

Appendix A

RF Test Data for BT V4.1(LE) (Conducted Measurement)

Product Name: SIREN Socks

Trade Mark: Siren

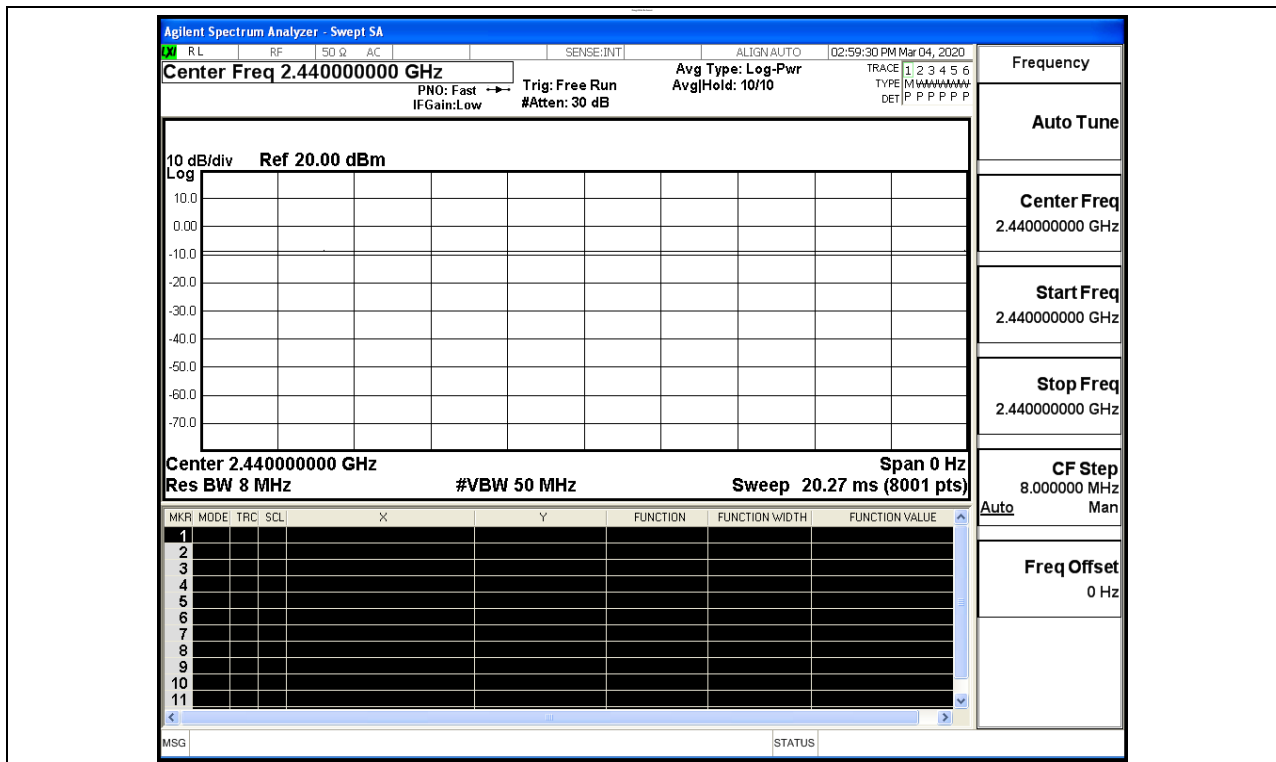
Test Model: SZU1002

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Li Huan
Supervised by:	Tom.Liu

A.1 Duty Cycle

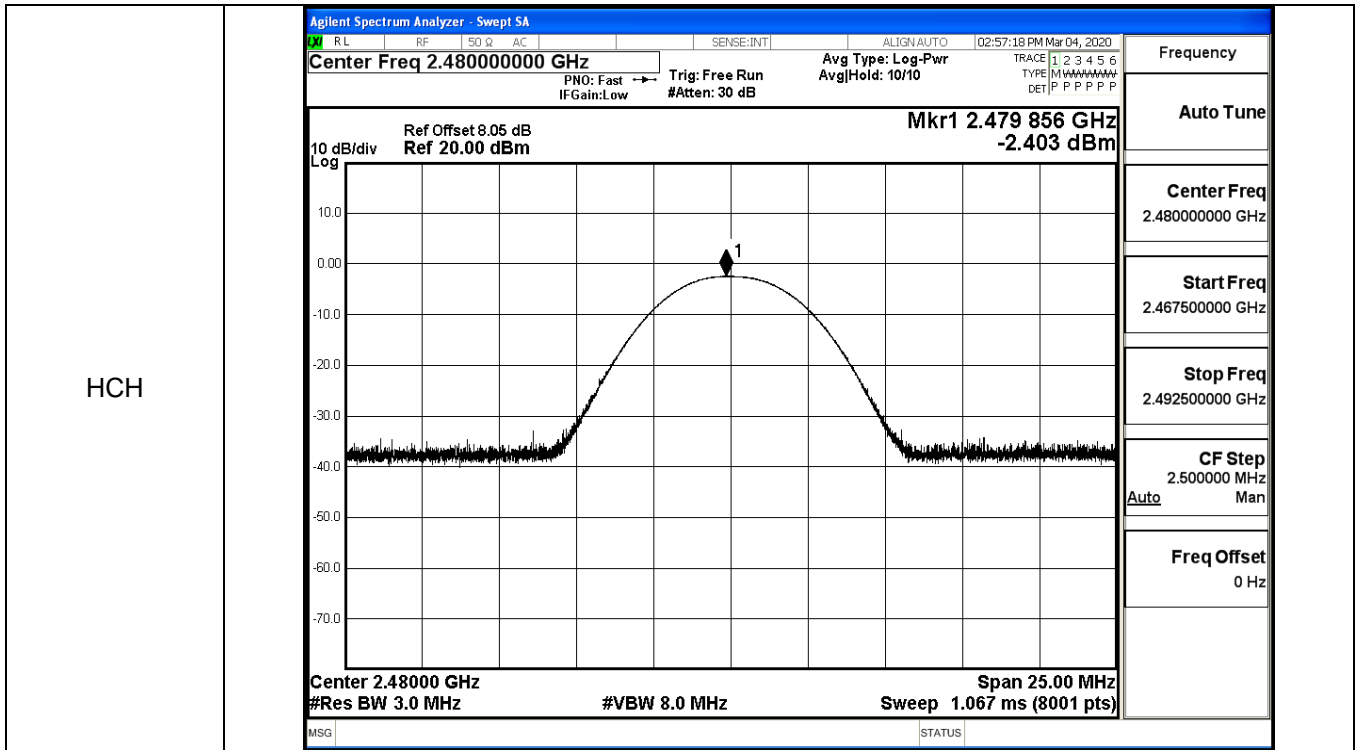
Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
BT LE	2440	Ant1	100	PASS



