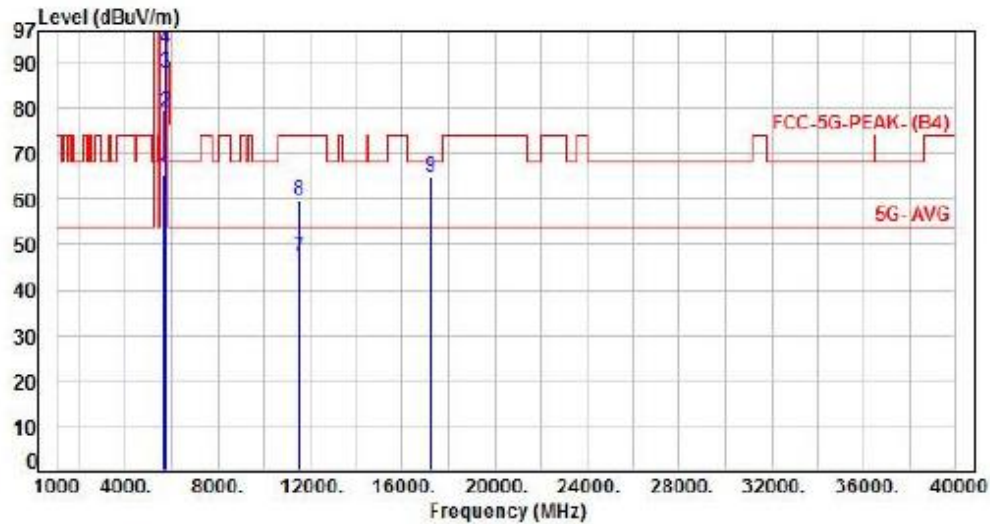




BeamForming-ALI22 Antenna

Power	:	From PoE (120V/60Hz)	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 5, Band 4, CH149		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	7.35	57.96	65.31	68.20	-2.89	Peak	183	35	P
2	5700.00	7.37	71.87	79.24	105.20	-25.96	Peak	183	35	P
3	5720.00	7.34	80.43	87.77	110.80	-23.03	Peak	183	35	P
4	5725.00	7.33	85.93	93.26	122.20	-28.94	Peak	183	35	P
5	5745.00	7.30	112.55	119.85	200.00	-80.15	Average	183	35	P
6	5745.00	7.30	123.23	130.53	200.00	-69.47	Peak	183	35	P
7	11490.00	17.63	29.67	47.30	54.00	-6.70	Average	100	157	P
8	11490.00	17.63	42.00	59.63	74.00	-14.37	Peak	100	157	P
9	17235.00	23.62	41.36	64.98	68.20	-3.22	Peak	100	347	P

Note: Level=Reading+Factor

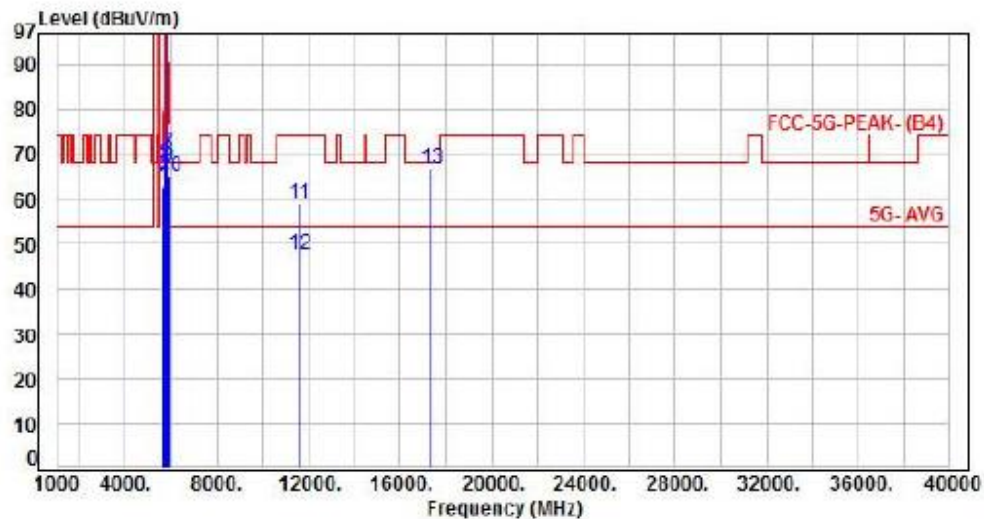
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



BeamForming-ALI22 Antenna

Power	:	From PoE (120V/60Hz)	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 5, Band 4, CH157		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	7.35	55.29	62.64	68.20	-5.56	Peak	178	360	P
2	5700.00	7.37	57.99	65.36	105.20	-39.84	Peak	178	360	P
3	5720.00	7.34	60.51	67.85	110.80	-42.95	Peak	178	360	P
4	5725.00	7.33	61.82	69.15	122.20	-53.05	Peak	178	360	P
5	5785.00	7.37	112.67	120.04	200.00	-79.96	Average	178	360	P
6	5785.00	7.37	123.01	130.38	200.00	-69.62	Peak	178	360	P
7	5850.00	7.43	62.48	69.91	122.20	-52.29	Peak	178	360	P
8	5855.00	7.45	61.01	68.46	110.80	-42.34	Peak	178	360	P
9	5875.00	7.54	59.60	67.14	105.20	-38.06	Peak	178	360	P
10	5925.00	7.66	57.28	64.94	68.20	-3.26	Peak	178	360	P
11	11570.00	17.83	41.36	59.19	54.00	5.19	Average	100	338	F
12	11570.00	17.83	29.65	47.48	74.00	-26.52	Peak	100	338	P
13	17355.00	24.42	42.31	66.73	68.20	-1.47	Peak	100	214	P

Note: Level-Reading+Factor

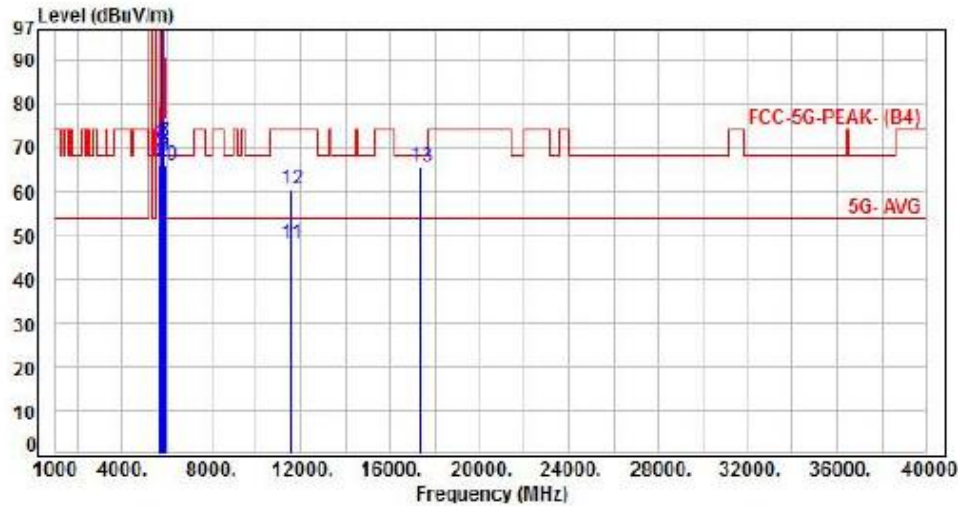
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



BeamForming-ALI22 Antenna

Power	:	From PoE (120V/60Hz)	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 5, Band 4, CH157		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	7.35	58.63	65.98	68.20	-2.22	Peak	183	360	P
2	5700.00	7.37	59.27	66.64	105.20	-38.56	Peak	183	360	P
3	5720.00	7.34	63.32	70.66	110.80	-40.14	Peak	183	360	P
4	5725.00	7.33	63.44	70.77	122.20	-51.43	Peak	183	360	P
5	5785.00	7.37	112.65	120.02	200.00	-79.98	Average	183	360	P
6	5785.00	7.37	123.60	130.97	200.00	-69.03	Peak	183	360	P
7	5850.00	7.43	63.71	71.14	122.20	-51.06	Peak	183	360	P
8	5855.00	7.45	62.32	69.77	110.80	-41.03	Peak	183	360	P
9	5875.00	7.54	60.47	68.01	105.20	-37.19	Peak	183	360	P
10	5925.00	7.66	58.25	65.91	68.20	-2.29	Peak	183	360	P
11	11570.00	17.83	29.96	47.79	54.00	-6.21	Average	100	124	P
12	11570.00	17.83	42.51	60.34	74.00	-13.66	Peak	100	124	P
13	17355.00	24.42	41.32	65.74	68.20	-2.46	Peak	100	224	P

Note: Level=Reading+Factor

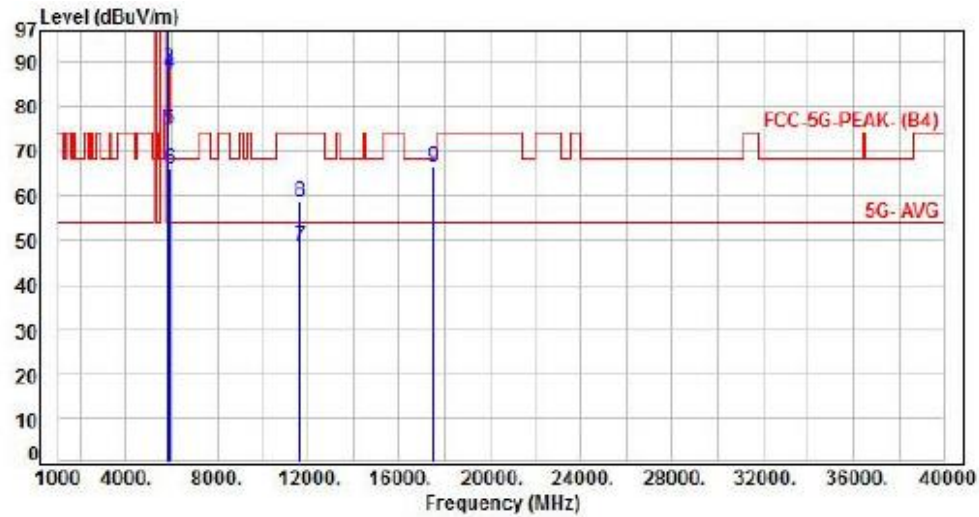
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



BeamForming-ALI22 Antenna

Power	:	From PoE (120V/60Hz)	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 5, Band 4, CH165		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5825.00	7.42	111.57	118.99	200.00	-81.01	Average	175	360	P
2	5825.00	7.42	122.15	129.57	200.00	-70.43	Peak	175	360	P
3	5850.00	7.43	80.94	88.37	122.20	-33.83	Peak	175	360	P
4	5855.00	7.45	79.99	87.44	110.80	-23.36	Peak	175	360	P
5	5875.00	7.54	67.21	74.75	105.20	-30.45	Peak	175	360	P
6	5925.00	7.66	58.42	66.08	68.20	-2.12	Peak	175	360	P
7	11650.00	17.99	30.58	48.57	54.00	-5.43	Average	100	221	P
8	11650.00	17.99	40.69	58.68	74.00	-15.32	Peak	100	221	P
9	17475.00	25.00	41.21	66.21	68.20	-1.99	Peak	100	337	P

Note: Level=Reading+Factor

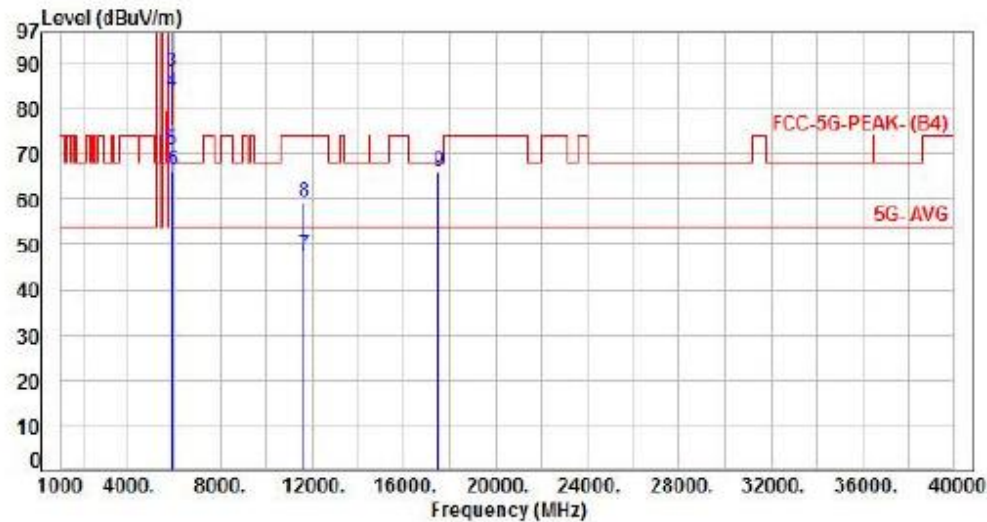
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



