



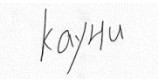

Appendix A

RF Test Data for Zigbee (Conducted Measurement)

Product Name: ZigBee Module

Test Model: EWN-8258FAT1CA

Environmental Conditions

Temperature:	22.2° C
Relative Humidity:	53.5%
ATM Pressure:	100.0 kPa
Test Engineer:	 Kay Hu
Supervised by:	 Li Huan



A.1 DTS Bandwidth

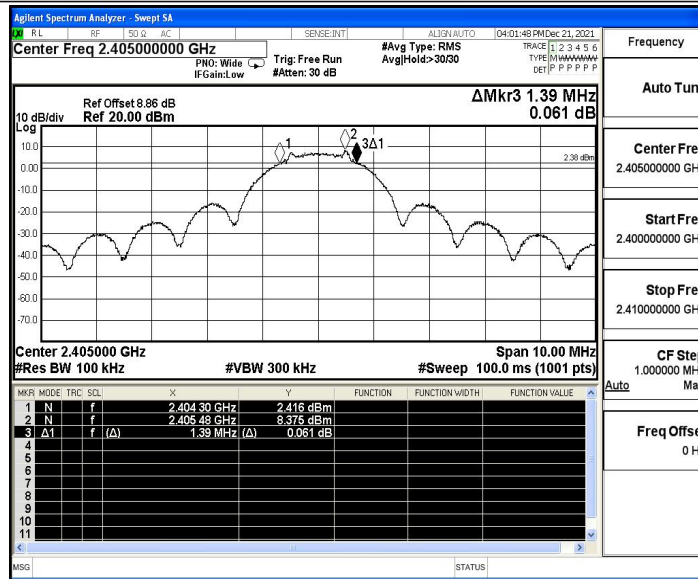
Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
ZIGB	Ant1	2405	1.390	2404.300	2405.690	0.5	PASS
		2440	1.480	2439.250	2440.730	0.5	PASS
		2480	1.430	2479.290	2480.720	0.5	PASS

