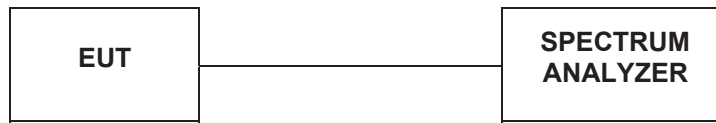


4.6. 6dB Bandwidth

TEST CONFIGURATION



TEST PROCEDURE

According to KDB789033 D02 General UNII Test Procedures New Rules v01 for one of the following procedures may be used for section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- a. Set RBW = 100 kHz.
- b. Set the video bandwidth (VBW) $\geq 3 \times$ RBW
- c. Detector = Peak.
- d. Trace mode = max hold.
- e. Sweep = auto couple.
- f. Allow the trace to stabilize
- g. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

LIMIT

For Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz

TEST RESULTS

Antenna 0:

Type	Channel	99%Bandwidth (MHz)	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	149	16.996	15.160	≥500	Pass
	157	17.006	12.960		
	165	16.929	15.200		
802.11nHT20	149	18.091	15.480	≥500	Pass
	157	18.079	15.360		
	165	18.102	15.520		
802.11ac20	149	18.105	35.280	≥500	Pass
	157	18.061	35.280		
	165	18.037	15.160		
802.11n40	151	36.361	15.080	≥500	Pass
	159	36.391	15.160		
802.11ac40	151	36.342	35.280	≥500	Pass
	159	36.350	35.280		
802.11ac80	155	75.582	75.360	≥500	Pass

Antenna 1:

Type	Channel	99%Bandwidth (MHz)	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	149	17.109	15.120	≥500	Pass
	157	16.999	15.200		
	165	16.921	15.120		
802.11nHT20	149	18.087	15.200	≥500	Pass
	157	18.084	15.760		
	165	18.016	15.200		
802.11ac20	149	18.112	35.280	≥500	Pass
	157	18.114	35.280		
	165	18.016	15.160		
802.11n40	151	36.345	15.360	≥500	Pass
	159	36.363	15.200		
802.11ac40	151	36.311	35.280	≥500	Pass
	159	36.399	35.280		
802.11ac80	155	75.558	75.360	≥500	Pass

Antenna 0:

99%Bandwidth

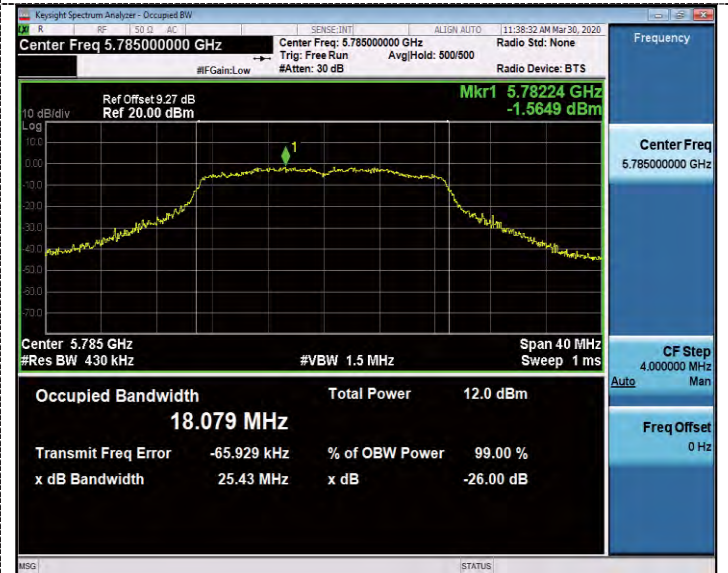
802.11a

802.11n HT20



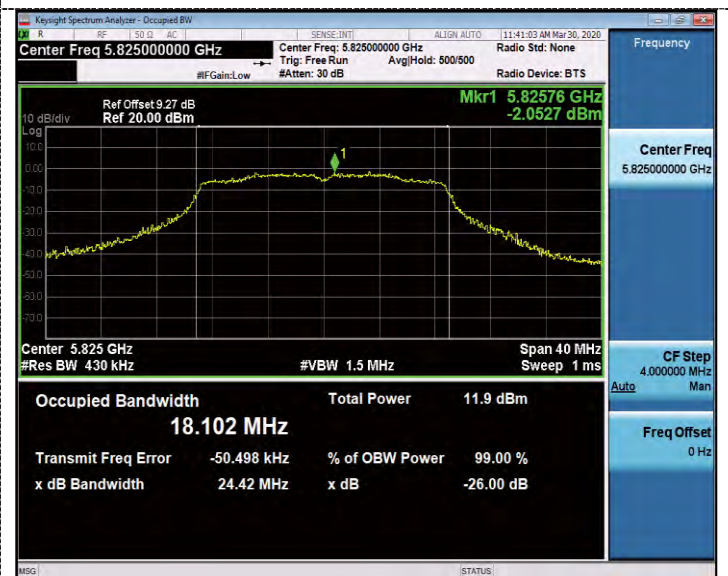
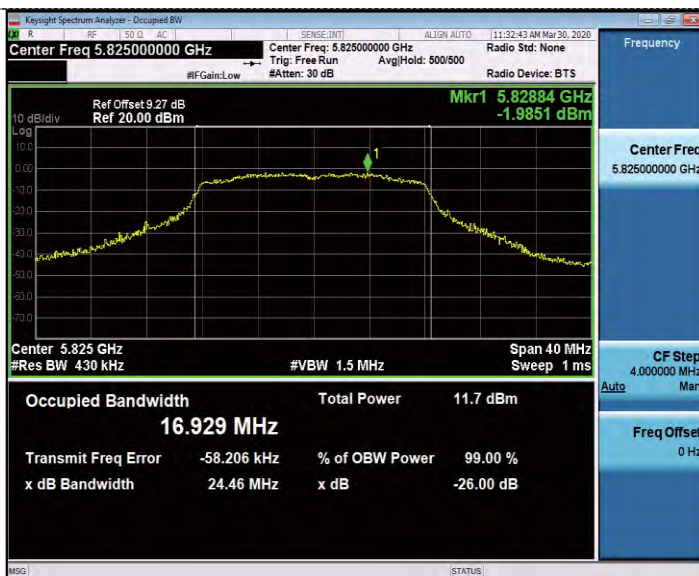
CH149

