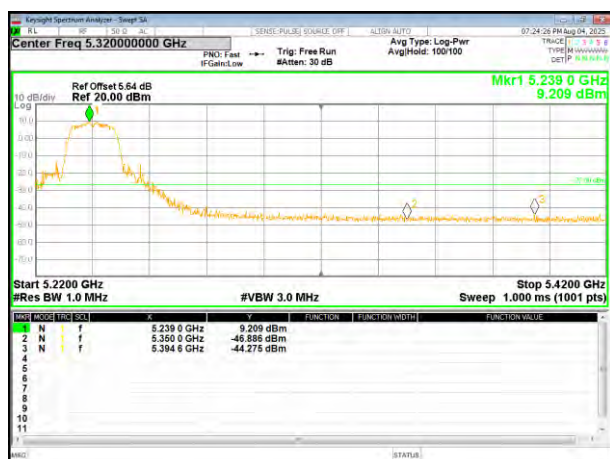
(802.11a) Band Edge, Left Side



(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

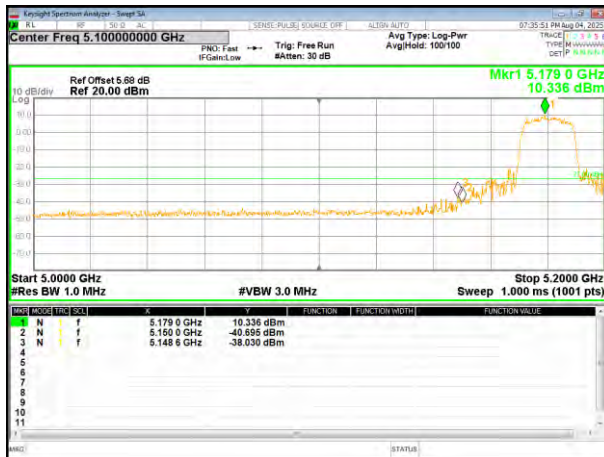


(802.11n20) Band Edge, Right Side



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



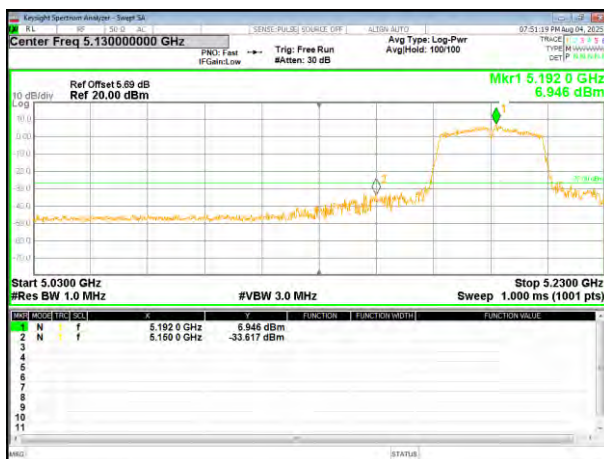
(802.11ac20) Band Edge, Right Side



(802.11n40) Band Edge, Right Side



(802.11ac40) Band Edge, Left Side



(802.11ac40) Band Edge, Right Side

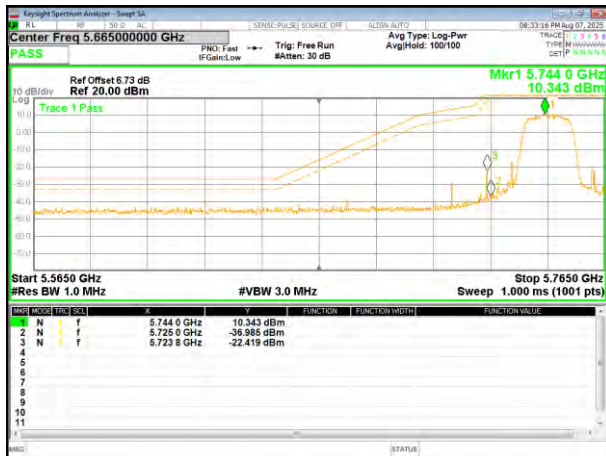


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

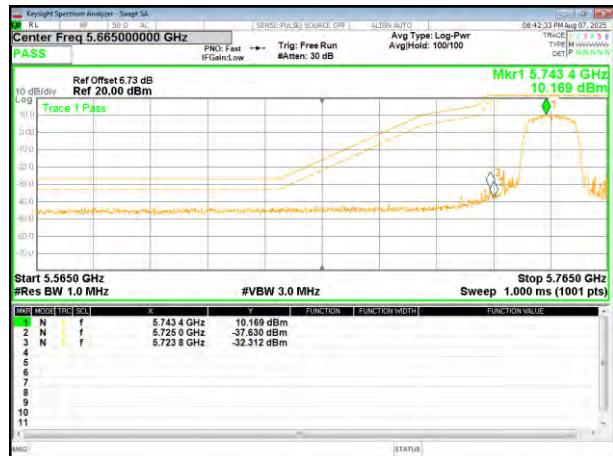


