

Appendix A: Test Common requirements for all bands

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Section 15.35 Subclause (c) / RSS-Gen 6.10. Transmitter Duty Cycle.

SPECIFICATION

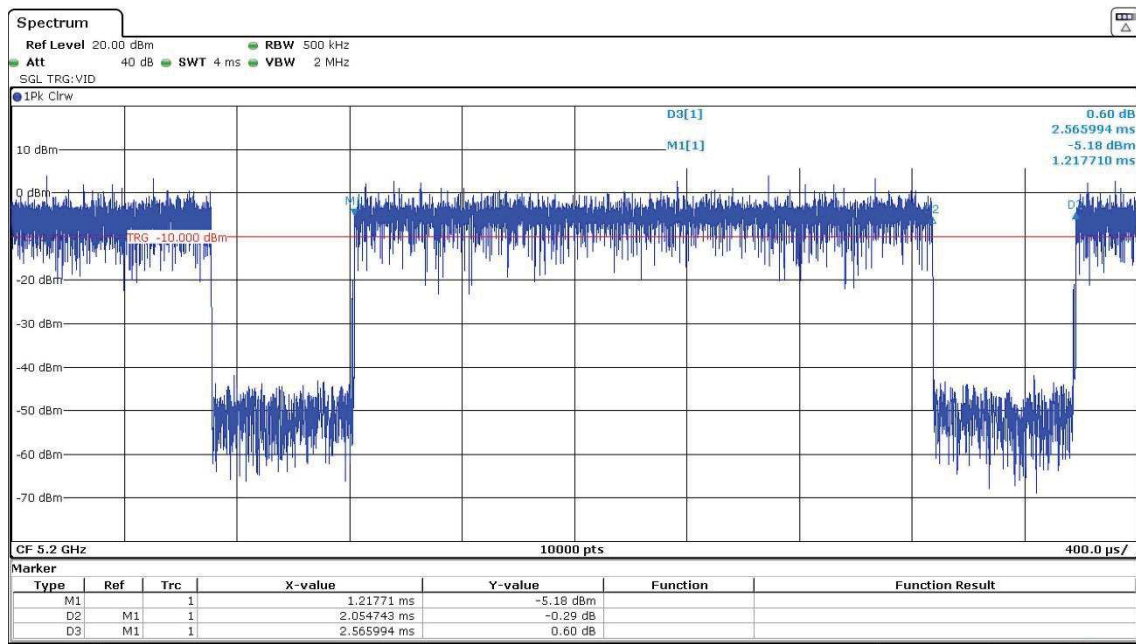
When the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

RESULTS:

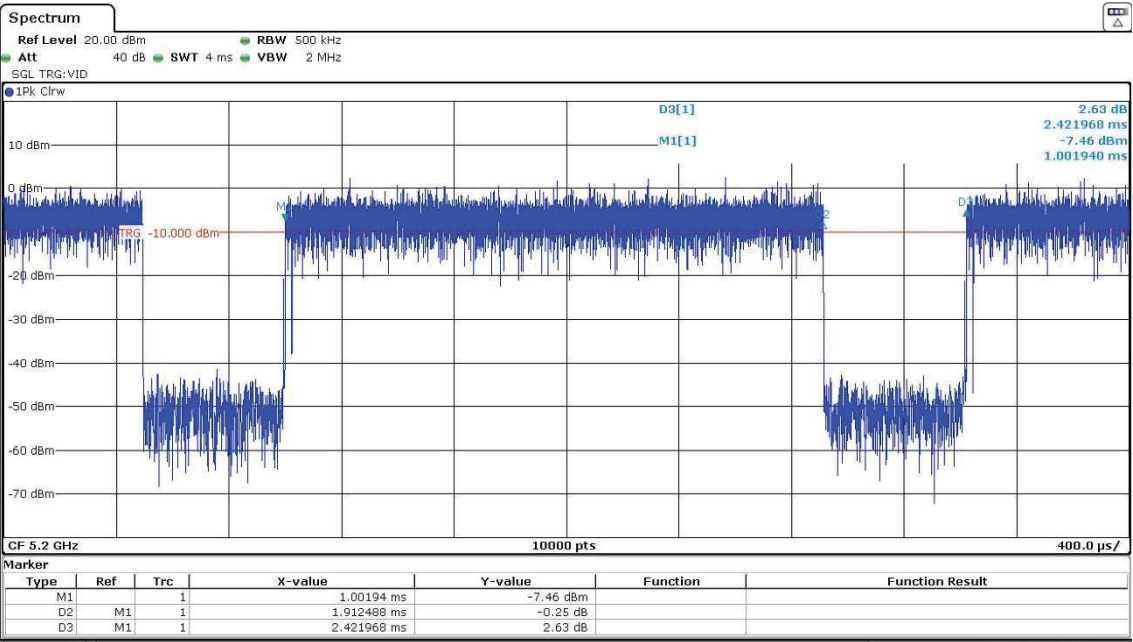
The results below are for data rates with a duty cycle less than 98%. The results for all rest of modes having a value > 98%.

Mode	Pulse Duration (us)	Period (us)	Duty Cycle correction (dB)
802.11a / 20 MHz	2054.74	2565.99	0.96
802.11n / 20 MHz	1912.49	2421.97	1.03
802.11n / 40 MHz	938.24	1445.46	1.88
802.11ac / 80 MHz	462.19	960.90	3.18

