



Appendix B

RF Test Data for Zigbee(Conducted Measurement)

Product Name: Axis Centrifugal Pump

Test Model: AX60

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
Supervised by:	Ling Zhu



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B.1 DTS Bandwidth

Test Result

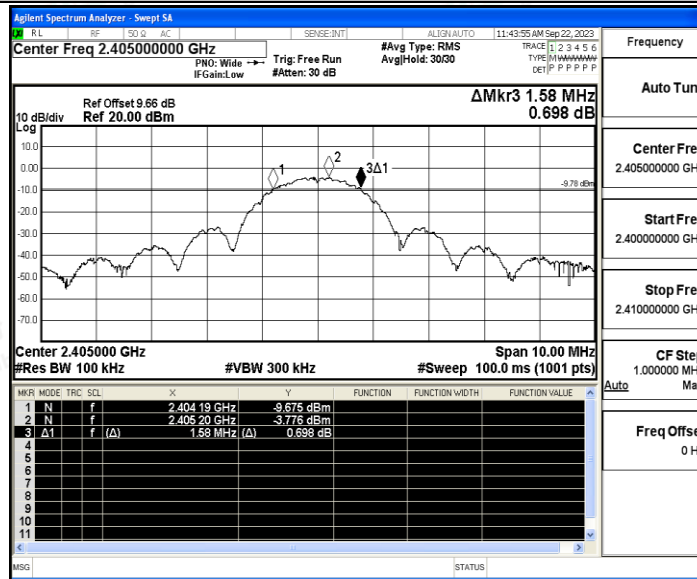
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
ZIGB	Ant	2405	1.580	2404.190	2405.770	0.5	PASS
		2440	1.580	2439.200	2440.780	0.5	PASS
		2480	1.590	2479.190	2480.780	0.5	PASS



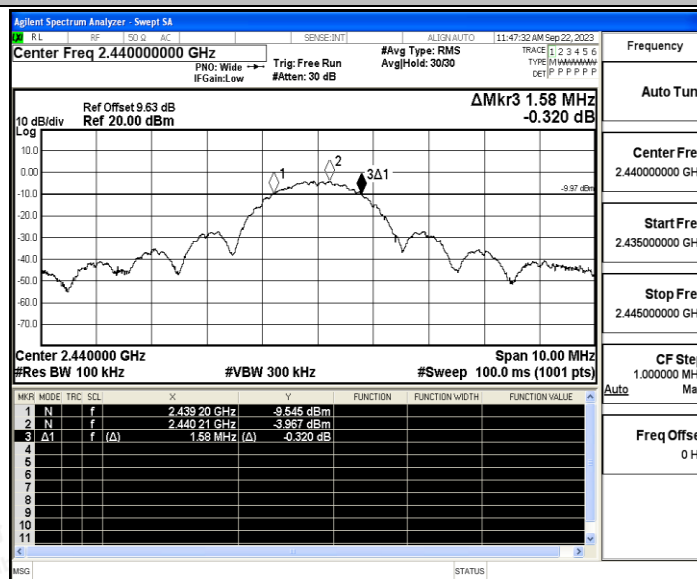


Test Graphs

ZIGB_Ant_2405



ZIGB_Ant_2440



ZIGB_Ant_2480

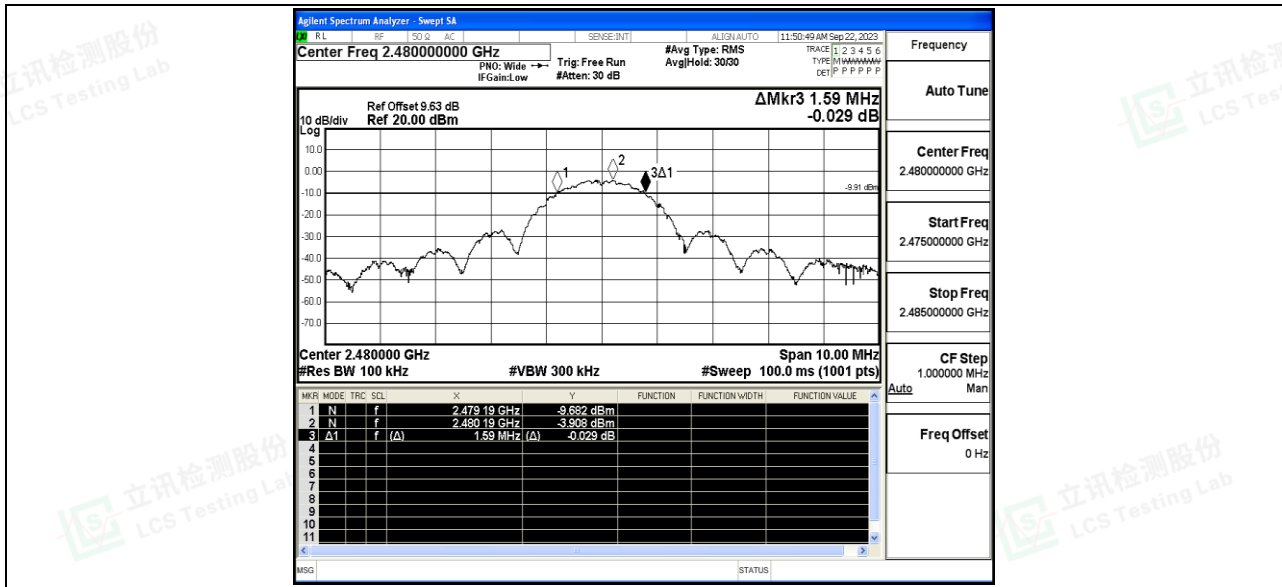


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B.2 Maximum conducted output power

Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant	2405	0.42	≤30	PASS
		2440	0.36	≤30	PASS
		2480	0.29	≤30	PASS



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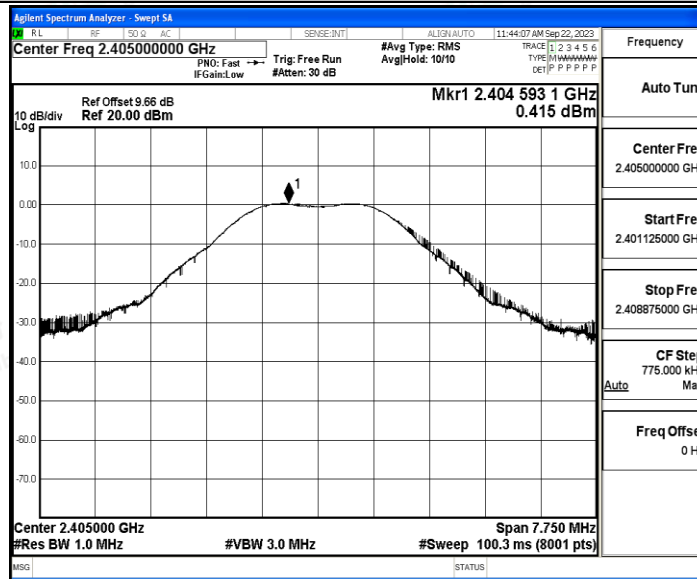
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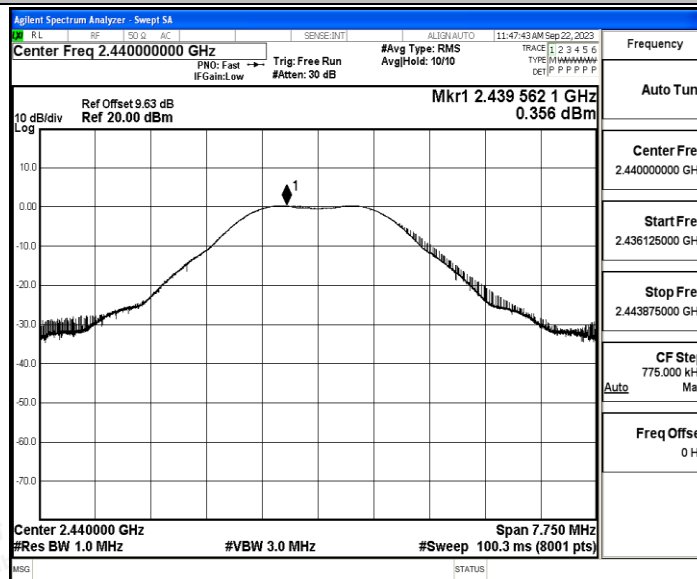


