

FCC Appendix RF Test Data for BLE

FCC ID : 2BKDL-F18

Company : Shenzhen Jinruihuan Technology Co., Ltd

EUT : Outdoor sports Bluetooth call smartwatch

Model Number : F18

Report No. : CTA26031200801

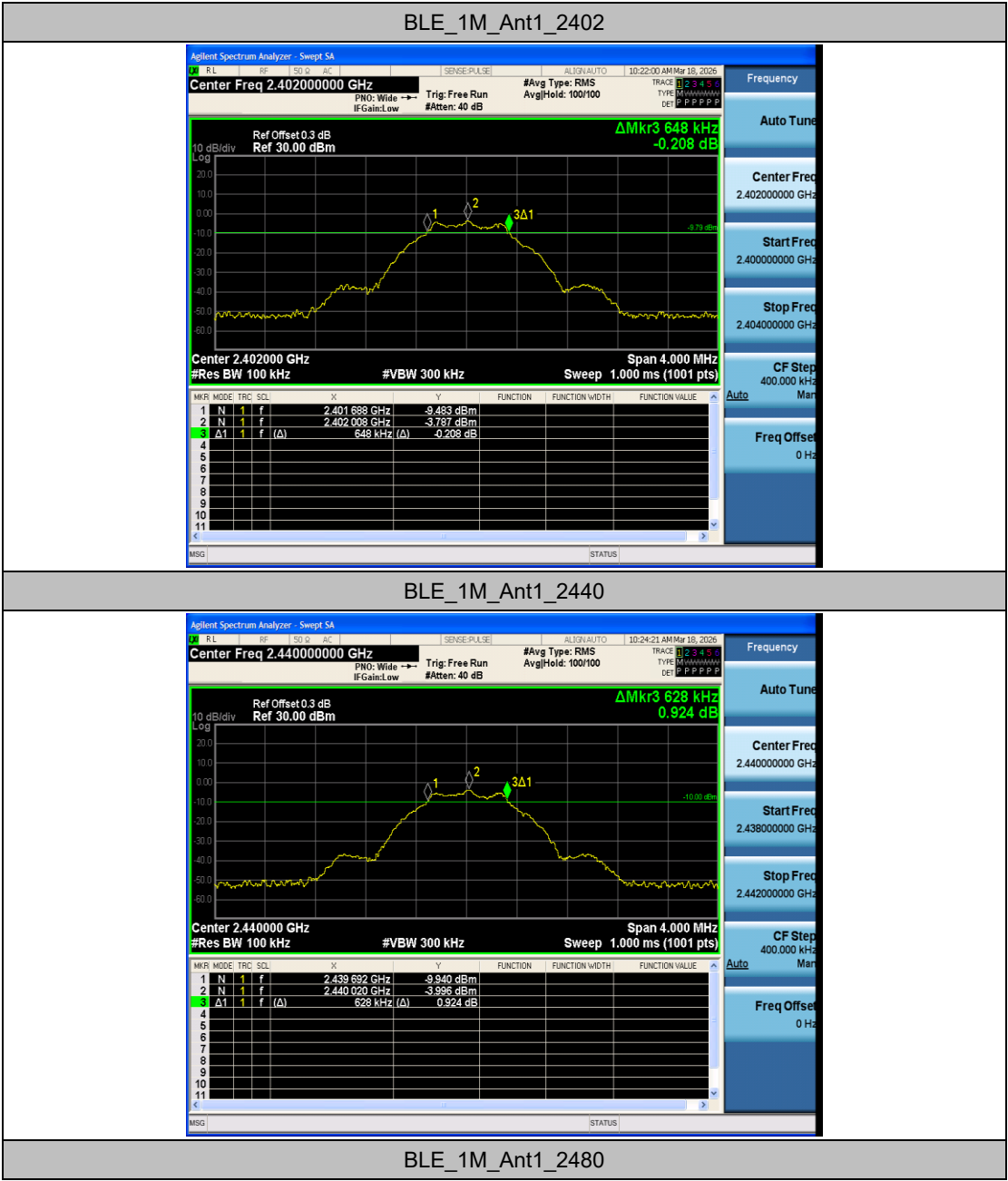
Reviewed By : Eric Wang

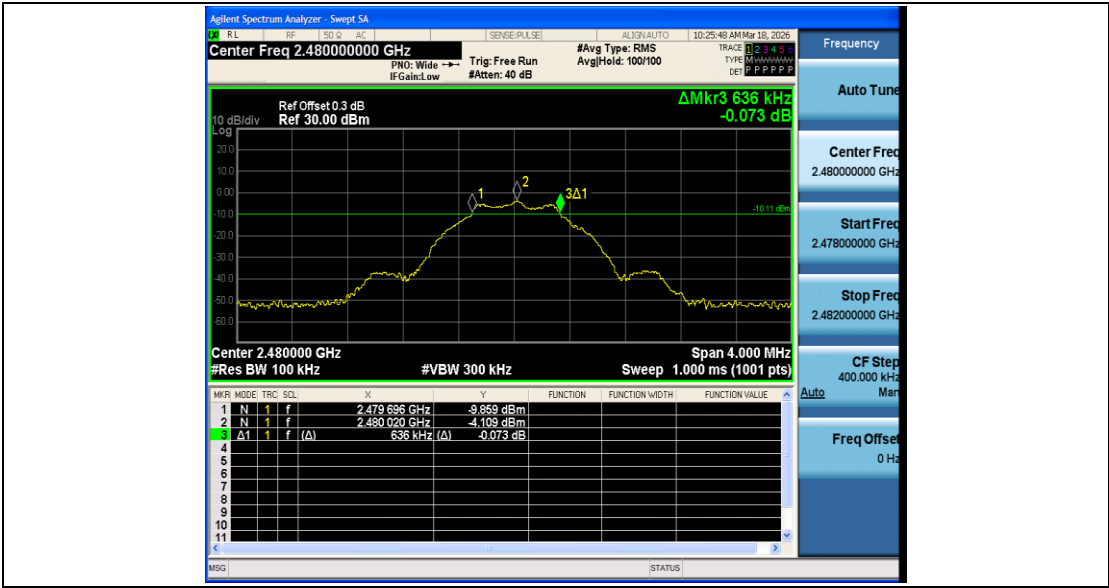
Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.648	2401.688	2402.336	0.5	PASS
		2440	0.628	2439.692	2440.320	0.5	PASS
		2480	0.636	2479.696	2480.332	0.5	PASS