BeamForming-ALI22 Antenna

Power	:	From PoE (120V/60Hz)	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 5, Band 4, CH165		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5825.00	7.42	112.47	119.89	200.00	-80.11	Average	179	360	P
2	5825.00	7.42	124.46	131.88	200.00	-68.12	Peak	179	360	P
3	5850.00	7.43	80.54	87.97	122.20	-34.23	Peak	179	360	P
4	5855.00	7.45	76.24	83.69	110.80	-27.11	Peak	179	360	P
5	5875.00	7.54	63.16	70.70	105.20	-34.50	Peak	179	360	P
6	5925.00	7.66	58.69	66.35	68.20	-1.85	Peak	179	360	P
7	11650.00	17.99	29.77	47.76	54.00	-6.24	Average	100	214	P
8	11650.00	17.99	41.25	59.24	74.00	-14.76	Peak	100	214	P
9	17475.00	25.00	40.85	65.85	68.20	-2.35	Peak	100	338	P

Note: Level=Reading+Factor

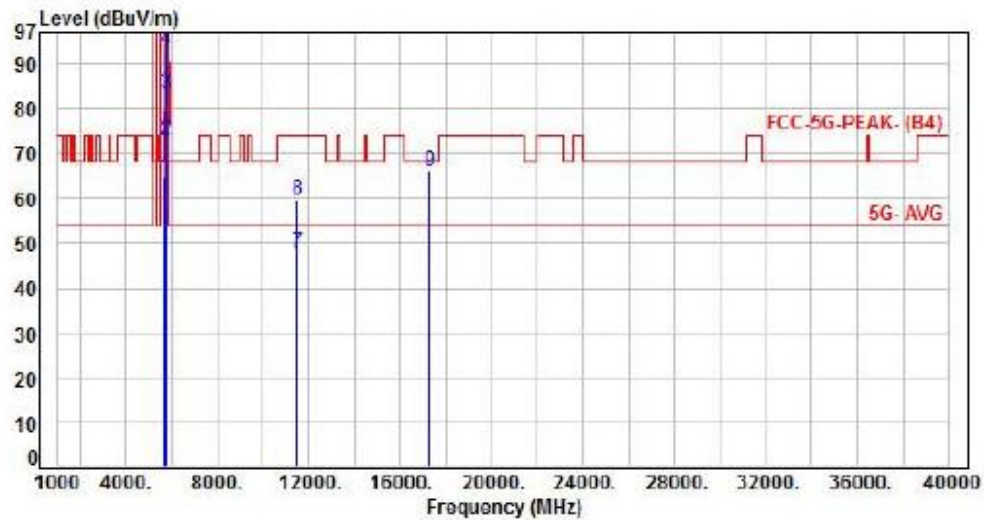
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



BeamForming-ALI22 Antenna

Power	:	From PoE (120V/60Hz)	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 6, Band 4, CH151		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	7.35	57.61	64.96	68.20	-3.24	Peak	185	360	P
2	5700.00	7.37	65.59	72.96	105.20	-32.24	Peak	185	360	P
3	5700.00	7.37	76.12	83.49	105.20	-21.71	Peak	185	360	P
4	5725.00	7.33	85.90	93.23	122.20	-28.97	Peak	185	360	P
5	5755.00	7.30	109.46	116.76	200.00	-83.24	Average	185	360	P
6	5755.00	7.30	121.38	128.68	200.00	-71.32	Peak	185	360	P
7	11510.00	17.70	30.41	48.11	54.00	-5.89	Average	100	314	P
8	11510.00	17.70	41.99	59.69	74.00	-14.31	Peak	100	314	P
9	17265.00	23.77	42.17	65.94	68.20	-2.26	Peak	100	282	P

Note: Level=Reading+Factor

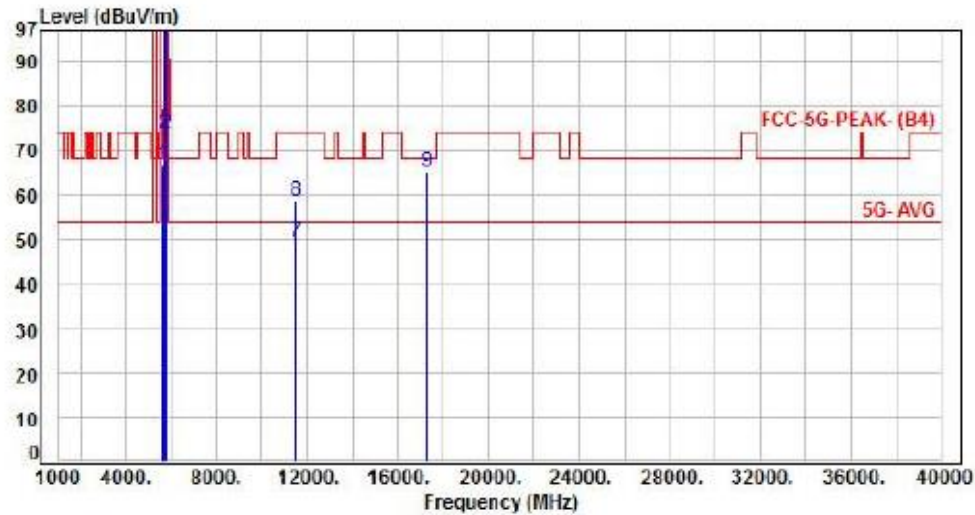
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



BeamForming-ALI22 Antenna

Power	:	From PoE (120V/60Hz)	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 6, Band 4, CH151		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	7.35	59.37	66.72	66.20	-1.48	Peak	182	360	P
2	5700.00	7.37	66.47	73.84	105.20	-31.36	Peak	182	360	P
3	5720.00	7.34	89.22	96.56	110.80	-14.24	Peak	182	360	P
4	5725.00	7.33	90.84	98.17	122.20	-24.03	Peak	182	360	P
5	5755.00	7.30	110.72	118.02	200.00	-81.98	Average	182	360	P
6	5755.00	7.30	121.66	128.96	200.00	-71.04	Peak	182	360	P
7	11510.00	17.70	31.54	49.24	54.00	-4.76	Average	100	62	P
8	11510.00	17.70	40.99	58.69	74.00	-15.31	Peak	100	62	P
9	17265.00	23.77	41.33	65.10	66.20	-3.10	Peak	100	244	P

Note: Level=Reading+Factor

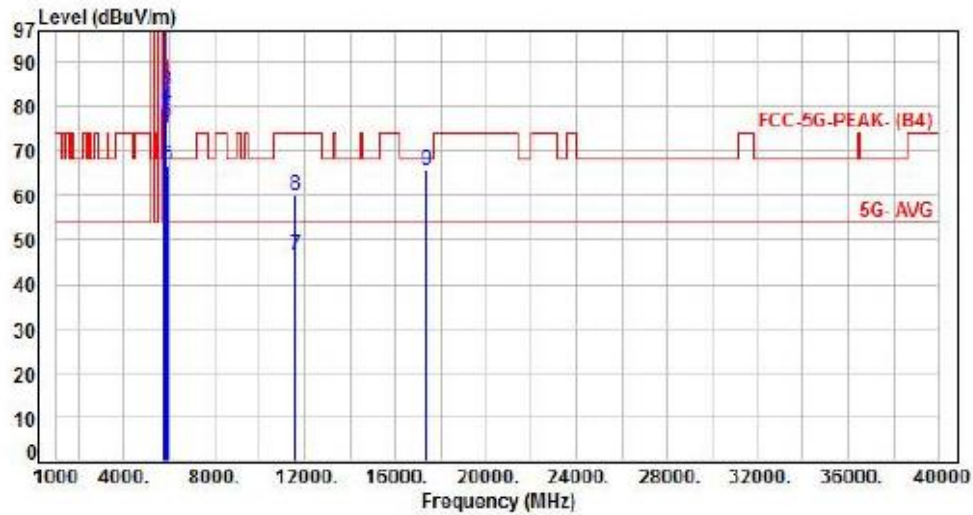
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



BeamForming-ALI22 Antenna

Power	:	From PoE (120V/60Hz)	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 6, Band 4, CH159		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5795.00	7.39	107.15	114.54	200.00	-85.46	Average	176	360	P
2	5795.00	7.39	121.24	128.63	200.00	-71.37	Peak	176	360	P
3	5850.00	7.43	76.38	83.81	122.20	-38.39	Peak	176	360	P
4	5855.00	7.45	72.65	80.10	110.80	-30.70	Peak	176	360	P
5	5875.00	7.54	68.85	76.39	105.20	-28.81	Peak	176	360	P
6	5925.00	7.66	59.11	66.77	68.20	-1.43	Peak	176	360	P
7	11590.00	17.86	28.65	46.51	54.00	-7.49	Average	100	347	P
8	11590.00	17.86	42.16	60.02	74.00	-13.98	Peak	100	347	P
9	17385.00	24.49	41.28	65.77	68.20	-2.43	Peak	100	45	P

Note: Level=Reading+Factor

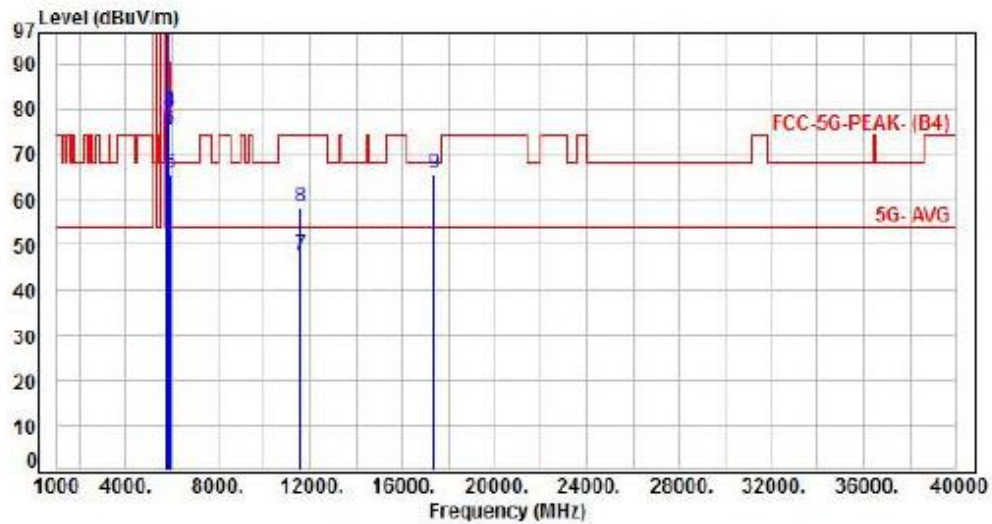
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



BeamForming-ALI22 Antenna

Power	:	From PoE (120V/60Hz)	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 6, Band 4, CH159		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5795.00	7.39	111.42	118.81	200.00	-81.19	Average	182	360	P
2	5795.00	7.39	122.71	130.10	200.00	-69.90	Peak	182	360	P
3	5850.00	7.43	71.75	79.18	122.20	-43.02	Peak	182	360	P
4	5855.00	7.45	71.68	79.13	110.80	-31.67	Peak	182	360	P
5	5875.00	7.54	67.73	75.27	105.20	-29.93	Peak	182	360	P
6	5925.00	7.66	58.01	65.67	68.20	-2.53	Peak	182	360	P
7	11590.00	17.86	29.66	47.52	54.00	-6.48	Average	100	221	P
8	11590.00	17.86	40.57	58.43	74.00	-15.57	Peak	100	221	P
9	17385.00	24.49	41.22	65.71	68.20	-2.49	Peak	100	349	P

Note: Level=Reading+Factor

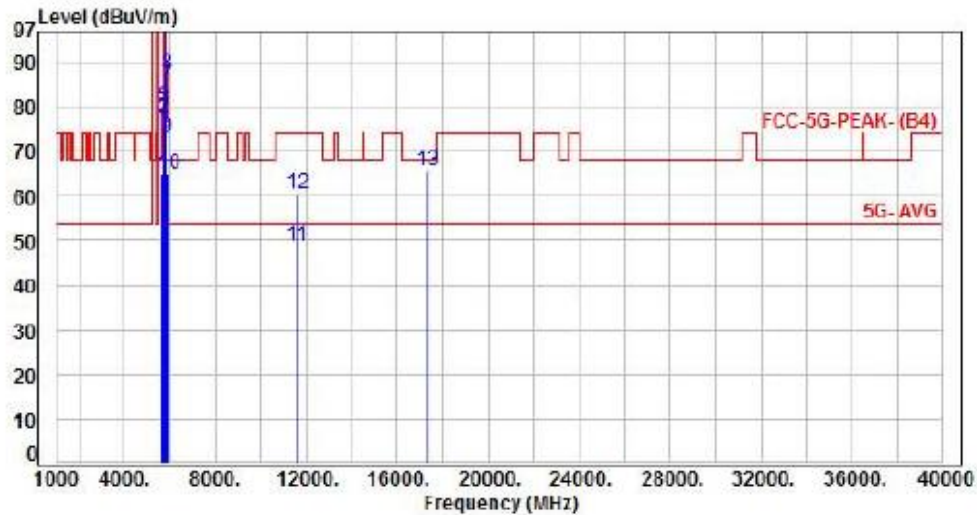
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