5.745~5.825 GHz

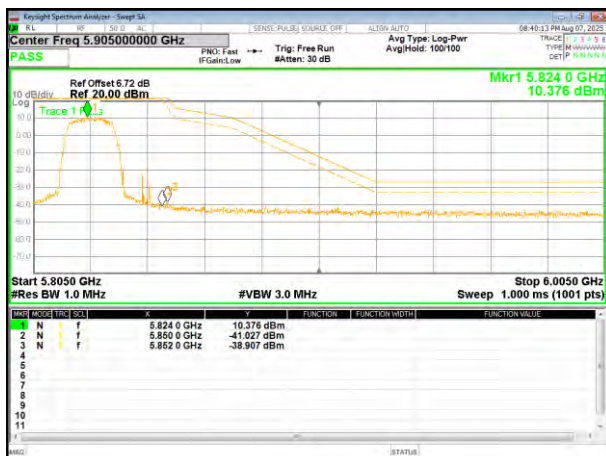
(802.11a) Band Edge, Left Side



(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

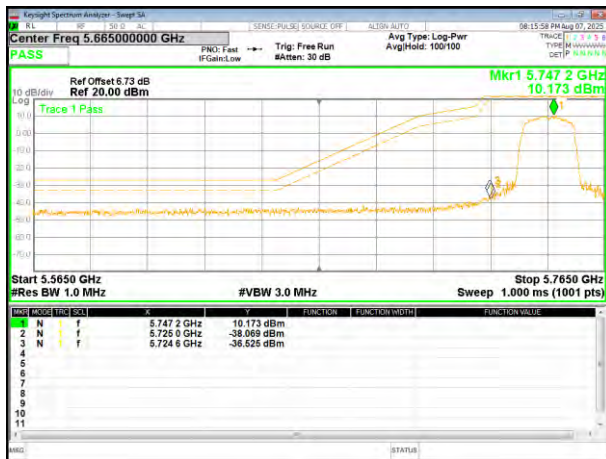


(802.11n20) Band Edge, Right Side

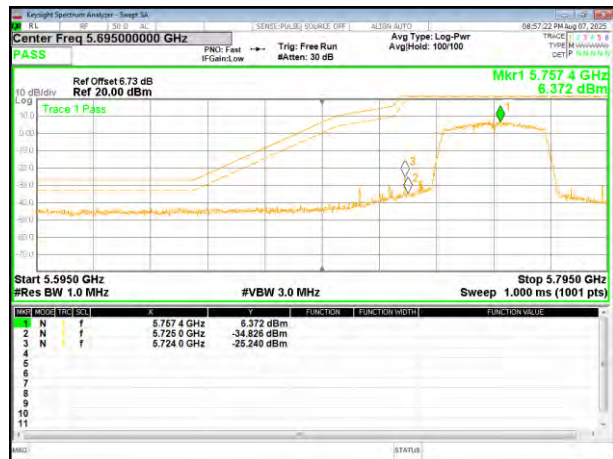


Remark: Antenna gain and cable loss data included in Offset.

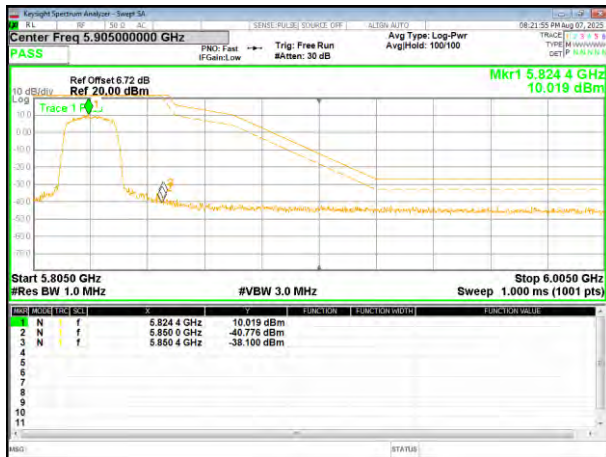
(802.11ac20) Band Edge, Left Side



(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side



(802.11n40) Band Edge, Right Side

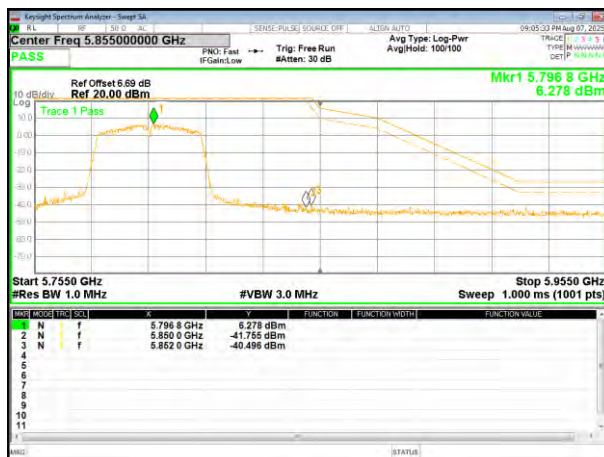


Remark: Antenna gain and cable loss data included in Offset.

