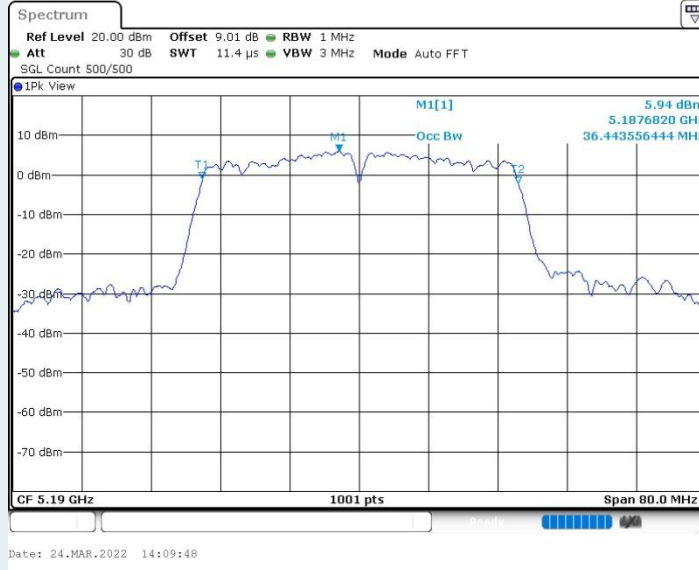
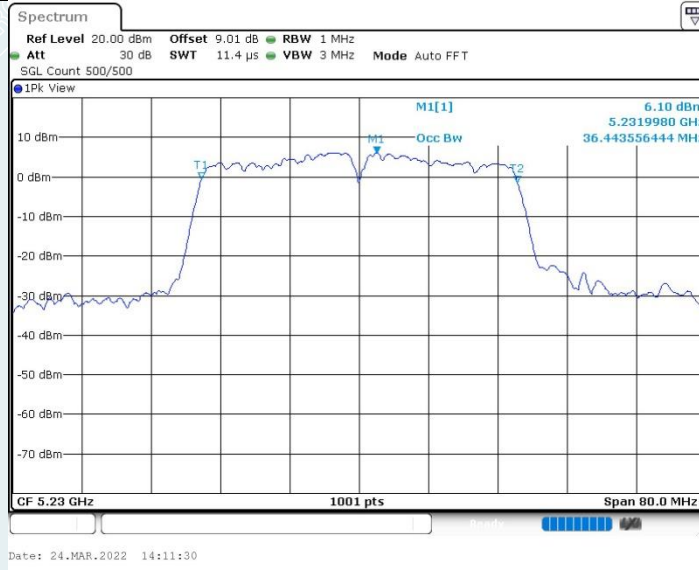


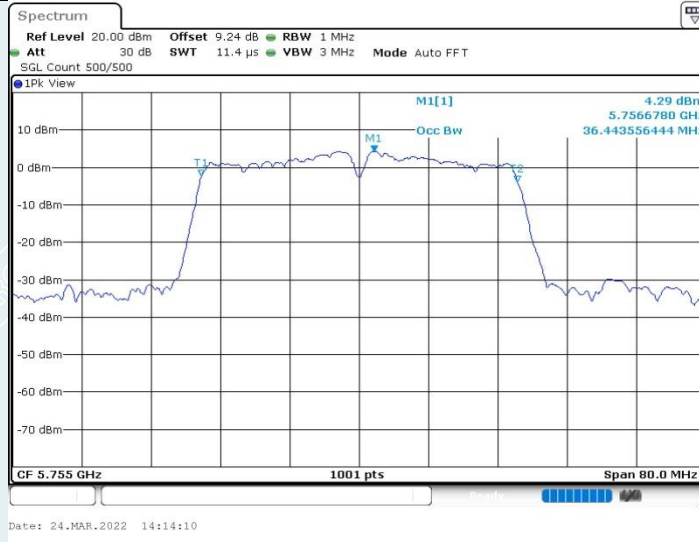
802.11ac VHT40_Ant1_5190 MHz

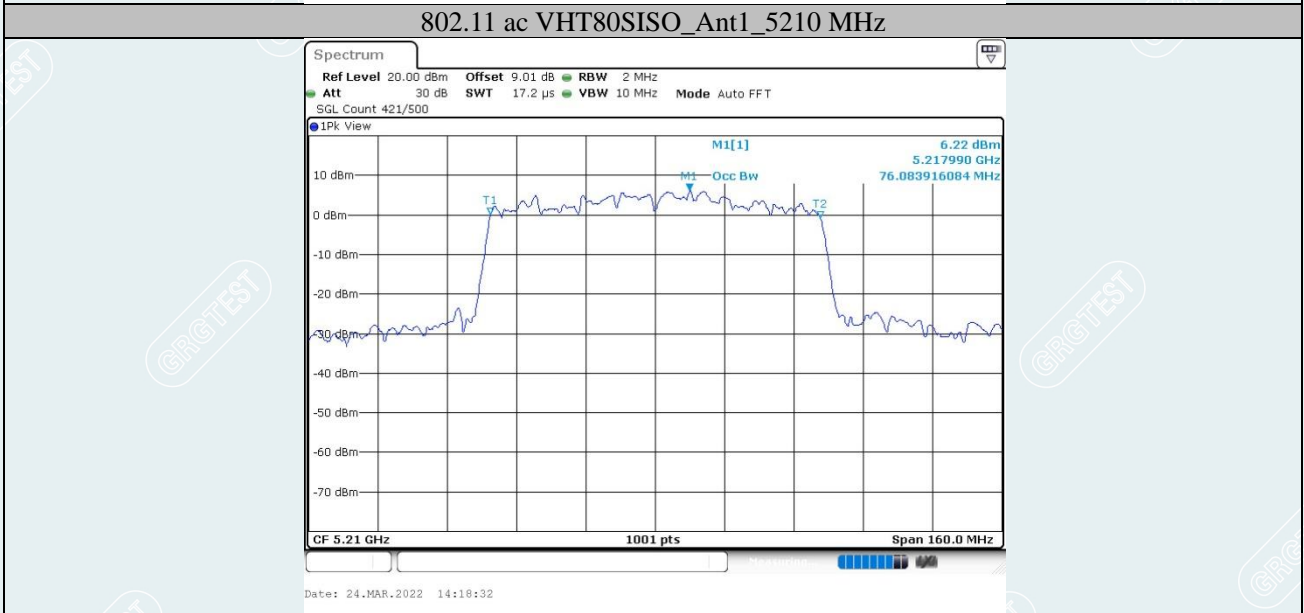
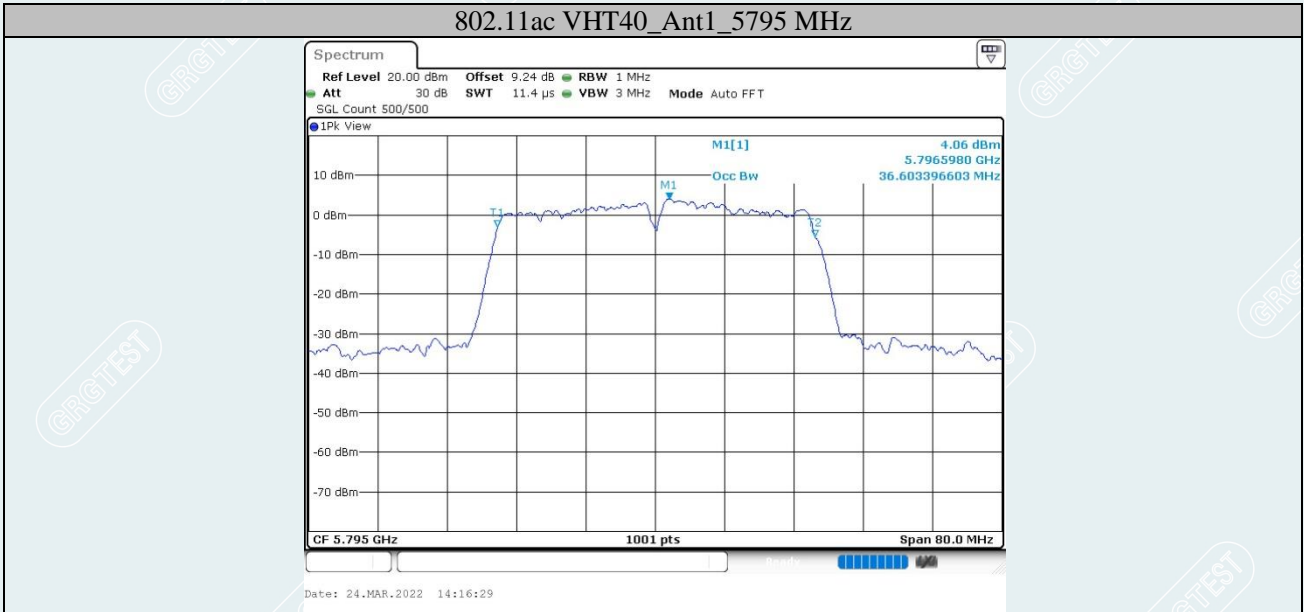


