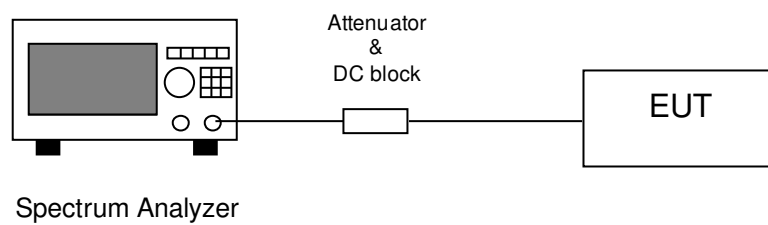


4.4 Test diagram



TEST REPORT

4.5 Test results

Temperature (°C) :	27
Relative Humidity (%) :	61
Test date :	2021/8/11

Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Result
802.11a Chain0	36	5180		26.58	N/A	
	44	5220		25.76		
	48	5240		30.76		
	149	5745	16.04		>0.5	Pass
	157	5785	14.41			Pass
	165	5825	16.34			Pass
802.11a Chain1	36	5180		26.34	N/A	
	44	5220		24.38		
	48	5240		27.36		
	149	5745	16.26		>0.5	Pass
	157	5785	16.26			Pass
	165	5825	15.66			Pass
802.11ac(VHT20) Chain0	36	5180		23.20	N/A	
	44	5220		23.88		
	48	5240		22.54		
	149	5745	17.32		>0.5	Pass
	157	5785	17.64			Pass
	165	5825	17.54			Pass
802.11ac(VHT20) Chain1	36	5180		22.06	N/A	
	44	5220		21.48		
	48	5240		26.34		
	149	5745	17.60		>0.5	Pass
	157	5785	17.56			Pass
	165	5825	17.55			Pass

TEST REPORT

Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Result
802.11ac(VHT40) Chain0	38	5190		40.76	N/A	
	46	5230		39.72		
	151	5755	36.33		>0.5	Pass
	159	5795	36.26			Pass
802.11ac(VHT40) Chain1	38	5190		39.24	N/A	
	46	5230		39.64		
	151	5755	36.33		>0.5	Pass
	159	5795	36.08			Pass
802.11ac(VHT80) Chain0	42	5210		81.44	N/A	
	155	5775	76.30		>0.5	Pass
802.11ac(VHT80) Chain1	42	5210		80.80	N/A	
	155	5775	76.34		>0.5	Pass

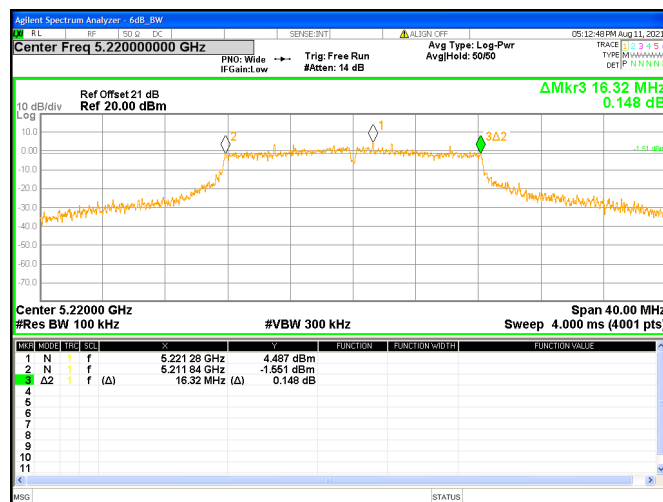
TEST REPORT

Mode	Channel	Frequency (MHz)	Data rate (Mbps)	99% Bandwidth (MHz)	Frequency _Lower (MHz)	Frequency _Upper (MHz)	Lower Limit (MHz)	Upper Limit (MHz)	Result
802.11a Chain0	36	5180	6	17.38	-	-			
	44	5220		17.46	-	-			
	48	5240		17.93	-	5249.32		5250	Pass
	149	5745		17.71	5736.36	-	5725		Pass
	157	5785		17.73	-	-			
	165	5825		17.14	-	-			
802.11a Chain1	36	5180	6	17.32	-	-			
	44	5220		17.31	-	-			
	48	5240		18.12	-	5249.32		5250	Pass
	149	5745		17.53	5736.22	-	5725		Pass
	157	5785		17.17	-	-			
	165	5825		21.25	-	-			
802.11ac (VHT20) Chain0	36	5180	6.5	18.23	-	-			
	44	5220		18.17	-	-			
	48	5240		18.22	-	5249.20		5250	Pass
	149	5745		18.19	5735.90	-	5725		Pass
	157	5785		18.27	-	-			
	165	5825		18.26	-	-			
802.11ac (VHT20) Chain1	36	5180	6.5	18.08	-	-			
	44	5220		18.12	-	-			
	48	5240		18.09	-	5249.10		5250	Pass
	149	5745		18.16	5735.90	-	5725		Pass
	157	5785		18.16	-	-			
	165	5825		18.21	-	-			
802.11ac (VHT40) Chain0	38	5190	13.5	36.51	-	-			
	46	5230		36.59	-	5248.32		5250	Pass
	151	5755		36.51	5736.64	-	5725		Pass
	159	5795		36.43	-	-			
802.11ac (VHT40) Chain1	38	5190	13.5	36.44	-	-			
	46	5230		36.58	-	5248.32		5250	Pass
	151	5755		36.58	5736.60	-	5725		Pass
	159	5795		36.52	-	-			
802.11ac (VHT80) Chain0	42	5210	29.3	76.13	-	5248.16		5250	Pass
	155	5775		76.06	5736.60	-	5725		Pass
802.11ac (VHT80) Chain1	42	5210	29.3	76.07	-	5248.16		5250	Pass
	155	5775		76.10	5736.60	-	5725		Pass

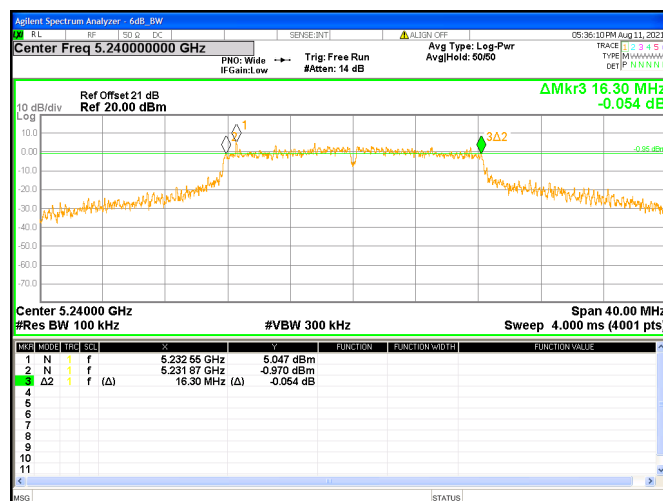
Chain0 : 6dB Bandwidth @ 802.11a Mode Ch36



Chain0 : 6dB Bandwidth @ 802.11a Mode Ch44



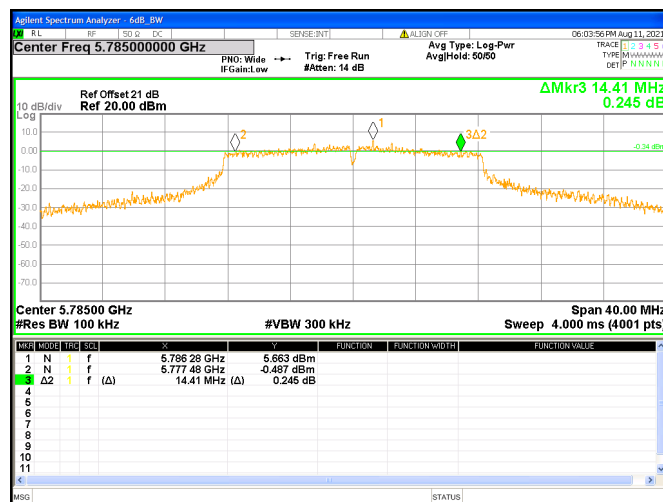
Chain0 : 6dB Bandwidth @ 802.11a Mode Ch48



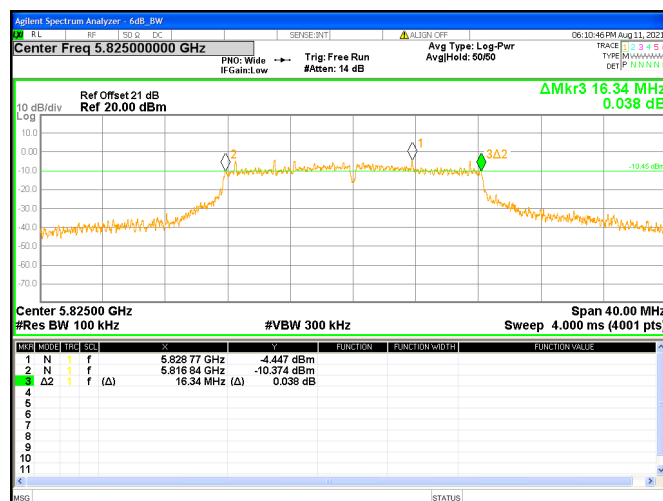
Chain0 : 6dB Bandwidth @ 802.11a Mode Ch149



Chain0 : 6dB Bandwidth @ 802.11a Mode Ch157



Chain0 : 6dB Bandwidth @ 802.11a Mode Ch165



Chain1 : 6dB Bandwidth @ 802.11a Mode Ch36



Chain1 : 6dB Bandwidth @ 802.11a Mode Ch44



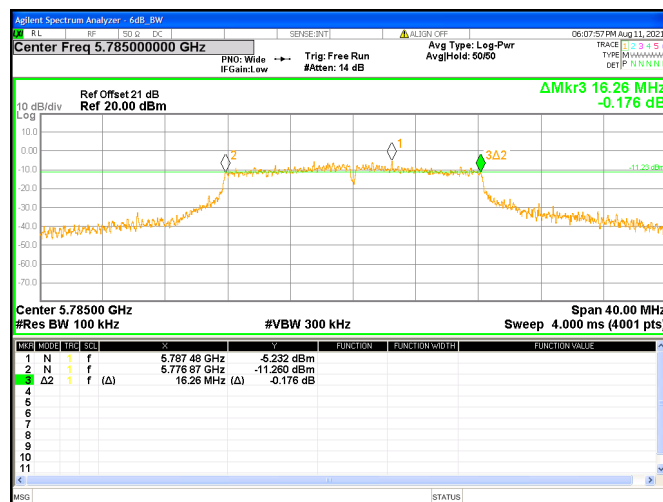
Chain1 : 6dB Bandwidth @ 802.11a Mode Ch48



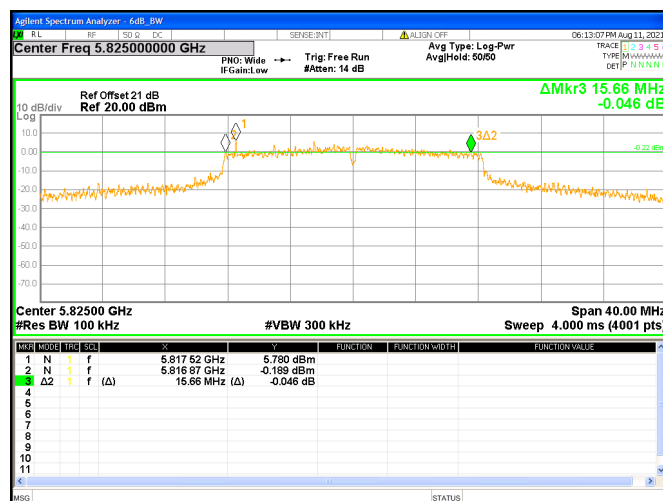
Chain1 : 6dB Bandwidth @ 802.11a Mode Ch149



Chain1 : 6dB Bandwidth @ 802.11a Mode Ch157



Chain1 : 6dB Bandwidth @ 802.11a Mode Ch165



Chain0 : 6dB Bandwidth @ 802.11ac(VHT20) Mode Ch36



Chain0 : 6dB Bandwidth @ 802.11ac(VHT20) Mode Ch44



Chain0 : 6dB Bandwidth @ 802.11ac(VHT20) Mode Ch48



Chain0 : 6dB Bandwidth @ 802.11ac(VHT20) Mode Ch149



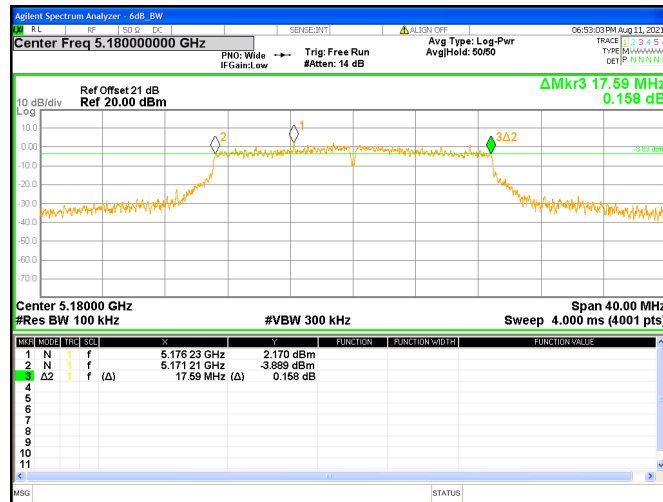
Chain0 : 6dB Bandwidth @ 802.11ac(VHT20) Mode Ch157



Chain0 : 6dB Bandwidth @ 802.11ac(VHT20) Mode Ch165



Chain1 : 6dB Bandwidth @ 802.11ac(VHT20) Mode Ch36



Chain1 : 6dB Bandwidth @ 802.11ac(VHT20) Mode Ch44



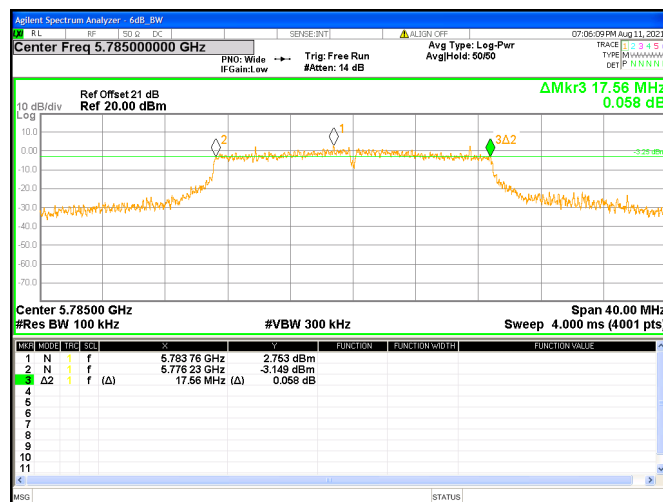
Chain1 : 6dB Bandwidth @ 802.11ac(VHT20) Mode Ch48



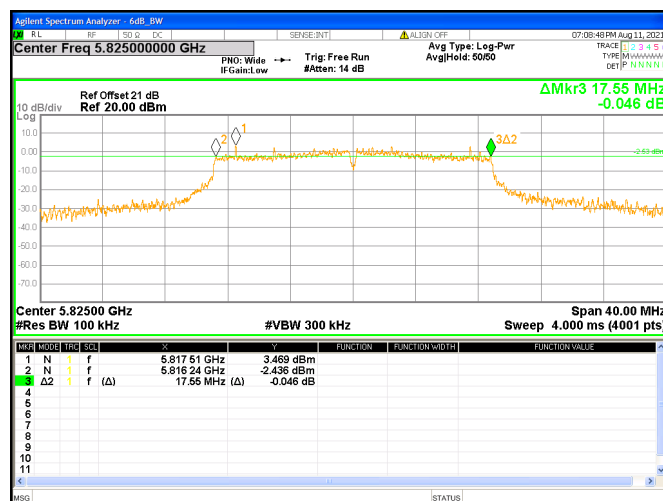
Chain1 : 6dB Bandwidth @ 802.11ac(VHT20) Mode Ch149



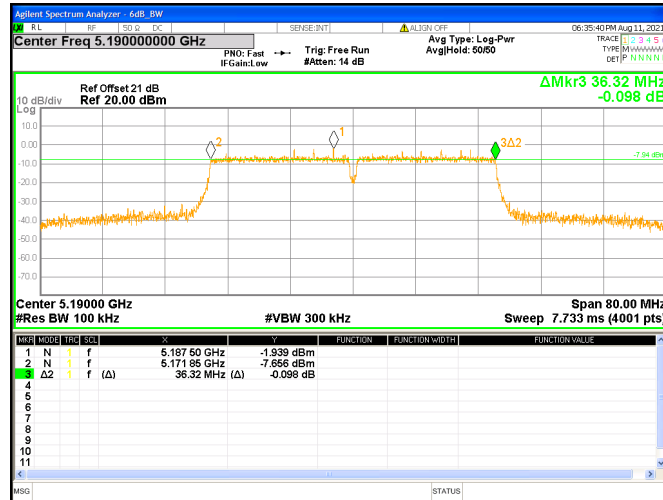
Chain1 : 6dB Bandwidth @ 802.11ac(VHT20) Mode Ch157



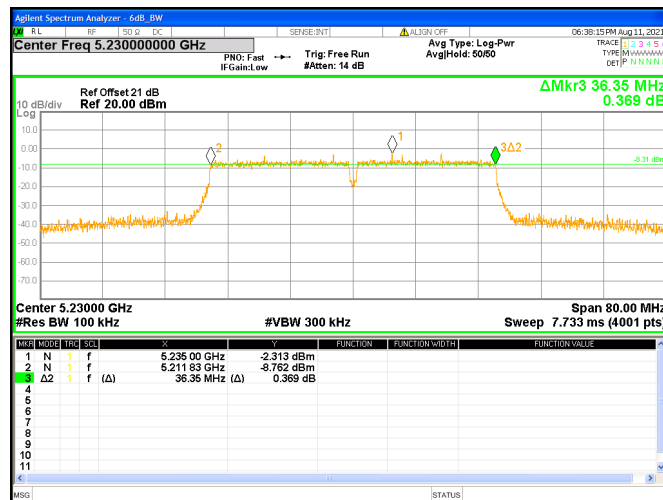
Chain1 : 6dB Bandwidth @ 802.11ac(VHT20) Mode Ch165



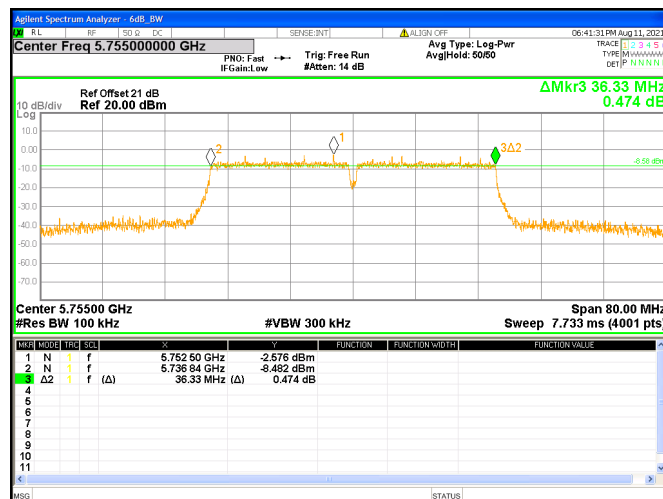
Chain0 : 6dB Bandwidth @ 802.11ac(VHT40) Mode Ch38



