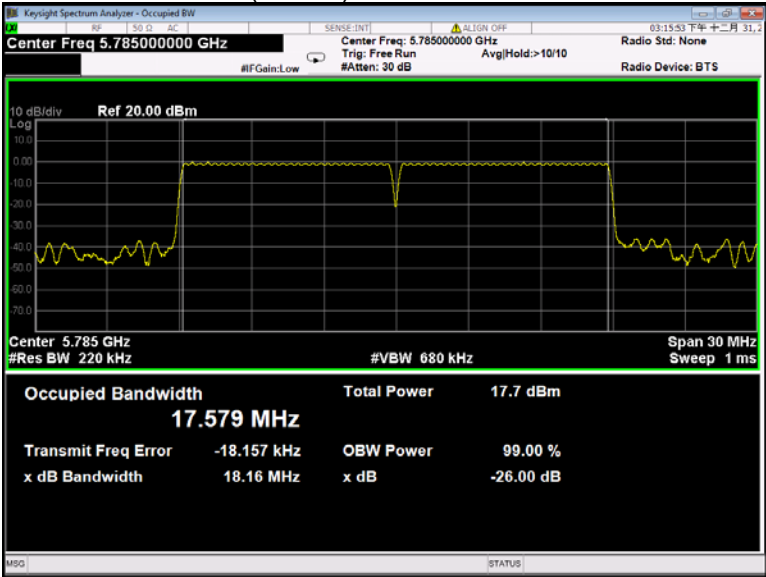
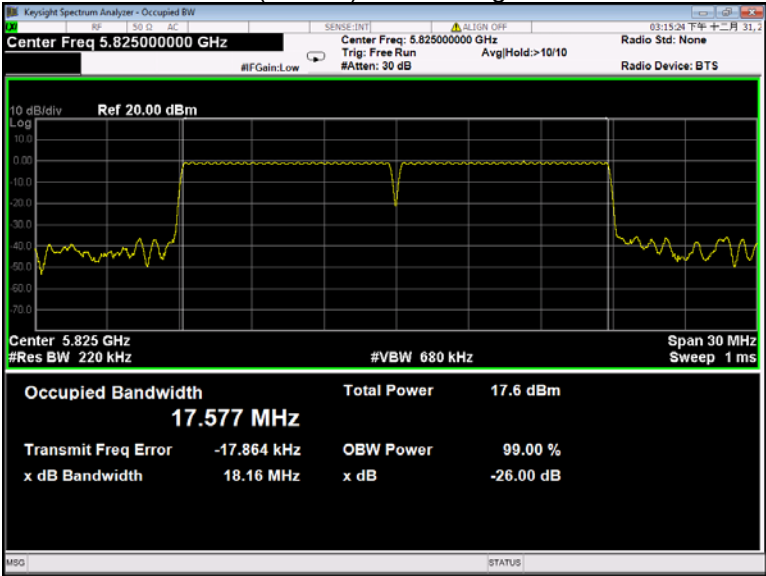


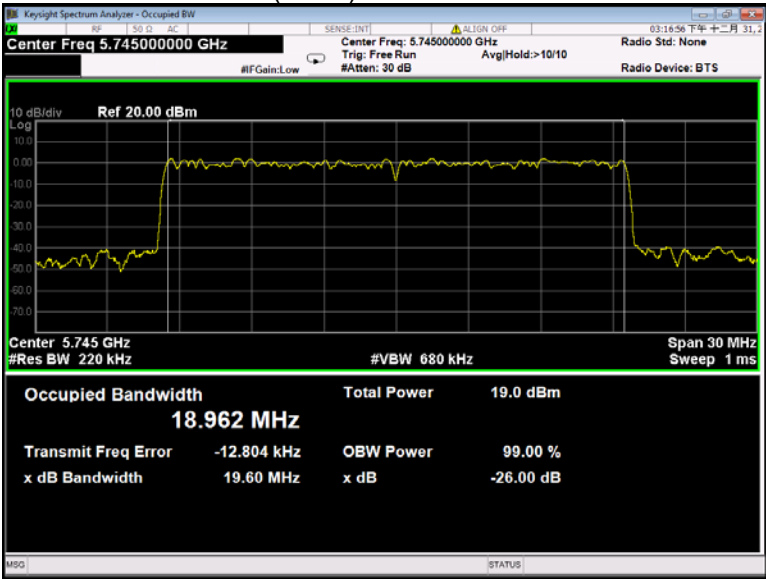
802.11ac(VHT20) U-NII-3 Middle channel



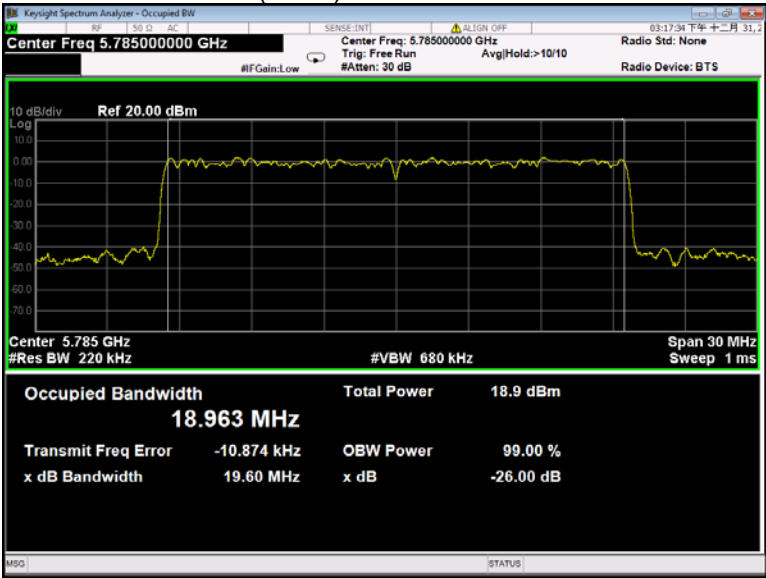
802.11ac(VHT20) U-NII-3 High channel



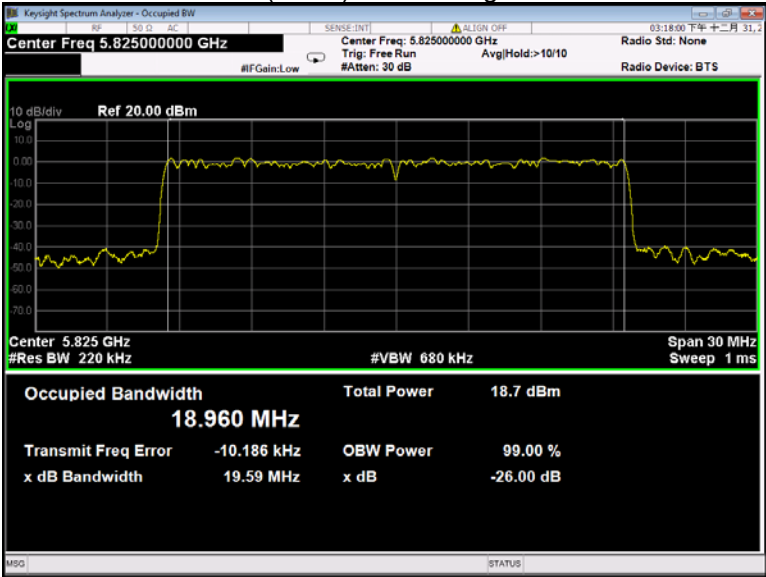
802.11ax(HE20) U-NII-3 Low channel



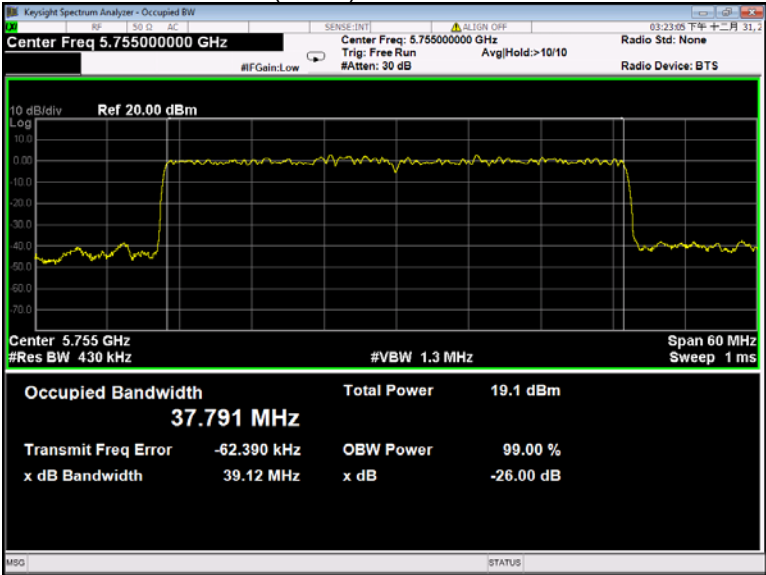
802.11ax(HE20) U-NII-3 Middle channel



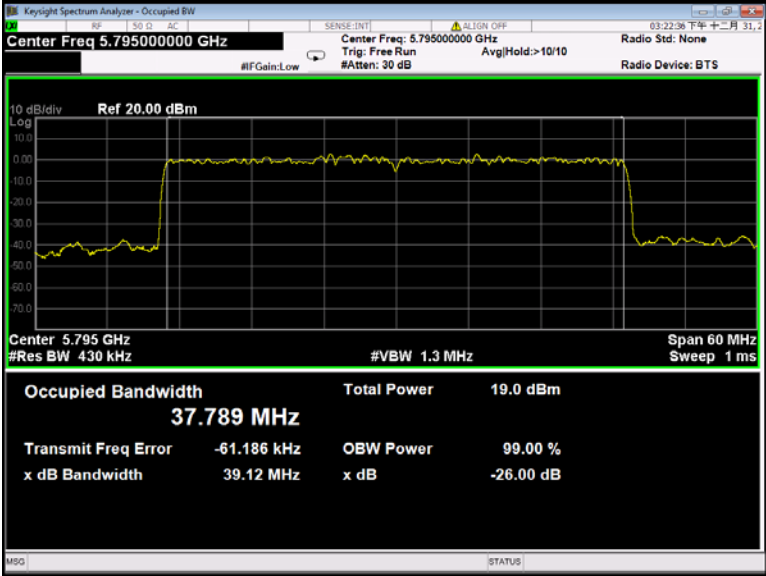
802.11ax(HE20) U-NII-3 High channel



802.11ax(HE40) U-NII-3 Low channel



802.11ax(HE40) U-NII-3 High channel



12 Conducted Output Power

Test Requirement:	FCC 47CFR 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:	For the band 5.15-5.25 GHz For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. For the band 5.725-5.850 GHz For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.
Test Result:	PASS Conducted output power= measurement power+10log(1/x)
Remark:	X is duty cycle=1, so 10log(1/1)=0 Conducted output power= measurement power

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 = 1 MHz. VBW = 3 MHz. Sweep = auto; Detector Function = Peak, 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.

12.2 Test Result

Band	Operation mode	Conducted Output Power (dBm)		
		Low	Middle	High
U-NII-1	802.11a	16.90	16.90	17.15
	802.11n(HT20)	17.20	17.21	17.39
	802.11n(HT40)	17.04	/	17.29
	802.11ac(VHT20)	16.74	16.77	19.67
	802.11ax(HE20)	19.10	19.07	17.48
	802.11ac(VHT40)	17.07	/	17.24
	802.11ax(HE40)	18.75	/	19.00

Band	Operation mode	Conducted Output Power (dBm)		
		Low	Middle	High
U-NII-2A	802.11a	19.32	19.05	18.45
	802.11n(HT20)	19.45	19.32	18.94
	802.11n(HT40)	19.46	/	18.59
	802.11ac(VHT20)	19.54	19.31	18.90
	802.11ax(HE20)	19.49	19.14	18.77
	802.11ac(VHT40)	19.28	/	18.86
	802.11ax(HE40)	18.94	/	18.54

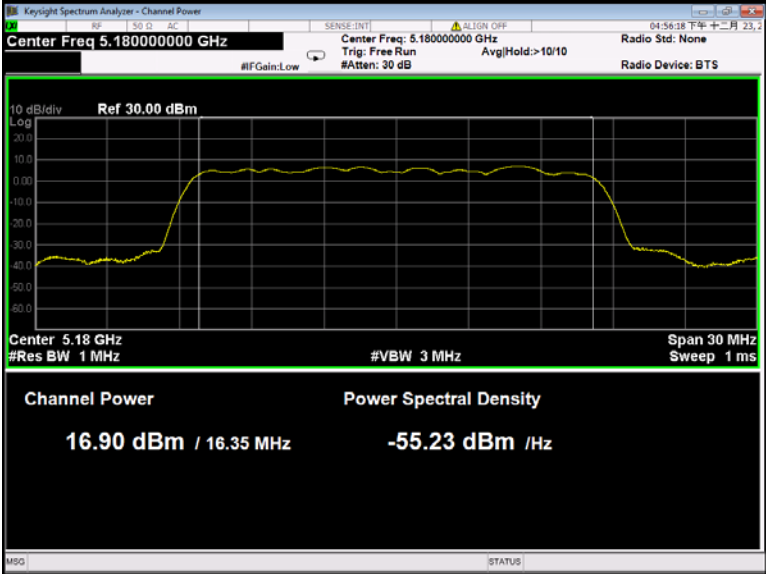
Band	Operation mode	Conducted Output Power (dBm)		
		Low	Middle	High
U-NII-2C	802.11a	18.39	19.04	19.35
	802.11n(HT20)	18.52	19.28	19.66
	802.11n(HT40)	18.72	18.97	19.71
	802.11ac(VHT20)	18.57	19.21	19.53
	802.11ax(HE20)	18.52	19.24	19.50
	802.11ac(VHT40)	18.68	18.99	19.74
	802.11ax(HE40)	18.28	18.68	19.40

Band	Operation mode	Conducted Output Power (dBm)		
		Low	Middle	High
U-NII-3	802.11a	19.20	19.07	18.98
	802.11n(HT20)	19.23	19.23	19.19
	802.11n(HT40)	19.43	/	19.29
	802.11ac(VHT20)	19.47	19.34	19.17
	802.11ax(HE20)	19.24	19.20	19.11
	802.11ac(VHT40)	19.48	/	19.26
	802.11ax(HE40)	18.65	/	18.97

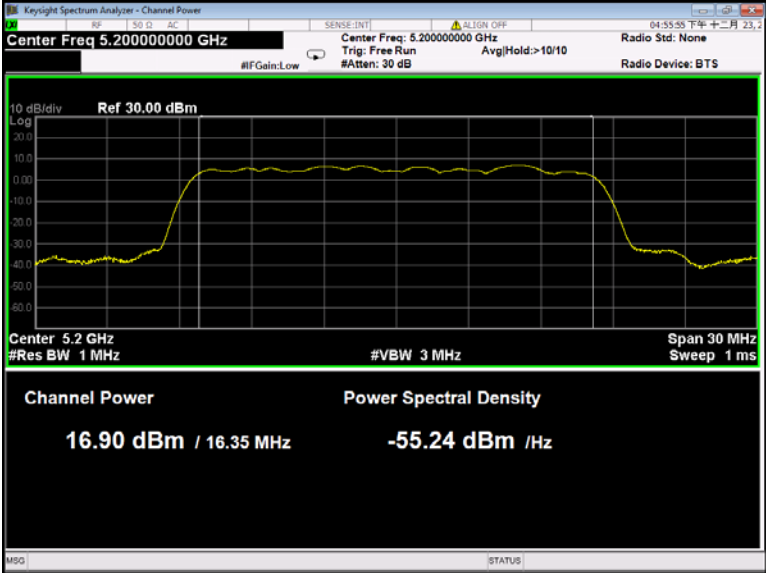
* All transmit signals are completely uncorrelated with each other, Directional gain = G_{ANT} which is less than 6dBi. So the limit does not be reduced.