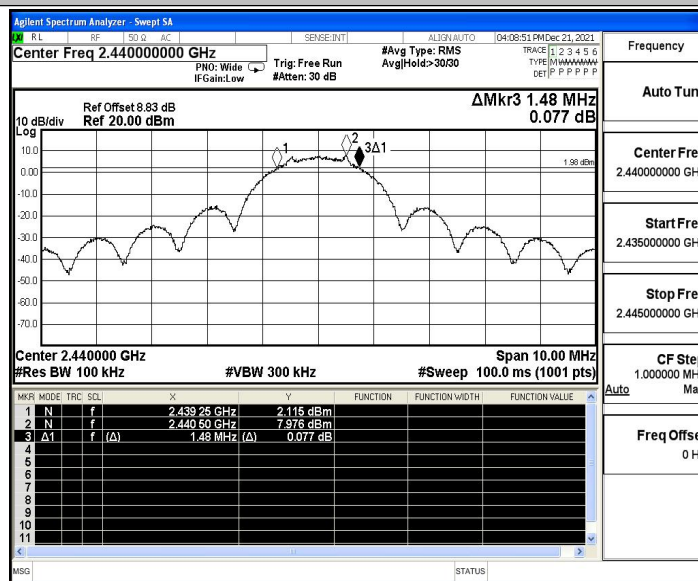


Test Graphs

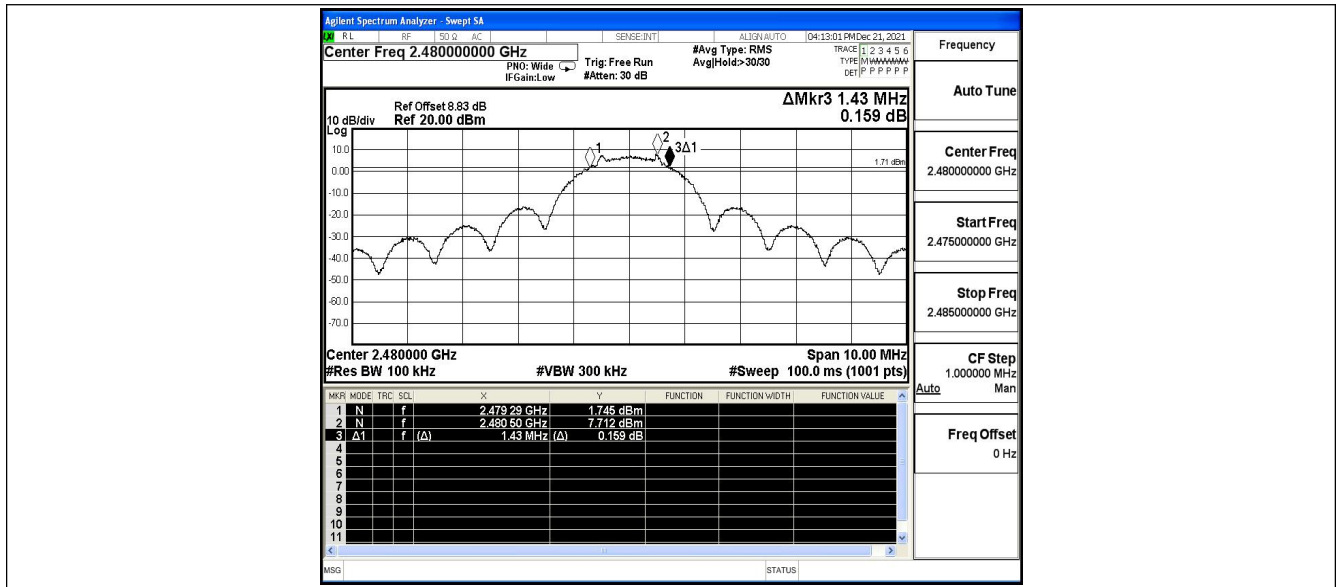
ZIGB_Ant1_2405



ZIGB_Ant1_2440



ZIGB_Ant1_2480





A.2 Occupied Channel Bandwidth

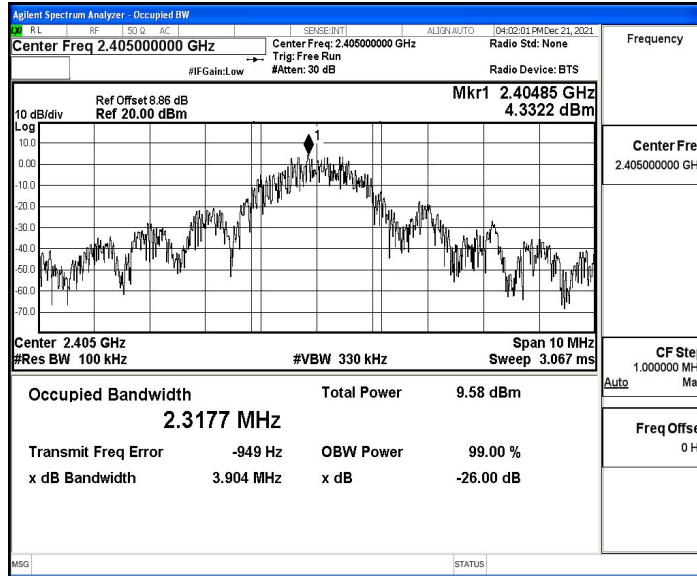
Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
ZIGB	Ant1	2405	2.3177	2403.840	2406.158	---	---
		2440	2.5267	2438.741	2441.267	---	---
		2480	2.4173	2478.773	2481.190	---	---

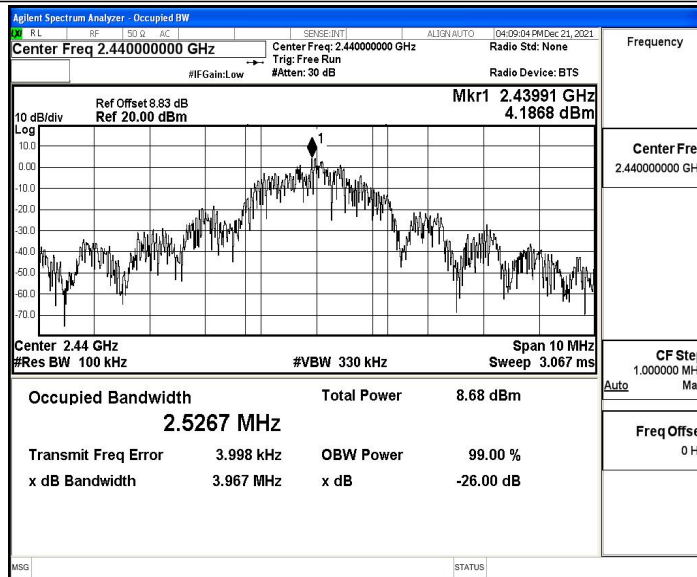


Test Graphs

ZIGB_Ant1_2405



ZIGB_Ant1_2440



ZIGB_Ant1_2480





A.3 Maximum peak conducted output power

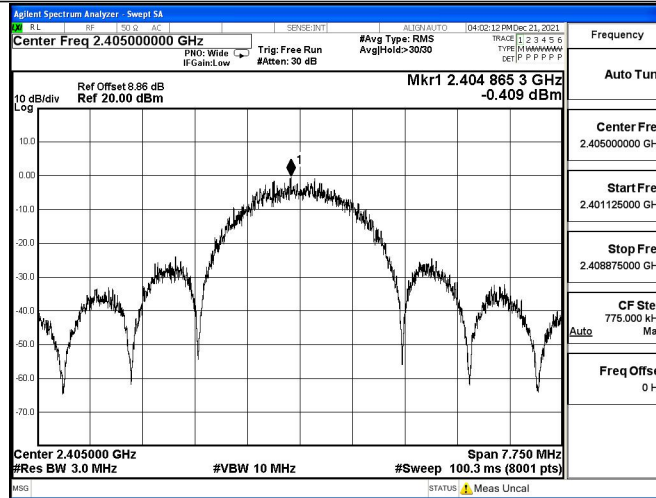
Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	2405	-0.41	≤30	PASS
		2440	0.06	≤30	PASS
		2480	-0.6	≤30	PASS

