



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

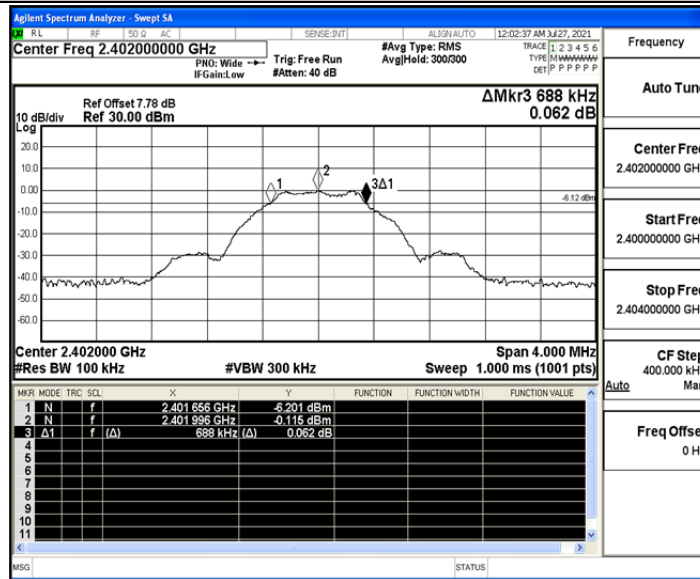
Test Result

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

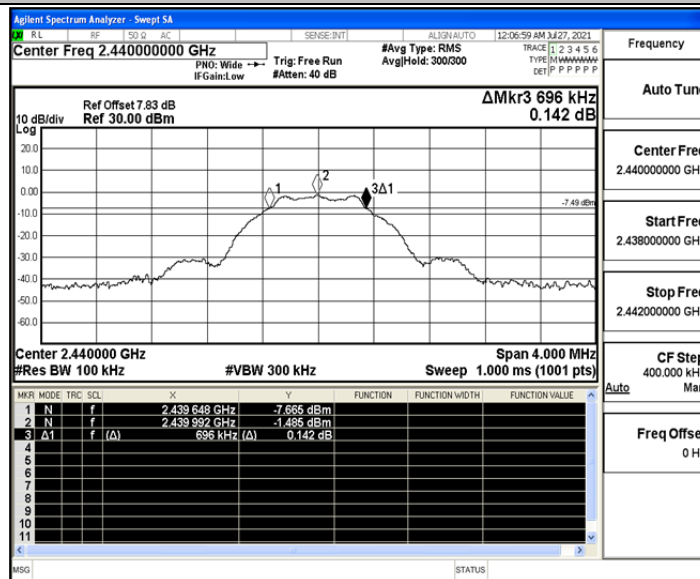


Test Graphs

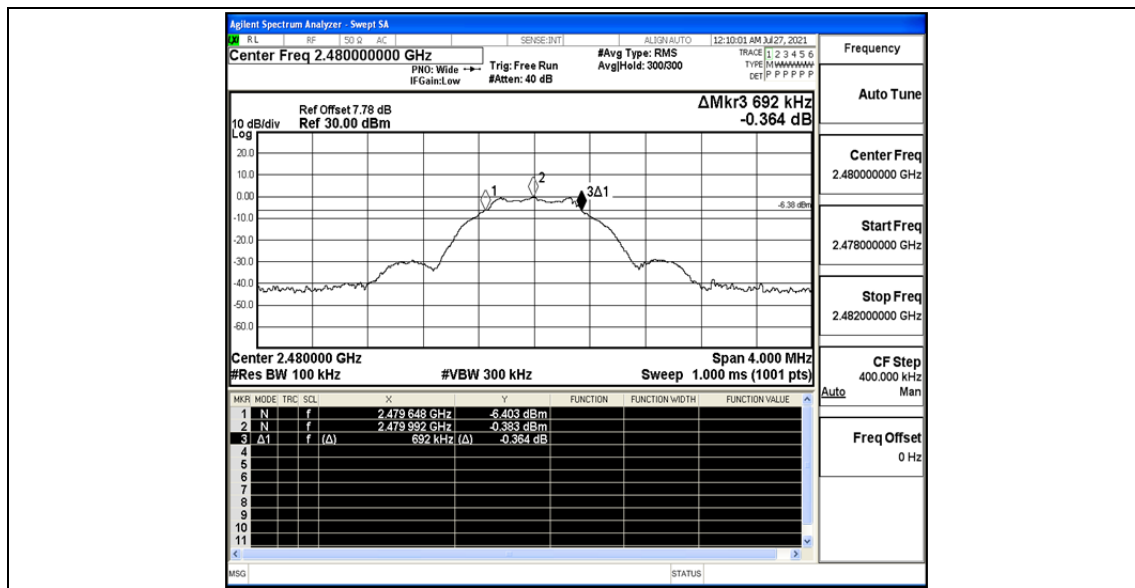
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