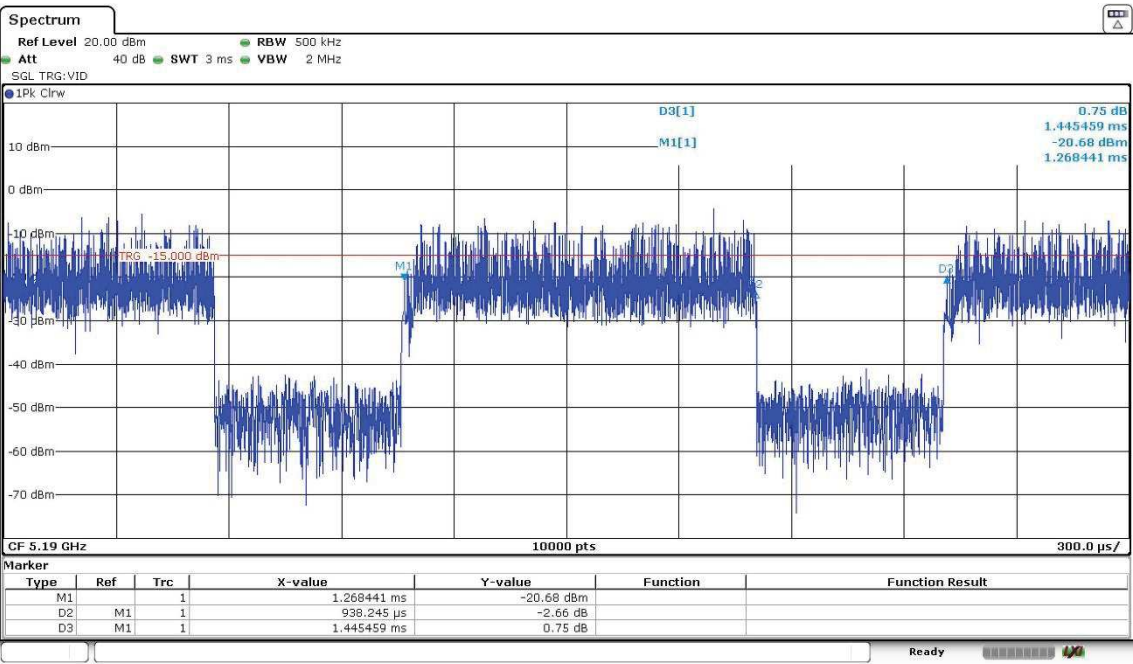
802.11a / 20 MHz



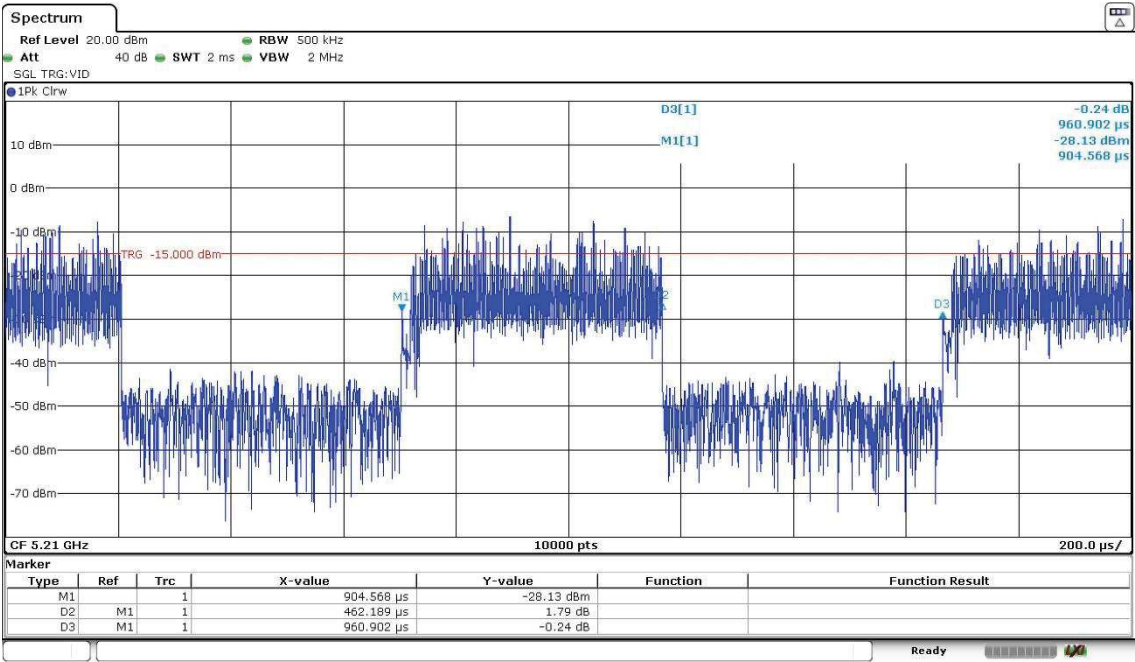
802.11n / 20 MHz



802.11n / 40 MHz



802.11ac / 80 MHz



RSS-Gen 6.6 / RSS-247 6.2. Transmitter 99% Occupied Bandwidth

Measurements were performed on the SISO modes for testing

- 802.11a: 6 Mbit/s / SISO on WLAN0-Core 0 – Antenna RF Port 3
- 802.11n HT20: MCS0 / SISO on WLAN0-Core 0 – Antenna RF Port 3
- 802.11n HT40: MCS0 / SISO on WLAN0-Core 0 – Antenna RF Port 3
- 802.11ac VHT80: MCS0 / SISO on WLAN0-Core 0 – Antenna RF Port 3

Mode : 802.11a - 20MHz (see next plots)

	Occ. BW (MHz)	Measurement uncertainty (KHz)
channel 36 (5180 MHz)	17.04	<±23.02
channel 40 (5200 MHz)	17.08	
channel 48 (5240 MHz)	17.04	
channel 149 (5745 MHz)	17.00	
channel 157 (5785 MHz)	17.00	
channel 165 (5825 MHz)	17.00	

Mode : 802.11n HT20 - 20MHz (see next plots)

	Occ. BW (MHz)	Measurement uncertainty (KHz)
channel 36 (5180 MHz)	18.25	<±28.02
channel 40 (5200 MHz)	18.35	
channel 48 (5240 MHz)	18.20	
channel 149 (5745 MHz)	18.16	
channel 157 (5785 MHz)	18.12	
channel 165 (5825 MHz)	18.12	

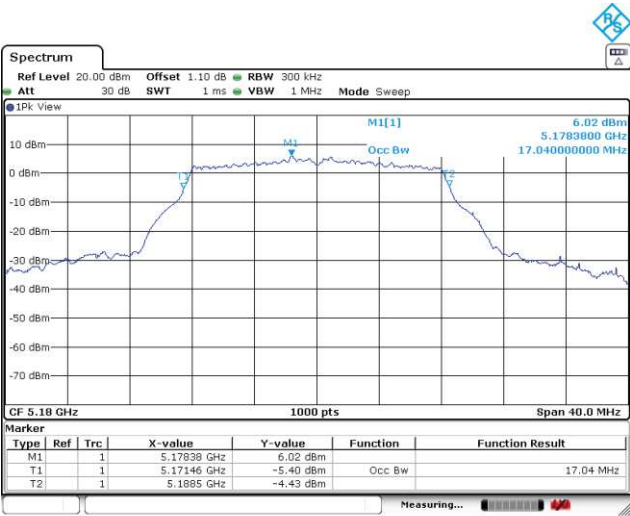
Mode : 802.11n HT40 - 40MHz (see next plots)

	Occ. BW (MHz)	Measurement uncertainty (KHz)
channel 38 (5190 MHz)	36.30	<±55.05
channel 46 (5230 MHz)	36.00	
channel 151 (5755 MHz)	36.40	
channel 159 (5795 MHz)	36.40	

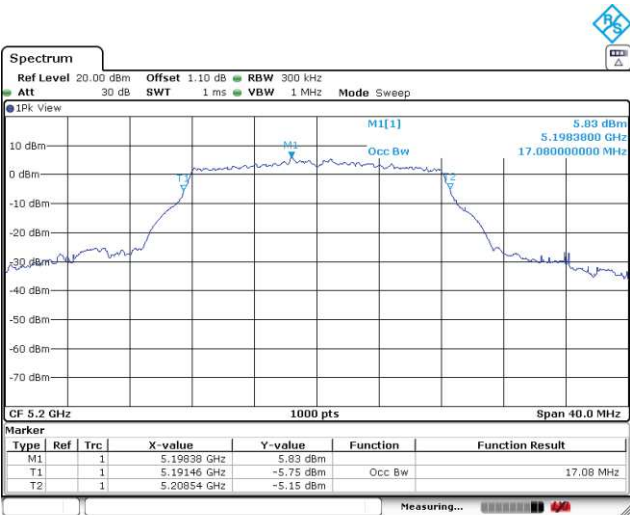
Mode : 802.11ac VHT80 - 80MHz (see next plots)

