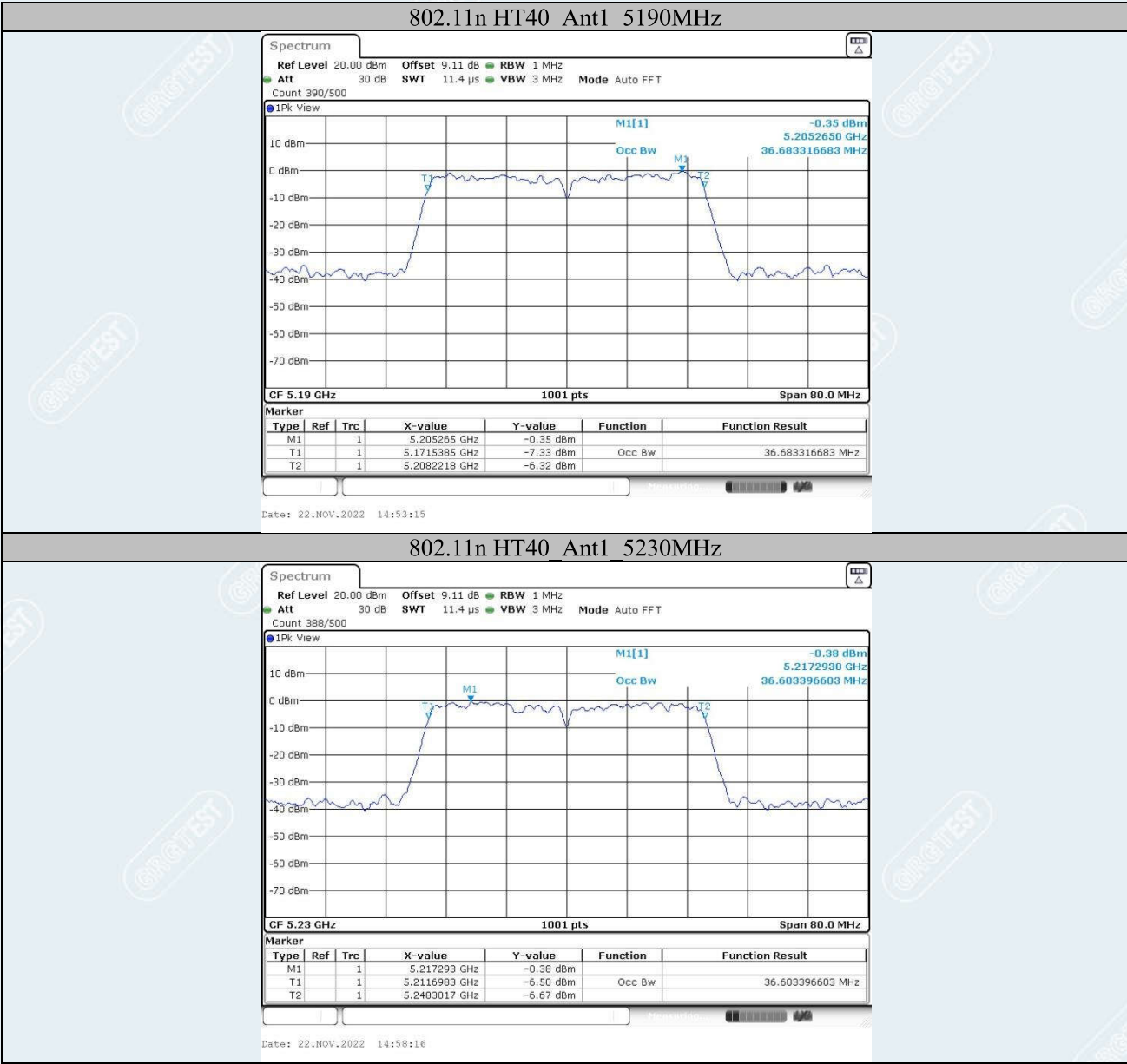










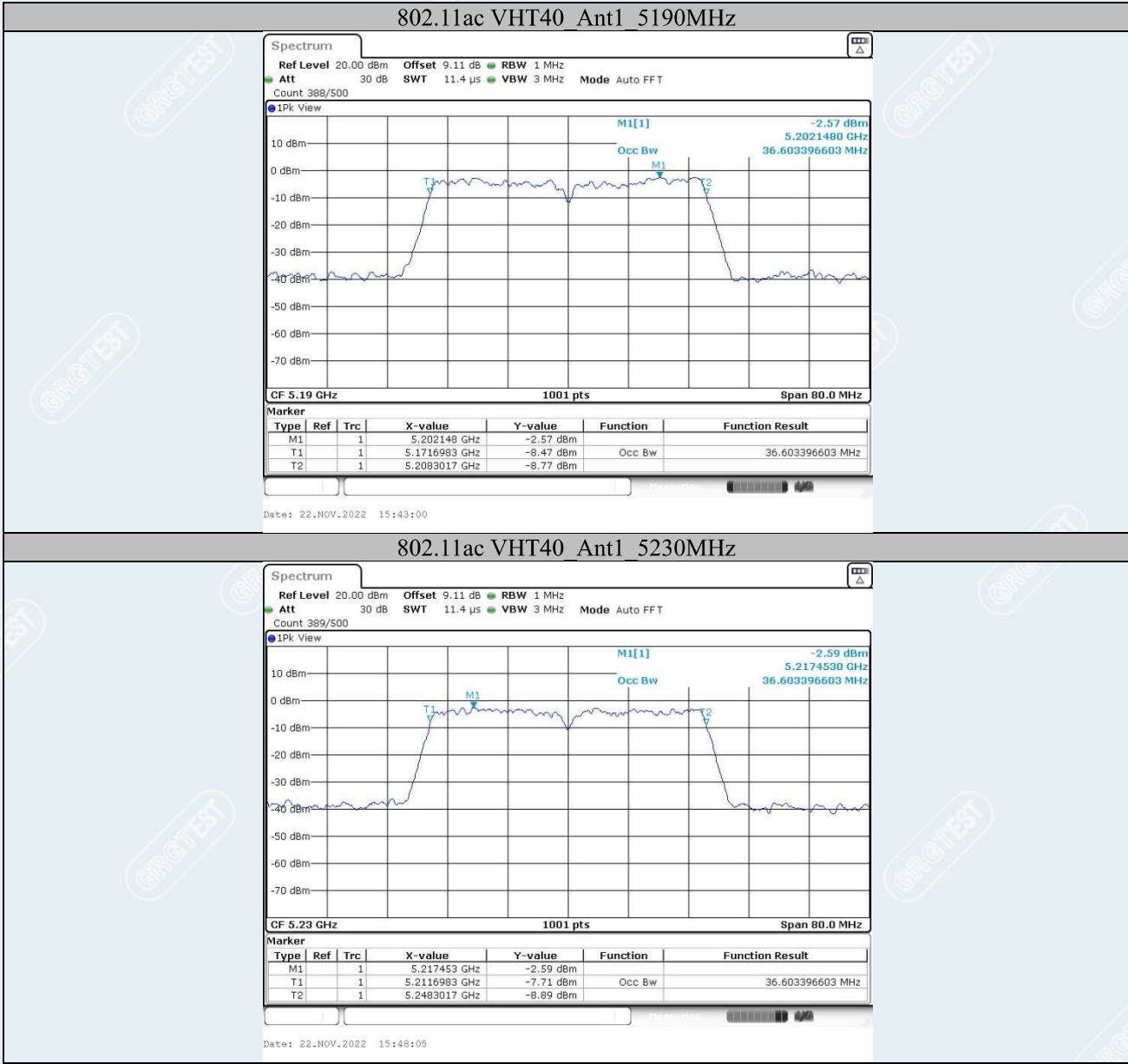




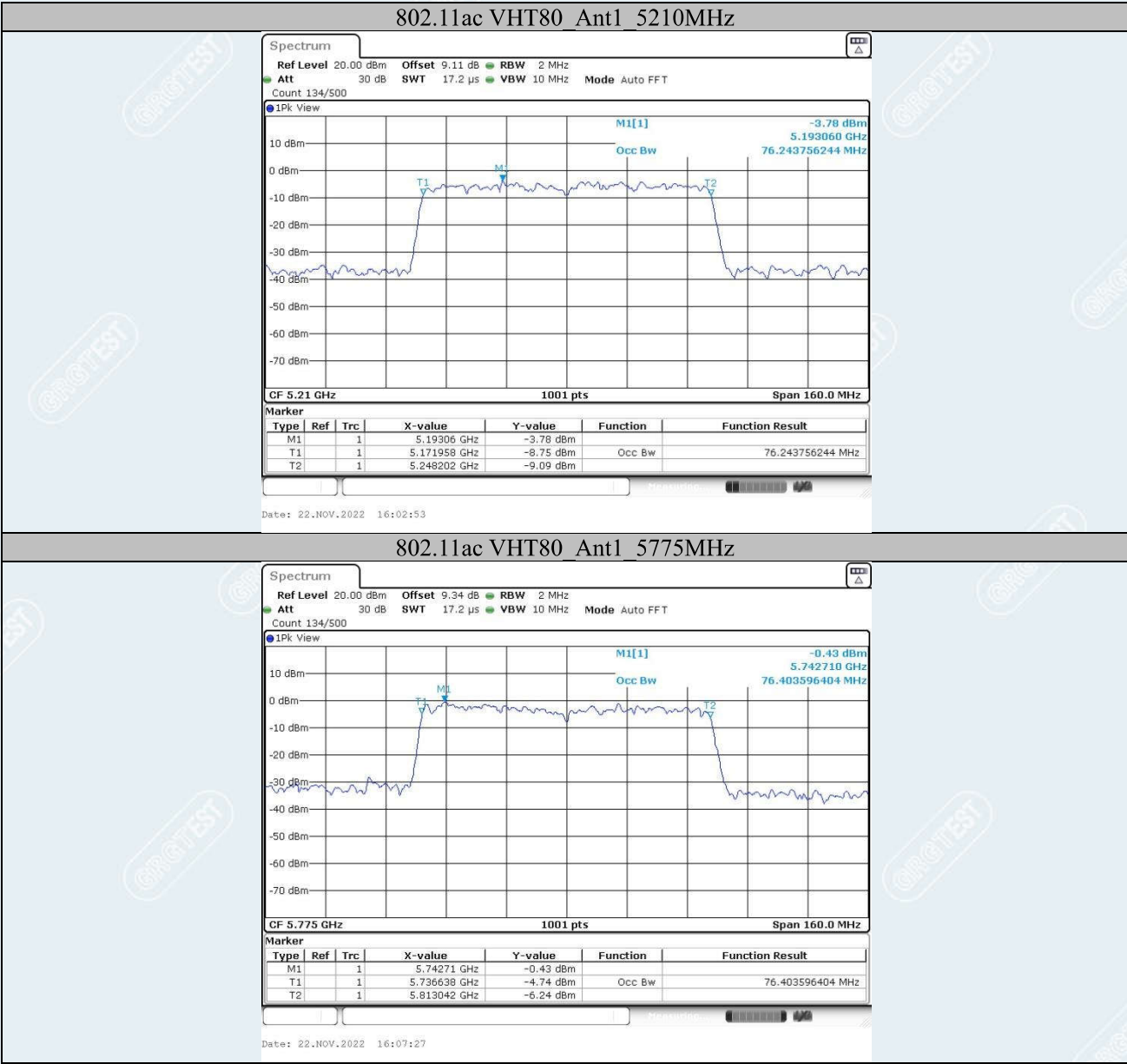












8. OUTPUT POWER

8.1 LIMITS

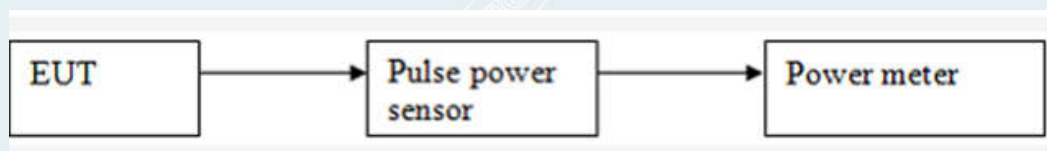
The FCC 15.407(a), The maximum conducted output power should not exceed:

Band	EUT Type	Limit
U-NII-1	Outdoor Access Point	1W(30dBm) (Max. e.i.r.p $\leq$ 125mW at any elevation angle above 30 degrees as measured from the horizon)
	Indoor Access Point	1W(30dBm)
	Fixed point-to-point Access Point	1W(30dBm)
	Mobile and Portable Client Device	250mW(23.98dBm)
U-NII-3	All Device	1W(30dBm)

8.2 TEST PROCEDURES

- 1) The RF output of EUT was connected to the broadband average RF power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 2) Set to the maximum power setting and enable the EUT transmit continuously.
- 3) Measure the conducted output power and record the results in the test report.

8.3 TEST SETUP



———— The following blanks ————

8.4 TEST RESULTS

Environmental Conditions	24.2°C/49%RH/101.0kPa	Test Voltage	DC 12V
Tested By	Yang Zhaoyun	Tested Date	2022-11-22

