



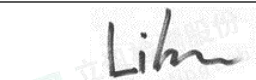
Appendix A

RF Test Data for Zigbee (Conducted Measurement)

Product Name: Water Leak Sensor

Test Model: SZW04U

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	 Bill Zhu
Supervised by:	 Li Huan





A.1 DTS Bandwidth

Test Result

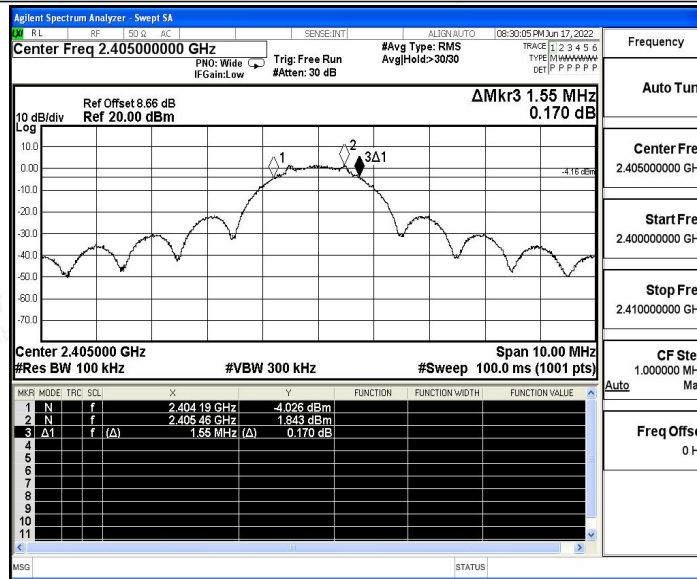
Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
ZIGB	Ant1	2405	1.550	2404.190	2405.740	0.5	PASS
		2440	1.500	2439.230	2440.730	0.5	PASS
		2480	1.390	2479.280	2480.670	0.5	PASS



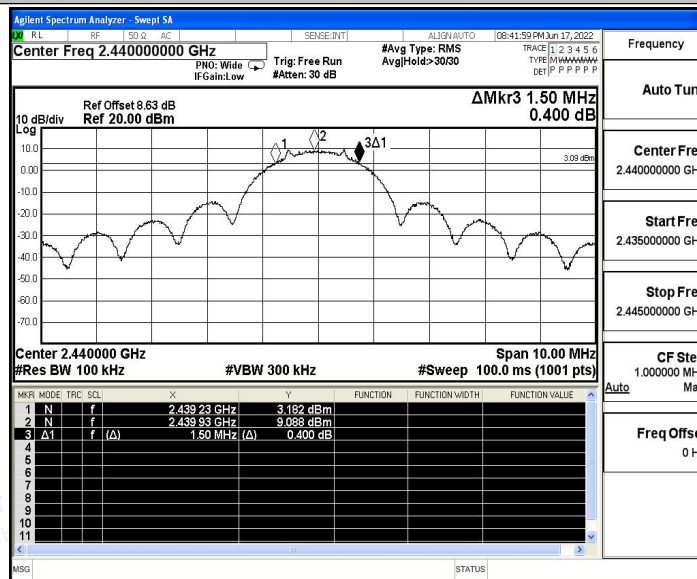


Test Graphs

ZIGB_Ant1_2405



ZIGB_Ant1_2440



ZIGB_Ant1_2480

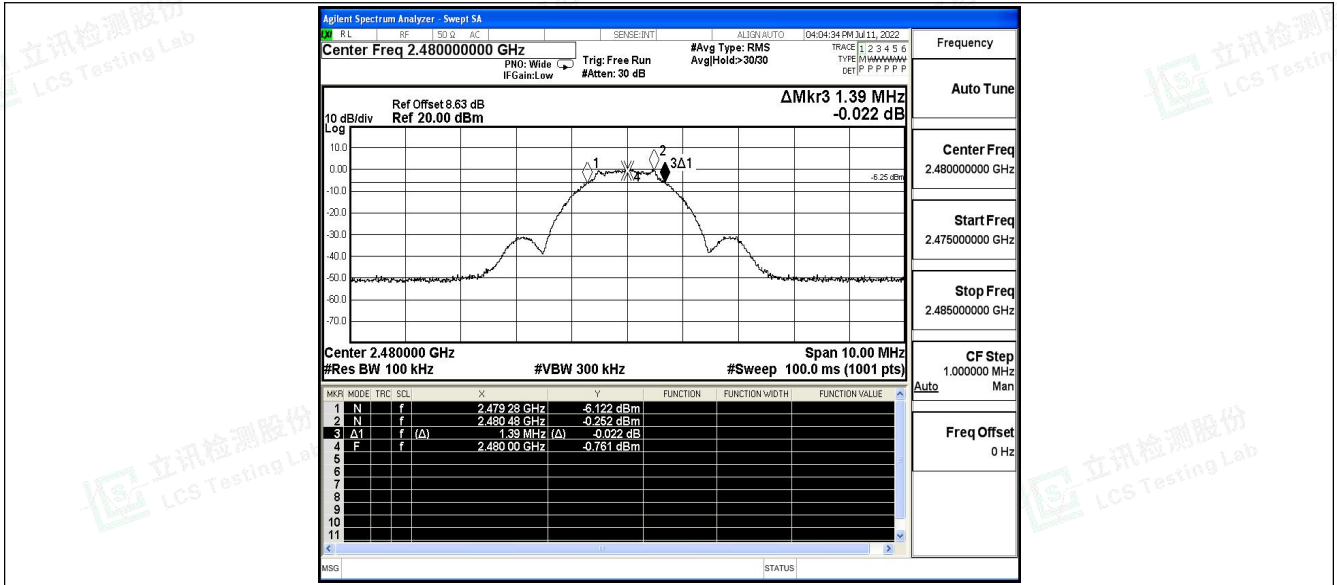


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A.2 Maximum peak conducted output power

