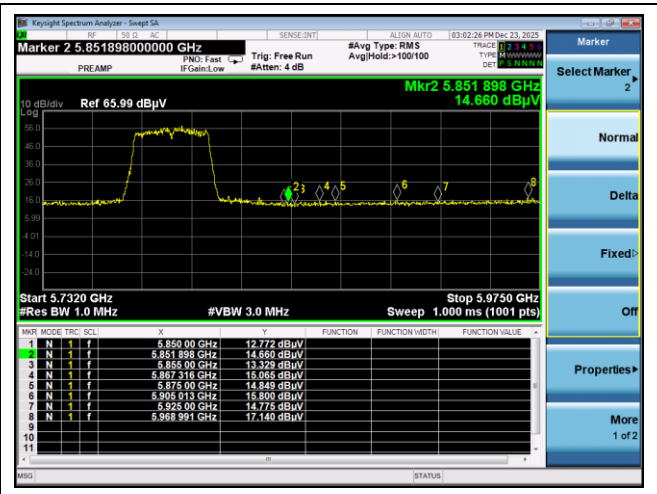
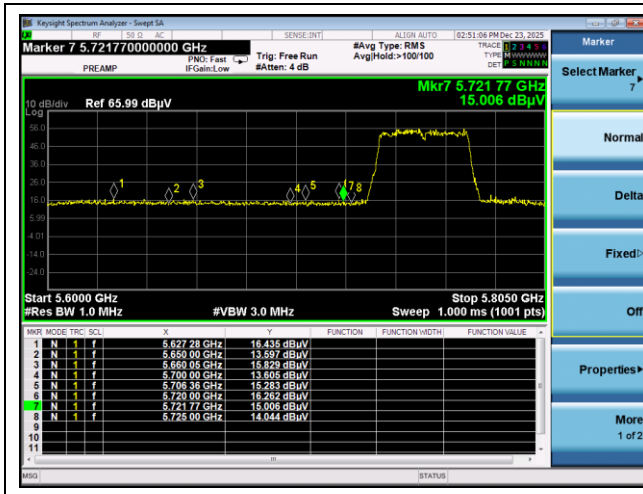


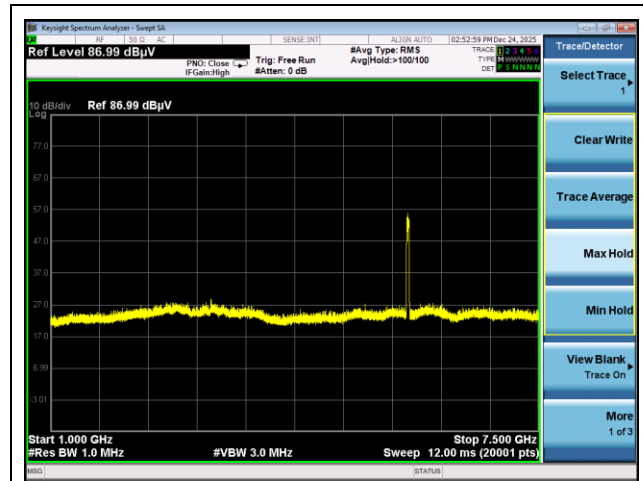
11n_HT40

Low channel Band edge (Peak) - Band 3

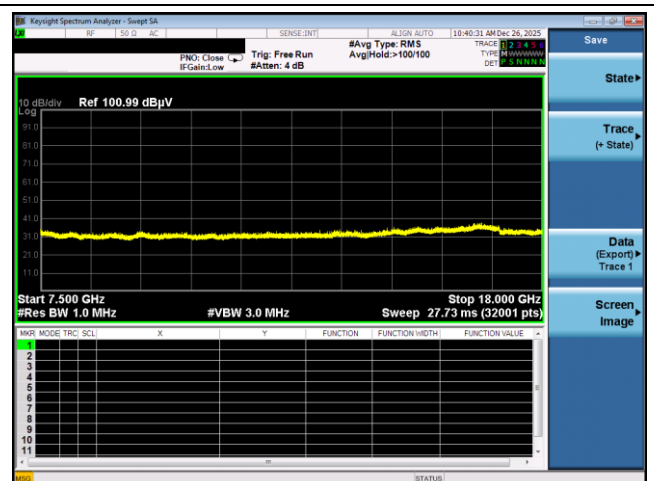
High channel Band edge (Peak) - Band 3



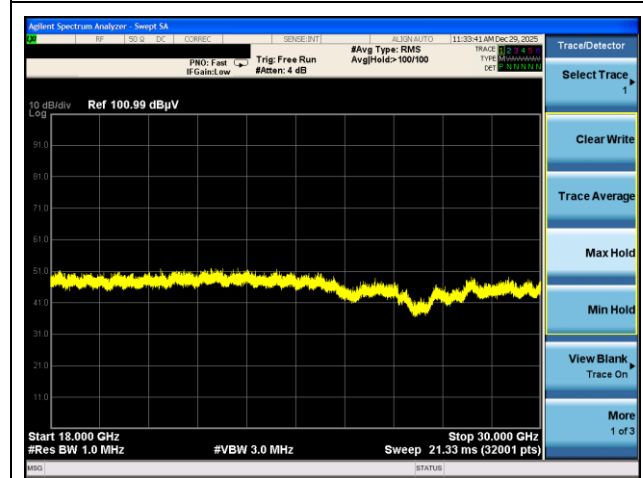
Radiated Spurious Emissions



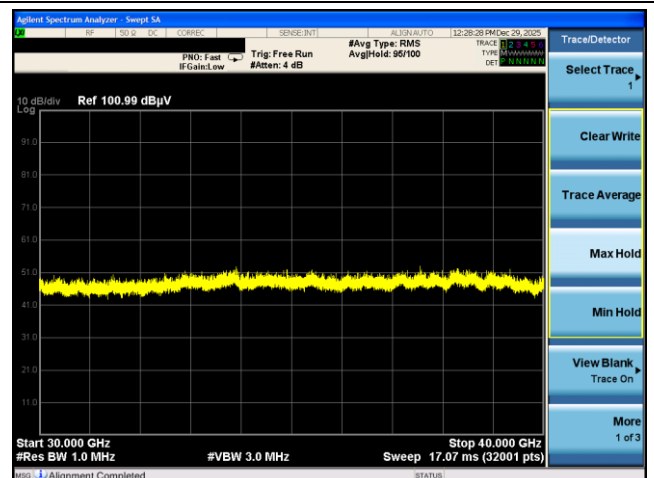
1 GHz ~ 7.5 GHz



7.5 GHz ~ 18 GHz



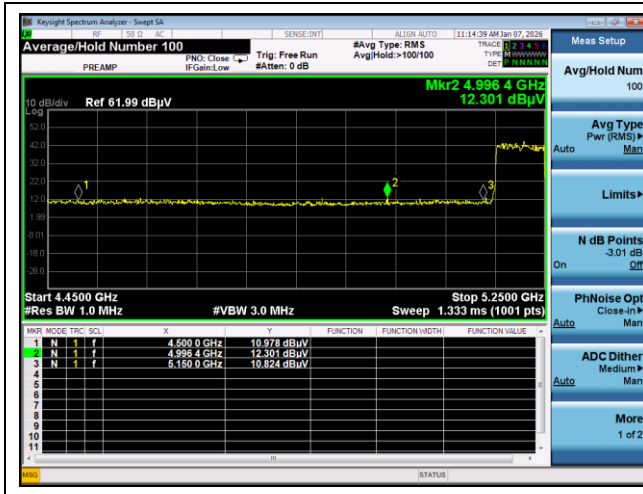
18 GHz ~ 30 GHz



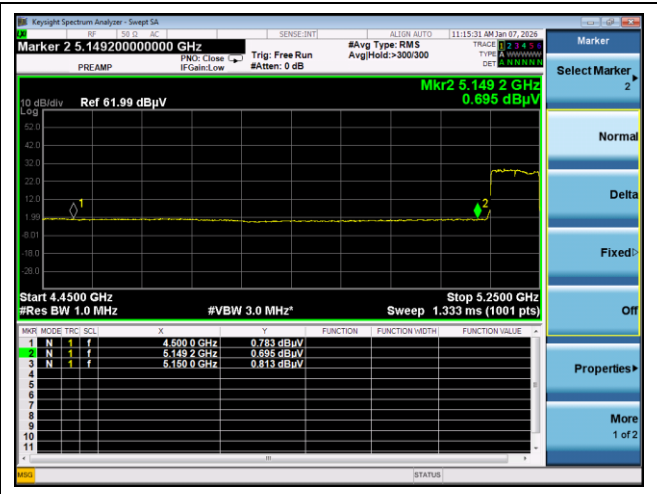
30 GHz ~ 40 GHz

11ac_VHT80

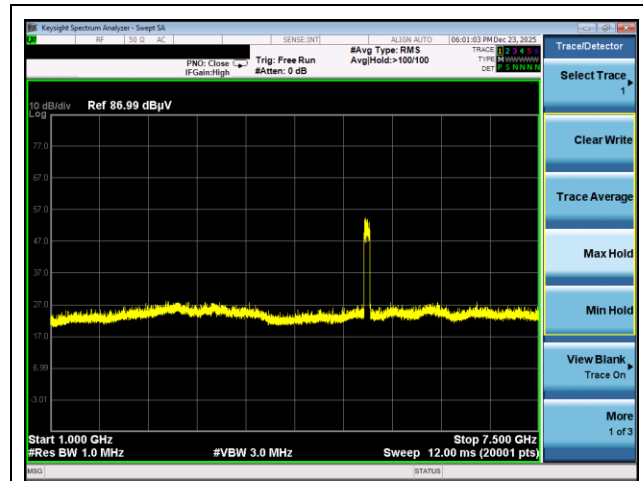
Middle channel Band edge (Peak) - Band 1



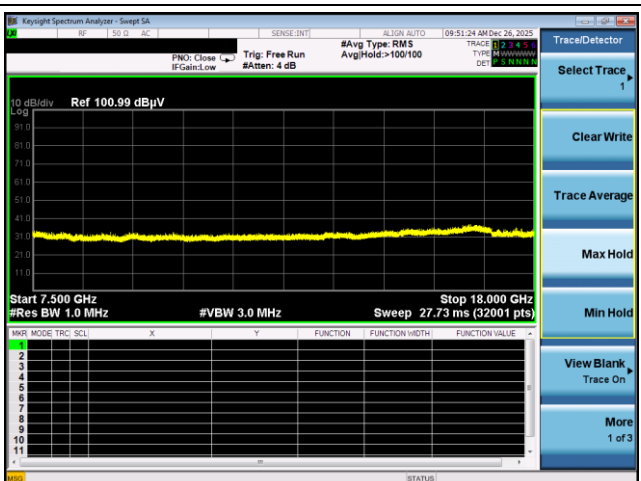
Middle channel Band edge (Average) - Band 1



