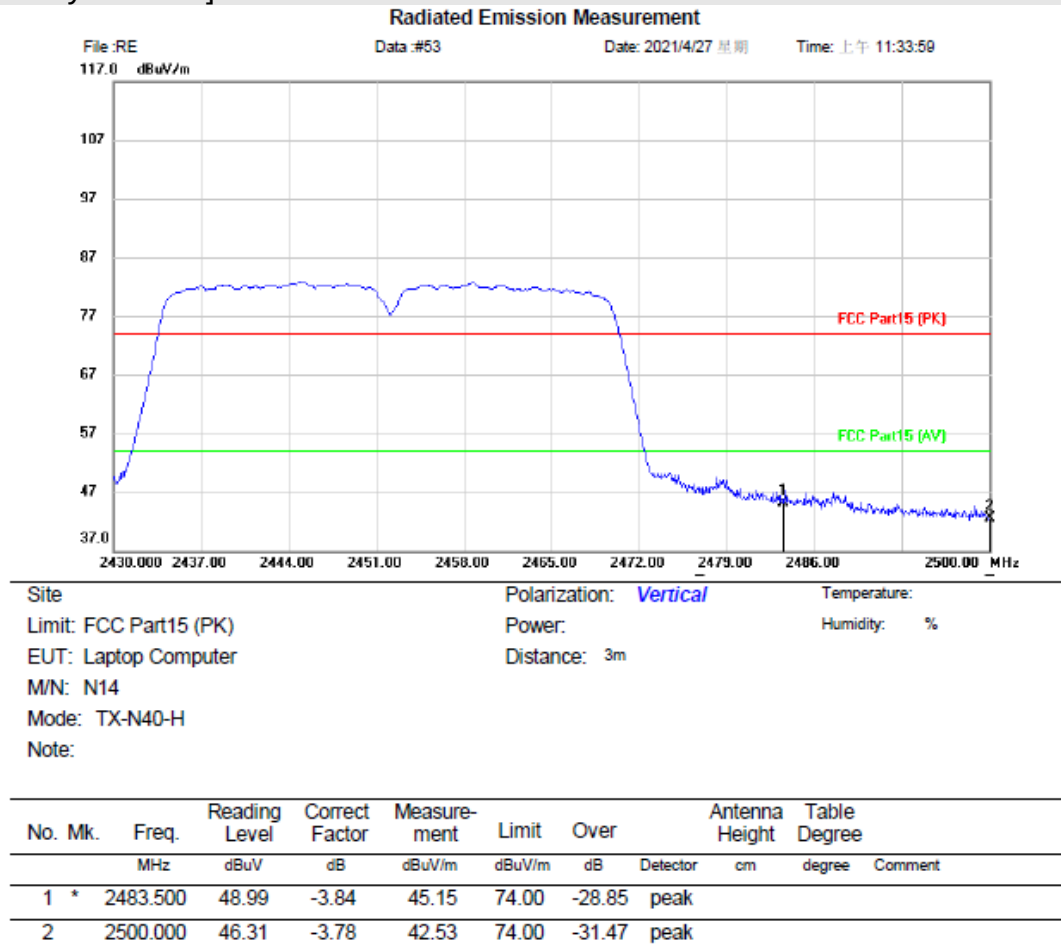


[Polarity: Vertical]



Test Result: Pass

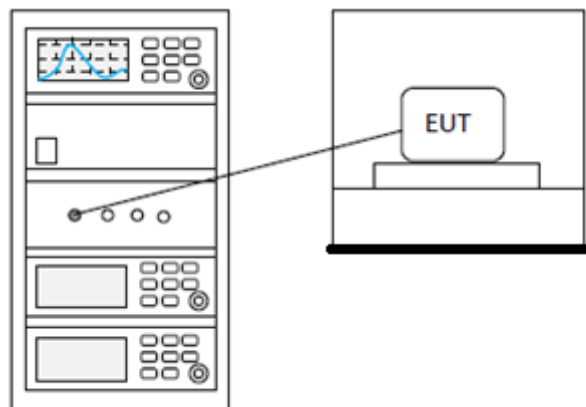
3 CONDUCTED PEAK OUTPUT POWER

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.5
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	22℃
Humidity	50%

3.1 LIMITS

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥ 50 hopping channels
	0.25 for $25 \leq \text{hopping channels} < 50$
	1 for digital modulation
2400-2483.5	1 for ≥ 75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

3.2 BLOCK DIAGRAM OF TEST SETUP



3.3 TEST DATA

Pass: Please Refer To Appendix: For Details

BlueAsia

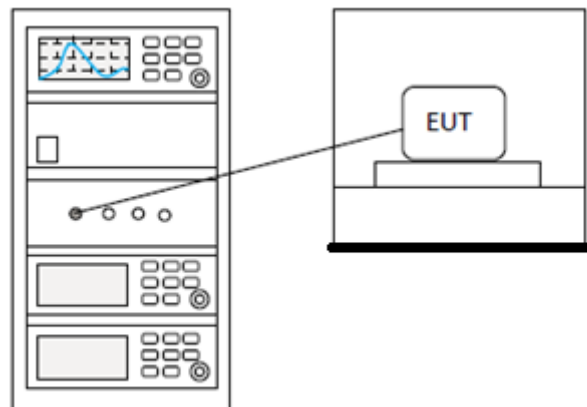
4 MINIMUM 6DB BANDWIDTH

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 11.8.1
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	22℃
Humidity	50%

4.1 LIMITS

Limit:	≥ 500 kHz
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4.2 BLOCK DIAGRAM OF TEST SETUP



4.3 TEST DATA

Pass: Please Refer To Appendix: For Details

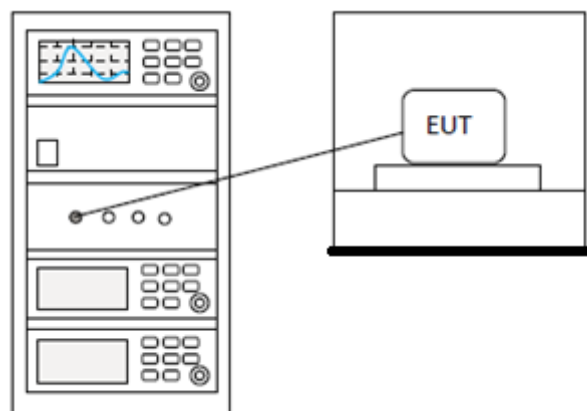
5 CONDUCTED SPURIOUS EMISSIONS

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.8
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	22°C
Humidity	50%

5.1 LIMITS

Limit:	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. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
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5.2 BLOCK DIAGRAM OF TEST SETUP



5.3 TEST DATA

Pass: Please Refer To Appendix: For Details

BlueAsia

6 CONDUCTED EMISSIONS AT AC POWER LINE (150KHZ-30MHZ)

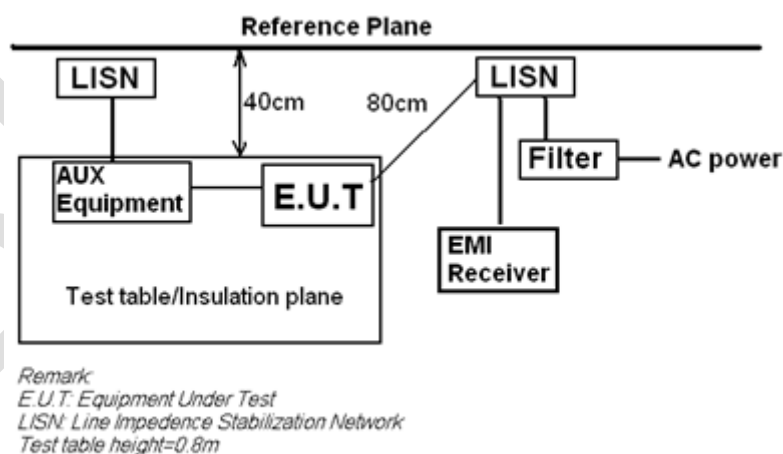
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	22℃
Humidity	50%

6.1 LIMITS

Frequency of emission(MHz)	Conducted limit(dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

