

Appendix A

RF Test Data for BT V4.2(BLE) (Conducted Measurement)

Product Name: Wireless Beacon

Trade Mark: N/A

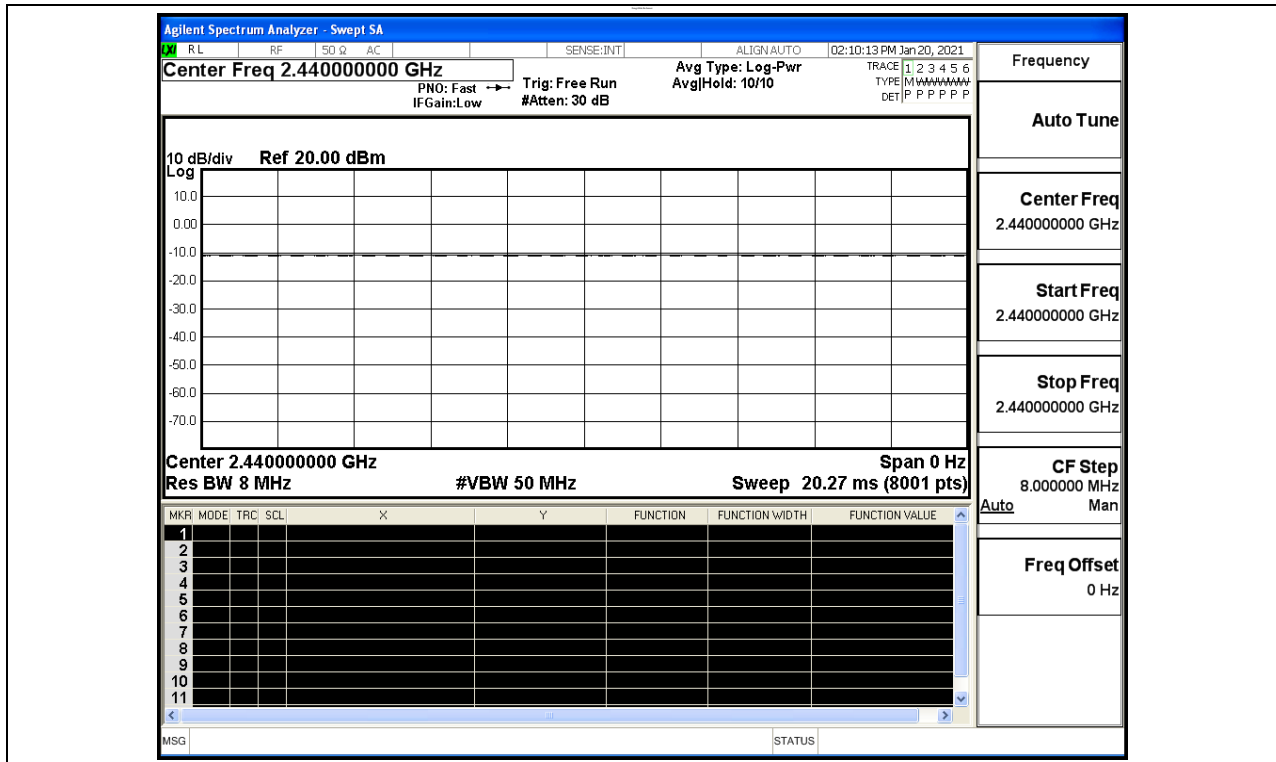
Test Model: AC-BLE-T110G

Environmental Conditions

Temperature:	24.6 °C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Carl Fu
Supervised by:	Li Huan

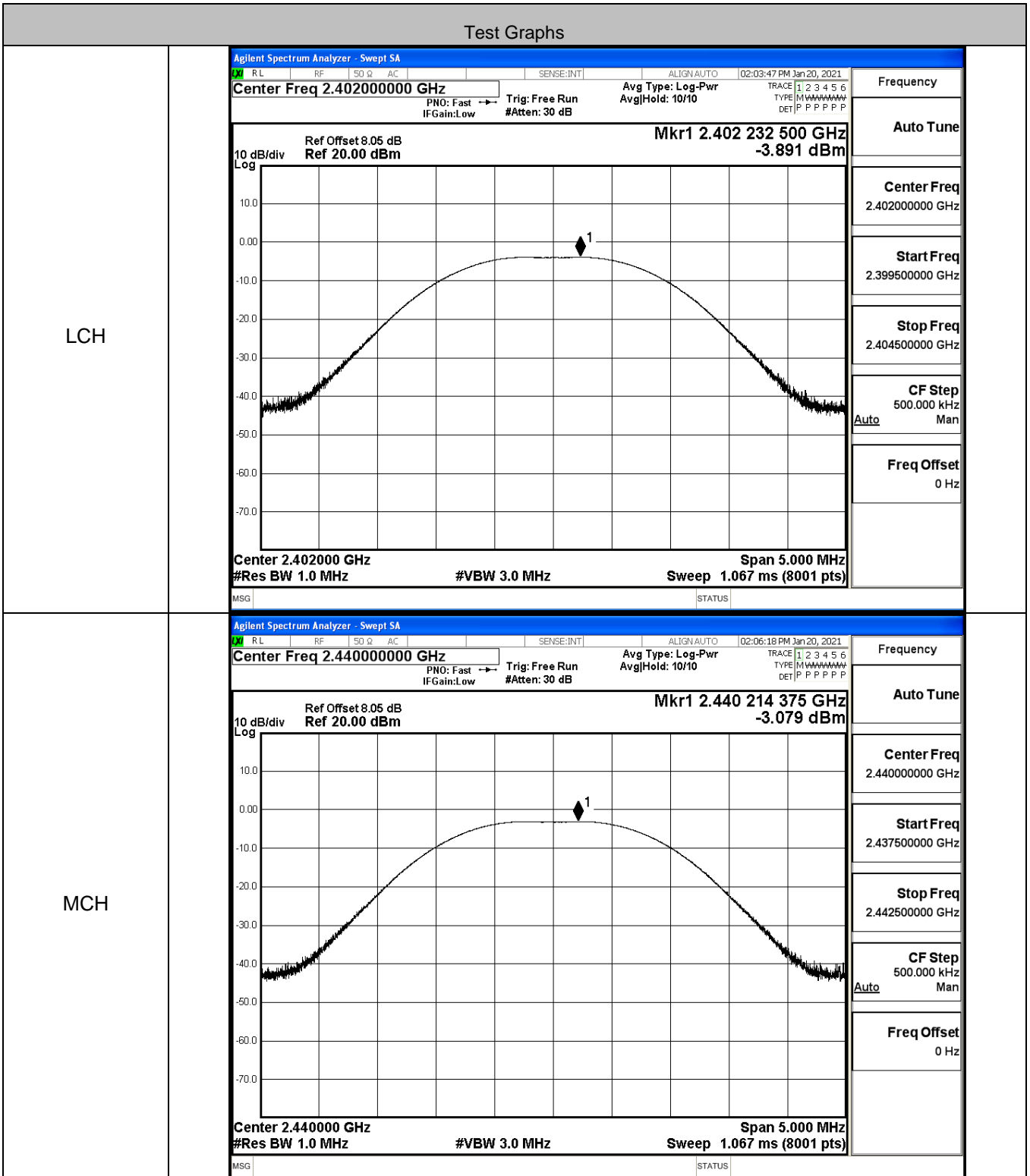
A.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
BT LE	2440	Ant1	100	PASS