Appendix A.3: Maximum conducted Peak output power

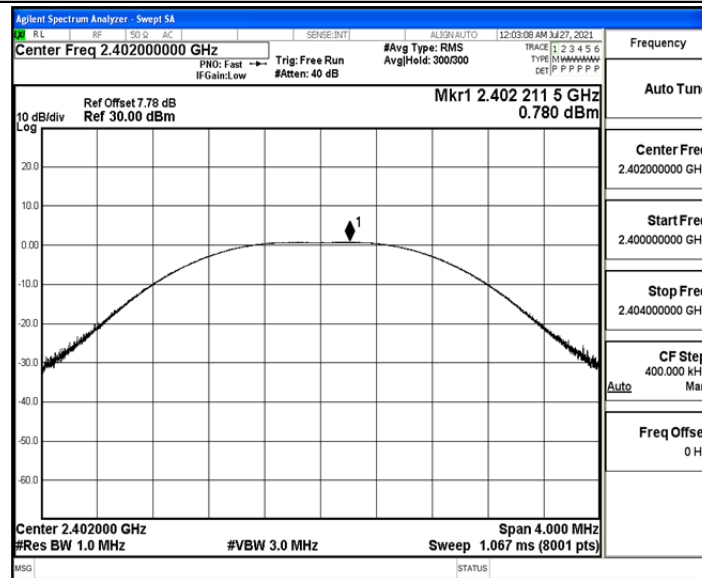
Test Result

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

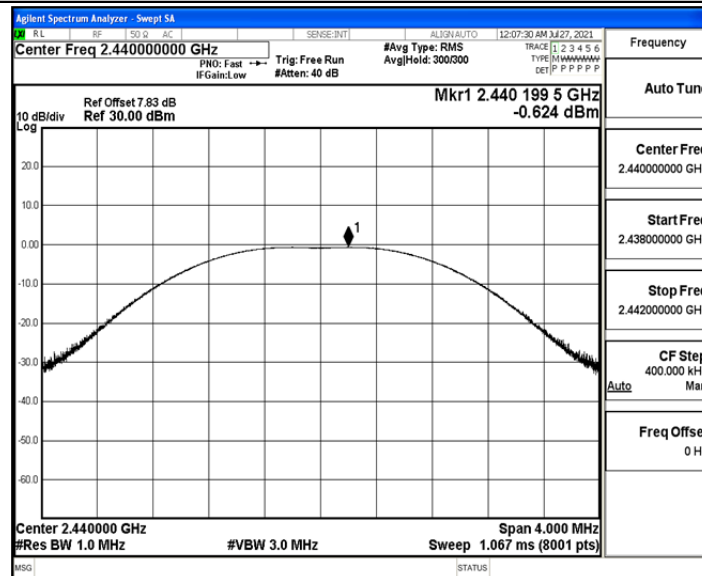


Test Graphs

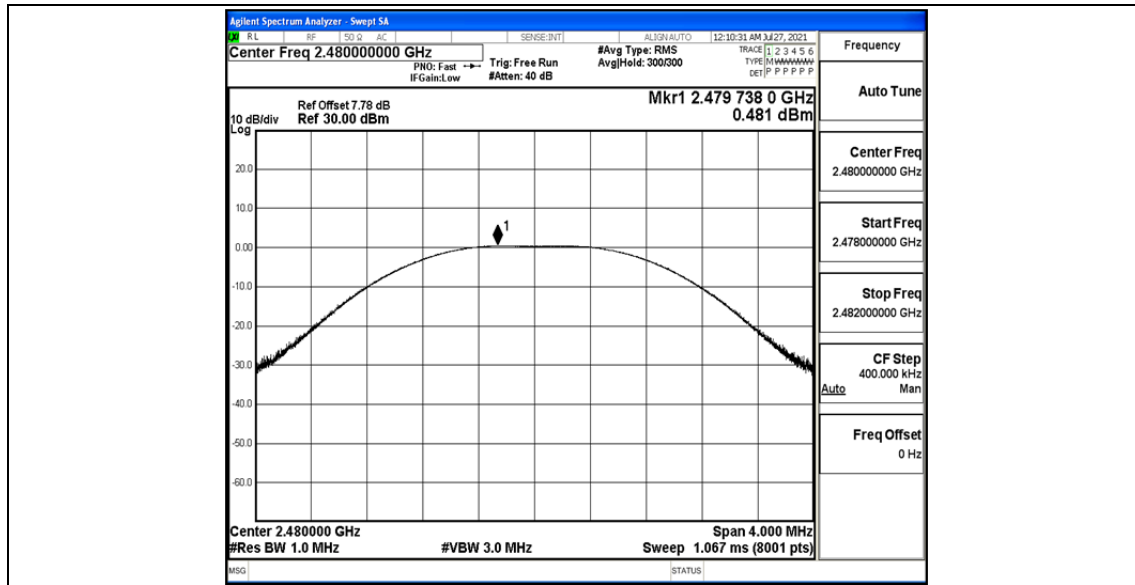
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





