



5. POWER SPECTRAL DENSITY TEST

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	= the frequency band of operation
RB	$RBW \geq 3kHz$
VB	$VBW \geq 3RBW$
Detector	power averaging (rms) or sample detector (when rms not available).
Trace	rms/average
Sweep Time	Auto

5.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

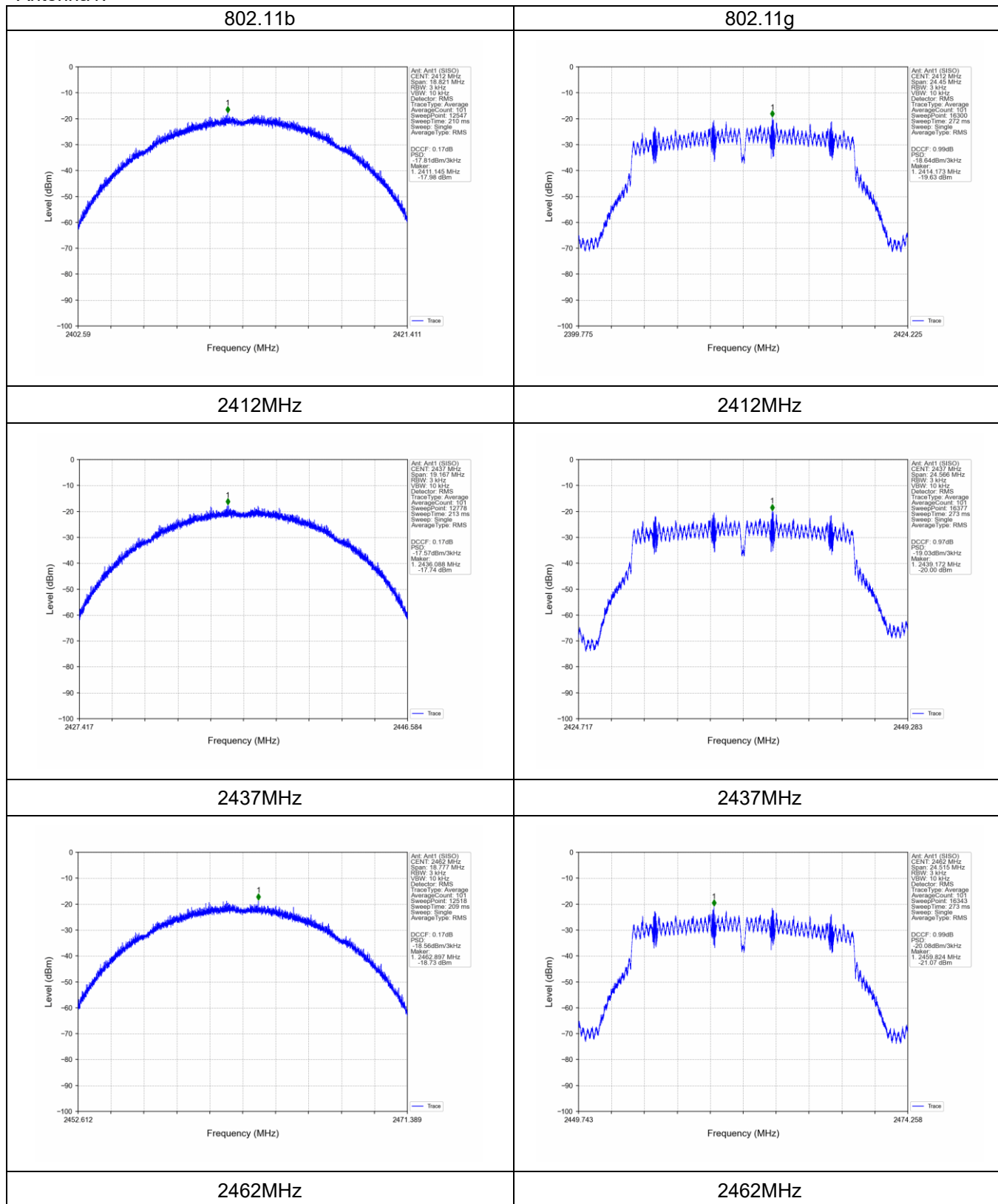
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

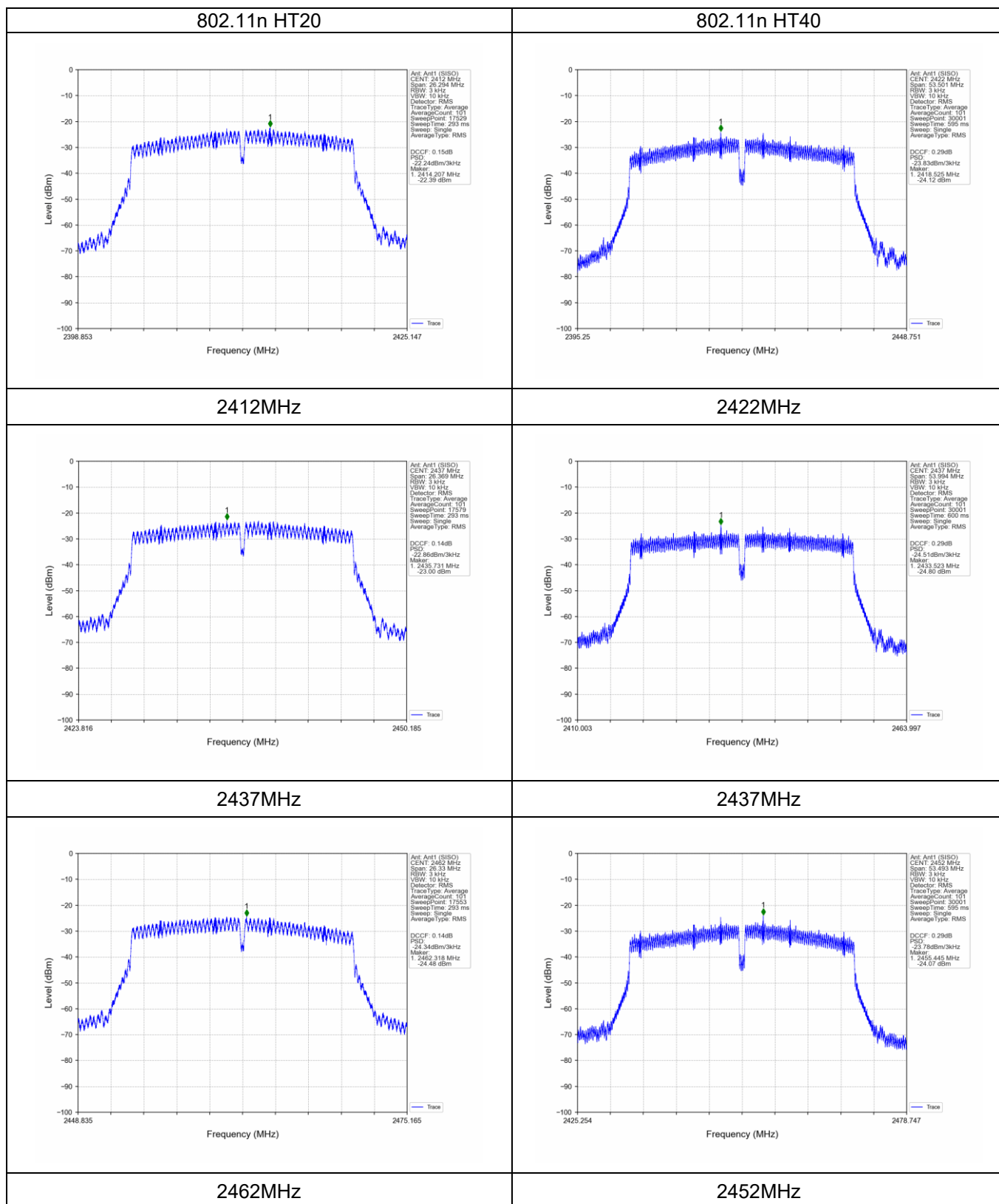
**5.1.5 TEST RESULTS**

	Test Channel	Reading Level (dBm/3kHz)		ANT1&ANT2 MIMO Power Spectral Density (dBm/3KHz)	Limit (dBm)	Result
		ANT1	ANT2			
802.11b	Low	-17.81	-21.48	/	<8	PASS
	Middle	-17.57	-21.27	/	<8	PASS
	High	-18.56	-22.71	/	<8	PASS
802.11g	Low	-18.64	-19.49	/	<8	PASS
	Middle	-19.03	-19.88	/	<8	PASS
	High	-20.08	-21.36	/	<8	PASS
802.11n (20MHz)	Low	-22.24	-22.79	-19.50	<8	PASS
	Middle	-22.86	-23.02	-19.93	<8	PASS
	High	-24.34	-24.67	-21.49	<8	PASS
802.11n (40MHz)	Low	-23.83	-23.10	-20.44	<8	PASS
	Middle	-24.51	-24.86	-21.67	<8	PASS
	High	-23.78	-26.87	-22.05	<8	PASS



