Band-crossing channels

Mode	Band	Frequency (㎒)	Ch.	Data Rate	Measured PSD (㏈m)		
					Port 1	Port 2	MIMO
11a	U-NII 2C	5 720	144	6 Mbps	-12.49	-7.68	-6.44
	U-NII 3				-18.36	-13.68	-12.41
11n_HT20	U-NII 2C	5 720	144	MCS0	-12.91	-8.11	-6.87
	U-NII 3				-19.73	-13.60	-12.65
11n_HT40	U-NII 2C	5 710	142	MCS0	-14.55	-9.48	-8.30
	U-NII 3				-22.55	-15.51	-14.73
11ac_VHT80	U-NII 2C	5 690	138	MCS0	-17.81	-12.27	-11.20
	U-NII 3				-26.90	-19.85	-19.07

Mode	Band	Frequency (㎒)	Ch.	Data Rate	MIMO PSD (㏈m)	Duty Cycle Correction Factor (㏈)	Final PSD (㏈m)	Directional Antenna Gain (㏈i)	Limit (㏈m/1 ㎒ or ㏈m/500 ㎑)
11a	U-NII 2C	5 720	144	6 Mbps	-6.44	-	-6.44	9.08	7.92
	U-NII 3				-12.41		-12.41	8.35	8.65
11n_HT20	U-NII 2C	5 720	144	MCS0	-6.87		-6.87	9.08	7.92
	U-NII 3				-12.65		-12.65	8.35	8.65
11n_HT40	U-NII 2C	5 710	142	MCS0	-8.30		-8.30	9.08	7.92
	U-NII 3				-14.73		-14.73	8.35	8.65
11ac_VHT80	U-NII 2C	5 690	138	MCS0	-11.20		-11.20	9.08	7.92
	U-NII 3				-19.07		-19.07	8.35	8.65

Remark;

1. According to KDB 662911, power spectral density of each port and antenna gain was combined by using below calculation.

   - PSD: 10 log {10^(Port 1 PSD / 10)+10^(Port 2 PSD / 10)}

   - Unequal antenna gains, with equal transmit powers. For antenna gains given by G_1, G_2, …, G_N ㏈i
   (i) If transmit signals are correlated, then
   Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N_{ANT}$] ㏈i [Note the “20”s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

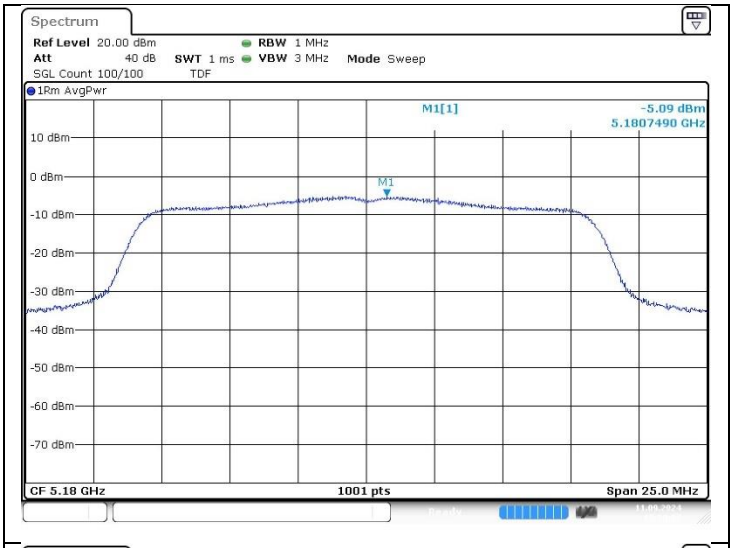
2. Final PSD (㏈m) = PSD (㏈m) + Duty Cycle Correction Factor (㏈)
3. PSD limit is reduced in accordance with Part 15.407 and RSS-247 Issue 3 due to directional gain exceeding 6 ㏈i.

- Test plots

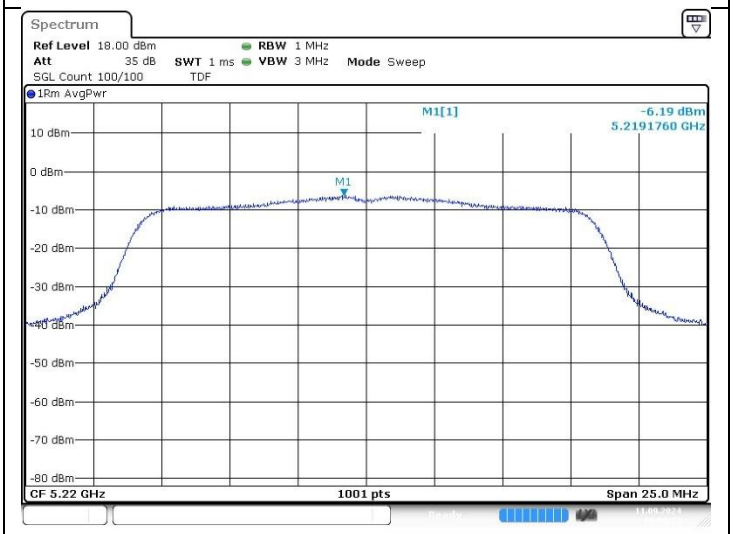
SISO

11a (Band 1)

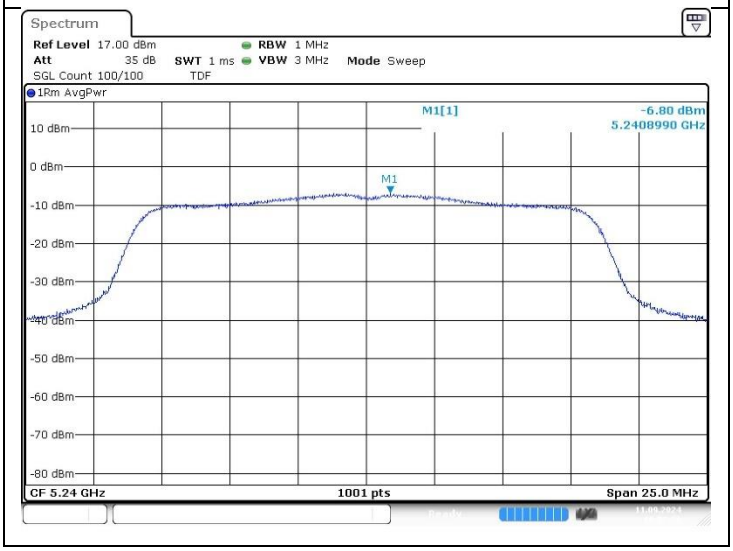
Low Channel
(5 180 ㎒)



Middle Channel
(5 220 ㎒)

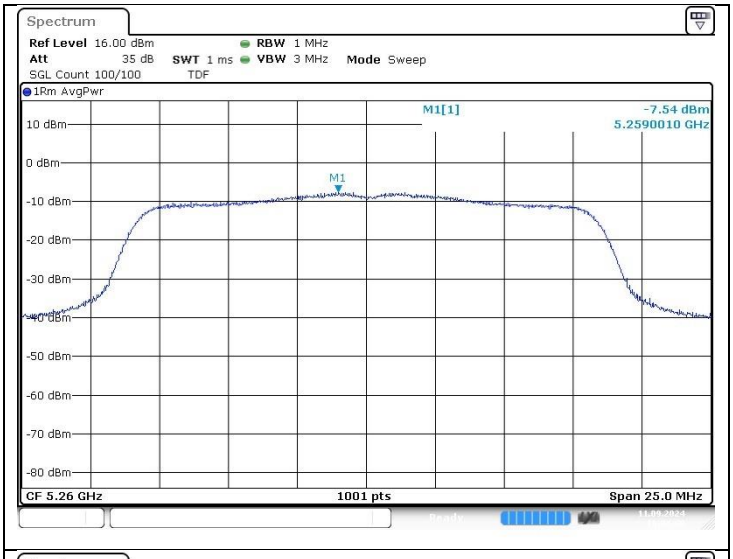


High Channel
(5 240 ㎒)

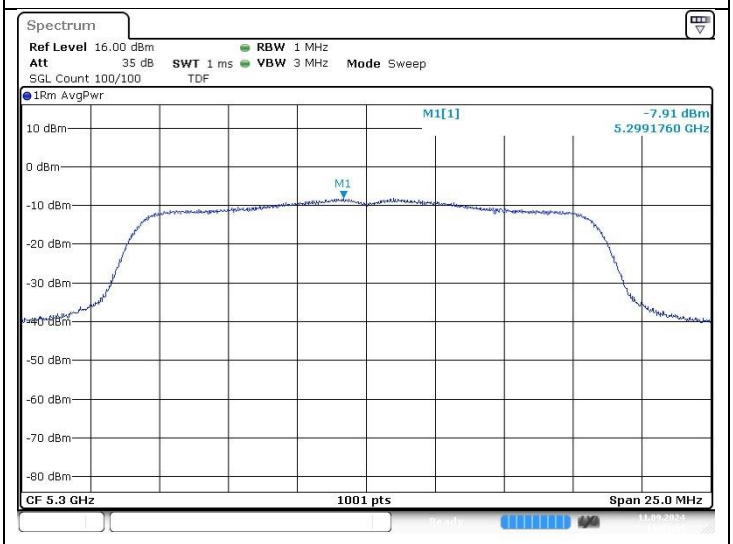


11a (Band 2A)

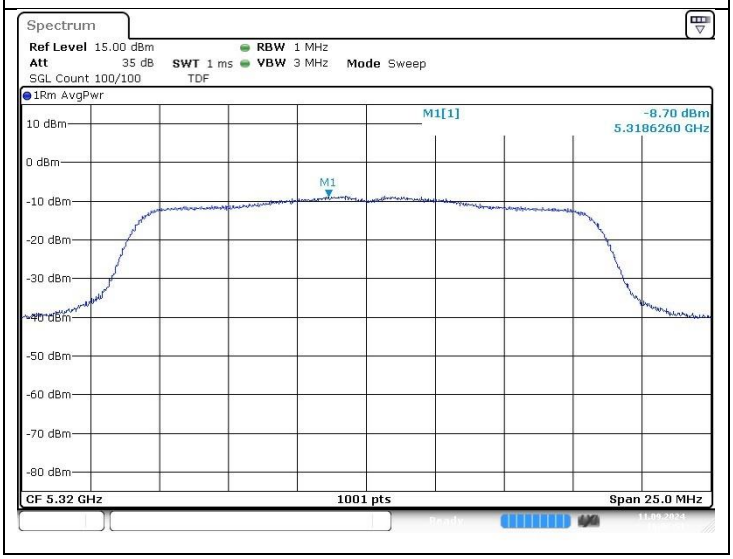
Low Channel
(5 260 ㎒)



Middle Channel
(5 300 ㎒)

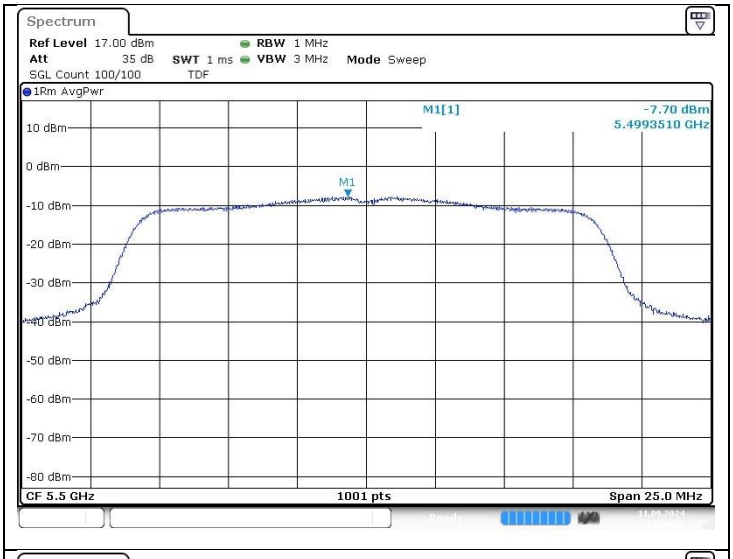


High Channel
(5 320 ㎒)

