

## 8. MAXIMUM PEAK OUTPUT POWER

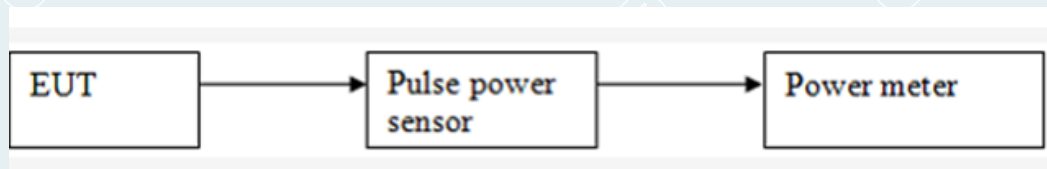
### 8.1 LIMITS

The maximum Peak output power measurement is 1W

### 8.2 TEST PROCEDURES

- 1) RF output of EUT was connected to the broadband peak 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



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**8.4 TEST RESULT**

Environment: 30.8°C/57%RH  
 Tested By: Huang Tianmei

Voltage: AC 120V/60Hz  
 Date: 2023-07-14~2023-07-28

**IEEE 802.11b Mode Antenna 1:**

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)	Peak / AVG	Limit	Result
1	2412	18.30	Peak	30dBm	Pass
6	2437	17.98			Pass
11	2462	18.08			Pass

**IEEE 802.11g Mode Antenna 1:**

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)	Peak / AVG	Limit	Result
1	2412	23.33	Peak	30dBm	Pass
6	2437	23.89			Pass
11	2462	24.17			Pass

**IEEE 802.11n HT20 Mode Antenna 1:**

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)	Peak/ AVG	Limit	Result
1	2412	23.67	Peak	30dBm	Pass
6	2437	23.68			Pass
11	2462	23.74			Pass

**IEEE 802.11n HT40 Mode Antenna 1:**

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)	Peak/ AVG	Limit	Result
3	2422	23.18	Peak	30dBm	Pass
6	2437	23.48			Pass
9	2452	23.73			Pass

**IEEE 802.11ax HE20 Mode Antenna 1:**

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)	Peak / AVG	Limit	Result
1	2412	20.46	Peak	30dBm	Pass
6	2437	20.05			Pass
11	2462	20.14			Pass

**IEEE 802.11ax HE40 Mode Antenna 1:**

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)	Peak/ AVG	Limit	Result
3	2422	22.19	Peak	30dBm	Pass
6	2437	21.46			Pass
9	2452	21.76			Pass



## 9. POWER SPECTRAL DENSITY

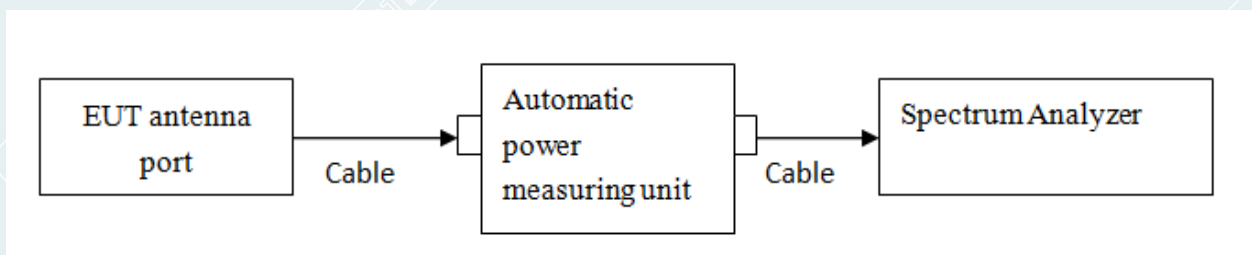
### 9.1 LIMITS

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

### 9.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 2) Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- 3) The following procedure shall be used if maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:
  - a) Set analyzer center frequency to DTS channel center frequency.
  - b) Set the span to 1.5 times the DTS bandwidth.
  - c) Set the RBW to  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
  - d) Set the VBW  $\geq [3 \times \text{RBW}]$ .
  - e) Detector = peak
  - f) Sweep time = auto couple.
  - g) Trace mode = max hold.
  - h) Allow trace to fully stabilize.
  - i) Use the peak marker function to determine the maximum amplitude level within the RBW.
  - j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.
- 4) Repeat above procedures until all frequencies measured were complete.

### 9.3 TEST SETUP



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**9.4 TEST RESULTS**

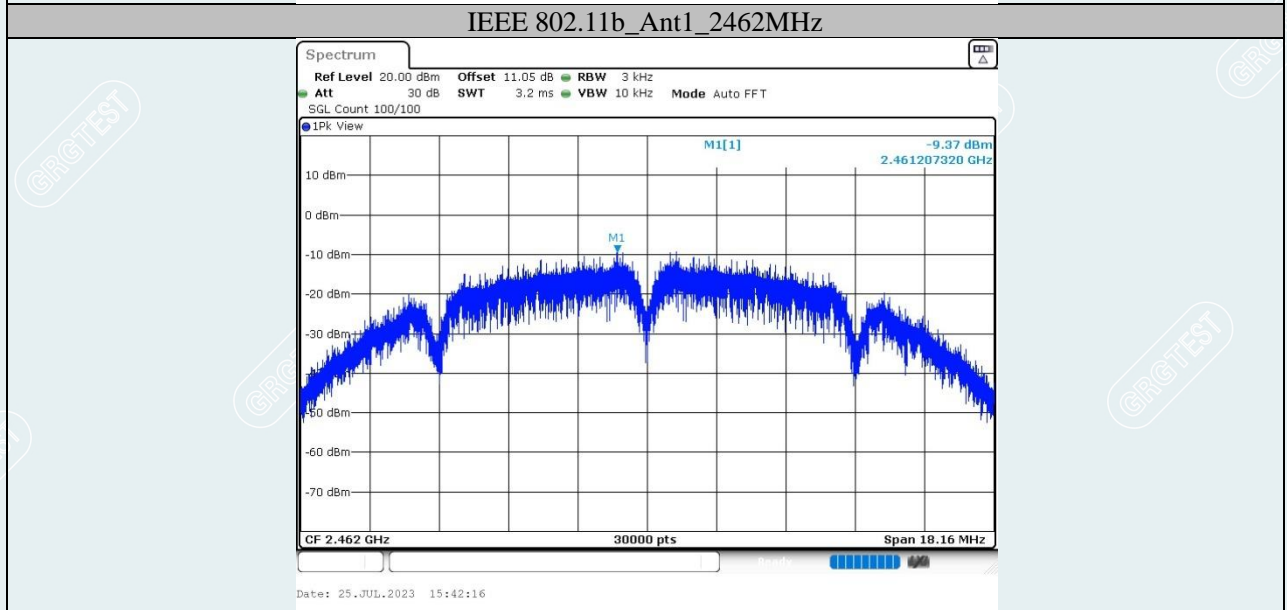
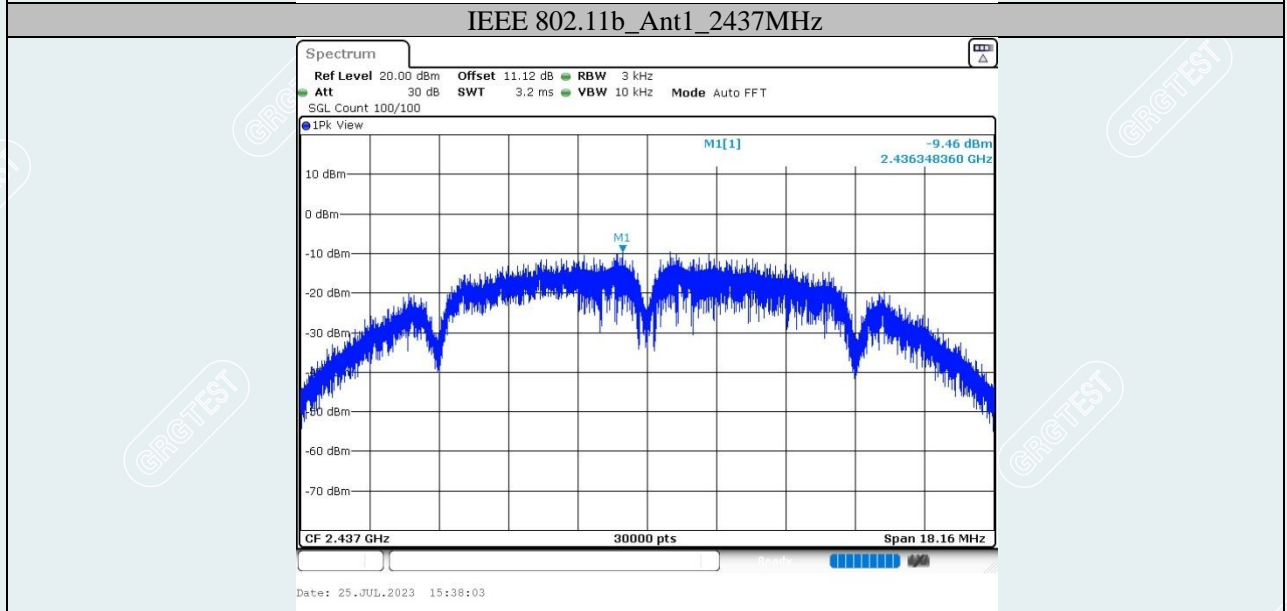
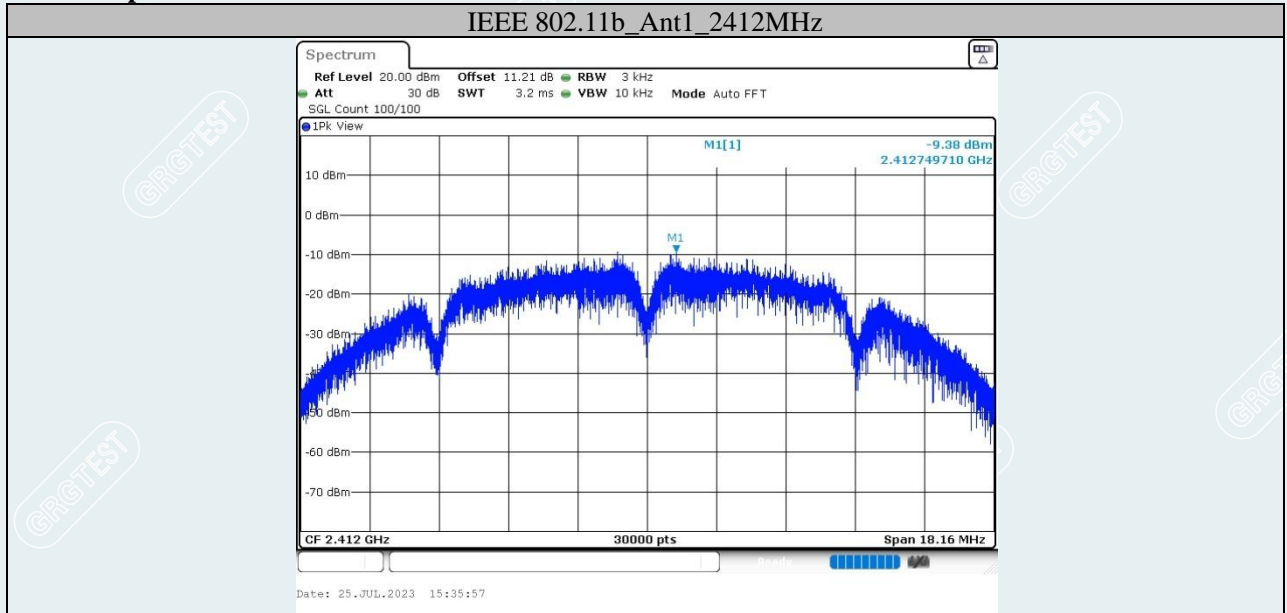
Environment: 30.8°C/57%RH  
 Tested By: Huang Tianmei