BeamForming-ALI22 Antenna

Power	:	From PoE (120V/60Hz)	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 7, Band 4, CH155		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	7.35	57.57	64.92	68.20	-3.28	Peak	175	360	P
2	5700.00	7.37	70.16	77.53	105.20	-27.67	Peak	175	360	P
3	5720.00	7.34	72.80	80.14	110.80	-30.66	Peak	175	360	P
4	5725.00	7.33	73.89	81.22	122.20	-40.98	Peak	175	360	P
5	5775.00	7.35	107.47	114.82	200.00	-85.18	Average	175	360	P
6	5775.00	7.35	119.81	127.16	200.00	-72.84	Peak	175	360	P
7	5850.00	7.43	77.31	84.74	122.20	-37.46	Peak	175	360	P
8	5855.00	7.45	80.10	87.55	110.80	-23.25	Peak	175	360	P
9	5875.00	7.54	65.52	73.06	105.20	-32.14	Peak	175	360	P
10	5925.00	7.66	57.23	64.89	68.20	-3.31	Peak	175	360	P
11	11550.00	17.79	31.01	48.80	54.00	-5.20	Average	100	117	P
12	11550.00	17.79	42.65	60.44	74.00	-13.56	Peak	100	117	P
13	17325.00	24.20	41.61	65.81	68.20	-2.39	Peak	100	249	P

Note: Level=Reading+Factor

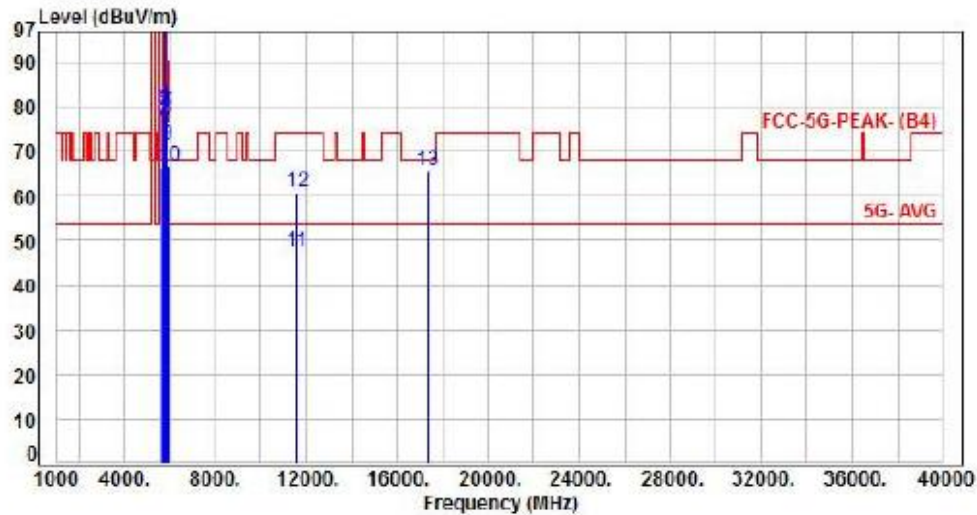
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



BeamForming-ALI22 Antenna

Power	:	From PoE (120V/60Hz)	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 7, Band 4, CH155		:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	7.35	58.87	66.22	68.20	-1.98	Peak	184	360	P
2	5700.00	7.37	69.54	76.91	105.20	-28.29	Peak	184	360	P
3	5720.00	7.34	71.79	79.13	110.80	-31.67	Peak	184	360	P
4	5725.00	7.33	72.73	80.06	122.20	-42.14	Peak	184	360	P
5	5775.00	7.35	109.46	116.83	200.00	-83.17	Average	184	360	P
6	5775.00	7.35	120.59	127.94	200.00	-72.06	Peak	184	360	P
7	5850.00	7.43	71.41	78.84	122.20	-43.36	Peak	184	360	P
8	5855.00	7.45	70.11	77.56	110.80	-33.24	Peak	184	360	P
9	5875.00	7.54	64.08	71.62	105.20	-33.58	Peak	184	360	P
10	5925.00	7.66	59.21	66.87	68.20	-1.33	Peak	184	360	P
11	11550.00	17.79	29.68	47.47	54.00	-6.53	Average	100	258	P
12	11550.00	17.79	42.93	60.72	74.00	-13.28	Peak	100	258	P
13	17325.00	24.20	41.39	65.59	68.20	-2.61	Peak	100	337	P

Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



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

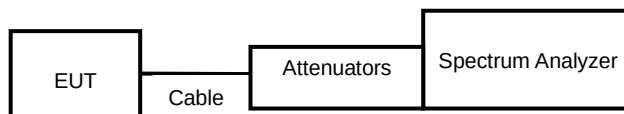
7.1. Test Limit

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

Non Beamforming

Modulation Type	On Time (ms)	Period Time (ms)	Duty Cycle (%)
802.11a,6M	1.98	2.04	97.25%
802.11ax HE20	5.48	6.25	87.70%
802.11ax HE40	5.46	5.75	94.99%
802.11ax HE80	5.47	5.79	94.47%

Beamforming

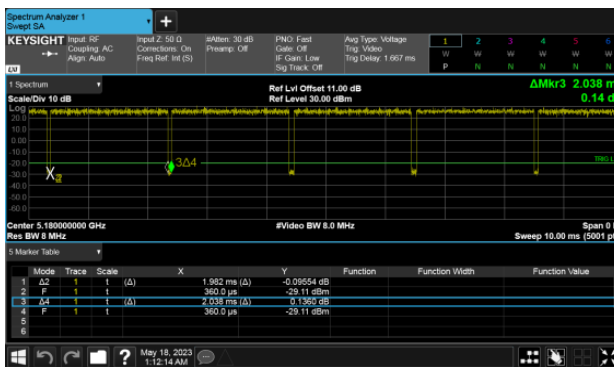
Modulation Type	On Time (ms)	Period Time (ms)	Duty Cycle (%)
802.11ax HE20	1.79	1.92	93.37%
802.11ax HE40	1.79	1.92	93.32%
802.11ax HE80	1.91	2.04	93.77%

7.5. Measurement Methods

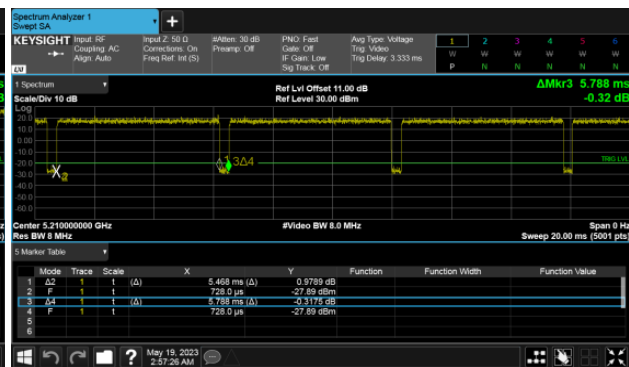
26 dB and 6dB Emission BW	KDB 789033 D02 v02r01, Section C
99% Occupied BW	KDB 789033 D02 v02r01, Section D
Conducted Output Power	KDB 789033 D02 v02r01, Section E.2.d and E.3.b (Method PM-G)
Power Spectral Density	KDB 789033 D02 v02r01, Section F
Unwanted emissions in restricted bands	KDB 789033 D02 v02r01, Sections G and H
Unwanted emissions in non-restricted bands	KDB 789033 D02 v02r01, Sections G and H



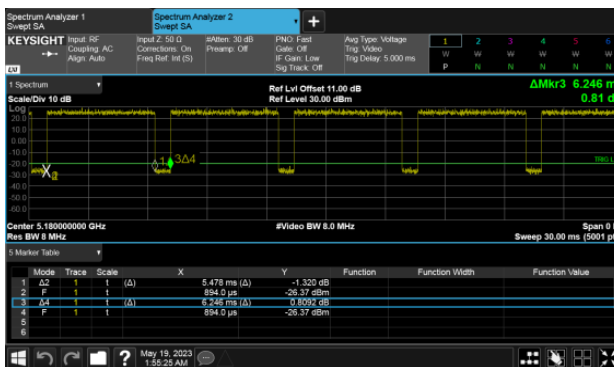
Non BeamForming Modulation Type: 802.11a (6Mbps)



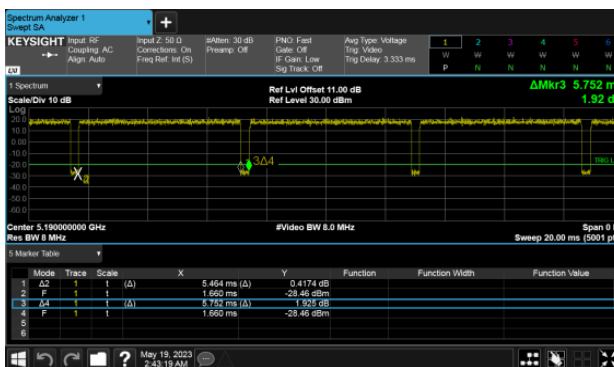
Modulation Type: 802.11ax HE80 (30.6Mbps)



Modulation Type: 802.11ax HE20 (7.3Mbps)



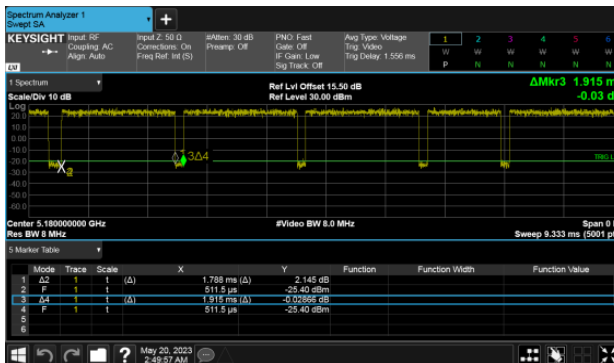
Modulation Type: 802.11ax HE40 (14.6Mbps)



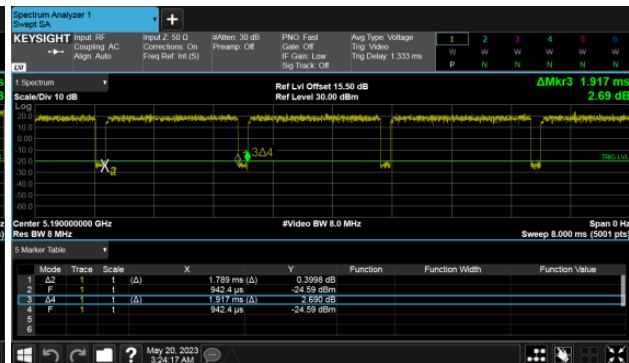


BeamForming

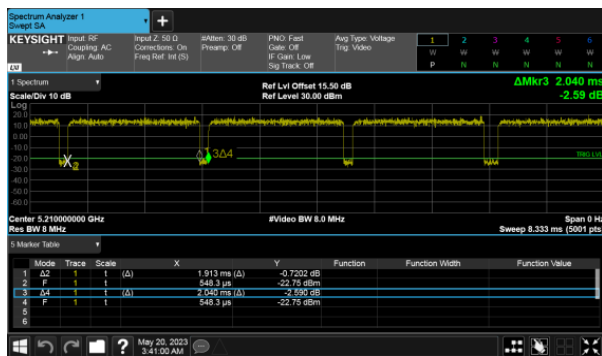
Modulation Type: 802.11ax HE20 (7.3Mbps)



Modulation Type: 802.11ax HE40 (14.6Mbps)



Modulation Type: 802.11ax HE80 (30.6Mbps)





