





Appendix A

RF Test Data for BT LE V5.0 (DTS) (Conducted Measurement)

Product Name: Smart Dimmer Switch

Test Model: EDM-12TBNVT-US

Environmental Conditions

Temperature:	22.5°C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	 Bill Zhu
Supervised by:	 Li Huan



A.1 DTS Bandwidth

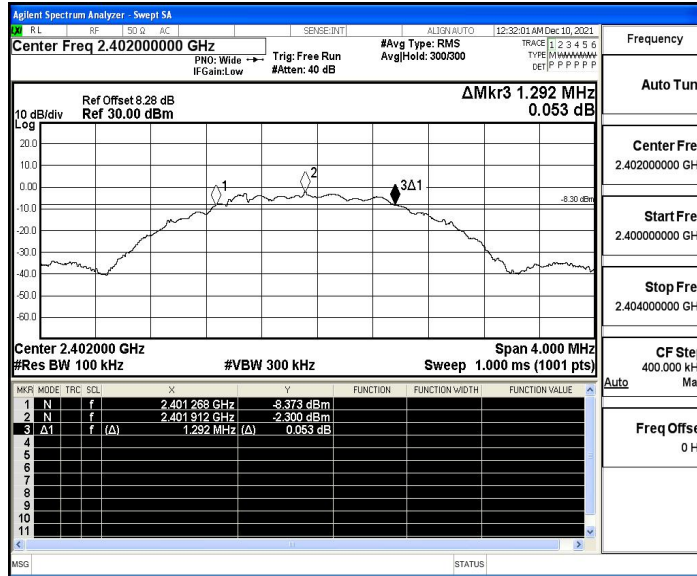
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_2M	Ant1	2402	1.292	2401.268	2402.560	≥0.5	PASS
		2440	1.244	2439.296	2440.540	≥0.5	PASS
		2480	1.188	2479.344	2480.532	≥0.5	PASS

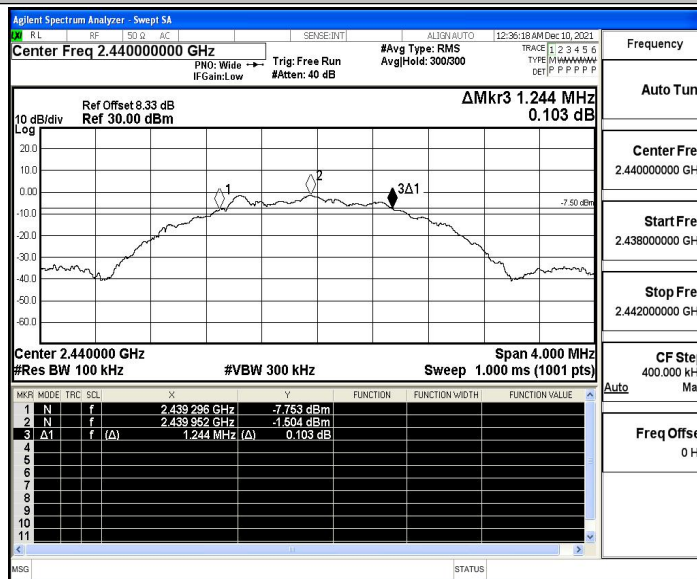


Test Graphs

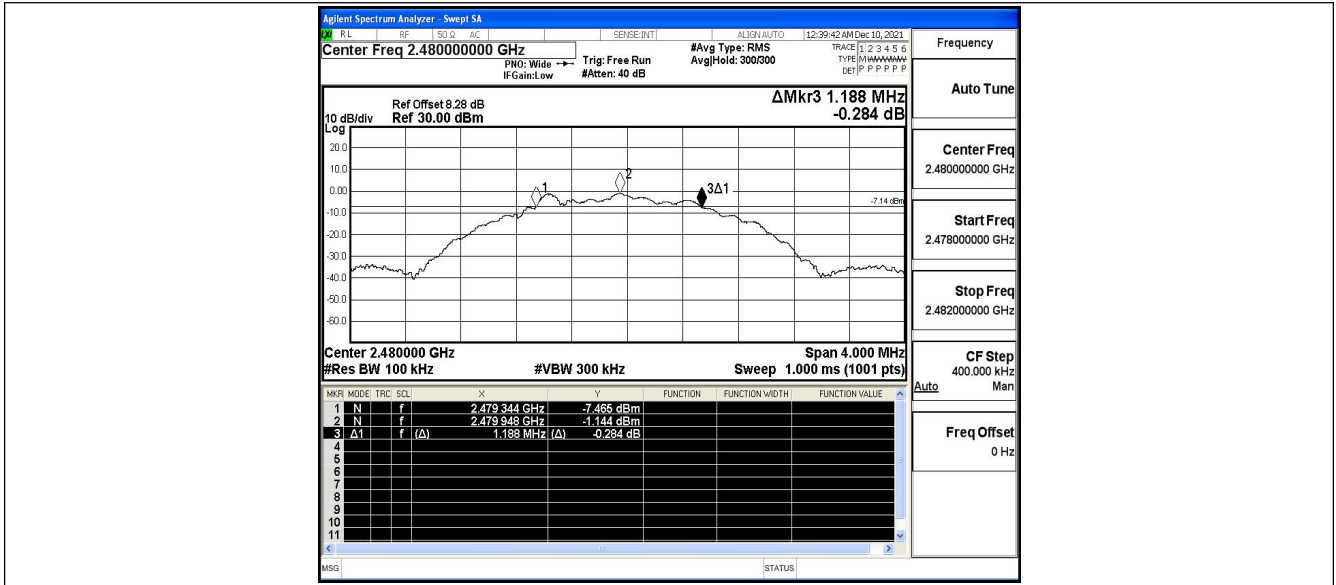
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480