Test result plots shown as follows:

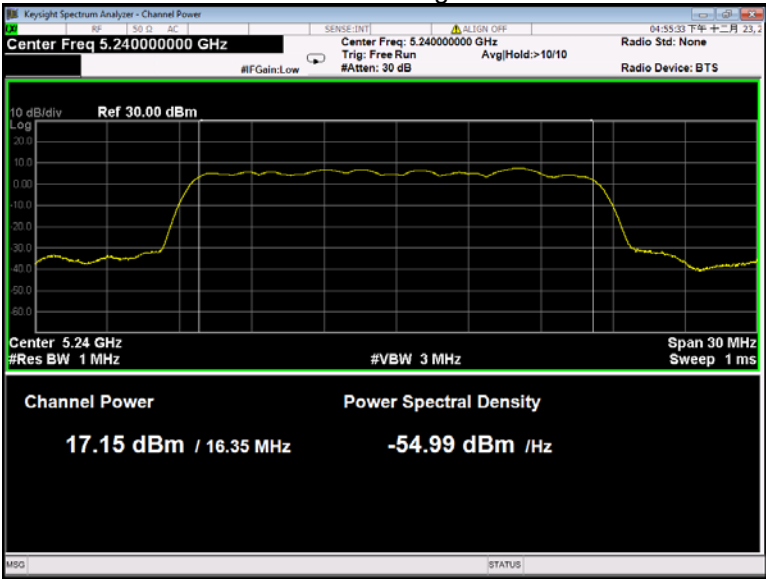
802.11a U-NII-1 Low channel



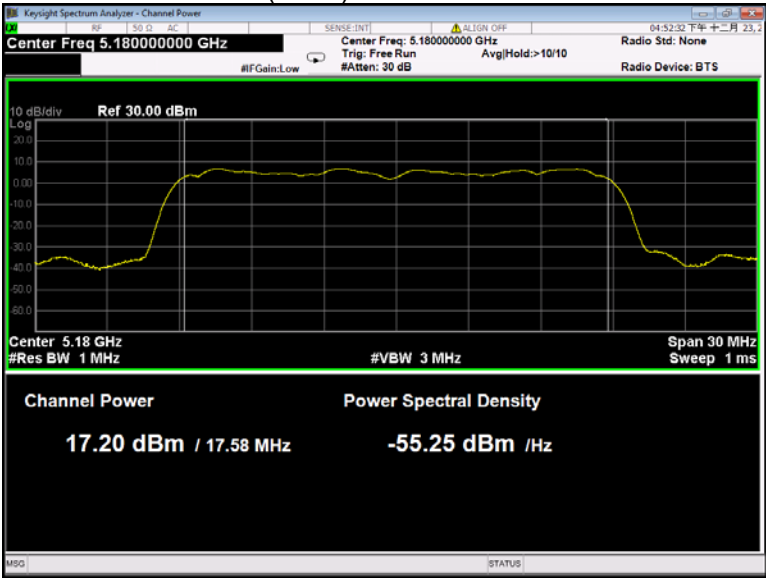
802.11a U-NII-1 Middle channel



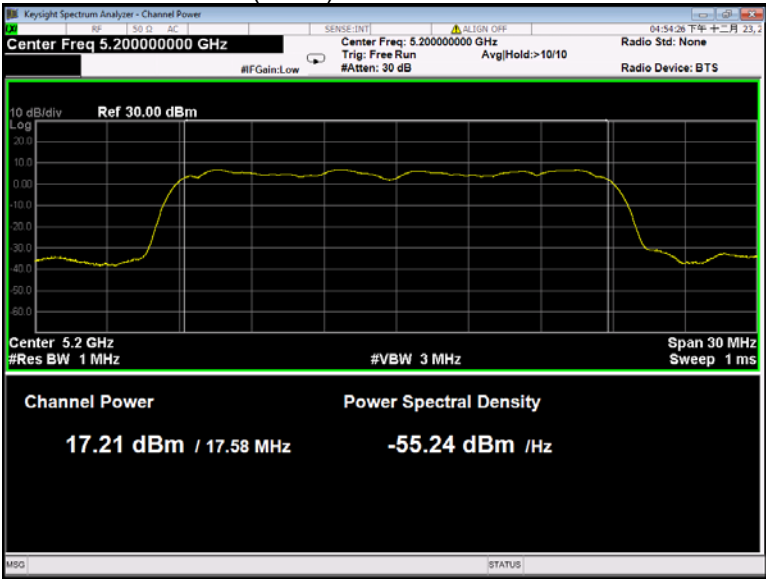
802.11a U-NII-1 High channel



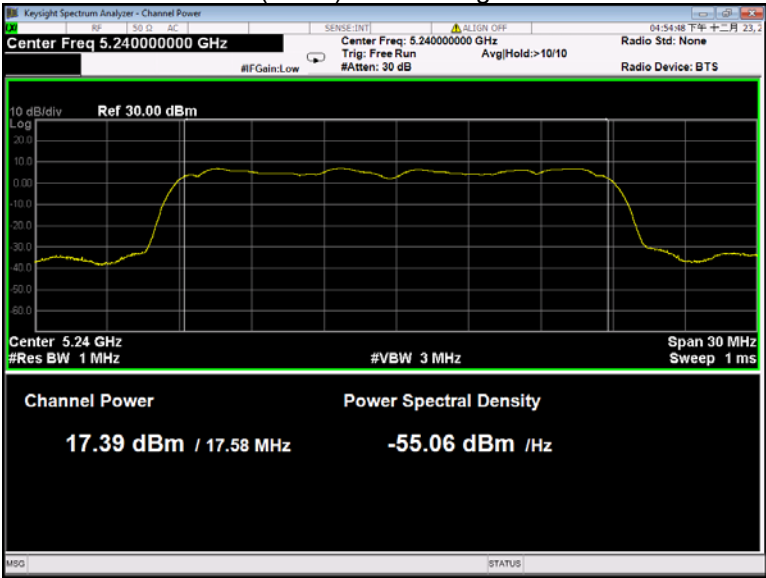
802.11n(HT20) U-NII-1 Low channel



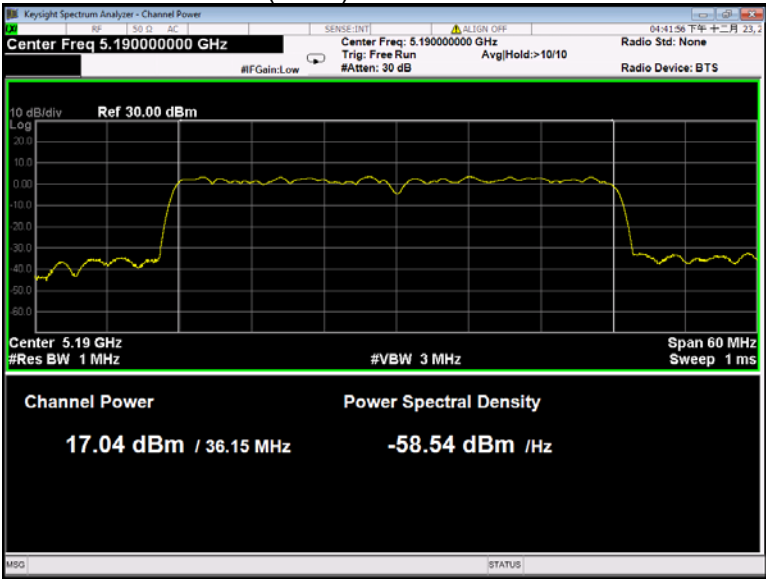
802.11n(HT20) U-NII-1 Middle channel



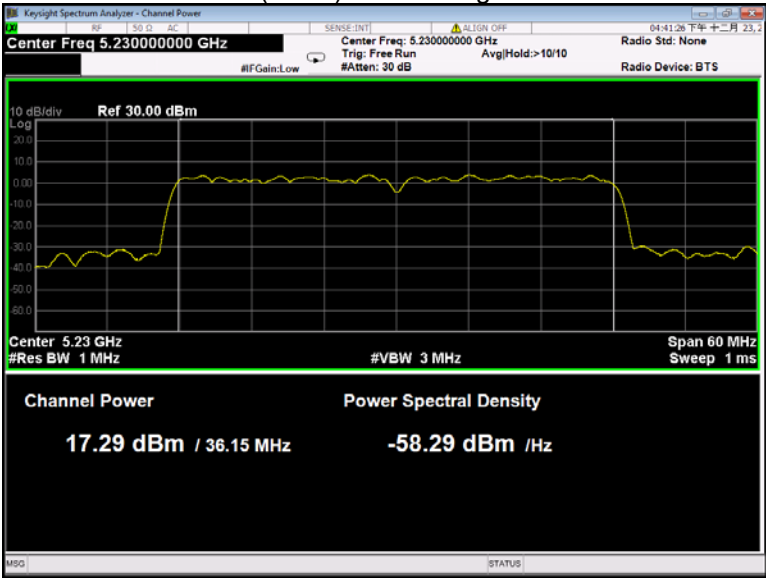
802.11n(HT20) U-NII-1 High channel



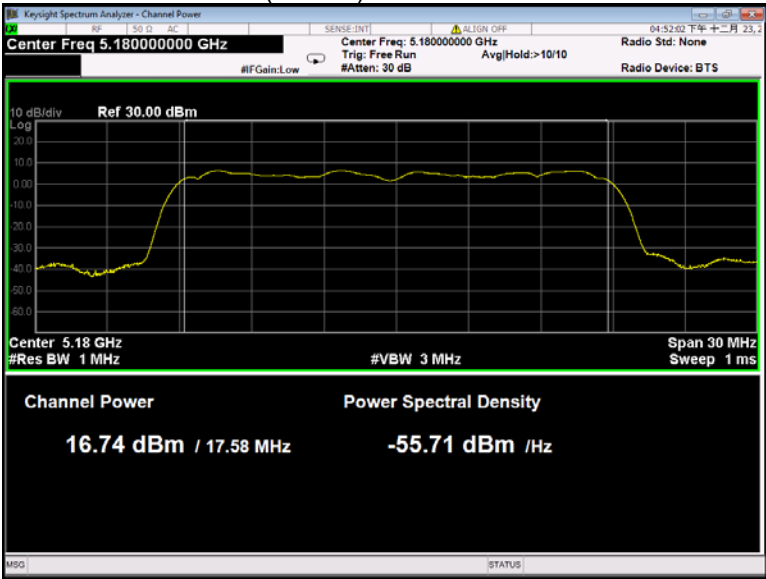
802.11n(HT40) U-NII-1 Low channel



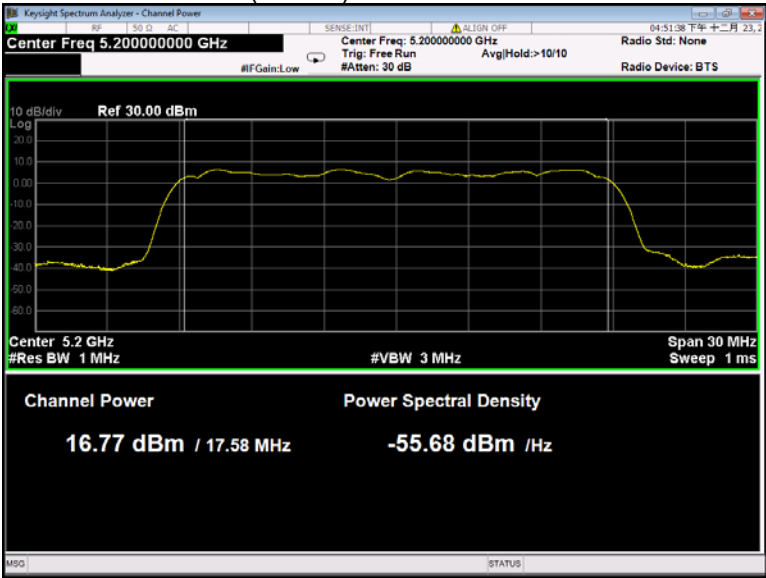
802.11n(HT40) U-NII-1 High channel



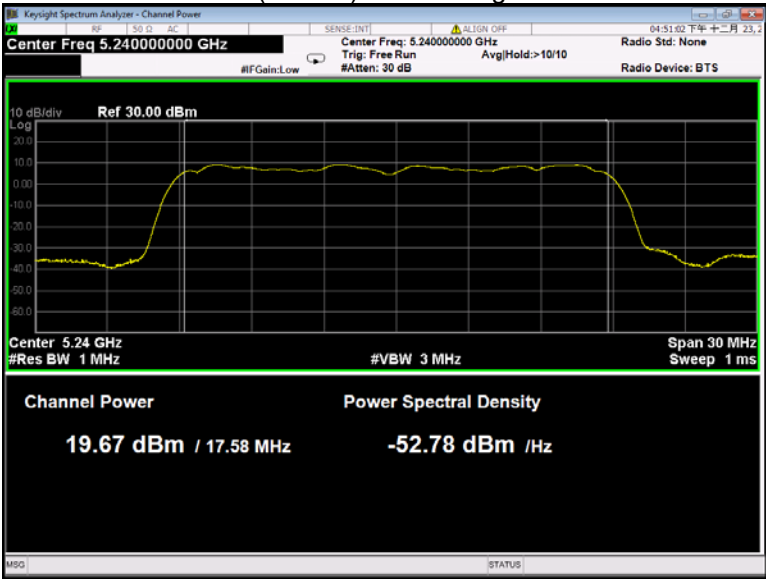
802.11ac(VHT20) U-NII-1 Low channel



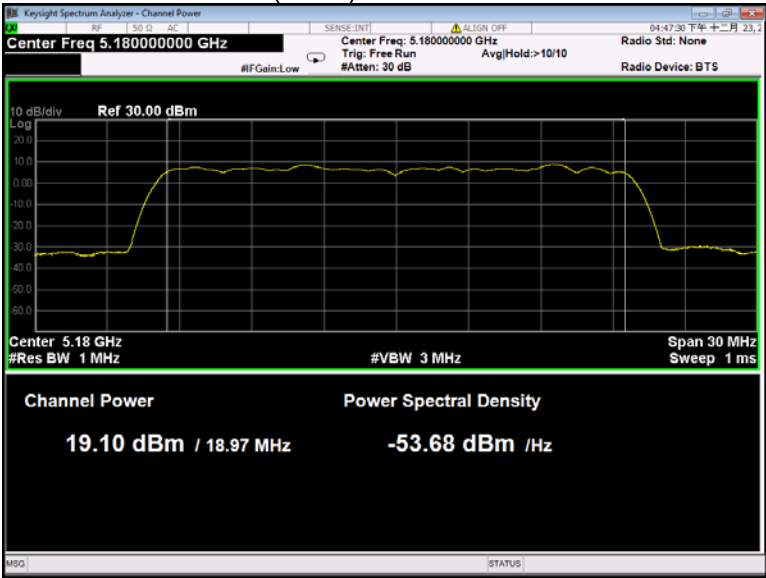
802.11ac(VHT20) U-NII-1 Middle channel



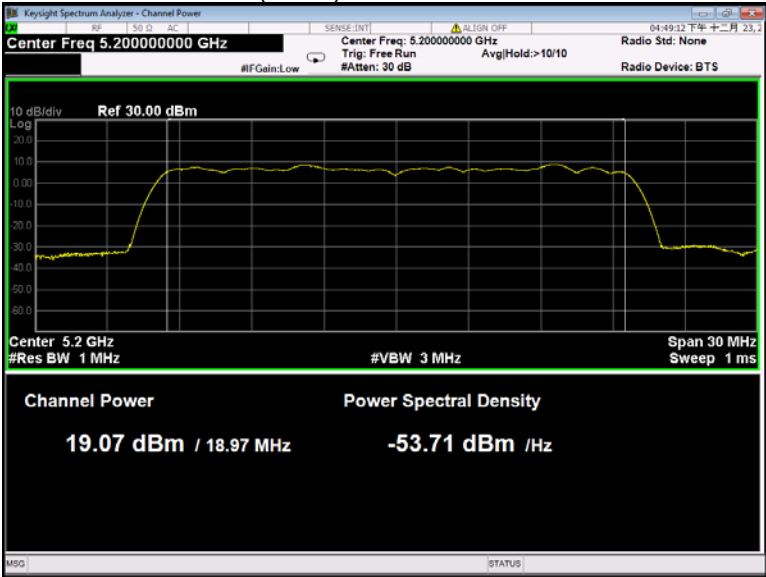
802.11ac(VHT20) U-NII-1 High channel



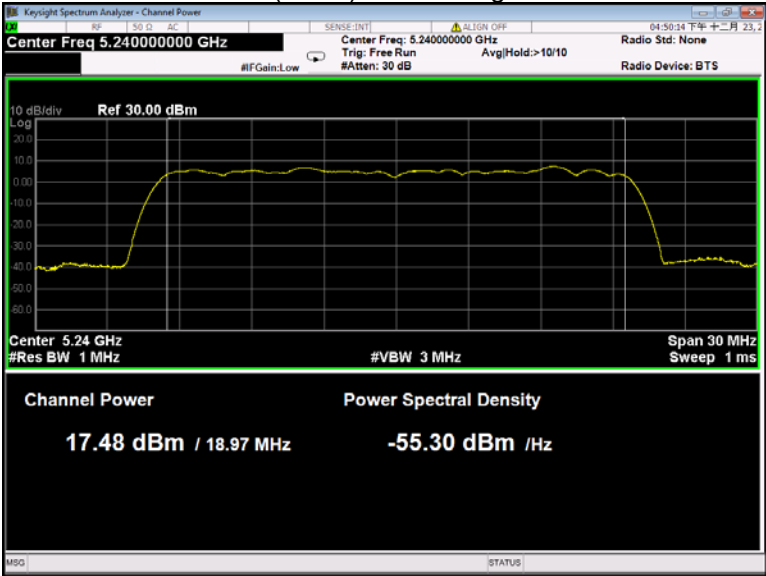
802.11ax(HE20) U-NII-1 Low channel



