

Appendix B

RF Test Data for BT V4.0(BT LE) (Conducted Measurement)

Product Name: Smart Phone

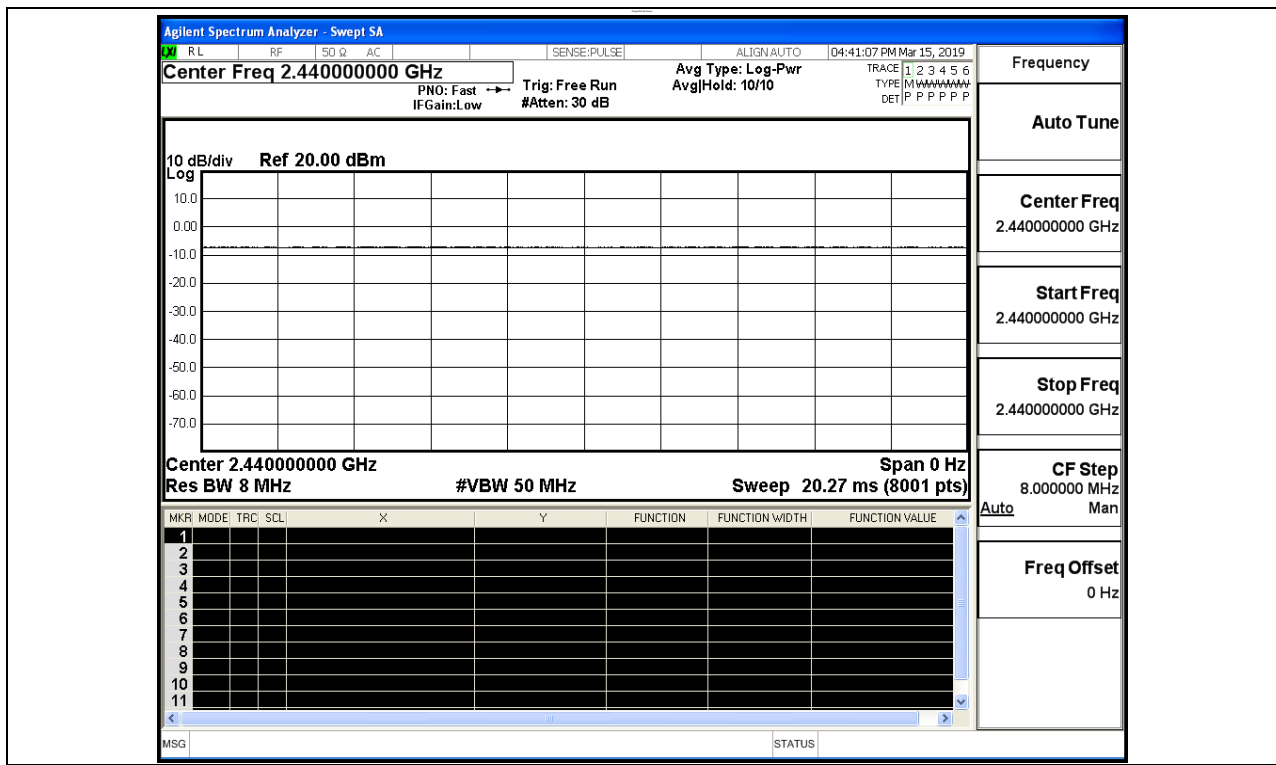
Test Model: Eluga Ray 810

Environmental Conditions

Temperature:	21.8 °C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Wang Chuang
Supervised by:	Tom Liu

