

FCC Section 15.407 Subclause (a)(3). / RSS-247 Clause 6.2.4.1. Transmitter Maximum Conducted Output Power

SPECIFICATION

FCC 15.407/RSS-247: For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1W (30 dBm). If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RESULTS:

The maximum conducted output power was measured using the channel power integration method according to point E) 2) b) (Method SA-1) of 789033 D02 General UNII Test Procedures New Rules v02r01 when the duty cycle is >98% and the channel power integration method according to point E) 2) d) (Method SA-2) of 789033 D02 General UNII Test Procedures New Rules v02r01 when the duty cycle is <98%.

For data rates where the EUT was transmitting at <98% duty cycle, the duty calculated in Appendix A was added to the measured power in order to calculate the total average power during the actual transmission time.

For all SISO and MIMO modes of operation, the antenna gain is less than 6dBi.

In the measure-and-sum approach for MIMO mode, the conducted emission level (e.g., transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in linear power units (mW—not dBm).

The e.i.r.p. levels are calculated by adding the corresponding antenna gain (dBi).

FCC and Canada power setting

WLAN0 - CORE 0 – SISO - Antenna port 2

Declared antenna gain: +3.2 dBi

Mode: 802.11a - 20MHz

	Channel 149 5745 MHz	Channel 157 5785 MHz	Channel 165 5825 MHz
Max. conducted power (dBm)	7.70	7.40	7.49
Duty Cycle Correction Factor (dB)	0.96		
Max. conducted power corrected (dBm)	8.66	8.36	8.45
Maximum EIRP power (dBm)	11.86	11.56	11.65
Measurement uncertainty (dB)	<±1.20		

Mode: 802.11n HT20 - 20MHz

	Channel 149 5745 MHz	Channel 157 5785 MHz	Channel 165 5825 MHz
Max. conducted power (dBm)	7.59	7.27	6.97
Duty Cycle Correction Factor (dB)	1.03		
Max. conducted power corrected (dBm)	8.62	8.30	8.00
Maximum EIRP power (dBm)	11.82	11.50	11.20
Measurement uncertainty (dB)	<±1.20		

Mode: 802.11n HT40 - 40MHz

	Channel 151 5755 MHz	Channel 159 5795 MHz
Max. conducted power (dBm)	5.82	5.52
Duty Cycle Correction Factor (dB)	1.84	
Max. conducted power corrected (dBm)	7.66	7.36
Maximum EIRP power (dBm)	10.86	10.56
Measurement uncertainty (dB)	<±1.20	

Mode : 802.11ac VHT80 - 80MHz

	channel 155 5775 MHz
Max. conducted power (dBm)	5.20
Duty Cycle Correction Factor (dB)	3.18
Max. conducted power corrected (dBm)	8.38
Maximum EIRP power (dBm)	11.58
Measurement uncertainty (dB)	<±1.20

Verdict: PASS

WLAN 1 - CORE 0 – SISO - Antenna port 3

Declared antenna gain: +0.9 dBi

Mode: 802.11a - 20MHz

	Channel 149 5745 MHz	Channel 157 5785 MHz	Channel 165 5825 MHz
Max. conducted power (dBm)	11.05	11.28	11.53
Duty Cycle Correction Factor (dB)	0.96		
Max. conducted power corrected (dBm)	12.01	12.24	12.49
Maximum EIRP power (dBm)	12.91	13.14	13.39
Measurement uncertainty (dB)	<±1.20		

Mode: 802.11n HT20 - 20MHz

	Channel 149 5745 MHz	Channel 157 5785 MHz	Channel 165 5825 MHz
Max. conducted power (dBm)	11.39	11.36	11.67
Duty Cycle Correction Factor (dB)	1.03		
Max. conducted power corrected (dBm)	12.42	12.39	12.70
Maximum EIRP power (dBm)	13.32	13.29	12.60
Measurement uncertainty (dB)	<±1.20		

Mode: 802.11n HT40 - 40MHz

	Channel 151 5755 MHz	Channel 159 5795 MHz
Max. conducted power (dBm)	9.12	9.82
Duty Cycle Correction Factor (dB)	1.88	
Max. conducted power corrected (dBm)	11.00	11.70
Maximum EIRP power (dBm)	11.90	12.60
Measurement uncertainty (dB)	<±1.20	

Mode : 802.11ac VHT80 - 80MHz

	channel 155 5775 MHz
Max. conducted power (dBm)	9.12
Duty Cycle Correction Factor (dB)	3.19
Max. conducted power corrected (dBm)	12.31
Maximum EIRP power (dBm)	13.21
Measurement uncertainty (dB)	<±1.20

Verdict: PASS

WLAN1 - CORE 1 – SISO - Antenna port 4

Declared antenna gain: +2.3 dBi

Mode: 802.11a - 20MHz

	Channel 149 5745 MHz	Channel 157 5785 MHz	Channel 165 5825 MHz
Max. conducted power (dBm)	9.26	8.76	7.80
Duty Cycle Correction Factor (dB)	0.96		
Max. conducted power corrected (dBm)	10.22	9.72	8.76
Maximum EIRP power (dBm)	12.52	12.02	11.06
Measurement uncertainty (dB)	<±1.20		

Mode: 802.11n HT20 - 20MHz

	Channel 149 5745 MHz	Channel 157 5785 MHz	Channel 165 5825 MHz
Max. conducted power (dBm)	8.36	7.79	8.18
Duty Cycle Correction Factor (dB)	1.03		
Max. conducted power corrected (dBm)	9.39	8.82	9.21
Maximum EIRP power (dBm)	11.69	11.12	11.51
Measurement uncertainty (dB)	<±1.20		

Mode: 802.11n HT40 - 40MHz

	Channel 151 5755 MHz	Channel 159 5795 MHz
Max. conducted power (dBm)	7.85	7.38
Duty Cycle Correction Factor (dB)	1.84	
Max. conducted power corrected (dBm)	9.69	9.22
Maximum EIRP power (dBm)	11.99	11.52
Measurement uncertainty (dB)	<±1.20	

Mode : 802.11ac VHT80 - 80MHz

	channel 155 5775 MHz
Max. conducted power (dBm)	6.34
Duty Cycle Correction Factor (dB)	3.17
Max. conducted power corrected (dBm)	9.51
Maximum EIRP power (dBm)	11.81
Measurement uncertainty (dB)	<±1.20

Verdict: PASS

WLAN 1 – CORE2 (CORE0+CORE1) - MIMO - Antenna ports 1 - 4

Antenna 1 gain: +3.2 dBi

Antenna 4 gain: +2.3 dBi

Mode: 802.11n HT20 - 20MHz

	channel 149 5745 MHz		channel 157 5785 MHz		channel 165 5825 MHz	
	Port 1	Port 4	Port 1	Port 4	Port 1	Port 4
Max. conducted power (dBm)	6.79	5.08	6.90	5.34	6.43	4.78
Duty Cycle Correction Factor (dB)	1.03	1.03	1.03	1.03	1.03	1.03
Max. conducted power corrected (dBm)	7.82	6.11	7.93	6.37	7.46	5.81
Combined Conducted Peak Power (dBm)	10.06		10.23		9.72	
Max. EIRP power (dBm)	12.92		13.08		12.58	
Measurement uncertainty (dB)	<±1.20					

