

Appendix A

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

Product Name: Assist Monitoring System Sekurlt

Trade Mark: Sekurlt

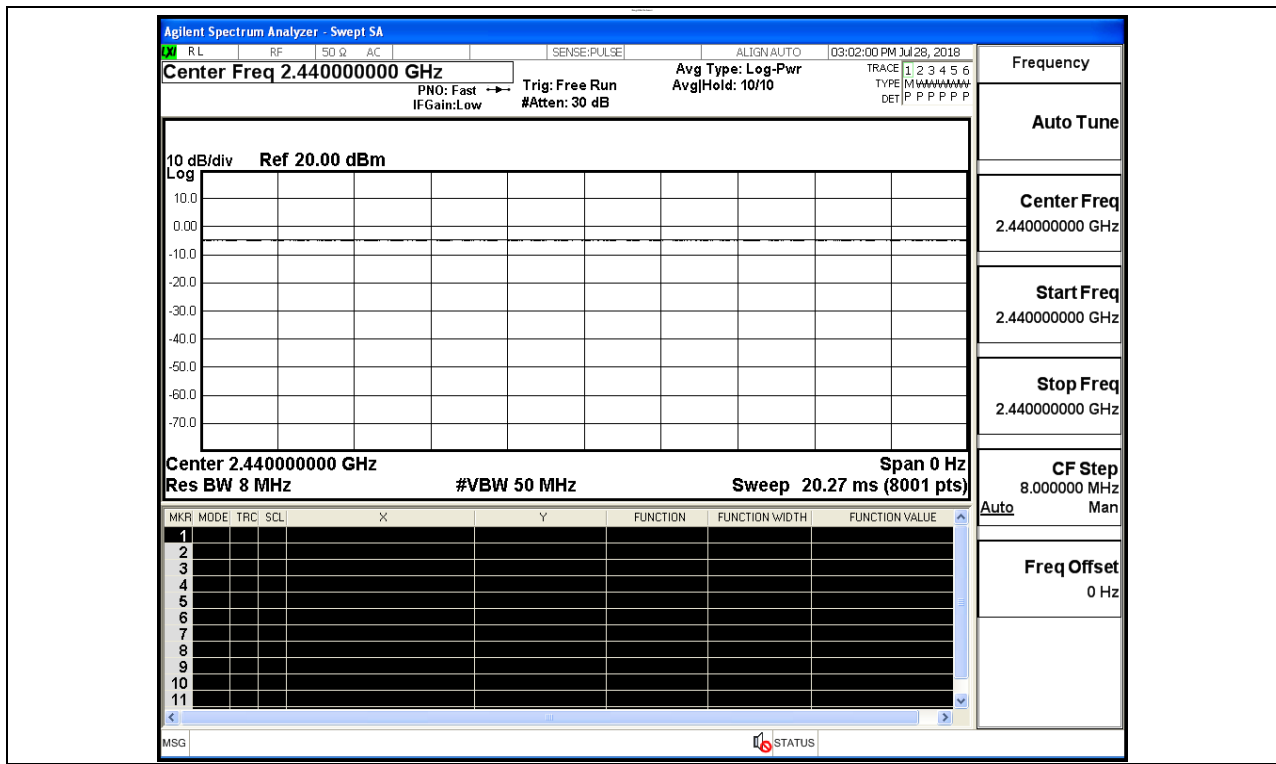
Test Model: SU376B

Environmental Conditions

Temperature:	22.7° C
Relative Humidity:	53.5%
ATM Pressure:	100.0 kPa
Test Engineer:	WangChuang
Supervised by:	Jayden.Zhuo

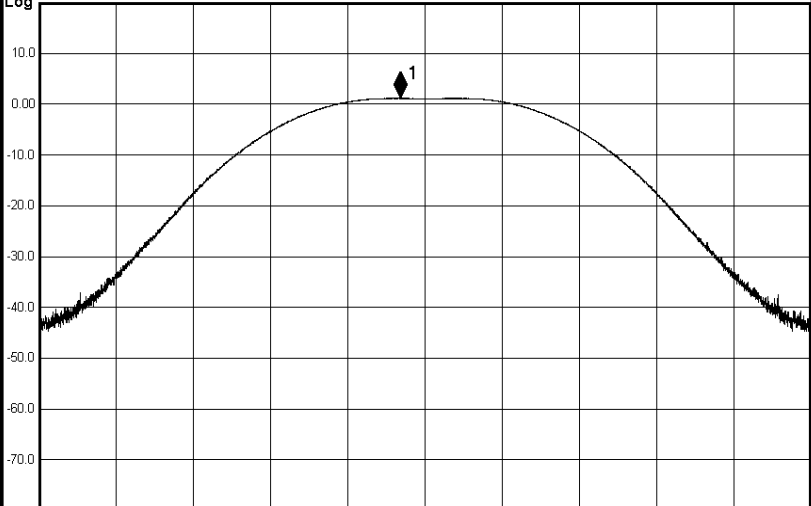
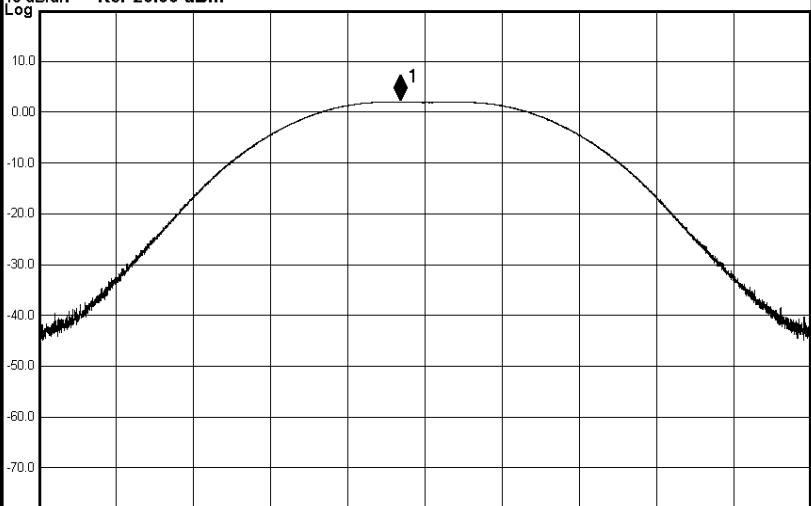
A.1 Duty Cycle