Test Graphs



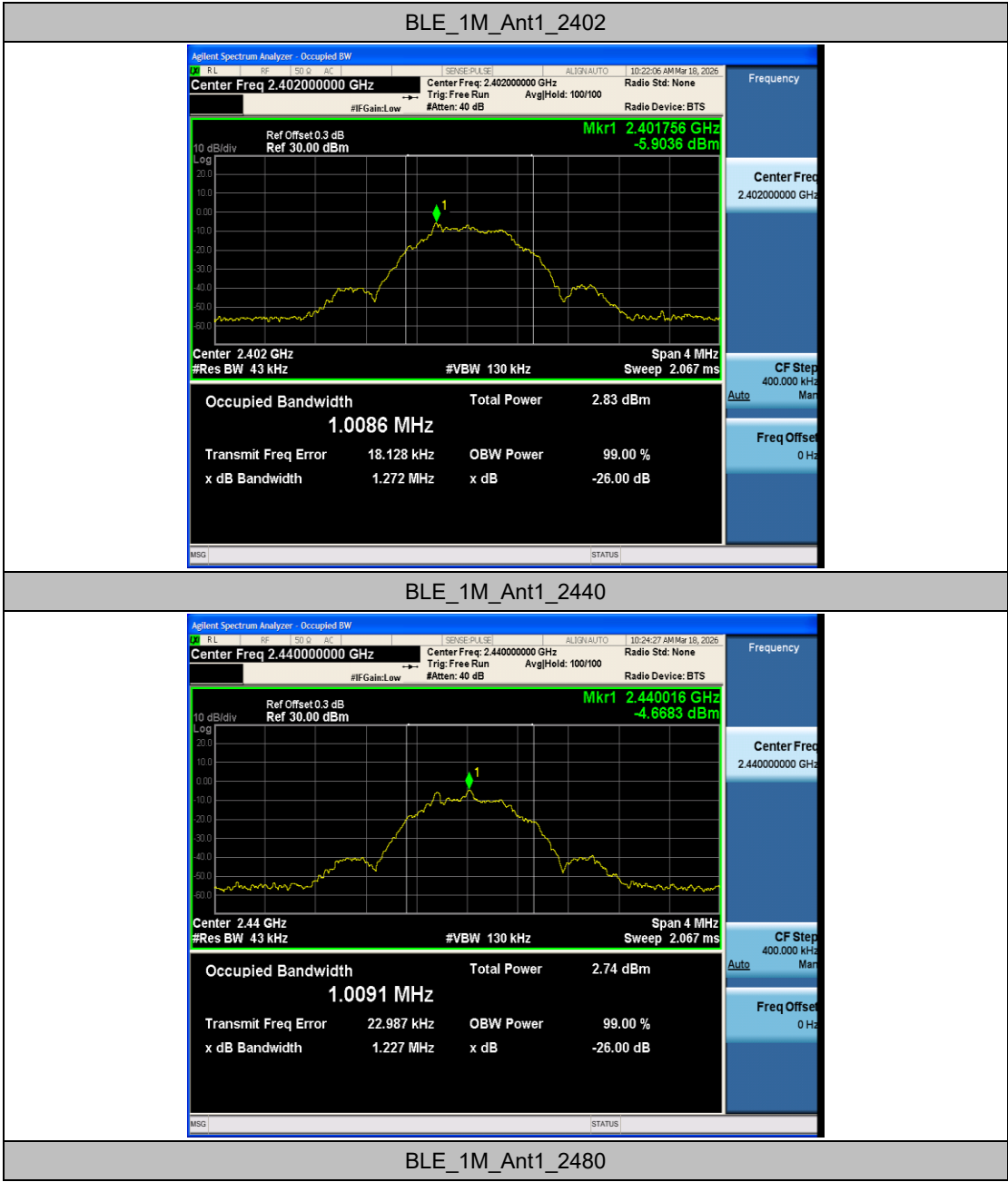


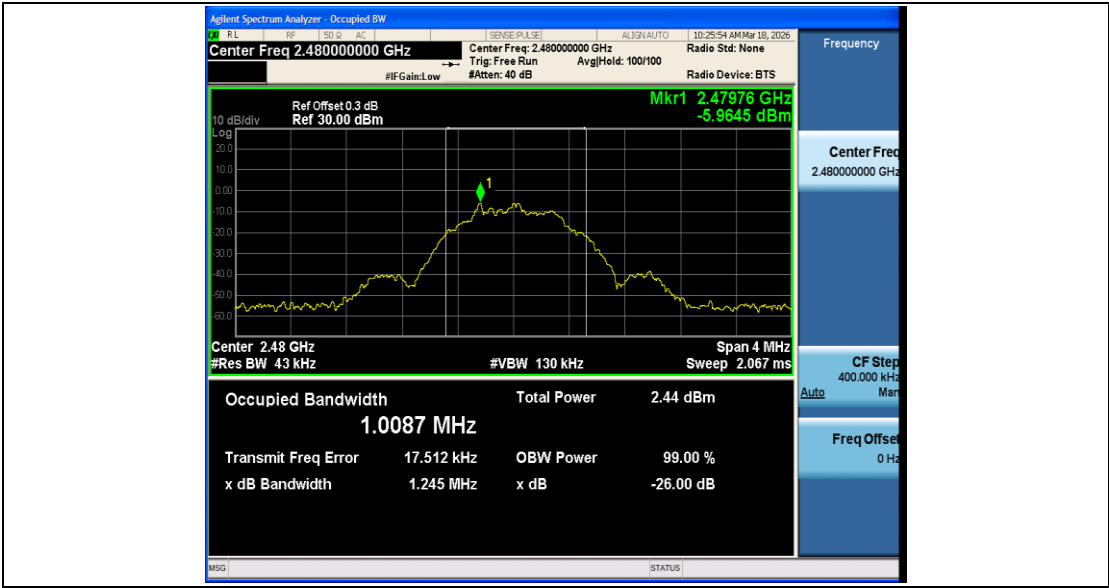
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0086	2401.5138	2402.5224	---	---
		2440	1.0091	2439.5184	2440.5275	---	---
		2480	1.0087	2479.5132	2480.5219	---	---

Test Graphs





Appendix C: Maximum conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-3.52	≤30	PASS
