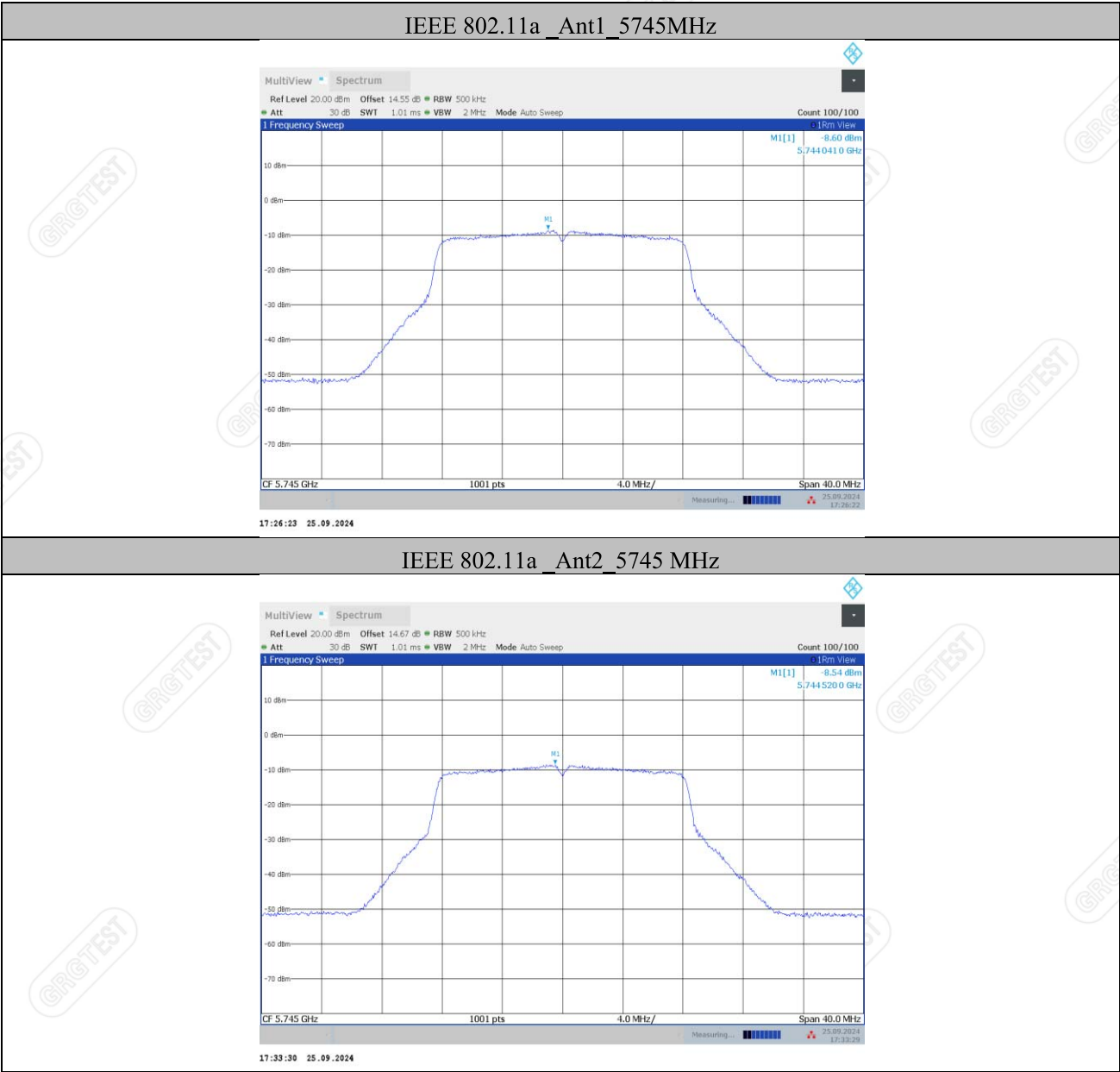


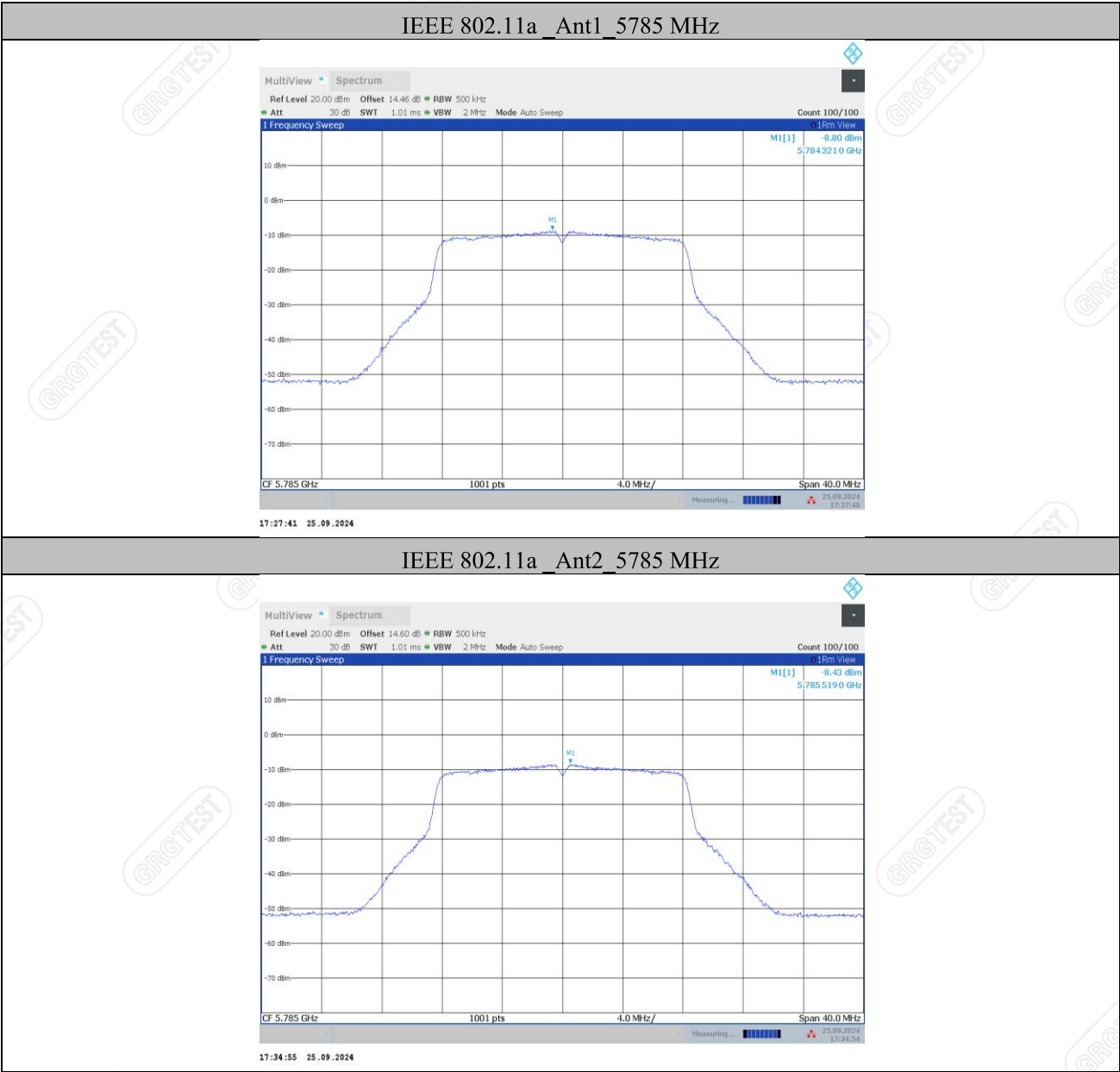
U-NII-3:

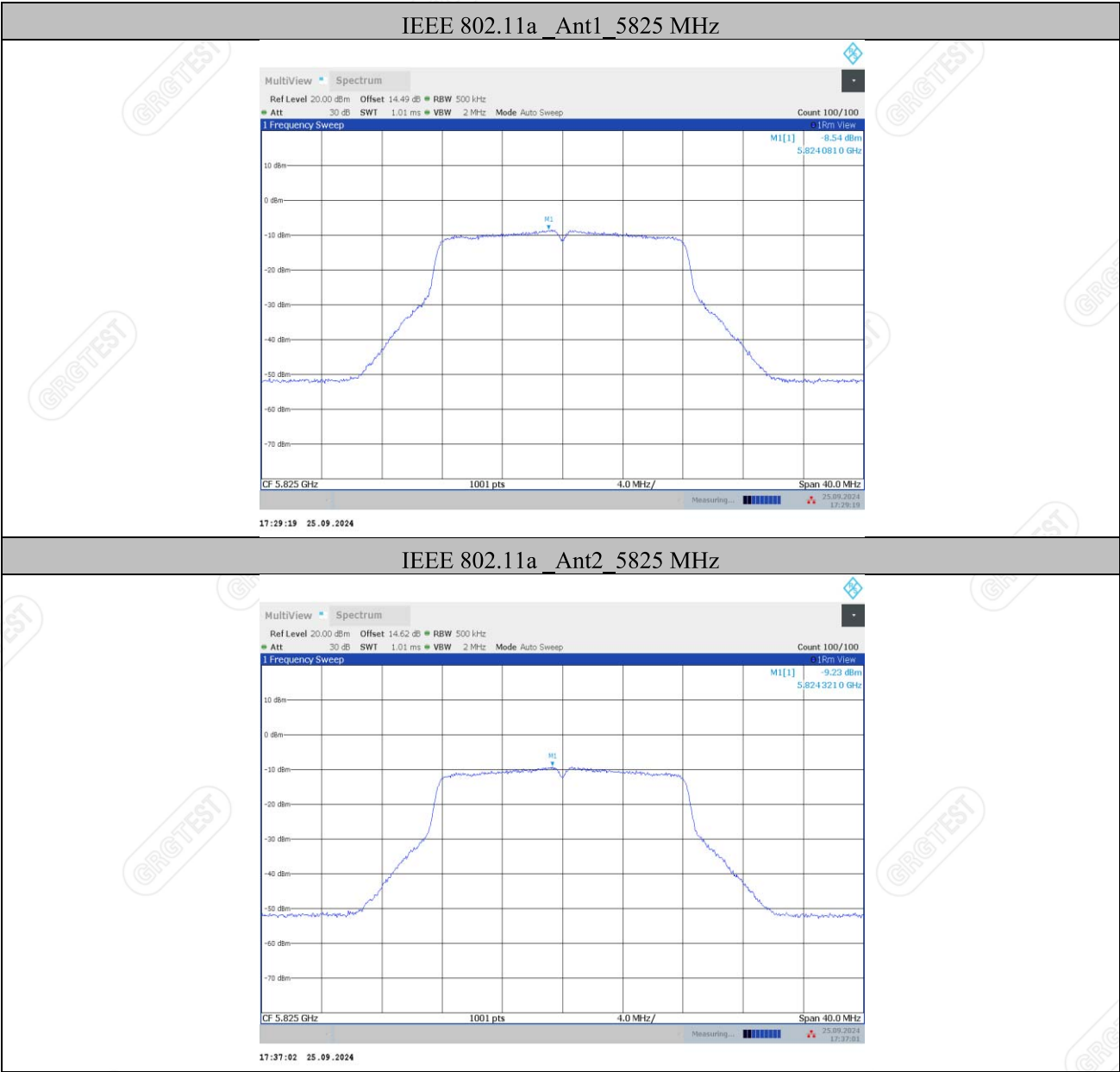
Test Mode	Antenna	Frequency [MHz]	Result [dBm/500kHz]	Limit [dBm/500kHz]	Verdict
IEEE 802.11a	Ant1	5745	-8.60	≤28.74	PASS
	Ant2	5745	-8.54	≤28.74	PASS
	Ant1	5785	-8.80	≤28.74	PASS
	Ant2	5785	-8.43	≤28.74	PASS
	Ant1	5825	-8.54	≤28.74	PASS
	Ant2	5825	-9.23	≤28.74	PASS
IEEE 802.11n HT20	Ant1	5745	-10.49	≤28.74	PASS
	Ant2	5745	-11.93	≤28.74	PASS
	total	5745	-8.14	≤28.74	PASS
	Ant1	5785	-11.10	≤28.74	PASS
	Ant2	5785	-12.14	≤28.74	PASS
	total	5785	-8.58	≤28.74	PASS
	Ant1	5825	-10.72	≤28.74	PASS
	Ant2	5825	-12.87	≤28.74	PASS
	total	5825	-8.65	≤28.74	PASS
IEEE 802.11n HT40	Ant1	5755	-13.63	≤28.74	PASS
	Ant2	5755	-14.63	≤28.74	PASS
	total	5755	-11.09	≤28.74	PASS
	Ant1	5795	-13.99	≤28.74	PASS
	Ant2	5795	-14.68	≤28.74	PASS
	total	5795	-11.31	≤28.74	PASS
IEEE 802.11ac VHT20	Ant1	5745	-10.87	≤28.74	PASS
	Ant2	5745	-11.73	≤28.74	PASS
	total	5745	-8.27	≤28.74	PASS
	Ant1	5785	-11.29	≤28.74	PASS
	Ant2	5785	-12.21	≤28.74	PASS
	total	5785	-8.72	≤28.74	PASS
	Ant1	5825	-10.89	≤28.74	PASS
	Ant2	5825	-12.79	≤28.74	PASS
	total	5825	-8.73	≤28.74	PASS
IEEE 802.11ac VHT40	Ant1	5755	-13.84	≤28.74	PASS
	Ant2	5755	-14.72	≤28.74	PASS
	total	5755	-11.25	≤28.74	PASS
	Ant1	5795	-14.17	≤28.74	PASS
	Ant2	5795	-14.88	≤28.74	PASS
	total	5795	-11.50	≤28.74	PASS
IEEE 802.11ac VHT80	Ant1	5775	-17.05	≤28.74	PASS
	Ant2	5775	-18.56	≤28.74	PASS
	total	5775	-14.73	≤28.74	PASS

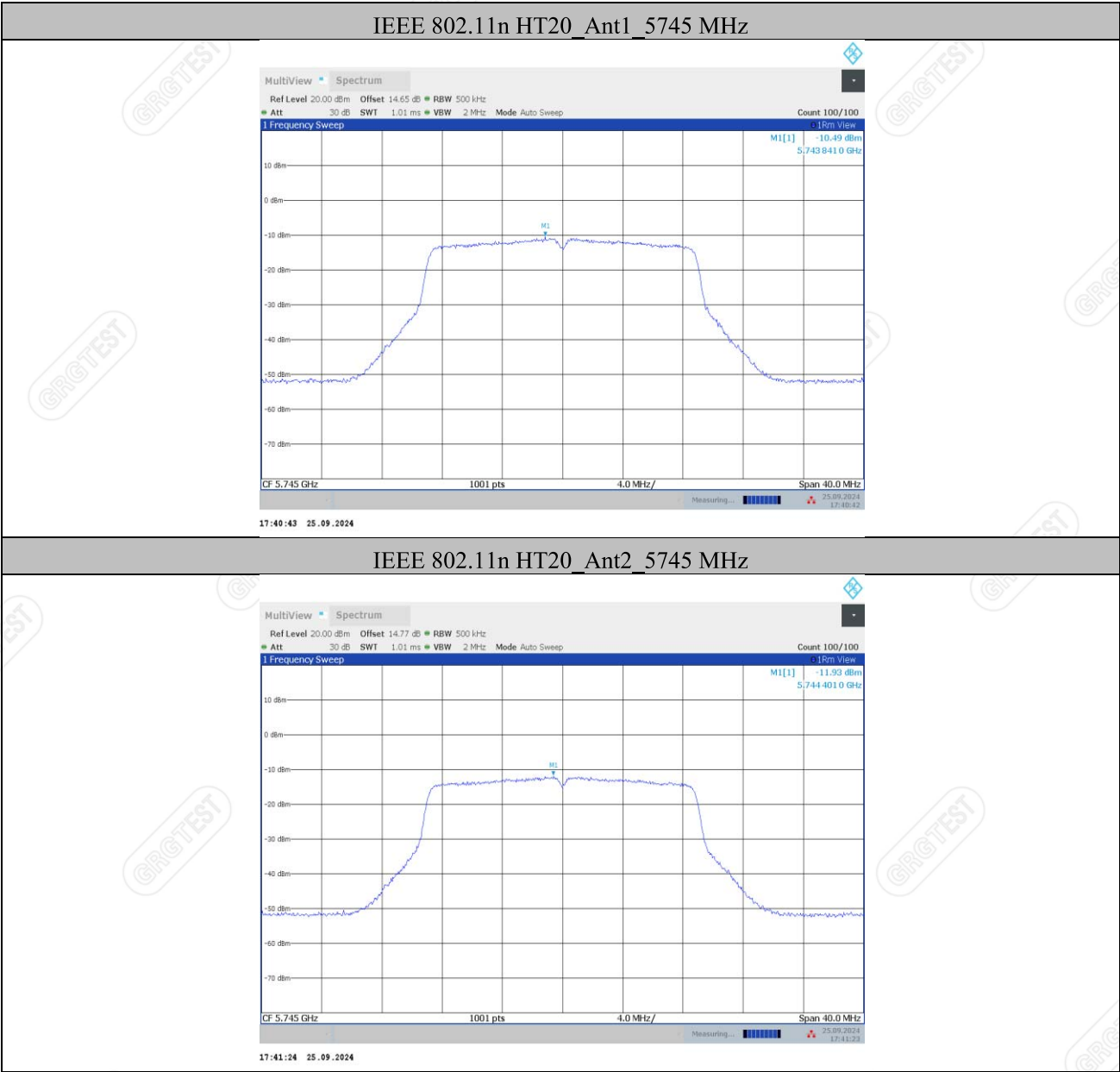
Note: 1. Result already includes duty factor, 5745MHz~5825MHz antenna maximum gain is 7.26dBi. So the limit is $30+(6-7.26)=30-1.26=28.74\text{ dBm}/500\text{kHz}$.