6.2 BLOCK DIAGRAM OF TEST SETUP



6.3 PROCEDURE

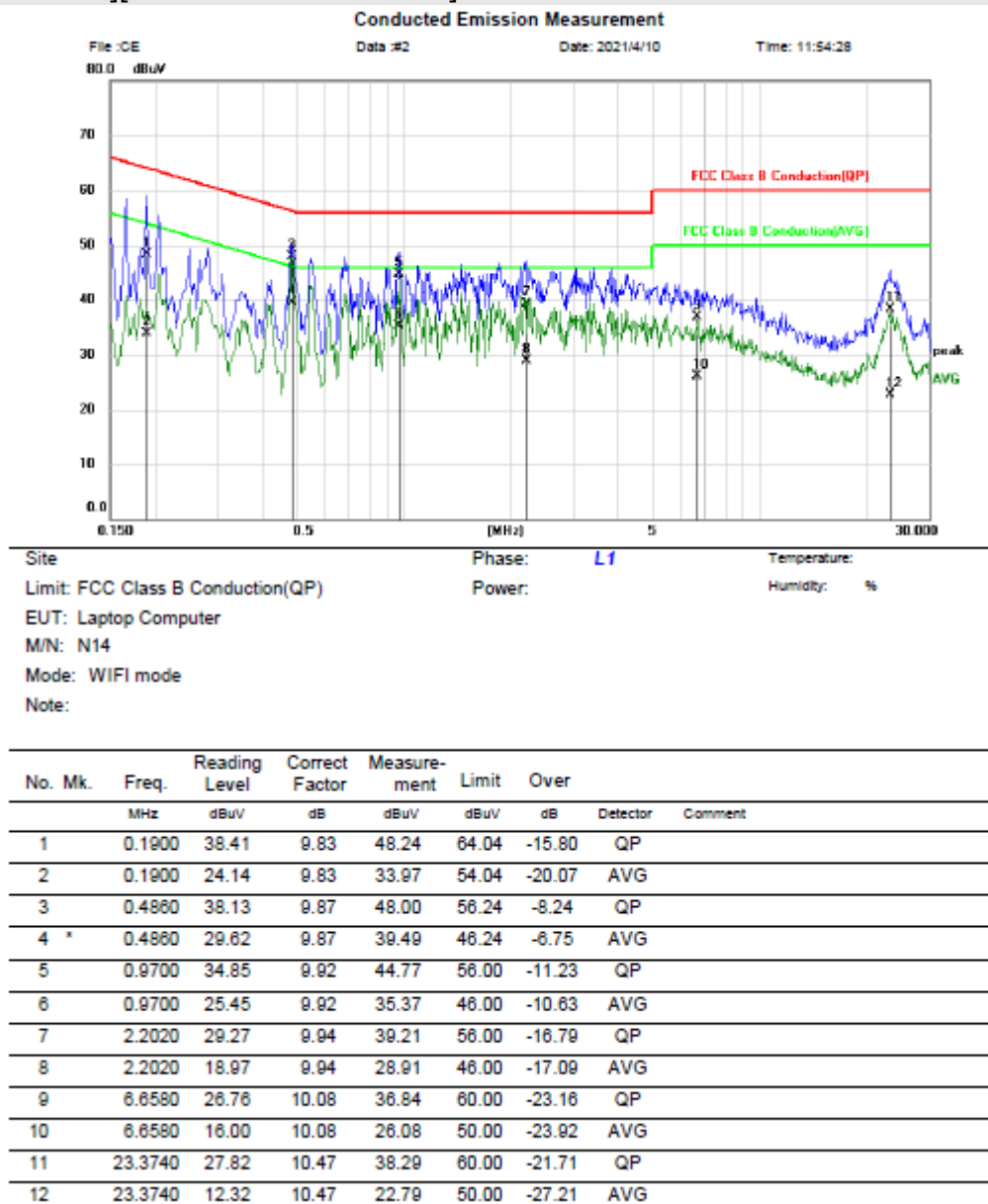
- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50?H + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: $LISN = Read\ Level + Cable\ Loss + LISN\ Factor$

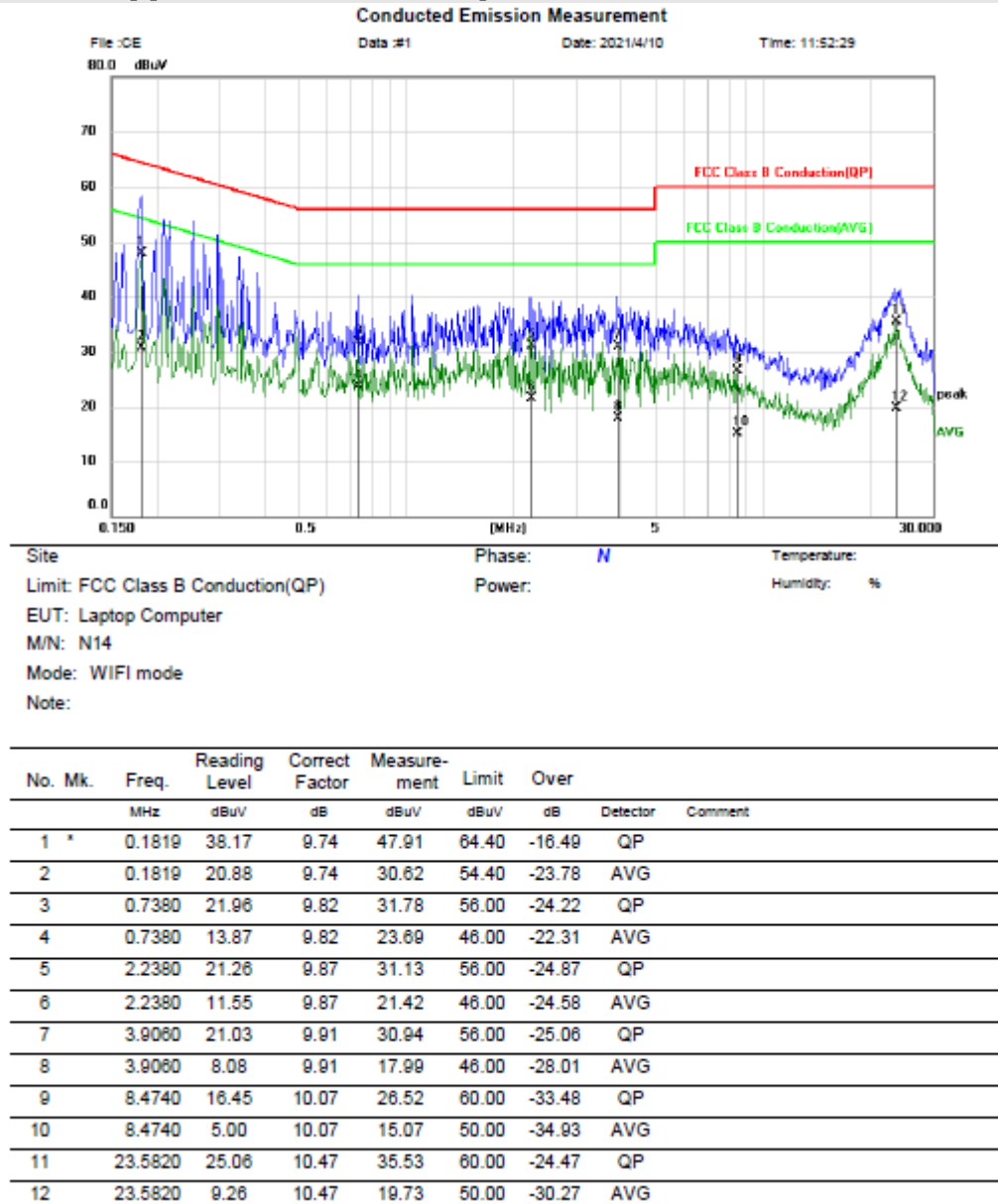
6.4 TEST DATA

[Line: Line][Power: AC120V/60Hz]



Test Result: Pass

[Line: Nutral] [Power: AC120V/60Hz]



Test Result: Pass

7 ANTENNA REQUIREMENT

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	N/A

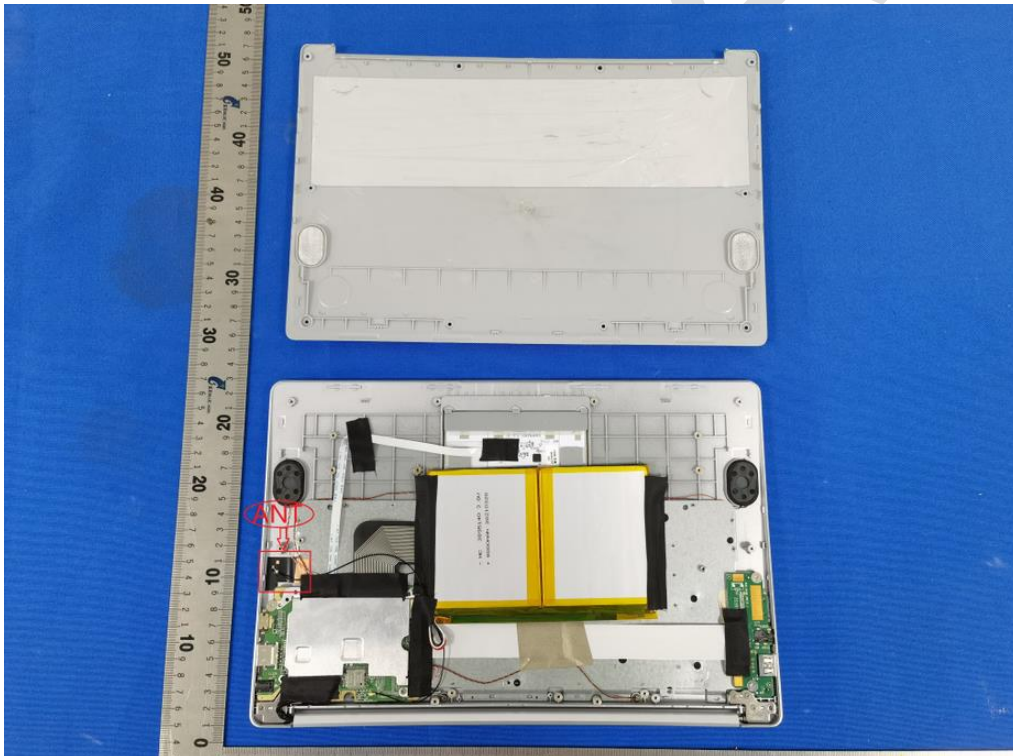
7.1 CONCLUSION

Standard Requirement:

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. The use of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 1.8dBi.