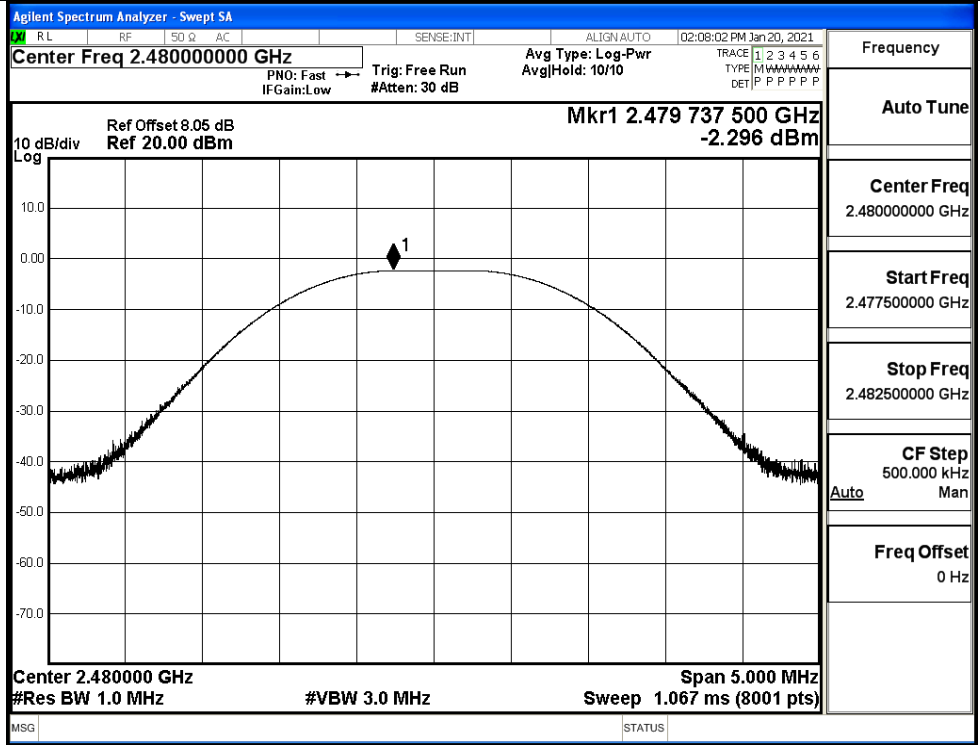


A.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	-3.891	30	PASS
BT LE	MCH	-3.079	30	PASS
BT LE	HCH	-2.296	30	PASS



