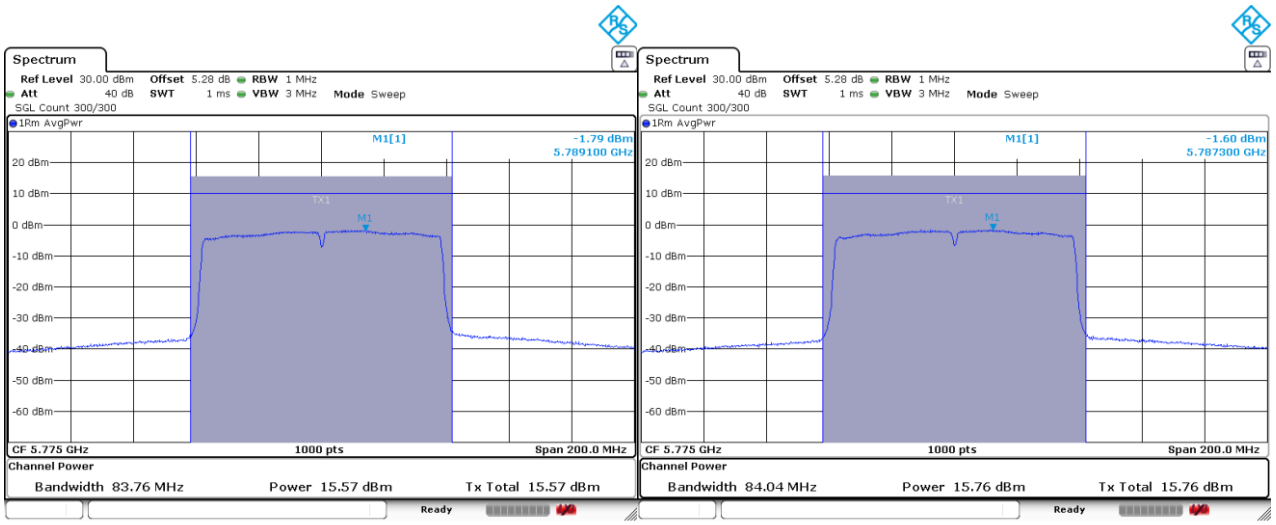
Mode : 802.11ac VHT80 – TxBF – 80MHz – MIMO – CORE 0 & CORE 2

