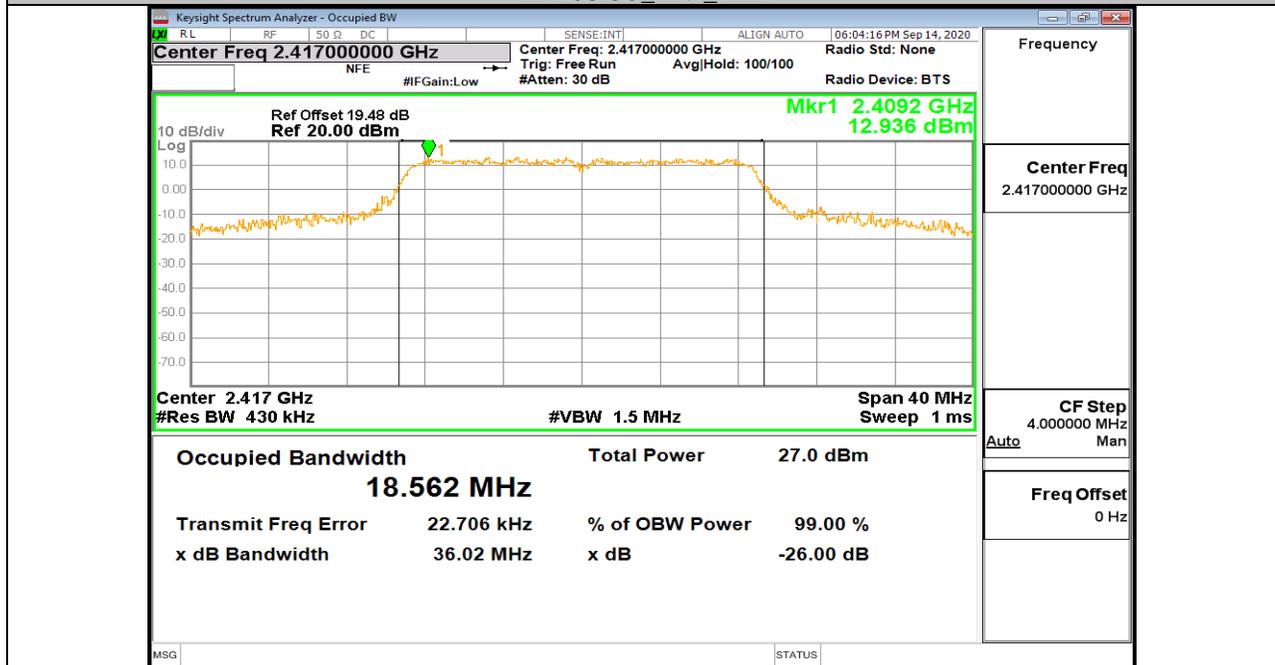11N20SISO_Ant1_2412

11N20SISO_Ant1_2417

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11N20SISO_Ant1_2437

11N20SISO_Ant1_2457

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11N20SISO_Ant1_2462

11.3. Appendix C: Maximum conducted output power
11.3.1.   Test Result

Test Mode	Antenna	Channel	PEAK Result[dBm]	AVG Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	24.08	21.31	<=30	PASS
		2417	22.86	20.23	<=30	PASS
		2437	22.36	19.71	<=30	PASS
		2457	22.43	19.83	<=30	PASS
		2462	21.20	18.48	<=30	PASS
11G	Ant1	2412	26.09	18.44	<=30	PASS
		2417	26.67	20.67	<=30	PASS
		2437	26.64	22.32	<=30	PASS
		2457	26.37	19.07	<=30	PASS
		2462	26.39	18.08	<=30	PASS
11N20SISO	Ant1	2412	26.45	21.89	<=30	PASS
		2417	26.52	20.26	<=30	PASS
		2437	26.54	22.44	<=30	PASS
		2457	26.07	18.98	<=30	PASS
		2462	24.24	16.01	<=30	PASS

Note: 1. Conducted Power=Meas. Level+ Correction Factor
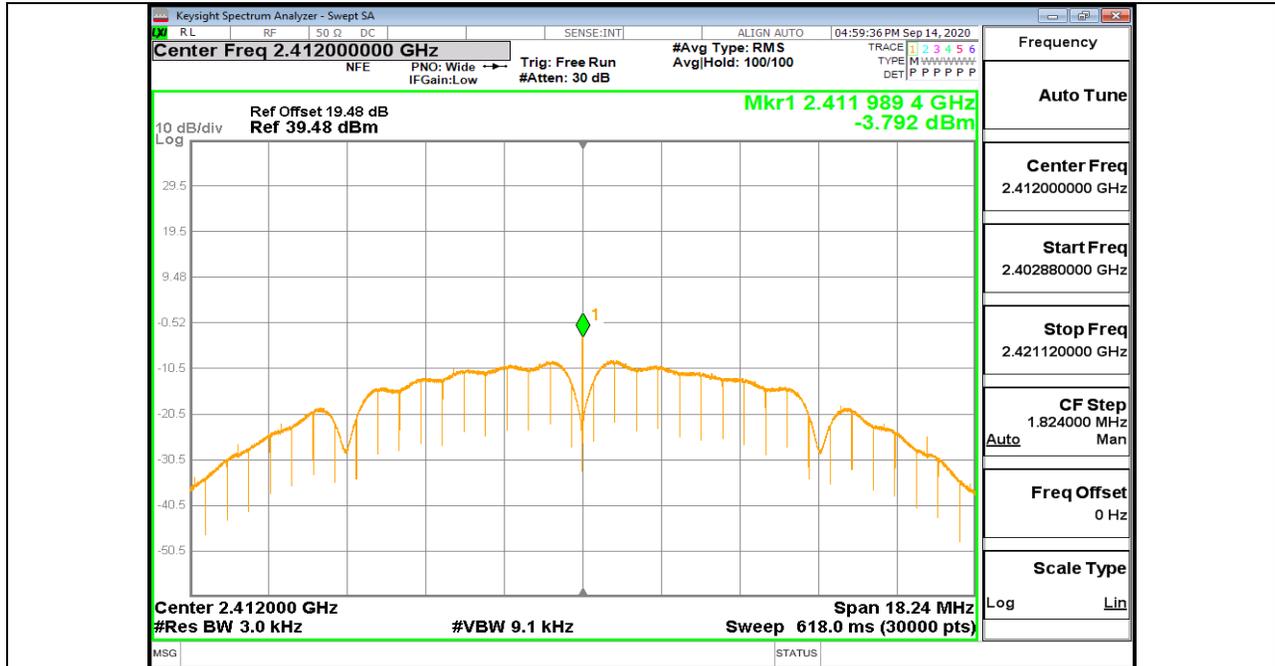   2. The Duty Cycle Factor (refer to section 7.1) had already compensated to the test data.

11.4. Appendix D: Maximum power spectral density
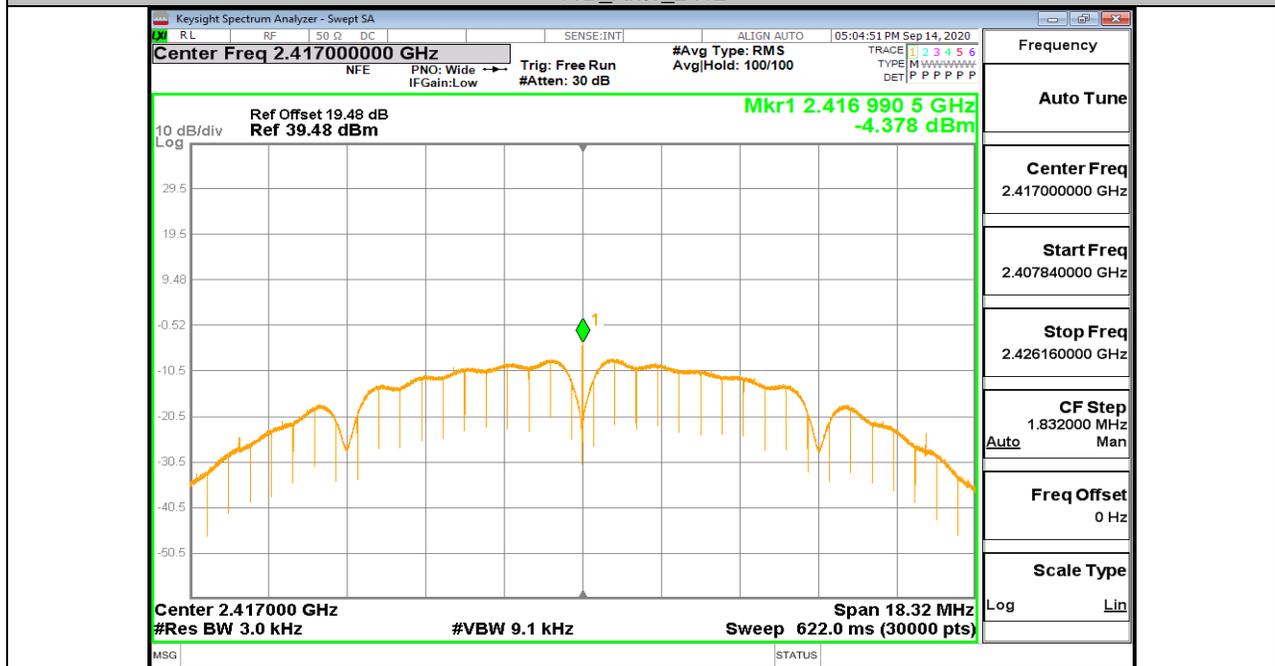### 11.4.1. Test Result

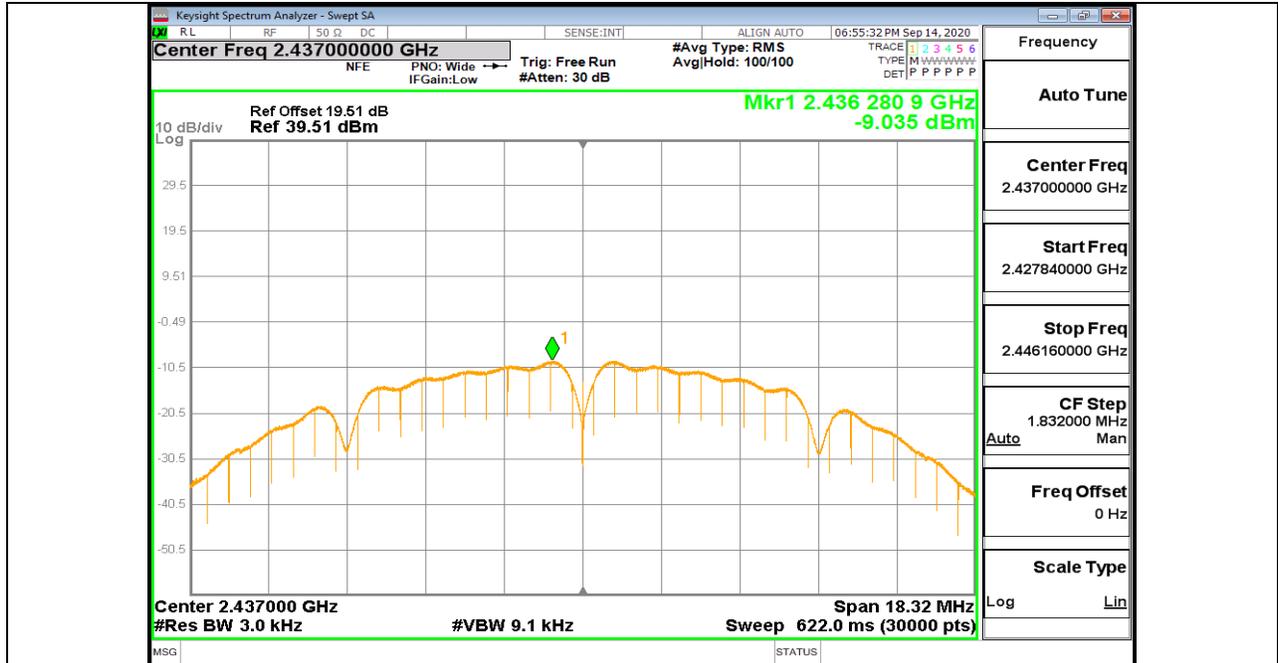| Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-3.79	<=8	PASS
		2417	-4.38	<=8	PASS
		2437	-9.04	<=8	PASS
		2457	-5.39	<=8	PASS
		2462	-5.15	<=8	PASS
11G	Ant1	2412	-3.65	<=8	PASS
		2417	-0.81	<=8	PASS
		2437	-6.18	<=8	PASS
		2457	-9.24	<=8	PASS
		2462	-11.71	<=8	PASS
11N20SISO	Ant1	2412	-5.44	<=8	PASS
		2417	-6.92	<=8	PASS
		2437	-5.5	<=8	PASS
		2457	-8.23	<=8	PASS
		2462	-12.77	<=8	PASS

11.4.2. Test Graphs

11B_Ant1_2412

11B_Ant1_2417

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11B_Ant1_2437

11B_Ant1_2457

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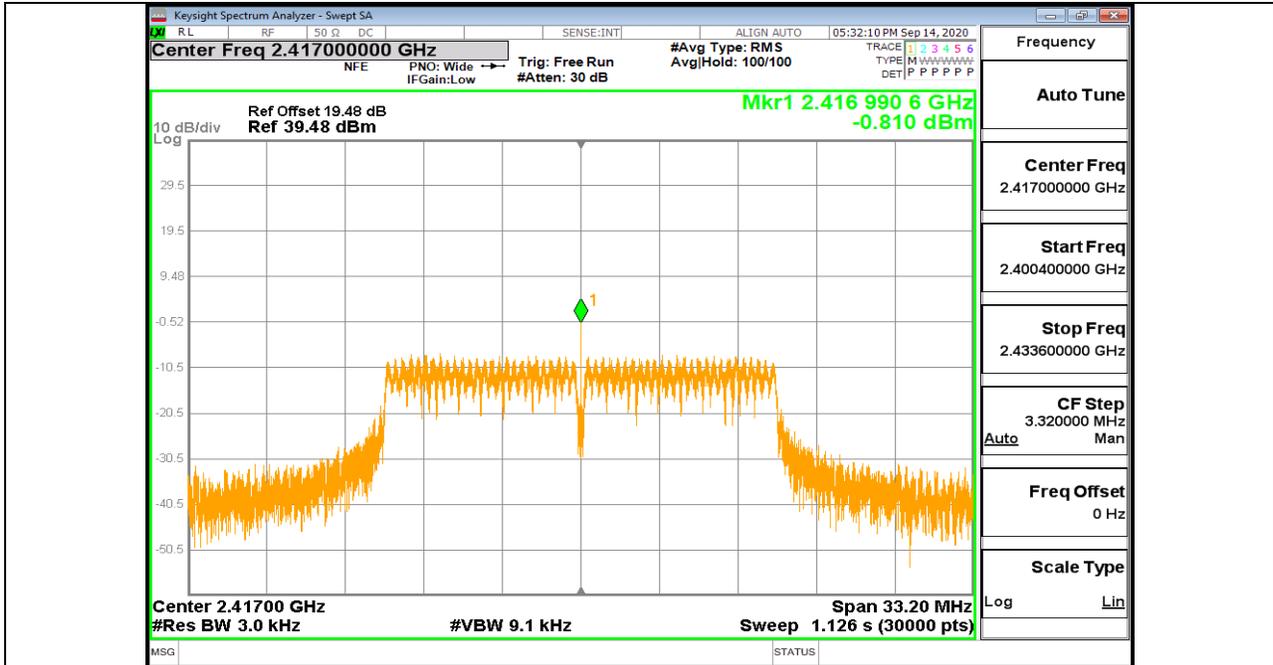*This report shall not be reproduced except in full, without the written approval of UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch.*
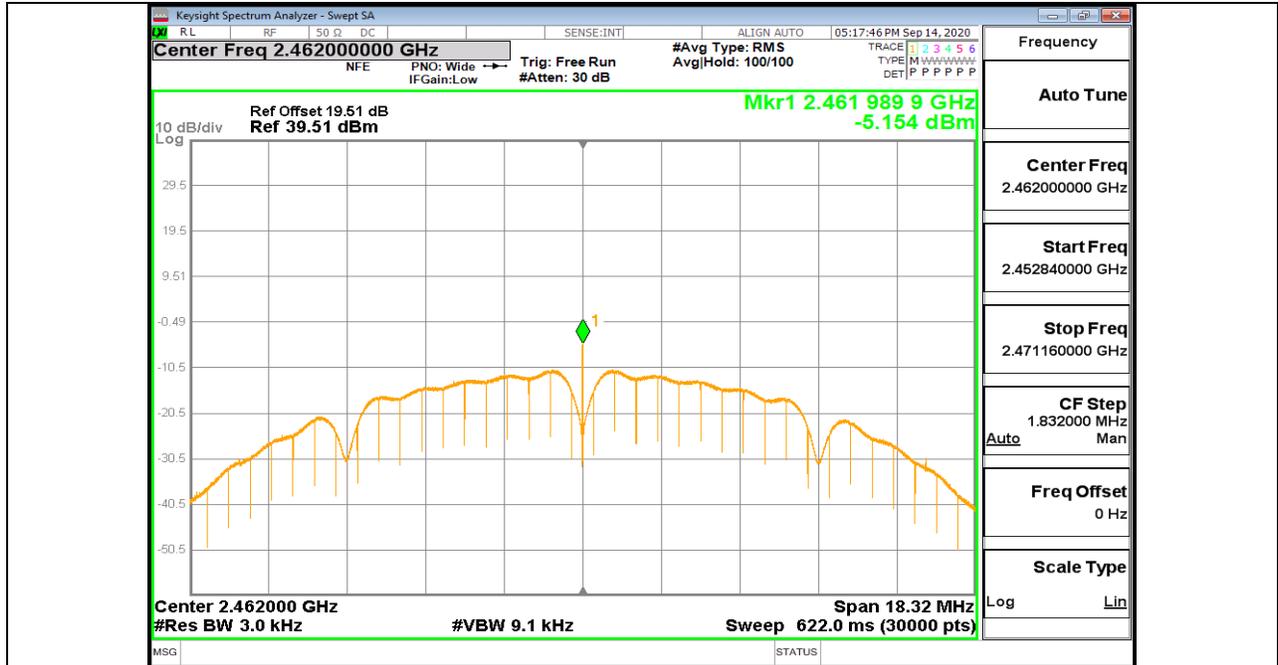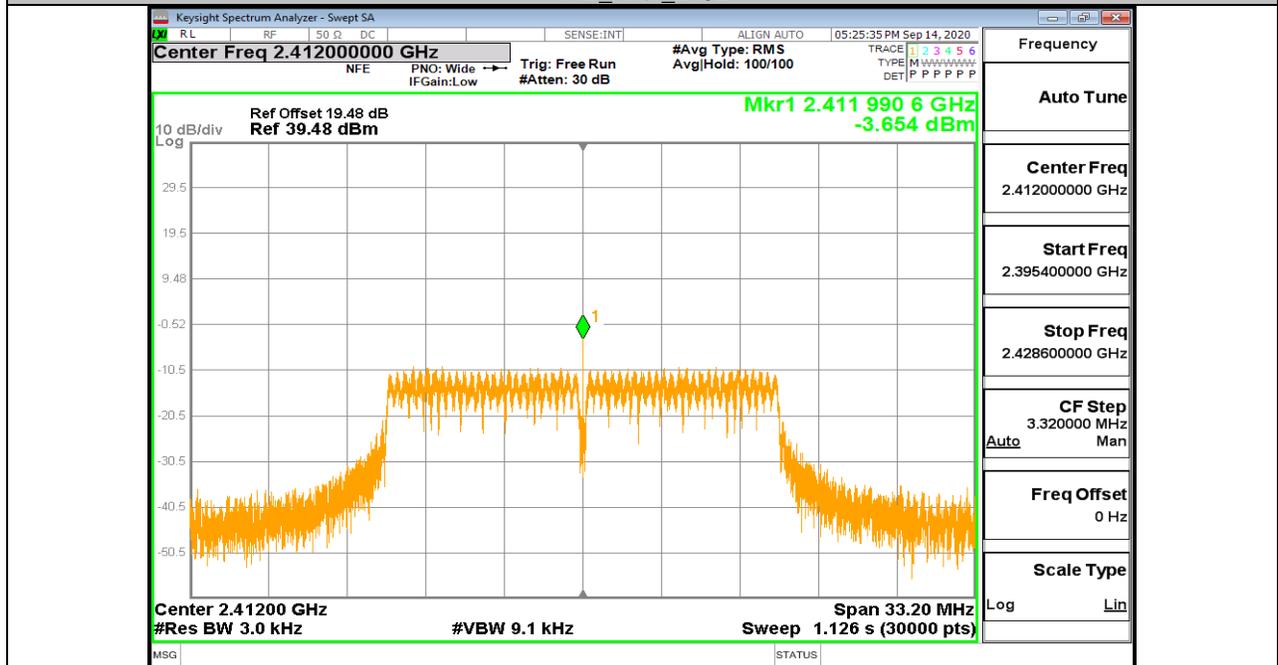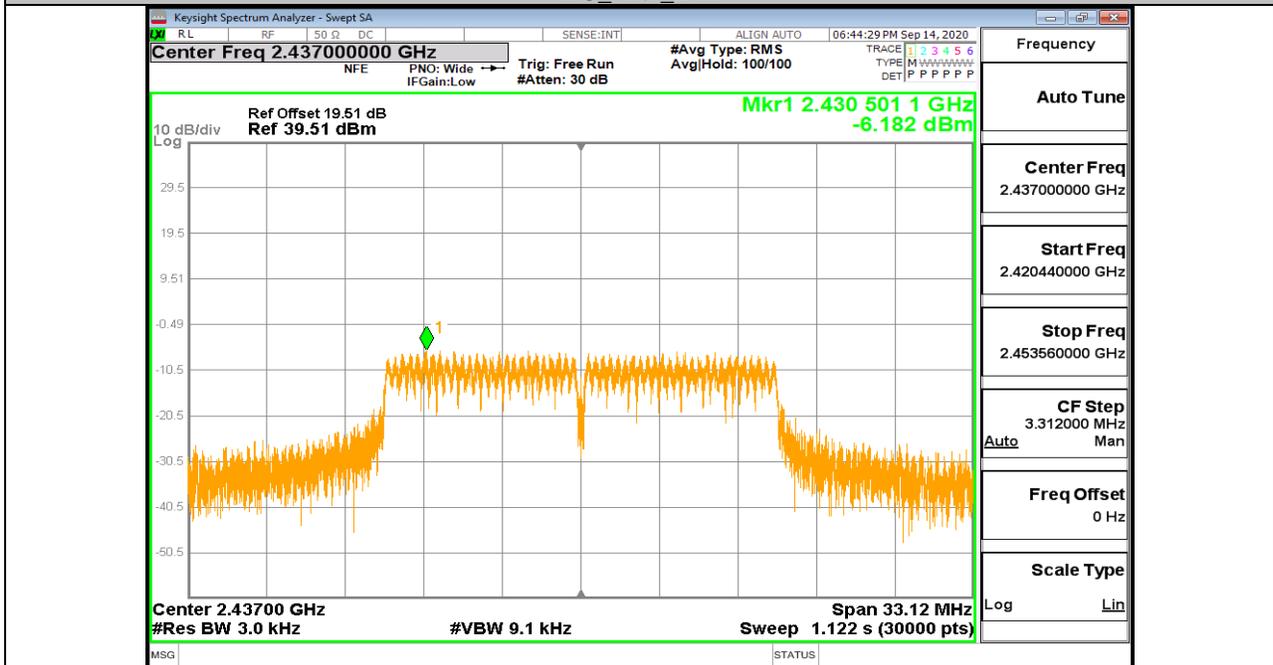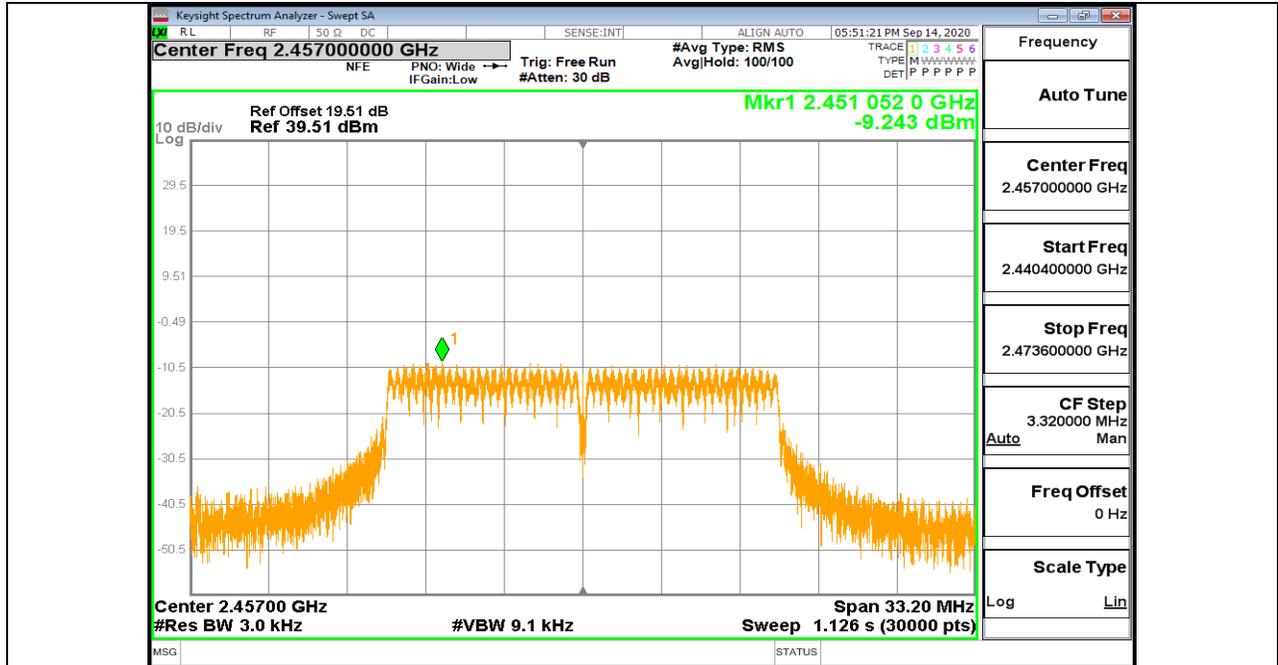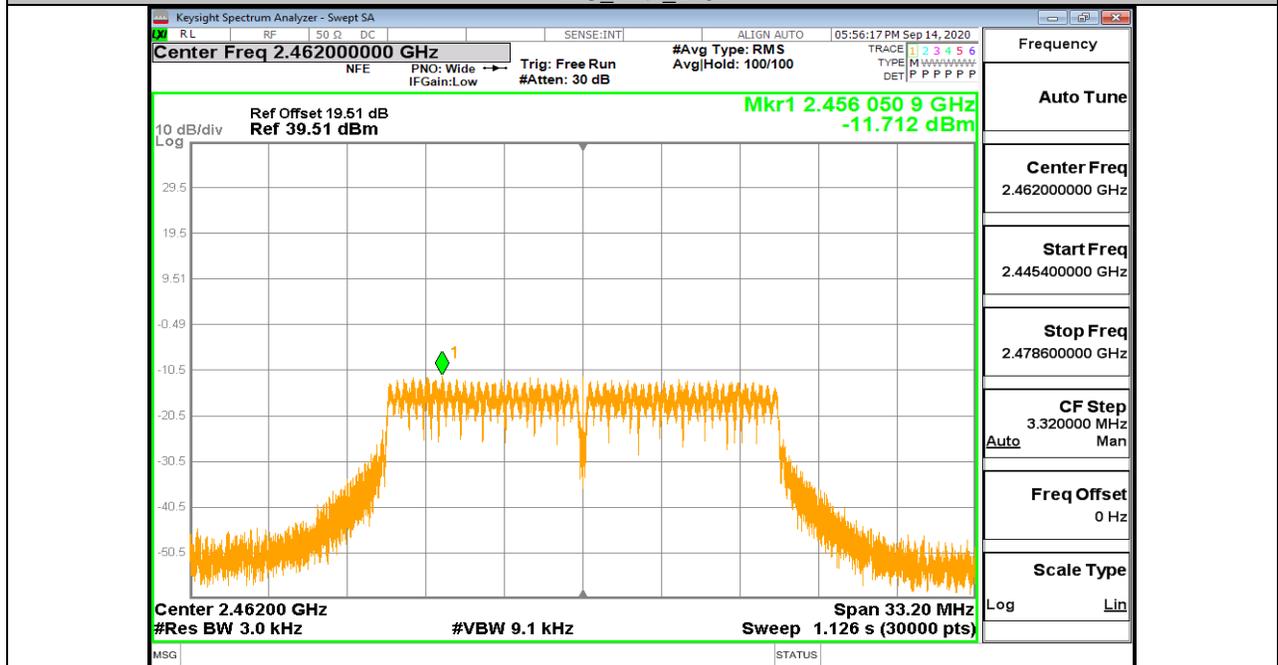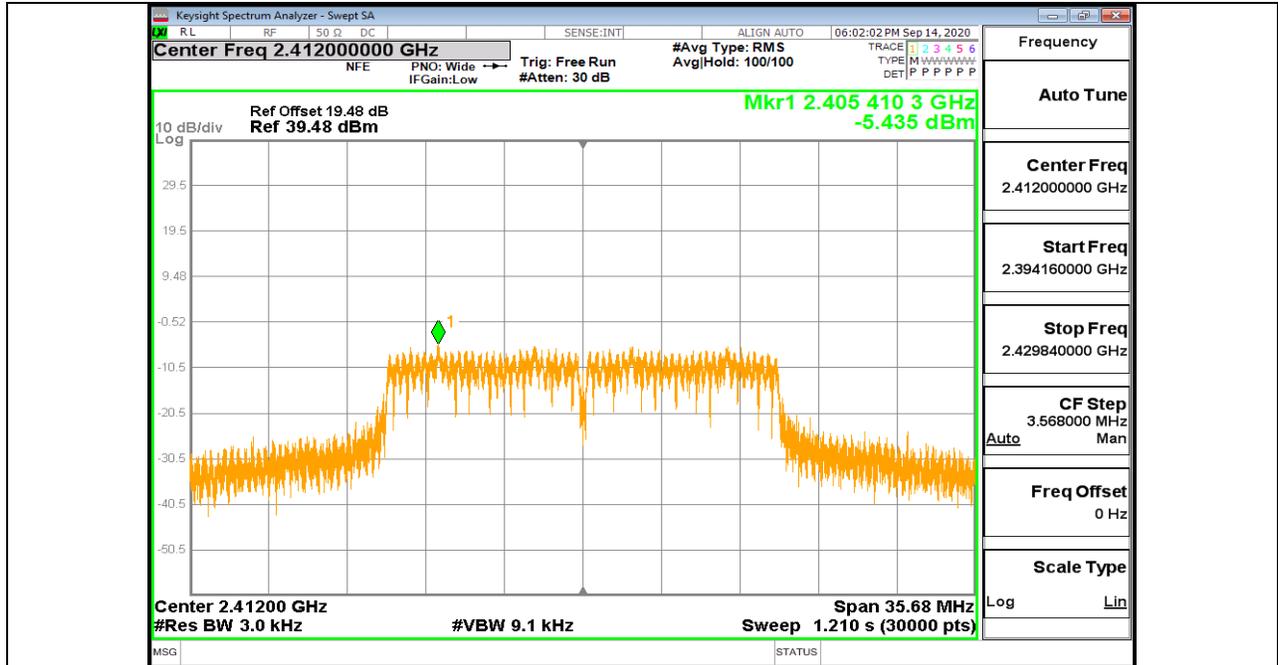
11B_Ant1_2462