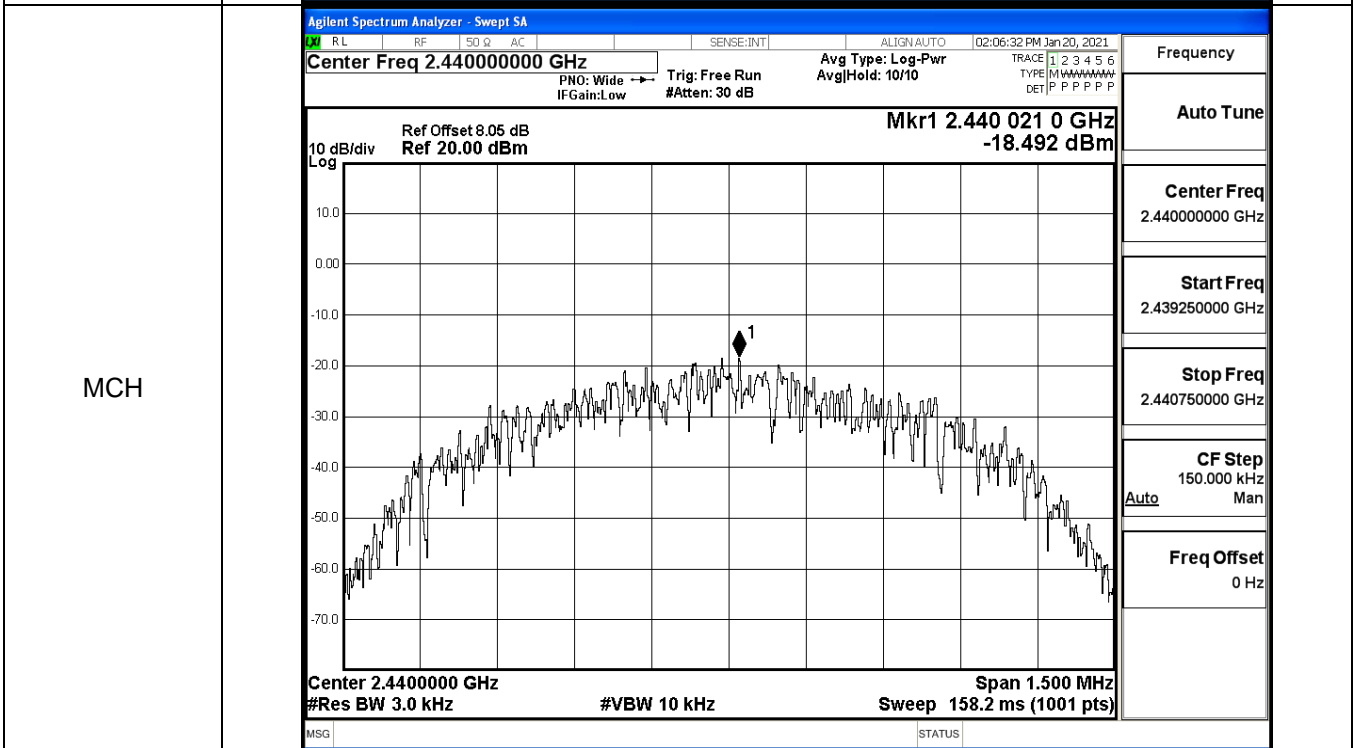
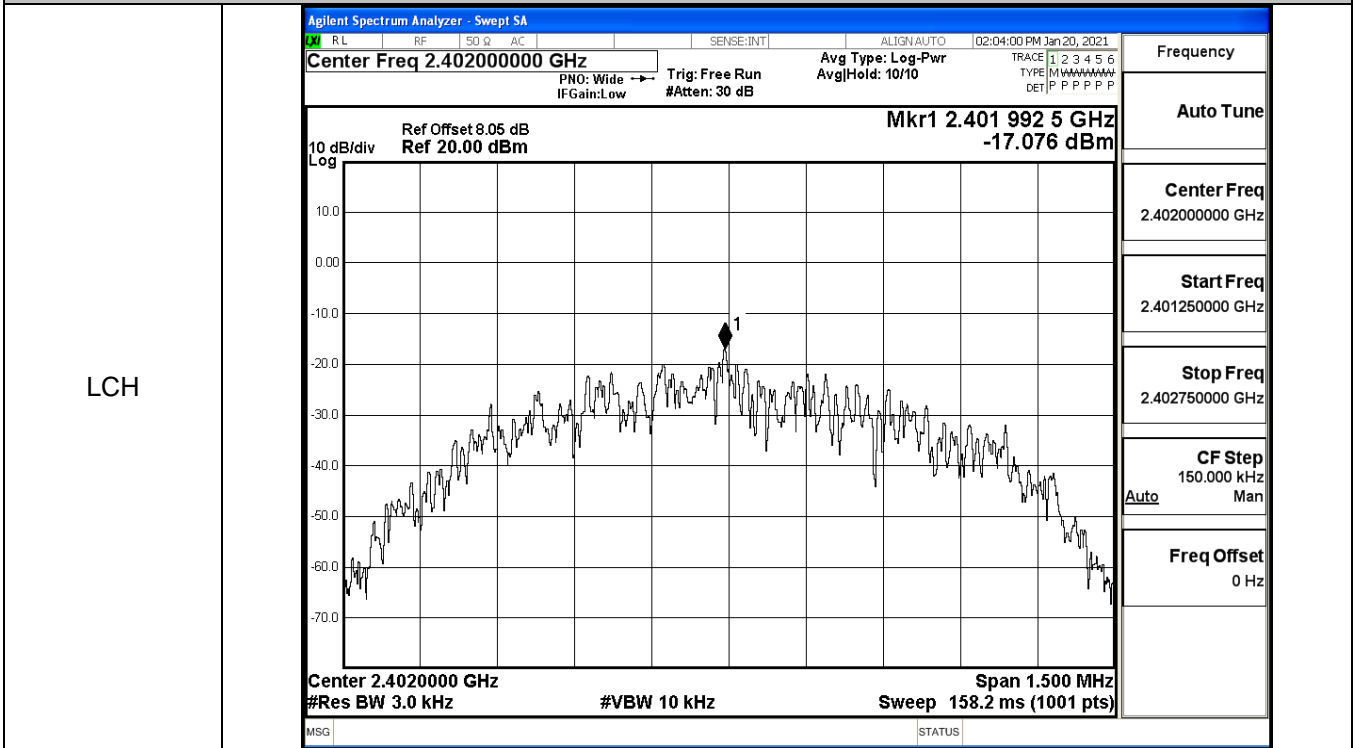
HCH