Test Mode	Band	Antenna	Frequency [MHz]	AVG Conducted Output Power with Duty Factor (dBm)	Limit[dBm]	Verdict
802.11a	U-NII-1	Ant1	5180	11.20	≤23.98	PASS
		Ant1	5200	11.05	≤23.98	PASS
		Ant1	5240	10.98	≤23.98	PASS
	U-NII-3	Ant1	5745	14.02	≤30	PASS
		Ant1	5785	13.81	≤30	PASS
		Ant1	5825	13.54	≤30	PASS
802.11n HT20	U-NII-1	Ant1	5180	9.29	≤23.98	PASS
		Ant1	5200	9.28	≤23.98	PASS
		Ant1	5240	9.27	≤23.98	PASS
	U-NII-3	Ant1	5745	12.29	≤30	PASS
		Ant1	5785	12.01	≤30	PASS
		Ant1	5825	11.83	≤30	PASS
802.11n HT40	U-NII-1	Ant1	5190	9.63	≤23.98	PASS
		Ant1	5230	9.69	≤23.98	PASS
	U-NII-3	Ant1	5755	12.73	≤30	PASS
		Ant1	5795	12.46	≤30	PASS
802.11ac VHT20	U-NII-1	Ant1	5180	7.45	≤23.98	PASS
		Ant1	5200	7.43	≤23.98	PASS
		Ant1	5240	7.42	≤23.98	PASS
	U-NII-3	Ant1	5745	10.36	≤30	PASS
		Ant1	5785	10.07	≤30	PASS
		Ant1	5825	9.94	≤30	PASS
802.11ac VHT40	U-NII-1	Ant1	5190	7.78	≤23.98	PASS
		Ant1	5230	7.83	≤23.98	PASS
	U-NII-3	Ant1	5755	10.72	≤30	PASS
		Ant1	5795	10.54	≤30	PASS
802.11ac VHT80	U-NII-1	Ant1	5210	7.29	≤23.98	PASS
	U-NII-3	Ant1	5775	10.29	≤30	PASS