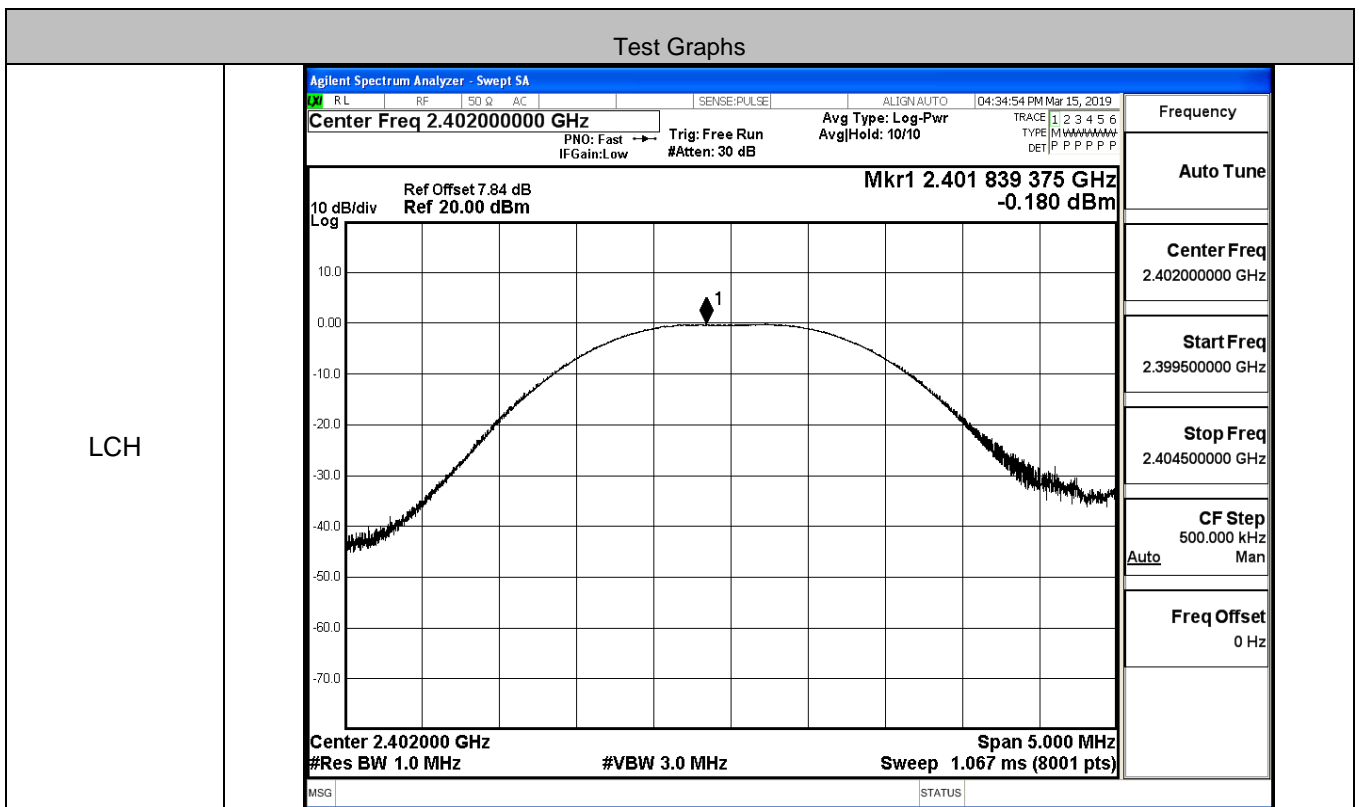
B.1 Duty Cycle

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

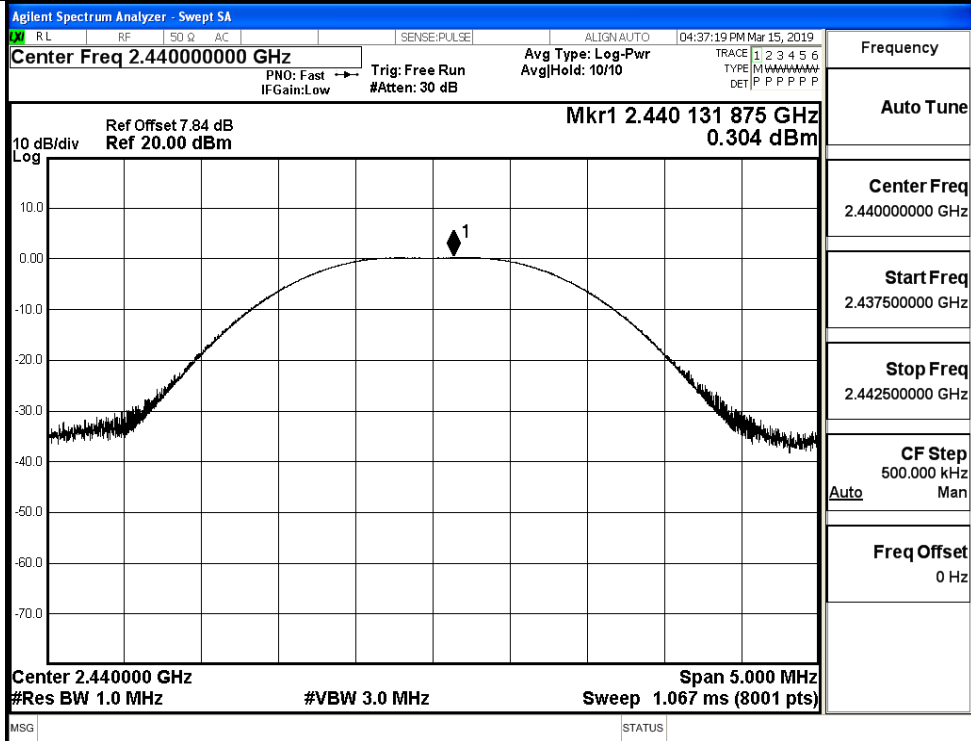


B.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Conduct Average Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	-0.180	-0.310	30	PASS
BT LE	MCH	0.304	0.119	30	PASS
BT LE	HCH	-0.178	-0.387	30	PASS

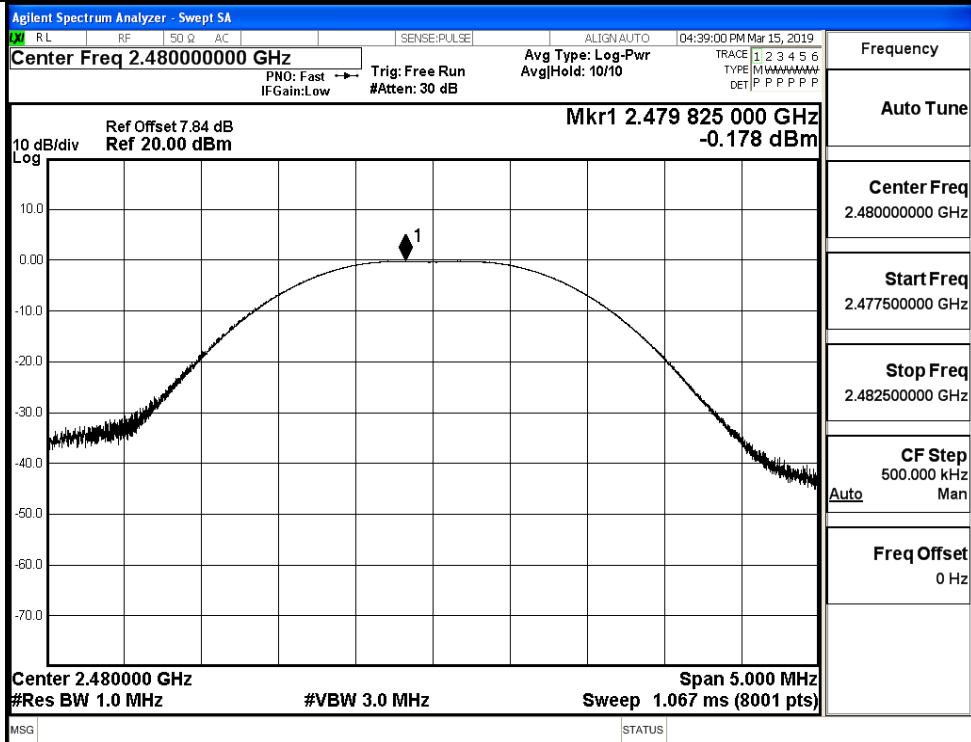


MCH



Frequency	
Auto Tune	
Center Freq	2.440000000 GHz
Start Freq	2.437500000 GHz
Stop Freq	2.442500000 GHz
CF Step	500.000 kHz
Auto	Man
Freq Offset	0 Hz