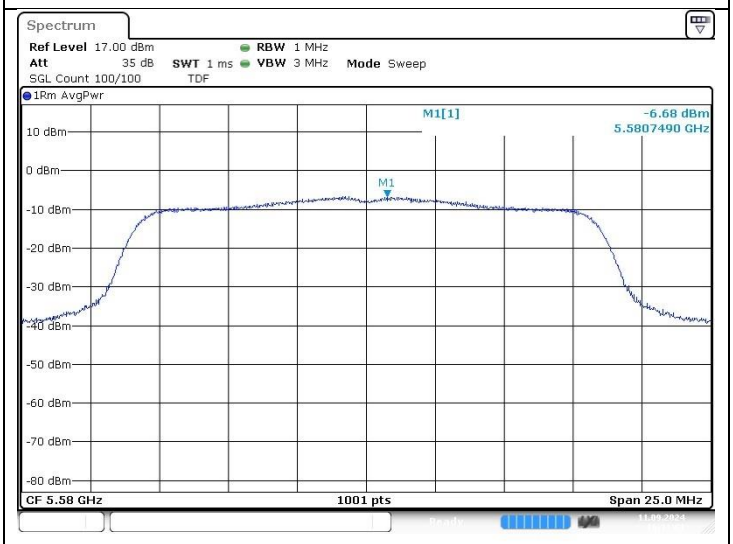


11a (Band 2C)

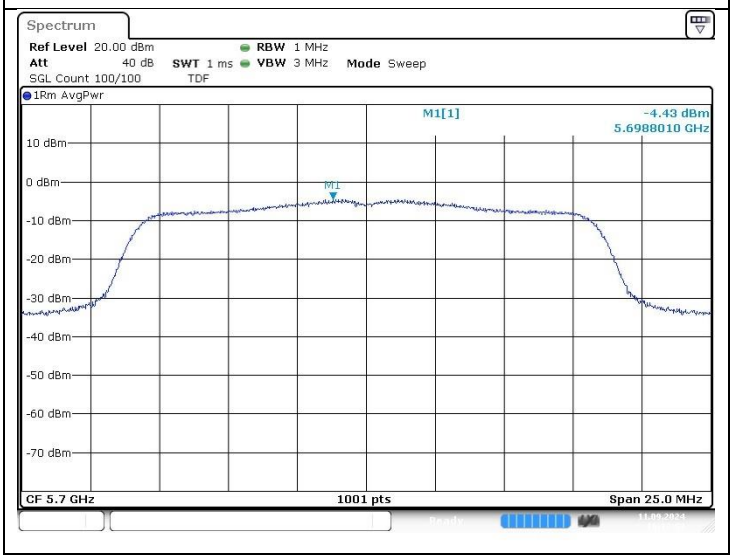
Low Channel
(5 500 ㎒)



Middle Channel
(5 580 ㎒)

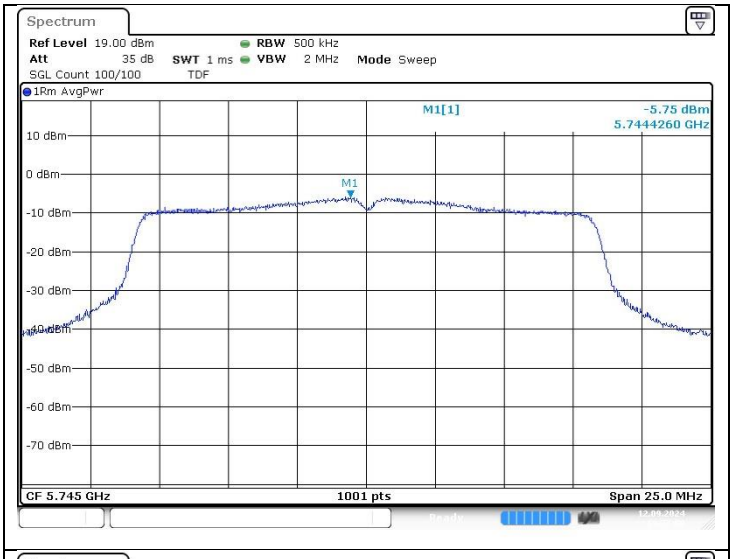


High Channel
(5 700 ㎒)

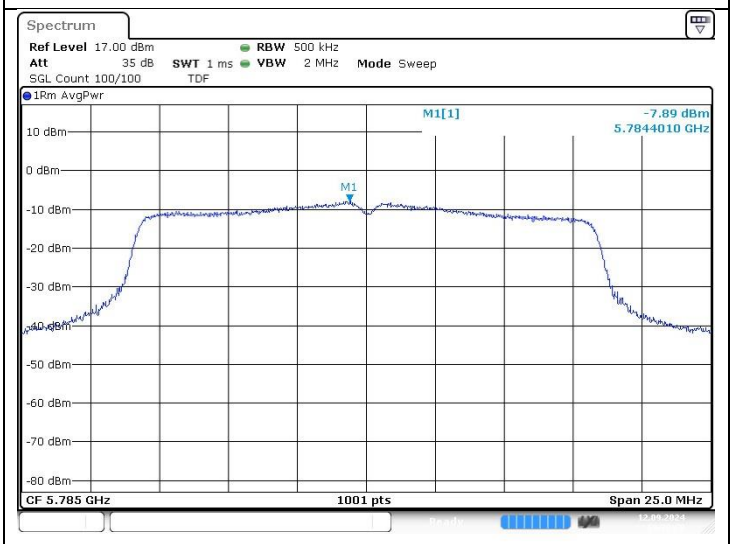


11a (Band 3)

Low Channel
(5 745 ㎒)



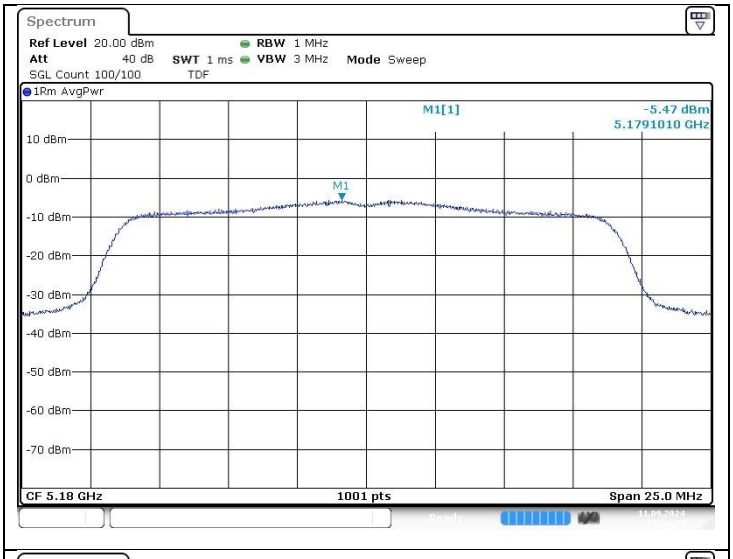
Middle Channel
(5 785 ㎒)



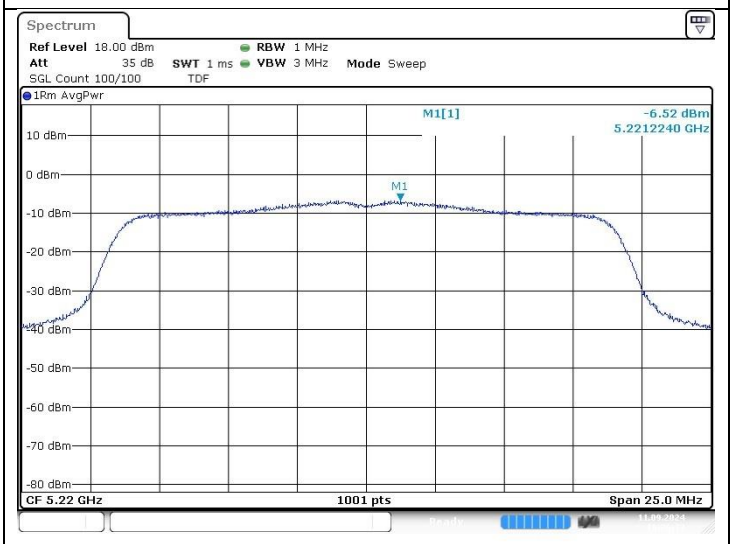
High Channel
(5 825 ㎒)

11n_HT20 (Band 1)

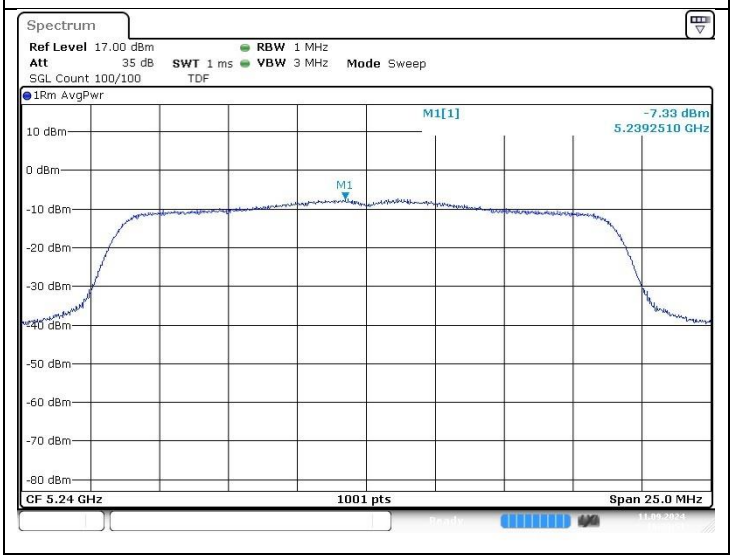
Low Channel
(5 180 ㎒)



Middle Channel
(5 220 ㎒)

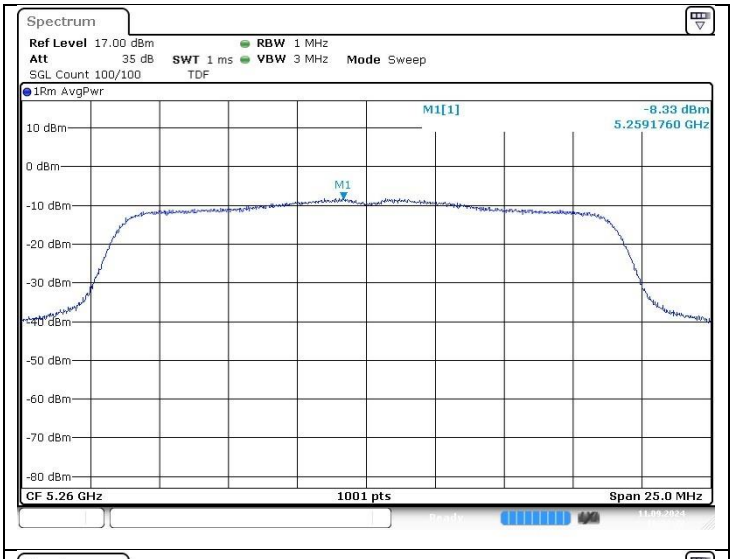


High Channel
(5 240 ㎒)