Appendix A.4: Maximum power spectral density

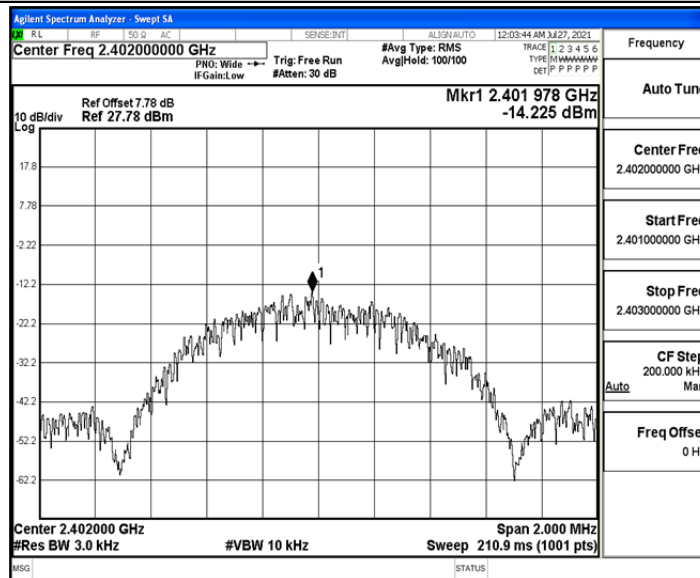
Test Result

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

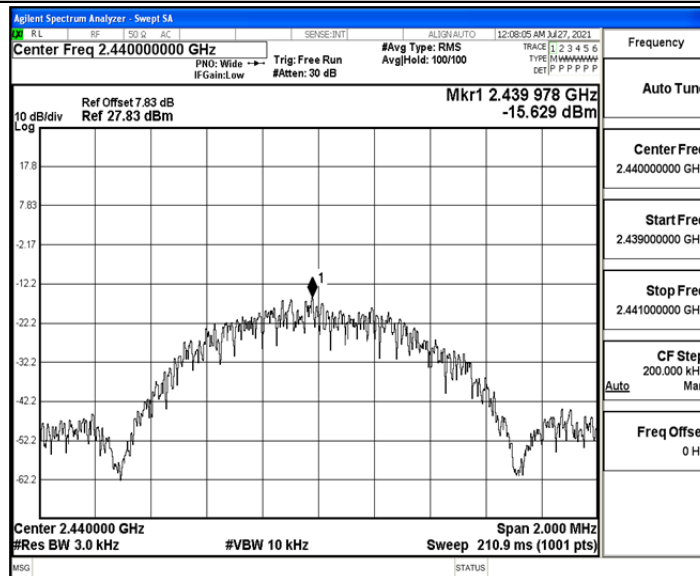


Test Graphs

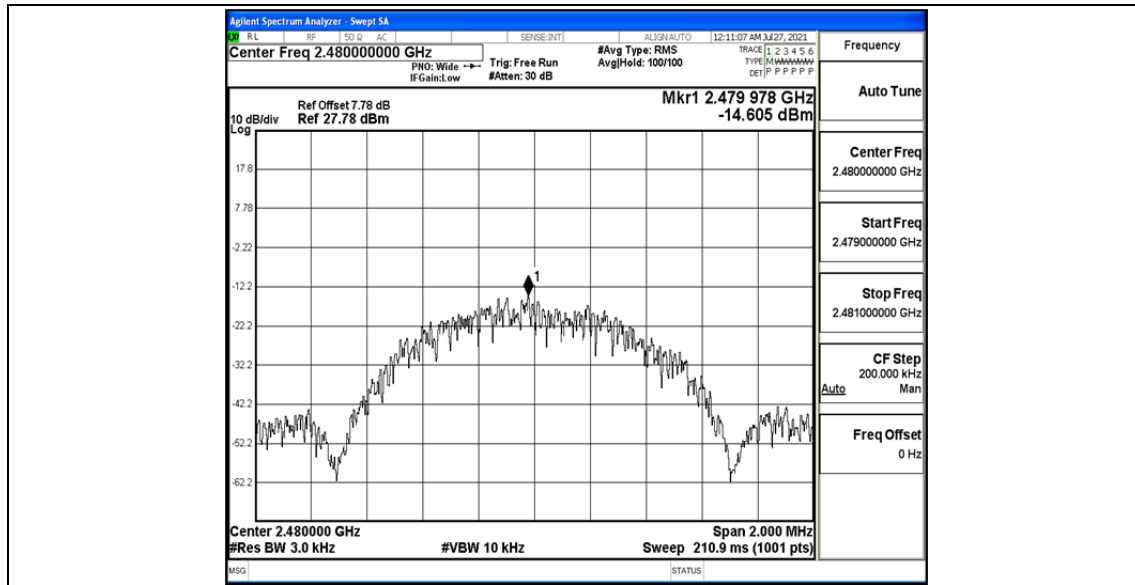
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





