



7. On Time, Duty Cycle and Measurement methods

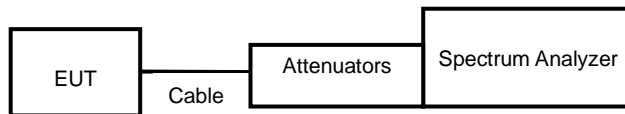
7.1. Test Limit

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

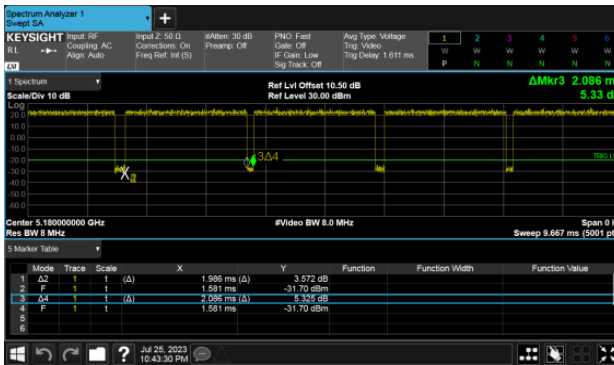
Modulation Type	On Time (ms)	Period Time (ms)	Duty Cycle (%)
802.11a,6M	1.99	2.09	95.21%
802.11ax HE20	5.47	5.95	91.83%
802.11ax HE40	5.46	5.93	92.11%
802.11ax HE80	5.46	5.95	91.73%
802.11ax HE160	5.46	6.43	84.89%

7.5. Measurement Methods

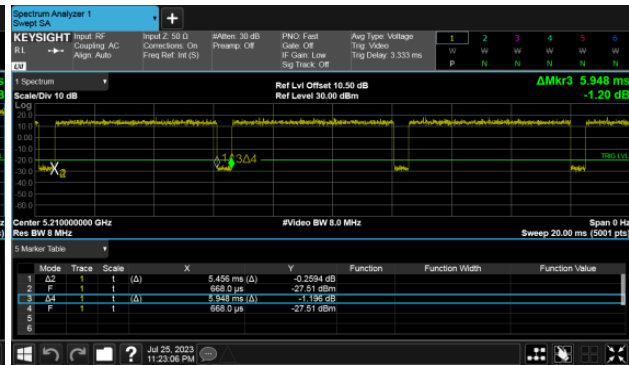
26 dB and 6dB Emission BW	KDB 789033 D02 v02r01, Section C
99% Occupied BW	KDB 789033 D02 v02r01, Section D
Conducted Output Power	KDB 789033 D02 v02r01, Section E.2.d and E.3.b (Method PM-G)
Power Spectral Density	KDB 789033 D02 v02r01, Section F
Unwanted emissions in restricted bands	KDB 789033 D02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



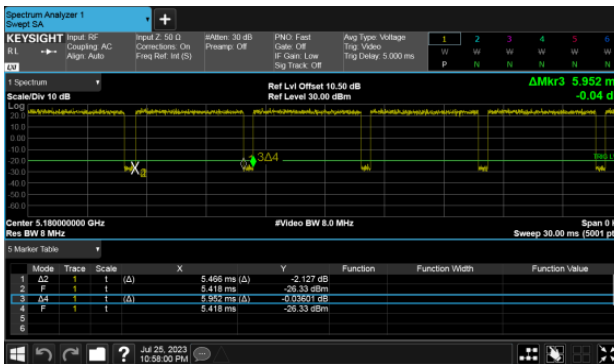
Modulation Type: 802.11a (6Mbps)



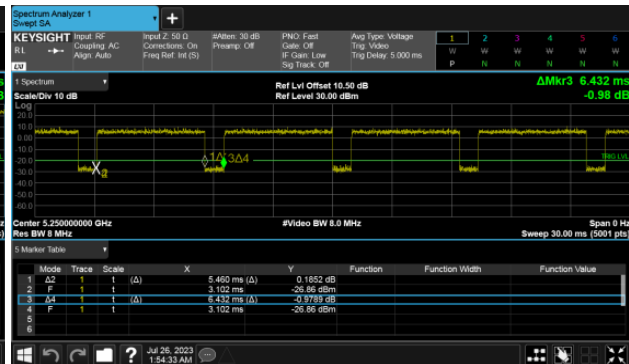
Modulation Type: 802.11ax HE80 (30.6Mbps)



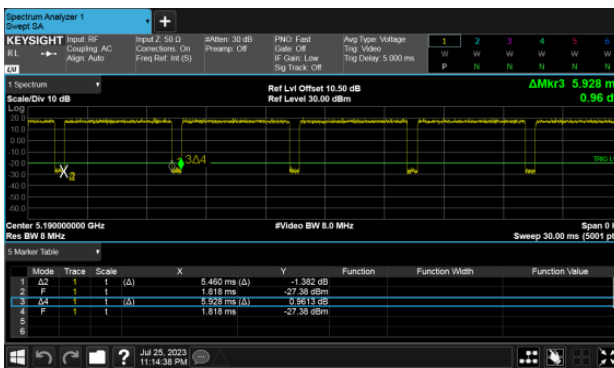
Modulation Type: 802.11ax HE20 (7.3Mbps)



Modulation Type: 802.11ax HE160 (61.3Mbps)



Modulation Type: 802.11ax HE40 (14.6Mbps)





8. 6dB Bandwidth & 99% Occupied Bandwidth

8.1. Test Limit

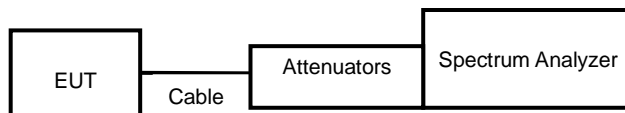
FCC §15.407

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

In the 5.8G Band

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth(MHz)		Minimum Limit (MHz)
			ANT C	ANT D	
11a	149	5745	15.08	15.06	0.50
11a	157	5785	15.11	15.08	0.50
11a	165	5825	15.08	15.05	0.50
11ax HE20	149	5745	15.08	13.84	0.50
11ax HE20	157	5785	15.26	13.82	0.50
11ax HE20	165	5825	15.07	15.04	0.50
11ax HE40	151	5755	33.93	33.98	0.50
11ax HE40	159	5795	34.99	35.07	0.50
11ax HE80	155	5775	68.81	57.54	0.50

In the 5.8G Band

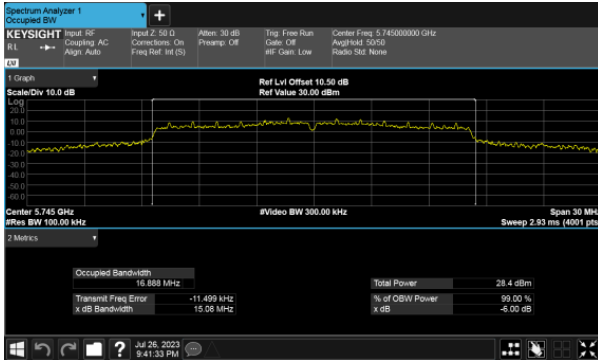
Modulation Type	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT C	ANT D
11a	149	5745	17.16	18.16
11a	157	5785	20.80	20.85
11a	165	5825	16.63	16.59
11ax HE20	149	5745	18.98	19.14
11ax HE20	157	5785	19.40	19.55
11ax HE20	165	5825	19.24	19.05
11ax HE40	151	5755	37.65	37.80
11ax HE40	159	5795	37.85	38.01
11ax HE80	155	5775	76.67	76.59

UNII Emission Bandwidth Result (Extends across 5725MHz band)