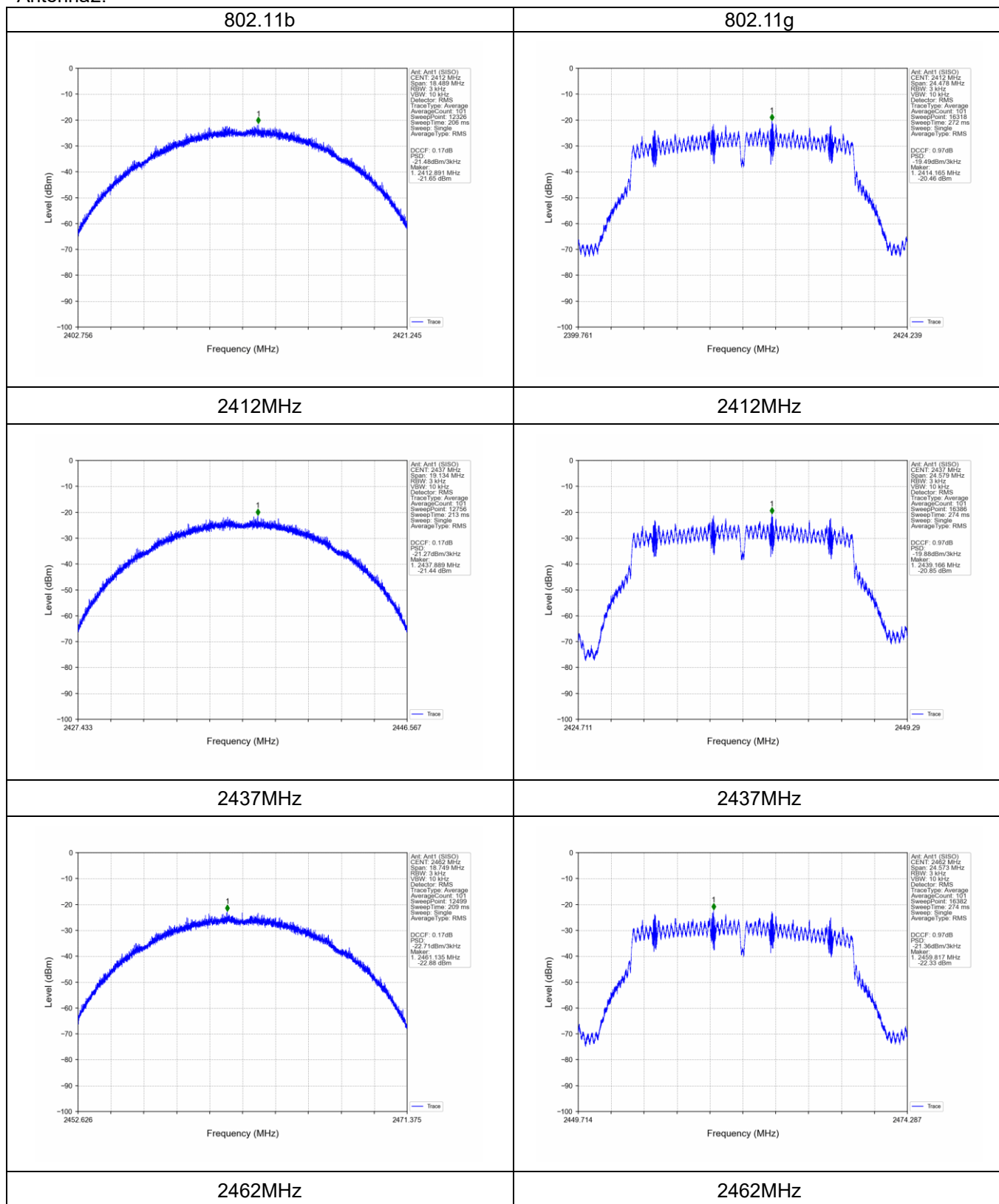
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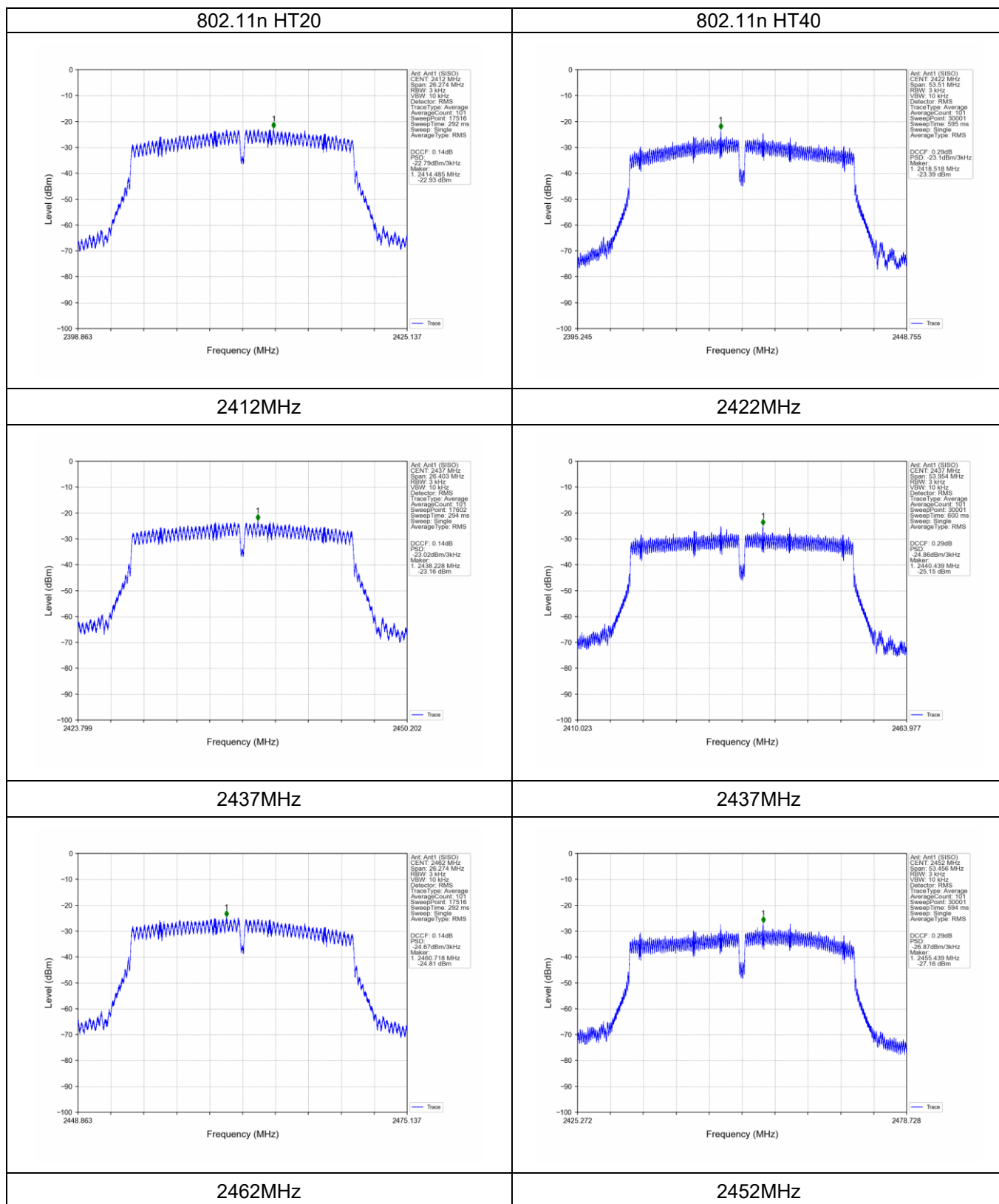






Antenna2:







6. 6DB BANDWIDTH TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range(MHz)	Result
15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

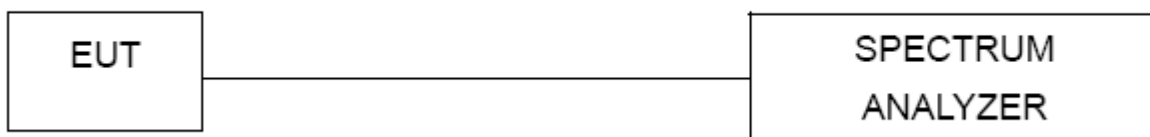
6.1.1 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) $\geq$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

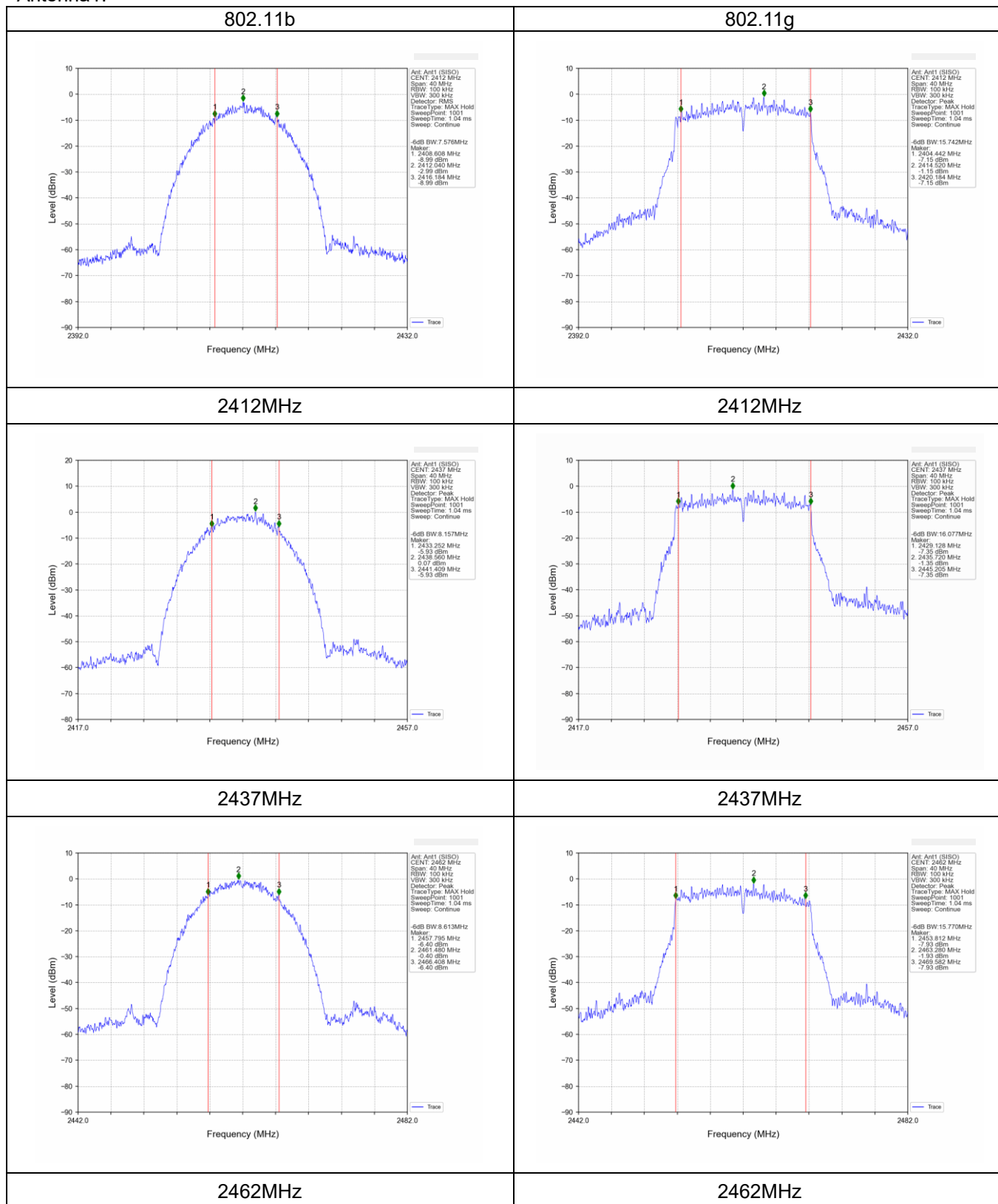
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

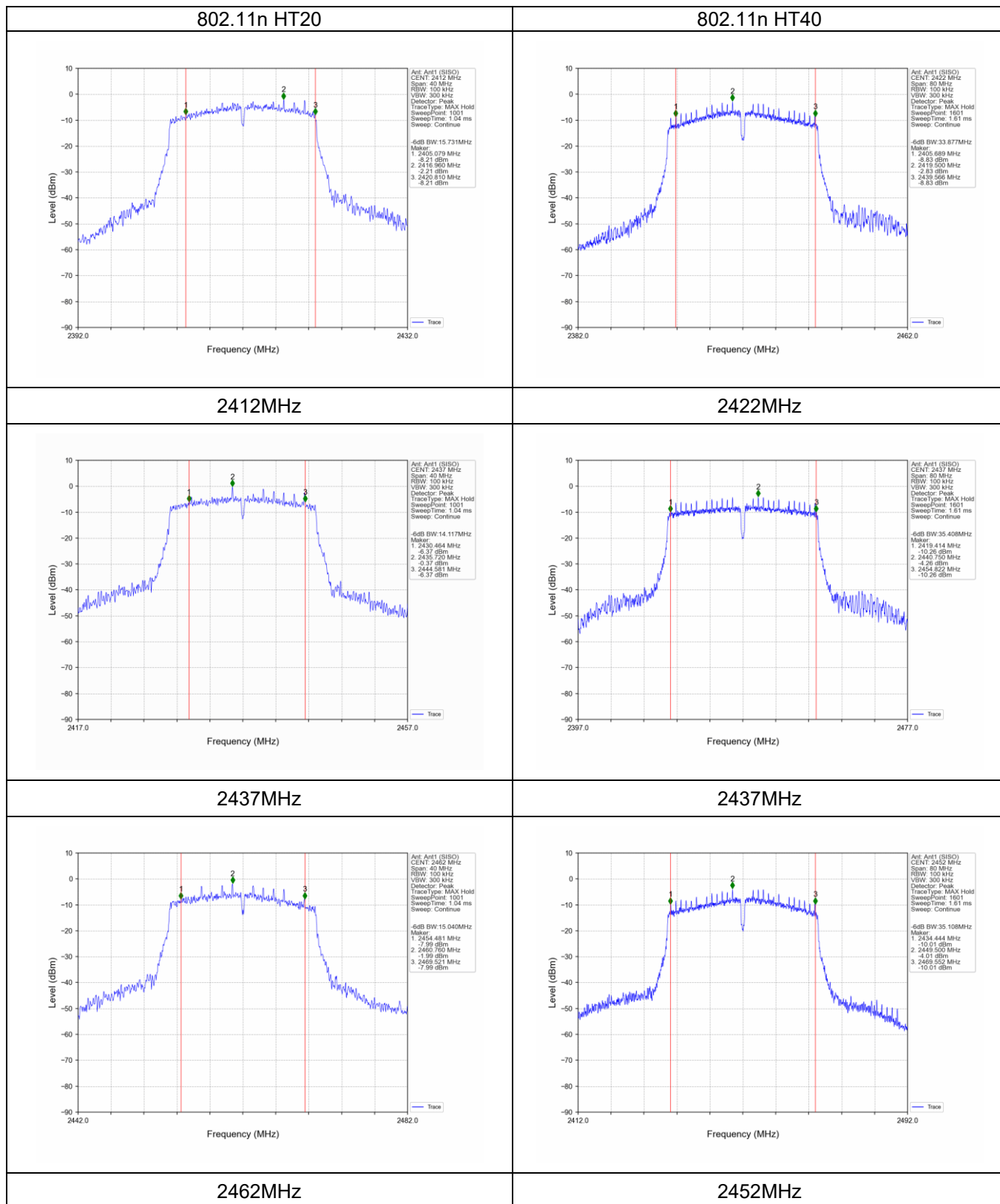
**6.1.5 TEST RESULTS**

Test Channel		6dB Bandwidth(MHz)		Limit(MHz)	Result
		Ant1	Ant2		
802.11b	Low	7.576	7.811	0.5	Pass
	Middle	8.157	8.183		
	High	8.613	7.321		
802.11g	Low	15.742	15.710		
	Middle	16.077	15.749		
	High	15.770	15.785		
802.11n (20MHz)	Low	15.731	13.195		
	Middle	14.117	15.169		
	High	15.040	14.822		
802.11n (40MHz)	Low	33.877	33.871		
	Middle	35.408	35.201		
	High	35.108	35.060		



