

Appendix B

RF Test Data for BT V5.0(LE) (Conducted Measurement)

Product Name: Bluetooth Handwriting Tablet

Trade Mark: XPPEN

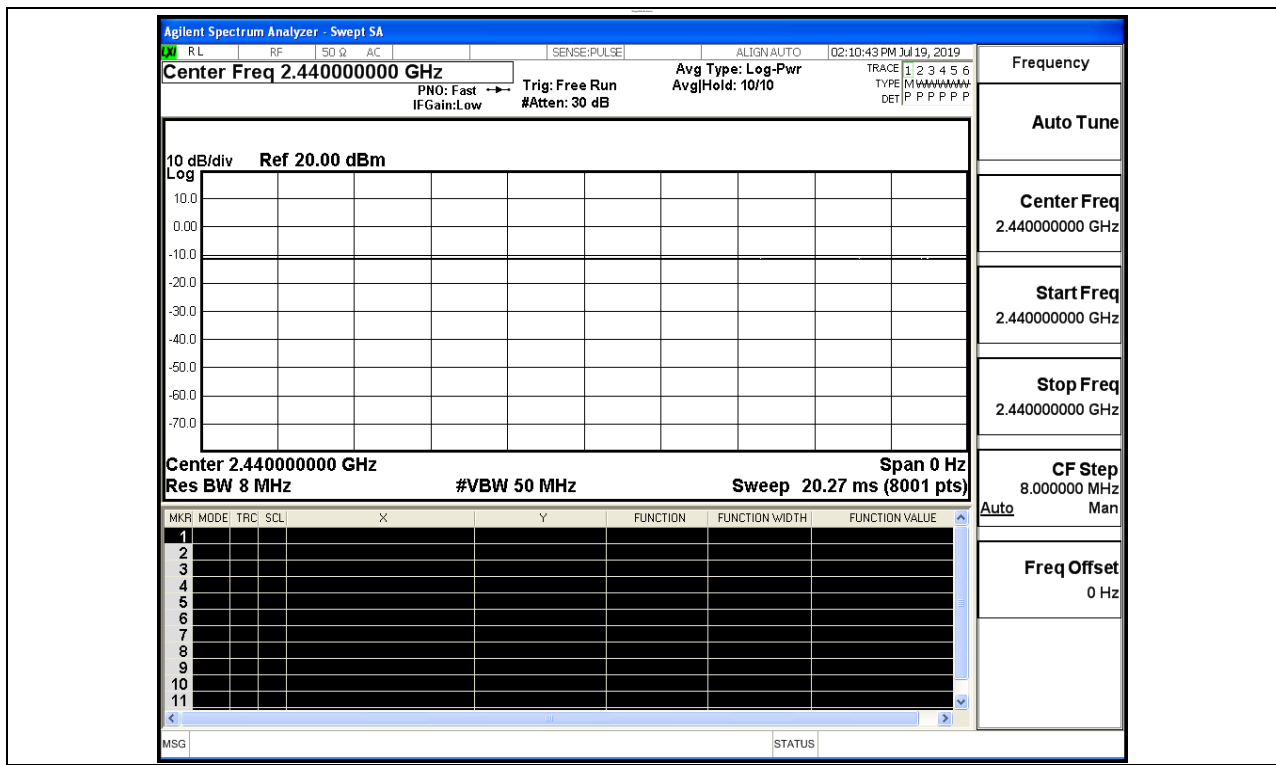
Test Model: Note Plus

Environmental Conditions

Temperature:	23.9 C
Relative Humidity:	52.9%
ATM Pressure:	100.0 kPa
Test Engineer:	JERRY.ZENG
Supervised by:	Wang.Chuang

B.1 Duty Cycle

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



B.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	-0.782	30	PASS
BT LE	MCH	-3.066	30	PASS
BT LE	HCH	-5.786	30	PASS

Test Graphs

LCH

Keysight Spectrum Analyzer - Swept SA

Center Freq 2.40200000 GHz

Mkr1 2.401 67 GHz
-0.782 dBm

Center 2.402000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Span 10.00 MHz Sweep 1.000 ms (1001 pts)

Frequency

Auto Tune

Center Freq
2.402000000 GHz

Start Freq
2.397000000 GHz

Stop Freq
2.407000000 GHz

CF Step
1.000000 MHz
Auto Man

Freq Offset
0 Hz

MCH

Keysight Spectrum Analyzer - Swept SA

Marker 1 2.43972000000 GHz

Mkr1 2.439 72 GHz
-3.066 dBm

Center 2.440000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Span 10.00 MHz Sweep 1.000 ms (1001 pts)