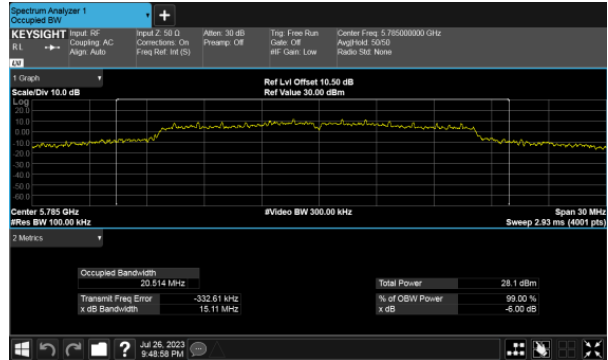
Modulation Type	Data Rate / MCS	Frequency (MHz)	6dB Bandwidth(MHz)		99% Bandwidth(MHz)	
			ANT C	ANT D	ANT C	ANT D
11a	6 Mbps	5720	3.15	3.13	4.36	4.26
11ax HE20	NSS1-MCS0	5720	4.51	3.81	4.76	4.89
11ax HE40	NSS1-MCS0	5710	4.02	3.93	26.85	42.63
11ax HE80	NSS1-MCS0	5690	4.01	3.95	59.21	68.58



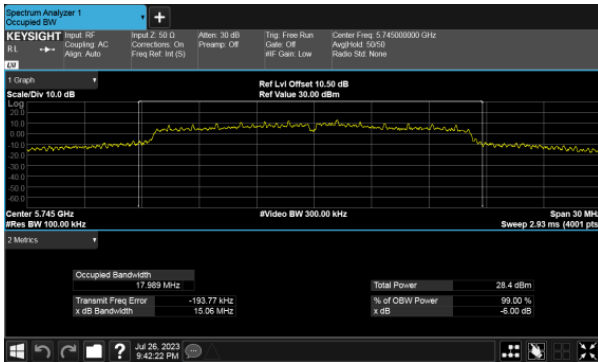
6dB Bandwidth
Modulation Type: 802.11a CH149
ANT C



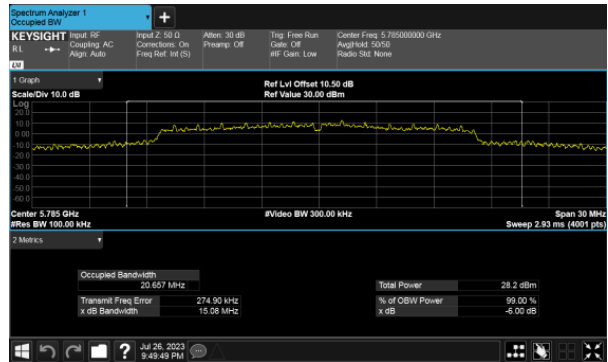
Modulation Type: 802.11a CH157
ANT C



ANT D

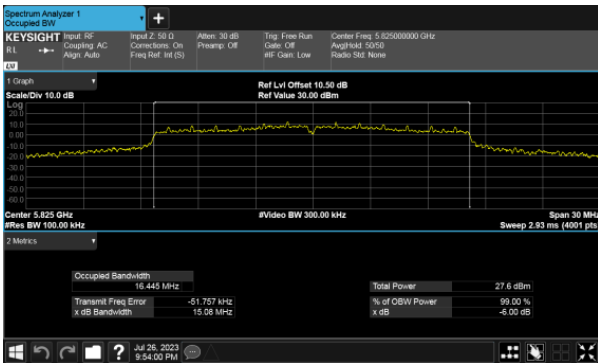


ANT D

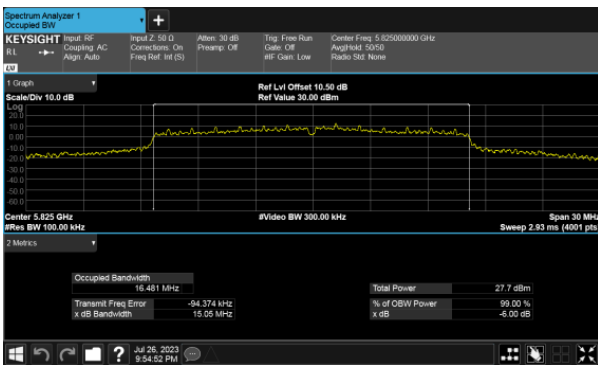




6dB Bandwidth
Modulation Type: 802.11a CH165
ANT C

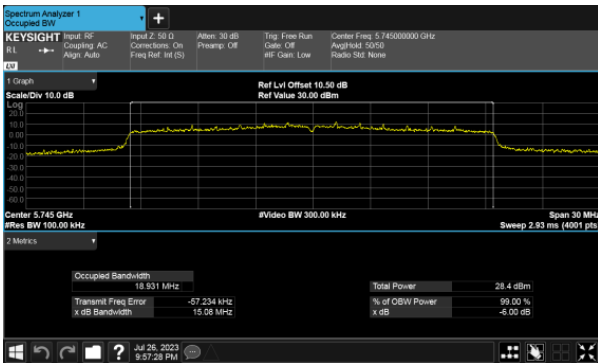


ANT D

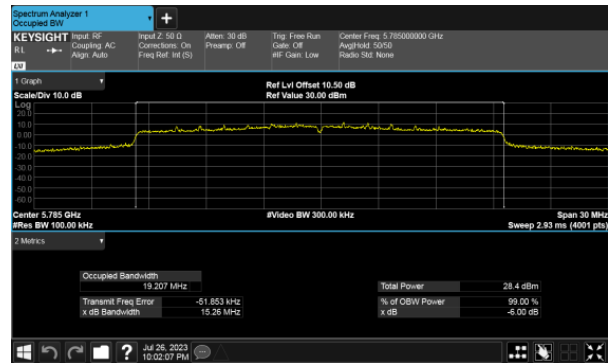




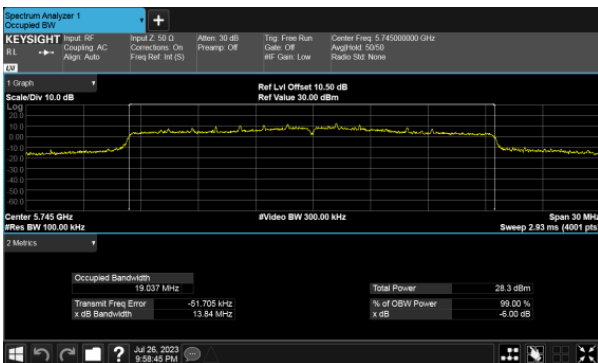
6dB Bandwidth
Modulation Type: 802.11ax HE20 CH149
ANT C



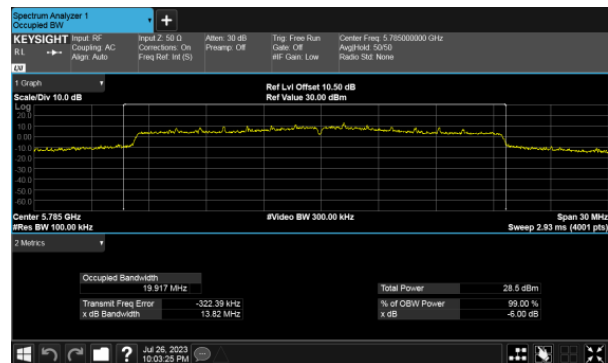
Modulation Type: 802.11ax HE20 CH157
ANT C