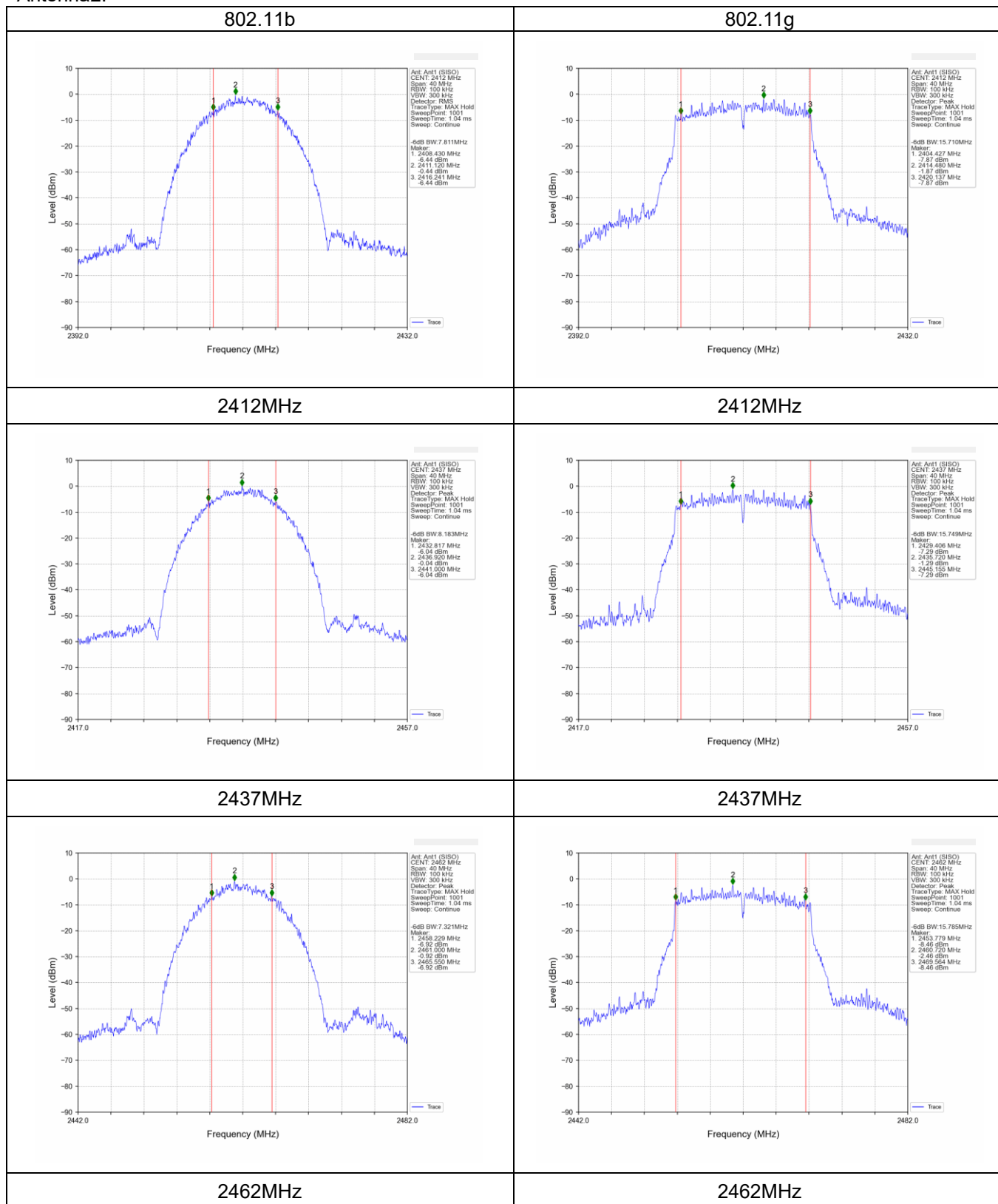
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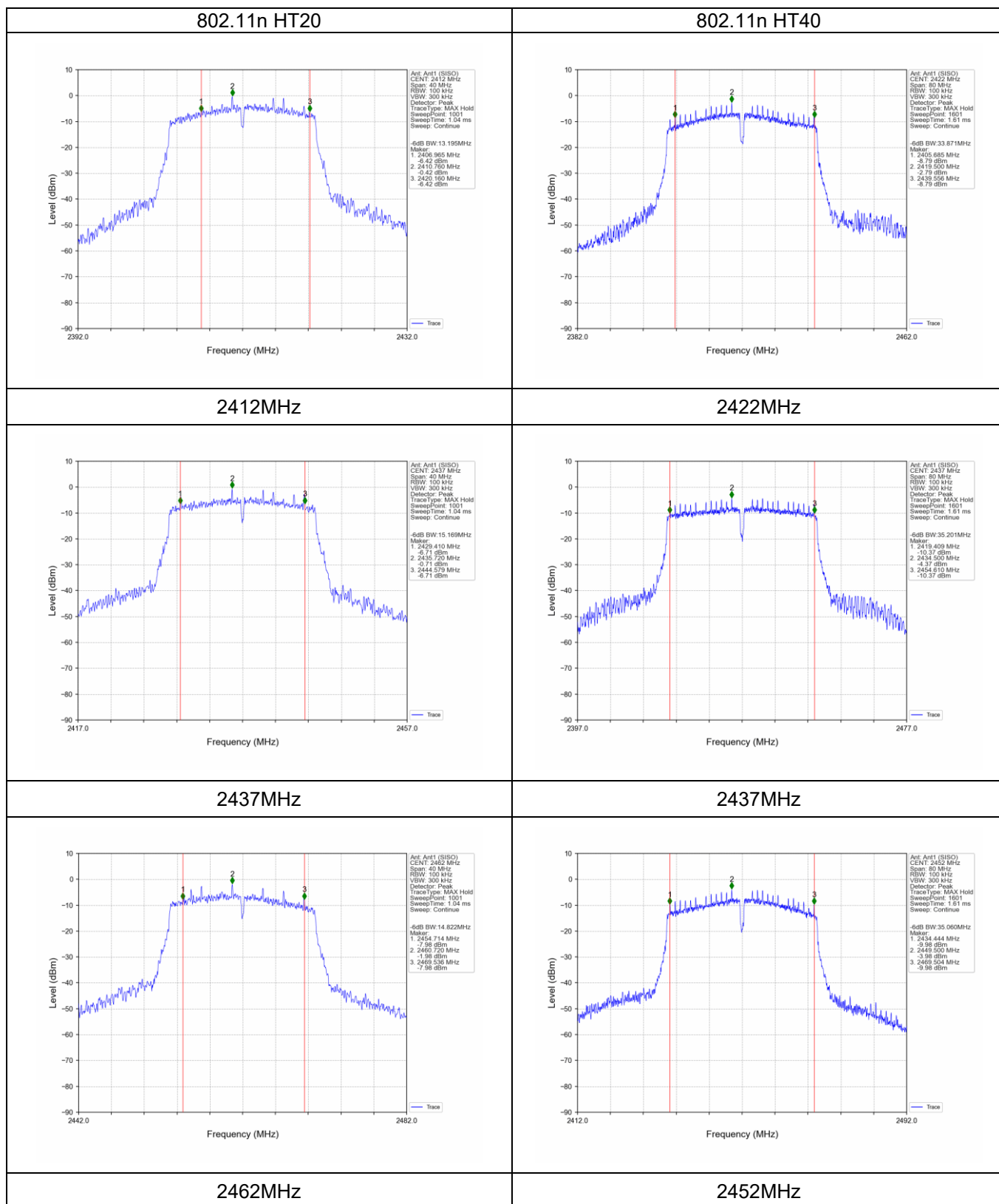






Antenna2:



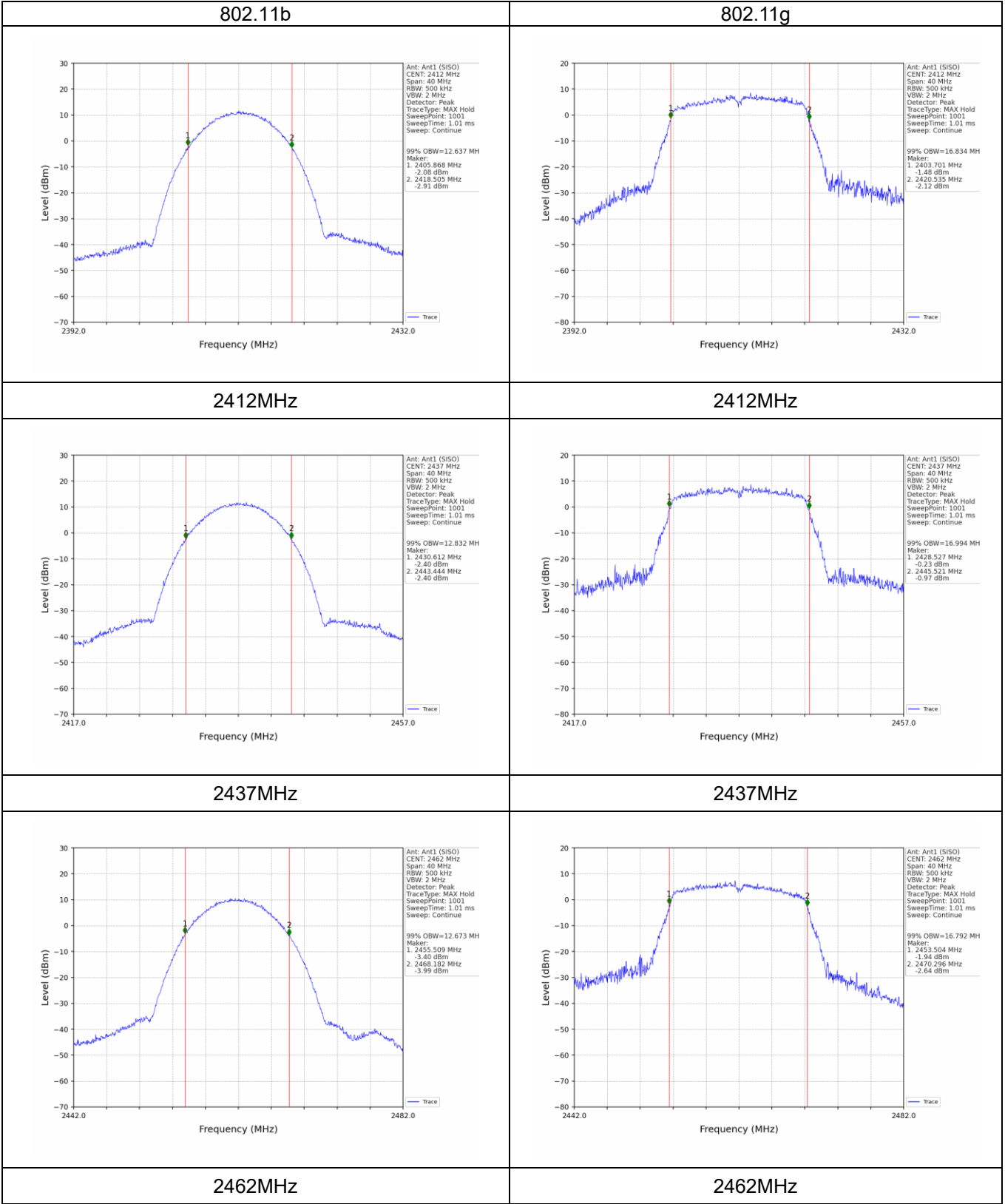


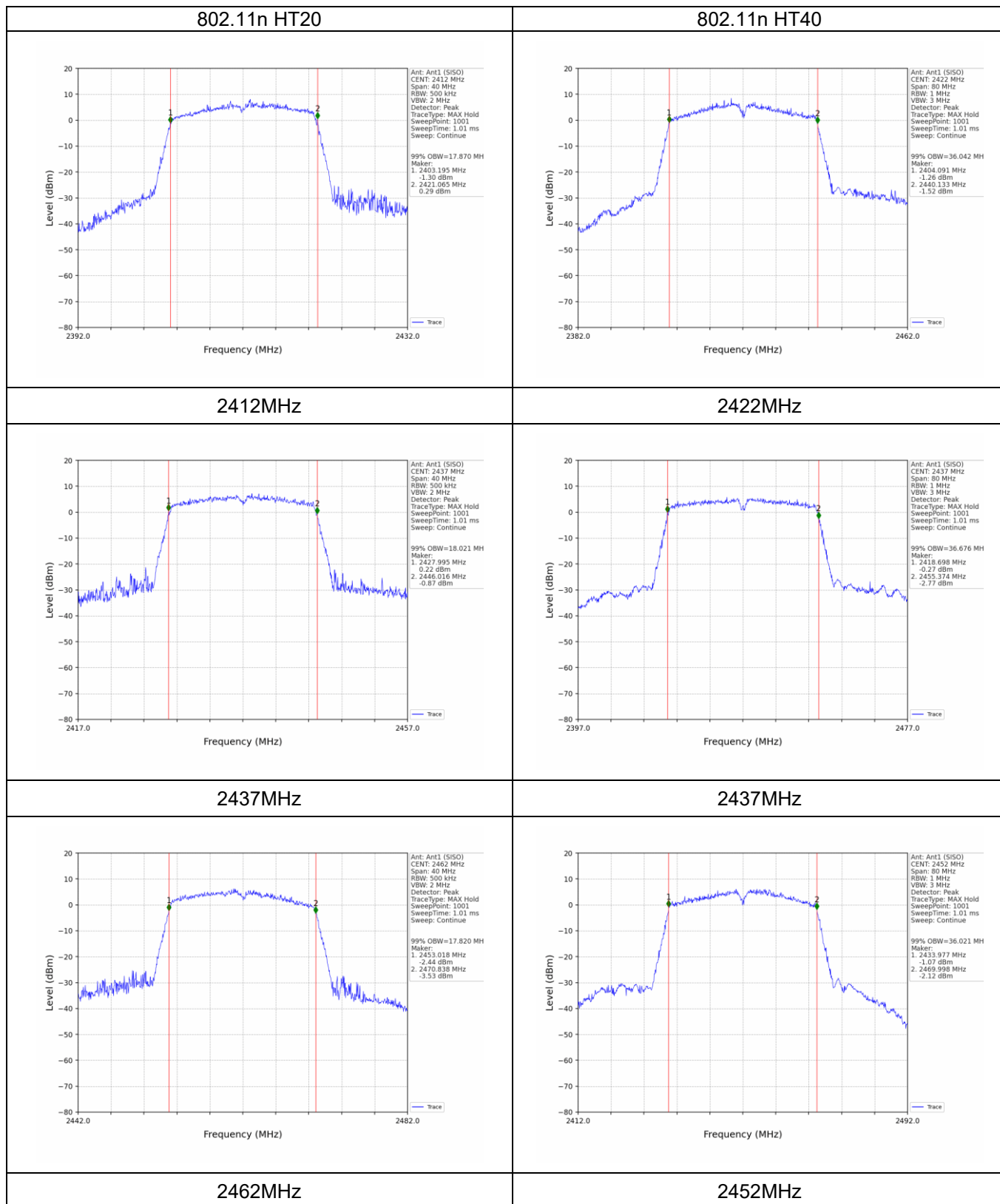


Test Channel		99% OBW (MHz)	
		Ant1	Ant2
802.11b	Low	12.637	12.607
	Middle	12.832	12.886
	High	12.673	12.747
802.11g	Low	16.834	16.854
	Middle	16.994	16.933
	High	16.792	16.850
802.11n (20MHz)	Low	17.870	17.857
	Middle	18.021	17.982
	High	17.820	17.888
802.11n (40MHz)	Low	36.042	36.129
	Middle	36.676	36.748
	High	36.021	36.064



