

RF Test Data for BT(BLE) (Conducted Measurement)

Product Name: SKYBOXE 4G

Trade Mark: SKYBOXE

Test Model: SB4GTVLM940

FCC ID: 2AWJS-SB4GTVLM940

Environmental Conditions

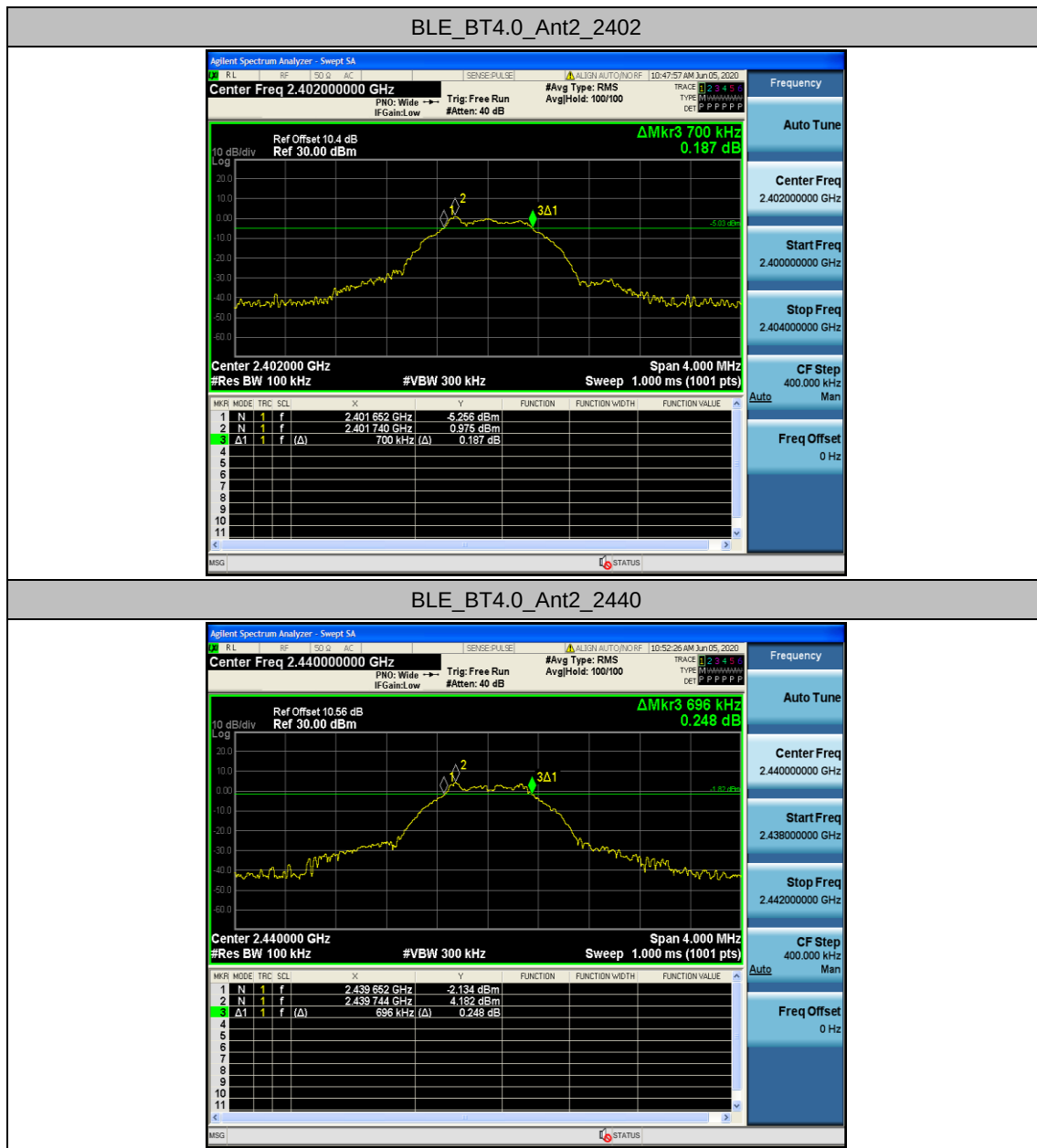
Temperature:	25.5°C
Relative Humidity:	55.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

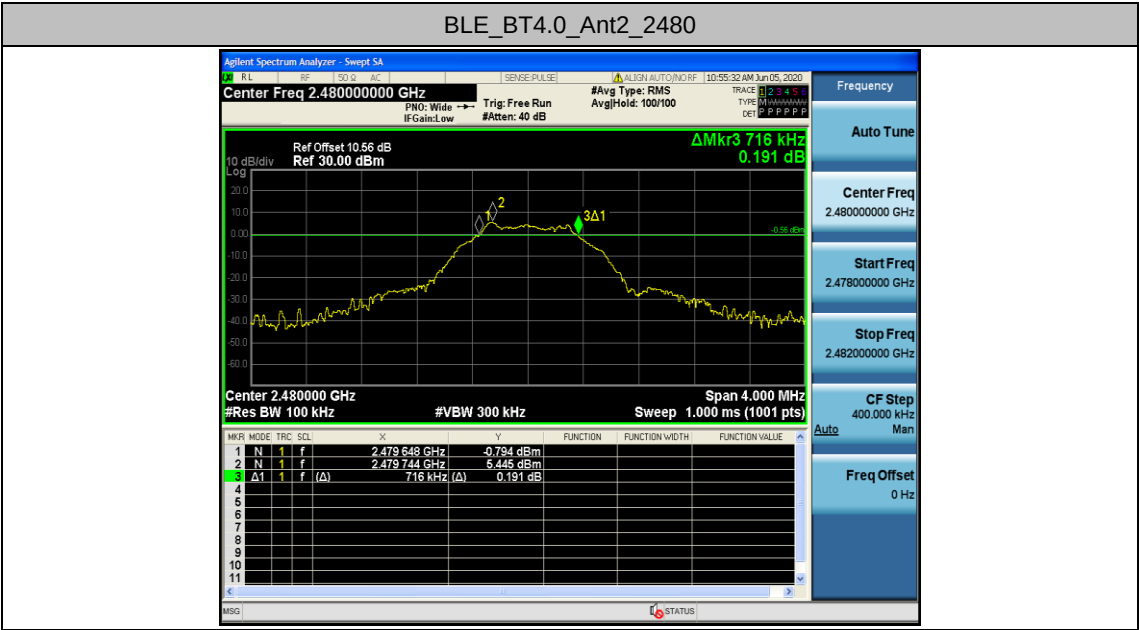
Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_BT4.0	Ant2	2402	0.700	2401.652	2402.352	0.5	PASS
		2440	0.696	2439.652	2440.348	0.5	PASS
		2480	0.716	2479.648	2480.364	0.5	PASS