ANT D

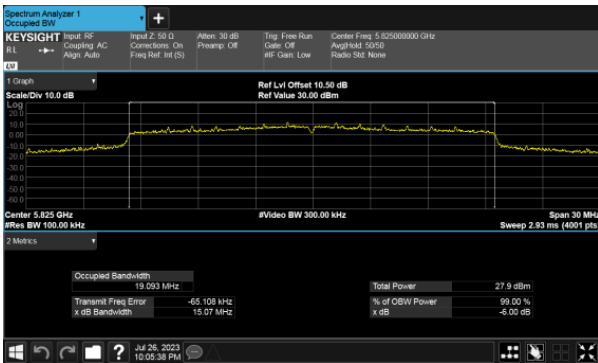


ANT D

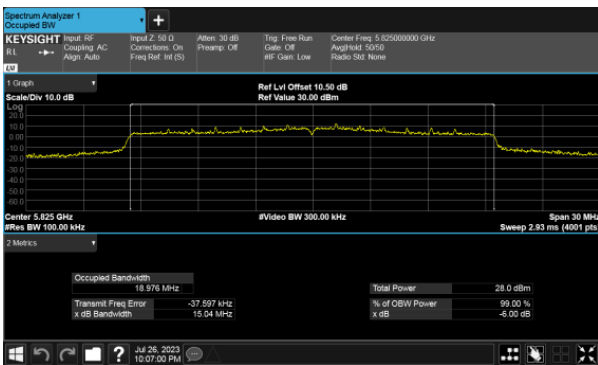




6dB Bandwidth
Modulation Type: 802.11ax HE20 CH165
ANT C



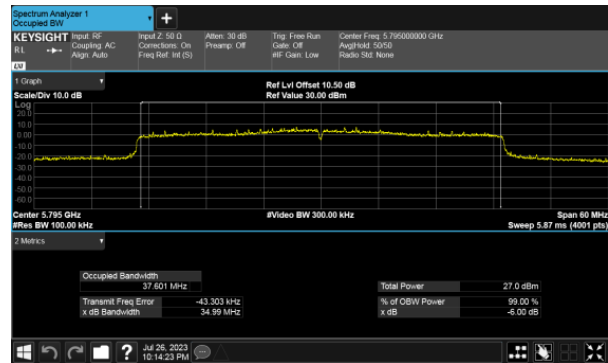
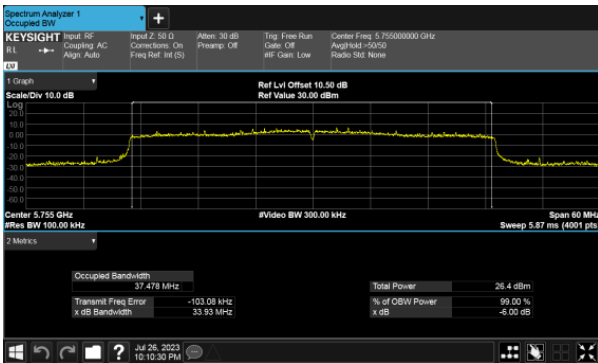
ANT D





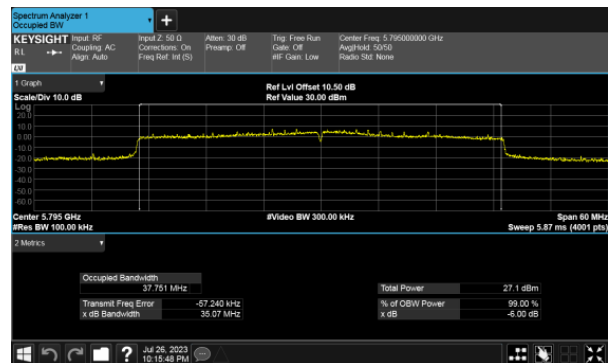
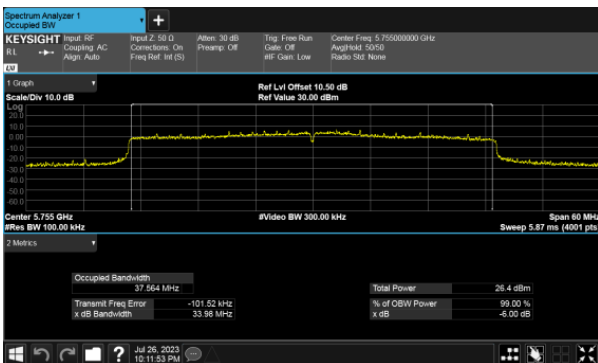
6dB Bandwidth
Modulation Type: 802.11ax HE40 CH151
ANT C

Modulation Type: 802.11ax HE40 CH159
ANT C



ANT D

ANT D

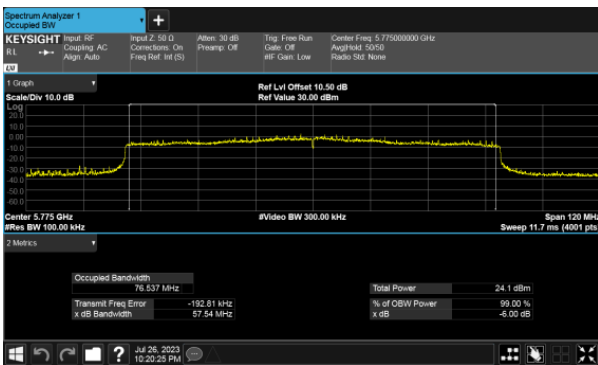




6dB Bandwidth
Modulation Type: 802.11ax HE80 CH155
ANT C



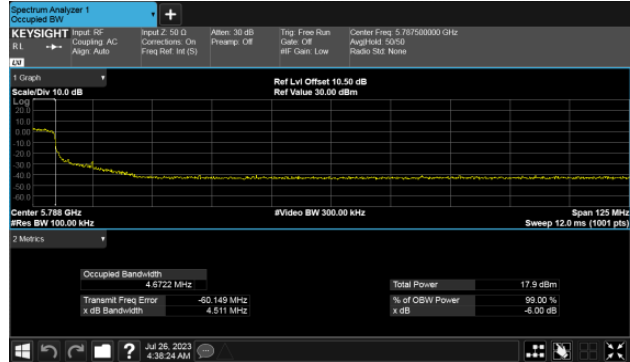
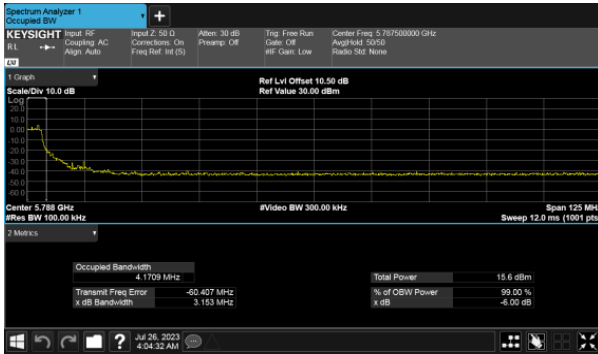
ANT D



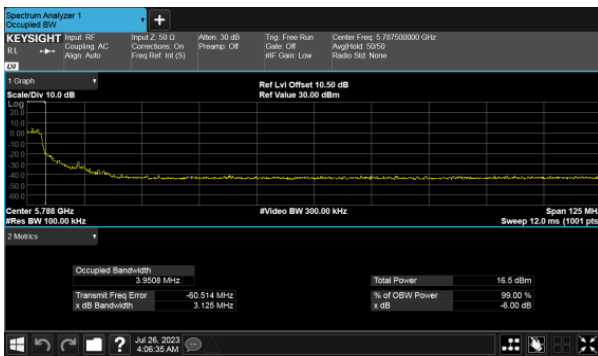


6dB Bandwidth
Extends across 5725MHz Band, Straddle Channel
Modulation Type: 802.11a CH144
ANT C

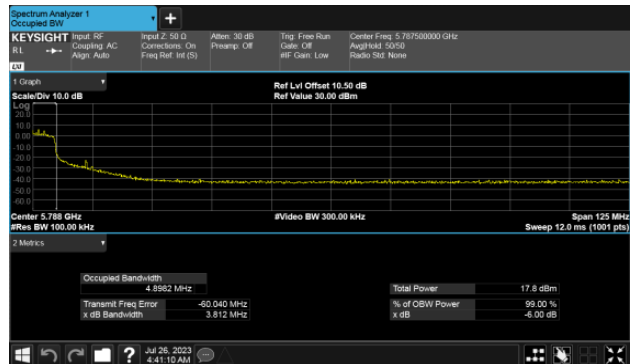
Modulation Type: 802.11ax HE20 CH144
ANT C