A.2 Maximum Conducted Peak Output Power

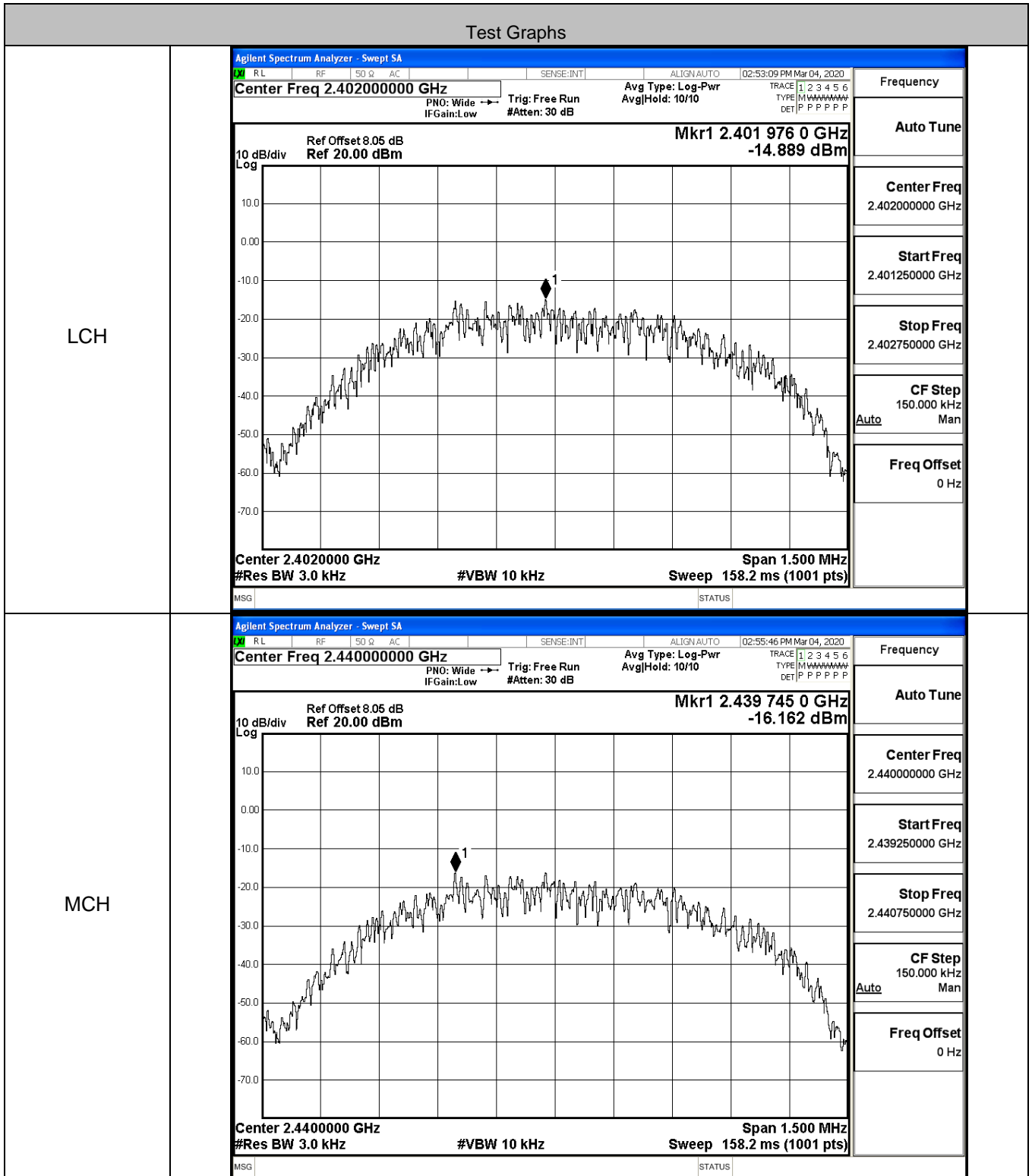
Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.703	30	PASS
BT LE	MCH	-0.703	30	PASS
BT LE	HCH	-2.403	30	PASS