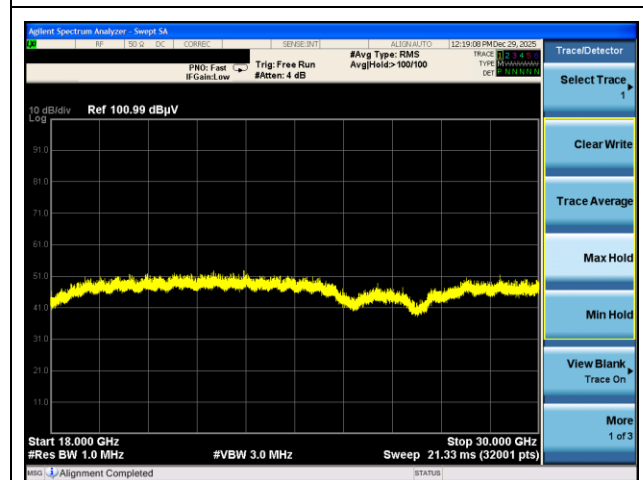
Radiated Spurious Emissions



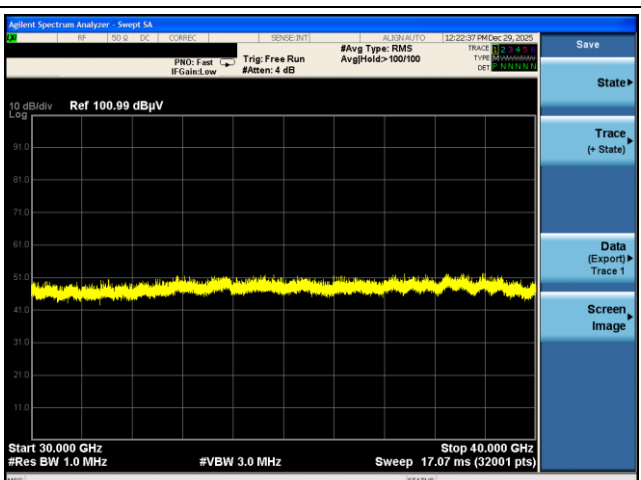
1 GHz ~ 7.5 GHz



7.5 GHz ~ 18 GHz

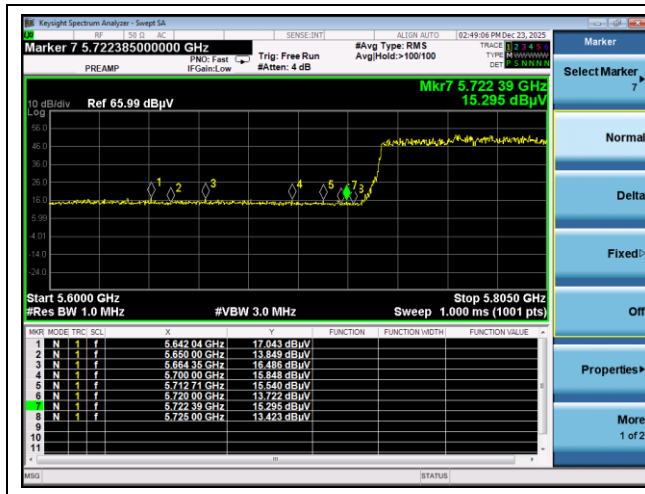


18 GHz ~ 30 GHz

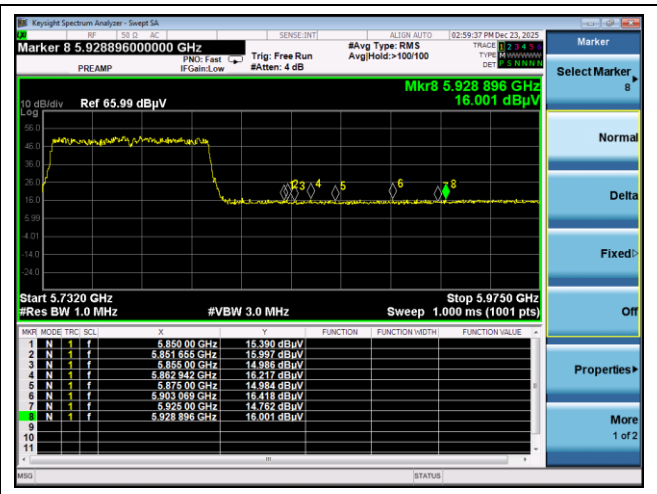


30 GHz ~ 40 GHz

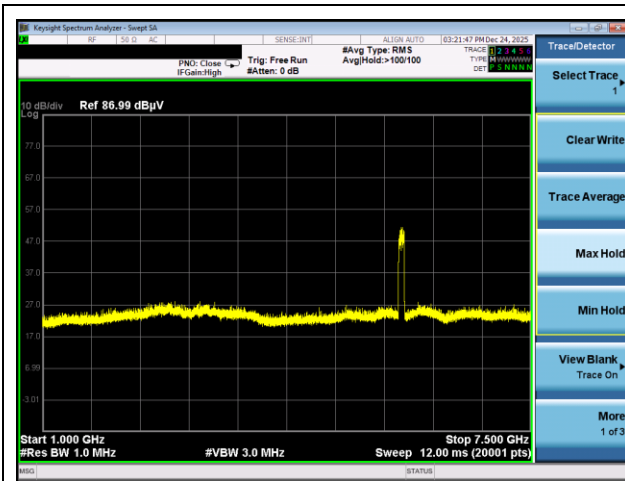
Middle channel Band edge (Peak) - Band 3



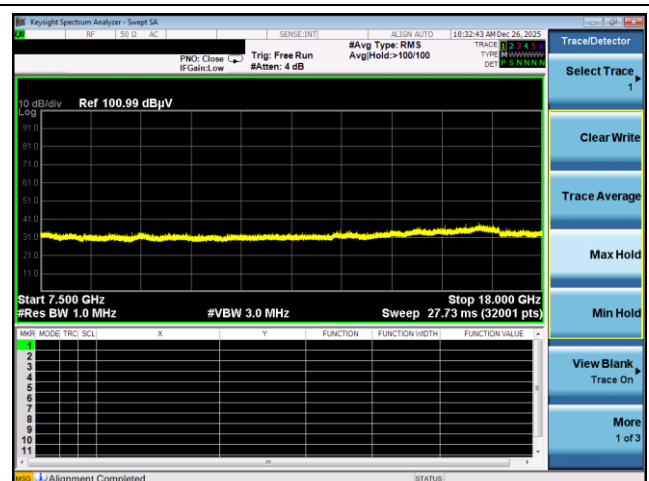
Middle channel Band edge (Peak) - Band 3



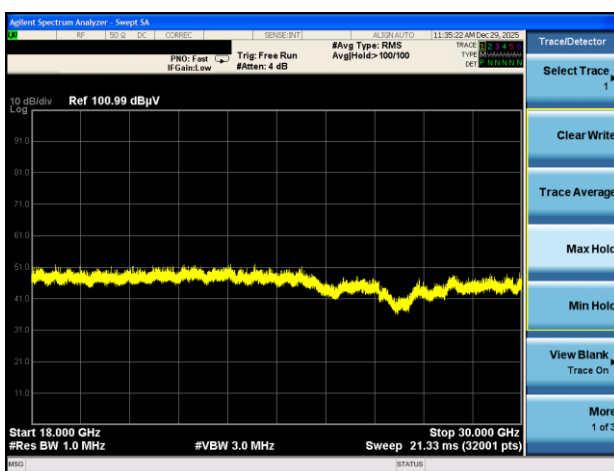
Radiated Spurious Emissions



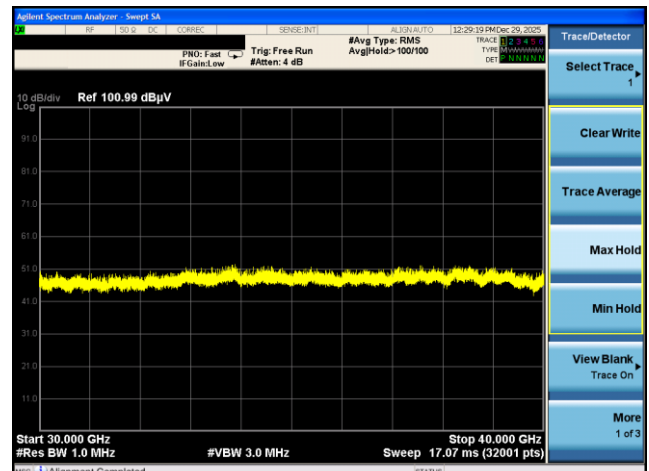
1 GHz ~ 7.5 GHz



7.5 GHz ~ 18 GHz



18 GHz ~ 30 GHz



30 GHz ~ 40 GHz

3. 26 dB Bandwidth & 99 % Bandwidth

3.1. Test Setup



3.2. Limit

None; for reporting purpose only.

3.3. Test Procedure

3.3.1. 26 dB Bandwidth

1. This measurement settings are specified in section II.C.1 of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set RBW = approximately 1 % of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

3.3.2. 99 % Bandwidth

3.3.2.1 FCC

1. This measurement settings are specified in section II.D of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set center frequency to the nominal EUT channel center frequency.
3. Set span = 1.5 times to 5.0 times the OBW.
4. Set RBW = 1 % to 5 % of the OBW.
5. Set VBW $\geq 3 \times$ RBW.
6. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
7. Use the 99 % power bandwidth function of the instrument (if available).
8. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99 % occupied bandwidth is the difference between these two frequencies.

In the result,

- DFS requirements are not applicable in the 5 150 MHz ~ 5 250 MHz.

3.3.2.2 IC

The test follows section 6.9.3 of ANSI C63.10-2020 (for FCC) and ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 (for ISSED).

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement.
 - 1) When measuring OBW for UWB, the VBW shall be set to three times the RBW or the maximum available VBW of the measuring instrument.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.6.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max-hold mode (until the trace stabilizes) shall be used.
- f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
- h) The occupied bandwidth shall be reported by providing spectral plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

3.4. Test Result

Ambient temperature : (23 ± 1) °C

Relative humidity : 47 %

- Ant. 1 + Ant. 2

Test mode: 11a

Band	Frequency (MHz)	Ch.	Data Rate	26 dB Bandwidth (MHz)		99 % Bandwidth (MHz)	
				Port 1	Port 2	Port 1	Port 2
U-NII 1	5 180	36	6 Mbps	21.109	21.429	16.600	16.548
	5 200	40		21.149	21.369	16.662	16.569
	5 220	44		21.169	21.389	16.573	16.585
	5 240	48		21.189	21.229	16.613	16.568
U-NII 3	5 745	149		22.049	21.469	16.648	16.619
	5 785	157		21.709	21.409	16.655	16.566
	5 805	161		21.829	21.469	16.661	16.552

Test mode: 11ac_VHT20 (U-NII 1) & 11n_HT20(U-NII 3)

Band	Frequency (MHz)	Ch.	Data Rate	26 dB Bandwidth (MHz)		99 % Bandwidth (MHz)	
				Port 1	Port 2	Port 1	Port 2
U-NII 1	5 180	36	MCS0	21.349	21.729	17.685	17.693
	5 200	40		21.329	21.649	17.692	17.677
	5 220	44		21.249	21.589	17.699	17.694
	5 240	48		21.309	21.329	17.700	17.674
U-NII 3	5 745	149		21.429	21.409	17.730	17.682
	5 785	157		21.689	21.849	17.727	17.688
	5 805	161		21.389	21.689	17.731	17.700

Test mode: 11ac_VHT40 (U-NII 1) & 11n_HT40(U-NII 3)

Band	Frequency (MHz)	Ch.	Data Rate	26 dB Bandwidth (MHz)		99 % Bandwidth (MHz)	
				Port 1	Port 2	Port 1	Port 2
U-NII 1	5 190	38	MCS1	40.780	41.419	36.203	36.301
	5 230	46		41.020	41.100	36.315	36.286
U-NII 3	5 755	151		40.860	40.580	36.275	36.230
	5 795	159		40.780	40.940	36.230	36.229

Test mode: 11ac_VHT80

Band	Frequency (MHz)	Ch.	Data Rate	26 dB Bandwidth (MHz)		99 % Bandwidth (MHz)	
				Port 1	Port 2	Port 1	Port 2
U-NII 1	5 210	42	MCS0	84.118	83.638	75.805	75.704
U-NII 3	5 775	155		84.118	82.999	75.821	75.703

- Ant. 1 + Ant. 3

Test mode: 11a

Band	Frequency (MHz)	Ch.	Data Rate	26 dB Bandwidth (MHz)		99 % Bandwidth (MHz)	
				Port 1	Port 3	Port 1	Port 3
U-NII 1	5 180	36	6 Mbps	21.189	21.469	16.603	16.567
	5 200	40		21.129	21.449	16.575	16.546
	5 220	44		21.129	21.409	16.618	16.550
	5 240	48		21.169	21.409	16.603	16.554
U-NII 3	5 745	149		21.789	21.249	16.620	16.629
	5 785	157		21.809	21.389	16.649	16.549
	5 805	161		21.769	21.429	16.622	16.566

Test mode: 11n_HT20 (U-NII 1) & 11ac_VHT20(U-NII 3)

Band	Frequency (MHz)	Ch.	Data Rate	26 dB Bandwidth (MHz)		99 % Bandwidth (MHz)	
				Port 1	Port 3	Port 1	Port 3
U-NII 1	5 180	36	MCS0	21.429	21.729	17.702	17.696
	5 200	40		21.369	21.849	17.690	17.673
	5 220	44		21.389	21.509	17.687	17.703
	5 240	48		21.249	21.669	17.702	17.697
U-NII 3	5 745	149		21.509	21.829	17.716	17.669
	5 785	157		21.389	21.669	17.722	17.673
	5 805	161		21.449	21.369	17.710	17.697

Test mode: 11ac_VHT40 (U-NII 1) & 11n_HT40(U-NII 3)

Band	Frequency (MHz)	Ch.	Data Rate	26 dB Bandwidth (MHz)		99 % Bandwidth (MHz)	
				Port 1	Port 3	Port 1	Port 3
U-NII 1	5 190	38	MCS1	41.139	40.980	36.271	36.196
	5 230	46		41.259	40.820	36.309	36.282
U-NII 3	5 755	151		40.700	40.940	36.318	36.249
	5 795	159		40.700	41.060	36.241	36.241

Test mode: 11ac_VHT80

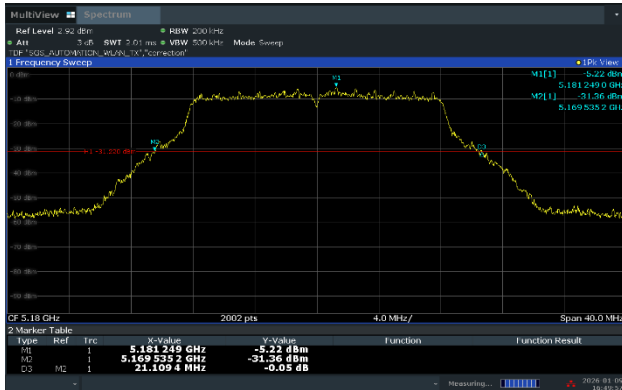
Band	Frequency (MHz)	Ch.	Data Rate	26 dB Bandwidth (MHz)		99 % Bandwidth (MHz)	
				Port 1	Port 3	Port 1	Port 3
U-NII 1	5 210	42	MCS0	83.958	83.558	75.776	75.615
U-NII 3	5 775	155		84.118	84.198	75.821	75.802