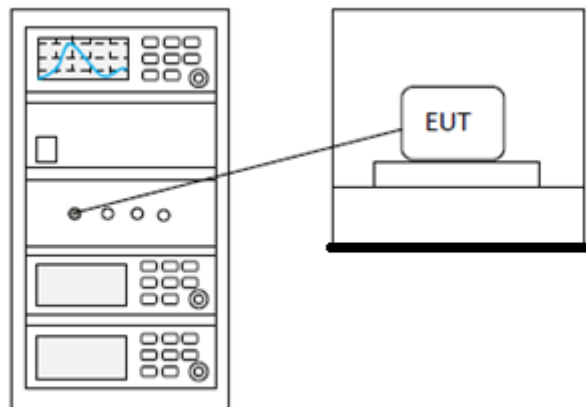
8 POWER SPECTRUM DENSITY

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 11.10.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Eason
Temperature	22°C
Humidity	50%

8.1 LIMITS

Limit:	$\leq 8\text{dBm}$ in any 3 kHz band during any time interval of continuous transmission
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8.2 BLOCK DIAGRAM OF TEST SETUP



8.3 TEST DATA

Pass: Please Refer To Appendix: For Details

10 APPENDIX

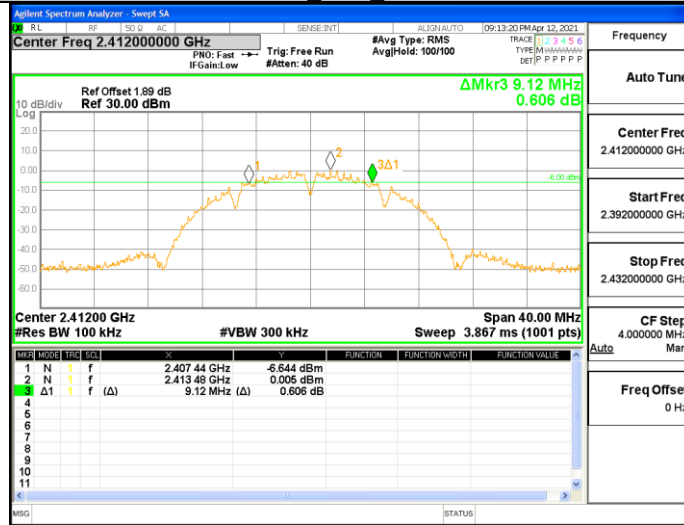
10.1 APPENDIX A: DTS BANDWIDTH

Test Result

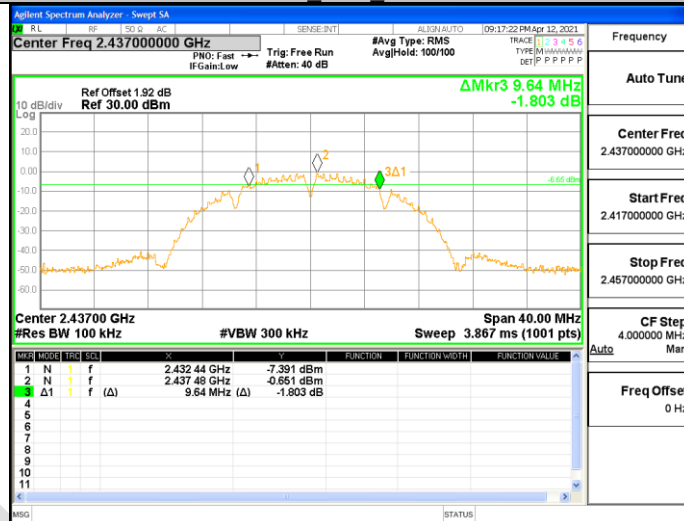
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.120	2407.440	2416.560	≥ 0.5	PASS
		2437	9.640	2432.440	2442.080	≥ 0.5	PASS
		2462	9.680	2456.920	2466.600	≥ 0.5	PASS
11G	Ant1	2412	16.400	2403.800	2420.200	≥ 0.5	PASS
		2437	16.440	2428.760	2445.200	≥ 0.5	PASS
		2462	16.400	2453.800	2470.200	≥ 0.5	PASS
11N20SISO	Ant1	2412	17.120	2403.440	2420.560	≥ 0.5	PASS
		2437	17.280	2428.160	2445.440	≥ 0.5	PASS
		2462	17.280	2453.160	2470.440	≥ 0.5	PASS
11N40SISO	Ant1	2422	35.440	2404.400	2439.840	≥ 0.5	PASS
		2437	35.440	2419.400	2454.840	≥ 0.5	PASS
		2452	35.680	2434.160	2469.840	≥ 0.5	PASS