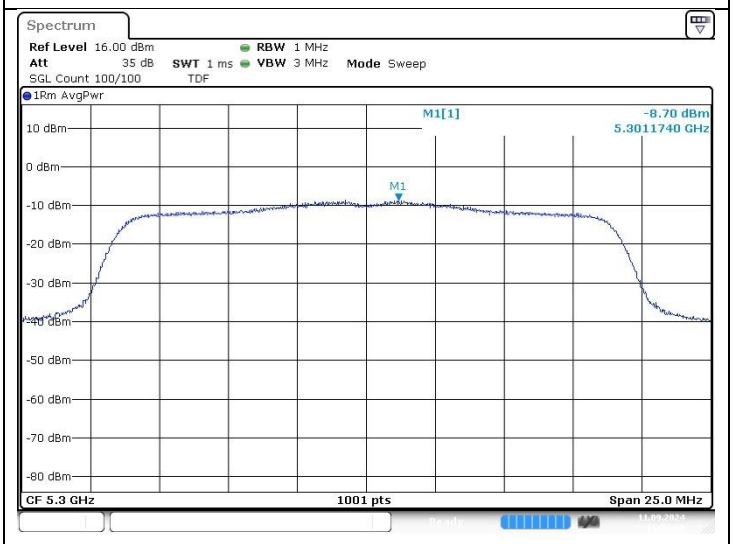


11n_HT20 (Band 2A)

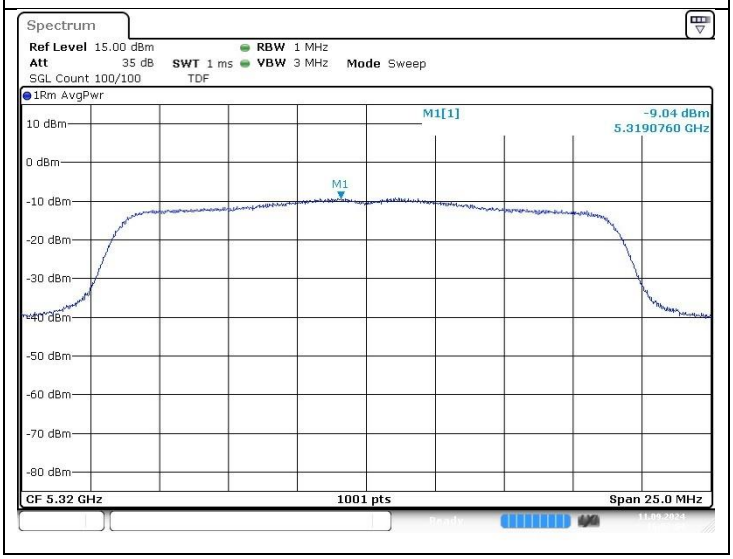
Low Channel
(5 260 ㎒)



Middle Channel
(5 300 ㎒)



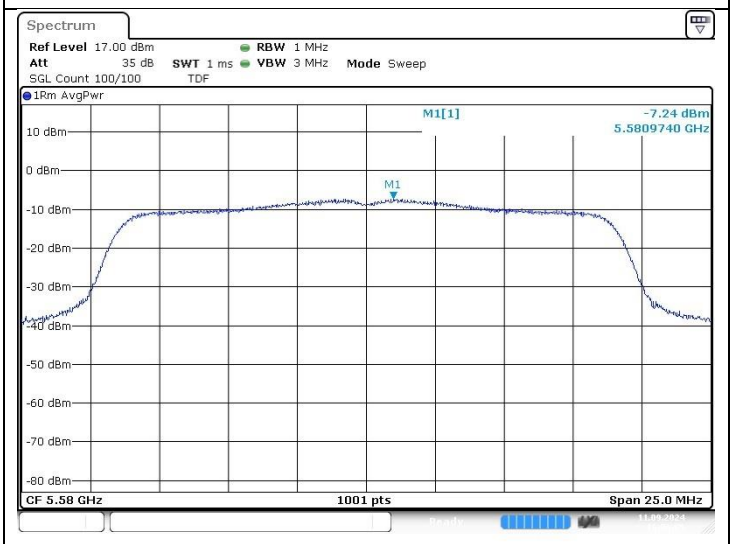
High Channel
(5 320 ㎒)



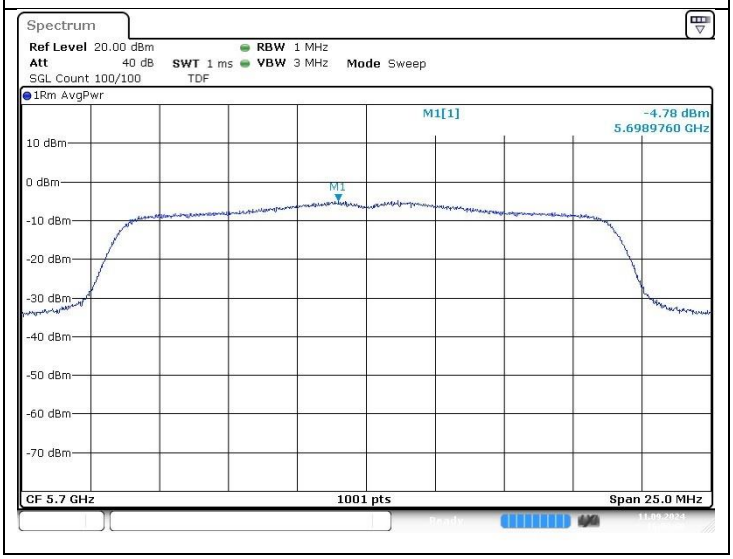
11n_HT20 (Band 2C)

Low Channel
(5 500 ㎒)

Middle Channel
(5 580 ㎒)

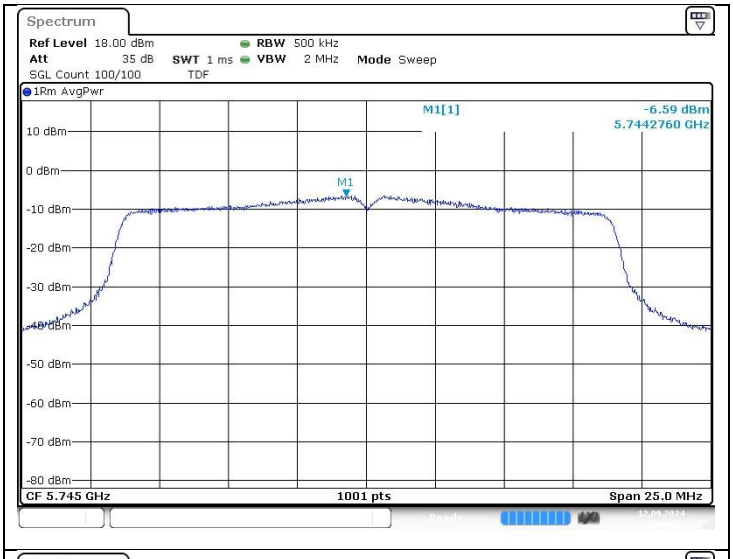


High Channel
(5 700 ㎒)

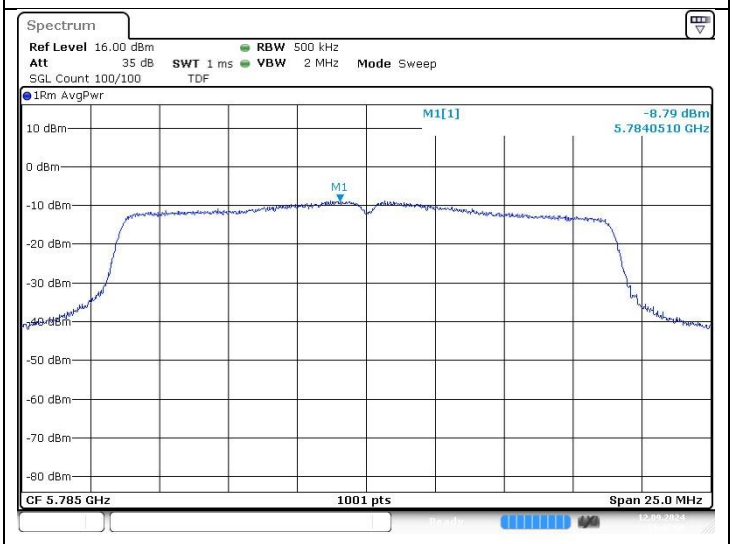


11n_HT20 (Band 3)

Low Channel
(5 745 ㎒)



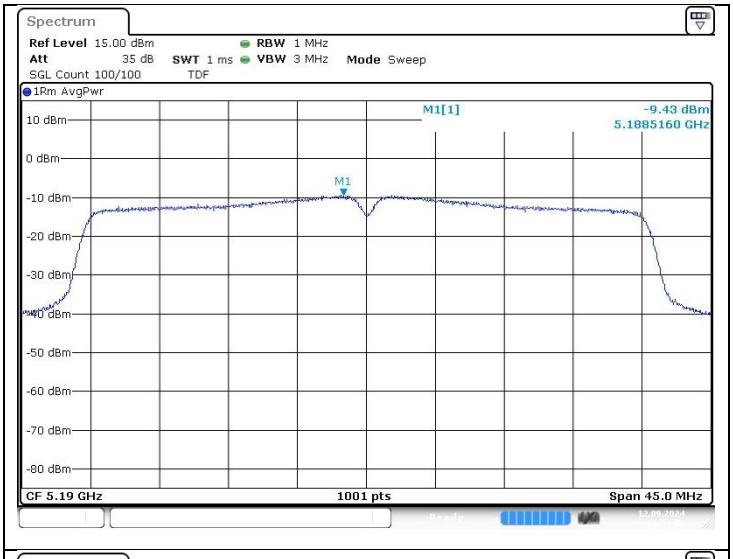
Middle Channel
(5 785 ㎒)



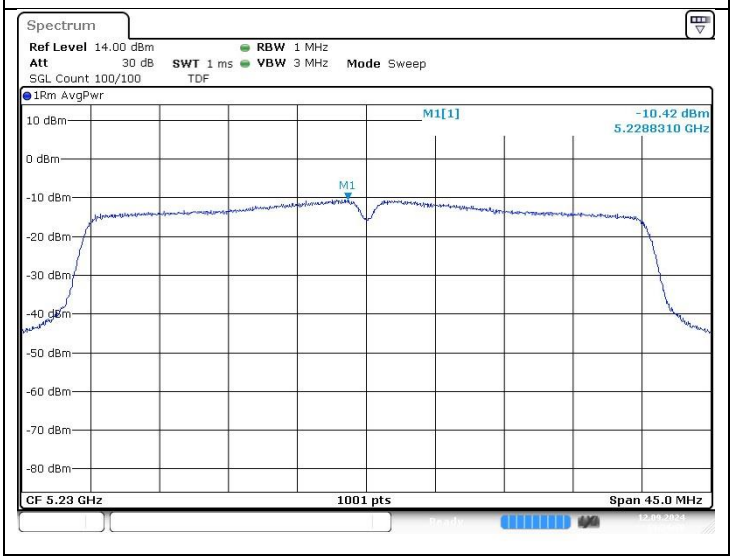
High Channel
(5 825 ㎒)

11n_HT40 (Band 1)

Low Channel
(5 190 ㎒)