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

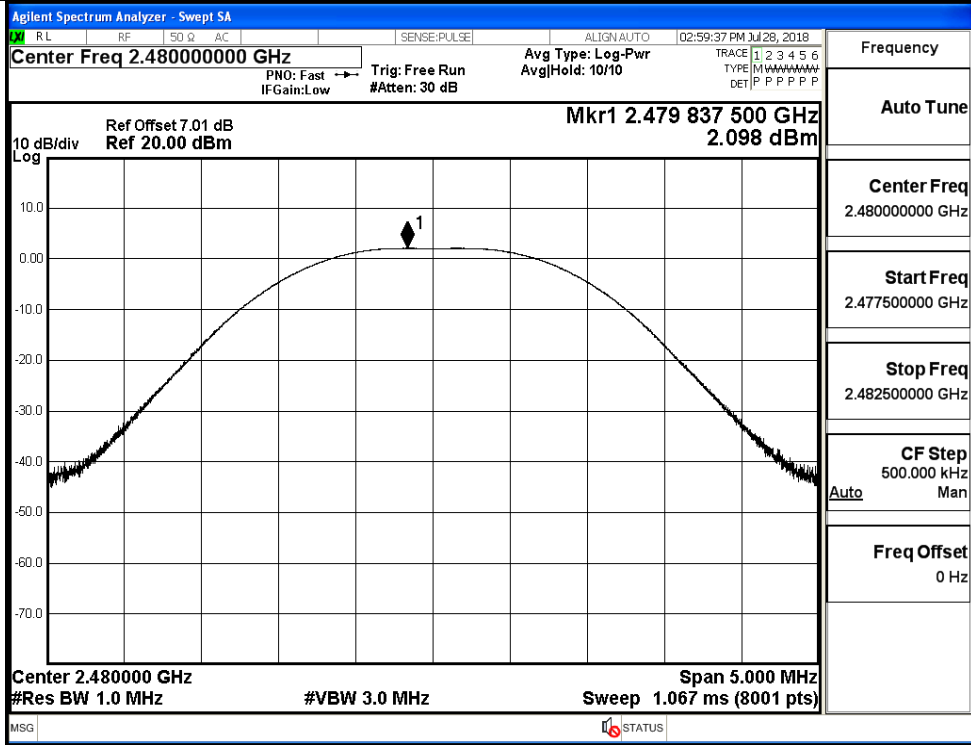


A.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	1.171	30	PASS
BT LE	MCH	2.036	30	PASS
BT LE	HCH	2.098	30	PASS

Test Graphs	
LCH	<div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Swept SA</p> <p style="font-size: x-small; margin: 0;">RL RF 50 Ω AC SENSE:PULSE ALIGN:AUTO 02:55:06 PM Jul 28, 2018</p> <p style="font-size: small; margin: 0;">Center Freq 2.40200000 GHz Avg Type: Log-Pwr TRACE 1 2 3 4 5 6</p> <p style="font-size: x-small; margin: 0;">PNO: Fast Trig: Free Run AvgHold: 10/10 TYPE M W M M M M M M</p> <p style="font-size: x-small; margin: 0;">IFGain:Low #Atten: 30 dB DET P P P P P P</p> <div style="display: flex; justify-content: space-between; font-size: small;"> Ref Offset 7.01 dB Mkr1 2.401 841 875 GHz </div> <div style="display: flex; justify-content: space-between; font-size: small;"> Ref 20.00 dBm 1.171 dBm </div>  <div style="display: flex; justify-content: space-between; font-size: x-small; margin-top: 5px;"> Center 2.402000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 5.000 MHz </div> <div style="display: flex; justify-content: space-between; font-size: x-small; margin-top: 0;"> Sweep 1.067 ms (8001 pts) </div> <p style="font-size: x-small; margin-top: 5px;">MSG STATUS</p> </div>
MCH	<div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Swept SA</p> <p style="font-size: x-small; margin: 0;">RL RF 50 Ω AC SENSE:PULSE ALIGN:AUTO 02:57:47 PM Jul 28, 2018</p> <p style="font-size: small; margin: 0;">Center Freq 2.44000000 GHz Avg Type: Log-Pwr TRACE 1 2 3 4 5 6</p> <p style="font-size: x-small; margin: 0;">PNO: Fast Trig: Free Run AvgHold: 10/10 TYPE M W M M M M M M</p> <p style="font-size: x-small; margin: 0;">IFGain:Low #Atten: 30 dB DET P P P P P P</p> <div style="display: flex; justify-content: space-between; font-size: small;"> Ref Offset 7.01 dB Mkr1 2.439 840 625 GHz </div> <div style="display: flex; justify-content: space-between; font-size: small;"> Ref 20.00 dBm 2.036 dBm </div>  <div style="display: flex; justify-content: space-between; font-size: x-small; margin-top: 5px;"> Center 2.440000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 5.000 MHz </div> <div style="display: flex; justify-content: space-between; font-size: x-small; margin-top: 0;"> Sweep 1.067 ms (8001 pts) </div> <p style="font-size: x-small; margin-top: 5px;">MSG STATUS</p> </div>