Test Graphs	
LCH	<div style="border: 1px solid black; padding: 5px;"> <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.40200000 GHz Avg Type: Log-Pwr Mkr1 2.401 938 GHz PNO: Fast Trig: Free Run AvgHold: 10/10 0.703 dBm IFGain:Low #Atten: 30 dB</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Center 2.40200 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Sweep 1.067 ms (8001 pts)</p> </div>
MCH	<div style="border: 1px solid black; padding: 5px;"> <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.44000000 GHz Avg Type: Log-Pwr Mkr1 2.439 938 GHz PNO: Fast Trig: Free Run AvgHold: 10/10 -0.703 dBm IFGain:Low #Atten: 30 dB</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Center 2.44000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Sweep 1.067 ms (8001 pts)</p> </div>

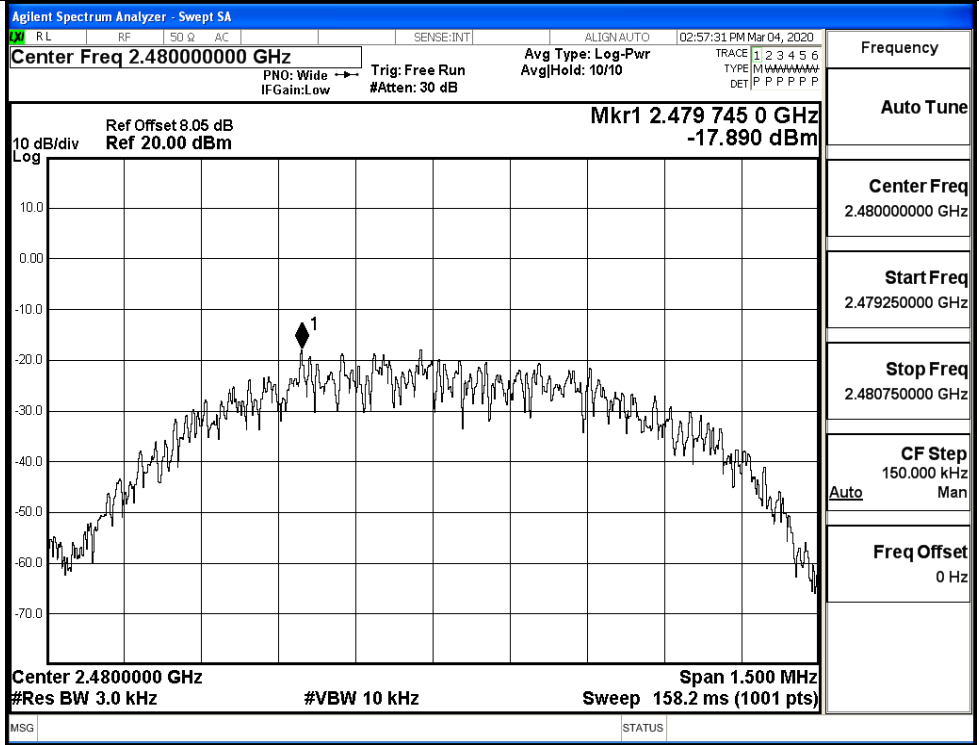


A.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-14.889	8	PASS
BT LE	MCH	-16.162	8	PASS
BT LE	HCH	-17.890	8	PASS



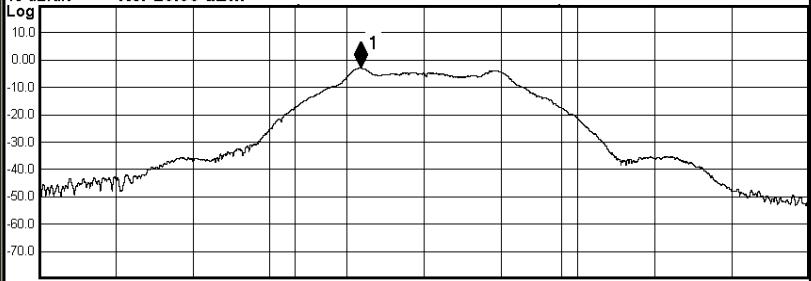
HCH



A.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6961	≥0.5	PASS
BT LE	MCH	0.6969	≥0.5	PASS
BT LE	HCH	0.6927	≥0.5	PASS

Test Graphs	
LCH	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.402000000 GHz Center Freq: 2.402000000 GHz Radio Std: None</p> <p>Trig: Free Run AvgHold: 1/1</p> <p>#IFGain:Low #Atten: 30 dB Radio Device: BTS</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.4017529 GHz 0.098893 dBm</p> <p>Center 2.402 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1.067 ms</p> <p>Occupied Bandwidth 1.0340 MHz</p> <p>Total Power 6.58 dBm</p> <p>Transmit Freq Error 16.177 kHz OBW Power 99.00 %</p> <p>x dB Bandwidth 696.1 kHz x dB -6.00 dB</p>
	<p>Frequency 2.402000000 GHz</p> <p>Center Freq 2.402000000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Freq Offset 0 Hz</p>
MCH	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.440000000 GHz Center Freq: 2.440000000 GHz Radio Std: None</p> <p>Trig: Free Run AvgHold: 1/1</p> <p>#IFGain:Low #Atten: 30 dB Radio Device: BTS</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.4397491 GHz -1.2861 dBm</p> <p>Center 2.44 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1.067 ms</p> <p>Occupied Bandwidth 1.0347 MHz</p> <p>Total Power 5.19 dBm</p> <p>Transmit Freq Error 16.602 kHz OBW Power 99.00 %</p> <p>x dB Bandwidth 696.9 kHz x dB -6.00 dB</p>
	<p>Frequency 2.440000000 GHz</p> <p>Center Freq 2.440000000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Freq Offset 0 Hz</p>