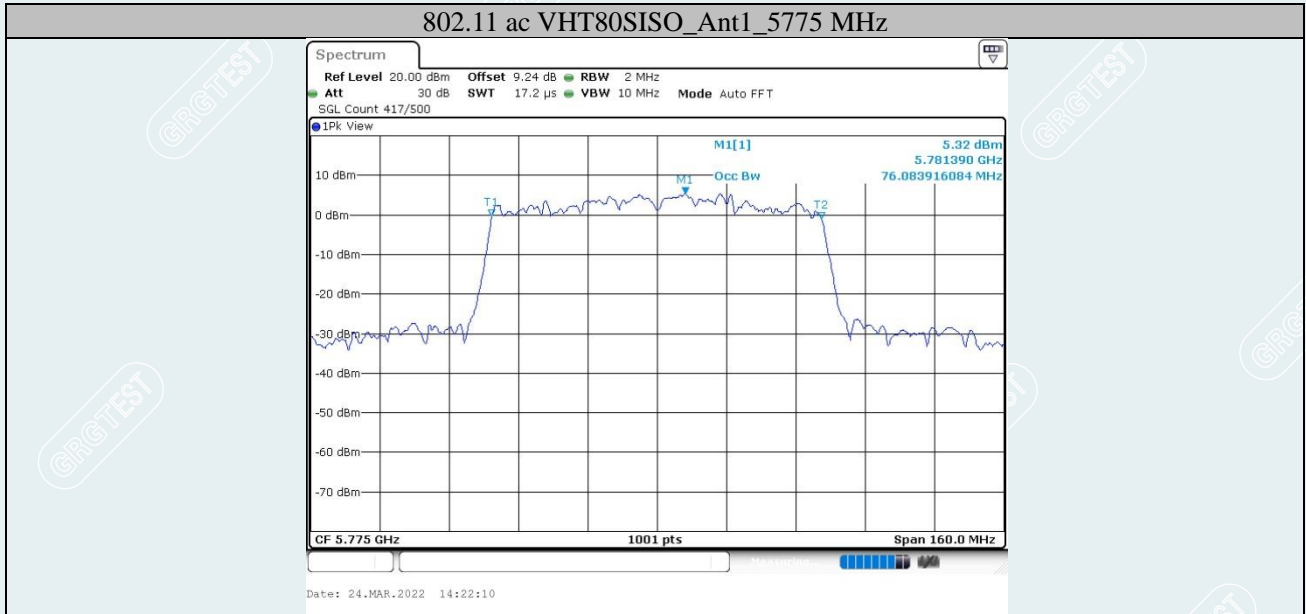
802.11ac VHT40_Ant1_5230 MHz



802.11ac VHT40_Ant1_5755 MHz







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9. OUTPUT POWER

9.1. LIMITS

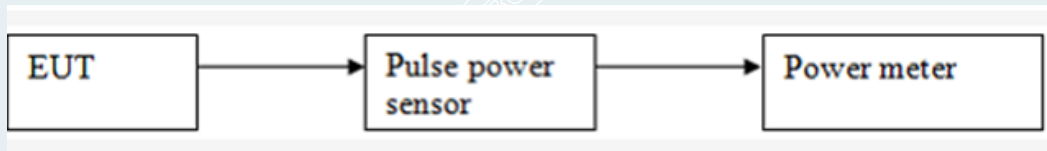
The FCC 15.407(a),The maximum conducted output power should not exceed:

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)

9.2. 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.

9.3. TEST SETUP



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

9.4. TEST RESULTS

Environmental Conditions	23.5°C/48%RH	Test Voltage	DC 3.85V
Tested By	Lu Wei	Tested Date	2022-3-24

TestMode	Band	Antenna	Frequency [MHz]	AVG Conducted Output Power with Duty Factor (dBm)	Limit[dBm]	Verdict
802.11a	U-NII-1	Ant1	5180	11.88	≤23.98	PASS
		Ant1	5200	12.00	≤23.98	PASS
		Ant1	5240	11.15	≤23.98	PASS
	U-NII-3	Ant1	5745	10.06	≤30	PASS
		Ant1	5785	10.07	≤30	PASS
		Ant1	5825	9.78	≤30	PASS
802.11n HT20	U-NII-1	Ant1	5180	11.40	≤23.98	PASS
		Ant1	5200	11.68	≤23.98	PASS
		Ant1	5240	9.69	≤23.98	PASS
	U-NII-3	Ant1	5745	9.59	≤30	PASS
		Ant1	5785	9.58	≤30	PASS
		Ant1	5825	9.57	≤30	PASS
802.11n HT40	U-NII-1	Ant1	5190	12.05	≤23.98	PASS
		Ant1	5230	12.33	≤23.98	PASS
	U-NII-3	Ant1	5755	9.43	≤30	PASS
		Ant1	5795	9.35	≤30	PASS
802.11ac VHT20	U-NII-1	Ant1	5180	10.01	≤23.98	PASS
		Ant1	5200	10.24	≤23.98	PASS
		Ant1	5240	8.32	≤23.98	PASS
	U-NII-3	Ant1	5745	9.62	≤30	PASS
		Ant1	5785	9.85	≤30	PASS
		Ant1	5825	9.64	≤30	PASS
802.11ac VHT40	U-NII-1	Ant1	5190	11.52	≤23.98	PASS
		Ant1	5230	11.82	≤23.98	PASS
	U-NII-3	Ant1	5755	9.32	≤30	PASS
		Ant1	5795	9.29	≤30	PASS
802.11ac VHT80	U-NII-1	Ant1	5210	11.34	≤23.98	PASS
	U-NII-3	Ant1	5775	9.23	≤30	PASS

10. POWER SPECTRAL DENSITY

10.1. LIMITS

FCC 15.407(a)

The maximum power spectral density should not exceed:

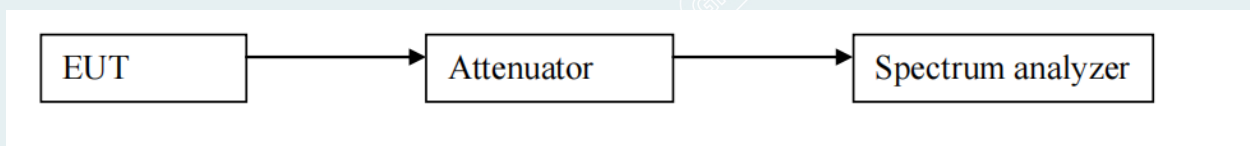
Band	EUT Type	Limit
U-NII-1	Outdoor Access Point	17dBm/MHz
	Indoor Access Point	17dBm/MHz
	Fixed point-to-point Access Point	17dBm/MHz
	Mobile and Portable Client Device	11dBm/MHz
U-NII-3	All Device	30dBm/500kHz

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.