	Occ. BW (MHz)	Measurement uncertainty (KHz)
channel 42 (5210 MHz)	75.80	<±103.10
channel 155 (5775 MHz)	75.60	

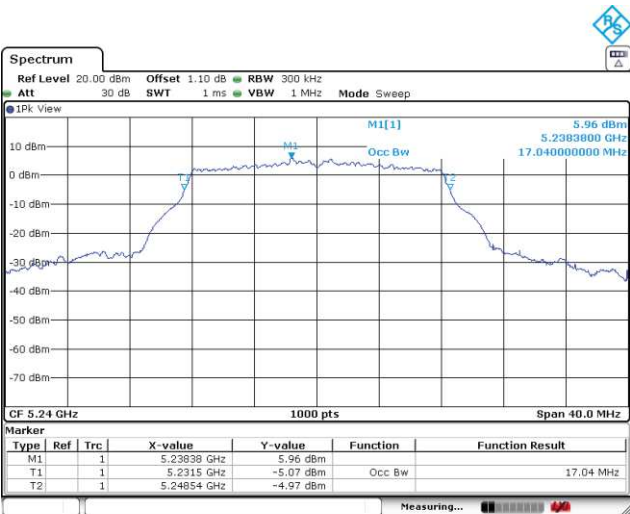
Mode : 802.11a - 20MHz
channel 36 (5180 MHz)



channel 40 (5200 MHz)



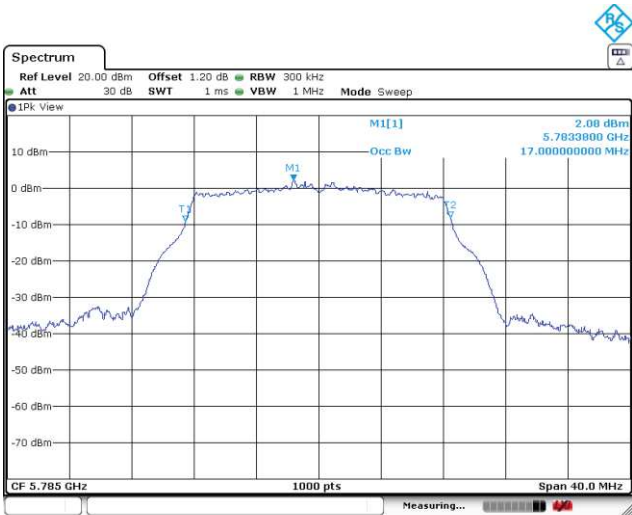
channel 48 (5240 MHz)



channel 149 (5745 MHz)



channel 157 (5785 MHz)

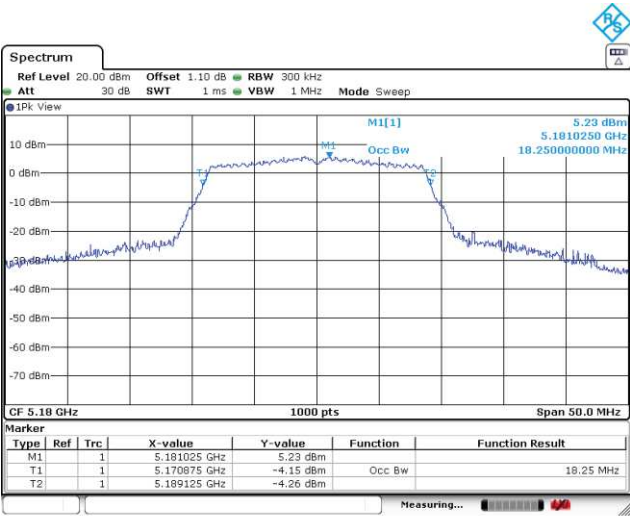


channel 165 (5825 MHz)

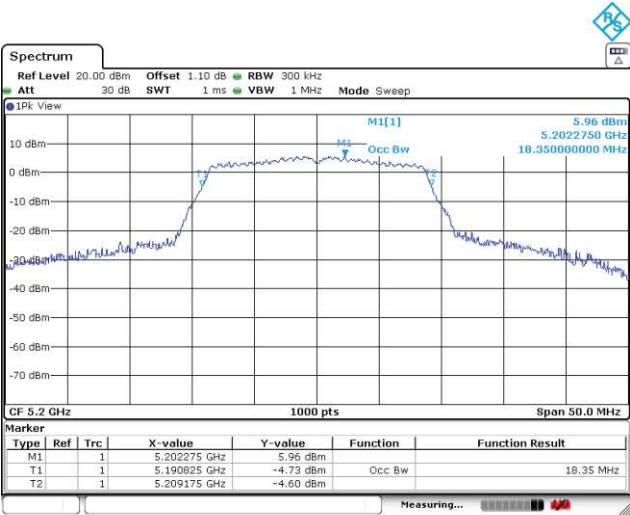


Mode : 802.11n HT20 - 20MHz

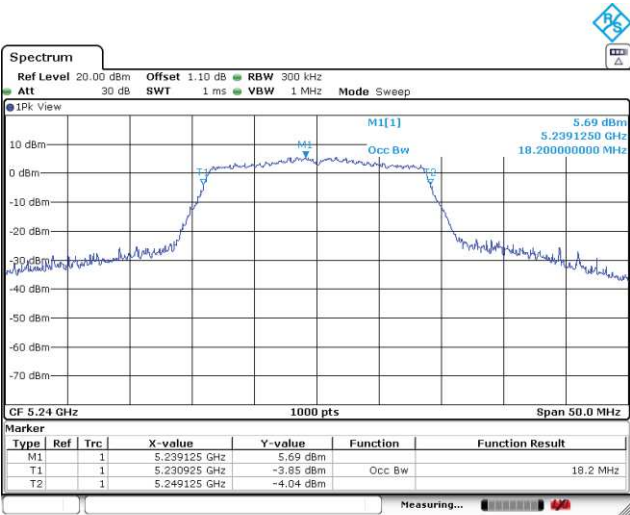
channel 36 (5180 MHz)



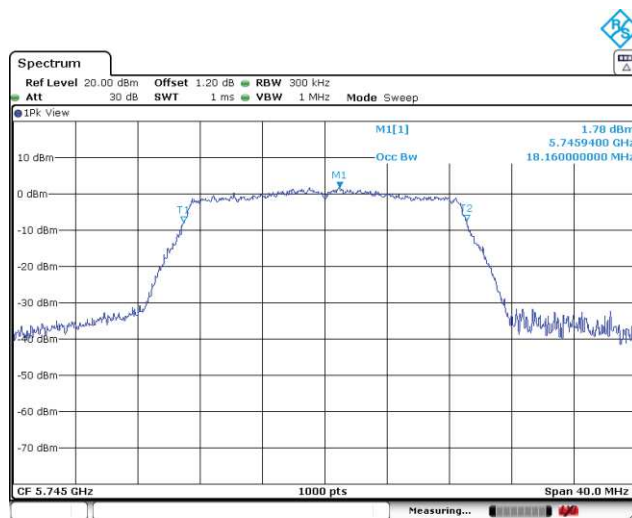
channel 40 (5200 MHz)