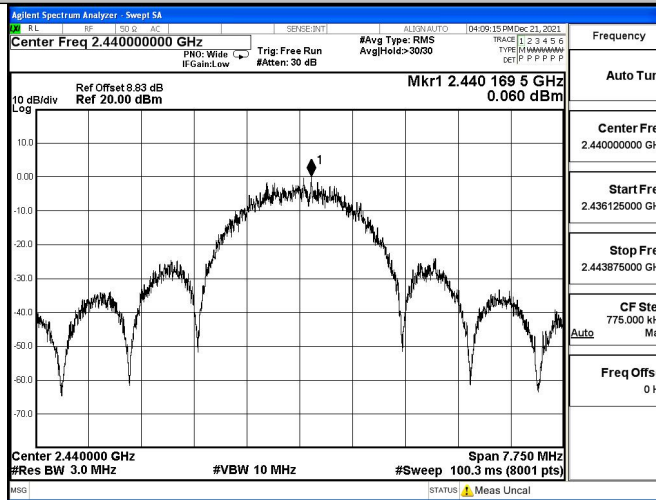


Test Graphs

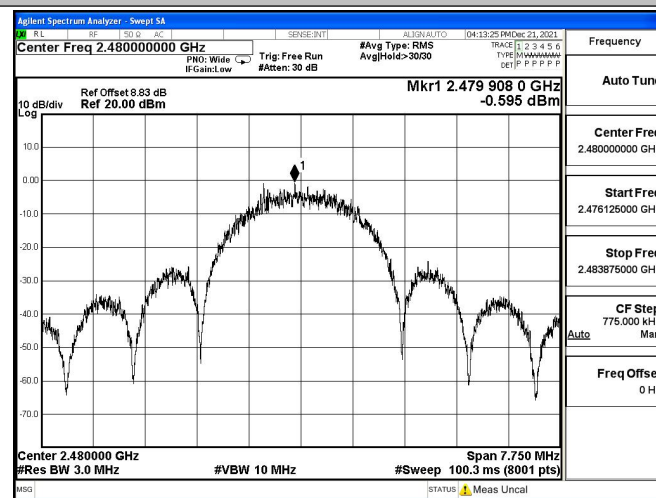
ZIGB_Ant1_2405



ZIGB_Ant1_2440



ZIGB_Ant1_2480





A.4 Maximum power spectral density

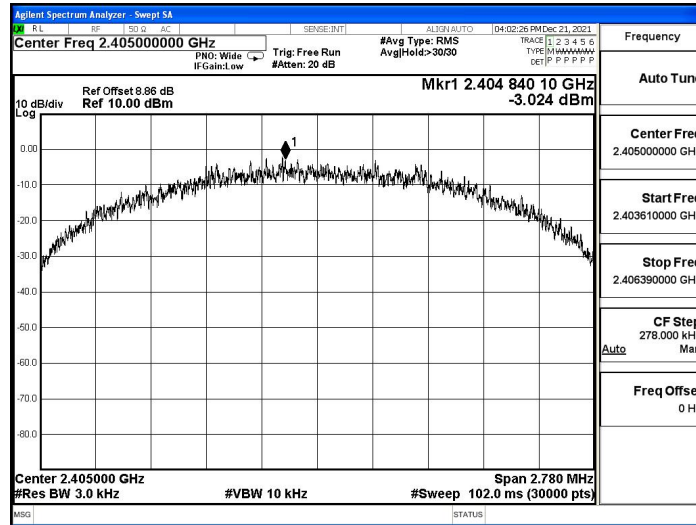
Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
ZIGB	Ant1	2405	-3.02	≤8.00	PASS
		2440	-3.66	≤8.00	PASS
		2480	-2.63	≤8.00	PASS

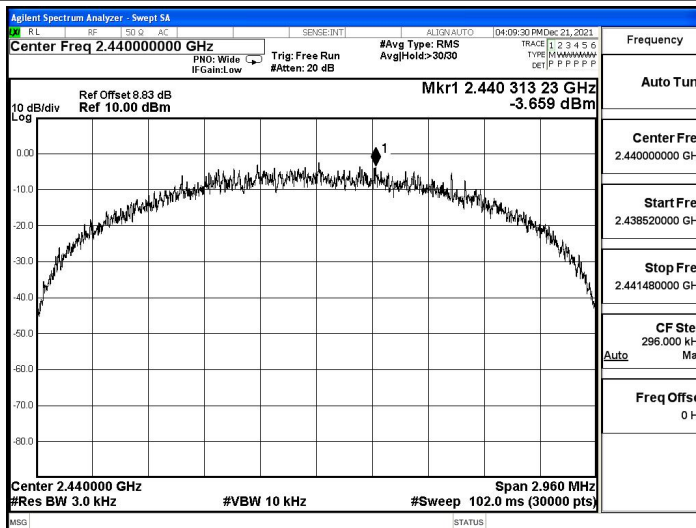


Test Graphs

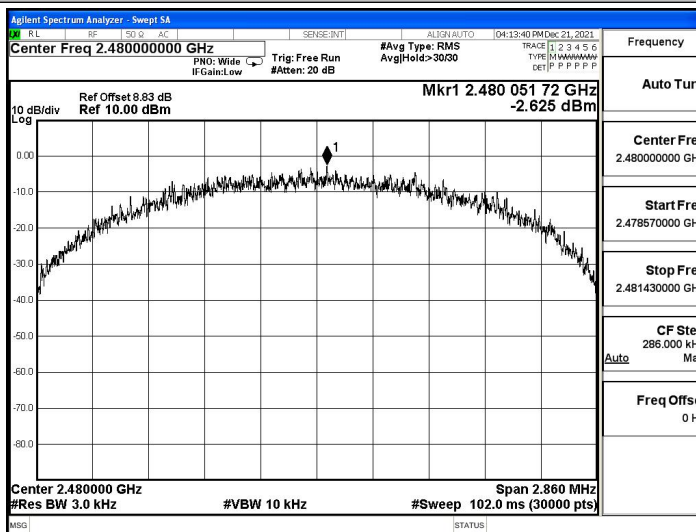
ZIGB_Ant1_2405



ZIGB_Ant1_2440



ZIGB_Ant1_2480





A.5 Band edge measurements

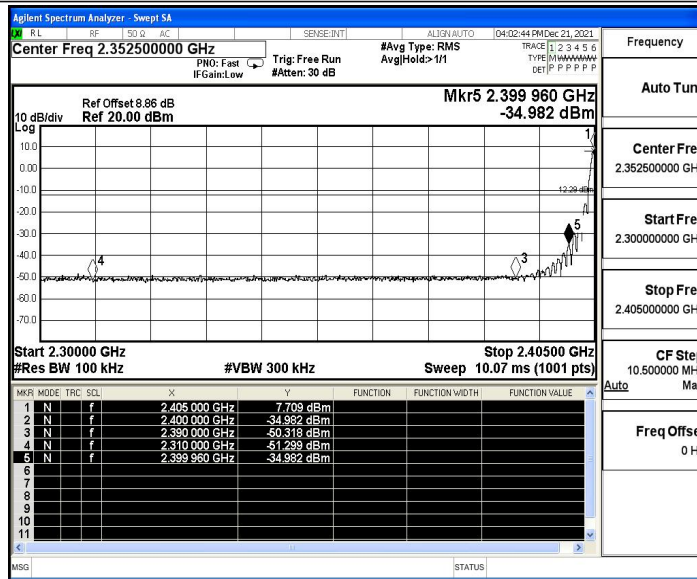
Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	Low	2405	7.71	-34.98	≤ -12.29	PASS
		High	2480	6.95	-30.12	≤ -13.05	PASS