10.2. 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

10.3. TEST SETUP



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

10.4. TEST RESULTS

Environmental Conditions	23.5°C/48%RH	Test Voltage	DC 3.85V
Tested By	Lu Wei	Tested Date	2022-3-24

U-NII-1:

TestMode	Antenna	Frequency [MHz]	Result+ Duty factor [dBm/MHz]	Limit [dBm/MHz]	Verdict
802.11a	Ant1	5180	1.37	≤11	PASS
		5200	1.48	≤11	PASS
		5240	0.52	≤11	PASS
802.11n HT20	Ant1	5180	1.10	≤11	PASS
		5200	1.03	≤11	PASS
		5240	-1.19	≤11	PASS
802.11n HT40	Ant1	5190	-0.88	≤11	PASS
		5230	-1.51	≤11	PASS
802.11ac VHT20	Ant1	5180	0.02	≤11	PASS
		5200	0.10	≤11	PASS
		5240	-2.32	≤11	PASS
802.11ac VHT40	Ant1	5190	-1.01	≤11	PASS
		5230	-1.24	≤11	PASS
802.11ac VHT80	Ant1	5210	-4.28	≤11	PASS

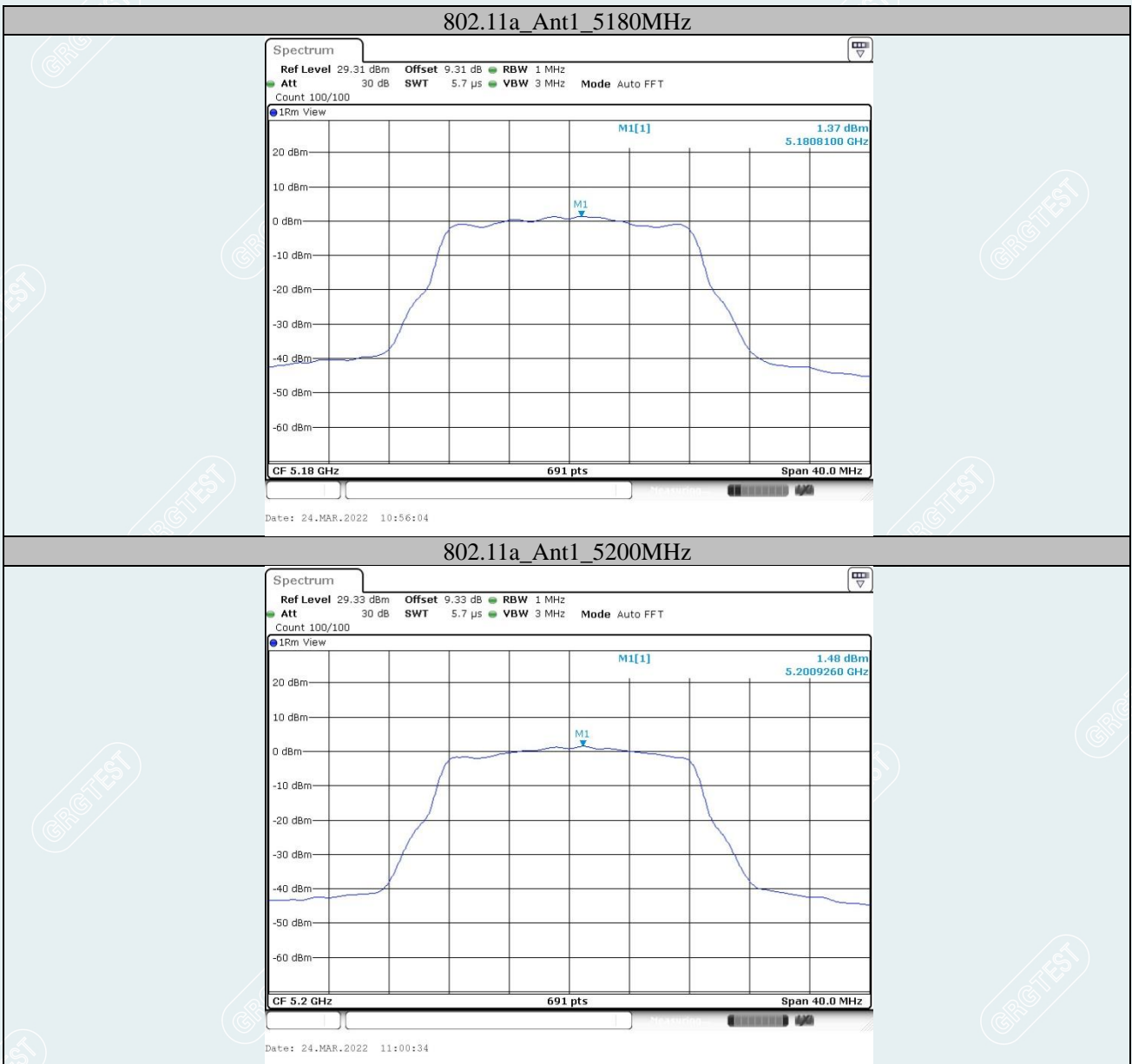
U-NII-3:

TestMode	Antenna	Frequency [MHz]	Result+ Duty factor [dBm/500kHz]	Limit [dBm/500kHz]	Verdict
802.11a	Ant1	5745	-2.29	≤30	PASS
		5785	-2.72	≤30	PASS
		5825	-2.75	≤30	PASS
802.11n HT20	Ant1	5745	-3.00	≤30	PASS
		5785	-3.35	≤30	PASS
		5825	-3.79	≤30	PASS
802.11n HT40	Ant1	5755	-6.67	≤30	PASS
		5795	-6.43	≤30	PASS
802.11ac VHT20	Ant1	5745	-3.37	≤30	PASS
		5785	-3.26	≤30	PASS
		5825	-3.57	≤30	PASS
802.11ac	Ant1	5755	-6.66	≤30	PASS

VHT40		5795	-7.17	≤30	PASS
802.11ac VHT80	Ant1	5775	-7.86	≤30	PASS

Note: 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.
 2.The Duty Cycle Factor and RBW Factor is compensated in the graph.