Test Result

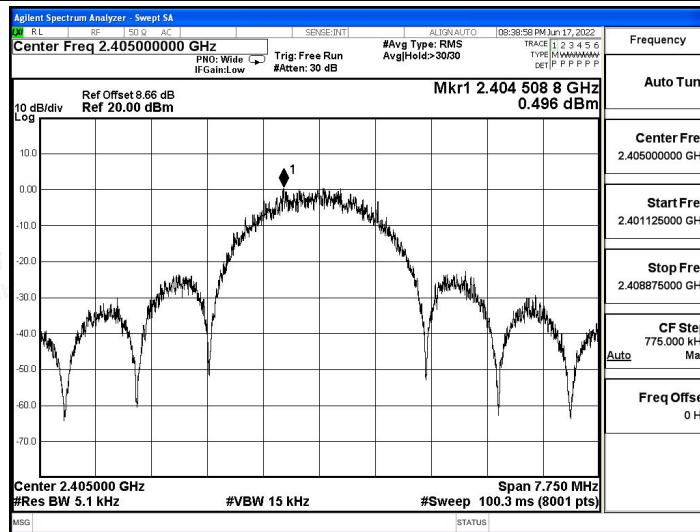
Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	2405	0.5	≤30	PASS
		2440	0.27	≤30	PASS
		2480	0.49	≤30	PASS