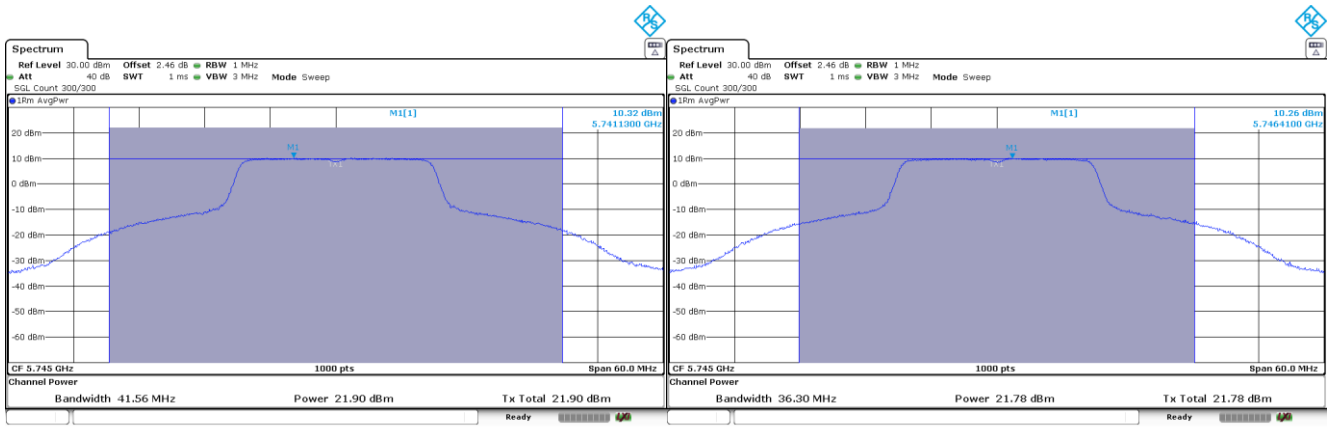
Channel 155



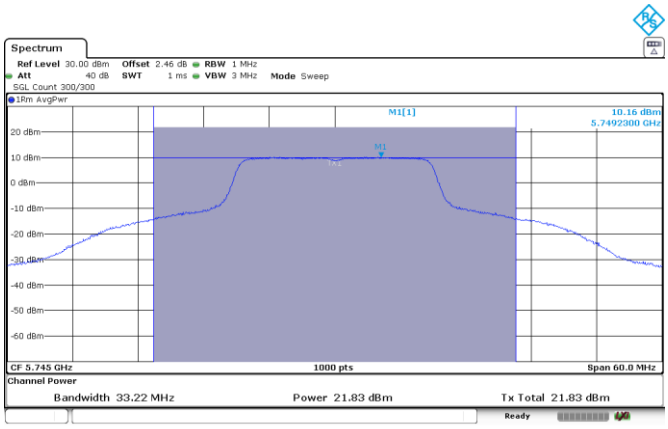
CORE 0 CORE 2

Mode : 802.11n HT20 – CDD – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

Channel 149

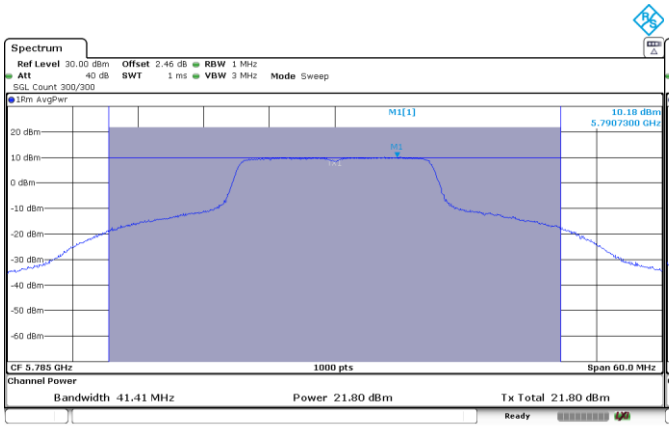


CORE 0 CORE 1

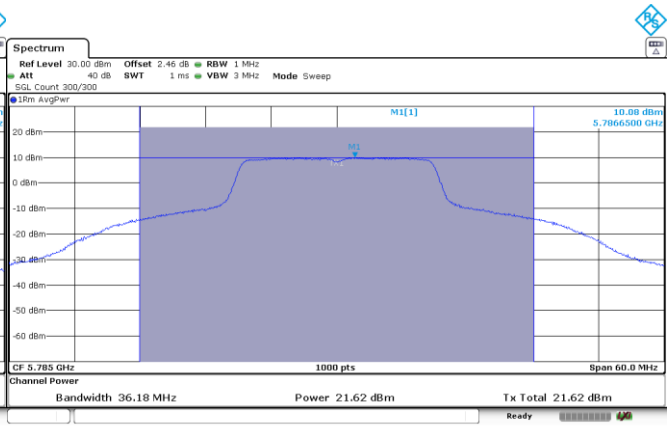


CORE 2

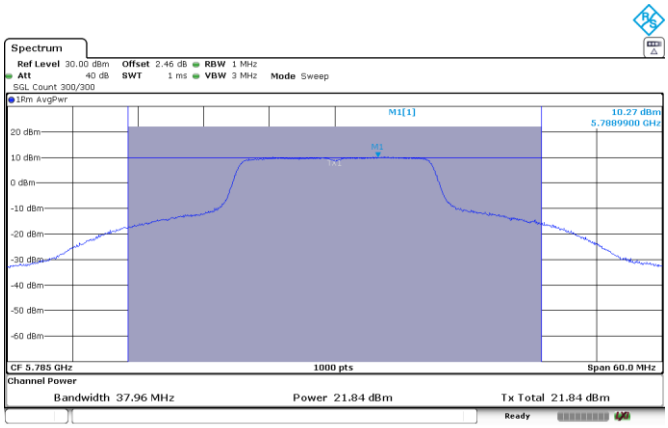
Channel 157



CORE 0

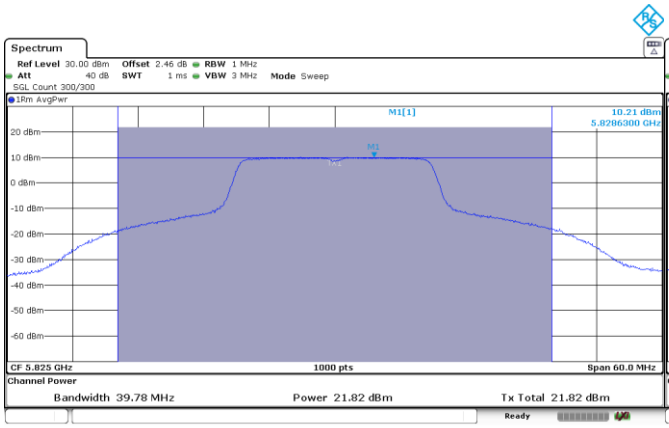


CORE 1

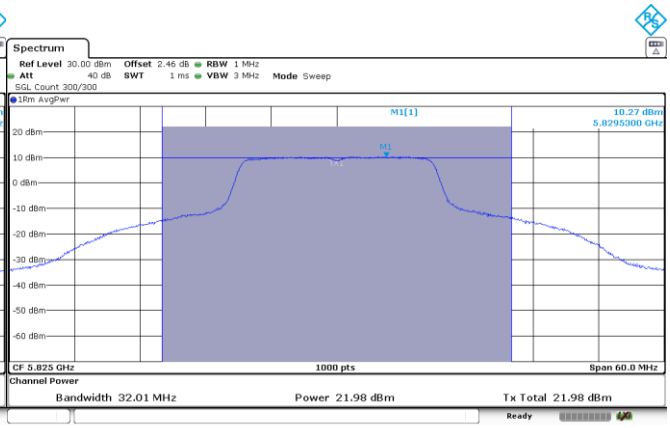


CORE 2

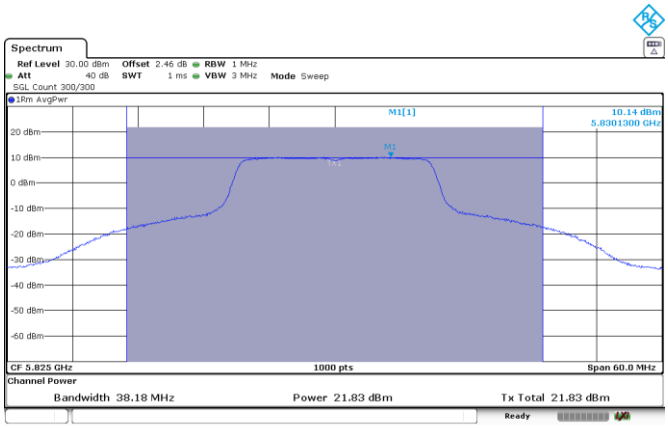
Channel 165



CORE 0



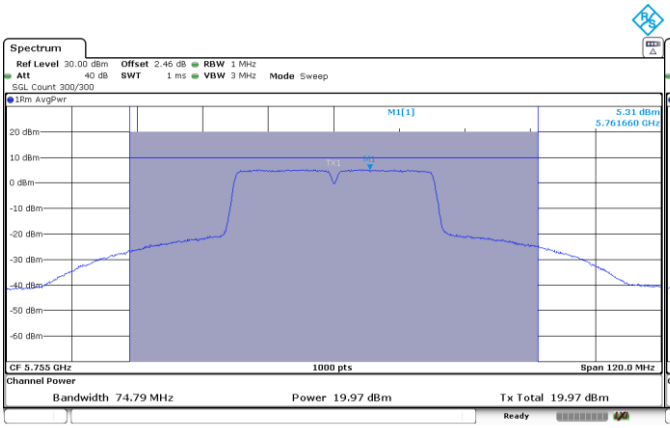
CORE 1



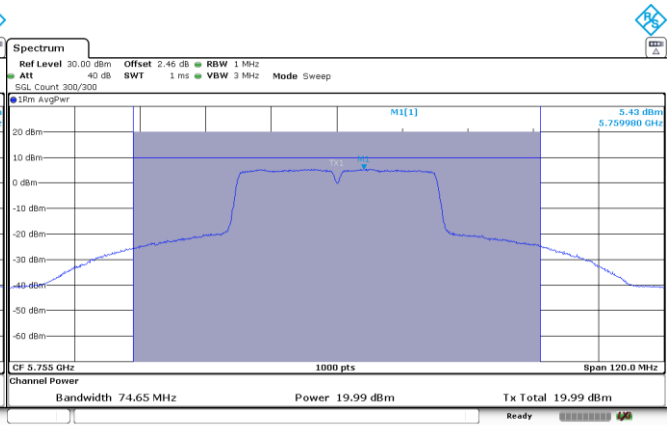
CORE 2

Mode : 802.11n HT40 – CDD – 40MHz – MIMO – CORE 0 & CORE 1 & CORE 2

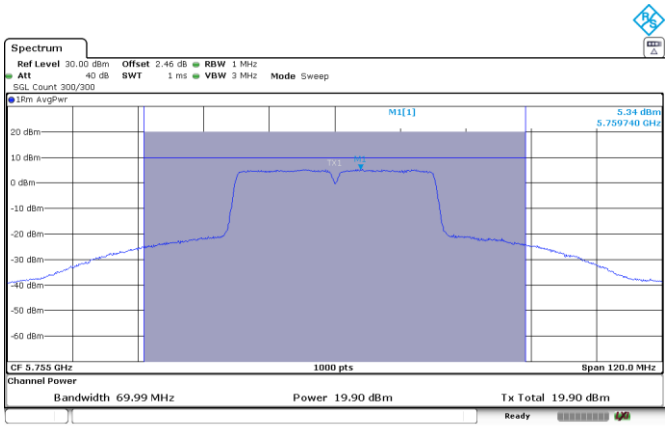
Channel 151



CORE 0

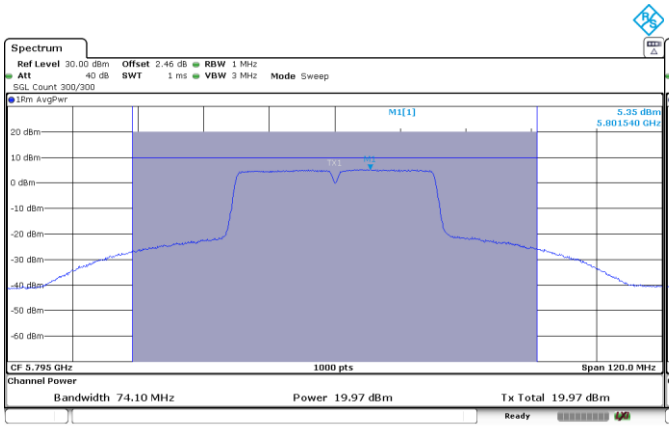


CORE 1

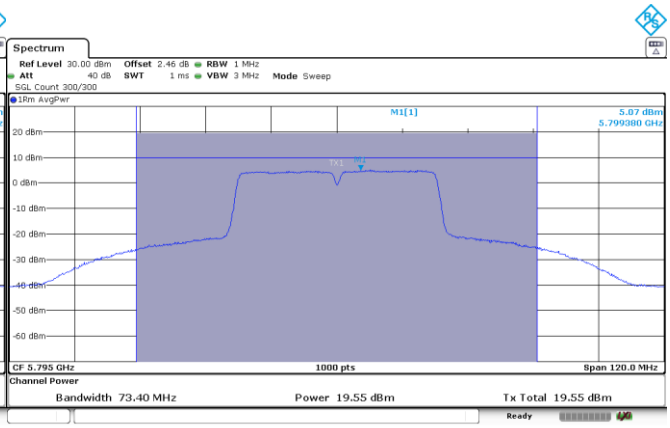


CORE 2

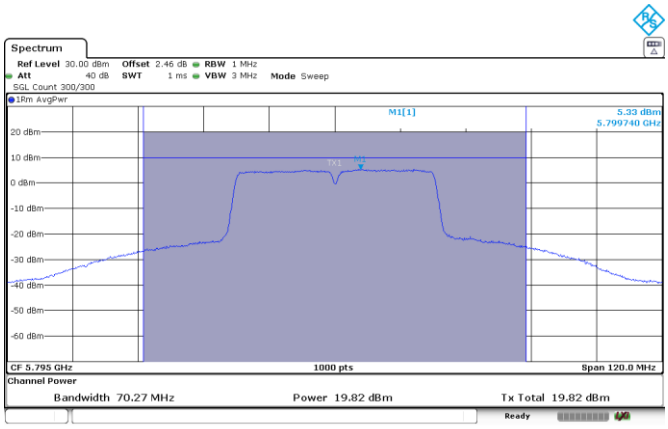
Channel 159



CORE 0



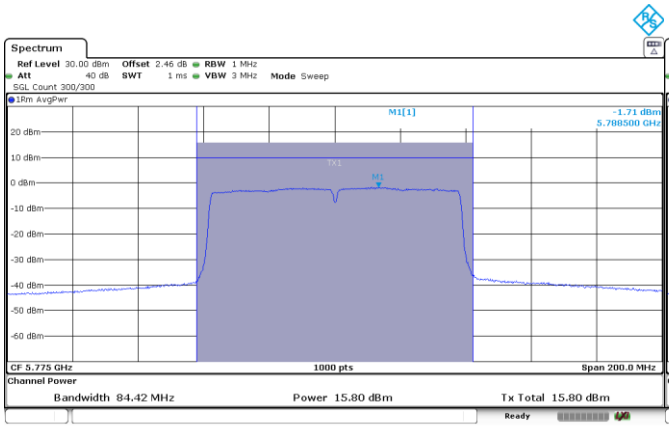
CORE 1



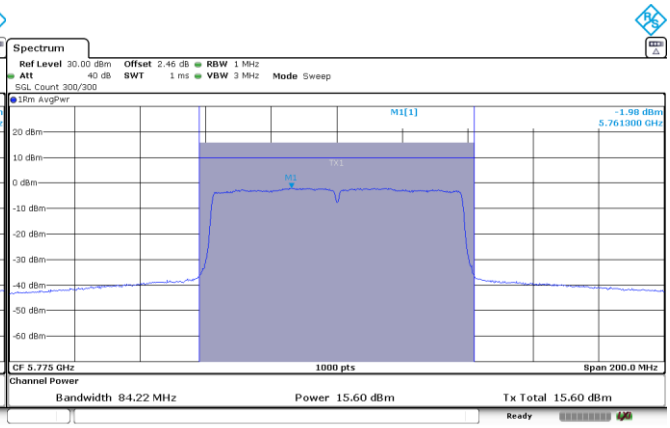
CORE 2

Mode : 802.11ac VHT80 – CDD – 80MHz – MIMO – CORE 0 & CORE 1 & CORE 2

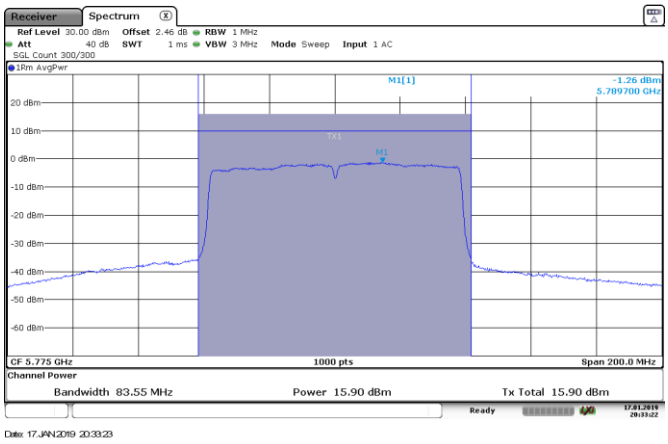
Channel 155



CORE 0



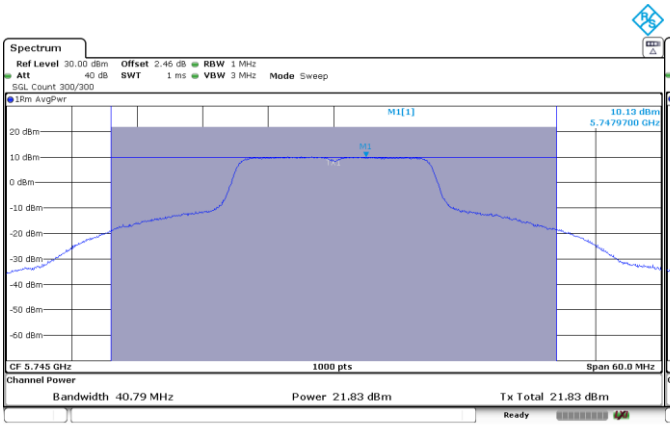
CORE 1



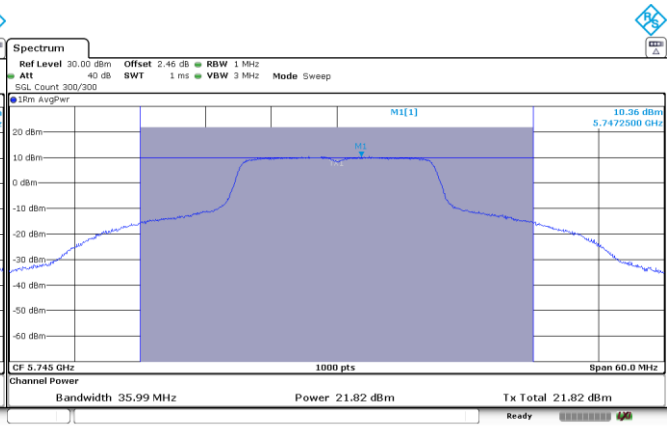
CORE 2

Mode : 802.11n HT20 – SDM – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

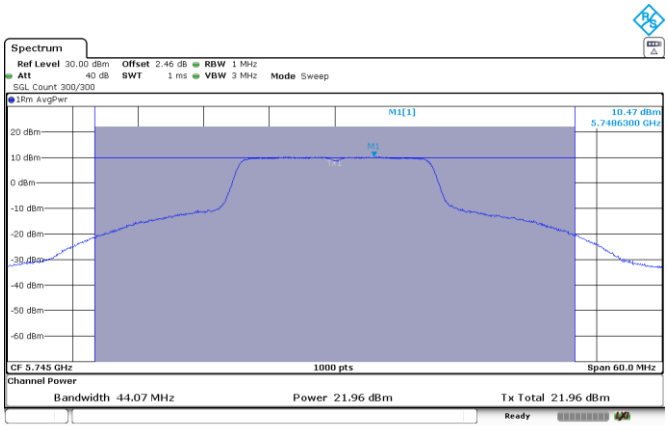
Channel 149



CORE 0

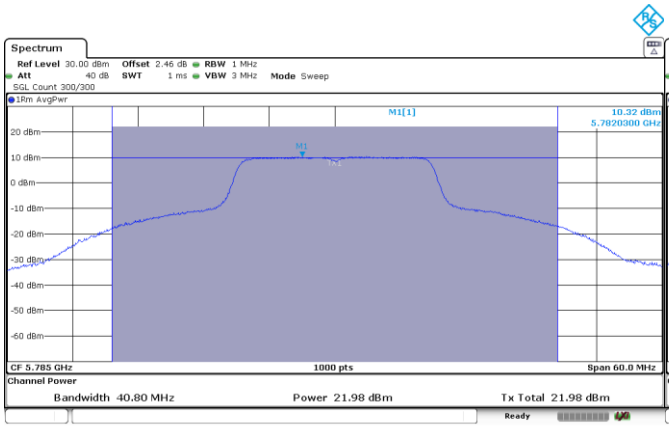


CORE 1

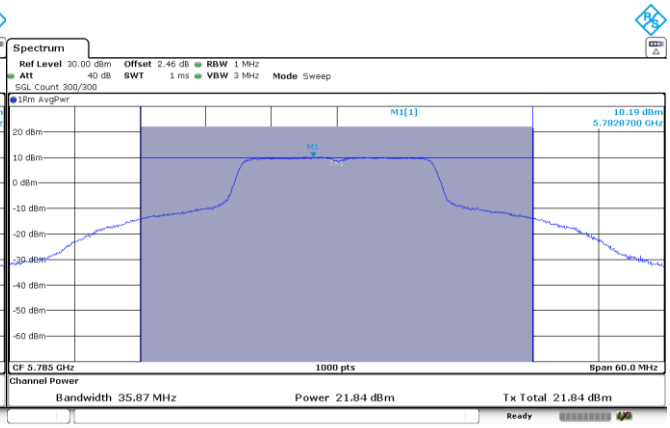


CORE 2

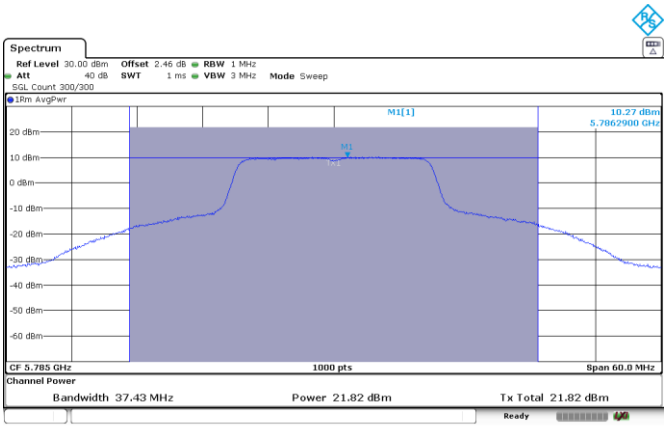
Channel 157



CORE 0

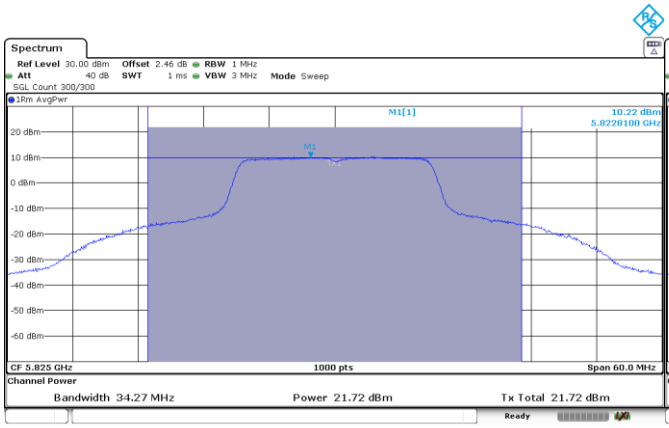


CORE 1

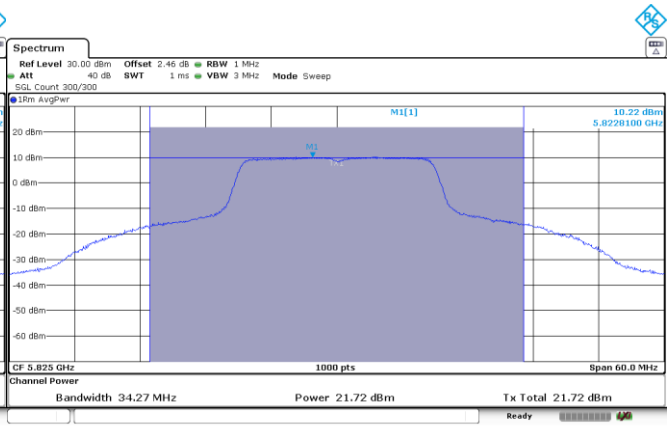


CORE 2

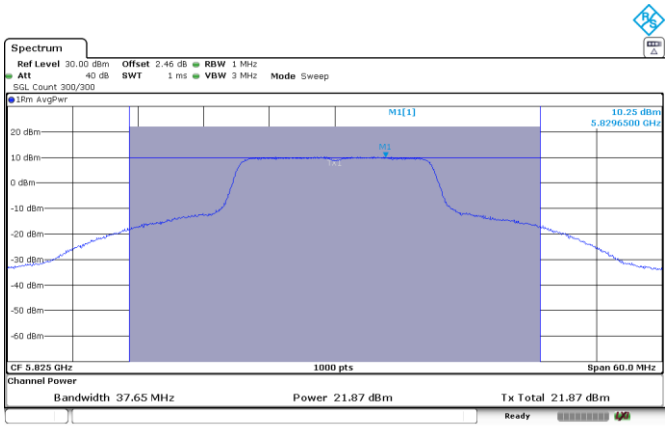
Channel 165



CORE 0



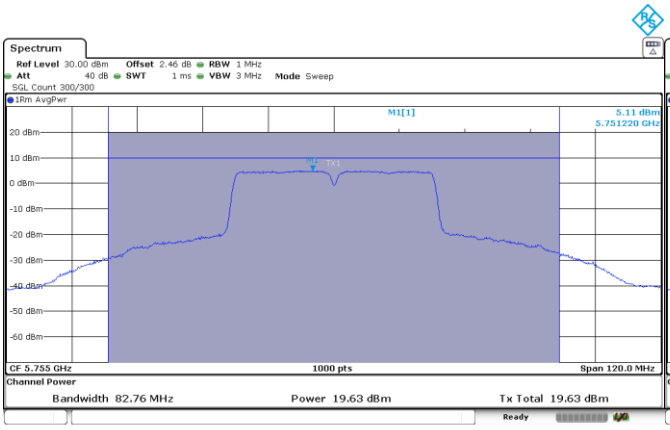
CORE 1



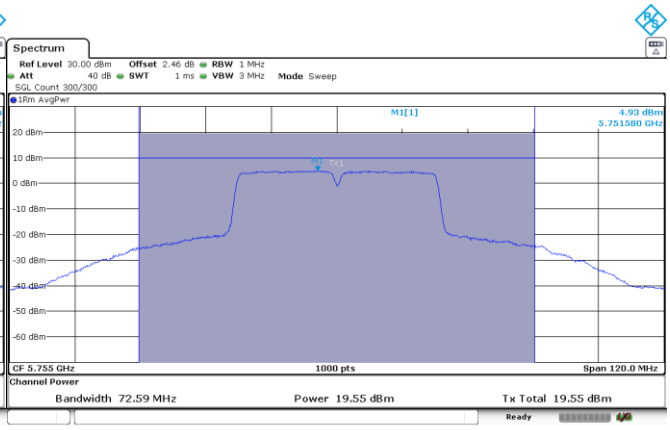
CORE 2

Mode : 802.11n HT40 – SDM – 40MHz – MIMO – CORE 0 & CORE 1 & CORE 2

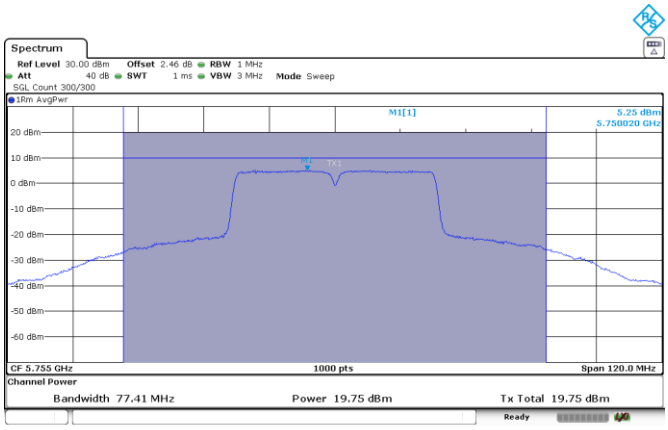
Channel 151



CORE 0

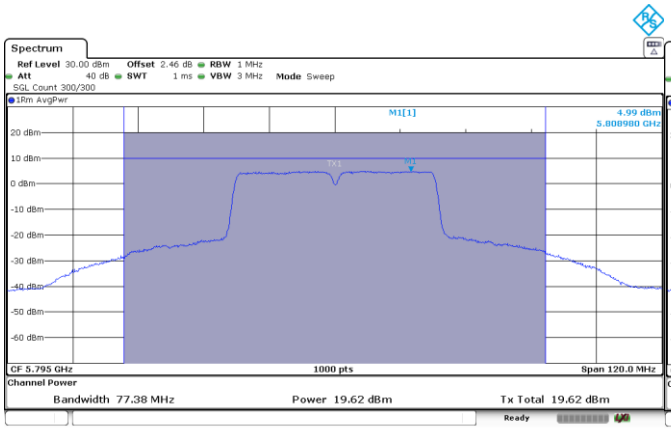


CORE 1

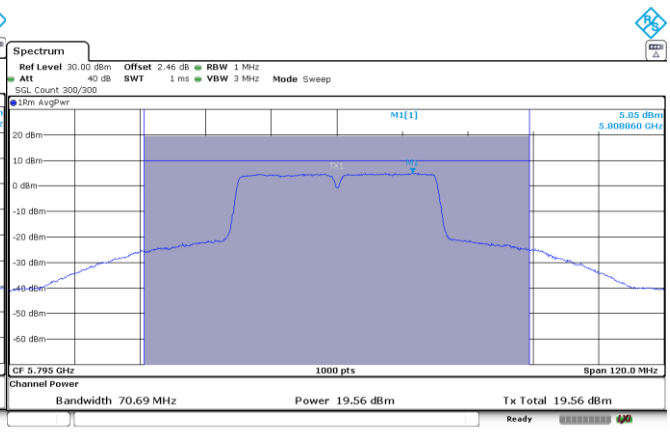


CORE 2

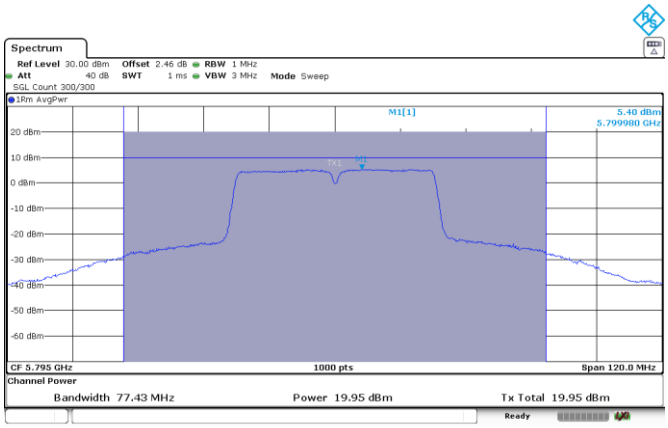
Channel 159



CORE 0

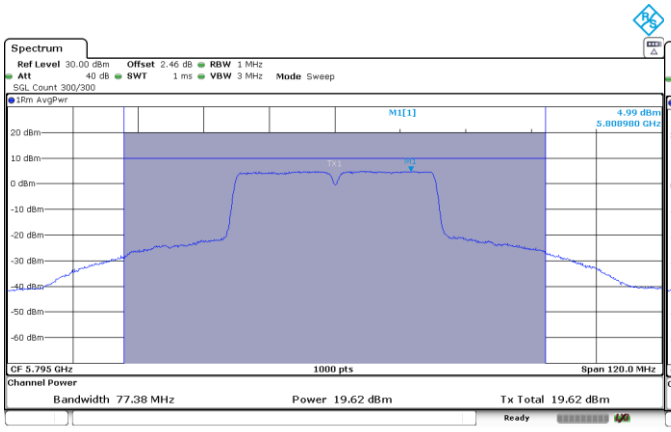


CORE 1

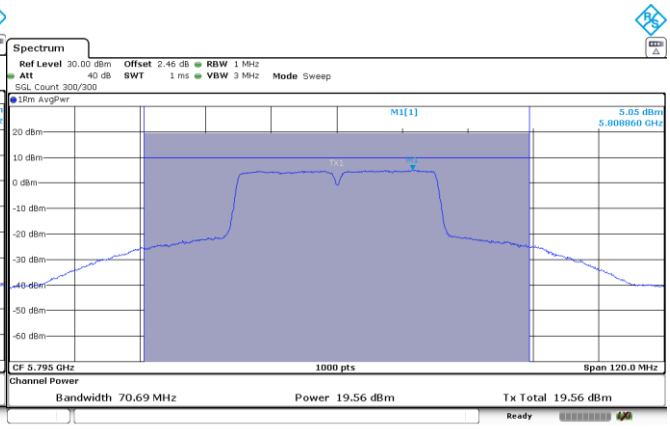


CORE 2

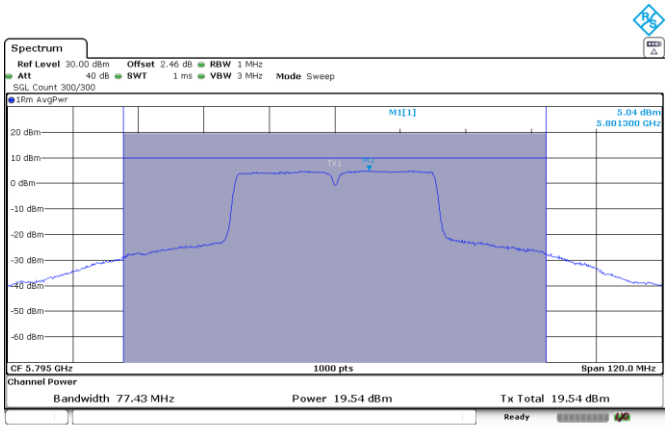
Channel 159



CORE 0



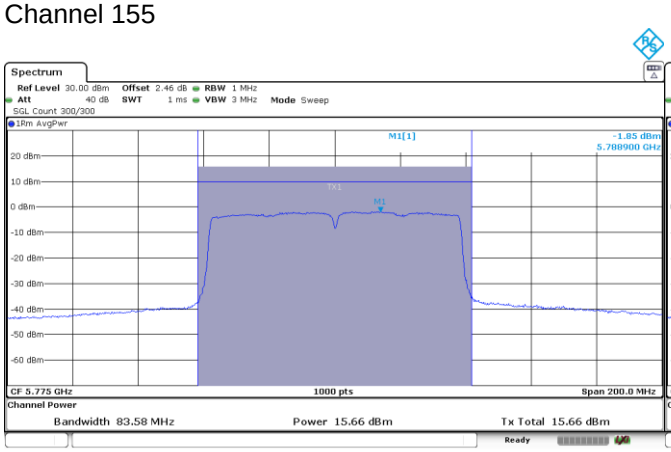
CORE 1



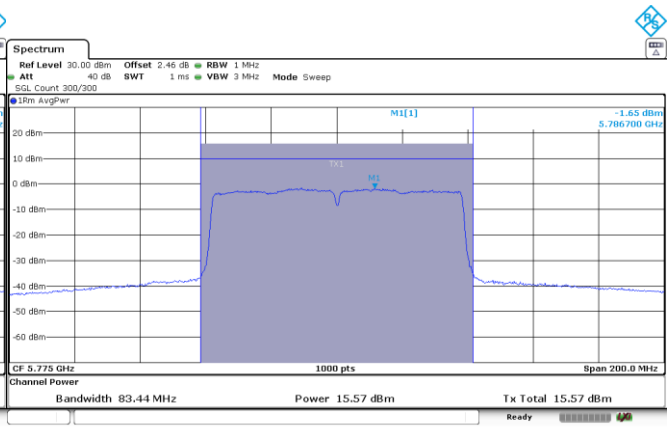
CORE 2

Mode : 802.11ac VHT80 – SDM – 80MHz – MIMO – CORE 0 & CORE 1 & CORE 2

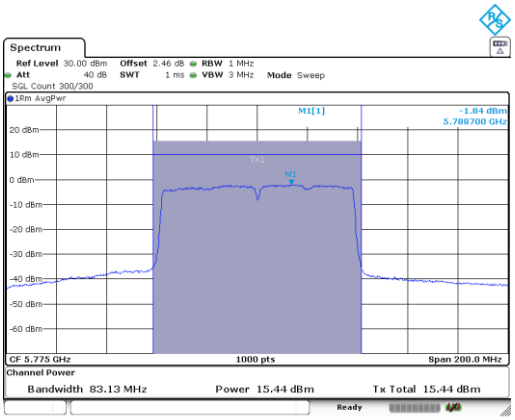
Channel 155



CORE 0



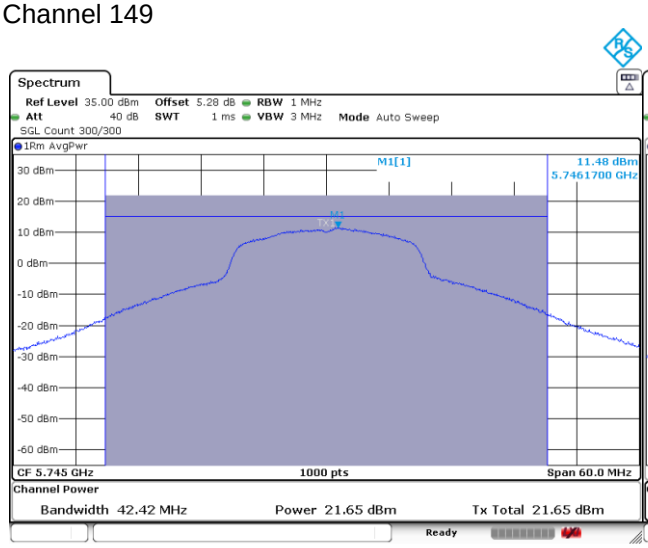
CORE 1



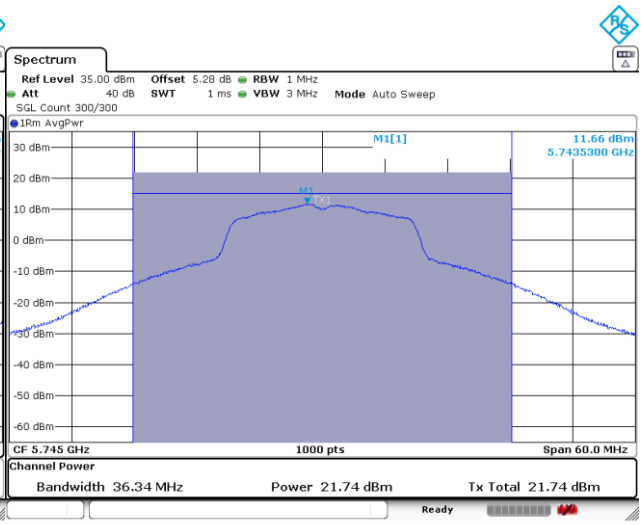
CORE 2

Mode : 802.11n HT20 – TxBF – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

