

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

Product Name: OTT+DVB

Trade Mark: N/A

Test Model: SH5BFAA

FCC ID: 2AOVU-SH5BFAX

Environmental Conditions

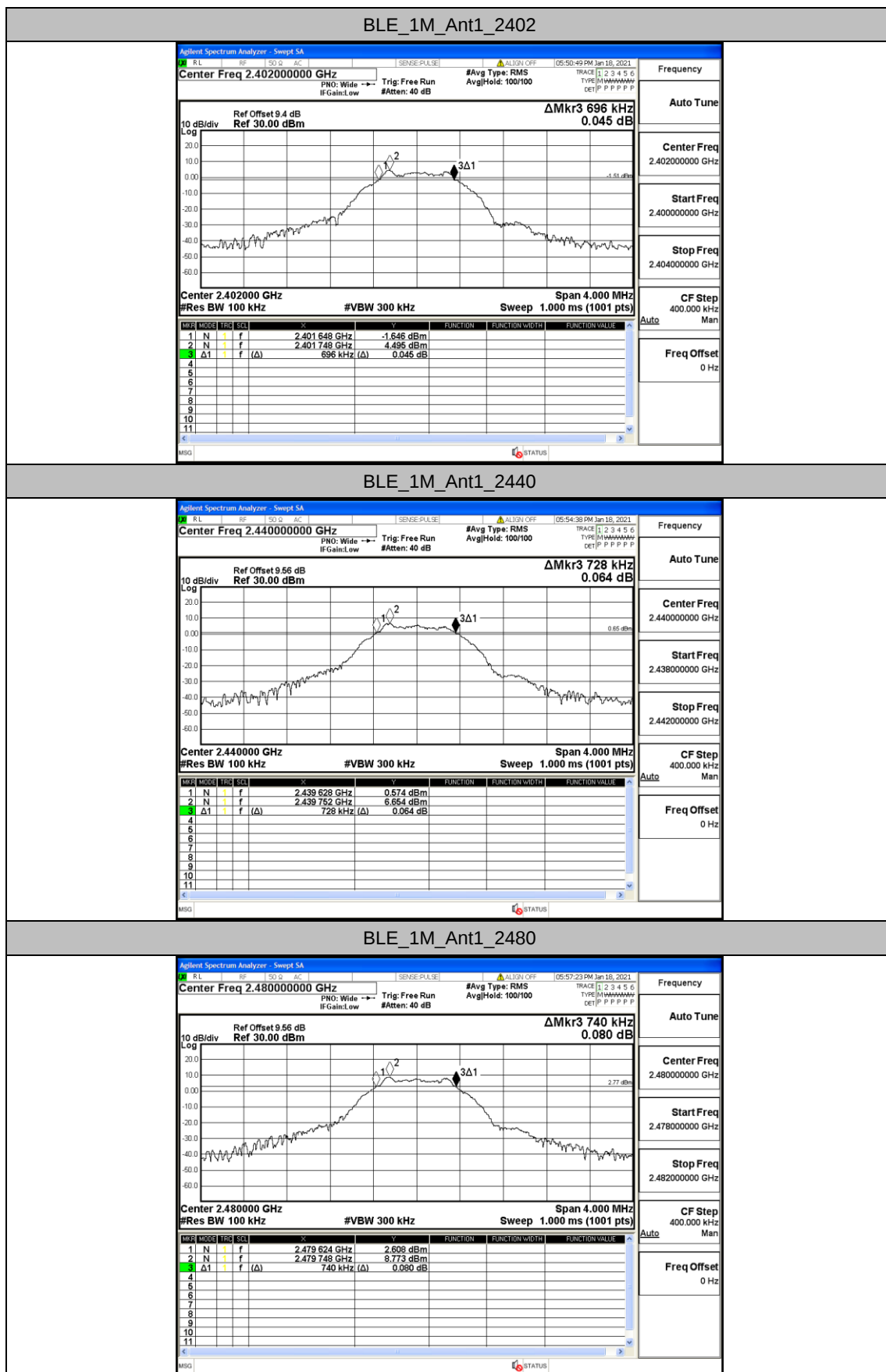
Temperature:	25.5°C
Relative Humidity:	55.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_BT 1M	Ant3	2402	0.696	2401.648	2402.344	0.5	PASS
		2440	0.728	2439.628	2440.356	0.5	PASS
		2480	0.740	2479.624	2480.364	0.5	PASS

