



Appendix A

RF Test Data for Zigbee (Conducted Measurement)

Product Name: Smart Relay

Test Model: SRB01A

Environmental Conditions

Temperature:	23.7° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Monkey Li
Supervised by:	Li Huan

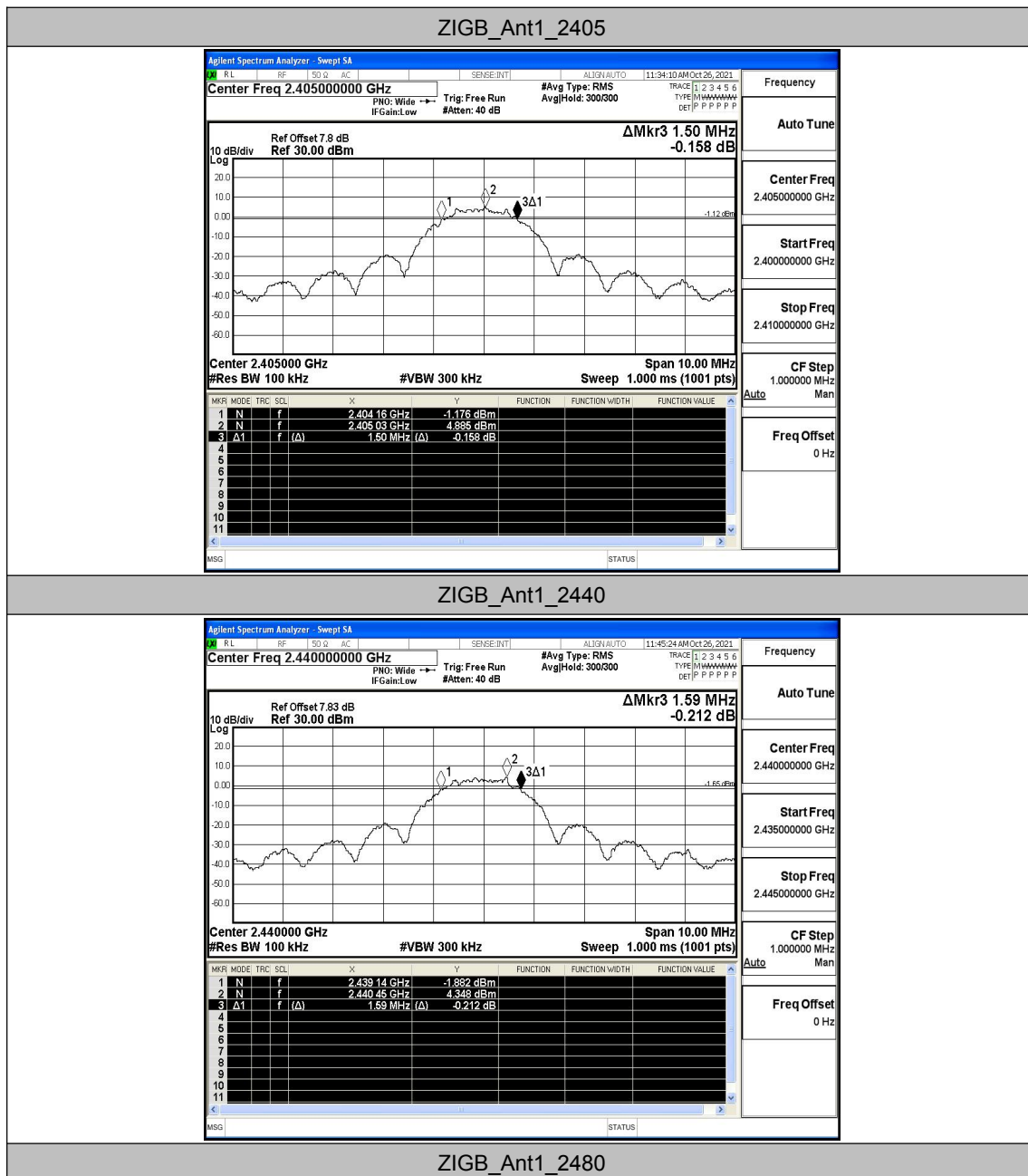


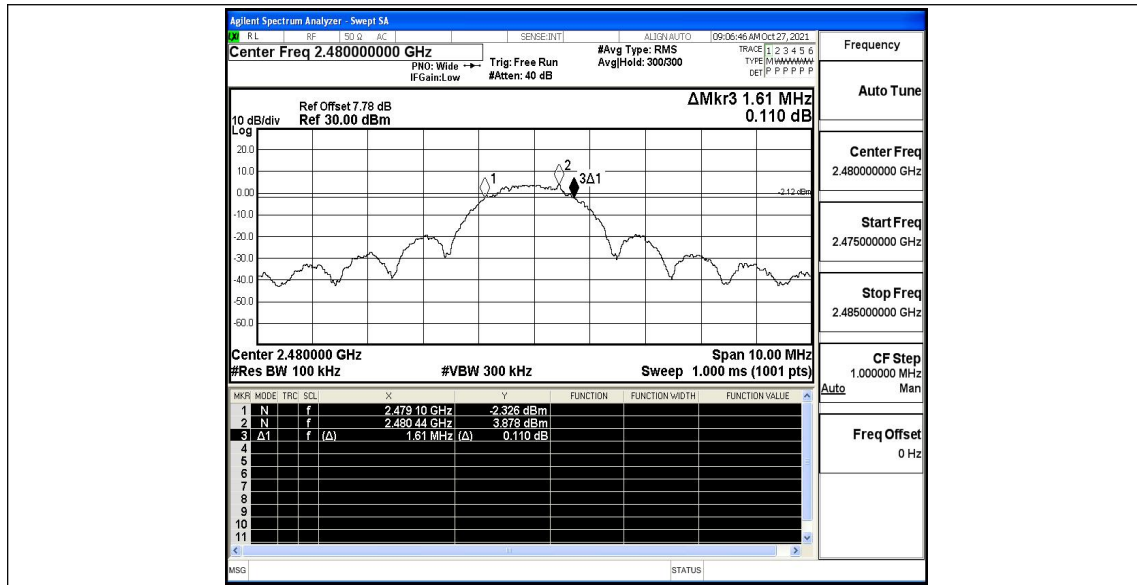
A.1 6dB Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
ZIGB	Ant1	2405	1.500	2404.160	2405.660	≥0.5	PASS
		2440	1.590	2439.140	2440.730	≥0.5	PASS
		2480	1.610	2479.100	2480.710	≥0.5	PASS

