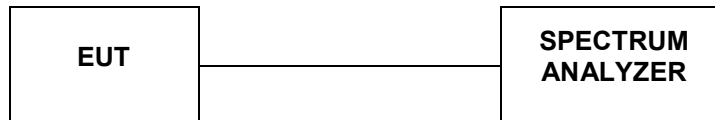


4.6. 6dB Bandwidth

TEST CONFIGURATION



TEST PROCEDURE

According to KDB789033 D02 General U-NII Test Procedures New Rules v02r01 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:

- Set RBW = 100 kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Allow the trace to stabilize
- 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

Temperature	23.6°C	Humidity	55.7%
Test Engineer	Oliver Ou	Configurations	IEEE 802.11a/n/ac

Antenna 0:

Type	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	149	16.600	>500	Pass
	157	16.560		
	165	16.600		
802.11nHT20	149	17.760	>500	Pass
	157	17.760		
	165	17.760		
802.11n40	151	36.640	>500	Pass
	159	36.640		
802.11ac20	149	17.800	>500	Pass
	157	17.800		
	165	17.760		
802.11ac40	151	36.720	>500	Pass
	159	36.640		
802.11ac80	155	76.480	>500	Pass

Antenna 1:

Type	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	149	16.560	>500	Pass
	157	16.600		
	165	16.600		
802.11nHT20	149	17.800	>500	Pass
	157	17.760		
	165	17.800		
802.11n40	151	36.640	>500	Pass
	159	36.640		
802.11ac20	149	17.800	>500	Pass
	157	17.760		
	165	17.800		
802.11ac40	151	36.640	>500	Pass
	159	36.640		
802.11ac80	155	76.480	>500	Pass

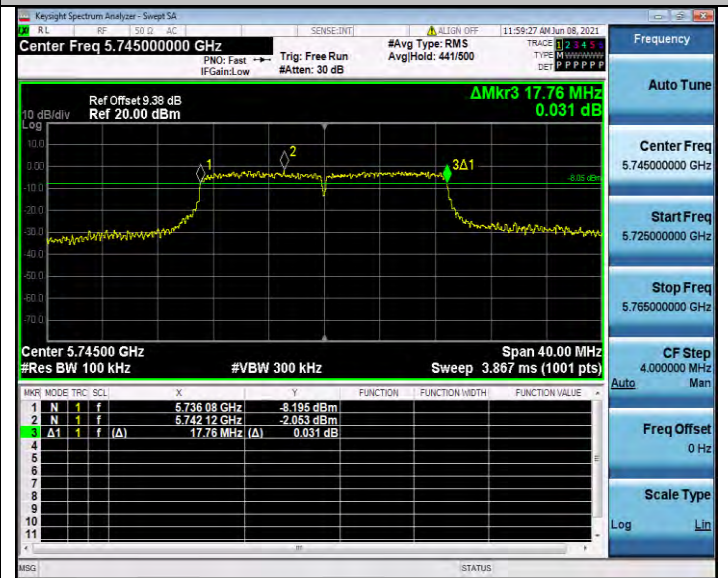
Antenna 0:

6dB Bandwidth

802.11a



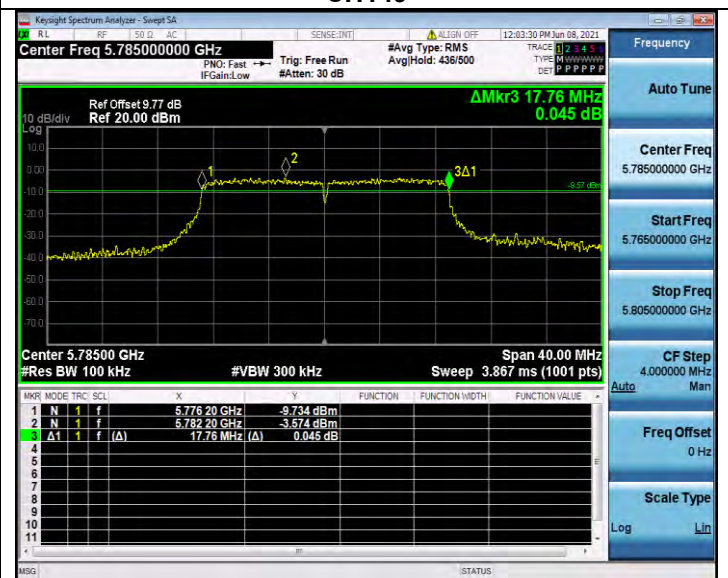
802.11n HT20



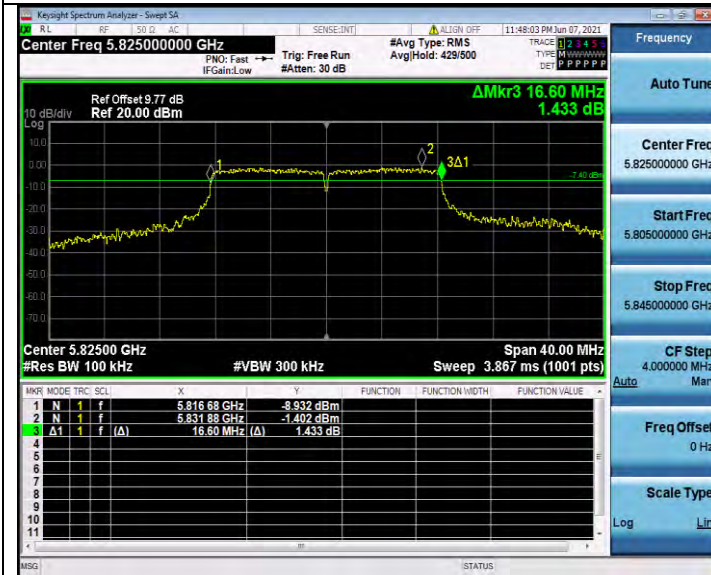
CH149



CH149



CH157



CH157



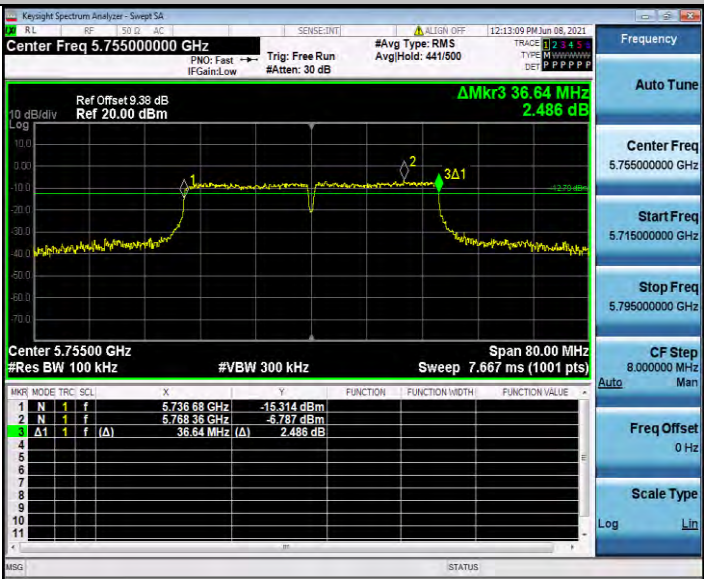
CH165

CH165

6dB Bandwidth

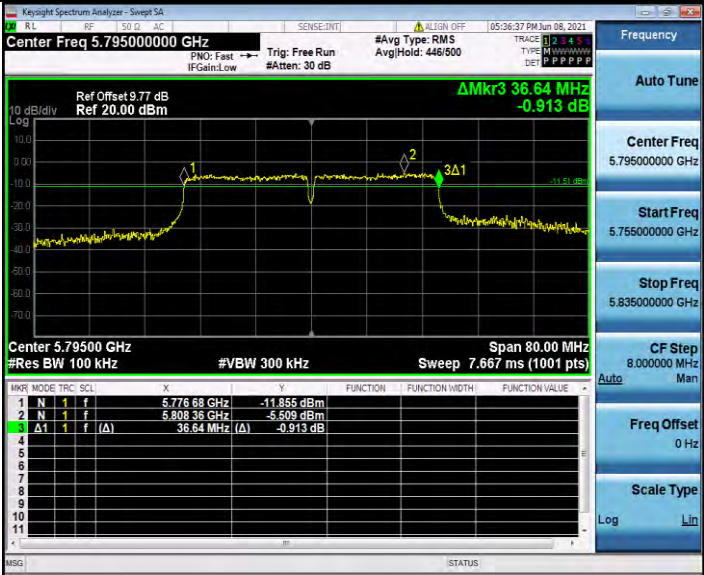
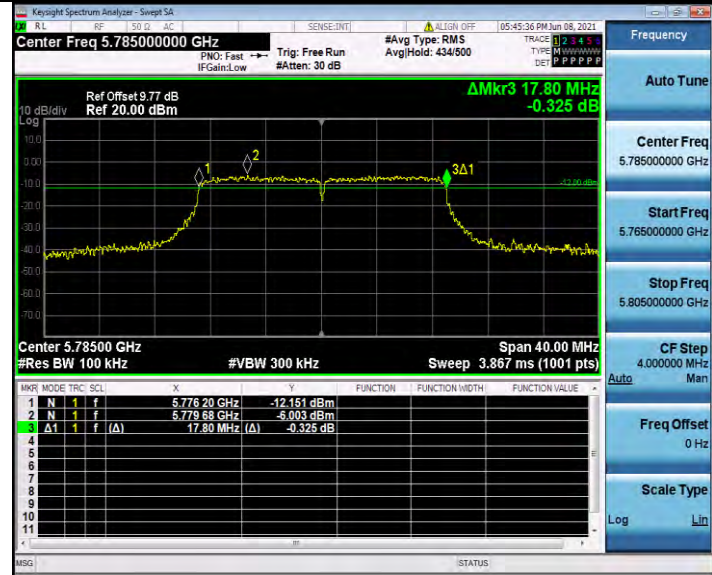
802.11ac20

802.11n HT40



CH149

CH151



CH157

CH159



CH165

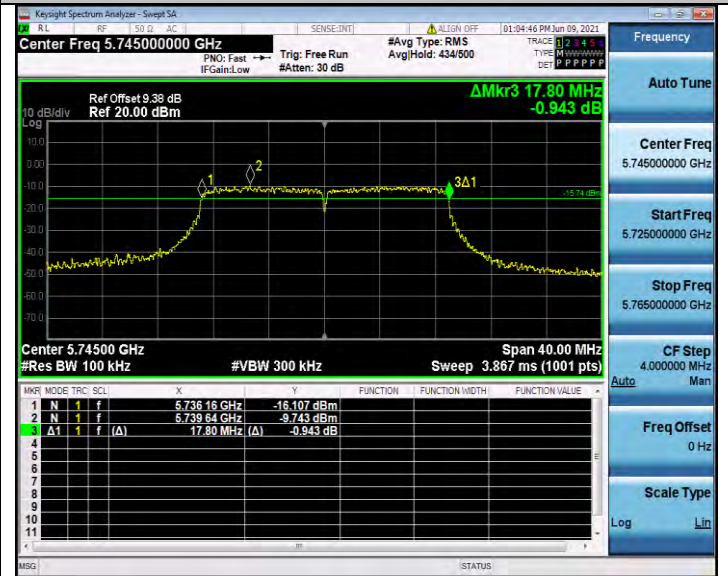


Antenna 1:

6dB Bandwidth

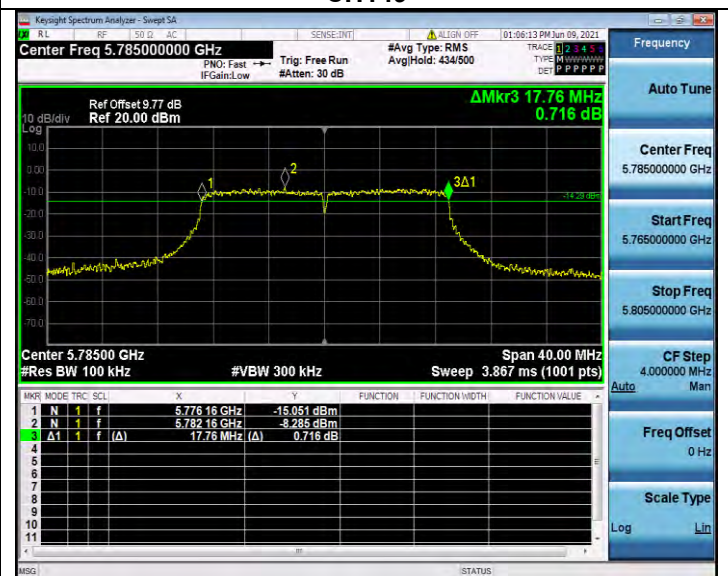
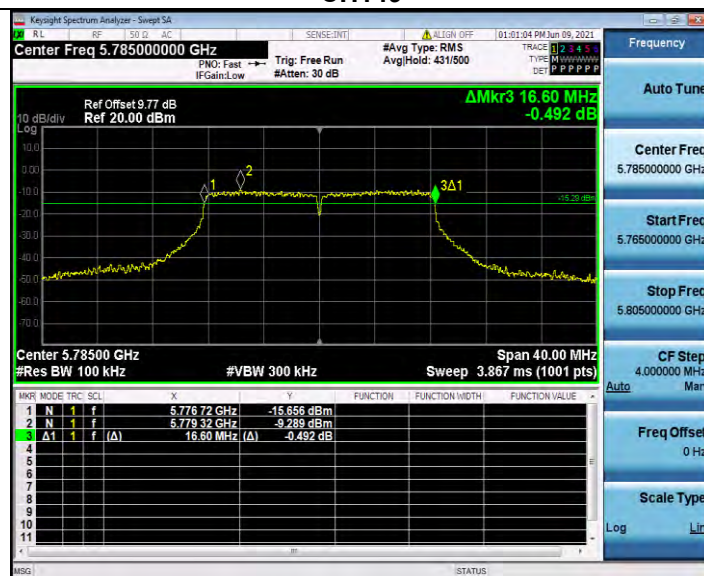
802.11a