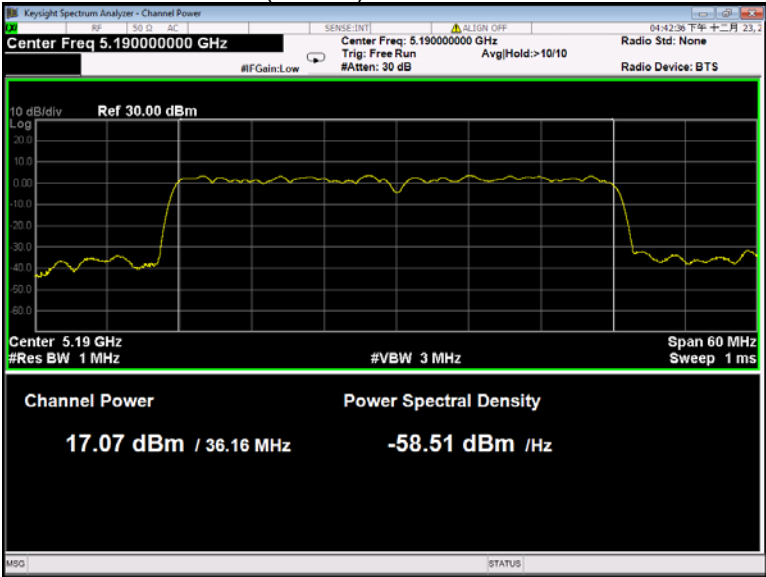
802.11ax(HE20) U-NII-1 Middle channel



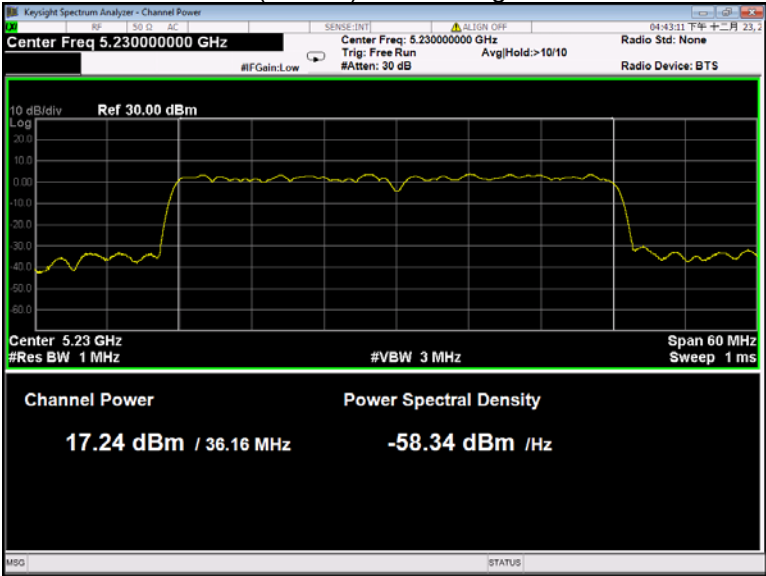
802.11ax(HE20) U-NII-1 High channel



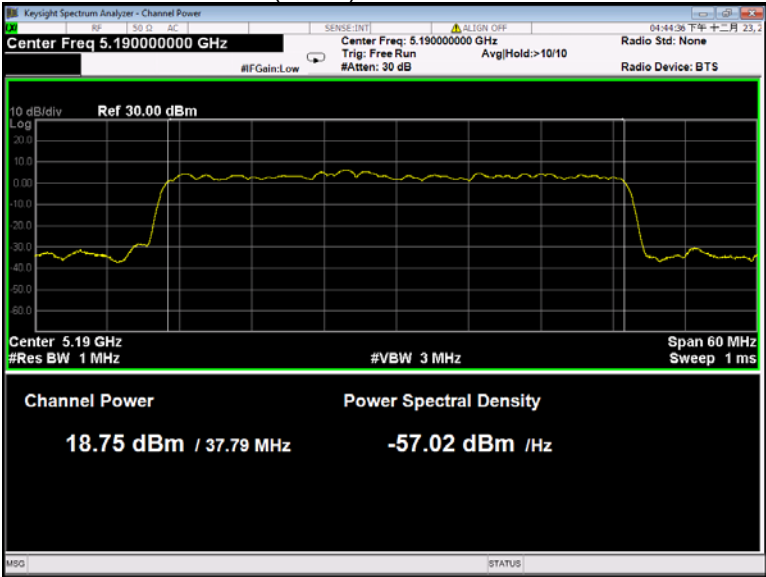
802.11ac(VHT40) U-NII-1 Low channel



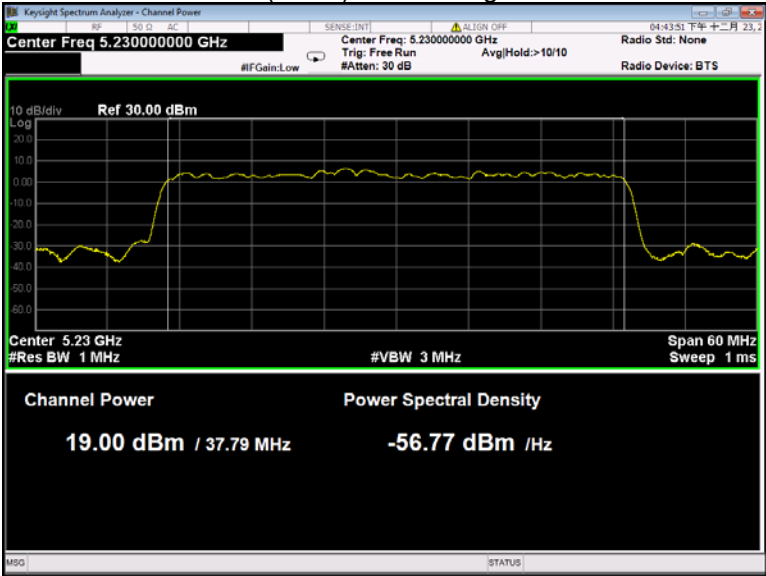
802.11ac(VHT40) U-NII-1 High channel



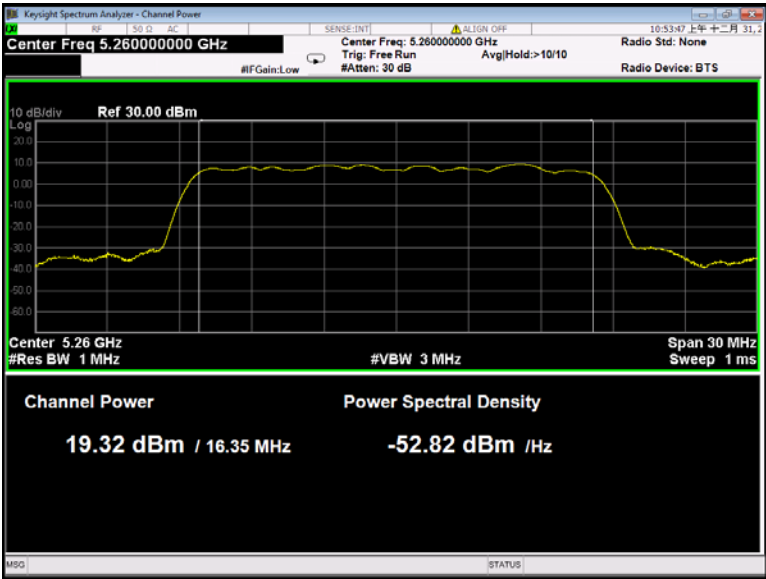
802.11ax(HE40) U-NII-1 Low channel



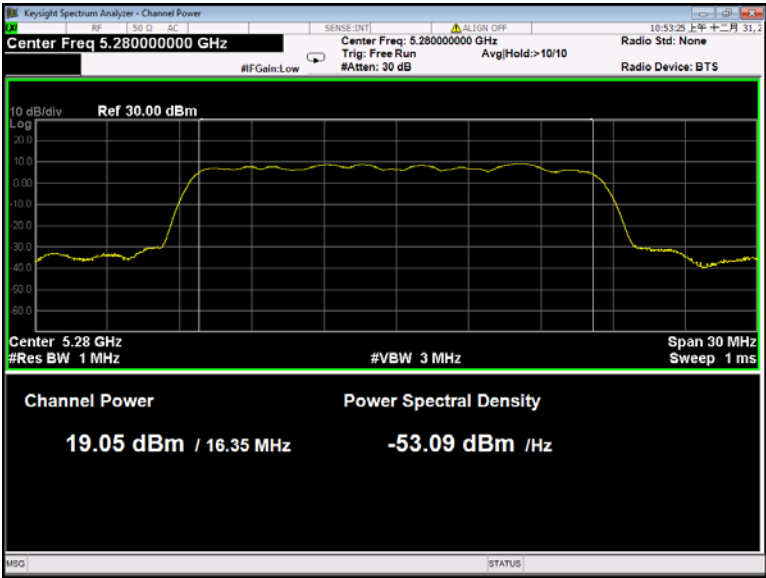
802.11ax(HE40) U-NII-1 High channel



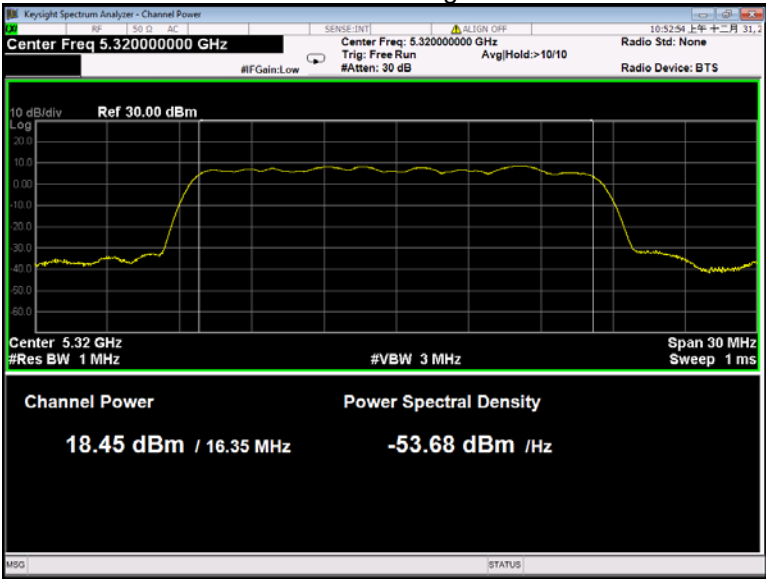
802.11a U-NII-2A Low channel



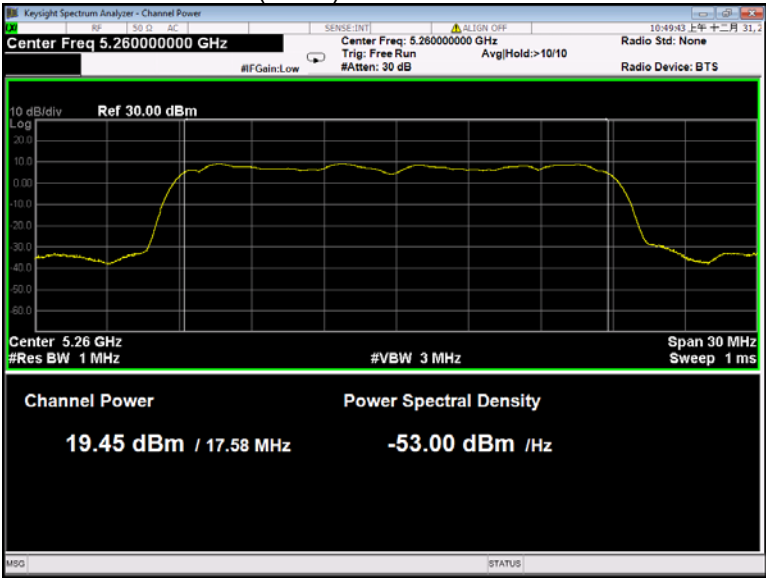
802.11a U-NII-2A Middle channel



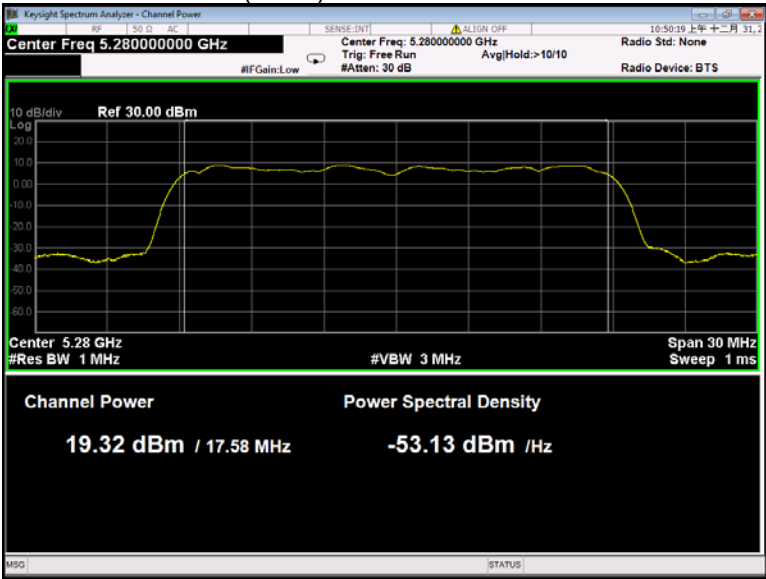
802.11a U-NII-2A High channel



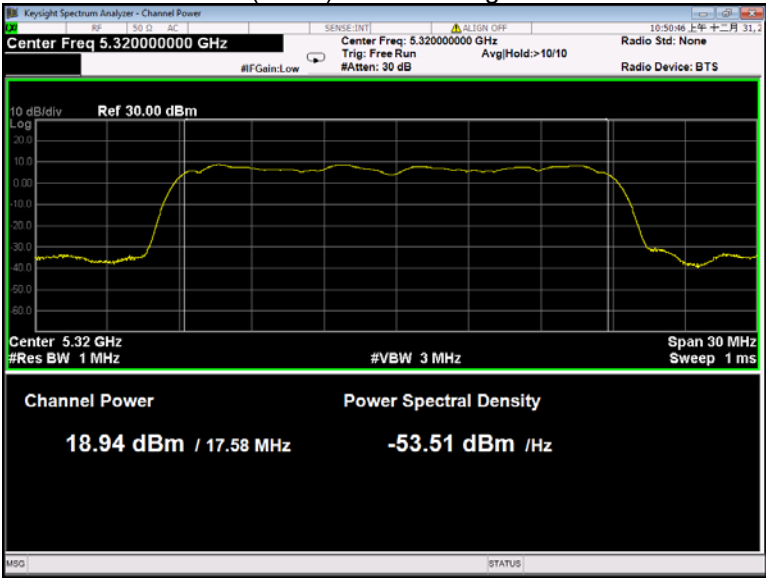
802.11n(HT20) U-NII-2A Low channel



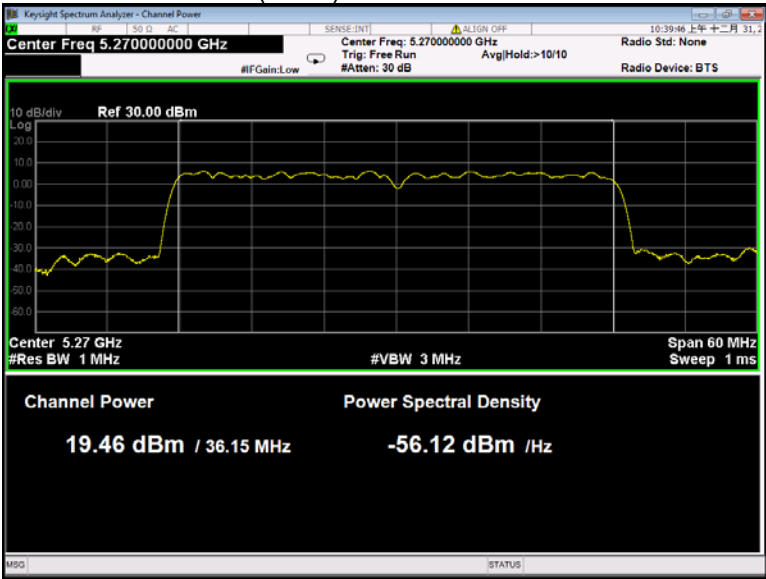
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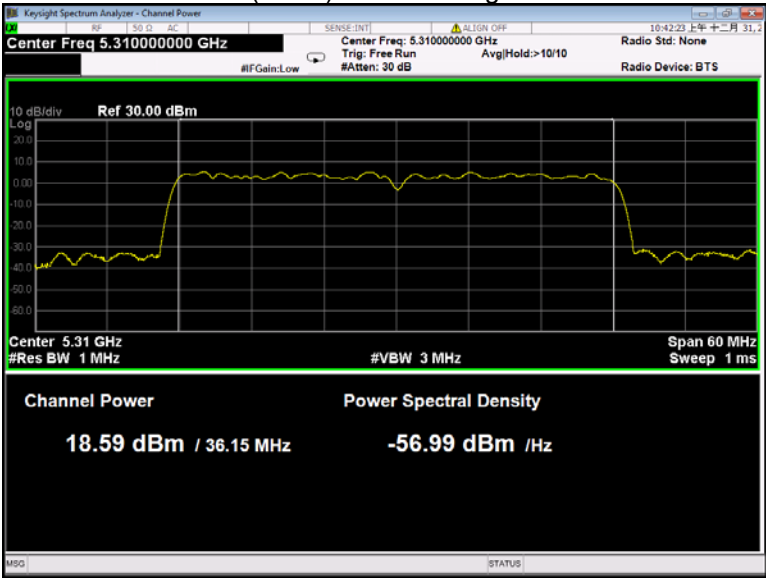
802.11n(HT20) U-NII-2A High channel



