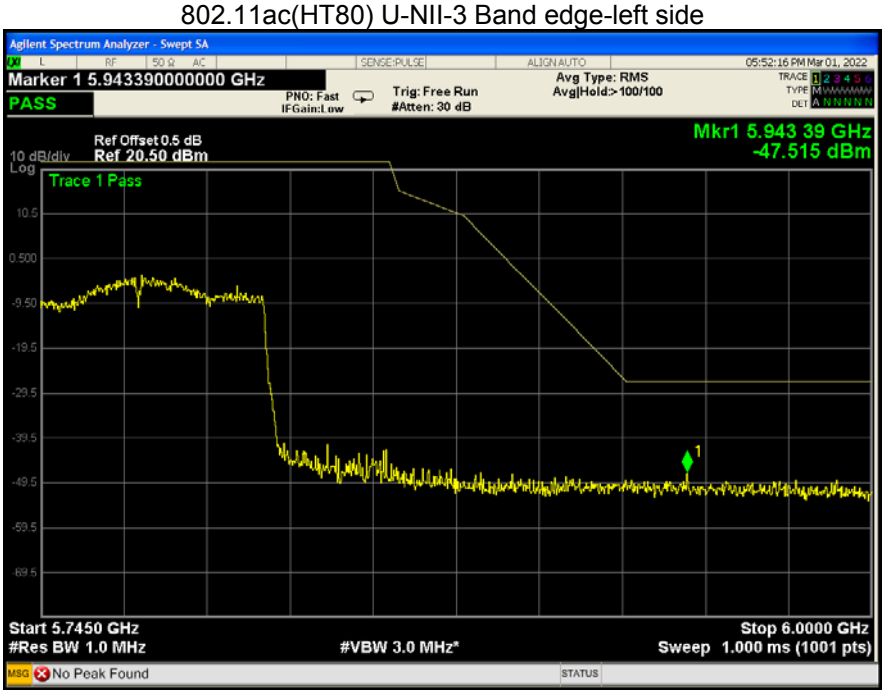
802.11ac(HT80) U-NII-3 Band edge-left side

802.11ac(HT80) U-NII-3 Band edge-left side



12 6 dB Bandwidth

Test Requirement:	FCC CFR47 Part 15 Section 15.407(e) KDB662911 D01 Multiple Transmitter Output v02r01
Test Method:	KDB789033 D02 General U-NII Test Procedures New Rules v02r01 Section C
Test Limit:	≥ 500 kHz
Test Result:	PASS

12.1 Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;

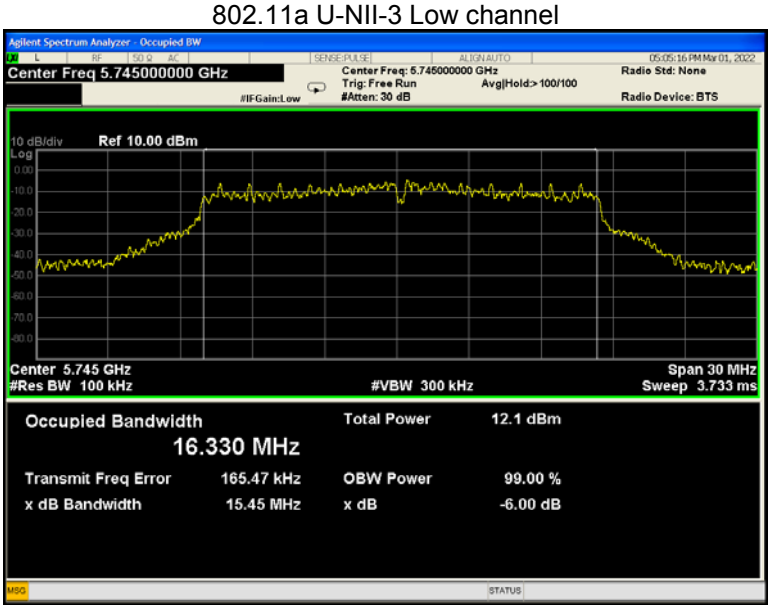
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

12.2 Test Result:

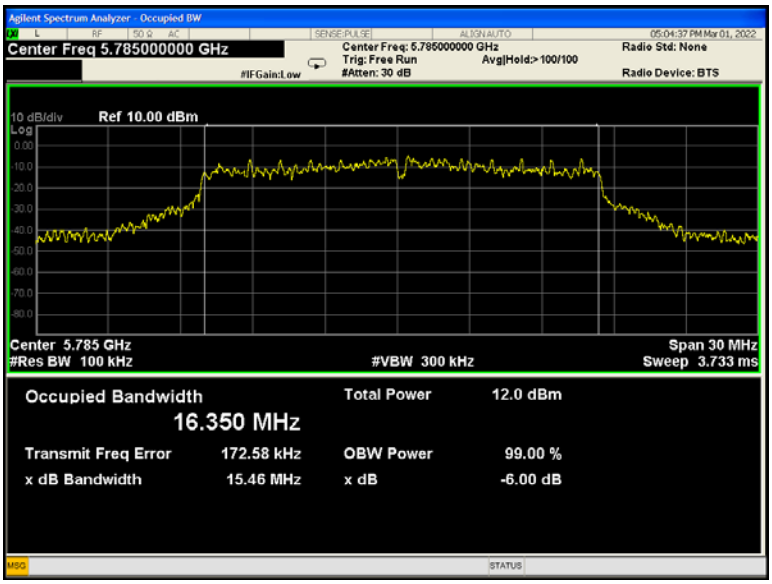
Band	Operation mode	6 dB Bandwidth (MHz)		
		Low	Middle	High
U-NII-3	802.11a	15.45	15.46	15.61
	802.11n(HT20)	17.49	17.01	15.97
	802.11n(HT40)	35.75	/	35.81
	802.11ac(HT20)	17.33	17.60	17.30
	802.11ac(HT40)	35.72	/	35.73
	802.11ac(HT80)	/	75.24	/

Test result plots shown as follows:

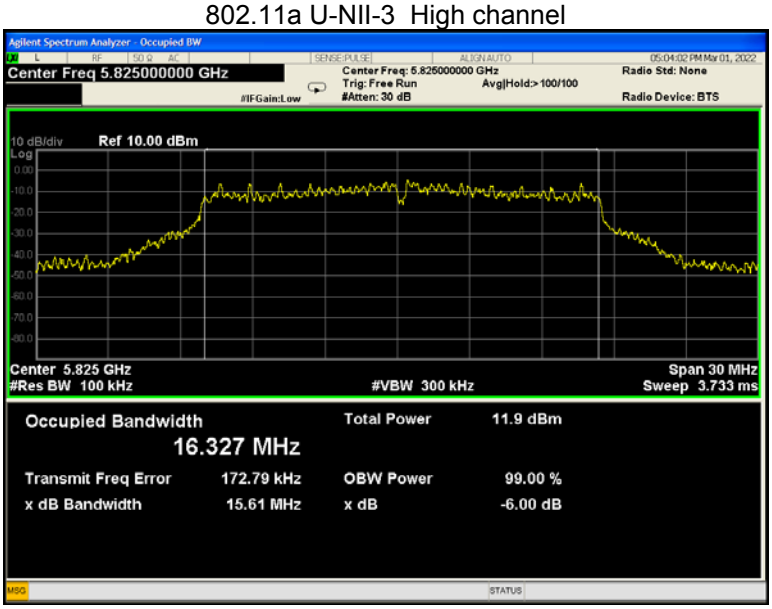
802.11a U-NII-3 Low channel



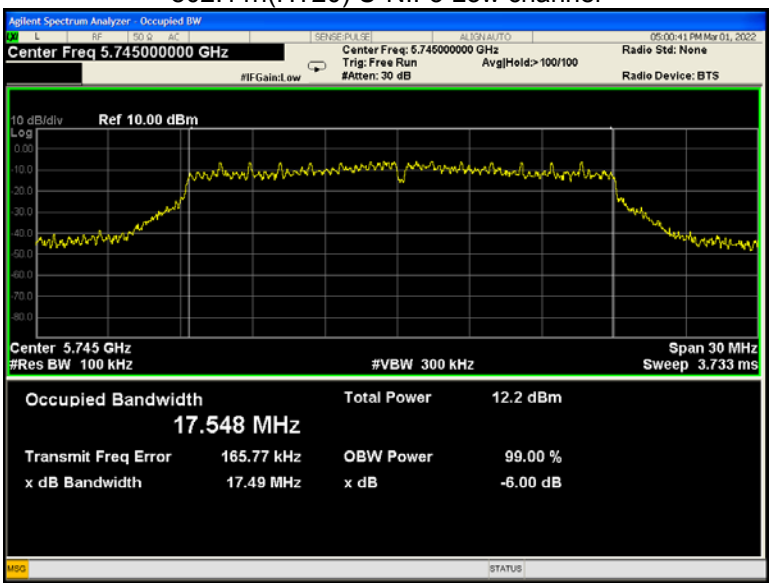
802.11a U-NII-3 Middle channel



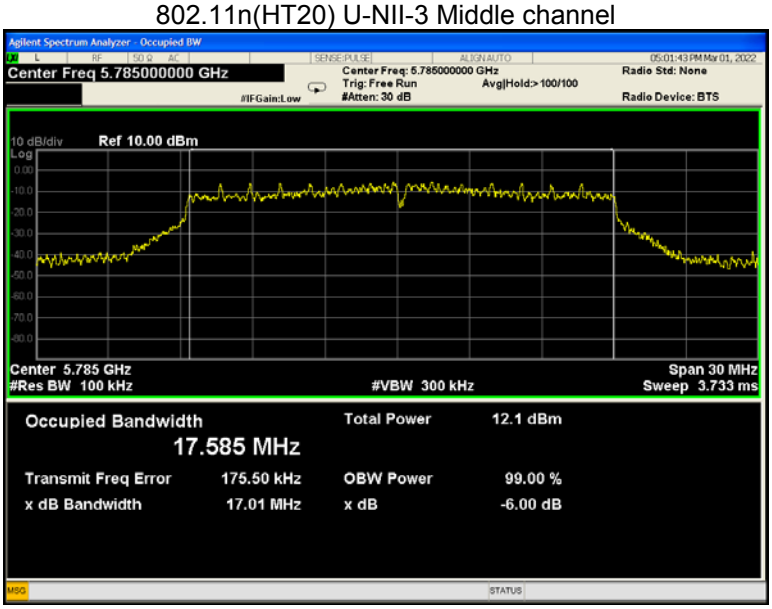
802.11a U-NII-3 High channel



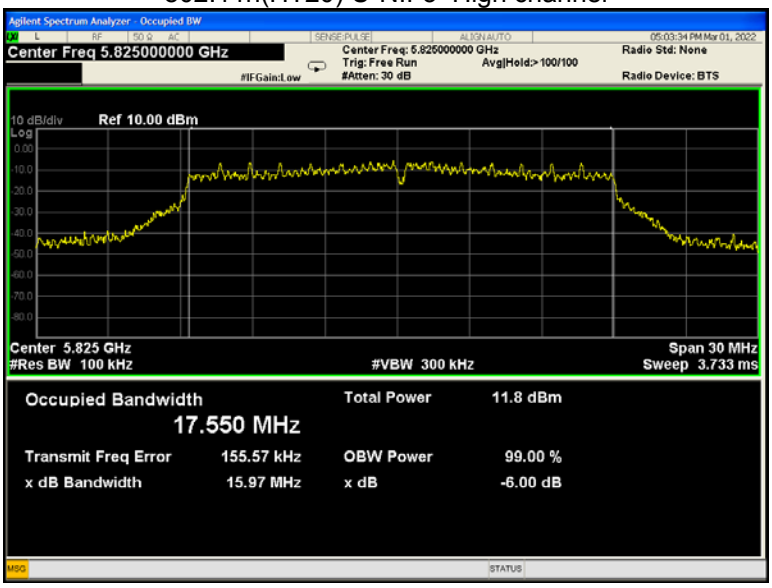
802.11n(HT20) U-NII-3 Low channel



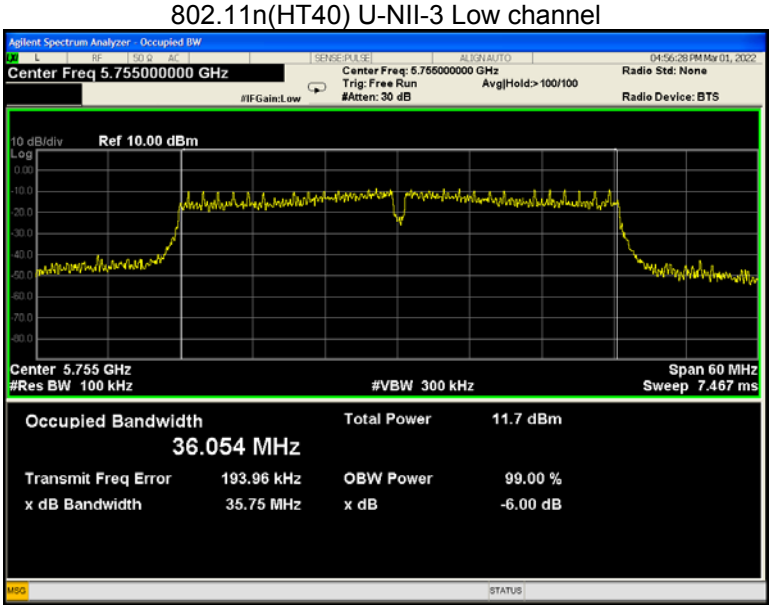
802.11n(HT20) U-NII-3 Middle channel



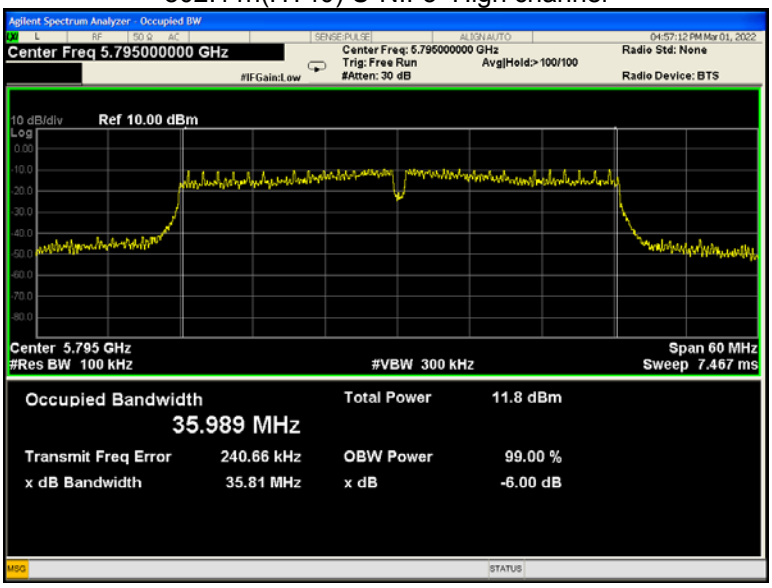
802.11n(HT20) U-NII-3 High channel



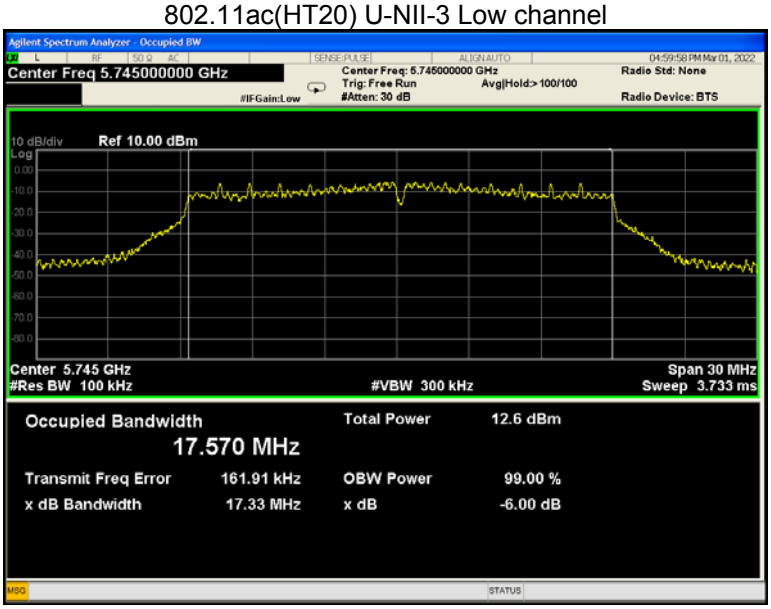
802.11n(HT40) U-NII-3 Low channel



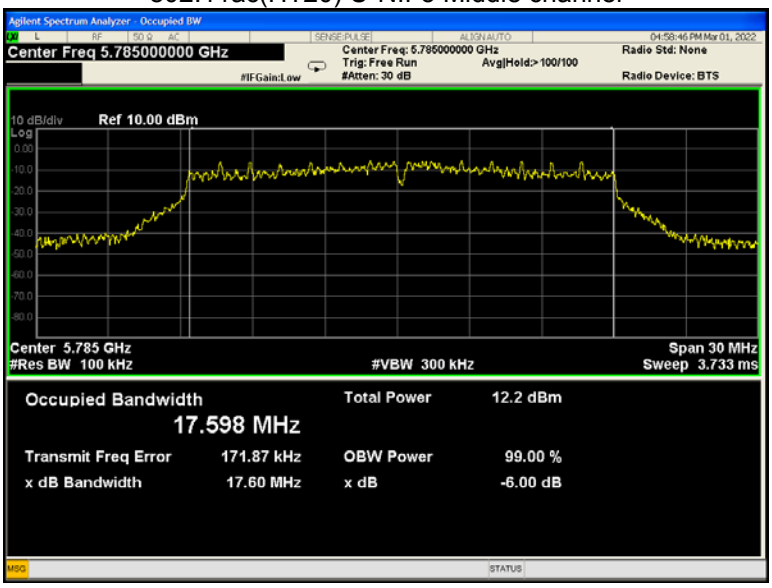
802.11n(HT40) U-NII-3 High channel



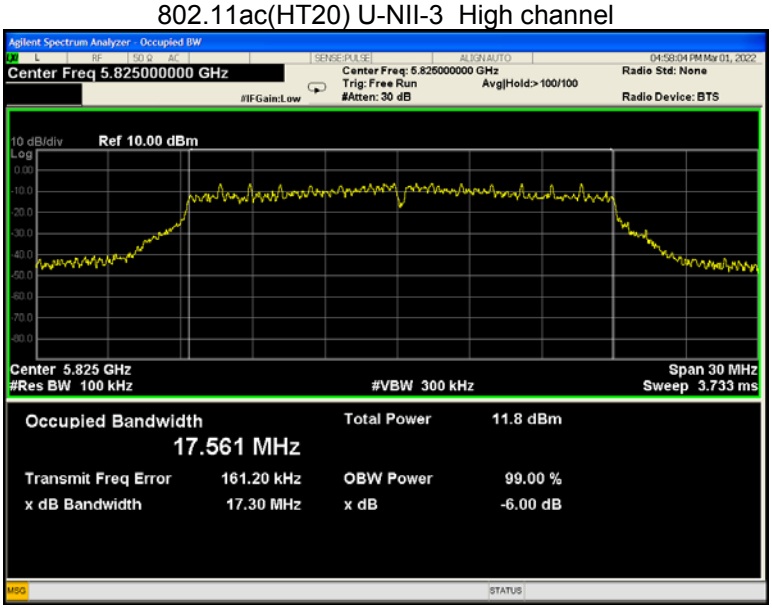
802.11ac(HT20) U-NII-3 Low channel



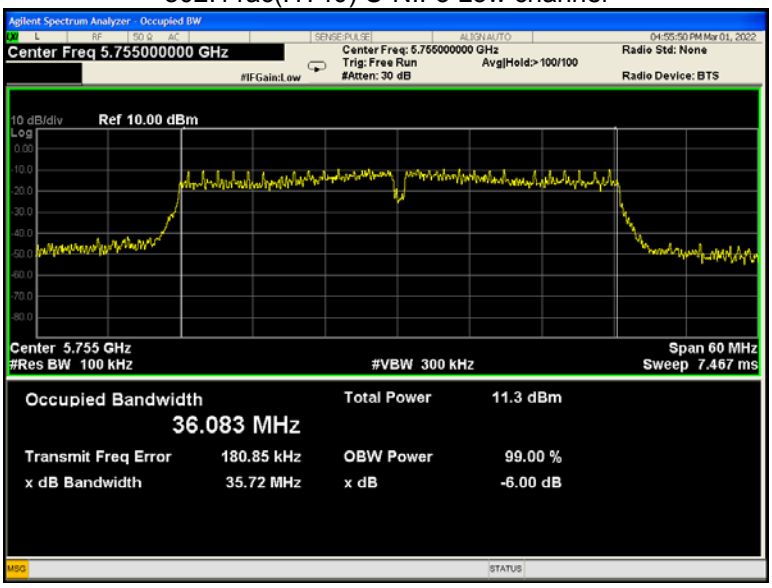
802.11ac(HT20) U-NII-3 Middle channel



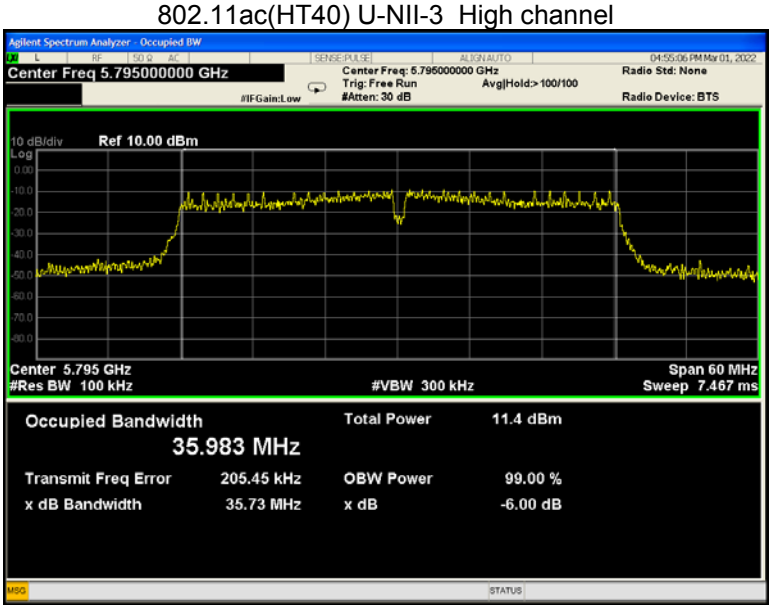
802.11ac(HT20) U-NII-3 High channel



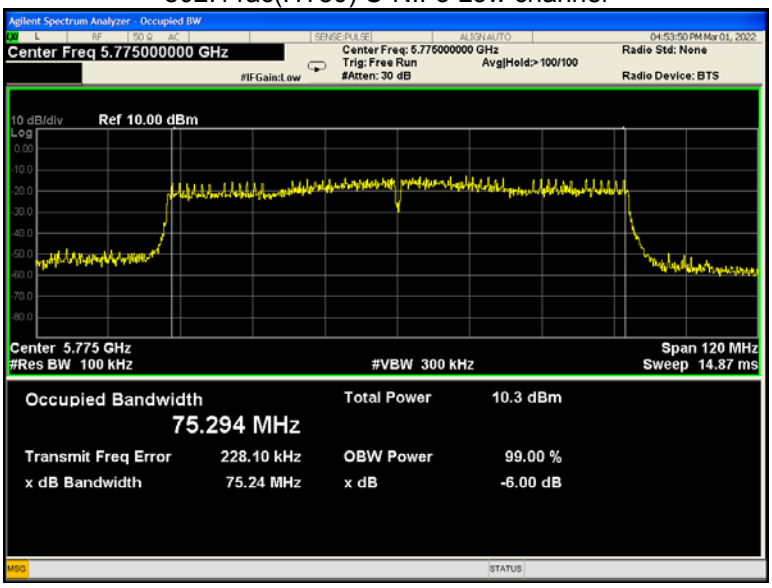
802.11ac(HT40) U-NII-3 Low channel



802.11ac(HT40) U-NII-3 High channel



802.11ac(HT80) U-NII-3 Low channel



13 26 dB Bandwidth and 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.407 (a)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General U-NII Test Procedures New Rules v02r01 Section D
Test Limit:	No restriction limits
Test Result:	PASS

13.1 Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;

2. Set the spectrum analyzer: RBW = 1% to 5% of the OBW, VBW = 3x RBW

13.2 Test Result:

Band	Operation mode	26 dB Bandwidth (MHz)			99% Bandwidth (MHz)		
		Low	Middle	High	Low	Middle	High
U-NII-1	802.11a	19.69	19.39	19.73	16.349	16.353	16.356
	802.11n(HT20)	20.73	20.71	20.50	17.639	17.621	17.623
	802.11ac(HT20)	20.81	20.76	20.30	17.647	17.635	17.641
	802.11n(HT40)	38.81	/	38.67	36.033	/	36.083
	802.11ac(HT40)	39.36	/	39.59	36.123	/	36.179
	802.11ac(HT80)	/	79.65	/	/	75.224	/

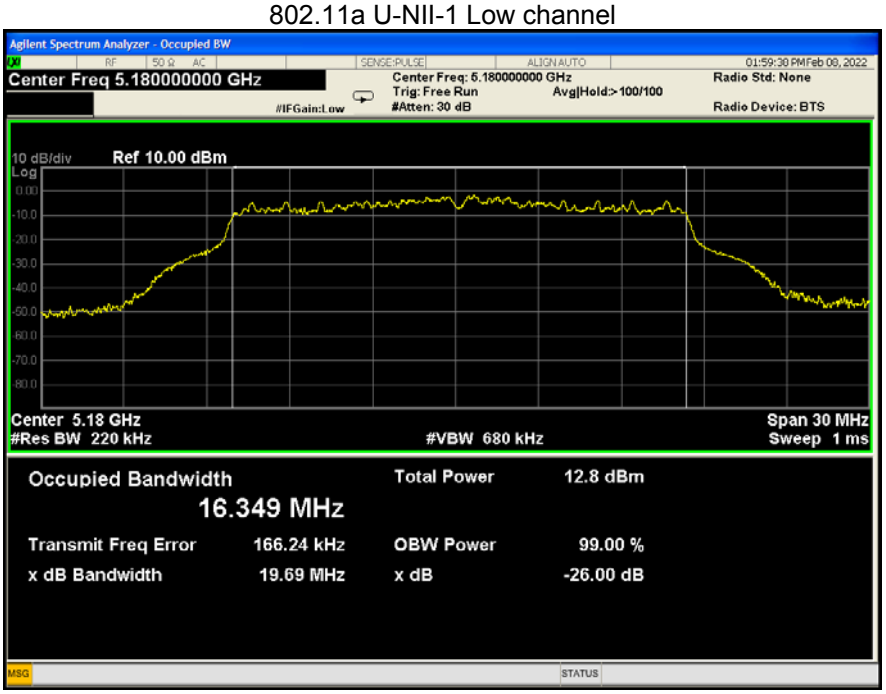
Band	Operation mode	26 dB Bandwidth (MHz)			99% Bandwidth (MHz)		
		Low	Middle	High	Low	Middle	High
U-NII-2A	802.11a	19.61	19.51	19.57	16.349	16.359	16.362
	802.11n(HT20)	20.52	20.71	20.47	17.615	17.616	17.628
	802.11ac(HT20)	20.85	20.52	20.83	17.669	17.654	17.677
	802.11n(HT40)	39.00	/	39.10	36.094	/	36.034
	802.11ac(HT40)	39.02	/	39.48	36.273	/	36.220
	802.11ac(HT80)	/	79.52	/	/	75.343	/

Band	Operation mode	26 dB Bandwidth (MHz)			99% Bandwidth (MHz)		
		Low	Middle	High	Low	Middle	High
U-NII-2C	802.11a	19.90	19.40	20.12	16.363	16.346	16.374
	802.11n(HT20)	20.34	20.48	20.88	17.606	17.642	17.608
	802.11ac(HT20)	20.79	20.47	20.96	17.642	17.640	17.686
	802.11n(HT40)	38.63	38.75	39.02	36.032	36.086	36.089
	802.11ac(HT40)	39.54	39.34	39.26	36.167	36.184	36.148
	802.11ac(HT80)	79.76	80.05	/	75.233	75.397	/

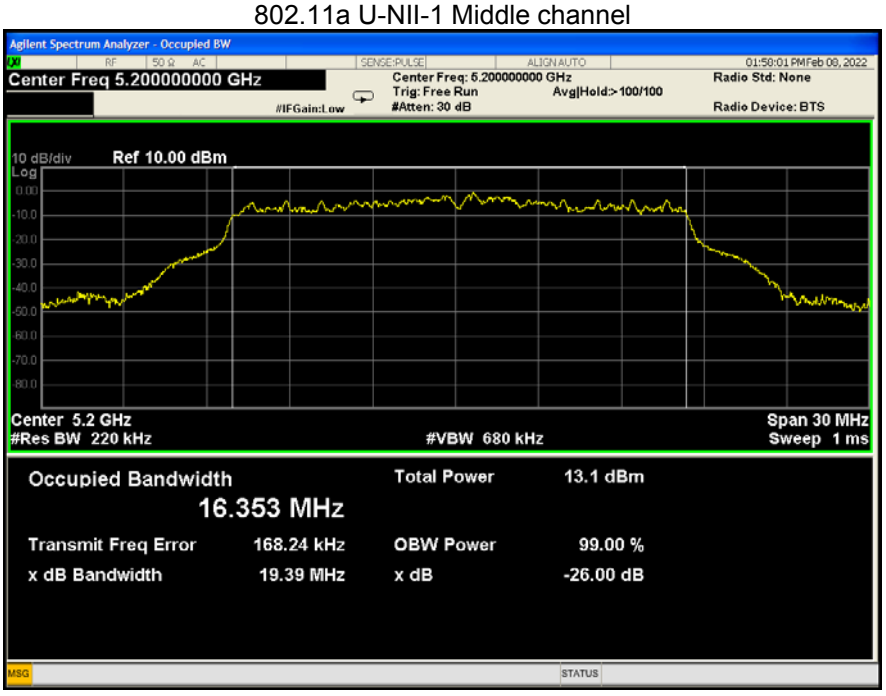
Band	Operation mode	26 dB Bandwidth (MHz)			99% Bandwidth (MHz)		
		Low	Middle	High	Low	Middle	High
U-NII-3	802.11a	20.14	19.88	19.95	16.384	16.385	16.381
	802.11n(HT20)	20.74	20.93	20.76	17.601	17.632	17.614
	802.11ac(HT20)	20.91	20.80	20.81	17.684	17.692	17.630
	802.11n(HT40)	39.03	/	38.79	36.120	/	36.046
	802.11ac(HT40)	39.19	/	39.47	36.220	/	36.233
	802.11ac(HT80)	/	80.41	/	/	75.358	/

Test result plots shown as follows:

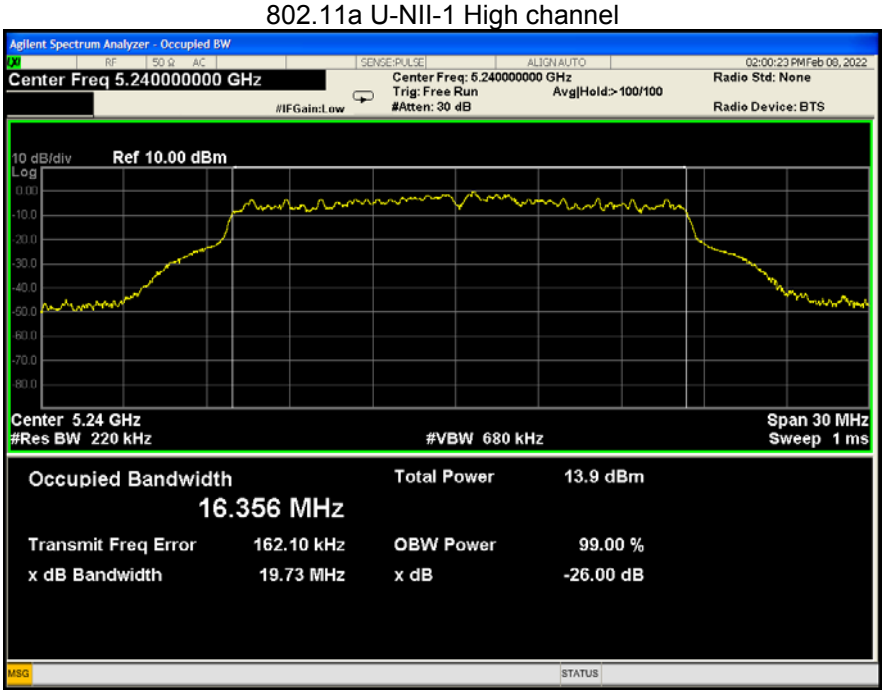
802.11a U-NII-1 Low channel



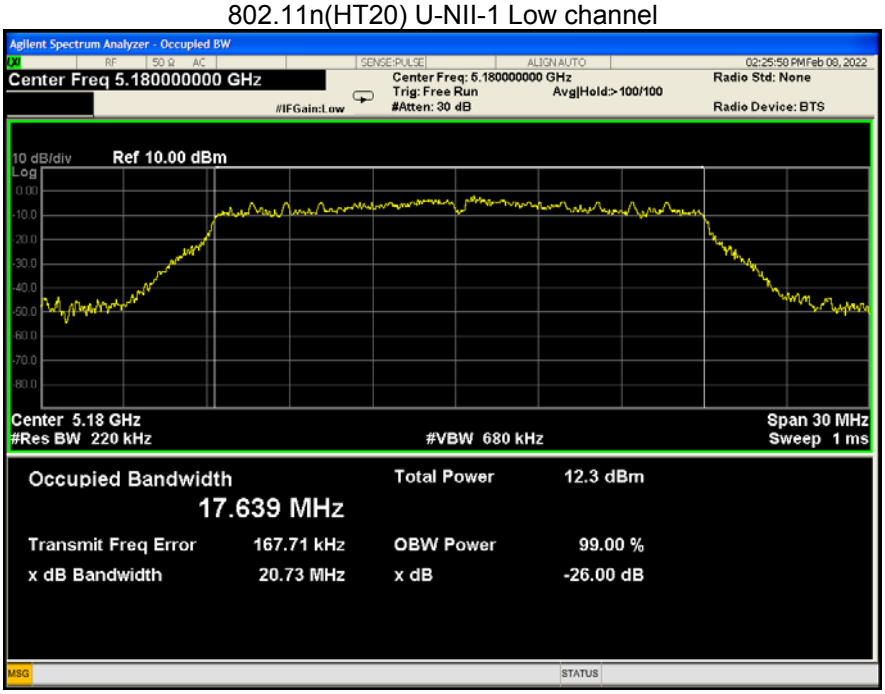
802.11a U-NII-1 Middle channel



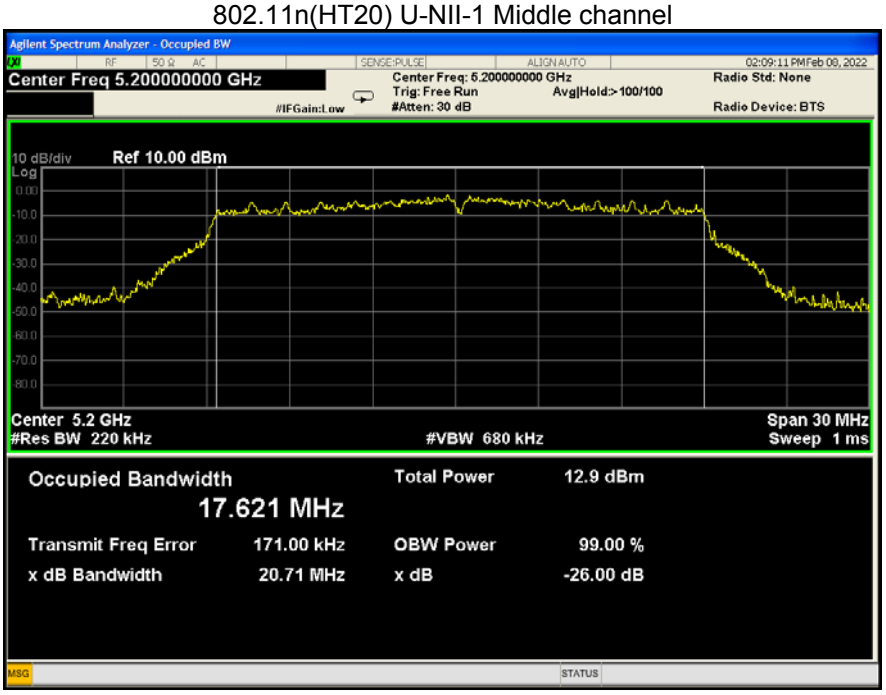
802.11a U-NII-1 High channel



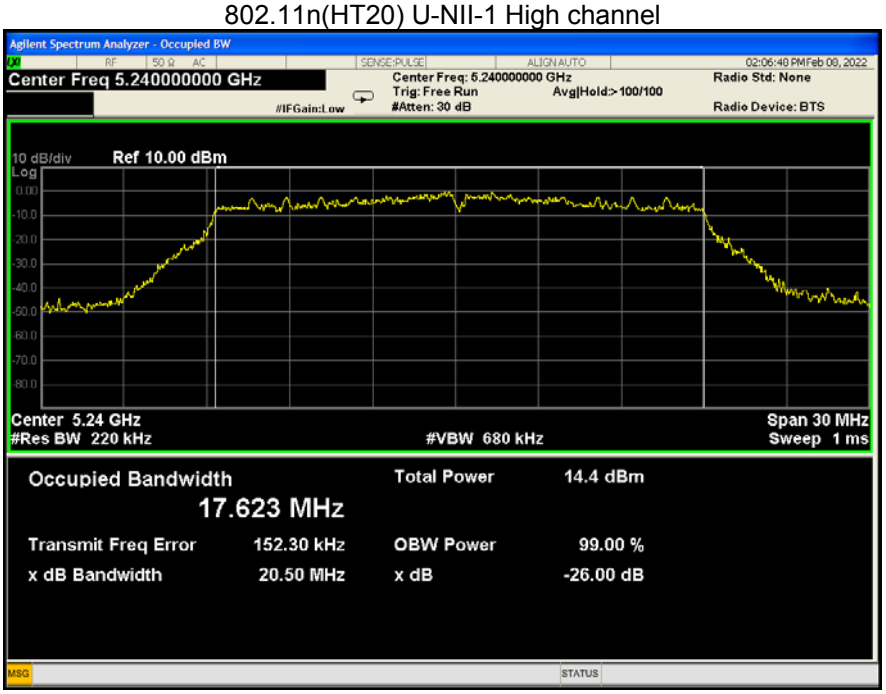
802.11n(HT20) U-NII-1 Low channel



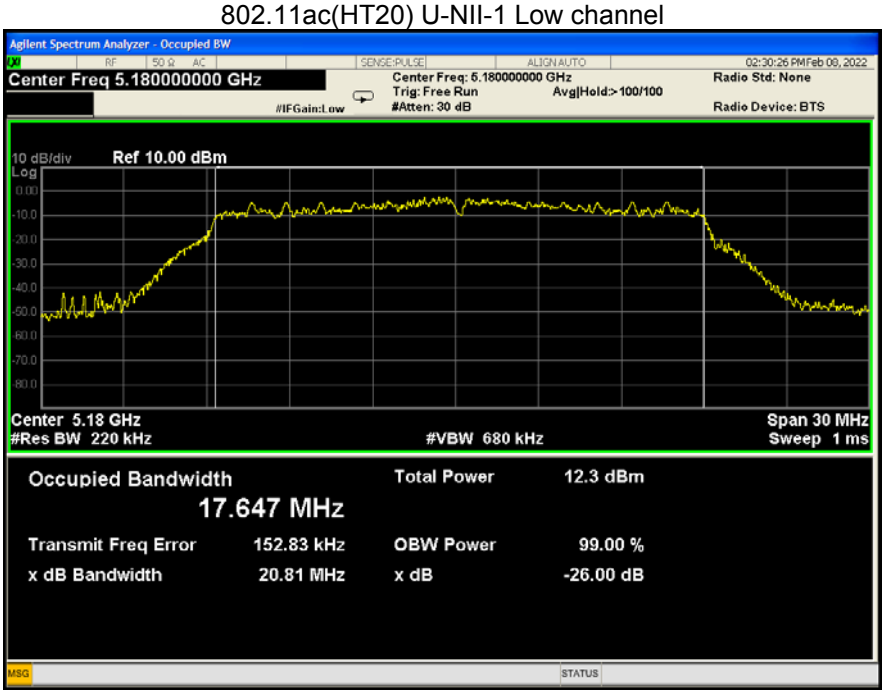
802.11n(HT20) U-NII-1 Middle channel



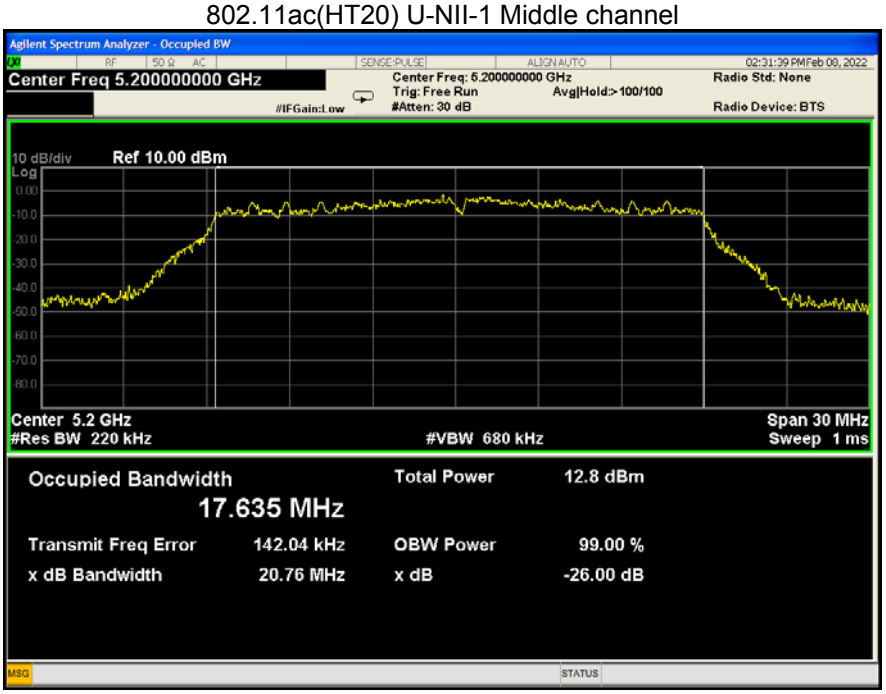
802.11n(HT20) U-NII-1 High channel



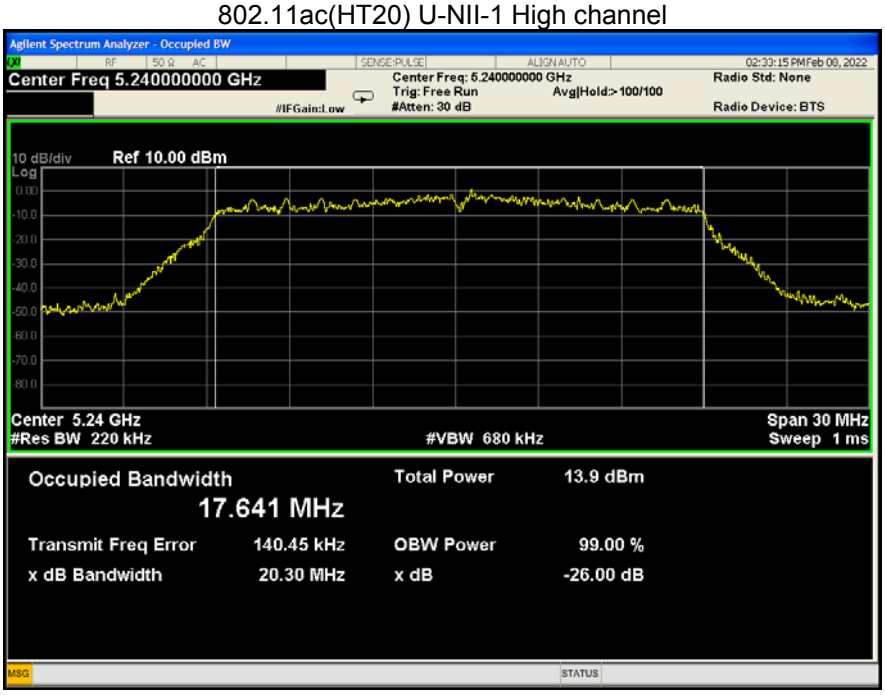
802.11ac(HT20) U-NII-1 Low channel



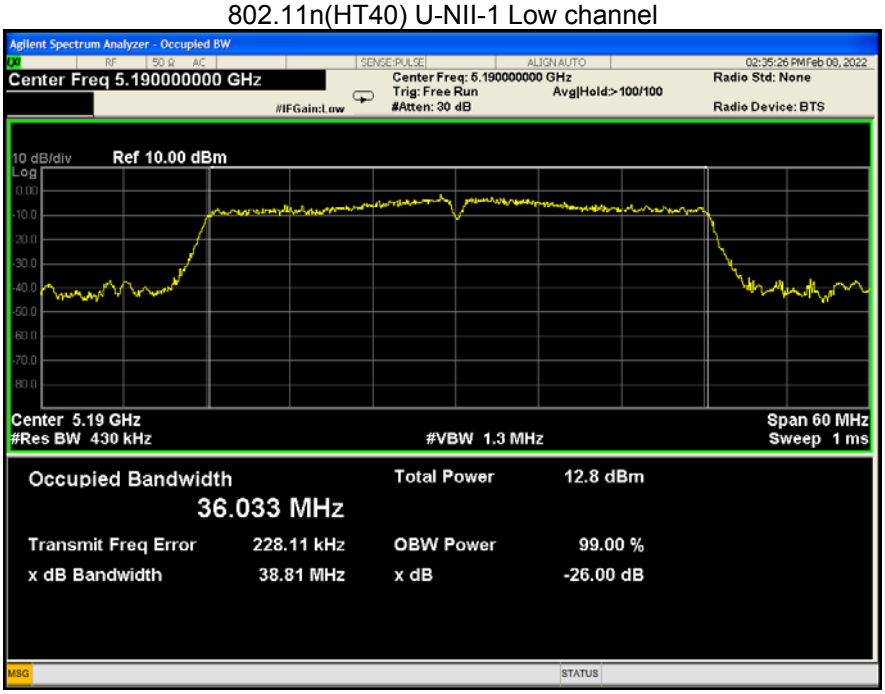
802.11ac(HT20) U-NII-1 Middle channel



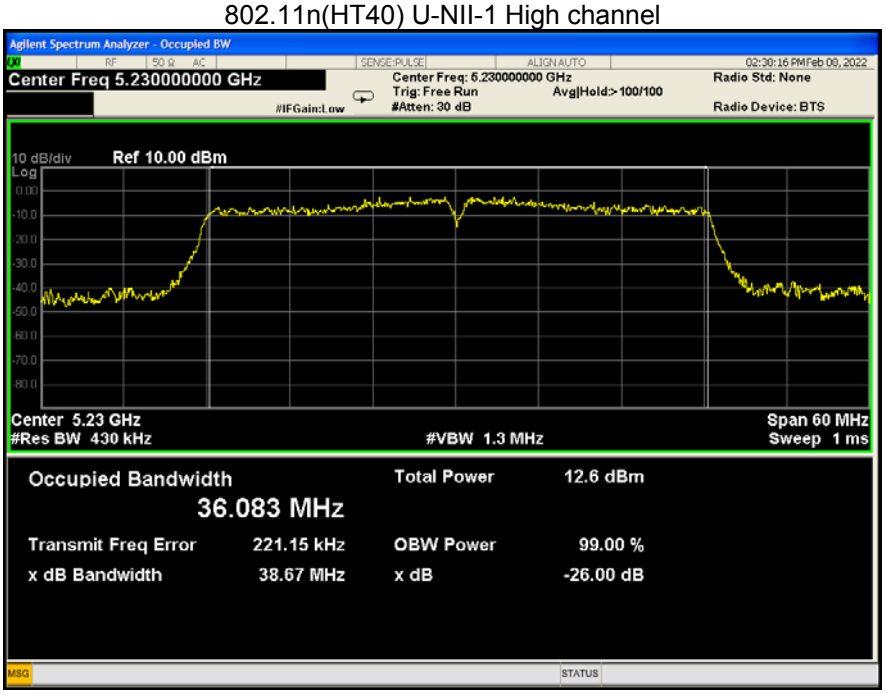
802.11ac(HT20) U-NII-1 High channel



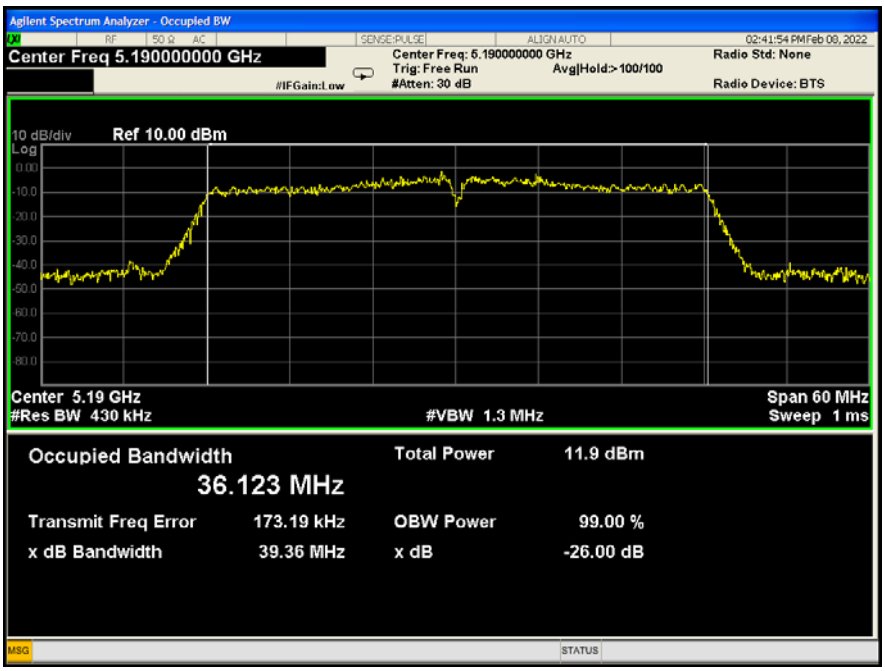
802.11n(HT40) U-NII-1 Low channel



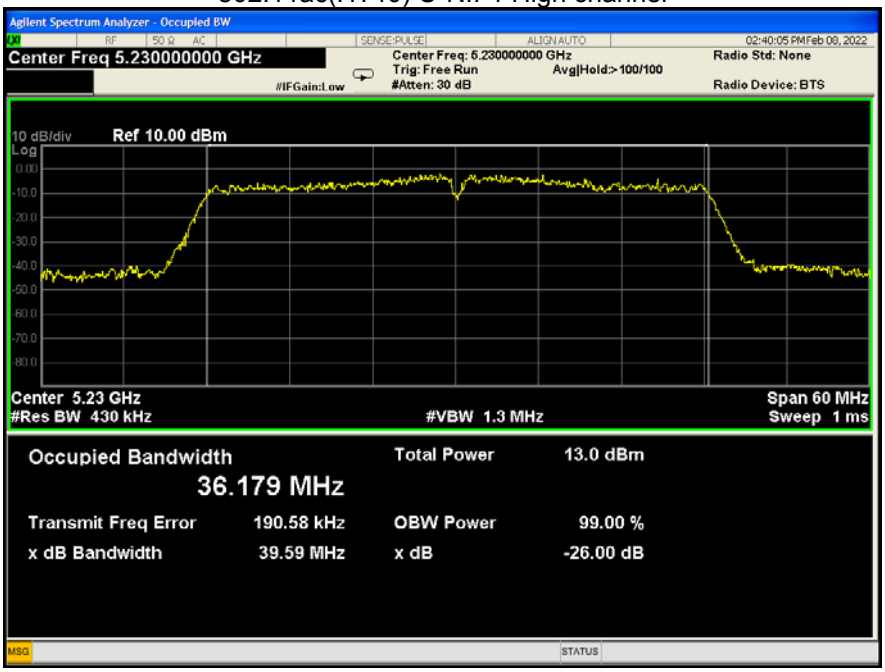
802.11n(HT40) U-NII-1 High channel



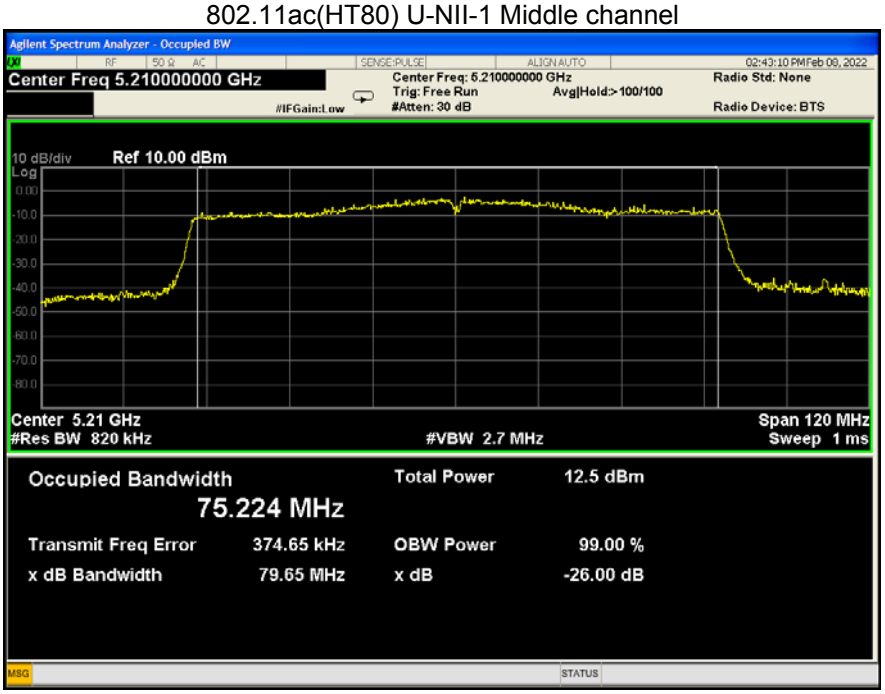
802.11ac(HT40) U-NII-1 Low channel



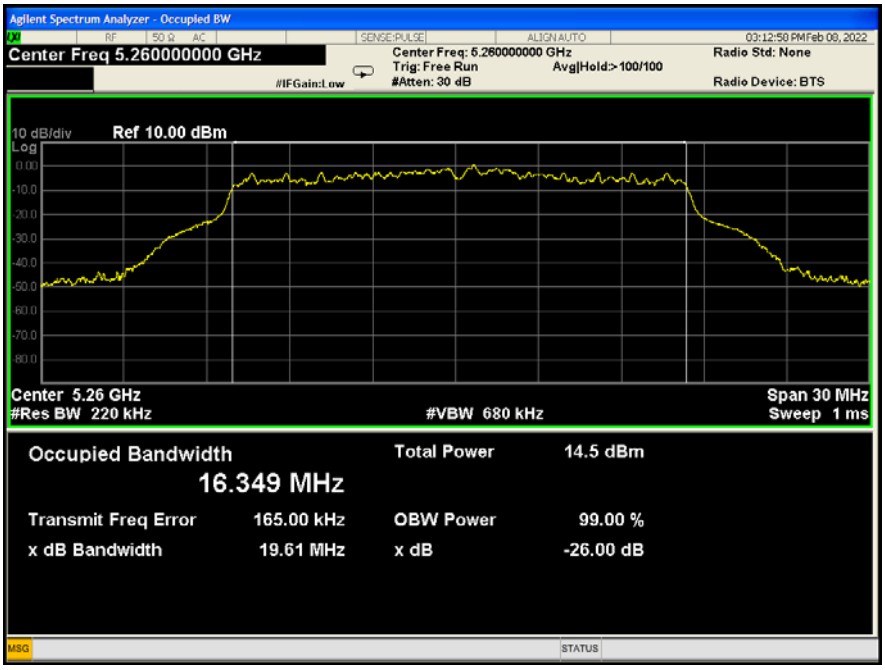
802.11ac(HT40) U-NII-1 High channel



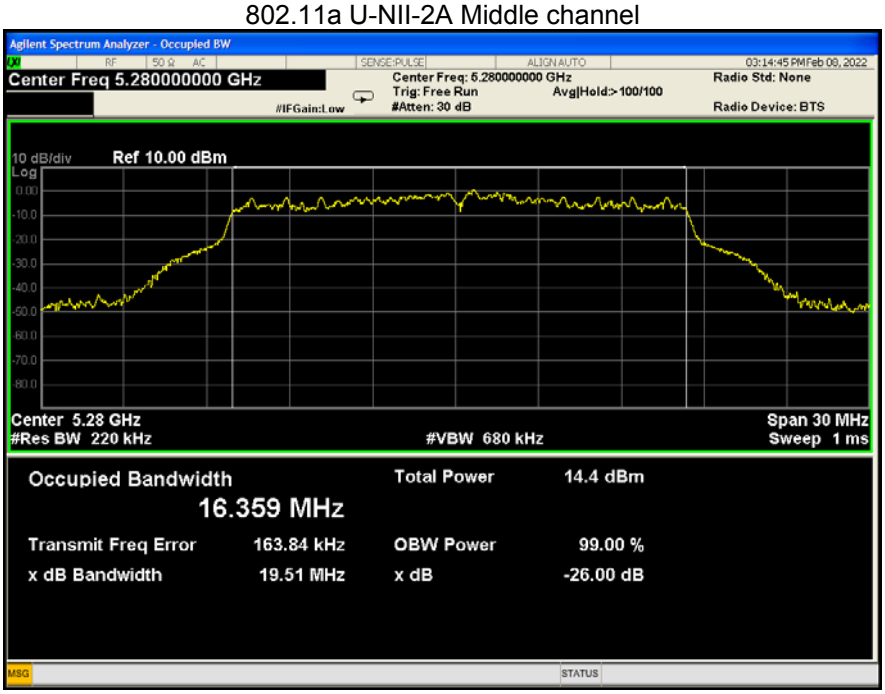
802.11ac(HT80) U-NII-1 Middle channel