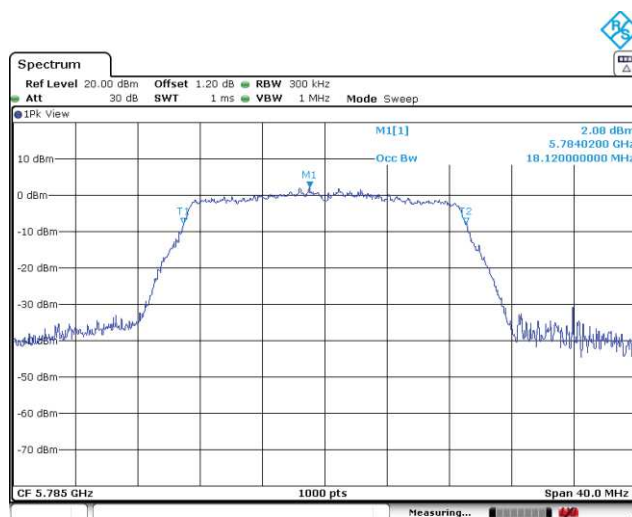
channel 48 (5240 MHz)



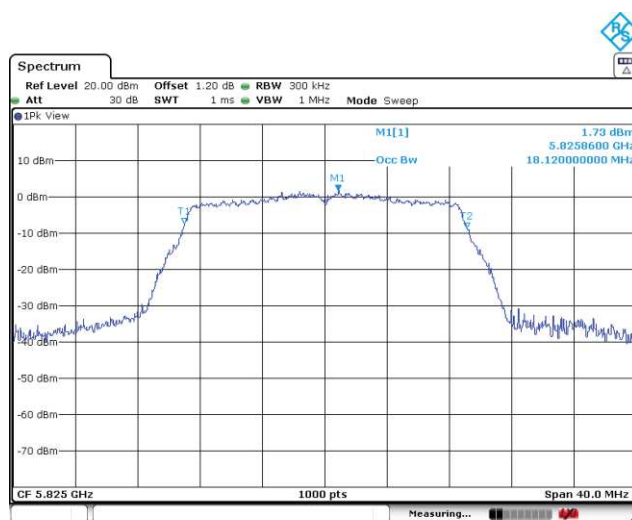
channel 149 (5745 MHz)



channel 157 (5785 MHz)

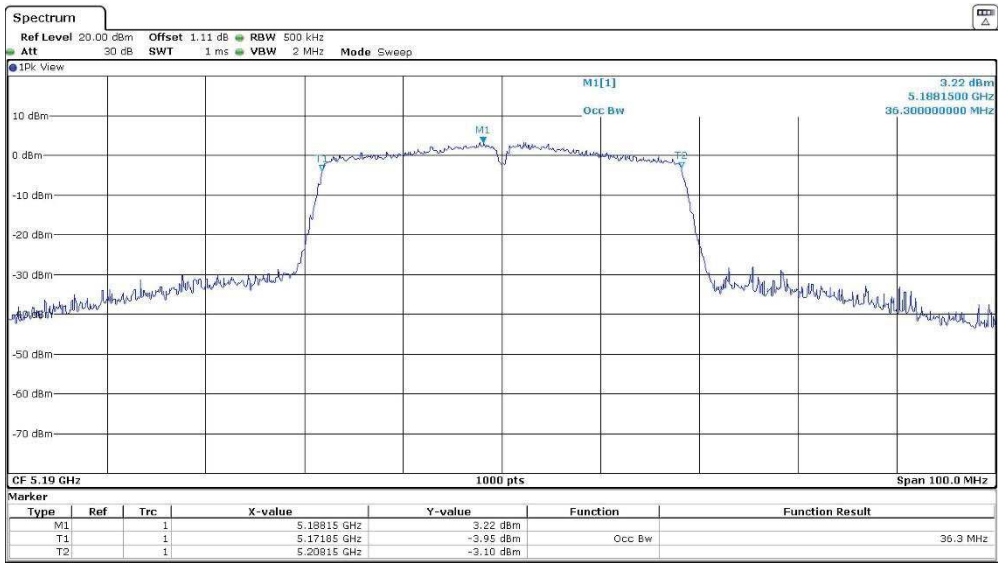


channel 165 (5825 MHz)