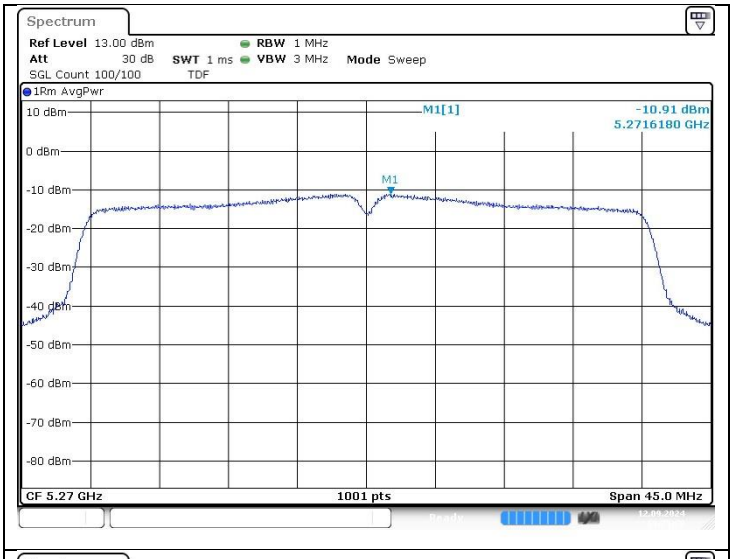


High Channel
(5 230 ㎒)

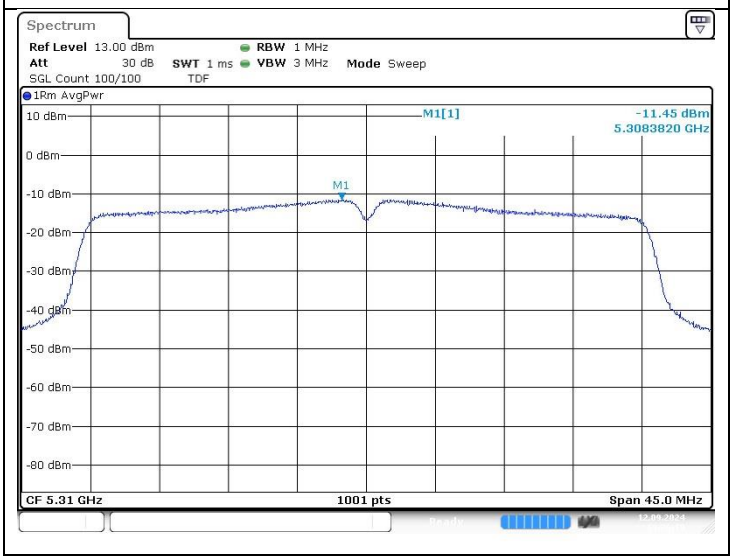


11n_HT40 (Band 2A)

Low Channel
(5 270 ㎒)

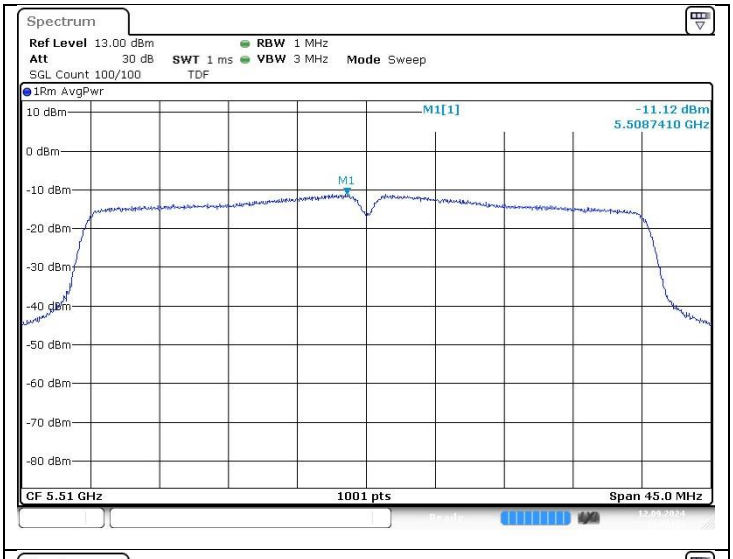


High Channel
(5 310 ㎒)

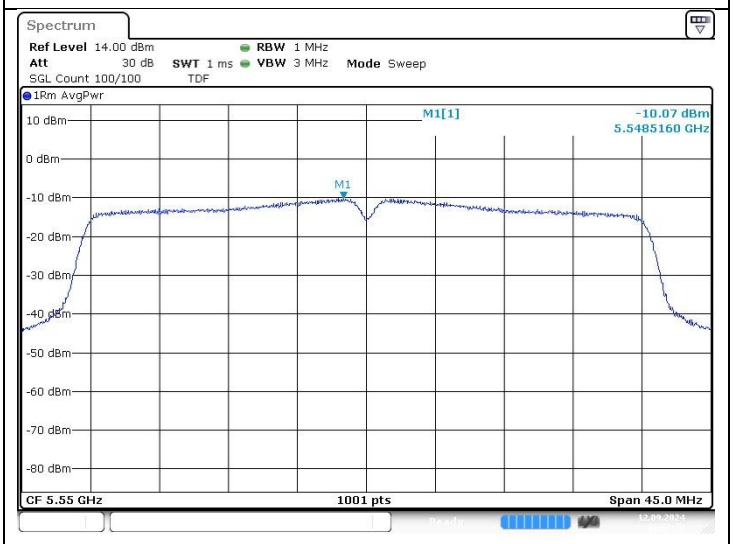


11n_HT40 (Band 2C)

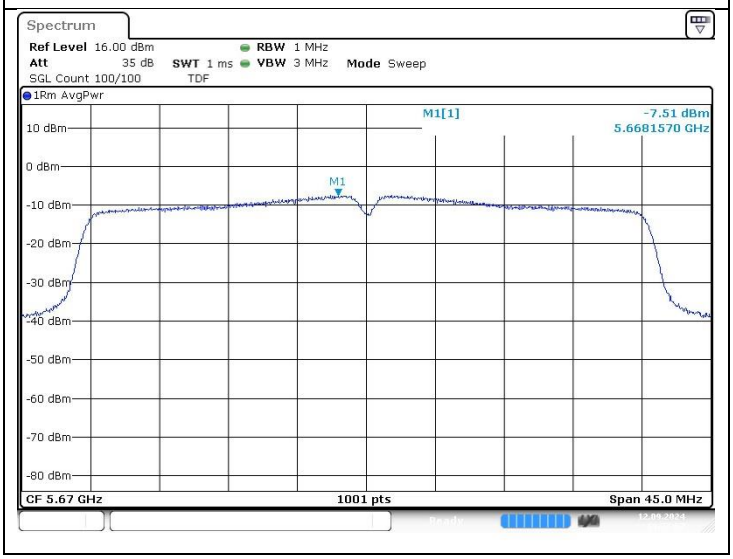
Low Channel
(5 510 ㎒)



Middle Channel
(5 550 ㎒)

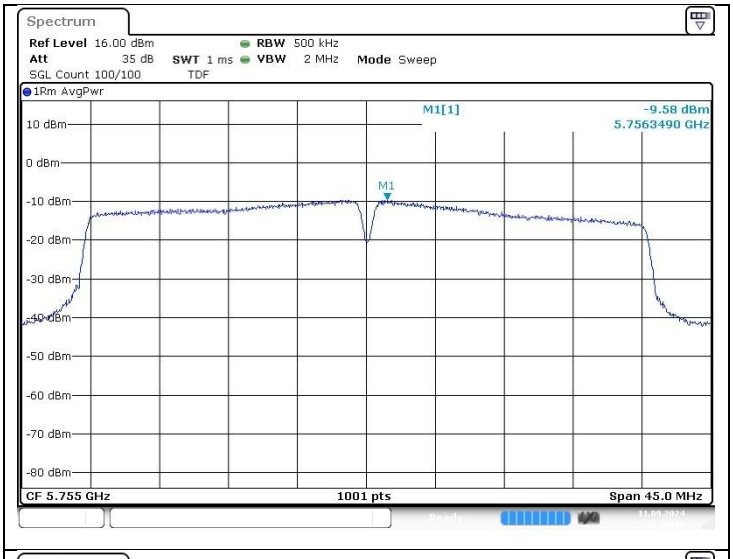


High Channel
(5 670 ㎒)

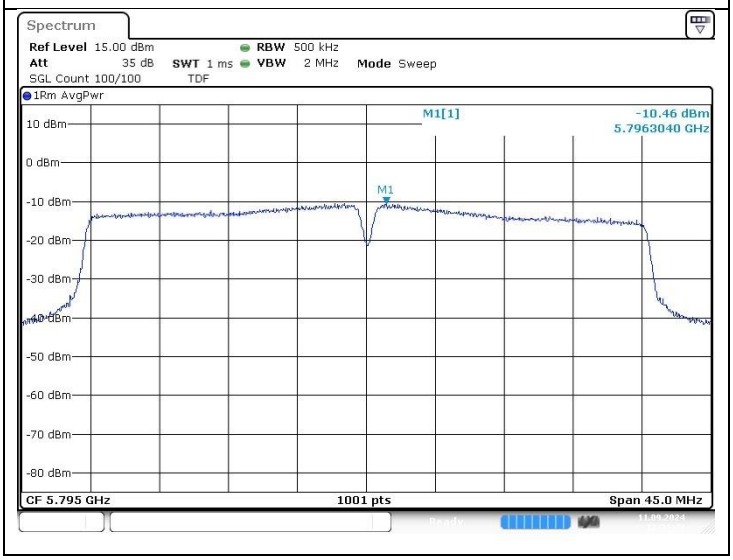


11n_HT40 (Band 3)

Low Channel
(5 755 ㎒)

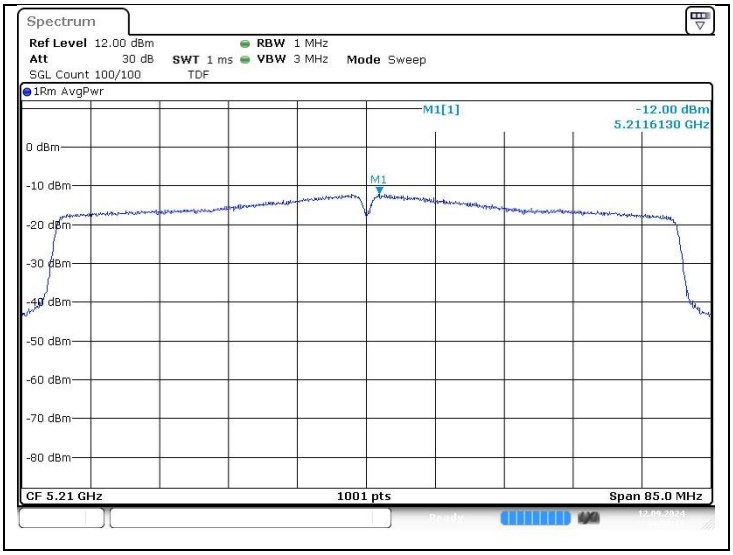


High Channel
(5 795 ㎒)



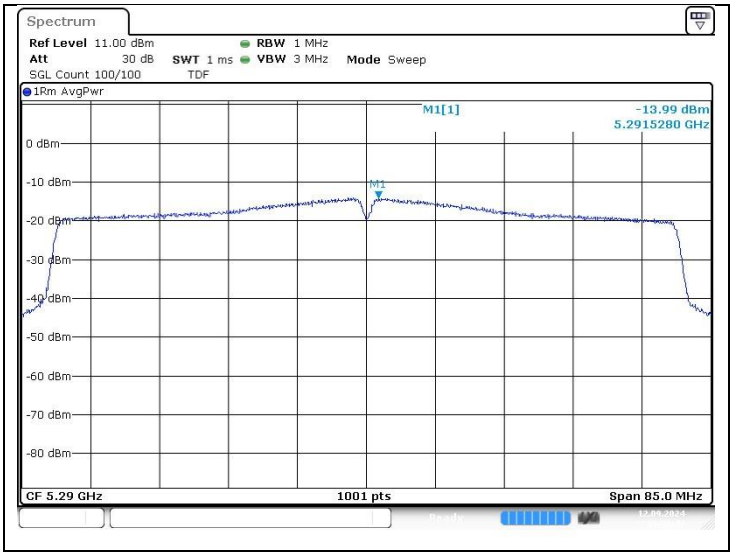
11ac_VHT80 (Band 1)