11G_Ant1_2412

11G_Ant1_2417

11G_Ant1_2437

11G_Ant1_2457

11G_Ant1_2462

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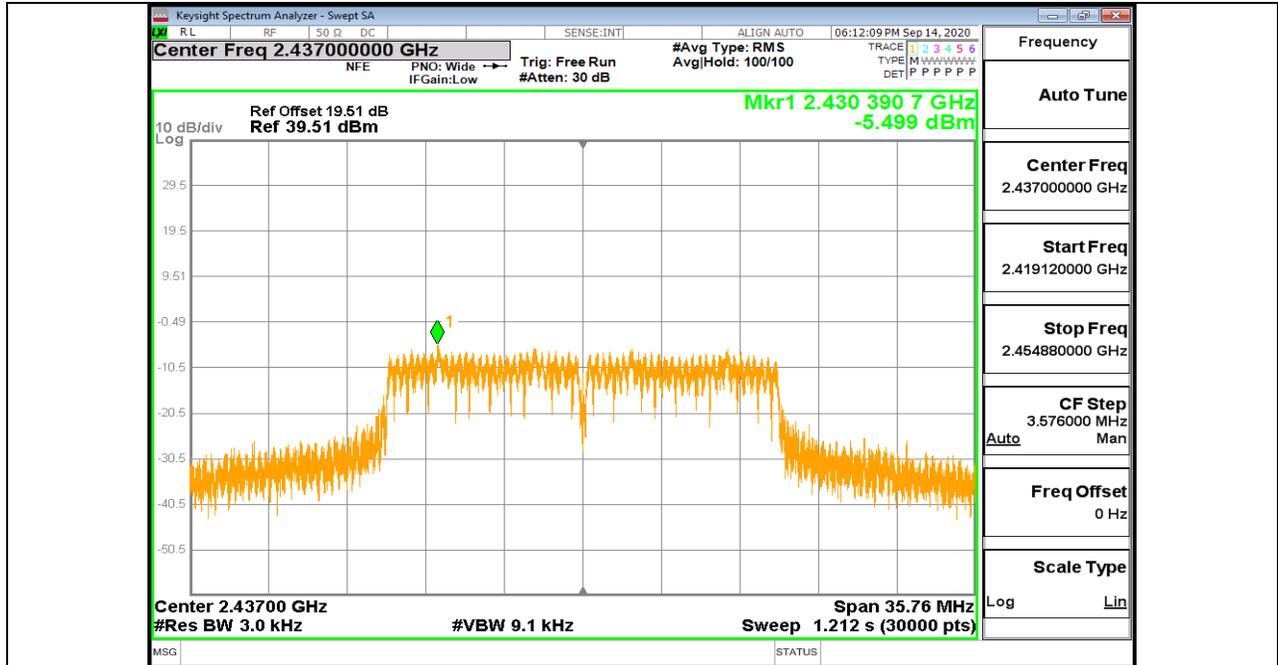
11N20SISO_Ant1_2412
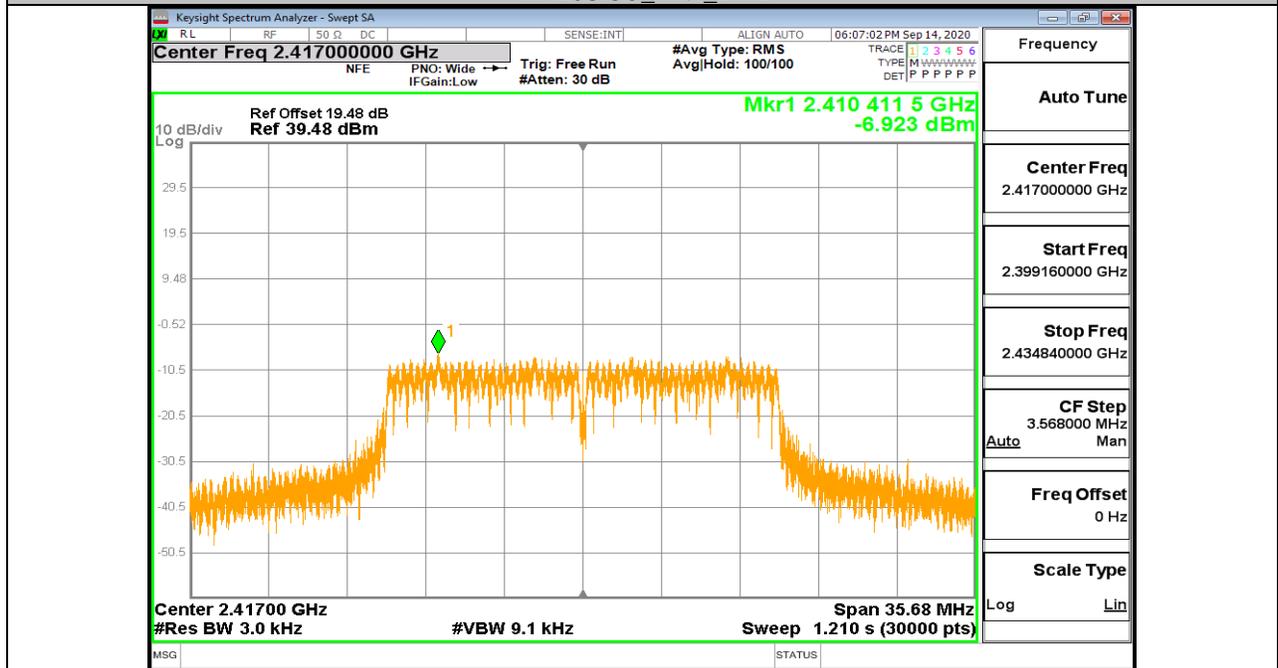
11N20SISO_Ant1_2417

11N20SISO_Ant1_2437

11N20SISO_Ant1_2457

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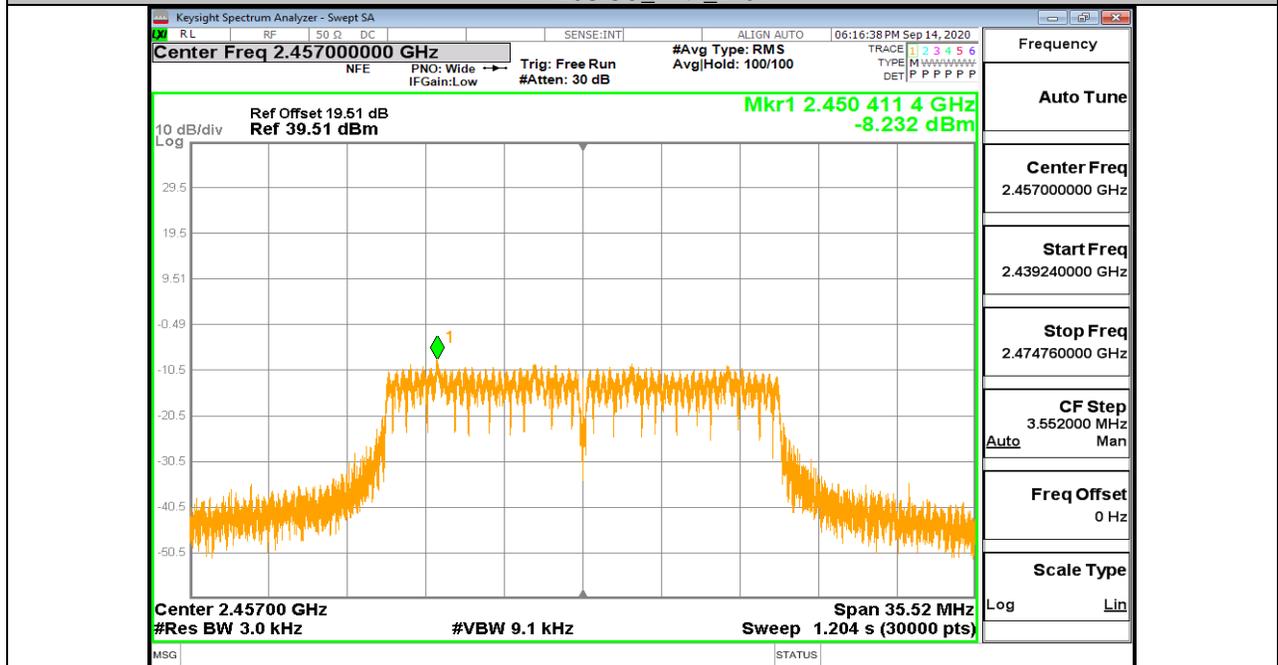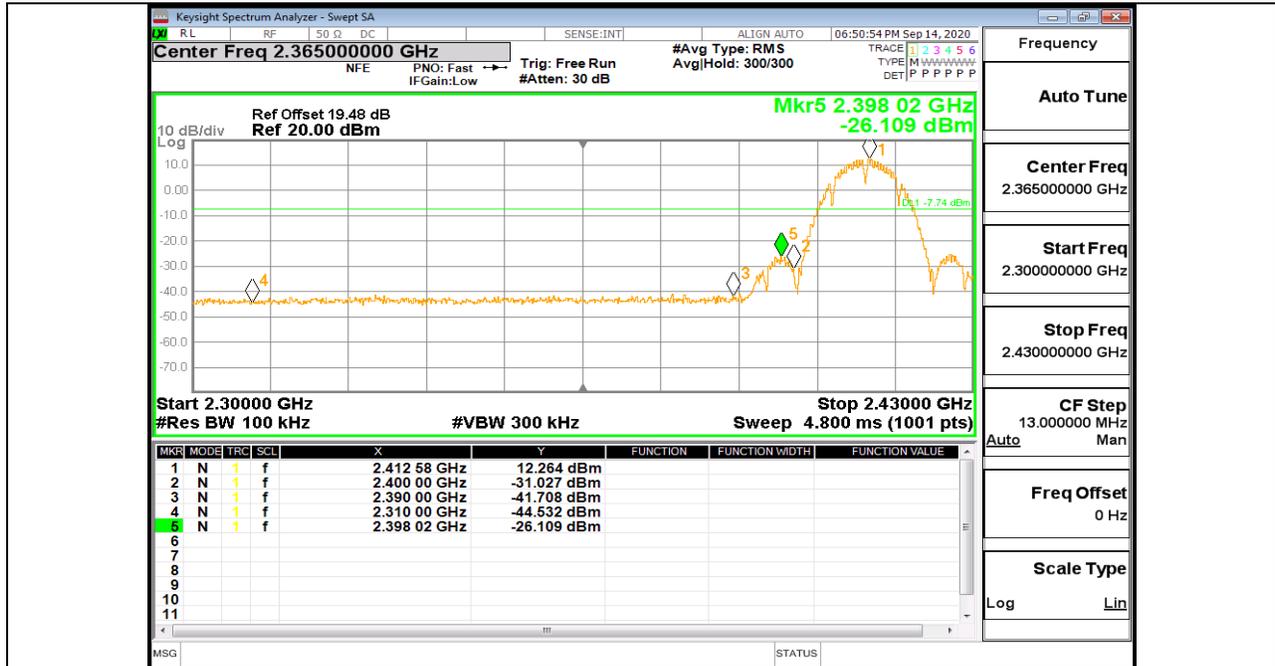
11N20SISO_Ant1_2462
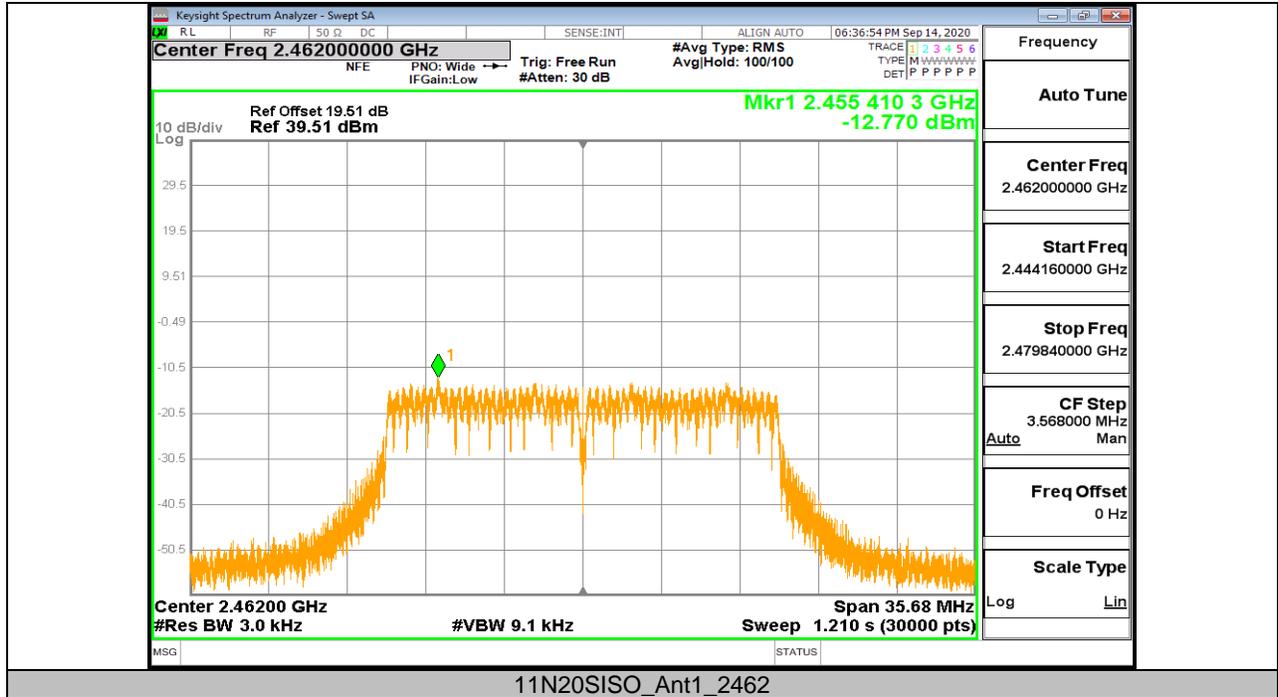
11.5. Appendix E: Band edge measurements
11.5.1. Test Result