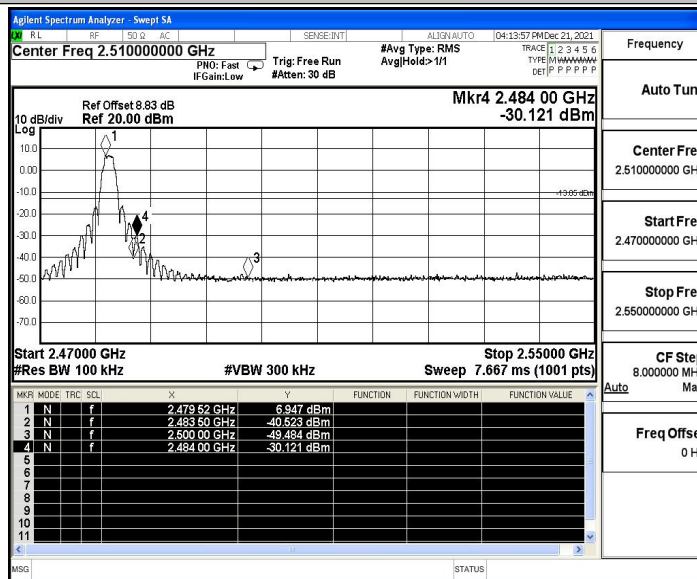


Test Graphs

ZIGB_Ant1_Low_2405



ZIGB_Ant1_High_2480





A.6 Conducted Spurious Emission

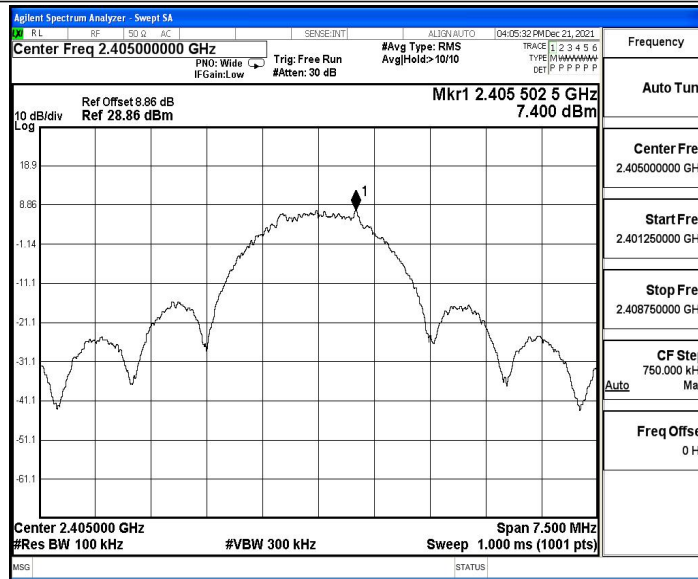
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	2405	Reference	7.40	7.40	---	PASS
			30~1000	7.40	-60.25	≤-12.6	PASS
			1000~26500	7.40	-43.81	≤-12.6	PASS
		2440	Reference	7.13	7.13	---	PASS
			30~1000	7.13	-59.83	≤-12.87	PASS
			1000~26500	7.13	-43.45	≤-12.87	PASS
		2480	Reference	-2.23	-2.23	---	PASS
			30~1000	-2.23	-60.36	≤-22.23	PASS
			1000~26500	-2.23	-45.89	≤-22.23	PASS