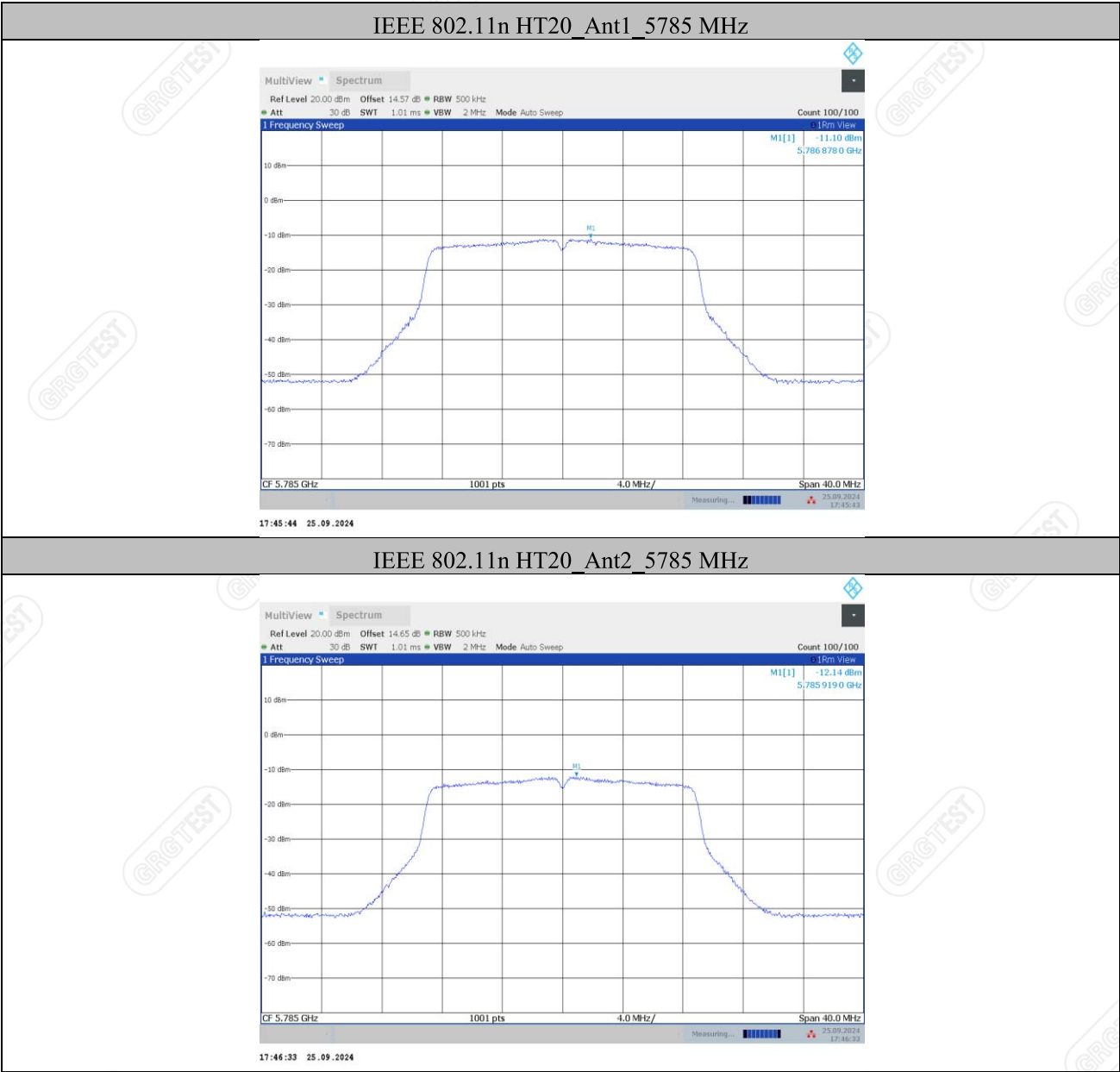
Test Graphs

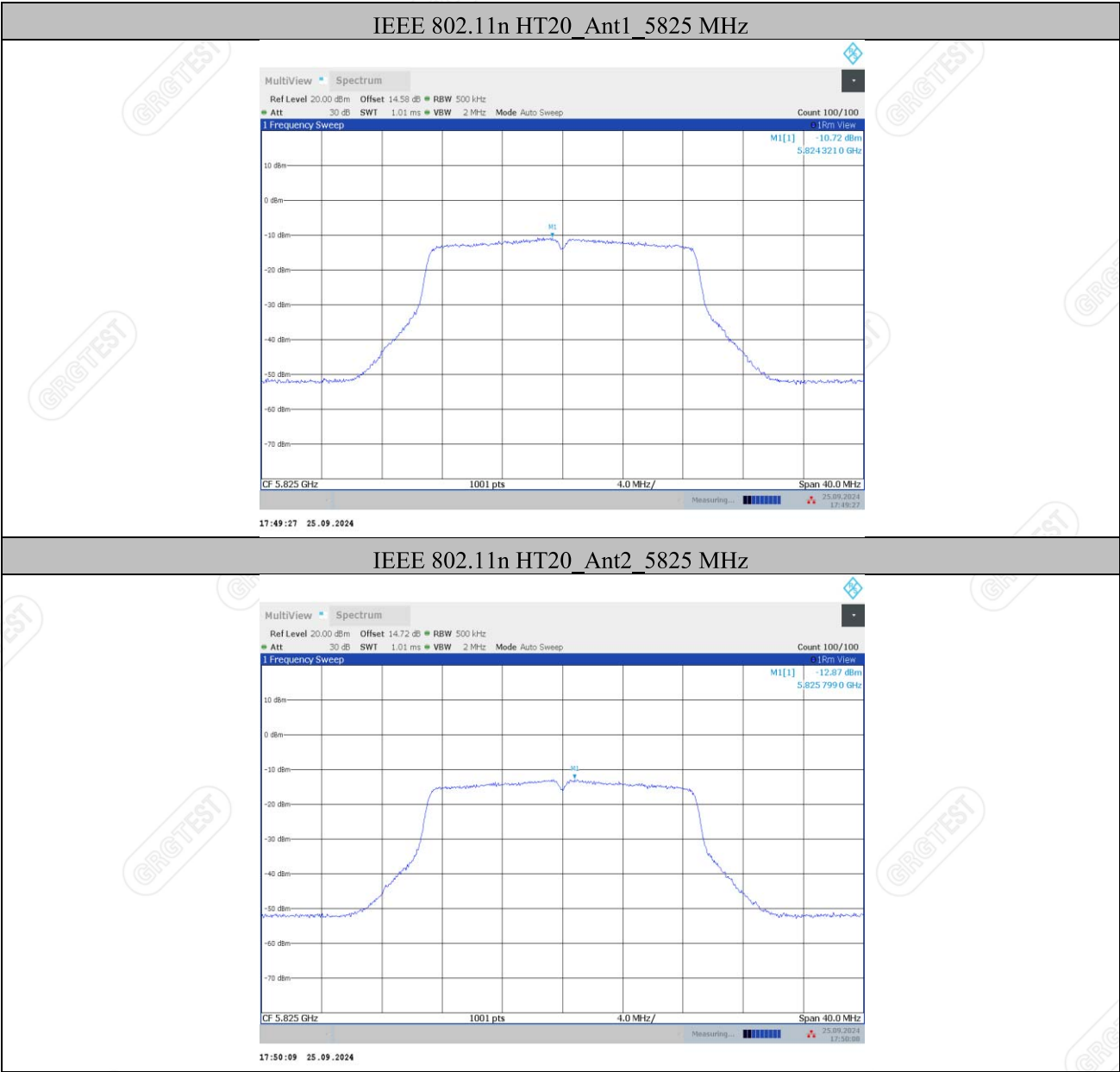


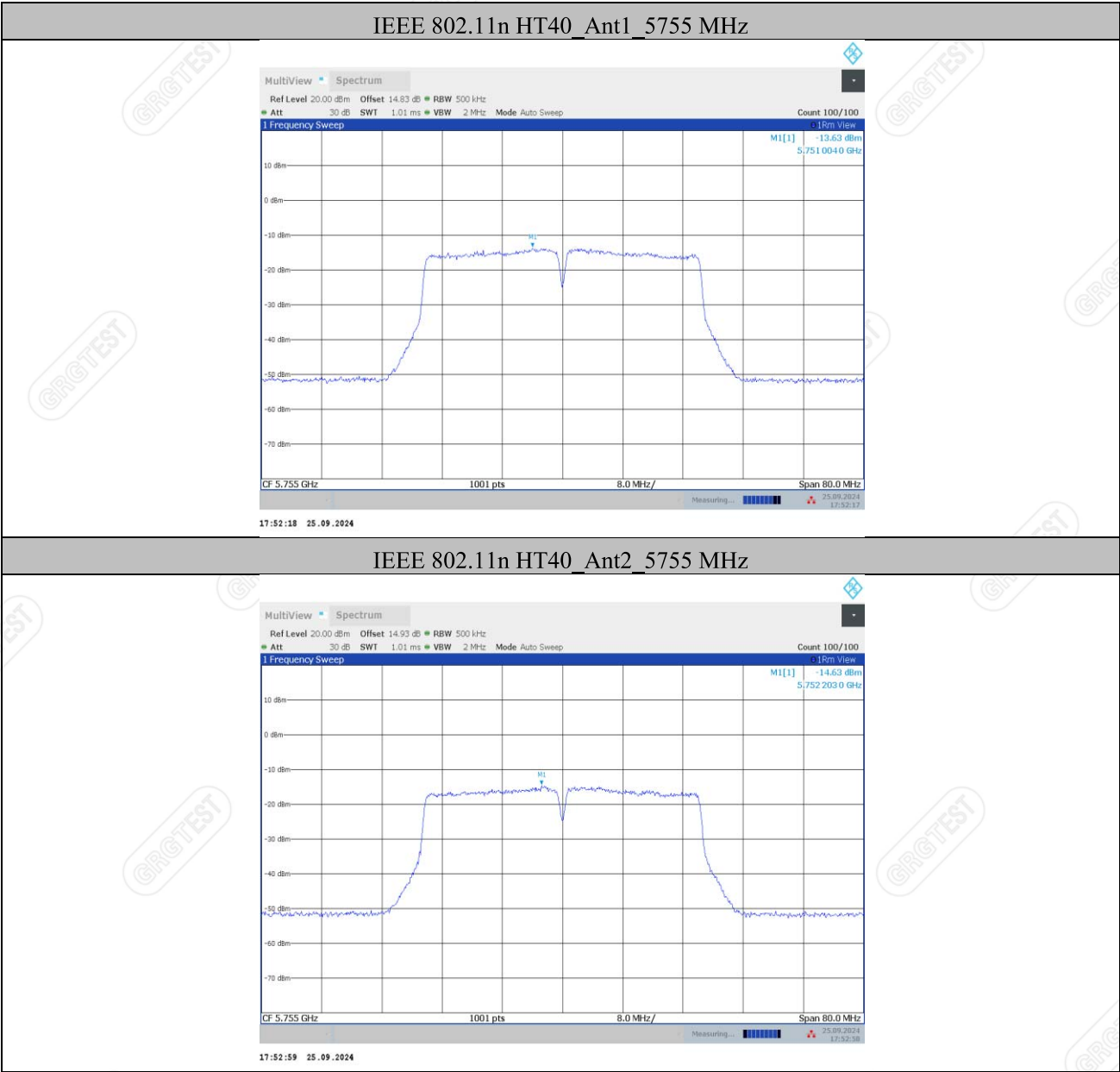


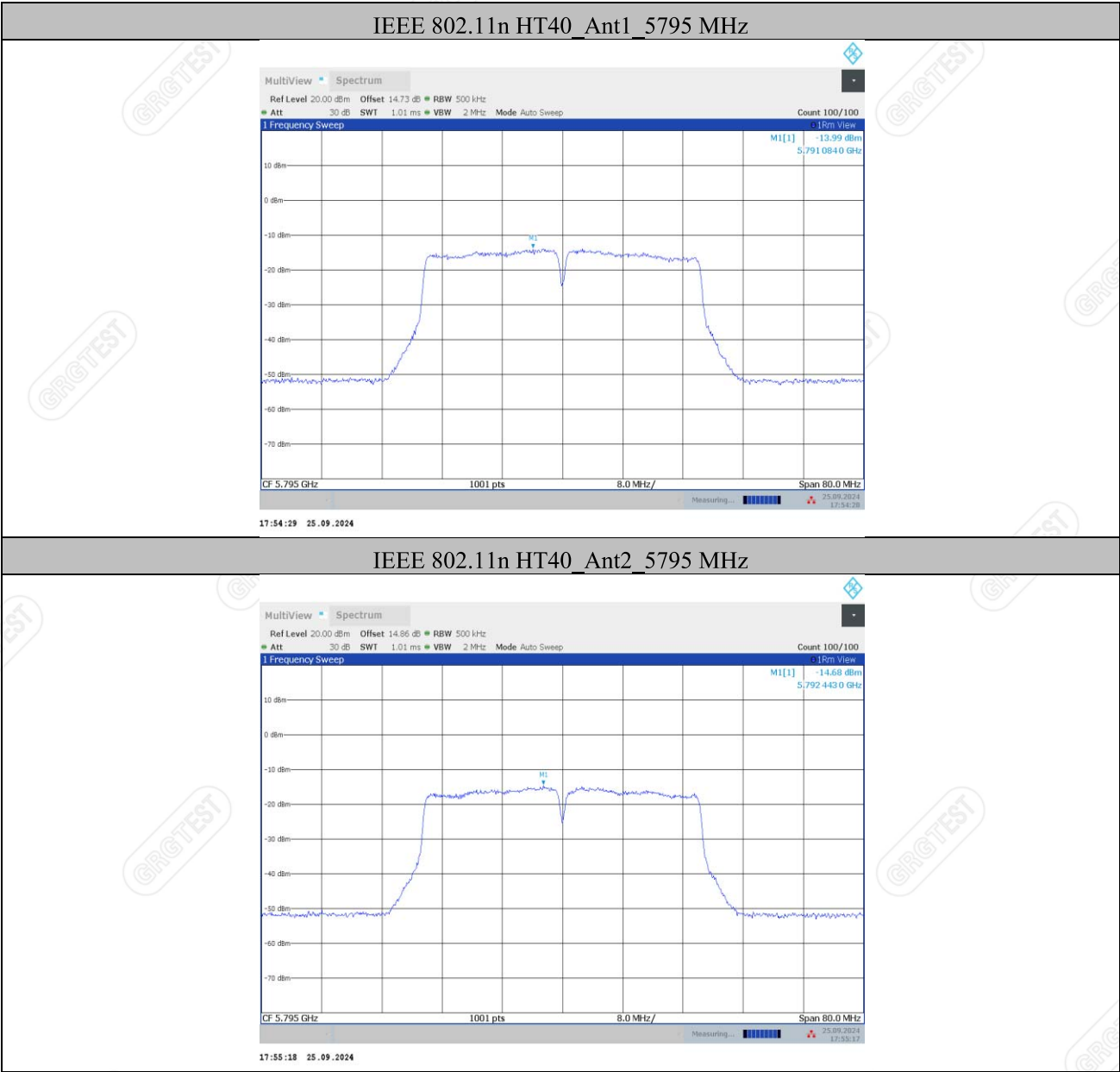


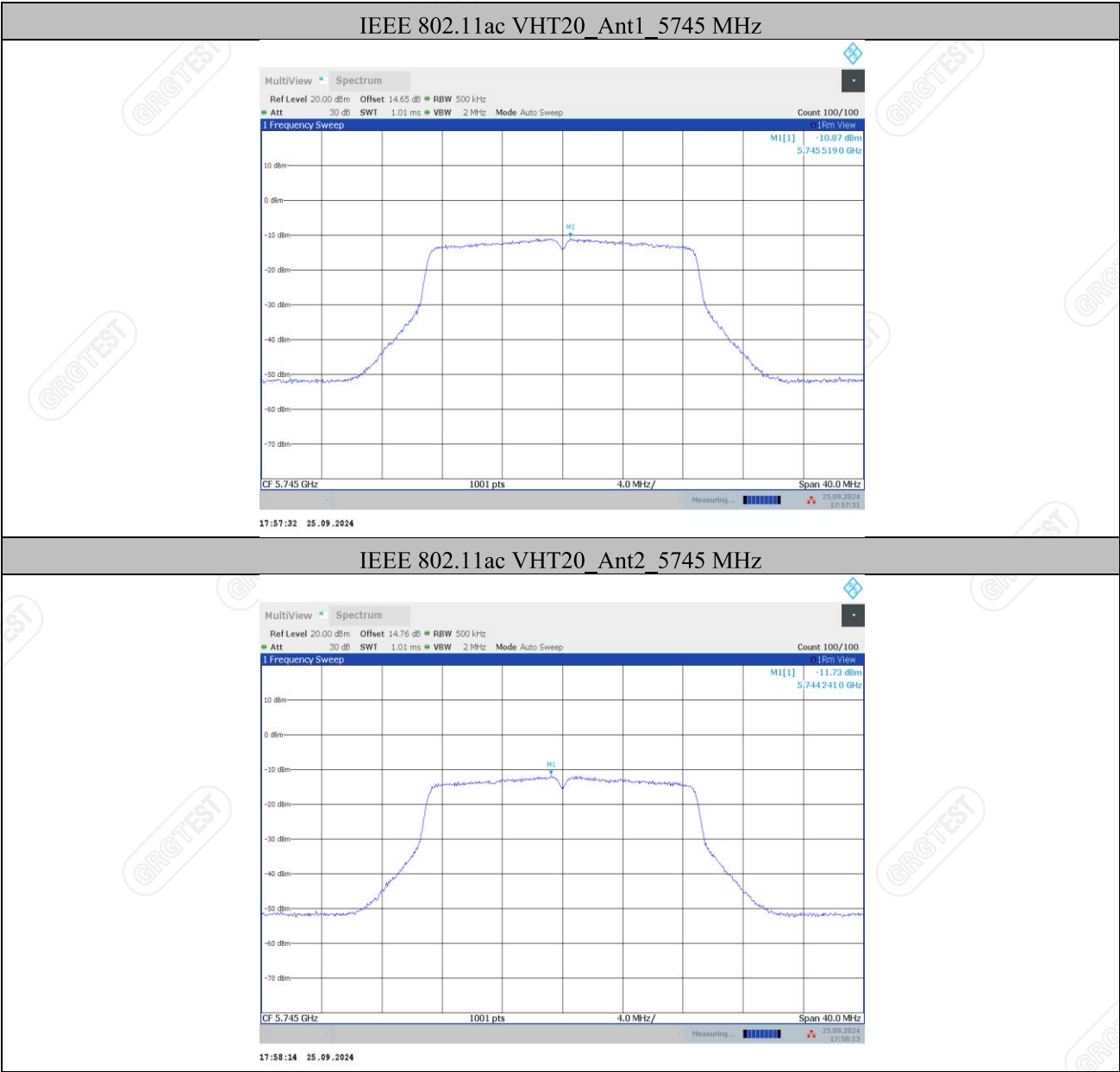


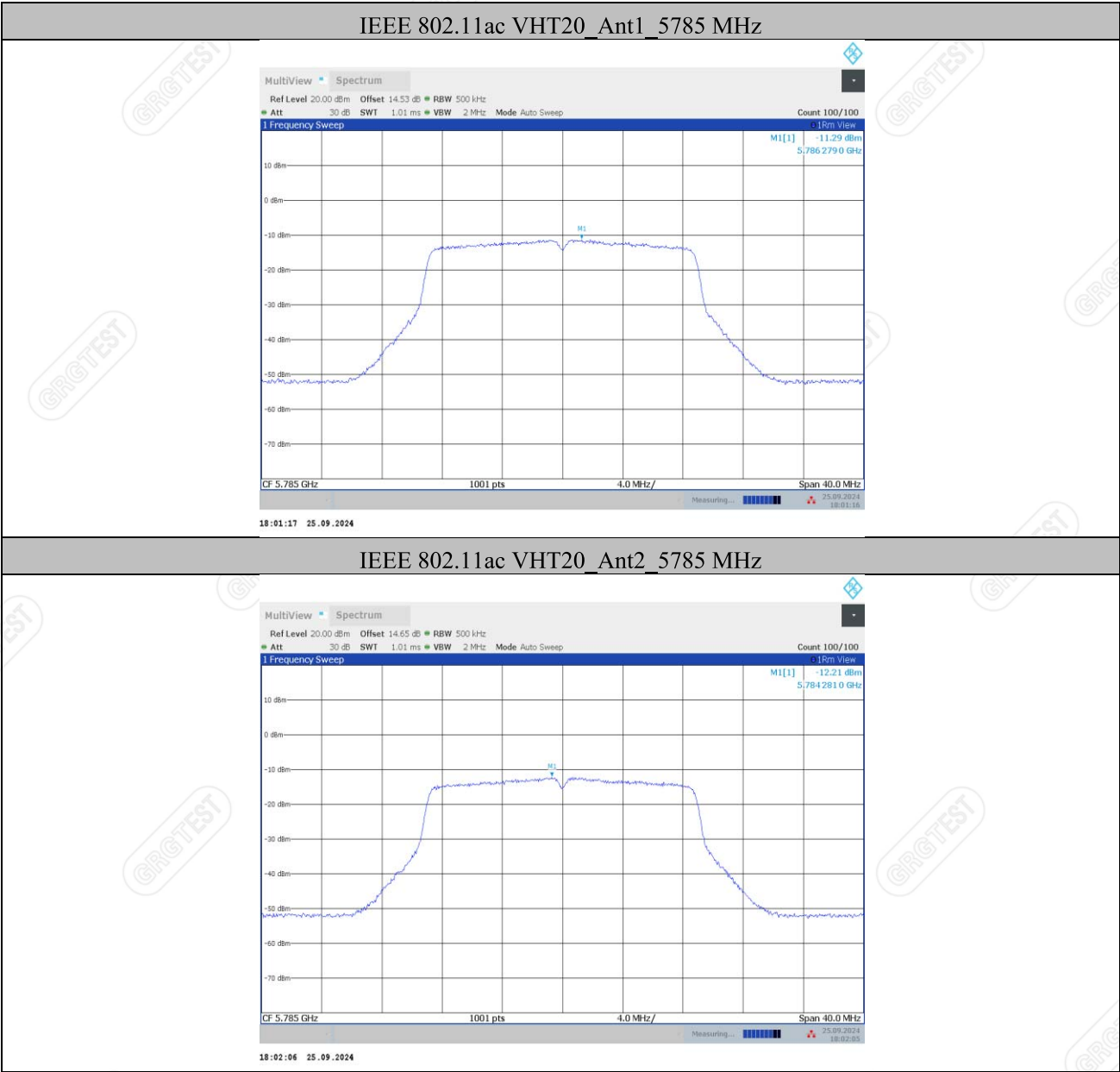


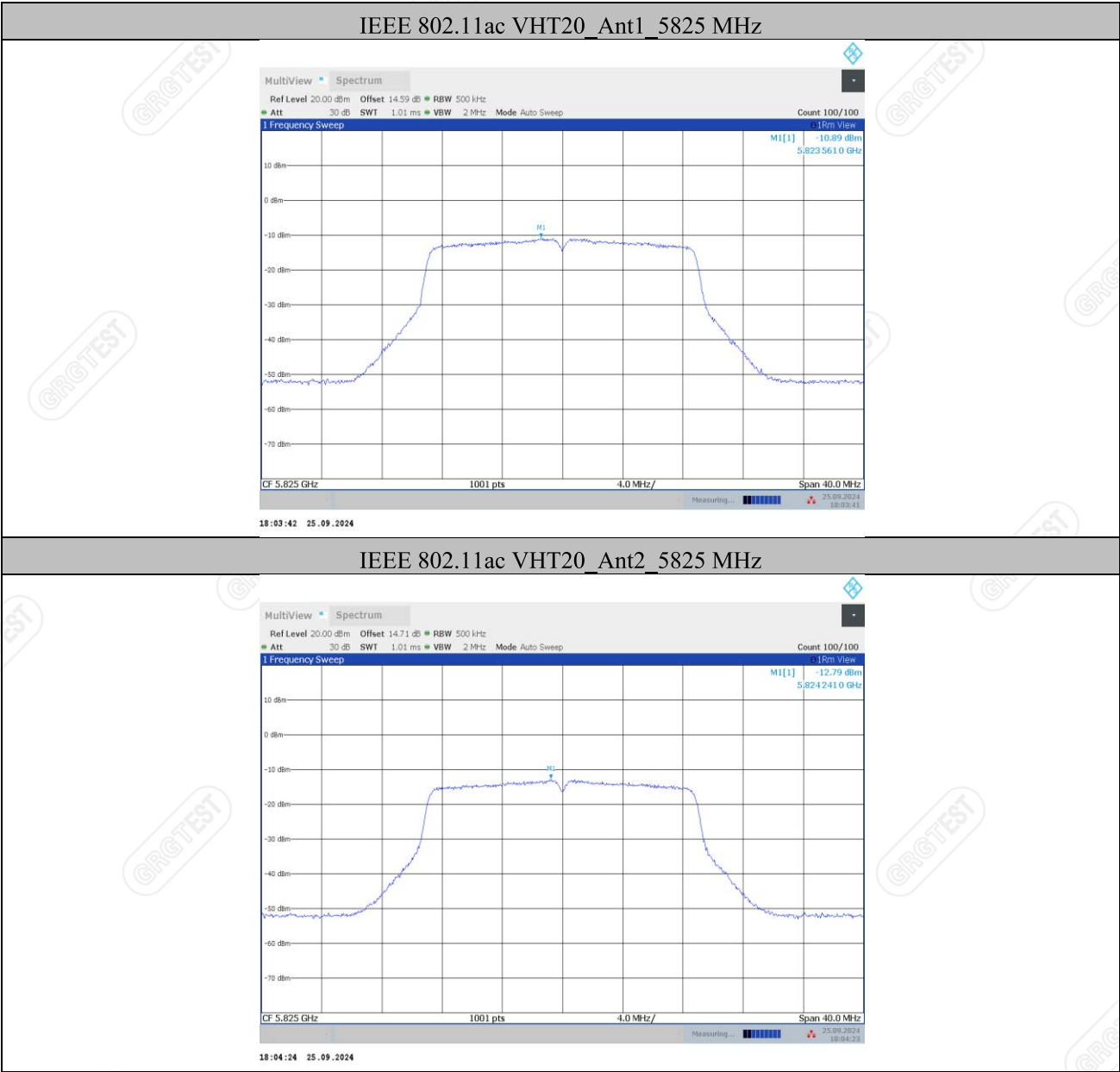


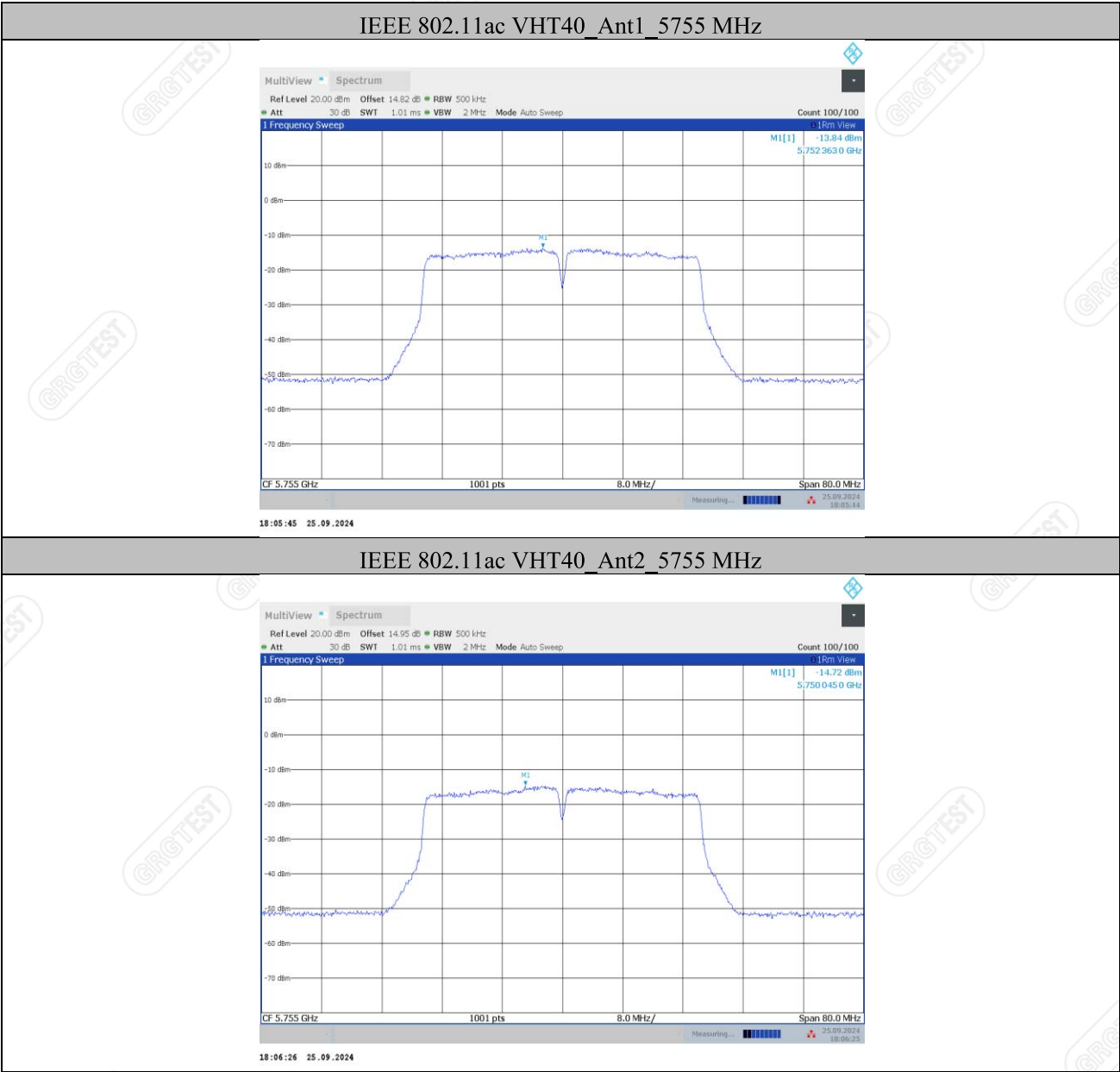




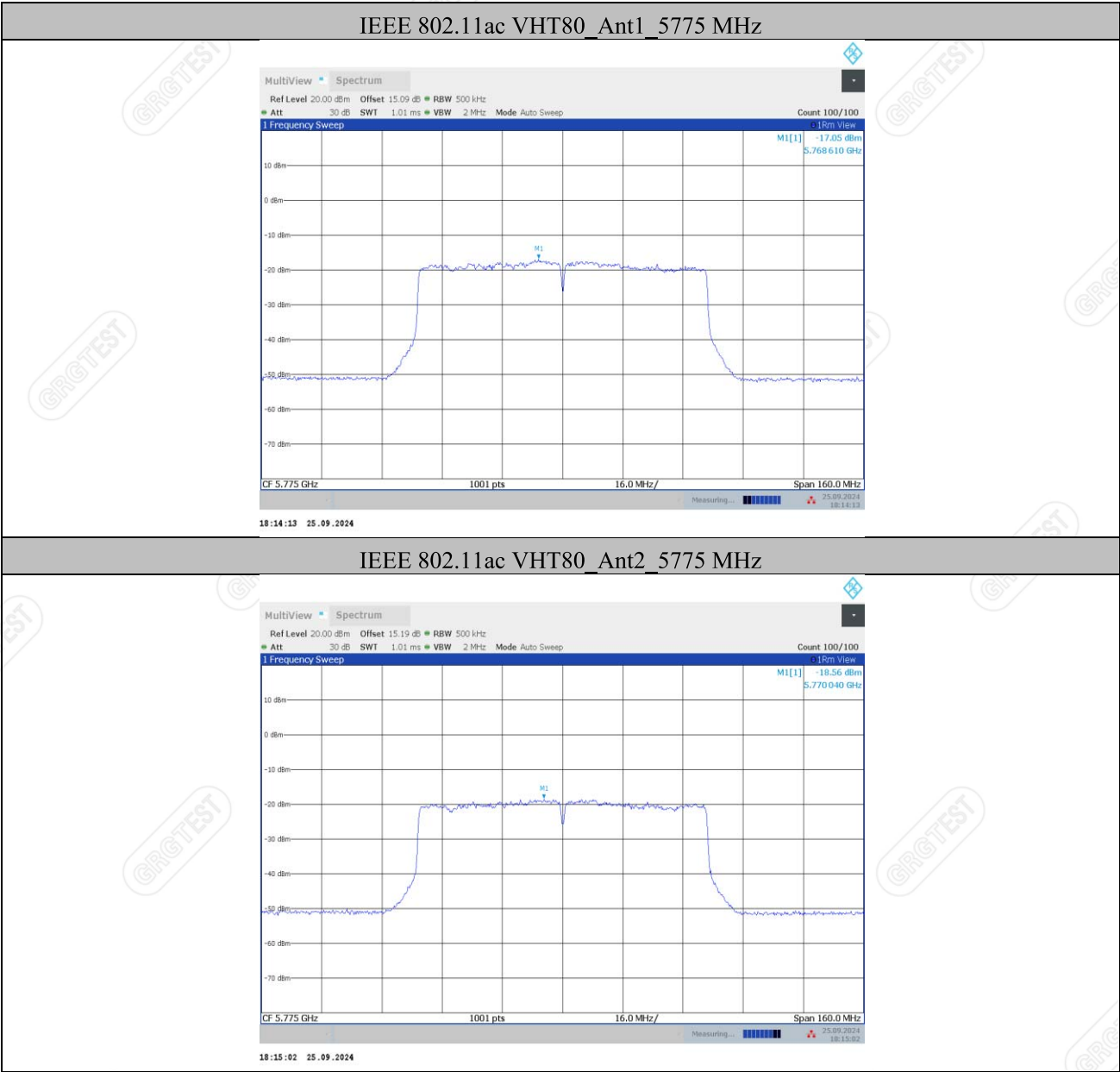












10. FREQUENCY STABILITY

10.1 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.

10.2 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 C63.10-2020(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 C63.10-2020(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.

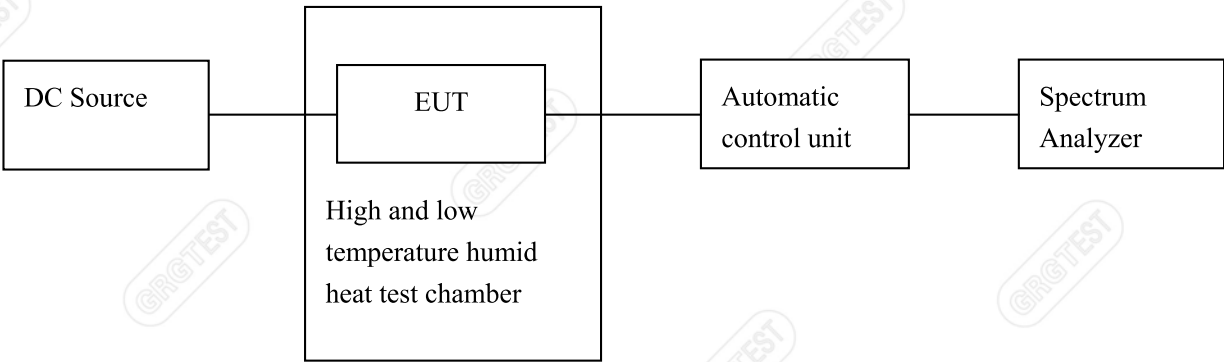
(2) Frequency stability when varying supply voltage