Appendix A.5: Band edge measurements

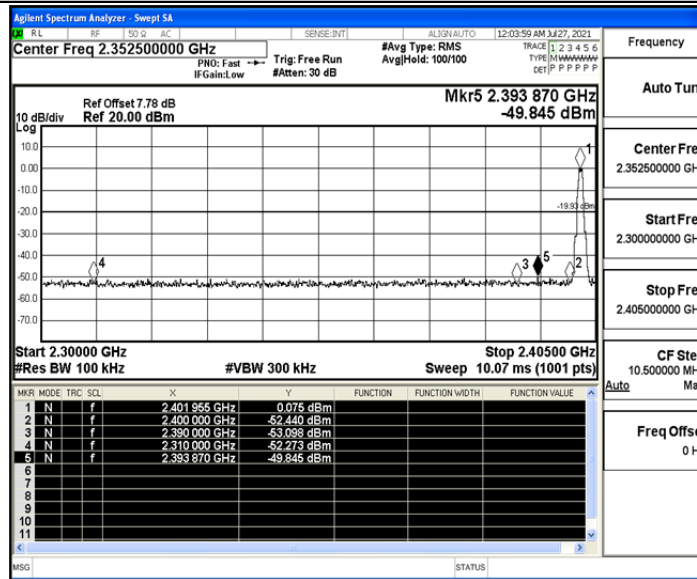
Test Result

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

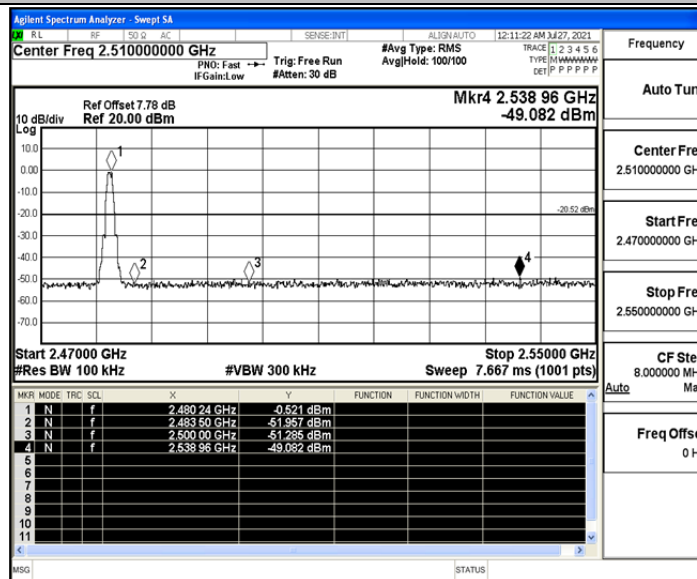


Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480