8. 6dB Bandwidth & 99% Occupied Bandwidth

8.1. Test Limit

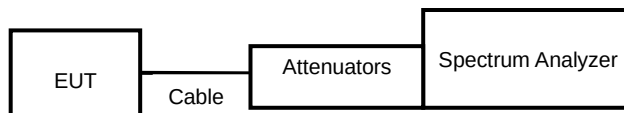
FCC §15.407

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

8.2. Test Procedure

Reference to 789033 D02 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

Non Beamforming-Omni Antenna

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth(MHz)		Minimum Limit (MHz)
			ANT C	ANT D	
11a	149	5745	15.76	16.01	0.50
11a	157	5785	15.67	16.01	0.50
11a	165	5825	15.55	15.91	0.50
11ax HE20	149	5745	18.10	18.66	0.50
11ax HE20	157	5785	18.59	18.69	0.50
11ax HE20	165	5825	18.70	18.62	0.50
11ax HE40	151	5755	37.69	37.83	0.50
11ax HE40	159	5795	37.92	37.65	0.50
11ax HE80	155	5775	76.66	76.81	0.50

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT C	ANT D
11a	149	5745	16.50	16.43
11a	157	5785	16.42	16.42
11a	165	5825	16.42	16.41
11ax HE20	149	5745	18.99	18.91
11ax HE20	157	5785	18.96	18.91
11ax HE20	165	5825	18.96	18.90
11ax HE40	151	5755	37.85	37.93
11ax HE40	159	5795	37.90	37.86
11ax HE80	155	5775	77.12	77.14



Beamforming-Omni Antenna

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth(MHz)		Minimum Limit (MHz)
			ANT C	ANT D	
11ax HE20	149	5745	18.30	18.79	0.50
11ax HE20	157	5785	17.97	18.14	0.50
11ax HE20	165	5825	18.49	18.30	0.50
11ax HE40	151	5755	35.44	35.51	0.50
11ax HE40	159	5795	35.74	37.59	0.50
11ax HE80	155	5775	72.97	75.07	0.50

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT C	ANT D
11ax HE20	149	5745	18.94	18.92
11ax HE20	157	5785	18.94	18.92
11ax HE20	165	5825	18.94	18.91
11ax HE40	151	5755	37.88	37.85
11ax HE40	159	5795	37.90	37.86
11ax HE80	155	5775	76.83	76.94



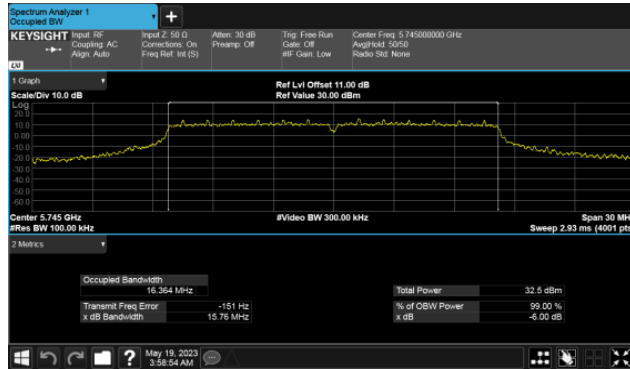
6dB Bandwidth

Non Beamforming-Omni Antenna

ANT C

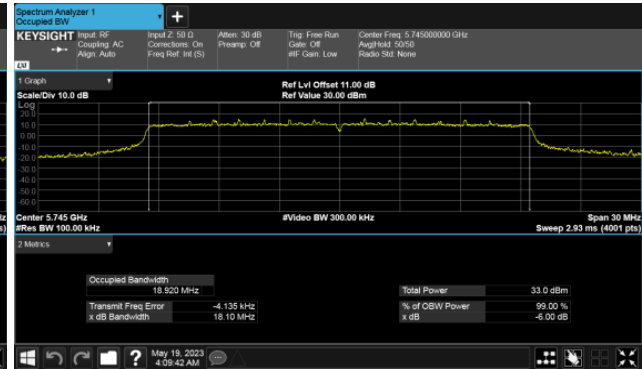
Modulation Type: 802.11a (6Mbps)

CH149

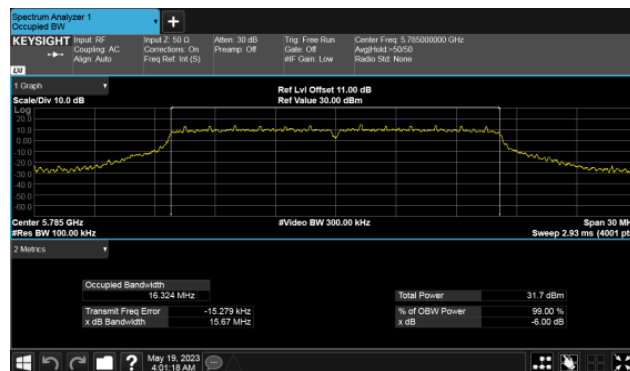


Modulation Type: 802.11ax HE20 (7.3Mbps)

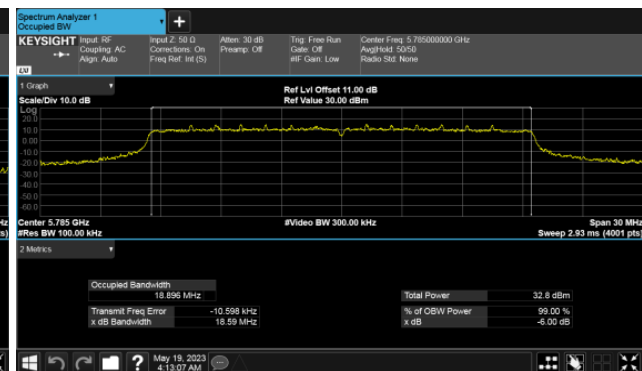
CH149



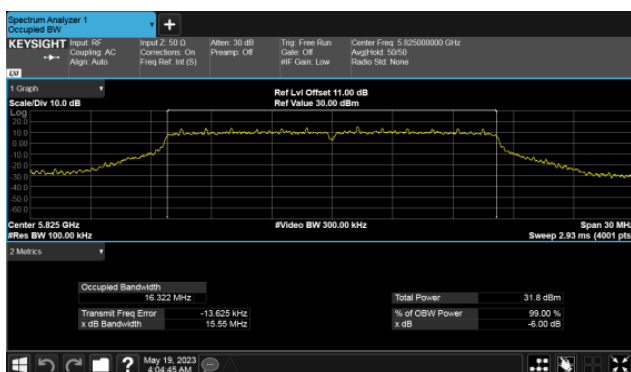
CH157



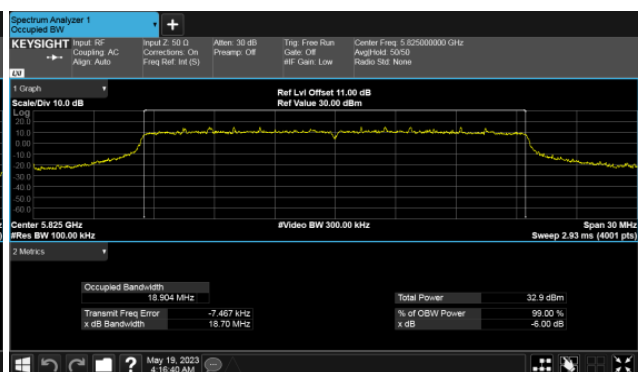
CH157



CH165



CH165

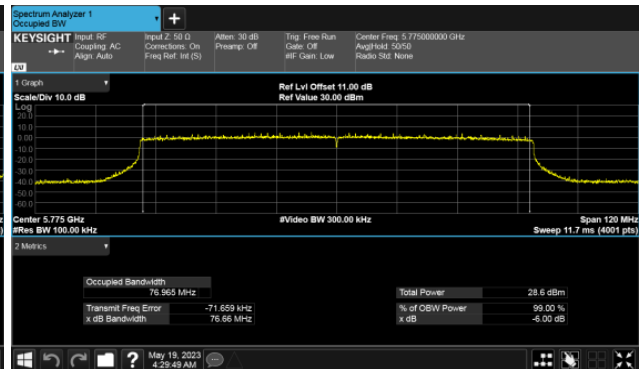




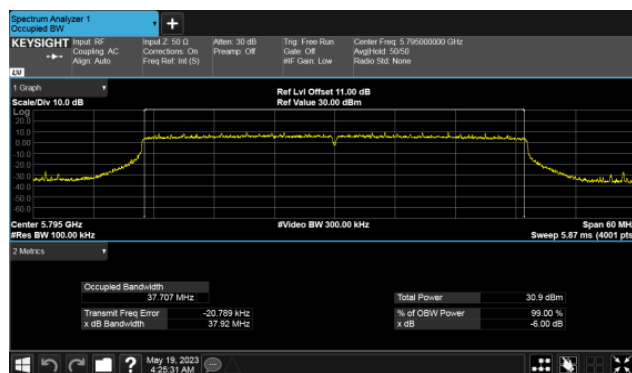
6dB Bandwidth

Non Beamforming-Omni Antenna

ANT C

Modulation Type: 802.11ax HE40 (14.6Mbps)
CH151Modulation Type: 802.11ax HE80 (30.6Mbps)
CH155

CH159





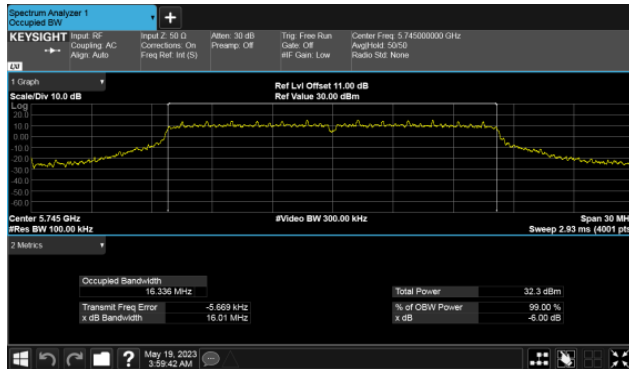
6dB Bandwidth

Non Beamforming-Omni Antenna

ANT D

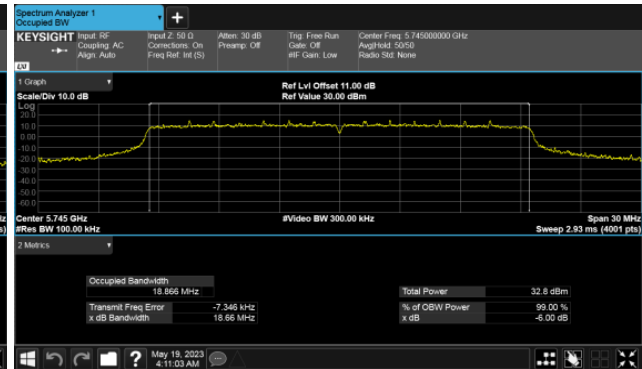
Modulation Type: 802.11a (6Mbps)

CH149

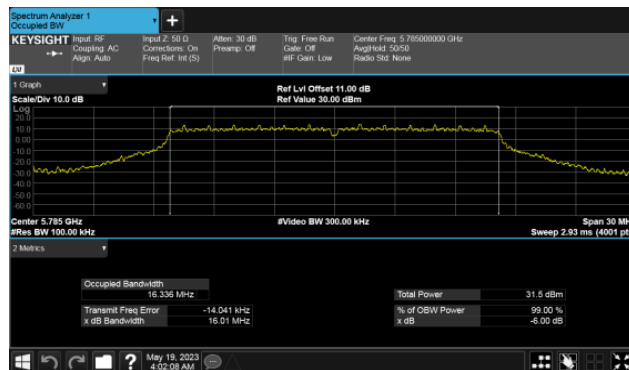


Modulation Type: 802.11ax HE20 (7.3Mbps)