ANT D



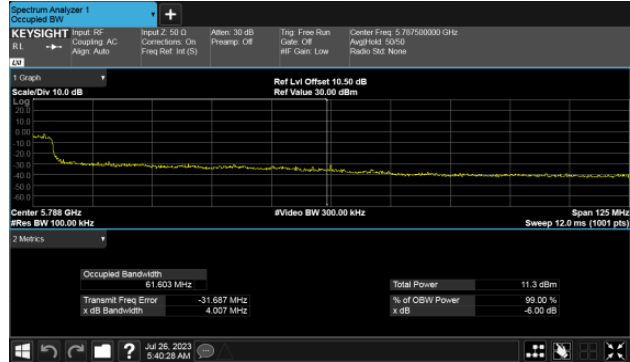
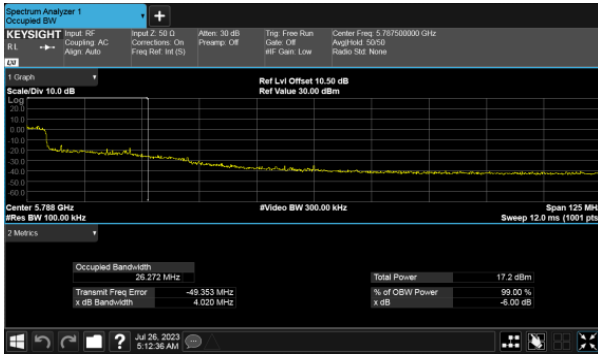
ANT D



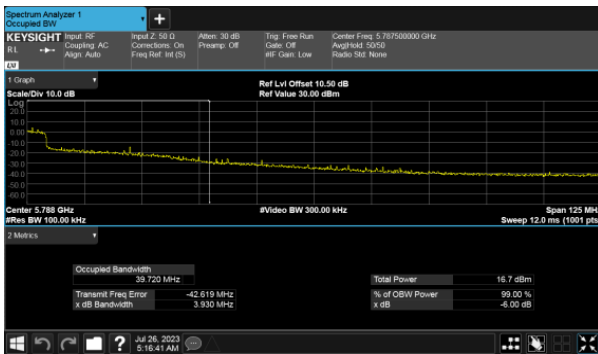


6dB Bandwidth
Extends across 5725MHz Band, Straddle Channel
Modulation Type: 802.11ax HE40 CH142
ANT C

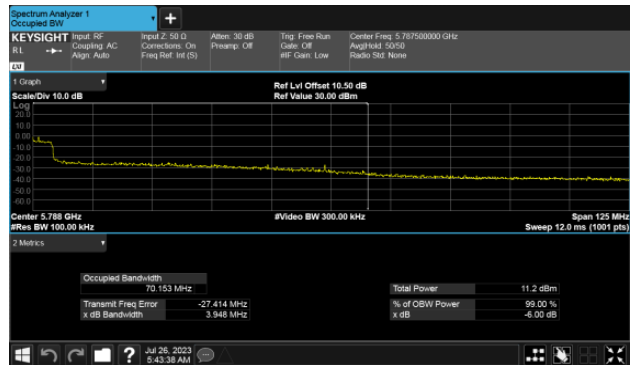
Modulation Type: 802.11ax HE80 CH138
ANT C



ANT D

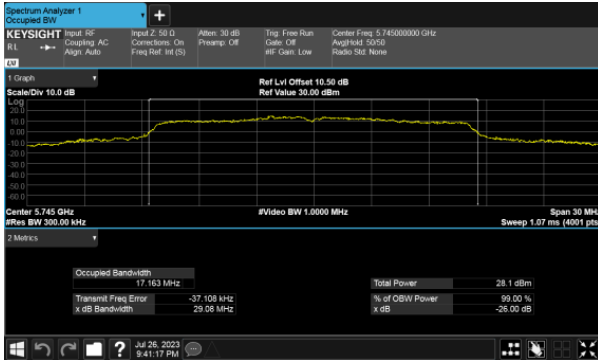


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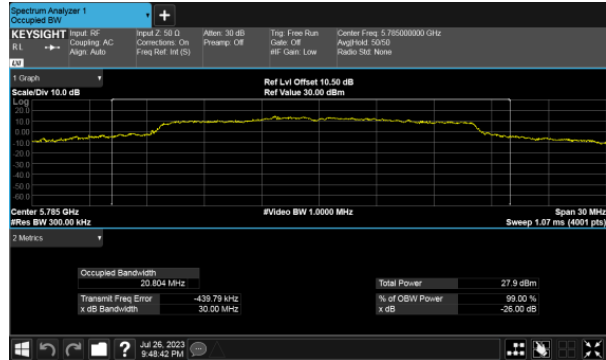




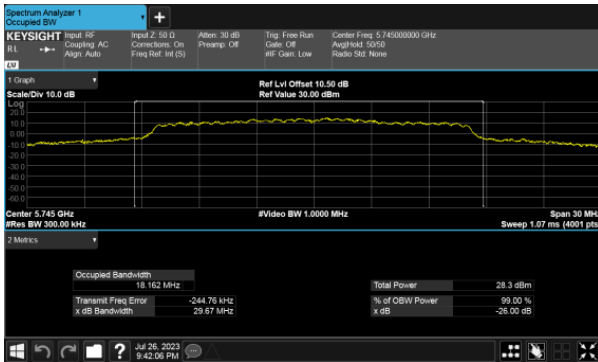
99% Bandwidth
Modulation Type: 802.11a CH149
ANT C



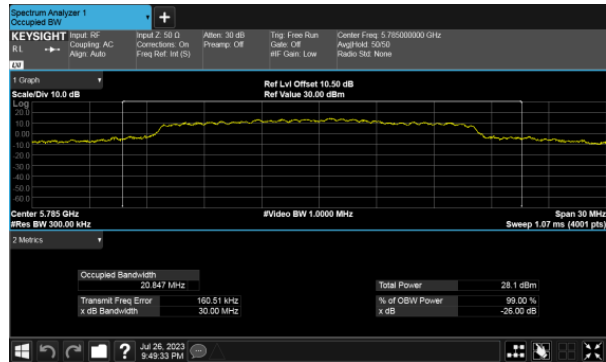
Modulation Type: 802.11a CH157
ANT C



ANT D

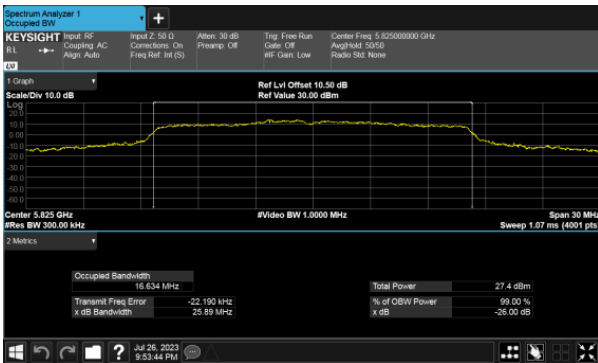


ANT D

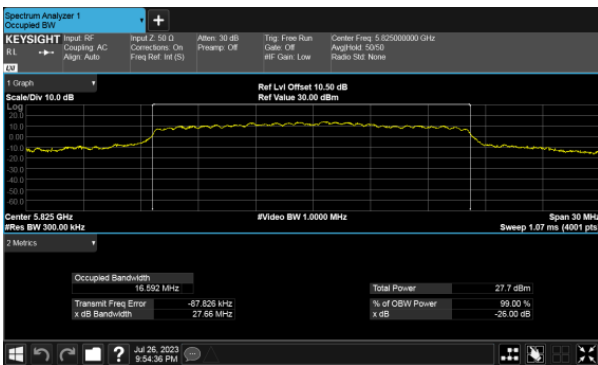




99% Bandwidth
Modulation Type: 802.11a CH165
ANT C



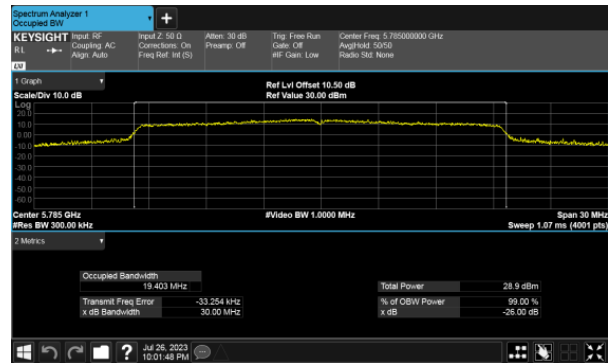
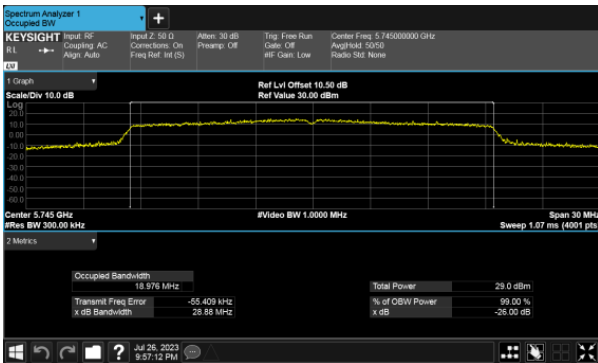
ANT D