Test Graphs



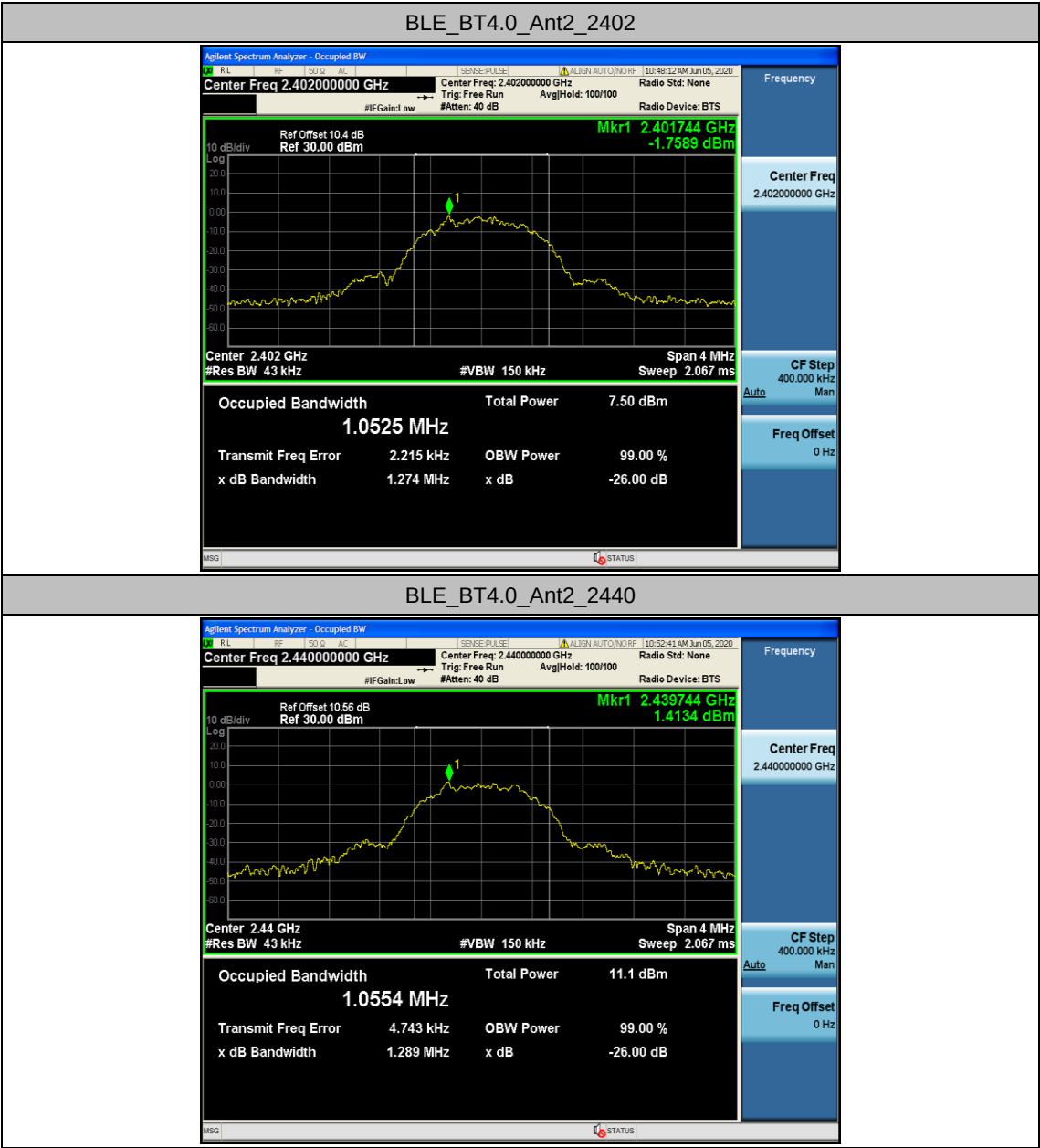


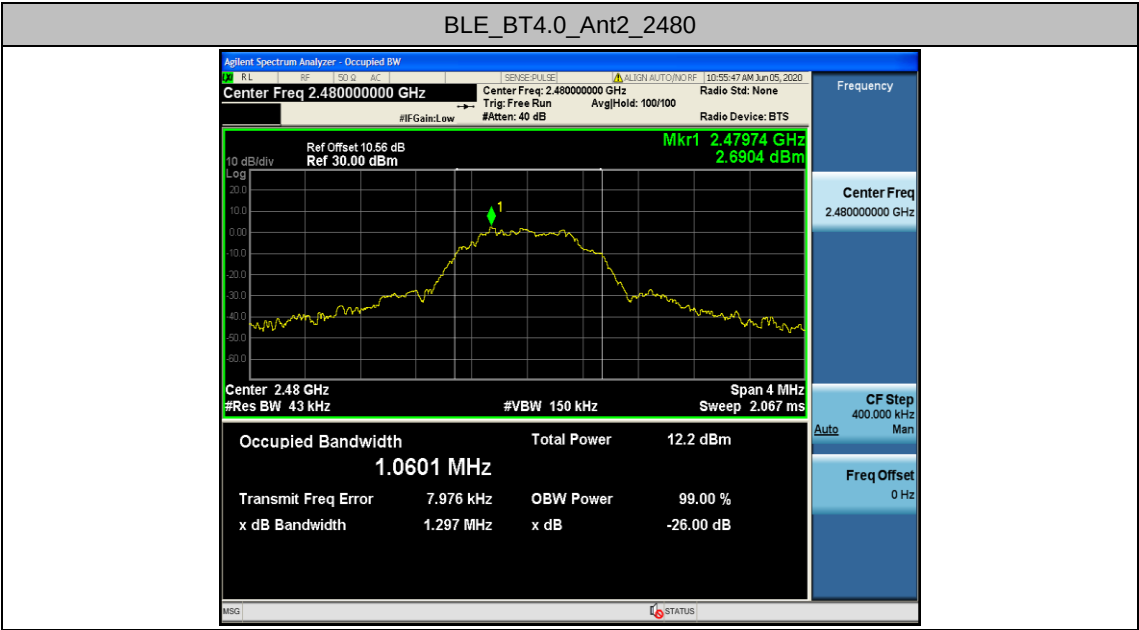
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_BT4.0	Ant2	2402	1.0525	2401.476	2402.528	---	PASS
		2440	1.0554	2439.477	2440.532	---	PASS
		2480	1.0601	2479.478	2480.538	---	PASS