Mode: 802.11n HT40 - 40MHz

	channel 151 5755 MHz		channel 159 5795 MHz	
	Port 1	Port 4	Port 1	Port 4
Max. conducted power (dBm)	6.62	5.05	6.67	5.55
Duty Cycle Correction Factor (dB)	1.84	1.84	1.84	1.84
Max. conducted power corrected (dBm)	8.46	6.89	8.51	7.39
Combined Conducted Peak Power (dBm)	10.76		11.00	
Max. EIRP power (dBm)	13.61		13.83	
Measurement uncertainty (dB)	<±1.20			

Mode : 802.11ac VHT80 - 80MHz

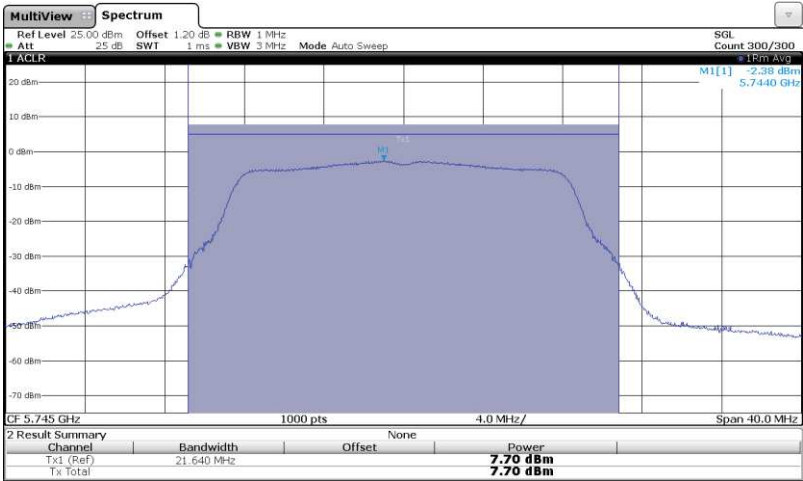
	channel 155 5775 MHz	
	Port 1	Port 4
Max. conducted power (dBm)	4.78	3.51
Duty Cycle Correction Factor (dB)	3.17	3.17
Max. conducted power corrected (dBm)	7.95	6.68
Combined Conducted Peak Power (dBm)	10.37	
Max. EIRP power (dBm)	13.21	
Measurement uncertainty (dB)	<±1.20	

