

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 $11 \text{ dBm} + 10 \log B$, 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 $\geq 2 \text{ Span} / \text{RBW}$
 - 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 1:

EUT: Wireless Speaker			
M/N: LF-S50G			
Test date: 2017-06-01		Pressure: 102.4±1.0 kpa	Humidity:53.1±3.0%
Tested by: zack_zhu		Test site: RF site	Temperature:23.2±0.6 °C
Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)	Limit (dBm)
11a	5180	12.86	23.98
	5200	12.79	23.98
	5240	12.78	23.98
11n HT20	5180	12.55	23.98
	5200	12.57	23.98
	5240	12.47	23.98
11n HT40	5190	12.49	23.98
	5230	12.56	23.98
Conclusion: PASS			

5260-5320MHz Band 2:

EUT: Wireless Speaker			
M/N: LF-S50G			
Test date: 2017-06-01		Pressure: 102.4±1.0 kpa	Humidity:53.1±3.0%
Tested by: zack_zhu		Test site: RF site	Temperature:23.2±0.6 °C
Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)	Limit (dBm)
11a	5260	12.48	23.69
	5300	12.22	23.69
	5320	12.36	23.69
11n HT20	5260	12.14	23.82
	5300	12.05	23.82
	5320	12.17	23.82
11n HT40	5270	12.01	23.89
	5310	12.10	23.89
Conclusion: PASS			

5500-5720MHz Band 3:

EUT: Wireless Speaker			
M/N: LF-S50G			
Test date: 2017-06-07		Pressure: 102.4±1.0 kpa	Humidity:53.1±3.0%
Tested by: zack_zhu		Test site: RF site	Temperature:23.2±0.6 °C
Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)	Limit (dBm)
11a	5500	13.01	23.81
	5600	13.17	23.81
	5700	12.60	23.81
	5720	13.05	23.81
11n HT20	5500	12.69	23.89
	5600	12.80	23.89
	5700	12.54	23.89
	5720	12.85	23.89
11n HT40	5510	12.75	23.98
	5590	12.82	23.98
	5670	12.50	23.98
	5710	12.76	23.98
Conclusion: PASS			

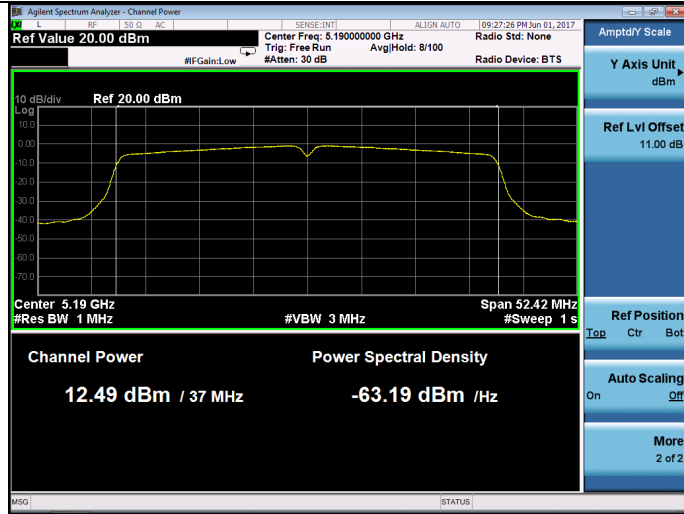
5745-5825MHz Band 4:

EUT: Wireless Speaker			
M/N: LF-S50G			
Test date: 2017-06-02		Pressure: 102.4±1.0 kpa	Humidity:53.1±3.0%
Tested by: zack_zhu		Test site: RF site	Temperature:23.2±0.6 °C
Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)	Limit (dBm)
11a	5745	12.19	29.61
	5785	11.91	29.61
	5825	11.79	29.61
11n HT20	5745	12.08	29.61
	5785	11.75	29.61
	5825	11.48	29.61
11n HT40	5755	11.60	29.61
	5795	11.88	29.61
Conclusion: PASS			

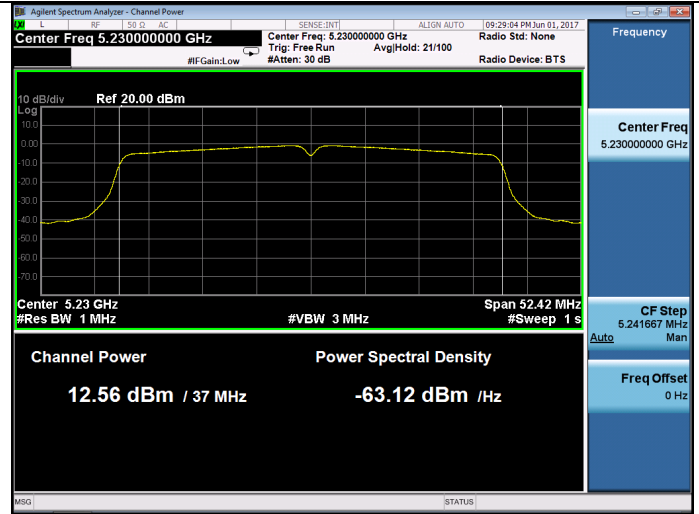
5180-5240MHz Band 1:

11n HT40

5190MHz



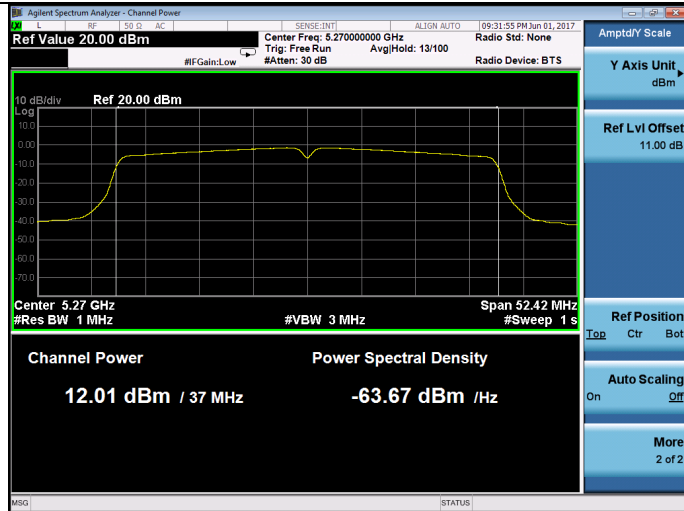
5230MHz



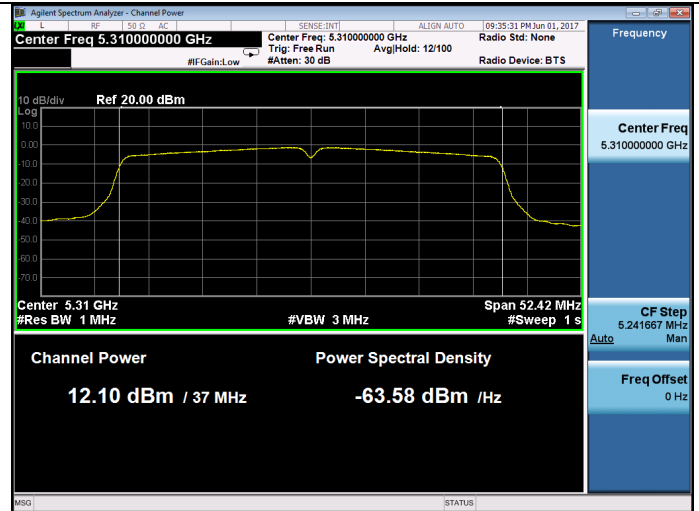
5260-5320MHz Band 2:

11n HT40

5270MHz



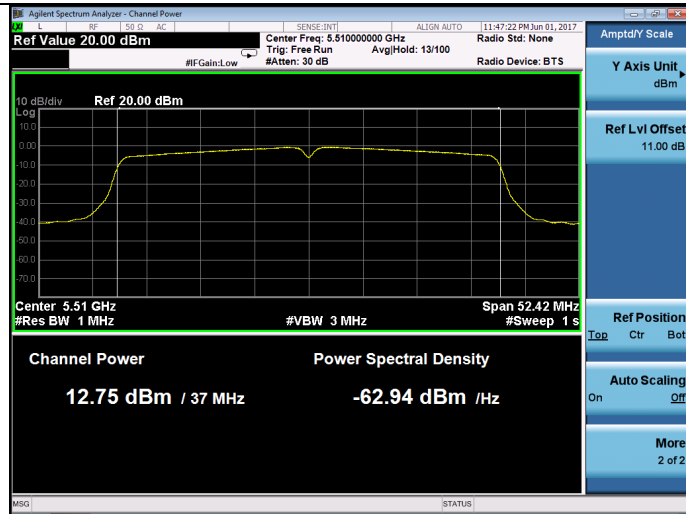
5310MHz



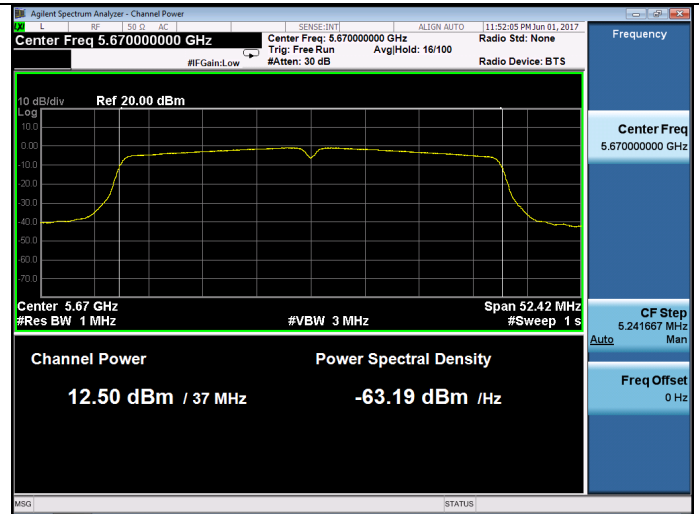
5500-5720MHz Band 3:

11n HT40

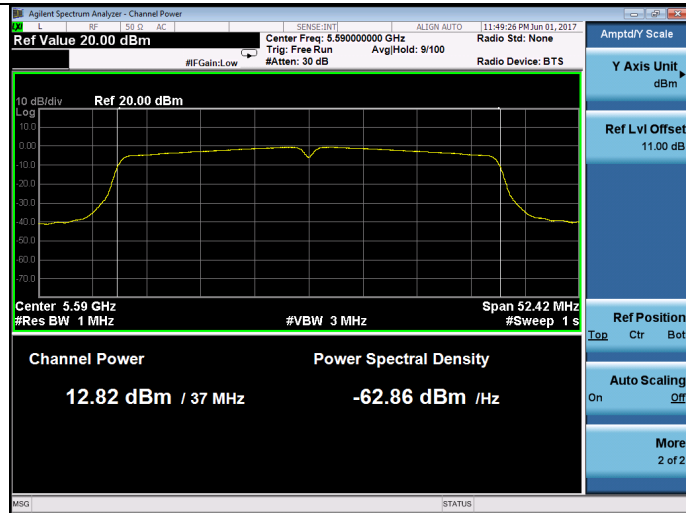
5510MHz



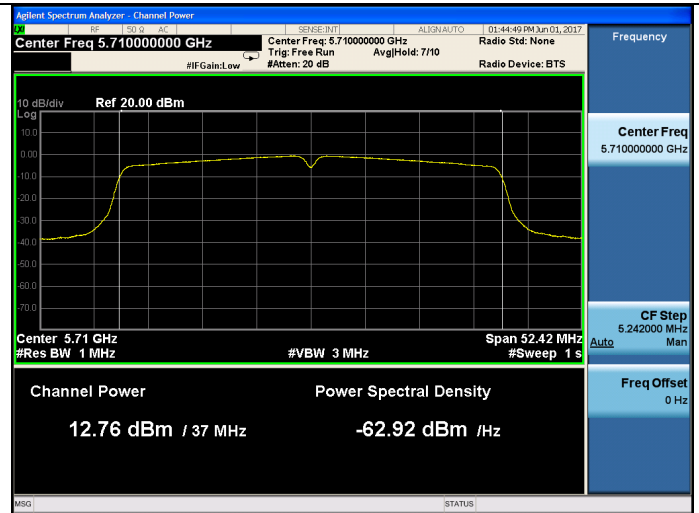
5670MHz



5590MHz



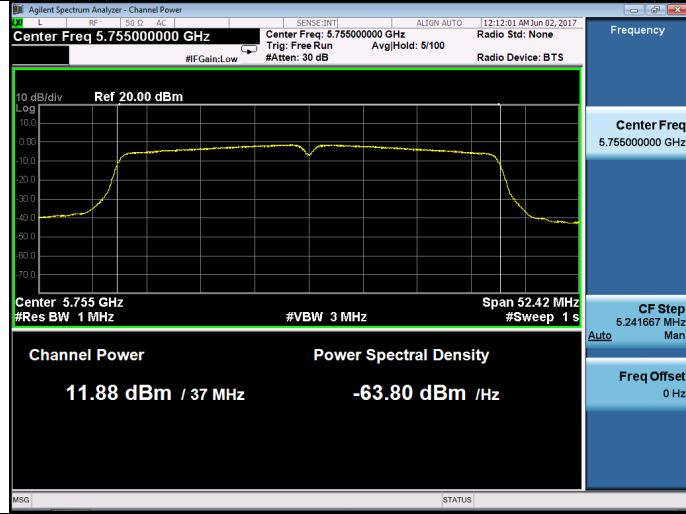
5710MHz



5745-5825MHz Band 4:

11n HT40

5755MHz



5795MHz