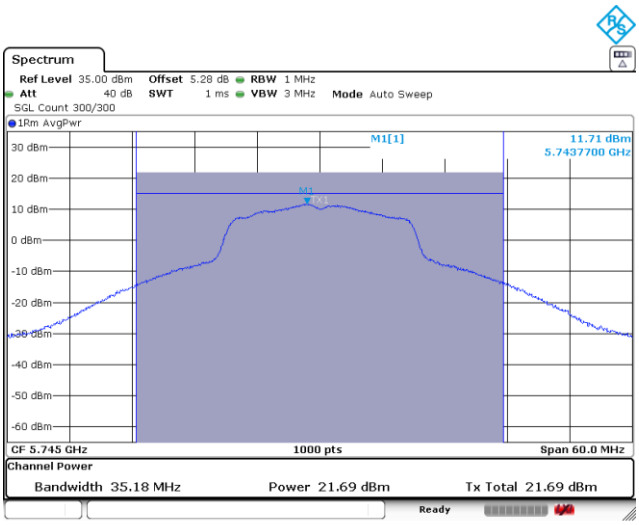
Channel 149



CORE 0

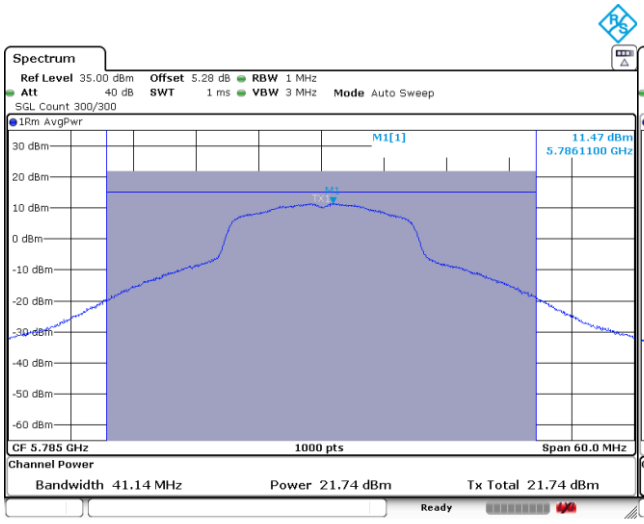


CORE 1

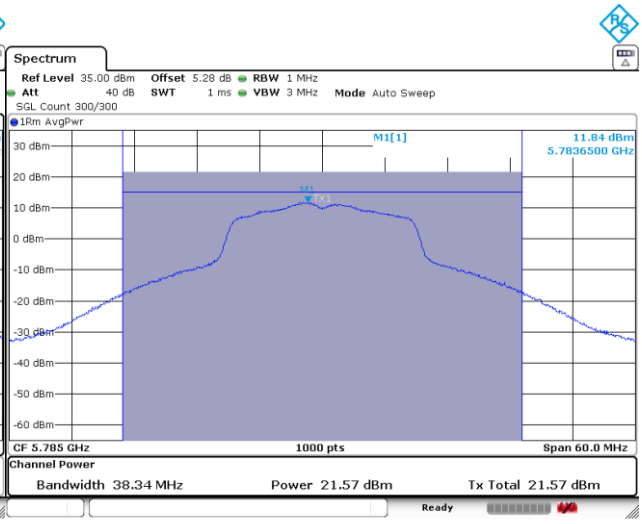


CORE 2

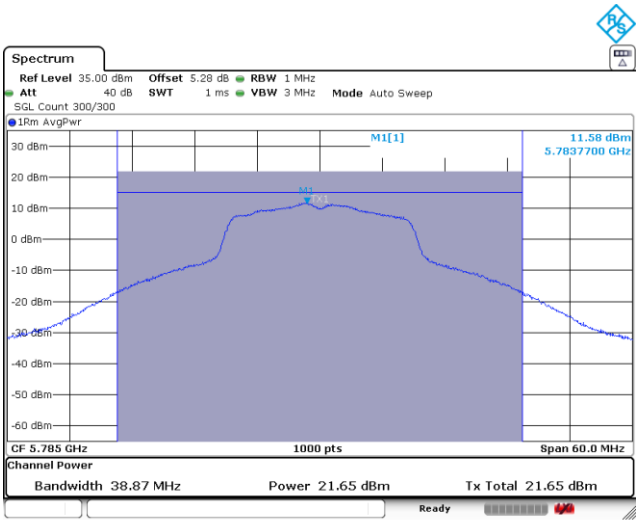
Channel 157



CORE 0

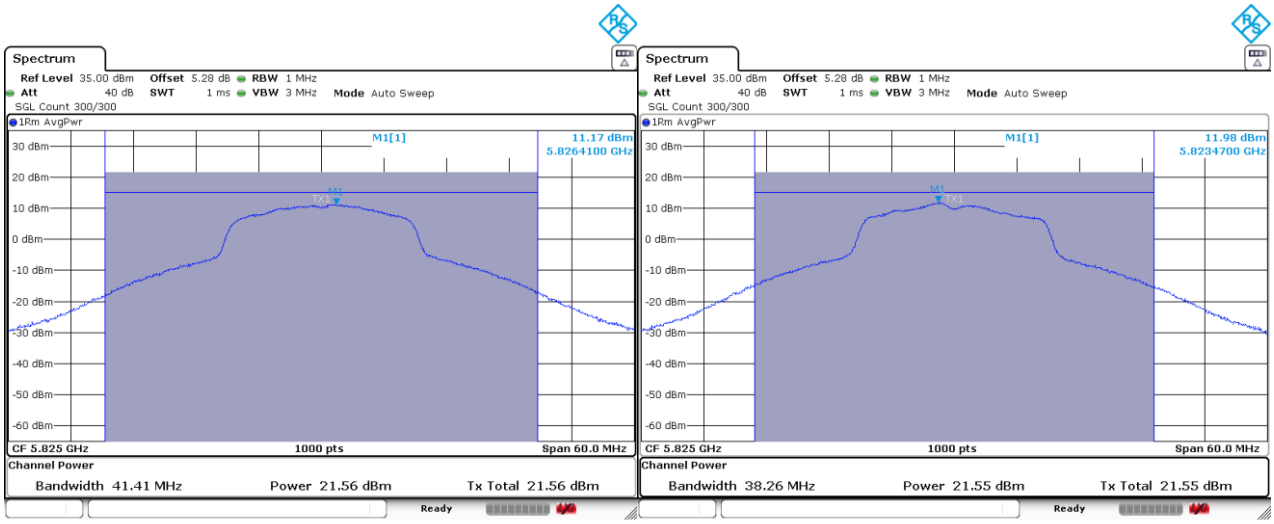


CORE 1

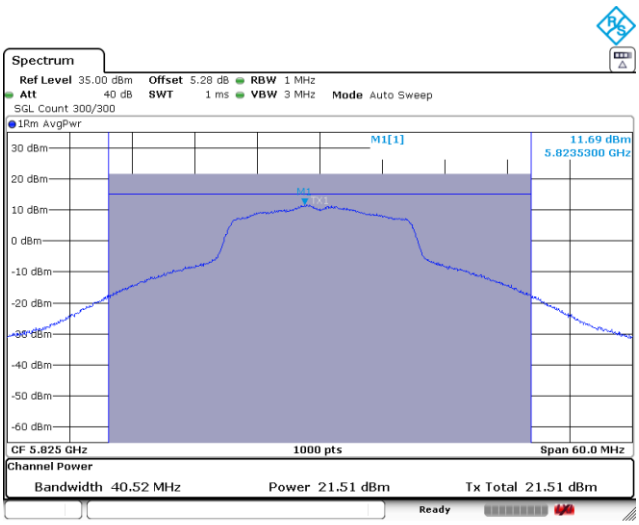


CORE 2

Channel 165



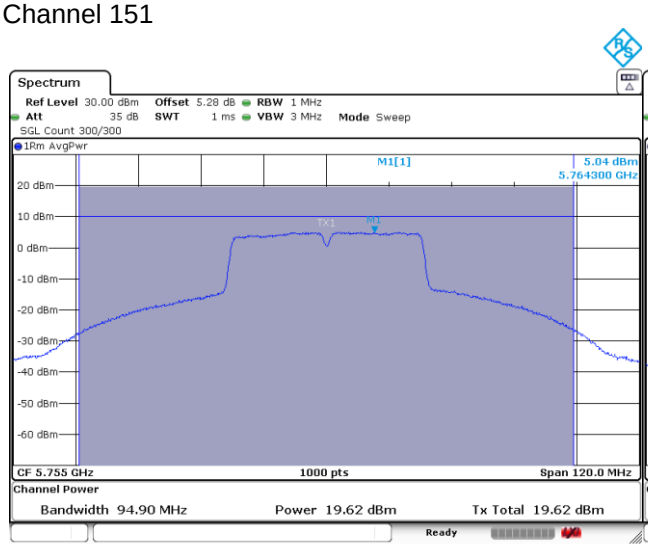
CORE 0 CORE 1



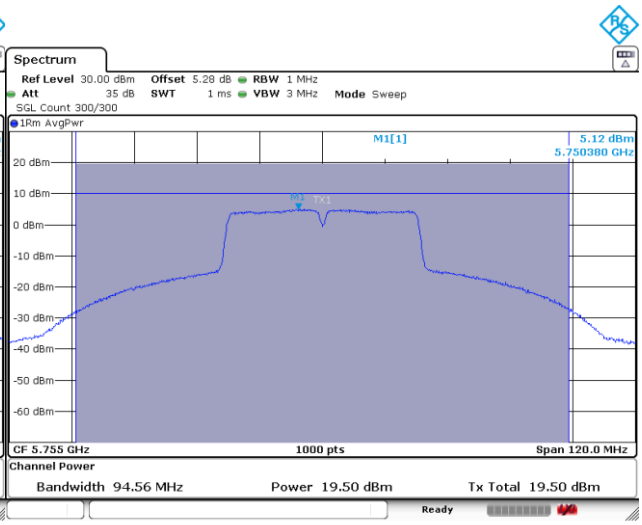
CORE 2

Mode : 802.11n HT40 – TxBF – 40MHz – MIMO – CORE 0 & CORE 1 & CORE 2

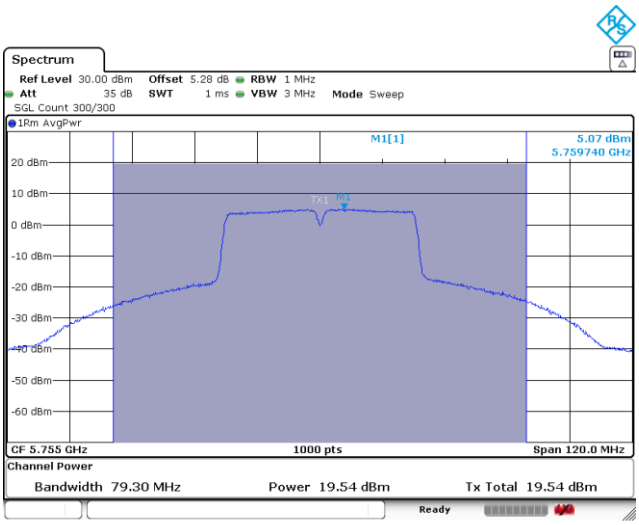
Channel 151



CORE 0

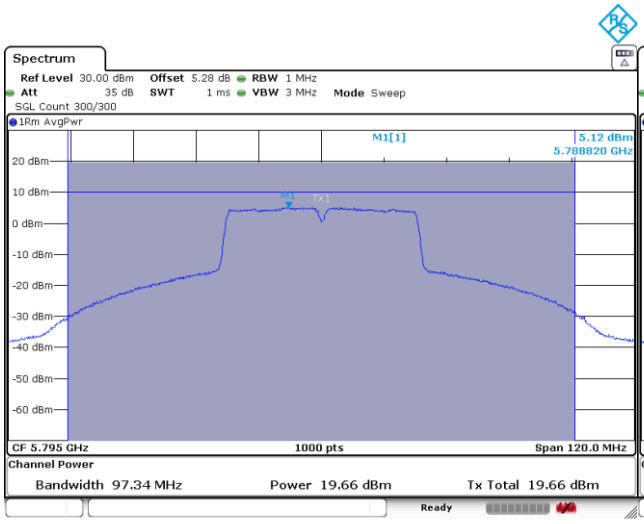


CORE 1

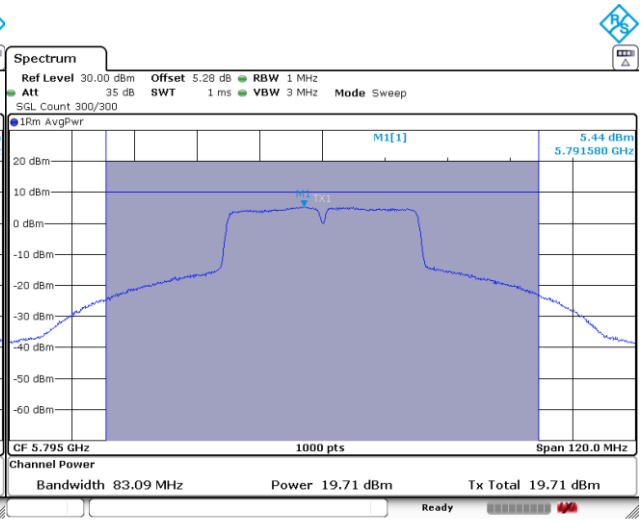


CORE 2

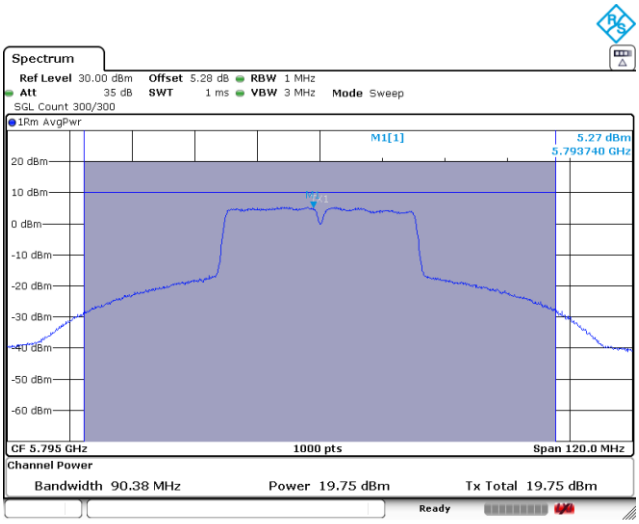
Channel 159



CORE 0



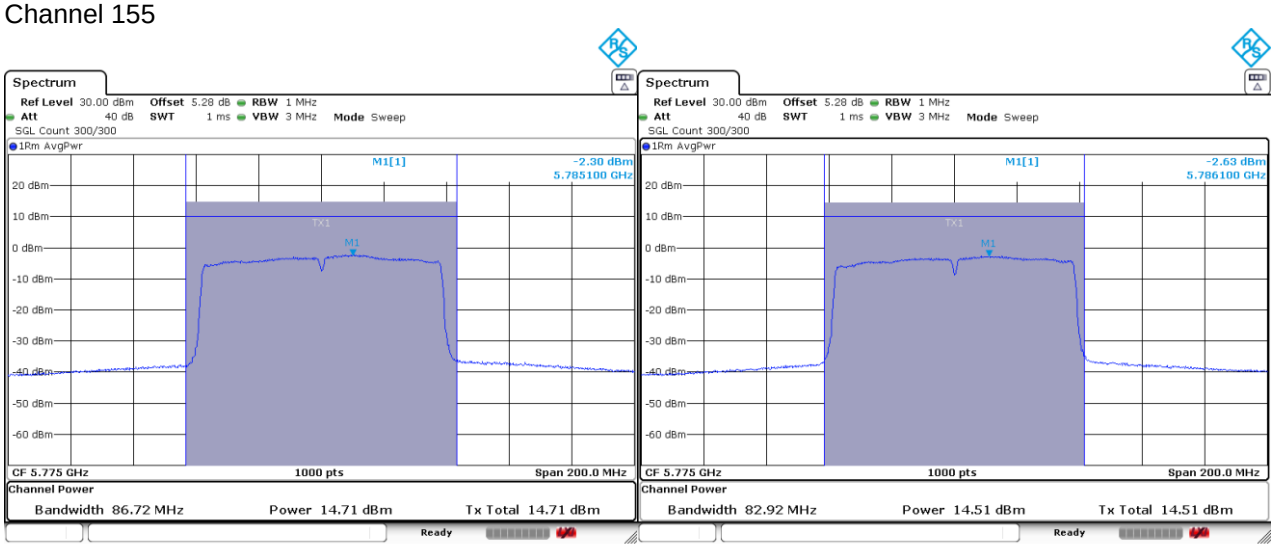
CORE 1



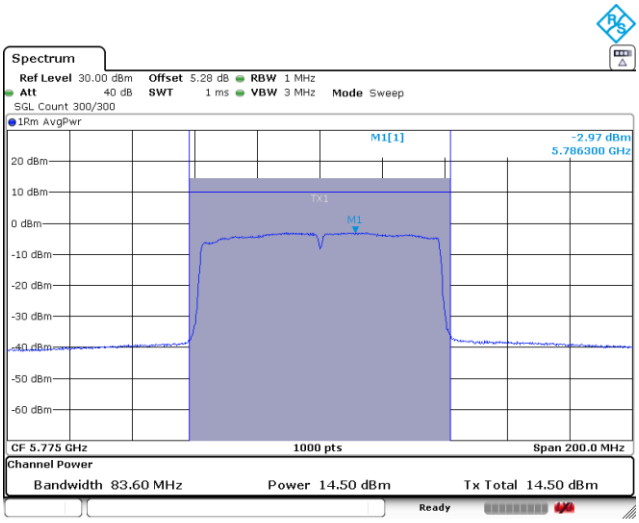
CORE 2

Mode : 802.11ac VHT80 – TxBF – 80MHz – MIMO – CORE 0 & CORE 1 & CORE 2

Channel 155



CORE 0 CORE 1


Spectrum
Ref Level 30.00 dBm Offset 5.28 dB RBW 1 MHz
Att 40 dB SWT 1 ms VBW 3 MHz Mode Sweep
SGL Count 300/300
1Rm AvgPwr
M1[1] -2.97 dBm
5.786300 GHz
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
TX1
M1
CF 5.775 GHz
1000 pts
Span 200.0 MHz
Channel Power
Bandwidth 83.60 MHz
Power 14.50 dBm
Tx Total 14.50 dBm
Ready

CORE 2

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

FCC 15.407/RSS-247: The maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RESULTS

The maximum power spectral density (PSD) was measured using the method according to point F) referencing E.2.b) (Method SA-1) and E.2.b) (Method SA-2) of Guidance 789033 D02 General UNII Test Procedures New Rules v02r01.

In accordance with ANSI C63.10 Section 4.1.4.1, use of bandwidths greater than those specified can produce higher readings. Compliance against the applicable limits is showns using a 1 MHz resolution bandwidth. This was deemed worst case.

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

For 2Tx CDD and 2Tx TxBF modes, the EUT has a directional antenna gain of 6.60 dBi. In accordance with Part 15.407 (a)(1)(iv), the limit was reduced by the amount in dB the antenna gain exceeds 6 dBi. The limit has been reduced by 0.60 to 29.40 dBm.

For 3Tx CDD and 3Tx TxBF modes, the EUT has a directional antenna gain of 7.43 dBi. In accordance with Part 15.407 (a)(1)(iv), the limit was reduced by the amount in dB the antenna gain exceeds 6 dBi. The limit has been reduced by 1.43 to 28.57 dBm.

The PSD test uses the same setup than the transmitter maximum conducted output power test. The result of the Peak PSD was measured by colocation a maker on the peak of the signal and the results are in the tables below.

Mode : 802.11a - 20MHz – SISO – CORE 2

	Channel 149 5745 MHz	Channel 157 5785 MHz	Channel 165 5825 MHz
PSD (dBm/MHz)	10.42	10.39	10.38
PSD Limit (dBm/500KHz)	30		
Margin (dB)	19.58	19.61	19.62
Measurement uncertainty (dB)	<±1.20		

Mode : 802.11n HT20 - 20MHz – SISO – CORE 2

	Channel 149 5745 MHz	Channel 157 5785 MHz	Channel 165 5825 MHz
PSD (dBm/MHz)	10.35	10.32	10.33
PSD Limit (dBm/500KHz)	30		
Margin (dB)	19.65	19.68	19.67
Measurement uncertainty (dB)	<±1.20		

Mode : 802.11n HT40 - 40MHz – SISO – CORE 2

	Channel 151 5755 MHz	Channel 159 5795 MHz
PSD (dBm/MHz)	7.25	7.30
Duty Cycle Correction Factor (dB)	0.10	0.10
PSD Corrected (dBm/MHz)	7.35	7.40
PSD Limit (dBm/500KHz)	30	
Margin (dB)	22.65	22.60
Measurement uncertainty (dB)	<±1.20	

Mode : 802.11ac VHT80 - 80MHz – SISO – CORE 2

	Channel 155 5775 MHz
PSD (dBm/MHz)	0.5
Duty Cycle Correction Factor (dB)	0.15
PSD Corrected (dBm/MHz)	0.65
PSD Limit (dBm/500KHz)	30
Margin (dB)	29.35
Measurement uncertainty (dB)	<±1.20

Mode : 802.11n HT20 – CDD – 20MHz – MIMO – CORE 0 & CORE 2

	Channel 149 5745 MHz		Channel 157 5785 MHz		Channel 165 5825 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2	CORE 0	CORE 2
PSD (dBm/MHz)	10.24	10.20	10.32	10.30	10.13	9.89
Combined PSD (dBm/MHz)	13.23		13.32		13.02	
PSD Limit (dBm/500KHz)	29.40					
Margin (dB)	16.17		16.08		16.37	
Measurement uncertainty (dB)	<±1.20					

Mode : 802.11n HT40 – CDD – 40MHz – MIMO – CORE 0 & CORE 2

	Channel 151 5755 MHz		Channel 159 5795 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2
PSD (dBm/MHz)	5.18	5.18	5.42	5.46
Duty Cycle Correction Factor (dB)	0.09	0.09	0.09	0.09
PSD Corrected (dBm/MHz)	5.27	5.27	5.51	5.55
Combined PSD (dBm/MHz)	8.28		8.54	
PSD Limit (dBm/500KHz)	29.40			
Margin (dB)	21.12		20.86	
Measurement uncertainty (dB)	<±1.20			

Mode : 802.11ac VHT80 – CDD – 80MHz – MIMO – CORE 0 & CORE 2

	Channel 155 5775 MHz	
	CORE 0	CORE 2
PSD (dBm/MHz)	-0.26	-0.37
Duty Cycle Correction Factor (dB)	0.16	0.16
PSD corrected (dBm/MHz)	-0.10	-0.21
Combined PSD (dBm/MHz)	2.86	
PSD Limit (dBm/500KHz)	29.40	
Margin (dB)	26.54	
Measurement uncertainty (dB)	<±1.20	

Mode : 802.11n HT20 – SDM – 20MHz – MIMO – CORE 0 & CORE 2

	Channel 149 5745 MHz		Channel 157 5785 MHz		Channel 165 5825 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2	CORE 0	CORE 2
PSD (dBm/MHz)	10.20	10.16	10.22	10.31	10.18	10.23
Combined PSD (dBm/MHz)	13.19		13.28		13.22	
PSD Limit (dBm/500KHz)	30					
Margin (dB)	16.81		16.72		16.78	
Measurement uncertainty (dB)	<±1.20					

Mode : 802.11n HT40 – SDM – 40MHz – MIMO – CORE 0 & CORE 2

	Channel 151 5755 MHz		Channel 159 5795 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2
PSD (dBm/MHz)	5.34	5.09	5.39	5.37
Duty Cycle Correction Factor (dB)	0.14	0.14	0.14	0.14
PSD Corrected (dBm/MHz)	5.48	5.23	5.53	5.51
Combined PSD (dBm/MHz)	8.37		8.53	
PSD Limit (dBm/500KHz)	30			
Margin (dB)	21.63		21.47	
Measurement uncertainty (dB)	<±1.20			

Mode : 802.11ac VHT80 – SDM – 80MHz – MIMO – CORE 0 & CORE 2

	Channel 155 5775 MHz	
	CORE 0	CORE 2
PSD (dBm/MHz)	-0.6	-0.49
Duty Cycle Correction Factor (dB)	0.29	0.29
PSD corrected (dBm/MHz)	-0.31	-0.20
Combined PSD (dBm/MHz)	2.76	
PSD Limit (dBm/500KHz)	30	
Margin (dB)	27.24	
Measurement uncertainty (dB)	<±1.20	

Mode : 802.11n HT20 – TxBF – 20MHz – MIMO – CORE 0 & CORE 2

	Channel 149 5745 MHz		Channel 157 5785 MHz		Channel 165 5825 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2	CORE 0	CORE 2
PSD (dBm/MHz)	11.48	11.23	11.36	11.15	11.47	11.09
Duty Cycle Correction Factor (dB)	0.11	0.11	0.11	0.11	0.11	0.11
PSD corrected (dBm/MHz)	11.59	11.34	11.47	11.26	11.58	11.20
Combined PSD (dBm/MHz)	14.48		14.38		14.40	
PSD Limit (dBm/500KHz)	29.40					
Margin (dB)	14.92		15.02		14.99	
Measurement uncertainty (dB)	<±1.20					

Mode : 802.11n HT40 – TxBF – 40MHz – MIMO – CORE 0 & CORE 2

	Channel 151 5755 MHz		Channel 159 5795 MHz	
	CORE 0	CORE 2	CORE 0	CORE 2
PSD (dBm/MHz)	5.09	5.29	5.13	4.95
Duty Cycle Correction Factor (dB)	0.13	0.13	0.13	0.13
PSD Corrected (dBm/MHz)	5.22	5.42	5.26	5.08
Combined PSD (dBm/MHz)	8.33		8.18	
PSD Limit (dBm/500KHz)	29.40			
Margin (dB)	21.07		21.22	
Measurement uncertainty (dB)	<±1.20			

Mode : 802.11ac VHT80 – TxBF – 80MHz – MIMO – CORE 0 & CORE 2

	Channel 155 5775 MHz	
	CORE 0	CORE 2
PSD (dBm/MHz)	-1.79	-1.60
Duty Cycle Correction Factor (dB)	0.11	0.11
PSD corrected (dBm/MHz)	-1.68	-1.49
Combined PSD (dBm/MHz)	1.43	
PSD Limit (dBm/500KHz)	29.40	
Margin (dB)	27.97	
Measurement uncertainty (dB)	<±1.20	

