



Power	AC120V/60Hz
Test Mode	Mode 6, 802.11ax HE20 CH157 UNII-3
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5650.000	2.39	48.73	51.12	68.20	-17.08	peak	H
2	5700.000	2.52	48.41	50.93	105.20	-54.27	peak	H
3	5720.000	2.57	48.81	51.38	110.80	-59.42	peak	H
4	5725.000	2.58	49.22	51.80	122.20	-70.40	peak	H
5	5850.000	2.89	48.79	51.68	122.20	-70.52	peak	H
6	5855.000	2.90	48.79	51.69	110.80	-59.11	peak	H
7	5875.000	2.95	48.49	51.44	105.20	-53.76	peak	H
8	5925.000	3.07	48.76	51.83	68.20	-16.37	peak	H
9	11570.000	16.00	38.46	54.46	74.00	-19.54	peak	H
10	11570.000	16.00	24.55	40.55	54.00	-13.45	AVG	H
11	17355.000	30.74	24.83	55.57	68.20	-12.63	peak	H
1	5650.000	2.39	49.30	51.69	68.20	-16.51	peak	V
2	5700.000	2.52	50.34	52.86	105.20	-52.34	peak	V
3	5720.000	2.57	49.92	52.49	110.80	-58.31	peak	V
4	5725.000	2.58	49.38	51.96	122.20	-70.24	peak	V
5	5850.000	2.89	50.08	52.97	122.20	-69.23	peak	V
6	5855.000	2.90	49.96	52.86	110.80	-57.94	peak	V
7	5875.000	2.95	49.62	52.57	105.20	-52.63	peak	V
8	5925.000	3.07	50.04	53.11	68.20	-15.09	peak	V
9	11570.000	16.00	39.06	55.06	74.00	-18.94	peak	V
10	11570.000	16.00	25.77	41.77	54.00	-12.23	AVG	V
11	17355.000	30.74	25.70	56.44	68.20	-11.76	peak	V



Power	AC120V/60Hz
Test Mode	Mode 6, 802.11ax HE20 CH165 UNII-3
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5850.000	2.89	49.78	52.67	122.20	-69.53	peak	H
2	5855.000	2.90	48.86	51.76	110.80	-59.04	peak	H
3	5875.000	2.95	49.26	52.21	105.20	-52.99	peak	H
4	5925.000	3.07	48.45	51.52	68.20	-16.68	peak	H
5	11650.000	16.16	37.60	53.76	74.00	-20.24	peak	H
6	11650.000	16.16	23.05	39.21	54.00	-14.79	AVG	H
7	17475.000	31.21	23.83	55.04	68.20	-13.16	peak	H
1	5850.000	2.89	51.98	54.87	122.20	-67.33	peak	V
2	5855.000	2.90	51.67	54.57	110.80	-56.23	peak	V
3	5875.000	2.95	49.46	52.41	105.20	-52.79	peak	V
4	5925.000	3.07	50.17	53.24	68.20	-14.96	peak	V
5	11650.000	16.16	38.02	54.18	74.00	-19.82	peak	V
6	11650.000	16.16	24.37	40.53	54.00	-13.47	AVG	V
7	17475.000	31.21	24.00	55.21	68.20	-12.99	peak	V



Power	AC120V/60Hz
Test Mode	Mode 7, 802.11ax HE40 CH151 UNII-3
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5650.000	2.39	49.10	51.49	68.20	-16.71	peak	H
2	5700.000	2.52	49.46	51.98	105.20	-53.22	peak	H
3	5720.000	2.57	49.30	51.87	110.80	-58.93	peak	H
4	5725.000	2.58	51.06	53.64	122.20	-68.56	peak	H
5	11510.000	15.88	37.17	53.05	74.00	-20.95	peak	H
6	11510.000	15.88	23.54	39.42	54.00	-14.58	AVG	H
7	17265.000	30.38	23.91	54.29	68.20	-13.91	peak	H
1	5650.000	2.39	50.03	52.42	68.20	-15.78	peak	V
2	5700.000	2.52	50.92	53.44	105.20	-51.76	peak	V
3	5720.000	2.57	53.39	55.96	110.80	-54.84	peak	V
4	5725.000	2.58	56.90	59.48	122.20	-62.72	peak	V
5	11510.000	15.88	38.65	54.53	74.00	-19.47	peak	V
6	11510.000	15.88	24.84	40.72	54.00	-13.28	AVG	V
7	17265.000	30.38	26.17	56.55	68.20	-11.65	peak	V



Power	AC120V/60Hz
Test Mode	Mode 7, 802.11ax HE40 CH159 UNII-3
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5850.000	2.89	49.25	52.14	122.20	-70.06	peak	H
2	5855.000	2.90	49.14	52.04	110.80	-58.76	peak	H
3	5875.000	2.95	48.49	51.44	105.20	-53.76	peak	H
4	5925.000	3.07	48.79	51.86	68.20	-16.34	peak	H
5	11590.000	16.04	37.11	53.15	74.00	-20.85	peak	H
6	11590.000	16.04	23.27	39.31	54.00	-14.69	AVG	H
7	17385.000	30.85	24.24	55.09	68.20	-13.11	peak	H
1	5850.000	2.89	50.74	53.63	122.20	-68.57	peak	V
2	5855.000	2.90	50.04	52.94	110.80	-57.86	peak	V
3	5875.000	2.95	49.67	52.62	105.20	-52.58	peak	V
4	5925.000	3.07	49.51	52.58	68.20	-15.62	peak	V
5	11590.000	16.04	38.40	54.44	74.00	-19.56	peak	V
6	11590.000	16.04	24.81	40.85	54.00	-13.15	AVG	V
7	17385.000	30.85	25.53	56.38	68.20	-11.82	peak	V



Power	AC120V/60Hz
Test Mode	Mode 8, 802.11ax HE80 CH155 UNII-3
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor	

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector mode (PK/AVG)	AntPol. H/V
1	5650.000	2.39	48.46	50.85	68.20	-17.35	peak	H
2	5700.000	2.52	48.76	51.28	105.20	-53.92	peak	H
3	5720.000	2.57	49.45	52.02	110.80	-58.78	peak	H
4	5725.000	2.58	48.82	51.40	122.20	-70.80	peak	H
5	5850.000	2.89	48.80	51.69	122.20	-70.51	peak	H
6	5855.000	2.90	48.90	51.80	110.80	-59.00	peak	H
7	5875.000	2.95	48.34	51.29	105.20	-53.91	peak	H
8	5925.000	3.07	48.58	51.65	68.20	-16.55	peak	H
9	11550.000	15.96	37.25	53.21	74.00	-20.79	peak	H
10	11550.000	15.96	23.58	39.54	54.00	-14.46	AVG	H
11	17325.000	30.62	24.43	55.05	68.20	-13.15	peak	H
1	5650.000	2.39	49.12	51.51	68.20	-16.69	peak	V
2	5700.000	2.52	51.41	53.93	105.20	-51.27	peak	V
3	5720.000	2.57	52.43	55.00	110.80	-55.80	peak	V
4	5725.000	2.58	54.42	57.00	122.20	-65.20	peak	V
5	5850.000	2.89	50.97	53.86	122.20	-68.34	peak	V
6	5855.000	2.90	51.27	54.17	110.80	-56.63	peak	V
7	5875.000	2.95	48.77	51.72	105.20	-53.48	peak	V
8	5925.000	3.07	49.52	52.59	68.20	-15.61	peak	V
9	11550.000	15.96	38.58	54.54	74.00	-19.46	peak	V
10	11550.000	15.96	24.12	40.08	54.00	-13.92	AVG	V
11	17325.000	30.62	26.13	56.75	68.20	-11.45	peak	V



6.7. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.150
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz



7. On Time, Duty Cycle and Measurement methods

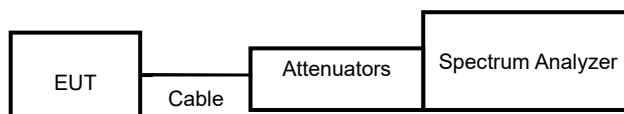
7.1. Test Limit

None; for reporting purposes only.

7.2. Test Procedure

KDB 789033 Zero-Span Spectrum Analyzer Method.

7.3. Test Setup Layout



7.4. Test Result and Data

SISO

Modulation Mode	On Time (msec)	Period Time (msec)	Duty Cycle (%)
802.11a	1.41	1.45	96.90%
802.11ac VHT20	0.69	0.74	93.26%
802.11ac VHT40	0.36	0.41	86.86%
802.11ac VHT80	0.19	0.53	36.02%
802.11ax HE20	0.55	0.60	91.64%
802.11ax HE40	0.31	0.36	84.96%
802.11ax HE80	0.18	0.52	34.17%

MIMO

Modulation Mode	On Time (msec)	Period Time (msec)	Duty Cycle (%)
802.11ac VHT20	0.69	0.75	91.49%
802.11ac VHT40	0.35	0.41	86.55%
802.11ac VHT80	0.19	0.53	35.58%
802.11ax HE20	0.55	0.60	91.00%
802.11ax HE40	0.30	0.36	84.40%
802.11ax HE80	0.18	0.52	34.23%

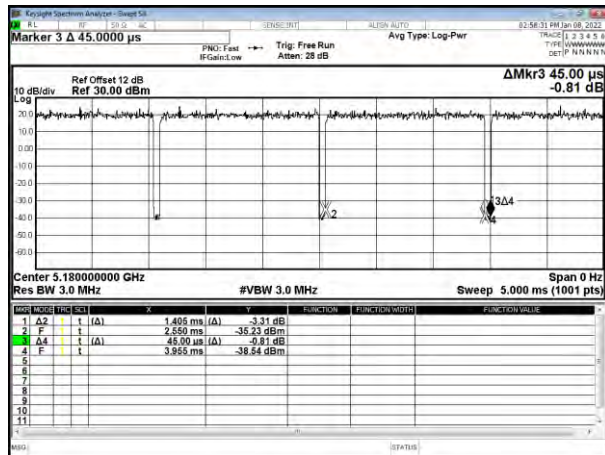
**7.5. Measurement Methods**

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

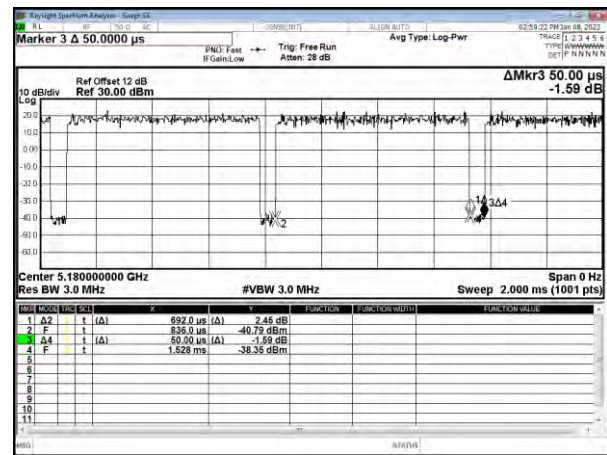


SISO

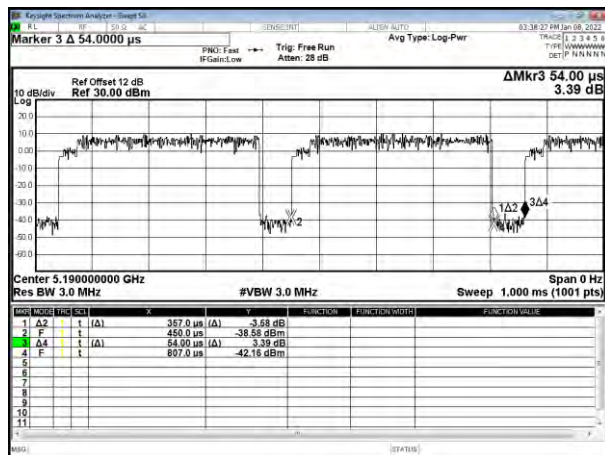
Modulation Type: 802.11a (6Mbps)



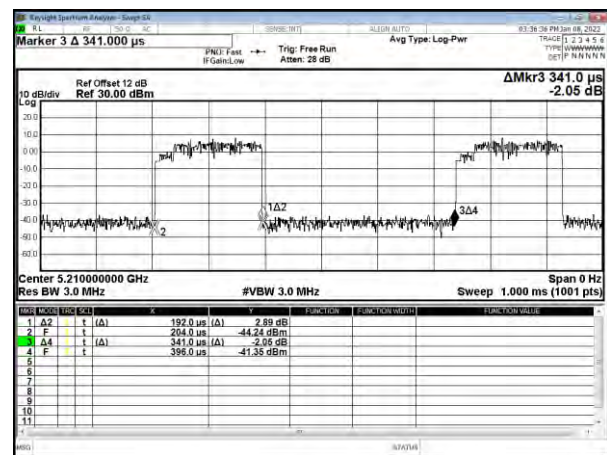
Modulation Type: 802.11ac VHT20 (6.5Mbps)



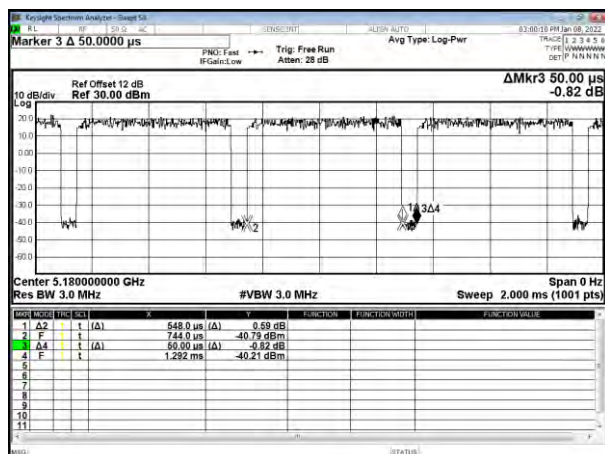
Modulation Type: 802.11ac VHT40 (13.5Mbps)



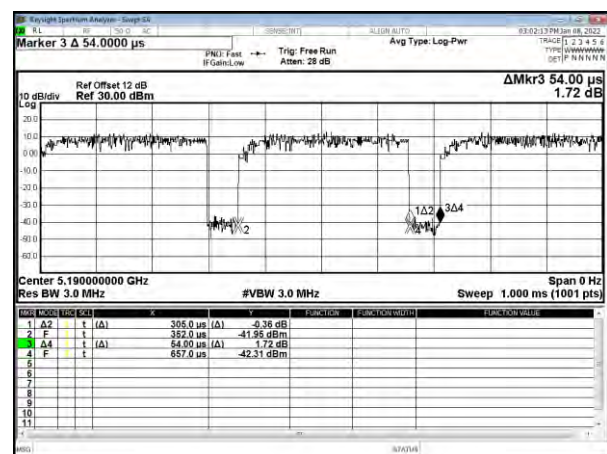
Modulation Type: 802.11ac VHT80 (29.3Mbps)



Modulation Type: 802.11ax HE20 (7.3Mbps)

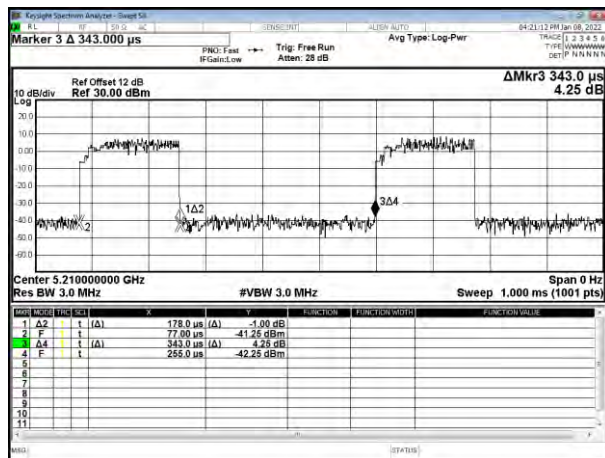


Modulation Type: 802.11ax HE40 (14.6Mbps)





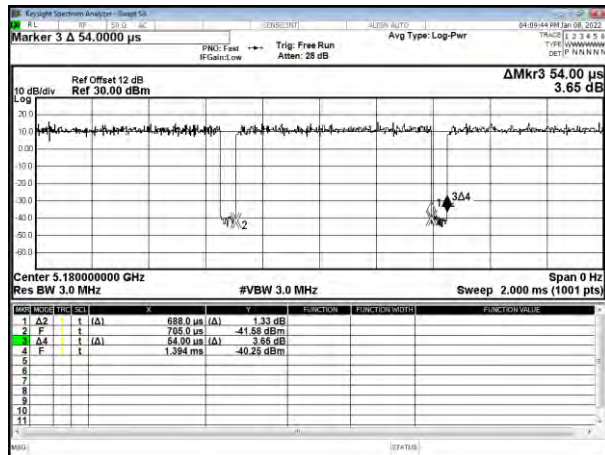
Modulation Type: 802.11ax HE80 (30.6Mbps)



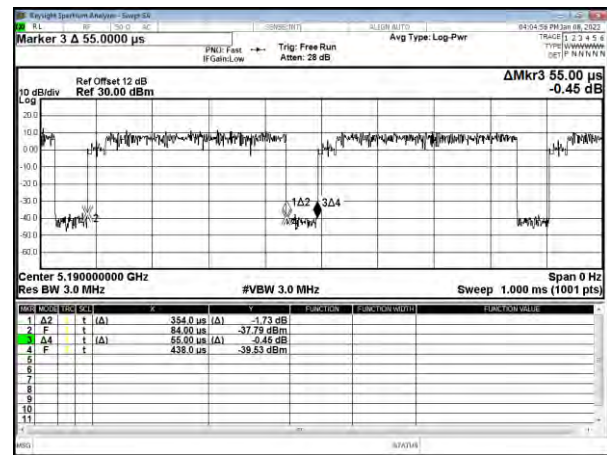


MIMO

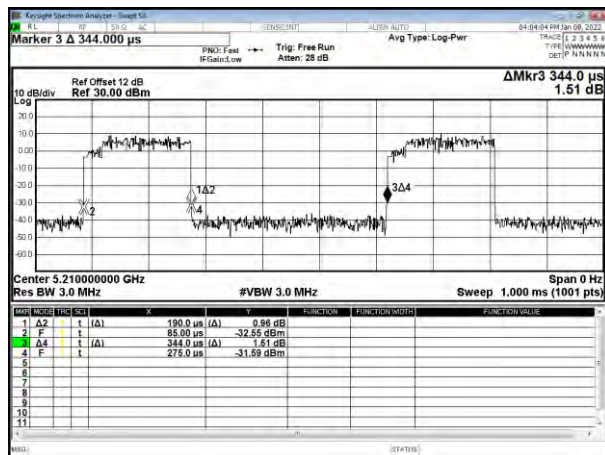
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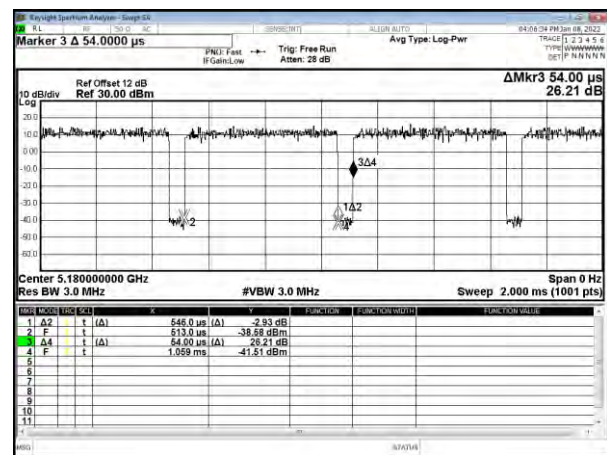
Modulation Type: 802.11ac VHT40 (27Mbps)



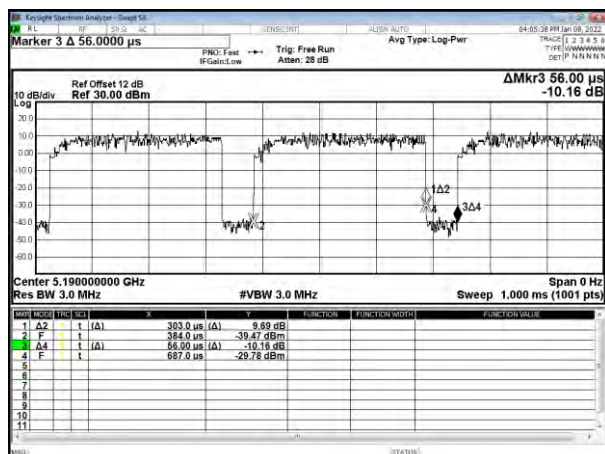
Modulation Type: 802.11ac VHT80 (58.5Mbps)



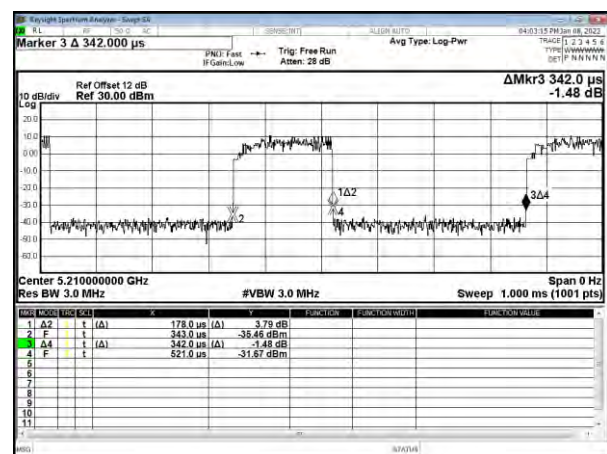
Modulation Type: 802.11ax HE20 (7.3Mbps)



Modulation Type: 802.11ax HE40 (14.6Mbps)



Modulation Type: 802.11ax HE80 (30.6Mbps)





8. 6dB Bandwidth & 99% Occupied Bandwidth

8.1. Test Limit

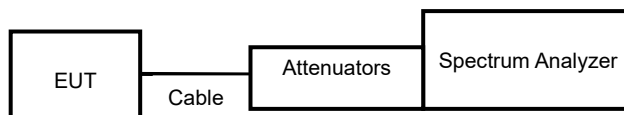
FCC §15.407

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

8.2. Test Procedure

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

8.3. Test Setup Layout



8.4. Test Result and Data (6dB Bandwidth)

In the 5.8GHz Band

SISO

Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)
			ANT A	ANT B	
802.11a	149	5745	15.14	15.82	0.50
	157	5785	15.06	15.17	0.50
	165	5825	15.42	15.35	0.50
802.11ac VHT20	149	5745	15.17	16.26	0.50
	157	5785	15.34	15.50	0.50
	165	5825	14.23	17.29	0.50
802.11ac VHT40	155	5755	35.11	35.06	0.50
	159	5795	35.09	35.09	0.50
802.11ac VHT80	155	5775	75.12	75.09	0.50
802.11ax HE20	149	5745	18.71	18.97	0.50
	157	5785	18.74	18.62	0.50
	165	5825	18.83	18.73	0.50
802.11ax HE40	155	5755	35.35	36.36	0.50
	159	5795	35.15	35.14	0.50
802.11ax HE80	155	5775	75.13	75.12	0.50

**MIMO**

Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)
			ANT A	ANT B	
802.11ac VHT20	149	5745	17.66	16.33	0.50
	157	5785	17.01	16.94	0.50
	165	5825	17.23	16.96	0.50
802.11ac VHT40	155	5755	35.12	35.09	0.50
	159	5795	35.11	35.10	0.50
802.11ac VHT80	155	5775	75.11	75.12	0.50
802.11ax HE20	149	5745	19.09	18.76	0.50
	157	5785	19.06	18.89	0.50
	165	5825	19.10	18.87	0.50
802.11ax HE40	155	5755	35.16	35.87	0.50
	159	5795	36.52	35.33	0.50
802.11ax HE80	155	5775	75.54	75.13	0.50

**8.5. Test Result and Data (99% Occupied Bandwidth)**

In the 5.8GHz Band

SISO

Mode	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT A	ANT B
802.11a	149	5745	16.48	16.55
	157	5785	16.53	16.61
	165	5825	16.52	16.61
802.11ac VHT20	149	5745	17.61	17.63
	157	5785	17.59	17.65
	165	5825	17.62	17.65
802.11ac VHT40	155	5755	35.89	35.82
	159	5795	35.82	35.78
802.11ac VHT80	155	5775	75.03	74.78
802.11ax HE20	149	5745	19.06	19.22
	157	5785	19.04	19.13
	165	5825	19.03	19.04
802.11ax HE40	155	5755	37.48	37.54
	159	5795	37.61	37.52
802.11ax HE80	155	5775	76.74	76.55

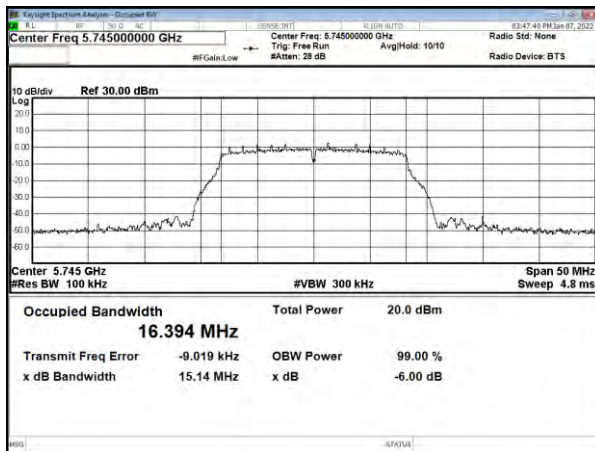
MIMO

Mode	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT A	ANT B
802.11ac VHT20	149	5745	17.62	17.64
	157	5785	17.63	17.63
	165	5825	17.66	17.64
802.11ac VHT40	155	5755	35.89	35.76
	159	5795	35.84	35.91
802.11ac VHT80	155	5775	74.90	74.78
802.11ax HE20	149	5745	19.03	19.13
	157	5785	19.16	19.18
	165	5825	19.07	19.05
802.11ax HE40	155	5755	37.25	37.49
	159	5795	37.59	37.57
802.11ax HE80	155	5775	76.48	76.68

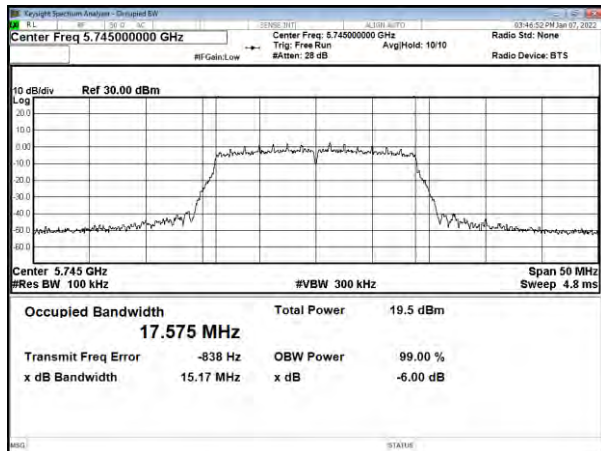


SISO (ANT A)
6dB Bandwidth

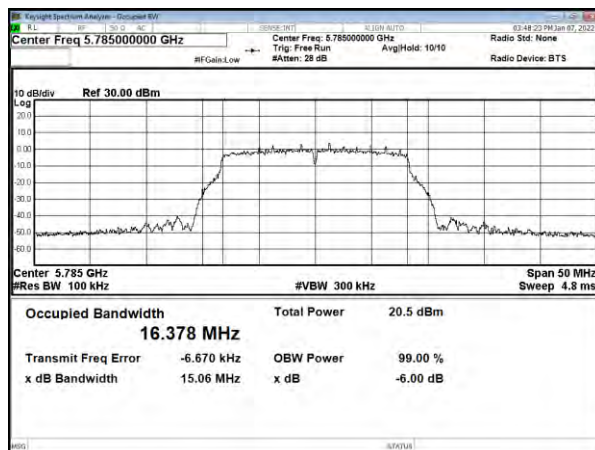
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CH149



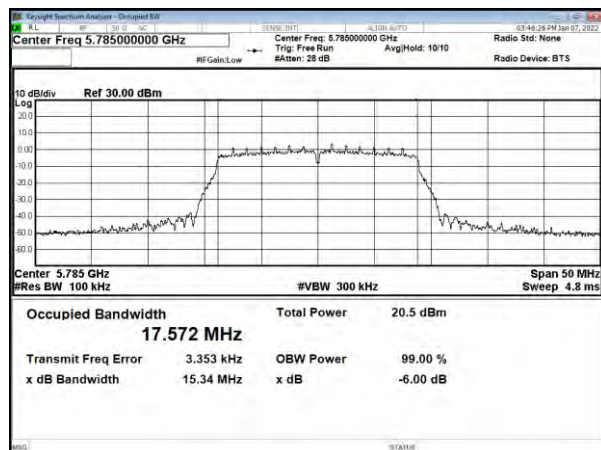
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CH149



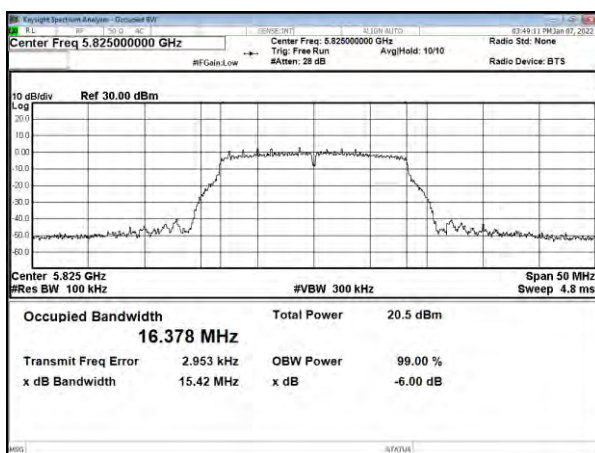
CH157



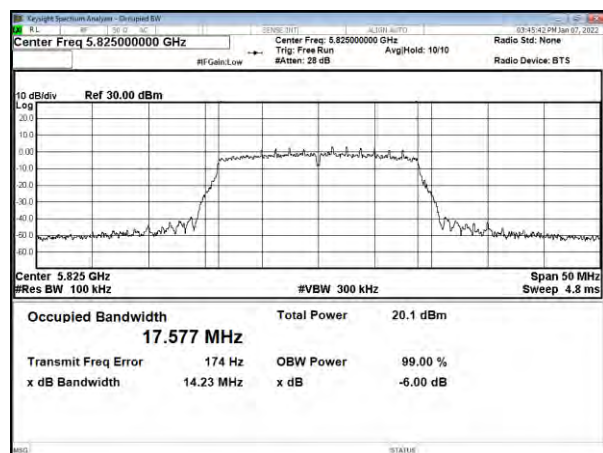
CH157



CH165

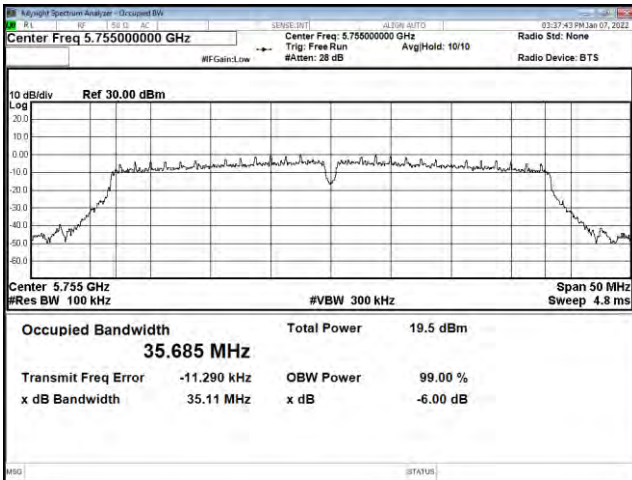
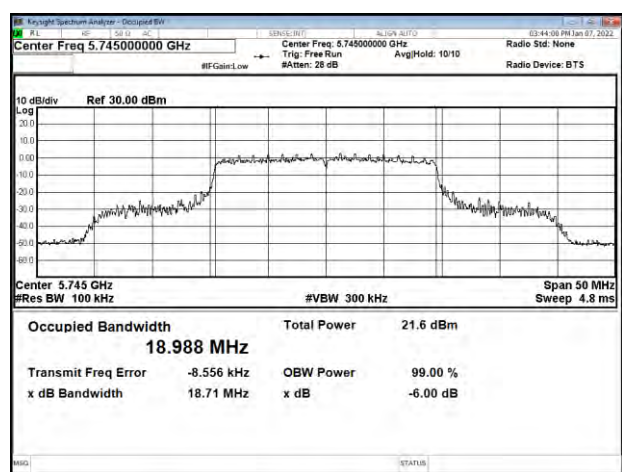


CH165

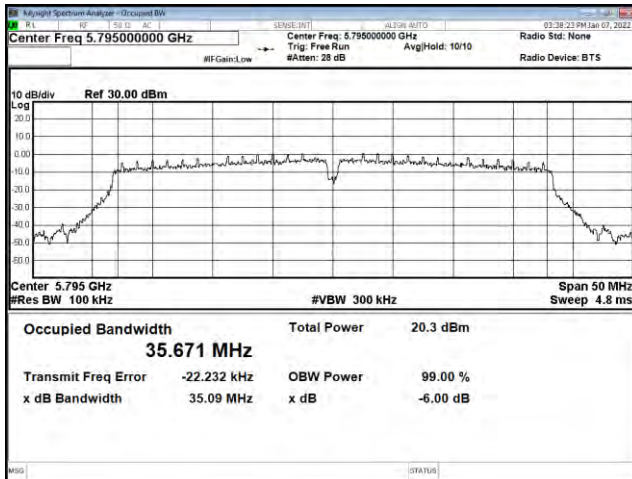




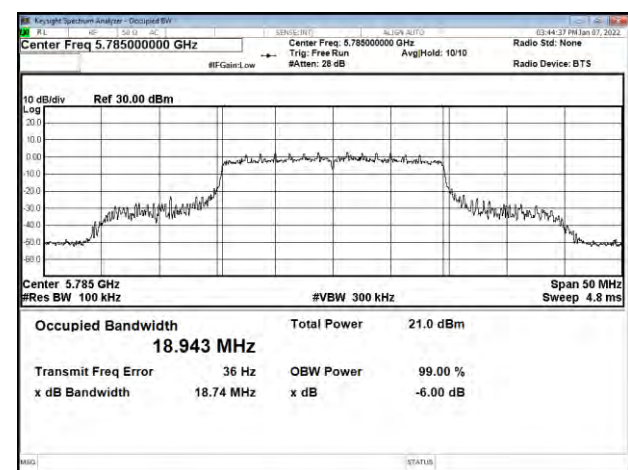
6dB Bandwidth

Modulation Type: 802.11ac, VHT40 (13.5Mbps)
CH151Modulation Type: 802.111ax HE20 (7.3Mbps)
CH149

CH159

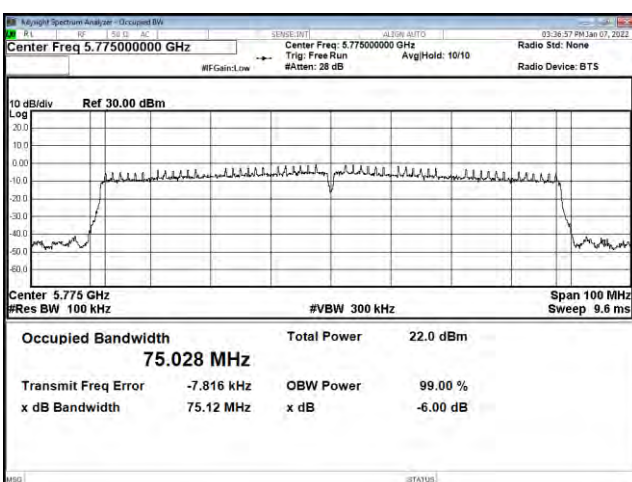


CH157

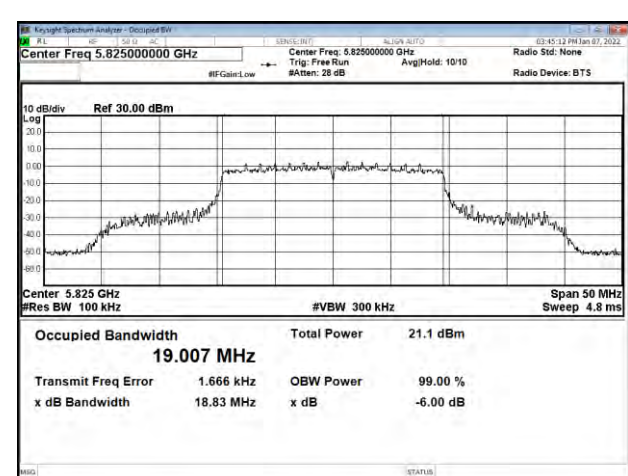


Modulation Type: 802.11ac, VHT80 (29.3Mbps)

CH155



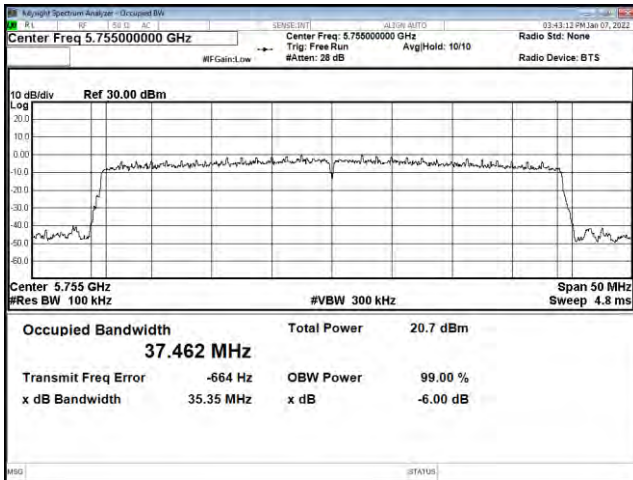
CH165



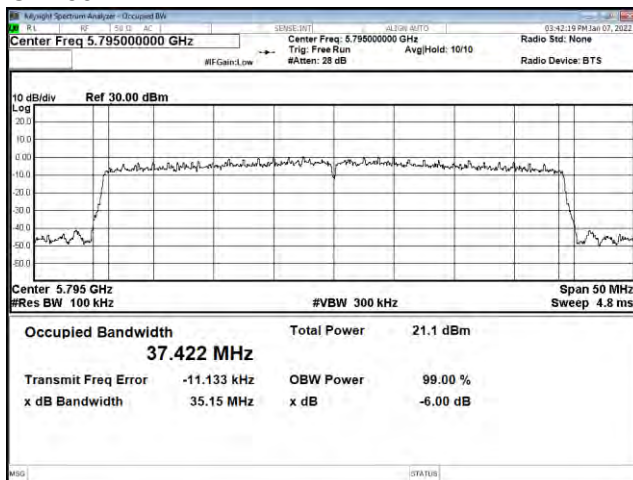


6dB Bandwidth

Modulation Type: 802.11 ax HE40 (14.6Mbps)
CH151

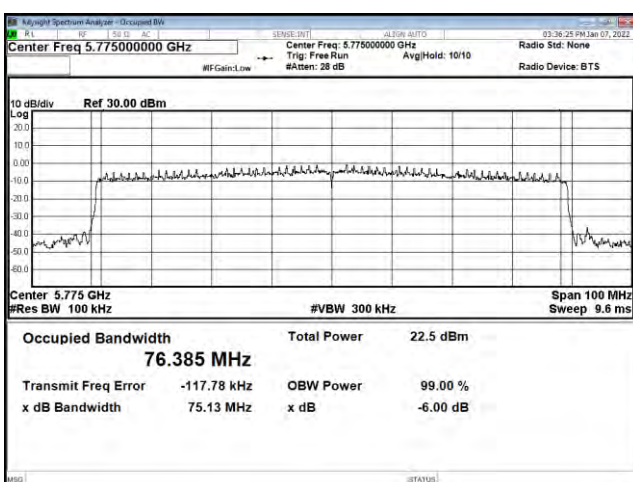


CH159



Modulation Type: 802.11ax HE80 (30.6Mbps)