9. POWER SPECTRAL DENSITY

9.1 LIMITS

FCC 15.407(a)

The maximum power spectral density should not exceed:

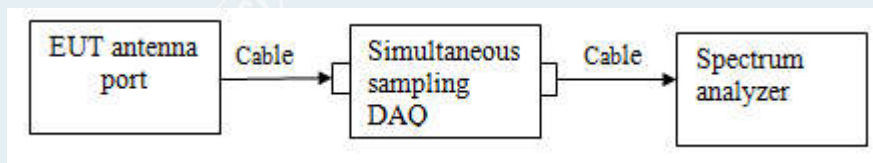
Band	EUT Type	Limit
U-NII-1	Outdoor Access Point	17dBm/MHz
	Indoor Access Point	17dBm/MHz
	Fixed point-to-point Access Point	17dBm/MHz
	Mobile and Portable Client Device	11dBm/MHz
U-NII-3	All Device	30dBm/500kHz

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.

9.2 TEST PROCEDURES

Spectrum Parameters	Setting
RBW	1MHz(For U-NII-1) 500kHz(For U-NII-3)
VBW	3MHz(For U-NII-1) 2MHz(For U-NII-3)
Span	encompass the entire 26 dB EBW or 99% OBW of the signal
Sweep Time	Auto
Number of Sweep Point	$\geq 2 \times \text{SPAN} / \text{RBW}$
Detector	RMS(power averaging)
Trace Average	≥ 100 traces

9.3 TEST SETUP



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

9.4 TEST RESULTS

Environmental Conditions	24.2℃/49%RH/101.0kPa	Test Voltage	DC 12V
Tested By	Yang Zhaoyun	Tested Date	2022-11-22

Test Mode	Antenna	Band	Frequency [MHz]	Result+ Duty factor [dBm/MHz]	Limit [dBm/MHz]	Verdict
802.11a	Ant1	U-NII-1	5180	-4.09	≤11.00	PASS
			5200	-3.35	≤11.00	PASS
			5240	-3.58	≤11.00	PASS
802.11n HT20	Ant1	U-NII-1	5180	-5.82	≤11.00	PASS
			5200	-6.1	≤11.00	PASS
			5240	-5.42	≤11.00	PASS
802.11n HT40	Ant1	U-NII-1	5190	-7.61	≤11.00	PASS
			5230	-7.24	≤11.00	PASS
802.11ac VHT20	Ant1	U-NII-1	5180	-7.98	≤11.00	PASS
			5200	-7.74	≤11.00	PASS
			5240	-7.48	≤11.00	PASS
802.11ac VHT40	Ant1	U-NII-1	5190	-10.48	≤11.00	PASS
			5230	-9.84	≤11.00	PASS
802.11ac VHT80	Ant1	U-NII-1	5210	-13.04	≤11.00	PASS

Note: 1.The Duty Cycle Factor is compensated in the graph.