CH149



CH157

CH157

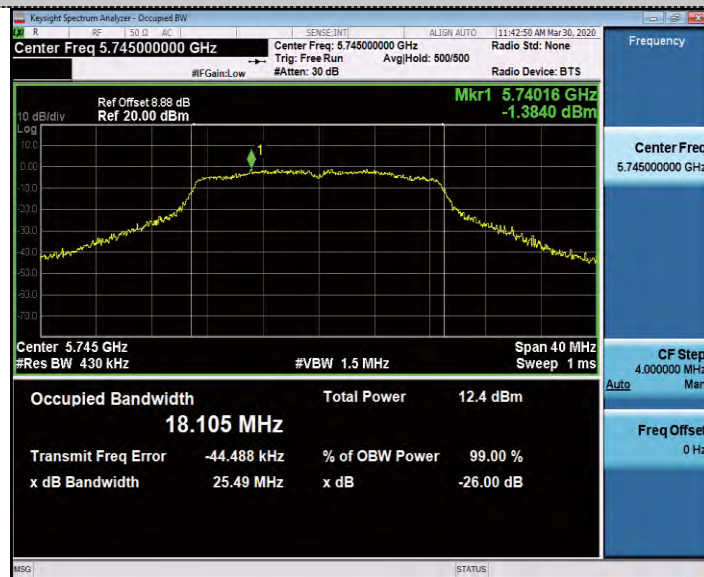


CH165

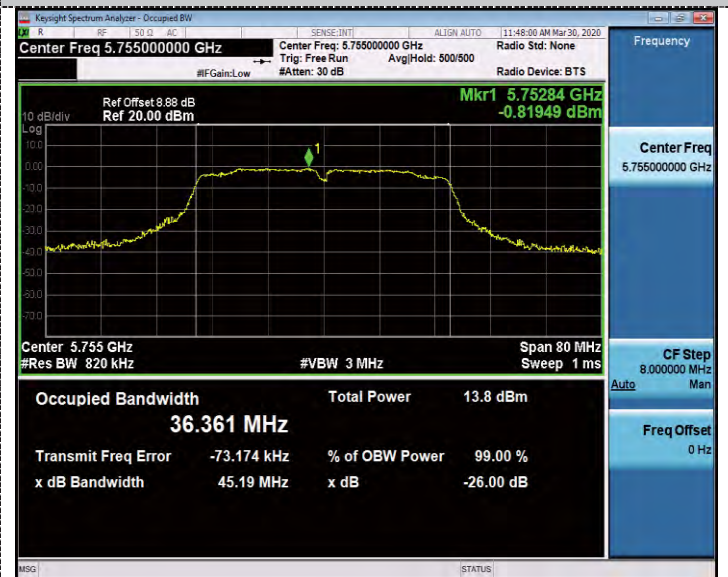
CH165

99%Bandwidth

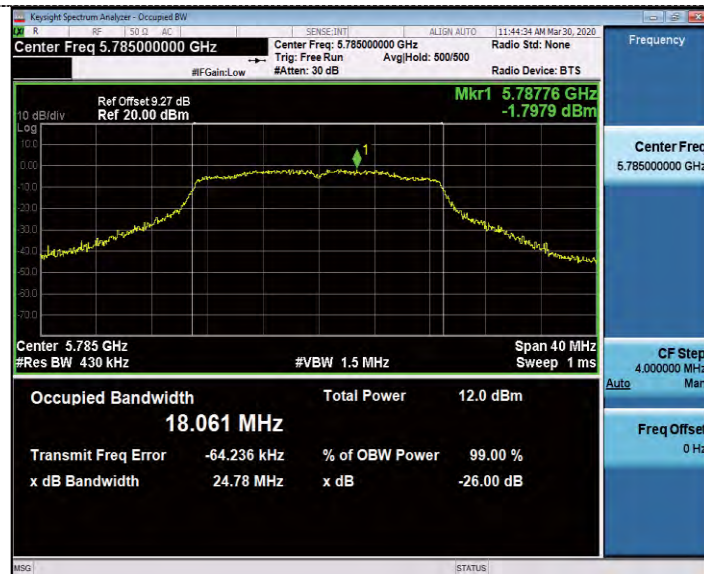
802.11ac20



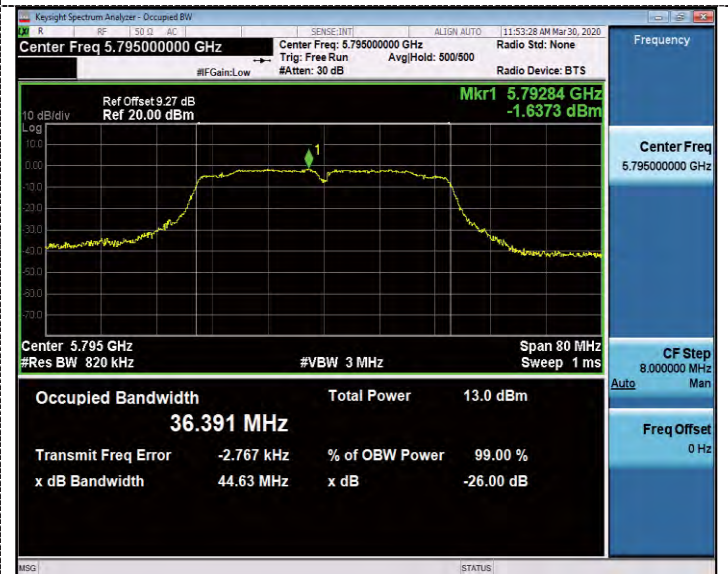
802.11n HT40



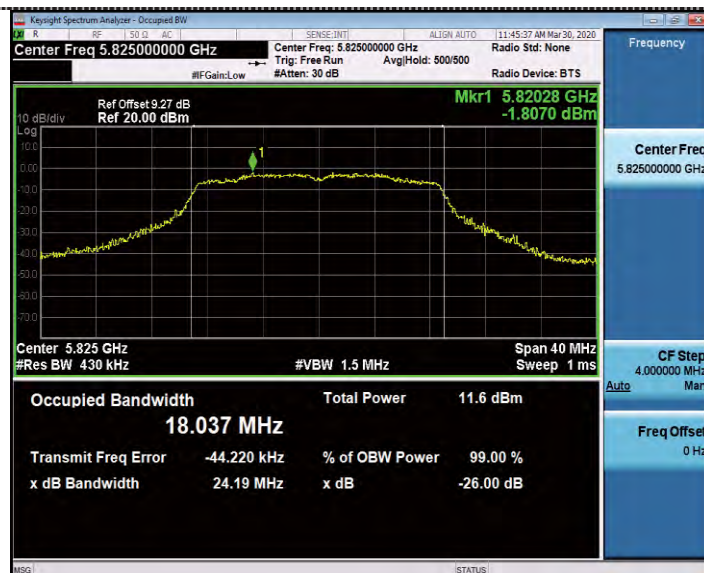
CH149



CH151



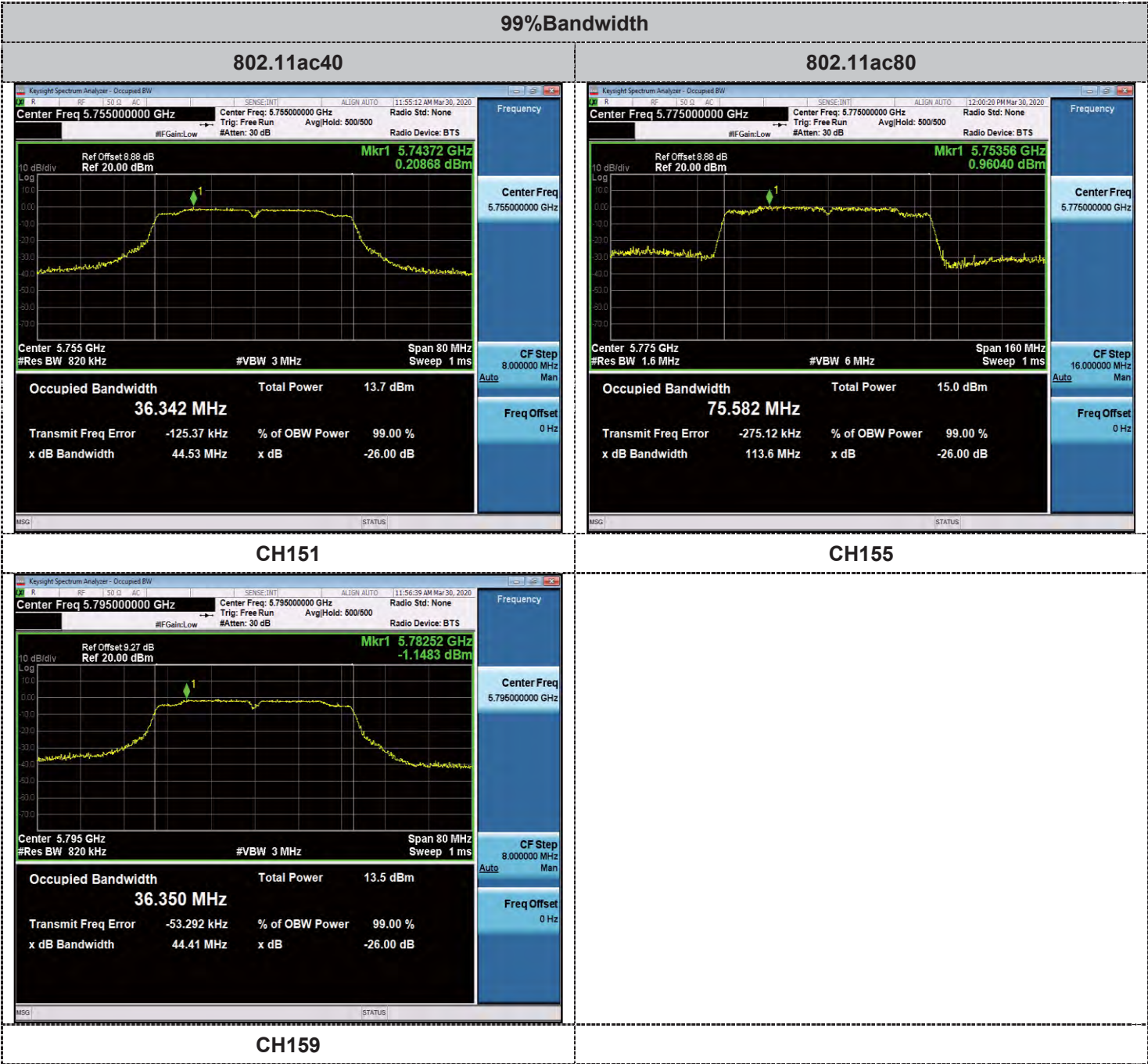
CH157



CH159



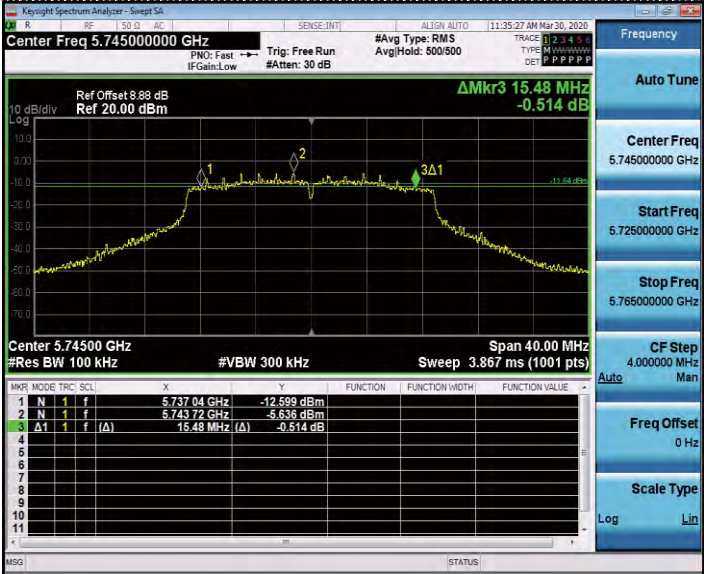
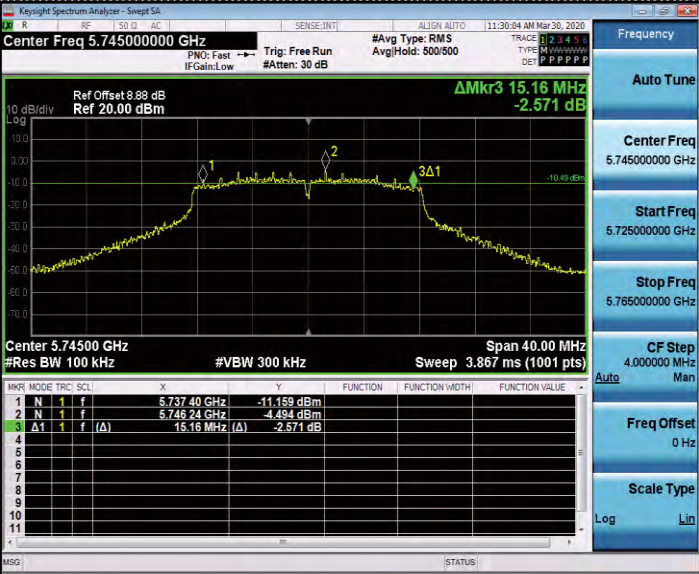
CH165



6dB Bandwidth

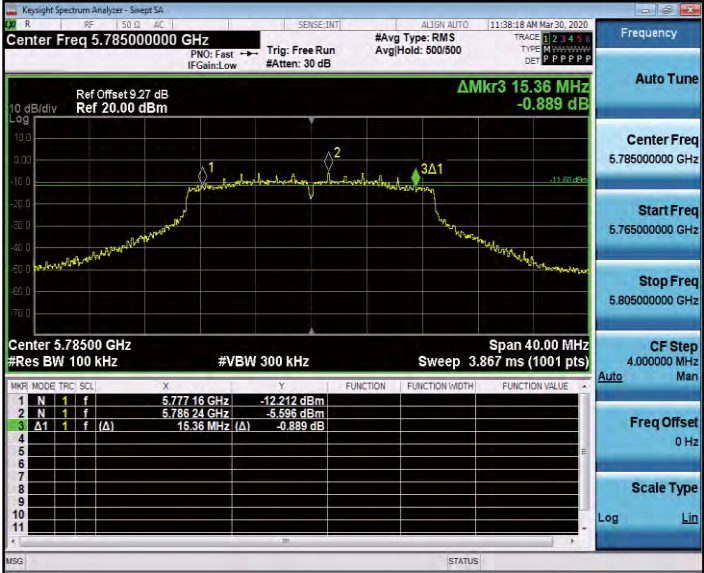
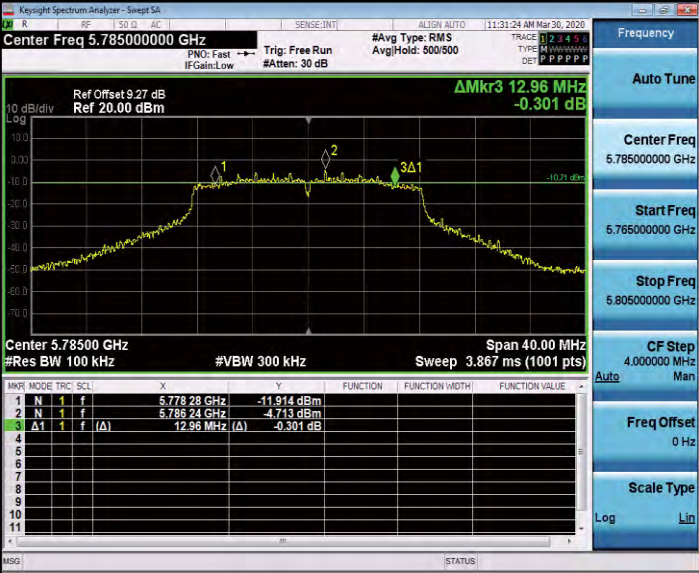
802.11a