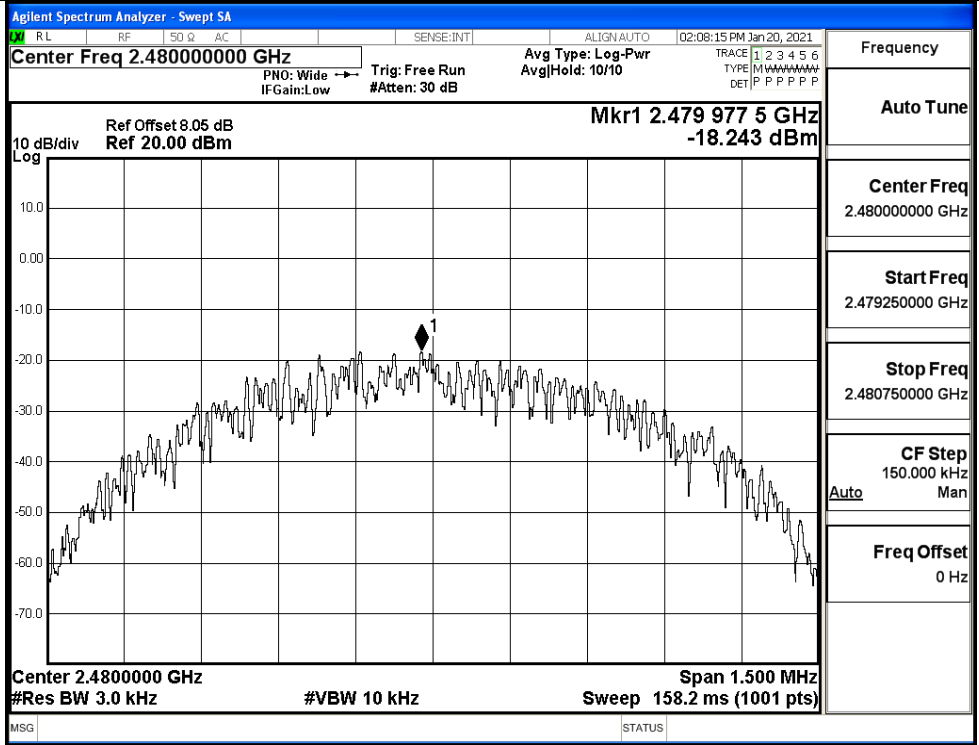
A.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-17.076	8	PASS
BT LE	MCH	-18.492	8	PASS
BT LE	HCH	-18.243	8	PASS

Test Graphs



HCH



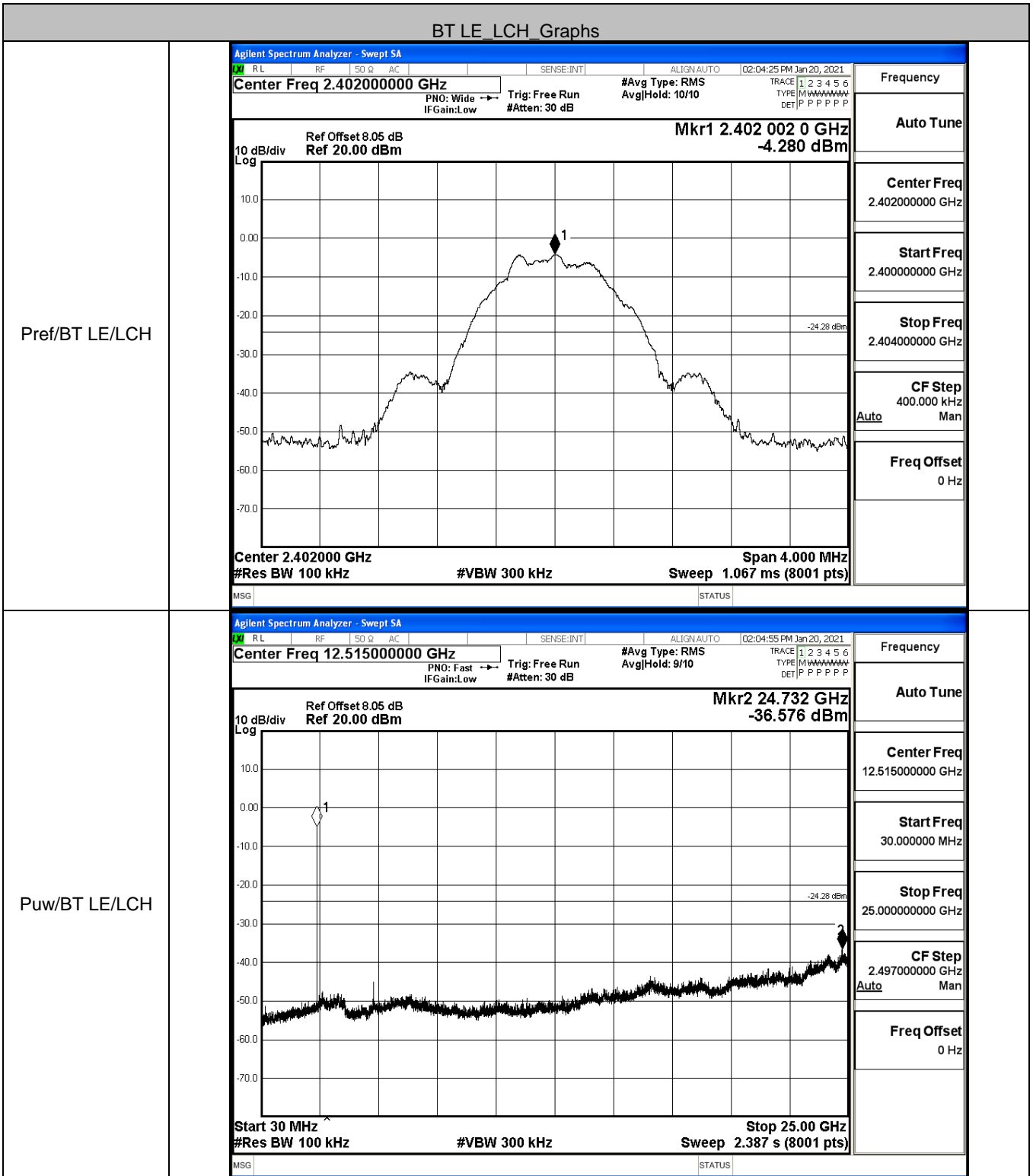
A.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6582	≥0.5	PASS
BT LE	MCH	0.6637	≥0.5	PASS
BT LE	HCH	0.6564	≥0.5	PASS

