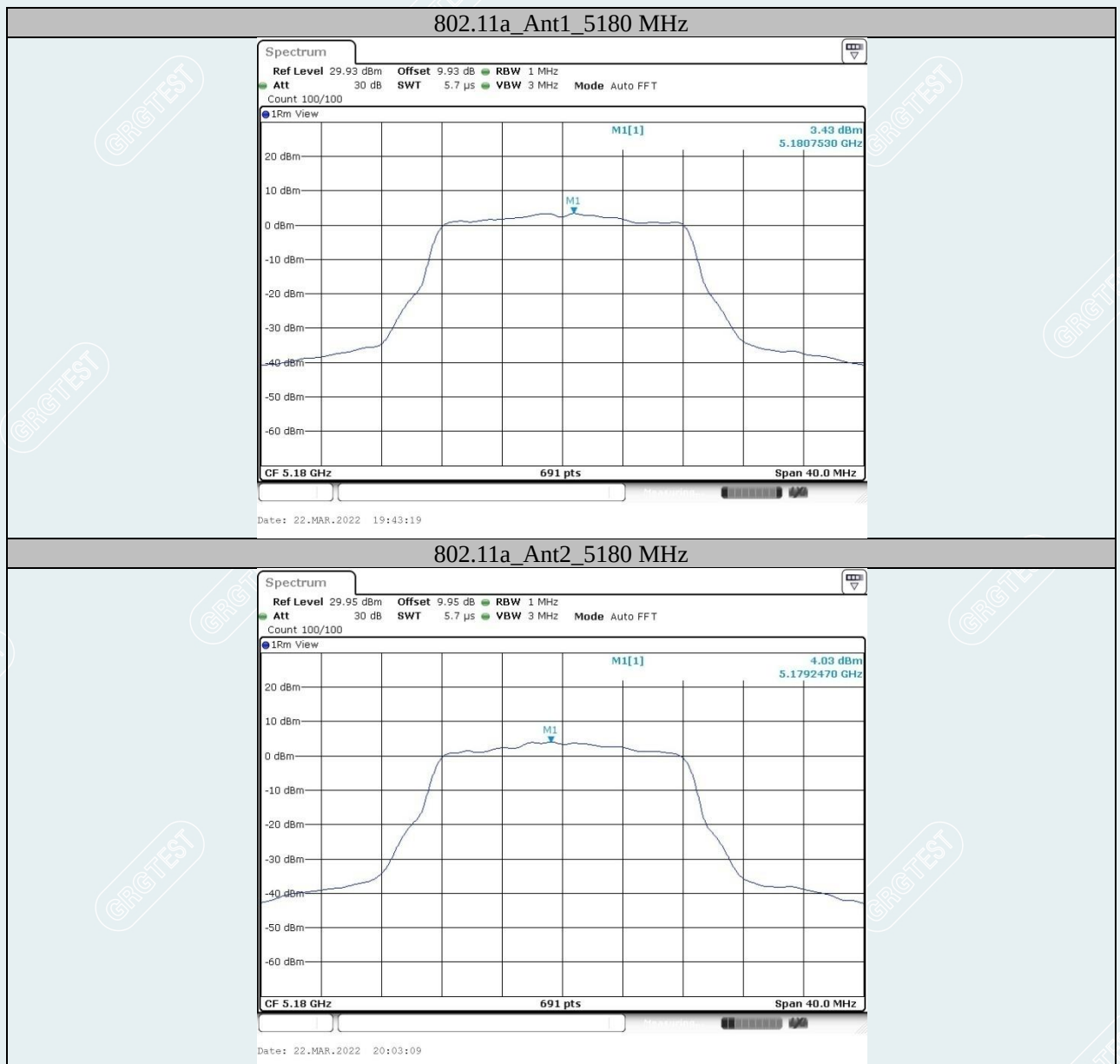


Test Graphs

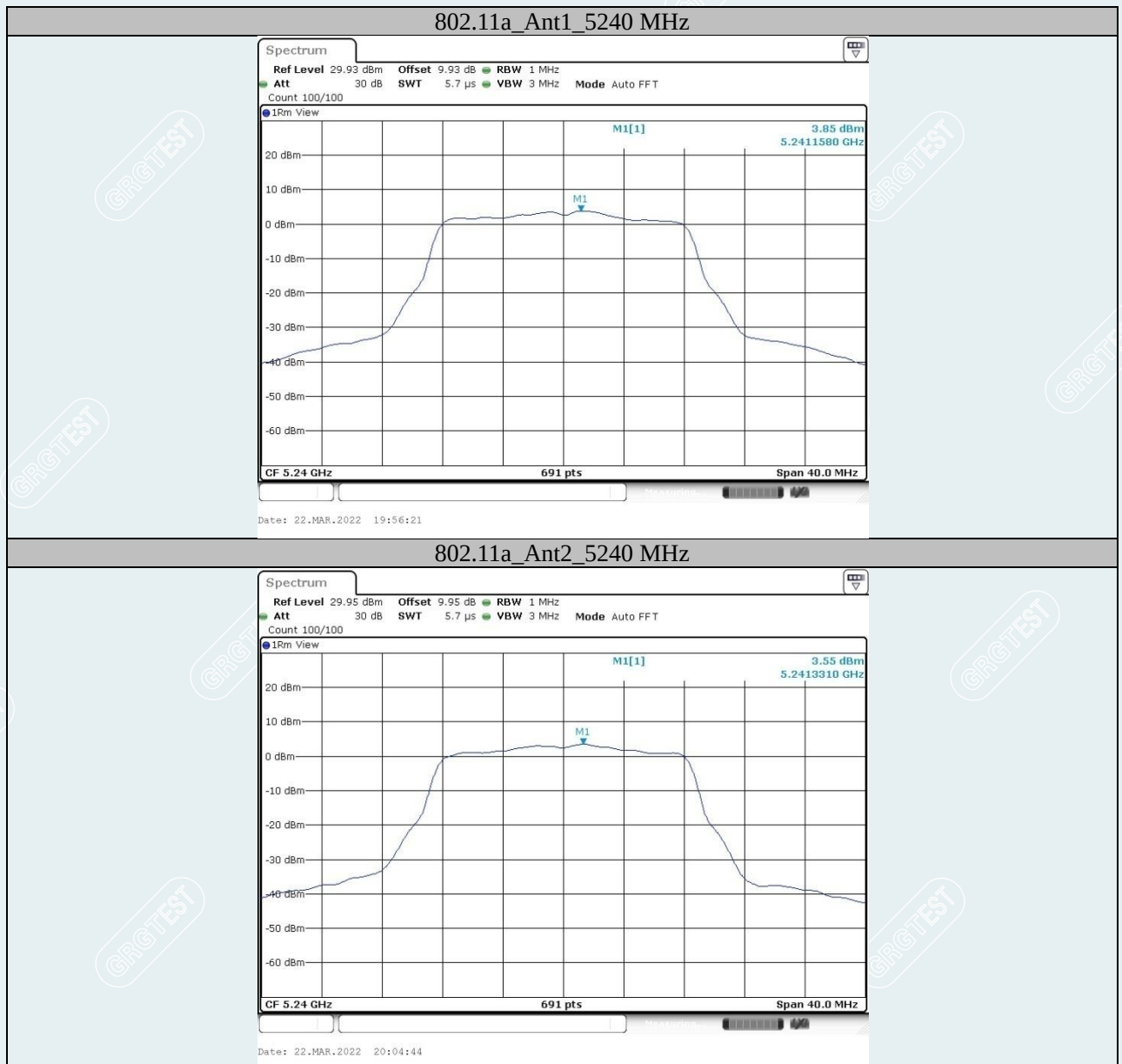


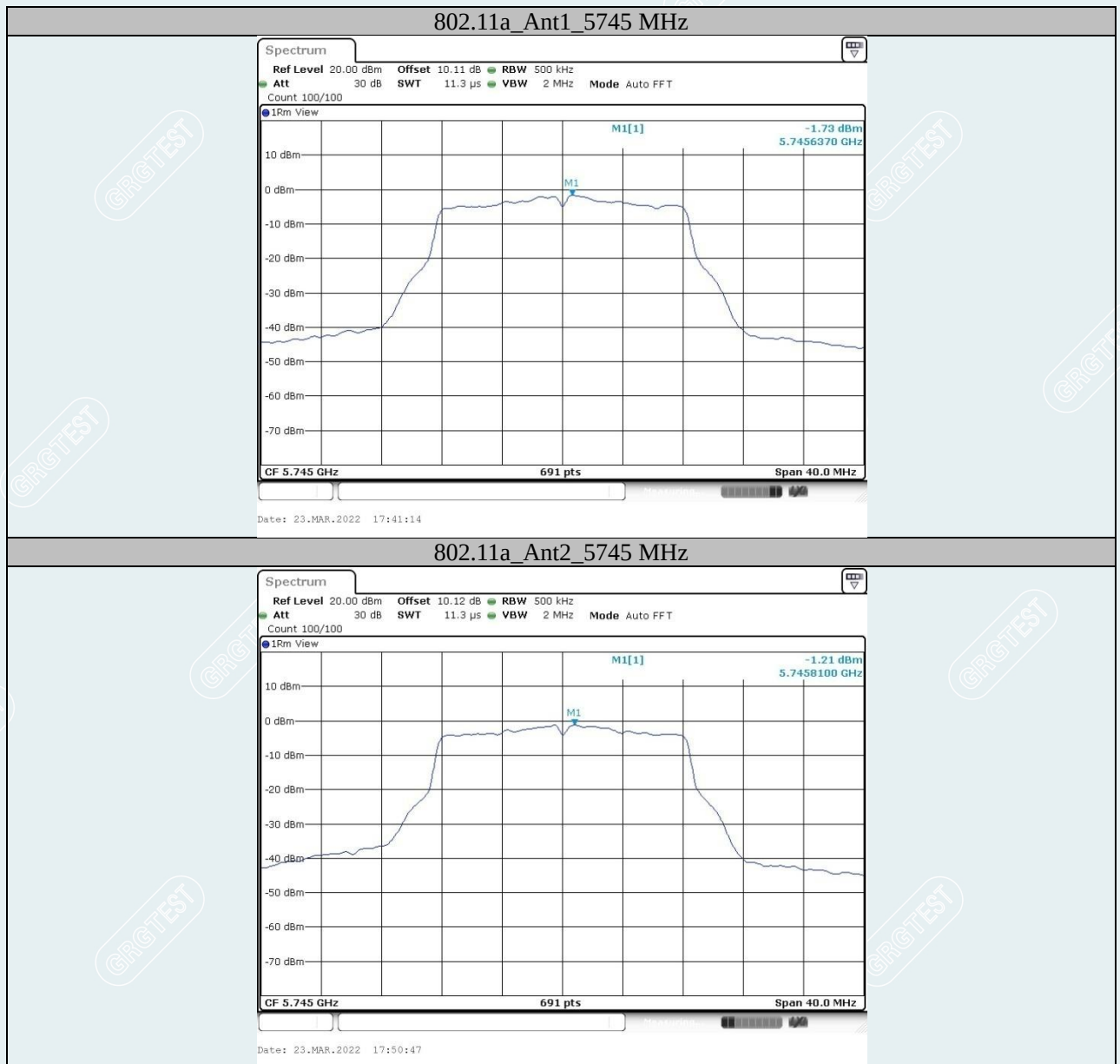
802.11a_Ant1_5200 MHz

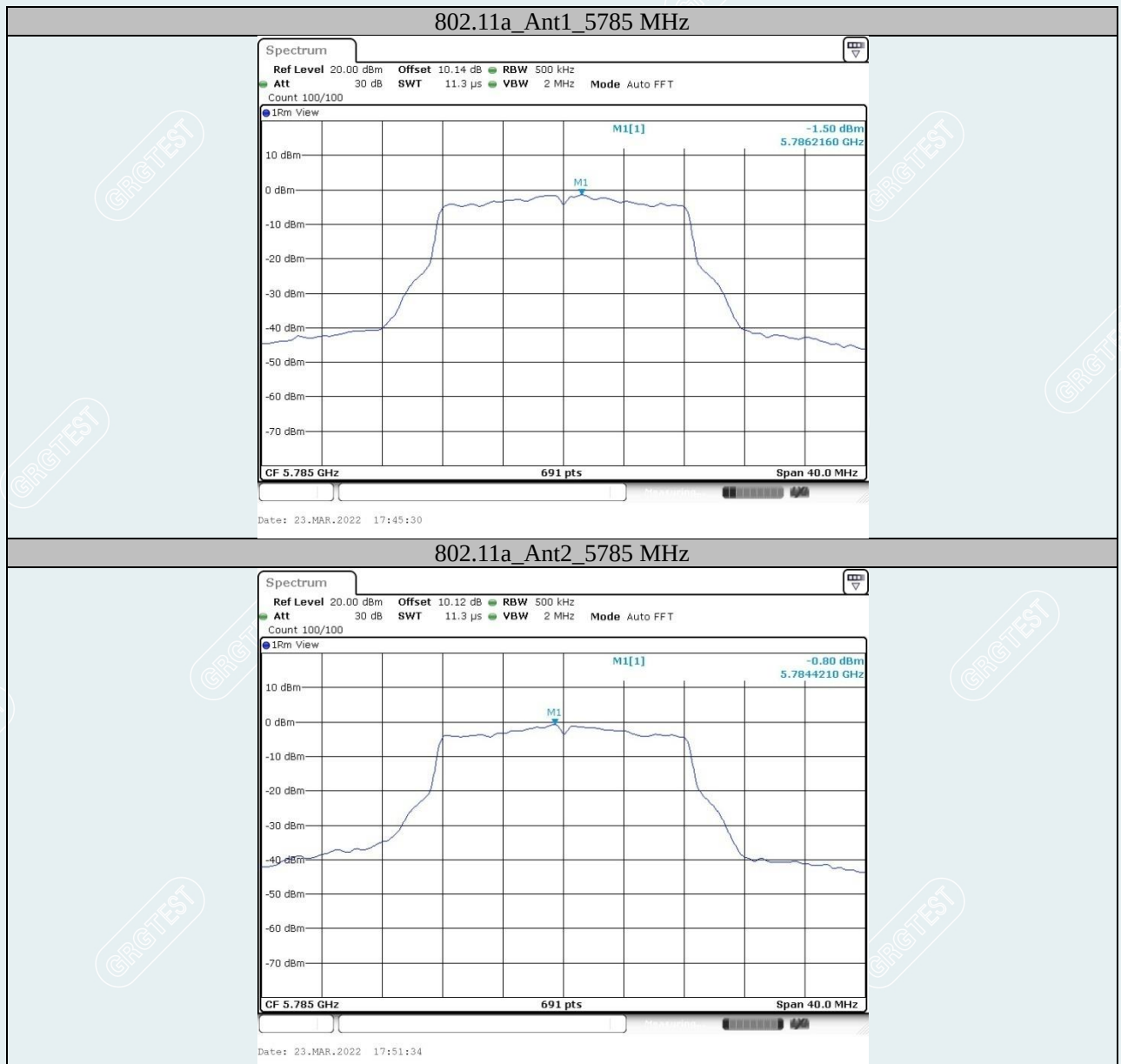


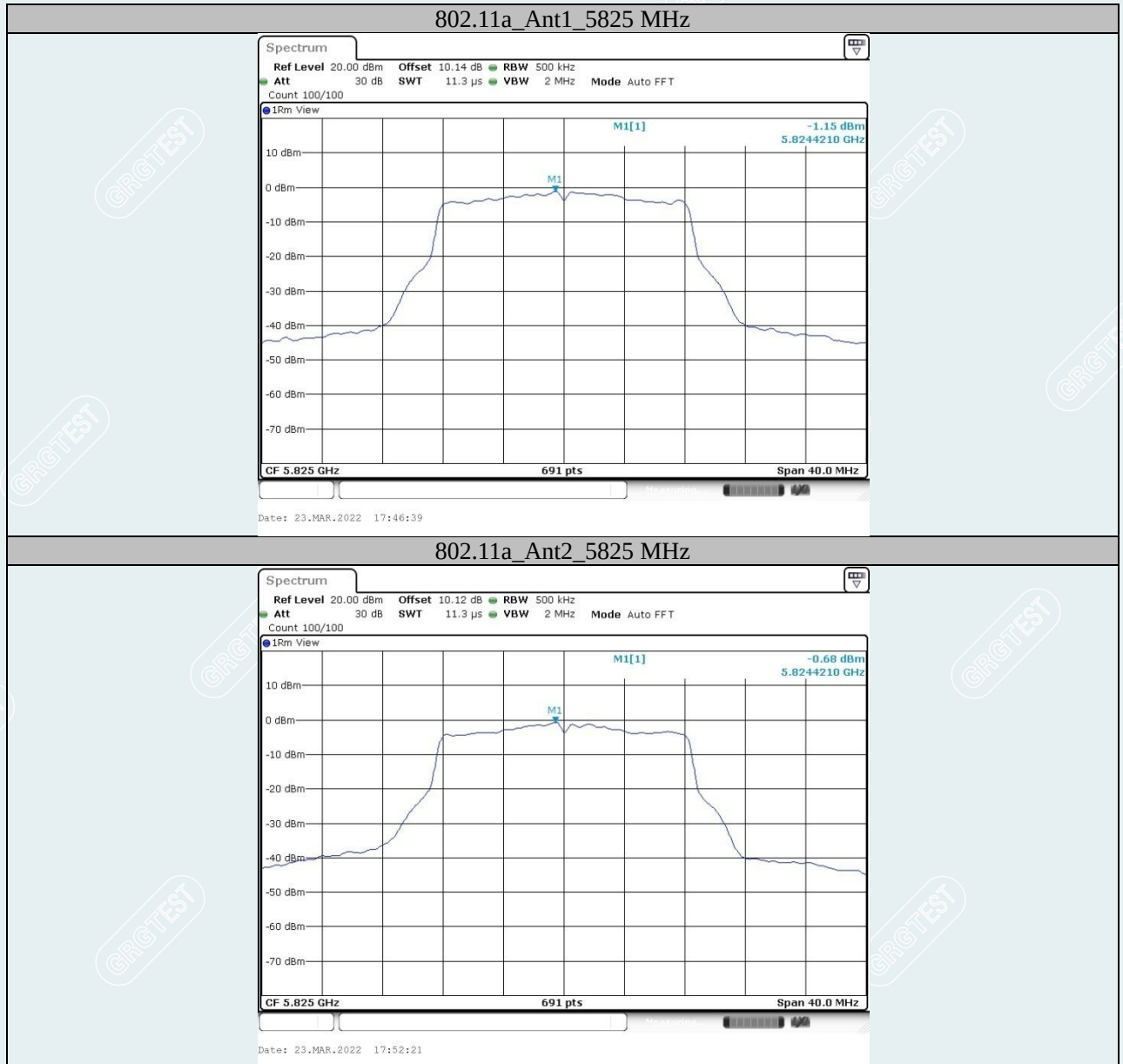
802.11a_Ant2_5200 MHz

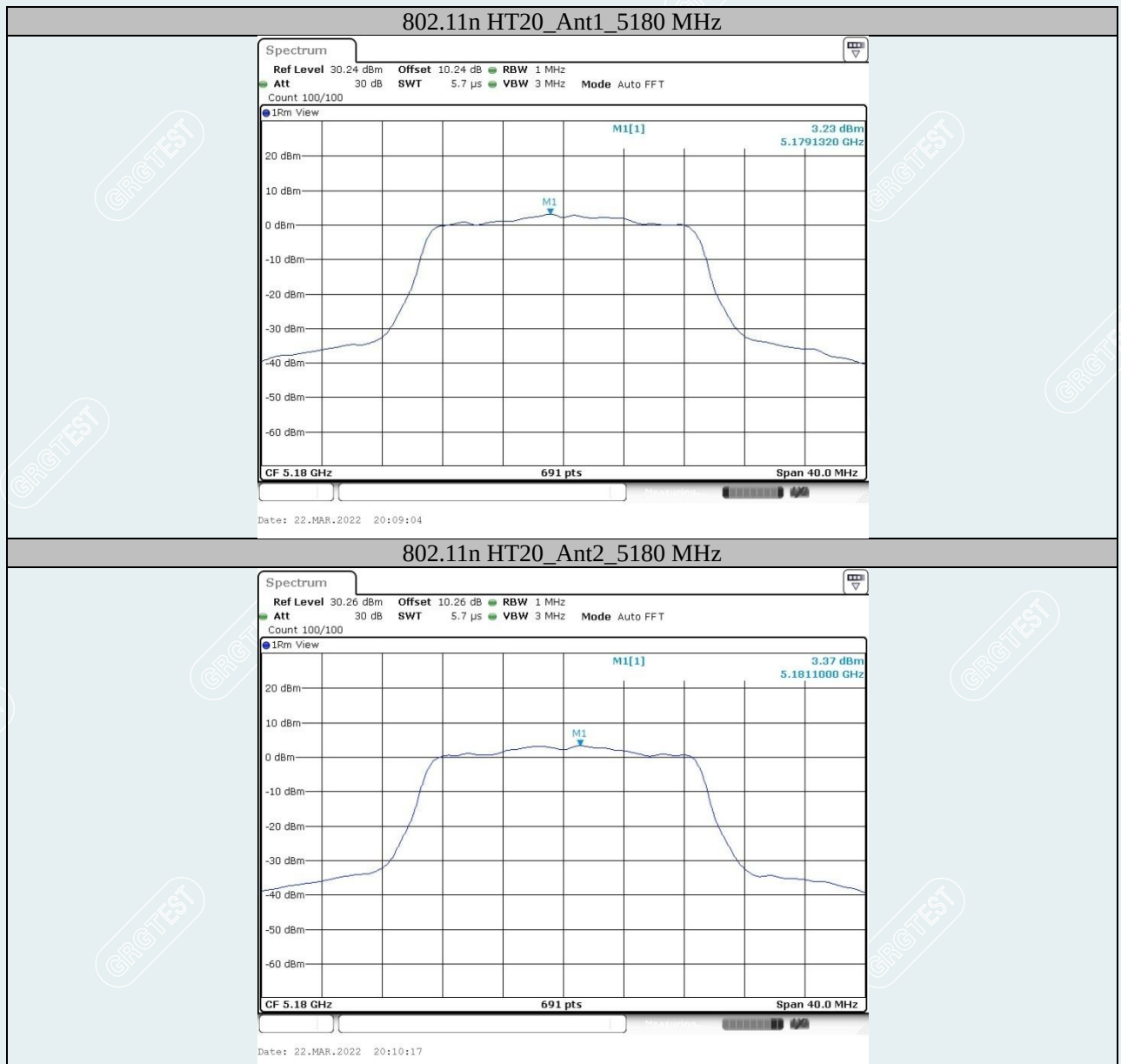


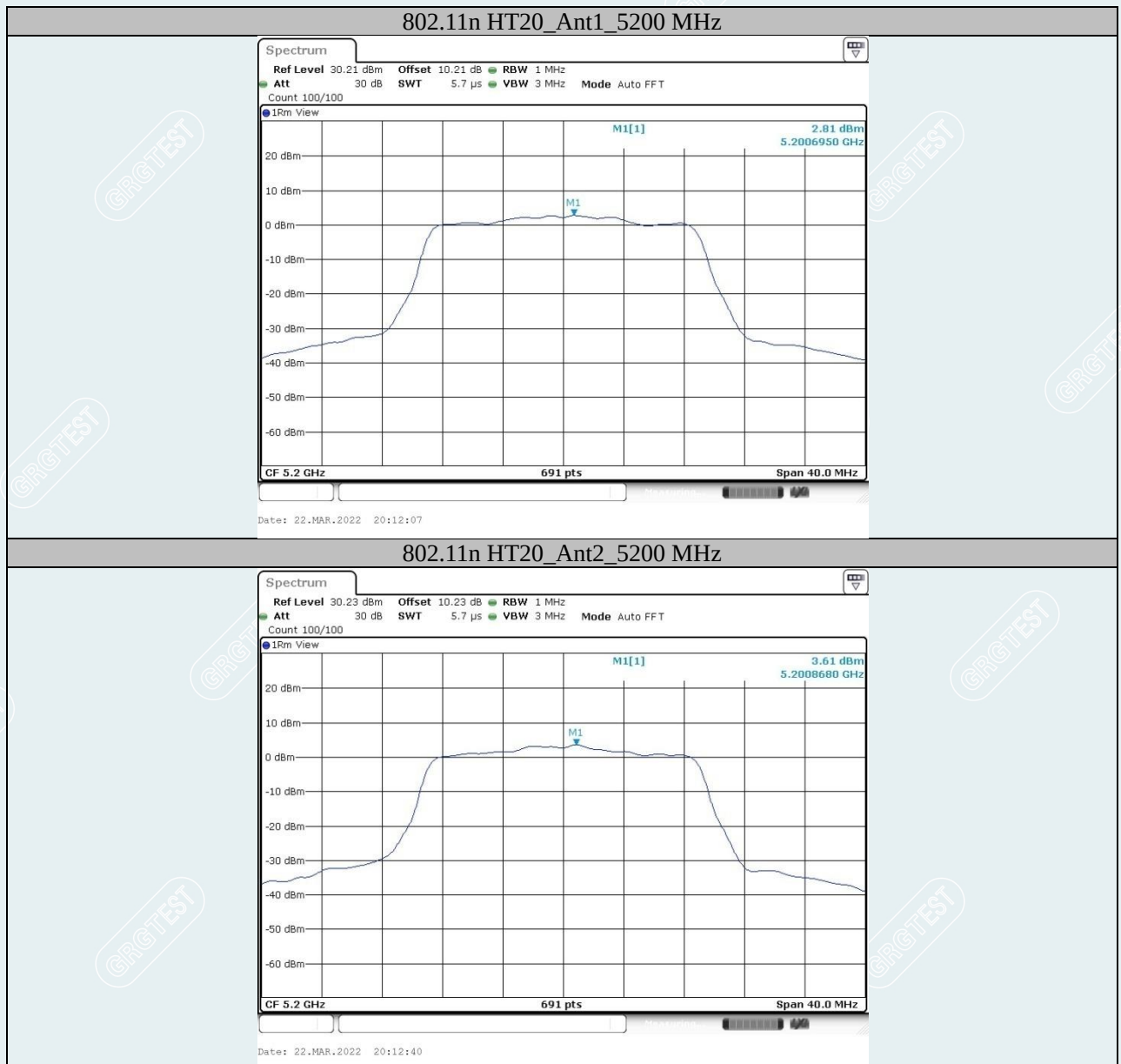


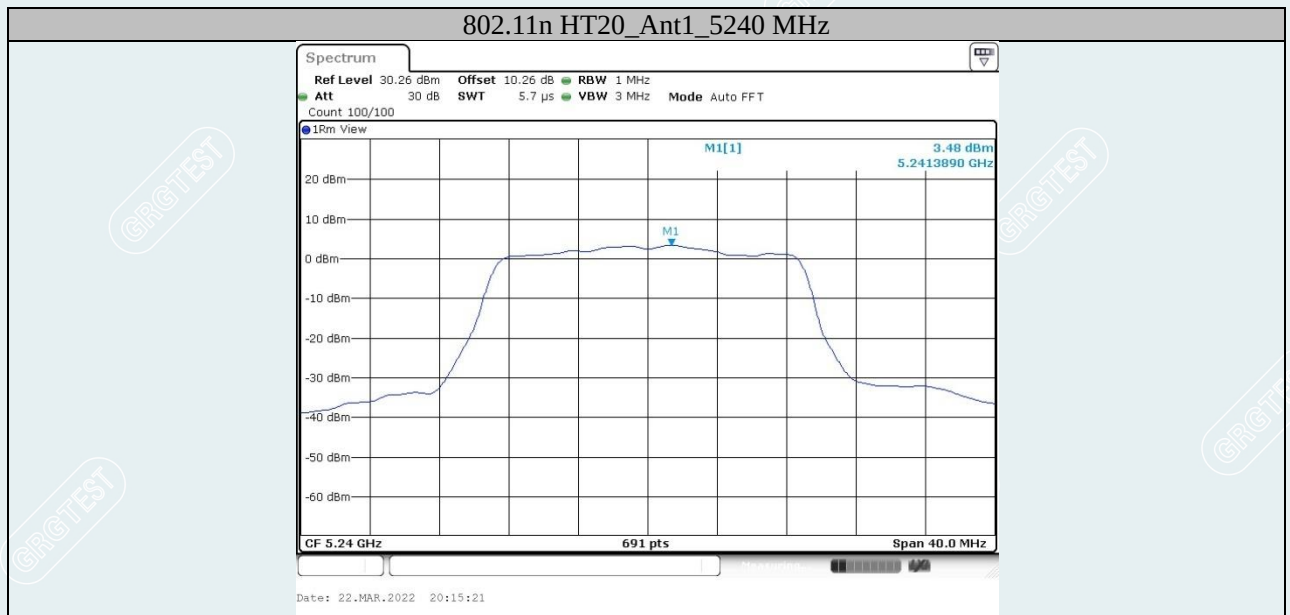


