

Appendix A

RF Test Data for 2.4G (Conducted Measurement)

Product Name: USB receiver

Test Model: HM-BK001

Environmental Conditions

Temperature:	24.2°C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

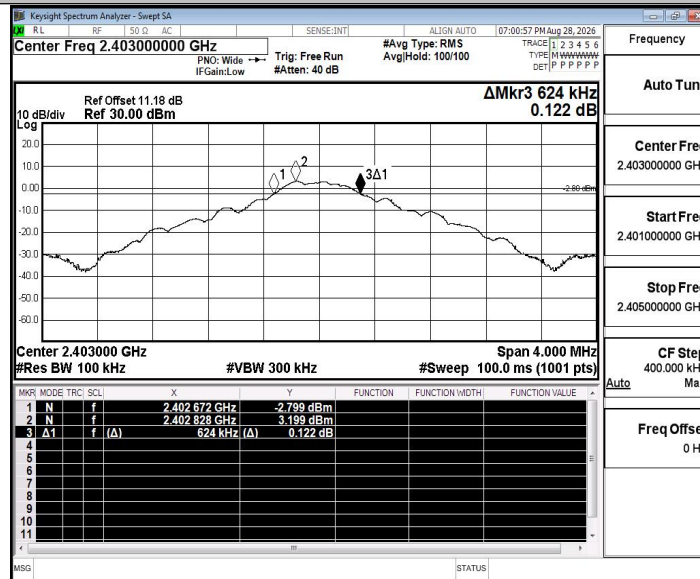
A.1 6dB Bandwidth

Test Result

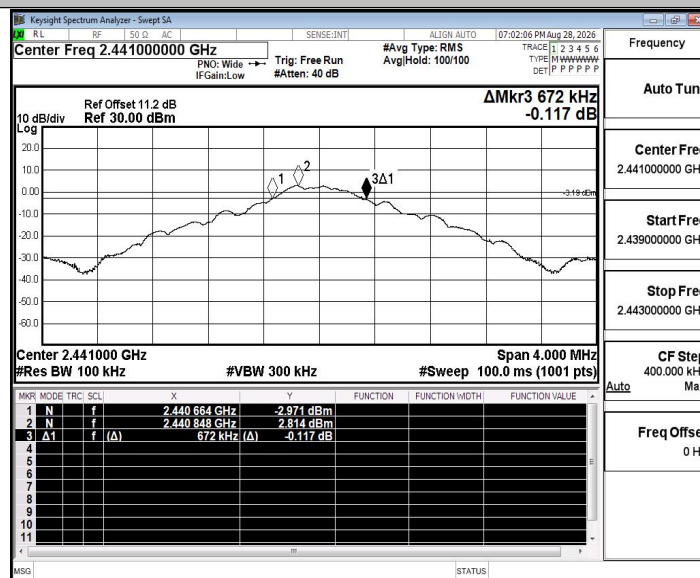
TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
2.4G	Ant1	2403	0.624	2402.672	2403.296	0.5	PASS
		2441	0.672	2440.664	2441.336	0.5	PASS
		2479	0.692	2478.652	2479.344	0.5	PASS