Test Graphs

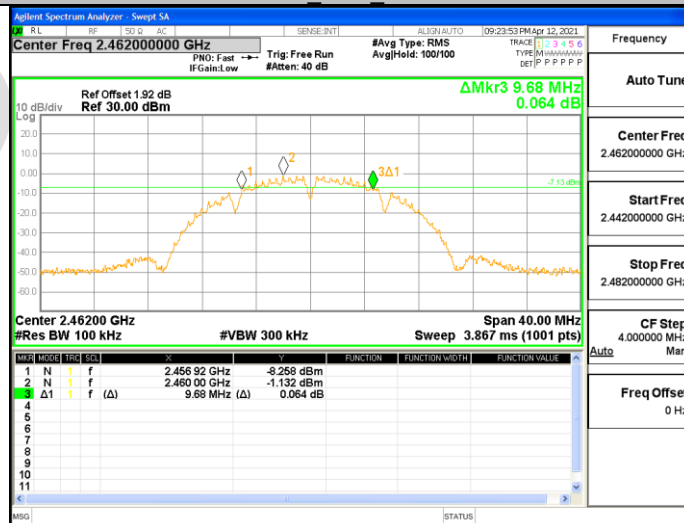
11B Ant1 2412



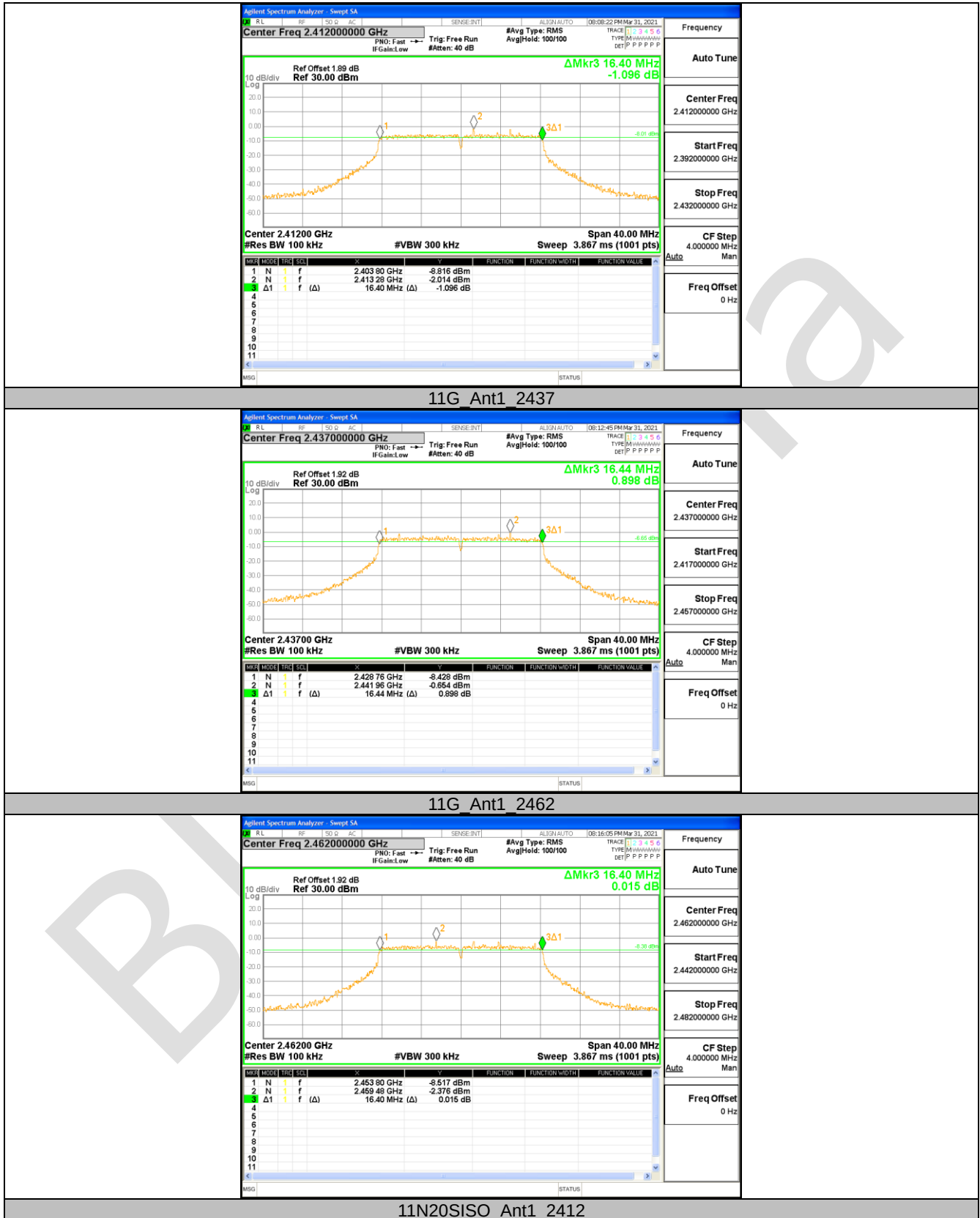
11B Ant1 2437

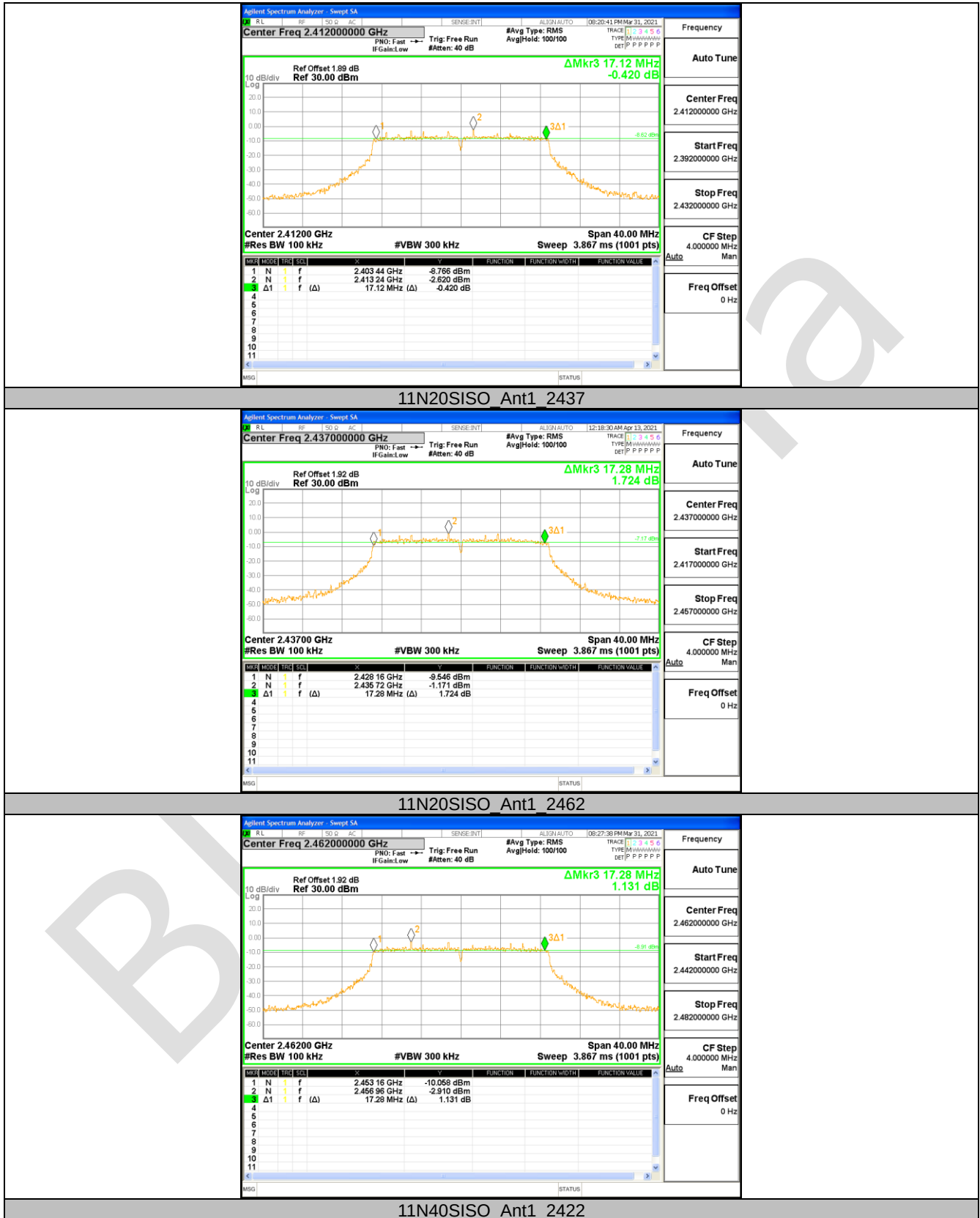


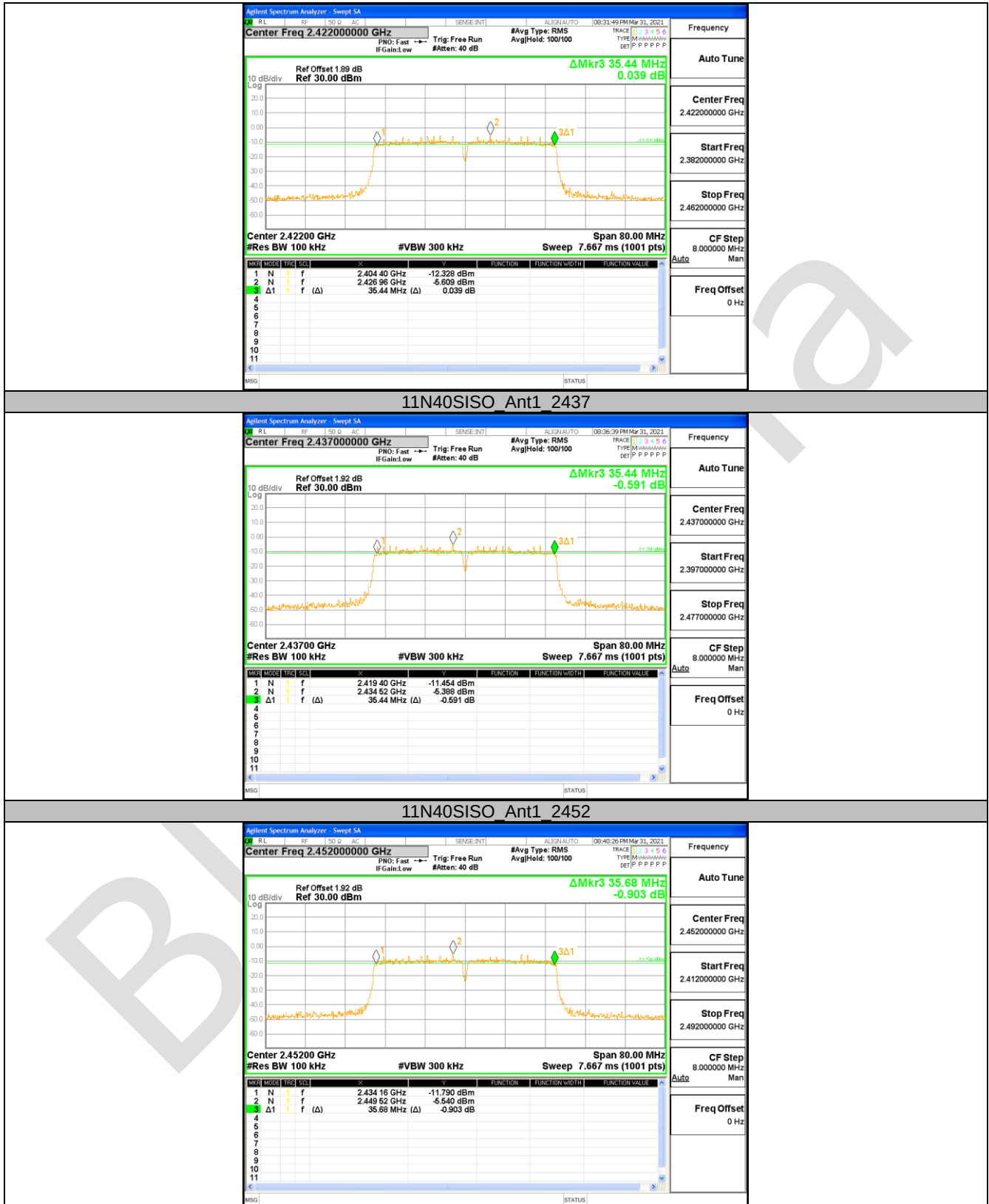
11B Ant1 2462



11G Ant1 2412







10.2 APPENDIX B: OCCUPIED CHANNEL BANDWIDTH

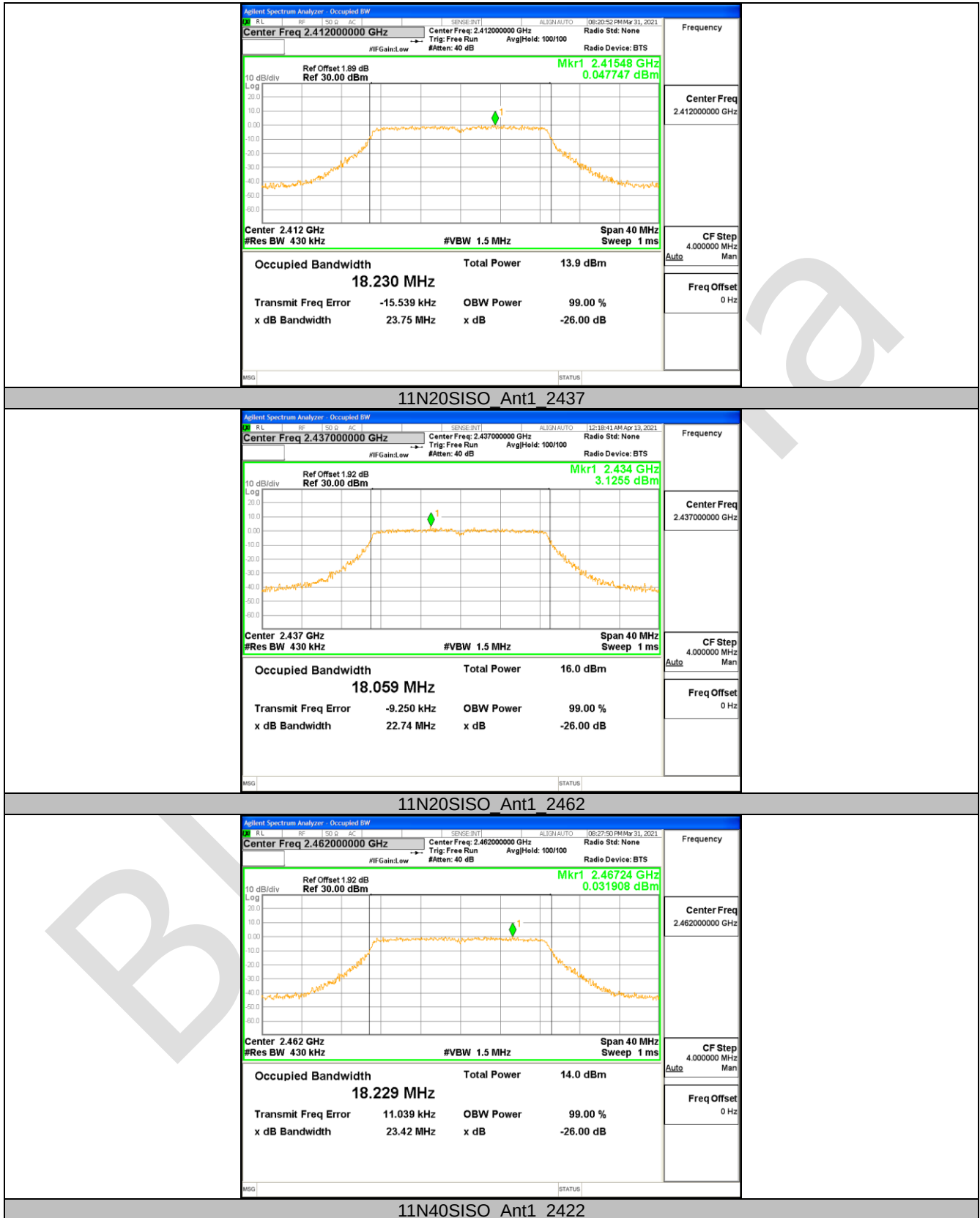
Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	14.797	2404.601	2419.398	---	PASS
		2437	14.825	2429.540	2444.365	---	PASS
		2462	14.759	2454.615	2469.374	---	PASS
11G	Ant1	2412	17.143	2403.422	2420.565	---	PASS
		2437	17.183	2428.348	2445.531	---	PASS
		2462	17.180	2453.435	2470.615	---	PASS
11N20SISO	Ant1	2412	18.230	2402.869	2421.099	---	PASS