802.11n HT20



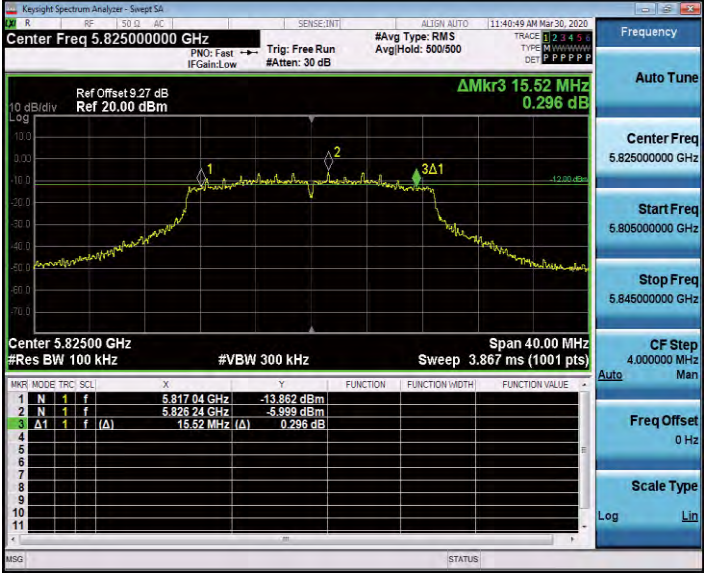
CH149

CH149



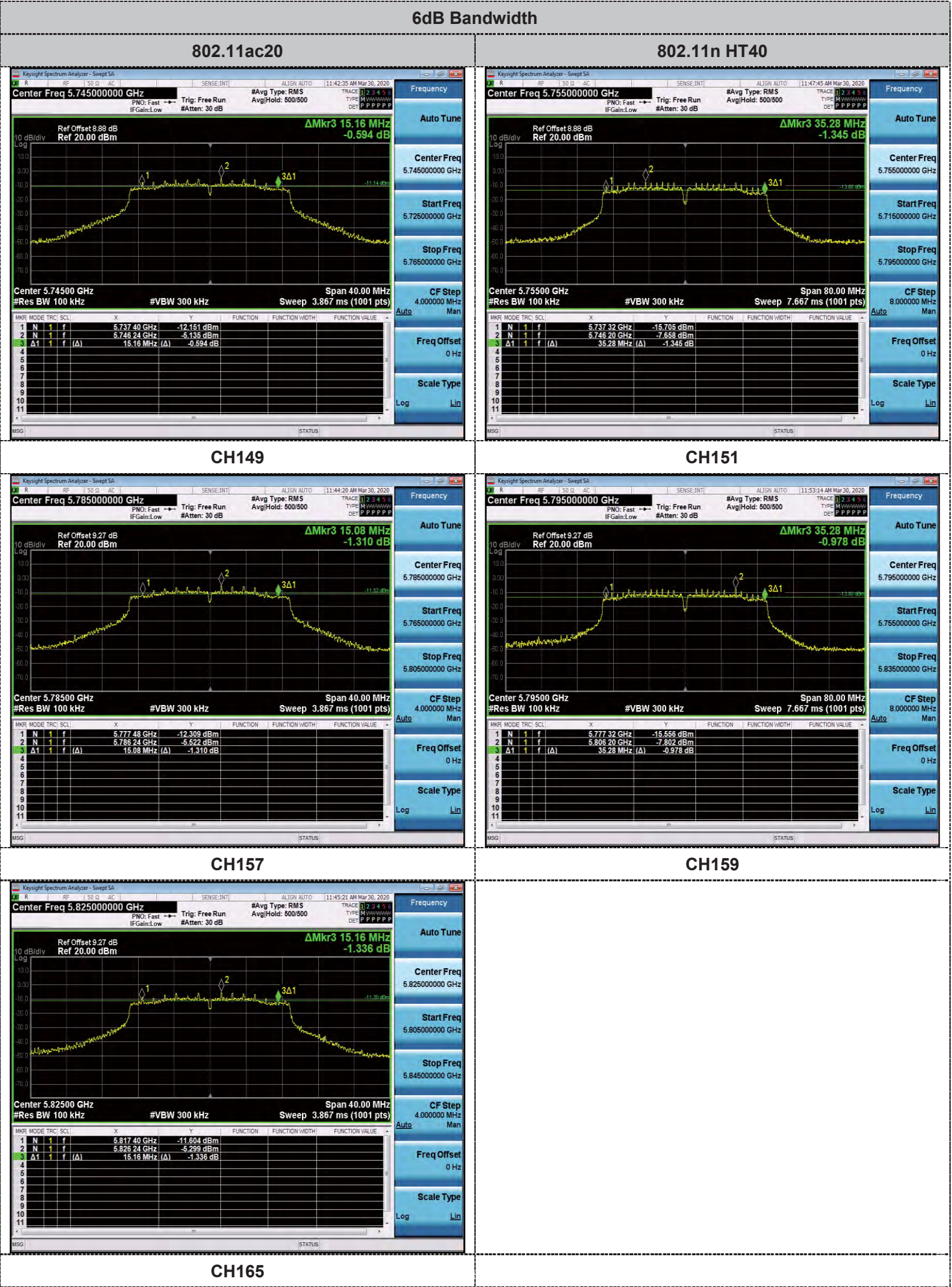
CH157

CH157



CH165

CH165



CH157

KeySight Spectrum Analyzer - Sweep SA

Center Freq 5.825000000 GHz

Ref Offset 9.27 dB
Ref 20.00 dBm

ΔMkr3 15.16 MHz
-1.336 dB

Auto Tune

Center Freq
5.825000000 GHz

Start Freq
5.805000000 GHz

Stop Freq
5.845000000 GHz

CF Step
4.0000000 MHz
Man

Freq Offset
0 Hz

Scale Type
Log Lin

Center 5.82500 GHz

#Res BW 100 kHz

#VBW 300 kHz

Span 40.00 MHz

Sweep 3.867 ms (1001 pts)

MNR MODE TRC SCL

1 N 1 f 5.817 40 GHz -11.604 dBm

2 N 1 f 5.826 24 GHz -5.299 dBm

3 Δ1 1 f (Δ) 15.16 MHz (Δ) -1.336 dB

4

5

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7

8

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10

11

MSG

STATUS

CH165

KeySight Spectrum Analyzer - Sweep SA

Center Freq 5.825000000 GHz

Ref Offset 9.27 dB
Ref 20.00 dBm

ΔMkr3 15.16 MHz
-1.336 dB

Auto Tune

Center Freq
5.825000000 GHz

Start Freq
5.805000000 GHz

Stop Freq
5.845000000 GHz

CF Step
4.0000000 MHz
Man

Freq Offset
0 Hz

Scale Type
Log Lin

Center 5.82500 GHz

#Res BW 100 kHz

#VBW 300 kHz

Span 40.00 MHz

Sweep 3.867 ms (1001 pts)

MNR MODE TRC SCL

1 N 1 f 5.817 40 GHz -11.604 dBm

2 N 1 f 5.826 24 GHz -5.299 dBm

3 Δ1 1 f (Δ) 15.16 MHz (Δ) -1.336 dB

4

5

6

7

8

9

10

11

MSG

STATUS

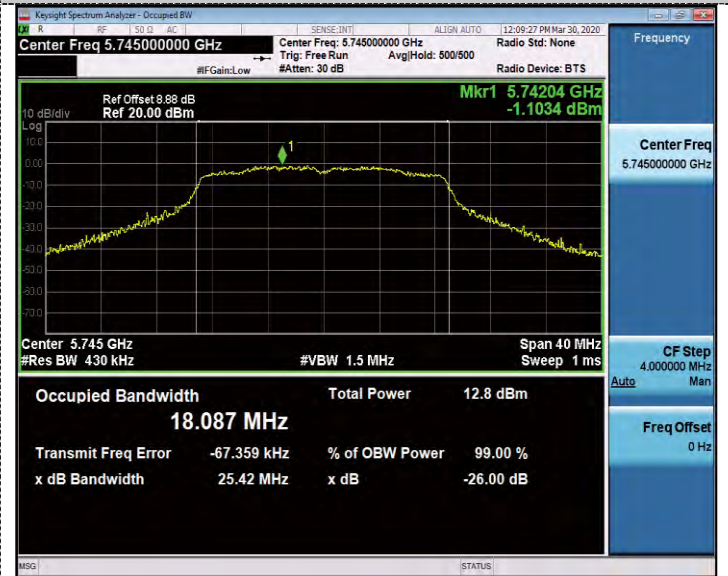
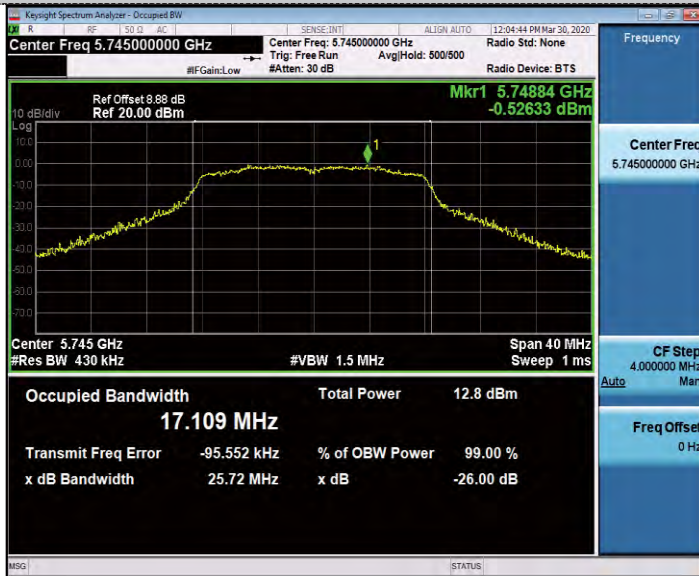


Antenna 1:

99%Bandwidth

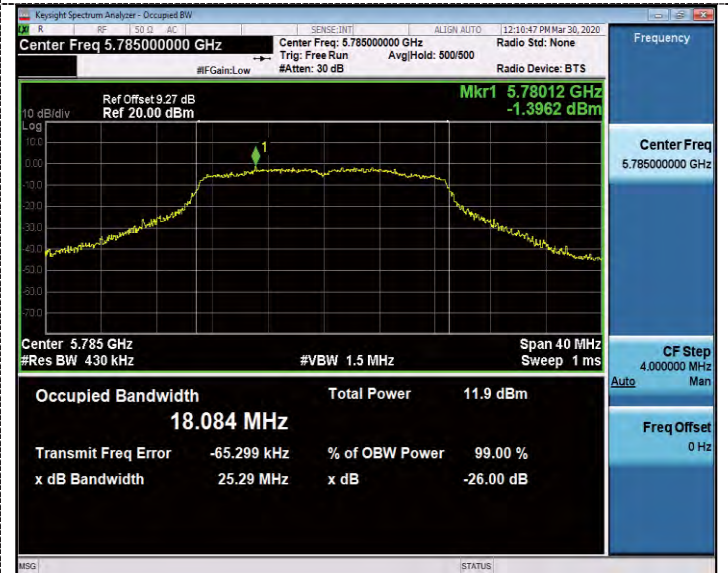
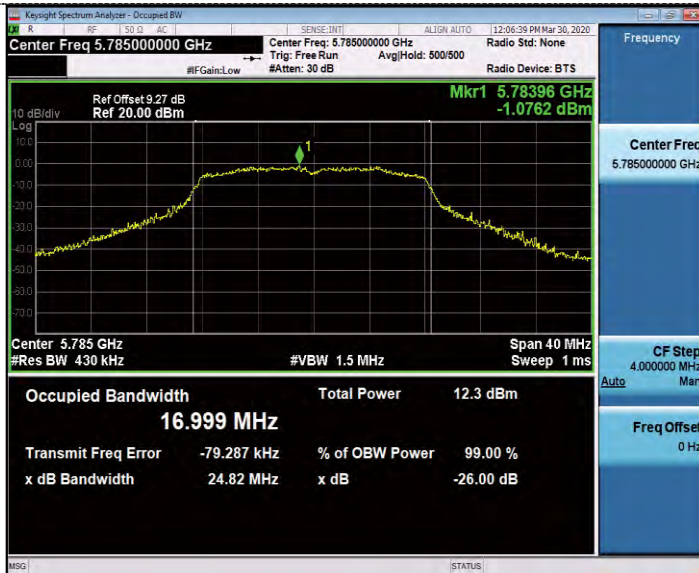
802.11a

802.11n HT20



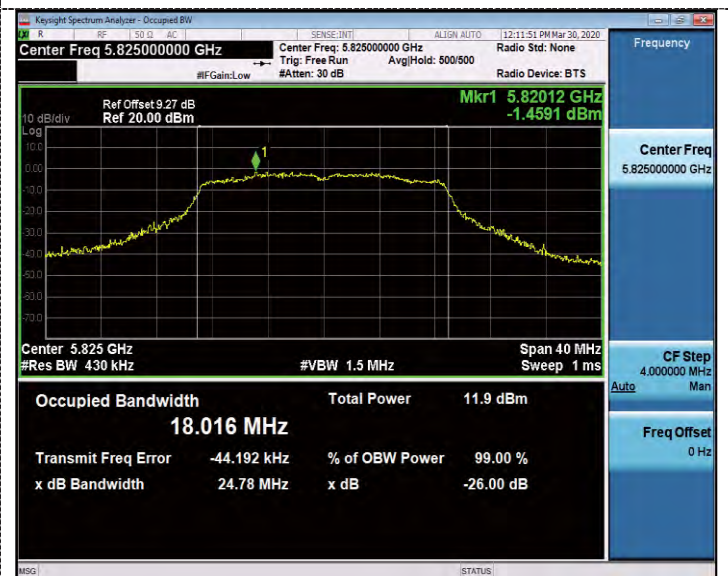
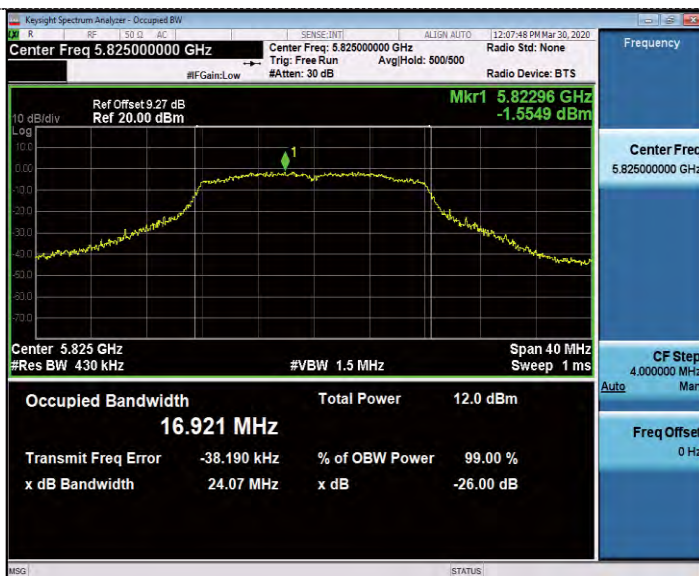
CH149

CH149



CH157

CH157

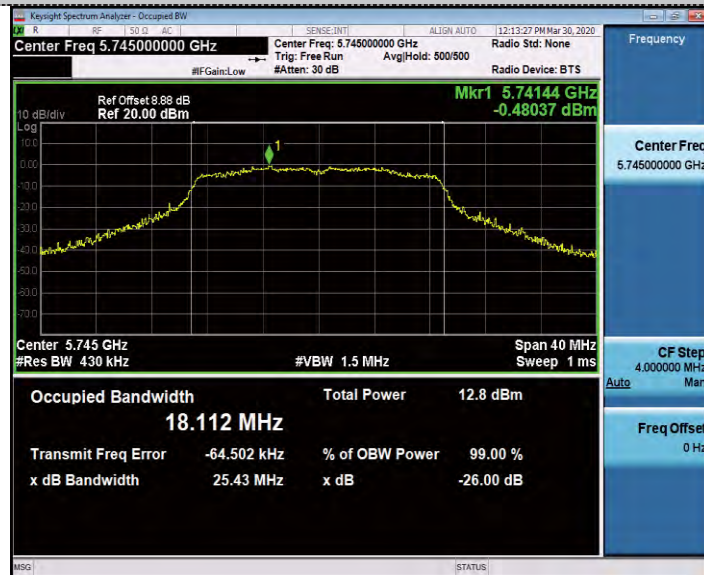


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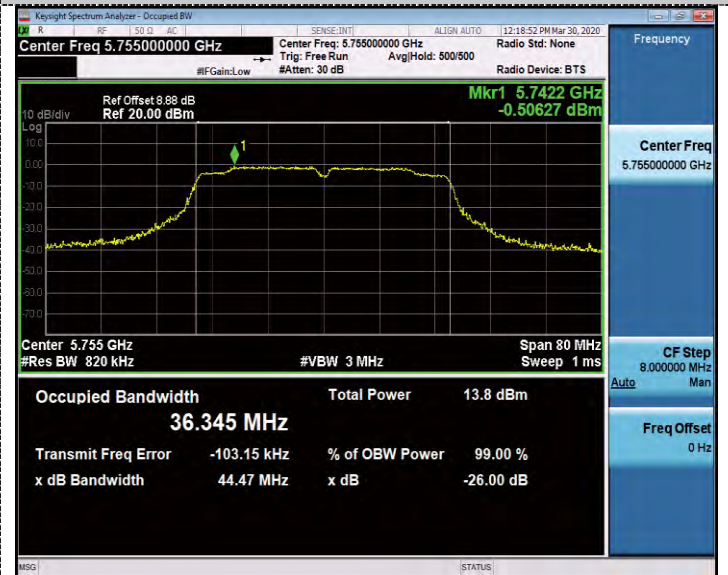
CH165