Test plots

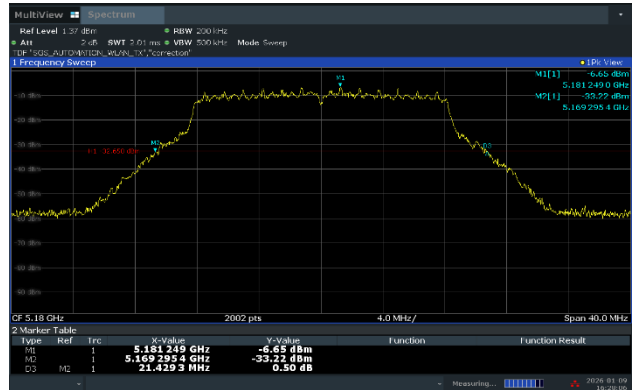
- Ant. 1 + Ant. 2

26 dB Bandwidth

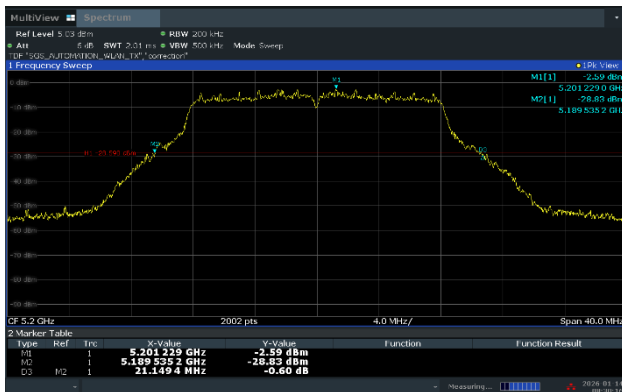
11a (Band 1)



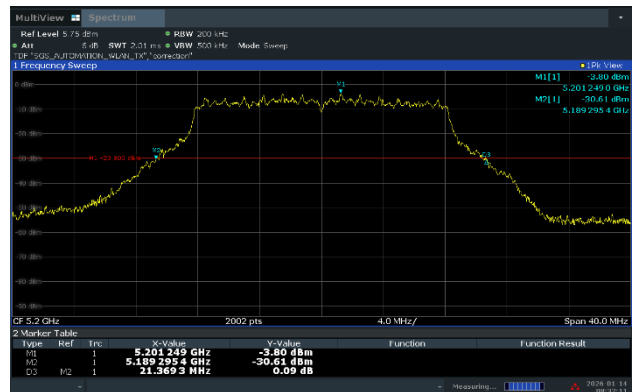
Port 1_Low Channel -1 (5 180 MHz)



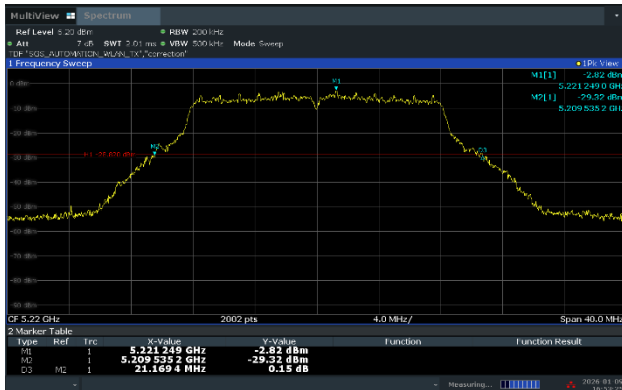
Port 2_Low Channel -1 (5 180 MHz)



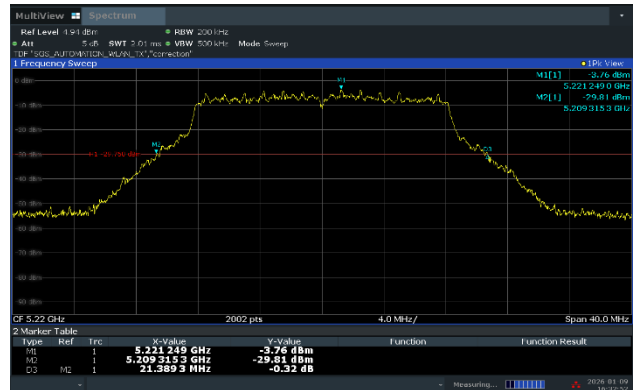
Port 1_Low Channel -2 (5 200 MHz)



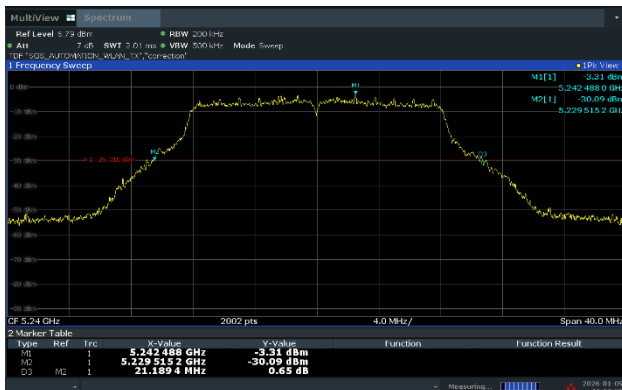
Port 2_Low Channel -2 (5 200 MHz)



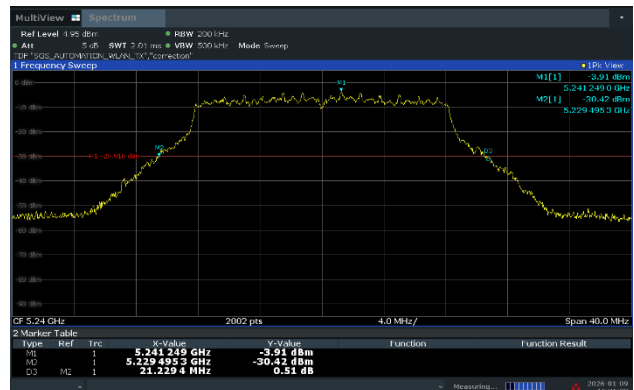
Port 1_Middle Channel (5 220 MHz)



Port 2_Middle Channel (5 220 MHz)

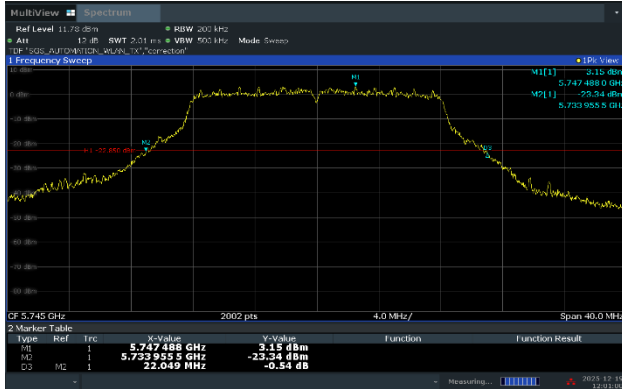


Port 1_High Channel (5 240 MHz)

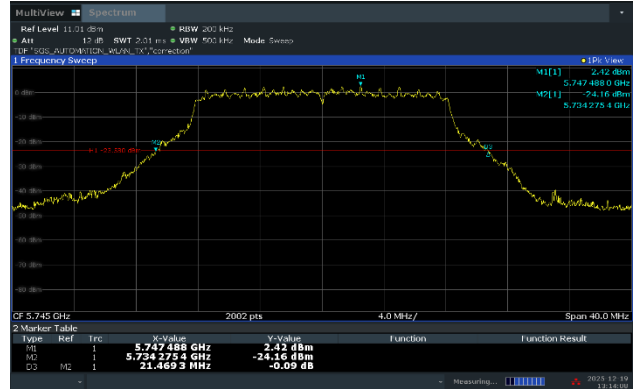


Port 2_High Channel (5 240 MHz)

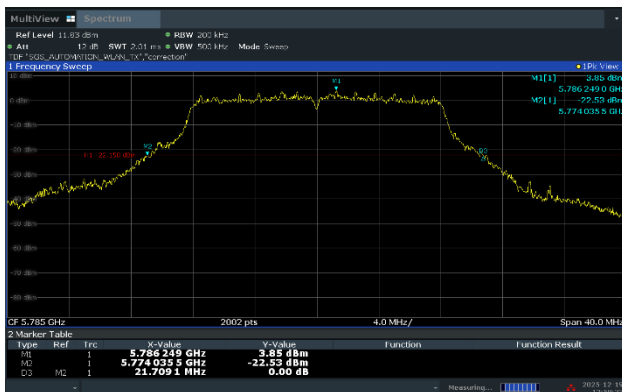
11a (Band 3)



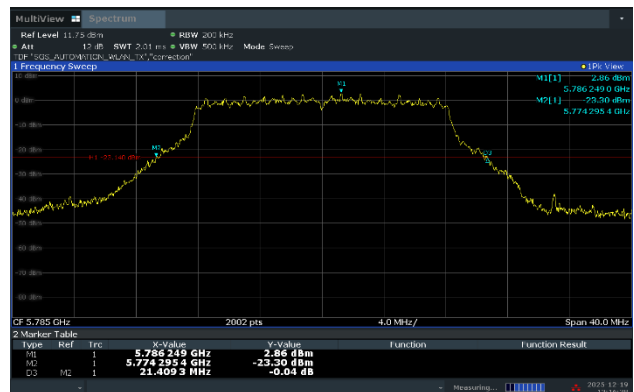
Port 1_Low Channel (5 745 MHz)



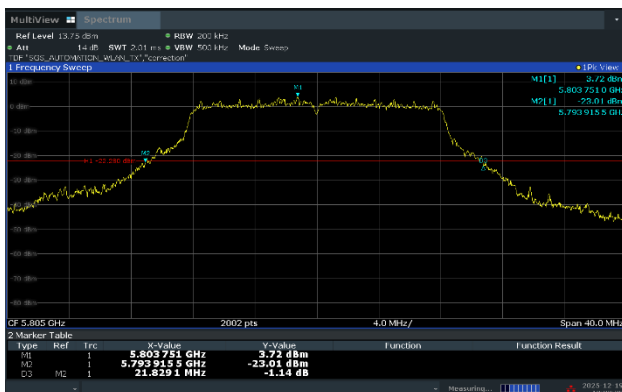
Port 2_Low Channel (5 745 MHz)



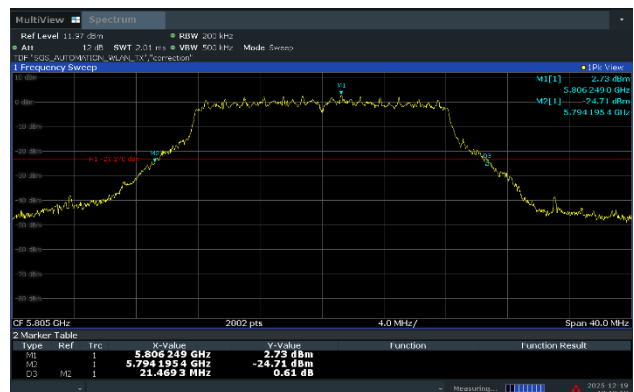
Port 1_Middle Channel (5 785 MHz)



Port 2_Middle Channel (5 785 MHz)

