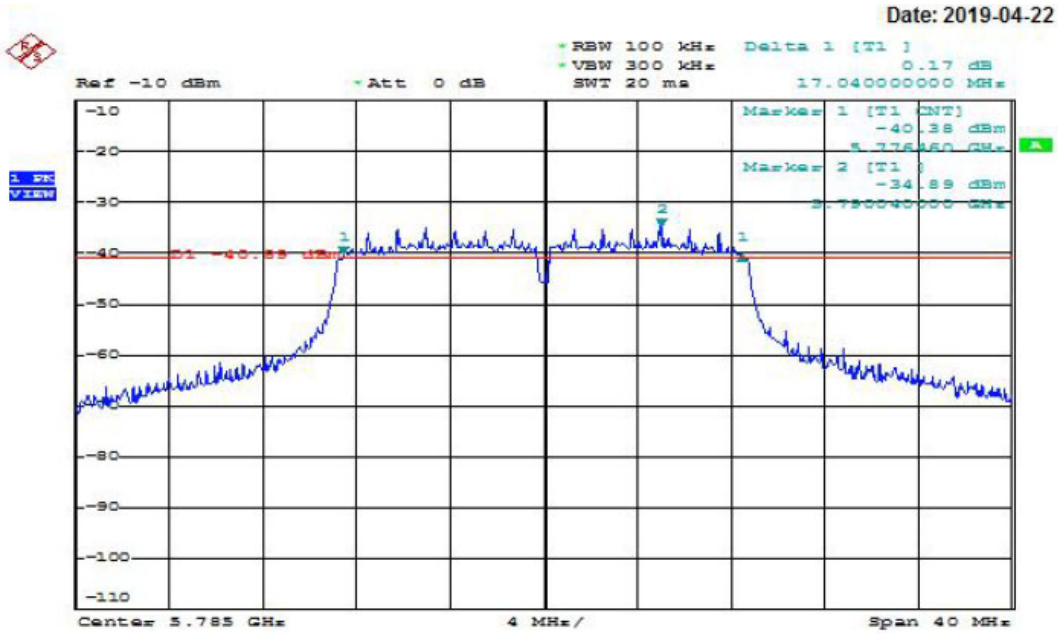
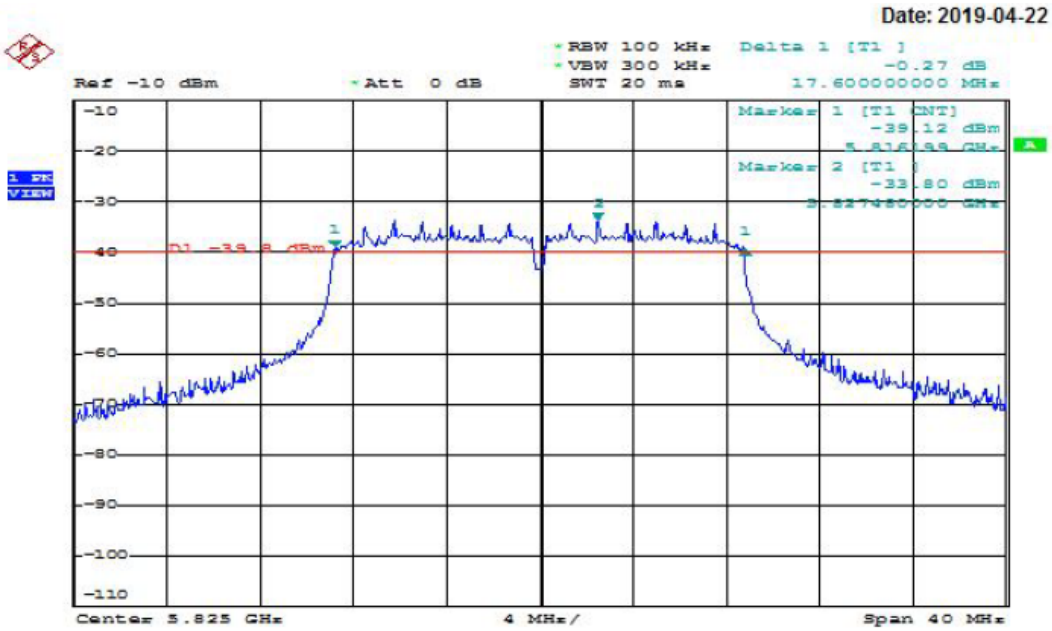
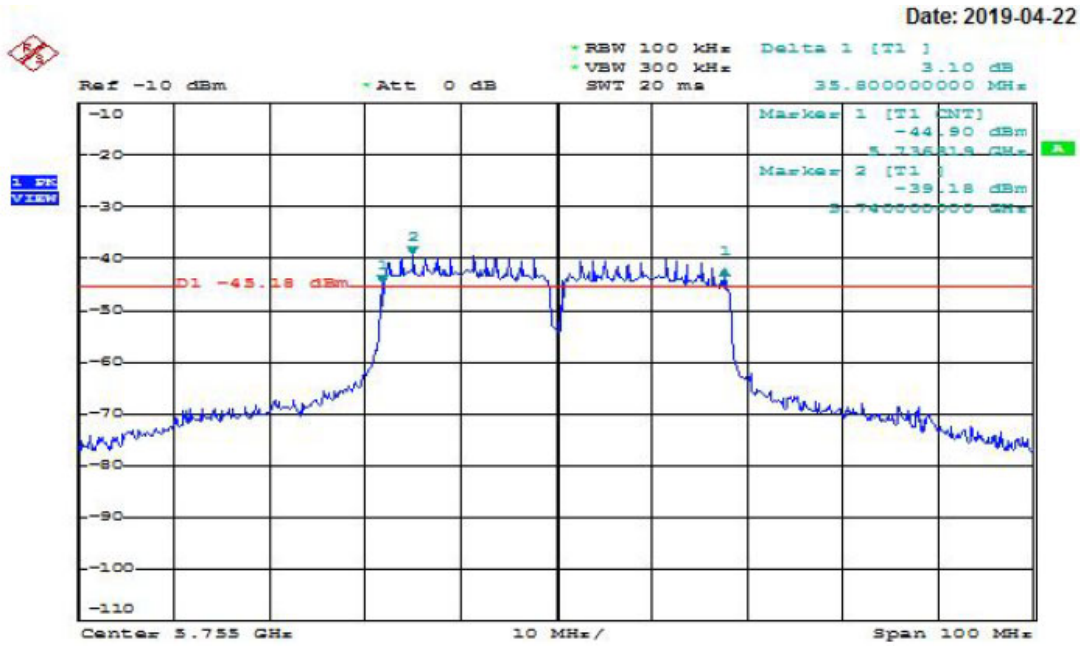
802.11n HT20
Channel: 157