CH155



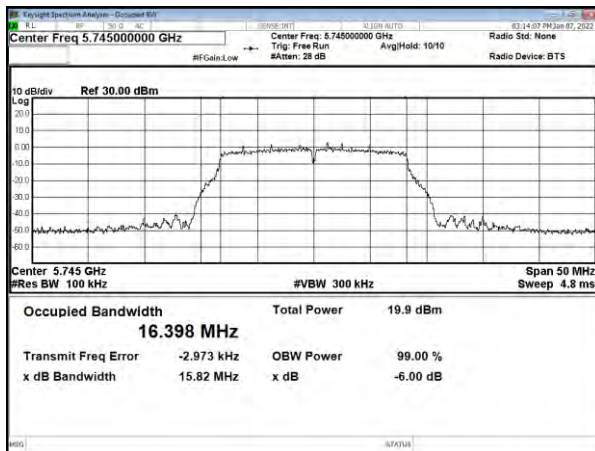


SISO (ANT B)

6dB Bandwidth

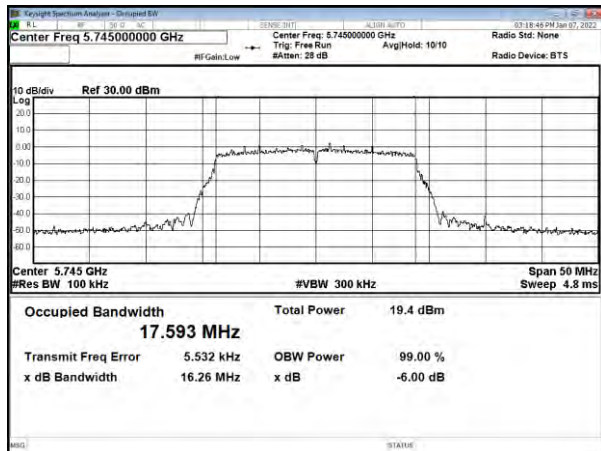
Modulation Type: 802.11a (6Mbps)

CH149

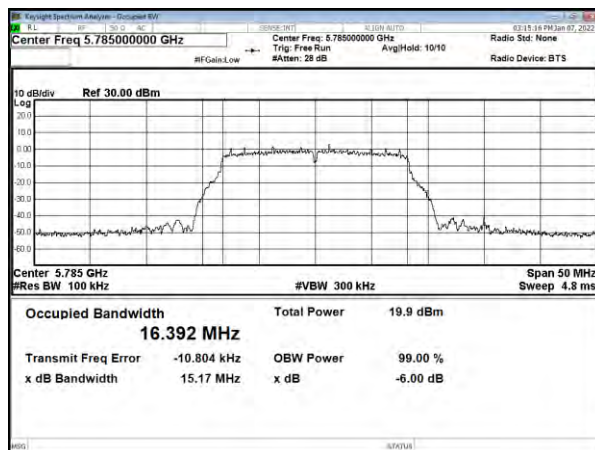


Modulation Type: 802.11ac, VHT20 (6.5Mbps)

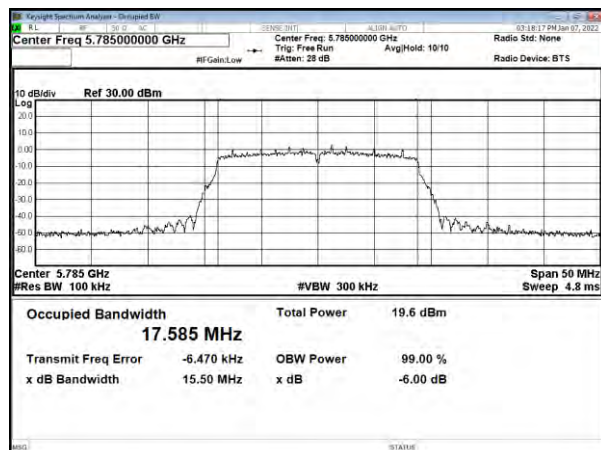
CH149



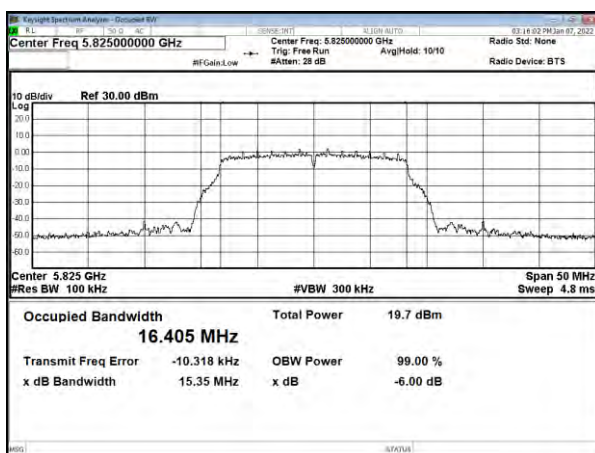
CH157



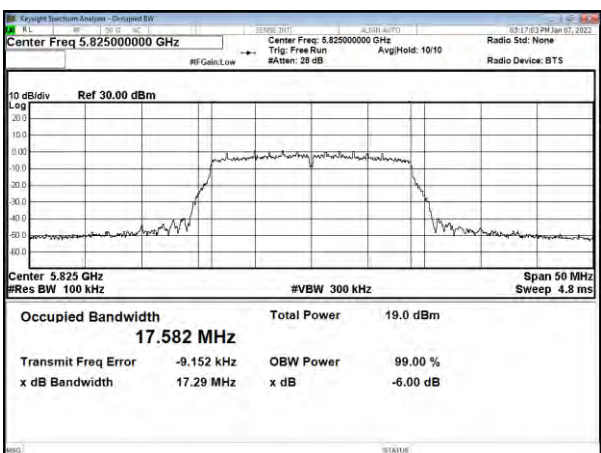
CH157



CH165

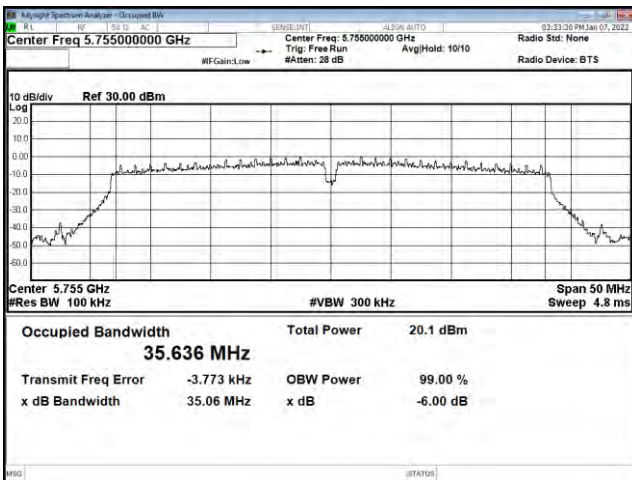
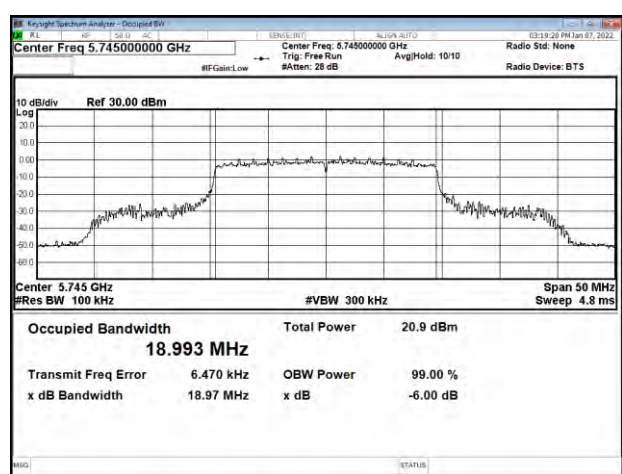


CH165

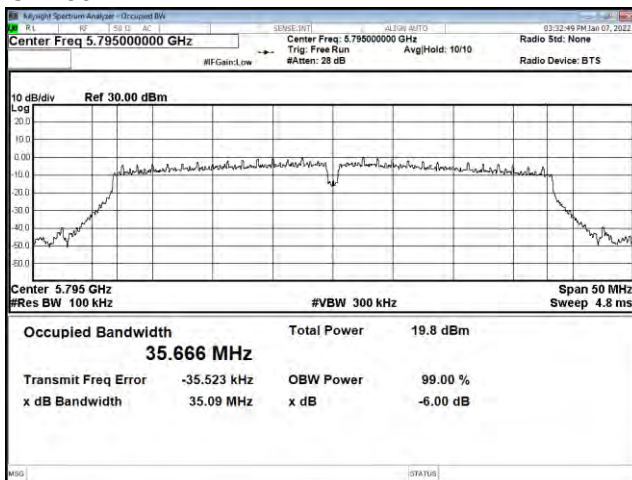




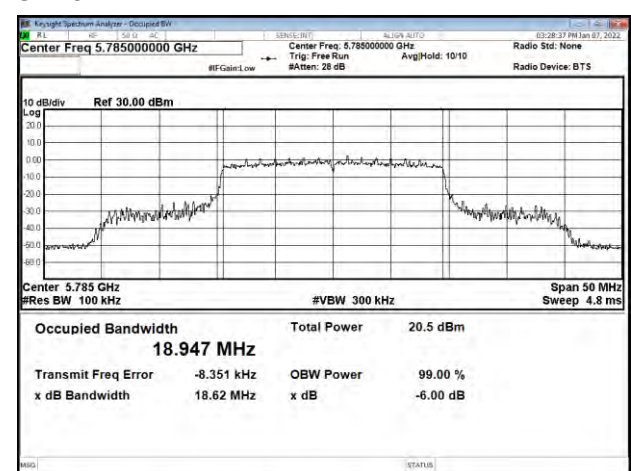
6dB Bandwidth

Modulation Type: 802.11ac, VHT40 (13.5Mbps)
CH151Modulation Type: 802.111ax HE20 (7.3Mbps)
CH149

CH159

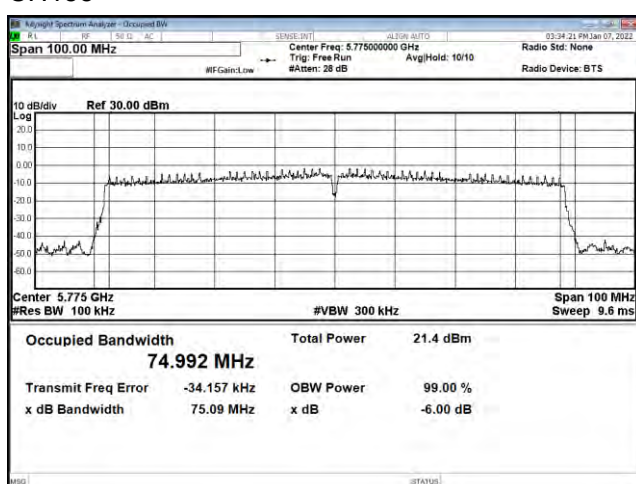


CH157

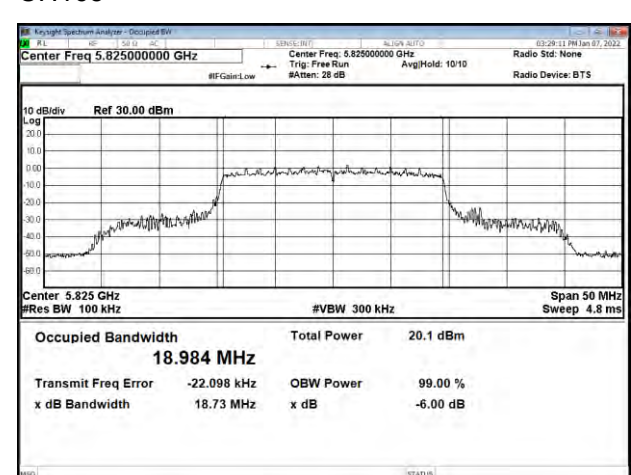


Modulation Type: 802.11ac, VHT80 (29.3Mbps)

CH155

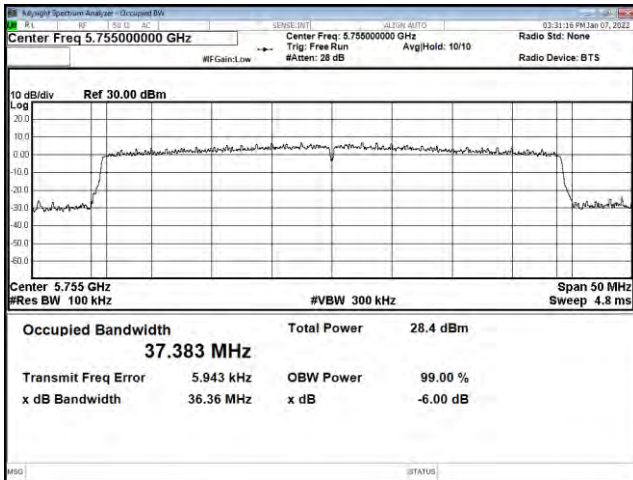


CH165

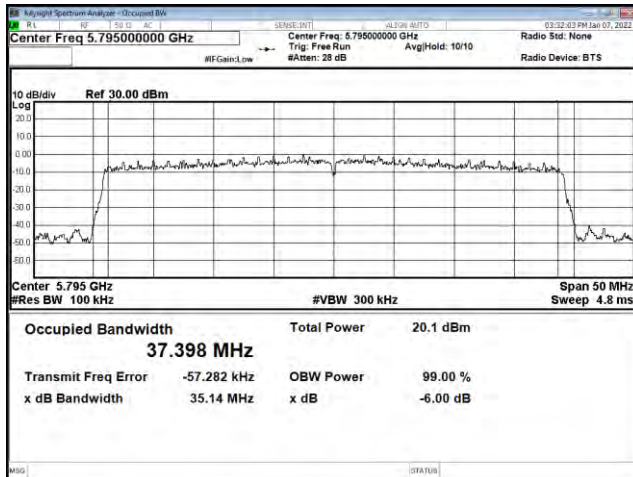




Modulation Type: 802.11 ax HE40 (14.6Mbps)
CH151

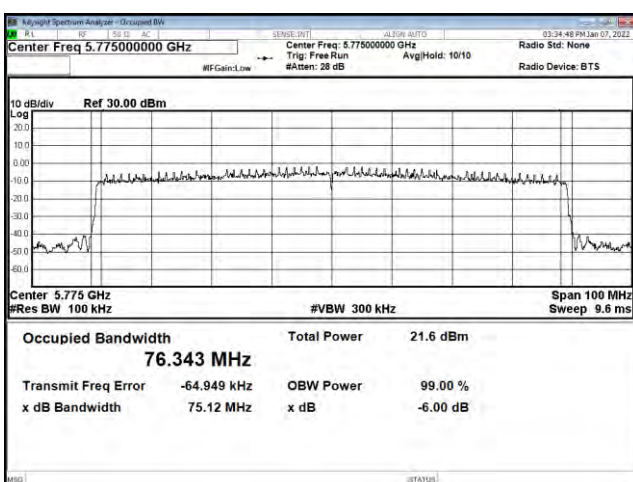


CH159



Modulation Type: 802.11ax HE80 (30.6Mbps)

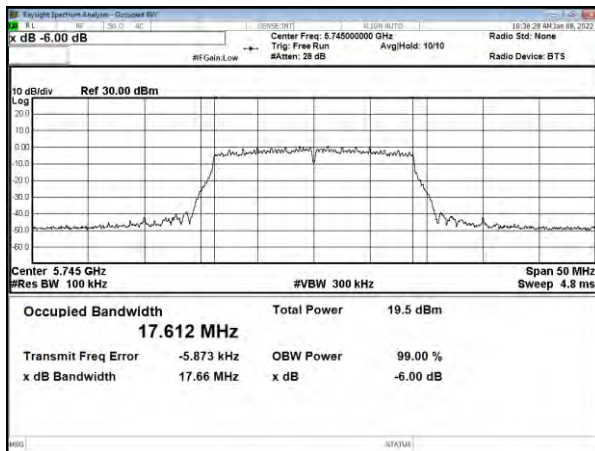
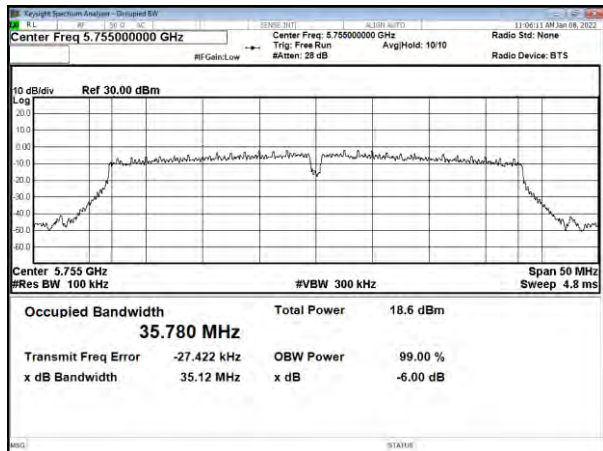
CH155



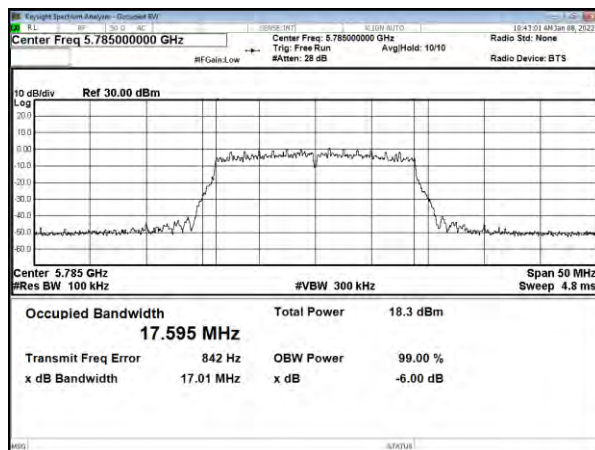


MIMO (ANT A)

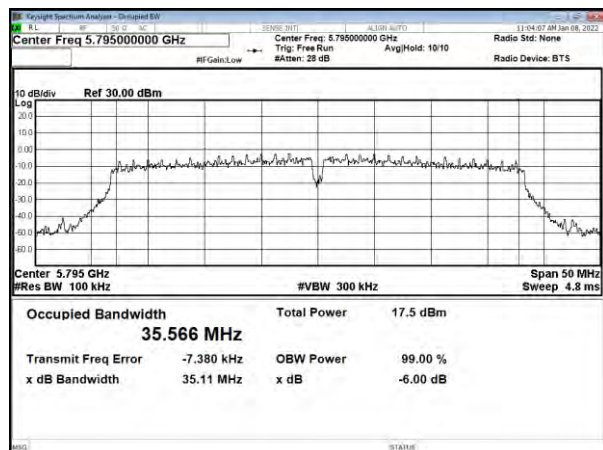
6dB Bandwidth

Modulation Type: 802.11ac, VHT20 (13Mbps)
CH149Modulation Type: 802.11ac, VHT40 (27Mbps)
CH151

CH157



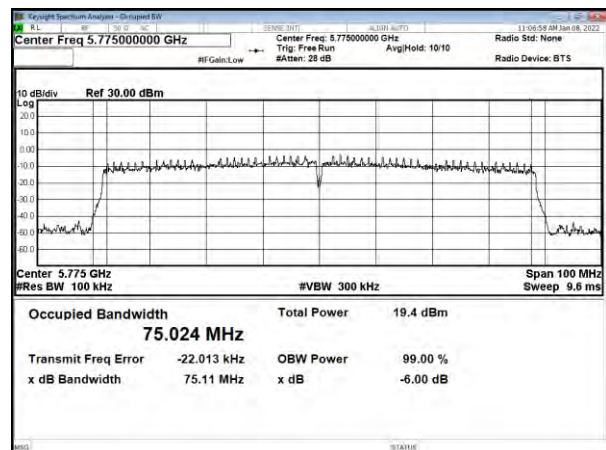
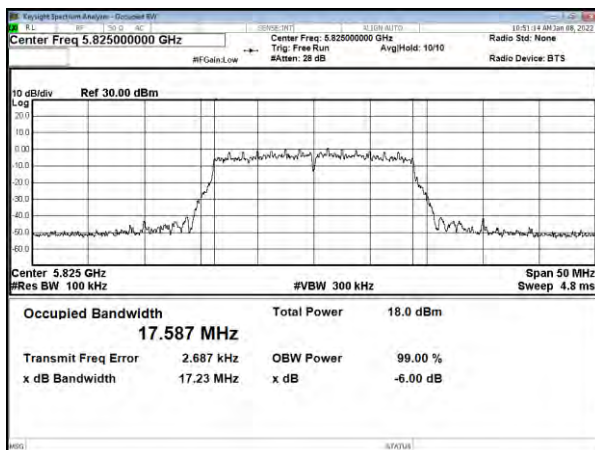
CH159



Modulation Type: 802.11ac, VHT80 (58.5Mbps)

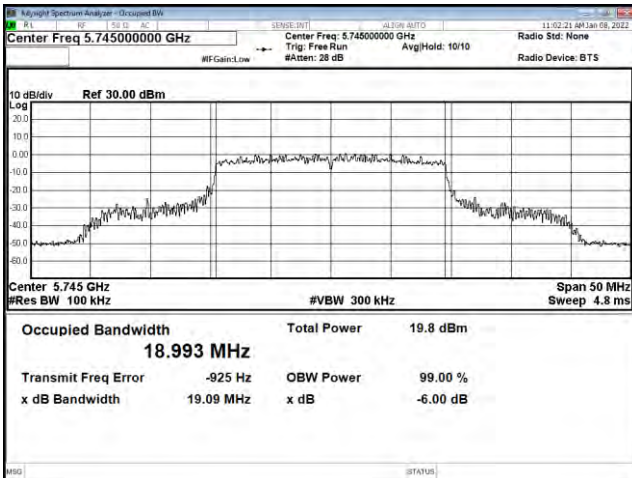
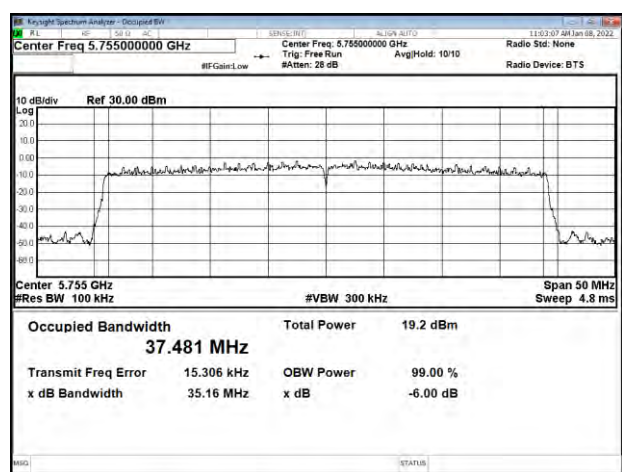
CH155

CH165

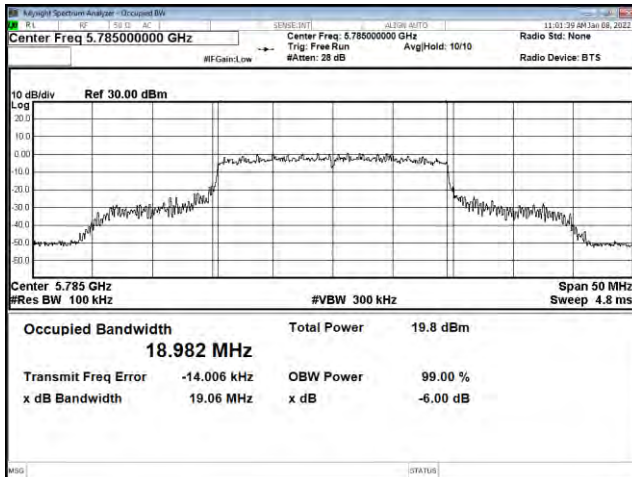




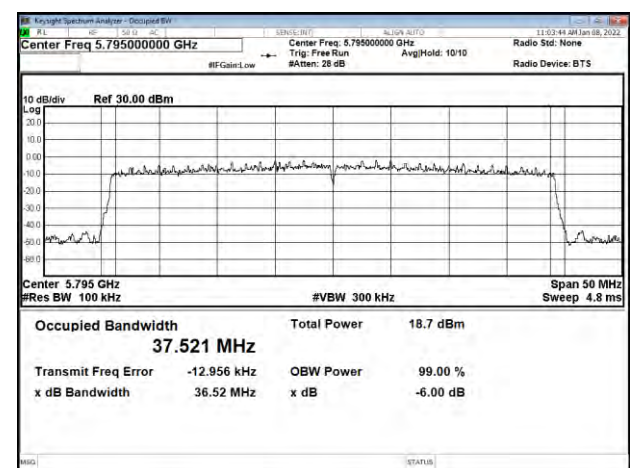
6dB Bandwidth

Modulation Type: 802.11ax HE20 (7.3Mbps)
CH149Modulation Type: 802.11 ax HE40 (14.6Mbps)
CH151

CH157

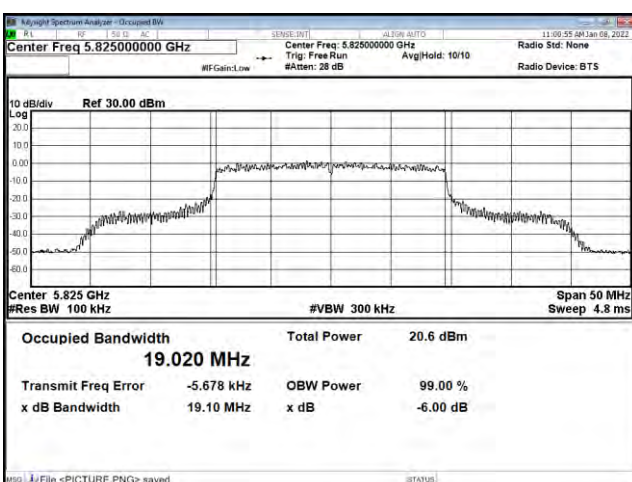


CH159

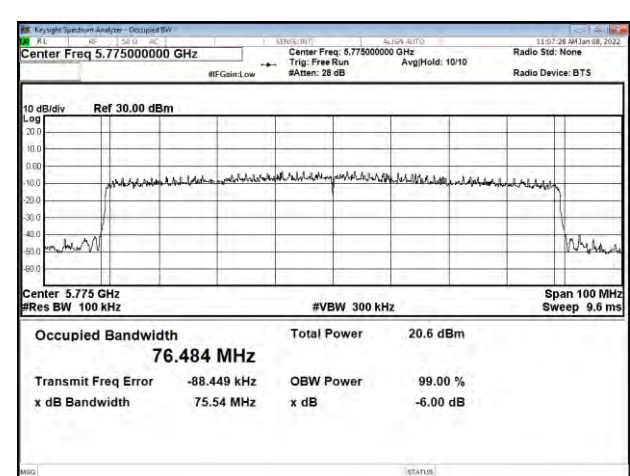


Modulation Type: 802.11ax HE80 (30.6Mbps)

CH165



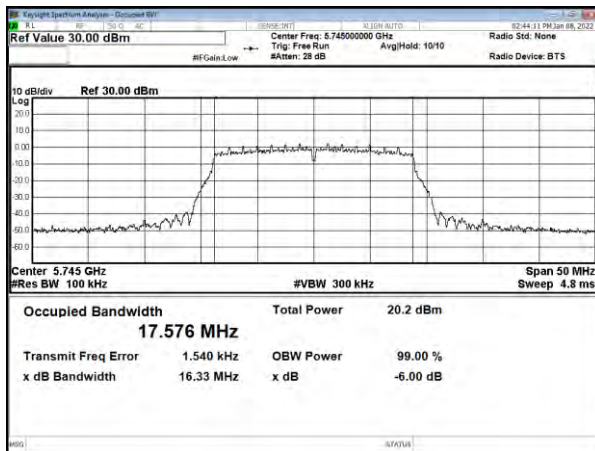
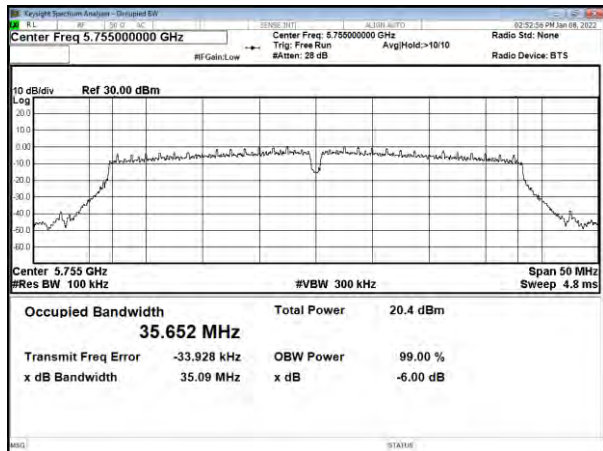
CH155



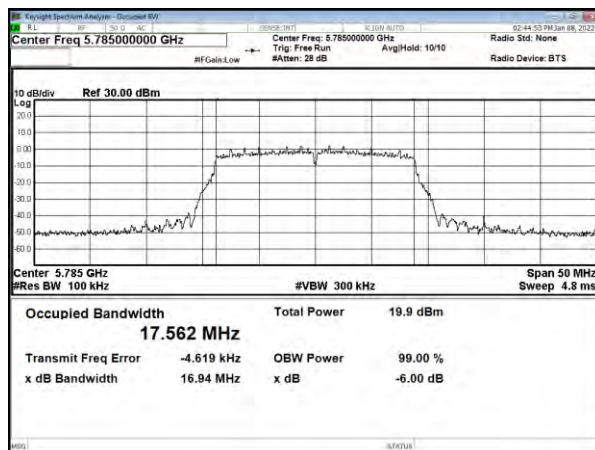


MIMO (ANT B)

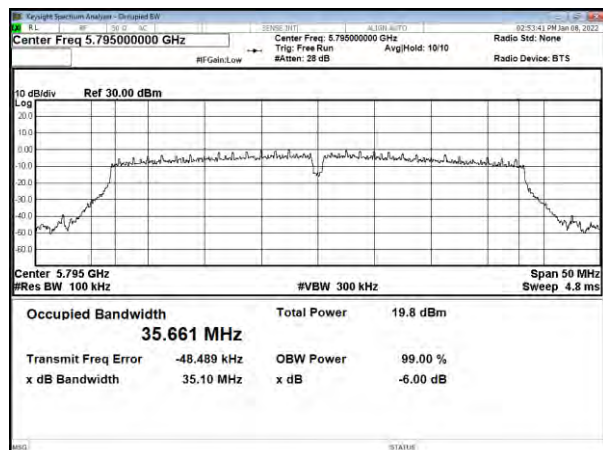
6dB Bandwidth

Modulation Type: 802.11ac, VHT20 (13Mbps)
CH149Modulation Type: 802.11ac, VHT40 (27Mbps)
CH151

CH157

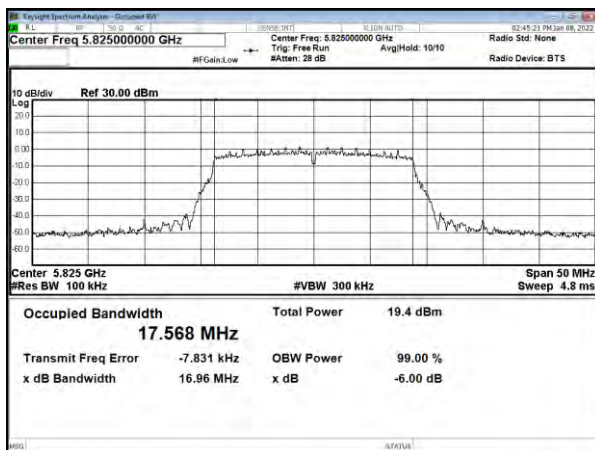


CH159

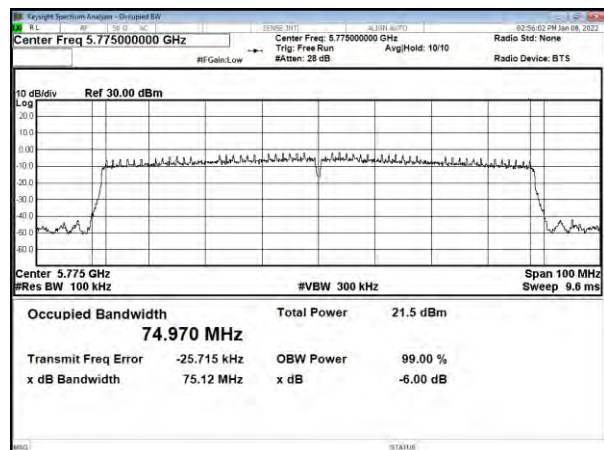


Modulation Type: 802.11ac, VHT80 (58.5Mbps)

CH165

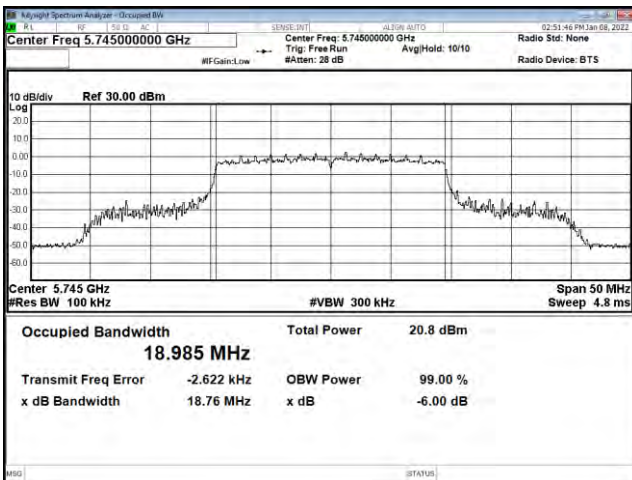
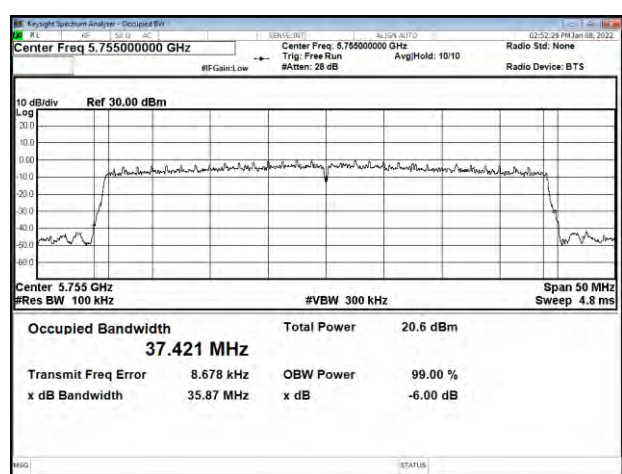


CH155

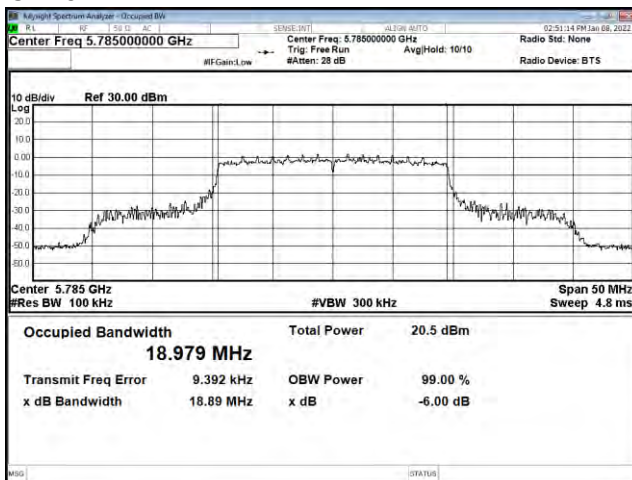




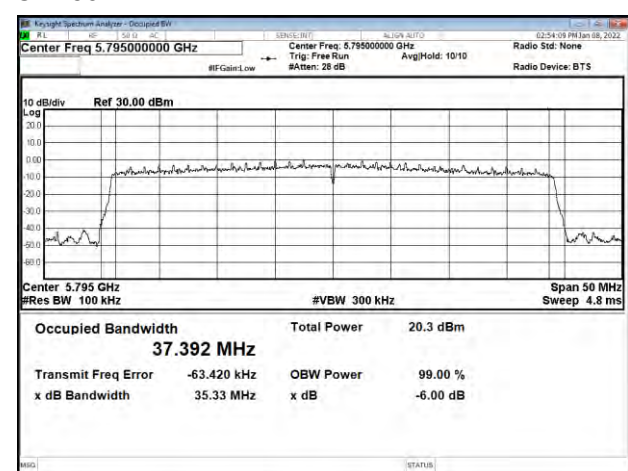
6dB Bandwidth

Modulation Type: 802.11ax HE20 (7.3Mbps)
CH149Modulation Type: 802.11 ax HE40 (14.6Mbps)
CH151

