



Appendix A

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

Product Name: Bluetooth Humidity&Temperature Monitor

Trade Mark: N/A

Test Model: TP359

Environmental Conditions

Temperature:	23.7℃
Relative Humidity:	51.9%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

Appendix A.1: DTS Bandwidth

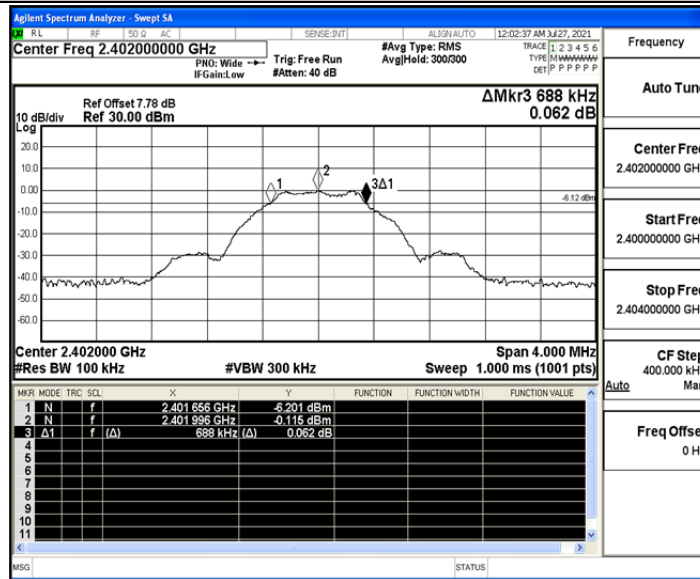
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.688	2401.656	2402.344	≥0.5	PASS
		2440	0.696	2439.648	2440.344	≥0.5	PASS
		2480	0.692	2479.648	2480.340	≥0.5	PASS

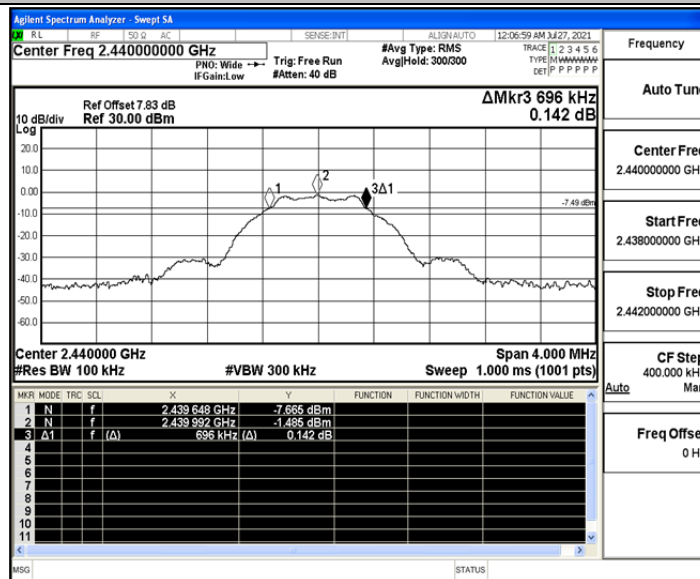


Test Graphs

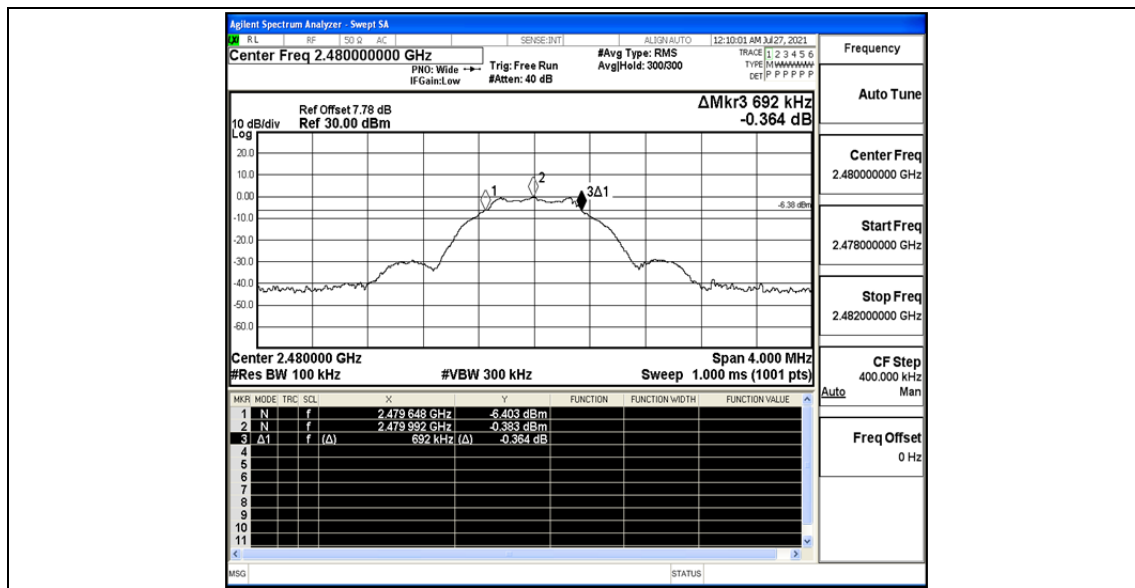
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