Test Graphs



802.11a_Ant1_5240MHz



802.11a_Ant1_5745MHz



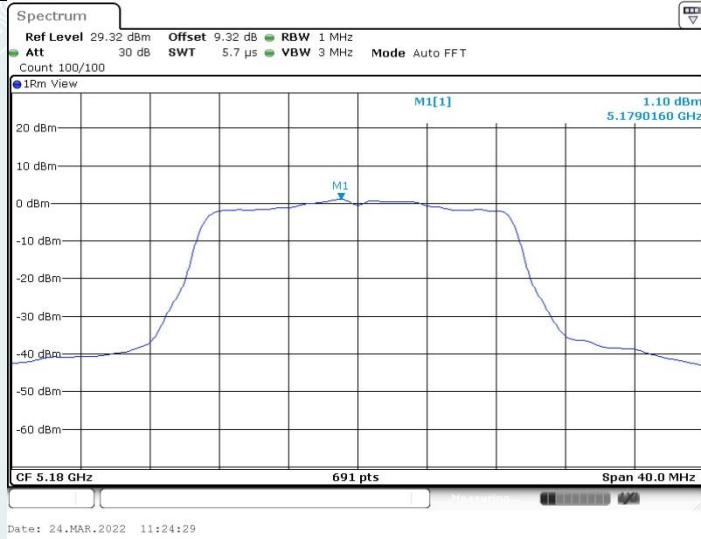
802.11a_Ant1_5785MHz



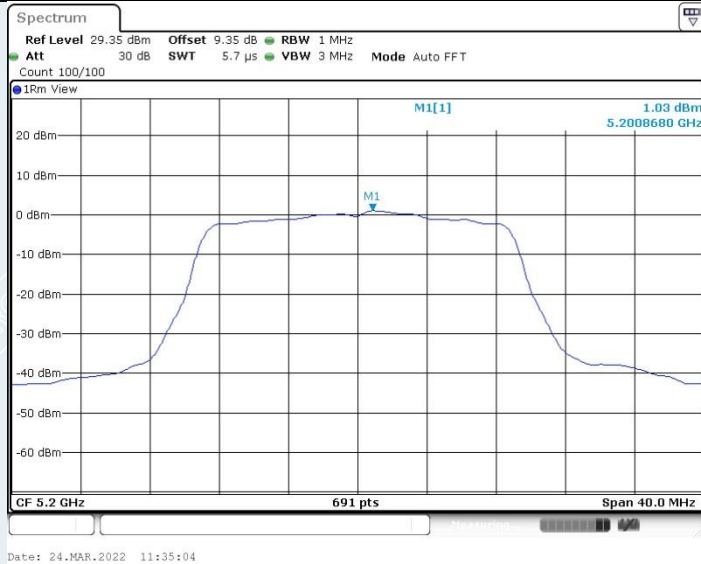
802.11a_Ant1_5825MHz



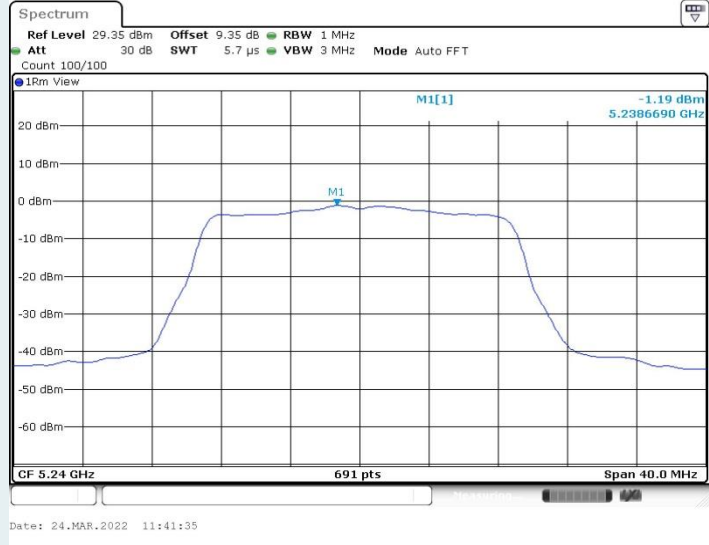
802.11n HT20_Ant1_5180MHz



802.11n HT20_Ant1_5200MHz



802.11n HT20_Ant1_5240MHz



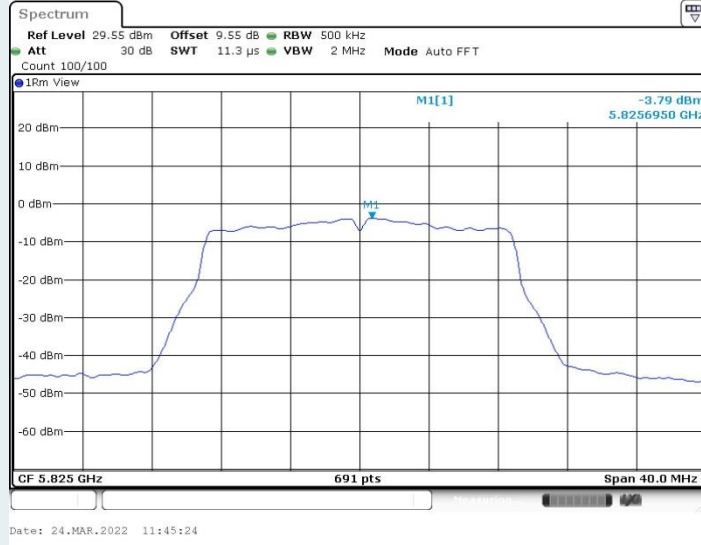
802.11n HT20_Ant1_5745MHz