802.11n HT20



CH149

CH149



CH157

CH157

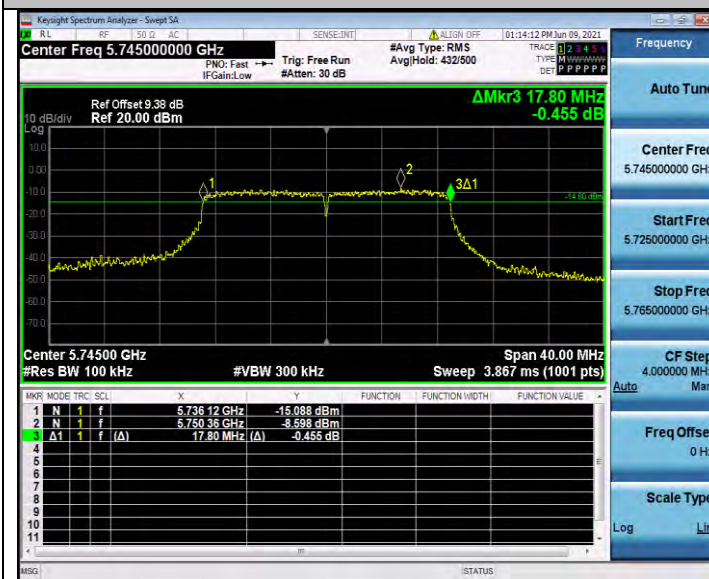


CH165

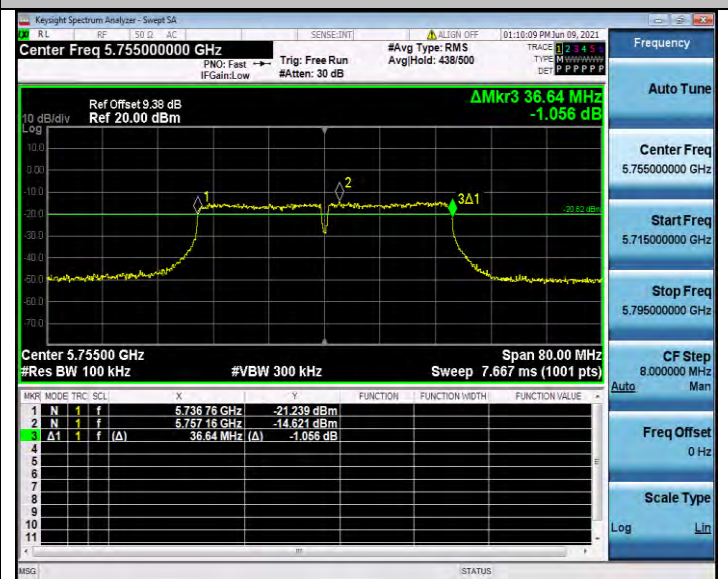
CH165

6dB Bandwidth

802.11ac20



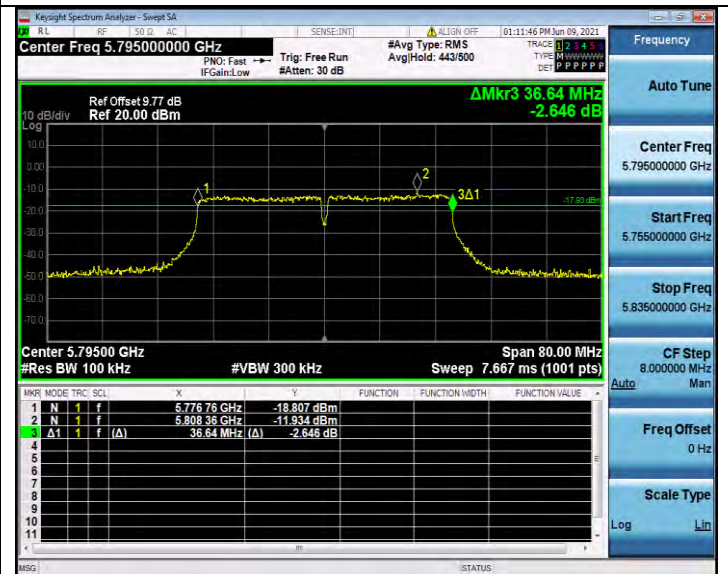
802.11n HT40



CH149



CH151



CH157



CH159

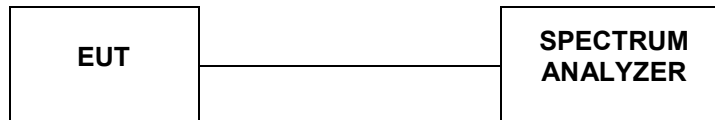


CH165



4.7. 26dBc Bandwidth

TEST CONFIGURATION



TEST PROCEDURE

According to KDB789033 D02 General U-NII Test Procedures New Rules v02r01 for one of the following procedures may be used for Emission Bandwidth (EBW) measurement:

- Set RBW = 220 kHz/430 kHz /820 kHz (approximately 1% of the emission bandwidth).
- Set the video bandwidth (VBW) = 3* RBW
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Allow the trace to stabilize
- 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

Temperature	23.6°C	Humidity	55.7%
Test Engineer	Oliver Ou	Configurations	IEEE 802.11a/n/ac

Antenna 0:

Type	Channel	99%Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	36	17.183	20.840	-	Pass
	40	17.102	23.200		
	48	17.220	25.040		
802.11nHT20	36	18.181	27.360	-	Pass
	40	18.141	23.480		
	48	18.102	22.000		
802.11n40	38	37.588	69.520	-	Pass
	46	37.518	63.200		
802.11ac20	36	18.209	29.400	-	Pass
	40	18.074	23.120		
	48	18.028	21.680		
802.11ac40	38	37.418	65.040	-	Pass
	46	37.224	55.600		
802.11ac80	42	75.829	104.320	-	Pass

Antenna 1:

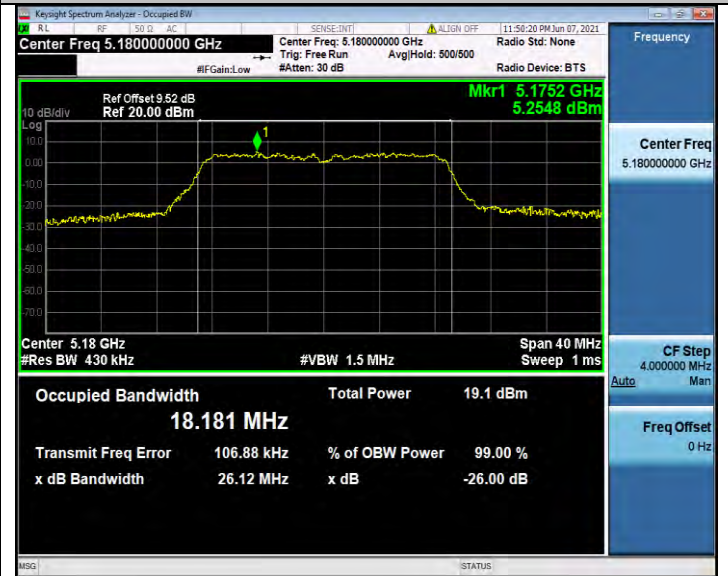
Type	Channel	99%Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	36	16.941	20.160	-	Pass
	40	17.074	20.480		
	48	17.066	20.360		
802.11nHT20	36	17.952	21.480	-	Pass
	40	17.969	21.240		
	48	17.999	21.200		
802.11n40	38	37.063	43.200	-	Pass
	46	37.091	42.880		
802.11ac20	36	17.946	21.240	-	Pass
	40	17.984	21.240		
	48	18.007	21.000		
802.11ac40	38	37.001	42.800	-	Pass
	46	37.054	42.480		
802.11ac80	42	75.702	83.200	-	Pass

Antenna 0:

99%Bandwidth

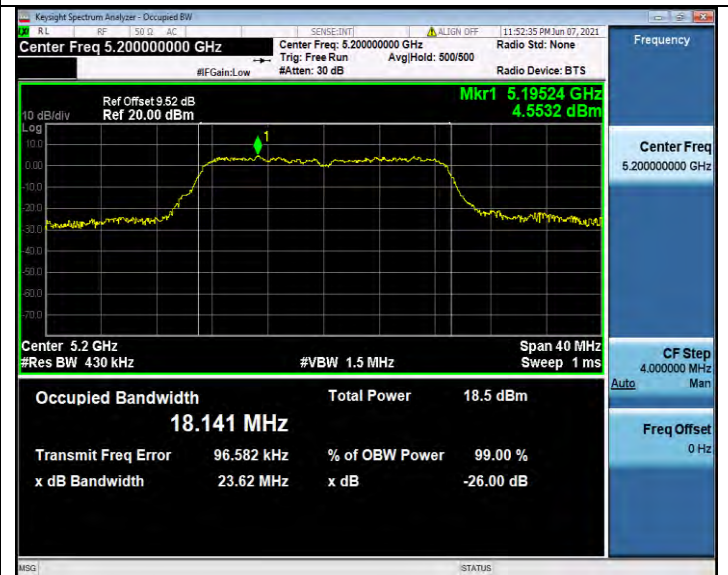
802.11a

802.11n HT20



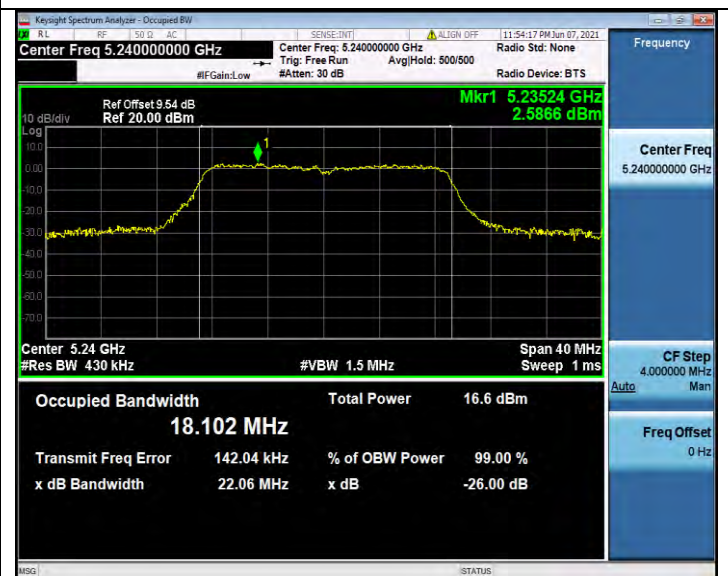
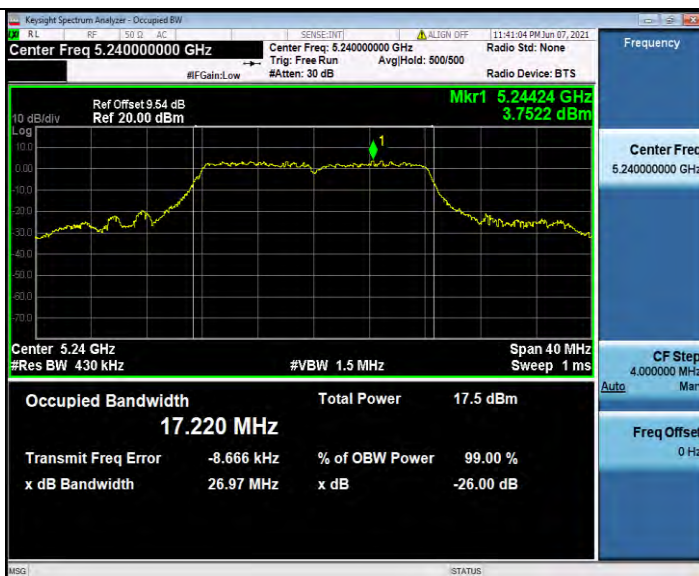
CH36