- 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 C63.10-2020(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 C63.10-2020(5.6).
- d) Repeat the above procedure at 85% and 115% of the nominal supply voltage as described in §ANSI C63.10-2020(5.13).

10.3 TEST SETUP



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10.4 TEST RESULTS

Environment: 24.5°C/65%RH 101.0kPa
Tested By: Zhu rongting

Voltage:DC 12V
Date: 2024-09-25

Voltage								
Test Mode	Antenna	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
	Ant1	5745	NV	NT	-13000.00	-2.262837	20	PASS
			LV	NT	-13000.00	-2.262837	20	PASS
			HV	NT	-13000.00	-2.262837	20	PASS
	Ant2	5745	NV	NT	-19000.00	-3.307224	20	PASS
			LV	NT	-19000.00	-3.307224	20	PASS
			HV	NT	-19000.00	-3.307224	20	PASS
	Ant1	5785	NV	NT	-21000.00	-3.630078	20	PASS
			LV	NT	-23000.00	-3.975799	20	PASS
			HV	NT	-23000.00	-3.975799	20	PASS
	Ant2	5785	NV	NT	-22000.00	-3.802939	20	PASS
			LV	NT	-22000.00	-3.802939	20	PASS
			HV	NT	-22000.00	-3.802939	20	PASS
	Ant1	5825	NV	NT	-21000.00	-3.605150	20	PASS
			LV	NT	-21000.00	-3.605150	20	PASS
			HV	NT	-21000.00	-3.605150	20	PASS
	Ant2	5825	NV	NT	-21000.00	-3.605150	20	PASS
			LV	NT	-22000.00	-3.776824	20	PASS
			HV	NT	-22000.00	-3.776824	20	PASS
	Ant1	5755	NV	NT	-21000.00	-3.649001	20	PASS
			LV	NT	-21000.00	-3.649001	20	PASS
			HV	NT	-21000.00	-3.649001	20	PASS
	Ant2	5755	NV	NT	-21000.00	-3.649001	20	PASS
			LV	NT	-22000.00	-3.822763	20	PASS
			HV	NT	-22000.00	-3.822763	20	PASS
	Ant1	5795	NV	NT	-21000.00	-3.623814	20	PASS
			LV	NT	-20000.00	-3.451251	20	PASS
			HV	NT	-20000.00	-3.451251	20	PASS
	Ant2	5795	NV	NT	-19000.00	-3.278689	20	PASS
			LV	NT	-19000.00	-3.278689	20	PASS
			HV	NT	-19000.00	-3.278689	20	PASS
	Ant1	5775	NV	NT	-20000.00	-3.463203	20	PASS