Test Graphs







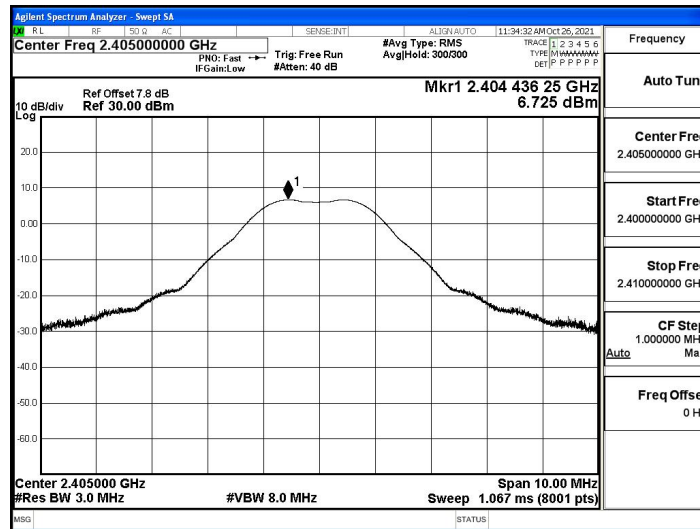
A.2 Maximum Peak conducted output power

Test Result

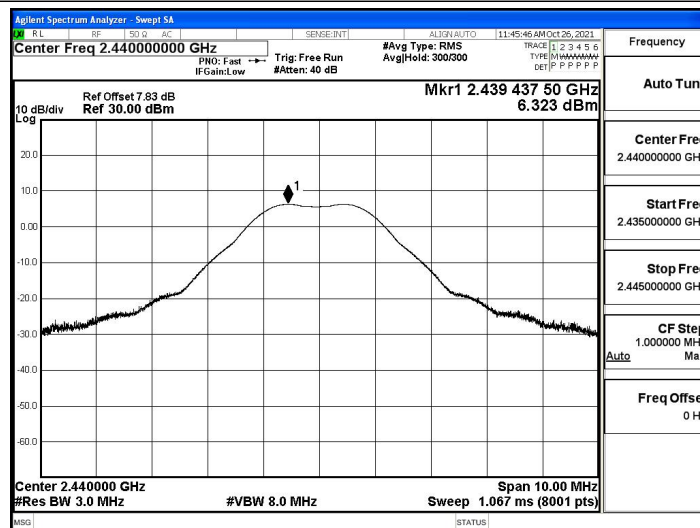
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	2405	6.73	≤30	PASS
		2440	6.32	≤30	PASS
		2480	6.37	≤30	PASS