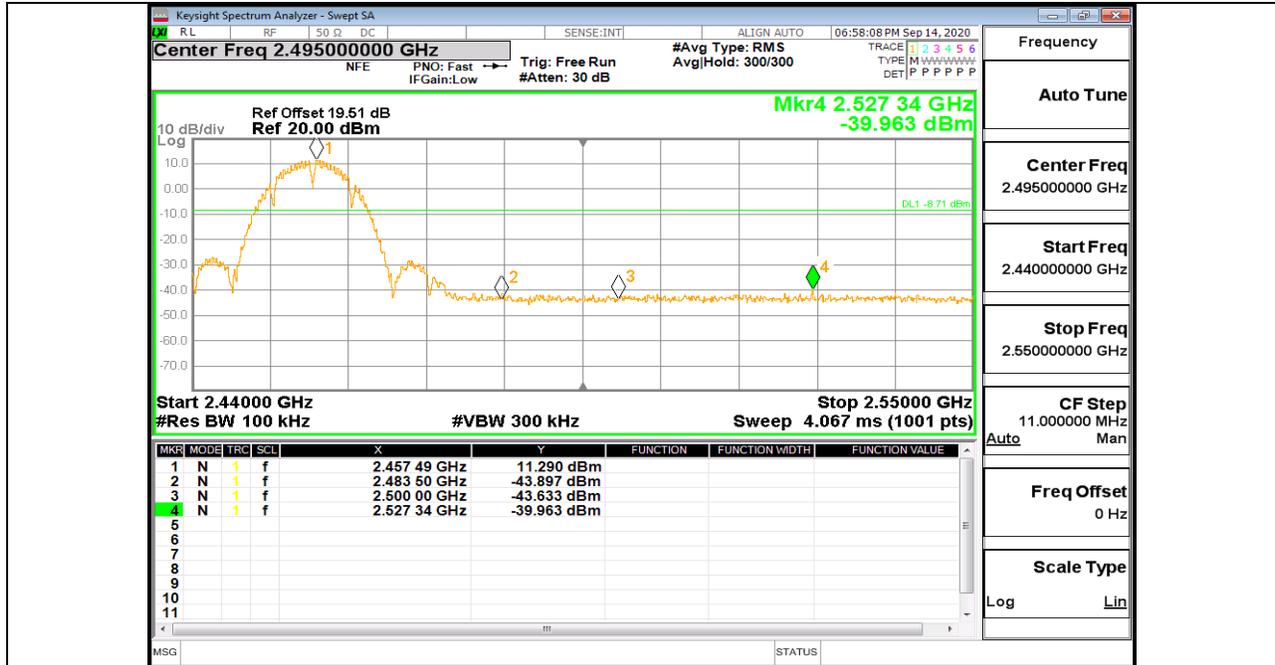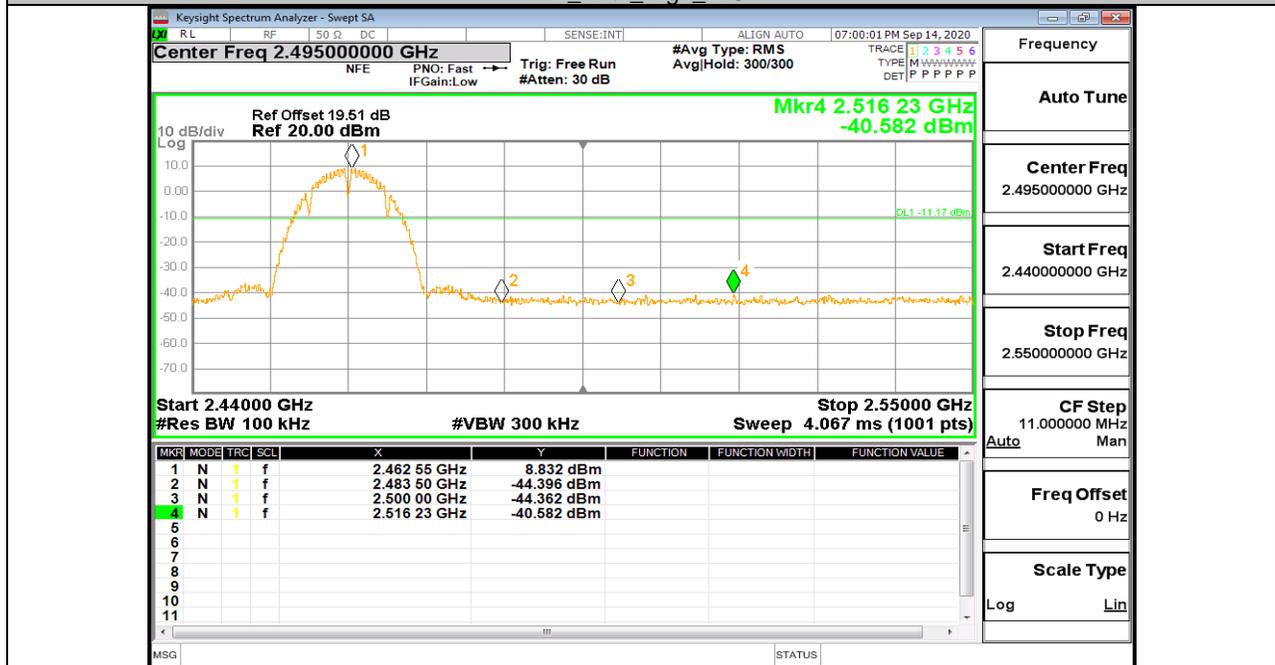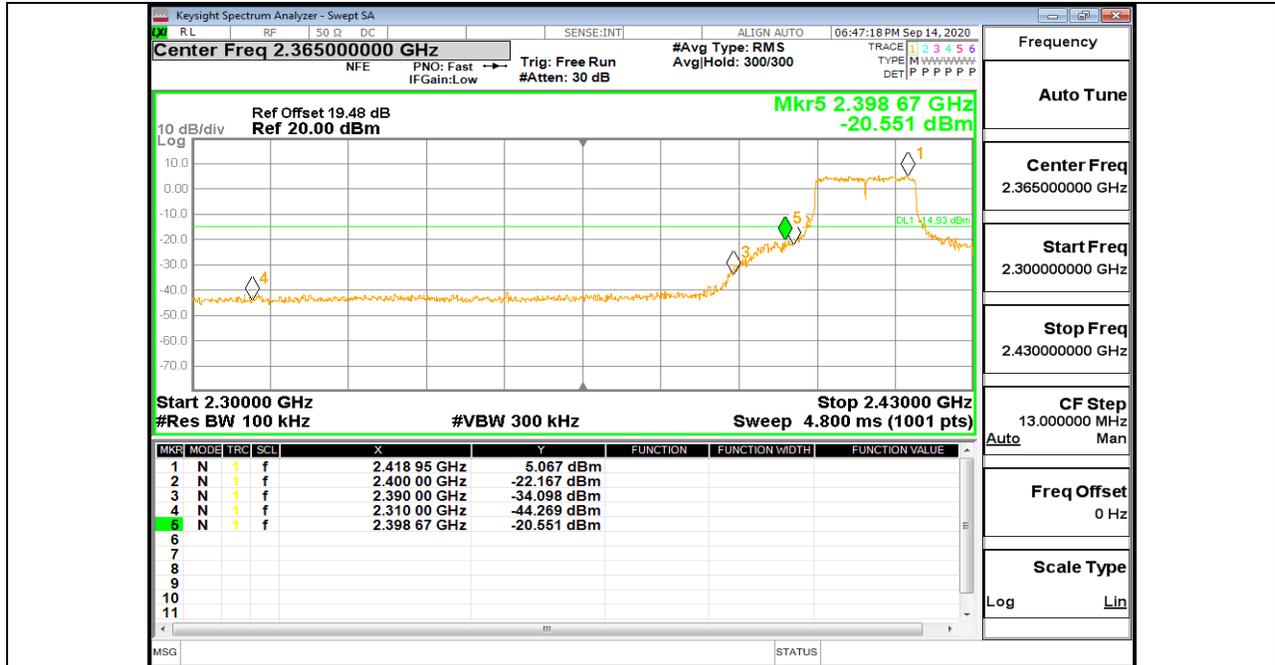| Test Mode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	12.26	-26.11	<=-7.74	PASS
			2417	10.81	-38.08	<=-9.19	PASS
		High	2457	11.29	-39.96	<=-8.71	PASS
			2462	8.83	-40.58	<=-11.17	PASS
11G	Ant1	Low	2412	5.07	-20.55	<=-14.93	PASS
			2417	5.85	-21.77	<=-14.16	PASS
		High	2457	5.03	-39.82	<=-14.97	PASS
			2462	2.62	-41	<=-17.38	PASS
11N20SISO	Ant1	Low	2412	8.27	-12.37	<=-11.73	PASS
			2417	7.07	-20.45	<=-12.93	PASS
		High	2457	5.55	-39.75	<=-14.45	PASS
			2462	1.05	-38.95	<=-18.95	PASS

11.5.2. Test Graphs

11B_Ant1_Low_2412

11B_Ant1_Low_2417

11B_Ant1_High_2457

11B_Ant1_High_2462

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11G_Ant1_Low_2412

11G_Ant1_Low_2417

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11G_Ant1_High_2457

11G_Ant1_High_2462

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Keysight Spectrum Analyzer - Swept SA

LX R L   RF   50 Ω   DC   SENSE:INT   ALIGN AUTO   07:07:41 PM Sep 14, 2020
#Avg Type: RMS   TRACE 1 2 3 4 5 6
Center Freq 2.365000000 GHz   Avg|Hold: 300/300   TYPE M WWWWWW
NFE   PNO: Fast   Trig: Free Run   DET P P P P P P
IFGain:Low   #Atten: 30 dB

Ref Offset 19.48 dB   **Mkr5 2.399 97 GHz**
10 dB/div   **Ref 20.00 dBm**   **-12.371 dBm**
Log

Start 2.30000 GHz   Stop 2.43000 GHz
#Res BW 100 kHz   #VBW 300 kHz   Sweep 4.800 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.409 20 GHz	8.269 dBm			
2	N	1	f	2.400 00 GHz	-12.371 dBm			
3	N	1	f	2.390 00 GHz	-20.420 dBm			
4	N	1	f	2.310 00 GHz	-43.589 dBm			
5	N	1	f	2.399 97 GHz	-12.371 dBm			

Frequency / Auto Tune / Center Freq 2.365000000 GHz / Start Freq 2.300000000 GHz / Stop Freq 2.430000000 GHz / CF Step 13.000000 MHz Auto Man / Freq Offset 0 Hz / Scale Type Log Lin

MSG   STATUS

11N20SISO_Ant1_Low_2412

Keysight Spectrum Analyzer - Swept SA

LX R L   RF   50 Ω   DC   SENSE:INT   ALIGN AUTO   06:07:15 PM Sep 14, 2020
#Avg Type: RMS   TRACE 1 2 3 4 5 6
Center Freq 2.365000000 GHz   Avg|Hold: 300/300   TYPE M WWWWWW
NFE   PNO: Fast   Trig: Free Run   DET P P P P P P
IFGain:Low   #Atten: 30 dB

Ref Offset 19.48 dB   **Mkr5 2.398 93 GHz**
10 dB/div   **Ref 20.00 dBm**   **-20.445 dBm**
Log

Start 2.30000 GHz   Stop 2.43000 GHz
#Res BW 100 kHz   #VBW 300 kHz   Sweep 4.800 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.414 14 GHz	7.067 dBm			
2	N	1	f	2.400 00 GHz	-20.984 dBm			
3	N	1	f	2.390 00 GHz	-35.035 dBm			
4	N	1	f	2.310 00 GHz	-43.657 dBm			
5	N	1	f	2.398 93 GHz	-20.445 dBm			

Frequency / Auto Tune / Center Freq 2.365000000 GHz / Start Freq 2.300000000 GHz / Stop Freq 2.430000000 GHz / CF Step 13.000000 MHz Auto Man / Freq Offset 0 Hz / Scale Type Log Lin

MSG   STATUS
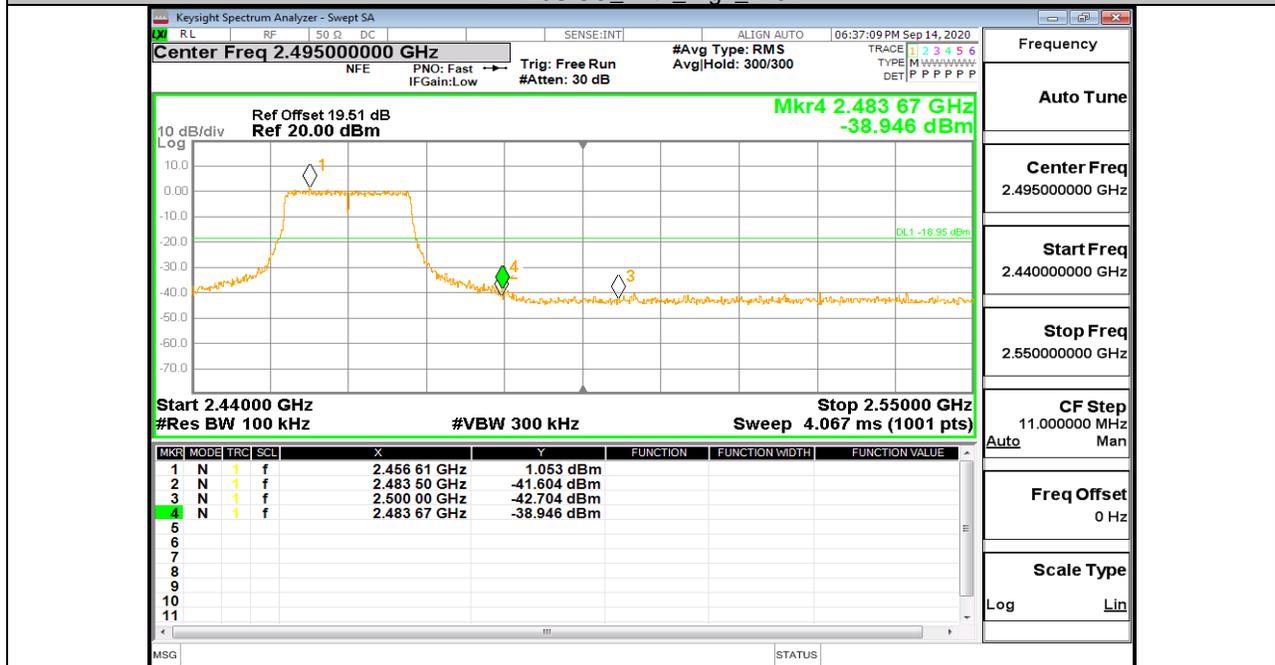
11N20SISO_Ant1_Low_2417

11N20SISO_Ant1_High_2457
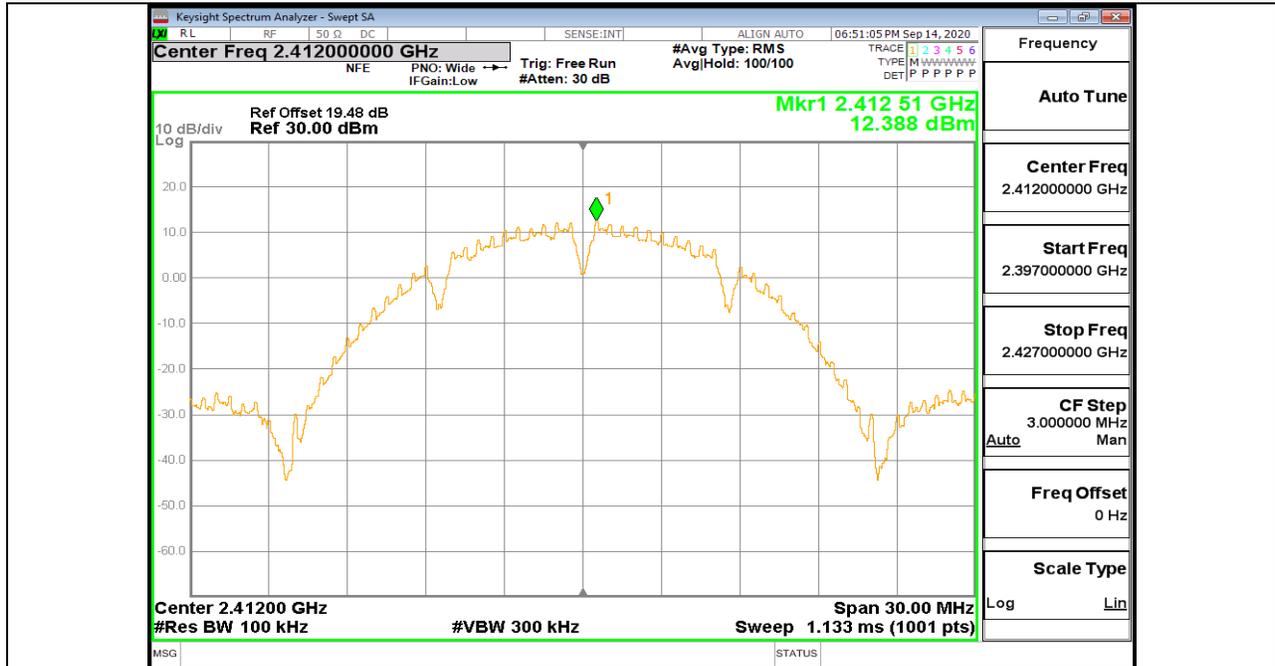

11N20SISO_Ant1_High_2462

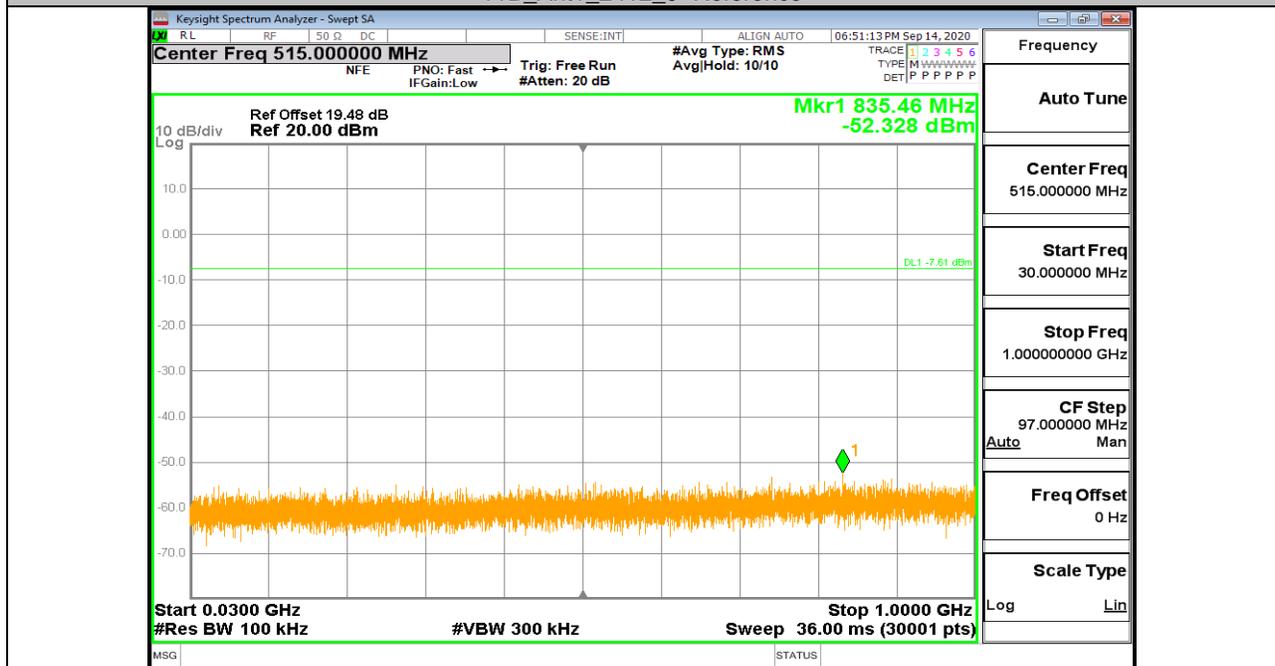## 11.6. Appendix F: Conducted Spurious Emission
11.6.1. Test Result

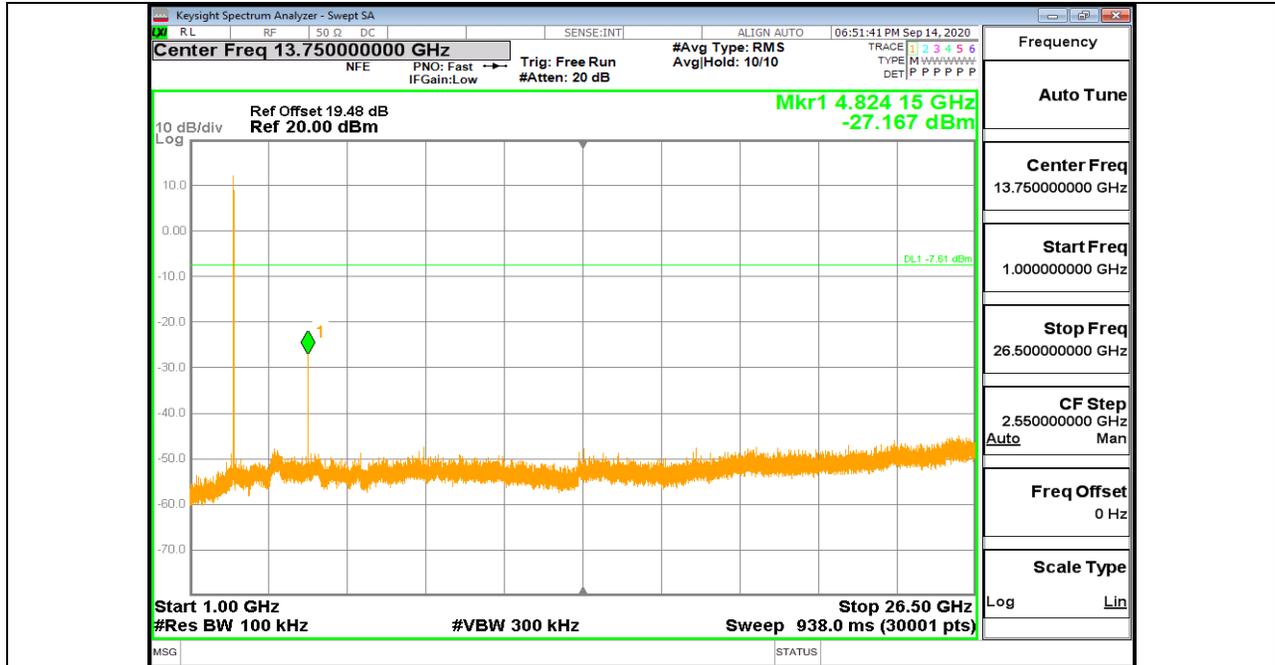| Test Mode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	12.39	12.39	---	PASS
			30~1000	30~1000	-52.328	<=-7.612	PASS
			1000~26500	1000~26500	-27.167	<=-7.612	PASS
		2417	Reference	11.52	11.52	---	PASS
			30~1000	30~1000	-52.103	<=-8.479	PASS
			1000~26500	1000~26500	-28.591	<=-8.479	PASS
		2437	Reference	11.24	11.24	---	PASS
			30~1000	30~1000	-53.839	<=-8.763	PASS
			1000~26500	1000~26500	-30.295	<=-8.763	PASS
		2457	Reference	11.17	11.17	---	PASS
			30~1000	30~1000	-53.307	<=-8.827	PASS
			1000~26500	1000~26500	-30.671	<=-8.827	PASS
		2462	Reference	9.82	9.82	---	PASS
			30~1000	30~1000	-53.476	<=-10.182	PASS
			1000~26500	1000~26500	-33.029	<=-10.182	PASS
11G	Ant1	2412	Reference	4.62	4.62	---	PASS
			30~1000	30~1000	-53.375	<=-15.382	PASS
			1000~26500	1000~26500	-42.52	<=-15.382	PASS
		2417	Reference	6.97	6.97	---	PASS
			30~1000	30~1000	-53.111	<=-13.034	PASS
			1000~26500	1000~26500	-39.57	<=-13.034	PASS
		2437	Reference	8.68	8.68	---	PASS
			30~1000	30~1000	-53.886	<=-11.319	PASS
			1000~26500	1000~26500	-39.179	<=-11.319	PASS
		2457	Reference	4.98	4.98	---	PASS
			30~1000	30~1000	-52.798	<=-15.02	PASS
			1000~26500	1000~26500	-45.051	<=-15.02	PASS
		2462	Reference	2.46	2.46	---	PASS
			30~1000	30~1000	-53.17	<=-17.536	PASS
			1000~26500	1000~26500	-44.459	<=-17.536	PASS
11N20SISO	Ant1	2412	Reference	8.56	8.56	---	PASS
			30~1000	30~1000	-53.132	<=-11.437	PASS
			1000~26500	1000~26500	-38.091	<=-11.437	PASS
		2417	Reference	6.53	6.53	---	PASS
			30~1000	30~1000	-53.773	<=-13.469	PASS
			1000~26500	1000~26500	-41.111	<=-13.469	PASS
		2437	Reference	7.65	7.65	---	PASS
			30~1000	30~1000	-53.154	<=-12.355	PASS
			1000~26500	1000~26500	-39.603	<=-12.355	PASS
		2457	Reference	5.01	5.01	---	PASS
			30~1000	30~1000	-52.604	<=-14.995	PASS
			1000~26500	1000~26500	-43.687	<=-14.995	PASS
		2462	Reference	0.31	0.31	---	PASS
			30~1000	30~1000	-52.26	<=-19.688	PASS
			1000~26500	1000~26500	-44.449	<=-19.688	PASS

11.6.2.　　Test Graphs

11B_Ant1_2412_0~Reference

11B_Ant1_2412_30~1000

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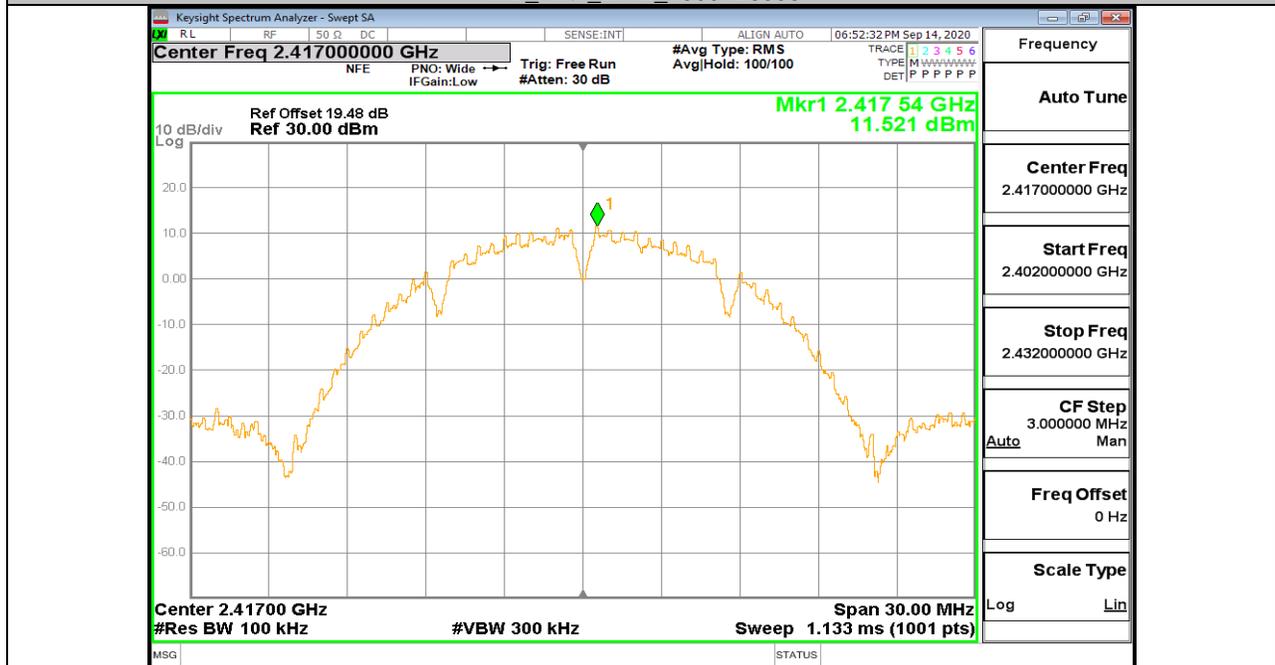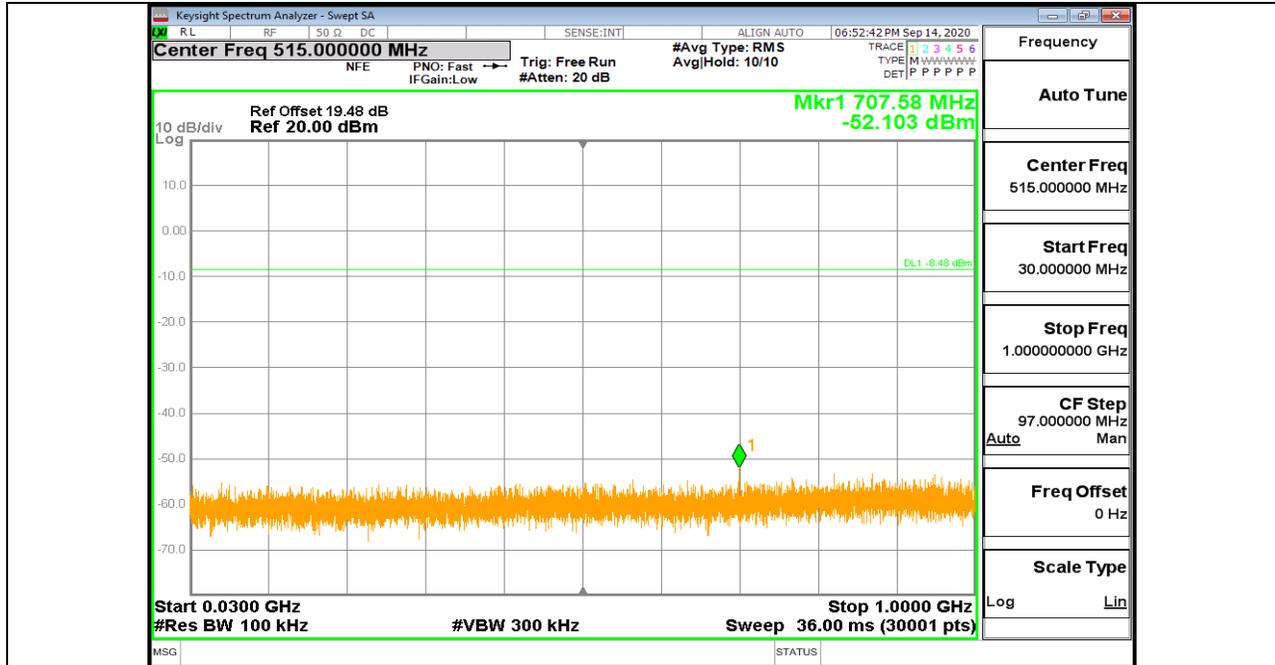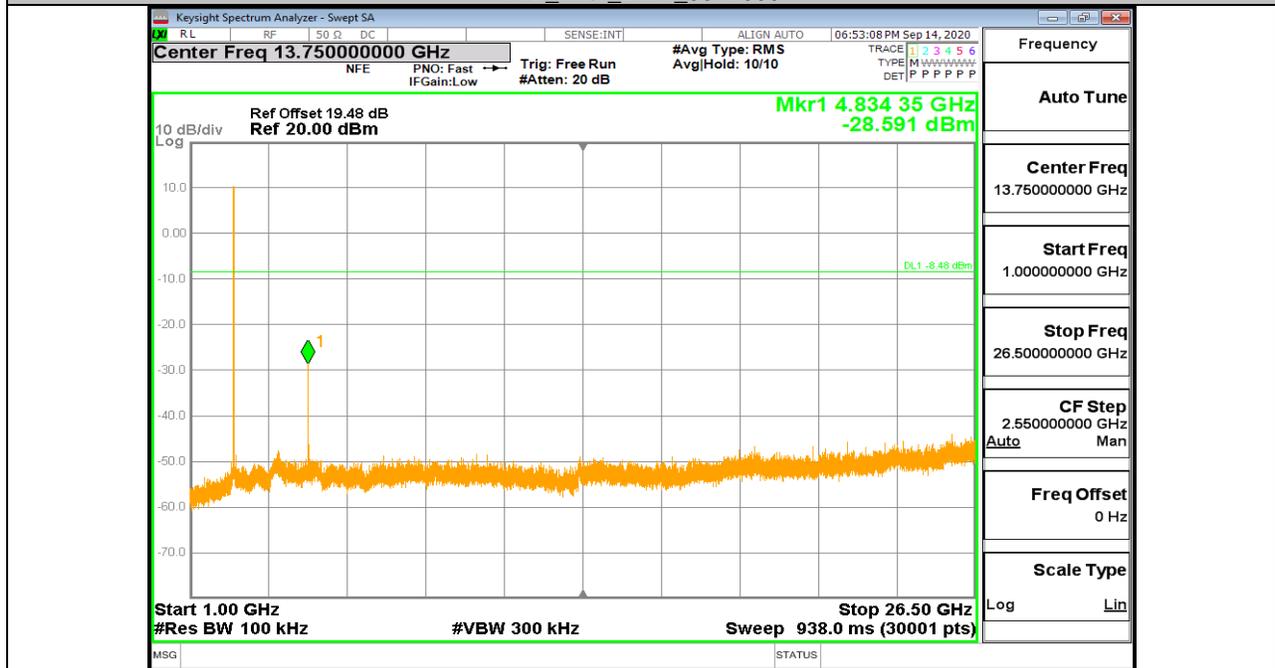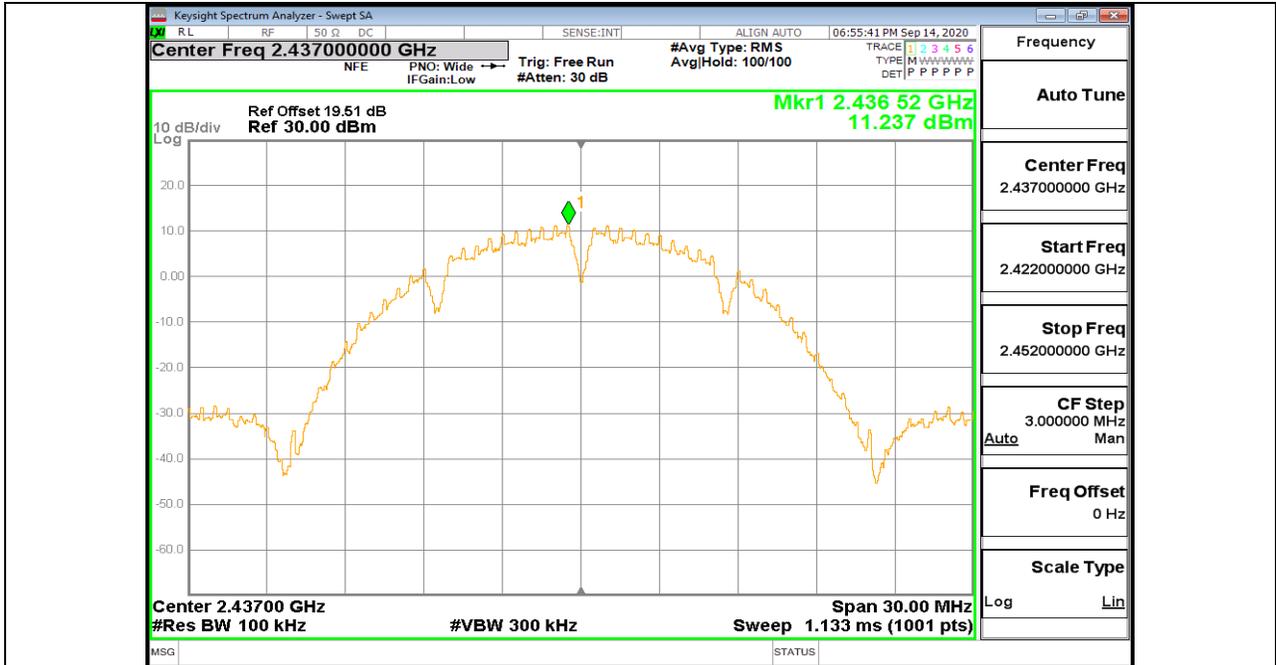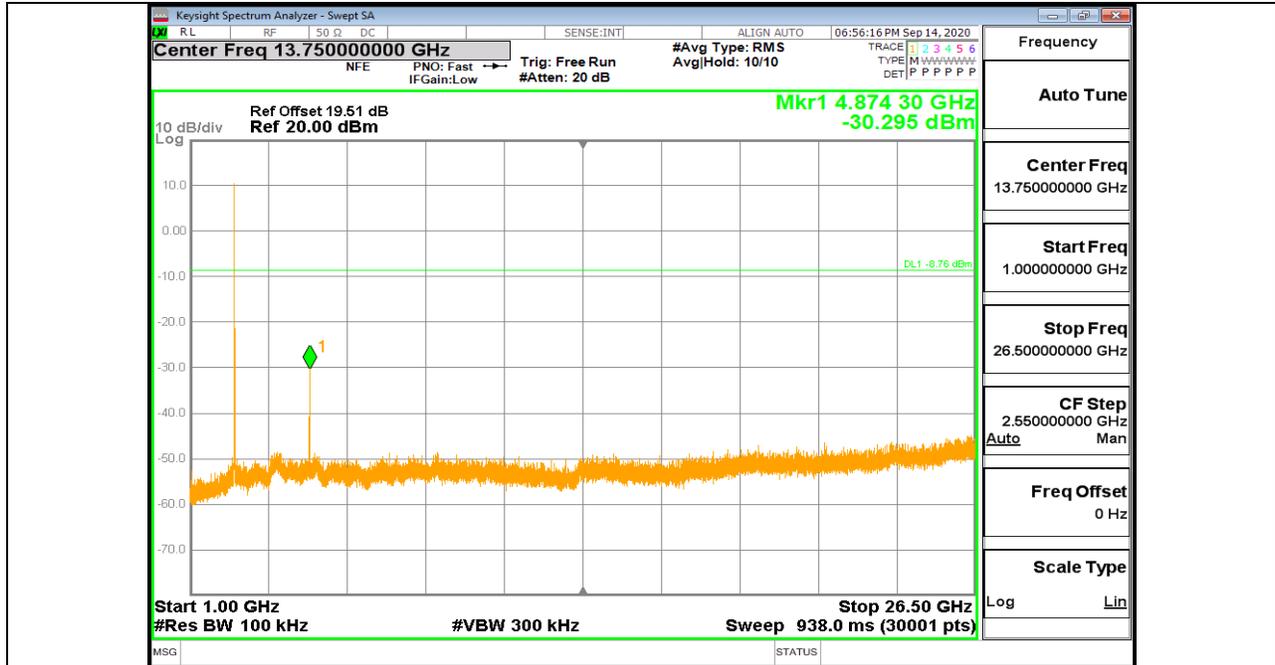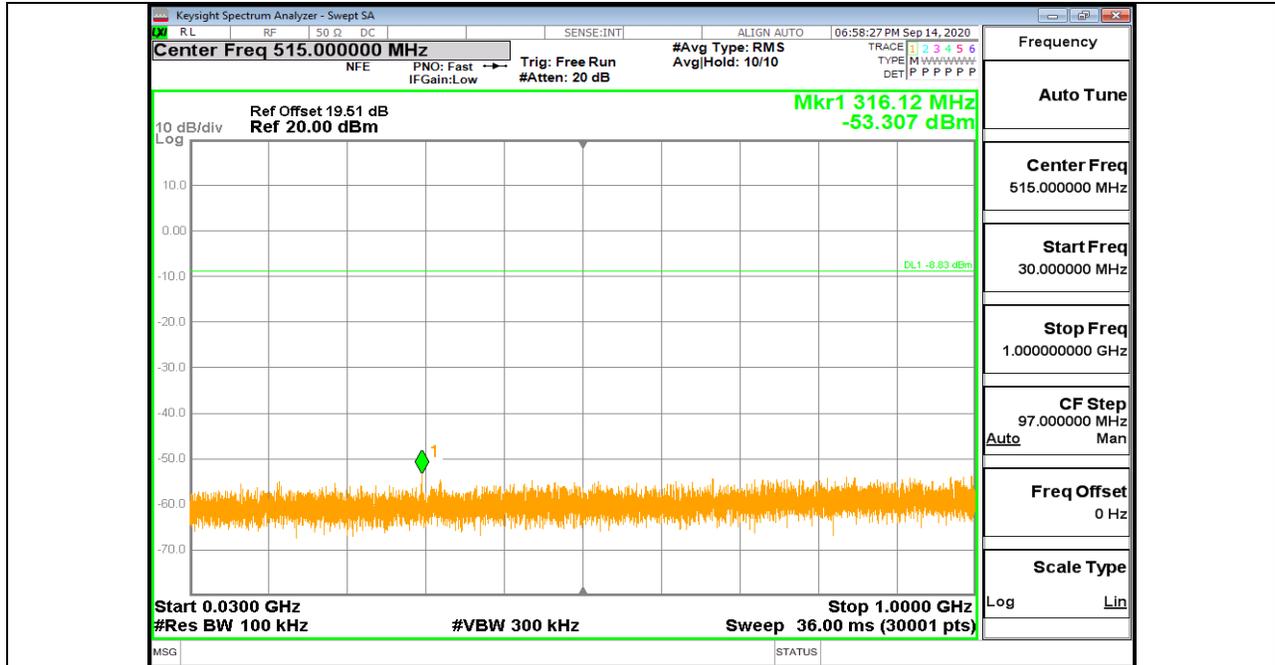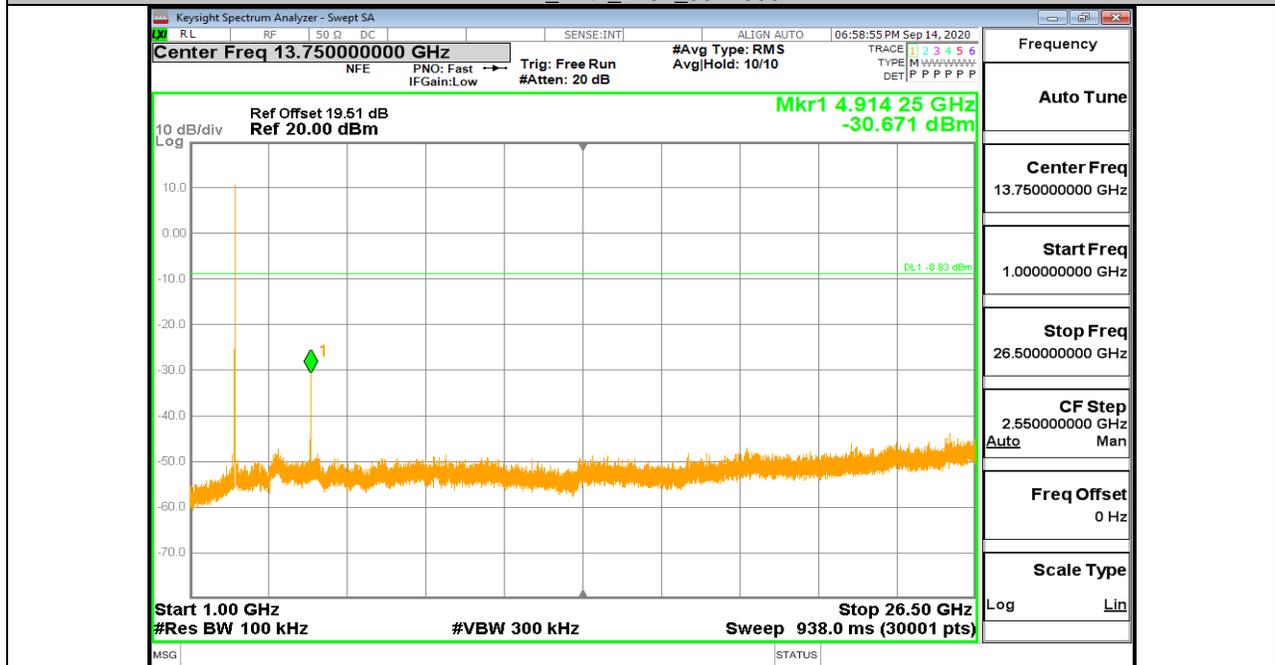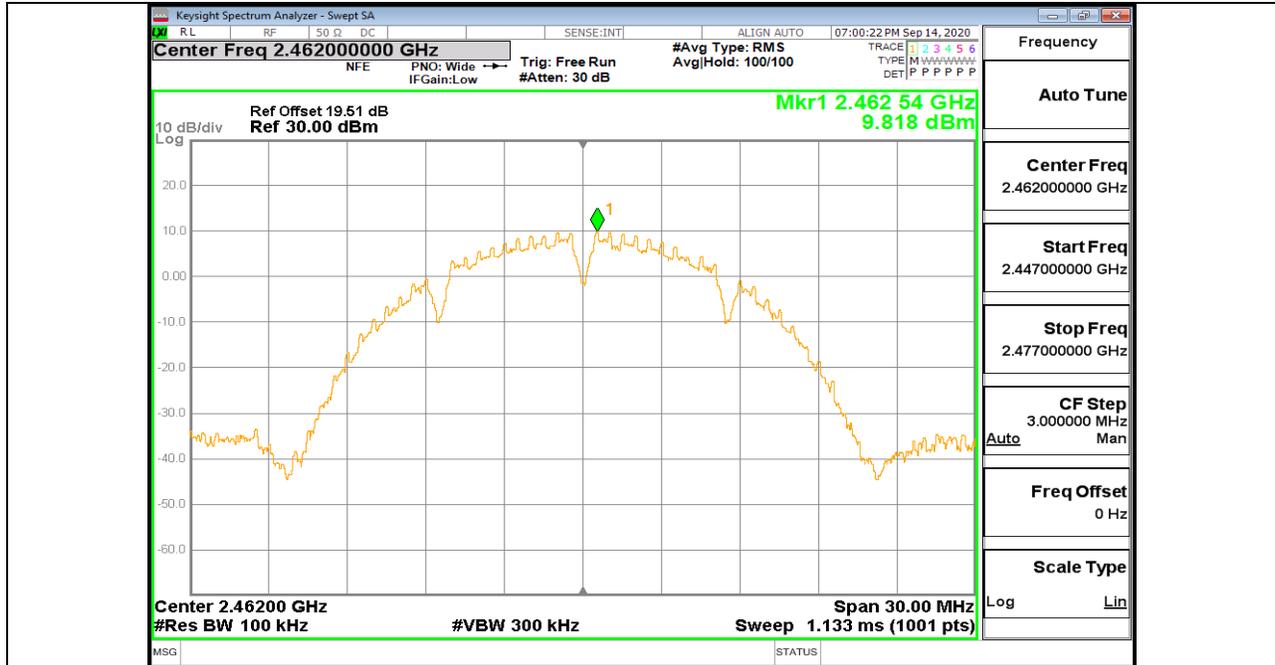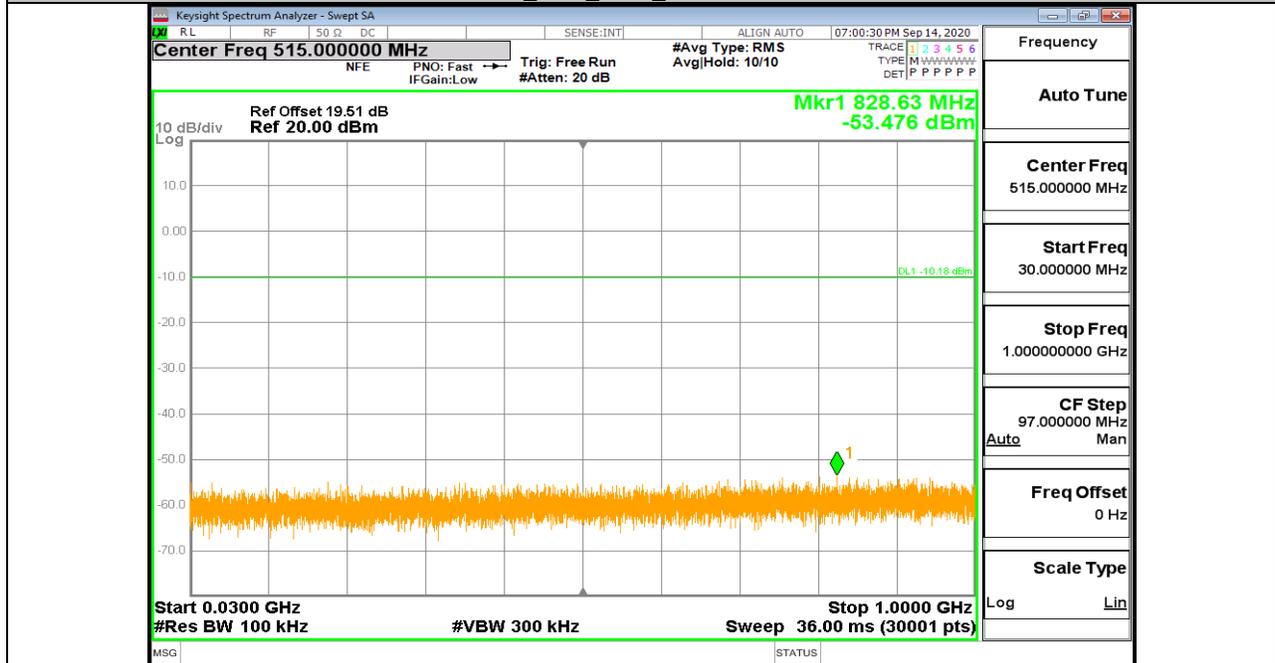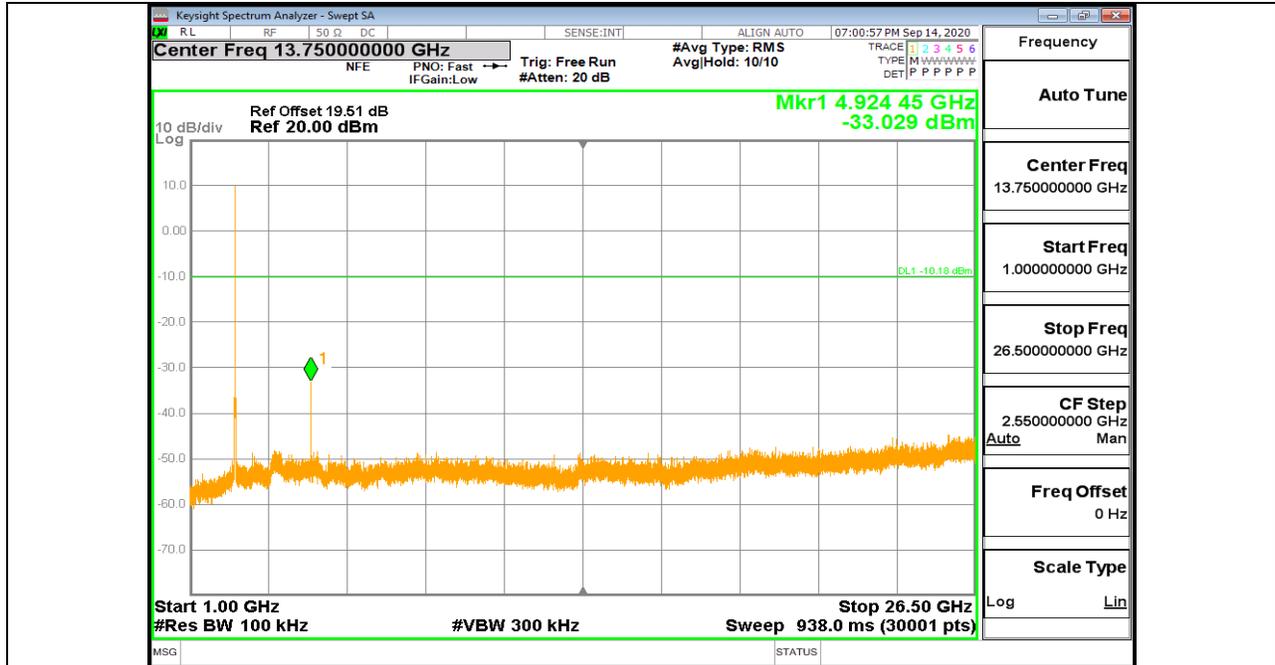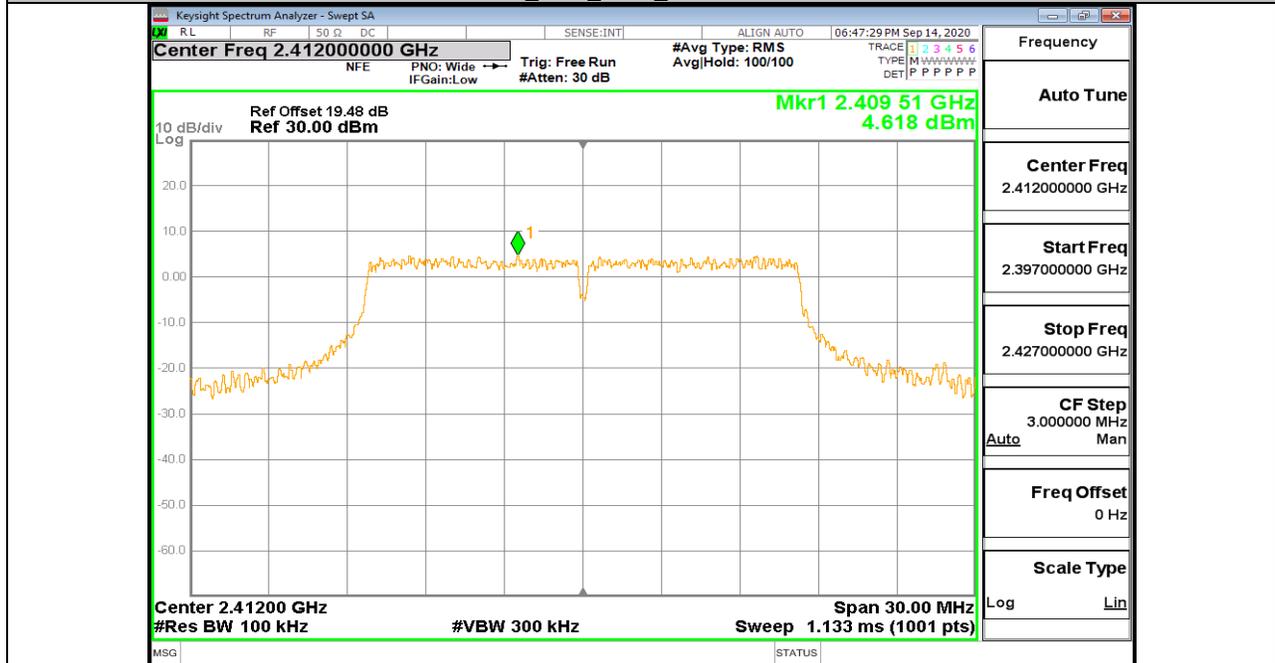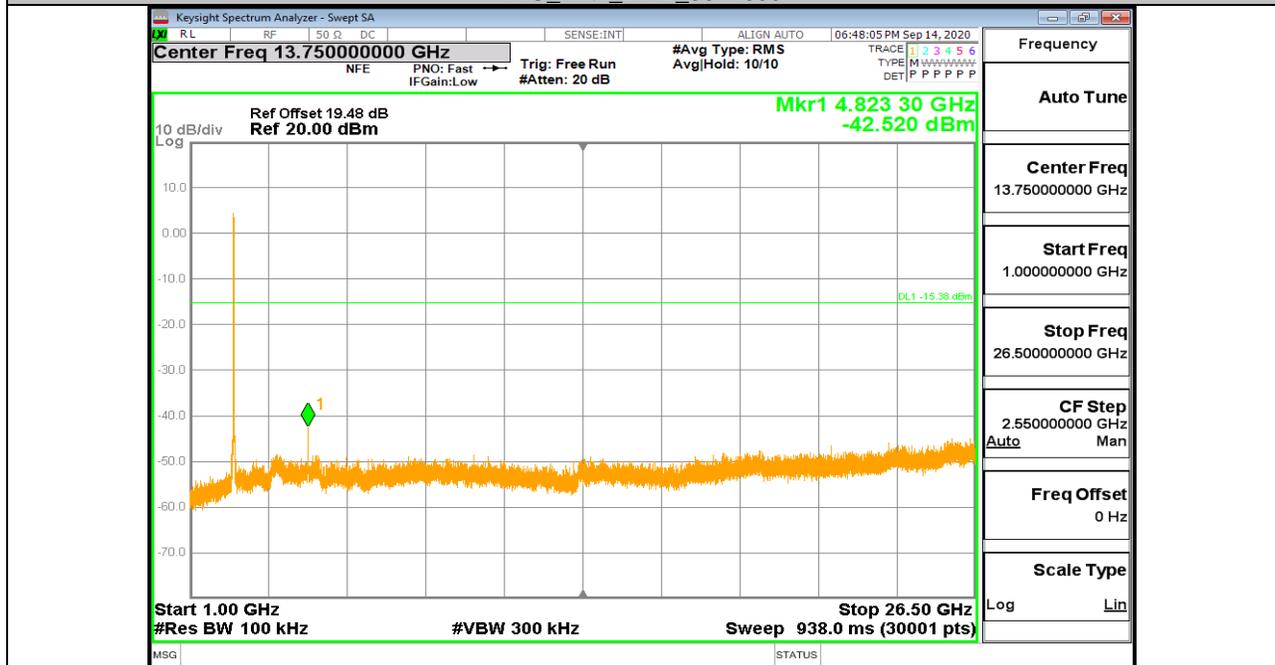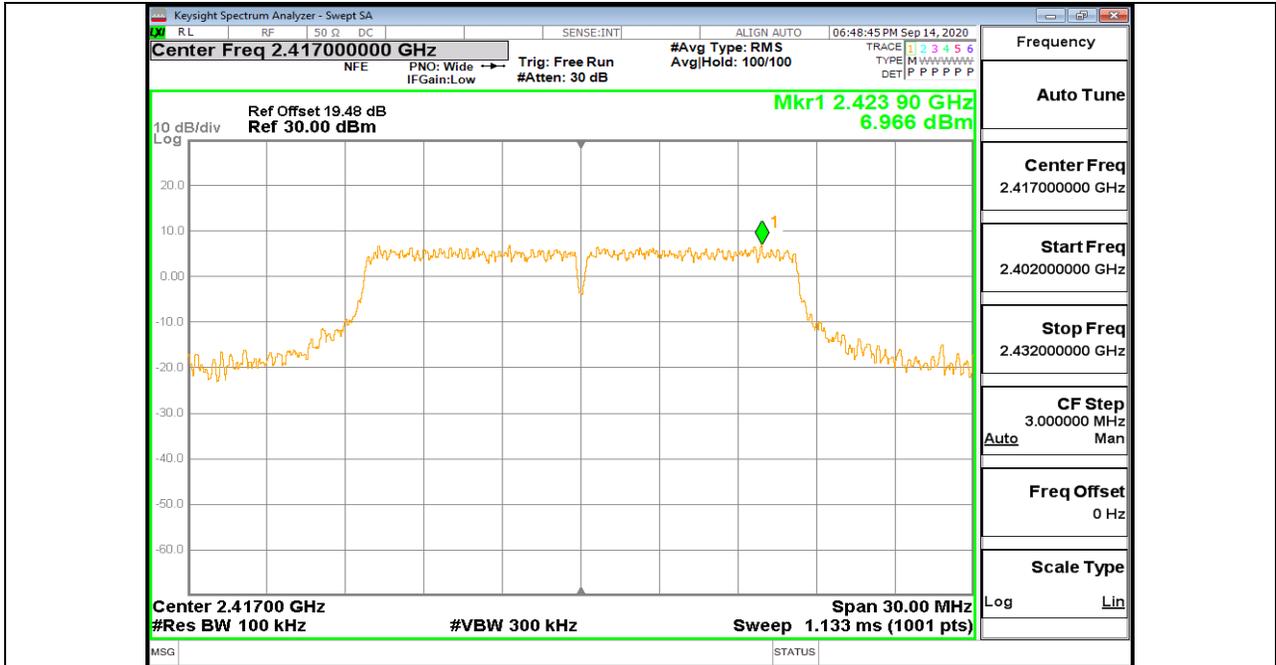
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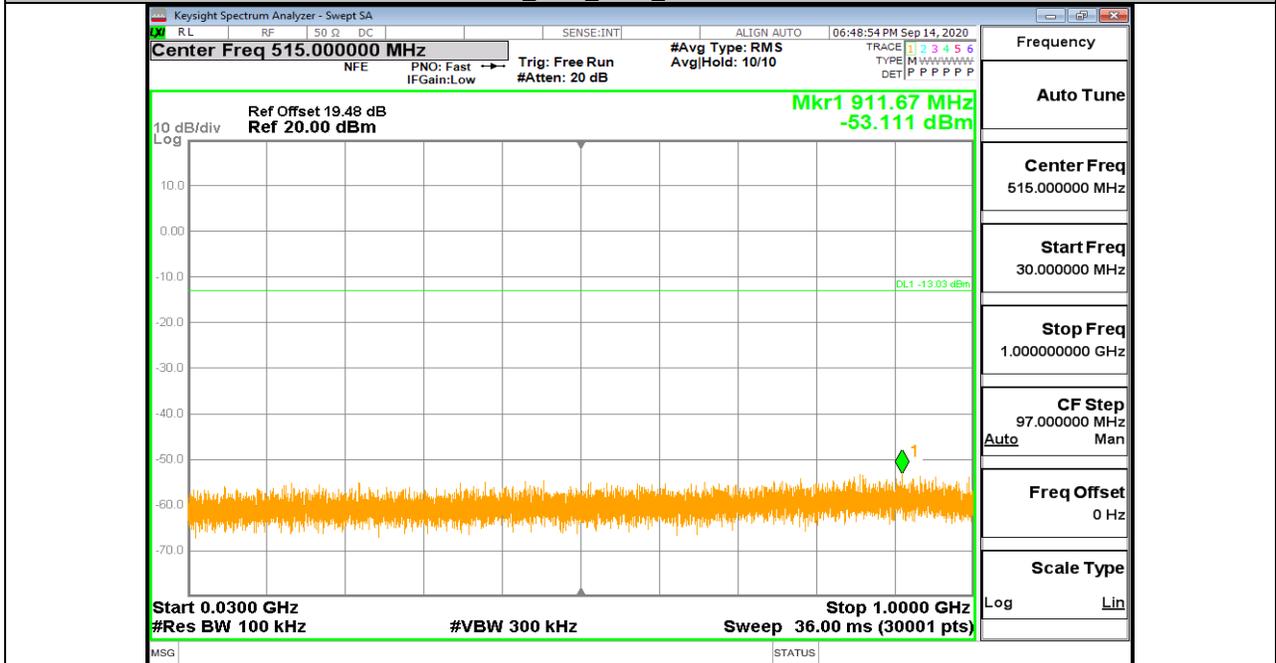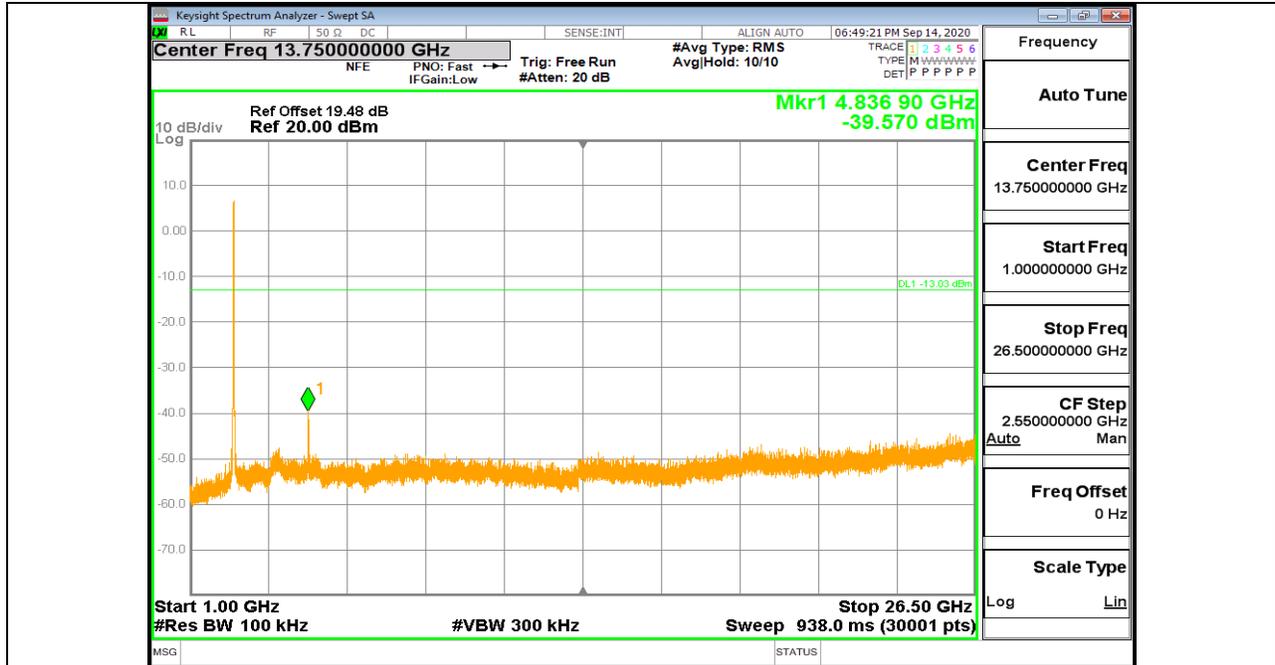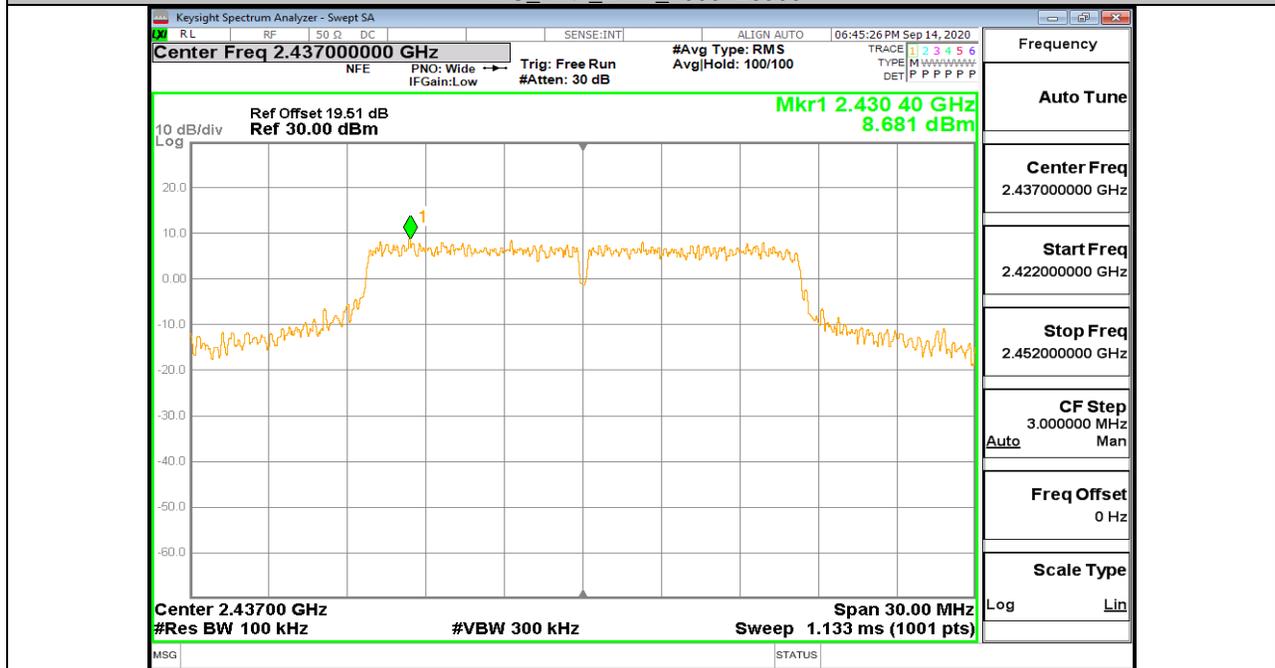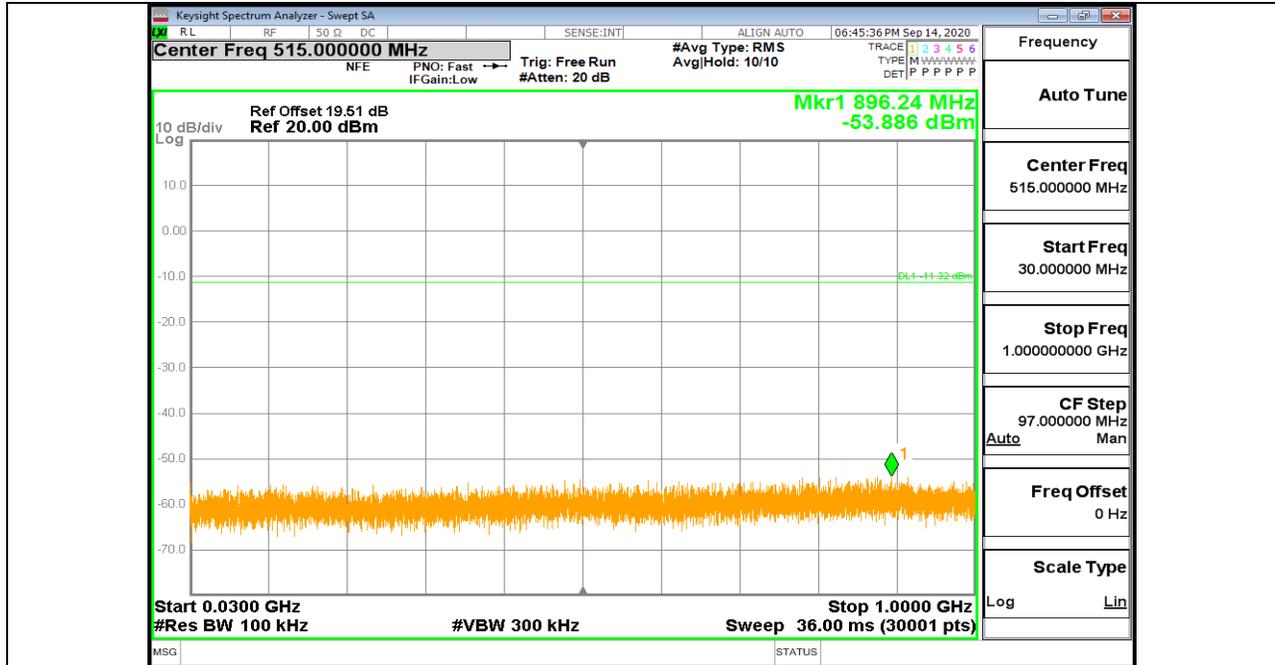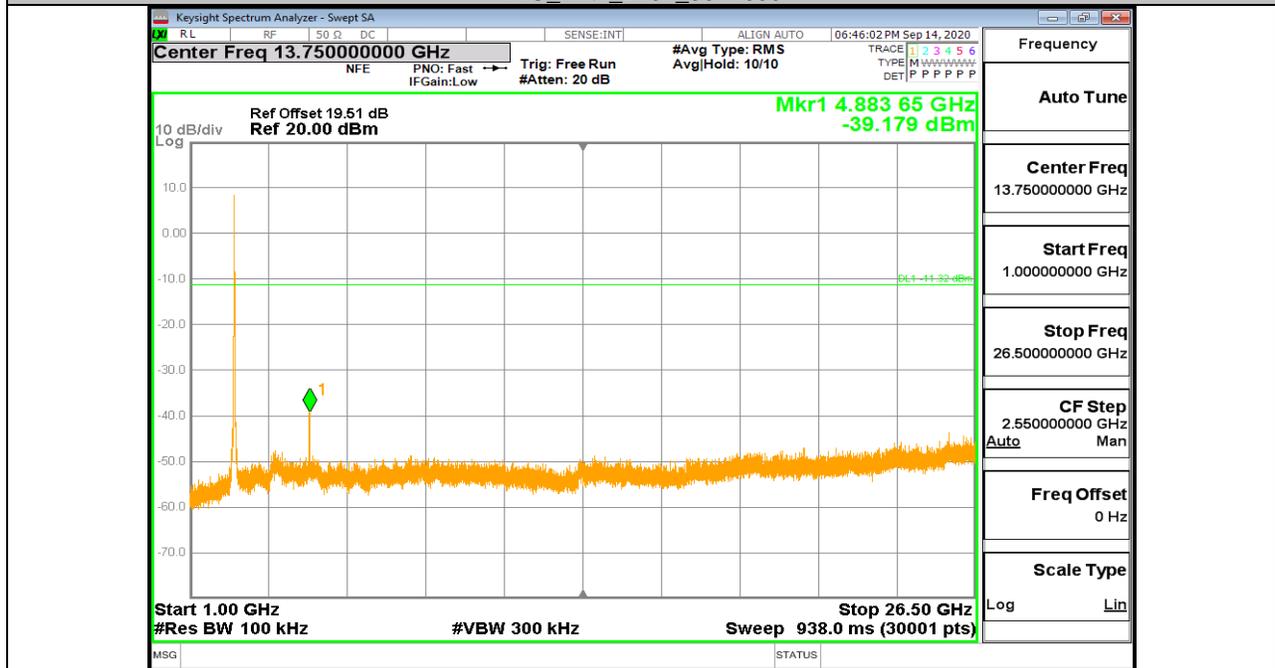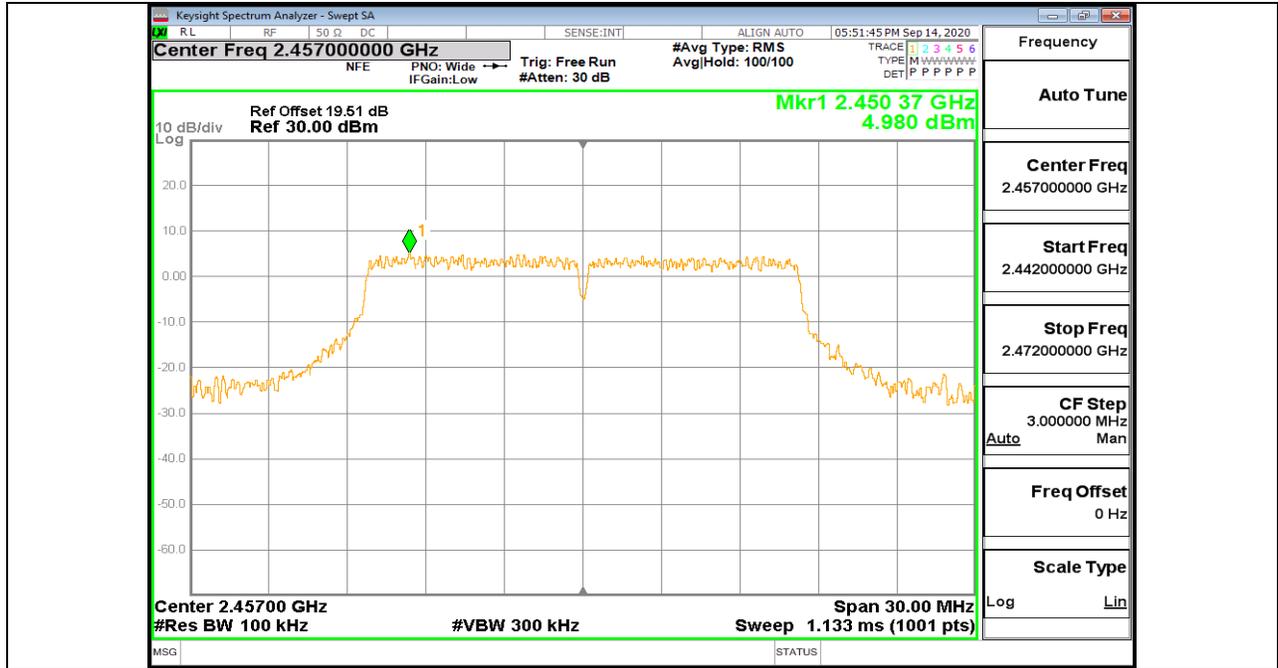

11B_Ant1_2417_0~Reference

11B_Ant1_2417_30~1000

11B_Ant1_2417_1000~26500

11B_Ant1_2437_0~Reference

11B_Ant1_2437_30~1000

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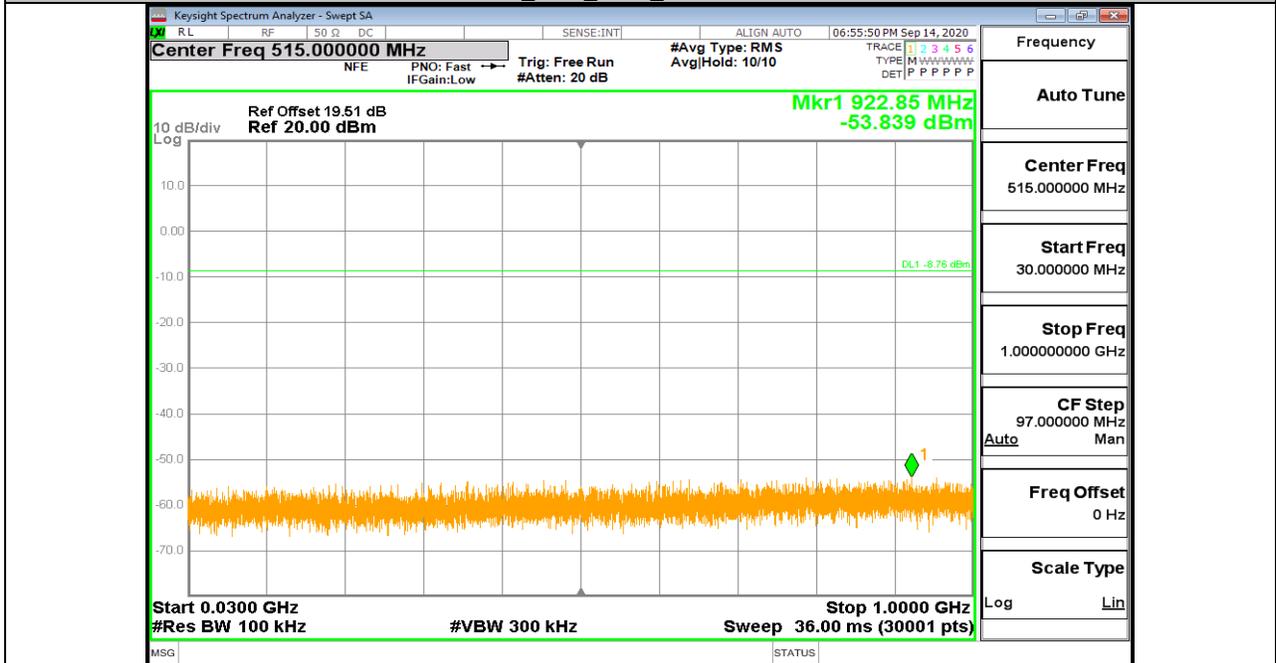
11B_Ant1_2437_1000~26500

11B_Ant1_2457_0~Reference

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11B_Ant1_2457_30~1000

11B_Ant1_2457_1000~26500

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11B_Ant1_2462_0~Reference

11B_Ant1_2462_30~1000

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11B_Ant1_2462_1000~26500

11G_Ant1_2412_0~Reference

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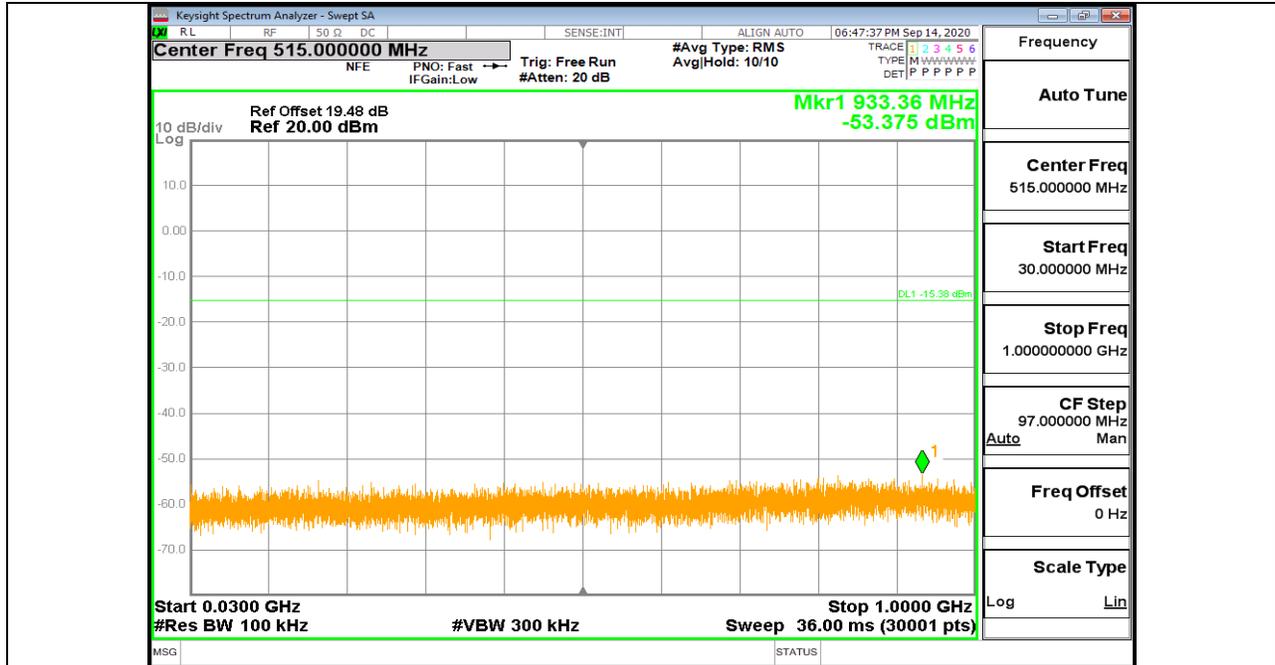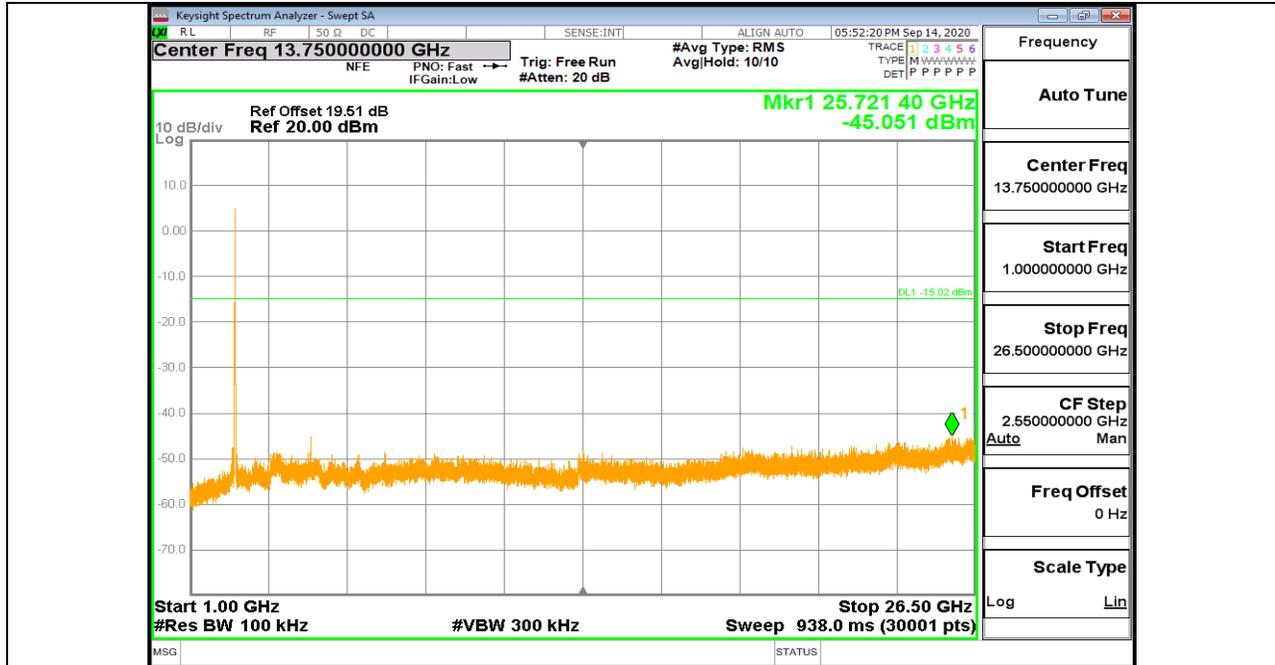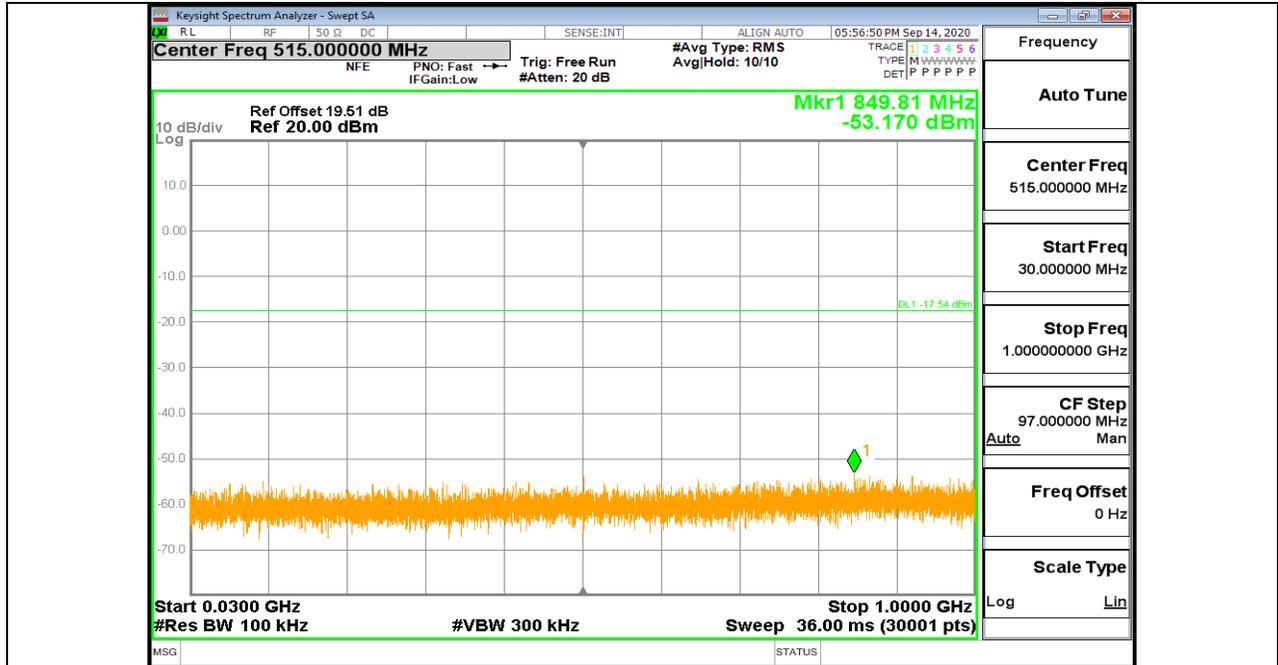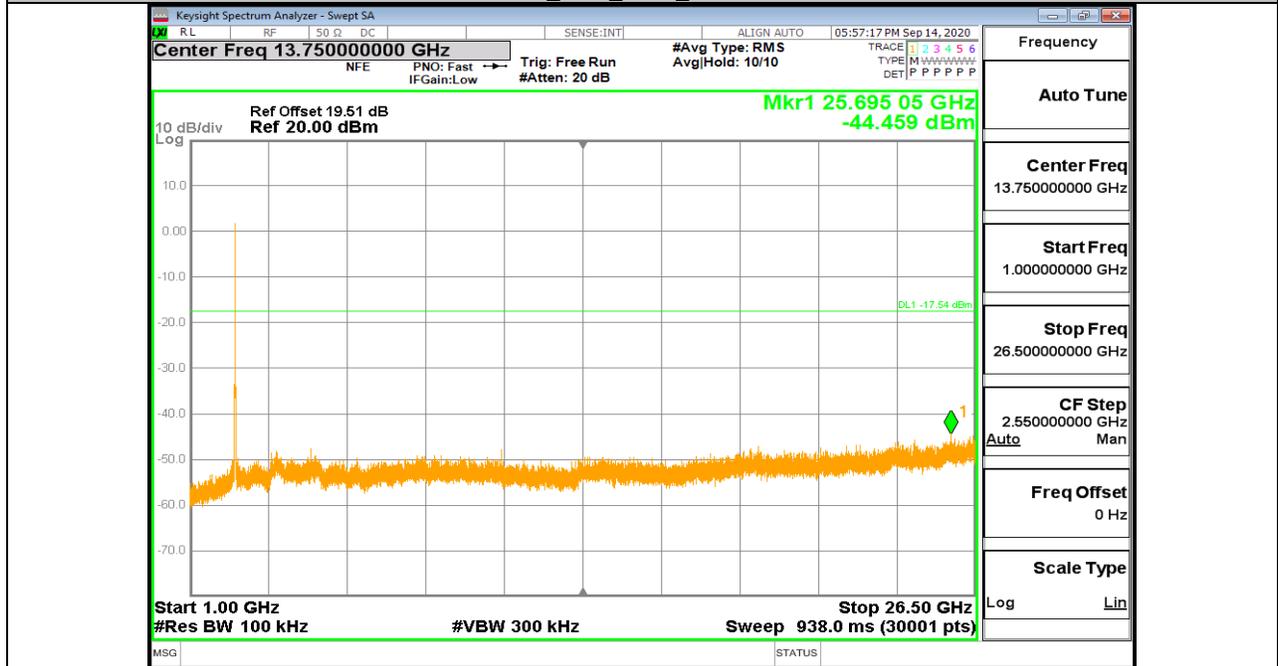
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11G_Ant1_2412_1000~26500

11G_Ant1_2417_0~Reference

11G_Ant1_2417_30~1000

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11G_Ant1_2417_1000~26500

11G_Ant1_2437_0~Reference

11G_Ant1_2437_30~1000

11G_Ant1_2437_1000~26500

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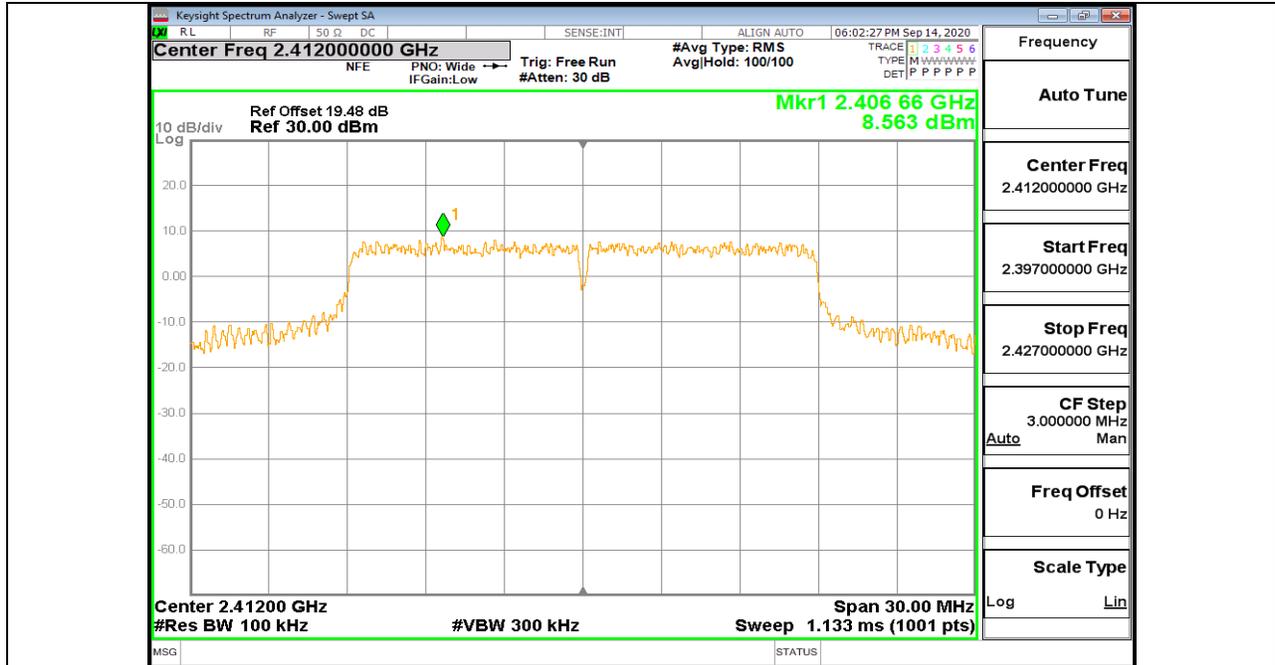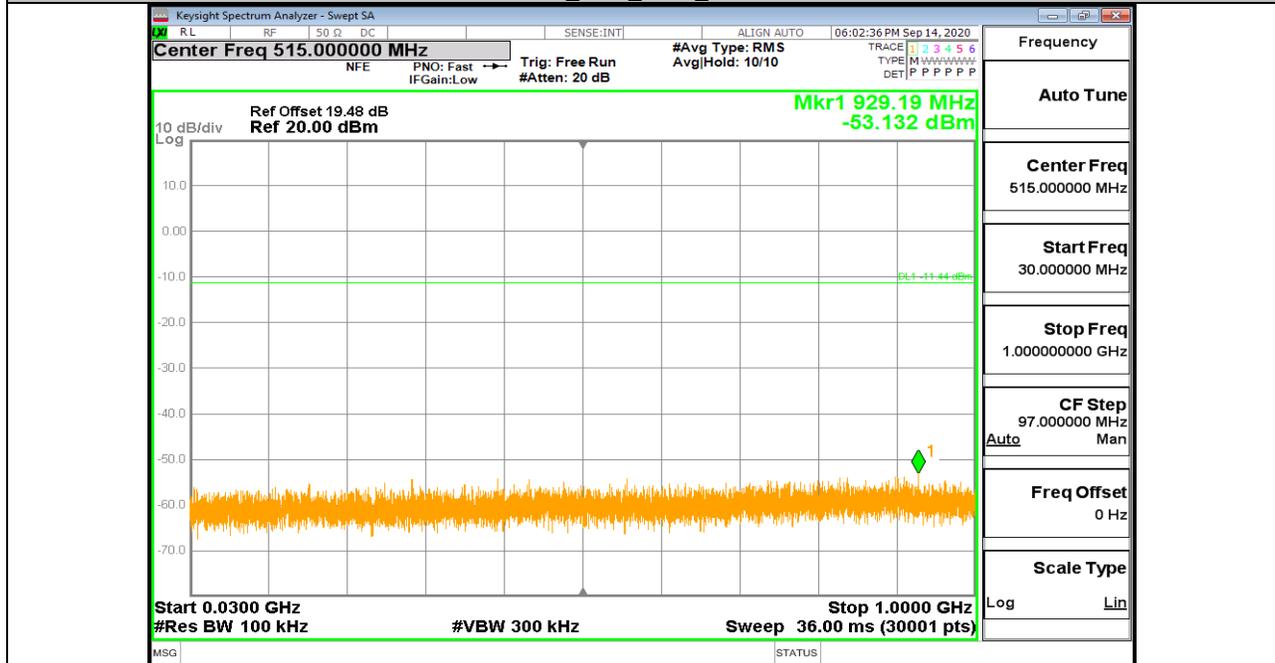
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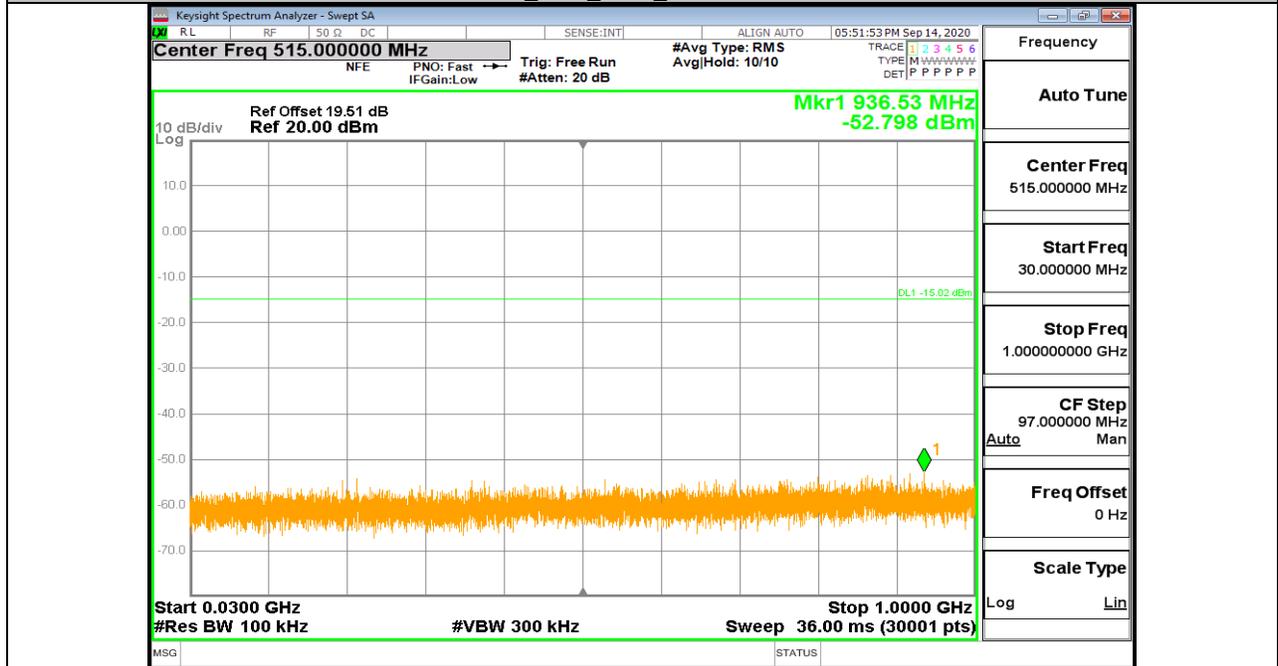
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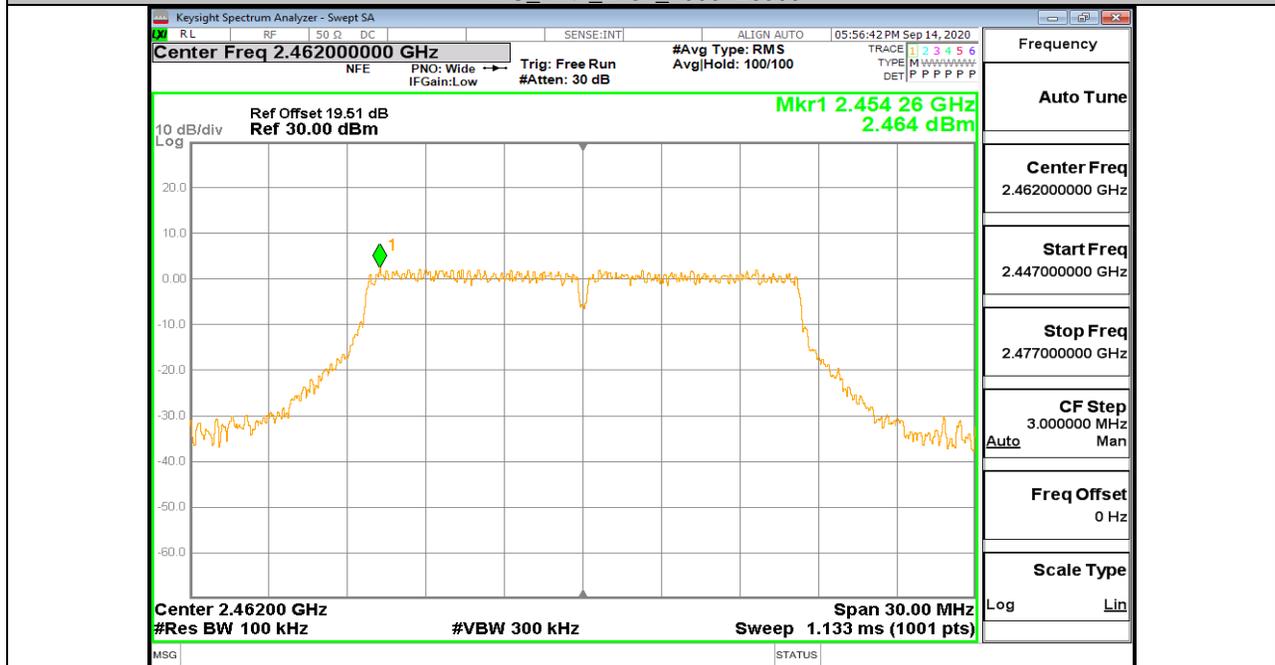
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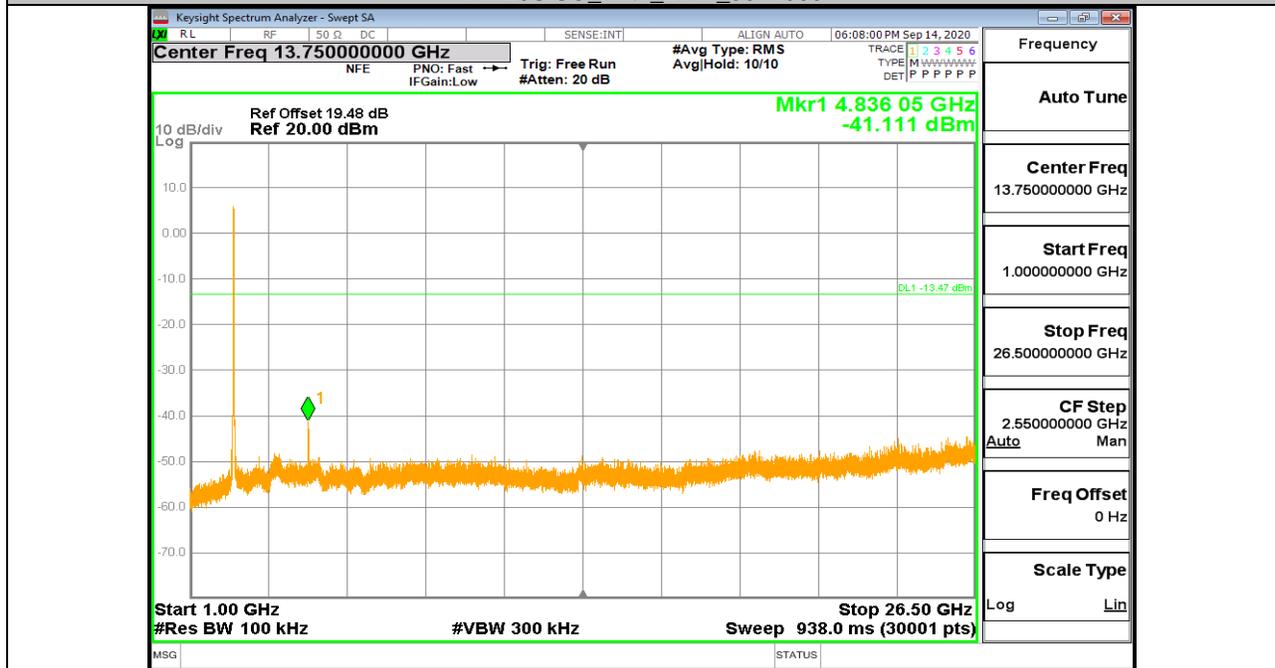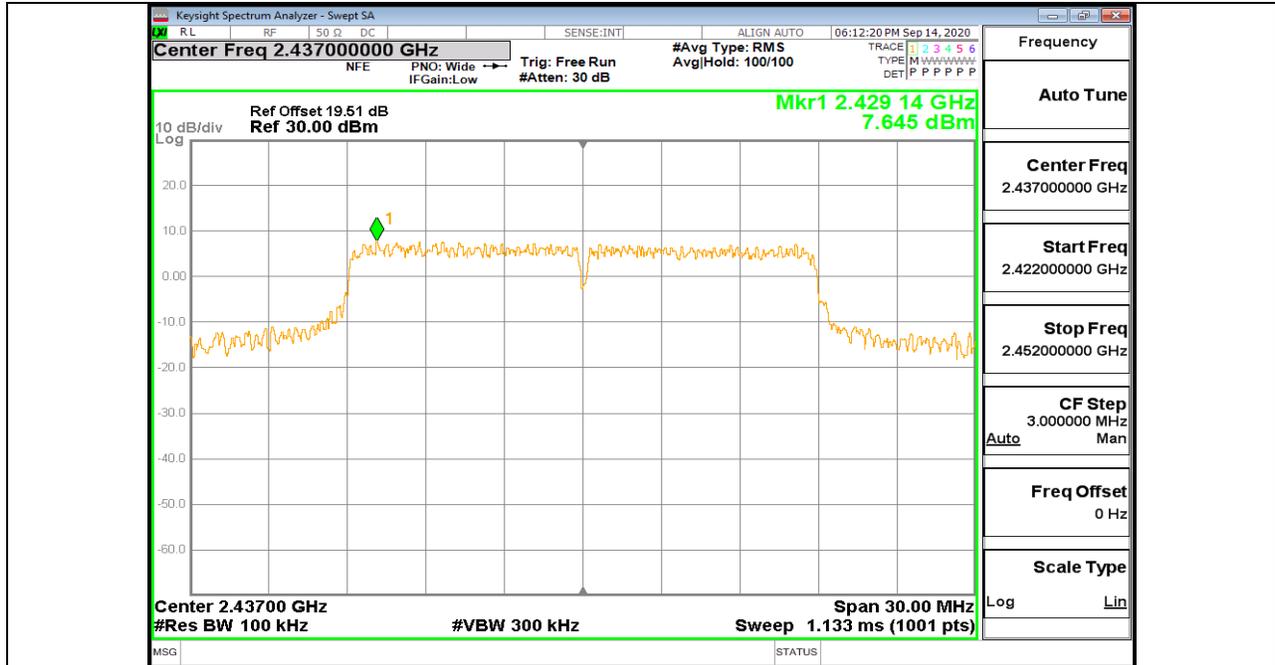
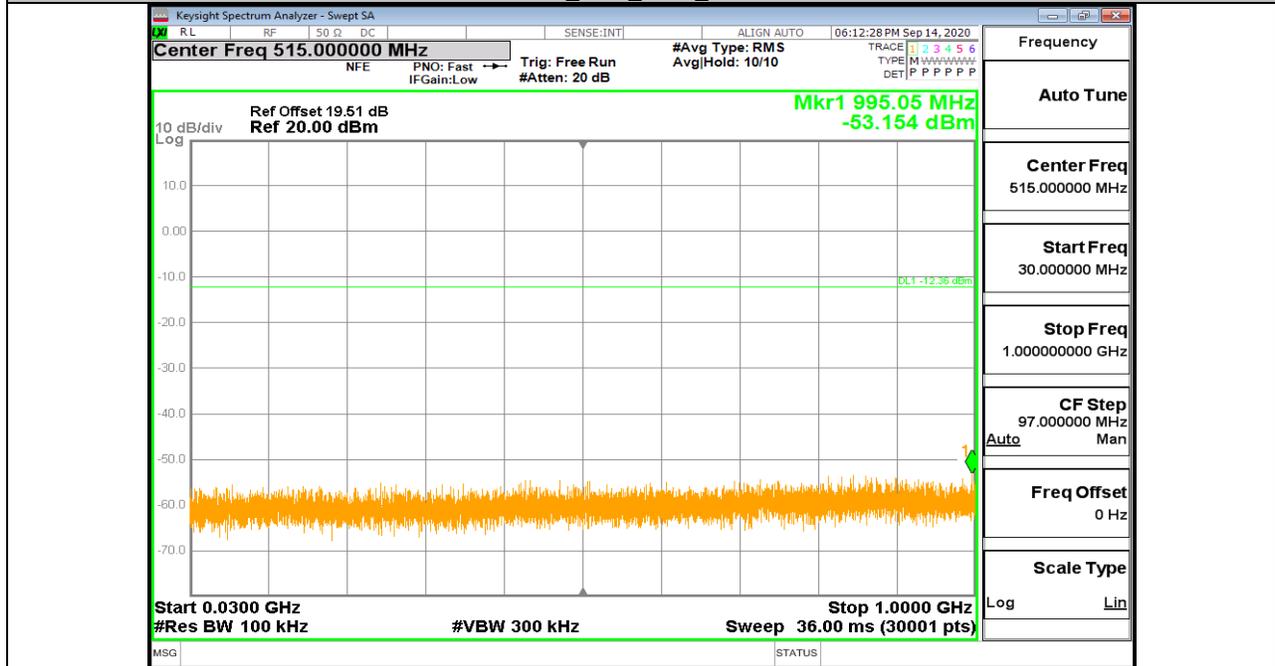11N20SISO_Ant1_2412_0~Reference
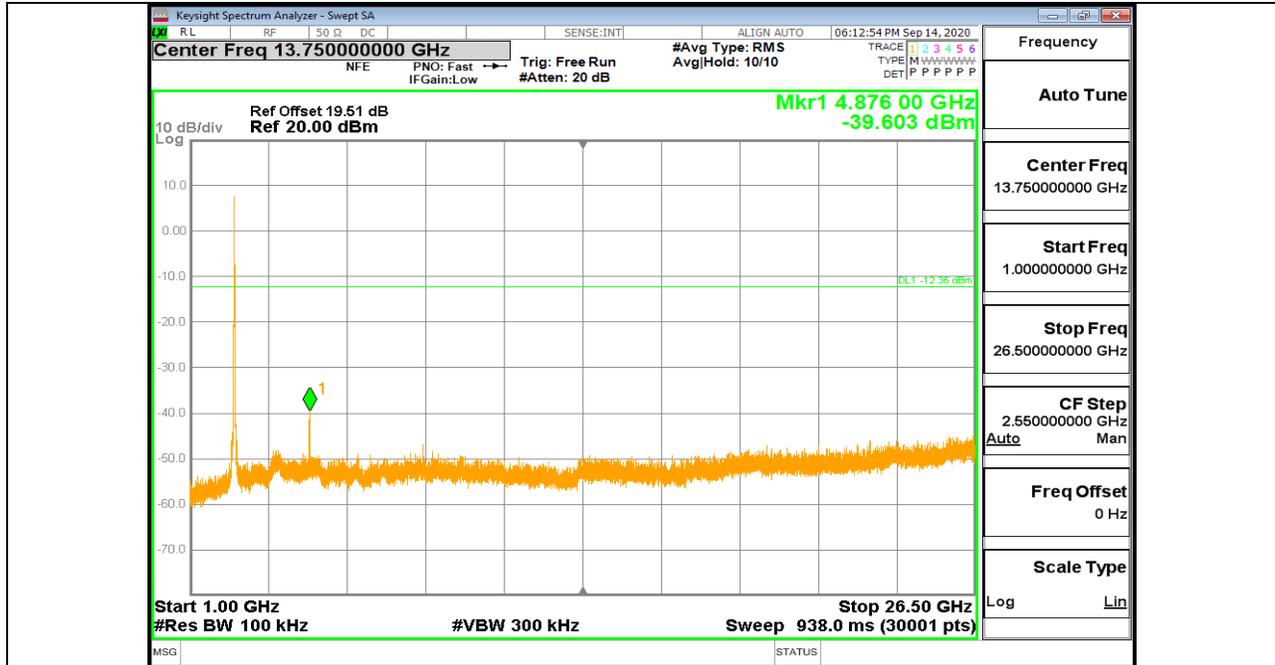