CH157

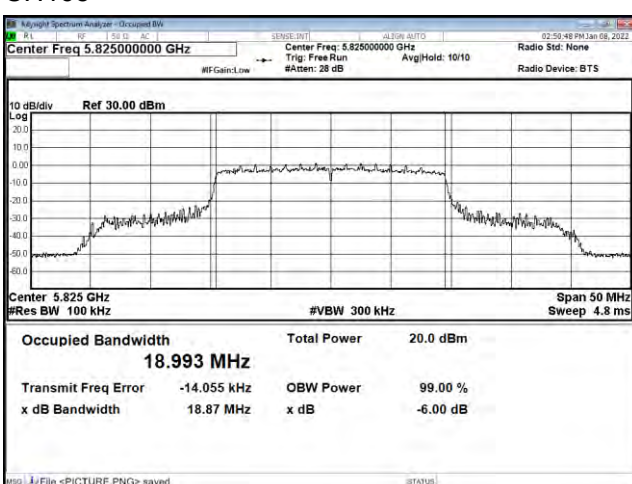


CH159

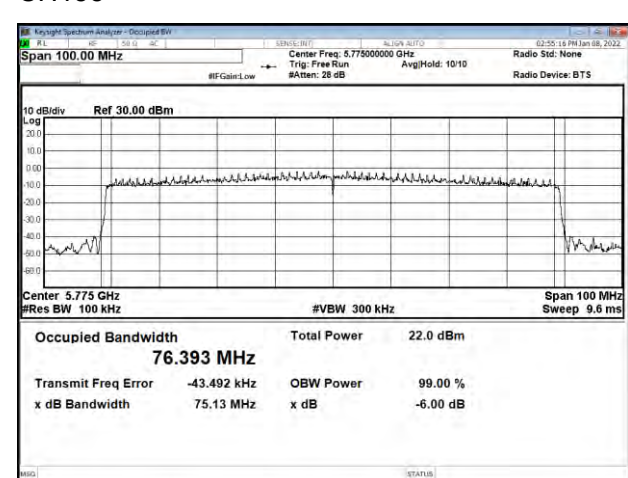


Modulation Type: 802.11ax HE80 (30.6Mbps)

CH165

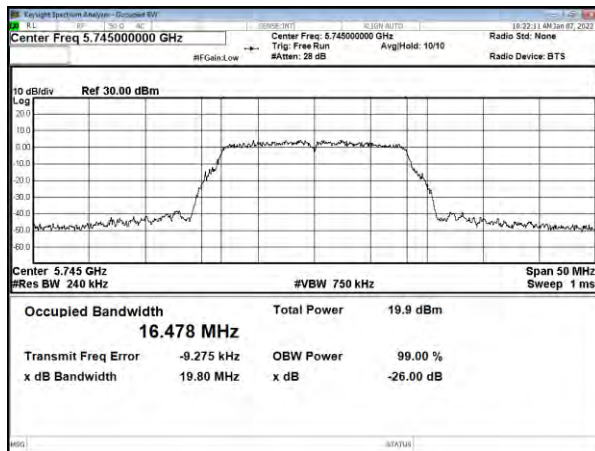


CH155

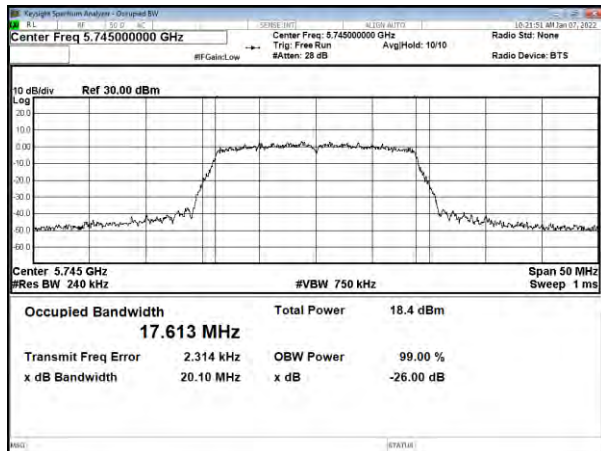




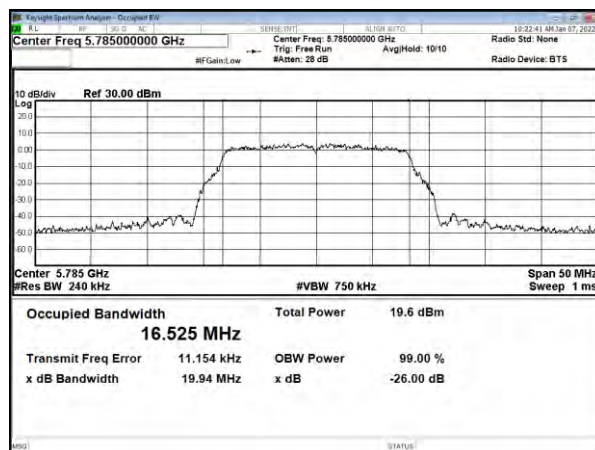
SISO (ANT A)
99% Occupied Bandwidth
Modulation Type: 802.11a (6Mbps)
CH149



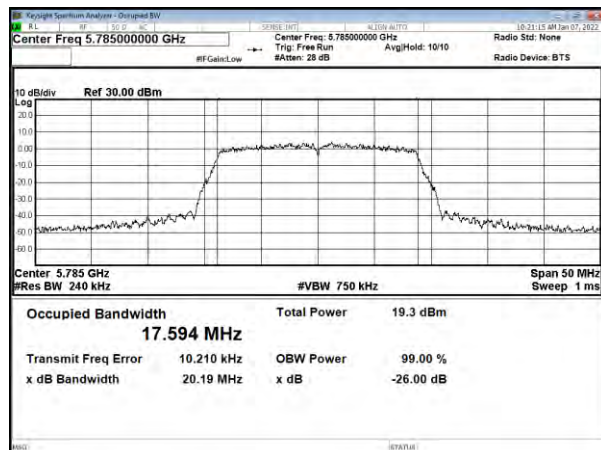
Modulation Type: 802.11ac, VHT20 (6.5Mbps)
CH149



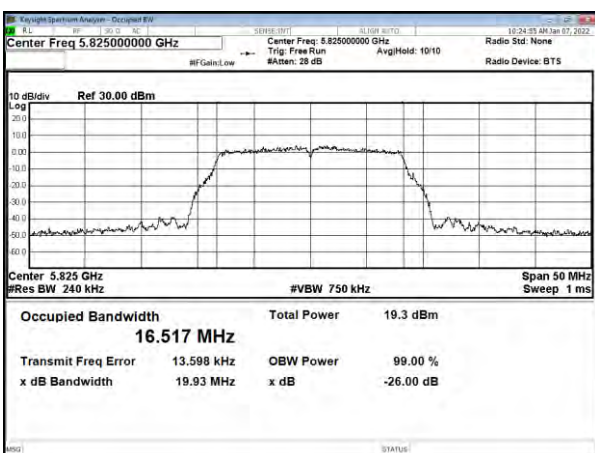
CH157



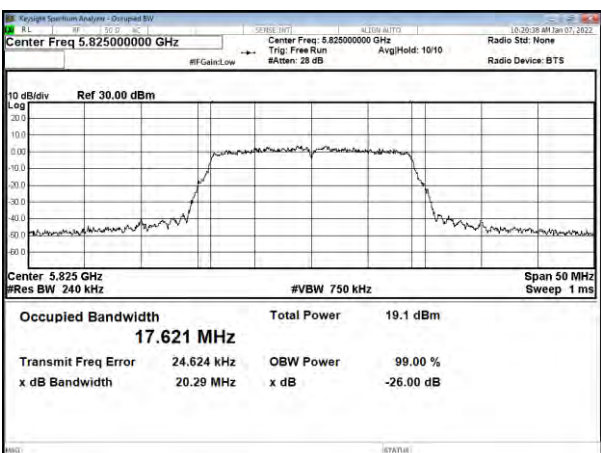
CH157



CH165

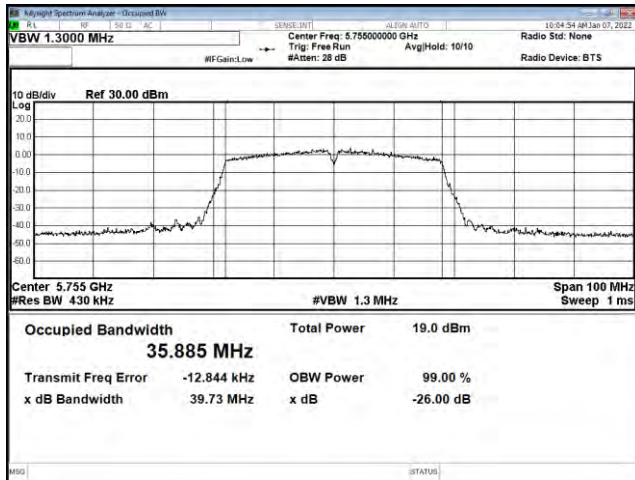


CH165

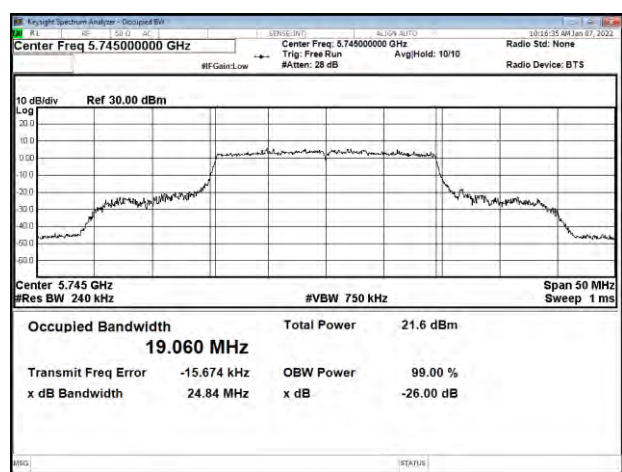




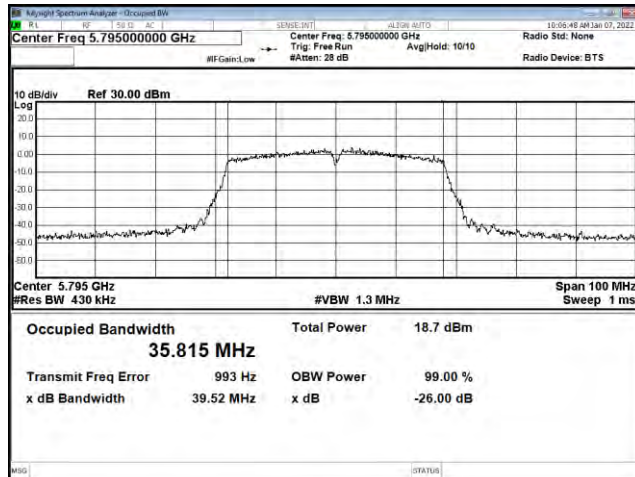
99% Occupied Bandwidth
Modulation Type: 802.11ac, VHT40 (13.5Mbps)
CH151



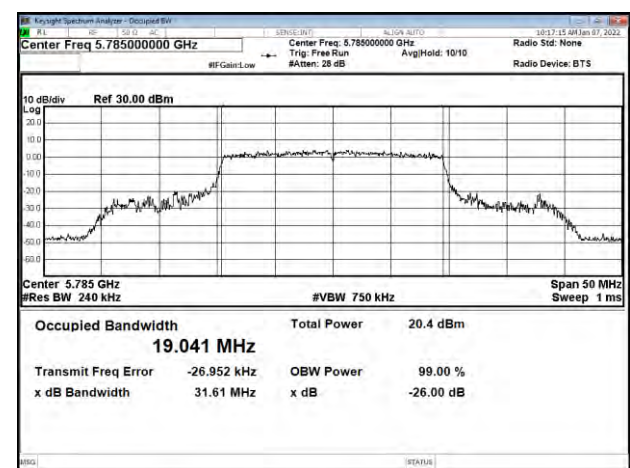
Modulation Type: 802.111ax HE20 (7.3Mbps)
CH149



CH159

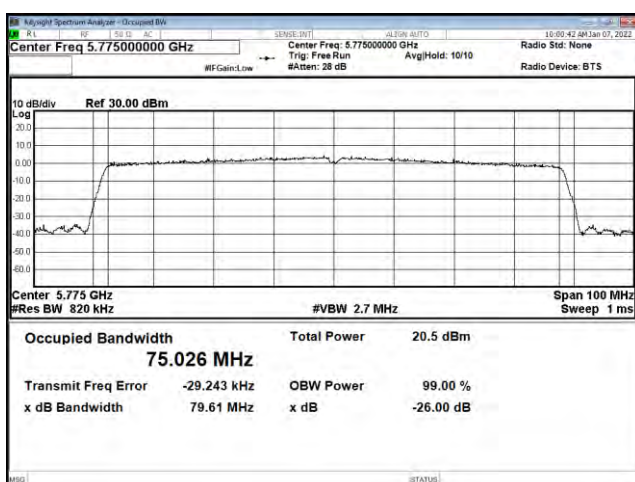


CH157

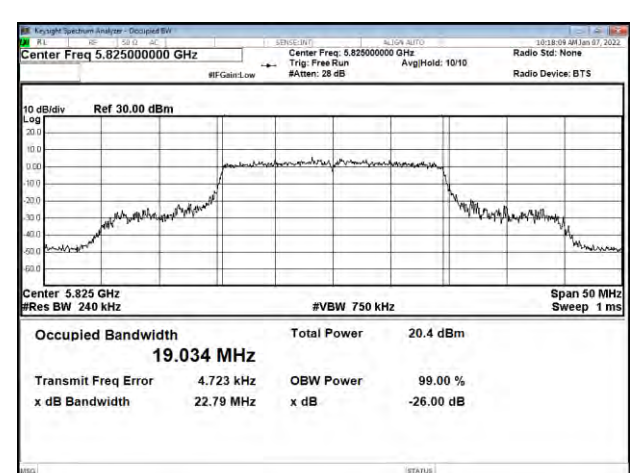


Modulation Type: 802.11ac, VHT80 (29.3Mbps)

CH155

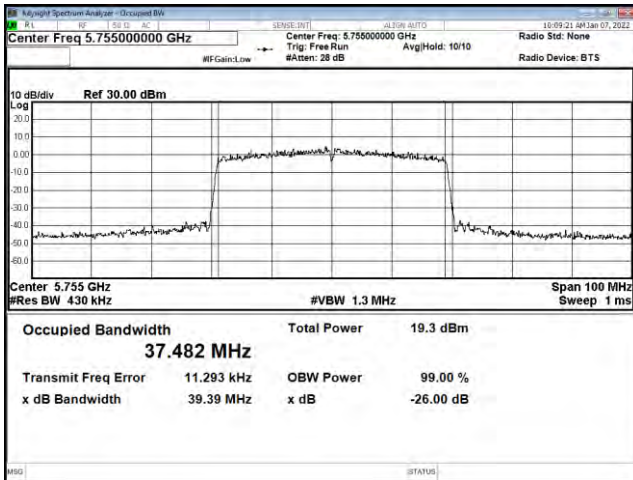


CH165

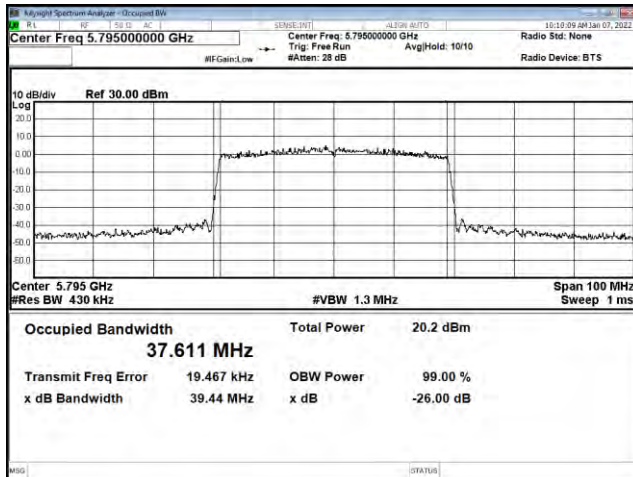




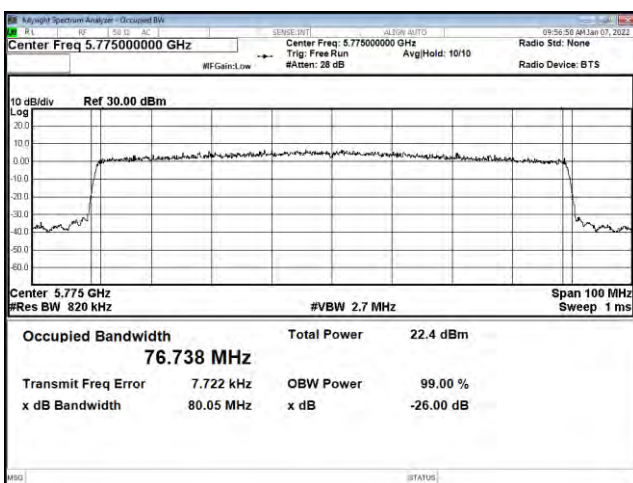
99% Occupied Bandwidth
Modulation Type: 802.11 ax HE40 (14.6Mbps)
CH151



CH159

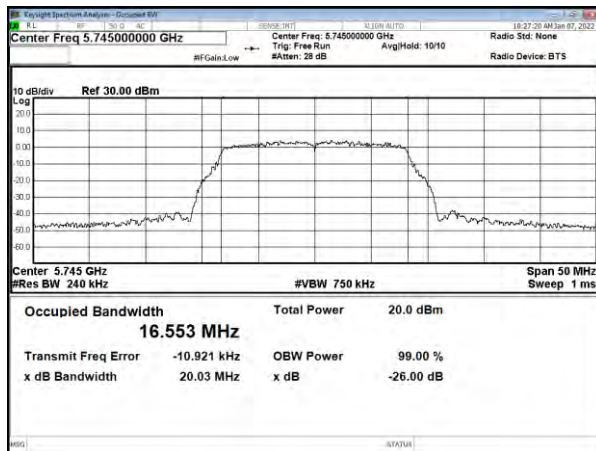


Modulation Type: 802.11ax HE80 (30.6Mbps)
CH155

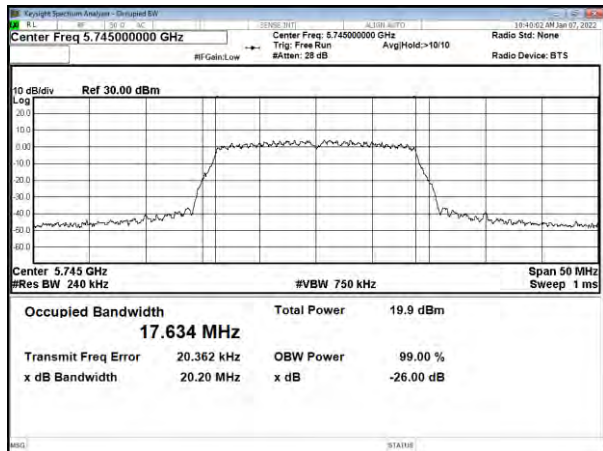




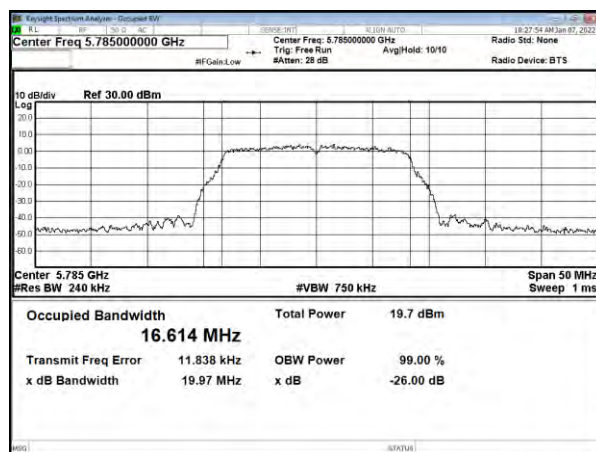
SISO (ANT B)
99% Occupied Bandwidth
Modulation Type: 802.11a (6Mbps)
CH149



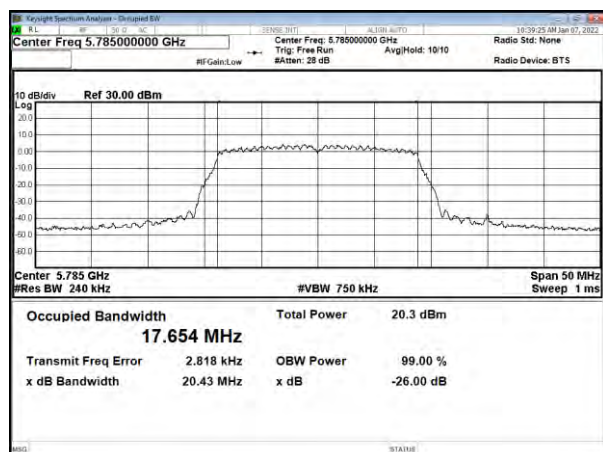
Modulation Type: 802.11ac, VHT20 (6.5Mbps)
CH149



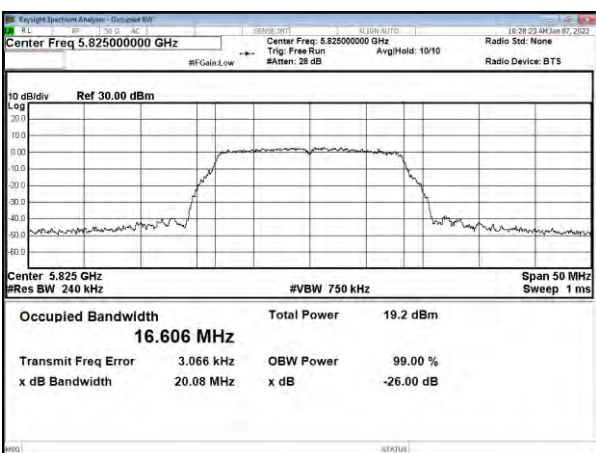
CH157



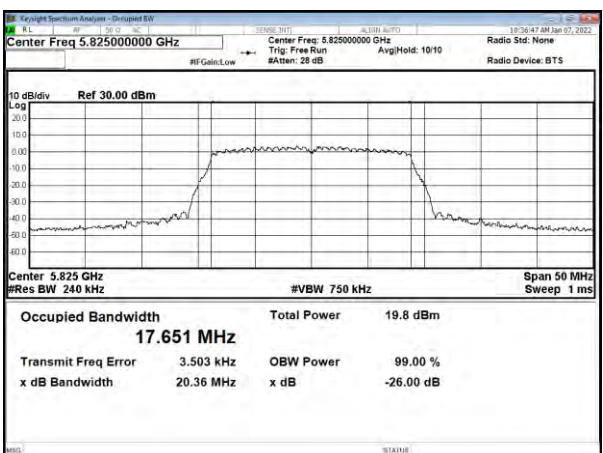
CH157



CH165

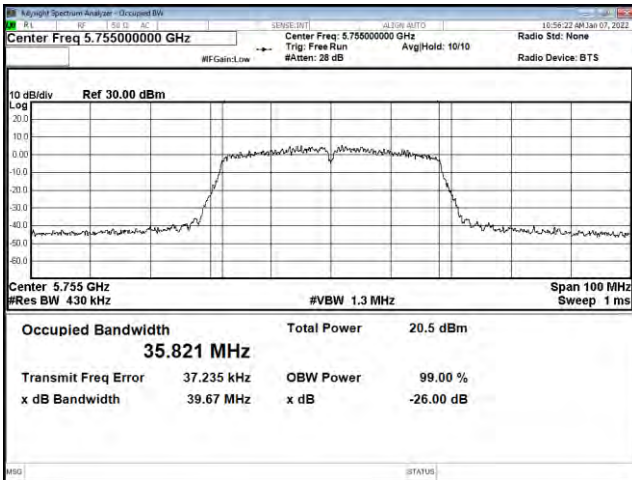


CH165

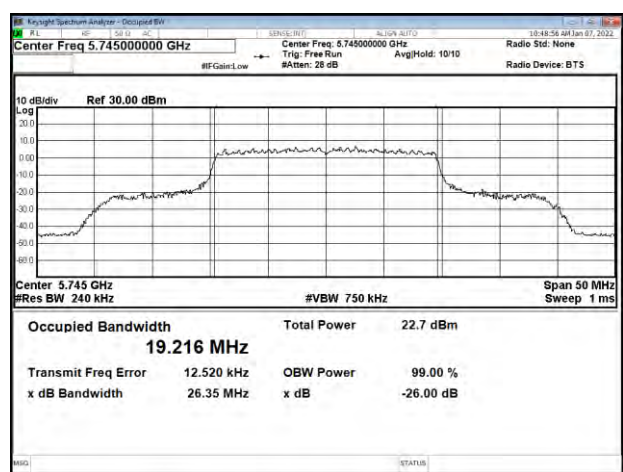




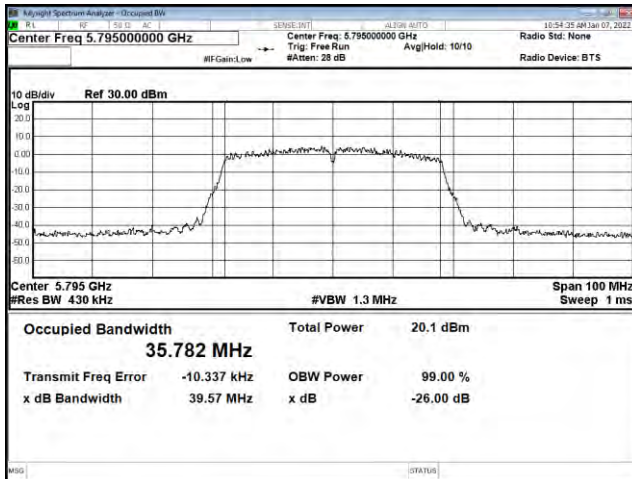
99% Occupied Bandwidth
Modulation Type: 802.11ac, VHT40 (13.5Mbps)
CH151



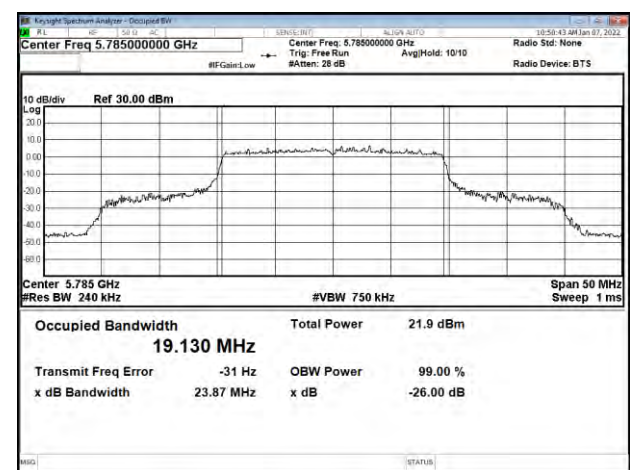
Modulation Type: 802.1111ax HE20 (7.3Mbps)
CH149



CH159

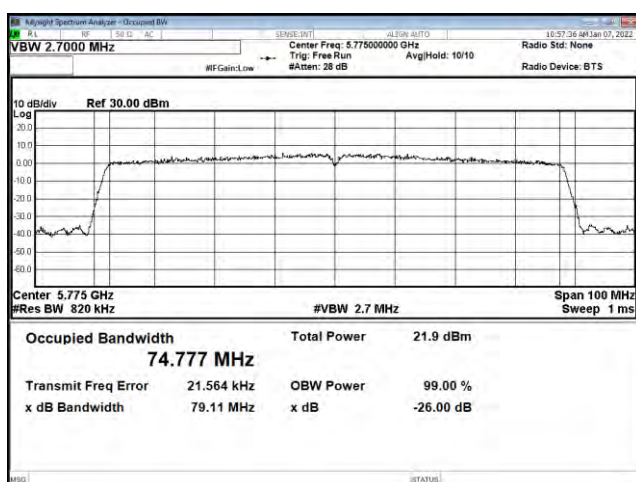


CH157

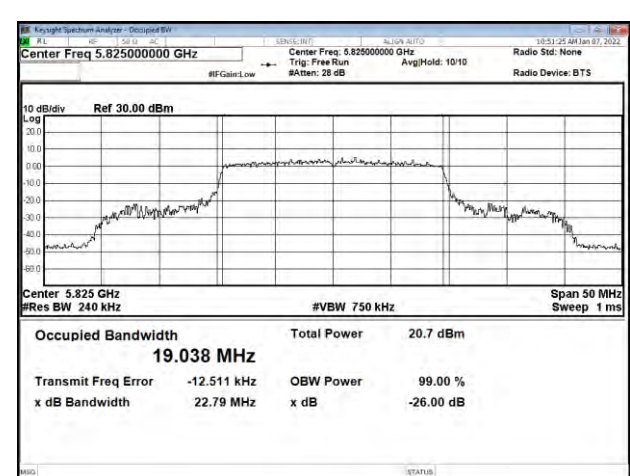


Modulation Type: 802.11ac, VHT80 (29.3Mbps)

CH155

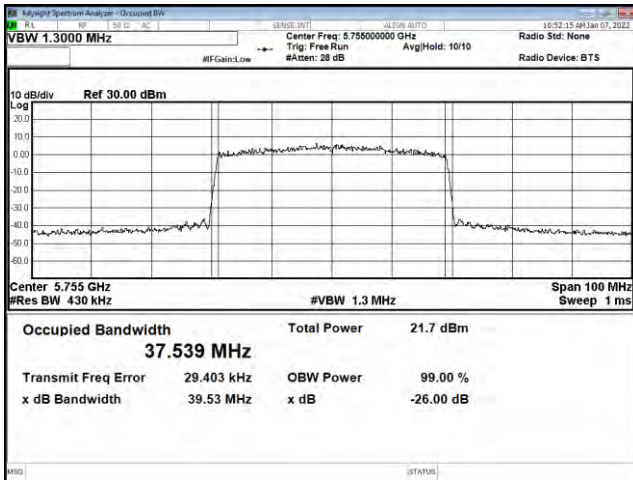


CH165

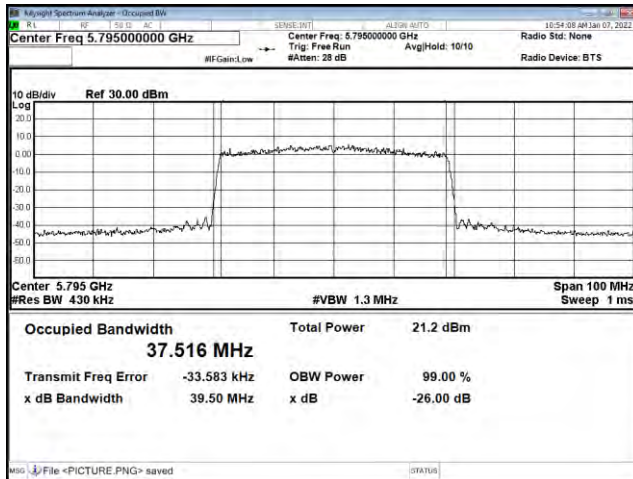




Modulation Type: 802.11 ax HE40 (14.6Mbps)
CH151

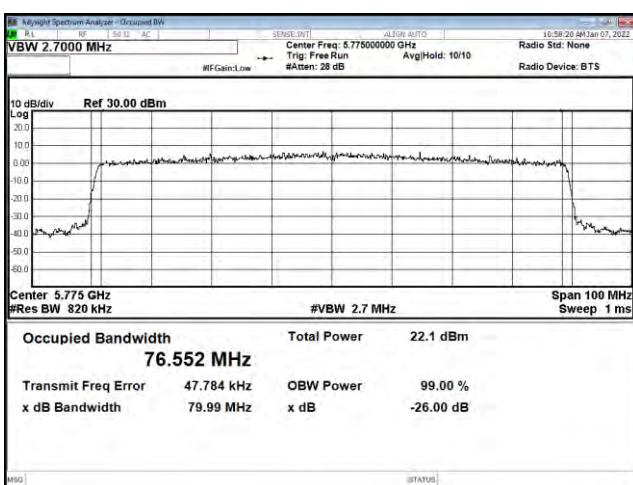


CH159



Modulation Type: 802.11ax HE80 (30.6Mbps)

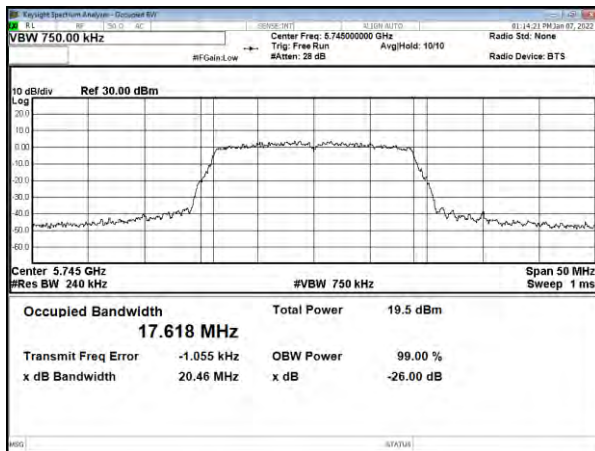
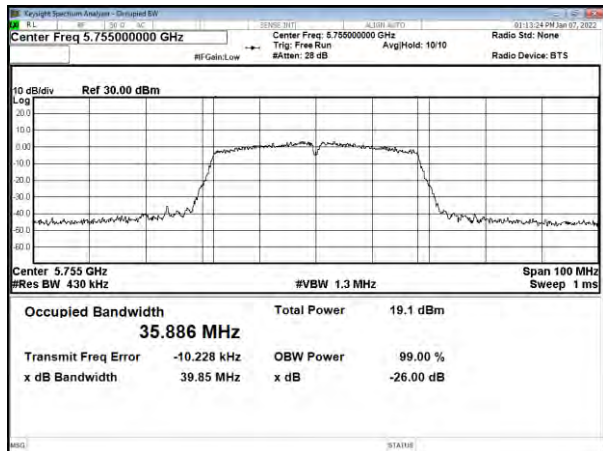
CH155



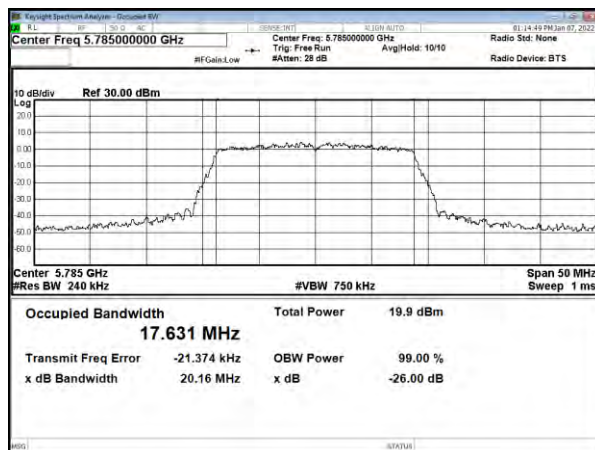


MIMO (ANT A)

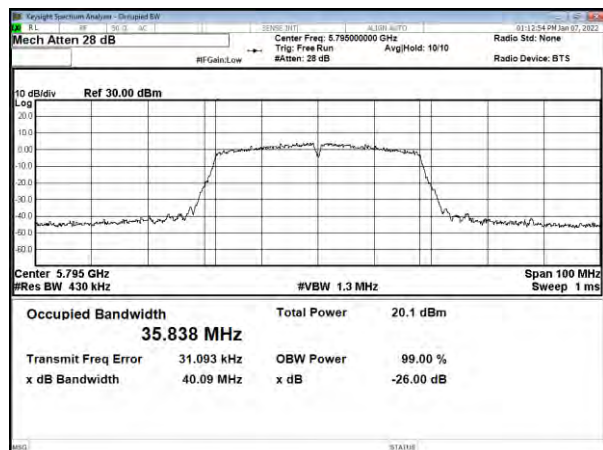
99% Occupied Bandwidth

Modulation Type: 802.11ac, VHT20 (13Mbps)
CH149Modulation Type: 802.11ac, VHT40 (27Mbps)
CH151

CH157



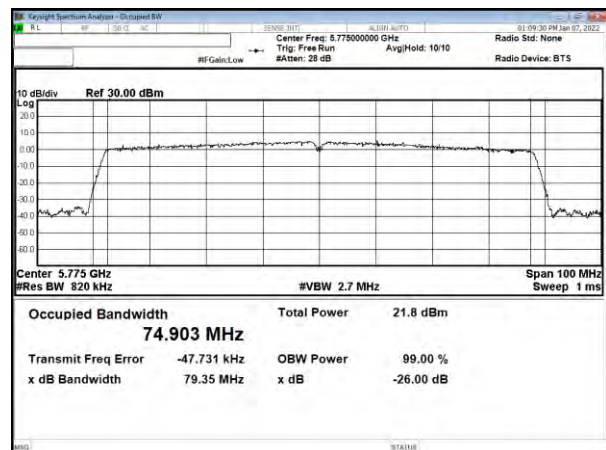
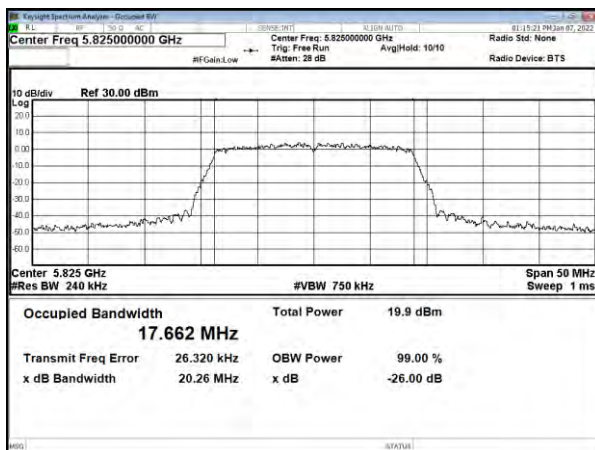
CH159



Modulation Type: 802.11ac, VHT80 (58.5Mbps)