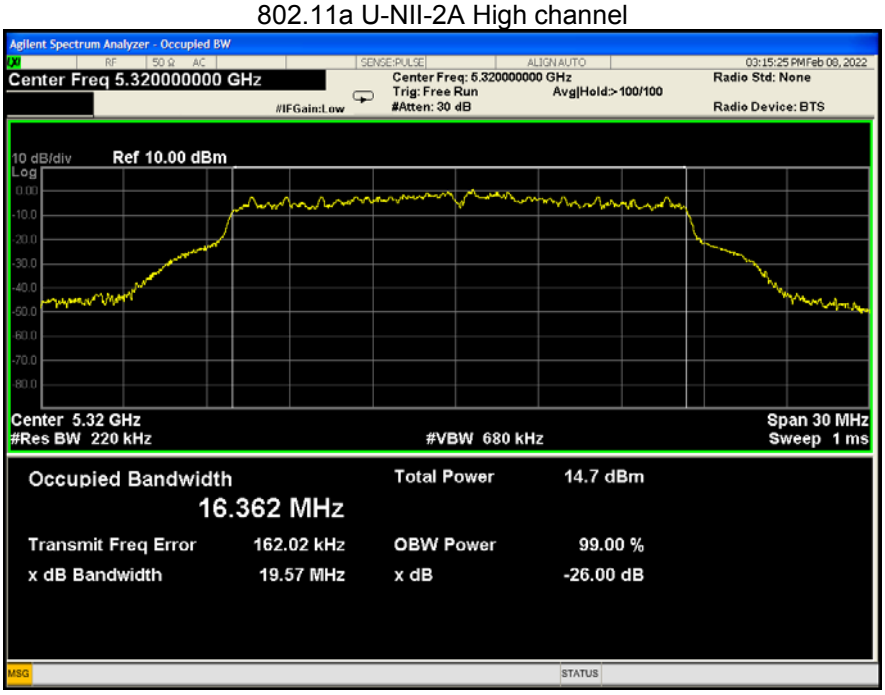
802.11a U-NII-2A Low channel



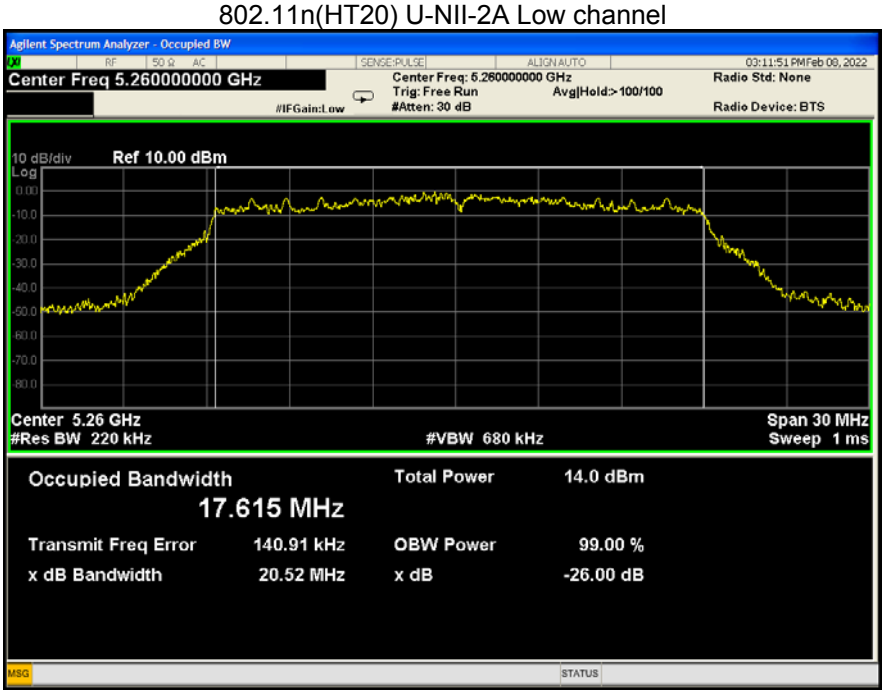
802.11a U-NII-2A Middle channel



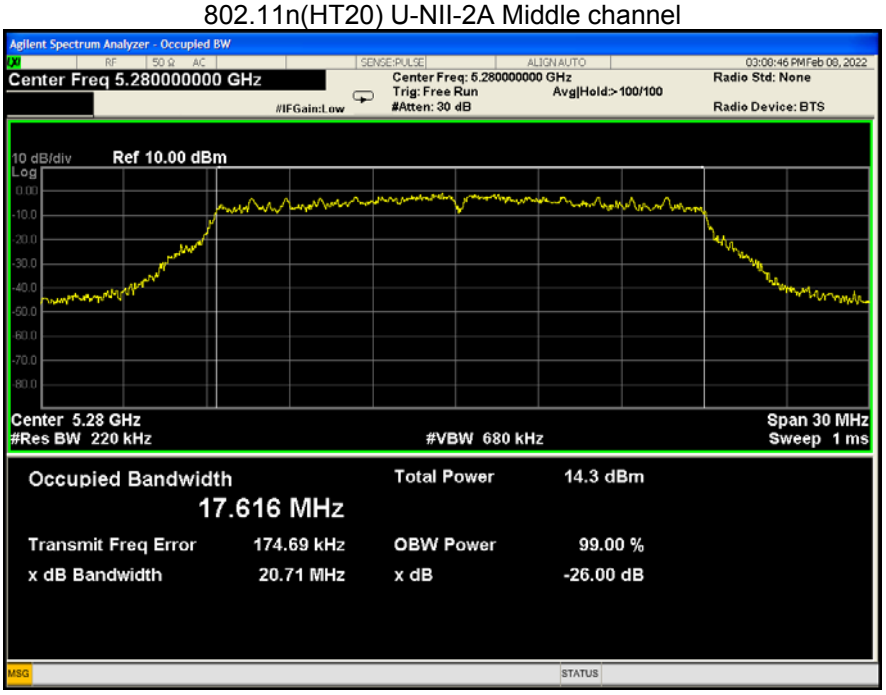
802.11a U-NII-2A High channel



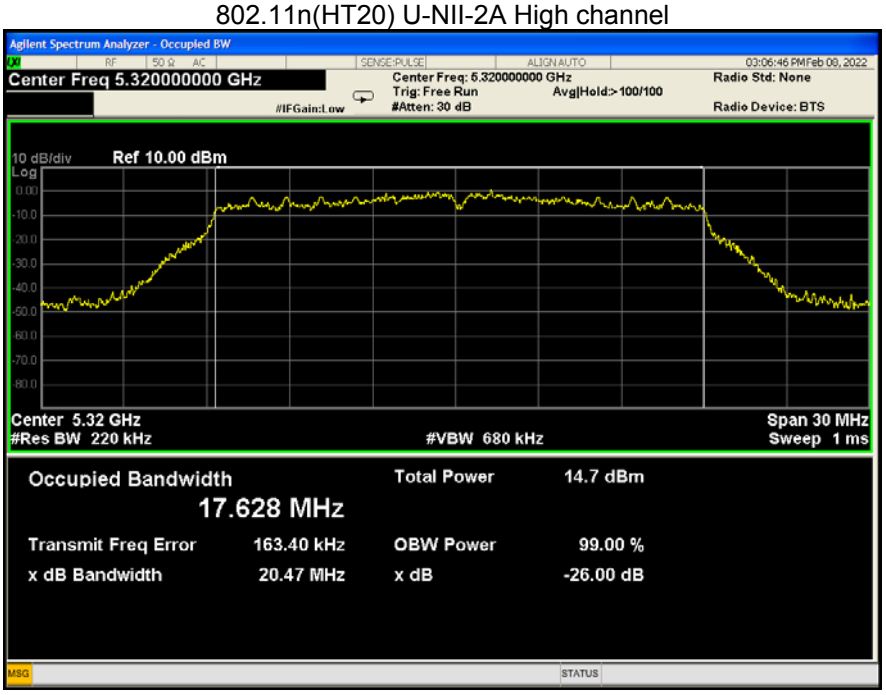
802.11n(HT20) U-NII-2A Low channel



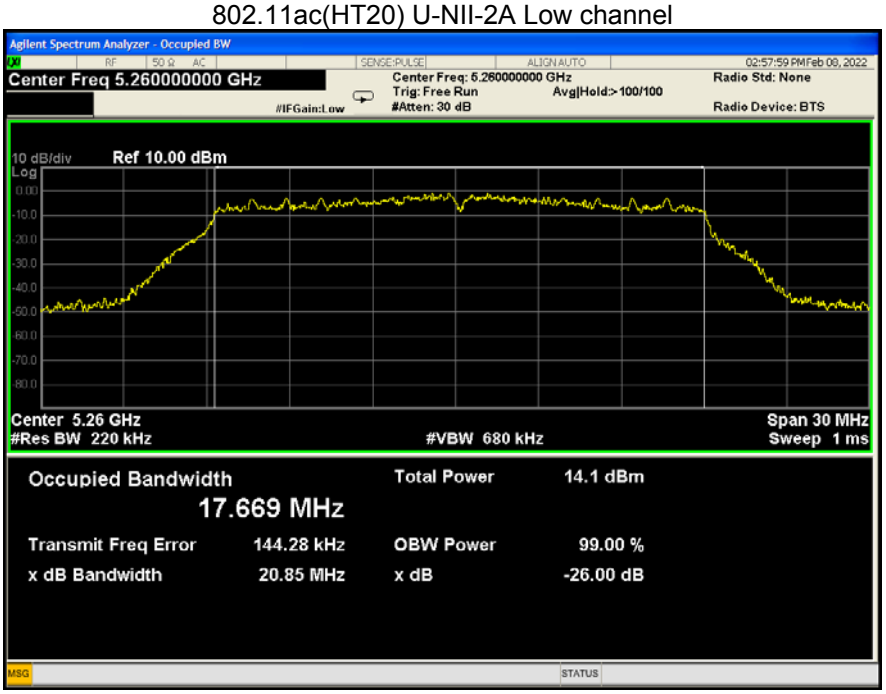
802.11n(HT20) U-NII-2A Middle channel



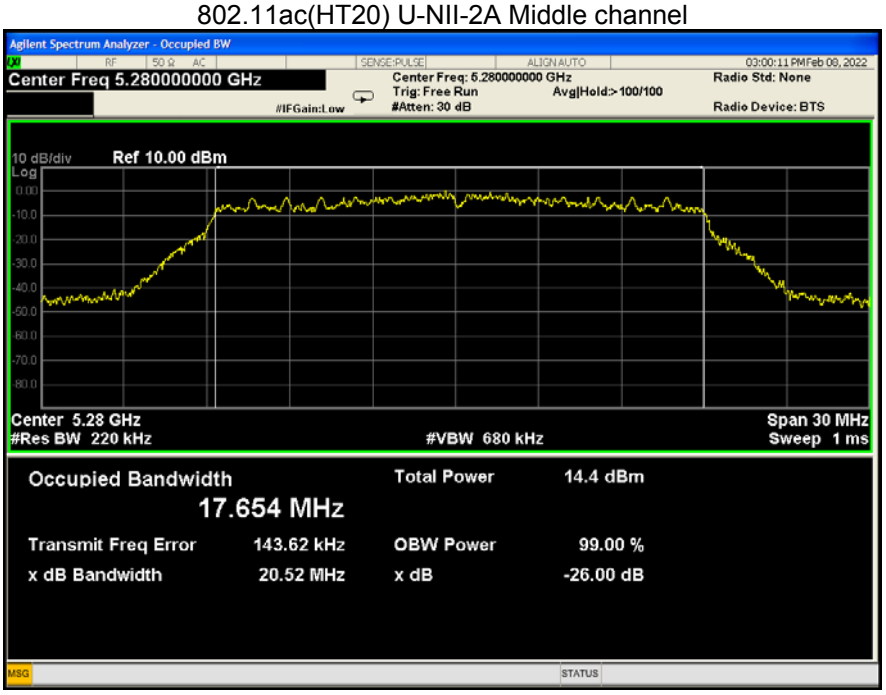
802.11n(HT20) U-NII-2A High channel



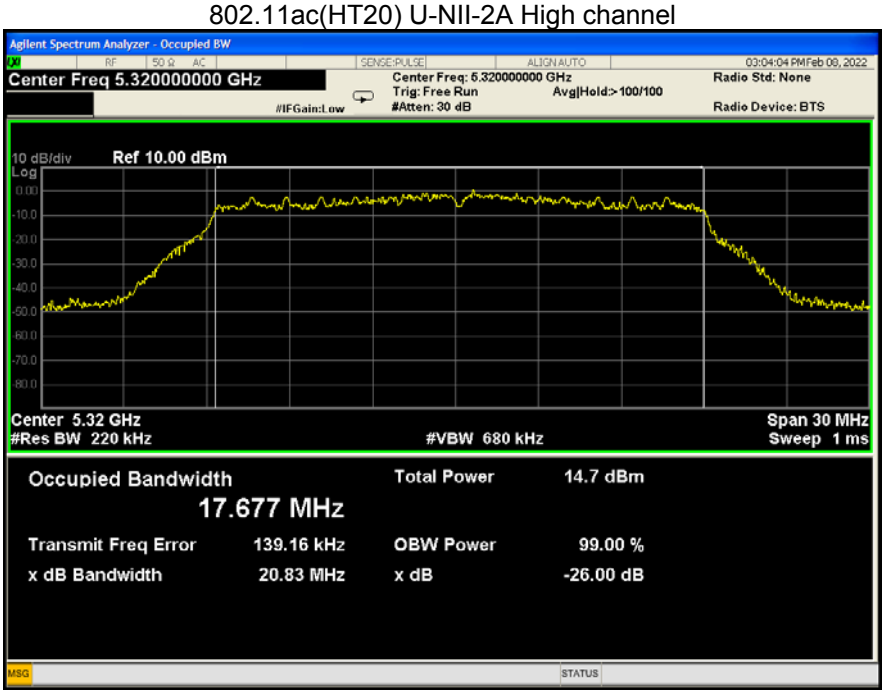
802.11ac(HT20) U-NII-2A Low channel



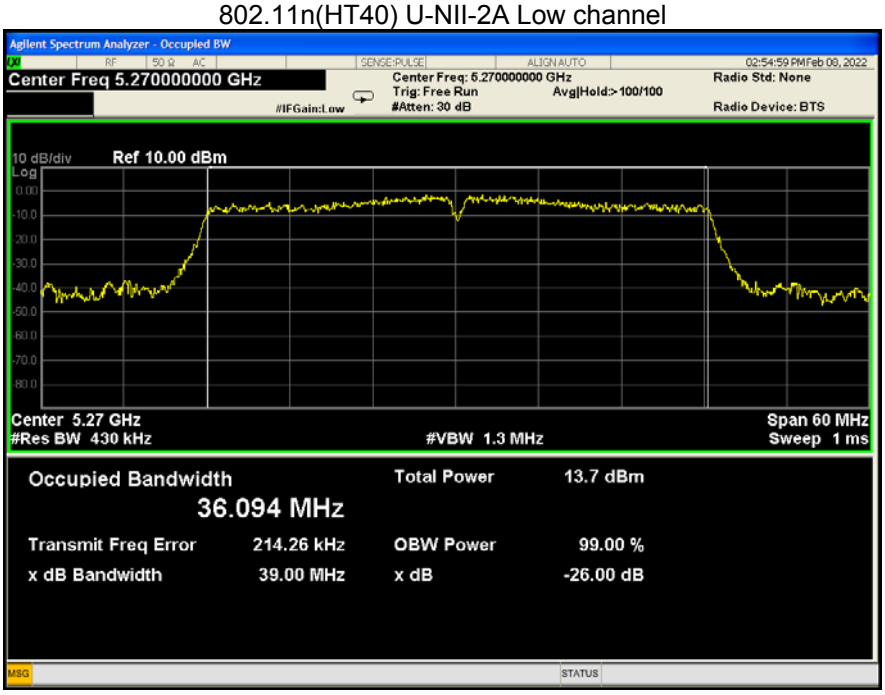
802.11ac(HT20) U-NII-2A Middle channel



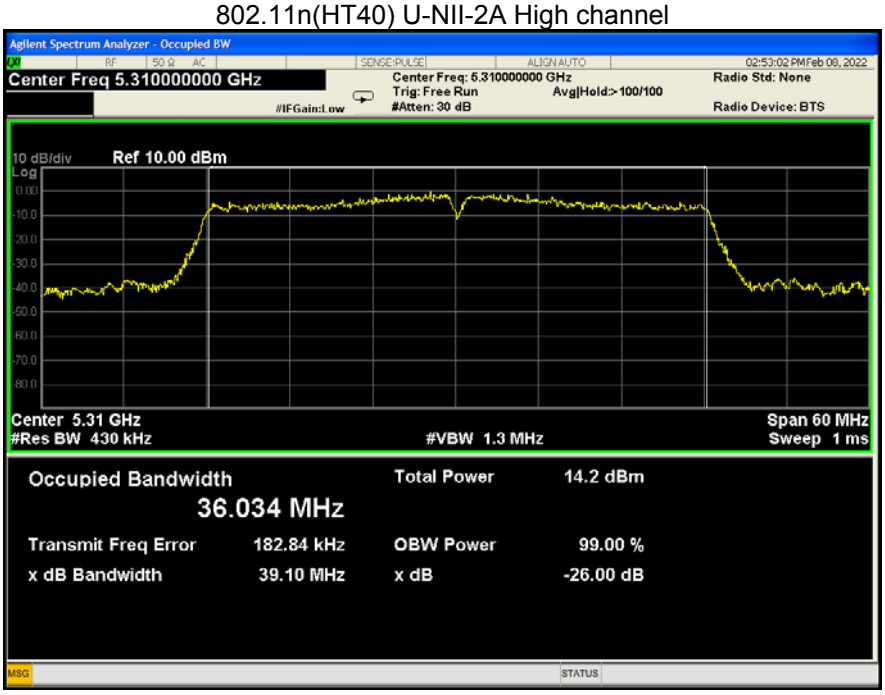
802.11ac(HT20) U-NII-2A High channel



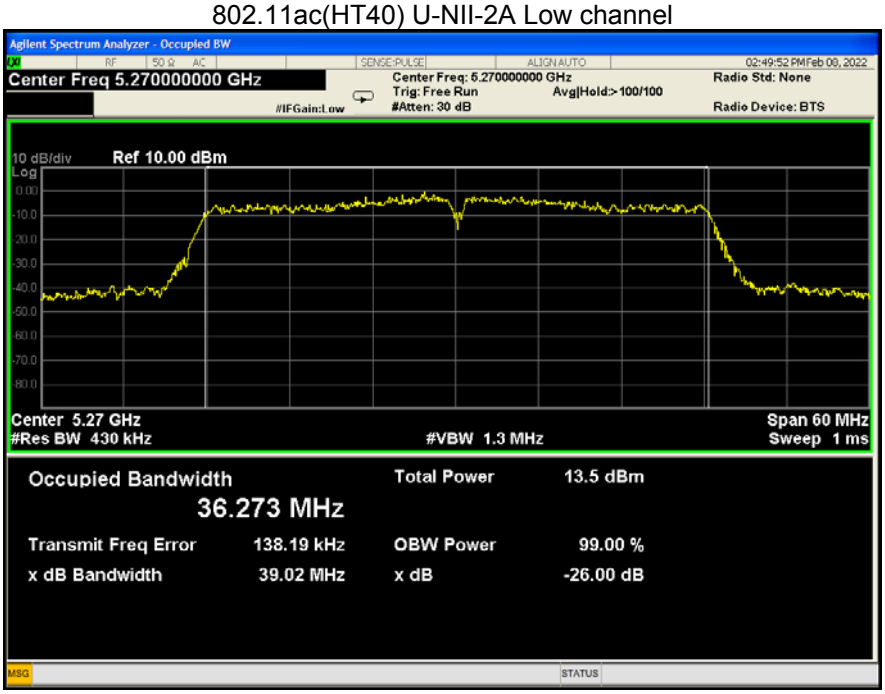
802.11n(HT40) U-NII-2A Low channel



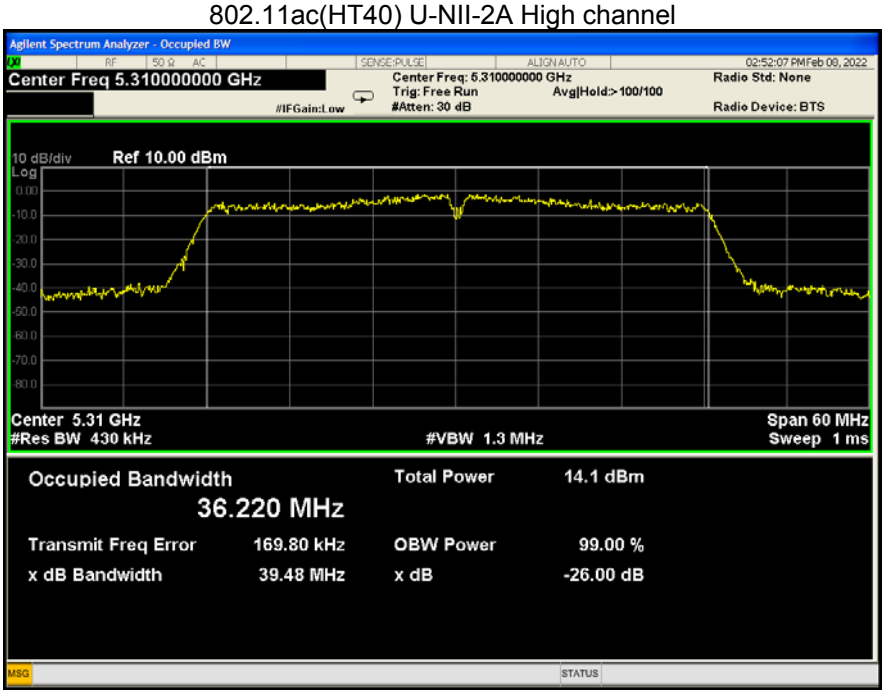
802.11n(HT40) U-NII-2A High channel



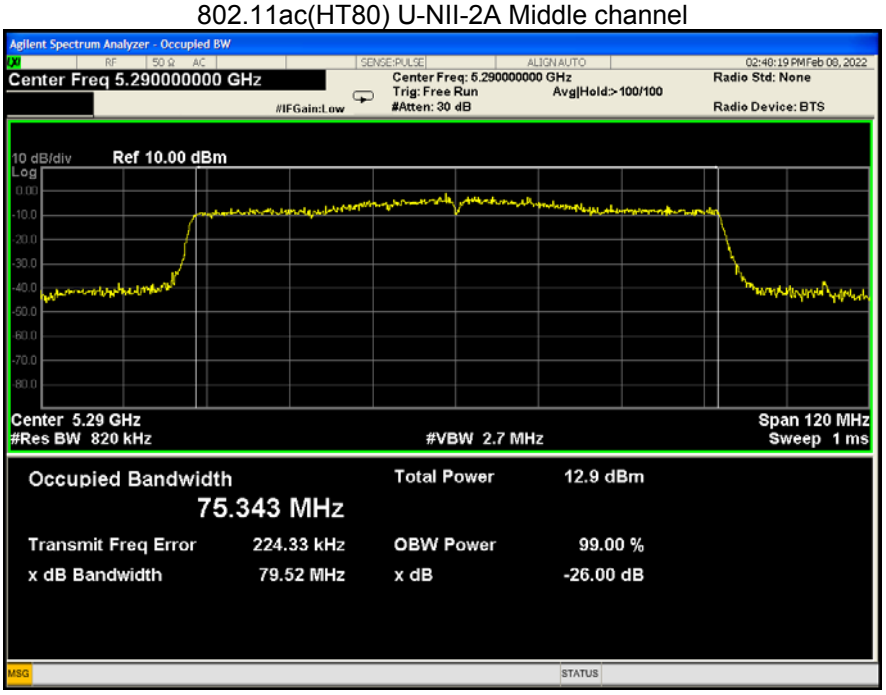
802.11ac(HT40) U-NII-2A Low channel



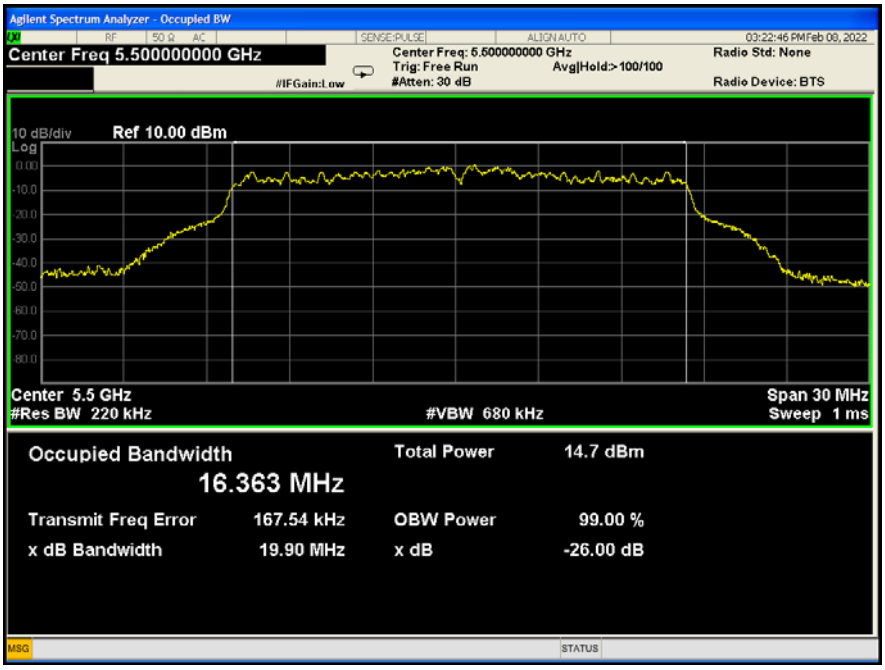
802.11ac(HT40) U-NII-2A High channel



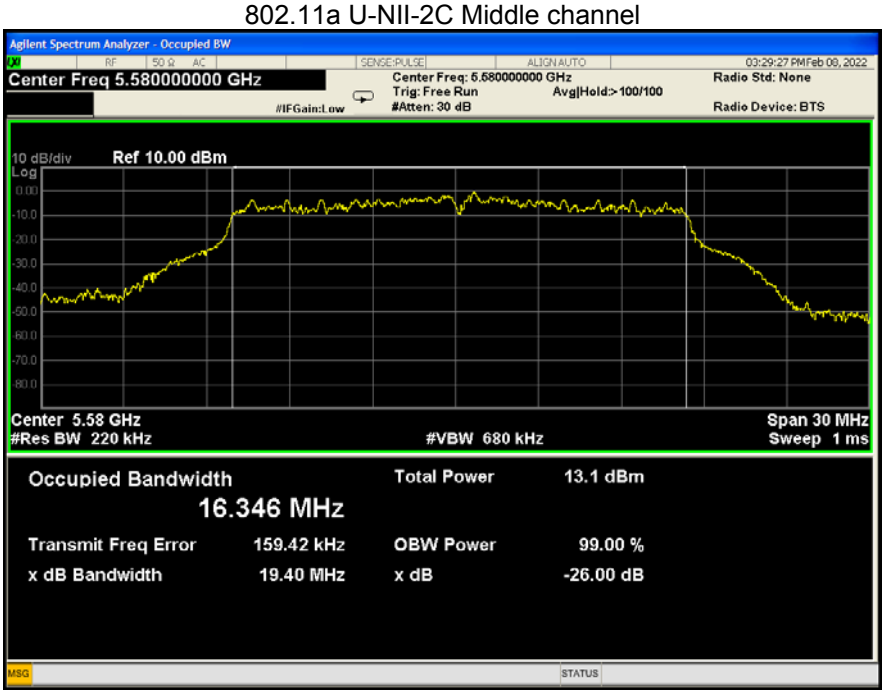
802.11ac(HT80) U-NII-2A Middle channel