Verdict: PASS

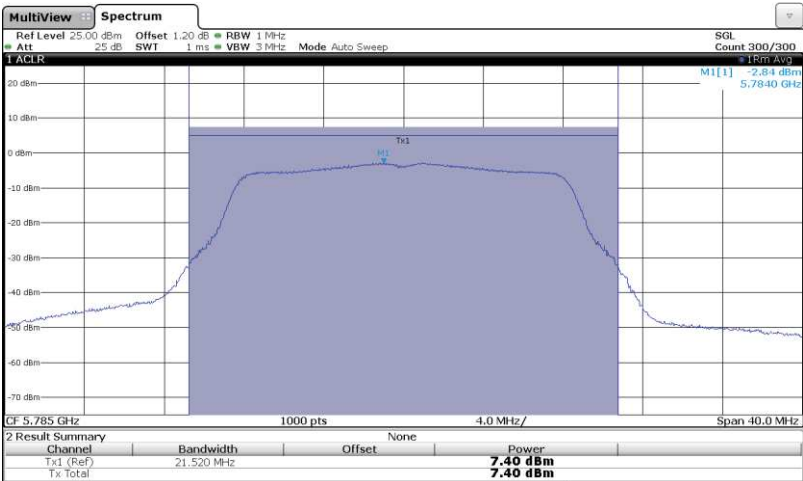
WLAN0 - CORE 0 – SISO - Antenna port 2

Mode: 802.11a 20MHz

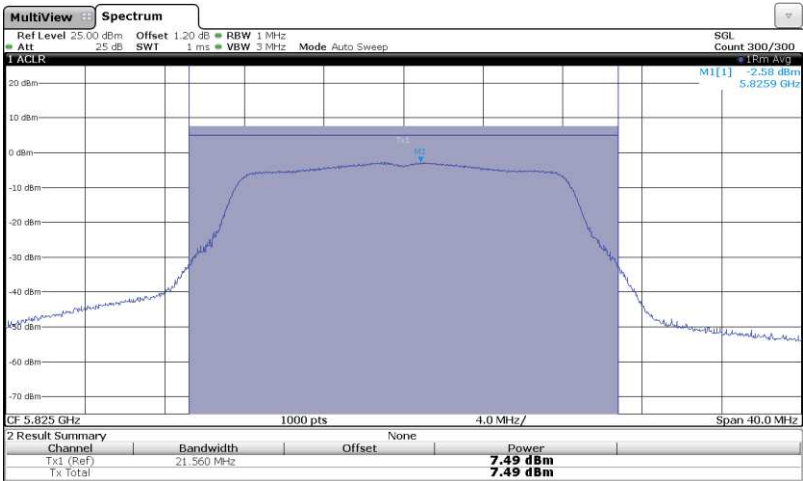
Channel 149



Channel 157

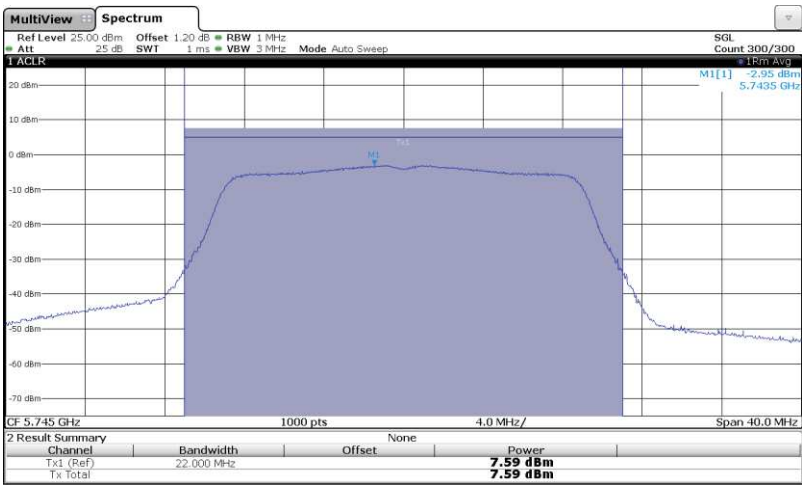


Channel 165

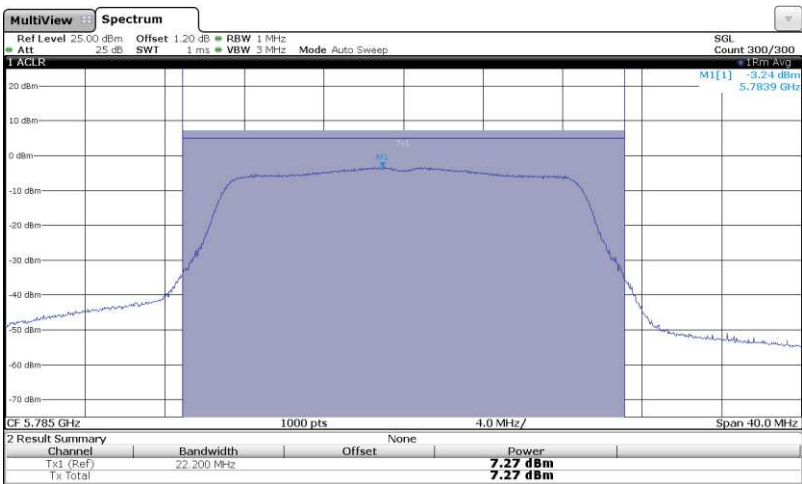


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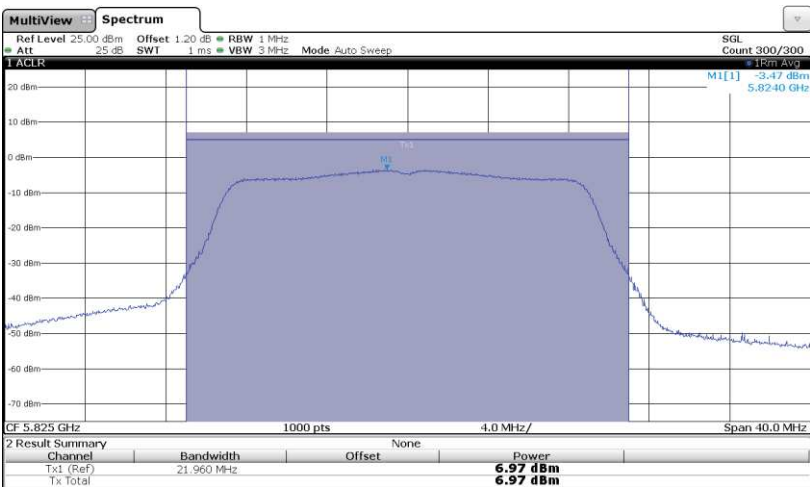
Channel 149