Test Graphs

ZIGB_Ant_2405



ZIGB_Ant_2440



ZIGB_Ant_2480

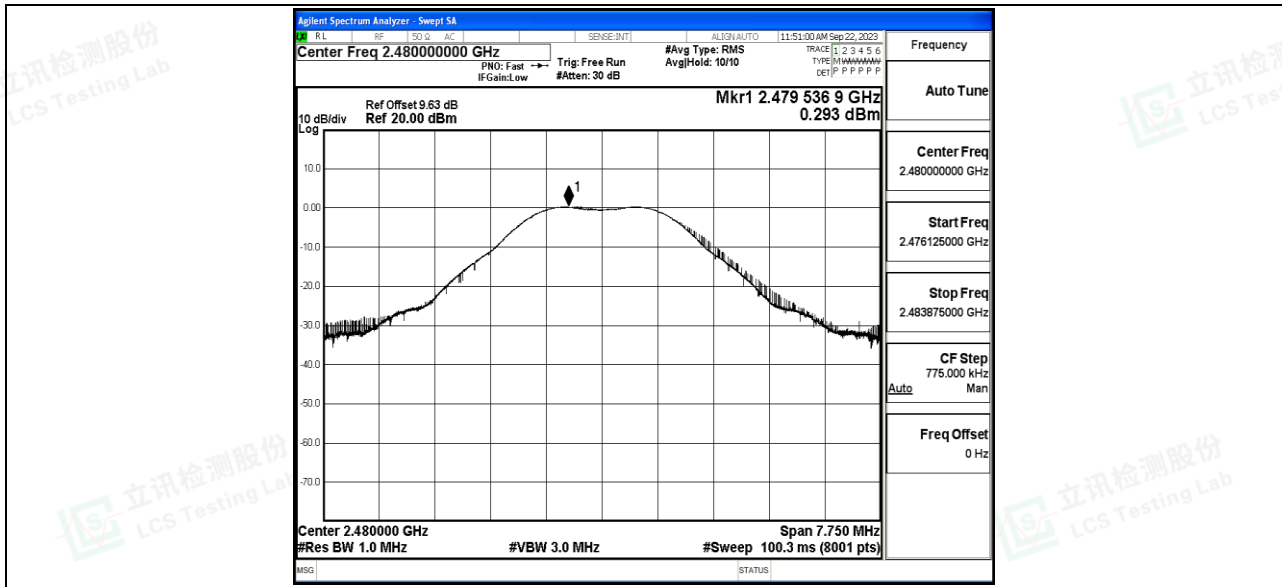


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B.3 Maximum power spectral density

Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
ZIGB	Ant	2405	-12.97	≤8.00	PASS
		2440	-12.76	≤8.00	PASS
		2480	-13.04	≤8.00	PASS



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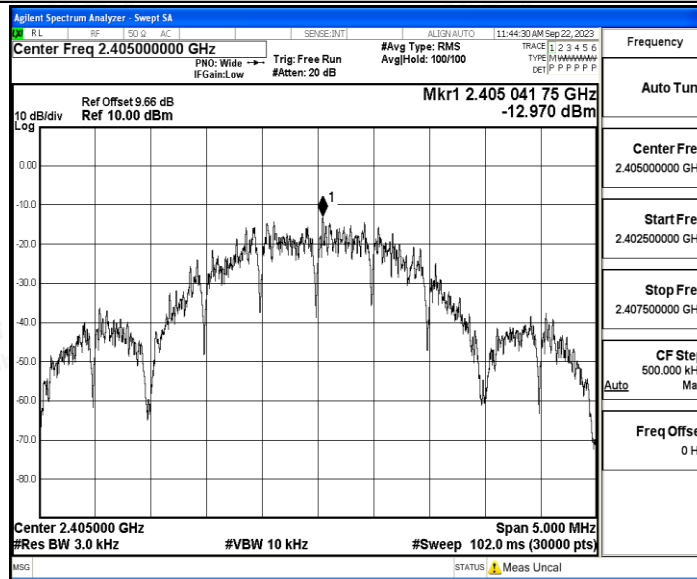
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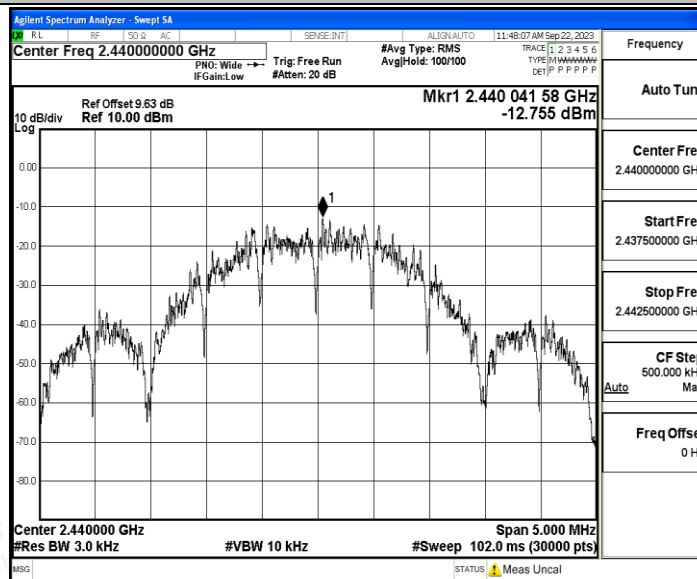