		2437	18.059	2427.961	2446.020	---	PASS
		2462	18.229	2452.897	2471.126	---	PASS
11N40SISO	Ant1	2422	35.964	2404.026	2439.990	---	PASS
		2437	36.002	2418.995	2454.997	---	PASS
		2452	36.016	2433.989	2470.005	---	PASS

Test Graphs









10.3 APPENDIX C: MAXIMUM CONDUCTED OUTPUT POWER

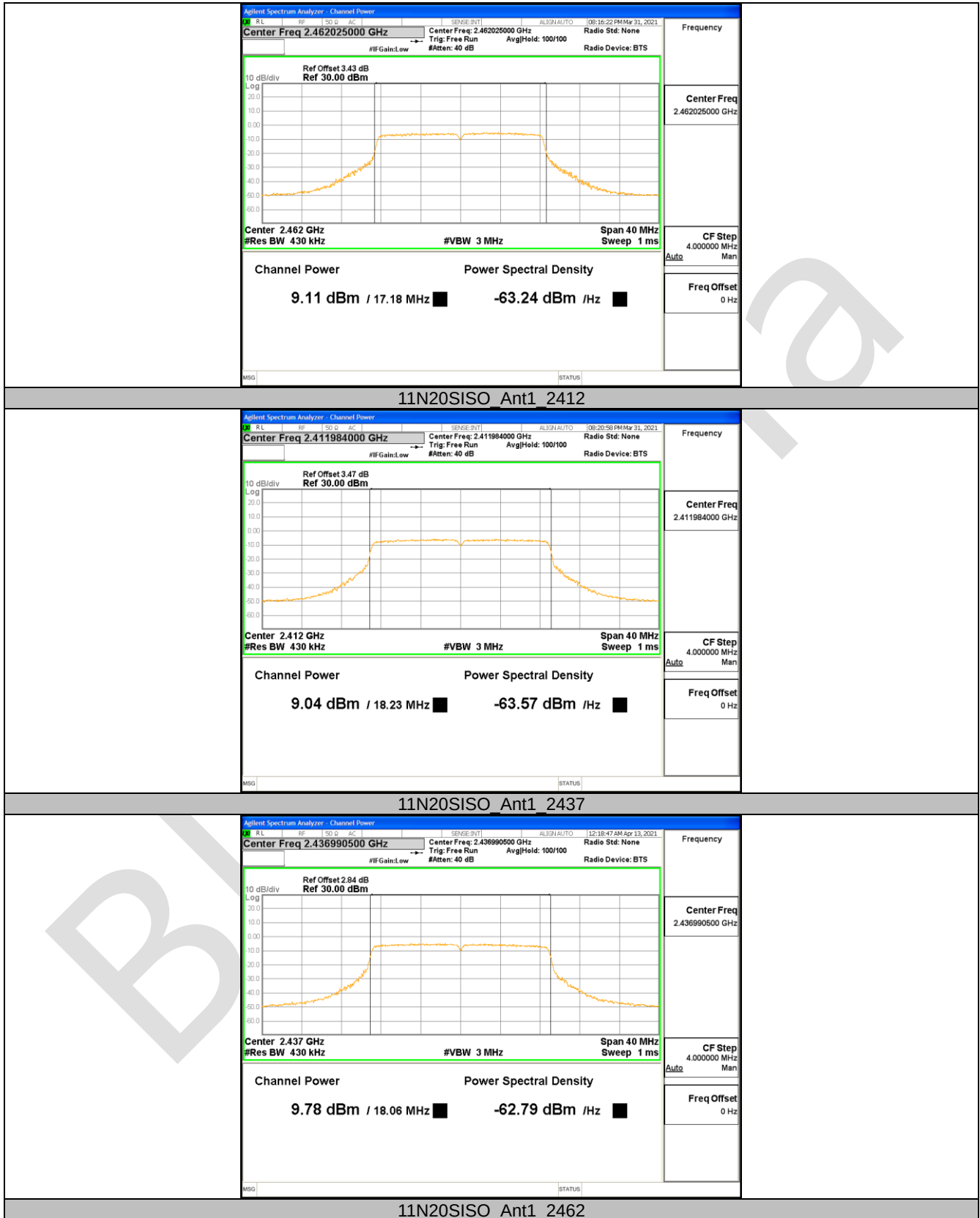
Test Result

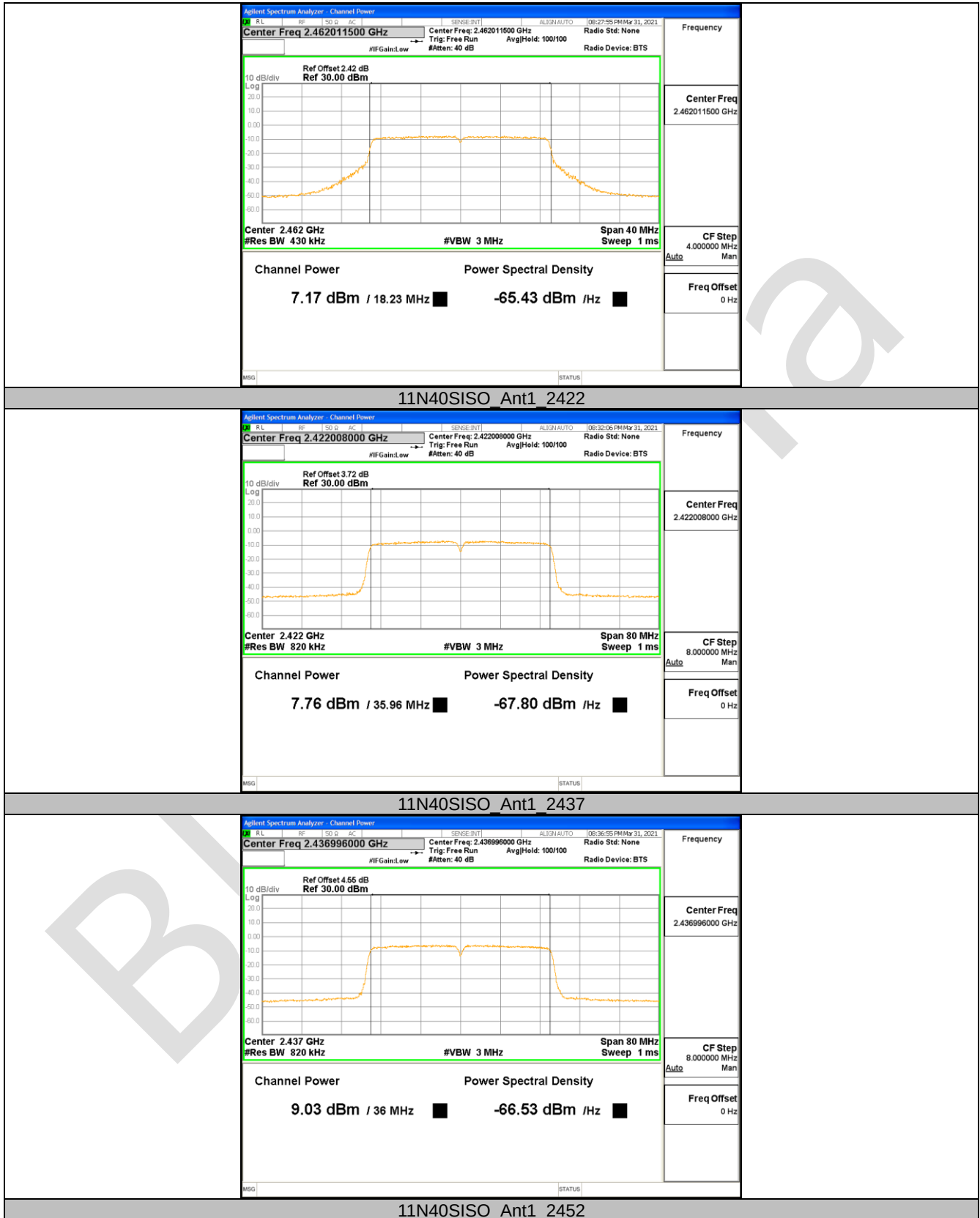
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	8.80	<=30	PASS
		2437	8.52	<=30	PASS
		2462	9.28	<=30	PASS
11G	Ant1	2412	9.27	<=30	PASS
		2437	9.69	<=30	PASS
		2462	9.11	<=30	PASS
11N20SISO	Ant1	2412	9.04	<=30	PASS
		2437	9.78	<=30	PASS
		2462	7.17	<=30	PASS
11N40SISO	Ant1	2422	7.76	<=30	PASS
		2437	9.03	<=30	PASS
		2452	7.86	<=30	PASS