(802.11ac40) Band Edge, Left Side



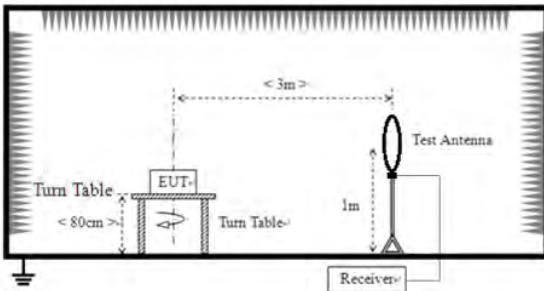
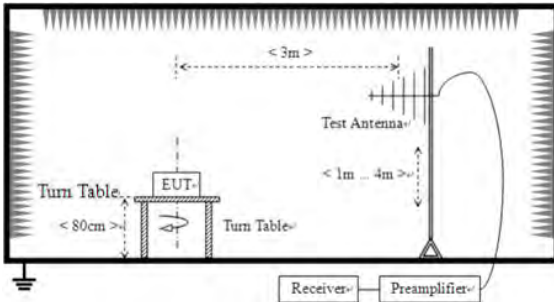
(802.11ac40) Band Edge, Right Side

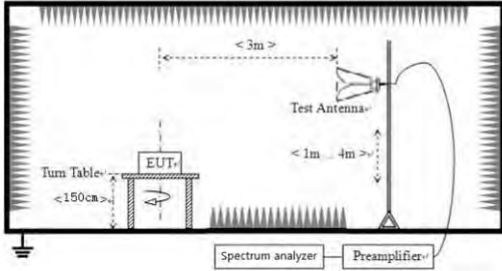


Remark: Antenna gain and cable loss data included in Offset.

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				
					
Test setup:	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:

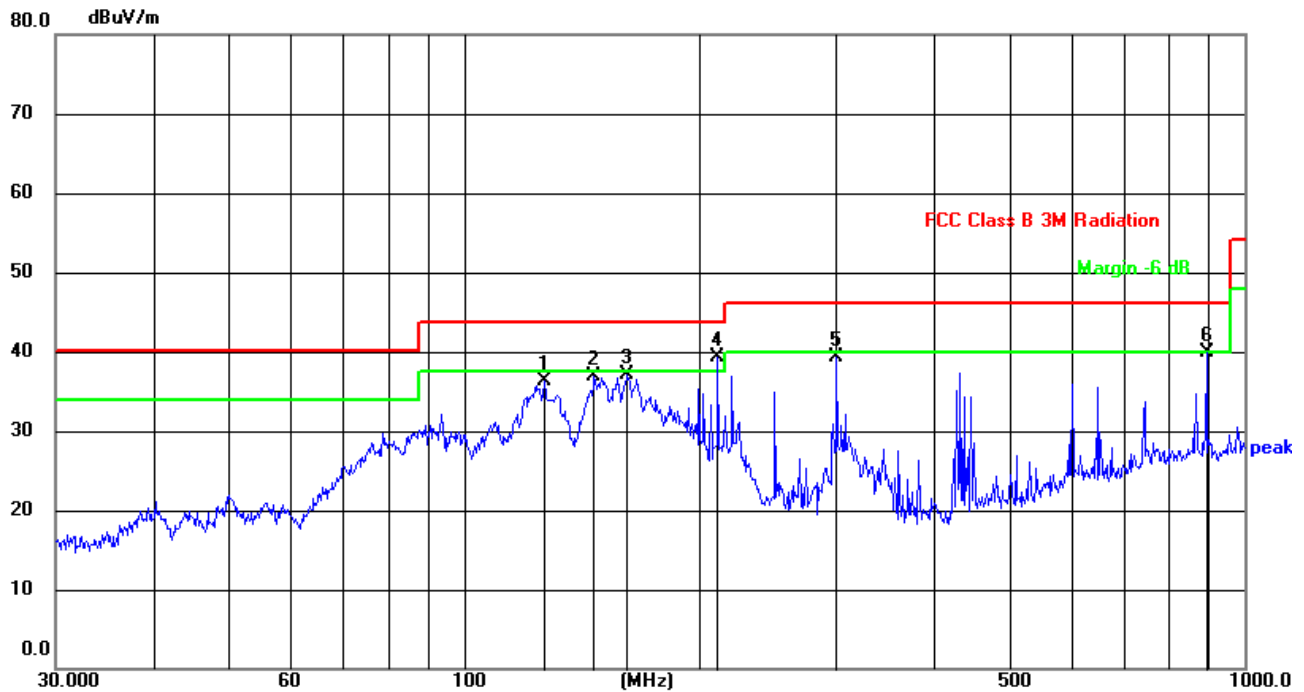
9 kHz ~ 30 MHz

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

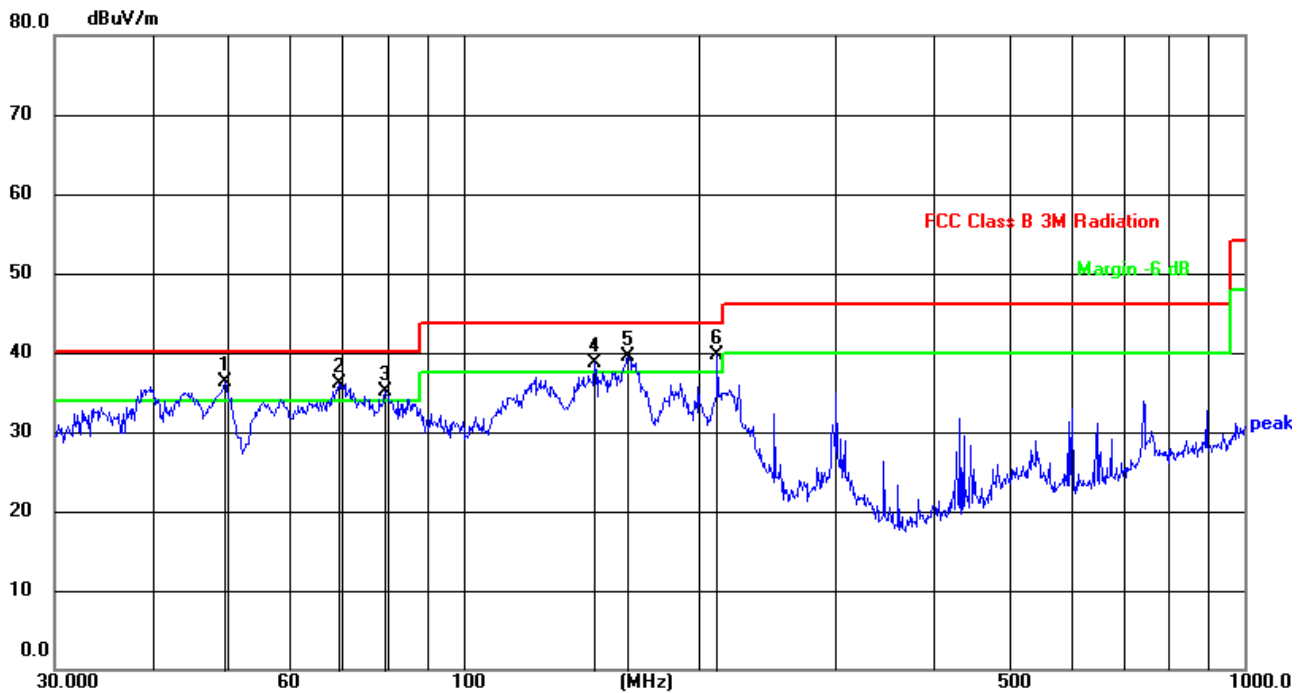
Temperature:	22.6℃	Relative Humidity:	61%RH
Pressure:	101.2kPa	Test Voltage :	DC 5V
Test Mode :	TX- 802.11ac20 (5200MHz)		

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	126.7723	55.30	-19.09	36.21	43.50	-7.29	QP
2	146.8875	55.54	-18.72	36.82	43.50	-6.68	QP
3	162.0413	55.76	-18.62	37.14	43.50	-6.36	QP
4	211.5263	57.81	-18.57	39.24	43.50	-4.26	QP
5	300.3672	57.95	-18.55	39.40	46.00	-6.60	QP
6	893.8565	46.47	-6.65	39.82	46.00	-6.18	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	49.5328	57.21	-20.98	36.23	40.00	-3.77	QP
2	69.3568	56.59	-20.54	36.05	40.00	-3.95	QP
3	79.5208	55.38	-20.31	35.07	40.00	-4.93	QP
4	147.4036	57.74	-18.99	38.75	43.50	-4.75	QP
5	162.6105	58.29	-18.77	39.52	43.50	-3.98	QP
6	211.5263	58.34	-18.55	39.79	43.50	-3.71	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 802.11n20 mode.