Test Graphs

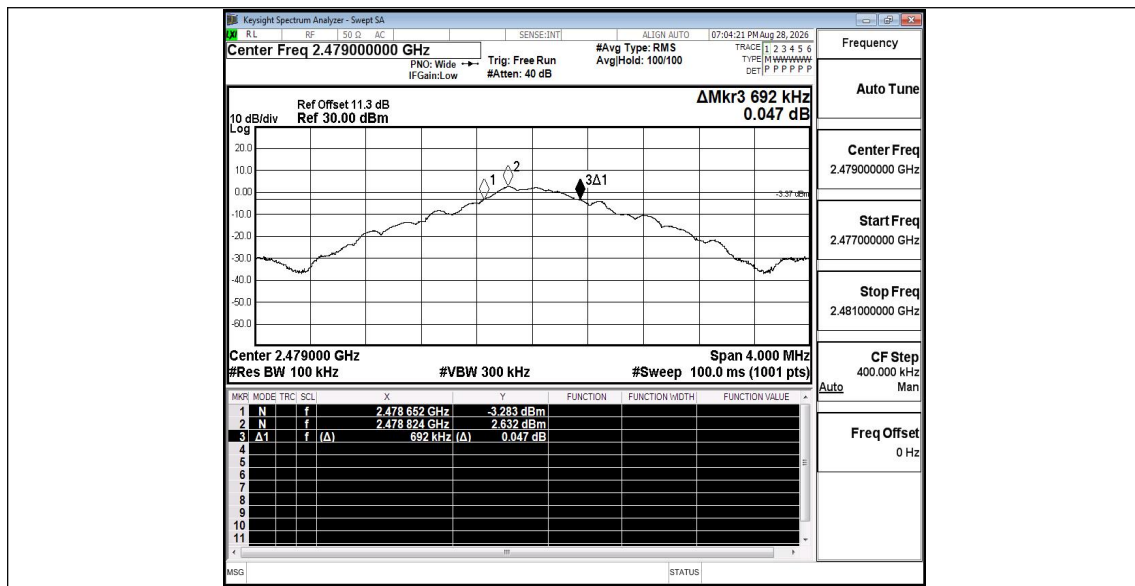
2.4G_Ant1_2403



2.4G_Ant1_2441



2.4G_Ant1_2479



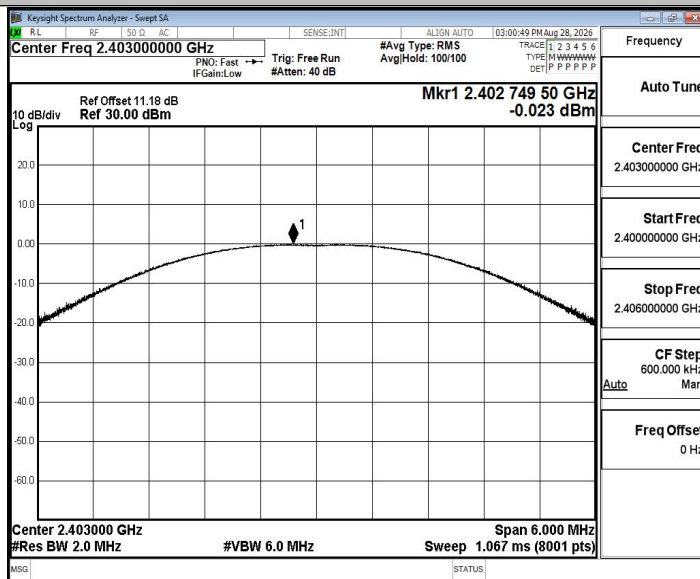
A.2 Maximum Peak conducted output power

Test Result Peak

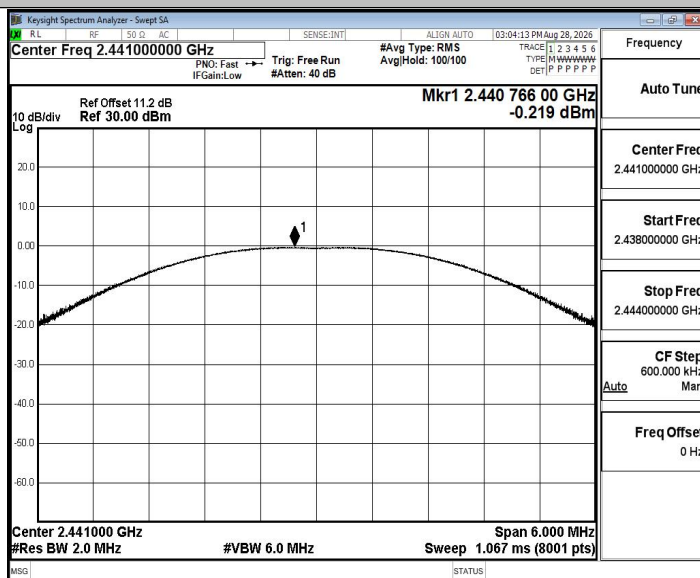
TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
2.4G_SRD	Ant1	2403	-0.02	≤30	PASS
		2441	-0.22	≤30	PASS
		2479	-0.49	≤30	PASS