HCH

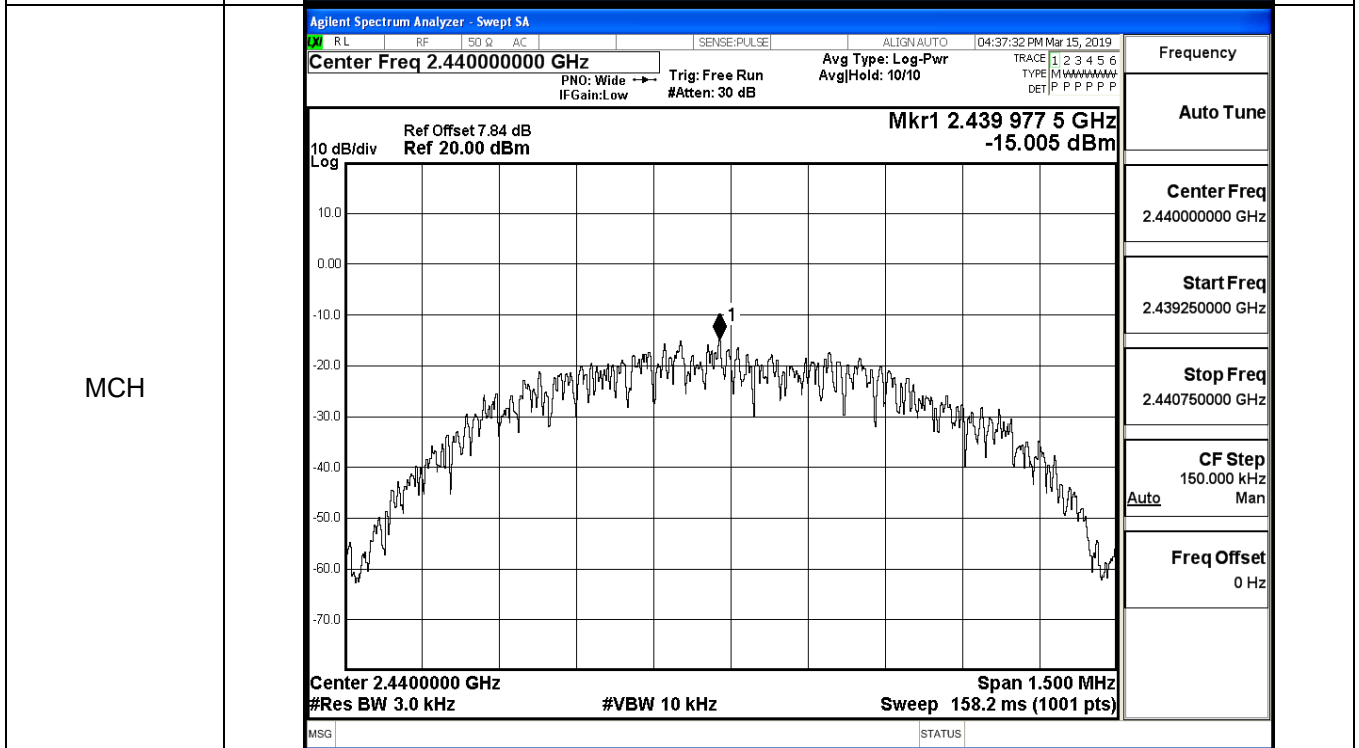
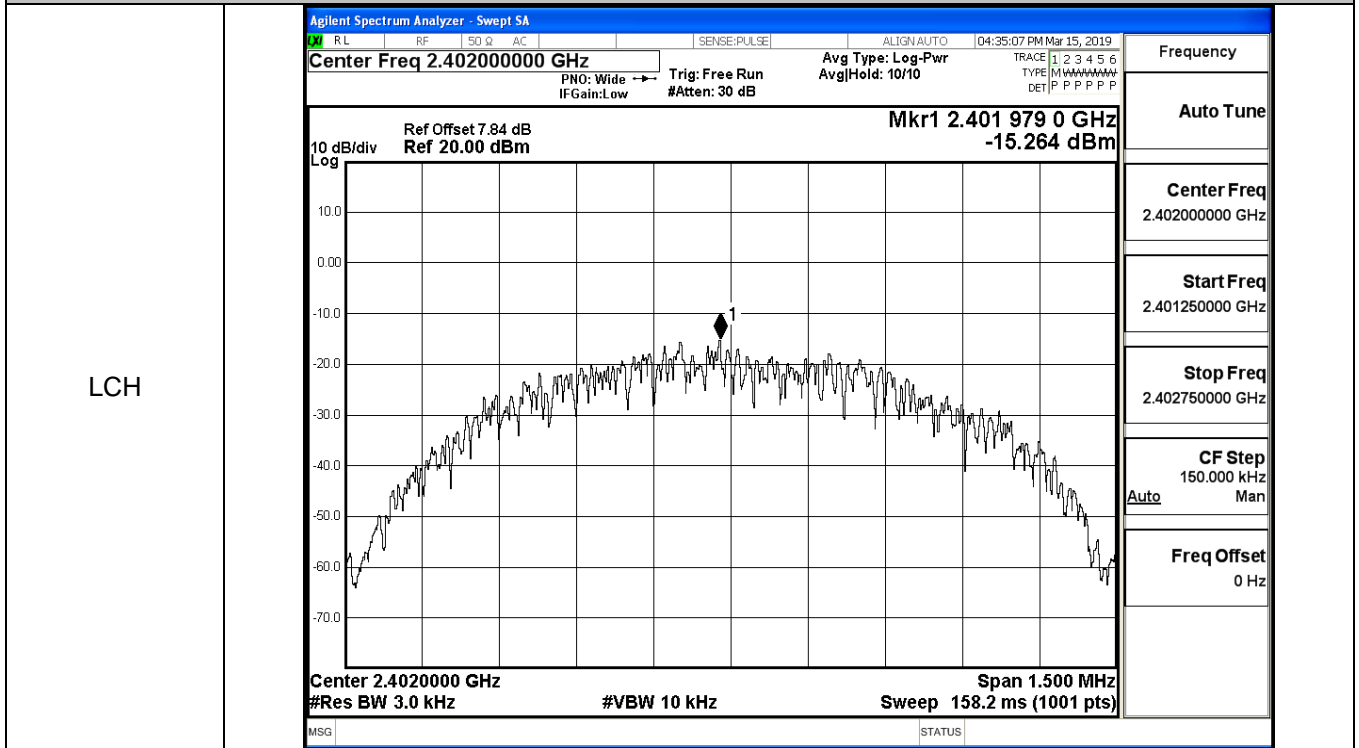