Chain0 : 6dB Bandwidth @ 802.11ac(VHT40) Mode Ch46



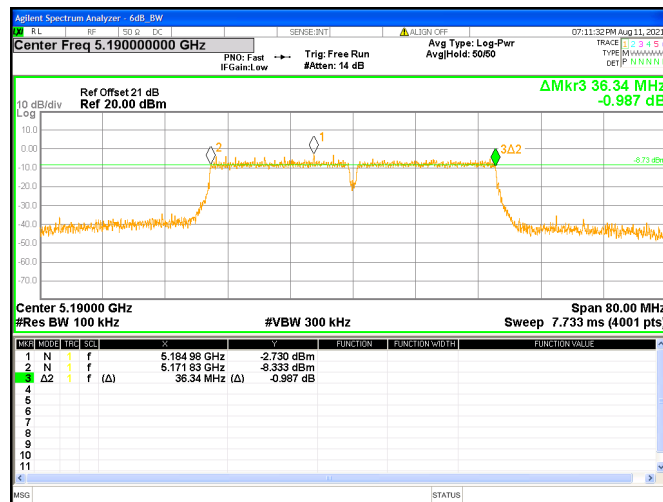
Chain0 : 6dB Bandwidth @ 802.11ac(VHT40) Mode Ch151



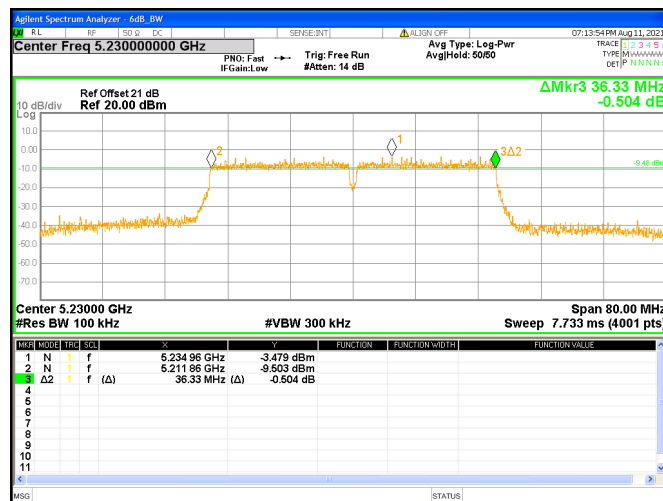
Chain0 : 6dB Bandwidth @ 802.11ac(VHT40) Mode Ch159



Chain1 : 6dB Bandwidth @ 802.11ac(VHT40) Mode Ch38



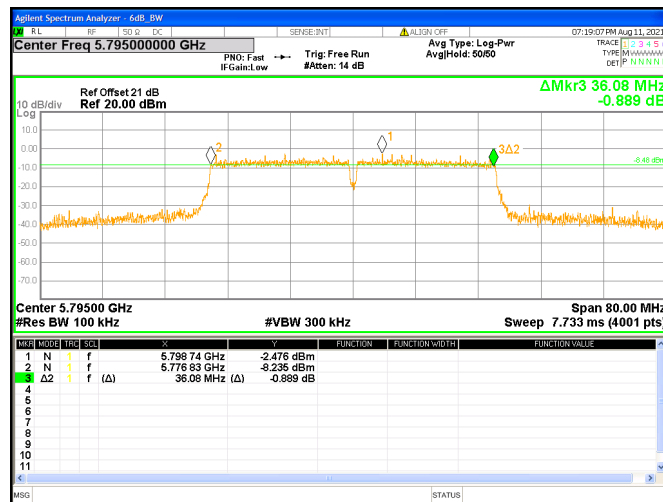
Chain1 : 6dB Bandwidth @ 802.11ac(VHT40) Mode Ch46



Chain1 : 6dB Bandwidth @ 802.11ac(VHT40) Mode Ch151



Chain1 : 6dB Bandwidth @ 802.11ac(VHT40) Mode Ch159



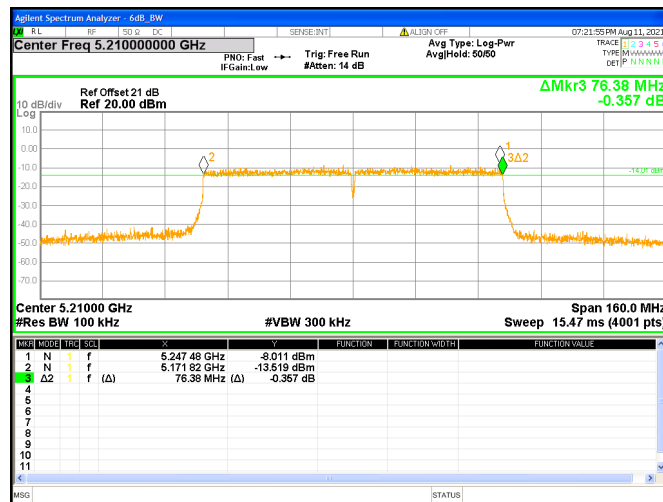
Chain0 : 6dB Bandwidth @ 802.11ac(VHT80) Mode Ch42



Chain0 : 6dB Bandwidth @ 802.11ac(VHT80) Mode Ch155



Chain1 : 6dB Bandwidth @ 802.11ac(VHT80) Mode Ch42



Chain1 : 6dB Bandwidth @ 802.11ac(VHT80) Mode Ch155



Chain0 : 26dB Bandwidth @ 802.11a Mode Ch36



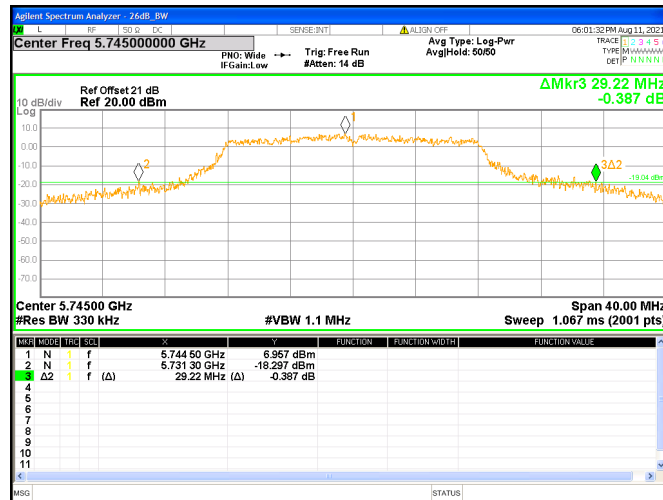
Chain0 : 26dB Bandwidth @ 802.11a Mode Ch44



Chain0 : 26dB Bandwidth @ 802.11a Mode Ch48



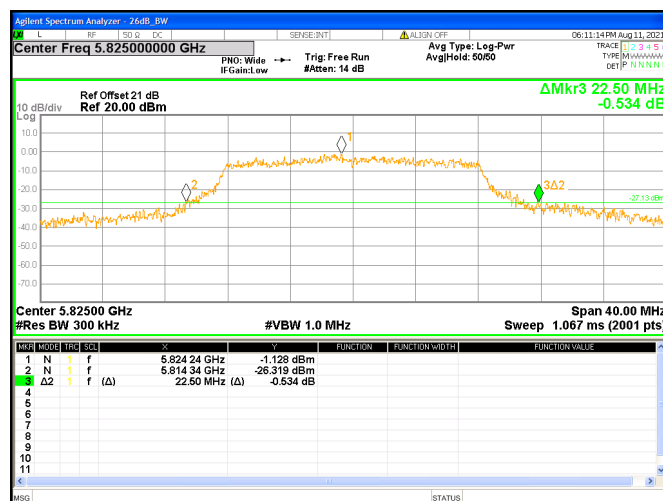
Chain0 : 26dB Bandwidth @ 802.11a Mode Ch149



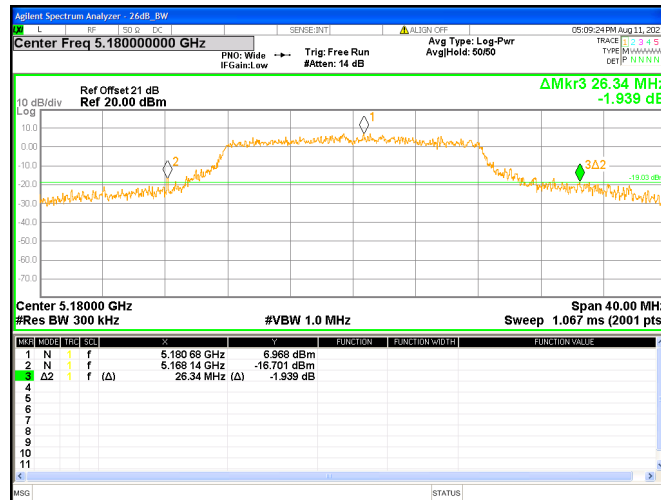
Chain0 : 26dB Bandwidth @ 802.11a Mode Ch157



Chain0 : 26dB Bandwidth @ 802.11a Mode Ch165



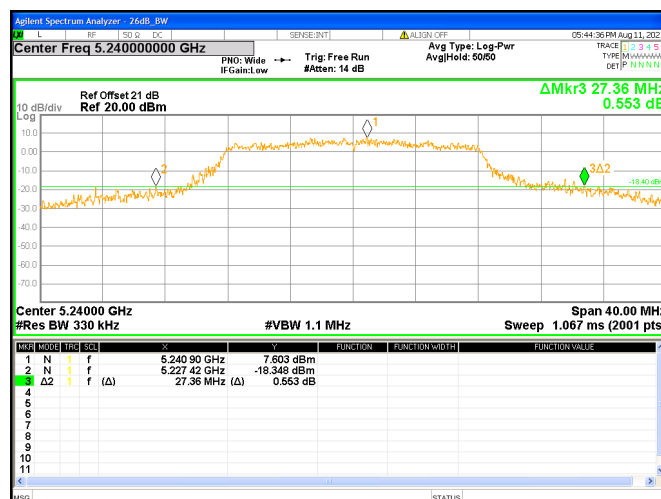
Chain1 : 26dB Bandwidth @ 802.11a Mode Ch36



Chain1 : 26dB Bandwidth @ 802.11a Mode Ch44



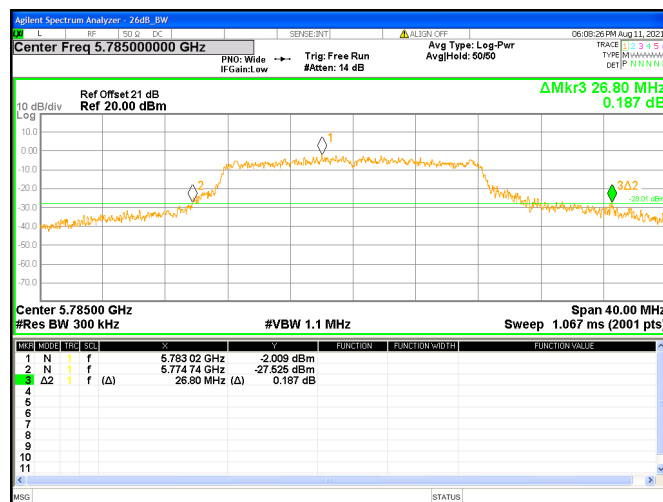
Chain1 : 26dB Bandwidth @ 802.11a Mode Ch48



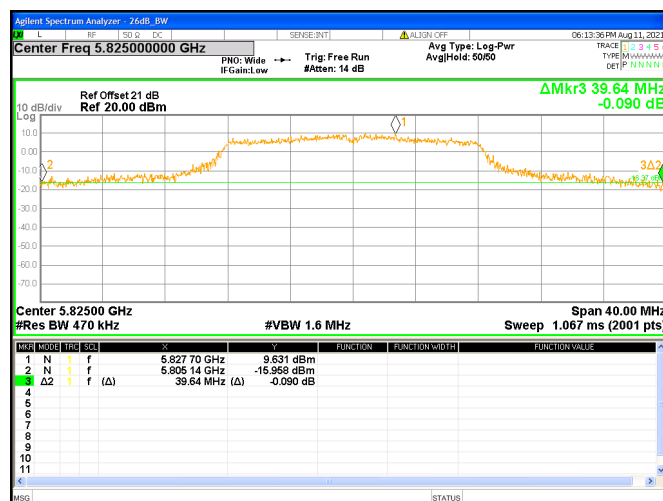
Chain1 : 26dB Bandwidth @ 802.11a Mode Ch149



Chain1 : 26dB Bandwidth @ 802.11a Mode Ch157



Chain1 : 26dB Bandwidth @ 802.11a Mode Ch165



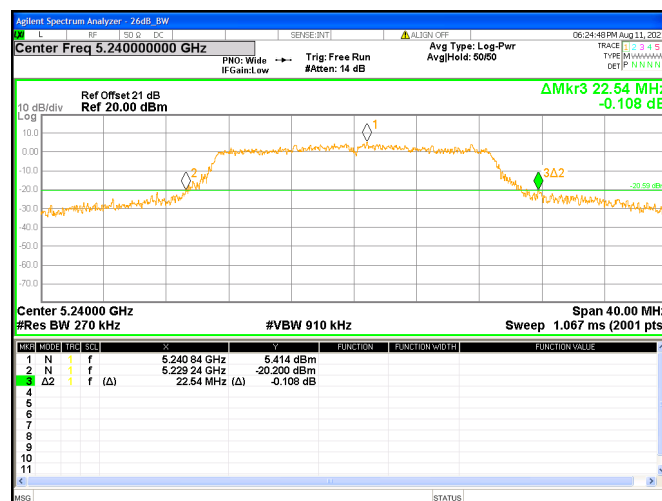
Chain0 : 26dB Bandwidth @ 802.11ac(VHT20) Mode Ch36



Chain0 : 26dB Bandwidth @ 802.11ac(VHT20) Mode Ch44



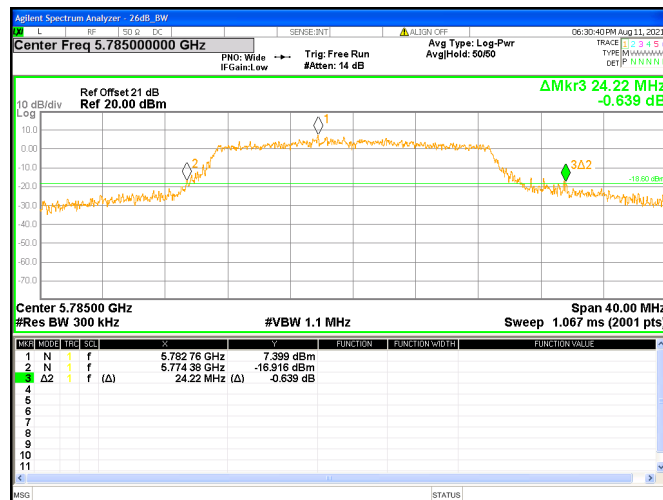
Chain0 : 26dB Bandwidth @ 802.11ac(VHT20) Mode Ch48



Chain0 : 26dB Bandwidth @ 802.11ac(VHT20) Mode Ch149



Chain0 : 26dB Bandwidth @ 802.11ac(VHT20) Mode Ch157



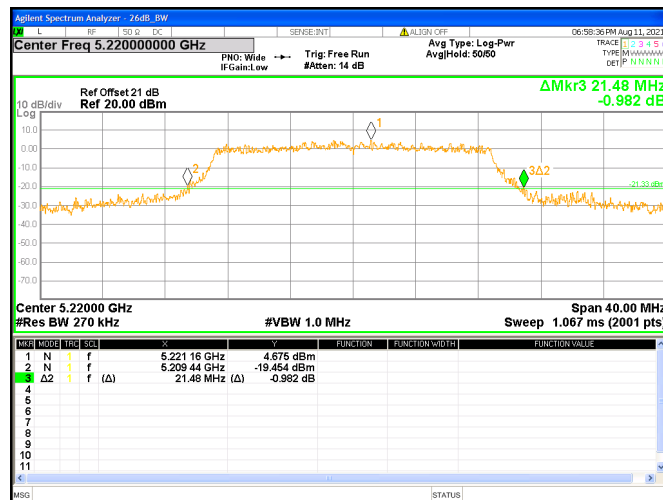
Chain0 : 26dB Bandwidth @ 802.11ac(VHT20) Mode Ch165



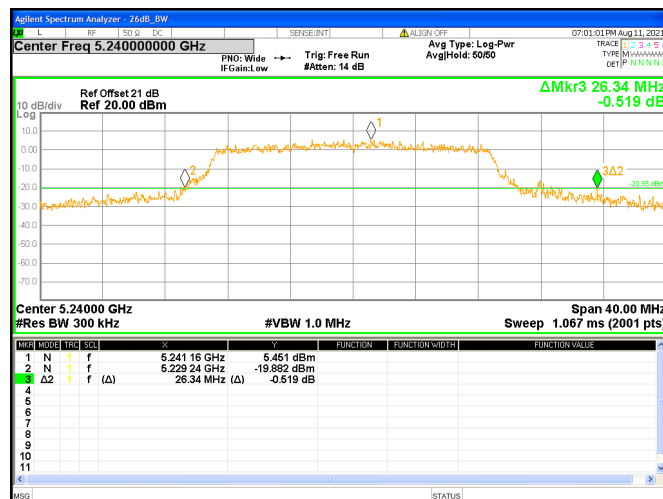
Chain1 : 26dB Bandwidth @ 802.11ac(VHT20) Mode Ch36



Chain1 : 26dB Bandwidth @ 802.11ac(VHT20) Mode Ch44



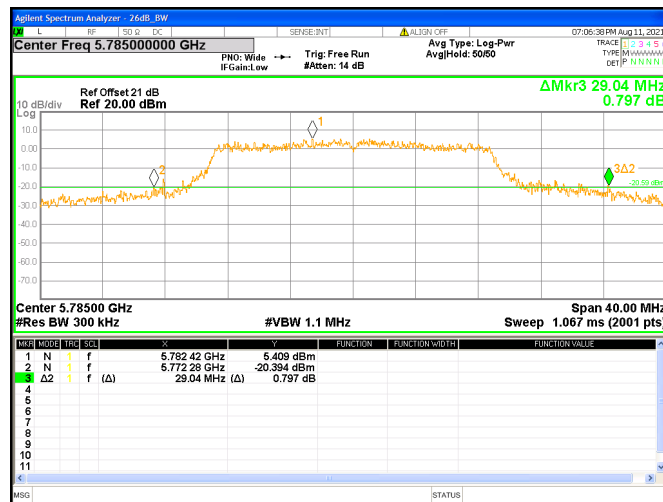
Chain1 : 26dB Bandwidth @ 802.11ac(VHT20) Mode Ch48



Chain1 : 26dB Bandwidth @ 802.11ac(VHT20) Mode Ch149



Chain1 : 26dB Bandwidth @ 802.11ac(VHT20) Mode Ch157



Chain1 : 26dB Bandwidth @ 802.11ac(VHT20) Mode Ch165



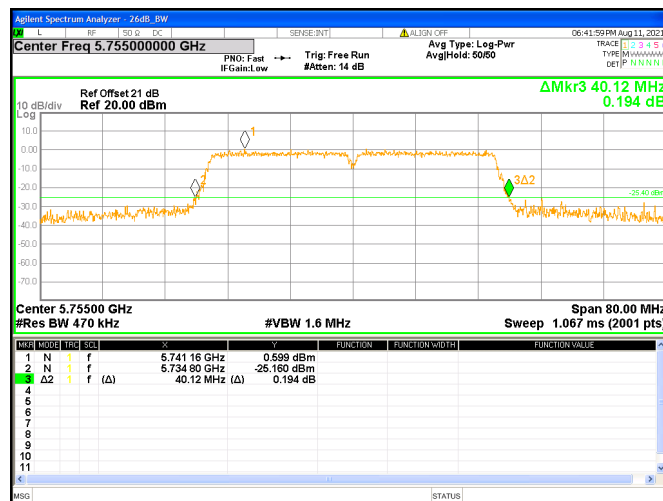
Chain0 : 26dB Bandwidth @ 802.11ac(VHT40) Mode Ch38