Test Graphs

ZIGB_Ant_2405



ZIGB_Ant_2440



ZIGB_Ant_2480

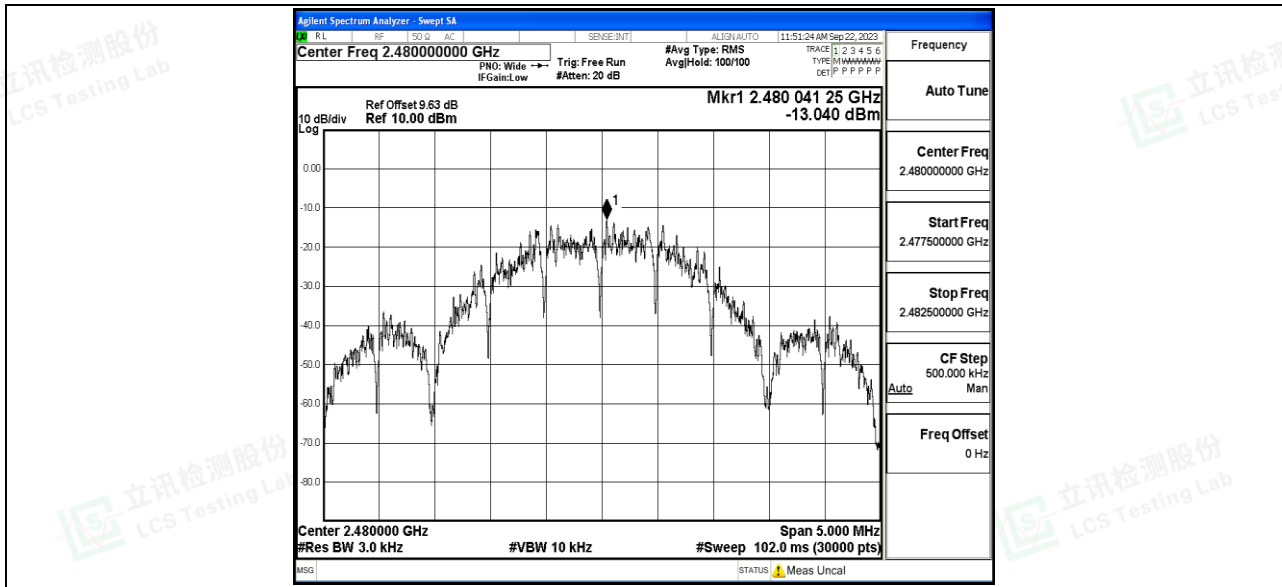


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B.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant	Low	2405	-3.57	-46.36	≤ -23.57	PASS
		High	2480	-3.79	-40.58	≤ -23.79	PASS



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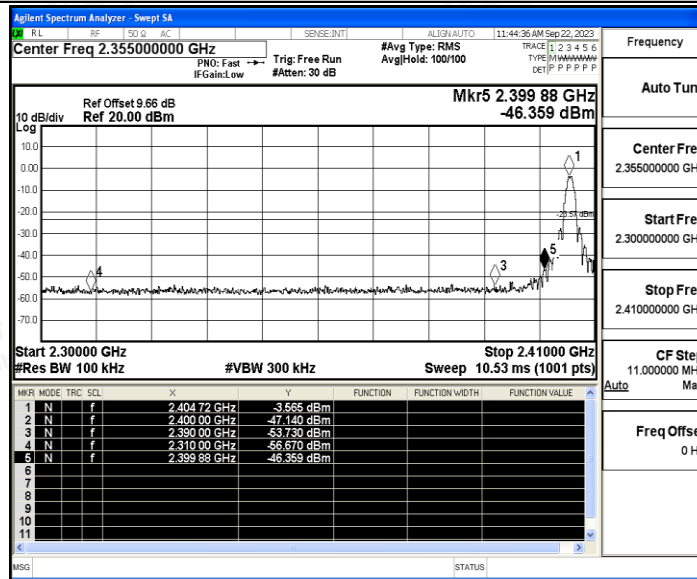
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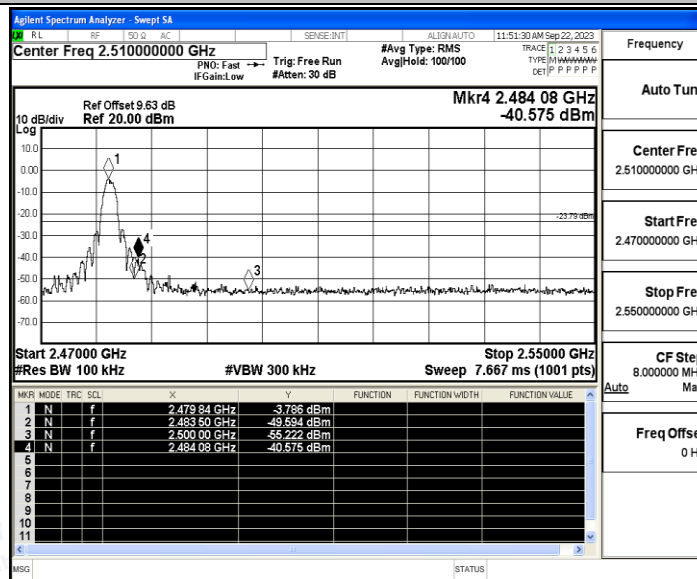


Test Graphs

ZIGB_Ant_Low_2405



ZIGB_Ant_High_2480



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B.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant	2405	Reference	-4.71	-4.71	---	PASS
			30~1000	-4.71	-62.18	≤-24.71	PASS
			1000~26500	-4.71	-41.51	≤-24.71	PASS
		2440	Reference	-5.24	-5.24	---	PASS
			30~1000	-5.24	-62.55	≤-25.24	PASS
			1000~26500	-5.24	-43.01	≤-25.24	PASS
		2480	Reference	-4.56	-4.56	---	PASS
			30~1000	-4.56	-62.5	≤-24.56	PASS
			1000~26500	-4.56	-45.7	≤-24.56	PASS