Trace/Detector

Select Trace
1

Clear Write

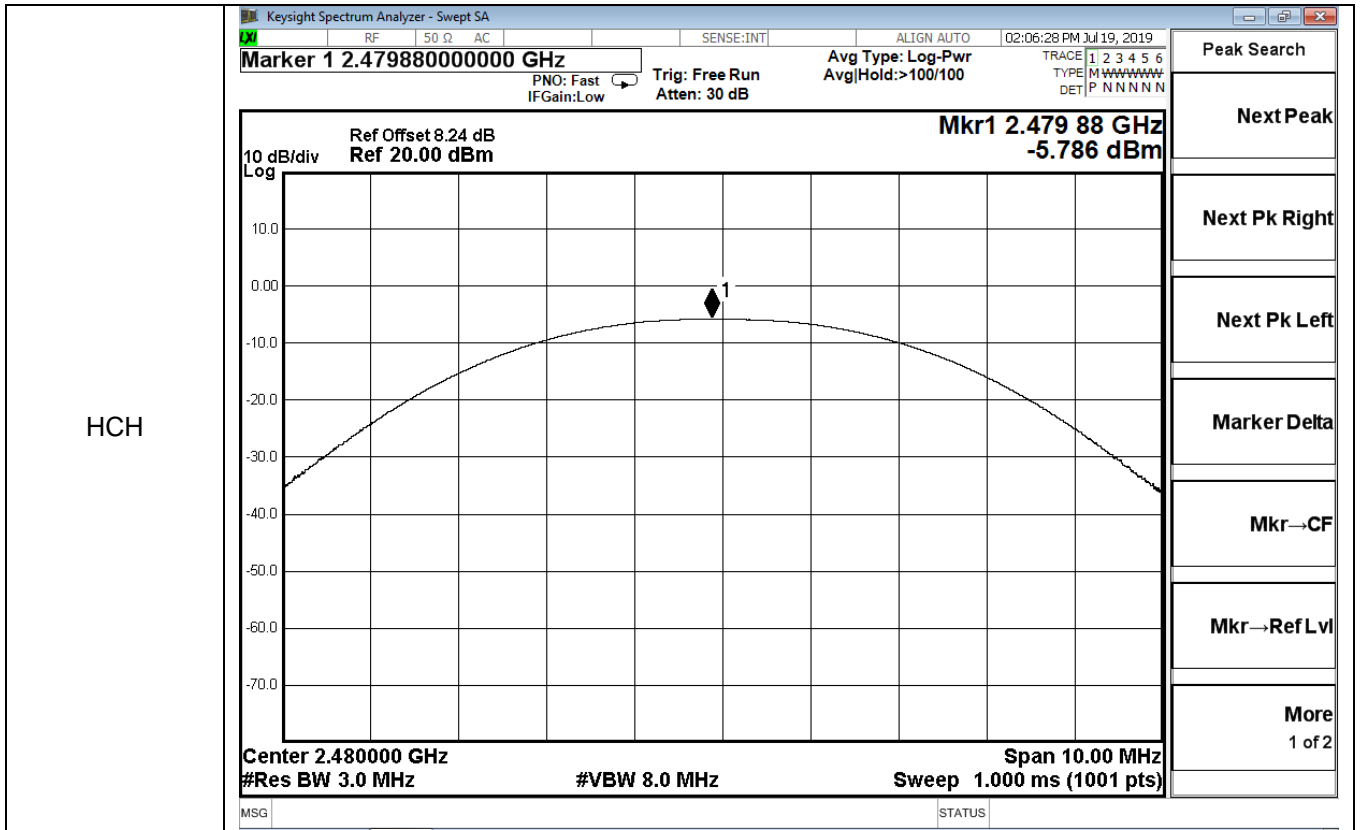
Trace Average

Max Hold

Min Hold

View Blank
Trace On

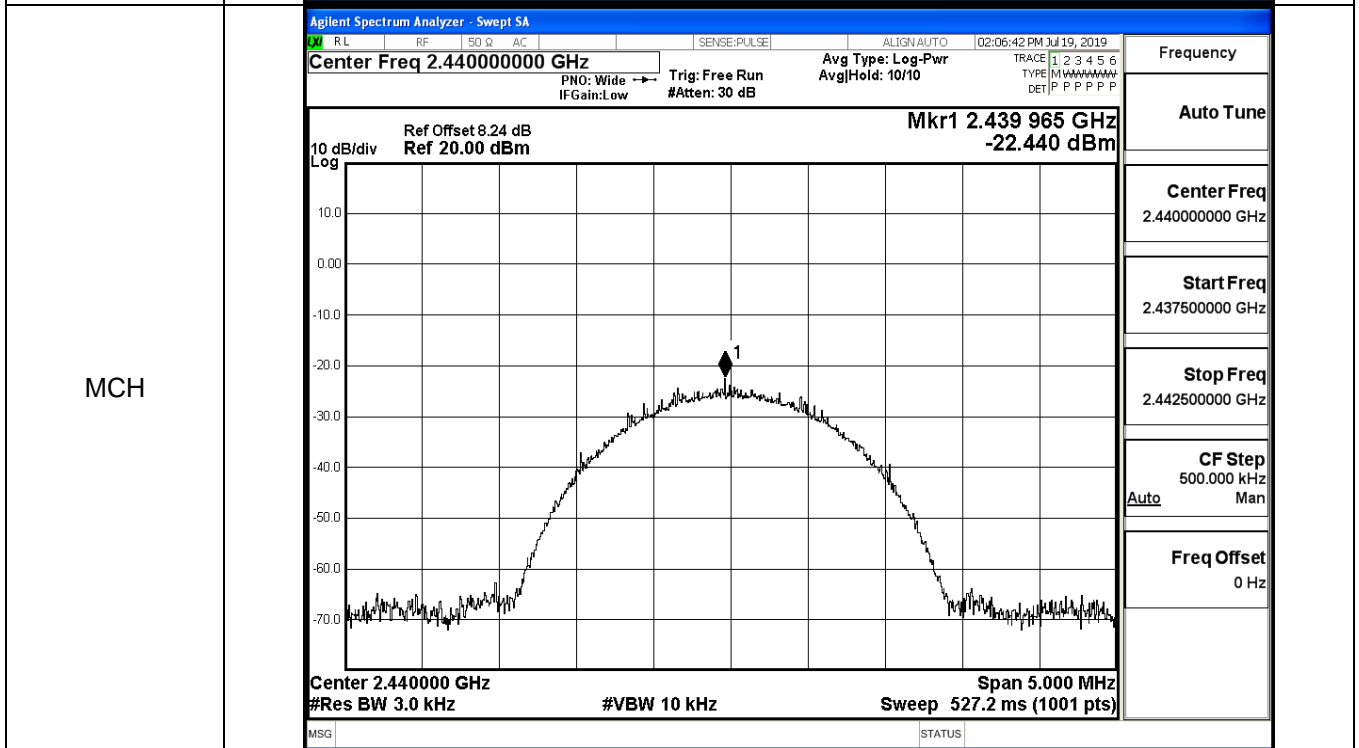
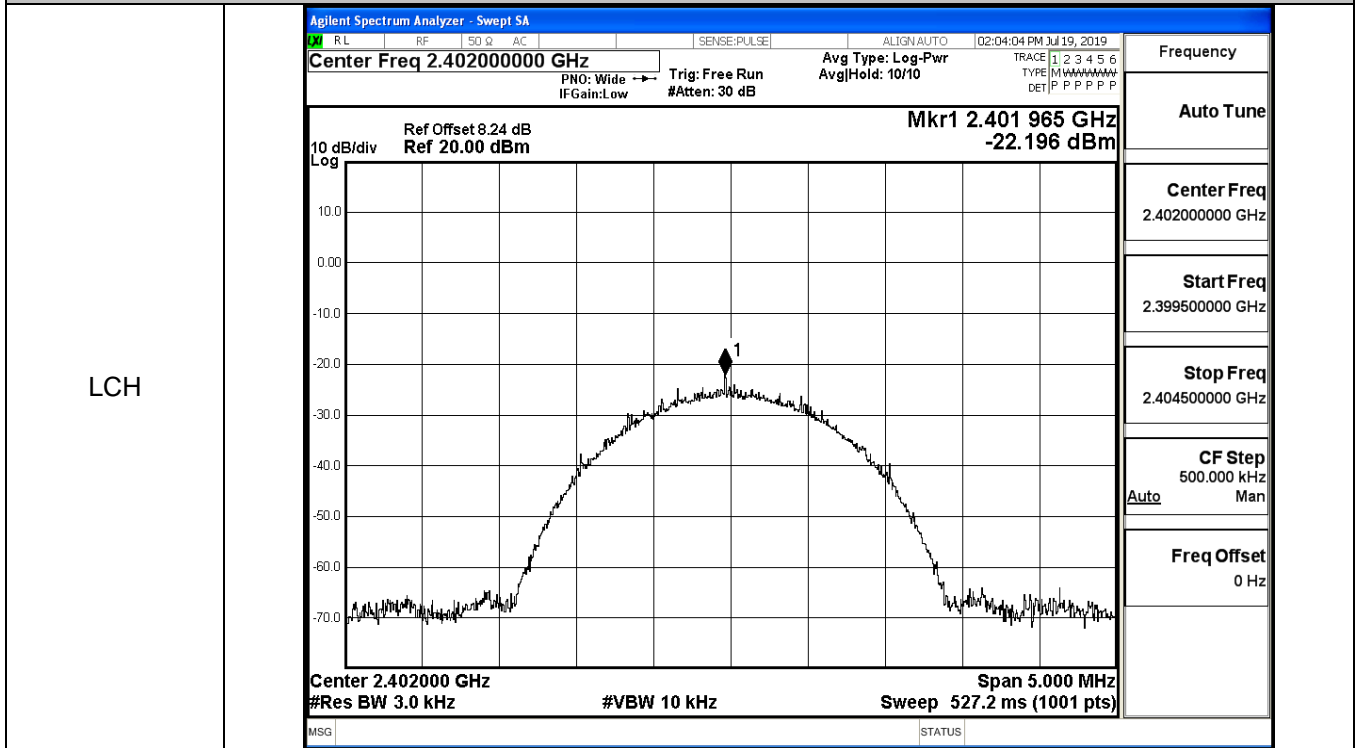
More
1 of 3