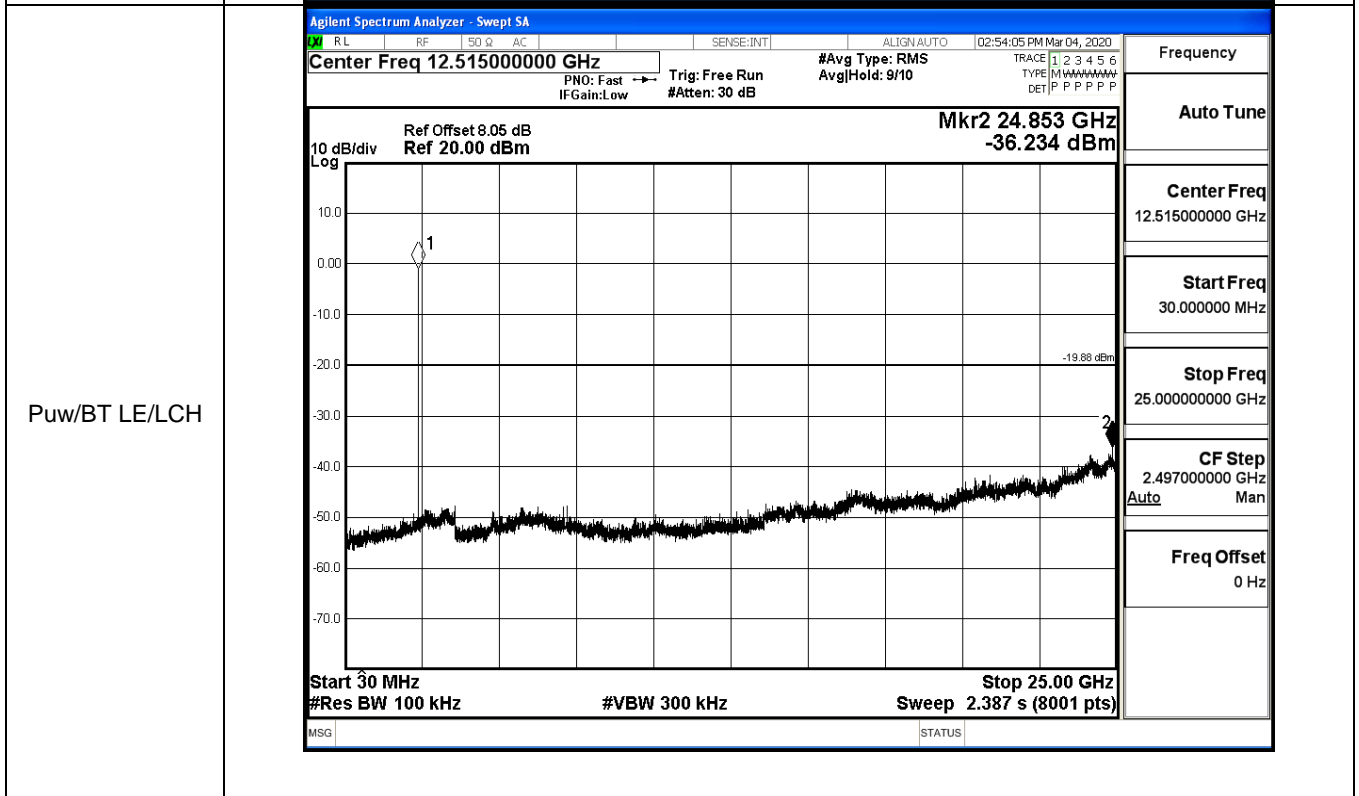
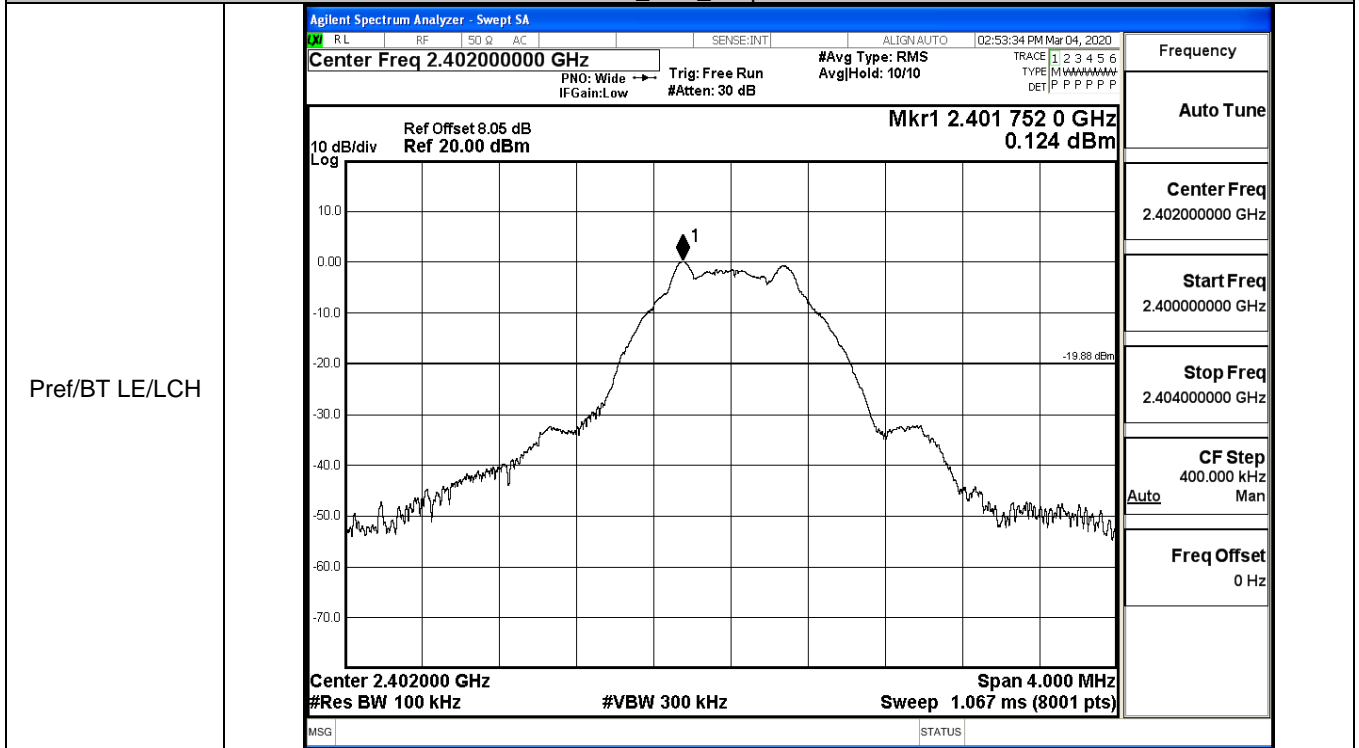
HCH	Agilent Spectrum Analyzer - Occupied BW	
	RL RF 50 Ω AC SENSE:INT ALIGN:AUTO 02:57:07 PM Mar 04, 2020	Center Freq: 2.480000000 GHz
	Center Freq: 2.480000000 GHz	Trig: Free Run AvgHold: 1/1
	#IFGain:Low #Atten: 30 dB	Radio Device: BTS
	Ref Offset 8.05 dB Mkr1 2.4797529 GHz Ref 20.00 dBm -3.0022 dBm	
		