			LV	NT	-20000.00	-3.463203	20	PASS
			HV	NT	-21000.00	-3.636364	20	PASS
	Ant2	5775	NV	NT	-21000.00	-3.636364	20	PASS

			LV	NT	-21000.00	-3.636364	20	PASS
			HV	NT	-21000.00	-3.636364	20	PASS

Temperature								
Test Mode	Antenna	Frequency (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
/	Ant1	5745	NV	-40	-14000.00	-2.436902	20	PASS
			NV	-30	-14000.00	-2.436902	20	PASS
			NV	-20	-14000.00	-2.436902	20	PASS
			NV	-10	-14000.00	-2.436902	20	PASS
			NV	0	-14000.00	-2.436902	20	PASS
			NV	10	-14000.00	-2.436902	20	PASS
			NV	20	-15000.00	-2.610966	20	PASS
			NV	30	-15000.00	-2.610966	20	PASS
			NV	40	-15000.00	-2.610966	20	PASS
			NV	50	-15000.00	-2.610966	20	PASS
			NV	60	-15000.00	-2.610966	20	PASS
			NV	70	-15000.00	-2.610966	20	PASS
			NV	75	-15000.00	-2.610966	20	PASS
	Ant2	5745	NV	-40	-19000.00	-3.307224	20	PASS