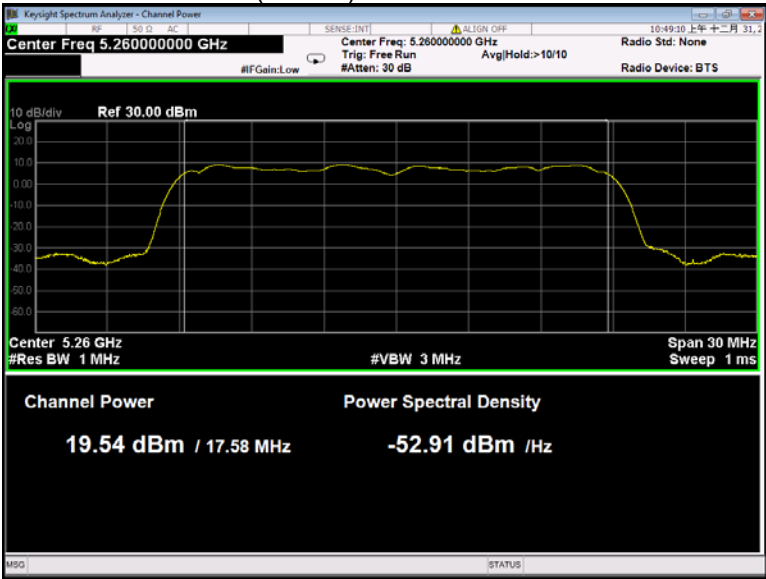
802.11n(HT40) U-NII-2A Low channel



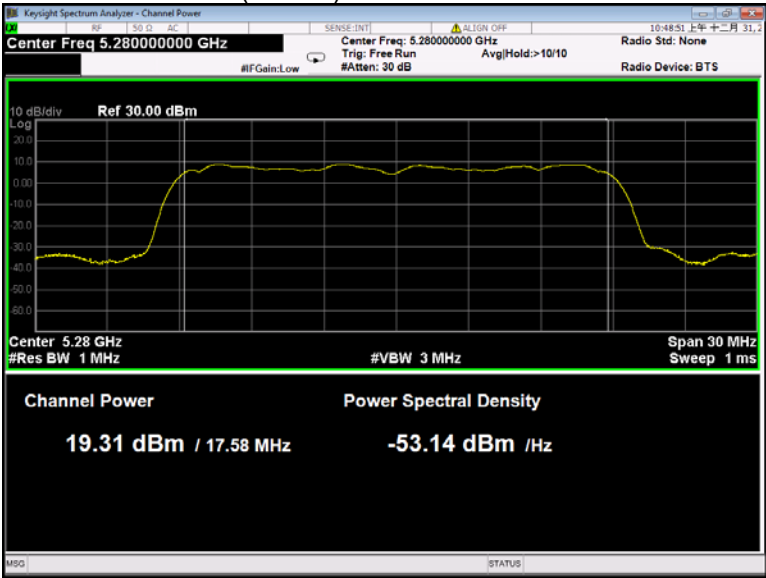
802.11n(HT40) U-NII-2A High channel



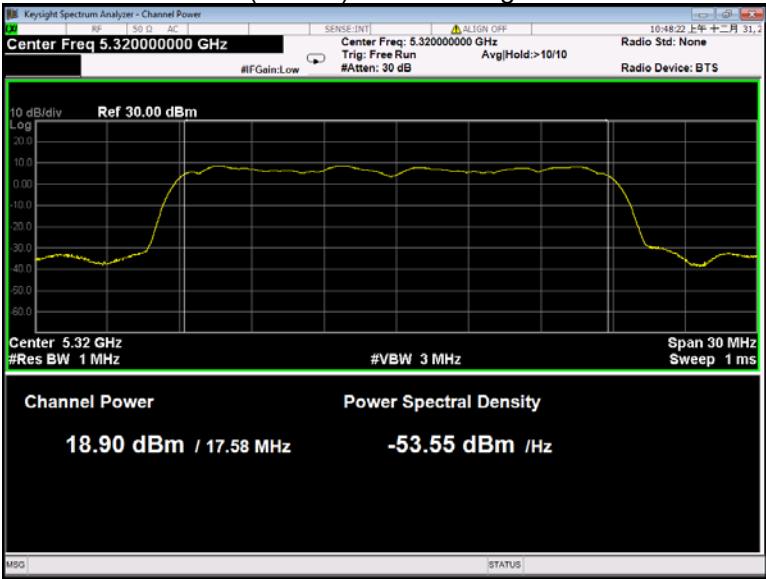
802.11ac(VHT20) U-NII-2A Low channel



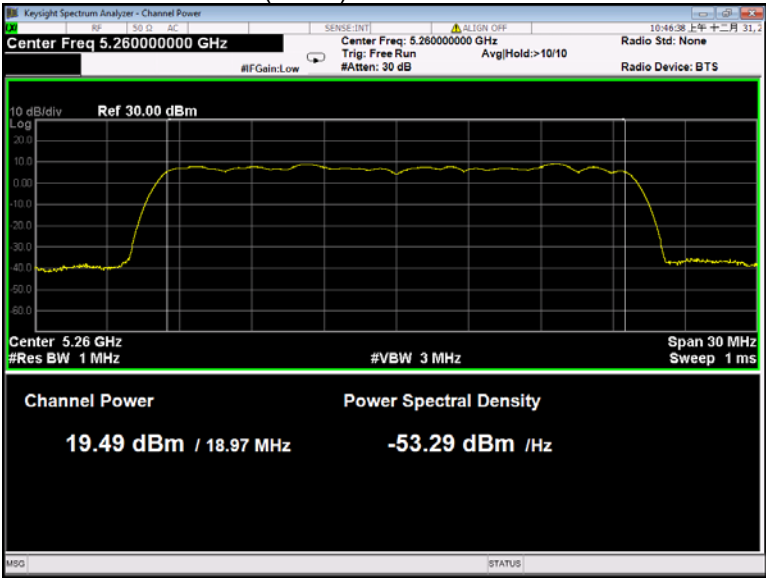
802.11ac(VHT20) U-NII-2A Middle channel



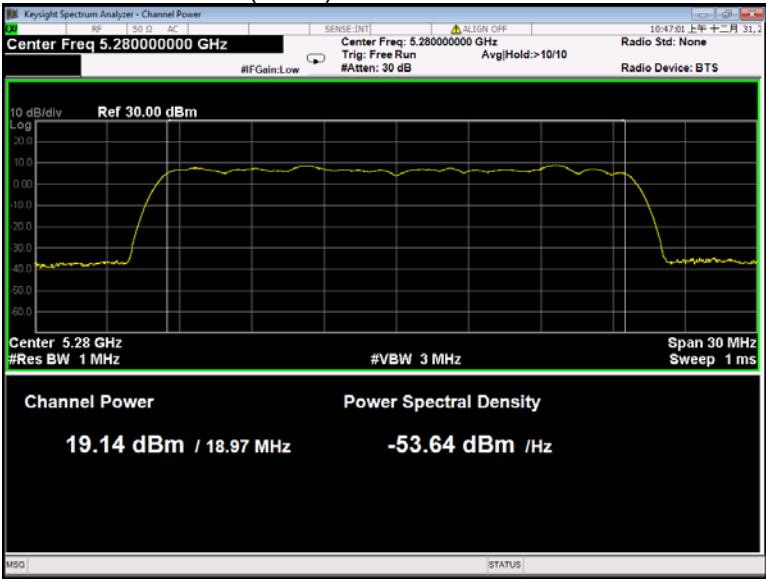
802.11ac(VHT20) U-NII-2A High channel



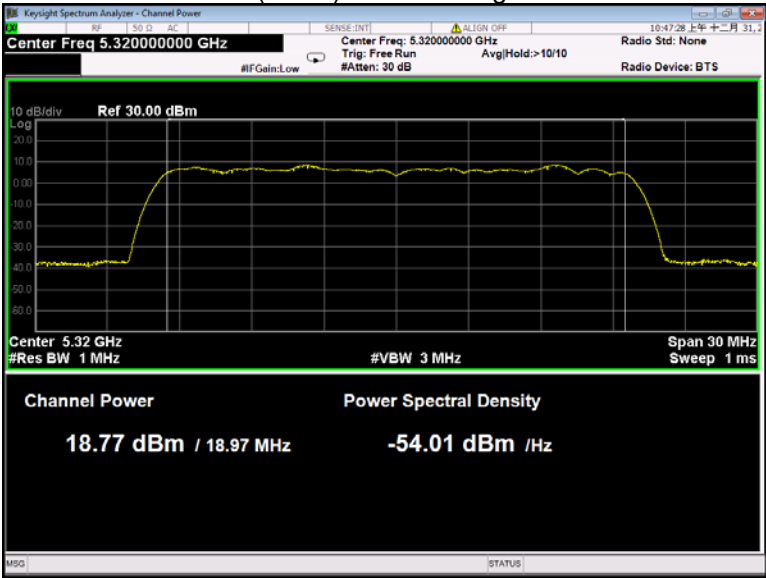
802.11ax(HE20) U-NII-2A Low channel



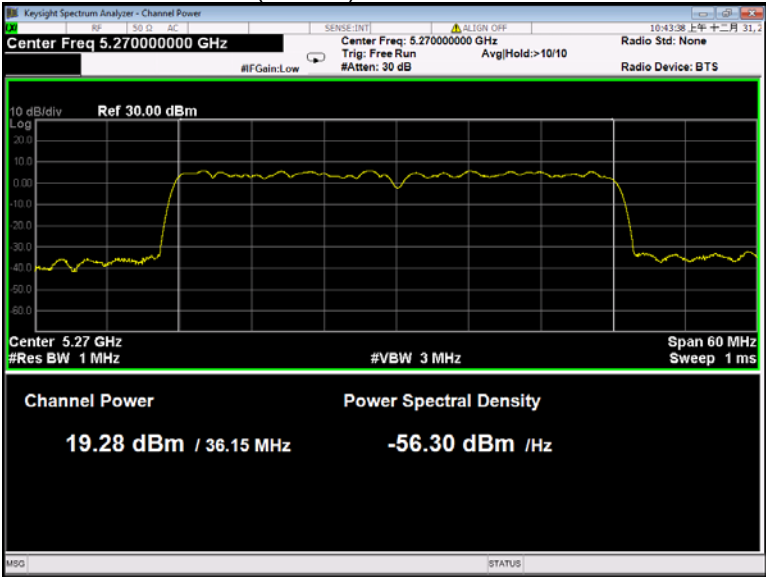
802.11ax(HE20) U-NII-2A Middle channel



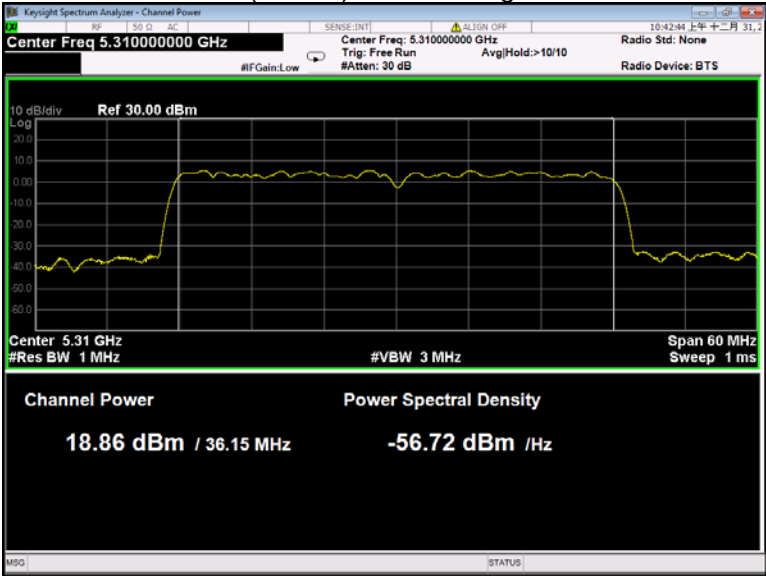
802.11ax(HE20) U-NII-2A High channel



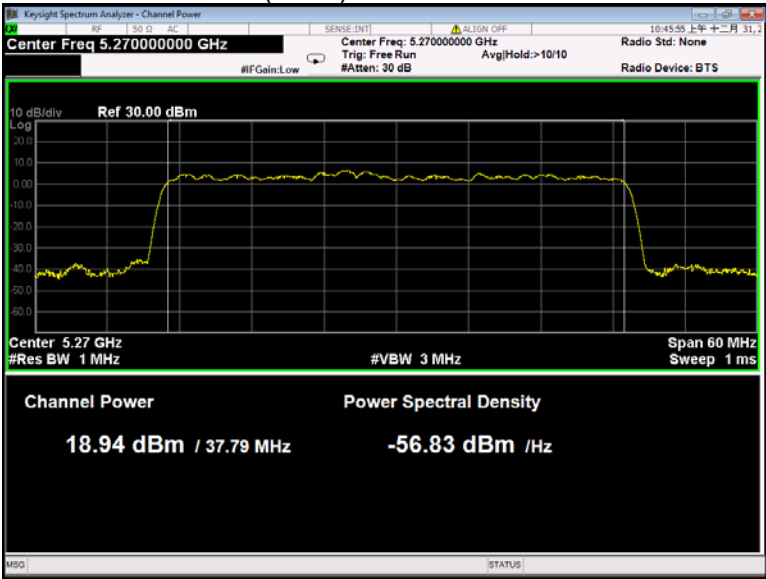
802.11ac(VHT40) U-NII-2A Low channel



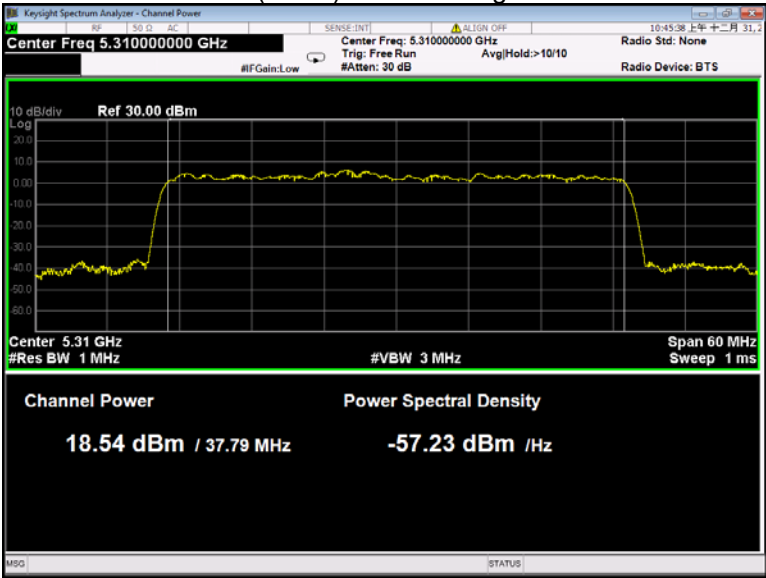
802.11ac(VHT40) U-NII-2A High channel



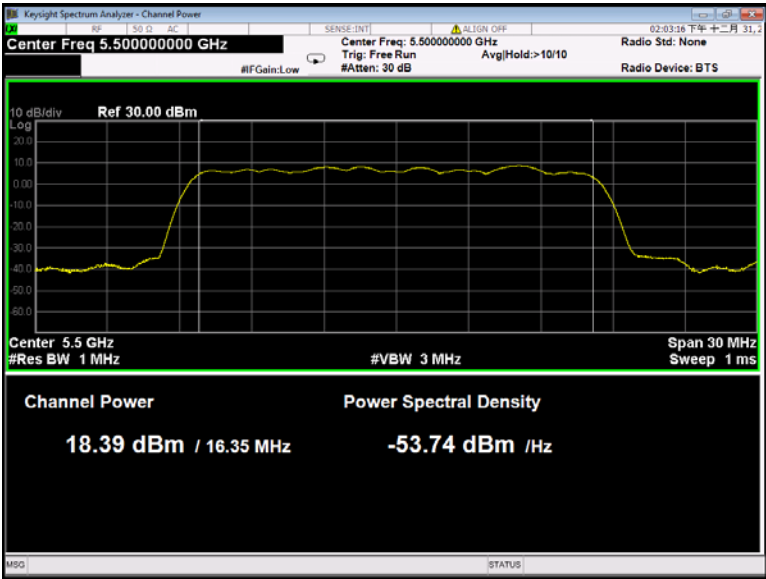
802.11ax(HE40) U-NII-2A Low channel



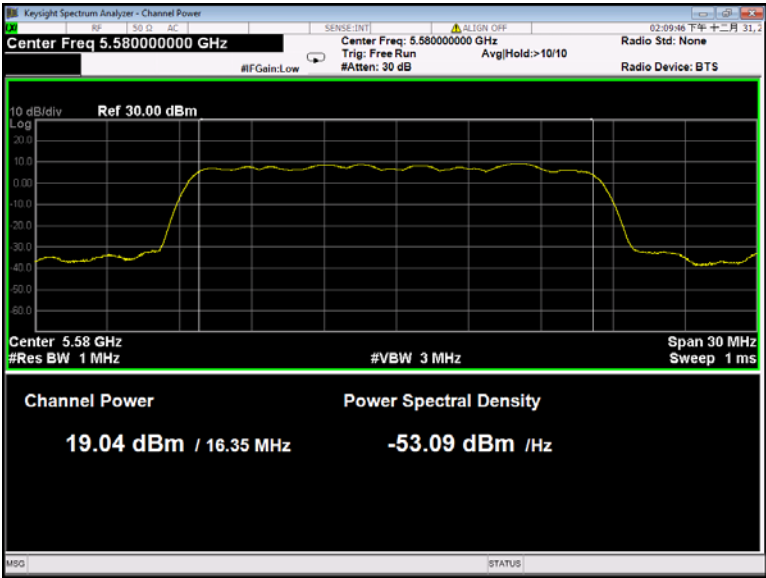
802.11ax(HE40) U-NII-2A High channel



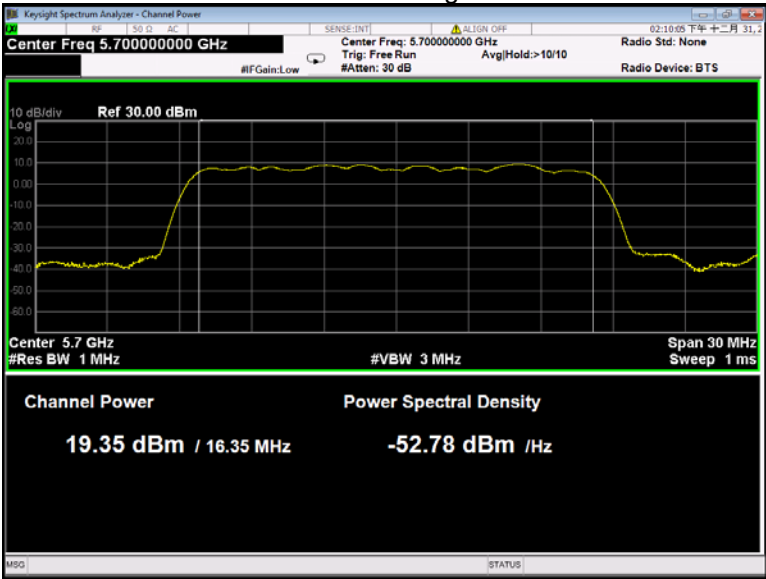