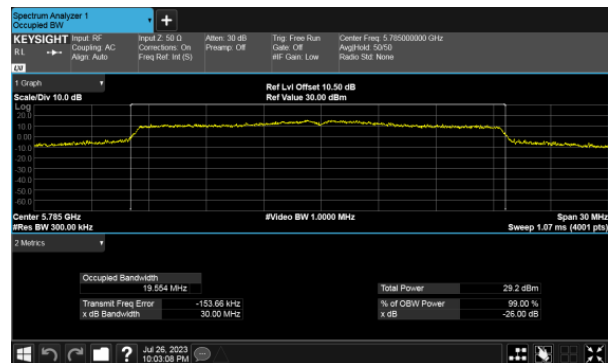
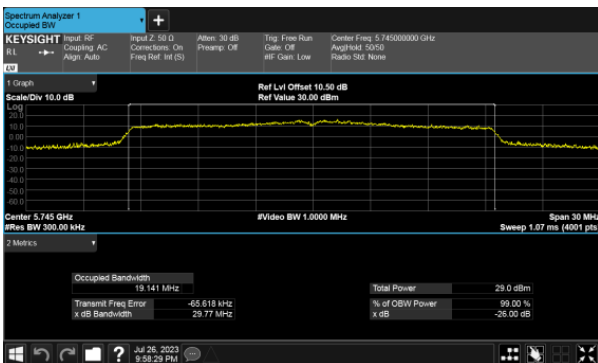
99% Bandwidth
Modulation Type: 802.11ax HE20 CH149
ANT C

Modulation Type: 802.11ax HE20 CH157
ANT C



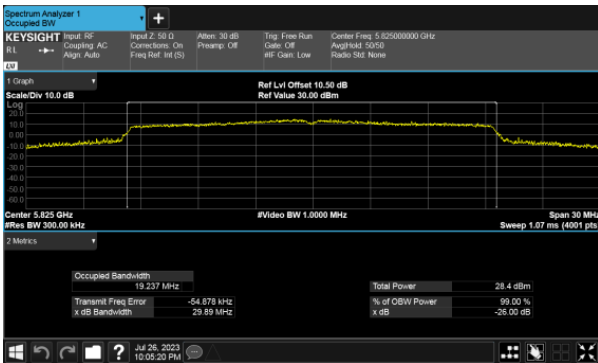
ANT D

ANT D





99% Bandwidth
Modulation Type: 802.11ax HE20 CH165
ANT C



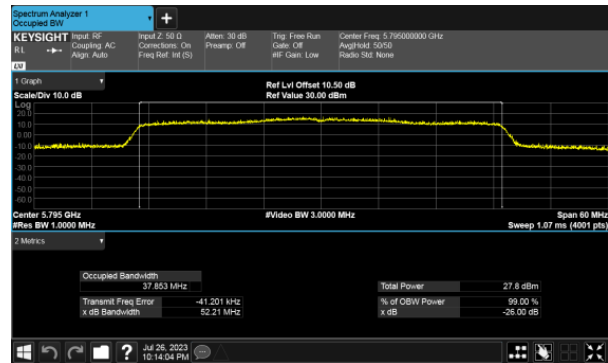
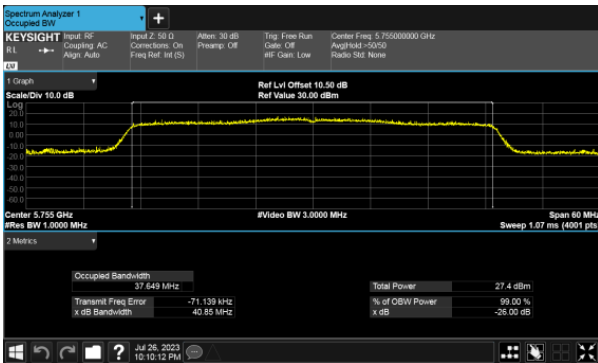
ANT D





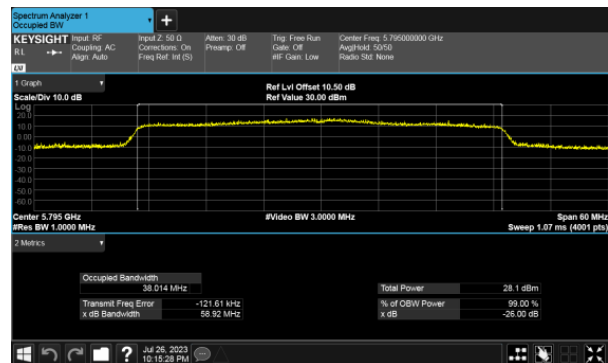
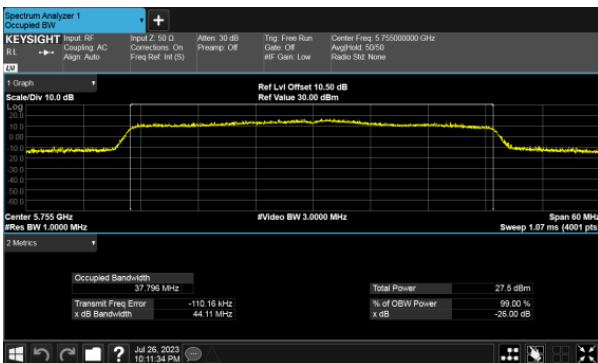
99% Bandwidth
Modulation Type: 802.11ax HE40 CH151
ANT C

Modulation Type: 802.11ax HE40 CH159
ANT C



ANT D

ANT D

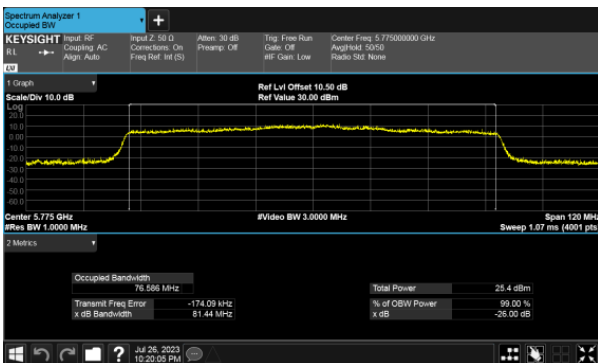




99% Bandwidth
Modulation Type: 802.11ax HE80 CH155
ANT C



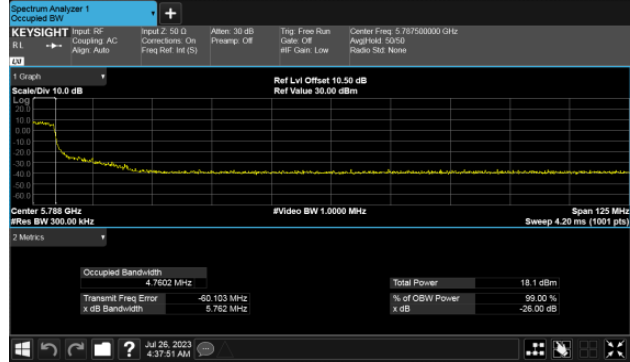
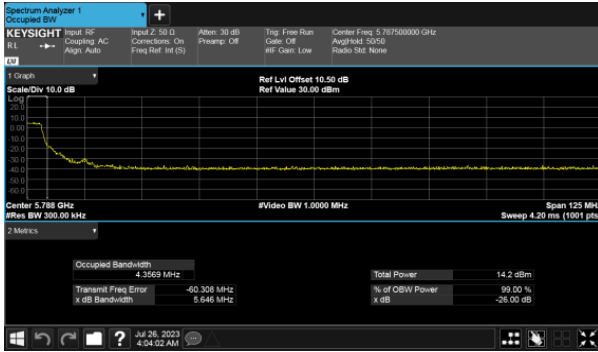
ANT D