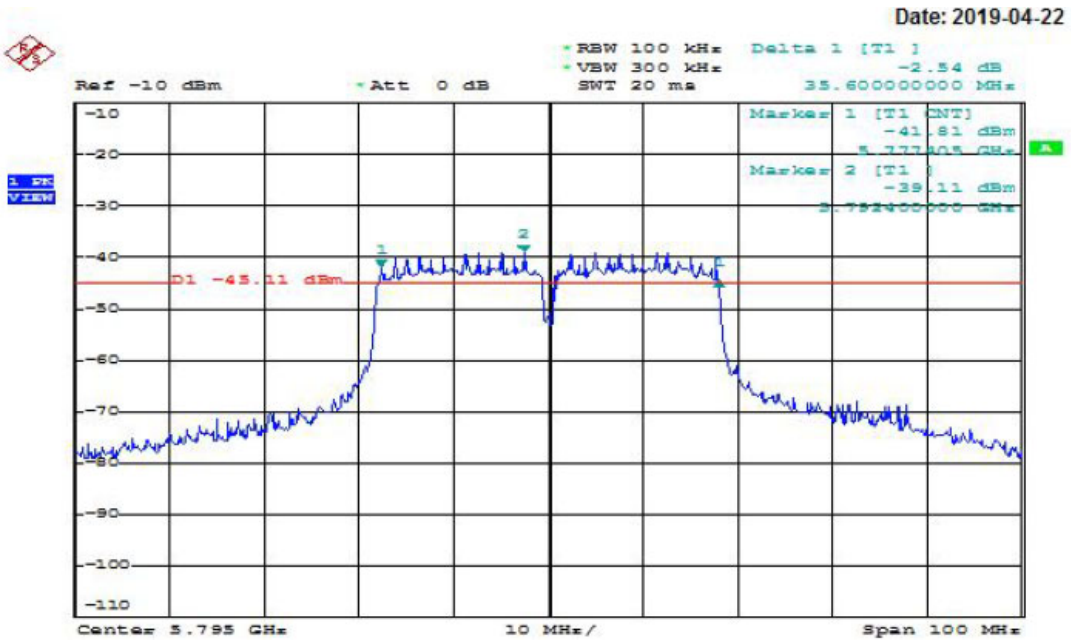
802.11n HT20
Channel: 165



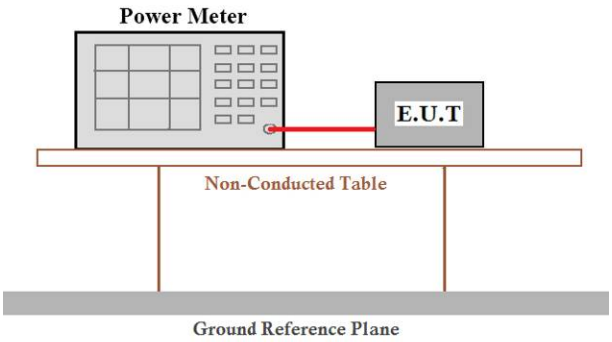
802.11n HT40
Channel: 151



802.11n HT40
Channel: 159



9. Output Power

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02
Limit:	For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency bands of operation shall not exceed 250mW. For the band 5.745-5.850 GHz, the maximum conducted output power over the frequency bands of operation shall not exceed 30dBm
Test setup:	
Test procedure:	**Measurement using an RF average power meter** (i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied a) The EUT is configured to transmit continuously or to transmit with a constant duty cycle. b) At all times when the EUT is transmitting, it must be transmitting at its maximum power control level. c) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five. (ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section B). (iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter. (iv) Adjust the measurement in dBm by adding 10 log(1/x) where x is the duty cycle (e.g., 10log(1/0.25) if the duty cycle is 25 percent).
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details

9.1 Test Result and Data

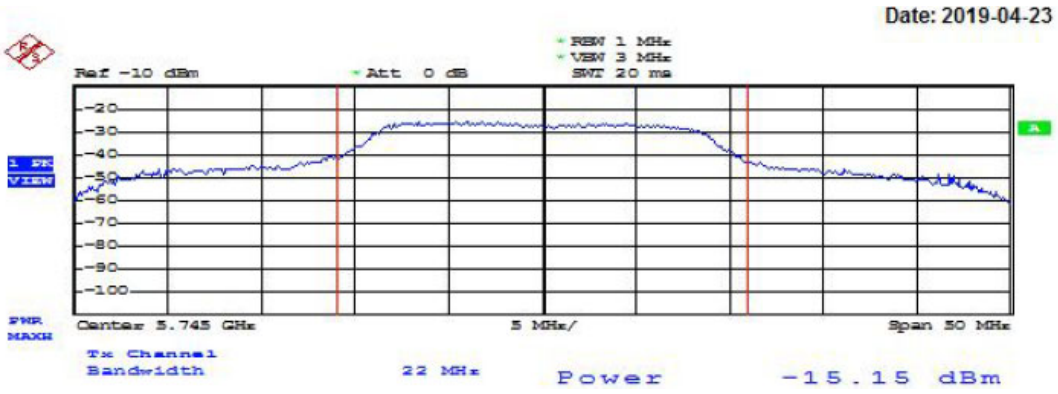
U-NII-3

Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)		Peak Power Output (mW)		Limit (dBm)
			ANT R	ANT L	ANT R	ANT L	
802.11a	149	5745	-15.15	-20.61	0.0305	0.0086	13
	157	5785	-16.29	-21.12	0.0234	0.0077	13
	165	5825	-15.21	-20.56	0.0301	0.0087	13
Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)			Peak Power	Limit (dBm)
			ANT R	ANT L	R + L	R + L	
802.11n HT20	149	5745	-15.73	-20.42	-14.46	0.0358	9.99
	157	5785	-16.08	-20.78	-14.81	0.0330	9.99
	165	5825	-15.00	-20.34	-13.89	0.0408	9.99
802.11n HT40	151	5755	-16.75	-21.54	-15.51	0.0281	9.99
	159	5795	-16.54	-21.3	-15.29	0.0295	9.99

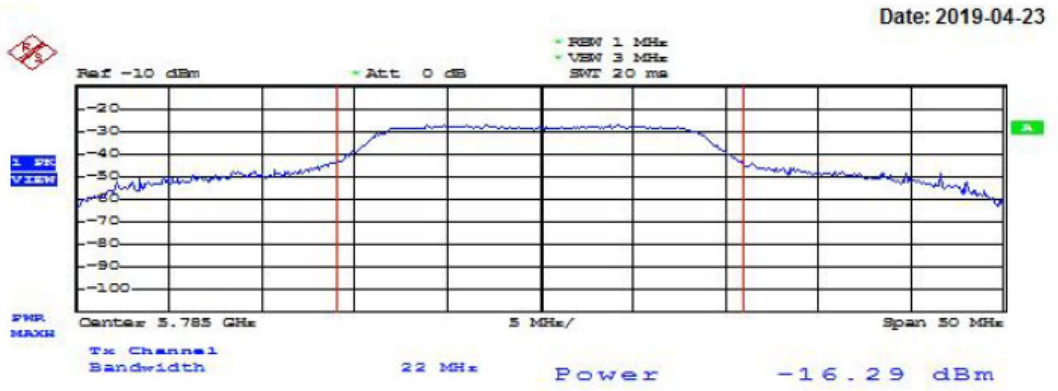
Note: Directional gain = G^{ANT}+10 log(N) dBi=23+10log(2)=26.01(dBi)