802.11a U-NII-2C Low channel



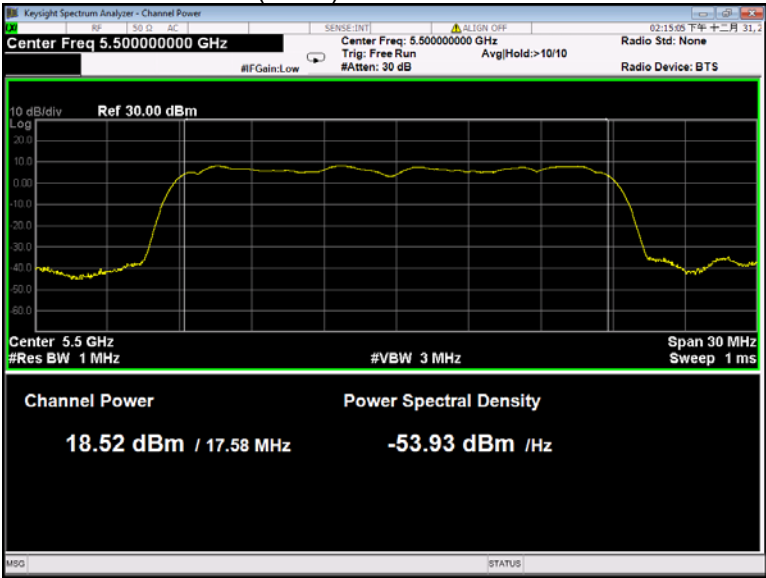
802.11a U-NII-2C Middle channel



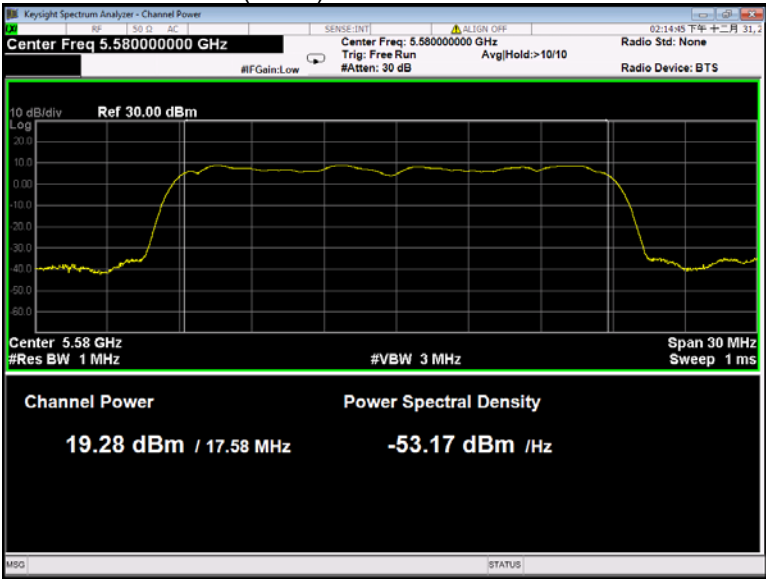
802.11a U-NII-2C High channel



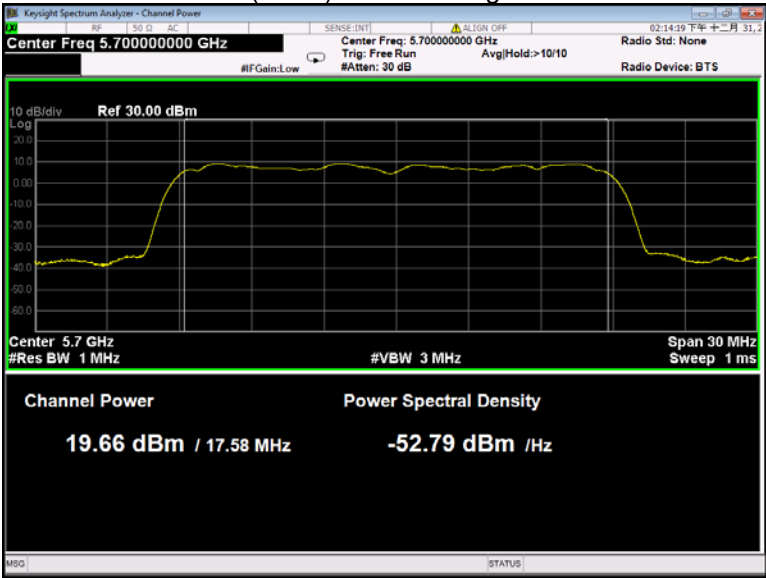
802.11n(HT20) U-NII-2C Low channel



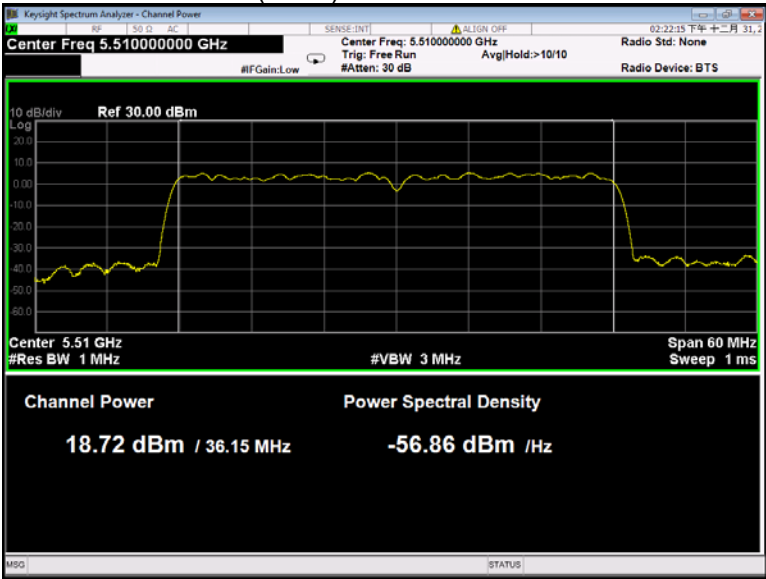
802.11n(HT20) U-NII-2C Middle channel



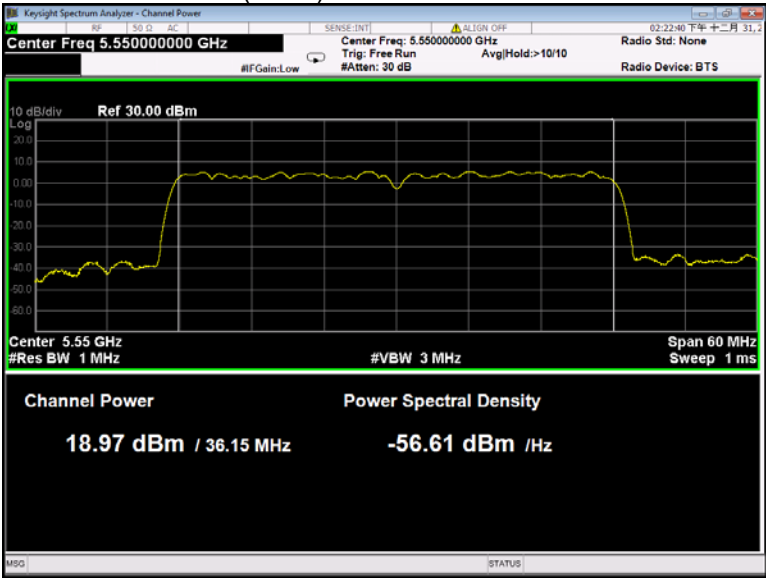
802.11n(HT20) U-NII-2C High channel



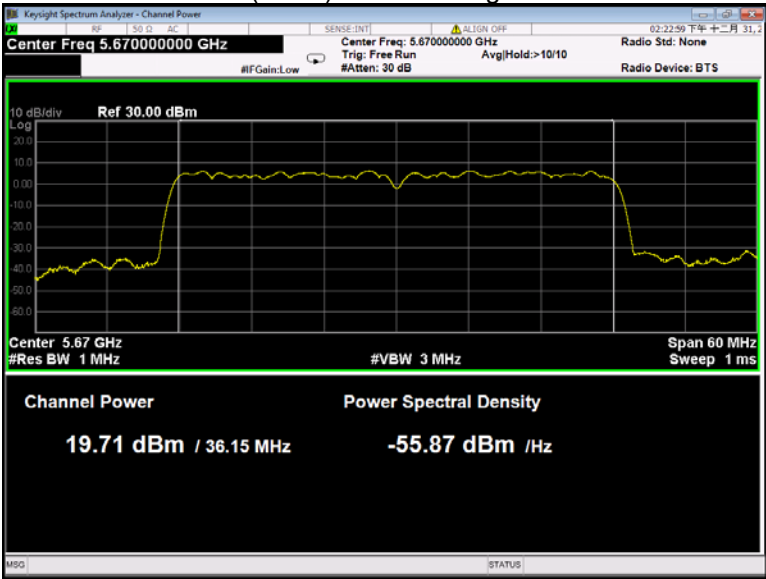
802.11n(HT40) U-NII-2C Low channel



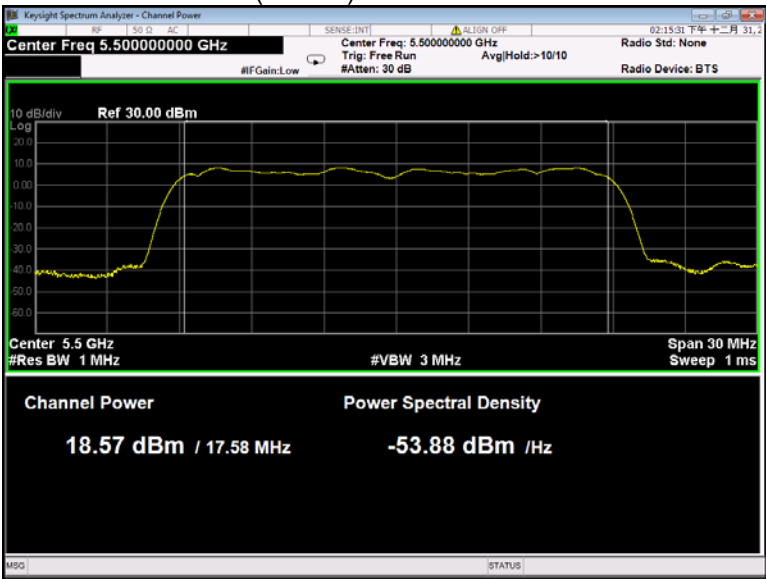
802.11n(HT40) U-NII-2C Middle channel



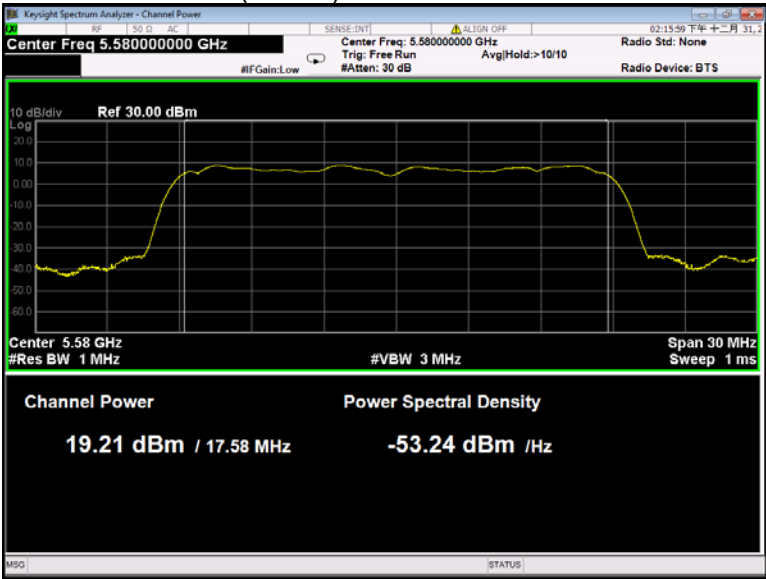
802.11n(HT40) U-NII-2C High channel



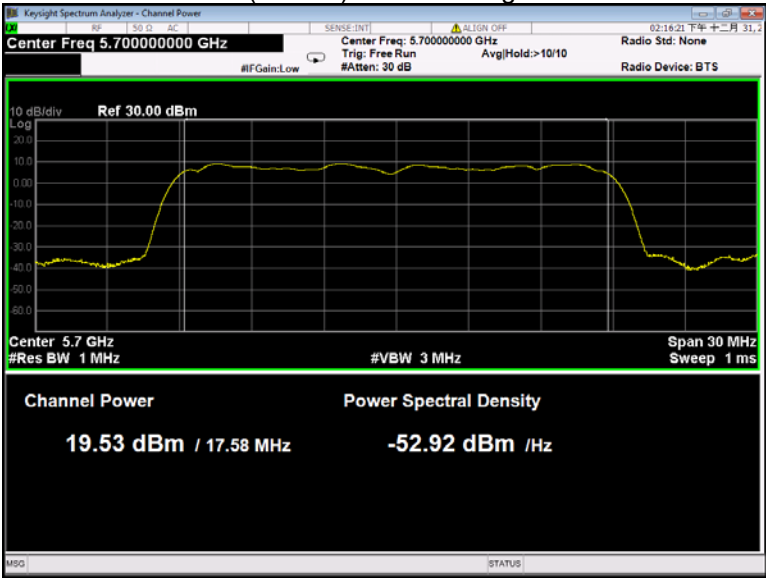
802.11ac(VHT20) U-NII-2C Low channel



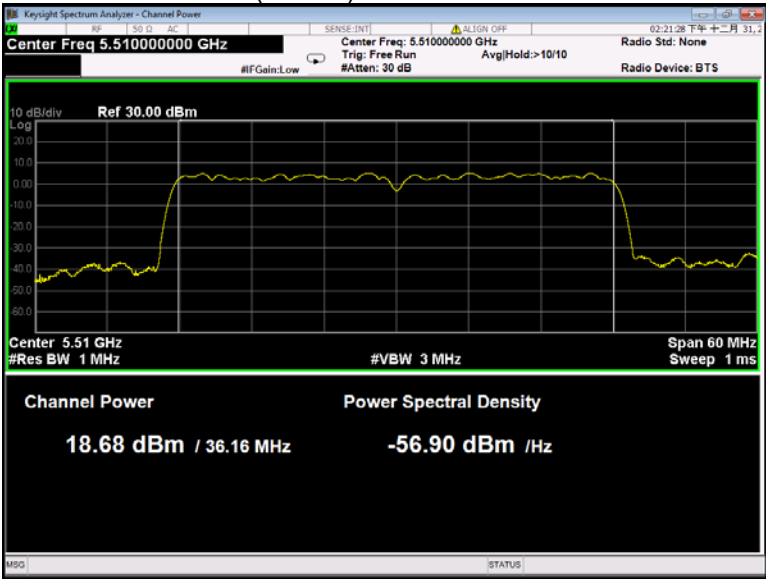
802.11ac(VHT20) U-NII-2C Middle channel



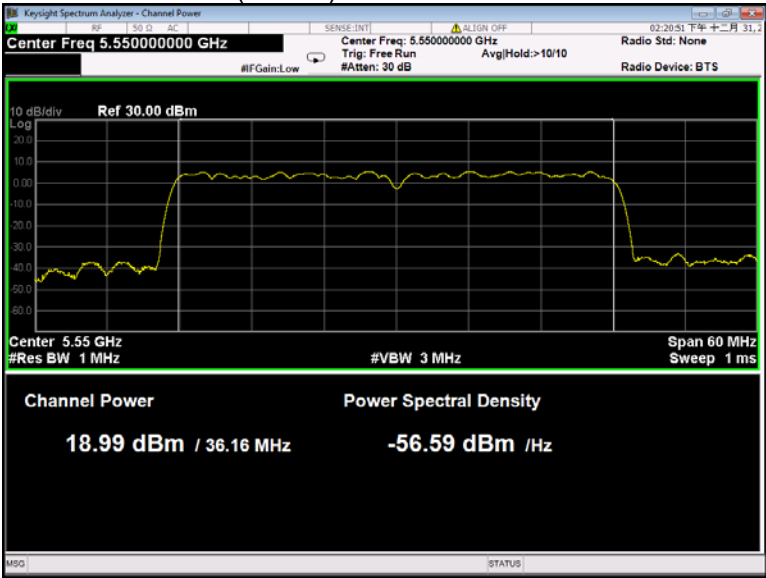
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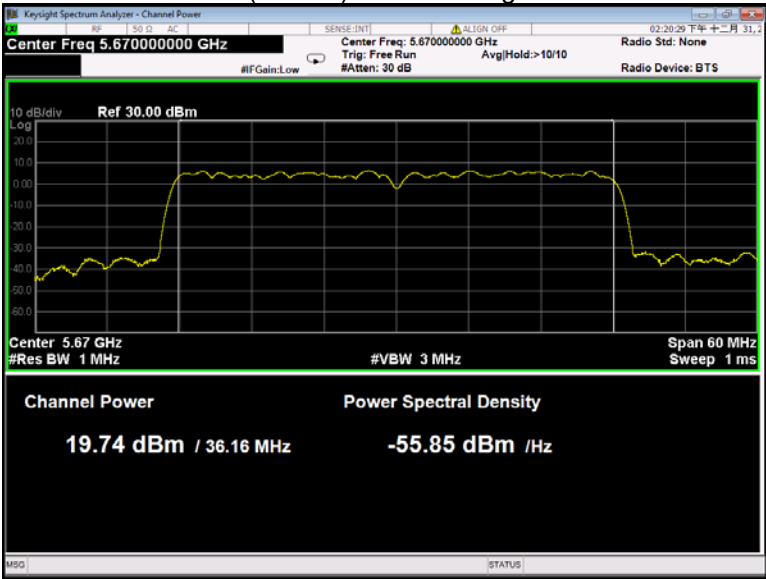
802.11ac(VHT40) U-NII-2C Low channel



