

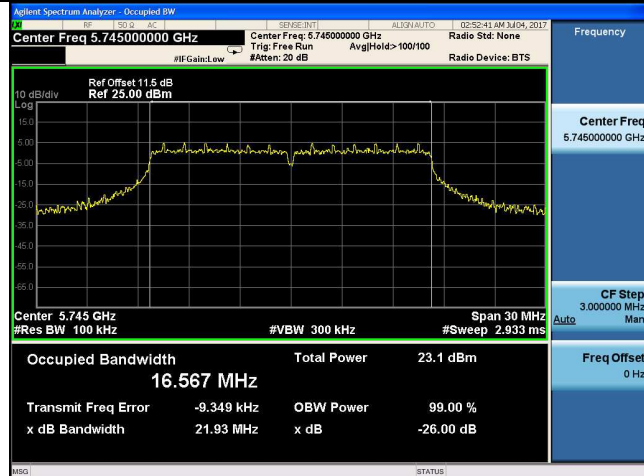
5745-5825MHz Band:

26dB bandwidth

ANT 1

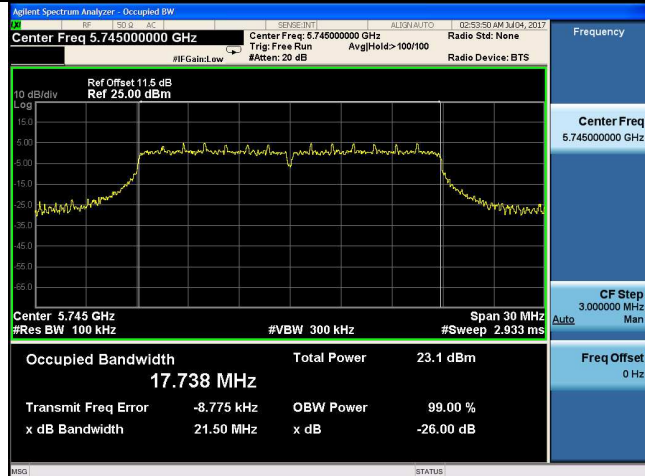
11a

5745MHz

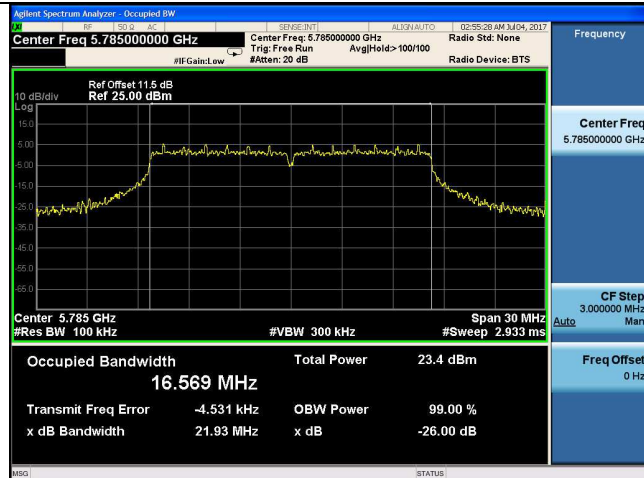


11n HT20

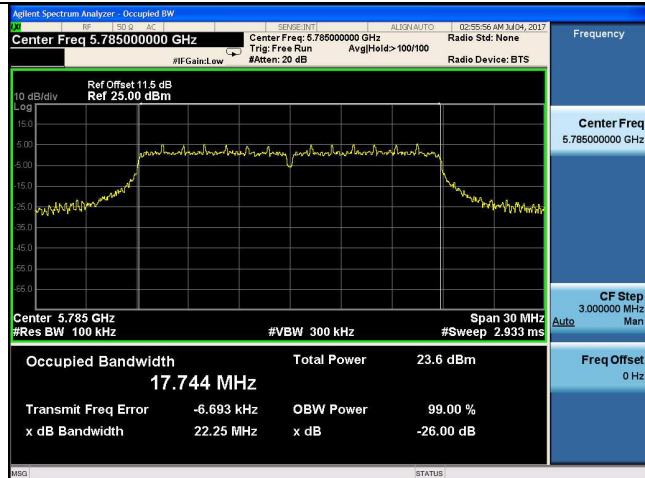
5745MHz



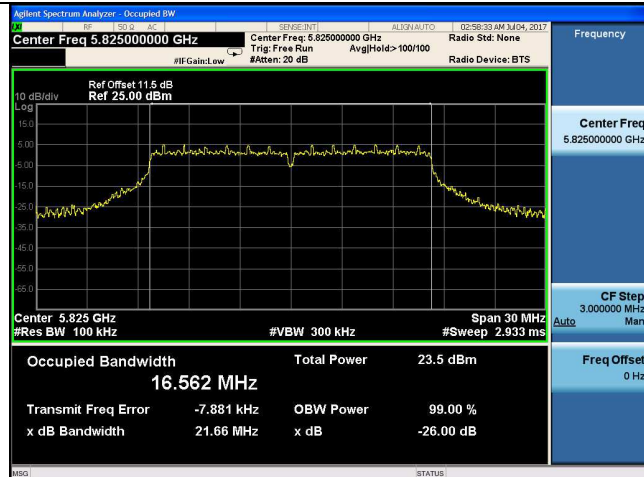
5785MHz



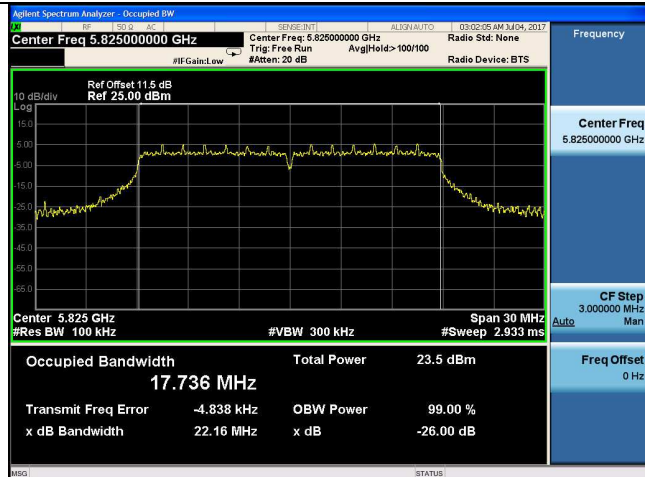
5785MHz



5825MHz

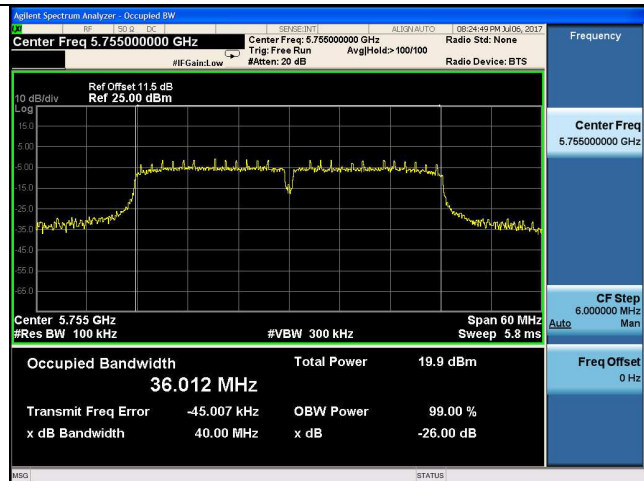


5825MHz

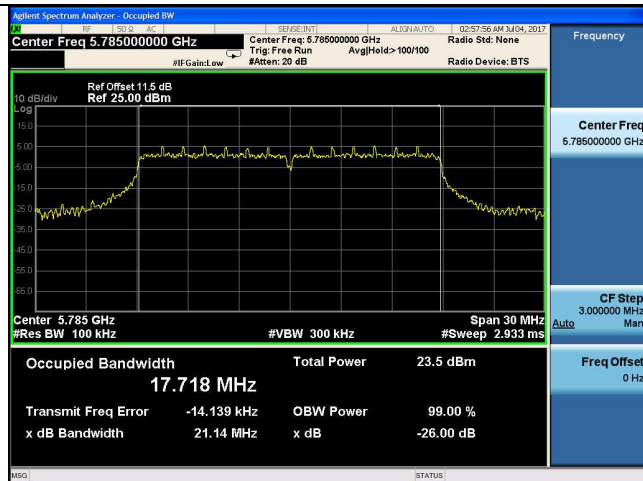


11n HT40

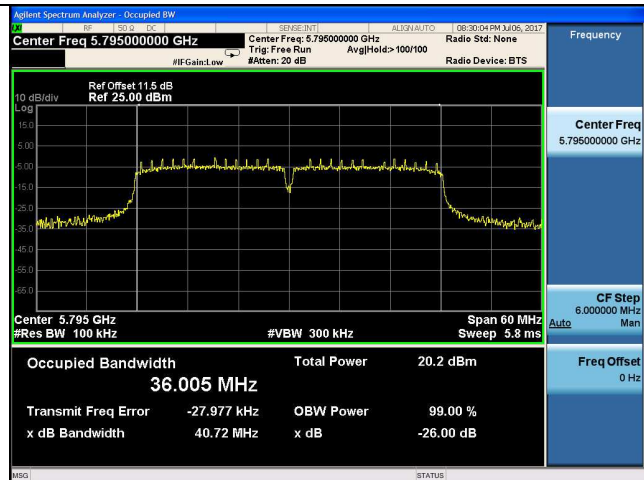
5755MHz



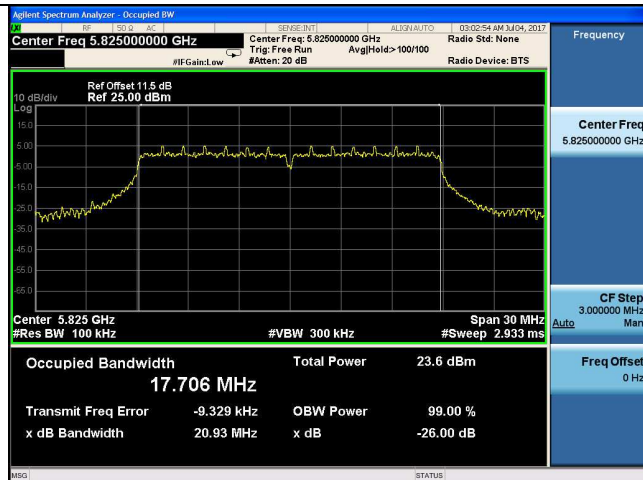
5785MHz



5795MHz

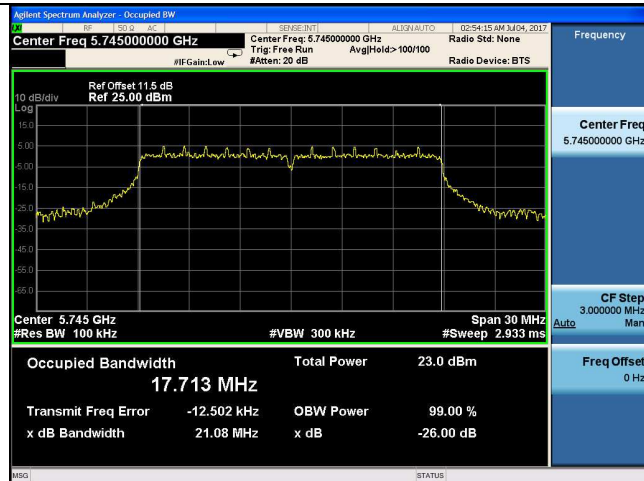


5825MHz