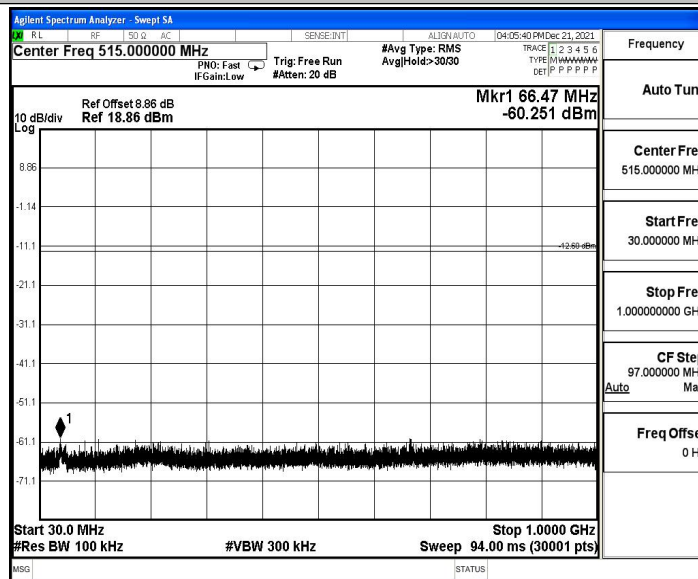


Test Graphs

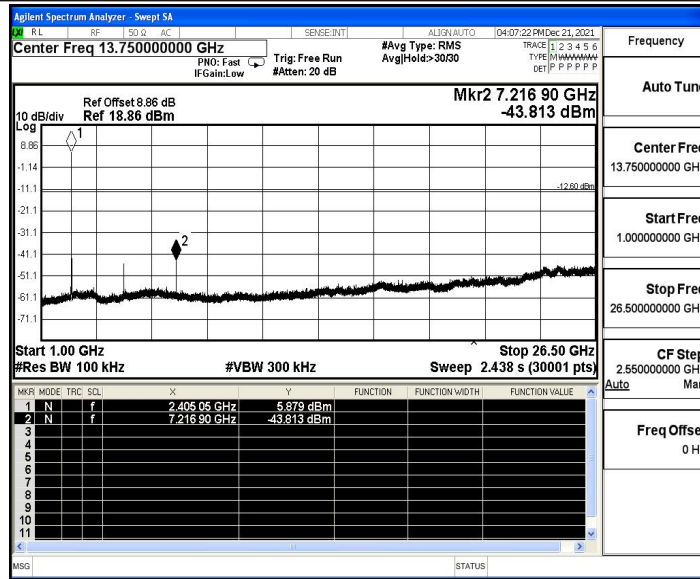
ZIGB_Ant1_2405_0~Reference



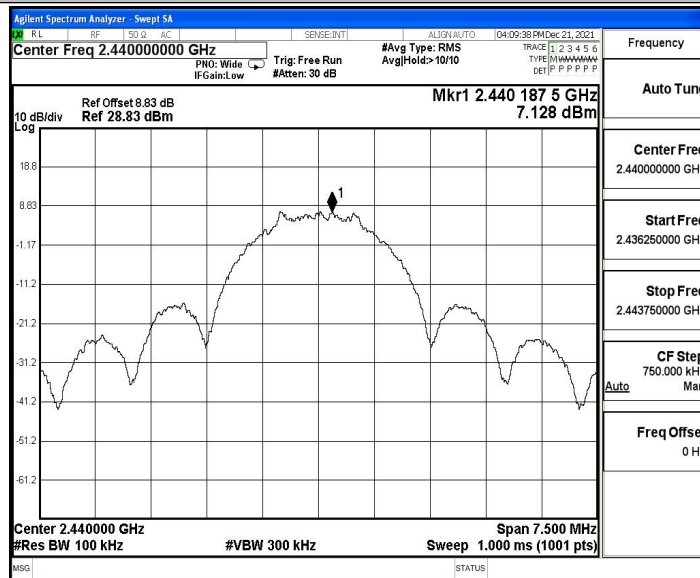
ZIGB_Ant1_2405_30~1000



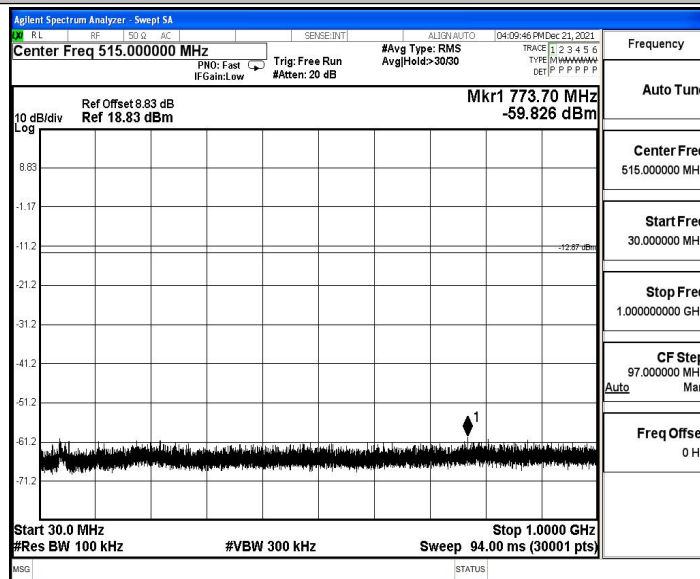
ZIGB_Ant1_2405_1000~26500



ZIGB_Ant1_2440_0~Reference

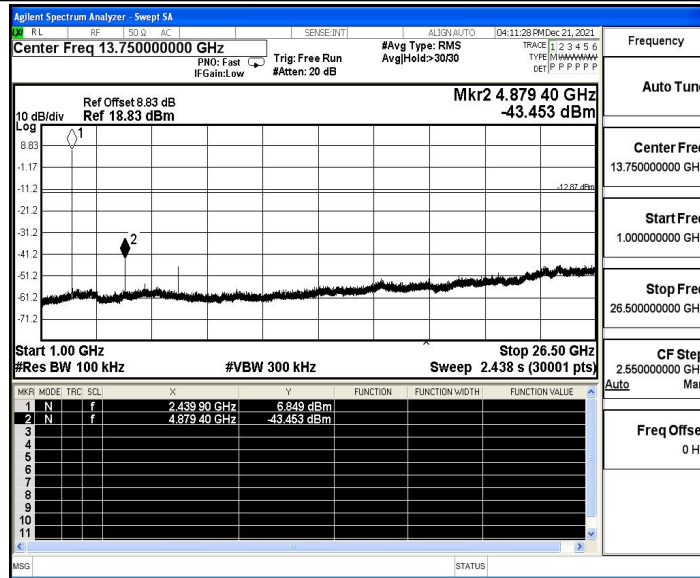


ZIGB_Ant1_2440_30~1000

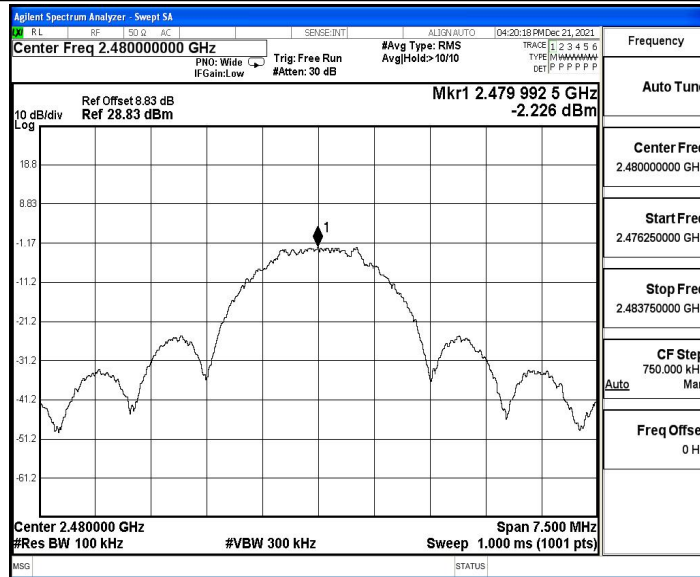