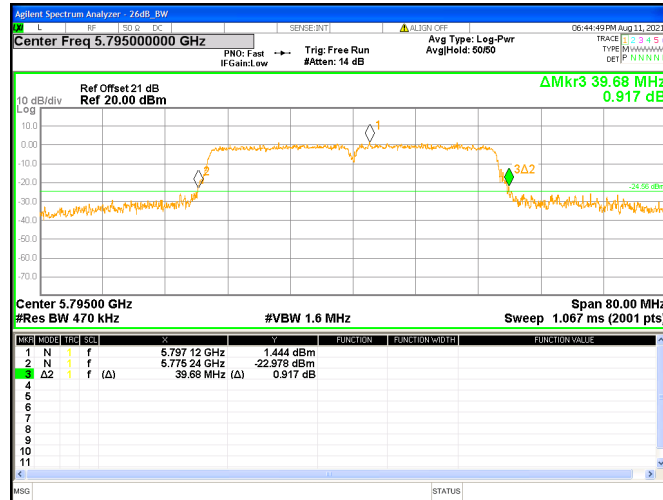
Chain0 : 26dB Bandwidth @ 802.11ac(VHT40) Mode Ch46



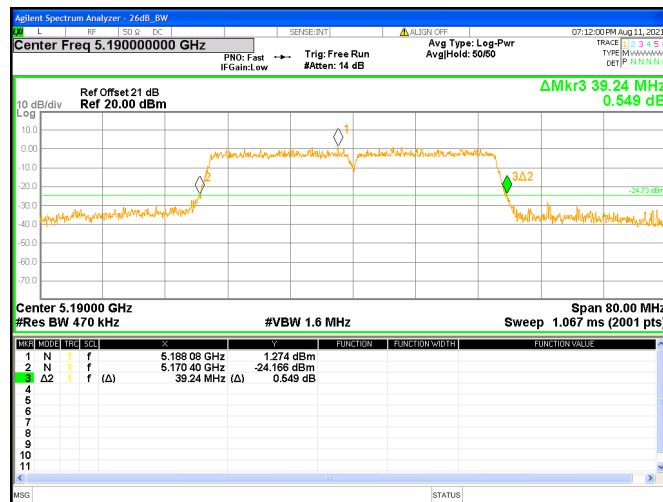
Chain0 : 26dB Bandwidth @ 802.11ac(VHT40) Mode Ch151



Chain0 : 26dB Bandwidth @ 802.11ac(VHT40) Mode Ch159



Chain1 : 26dB Bandwidth @ 802.11ac(VHT40) Mode Ch38



Chain1 : 26dB Bandwidth @ 802.11ac(VHT40) Mode Ch46



Chain1 : 26dB Bandwidth @ 802.11ac(VHT40) Mode Ch151



Chain1 : 26dB Bandwidth @ 802.11ac(VHT40) Mode Ch159



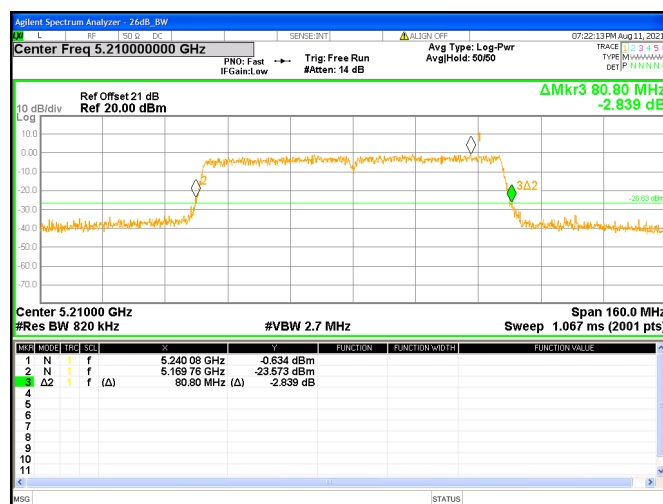
Chain0 : 26dB Bandwidth @ 802.11ac(VHT80) Mode Ch42



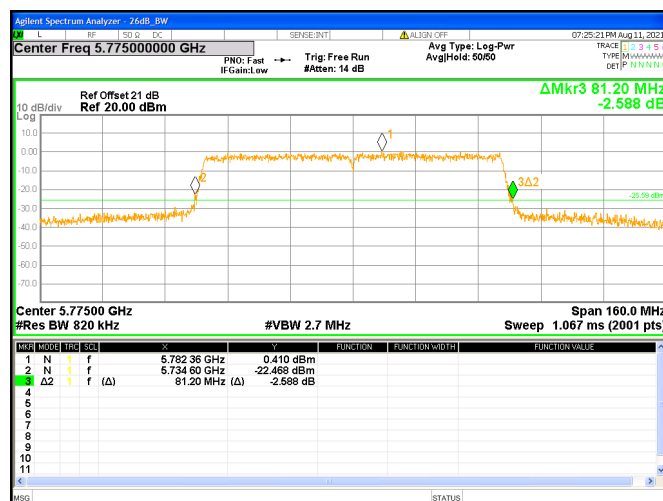
Chain0 : 26dB Bandwidth @ 802.11ac(VHT80) Mode Ch155



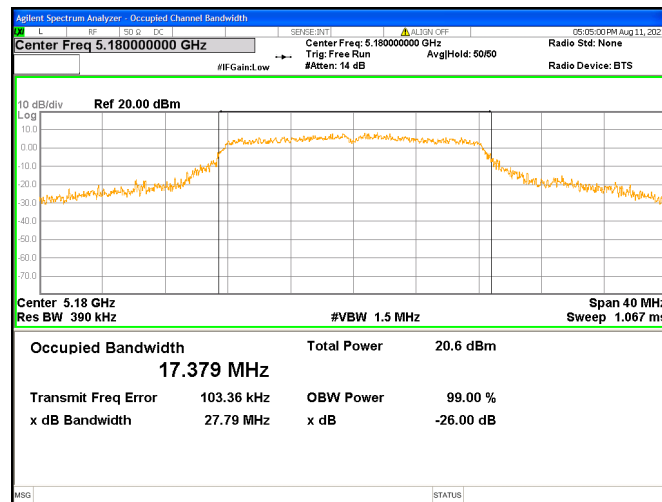
Chain1 : 26dB Bandwidth @ 802.11ac(VHT80) Mode Ch42



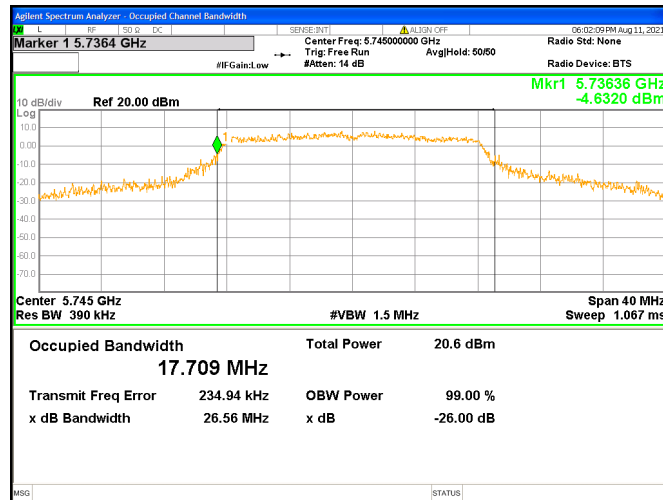
Chain1 : 26dB Bandwidth @ 802.11ac(VHT80) Mode Ch155



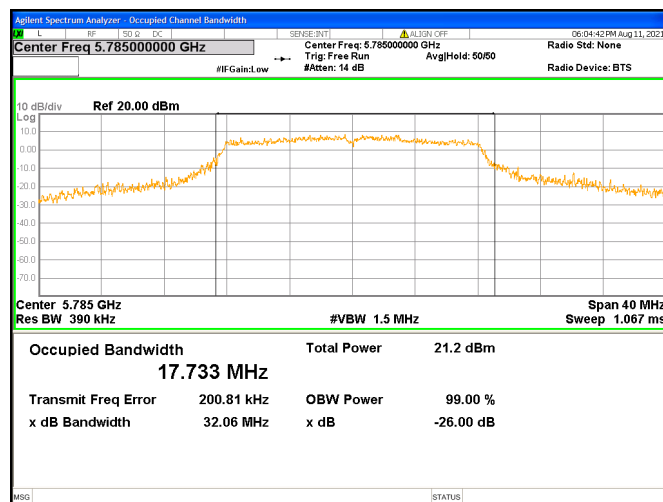
Chain0 : 99% OBW @ 802.11a Mode Ch36



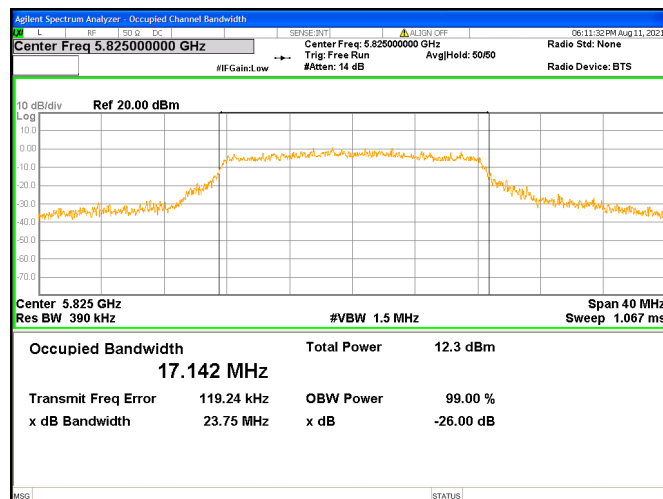
Chain0 : 99% OBW @ 802.11a Mode Ch149



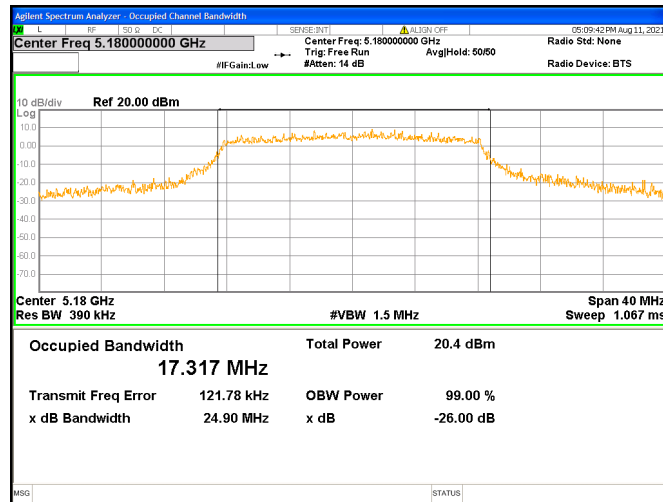
Chain0 : 99% OBW @ 802.11a Mode Ch157



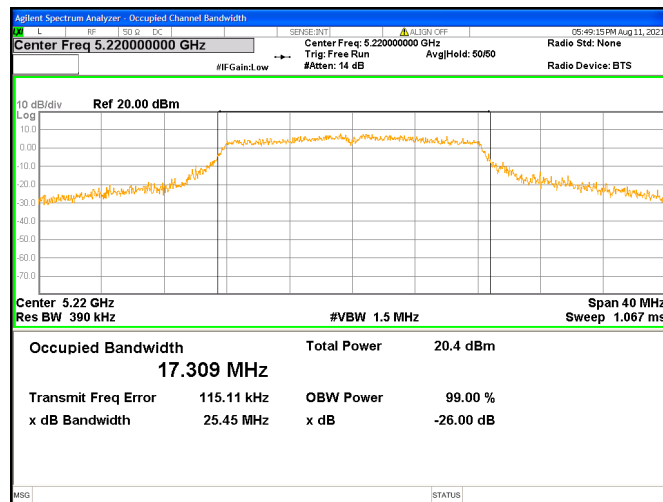
Chain0 : 99% OBW @ 802.11a Mode Ch165



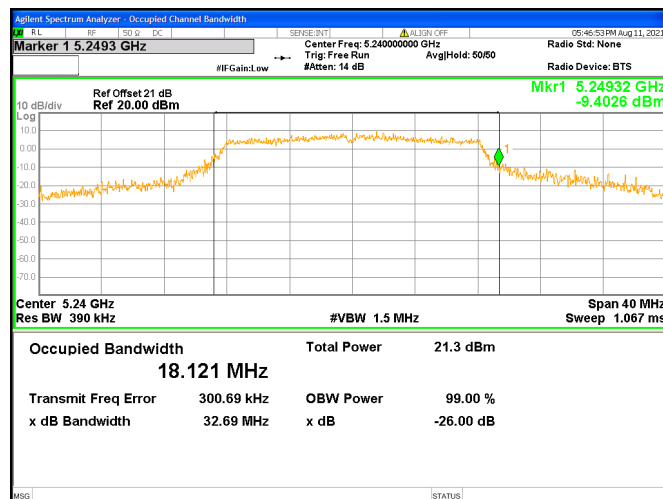
Chain1 : 99% OBW @ 802.11a Mode Ch36



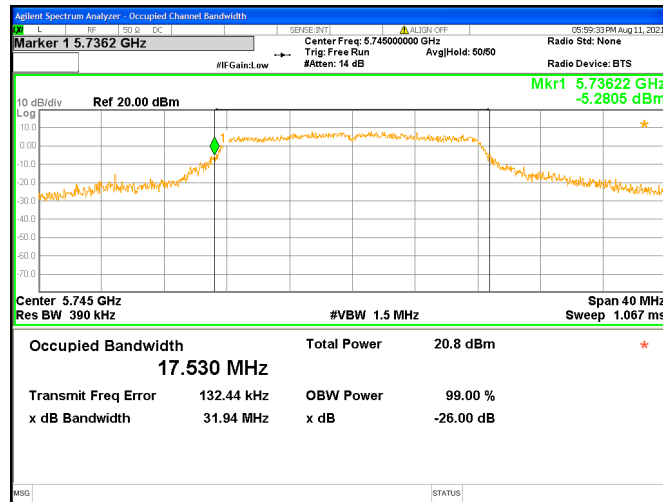
Chain1 : 99% OBW @ 802.11a Mode Ch44



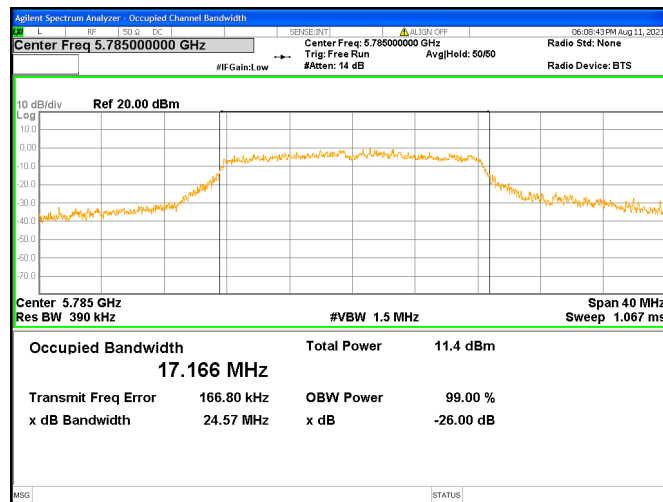
Chain1 : 99% OBW @ 802.11a Mode Ch48



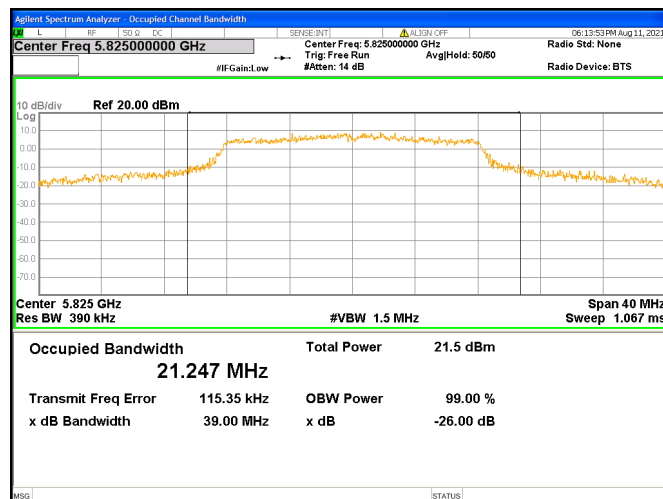
Chain1 : 99% OBW @ 802.11a Mode Ch149



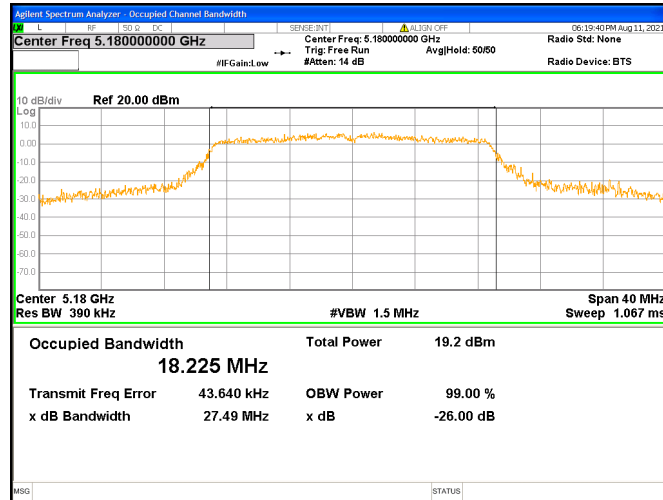
Chain1 : 99% OBW @ 802.11a Mode Ch157



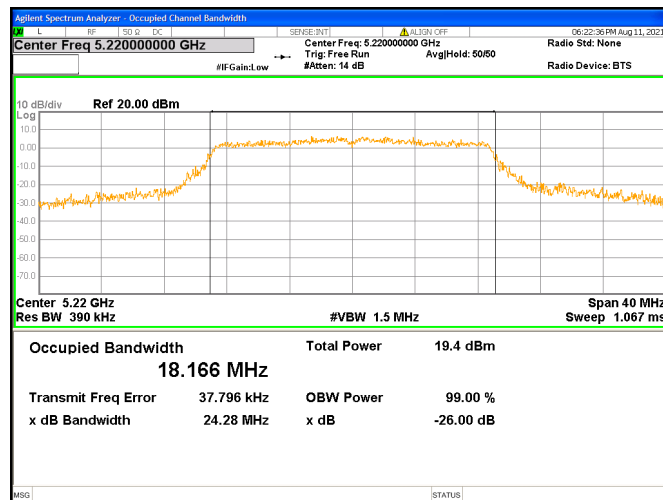
Chain1 : 99% OBW @ 802.11a Mode Ch165



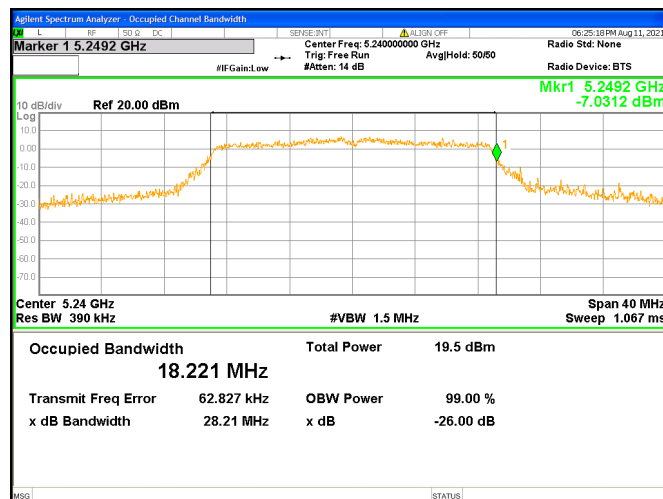
Chain0 : 99% OBW @ 802.11ac(VHT20) Mode Ch36