Channel 157

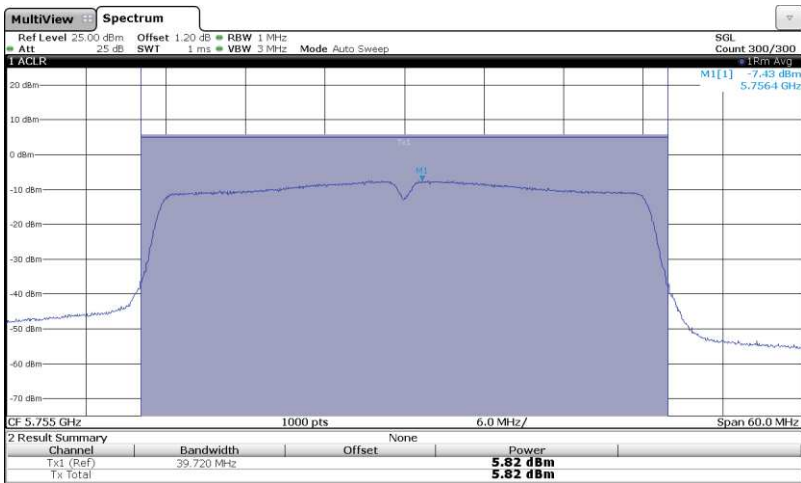


Channel 165

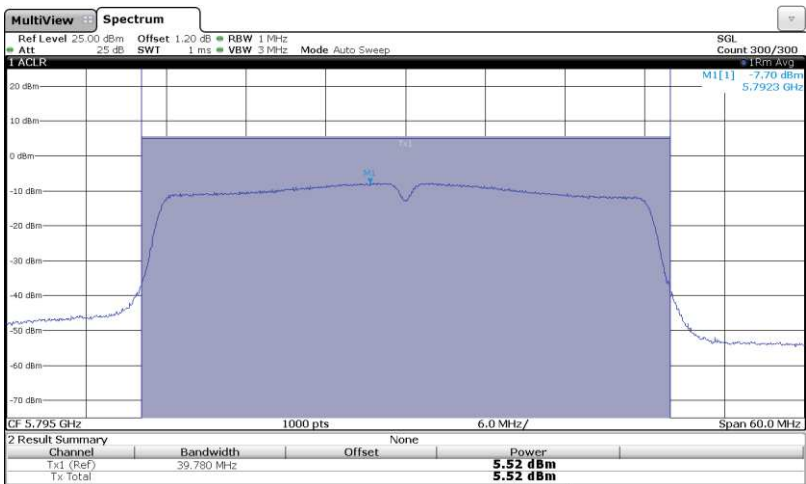


Mode: 802.11n HT40 - 40MHz

Channel 151

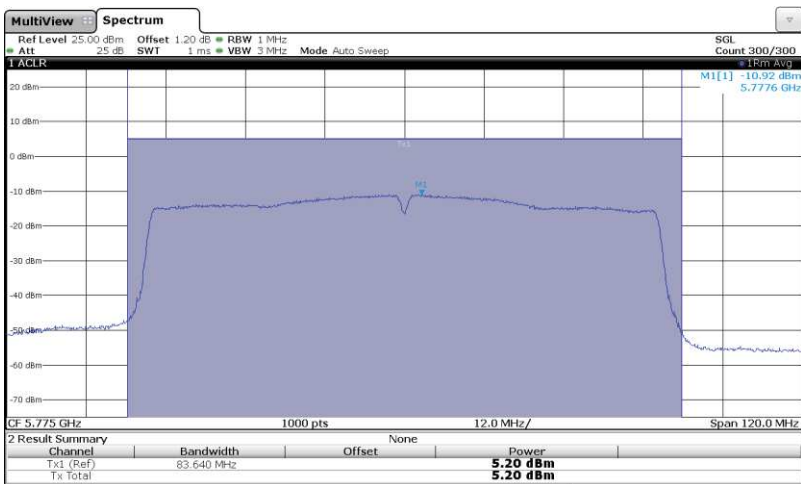


Channel 159



Mode: 802.11ac VHT80 - 80MHz

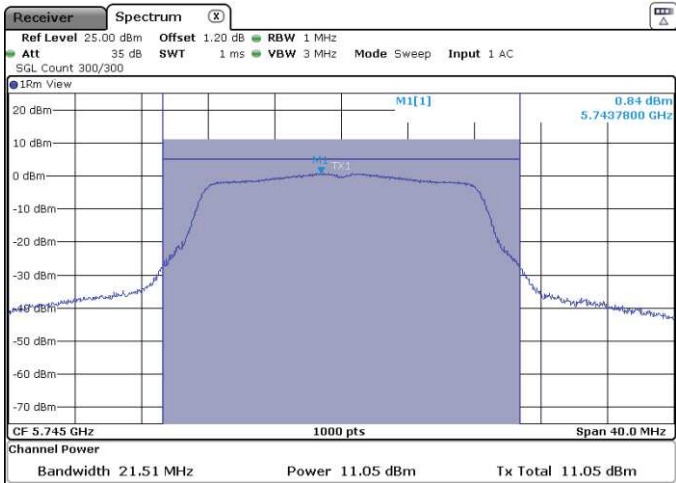
Channel 155



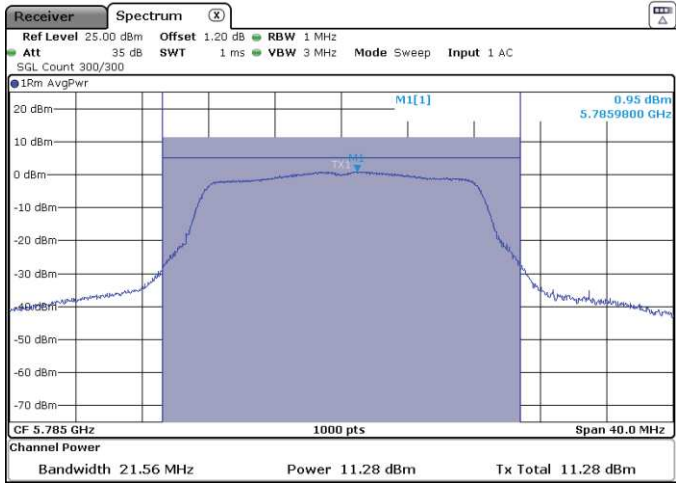
WLAN 1 - CORE 0 – SISO - Antenna port 3

Mode: 802.11a 20MHz

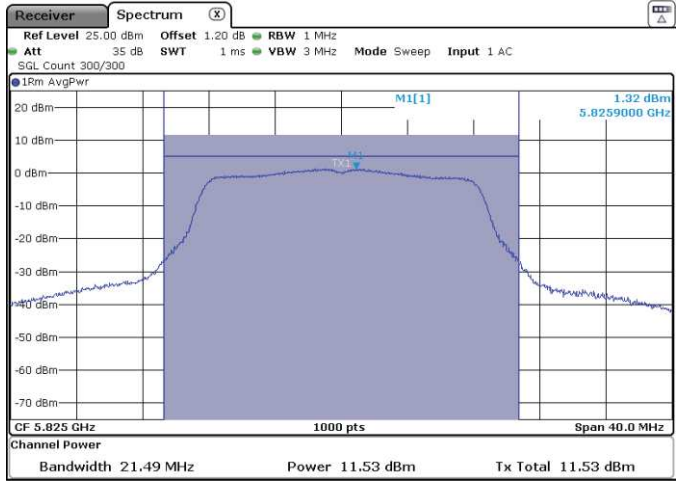
Channel 149



Channel 157

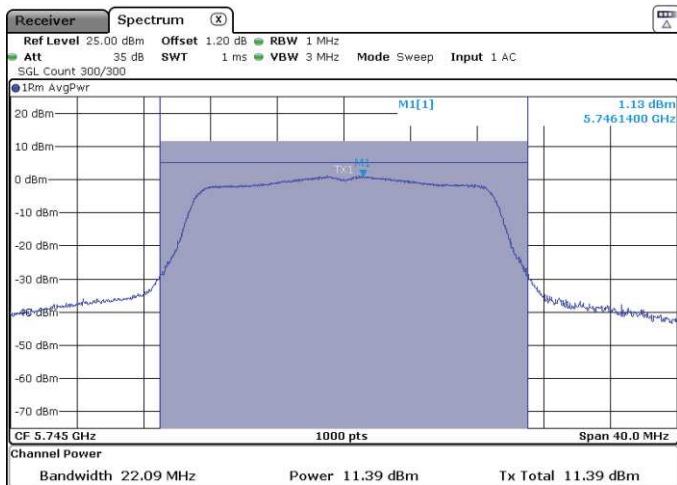


Channel 165

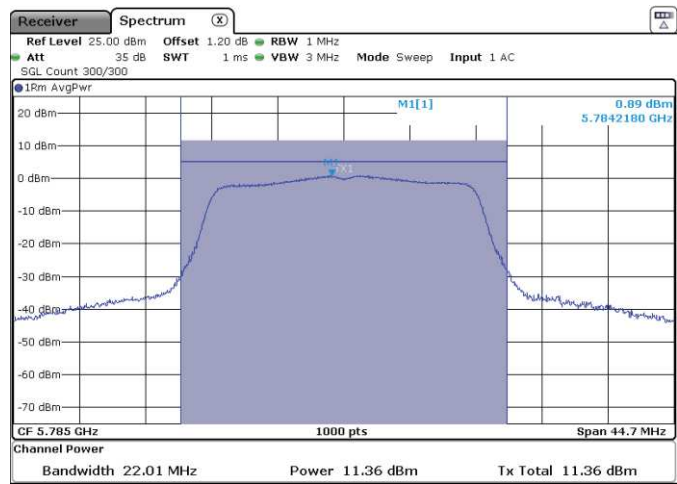


Mode: 802.11n HT20 - 20MHz