Voltage: AC 120V/60Hz  
 Date: 2023-07-25~2023-07-28

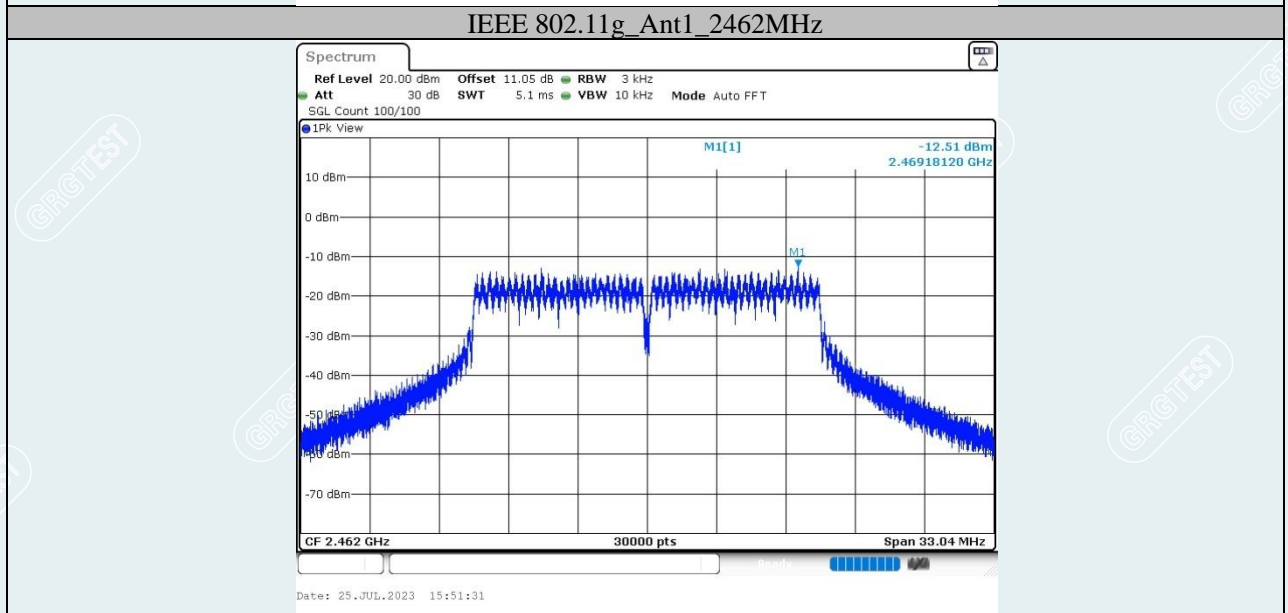
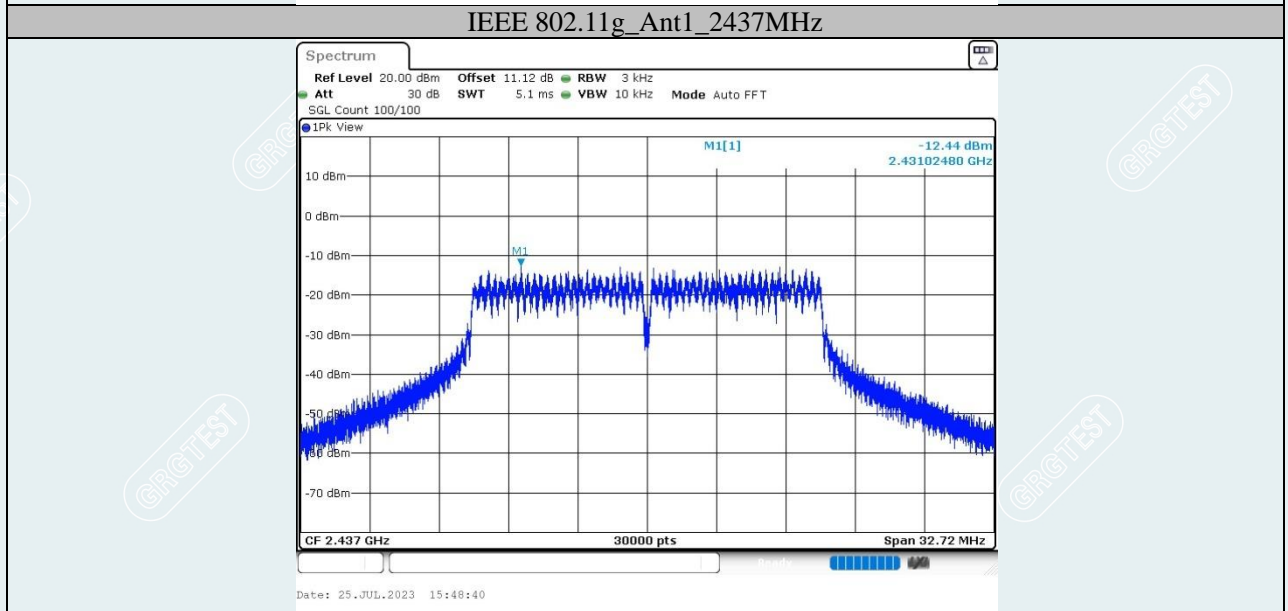
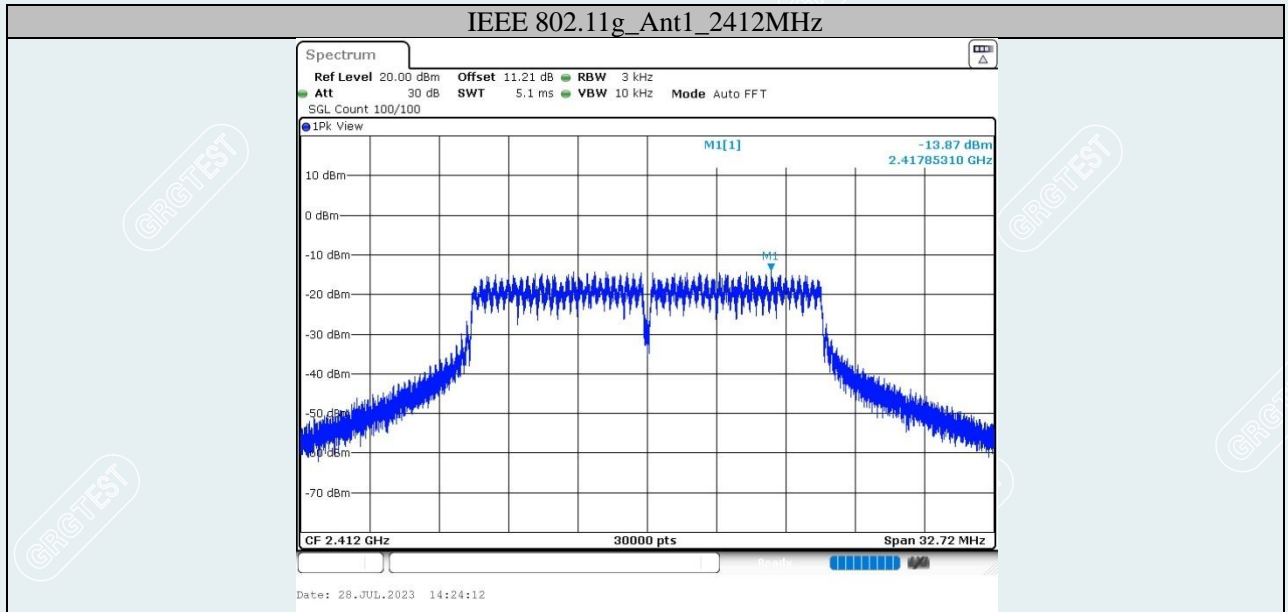
Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
IEEE 802.11b	Ant1	2412	-9.38	≤8.00	PASS
		2437	-9.46	≤8.00	PASS
		2462	-9.37	≤8.00	PASS
IEEE 802.11g	Ant1	2412	-13.87	≤8.00	PASS
		2437	-12.44	≤8.00	PASS
		2462	-12.51	≤8.00	PASS
IEEE 802.11n HT20	Ant1	2412	-13.06	≤8.00	PASS
		2437	-12.63	≤8.00	PASS
		2462	-11.85	≤8.00	PASS
IEEE 802.11n HT40	Ant1	2422	-15.64	≤8.00	PASS
		2437	-13.64	≤8.00	PASS
		2452	-15.49	≤8.00	PASS
IEEE 802.11ax HE20	Ant1	2412	-15.66	≤8.00	PASS
		2437	-16.13	≤8.00	PASS
		2462	-15.87	≤8.00	PASS
IEEE 802.11ax HE40	Ant1	2422	-16.92	≤8.00	PASS
		2437	-18.61	≤8.00	PASS
		2452	-18.03	≤8.00	PASS