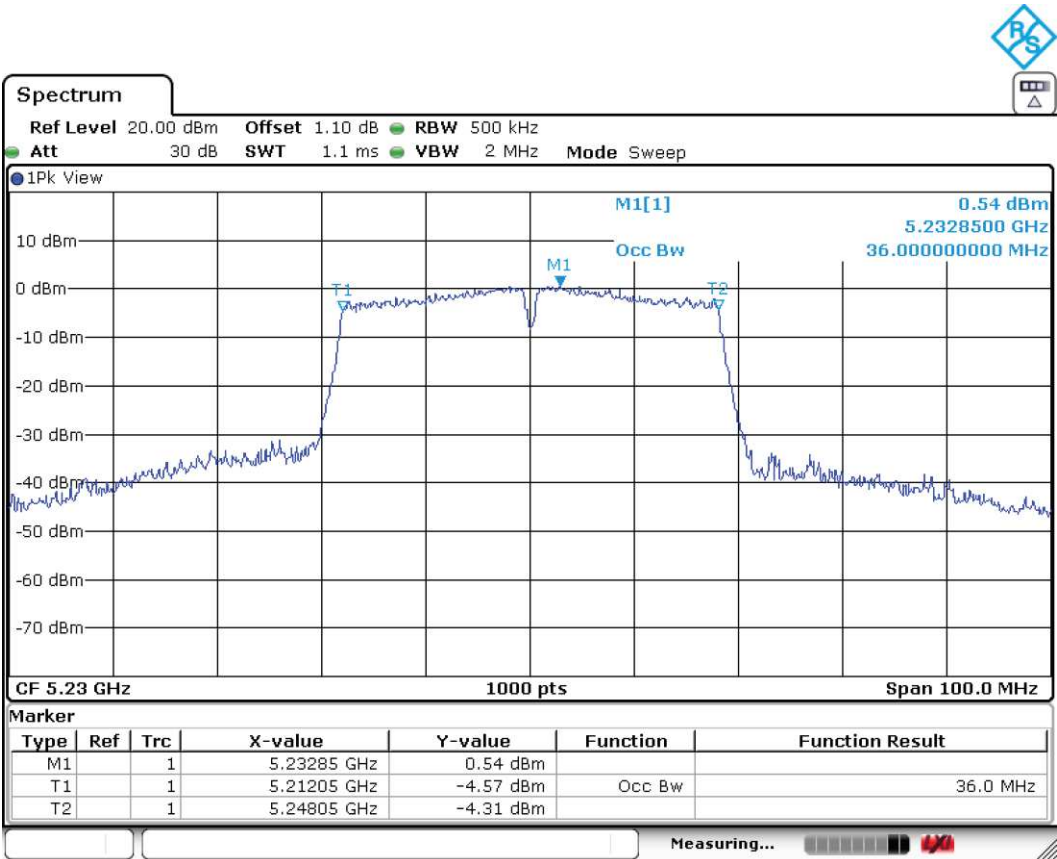


Mode : 802.11n HT40 - 40MHz

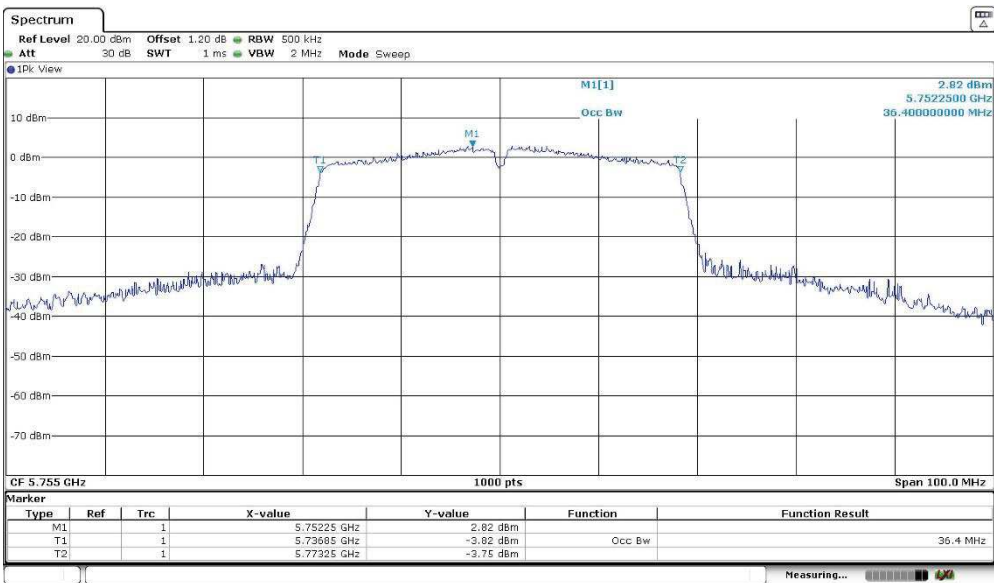
channel 38 (5190 MHz)



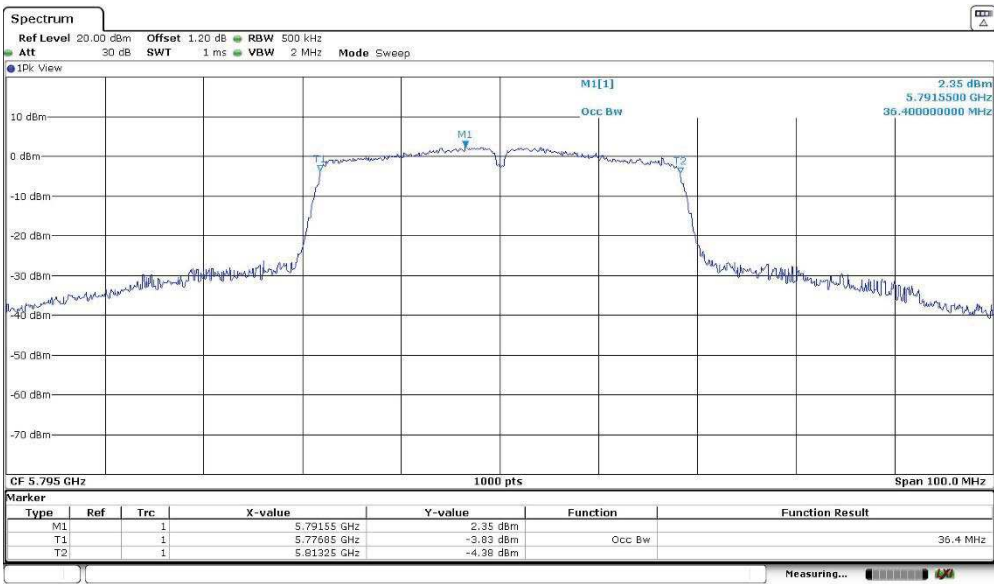
channel 46 (5230 MHz)



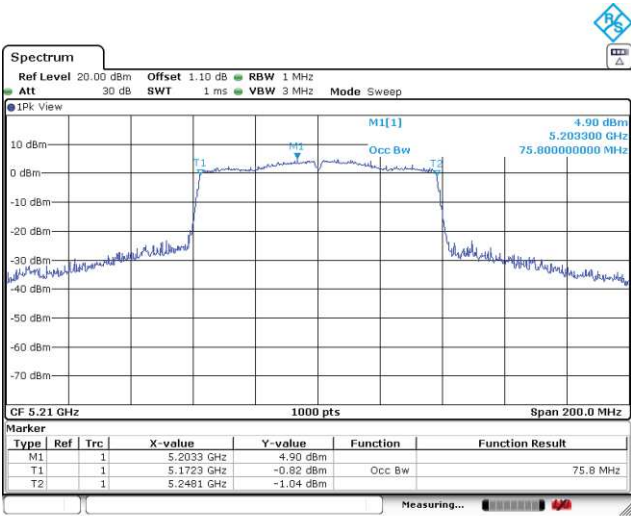
channel 151 (5755 MHz)



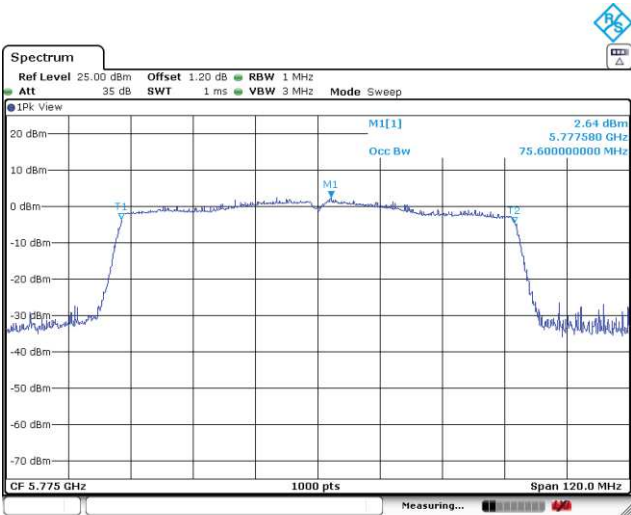
channel 159 (5795 MHz)



Mode : 802.11ac VHT80 - 80MHz
channel 42 (5210 MHz)



channel 155 (5775 MHz)



Section 15.407 Subclause 15.403(i) Transmitter 26 dB Emission Bandwidth (EBW)

RESULTS:

The 26 dB emission Bandwidth was measured using the method according to point C) 1) of 789033 D02 General UNII Test Procedures New Rules v02r01.