Appendix A.3: Maximum conducted Peak output power

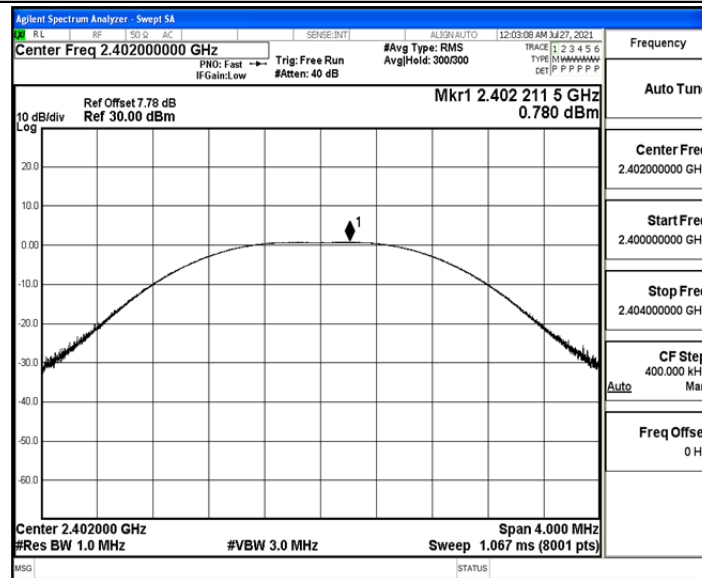
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0.78	≤30	PASS
		2440	-0.62	≤30	PASS
		2480	0.48	≤30	PASS