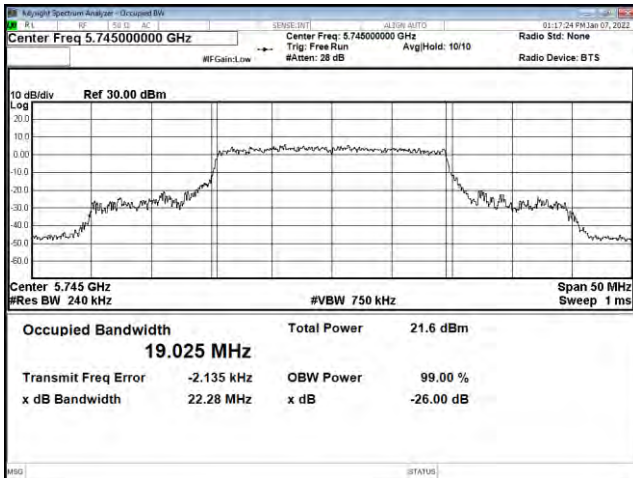
CH155

CH165

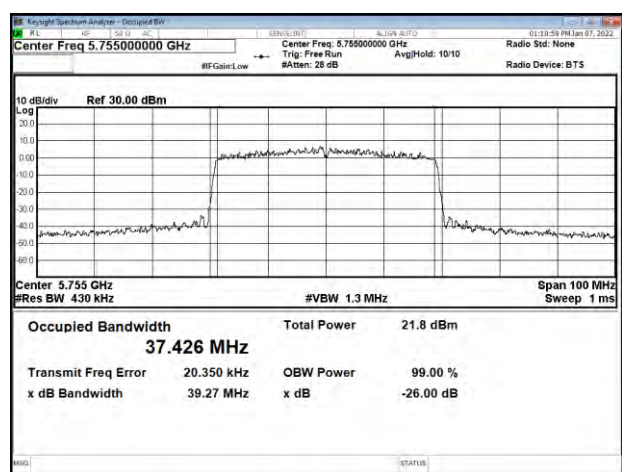




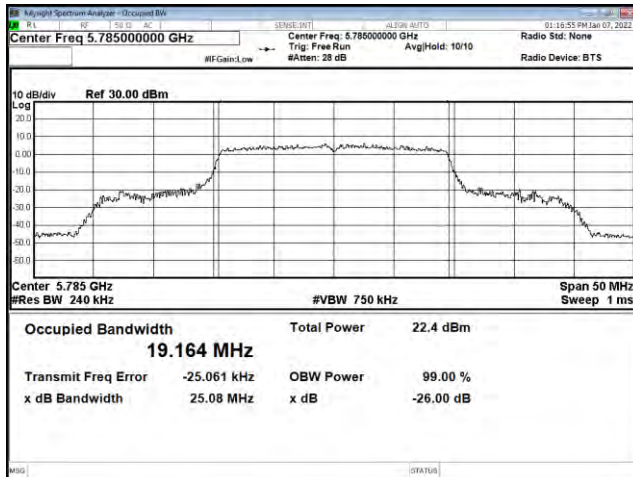
99% Occupied Bandwidth
Modulation Type: 802.11ax HE20 (7.3Mbps)
CH149



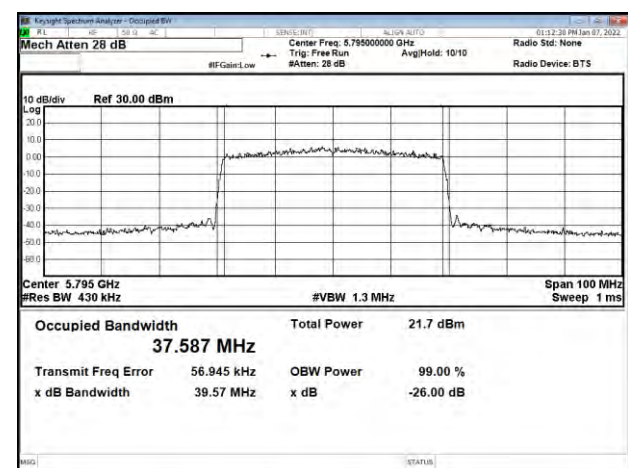
Modulation Type: 802.11 ax HE40 (14.6Mbps)
CH151



CH157

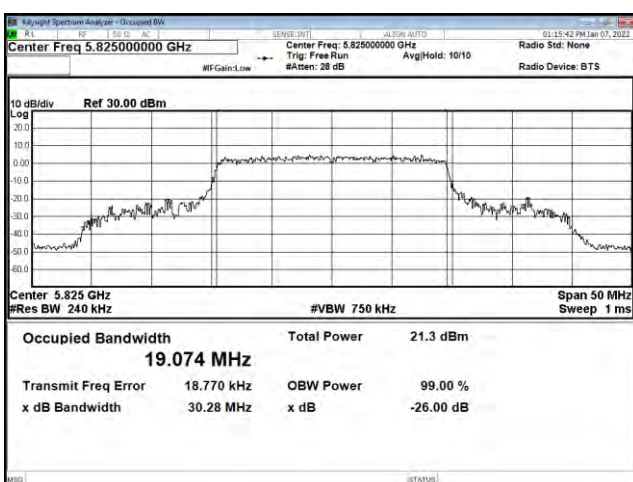


CH159

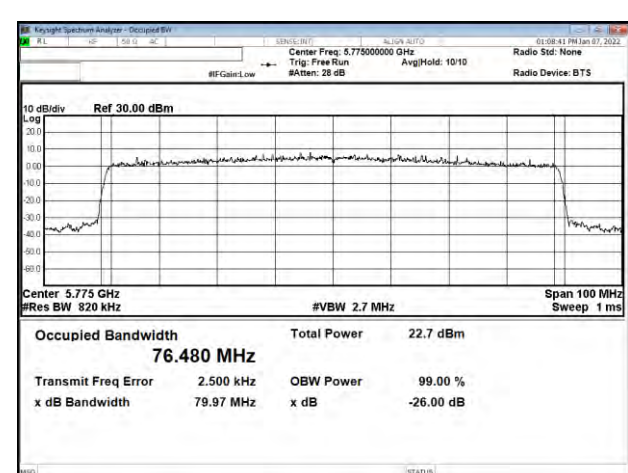


Modulation Type: 802.11ax HE80 (30.6Mbps)

CH165



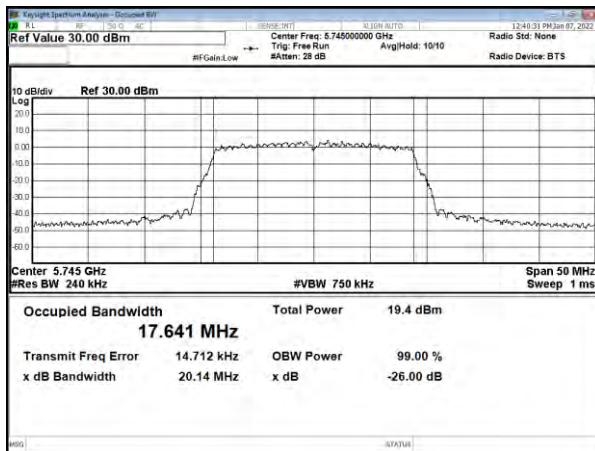
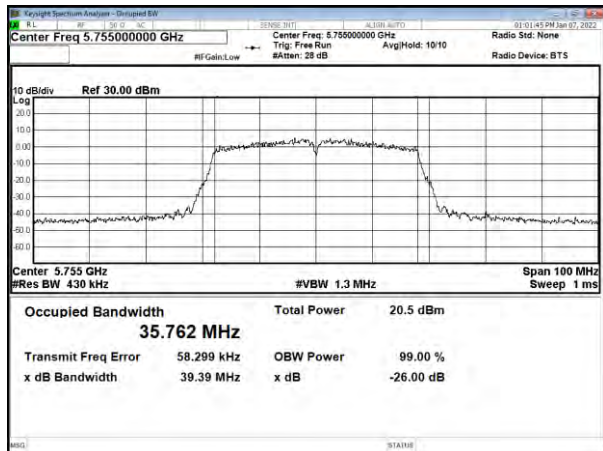
CH155



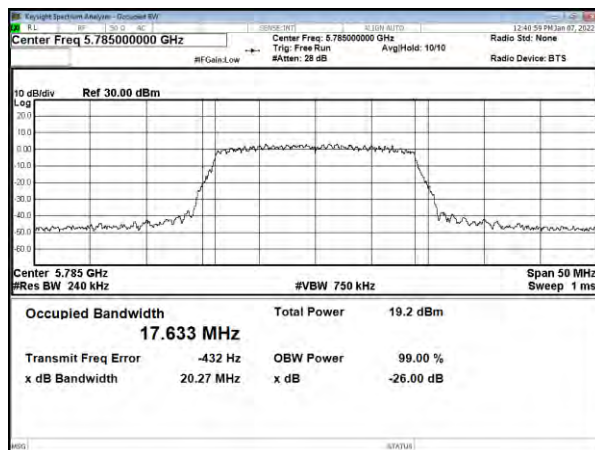


MIMO (ANT B)

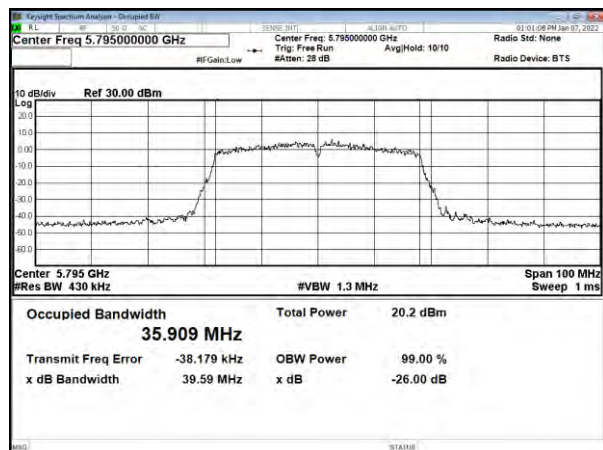
99% Occupied Bandwidth

Modulation Type: 802.11ac, VHT20 (13Mbps)
CH149Modulation Type: 802.11ac, VHT40 (27Mbps)
CH151

CH157



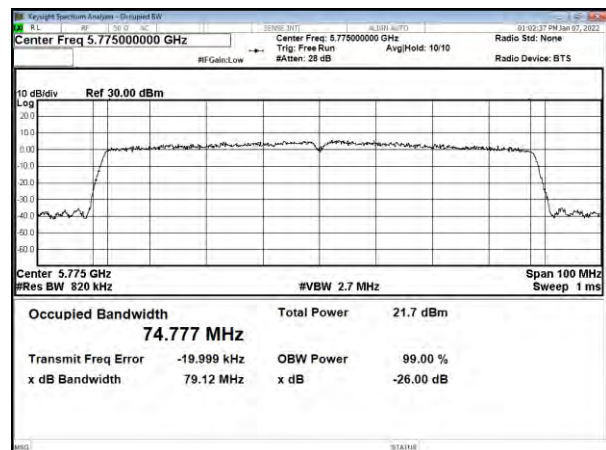
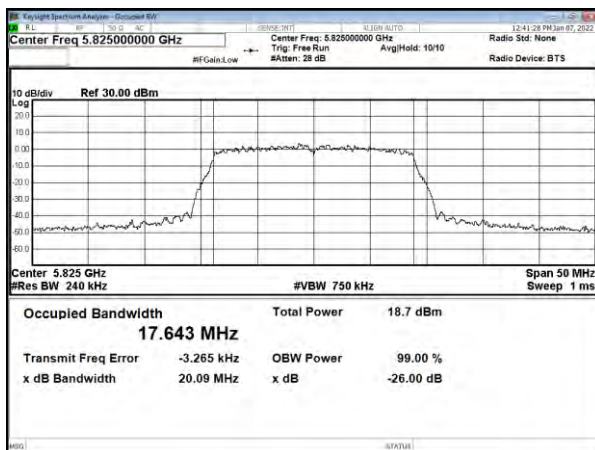
CH159



Modulation Type: 802.11ac, VHT80 (58.5Mbps)

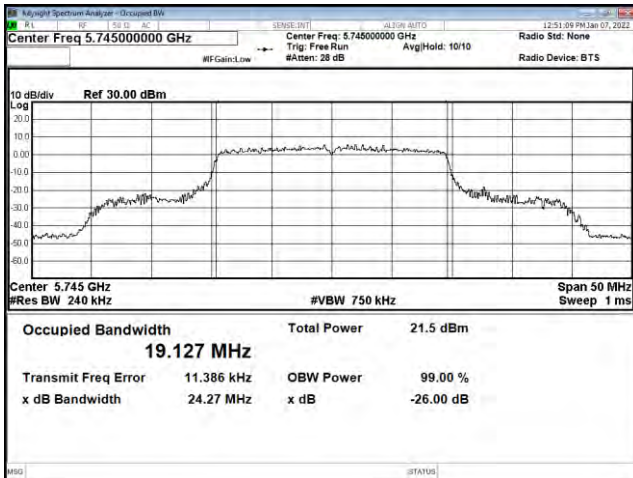
CH155

CH165

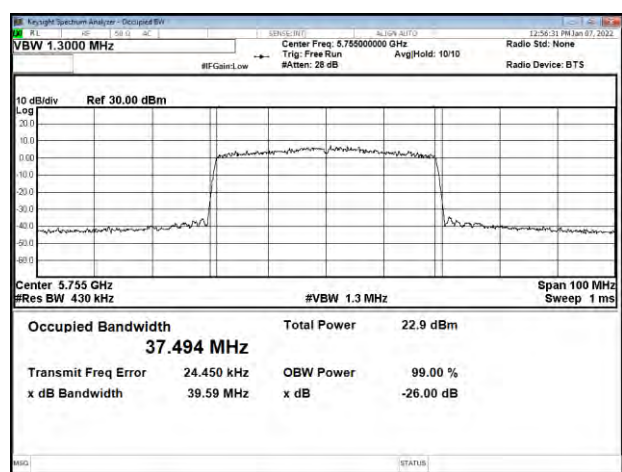




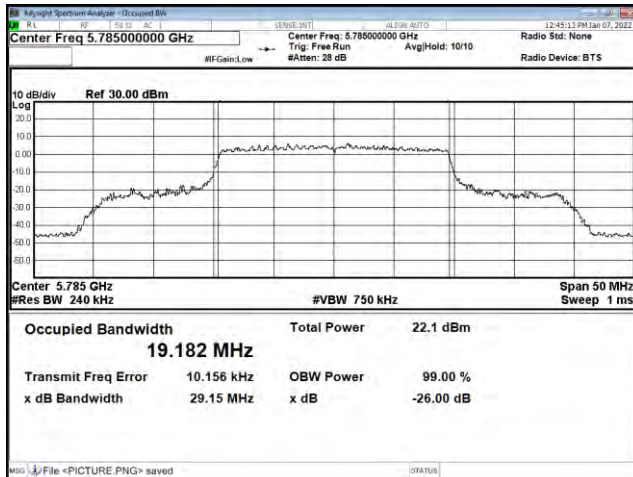
99% Occupied Bandwidth
Modulation Type: 802.11ax HE20 (7.3Mbps)
CH149



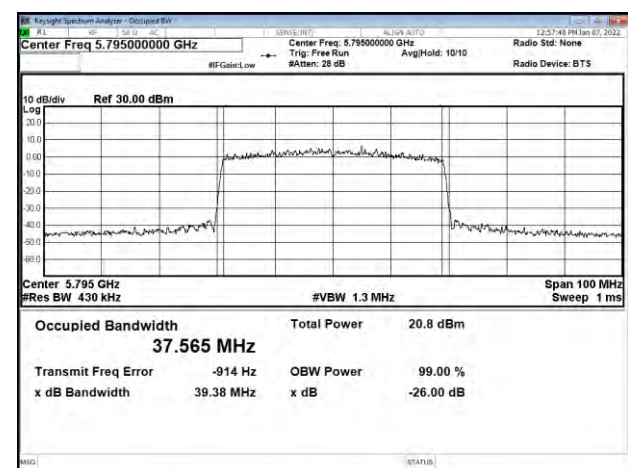
Modulation Type: 802.11 ax HE40 (14.6Mbps)
CH151



CH157

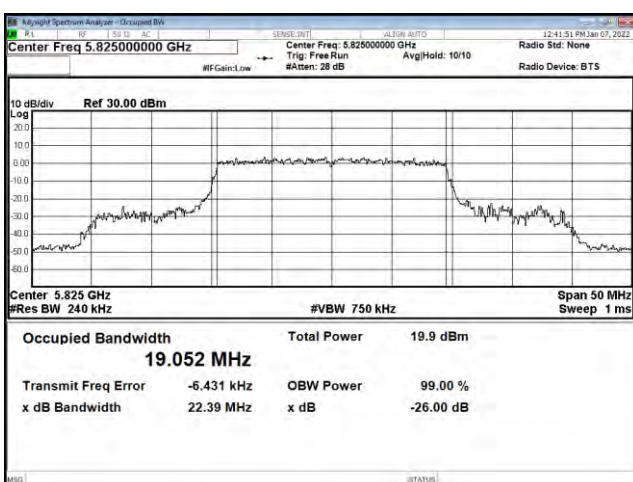


CH159

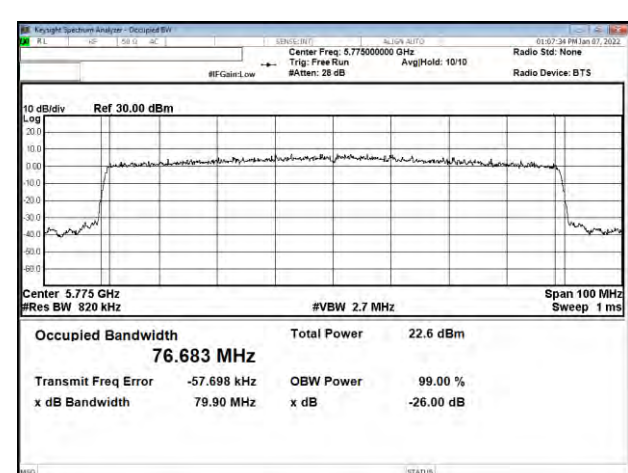


Modulation Type: 802.11ax HE80 (30.6Mbps)

CH165



CH155





9. 26dB Bandwidth & 99% Occupied Bandwidth

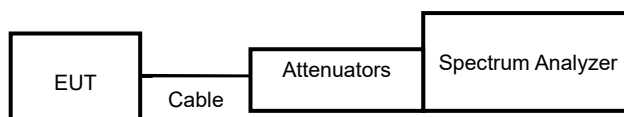
9.1. Test Limit

None; for reporting purposes only.

9.2. Test Procedure

Reference to 789033 v02r01 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW = approximately 1% of the emission bandwidth, the VBW $\geq 3 \times$ RBW, peak detector and max hold.

9.3. Test Setup Layout



**9.4. Test Result and Data (26dB Bandwidth)****In the 5.2G Band
SISO**

Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT A	ANT B
802.11a	36	5180	20.25	20.18
	44	5220	19.87	19.8
	48	5240	20.09	19.82
802.11ac VHT20	36	5180	20.23	20.12
	44	5220	20.14	20.31
	48	5240	20.25	20.19
802.11ac VHT40	38	5190	40.21	39.59
	46	5230	39.81	39.59
802.11ac VHT80	42	5210	79.38	79.06
802.11ax HE20	36	5180	21.70	22.38
	44	5220	25.29	22.79
	48	5240	19.95	19.97
802.11ax HE40	38	5190	39.47	39.45
	46	5230	39.43	39.50
802.11ax HE80	42	5210	79.99	79.99

MIMO

Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT A	ANT B
802.11ac VHT20	36	5180	20.30	20.25
	44	5220	20.20	20.43
	48	5240	20.22	20.28
802.11ac VHT40	38	5190	39.39	39.67
	46	5230	40.04	39.60
802.11ac VHT80	42	5210	79.24	78.90
802.11ax HE20	36	5180	21.88	24.20
	44	5220	21.92	25.23
	48	5240	19.99	19.92
802.11ax HE40	38	5190	39.45	39.50
	46	5230	39.49	39.41
802.11ax HE80	42	5210	80.11	79.94

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

In the 5.2G Band

SISO

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
			ANT A	ANT B
802.11a	36	5180	16.56	16.53
	44	5220	16.56	16.55
	48	5240	16.59	16.52
802.11ac VHT20	36	5180	17.62	17.61
	44	5220	17.64	17.62
	48	5240	17.68	17.62
802.11ac VHT40	38	5190	35.83	35.77
	46	5230	35.91	35.84
802.11ac VHT80	42	5210	74.97	79.06
802.11ax HE20	36	5180	19.07	18.99
	44	5220	19.08	19.01
	48	5240	18.90	18.86
802.11ax HE40	38	5190	37.49	37.53
	46	5230	37.55	37.55
802.11ax HE80	42	5210	76.68	76.59

MIMO

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
			ANT A	ANT B
802.11ac VHT20	36	5180	17.62	17.62
	44	5220	17.58	17.64
	48	5240	17.62	17.64
802.11ac VHT40	38	5190	35.85	35.89
	46	5230	35.88	35.86
802.11ac VHT80	42	5210	75.11	75.05
802.11ax HE20	36	5180	18.99	19.02
	44	5220	19.00	19.05
	48	5240	18.85	18.90
802.11ax HE40	38	5190	37.51	37.54
	46	5230	37.48	37.56
802.11ax HE80	42	5210	76.67	79.94

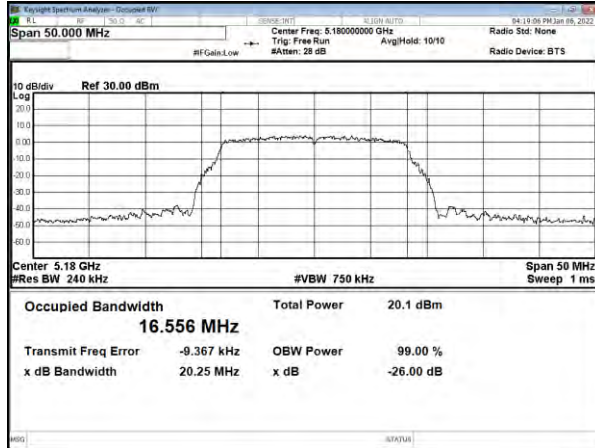


SISO (ANT A)

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

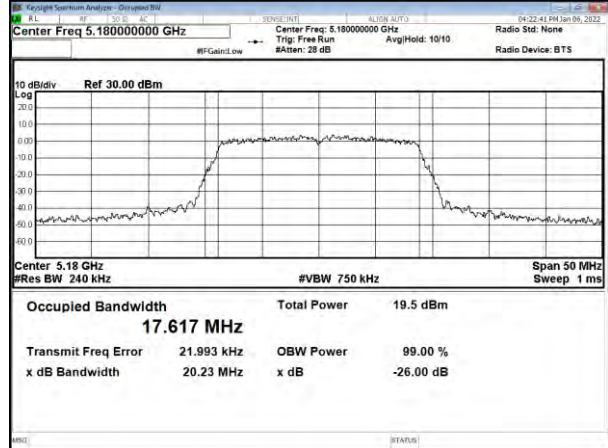
Modulation Standard: 802.11a (6Mbps)

CH36

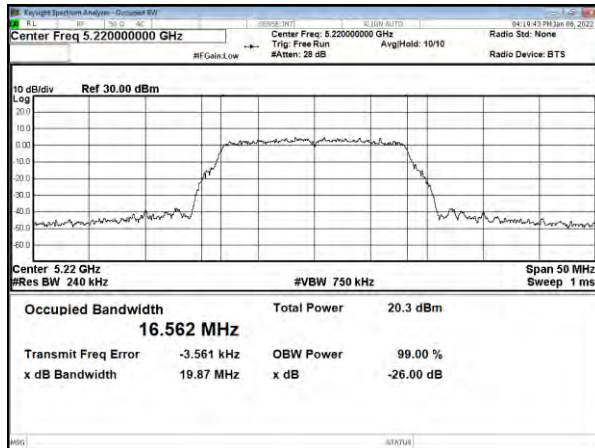


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

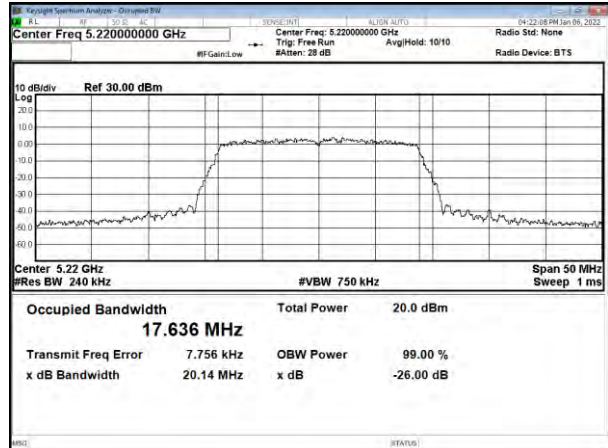
CH36



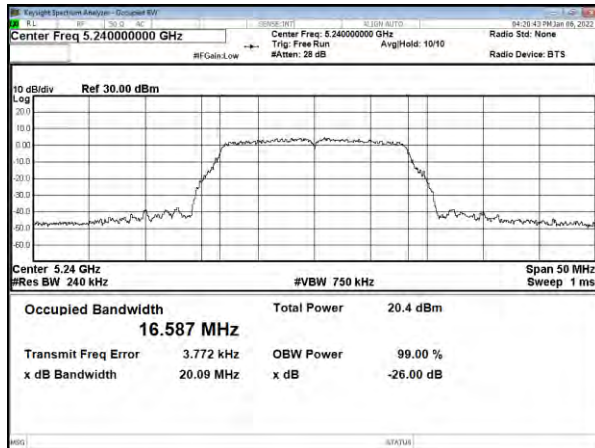
CH44



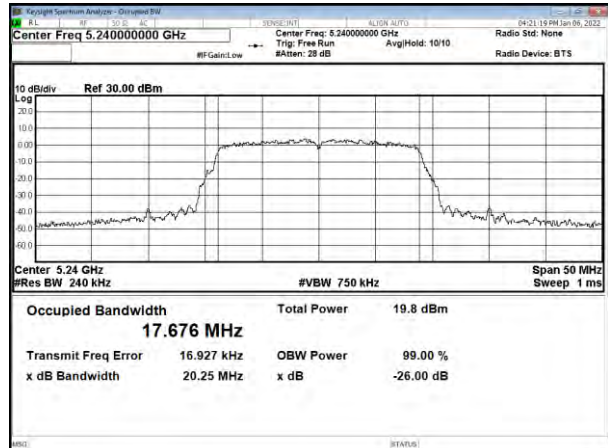
CH44



CH48



CH48

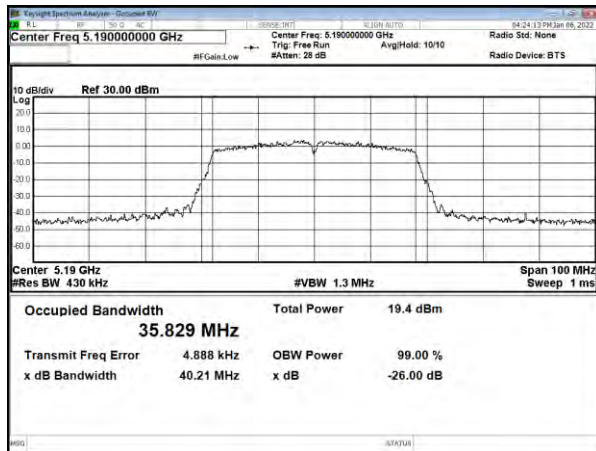




26dB Bandwidth &99% Occupied Bandwidth, UNII-1

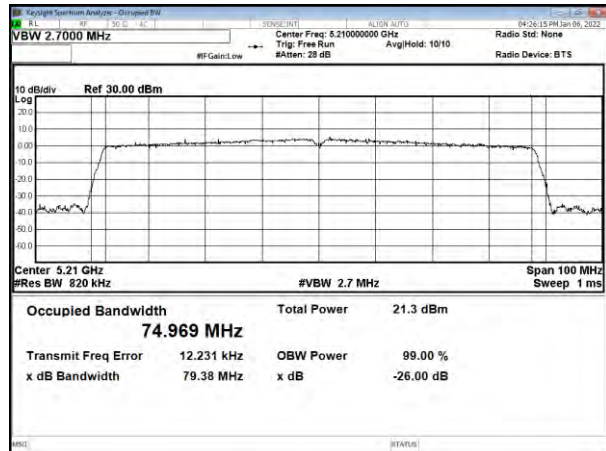
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH38

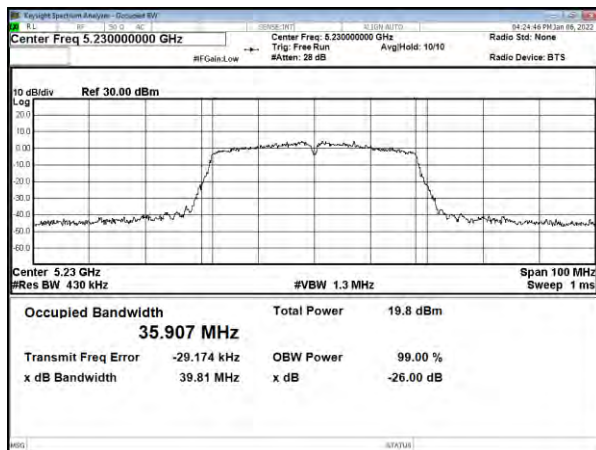


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH42



CH46

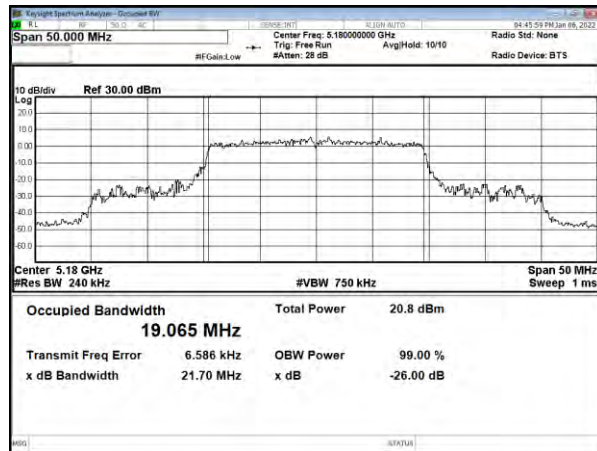




26dB Bandwidth &99% Occupied Bandwidth, UNII-1

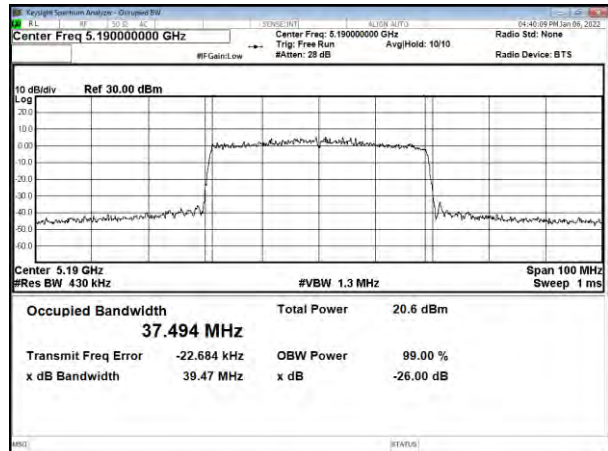
Modulation Standard: 802.11 ax HE20 (7.3Mbps)

CH36

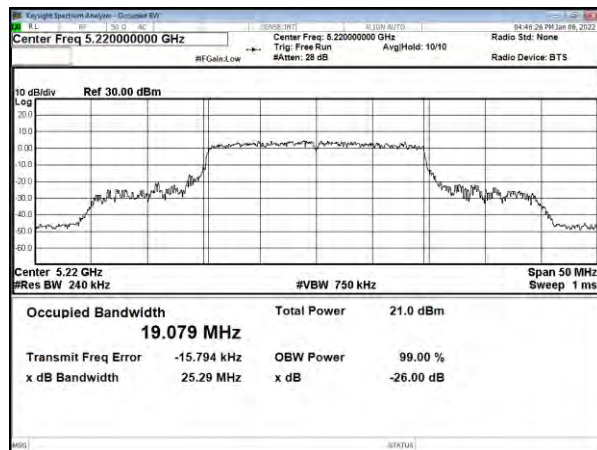


Modulation Standard: 802.11 ax HE40 (14.6Mbps)

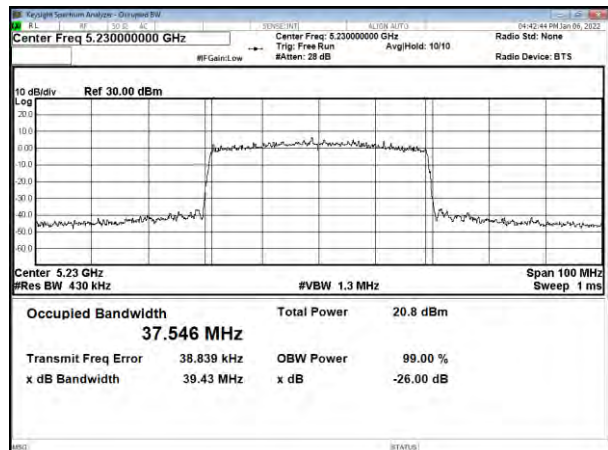
CH38



CH44

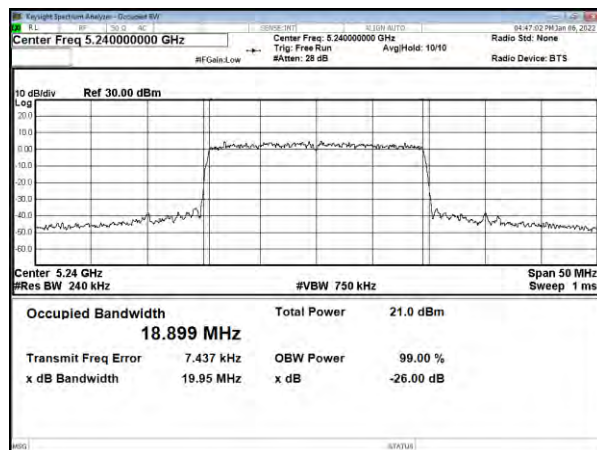


CH46

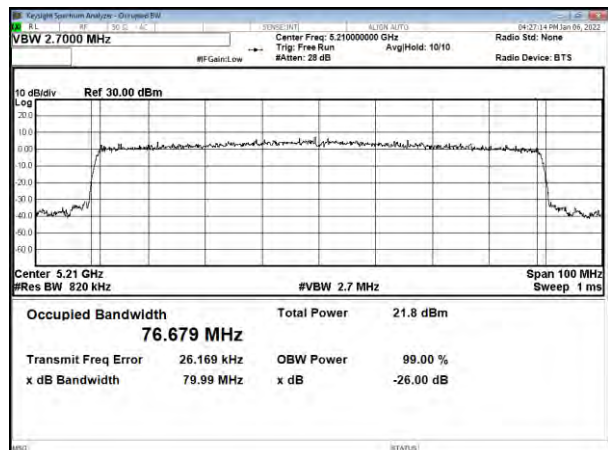


Modulation Standard: 802.11ac VHT80 (30.6Mbps)

CH48



CH42



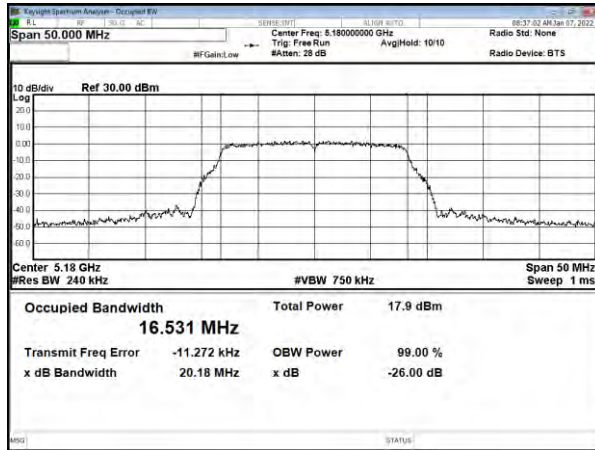


SISO (ANT B)

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

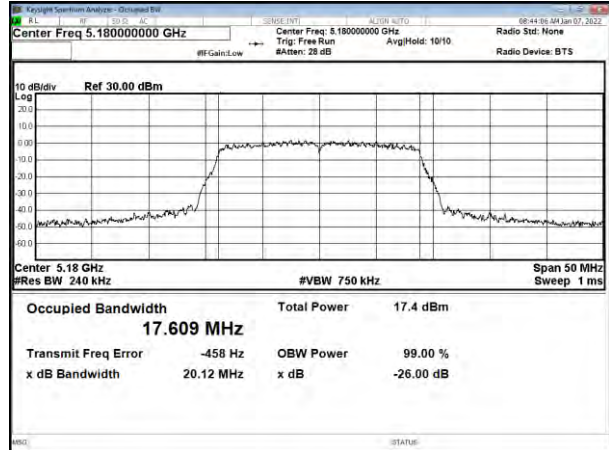
Modulation Standard: 802.11a (6Mbps)