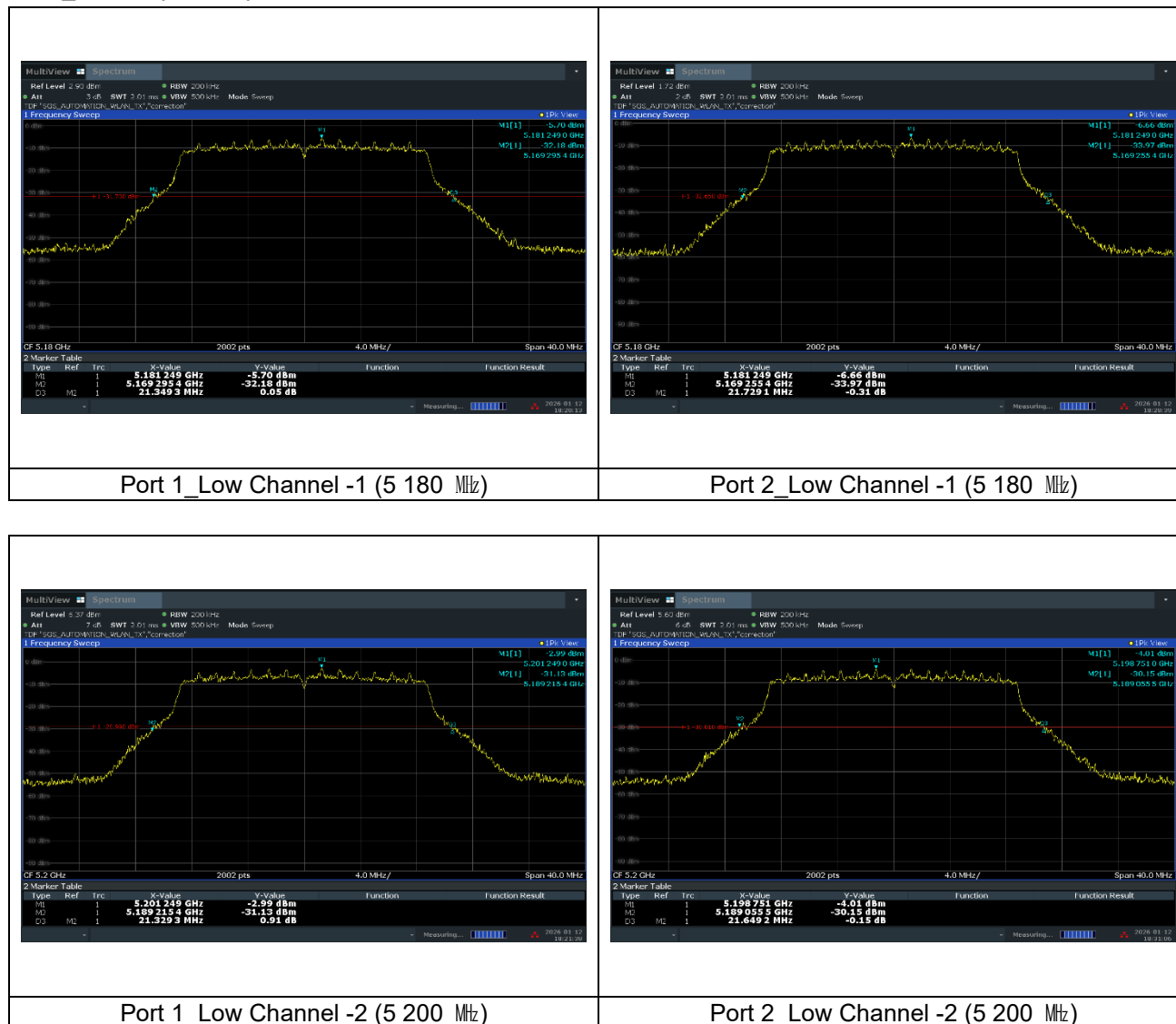


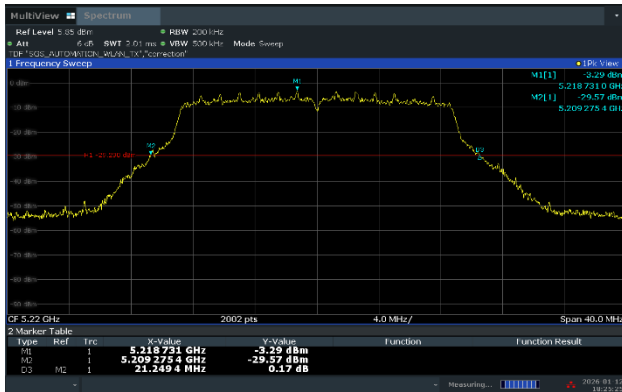
Port 1_High Channel (5 805 MHz)



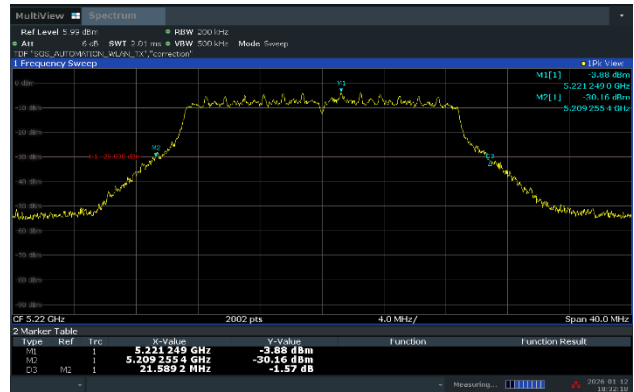
Port 2_High Channel (5 805 MHz)

11ac_VHT20 (Band 1)

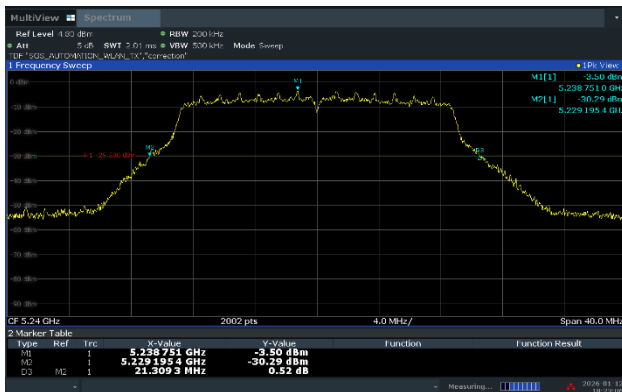




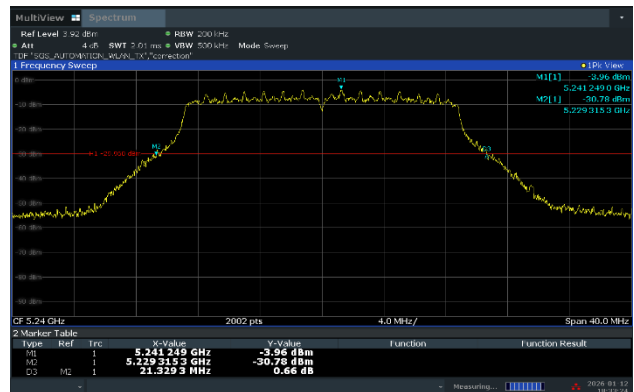
Port 1_Middle Channel (5 220 MHz)



Port 2_Middle Channel (5 220 MHz)

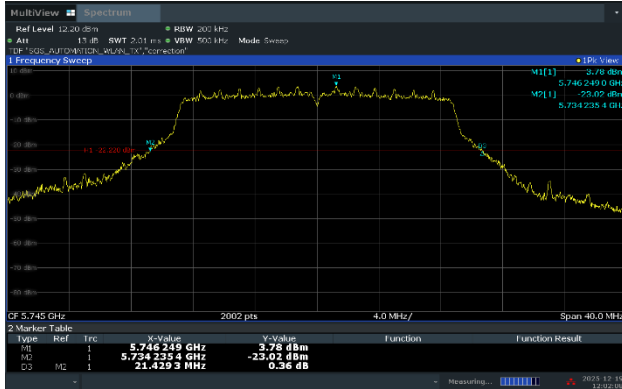


Port 1_High Channel (5 240 MHz)

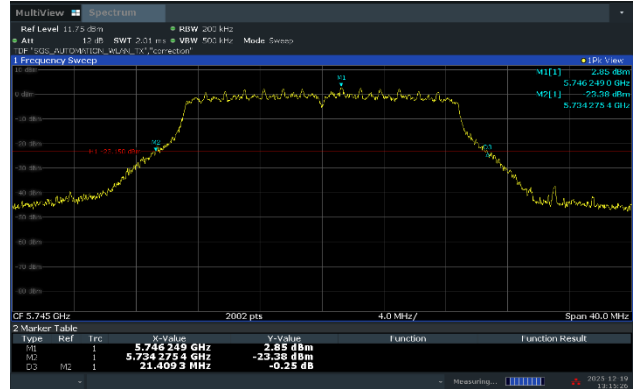


Port 2_High Channel (5 240 MHz)

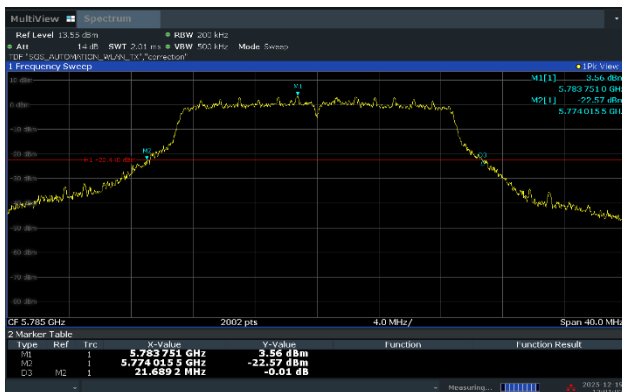
11n_HT20 (Band 3)



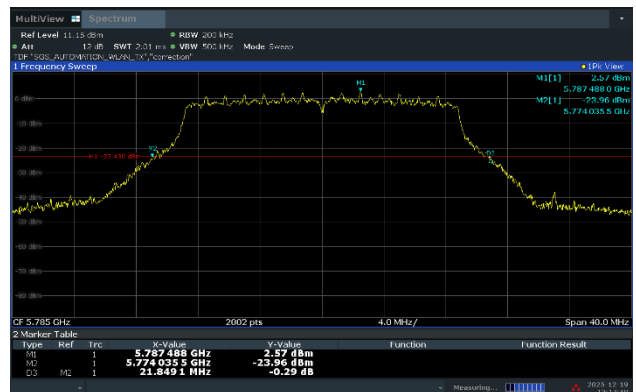
Port 1_Low Channel (5 745 MHz)



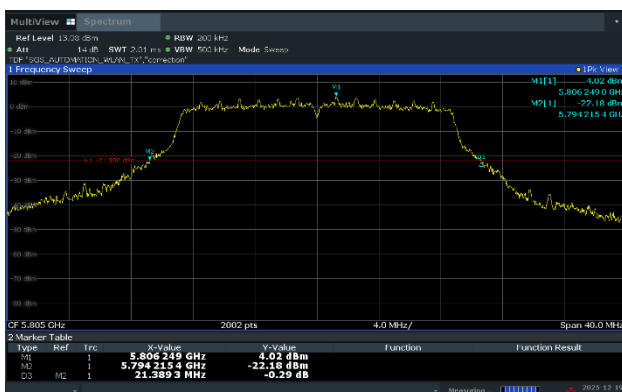
Port 2_Low Channel (5 745 MHz)



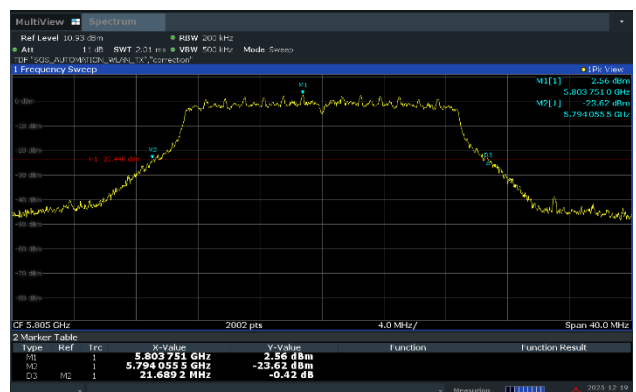
Port 1_Middle Channel (5 785 MHz)



Port 2_Middle Channel (5 785 MHz)

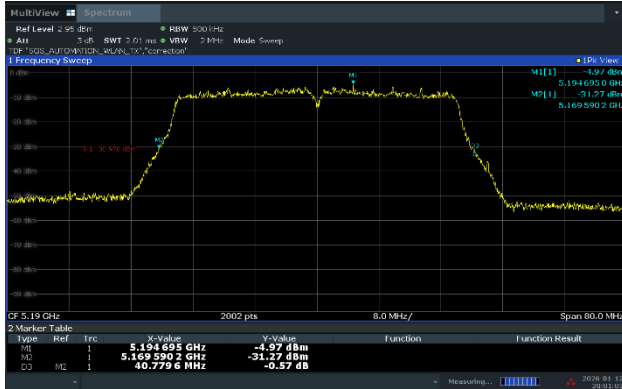


Port 1_High Channel (5 805 MHz)

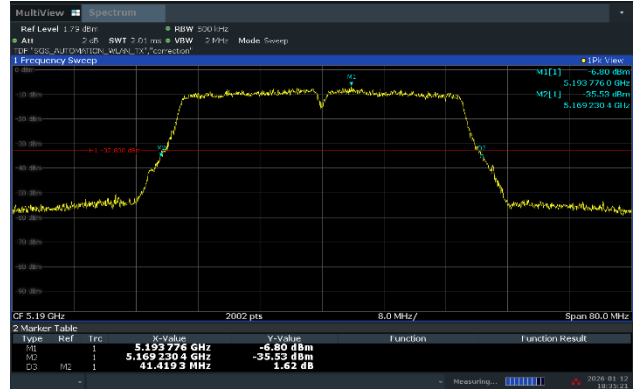


Port 2_High Channel (5 805 MHz)