Middle Channel
(5 210 ㎒)



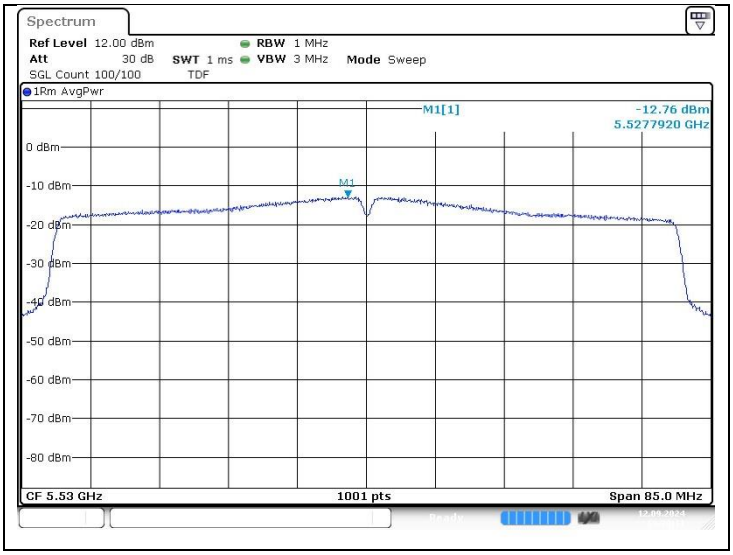
11ac_VHT80 (Band 2A)

Middle Channel
(5 290 ㎒)



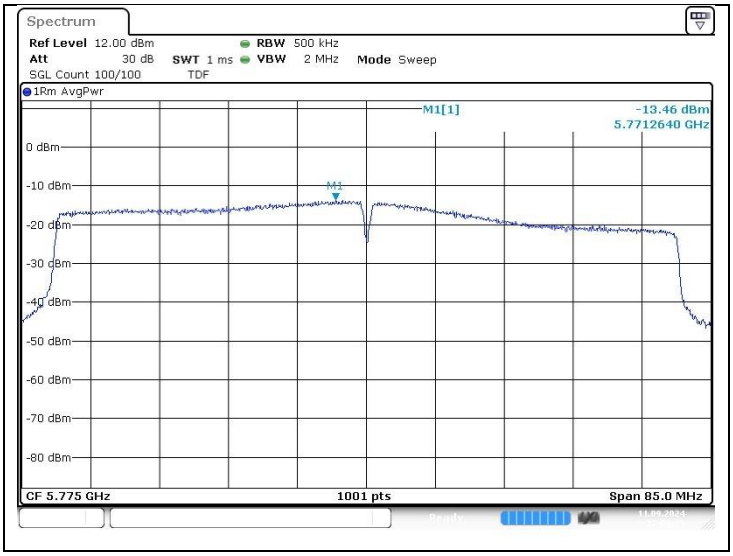
11ac_VHT80 (Band 2C)

Low Channel
(5 530 ㎒)



11ac_VHT80 (Band 3)

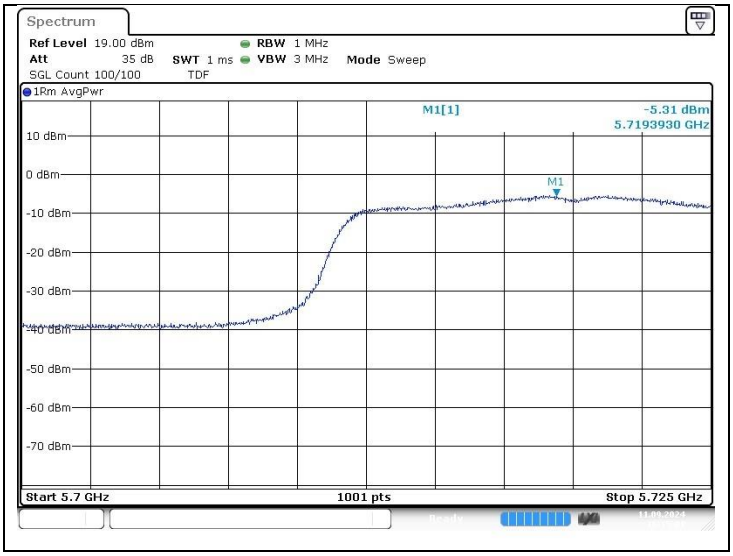
Middle Channel
(5 775 ㎒)



Band-crossing channels

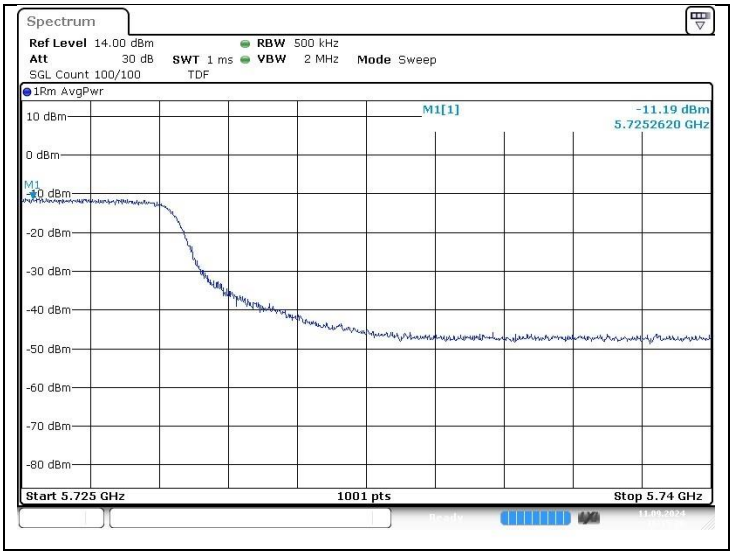
11a (Band 2C)

High Channel
(5 720 ㎒)



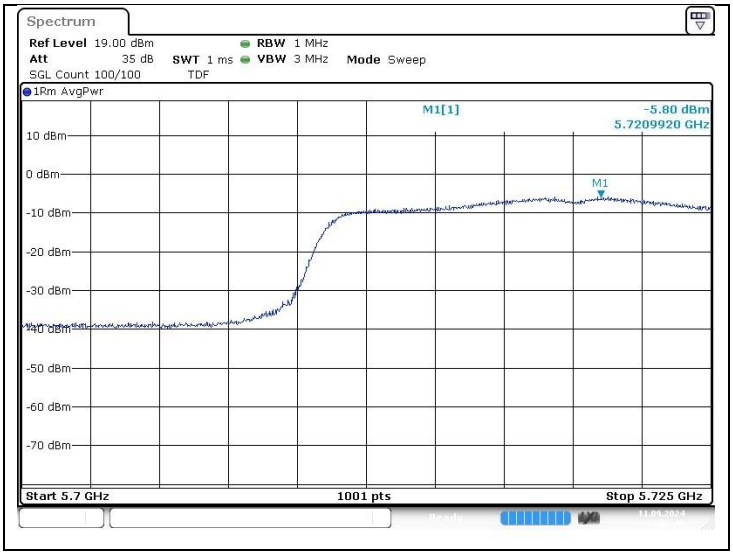
11a (Band 3)

High Channel
(5 720 ㎒)



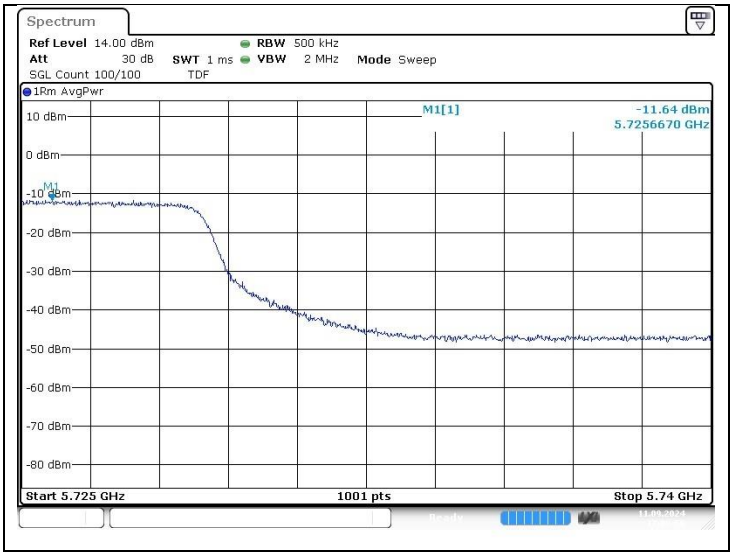
11n_HT20 (Band 2C)

High Channel
(5 720 ㎒)



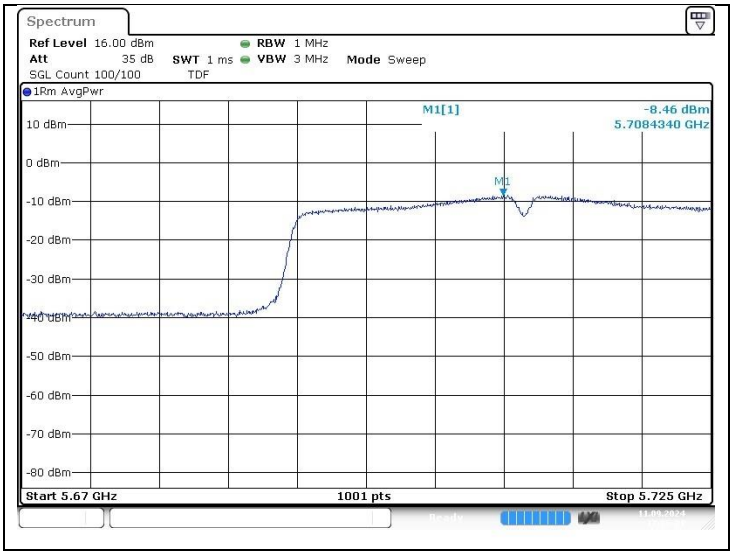
11n_HT20 (Band 3)

High Channel
(5 720 ㎒)



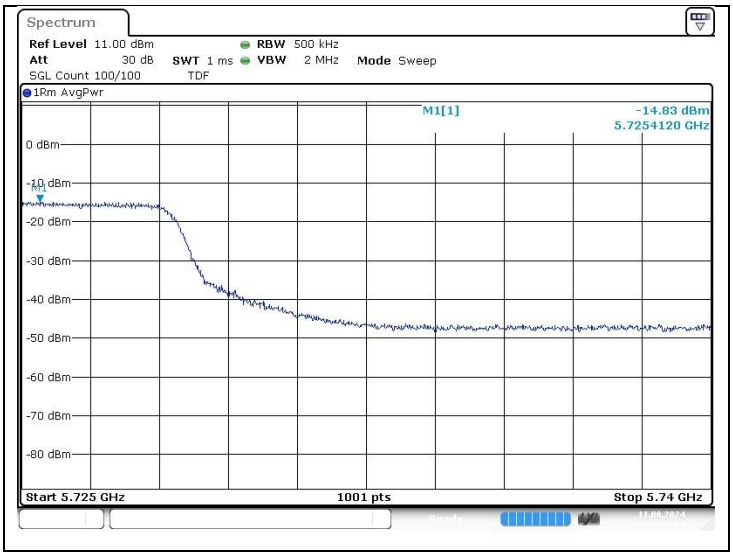
11n_HT40 (Band 2C)