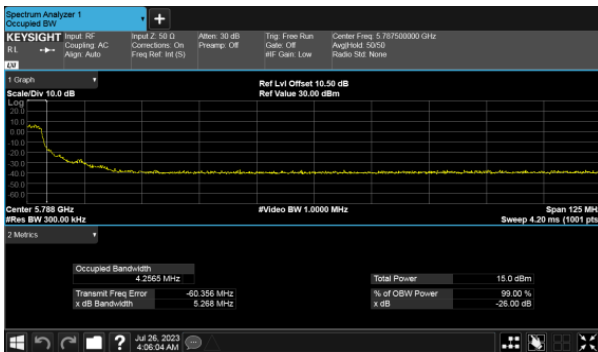


99% Bandwidth
Extends across 5725MHz Band, Straddle Channel
Modulation Type: 802.11a CH144
ANT C

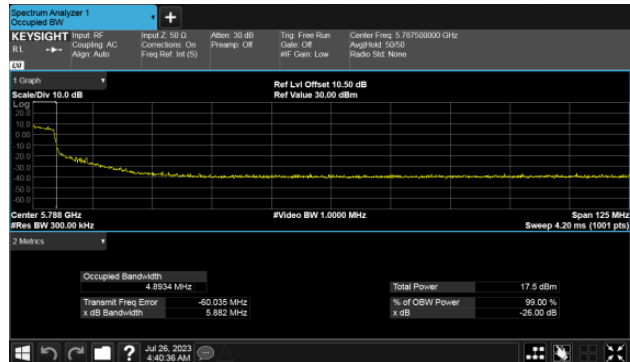
Modulation Type: 802.11ax HE20 CH144
ANT C



ANT D



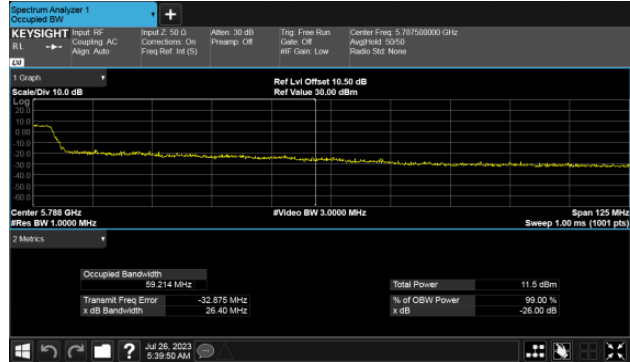
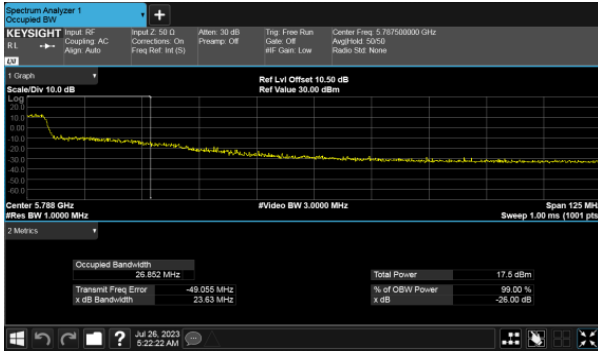
ANT D



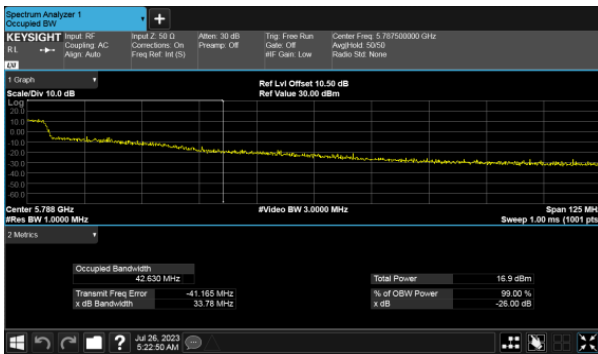


99% Bandwidth
Extends across 5725MHz Band, Straddle Channel
Modulation Type: 802.11ax HE40 CH142
ANT C

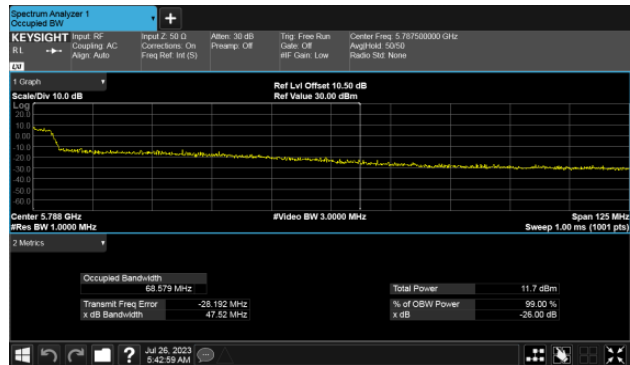
Modulation Type: 802.11ax HE80 CH138
ANT C



ANT D



ANT D





9. 26dB Bandwidth & 99% Occupied Bandwidth

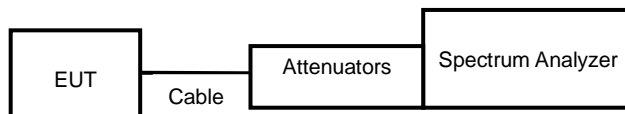
9.1. Test Limit

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 >= 3 x RBW, peak detector and max hold.

9.3. Test Setup Layout



9.4. Test Result and Data

In the 5.2G Band

Mode	Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
			ANT C	ANT D
11a	36	5180	18.56	18.81
11a	40	5200	19.27	19.93
11a	48	5240	18.73	18.96
11ax HE20	36	5180	20.62	20.42
11ax HE20	40	5200	20.82	21.02
11ax HE20	48	5240	22.15	22.65
11ax HE40	38	5190	40.79	41.12
11ax HE40	46	5230	41.18	41.06
11ax HE80	42	5210	81.31	81.2



In the 5.3G Band

Mode	Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
			ANT C	ANT D
11a	52	5260	18.77	19
11a	60	5300	18.77	18.97
11a	64	5320	19.31	18.87
11ax HE20	52	5260	20.36	20.87
11ax HE20	60	5300	20.92	20.49
11ax HE20	64	5320	20.83	20.65
11ax HE40	54	5270	46.44	44.27
11ax HE40	62	5310	40.81	41.08
11ax HE80	58	5290	81.28	81.03

In the 5.5G Band

Mode	Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
			ANT C	ANT D
11a	100	5500	18.72	18.84
11a	120	5600	18.82	18.86
11a	140	5700	18.71	19.13
11ax HE20	100	5500	20.75	20.66
11ax HE20	120	5600	20.63	20.47
11ax HE20	140	5700	20.73	20.85
11ax HE40	102	5510	40.96	40.83
11ax HE40	118	5590	41.06	46.69
11ax HE40	134	5670	40.77	40.99
11ax HE80	106	5530	81.41	81.06
11ax HE80	122	5610	81.28	80.93

802.11ax(160)

Mode	Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
			ANT C	ANT D
11ax HE160	114	5570	163.50	163.60



UNII Emission Bandwidth Result (Within 5470-5725MHz band)				
Modulation Type	Data Rate / MCS	Frequency (MHz)	26dB Bandwidth(MHz)	
			ANT C	ANT D
11a	6 Mbps	5720	14.61	14.74
11ax HE20	NSS1-MCS0	5720	15.56	15.66
11ax HE40	NSS1-MCS0	5710	38.29	51.73
11ax HE80	NSS1-MCS0	5690	91.57	78.14

UNII Emission Bandwidth Result (Within 5150-5250MHz band)				
Modulation Type	Data Rate / MCS	Frequency (MHz)	26dB Bandwidth(MHz)	
			ANT C	ANT D
11ax HE160	NSS1-MCS0	5250	83.00	82.26

UNII Emission Bandwidth Result (Extends across 5250MHz band)				
Modulation Type	Data Rate / MCS	Frequency (MHz)	26dB Bandwidth(MHz)	
			ANT C	ANT D
11ax HE160	NSS1-MCS0	5250	81.75	81.63