Test Graphs																	
LCH	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: small; margin: 0;">RL RF 50 Ω AC SENSE:INT ALIGN:AUTO 02:03:36 PM Jan 20, 2021</p> <p style="margin: 0;">Center Freq 2.402000000 GHz Center Freq: 2.402000000 GHz Radio Std: None Trig: Free Run AvgHold: 1/1 #IFGain:Low #Atten: 30 dB Radio Device: BTS</p> <div style="border: 1px solid black; padding: 2px;"> <p style="text-align: right; margin: 0;">Mkr1 2.4019993 GHz -4.2270 dBm</p> </div> <p style="margin: 0;">Center 2.402 GHz Span 3 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <table style="width: 100%; border-collapse: collapse; font-size: small;"> <tr> <td colspan="2">Occupied Bandwidth</td> <td>Total Power</td> <td>2.21 dBm</td> </tr> <tr> <td colspan="2" style="text-align: center;">1.0549 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>7.367 kHz</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>x dB Bandwidth</td> <td>658.2 kHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">MSG STATUS</p> </div>	Occupied Bandwidth		Total Power	2.21 dBm	1.0549 MHz				Transmit Freq Error	7.367 kHz	OBW Power	99.00 %	x dB Bandwidth	658.2 kHz	x dB	-6.00 dB
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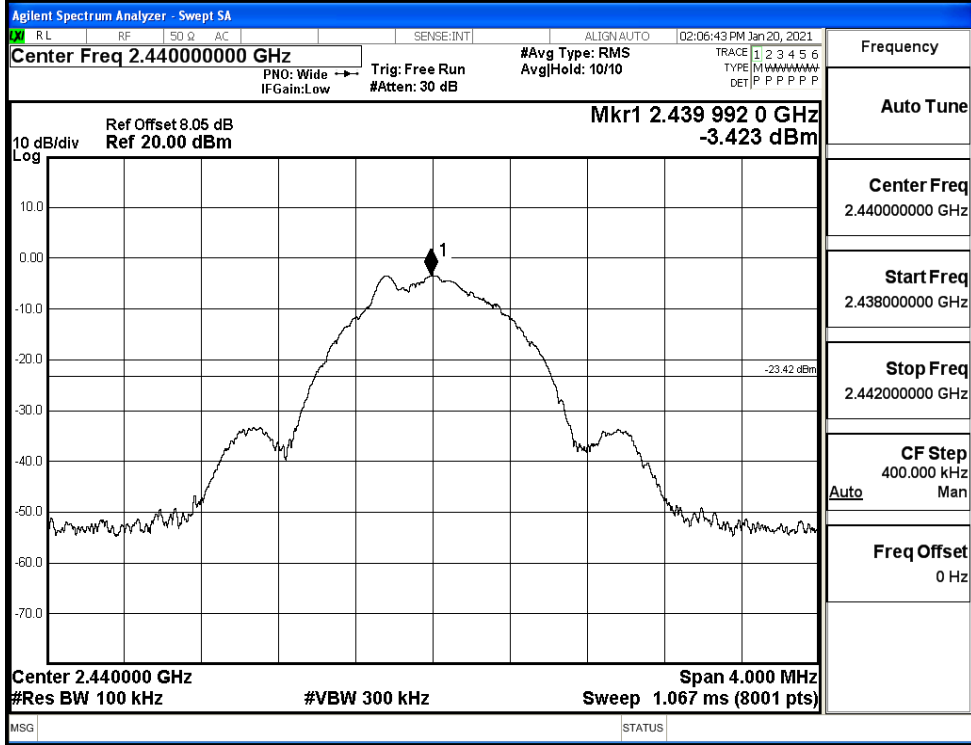
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-4.28	-36.576	-24.280	PASS
BT LE	MCH	-3.423	-37.469	-23.423	PASS
BT LE	HCH	-2.61	-37.293	-22.610	PASS