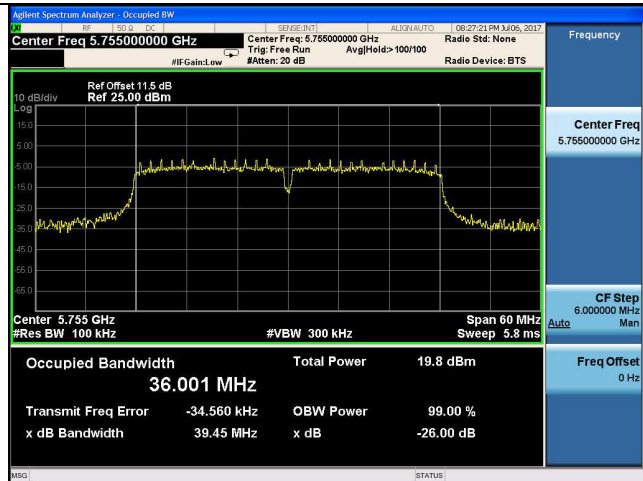
11ac VHT20

5745MHz

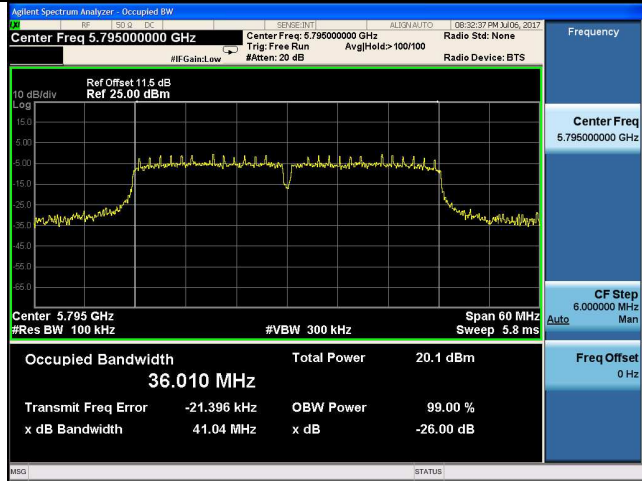


11ac VHT40

5755MHz

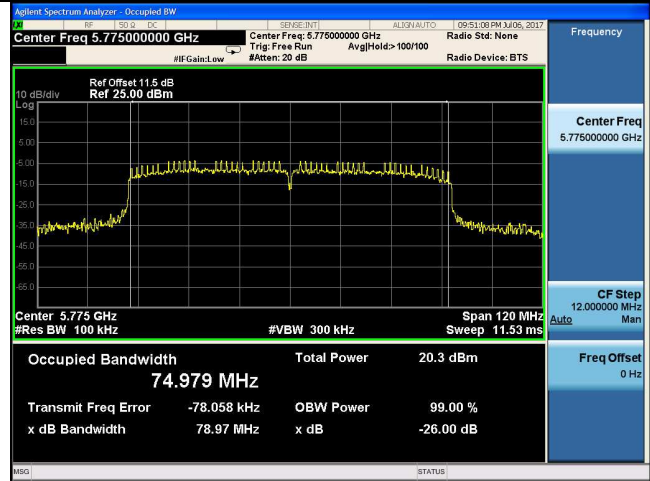


5795MHz



11ac VHT80

5775MHz



7. OUTPUT POWER TEST

7.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	N9030A	MY51380221	Oct.15,16	1 Year
2.	Power meter	Anritsu	ML2487A	6K00002472	Apr.22,17	1 Year
3.	Power sensor	Anritsu	MA2491A	0033005	Apr.22,17	1 Year
4.	Attenuator (20dB)	Agilent	8491B	MY39262165	Apr.22,17	1 Year
5.	RF Cable	Marvelous Microwave Inc	SFL402105FLEX	NO.1	Oct.15,16	1 Year

7.2. Limit

For the band 5.15–5.25 GHz.

For mobile and portable 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, 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 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

7.3. Test Procedure

1. Connected the EUT's antenna port to measure device by 26dB attenuator.
2. For IEEE 802.11a and IEEE802.11n HT20 and 802.11ac VHT20 mode, use a PK power meter which's bandwidth is 20MHz and above 26dB bandwidth of signal to measure out each test modes' PK output power.
3. For IEEE802.11n HT40 mode, because the signal's bandwidth is about 40MHz and above 20MHz bandwidth of power sensor ML2491A. So use the test method described in KBD789033 clause E Method SA-1
 - 1) Connect the antenna port to the spectrum analyzer and Set span of the spectrum to encompass the entire emission bandwidth (EBW) of the signal.
 - 2) Set the RBW=1MHz and VBW =3MHz
 - 3) Number of points in sweep ≥ 2 Span / RBW
 - 4) Detector = RMS
 - 5) Sweep time = auto couple
 - 6) Allow the sweep to "free run" and set the Trace average at least 100 traces in power averaging (i.e., RMS) mode.
 - 7) Compute power by integrating the spectrum across the 26 dB EBW of the signal using the instrument's band power measurement function with band limits set equal to the EBW band edges.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