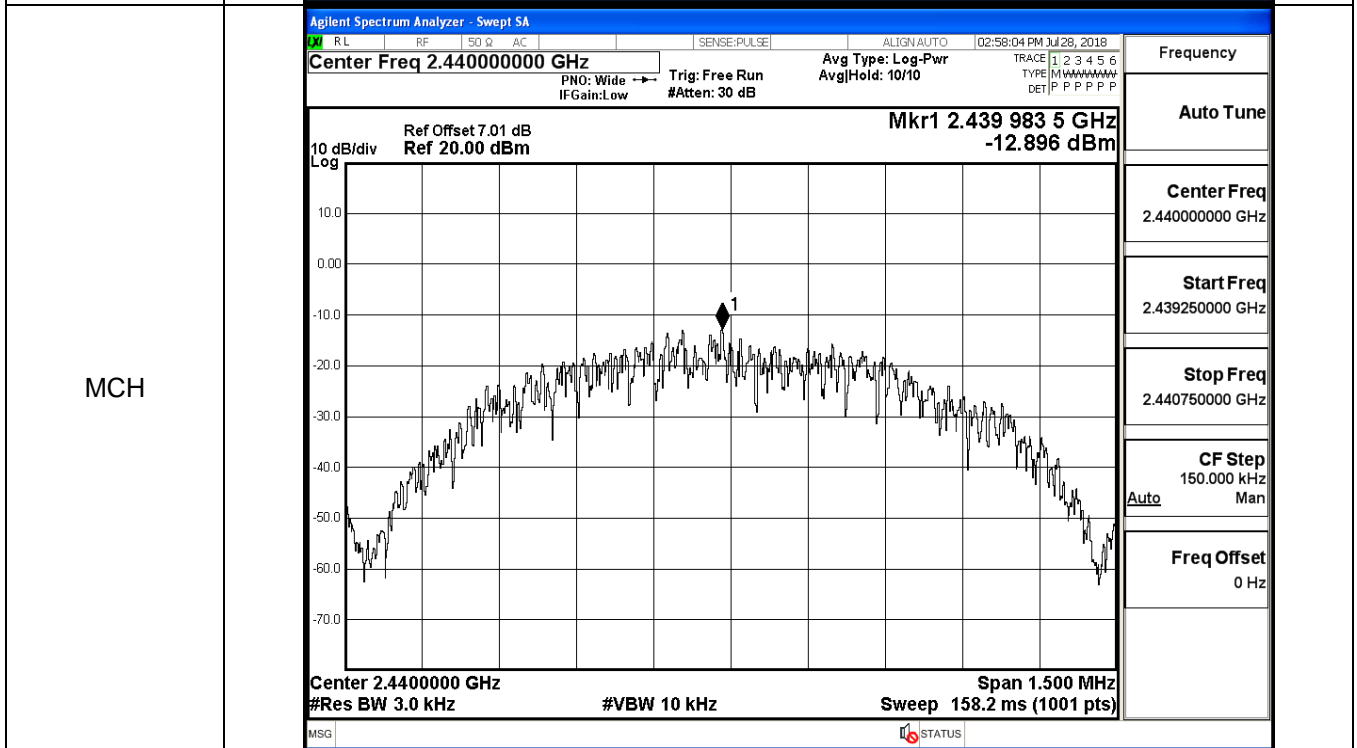
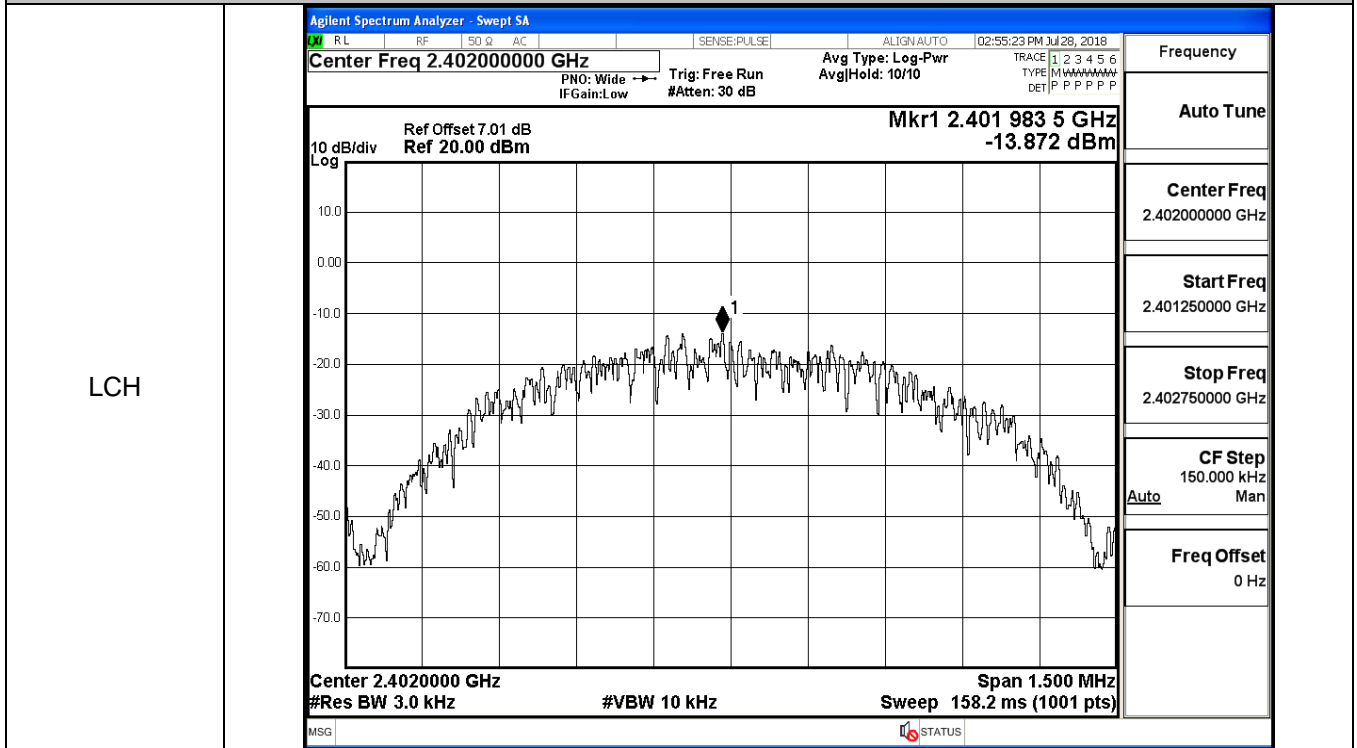
HCH



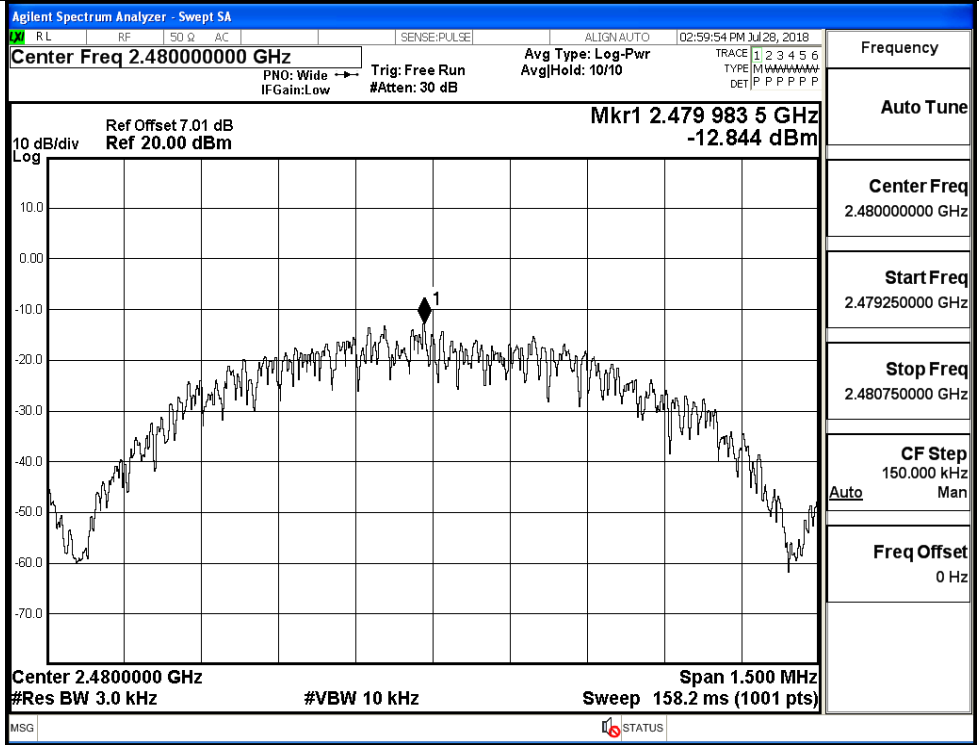
A.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-13.872	8	PASS
BT LE	MCH	-12.896	8	PASS
BT LE	HCH	-12.844	8	PASS

Test Graphs



HCH



A.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6978	≥0.5	PASS
BT LE	MCH	0.6939	≥0.5	PASS
BT LE	HCH	0.6853	≥0.5	PASS

Test Graphs

LCH	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.40200000 GHz Center Freq: 2.402000000 GHz Radio Std: None Trig: Free Run Avg/Hold: 1/1 #IFGain: Low #Atten: 30 dB Radio Device: BTS</p> <p>Ref Offset 7.01 dB Mkr1 2.4019963 GHz Ref 20.00 dBm 0.36958 dBm</p> <p>10 dB/div Log</p> <p>Center 2.402 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1.067 ms</p> <p>Occupied Bandwidth 1.0455 MHz Total Power 7.47 dBm</p> <p>Transmit Freq Error 9.145 kHz OBW Power 99.00 % x dB Bandwidth 697.8 kHz x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.402000000 GHz</p> <p>CF Step 300.000 kHz Auto Man</p> <p>Freq Offset 0 Hz</p>
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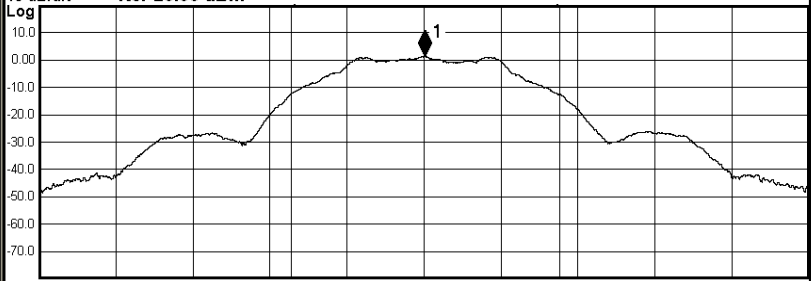
MCH	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.44000000 GHz Center Freq: 2.440000000 GHz Radio Std: None Trig: Free Run Avg/Hold: >1/1 #IFGain: Low #Atten: 30 dB Radio Device: BTS</p> <p>Ref Offset 7.01 dB Mkr1 2.4400008 GHz Ref 20.00 dBm 1.2312 dBm</p> <p>10 dB/div Log</p> <p>Center 2.44 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1.067 ms</p> <p>Occupied Bandwidth 1.0432 MHz Total Power 8.34 dBm</p> <p>Transmit Freq Error 7.662 kHz OBW Power 99.00 % x dB Bandwidth 693.9 kHz x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.440000000 GHz</p> <p>CF Step 300.000 kHz Auto Man</p> <p>Freq Offset 0 Hz</p>
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HCH

Agilent Spectrum Analyzer - Occupied BW

RL	RF	50 Ω	AC	SENSE: PULSE	ALIGN: AUTO	02:59:22 PM Jul 28, 2018
Center Freq 2.480000000 GHz			Center Freq: 2.480000000 GHz		Radio Std: None	
			Trig: Free Run		AvgHold: >1/1	
#IF Gain: Low			#Atten: 30 dB		Radio Device: BTS	