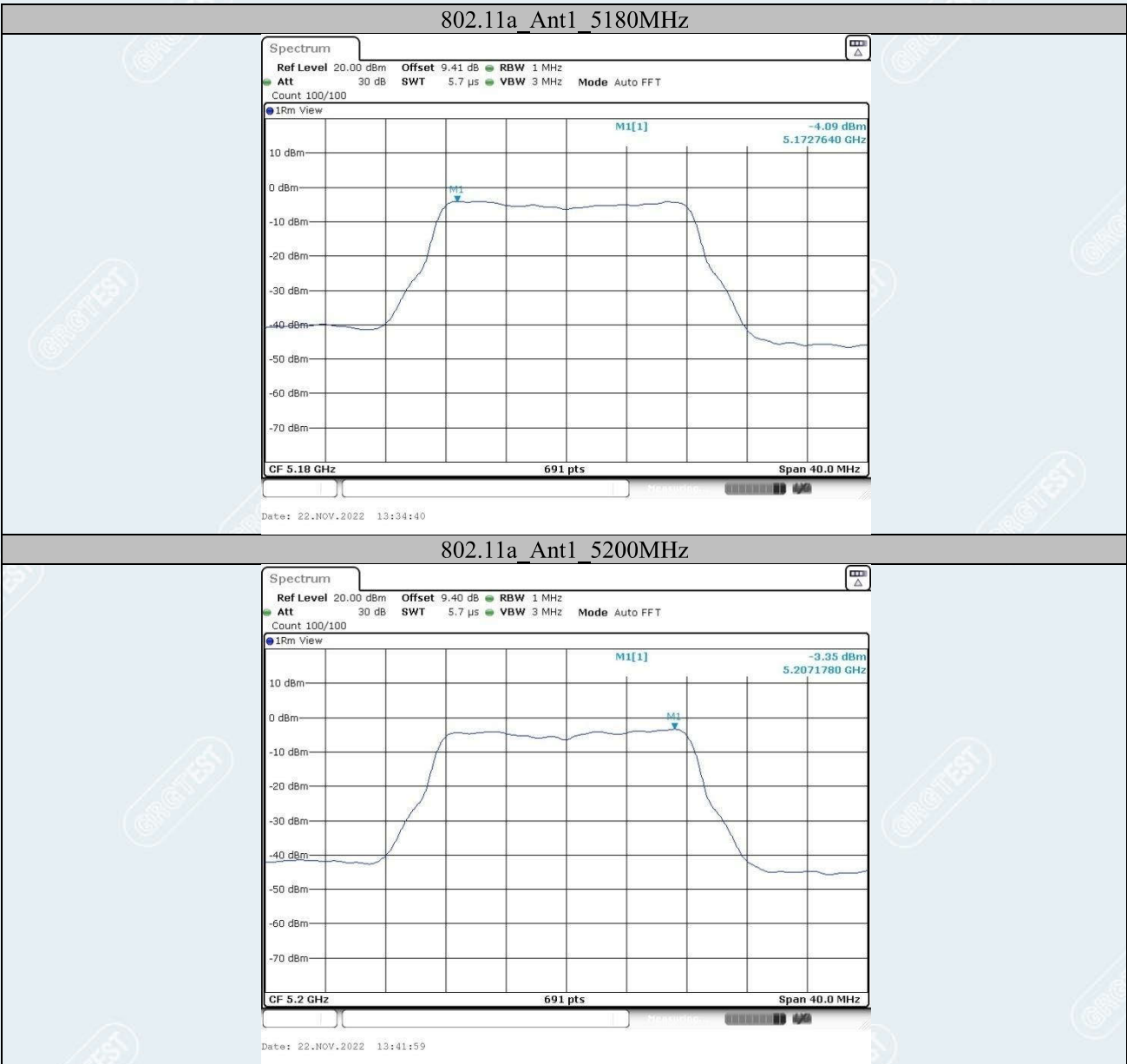
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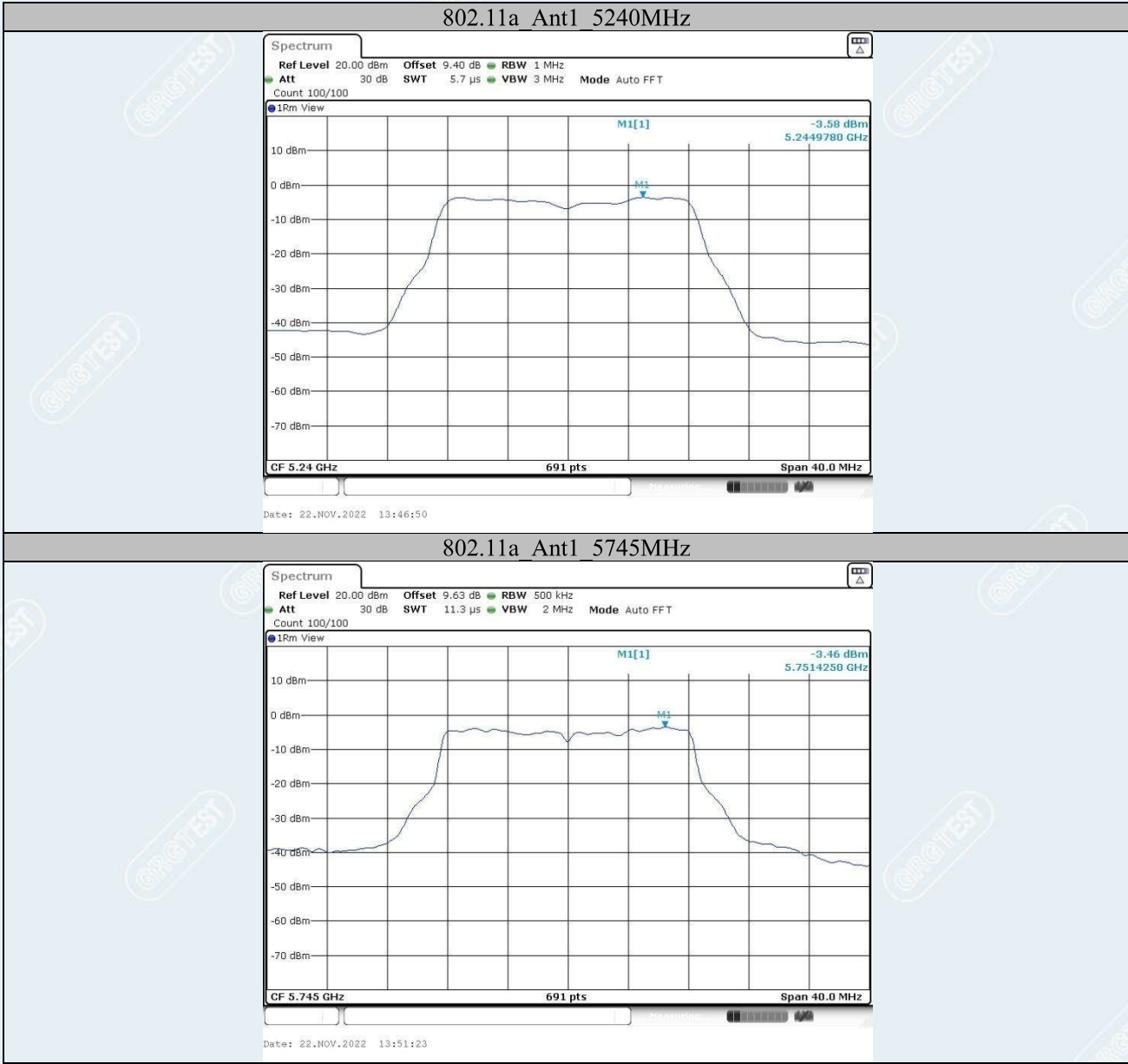
Test Mode	Antenna	Band	Frequency [MHz]	Result+ Duty factor [dBm/500kHz]	Limit [dBm/500kHz]	Verdict
802.11a	Ant1	U-NII-3	5745	-3.46	≤30.00	PASS
			5785	-4.22	≤30.00	PASS
			5825	-4.49	≤30.00	PASS
802.11n HT20	Ant1	U-NII-3	5745	-5.8	≤30.00	PASS
			5785	-6.41	≤30.00	PASS
			5825	-6.66	≤30.00	PASS