The following modes and data rates were selected based on preliminary testing that identified those corresponding to the worst cases:

- 802.11a: 6 Mbit/s / SISO on WLAN0-Core 0 – Antenna RF Port 3
- 802.11n HT20: MCS0 / SISO on WLAN0-Core 0 – Antenna RF Port 3
- 802.11n HT40: MCS0 / SISO on WLAN0-Core 0 – Antenna RF Port 3
- 802.11ac VHT80: MCS0 / SISO on WLAN0-Core 0 – Antenna RF Port 3

Mode : 802.11a - 20MHz (see next plots)

	26dB Emission Bandwidth (MHz)	Measurement uncertainty (KHz)
channel 36 (5180 MHz)	21.52	<±23.02
channel 40 (5200 MHz)	21.56	
channel 48 (5240 MHz)	21.48	
channel 149 (5745 MHz)	21.48	
channel 157 (5785 MHz)	21.48	
channel 165 (5825 MHz)	21.48	

Mode : 802.11n HT20 - 20MHz (see next plots)

	26dB Emission Bandwidth (MHz)	Measurement uncertainty (KHz)
channel 36 (5180 MHz)	22	<±23.02
channel 40 (5200 MHz)	22	
channel 48 (5240 MHz)	21.95	
channel 149 (5745 MHz)	21.92	
channel 157 (5785 MHz)	21.92	
channel 165 (5825 MHz)	21.96	

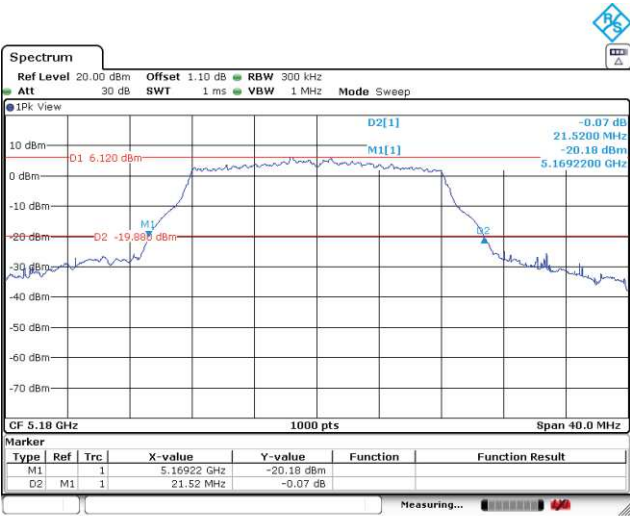
Mode : 802.11n HT40 - 40MHz (see next plots)

	26dB Emission Bandwidth (MHz)	Measurement uncertainty (KHz)
channel 38 (5190 MHz)	39.8	<±53.05
channel 46 (5230 MHz)	39.7	
channel 151 (5755 MHz)	39.54	
channel 159 (5795 MHz)	39.72	

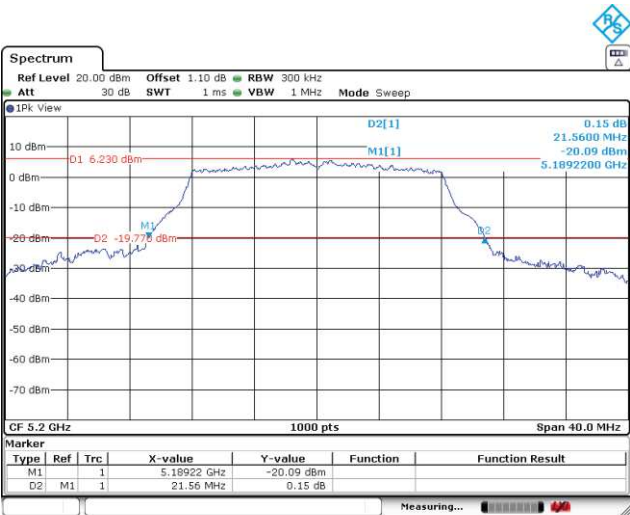
Mode : 802.11ac VHT80 - 80MHz (see next plots)

	26dB Emission Bandwidth (MHz)	Measurement uncertainty (KHz)
channel 42 (5210 MHz)	82.2	<±103.10
channel 155 (5775 MHz)	82.2	

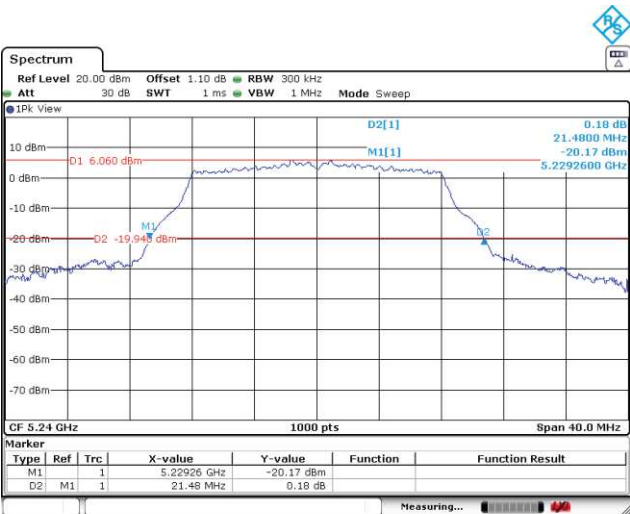
Mode : 802.11a - 20MHz
channel 36 (5180 MHz)



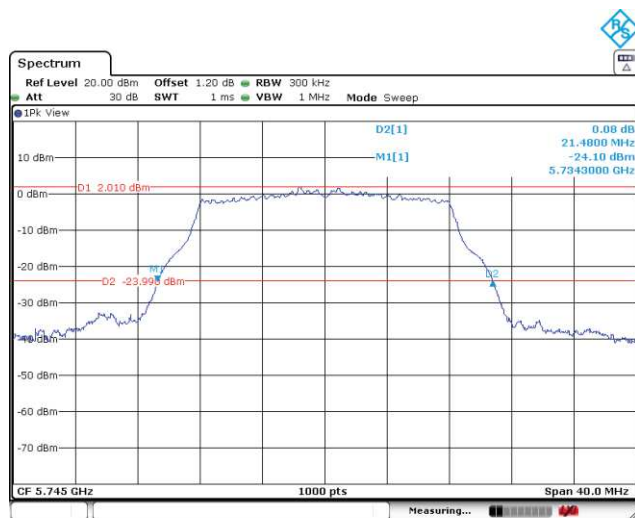
channel 40 (5200 MHz)



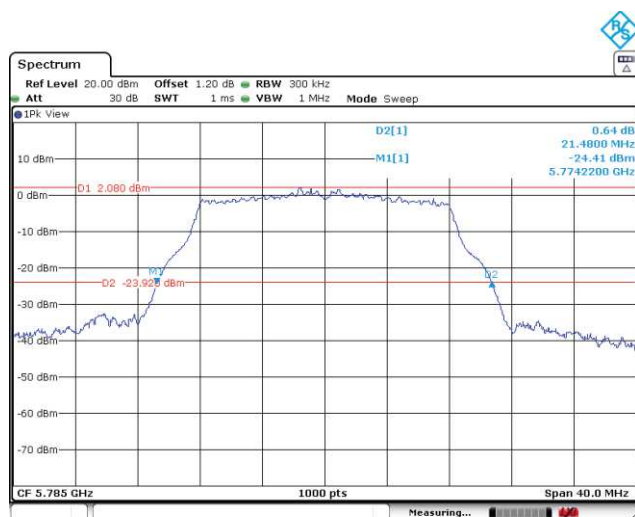
channel 48 (5240 MHz)