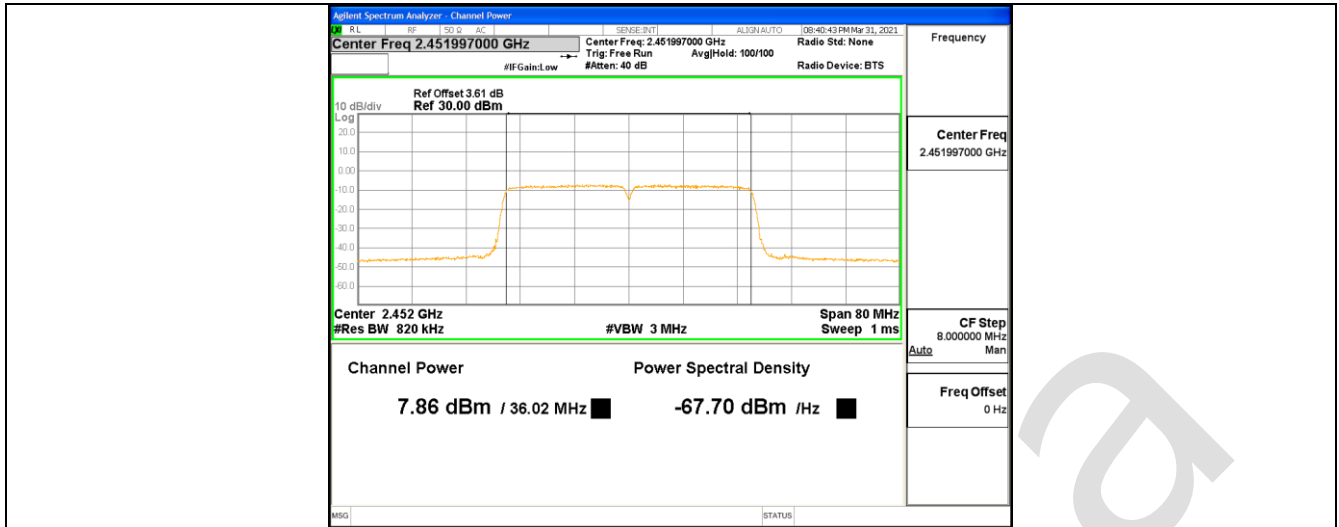
Test Graphs









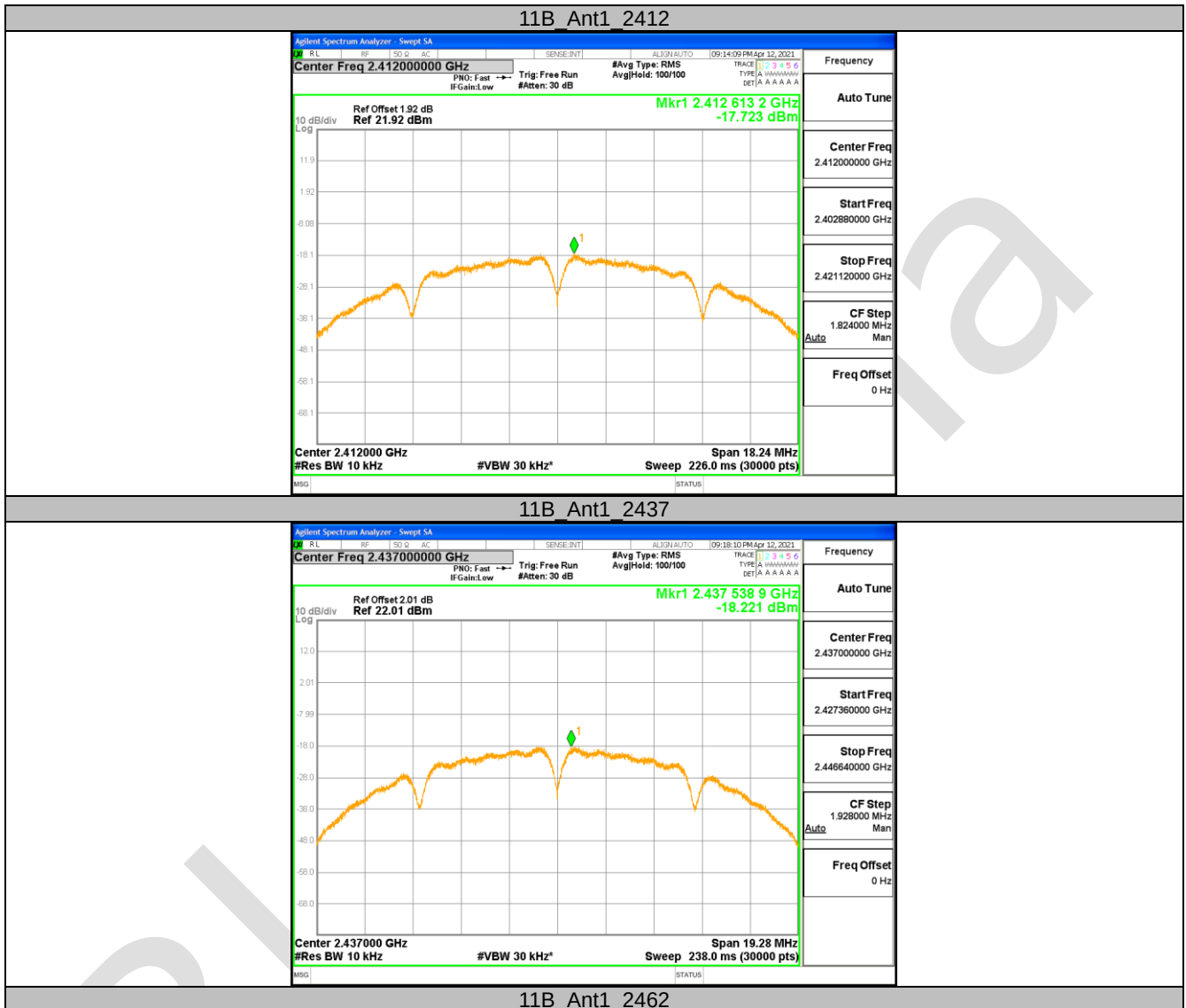


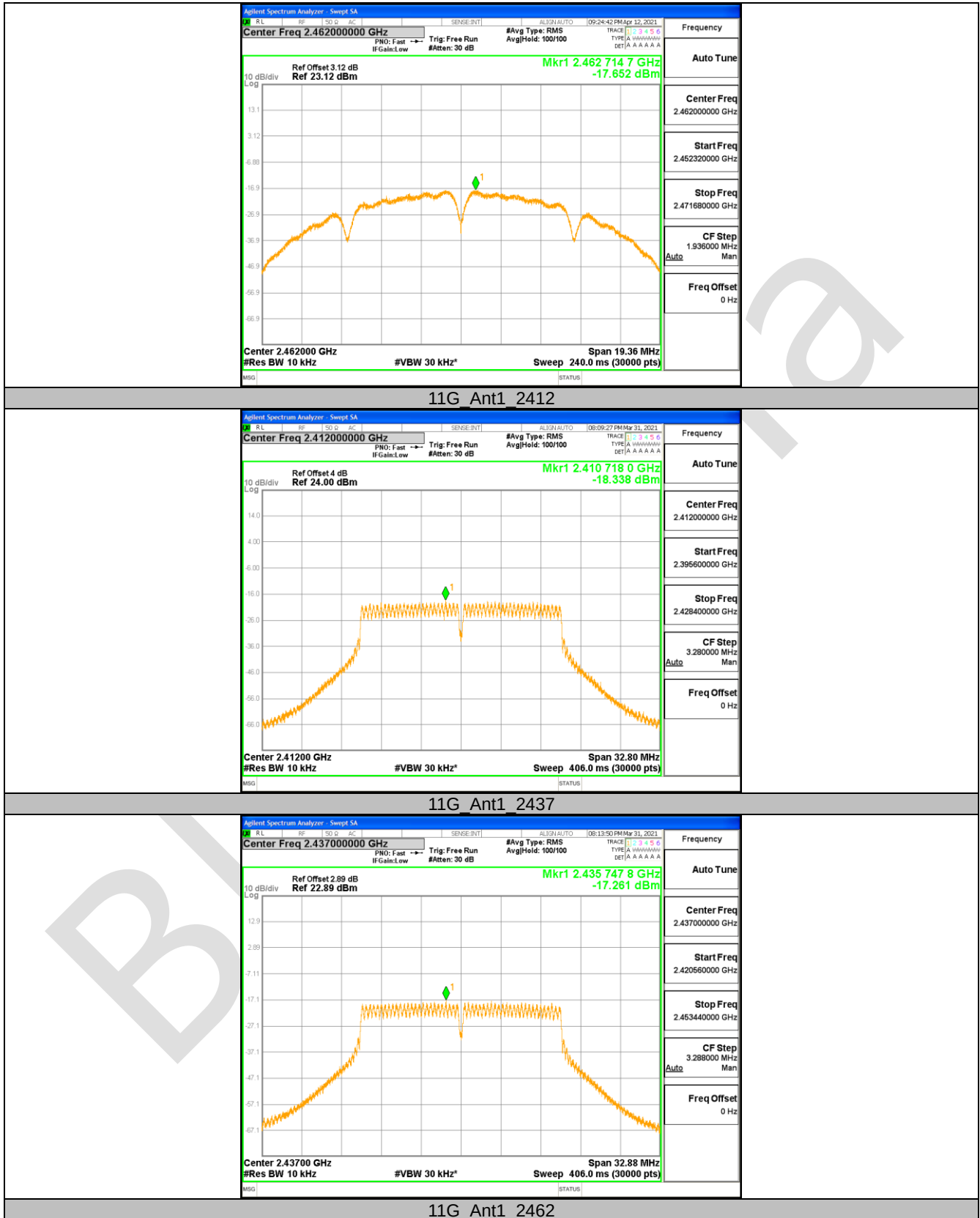
10.4 APPENDIX D: MAXIMUM POWER SPECTRAL DENSITY