High Channel
(5 710 ㎒)



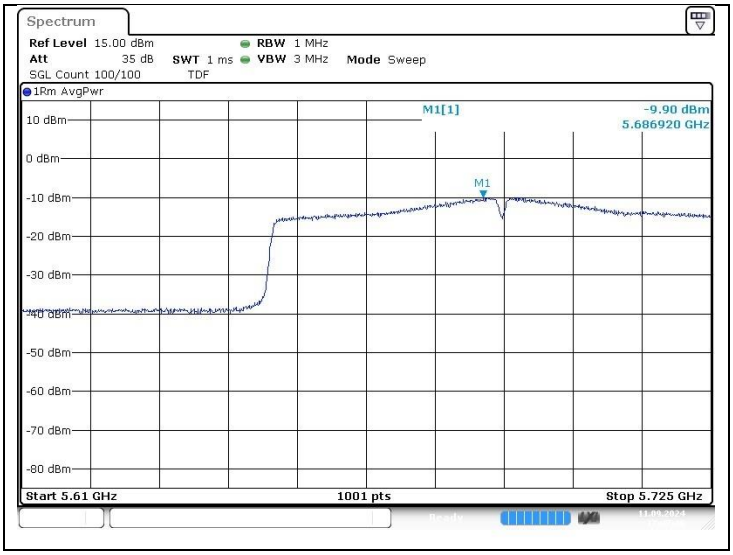
11n_HT40 (Band 3)

High Channel
(5 710 ㎒)



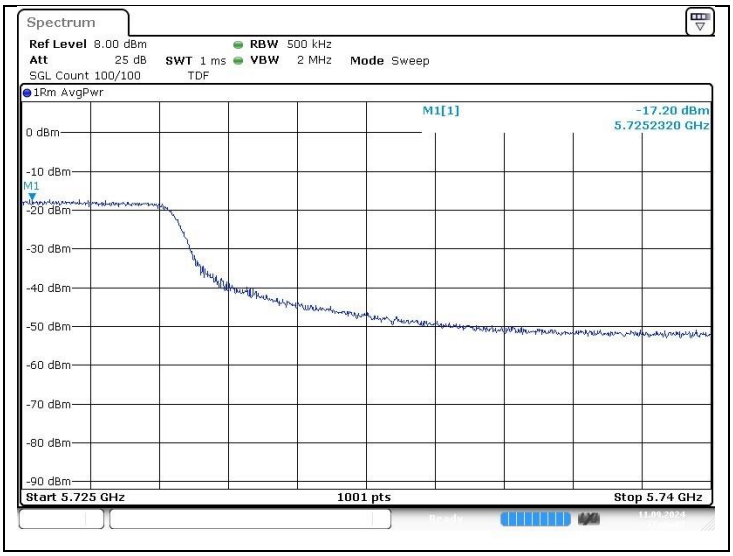
11ac_VHT80 (Band 2C)

High Channel
(5 690 ㎒)



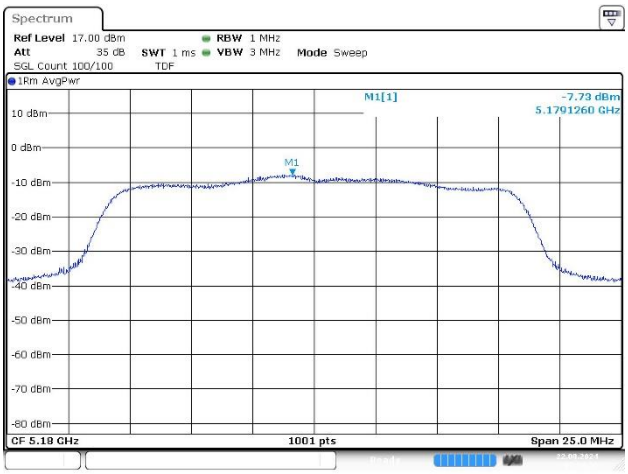
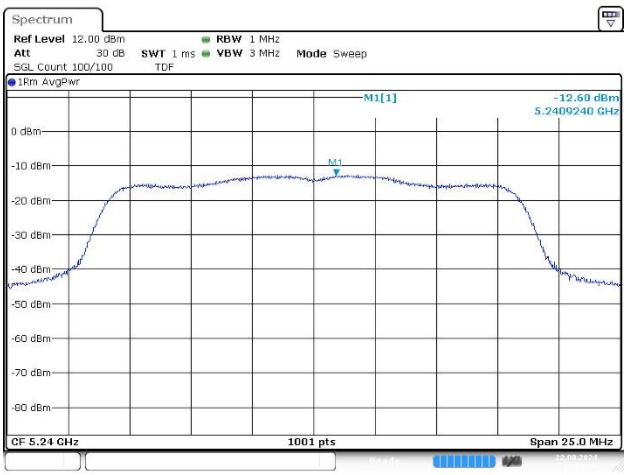
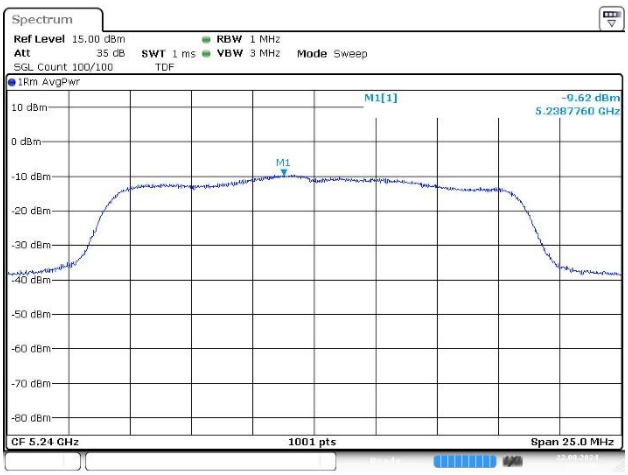
11ac_VHT80 (Band 3)

High Channel
(5 690 ㎒)

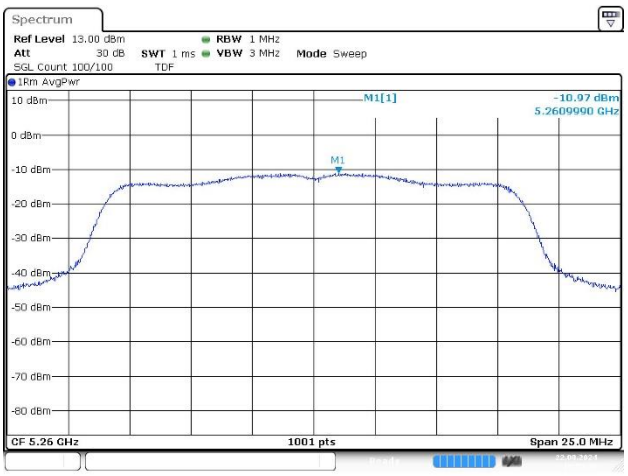
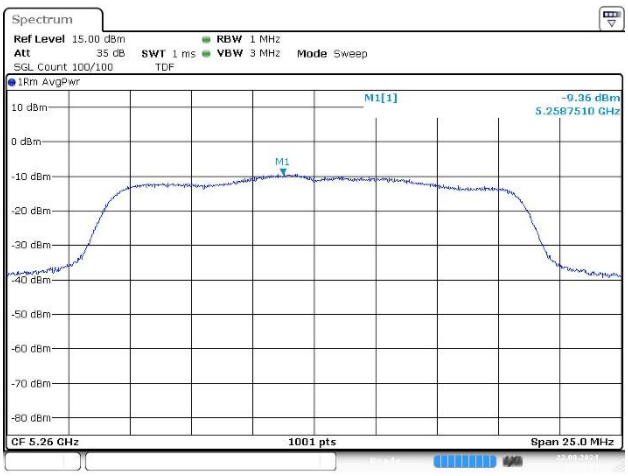
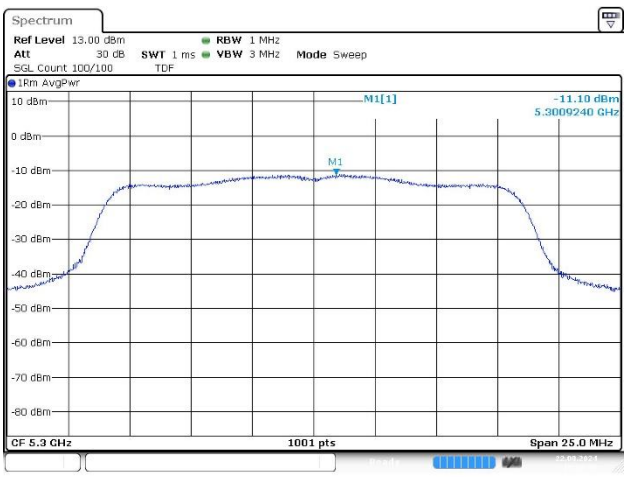
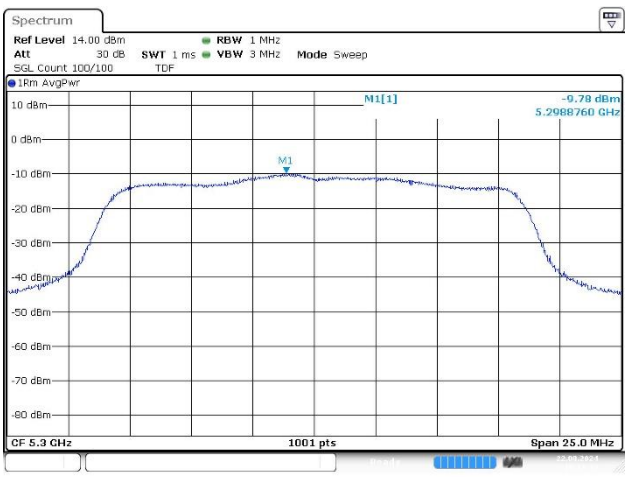
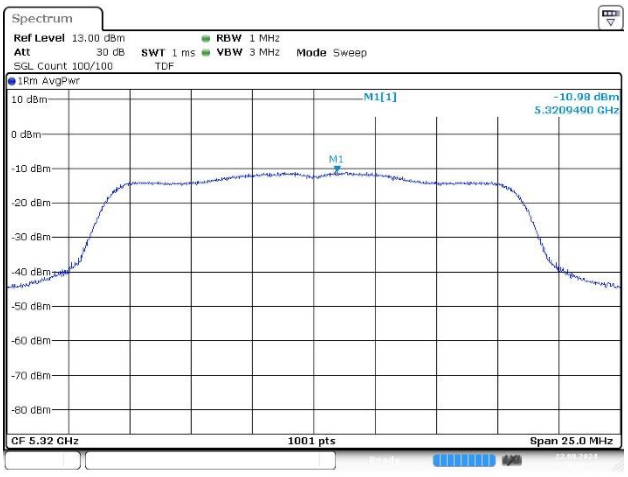
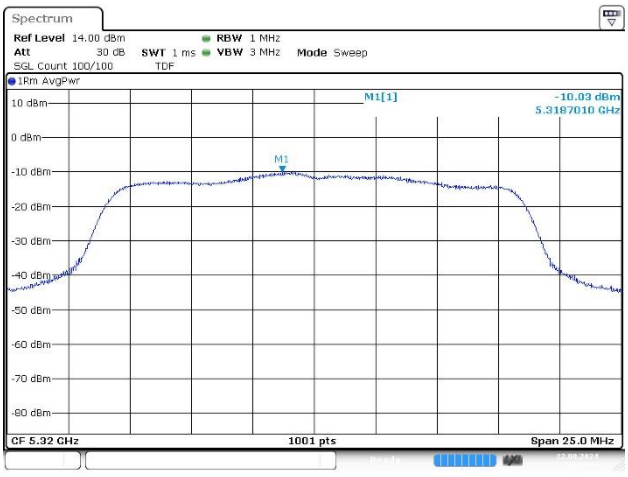