CH36

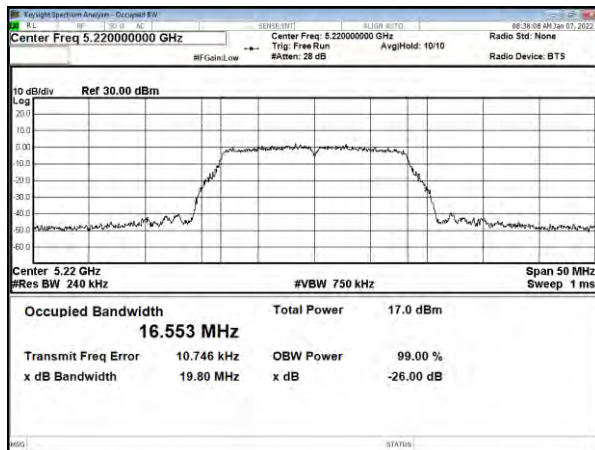


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

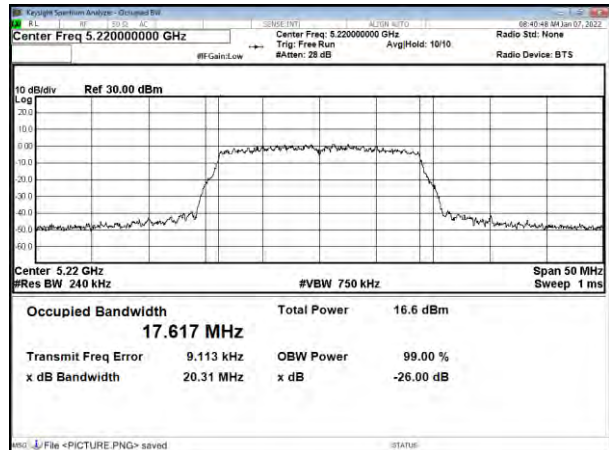
CH36



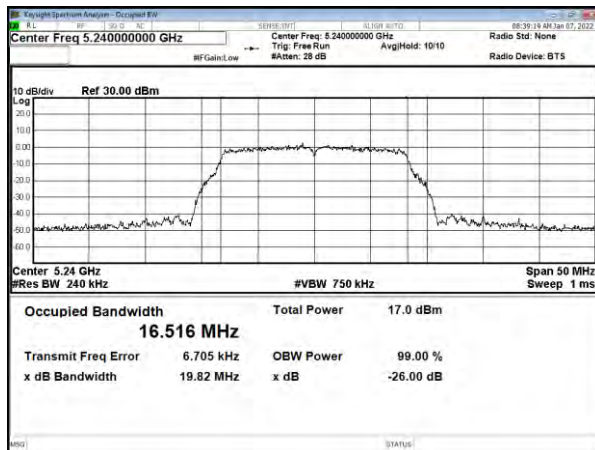
CH44



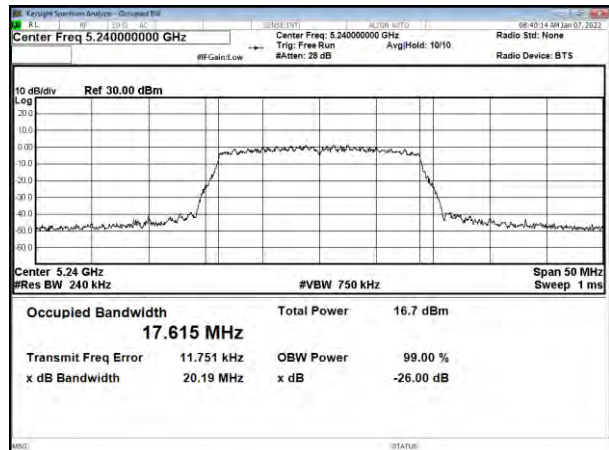
CH44



CH48



CH48

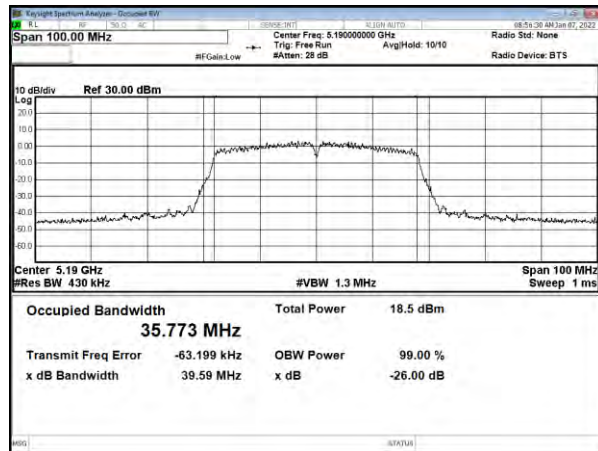




26dB Bandwidth &99% Occupied Bandwidth, UNII-1

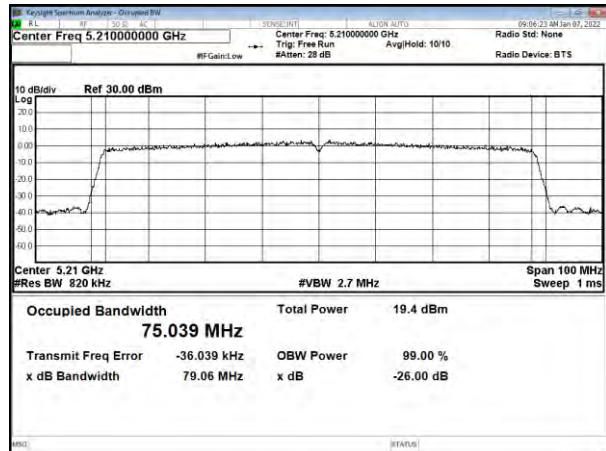
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH38

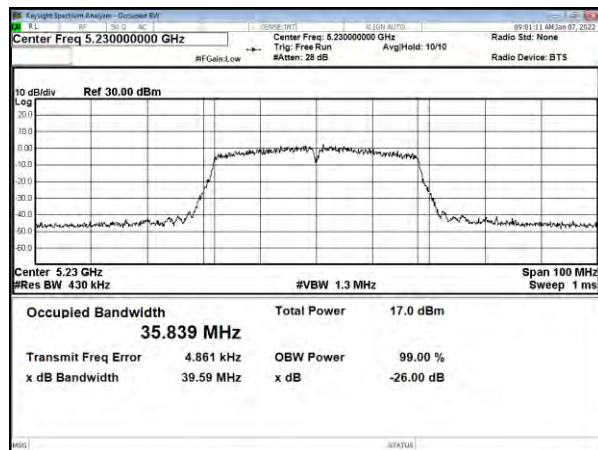


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH42



CH46

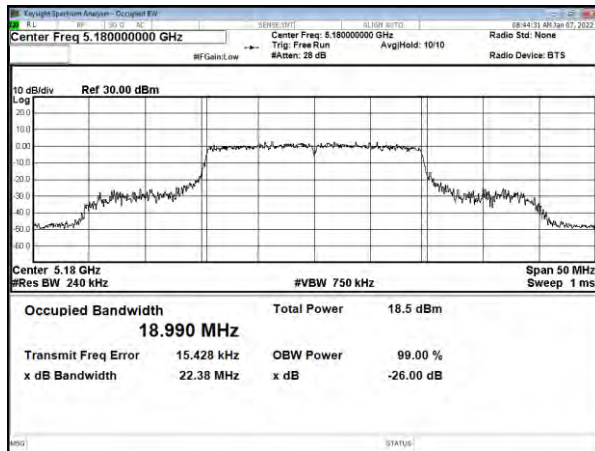




26dB Bandwidth &99% Occupied Bandwidth, UNII-1

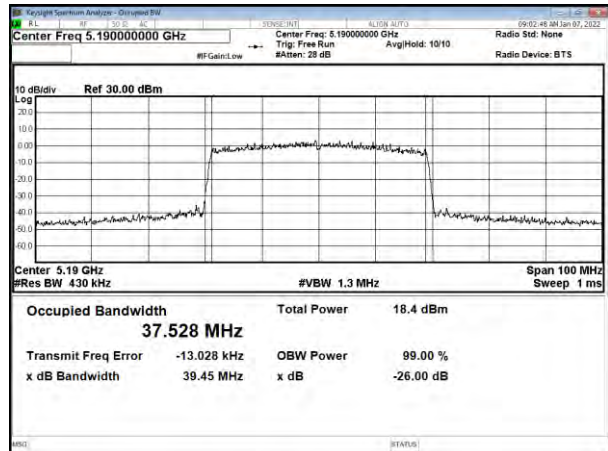
Modulation Standard: 802.11 ax HE20 (7.3Mbps)

CH36

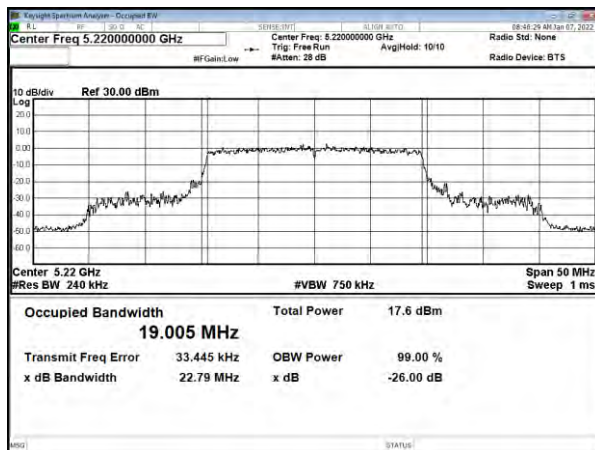


Modulation Standard: 802.11 ax HE40 (14.6Mbps)

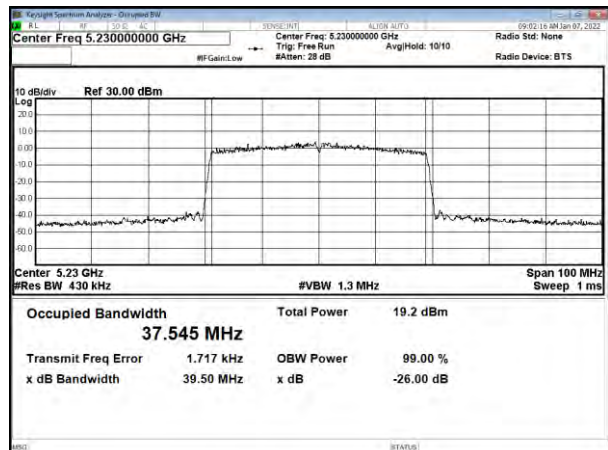
CH38



CH44

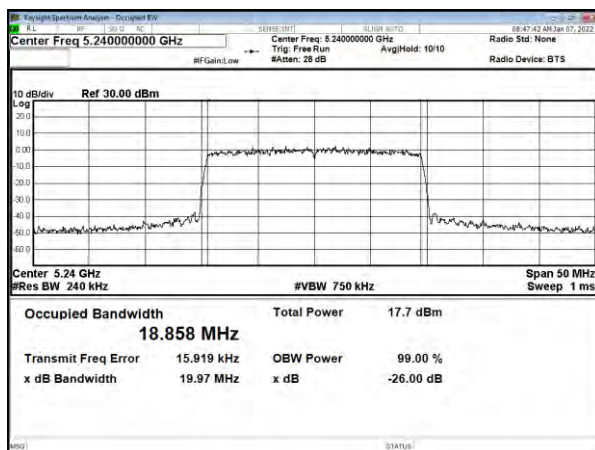


CH46

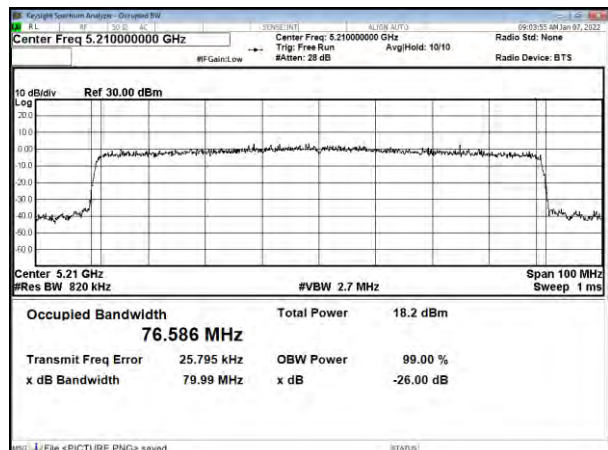


Modulation Standard: 802.11ac VHT80 (30.6Mbps)

CH48



CH42



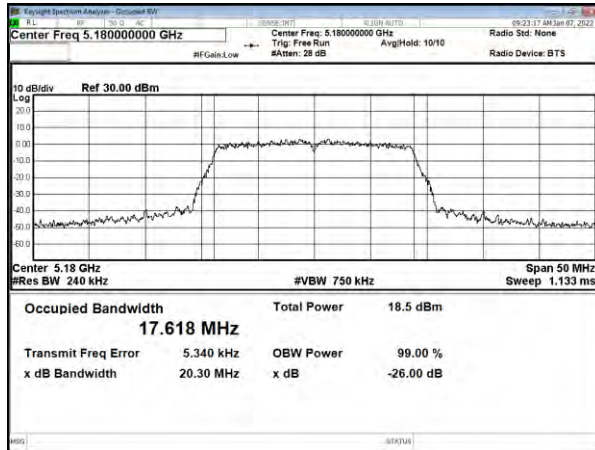


MIMO (ANT A)

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

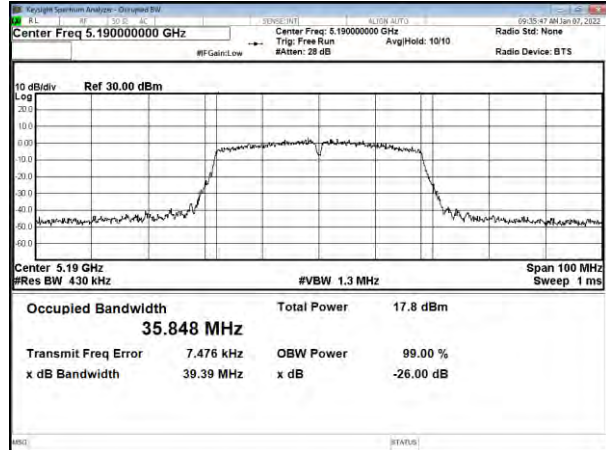
Modulation Standard: 802.11ac VHT20 (13Mbps)

CH36

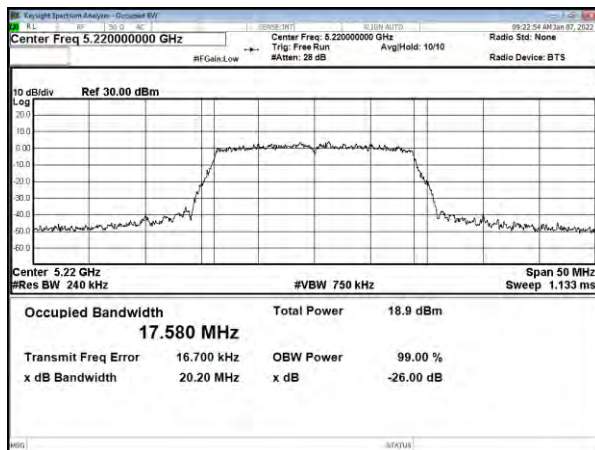


Modulation Standard: 802.11ac VHT40 (27Mbps)

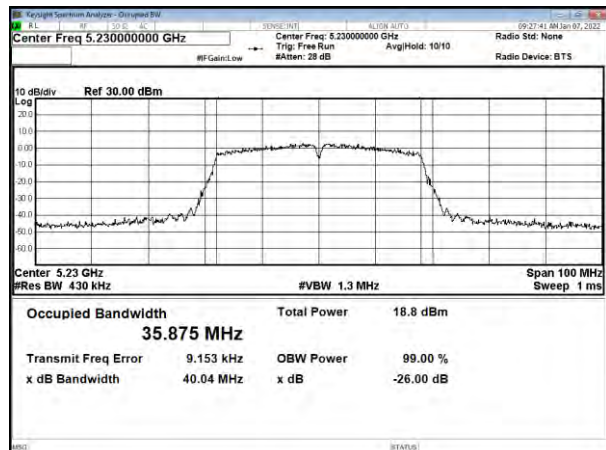
CH38



CH44

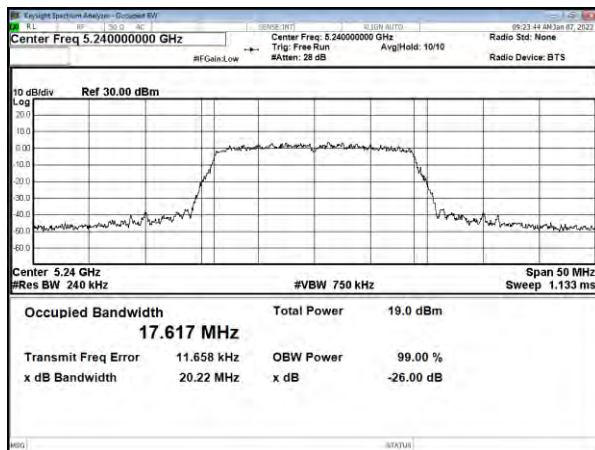


CH46

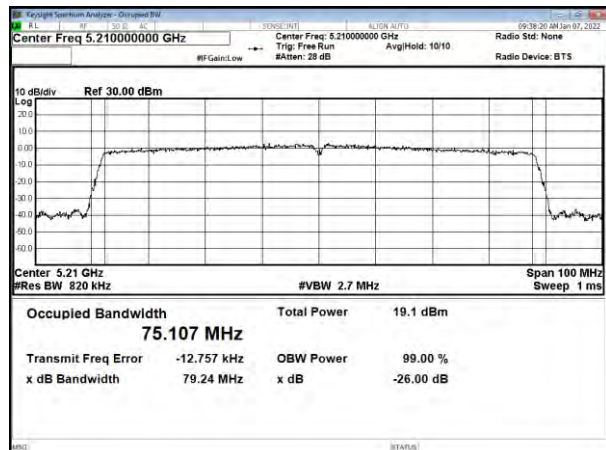


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

CH48



CH42

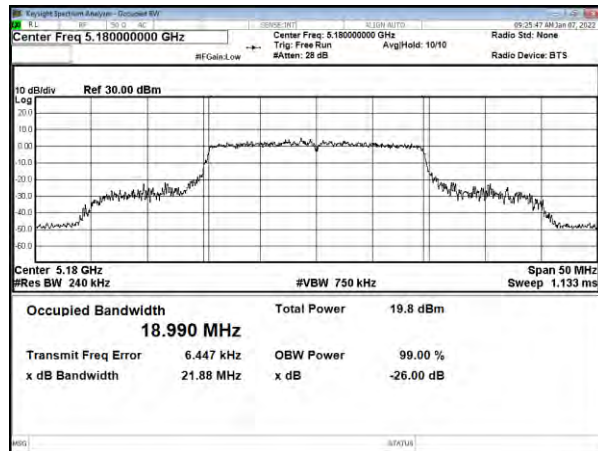




26dB Bandwidth & 99% Occupied Bandwidth, UNII-1

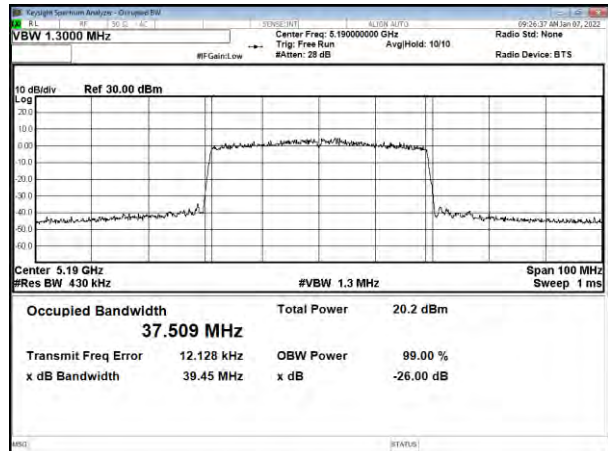
Modulation Standard: 802.11 ax HE20 (7.3Mbps)

CH36

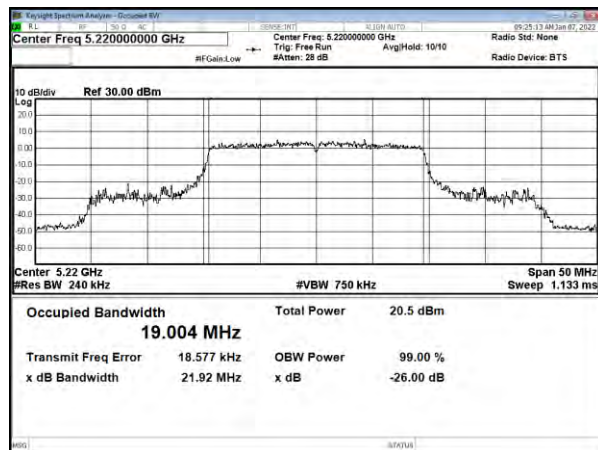


Modulation Standard: 802.11 ax HE40 (14.6Mbps)

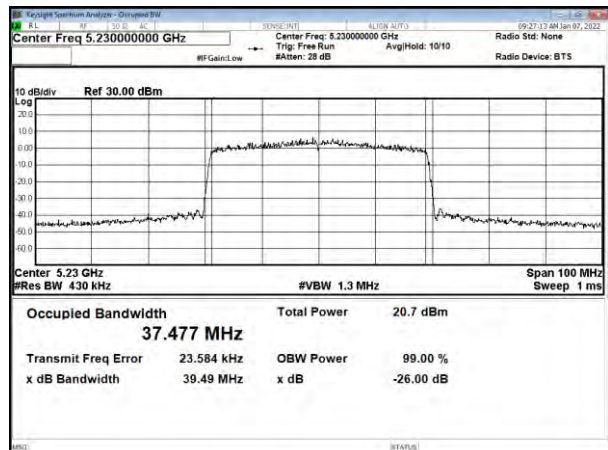
CH38



CH44

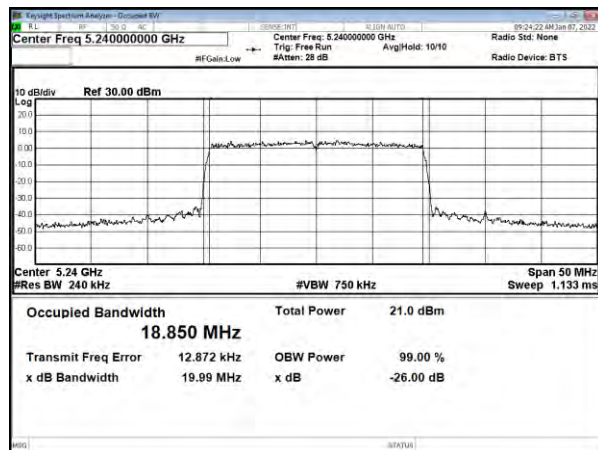


CH46

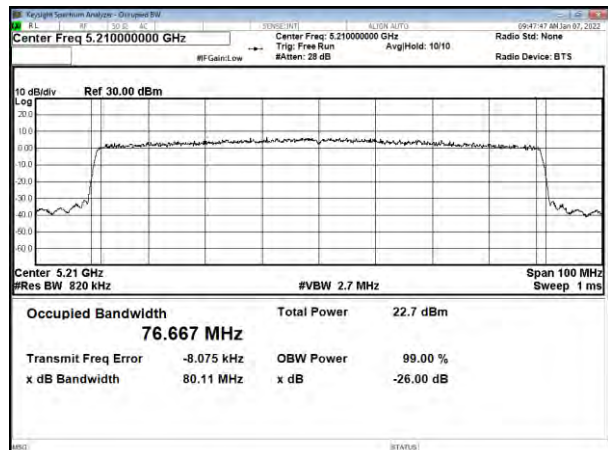


Modulation Standard: 802.11ac VHT80 (30.6Mbps)

CH48



CH42

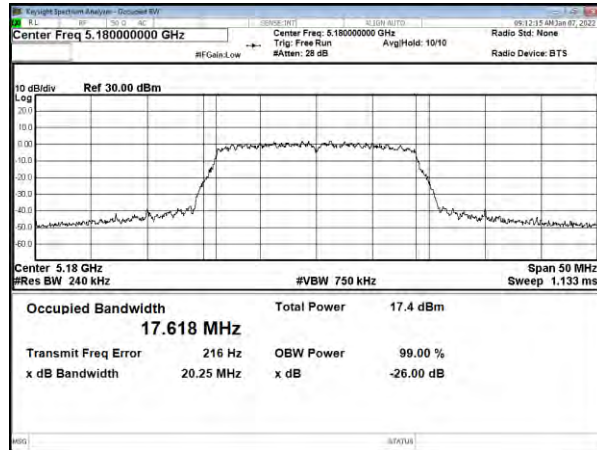


**MIMO (ANT B)**

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

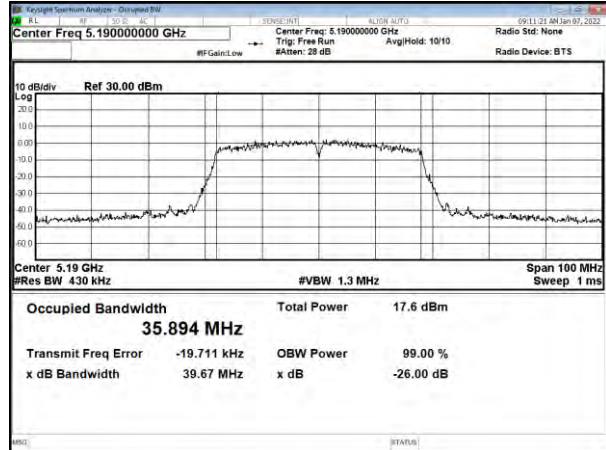
Modulation Standard: 802.11ac VHT20 (13Mbps)

CH36

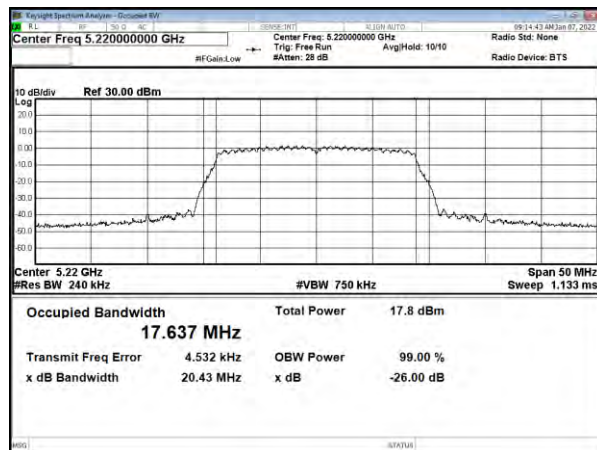


Modulation Standard: 802.11ac VHT40 (27Mbps)

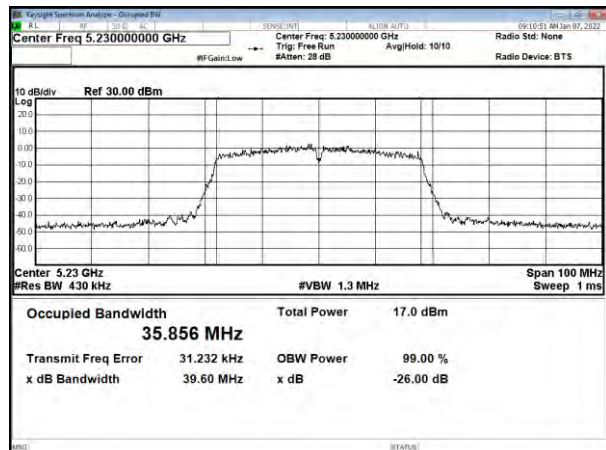
CH38



CH44

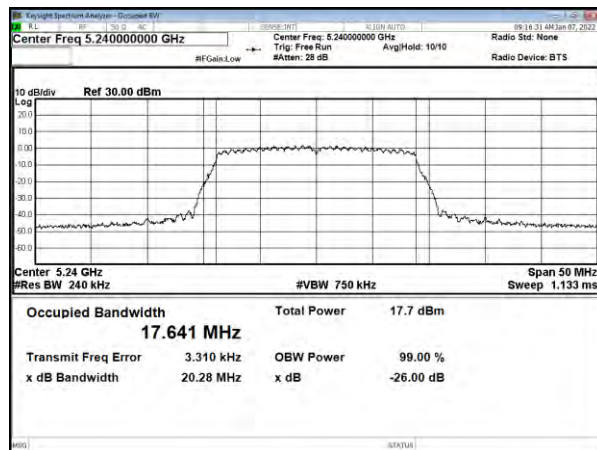


CH46

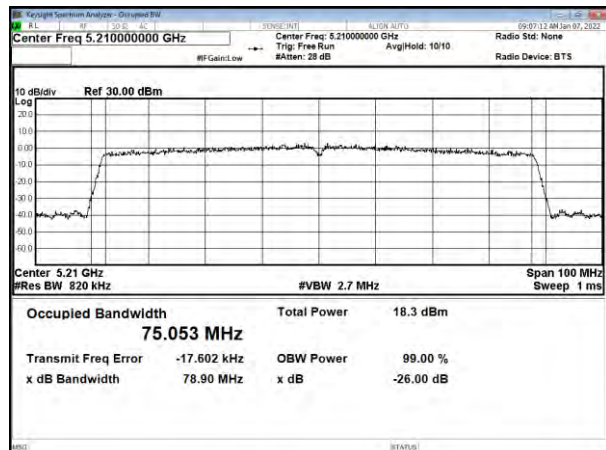


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

CH48



CH42





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

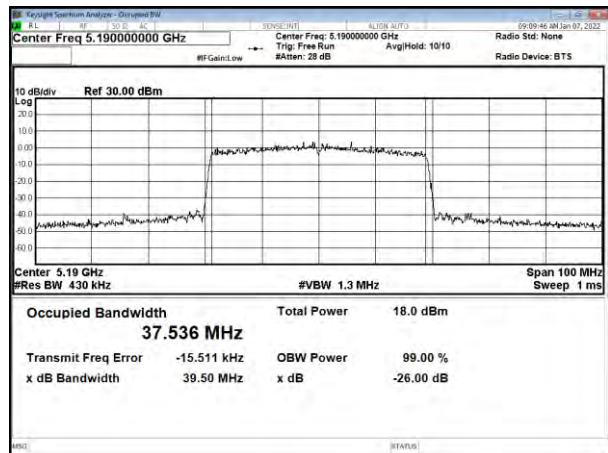
Modulation Standard: 802.11 ax HE20 (7.3Mbps)

CH36

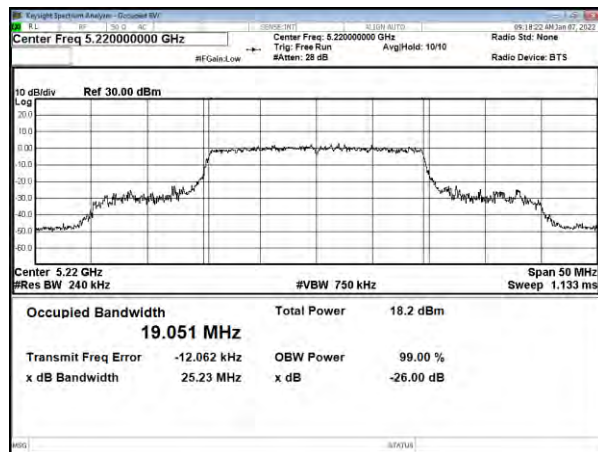


Modulation Standard: 802.11 ax HE40 (14.6Mbps)

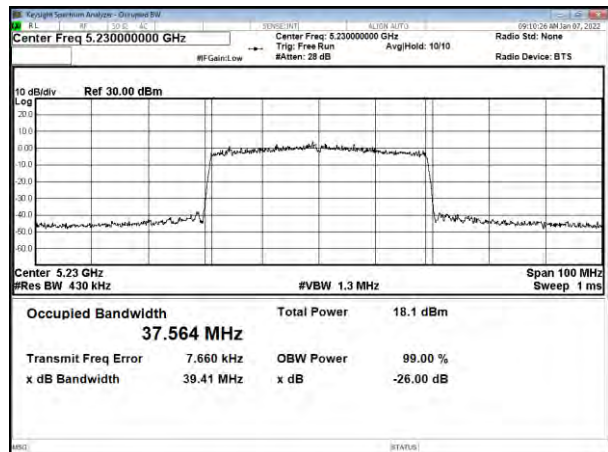
CH38



CH44

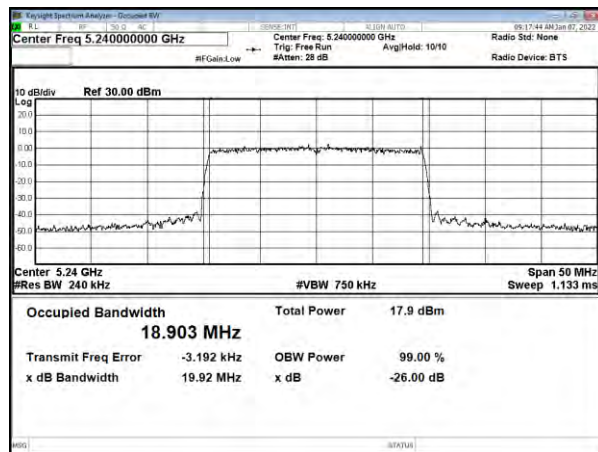


CH46

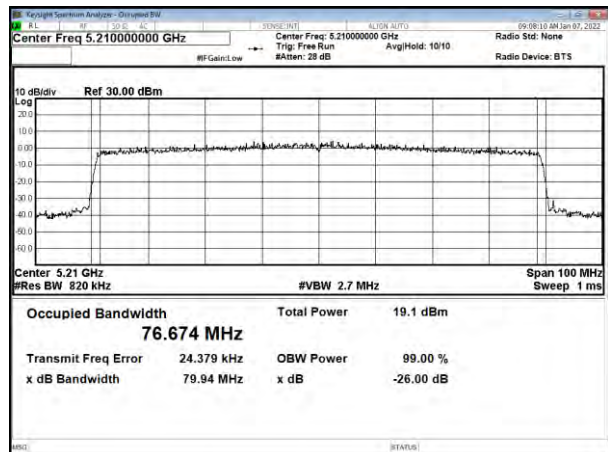


Modulation Standard: 802.11ac VHT80 (30.6Mbps)

CH48



CH42





10. Average Power

10.1. Test Limit

Output Power:

Frequency Band		Limit
☒	5.15~5.25GHz	
	Operating Mode	
☐	Outdoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30degrees as measured from the horizon must not exceed 125 mW (21 dBm).
☐	Indoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☐	Fixed point-to-point access points	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.
☒	client devices	The maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.



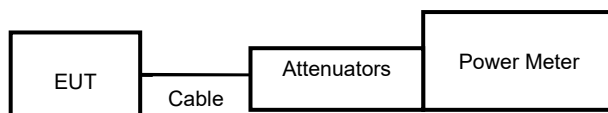
Frequency Band		Limit
☐	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☐	5.470-5.725 GHz	
☒	5.725~5.85 GHz	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.

10.2. Test Procedure

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

10.3. Test Setup Layout



**10.4. Test Result and Data****In the 5.2G Band****SISO**

Modulation Type	Data Rate	Setting	Channel	Frequency (MHz)	Avg Power Output (dBm)		Avg Power Output(mW)		Power Limit (dBm)
					ANT A	ANT B	ANT A	ANT B	
11a	6 Mbps	13	36	5180	13.47	12.42	22.22	17.45	24.00
11a	6 Mbps	13	44	5220	14.06	11.76	25.45	14.99	24.00
11a	6 Mbps	13	48	5240	13.95	11.80	24.81	15.12	24.00
11n HT20	MCS 0	13	36	5180	12.96	11.82	19.77	15.21	24.00
11n HT20	MCS 0	13	44	5220	13.54	11.19	22.61	13.16	24.00
11n HT20	MCS 0	13	48	5240	13.43	11.21	22.04	13.22	24.00
11n HT40	MCS 0	13	38	5190	13.10	11.49	20.43	14.10	24.00
11n HT40	MCS 0	13	46	5230	13.68	11.08	23.34	12.83	24.00
11ac VHT20	MCS 0	13	36	5180	13.08	11.83	20.32	15.24	24.00
11ac VHT20	MCS 0	13	44	5220	13.61	11.26	22.98	13.38	24.00
11ac VHT20	MCS 0	13	48	5240	13.45	11.27	22.15	13.41	24.00
11ac VHT40	MCS 0	13	38	5190	13.13	11.59	20.57	14.43	24.00
11ac VHT40	MCS 0	13	46	5230	13.72	11.12	23.56	12.95	24.00
11ac VHT80	MCS 0	15	42	5210	14.23	12.55	26.51	18.01	24.00
802.11ax HE20	MCS 0	13	36	5180	13.33	12.16	21.52	16.44	24.00
802.11ax HE20	MCS 0	13	44	5220	13.74	11.49	23.65	14.09	24.00
802.11ax HE20	MCS 0	13	48	5240	13.58	11.41	22.80	13.83	24.00
802.11ax HE40	MCS 0	13	38	5190	13.12	11.77	20.50	15.02	24.00
802.11ax HE40	MCS 0	13	46	5230	13.63	11.33	23.06	13.58	24.00
802.11ax HE80	MCS 0	15	42	5210	14.47	12.82	28.02	19.16	24.00

MIMO

Modulation Type	Data Rate	Setting	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (Mw)	Power Limit (dBm)
					ANT A	ANT B	A+B	A+B	
11n HT20	MCS 0	13	36	5180	12.87	11.72	15.34	34.224	23.17
11n HT20	MCS 0	13	44	5220	13.44	11.06	15.42	34.868	23.17
11n HT20	MCS 0	13	48	5240	13.31	11.14	15.37	34.454	23.17
11n HT40	MCS 0	13	38	5190	12.78	11.28	15.11	32.408	23.17
11n HT40	MCS 0	13	46	5230	13.23	10.94	15.25	33.468	23.17
11ac VHT20	MCS 0	13	36	5180	12.98	11.74	15.41	34.789	23.17
11ac VHT20	MCS 0	13	44	5220	13.47	11.12	15.47	35.199	23.17
11ac VHT20	MCS 0	13	48	5240	13.35	11.15	15.40	34.683	23.17
11ac VHT40	MCS 0	13	38	5190	12.90	11.34	15.20	33.126	23.17
11ac VHT40	MCS 0	13	46	5230	13.25	11.07	15.31	33.942	23.17
11ac VHT80	MCS 0	15	42	5210	14.11	12.51	16.40	43.630	23.17
802.11ax HE20	MCS 0	13	36	5180	13.25	12.22	15.77	37.800	23.17
802.11ax HE20	MCS 0	13	44	5220	13.65	11.57	15.74	37.522	23.17
802.11ax HE20	MCS 0	13	48	5240	13.97	11.50	15.92	39.064	23.17
802.11ax HE40	MCS 0	13	38	5190	13.04	11.81	15.48	35.291	23.17
802.11ax HE40	MCS 0	13	46	5230	13.52	11.40	15.60	36.277	23.17
802.11ax HE80	MCS 0	15	42	5210	14.42	12.81	16.70	46.813	23.17

**In the 5.8G Band
SISO**

Modulation Type	Data Rate	Setting	Channel	Frequency (MHz)	Avg Power Output (dBm)		Avg Power Output(Mw)		Power Limit (dBm)
					ANT A	ANT B	ANT A	ANT B	
11a	MCS8	13	149	5745	13.32	13.48	21.46	22.27	30.00
11a	MCS8	13	157	5785	13.72	13.51	23.53	22.42	30.00
11a	MCS8	13	165	5825	13.90	12.95	24.53	19.71	30.00
11n HT20	MCS8	13	149	5745	12.89	13.34	19.45	21.58	30.00
11n HT20	MCS8	13	157	5785	13.36	13.15	21.69	20.67	30.00
11n HT20	MCS8	13	165	5825	13.31	12.54	21.44	17.96	30.00
11n HT40	MCS8	13	151	5755	12.43	13.04	17.51	20.15	30.00
11n HT40	MCS8	13	159	5795	13.30	12.76	21.39	18.89	30.00
11ac VHT20	MCS8	13	149	5745	12.98	13.36	19.86	21.68	30.00
11ac VHT20	MCS8	13	157	5785	13.42	13.18	21.99	20.81	30.00
11ac VHT20	MCS8	13	165	5825	13.36	12.59	21.69	18.17	30.00
11ac VHT40	MCS0	13	151	5755	12.58	13.09	18.12	20.38	30.00
11ac VHT40	MCS0	13	159	5795	13.33	12.80	21.54	19.06	30.00
11ac VHT80	MCS0	13	155	5775	14.78	14.16	30.09	26.09	30.00
802.11ax HE20	MCS0	13	149	5745	13.29	13.51	21.33	22.43	30.00
802.11ax HE20	MCS0	13	157	5785	13.67	13.35	23.28	21.62	30.00
802.11ax HE20	MCS0	13	165	5825	13.71	12.82	23.49	19.14	30.00
802.11ax HE40	MCS8	13	151	5755	12.96	13.21	19.76	20.93	30.00
802.11ax HE40	MCS8	13	159	5795	13.67	12.99	23.27	19.90	30.00
802.11ax HE80	MCS8	13	155	5775	15.18	14.35	32.99	27.25	30.00

MIMO

Modulation Type	Data Rate	Setting	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
					ANT A	ANT B	A+B	A+B	
11n HT20	MCS8	13	149	5745	12.76	13.24	16.02	39.966	29.18
11n HT20	MCS8	13	157	5785	13.25	13.11	16.19	41.628	29.18
11n HT20	MCS8	13	165	5825	13.19	12.38	15.82	38.169	29.18
11n HT40	MCS8	13	151	5755	13.42	12.93	16.19	41.629	29.18
11n HT40	MCS8	13	159	5795	13.27	12.77	16.04	40.172	29.18
11ac VHT20	MCS8	13	149	5745	12.89	13.31	16.12	40.883	29.18
11ac VHT20	MCS8	13	157	5785	13.28	13.14	16.22	41.916	29.18
11ac VHT20	MCS8	13	165	5825	13.27	12.47	15.90	38.920	29.18
11ac VHT40	MCS0	13	151	5755	13.49	12.95	16.24	42.077	29.18
11ac VHT40	MCS0	13	159	5795	13.30	12.81	16.07	40.494	29.18
11ac VHT80	MCS0	13	155	5775	14.77	14.20	17.51	56.350	29.18
802.11ax HE20	MCS0	13	149	5745	13.22	13.42	16.33	42.960	29.18
802.11ax HE20	MCS0	13	157	5785	13.72	13.20	16.48	44.435	29.18
802.11ax HE20	MCS0	13	165	5825	13.79	12.62	16.25	42.206	29.18
802.11ax HE40	MCS8	13	151	5755	12.88	13.08	15.99	39.714	29.18
802.11ax HE40	MCS8	13	159	5795	13.66	12.94	16.32	42.886	29.18
802.11ax HE80	MCS8	13	155	5775	15.18	14.40	17.82	60.561	29.18



11. Maximum Power Spectral Density

11.1. Test Limit

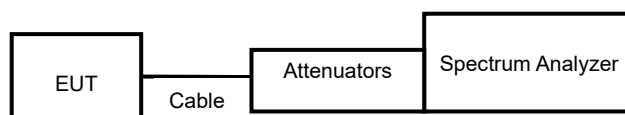
PSD:

Frequency Band		Limit
☒	5.15~5.25GHz	
	Operating Mode	
☐	Outdoor access point	17 dBm/MHz
☐	Indoor access point	17 dBm/MHz
☐	Fixed point-to-point access points	17 dBm/MHz
☒	client devices	11 dBm/MHz
☐	5.250~5.350 GHz	11 dBm/MHz
☐	5.470~5.725 GHz	11 dBm/MHz
☒	5.725~5.85 GHz	30 dBm/500kHz

11.2. Test Procedure

Reference to KDB789033 v02r01 General UNII Test Procedures New Rules.