B.3 Maximum Power Spectral Density

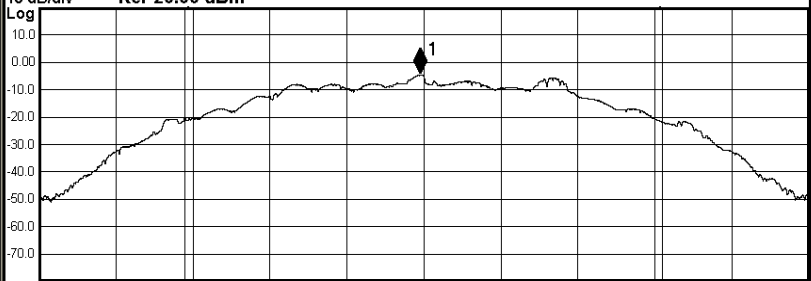
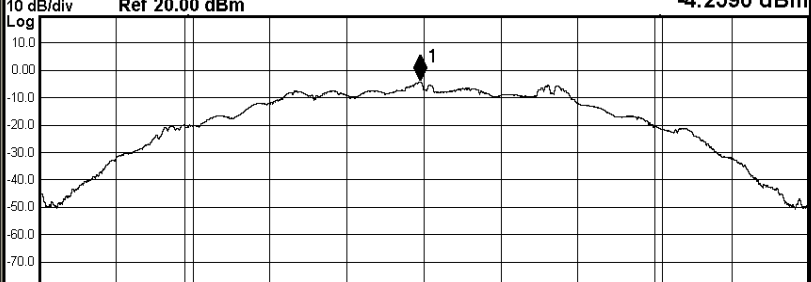
Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-22.196	8	PASS
BT LE	MCH	-22.440	8	PASS
BT LE	HCH	-22.844	8	PASS

Test Graphs



B.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	1.115	≥0.5	PASS
BT LE	MCH	1.121	≥0.5	PASS
BT LE	HCH	1.128	≥0.5	PASS