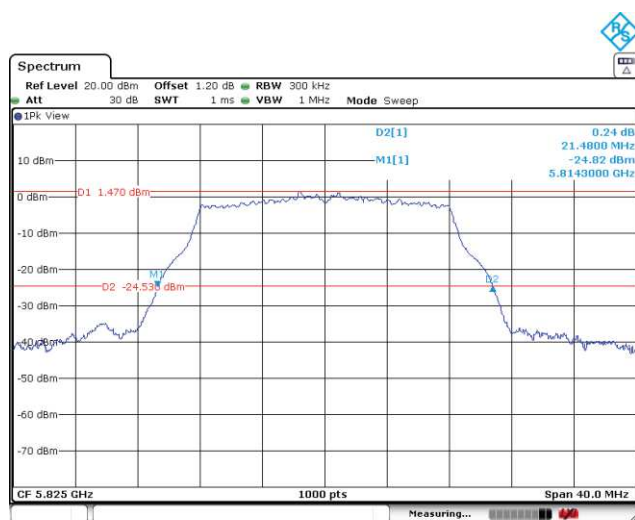
channel 149 (5745 MHz)



channel 157 (5785 MHz)

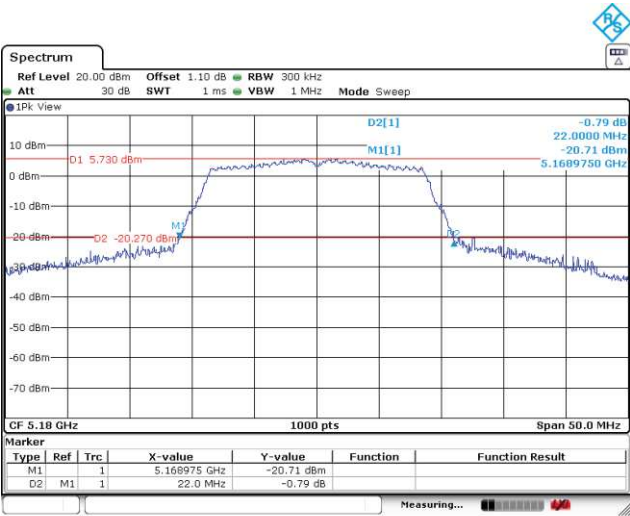


channel 165 (5825 MHz)

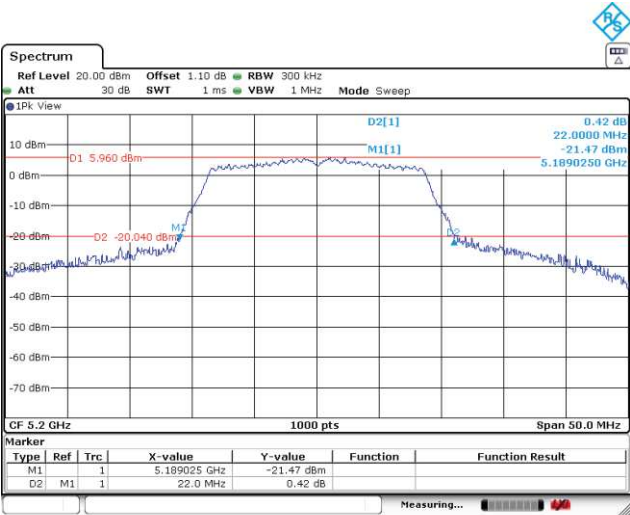


Mode : 802.11n HT20 - 20MHz

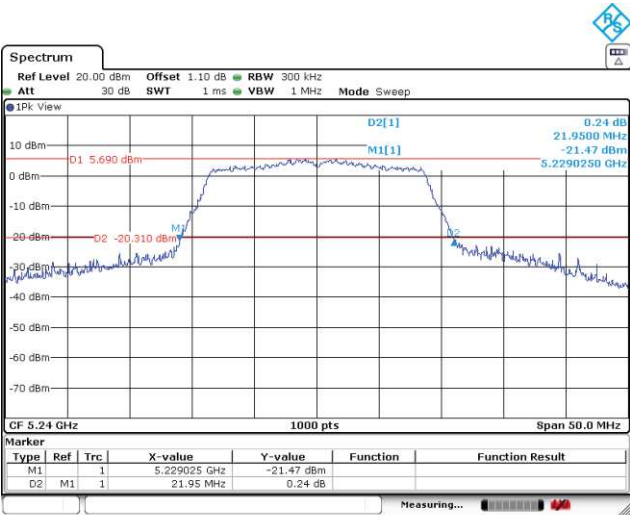
channel 36 (5180 MHz)



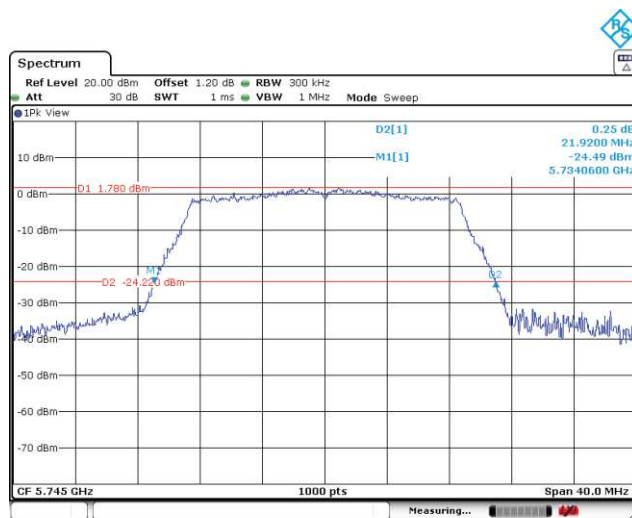
channel 40 (5200 MHz)



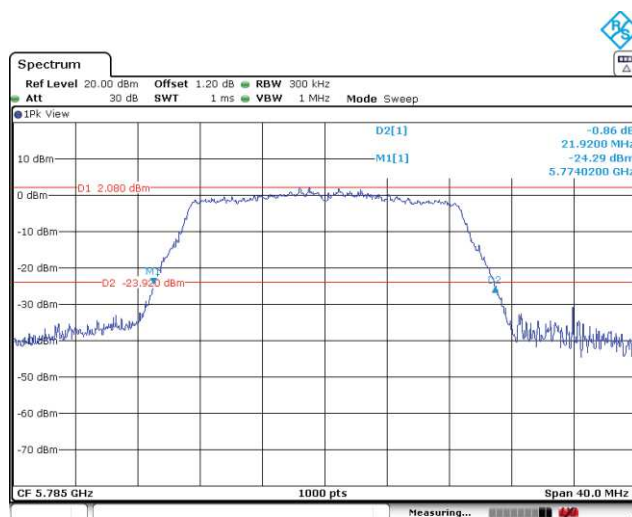
channel 48 (5240 MHz)



