

Appendix B

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

Product Name: 3G/4G Smart Phone

Trade Mark: DOOGEE

Test Model: S59Pro

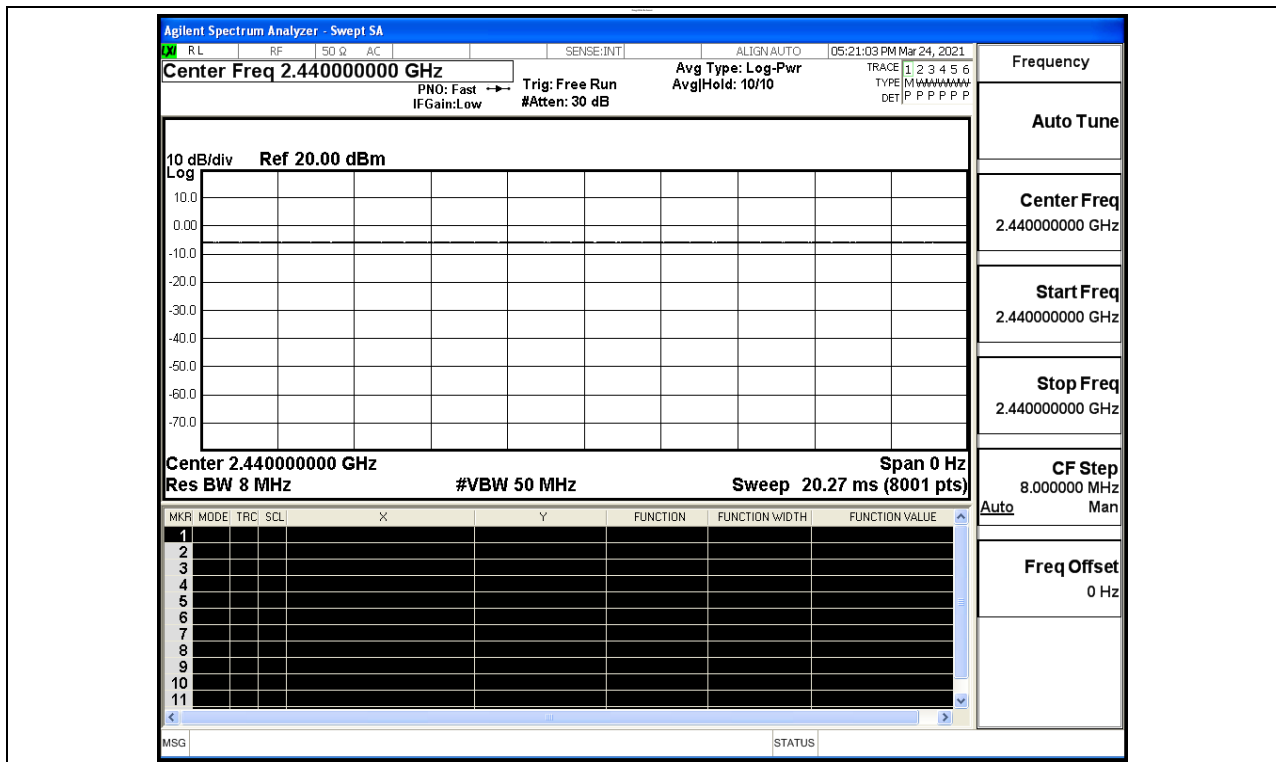
Environmental Conditions

Temperature:	22.9° C
Relative Humidity:	53.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