99%Bandwidth

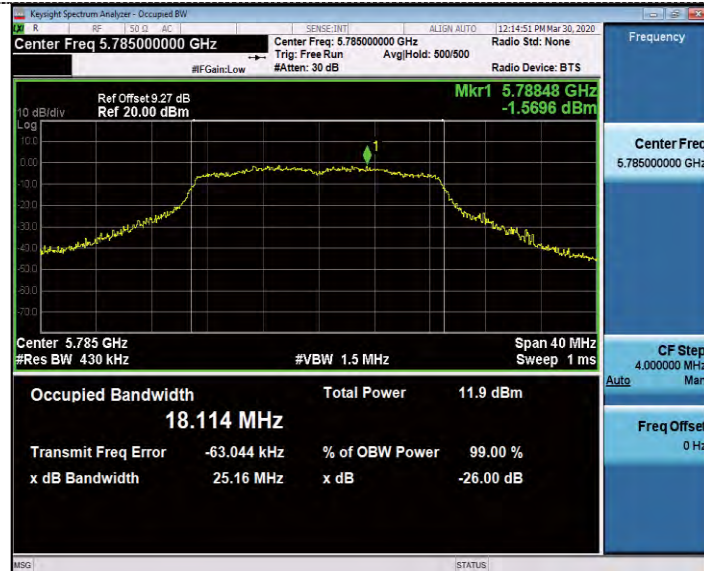
802.11ac20



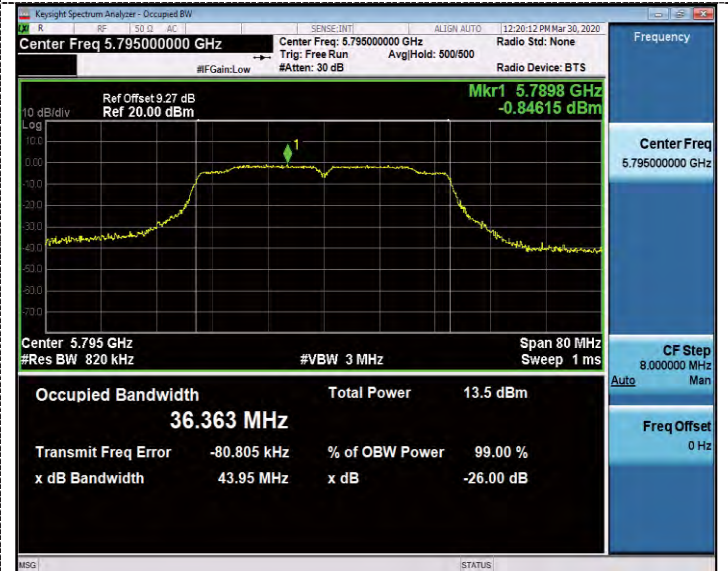
802.11n HT40



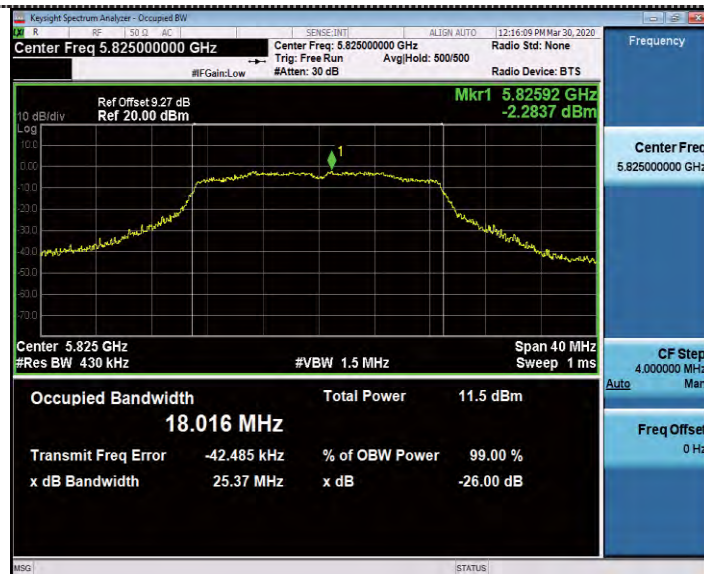
CH149



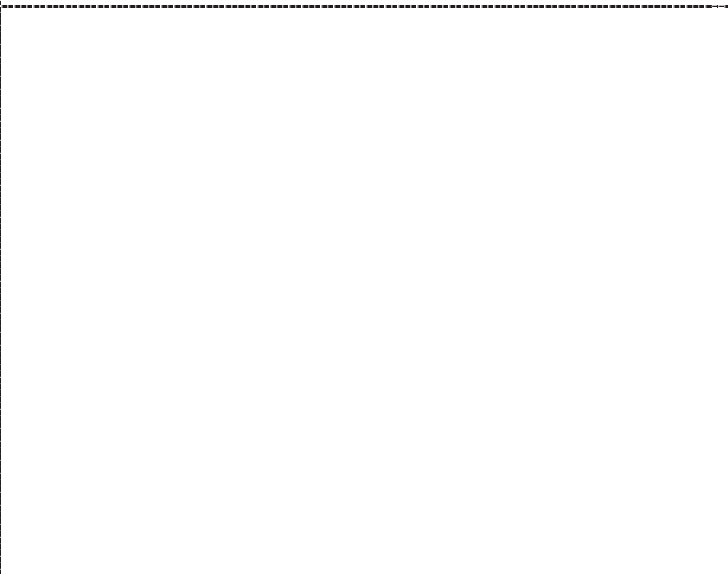
CH151



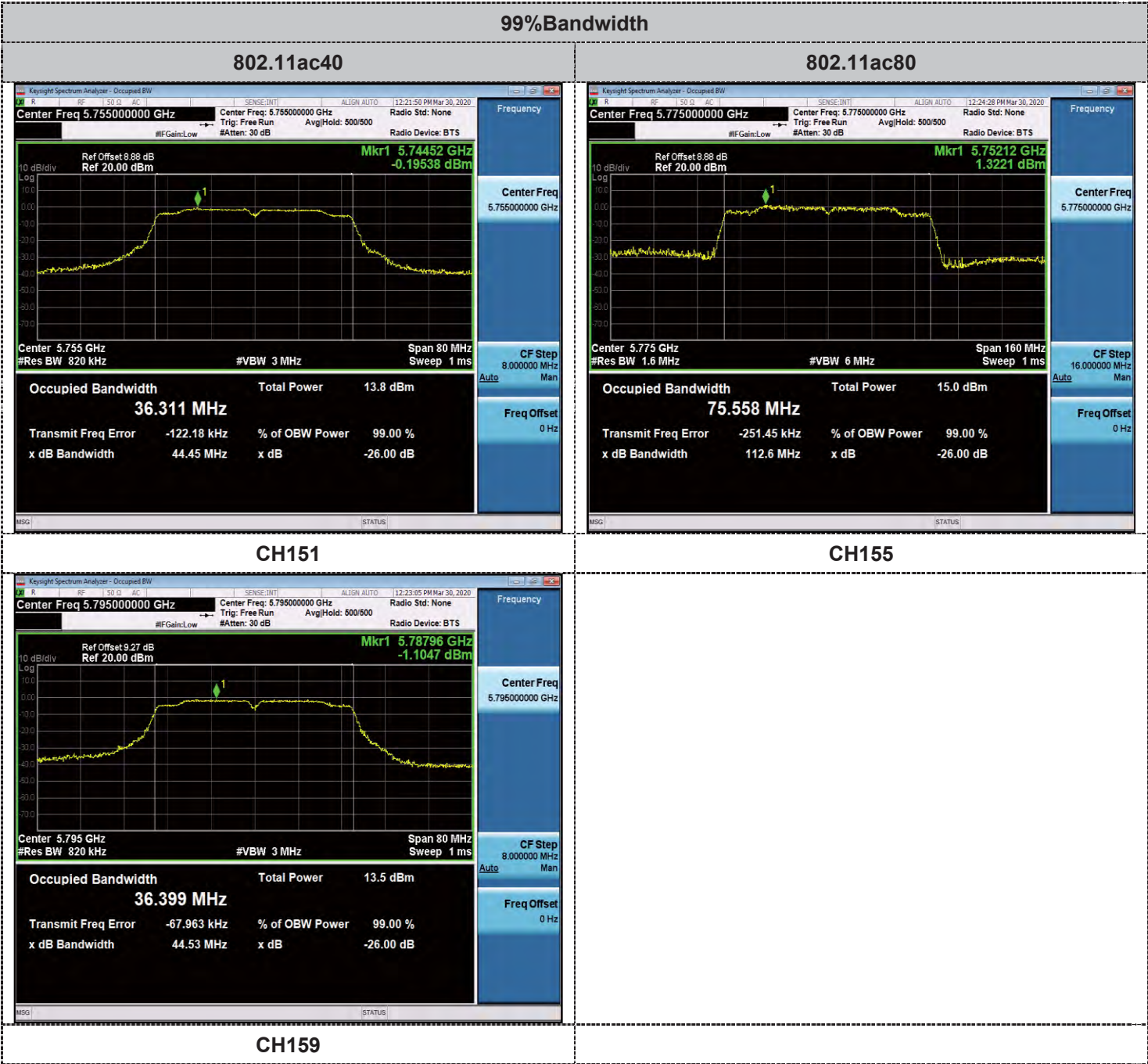
CH157



CH159



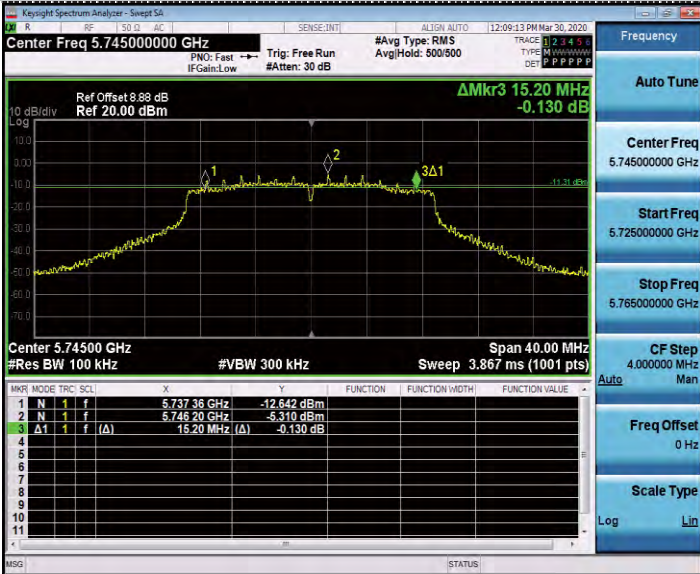
CH165



6dB Bandwidth

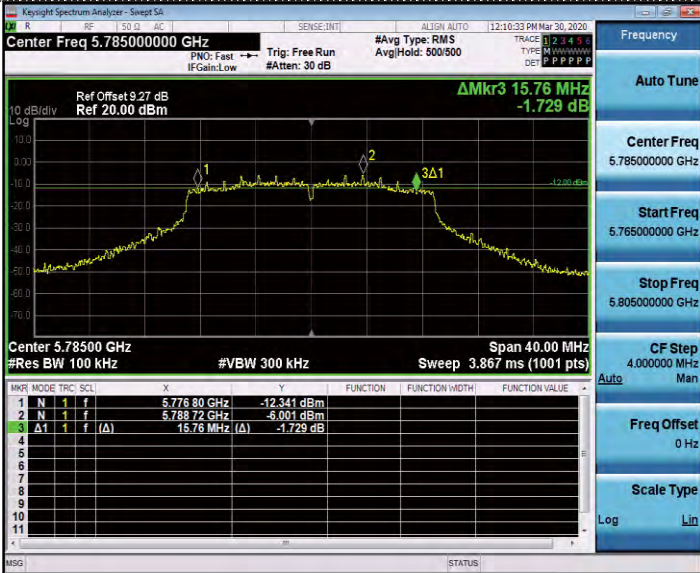
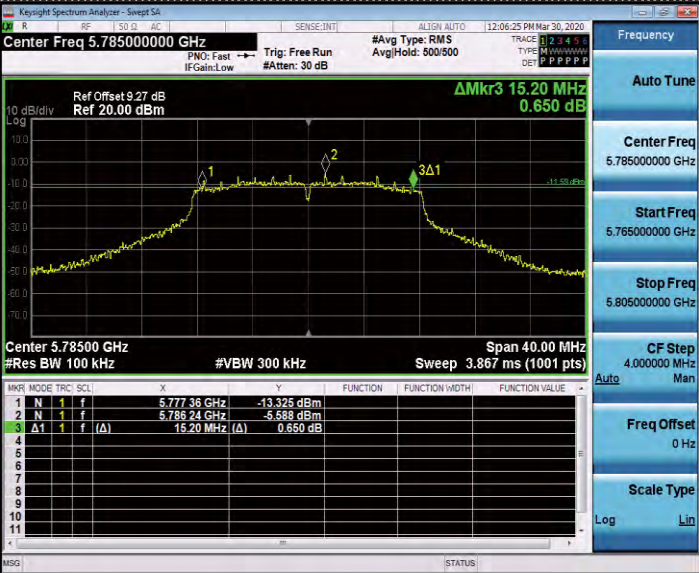
802.11a

802.11n HT20



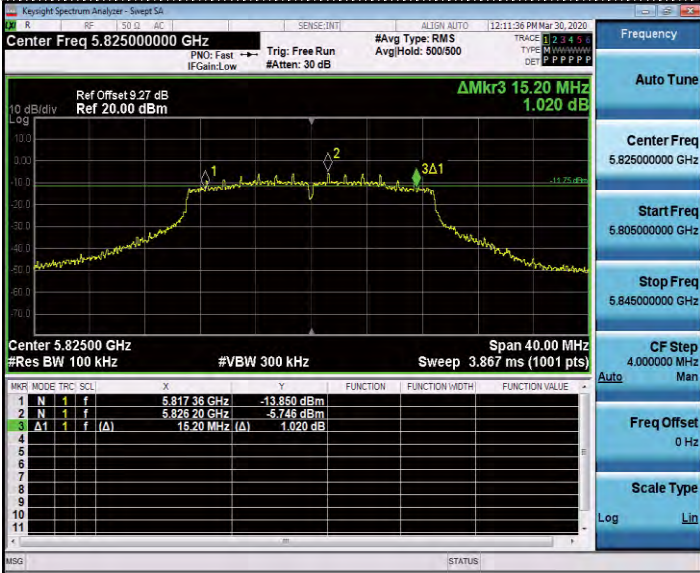
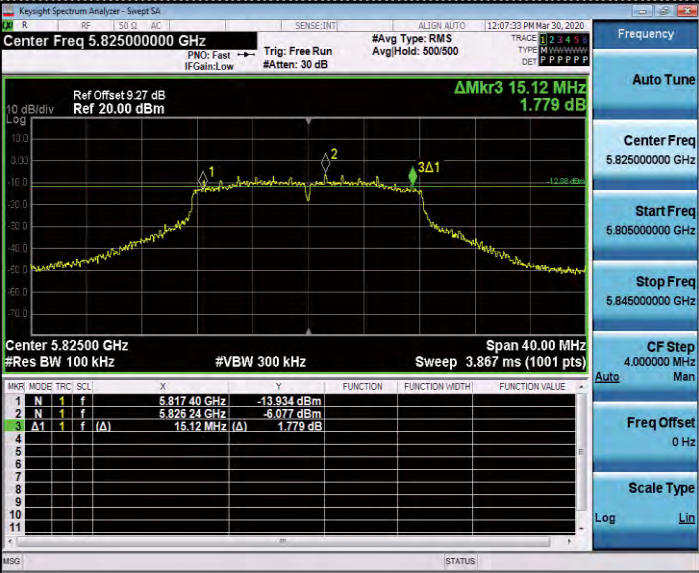
CH149