MIMO

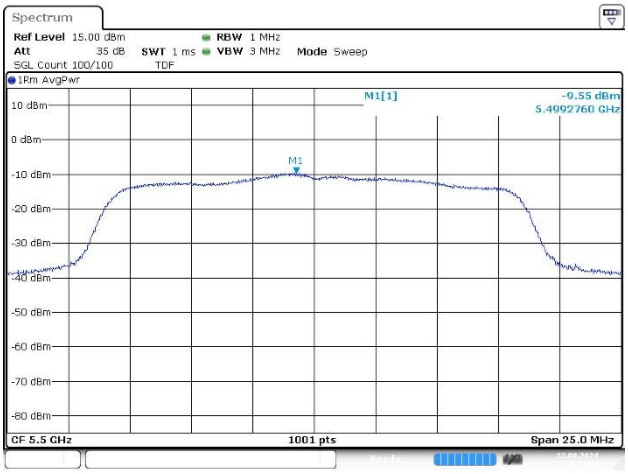
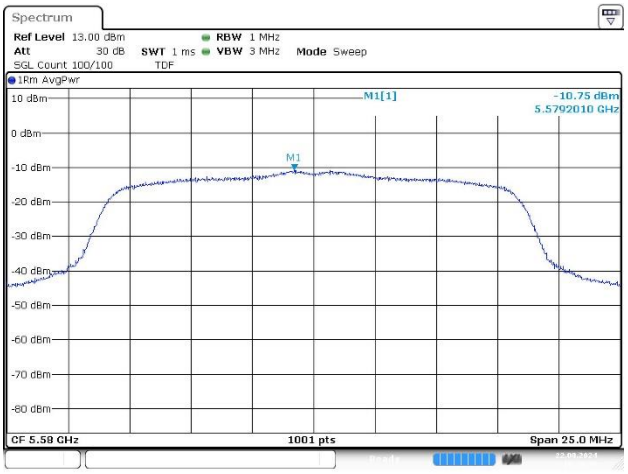
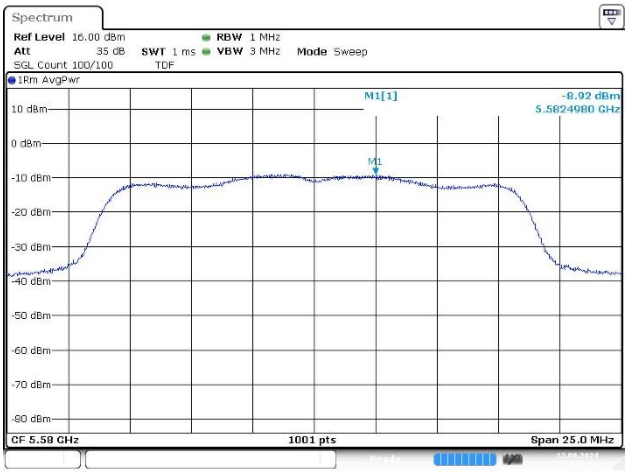
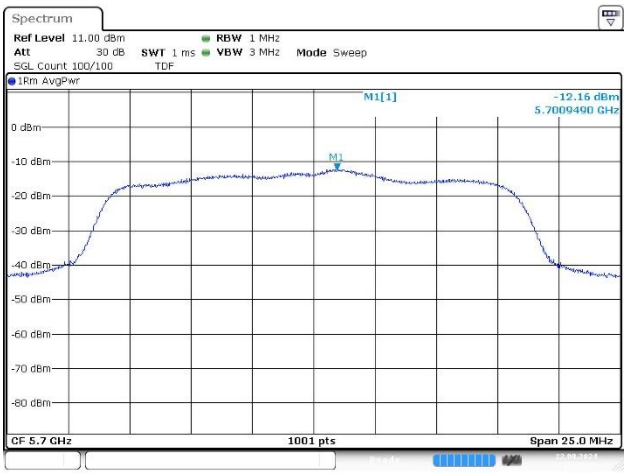
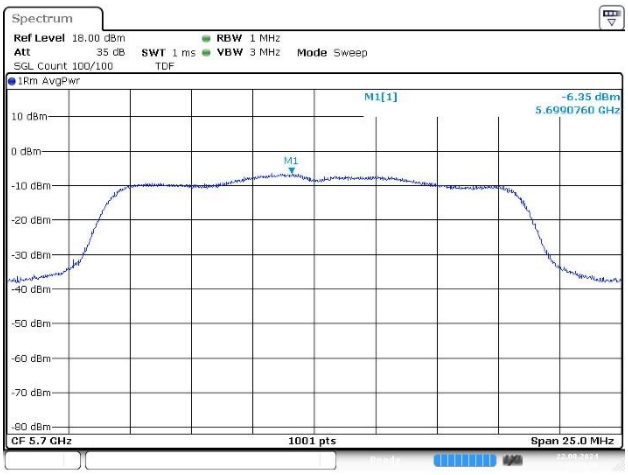
11a (Band 1)

Port 1_Low Channel (5 180 ㎒)	Port 2_Low Channel (5 180 ㎒)
	
Port 1_Middle Channel (5 220 ㎒)	Port 2_Middle Channel (5 220 ㎒)
	
Port 1_High Channel (5 240 ㎒)	Port 2_High Channel (5 240 ㎒)
	

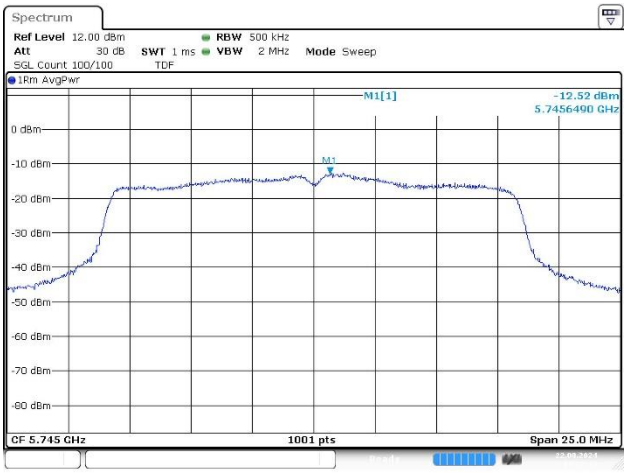
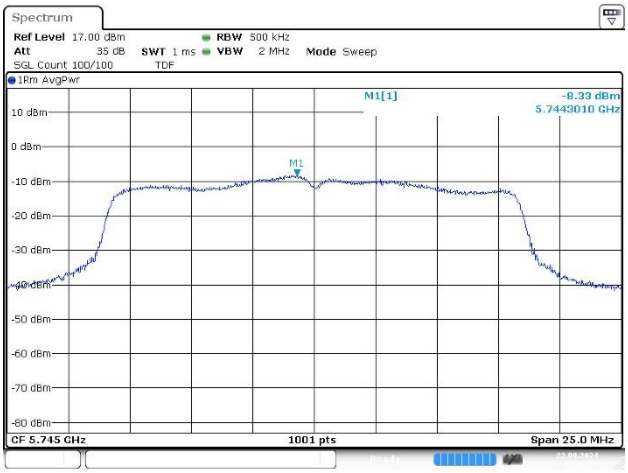
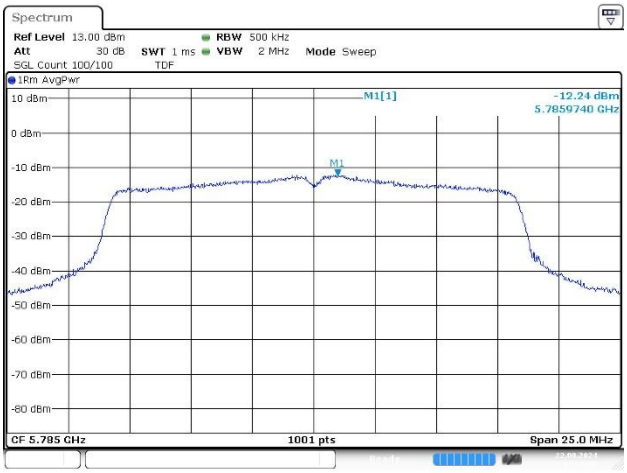
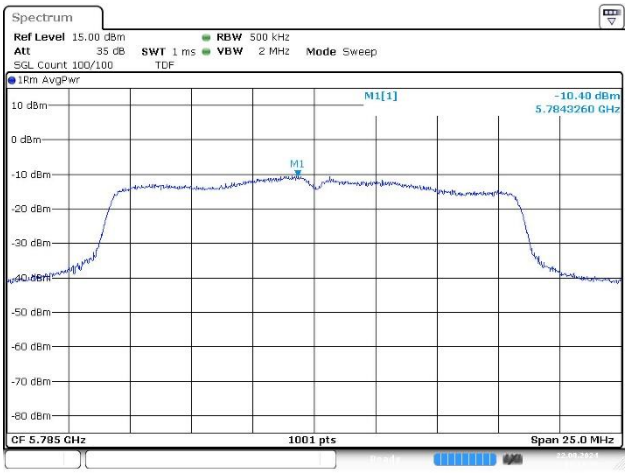
11a (Band 2A)

Port 1_Low Channel (5 260 ㎒)	Port 2_Low Channel (5 260 ㎒)
	
Port 1_Middle Channel (5 300 ㎒)	Port 2_Middle Channel (5 300 ㎒)
	
Port 1_High Channel (5 320 ㎒)	Port 2_High Channel (5 320 ㎒)
	