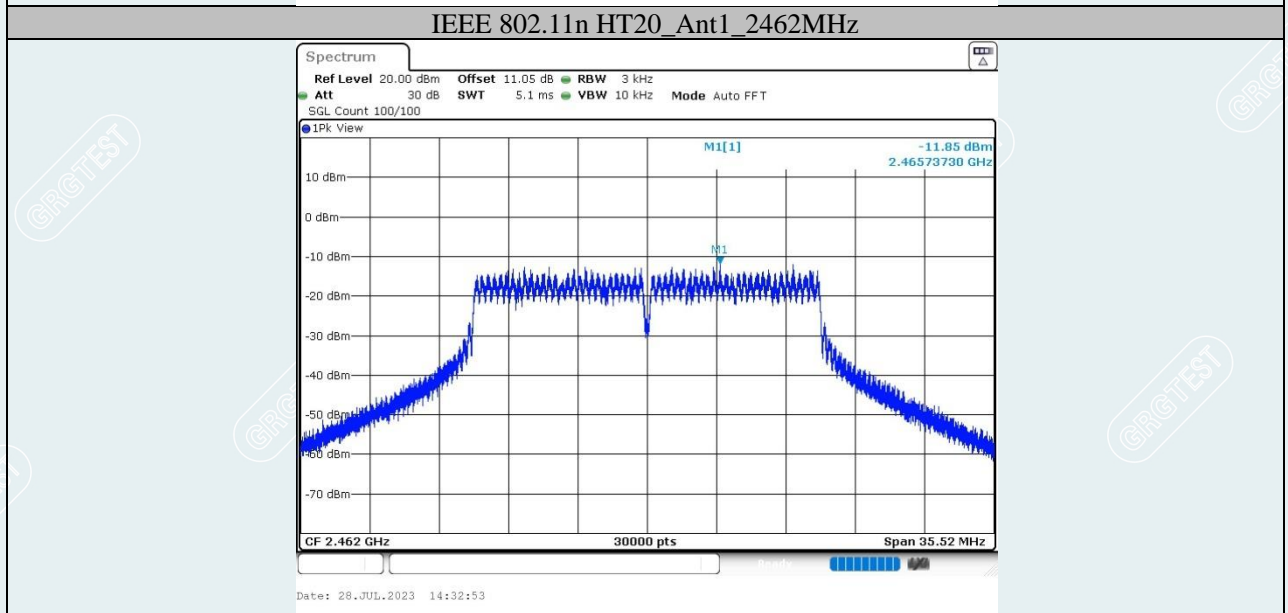
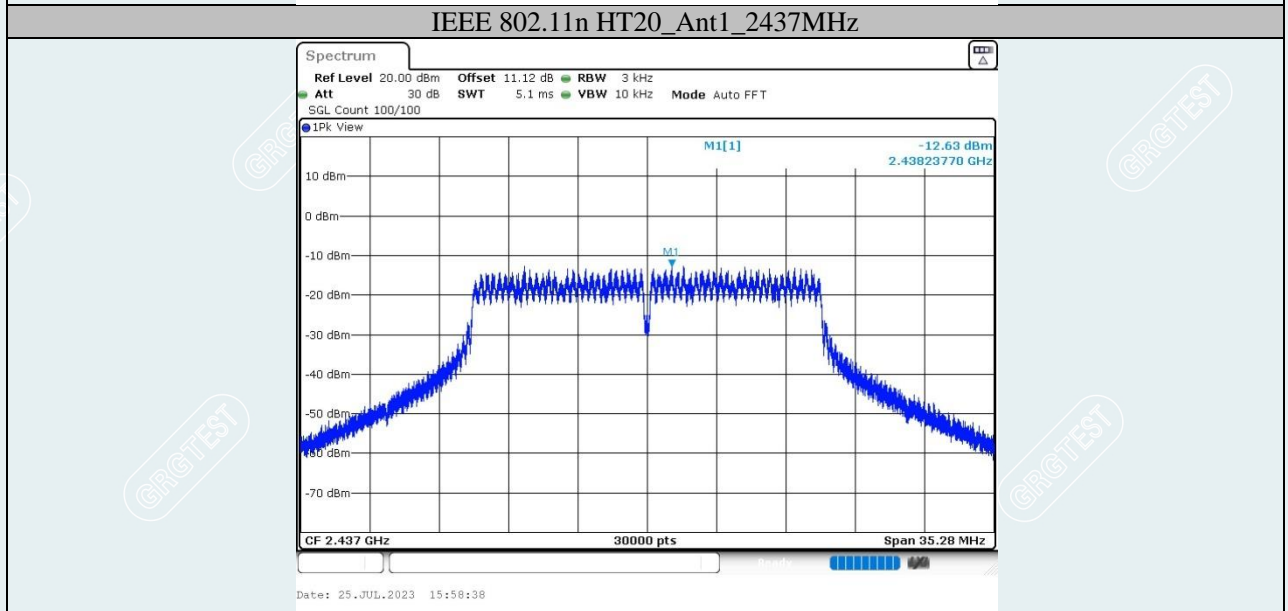
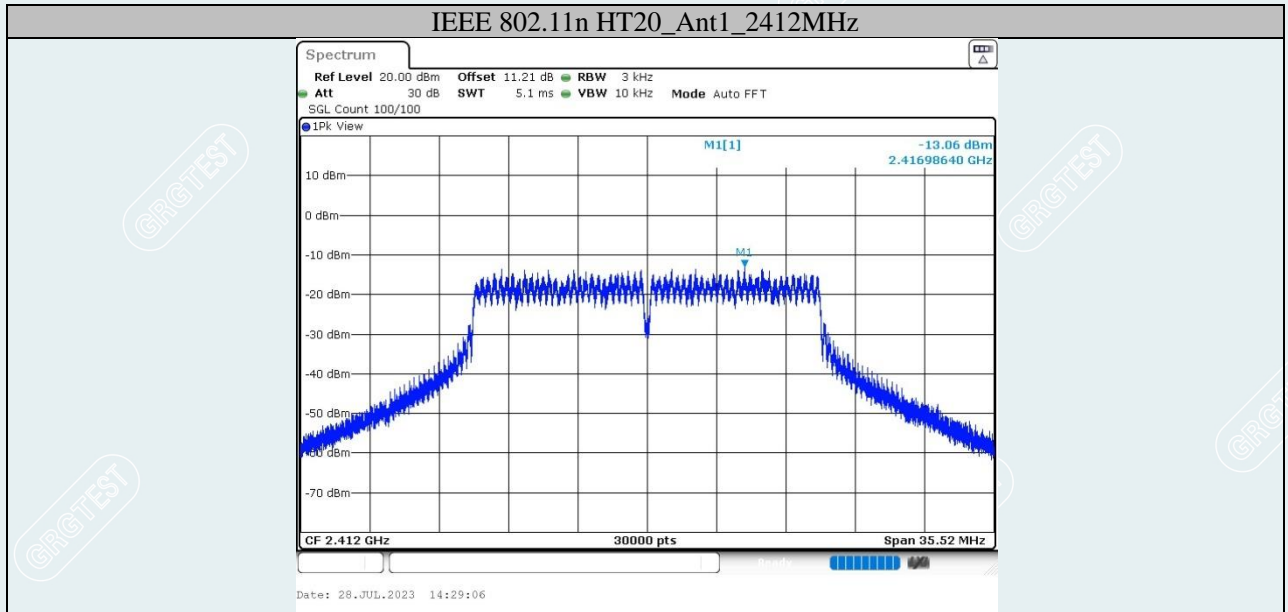
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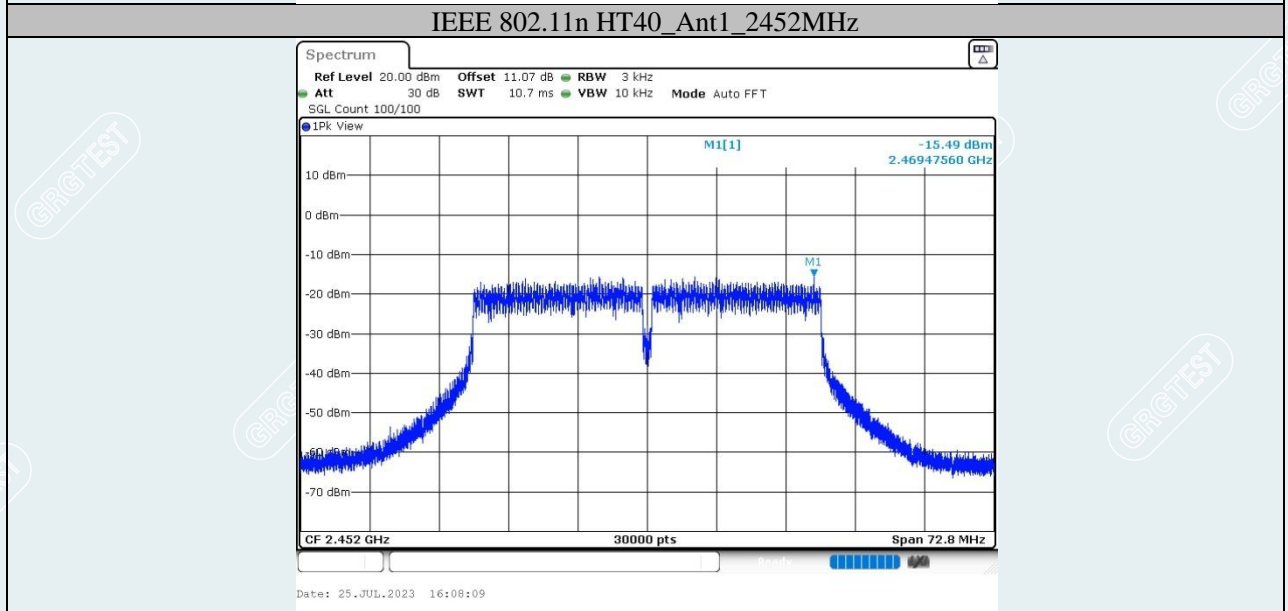
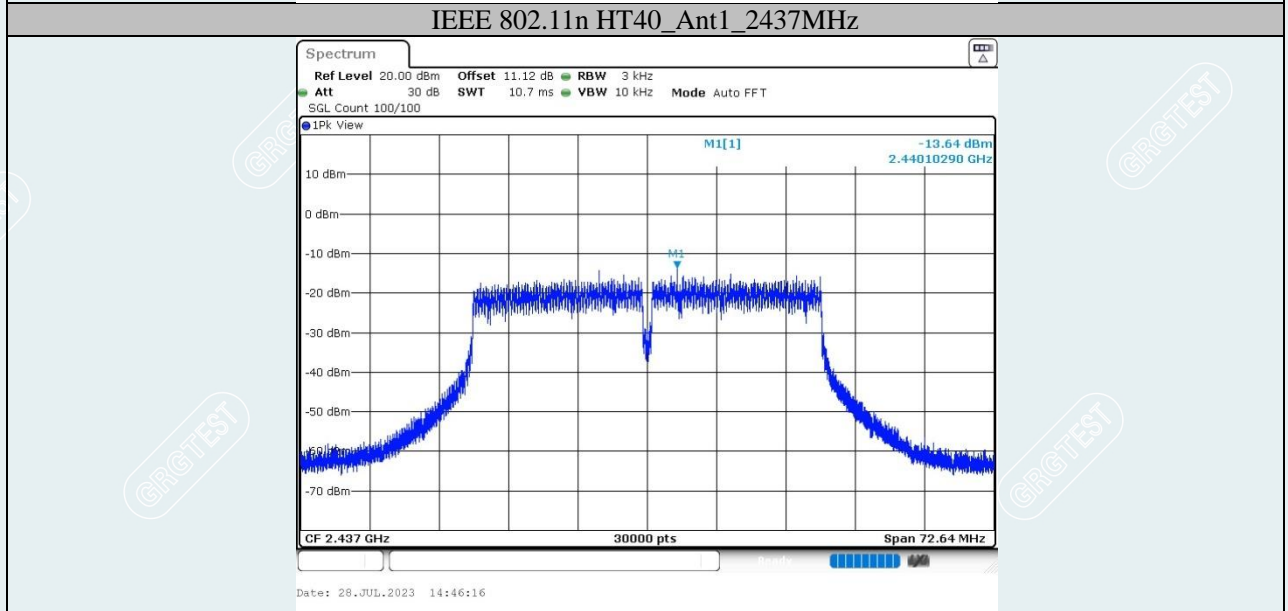
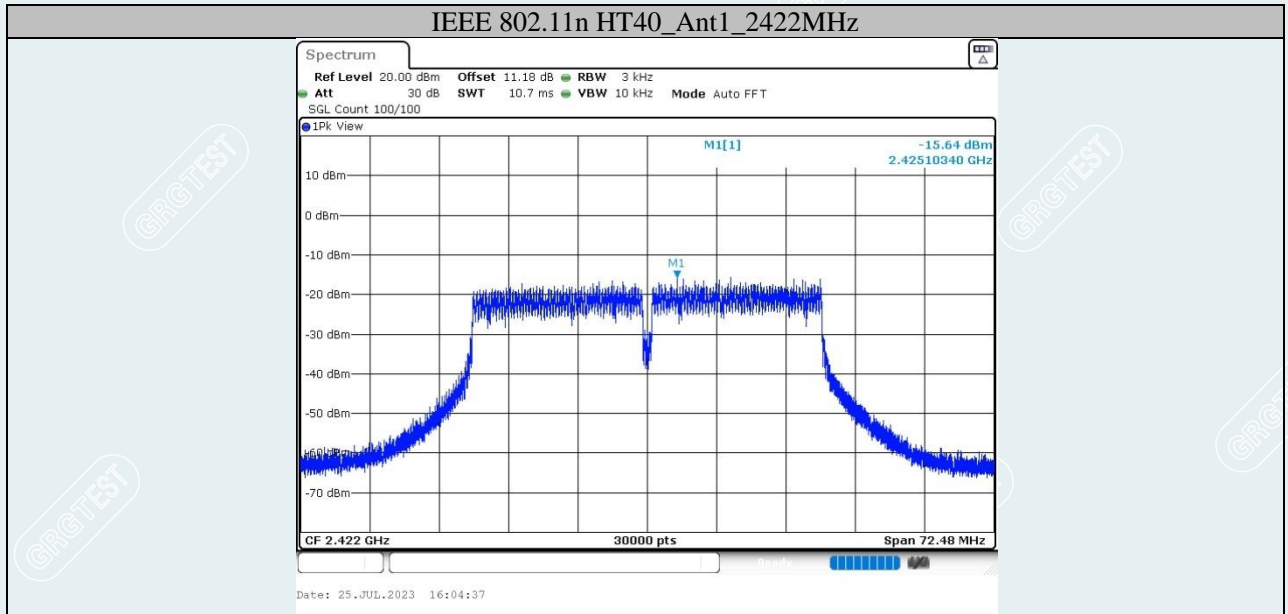
### Test Graphs