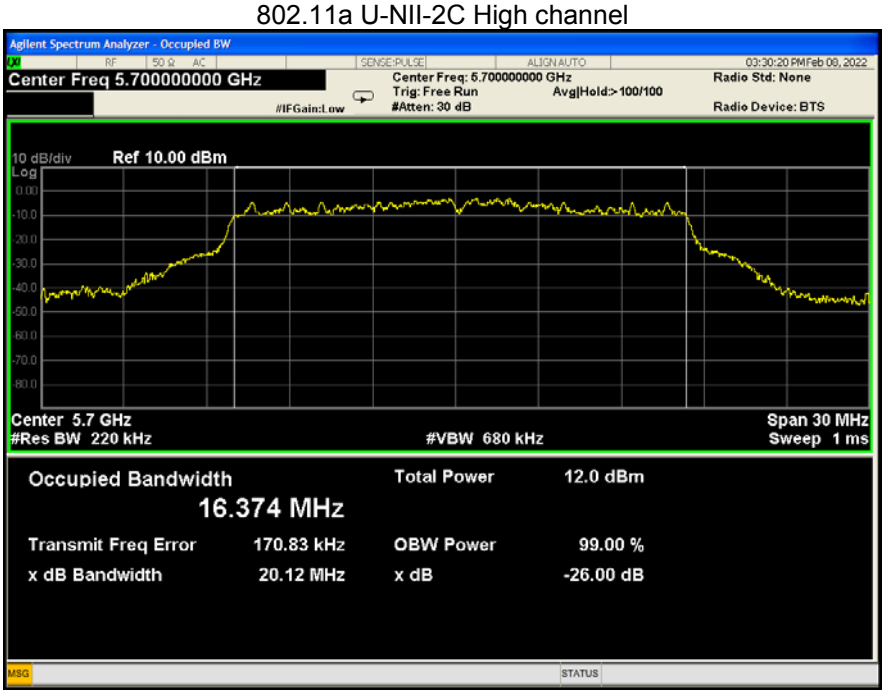
802.11a U-NII-2C Low channel



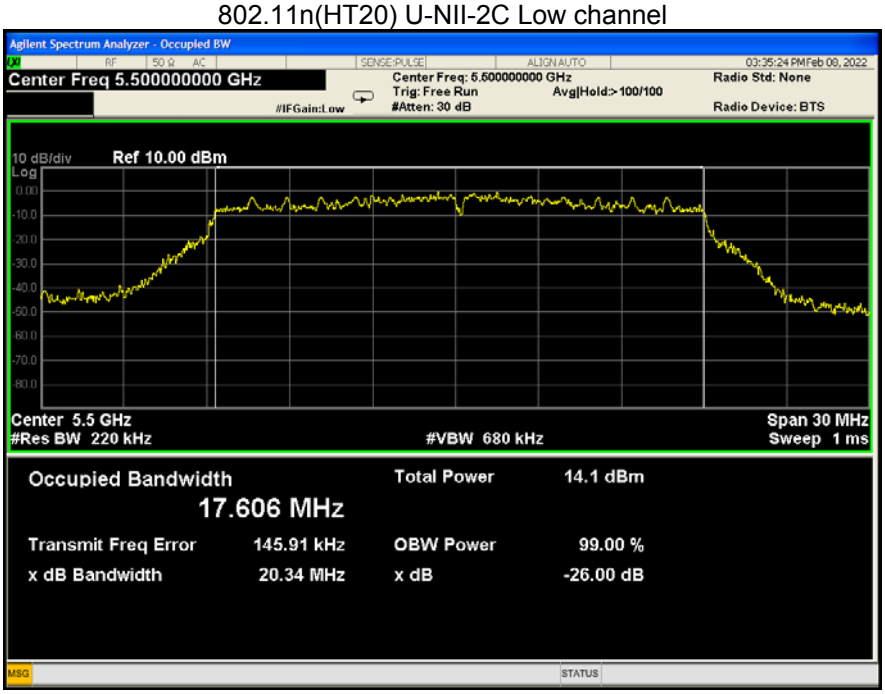
802.11a U-NII-2C Middle channel



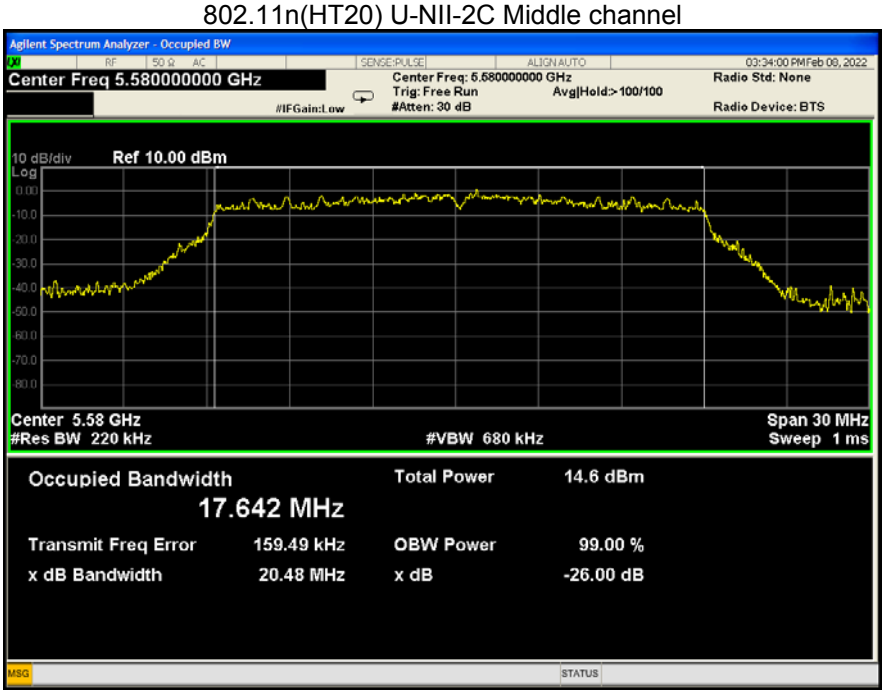
802.11a U-NII-2C High channel



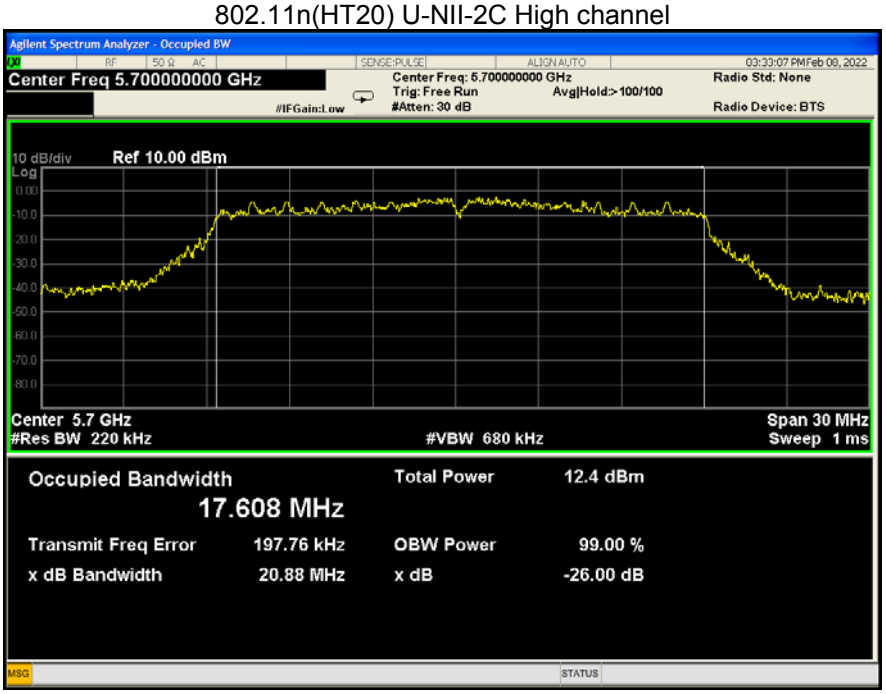
802.11n(HT20) U-NII-2C Low channel



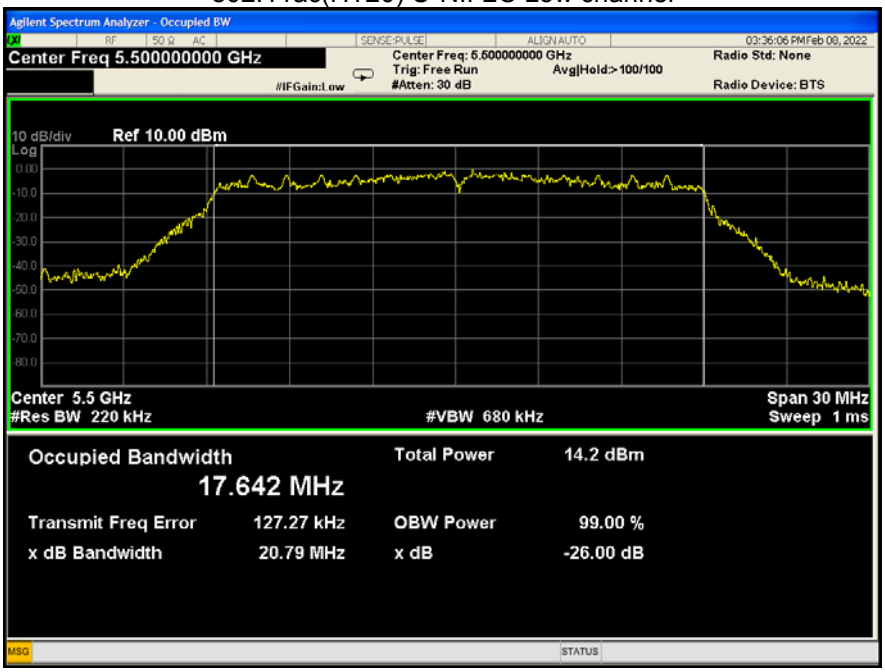
802.11n(HT20) U-NII-2C Middle channel



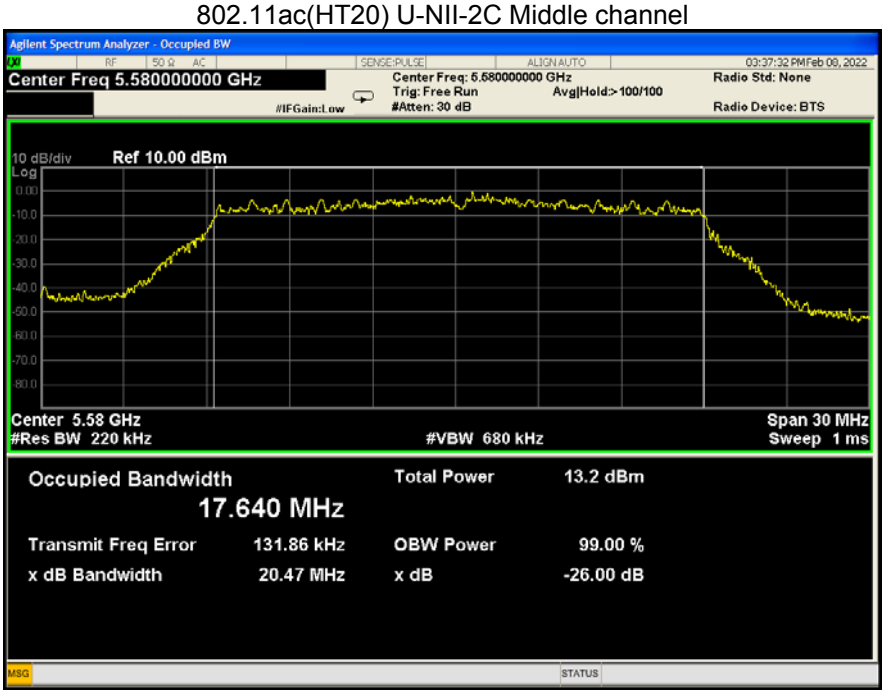
802.11n(HT20) U-NII-2C High channel



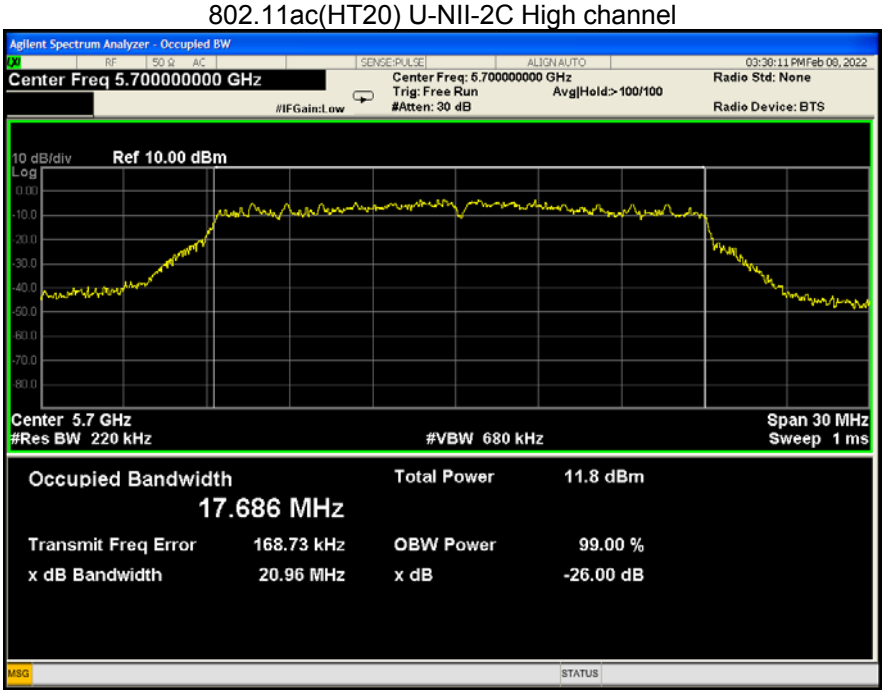
802.11ac(HT20) U-NII-2C Low channel



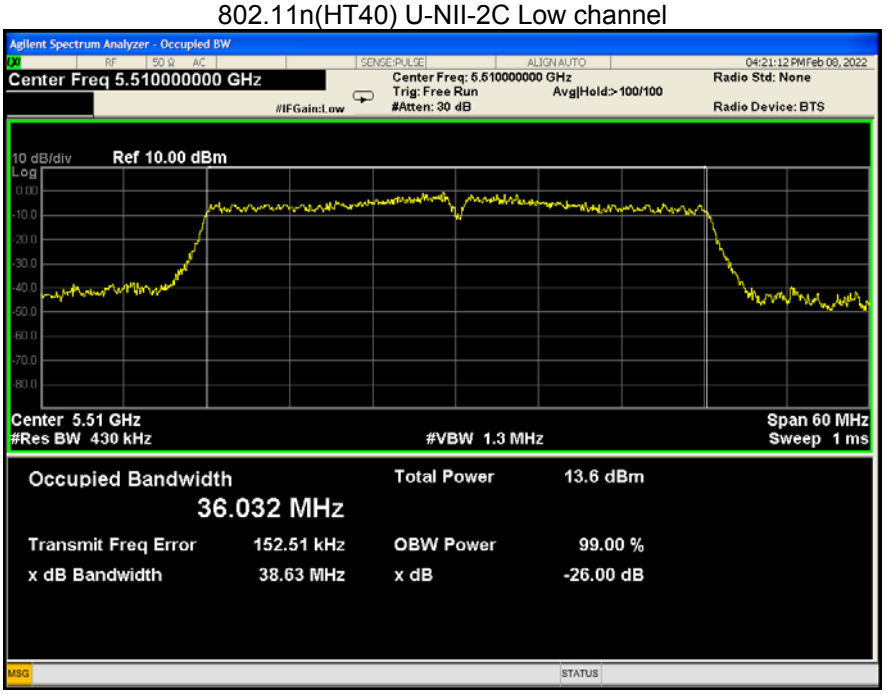
802.11ac(HT20) U-NII-2C Middle channel



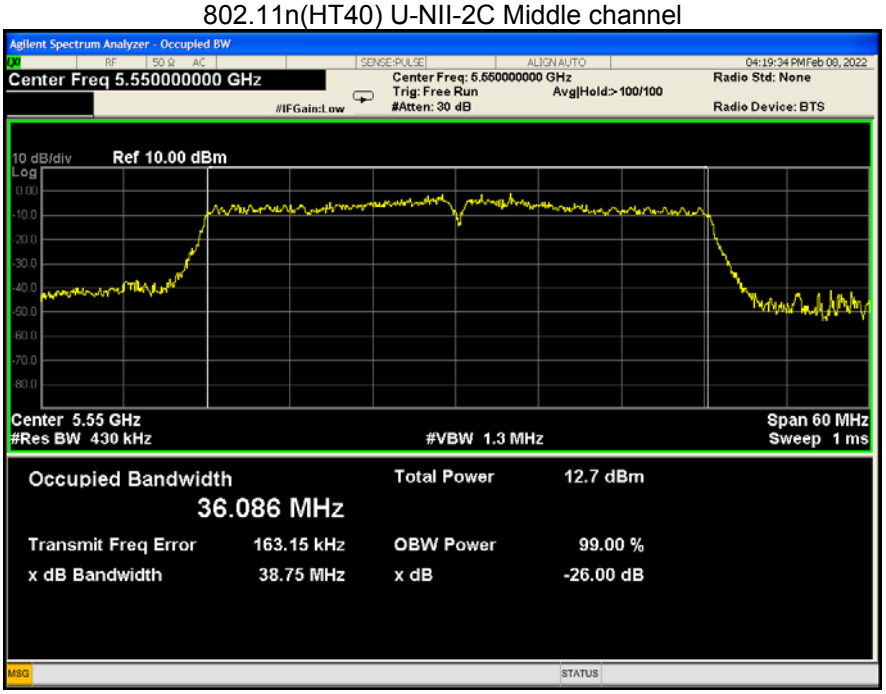
802.11ac(HT20) U-NII-2C High channel



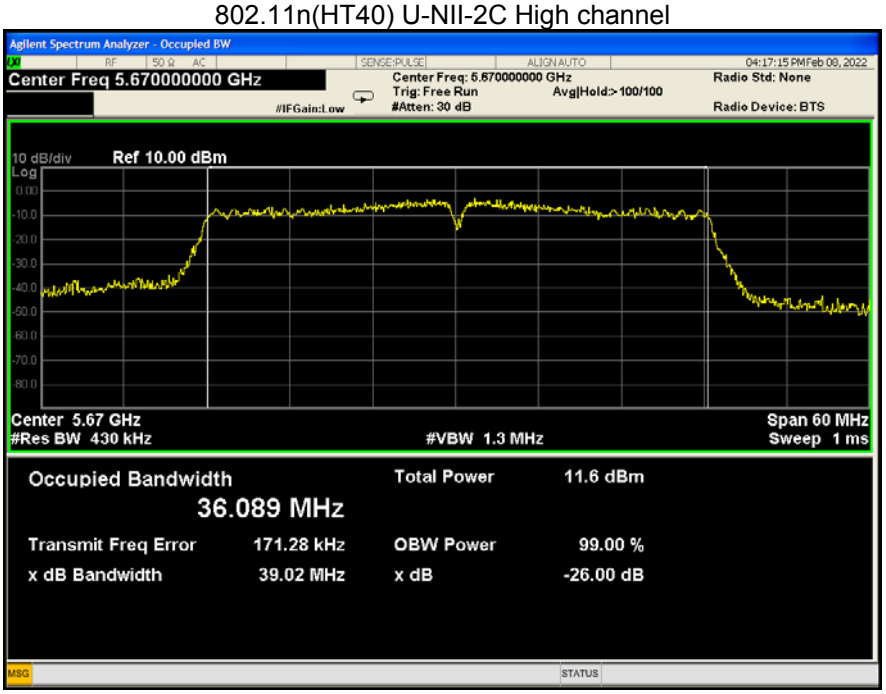
802.11n(HT40) U-NII-2C Low channel



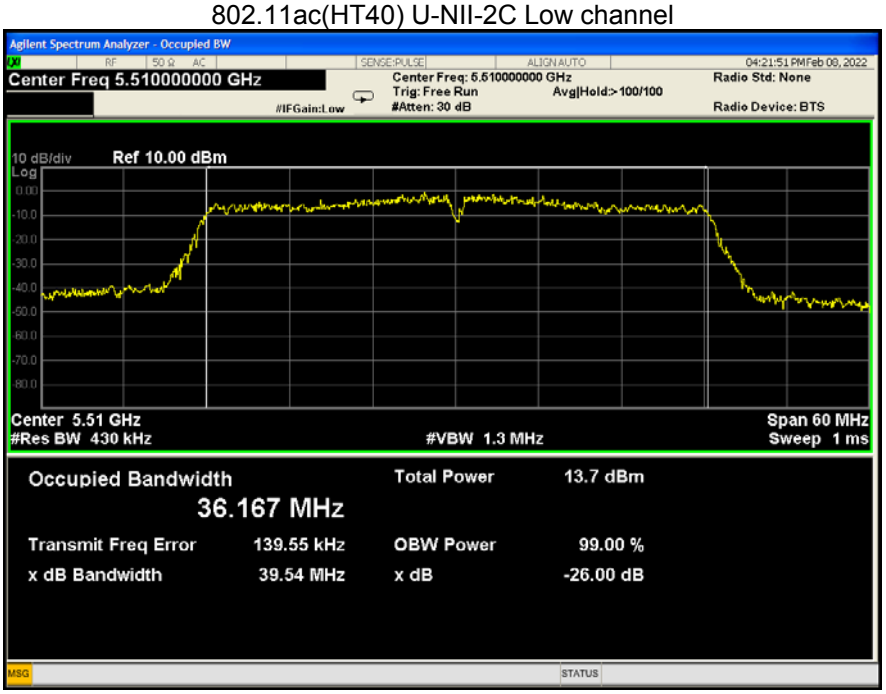
802.11n(HT40) U-NII-2C Middle channel



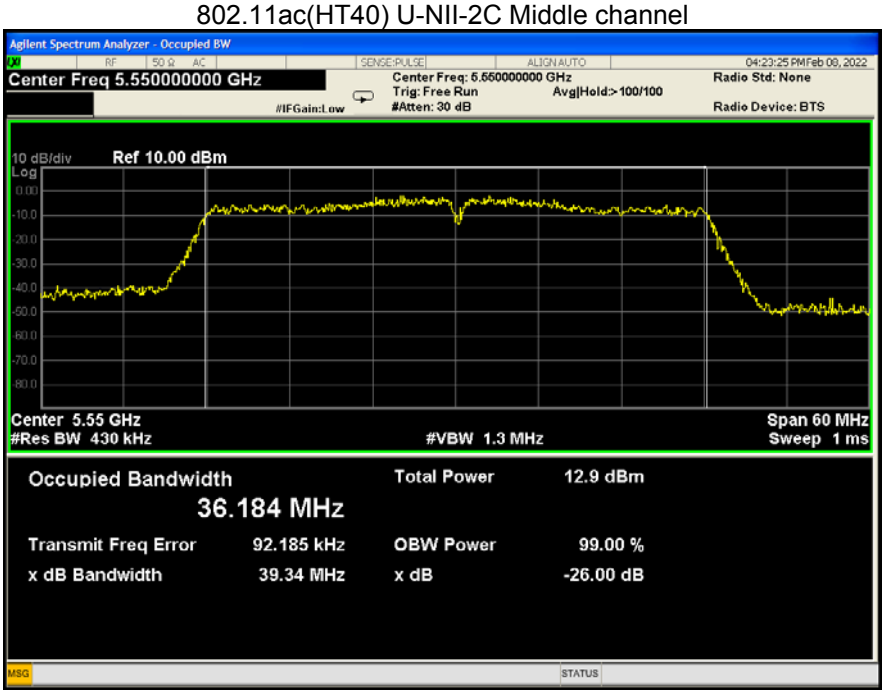
802.11n(HT40) U-NII-2C High channel



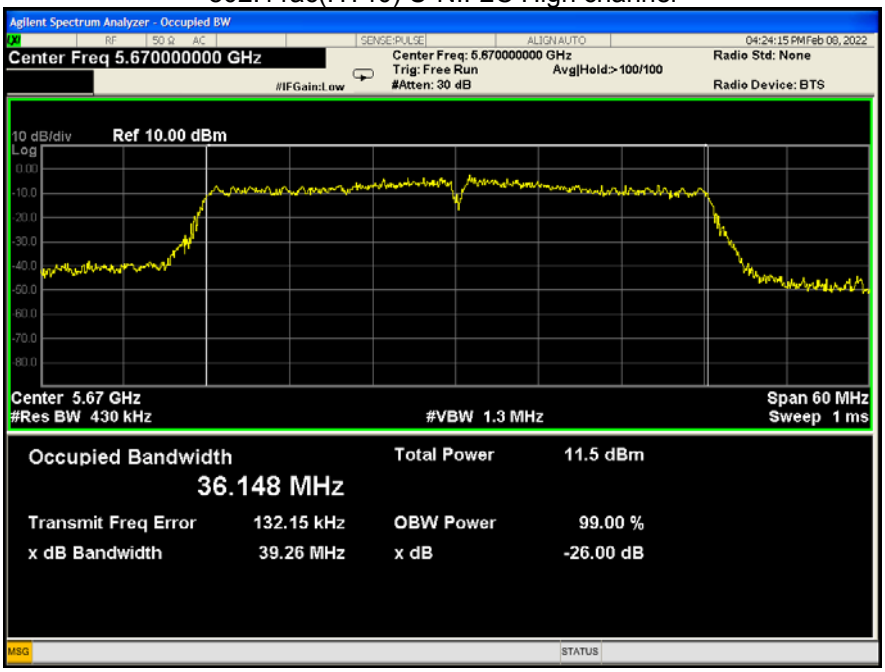
802.11ac(HT40) U-NII-2C Low channel



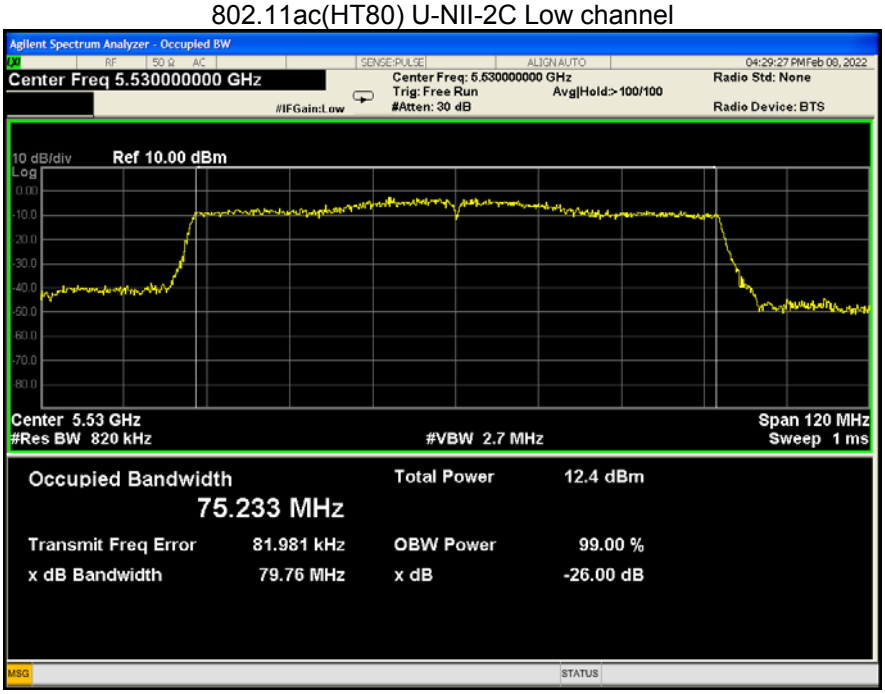
802.11ac(HT40) U-NII-2C Middle channel