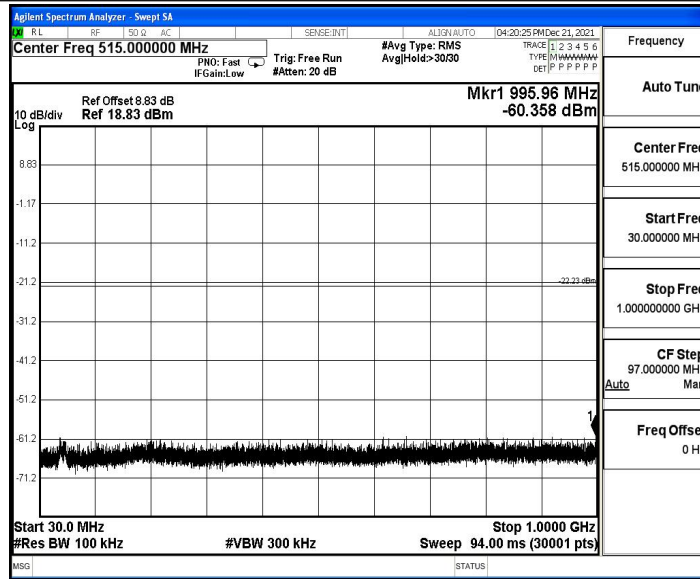
ZIGB_Ant1_2440_1000~26500



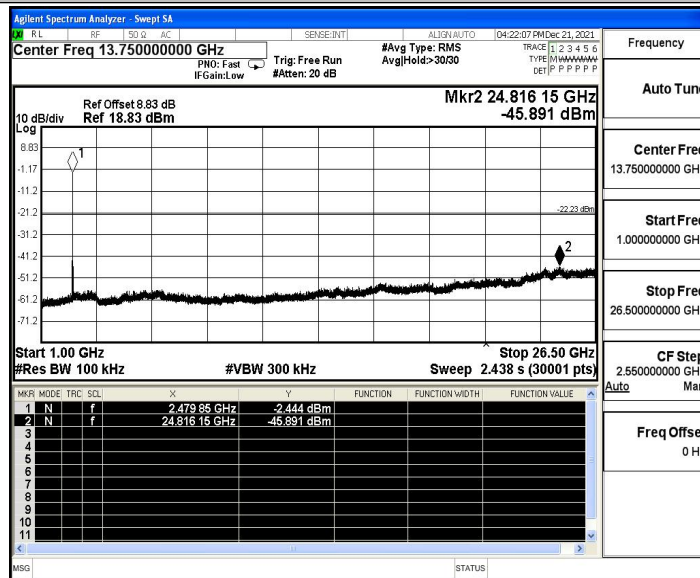
ZIGB_Ant1_2480_0~Reference



ZIGB_Ant1_2480_30~1000



ZIGB_Ant1_2480_1000~26500





A.7 Duty Cycle

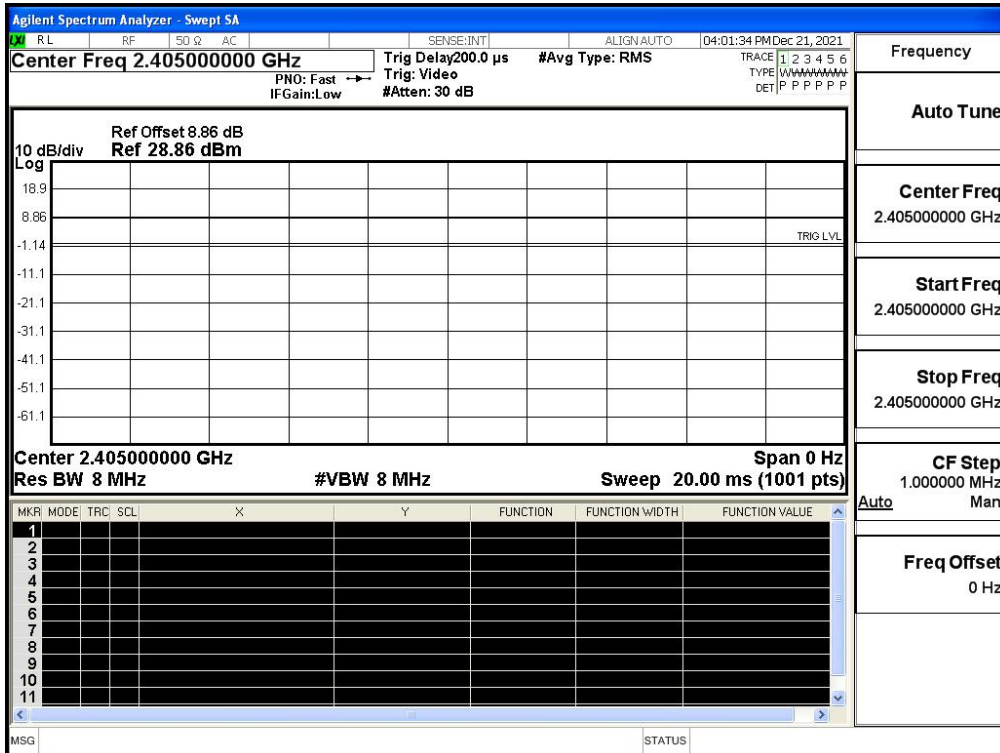
Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
ZIGB	Ant1	2405	20.00	20.00	100.00	---	---
		2440	20.00	20.00	100.00	---	---
		2480	20.00	20.00	100.00	---	---