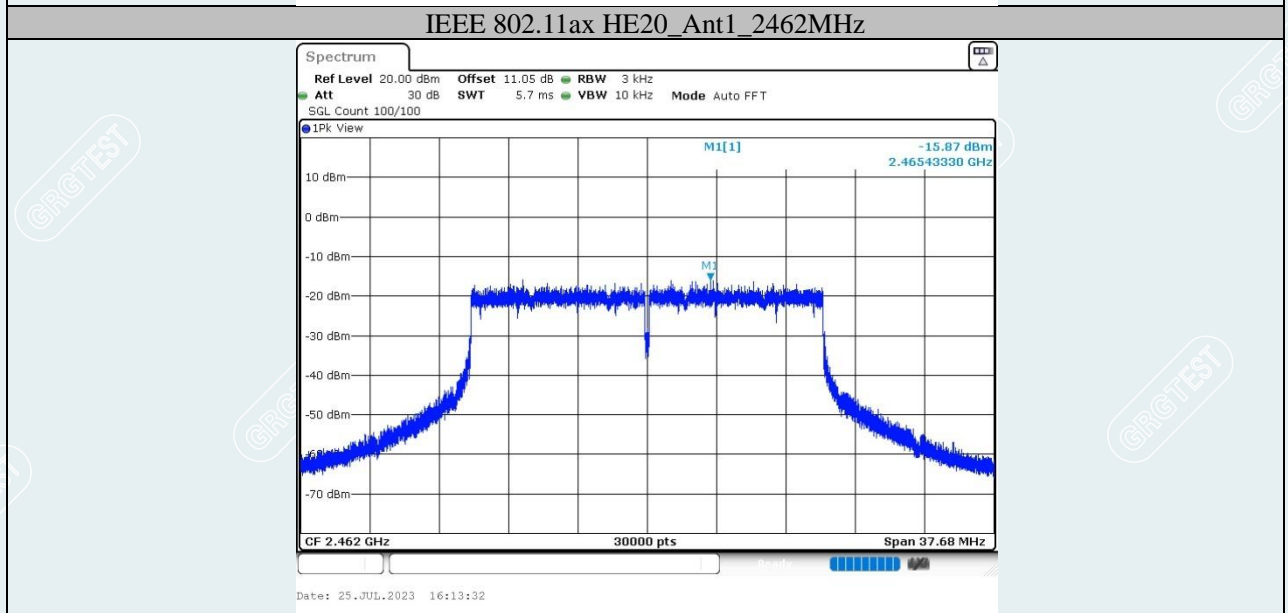
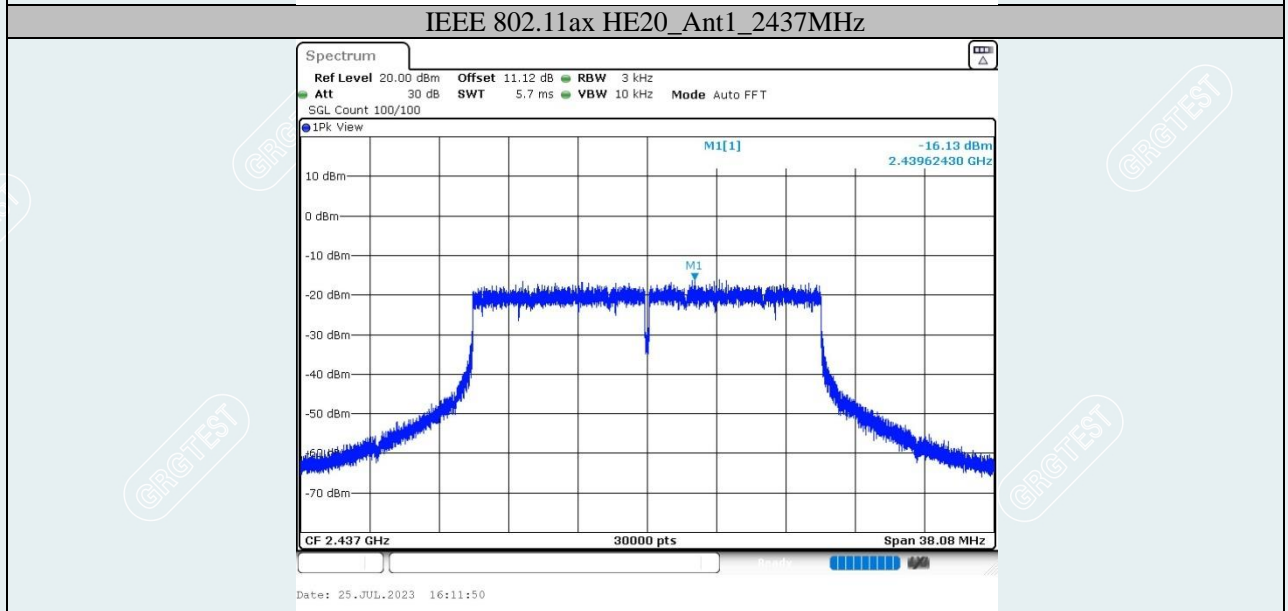
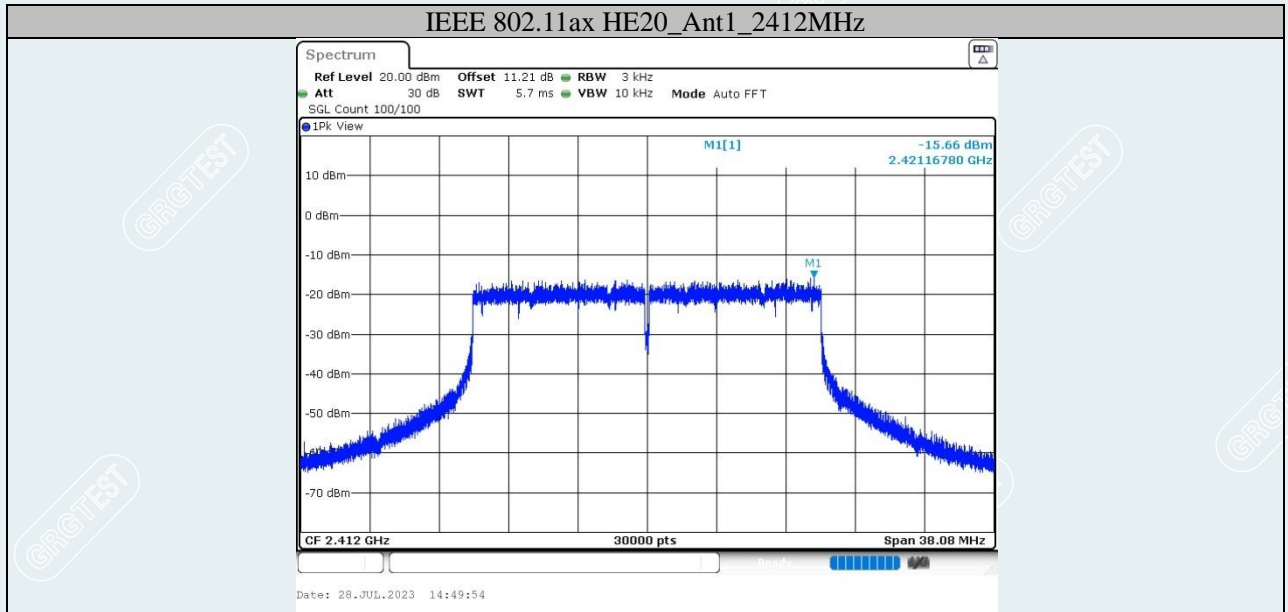