11.3. Test Setup Layout



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

Modulation Type	CH	Freq. (MHz)	Meas PPSSD (dBm/MHz)		Duty Cycle CF(dB)	Total Corr'd PPSSD(dBm/MHz)		PPSSD Limit (dBm/MHz)
			ANT A	ANT B		ANT A	ANT B	
11a	36	5180	2.79	1.66	0.14	2.93	1.80	11.00
11a	44	5220	3.26	1.07	0.14	3.40	1.21	11.00
11a	48	5240	3.19	1.01	0.14	3.33	1.15	11.00
11ac VHT20	36	5180	2.01	0.77	0.30	2.31	1.07	11.00
11ac VHT20	44	5220	2.53	0.17	0.30	2.83	0.47	11.00
11ac VHT20	48	5240	2.37	0.16	0.30	2.67	0.46	11.00
11ac VHT40	38	5190	0.64	-2.03	0.61	1.25	-1.42	11.00
11ac VHT40	46	5230	-0.12	-2.34	0.61	0.50	-1.73	11.00
11ac VHT80	42	5210	-6.34	-7.90	4.43	-1.91	-3.47	11.00
802.11ax HE20	36	5180	1.52	0.50	0.38	1.90	0.88	11.00
802.11ax HE20	44	5220	2.10	-0.09	0.38	2.48	0.29	11.00
802.11ax HE20	48	5240	1.99	-0.18	0.38	2.37	0.20	11.00
802.11ax HE40	38	5190	-1.11	-2.38	0.71	-0.40	-1.67	11.00
802.11ax HE40	46	5230	-0.58	-2.80	0.71	0.13	-2.09	11.00
802.11ax HE80	42	5210	-6.33	-8.20	4.66	-1.67	-3.53	11.00

MIMO

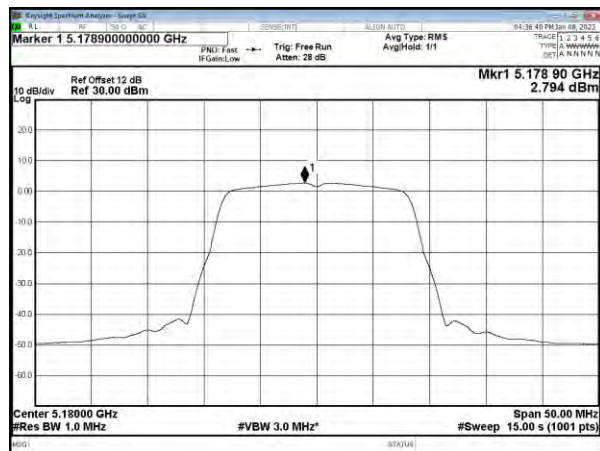
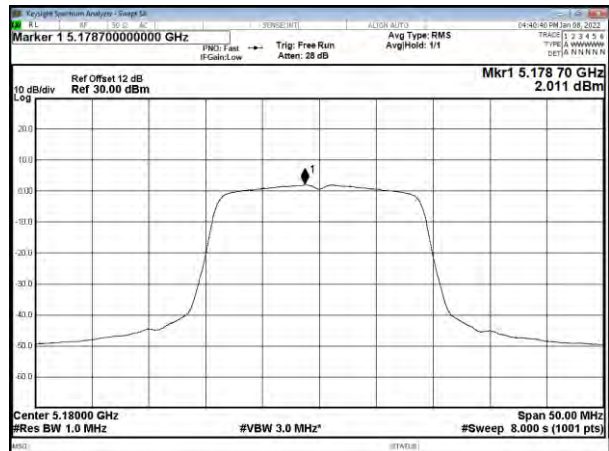
Modulation Type	CH	Freq. (MHz)	Meas PPSSD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PPSSD (dBm/MHz)	PPSSD Limit (dBm/MHz)
			ANT A	ANT B				
11ac VHT20	36	5180	1.61	0.53	4.11	0.39	4.50	10.17
11ac VHT20	44	5220	2.10	-0.20	4.11	0.39	4.50	10.17
11ac VHT20	48	5240	1.92	-0.17	4.01	0.39	4.40	10.17
11ac VHT40	38	5190	-1.19	-2.28	1.31	0.63	1.94	10.17
11ac VHT40	46	5230	-0.66	-2.77	1.42	0.63	2.05	10.17
11ac VHT80	42	5210	-6.77	-8.24	-4.43	4.49	0.06	10.17
802.11ax HE20	36	5180	1.16	0.09	3.67	0.41	4.08	10.17
802.11ax HE20	44	5220	1.58	-0.49	3.68	0.41	4.09	10.17
802.11ax HE20	48	5240	1.56	-0.55	3.64	0.41	4.05	10.17
802.11ax HE40	38	5190	-1.60	-2.71	0.89	0.74	1.63	10.17
802.11ax HE40	46	5230	-1.03	-3.16	1.04	0.74	1.78	10.17
802.11ax HE80	42	5210	-6.76	-8.39	-4.49	4.66	0.17	10.17

**In the 5.8G Band
SISO**

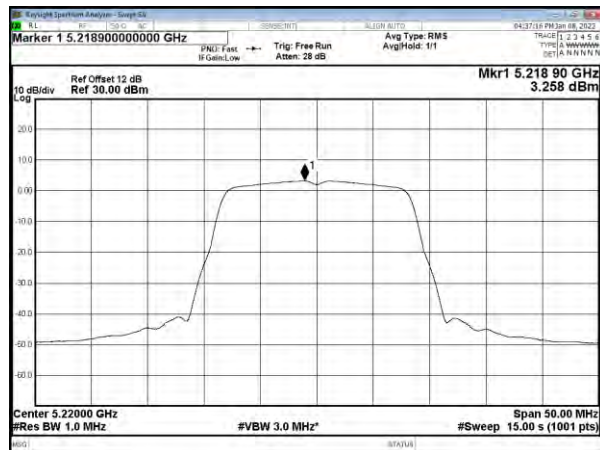
Modulation Type	CH	Freq. (MHz)	Meas PPSD (dBm/MHz)		Duty Cycle CF(dB)	10log(500 KHz/RBW) CF (dB)	Total Corr'd PPSD(dBm/500kHz)		PPSD Limit (dBm/500kHz)
			ANT A	ANT B			ANT A	ANT B	
11a	149	5745	3.28	2.58	0.14	-3.01	0.41	-0.29	30.00
11a	157	5785	2.80	2.43	0.14	-3.01	-0.07	-0.44	30.00
11a	165	5825	2.85	1.82	0.14	-3.01	-0.02	-1.05	30.00
11ac VHT20	149	5745	1.76	1.79	0.30	-3.01	-0.95	-0.93	30.00
11ac VHT20	157	5785	2.28	1.77	0.30	-3.01	-0.43	-0.94	30.00
11ac VHT20	165	5825	2.26	1.02	0.30	-3.01	-0.45	-1.69	30.00
11ac VHT40	151	5755	-1.09	-0.85	0.61	-3.01	-3.49	-3.25	30.00
11ac VHT40	159	5795	-0.42	-1.22	0.61	-3.01	-2.82	-3.62	30.00
11ac VHT80	155	5775	-5.94	-6.60	4.43	-3.01	-4.52	-5.18	30.00
802.11ax HE20	149	5745	1.32	1.54	0.38	-3.01	-1.31	-1.10	30.00
802.11ax HE20	157	5785	1.88	1.34	0.38	-3.01	-0.75	-1.29	30.00
802.11ax HE20	165	5825	1.85	0.63	0.38	-3.01	-0.78	-2.01	30.00
802.11ax HE40	151	5755	-1.49	-1.38	0.71	-3.01	-3.79	-3.69	30.00
802.11ax HE40	159	5795	-0.78	-1.51	0.71	-3.01	-3.08	-3.81	30.00
802.11ax HE80	155	5775	-5.86	-6.89	4.66	-3.01	-4.21	-5.23	30.00

MIMO

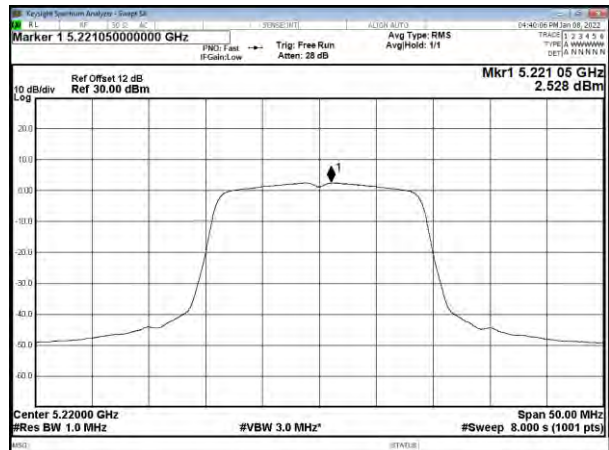
Modulation Type	CH	Freq. (MHz)	Meas PPSD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	10log(500K Hz/RBW) CF (dB)	Total Corr'd PPSD (dBm/500kHz)	PPSD Limit (dBm/500kHz)
			ANT A	ANT B					
11ac VHT20	149	5745	-1.33	1.98	3.65	0.39	-3.01	1.03	29.18
11ac VHT20	157	5785	2.25	1.78	5.03	0.39	-3.01	2.41	29.18
11ac VHT20	165	5825	2.20	1.10	4.69	0.39	-3.01	2.07	29.18
11ac VHT40	151	5755	-1.02	-0.85	2.08	0.63	-3.01	-0.30	29.18
11ac VHT40	159	5795	-0.35	-1.14	2.28	0.63	-3.01	-0.10	29.18
11ac VHT80	155	5775	-5.85	-6.56	-3.18	4.49	-3.01	-1.70	29.18
802.11ax HE20	149	5745	1.38	1.55	4.47	0.41	-3.01	1.87	29.18
802.11ax HE20	157	5785	1.83	1.44	4.65	0.41	-3.01	2.05	29.18
802.11ax HE20	165	5825	1.83	0.65	4.29	0.41	-3.01	1.69	29.18
802.11ax HE40	151	5755	-1.47	-1.21	1.67	0.74	-3.01	-0.60	29.18
802.11ax HE40	159	5795	-0.77	-1.57	1.86	0.74	-3.01	-0.41	29.18
802.11ax HE80	155	5775	-5.93	-6.73	-3.30	4.66	-3.01	-1.65	29.18

**5.2G, UNII-1
SISO (ANT A)**Modulation Standard: 802.11a (6Mbps)
CH36Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH36

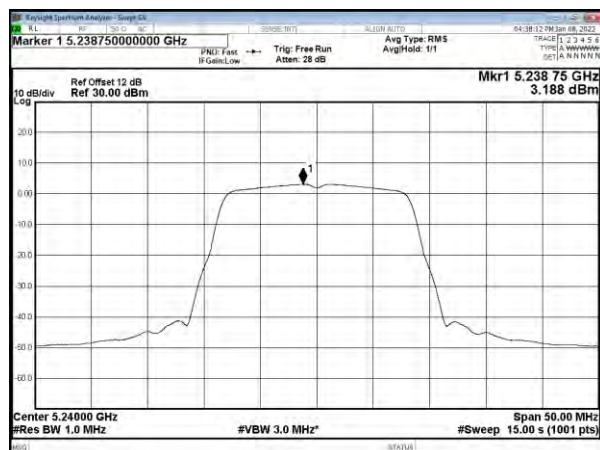
CH44



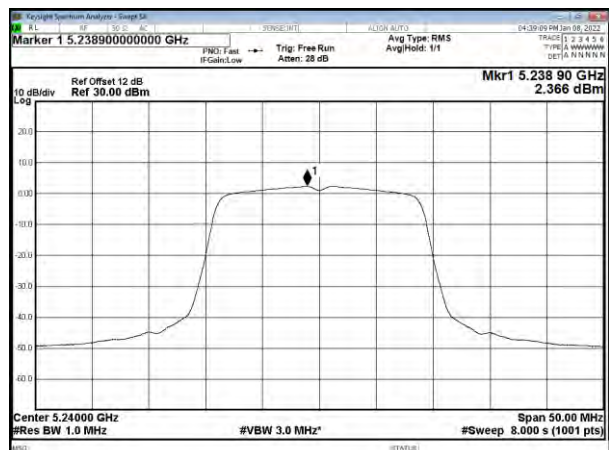
CH44



CH48



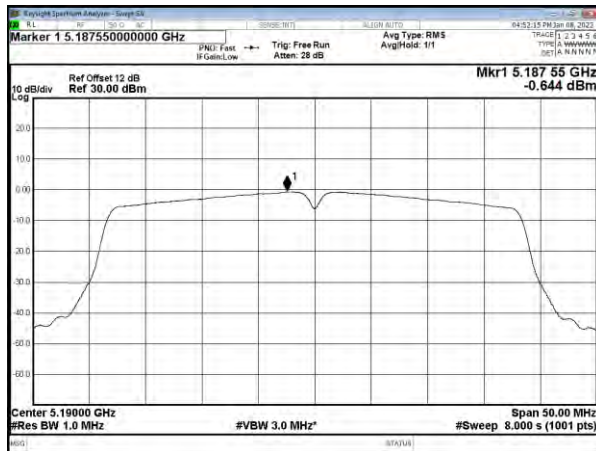
CH48





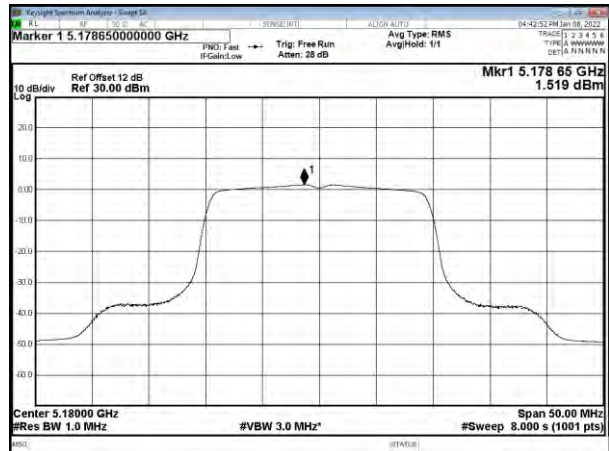
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH38

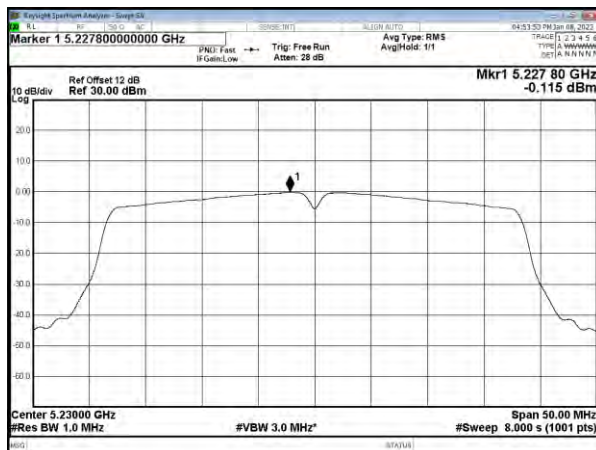


Modulation Standard: 802.11 ax HE20 (7.3Mbps)

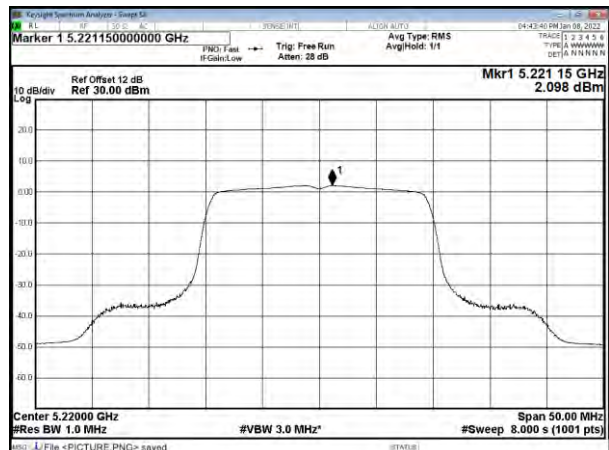
CH36



CH46

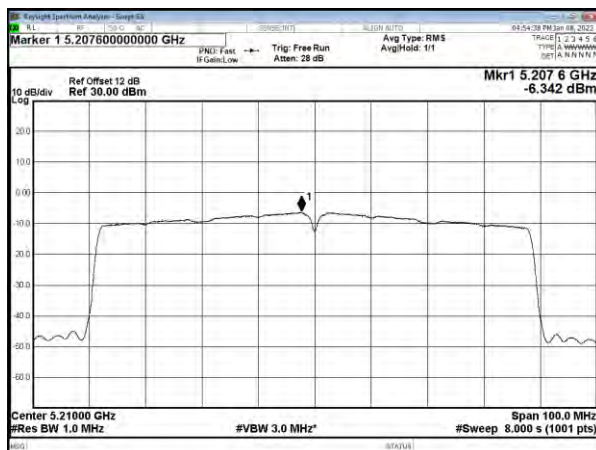


CH44

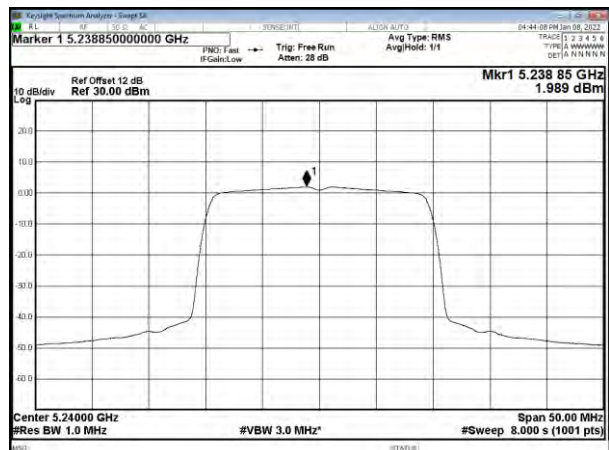


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH42



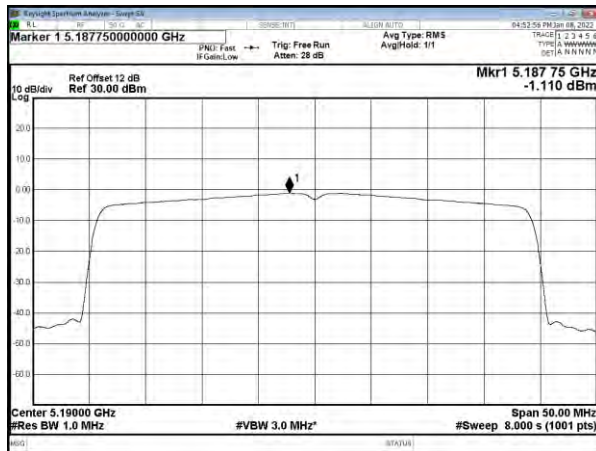
CH48



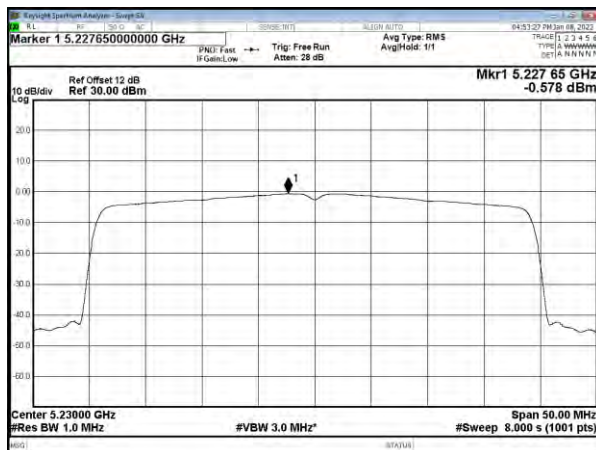


Modulation Standard: 802.11 ax HE40 (14.6Mbps)

CH38

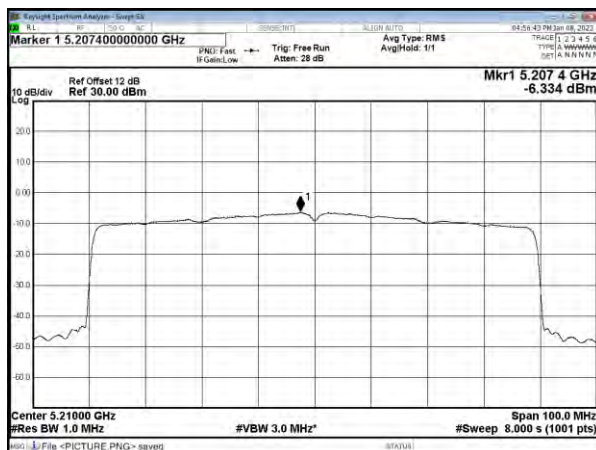


CH46



Modulation Standard: 802.11 ax HE80 (30.6Mbps)

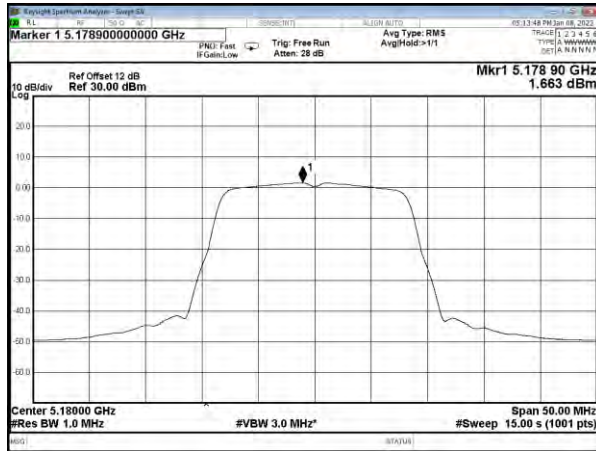
CH42



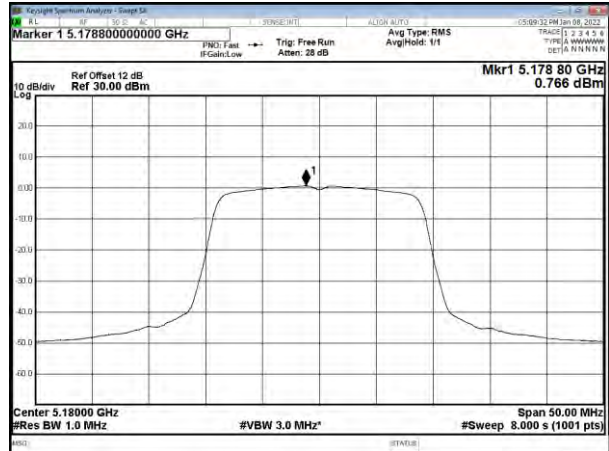


SISO (ANT B)

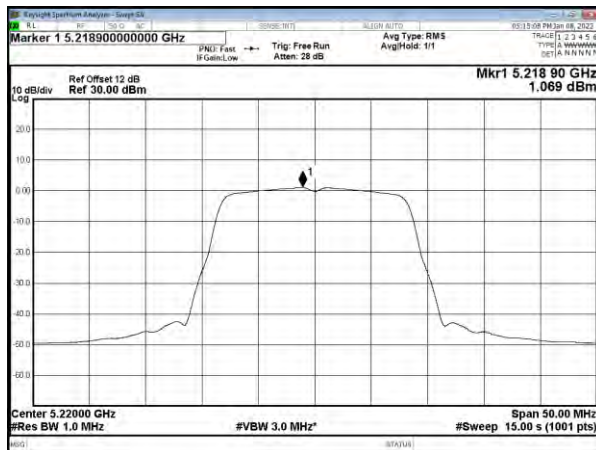
Modulation Standard: 802.11a (6Mbps)
CH36



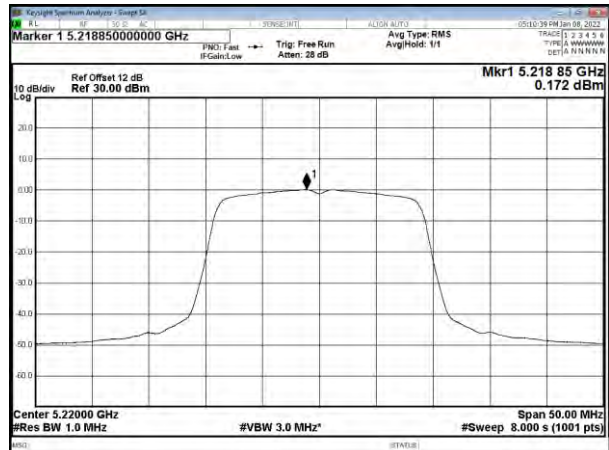
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH36



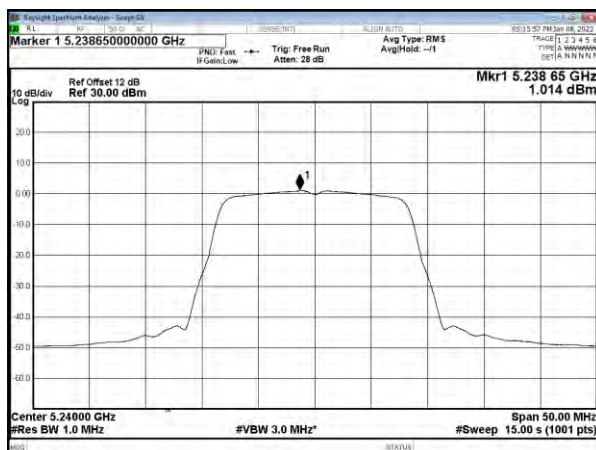
CH44



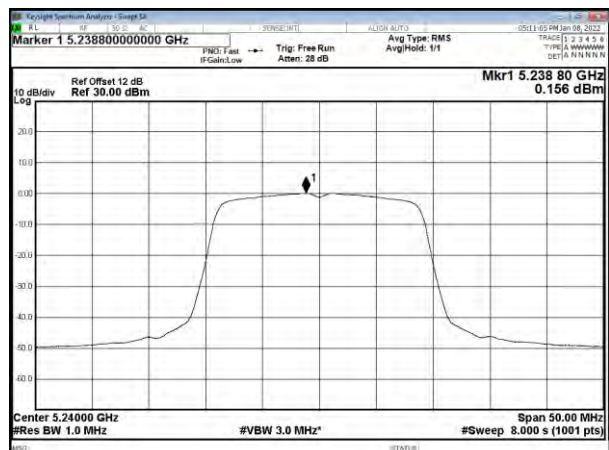
CH44



CH48



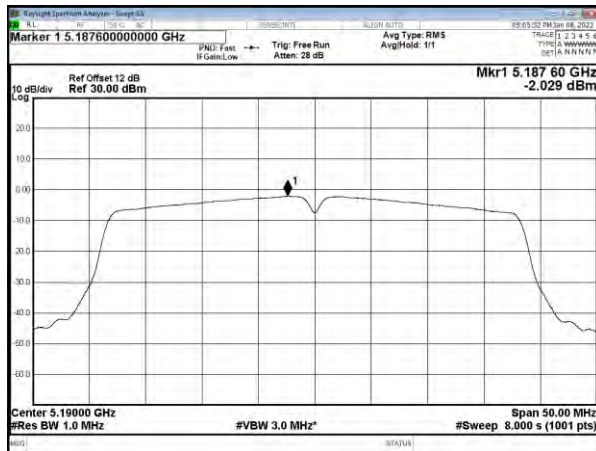
CH48





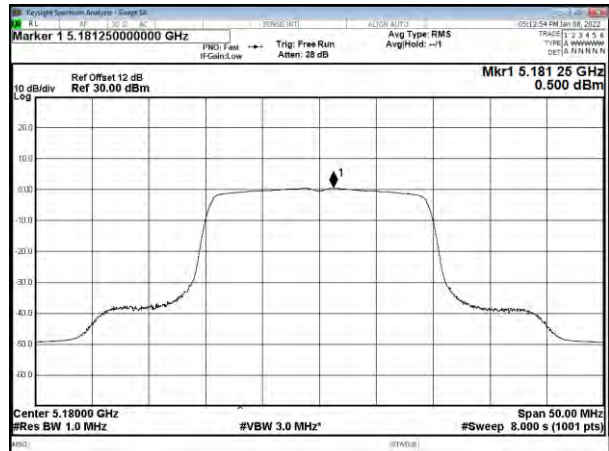
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH38

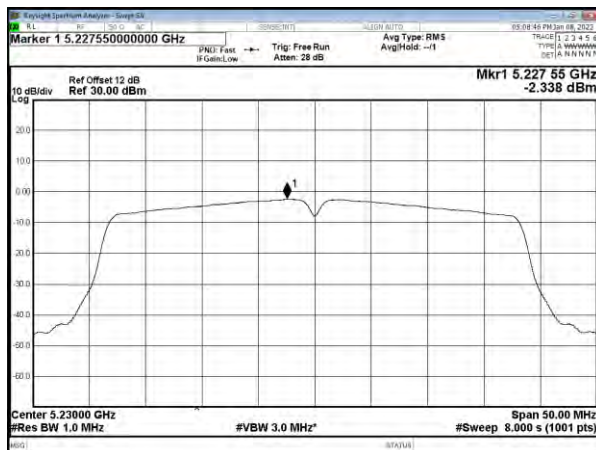


Modulation Standard: 802.11 ax HE20 (7.3Mbps)

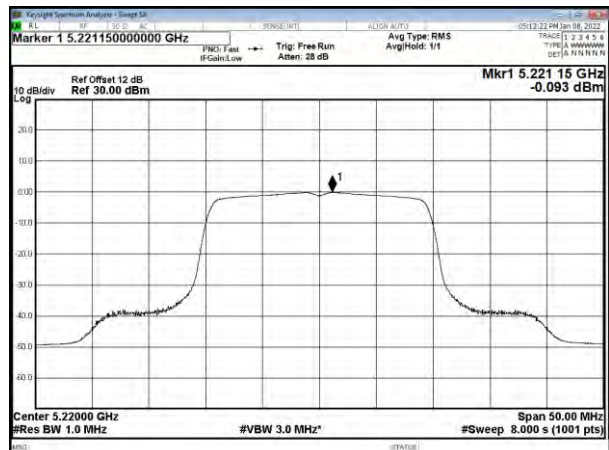
CH36



CH46

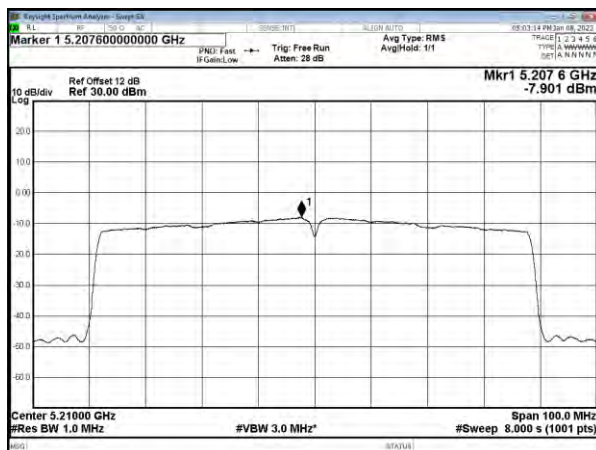


CH44

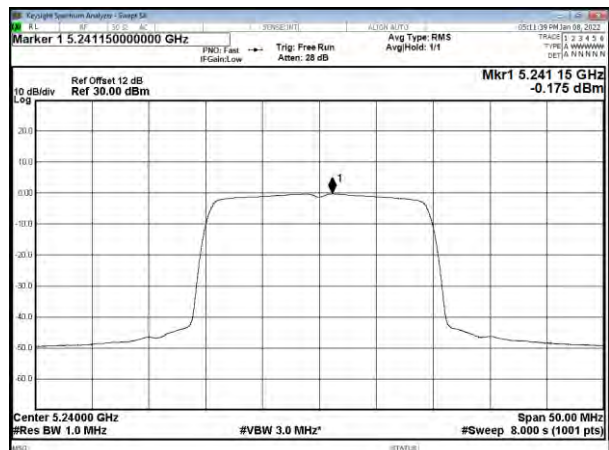


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH42



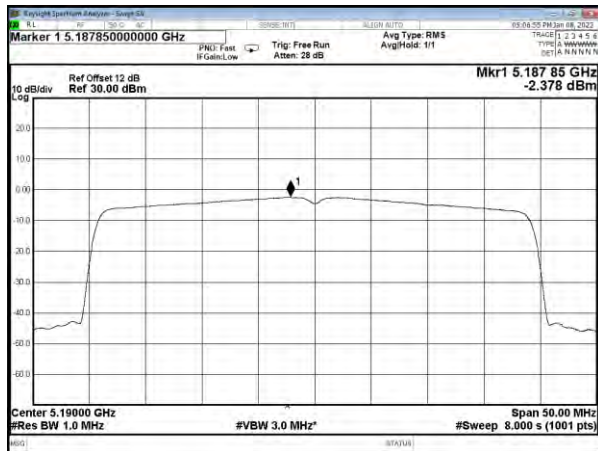
CH48



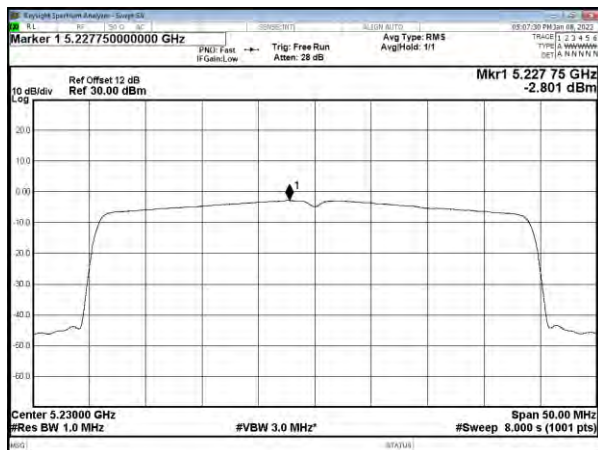


Modulation Standard: 802.11 ax HE40 (14.6Mbps)

CH38

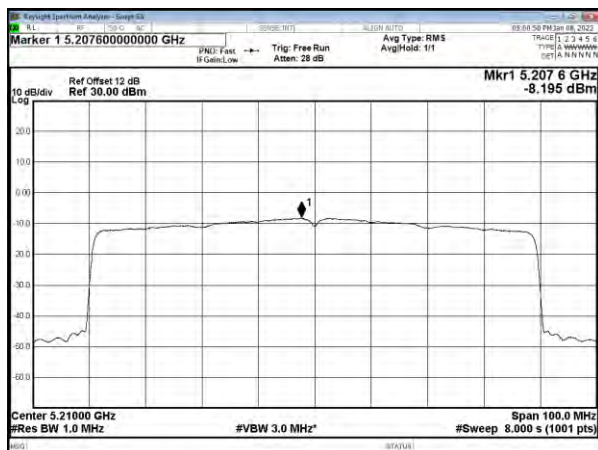


CH46



Modulation Standard: 802.11 ax HE80 (30.6Mbps)