Frequency	
Auto Tune	
Center Freq	2.480000000 GHz
Start Freq	2.477500000 GHz
Stop Freq	2.482500000 GHz
CF Step	500.000 kHz
Auto	Man
Freq Offset	0 Hz

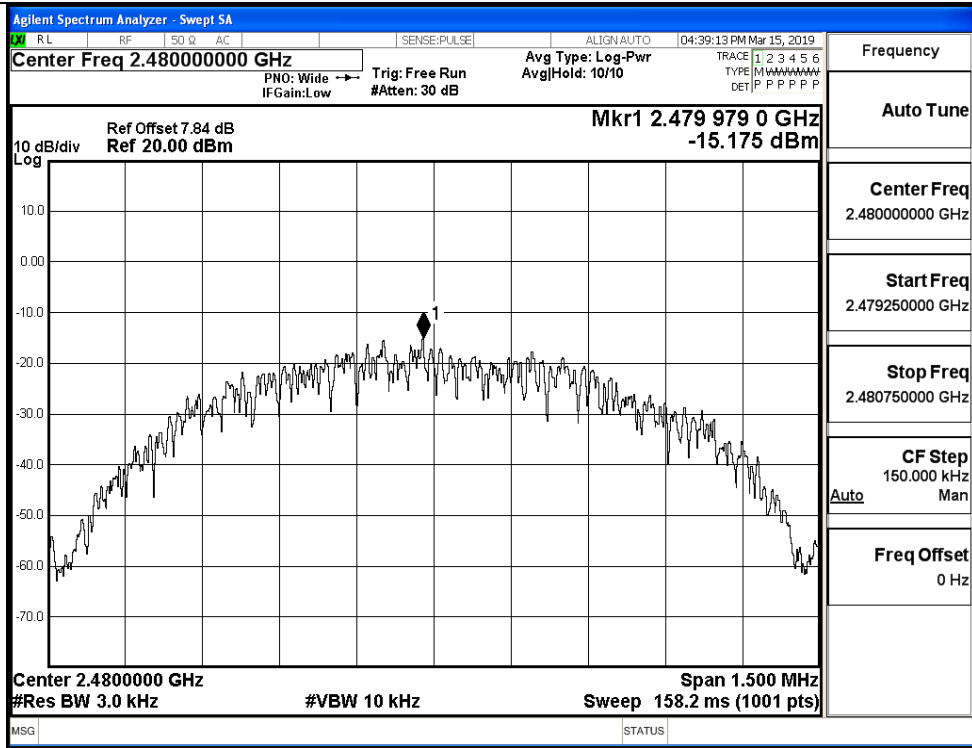
B.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-15.264	8	PASS
BT LE	MCH	-15.005	8	PASS
BT LE	HCH	-15.175	8	PASS

Test Graphs



HCH



B.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6950	≥0.5	PASS
BT LE	MCH	0.6837	≥0.5	PASS
BT LE	HCH	0.6794	≥0.5	PASS

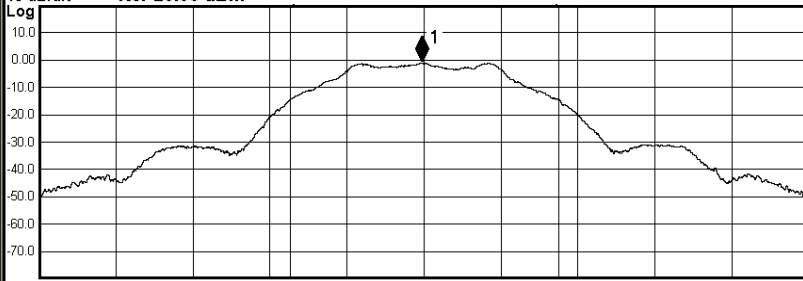
Test Graphs																	
LCH	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: small; margin: 0;">RL RF 50 Ω AC SENSE:PULSE ALIGN:AUTO 04:34:42 PM Mar 15, 2019</p> <p style="margin: 0;">Center 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="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p style="font-size: small;">10 dB/div Ref Offset 7.84 dB Log Ref 20.00 dBm</p> <p style="font-size: small;">Center 2.402 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1.067 ms</p> <table border="0" style="width: 100%; font-size: small;"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td colspan="2">5.97 dBm</td> </tr> <tr> <td colspan="4" style="text-align: center;">1.0544 MHz</td> </tr> <tr> <td>Transmit Freq Error</td> <td>7.157 kHz</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>x dB Bandwidth</td> <td>695.0 kHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> </table> </div> <div style="width: 50%;"> <p style="text-align: right; margin: 0;">Mkr1 2.4019966 GHz -1.1289 dBm</p> <p style="text-align: right; font-size: small;">Center Freq 2.402000000 GHz</p> <p style="text-align: right; font-size: small;">CF Step 300.000 kHz Auto Man</p> <p style="text-align: right; font-size: small;">Freq Offset 0 Hz</p> </div> </div> <p style="font-size: x-small; margin-top: 5px;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	5.97 dBm		1.0544 MHz				Transmit Freq Error	7.157 kHz	OBW Power	99.00 %	x dB Bandwidth	695.0 kHz	x dB	-6.00 dB
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Occupied Bandwidth	Total Power	6.50 dBm															
1.0485 MHz																	
Transmit Freq Error	6.033 kHz	OBW Power	99.00 %														
x dB Bandwidth	683.7 kHz	x dB	-6.00 dB														