7.4. Test Results

5180-5240MHz Band:

EUT: Cash Register		
M/N: SPB1-01		
Test date: 2017-07-05	Pressure: 102.8±1.0 kpa	Humidity:53.2±3.0%
Tested by: zack_zhu	Test site: RF site	Temperature:23.6±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)		Limit (dBm)	
		ANT0	ANT1	ANT0	ANT1
11a	5180	14.73	15.44	23.98	23.85
	5200	14.38	15.07	23.98	23.85
	5240	14.36	15.23	23.98	23.85
11n HT20	5180	14.51	15.35	23.98	23.85
	5200	14.30	15.08	23.98	23.85
	5240	14.38	15.17	23.98	23.85
11n HT40	5190	16.01	14.60	23.98	23.85
	5230	16.00	14.33	23.98	23.85
11ac VHT20	5180	14.60	15.19	23.98	23.85
	5200	14.37	15.06	23.98	23.85
	5240	14.38	15.17	23.98	23.85
11ac VHT40	5190	15.95	14.56	23.98	23.85
	5230	16.01	14.26	23.98	23.85
11ac VHT80	5210	14.93	15.00	23.98	23.85
Conclusion: PASS					

Note: For ANT0:

Antenna Gain= -2.39dBi<6dBi.

For ANT1:

Antenna Gain= 6.13dBi>6dBi.

5260-5320MHz Band:

EUT: Cash Register		
M/N: SPB1-01		
Test date: 2017-07-05	Pressure: 102.8±1.0 kpa	Humidity:53.2±3.0%
Tested by: zack_zhu	Test site: RF site	Temperature:23.6±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)		Limit (dBm)	
		ANT0	ANT1	ANT0	ANT1
11a	5260	14.48	15.31	23.98	23.24
	5300	14.65	15.45	23.98	23.24
	5320	14.74	15.50	23.98	23.24
11n HT20	5260	14.44	15.29	23.98	23.24
	5300	14.52	15.34	23.98	23.24
	5320	14.56	15.44	23.98	23.24
11n HT40	5270	16.10	14.44	23.98	23.24
	5310	16.11	14.56	23.98	23.24
11ac VHT20	5260	14.52	15.29	23.98	23.24
	5300	14.53	15.38	23.98	23.24
	5320	14.61	15.43	23.98	23.24
11ac VHT40	5270	16.09	14.28	23.98	23.24
	5310	16.12	14.57	23.98	23.24
11ac VHT80	5290	14.99	15.03	23.98	23.24

Conclusion: PASS

Note: For ANT0:

Antenna Gain= -1.76dBi<6dBi.

For ANT1:

Antenna Gain= 6.74dBi>6dBi.

5500-5700MHz Band:

EUT: Cash Register		
M/N: SPB1-01		
Test date: 2017-07-10	Pressure: 102.8±1.0 kpa	Humidity: 53.2±3.0%
Tested by: zack_zhu	Test site: RF site	Temperature: 23.6±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)		Limit (dBm)	
		ANT0	ANT1	ANT0	ANT1
11a	5500	15.19	15.82	23.98	23.06
	5600	14.64	15.12	23.98	23.06
	5700	14.67	15.06	23.98	23.06
11n HT20	5500	14.87	15.75	23.98	23.06
	5600	14.21	15.06	23.98	23.06
	5700	14.26	14.99	23.98	23.06
11n HT40	5510	16.05	14.86	23.98	23.06
	5590	15.74	14.34	23.98	23.06
	5670	15.27	13.98	23.98	23.06
11ac VHT20	5500	14.98	15.74	23.98	23.06
	5600	14.24	15.07	23.98	23.06
	5700	14.40	15.01	23.98	23.06
11ac VHT40	5510	16.04	14.84	23.98	23.06
	5590	15.73	14.37	23.98	23.06
	5670	15.28	13.98	23.98	23.06
11ac VHT80	5530	15.01	15.34	23.98	23.06
	5610	14.51	14.75	23.98	23.06
	5690	14.48	14.69	23.98	23.06

Conclusion: PASS

Note: For ANT0:

Antenna Gain= 1.42dBi<6dBi.