		2440	-3.86	≤30	PASS
		2480	-3.97	≤30	PASS

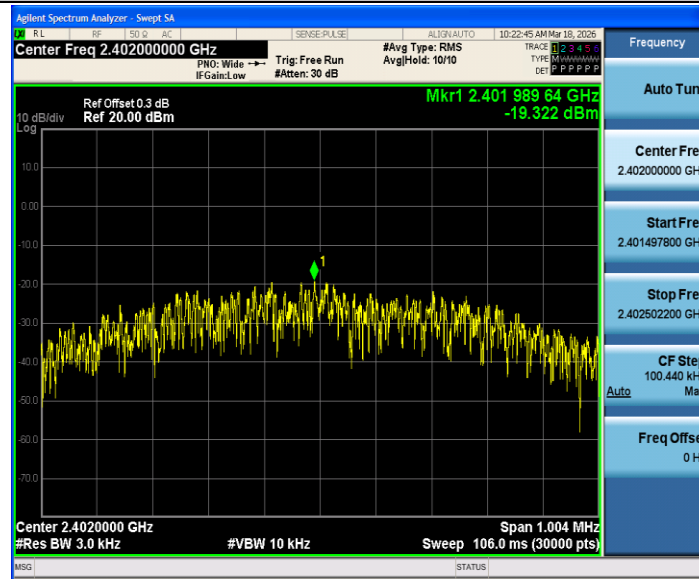
Appendix D: Maximum power spectral density

Test Result

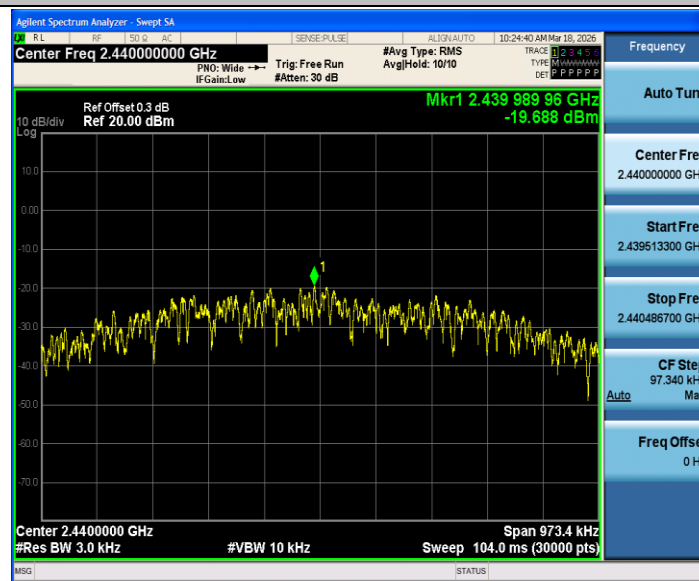
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-19.32	≤8.00	PASS
		2440	-19.69	≤8.00	PASS
		2480	-19.75	≤8.00	PASS

Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



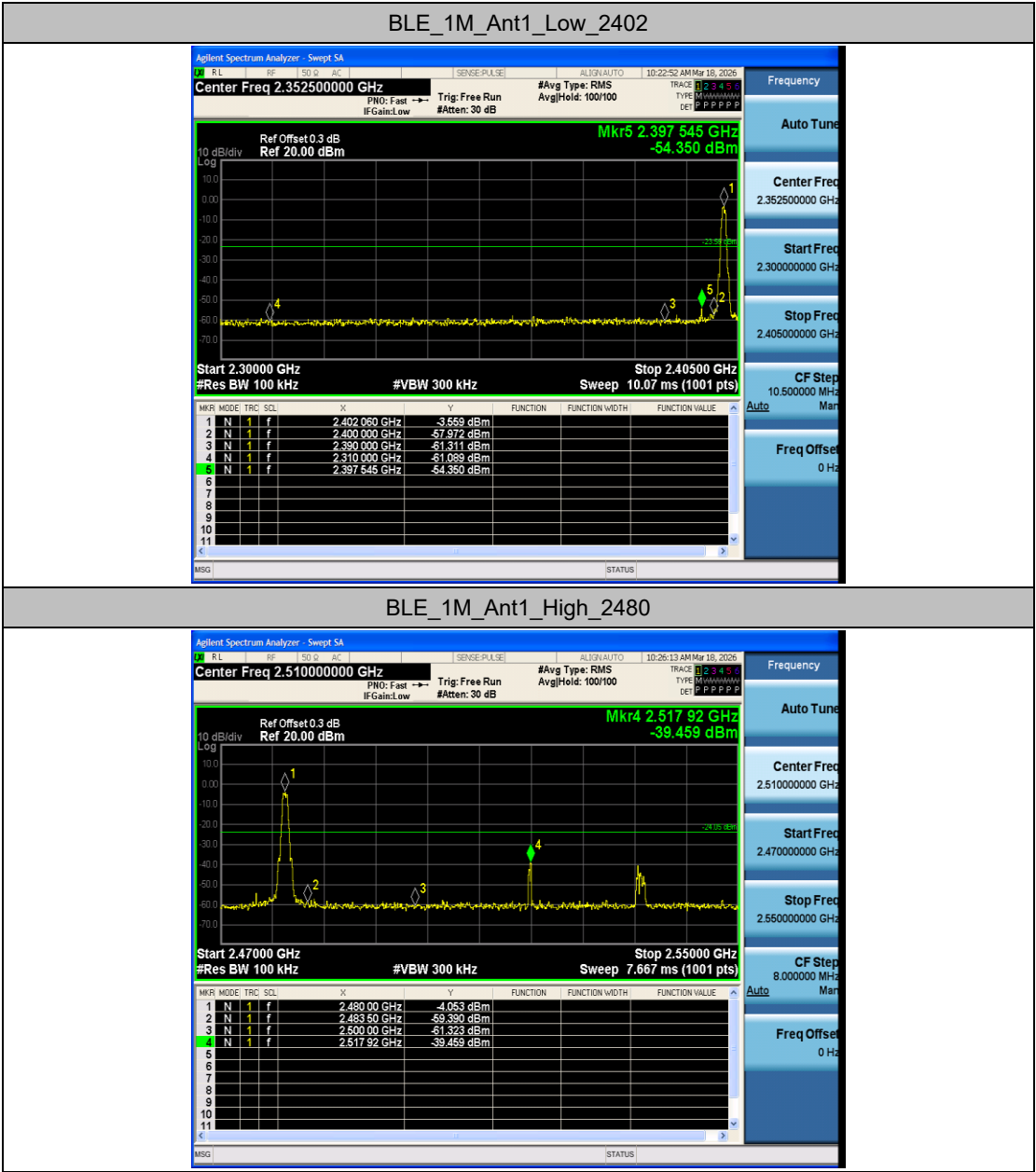
BLE_1M_Ant1_2480

Appendix E: Band edge measurements

Test Result

TestMod e	Antenn a	ChNam e	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdic t
BLE_1M	Ant1	Low	2402	-3.56	-54.35	≤-23.56	PASS
		High	2480	-4.05	-39.46	≤-24.05	PASS