HCH

Agilent Spectrum Analyzer - Occupied BW

RL	RF	50 Ω	AC	SENSE:PULSE	ALIGN:AUTO	04:38:49 PM Mar 15, 2019
Center Freq 2.480000000 GHz			Center Freq: 2.480000000 GHz		Radio Std: None	
			Trig: Free Run		AvgJHold: 1/1	
#IFGain:Low			#Atten: 30 dB		Radio Device: BTS	

10 dB/div	Ref Offset 7.84 dB	Mkr1 2.4799936 GHz
Log	Ref 20.00 dBm	-1.0220 dBm



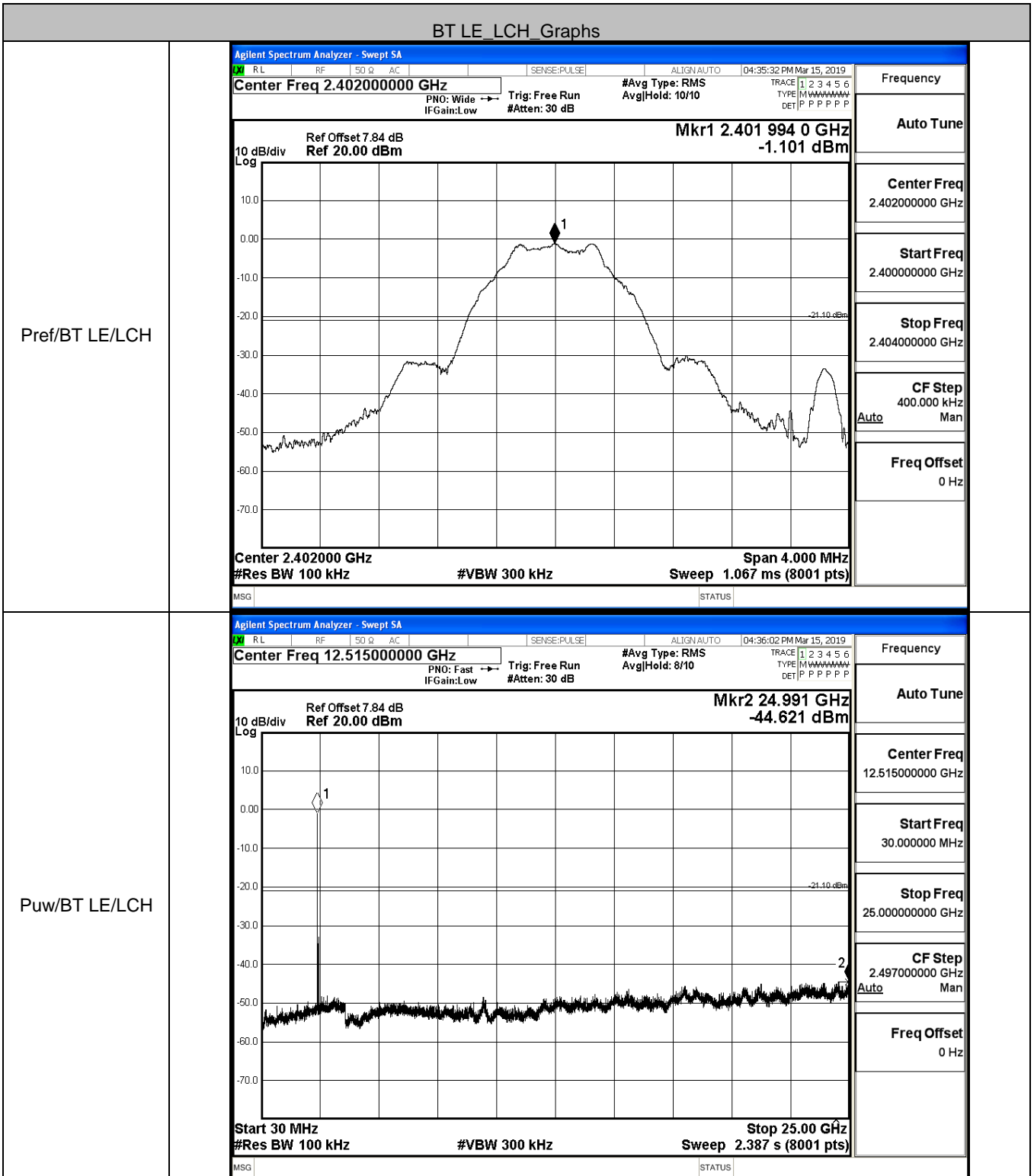
Center 2.48 GHz	#VBW 300 kHz	Span 3 MHz
#Res BW 100 kHz		Sweep 1.067 ms

Occupied Bandwidth	Total Power	6.02 dBm
1.0420 MHz		
Transmit Freq Error	3.607 kHz	OBW Power
x dB Bandwidth	679.4 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