			NV	-30	-19000.00	-3.307224	20	PASS
			NV	-20	-19000.00	-3.307224	20	PASS
			NV	-10	-19000.00	-3.307224	20	PASS
			NV	0	-19000.00	-3.307224	20	PASS
			NV	10	-19000.00	-3.307224	20	PASS
			NV	20	-19000.00	-3.307224	20	PASS
			NV	30	-19000.00	-3.307224	20	PASS
			NV	40	-20000.00	-3.481288	20	PASS
			NV	50	-20000.00	-3.481288	20	PASS
			NV	60	-20000.00	-3.481288	20	PASS
			NV	70	-20000.00	-3.481288	20	PASS
			NV	75	-20000.00	-3.481288	20	PASS
	Ant1	5785	NV	-40	-24000.00	-4.148660	20	PASS
			NV	-30	-24000.00	-4.148660	20	PASS
			NV	-20	-23000.00	-3.975799	20	PASS
			NV	-10	-24000.00	-4.148660	20	PASS
			NV	0	-23000.00	-3.975799	20	PASS
			NV	10	-23000.00	-3.975799	20	PASS
			NV	20	-23000.00	-3.975799	20	PASS
			NV	30	-23000.00	-3.975799	20	PASS
			NV	40	-23000.00	-3.975799	20	PASS
			NV	50	-23000.00	-3.975799	20	PASS