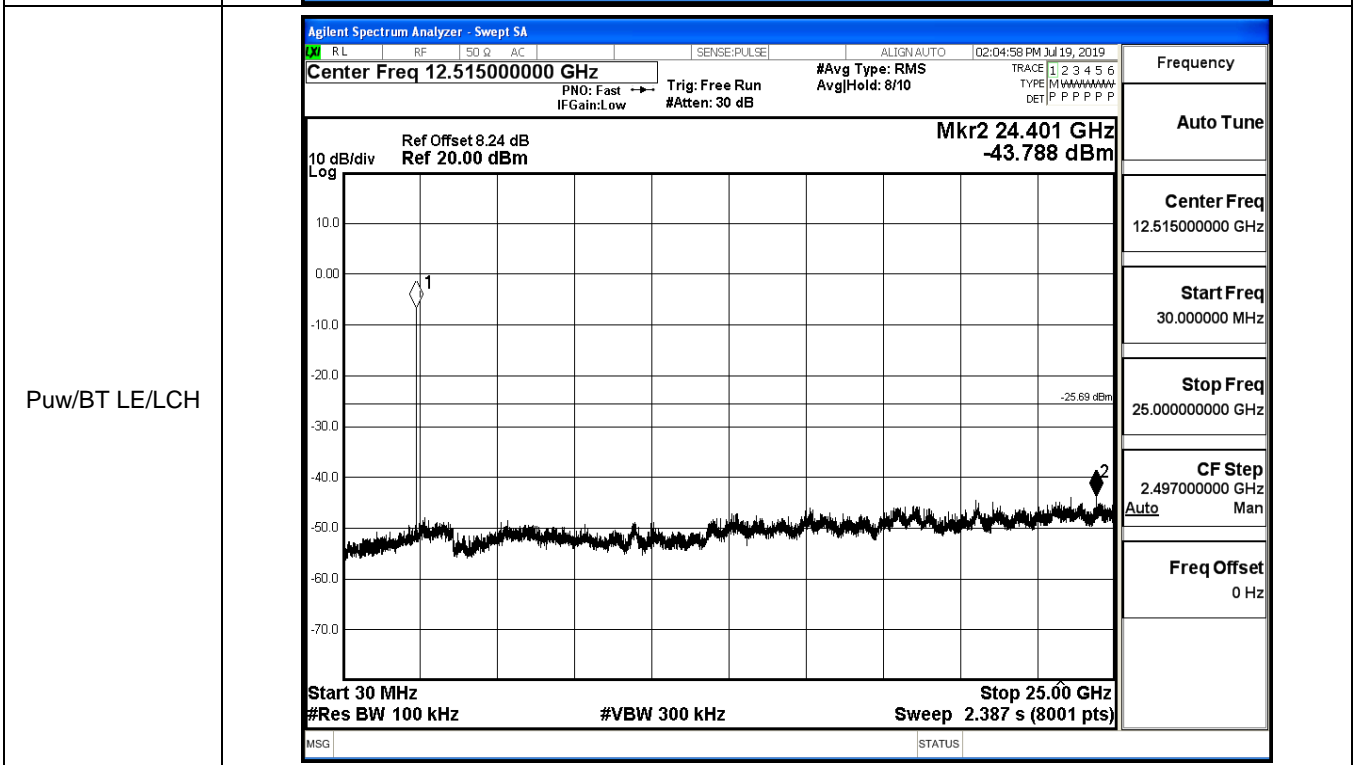
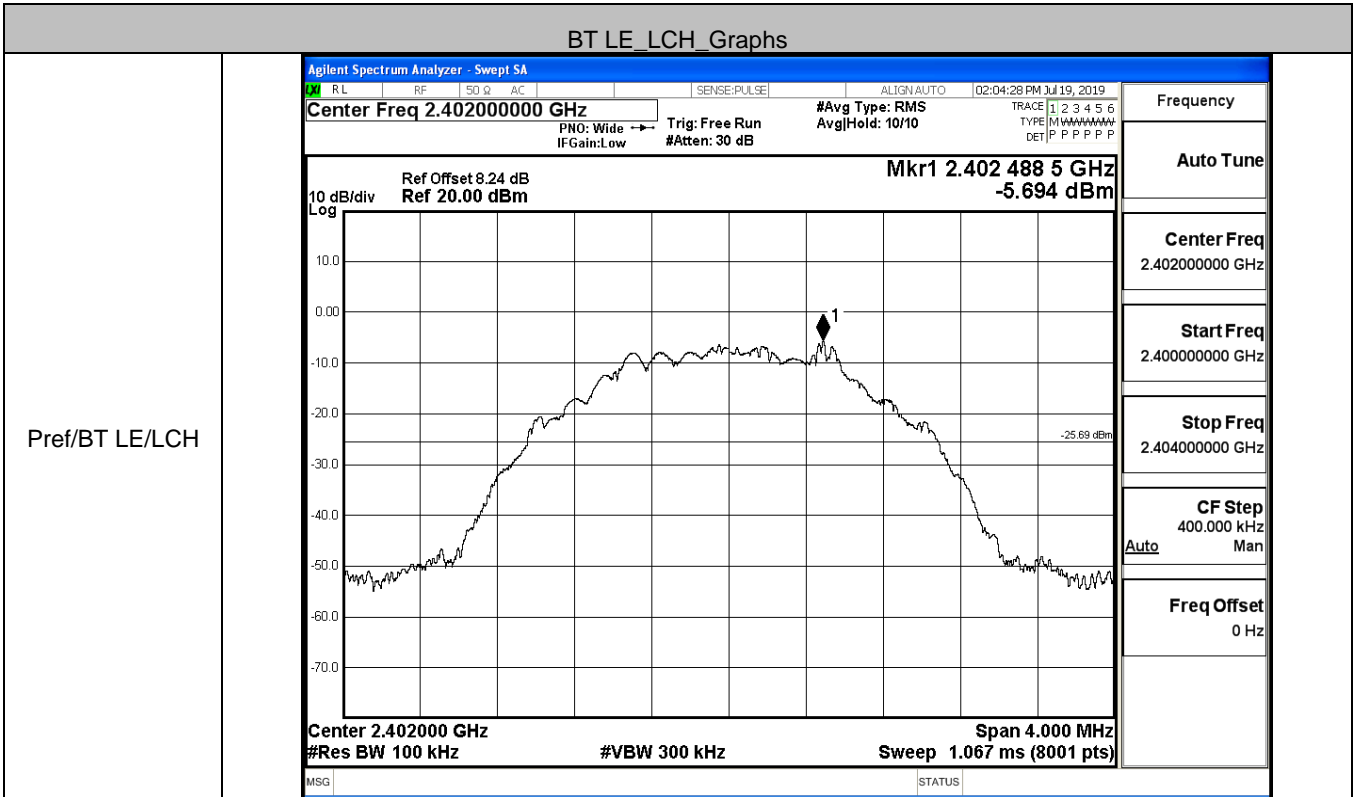
Test Graphs																
LCH	<div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: x-small; margin: 0;">RL RF 50 Ω AC SENSE:PULSE ALIGN:AUTO 02:03:39 PM Jul 19, 2019</p> <p style="font-size: small; margin: 0;">Center Freq 2.402000000 GHz Center Freq: 2.402000000 GHz Radio Std: None</p> <p style="font-size: x-small; margin: 0;">Trig: Free Run AvgHold>1/1</p> <p style="font-size: x-small; margin: 0;">#IFGain:Low #Atten: 30 dB Radio Device: BTS</p> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p style="font-size: x-small; margin: 0;">10 dB/div Ref Offset 8.24 dB Mkr1 2.4019861 GHz</p> <p style="font-size: x-small; margin: 0;">Log Ref 20.00 dBm -4.6300 dBm</p>  </div> <p style="font-size: x-small; margin: 0;">Center 2.402 GHz Span 3 MHz</p> <p style="font-size: x-small; margin: 0;">#Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>2.72 dBm</td> </tr> <tr> <td style="text-align: center;">1.8537 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>-541 Hz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>1.115 MHz</td> <td>x dB</td> </tr> <tr> <td></td> <td></td> <td>-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	2.72 dBm	1.8537 MHz			Transmit Freq Error	-541 Hz	OBW Power	x dB Bandwidth	1.115 MHz	x dB			-6.00 dB
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MCH	<div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: x-small; margin: 0;">RL RF 50 Ω AC SENSE:PULSE ALIGN:AUTO 02:06:17 PM Jul 19, 2019</p> <p style="font-size: small; margin: 0;">Center Freq 2.440000000 GHz Center Freq: 2.440000000 GHz Radio Std: None</p> <p style="font-size: x-small; margin: 0;">Trig: Free Run AvgHold>1/1</p> <p style="font-size: x-small; margin: 0;">#IFGain:Low #Atten: 30 dB Radio Device: BTS</p> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p style="font-size: x-small; margin: 0;">10 dB/div Ref Offset 8.24 dB Mkr1 2.4399861 GHz</p> <p style="font-size: x-small; margin: 0;">Log Ref 20.00 dBm -4.2590 dBm</p>  </div> <p style="font-size: x-small; margin: 0;">Center 2.44 GHz Span 3 MHz</p> <p style="font-size: x-small; margin: 0;">#Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>3.07 dBm</td> </tr> <tr> <td style="text-align: center;">1.8603 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>-916 Hz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>1.121 MHz</td> <td>x dB</td> </tr> <tr> <td></td> <td></td> <td>-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	3.07 dBm	1.8603 MHz			Transmit Freq Error	-916 Hz	OBW Power	x dB Bandwidth	1.121 MHz	x dB			-6.00 dB
Occupied Bandwidth	Total Power	3.07 dBm														
1.8603 MHz																
Transmit Freq Error	-916 Hz	OBW Power														
x dB Bandwidth	1.121 MHz	x dB														
		-6.00 dB														