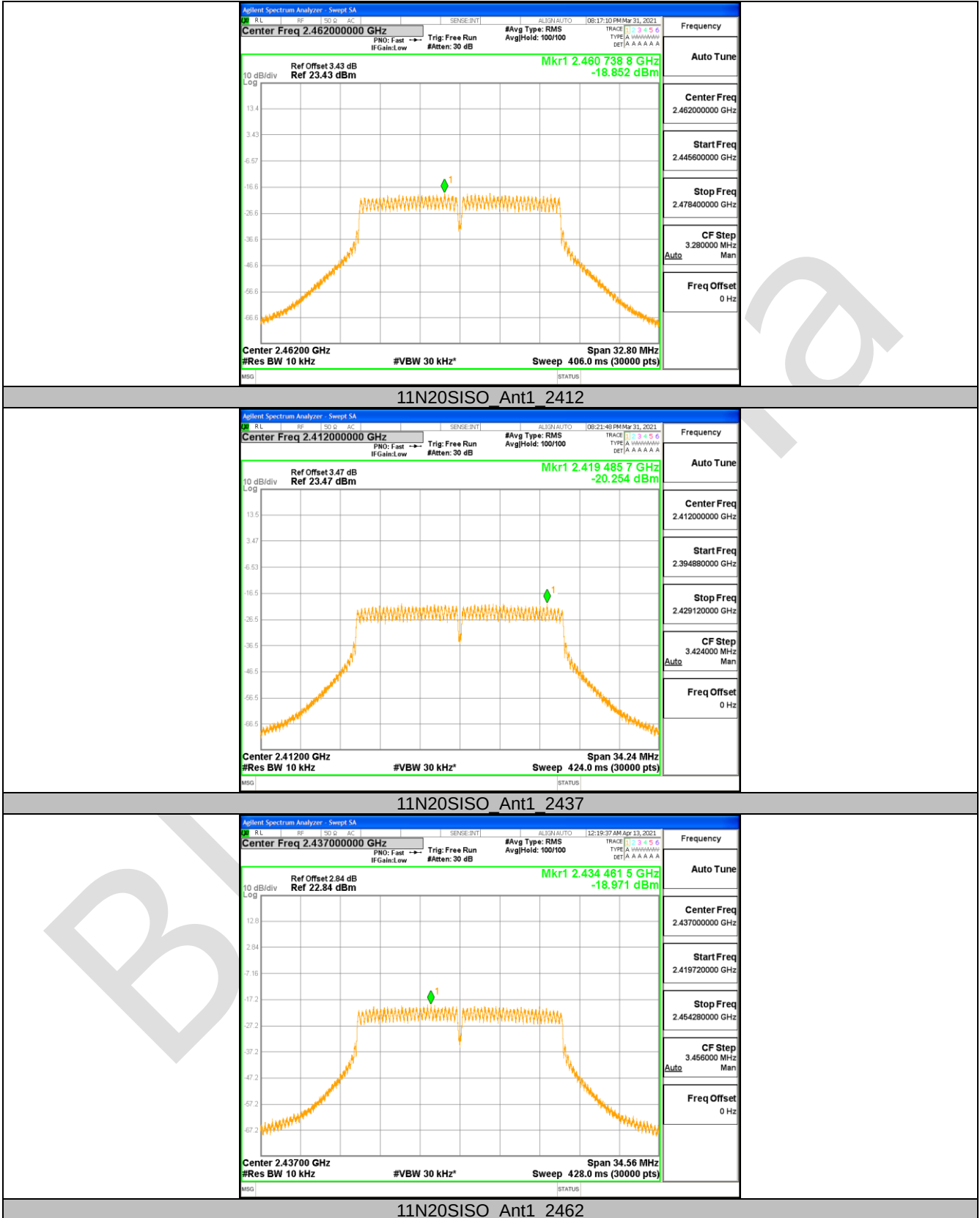
Test Result

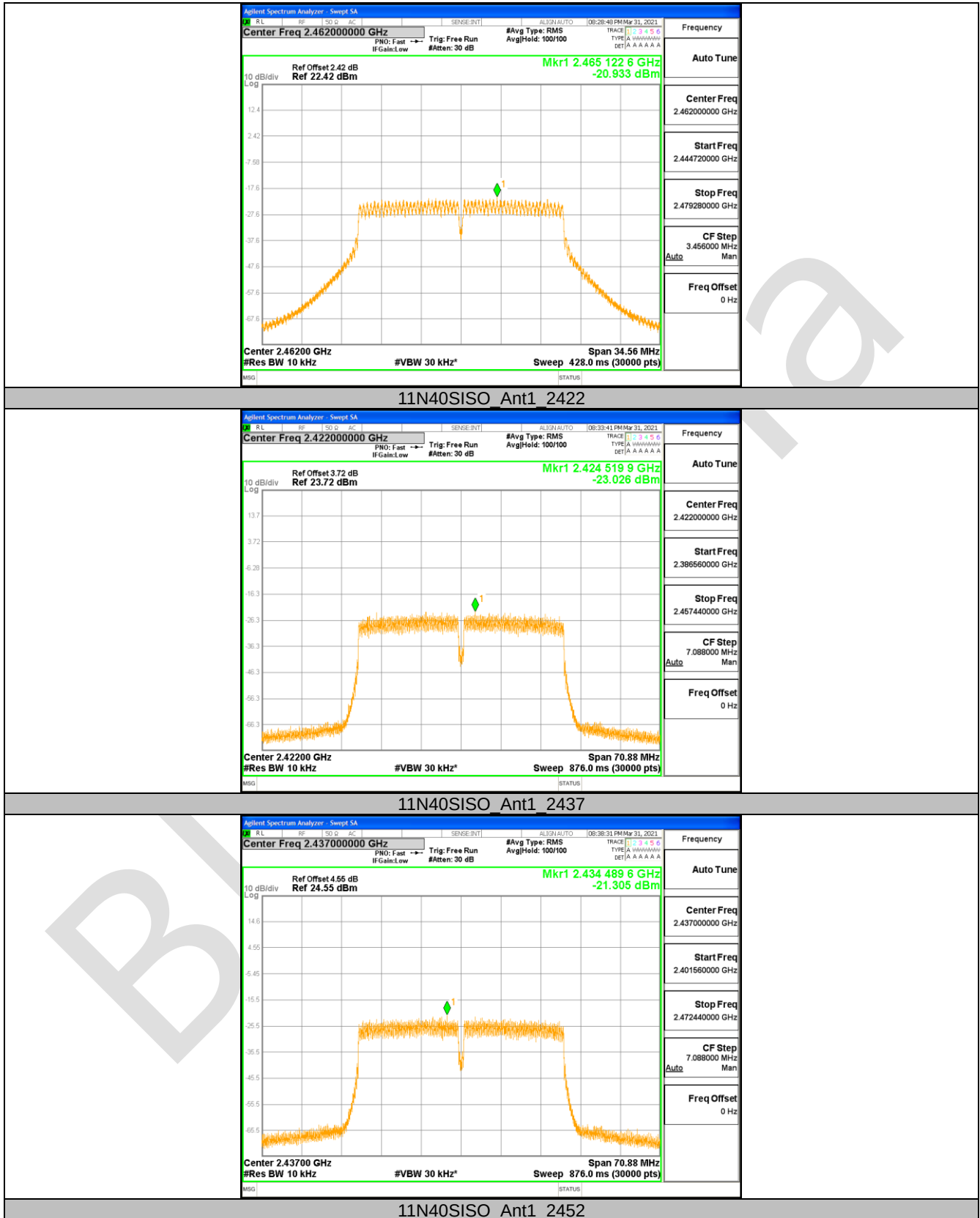
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-17.72	<=8	PASS
		2437	-18.22	<=8	PASS
		2462	-17.65	<=8	PASS
11G	Ant1	2412	-18.34	<=8	PASS
		2437	-17.26	<=8	PASS
		2462	-18.85	<=8	PASS
11N20SISO	Ant1	2412	-20.25	<=8	PASS
		2437	-18.97	<=8	PASS
		2462	-20.93	<=8	PASS
11N40SISO	Ant1	2422	-23.03	<=8	PASS
		2437	-21.31	<=8	PASS
		2452	-23.17	<=8	PASS