Antenna R

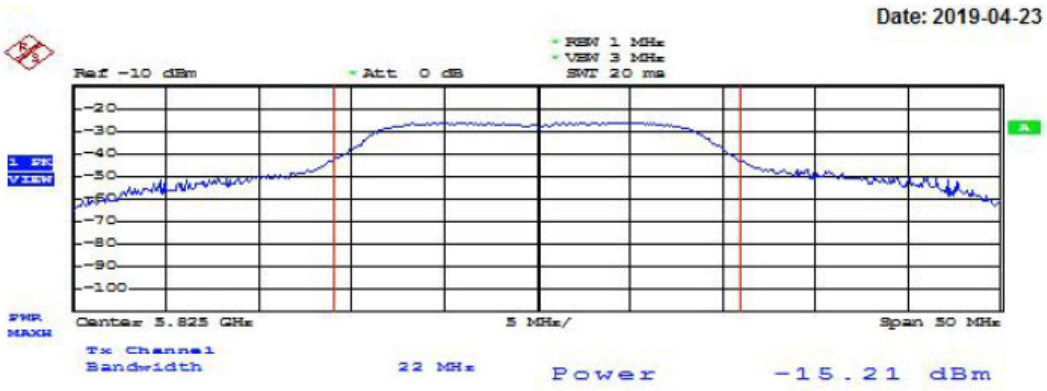
802.11a
Channel: 149



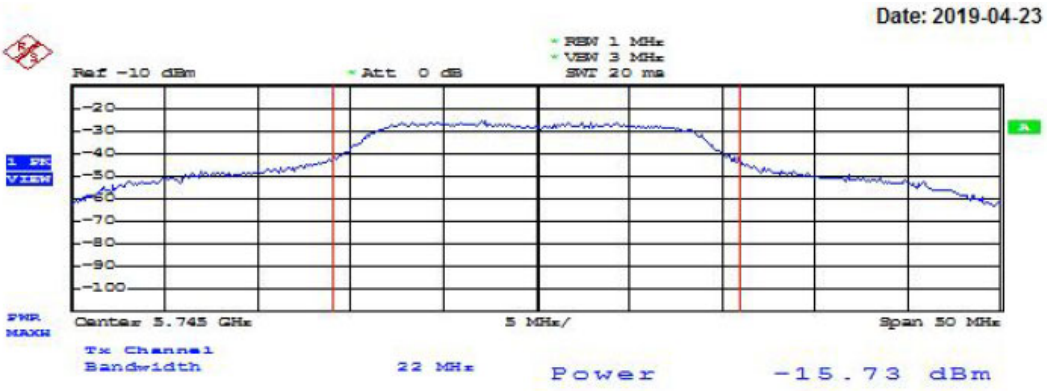
802.11a
Channel: 157



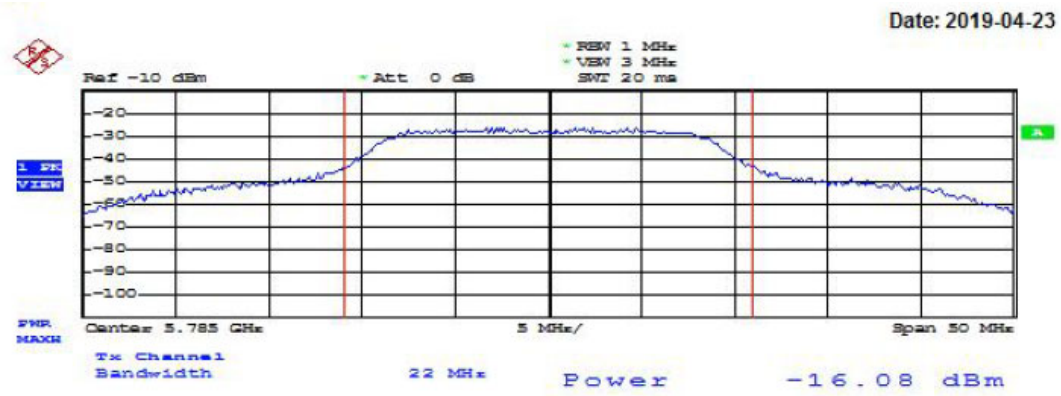
802.11a
Channel: 165



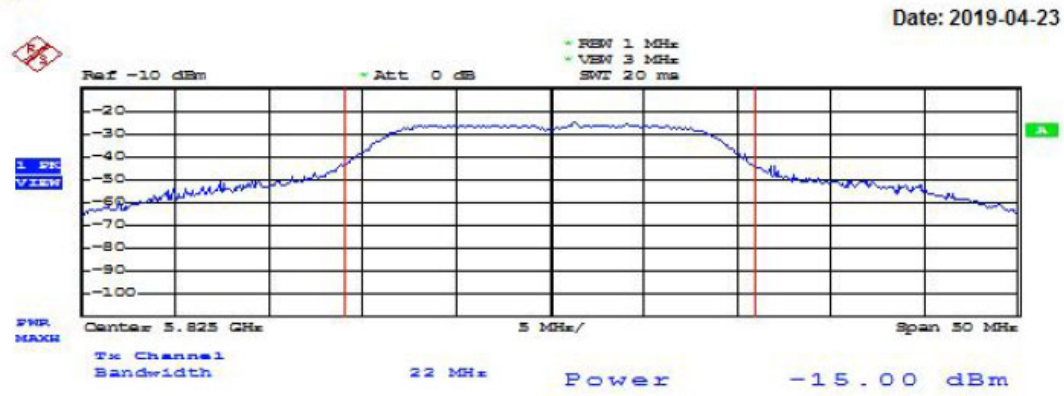
802.11n HT20
Channel: 149



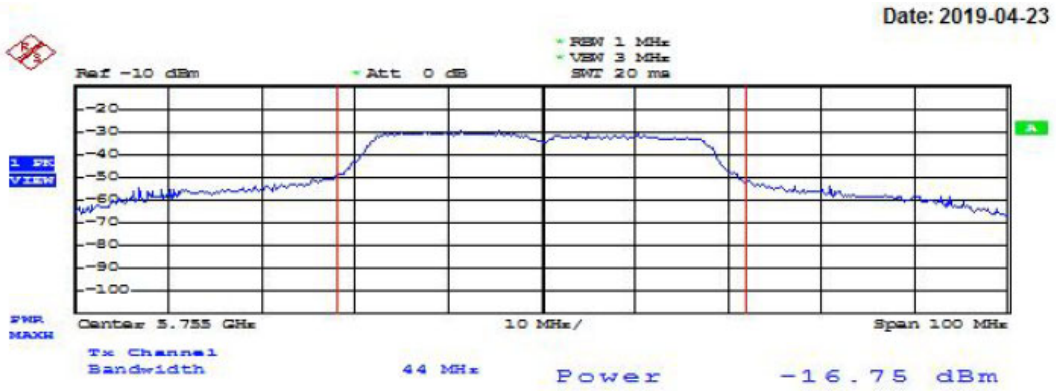
802.11n HT20
Channel: 157



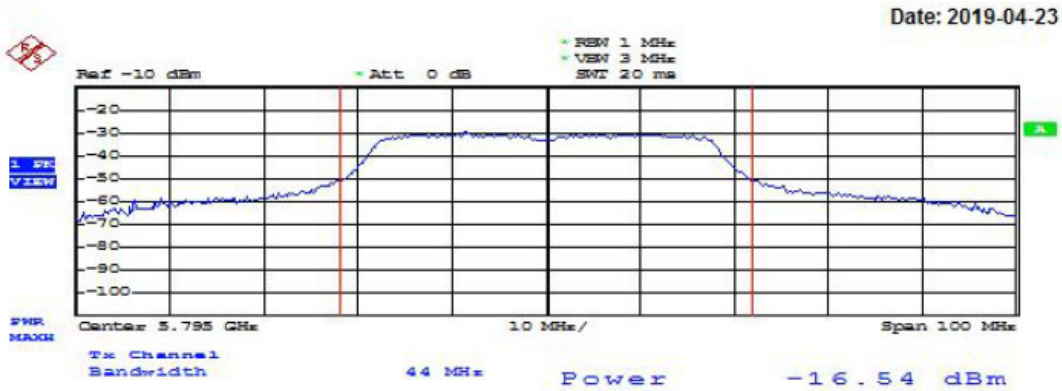
802.11n HT20
Channel: 165



802.11n HT40
Channel: 151

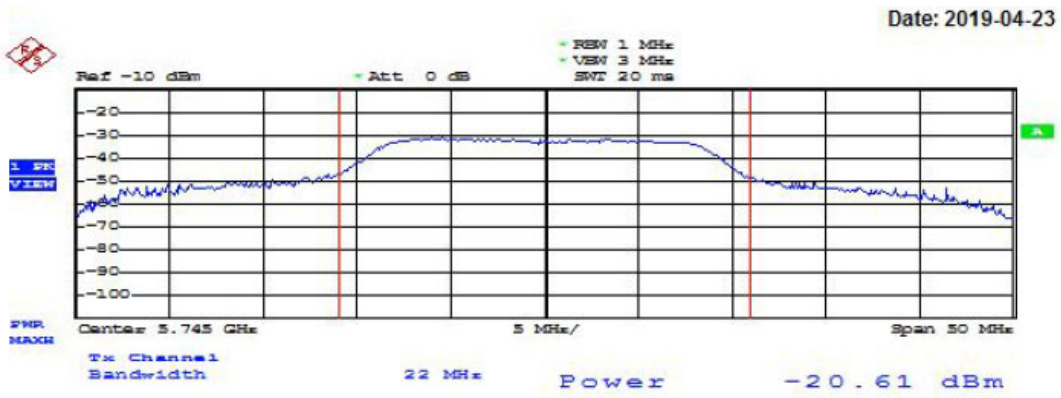


802.11n HT40
Channel: 159

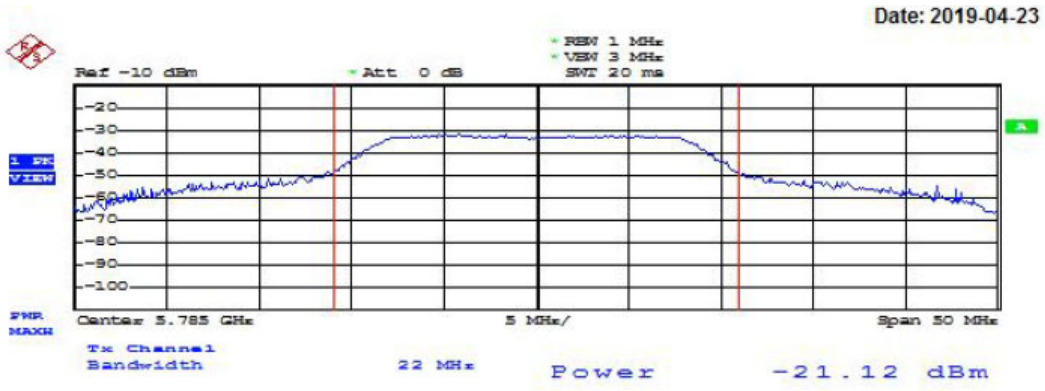


Antenna L

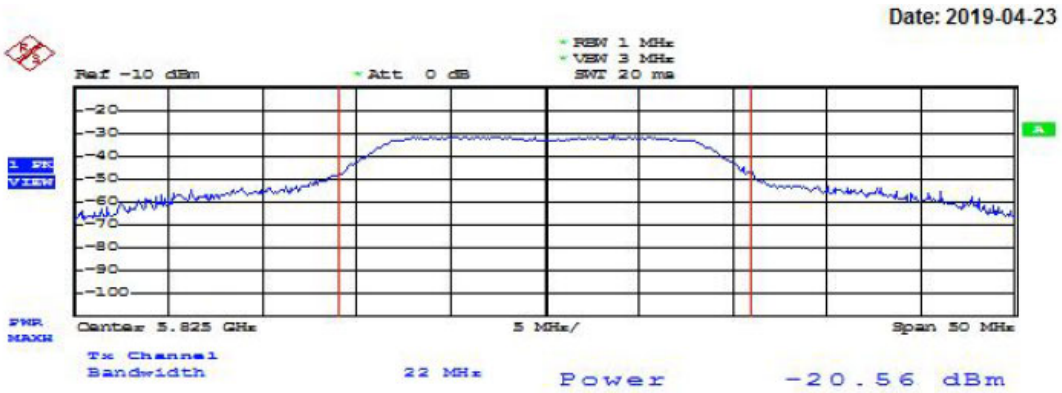
802.11a
Channel: 149



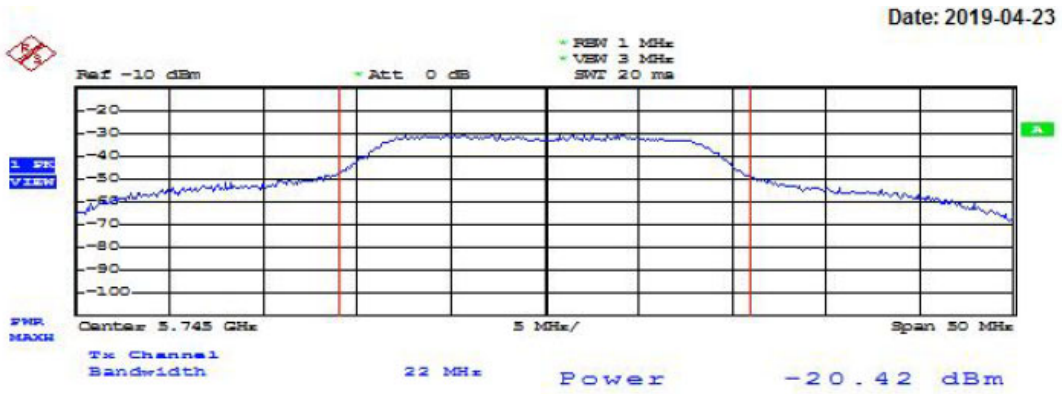
802.11a
Channel: 157



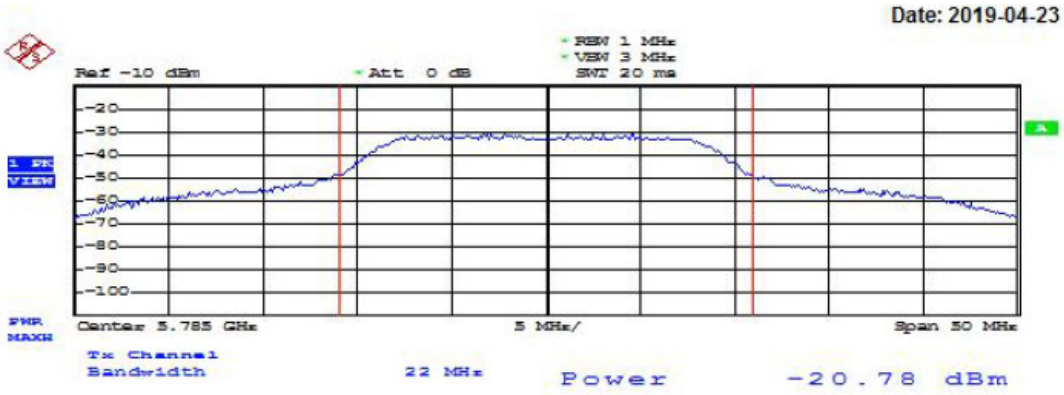
802.11a
Channel: 165



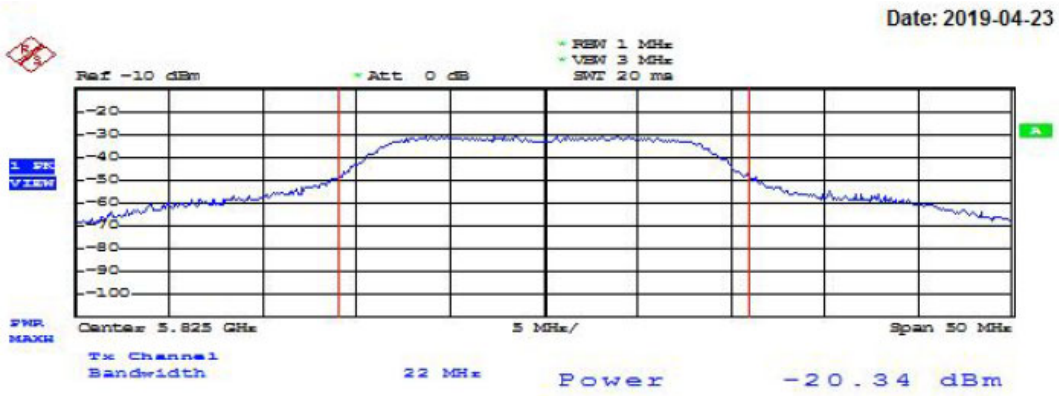