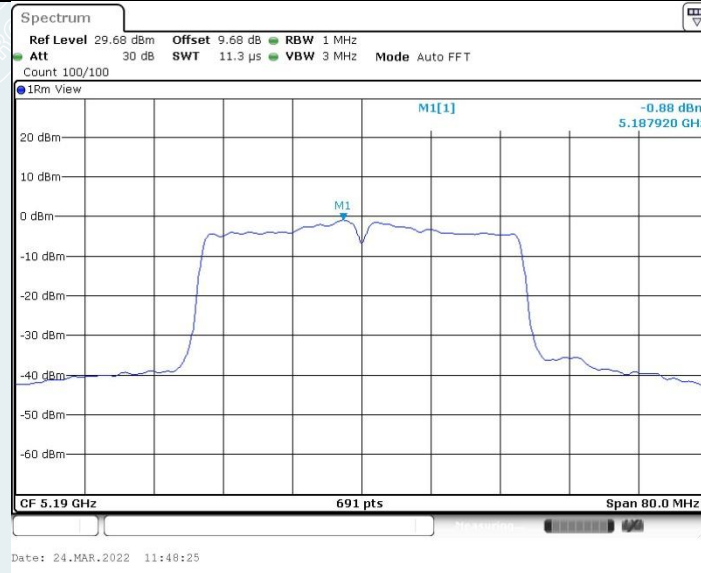
802.11n HT20_Ant1_5785MHz



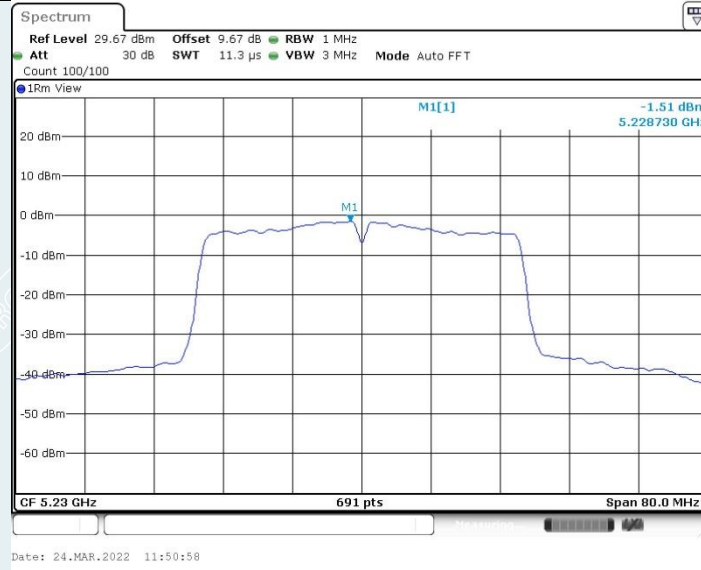
802.11n HT20_Ant1_5825MHz



802.11n HT40_Ant1_5190MHz



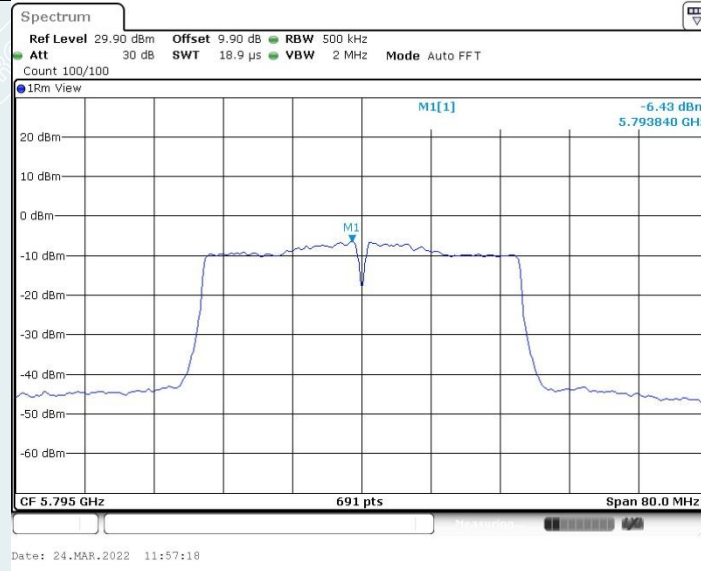
802.11n HT40_Ant1_5230MHz



802.11n HT40_Ant1_5755MHz

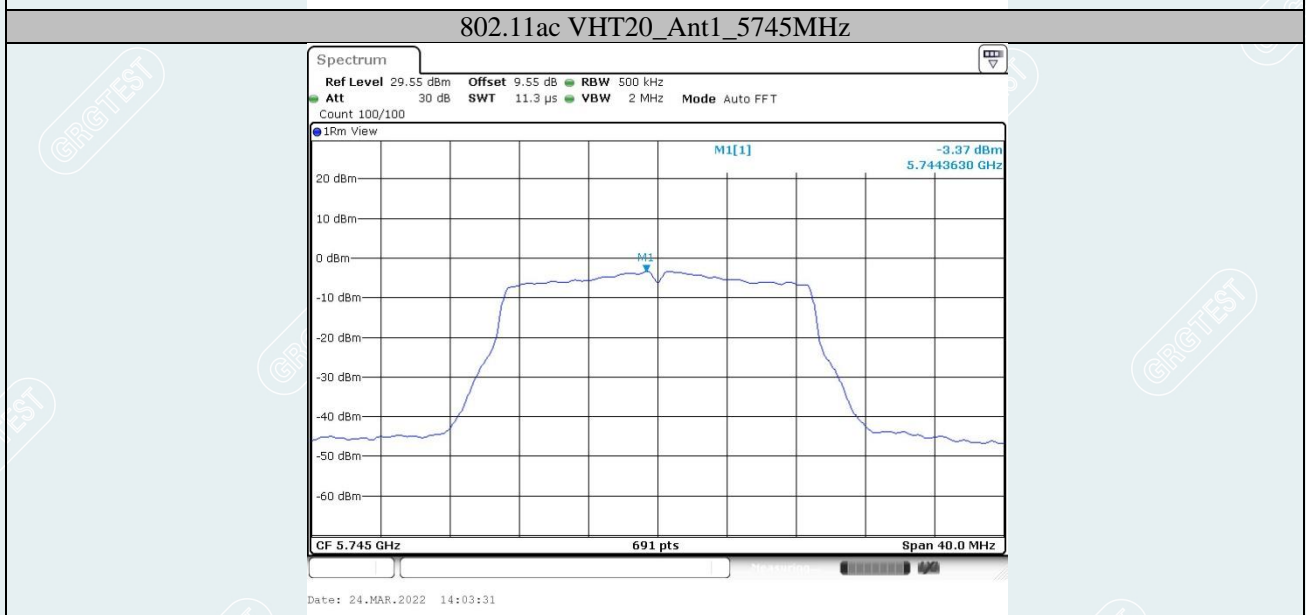
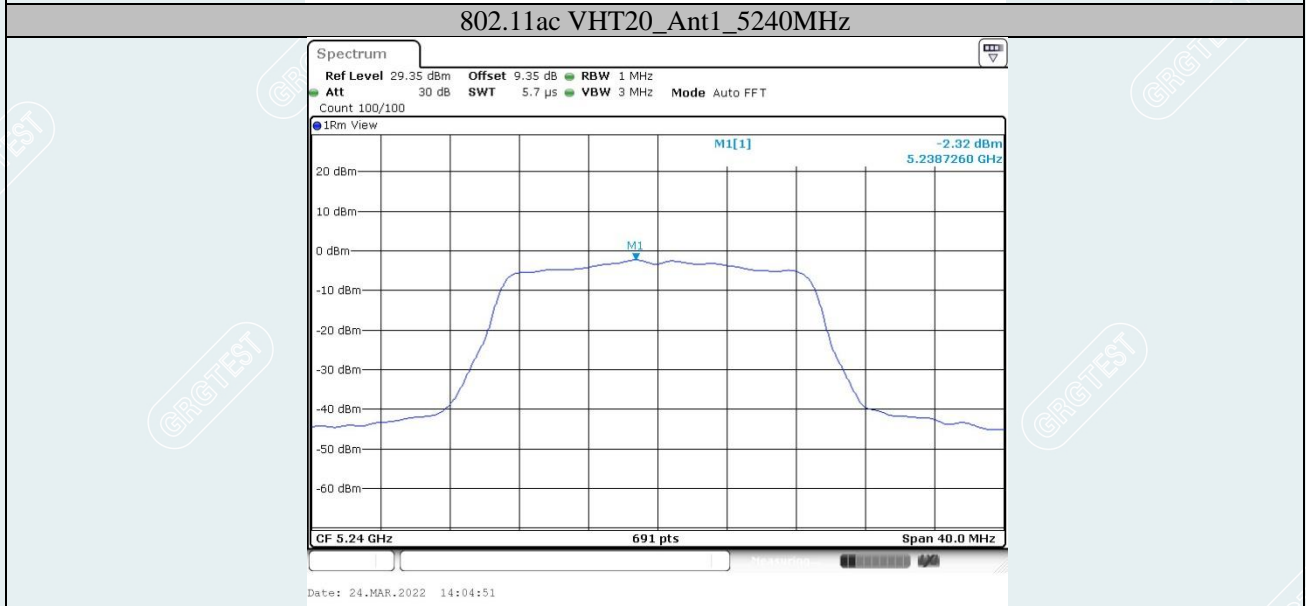
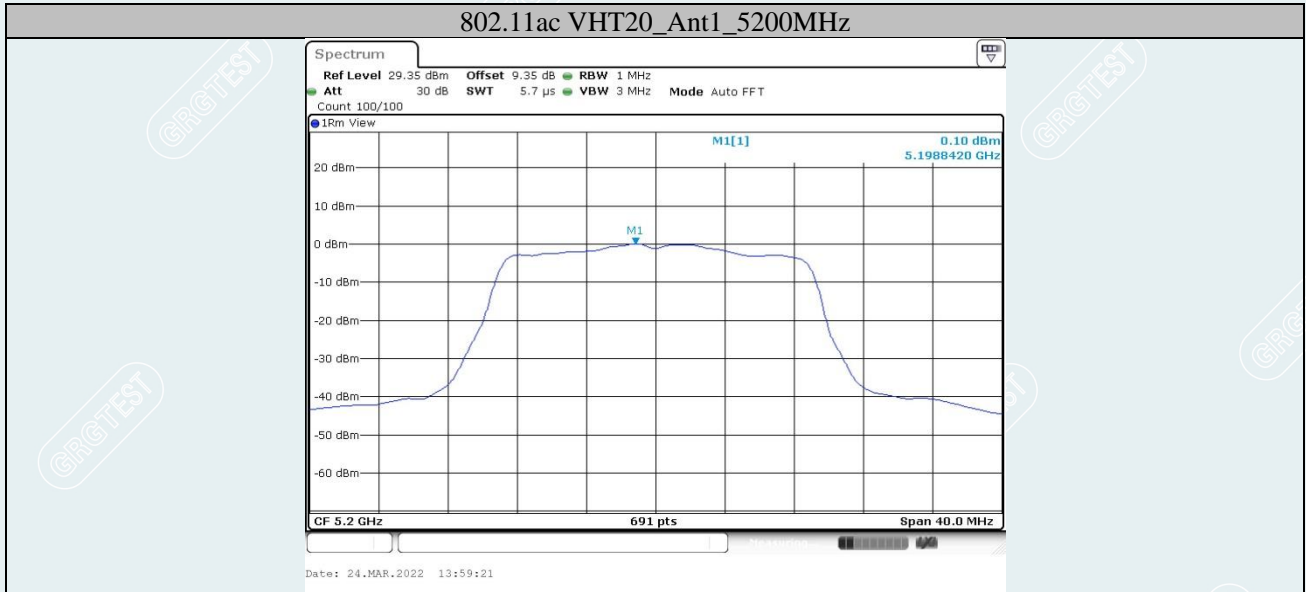