CH36



CH40

CH40

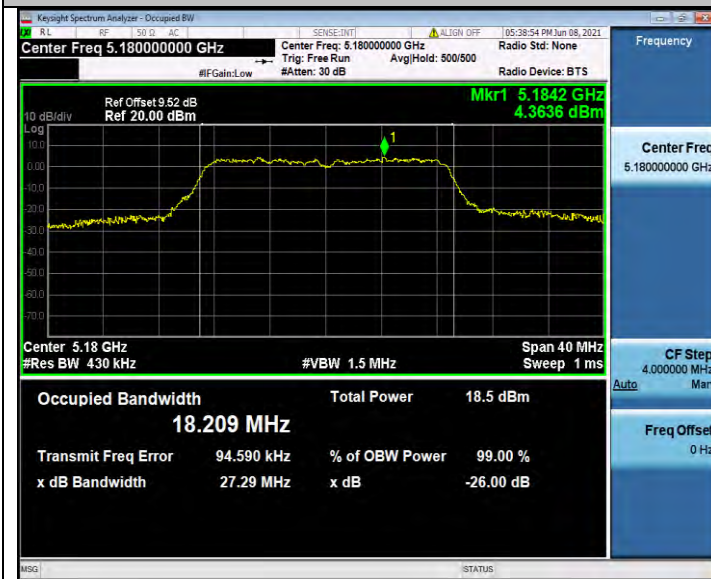


CH48

CH48

99%Bandwidth

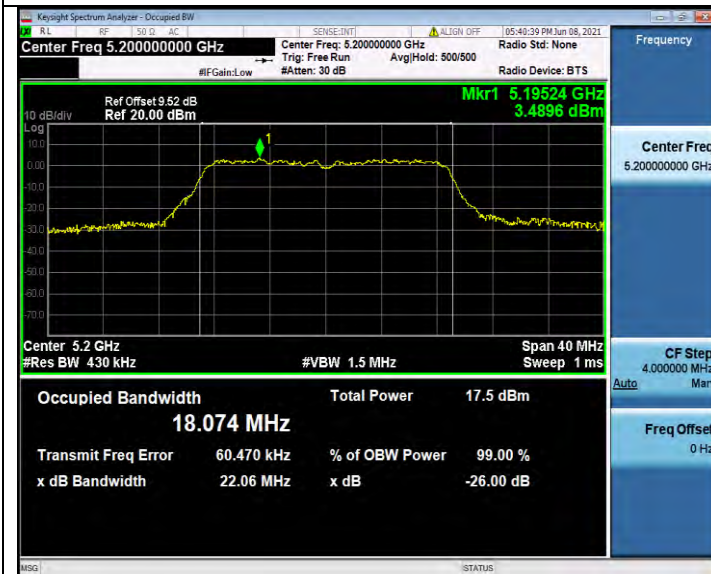
802.11ac20



802.11n HT40



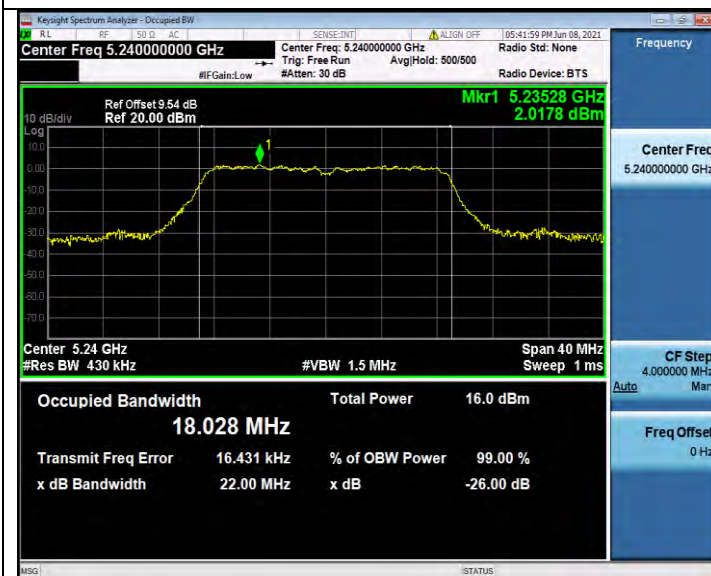
CH36



CH38



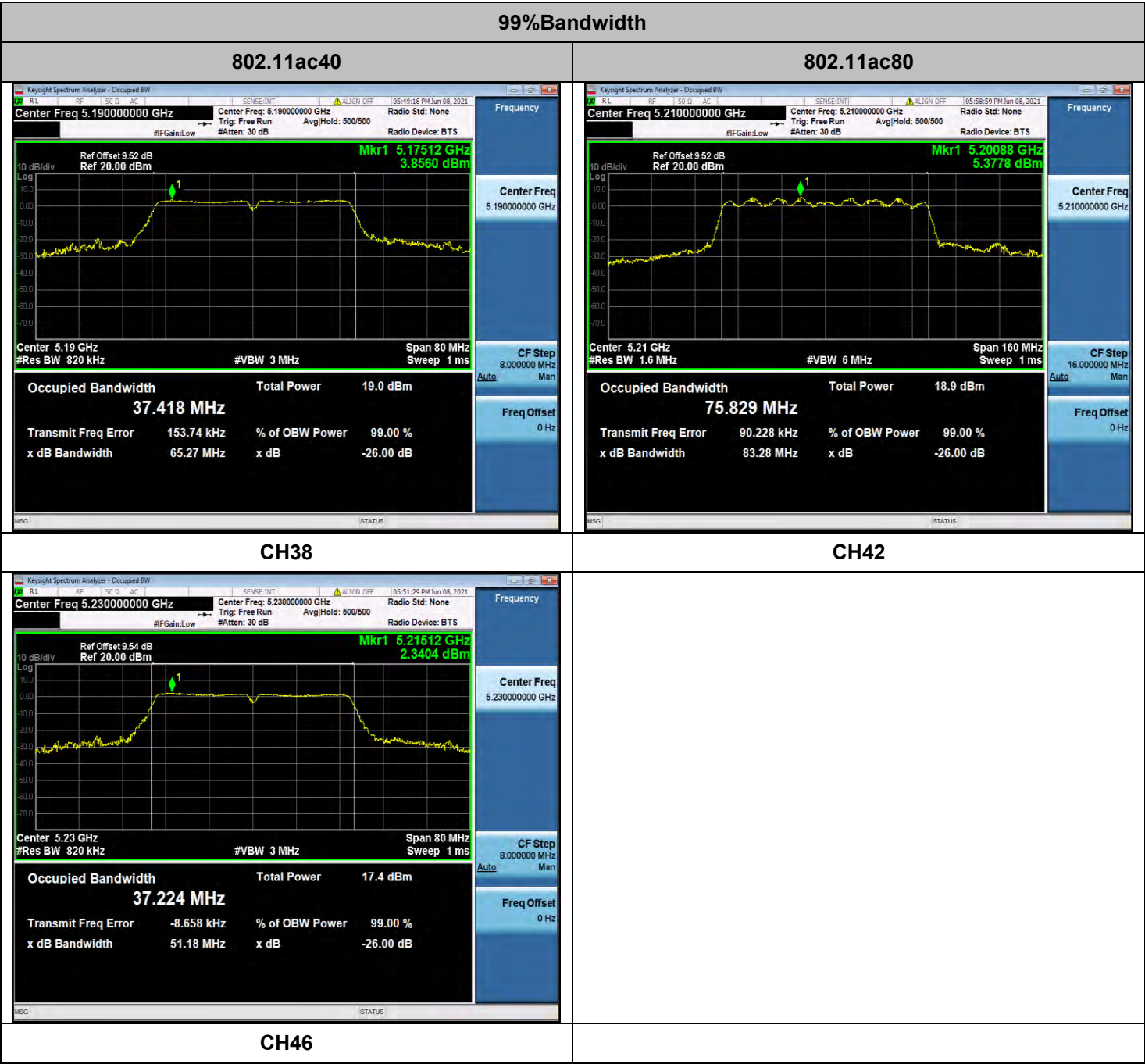
CH40



CH46