802.11n HT20
Channel: 149



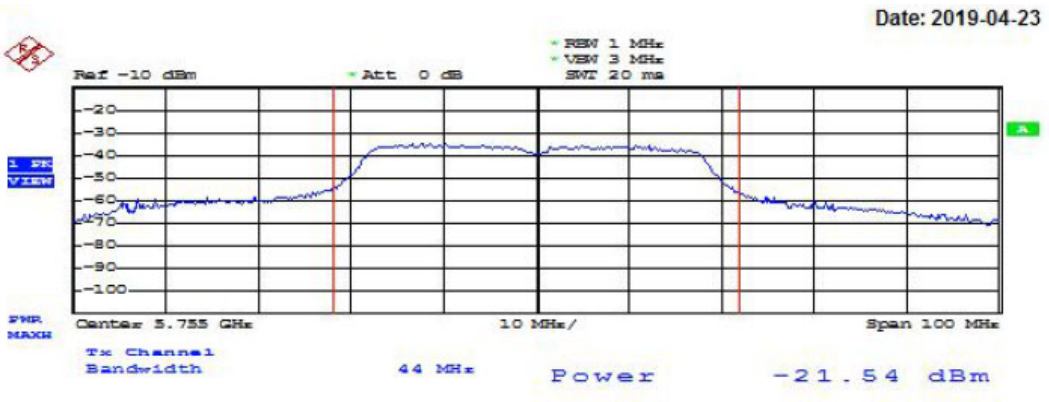
802.11n HT20
Channel: 157



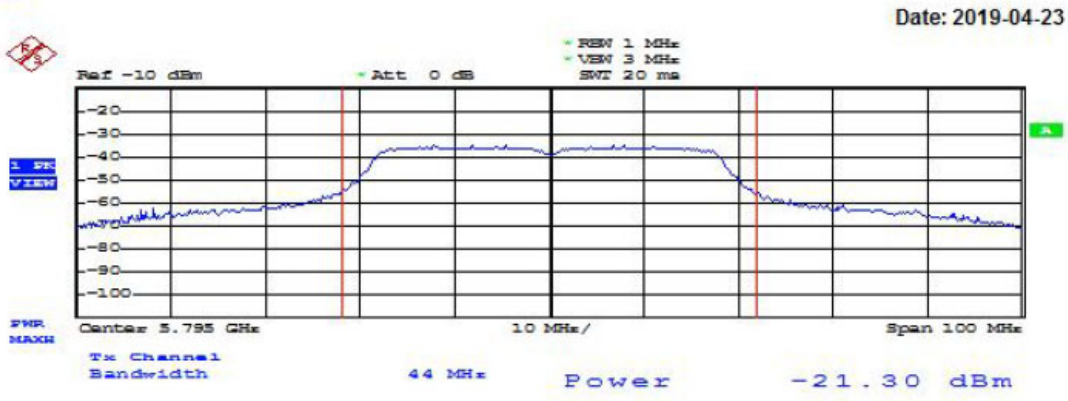
802.11n HT20
Channel: 165



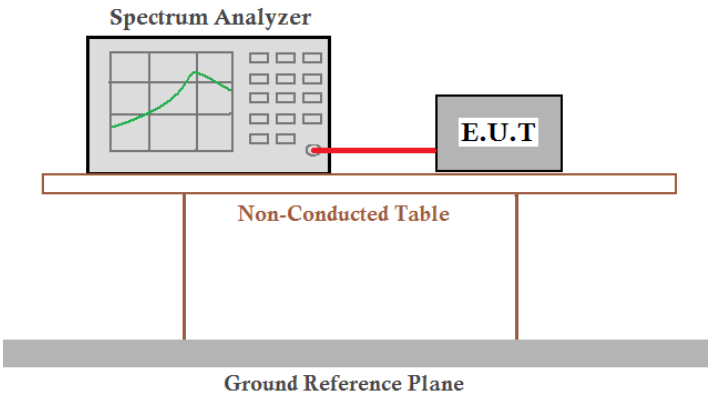
802.11n HT40
Channel: 151



802.11n HT40
Channel: 159



10. Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02
Limit:	11dBm/MHz(Band I), 30 dBm(Band IV)
Test setup:	
Test procedure:	1) Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, “Compute power…”. 2) Use the peak search function on the instrument to find the peak of the spectrum. 3) Make the following adjustments to the peak value of the spectrum, if applicable: a) If Method SA-2 or SA-2 Alternative was used, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum. b) If Method SA-3 Alternative was used and the linear mode was used in step E)2)g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging. 4) The result is the PPSD.