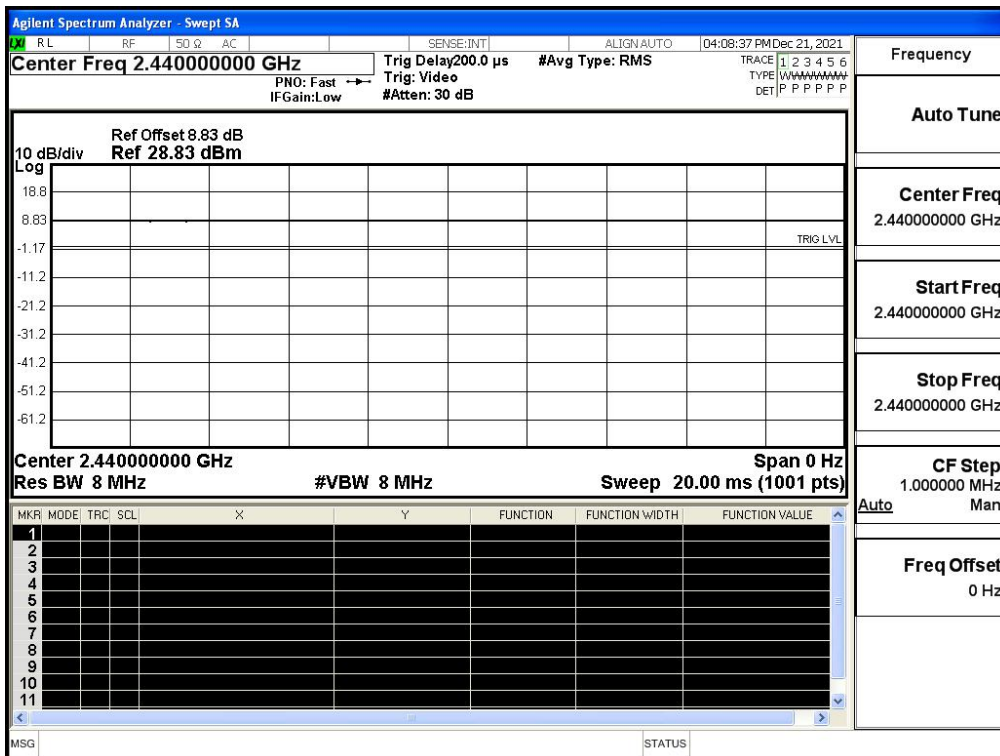


Test Graphs

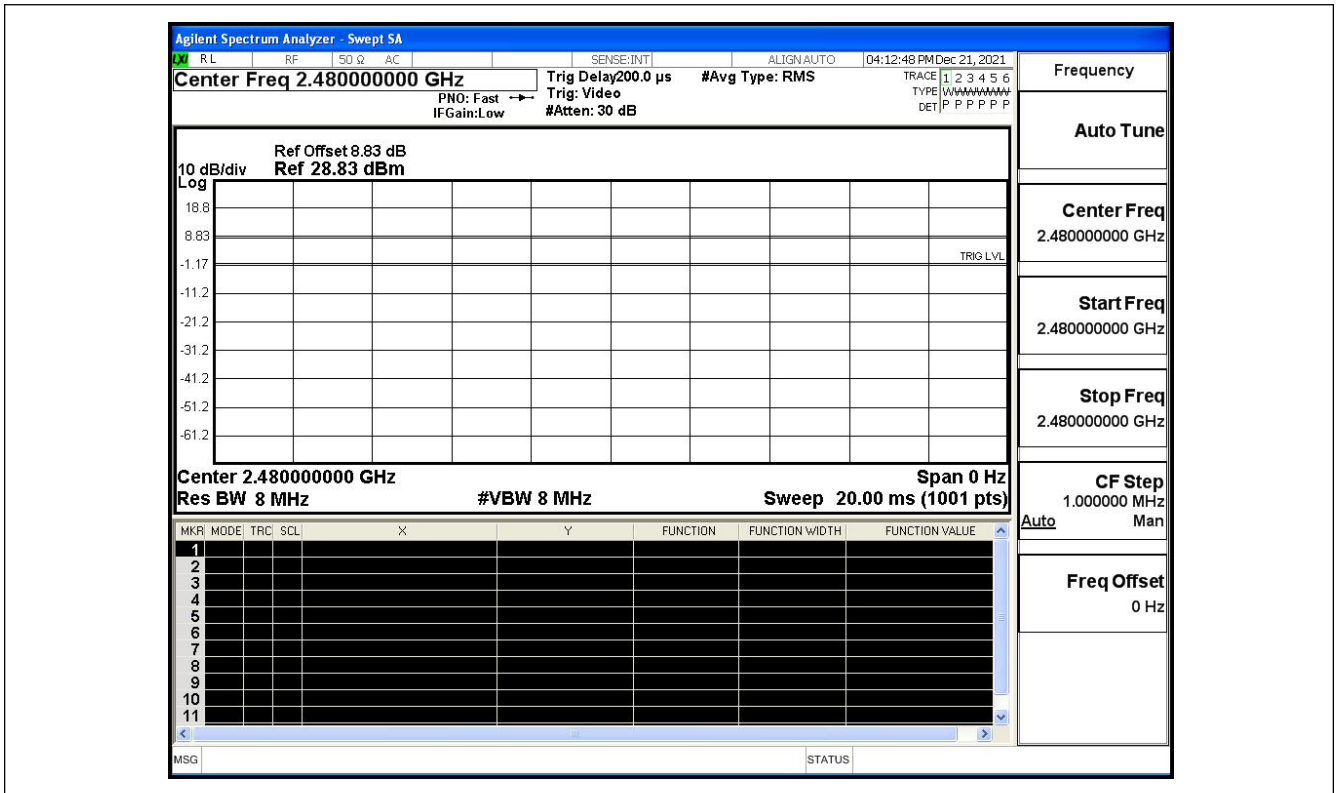
ZIGB_Ant1_2405



ZIGB_Ant1_2440



ZIGB_Ant1_2480





A.8 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Frequency[MHz]	Detector	Freq.[MHz]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	Low	2405	AV	2310.000	-48.33	≤-41.20	PASS
				AV	2389.985	-47.59	≤-41.20	PASS
				AV	2390.000	-47.59	≤-41.20	PASS
				Peak	2310.000	-38.81	≤-21.20	PASS
				Peak	2382.005	-36.4	≤-21.20	PASS
				Peak	2390.000	-38.17	≤-21.20	PASS