CH48



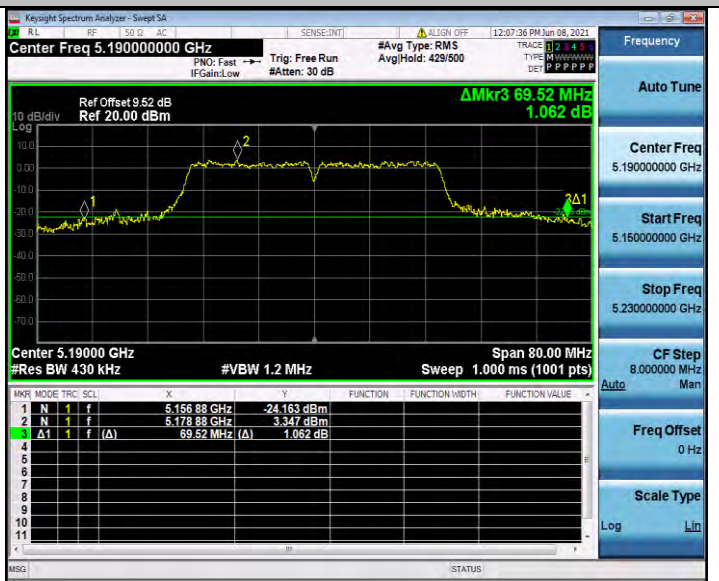


26dB Bandwidth

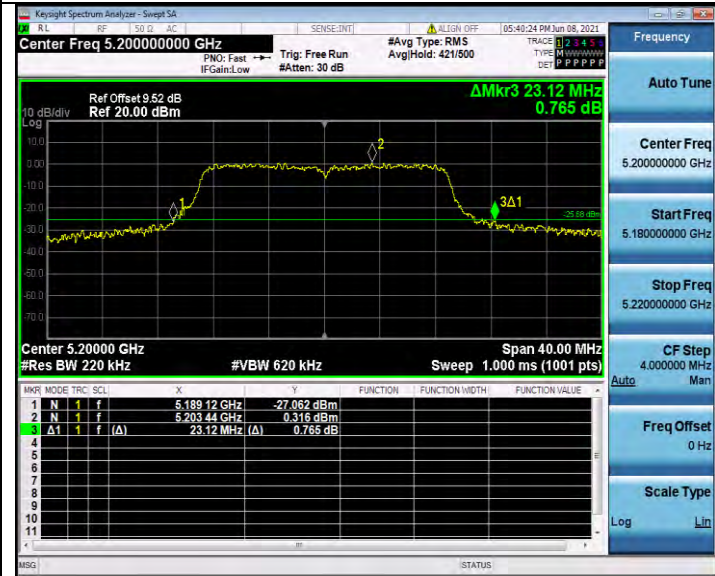
802.11ac20



802.11n HT40



CH36



CH38



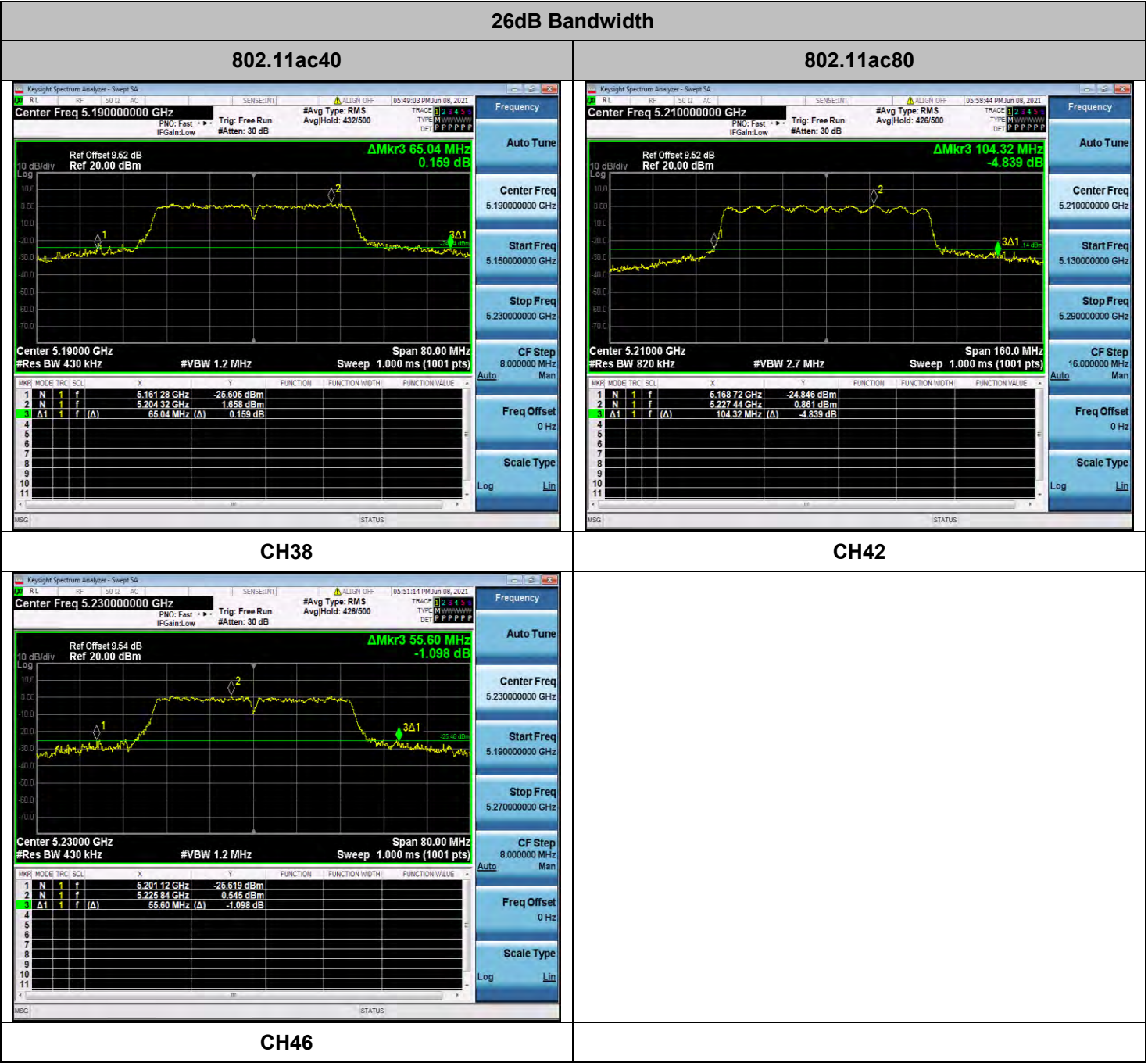
CH40



CH46



CH48

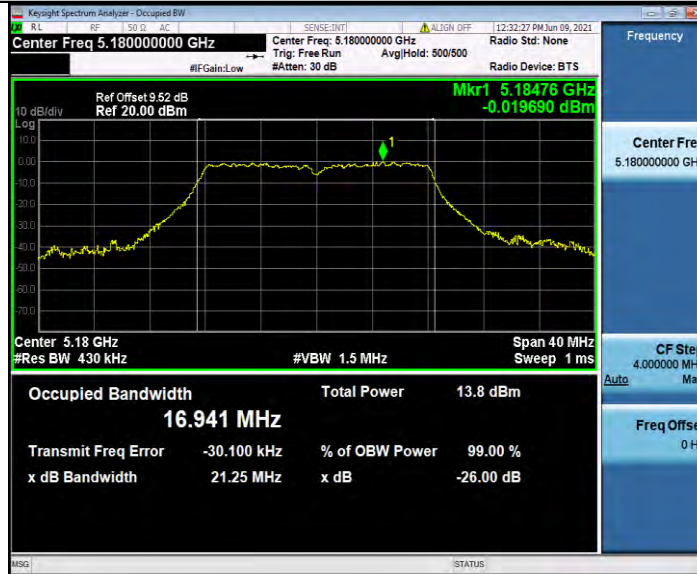


Antenna 1:

99%Bandwidth

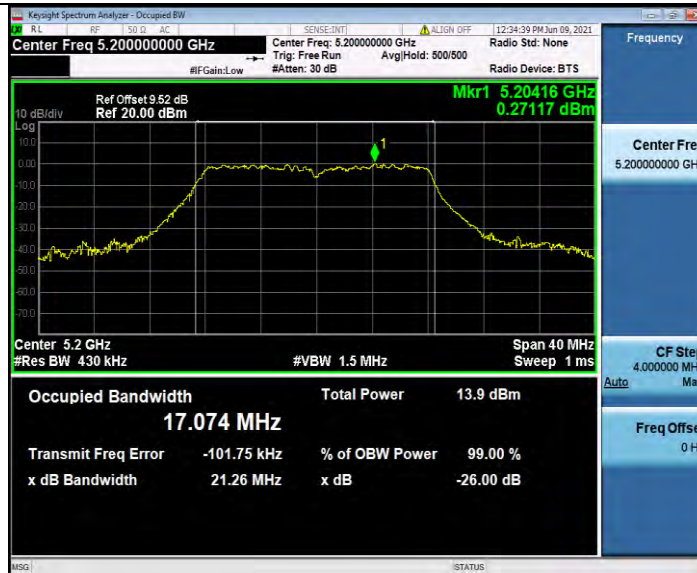
802.11a

802.11n HT20



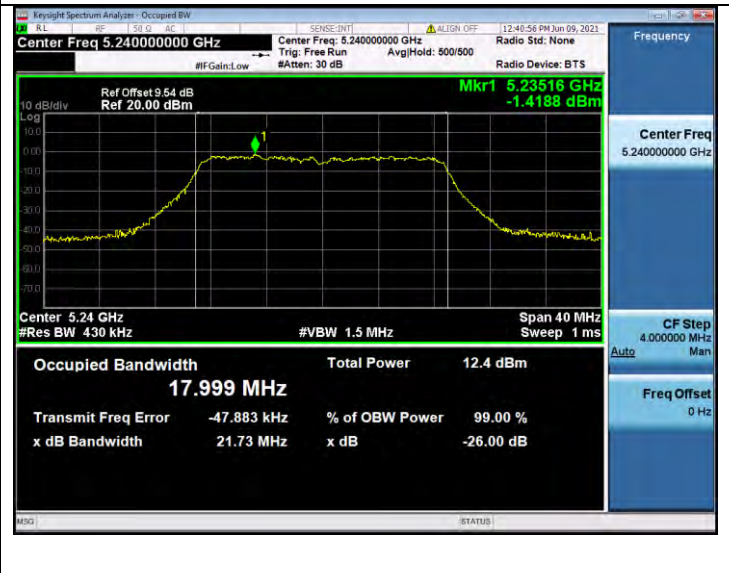
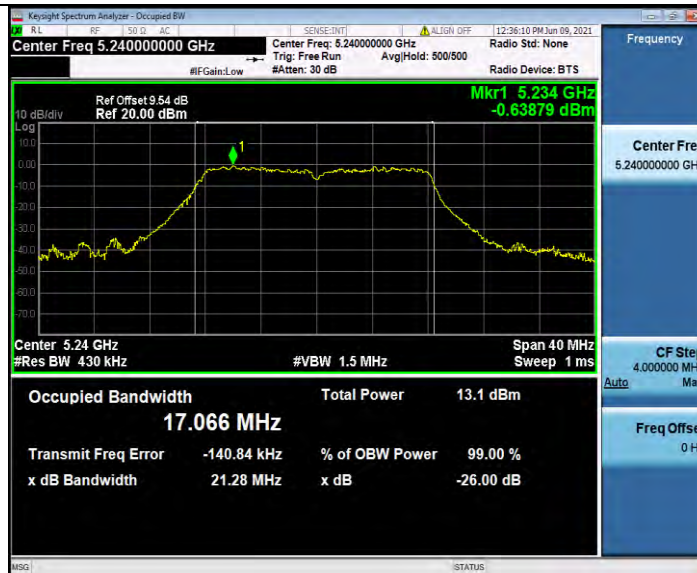
CH36