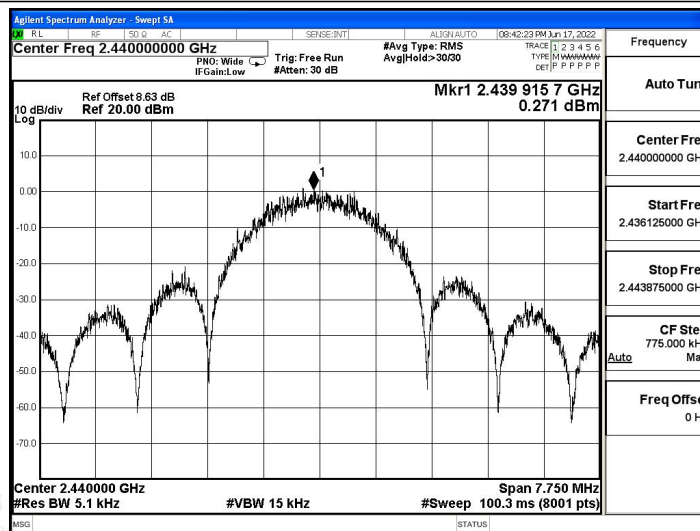


Test Graphs

ZIGB_Ant1_2405

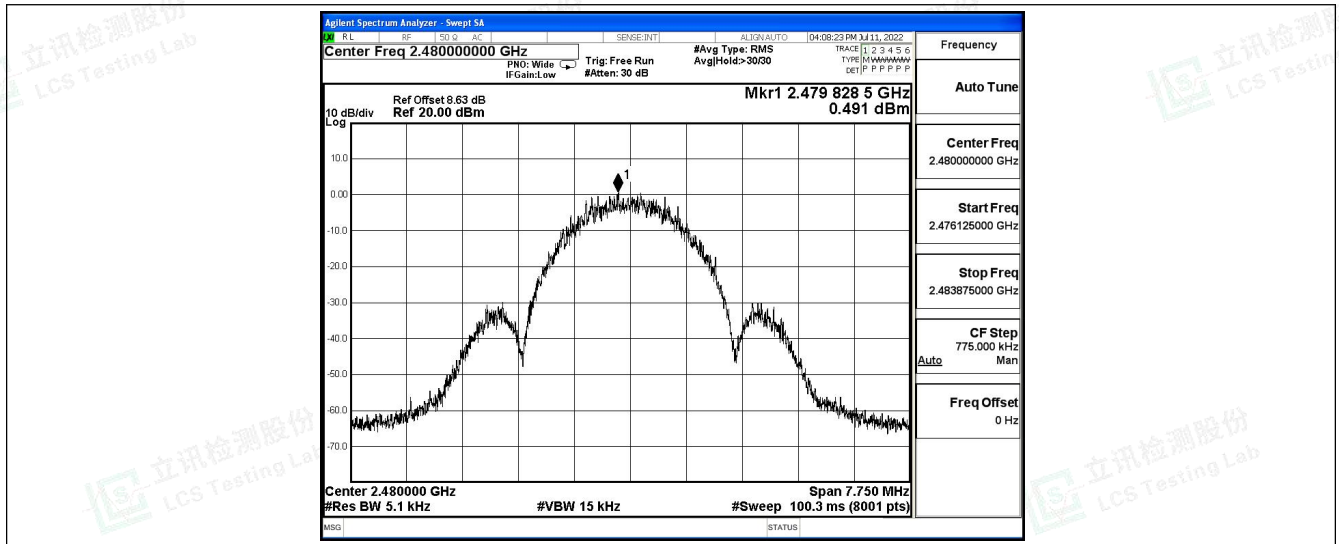


ZIGB_Ant1_2440



ZIGB_Ant1_2480







A.3 Maximum power spectral density

Test Result

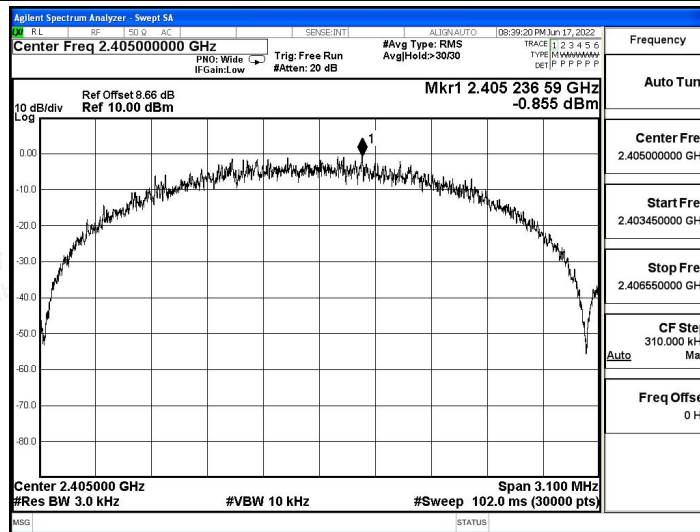
Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
ZIGB	Ant1	2405	-0.86	≤8.00	PASS
		2440	-1.13	≤8.00	PASS
		2480	-1.04	≤8.00	PASS



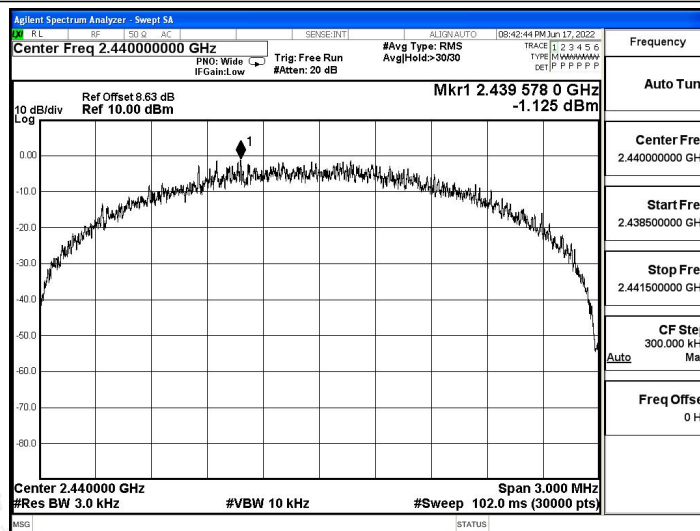


Test Graphs

ZIGB_Ant1_2405

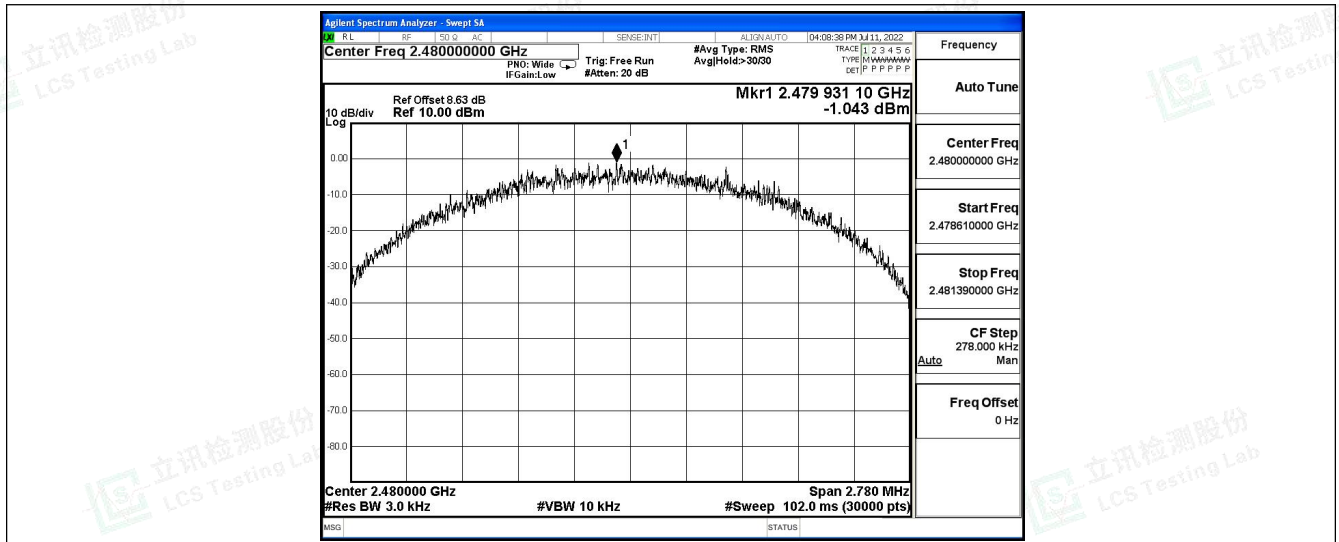


ZIGB_Ant1_2440



ZIGB_Ant1_2480







A.4 Band edge measurements

Test Result

Test Mode	Antenna	Ch Name	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	Low	2405	1.67	-40.08	≤ -18.33	PASS
		High	2480	0.37	-47.83	≤ -19.63	PASS