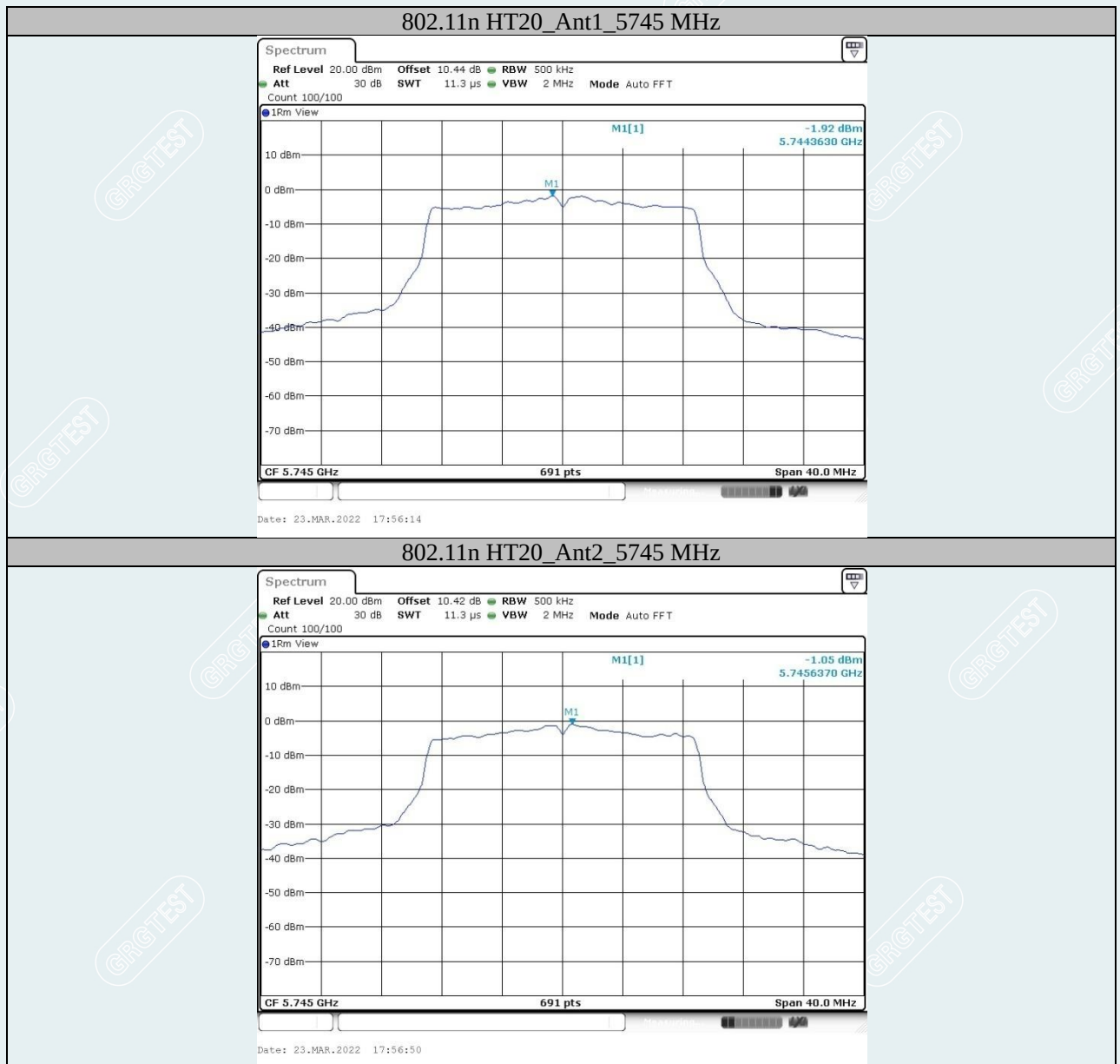


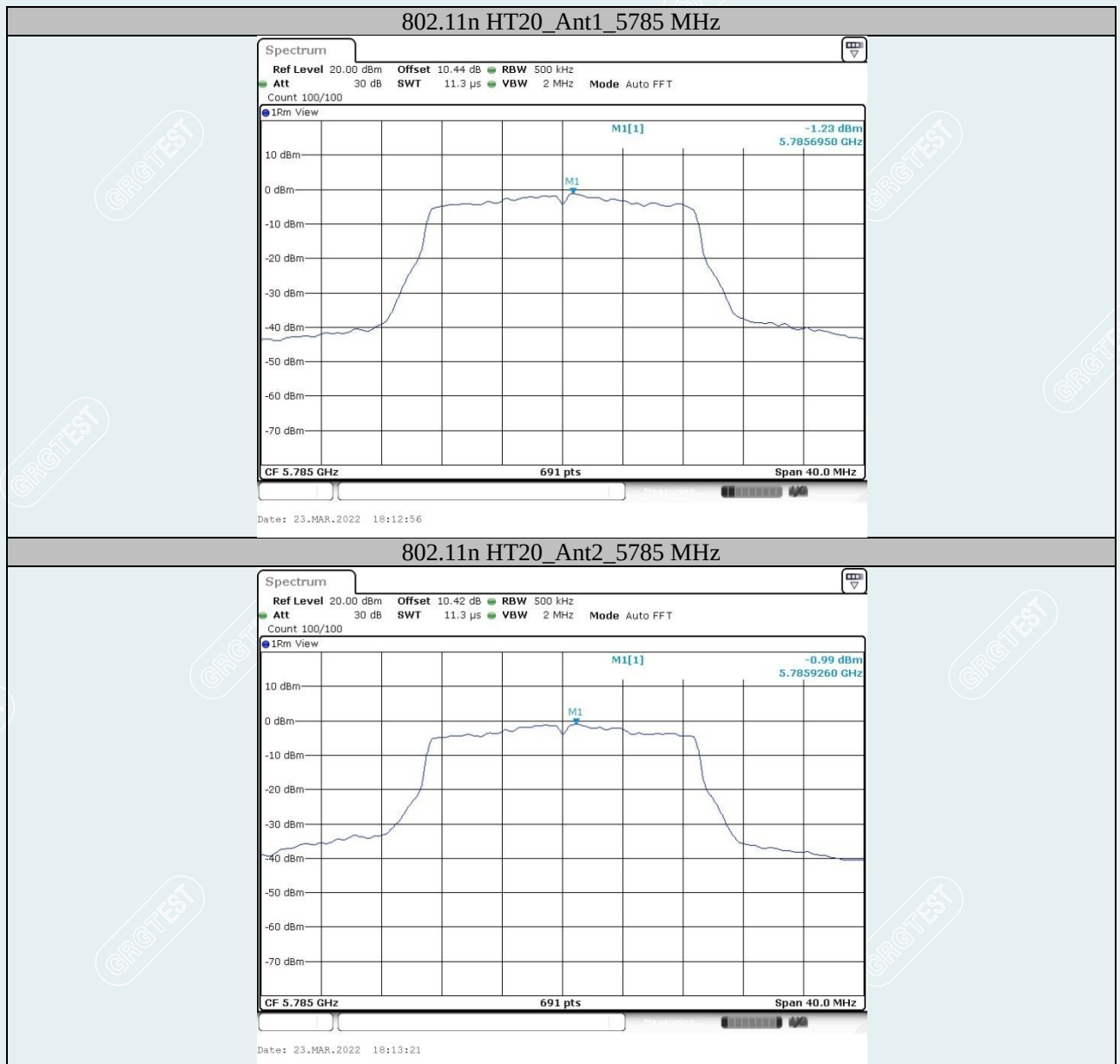


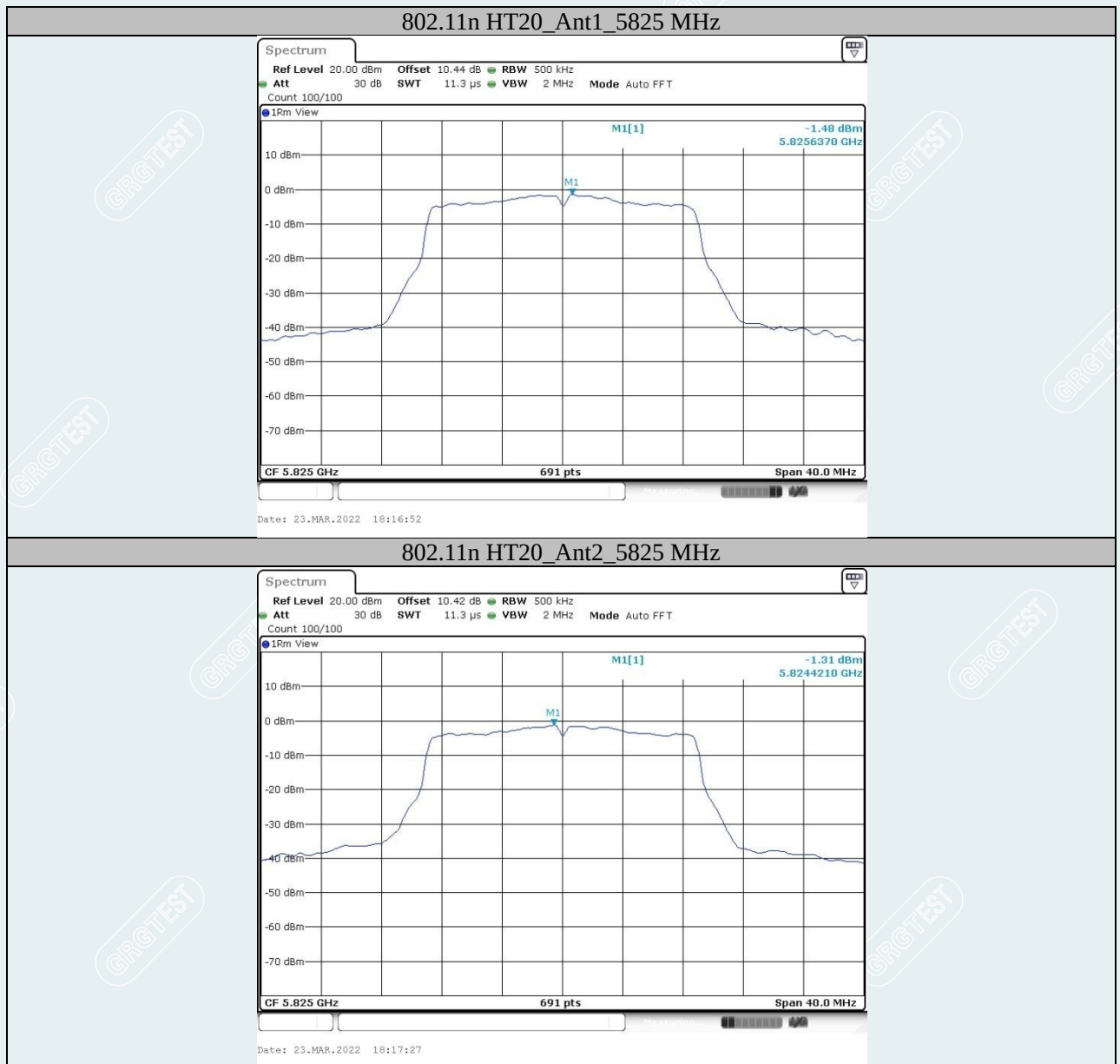


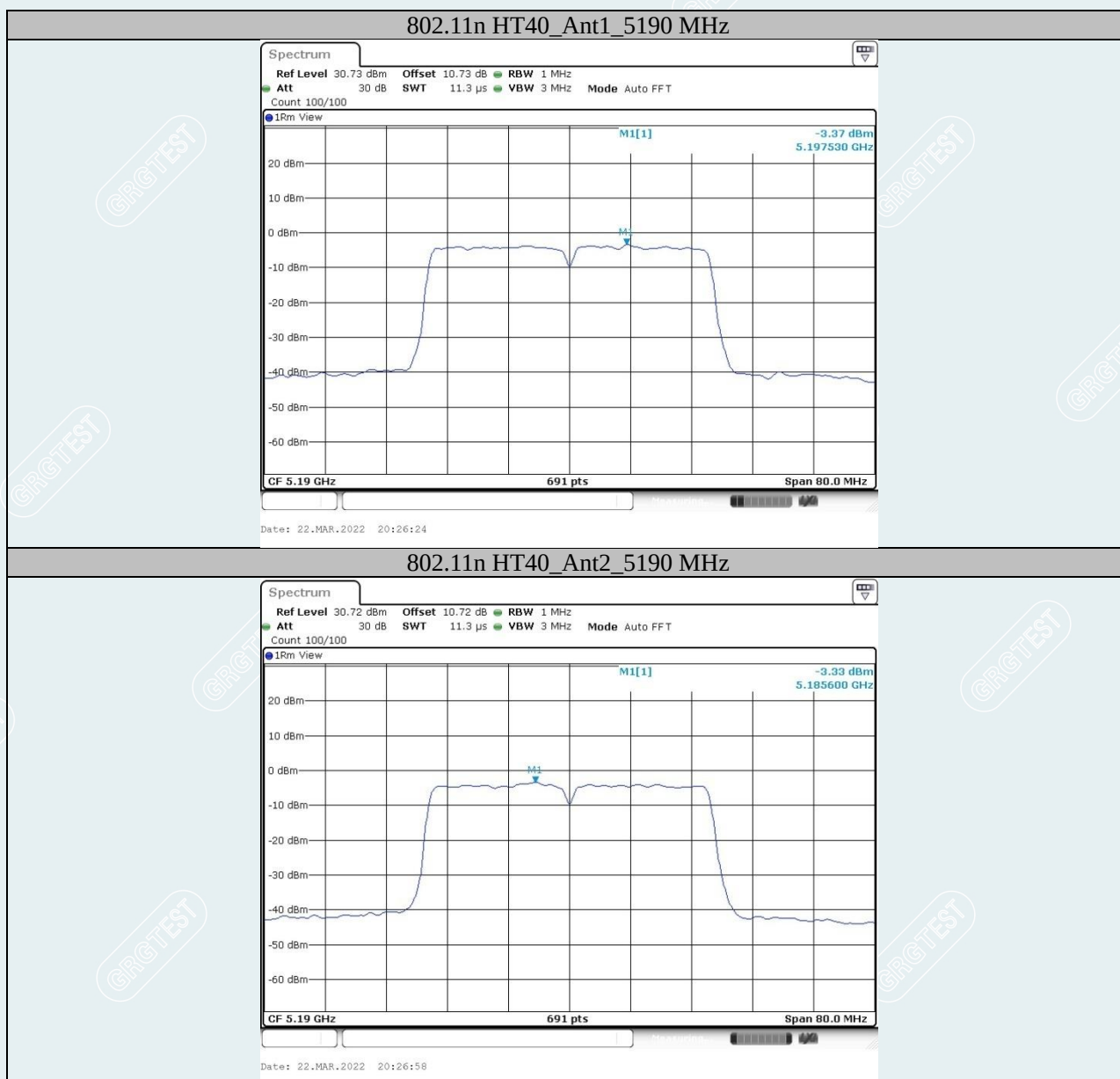


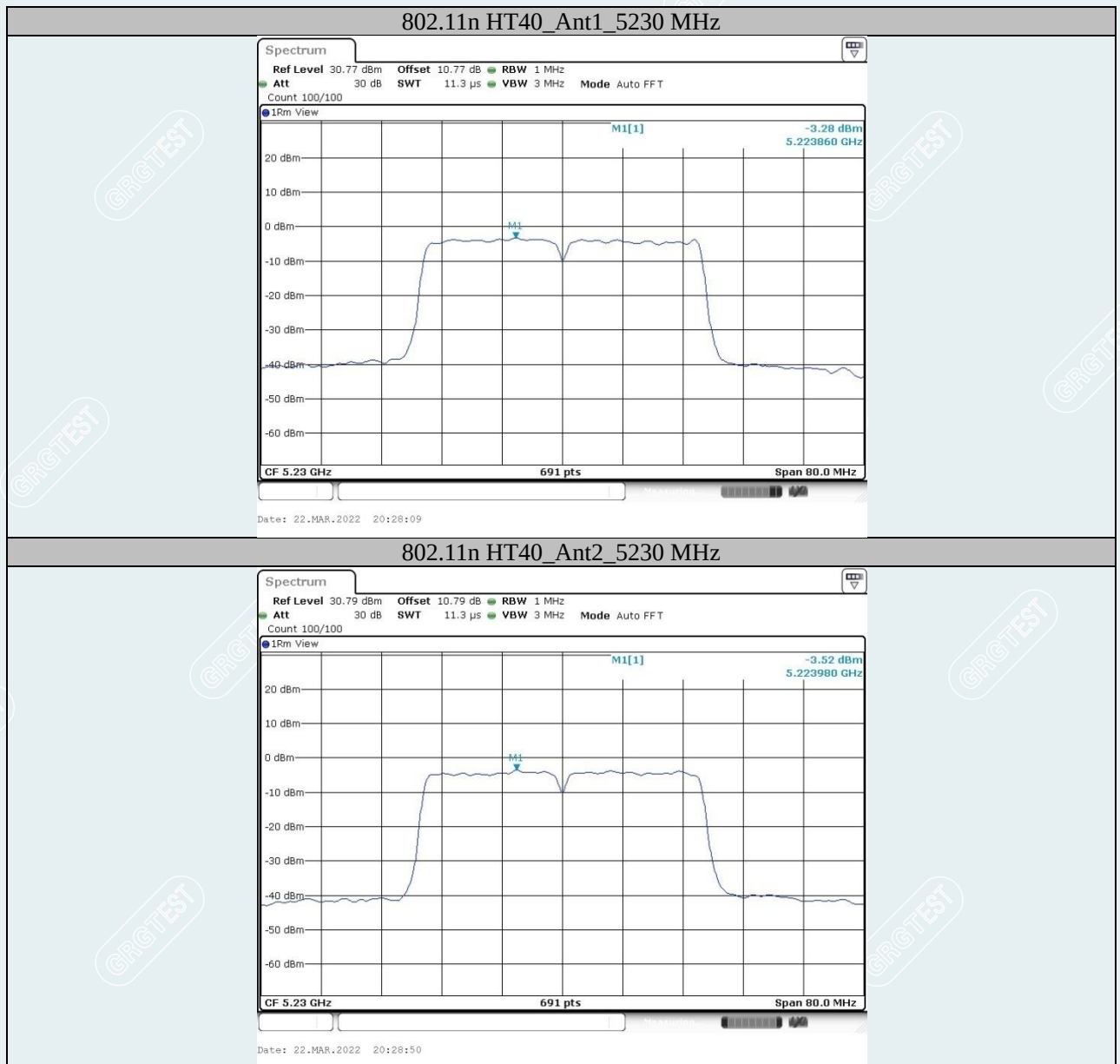


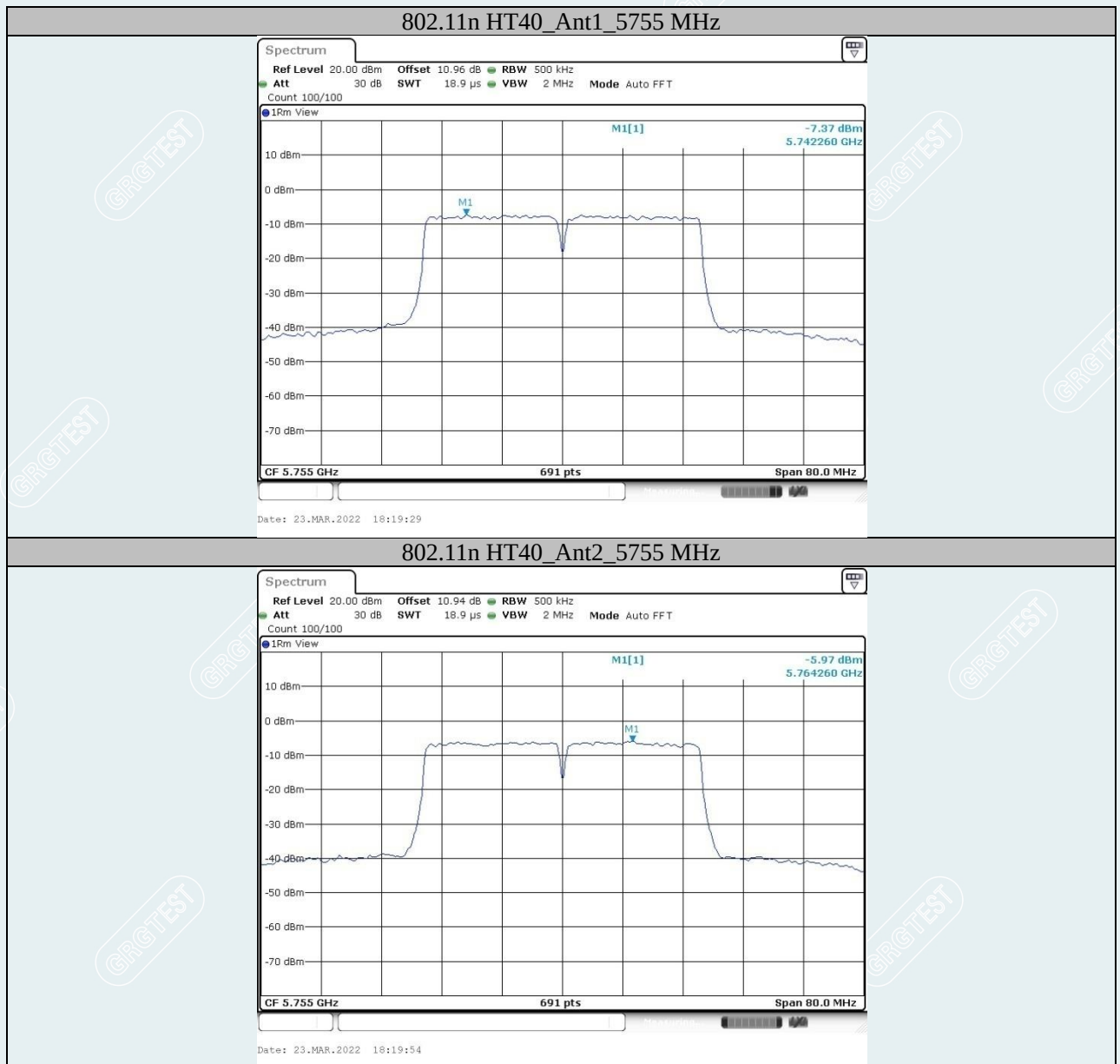


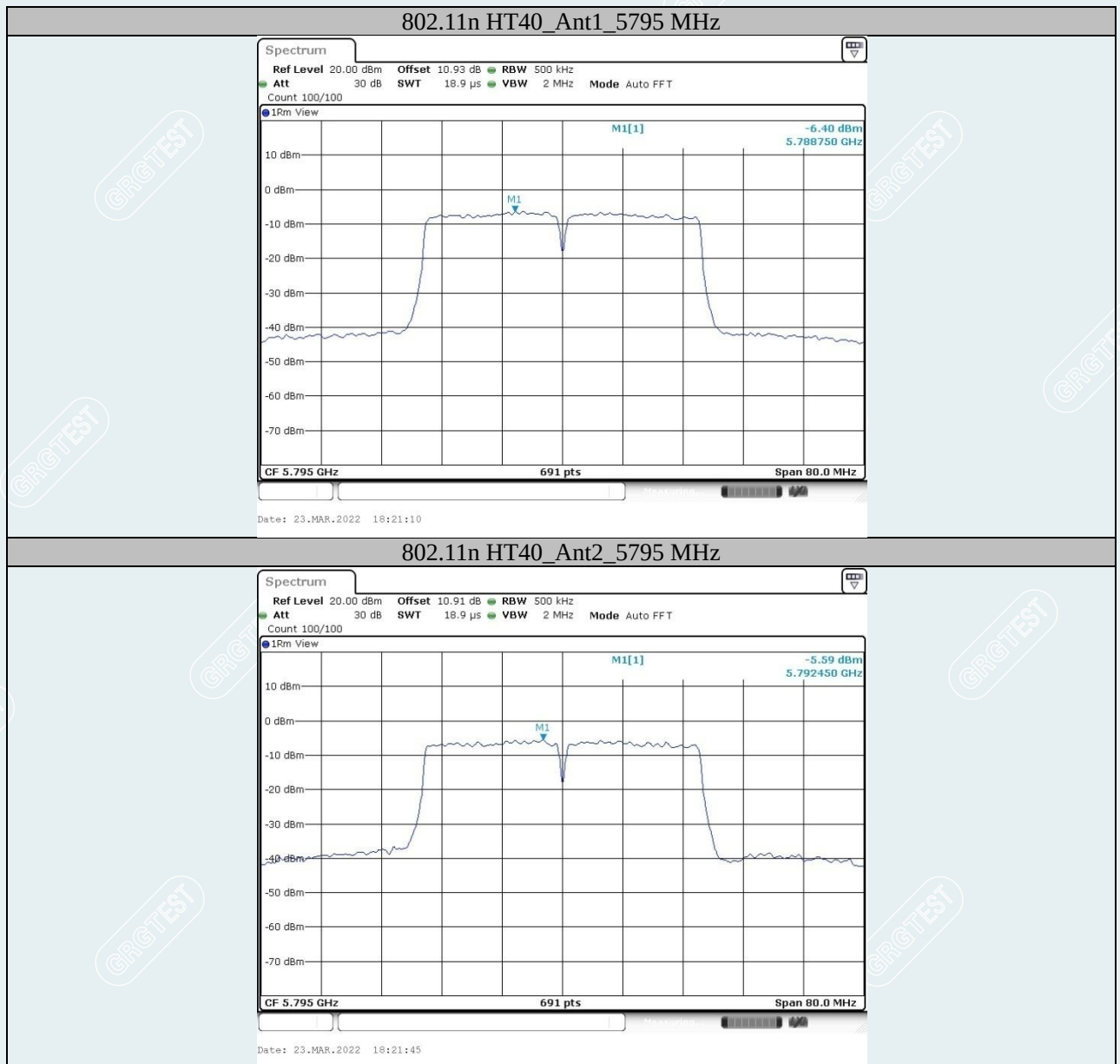












802.11ac VHT20_Ant1_5180 MHz



802.11ac VHT20_Ant2_5180 MHz



802.11ac VHT20_Ant1_5200 MHz