CH149



CH157

CH157



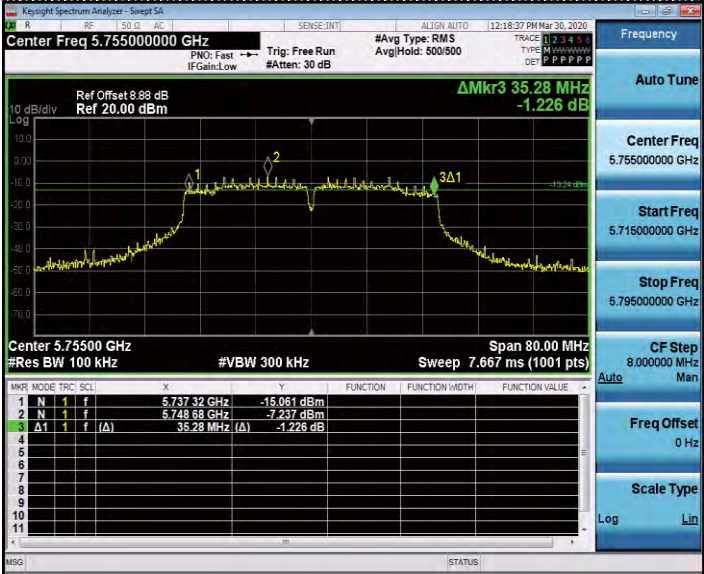
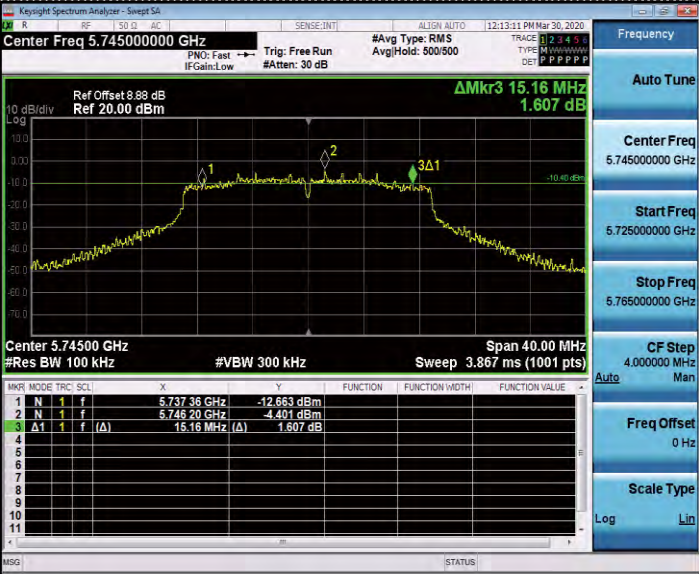
CH165

CH165

6dB Bandwidth

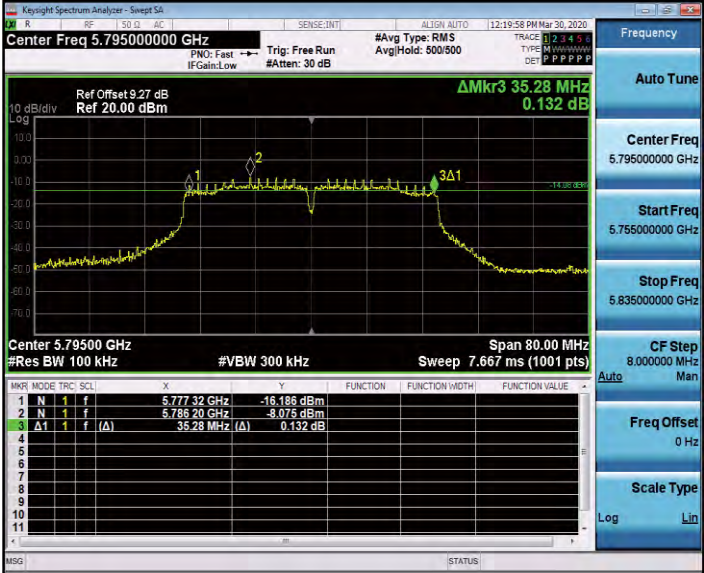
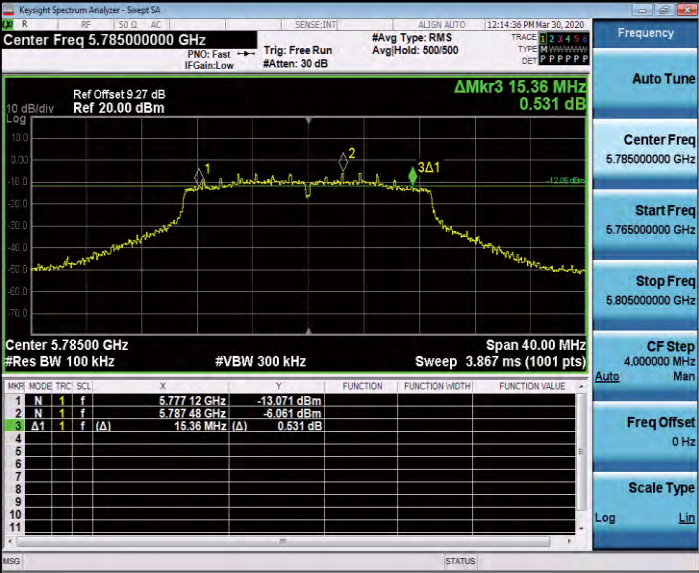
802.11ac20

802.11n HT40



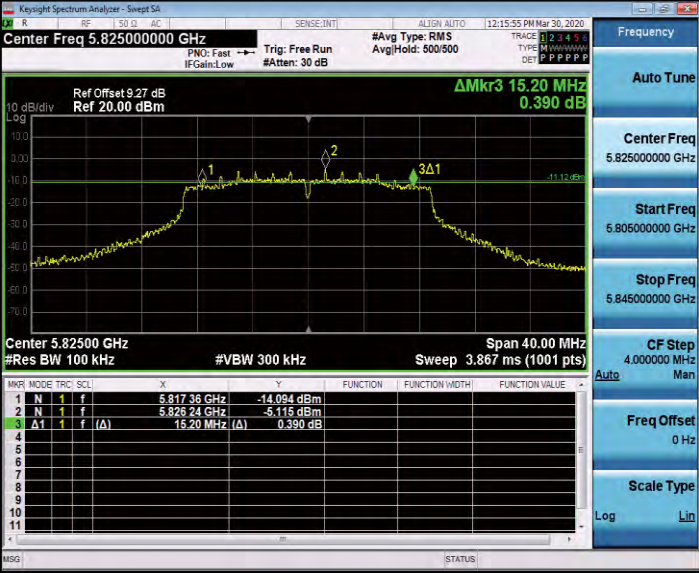
CH149

CH151



CH157

CH159

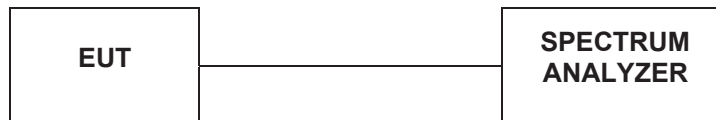


CH165



4.7. 26dBc Bandwidth

TEST CONFIGURATION



TEST PROCEDURE

According to KDB789033 D02 General UNII Test Procedures New Rules v01 for one of the following procedures may be used for Emission Bandwidth (EBW) measurement:

- a. Set RBW = 300 kHz (approximately 1% of the emission bandwidth).
- b. Set the video bandwidth (VBW) = 1000 KHz (VBW > RBW)
- c. Detector = Peak.
- d. Trace mode = max hold.
- e. Sweep = auto couple.
- f. Allow the trace to stabilize
- g. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

LIMIT

No Limits for 26dBc Bandwidth

TEST RESULTS

Antenna 0:

Type	Channel	99%Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	36	16.927	22.000	-	Pass
	40	16.928	22.520		
	48	16.929	23.120		
802.11nHT20	36	18.046	22.920	-	Pass
	40	18.002	23.880		
	48	18.070	23.840		
802.11ac20	36	18.026	42.480	-	Pass
	40	18.053	44.080		
	48	18.044	22.240		
802.11n40	38	36.241	23.360	-	Pass
	46	36.312	24.280		
802.11ac40	38	36.211	43.120	-	Pass
	46	36.303	42.480		
802.11ac80	155	75.257	81.440	-	Pass

Antenna 1:

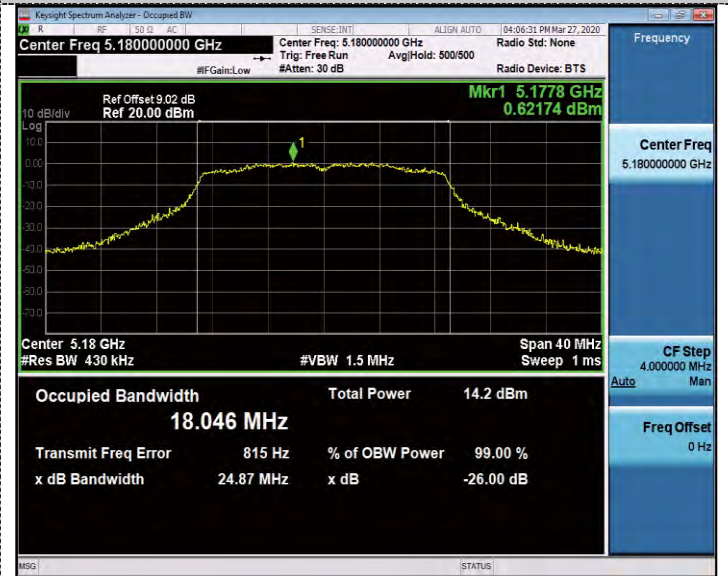
Type	Channel	99%Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	36	16.915	23.240	-	Pass
	40	16.924	22.880		
	48	16.988	23.320		
802.11nHT20	36	18.032	22.080	-	Pass
	40	18.045	23.040		
	48	18.089	24.160		
802.11ac20	36	18.045	41.760	-	Pass
	40	18.036	44.240		
	48	18.115	23.000		
802.11n40	38	36.222	23.280	-	Pass
	46	36.272	23.120		
802.11ac40	38	36.287	42.720	-	Pass
	46	36.283	42.720		
802.11ac80	155	75.259	81.440	-	Pass