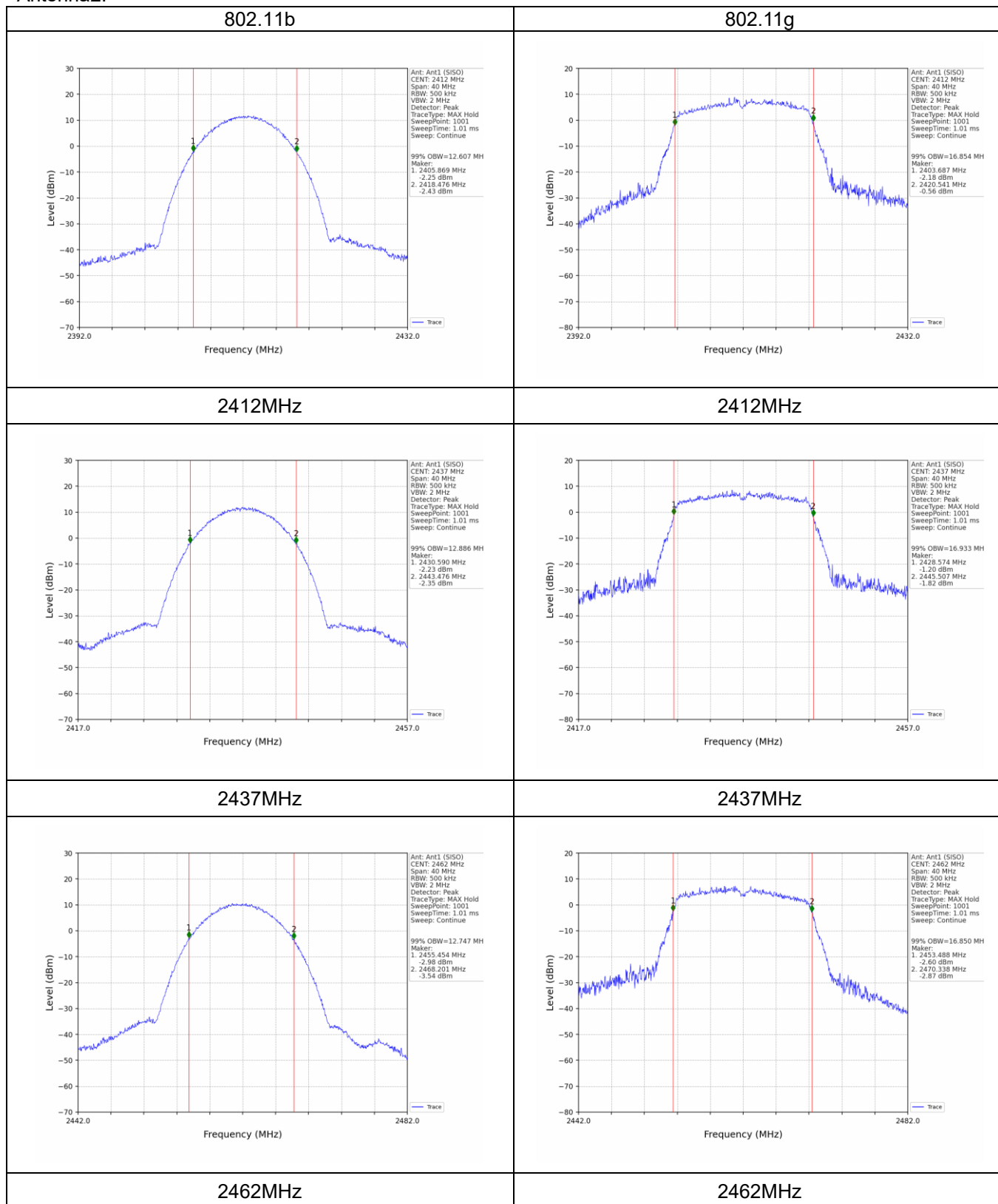
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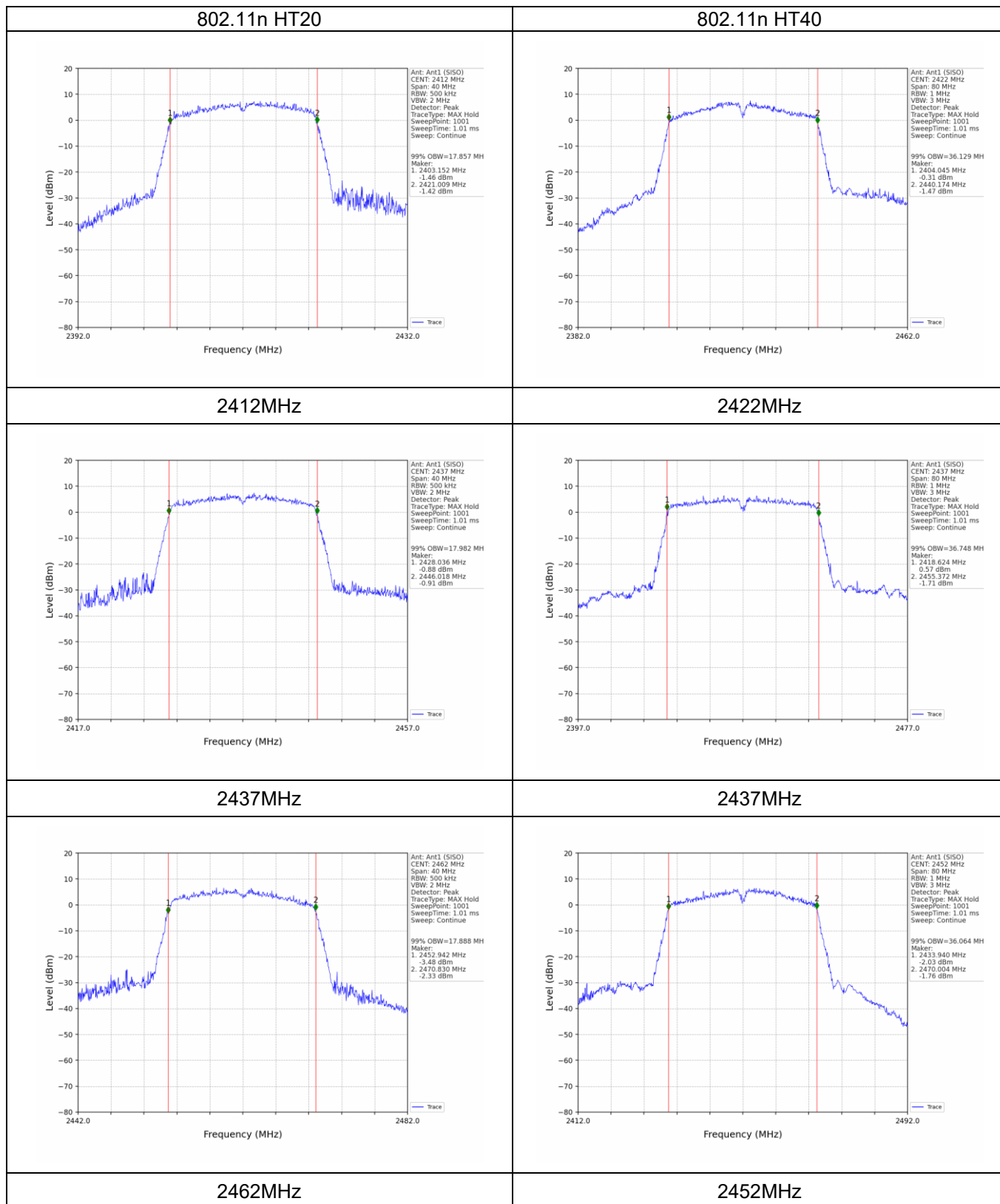






Antenna2:







7. DUTY CYCLE TEST SIGNAL

7.1 APPLIED PROCEDURES / LIMIT

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle. All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

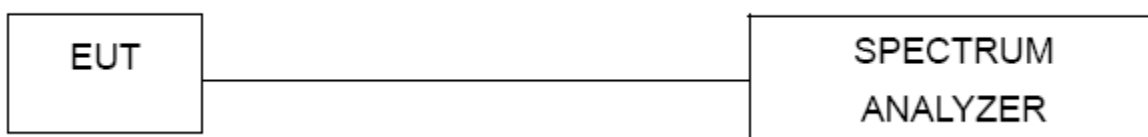
7.1.1 TEST PROCEDURE

1. Set RBW = 10 MHz.
2. Set the video bandwidth (VBW) $\geq$ RBW.
3. Detector = Peak.
4. Sweep = auto couple.
5. Allow the trace to stabilize.
6. Span=0

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

**7.1.5 TEST RESULTS**

ANT1:

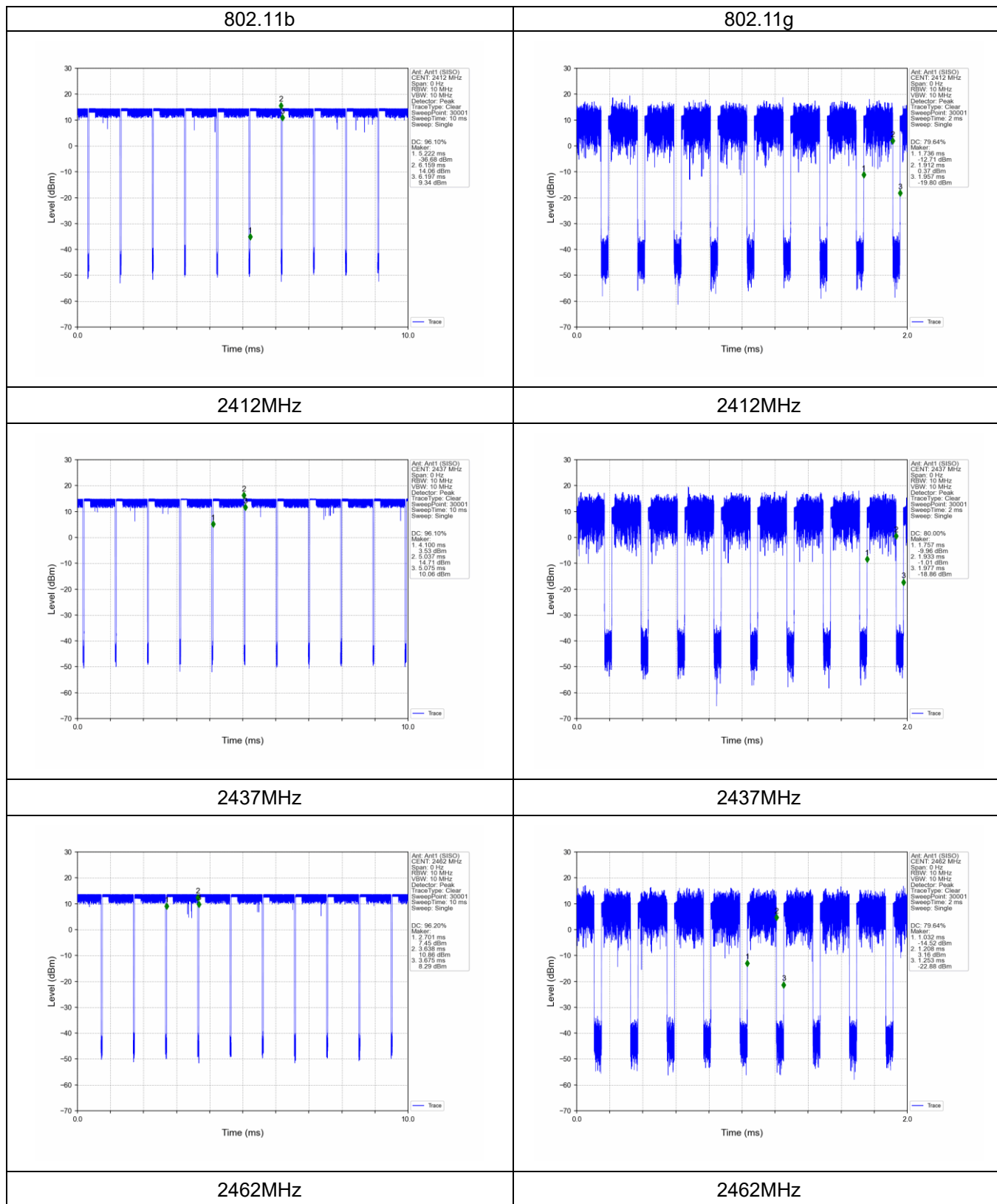
Mode	Test Channel	Duty Cycle(%)	Duty Fator (dB) 10 * log (1/ Duty cycle)
802.11b	Low	96.10	0.17
	Middle	96.10	0.17
	High	96.20	0.17
802.11g	Low	79.64	0.99
	Middle	80.00	0.97
	High	79.64	0.99
802.11n HT20	Low	96.65	0.15
	Middle	96.73	0.14
	High	96.73	0.14
802.11n HT40	Low	93.64	0.29
	Middle	93.64	0.29
	High	93.64	0.29

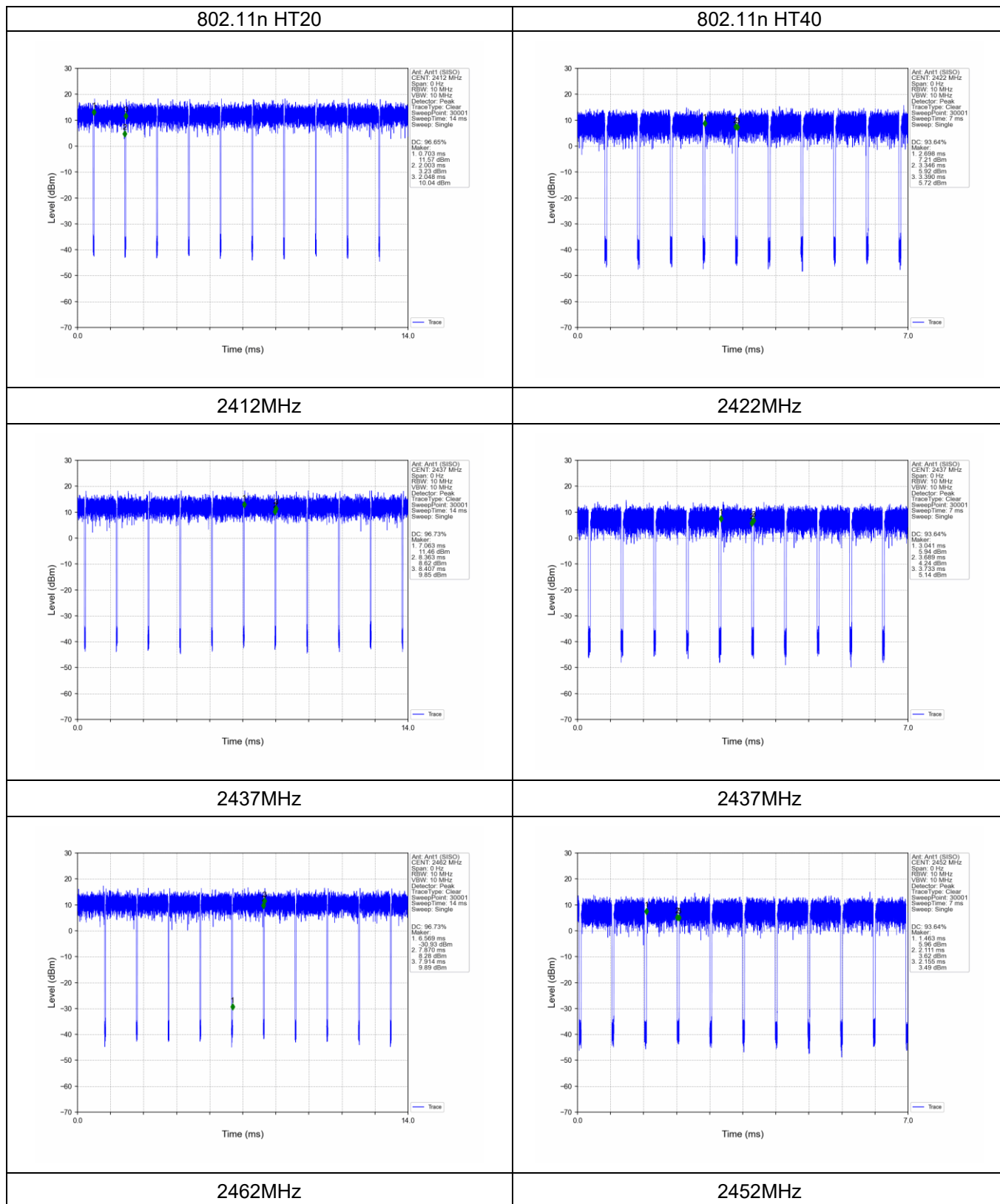
ANT2:

Mode	Test Channel	Duty Cycle(%)	Duty Fator (dB) 10 * log (1/ Duty cycle)
802.11b	Low	96.21	0.17
	Middle	96.21	0.17
	High	96.21	0.17
802.11g	Low	80.00	0.97
	Middle	80.00	0.97
	High	80.00	0.97
802.11n HT20	Low	96.73	0.14
	Middle	96.73	0.14
	High	96.73	0.14
802.11n HT40	Low	93.64	0.29
	Middle	93.64	0.29
	High	93.64	0.29



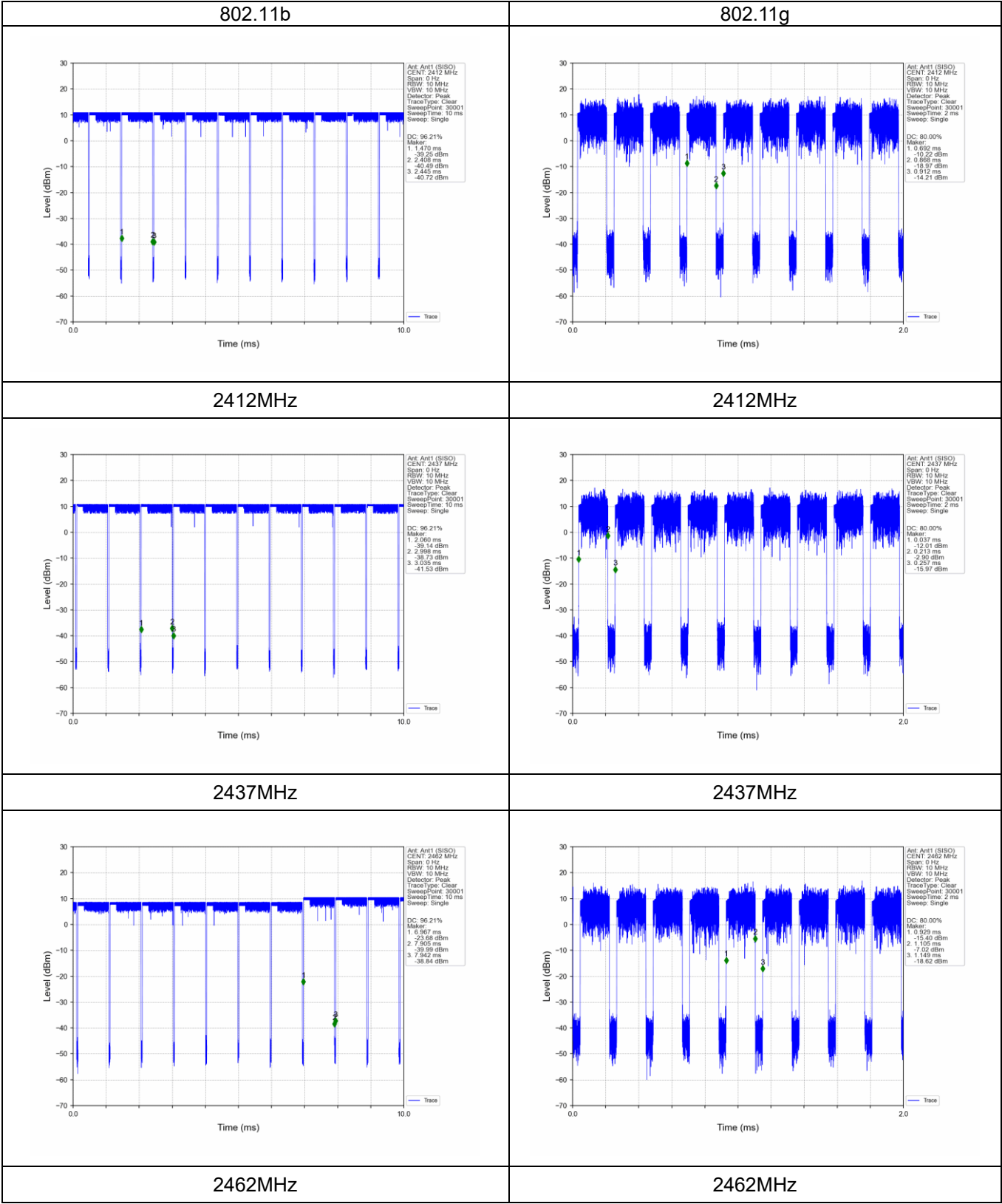
ANT1:

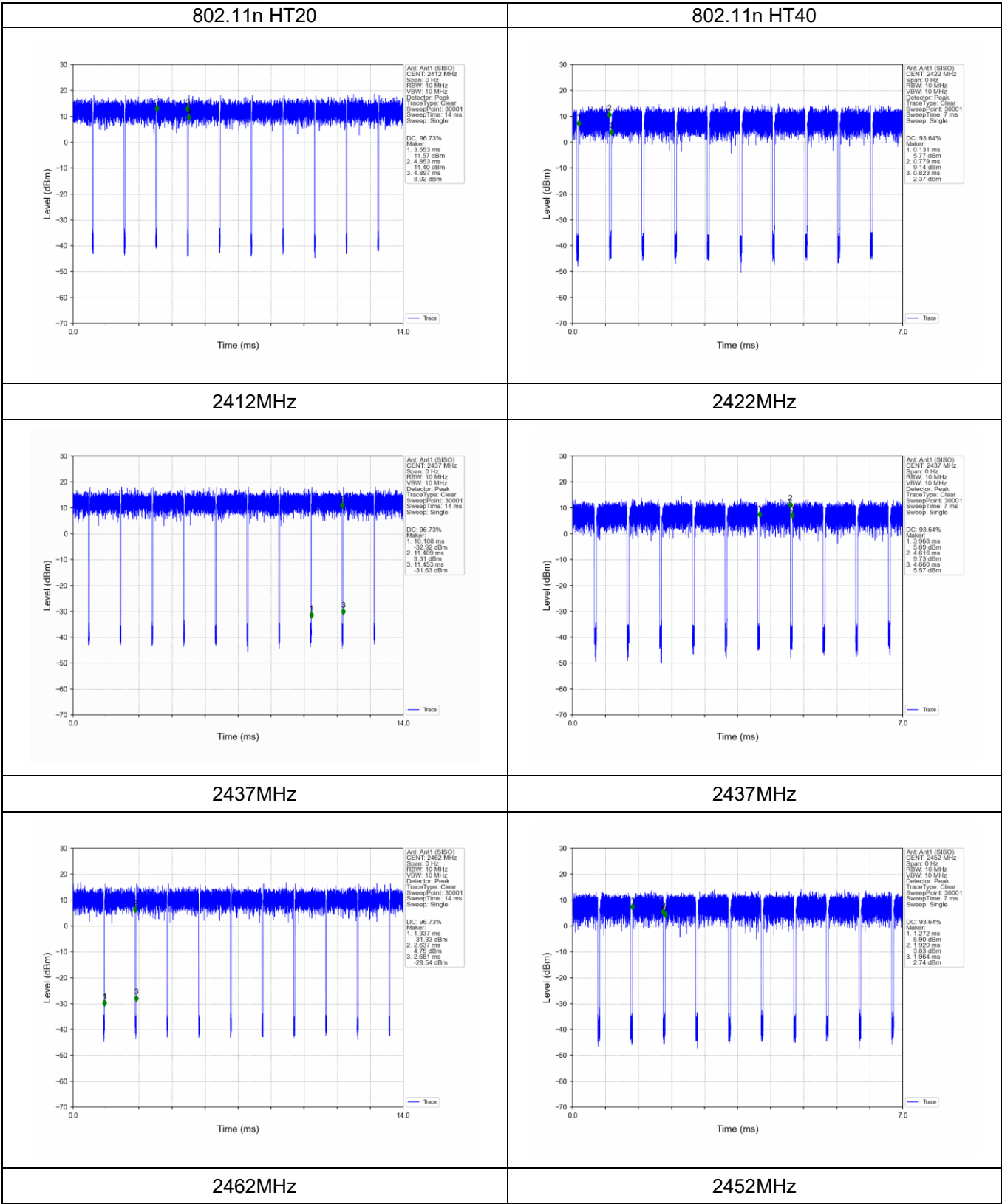






ANT2:







8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

8.2 EUT ANTENNA

The EUT antenna is FPC Antenna, It comply with the standard requirement.

9. TEST SEUUP PHOTO

Reference to the appendix I for details.

10. EUT PHOTO

Reference to the appendix II for details.

******* END OF REPORT *******