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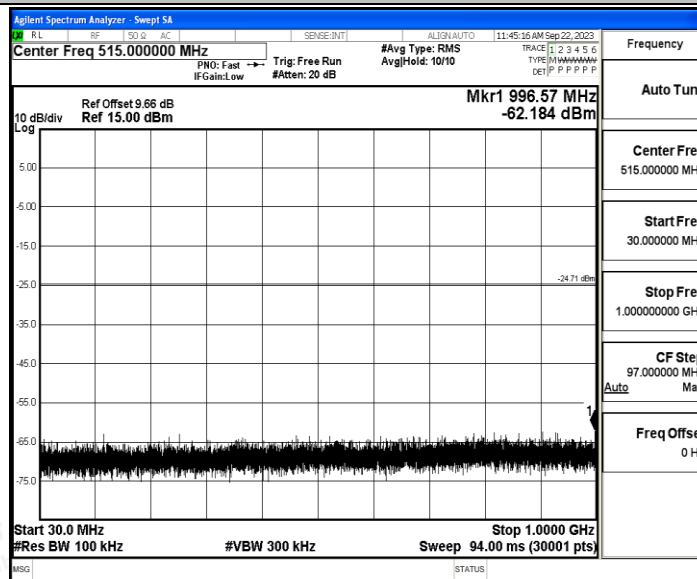


Test Graphs

ZIGB_Ant_2405_0~Reference



ZIGB_Ant_2405_30~1000



ZIGB_Ant_2405_1000~26500

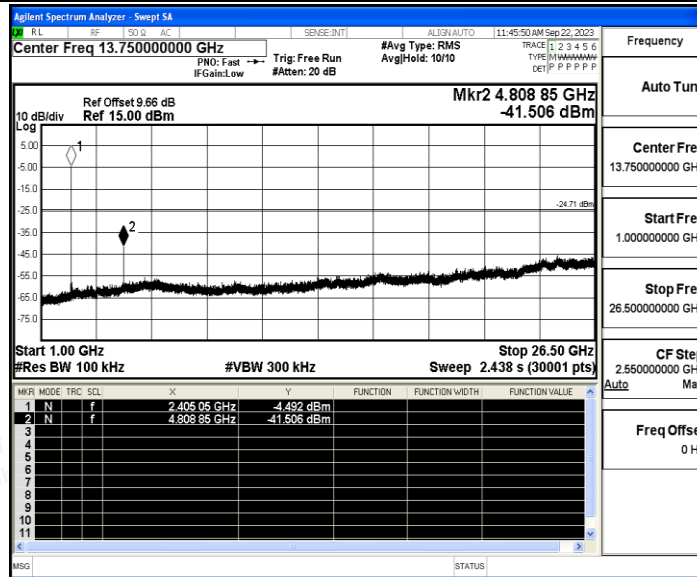


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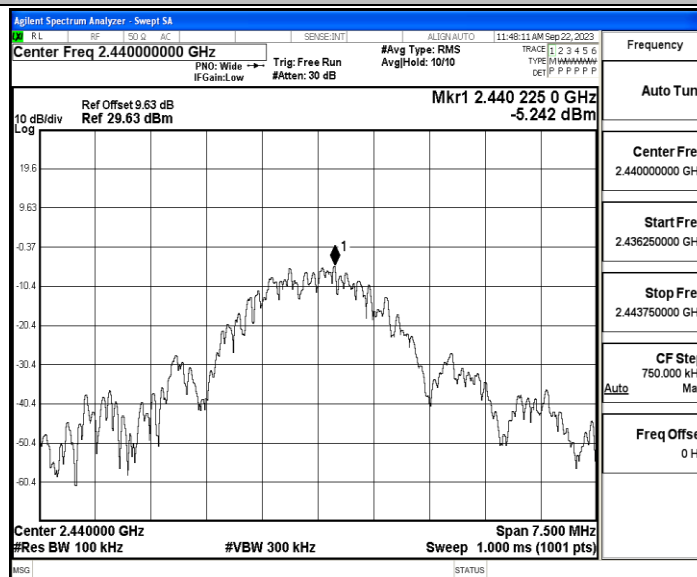
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ZIGB_Ant_2440_0~Reference