Test Graphs

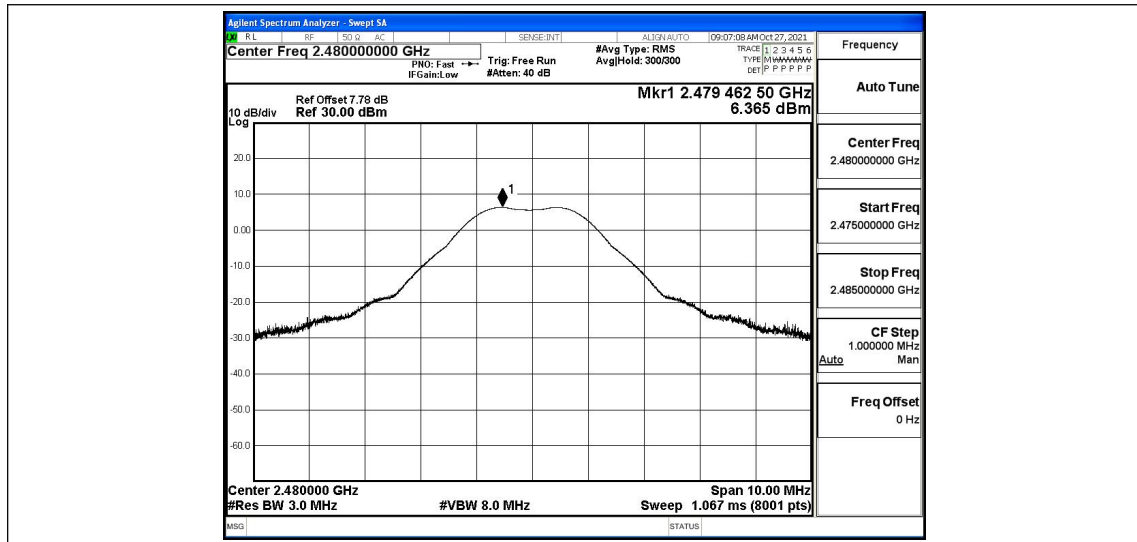
ZIGB_Ant1_2405



ZIGB_Ant1_2440



ZIGB_Ant1_2480



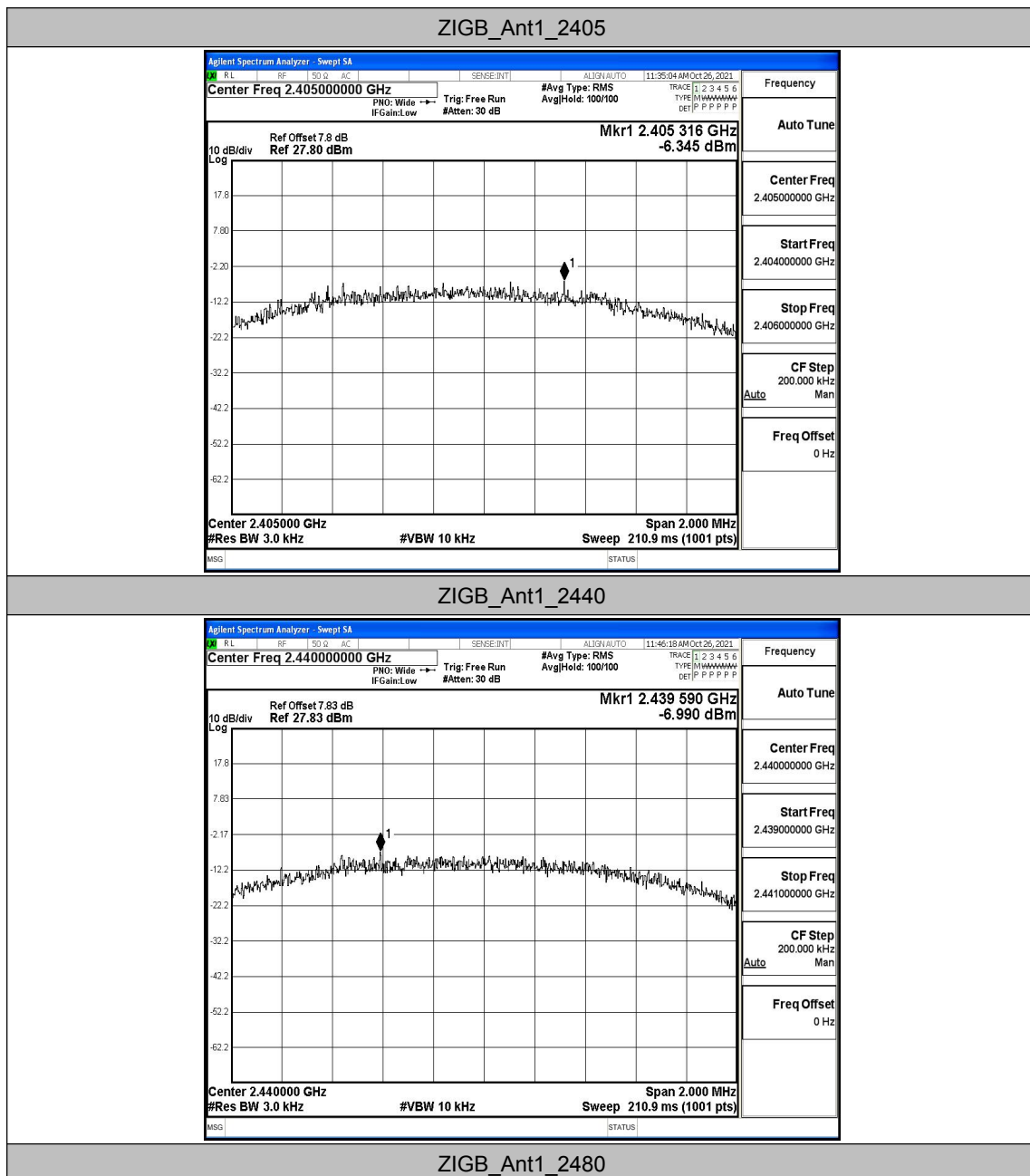


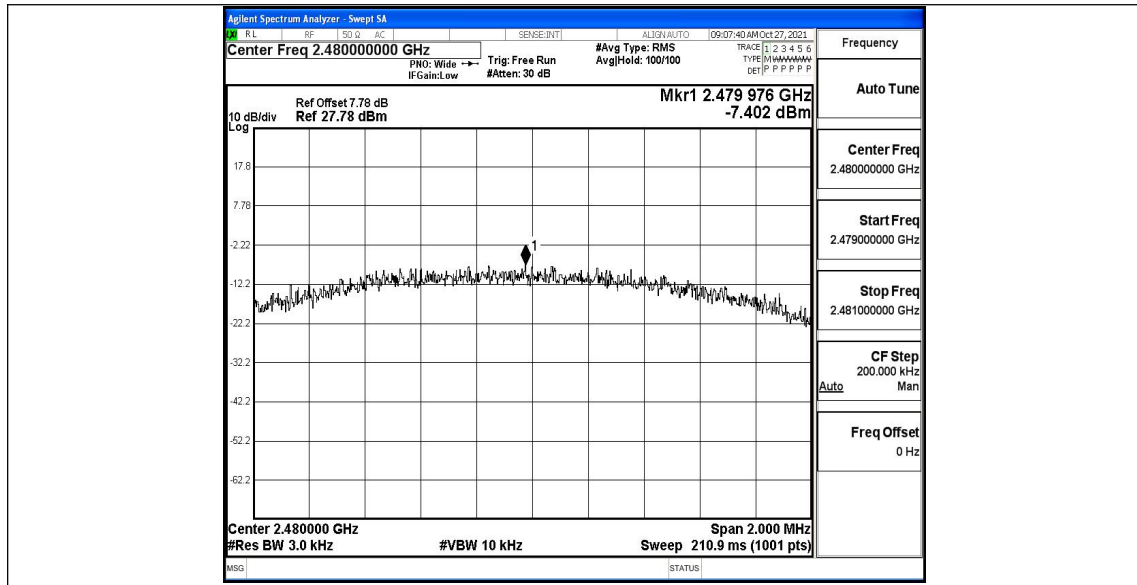
A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
ZIGB	Ant1	2405	-6.35	≤8	PASS
		2440	-6.99	≤8	PASS
		2480	-7.4	≤8	PASS