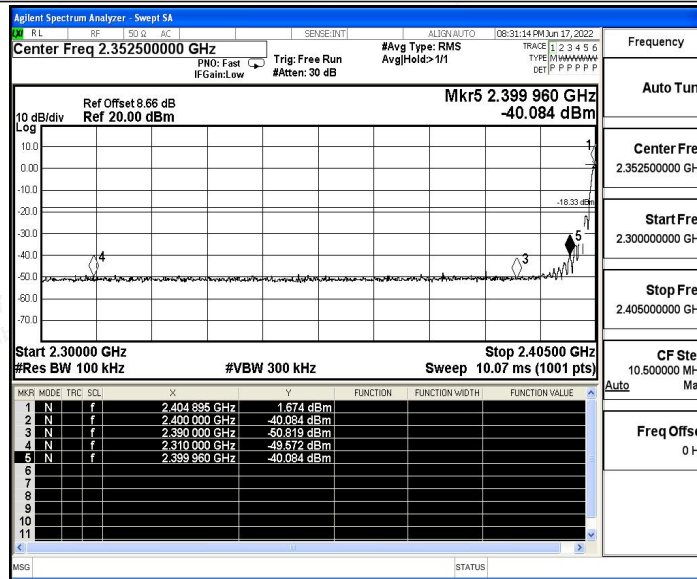


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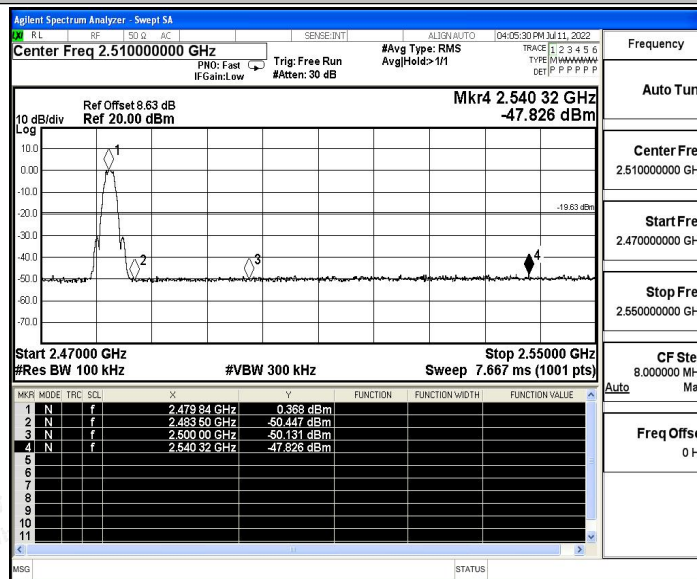


Test Graphs

ZIGB_Ant1_Low_2405



ZIGB_Ant1_High_2480



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A.5 Conducted Spurious Emission

Test Result

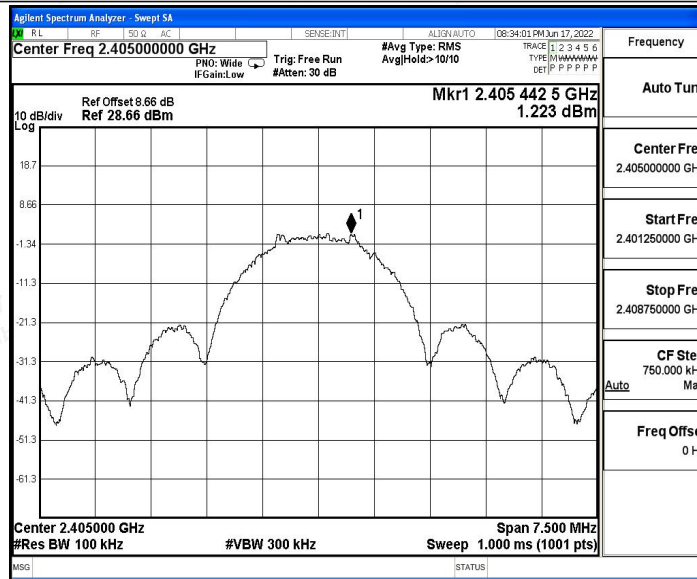
Test Mode	Antenna	Channel	Freq Range [MHz]	Ref Level [dBm]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	2405	Reference	1.22	1.22	---	PASS
			30~1000	1.22	-41.42	≤ -18.78	PASS
			1000~26500	1.22	-46.02	≤ -18.78	PASS
		2440	Reference	9.31	9.31	---	PASS
			30~1000	9.31	-59.85	≤ -10.69	PASS
			1000~26500	9.31	-42.59	≤ -10.69	PASS
		2480	Reference	9.03	9.03	---	PASS
			30~1000	9.03	-60.52	≤ -10.97	PASS
			1000~26500	9.03	-46.09	≤ -10.97	PASS