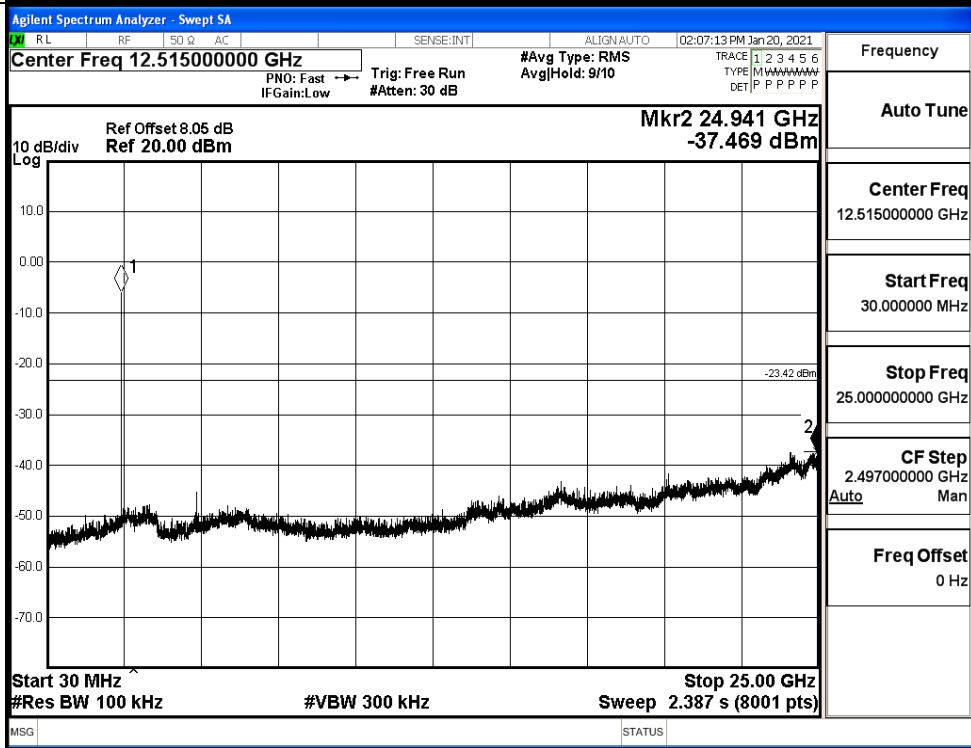


BT LE_MCH_Graphs

Pref/BT LE/MCH

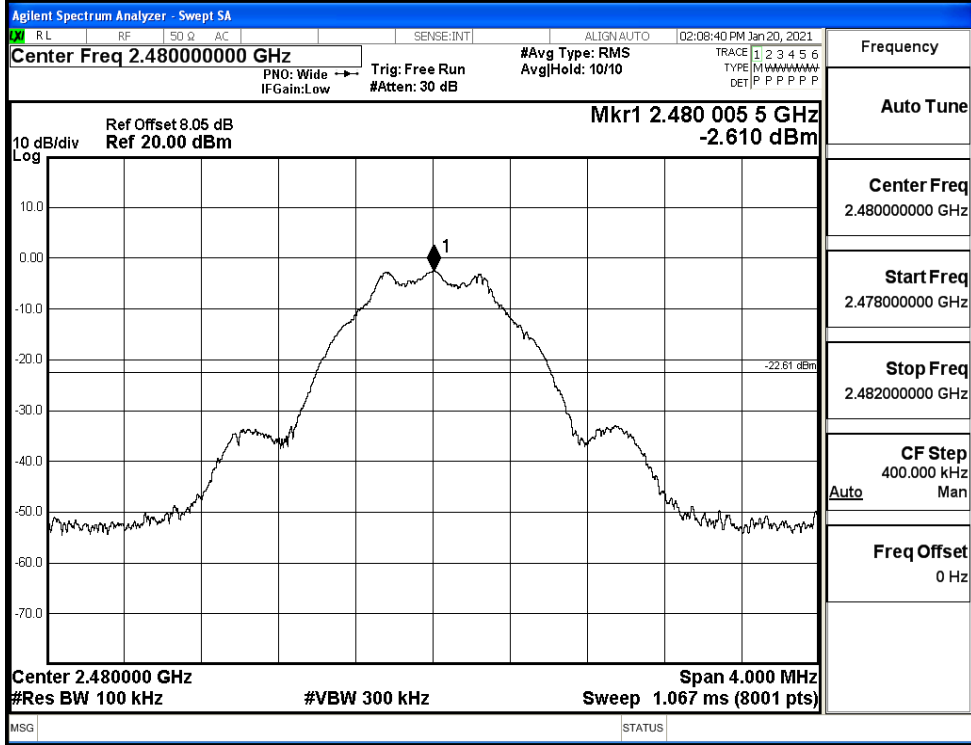


Puw/BT LE/MCH

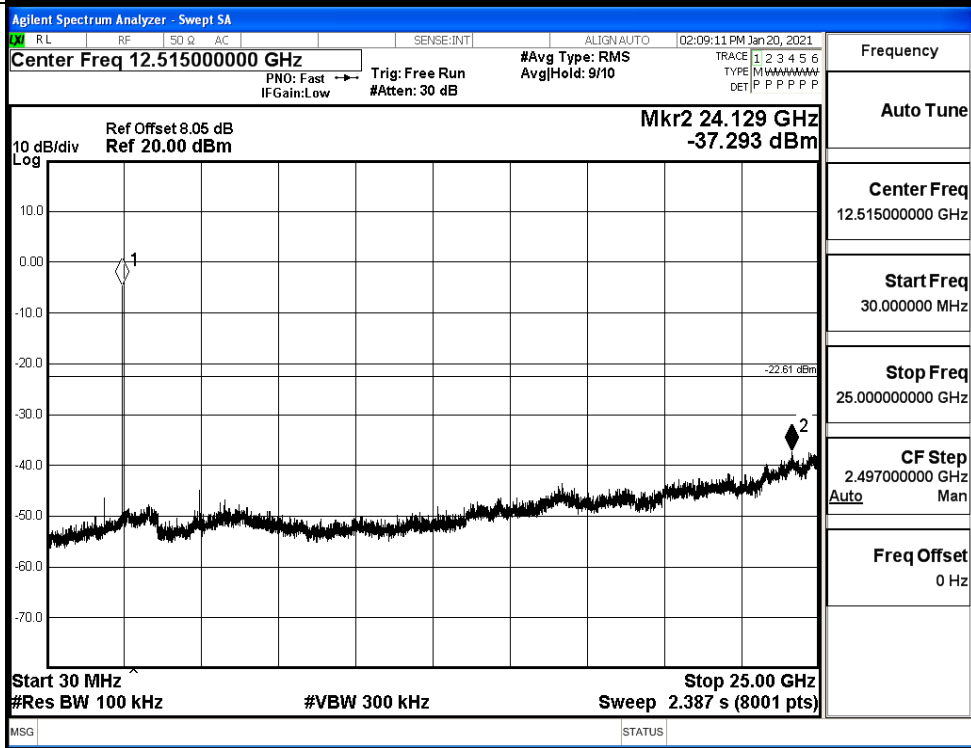


BT LE_HCH_Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH



A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-4.069	-49.358	-24.07	PASS
BT LE	HCH	-2.487	-49.699	-22.49	PASS

Test Graphs

LCH

Agilent Spectrum Analyzer - Swept SA
 Center Freq 2.35700000 GHz
 Ref Offset 8.05 dB, Ref 20.00 dBm
 Mkr4 2.311 857 GHz, -49.358 dBm
 Start 2.31000 GHz, Stop 2.40400 GHz
 #Res BW 100 kHz, #VBW 300 kHz, Sweep 9.067 ms (8001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.401 788 GHz	-4.069 dBm			
2	N	f		2.400 000 GHz	-52.422 dBm			
3	N	f		2.390 000 GHz	-53.898 dBm			
4	N	f		2.311 857 GHz	-49.358 dBm			

Frequency

Auto Tune

Center Freq
2.35700000 GHz

Start Freq
2.31000000 GHz

Stop Freq
2.40400000 GHz

CF Step
9.400000 MHz

Freq Offset
0 Hz

HCH

Agilent Spectrum Analyzer - Swept SA
 Center Freq 2.48900000 GHz
 Ref Offset 8.05 dB, Ref 20.00 dBm
 Mkr4 2.490 553 75 GHz, -49.699 dBm
 Start 2.47800 GHz, Stop 2.50000 GHz
 #Res BW 100 kHz, #VBW 300 kHz, Sweep 2.133 ms (8001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.479 765 50 GHz	-2.487 dBm			
2	N	f		2.483 500 00 GHz	-50.460 dBm			
3	N	f		2.500 000 00 GHz	-52.478 dBm			
4	N	f		2.490 553 75 GHz	-49.699 dBm			