Test Graphs



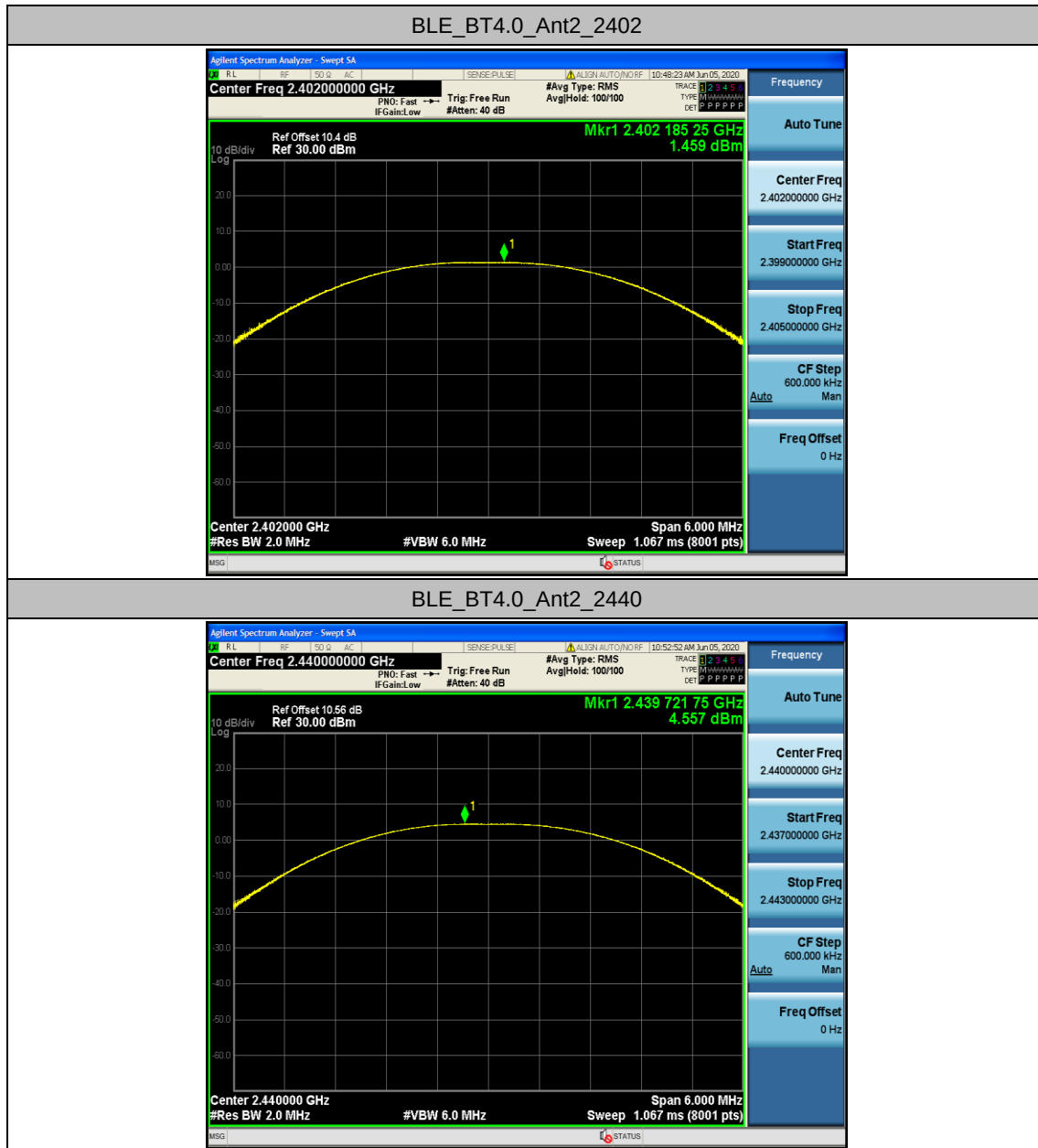


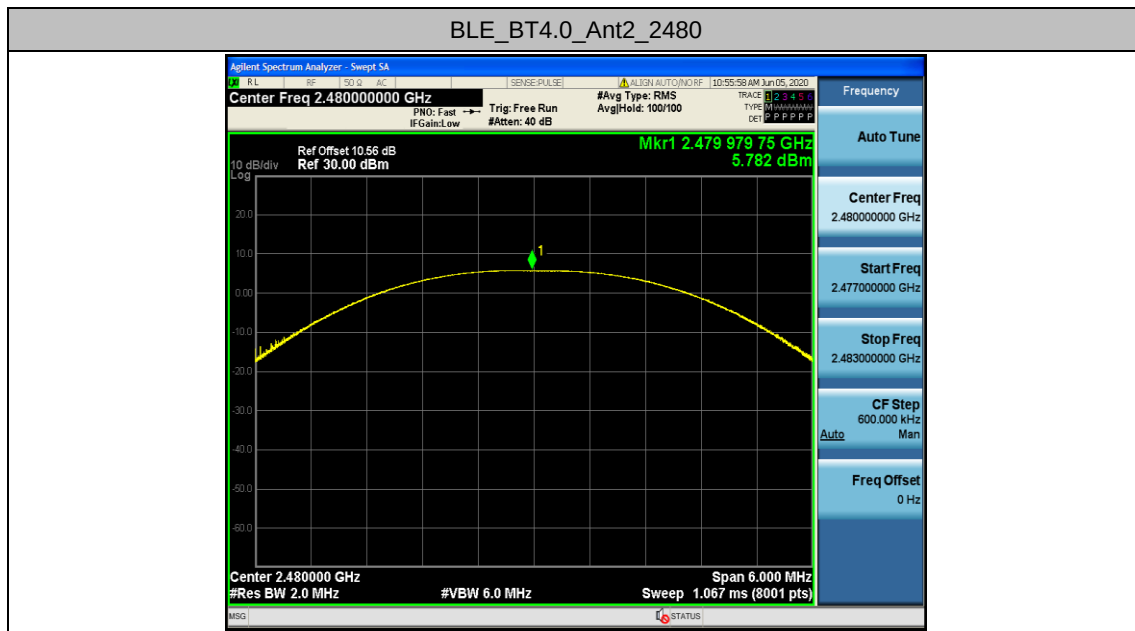
Appendix C: Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_BT4.0	Ant2	2402	1.46	<=30	PASS
		2440	4.56	<=30	PASS
		2480	5.78	<=30	PASS