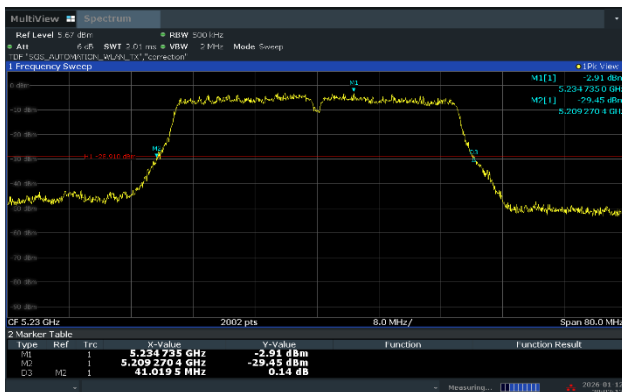
11ac_VHT40 (Band 1)



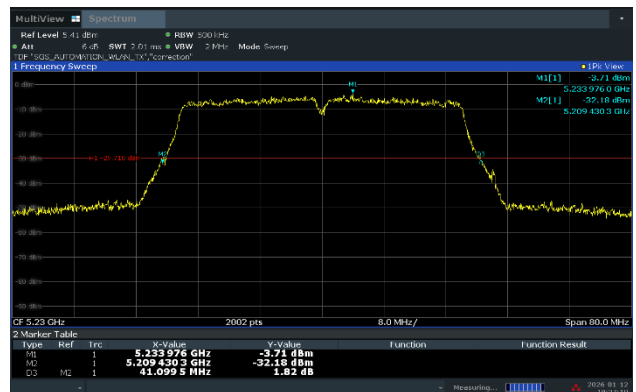
Port 1_Low Channel (5 190 MHz)



Port 2_Low Channel (5 190 MHz)

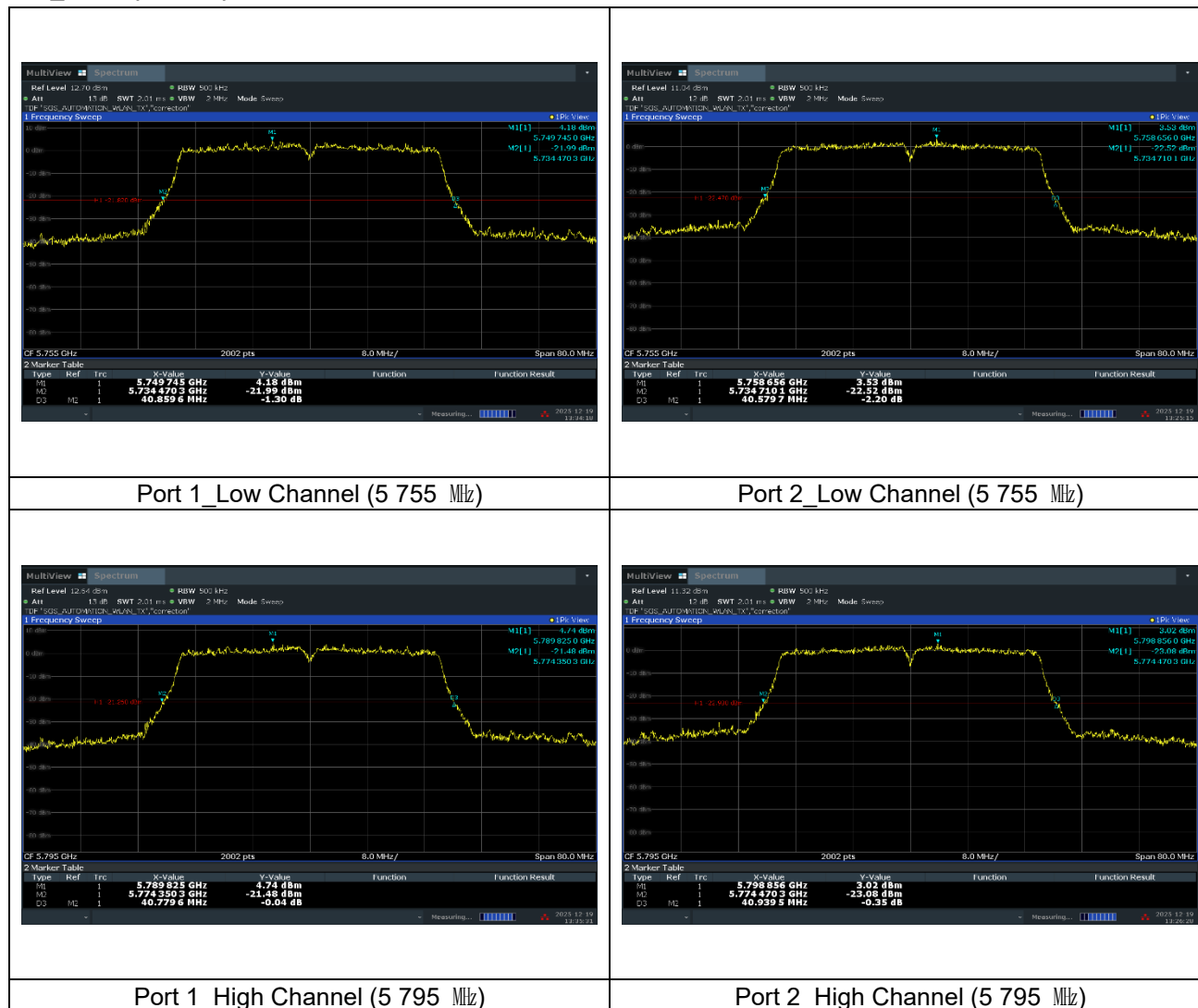


Port 1_High Channel (5 230 MHz)

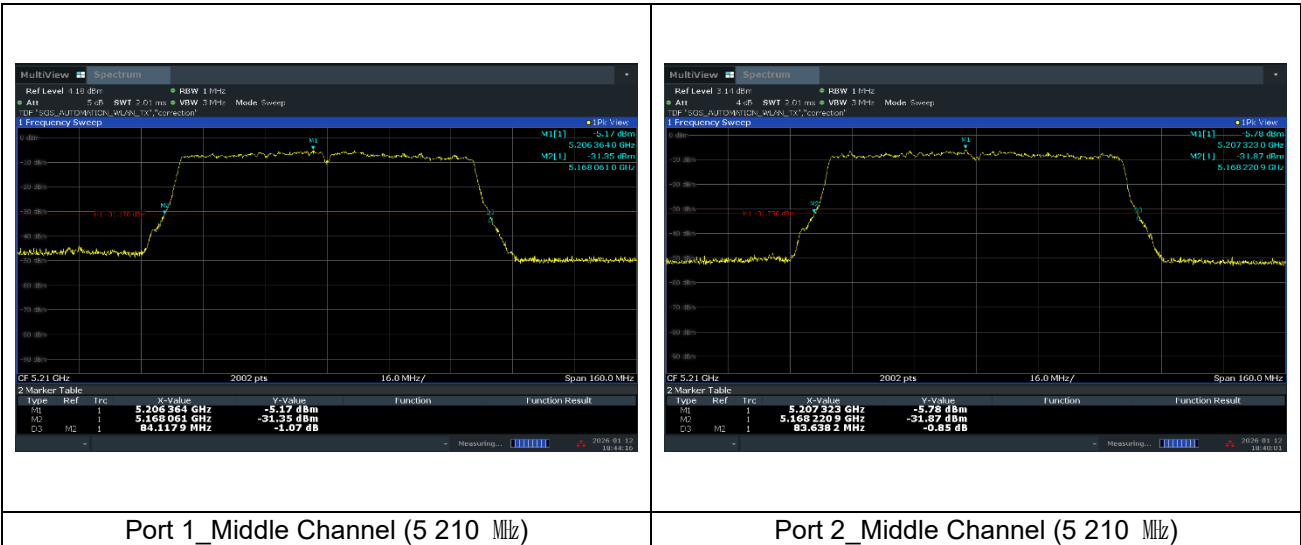


Port 2_High Channel (5 230 MHz)

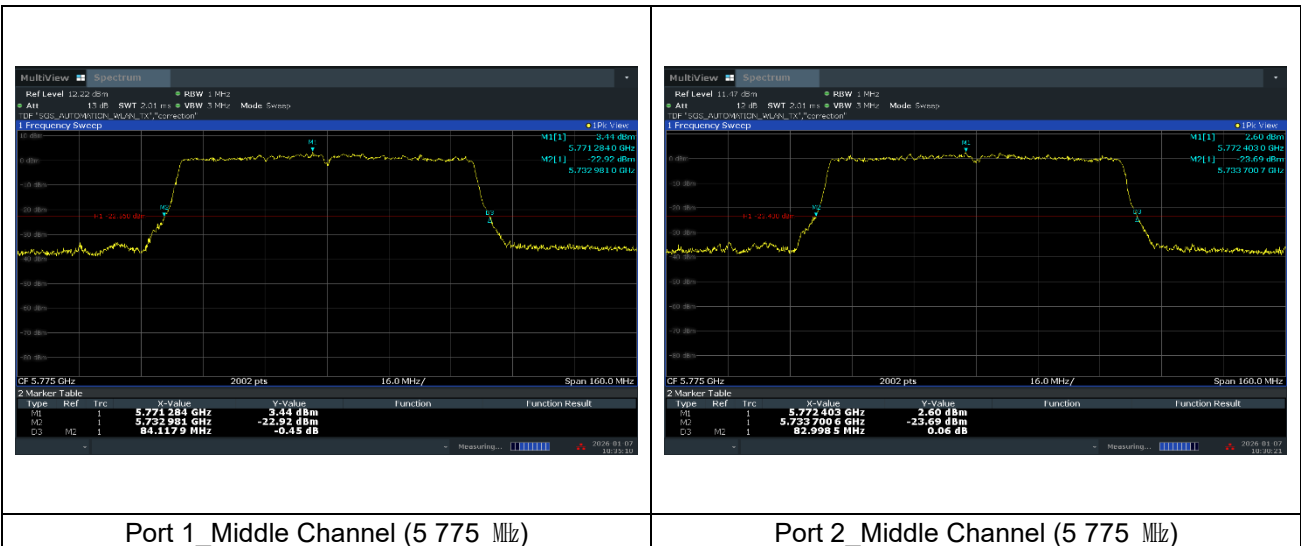
11n_HT40 (Band 3)



11ac_VHT80 (Band 1)

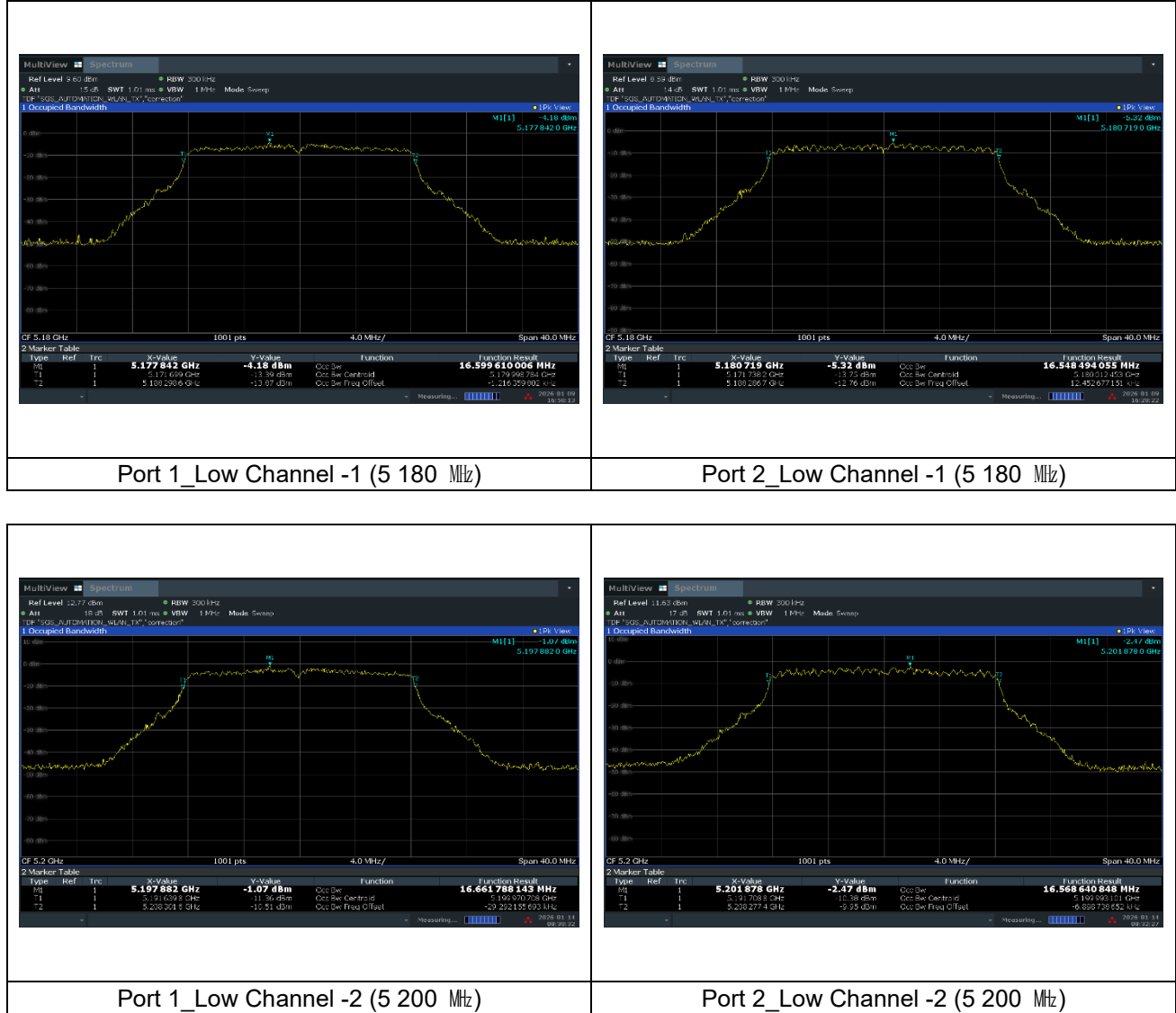


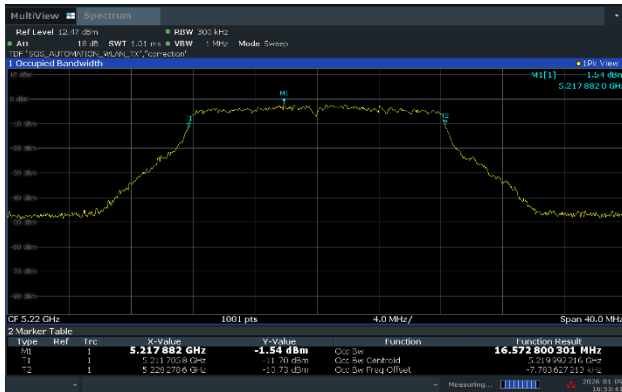
11ac_VHT80 (Band 3)