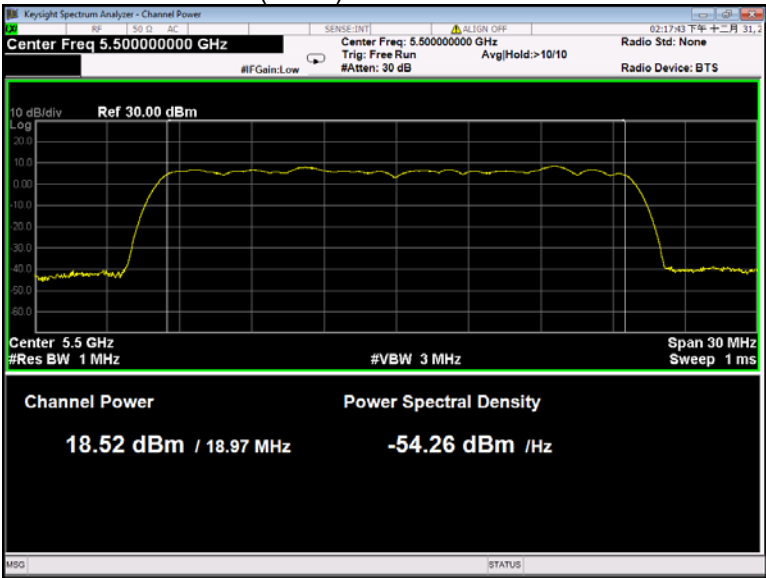
802.11ac(VHT40) U-NII-2C Middle channel



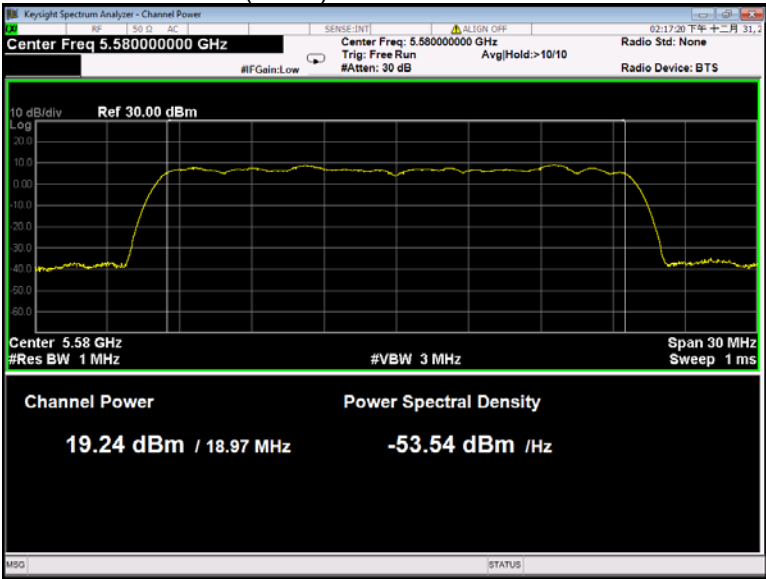
802.11ac(VHT40) U-NII-2C High channel



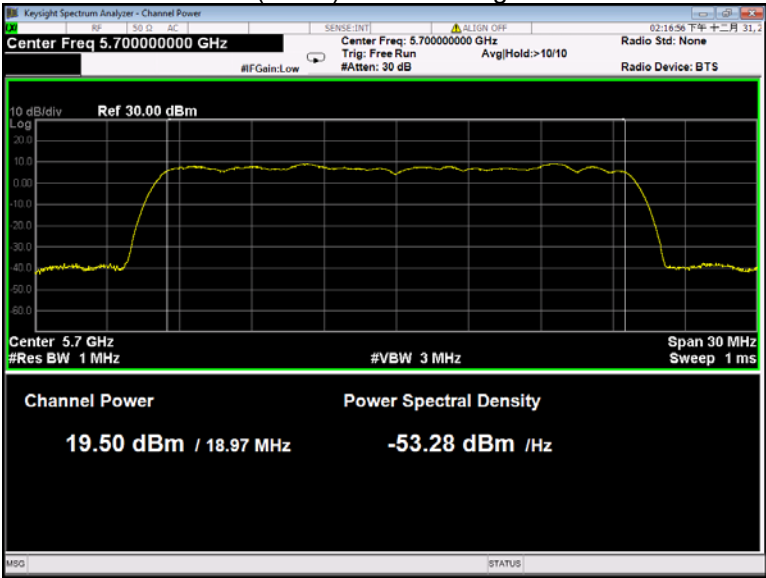
802.11ax(HE20) U-NII-2C Low channel



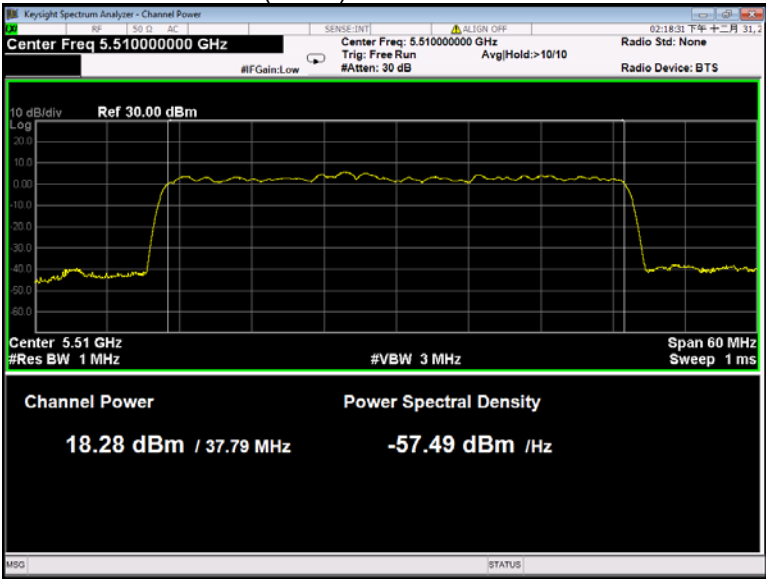
802.11ax(HE20) U-NII-2C Middle channel



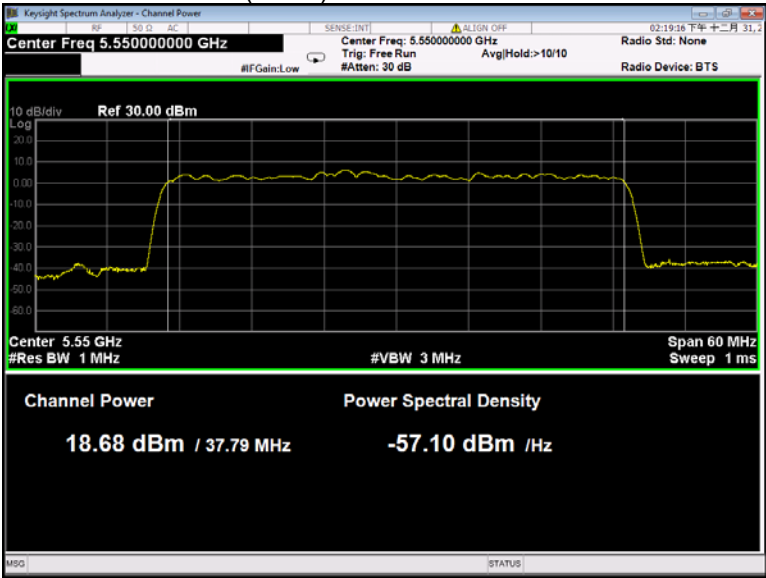
802.11ax(HE20) U-NII-2C High channel



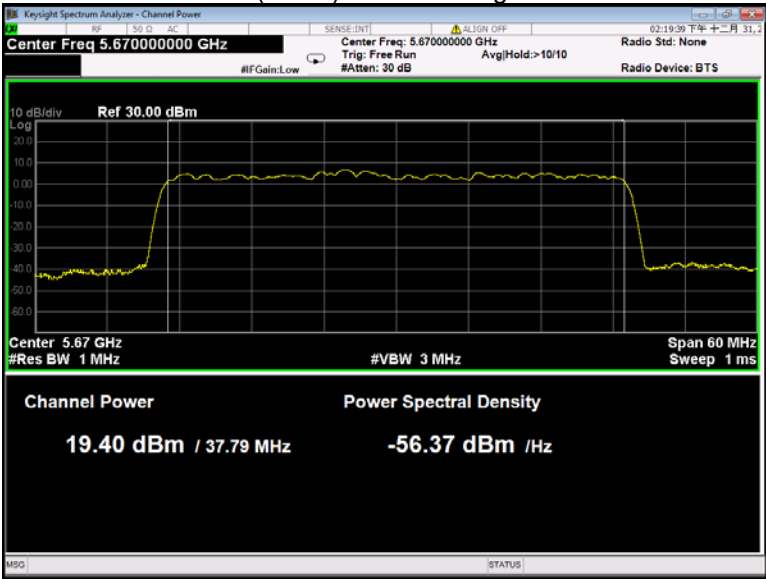
802.11ax(HE40) U-NII-2C Low channel



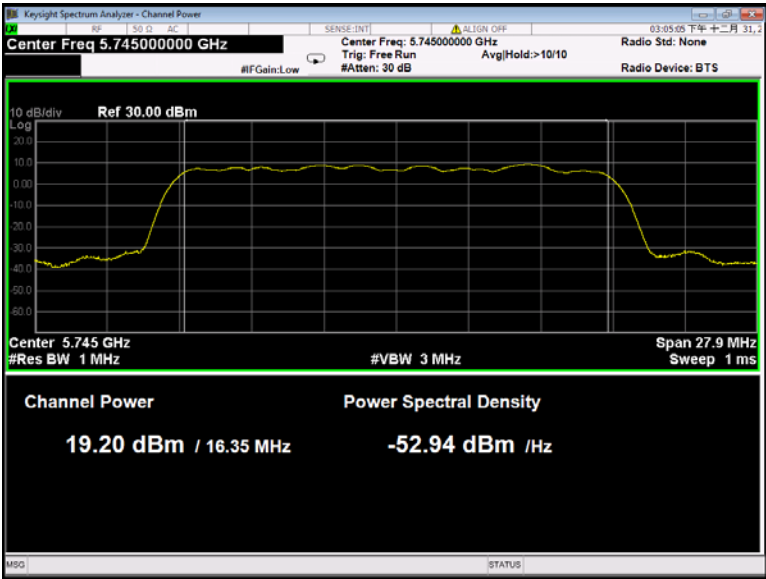
802.11ax(HE40) U-NII-2C Middle channel



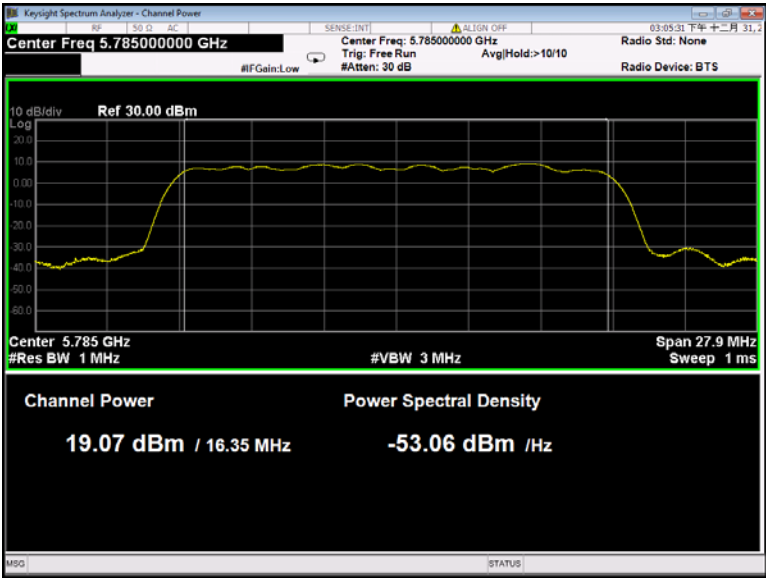
802.11ax(HE40) U-NII-2C High channel



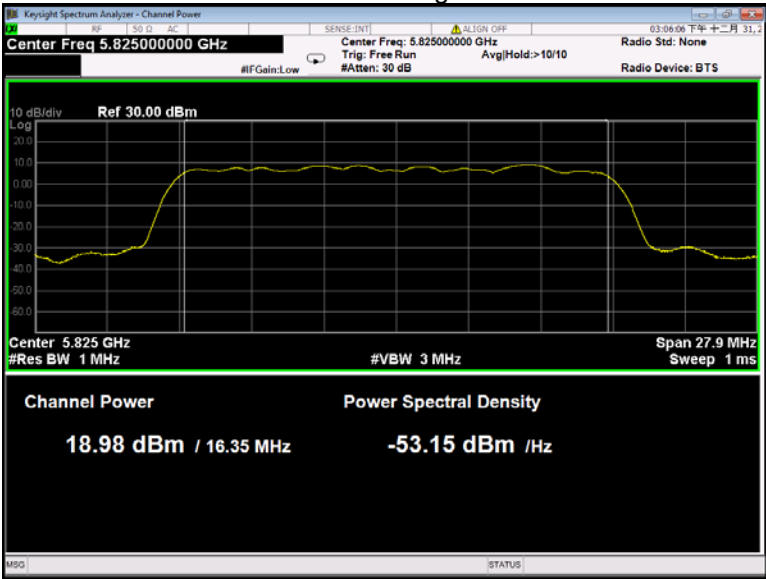
802.11a U-NII-3 Low channel



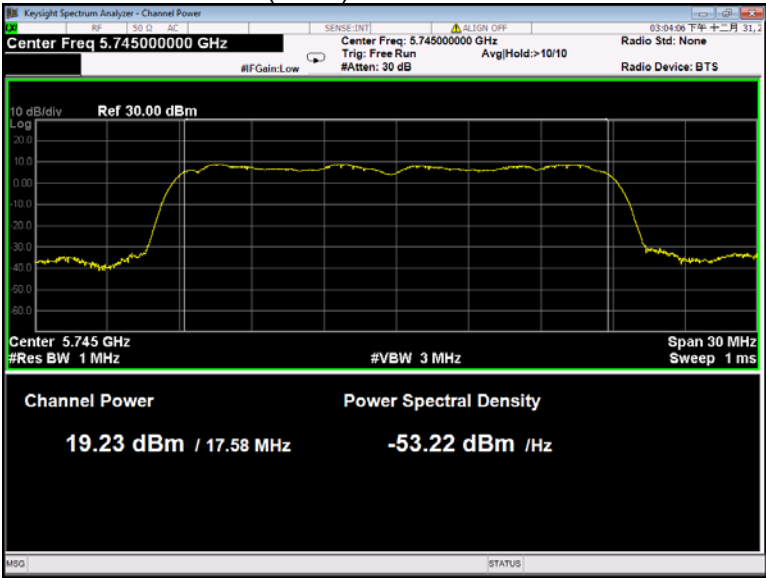
802.11a U-NII-3 Middle channel



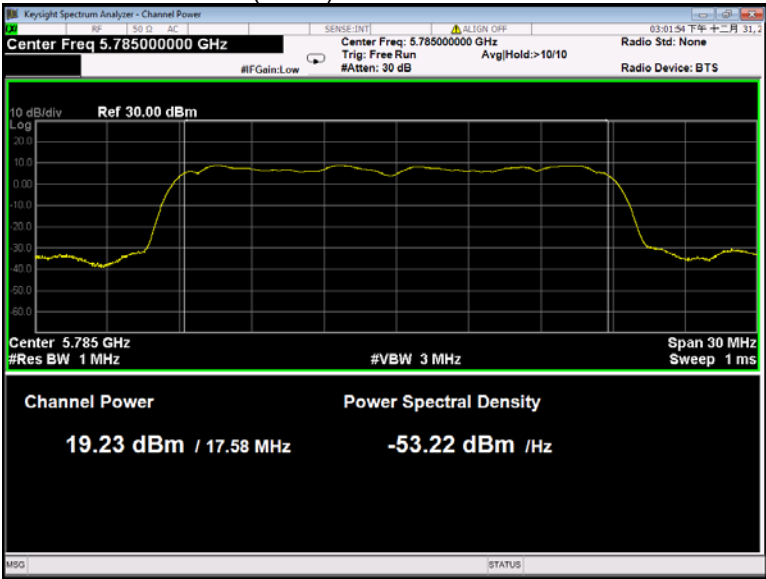
802.11a U-NII-3 High channel



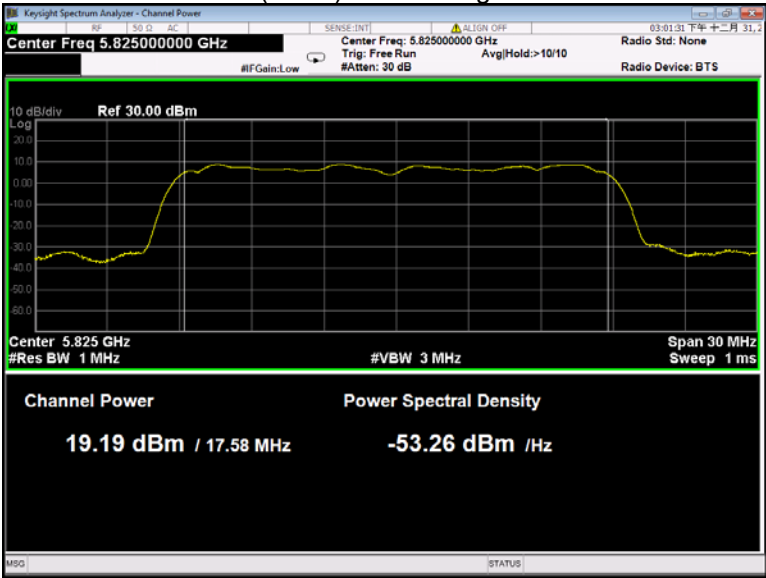
802.11n(HT20) U-NII-3 Low channel



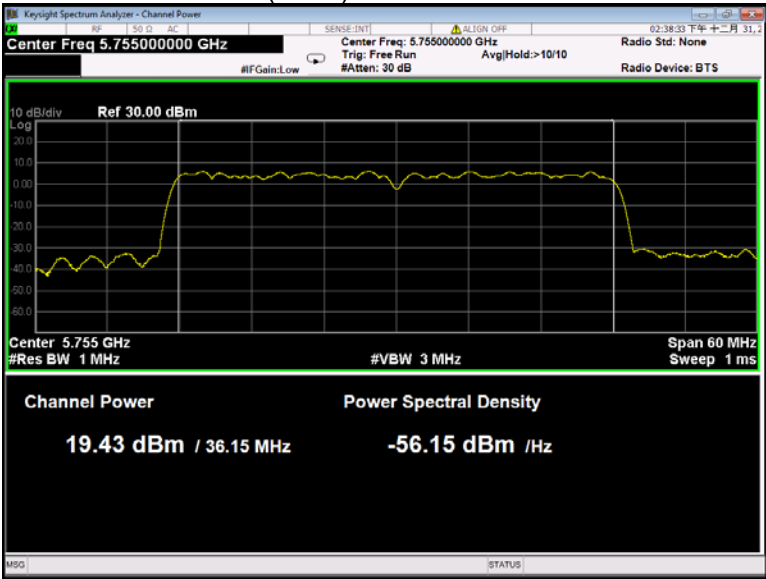
802.11n(HT20) U-NII-3 Middle channel



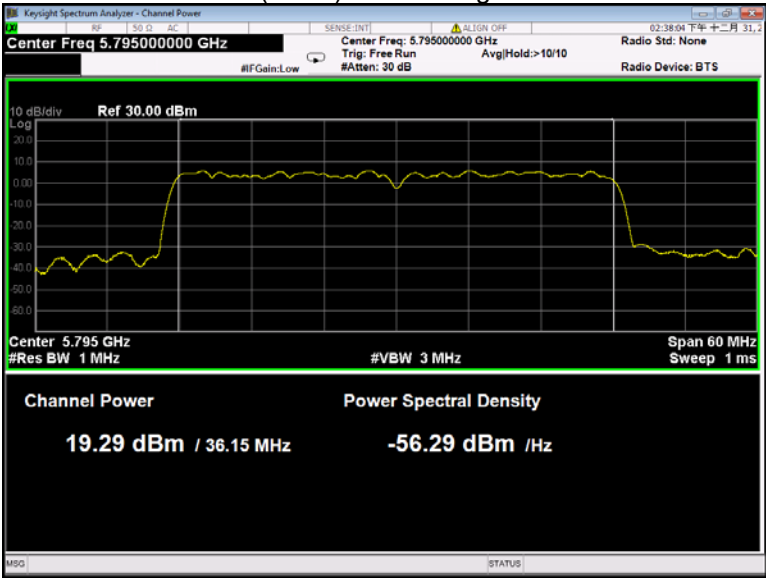
802.11n(HT20) U-NII-3 High channel



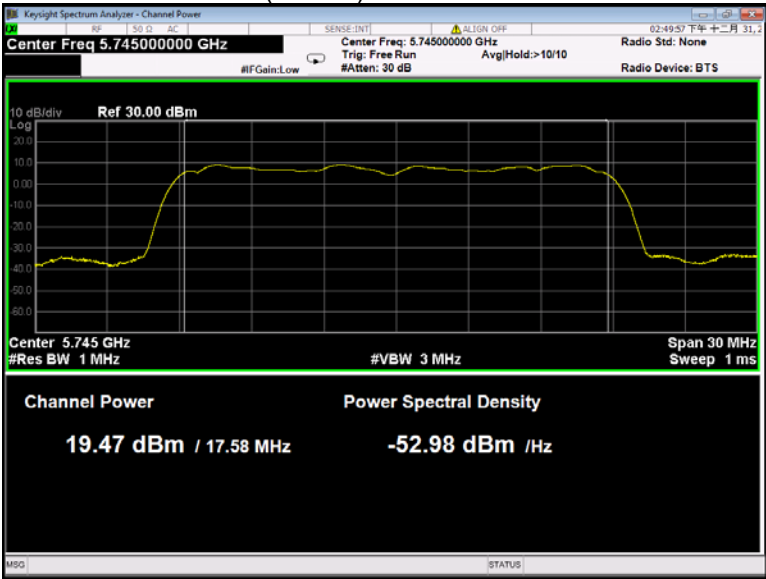
802.11n(HT40) U-NII-3 Low channel



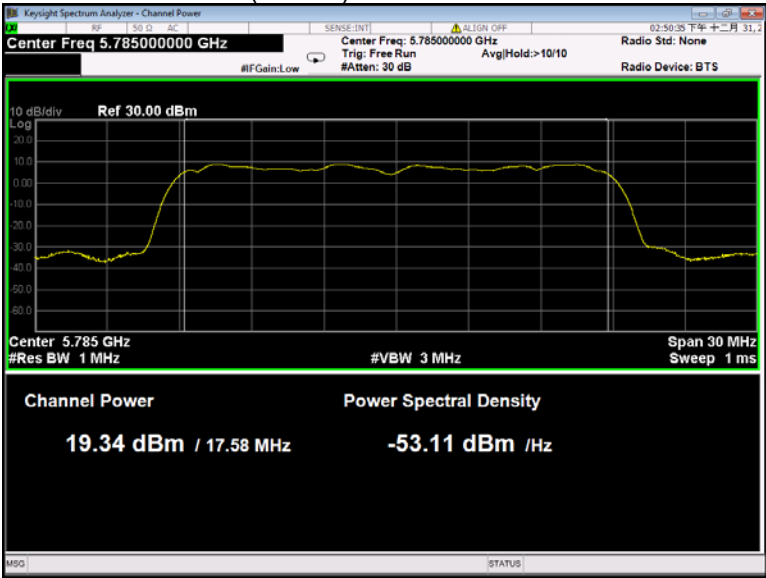
802.11n(HT40) U-NII-3 High channel



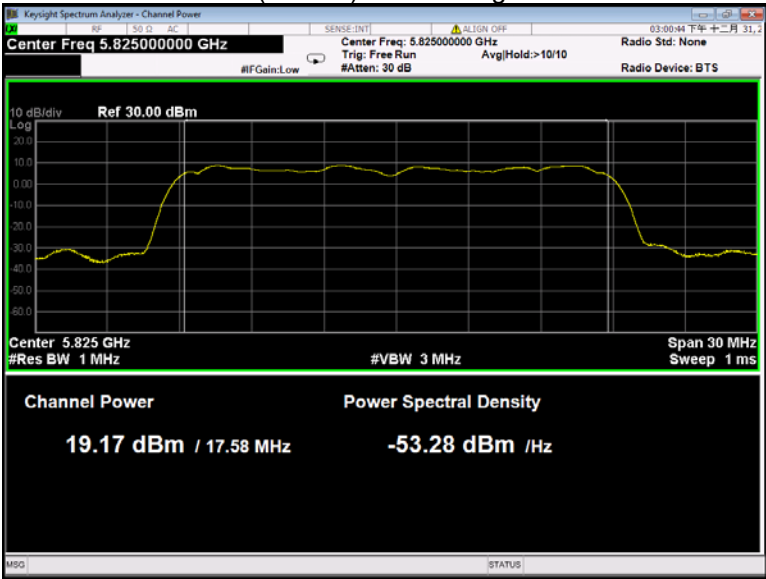
802.11ac(VHT20) U-NII-3 Low channel



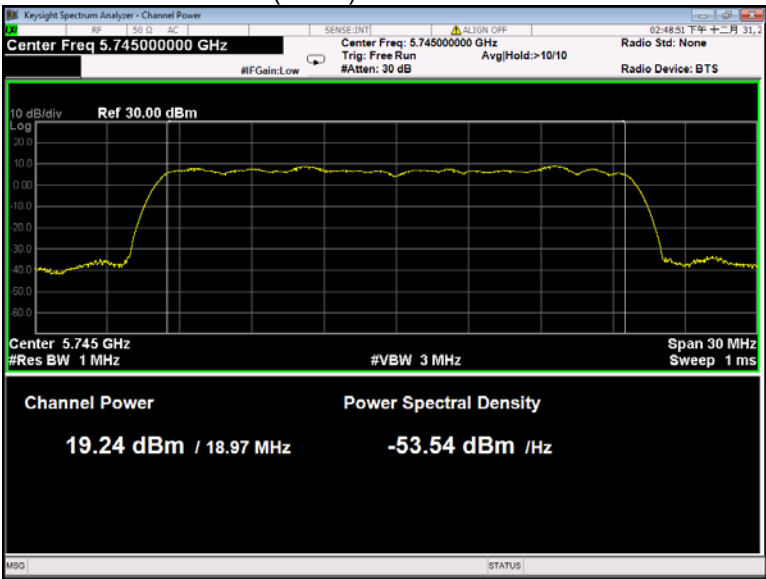
802.11ac(VHT20) U-NII-3 Middle channel



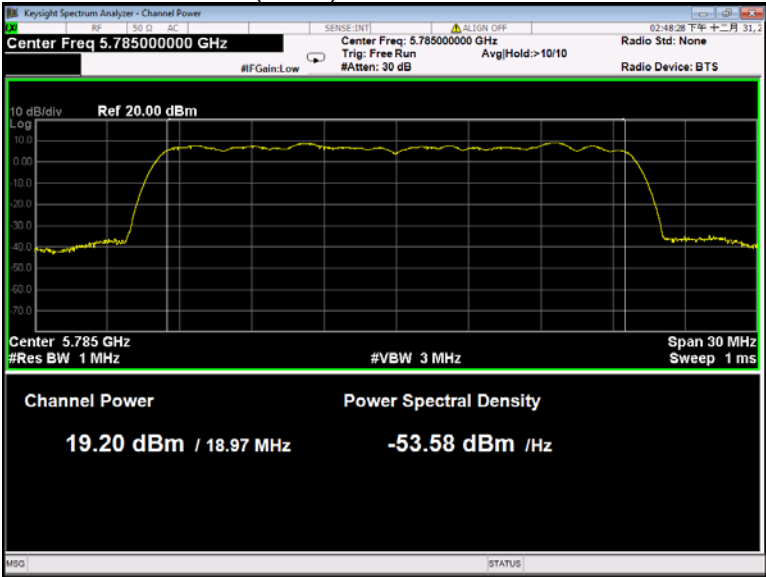
802.11ac(VHT20) U-NII-3 High channel



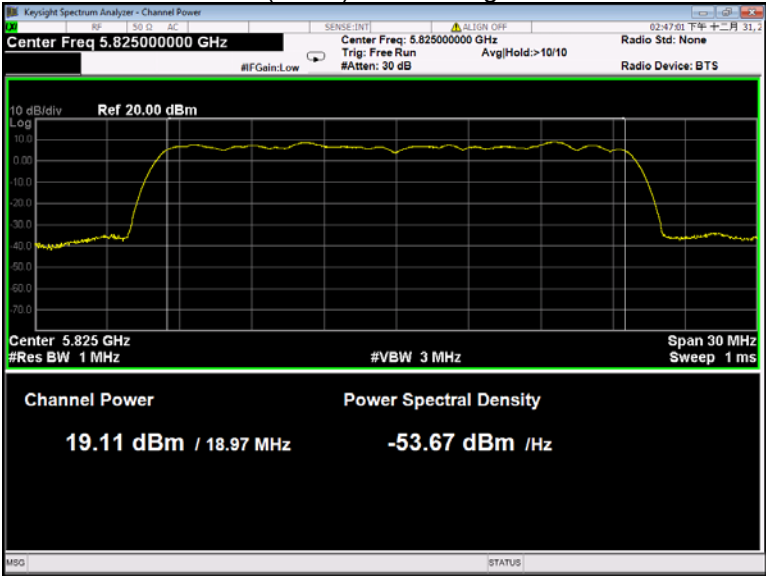
802.11ax(HE20) U-NII-3 Low channel