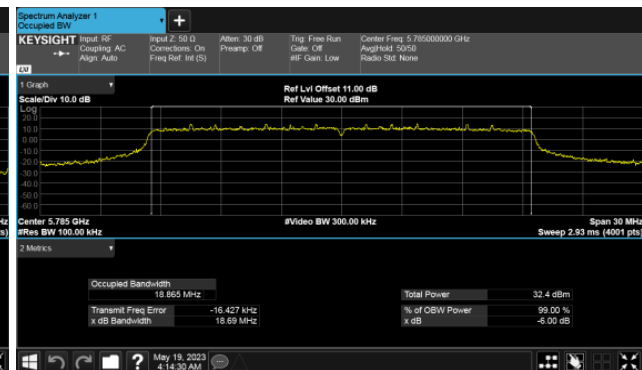
CH149



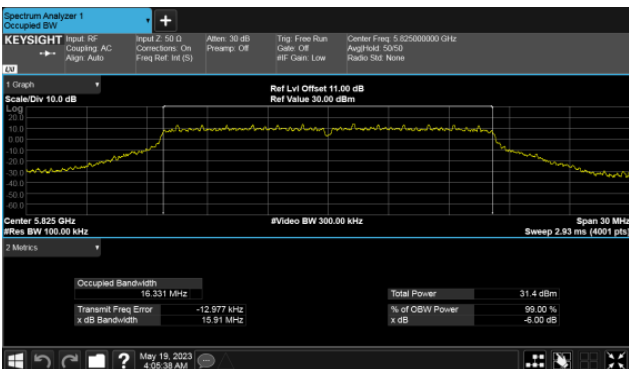
CH157



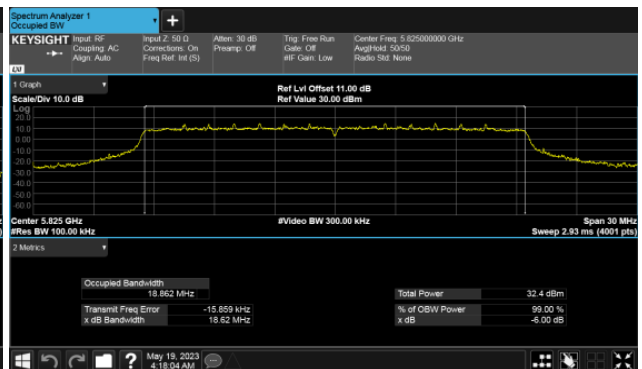
CH157



CH165



CH165





6dB Bandwidth

Non Beamforming-Omni Antenna

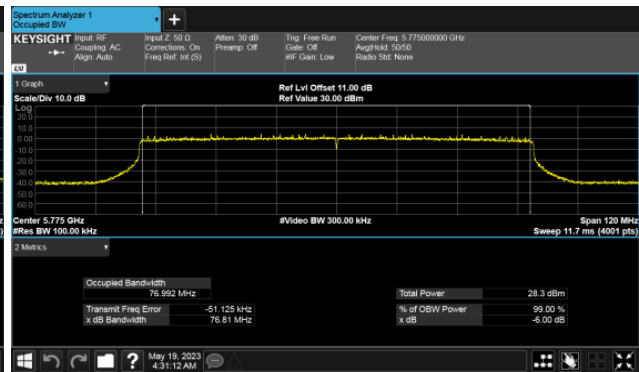
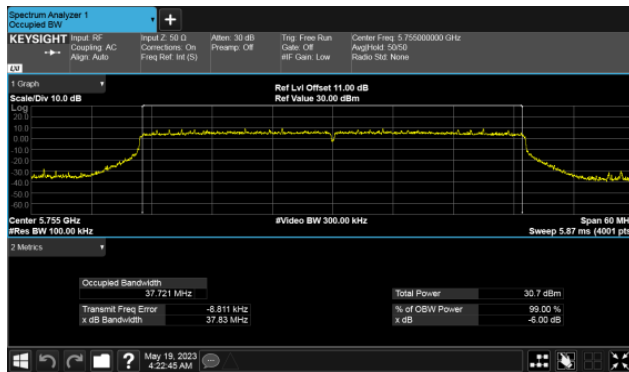
ANT D

Modulation Type: 802.11ax HE40 (14.6Mbps)

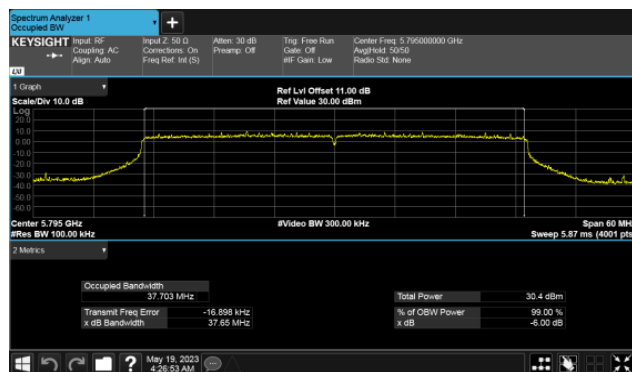
CH151

Modulation Type: 802.11ax HE80 (30.6Mbps)

CH155



CH159





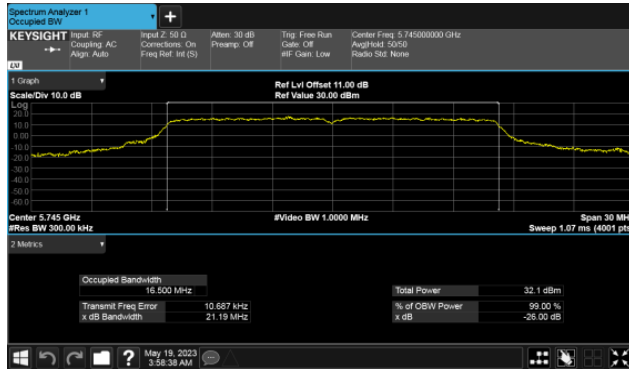
99% Occupied Bandwidth

Non Beamforming-Omni Antenna

ANT C

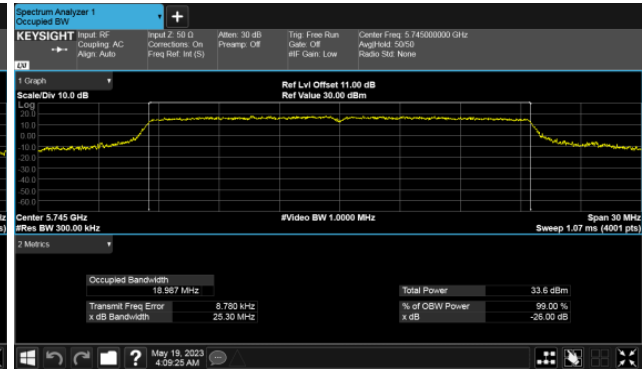
Modulation Type: 802.11a (6Mbps)

CH149

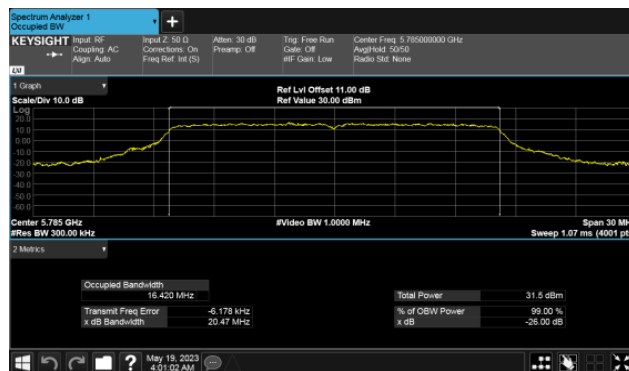


Modulation Type: 802.11ax HE20 (7.3Mbps)

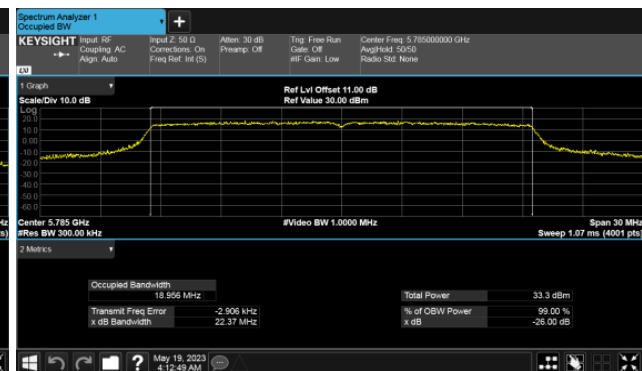
CH149



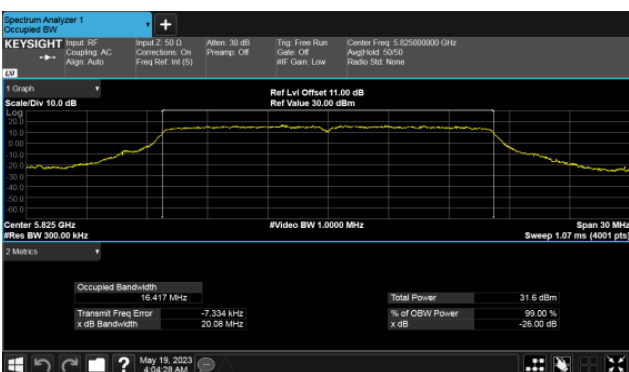
CH157



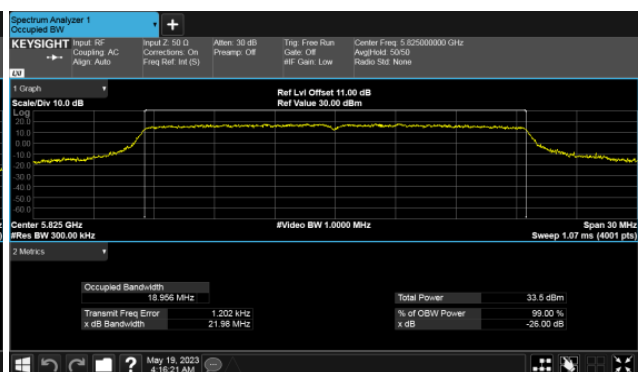
CH157



CH165



CH165

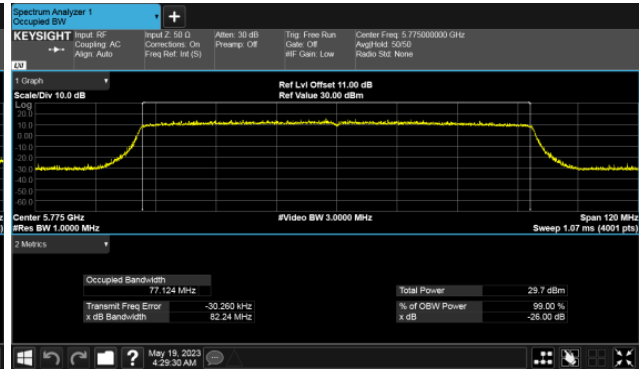
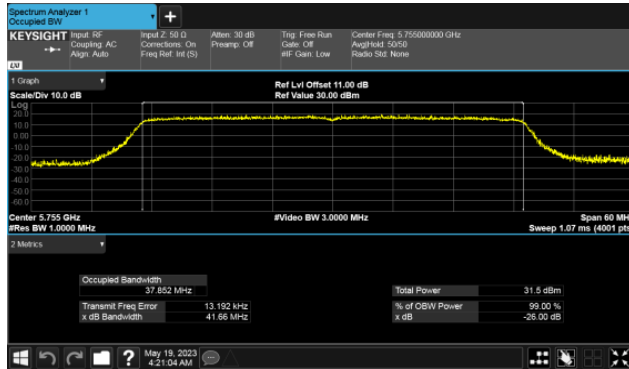




99% Occupied Bandwidth

Non Beamforming-Omni Antenna

ANT C

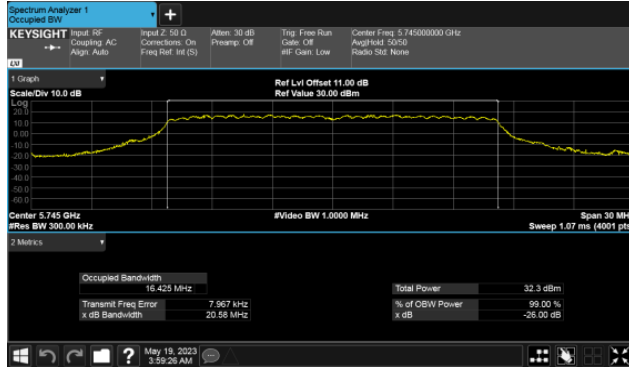
Modulation Type: 802.11ax HE40 (14.6Mbps)
CH151Modulation Type: 802.11ax HE80 (30.6Mbps)
CH155

CH159

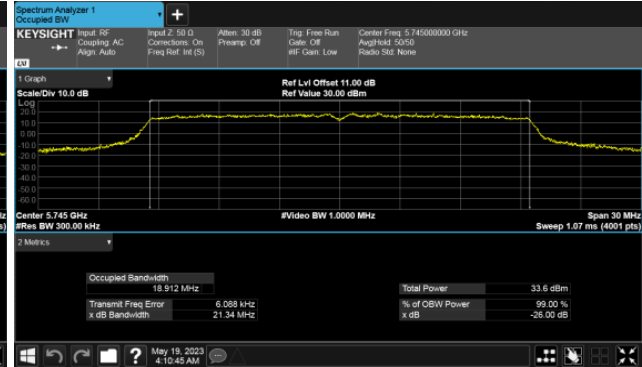




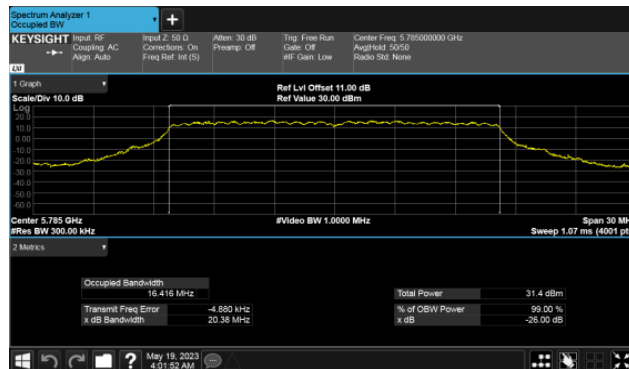
99% Occupied Bandwidth
Non Beamforming-Omni Antenna
ANT D
Modulation Type: 802.11a (6Mbps)
CH149