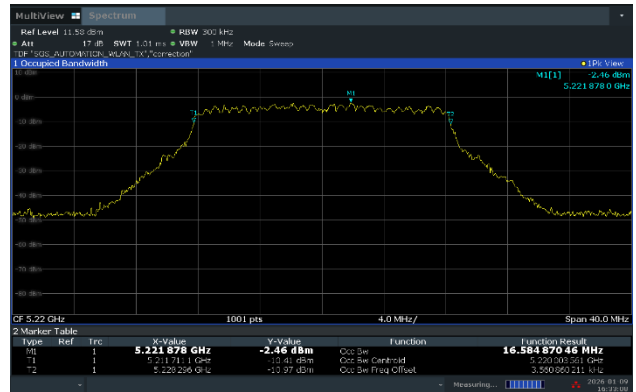
99 % Bandwidth

11a (Band 1)

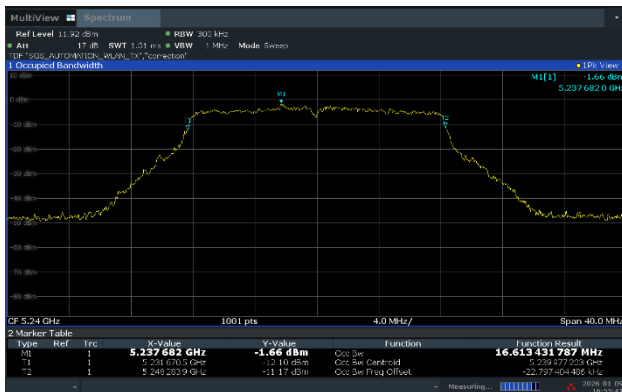




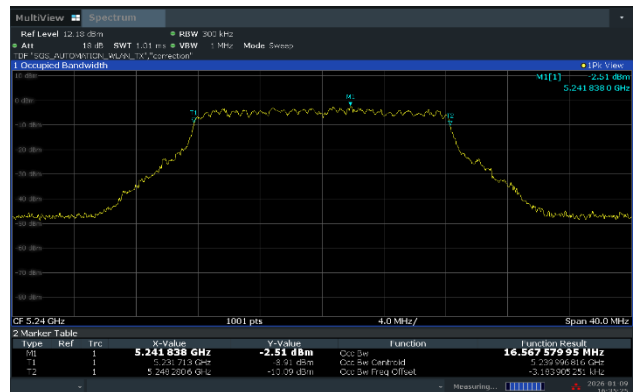
Port 1_Middle Channel (5 220 MHz)



Port 2_Middle Channel (5 220 MHz)

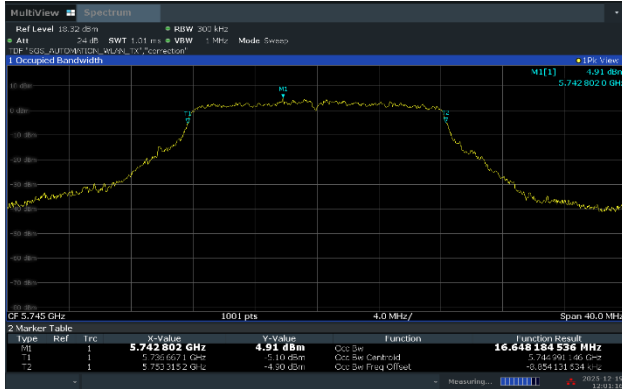


Port 1_High Channel (5 240 MHz)

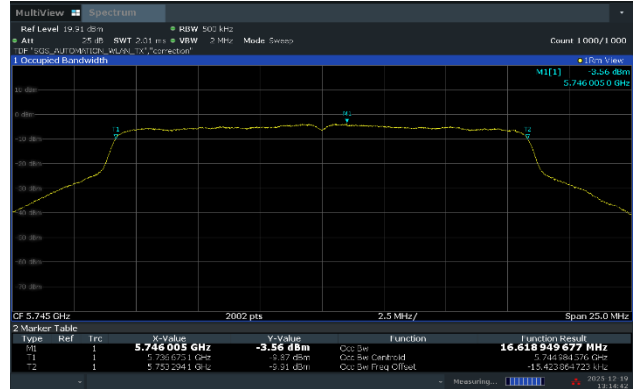


Port 2_High Channel (5 240 MHz)

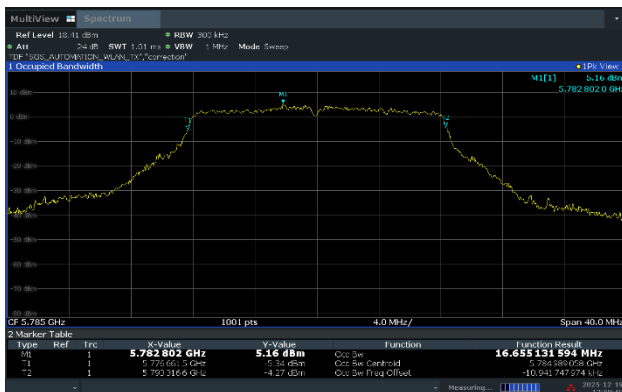
11a (Band 3)



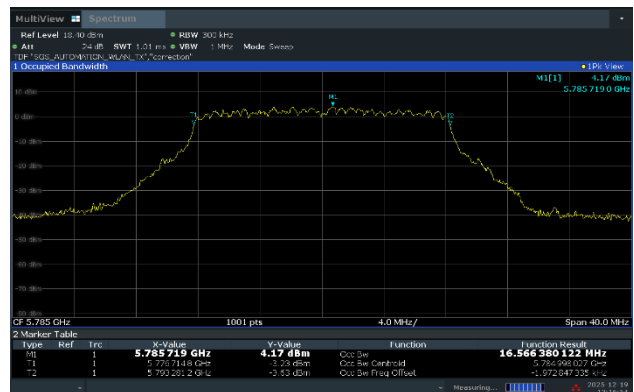
Port 1_Low Channel (5 745 MHz)



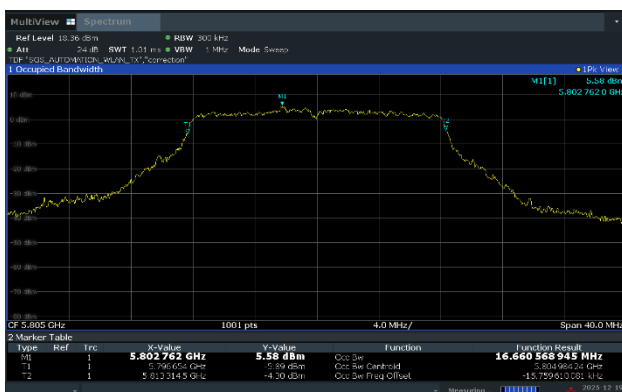
Port 2_Low Channel (5 745 MHz)



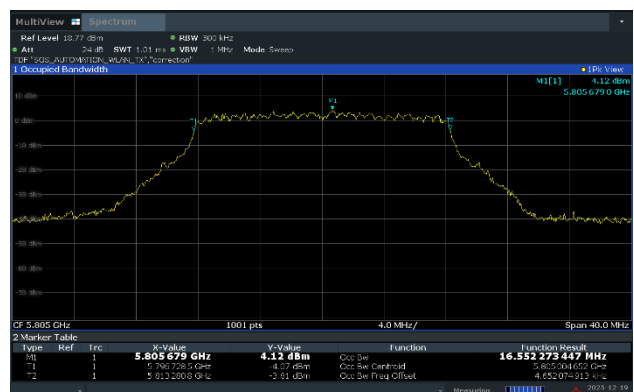
Port 1_Middle Channel (5 785 MHz)



Port 2_Middle Channel (5 785 MHz)

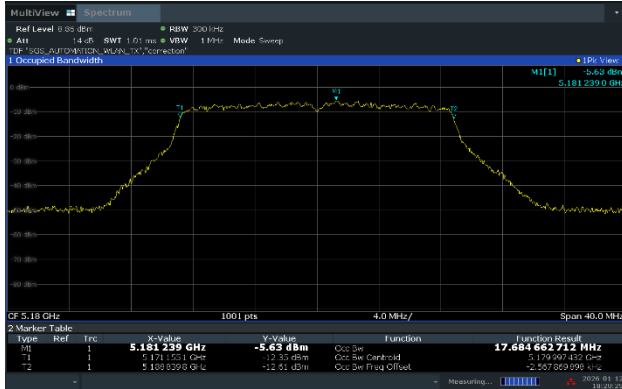


Port 1_High Channel (5 805 MHz)

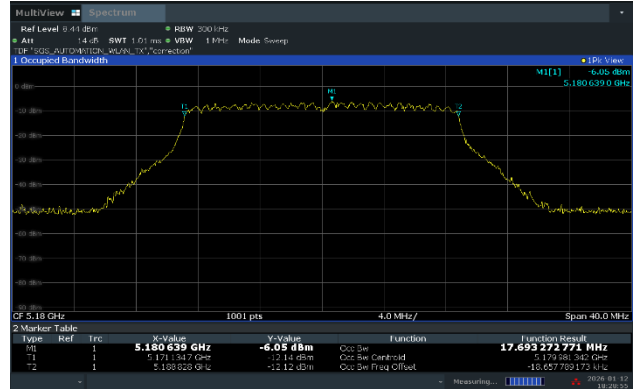


Port 2_High Channel (5 805 MHz)

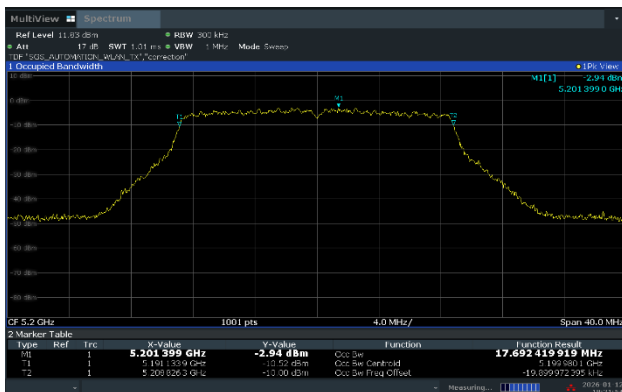
11ac_VHT20 (Band 1)



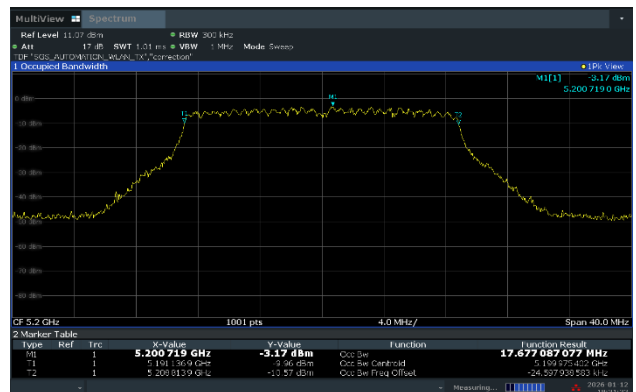
Port 1_Low Channel -1 (5 180 MHz)