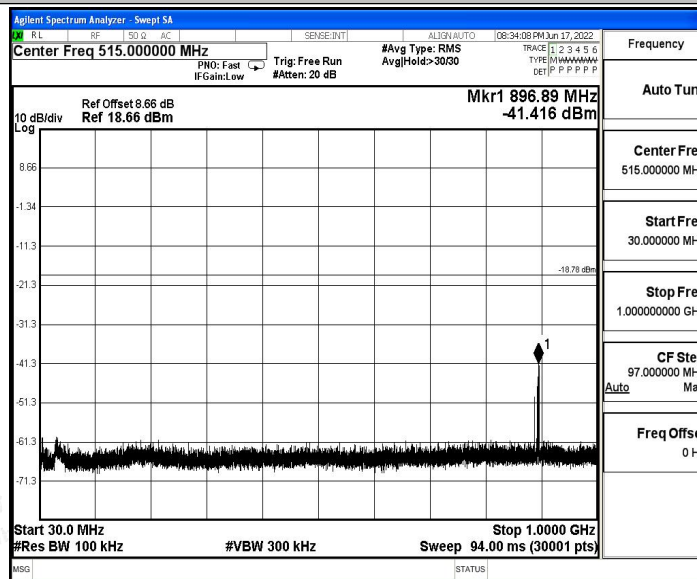


Test Graphs

ZIGB_Ant1_2405_0~Reference

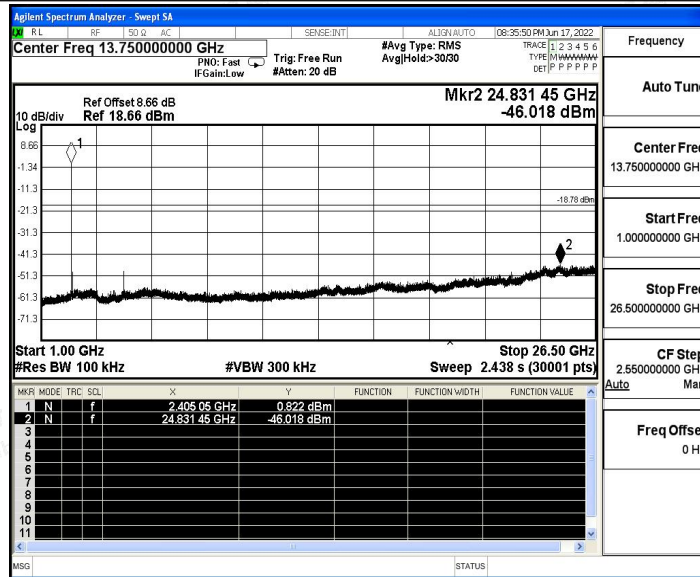


ZIGB_Ant1_2405_30~1000

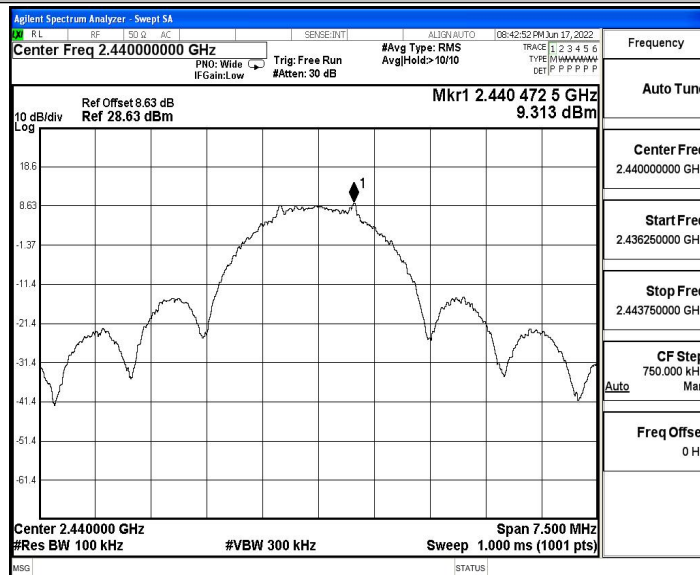


ZIGB_Ant1_2405_1000~26500



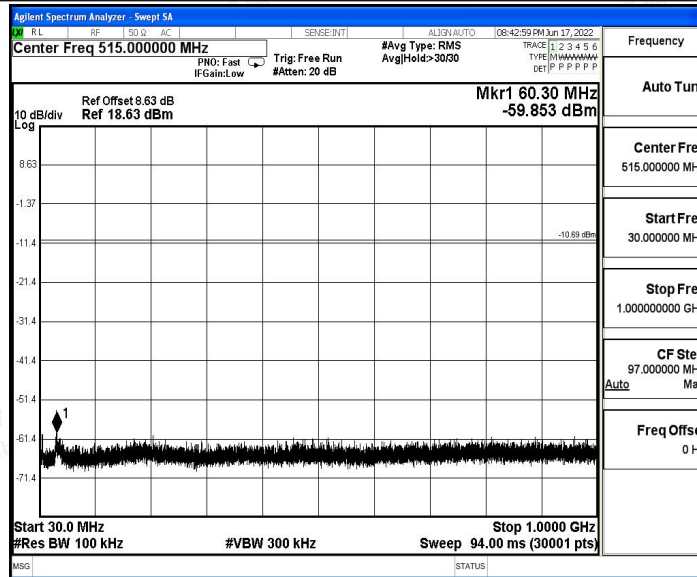


ZIGB_Ant1_2440_0~Reference

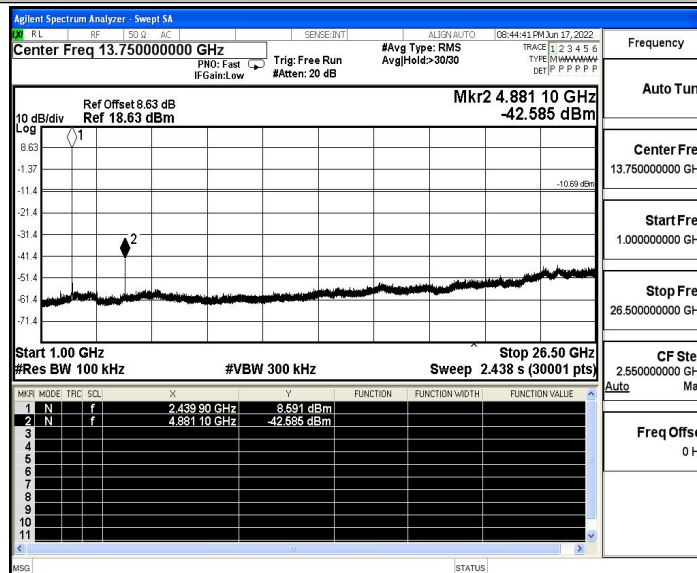


ZIGB_Ant1_2440_30~1000



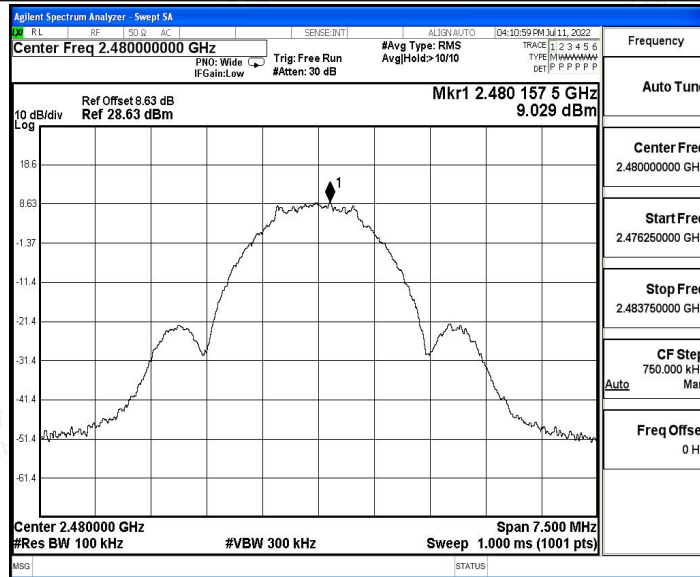


ZIGB_Ant1_2440_1000~26500

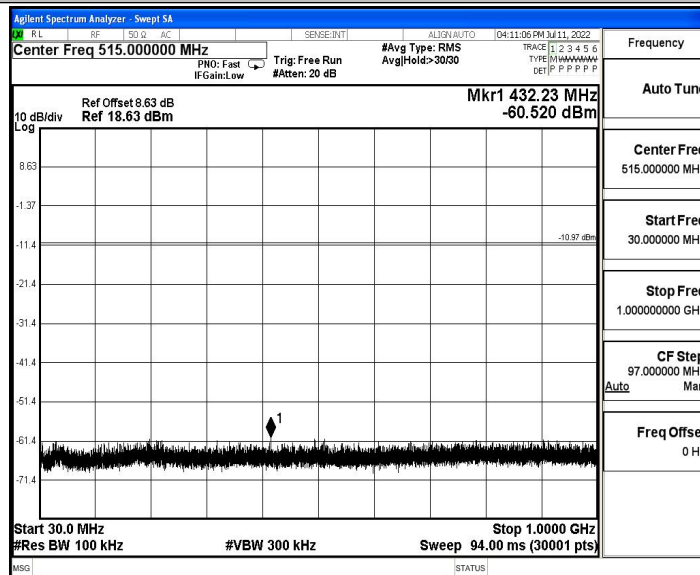


ZIGB_Ant1_2480_0~Reference



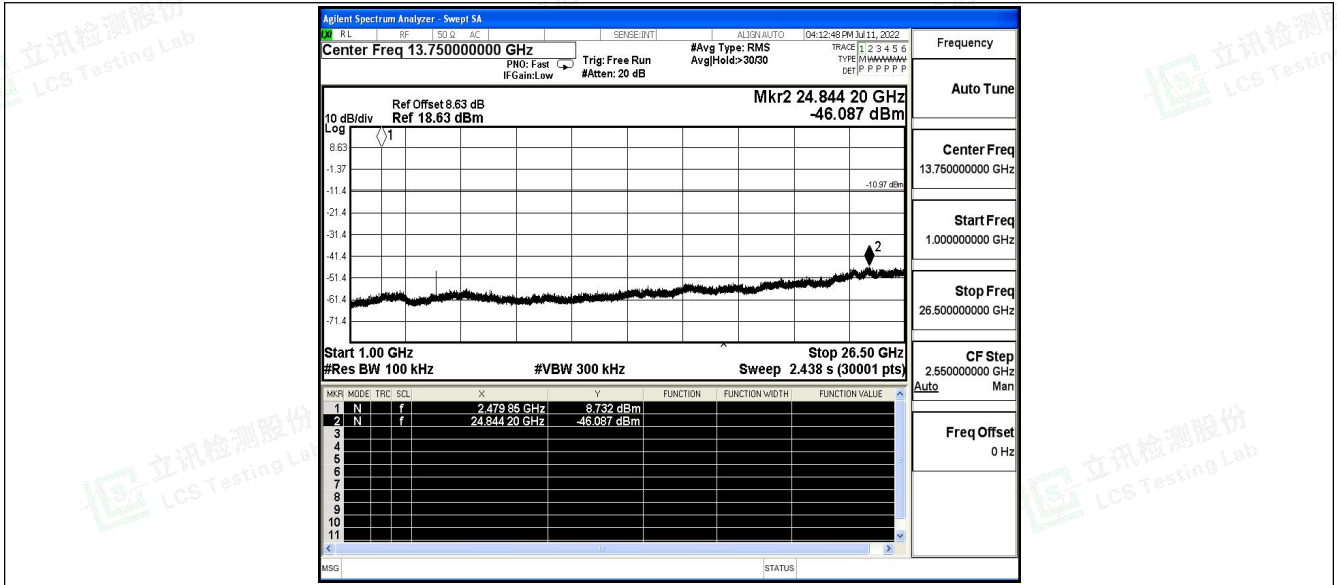