Center 2.48 GHz Span 3 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms		
Occupied Bandwidth Total Power 3.47 dBm 1.0339 MHz		
Transmit Freq Error 17.745 kHz OBW Power 99.00 % x dB Bandwidth 692.7 kHz x dB -6.00 dB		
MSG	STATUS	

Frequency
Center Freq 2.480000000 GHz
CF Step 300.000 kHz Auto Man
Freq Offset 0 Hz

A.5 RF Conducted Spurious Emissions

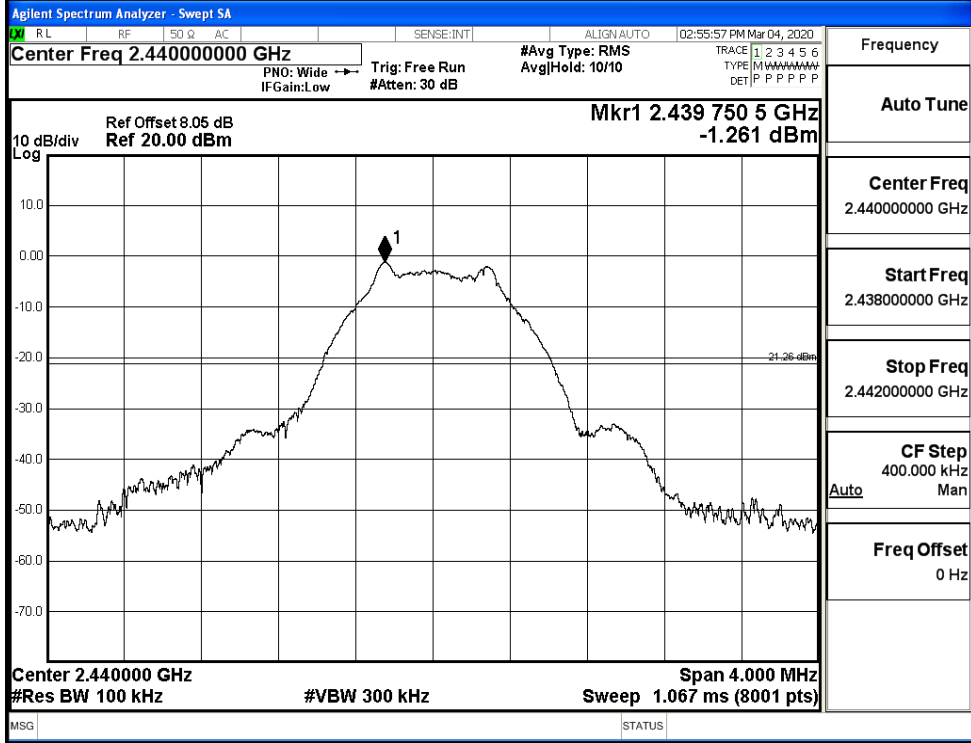
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.124	-36.234	-19.876	PASS
BT LE	MCH	-1.261	-36.843	-21.261	PASS
BT LE	HCH	-2.993	-36.799	-22.993	PASS