Mode : 802.11n HT20 – CDD – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

	Channel 149 5745 MHz			Channel 157 5785 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
PSD (dBm/MHz)	10.32	10.26	10.16	10.18	10.08	10.27
Combined PSD (dBm/MHz)	15.02			14.95		
PSD Limit (dBm/500KHz)	28.57					
Margin (dB)	13.55			13.62		
Measurement uncertainty (dB)	<±1.20					

	Channel 165 5825 MHz		
	CORE 0	CORE 1	CORE 2
PSD (dBm/MHz)	10.21	10.27	10.14
Combined PSD (dBm/MHz)	14.98		
PSD Limit (dBm/500KHz)	28.57		
Margin (dB)	13.59		
Measurement uncertainty (dB)	<±1.20		

Mode : 802.11n HT40 – CDD – 40MHz – MIMO – CORE 0 & CORE 1 & CORE 2

	Channel 151 5755 MHz			Channel 159 5795 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
PSD (dBm/MHz)	5.31	5.43	5.34	5.35	5.07	5.33
Combined PSD (dBm/MHz)	10.31			10.02		
PSD Limit (dBm/500KHz)	28.57					
Margin (dB)	18.44			18.55		
Measurement uncertainty (dB)	<±1.20					

Mode : 802.11ac VHT80 – CDD – 80MHz – MIMO – CORE 0 & CORE 1 & CORE 2

	Channel 155 5775 MHz		
	CORE 0	CORE 1	CORE 2
PSD (dBm/MHz)	-1.71	-1.98	-1.26
Duty Cycle Correction Factor (dB)	0.18	0.18	0.18
PSD corrected (dBm/MHz)	-1.53	-1.80	-1.08
Combined PSD (dBm/MHz)	3.31		
PSD Limit (dBm/500KHz)	28.57		
Margin (dB)	25.26		
Measurement uncertainty (dB)	<±1.20		

Mode : 802.11n HT20 – SDM – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

	Channel 149 5745 MHz			Channel 157 5785 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
PSD (dBm/MHz)	10.13	10.36	10.47	10.32	10.19	10.27
Duty Cycle Correction Factor (dB)	0.11	0.11	0.11	0.11	0.11	0.11
PSD corrected (dBm/MHz)	10.24	10.47	10.58	10.43	10.30	10.38
Combined PSD (dBm/MHz)	15.21			15.14		
PSD Limit (dBm/500KHz)	30					
Margin (dB)	14.79			14.86		
Measurement uncertainty (dB)	<±1.20					

	Channel 165 5825 MHz		
	CORE 0	CORE 1	CORE 2
PSD (dBm/MHz)	10.15	10.22	10.25
Duty Cycle Correction Factor (dB)	0.11	0.11	0.11
PSD corrected (dBm/MHz)	10.26	10.33	10.36
Combined PSD (dBm/MHz)	15.09		
PSD Limit (dBm/500KHz)	30		
Margin (dB)	14.91		
Measurement uncertainty (dB)	<±1.20		

Mode : 802.11n HT40 – SDM – 40MHz – MIMO – CORE 0 & CORE 1 & CORE 2

	Channel 151 5755 MHz			Channel 159 5795 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
PSD (dBm/MHz)	5.37	5.50	5.52	5.37	5.05	5.40
Duty Cycle Correction Factor (dB)	0.22	0.22	0.22	0.22	0.22	0.22
PSD corrected (dBm/MHz)	5.59	5.72	5.74	5.59	5.27	5.62
Combined PSD (dBm/MHz)	10.45			10.26		
PSD Limit (dBm/500KHz)	30					
Margin (dB)	19.55			19.74		
Measurement uncertainty (dB)	<±1.20					

Mode : 802.11ac VHT80 – SDM – 80MHz – MIMO – CORE 0 & CORE 1 & CORE 2

	Channel 155 5775 MHz		
	CORE 0	CORE 1	CORE 2
PSD (dBm/MHz)	-1.85	-1.65	-1.84
Duty Cycle Correction Factor (dB)	0.37	0.37	0.37
PSD corrected (dBm/MHz)	-1.48	-1.28	-1.47
Combined PSD (dBm/MHz)	3.36		
PSD Limit (dBm/500KHz)	30		
Margin (dB)	26.64		
Measurement uncertainty (dB)	<±1.20		

Mode : 802.11n HT20 – TxBF – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

	Channel 149 5745 MHz			Channel 157 5785 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
PSD (dBm/MHz)	11.48	11.66	11.71	11.47	11.84	11.58
Duty Cycle Correction Factor (dB)	0.14	0.14	0.14	0.14	0.14	0.14
PSD corrected (dBm/MHz)	11.62	11.80	11.85	11.61	11.98	11.72
Combined PSD (dBm/MHz)	16.52			16.54		
PSD Limit (dBm/500KHz)	28.57					
Margin (dB)	12.05			12.03		
Measurement uncertainty (dB)	<±1.20					

	Channel 165 5825 MHz		
	CORE 0	CORE 1	CORE 2
PSD (dBm/MHz)	11.17	11.98	11.69
Duty Cycle Correction Factor (dB)	0.14	0.14	0.14
PSD corrected (dBm/MHz)	11.31	12.12	11.83
Combined PSD (dBm/MHz)	16.53		
PSD Limit (dBm/500KHz)	28.57		
Margin (dB)	12.04		
Measurement uncertainty (dB)	<±1.20		

Mode : 802.11n HT40 – TxBF – 40MHz – MIMO – CORE 0 & CORE 1 & CORE 2

	Channel 151 5755 MHz			Channel 159 5795 MHz		
	CORE 0	CORE 1	CORE 2	CORE 0	CORE 1	CORE 2
PSD (dBm/MHz)	5.04	5.12	5.07	5.12	5.44	5.27
Duty Cycle Correction Factor (dB)	0.13	0.13	0.13	0.13	0.13	0.13
PSD corrected (dBm/MHz)	5.17	5.25	5.20	5.25	5.57	5.40
Combined PSD (dBm/MHz)	9.98			10.18		
PSD Limit (dBm/500KHz)	28.57					
Margin (dB)	18.59			18.39		
Measurement uncertainty (dB)	<±1.20					

Mode : 802.11ac VHT80 – TxBF – 80MHz – MIMO – CORE 0 & CORE 1 & CORE 2

	Channel 155 5775 MHz		
	CORE 0	CORE 1	CORE 2
PSD (dBm/MHz)	-2.3	-2.63	-2.97
Duty Cycle Correction Factor (dB)	0.12	0.12	0.12
PSD corrected (dBm/MHz)	-2.18	-2.51	-2.85
Combined PSD (dBm/MHz)	2.27		
PSD Limit (dBm/500KHz)	28.57		
Margin (dB)	26.30		
Measurement uncertainty (dB)	<±1.20		

FCC Section 15.407(b)(4)(6) /RSS-247 6.2.4.2. Transmitter Out of Band Radiated Emissions

SPECIFICATION

For transmitters operating in the 5.725–5.85 GHz band:
All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)):

Frequency Range (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	300
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 40000	500	54	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

RESULTS:

The situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

All tests were performed in a semi-anechoic chamber at a distance of 3 m for the frequency range 30 MHz-25 GHz.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

Test performed on the following worst case channel 157 (5785MHz):

- 802. 11n HT20: MCS0 / MIMO (3Tx CDD) on Core 0 & Core 1 & Core 2

Frequency range 30 MHz-1000 MHz.

Note: The spurious emissions below 1 GHz do not depend on either the operating channel or the modulation mode selected in the EUT.

Spurious levels operating (radiated) closest to limit.

Spurious frequency (MHz)	Polarization	Detector	Emission Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Measurement Uncertainty (dB)
119.644	Vertical	Quasi-Peak	34.8	43.5	8.70	± 3.88
125.012	Horizontal	Quasi-Peak	36	43.5	7.50	± 3.88
144.832	Horizontal	Quasi-Peak	30.2	43.5	13.30	± 3.88
167.336	Horizontal	Quasi-Peak	33.3	43.5	10.20	± 3.88
191.230	Horizontal	Quasi-Peak	34	43.5	9.50	± 3.88

Frequency range 1 GHz-40 GHz

The results in the next tables show the maximum measured levels in the 1-40 GHz frequency range.

Mode : 802.11n HT20 – CDD – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

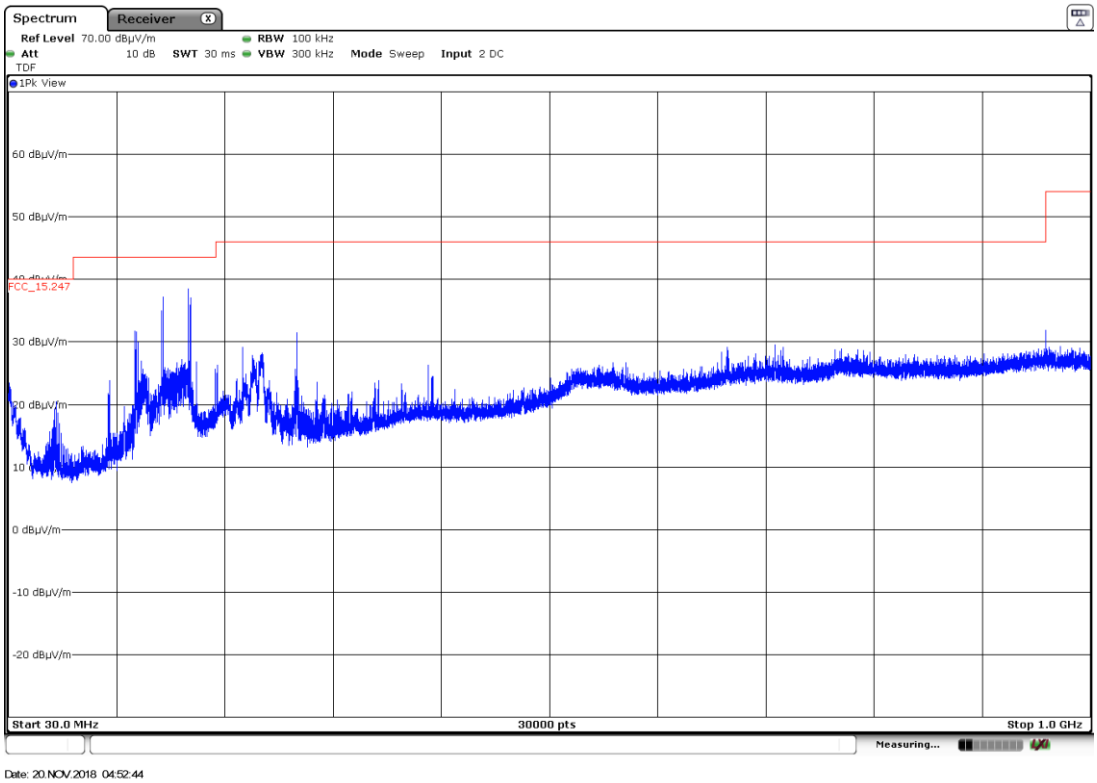
Channel 157 (5785MHz):

No radiated spurious signals were detected at less than 20 dB respect to the limit.

Measurement Uncertainty (dB) < ± 3.05

Verdict: PASS

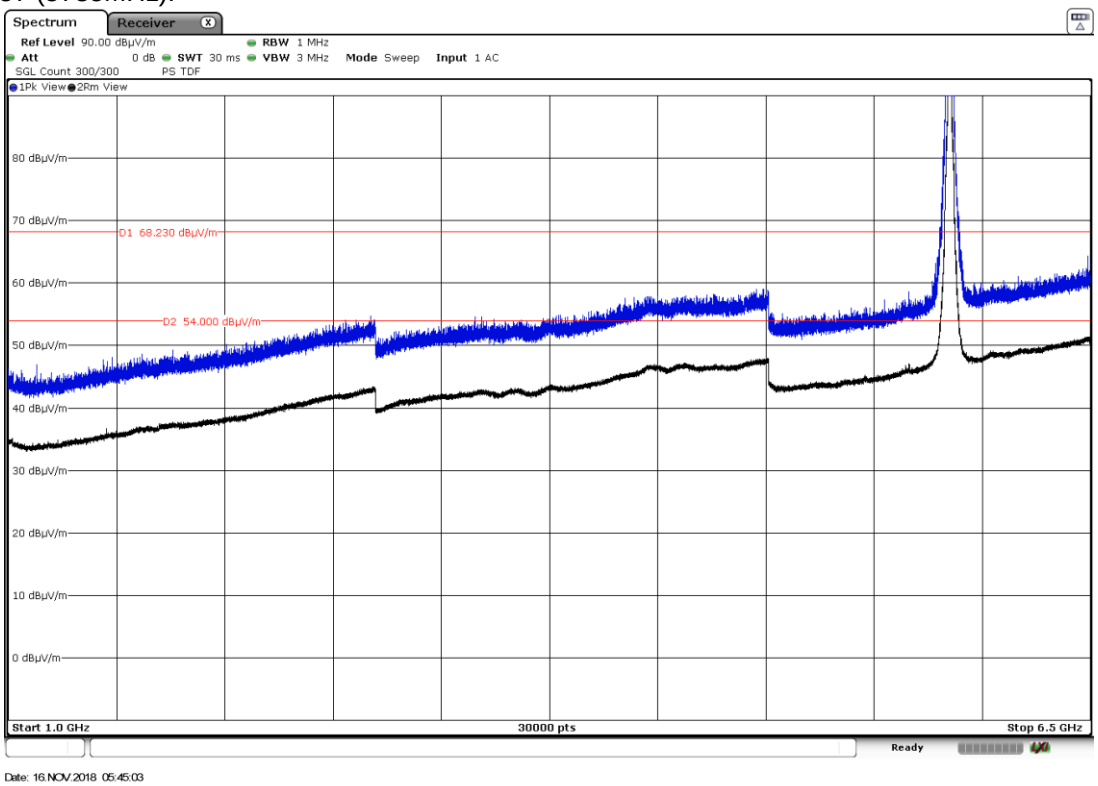
FREQUENCY RANGE 30 MHz-1000 MHz.



FREQUENCY RANGE 1 GHz to 6.5 GHz.

Mode : 802.11n HT20 – CDD – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

Channel 157 (5785MHz):

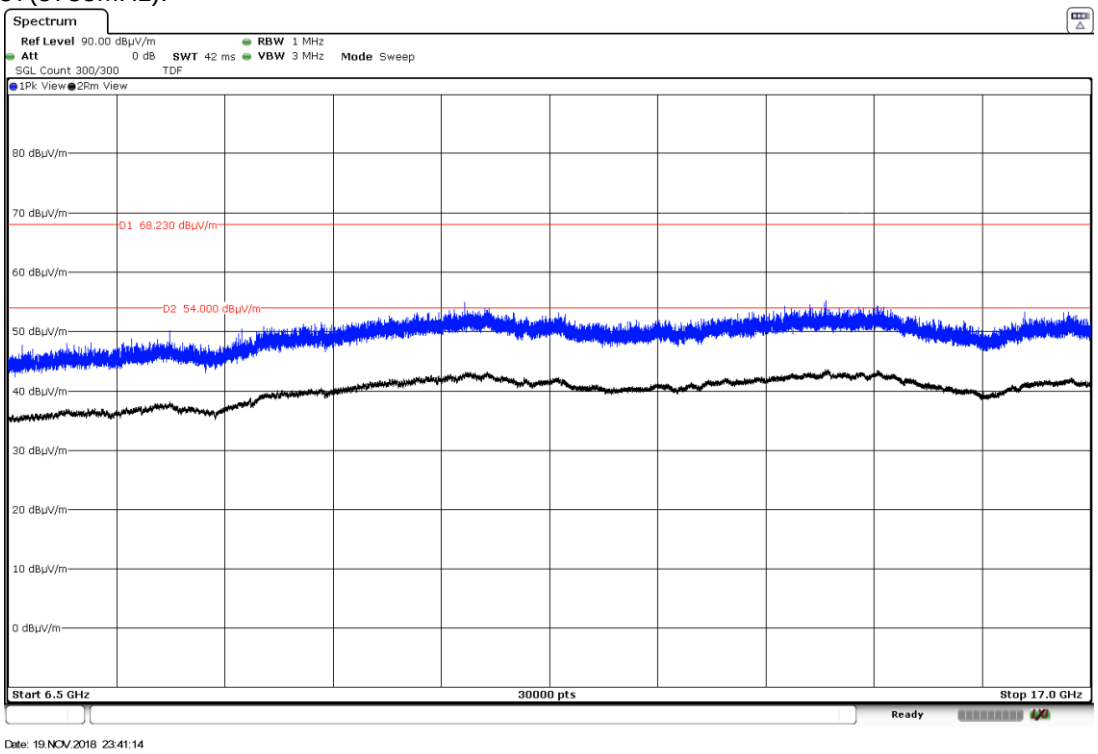


Note: The peak shown in the plot above the limit is the carrier frequency.

FREQUENCY RANGE 6.5 GHz to 17 GHz.

Mode : 802.11n HT20 – CDD – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

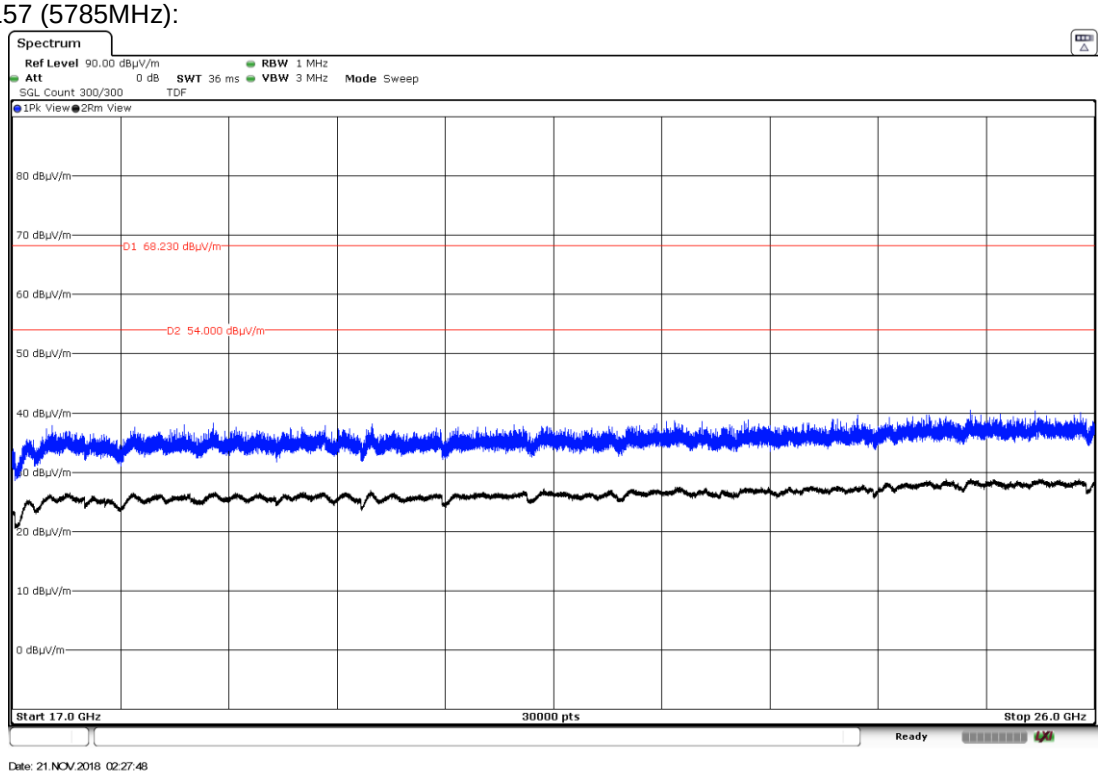
Channel 157(5785MHz):



FREQUENCY RANGE 17 GHz to 26 GHz.

Mode : 802.11n HT20 – CDD – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

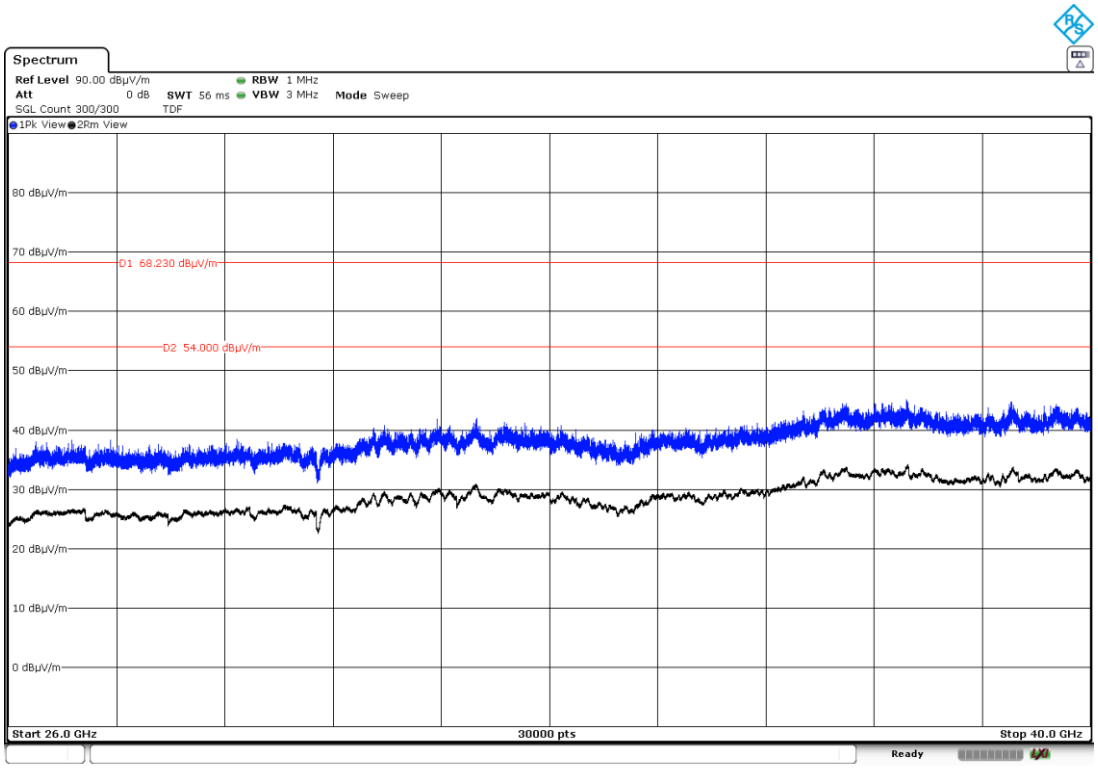
Channel 157 (5785MHz):



FREQUENCY RANGE 26 GHz to 40 GHz.

Mode : 802.11n HT20 – CDD – 20MHz – MIMO – CORE 0 & CORE 1 & CORE 2

Channel 157 (5785MHz):



FCC Section 15.407 Subclause (b) (4) / RSS-247 6.2.4.2. Transmitter Band Edge Radiated Emissions.