802.11n HT40_Ant1_5795MHz

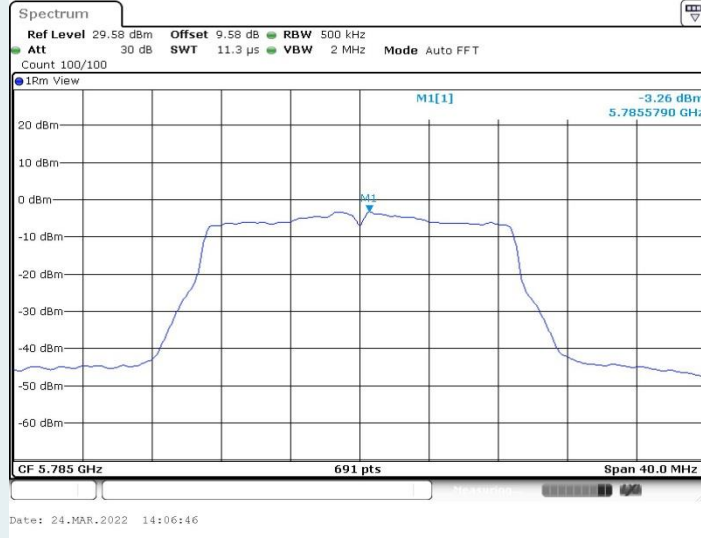


802.11ac VHT20_Ant1_5180MHz

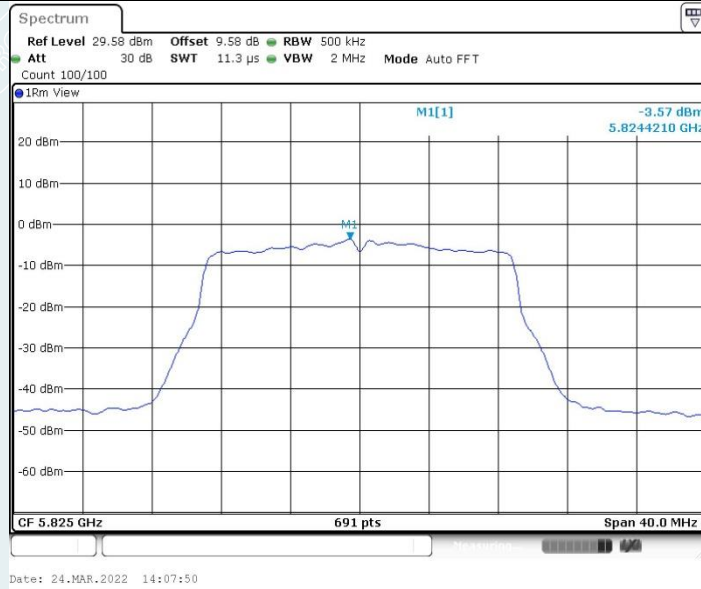




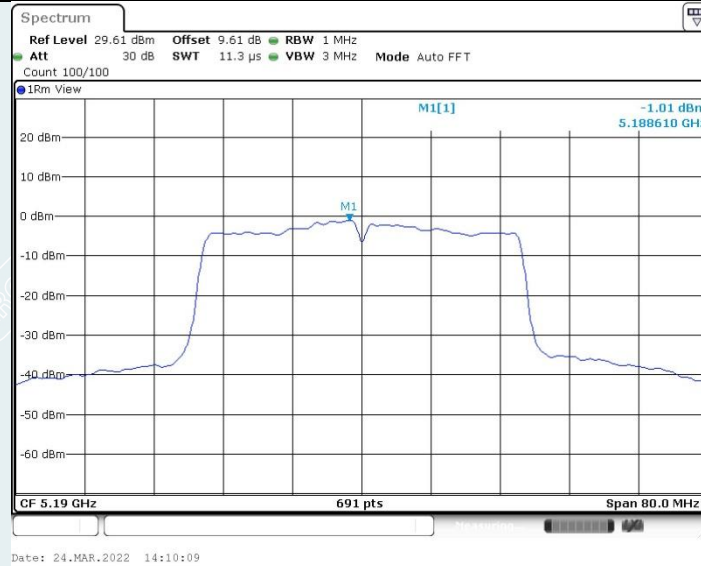
802.11ac VHT20_Ant1_5785MHz

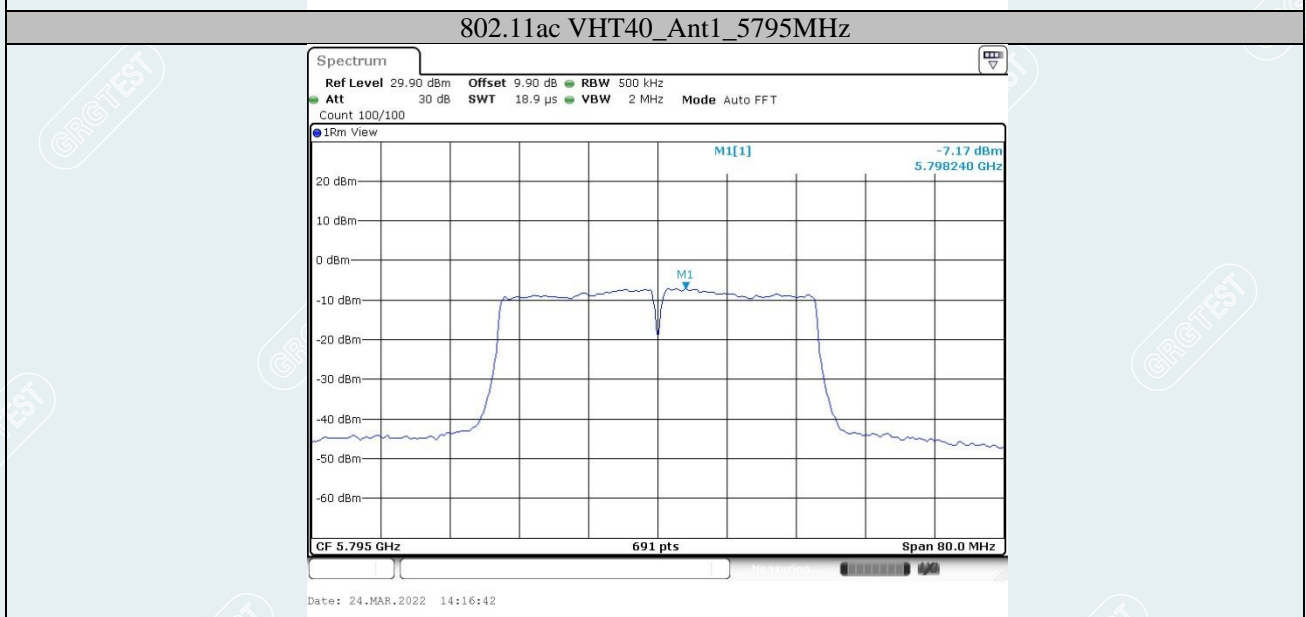
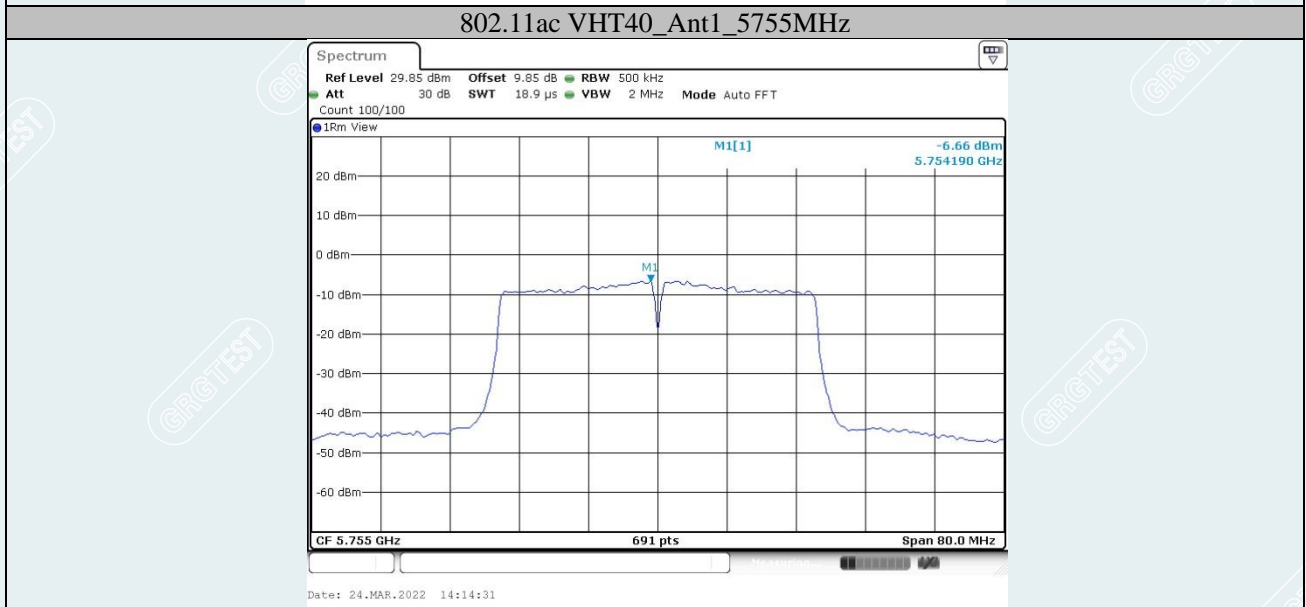
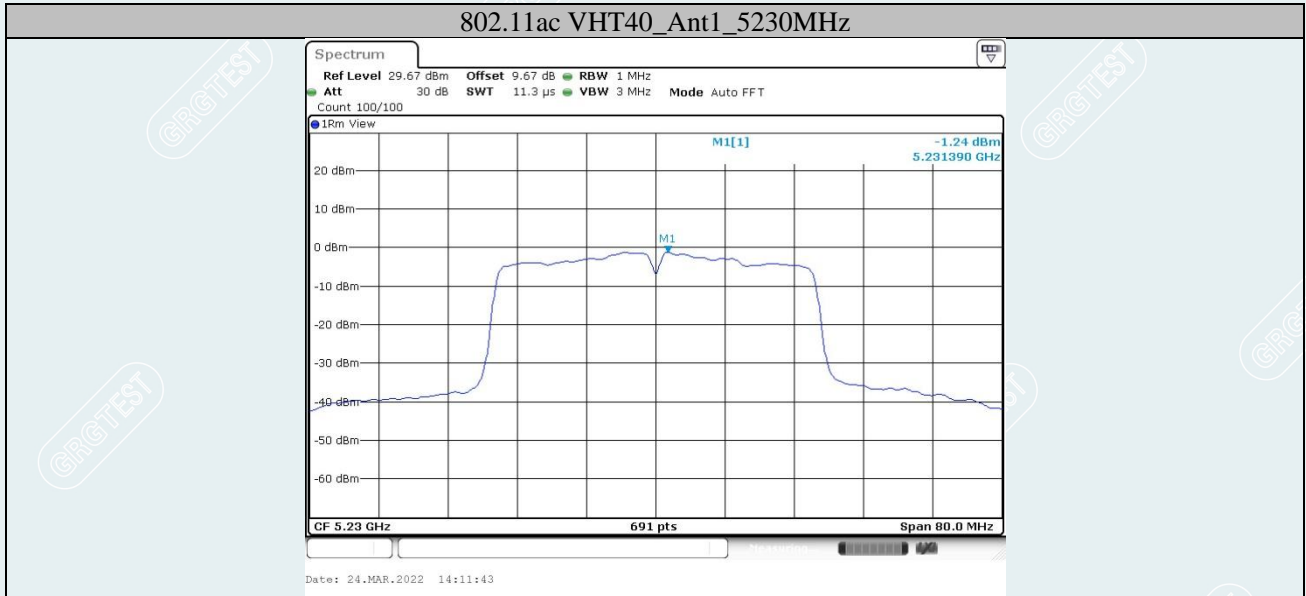