Test Graphs

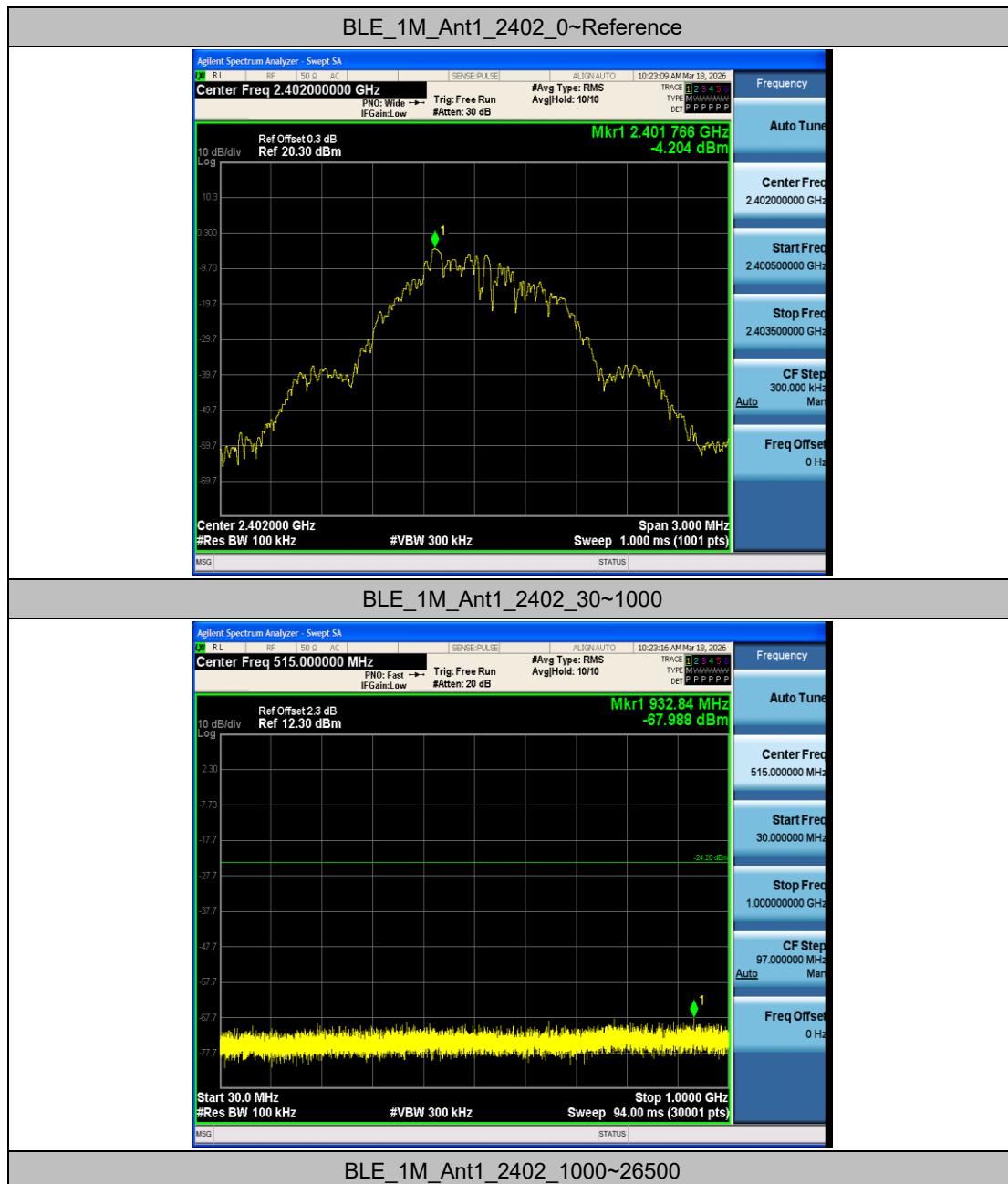


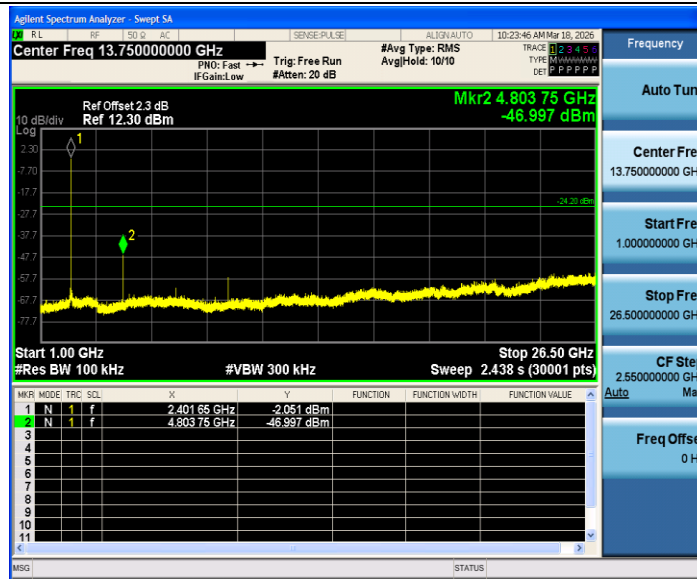
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-4.20	-4.20	---	PASS
			30~1000	-4.20	-67.99	≤-24.2	PASS
			1000~26500	-4.20	-47	≤-24.2	PASS
		2440	Reference	-5.08	-5.08	---	PASS
			30~1000	-5.08	-68.02	≤-25.08	PASS
			1000~26500	-5.08	-47.26	≤-25.08	PASS
		2480	Reference	-5.70	-5.70	---	PASS
			30~1000	-5.70	-67.95	≤-25.7	PASS
			1000~26500	-5.70	-47.33	≤-25.7	PASS