Test Graphs





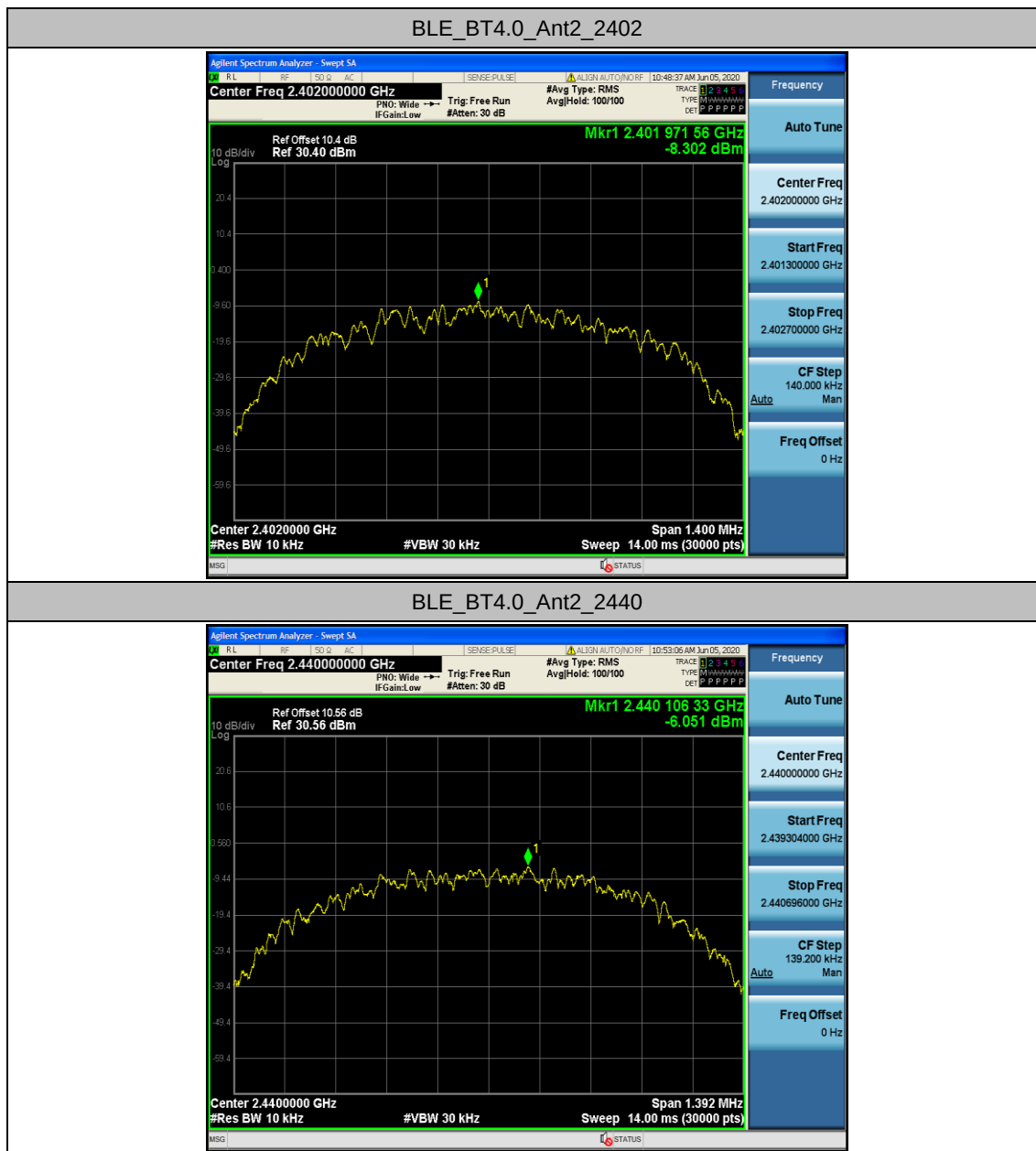
Appendix D: Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Conveter factor(dB)	Result 3kHz (dBm)	Limit[dBm/3kHz]	Verdict
BLE_BT4.0	Ant2	2402	-8.3	5.23	-13.53	<=8	PASS
		2440	-6.05	5.23	-11.28	<=8	PASS
		2480	-3.65	5.23	-8.88	<=8	PASS