Frequency

Auto Tune

Center Freq
2.48900000 GHz

Start Freq
2.47800000 GHz

Stop Freq
2.50000000 GHz

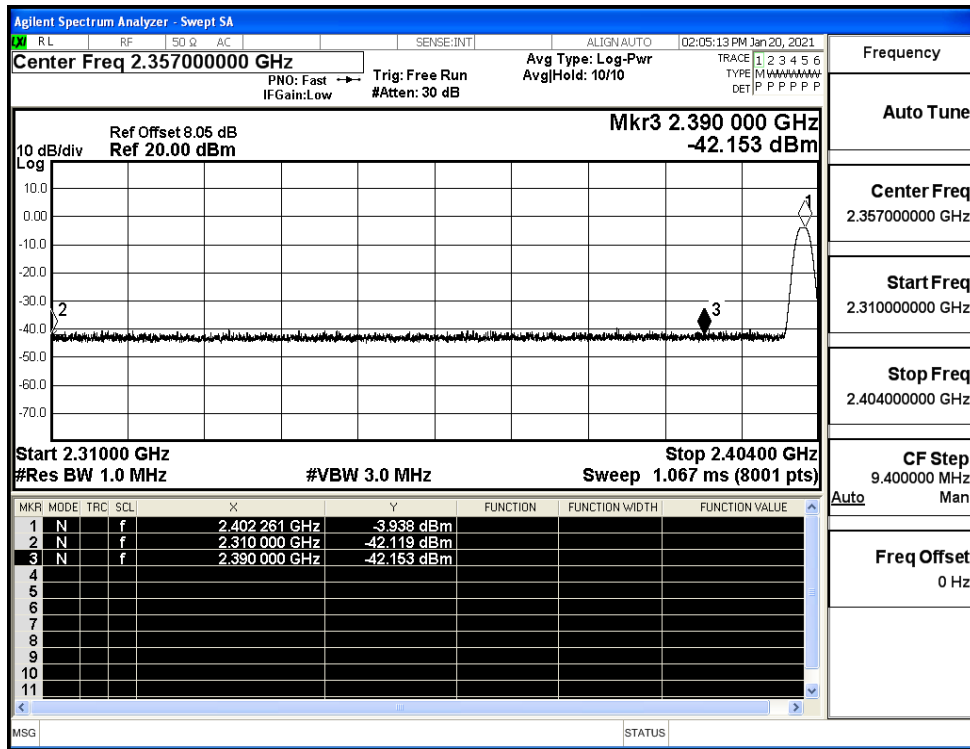
CF Step
2.200000 MHz

Freq Offset
0 Hz

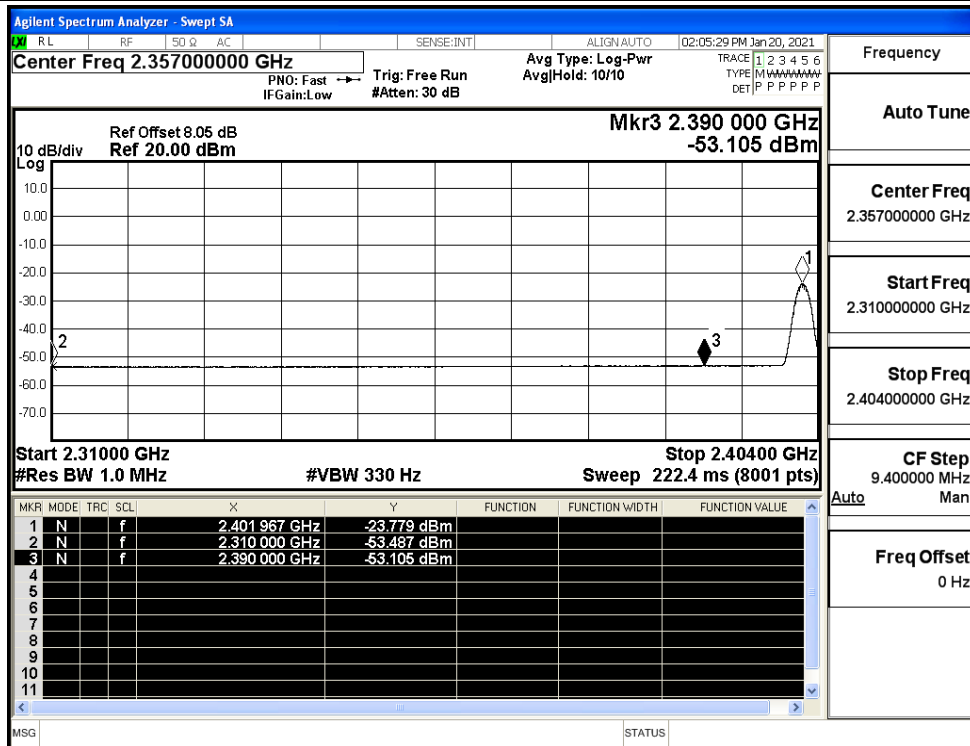
A.8 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdi
BT LE	2402	Ant1	2310.0	-42.12	2.0	0	53.14	PEAK	74	PASS
		Ant1	2310.0	-53.49	2.0	0	41.77	AV	54	PASS
		Ant1	2390.0	-42.15	2.0	0	53.10	PEAK	74	PASS
		Ant1	2390.0	-53.11	2.0	0	42.15	AV	54	PASS
	2480	Ant1	2483.5	-42.25	2.0	0	53.01	PEAK	74	PASS
		Ant1	2483.5	-52.58	2.0	0	42.68	AV	54	PASS
		Ant1	2500.0	-42.94	2.0	0	52.32	PEAK	74	PASS
		Ant1	2500.0	-52.51	2.0	0	42.75	AV	54	PASS

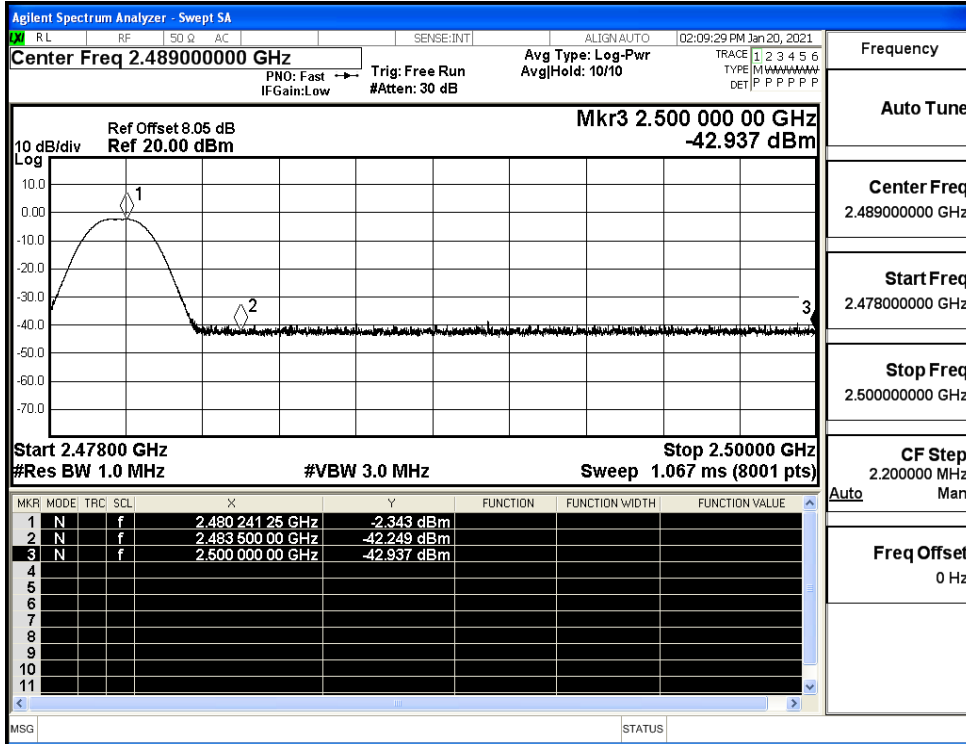
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



Restrict-band band-edge measurements_BT LE_2402_Ant1_AV



Restrict-band band-edge measurements_BT LE_2480_Ant1_PEAK



Restrict-band band-edge measurements_BT LE_2480_Ant1_AV