Above 1GHz:

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

Temperature:	22.6℃	Relative Humidity:	61%RH
Pressure:	101.2kPa	Test Voltage :	DC 5V
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	44.29	1.77	46.06	68.20	-22.14	PK
V	10360.00	39.23	1.77	41.00	54.00	-13.00	AV
V	15540.00	46.82	7.72	54.54	74.00	-19.46	PK
V	15540.00	35.17	7.72	42.89	54.00	-11.11	AV
V	20720.00	51.56	-5.73	45.83	68.20	-22.37	PK
V	20720.00	45.75	-5.73	40.02	54.00	-13.98	AV
V	25900.00	48.55	-2.89	45.66	68.20	-22.54	PK
V	25900.00	43.48	-2.89	40.59	54.00	-13.41	AV
V	31080.00	50.22	1.66	51.88	68.20	-16.32	PK
V	31080.00	43.94	1.66	45.60	54.00	-8.40	AV
V	36260.00	47.06	4.63	51.69	68.20	-16.51	PK
V	36260.00	40.70	4.63	45.33	54.00	-8.67	AV
H	10360.00	44.62	1.77	46.39	68.20	-21.81	PK
H	10360.00	39.40	1.77	41.17	54.00	-12.83	AV
H	15540.00	46.18	7.72	53.90	74.00	-20.10	PK
H	15540.00	35.29	7.72	43.01	54.00	-10.99	AV
H	20720.00	50.64	-5.73	44.91	68.20	-23.29	PK
H	20720.00	44.45	-5.73	38.72	54.00	-15.28	AV
H	25900.00	48.52	-2.89	45.63	68.20	-22.57	PK
H	25900.00	42.68	-2.89	39.79	54.00	-14.21	AV
H	31080.00	49.21	1.66	50.87	68.20	-17.33	PK
H	31080.00	43.53	1.66	45.19	54.00	-8.81	AV
H	36260.00	46.58	4.63	51.21	68.20	-16.99	PK
H	36260.00	41.12	4.63	45.75	54.00	-8.25	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	44.24	1.85	46.09	68.20	-22.11	PK
V	10400.00	39.22	1.85	41.07	54.00	-12.93	AV
V	15600.00	46.16	7.64	53.80	74.00	-20.20	PK
V	15600.00	34.51	7.64	42.15	54.00	-11.85	AV
V	20800.00	55.01	-5.67	49.34	68.20	-18.86	PK
V	20800.00	50.19	-5.67	44.52	54.00	-9.48	AV
V	26000.00	49.04	-2.85	46.19	68.20	-22.01	PK
V	26000.00	43.56	-2.85	40.71	54.00	-13.29	AV
V	31200.00	47.65	1.57	49.22	68.20	-18.98	PK
V	31200.00	43.58	1.57	45.15	54.00	-8.85	AV
V	36400.00	47.25	4.93	52.18	68.20	-16.02	PK
V	36400.00	42.02	4.93	46.95	54.00	-7.05	AV
H	10400.00	44.42	1.85	46.27	68.20	-21.93	PK
H	10400.00	39.65	1.85	41.50	54.00	-12.50	AV
H	15600.00	45.96	7.64	53.60	74.00	-20.40	PK
H	15600.00	34.75	7.64	42.39	54.00	-11.61	AV
H	20800.00	51.59	-5.67	45.92	68.20	-22.28	PK
H	20800.00	46.54	-5.67	40.87	54.00	-13.13	AV
H	26000.00	50.73	-2.85	47.88	68.20	-20.32	PK
H	26000.00	45.51	-2.85	42.66	54.00	-11.34	AV
H	31200.00	49.51	1.57	51.08	68.20	-17.12	PK
H	31200.00	43.76	1.57	45.33	54.00	-8.67	AV
H	36400.00	46.68	4.93	51.61	68.20	-16.59	PK
H	36400.00	41.85	4.93	46.78	54.00	-7.22	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	42.05	2.02	44.07	68.20	-24.13	PK
V	10480.00	36.75	2.02	38.77	54.00	-15.23	AV
V	15720.00	42.47	7.46	49.93	74.00	-24.07	PK
V	15720.00	32.20	7.46	39.66	54.00	-14.34	AV
V	20960.00	48.34	-5.56	42.78	68.20	-25.42	PK
V	20960.00	43.40	-5.56	37.84	54.00	-16.16	AV
V	26200.00	45.97	-2.50	43.47	68.20	-24.73	PK
V	26200.00	41.67	-2.50	39.17	54.00	-14.83	AV