ZIGB_Ant_2440_30~1000

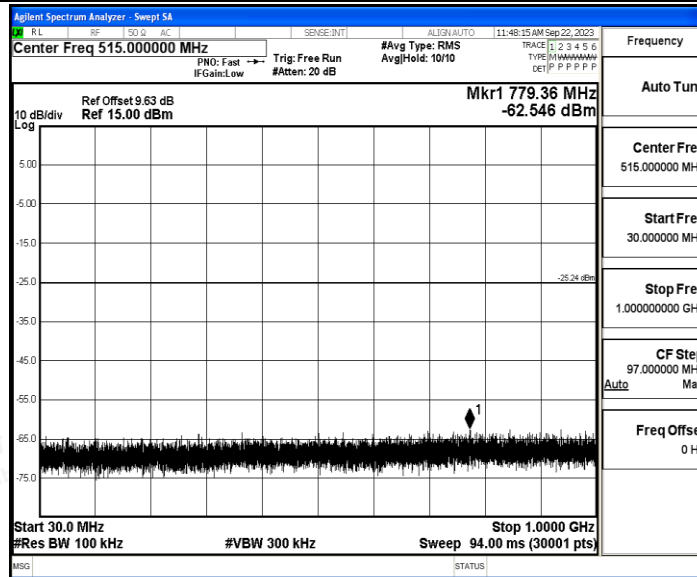


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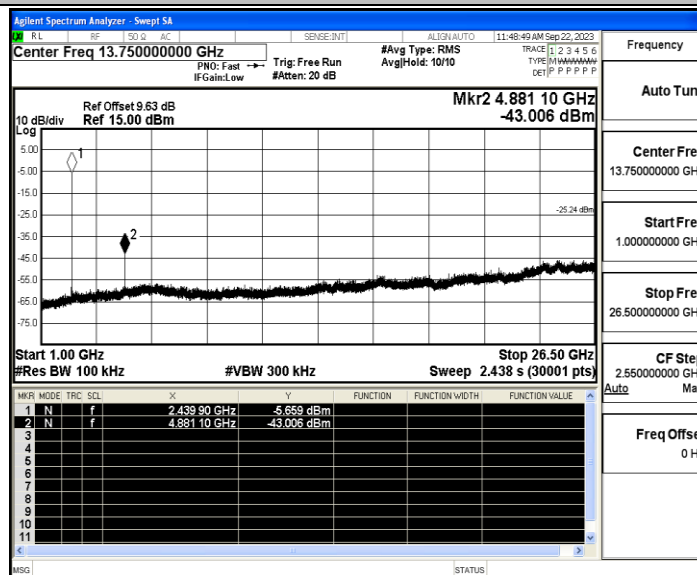
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ZIGB_Ant_2440_1000~26500



ZIGB_Ant_2480_0~Reference



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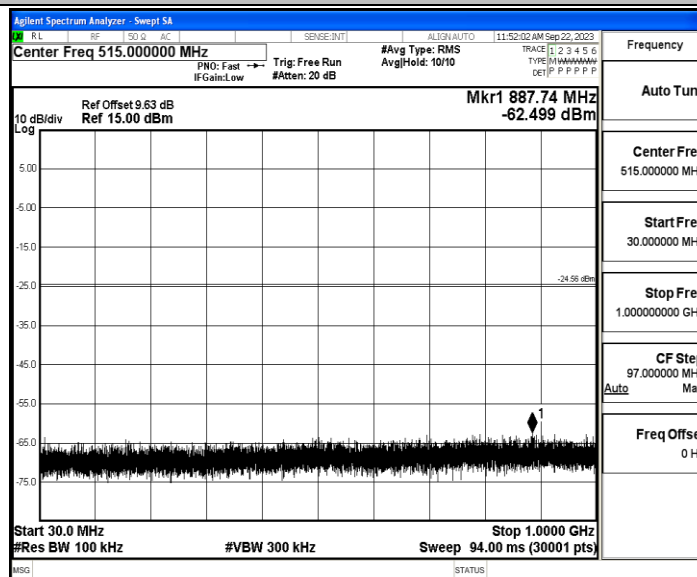
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ZIGB_Ant_2480_30~1000