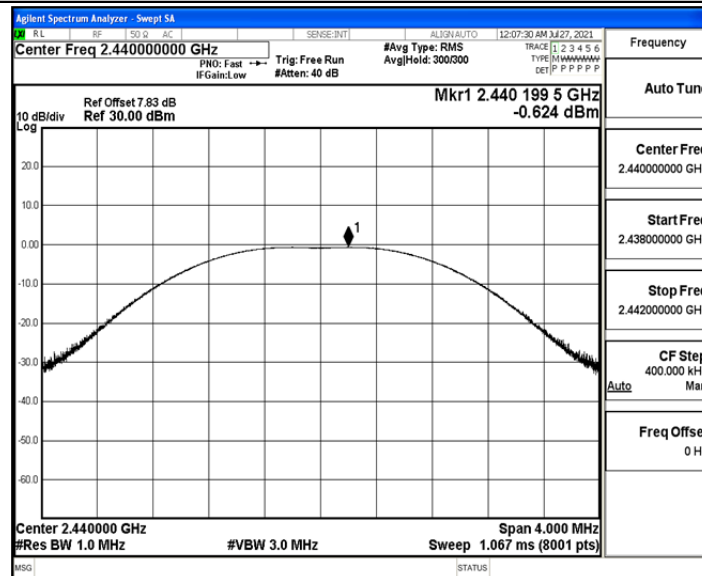


Test Graphs

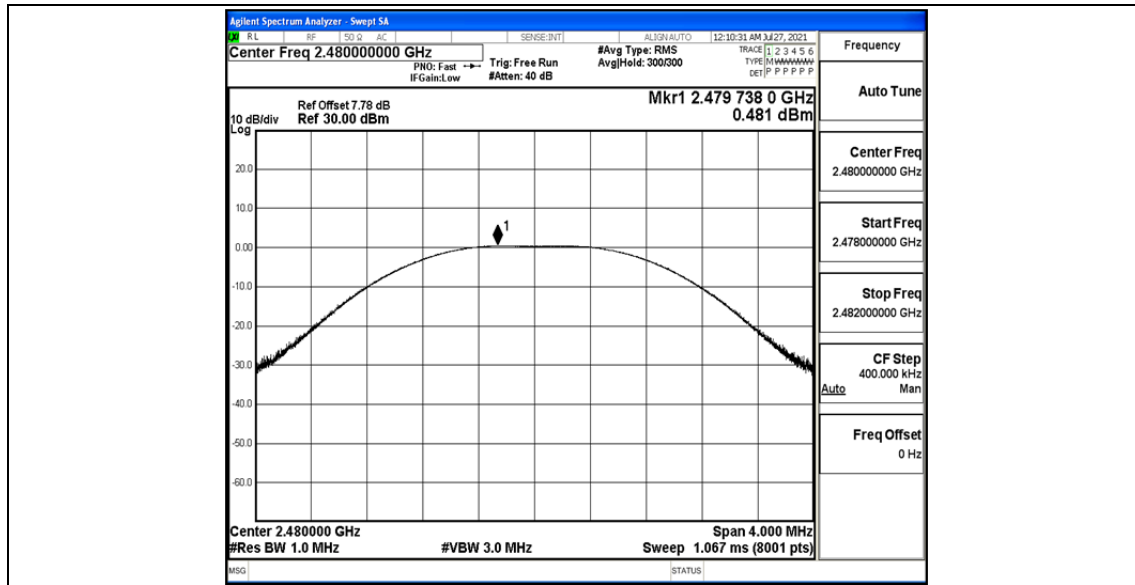
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





Appendix A.4: Maximum power spectral density

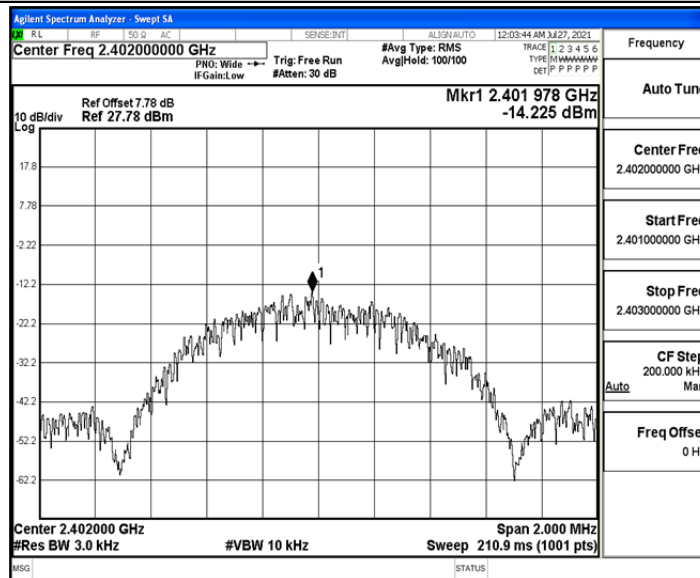
Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.23	≤8	PASS
		2440	-15.63	≤8	PASS
		2480	-14.61	≤8	PASS