Test Graphs





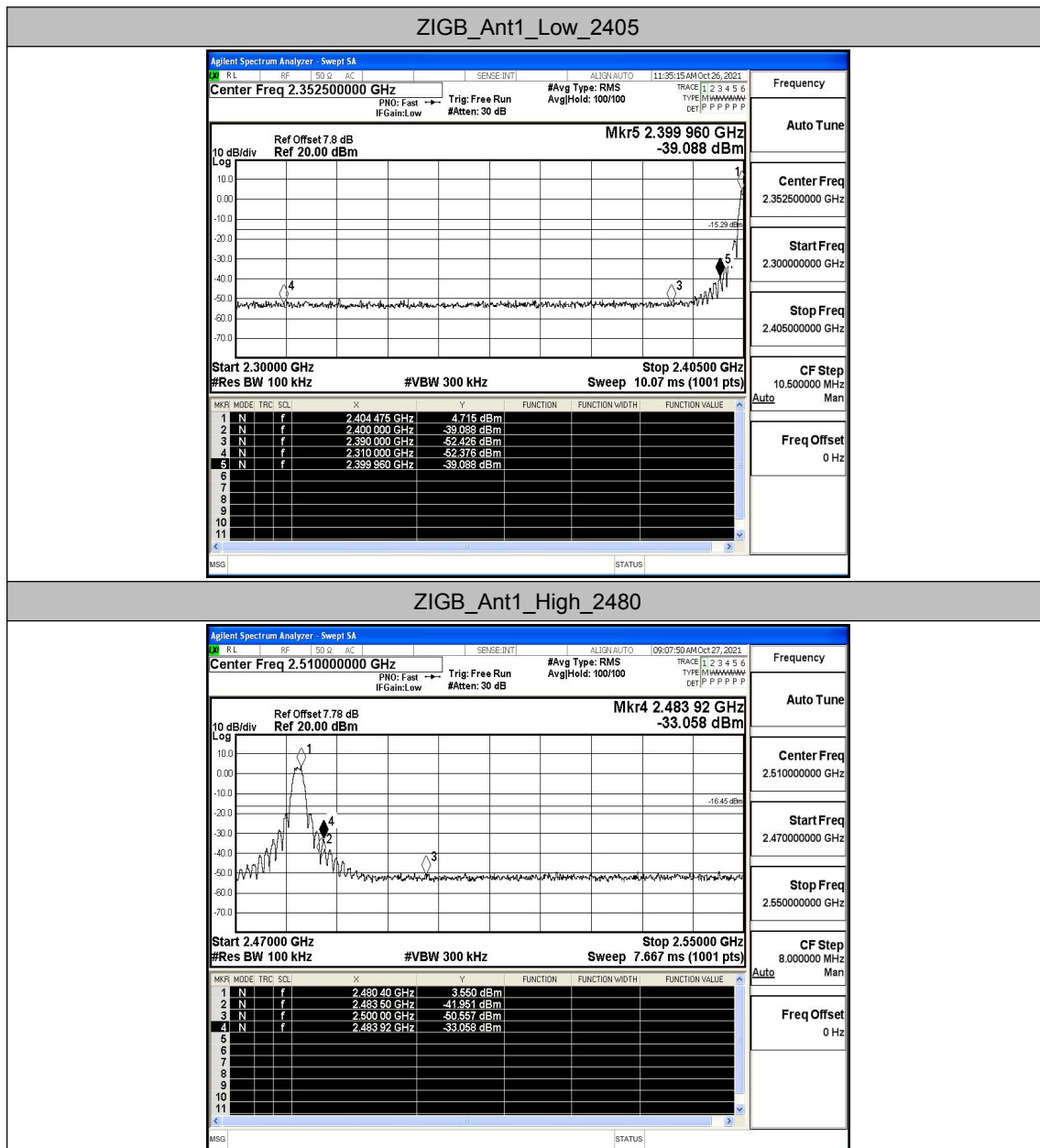


A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	Low	2405	4.72	-39.09	≤-15.29	PASS
		High	2480	3.55	-33.06	≤-16.45	PASS