For ANT1:

Antenna Gain= 6.92dBi>6dBi.

5745-5825MHz Band:

EUT: Cash Register		
M/N: SPB1-01		
Test date: 2017-07-10	Pressure: 102.8±1.0 kpa	Humidity: 53.2±3.0%
Tested by: zack_zhu	Test site: RF site	Temperature: 23.6±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)		Limit (dBm)	
		ANT0	ANT1	ANT0	ANT1
11a	5745	14.83	15.55	30	29.02
	5785	15.04	15.91	30	29.02
	5825	14.89	15.71	30	29.02
11n HT20	5745	14.63	15.51	30	29.02
	5785	14.84	15.85	30	29.02
	5825	14.71	15.65	30	29.02
11n HT40	5755	16.11	14.72	30	29.02
	5795	16.32	14.88	30	29.02
11ac VHT20	5745	14.80	15.48	30	29.02
	5785	14.92	15.85	30	29.02
	5825	14.72	15.65	30	29.02
11ac VHT40	5755	16.10	14.73	30	29.02
	5795	16.35	14.10	30	29.02
11ac VHT80	5775	14.35	14.56	30	29.02

Conclusion: PASS

Note: For ANT0:

Antenna Gain= 0.55dBi<6dBi.

For ANT1:

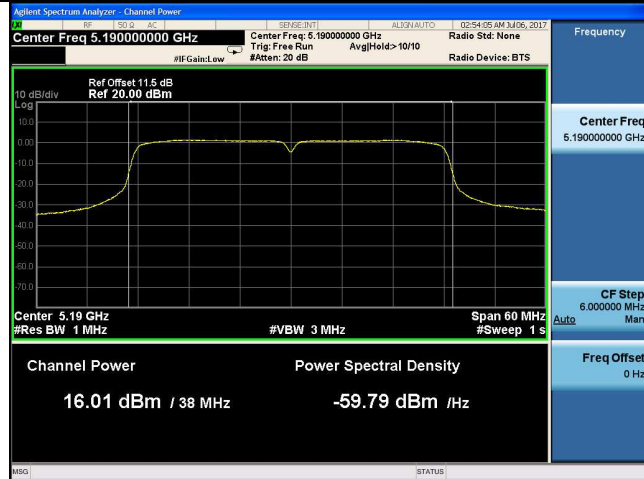
Antenna Gain= 6.98dBi>6dBi.

5180-5240MHz Band:

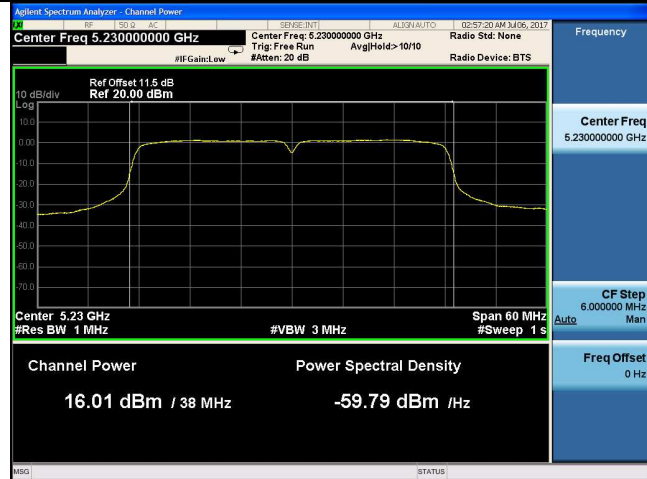
ANT 0

11n HT40

5190MHz



5230MHz



5230MHz



11ac VHT80

5210MHz



11acVHT40

5190MHz