802.11ac VHT20_Ant2_5200 MHz



802.11ac VHT20_Ant1_5240 MHz



802.11ac VHT20_Ant2_5240 MHz



802.11ac VHT20_Ant1_5745 MHz



802.11ac VHT20_Ant2_5745 MHz

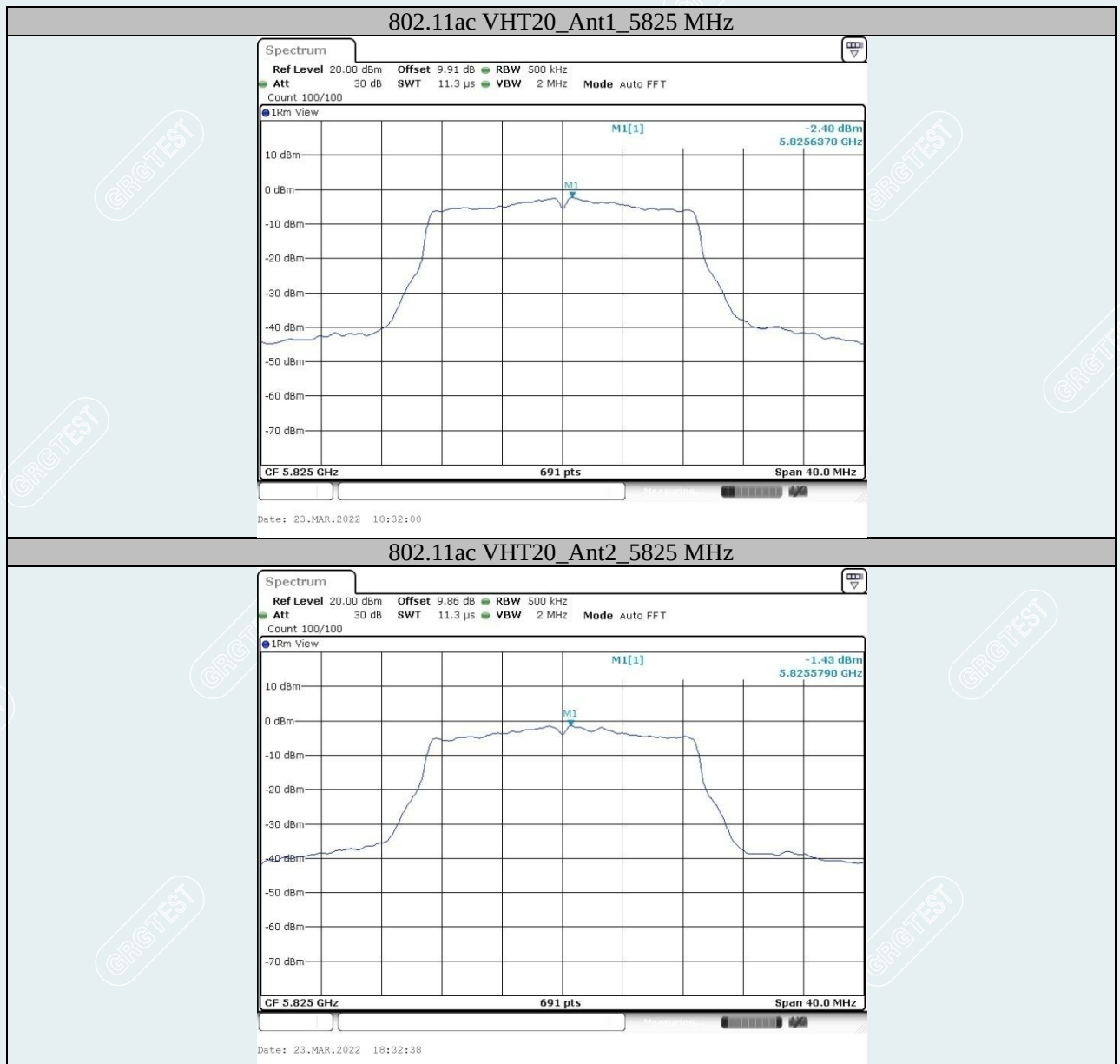


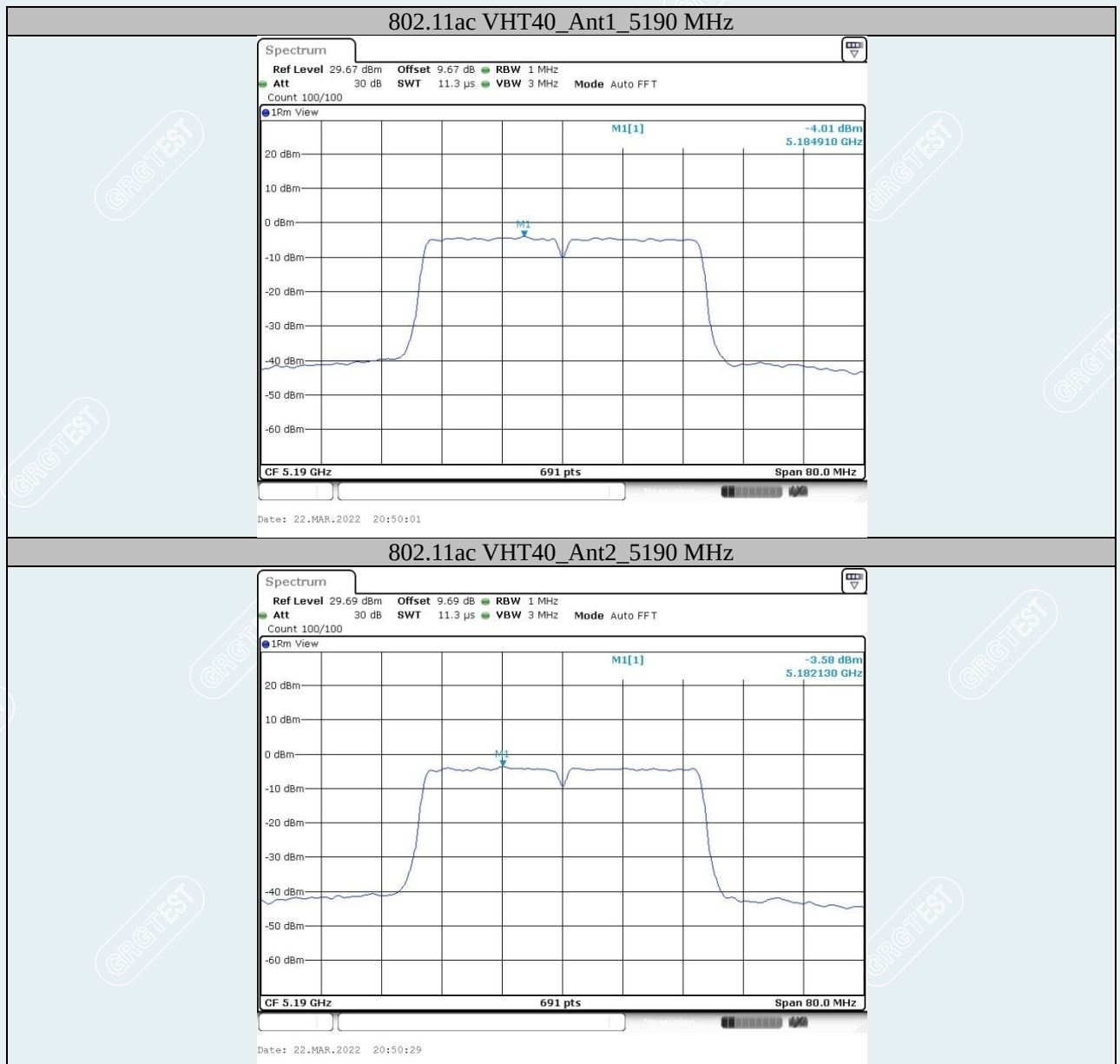
802.11ac VHT20_Ant1_5785 MHz



802.11ac VHT20_Ant2_5785 MHz







802.11ac VHT40_Ant1_5230 MHz



802.11ac VHT40_Ant2_5230 MHz