1. Conveter factor = $10 * \lg(\text{RBW}/3 \text{ kHz})$
2. Result 3kHz = Result - Conveter factor

Test Graphs



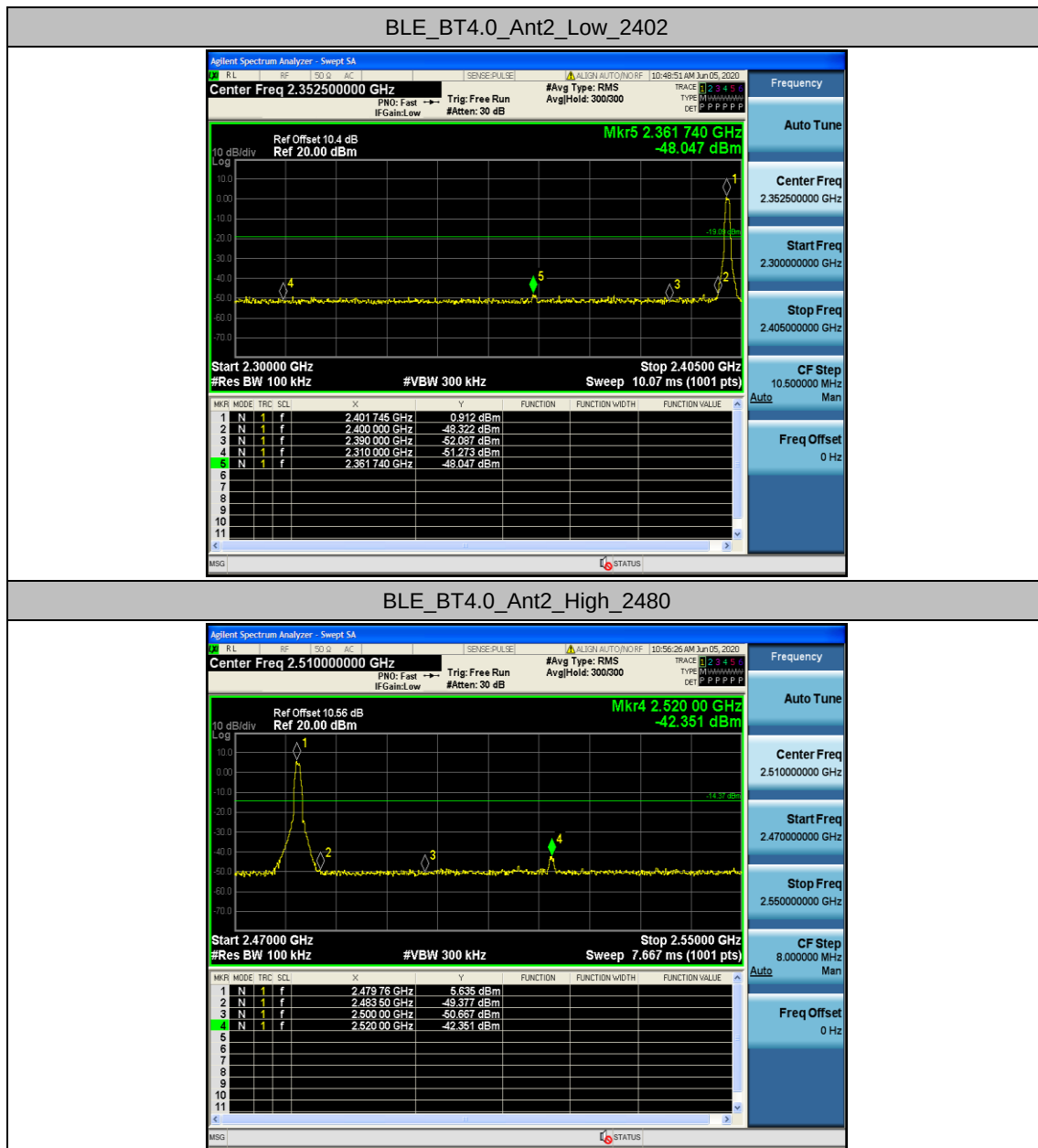


Appendix E: Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_BT4.0	Ant2	Low	2402	0.91	-48.05	<=-19.09	PASS
		High	2480	5.64	-42.35	<=-14.37	PASS

Test Graphs

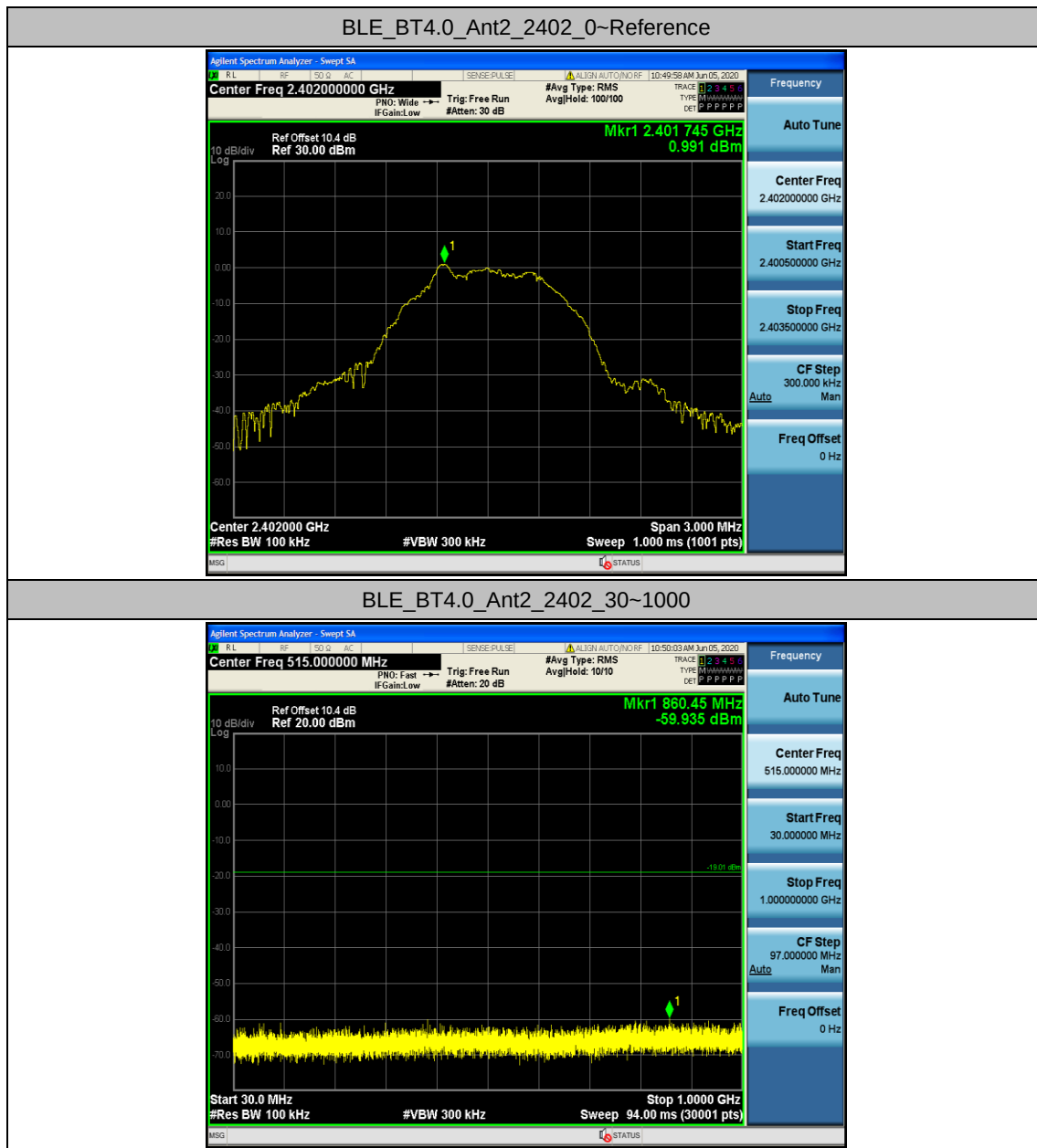


Appendix F: Conducted Spurious Emission

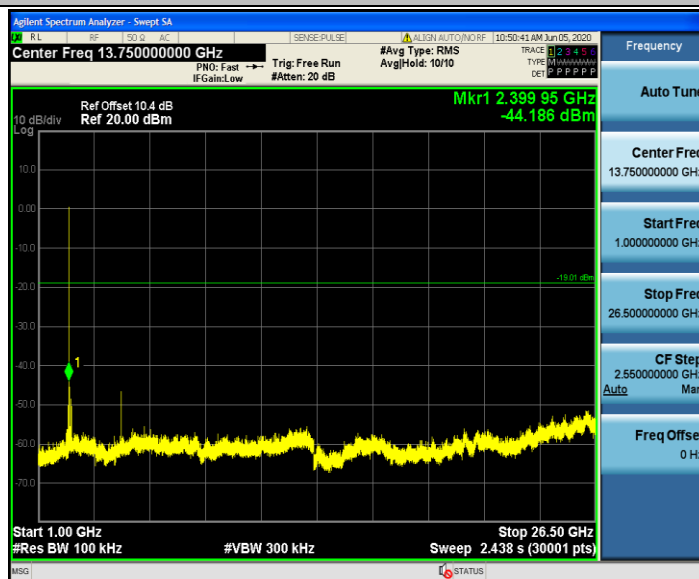
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_BT4.0	Ant2	2402	Reference	0.991	0.991	---	PASS
			30~1000	30~1000	-59.935	<=-19.01	PASS
			1000~26500	1000~26500	-44.186	<=-19.01	PASS
		2440	Reference	3.406	3.406	---	PASS
			30~1000	30~1000	-58.57	<=-16.59	PASS
			1000~26500	1000~26500	-37.883	<=-16.59	PASS
		2480	Reference	5.509	5.509	---	PASS
			30~1000	30~1000	-59.898	<=-14.49	PASS
			1000~26500	1000~26500	-34.739	<=-14.49	PASS