A.2 Maximum peak conducted output power

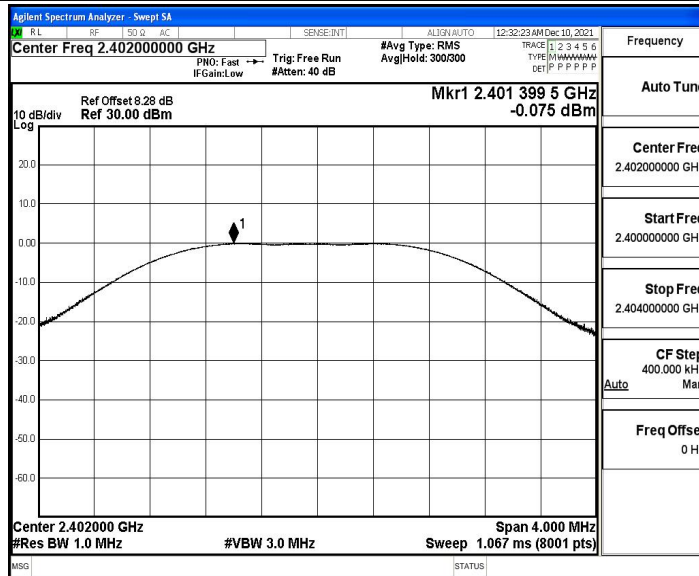
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_2M	Ant1	2402	-0.08	≤30	PASS
		2440	-0.05	≤30	PASS
		2480	0.35	≤30	PASS

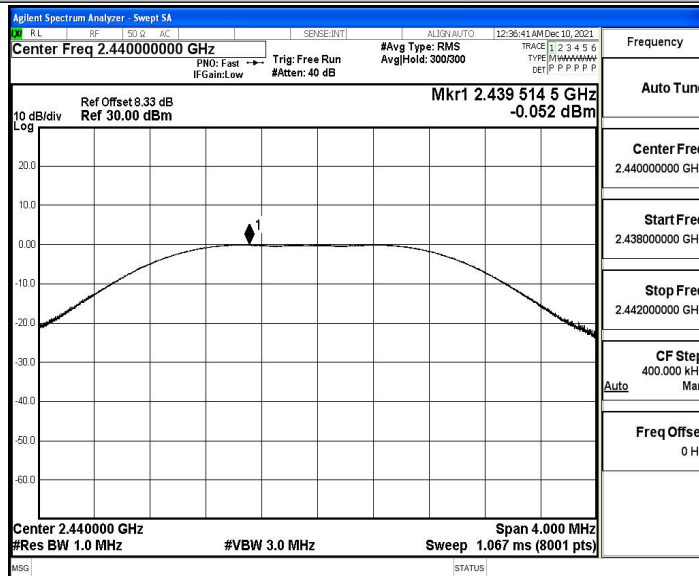


Test Graphs

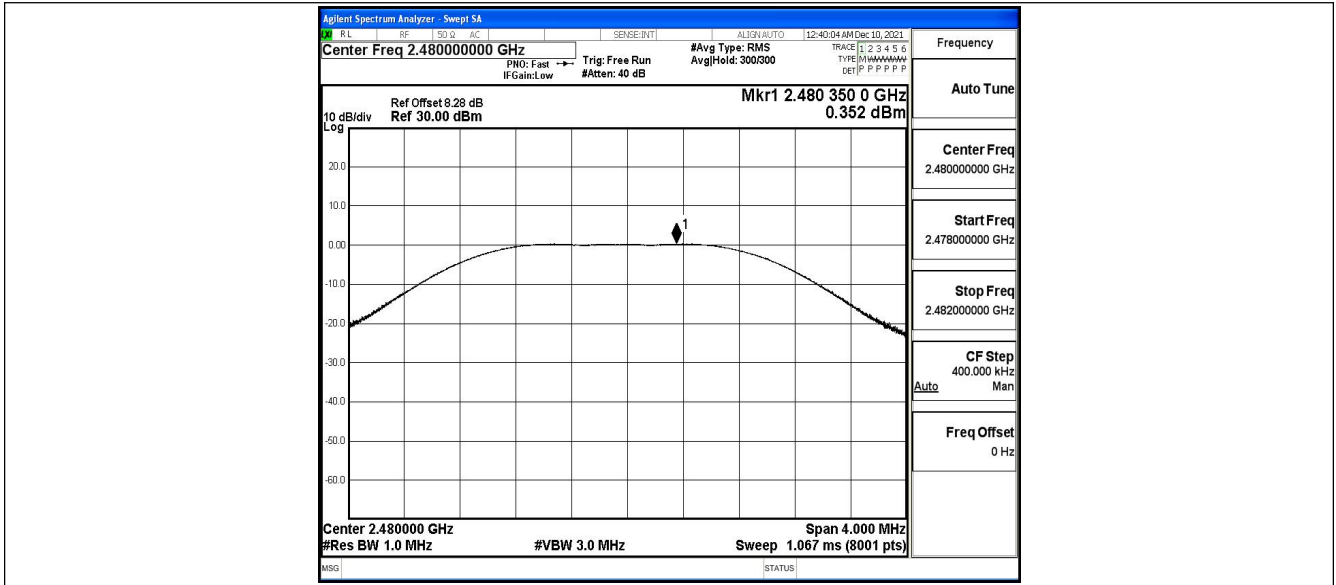
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480