B.1 Duty Cycle

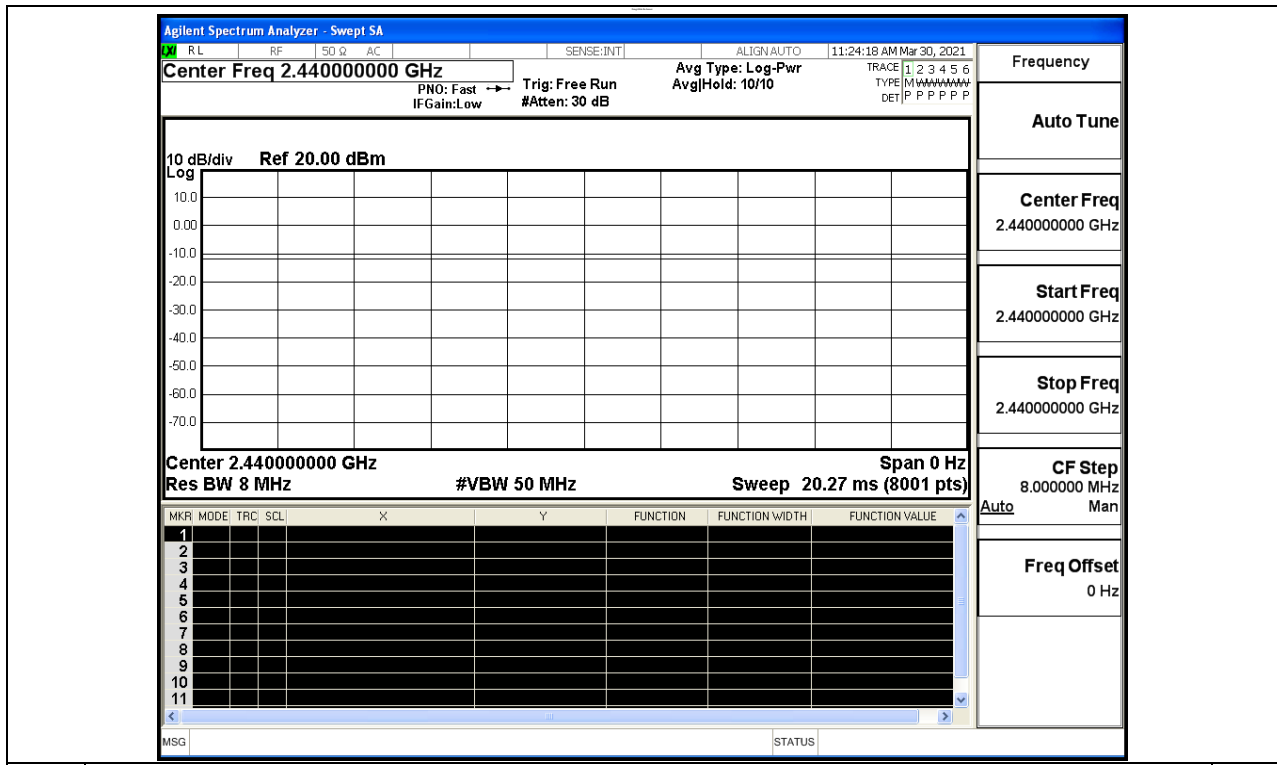
BT LE

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



BT 2LE

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
BT 2LE	2440	Ant1	100	PASS



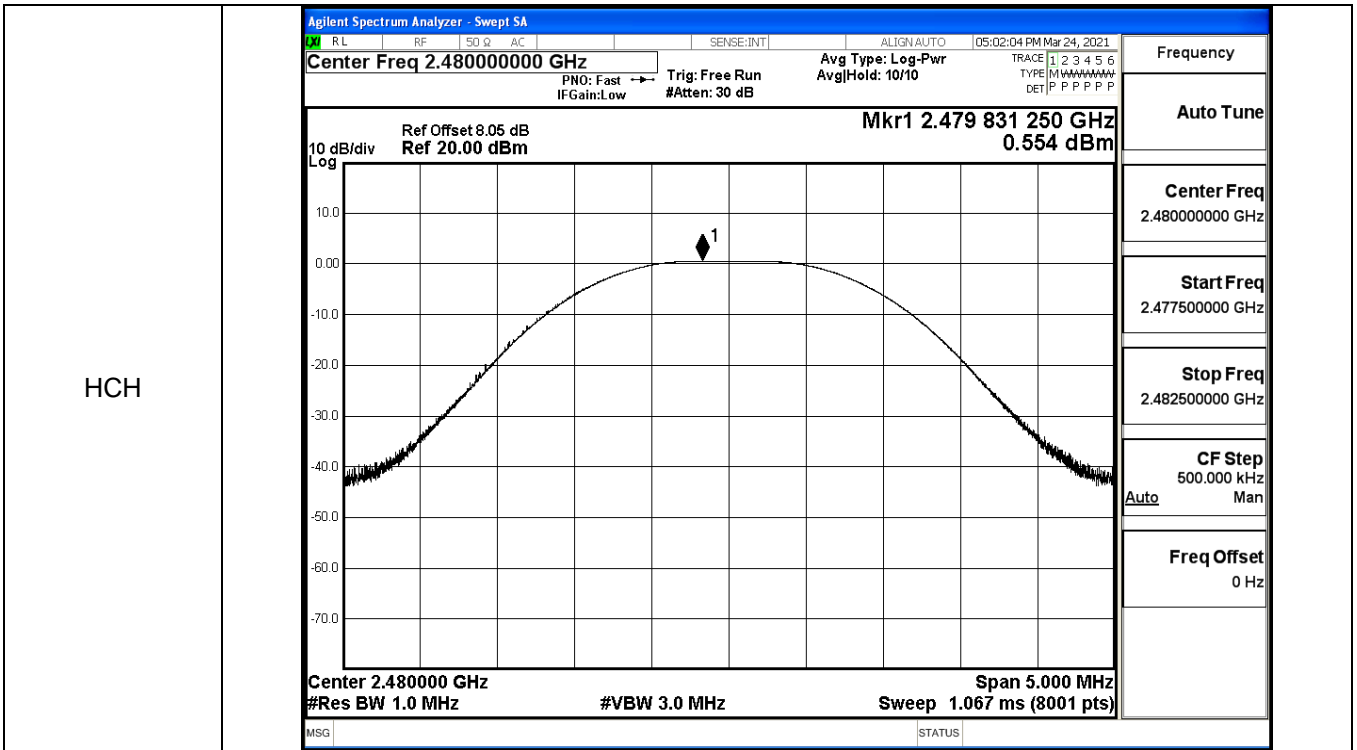
B.2 Maximum Conducted Peak Output Power

BT LE

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.474	30	PASS
BT LE	MCH	2.053	30	PASS
BT LE	HCH	0.554	30	PASS

Test Graphs

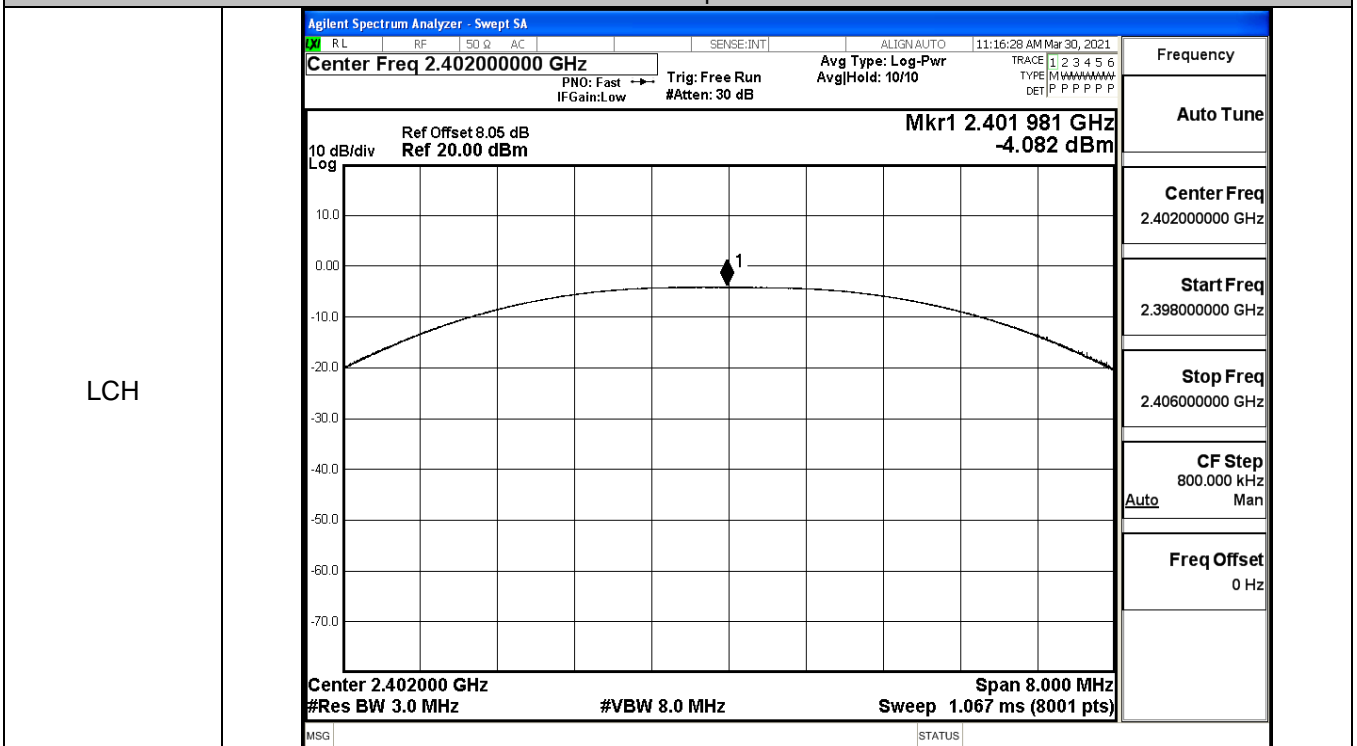
<p>LCH</p>		<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.40200000 GHz</p> <p>Mkr1 2.402 142 500 GHz 0.474 dBm</p> <p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.402000000 GHz</p> <p>Start Freq 2.399500000 GHz</p> <p>Stop Freq 2.404500000 GHz</p> <p>CF Step 500.000 kHz Auto Man</p> <p>Freq Offset 0 Hz</p>
<p>MCH</p>		<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.44000000 GHz</p> <p>Mkr1 2.440 132 500 GHz 2.053 dBm</p> <p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.440000000 GHz</p> <p>Start Freq 2.437500000 GHz</p> <p>Stop Freq 2.442500000 GHz</p> <p>CF Step 500.000 kHz Auto Man</p> <p>Freq Offset 0 Hz</p>