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

10.1 Test Result and Data

U-NII-3

Modulation Type	Channel	Frequency (MHz)	Measured Power Density (dBm)		Limit (dBm)
			ANT R	ANT L	
802.11a	149	5745	-35.36	-32.17	13
	157	5785	-35.64	-32.45	13
	165	5825	-34.45	-31.43	13

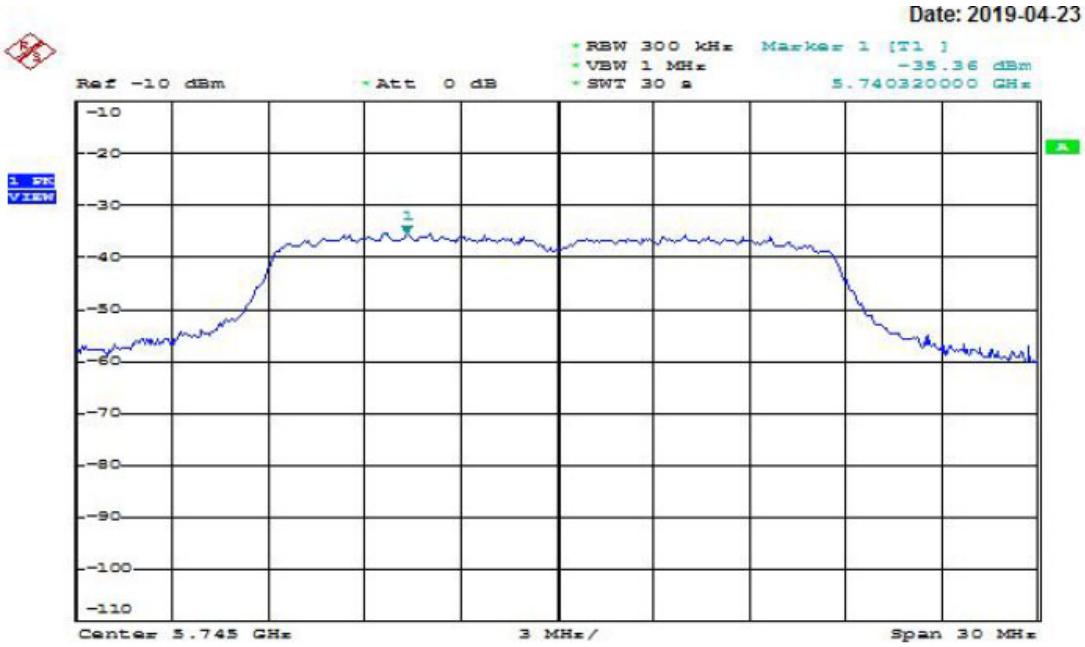
Modulation Type	Channel	Frequency (MHz)	Measured Power Density (dBm)			Limit (dBm)
			ANT R	ANT L	R + L	
802.11n HT20	149	5745	-34.68	-31.56	-29.84	9.99
	157	5785	-34.94	-31.93	-30.17	9.99
	165	5825	-34.17	-31.16	-29.40	9.99
802.11n HT40	151	5755	-38.49	-34.47	-33.02	9.99
	159	5795	-38.94	-35.94	-34.18	9.99

Note: Directional gain = G^{ANT}+10 log(N) dBi=23+10log(2)=26.01(dBi)