A.3 Maximum power spectral density

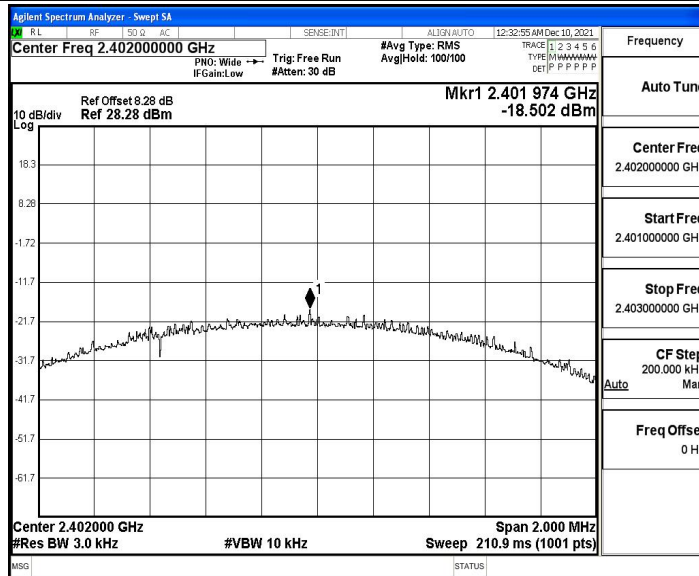
Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_2M	Ant1	2402	-18.5	≤8	PASS
		2440	-18.86	≤8	PASS
		2480	-18.39	≤8	PASS

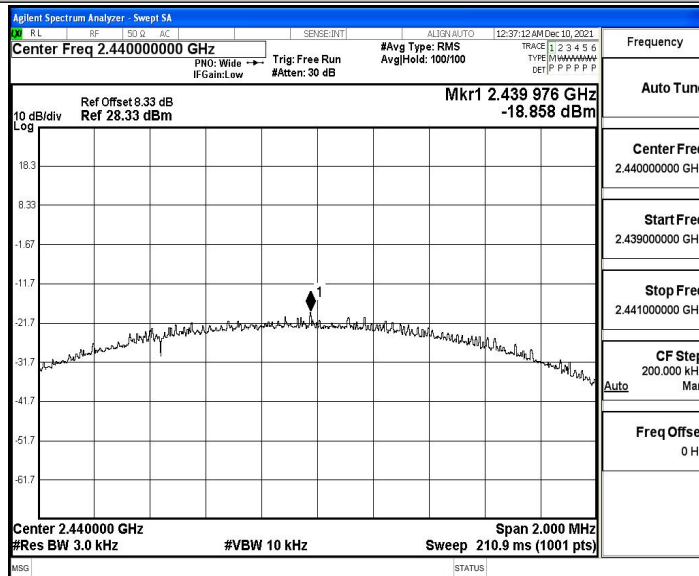


Test Graphs

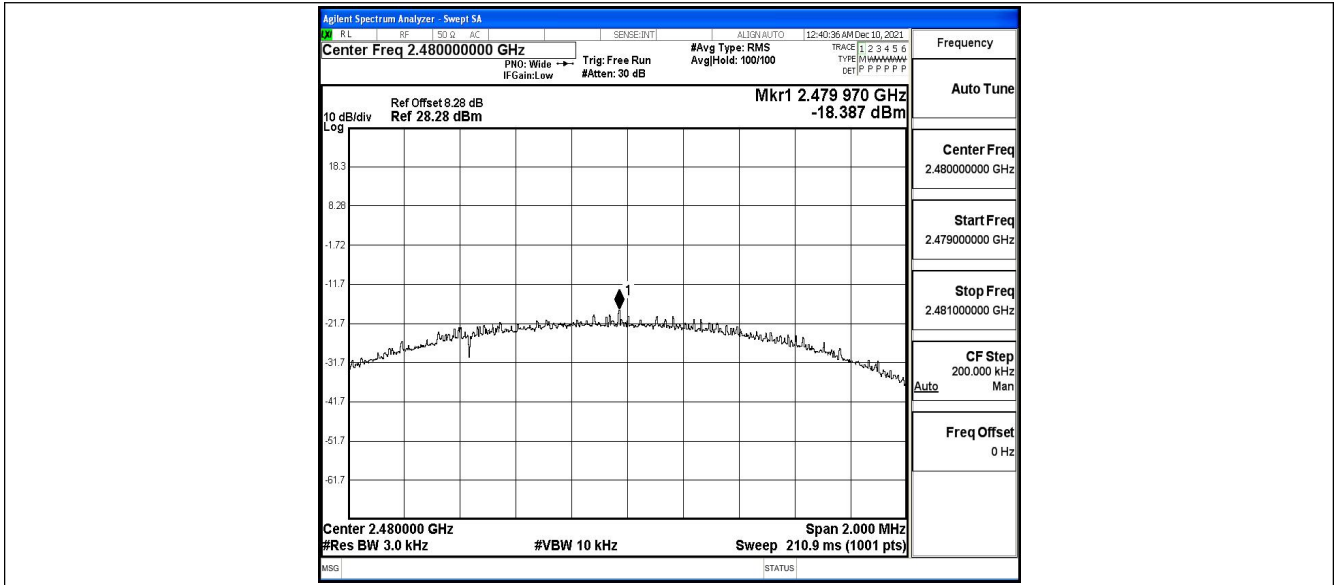
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480