		High	2480	AV	2483.500	-41.33	≤-41.20	PASS
				AV	2483.520	-41.33	≤-41.20	PASS
				AV	2500.000	-47.4	≤-41.20	PASS
				Peak	2483.500	-33.41	≤-21.20	PASS
				Peak	2483.600	-33.03	≤-21.20	PASS
				Peak	2500.000	-38.03	≤-21.20	PASS

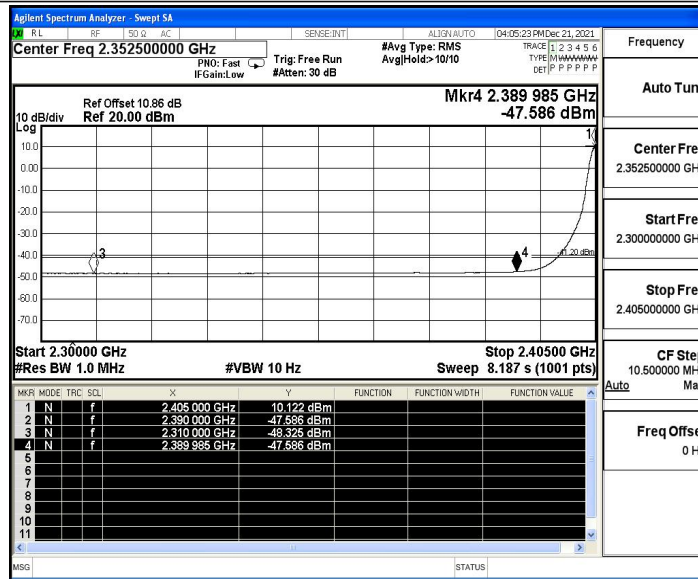
Note:

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.

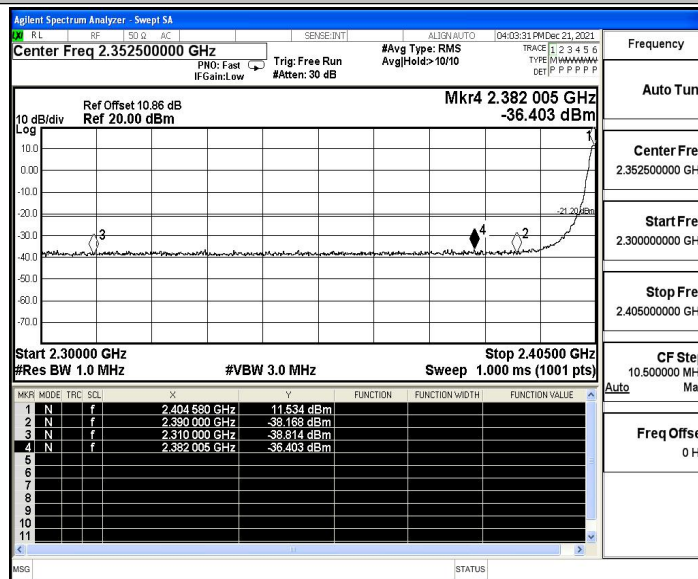


Test Graphs

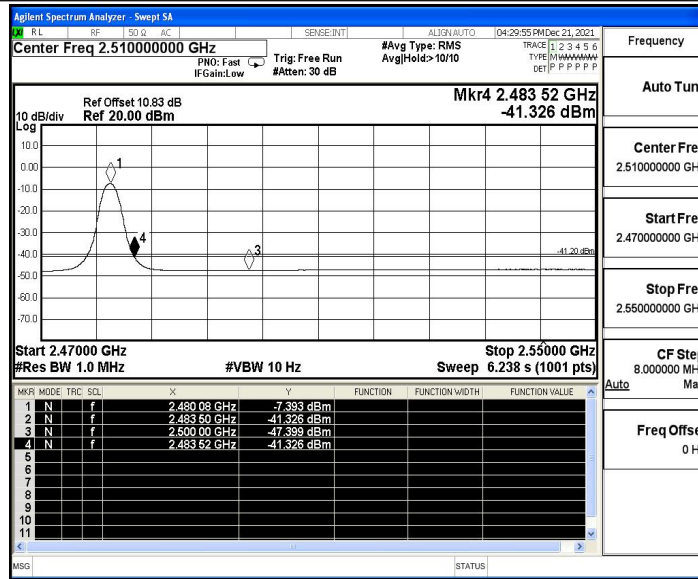
ZIGB_Ant1_Low_2405_AV



ZIGB_Ant1_Low_2405_Peak



ZIGB_Ant1_High_2480_AV



ZIGB_Ant1_High_2480_Peak