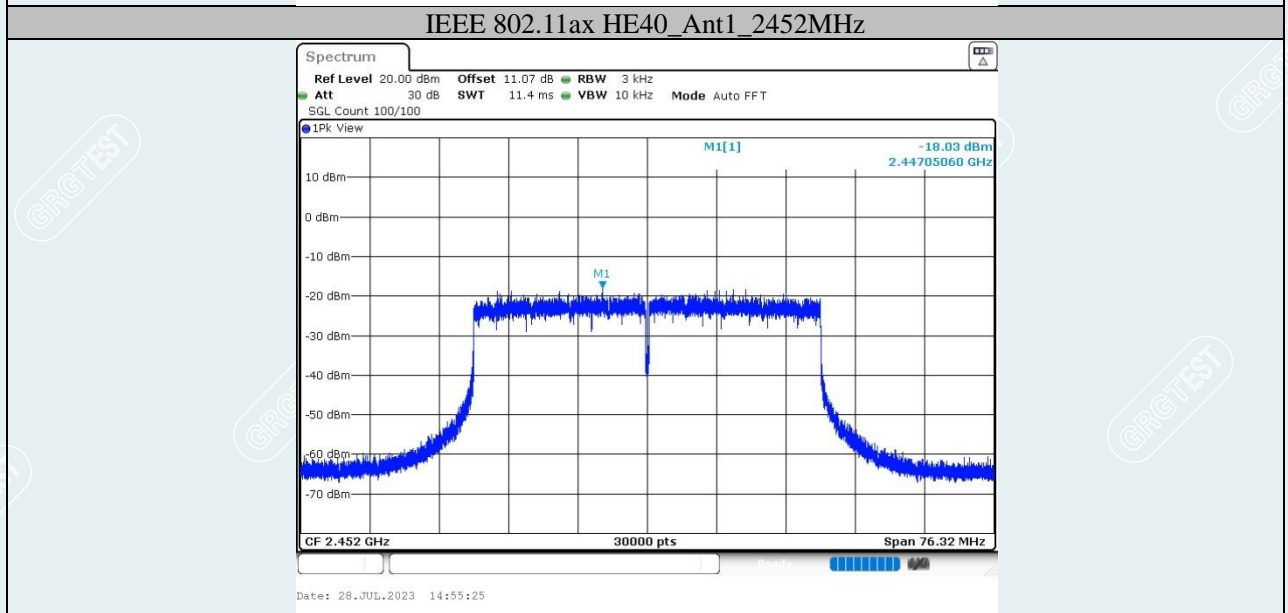
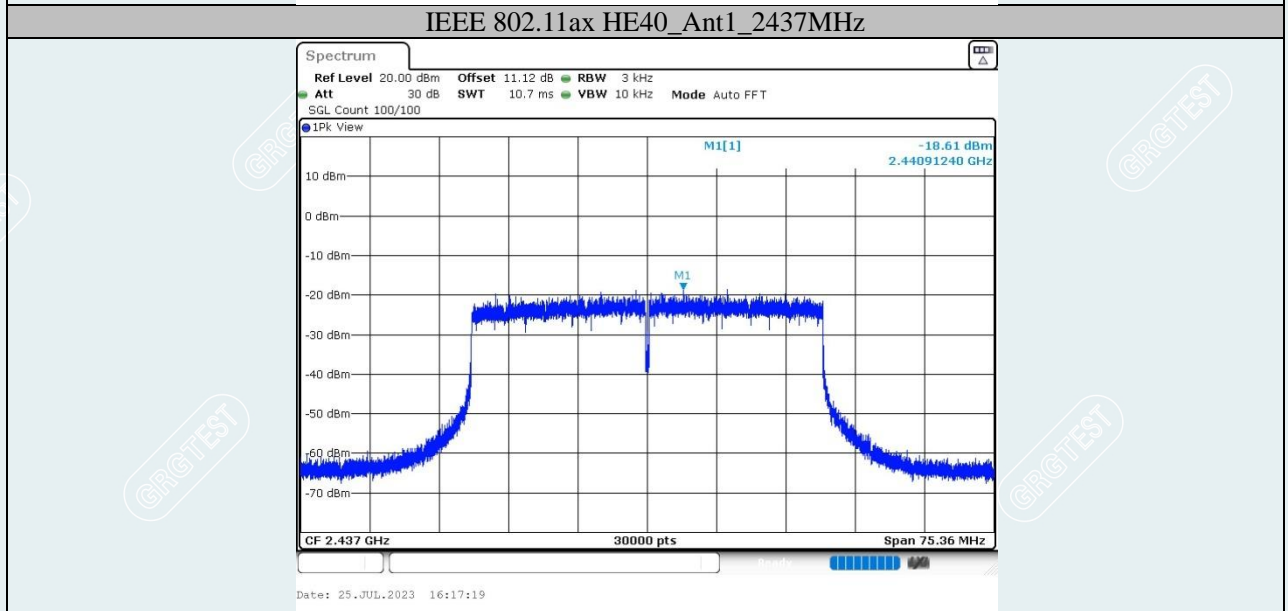
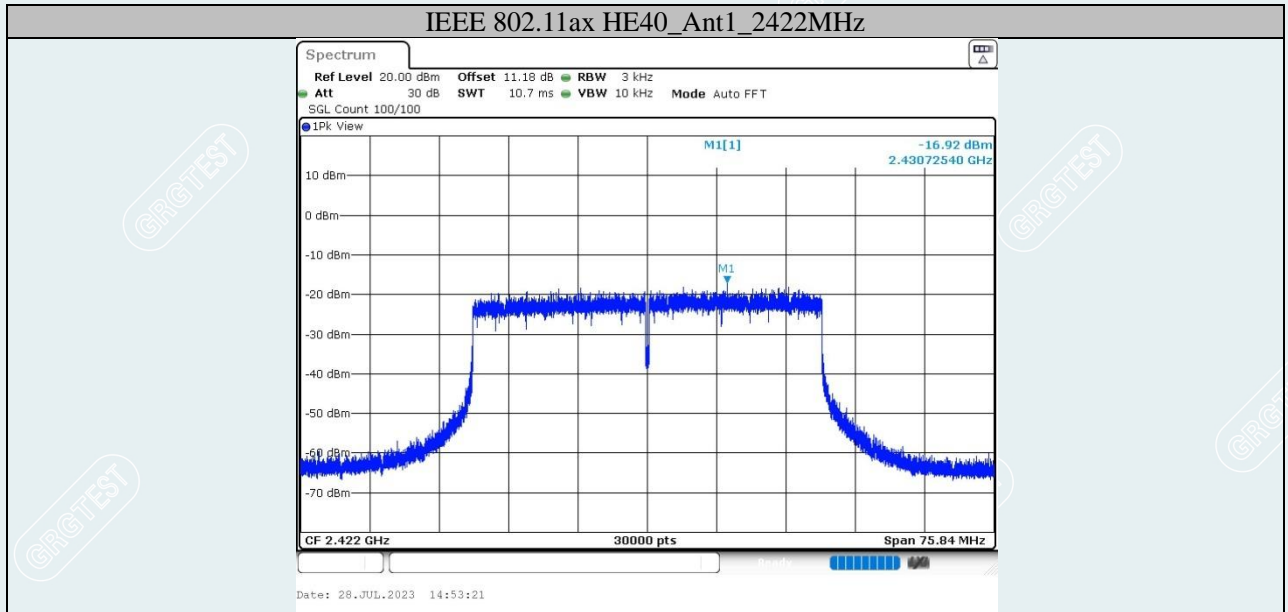














## 10. CONDUCTED BAND EDGES AND SPURIOUS EMISSIONS

### 10.1 LIMITS

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

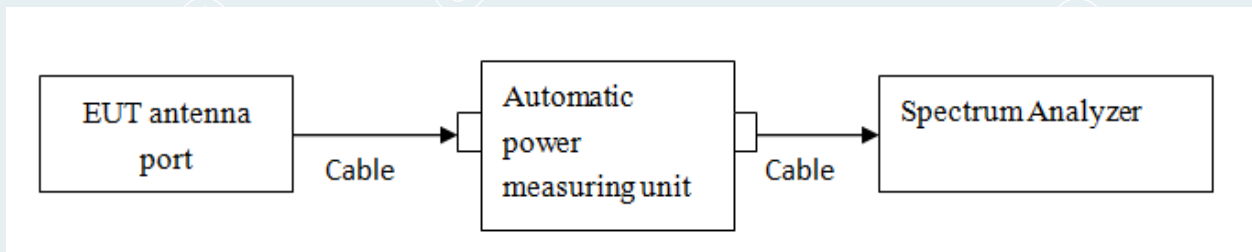
### 10.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 DTS Measurement Guidance.

Remove the antenna from the EUT and then connect a low attenuation cable from the antenna port to the spectrum.