Test Graphs



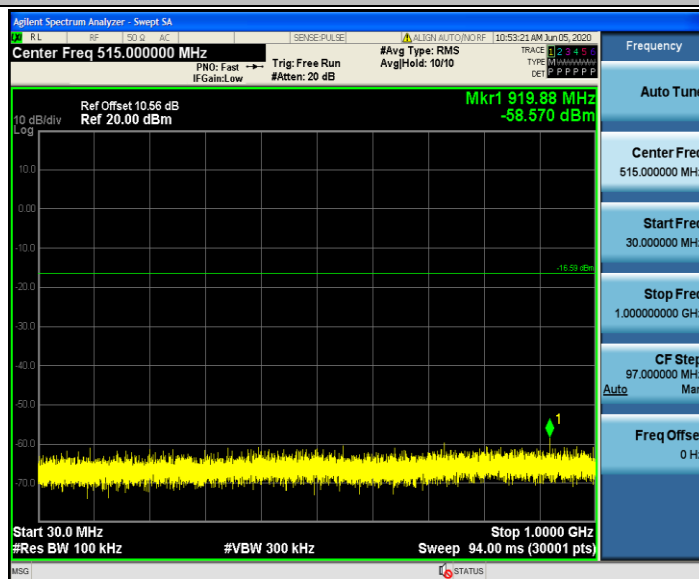
BLE_BT4.0_Ant2_2402_1000~26500



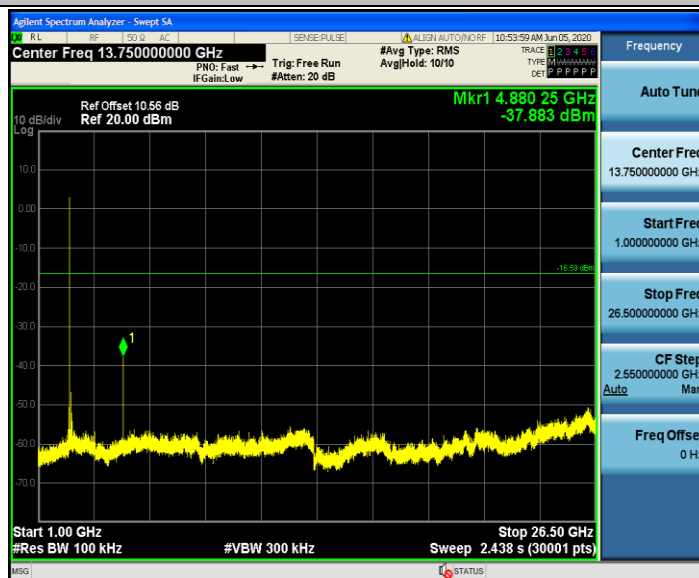
BLE_BT4.0_Ant2_2440_0~Reference



BLE_BT4.0_Ant2_2440_30~1000



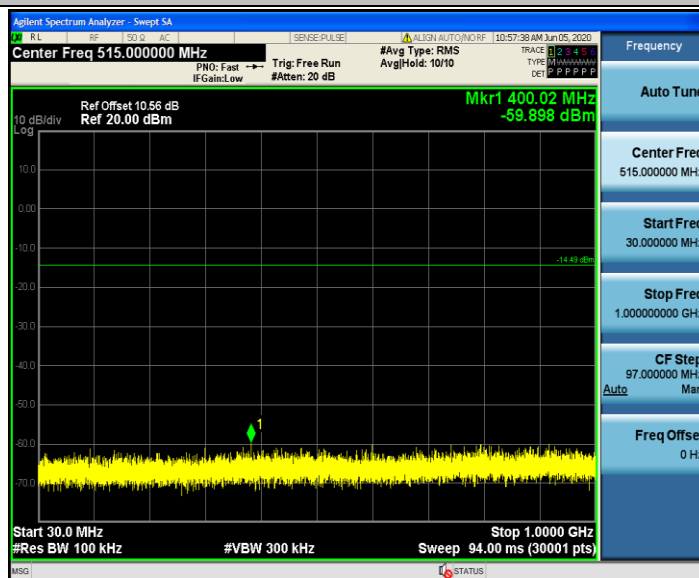
BLE_BT4.0_Ant2_2440_1000~26500

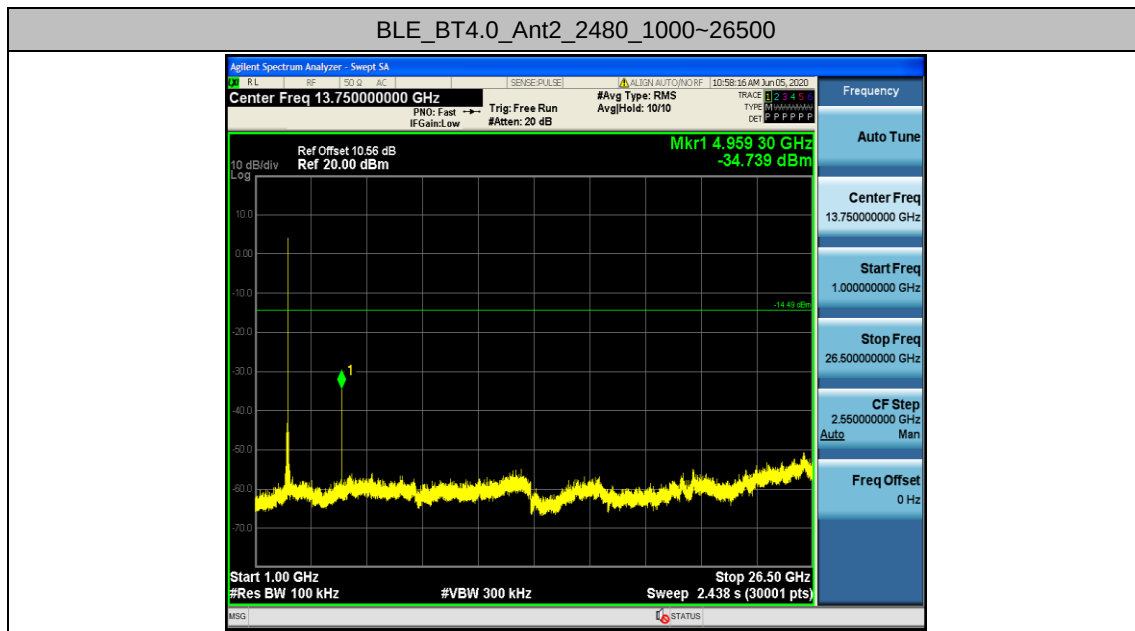