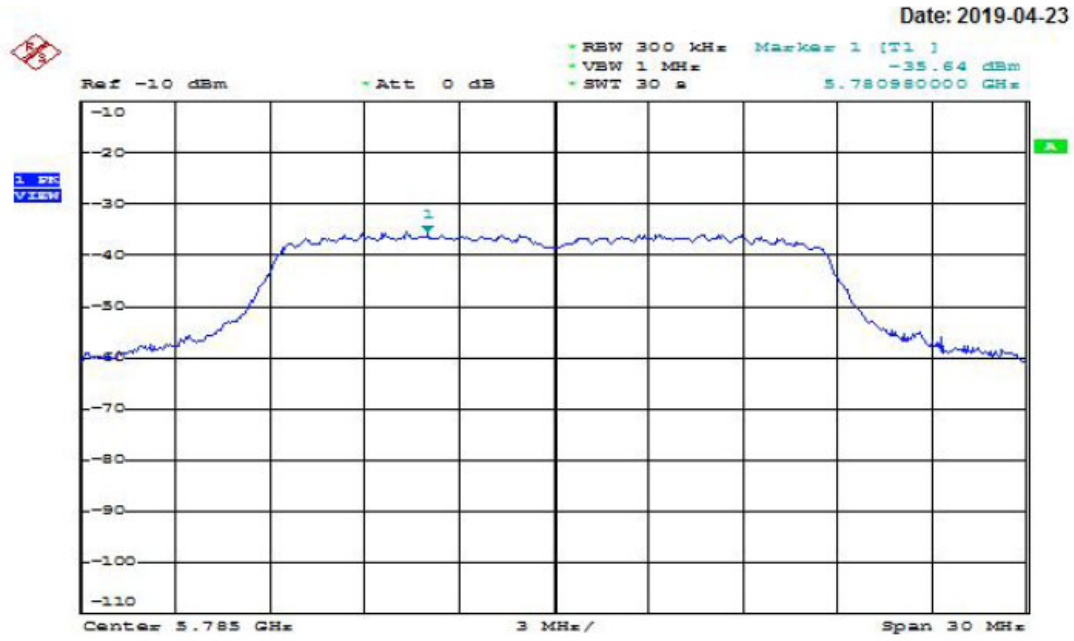
Note: Following pages of plots is 300kHz. Result of above table is data adding for transforming to 500kHz. $10\log\left(\frac{500k}{300k}\right) \cong 2.22$