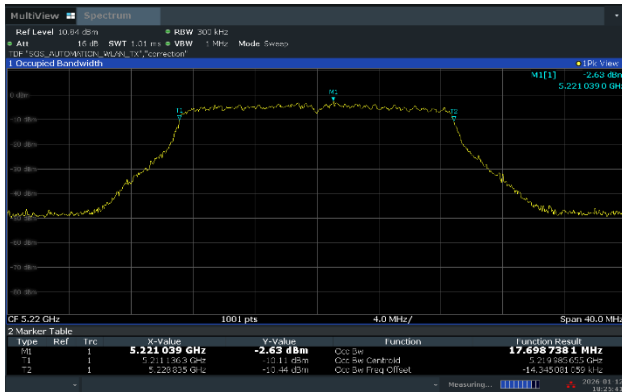
Port 2_Low Channel -1 (5 180 MHz)



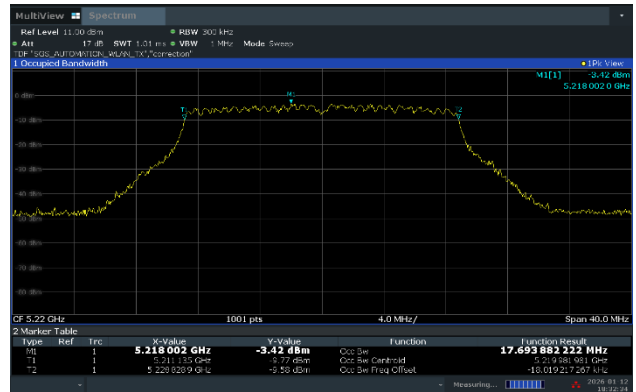
Port 1_Low Channel -2 (5 200 MHz)



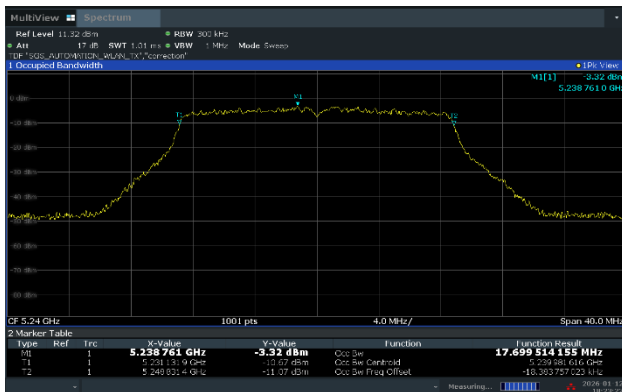
Port 2_Low Channel -2 (5 200 MHz)



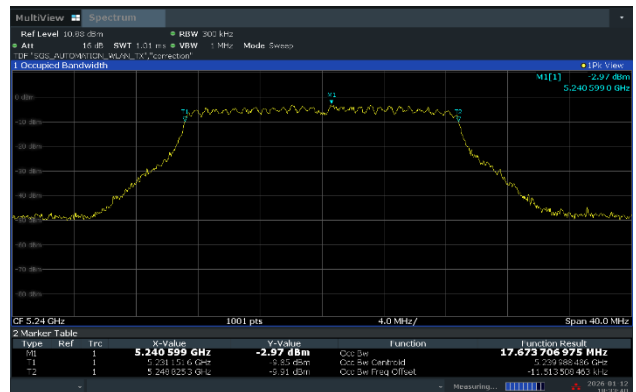
Port 1_Middle Channel (5 220 MHz)



Port 2_Middle Channel (5 220 MHz)

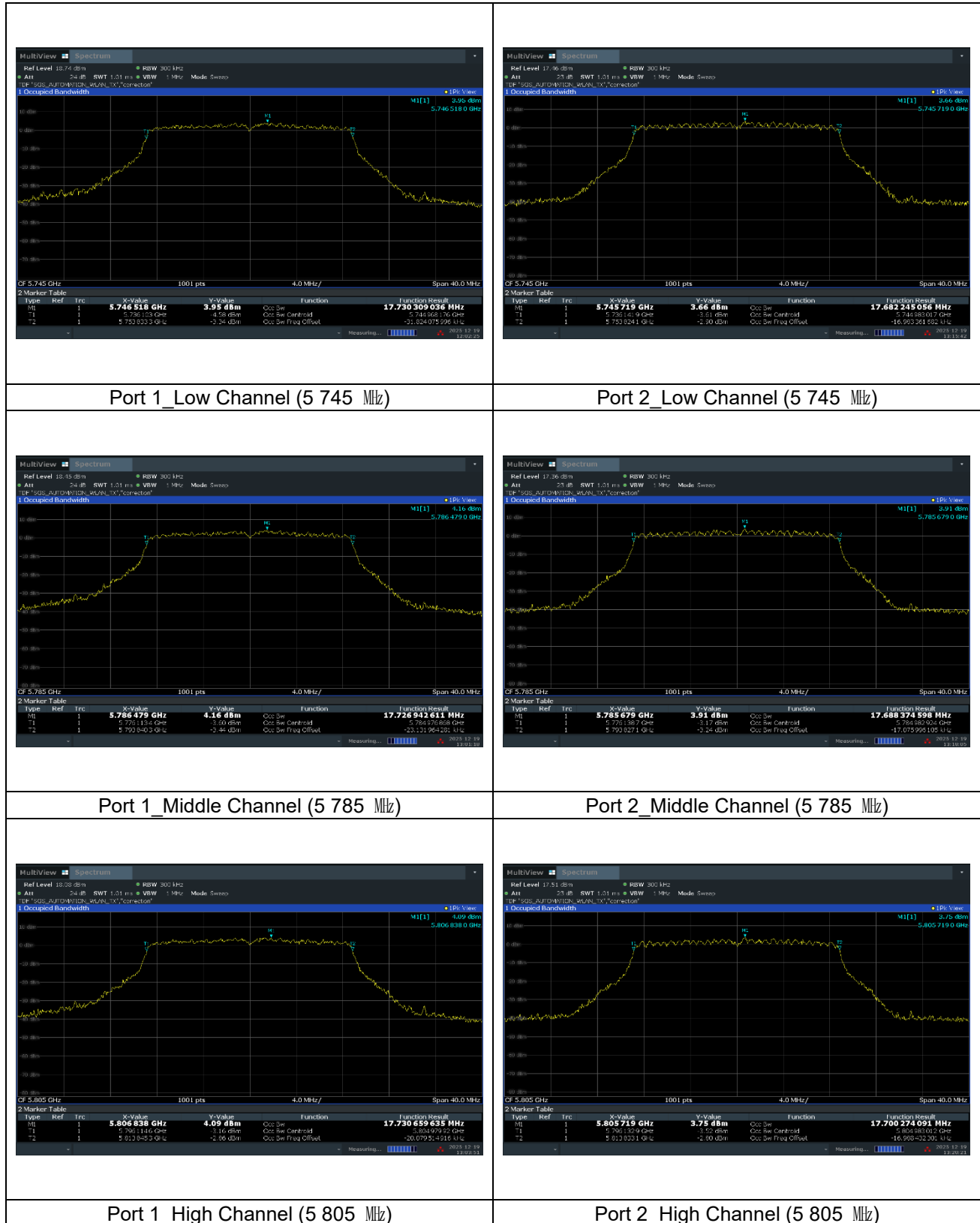


Port 1_High Channel (5 240 MHz)

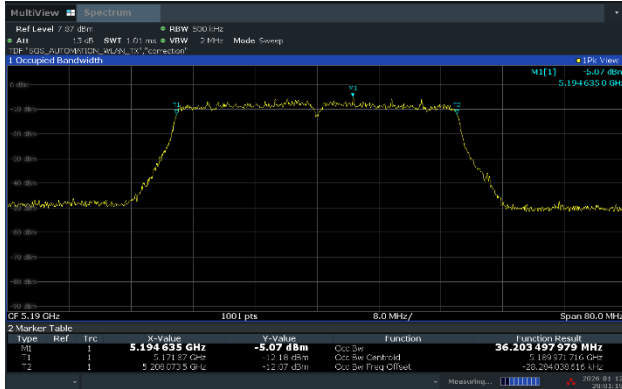


Port 2_High Channel (5 240 MHz)

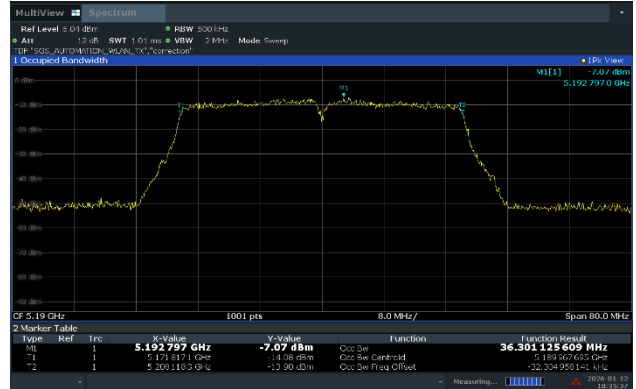
11n_HT20 (Band 3)



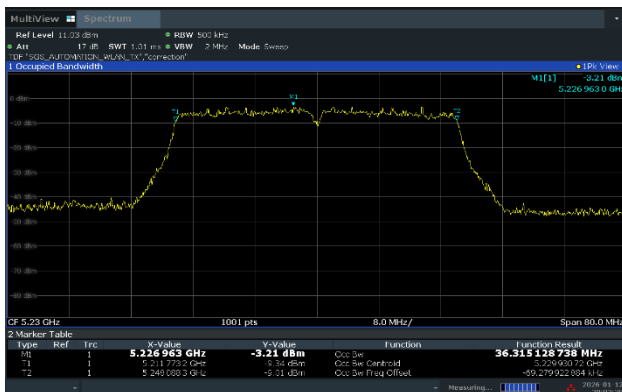
11ac_VHT40 (Band 1)



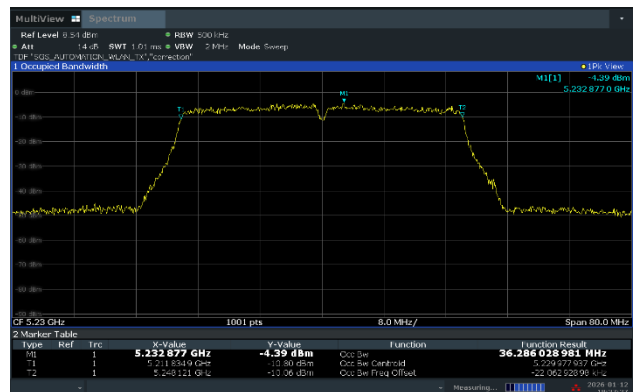
Port 1_Low Channel (5 190 MHz)



Port 2_Low Channel (5 190 MHz)

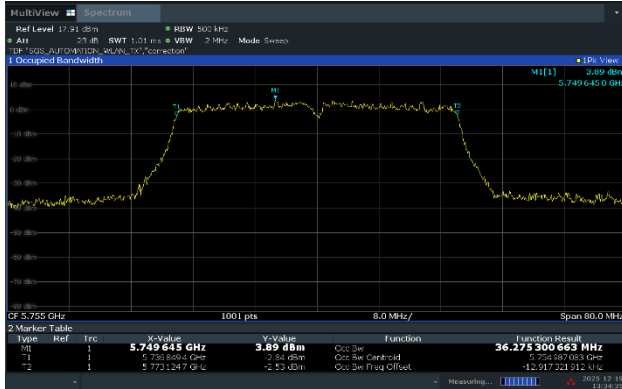


Port 1_High Channel (5 230 MHz)

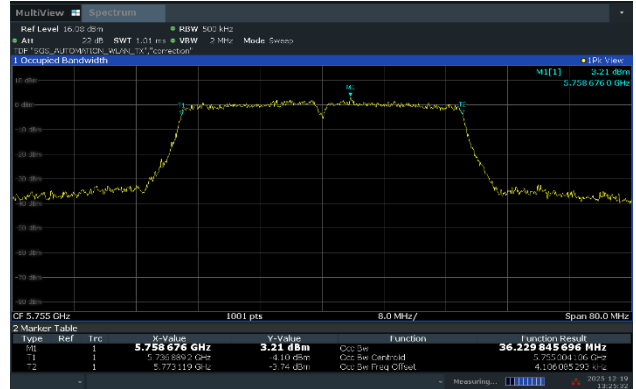


Port 2_High Channel (5 230 MHz)

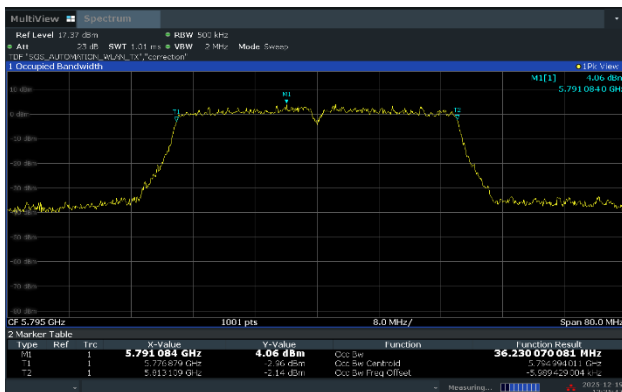
11n_HT40 (Band 3)