Test Graphs

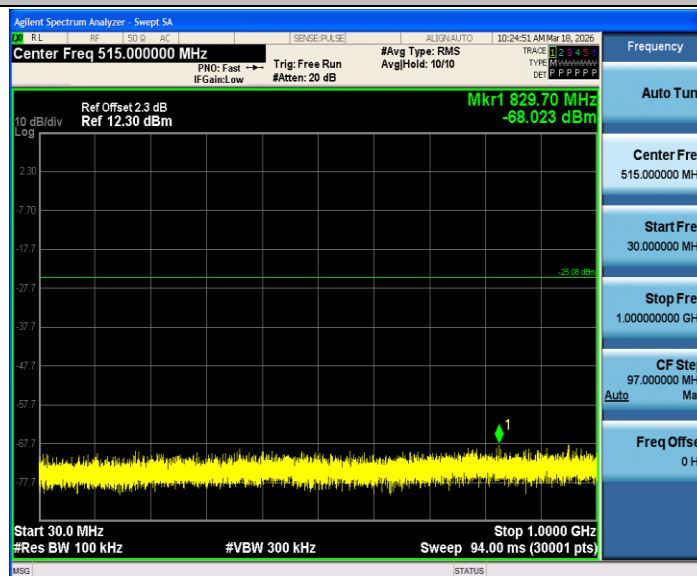




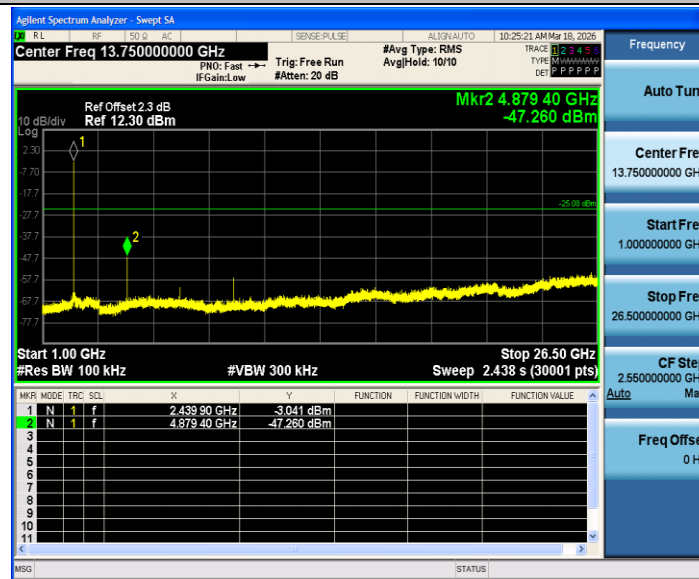
BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



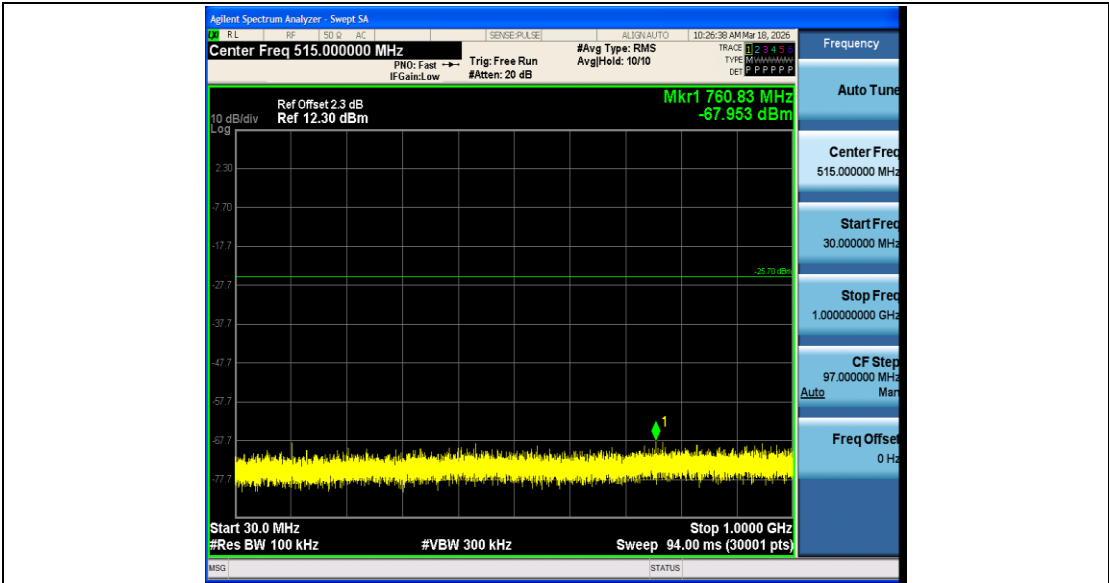
BLE_1M_Ant1_2440_1000~26500



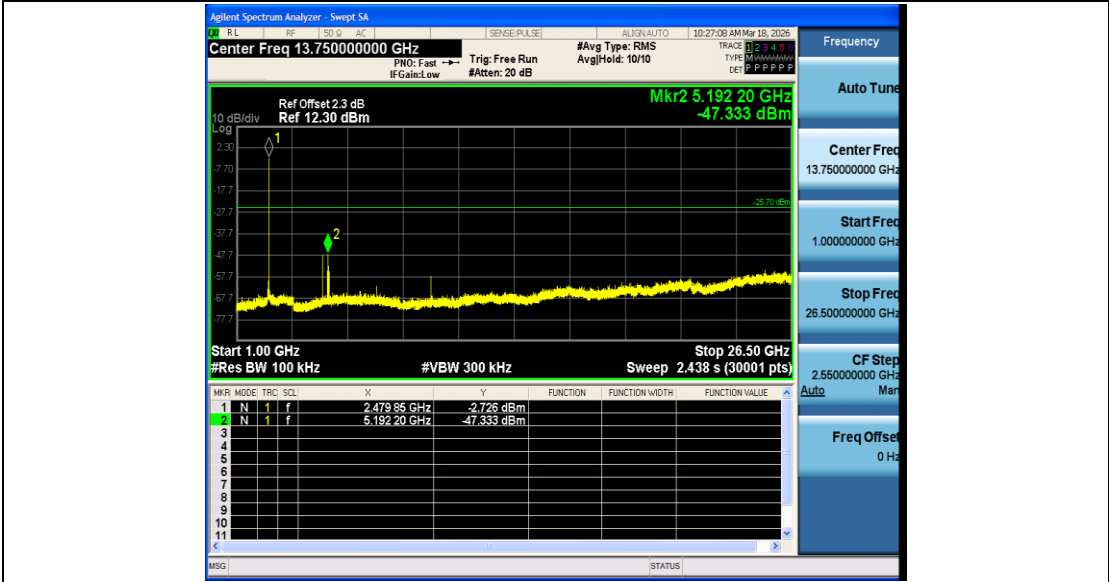
BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



Appendix G: Duty Cycle

Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	0.41	0.62	0.6613	66.13	1.80	---	---
		2440	0.41	0.62	0.6613	66.13	1.80	---	---
		2480	0.41	0.62	0.6613	66.13	1.80	---	---

The image displays two screenshots of an Agilent Spectrum Analyzer interface, showing signal measurements for two different antennas: BLE_1M_Ant1_2402 and BLE_1M_Ant1_2440.