Appendix A.6: Conducted Spurious Emission

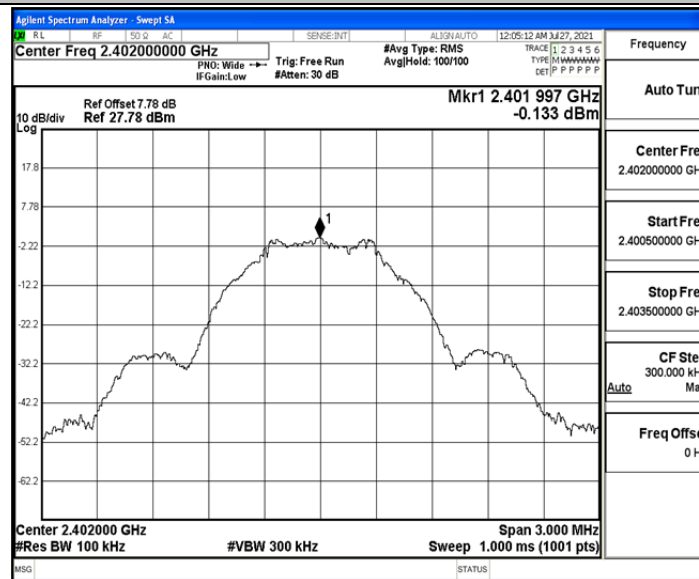
Test Result

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

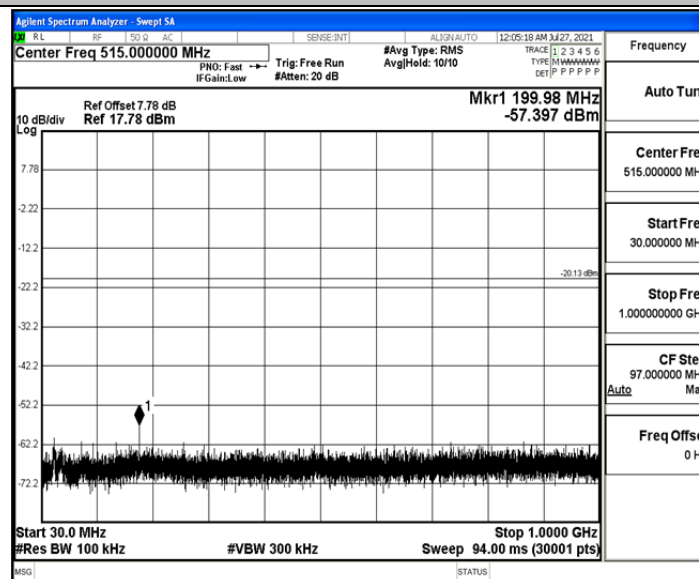


Test Graphs