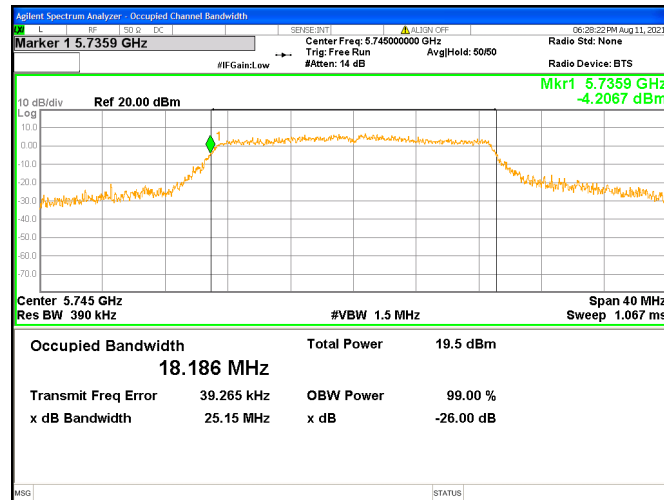
Chain0 : 99% OBW @ 802.11ac(VHT20) Mode Ch44



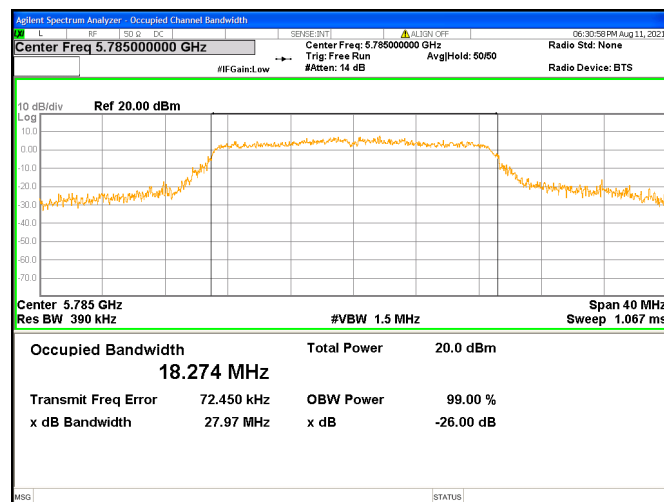
Chain0 : 99% OBW @ 802.11ac(VHT20) Mode Ch48



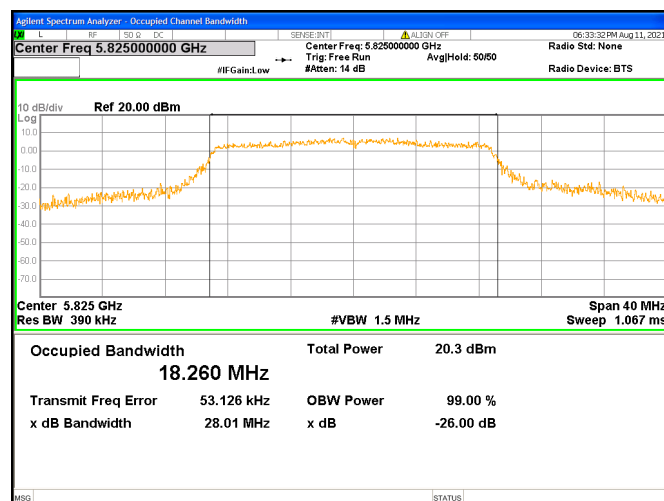
Chain0 : 99% OBW @ 802.11ac(VHT20) Mode Ch149



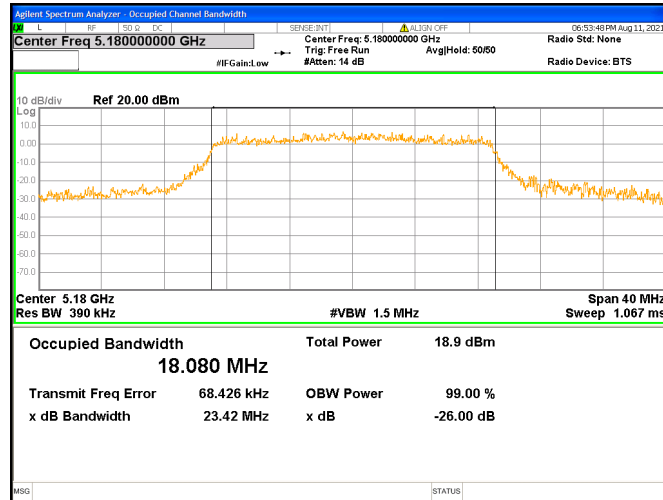
Chain0 : 99% OBW @ 802.11ac(VHT20) Mode Ch157



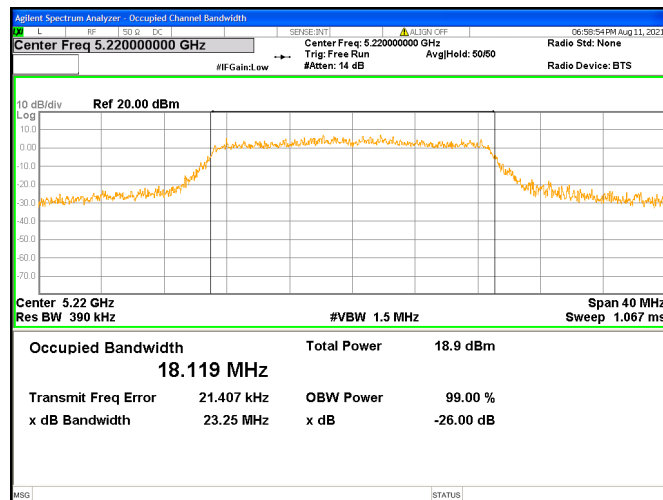
Chain0 : 99% OBW @ 802.11ac(VHT20) Mode Ch165



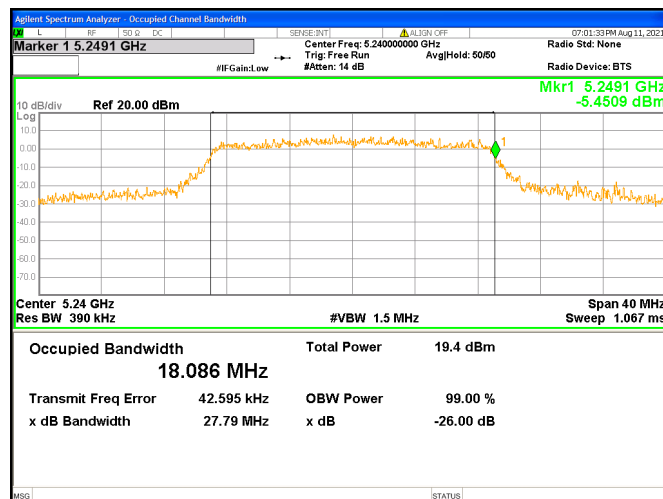
Chain1 : 99% OBW @ 802.11ac(VHT20) Mode Ch36



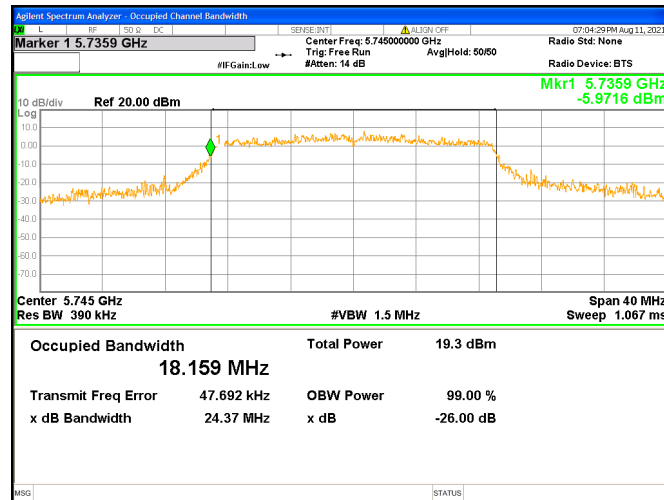
Chain1 : 99% OBW @ 802.11ac(VHT20) Mode Ch44



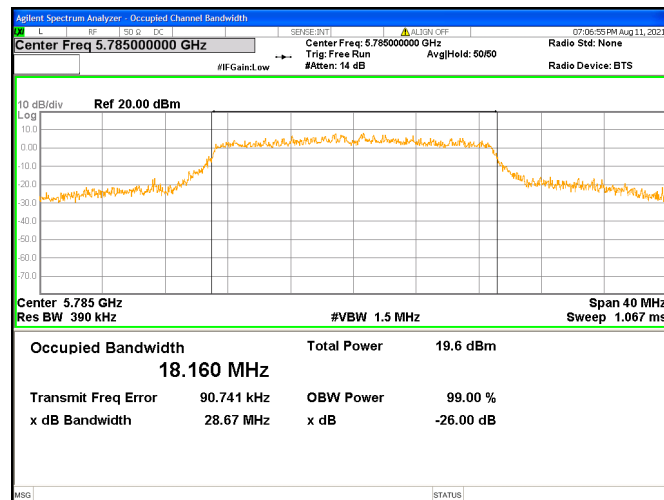
Chain1 : 99% OBW @ 802.11ac(VHT20) Mode Ch48



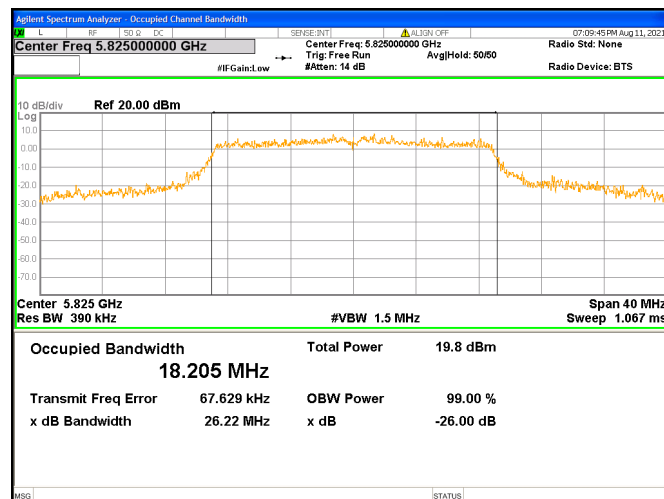
Chain1 : 99% OBW @ 802.11ac(VHT20) Mode Ch149



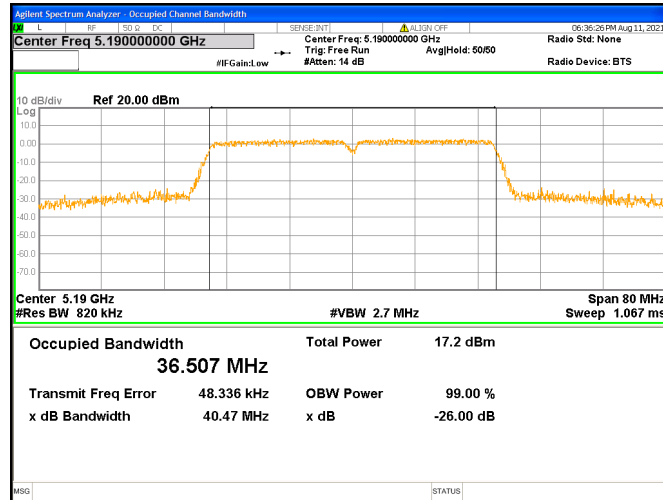
Chain1 : 99% OBW @ 802.11ac(VHT20) Mode Ch157



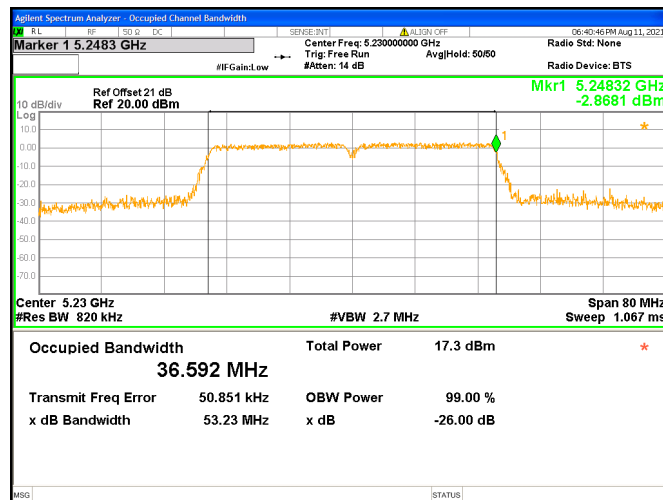
Chain1 : 99% OBW @ 802.11ac(VHT20) Mode Ch165



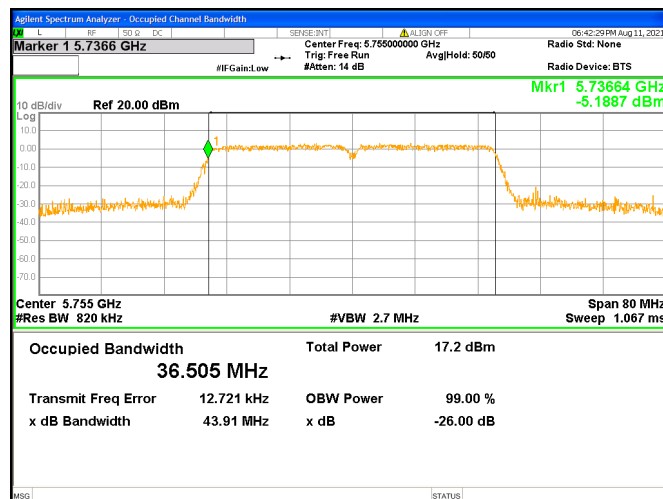
Chain0 : 99% OBW @ 802.11ac(VHT40) Mode Ch38



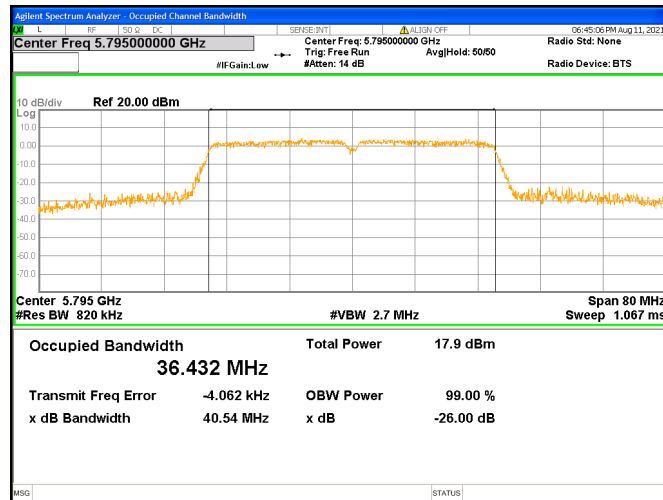
Chain0 : 99% OBW @ 802.11ac(VHT40) Mode Ch46



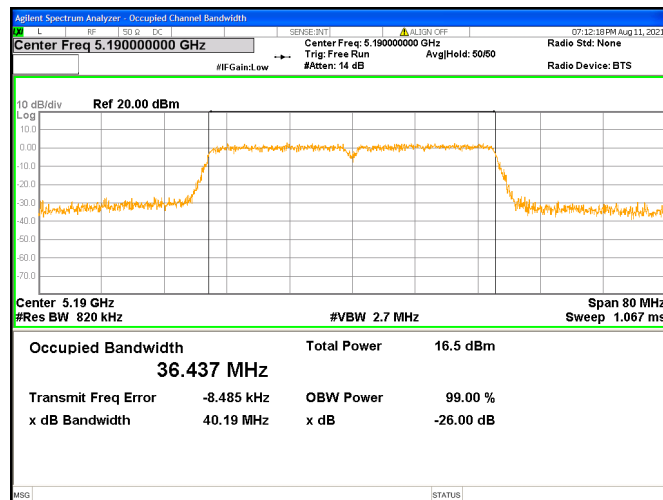
Chain0 : 99% OBW @ 802.11ac(VHT40) Mode Ch151



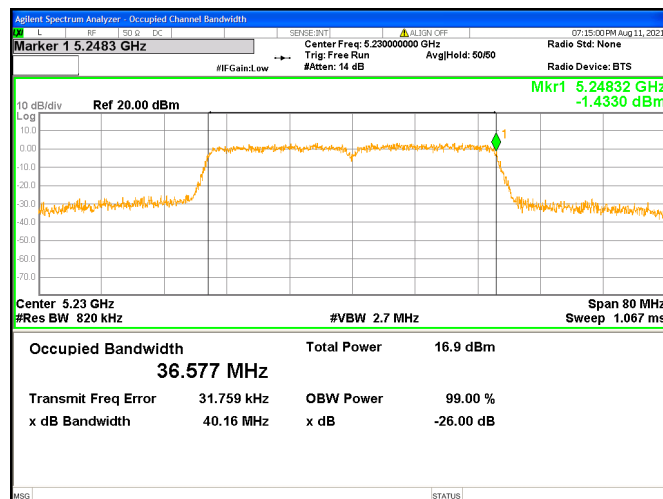
Chain0 : 99% OBW @ 802.11ac(VHT40) Mode Ch159



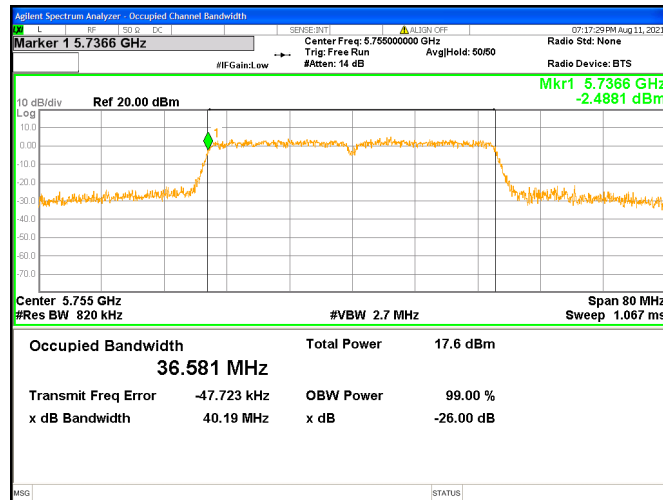
Chain1 : 99% OBW @ 802.11ac(VHT40) Mode Ch38



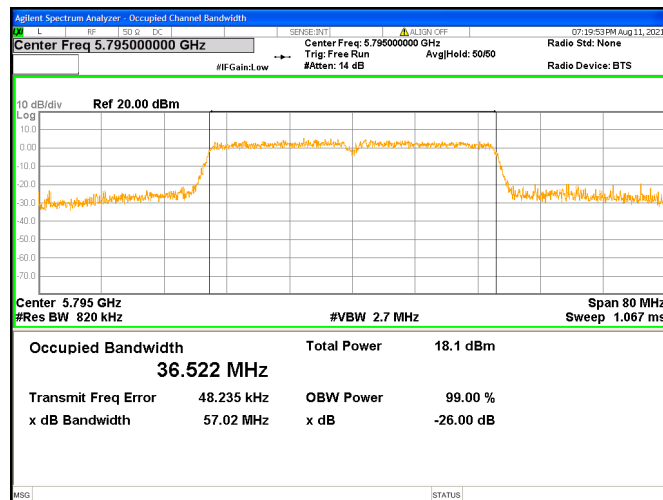
Chain1 : 99% OBW @ 802.11ac(VHT40) Mode Ch46