Test Graphs

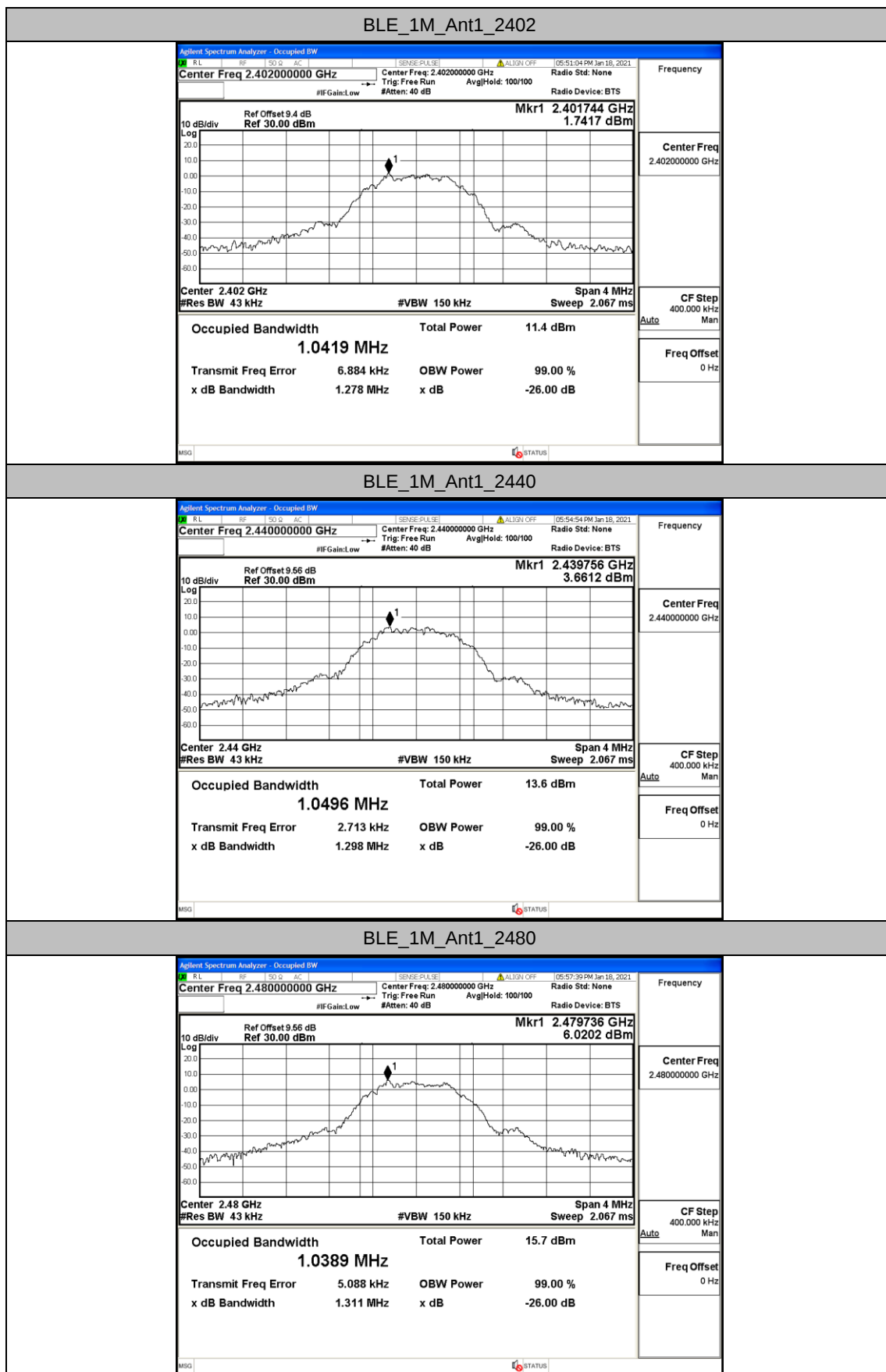


Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_BT 1M	Ant3	2402	1.0419	2401.486	2402.528	---	PASS
		2440	1.0496	2439.478	2440.528	---	PASS
		2480	1.0389	2479.486	2480.525	---	PASS