HCH	Agilent Spectrum Analyzer - Occupied BW			RL	RF	50 Ω	AC	SENSE: PULSE	ALIGN: AUTO	02:08:24 PM Jul 19, 2019			
	Center Freq 2.480000000 GHz			Center Freq: 2.480000000 GHz			Radio Std: None			Frequency			
				Trig: Free Run			AvgHold: >1/1			Radio Device: BTS			
				#IFGain: Low			#Atten: 30 dB						
			10 dB/div			Ref Offset 8.24 dB			Mkr1 2.480003 GHz				
			Log			Ref 20.00 dBm			-5.3934 dBm				
												Center Freq 2.480000000 GHz	
			Center 2.48 GHz			#Res BW 100 kHz			Span 3 MHz			CF Step 300.000 kHz	
			#VBW 300 kHz			Sweep 1.067 ms			Auto		Man		
			Occupied Bandwidth			Total Power			2.15 dBm			Freq Offset 0 Hz	
			1.8496 MHz										
			Transmit Freq Error			-7.065 kHz			OBW Power			99.00 %	
			x dB Bandwidth			1.128 MHz			x dB			-6.00 dB	
			MSG						STATUS				

B.5 RF Conducted Spurious Emissions

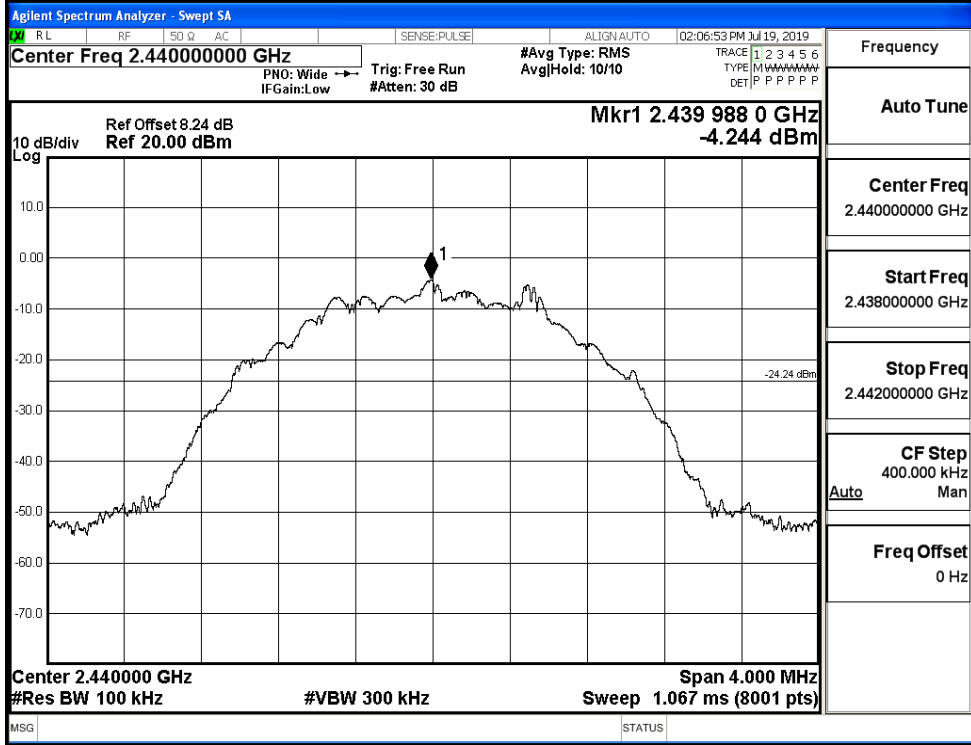
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-5.694	-43.788	-25.694	PASS
BT LE	MCH	-4.244	-44.115	-24.244	PASS
BT LE	HCH	-6.289	-43.402	-26.289	PASS