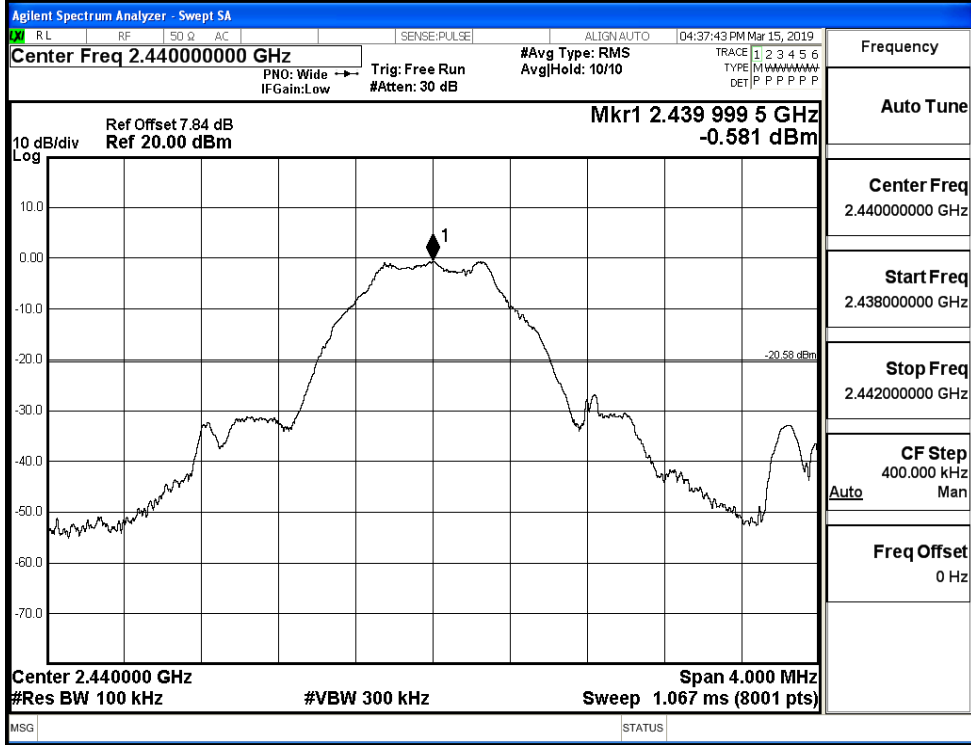
B.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-1.101	-44.621	-21.101	PASS
BT LE	MCH	-0.581	-44.453	-20.581	PASS
BT LE	HCH	-1.071	-44.045	-21.071	PASS