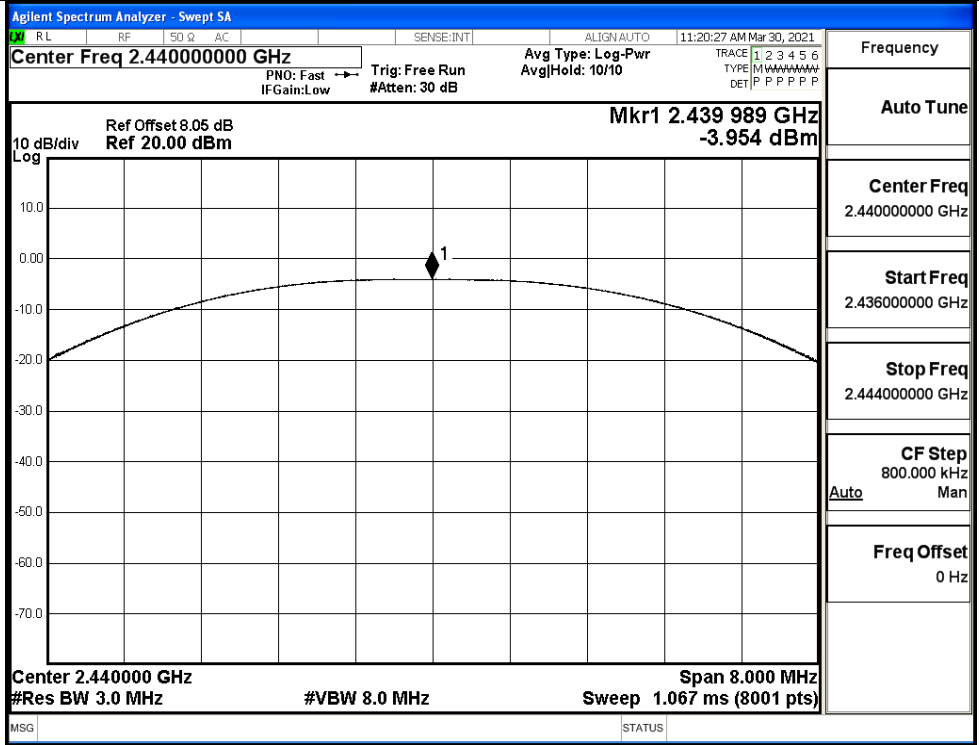
BT 2LE

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT 2LE	LCH	-4.082	30	PASS
BT 2LE	MCH	-3.954	30	PASS
BT 2LE	HCH	-4.354	30	PASS