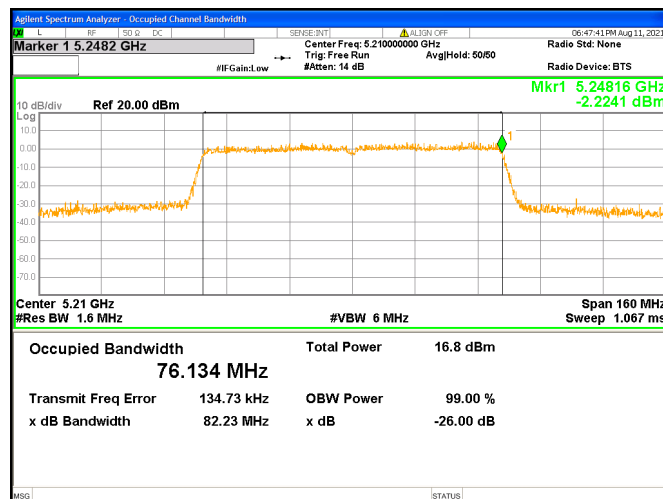
Chain1 : 99% OBW @ 802.11ac(VHT40) Mode Ch151



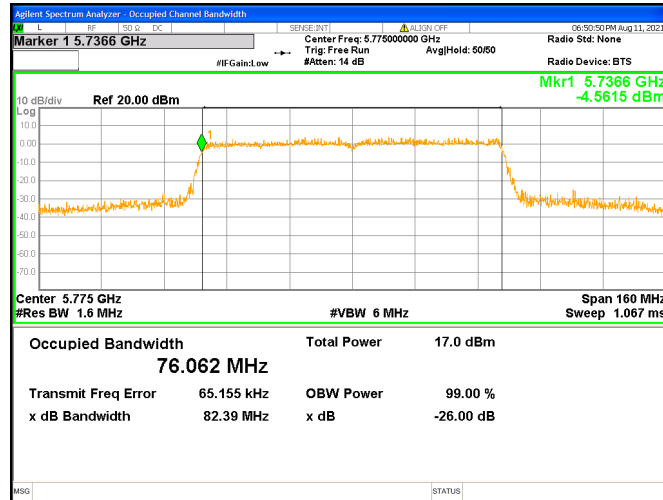
Chain1 : 99% OBW @ 802.11ac(VHT40) Mode Ch159



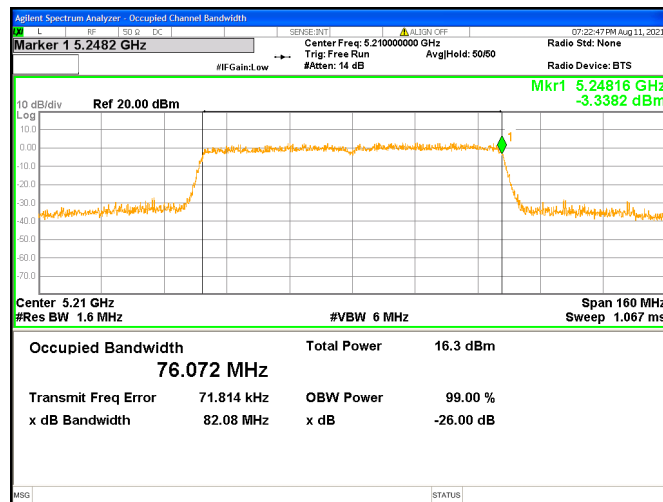
Chain0 : 99% OBW @ 802.11ac(VHT80) Mode Ch42



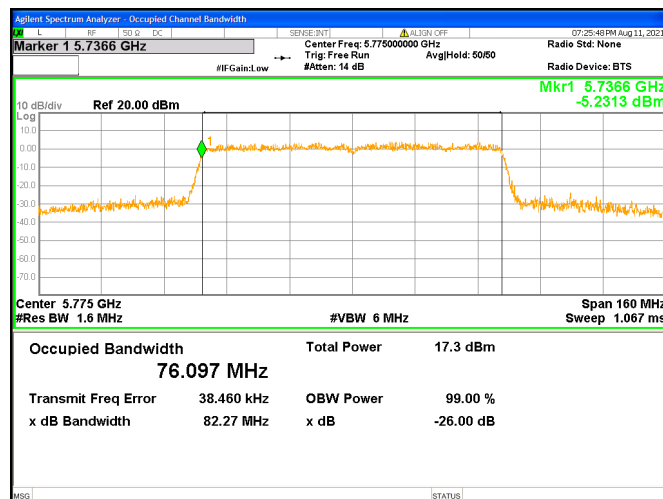
Chain0 : 99% OBW @ 802.11ac(VHT80) Mode Ch155



Chain1 : 99% OBW @ 802.11ac(VHT80) Mode Ch42



Chain1 : 99% OBW @ 802.11ac(VHT80) Mode Ch155



TEST REPORT

5. Emissions in Restricted Frequency Bands (Radiated emission measurements)

5.1 Limit for emission in restricted frequency bands (Radiated emission measurement)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	2400/F(kHz)	30
1.705~30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark:

1. In the above table, the tighter limit applies at the band edges.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

As specified in 15.407(b), For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 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.

However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.

5.2 Measuring instrument setting

Below 1GHz measurement

Receiver settings	
Receiver function	Setting
Detector	QP
RBW	9-150 kHz ; 200-300 Hz 0.15-30 MHz; 9-10 kHz 30-1000 MHz; 100-120 kHz
VBW	$\geq 3 \times \text{RBW}$
Sweep	Auto couple
Attenuation	Auto

Above 1GHz measurement

Spectrum analyzer settings	
Spectrum Analyzer function	Setting
Detector	Peak
RBW	1MHz
VBW	3MHz for Peak; 1/T Minimum kHz for Average
Sweep	Auto couple
Start Frequency	1GHz
Stop Frequency	Tenth harmonic
Attenuation	Auto

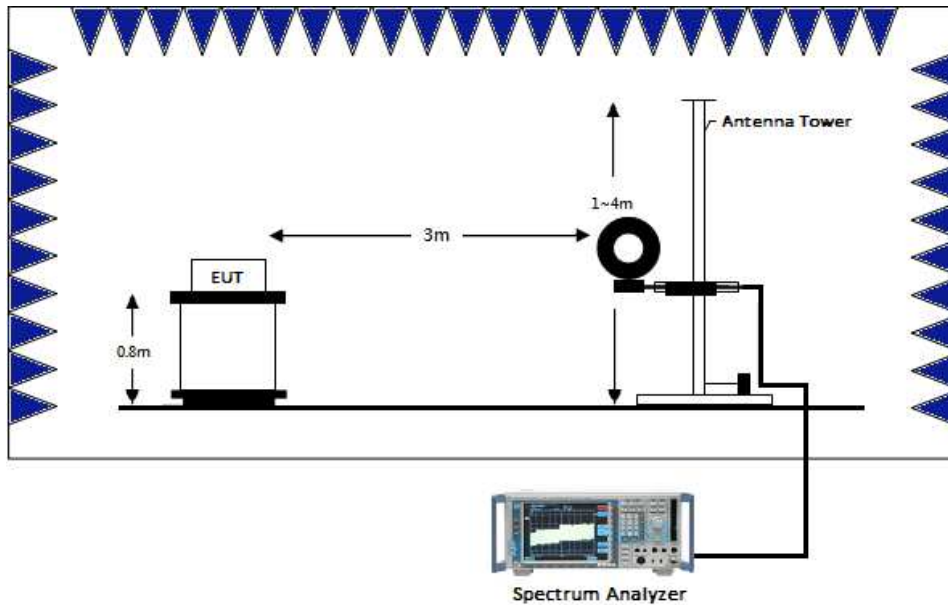
TEST REPORT**5.3 Test procedure**

1. Configure the EUT according to ANSI C63.10: 2013 The EUT was placed on the top of the turntable 1.5 meter above ground for above 1GHz and placed on the top of the turntable 0.8 meter above ground for below 1GHz. The center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the companion devices. The turntable was rotated by 360 degree to find the position of the maximum emission level.
3. The height of the receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of the both horizontal and vertical polarization
4. If find the frequencies above the limit or below within 3dB, the antenna tower was scan (from 1m to 4m) and then the turntable was rotated to find the maximum reading.
5. Set the test-receiver system to peak or CISPR quasi-peak detector with specified bandwidth under maximum hold mode.
6. For emissions above 1GHz, use 1MHz VBW and 3MHz RBW for peak reading. Then 1MHz RBW and 1/T Minimum kHz VBW for average reading in spectrum analyzer.
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.
7. If the emissions level of the EUT in peak mode was 3dB lower than the average limit specified then testing will be stopped and peak values of the EUT will be reported. Otherwise, the emissions which do not have 3dB margin will be measured using the quasi-peak method for below 1GHz.
8. For testing above 1GHz, The emissions level of the EUT in peak mode was lower than average limit, then testing will be stopped and peak values of the EUT will be reported, otherwise, the emission will be measured in average mode again and reported.
9. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be quasi-peak measured by receiver.

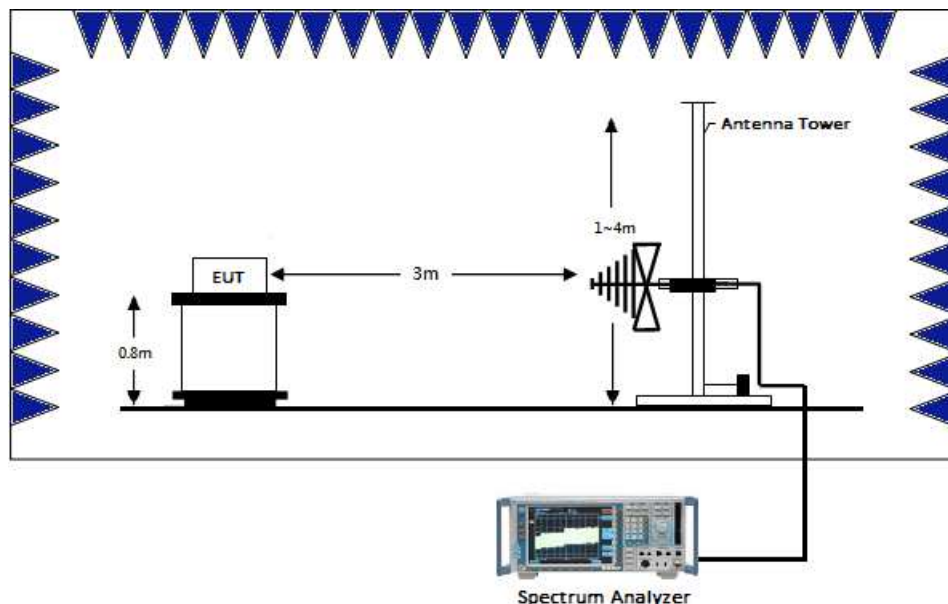
TEST REPORT

5.4 Test configuration

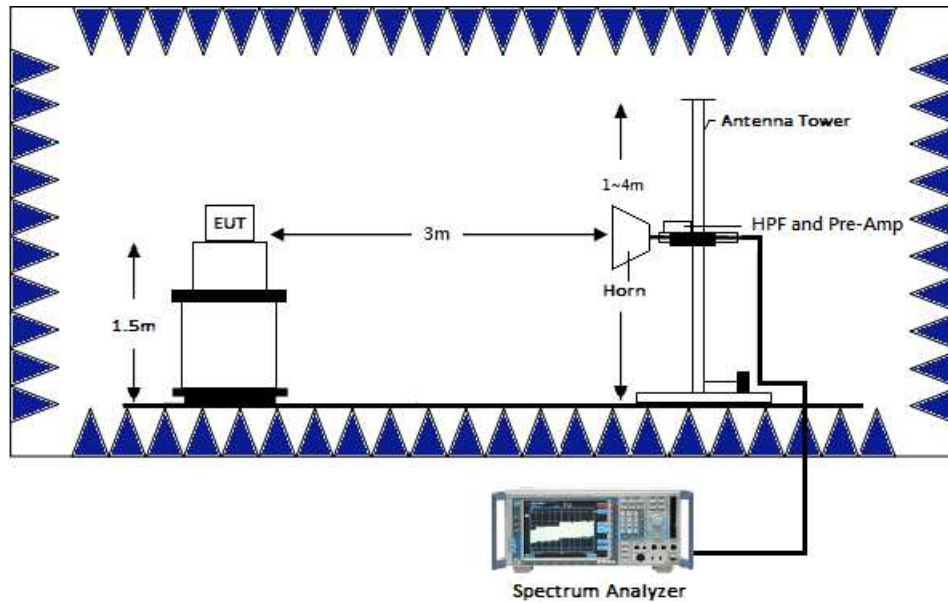
5.4.1 Radiated emission from 9 kHz to 30MHz using Loop Antenna



5.4.2 Radiated emission below 1GHz using Bilog Antenna



5.4.3 Radiated emission above 1GHz using Horn Antenna



TEST REPORT

5.5 Test results

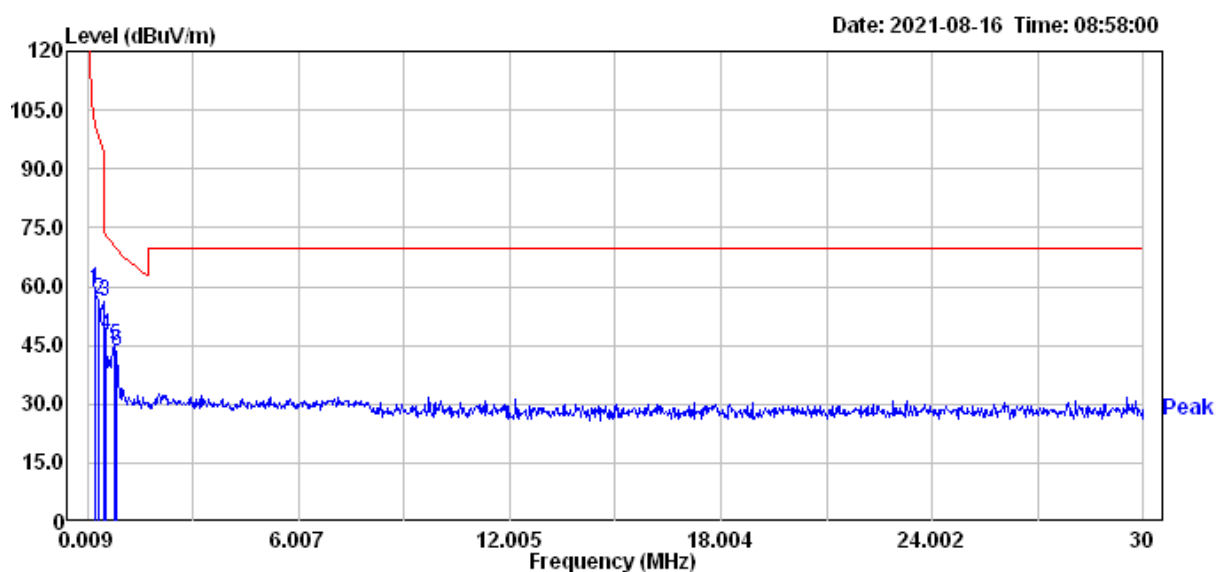
5.5.1 Measurement results: frequencies from 9 kHz to 30MHz

Temperature (°C) :	27
Relative Humidity (%) :	63
Test date :	2021/8/16

The test was performed on EUT under 802.11a/ac continuously transmitting mode. The worst case occurred at 802.11a Chain0+1 Channel 165.

Antenna polarity	Frequency (MHz)	Spectrum Analyzer Detector	Correction Factor (dB/m)	Reading (dBμV)	Corrected Reading (dBμV/m)	Limit @ 3 m (dBμV/m)	Margin (dB)
Perpendicular	0.21	AV	18.76	40.74	59.50	101.21	-41.71
Perpendicular	0.30	AV	18.71	37.89	56.60	98.08	-41.48
Perpendicular	0.45	AV	19.11	36.94	56.05	94.57	-38.52
Perpendicular	0.51	QP	19.39	28.19	47.58	73.51	-25.93
Perpendicular	0.75	QP	19.57	25.25	44.82	70.20	-25.38
Perpendicular	0.84	QP	19.64	23.86	43.50	69.19	-25.69

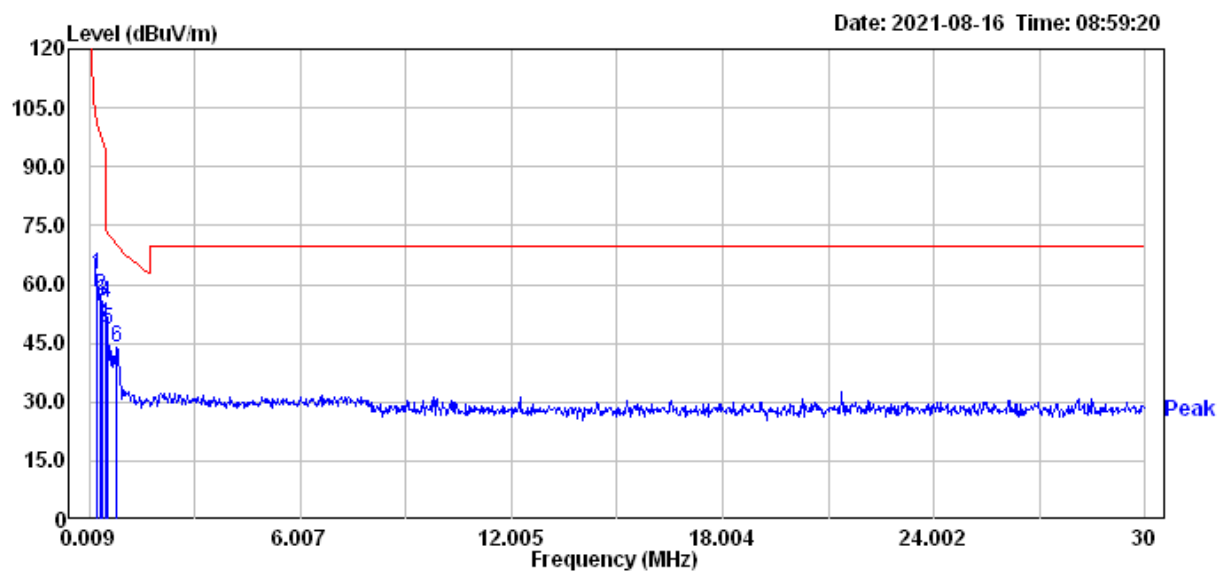
Remark: Corr. Factor = Antenna Factor + Cable Loss



TEST REPORT

Antenna polarity	Frequency (MHz)	Spectrum Analyzer Detector	Correction Factor (dB/m)	Reading (dB μ V)	Corrected Reading (dB μ V/m)	Limit @ 3 m (dB μ V/m)	Margin (dB)
Parallel	0.24	AV	18.74	43.56	62.30	100.05	-37.75
Parallel	0.30	AV	18.71	38.19	56.90	98.08	-41.18
Parallel	0.39	AV	18.83	36.83	55.66	95.82	-40.16
Parallel	0.48	AV	19.28	35.95	55.23	94.02	-38.79
Parallel	0.54	QP	19.37	29.18	48.55	73.03	-24.48
Parallel	0.75	QP	19.57	24.43	44.00	70.20	-26.20

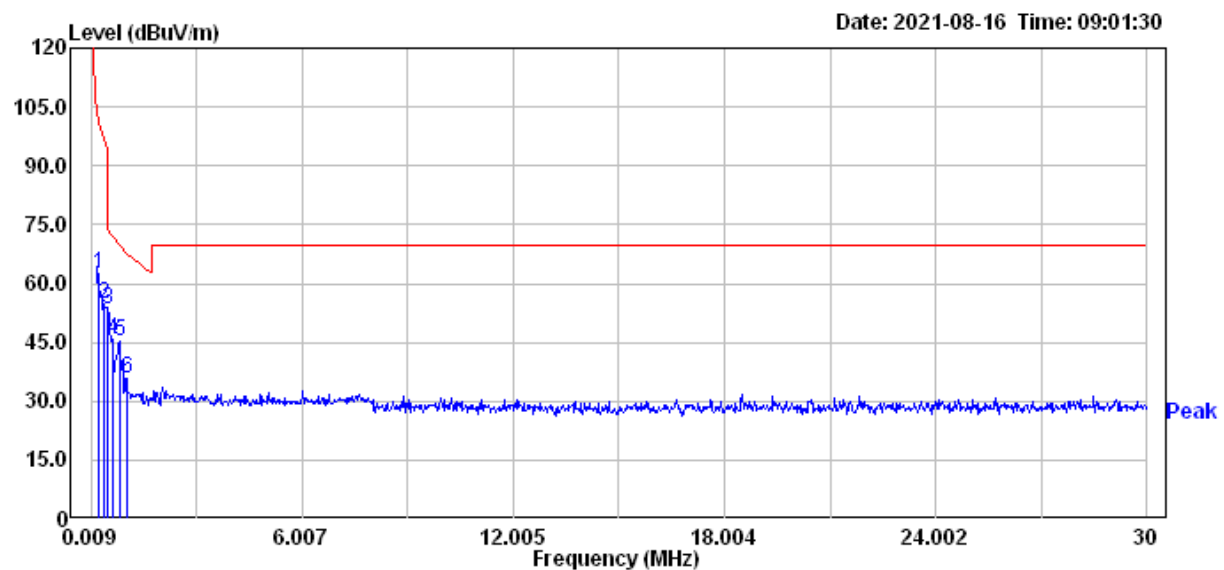
Remark: Corr. Factor = Antenna Factor + Cable Loss



TEST REPORT

Antenna polarity	Frequency (MHz)	Spectrum Analyzer Detector	Correction Factor (dB/m)	Reading (dBμV)	Corrected Reading (dBμV/m)	Limit @ 3 m (dBμV/m)	Margin (dB)
Ground-parallel	0.21	AV	18.76	43.64	62.40	101.21	-38.81
Ground-parallel	0.36	AV	18.79	36.20	54.99	96.51	-41.52
Ground-parallel	0.48	AV	19.28	34.29	53.57	94.02	-40.45
Ground-parallel	0.60	QP	19.32	26.33	45.65	72.08	-26.43
Ground-parallel	0.81	QP	19.66	25.60	45.26	69.48	-24.22
Ground-parallel	1.02	QP	19.50	16.08	35.58	67.48	-31.90

Remark: Corr. Factor = Antenna Factor + Cable Loss



TEST REPORT

5.5.2 Measurement results: frequencies from 30 MHz to 1GHz

Temperature (°C) :	28
Relative Humidity (%) :	60
Test date :	2021/8/13

The test was performed on EUT under 802.11a/ac continuously transmitting mode. The worst case occurred at 802.11a Chain0+1 Channel 165.