Antenna 0:

99%Bandwidth

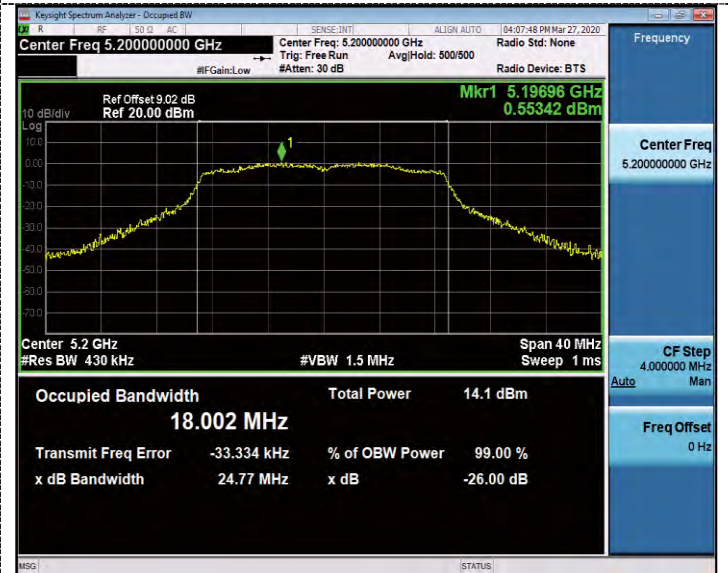
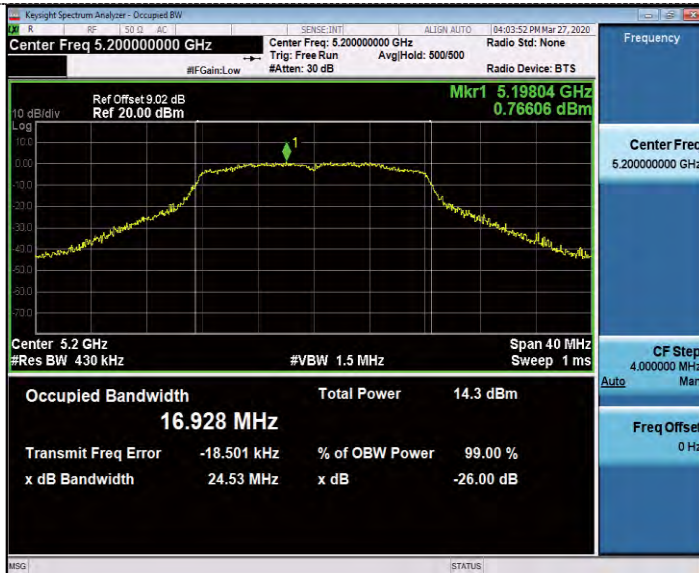
802.11a