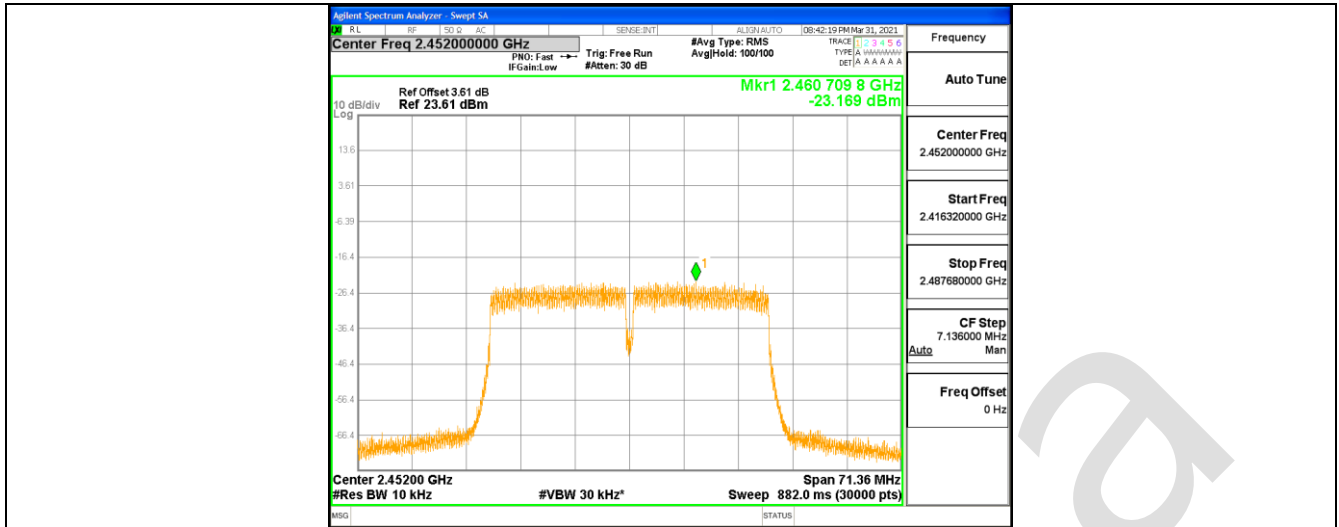
Test Graphs











10.5 APPENDIX E: BAND EDGE MEASUREMENTS

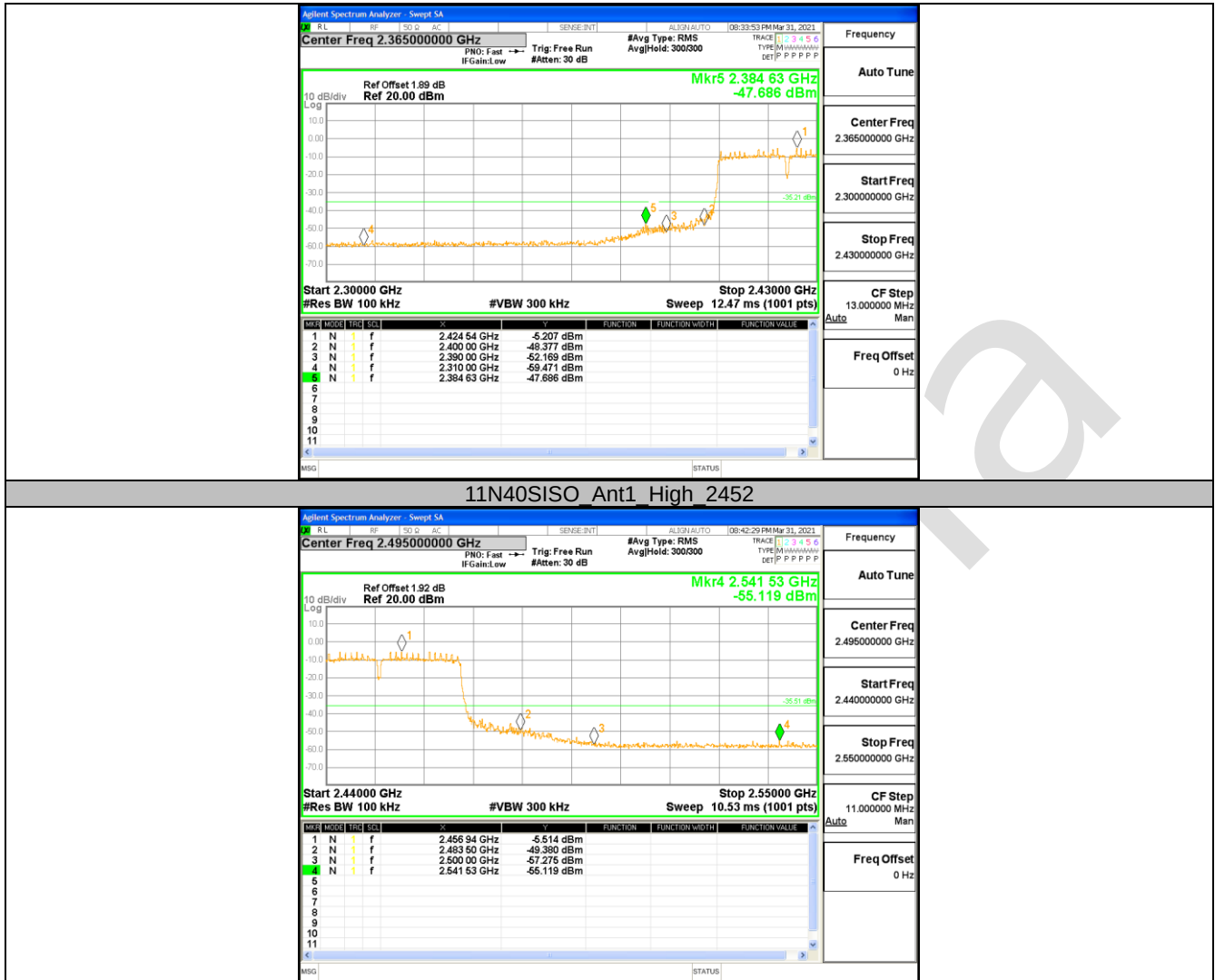
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	0.00	-55.13	<=-30	PASS
		High	2462	-0.31	-55.56	<=-30.31	PASS
11G	Ant1	Low	2412	-2.10	-48.85	<=-32.1	PASS
		High	2462	-1.86	-54.2	<=-31.86	PASS
11N20SISO	Ant1	Low	2412	-3.59	-53.81	<=-33.59	PASS
		High	2462	-3.24	-54.73	<=-33.24	PASS
11N40SISO	Ant1	Low	2422	-5.21	-47.69	<=-35.21	PASS
		High	2452	-5.51	-55.12	<=-35.51	PASS

Test Graphs







10.6 APPENDIX F: CONDUCTED SPURIOUS EMISSION

Test Result

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	-0.14	-0.14	---	PASS
			30~1000	30~1000	-63.615	<=-30.145	PASS
			1000~26500	1000~26500	-53.521	<=-30.145	PASS
		2437	Reference	-0.50	-0.50	---	PASS
			30~1000	30~1000	-67.59	<=-30.498	PASS
			1000~26500	1000~26500	-53.334	<=-30.498	PASS
		2462	Reference	-0.68	-0.68	---	PASS
			30~1000	30~1000	-65.078	<=-30.68	PASS
			1000~26500	1000~26500	-54.024	<=-30.68	PASS
11G	Ant1	2412	Reference	-2.53	-2.53	---	PASS
			30~1000	30~1000	-64.217	<=-32.527	PASS
			1000~26500	1000~26500	-54.111	<=-32.527	PASS
		2437	Reference	-0.50	-0.50	---	PASS
			30~1000	30~1000	-65.475	<=-30.496	PASS
			1000~26500	1000~26500	-51.44	<=-30.496	PASS
		2462	Reference	-2.38	-2.38	---	PASS
			30~1000	30~1000	-64.508	<=-32.381	PASS
			1000~26500	1000~26500	-50.881	<=-32.381	PASS
11N20SISO	Ant1	2412	Reference	-3.78	-3.78	---	PASS
			30~1000	30~1000	-66.063	<=-33.776	PASS
			1000~26500	1000~26500	-53.322	<=-33.776	PASS
		2437	Reference	-1.39	-1.39	---	PASS
			30~1000	30~1000	-63.019	<=-31.389	PASS
			1000~26500	1000~26500	-53.543	<=-31.389	PASS
		2462	Reference	-2.81	-2.81	---	PASS
			30~1000	30~1000	-64.383	<=-32.814	PASS
			1000~26500	1000~26500	-53.055	<=-32.814	PASS
11N40SISO	Ant1	2422	Reference	-5.60	-5.60	---	PASS
			30~1000	30~1000	-64.411	<=-35.599	PASS
			1000~26500	1000~26500	-53.577	<=-35.599	PASS
		2437	Reference	-5.50	-5.50	---	PASS
			30~1000	30~1000	-63.875	<=-35.5	PASS
			1000~26500	1000~26500	-53.359	<=-35.5	PASS
		2452	Reference	-5.62	-5.62	---	PASS
			30~1000	30~1000	-63.406	<=-35.618	PASS
			1000~26500	1000~26500	-54.093	<=-35.618	PASS

Test Graphs