Test Graphs

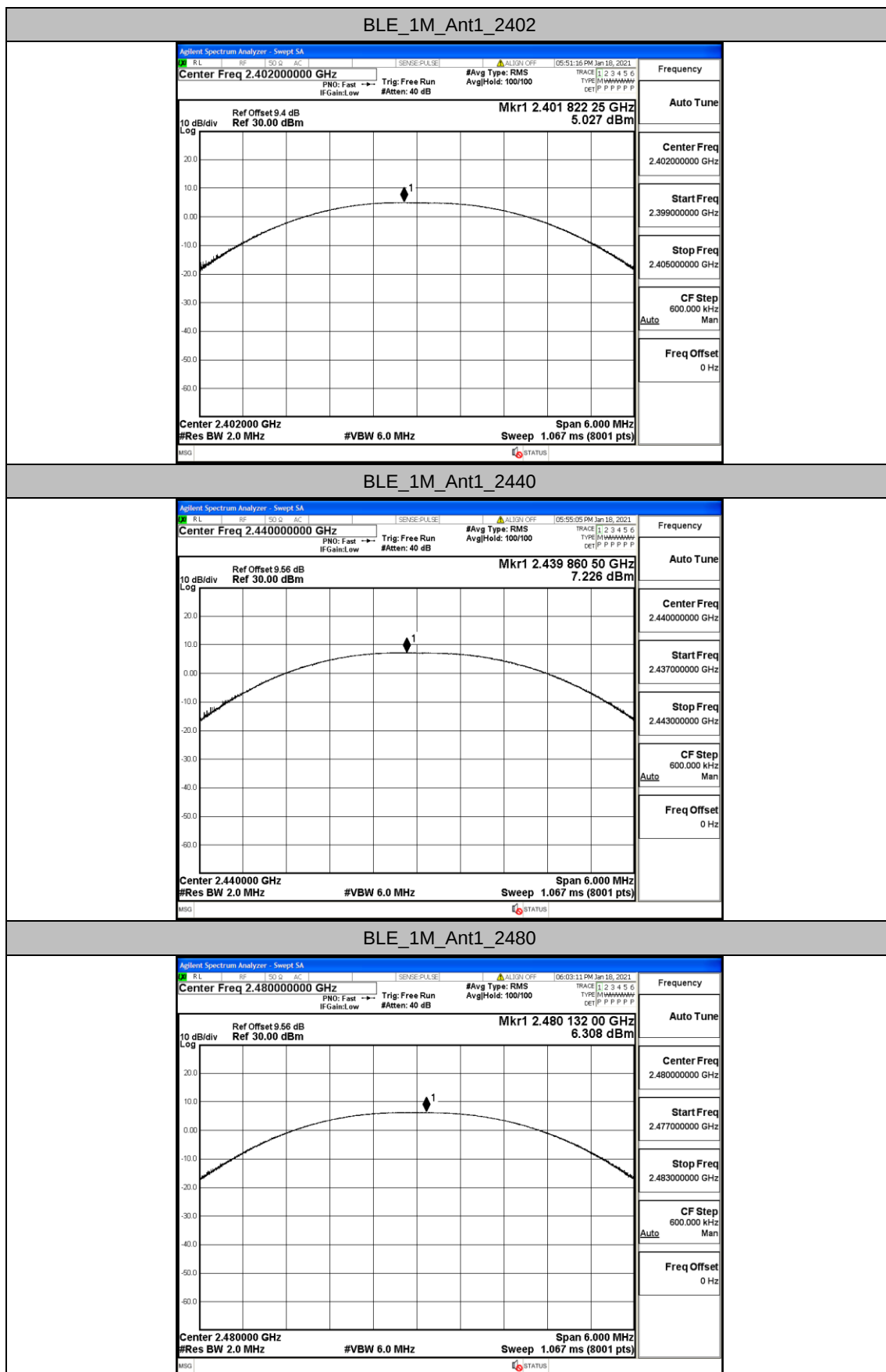


Appendix C: Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_BT 1M	Ant3	2402	5.03	<=30	PASS
		2440	7.23	<=30	PASS
		2480	6.31	<=30	PASS

Test Graphs

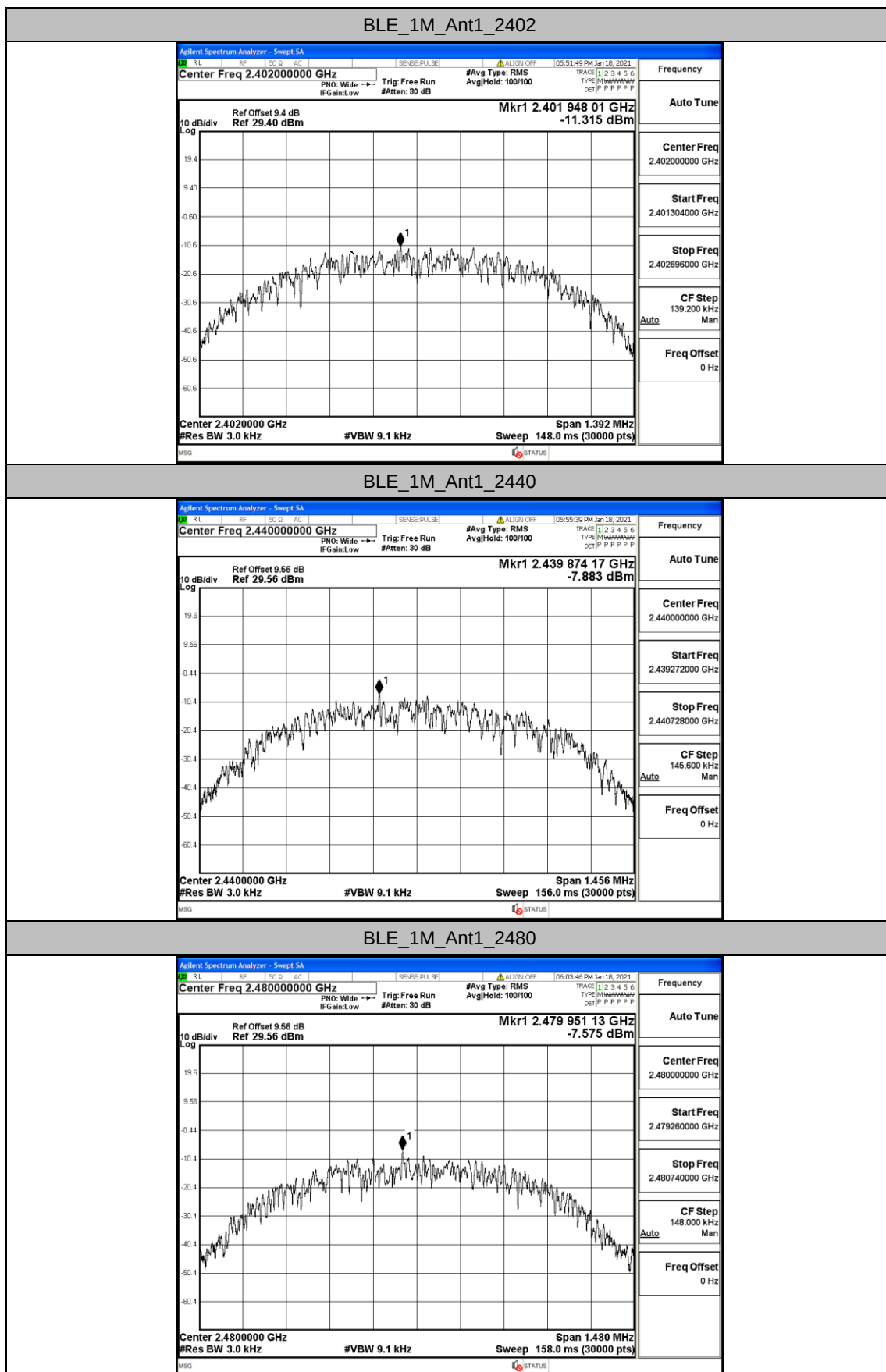


Appendix D: Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_BT 1M	Ant3	2402	-11.32	<=8	PASS
		2440	-7.88	<=8	PASS
		2480	-7.58	<=8	PASS