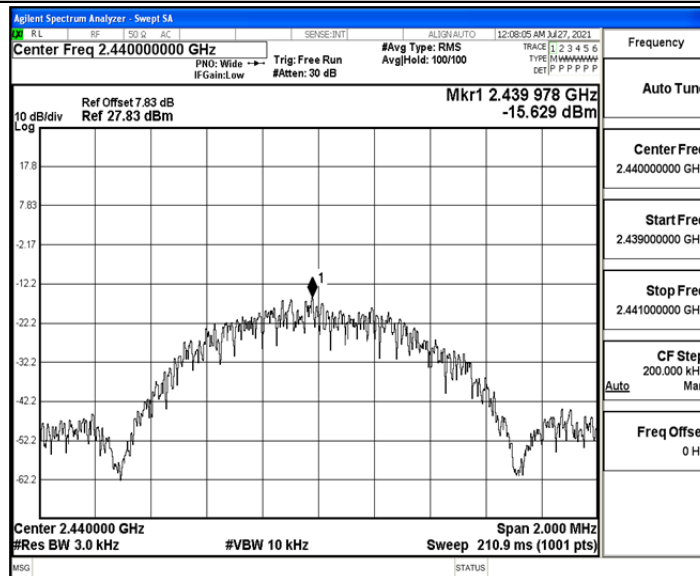


Test Graphs

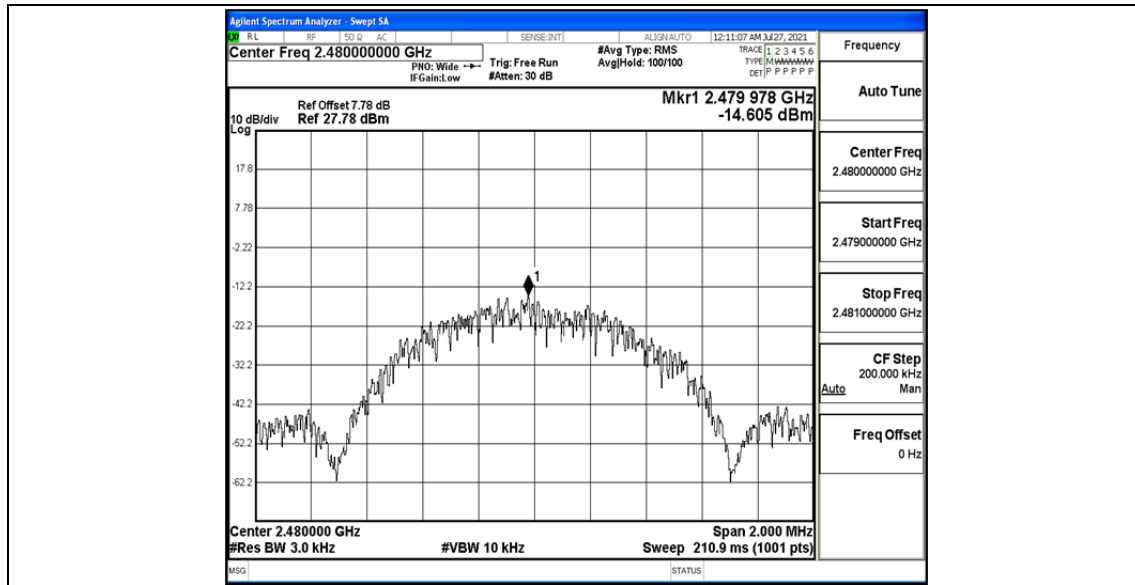
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





Appendix A.5: Band edge measurements

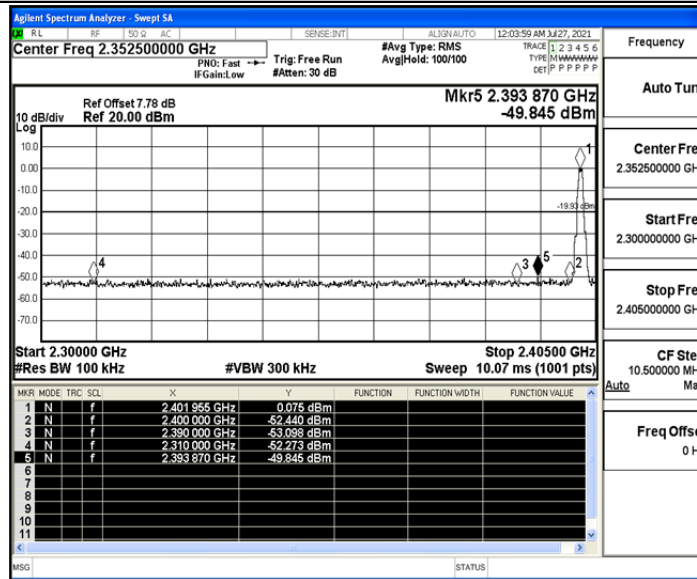
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.08	-49.85	≤-19.93	PASS
		High	2480	-0.52	-49.08	≤-20.52	PASS