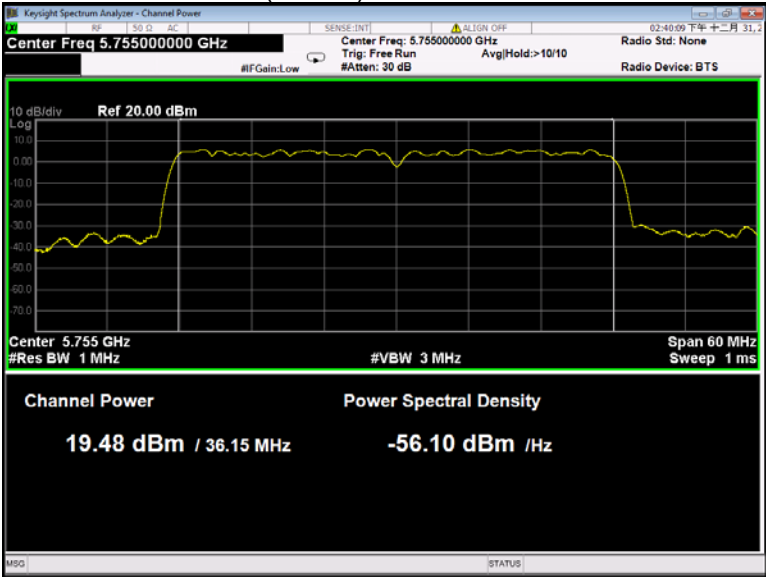
802.11ax(HE20) U-NII-3 Middle channel



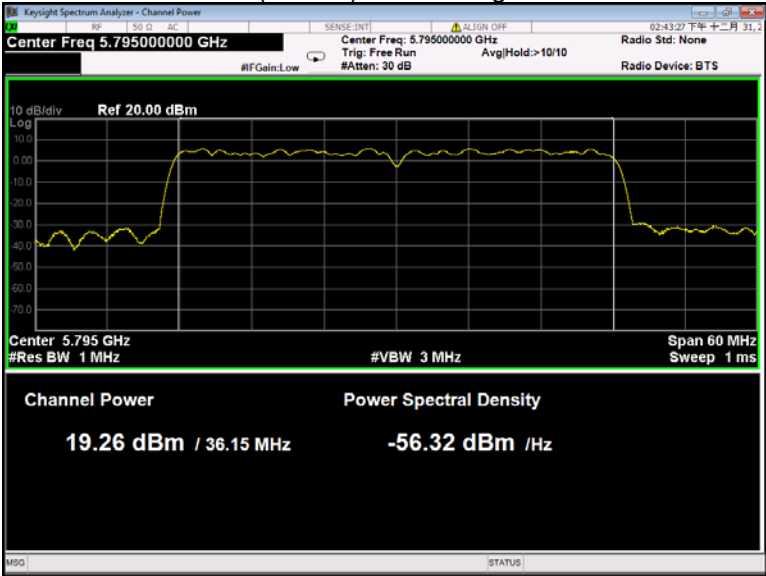
802.11ax(HE20) U-NII-3 High channel



802.11ac(VHT40) U-NII-3 Low channel

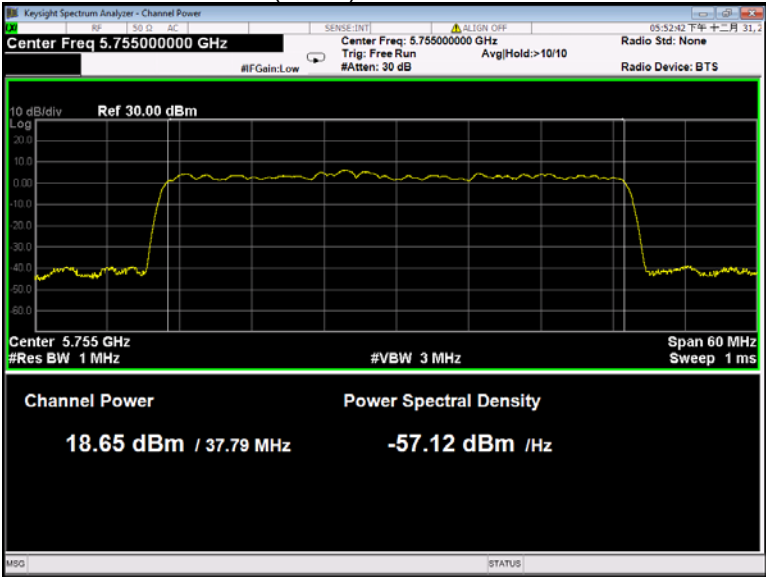


802.11ac(VHT40) U-NII-3 High channel

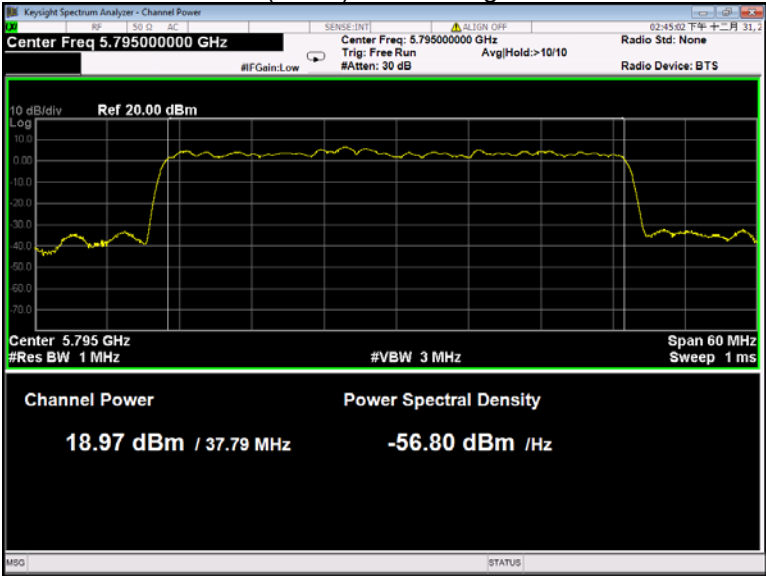


802.11

802.11ax(HE40) U-NII-3 Low channel



802.11ax(HE40) U-NII-3 High channel



13 Power Spectral density

Test Requirement:	FCC 47CFR Part 15 Section 15.407(a)
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Test Limit:	For the band 5.15-5.25 GHz For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands The maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. For the band 5.725-5.850 GHz The maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.
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:
U-NII-1
RBW = 1MHz, VBW $\geq 3 \times$ RBW Sweep = auto; Detector Function = Peak. Trace = Max hold.
U-NII-3
RBW = 510KHz, VBW $\geq 3 \times$ RBW Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section
Submit this plot.

13.2 Test Result

Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-1	802.11a	6.921	6.905	7.360
	802.11n(HT20)	6.504	6.530	6.863
	802.11n(HT40)	3.426	/	3.670
	802.11ac(VHT20)	6.415	6.411	6.633
	802.11ax(HE20)	9.069	9.294	4.922
	802.11ac(VHT40)	3.456	/	3.630
	802.11ax(HE40)	6.149	/	6.305
	Limit	≤11.00dBm/MHz		

Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-2A	802.11a	9.388	9.143	8.644
	802.11n(HT20)	9.128	8.934	8.676
	802.11n(HT40)	5.859	/	5.609
	802.11ac(VHT20)	9.256	9.072	8.681