Test Graphs Peak

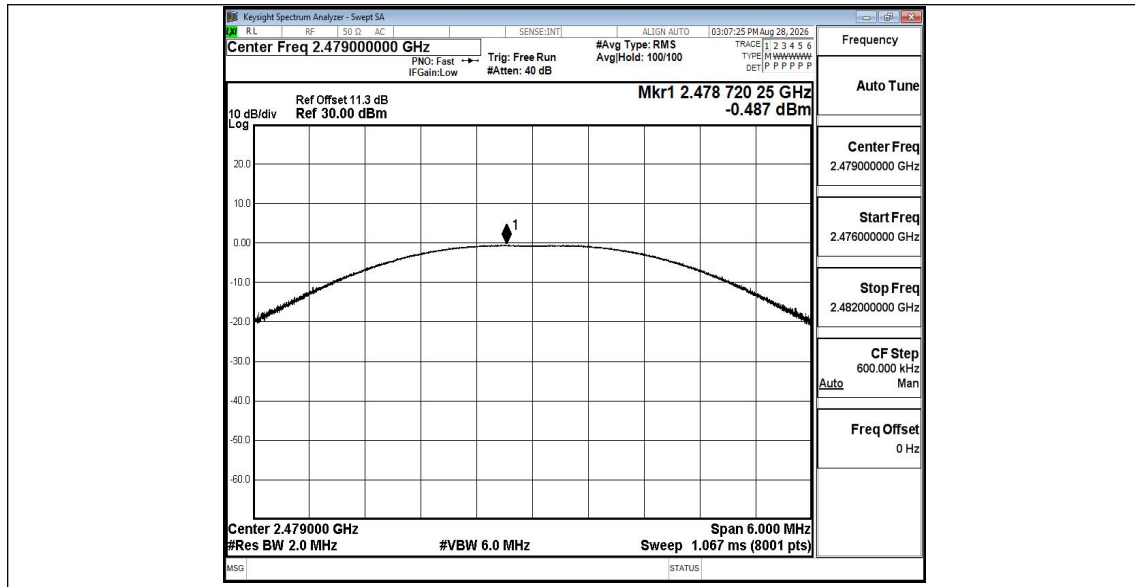
2.4G_SRD_Ant1_2403



2.4G_SRD_Ant1_2441



2.4G_SRD_Ant1_2479



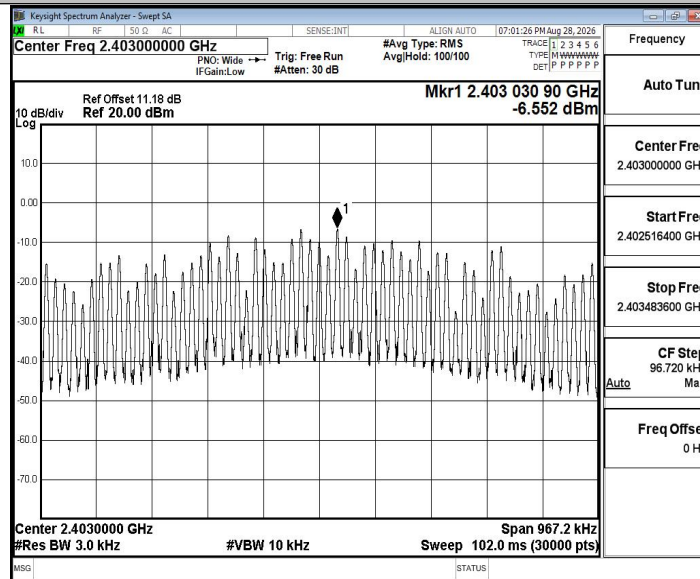
A.3 Maximum power spectral density

Test Result

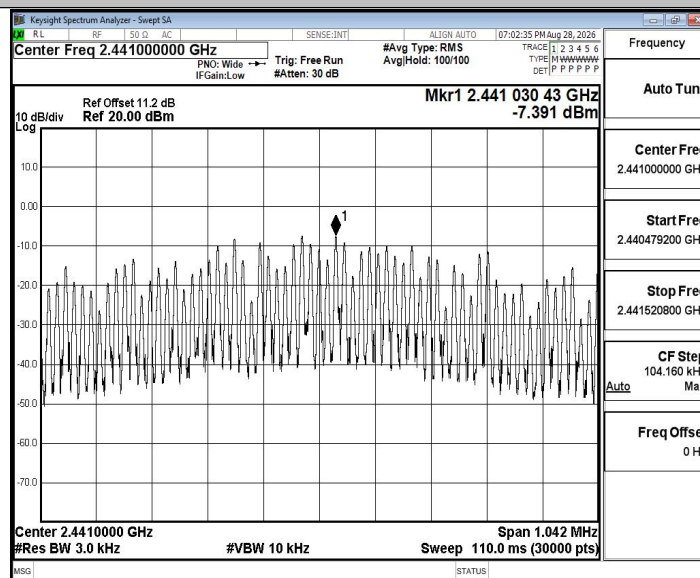
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
2.4G	Ant1	2403	-6.55	≤8.00	PASS
		2441	-7.39	≤8.00	PASS
		2479	-8.02	≤8.00	PASS

Test Graphs

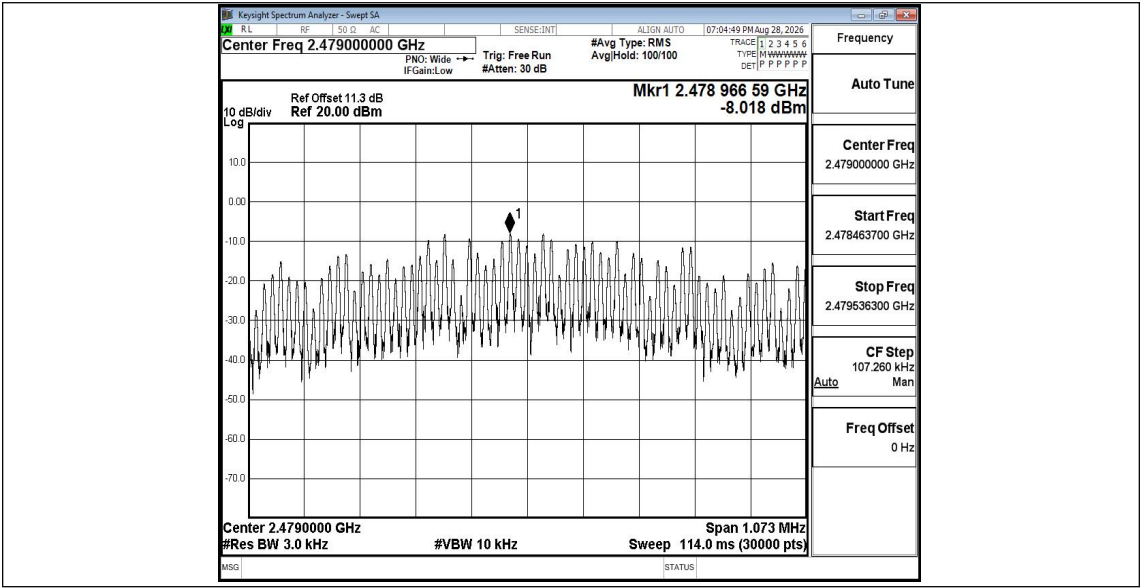
2.4G_Ant1_2403



2.4G_Ant1_2441



2.4G_Ant1_2479

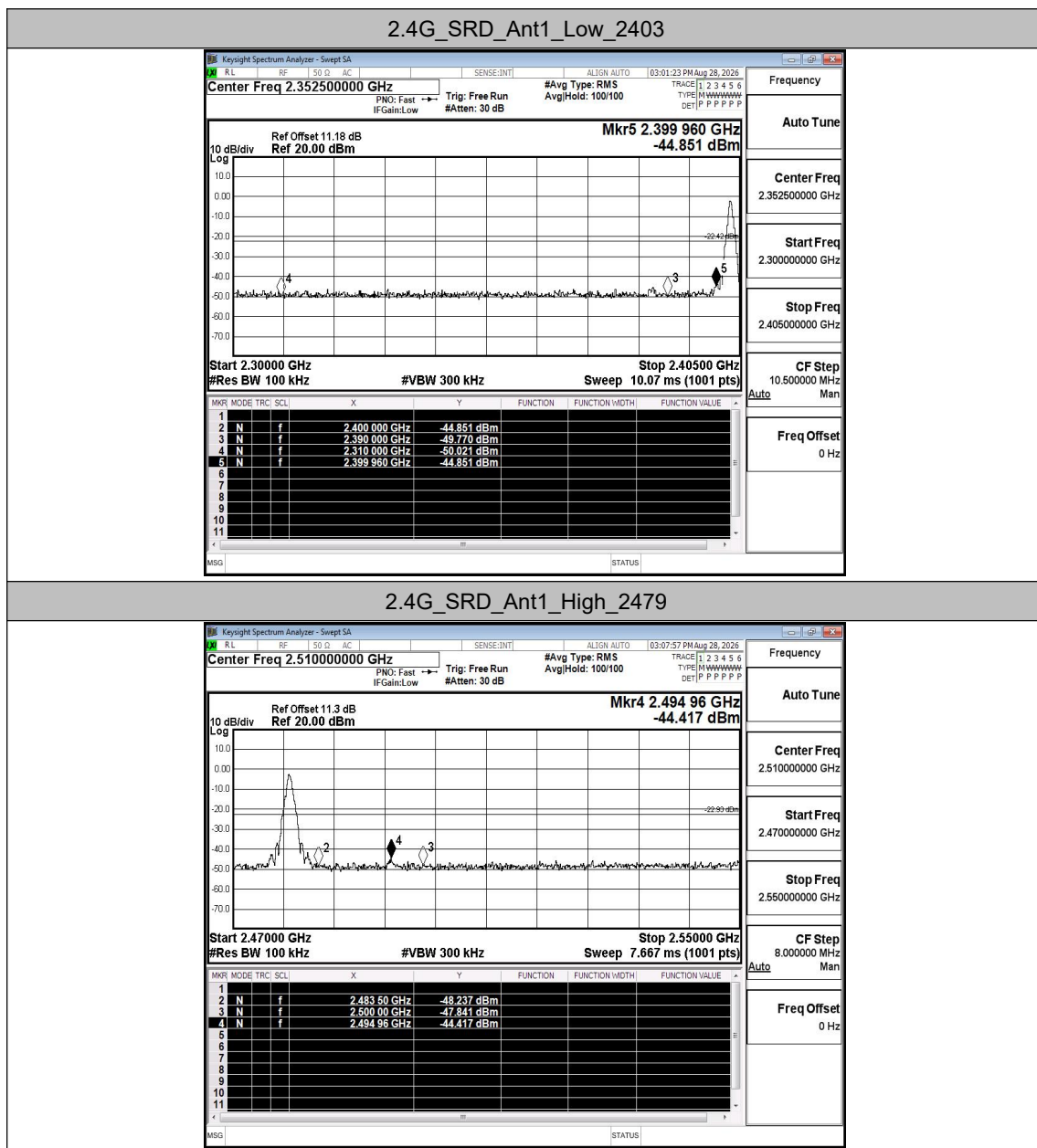


A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
2.4G_SRD	Ant1	Low	2403	-2.42	-44.85	≤ -22.42	PASS
		High	2479	-2.93	-44.42	≤ -22.93	PASS

Test Graphs



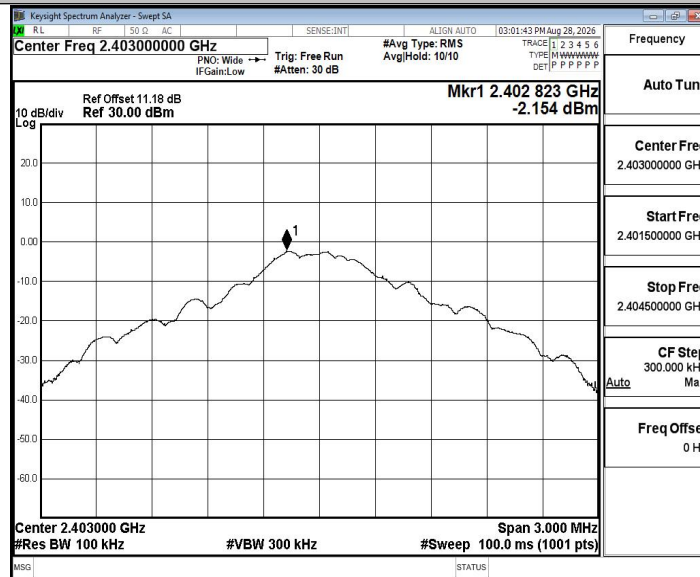
A.5 Conducted Spurious Emission

Test Result

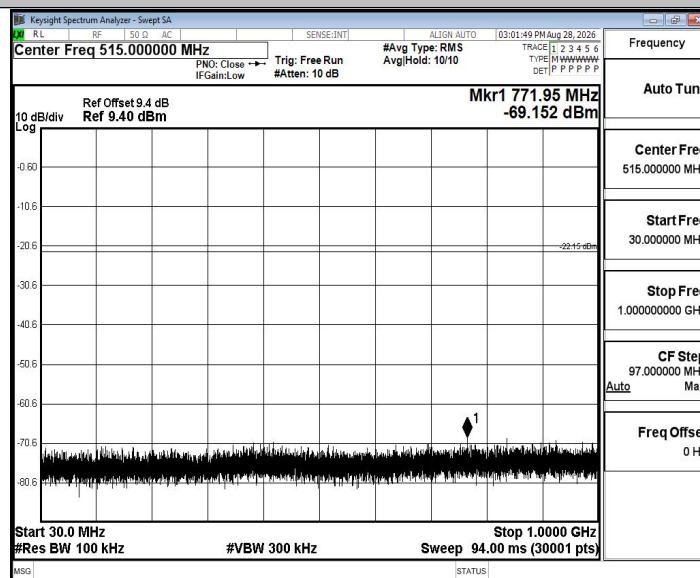
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
2.4G_SRD	Ant1	2403	Reference	-2.15	-2.15	---	PASS
			30~1000	-2.15	-69.15	≤-22.15	PASS
			1000~26500	-2.15	-35.76	≤-22.15	PASS
		2441	Reference	-2.68	-2.68	---	PASS
			30~1000	-2.68	-69.47	≤-22.68	PASS
			1000~26500	-2.68	-37.37	≤-22.68	PASS
		2479	Reference	-2.81	-2.81	---	PASS
			30~1000	-2.81	-69.49	≤-22.81	PASS
			1000~26500	-2.81	-39.23	≤-22.81	PASS

Test Graphs

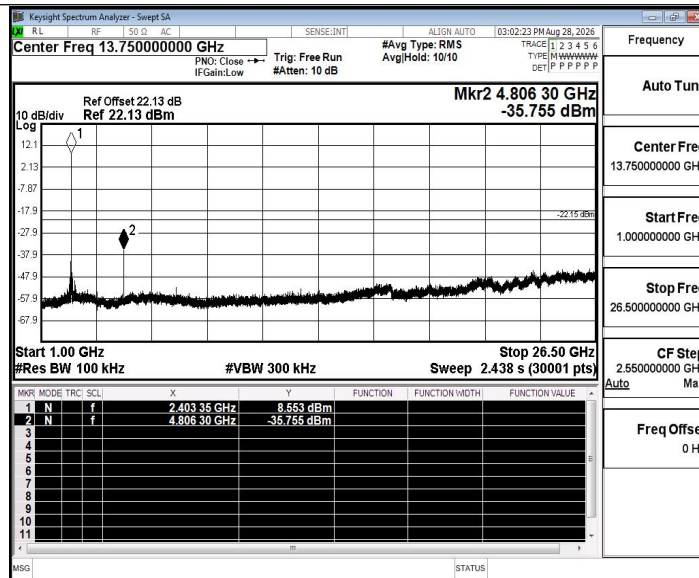
2.4G_SRD_Ant1_2403_0~Reference



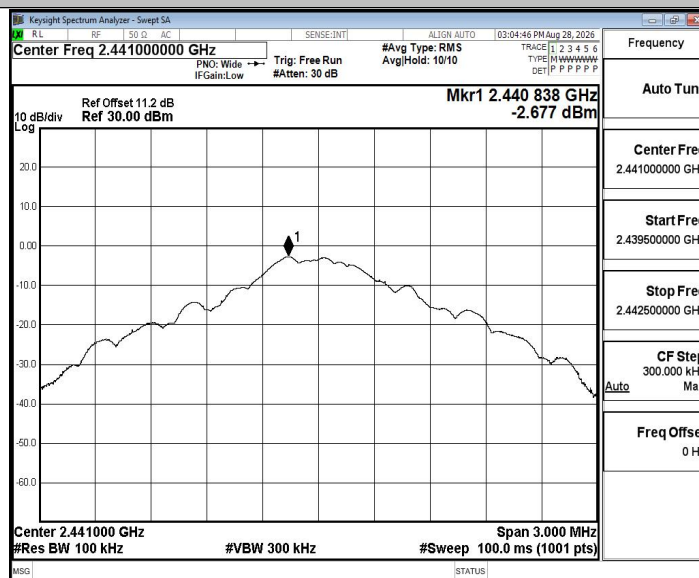
2.4G_SRD_Ant1_2403_30~1000



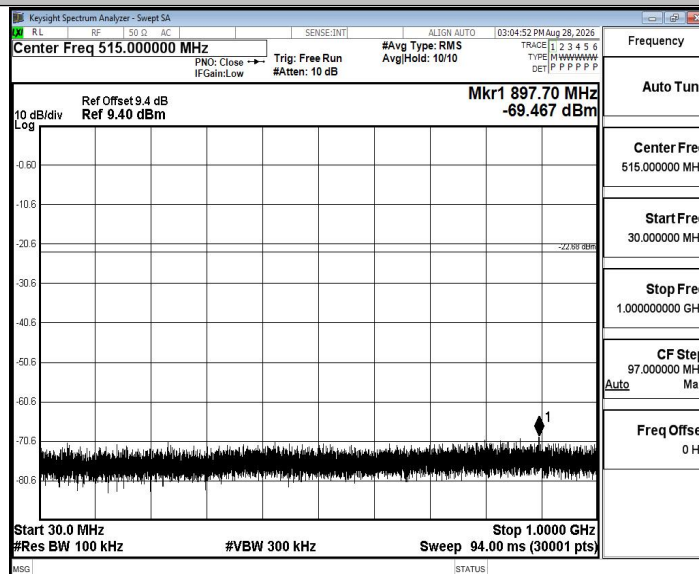
2.4G_SRD_Ant1_2403_1000~26500



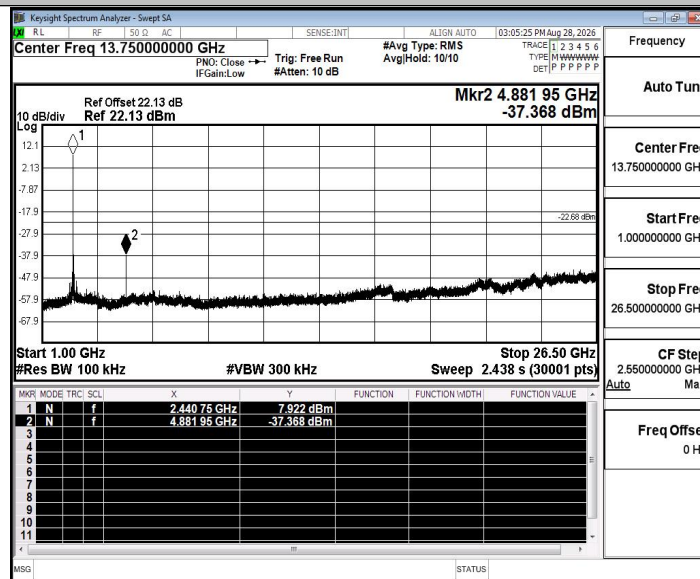
2.4G_SRD_Ant1_2441_0~Reference



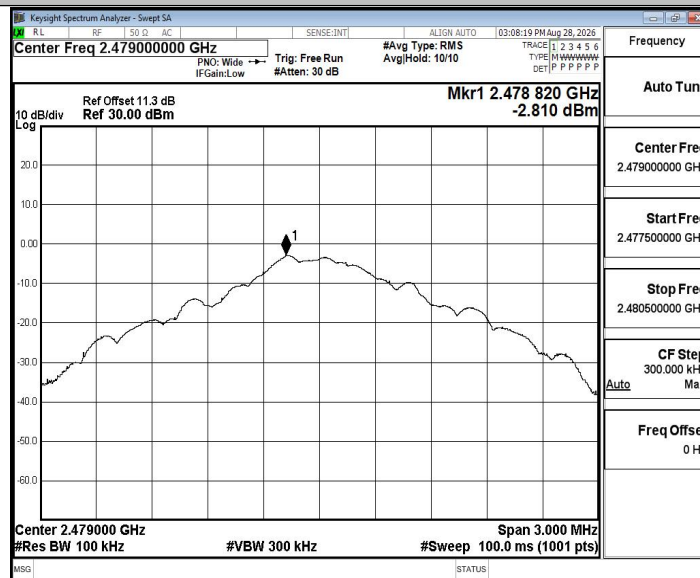
2.4G_SRD_Ant1_2441_30~1000



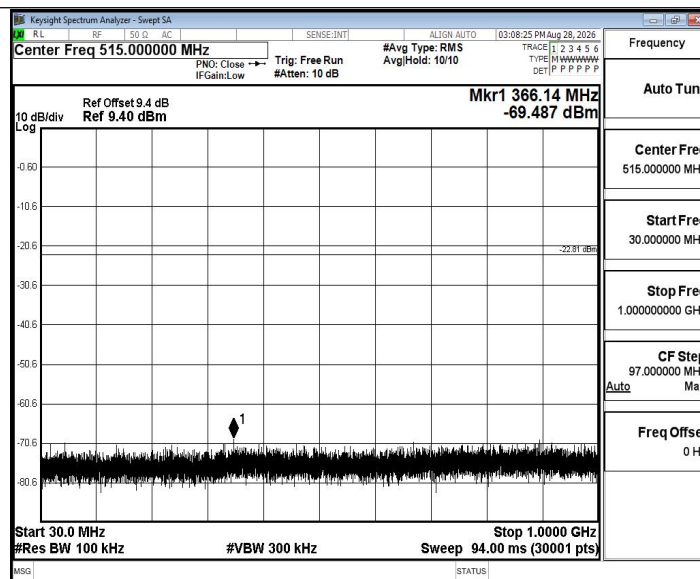
2.4G_SRD_Ant1_2441_1000~26500



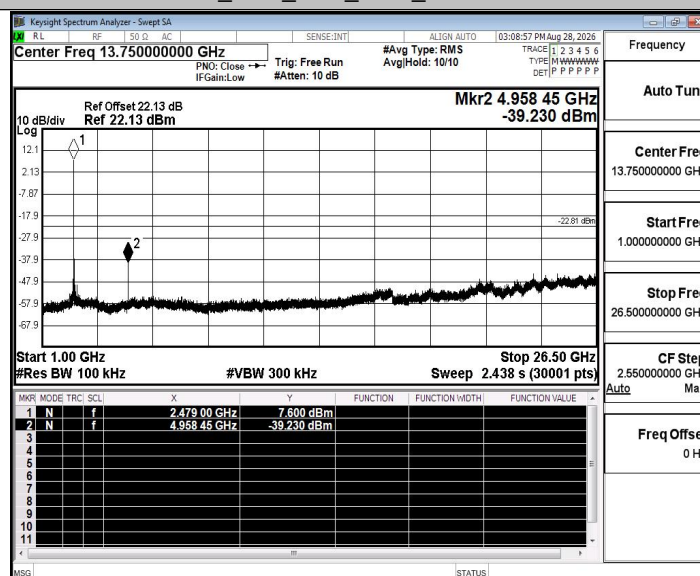
2.4G_SRD_Ant1_2479_0~Reference



2.4G_SRD_Ant1_2479_30~1000



2.4G SRD Ant1 2479 1000~26500

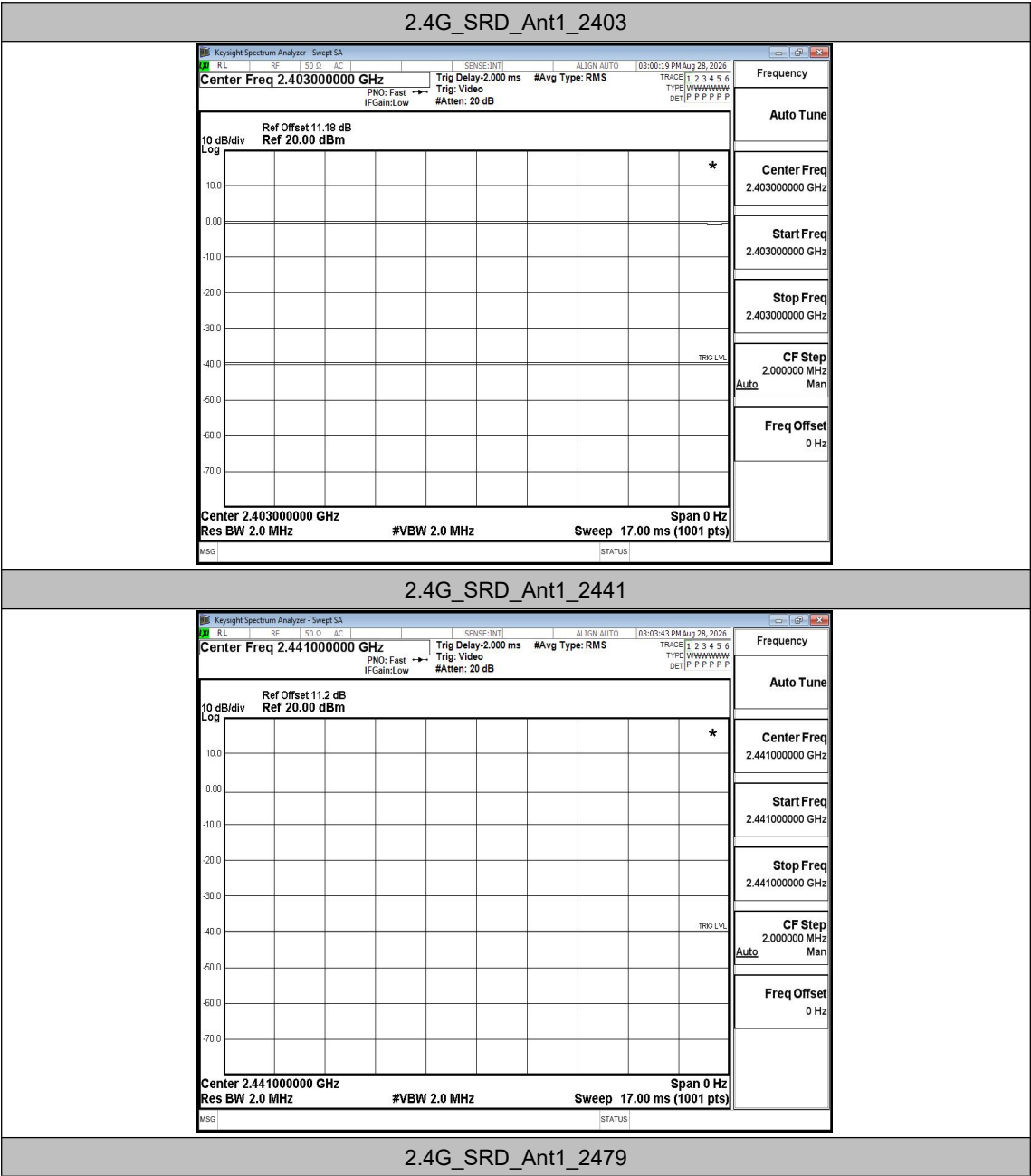


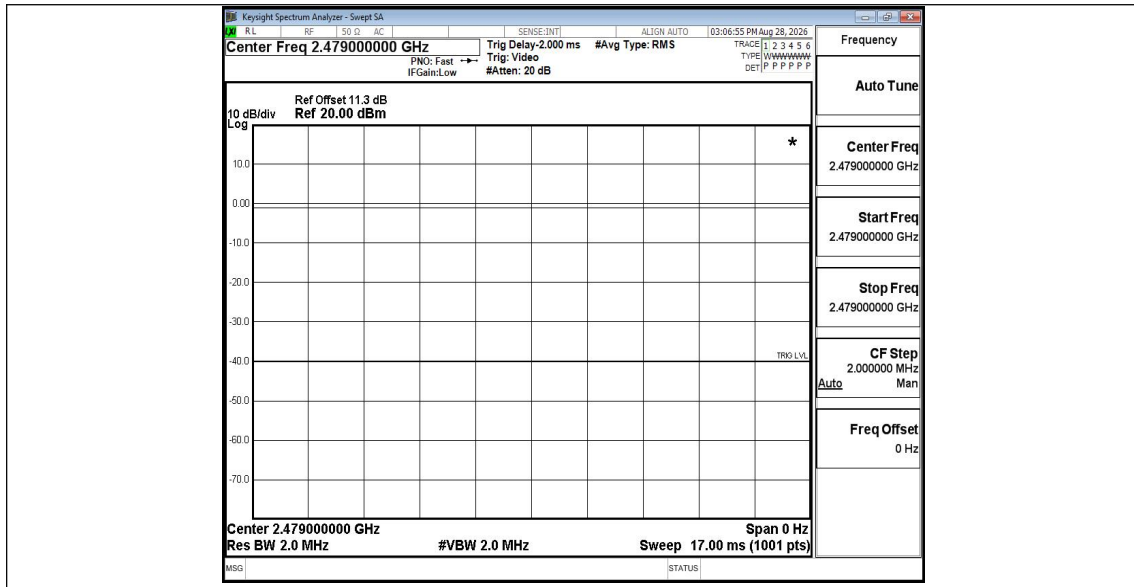
A.6 Duty Cycle

Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
2.4G_SRD	Ant1	2403	0.00	0.00	NaN	100	NaN	---	---
		2441	0.00	0.00	NaN	100	NaN	---	---
		2479	0.00	0.00	NaN	100	NaN	---	---