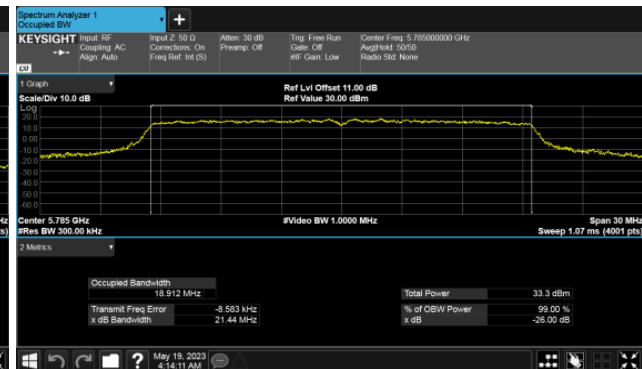
Modulation Type: 802.11ax HE20 (7.3Mbps)
CH149



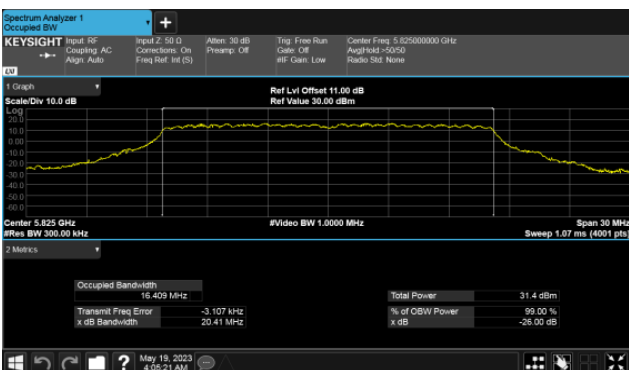
CH157



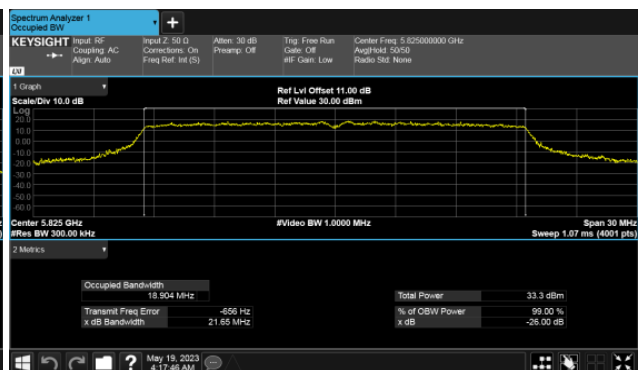
CH157



CH165



CH165





99% Occupied Bandwidth

Non Beamforming-Omni Antenna

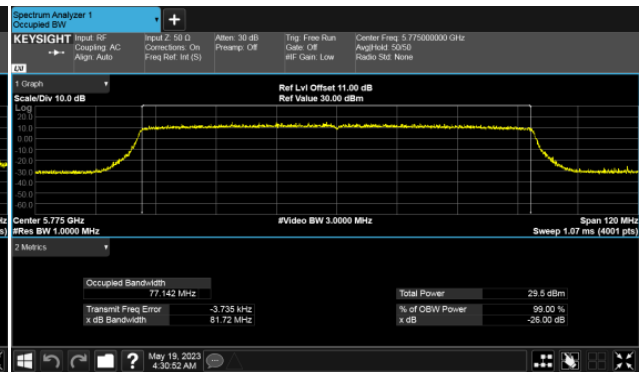
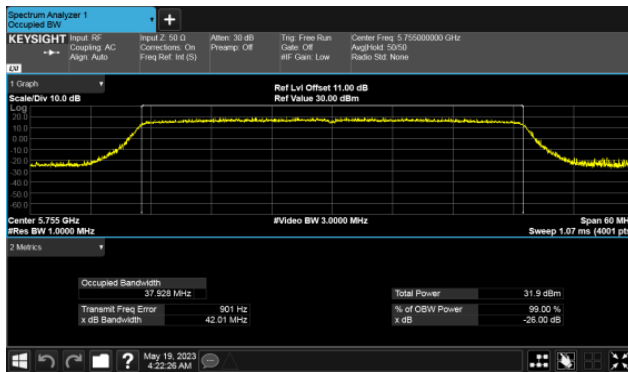
ANT D

Modulation Type: 802.11ax HE40 (14.6Mbps)

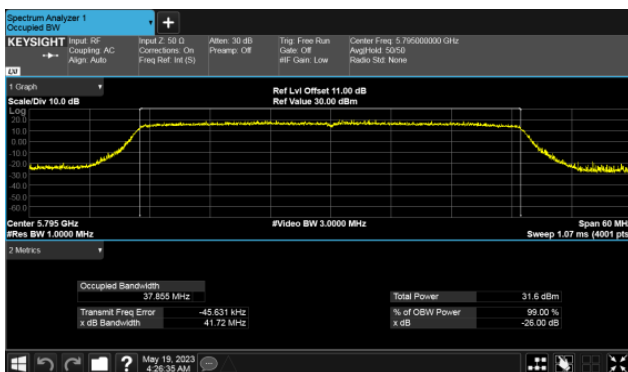
CH151

Modulation Type: 802.11ax HE80 (30.6Mbps)

CH155



CH159





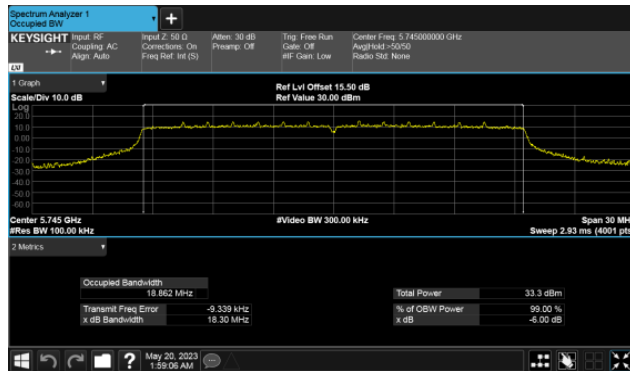
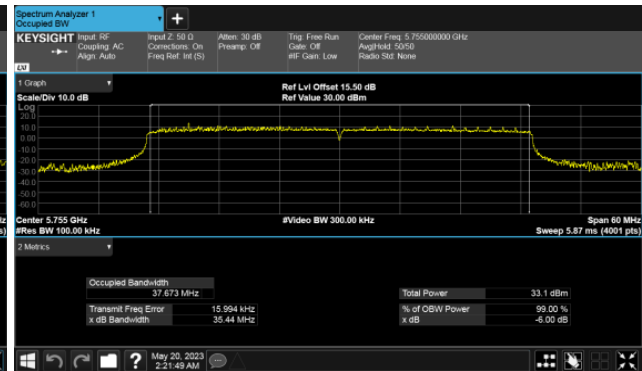
6dB Bandwidth

Beamforming-Omni Antenna

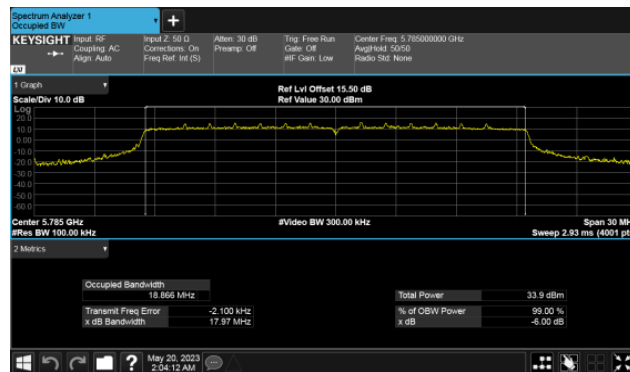
ANT C

Modulation Type: 802.11ax HE20 (7.3Mbps)

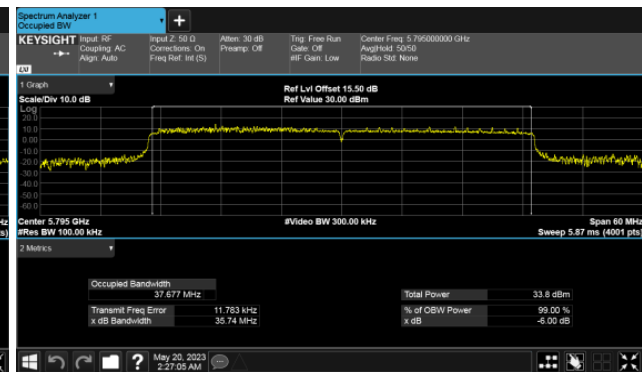
CH149

Modulation Type: 802.11ax HE40 (14.6Mbps)
CH151

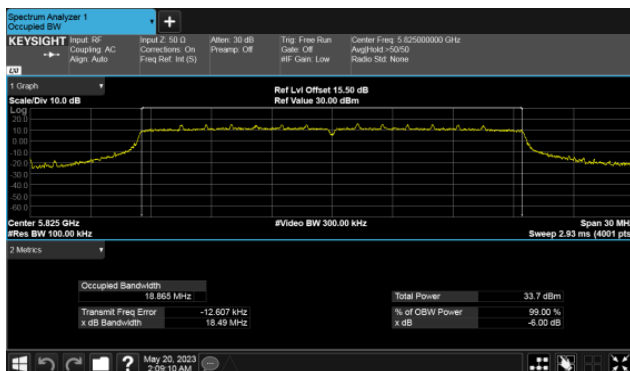
CH157



CH159

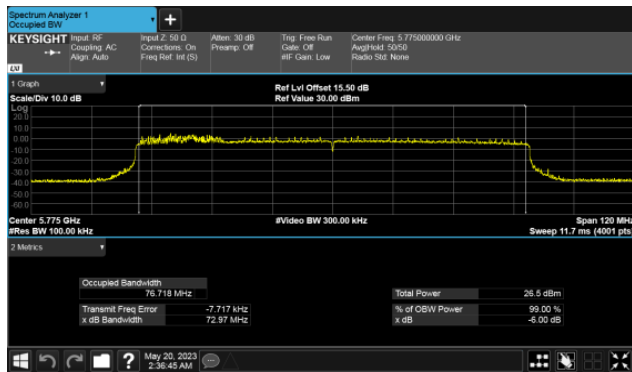


CH165





6dB Bandwidth
Beamforming-Omni Antenna
ANT C
Modulation Type: 802.11ax HE80 (30.6Mbps)
CH155





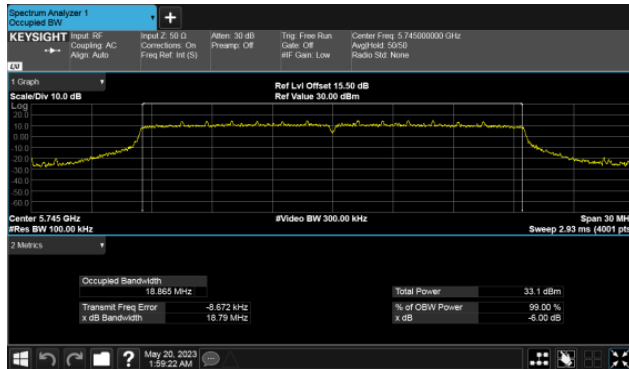
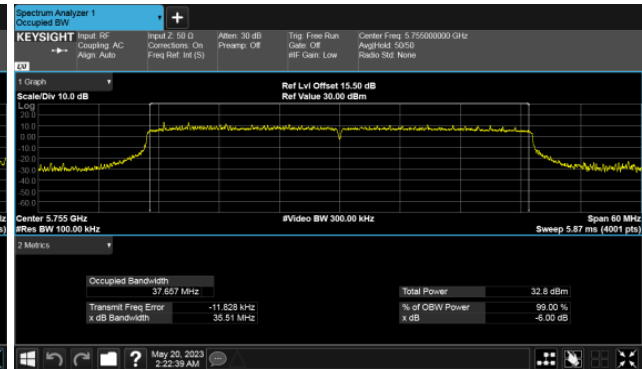
6dB Bandwidth