Test Graphs



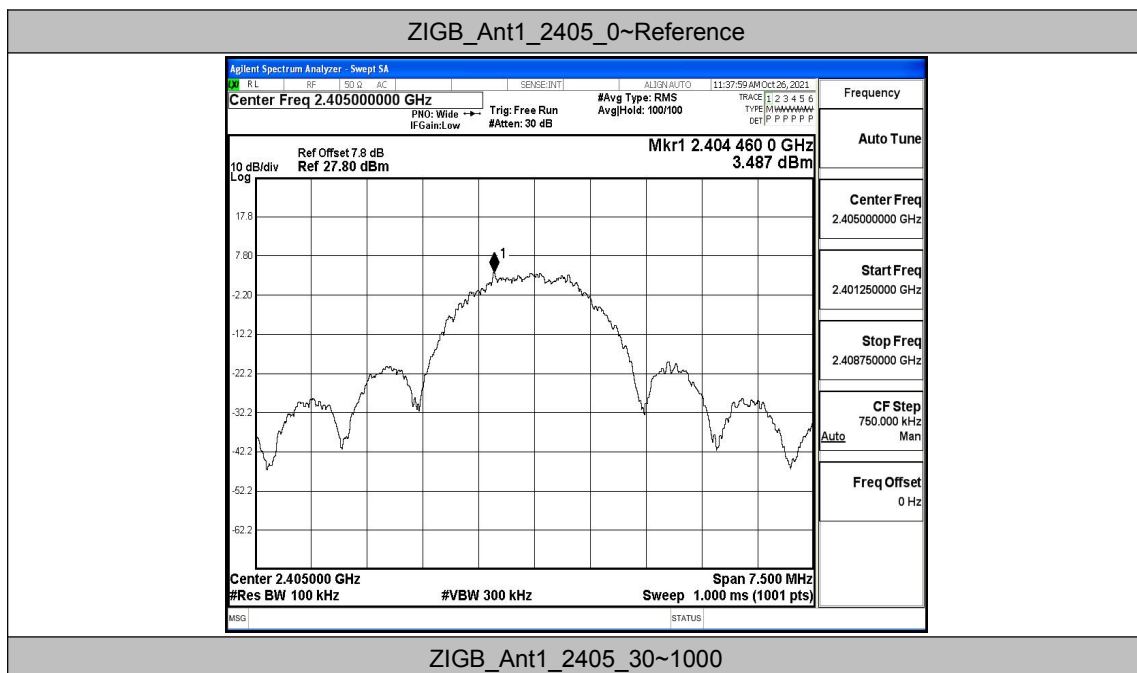


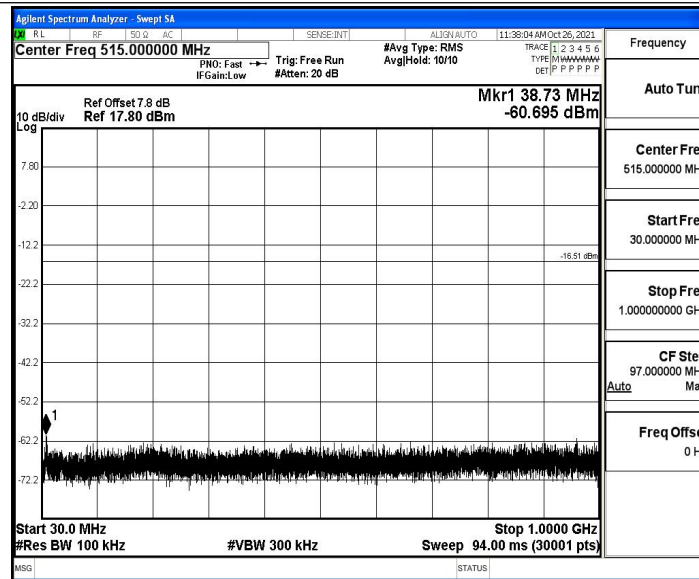
A.5 Conducted Spurious Emission

Test Result

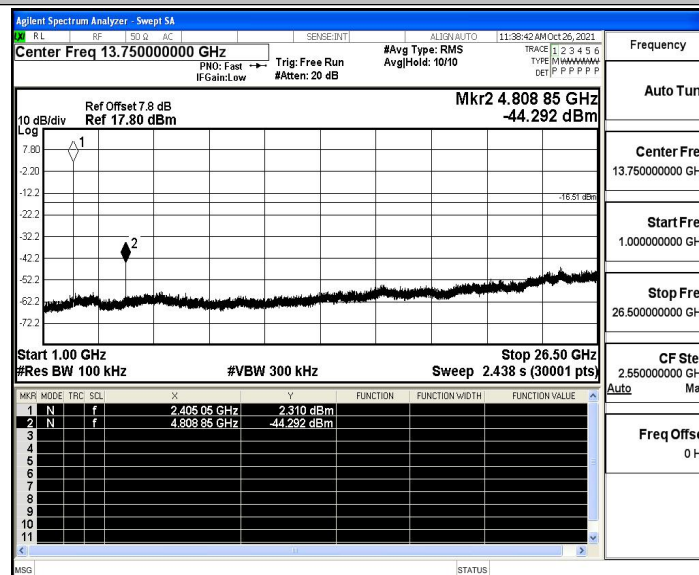
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	2405	Reference	3.49	3.49	---	PASS
			30~1000	3.49	-60.7	≤-16.51	PASS
			1000~26500	3.49	-44.29	≤-16.51	PASS
		2440	Reference	4.50	4.50	---	PASS
			30~1000	4.50	-60.89	≤-15.5	PASS
			1000~26500	4.50	-45.36	≤-15.5	PASS
		2480	Reference	3.50	3.50	---	PASS
			30~1000	3.50	-60.98	≤-16.5	PASS
			1000~26500	3.50	-42.8	≤-16.5	PASS