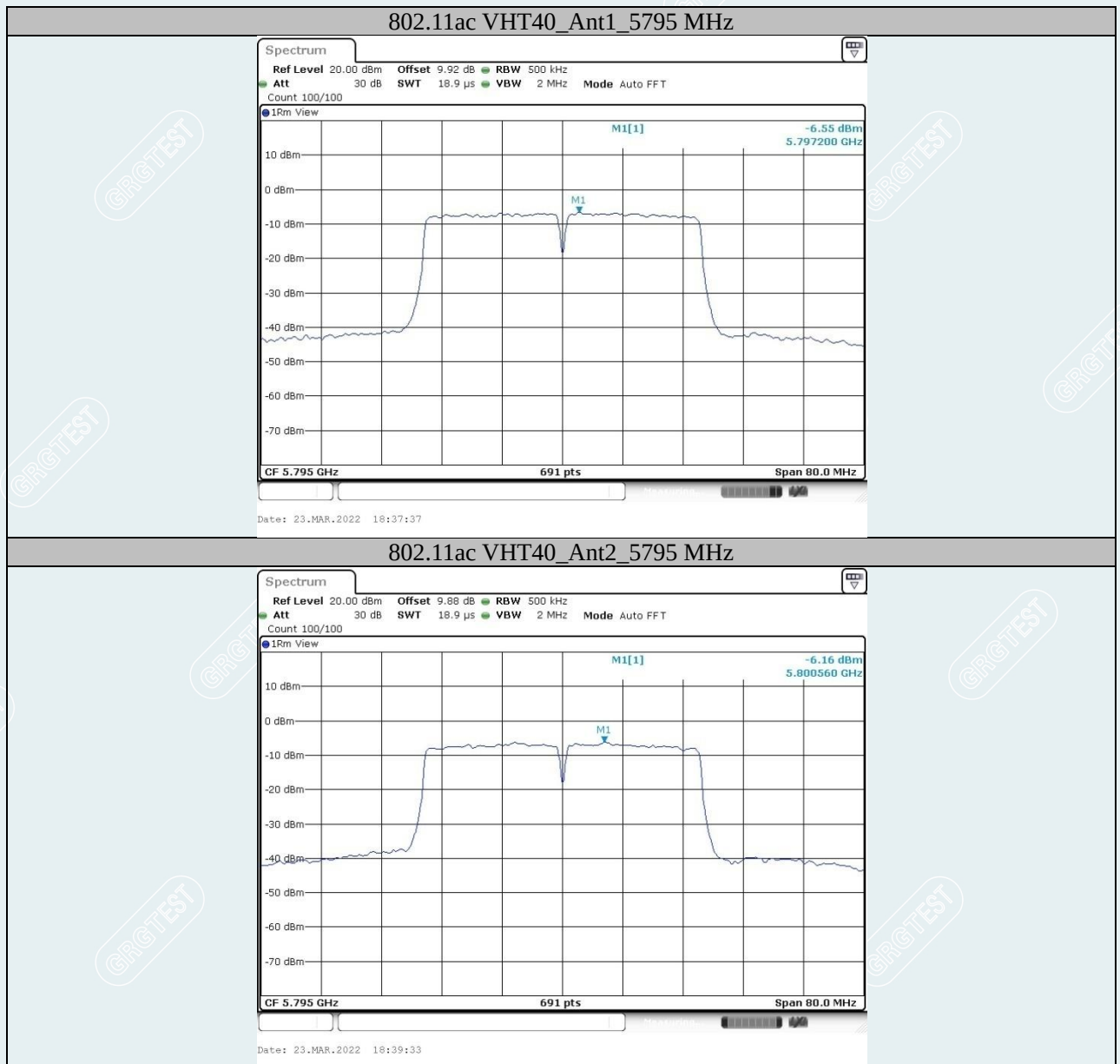


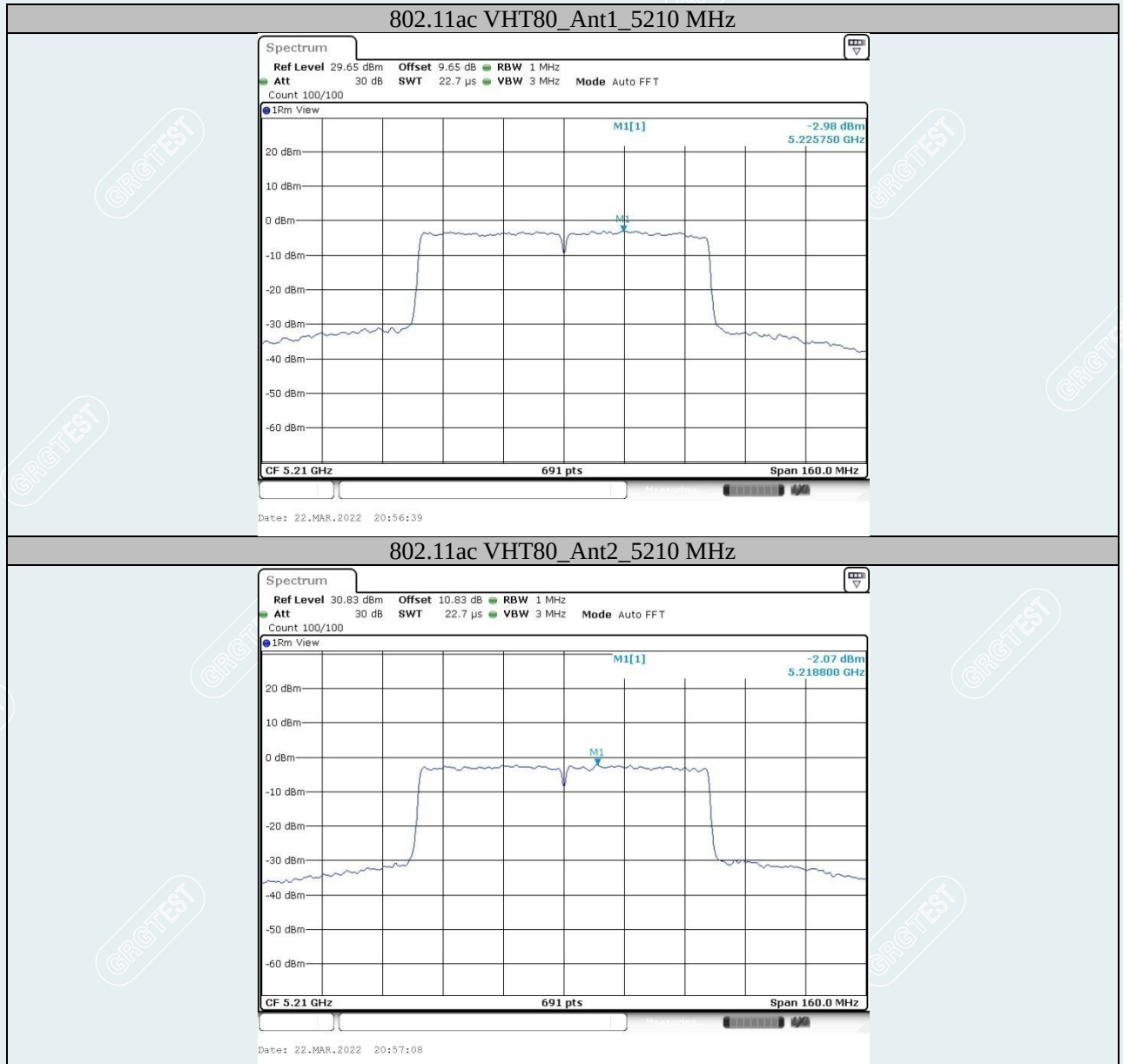
802.11ac VHT40_Ant1_5755 MHz



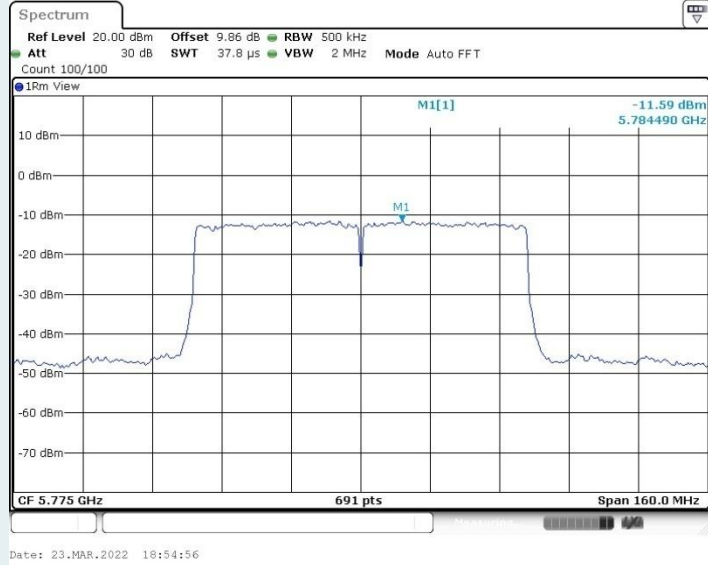
802.11ac VHT40_Ant2_5755 MHz



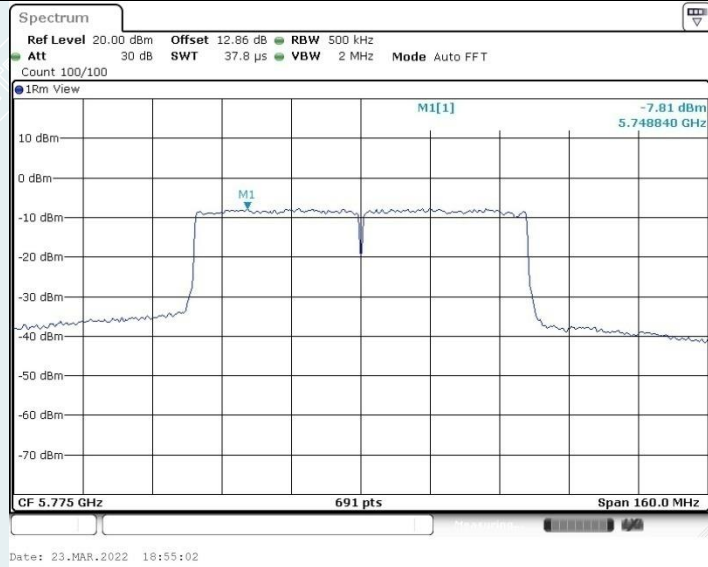




802.11ac VHT80_Ant1_5775 MHz



802.11ac VHT80_Ant2_5775 MHz



11. FREQUENCY STABILITY

11.1. LIMITS

According to §15.407(g), manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