Beamforming-Omni Antenna

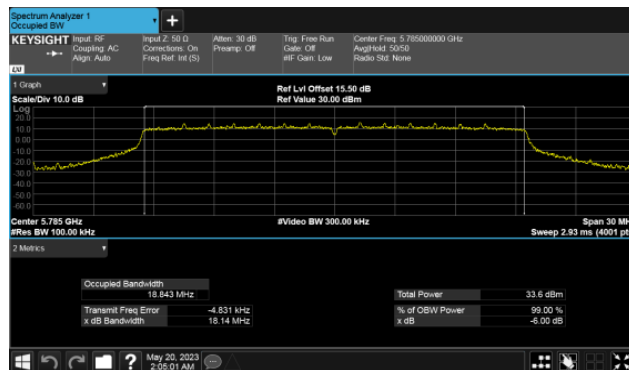
ANT D

Modulation Type: 802.11ax HE20 (7.3Mbps)

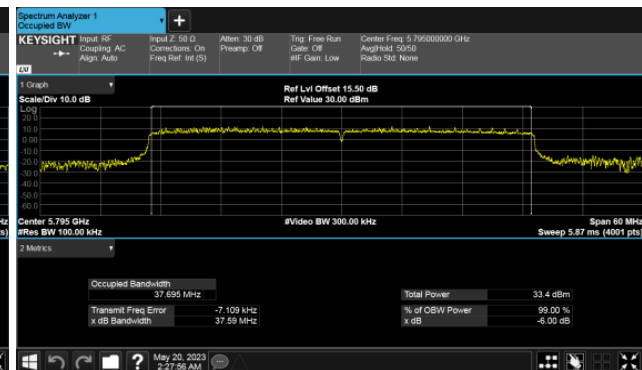
CH149

Modulation Type: 802.11ax HE40 (14.6Mbps)
CH151

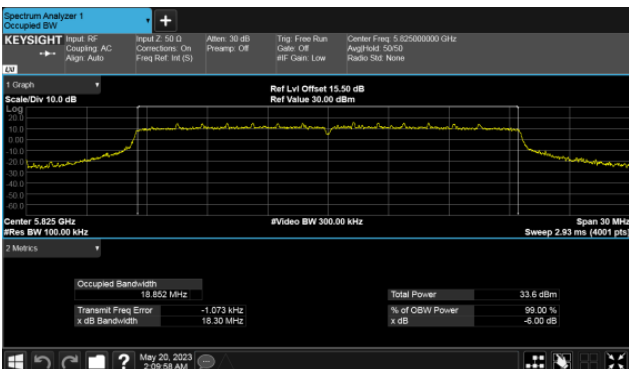
CH157



CH159



CH165





6dB Bandwidth
Beamforming-Omni Antenna
ANT D
Modulation Type: 802.11ax HE80 (30.6Mbps)
CH155





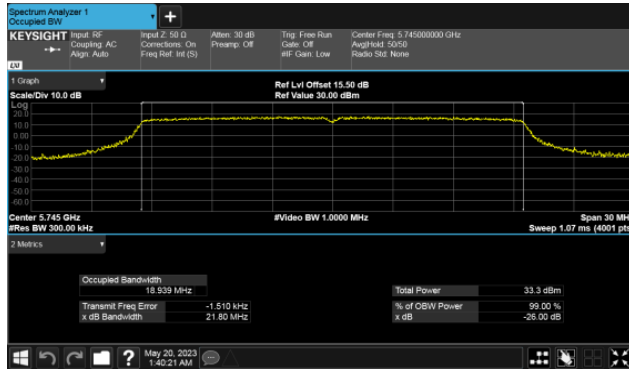
99% Occupied Bandwidth

Beamforming-Omni Antenna

ANT C

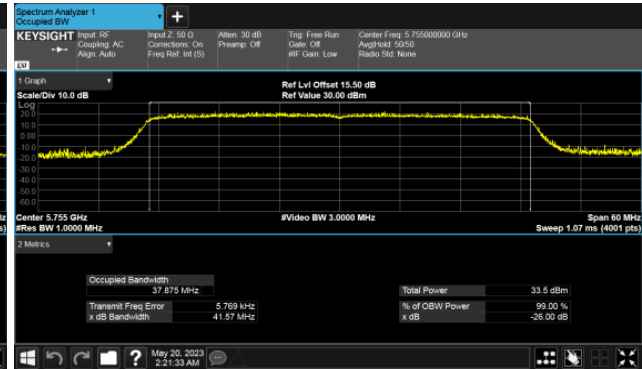
Modulation Type: 802.11ax HE20 (7.3Mbps)

CH149

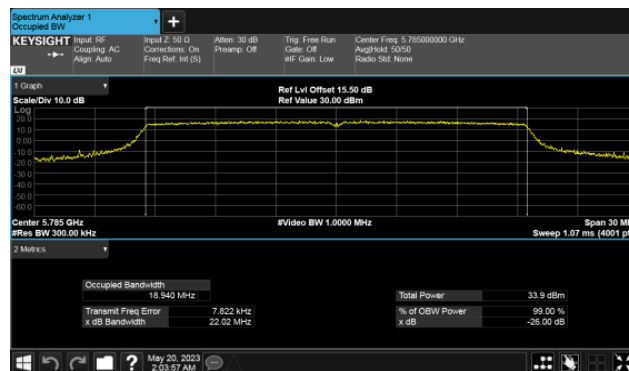


Modulation Type: 802.11ax HE40 (14.6Mbps)

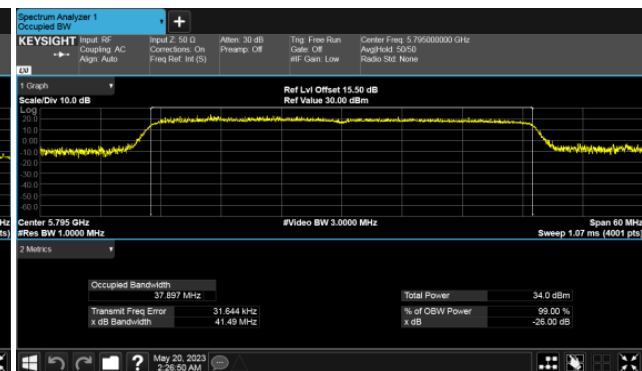
CH151



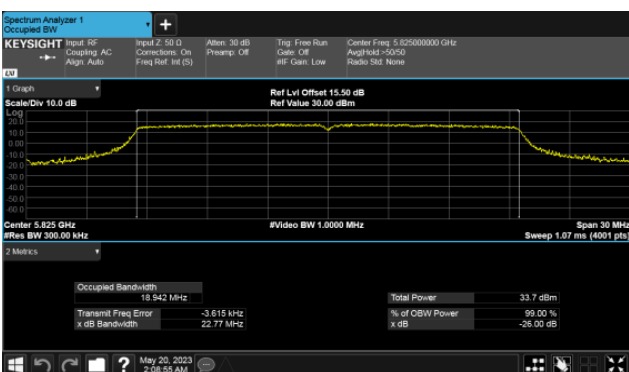
CH157



CH159

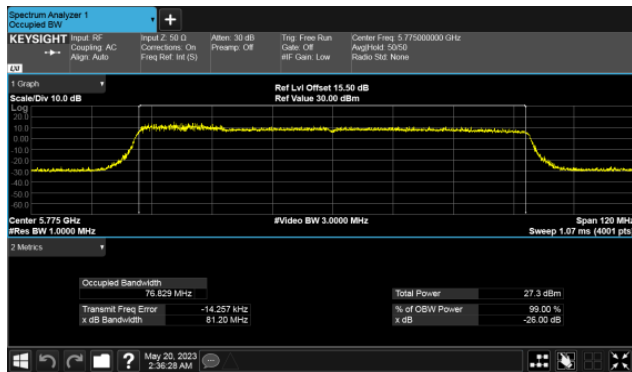


CH165





99% Occupied Bandwidth
Beamforming-Omni Antenna
ANT C
Modulation Type: 802.11ax HE80 (30.6Mbps)
CH155





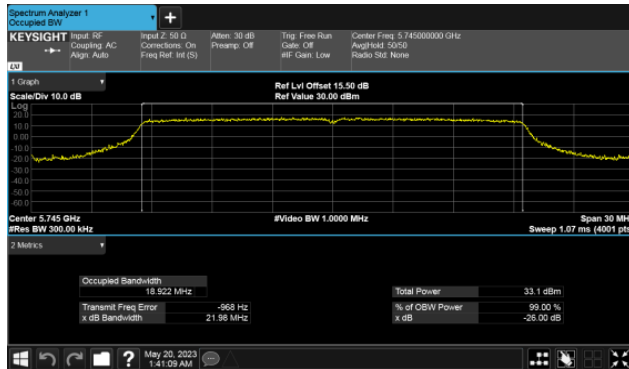
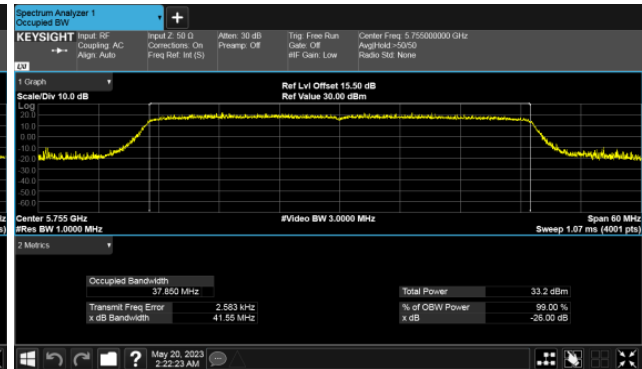
99% Occupied Bandwidth

Beamforming-Omni Antenna

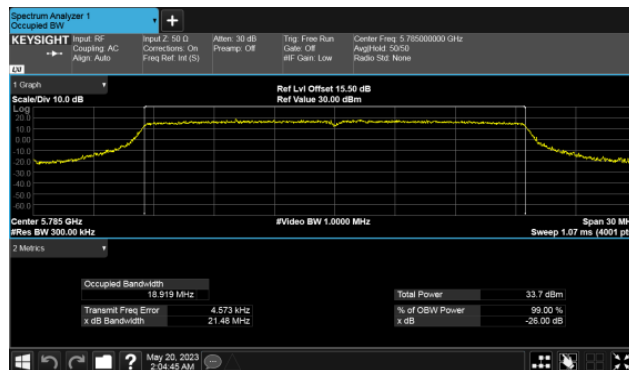
ANT D

Modulation Type: 802.11ax HE20 (7.3Mbps)

CH149

Modulation Type: 802.11ax HE40 (14.6Mbps)
CH151

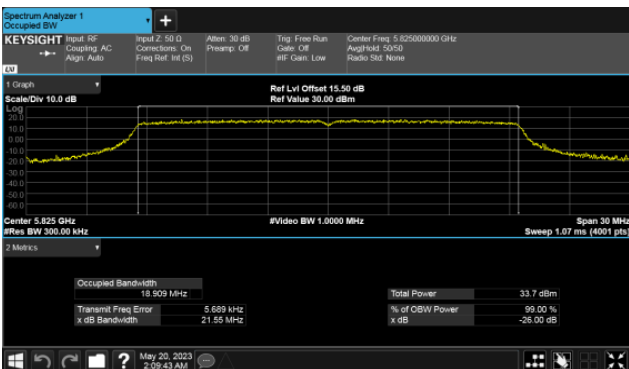
CH157



CH159

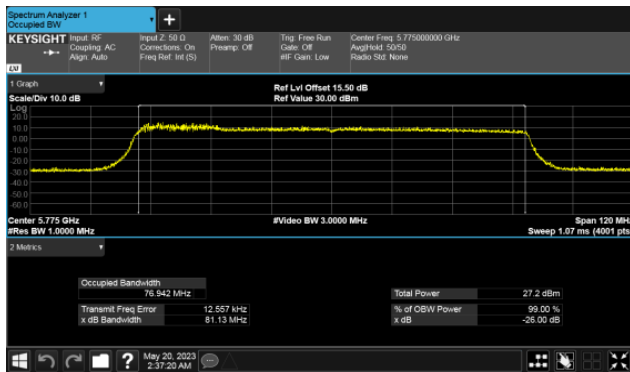


CH165





99% Occupied Bandwidth
Beamforming-Omni Antenna
ANT D
Modulation Type: 802.11ax HE80 (30.6Mbps)
CH155





9. 26dB Bandwidth & 99% Occupied Bandwidth

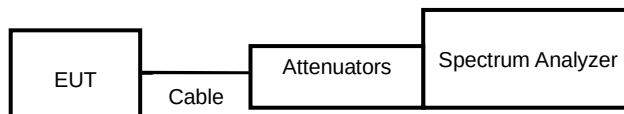
9.1. Test Limit

None; for reporting purposes only.