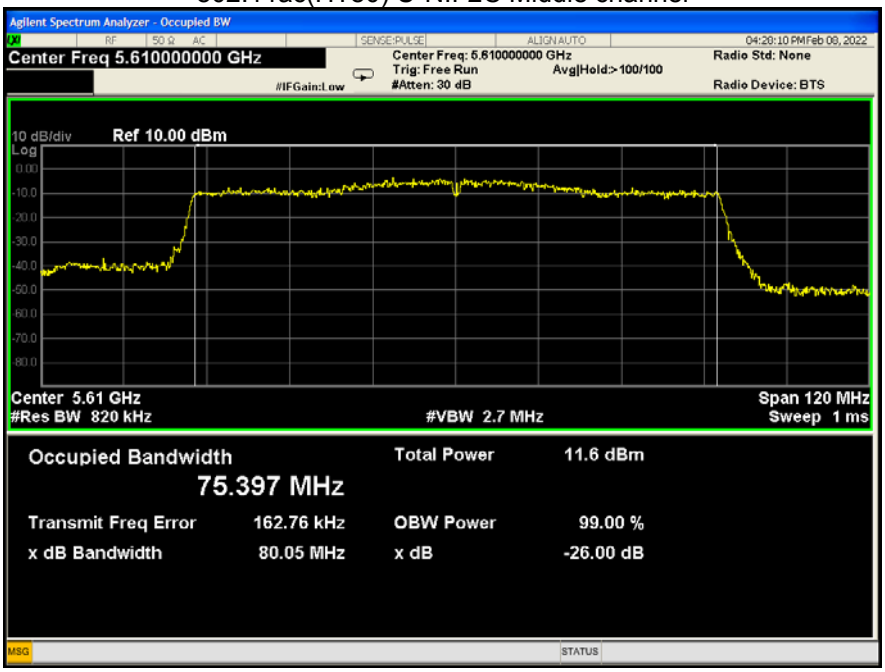
802.11ac(HT40) U-NII-2C High channel



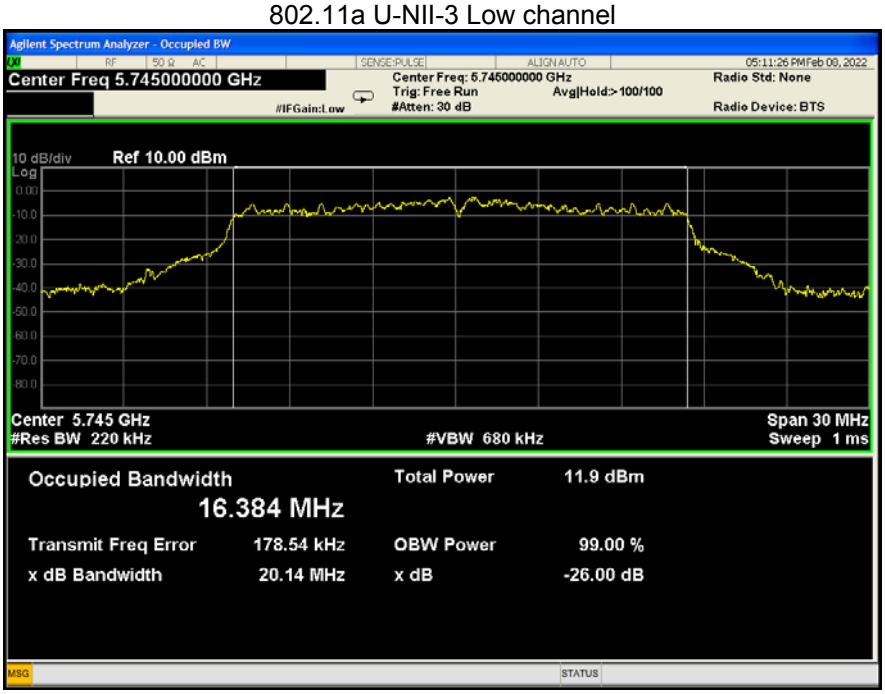
802.11ac(HT80) U-NII-2C Low channel



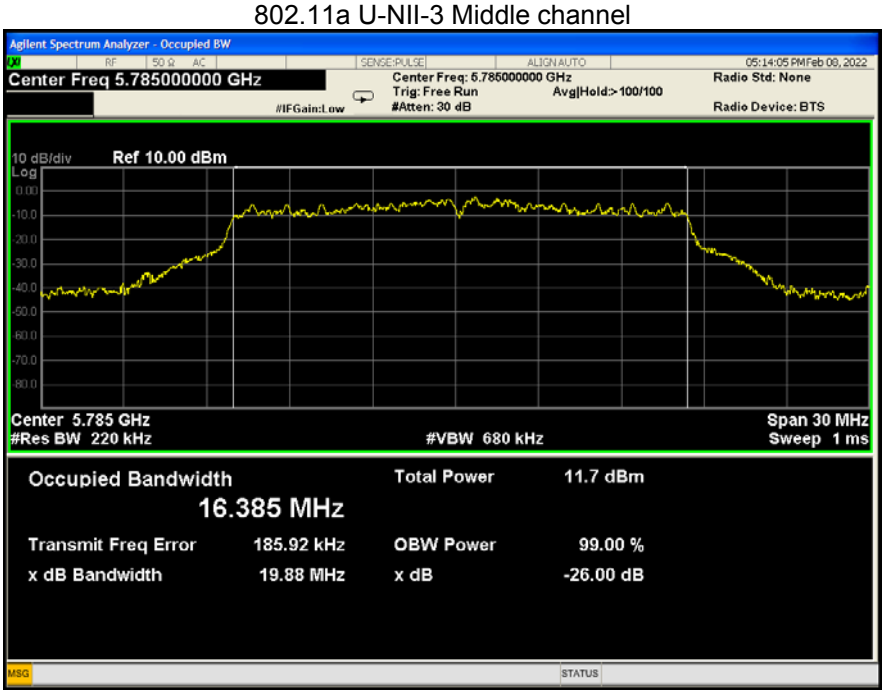
802.11ac(HT80) U-NII-2C Middle channel



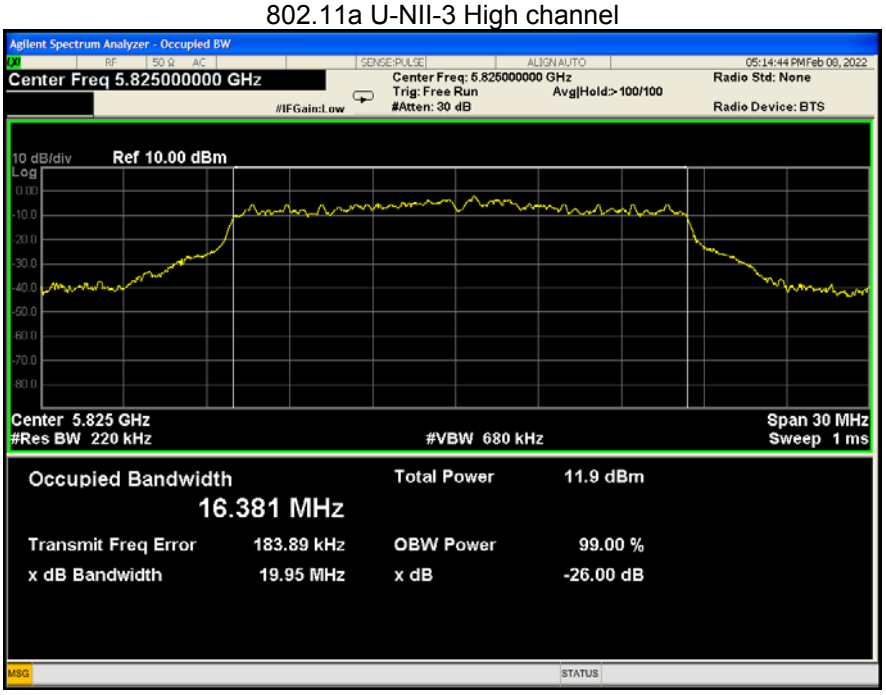
802.11a U-NII-3 Low channel



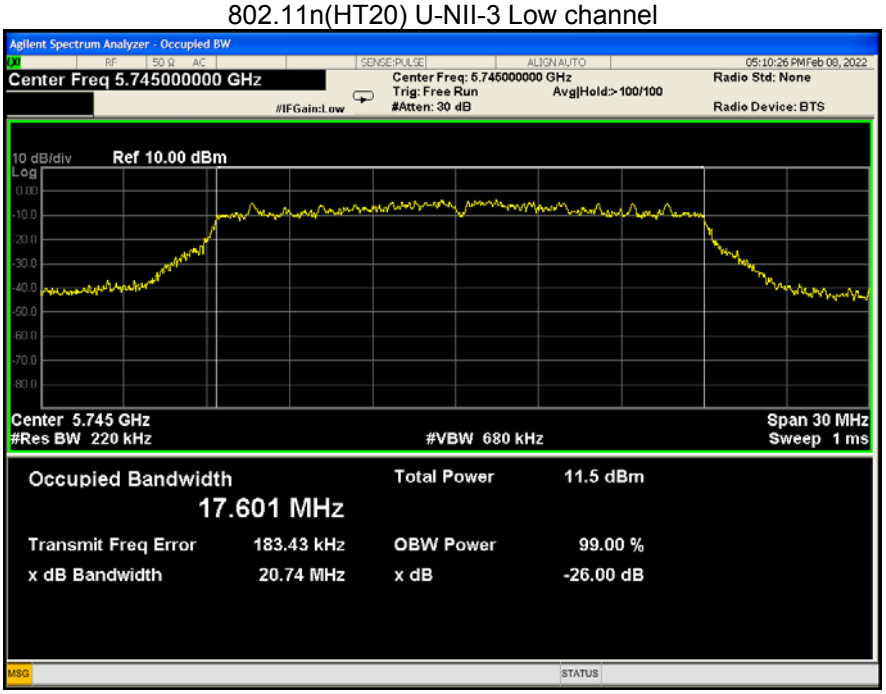
802.11a U-NII-3 Middle channel



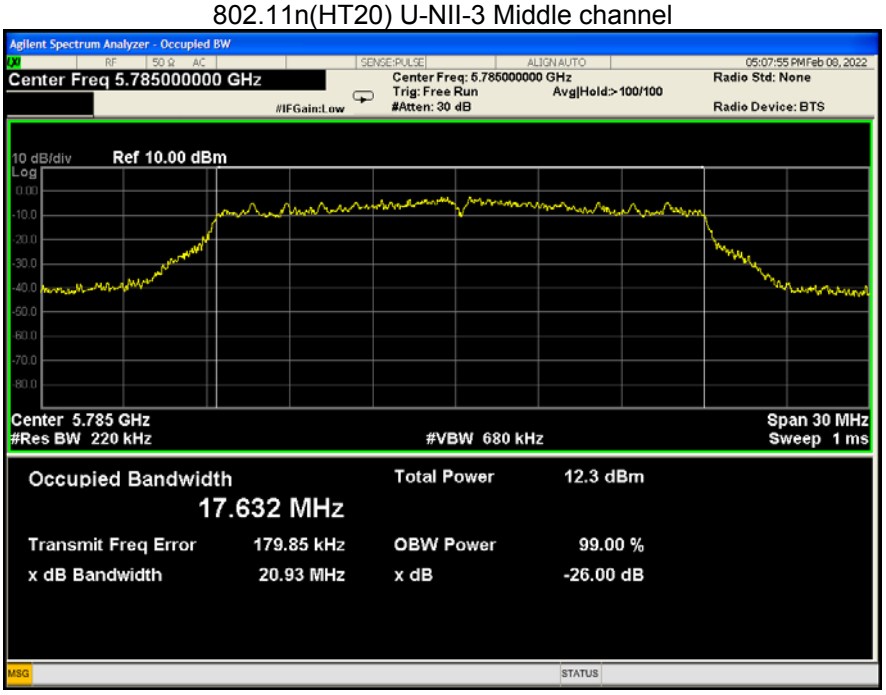
802.11a U-NII-3 High channel



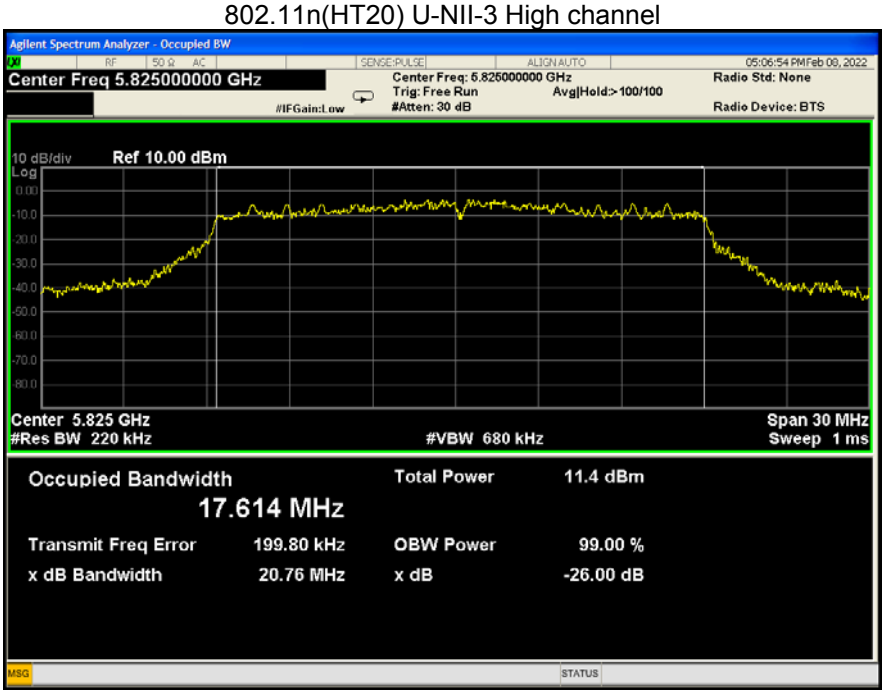
802.11n(HT20) U-NII-3 Low channel



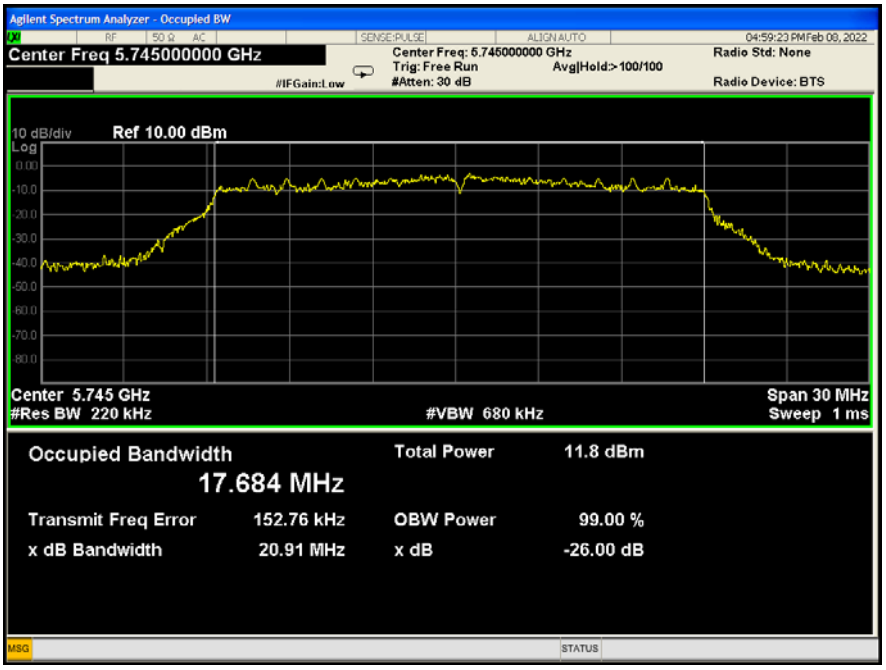
802.11n(HT20) U-NII-3 Middle channel



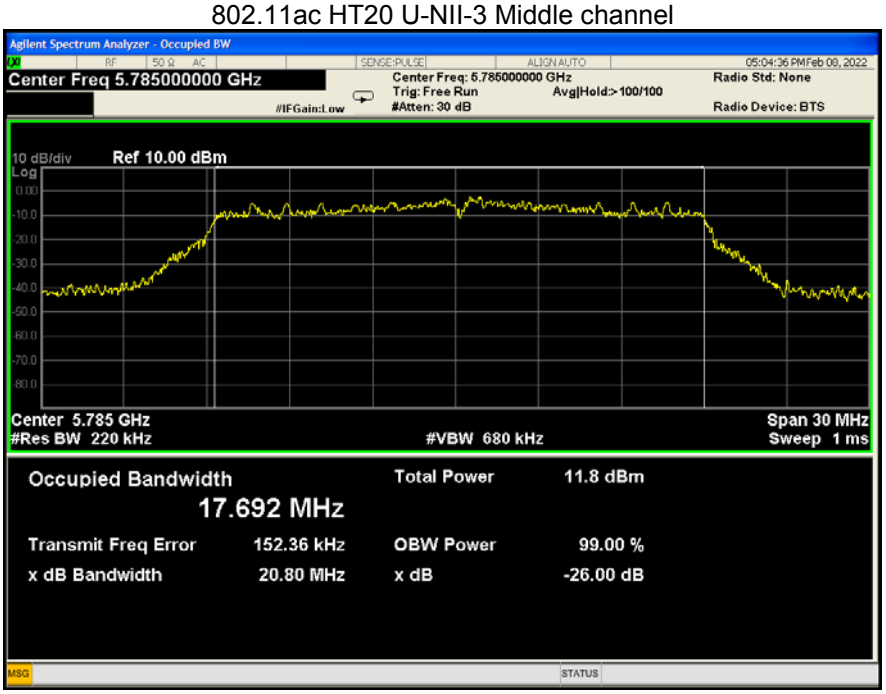
802.11n(HT20) U-NII-3 High channel



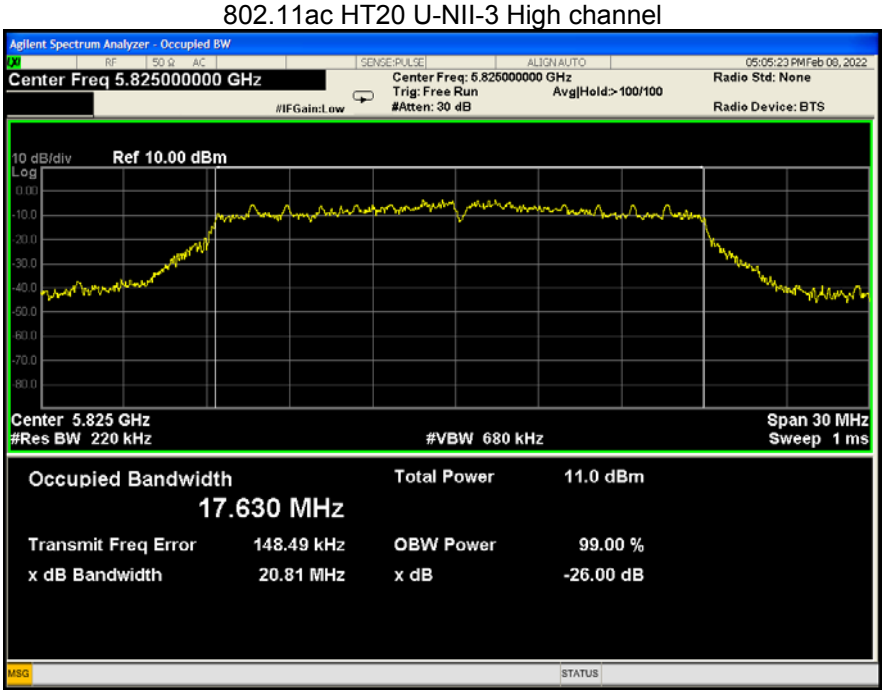
802.11ac HT20 U-NII-3 Low channel



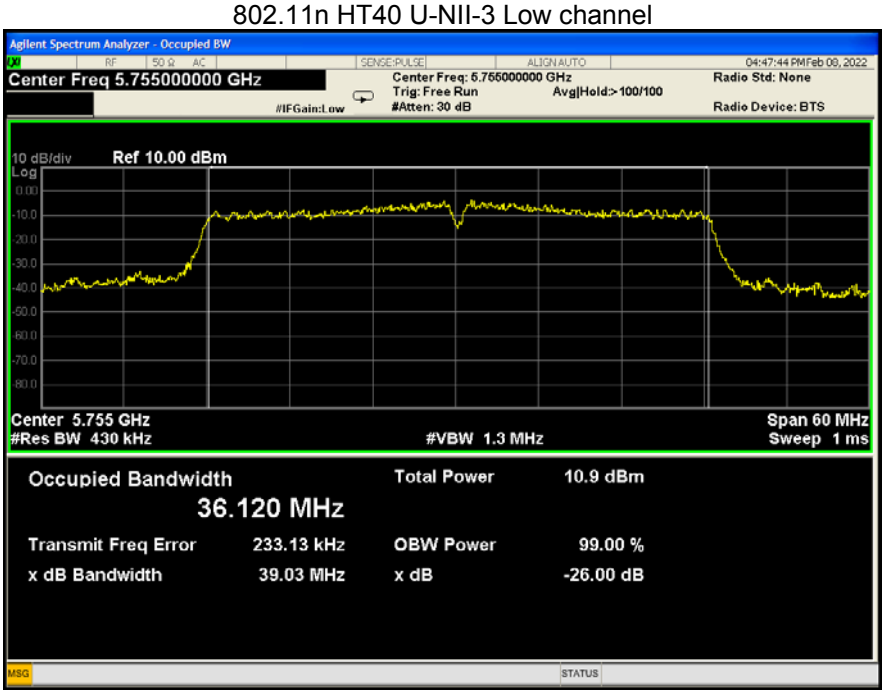
802.11ac HT20 U-NII-3 Middle channel



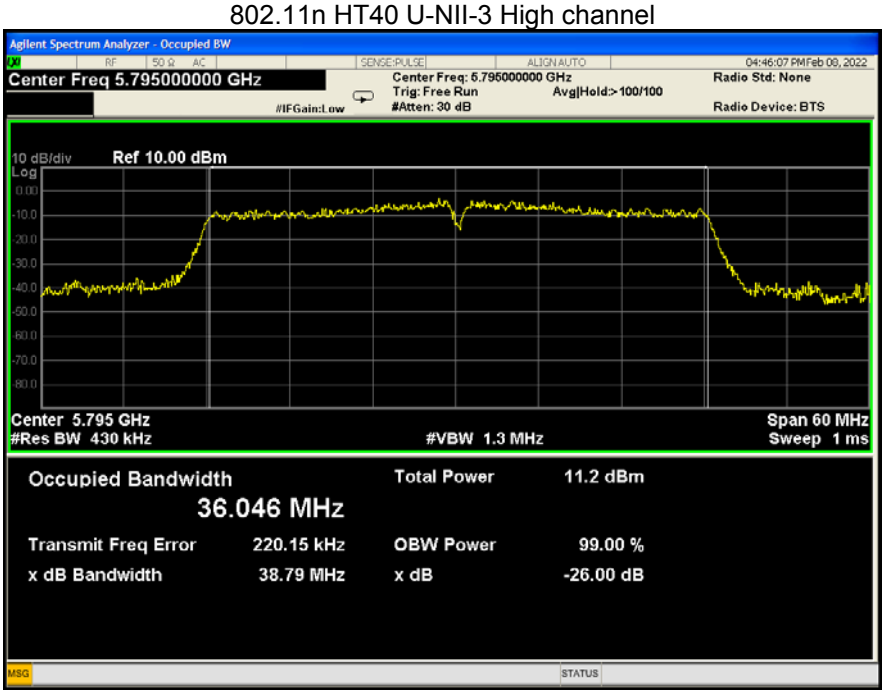
802.11ac HT20 U-NII-3 High channel



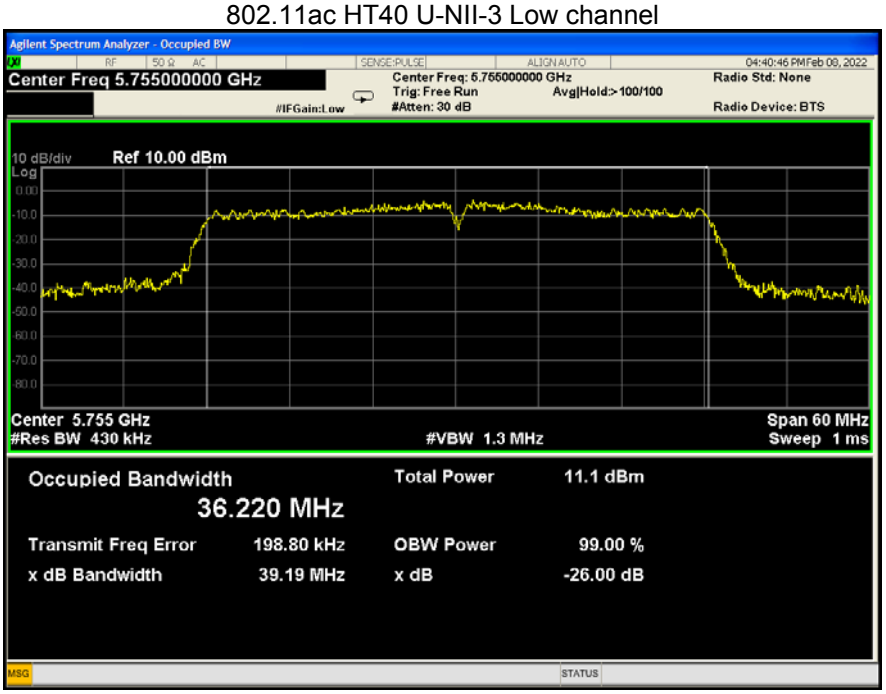
802.11n HT40 U-NII-3 Low channel



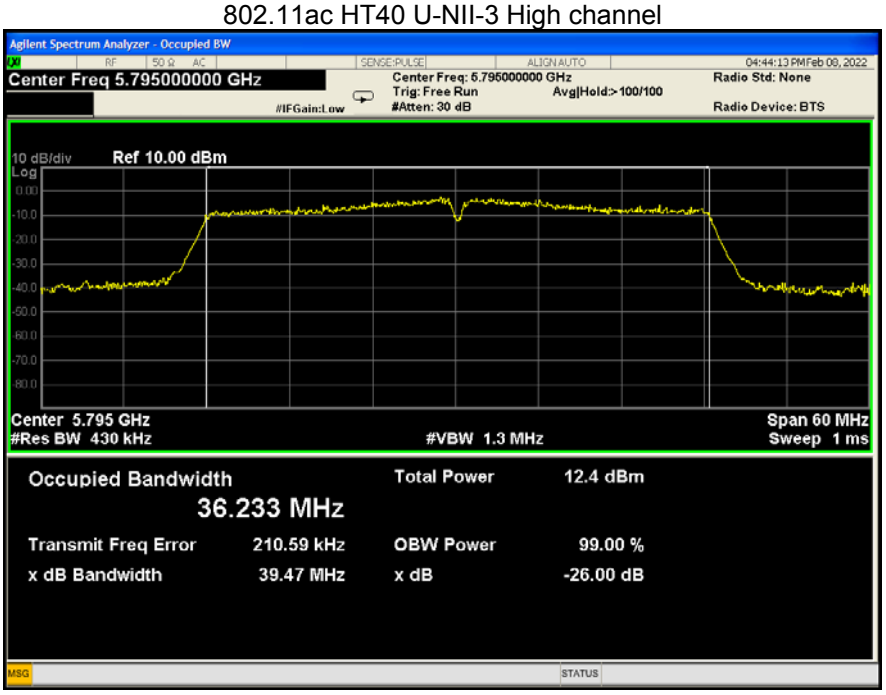
802.11n HT40 U-NII-3 High channel