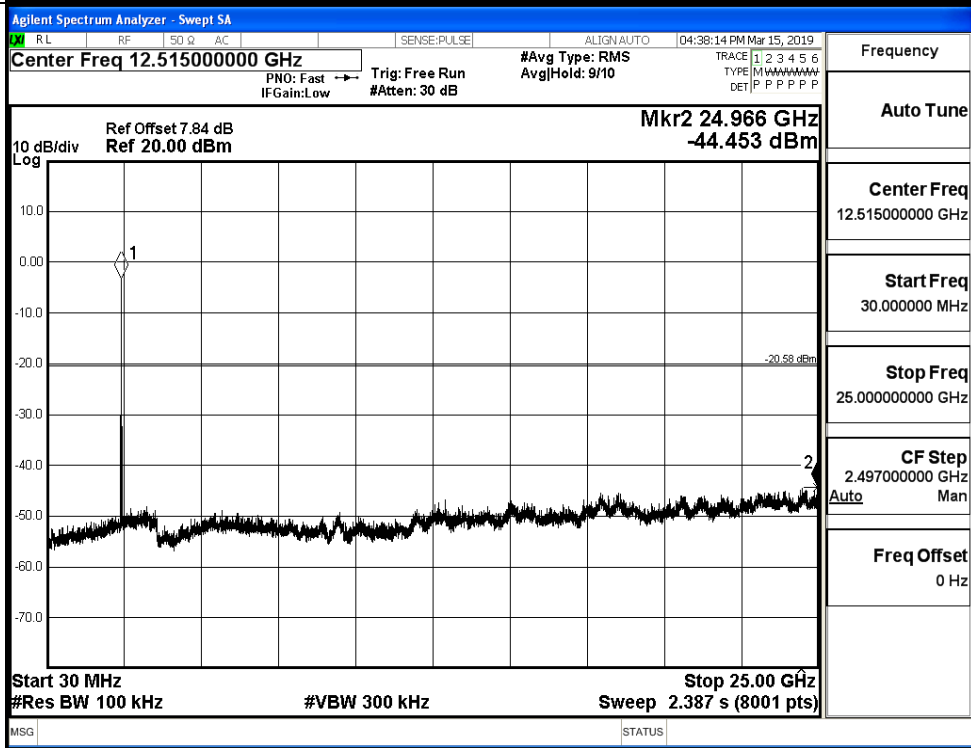


BT LE_MCH_Graphs

Pref/BT LE/MCH

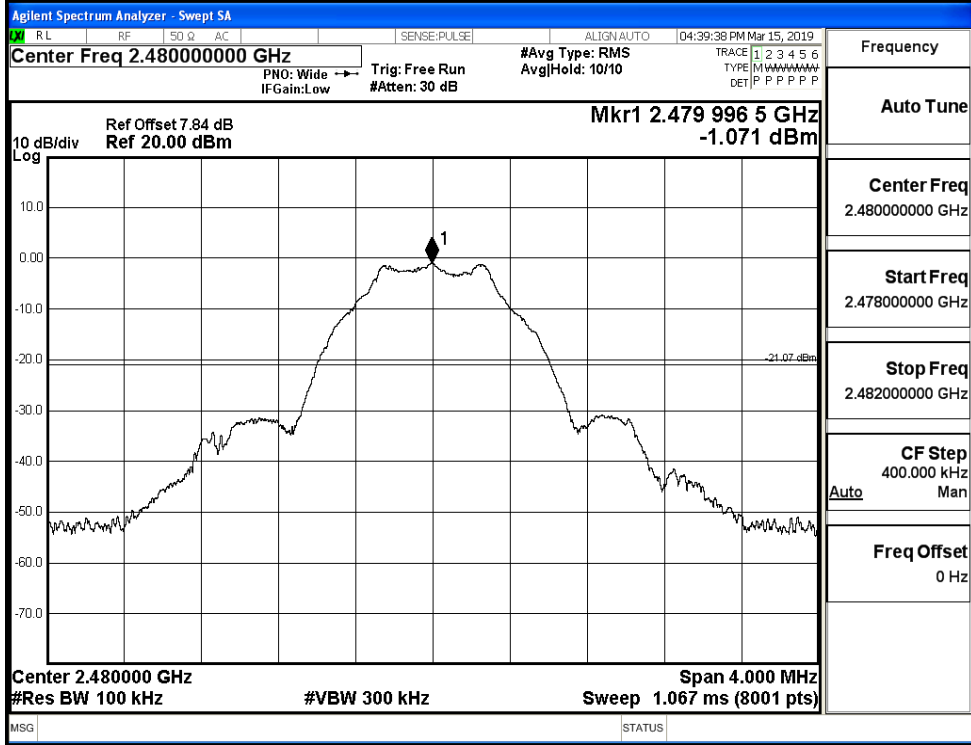


Puw/BT LE/MCH

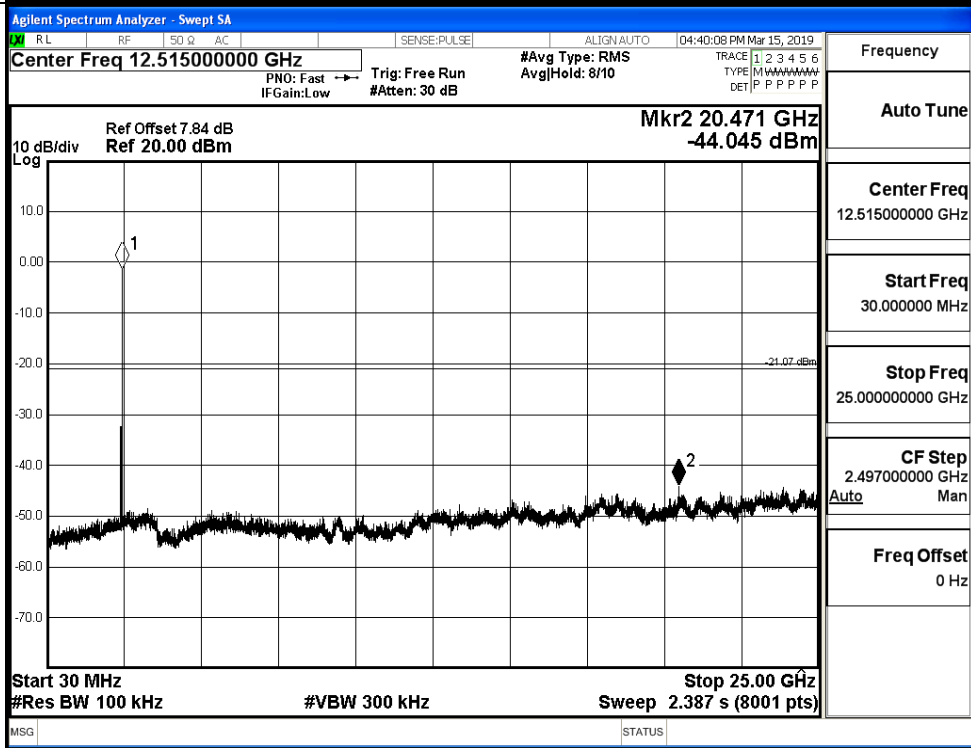


BT LE_HCH_Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH



B.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-0.962	-50.235	-20.96	PASS
BT LE	HCH	-0.913	-50.162	-20.91	PASS