Test Graphs





A.7 Emissions in Restricted Bands

Test Result

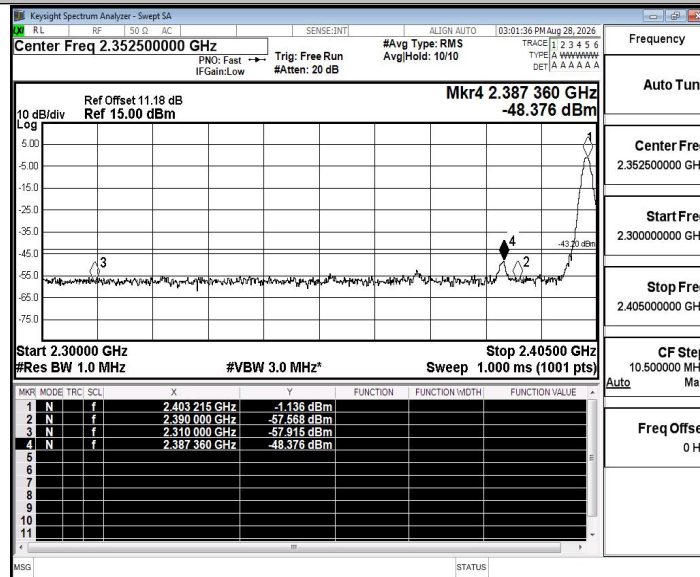
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
2.4G_SRD	Ant1	Low	2403	AV	2310.000	-57.92	≤-43.20	2.00	0.00	39.28	≤54	PASS
				AV	2387.360	-48.38	≤-43.20	2.00	0.00	48.82	≤54	PASS
				AV	2390.000	-57.57	≤-43.20	2.00	0.00	39.63	≤54	PASS
				Peak	2310.000	-50.9	≤-23.20	2.00	0.00	46.30	≤74	PASS
				Peak	2386.730	-43.53	≤-23.20	2.00	0.00	53.67	≤74	PASS
				Peak	2390.000	-49.98	≤-23.20	2.00	0.00	47.22	≤74	PASS
		High	2479	AV	2483.500	-55.05	≤-43.20	2.00	0.00	42.15	≤54	PASS
				AV	2494.960	-47.17	≤-43.20	2.00	0.00	50.03	≤54	PASS
				AV	2500.000	-56.66	≤-43.20	2.00	0.00	40.54	≤54	PASS
				Peak	2483.500	-49.56	≤-23.20	2.00	0.00	47.64	≤74	PASS
				Peak	2494.880	-43.39	≤-23.20	2.00	0.00	53.81	≤74	PASS
				Peak	2500.000	-49.64	≤-23.20	2.00	0.00	47.56	≤74	PASS

Note:

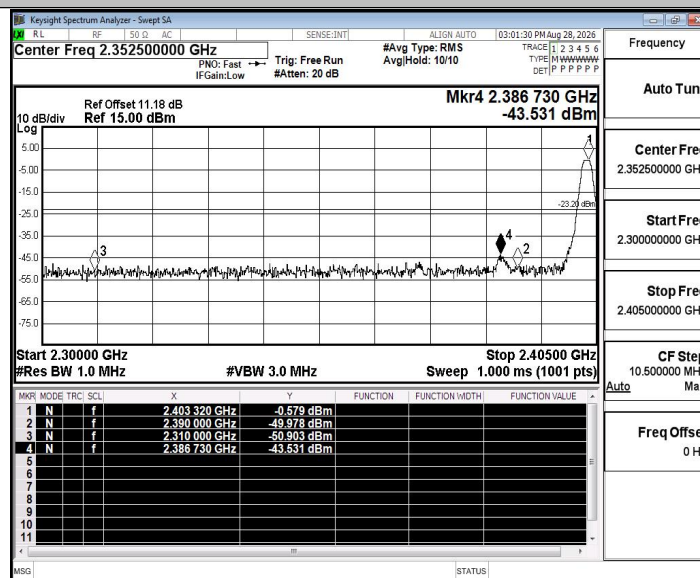
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

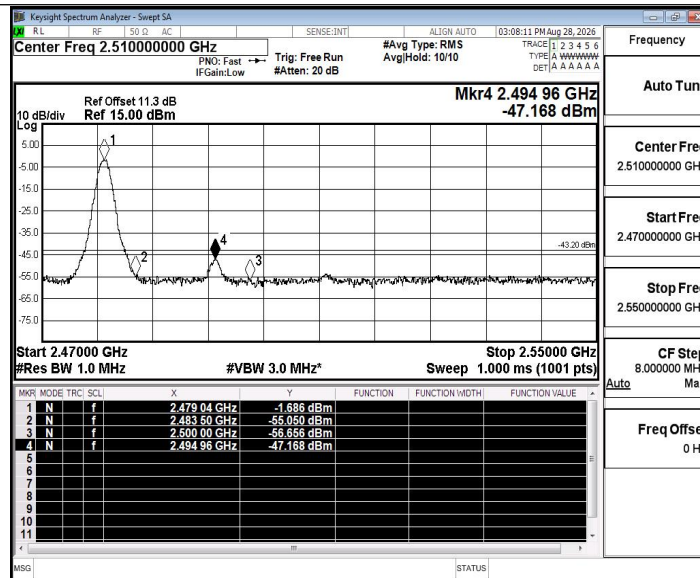
2.4G_SRD_Ant1_Low_2403_AV



2.4G_SRD_Ant1_Low_2403_Peak



2.4G_SRD_Ant1_High_2479_AV



2.4G_SRD_Ant1_High_2479_Peak