10 dB/div	Ref Offset 7.01 dB	Mkr1 2.4800023 GHz
Log	Ref 20.00 dBm	1.2957 dBm



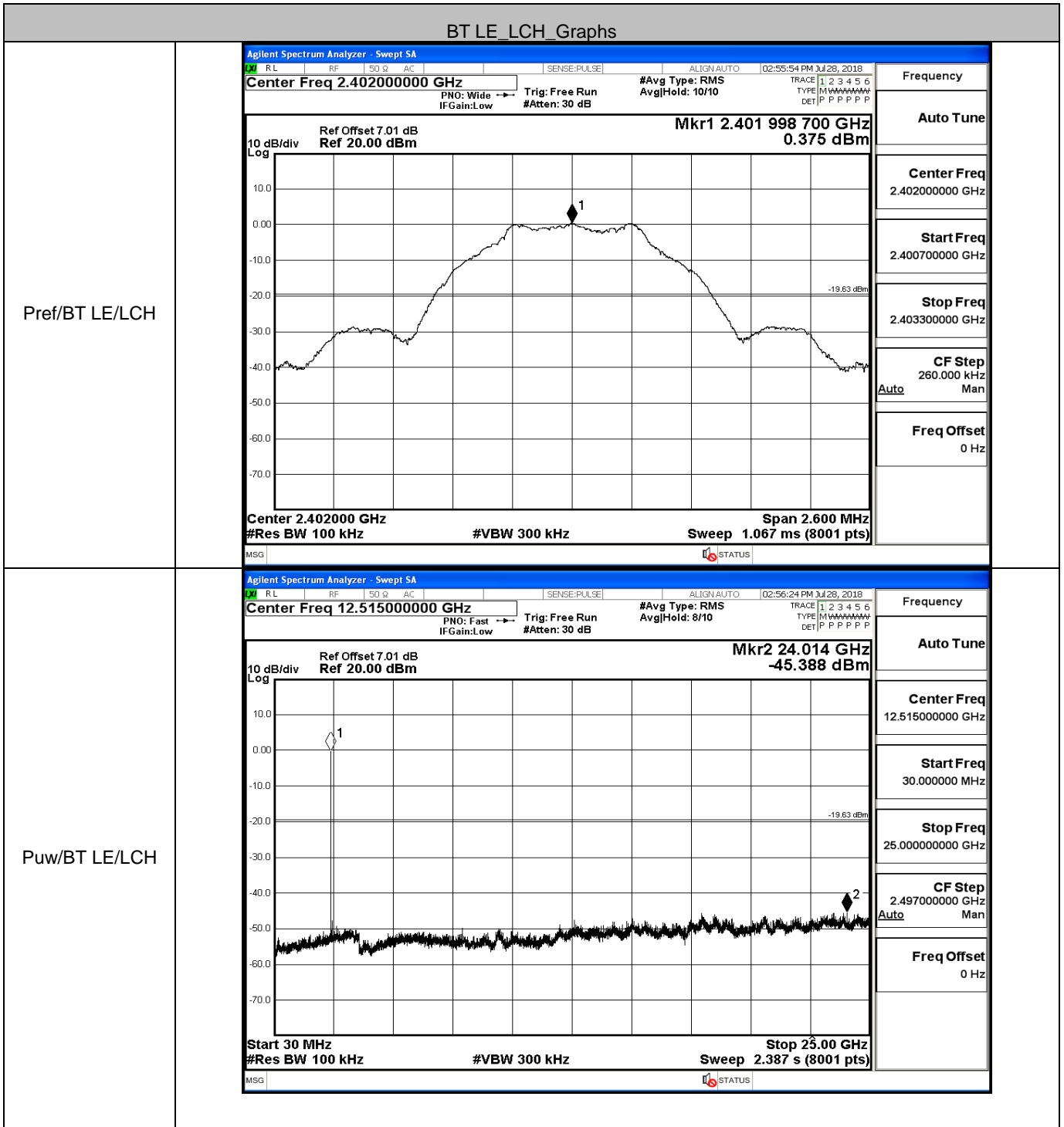
Center 2.48 GHz	#VBW 300 kHz	Span 3 MHz
#Res BW 100 kHz		Sweep 1.067 ms

Occupied Bandwidth	Total Power	8.33 dBm
1.0379 MHz		
Transmit Freq Error	8.069 kHz	OBW Power
x dB Bandwidth	685.3 kHz	x dB
		99.00 %
		-6.00 dB