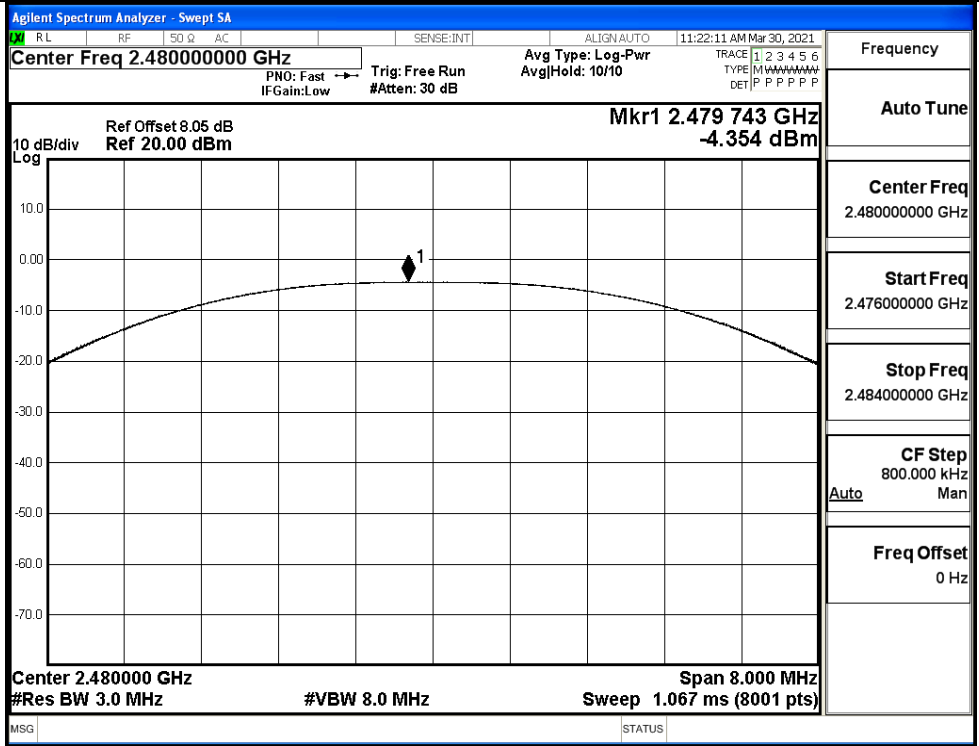
Test Graphs



MCH



HCH



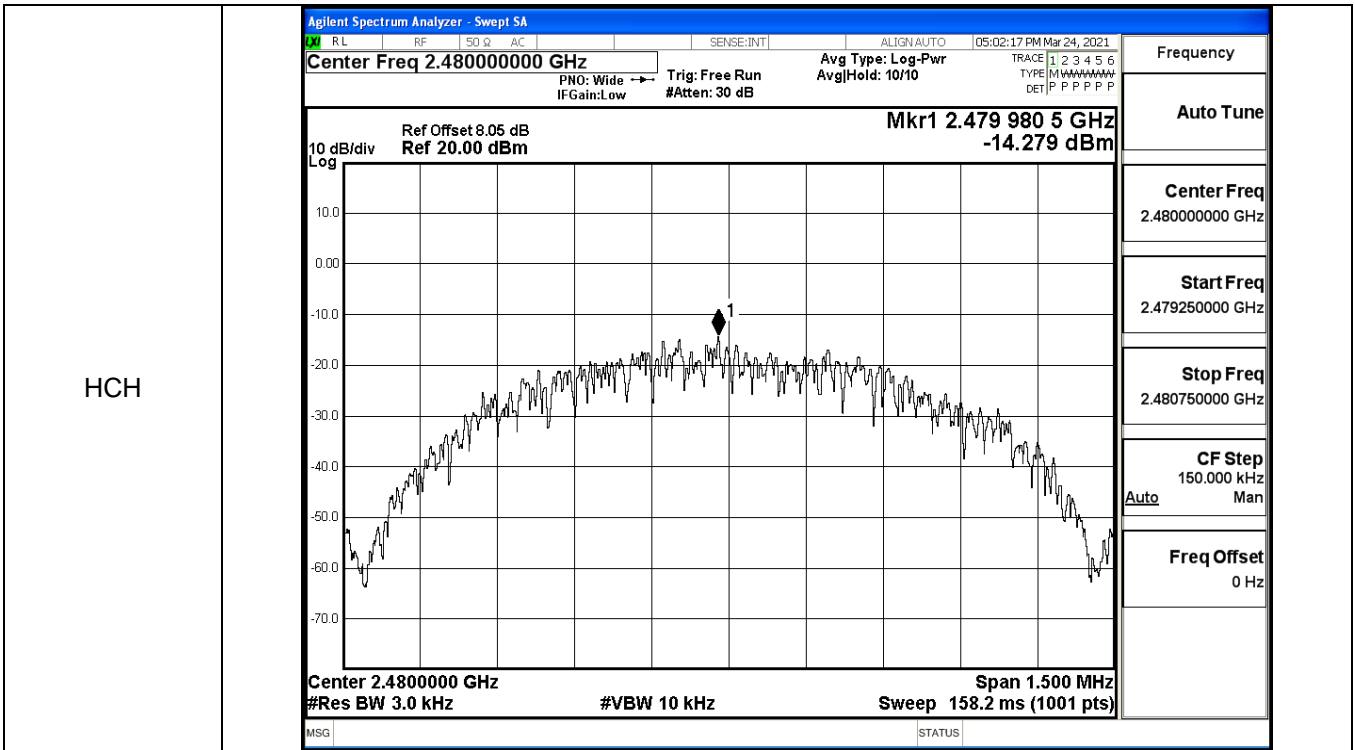
B.3 Maximum Power Spectral Density

BT LE

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-14.685	8	PASS
BT LE	MCH	-12.626	8	PASS
BT LE	HCH	-14.279	8	PASS

Test Graphs

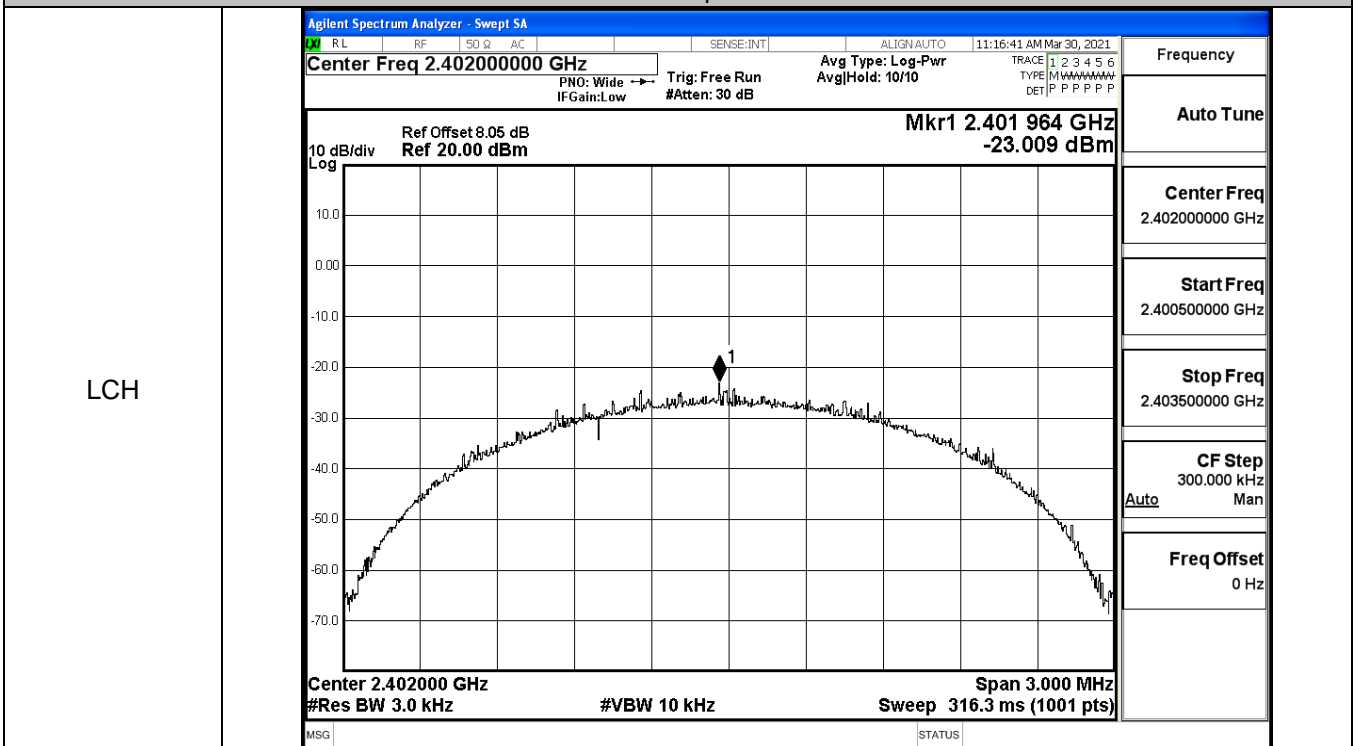
LCH	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.40200000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Mkr1 2.4019805 GHz -14.685 dBm</p> <p>Center 2.4020000 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 1.500 MHz Sweep 158.2 ms (1001 pts)</p>	<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.40200000 GHz</p> <p>Start Freq 2.401250000 GHz</p> <p>Stop Freq 2.402750000 GHz</p> <p>CF Step 150.000 kHz Auto</p> <p>Freq Offset 0 Hz</p>
MCH	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.44000000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Mkr1 2.4399805 GHz -12.626 dBm</p> <p>Center 2.4400000 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 1.500 MHz Sweep 158.2 ms (1001 pts)</p>	<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.44000000 GHz</p> <p>Start Freq 2.439250000 GHz</p> <p>Stop Freq 2.440750000 GHz</p> <p>CF Step 150.000 kHz Auto</p> <p>Freq Offset 0 Hz</p>