ZIGB_Ant1_2480_30~1000



ZIGB_Ant1_2480_1000~26500







A.6 Duty Cycle

Test Result

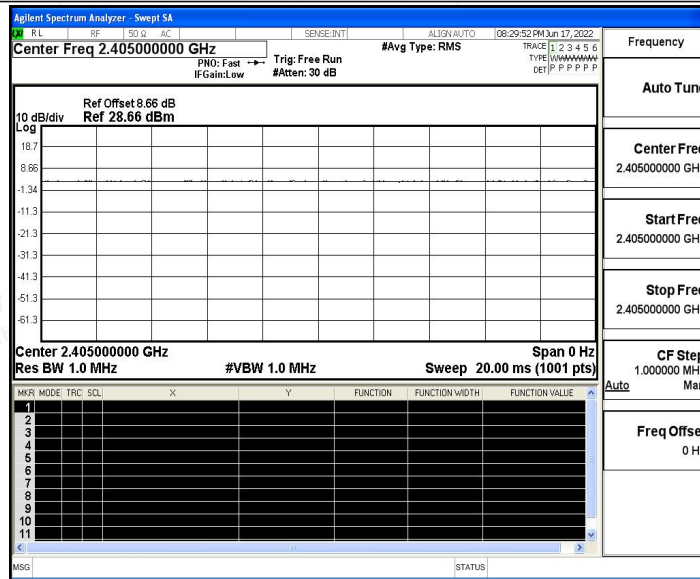
Test Mode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
ZIGB	Ant1	2405	5.00	5.00	100.00	---	---
		2440	20.00	20.00	100.00	---	---
		2480	20.00	20.00	100.00	---	---



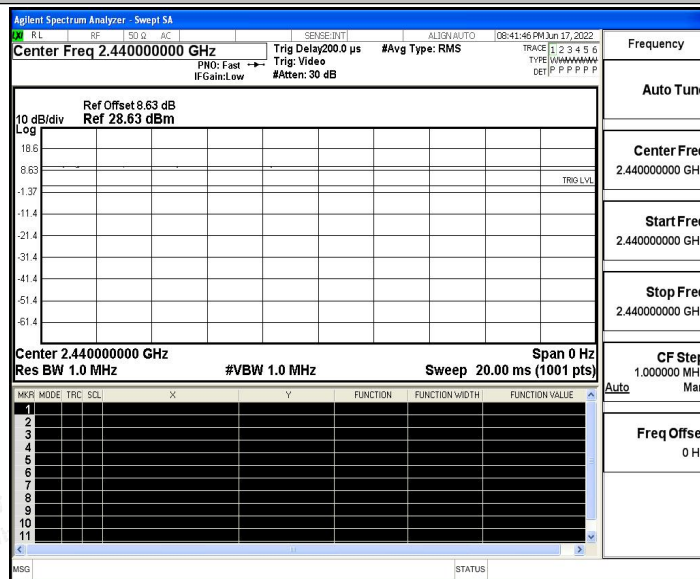


Test Graphs

ZIGB_Ant1_2405

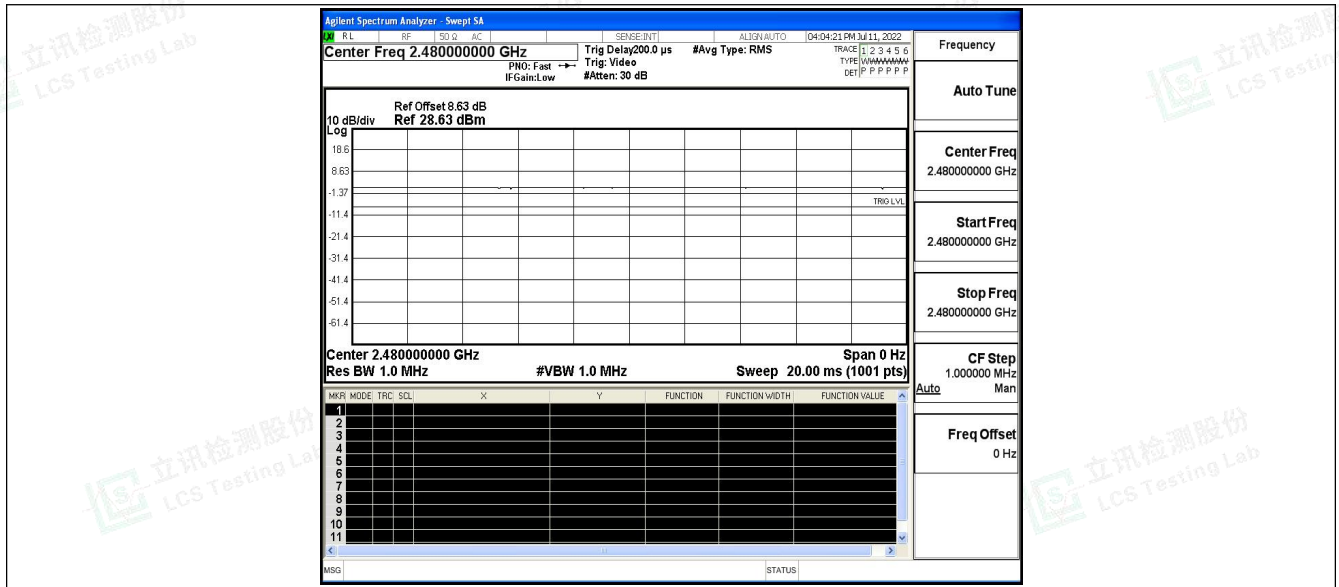


ZIGB_Ant1_2440



ZIGB_Ant1_2480







A.7 Emissions in Restricted Bands

Test Result

Test Mode	Antenna	Ch Name	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
ZIGB	Ant1	Low	2405	AV	2310.000	-48.5	≤ -41.20	PASS
				AV	2389.775	-48.03	≤ -41.20	PASS
				AV	2390.000	-48.06	≤ -41.20	PASS
				Peak	2310.000	-38.14	≤ -21.20	PASS
				Peak	2365.100	-36.69	≤ -21.20	PASS
				Peak	2390.000	-37.99	≤ -21.20	PASS
		High	2480	AV	2483.500	-44.75	≤ -41.20	PASS
				AV	2483.520	-44.75	≤ -41.20	PASS
				AV	2500.000	-47.6	≤ -41.20	PASS
				Peak	2483.500	-38.27	≤ -21.20	PASS
				Peak	2496.720	-36.15	≤ -21.20	PASS
				Peak	2500.000	-37.52	≤ -21.20	PASS