11.2. TEST PROCEDURES

(1) Frequency stability with respect to ambient temperature

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in §ANSI C63.10-2013(5.6).

b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.

e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.

f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

g) Measure the frequency at each of frequencies specified in §ANSI C63.10-2013(5.6).

h) Switch OFF the EUT but do not switch OFF the oscillator heater.

i) Lower the chamber temperature by not more than 10°C, and allow the temperature inside the chamber to stabilize.

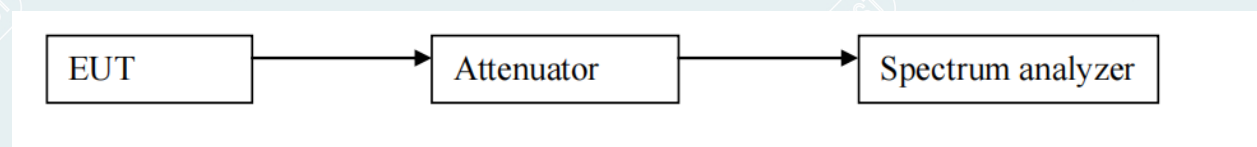
j) Repeat step f) through step i) down to the lowest specified temperature.

(2) Frequency stability when varying supply voltage

- a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

- b) Tune the EUT to one of the number of frequencies required in §ANSI C63.10-2013(5.6). Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
- c) Measure the frequency at each of the frequencies specified in §ANSI C63.10-2013(5.6).
- d) Repeat the above procedure at 85% and 115% of the nominal supply voltage as described in §ANSI C63.10-2013(5.13).