A.4 Band edge measurements

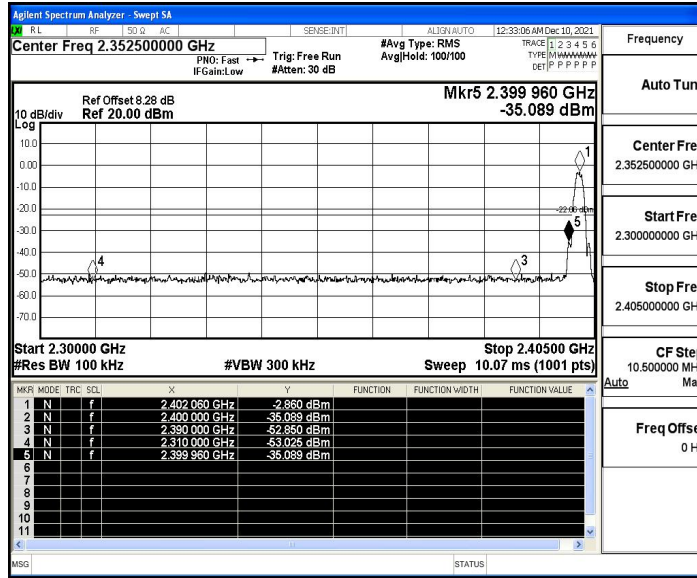
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_2M	Ant1	Low	2402	-2.86	-35.09	≤ -22.86	PASS
		High	2480	-0.72	-47.83	≤ -20.72	PASS

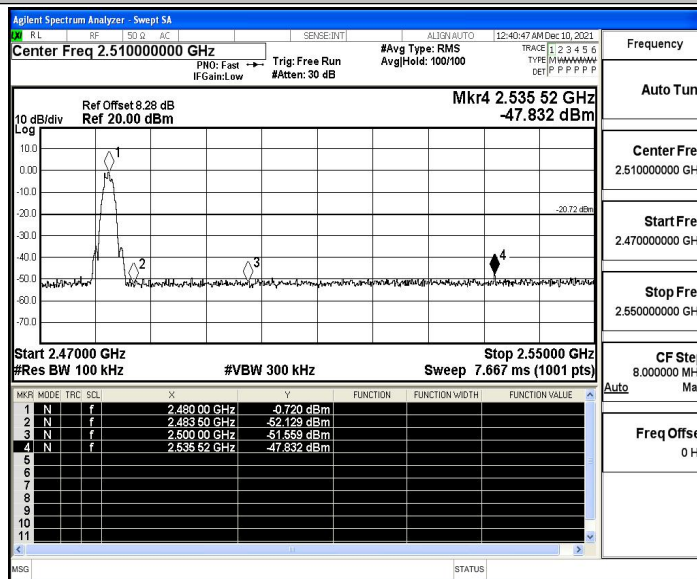


Test Graphs

BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480





A.5 Conducted Spurious Emission

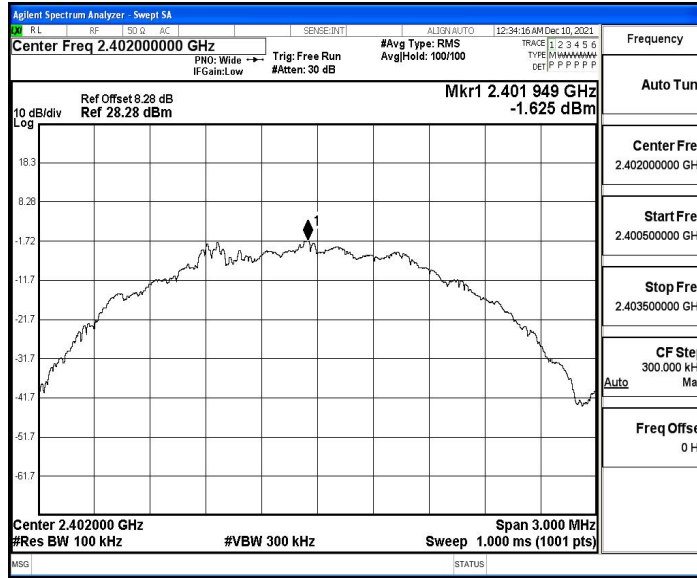
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_2M	Ant1	2402	Reference	-1.63	-1.63	---	PASS
			30~1000	-1.63	-61.12	≤-21.63	PASS
			1000~26500	-1.63	-46.76	≤-21.63	PASS
		2440	Reference	-1.74	-1.74	---	PASS
			30~1000	-1.74	-60.2	≤-21.74	PASS
			1000~26500	-1.74	-46.04	≤-21.74	PASS
		2480	Reference	-1.67	-1.67	---	PASS
			30~1000	-1.67	-61.13	≤-21.67	PASS
			1000~26500	-1.67	-46.76	≤-21.67	PASS

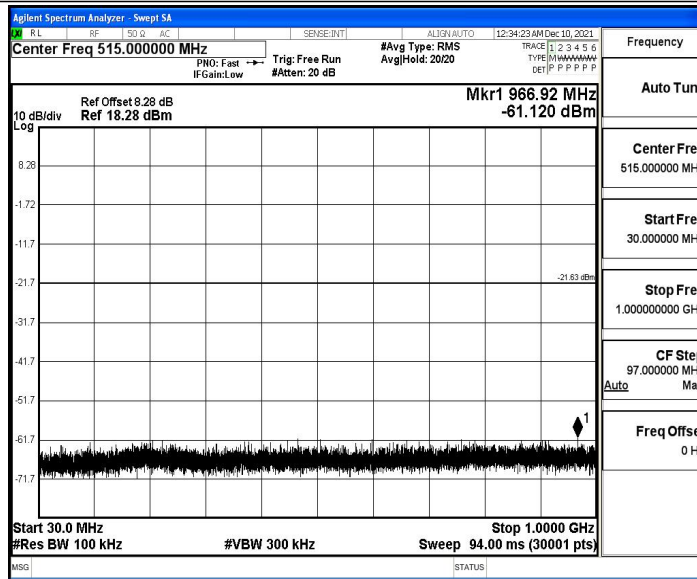


Test Graphs

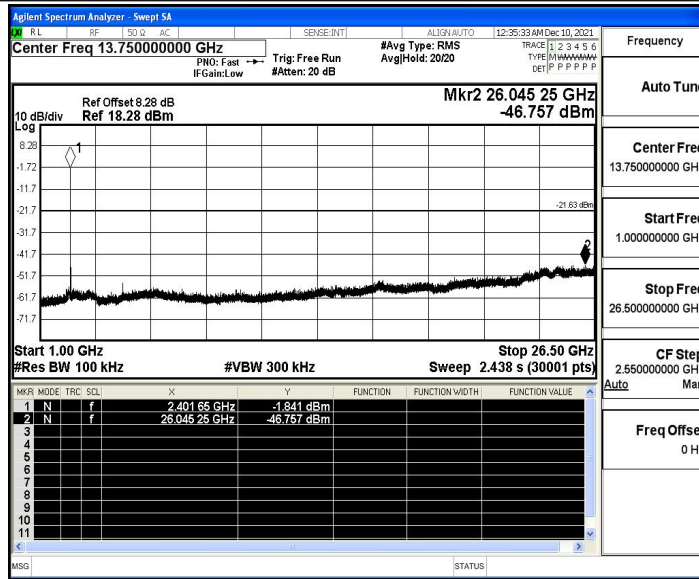
BLE_2M_Ant1_2402_0~Reference



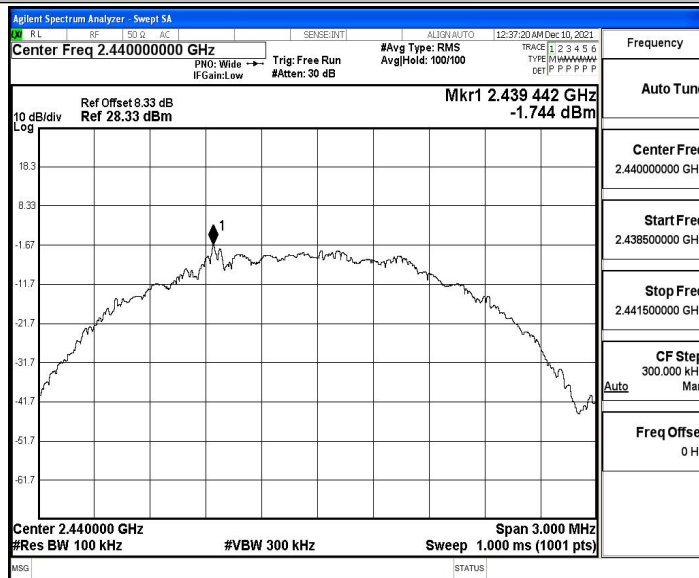
BLE_2M_Ant1_2402_30~1000



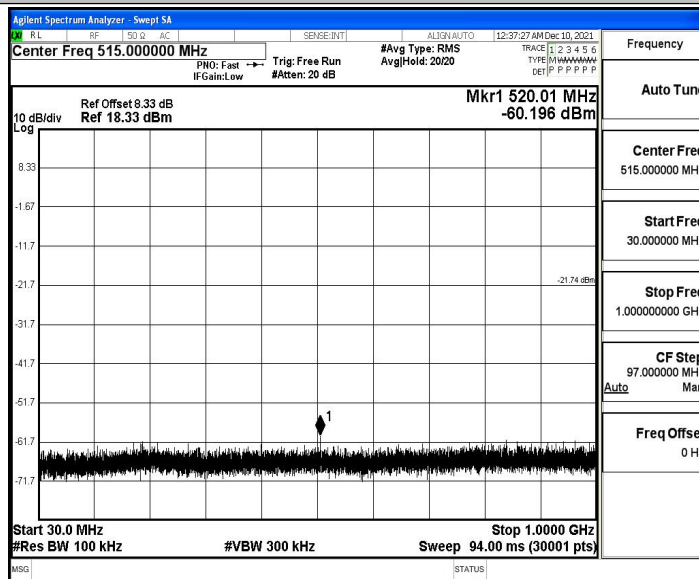
BLE_2M_Ant1_2402_1000~26500



BLE_2M_Ant1_2440_0~Reference

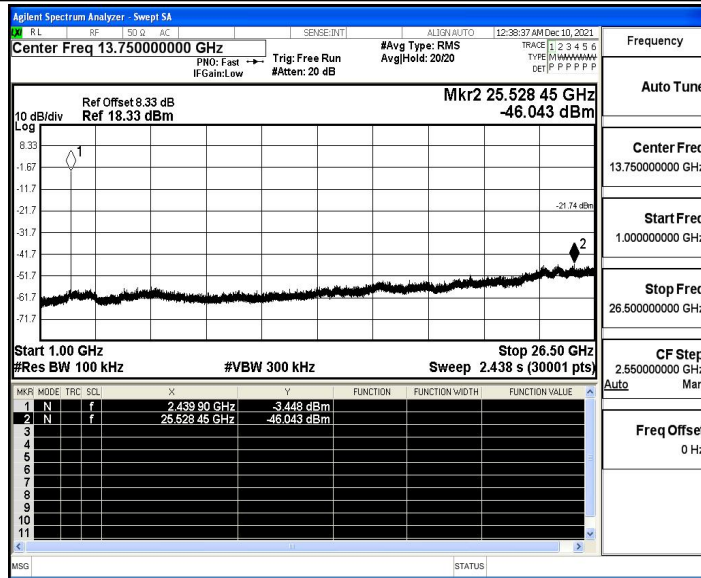


BLE_2M_Ant1_2440_30~1000

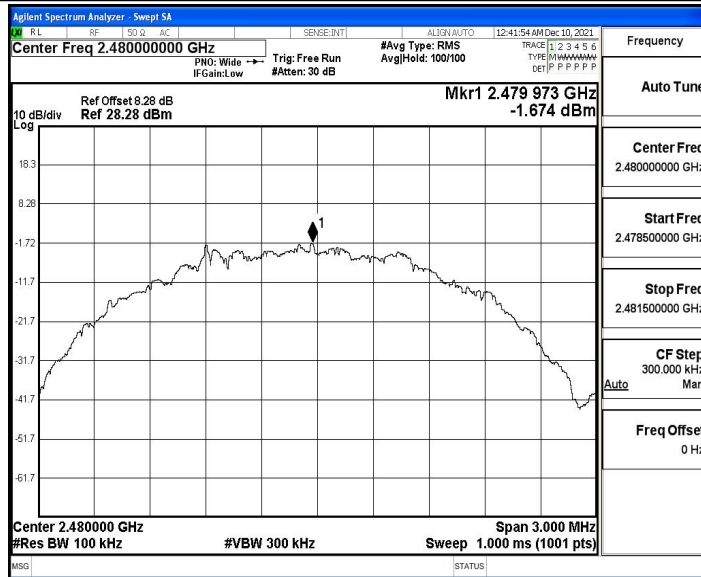




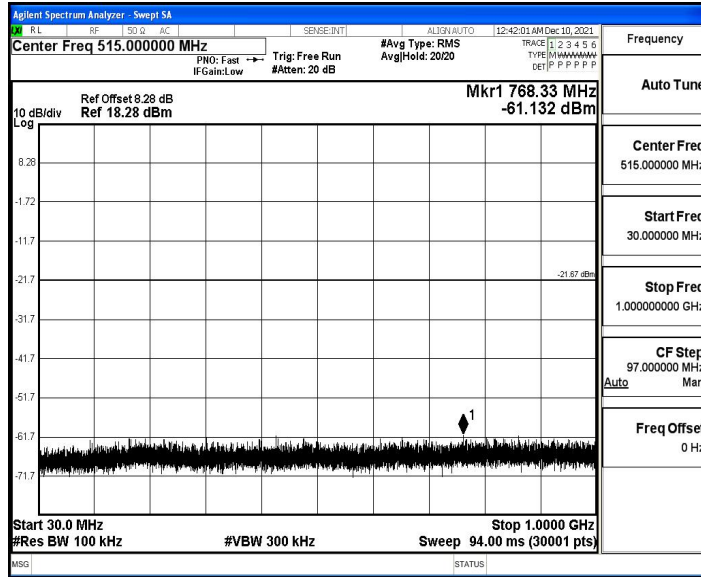
BLE_2M_Ant1_2440_1000~26500



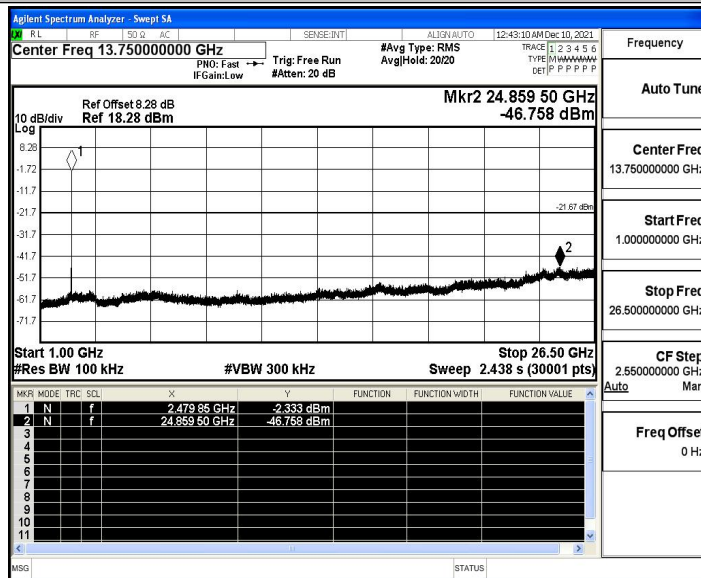
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500





A.6 Duty Cycle

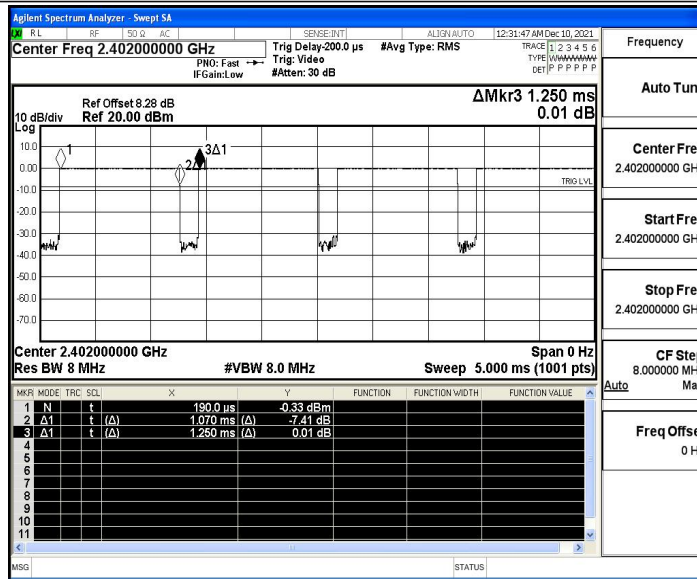
Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_2M	Ant1	2402	1.07	1.25	0.8560	85.60	0.68	---	PASS
		2440	1.07	1.25	0.8560	85.60	0.68	---	PASS
		2480	1.07	1.25	0.8560	85.60	0.68	---	PASS

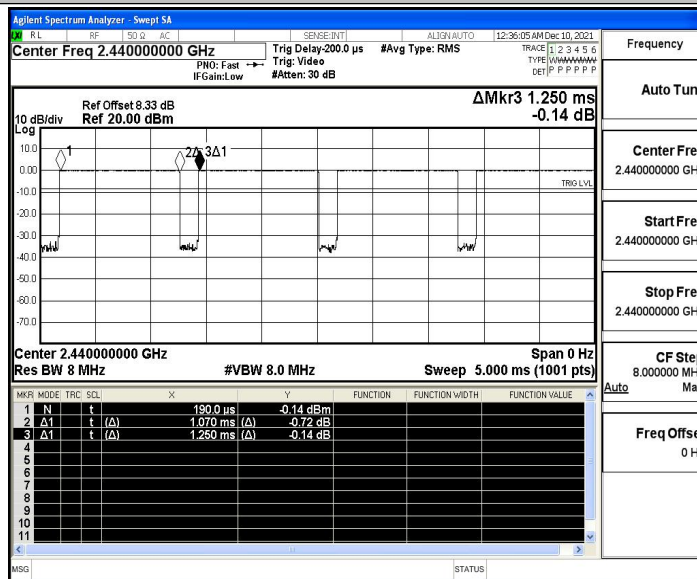


Test Graphs

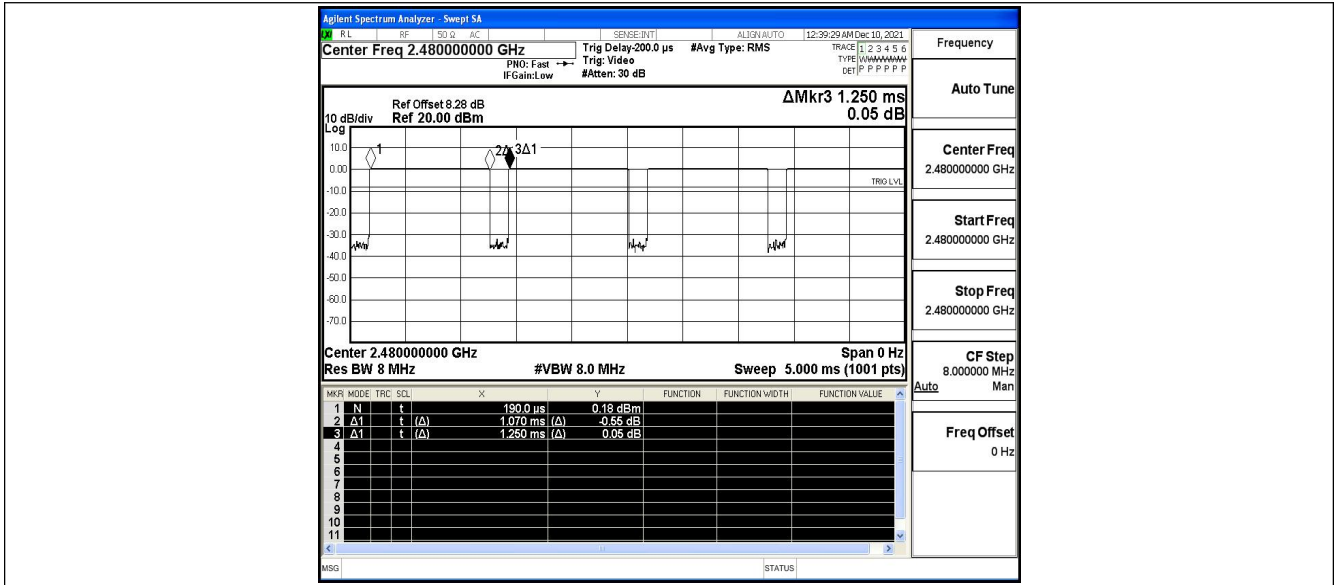
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480