BT LE_LCH_Graphs

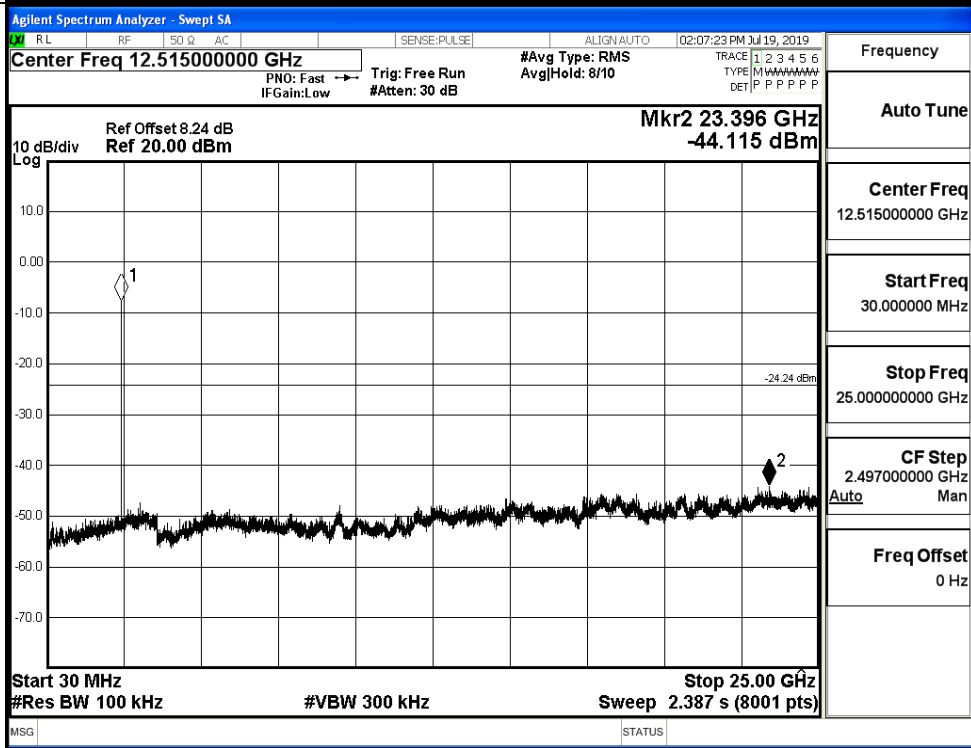


BT LE_MCH_Graphs

Pref/BT LE/MCH

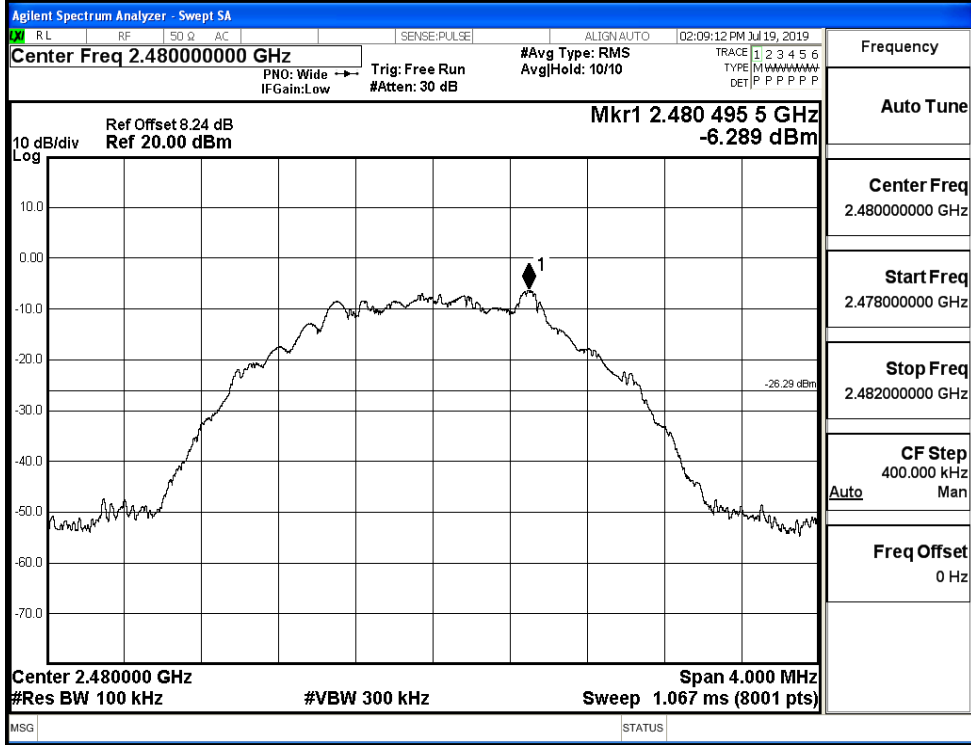


Puw/BT LE/MCH

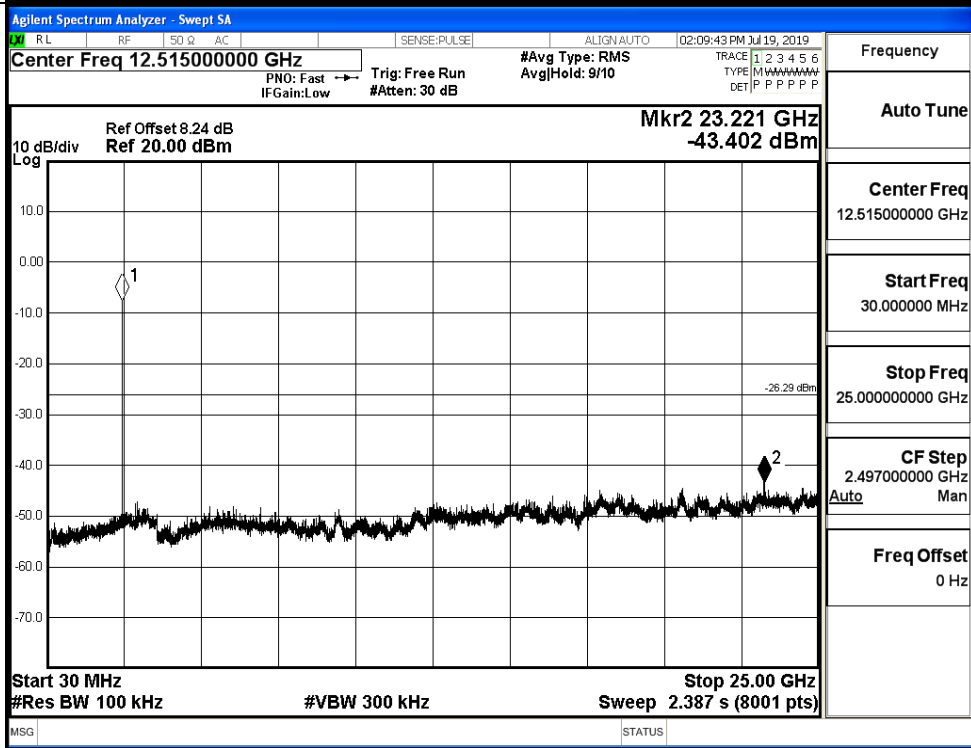


BT LE_HCH_Graphs

Pref/BT LE/HCH



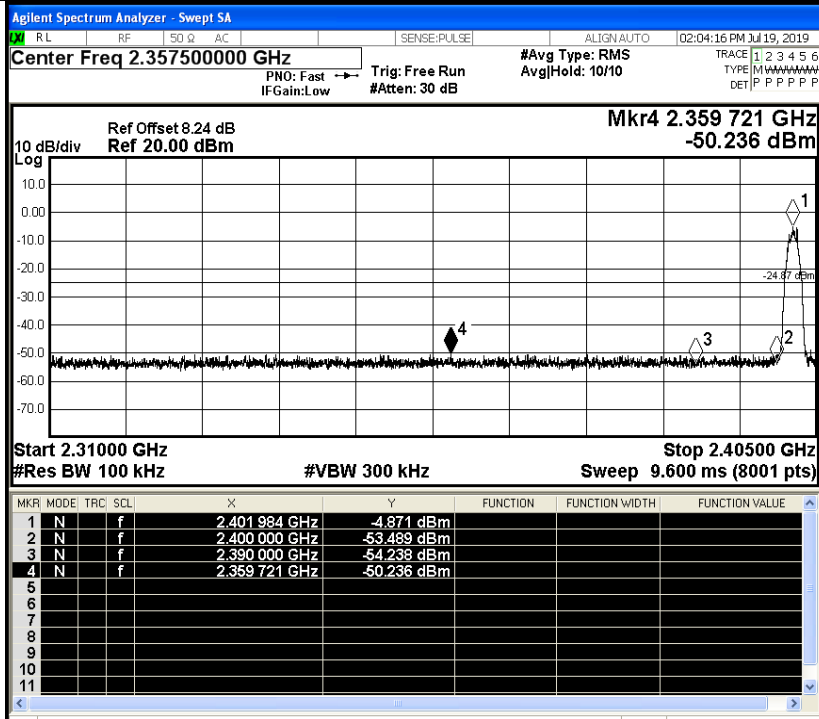
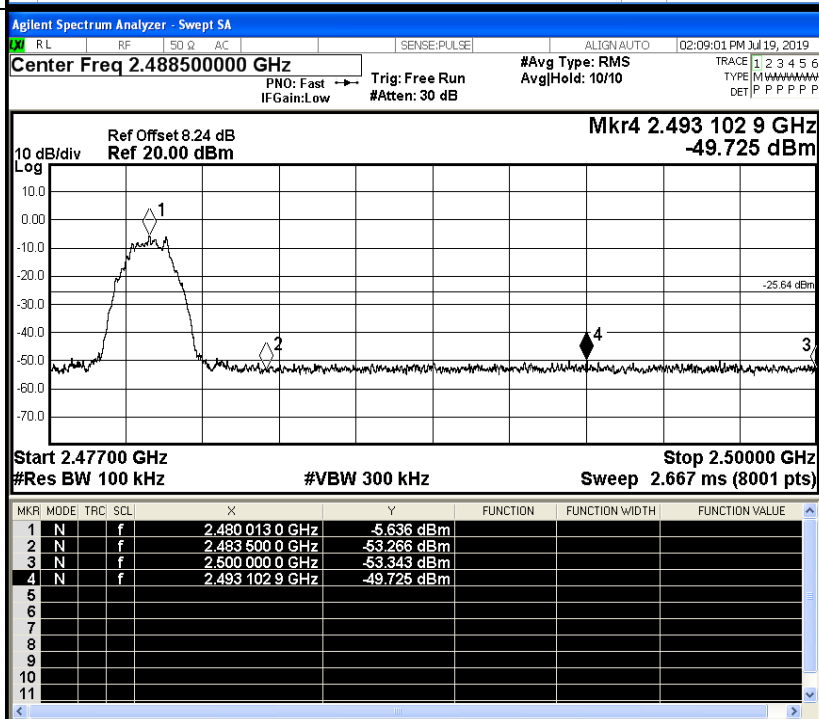
Puw/BT LE/HCH



B.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-4.871	-50.236	-24.87	PASS
BT LE	HCH	-5.636	-49.725	-25.64	PASS