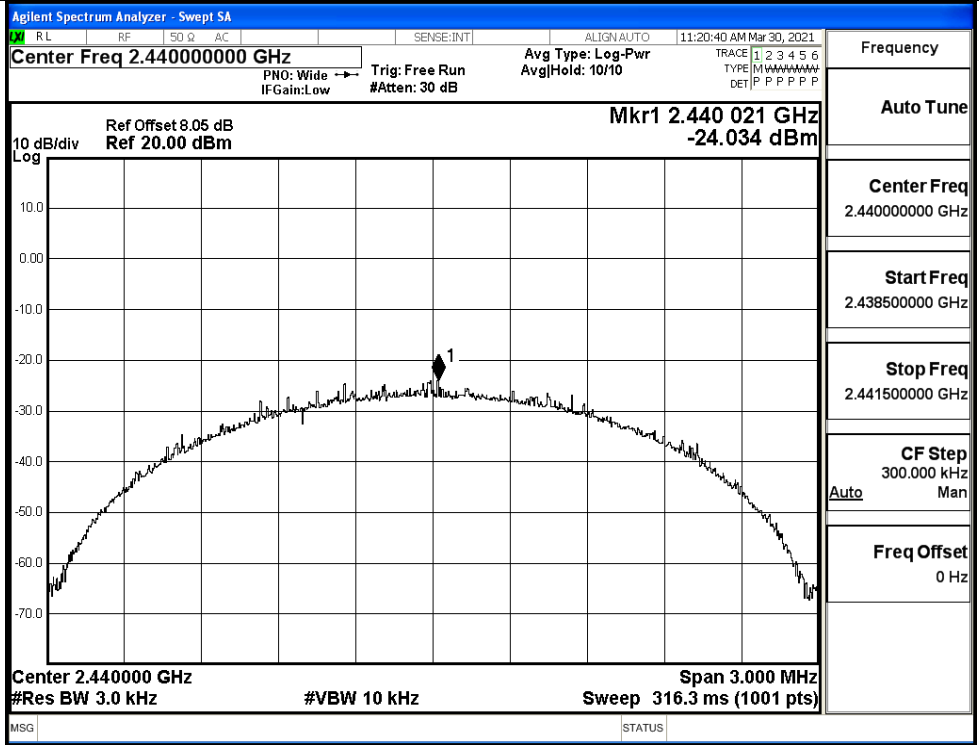
BT 2LE

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT 2LE	LCH	-23.009	8	PASS
BT 2LE	MCH	-24.034	8	PASS
BT 2LE	HCH	-23.295	8	PASS