Test Graphs

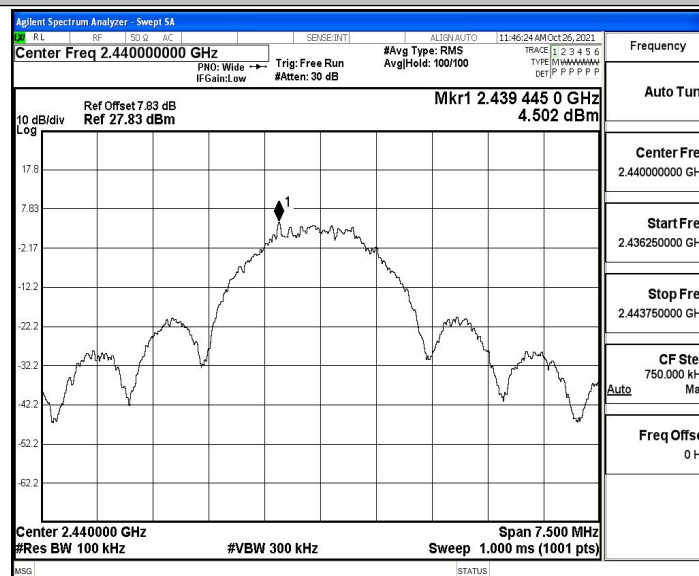




ZIGB_Ant1_2405_1000~26500

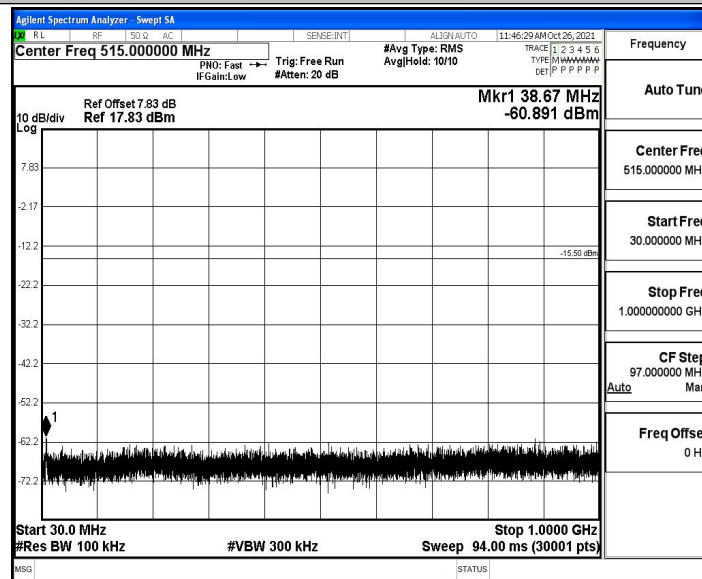


ZIGB_Ant1_2440_0~Reference

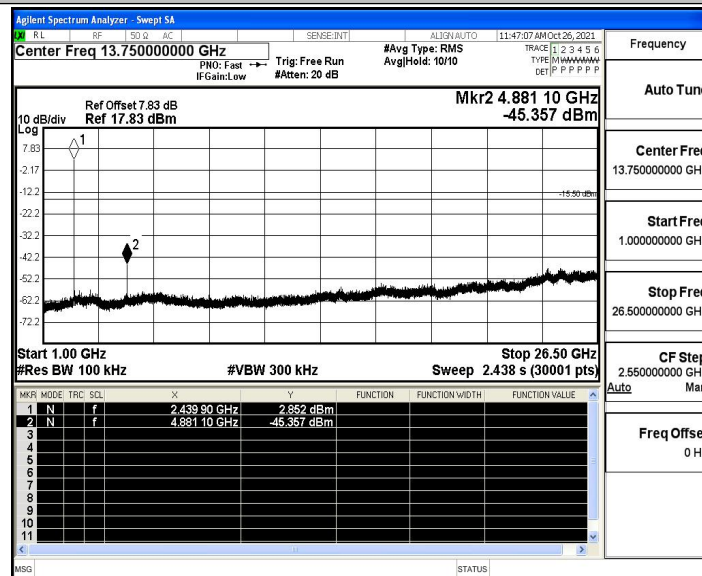




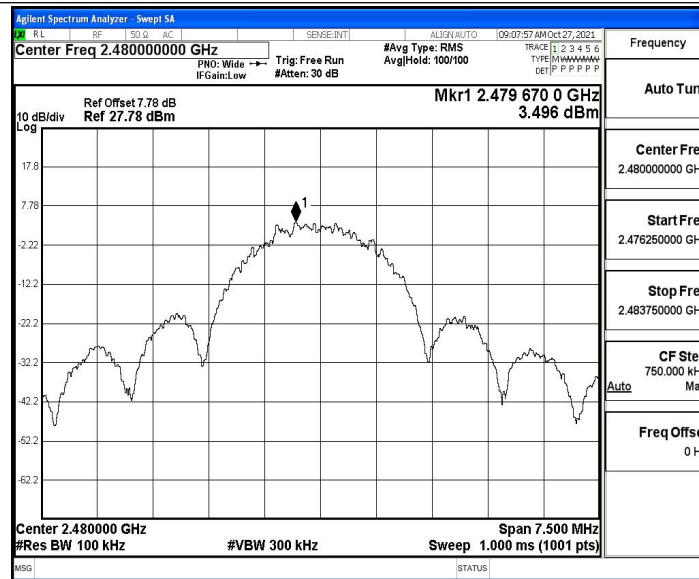
ZIGB_Ant1_2440_30~1000



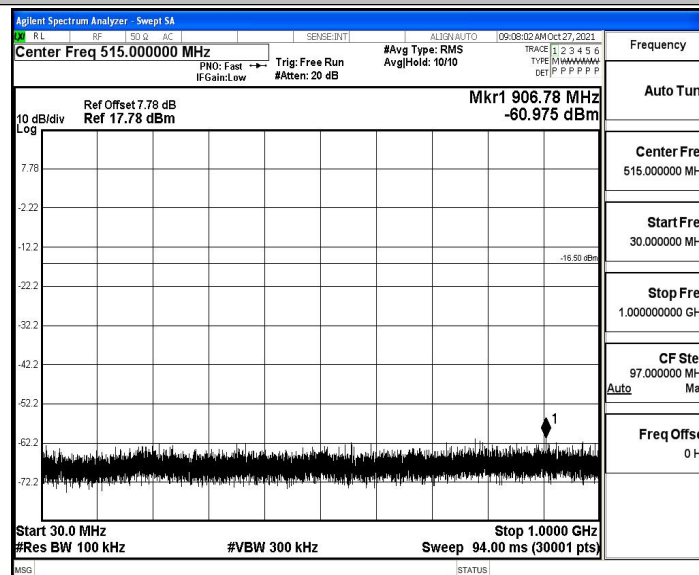
ZIGB_Ant1_2440_1000~26500



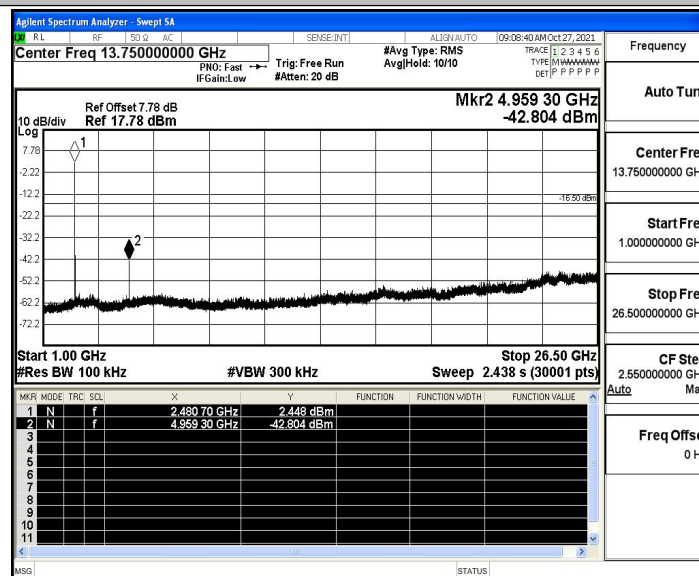