V	31440.00	47.25	1.39	48.64	68.20	-19.56	PK
V	31440.00	42.50	1.39	43.89	54.00	-10.11	AV
V	36680.00	43.35	5.25	48.60	68.20	-19.60	PK
V	36680.00	38.92	5.25	44.17	54.00	-9.83	AV
H	10480.00	42.46	2.02	44.48	68.20	-23.72	PK
H	10480.00	37.65	2.02	39.67	54.00	-14.33	AV
H	15720.00	42.76	7.46	50.22	74.00	-23.78	PK
H	15720.00	32.26	7.46	39.72	54.00	-14.28	AV
H	20960.00	48.13	-5.56	42.57	68.20	-25.63	PK
H	20960.00	43.50	-5.56	37.94	54.00	-16.06	AV
H	26200.00	48.01	-2.50	45.51	68.20	-22.69	PK
H	26200.00	44.64	-2.50	42.14	54.00	-11.86	AV
H	31440.00	46.60	1.39	47.99	68.20	-20.21	PK
H	31440.00	41.77	1.39	43.16	54.00	-10.84	AV
H	36680.00	43.62	5.15	48.77	68.20	-19.43	PK
H	36680.00	38.62	5.15	43.77	54.00	-10.23	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:	22.6℃	Relative Humidity:	61%RH
Pressure:	101.2kPa	Test Voltage :	DC 5V
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	49.97	3.31	53.28	74.00	-20.72	PK
V	11490.00	39.30	3.31	42.61	54.00	-11.39	AV
V	17235.00	38.57	10.10	48.67	68.20	-19.53	PK
V	17235.00	33.25	10.10	43.35	54.00	-10.65	AV
V	22980.00	57.04	-4.61	52.43	74.00	-21.57	PK
V	22980.00	45.47	-4.61	40.86	54.00	-13.14	AV
V	28725.00	47.15	0.87	48.02	68.20	-20.18	PK
V	28725.00	42.51	0.87	43.38	54.00	-10.62	AV
V	34470.00	47.73	3.82	51.55	68.20	-16.65	PK
V	34470.00	42.04	3.82	45.86	54.00	-8.14	AV
H	11490.00	50.67	3.31	53.98	74.00	-20.02	PK
H	11490.00	39.50	3.31	42.81	54.00	-11.19	AV
H	17235.00	37.63	10.10	47.73	68.20	-20.47	PK
H	17235.00	32.47	10.10	42.57	54.00	-11.43	AV
H	22980.00	56.59	-4.61	51.98	74.00	-22.02	PK
H	22980.00	45.23	-4.61	40.62	54.00	-13.38	AV
H	28725.00	49.60	0.87	50.47	68.20	-17.73	PK
H	28725.00	45.09	0.87	45.96	54.00	-8.04	AV
H	34470.00	48.26	3.82	52.08	68.20	-16.12	PK
H	34470.00	43.43	3.82	47.25	54.00	-6.75	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	49.25	3.34	52.59	74.00	-21.41	PK
V	11570.00	38.53	3.34	41.87	54.00	-12.13	AV
V	17355.00	36.70	10.52	47.22	68.20	-20.98	PK
V	17355.00	31.78	10.52	42.30	54.00	-11.70	AV
V	23140.00	56.13	-4.66	51.47	74.00	-22.53	PK
V	23140.00	45.38	-4.66	40.72	54.00	-13.28	AV
V	28925.00	48.61	1.36	49.97	68.20	-18.23	PK
V	28925.00	43.45	1.36	44.81	54.00	-9.19	AV
V	34710.00	48.16	3.95	52.11	68.20	-16.09	PK
V	34710.00	42.62	3.95	46.57	54.00	-7.43	AV
H	11570.00	50.36	3.34	53.70	74.00	-20.30	PK
H	11570.00	39.64	3.34	42.98	54.00	-11.02	AV
H	17355.00	35.80	10.52	46.32	68.20	-21.88	PK
H	17355.00	32.15	10.52	42.67	54.00	-11.33	AV
H	23140.00	56.71	-4.66	52.05	74.00	-21.95	PK
H	23140.00	45.22	-4.66	40.56	54.00	-13.44	AV
H	28925.00	49.43	1.36	50.79	68.20	-17.41	PK
H	28925.00	44.81	1.36	46.17	54.00	-7.83	AV
H	34710.00	48.78	3.95	52.73	68.20	-15.47	PK
H	34710.00	42.99	3.95	46.94	54.00	-7.06	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.