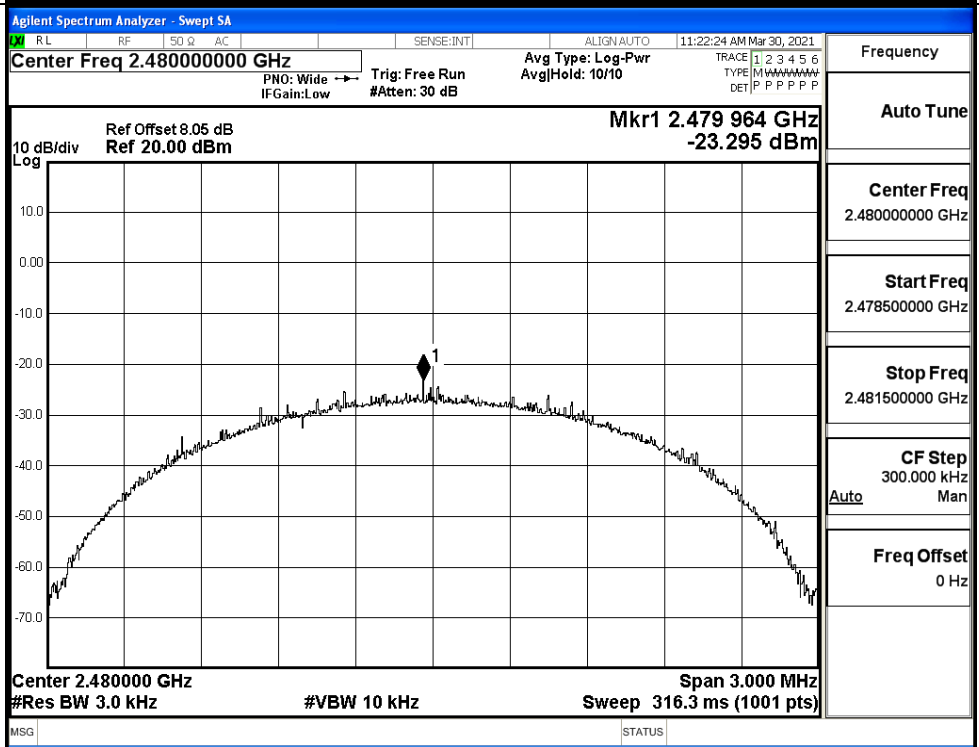
Test Graphs



MCH



HCH



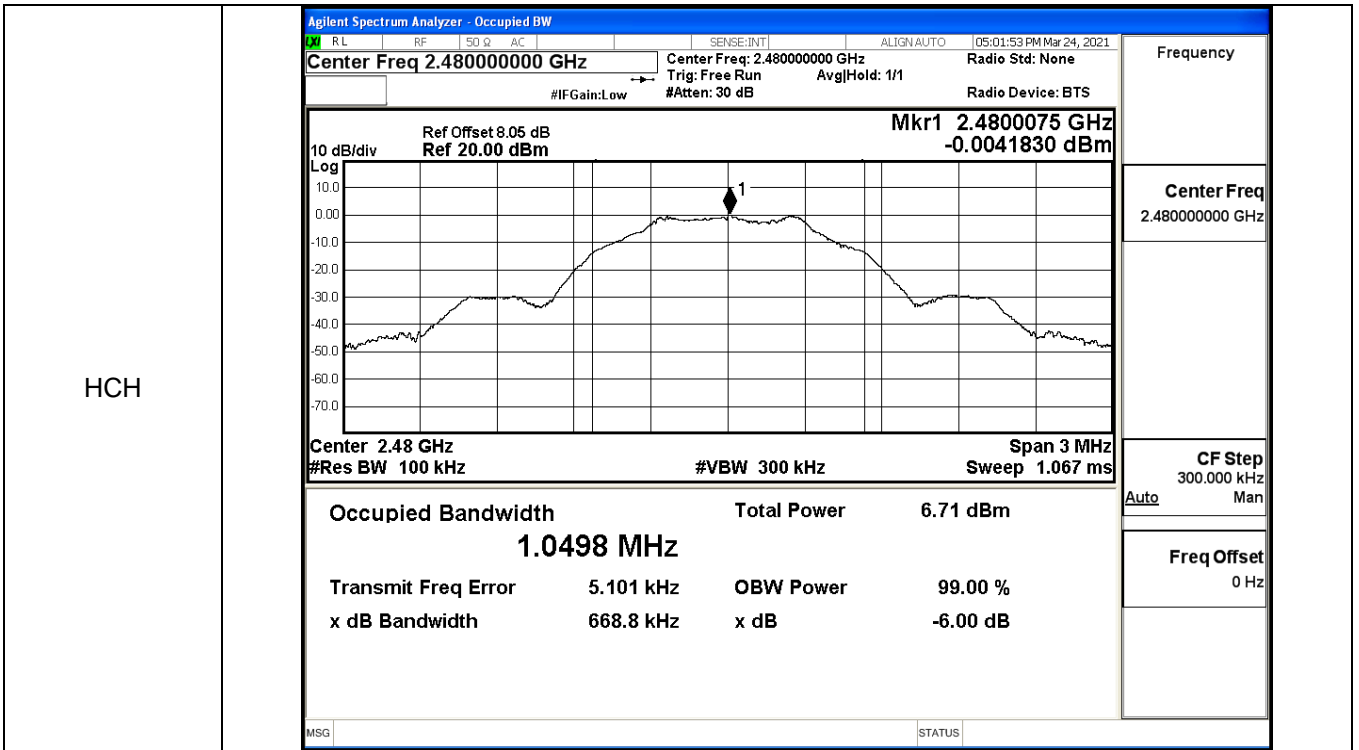
B.4 6dB Bandwidth

BT LE

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6702	≥0.5	PASS
BT LE	MCH	0.6690	≥0.5	PASS
BT LE	HCH	0.6688	≥0.5	PASS

Test Graphs

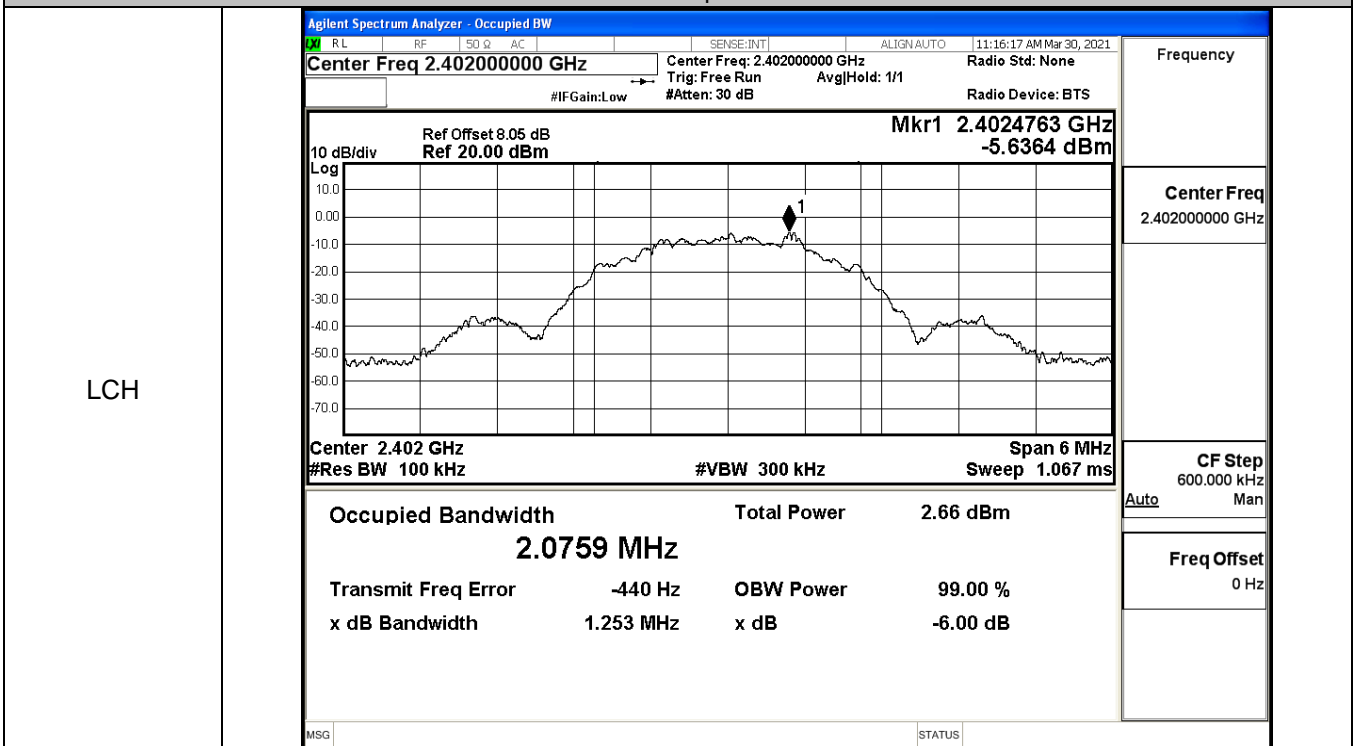
LCH	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Mkr1 2.4020113 GHz -0.17112 dBm</p> <p>Occupied Bandwidth 1.0484 MHz</p> <p>Total Power 6.68 dBm</p> <p>Transmit Freq Error 6.749 kHz</p> <p>x dB Bandwidth 670.2 kHz</p>	<p>Frequency</p> <p>Center Freq 2.40200000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Freq Offset 0 Hz</p>
	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.44000000 GHz</p> <p>Mkr1 2.439997 GHz 1.5101 dBm</p> <p>Occupied Bandwidth 1.0481 MHz</p> <p>Total Power 8.29 dBm</p> <p>Transmit Freq Error 4.970 kHz</p> <p>x dB Bandwidth 669.0 kHz</p>	<p>Frequency</p> <p>Center Freq 2.44000000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Freq Offset 0 Hz</p>