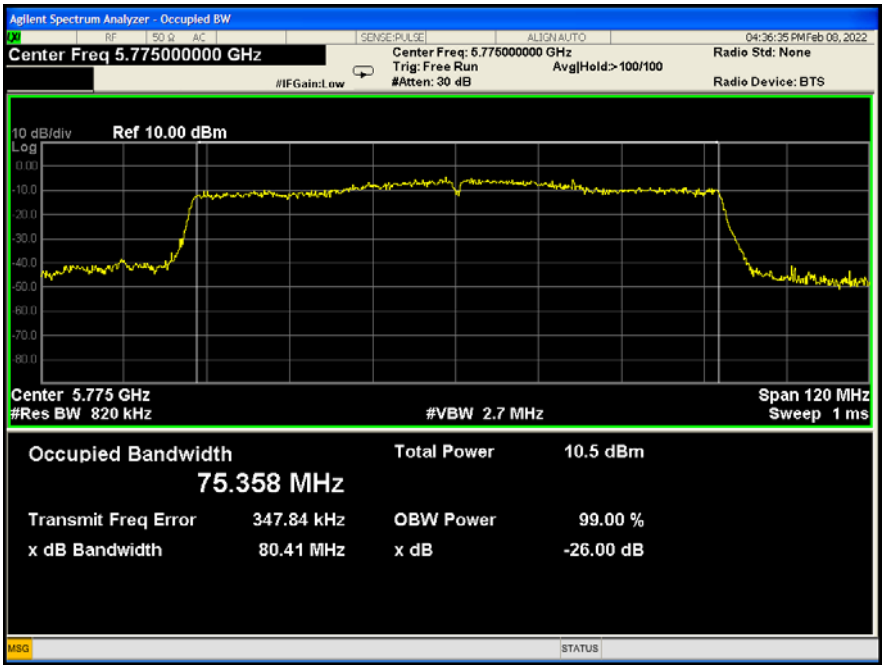
802.11ac HT40 U-NII-3 Low channel



802.11ac HT40 U-NII-3 High channel



802.11ac HT80 U-NII-3 Middle channel



14 Conducted Output Power

Test Requirement:	FCC CFR47 Part 15 Section 15.407(a) KDB662911 D01 Multiple Transmitter Output v02r01
Test Method:	KDB789033 D02 General U-NII Test Procedures New Rules v02r01 Section E
Test Limit:	U-NII-1 250mW(24dBm) U-NII-2A 250mW(24dBm) or 11 dBm + 10 log B U-NII-2C 250mW(24dBm) or 11 dBm + 10 log B U-NII-3 1W(30dBm)
Test Result:	PASS
Remark:	Conducted output power= measurement power+10log(1/x) where B is the 26 dB emission bandwidth in megahertz

14.1 Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 1 MHz. VBW = 3 MHz. Sweep = auto; Detector Function = RMS, Set the span to fully encompass the DTS bandwidth.
3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

14.2 Test Result :

Band	Operation mode	Conducted Output Power (dBm)		
		Low	Middle	High
U-NII-1	802.11a	14.01	14.13	15.19
	802.11n(HT20)	13.70	14.08	15.44
	802.11n(HT40)	14.87	/	15.25
	802.11ac(HT20)	13.74	14.30	14.98
	802.11ac(HT40)	15.35	/	15.71