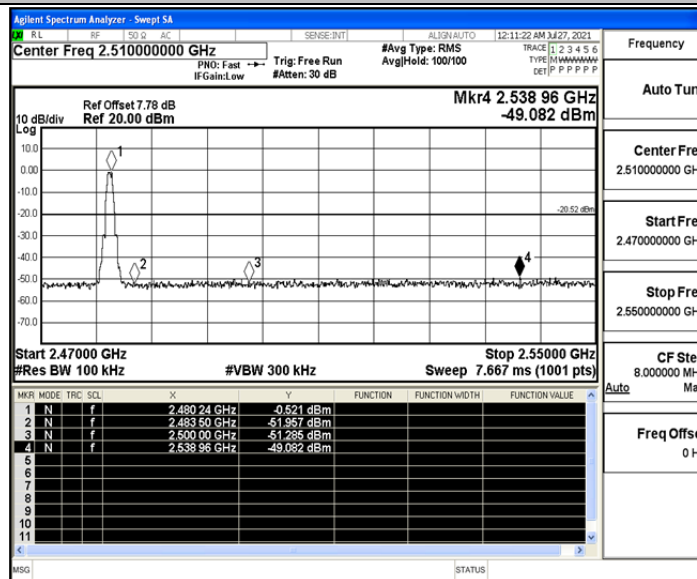


Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480





Appendix A.6: Conducted Spurious Emission

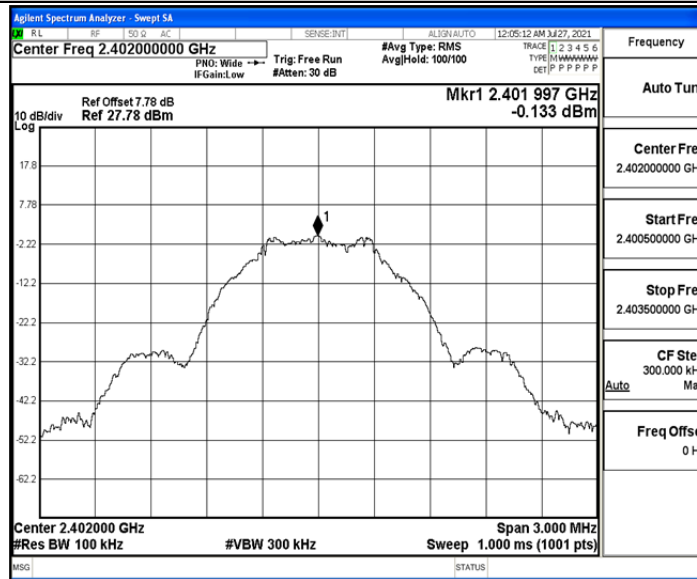
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.13	-0.13	---	PASS
			30~1000	-0.13	-57.4	≤ -20.13	PASS
			1000~26500	-0.13	-47.14	≤ -20.13	PASS
		2440	Reference	-1.82	-1.82	---	PASS
			30~1000	-1.82	-58.71	≤ -21.82	PASS
			1000~26500	-1.82	-47.24	≤ -21.82	PASS
		2480	Reference	-0.65	-0.65	---	PASS
			30~1000	-0.65	-56.08	≤ -20.65	PASS
			1000~26500	-0.65	-46.9	≤ -20.65	PASS