ZIGB_Ant1_2480_0~Reference



ZIGB_Ant1_2480_30~1000



ZIGB_Ant1_2480_1000~26500



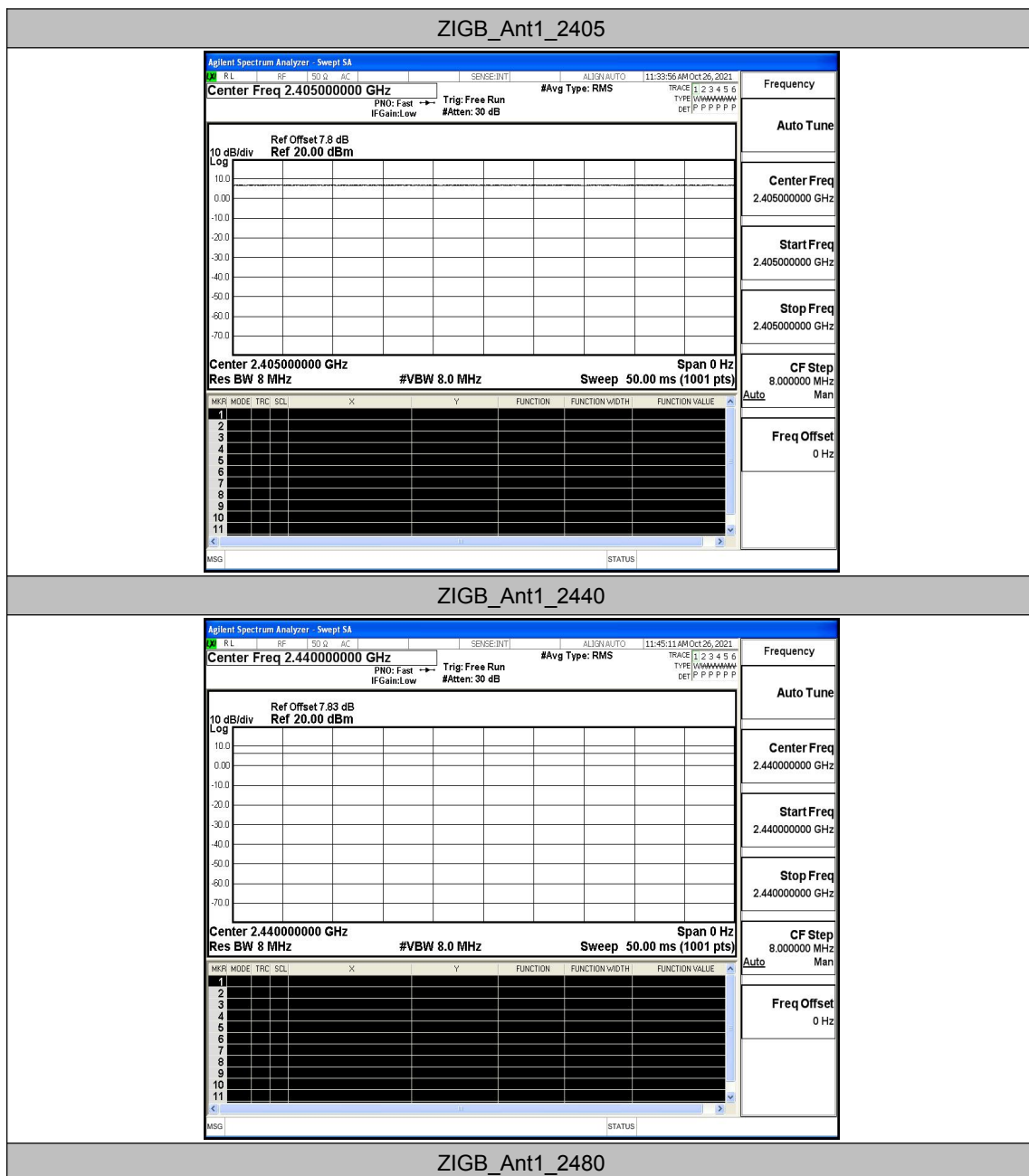


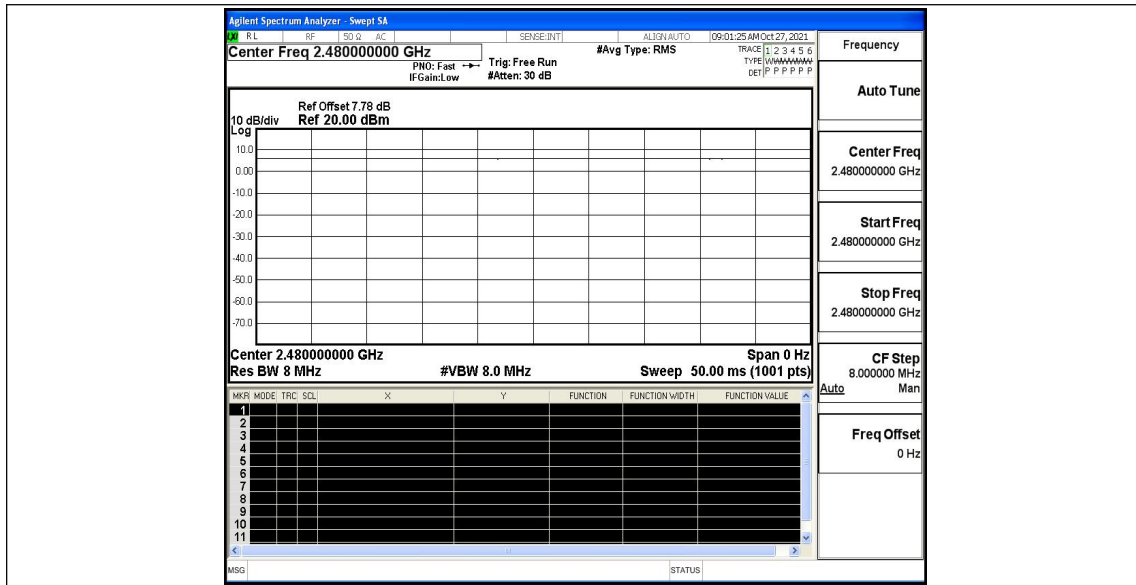
A.6 Duty Cycle

Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
ZIGB	Ant1	2405	50.00	50.00	100.00	---	PASS
		2440	50.00	50.00	100.00	---	PASS
		2480	50.00	50.00	100.00	---	PASS