802.11n HT40	Ant1	U-NII-3	5755	-7.61	≤30.00	PASS
			5795	-8.52	≤30.00	PASS
802.11ac VHT20	Ant1	U-NII-3	5745	-7.59	≤30.00	PASS
			5785	-8.06	≤30.00	PASS
			5825	-8.15	≤30.00	PASS
802.11ac VHT40	Ant1	U-NII-3	5755	-10.09	≤30.00	PASS
			5795	-10.78	≤30.00	PASS
802.11ac VHT80	Ant1	U-NII-3	5775	-12.83	≤30.00	PASS

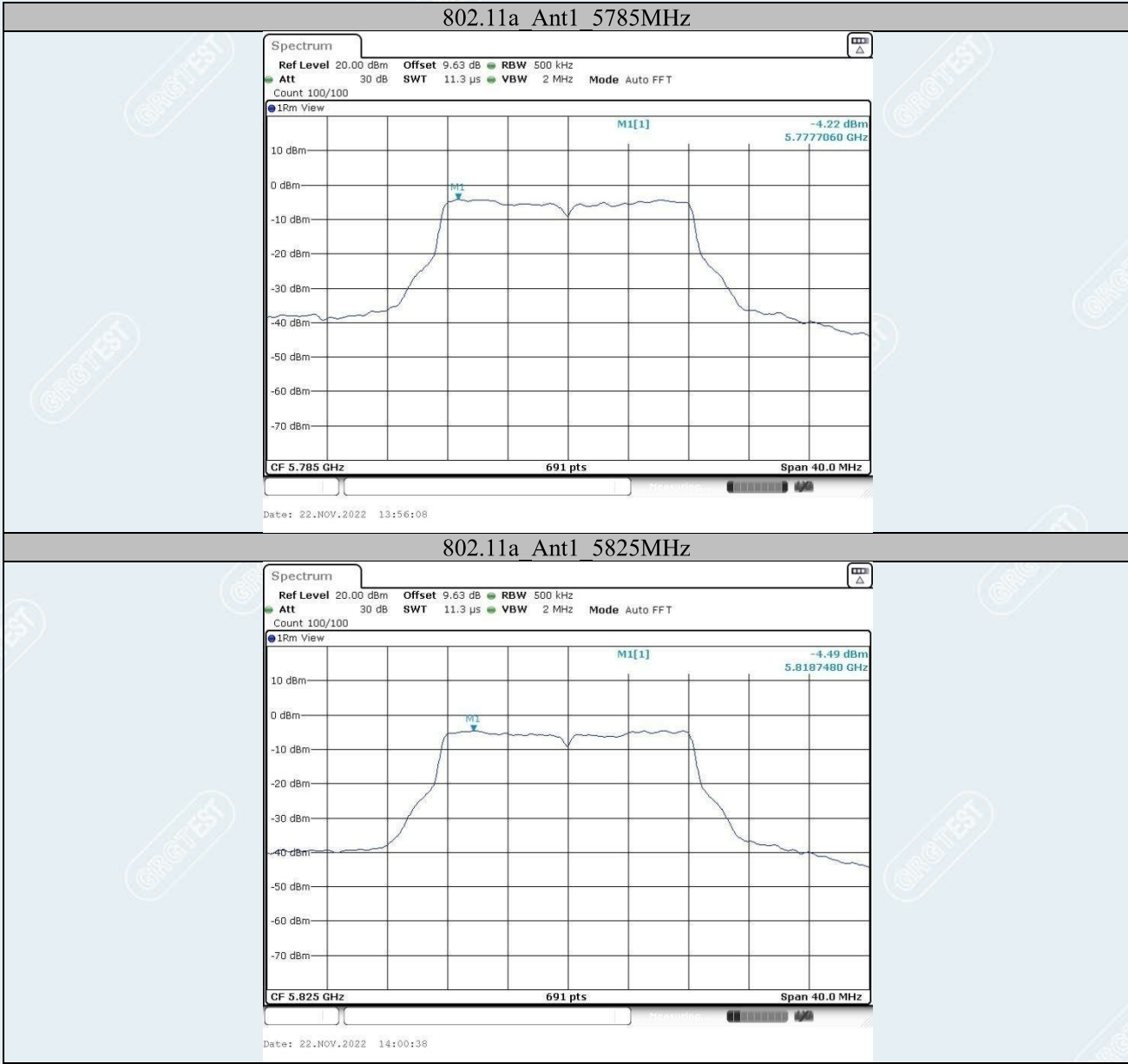
Note: 1.The Duty Cycle Factor is compensated in the graph.