- 1) Remove the antenna from the EUT and then connect a low attenuation cable from the antenna port to the spectrum.
- 2) Set the spectrum analyzer: RBW =100kHz; VBW =300kHz, Frequency range = 30MHz to 26.5GHz; Sweep = auto; Detector Function = Peak; Trace = Max hold.
- 3) Measure and record the results in the test report.
- 4) The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

### 10.3 TEST SETUP



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**10.4 TEST RESULTS**

Environment: 30.8°C/57%RH  
 Tested By: Huang Tianmei

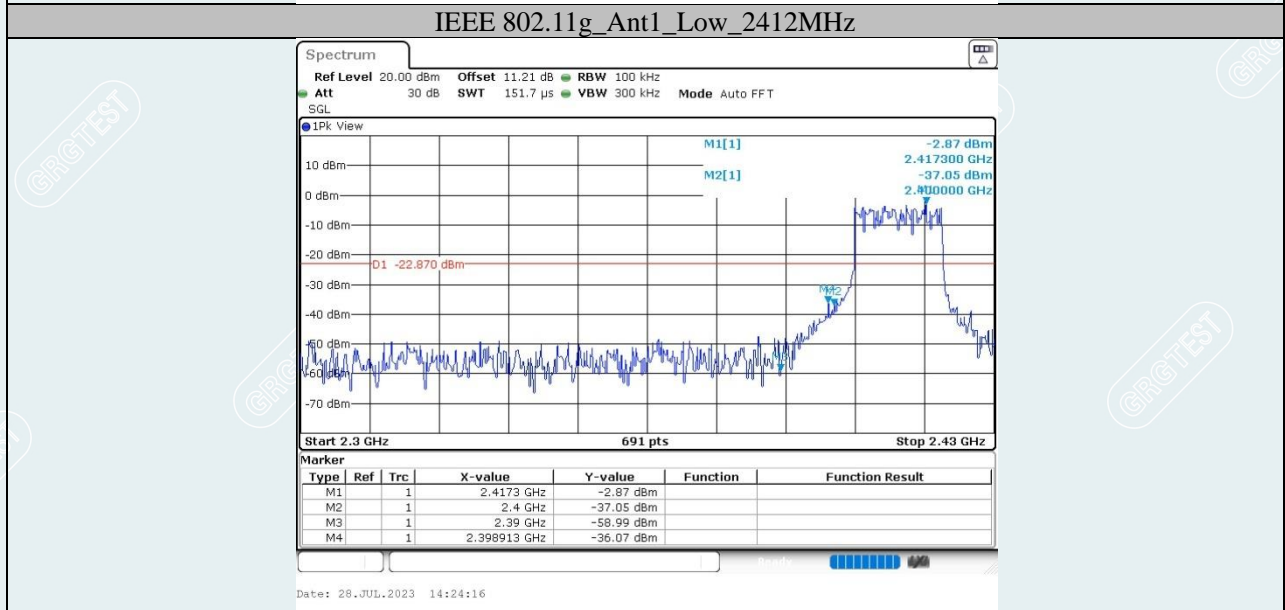
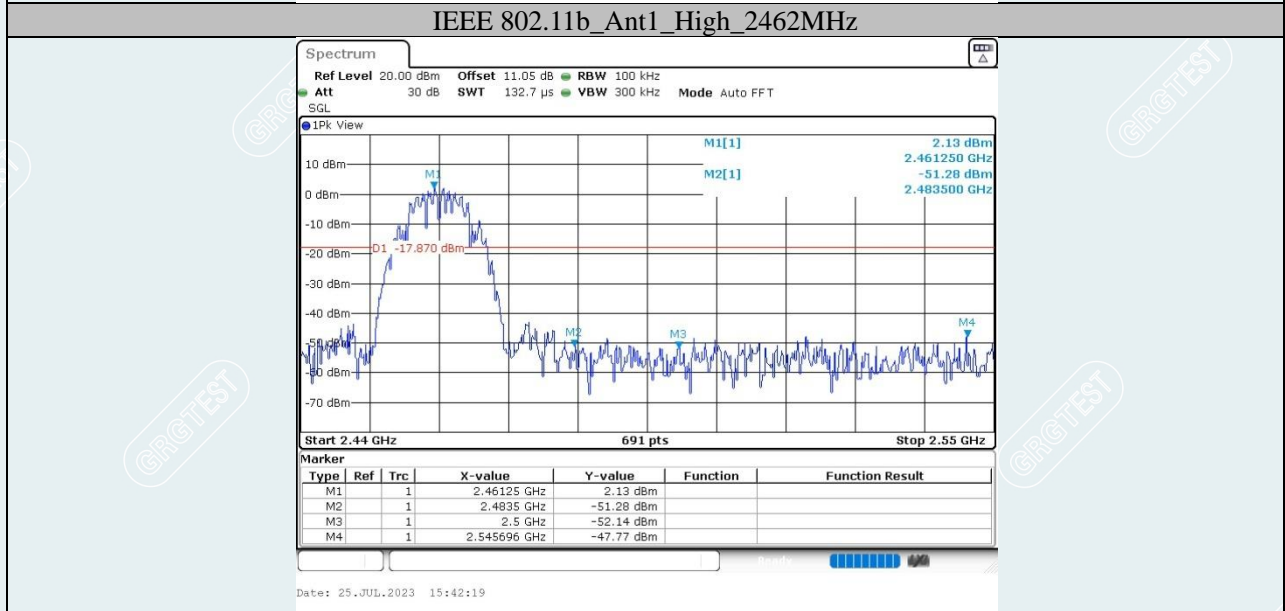
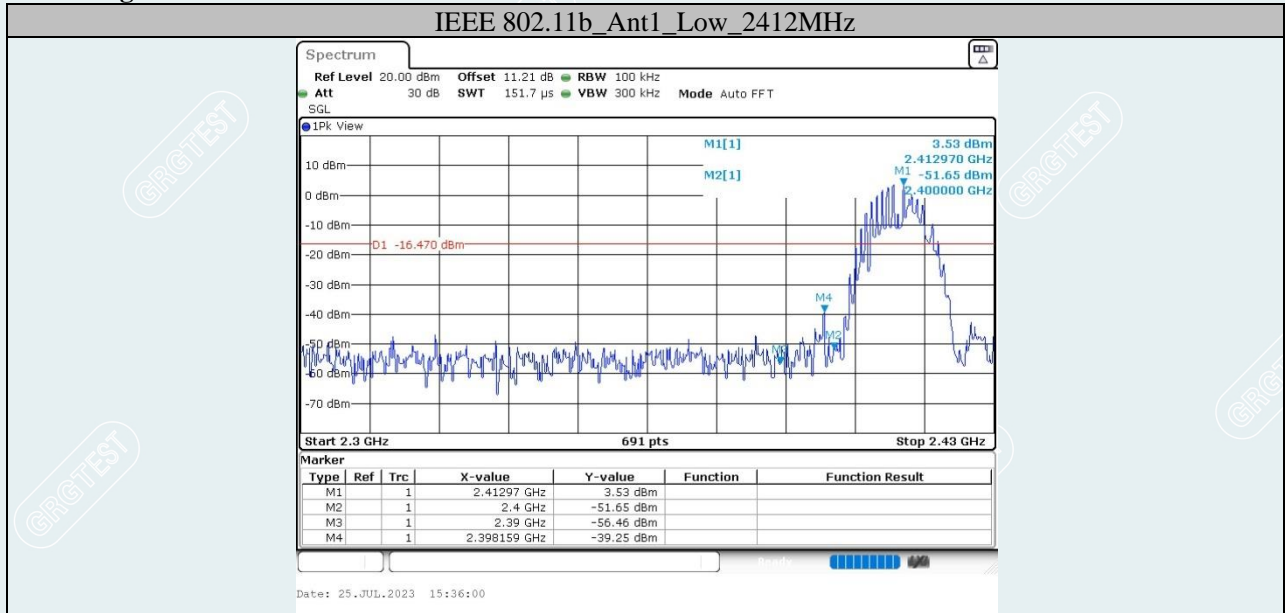
Voltage: AC 120V/60Hz  
 Date: 2023-07-25~2023-07-28