ZIGB_Ant_2480_1000~26500

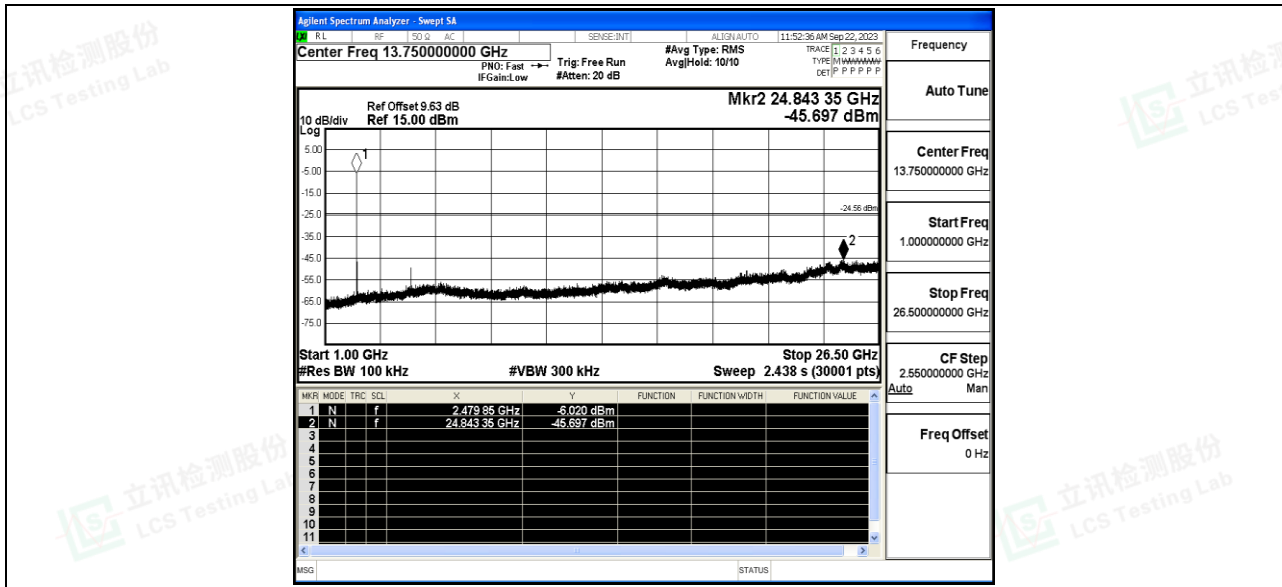


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B.6 Duty Cycle

Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
ZIGB	Ant	2405	0.84	2.54	33.07	---	---
		2440	0.84	2.55	32.94	---	---
		2480	0.84	2.55	32.94	---	---



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Test Graphs

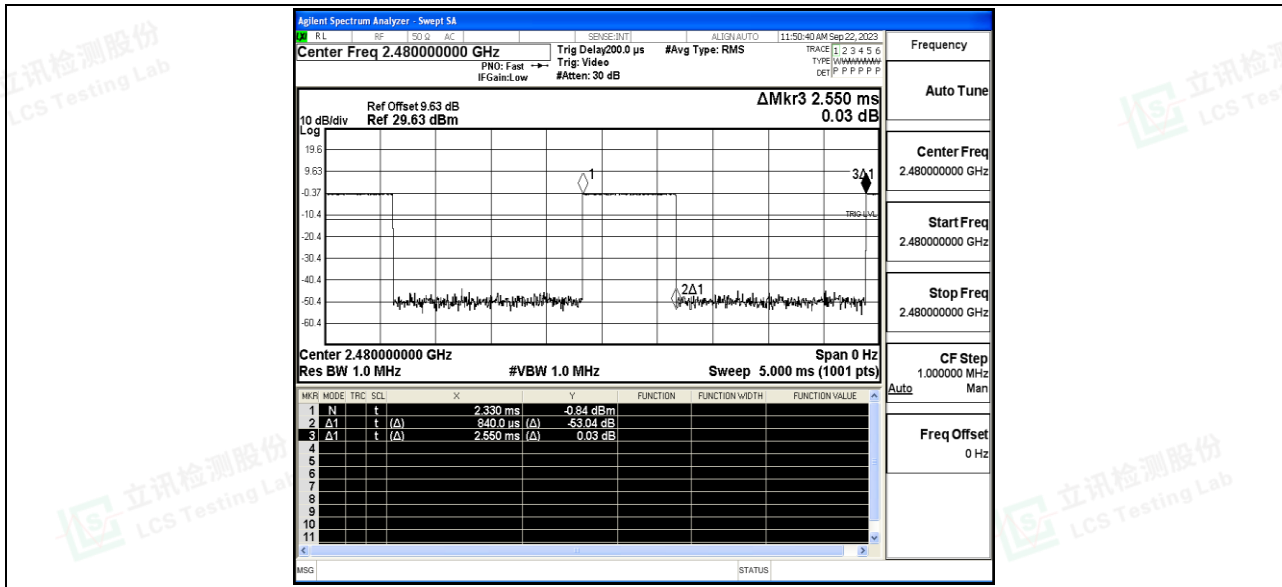


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B.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	Frequency[MHz]	Detector	Freq.[MHz]	Result[dBm]	Limit[dBm]	Result[dBuV/m]	Limit[dBuV/m]	Verdict
ZIGB	Ant	2405	AV	2310.000	-51.9	≤-41.20	43.33	≤54	PASS
			AV	2389.650	-50.63	≤-41.20	44.60	≤54	PASS
			AV	2390.000	-51.15	≤-41.20	44.08	≤54	PASS
			Peak	2310.000	-44.13	≤-21.20	51.10	≤74	PASS
			Peak	2381.730	-40.56	≤-21.20	54.67	≤74	PASS
			Peak	2390.000	-43.88	≤-21.20	51.35	≤74	PASS
		2480	AV	2483.500	-43.07	≤-41.20	52.16	≤54	PASS
			AV	2483.520	-43.07	≤-41.20	52.16	≤54	PASS
			AV	2500.000	-51.02	≤-41.20	44.21	≤54	PASS
			Peak	2483.500	-38.22	≤-21.20	57.01	≤74	PASS
			Peak	2484.640	-37.03	≤-21.20	58.20	≤74	PASS
			Peak	2500.000	-44.25	≤-21.20	50.98	≤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.