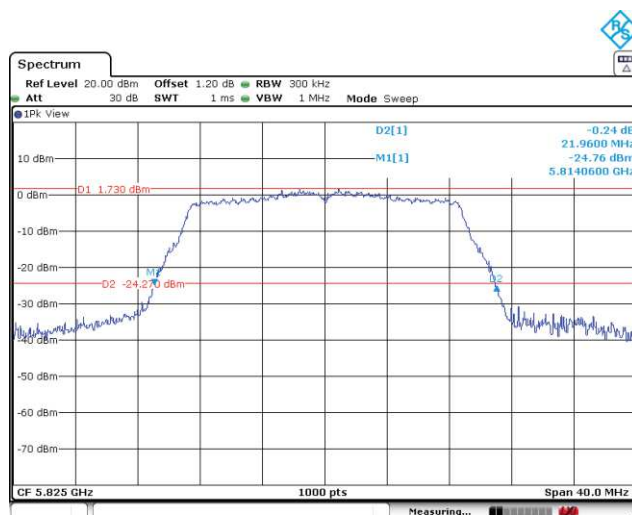
channel 149 (5745 MHz)



channel 157 (5785 MHz)

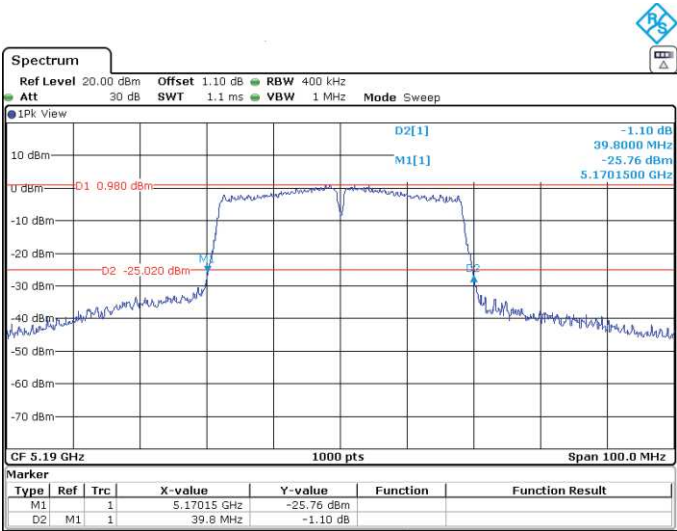


channel 165 (5825 MHz)

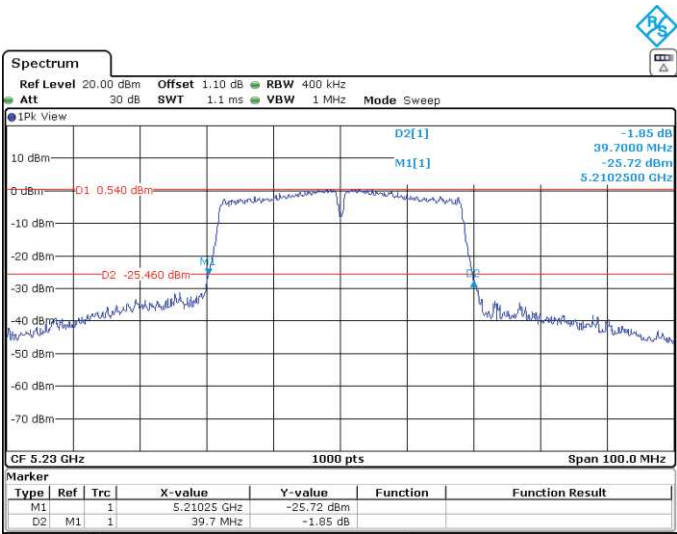


Mode : 802.11n HT40 - 40MHz

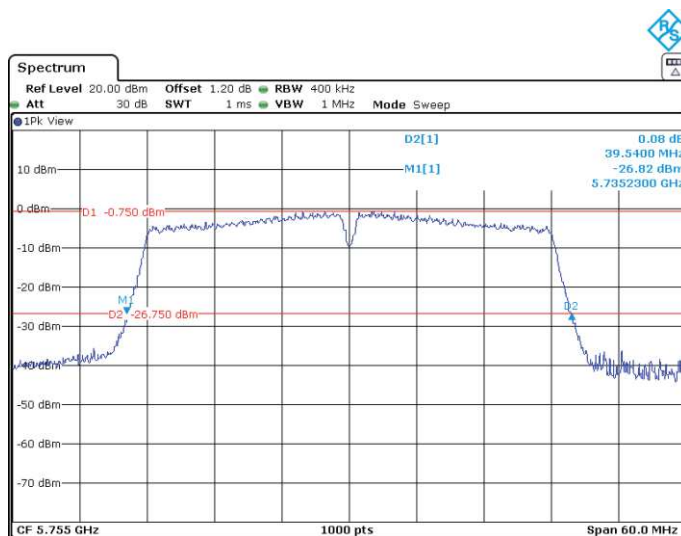
channel 38 (5190 MHz)



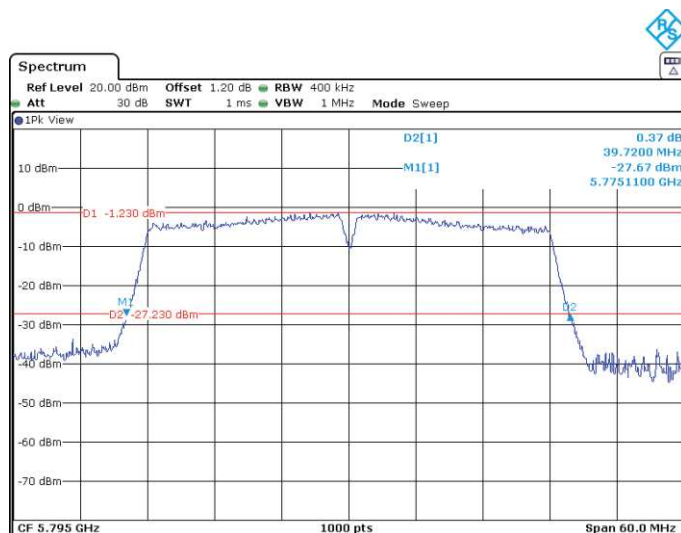
channel 46 (5230 MHz)



channel 151 (5755 MHz)

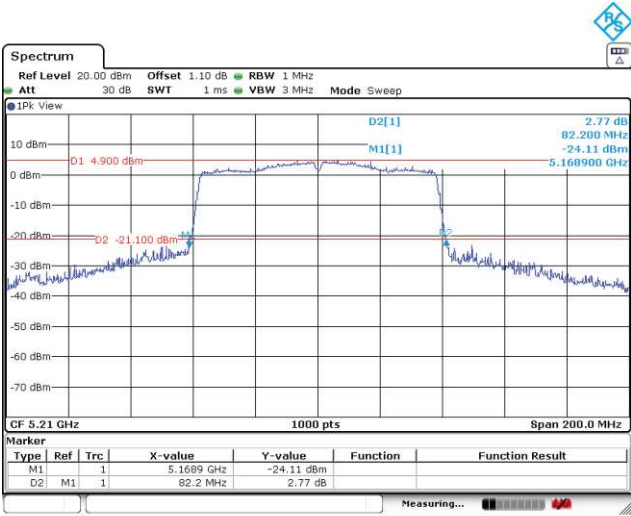


channel 159 (5795 MHz)



Mode : 802.11ac VHT80 - 80MHz

channel 42 (5210 MHz)



channel 155 (5775 MHz)