A.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_2M	Ant1	Low	2402	AV	2310.000	-48.11	≤-41.20	47.09	≤54	PASS
				AV	2343.575	-47.47	≤-41.20	47.73	≤54	PASS
				AV	2390.000	-47.89	≤-41.20	47.31	≤54	PASS
				Peak	2310.000	-41.77	≤-21.20	53.43	≤74	PASS
				Peak	2342.840	-38.25	≤-21.20	56.95	≤74	PASS
				Peak	2390.000	-40.84	≤-21.20	54.36	≤74	PASS
		High	2480	AV	2483.500	-46.3	≤-41.20	48.90	≤54	PASS
				AV	2483.520	-46.3	≤-41.20	48.90	≤54	PASS
				AV	2500.000	-47.32	≤-41.20	47.88	≤54	PASS
				Peak	2483.500	-39.34	≤-21.20	55.86	≤74	PASS
				Peak	2499.120	-37.73	≤-21.20	57.47	≤74	PASS
				Peak	2500.000	-41.27	≤-21.20	53.93	≤74	PASS

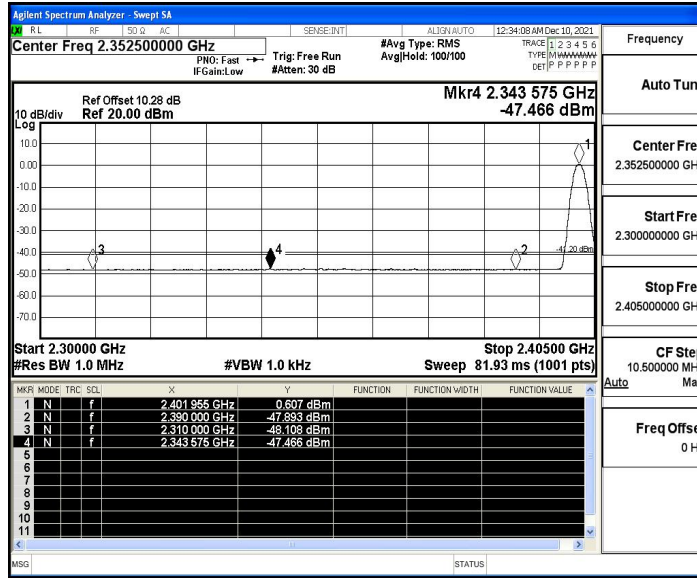
Note:

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.

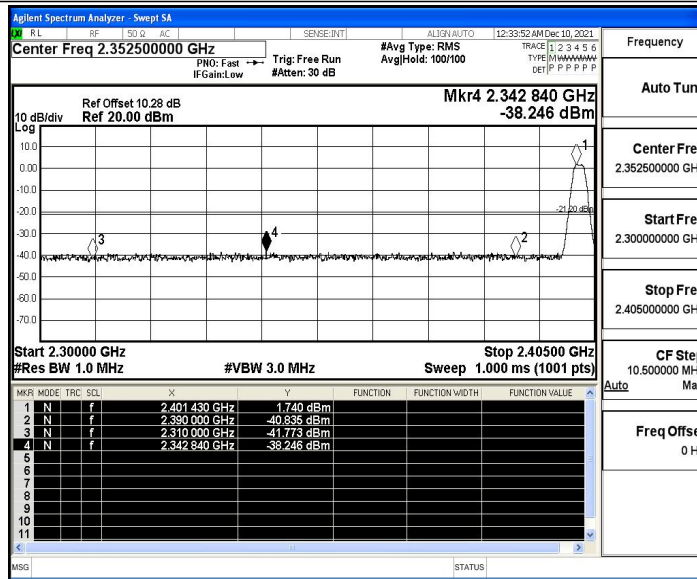


Test Graphs

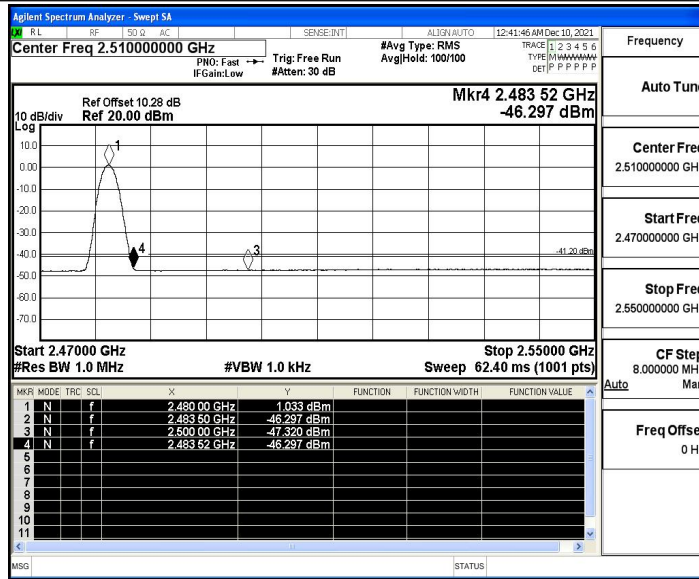
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