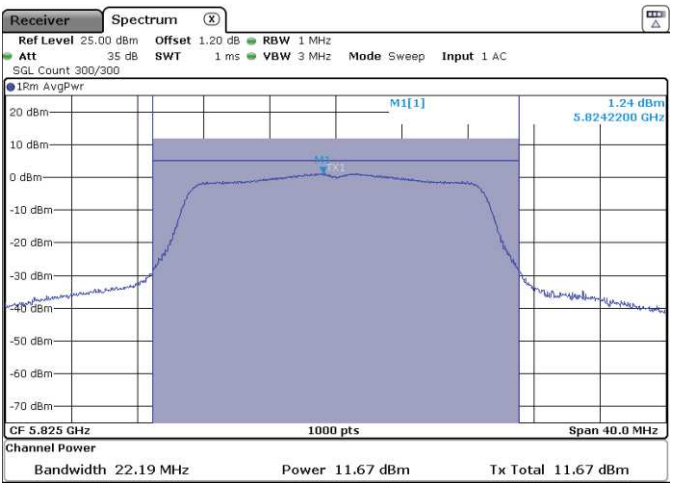
Channel 149



Channel 157

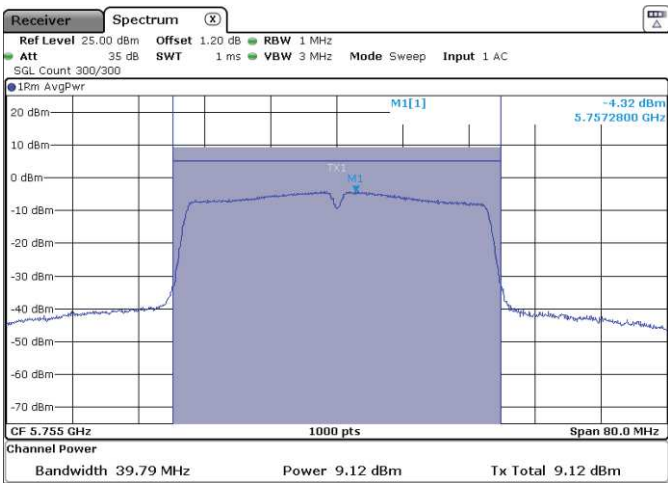


Channel 165

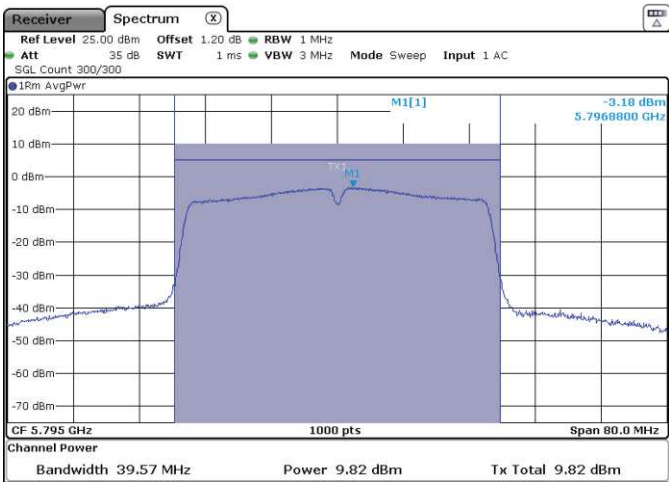


Mode: 802.11n HT40 - 40MHz

Channel 151

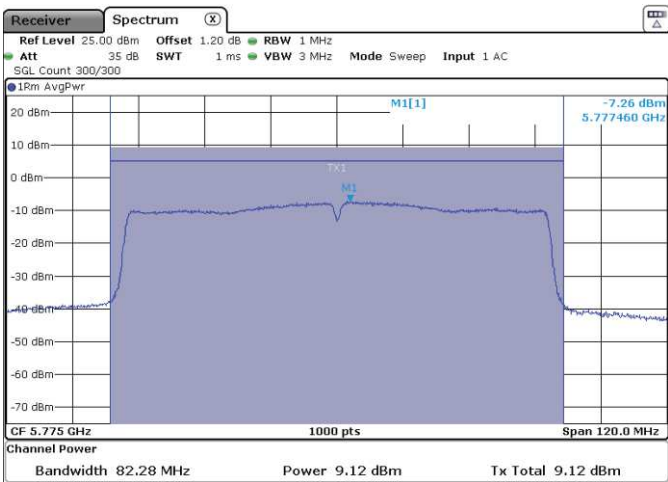


Channel 159



Mode: 802.11ac VHT80 - 80MHz

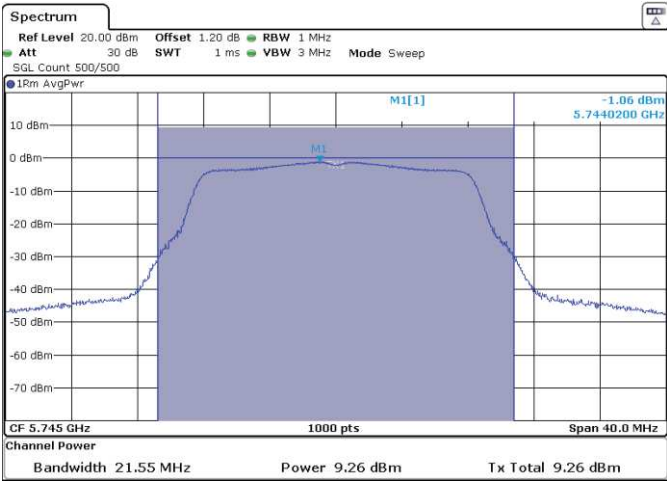
Channel 155



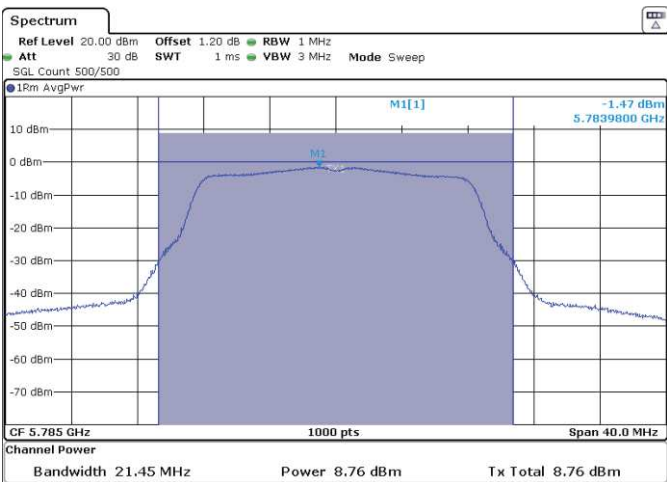
WLAN 1 - CORE 1 – SISO - Antenna port 4

Mode: 802.11a 20MHz

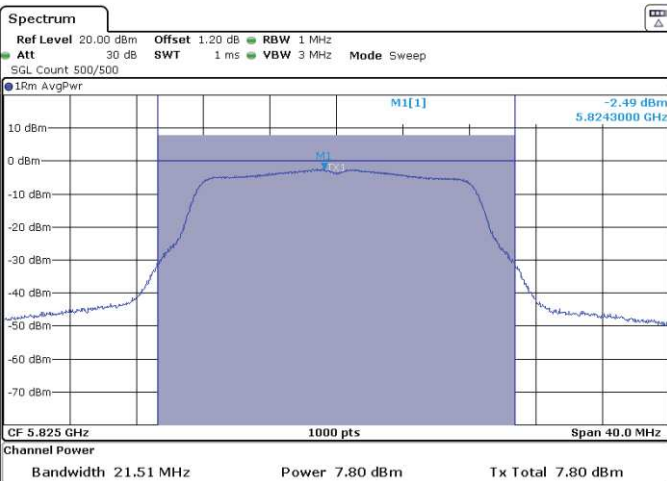
Channel 149



Channel 157

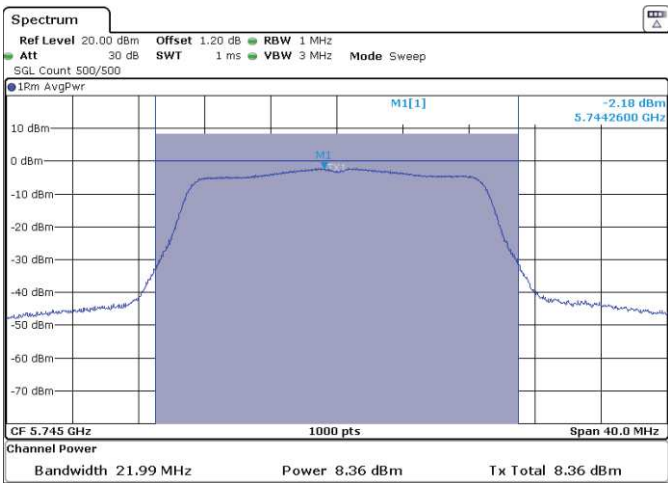


Channel 165