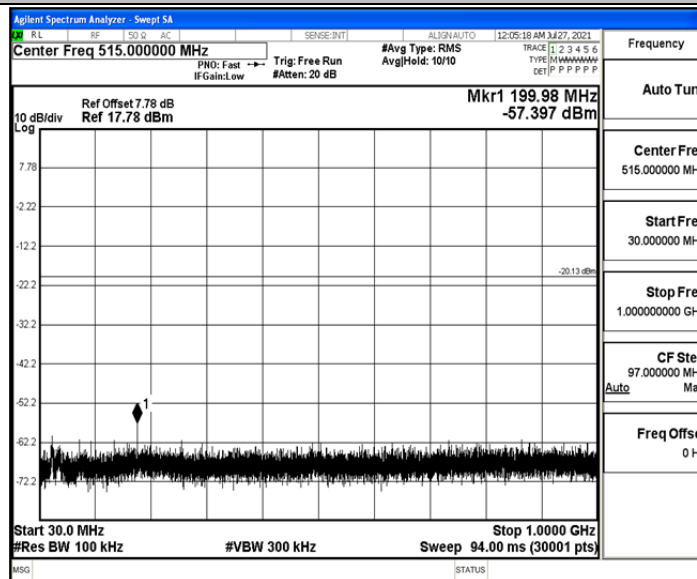


Test Graphs

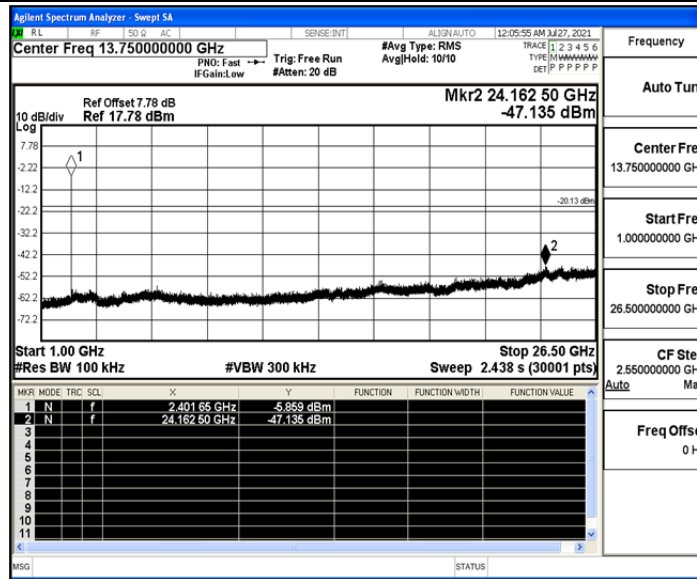
BLE_1M_Ant1_2402_0~Reference



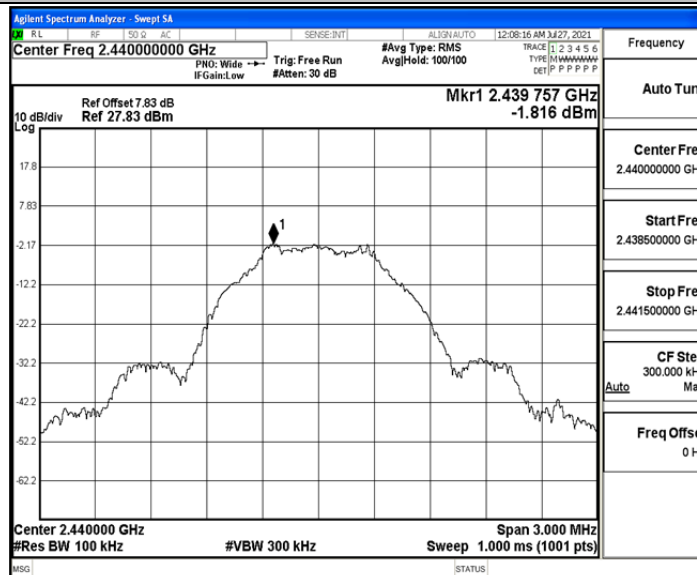
BLE_1M_Ant1_2402_30~1000



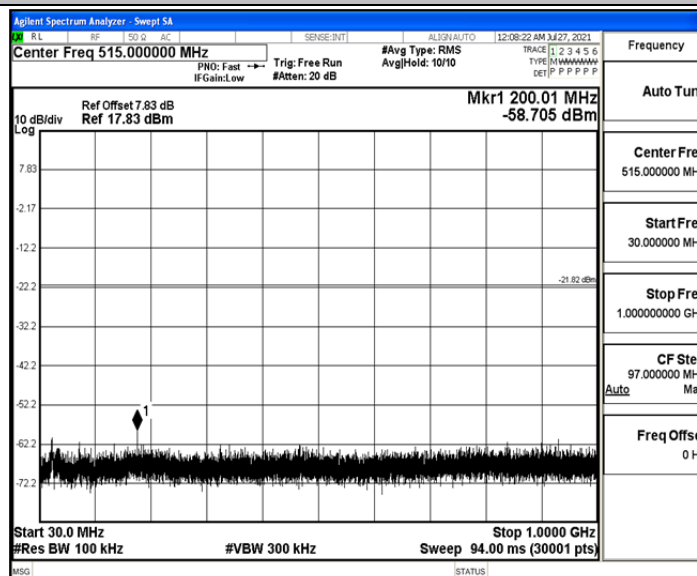
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference

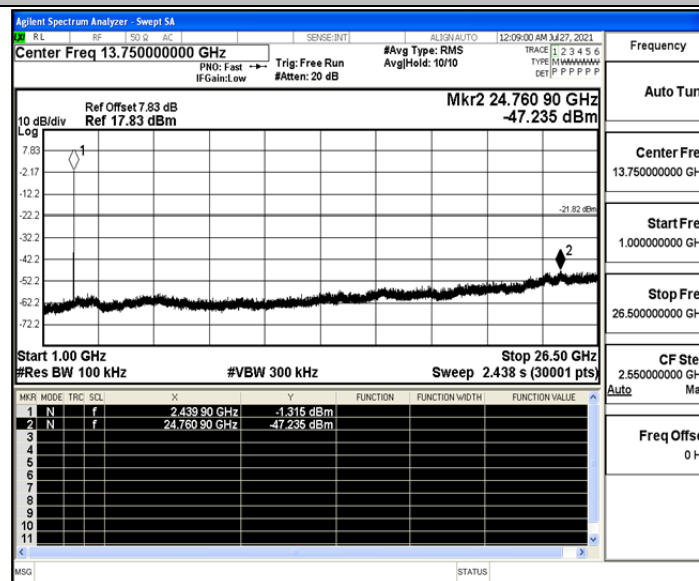


BLE_1M_Ant1_2440_30~1000

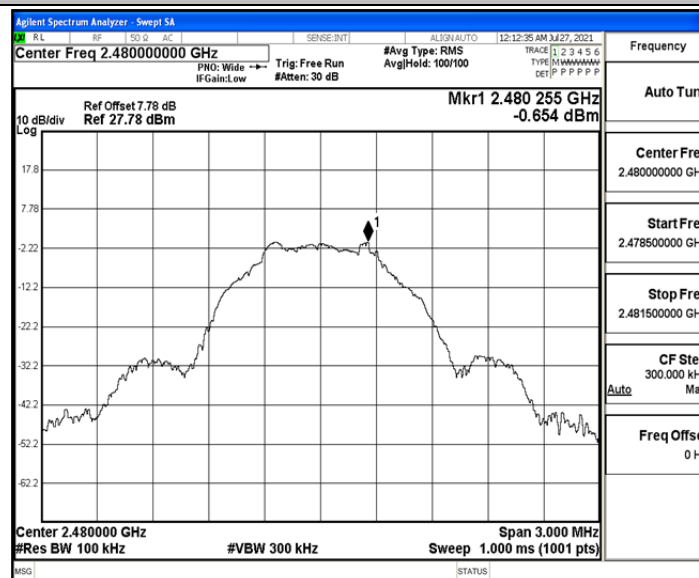




BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000

Agilent Spectrum Analyzer - Sweep SA

Center Freq 13.75000000 GHz PNO: Fast IF Gain: Low Trig: Free Run #Atten: 20 dB #Avg Type: RMS Avg Hold: 10/10 12:13:18 AM J27, 2021

Ref Offset 7.78 dB Ref 17.78 dBm Mkr2 26.454 10 GHz -46.903 dBm

10 dB/div
Log

Start 1.00 GHz Stop 26.50 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.438 s (30001 pts)

MKR	MODE	TRG	SQL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N		f	2.479 85 GHz	-0.539 dBm			
2	N		f	26.454 10 GHz	-46.903 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSO STATUS