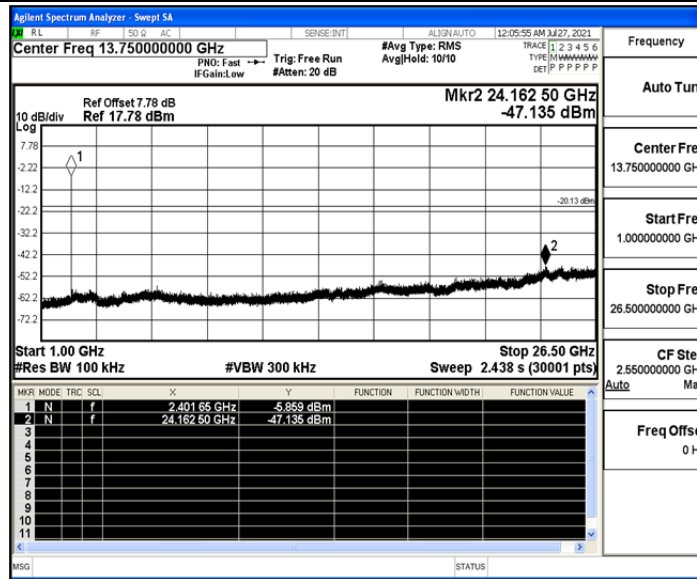
BLE_1M_Ant1_2402_0~Reference



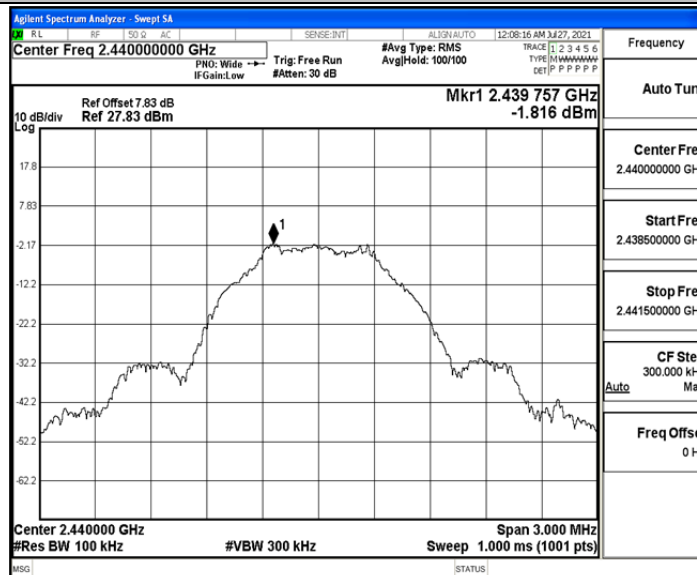
BLE_1M_Ant1_2402_30~1000



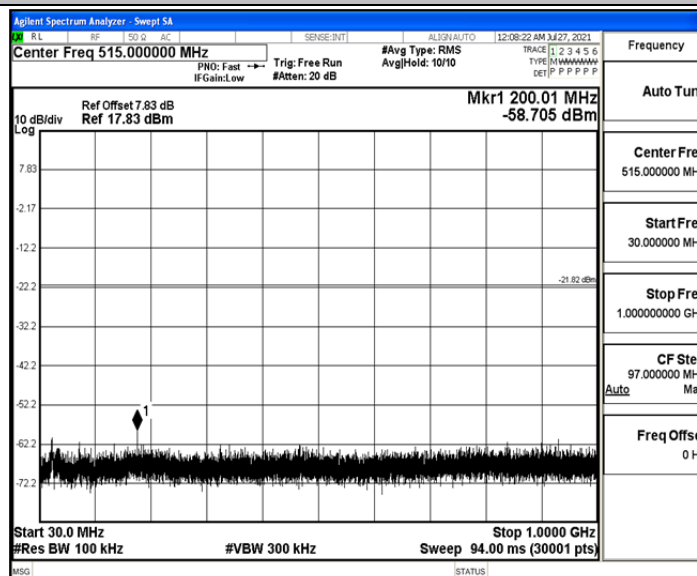
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference

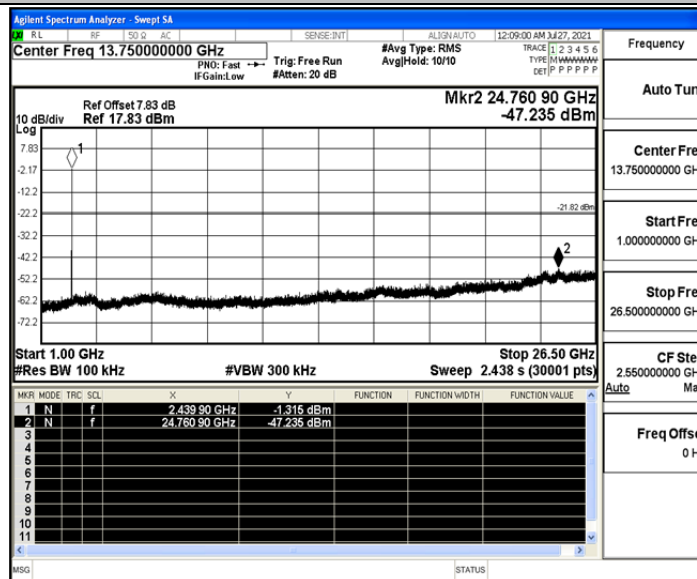


BLE_1M_Ant1_2440_30~1000

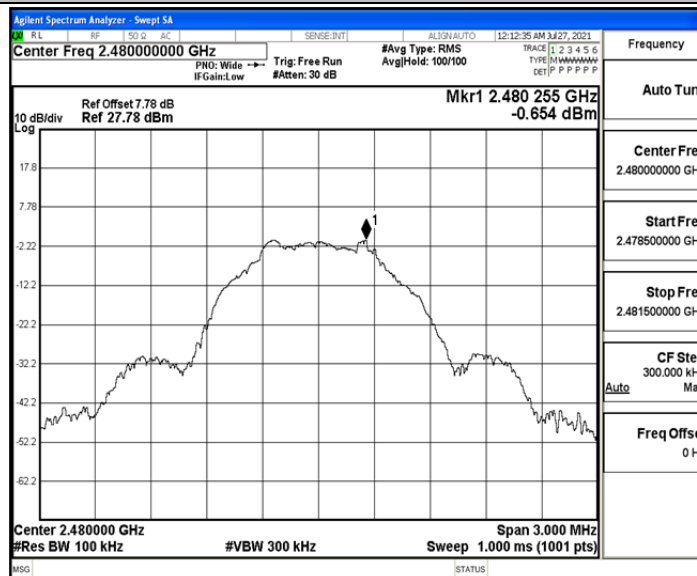




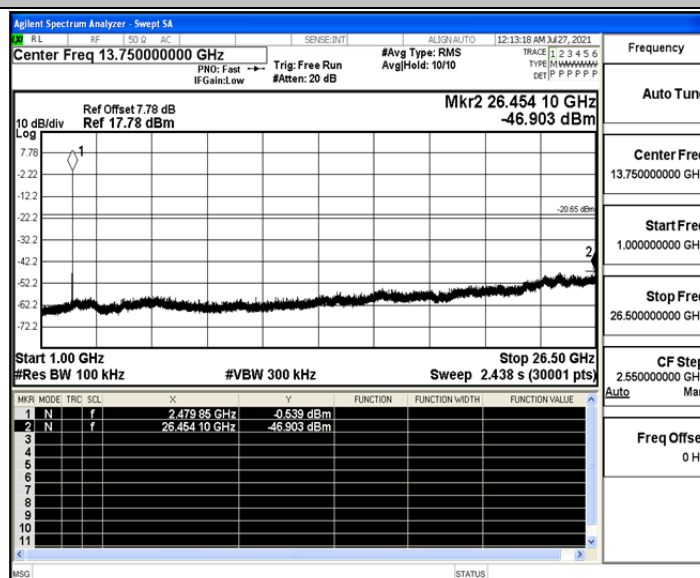
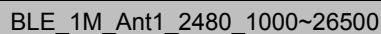
BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000