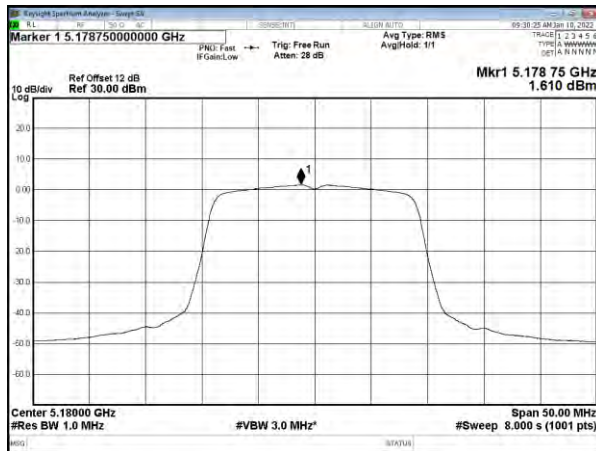
CH42



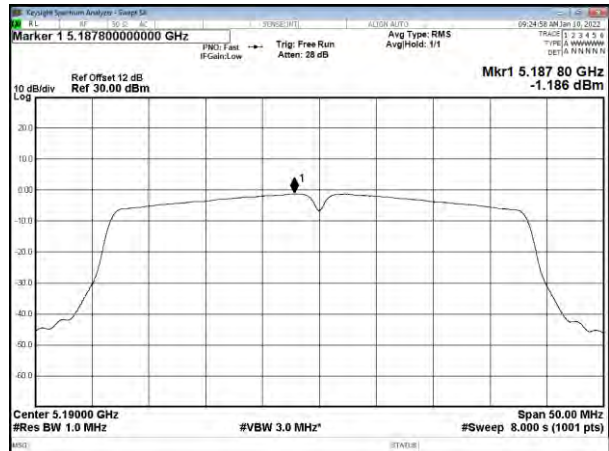


MIMO (ANT A)

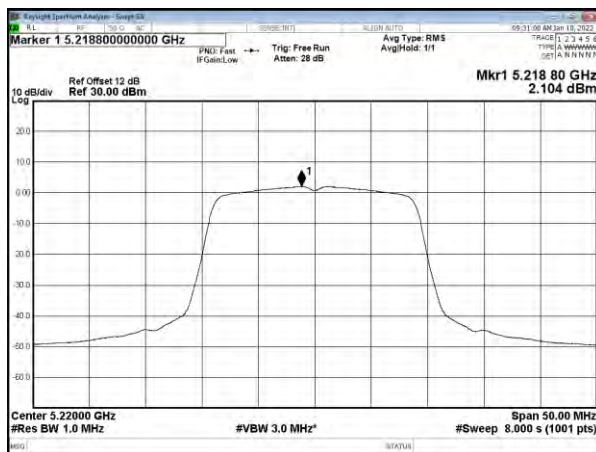
Modulation Standard: 802.11ac VHT20 (13Mbps)
CH36



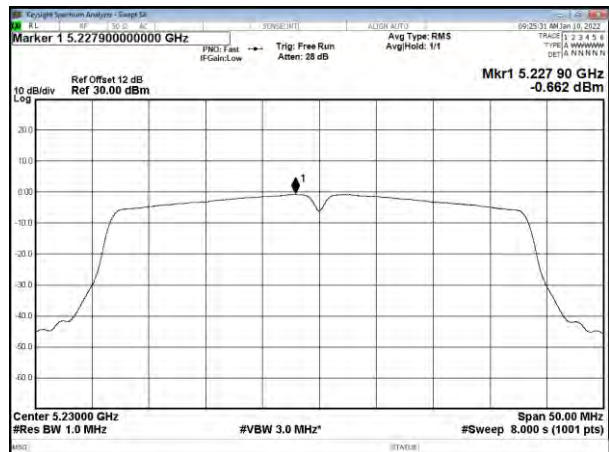
Modulation Standard: 802.11ac VHT40 (27Mbps)
CH38



CH44

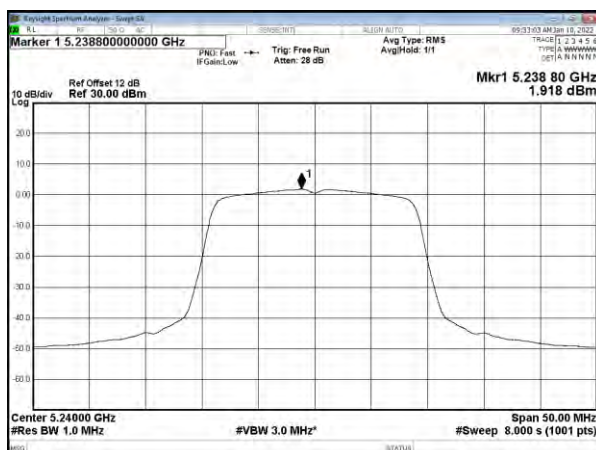


CH46

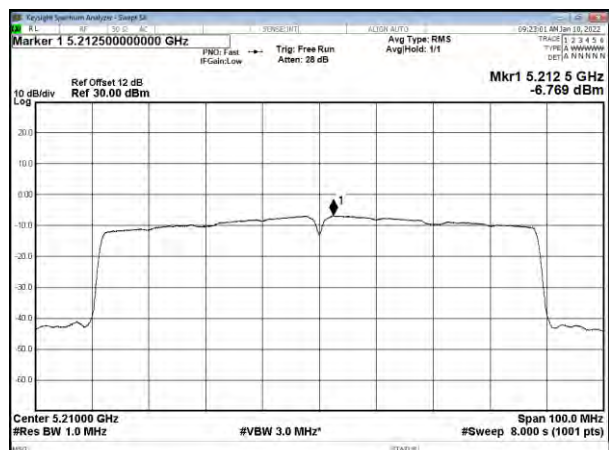


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

CH48



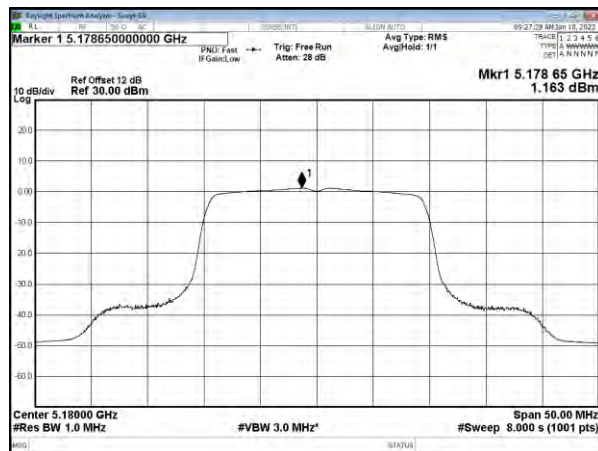
CH42





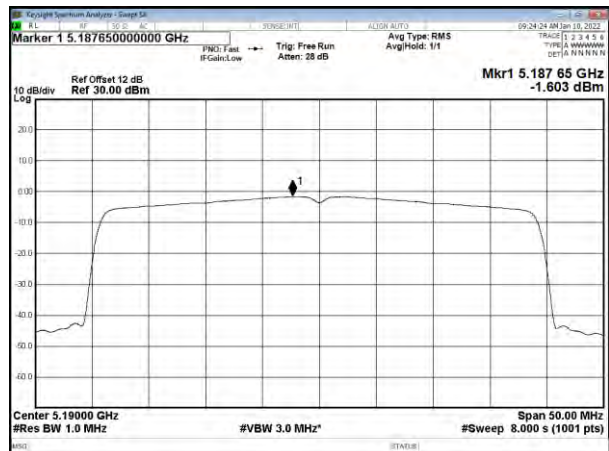
Modulation Standard: 802.11 ax HE20 (7.3Mbps)

CH36

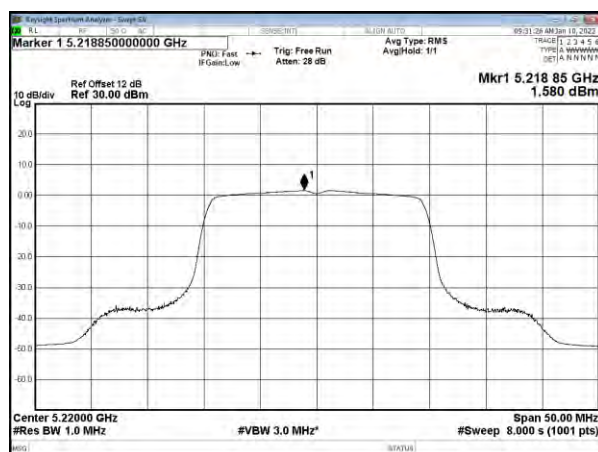


Modulation Standard: 802.11 ax HE40 (14.6Mbps)

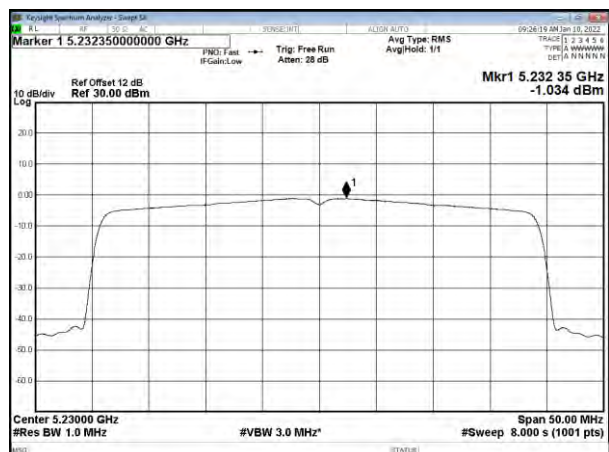
CH38



CH44

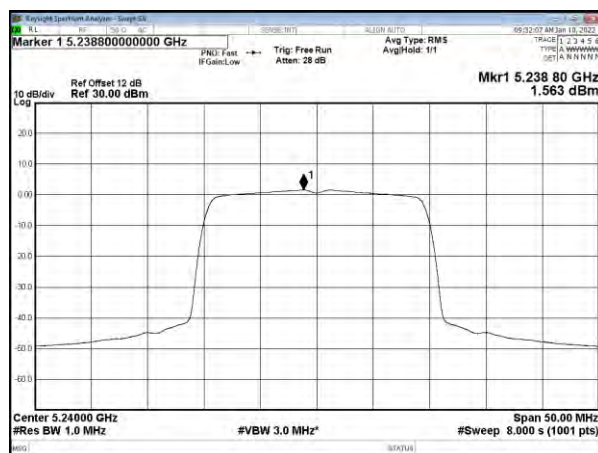


CH46

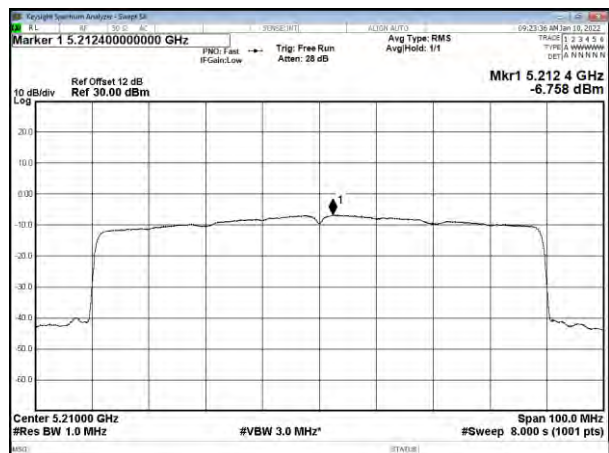


Modulation Standard: 802.11 ax HE80 (30.6Mbps)

CH48



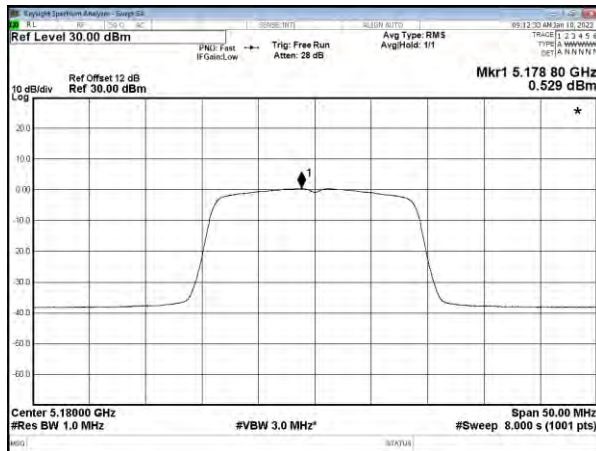
CH42



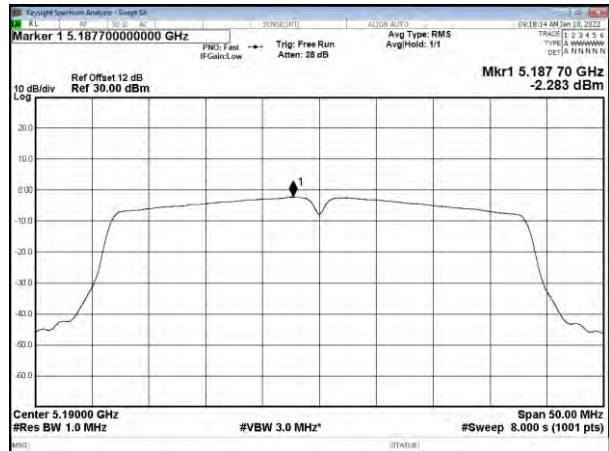


MIMO (ANT B)

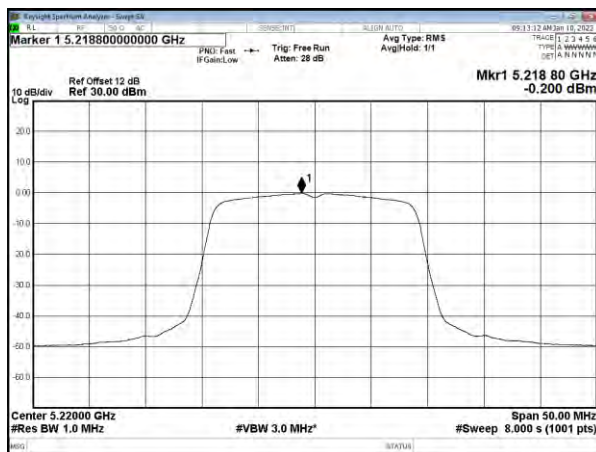
Modulation Standard: 802.11ac VHT20 (13Mbps)
CH38



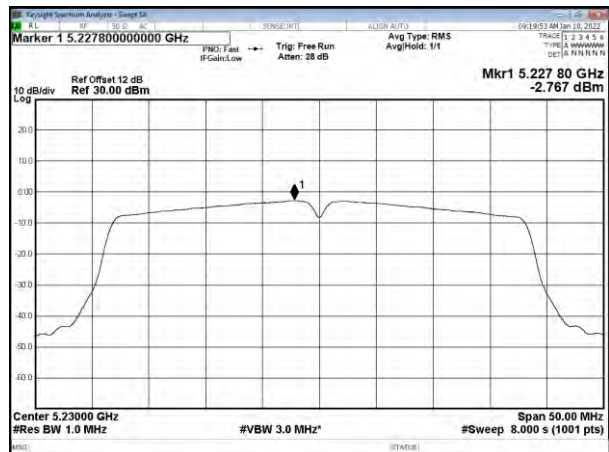
Modulation Standard: 802.11ac VHT40 (27Mbps)
CH38



CH44

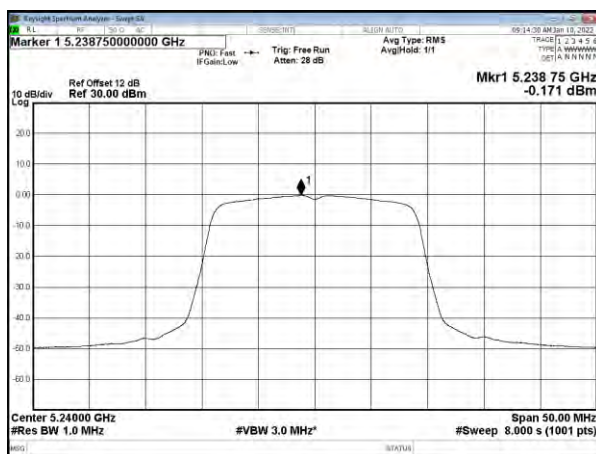


CH46

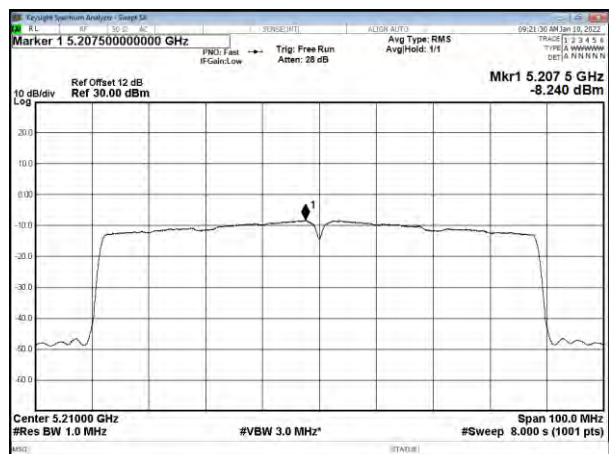


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

CH48



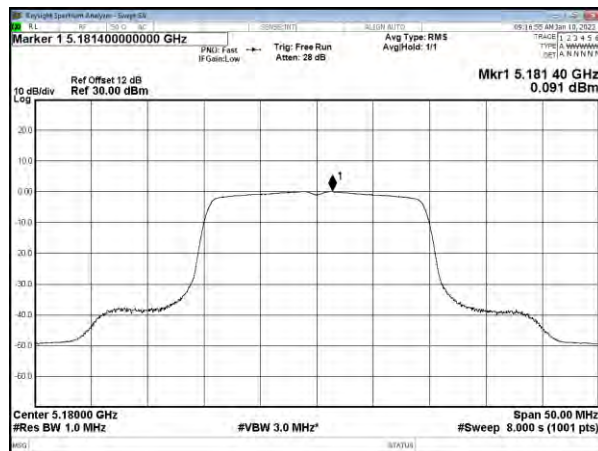
CH42





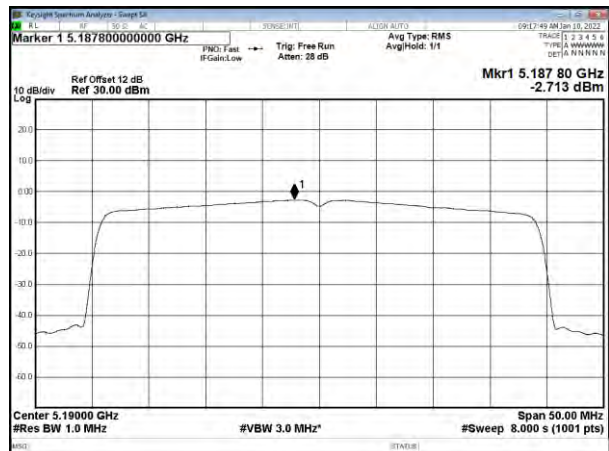
Modulation Standard: 802.11 ax HE20 (7.3Mbps)

CH36

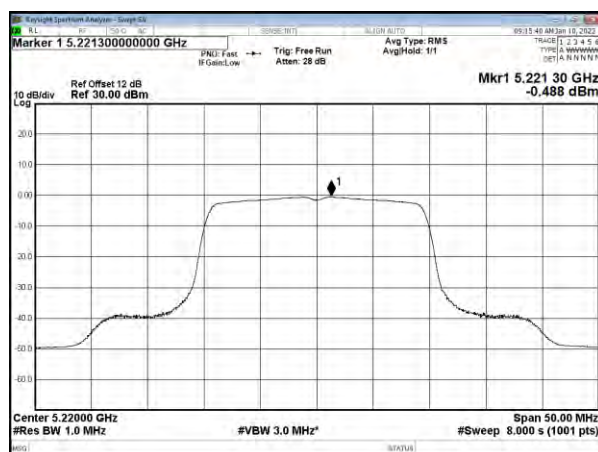


Modulation Standard: 802.11 ax HE40 (14.6Mbps)

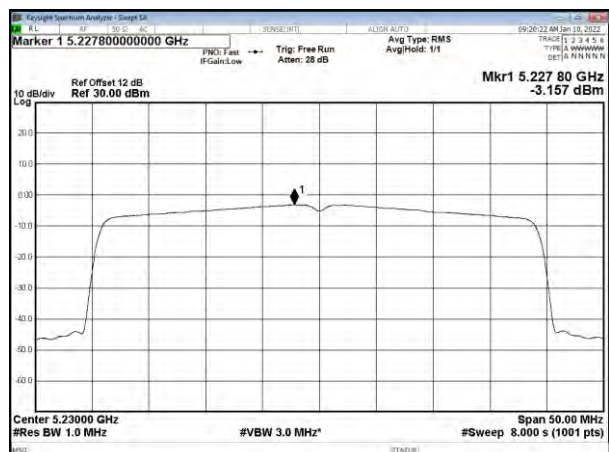
CH38



CH44

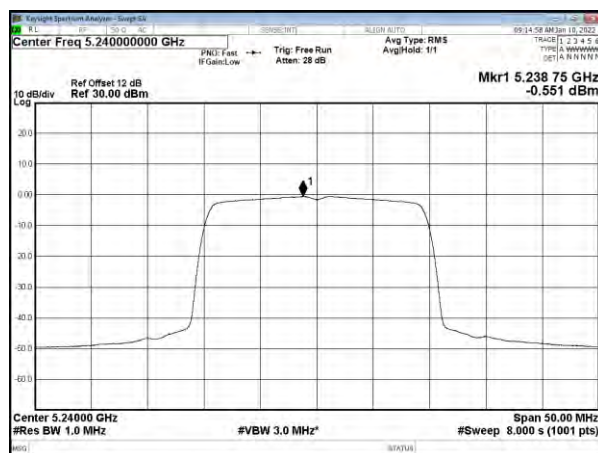


CH46

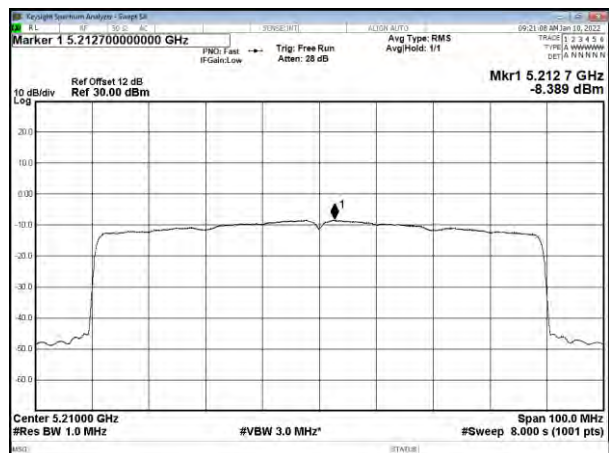


Modulation Standard: 802.11 ax HE80 (30.6Mbps)

CH48



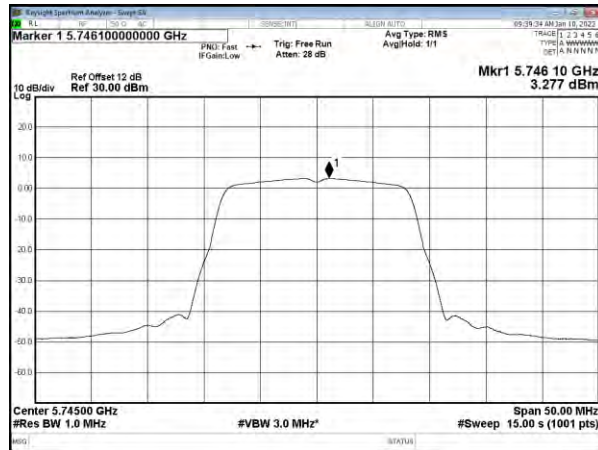
CH42



**5.8G, UNII-3
SISO (ANT A)**

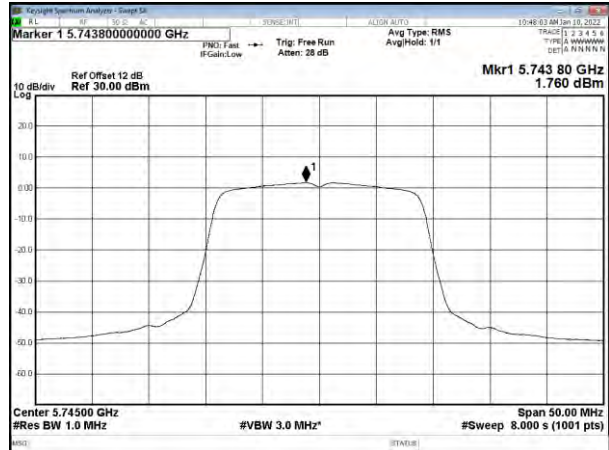
Modulation Standard: 802.11a (6Mbps)

CH149

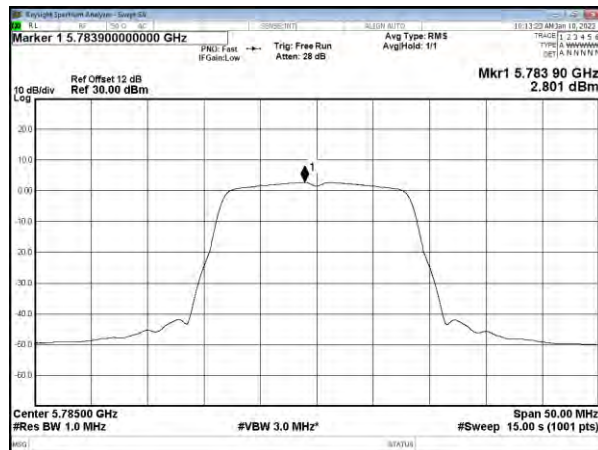


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

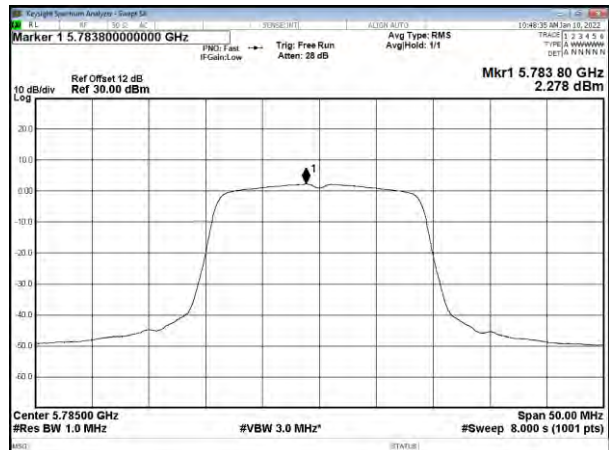
CH149



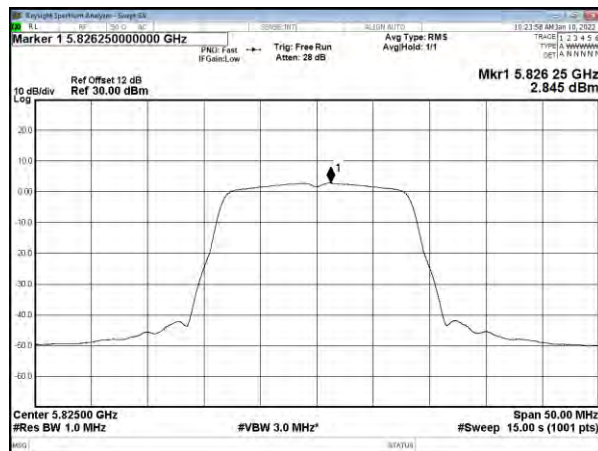
CH157



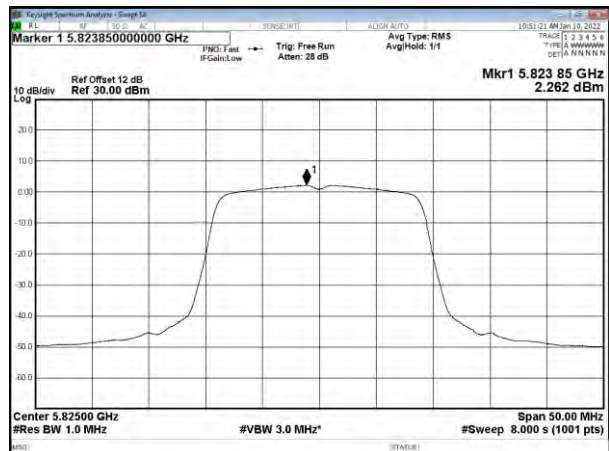
CH157



CH165



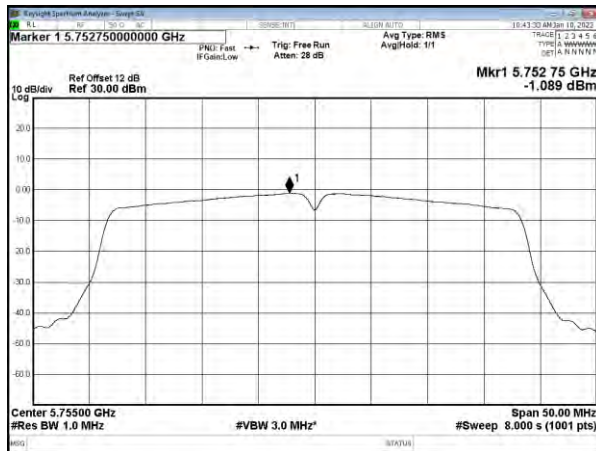
CH165





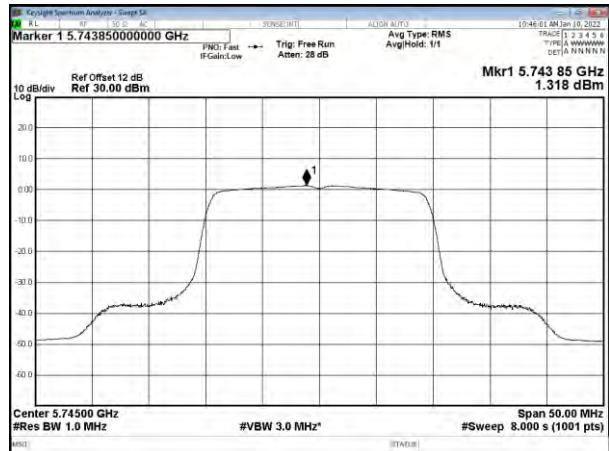
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH151

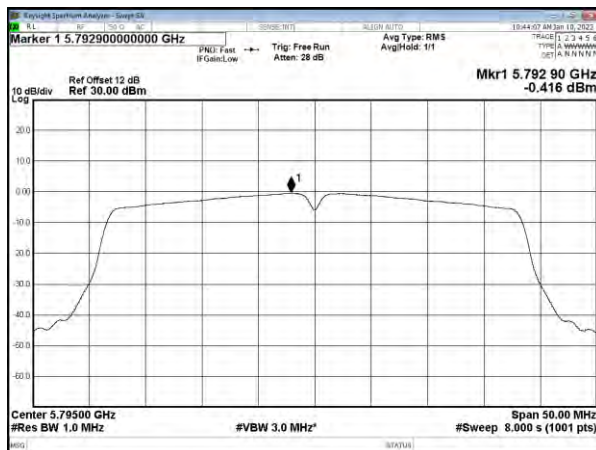


Modulation Type: 802.1111ax HE20 (7.3Mbps)

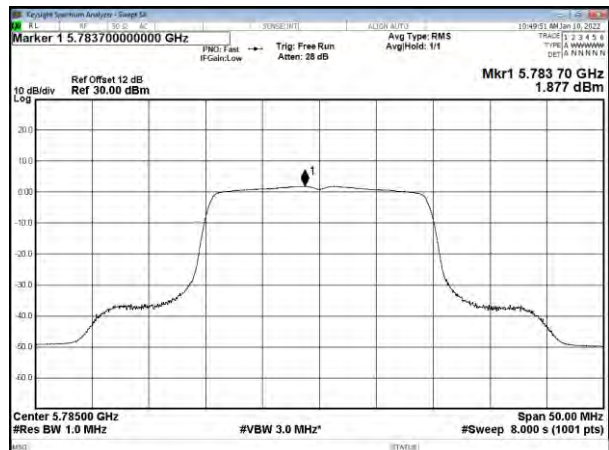
CH149



CH159

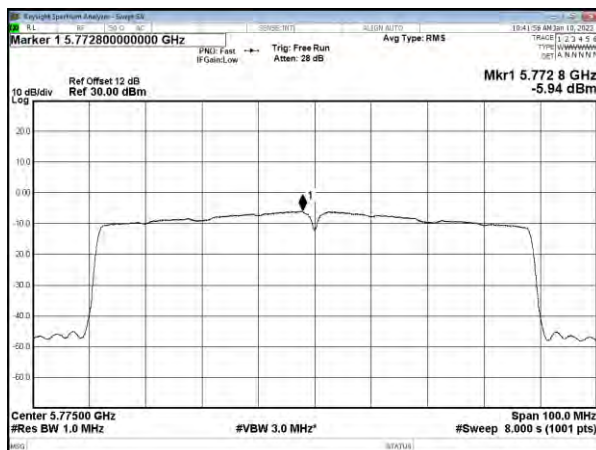


CH157

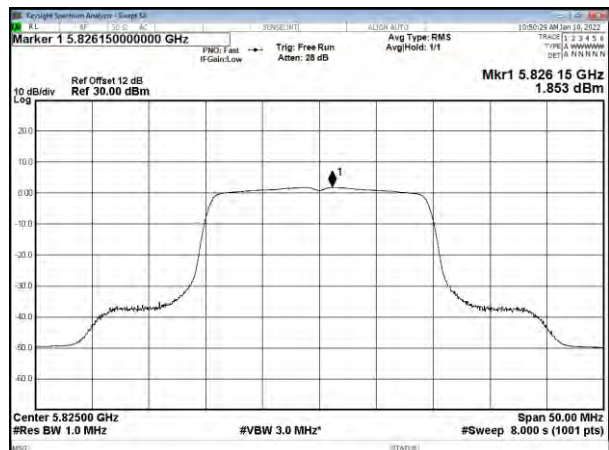


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH155



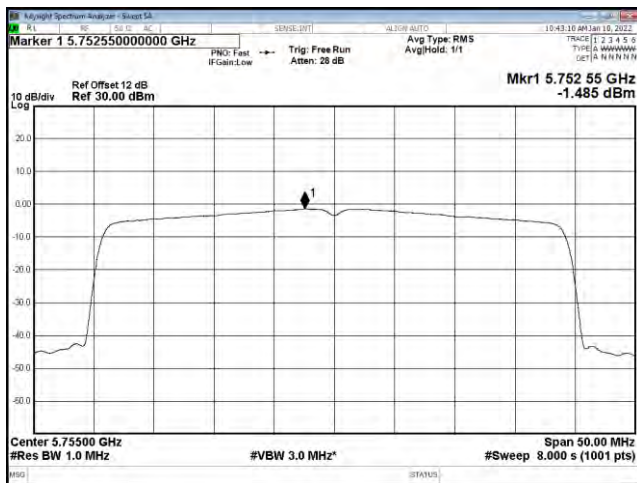
CH165



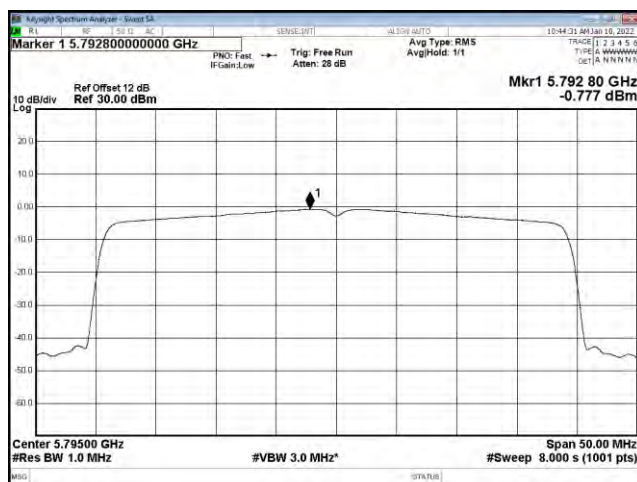


Modulation Type: 802.11 ax HE40 (14.6Mbps)

CH151

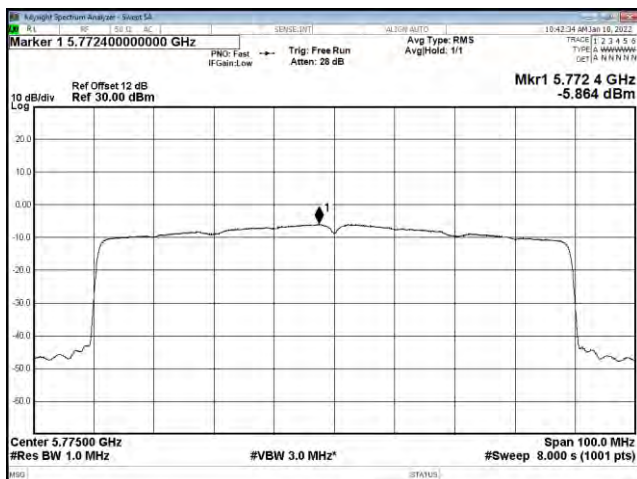


CH159



Modulation Type: 802.11ax HE80 (30.6Mbps)

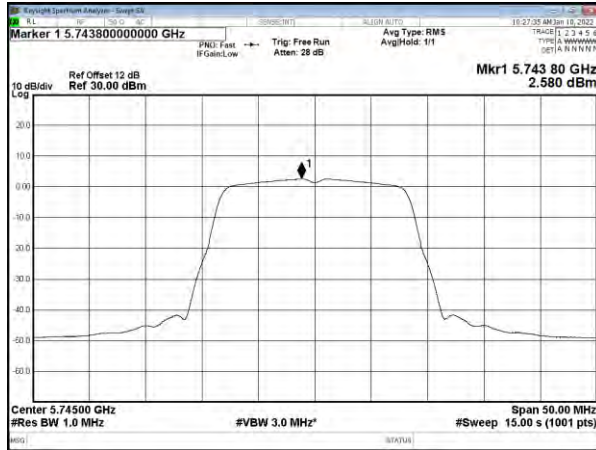
CH155



**SISO (ANT B)**

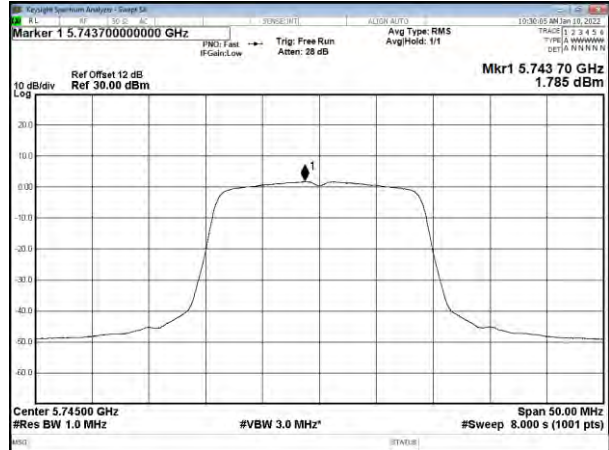
Modulation Standard: 802.11a (6Mbps)