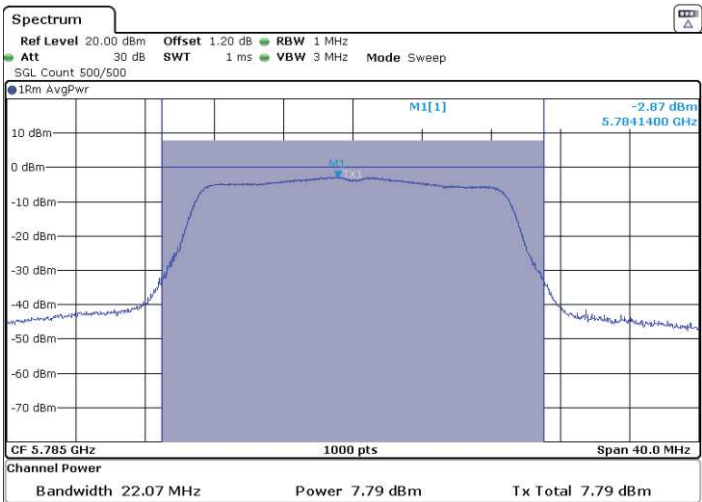


Mode: 802.11n HT20 - 20MHz

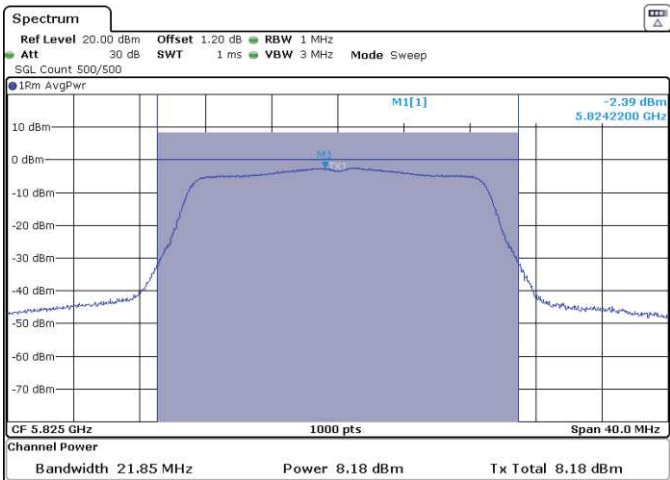
Channel 149



Channel 157

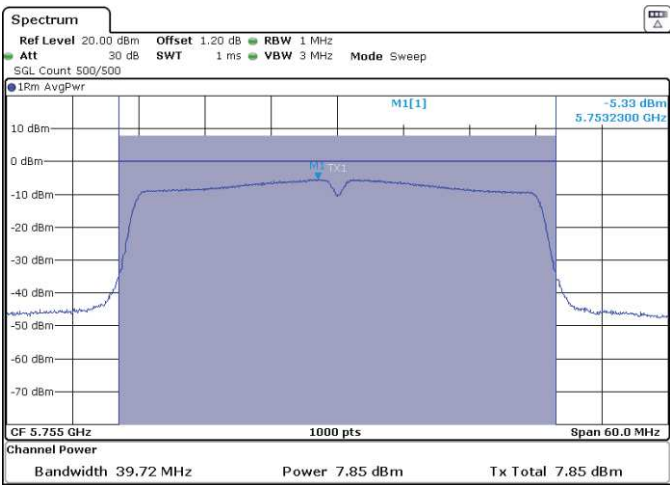


Channel 165

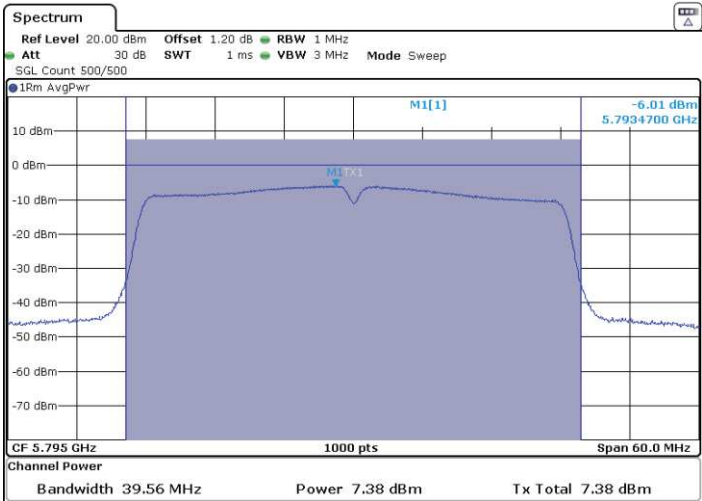


Mode: 802.11n HT40 - 40MHz

Channel 151

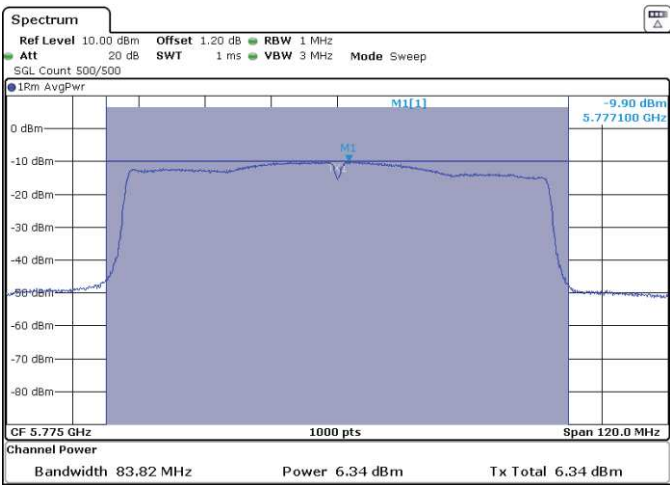


Channel 159



Mode: 802.11ac VHT80 - 80MHz

Channel 155

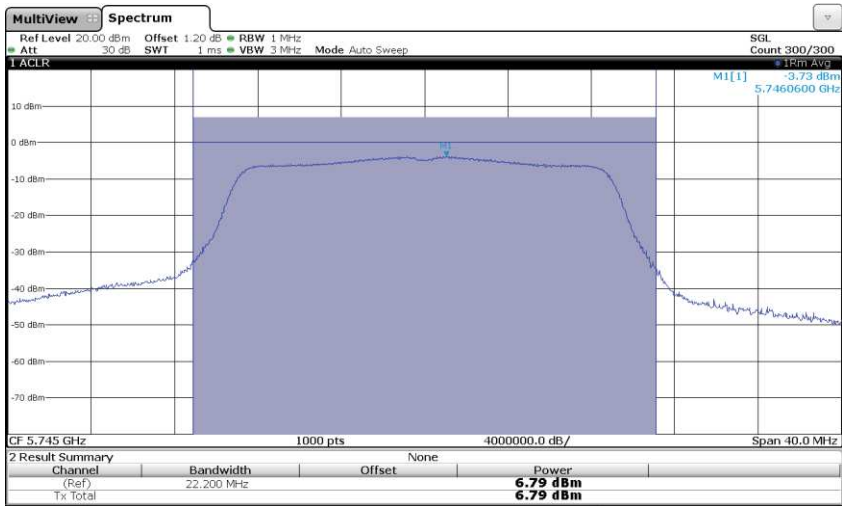


WLAN 1 – CORE2 (CORE0+CORE1) - MIMO – Antenna ports 1 - 4

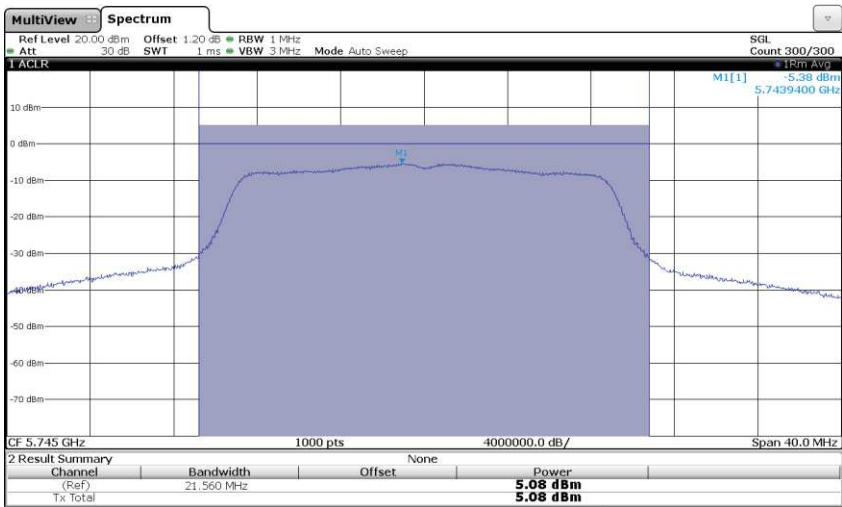
Mode: 802.11n HT20 - 20MHz

Channel 149

Antenna port 1:

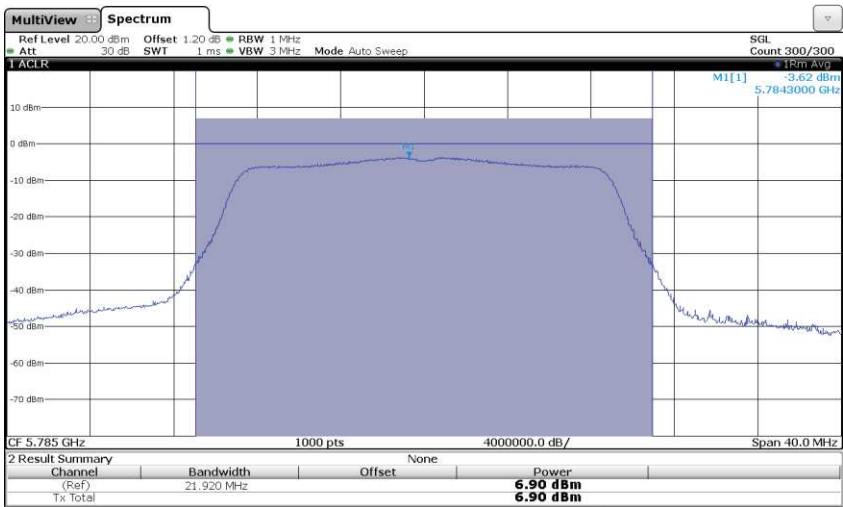


Antenna port 4:

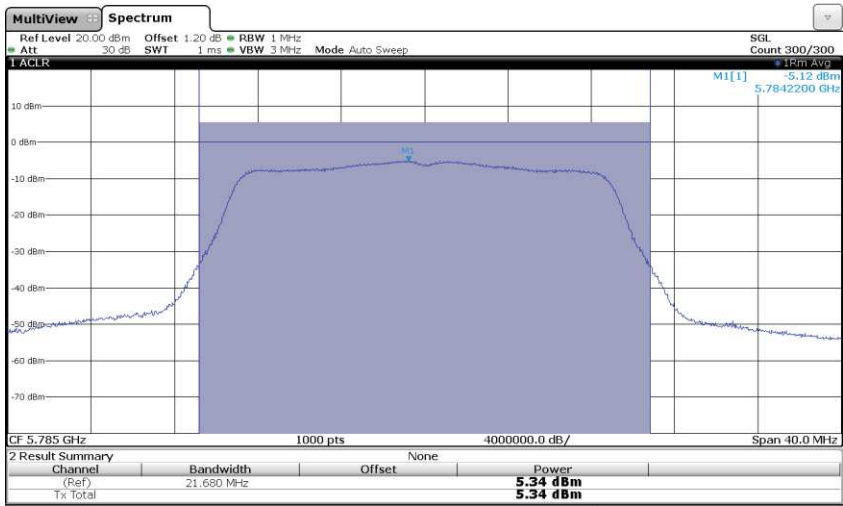


Channel 157

Antenna port 1:

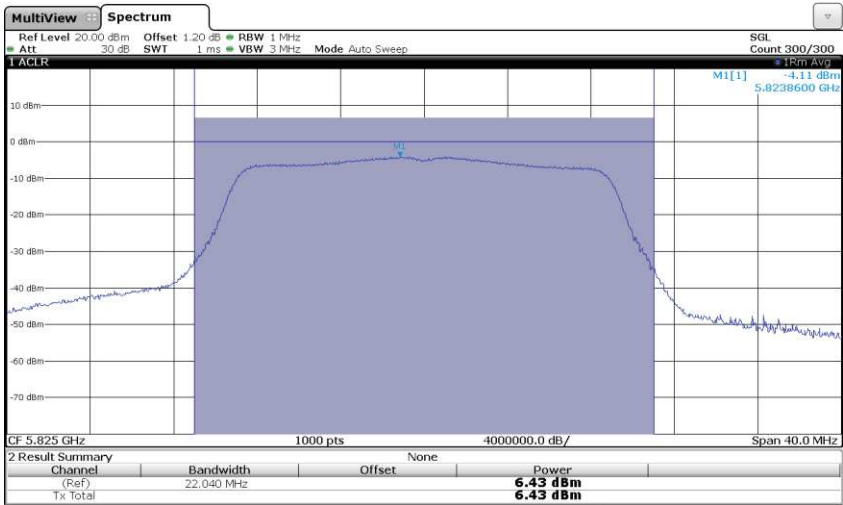


Antenna port 4:

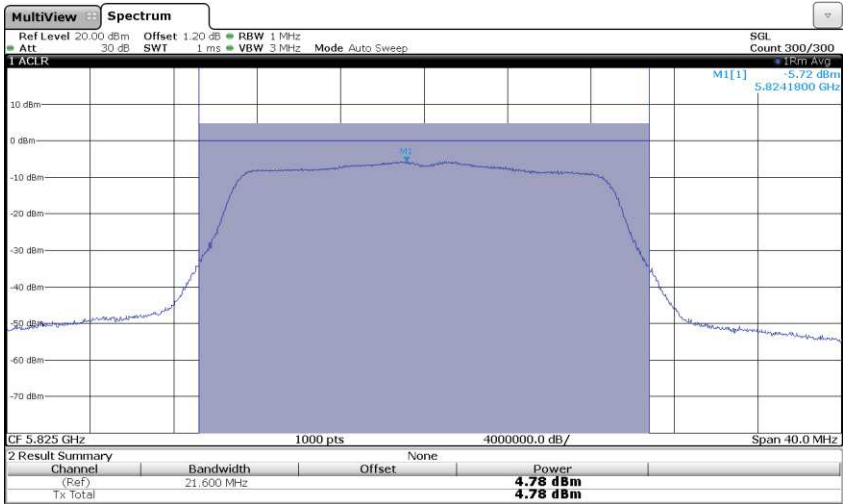


Channel 165

Antenna port 1:



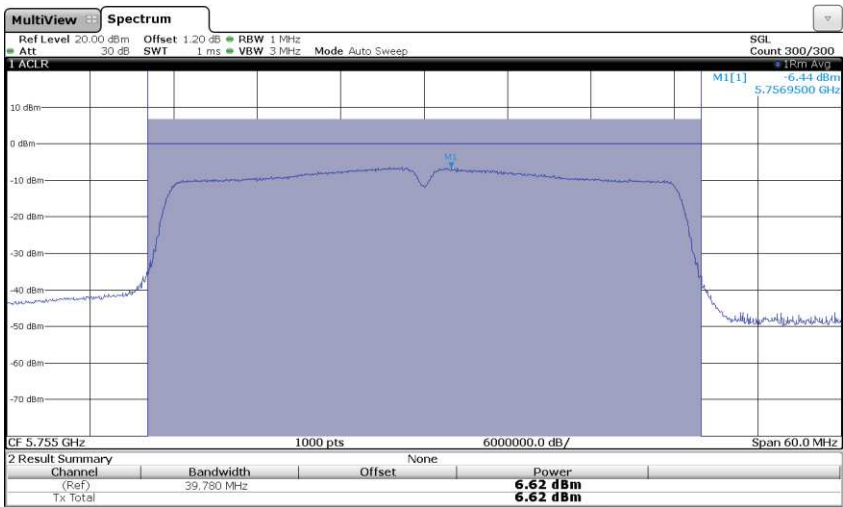
Antenna port 4:



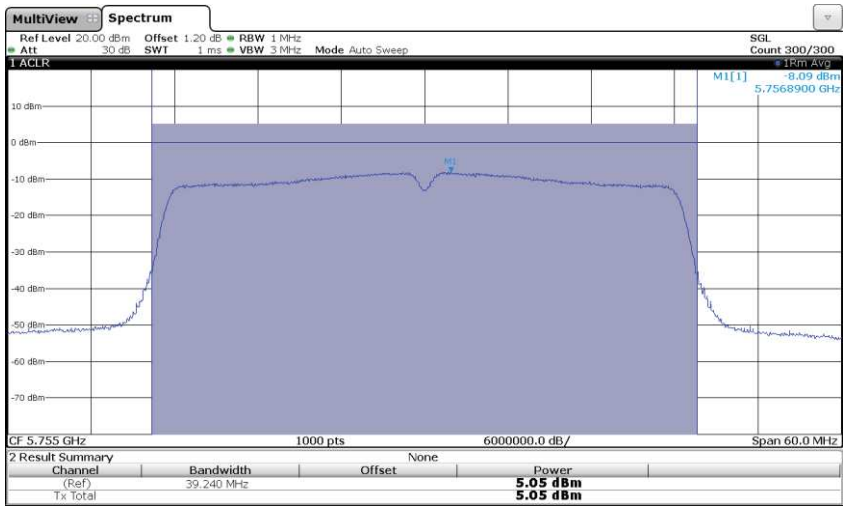
Mode: 802.11n HT40 - 40MHz

Channel 151

Antenna port 1:

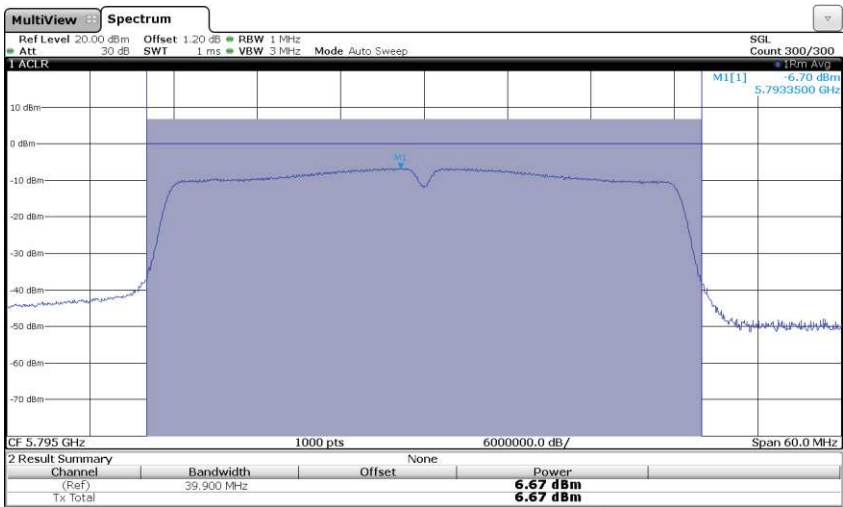


Antenna port 4:

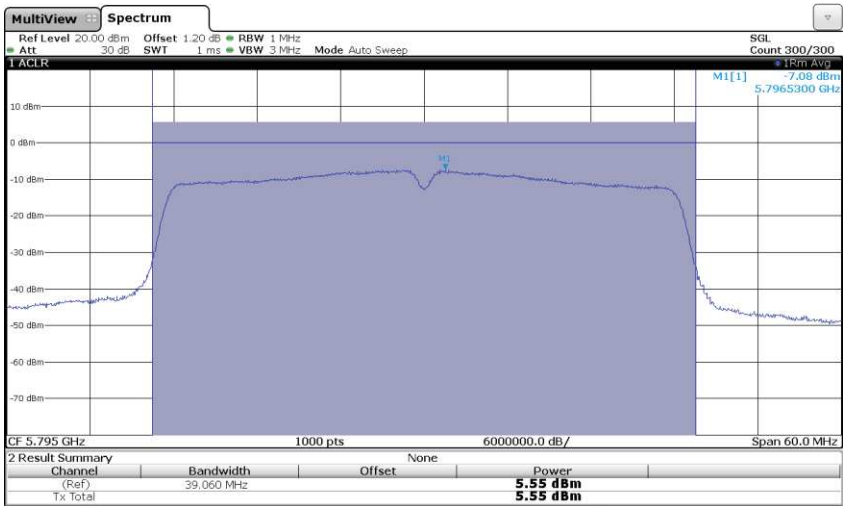


Channel 159

Antenna port 1:



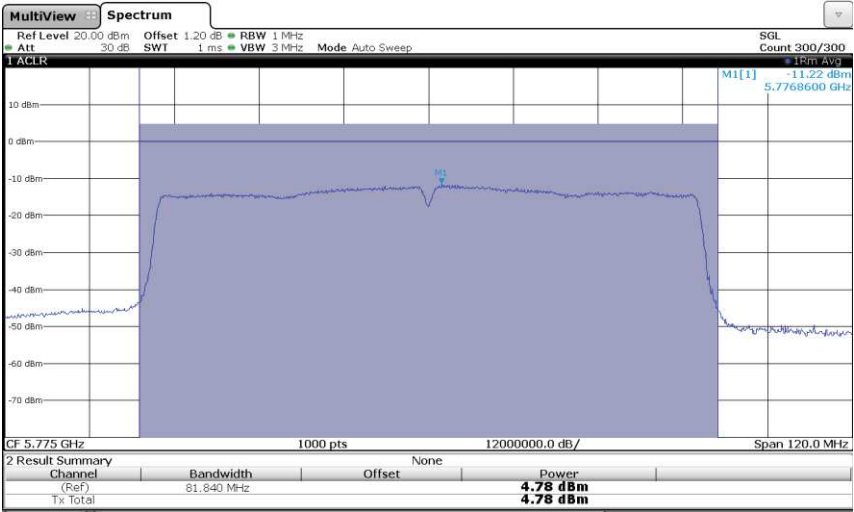
Antenna port 4:



Mode: 802.11ac VHT80 - 80MHz

Channel 155

Antenna port 1:



Antenna port 4:

