



Appendix A

RF Test Data for 915M (Conducted Measurement)

Product Name: LoRaWAN Sensor

Test Model: WSLRW

Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
Supervised by:	Ling Zhu



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A.1 20dB Emission Bandwidth

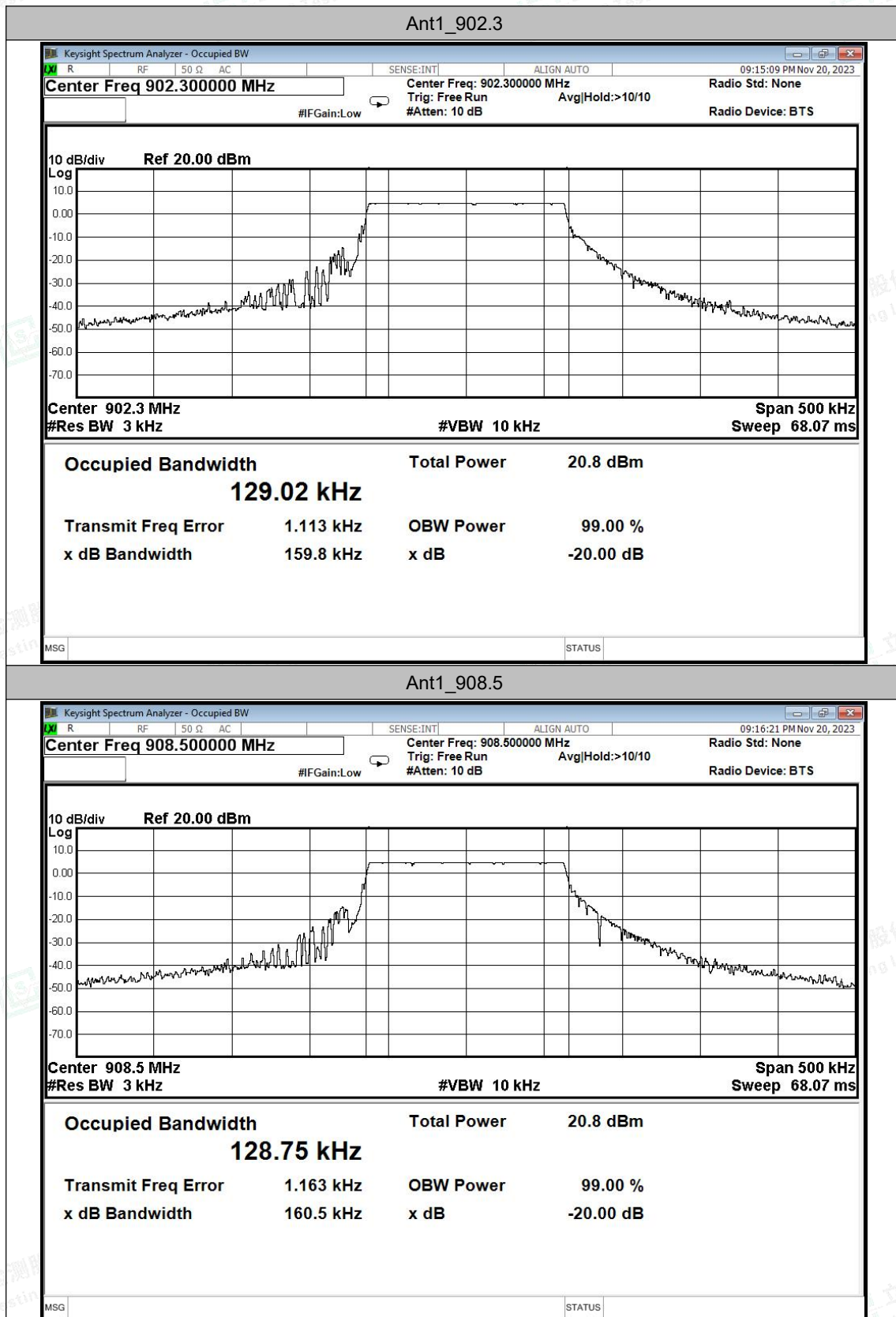
Test Result

Antenna	Channel[MHz]	20db EBW[kHz]	Limit[MHz]	Verdict
Ant1	902.3	159.8	---	PASS
	908.5	160.5	---	PASS
	914.9	153.5	---	PASS





Test Graphs



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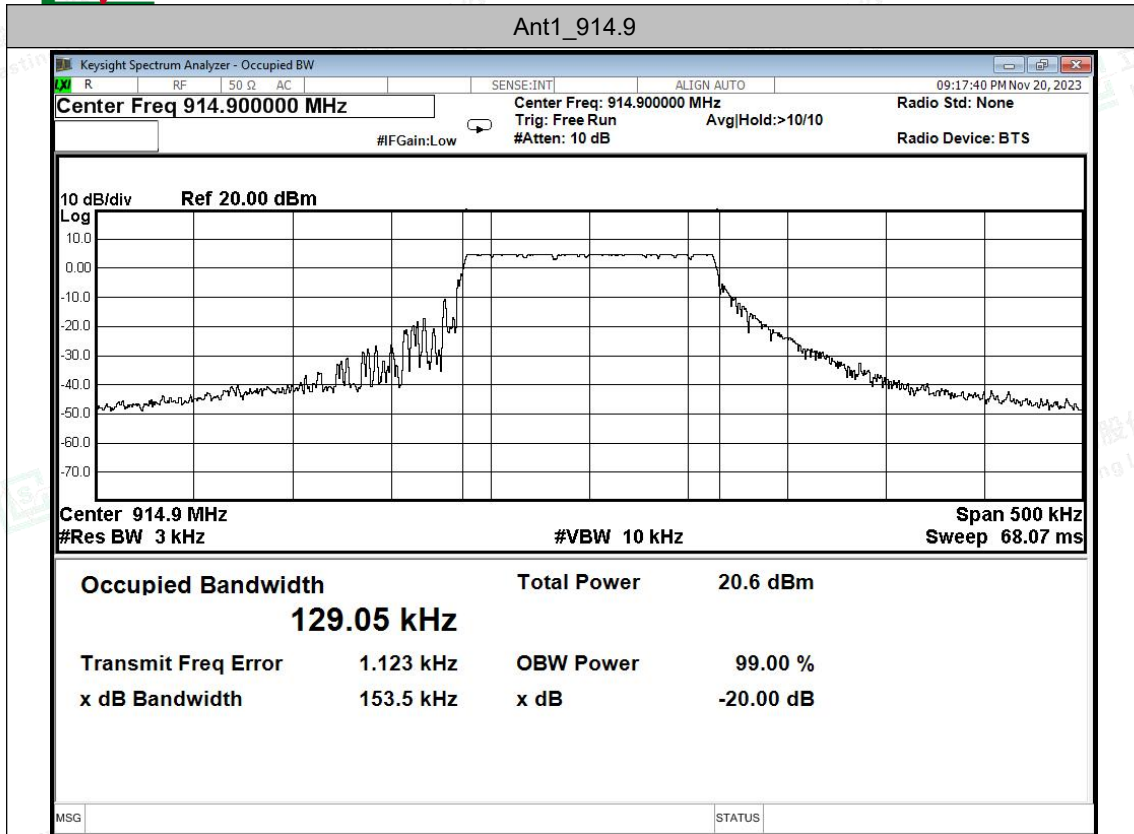
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Ant1_914.9



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A.2 Maximum Peak Conducted Output Power

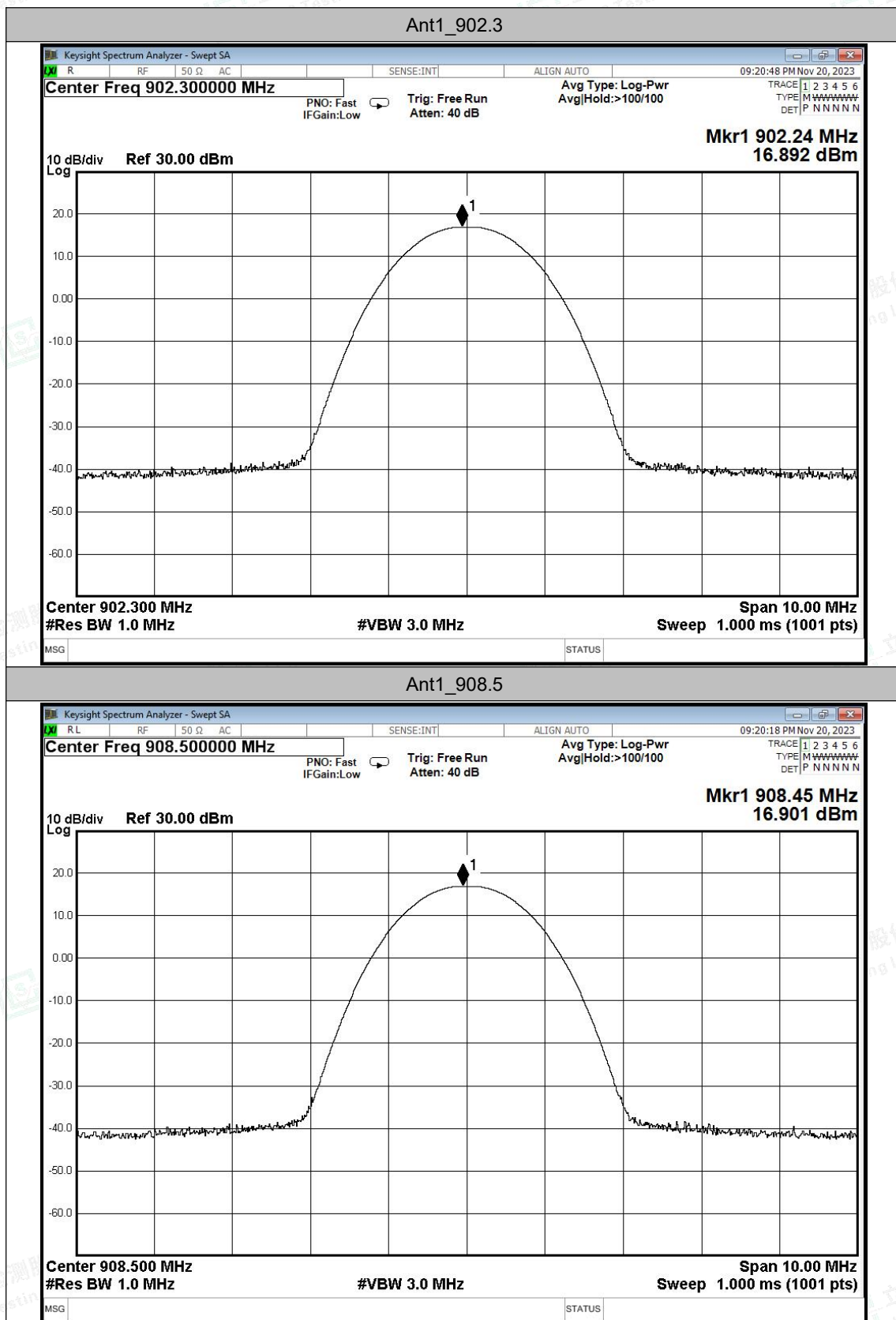
Test Result Peak

Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
Ant1	902.3	16.89	≤30	PASS
	908.5	16.90	≤30	PASS
	914.9	16.85	≤30	PASS





Test Graphs



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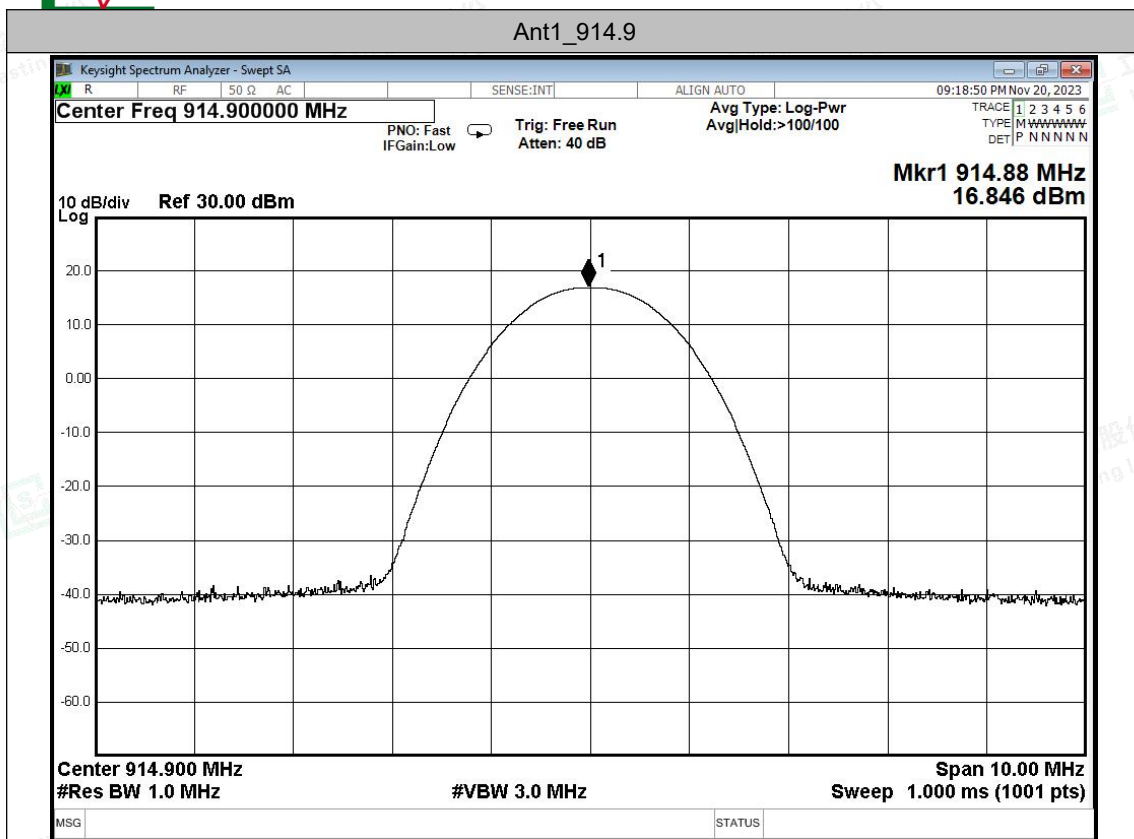
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Ant1_914.9



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A.3 Carrier frequency separation

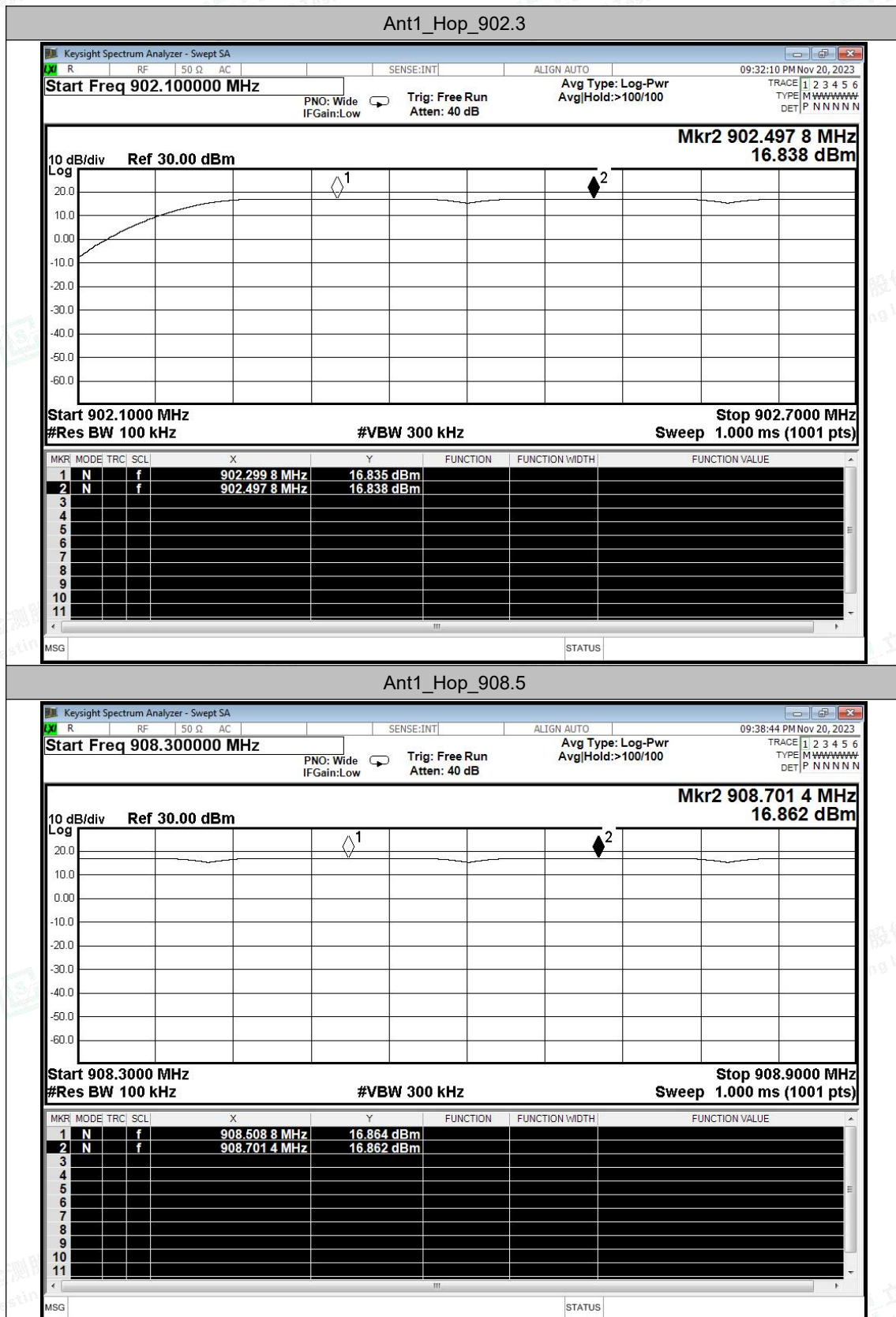
Test Result

Antenna	Channel[MHz]	Result[kHz]	Limit[kHz]	Verdict
Ant1	Hop_902.3	198.0	≥ 159.8	PASS
Ant1	Hop_908.5	192.6	≥ 160.5	PASS
Ant1	Hop_914.9	203.4	≥ 153.5	PASS





Test Graphs



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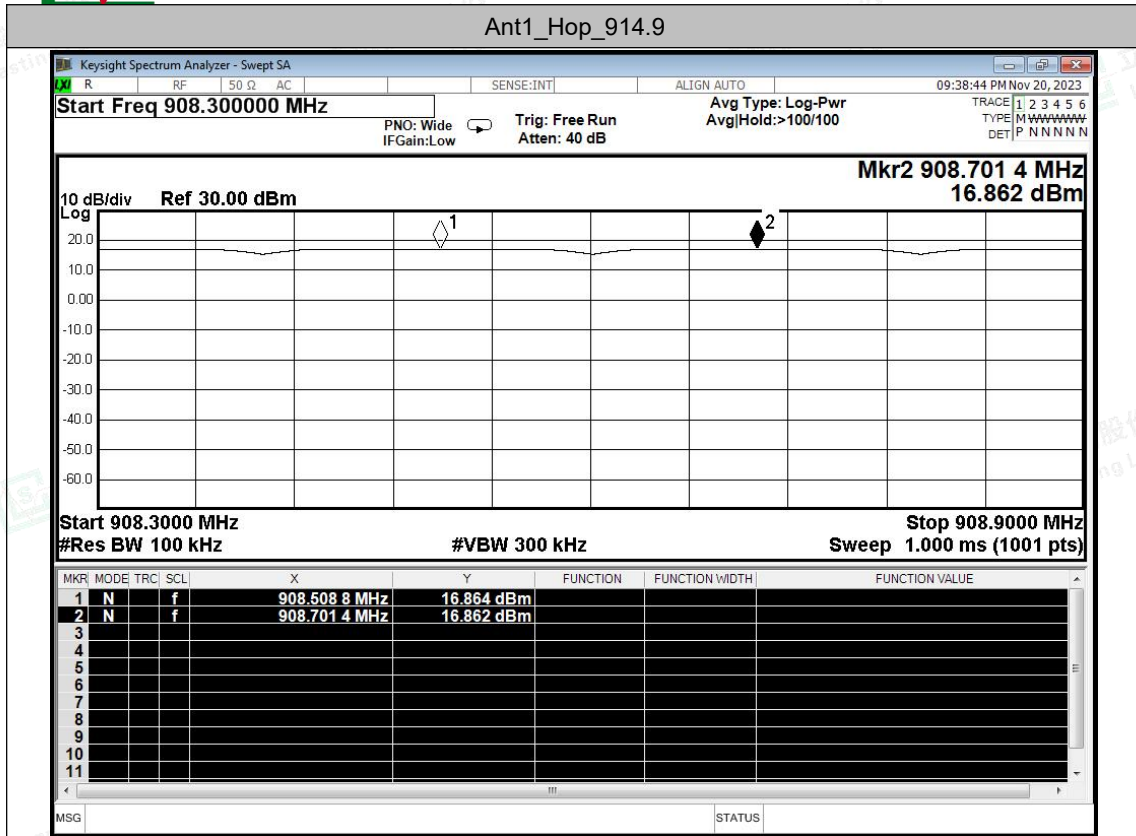
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Ant1_Hop_914.9



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A.4 Time of occupancy

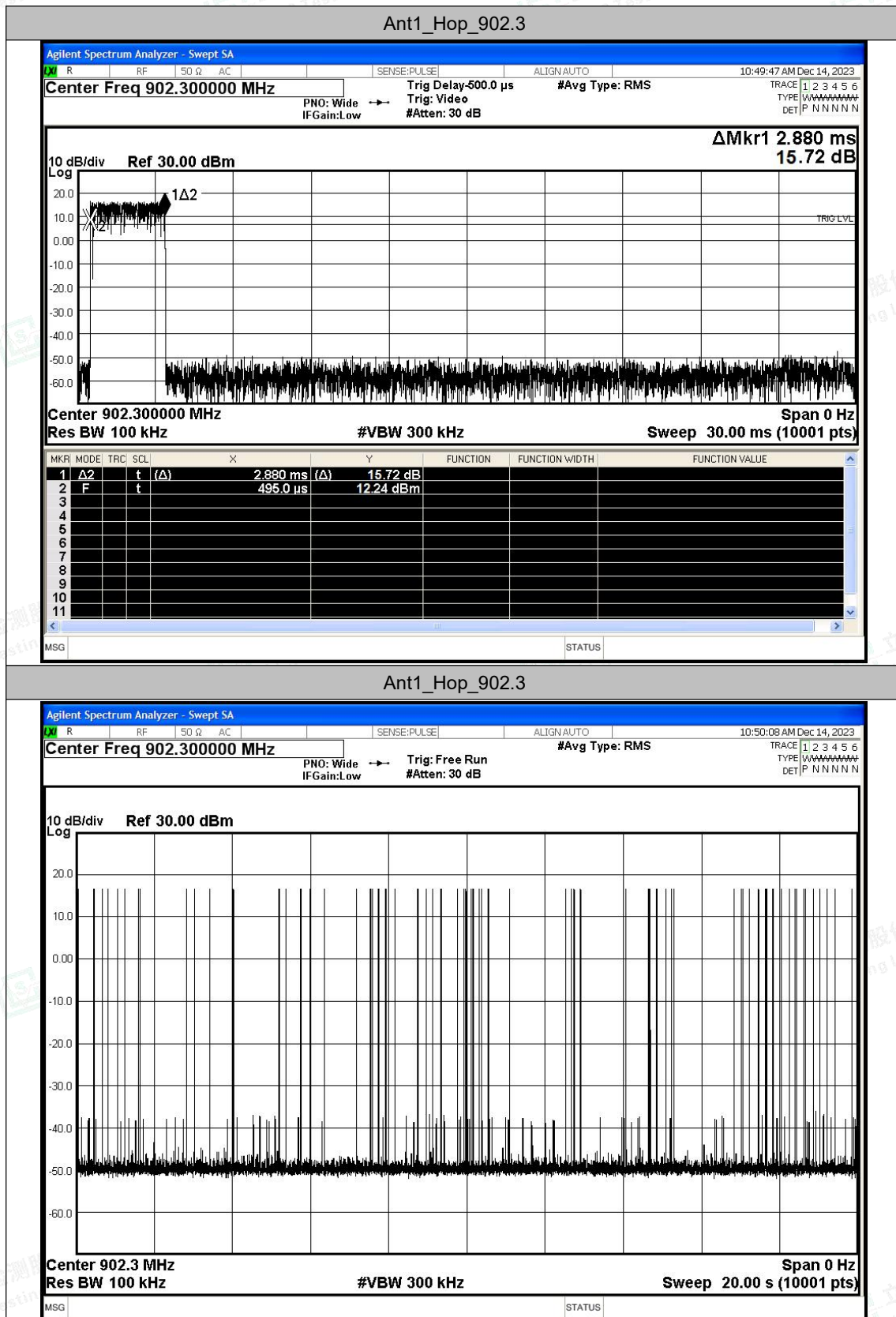
Test Result

Antenna	Channel[MHz]	Burst Width[ms]	Total Hops[Num]	Result[ms]	Limit[ms]	Verdict
Ant1	Hop_902.3	2.88	63	181.44	<=400	PASS
Ant1	Hop_908.5	2.86	64	183.04	<=400	PASS
Ant1	Hop_914.9	2.89	57	164.73	<=400	PASS





Test Graphs



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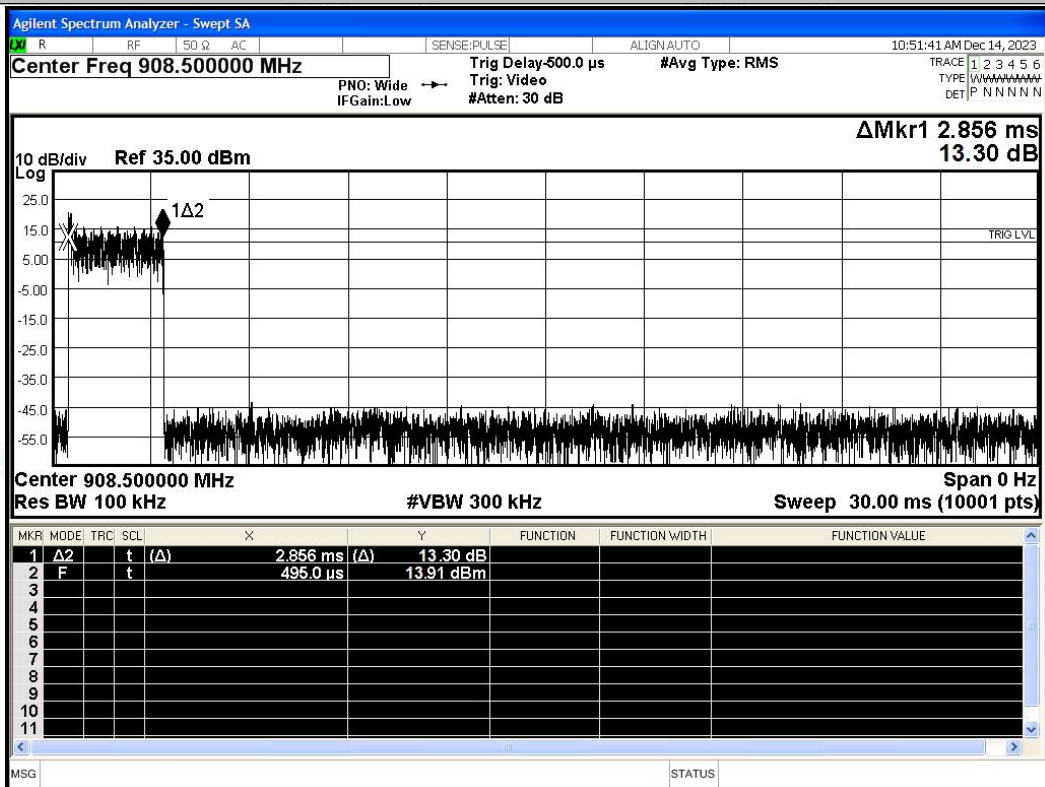
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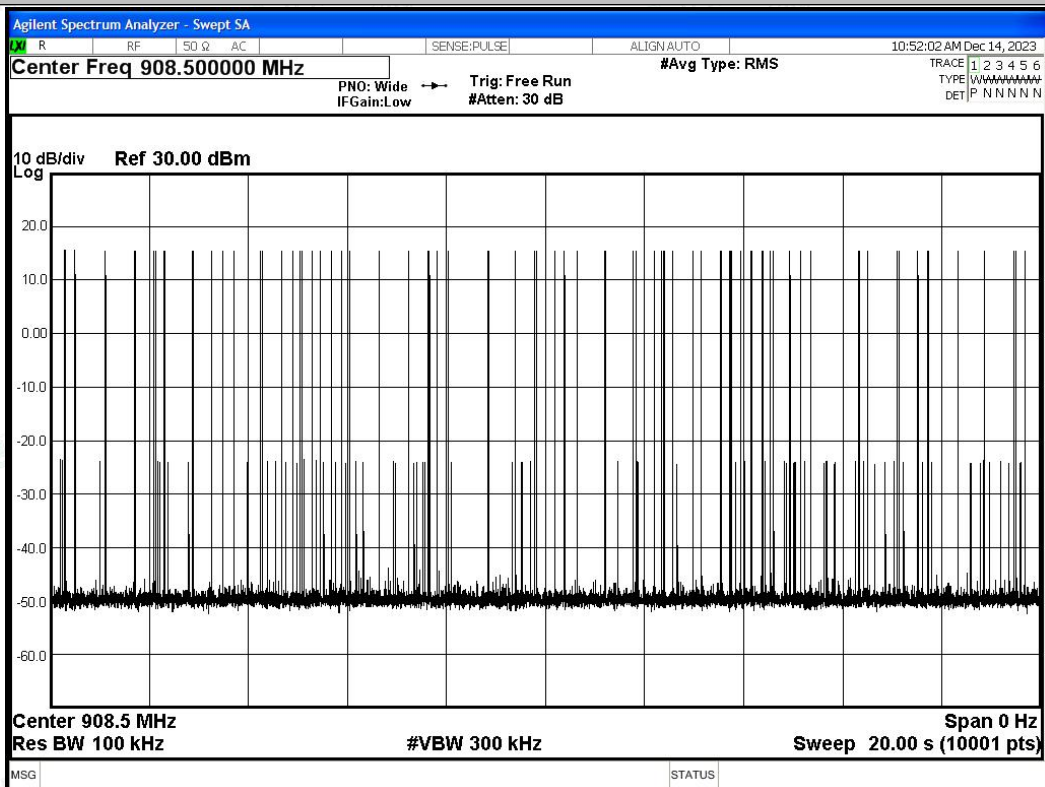
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Ant1_Hop_908.5



Ant1_Hop_908.5



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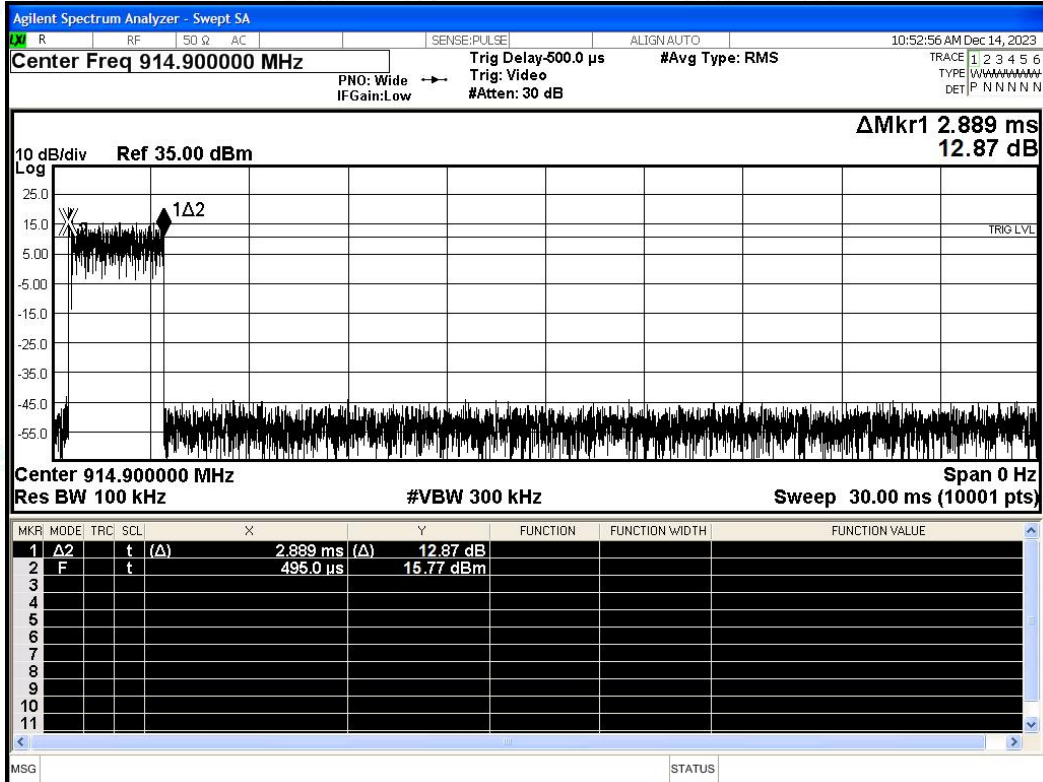
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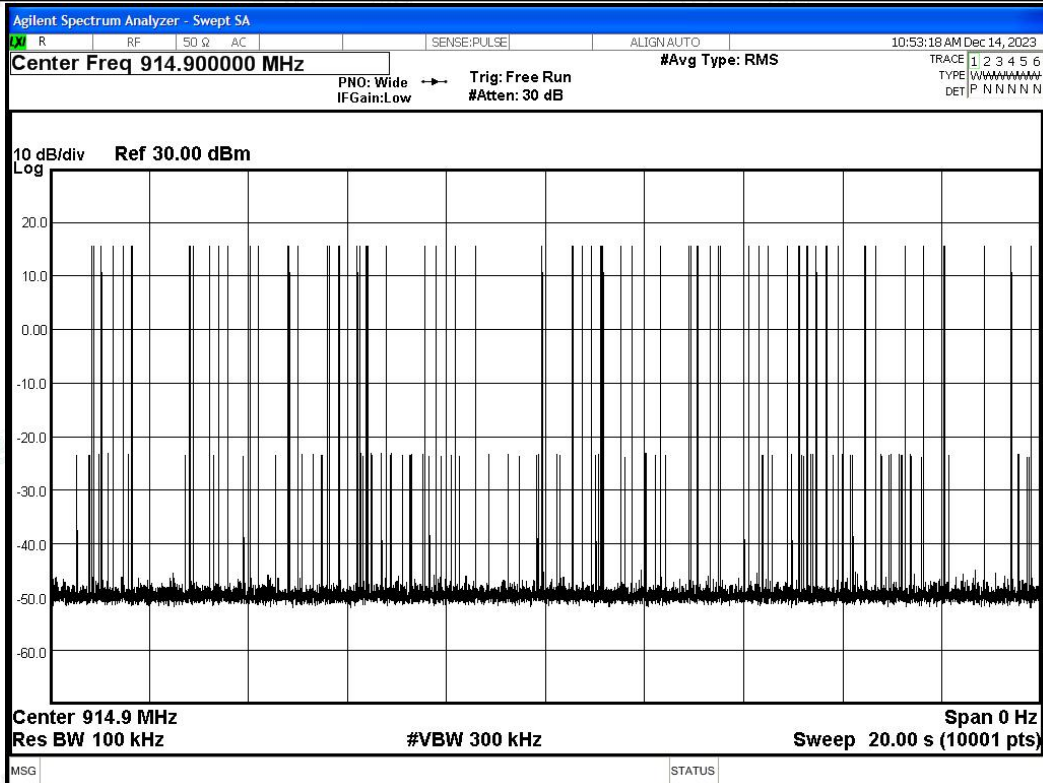
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Ant1_Hop_914.9



Ant1_Hop_914.9



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A.5 Number of hopping channels

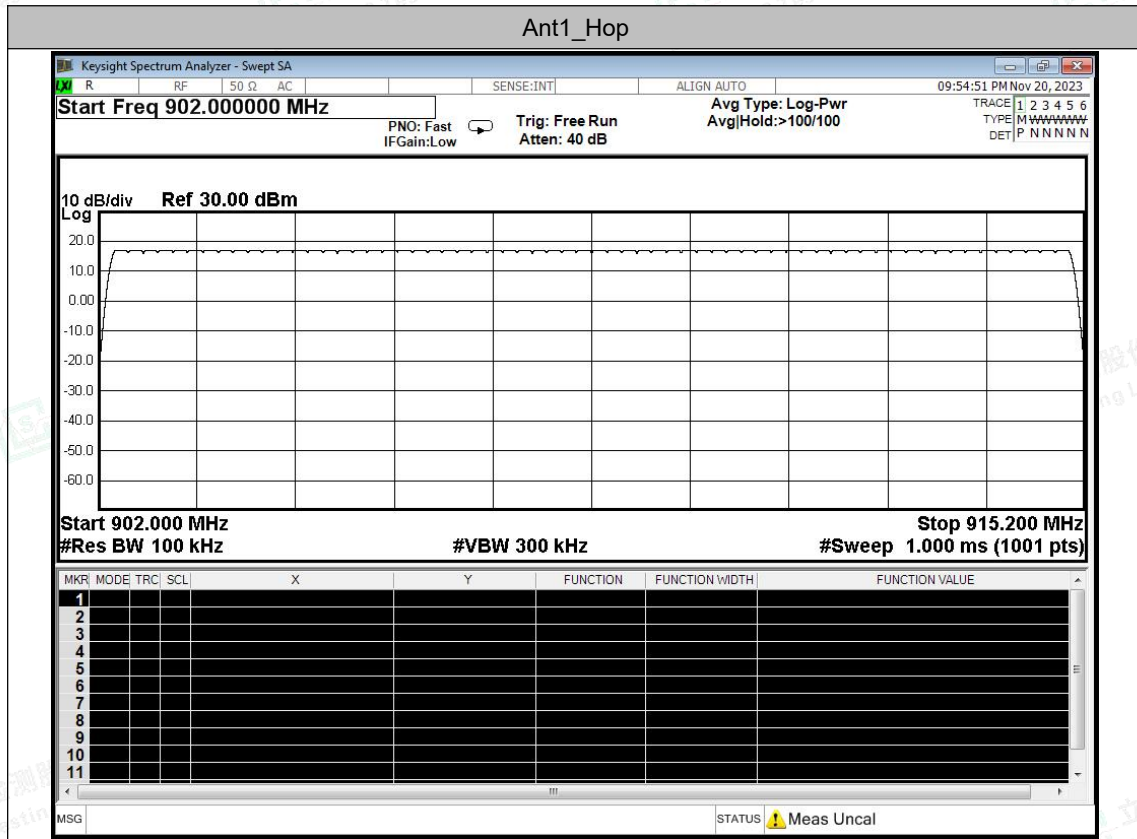
Test Result

Antenna	Channel	Result[Num]	Limit[Num]	Verdict
Ant1	Hop	64	>=50	PASS





Test Graphs



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A.6 Band edge measurements

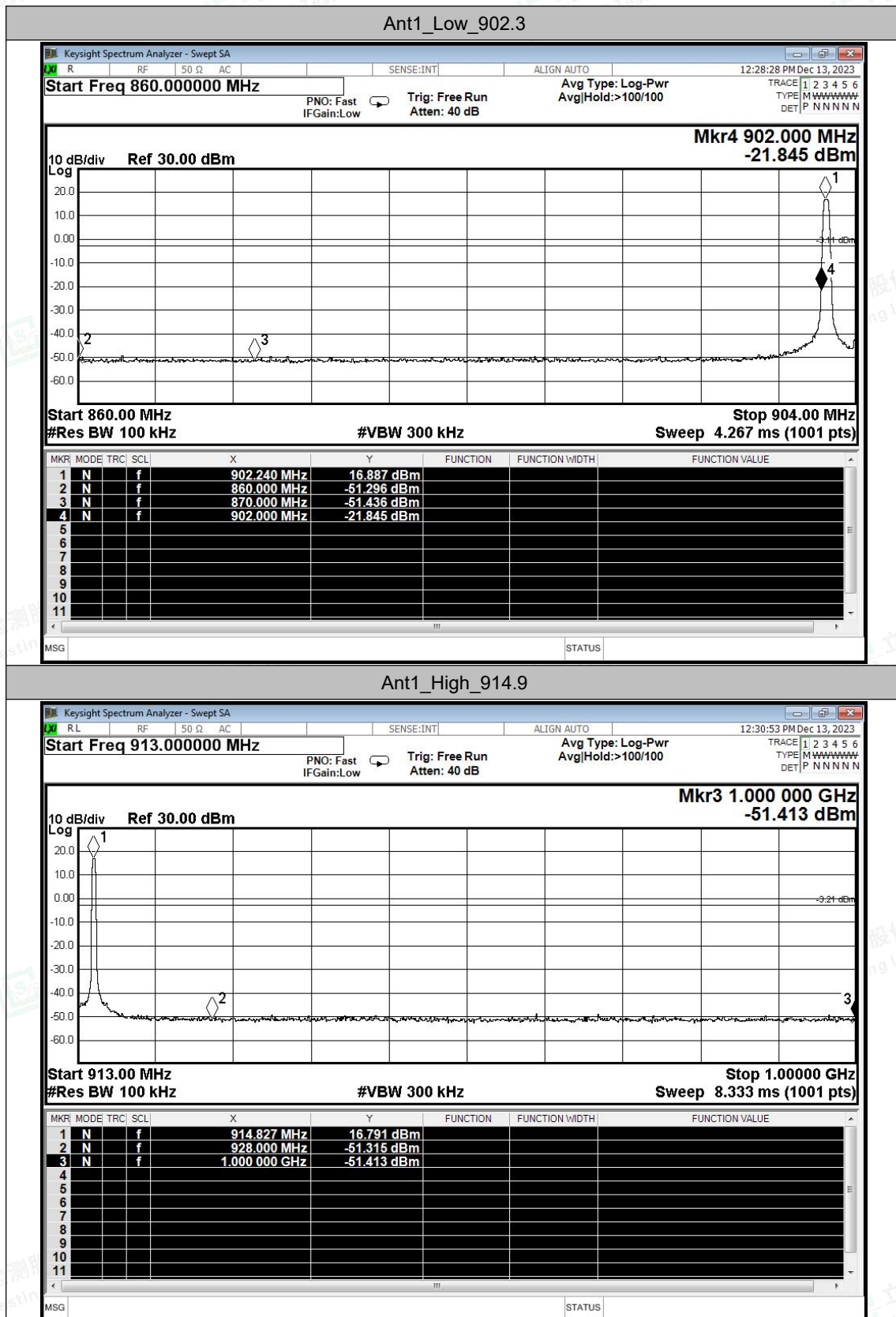
Test Result

Antenna	Ch Name	Channel[MHz]	Ref Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
Ant1	Low	902.3	12.50	-36.36	≤ -7.5	PASS
	High	914.9	12.21	-33.14	≤ -7.79	PASS
	Low	Hop_902.3	12.43	-36.17	≤ -7.57	PASS
	High	Hop_914.9	12.23	-36.38	≤ -7.77	PASS





Test Graphs



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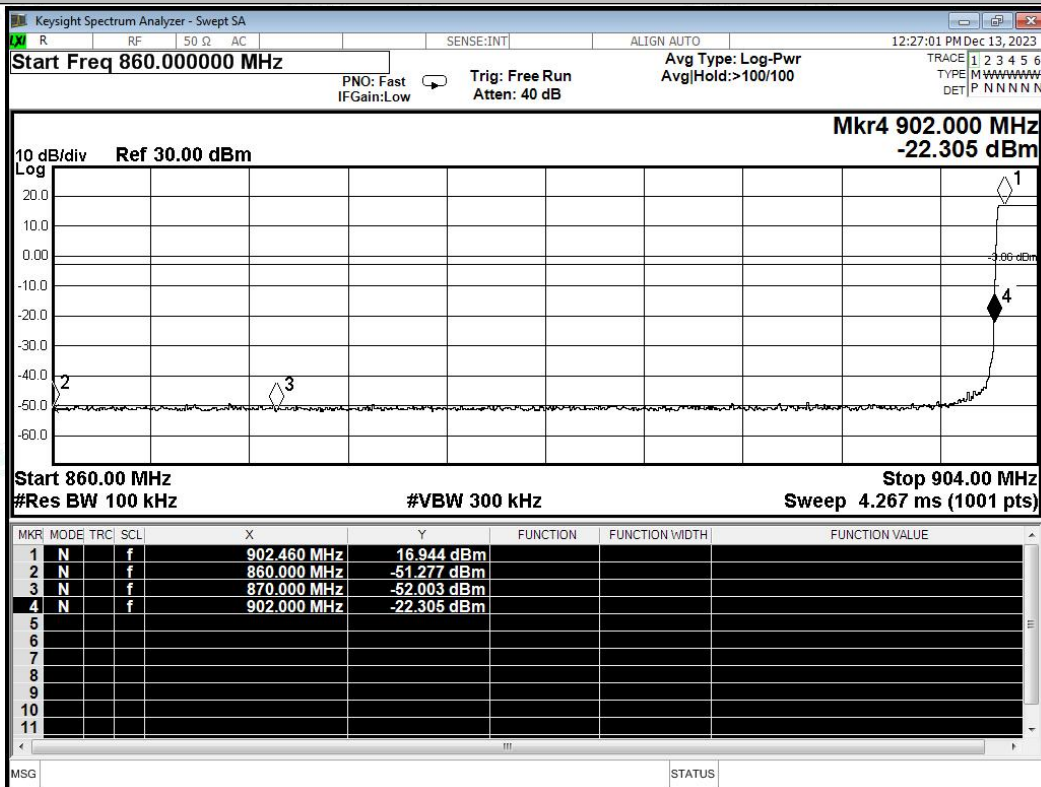
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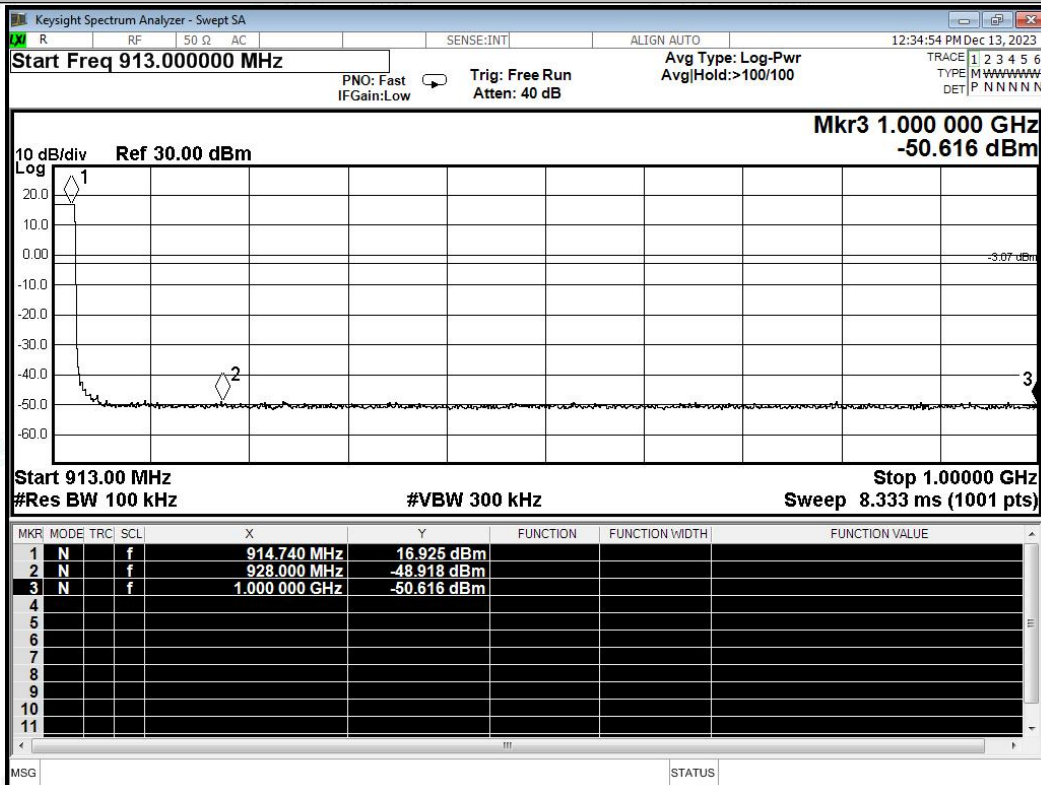
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Ant1_Low_Hop_902.3



Ant1_High_Hop_914.9



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A.7 Conducted Spurious Emission

Test Result

Antenna	Channel[MHz]	Freq Range [MHz]	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
Ant1	902.3	Reference	16.91	16.91	---	PASS
		30~1000	16.91	-50.00	<=-3.19	PASS
		1000~26500	16.91	-34.35	<=-3.19	PASS
	908.5	Reference	16.84	16.84	---	PASS
		30~1000	16.84	-49.07	<=-3.16	PASS
		1000~26500	16.84	-36.40	<=-3.16	PASS
	914.9	Reference	16.80	16.80	---	PASS
		30~1000	16.80	-49.11	<=-3.20	PASS
		1000~26500	16.80	-36.17	<=-3.20	PASS



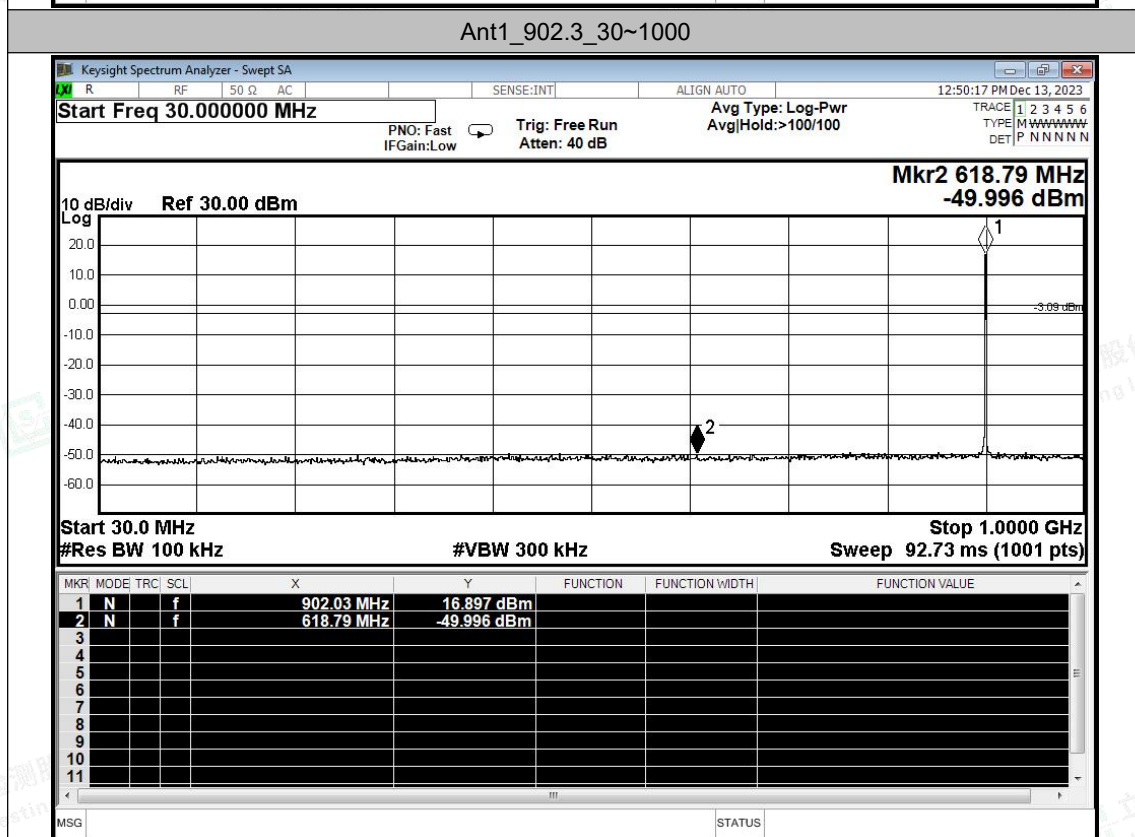
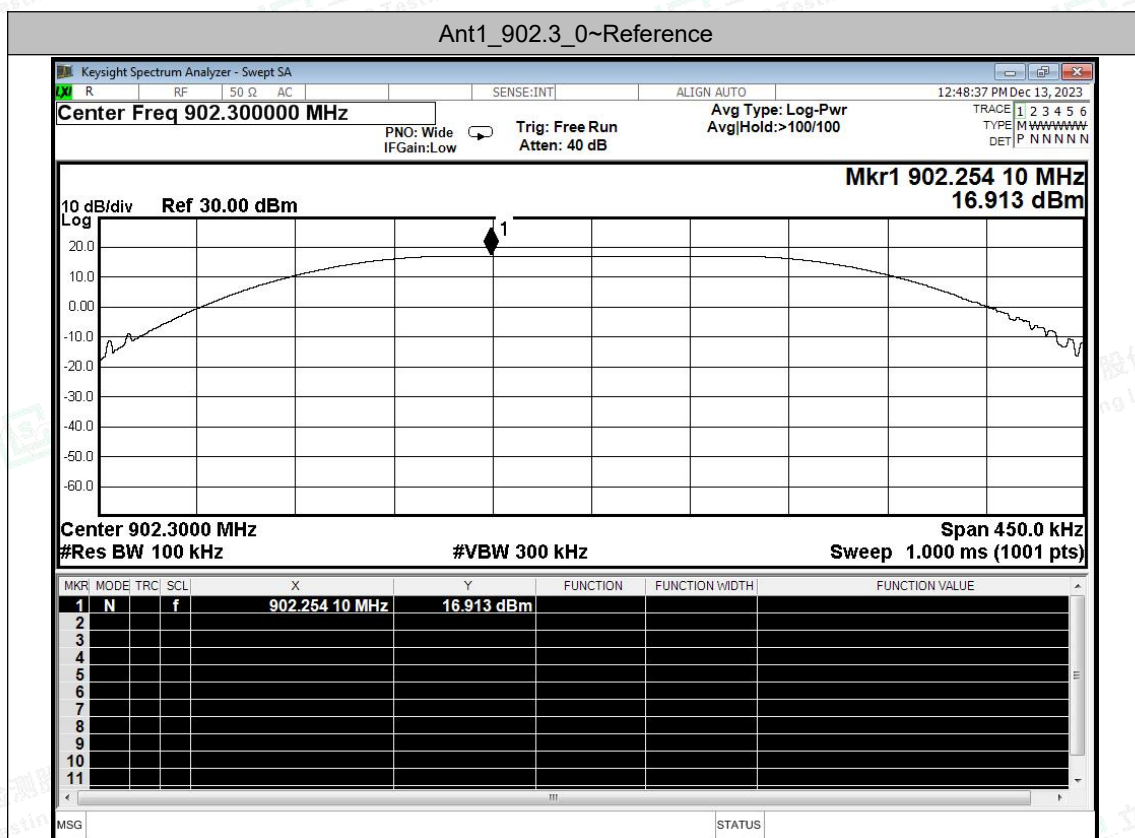
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Test Graphs



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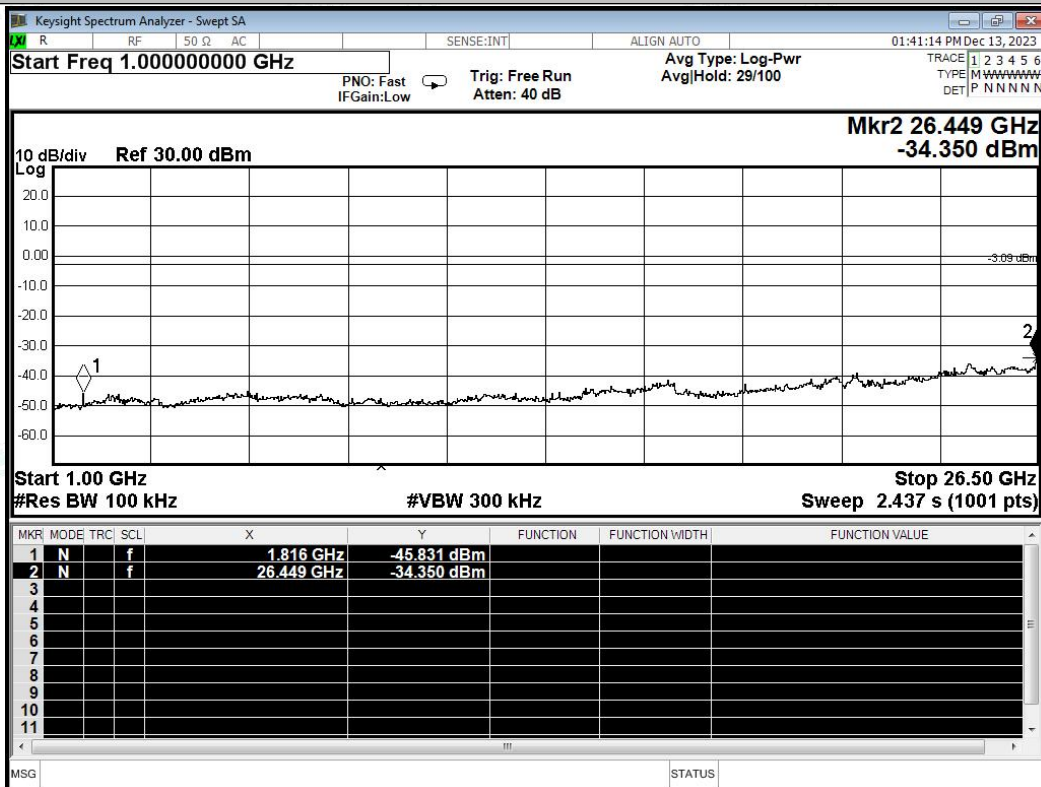
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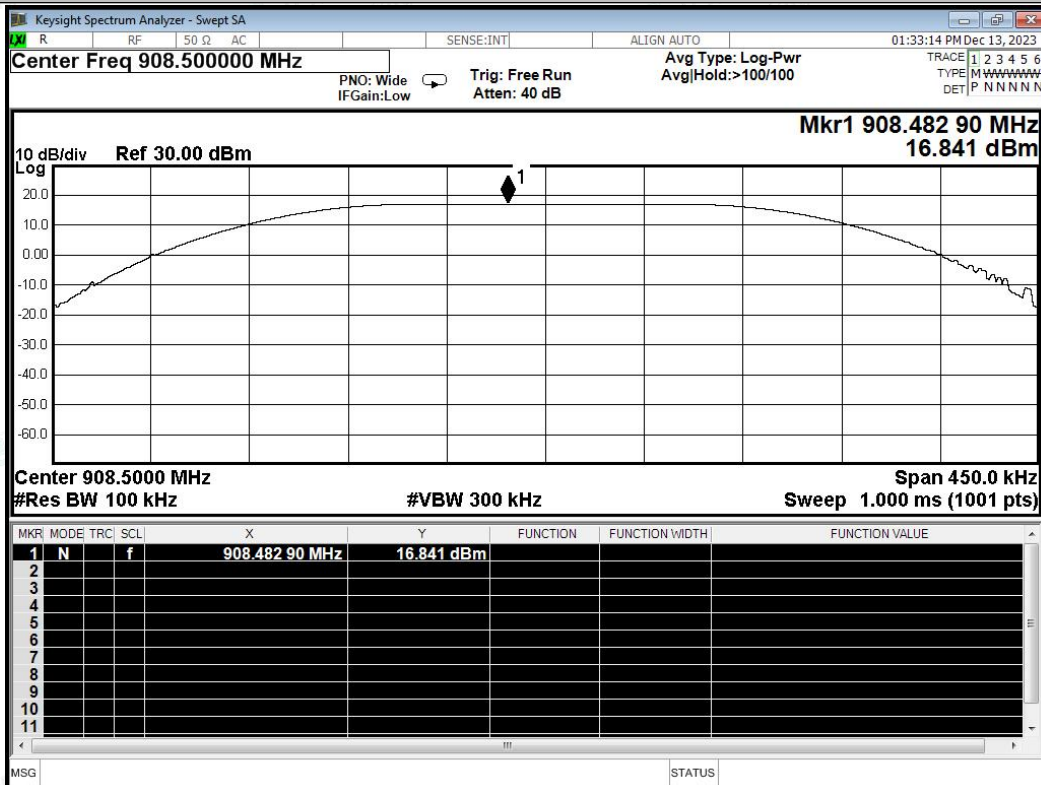
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Ant1_902.3_1000~26500



Ant1_908.5_0~Reference



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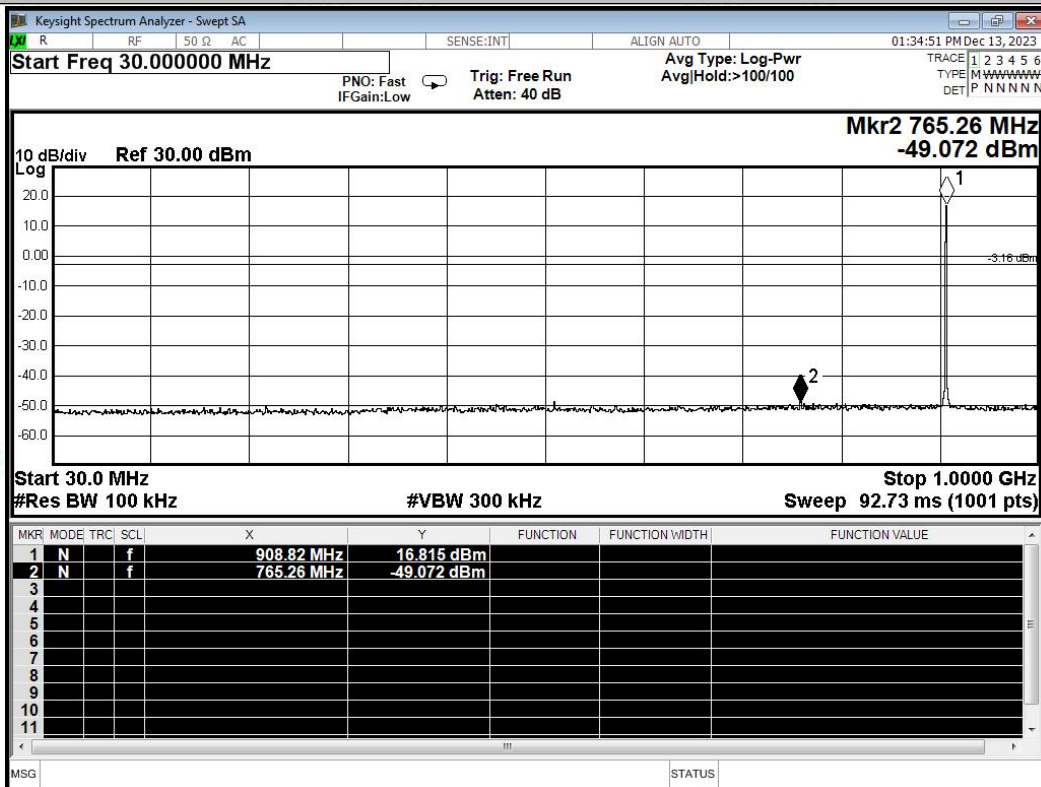
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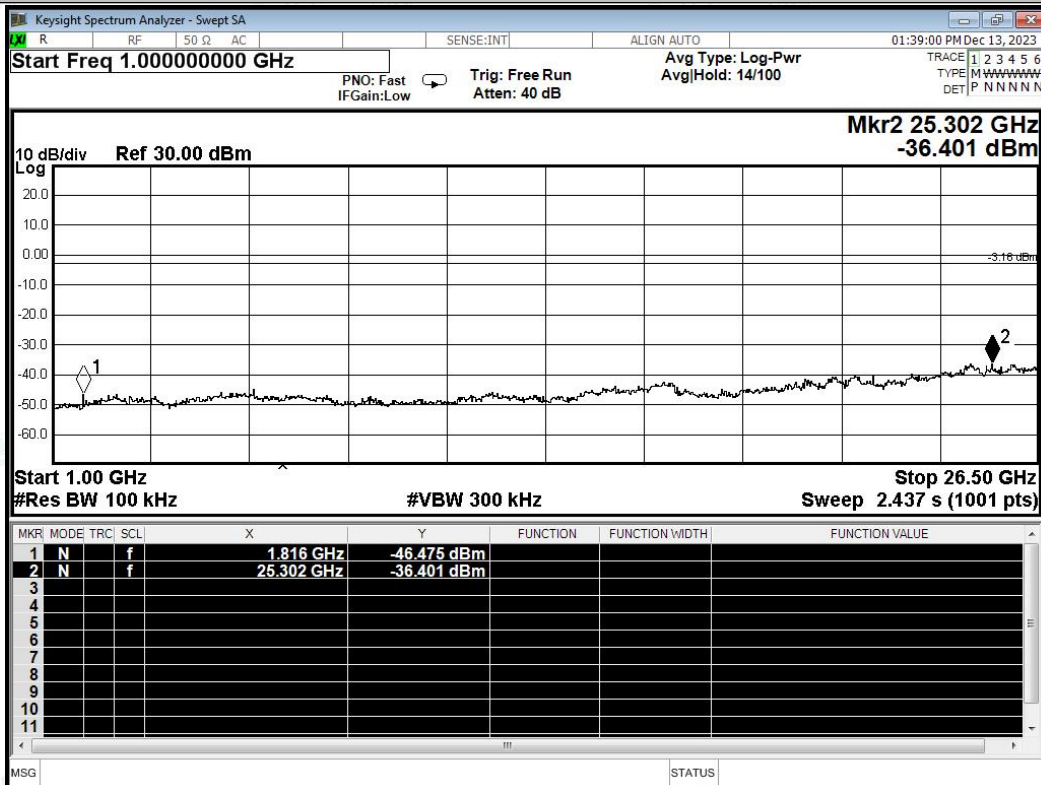
Scan code to check authenticity



Ant1_908.5_30~1000



Ant1_908.5_1000~26500



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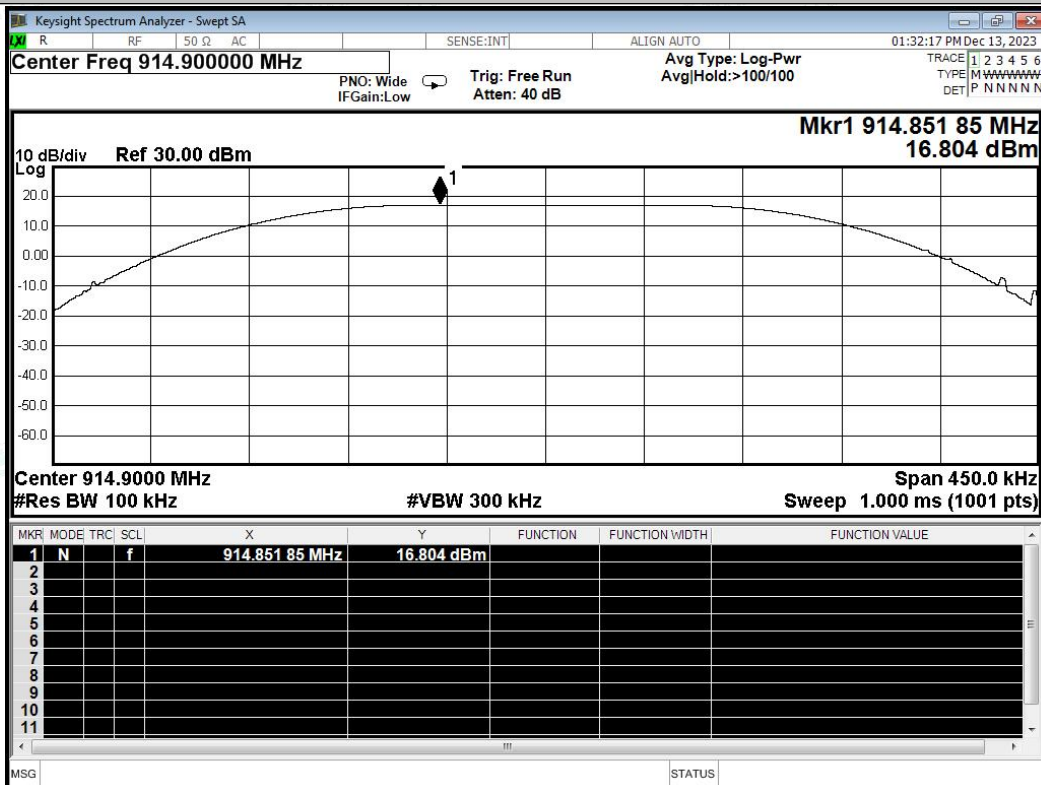
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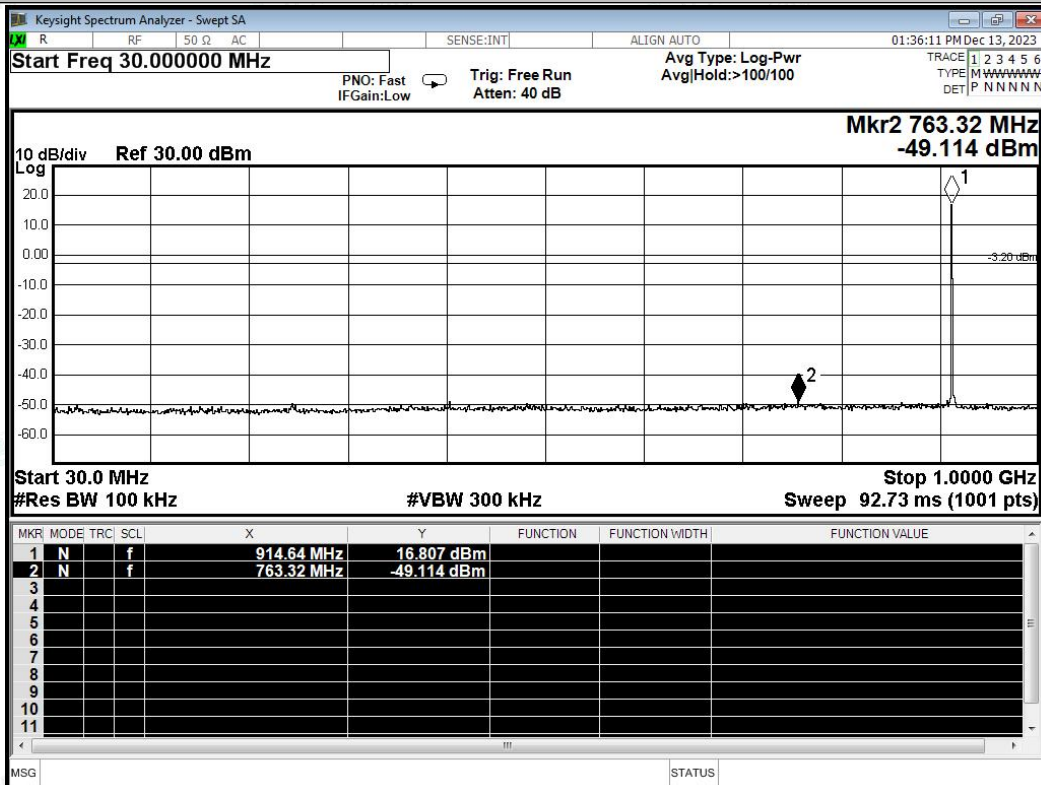
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Ant1_914.9_0~Reference



Ant1_914.9_30~1000



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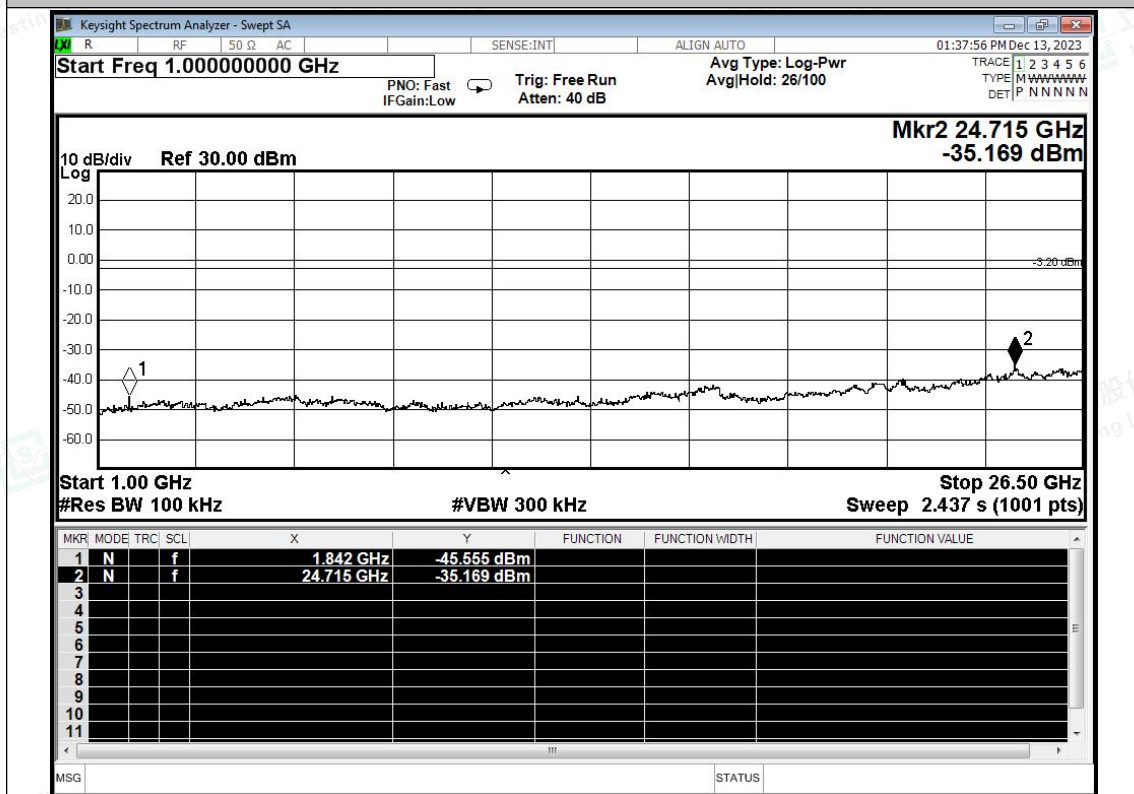
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Ant1_914.9_1000~26500



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A.8 Duty Cycle

Test Result

Antenna	Channel[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
Ant1	902.3	100.00	100.00	100.00	---	PASS
	908.5	100.00	100.00	100.00	---	PASS
	914.9	100.00	100.00	100.00	---	PASS



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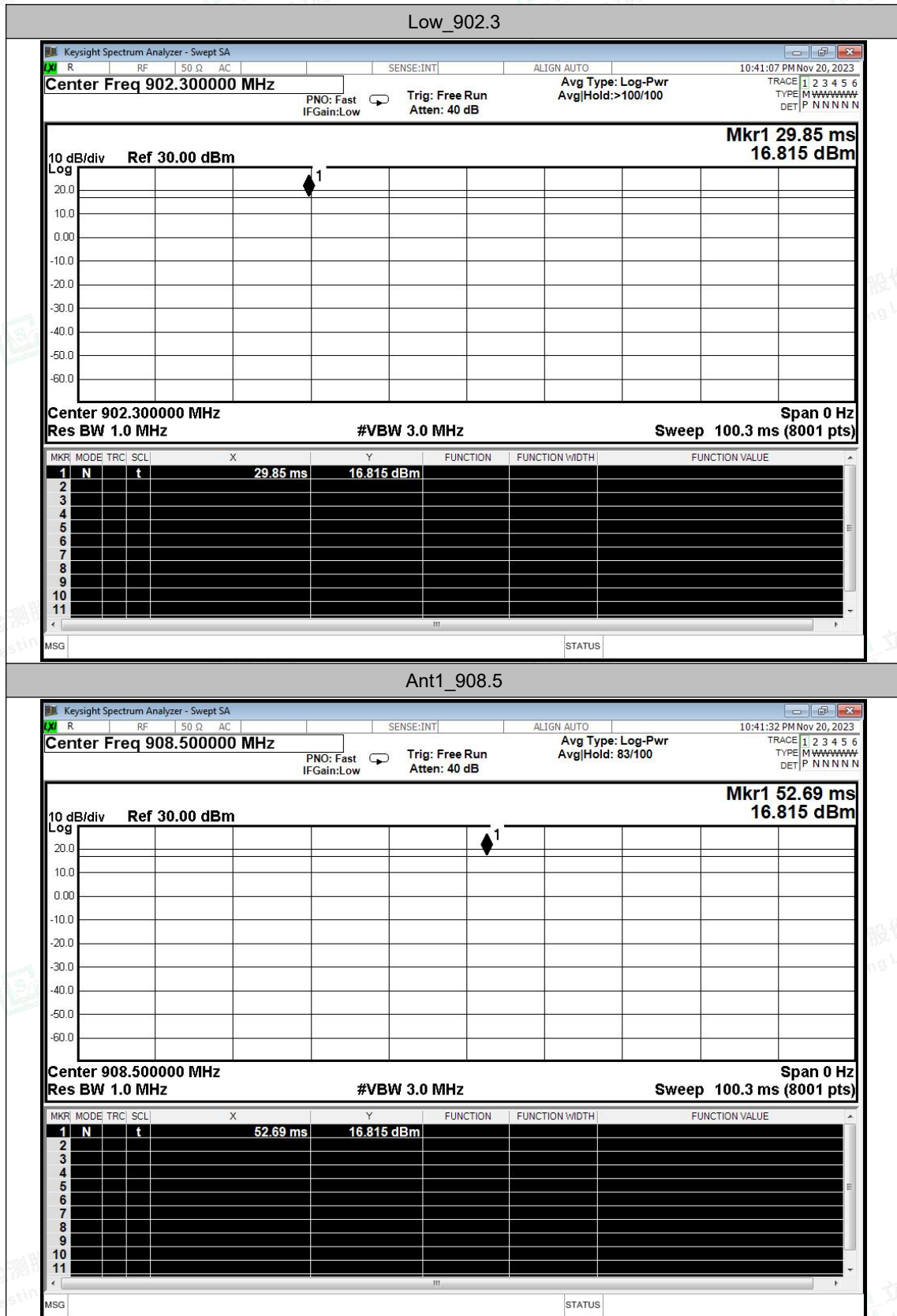
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Test Graphs



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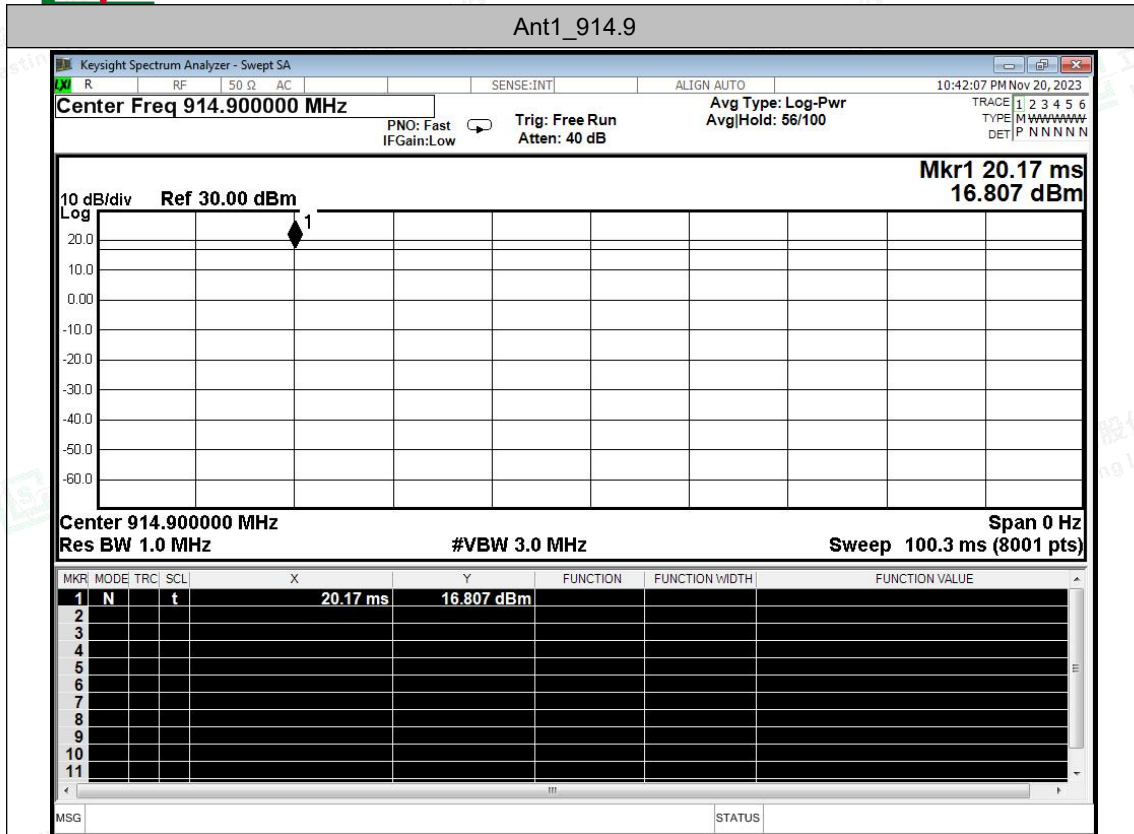
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Ant1_914.9



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