Top Screenshot (BLE_1M_Ant1_2402):

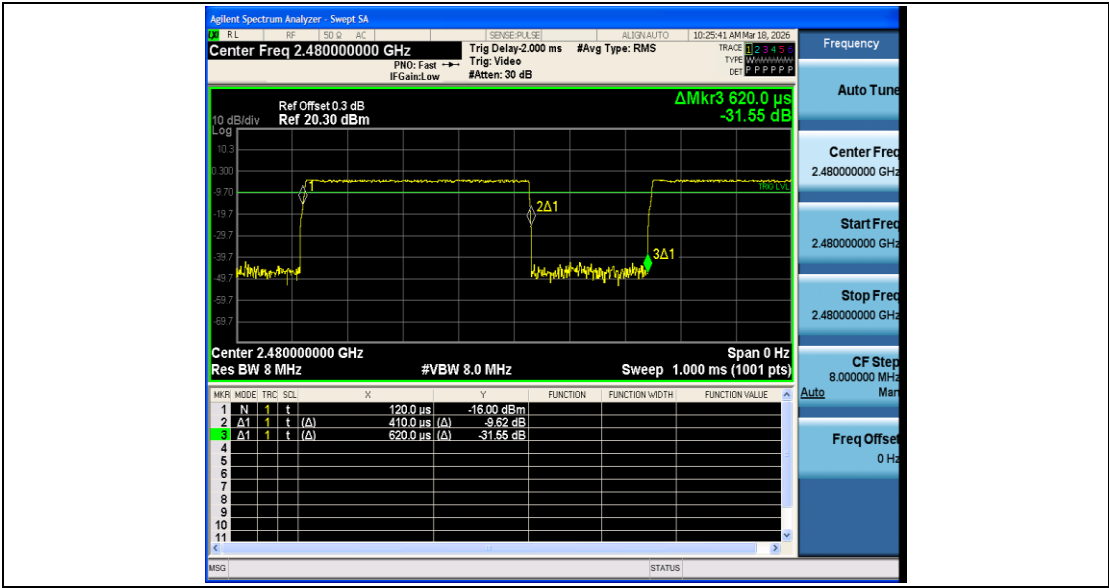
- Center Freq:** 2.402000000 GHz
- Ref Offset:** 0.3 dB
- Ref:** 20.30 dBm
- Trig Delay:** 2.000 ms
- Trig:** Video
- #Avg Type:** RMS
- Trig:** Fast
- IF Gain:** Low
- #Atten:** 30 dB
- Span:** 0 Hz
- Res BW:** 8 MHz
- #VBW:** 8.0 MHz
- Sweep:** 1.000 ms (1001 pts)
- Measurement Results Table:**

MKR	MODE	TRIG	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	t	120.0 μs	-14.38 dBm			
2	Δ1	1	t	410.0 μs	-17.23 dB			
3	Δ1	1	t	620.0 μs	-17.39 dB			

Bottom Screenshot (BLE_1M_Ant1_2440):

- Center Freq:** 2.440000000 GHz
- Ref Offset:** 0.3 dB
- Ref:** 20.30 dBm
- Trig Delay:** 2.000 ms
- Trig:** Video
- #Avg Type:** RMS
- Trig:** Fast
- IF Gain:** Low
- #Atten:** 30 dB
- Span:** 0 Hz
- Res BW:** 8 MHz
- #VBW:** 8.0 MHz
- Sweep:** 1.000 ms (1001 pts)
- Measurement Results Table:**

MKR	MODE	TRIG	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	t	120.0 μs	-14.97 dBm			
2	Δ1	1	t	410.0 μs	-18.44 dB			
3	Δ1	1	t	620.0 μs	-19.73 dB			