			NV	60	-23000.00	-3.975799	20	PASS
			NV	70	-23000.00	-3.975799	20	PASS
			NV	75	-23000.00	-3.975799	20	PASS
	Ant2	5785	NV	-40	-22000.00	-3.802939	20	PASS
			NV	-30	-22000.00	-3.802939	20	PASS
			NV	-20	-22000.00	-3.802939	20	PASS
			NV	-10	-22000.00	-3.802939	20	PASS
			NV	0	-22000.00	-3.802939	20	PASS
			NV	10	-22000.00	-3.802939	20	PASS
			NV	20	-22000.00	-3.802939	20	PASS
			NV	30	-22000.00	-3.802939	20	PASS
			NV	40	-22000.00	-3.802939	20	PASS
			NV	50	-22000.00	-3.802939	20	PASS
			NV	60	-22000.00	-3.802939	20	PASS
			NV	70	-22000.00	-3.802939	20	PASS
			NV	75	-22000.00	-3.802939	20	PASS
	Ant1	5825	NV	-40	-21000.00	-3.605150	20	PASS
			NV	-30	-21000.00	-3.605150	20	PASS
			NV	-20	-21000.00	-3.605150	20	PASS
			NV	-10	-22000.00	-3.776824	20	PASS
			NV	0	-22000.00	-3.776824	20	PASS
			NV	10	-22000.00	-3.776824	20	PASS
			NV	20	-22000.00	-3.776824	20	PASS
			NV	30	-22000.00	-3.776824	20	PASS
			NV	40	-22000.00	-3.776824	20	PASS
			NV	50	-22000.00	-3.776824	20	PASS
			NV	60	-22000.00	-3.776824	20	PASS
			NV	70	-22000.00	-3.776824	20	PASS
			NV	75	-22000.00	-3.776824	20	PASS
	Ant2	5825	NV	-40	-21000.00	-3.605150	20	PASS
			NV	-30	-21000.00	-3.605150	20	PASS
			NV	-20	-22000.00	-3.776824	20	PASS
			NV	-10	-21000.00	-3.605150	20	PASS
			NV	0	-21000.00	-3.605150	20	PASS
			NV	10	-21000.00	-3.605150	20	PASS
			NV	20	-21000.00	-3.605150	20	PASS
			NV	30	-21000.00	-3.605150	20	PASS
			NV	40	-21000.00	-3.605150	20	PASS
			NV	50	-21000.00	-3.605150	20	PASS
			NV	60	-21000.00	-3.605150	20	PASS
			NV	70	-21000.00	-3.605150	20	PASS
			NV	75	-21000.00	-3.605150	20	PASS

	Ant1	5755	NV	-40	-21000.00	-3.649001	20	PASS
			NV	-30	-21000.00	-3.649001	20	PASS
			NV	-20	-21000.00	-3.649001	20	PASS
			NV	-10	-21000.00	-3.649001	20	PASS
			NV	0	-21000.00	-3.649001	20	PASS
			NV	10	-21000.00	-3.649001	20	PASS
			NV	20	-21000.00	-3.649001	20	PASS
			NV	30	-21000.00	-3.649001	20	PASS
			NV	40	-21000.00	-3.649001	20	PASS
			NV	50	-21000.00	-3.649001	20	PASS
			NV	60	-21000.00	-3.649001	20	PASS
			NV	70	-21000.00	-3.649001	20	PASS
			NV	75	-21000.00	-3.649001	20	PASS
	Ant2	5755	NV	-40	-22000.00	-3.822763	20	PASS
			NV	-30	-22000.00	-3.822763	20	PASS
			NV	-20	-22000.00	-3.822763	20	PASS
			NV	-10	-22000.00	-3.822763	20	PASS
			NV	0	-22000.00	-3.822763	20	PASS
			NV	10	-22000.00	-3.822763	20	PASS
			NV	20	-22000.00	-3.822763	20	PASS
			NV	30	-22000.00	-3.822763	20	PASS
			NV	40	-22000.00	-3.822763	20	PASS
			NV	50	-22000.00	-3.822763	20	PASS
			NV	60	-22000.00	-3.822763	20	PASS
			NV	70	-22000.00	-3.822763	20	PASS
			NV	75	-22000.00	-3.822763	20	PASS
	Ant1	5795	NV	-40	-20000.00	-3.451251	20	PASS
			NV	-30	-20000.00	-3.451251	20	PASS
			NV	-20	-20000.00	-3.451251	20	PASS
			NV	-10	-20000.00	-3.451251	20	PASS
			NV	0	-19000.00	-3.278689	20	PASS
			NV	10	-19000.00	-3.278689	20	PASS
			NV	20	-19000.00	-3.278689	20	PASS
			NV	30	-19000.00	-3.278689	20	PASS
			NV	40	-19000.00	-3.278689	20	PASS
			NV	50	-19000.00	-3.278689	20	PASS
			NV	60	-19000.00	-3.278689	20	PASS
			NV	70	-19000.00	-3.278689	20	PASS
			NV	75	-19000.00	-3.278689	20	PASS
	Ant2	5795	NV	-40	-20000.00	-3.451251	20	PASS
			NV	-30	-20000.00	-3.451251	20	PASS
			NV	-20	-20000.00	-3.451251	20	PASS

			NV	-10	-21000.00	-3.623814	20	PASS
			NV	0	-21000.00	-3.623814	20	PASS
			NV	10	-21000.00	-3.623814	20	PASS
			NV	20	-22000.00	-3.796376	20	PASS
			NV	30	-22000.00	-3.796376	20	PASS
			NV	40	-22000.00	-3.796376	20	PASS
			NV	50	-22000.00	-3.796376	20	PASS
			NV	60	-22000.00	-3.796376	20	PASS
			NV	70	-22000.00	-3.796376	20	PASS
			NV	75	-22000.00	-3.796376	20	PASS
	Ant1	5775	NV	-40	-21000.00	-3.636364	20	PASS
			NV	-30	-21000.00	-3.636364	20	PASS
			NV	-20	-21000.00	-3.636364	20	PASS
			NV	-10	-21000.00	-3.636364	20	PASS
			NV	0	-21000.00	-3.636364	20	PASS
			NV	10	-21000.00	-3.636364	20	PASS
			NV	20	-21000.00	-3.636364	20	PASS
			NV	30	-21000.00	-3.636364	20	PASS
			NV	40	-21000.00	-3.636364	20	PASS
			NV	50	-21000.00	-3.636364	20	PASS
	Ant2	5775	NV	-40	-21000.00	-3.636364	20	PASS
			NV	-30	-21000.00	-3.636364	20	PASS
			NV	-20	-21000.00	-3.636364	20	PASS
			NV	-10	-21000.00	-3.636364	20	PASS
			NV	0	-21000.00	-3.636364	20	PASS
			NV	10	-21000.00	-3.636364	20	PASS
			NV	20	-21000.00	-3.636364	20	PASS
			NV	30	-21000.00	-3.636364	20	PASS
			NV	40	-21000.00	-3.636364	20	PASS
			NV	50	-21000.00	-3.636364	20	PASS
			NV	60	-21000.00	-3.636364	20	PASS
			NV	70	-21000.00	-3.636364	20	PASS
			NV	75	-21000.00	-3.636364	20	PASS

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

2.Test Voltage-NV:DC 12V, Test Voltage-LV:DC 10.2V, Test Voltage-HV:DC 13.8V.

3.Temperature Range:-40℃~+75℃, Temperature-NT: 24.8℃.

APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM

Please refer to the attached document E202409184352-test setup photo.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document E202409184352-EUT photo.

———— End of Report ————