Test Graphs

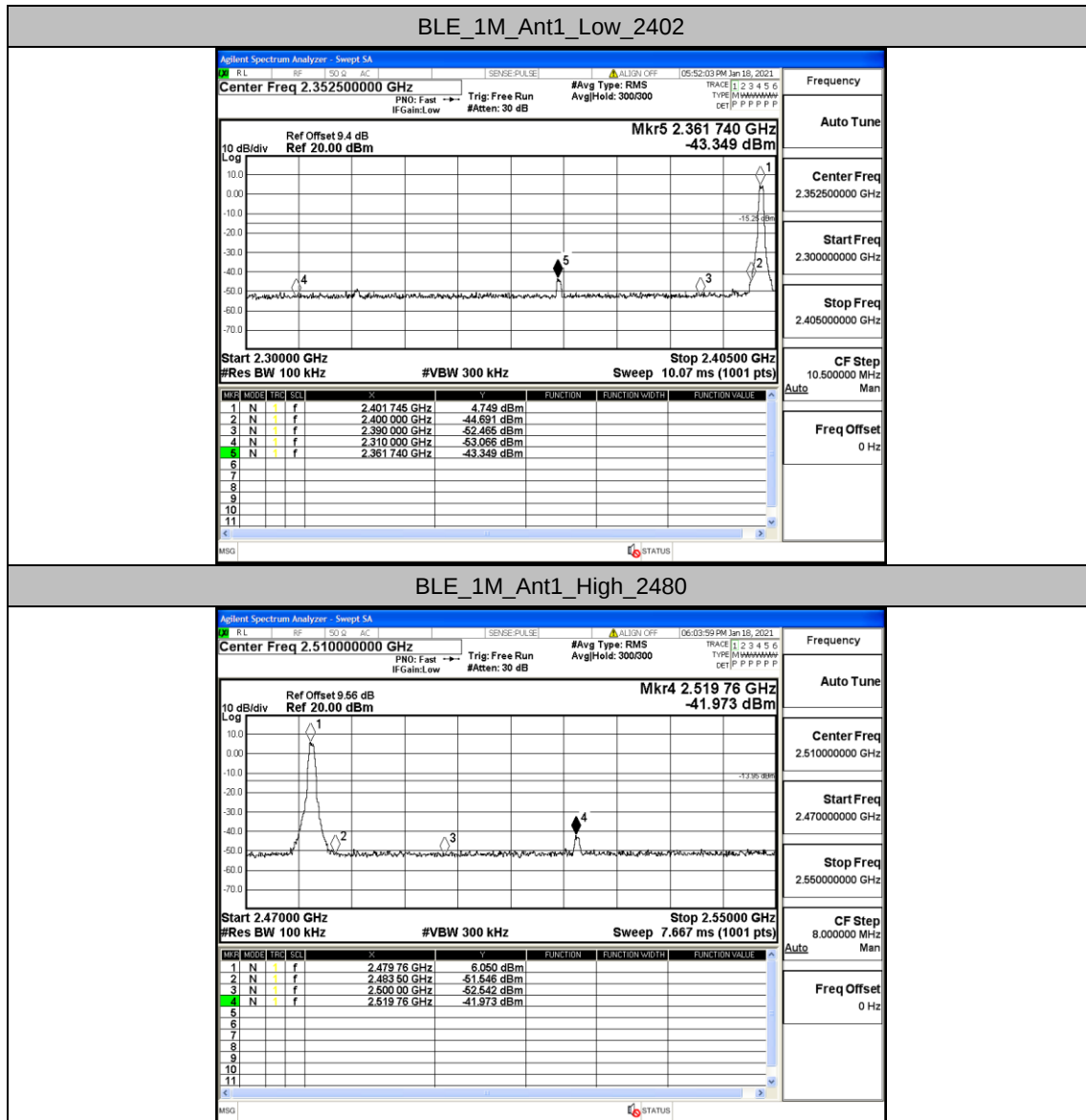


Appendix E: Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_BT 1M	Ant3	Low	2402	4.75	-43.35	<=-15.25	PASS
		High	2480	6.05	-41.97	<=-13.95	PASS