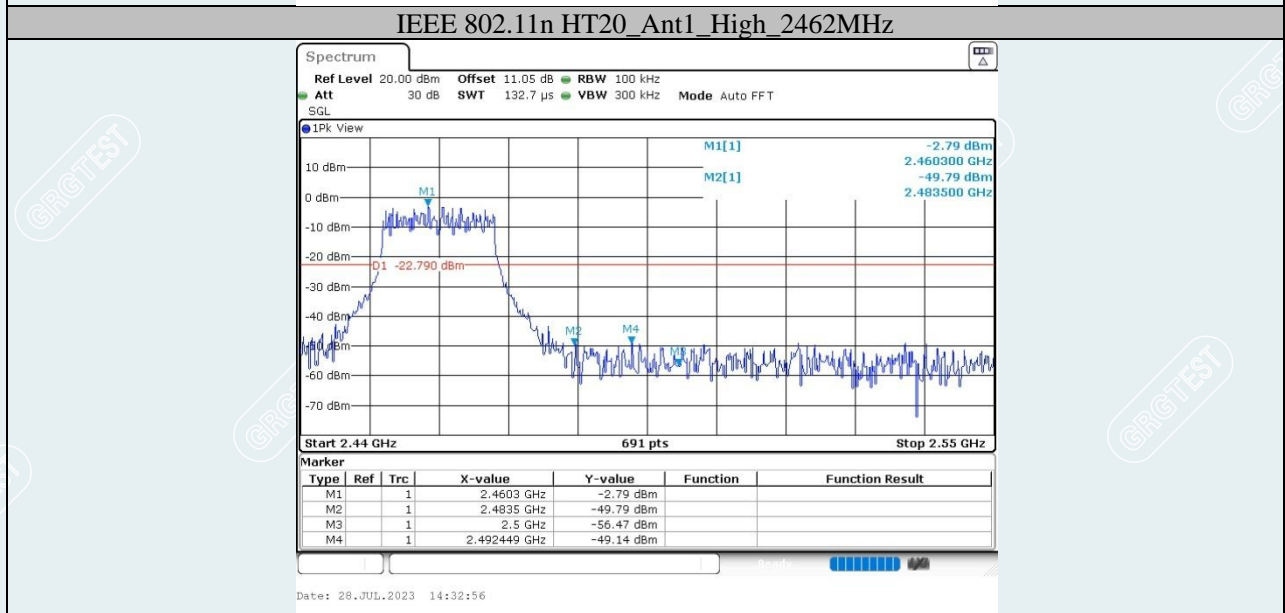
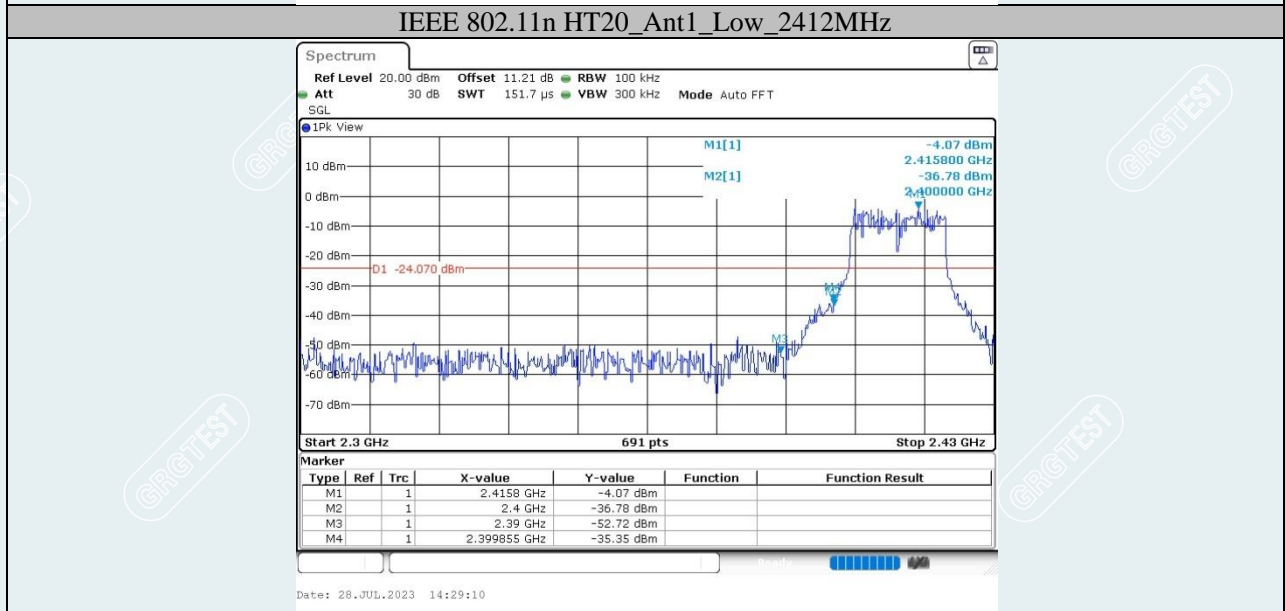
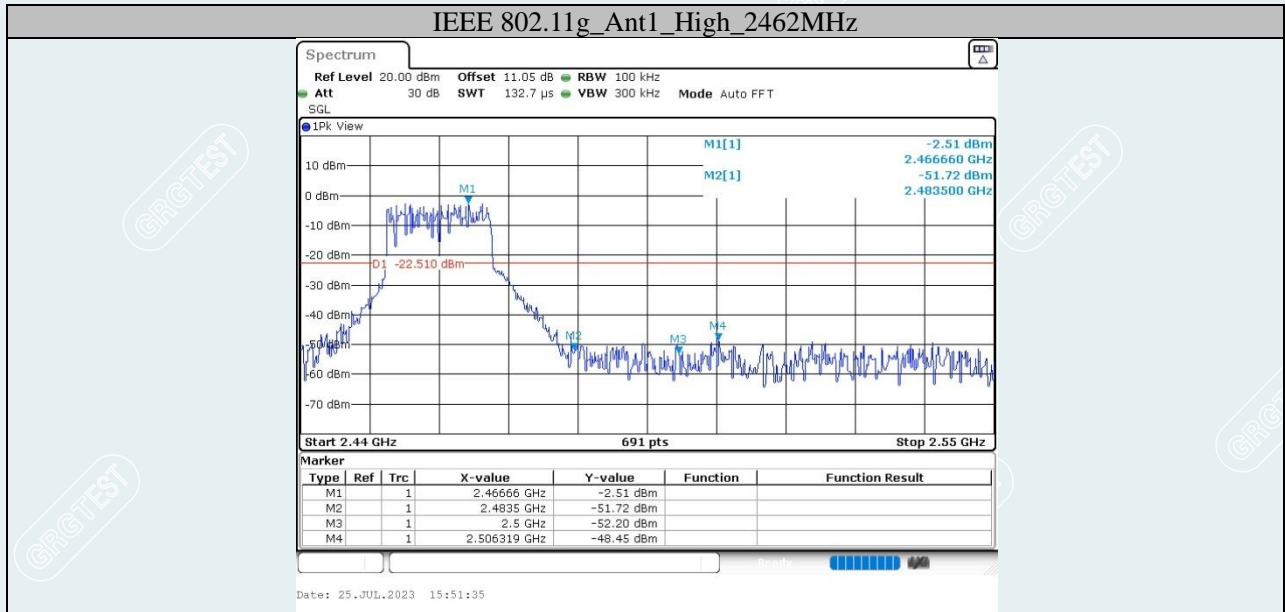
**Band edge**

Test Mode	Antenna	Ch Name	Frequency [MHz]	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
IEEE 802.11b	Ant1	Low	2412	3.53	-39.25	≤-16.47	PASS
		High	2462	2.13	-47.77	≤-17.87	PASS
IEEE 802.11g	Ant1	Low	2412	-2.87	-36.07	≤-22.87	PASS
		High	2462	-2.51	-48.45	≤-22.51	PASS
IEEE 802.11n HT20	Ant1	Low	2412	-4.07	-35.35	≤-24.07	PASS
		High	2462	-2.79	-49.14	≤-22.79	PASS
IEEE 802.11n HT40	Ant1	Low	2422	-5.49	-35.79	≤-25.49	PASS
		High	2452	-5.31	-47.42	≤-25.31	PASS
IEEE 802.11ax HE20	Ant1	Low	2412	-8.39	-43.56	≤-28.39	PASS
		High	2462	-5.54	-46.23	≤-25.54	PASS
IEEE 802.11ax HE40	Ant1	Low	2422	-8.41	-44.4	≤-28.41	PASS
		High	2452	-10.23	-48.11	≤-30.23	PASS

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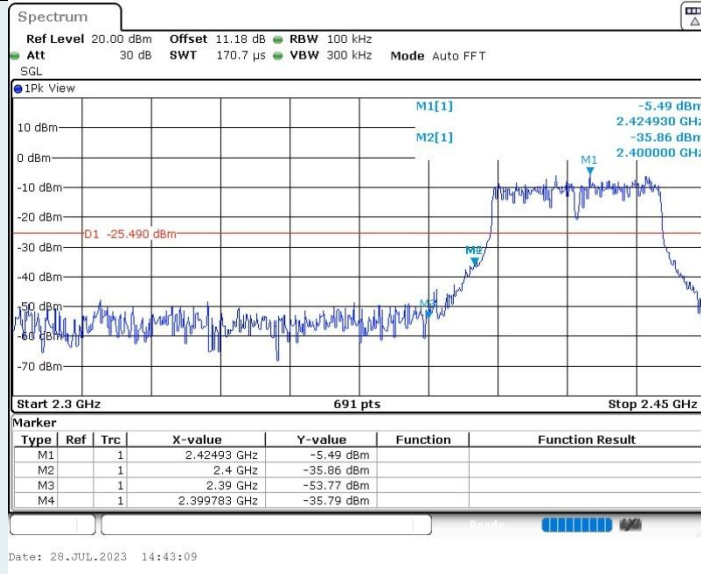
**Band edge**