Test Graphs







A.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
ZIGB	Ant1	Low	2405	AV	2310.000	-49.31	≤-41.20	PASS
				AV	2389.985	-48.67	≤-41.20	PASS
				AV	2390.000	-48.67	≤-41.20	PASS
				Peak	2310.000	-42.78	≤-21.20	PASS
				Peak	2343.155	-39.67	≤-21.20	PASS
				Peak	2390.000	-42.64	≤-21.20	PASS
		High	2480	AV	2483.500	-41.62	≤-41.20	PASS
				AV	2483.520	-41.62	≤-41.20	PASS
				AV	2500.000	-48.35	≤-41.20	PASS
				Peak	2483.500	-36.22	≤-21.20	PASS
				Peak	2483.600	-35.38	≤-21.20	PASS
				Peak	2500.000	-44.33	≤-21.20	PASS

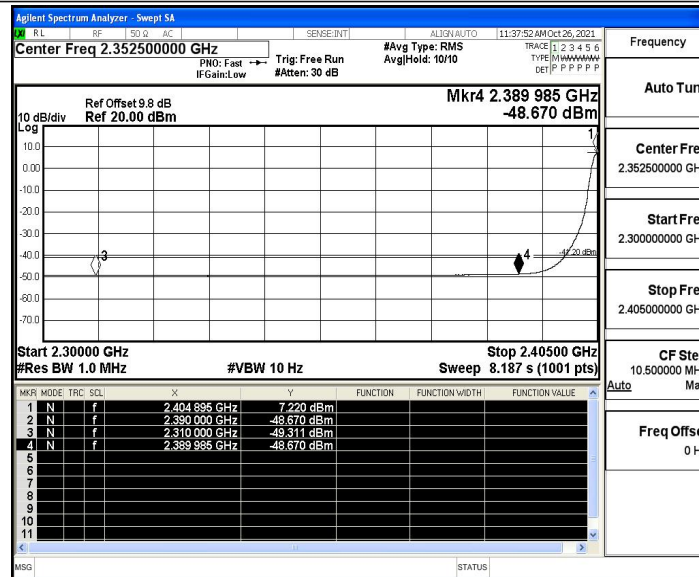
Note:

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.

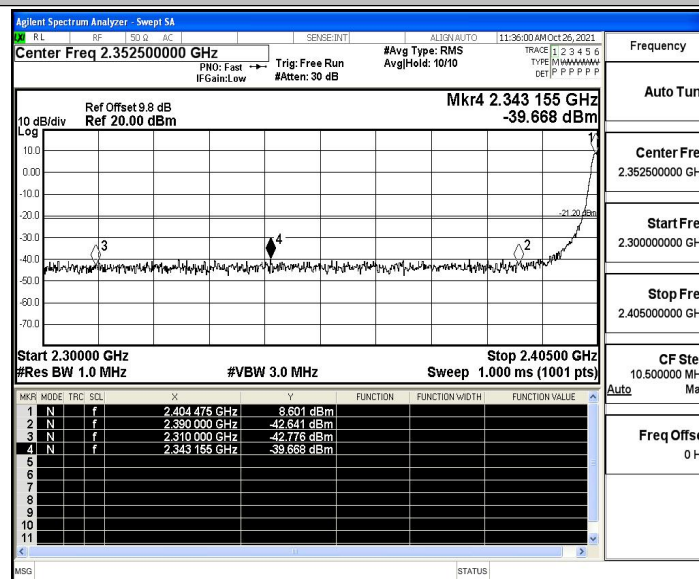


Test Graphs

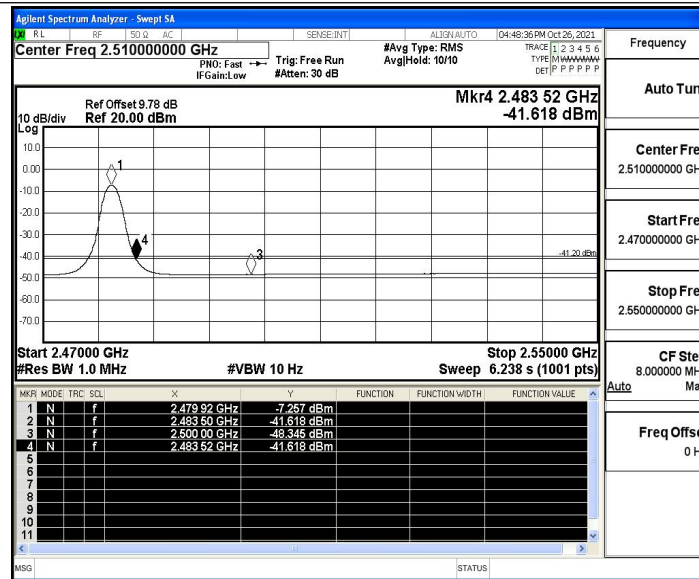
ZIGB_Ant1_Low_2405_AV



ZIGB_Ant1_Low_2405_Peak



ZIGB_Ant1_High_2480_AV



ZIGB_Ant1_High_2480_Peak