Test Graphs

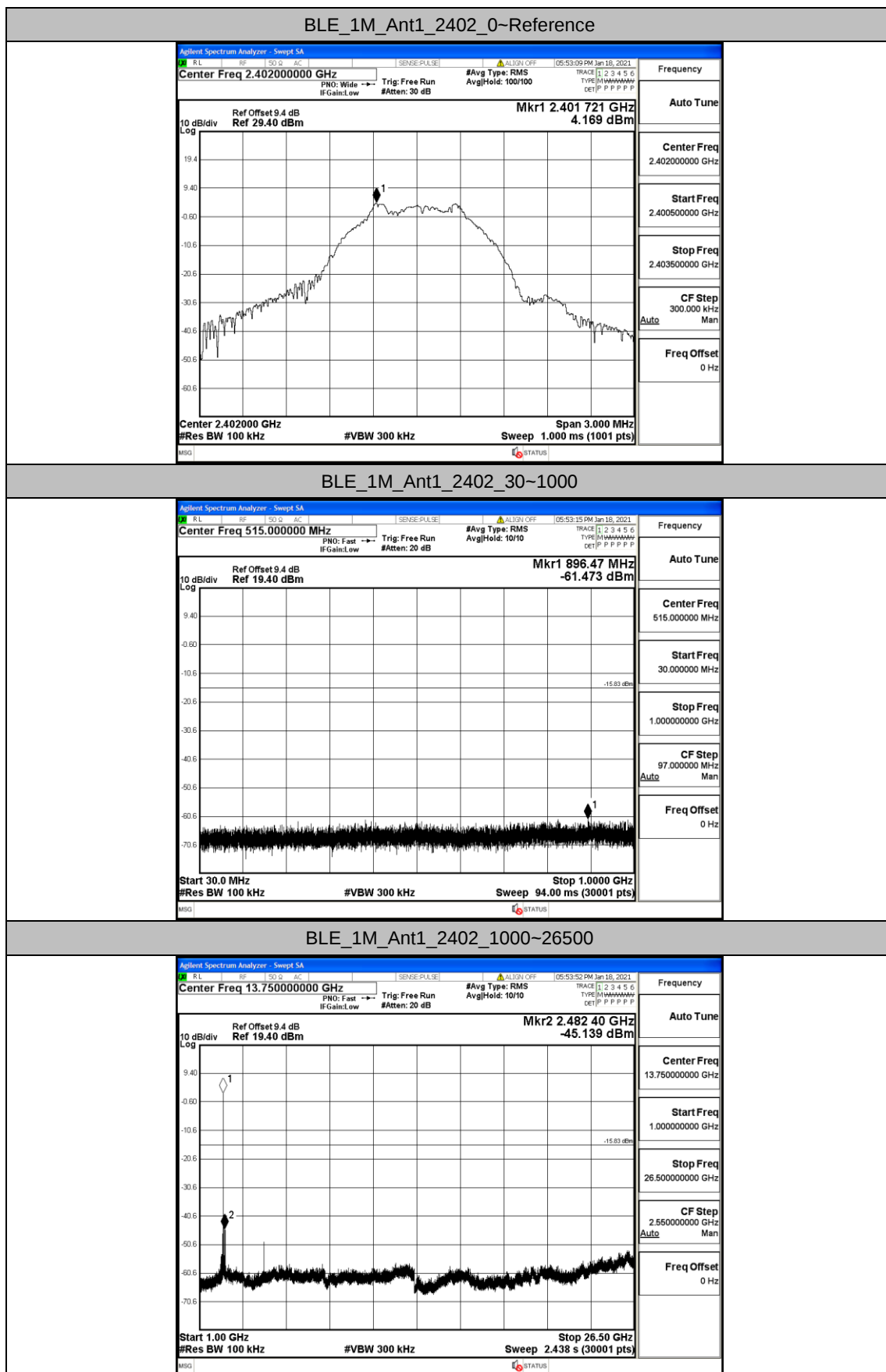


Appendix F: Conducted Spurious Emission

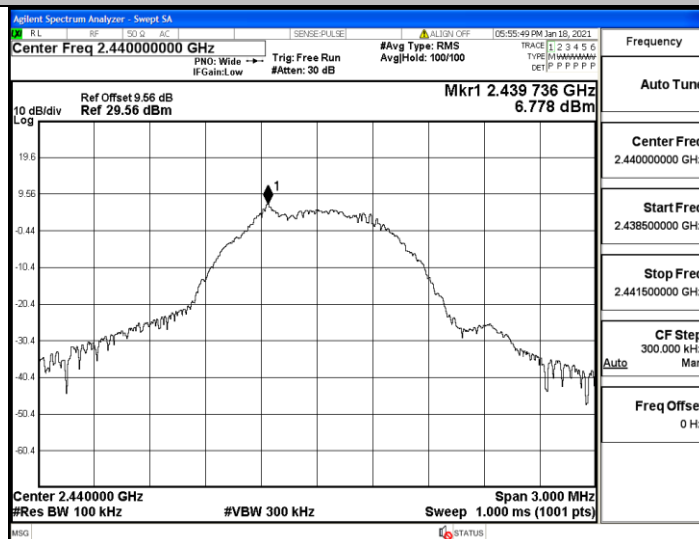
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	4.17	4.17	---	PASS
			30~1000	4.17	-61.47	<=-15.83	PASS
			1000~26500	4.17	-45.14	<=-15.83	PASS
		2440	Reference	6.78	6.78	---	PASS
			30~1000	6.78	-60.7	<=-13.22	PASS
			1000~26500	6.78	-43.38	<=-13.22	PASS
		2480	Reference	5.94	5.94	---	PASS
			30~1000	5.94	-61.06	<=-14.06	PASS
			1000~26500	5.94	-46.54	<=-14.06	PASS