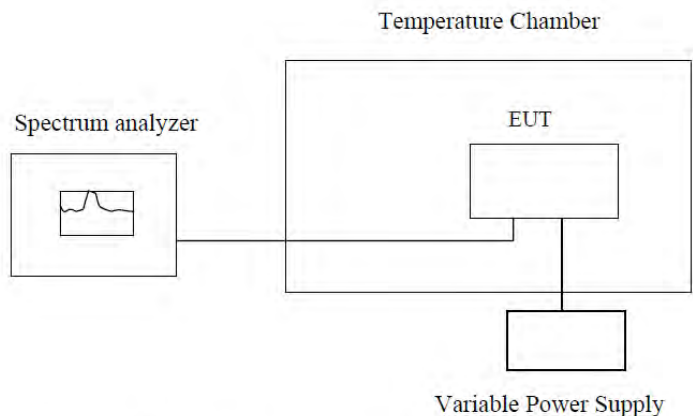


Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detect or Type
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
Low Channel:5825MHz							
V	11650.00	47.19	3.36	50.55	74.00	-23.45	PK
V	11650.00	36.56	3.36	39.92	54.00	-14.08	AV
V	17475.00	34.55	10.93	45.48	68.20	-22.72	PK
V	17475.00	30.69	10.93	41.62	54.00	-12.38	AV
V	23300.00	48.78	-4.77	44.01	68.20	-24.19	PK
V	23300.00	44.14	-4.77	39.37	54.00	-14.63	AV
V	29125.00	46.31	1.65	47.96	68.20	-20.24	PK
V	29125.00	40.80	1.65	42.45	54.00	-11.55	AV
V	34950.00	44.52	4.09	48.61	68.20	-19.59	PK
V	34950.00	40.13	4.09	44.22	54.00	-9.78	AV
H	11650.00	47.60	3.36	50.96	74.00	-23.04	PK
H	11650.00	37.10	3.36	40.46	54.00	-13.54	AV
H	17475.00	33.92	10.93	44.85	68.20	-23.35	PK
H	17475.00	28.84	10.93	39.77	54.00	-14.23	AV
H	23300.00	48.34	-4.77	43.57	68.20	-24.63	PK
H	23300.00	43.56	-4.77	38.79	54.00	-15.21	AV
H	29125.00	45.15	1.65	46.80	68.20	-21.40	PK
H	29125.00	41.82	1.65	43.47	54.00	-10.53	AV
H	34950.00	45.51	4.09	49.60	68.20	-18.60	PK
H	34950.00	40.32	4.09	44.41	54.00	-9.59	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:	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 5V					
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	5179.988	5180.001	5179.980
	5190	5189.993	5189.989	5189.992	5190.011
	5200	5199.988	5199.980	5200.000	5200.036
	5220	5219.989	5219.980	5220.013	5220.011
	5230	5229.987	5230.001	5229.991	5230.039
	5240	5240.000	5239.979	5240.009	5240.027
-20	5180	5179.949	5179.988	5179.989	5180.023
	5190	5189.979	5189.989	5190.000	5190.019
	5200	5199.974	5199.980	5199.991	5200.021
	5220	5219.979	5219.980	5219.999	5220.037
	5230	5229.987	5230.001	5230.007	5230.030
	5240	5239.995	5239.979	5239.989	5240.038
-10	5180	5179.987	5179.988	5180.001	5179.987
	5190	5189.988	5189.989	5189.992	5190.018
	5200	5199.979	5199.980	5200.000	5200.023
	5220	5219.979	5219.980	5220.013	5220.018
	5230	5230.000	5230.001	5229.991	5230.026
	5240	5239.978	5239.979	5240.009	5240.034
0	5180	5179.939	5179.991	5180.007	5180.025
	5190	5189.935	5189.987	5189.997	5190.026
	5200	5199.930	5199.982	5200.007	5200.037
	5220	5219.931	5219.993	5220.003	5220.023
	5230	5229.929	5229.997	5230.009	5230.040
	5240	5239.992	5239.997	5240.010	5240.025
10	5180	5179.976	5179.989	5180.001	5180.028
	5190	5189.987	5189.980	5189.992	5190.029
	5200	5199.978	5199.988	5200.000	5200.025
	5220	5219.986	5220.001	5220.013	5220.036
	5230	5229.994	5229.979	5229.991	5230.021
	5240	5239.976	5239.997	5240.009	5240.019
20	5180	5179.997	5179.988	5180.001	5179.980
	5190	5189.993	5189.989	5189.992	5190.011
	5200	5199.988	5199.980	5200.000	5200.036
	5220	5219.989	5219.980	5220.013	5220.011
	5230	5229.987	5230.001	5229.991	5230.039
	5240	5239.960	5239.979	5240.009	5240.027
30	5180	5179.927	5179.986	5180.000	5180.029



	5190	5189.923	5190.000	5189.831	5190.034
	5200	5199.918	5199.983	5199.999	5200.019
	5220	5219.919	5220.001	5220.002	5220.031
	5230	5229.916	5229.994	5229.999	5230.026
	5240	5239.889	5240.002	5240.003	5240.031
40	5180	5179.987	5179.977	5180.001	5180.018
	5190	5189.988	5189.988	5189.992	5190.020
	5200	5199.918	5199.988	5200.009	5200.019
	5220	5219.919	5219.993	5220.002	5220.031
	5230	5230.000	5229.995	5229.991	5230.032
	5240	5239.978	5239.977	5240.009	5240.010
50	5180	5179.949	5179.988	5179.989	5180.033
	5190	5189.979	5189.989	5190.000	5190.019
	5200	5199.994	5199.980	5199.991	5200.031
	5220	5219.919	5219.995	5220.008	5220.032
	5230	5229.916	5230.002	5230.003	5230.030
	5240	5239.989	5240.000	5239.997	5240.031



Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
DC 4.25V	5180	5179.913	5180.001	5179.999	5180.024
	5190	5189.989	5189.991	5190.000	5190.023
	5200	5199.987	5199.993	5200.001	5200.027
	5220	5220.000	5219.986	5220.001	5220.026
	5230	5229.977	5229.991	5230.000	5300.030
	5240	5239.985	5240.000	5240.009	5240.027
DC 5V	5180	5179.927	5179.996	5180.000	5180.029
	5190	5189.983	5189.990	5190.001	5190.014
	5200	5199.988	5199.978	5199.999	5200.019
	5220	5219.919	5220.001	5220.002	5220.031
	5230	5229.916	5229.993	5229.999	5230.023
	5240	5239.989	5240.000	5240.003	5240.031
DC 5.75V	5180	5179.997	5179.998	5179.989	5180.007
	5190	5189.993	5189.994	5190.000	5190.019
	5200	5199.988	5199.989	5199.991	5200.009
	5220	5219.989	5219.990	5219.999	5220.018
	5230	5229.987	5229.988	5230.004	5230.041
	5240	5239.990	5239.991	5239.989	5240.008



Frequency stability versus Temp.					
Power Supply: DC 5V					
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	5744.999	5744.991	5745.002	5745.034
	5755	5754.987	5754.987	5755.006	5755.016
	5785	5784.988	5784.989	5785.010	5785.016
	5795	5794.979	5795.000	5794.993	5795.027
	5825	5824.990	5824.981	5824.989	5825.031
-20	5745	5744.893	5744.971	5745.003	5745.017
	5755	5754.918	5754.987	5755.005	5755.043
	5785	5784.907	5784.989	5785.000	5785.023
	5795	5794.985	5795.000	5794.991	5795.012
	5825	5824.990	5824.981	5825.000	5825.027
-10	5745	5744.979	5744.982	5744.987	5745.031
	5755	5754.986	5754.989	5755.012	5755.026
	5785	5784.970	5784.982	5785.002	5785.031
	5795	5794.977	5794.978	5795.000	5795.034
	5825	5824.986	5824.981	5825.010	5825.036
0	5745	5744.973	5744.981	5744.993	5745.036
	5755	5754.983	5754.988	5755.000	5755.035
	5785	5784.980	5784.972	5784.993	5785.023
	5795	5794.976	5794.979	5794.989	5795.041
	5825	5824.974	5824.988	5824.992	5825.034
10	5745	5744.970	5744.992	5744.987	5745.027
	5755	5754.985	5754.994	5755.012	5755.041
	5785	5784.987	5784.989	5785.002	5785.013
	5795	5794.997	5794.980	5795.000	5795.007
	5825	5824.979	5824.989	5825.010	5825.042
20	5745	5744.990	5744.981	5745.003	5745.016
	5755	5754.992	5754.998	5755.007	5755.035
	5785	5784.976	5784.981	5784.989	5785.042
	5795	5794.970	5794.998	5794.983	5795.034
	5825	5824.996	5824.996	5824.953	5825.044
30	5745	5744.969	5744.992	5744.987	5745.035
	5755	5754.985	5754.994	5755.012	5755.041
	5785	5784.987	5784.989	5785.002	5785.013
	5795	5794.998	5794.980	5795.000	5795.007
	5825	5824.979	5824.989	5825.010	5825.042
40	5745	5744.980	5744.981	5744.987	5745.011
	5755	5754.987	5754.998	5755.012	5755.036
	5785	5784.971	5784.981	5785.002	5785.026
	5795	5794.978	5794.998	5795.000	5795.024
	5825	5824.997	5824.996	5825.010	5825.035
50	5745	5744.974	5744.981	5744.992	5745.017
	5755	5754.999	5754.998	5754.999	5755.024
	5785	5784.989	5784.981	5784.983	5785.017
	5795	5794.987	5794.998	5794.990	5795.013
	5825	5824.997	5824.996	5824.919	5825.017



Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
DC 4.25V	5745	5744.989	5744.991	5745.003	5745.031
	5755	5754.985	5754.988	5755.009	5755.036
	5785	5784.987	5784.972	5784.992	5785.026
	5795	5794.998	5794.979	5795.010	5795.024
	5825	5824.979	5824.998	5825.007	5825.035
DC 5V	5745	5744.969	5744.992	5744.987	5745.027
	5755	5754.985	5754.994	5755.012	5755.041
	5785	5784.987	5784.989	5785.002	5785.013
	5795	5794.994	5794.980	5795.000	5795.007
	5825	5824.979	5824.989	5825.010	5825.042
DC 5.75V	5745	5744.899	5744.989	5745.003	5745.044
	5755	5754.986	5755.001	5755.007	5755.032
	5785	5784.998	5785.985	5784.989	5785.038
	5795	5794.997	5794.980	5795.000	5795.007
	5825	5824.979	5824.989	5825.010	5825.042



5 Test Setup Photo

Reference to the file No.: ET-25072670SP for details.

6 EUT Constructional Details

Reference to the file No.: ET-25072670EP and ET-25072670IP for details.

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