CH149

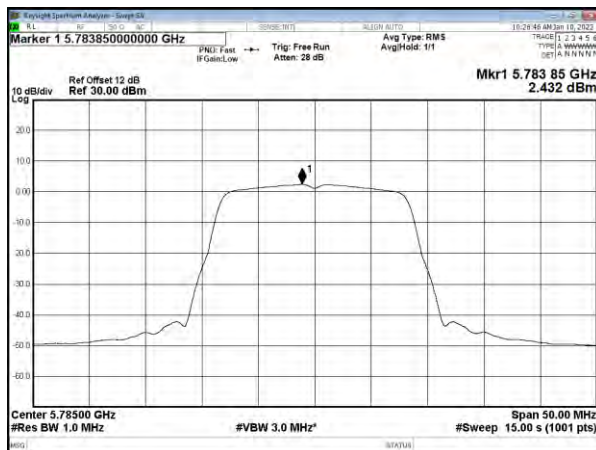


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

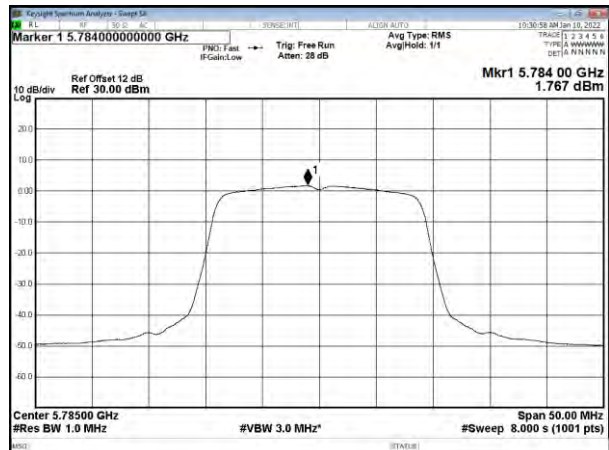
CH149



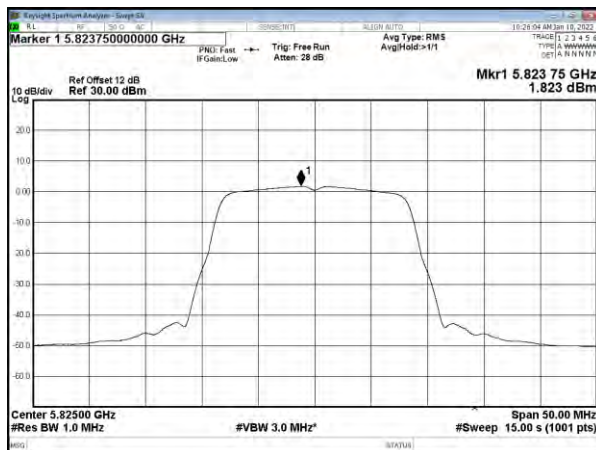
CH157



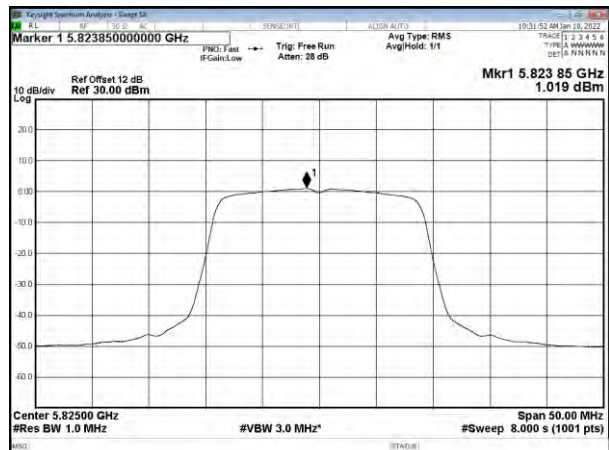
CH157



CH165



CH165





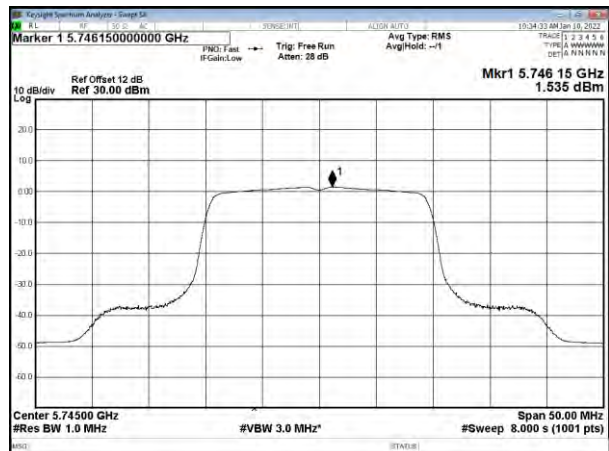
Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH151

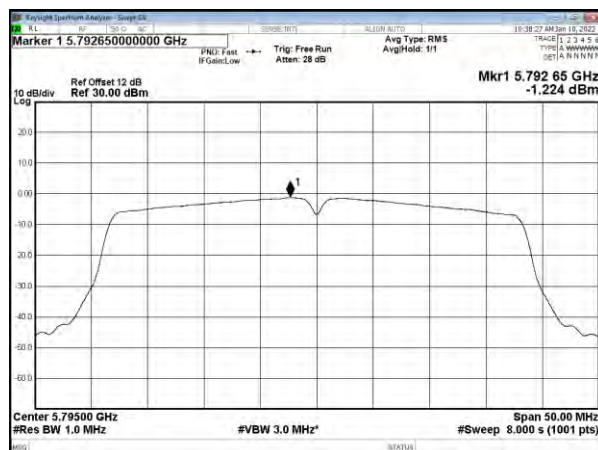


Modulation Type: 802.1111ax HE20 (7.3Mbps)

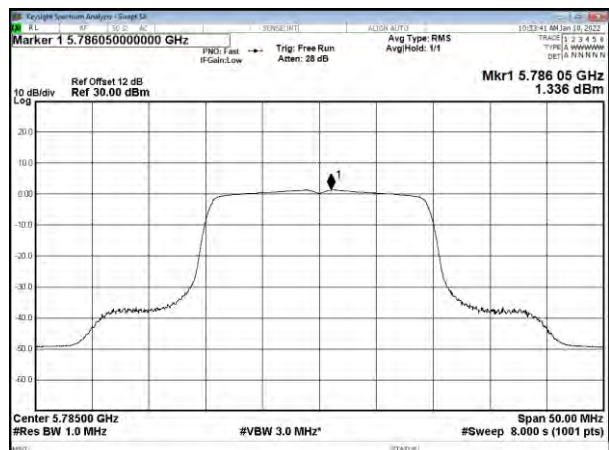
CH149



CH159

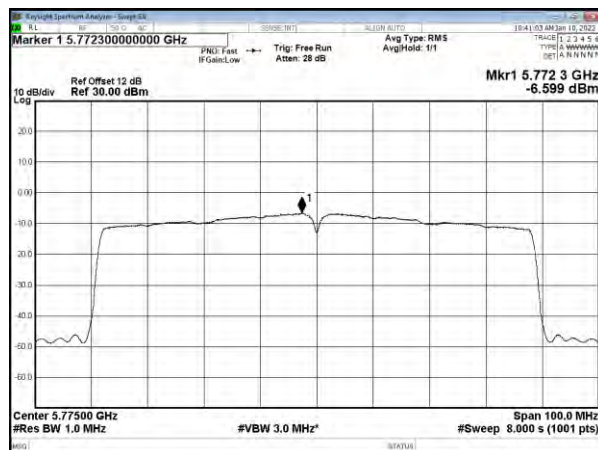


CH157

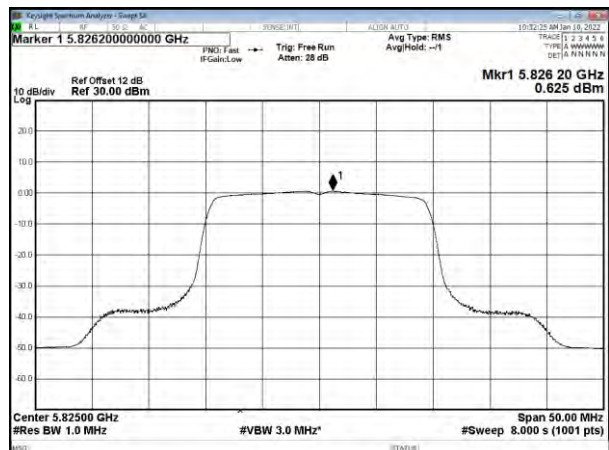


Modulation Standard: 802.11ac VHT80 (29.3Mbps)

CH155



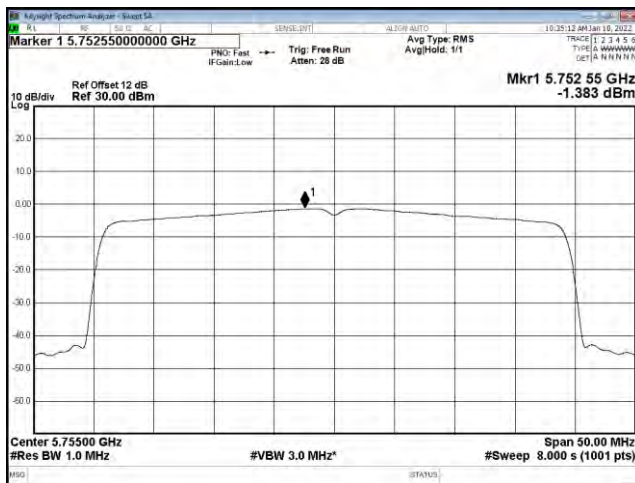
CH165



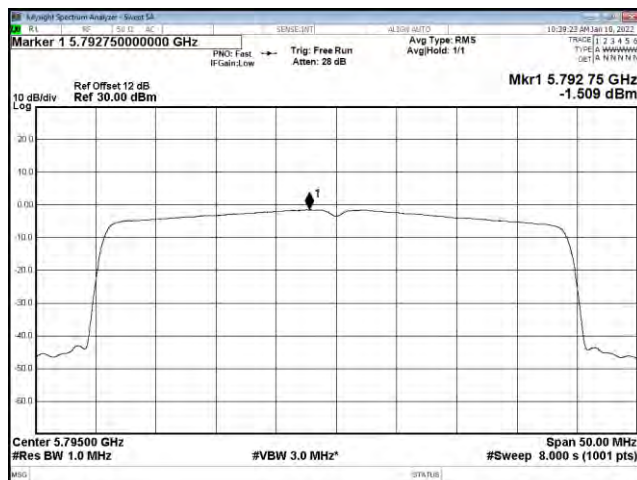


Modulation Type: 802.11 ax HE40 (14.6Mbps)

CH151

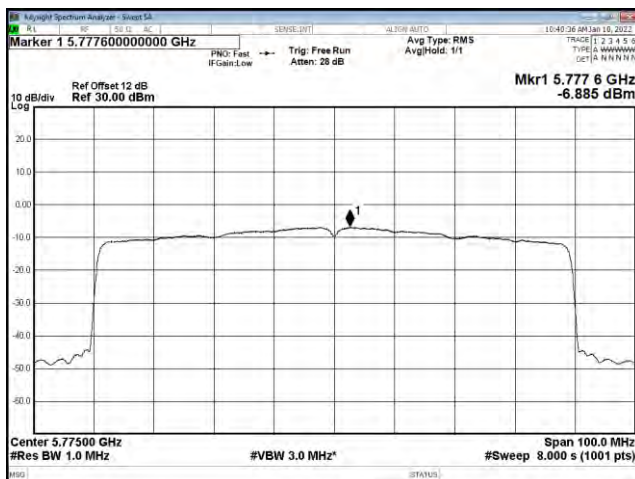


CH159



Modulation Type: 802.11ax HE80 (30.6Mbps)

CH155

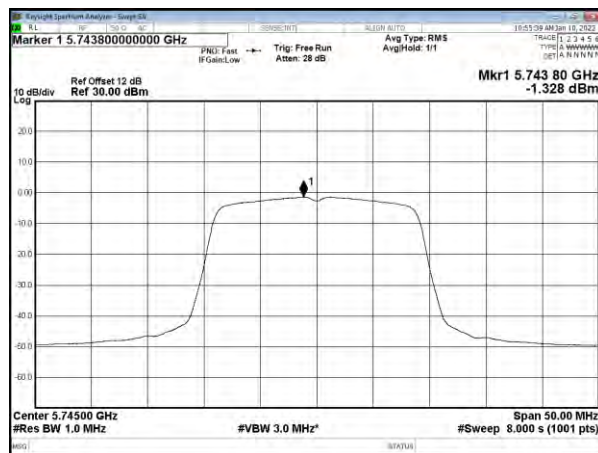




MIMO (ANT A)

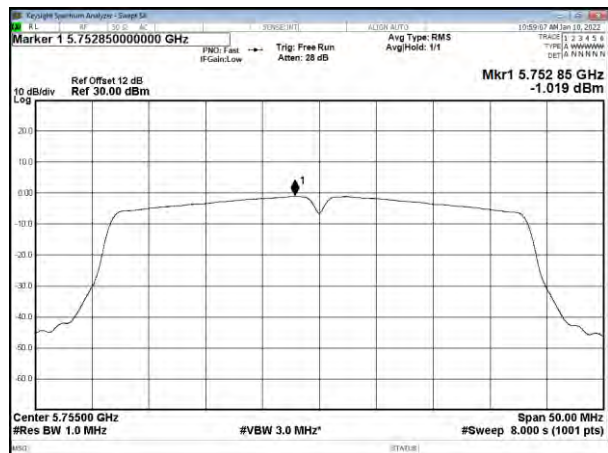
Modulation Standard: 802.11ac VHT20 (13Mbps)

CH149

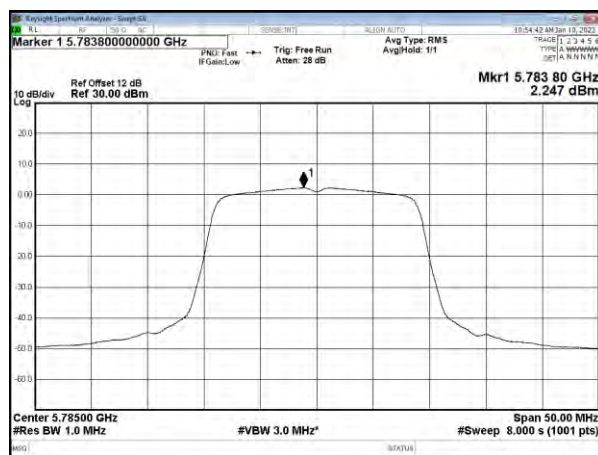


Modulation Standard: 802.11ac VHT40 (27Mbps)

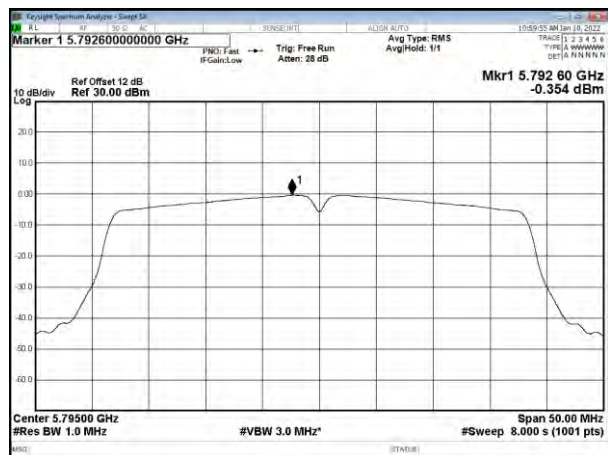
CH151



CH157

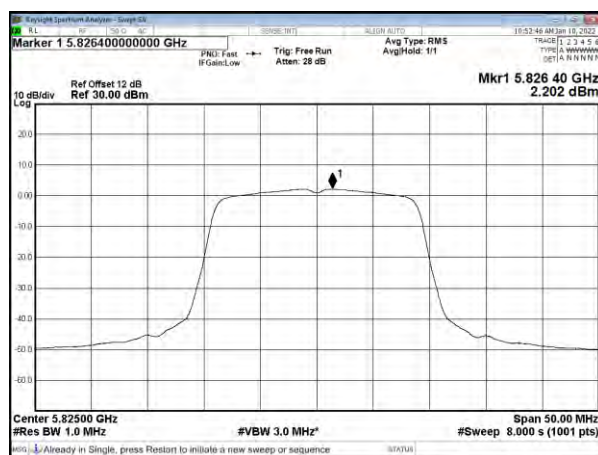


CH159

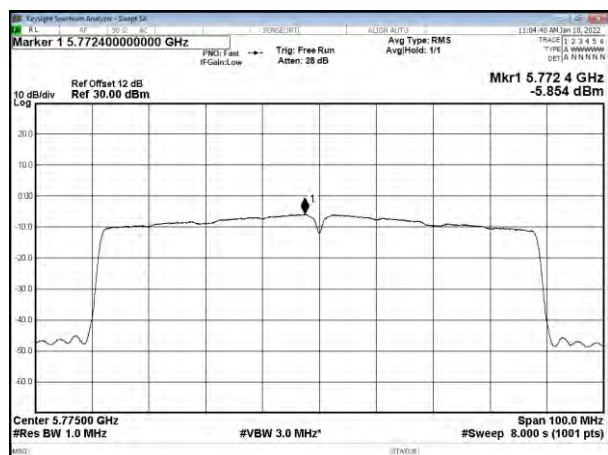


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

CH165



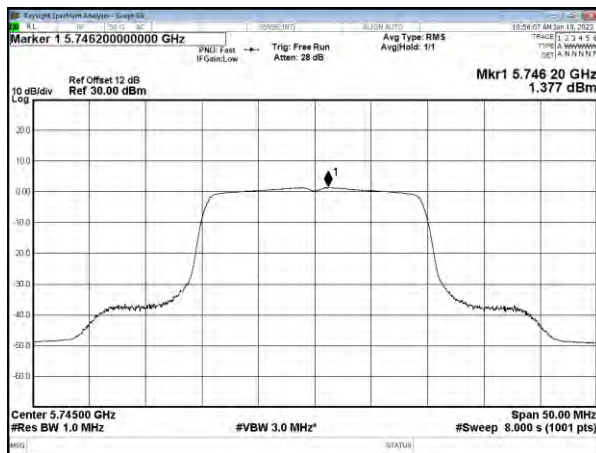
CH155





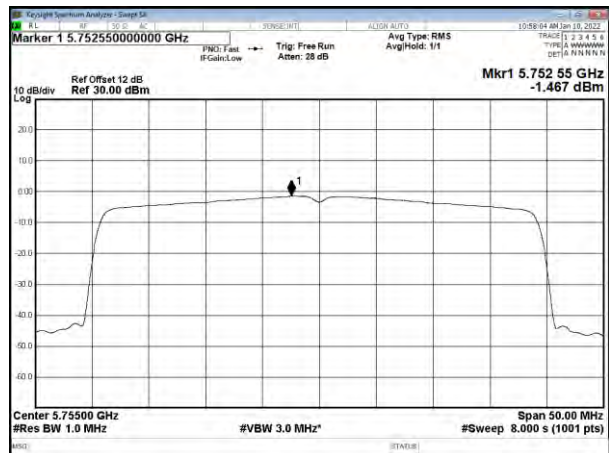
Modulation Type: 802.11ax HE20 (7.3Mbps)

CH149

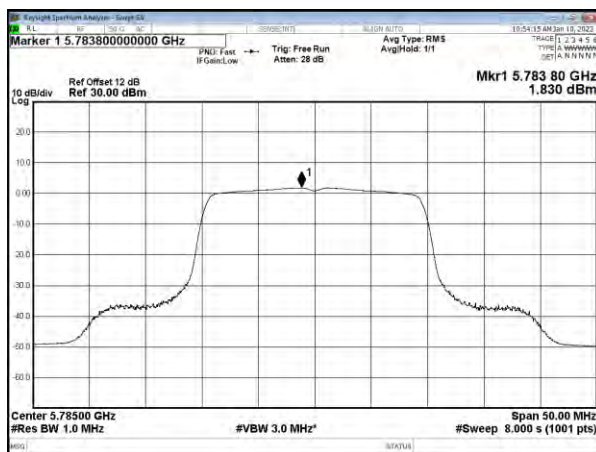


Modulation Type: 802.11 ax HE40 (14.6Mbps)

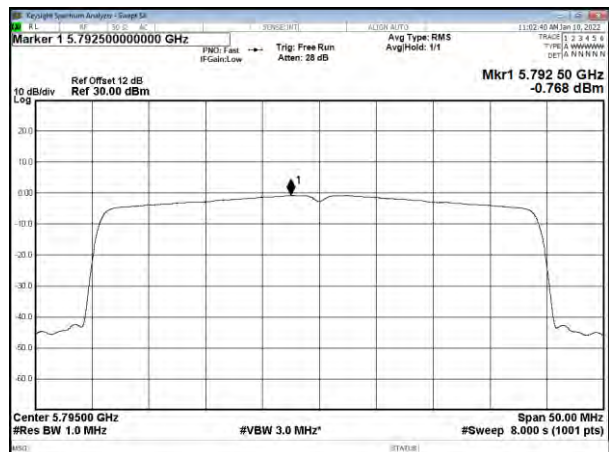
CH151



CH157

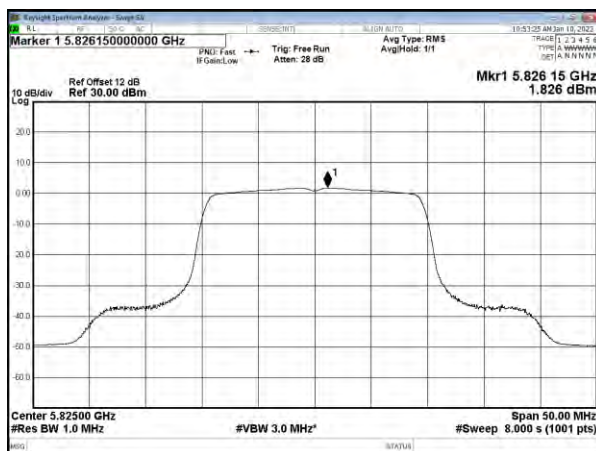


CH159

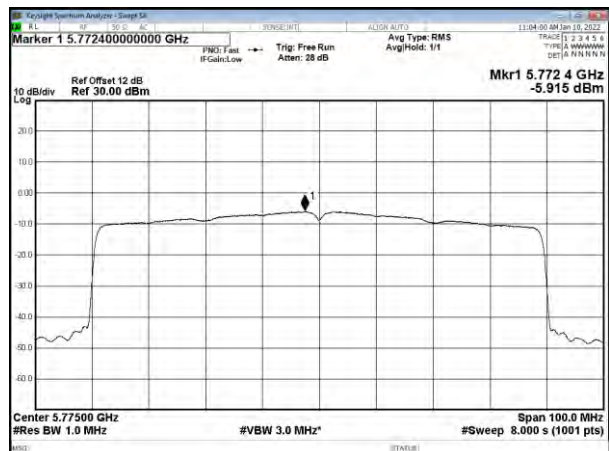


Modulation Type: 802.11ax HE80 (30.6Mbps)

CH165



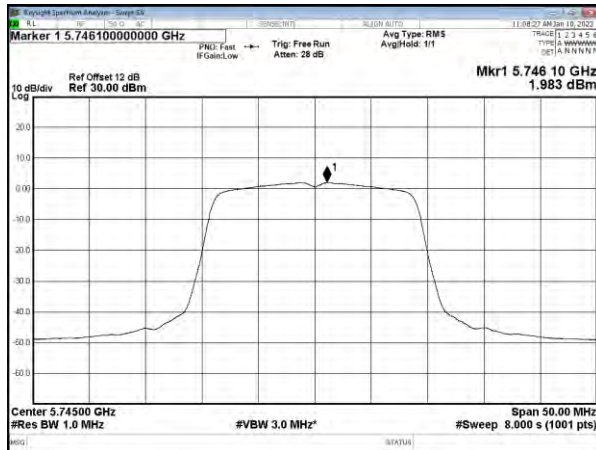
CH155



**MIMO (ANT B)**

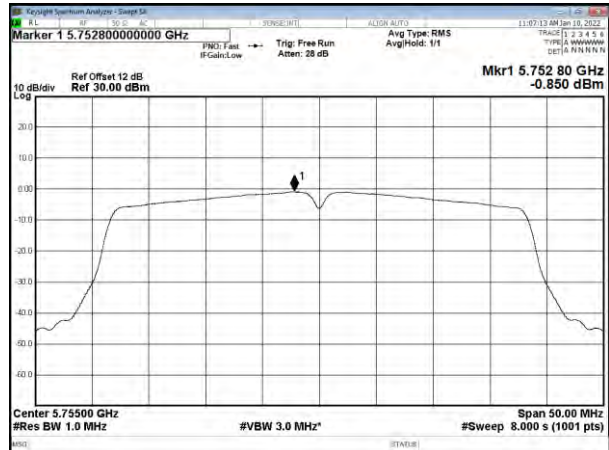
Modulation Standard: 802.11ac VHT20 (13Mbps)

CH149

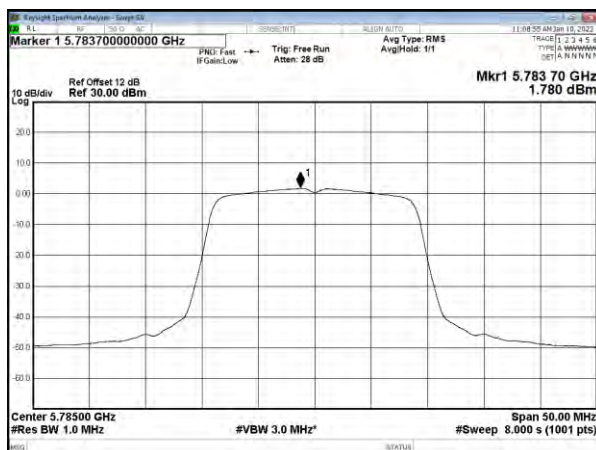


Modulation Standard: 802.11ac VHT40 (27Mbps)

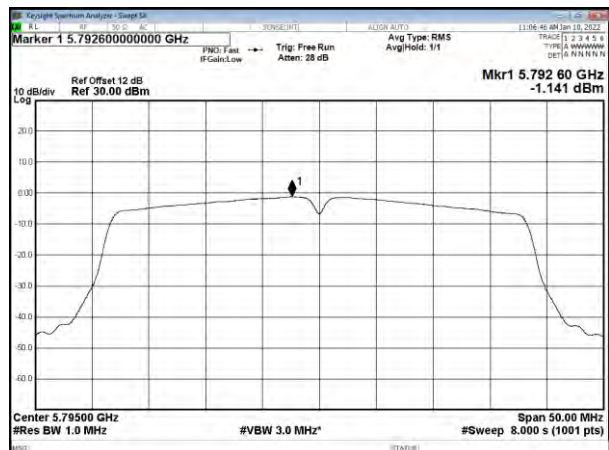
CH151



CH157

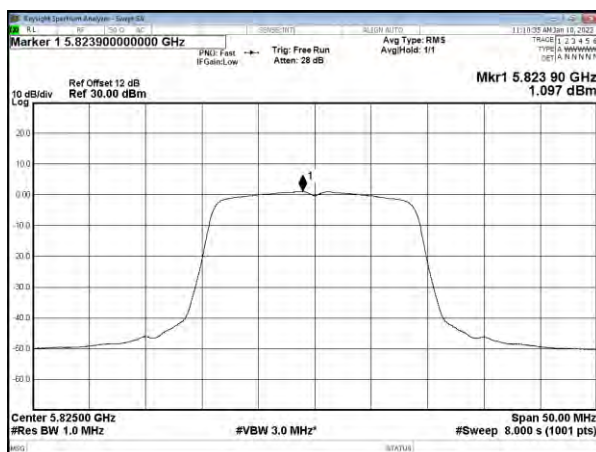


CH159

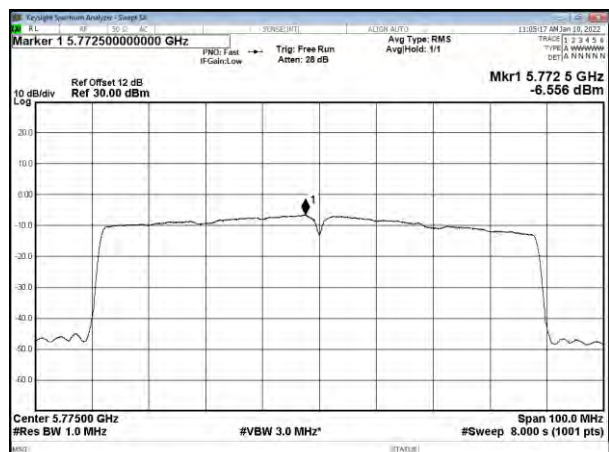


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

CH165



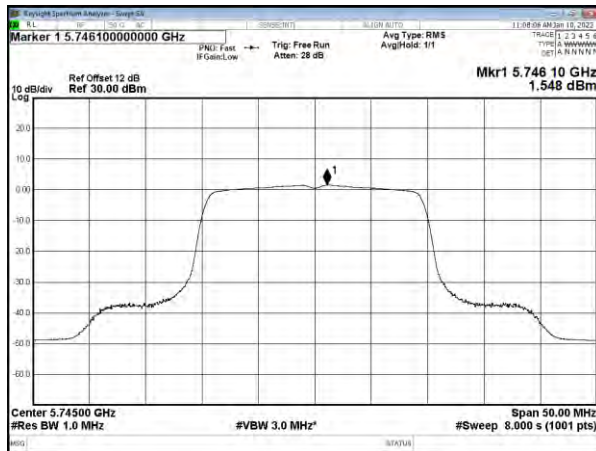
CH155





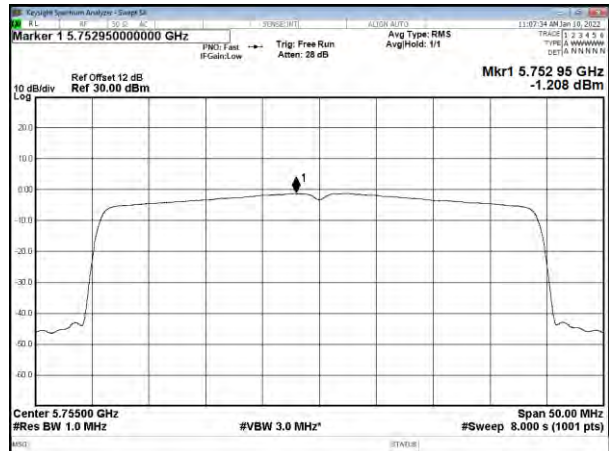
Modulation Type: 802.1111ax HE20 (7.3Mbps)

CH149

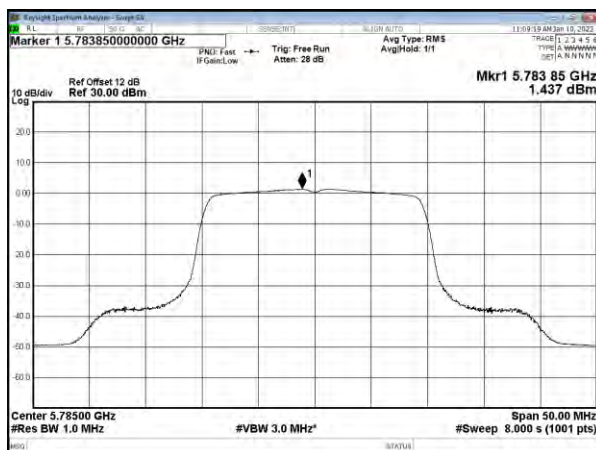


Modulation Type: 802.11 ax HE40 (14.6Mbps)

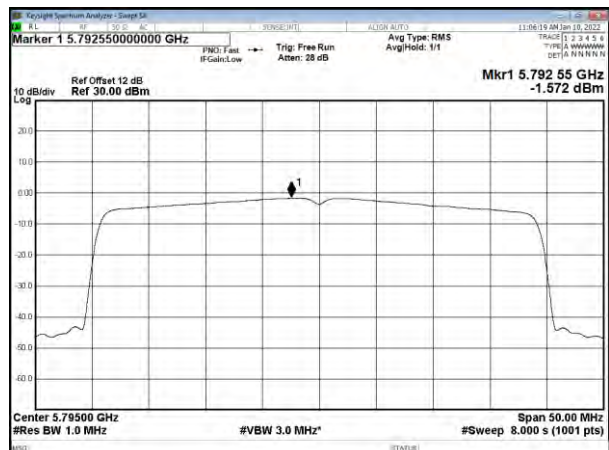
CH151



CH157

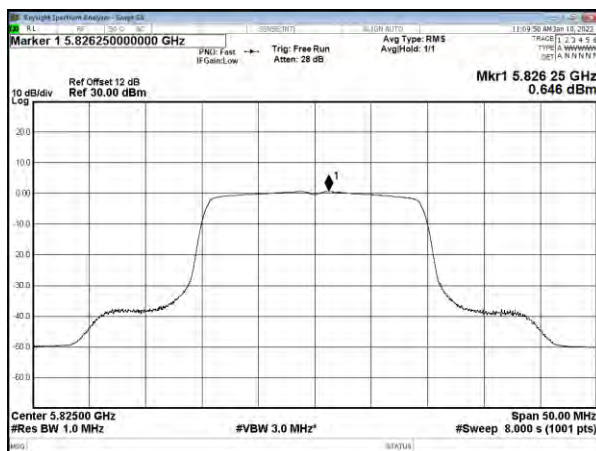


CH159

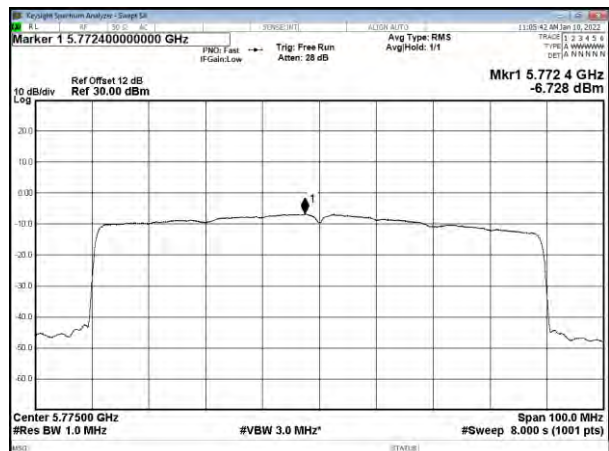


Modulation Type: 802.11ax HE80 (30.6Mbps)

CH165



CH155



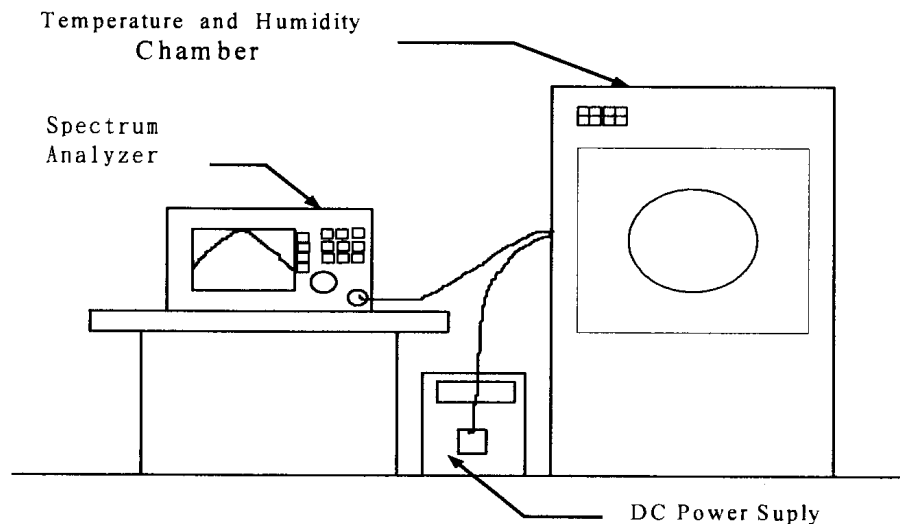


12. Frequency Stability

12.1. Test Procedure

1. The EUT was placed inside the Temperature and Humidity chamber.
2. The transmitter output was connected to spectrum analyzer.
3. Turn the EUT on and couple its output to a spectrum analyzer.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
6. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
7. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

12.2. Test Setup Layout



**12.3. Test Result and Data**

Operating frequency: 5180 MHz							
Temp	Power supply	2 minute		5 minute		10 minute	
(°C)	(V)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
45	13.8	5179.9802	-0.000382	5179.9792	-0.000402	5179.9772	-0.000440
	12	5179.9811	-0.000365	5179.9805	-0.000376	5179.9791	-0.000403
	10.2	5179.9817	-0.000353	5179.9812	-0.000363	5179.9805	-0.000376
30	13.8	5179.9799	-0.000388	5179.9803	-0.000380	5179.9784	-0.000417
	12	5179.9808	-0.000371	5179.9819	-0.000349	5179.9816	-0.000355
	10.2	5179.9778	-0.000429	5179.9831	-0.000326	5179.9765	-0.000454
20	13.8	5179.9842	-0.000305	5179.9815	-0.000357	5179.9813	-0.000361
	12	5179.9765	-0.000454	5179.9788	-0.000409	5179.9802	-0.000382
	10.2	5179.9784	-0.000417	5179.9796	-0.000394	5179.9758	-0.000467
10	13.8	5179.9791	-0.000403	5179.9778	-0.000429	5179.9795	-0.000396
	12	5179.9806	-0.000375	5179.9795	-0.000396	5179.9768	-0.000448
	10.2	5179.9811	-0.000365	5179.9804	-0.000378	5179.9725	-0.000531
0	13.8	5179.9851	-0.000288	5179.9845	-0.000299	5179.9781	-0.000423
	12	5179.9796	-0.000394	5179.9817	-0.000353	5179.9769	-0.000446
	10.2	5179.9783	-0.000419	5179.9769	-0.000446	5179.9807	-0.000373

Limit:

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

-----End of the report -----