BT LE_LCH_Graphs

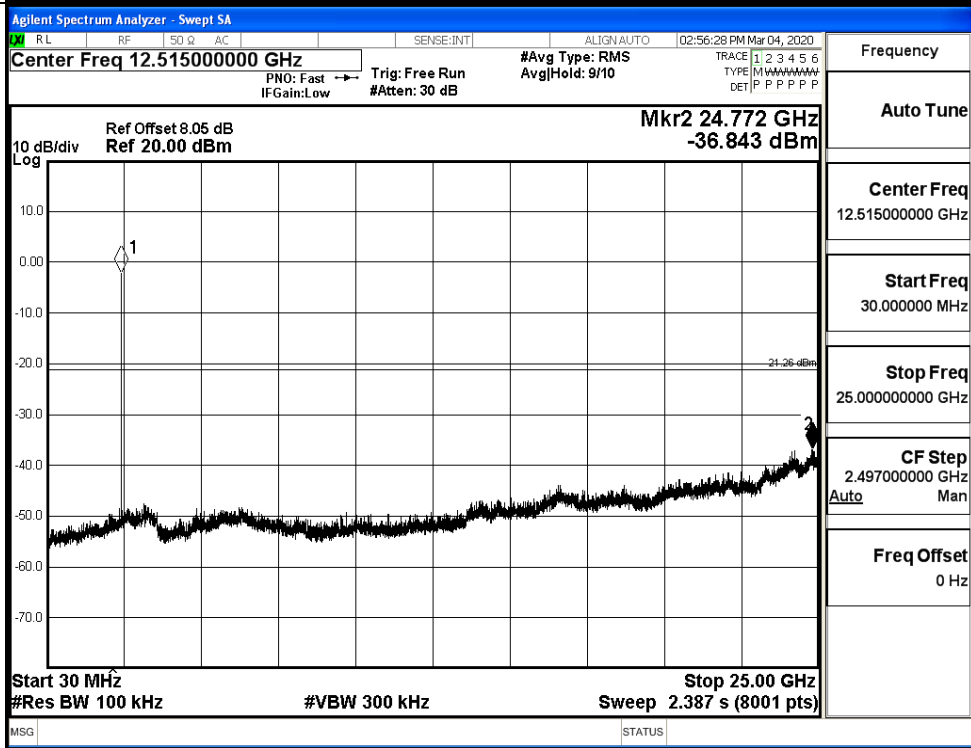


BT LE_MCH_Graphs

Pref/BT LE/MCH

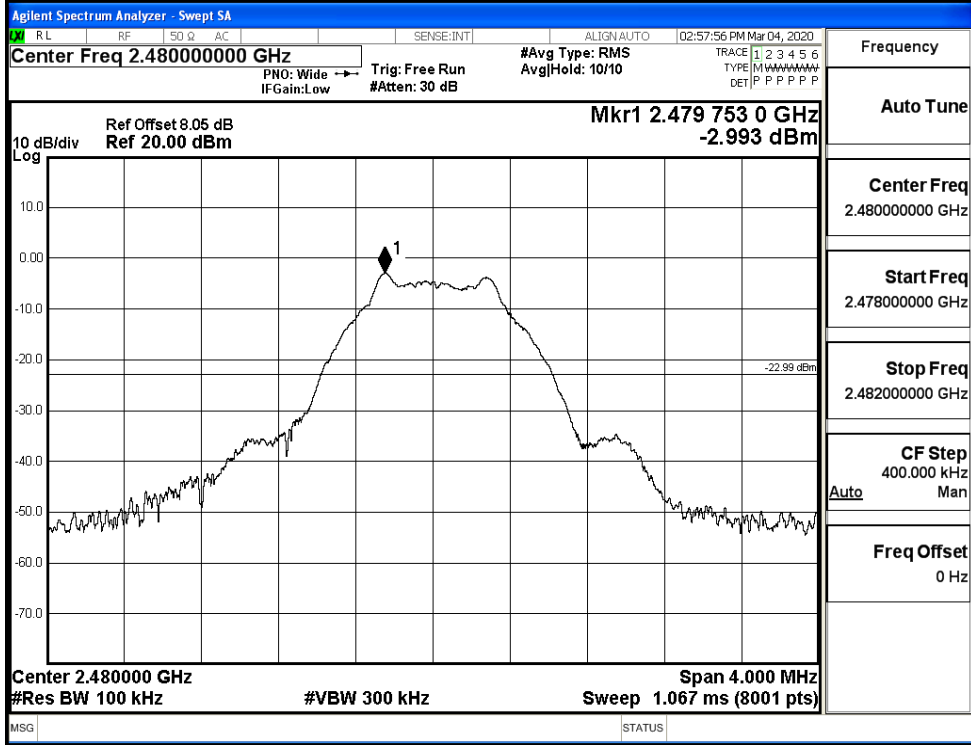


Puw/BT LE/MCH

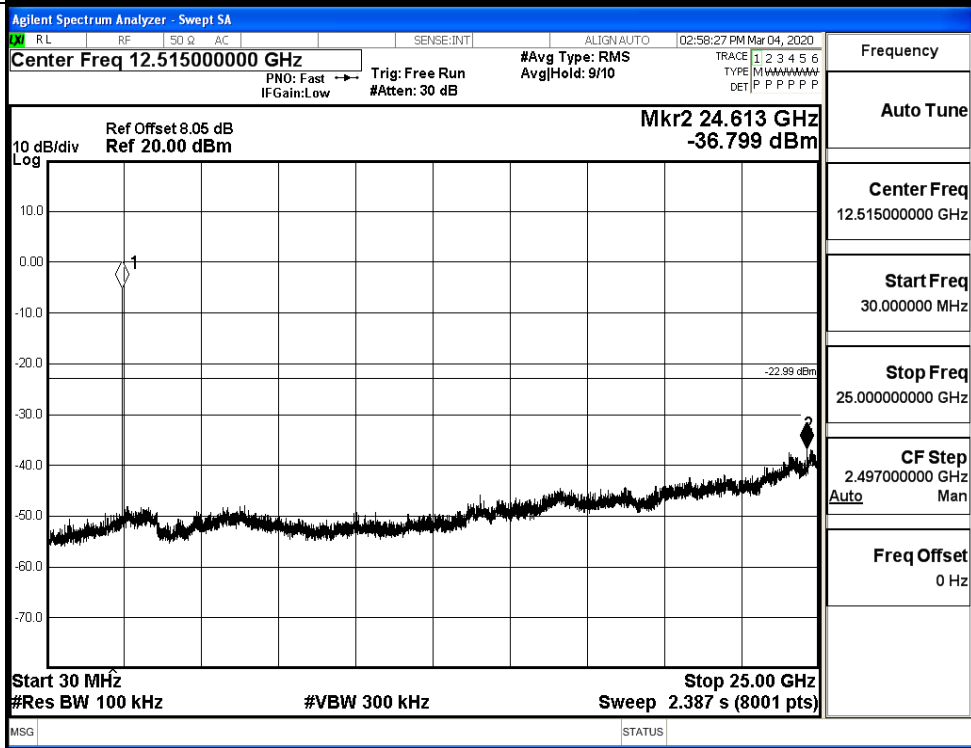


BT LE_HCH_Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH



A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.122	-49.661	-19.88	PASS
BT LE	HCH	-2.984	-49.873	-22.98	PASS