Test Graphs

LCH

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

Frequency

Auto Tune

Center Freq
2.48900000 GHz

Start Freq
2.47800000 GHz

Stop Freq
2.50000000 GHz

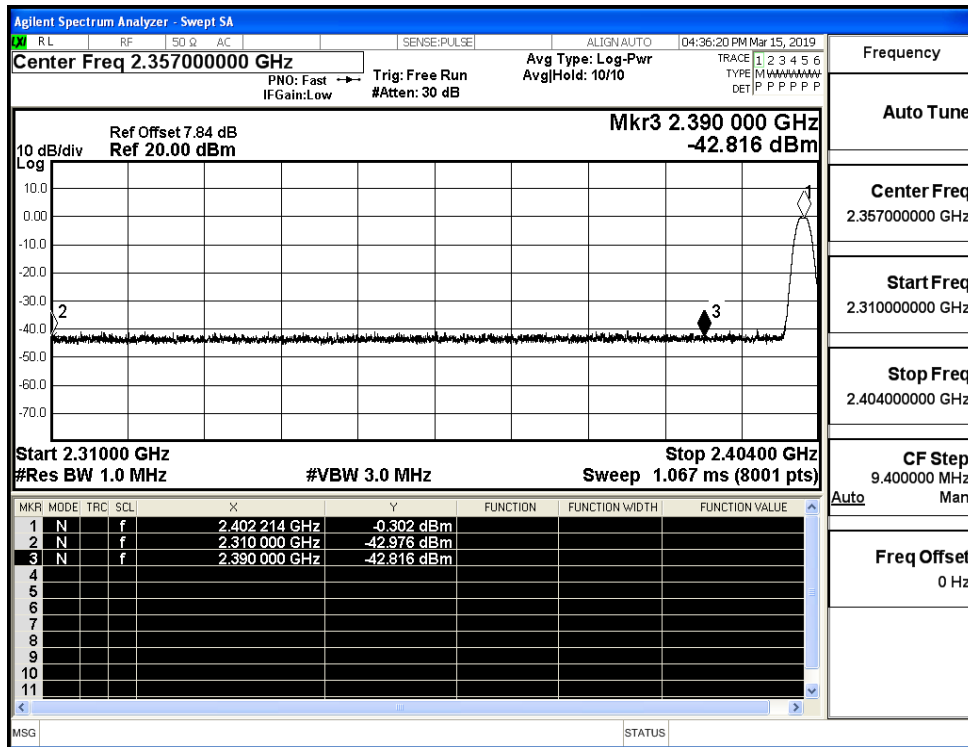
CF Step
2.200000 MHz

Freq Offset
0 Hz

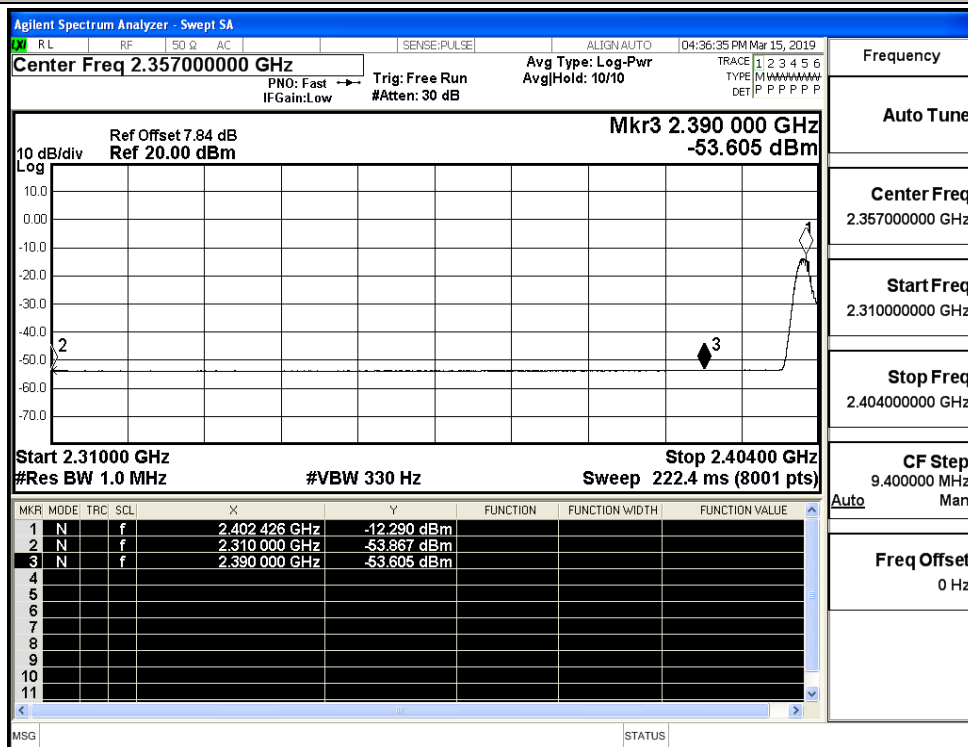
B.7 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
BT LE	2402	Ant1	2310.0	-42.98	2.0	0	52.28	PEAK	74	PASS
		Ant1	2310.0	-53.87	2.0	0	41.39	AV	54	PASS
		Ant1	2390.0	-42.82	2.0	0	52.44	PEAK	74	PASS
		Ant1	2390.0	-53.61	2.0	0	41.65	AV	54	PASS
	2480	Ant1	2483.5	-43.93	2.0	0	51.33	PEAK	74	PASS
		Ant1	2483.5	-53.40	2.0	0	41.86	AV	54	PASS
		Ant1	2500.0	-44.02	2.0	0	51.24	PEAK	74	PASS
		Ant1	2500.0	-53.35	2.0	0	41.91	AV	54	PASS

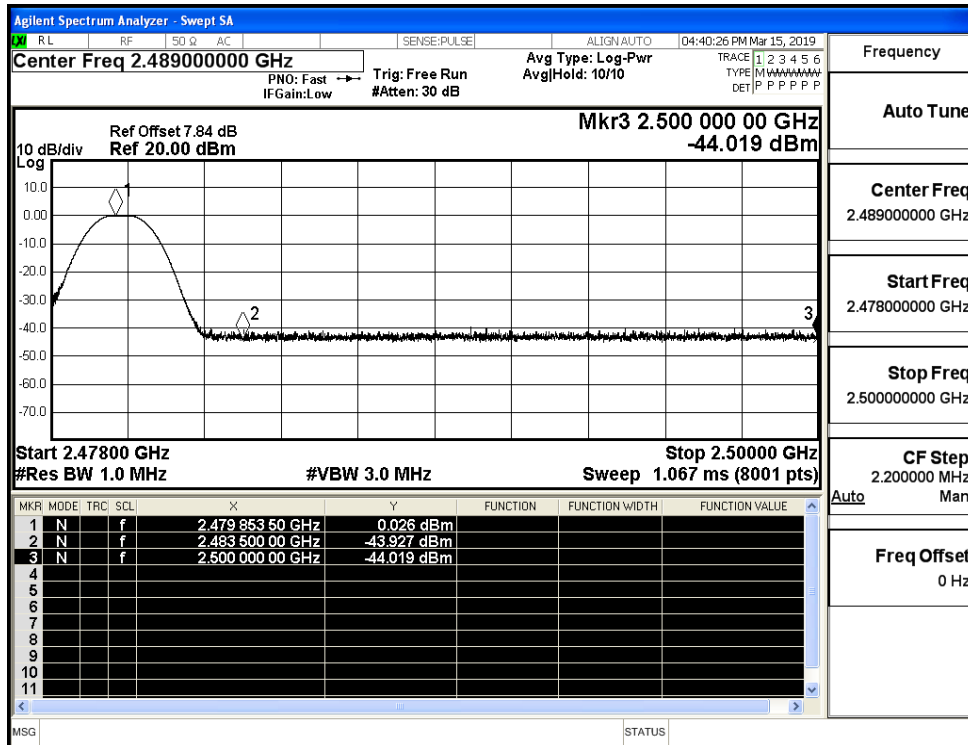
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