	802.11ac(HT80)	/	**15.99**	/

Band	Operation mode	Conducted Output Power (dBm)		
		Low	Middle	High
U-NII-2A	802.11a	15.16	15.28	15.50
	802.11n(HT20)	15.12	15.44	15.26
	802.11n(HT40)	15.99	/	16.40
	802.11ac(HT20)	15.25	15.49	15.53
	802.11ac(HT40)	16.16	/	16.26
	802.11ac(HT80)	/	**16.97**	/

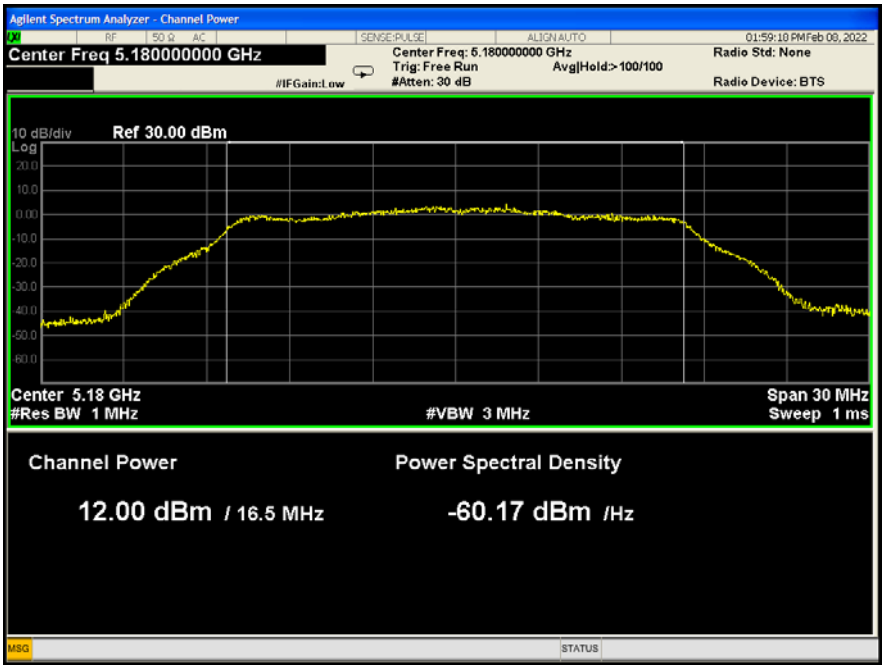
Band	Operation mode	Conducted Output Power (dBm)		
		Low	Middle	High
U-NII-2C	802.11a	15.50	14.50	13.13
	802.11n(HT20)	15.05	14.90	13.54
	802.11n(HT40)	15.66	15.16	14.73
	802.11ac(HT20)	15.21	14.15	13.36
	802.11ac(HT40)	16.07	15.43	14.37
	802.11ac(HT80)	**16.23**	15.28	/

Band	Operation mode	Conducted Output Power (dBm)		
		Low	Middle	High
U-NII-3	802.11a	13.14	12.95	13.09
	802.11n(HT20)	12.88	12.96	13.18
	802.11n(HT40)	13.57	/	13.66
	802.11ac(HT20)	13.34	14.16	13.63
	802.11ac(HT40)	14.03	/	13.87
	802.11ac(HT80)	/	**14.96**	/

* All transmit signals are completely uncorrelated with each other, Directional gain = G_{ANT} which is less than 6dBi. So the limit does not be reduced.

Test result plots shown as follows:

802.11a U-NII-1 Low channel



802.11a U-NII-1 Middle channel