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

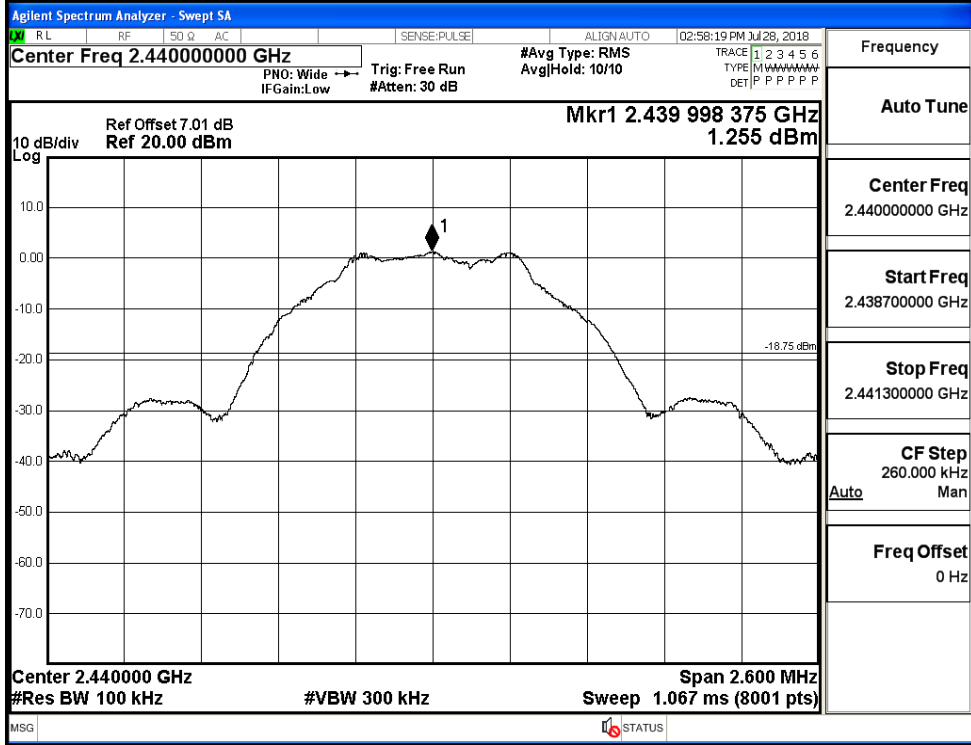
A.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.375	-45.388	-19.625	PASS
BT LE	MCH	1.255	-44.580	-18.745	PASS
BT LE	HCH	1.281	-45.583	-18.719	PASS