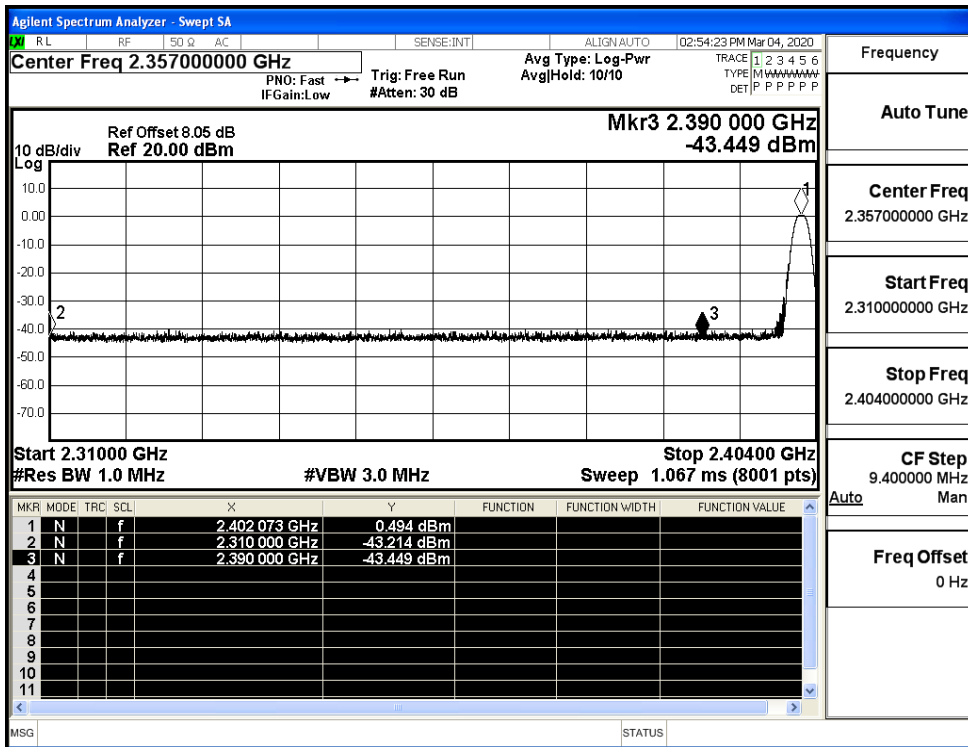
Test Graphs

LCH	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.35700000 GHz #Avg Type: RMS AvgHold: 10/10 Mkr4 2.338 212 GHz -49.661 dBm Start 2.31000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 9.067 ms (8001 pts) Stop 2.40400 GHz</p> <table border="1" style="width: 100%; font-size: small;"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr><td>1</td><td>N</td><td>f</td><td></td><td>2.401 756 GHz</td><td>0.122 dBm</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>N</td><td>f</td><td></td><td>2.400 000 GHz</td><td>-49.571 dBm</td><td></td><td></td><td></td></tr> <tr><td>3</td><td>N</td><td>f</td><td></td><td>2.390 000 GHz</td><td>-53.234 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>f</td><td></td><td>2.338 212 GHz</td><td>-49.661 dBm</td><td></td><td></td><td></td></tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	f		2.401 756 GHz	0.122 dBm				2	N	f		2.400 000 GHz	-49.571 dBm				3	N	f		2.390 000 GHz	-53.234 dBm				4	N	f		2.338 212 GHz	-49.661 dBm				Frequency Auto Tune Center Freq 2.35700000 GHz Start Freq 2.310000000 GHz Stop Freq 2.404000000 GHz CF Step 9.400000 MHz Freq Offset 0 Hz
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HCH	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.48900000 GHz #Avg Type: RMS AvgHold: 10/10 Mkr4 2.487 963 25 GHz -49.873 dBm Start 2.47800 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.133 ms (8001 pts) Stop 2.50000 GHz</p> <table border="1" style="width: 