	802.11ax(HE20)	9.188	8.976	8.508
	802.11ac(VHT40)	5.868	/	5.769
	802.11ax(HE40)	6.633	/	6.342
	Limit	≤11.00dBm/MHz		

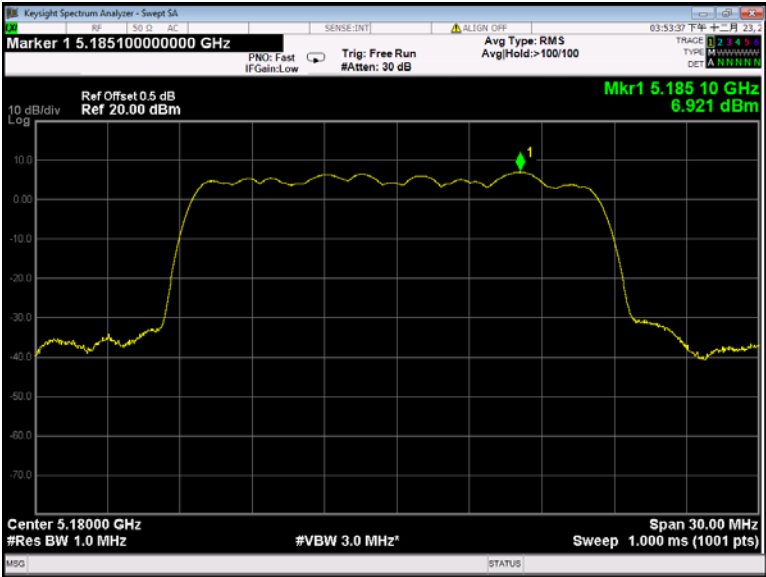
Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-2C	802.11a	8.529	9.022	9.314
	802.11n(HT20)	8.127	8.553	8.917
	802.11n(HT40)	4.981	5.237	5.926
	802.11ac(VHT20)	8.073	8.701	9.005
	802.11ax(HE20)	8.241	8.804	9.022
	802.11ac(VHT40)	4.966	5.235	5.916
	802.11ax(HE40)	5.525	5.856	6.481
	Limit	≤11.00dBm/MHz		

Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-3	802.11a	5.687	5.557	5.192
	802.11n(HT20)	5.425	4.96	5.173
	802.11n(HT40)	2.336	/	2.181
	802.11ac(VHT20)	5.443	5.318	5.192
	802.11ax(HE20)	6.498	6.443	6.438
	802.11ac(VHT40)	2.346	/	2.144
	802.11ax(HE40)	3.196	/	3.088
	Limit	$\leq 30.00 \text{ dBm/500kHz}$		

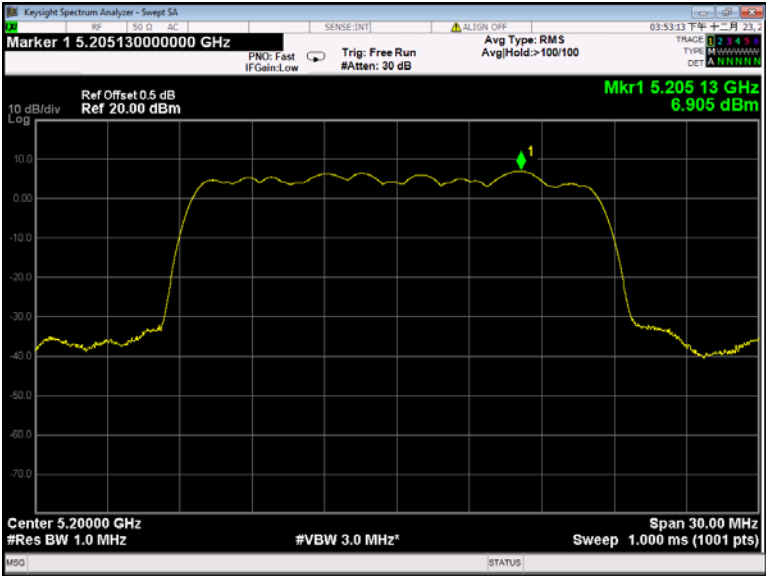
* All transmit signals are completely uncorrelated with each other, Directional gain = G_{ANT} which is less than 6dBi. So the limit does not be reduced.

Test result plots shown as follows:

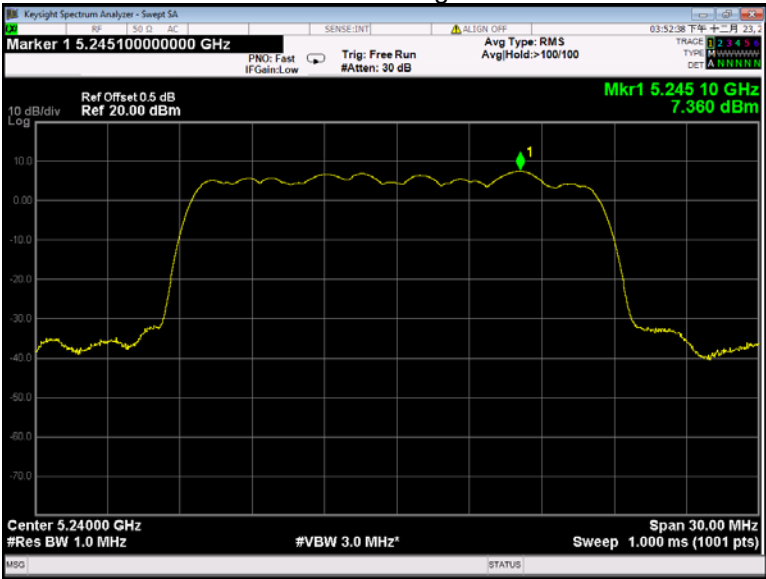
802.11a U-NII-1 Low channel



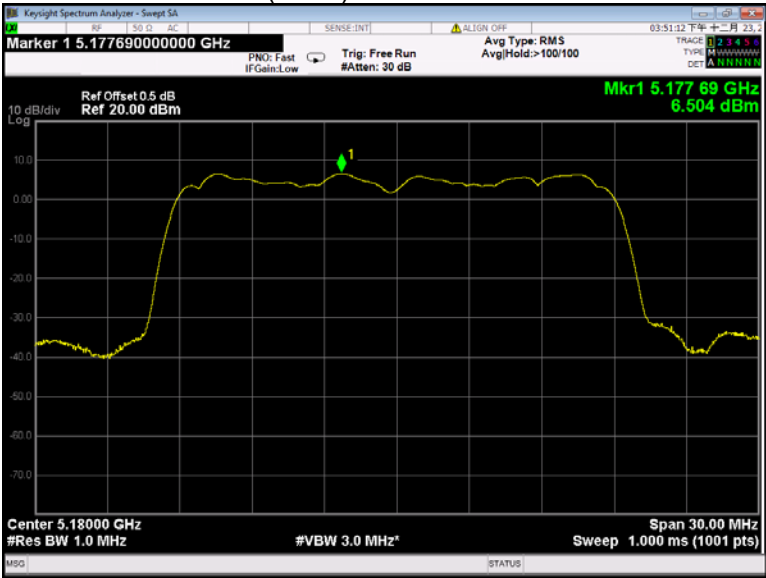
802.11a U-NII-1 Middle channel



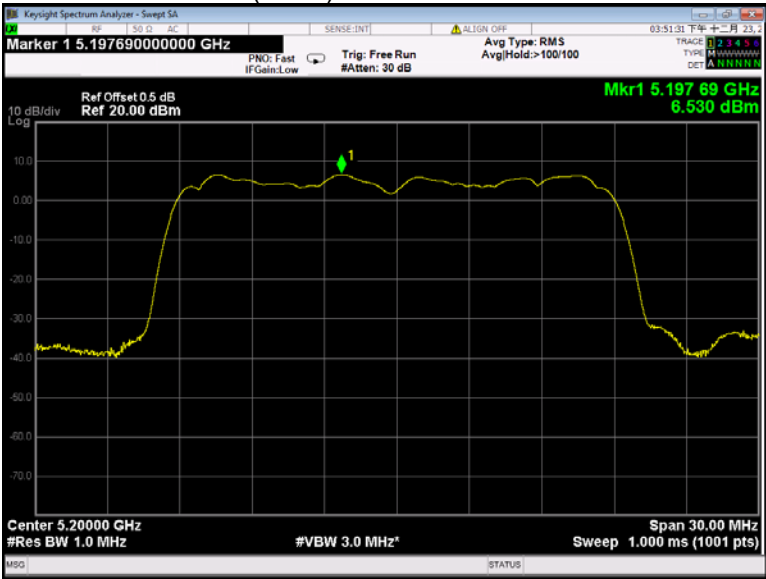
802.11a U-NII-1 High channel



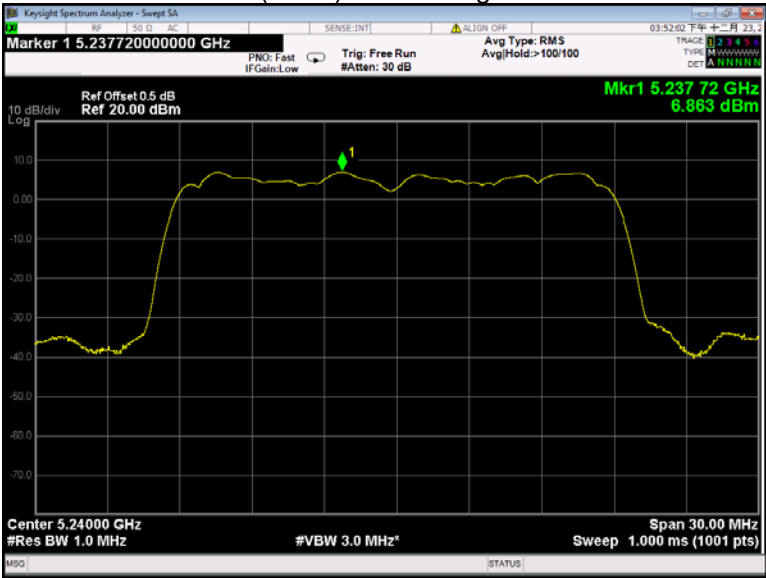
802.11n(HT20) U-NII-1 Low channel



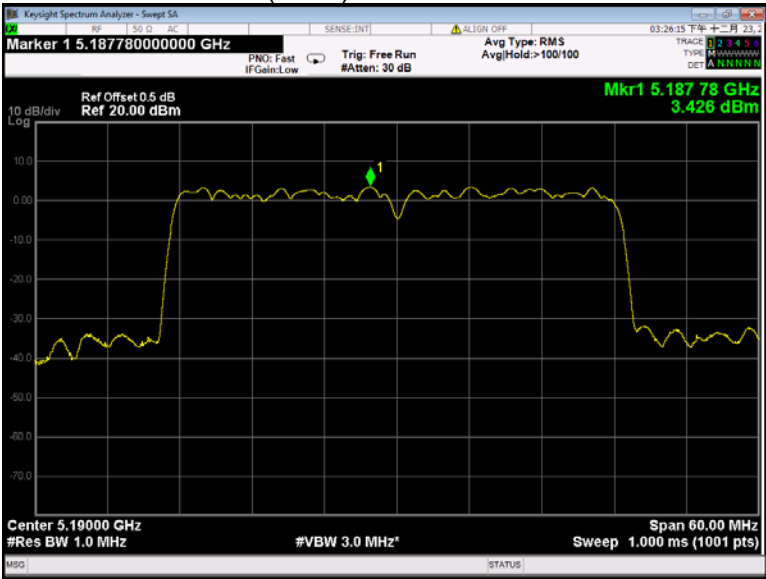
802.11n(HT20) U-NII-1 Middle channel



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



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



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