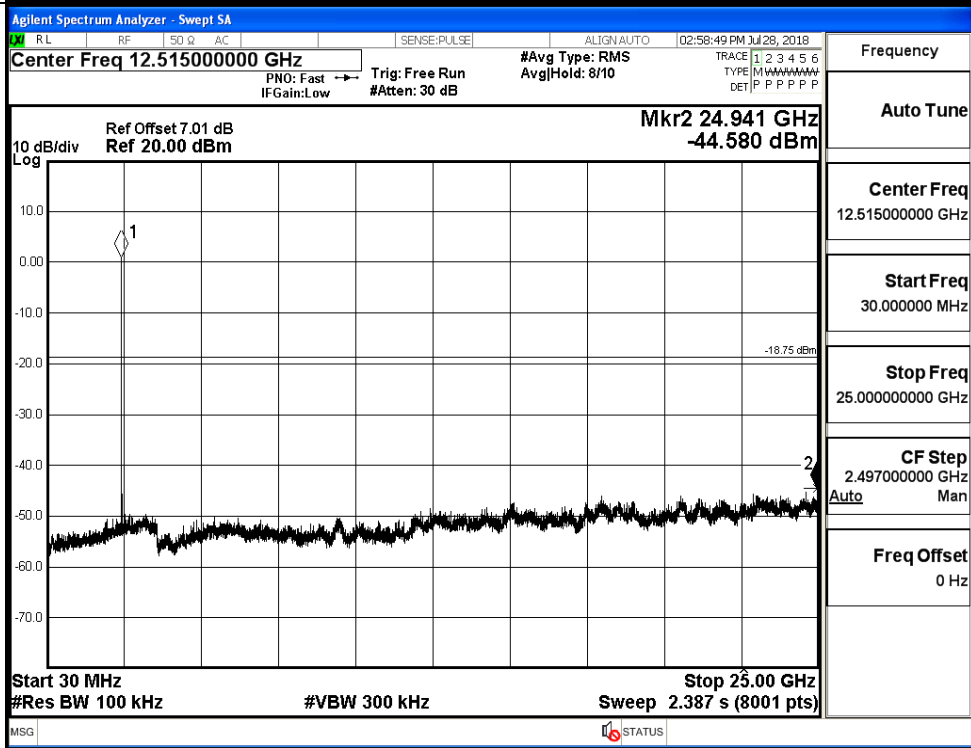


BT LE_MCH_Graphs

Pref/BT LE/MCH

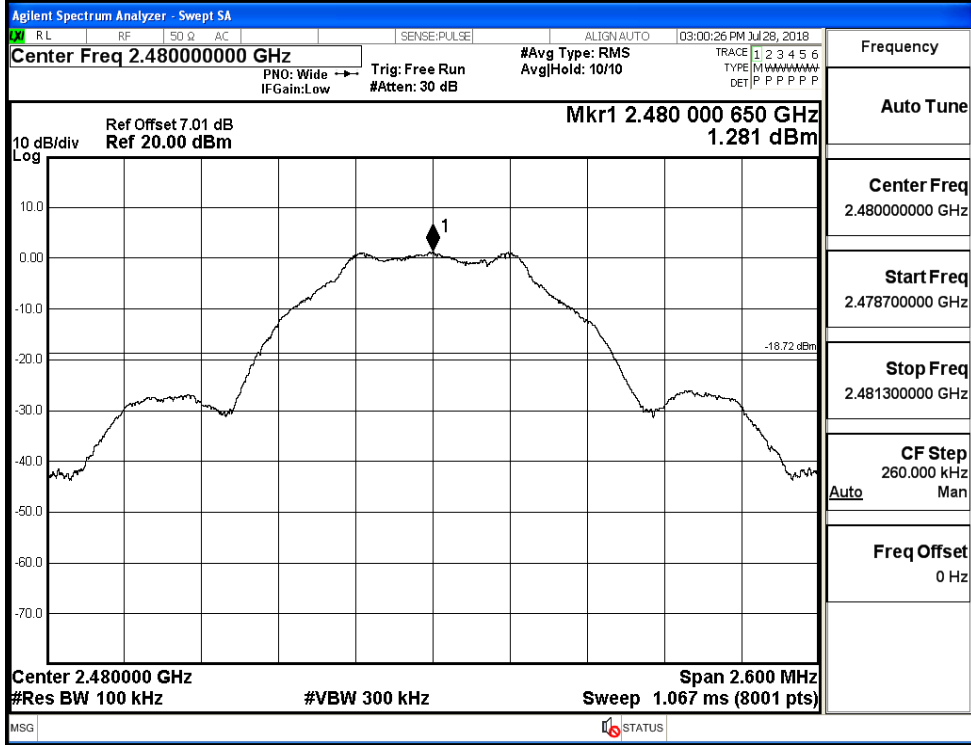


Puw/BT LE/MCH

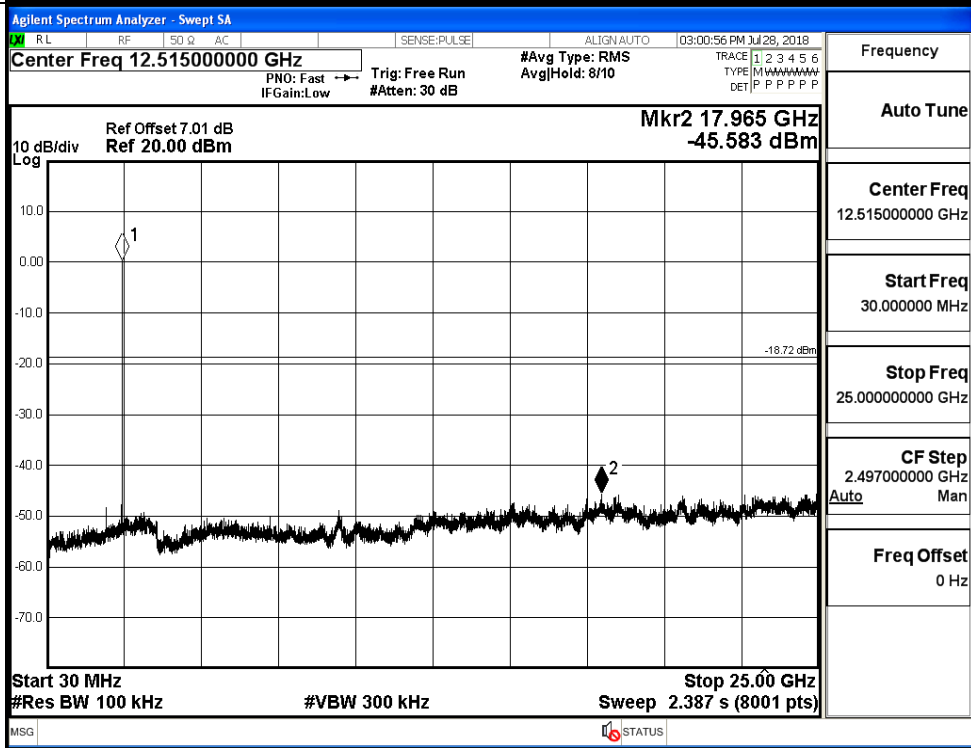


BT LE_HCH_Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH



A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.623	-51.220	-19.38	PASS
BT LE	HCH	1.456	-51.530	-18.54	PASS