BLE_BT4.0_Ant2_2480_0~Reference



BLE_BT4.0_Ant2_2480_30~1000



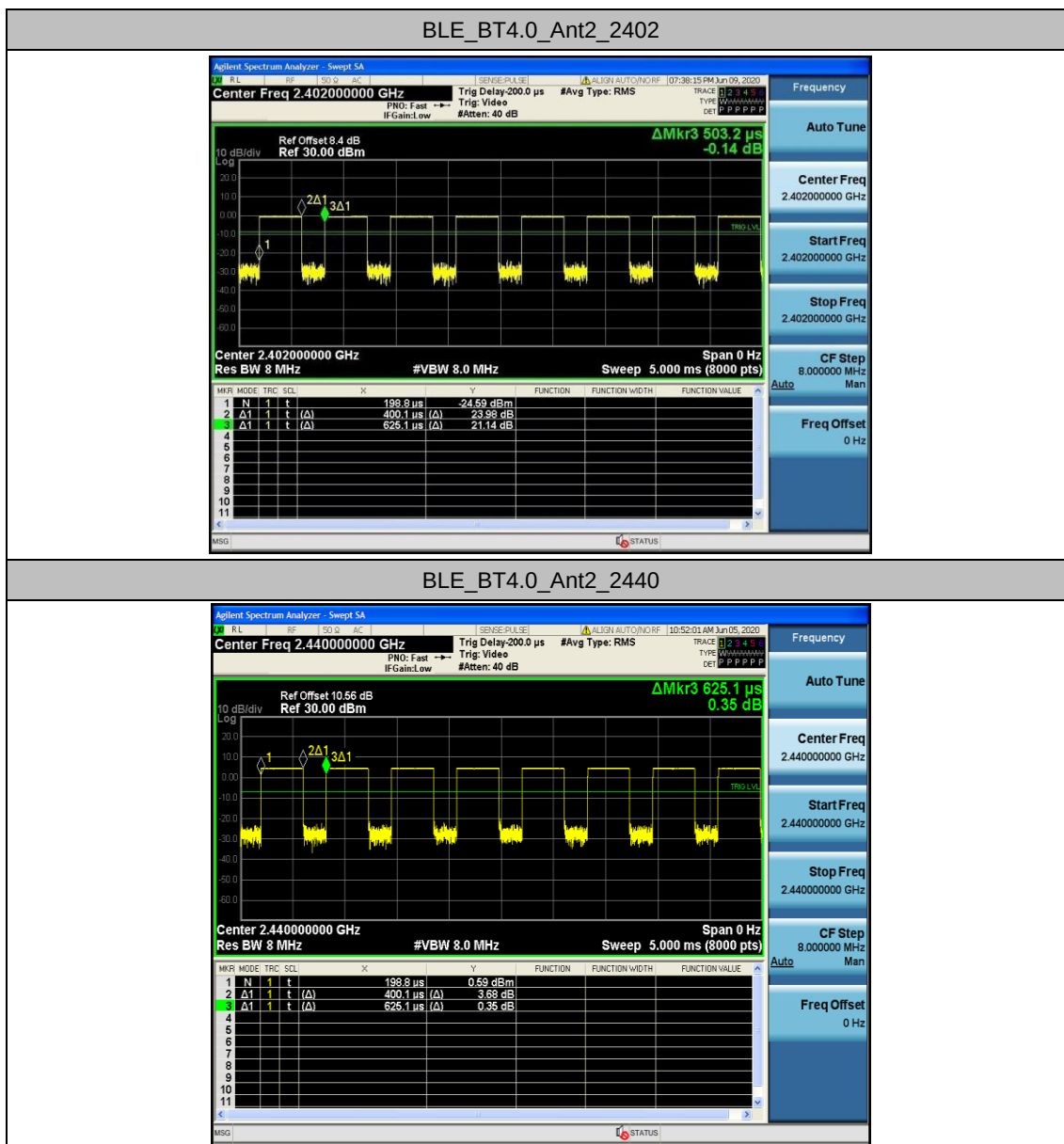


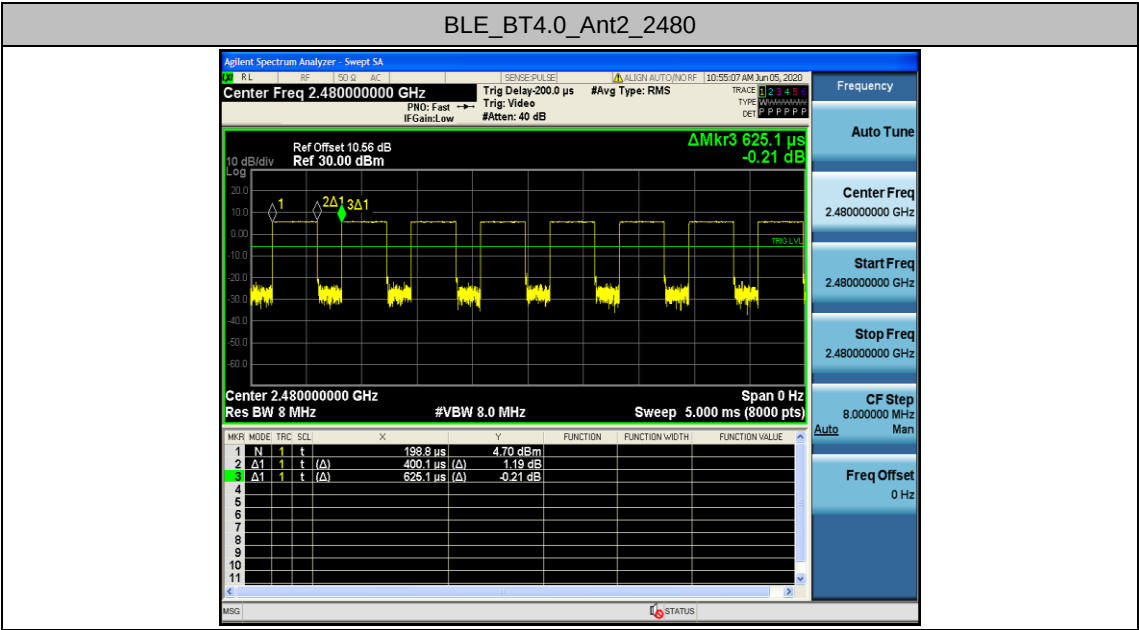
Appendix G: Duty Cycle

Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
BLE_BT4.0	Ant2	2402	0.40	0.63	64.00
		2440	0.40	0.63	64.00
		2480	0.40	0.63	64.00