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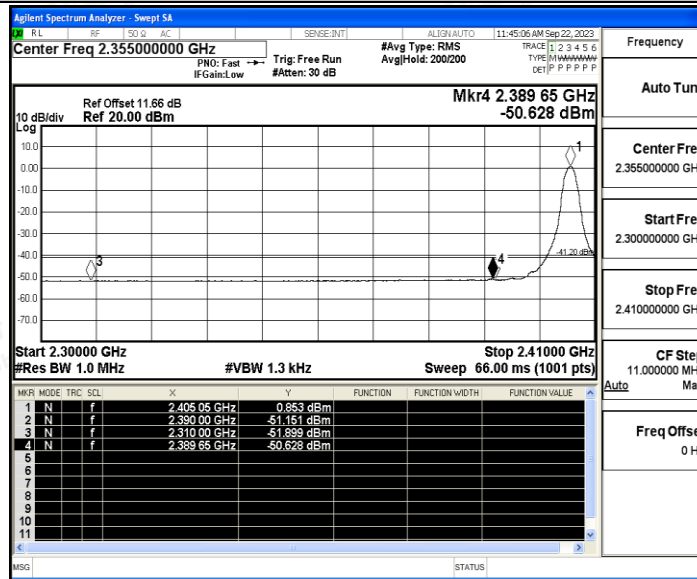
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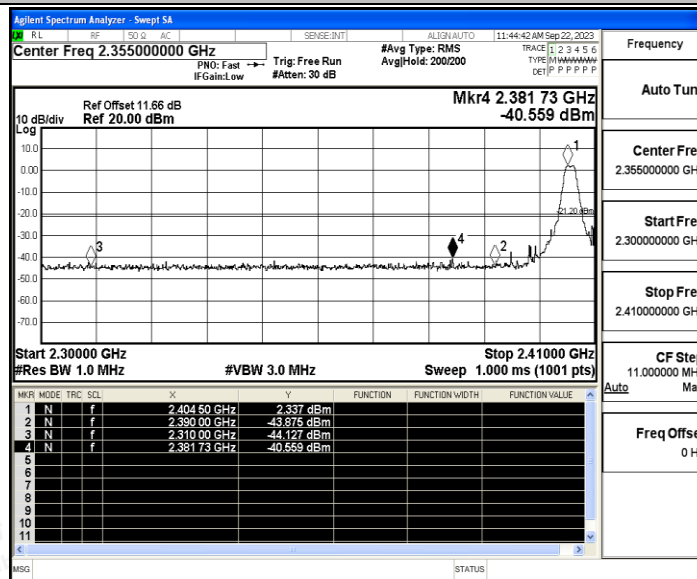


Test Graphs

ZIGB_Ant_Low_2405_AV



ZIGB_Ant_Low_2405_Peak



ZIGB_Ant_High_2480_AV

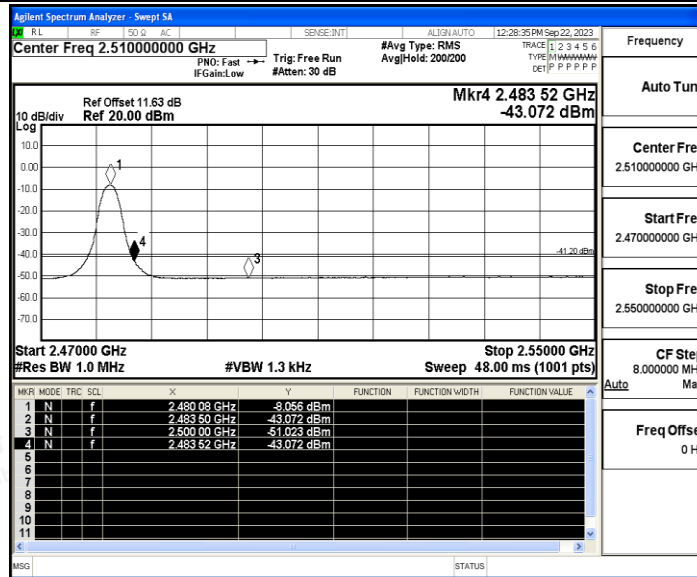


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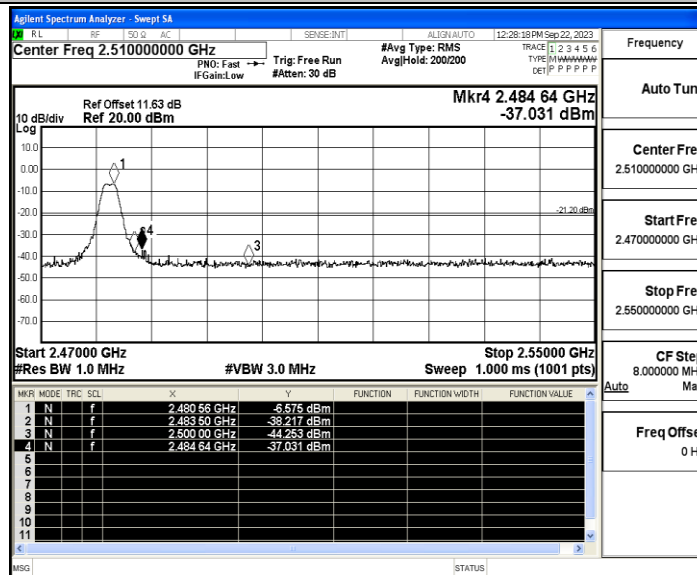
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ZIGB_Ant_High_2480_Peak



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