9.2. Test Procedure

Reference to 789033 D02 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

Non Beamforming-Omni Antenna

Mode	Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
			ANT C	ANT D
11a	36	5180	20.5	20.69
11a	40	5200	20.15	20.75
11a	48	5240	20.59	20.8
11ax HE20	36	5180	21.49	21.18
11ax HE20	40	5200	21.32	21.25
11ax HE20	48	5240	22.61	22.19
11ax HE40	38	5190	42.24	41.63
11ax HE40	46	5230	41.83	41.75
11ax HE80	42	5210	82.67	82.46

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT C	ANT D
11a	36	5180	16.42	16.42
11a	40	5200	16.42	16.43
11a	48	5240	16.44	16.43
11ax HE20	36	5180	18.94	18.94
11ax HE20	40	5200	18.89	18.91
11ax HE20	48	5240	18.95	18.96
11ax HE40	38	5190	37.91	37.92
11ax HE40	46	5230	37.89	37.87
11ax HE80	42	5210	77.06	77.12



Beamforming-Omni Antenna

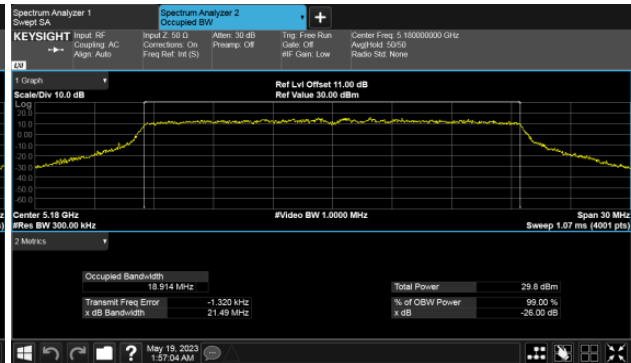
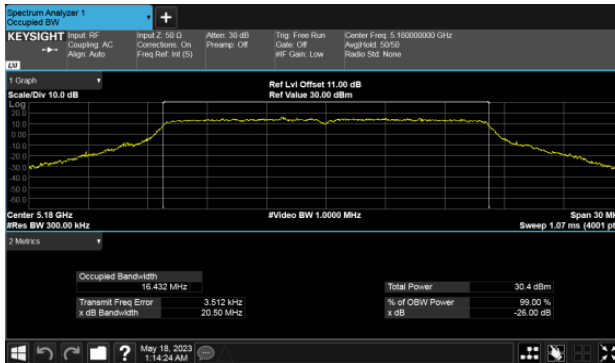
Mode	Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
			ANT C	ANT D
11ax HE20	36	5180	21.42	21.71
11ax HE20	40	5200	21.91	21.74
11ax HE20	48	5240	22.21	22.01
11ax HE40	38	5190	42.08	41.68
11ax HE40	46	5230	41.82	41.47
11ax HE80	42	5210	81.32	81.29

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT C	ANT D
11ax HE20	36	5180	18.94	18.90
11ax HE20	40	5200	18.93	18.93
11ax HE20	48	5240	18.94	18.93
11ax HE40	38	5190	38.36	38.08
11ax HE40	46	5230	37.88	37.88
11ax HE80	42	5210	77.52	77.49

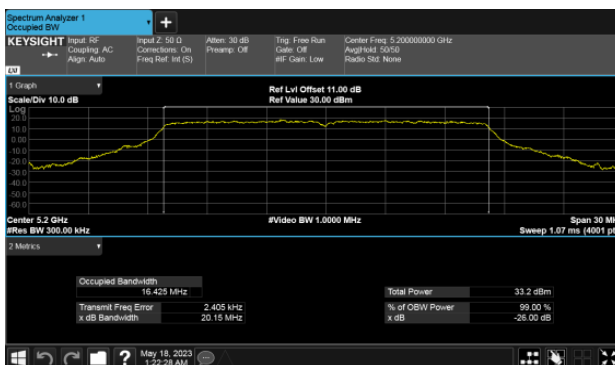


26dB Bandwidth
Non Beamforming-Omni Antenna
ANT C
Modulation Type: 802.11a (6Mbps)
CH36

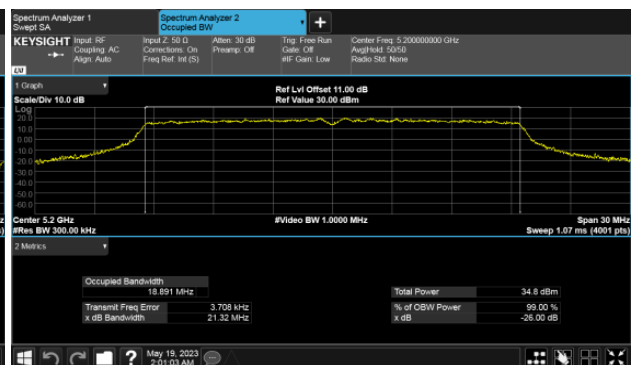
Modulation Type: 802.11ax HE20 (7.3Mbps)
CH36



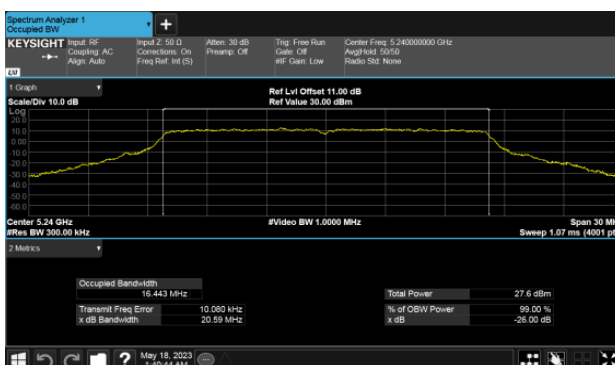
CH40



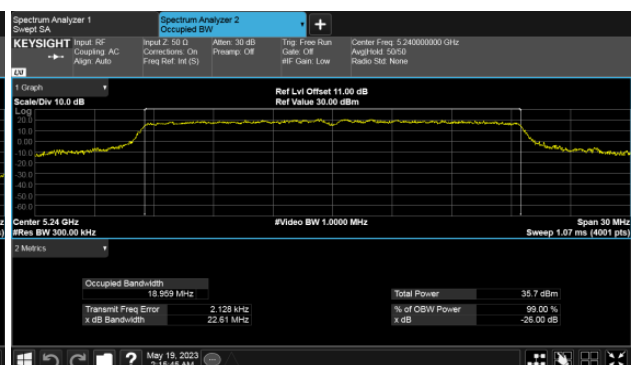
CH40



CH48



CH48

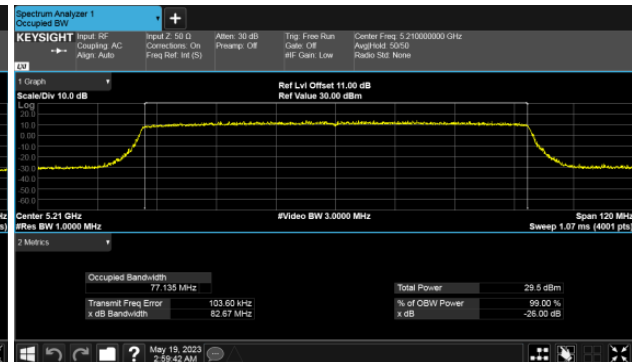
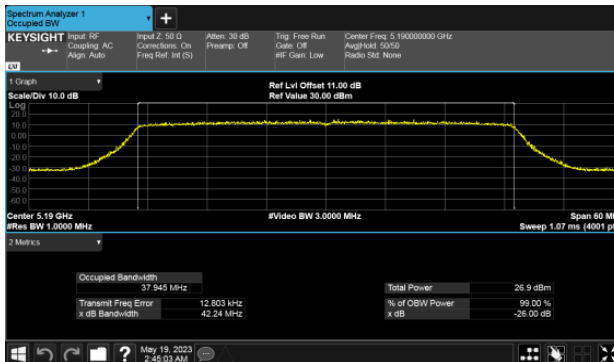




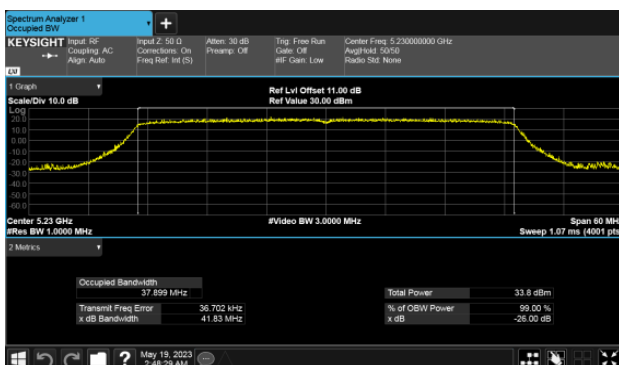
26dB Bandwidth

Non Beamforming-Omni Antenna

ANT C

Modulation Type: 802.11ax HE40 (14.6Mbps)
CH38Modulation Type: 802.11ax HE80 (30.6Mbps)
CH42

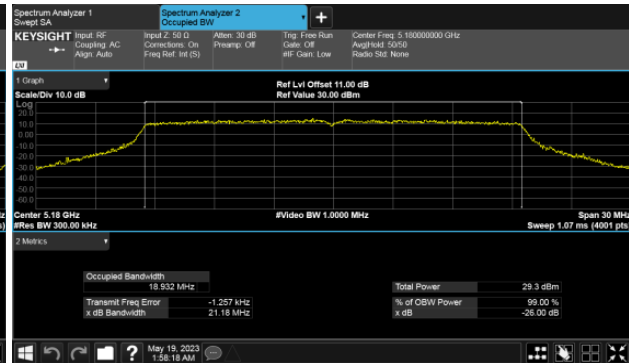
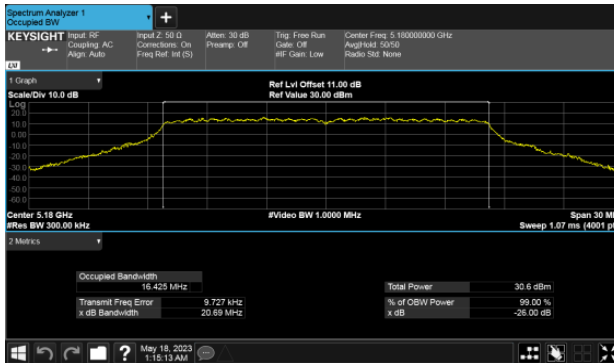
CH46



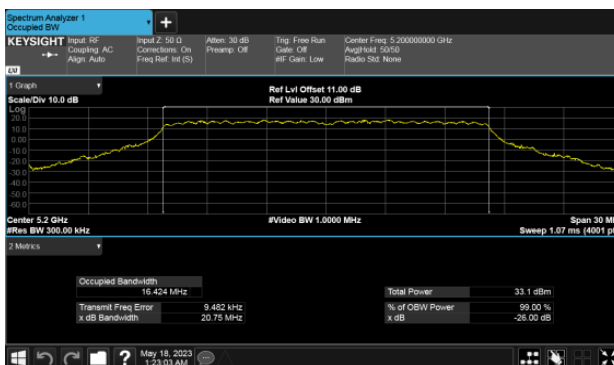


26dB Bandwidth
Non Beamforming-Omni Antenna
ANT D
Modulation Type: 802.11a (6Mbps)
CH36

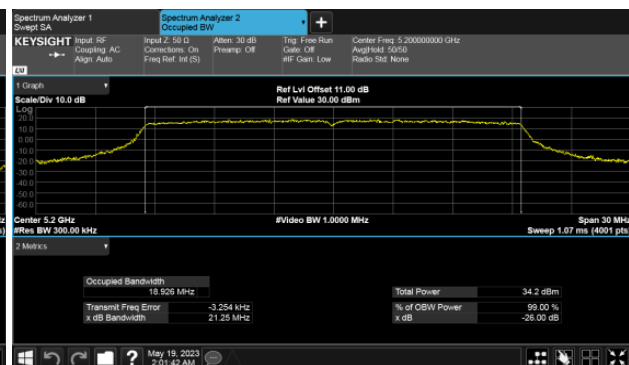
Modulation Type: 802.11ax HE20 (7.3Mbps)
CH36



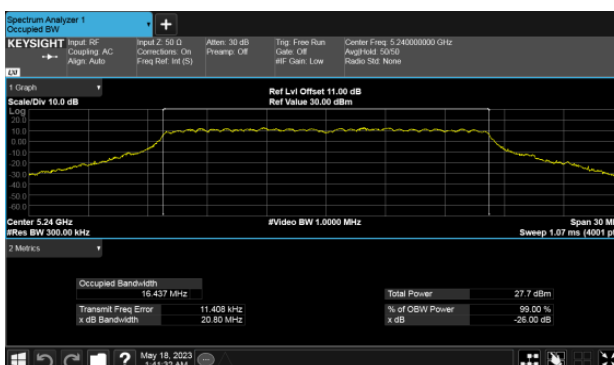
CH40



CH40



CH48



CH48