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Test Graphs



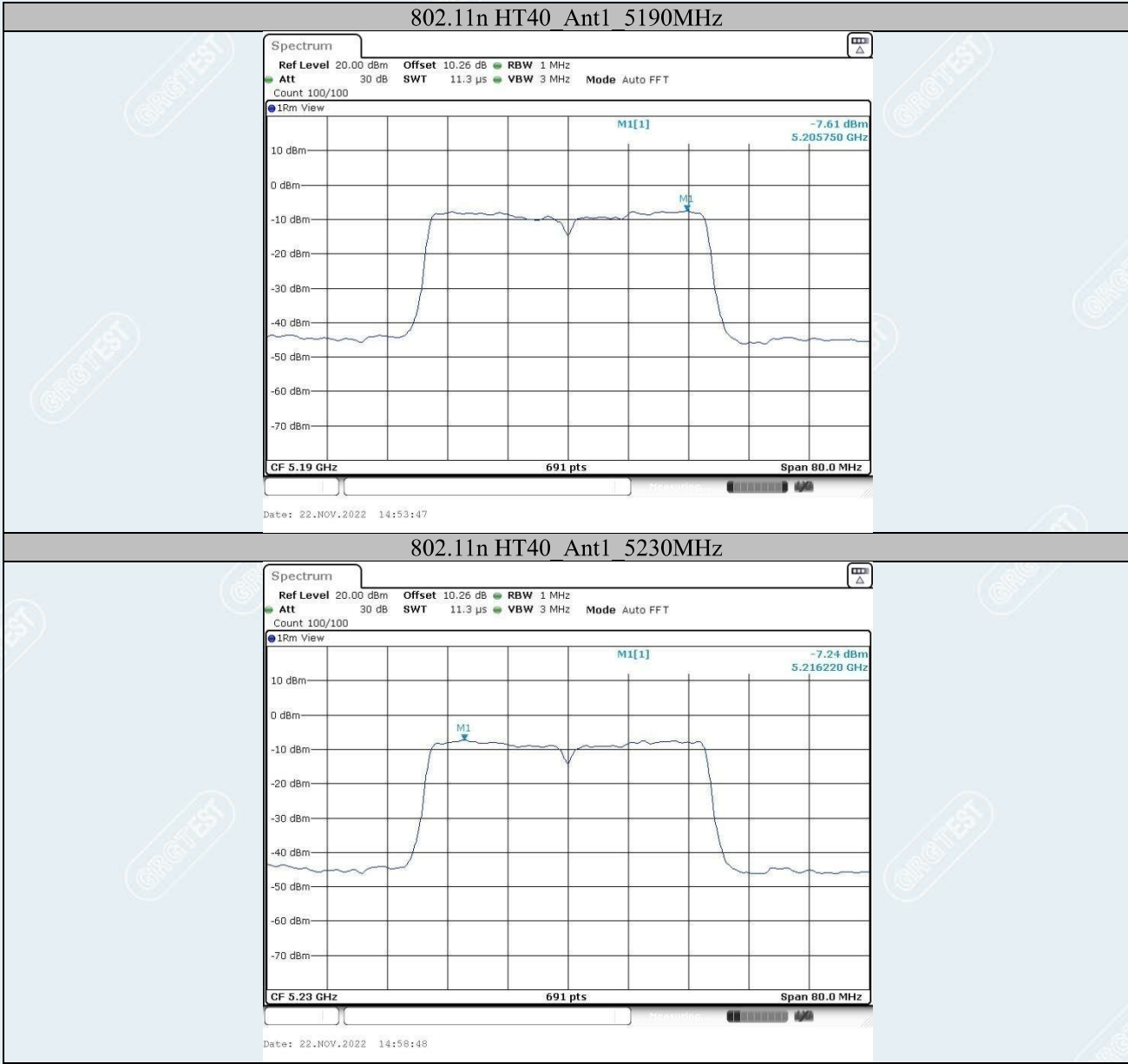


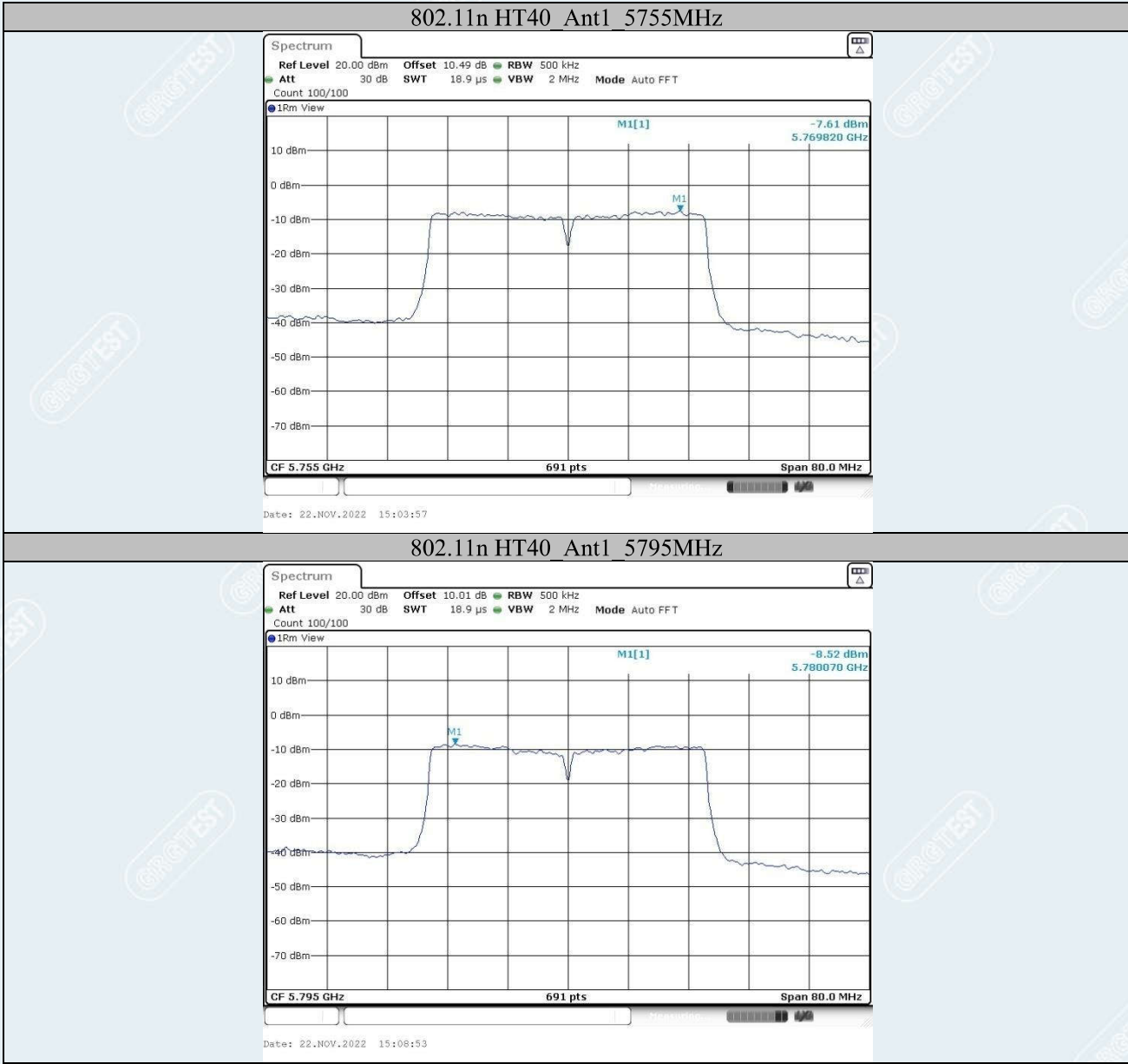