11.3. TEST SETUP

----- The following blanks -----

11.4. TEST RESULTS

Tested By	Lu Wei	Tested Date	2022-03-22
Environmental Conditions	23.5℃/48%RH	Test Voltage	AC120V/60Hz

Voltage								
Test Mode	Antenna	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
802.11a	Ant1	5180	NV	NT	31000	5.984556	20	PASS
			LV	NT	27000	5.212355	20	PASS
			HV	NT	24000	4.633205	20	PASS
	Ant2	5180	NV	NT	18000	3.474903	20	PASS
			LV	NT	21000	4.054054	20	PASS
			HV	NT	22000	4.247104	20	PASS
	Ant1	5200	NV	NT	13000	2.500000	20	PASS
			LV	NT	13000	2.500000	20	PASS
			HV	NT	13000	2.500000	20	PASS
	Ant2	5200	NV	NT	19000	3.653846	20	PASS
			LV	NT	22000	4.230769	20	PASS
			HV	NT	22000	4.230769	20	PASS
	Ant1	5240	NV	NT	16000	3.053435	20	PASS
			LV	NT	16000	3.053435	20	PASS
			HV	NT	16000	3.053435	20	PASS
	Ant2	5240	NV	NT	22000	4.198473	20	PASS
			LV	NT	23000	4.389313	20	PASS
			HV	NT	23000	4.389313	20	PASS
	Ant1	5745	NV	NT	23000	4.003481	20	PASS
			LV	NT	23000	4.003481	20	PASS
			HV	NT	23000	4.003481	20	PASS
	Ant2	5745	NV	NT	21000	3.655352	20	PASS
			LV	NT	25000	4.35161	20	PASS
			HV	NT	27000	4.699739	20	PASS
	Ant1	5785	NV	NT	20000	3.457217	20	PASS
			LV	NT	23000	3.975799	20	PASS
			HV	NT	24000	4.14866	20	PASS
	Ant2	5785	NV	NT	26000	4.494382	20	PASS
			LV	NT	30000	5.185825	20	PASS
			HV	NT	31000	5.358686	20	PASS
	Ant1	5825	NV	NT	21000	3.60515	20	PASS
			LV	NT	25000	4.291845	20	PASS
			HV	NT	26000	4.463519	20	PASS

	Ant2	5825	NV	NT	28000	4.806867	20	PASS
			LV	NT	32000	5.493562	20	PASS
			HV	NT	33000	5.665236	20	PASS
802.11n HT40	Ant1	5190	NV	NT	24000	4.624277	20	PASS
			LV	NT	28000	5.39499	20	PASS
			HV	NT	28000	5.39499	20	PASS
	Ant2	5190	NV	NT	26000	5.009634	20	PASS
			LV	NT	28000	5.39499	20	PASS
			HV	NT	28000	5.39499	20	PASS
	Ant1	5230	NV	NT	25000	4.780115	20	PASS
			LV	NT	27000	5.162524	20	PASS
			HV	NT	29000	5.544933	20	PASS
	Ant2	5230	NV	NT	23000	4.397706	20	PASS
			LV	NT	26000	4.971319	20	PASS
			HV	NT	27000	5.162524	20	PASS
	Ant1	5755	NV	NT	25000	4.344049	20	PASS
			LV	NT	29000	5.039096	20	PASS
			HV	NT	31000	5.38662	20	PASS
	Ant2	5755	NV	NT	24000	4.170287	20	PASS
			LV	NT	29000	5.039096	20	PASS
			HV	NT	31000	5.38662	20	PASS
	Ant1	5795	NV	NT	29000	5.004314	20	PASS
			LV	NT	32000	5.522002	20	PASS
			HV	NT	34000	5.867127	20	PASS
	Ant2	5795	NV	NT	28000	4.831752	20	PASS
			LV	NT	32000	5.522002	20	PASS
			HV	NT	33000	5.694564	20	PASS
802.11ac VHT80	Ant1	5210	NV	NT	25000	4.798464	20	PASS
			LV	NT	29000	5.566219	20	PASS
			HV	NT	29000	5.566219	20	PASS
	Ant2	5210	NV	NT	22000	4.222649	20	PASS
			LV	NT	26000	4.990403	20	PASS
			HV	NT	27000	5.182342	20	PASS
	Ant1	5775	NV	NT	29000	5.021645	20	PASS
			LV	NT	33000	5.714286	20	PASS
			HV	NT	34000	5.887446	20	PASS
	Ant2	5775	NV	NT	27000	4.675325	20	PASS
			LV	NT	31000	5.367965	20	PASS
			HV	NT	32000	5.541126	20	PASS

Temperature								
TestMode	Antenna	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
802.11a	Ant1	5180	NV	0	20000	3.861004	20	PASS
			NV	10	20000	3.861004	20	PASS
			NV	20	20000	3.861004	20	PASS
			NV	30	20000	3.861004	20	PASS
			NV	40	19000	3.667954	20	PASS
	Ant2	5180	NV	0	23000	4.440154	20	PASS
			NV	10	23000	4.440154	20	PASS
			NV	20	23000	4.440154	20	PASS
			NV	30	23000	4.440154	20	PASS
			NV	40	23000	4.440154	20	PASS
	Ant1	5200	NV	0	14000	2.692308	20	PASS
			NV	10	14000	2.692308	20	PASS
			NV	20	14000	2.692308	20	PASS
			NV	30	14000	2.692308	20	PASS
			NV	40	14000	2.692308	20	PASS
	Ant2	5200	NV	0	23000	4.423077	20	PASS
			NV	10	23000	4.423077	20	PASS
			NV	20	23000	4.423077	20	PASS
			NV	30	23000	4.423077	20	PASS
			NV	40	23000	4.423077	20	PASS
	Ant1	5240	NV	0	16000	3.053435	20	PASS
			NV	10	16000	3.053435	20	PASS
			NV	20	17000	3.244275	20	PASS
			NV	30	17000	3.244275	20	PASS
			NV	40	17000	3.244275	20	PASS
	Ant2	5240	NV	0	24000	4.580153	20	PASS
			NV	10	24000	4.580153	20	PASS
			NV	20	24000	4.580153	20	PASS
			NV	30	24000	4.580153	20	PASS
			NV	40	24000	4.580153	20	PASS
	Ant1	5745	NV	0	24000	4.177546	20	PASS
			NV	10	24000	4.177546	20	PASS
			NV	20	24000	4.177546	20	PASS
			NV	30	24000	4.177546	20	PASS
			NV	40	24000	4.177546	20	PASS
	Ant2	5745	NV	0	30000	5.221932	20	PASS
			NV	10	30000	5.221932	20	PASS
			NV	20	31000	5.395997	20	PASS
			NV	30	31000	5.395997	20	PASS
			NV	40	31000	5.395997	20	PASS
	Ant1	5785	NV	0	25000	4.321521	20	PASS
			NV	10	26000	4.494382	20	PASS

			NV	20	26000	4.494382	20	PASS
			NV	30	26000	4.494382	20	PASS
			NV	40	26000	4.494382	20	PASS
	Ant2	5785	NV	0	33000	5.704408	20	PASS
			NV	10	33000	5.704408	20	PASS
			NV	20	33000	5.704408	20	PASS
			NV	30	33000	5.704408	20	PASS
			NV	40	34000	5.877269	20	PASS
	Ant1	5825	NV	0	28000	4.806867	20	PASS
			NV	10	28000	4.806867	20	PASS
			NV	20	28000	4.806867	20	PASS
			NV	30	28000	4.806867	20	PASS
			NV	40	29000	4.978541	20	PASS
	Ant2	5825	NV	0	35000	6.008584	20	PASS
			NV	10	36000	6.180258	20	PASS
			NV	20	36000	6.180258	20	PASS
			NV	30	36000	6.180258	20	PASS
			NV	40	37000	6.351931	20	PASS
802.11n HT40	Ant1	5190	NV	0	29000	5.587669	20	PASS
			NV	10	29000	5.587669	20	PASS
			NV	20	29000	5.587669	20	PASS
			NV	30	29000	5.587669	20	PASS
			NV	40	29000	5.587669	20	PASS
	Ant2	5190	NV	0	28000	5.39499	20	PASS
			NV	10	28000	5.39499	20	PASS
			NV	20	27000	5.202312	20	PASS
			NV	30	27000	5.202312	20	PASS
			NV	40	27000	5.202312	20	PASS
	Ant1	5230	NV	0	29000	5.544933	20	PASS
			NV	10	29000	5.544933	20	PASS
			NV	20	30000	5.736138	20	PASS
			NV	30	29000	5.544933	20	PASS
			NV	40	30000	5.736138	20	PASS
	Ant2	5230	NV	0	28000	5.353728	20	PASS
			NV	10	28000	5.353728	20	PASS
			NV	20	28000	5.353728	20	PASS
			NV	30	28000	5.353728	20	PASS
			NV	40	28000	5.353728	20	PASS
	Ant1	5755	NV	0	33000	5.734144	20	PASS
			NV	10	34000	5.907906	20	PASS
			NV	20	34000	5.907906	20	PASS
			NV	30	34000	5.907906	20	PASS
			NV	40	34000	5.907906	20	PASS
	Ant2	5755	NV	0	34000	5.907906	20	PASS

			NV	10	34000	5.907906	20	PASS
			NV	20	34000	5.907906	20	PASS
			NV	30	35000	6.081668	20	PASS
			NV	40	35000	6.081668	20	PASS
			NV	0	35000	6.039689	20	PASS
	Ant1	5795	NV	10	35000	6.039689	20	PASS
			NV	20	35000	6.039689	20	PASS
			NV	30	35000	6.039689	20	PASS
			NV	40	35000	6.039689	20	PASS
			NV	0	35000	6.039689	20	PASS
	Ant2	5795	NV	10	35000	6.039689	20	PASS
			NV	20	35000	6.039689	20	PASS
			NV	30	35000	6.039689	20	PASS
			NV	40	35000	6.039689	20	PASS
			NV	0	35000	6.039689	20	PASS
802.11ac VHT80	Ant1	5210	NV	0	30000	5.758157	20	PASS
			NV	10	30000	5.758157	20	PASS
			NV	20	30000	5.758157	20	PASS
			NV	30	30000	5.758157	20	PASS
			NV	40	30000	5.758157	20	PASS
	Ant2	5210	NV	0	28000	5.37428	20	PASS
			NV	10	28000	5.37428	20	PASS
			NV	20	28000	5.37428	20	PASS
			NV	30	28000	5.37428	20	PASS
			NV	40	28000	5.37428	20	PASS
	Ant1	5775	NV	0	36000	6.233766	20	PASS
			NV	10	36000	6.233766	20	PASS
			NV	20	37000	6.406926	20	PASS
			NV	30	37000	6.406926	20	PASS
			NV	40	37000	6.406926	20	PASS
	Ant2	5775	NV	0	35000	6.060606	20	PASS
			NV	10	35000	6.060606	20	PASS
			NV	20	35000	6.060606	20	PASS
			NV	30	35000	6.060606	20	PASS
			NV	40	35000	6.060606	20	PASS

Note: 1.This report records the worst case of temperature change test observation time 0/2/5/10min .

2.Test Voltage-NV:AC120V/60Hz, Test Voltage-LV:AC108V/60Hz, Test Voltage-HV:AC132V/60Hz.

3.Temperature Range:0℃~40℃, Temperature-NT: 23.5℃.

APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM

Please refer to the attached document E202111246805-20-Test photo.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document E202111246805-21-EUT photo.

----- End of Report -----