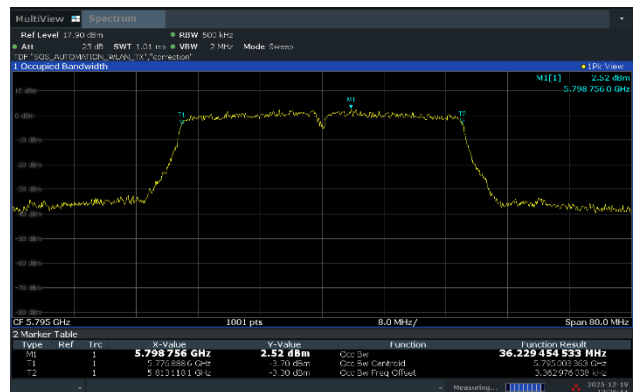
Port 1_Low Channel (5 755 MHz)



Port 2_Low Channel (5 755 MHz)

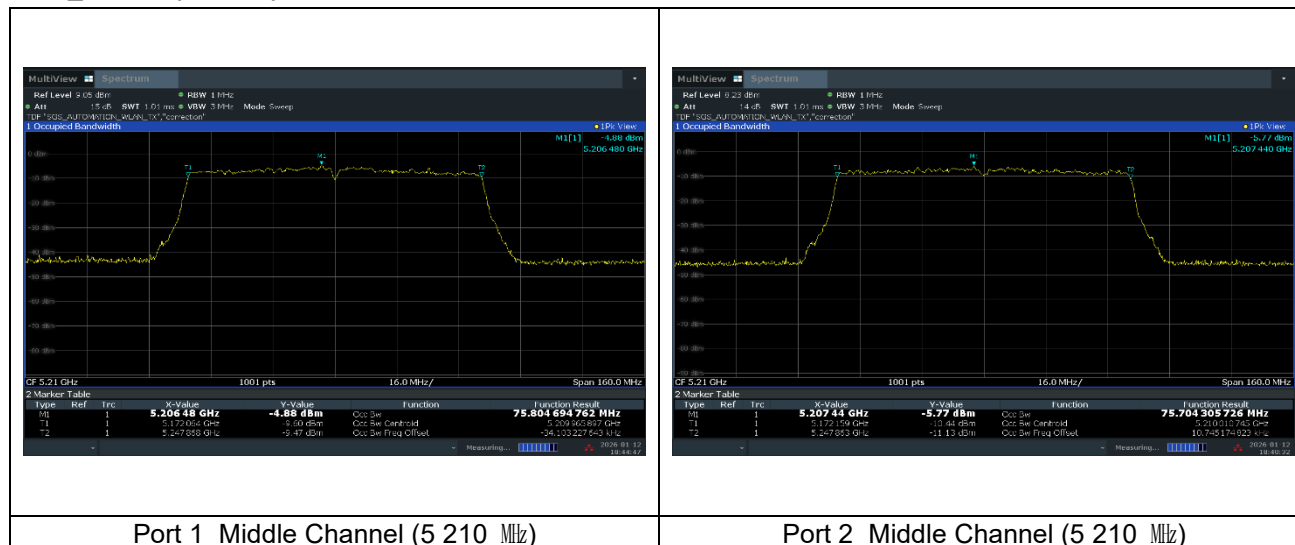


Port 1_High Channel (5 795 MHz)

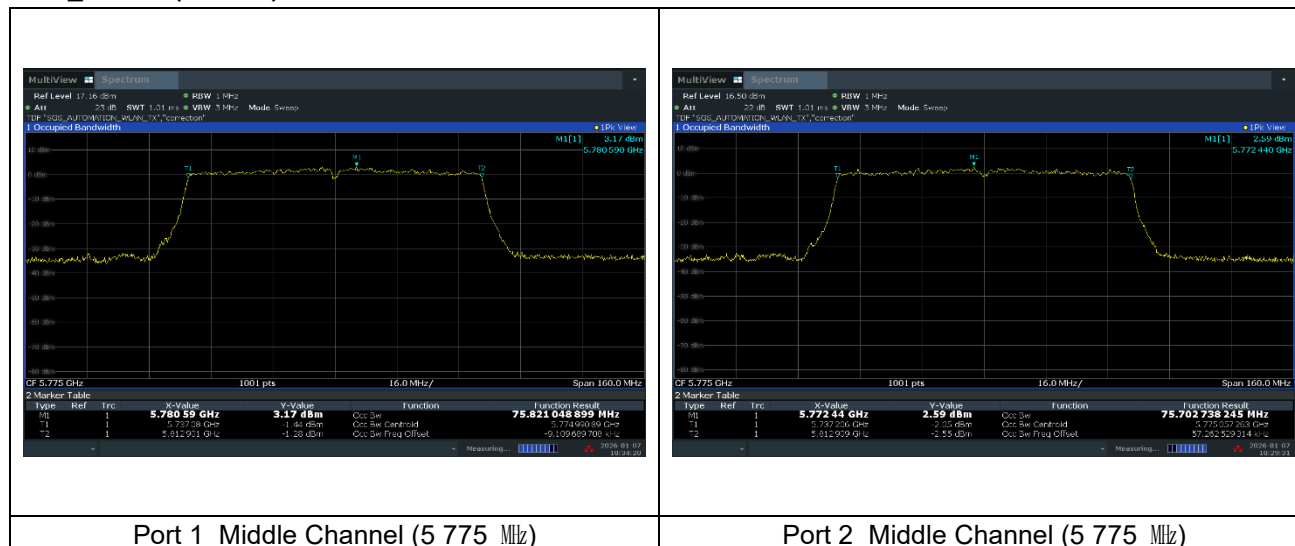


Port 2_High Channel (5 795 MHz)

11ac_VHT80 (Band 1)



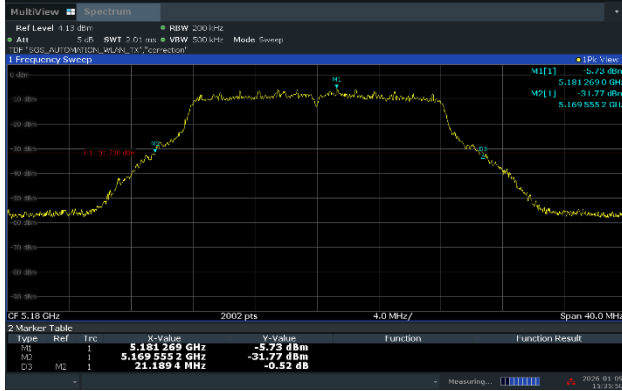
11ac_VHT80 (Band 3)



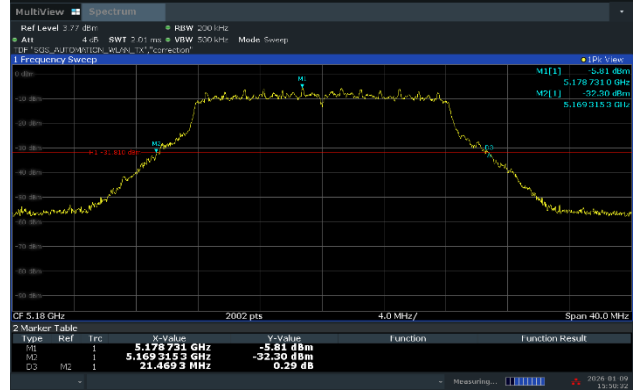
- Ant. 1 + Ant. 3

26 dB Bandwidth

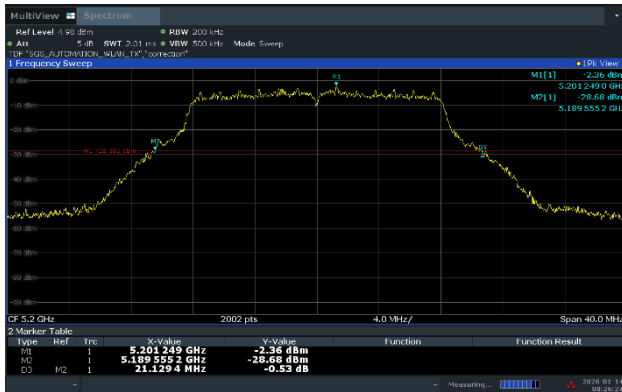
11a (Band 1)



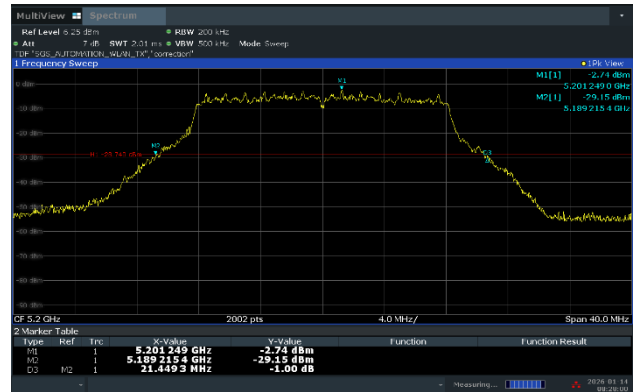
Port 1_Low Channel -1 (5 180 MHz)



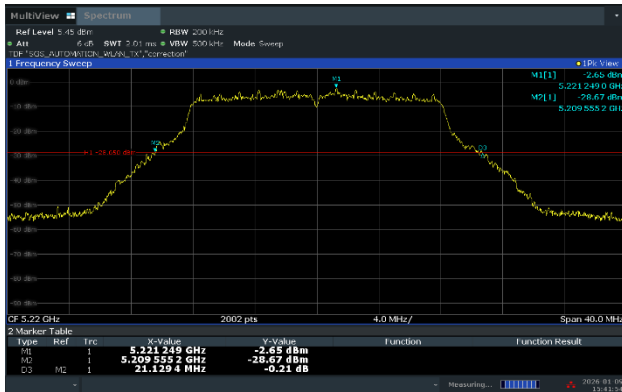
Port 3_Low Channel -1 (5 180 MHz)



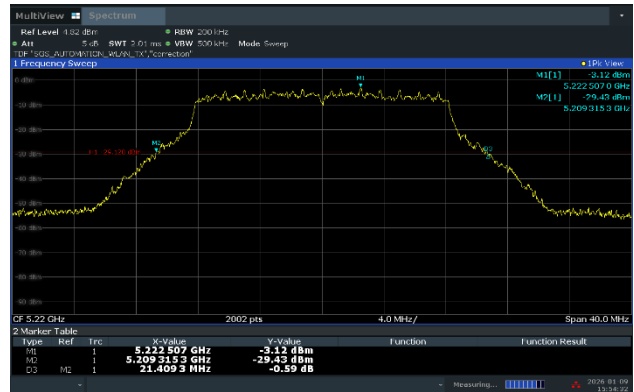
Port 1_Low Channel -2 (5 200 MHz)



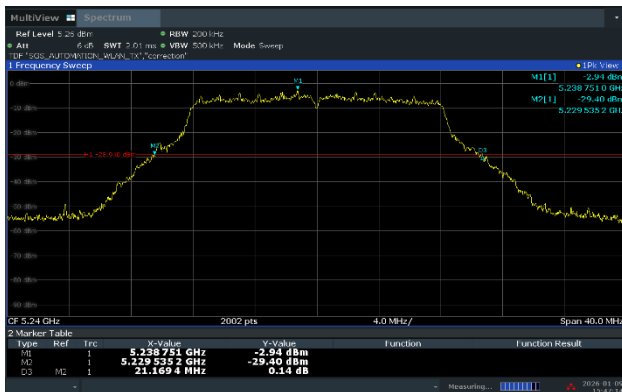
Port 3_Low Channel -2 (5 200 MHz)



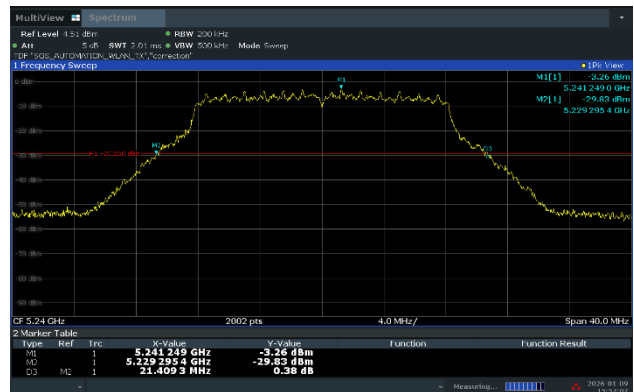
Port 1_Middle Channel (5 220 MHz)



Port 3_Middle Channel (5 220 MHz)



Port 1_High Channel (5 240 MHz)



Port 3_High Channel (5 240 MHz)