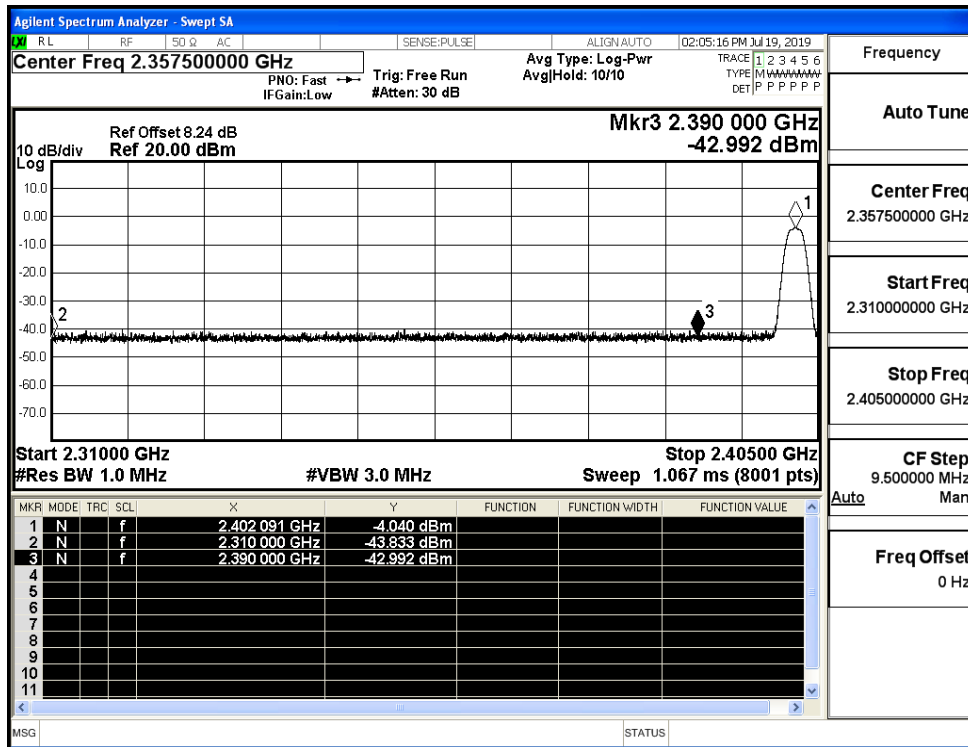
Test Graphs

LCH		<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.35750000 GHz</p> <p>Start Freq 2.31000000 GHz</p> <p>Stop Freq 2.40500000 GHz</p> <p>CF Step 9.500000 MHz</p> <p>Freq Offset 0 Hz</p>
HCH		<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.48850000 GHz</p> <p>Start Freq 2.47700000 GHz</p> <p>Stop Freq 2.50000000 GHz</p> <p>CF Step 2.300000 MHz</p> <p>Freq Offset 0 Hz</p>