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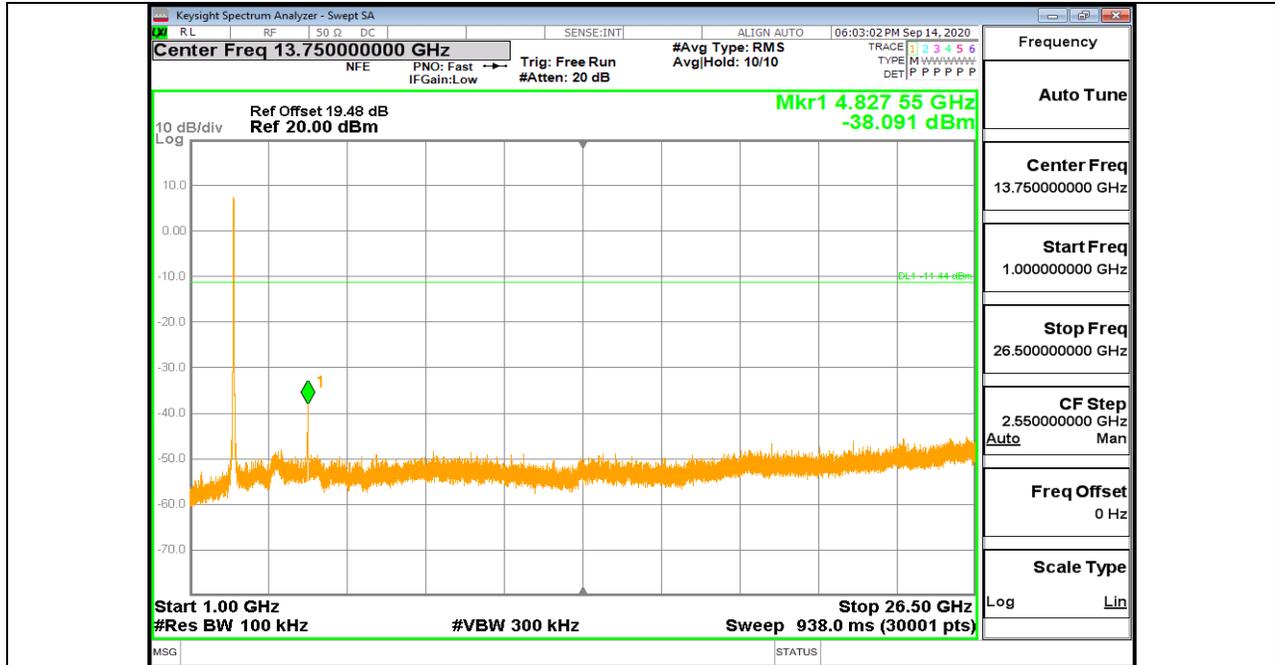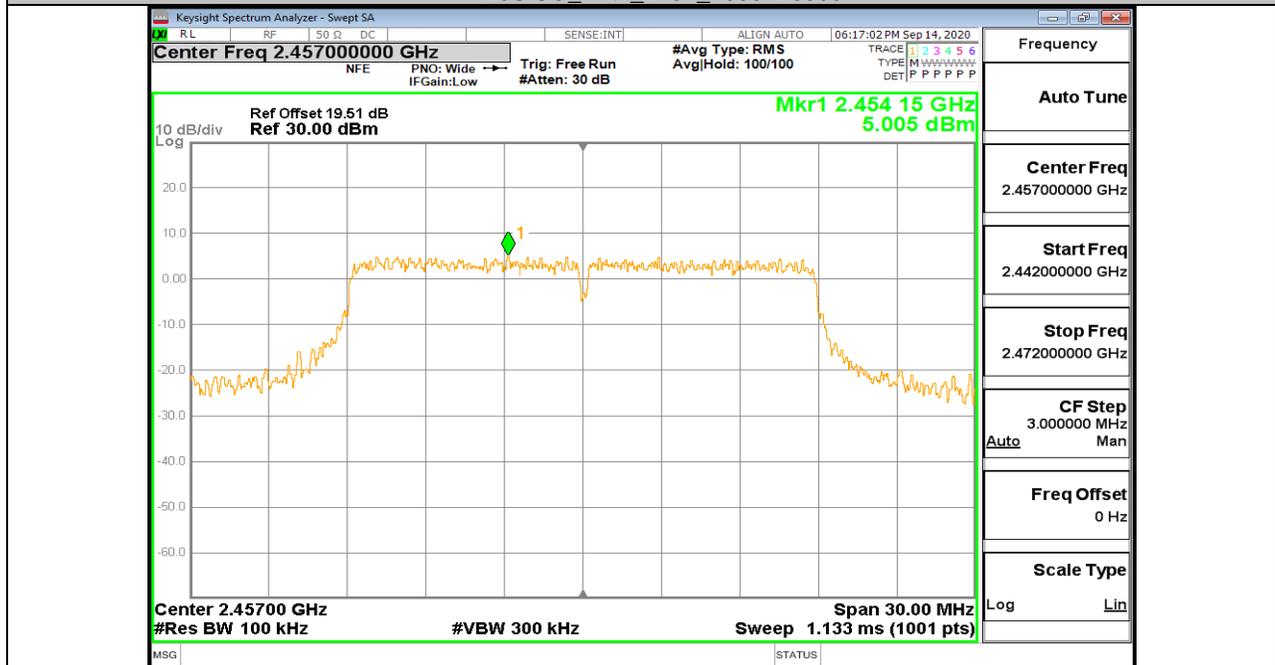
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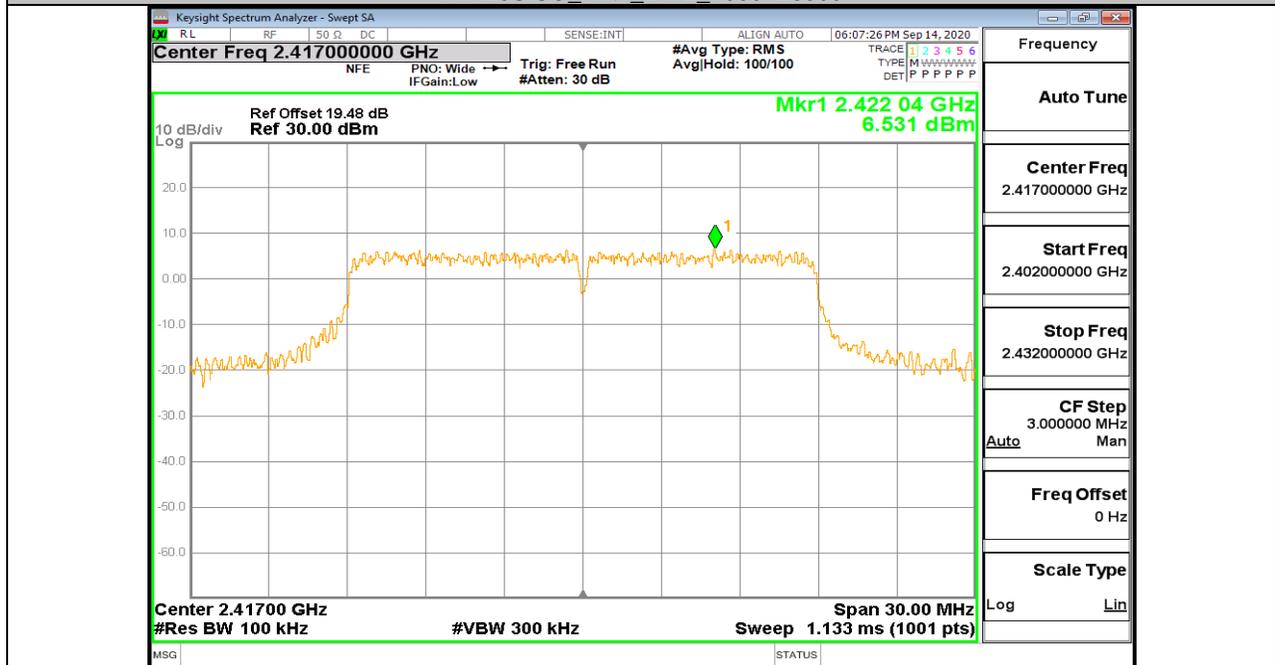
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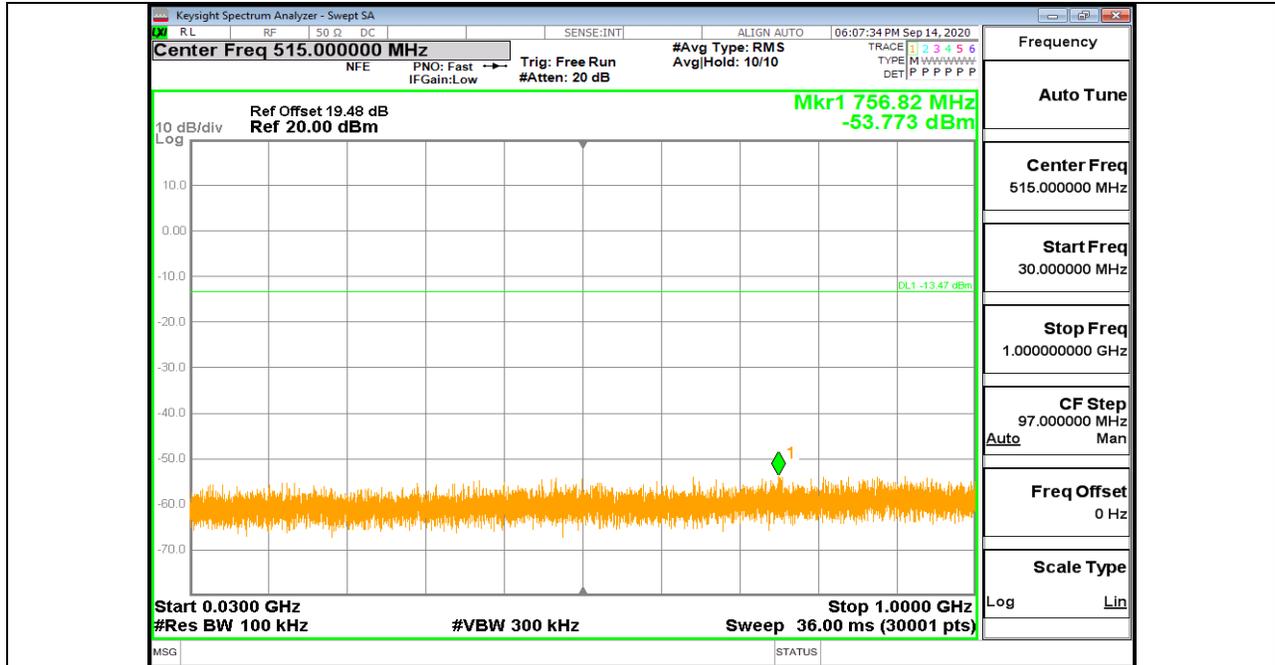
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11N20SISO_Ant1_2437_30~1000
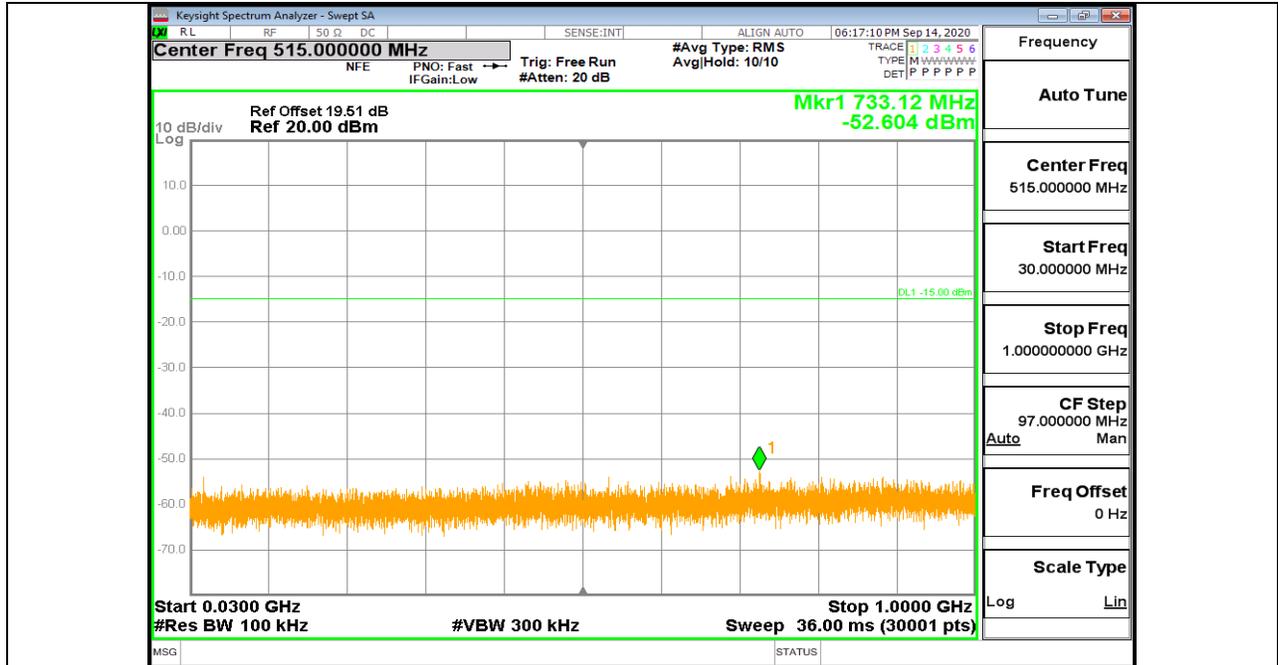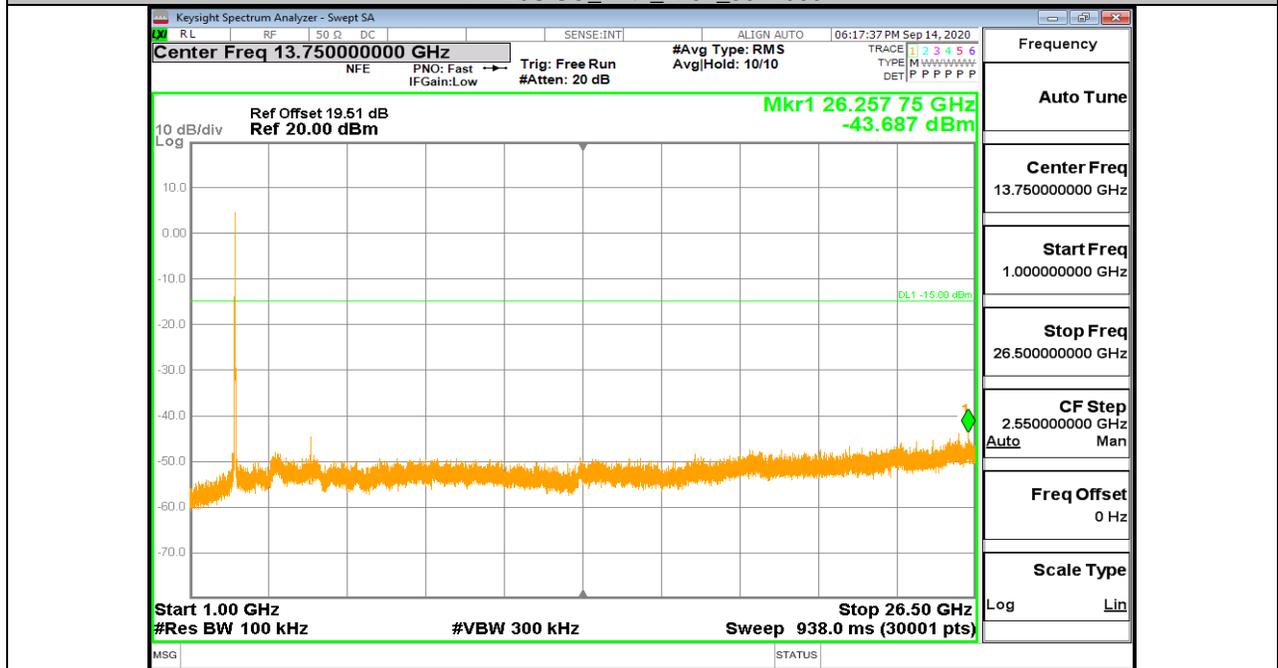

11N20SISO_Ant1_2437_1000~26500

11N20SISO_Ant1_2457_0~Reference

11N20SISO_Ant1_2457_30~1000

11N20SISO_Ant1_2457_1000~26500

11N20SISO_Ant1_2462_0~Reference

11N20SISO_Ant1_2462_30~1000

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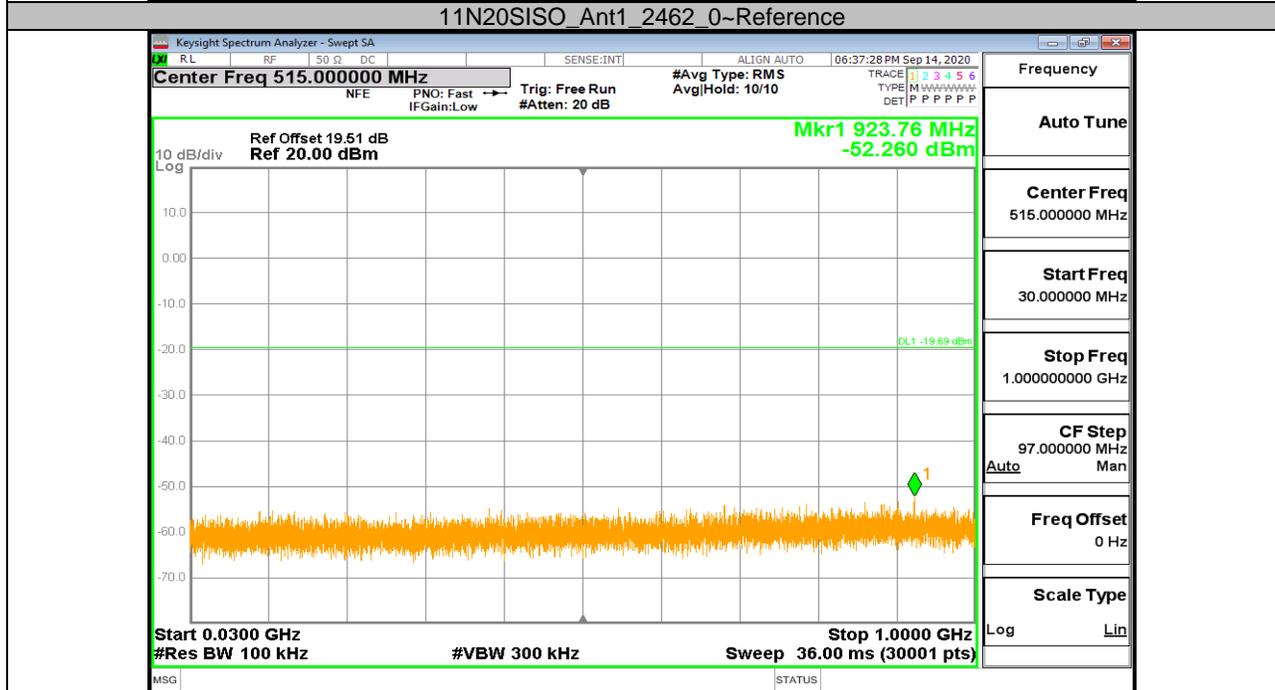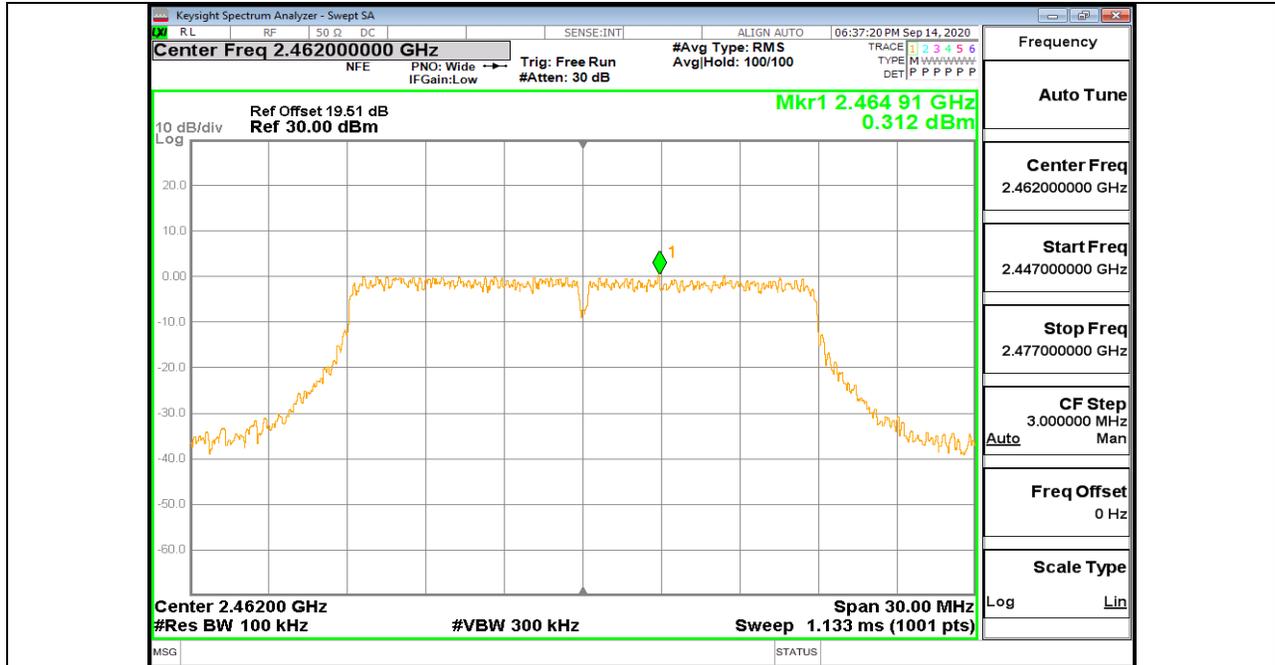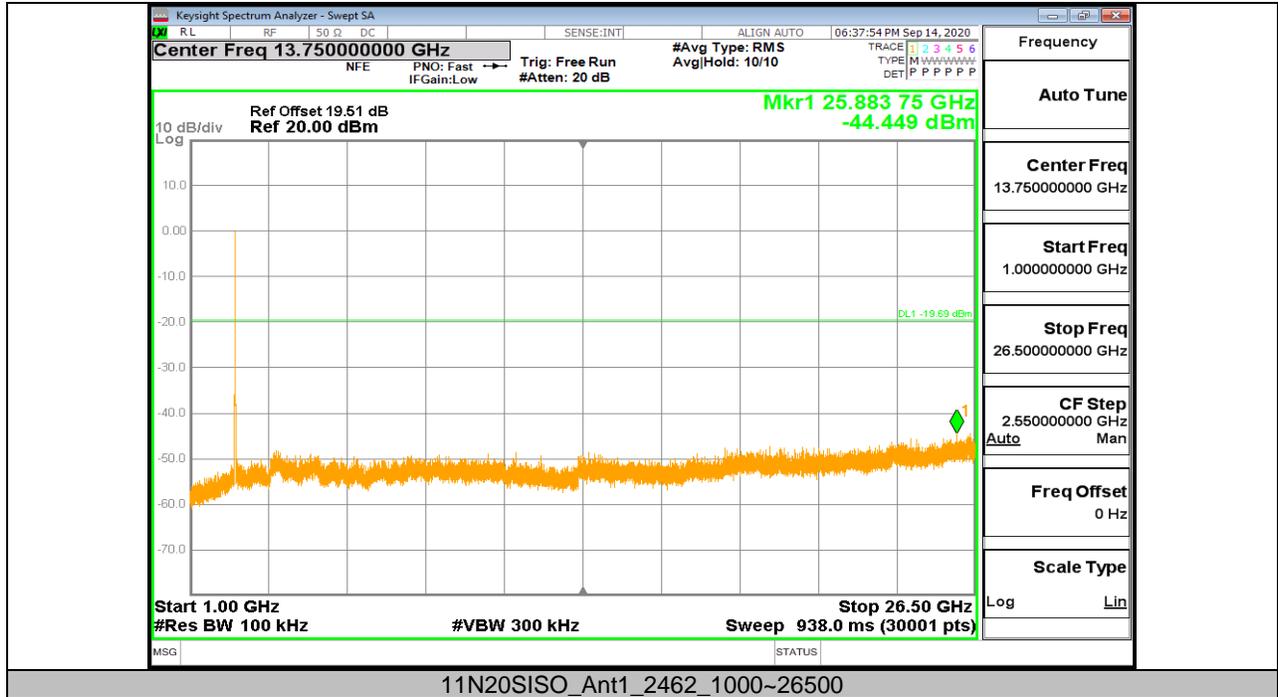
11.7. Appendix G: Duty Cycle
11.7.1. Test Result

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (KHz)	Final setting For VBW (KHz)
11b	100	100	1.0	100	0	0.01	0.5
11g	100	100	1.0	100	0	0.01	0.5
11n HT20	100	100	1.0	100	0	0.01	0.5

Note:
Duty Cycle Correction Factor=10log (1/x).
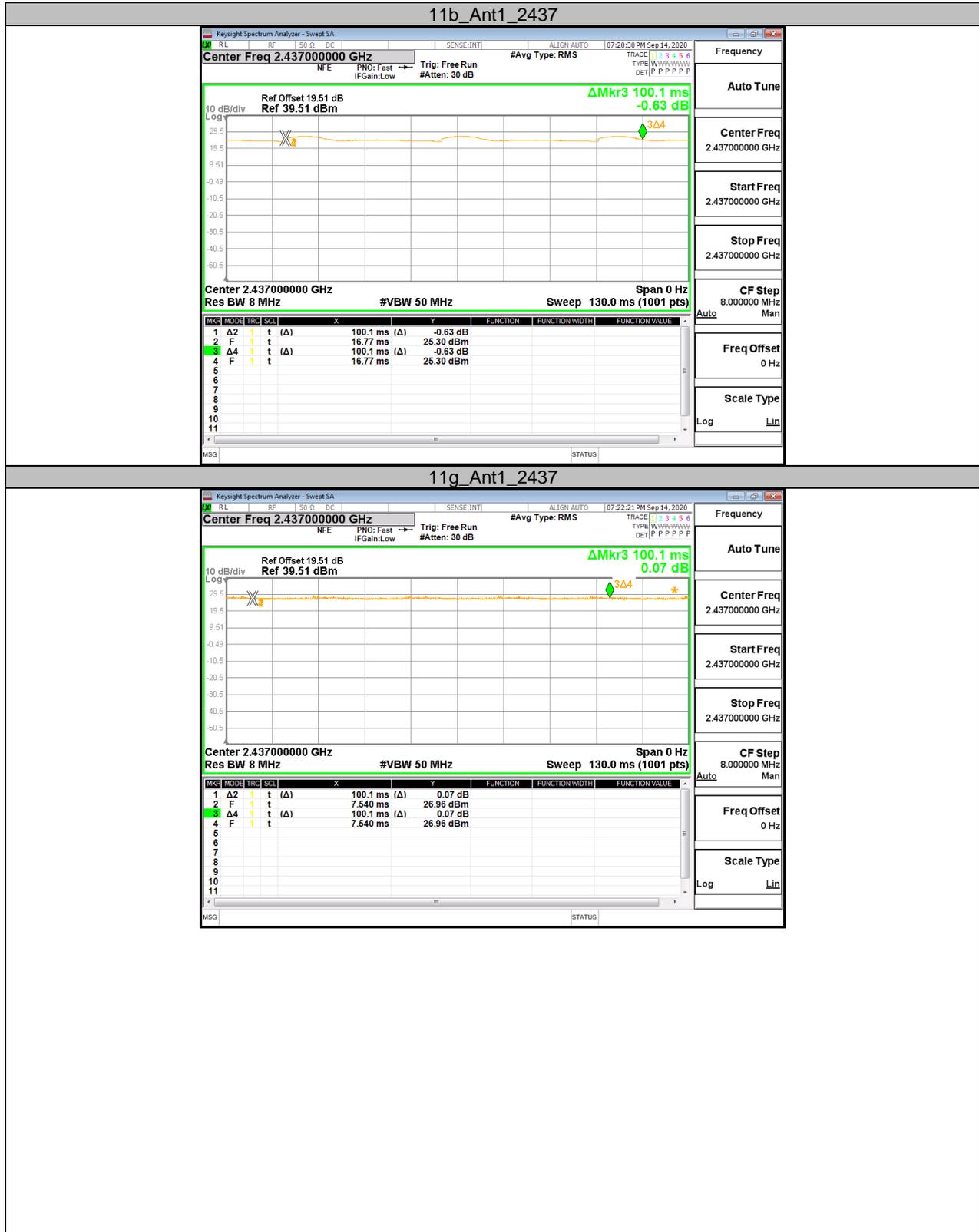Where: x is Duty Cycle (Linear)
Where: T is On Time
If that calculated VBW is not available on the analyzer, then the next higher value should be used.
For mode 11b, the duty cycle is greater than 98%, so it can set VBW to 10Hz.

11.7.2. Test Graphs

11b_Ant1_2437

11g_Ant1_2437

11n20SISO_Ant1_2437

END OF REPORT