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

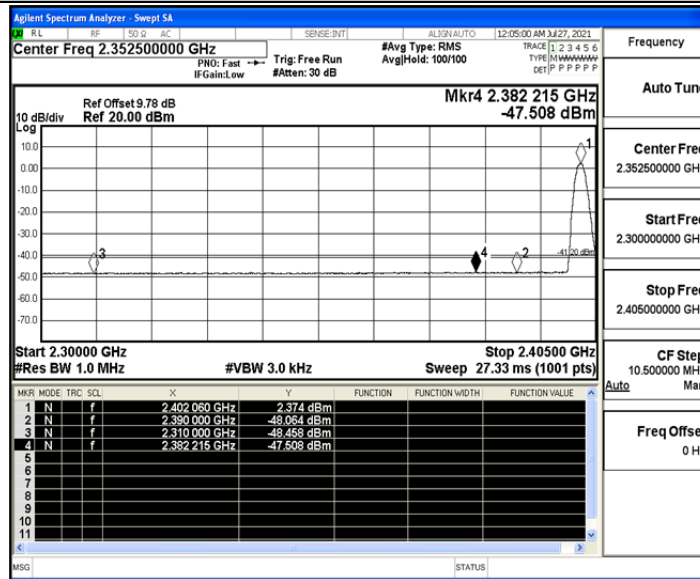
Note:

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.

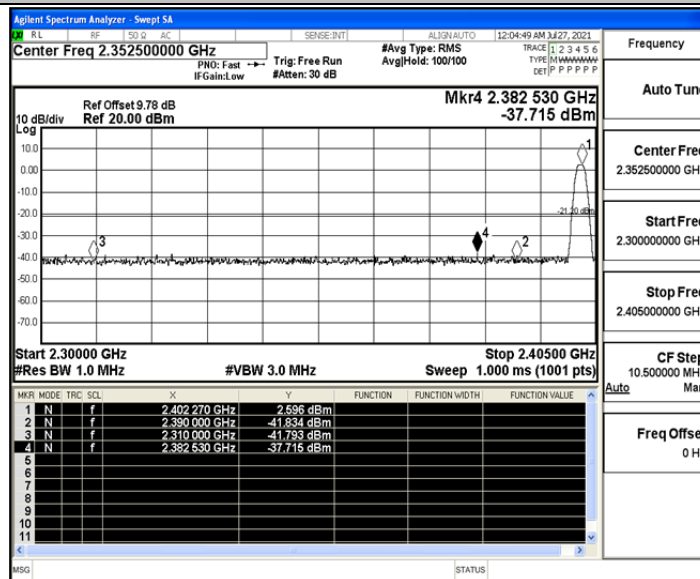


Test Graphs

BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV

Agilent Spectrum Analyzer - Swept SA

RL RF SQ Q AC SENSE:INT ALIGN:AUTO 12:12:12 AM 3/27, 2021

Center Freq 2.510000000 GHz Trg: Free Run #AvgType: RMS AvgHeld: 100/100
PHO: Fast IF Gain: Low #Atten: 30 dB

Mkr4 2.499 68 GHz
-38.331 dBm

10 dB/div Ref Offset 9.78 dB
Log Ref 20.00 dBm

Start 2.470000 GHz Stop 2.550000000 GHz
#Res BW 1.0 MHz #VBW 3.0 MHz Sweep 1.000 ms (1001 pts)

MKR	MODE	FREQ	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.479 84 GHz	2.318 dBm			
2	N	f		2.483 50 GHz	-41.500 dBm			
3	N	f		2.500 00 GHz	-41.866 dBm			
4	N	f		2.499 68 GHz	-38.331 dBm			