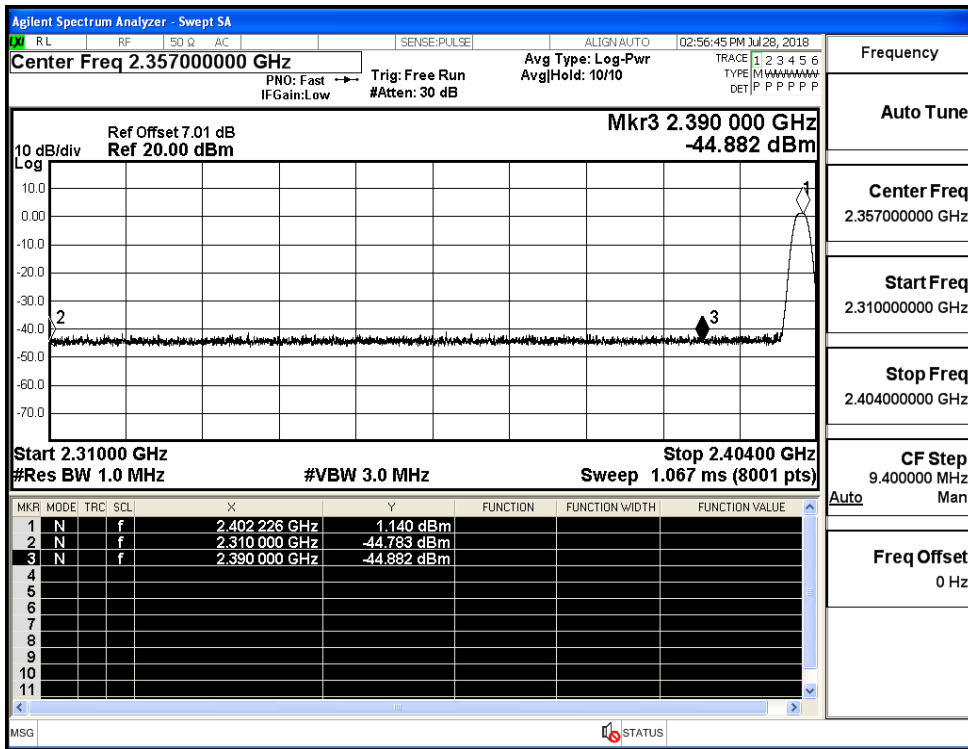
Test Graphs

LCH	<table border="1" style="width: 100%; border-collapse: collapse; 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>2.401991 GHz</td><td>0.623 dBm</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>N</td><td>f</td><td></td><td>2.400000 GHz</td><td>-53.428 dBm</td><td></td><td></td><td></td></tr> <tr><td>3</td><td>N</td><td>f</td><td></td><td>2.390000 GHz</td><td>-55.960 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>f</td><td></td><td>2.379325 GHz</td><td>-51.220 dBm</td><td></td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	f		2.401991 GHz	0.623 dBm				2	N	f		2.400000 GHz	-53.428 dBm				3	N	f		2.390000 GHz	-55.960 dBm				4	N	f		2.379325 GHz	-51.220 dBm				5									6									7									8									9									10									11									<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.35700000 GHz</p> <p>Start Freq 2.31000000 GHz</p> <p>Stop Freq 2.40400000 GHz</p> <p>CF Step 9.400000 MHz</p> <p>Freq Offset 0 Hz</p>
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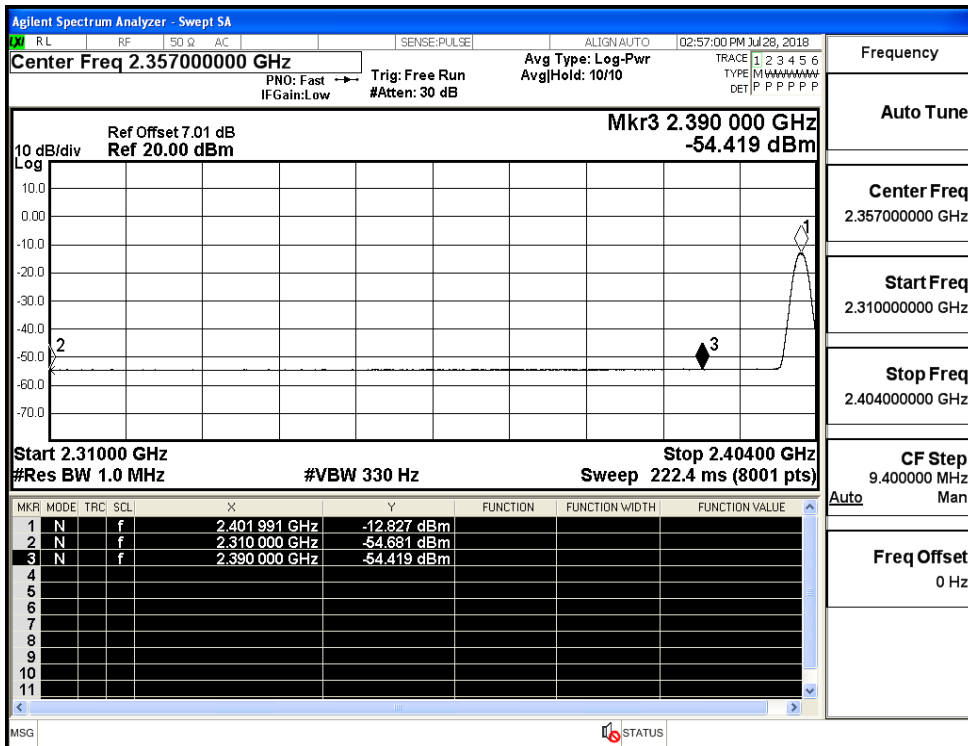
A.7 Restrict-band band-edge measurements

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	-44.78	2.0	0	50.47	PEAK	74	PASS
		Ant1	2310.0	-54.68	2.0	0	40.58	AV	54	PASS
		Ant1	2390.0	-44.88	2.0	0	50.38	PEAK	74	PASS
		Ant1	2390.0	-54.42	2.0	0	40.84	AV	54	PASS
	2480	Ant1	2483.5	-44.46	2.0	0	50.80	PEAK	74	PASS
		Ant1	2483.5	-54.06	2.0	0	41.20	AV	54	PASS
		Ant1	2500.0	-43.59	2.0	0	51.67	PEAK	74	PASS
		Ant1	2500.0	-53.99	2.0	0	41.27	AV	54	PASS

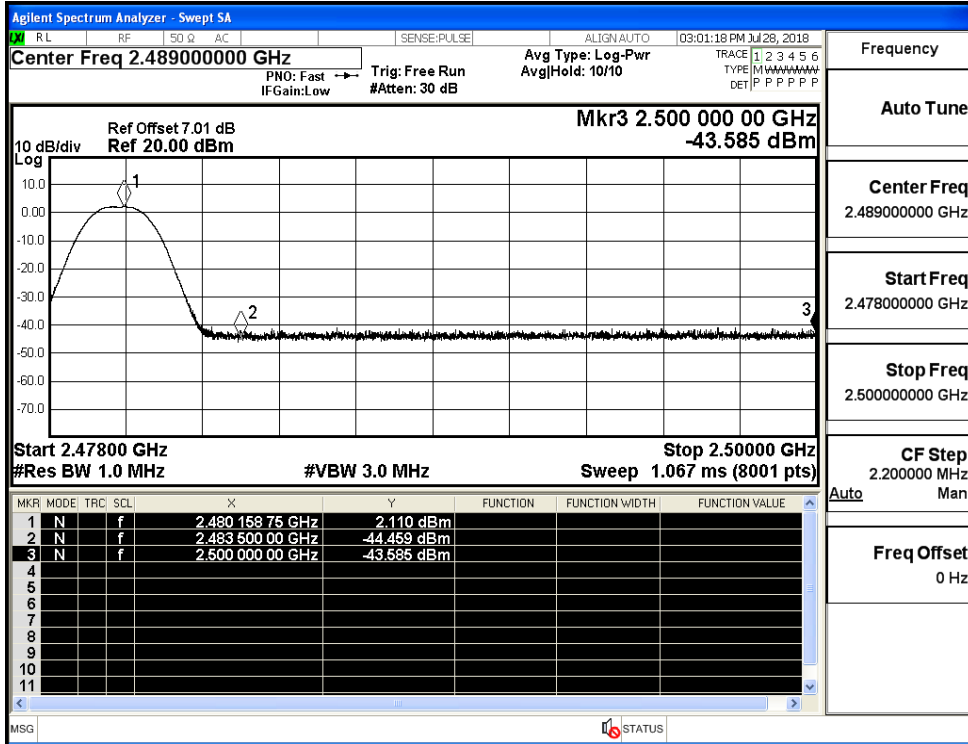
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