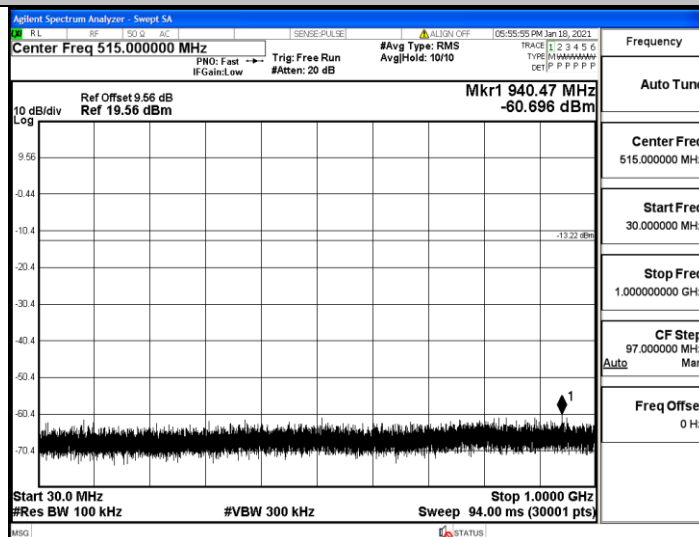
Test Graphs



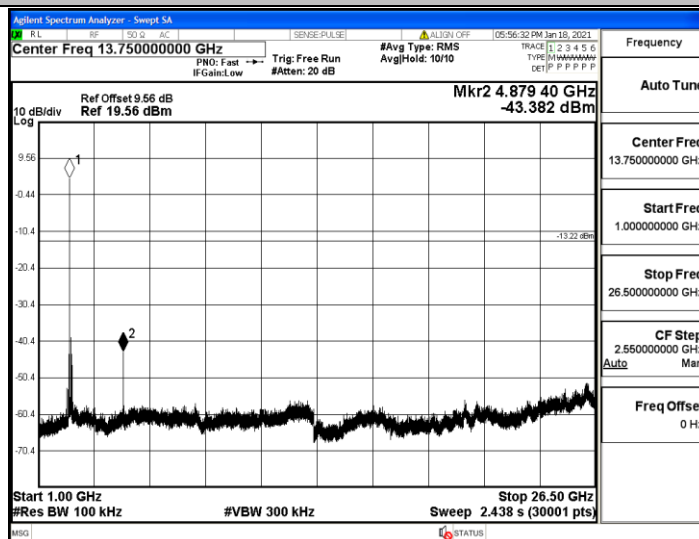
BLE_1M_Ant1_2440_0~Reference



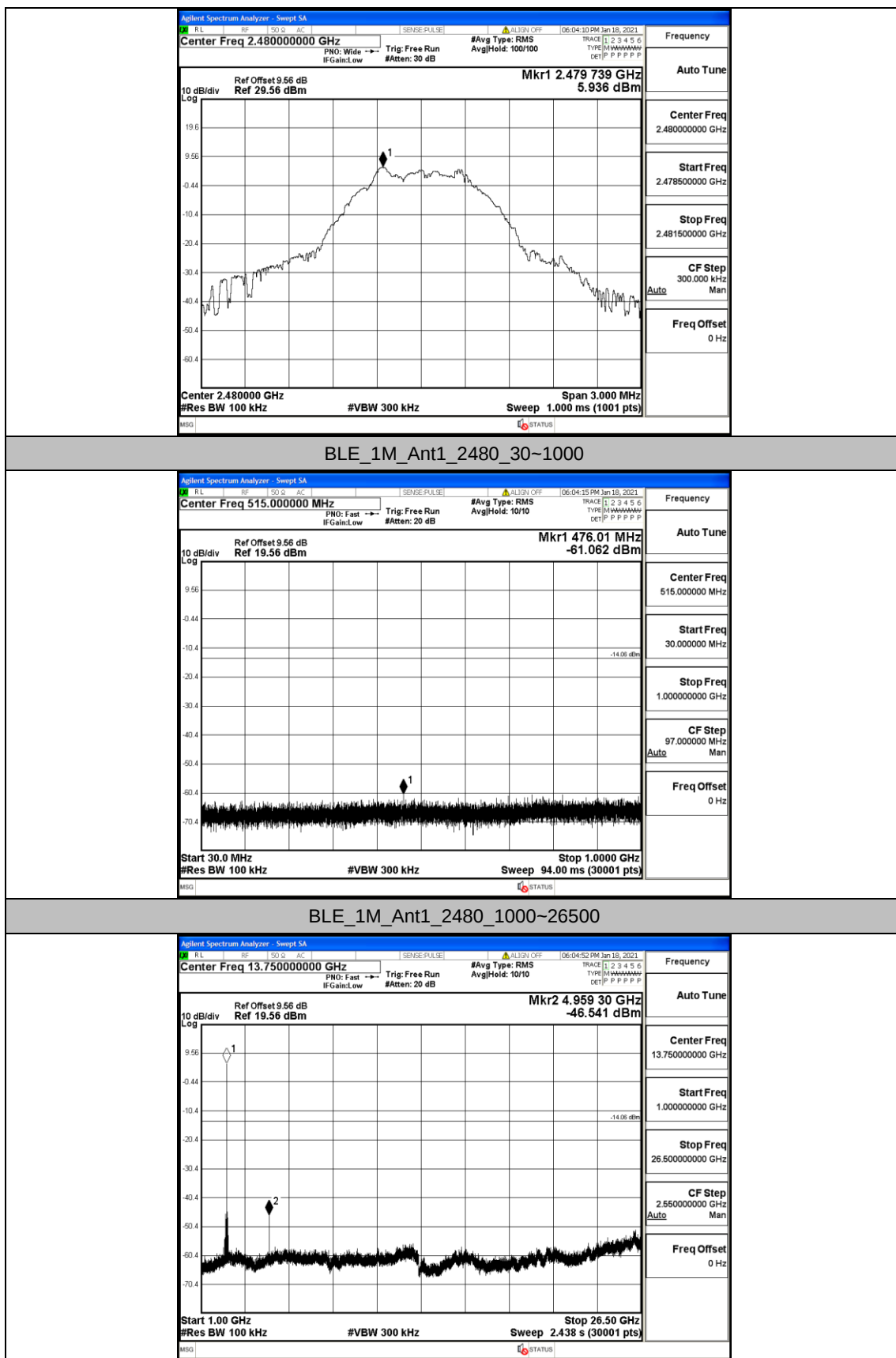
BLE_1M_Ant1_2440_30~1000



BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference

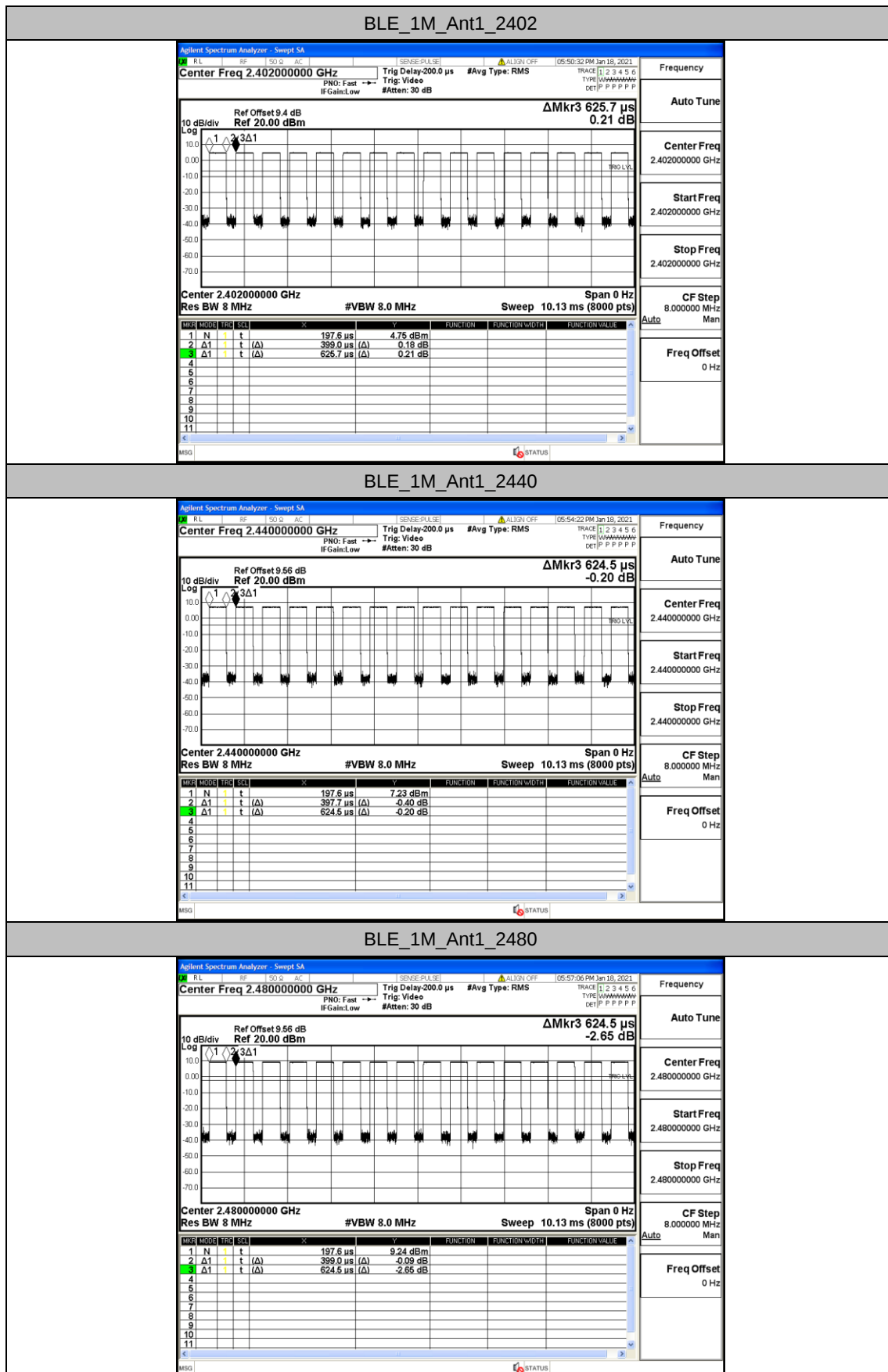


Appendix G: Duty Cycle

Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
BLE_BT 1M	Ant3	2402	0.40	0.63	63.49
		2440	0.40	0.62	64.52
		2480	0.40	0.62	64.52