Frequency

Auto Turn

Center Freq
13.75000000 GHz

Start Freq
1.00000000 GHz

Stop Freq
26.50000000 GHz

CF Stop
2.55000000 GHz

Auto Meas

Freq Offset
0 Hz

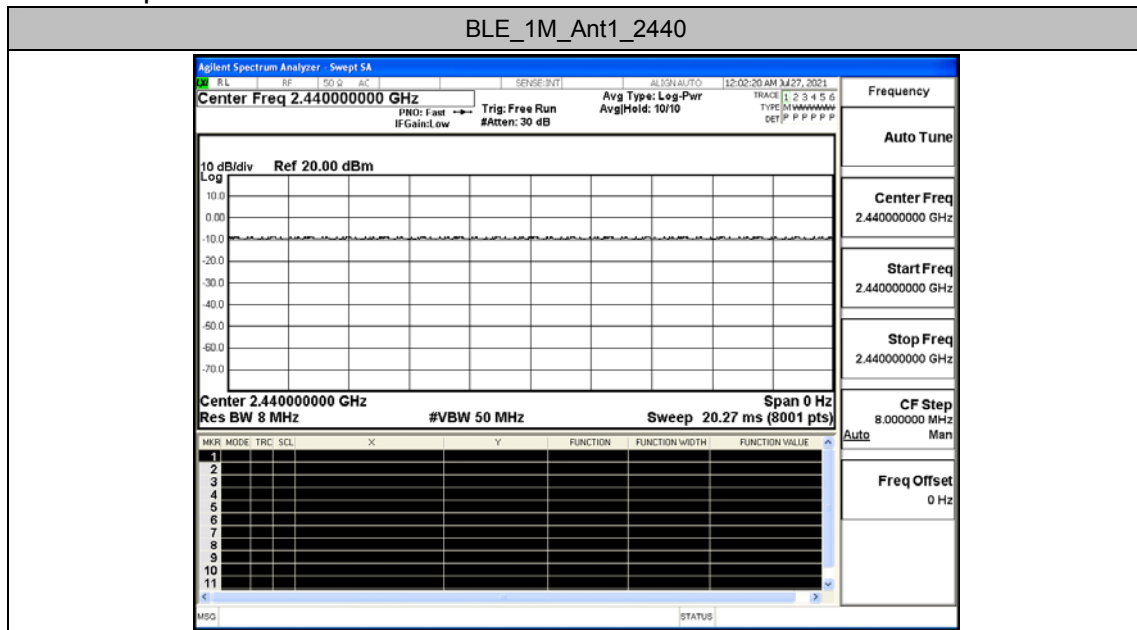


Appendix A.7: Duty Cycle

Test Result

TestMode	Antenna	Channel	DC [%]	xFactor	Limit	Verdict
		2440	100	0	---	PASS

Test Graphs





Appendix H: 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_1M	Ant1	Low	2402	AV	2310.000	-48.46	≤-41.20	46.74	≤54	PASS
				AV	2382.215	-47.51	≤-41.20	47.69	≤54	PASS
				AV	2390.000	-48.06	≤-41.20	47.14	≤54	PASS
				Peak	2310.000	-41.79	≤-21.20	53.41	≤74	PASS
				Peak	2382.530	-37.72	≤-21.20	57.48	≤74	PASS
				Peak	2390.000	-41.83	≤-21.20	53.37	≤74	PASS
		High	2480	AV	2483.500	-47.13	≤-41.20	48.07	≤54	PASS
				AV	2499.120	-46.96	≤-41.20	48.24	≤54	PASS
				AV	2500.000	-47.34	≤-41.20	47.86	≤54	PASS
				Peak	2483.500	-41.5	≤-21.20	53.70	≤74	PASS
				Peak	2499.680	-38.33	≤-21.20	56.87	≤74	PASS
				Peak	2500.000	-41.87	≤-21.20	53.33	≤74	PASS

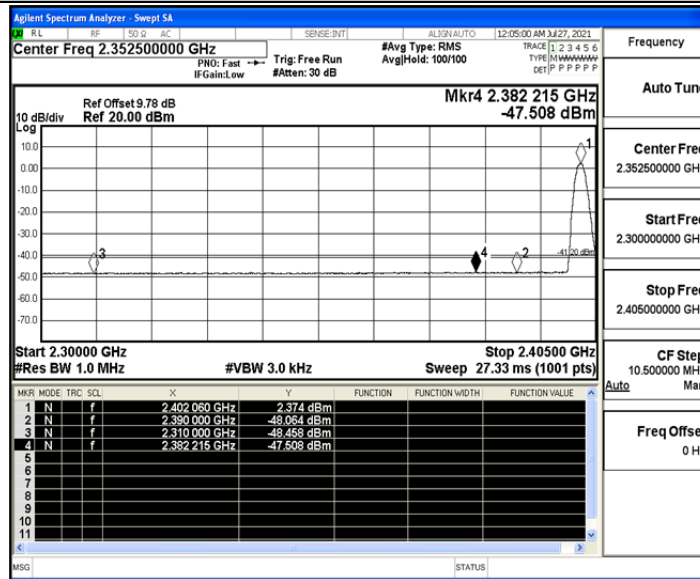
Note:

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.

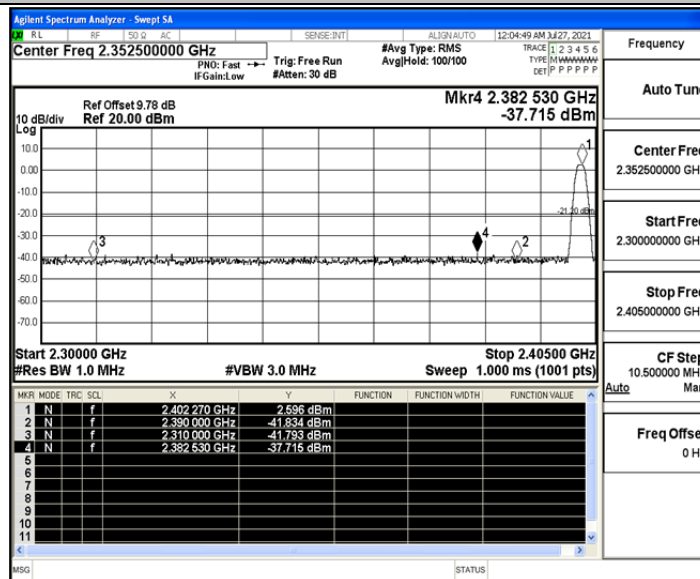


Test Graphs

BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV

BLE 1M Ant1 High 2480 Peak