Test Graphs





Appendix H: Emissions in Restricted Bands

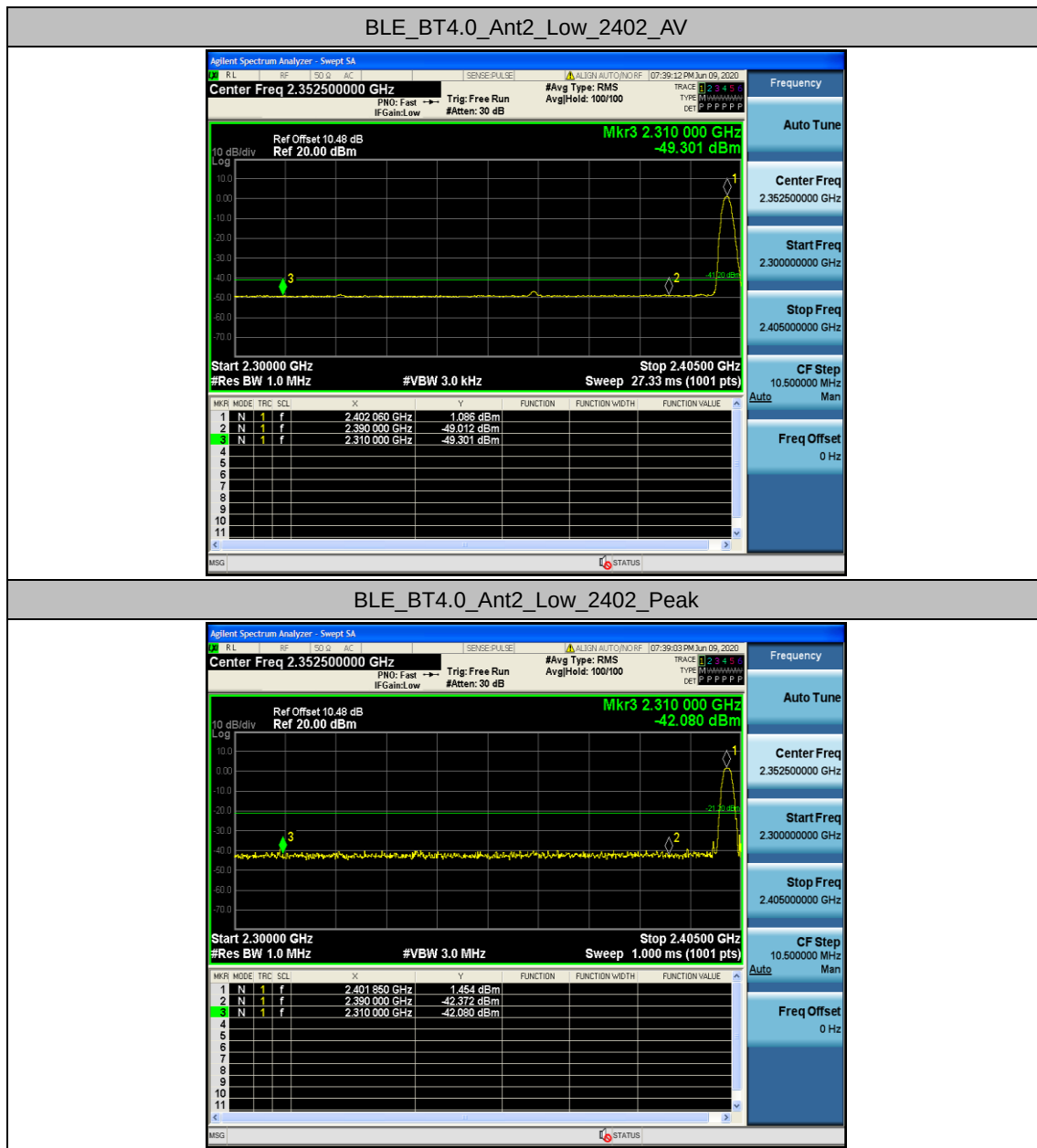
Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_BT4 .0	Ant2	Low	2402	AV	2310.000	-49.30	<=-41.20	PASS
				AV	2390.000	-49.01	<=-41.20	PASS
				Peak	2310.000	-41.61	<=-21.20	PASS
				Peak	2390.000	-50.90	<=-21.20	PASS
		High	2480	AV	2483.500	-45.00	<=-41.20	PASS
				AV	2500.000	-46.26	<=-41.20	PASS
				Peak	2483.500	-35.78	<=-21.20	PASS
				Peak	2500.000	-38.54	<=-21.20	PASS

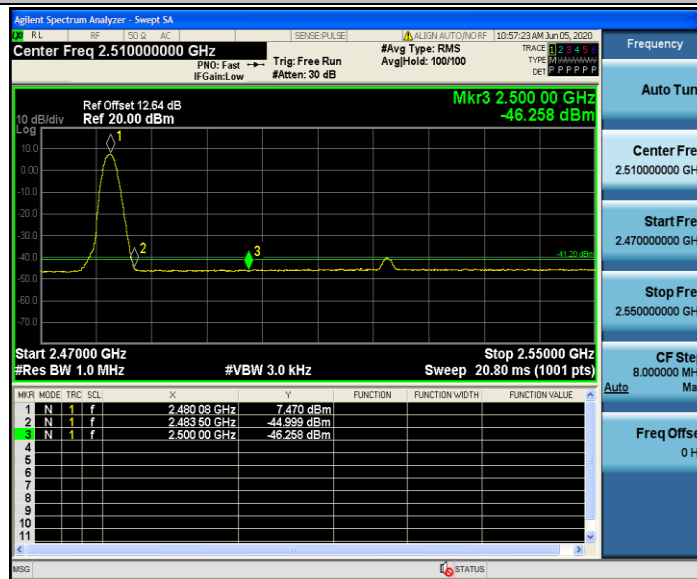
Note:

1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
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_BT4.0_Ant2_High_2480_AV



BLE_BT4.0_Ant2_High_2480_Peak