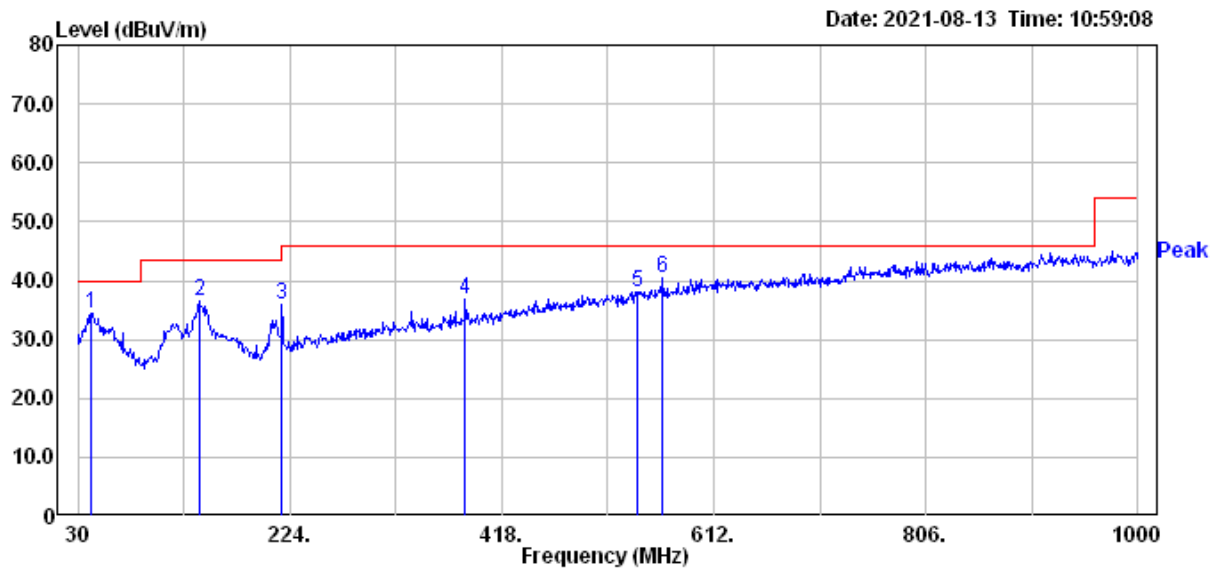
Antenna polarity	Frequency (MHz)	Spectrum Analyzer Detector	Correction Factor (dB/m)	Reading (dBμV)	Corrected Reading (dBμV/m)	Limit @ 3 m (dBμV/m)	Margin (dB)
Vertical	41.64	QP	20.95	13.59	34.54	40.00	-5.46
Vertical	140.58	QP	20.57	15.92	36.49	43.50	-7.01
Vertical	216.24	QP	18.53	17.50	36.03	46.00	-9.97
Vertical	384.05	QP	24.02	12.91	36.93	46.00	-9.07
Vertical	541.19	QP	27.81	10.37	38.18	46.00	-7.82
Vertical	565.44	QP	28.37	12.18	40.55	46.00	-5.45

Antenna polarity	Frequency (MHz)	Spectrum Analyzer Detector	Correction Factor (dB/m)	Reading (dBμV)	Corrected Reading (dBμV/m)	Limit @ 3 m (dBμV/m)	Margin (dB)
Horizontal	192.96	QP	18.16	13.84	32.00	43.50	-11.50
Horizontal	268.62	QP	21.19	10.83	32.02	46.00	-13.98
Horizontal	386.96	QP	24.08	12.39	36.47	46.00	-9.53
Horizontal	489.78	QP	26.68	10.64	37.32	46.00	-8.68
Horizontal	516.94	QP	27.46	13.13	40.59	46.00	-5.41
Horizontal	670.20	QP	30.31	11.28	41.59	46.00	-4.41

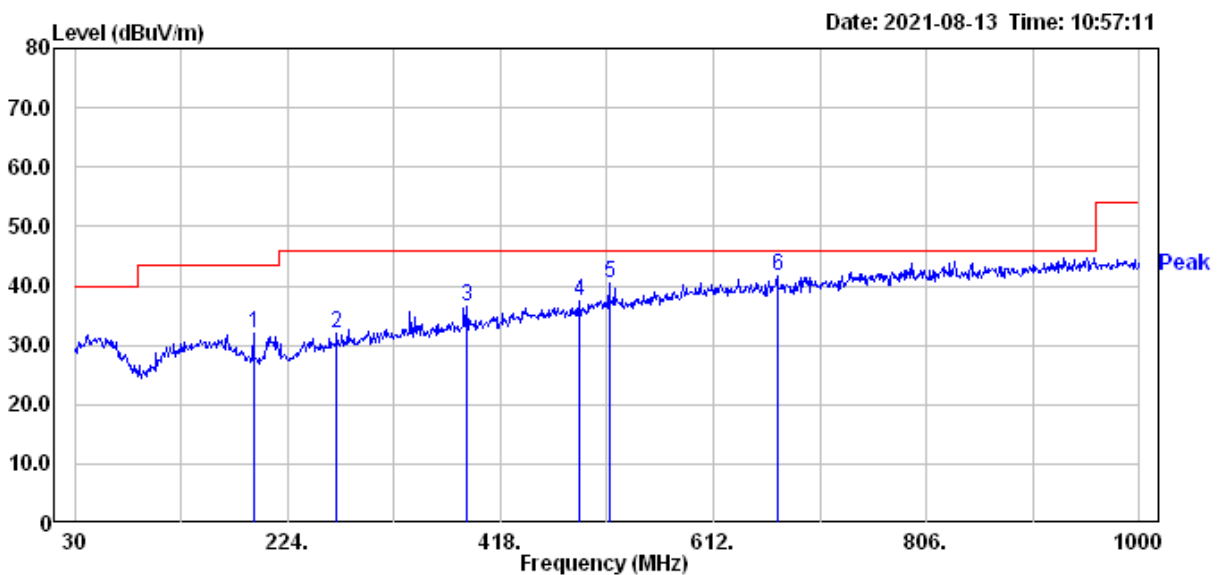
Remark: Corr. Factor = Antenna Factor + Cable Loss

TEST REPORT

Vertical



Horizontal



TEST REPORT

5.5.3 Measurement results: frequency above 1GHz to 40GHz

Temperature (°C) :	27
Relative Humidity (%) :	66
Test date :	2021/8/11

Chain0+1

Mode	Frequency	Spectrum	Ant.	Correction	Reading	Corrected	Limit @ 3 m	Margin
		Analyzer	Pol.	Factor		Reading		
	(MHz)	Detector	(H/V)	(dB/m)	(dBμV)	(dBμV/m)		
802.11a_Ch36	10360	PK	V	31.25	18.52	49.77	74.00	-24.23
	10360	PK	H	31.25	19.65	50.90	74.00	-23.10
802.11a_Ch44	10440	PK	V	31.66	19.00	50.66	74.00	-23.34
	10440	PK	H	31.66	20.28	51.94	74.00	-22.06
802.11a_Ch48	10480	PK	V	31.84	20.26	52.10	74.00	-21.90
	10480	PK	H	31.84	20.02	51.86	74.00	-22.14
802.11a_Ch149	11490	PK	V	33.31	19.01	52.32	74.00	-21.68
	11490	PK	H	33.31	19.30	52.61	74.00	-21.39
802.11a_Ch157	11570	PK	V	33.11	17.68	50.79	74.00	-23.21
	11570	PK	H	33.11	18.96	52.07	74.00	-21.93
802.11a_Ch165	11650	PK	V	32.70	18.23	50.93	74.00	-23.07
	11650	PK	H	32.70	18.31	51.01	74.00	-22.99
802.11ac(VHT20)_Ch36	10360	PK	V	31.25	18.43	49.68	74.00	-24.32
	10360	PK	H	31.25	18.26	49.51	74.00	-24.49
802.11ac(VHT20)_Ch44	10440	PK	V	31.66	19.49	51.15	74.00	-22.85
	10440	PK	H	31.66	18.65	50.31	74.00	-23.69
802.11ac(VHT20)_Ch48	10480	PK	V	31.84	19.89	51.73	74.00	-22.27
	10480	PK	H	31.84	21.23	53.07	74.00	-20.93
802.11ac(VHT20)_Ch149	11490	PK	V	33.31	18.81	52.12	74.00	-21.88
	11490	PK	H	33.31	19.93	53.24	74.00	-20.76
802.11ac(VHT20)_Ch157	11570	PK	V	33.11	18.54	51.65	74.00	-22.35
	11570	PK	H	33.11	17.87	50.98	74.00	-23.02
802.11ac(VHT20)_Ch165	11650	PK	V	32.70	17.75	50.45	74.00	-23.55
	11650	PK	H	32.70	18.16	50.86	74.00	-23.14

Remark: Correction Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Pre_Amplifier Gain

Chain0+1

Mode	Frequency	Spectrum	Ant.	Correction	Reading	Corrected	Limit @ 3 m	Margin
		Analyzer	Pol.	Factor		Reading		
	(MHz)	Detector	(H/V)	(dB/m)	(dBμV)	(dBμV/m)		
802.11ac(VHT40)_Ch38	10380	PK	V	31.35	18.78	50.13	74.00	-23.87
	10380	PK	H	31.35	19.02	50.37	74.00	-23.63
802.11ac(VHT40)_Ch46	10460	PK	V	31.75	19.42	51.17	74.00	-22.83
	10460	PK	H	31.75	20.29	52.04	74.00	-21.96
802.11ac(VHT40)_Ch151	11510	PK	V	33.32	19.57	52.89	74.00	-21.11
	11510	PK	H	33.32	19.15	52.47	74.00	-21.53
802.11ac(VHT40)_Ch159	11590	PK	V	33.05	19.35	52.40	74.00	-21.60
	11590	PK	H	33.05	17.78	50.83	74.00	-23.17
802.11ac(VHT80)_Ch42	10420	PK	V	31.57	19.65	51.22	74.00	-22.78
	10420	PK	H	31.57	19.69	51.26	74.00	-22.74
802.11ac(VHT80)_Ch155	11550	PK	V	33.18	19.93	53.11	74.00	-20.89
	11550	PK	H	33.18	18.05	51.23	74.00	-22.77

Remark: Correction Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Pre_Amplifier Gain

TEST REPORT

6. Emission on The Band Edge

6.1 Measuring instrument setting

Spectrum analyzer settings	
Spectrum Analyzer function	Setting
Detector	Peak
RBW	1MHz
VBW	3MHz for Peak; 1/T Minimum kHz for Average
Sweep	Auto couple
Restrict bands	4500~5150MHz
	5350 ~5460MHz
Attenuation	Auto

Applicable to	Limit
	EIRP Limit (dBm)
5725-5850MHz	PK
	-27~27

6.2 Test procedure

The test procedure is the same as clause 5.4

TEST REPORT

6.3 Test Result

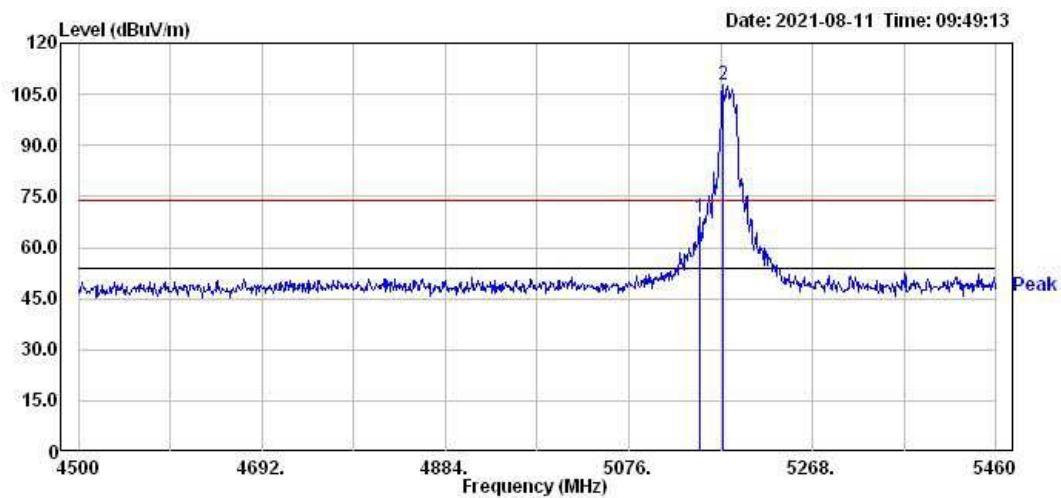
Temperature (°C) :	27
Relative Humidity (%) :	66
Test date :	2021/8/11

Mode	Channel	Frequency (MHz)	Spectrum Analyzer Detector	Ant. Pol. (H/V)	Correction Factor (dB/m)	Reading (dBμV)	Corrected Reading (dBμV/m)	Limit @ 3 m (dBμV/m)	Margin (dB)	Restricted band (MHz)
802.11a Chain0+1	36	5150.00	PK	H	16.82	52.06	68.88	74	-5.12	4500~5150
		5149.92	AV	H	16.82	33.03	49.85	54	-4.15	
	48	5413.92	PK	H	16.87	34.55	51.42	74	-22.58	5350~5460
		5447.52	AV	H	17.04	23.31	40.35	54	-13.65	
802.11ac (VHT20) Chain0+1	36	5150.00	PK	H	16.82	50.43	67.25	74	-6.75	4500~5150
		5150.00	AV	H	16.82	33.04	49.86	54	-4.14	
	48	5353.44	PK	H	16.46	35.65	52.11	74	-21.89	5350~5460
		5446.56	AV	H	17.04	23.33	40.37	54	-13.63	
802.11ac (VHT40) Chain0+1	38	5150.00	PK	H	16.82	44.67	61.49	74	-12.51	4500~5150
		5150.00	AV	H	16.82	33.43	50.25	54	-3.75	
	46	5407.20	PK	H	16.83	34.63	51.46	74	-22.54	5350~5460
		5447.52	AV	H	17.04	23.30	40.34	54	-13.66	
802.11ac (VHT80) Chain0+1	42	5150.00	PK	H	16.82	44.86	61.68	74	-12.32	4500~5150
		5149.92	AV	H	16.82	32.44	49.26	54	-4.74	
		5416.80	PK	H	16.89	34.69	51.58	74	-22.42	5350~5460
		5419.68	AV	H	16.90	24.06	40.96	54	-13.04	

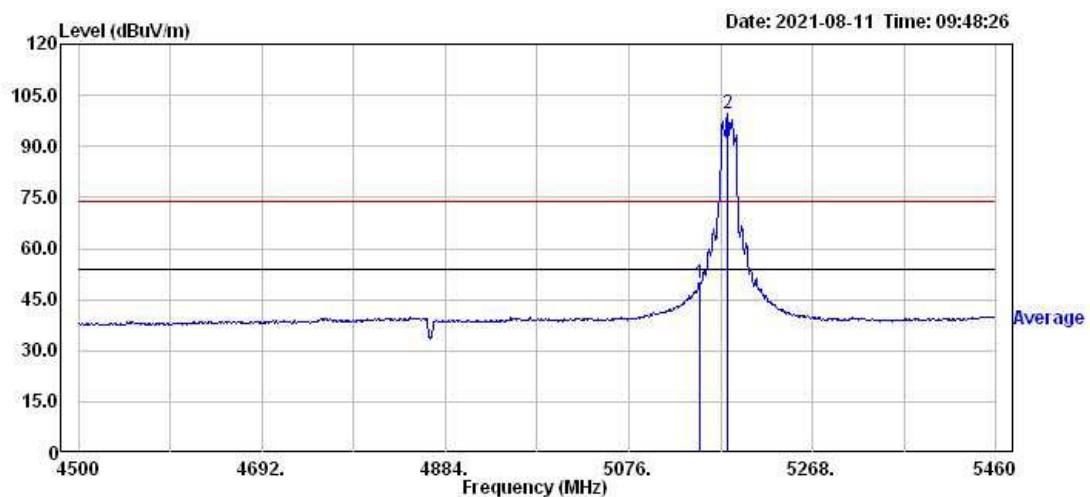
Remark: Correction Factor = Antenna Factor + Cable Loss - Pre_Amplifier Gain