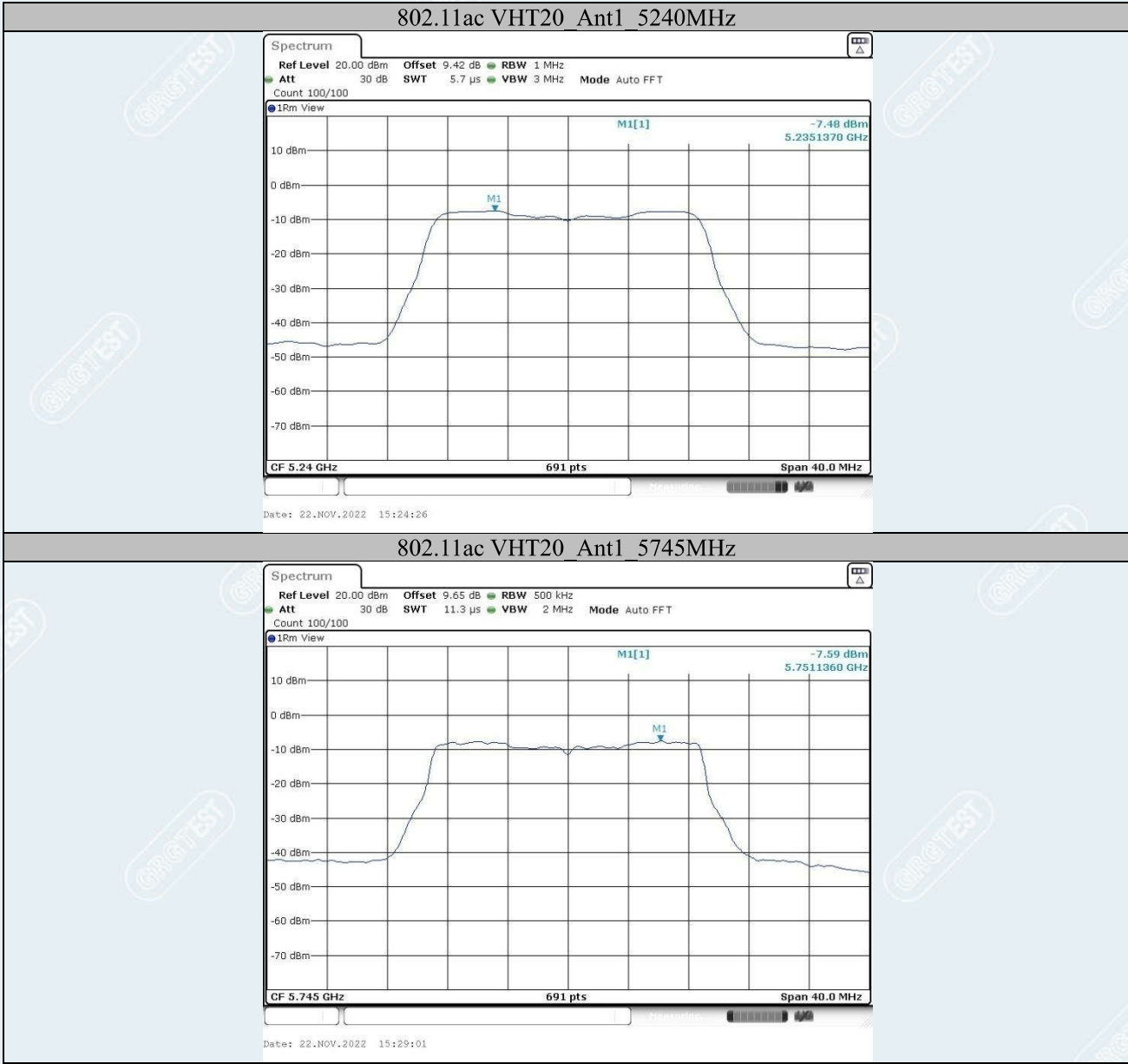


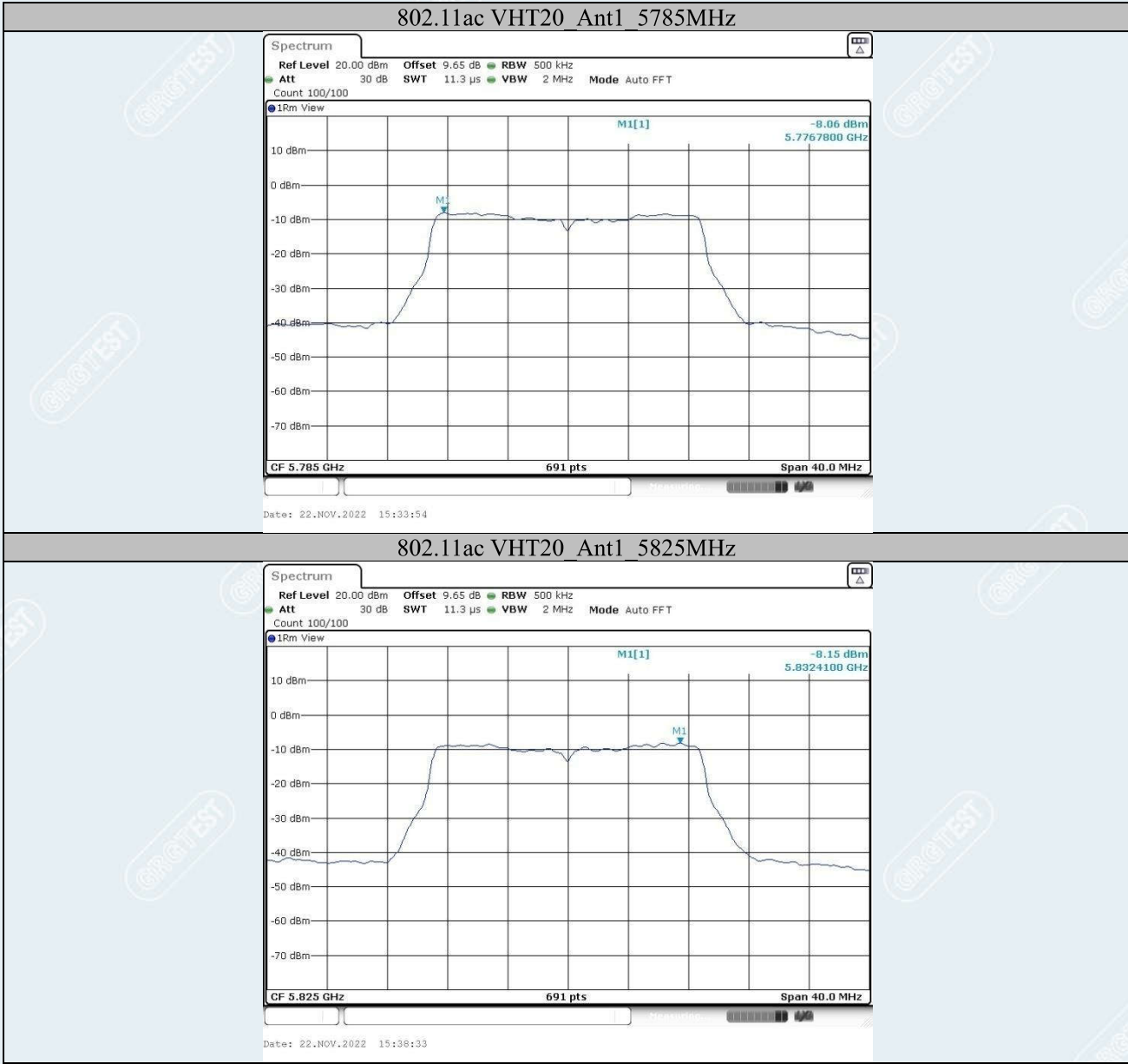


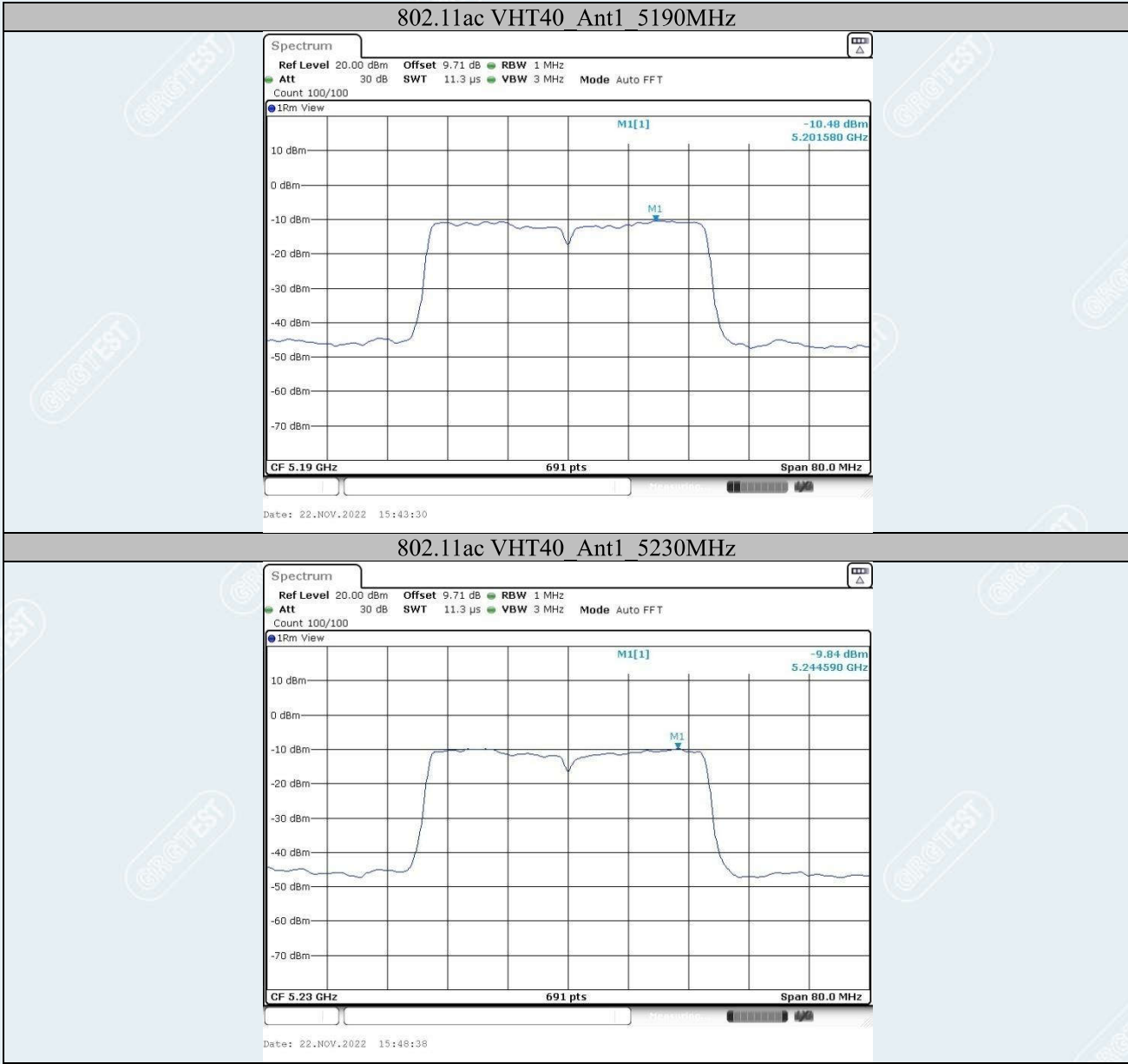


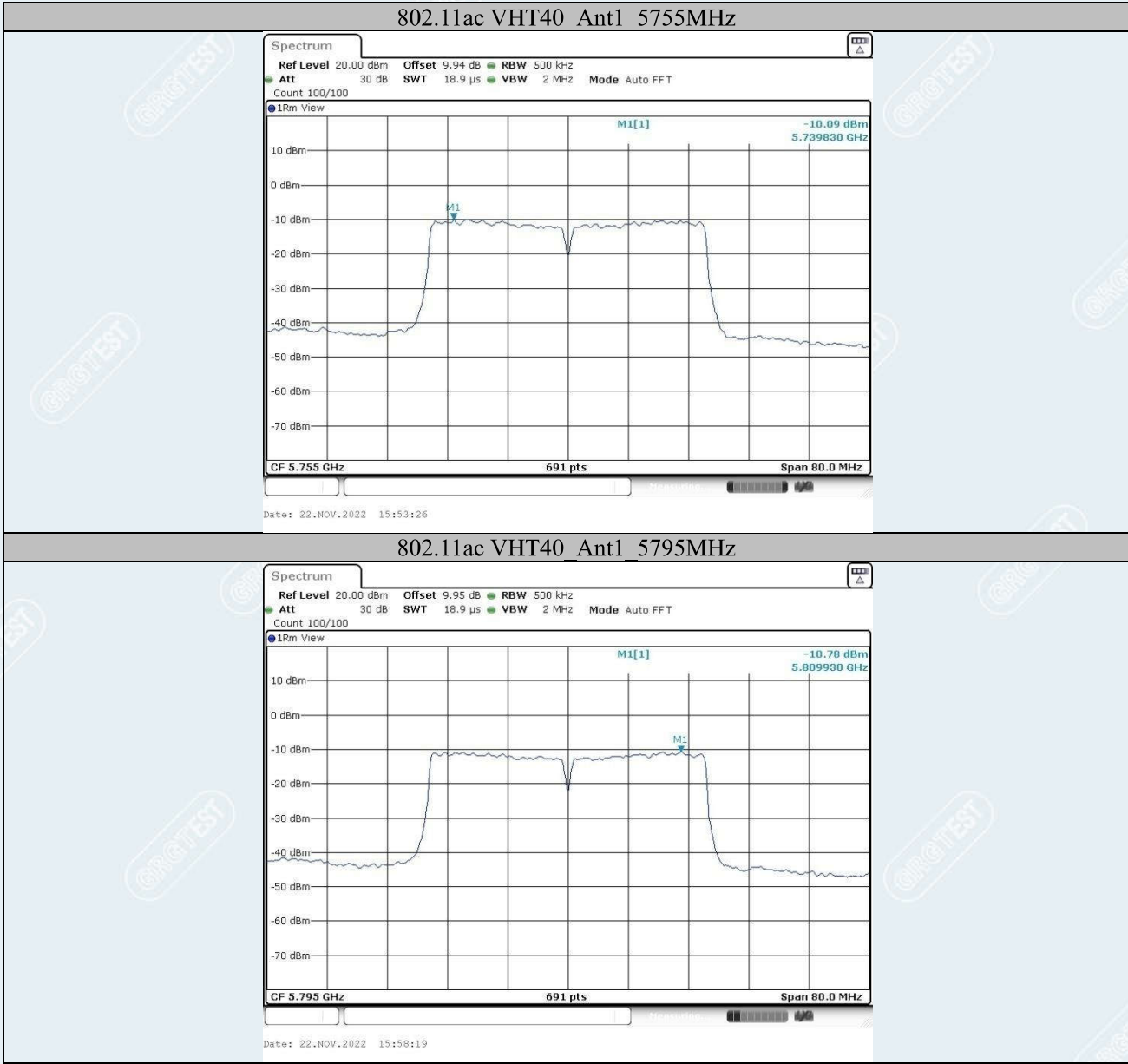