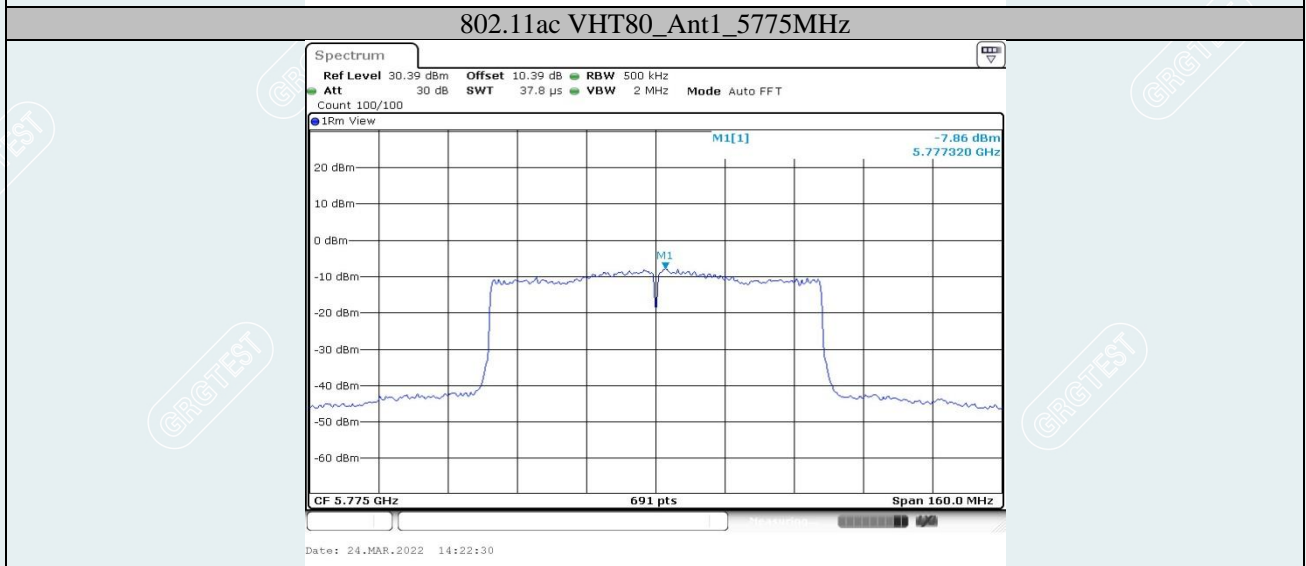
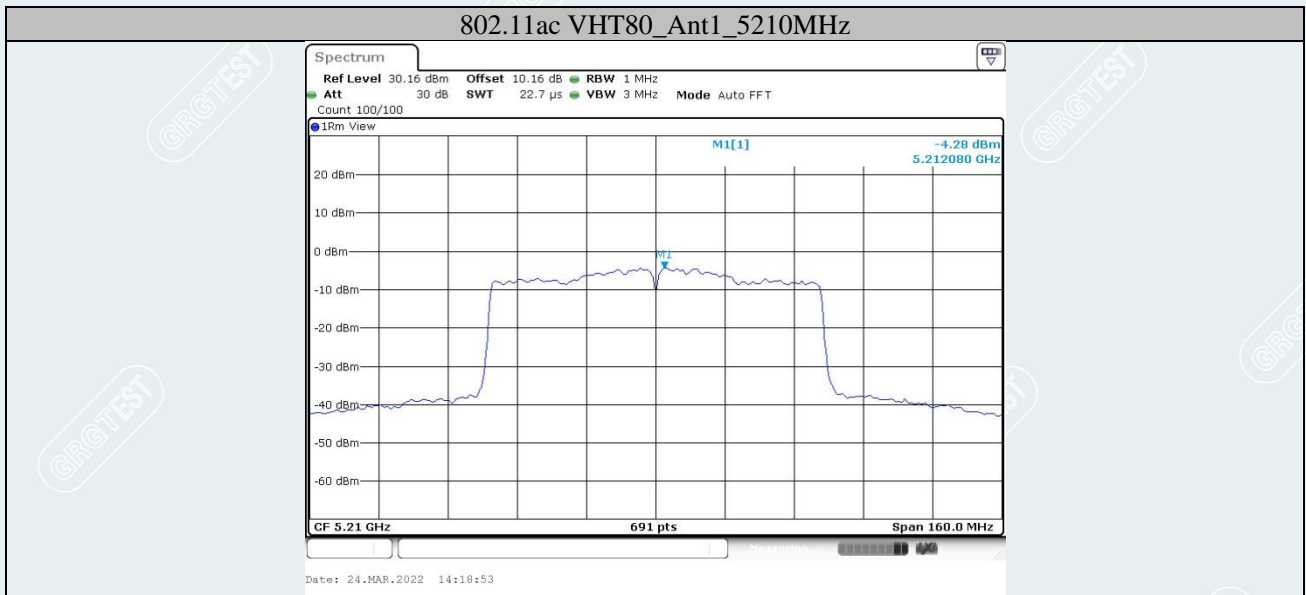
802.11ac VHT20_Ant1_5825MHz



802.11ac VHT40_Ant1_5190MHz







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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.

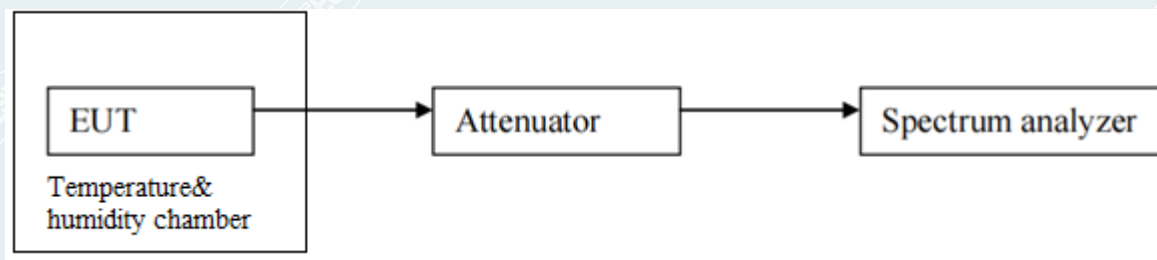
(2) Frequency stability when varying supply voltage

- 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	2022-3-24
Environmental Conditions	23.5°C/48%RH	Test Voltage	AC120V/60Hz