Test plots (RBW:300kHz,VBW:1MHz,Sweeptime:30s) **as followed:**
Antenna R

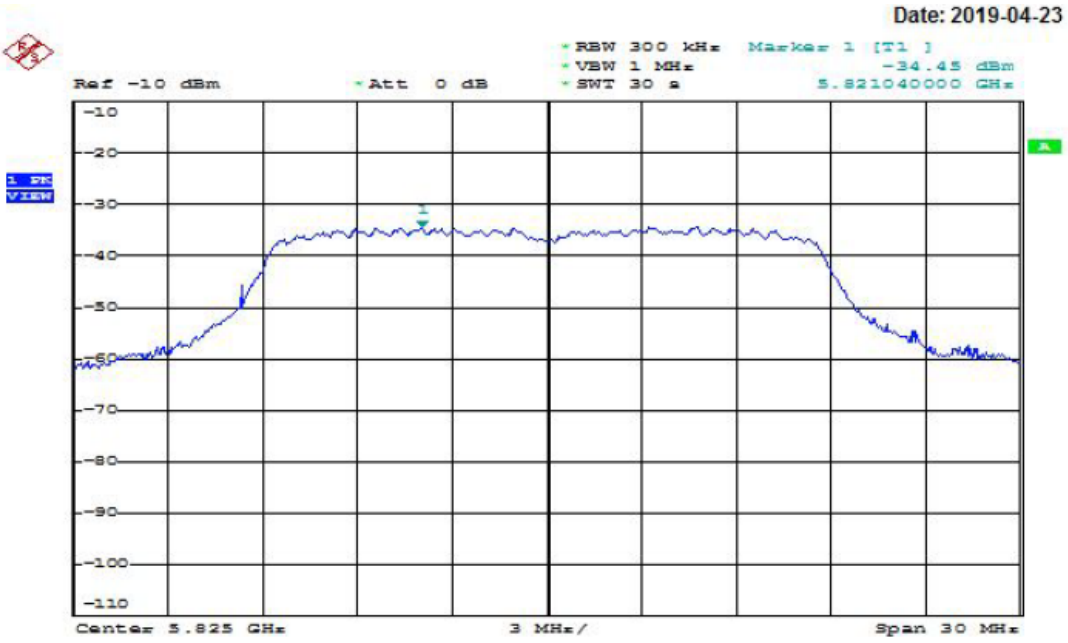
802.11a
Channel: 149



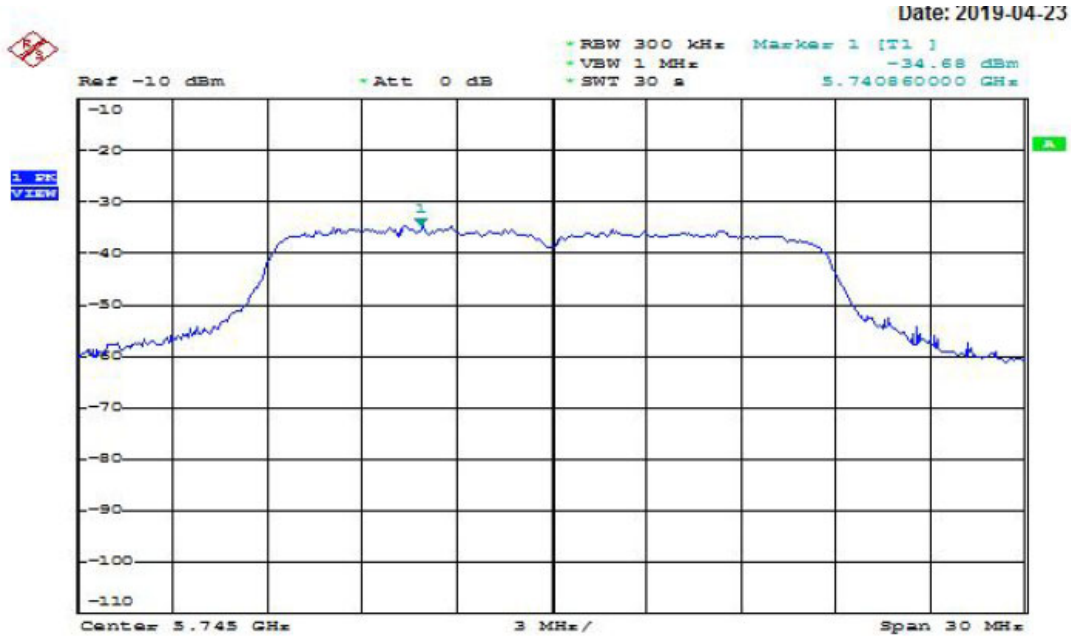
802.11a
Channel: 157



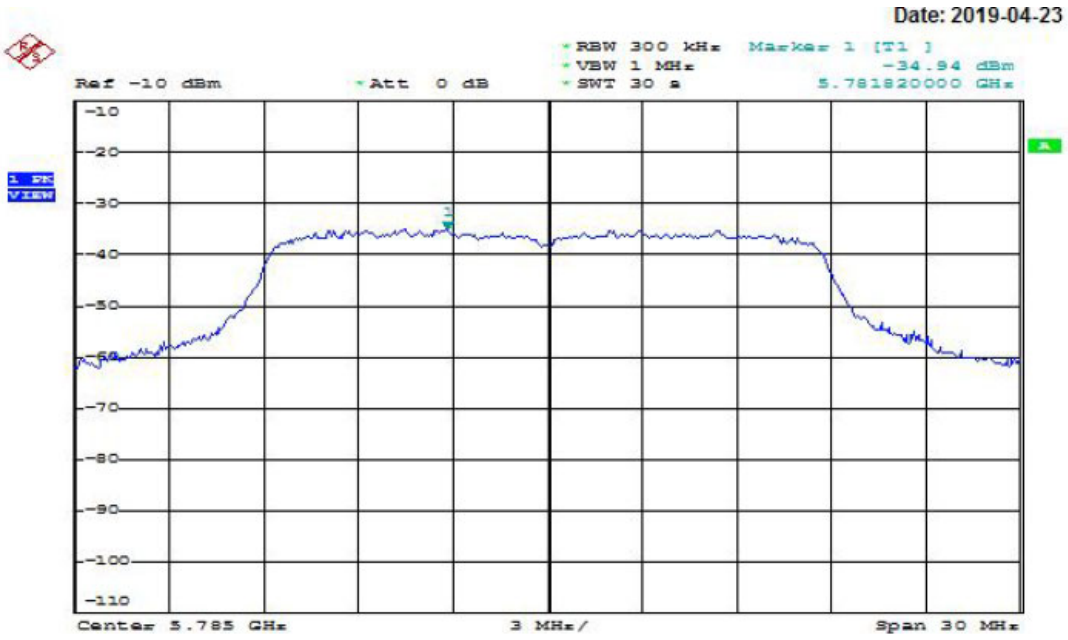
802.11a
Channel: 165



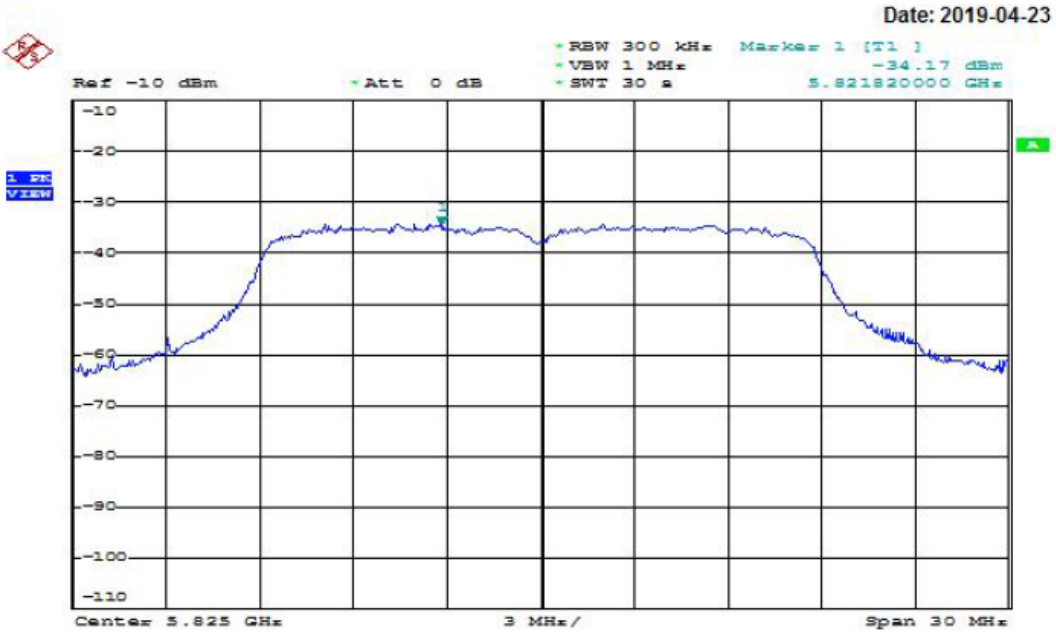
802.11n HT20
Channel: 149



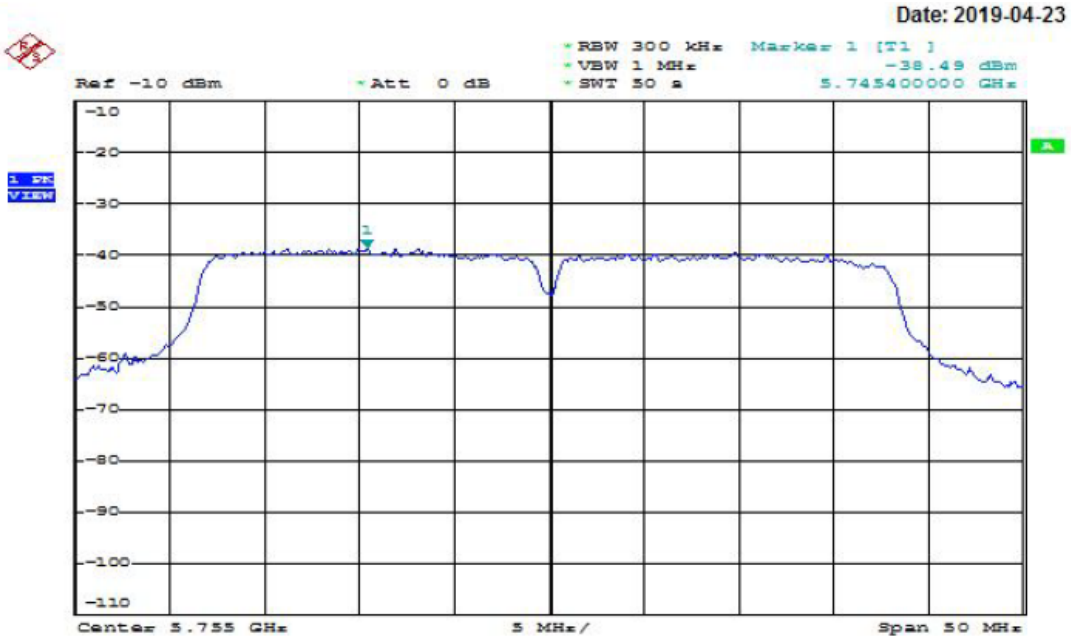