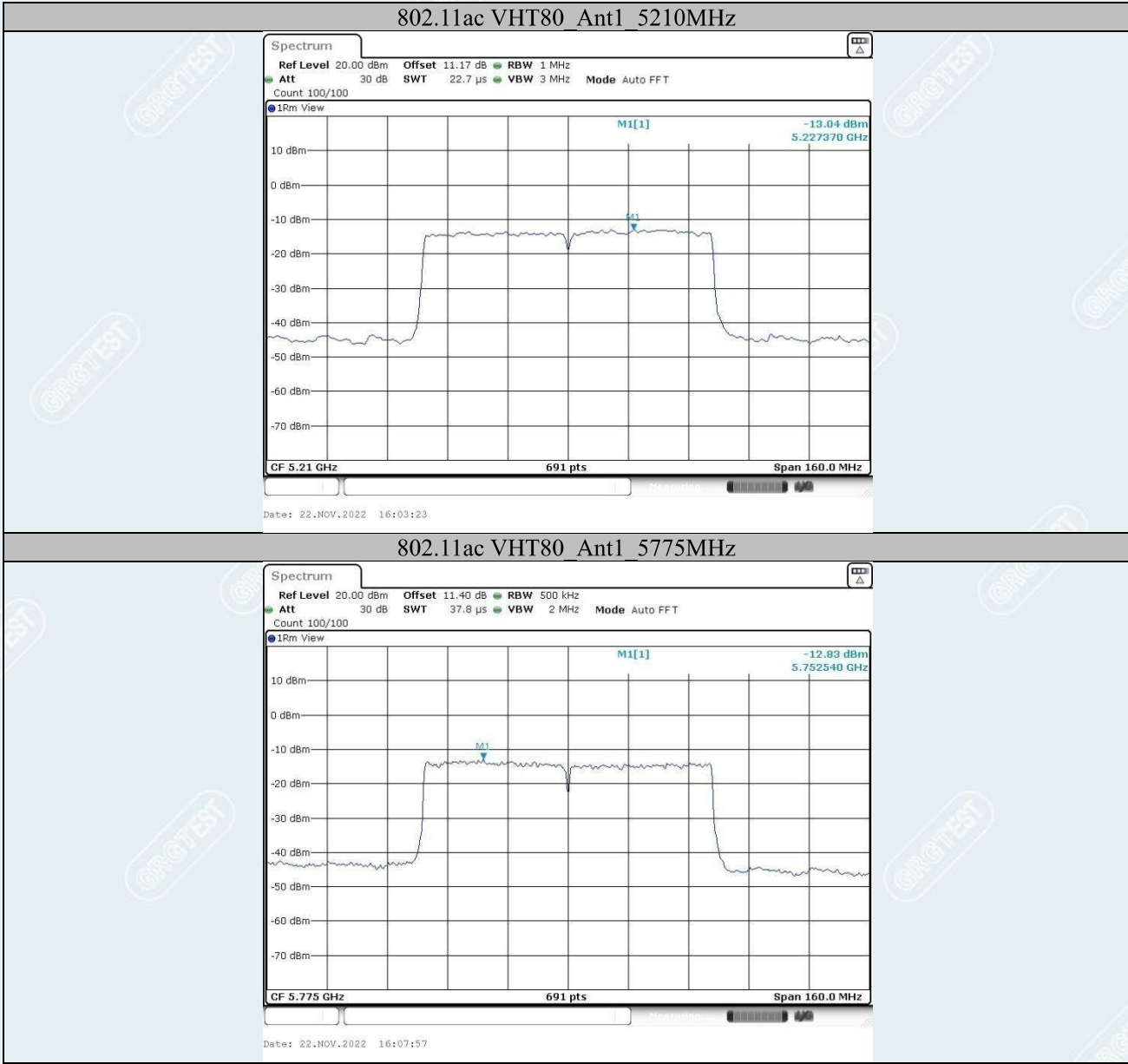












10. FREQUENCY STABILITY

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 C63.10-2013(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