CH36



CH40

CH40

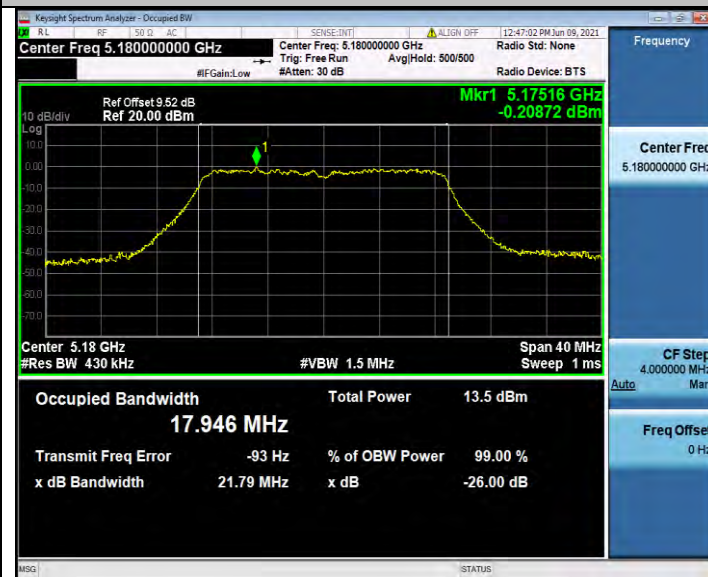


CH48

CH48

99%Bandwidth

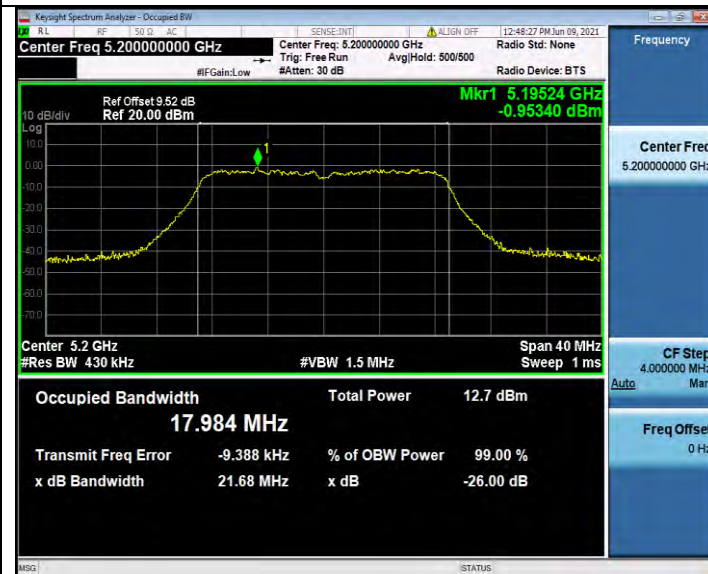
802.11ac20



802.11n HT40



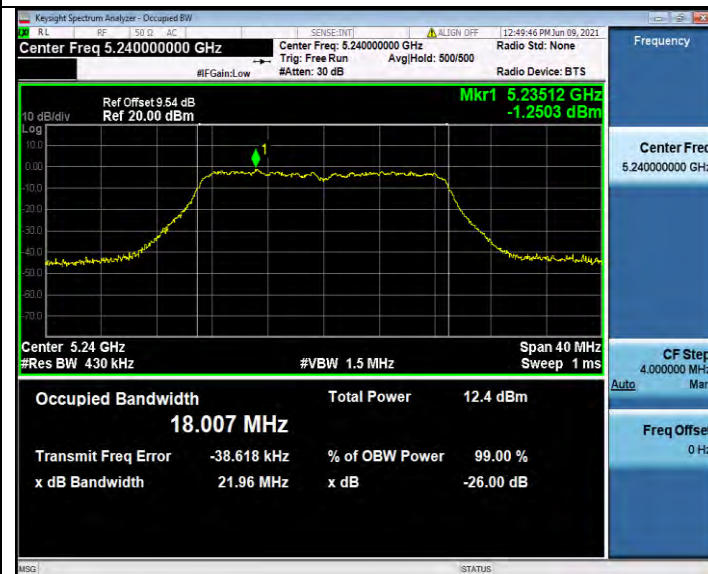
CH36



CH38



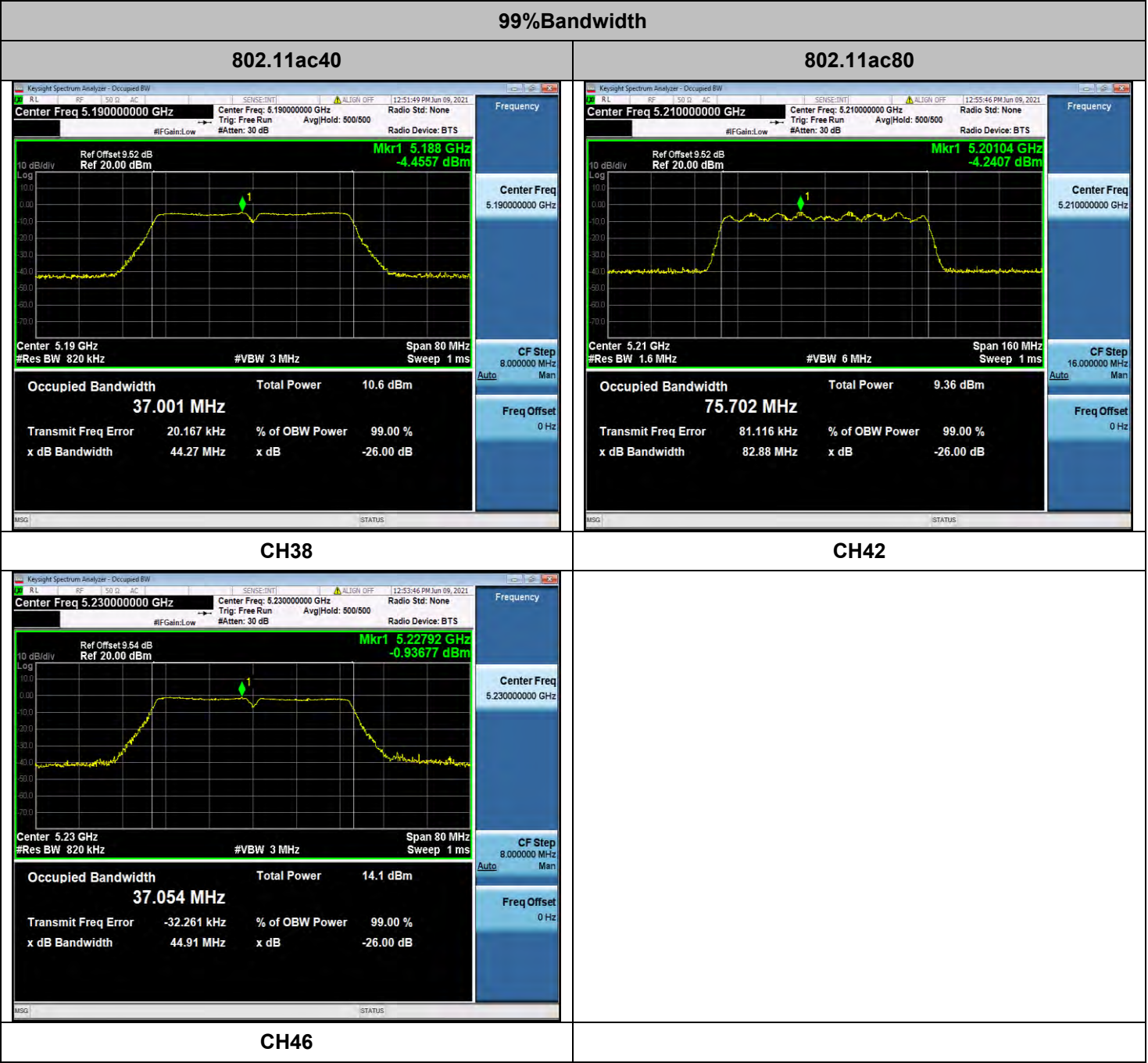
CH40



CH46



CH48



CH46

KeySight Spectrum Analyzer - Occupied BW

Center Freq 5.250000000 GHz

Center Freq: 5.250000000 GHz

Trig: Free Run

Avg/Hold: 500/500

Radio Std: None

Radio Device: BTS

Frequency

10 dB/div

Ref Offset 9.54 dB

Ref 20.00 dBm

Mkr1 5.24776 GHz

-0.93677 dBm

Center Freq 5.250000000 GHz

Center 5.25 GHz

#Res BW 820 kHz

#VBW 3 MHz

Span 80 MHz

Sweep 1 ms

CF Step 8.0000000 MHz

Auto

Man

Frequency Offset 0 Hz

Occupied Bandwidth 37.054 MHz

Total Power 14.1 dBm

Transmit Freq Error -32.261 kHz

% of OBW Power 99.00 %

x dB Bandwidth 44.91 MHz

x dB -26.00 dB

MSG

STATUS

26dB Bandwidth

802.11a



802.11n HT20



CH36



CH36



CH40



CH40



CH48

CH48

26dB Bandwidth

802.11ac20



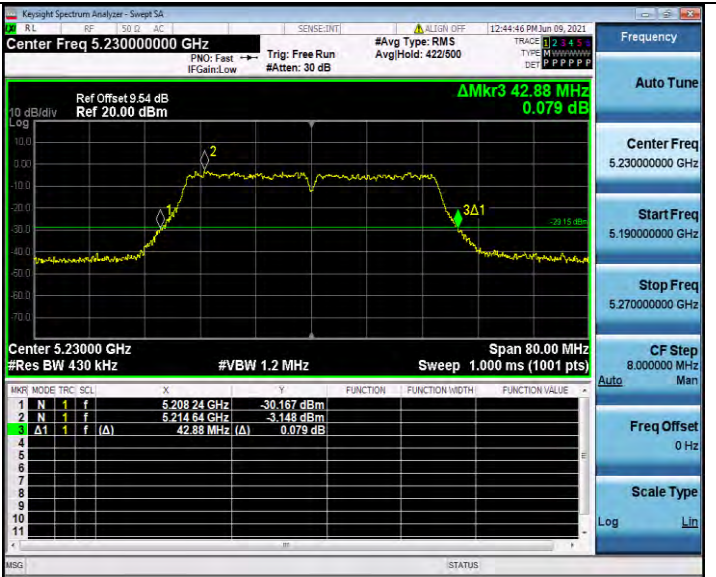
802.11n HT40



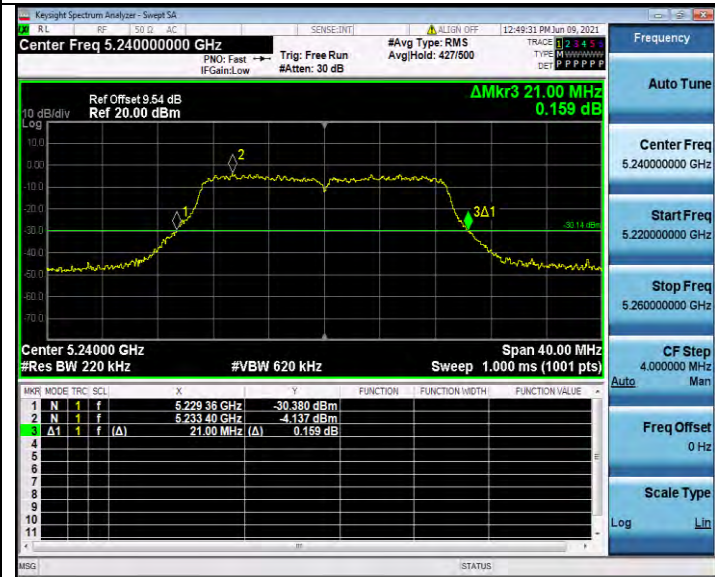
CH36



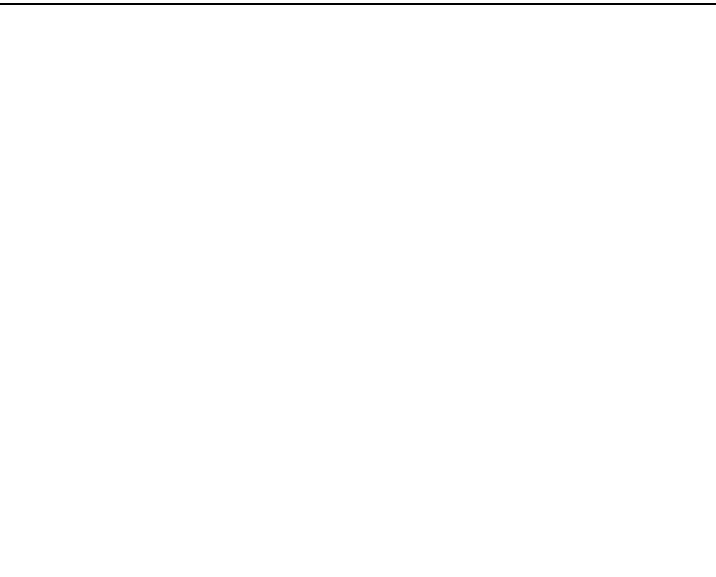
CH38



CH40



CH46



CH48