SPECIFICATION

For transmitters operating in the 5.725–5.85 GHz band:
All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)):

Frequency Range (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	300
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 40000	500	54	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

RESULTS:

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

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Test performed on the following worst cases modes in all relevant tests channels:

- 802.11a: 6 Mbit/s / SISO on Core 2
- 802.11n HT20: MCS0 / SISO on Core 2
- 802.11n HT40: MCS0 / SISO on Core 2
- 802.11ac VHT80: MCS0x1 / SISO on Core 2
- 802.11n HT20: MCS0 / MIMO / 2Tx CDD on Core 0 & Core 2
- 802.11n HT40: MCS0 / MIMO / 2Tx CDD on Core 0 & Core 2
- 802.11ac VHT80: MCS0x1 / MIMO / 2Tx CDD on Core 0 & Core 2
- 802.11n HT20: MCS8 / MIMO / 2Tx SDM on Core 0 & Core 2
- 802.11n HT40: MCS8 / MIMO / 2Tx SDM on Core 0 & Core 2
- 802.11ac VHT80: MCS0x2 / MIMO / 2Tx SDM on Core 0 & Core 2
- 802.11ac VHT20: MCS0x1 / MIMO / 2Tx TxBF on Core 0 & Core 2
- 802.11ac VHT40: MCS0x1 / MIMO / 2Tx TxBF on Core 0 & Core 2
- 802.11ac VHT80: MCS0x1 / MIMO / 2Tx TxBF on Core 0 & Core 2

- 802.11n HT20: MCS0 / MIMO / 3Tx CDD on Core 0 & Core 1 & Core 2
- 802.11n HT40: MCS0 / MIMO / 3Tx CDD on Core 0 & Core 1 & Core 2
- 802.11ac VHT80: MCS0x1 / MIMO / 3Tx CDD on Core 0 & Core 1 & Core 2

- 802.11n HT20: MCS16 / MIMO / 3Tx SDM on Core 0 &Core 1 & Core 2
- 802.11n HT40: MCS16 / MIMO / 3Tx SDM on Core 0 & Core 1 & Core 2
- 802.11ac VHT80: MCS0x3 / MIMO / 3Tx SDM on Core 0 & Core 1 & Core 2
- 802.11ac VHT20: MCS0x1 / MIMO / 3Tx TxBF on Core 0 & Core 1 & Core 2
- 802.11ac VHT40: MCS0x1 / MIMO / 3Tx TxBF on Core 0 & Core 1 & Core 2
- 802.11ac VHT80: MCS0x1 / MIMO / 3Tx TxBF on Core 0 & Core 1 & Core 2

Results for Mode: 802.11a - 20 MHz – SISO - CORE2

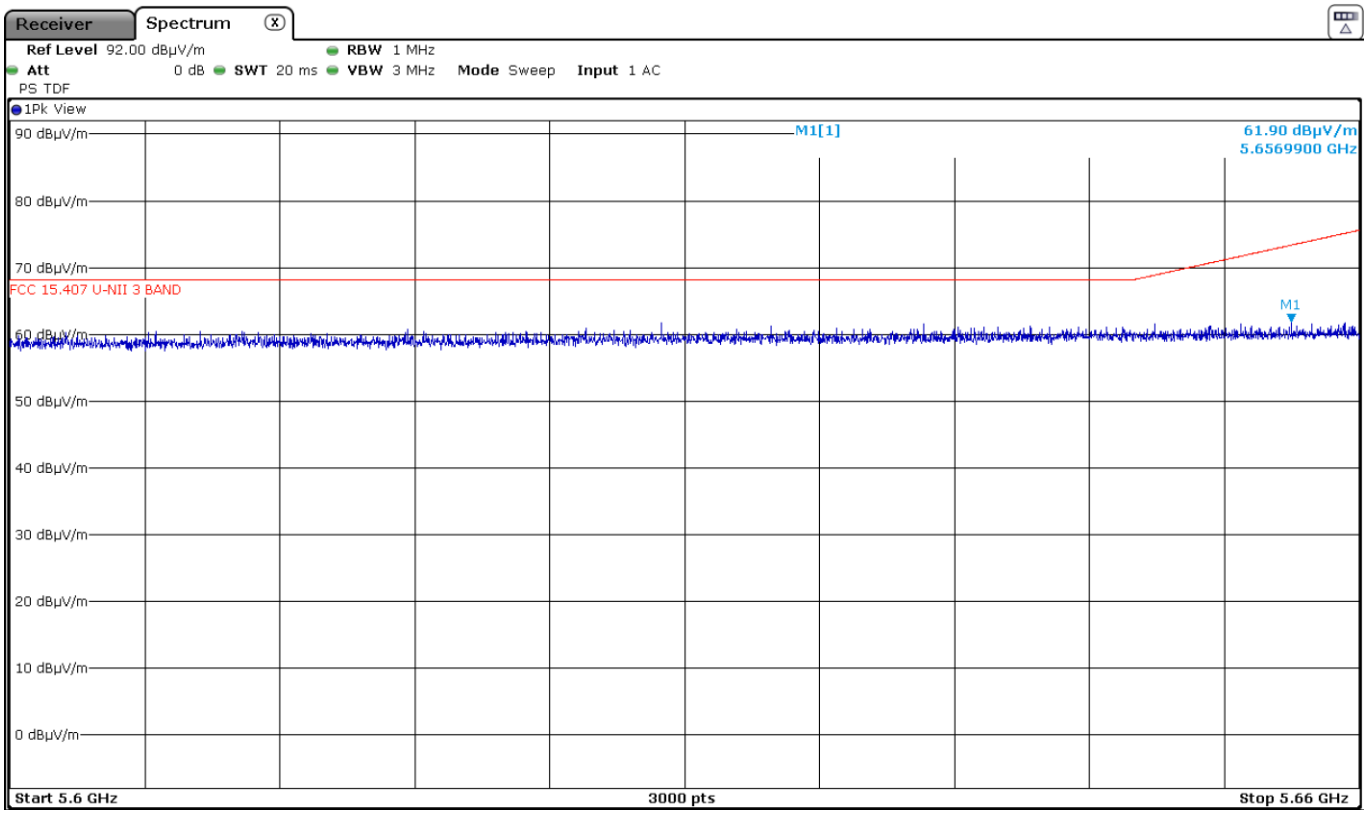
Results: Peak / Channel 149

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuv/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5724.113	Vertical	96.32	119.97	23.66	<± 3.05	PASS

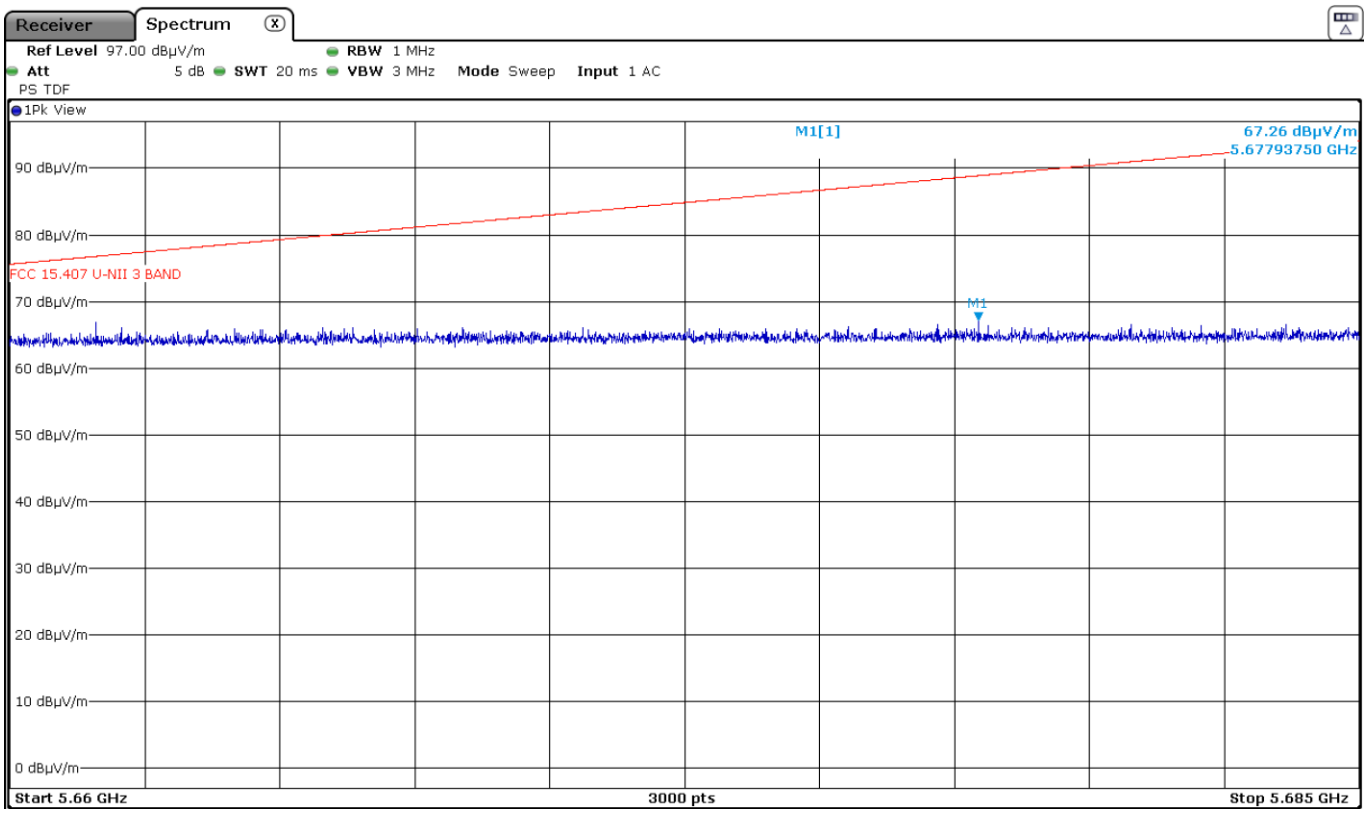
Results: Peak / Channel 165

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuv/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5877.013	Vertical	92.30	103.71	11.41	<± 3.05	PASS