802.11n HT20



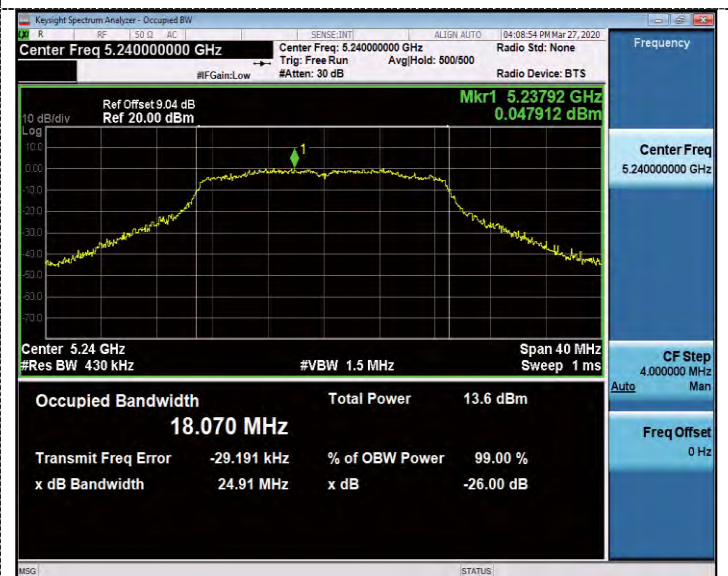
CH36

CH36



CH40

CH40

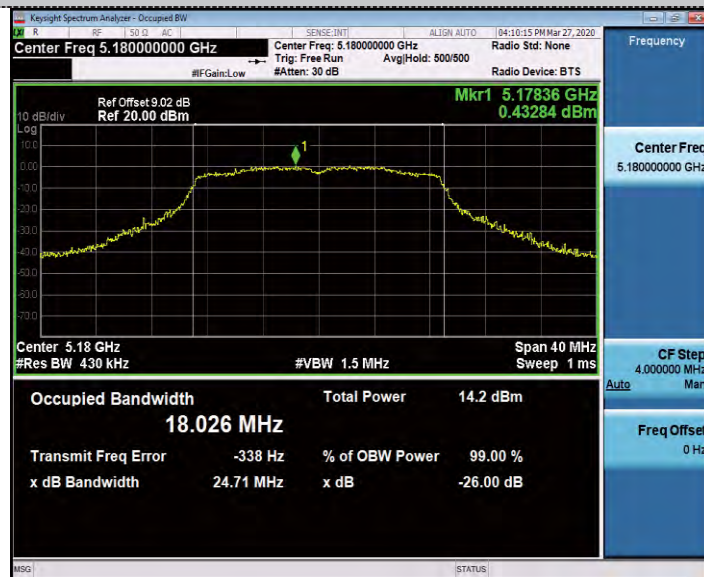


CH48

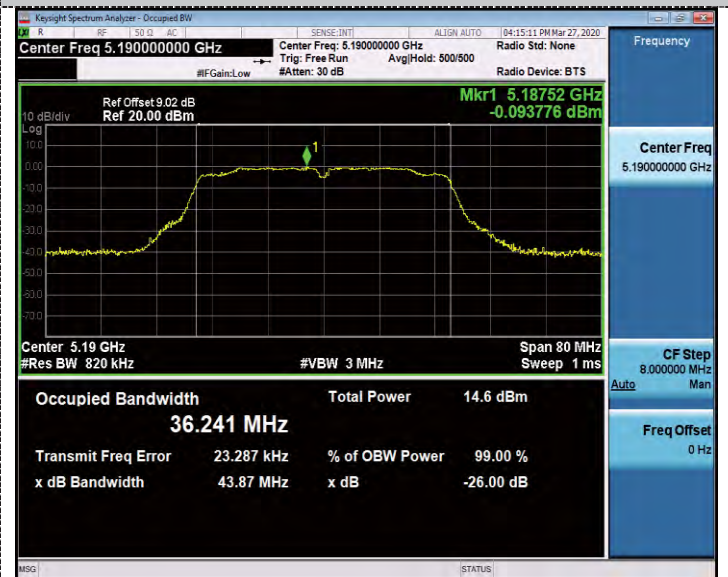
CH48

99%Bandwidth

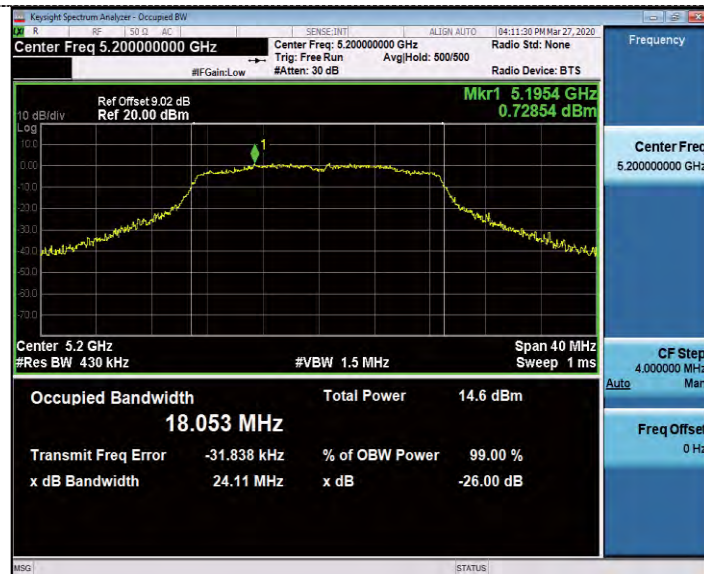
802.11ac20



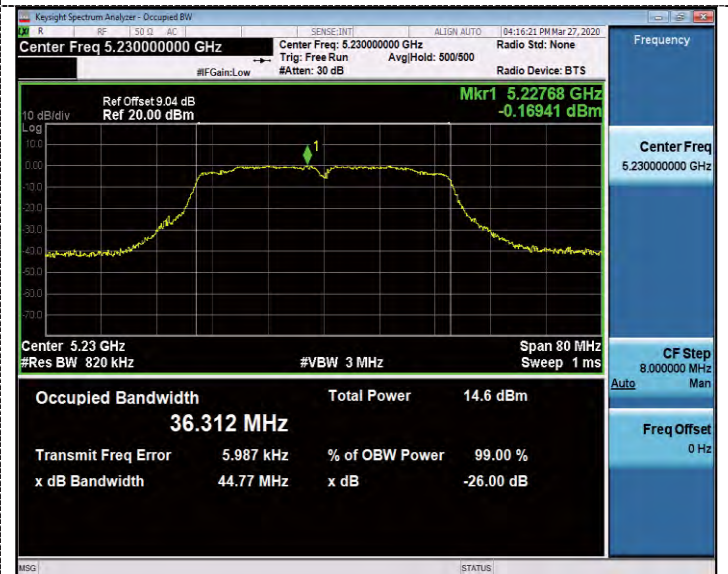
802.11n HT40



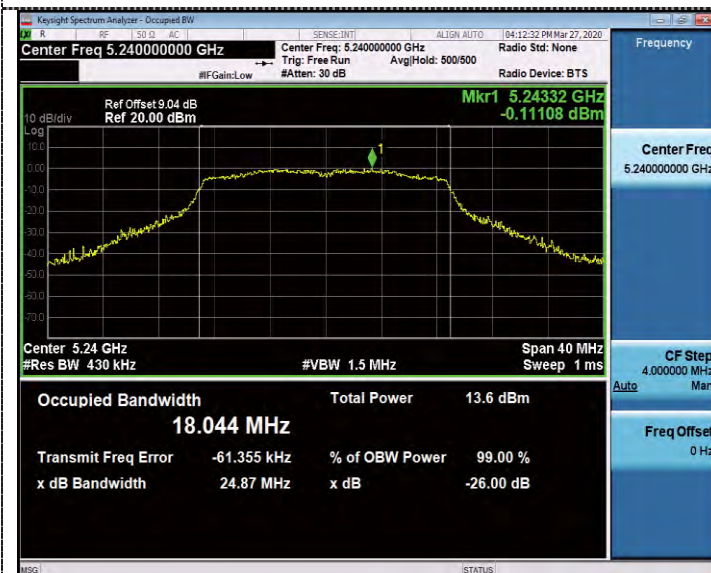
CH36



CH38



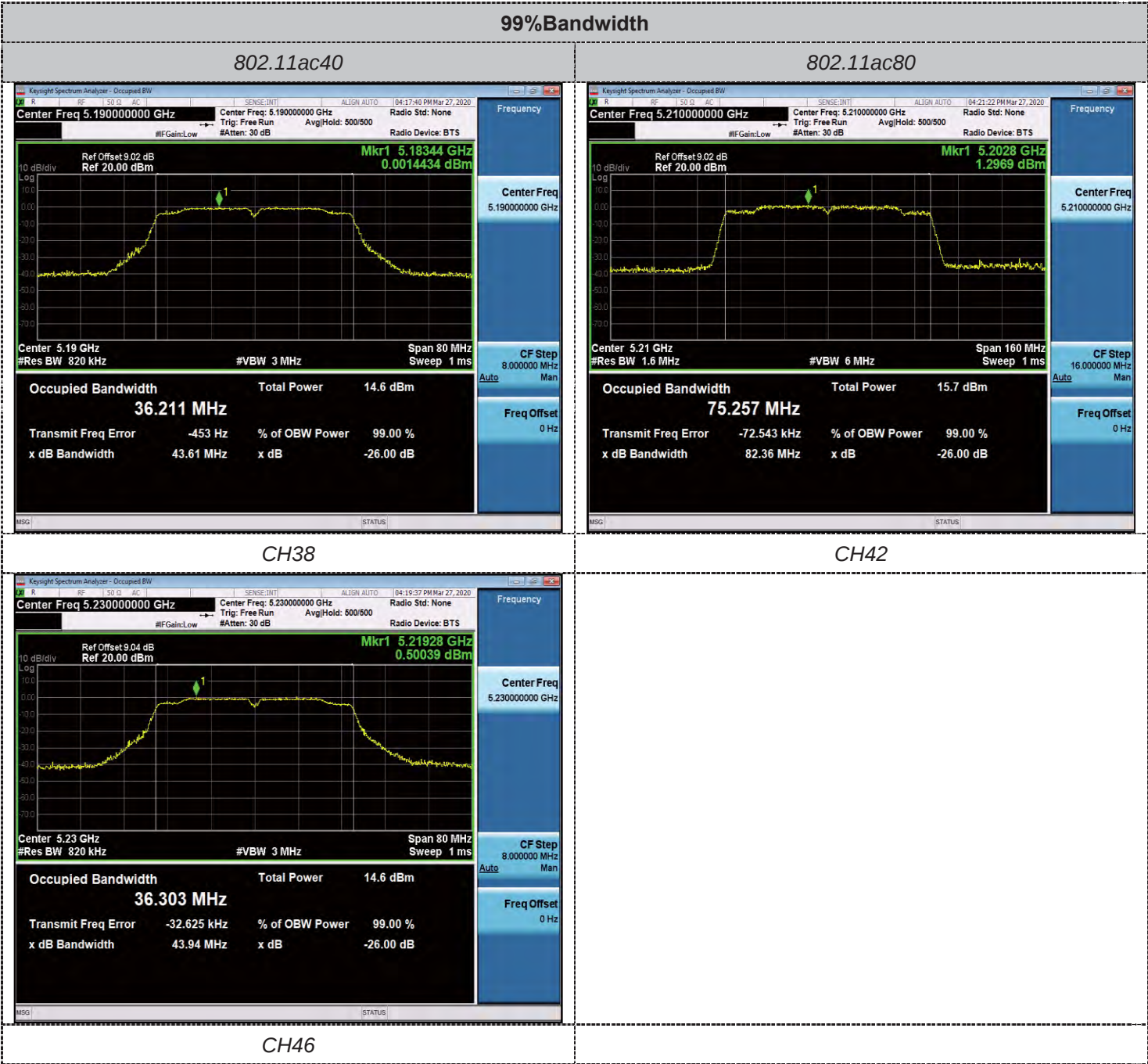
CH40



CH46

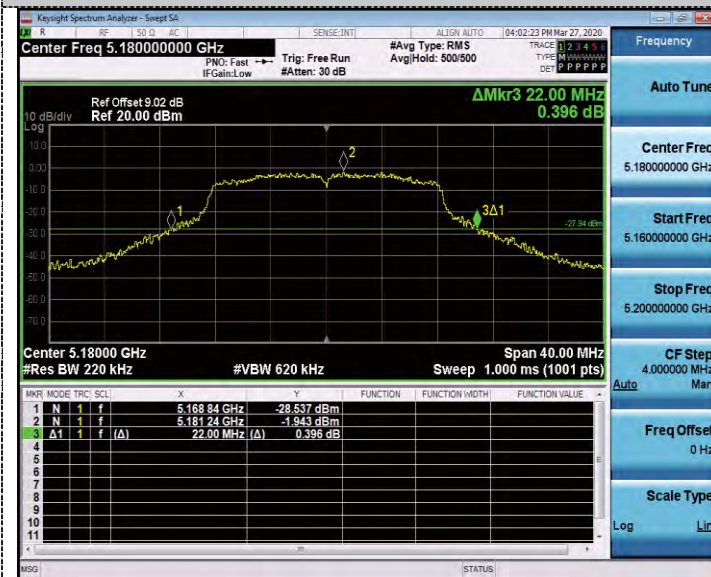


CH48

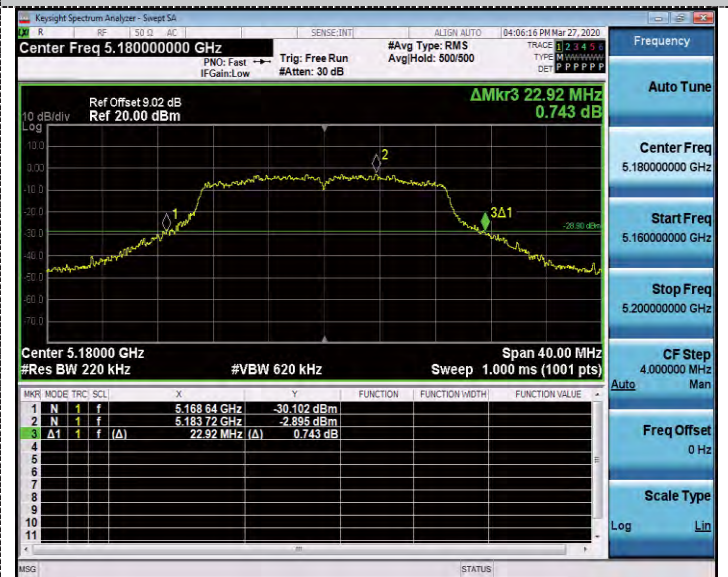


26dB Bandwidth

802.11a



802.11n HT20



CH36



CH36



CH40



CH40



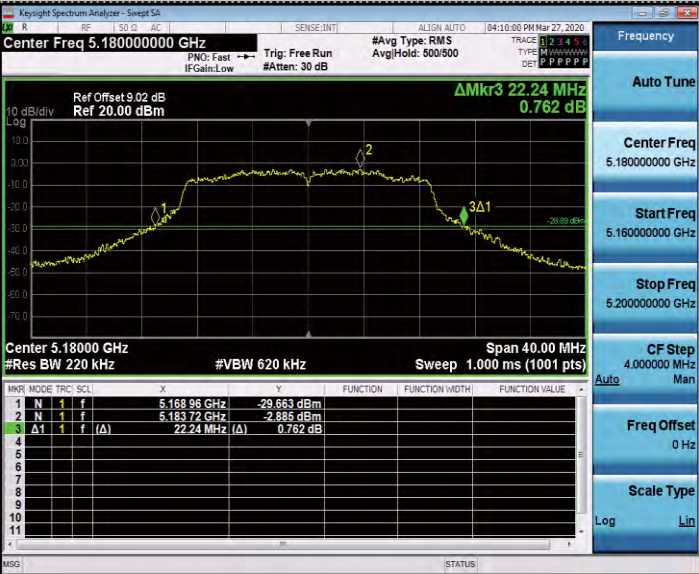
CH48

CH48

26dB Bandwidth

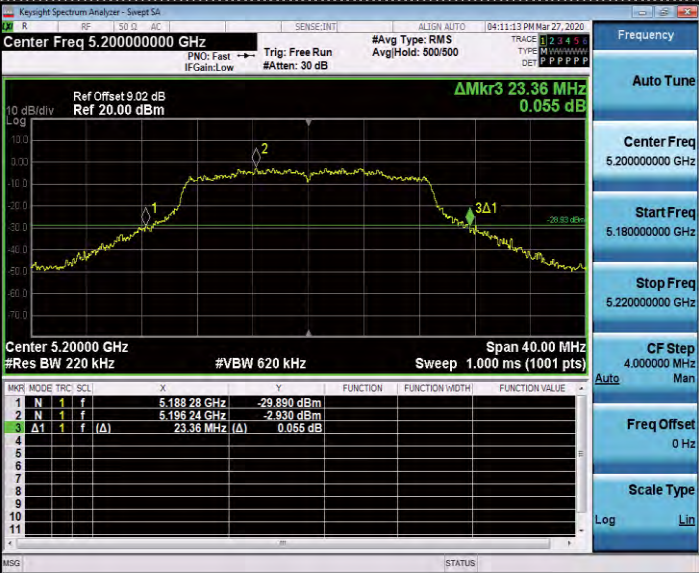
802.11ac20

802.11n HT40



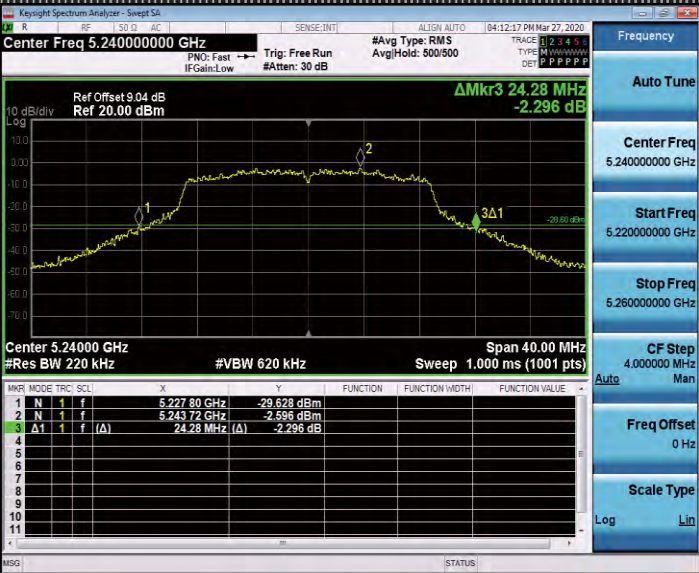
CH36

CH38



CH40

CH46



CH48