100%; font-size: small;"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr><td>1</td><td>N</td><td>f</td><td></td><td>2.479 767 25 GHz</td><td>-2.984 dBm</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>N</td><td>f</td><td></td><td>2.483 500 00 GHz</td><td>-52.680 dBm</td><td></td><td></td><td></td></tr> <tr><td>3</td><td>N</td><td>f</td><td></td><td>2.500 000 00 GHz</td><td>-52.980 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>f</td><td></td><td>2.487 963 25 GHz</td><td>-49.873 dBm</td><td></td><td></td><td></td></tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	f		2.479 767 25 GHz	-2.984 dBm				2	N	f		2.483 500 00 GHz	-52.680 dBm				3	N	f		2.500 000 00 GHz	-52.980 dBm				4	N	f		2.487 963 25 GHz	-49.873 dBm				Frequency Auto Tune Center Freq 2.489000000 GHz Start Freq 2.478000000 GHz Stop Freq 2.500000000 GHz CF Step 2.200000 MHz Freq Offset 0 Hz
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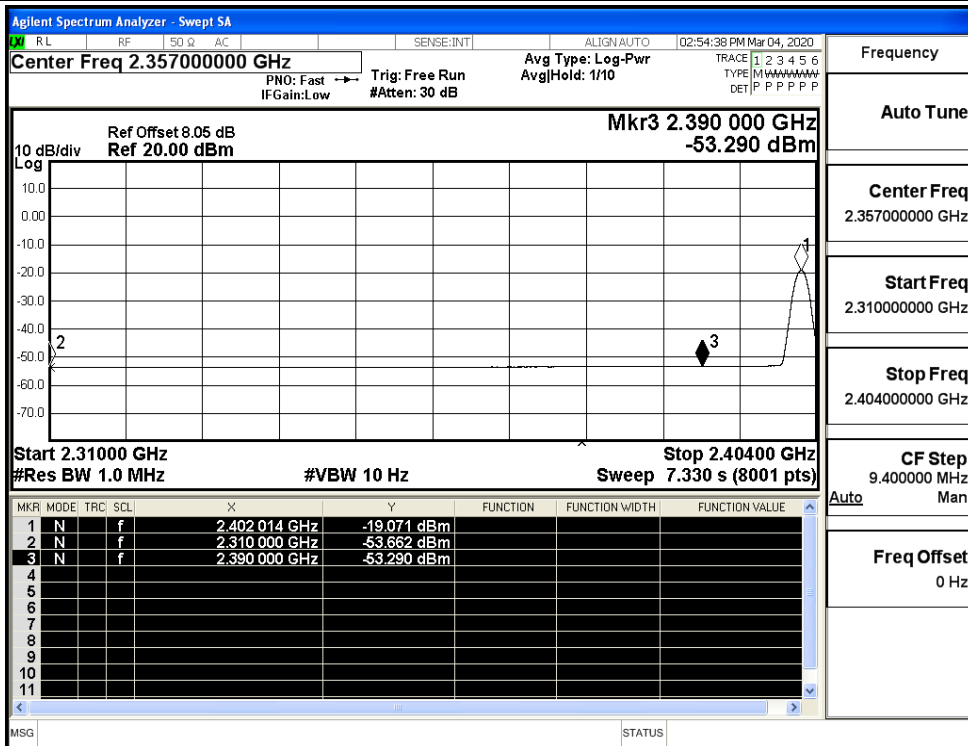
A.7 Restrict-band band-edge measurements

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	-43.21	2.0	0	52.04	PEAK	74	PASS
		Ant1	2310.0	-53.66	2.0	0	41.60	AV	54	PASS
		Ant1	2390.0	-43.45	2.0	0	51.81	PEAK	74	PASS
		Ant1	2390.0	-53.29	2.0	0	41.97	AV	54	PASS
	2480	Ant1	2483.5	-42.86	2.0	0	52.40	PEAK	74	PASS
		Ant1	2483.5	-52.85	2.0	0	42.41	AV	54	PASS
		Ant1	2500.0	-41.79	2.0	0	53.47	PEAK	74	PASS
		Ant1	2500.0	-52.66	2.0	0	42.59	AV	54	PASS

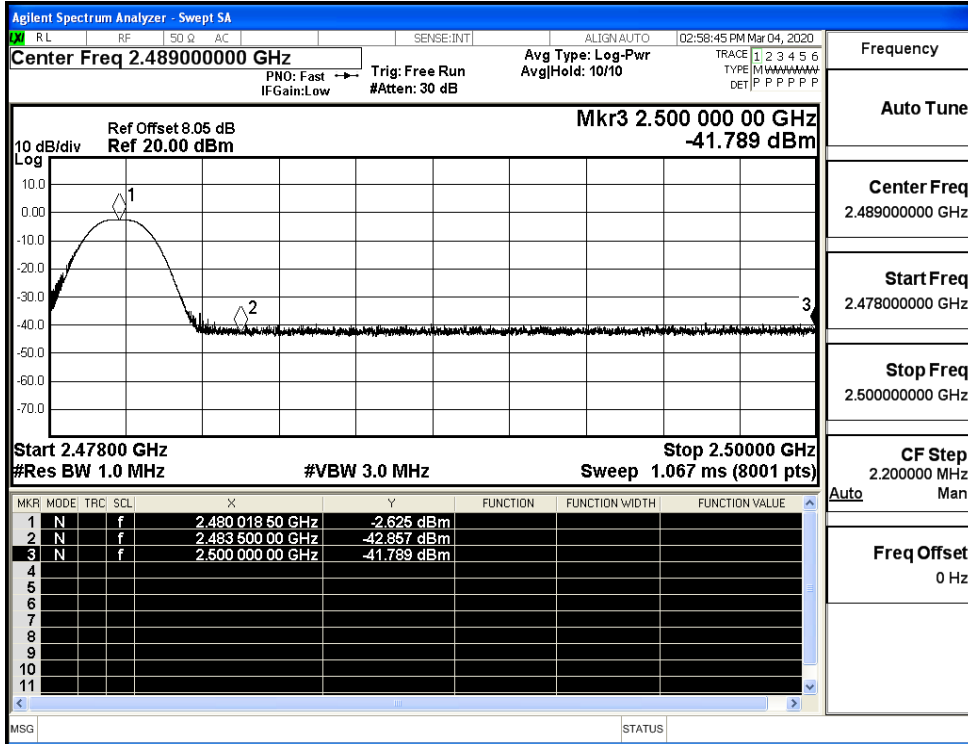
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