802.11n HT20
Channel: 157



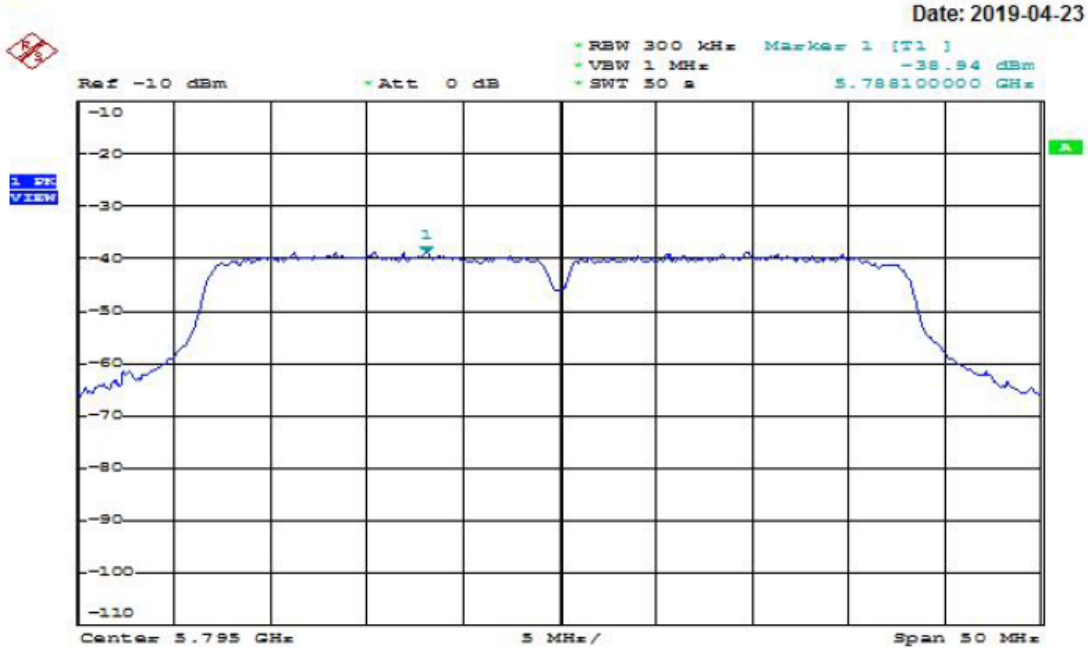
802.11n HT20
Channel: 165



802.11n HT40
Channel: 151

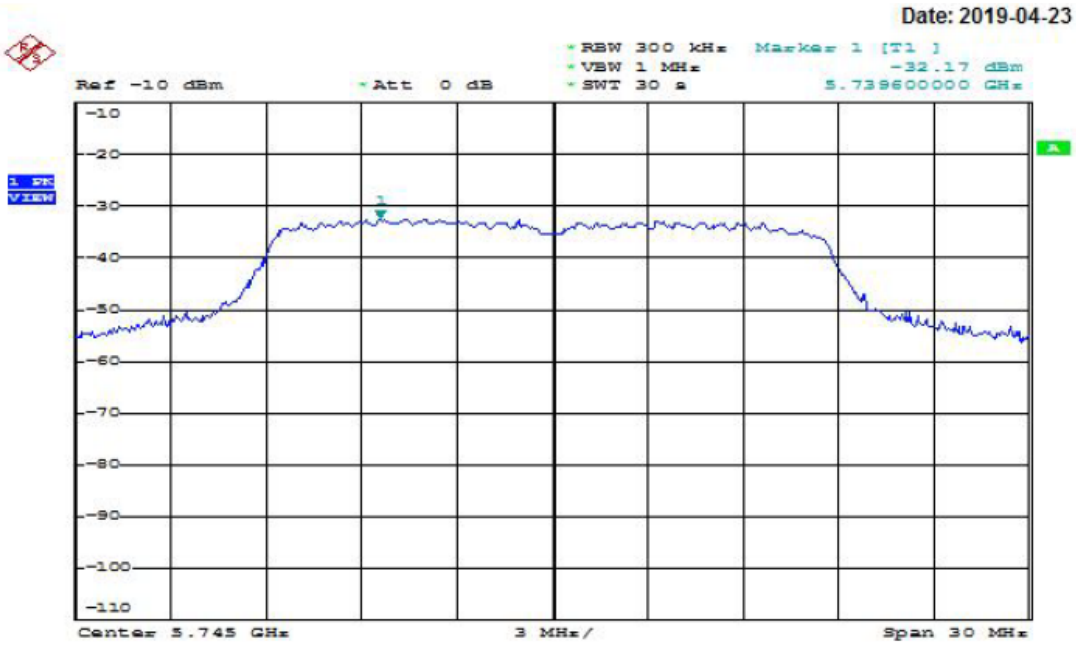


802.11n HT40
Channel: 159

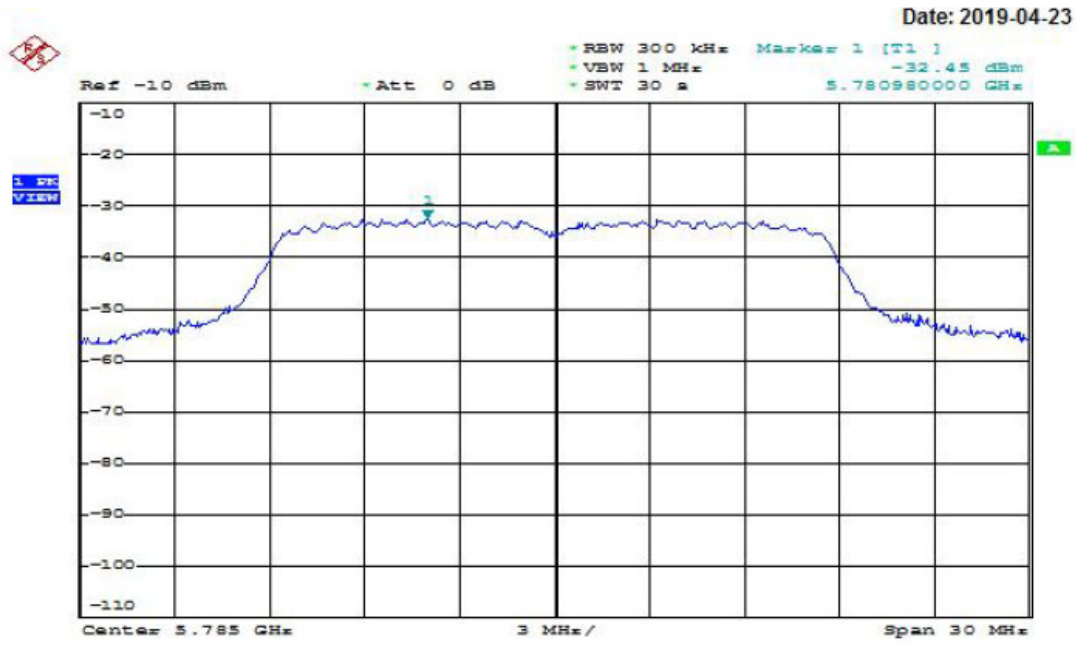


Antenna L

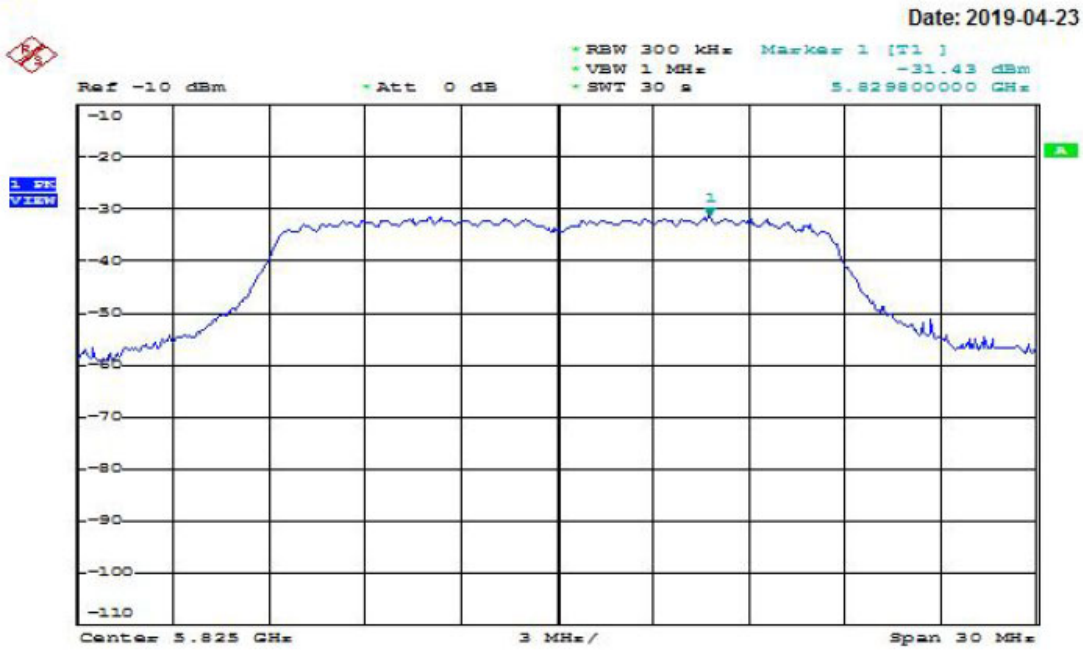
802.11a
Channel: 149



802.11a
Channel: 157



802.11a
Channel: 165



802.11n HT20
Channel: 149