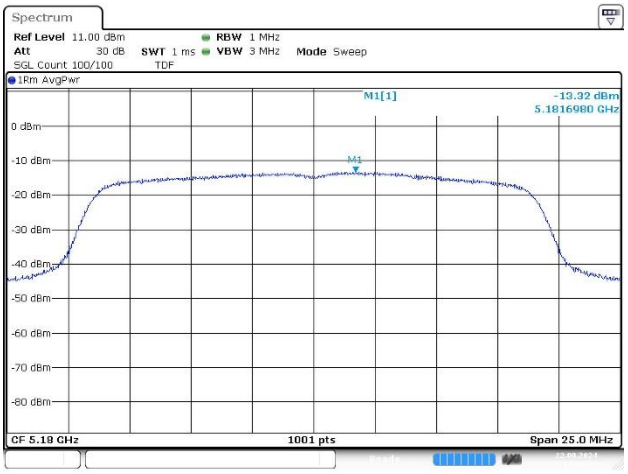
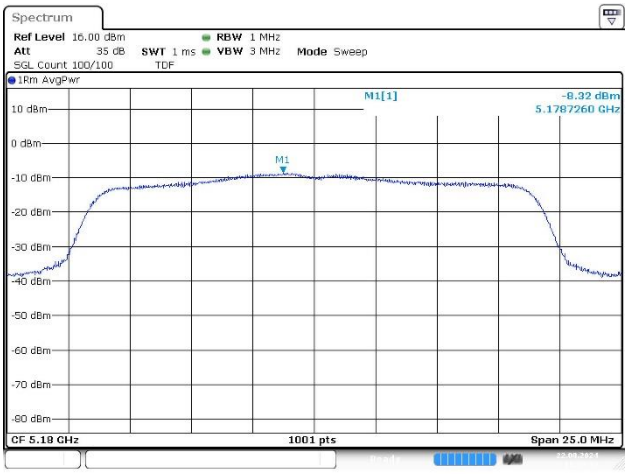
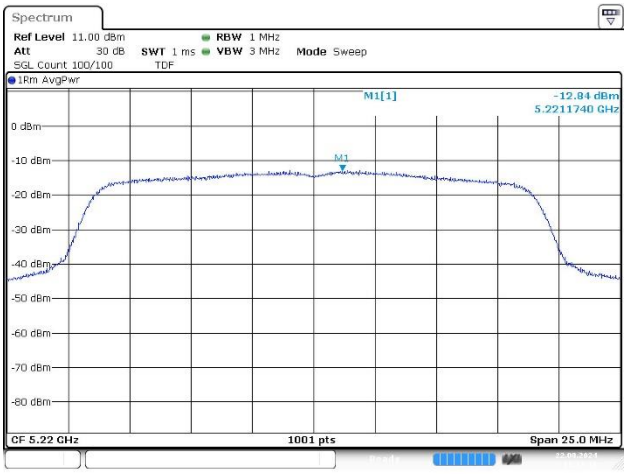
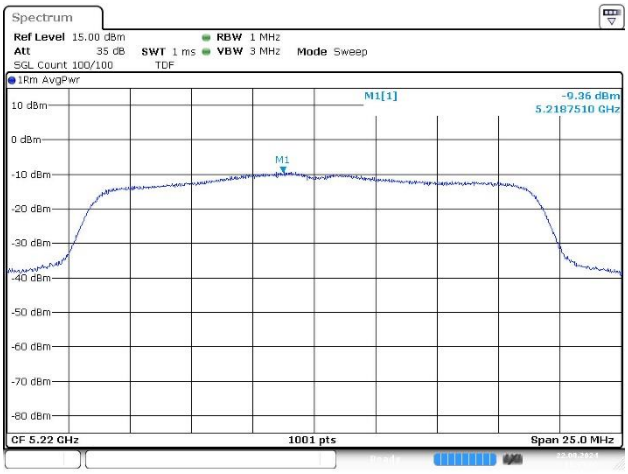
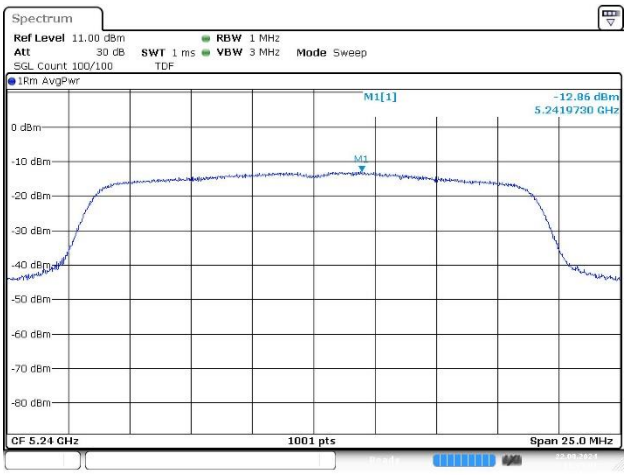
11a (Band 2C)

Port 1_Low Channel (5 500 ㎒)	Port 2_Low Channel (5 500 ㎒)
	
Port 1_Middle Channel (5 580 ㎒)	Port 2_Middle Channel (5 580 ㎒)
	
Port 1_High Channel (5 700 ㎒)	Port 2_High Channel (5 700 ㎒)
	

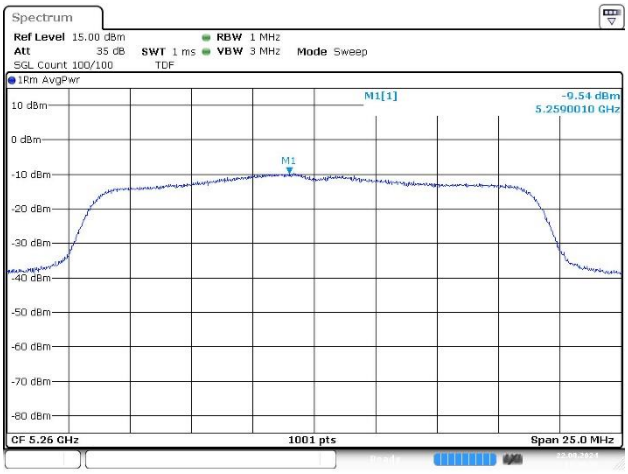
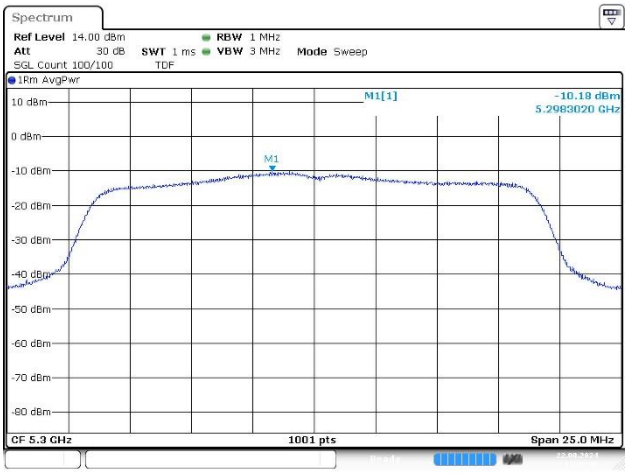
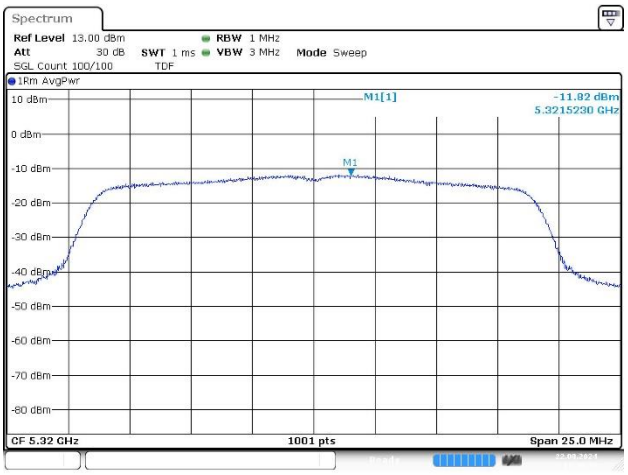
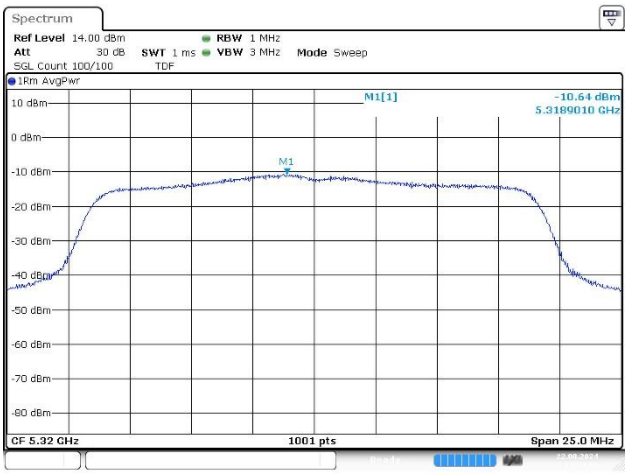
11a (Band 3)

Port 1_Low Channel (5 745 ㎒)	Port 2_Low Channel (5 745 ㎒)
	
Port 1_Middle Channel (5 785 ㎒)	**Port 2_Middle Channel (5 785 ㎒)**
	
Port 1_High Channel (5 825 ㎒)	**Port 2_High Channel (5 825 ㎒)**
	

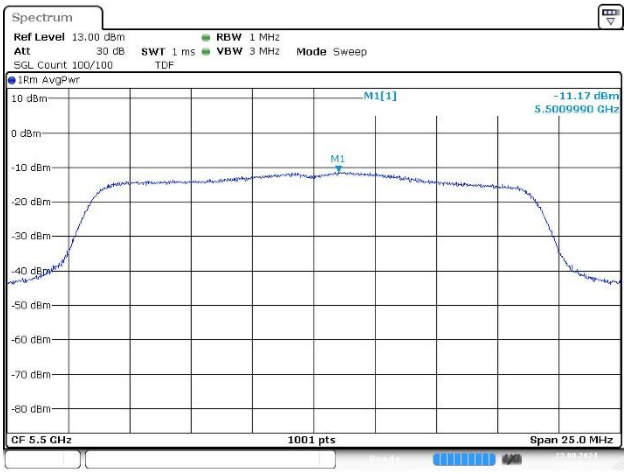
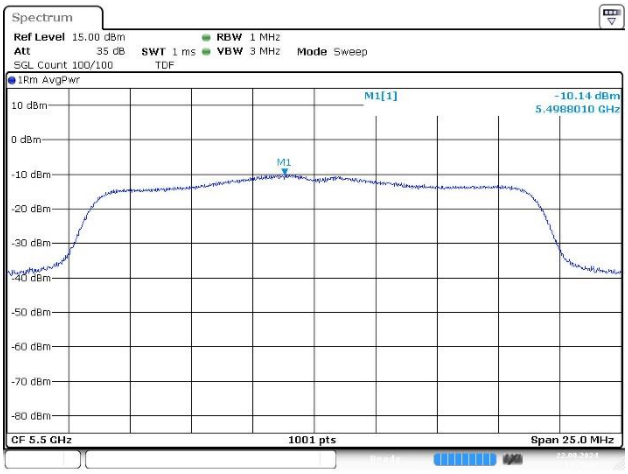
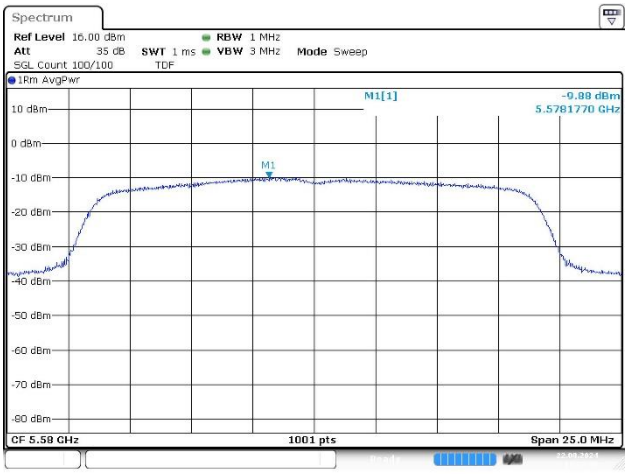
11n_HT20 (Band 1)

Port 1_Low Channel (5 180 ㎒)	Port 2_Low Channel (5 180 ㎒)
	
Port 1_Middle Channel (5 220 ㎒)	Port 2_Middle Channel (5 220 ㎒)
	
Port 1_High Channel (5 240 ㎒)	Port 2_High Channel (5 240 ㎒)
	

11n_HT20 (Band 2A)

Port 1_Low Channel (5 260 ㎒)	Port 2_Low Channel (5 260 ㎒)
	
Port 1_Middle Channel (5 300 ㎒)	Port 2_Middle Channel (5 300 ㎒)
	
Port 1_High Channel (5 320 ㎒)	Port 2_High Channel (5 320 ㎒)
	

11n_HT20 (Band 2C)

Port 1_Low Channel (5 500 ㎒)	Port 2_Low Channel (5 500 ㎒)
	
Port 1_Middle Channel (5 580 ㎒)	Port 2_Middle Channel (5 580 ㎒)
	
Port 1_High Channel (5 700 ㎒)	Port 2_High Channel (5 700 ㎒)