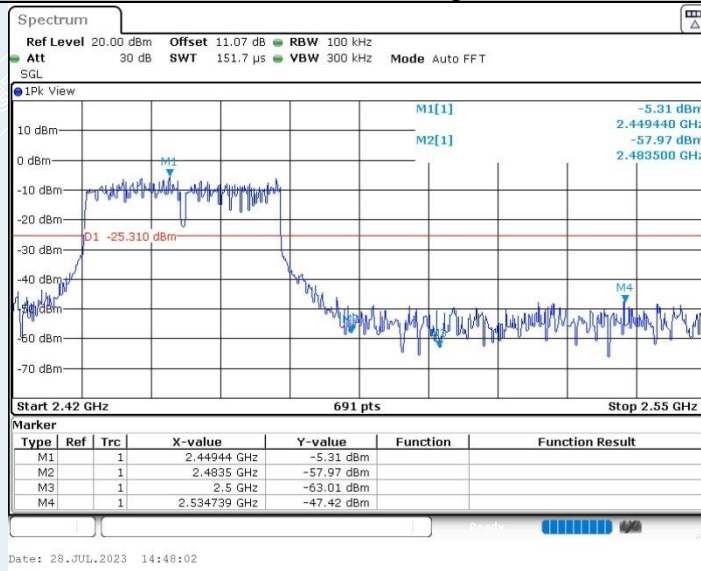




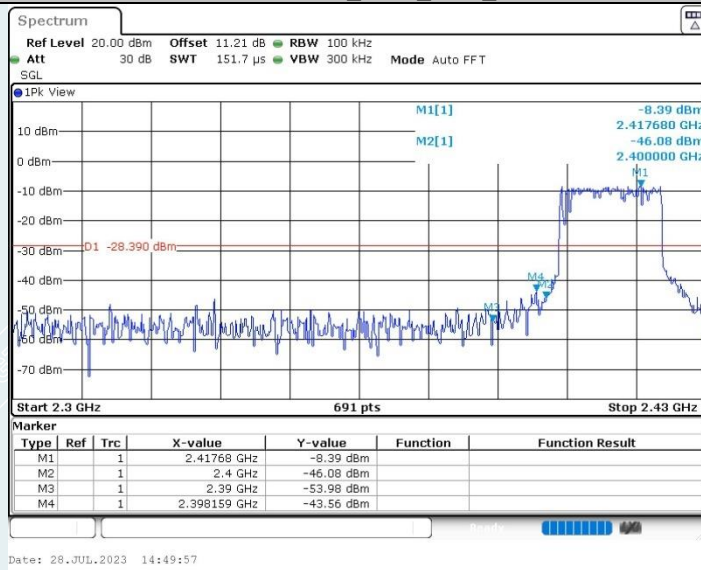
IEEE 802.11n HT40\_Ant1\_Low\_2422MHz



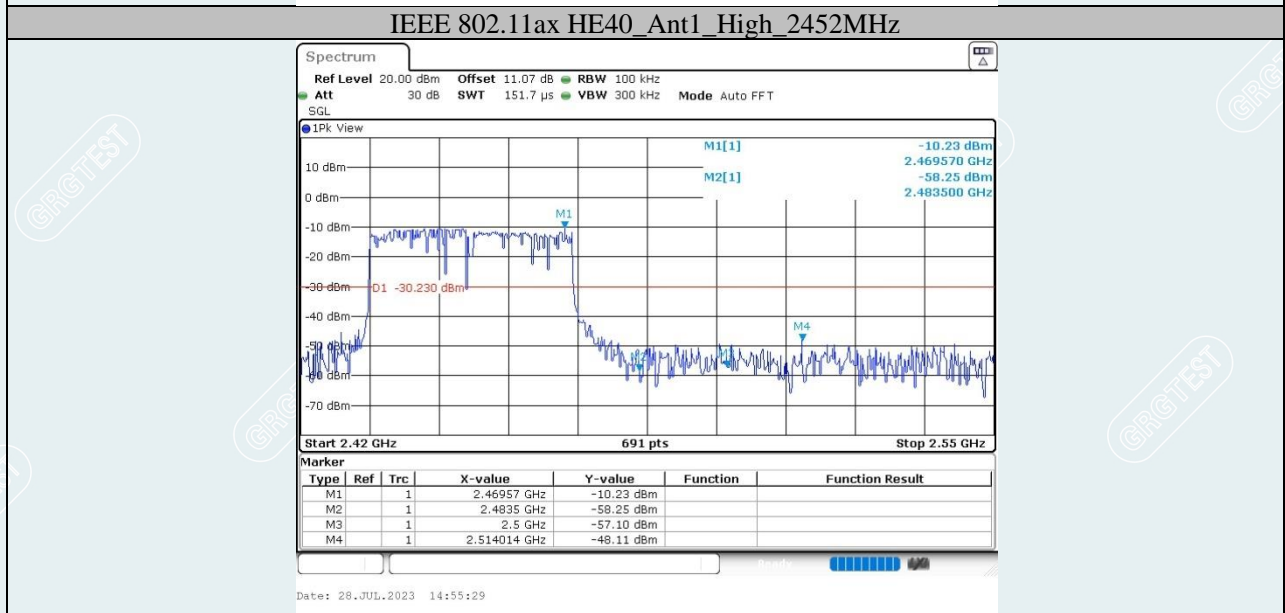
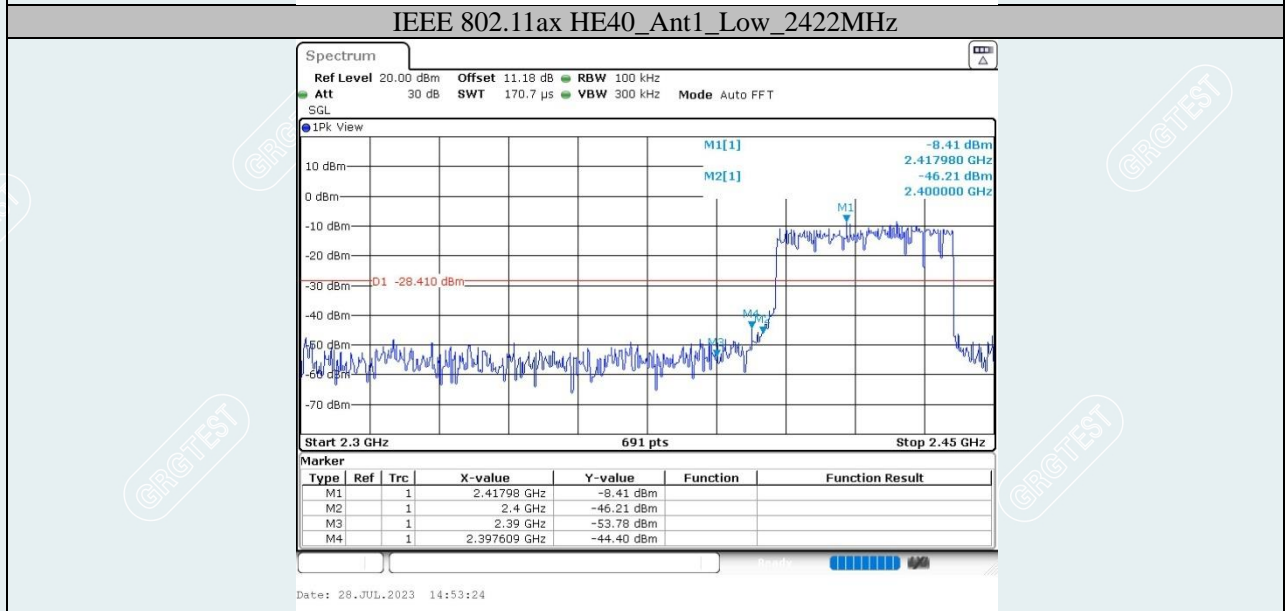
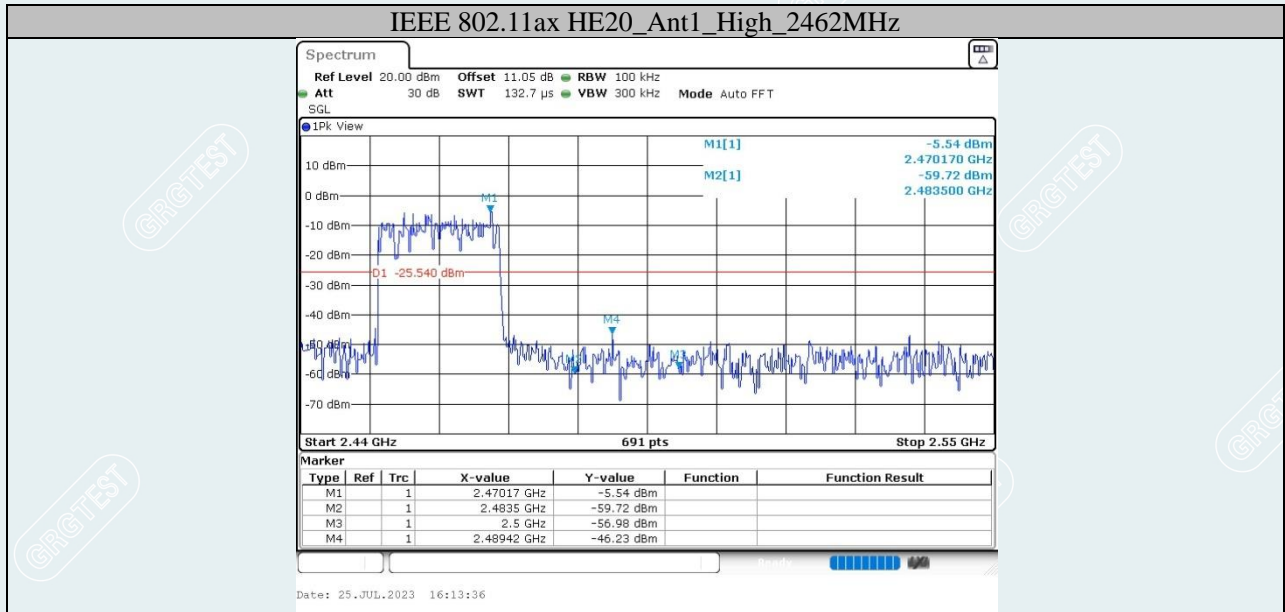
IEEE 802.11n HT40\_Ant1\_High\_2452MHz



IEEE 802.11ax HE20\_Ant1\_Low\_2412MHz







**Conducted Spurious Emission**

Test Mode	Antenna	Frequency [MHz]	Freq Range [MHz]	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
IEEE 802.11b	Ant1	2412	Reference	4.92	4.92	---	PASS
			30~1000	4.92	-56.04	≤-15.08	PASS
			1000~26500	4.92	-40.84	≤-15.08	PASS
		2437	Reference	4.96	4.96	---	PASS
			30~1000	4.96	-55.56	≤-15.04	PASS
			1000~26500	4.96	-41.81	≤-15.04	PASS
		2462	Reference	2.83	2.83	---	PASS
			30~1000	2.83	-55.81	≤-17.17	PASS
			1000~26500	2.83	-41.89	≤-17.17	PASS
IEEE 802.11g	Ant1	2412	Reference	-2.48	-2.48	---	PASS
			30~1000	-2.48	-54.93	≤-22.48	PASS
			1000~26500	-2.48	-41.2	≤-22.48	PASS
		2437	Reference	-1.45	-1.45	---	PASS
			30~1000	-1.45	-55.77	≤-21.45	PASS
			1000~26500	-1.45	-41.56	≤-21.45	PASS
		2462	Reference	-1.38	-1.38	---	PASS
			30~1000	-1.38	-55.48	≤-21.38	PASS
			1000~26500	-1.38	-40.9	≤-21.38	PASS
IEEE 802.11n HT20	Ant1	2412	Reference	-3.03	-3.03	---	PASS
			30~1000	-3.03	-56.19	≤-23.03	PASS
			1000~26500	-3.03	-41.2	≤-23.03	PASS
		2437	Reference	-2.58	-2.58	---	PASS
			30~1000	-2.58	-55.45	≤-22.58	PASS
			1000~26500	-2.58	-41.51	≤-22.58	PASS
		2462	Reference	-1.35	-1.35	---	PASS
			30~1000	-1.35	-54.98	≤-21.35	PASS
			1000~26500	-1.35	-41.81	≤-21.35	PASS
IEEE 802.11n HT40	Ant1	2422	Reference	-5.91	-5.91	---	PASS
			30~1000	-5.91	-56.13	≤-25.91	PASS
			1000~26500	-5.91	-41.56	≤-25.91	PASS
		2437	Reference	-5.33	-5.33	---	PASS
			30~1000	-5.33	-55.77	≤-25.33	PASS
			1000~26500	-5.33	-41.44	≤-25.33	PASS
		2452	Reference	-3.91	-3.91	---	PASS
			30~1000	-3.91	-56.4	≤-23.91	PASS
			1000~26500	-3.91	-42.29	≤-23.91	PASS
IEEE 802.11ax HE20	Ant1	2412	Reference	-2.79	-2.79	---	PASS
			30~1000	-2.79	-56.09	≤-22.79	PASS
			1000~26500	-2.79	-41.9	≤-22.79	PASS
		2437	Reference	-5.04	-5.04	---	PASS
			30~1000	-5.04	-55.56	≤-25.04	PASS
			1000~26500	-5.04	-41.63	≤-25.04	PASS
		2462	Reference	-4.76	-4.76	---	PASS
			30~1000	-4.76	-56	≤-24.76	PASS
			1000~26500	-4.76	-41.95	≤-24.76	PASS
IEEE 802.11ax HE40	Ant1	2422	Reference	-4.66	-4.66	---	PASS
			30~1000	-4.66	-55	≤-24.66	PASS
			1000~26500	-4.66	-41.12	≤-24.66	PASS
		2437	Reference	-8.27	-8.27	---	PASS
			30~1000	-8.27	-55.75	≤-28.27	PASS
			1000~26500	-8.27	-41.4	≤-28.27	PASS
		2452	Reference	-5.88	-5.88	---	PASS
			30~1000	-5.88	-55.49	≤-25.88	PASS
			1000~26500	-5.88	-41.21	≤-25.88	PASS

### Conducted Spurious Emission