In the 5.2G Band

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT C	ANT D
11a	36	5180	16.23	16.27
11a	40	5200	16.28	16.31
11a	48	5240	16.25	16.26
11ax HE20	36	5180	18.75	18.79
11ax HE20	40	5200	18.79	18.77
11ax HE20	48	5240	18.82	18.81
11ax HE40	38	5190	37.58	37.59
11ax HE40	46	5230	37.62	37.65
11ax HE80	42	5210	76.57	76.59

In the 5.3G Band

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT C	ANT D
11a	52	5260	16.25	16.26
11a	60	5300	16.26	16.26
11a	64	5320	16.26	16.26
11ax HE20	52	5260	18.77	18.79
11ax HE20	60	5300	18.76	18.74
11ax HE20	64	5320	18.76	18.74
11ax HE40	54	5270	37.71	37.71
11ax HE40	62	5310	37.58	37.60
11ax HE80	58	5290	76.45	76.37



In the 5.5G Band

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT C	ANT D
11a	100	5500	16.26	16.28
11a	120	5600	16.27	16.29
11a	140	5700	16.26	16.29
11ax HE20	100	5500	18.77	18.76
11ax HE20	120	5600	18.77	18.75
11ax HE20	140	5700	18.76	18.74
11ax HE40	102	5510	37.56	37.54
11ax HE40	118	5590	37.69	37.79
11ax HE40	134	5670	37.56	37.60
11ax HE80	106	5530	76.46	76.57
11ax HE80	122	5610	76.56	76.30

802.11ax(160)

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT C	ANT D
11ax HE160	114	5570	155.32	154.49

UNII Emission Bandwidth Result (Within 5470-5725MHz band)

Modulation Type	Data Rate / MCS	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT C	ANT D
11a	6 Mbps	5720	13.18	13.21
11ax HE20	NSS1-MCS0	5720	14.43	14.41
11ax HE40	NSS1-MCS0	5710	34.06	34.86
11ax HE80	NSS1-MCS0	5690	72.88	73.14

UNII Emission Bandwidth Result (Within 5150-5250MHz band)

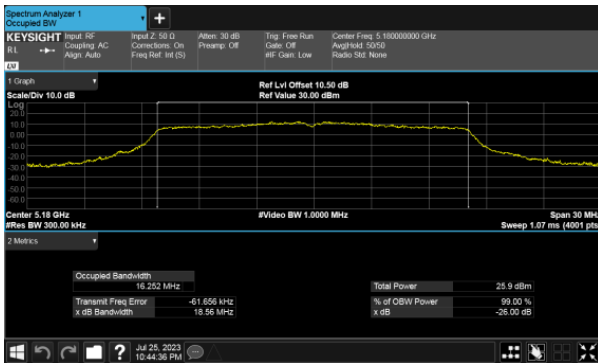
Modulation Type	Data Rate / MCS	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT C	ANT D
11ax HE160	NSS1-MCS0	5250	78.06	78.16

UNII Emission Bandwidth Result (Extends across 5250MHz band)

Modulation Type	Data Rate / MCS	Frequency (MHz)	99% Bandwidth(MHz)	
			ANT C	ANT D
11ax HE160	NSS1-MCS0	5250	77.70	77.74



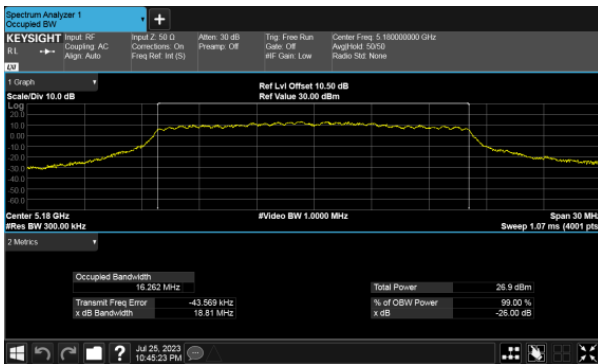
26dB Bandwidth
Modulation Type: 802.11a CH36
ANT C



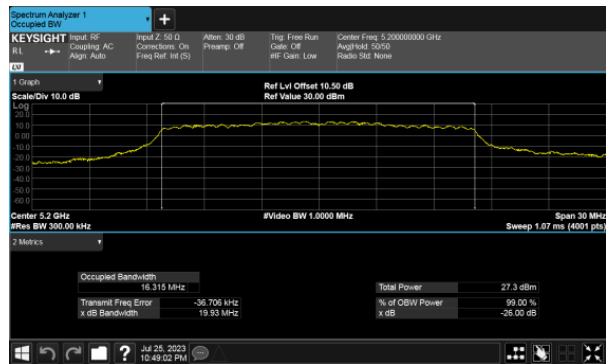
Modulation Type: 802.11a CH40
ANT C



ANT D



ANT D





26dB Bandwidth
Modulation Type: 802.11a CH48
ANT C

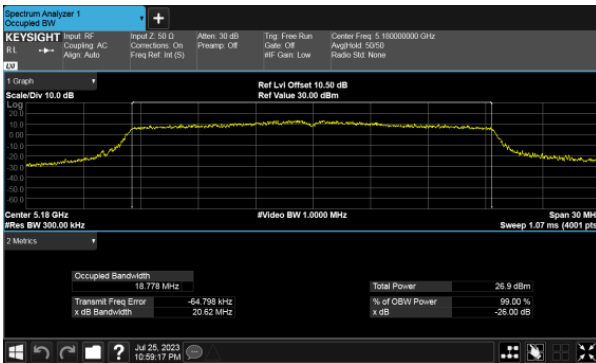


ANT D

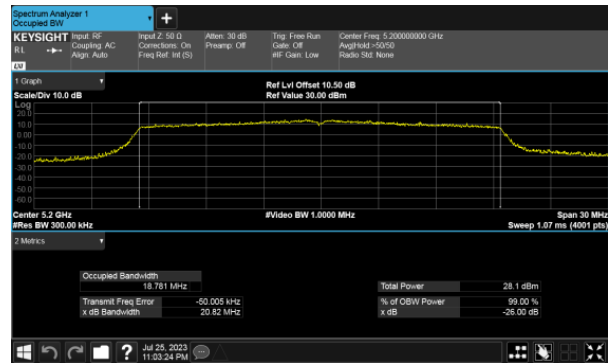




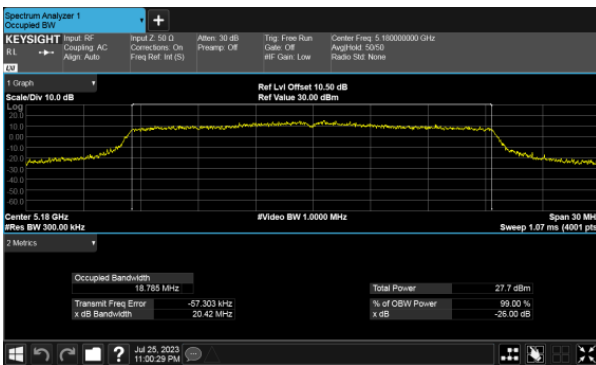
26dB Bandwidth
Modulation Type: 802.11ax HE20 CH36
ANT C



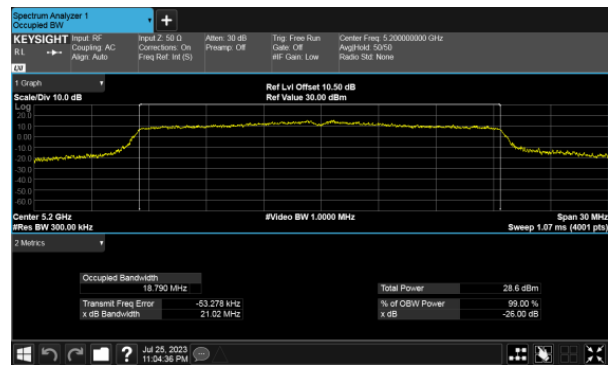
Modulation Type: 802.11ax HE20 CH40
ANT C