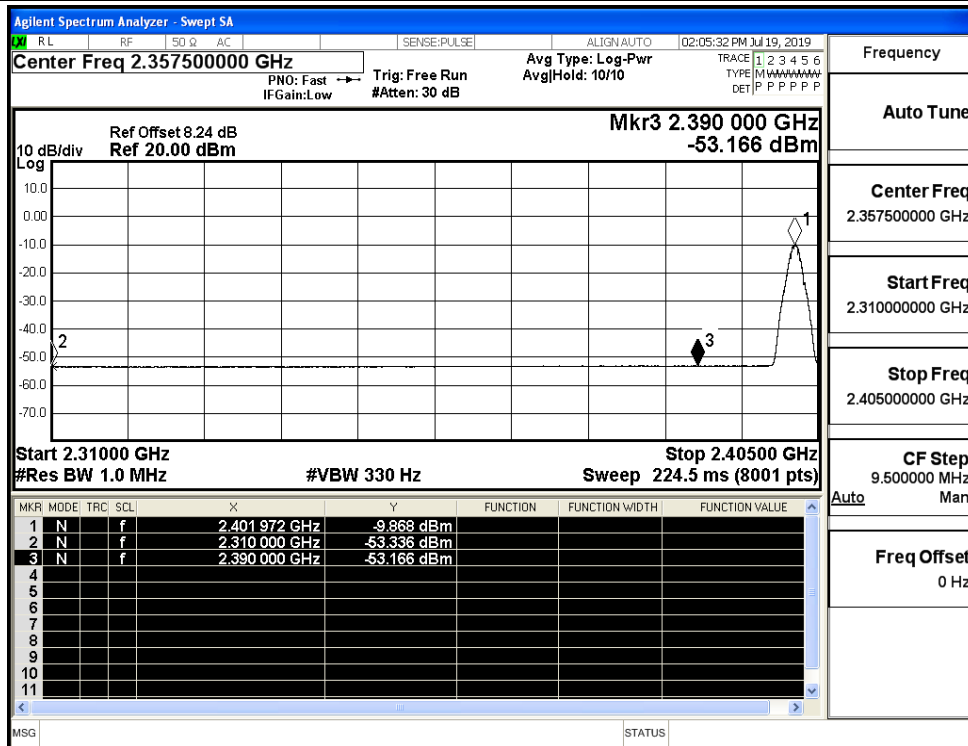
B.7 Restrict-band band-edge measurements

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	-43.83	2.0	0	53.42	PEAK	74	PASS
		Ant1	2310.0	-53.34	2.0	0	43.92	AV	54	PASS
		Ant1	2390.0	-42.99	2.0	0	54.27	PEAK	74	PASS
		Ant1	2390.0	-53.17	2.0	0	44.09	AV	54	PASS
	2480	Ant1	2483.5	-42.92	2.0	0	54.34	PEAK	74	PASS
		Ant1	2483.5	-52.84	2.0	0	44.42	AV	54	PASS
		Ant1	2500.0	-41.29	2.0	0	55.97	PEAK	74	PASS
		Ant1	2500.0	-52.86	2.0	0	44.39	AV	54	PASS

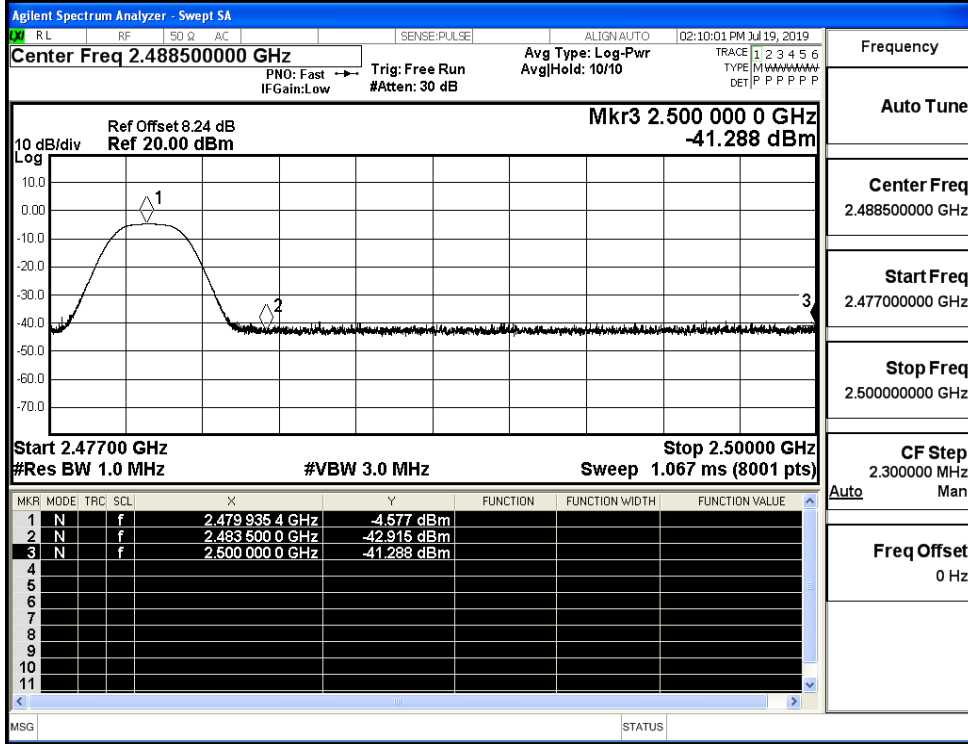
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