TEST REPORT

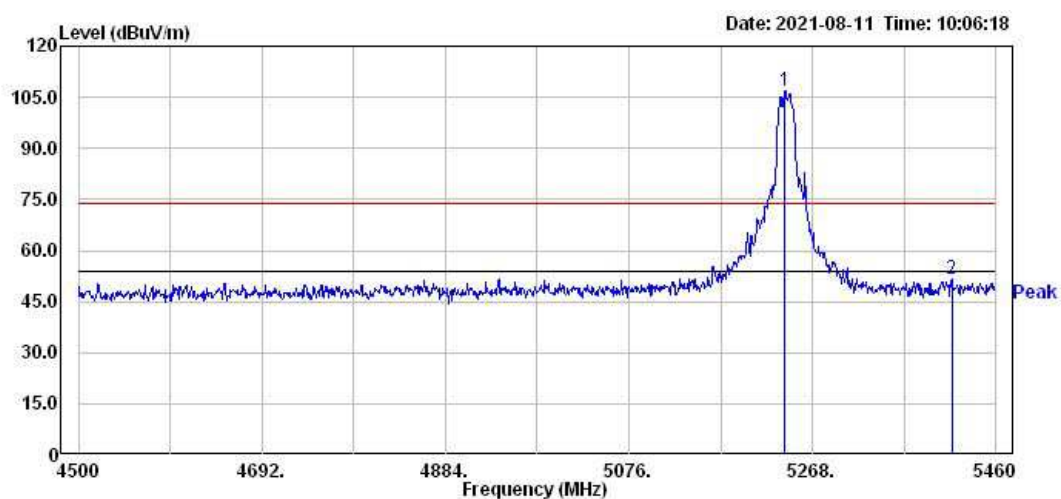
Chain0+1 : Restricted Band Bandedge @ 802.11a Mode Ch36 PK



Chain0+1 : Restricted Band Bandedge @ 802.11a Mode Ch36 AV

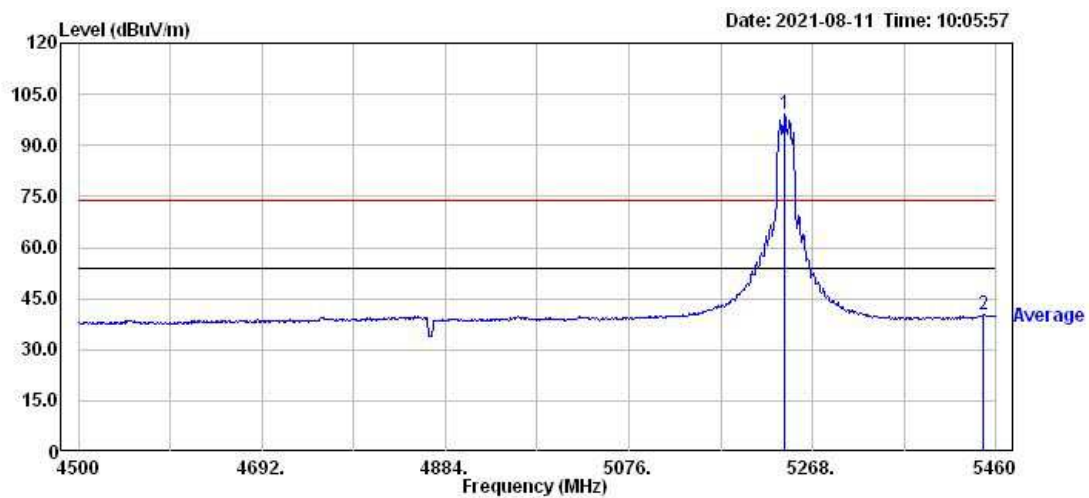


Chain0+1 : Restricted Band Bandedge @ 802.11a Mode Ch48 PK

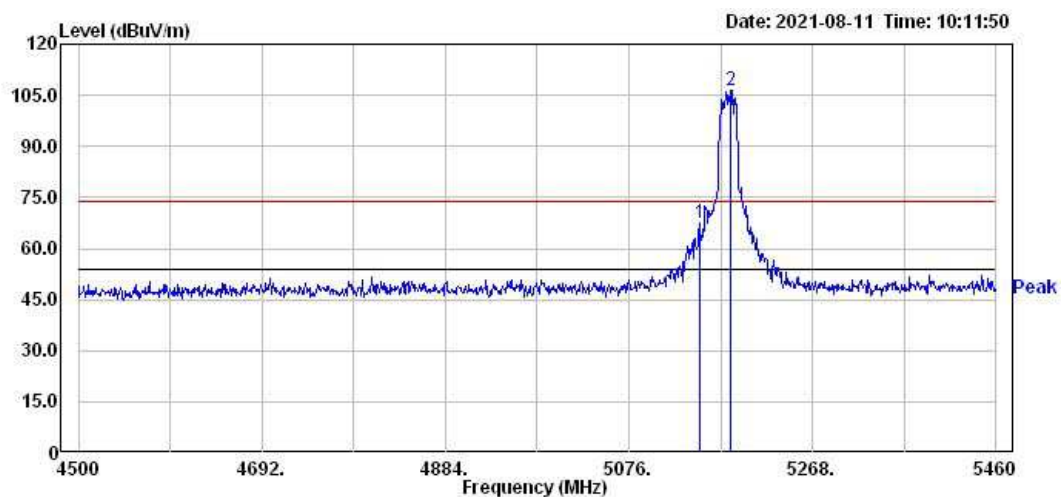


TEST REPORT

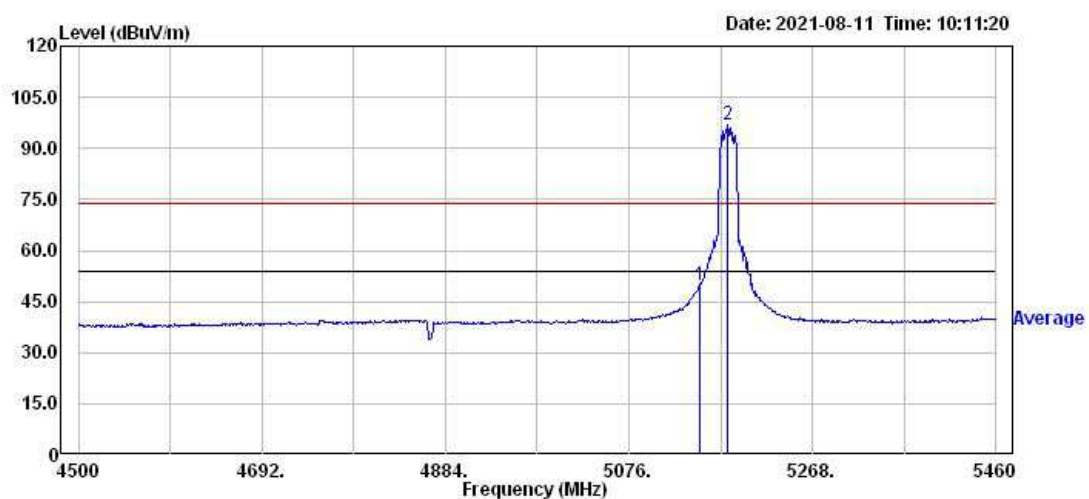
Chain0+1 : Restricted Band Bandedge @ 802.11a Mode Ch48 AV



Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT20) Mode Ch36 PK

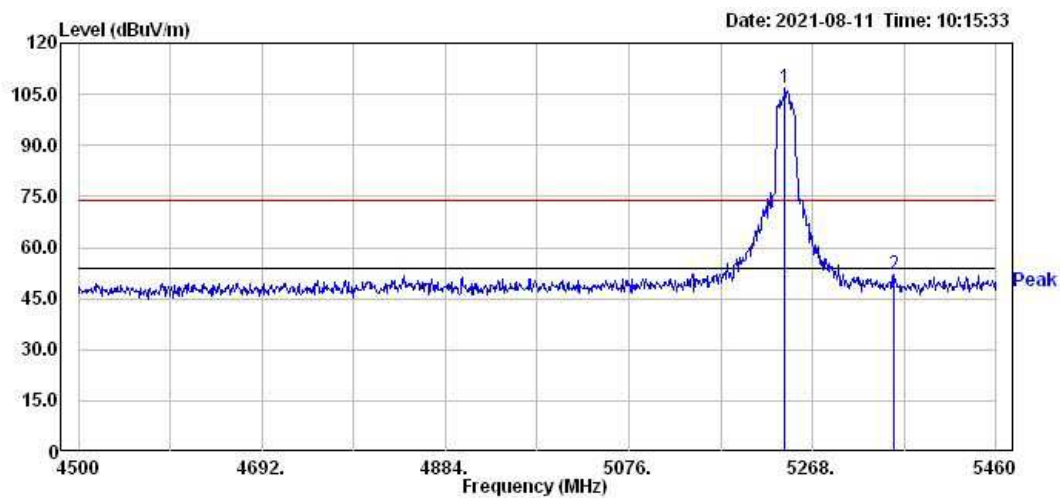


Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT20) Mode Ch36 AV

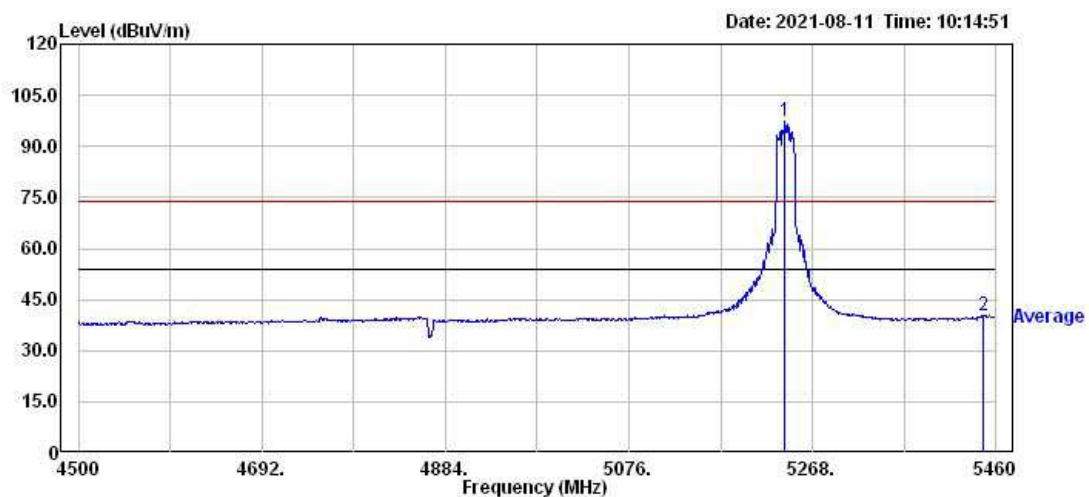


TEST REPORT

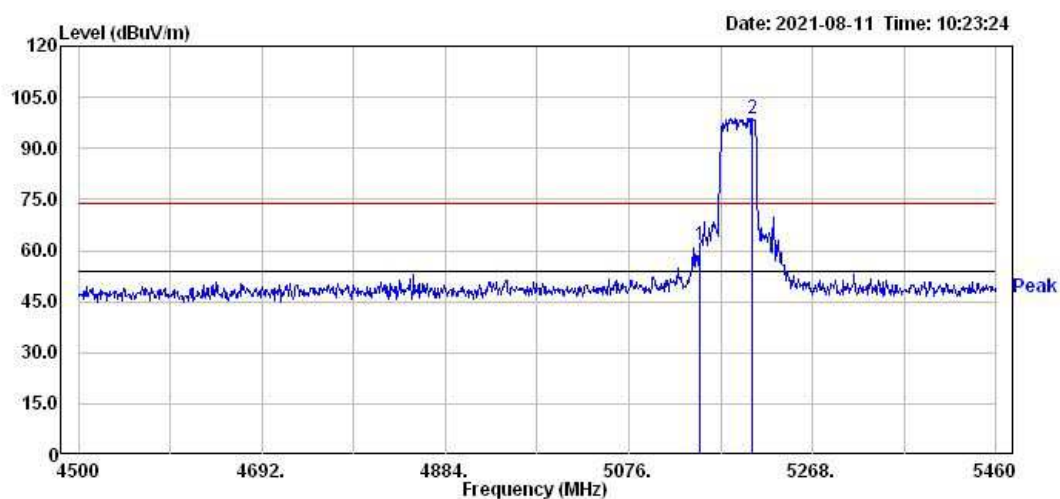
Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT20) Mode Ch48 PK



Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT20) Mode Ch48 AV

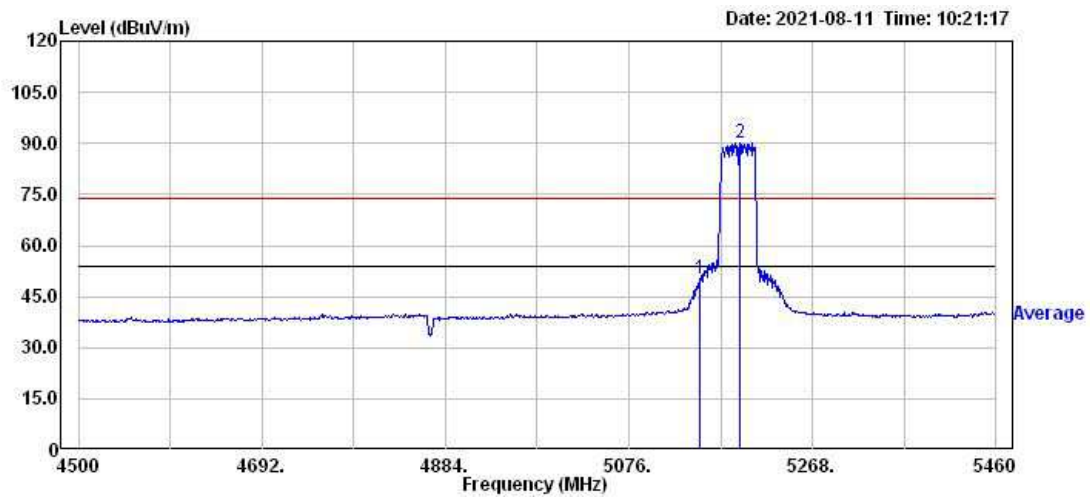


Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT40) Mode Ch38 PK

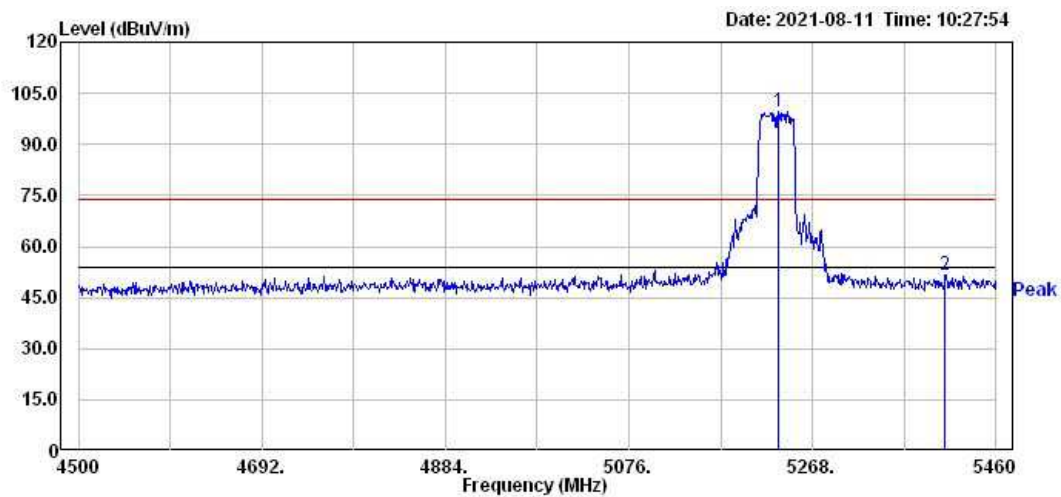


TEST REPORT

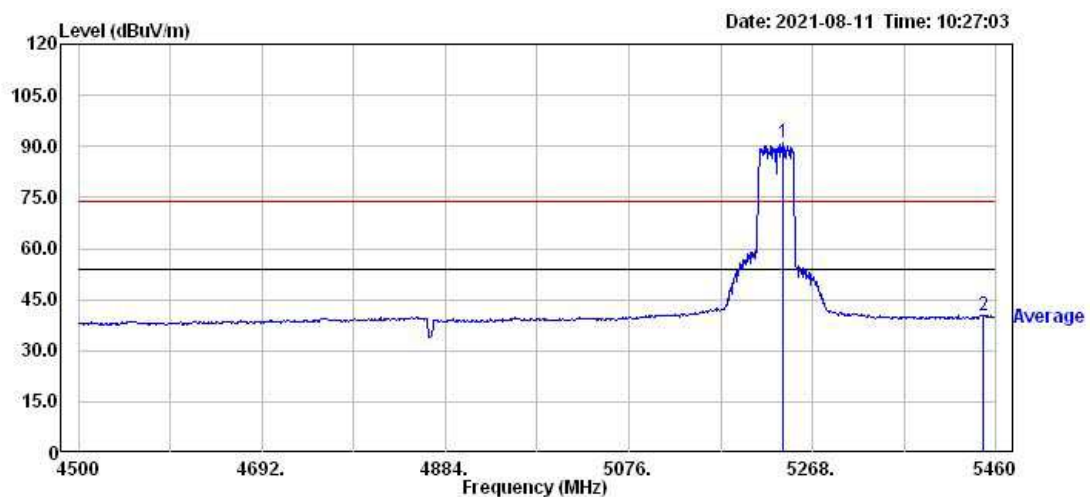
Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT40) Mode Ch38 AV



Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT40) Mode Ch46 PK

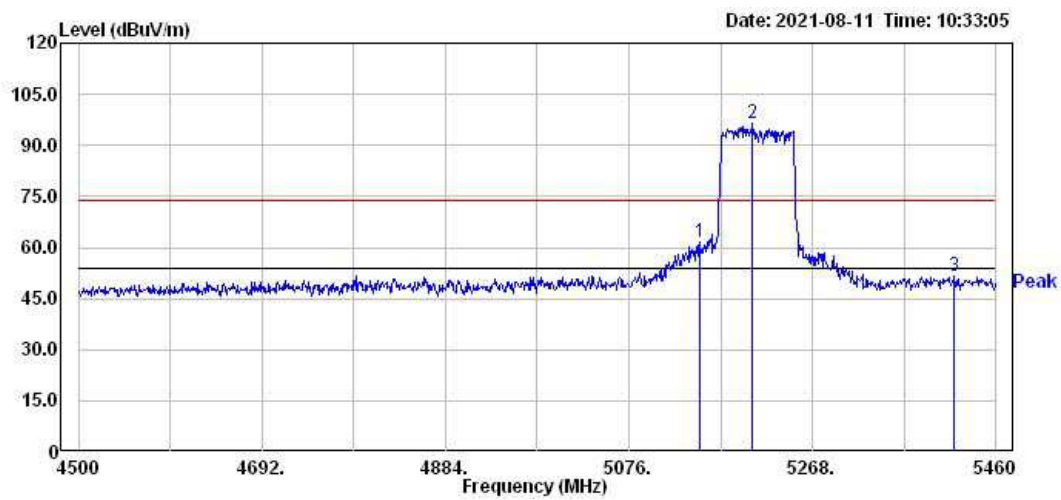


Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT40) Mode Ch46 AV

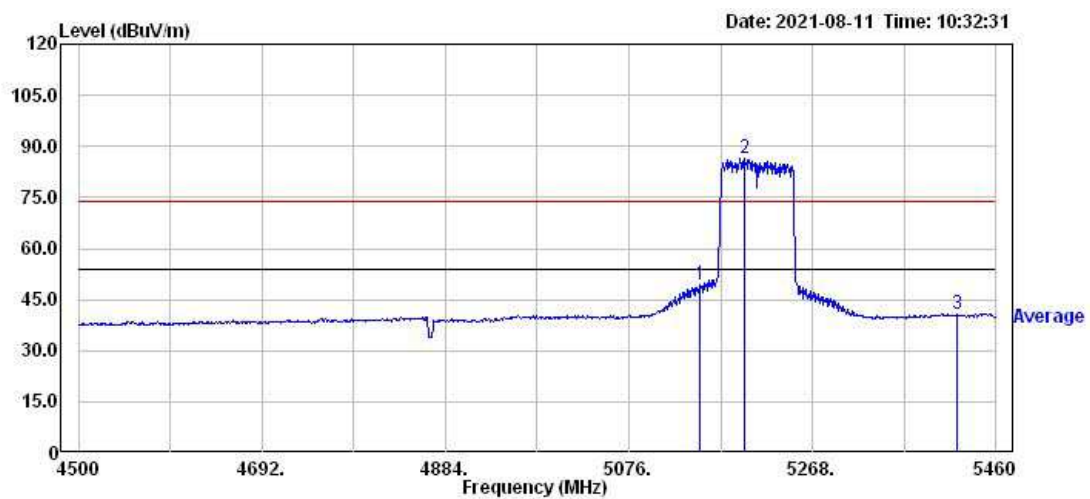


TEST REPORT

Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT80) Mode Ch42 PK

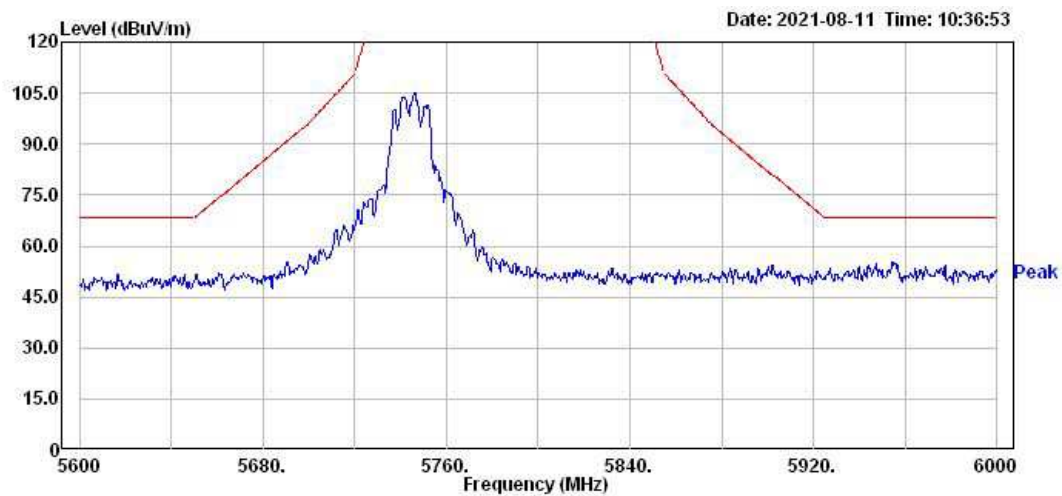


Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT80) Mode Ch42 AV

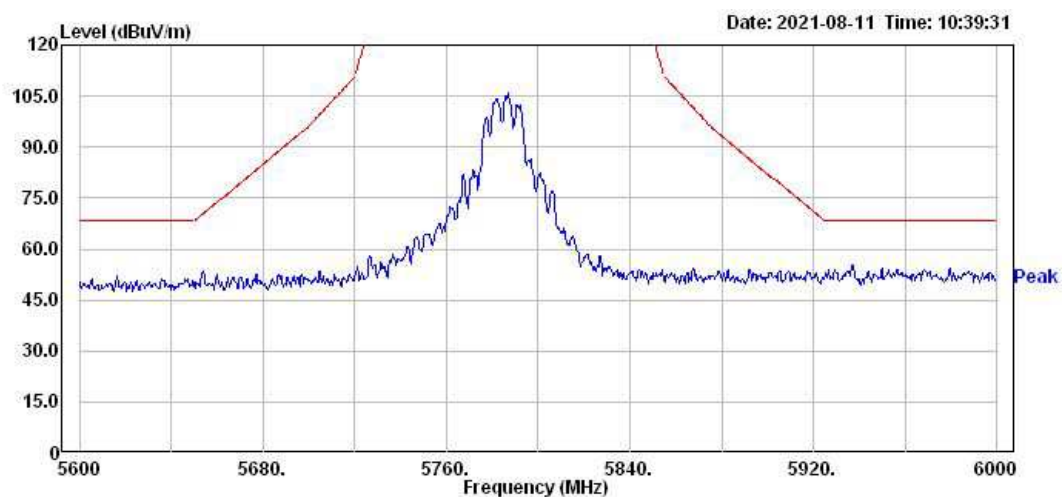


TEST REPORT

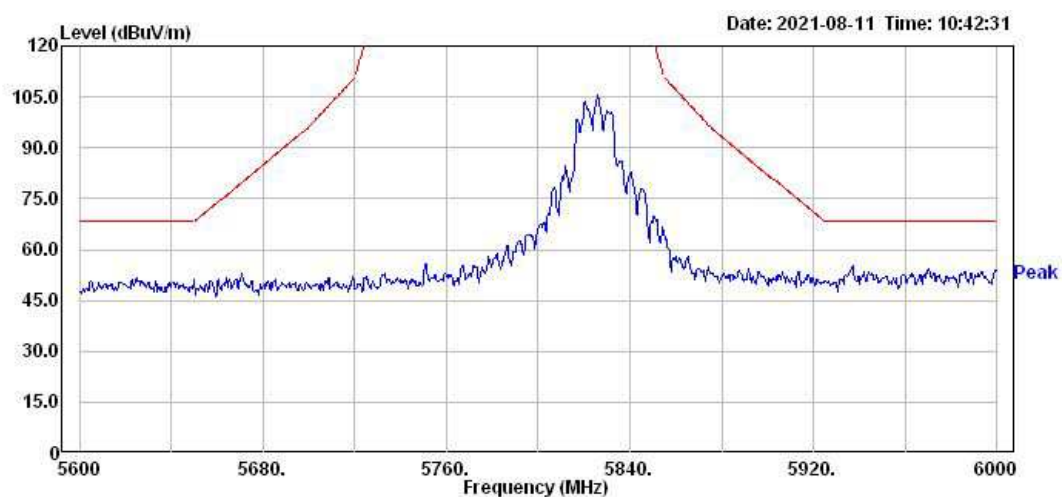
Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11a Ch149



Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11a Ch157

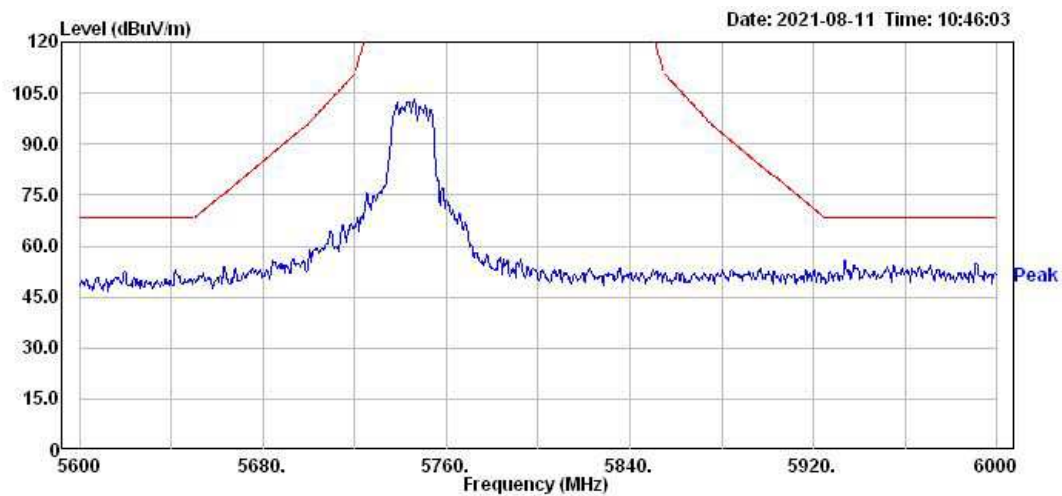


Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11a Ch165

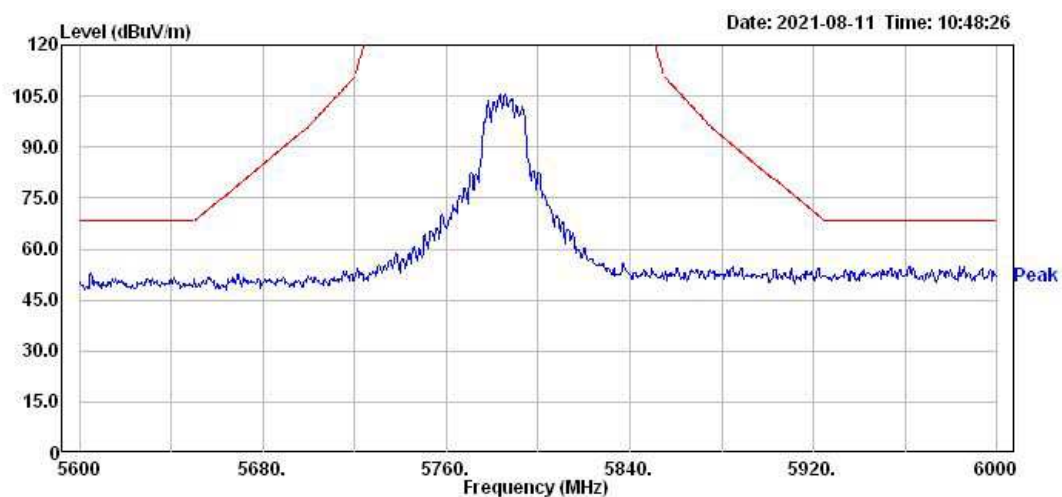


TEST REPORT

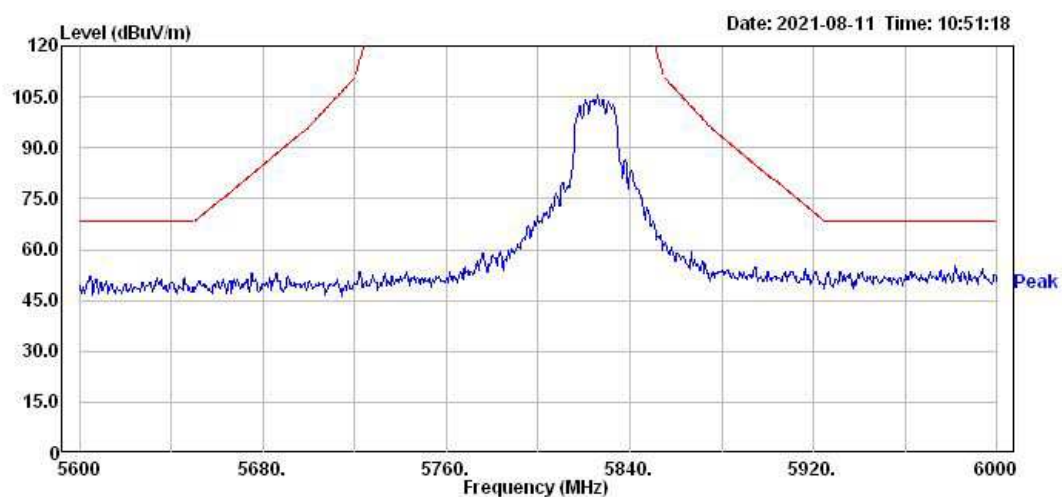
Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11ac(VHT20) Ch149



Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11ac(VHT20) Ch157

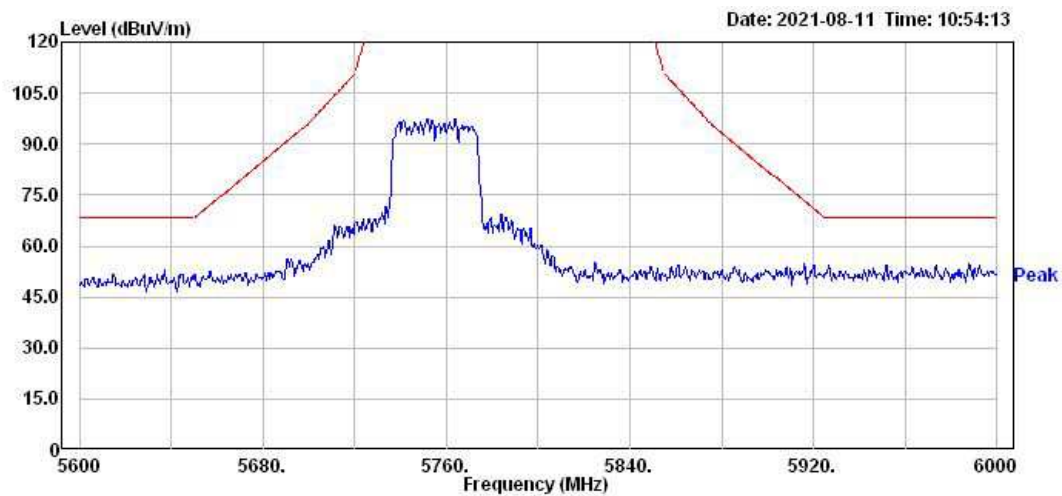


Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11ac(VHT20) Ch165

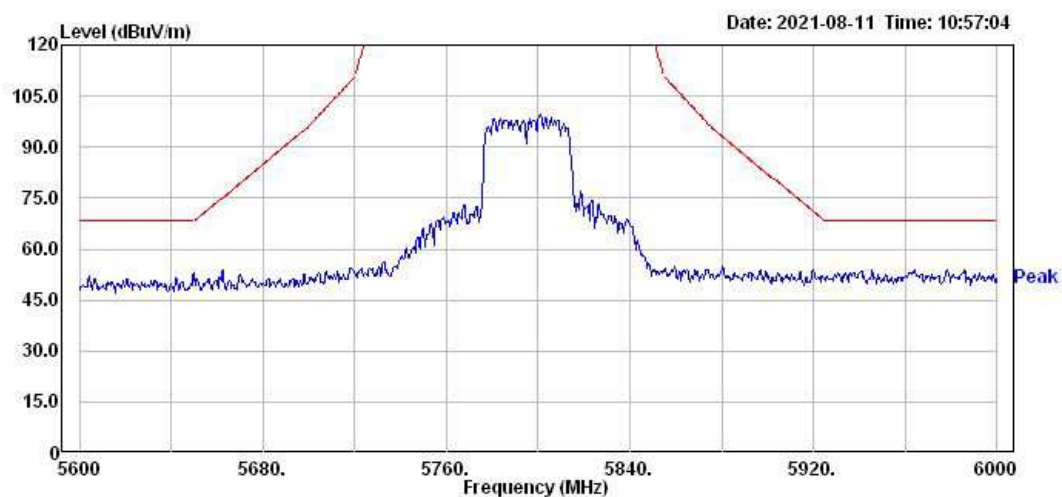


TEST REPORT

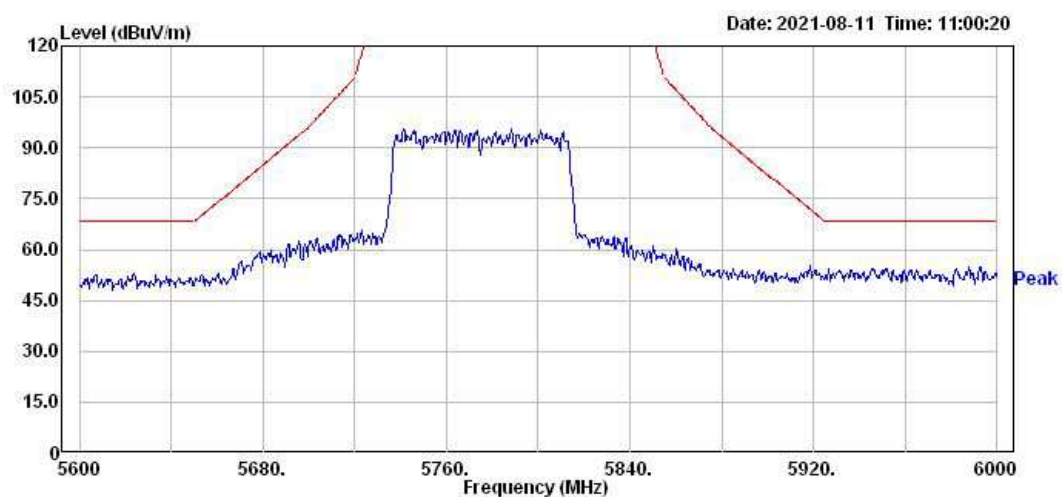
Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11ac(VHT40) Ch151



Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11ac(VHT40) Ch159



Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11ac(VHT80) Ch155



7.AC Power Line Conducted Emission

Since the EUT is not connected to AC source, therefore, the test can be waived.

TEST REPORT

Appendix A: Test equipment list

Test Equipment/ Test site	Brand	Model No.	Serial No.	Calibration Date	Next Calibration Date
EMI Test Receiver	Rohde & Schwarz	ESR7	101822	2020/08/18	2021/08/17
Spectrum Analyzer	Rohde & Schwarz	FSP30	100137	2020/08/25	2021/08/24
Signal Analyzer	Agilent	N9030A	MY51380492	2020/08/17	2021/08/16
Active Loop Antenna	SCHWARZBECK MESS-ELEKTRONIC	FMZB1519	1519-067	2021/04/14	2022/04/13
Broadband Antenna	SHWARZBECK	VULB 9168	9168-172	2021/01/29	2022/01/28
Horn Antenna	SHWARZBECK	BBHA 9120 D	9120D-456	2021/01/11	2022/01/10
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170159	2020/08/20	2023/08/19
Pre-Amplifier	AML	AML0120L3401	0419-114	2020/12/16	2021/12/15
Pre-amplifier	SGH	SGH184	20201124-1	2020/12/16	2021/12/15
Power Meter	Anritsu	ML2495A	0844001	2020/10/28	2021/10/27
Power Sensor	Anritsu	MA2411B	0738452	2020/10/28	2021/10/27
966-2(A) Cable	SUHNER	SUCOLEX 104	295105/4	2021/03/08	2022/03/07
966-2(B) Cable	SUHNER	SUCOFLEX 104P	CB0005	2021/03/08	2022/03/07
RF Cable	SUHNER	SUCOFLEX 104P	CB0006	2021/04/29	2022/04/28
966-2_3m Semi-Anechoic Chamber	966_2	CEM-966_2	N/A	2021/01/15	2022/01/14
Hight Pass Filter	Reactel	7HS-7G/18G-S11	N/A	2021/05/26	2022/05/25
20dB Attenuator	Mini-Circuits	BW-S20W5+	N/A	2021/05/26	2022/05/25
Test software	Audix	e3	V9	NCR	NCR

Note: No Calibration Required (NCR)

TEST REPORT

Appendix B: Measurement Uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of $k=2$.

Item	Uncertainty
Vertically polarized radiated disturbances from 30MHz~1GHz in a semi-anechoic chamber at a distance of 3m	5.16 dB
Horizontally polarized radiated disturbances from 30MHz~1GHz in a semi-anechoic chamber at a distance of 3m	5.02 dB
Radiated disturbances from 1GHz~18GHz in a semi-anechoic chamber at a distance of 3m	5.17 dB
Vertically polarized Radiated disturbances from 18GHz~26.5GHz in a semi-anechoic chamber at a distance of 1m	2.39 dB
Horizontally polarized Radiated disturbances from 18GHz~26.5GHz in a semi-anechoic chamber at a distance of 1m	2.39 dB
Vertically polarized Radiated disturbances from 26.5GHz~40GHz in a semi-anechoic chamber at a distance of 1m	2.39 dB
Horizontally polarized Radiated disturbances from 26.5GHz~40GHz in a semi-anechoic chamber at a distance of 1m	2.39 dB
Radiated disturbances from 9kHz~30MHz in a semi-anechoic chamber at a distance of 3m	3.70 dB
Emission on the Band Edge Test	4.32 dB
Occupied Bandwidth	7.78 %
Maximum Conducted Output Power	1.27 dB
Power Spectral Density	1.27 dB
AC Power Line Conducted Emission	3.08 dB