TestMode	Antenna	Frequency (MHz)	Voltage				Limit (ppm)	Verdict
			Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)		
802.11a	Ant1	5180	NV	NT	1000	0.19305	20	PASS
			LV	NT	0	0	20	PASS
			HV	NT	0	0	20	PASS
		5200	NV	NT	-1000	-0.192308	20	PASS
			LV	NT	-2000	-0.384615	20	PASS
			HV	NT	-2000	-0.384615	20	PASS
		5240	NV	NT	-1000	-0.19084	20	PASS
			LV	NT	-2000	-0.381679	20	PASS
			HV	NT	-2000	-0.381679	20	PASS
		5745	NV	NT	-2000	-0.348129	20	PASS
			LV	NT	-3000	-0.522193	20	PASS
			HV	NT	-3000	-0.522193	20	PASS
		5785	NV	NT	-2000	-0.345722	20	PASS
			LV	NT	-3000	-0.518583	20	PASS
			HV	NT	-3000	-0.518583	20	PASS
		5825	NV	NT	-2000	-0.343348	20	PASS
			LV	NT	-3000	-0.515021	20	PASS
			HV	NT	-3000	-0.515021	20	PASS
802.11n HT40	Ant1	5190	NV	NT	-2000	-0.385356	20	PASS
			LV	NT	-2000	-0.385356	20	PASS
			HV	NT	-3000	-0.578035	20	PASS
		5230	NV	NT	-2000	-0.382409	20	PASS
			LV	NT	-3000	-0.573614	20	PASS
			HV	NT	-3000	-0.573614	20	PASS
		5755	NV	NT	-2000	-0.347524	20	PASS
			LV	NT	-3000	-0.521286	20	PASS
			HV	NT	-3000	-0.521286	20	PASS
		5795	NV	NT	-3000	-0.517688	20	PASS
			LV	NT	-3000	-0.517688	20	PASS
			HV	NT	-4000	-0.69025	20	PASS
802.11ac VHT80	Ant1	5210	NV	NT	-2000	-0.383877	20	PASS
			LV	NT	-2000	-0.383877	20	PASS
			HV	NT	-3000	-0.575816	20	PASS
		5775	NV	NT	-2000	-0.34632	20	PASS
			LV	NT	-3000	-0.519481	20	PASS
			HV	NT	-3000	-0.519481	20	PASS

Temperature								
TestMode	Antenna	Frequenc y (MHz)	Voltage [Vdc]	Tempera ture (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
802.11a	Ant1	5180	NV	-30	-1000	-0.19305	20	PASS
			NV	-20	-1000	-0.19305	20	PASS
			NV	-10	-1000	-0.19305	20	PASS
			NV	0	-2000	-0.3861	20	PASS
			NV	10	-1000	-0.19305	20	PASS
			NV	20	-2000	-0.3861	20	PASS
			NV	30	-2000	-0.3861	20	PASS
			NV	40	-2000	-0.3861	20	PASS
		5200	NV	50	-2000	-0.3861	20	PASS
			NV	-30	-3000	-0.576923	20	PASS
			NV	-20	-3000	-0.576923	20	PASS
			NV	-10	-3000	-0.576923	20	PASS
			NV	0	-3000	-0.576923	20	PASS
			NV	10	-3000	-0.576923	20	PASS
			NV	20	-3000	-0.576923	20	PASS
			NV	30	-3000	-0.576923	20	PASS
		5240	NV	40	-3000	-0.576923	20	PASS
			NV	50	-3000	-0.576923	20	PASS
			NV	-30	-2000	-0.381679	20	PASS
			NV	-20	-3000	-0.572519	20	PASS
			NV	-10	-3000	-0.572519	20	PASS
			NV	0	-3000	-0.572519	20	PASS
			NV	10	-2000	-0.381679	20	PASS
			NV	20	-3000	-0.572519	20	PASS
		5745	NV	30	-3000	-0.572519	20	PASS
			NV	40	-3000	-0.572519	20	PASS
			NV	50	-3000	-0.572519	20	PASS
			NV	-30	-3000	-0.522193	20	PASS
			NV	-20	-3000	-0.522193	20	PASS
			NV	-10	-3000	-0.522193	20	PASS
			NV	0	-3000	-0.522193	20	PASS
			NV	10	-3000	-0.522193	20	PASS
		5785	NV	20	-3000	-0.522193	20	PASS
			NV	30	-3000	-0.522193	20	PASS
			NV	40	-3000	-0.522193	20	PASS
			NV	50	-3000	-0.522193	20	PASS
			NV	-30	-3000	-0.518583	20	PASS
			NV	-20	-3000	-0.518583	20	PASS
			NV	-10	-3000	-0.518583	20	PASS
			NV	0	-3000	-0.518583	20	PASS
		5825	NV	10	-4000	-0.691443	20	PASS
			NV	20	-3000	-0.518583	20	PASS
			NV	30	-4000	-0.691443	20	PASS
			NV	40	-4000	-0.691443	20	PASS
			NV	50	-4000	-0.691443	20	PASS
			NV	-30	-4000	-0.686695	20	PASS
			NV	-20	-4000	-0.686695	20	PASS
			NV	-10	-3000	-0.515021	20	PASS

			NV	0	-4000	-0.686695	20	PASS
			NV	10	-4000	-0.686695	20	PASS
			NV	20	-4000	-0.686695	20	PASS
			NV	30	-4000	-0.686695	20	PASS
			NV	40	-4000	-0.686695	20	PASS
			NV	50	-4000	-0.686695	20	PASS
802.11n HT40	Ant1	5190	NV	-30	-3000	-0.578035	20	PASS
			NV	-20	-3000	-0.578035	20	PASS
			NV	-10	-3000	-0.578035	20	PASS
			NV	0	-3000	-0.578035	20	PASS
			NV	10	-3000	-0.578035	20	PASS
			NV	20	-3000	-0.578035	20	PASS
			NV	30	-3000	-0.578035	20	PASS
			NV	40	-3000	-0.578035	20	PASS
			NV	50	-3000	-0.578035	20	PASS
		5230	NV	-30	-3000	-0.573614	20	PASS
			NV	-20	-3000	-0.573614	20	PASS
			NV	-10	-3000	-0.573614	20	PASS
			NV	0	-3000	-0.573614	20	PASS
			NV	10	-3000	-0.573614	20	PASS
			NV	20	-3000	-0.573614	20	PASS
			NV	30	-3000	-0.573614	20	PASS
			NV	40	-3000	-0.573614	20	PASS
			NV	50	-3000	-0.573614	20	PASS
		5755	NV	-30	-3000	-0.521286	20	PASS
			NV	-20	-3000	-0.521286	20	PASS
			NV	-10	-3000	-0.521286	20	PASS
			NV	0	-3000	-0.521286	20	PASS
			NV	10	-3000	-0.521286	20	PASS
			NV	20	-3000	-0.521286	20	PASS
NV	30		-4000	-0.695048	20	PASS		
NV	40		-3000	-0.521286	20	PASS		
NV	50		-3000	-0.521286	20	PASS		
5795	NV	-30	-3000	-0.517688	20	PASS		
	NV	-20	-3000	-0.517688	20	PASS		
	NV	-10	-3000	-0.517688	20	PASS		
	NV	0	-3000	-0.517688	20	PASS		
	NV	10	-3000	-0.517688	20	PASS		
	NV	20	-4000	-0.69025	20	PASS		
	NV	30	-4000	-0.69025	20	PASS		
	NV	40	-4000	-0.69025	20	PASS		
	NV	50	-4000	-0.69025	20	PASS		
802.11ac VHT80	Ant1	5210	NV	-30	-3000	-0.575816	20	PASS
			NV	-20	-3000	-0.575816	20	PASS
			NV	-10	-3000	-0.575816	20	PASS
			NV	0	-3000	-0.575816	20	PASS
			NV	10	-3000	-0.575816	20	PASS
			NV	20	-3000	-0.575816	20	PASS
			NV	30	-3000	-0.575816	20	PASS
			NV	40	-3000	-0.575816	20	PASS
			NV	50	-3000	-0.575816	20	PASS
		5775	NV	-30	-3000	-0.519481	20	PASS
			NV	-20	-3000	-0.519481	20	PASS
			NV	-10	-3000	-0.519481	20	PASS



			NV	0	-3000	-0.519481	20	PASS
			NV	10	-3000	-0.519481	20	PASS
			NV	20	-3000	-0.519481	20	PASS
			NV	30	-4000	-0.692641	20	PASS
			NV	40	-3000	-0.519481	20	PASS
			NV	50	-3000	-0.519481	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°C~55°C, Temperature-NT: 24°C.

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



APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM

Please refer to the attached document E202112291004-26-Test photo.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document E202112291004-27-EUT photo.

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