Test Graphs



Appendix H: Emissions in Restricted Bands

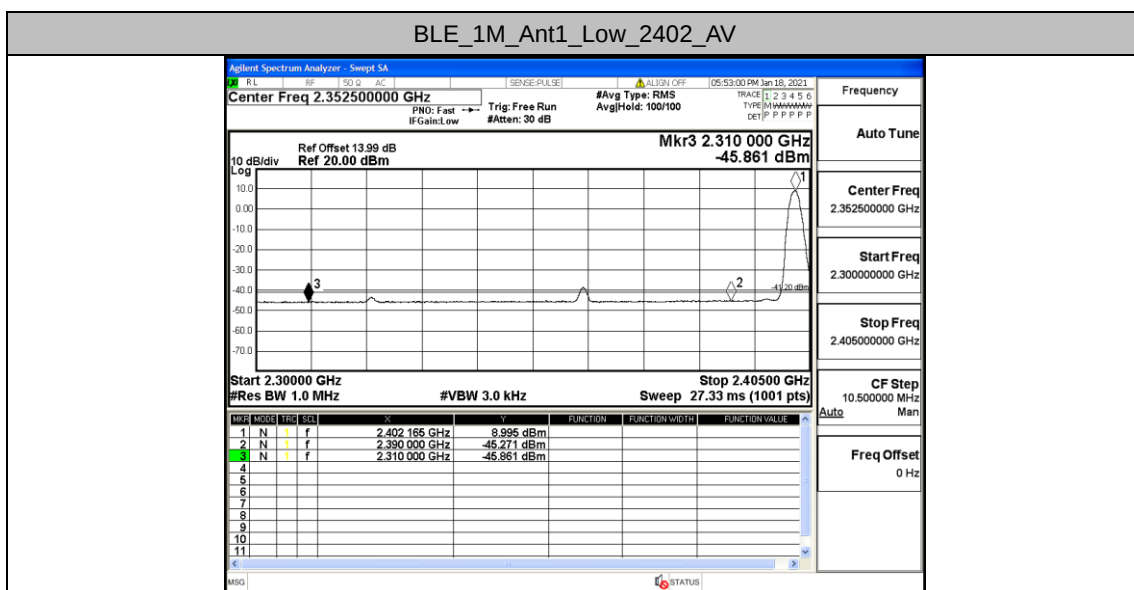
Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_BT 1M	Ant3	Low	2402	AV	2310.000	-45.86	<=-41.20	PASS
				AV	2390.000	-45.27	<=-41.20	PASS
				Peak	2310.000	-39.95	<=-21.20	PASS
				Peak	2390.000	-39.91	<=-21.20	PASS
		High	2480	AV	2483.500	-42.75	<=-41.20	PASS
				AV	2500.000	-44.99	<=-41.20	PASS
				Peak	2483.500	-37.14	<=-21.20	PASS
				Peak	2500.000	-37.99	<=-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.

BLE 1M Ant1 Low 2402 AV



Agilent Spectrum Analyzer - Swept SA

RL RB SO Z AC

Center Freq 2.352500000 GHz

PRF: Fast Trig: Free Run

IFGain: Low #Atten: 30 dB

#Avg Type: RMS Avg/Hold: 100/100

05:52:31 PM Jan 18, 2021

TRAC: [1] 2 3 4 5 6

TYPE: [MMMMMM] W

DET: [PPPP]

Frequency

Auto Tune

Center Freq 2.352500000 GHz

Start Freq 2.300000000 GHz

Stop Freq 2.405000000 GHz

CF Step 10.500000 MHz

Auto Man

Freq Offset 0 Hz

10 dB/div

Ref Offset 13.99 dB

Ref 20.00 dBm

Mkr3 2.310 000 GHz -39.950 dBm

Log

Start 2.300000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 2.405000 GHz Sweep 1.000 ms (1001 pts)

MHz	Mode	Freq	SC	X	Y	Function	Function Width	Function Value
1	N		f	2,401,850 GHz	9,507 dBm			
2	N		f	2,390,000 GHz	-39,913 dBm			
3	N		f	2,310,000 GHz	-39,950 dBm			
4								
5								
6								
7								
8								
9								
10								
11								

MSO

STATUS

Agilent Spectrum Analyzer - Swept SA

RF SO G AC SENSE-PULSE ALIGN OFF 06:02:30 PM Jan 18, 2021

Center Freq 2.510000000 GHz PWR: Fast IF Gain: Low Trg: Free Run #Avg Type: RMS Avg/Hold: 100/100 TYPE: [MMMM] DET: P P P P P

Frequency Auto Tune

Center Freq 2.510000000 GHz

Start Freq 2.470000000 GHz

Stop Freq 2.550000000 GHz

CF Step 8.000000 MHz

Auto Man

Freq Offset 0 Hz

Ref Offset 14.16 dB
Ref 20.00 dBm

Mkr3 2.500 00 GHz
-44.994 dBm

10 dB/div

Start 2.470000 GHz
#Res BW 1.0 MHz

#VBW 3.0 kHz

Stop 2.550000 GHz
Sweep 20.80 ms (1001 pts)

MFR	MODE	FREQ	SELT	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.480 08 GHz	10.298 dBm			
2	N	1	f	2.483 50 GHz	42.749 dBm			
3	N	1	f	2.500 00 GHz	-44.994 dBm			
4								
5								
6								
7								
8								
9								
10								
11								

MISO STATUS