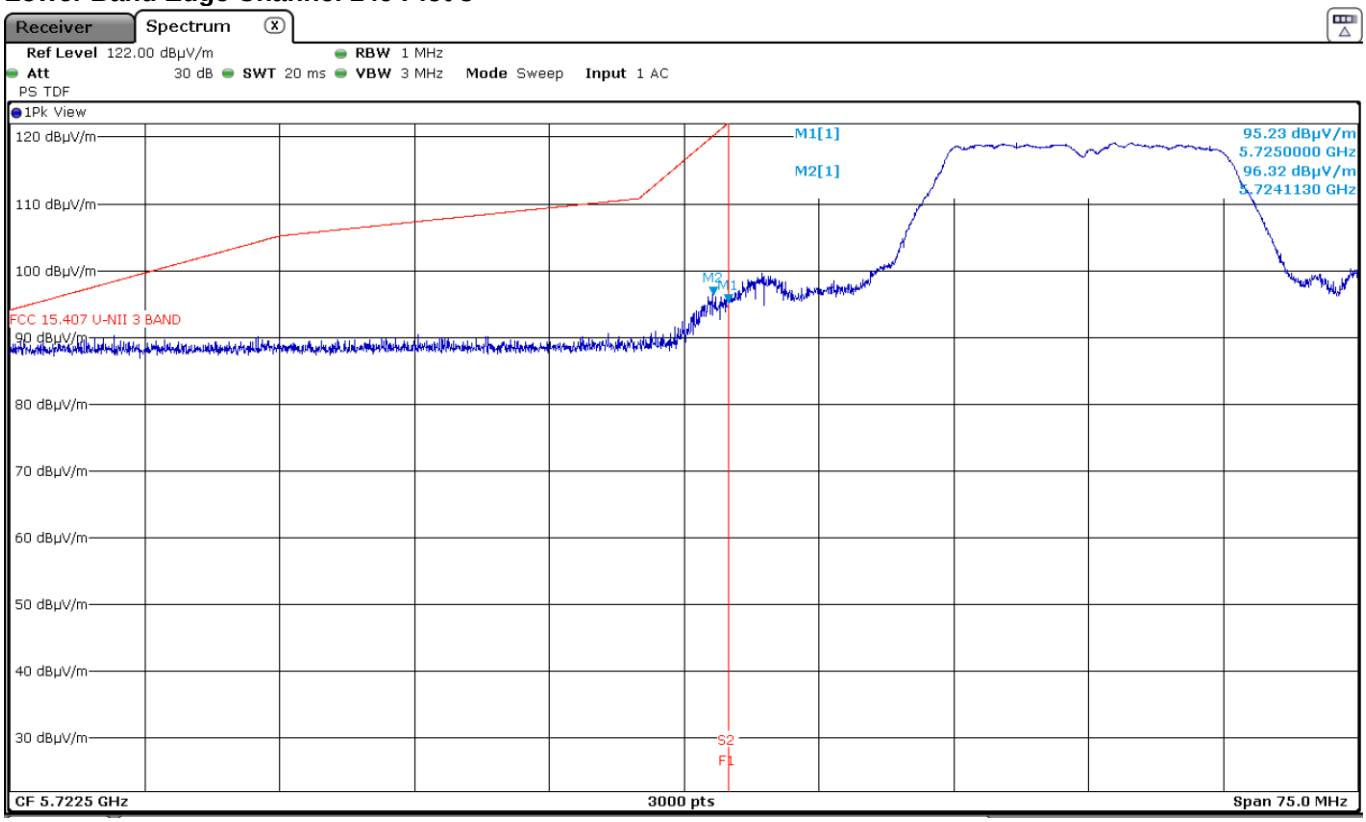
Lower Band Edge Channel 149 Plot 1



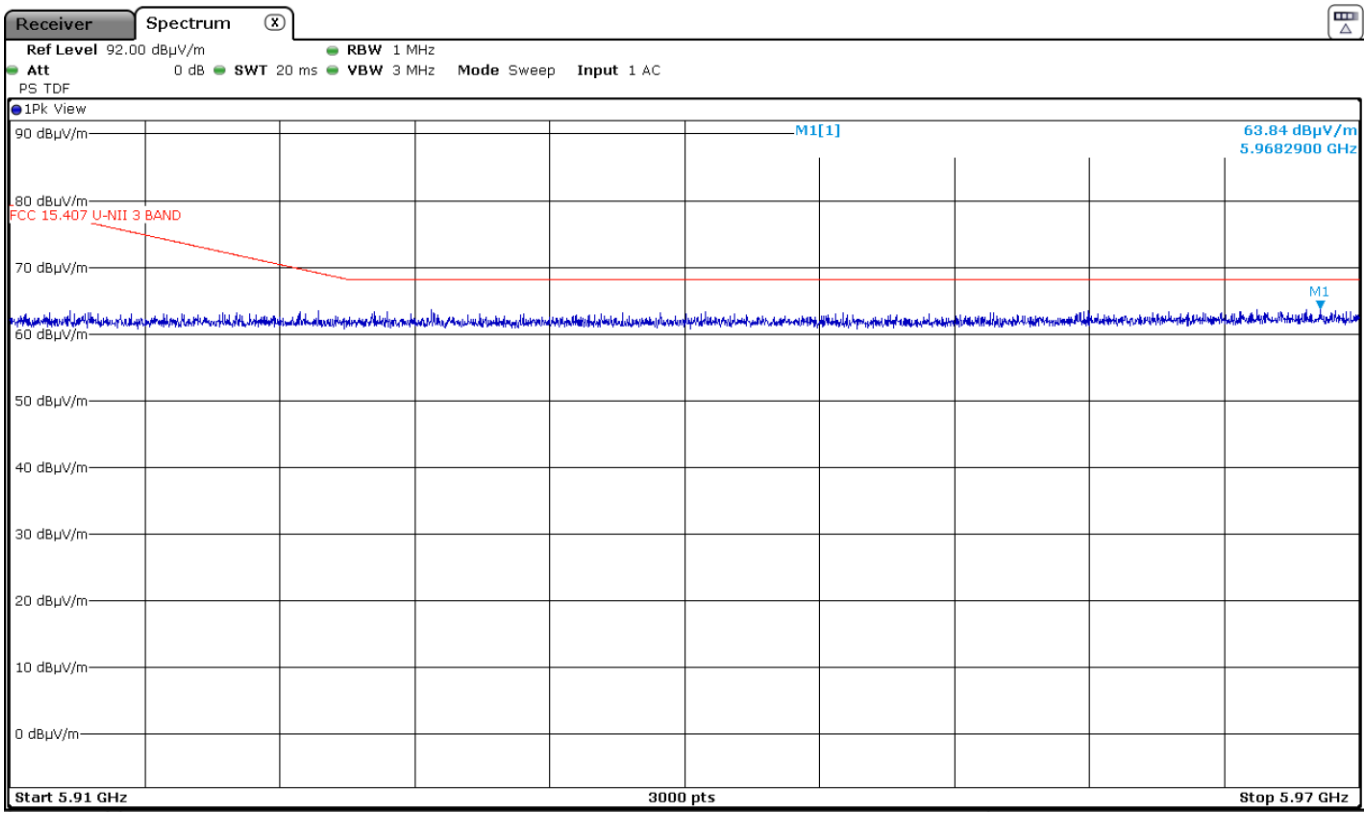
Lower Band Edge Channel 149 Plot 2



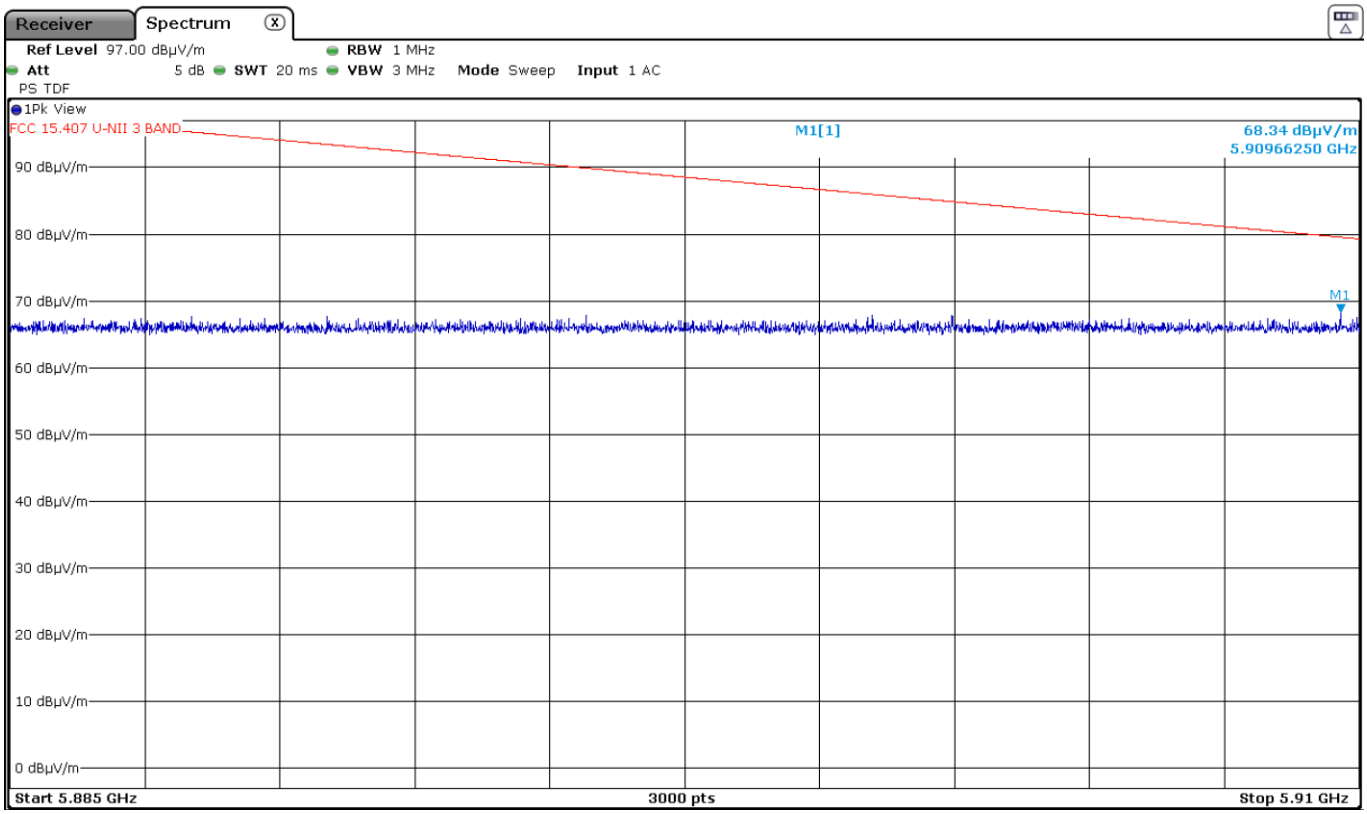
Lower Band Edge Channel 149 Plot 3



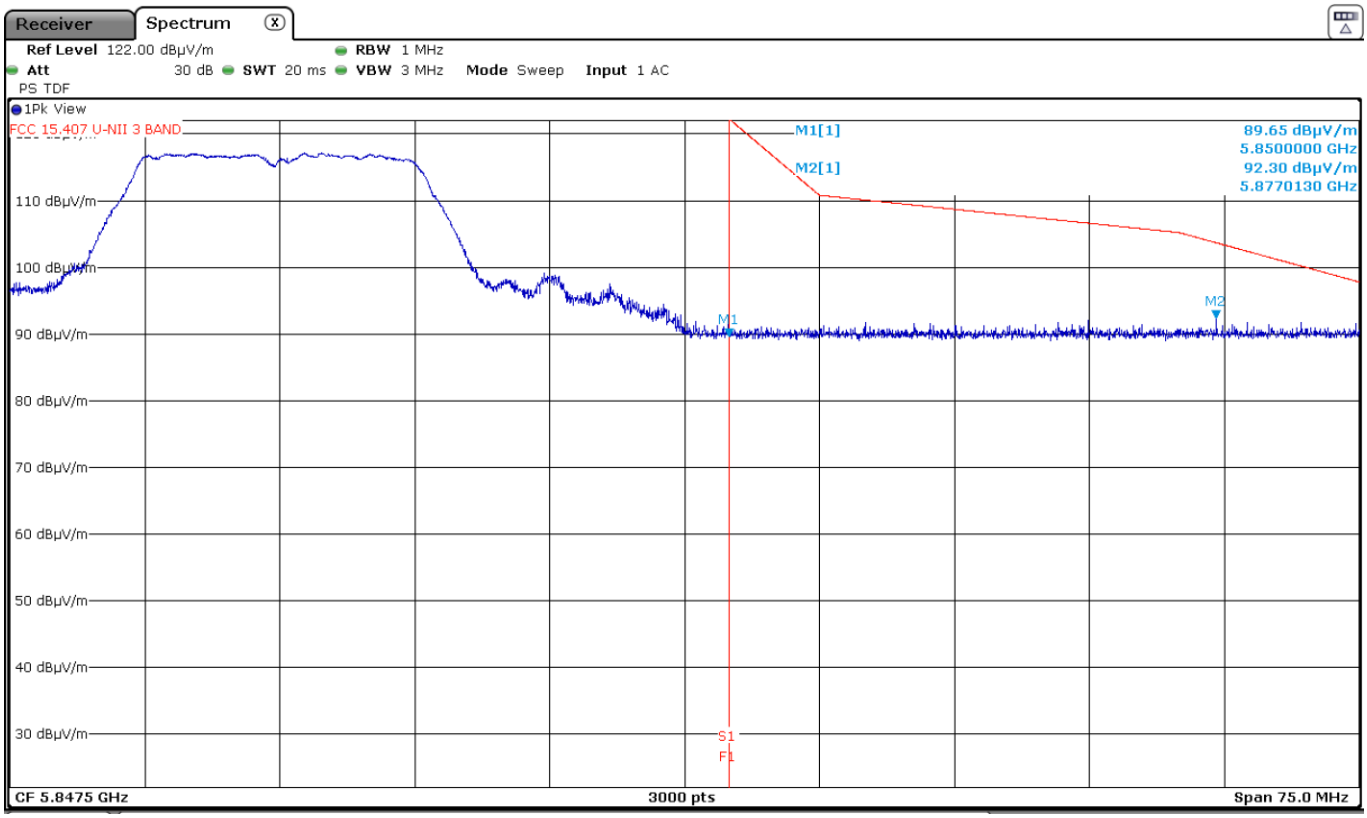
Upper Band Edge Channel 165 Plot 1



Upper Band Edge Channel 165 Plot 2



Upper Band Edge Channel 165 Plot 3



Results: 802.11n HT20 - 20 MHz – SISO - CORE 2

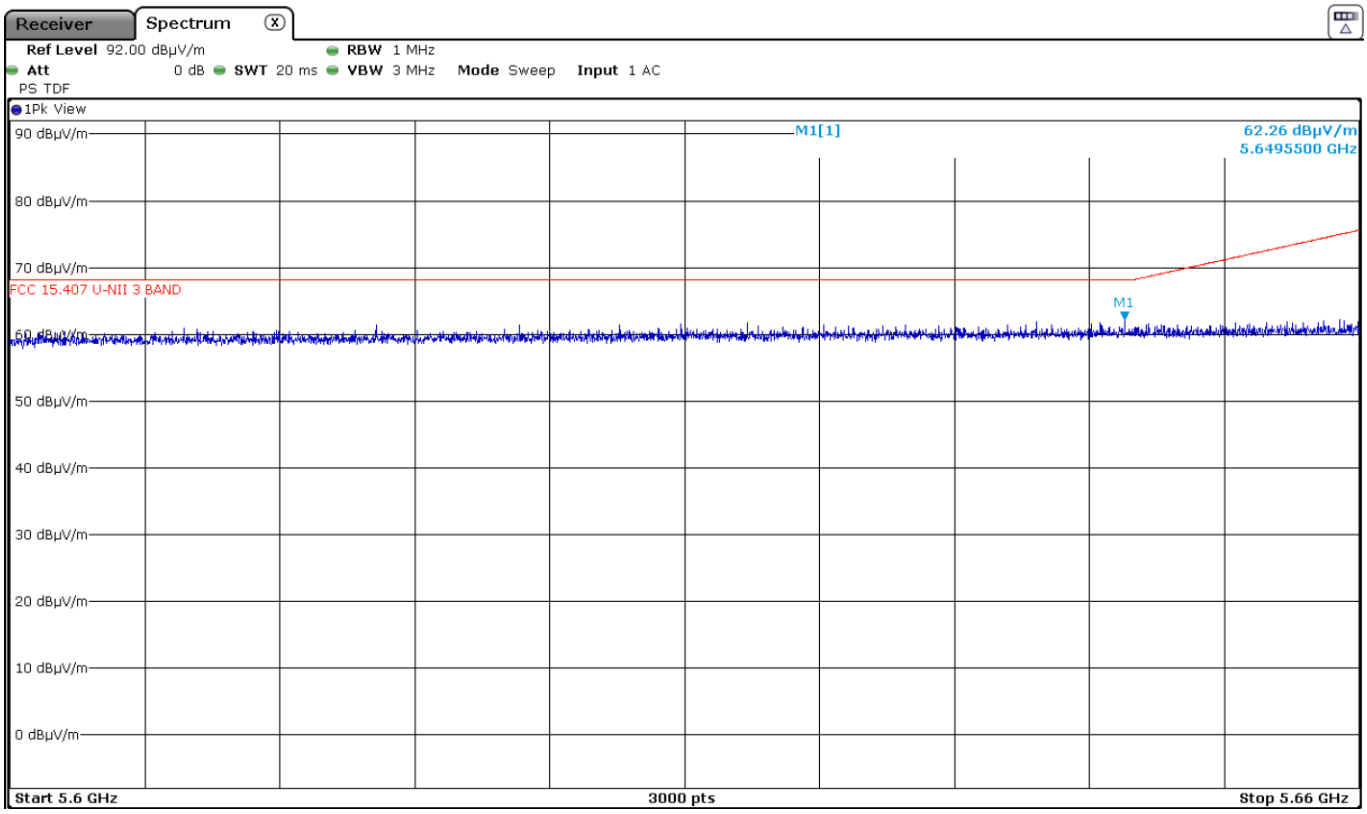
Results: Peak / Channel 149

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuv/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5724.713	Vertical	96.48	121.35	24.87	<± 3.05	PASS

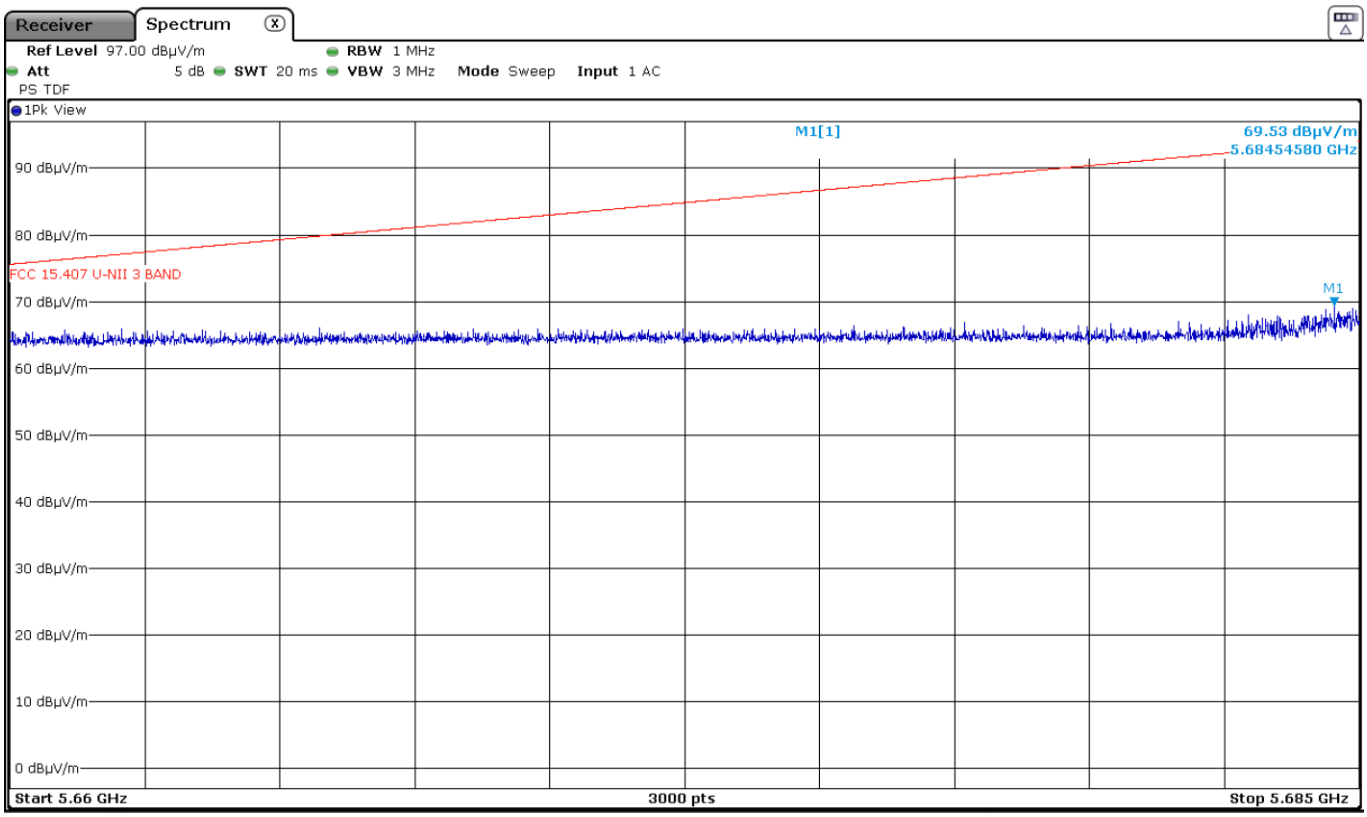
Results: Peak / Channel 165

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuv/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5877.463	Vertical	92.21	103.38	11.17	<± 3.05	PASS