Note:

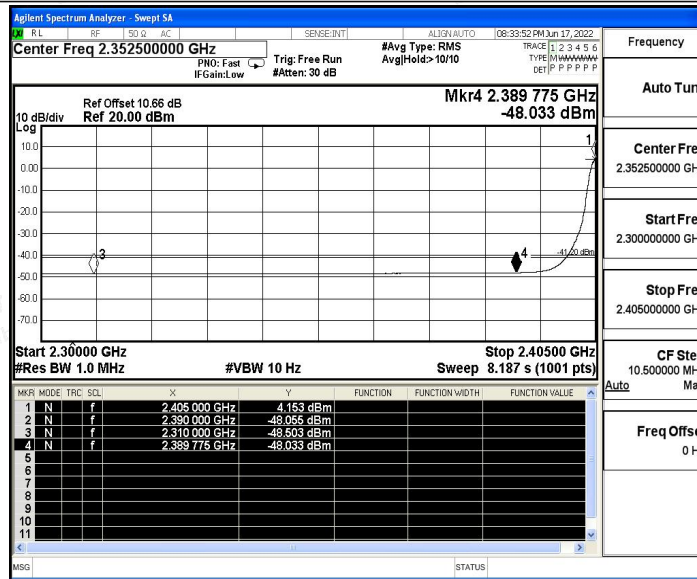
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



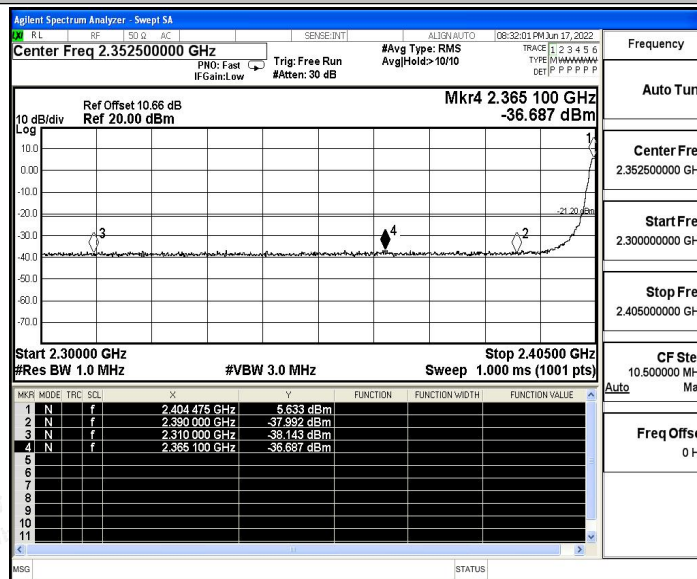


Test Graphs

ZIGB_Ant1_Low_2405_AV



ZIGB_Ant1_Low_2405_Peak



ZIGB_Ant1_High_2480_AV

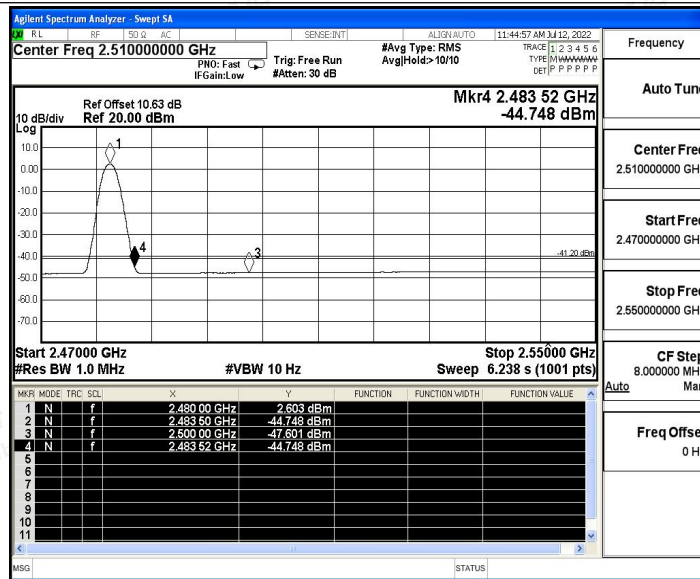


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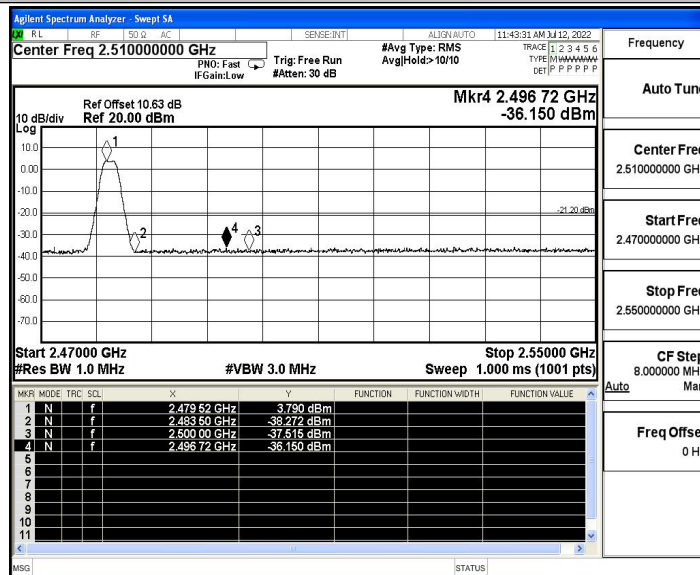
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ZIGB_Ant1_High_2480_Peak



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