ANT D

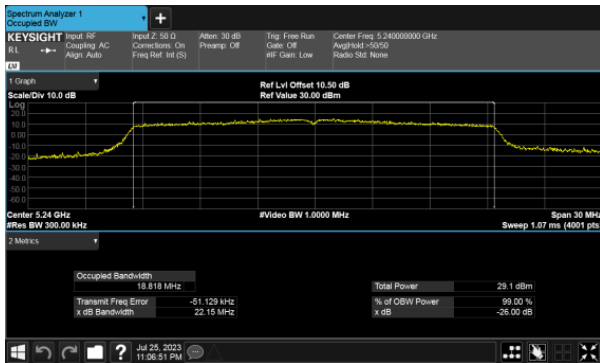


ANT D

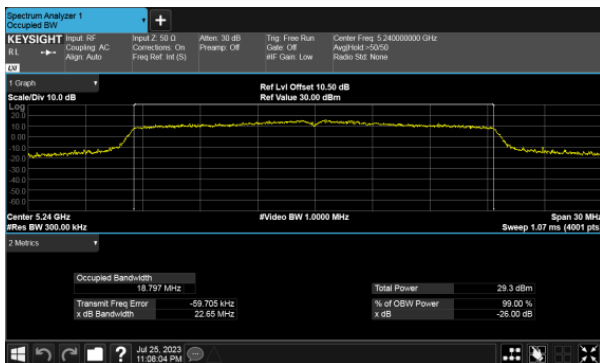




26dB Bandwidth
Modulation Type: 802.11ax HE20 CH48
ANT C



ANT D

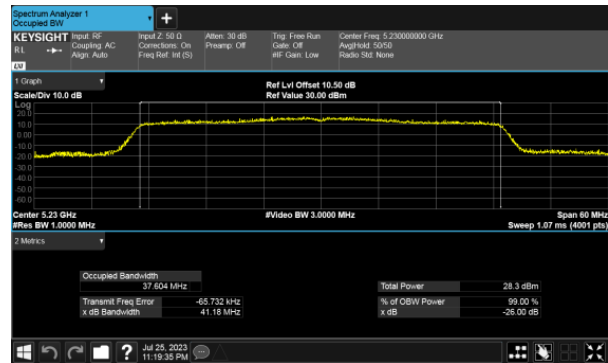




26dB Bandwidth
Modulation Type: 802.11ax HE40 CH38
ANT C



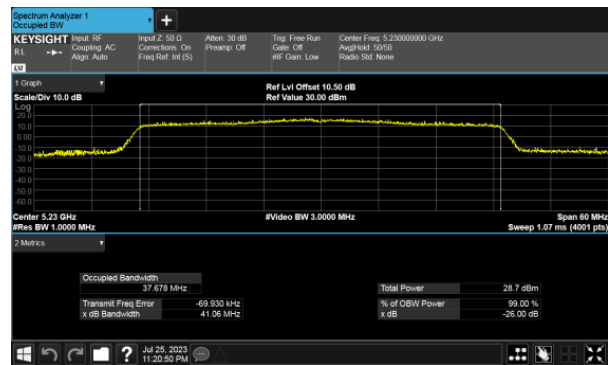
Modulation Type: 802.11ax HE40 CH46
ANT C



ANT D

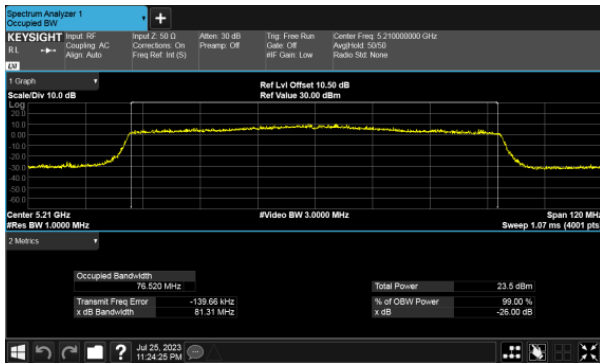


ANT D





26dB Bandwidth
Modulation Type: 802.11ax HE80 CH42
ANT C

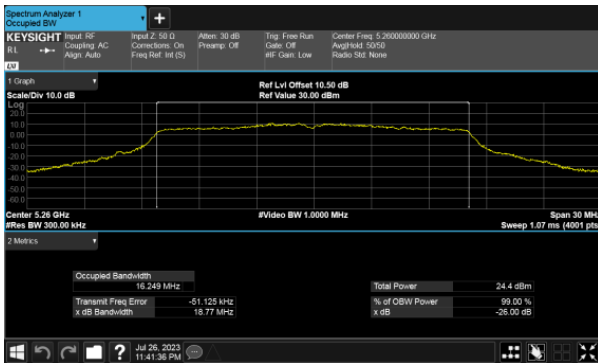


ANT D





26dB Bandwidth
Modulation Type: 802.11a CH52
ANT C



Modulation Type: 802.11a CH60
ANT C



ANT D

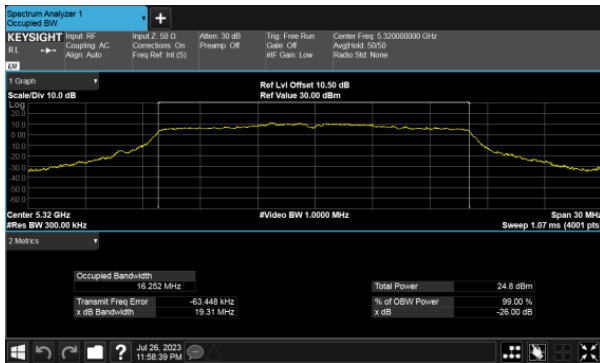


ANT D

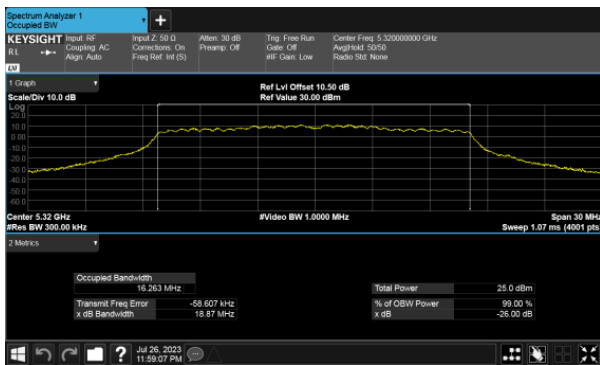




26dB Bandwidth
Modulation Type: 802.11a CH64
ANT C

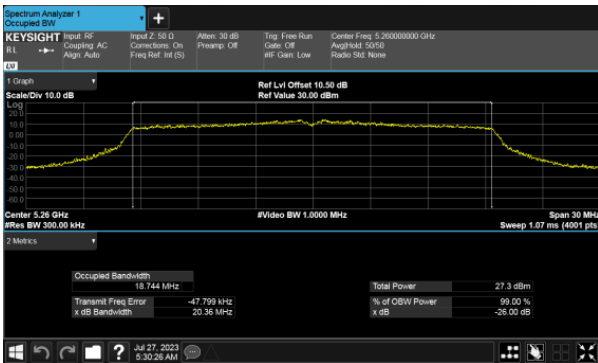


ANT D





26dB Bandwidth
Modulation Type: 802.11ax HE20 CH52
ANT C



Modulation Type: 802.11ax HE20 CH60
ANT C



ANT D

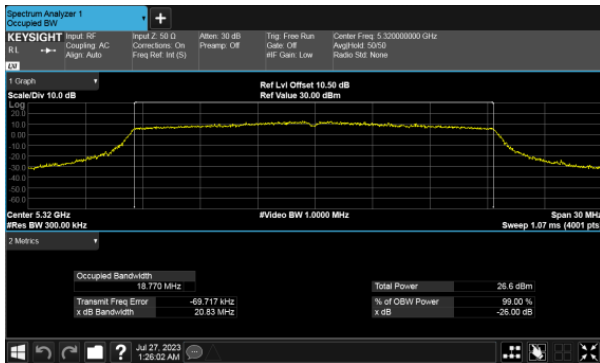


ANT D





26dB Bandwidth
Modulation Type: 802.11ax HE20 CH64
ANT C



ANT D