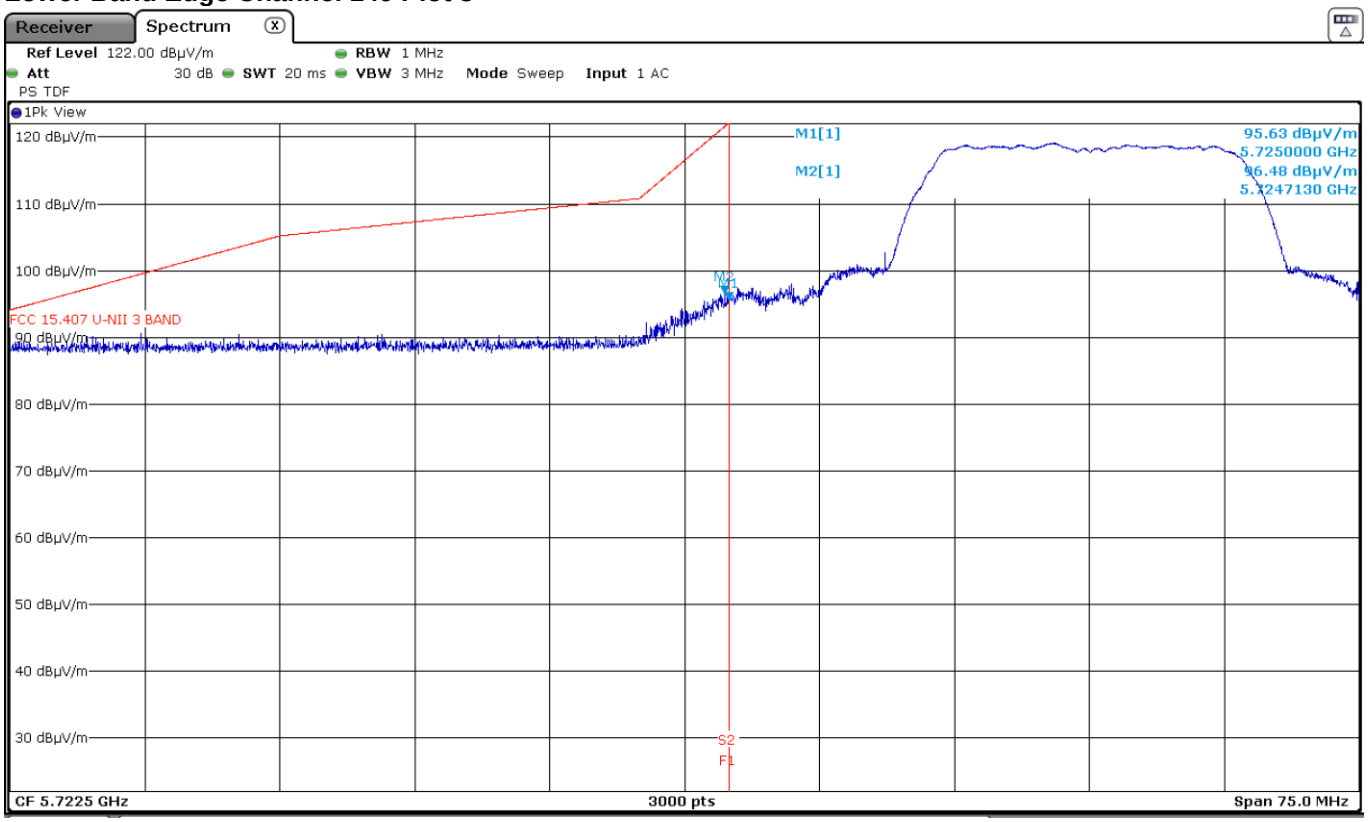
Lower Band Edge Channel 149 Plot 1



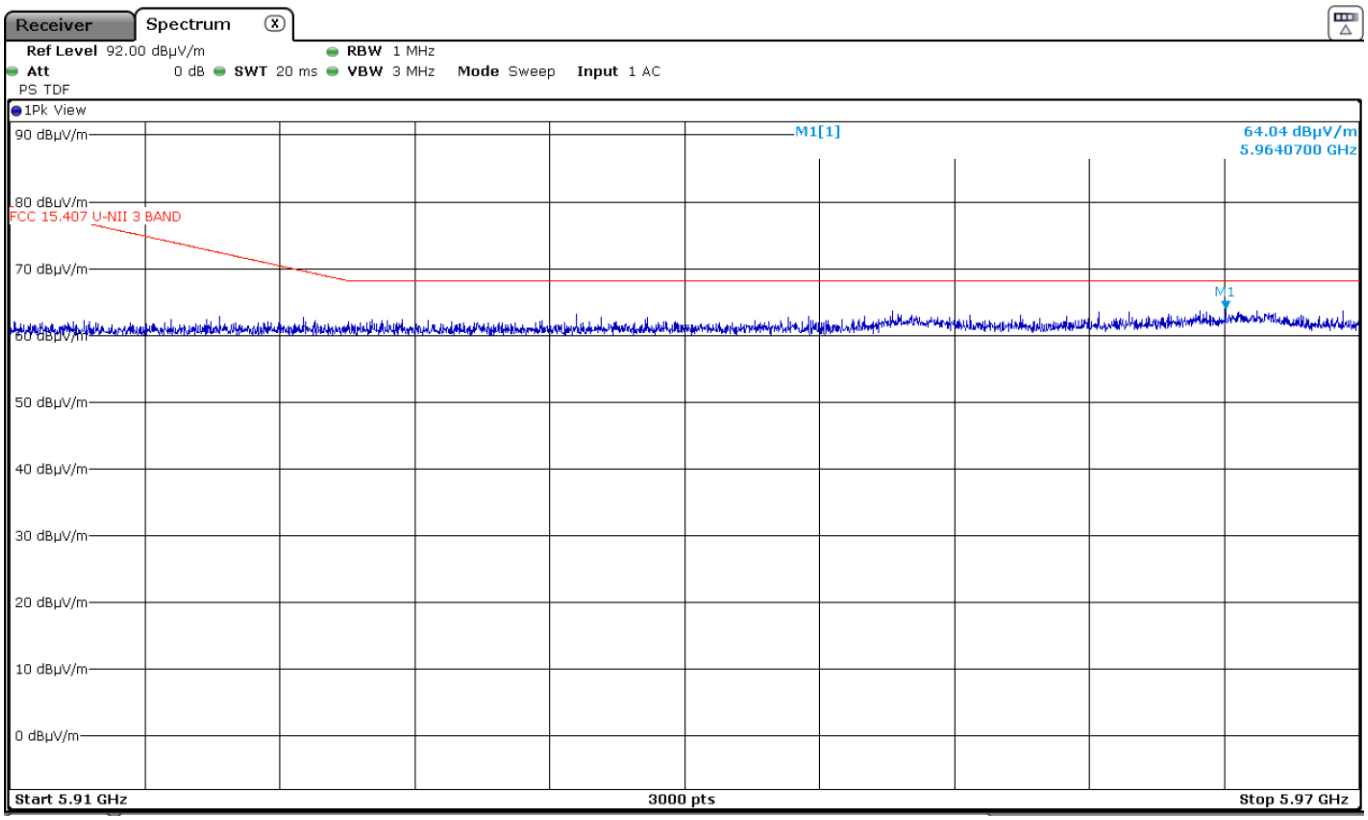
Lower Band Edge Channel 149 Plot 2



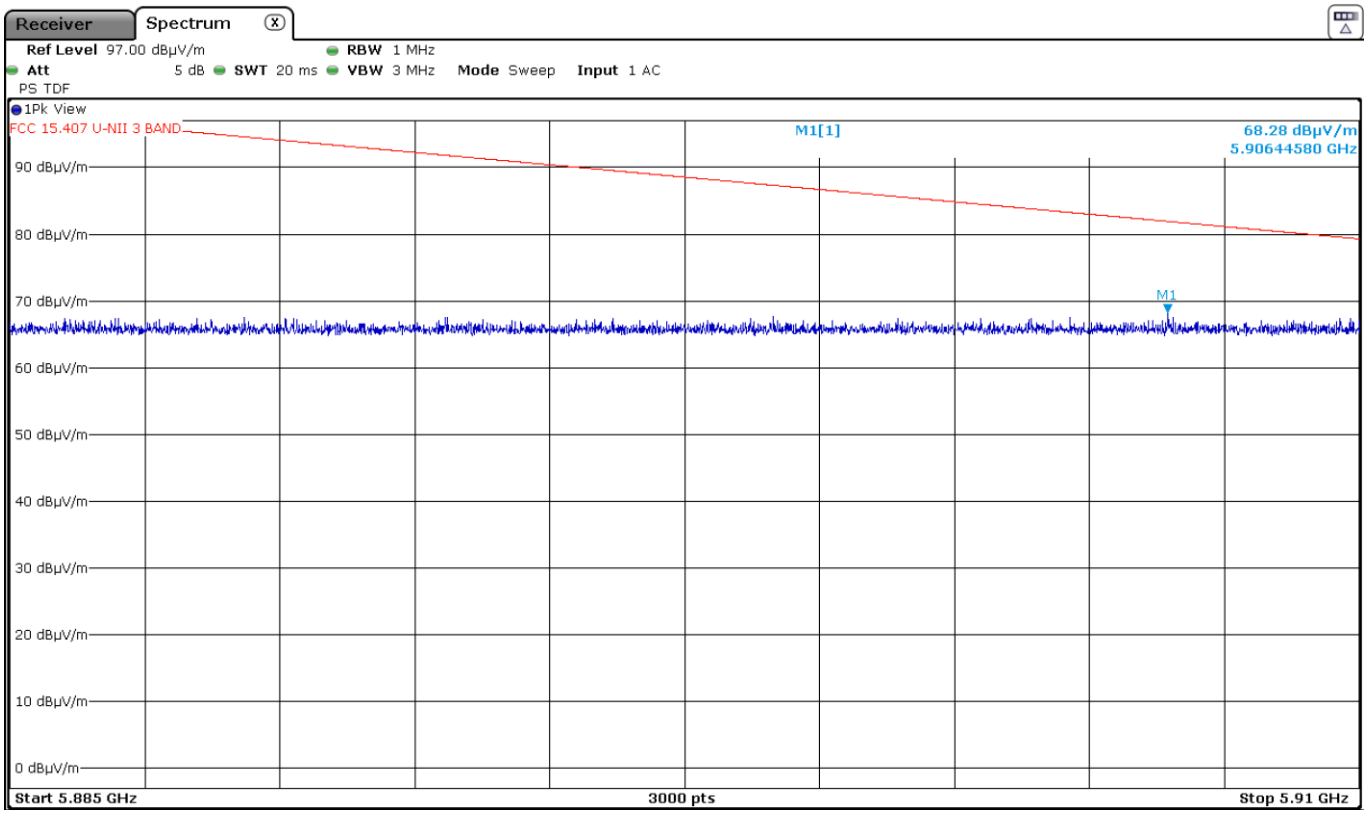
Lower Band Edge Channel 149 Plot 3



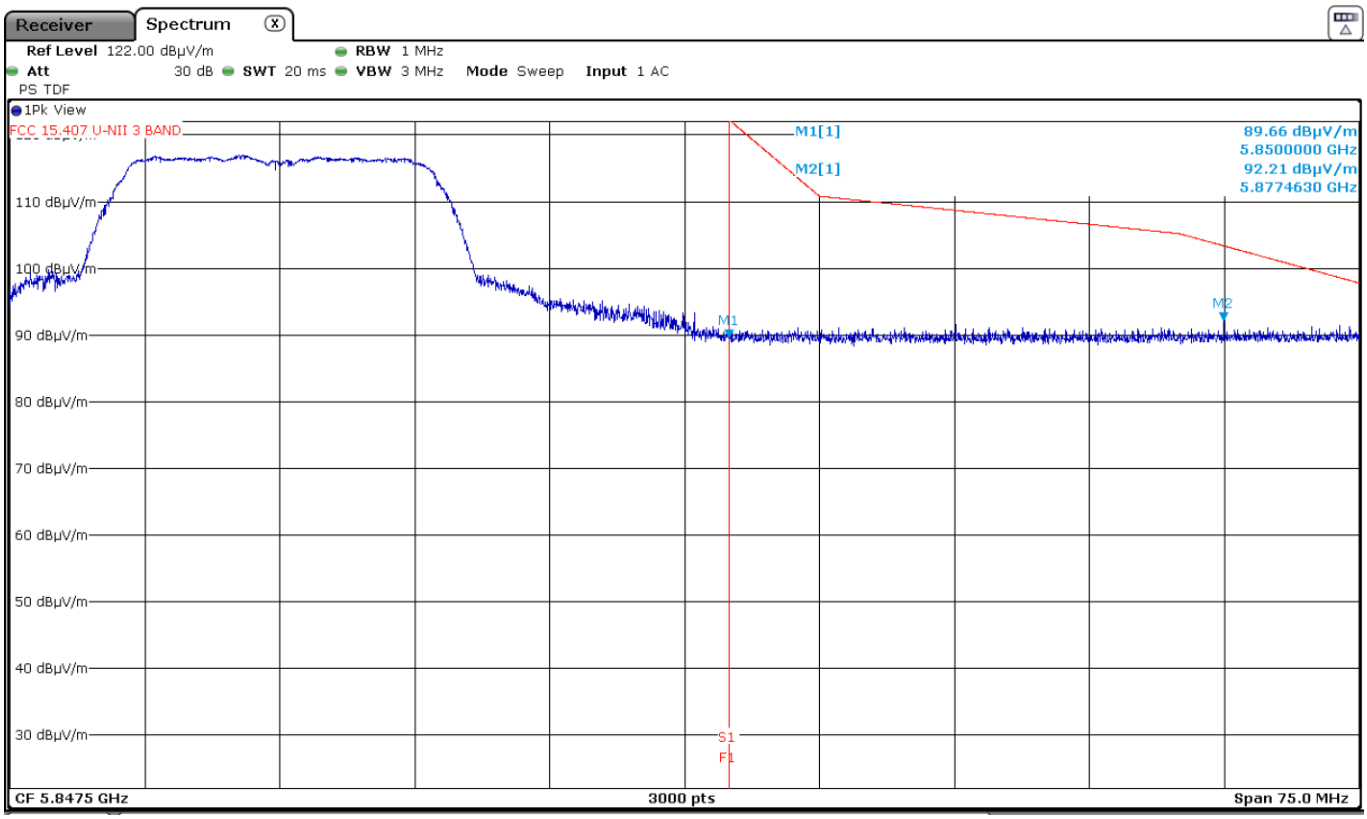
Upper Band Edge Channel 165 Plot 1



Upper Band Edge Channel 165 Plot 2



Upper Band Edge Channel 165 Plot 3



Results for Mode: 802.11n HT20 – CDD - 20 MHz - MIMO - Core 0 + Core 2

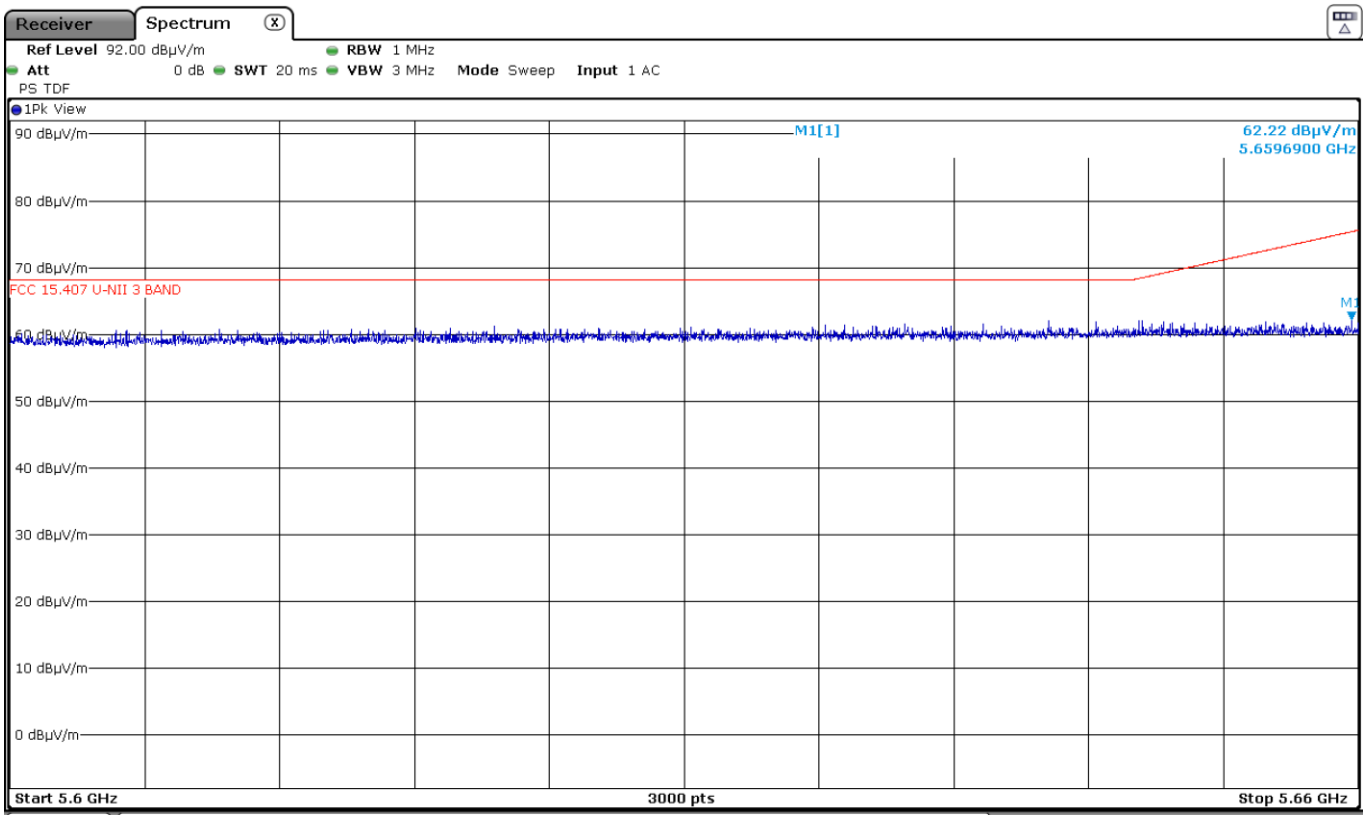
Results: Peak / Channel 149

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuv/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5724.888	Vertical	97.25	121.74	24.49	<± 3.05	PASS

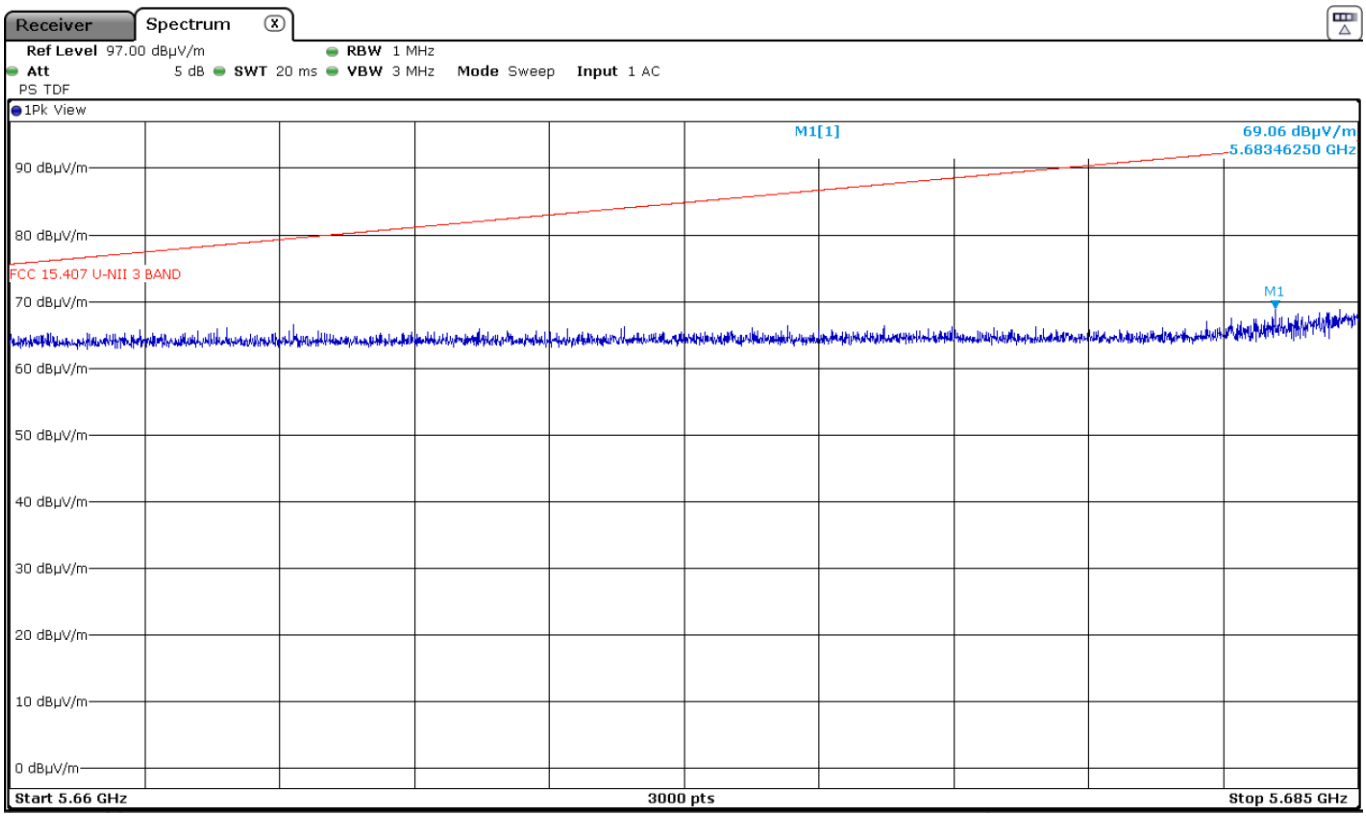
Results: Peak / Channel 165

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuv/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5852.613	Vertical	91.81	116.04	24.23	<± 3.05	PASS