Appendix H: Emissions in Restricted Bands

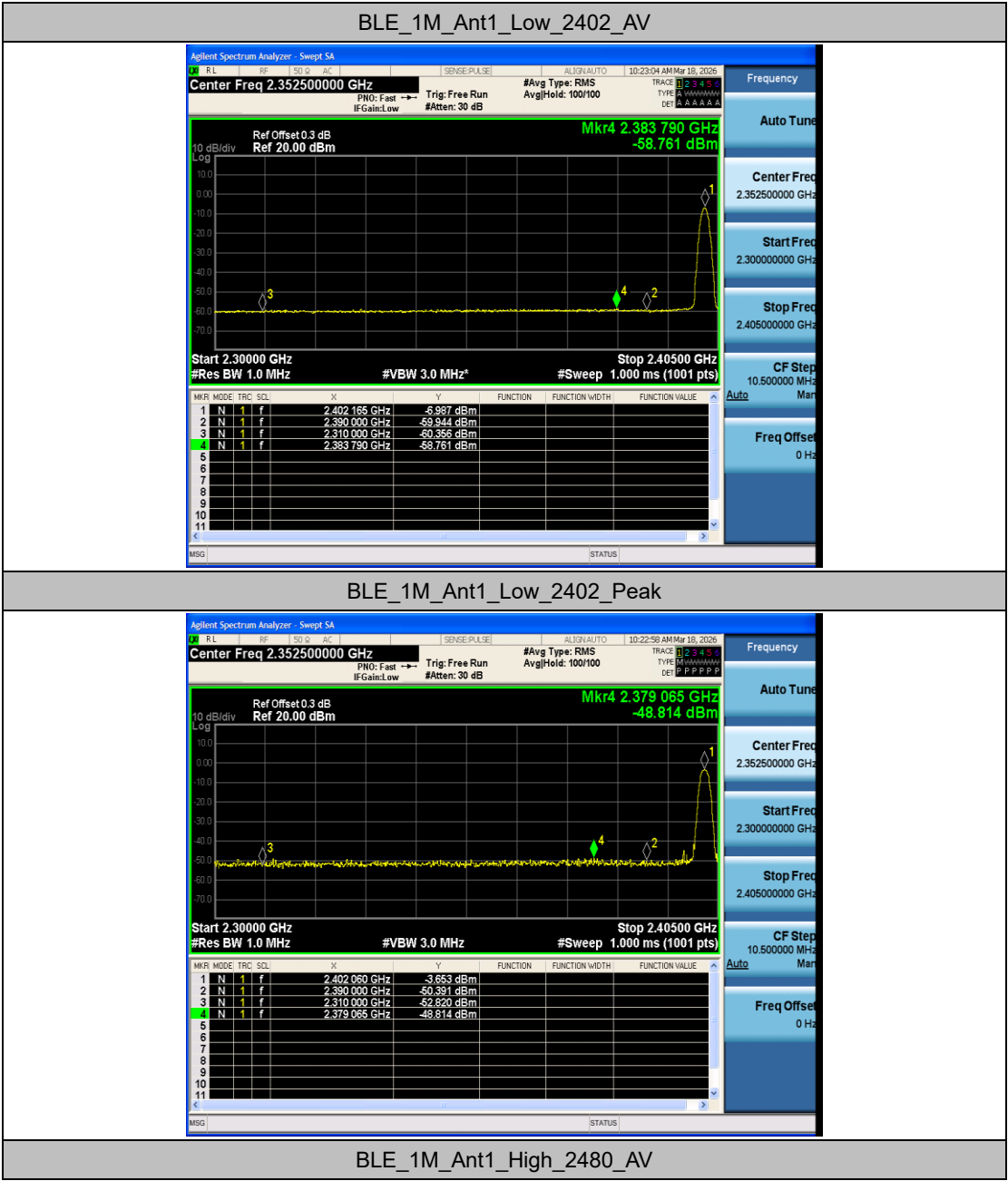
Test Result

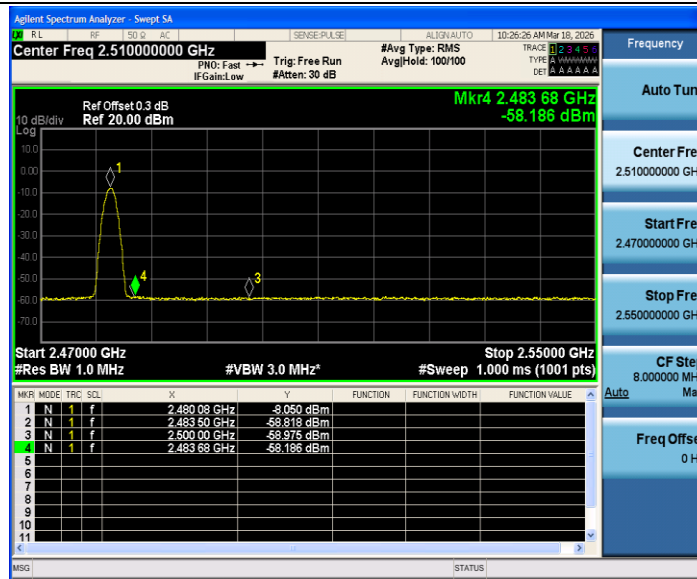
TestMode	Antenna	Channel	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-60.36	2.00	1.80	38.64	≤54	PASS
				AV	2383.790	-58.76	2.00	1.80	40.24	≤54	PASS
				AV	2390.000	-59.94	2.00	1.80	39.06	≤54	PASS
				Peak	2310.000	-52.82	2.00	0.00	44.38	≤74	PASS
				Peak	2379.065	-48.81	2.00	0.00	48.39	≤74	PASS
				Peak	2390.000	-50.39	2.00	0.00	46.81	≤74	PASS
		High	2480	AV	2483.500	-58.82	2.00	1.80	40.18	≤54	PASS
				AV	2483.680	-58.19	2.00	1.80	40.81	≤54	PASS
				AV	2500.000	-58.98	2.00	1.80	40.02	≤54	PASS
				Peak	2483.500	-49.21	2.00	0.00	47.99	≤74	PASS
				Peak	2489.120	-47.7	2.00	0.00	49.50	≤74	PASS
				Peak	2500.000	-51.15	2.00	0.00	46.05	≤74	PASS

Note:

1. 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_High_2480_Peak