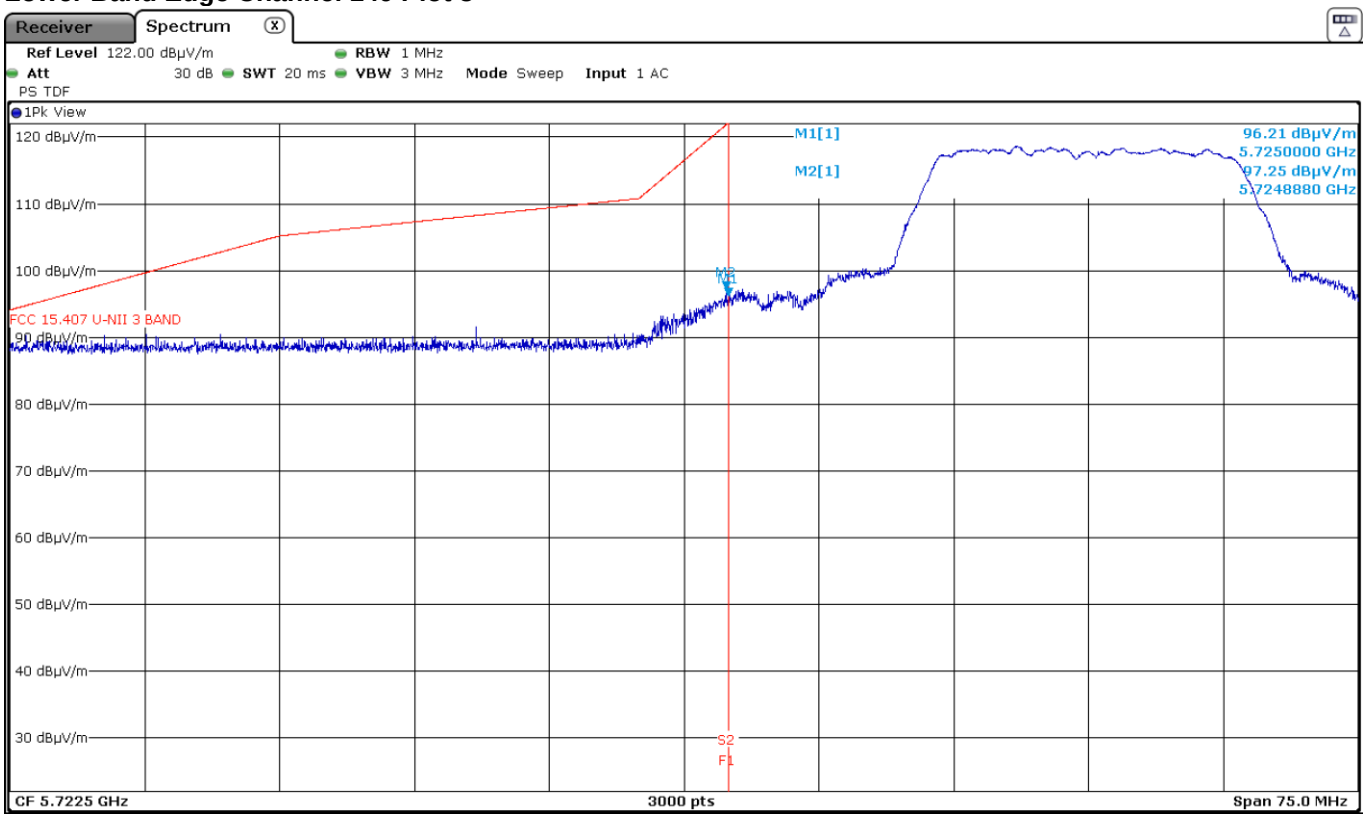
Lower Band Edge Channel 149 Plot 1



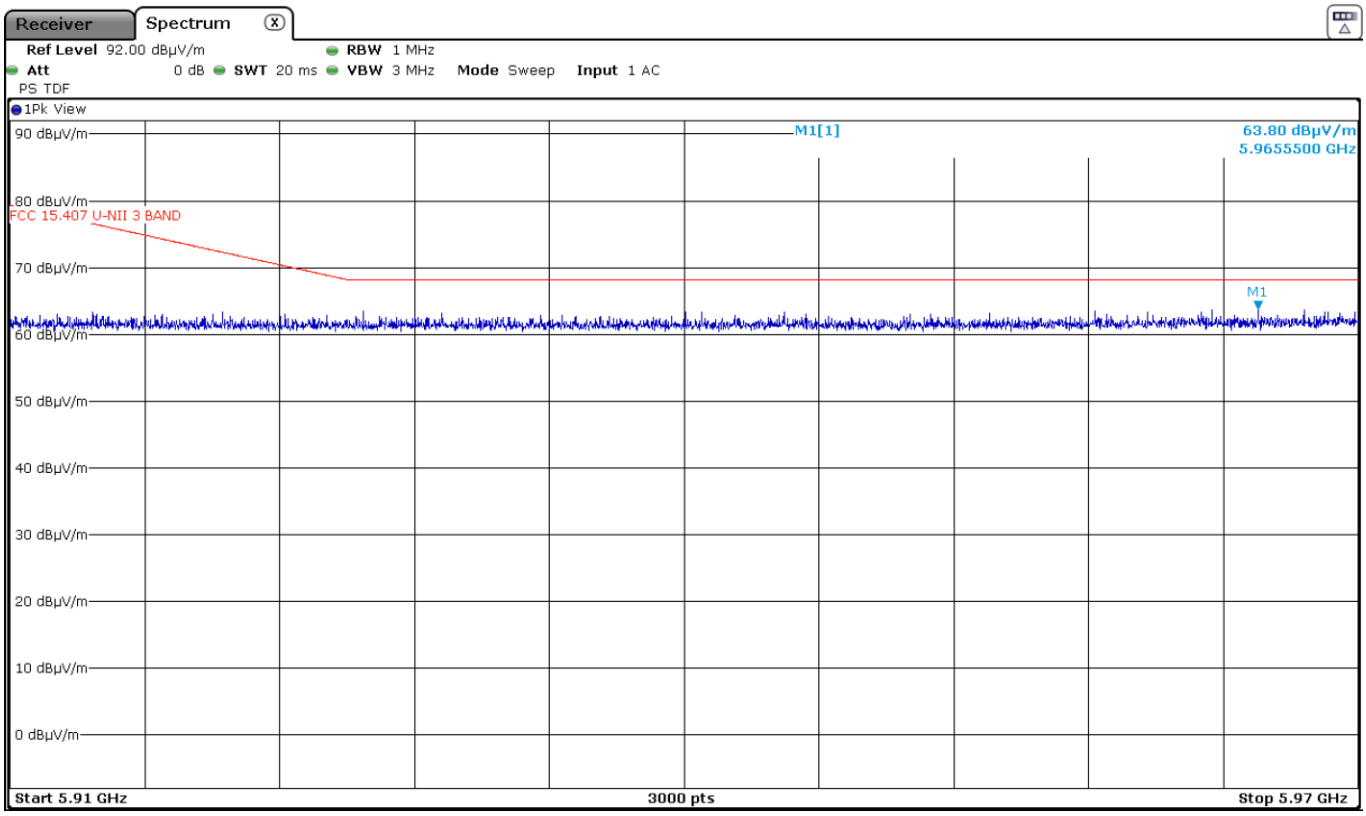
Lower Band Edge Channel 149 Plot 2



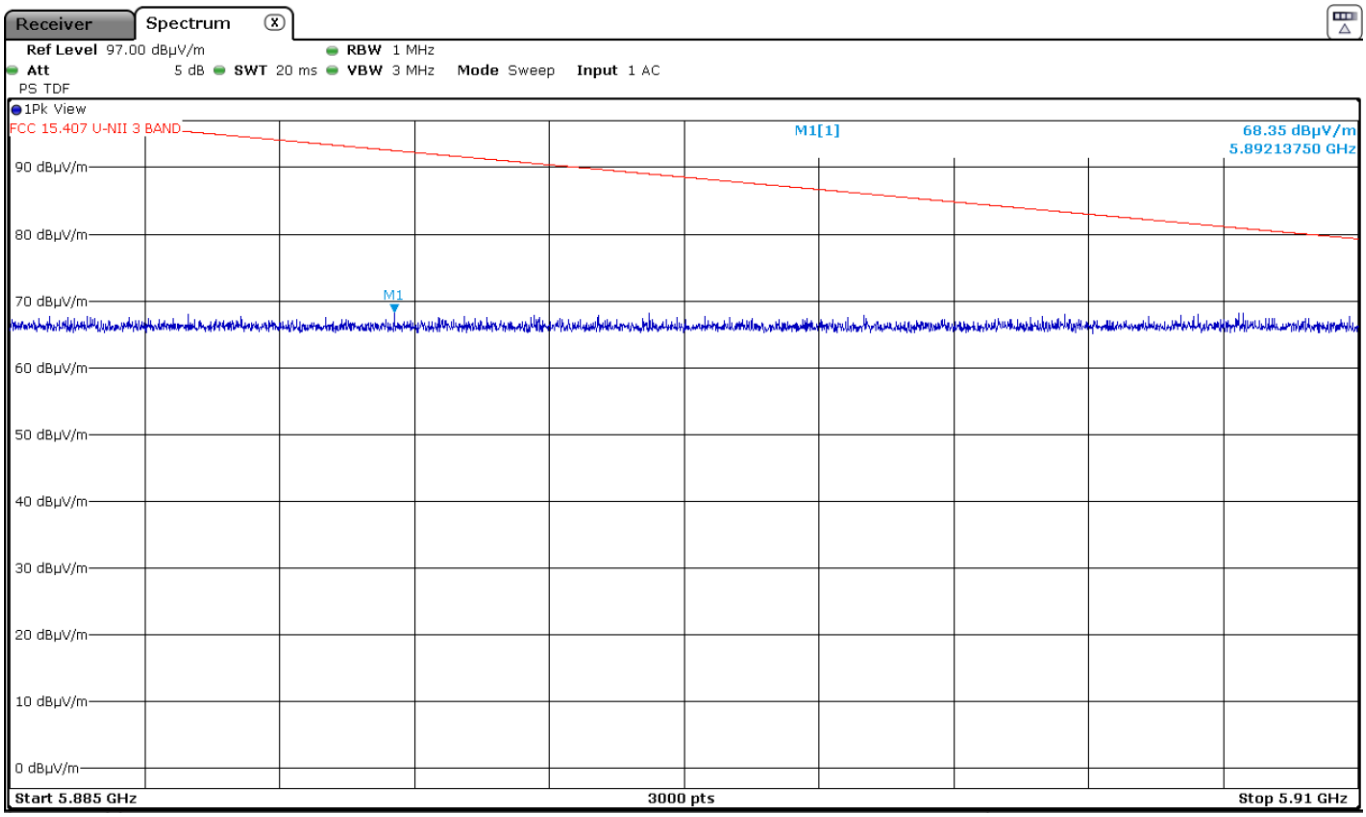
Lower Band Edge Channel 149 Plot 3



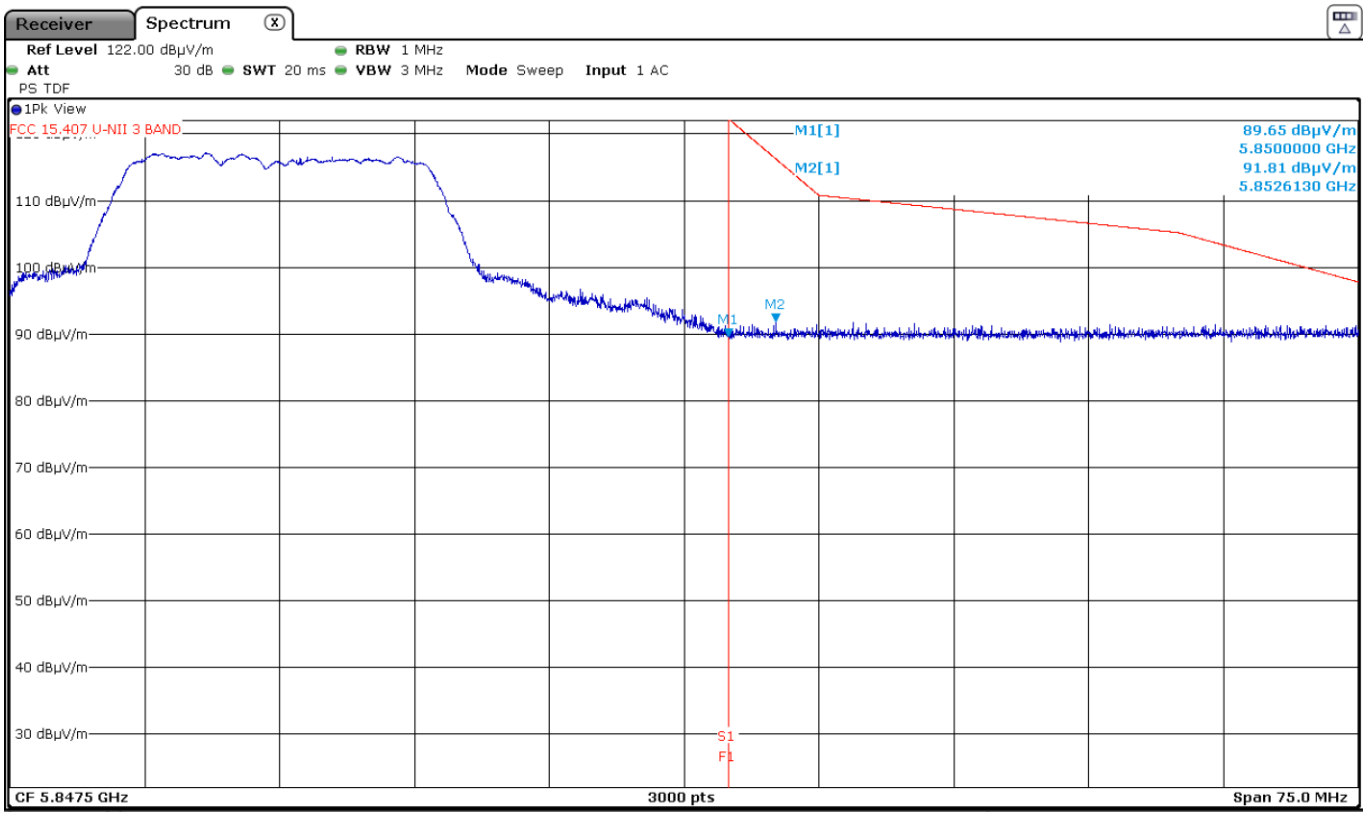
Upper Band Edge Channel 165 Plot 1



Upper Band Edge Channel 165 Plot 2



Upper Band Edge Channel 165 Plot 3



Results for Mode: 802.11n HT20 – SDM - 20 MHz – MIMO - Core 0 + Core 2

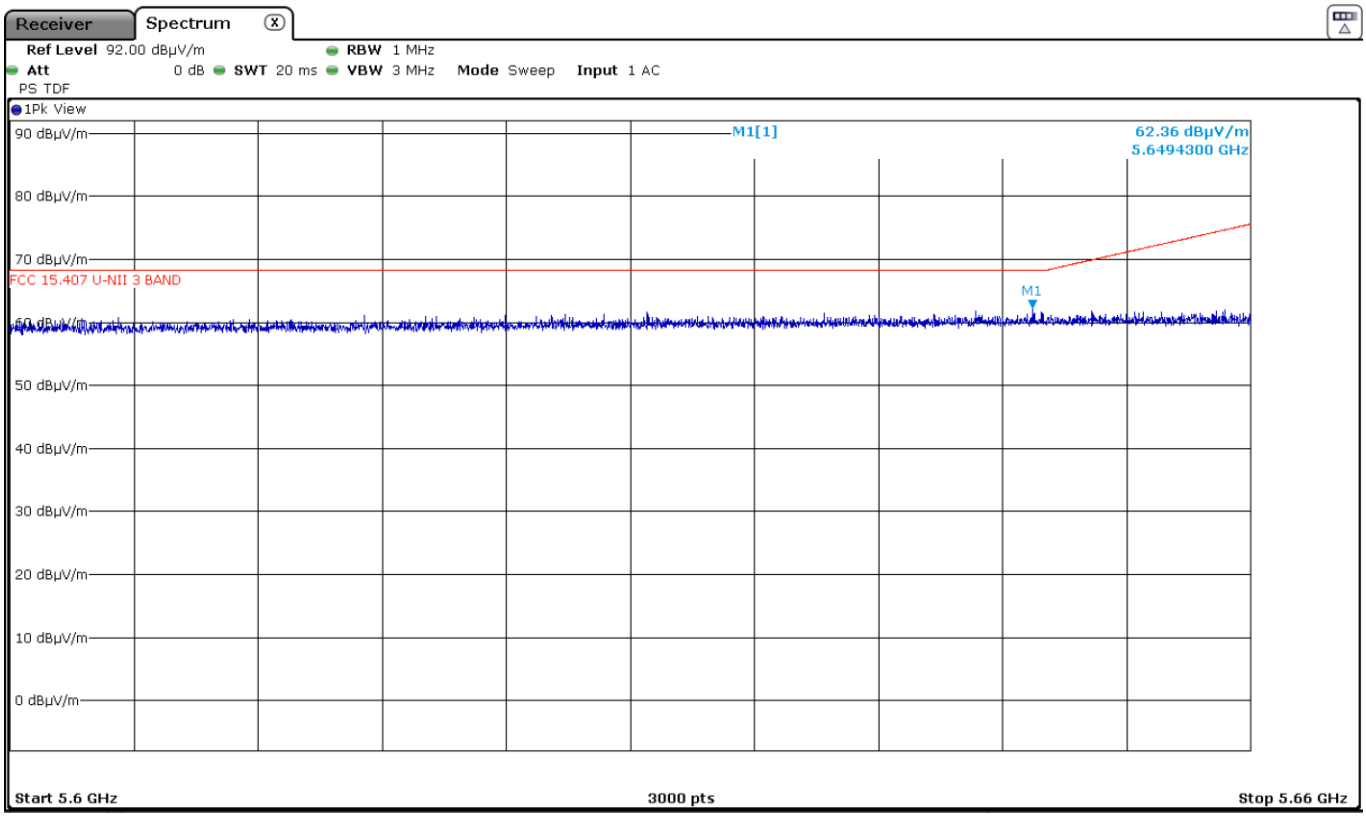
Results: Peak / Channel 149

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuv/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5724.613	Vertical	95.81	121.12	25.31	<± 3.05	PASS

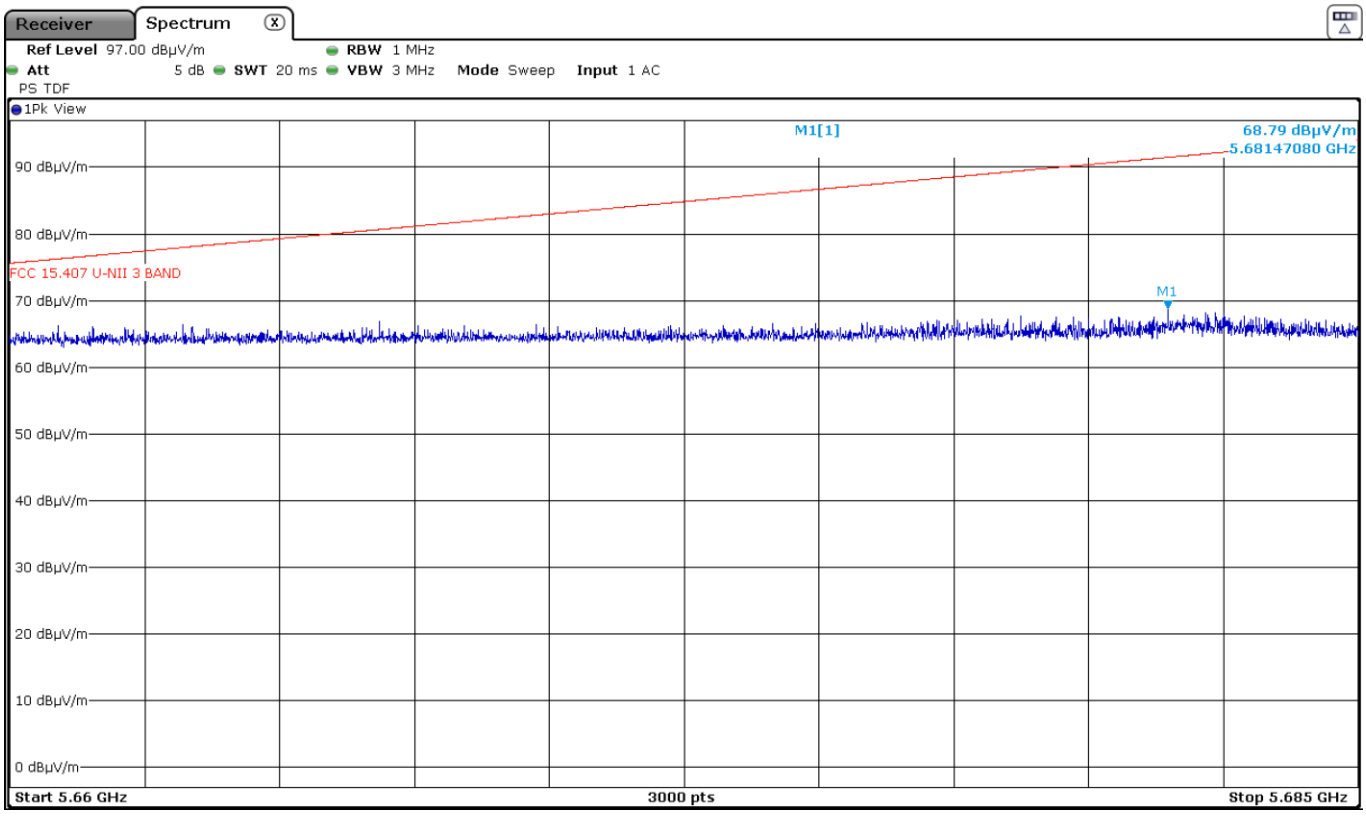
Results: Peak / Channel 165

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuv/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5850.038	Vertical	92.02	121.91	29.89	<± 3.05	PASS

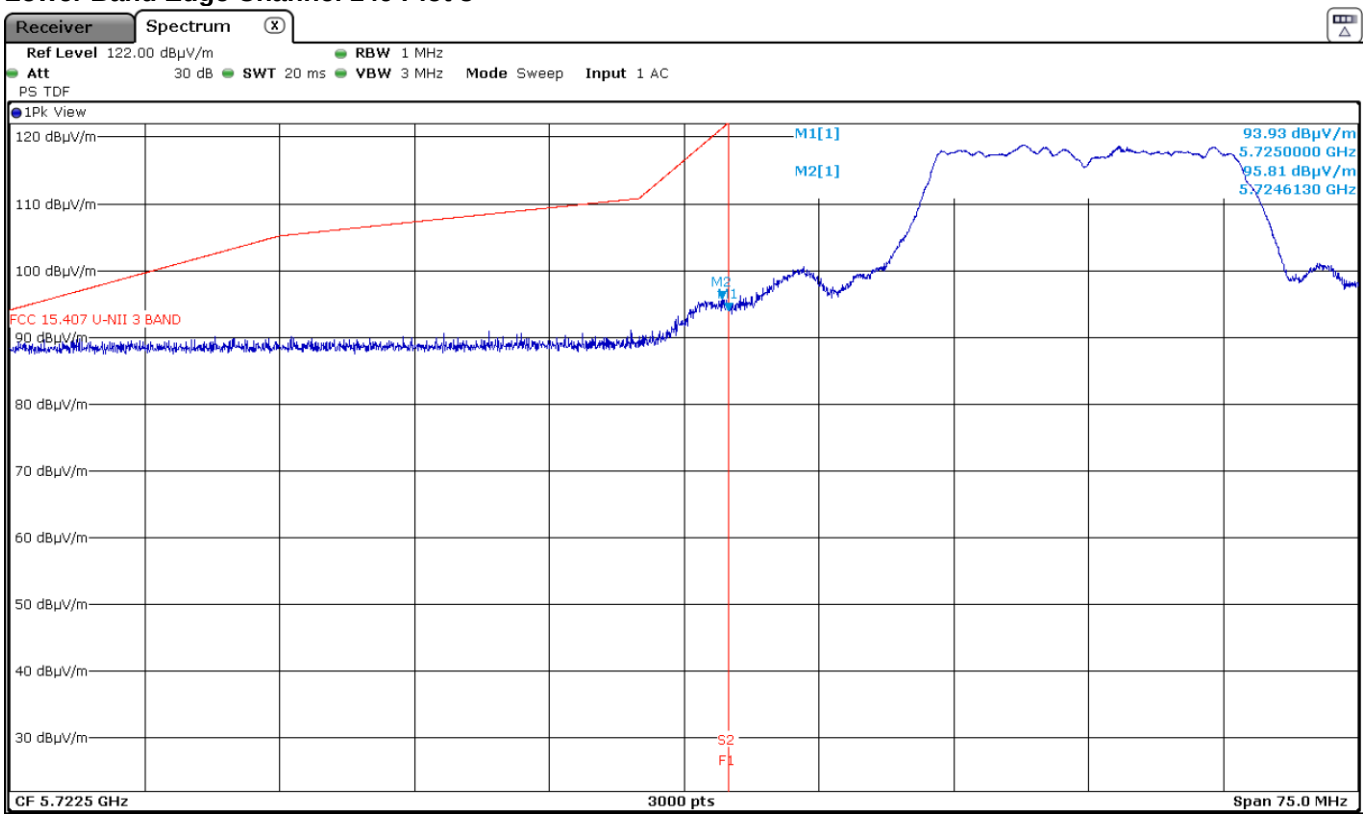
Lower Band Edge Channel 149 Plot 1



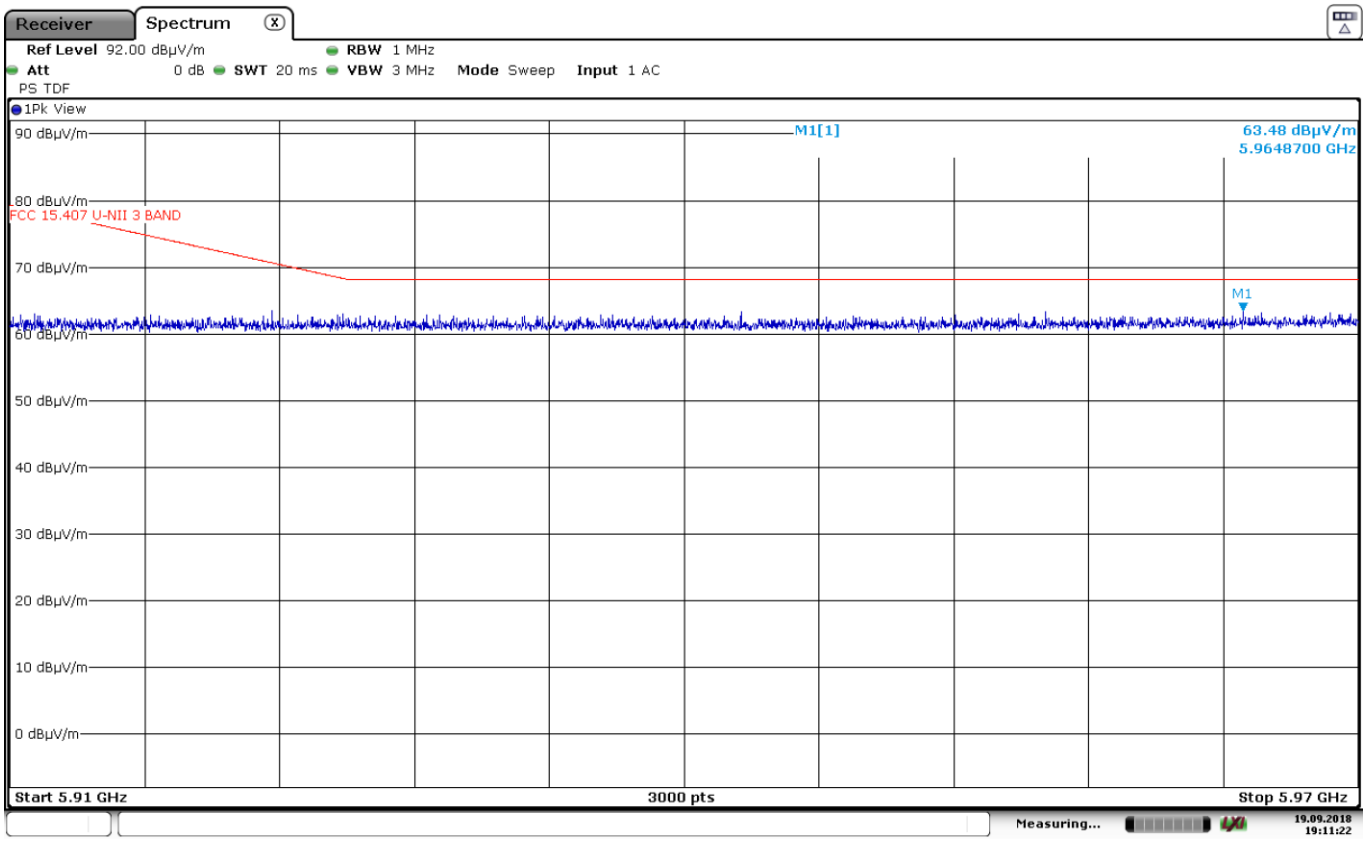
Lower Band Edge Channel 149 Plot 2



Lower Band Edge Channel 149 Plot 3



Upper Band Edge Channel 165 Plot 1



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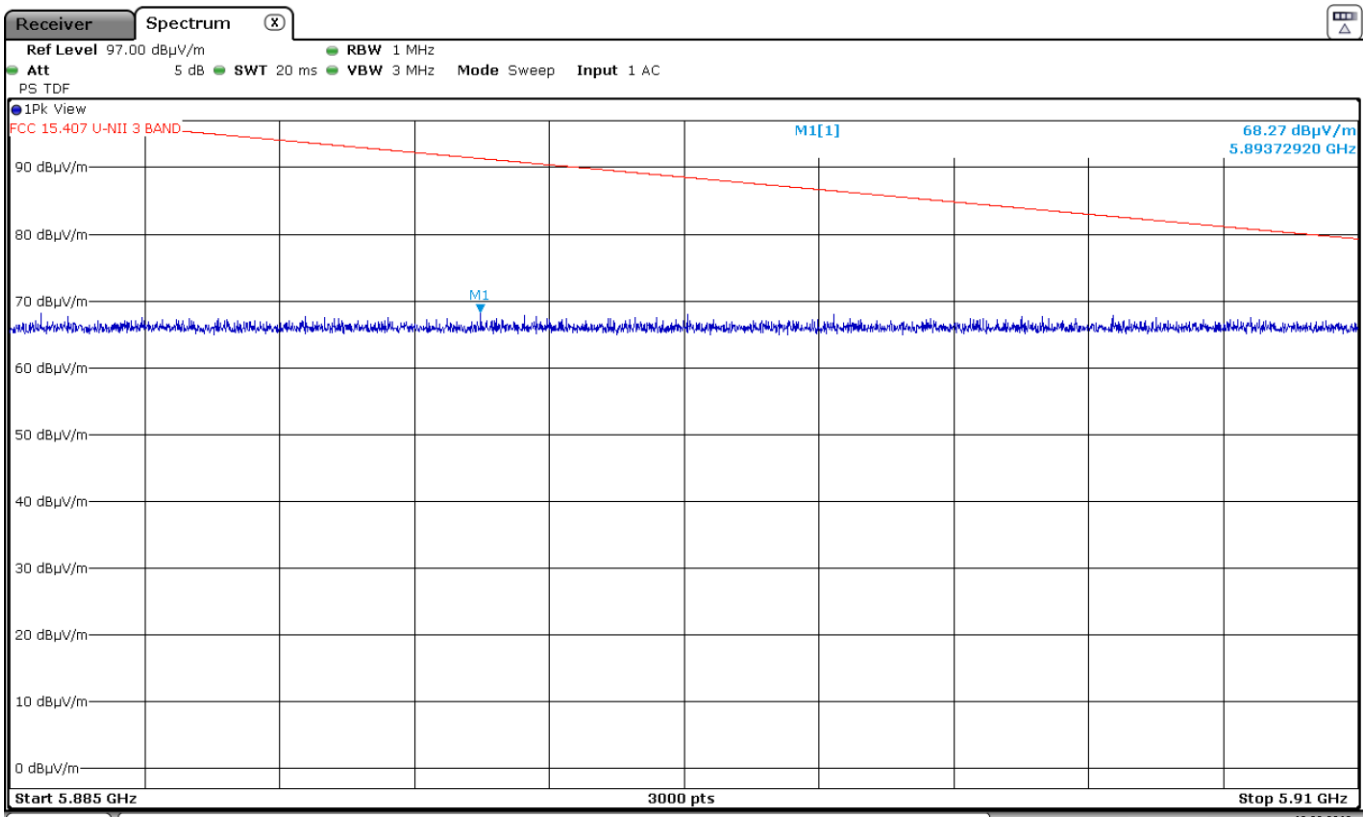
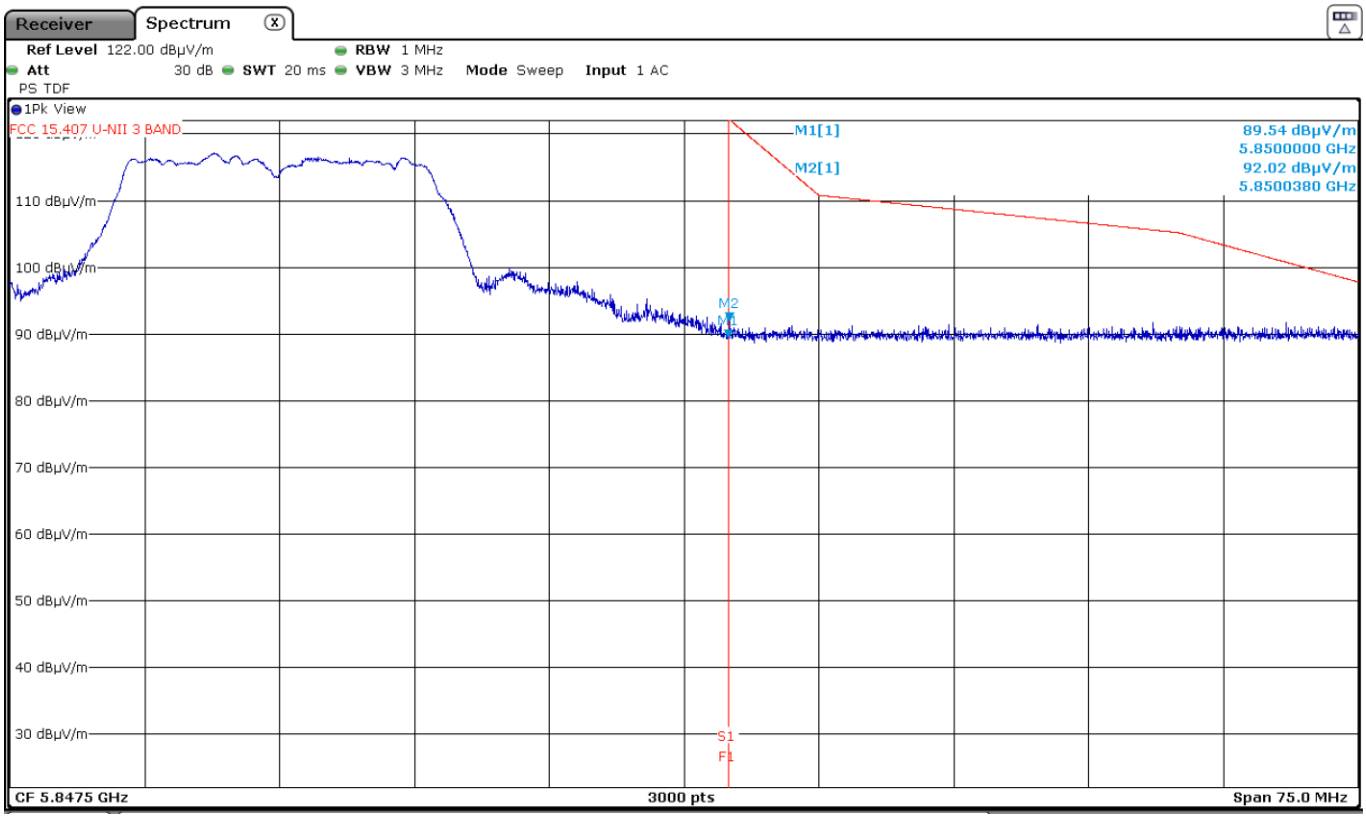
Upper Band Edge Channel 165 Plot 2



Upper Band Edge Channel 165 Plot 3



Results for Mode: 802.11n HT20 – TxBF - 20 MHz – MIMO - Core 0+Core 2

Results: Peak / Channel 149

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuv/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5724.479	Vertical	92.30	120.81	28.51	<± 3.05	PASS

Results: Peak / Channel 165

Frequency (MHz)	Antenna Polarity	Peak Level (dBuV/m)	Limit (dBuv/m)	Margin (dB)	Measurement uncertainty (dB)	Verdict
5853.363	Vertical	92.18	121.23	29.05	<± 3.05	PASS