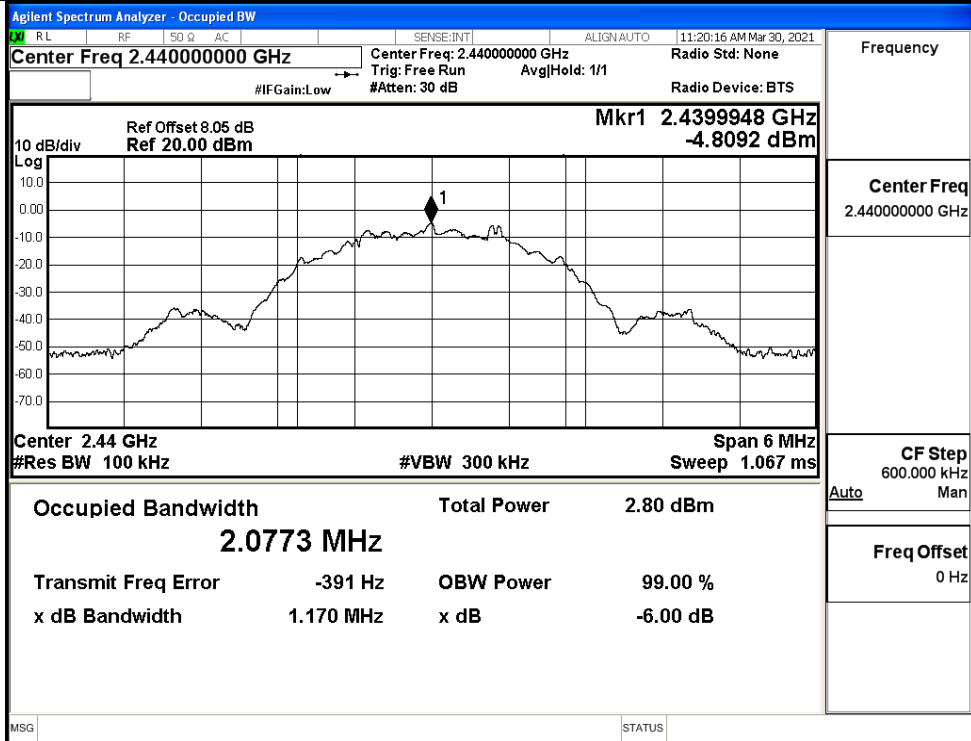
BT 2LE

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT 2LE	LCH	1.253	≥0.5	PASS
BT 2LE	MCH	1.170	≥0.5	PASS
BT 2LE	HCH	1.173	≥0.5	PASS

Test Graphs

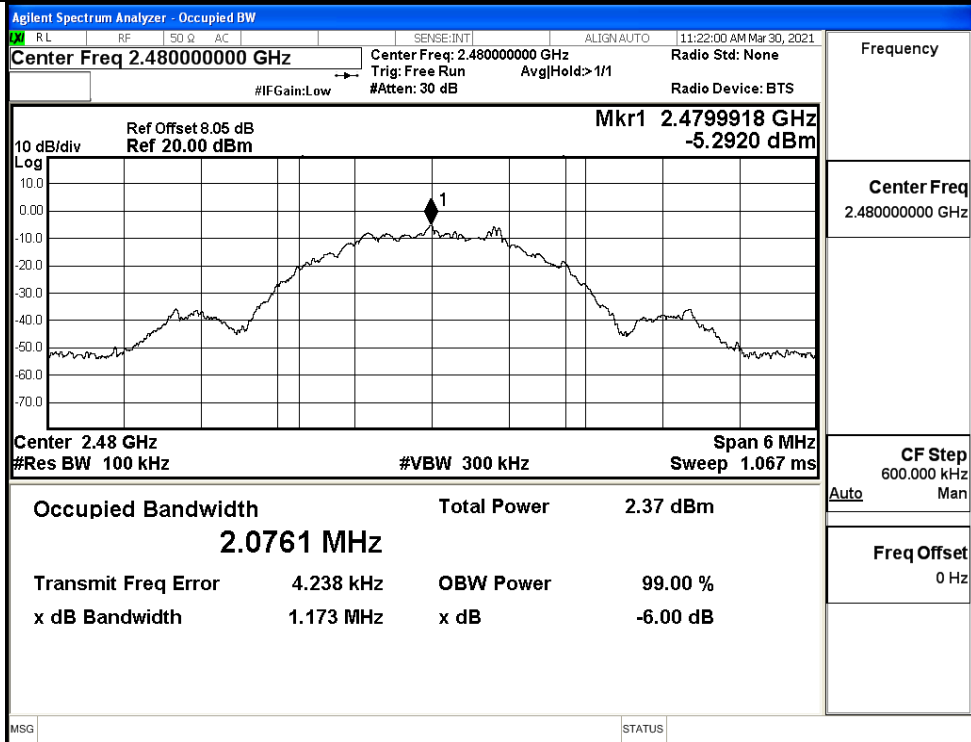


MCH



Frequency	2.44000000 GHz
Center Freq	2.44000000 GHz
CF Step	600.000 kHz
Auto	Man
Freq Offset	0 Hz

HCH

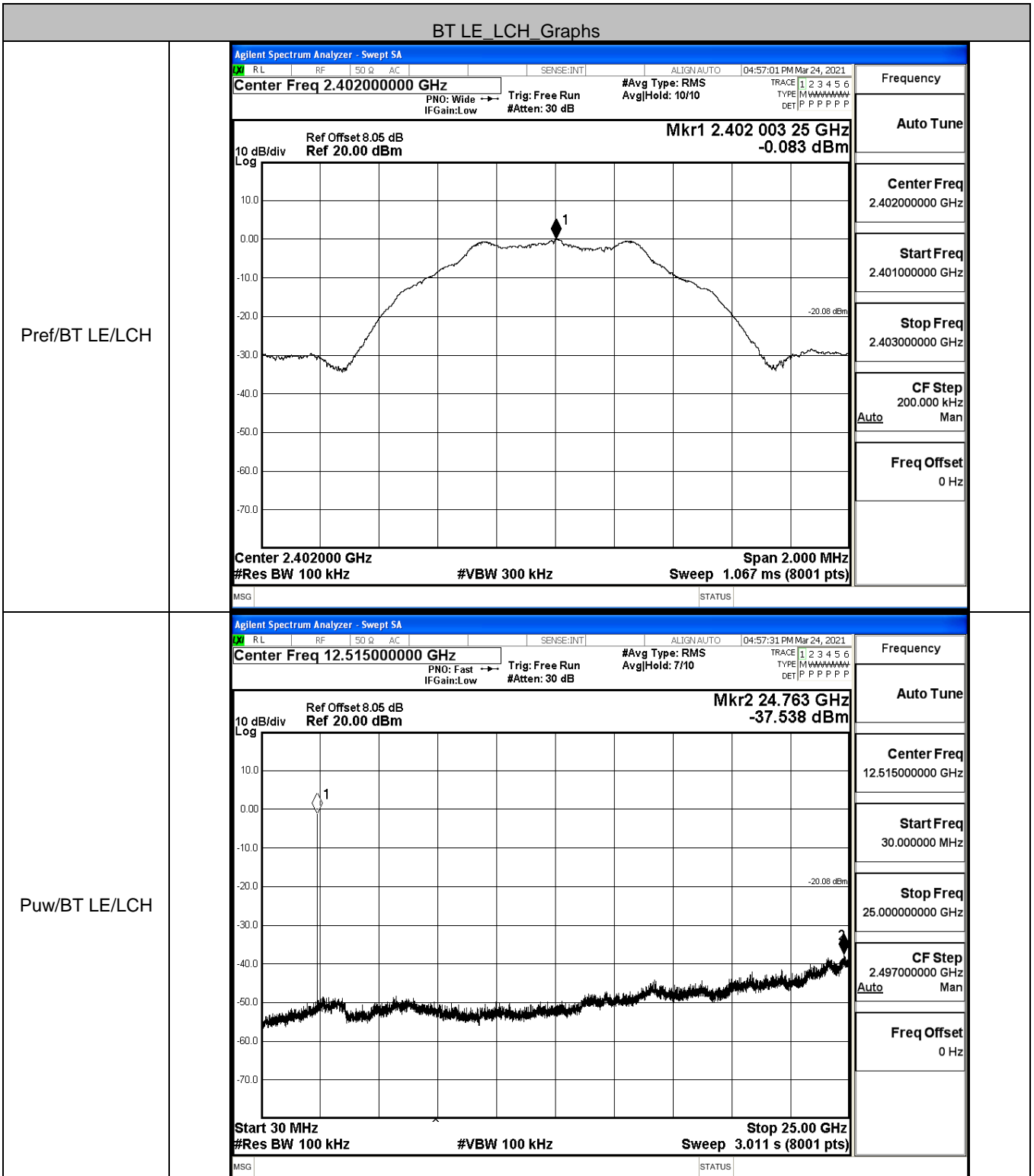


Frequency	2.48000000 GHz
Center Freq	2.48000000 GHz
CF Step	600.000 kHz
Auto	Man
Freq Offset	0 Hz

B.5 RF Conducted Spurious Emissions

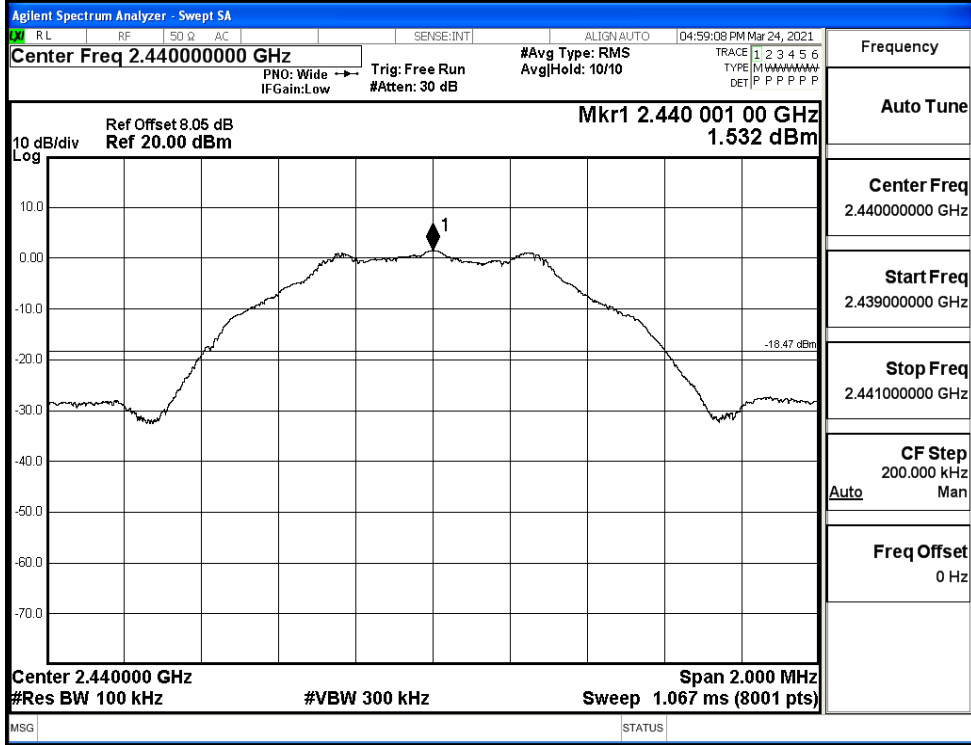
BT LE

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-0.083	-37.538	-20.083	PASS
BT LE	MCH	1.532	-37.875	-18.468	PASS
BT LE	HCH	0.003	-38.053	-19.997	PASS

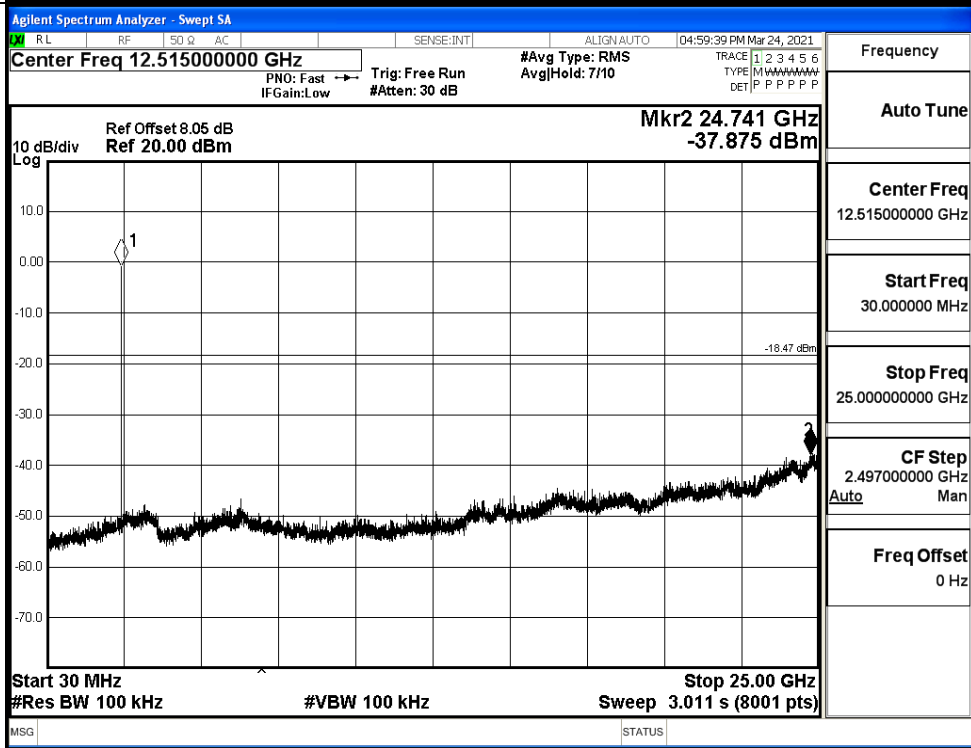


BT LE_MCH_Graphs

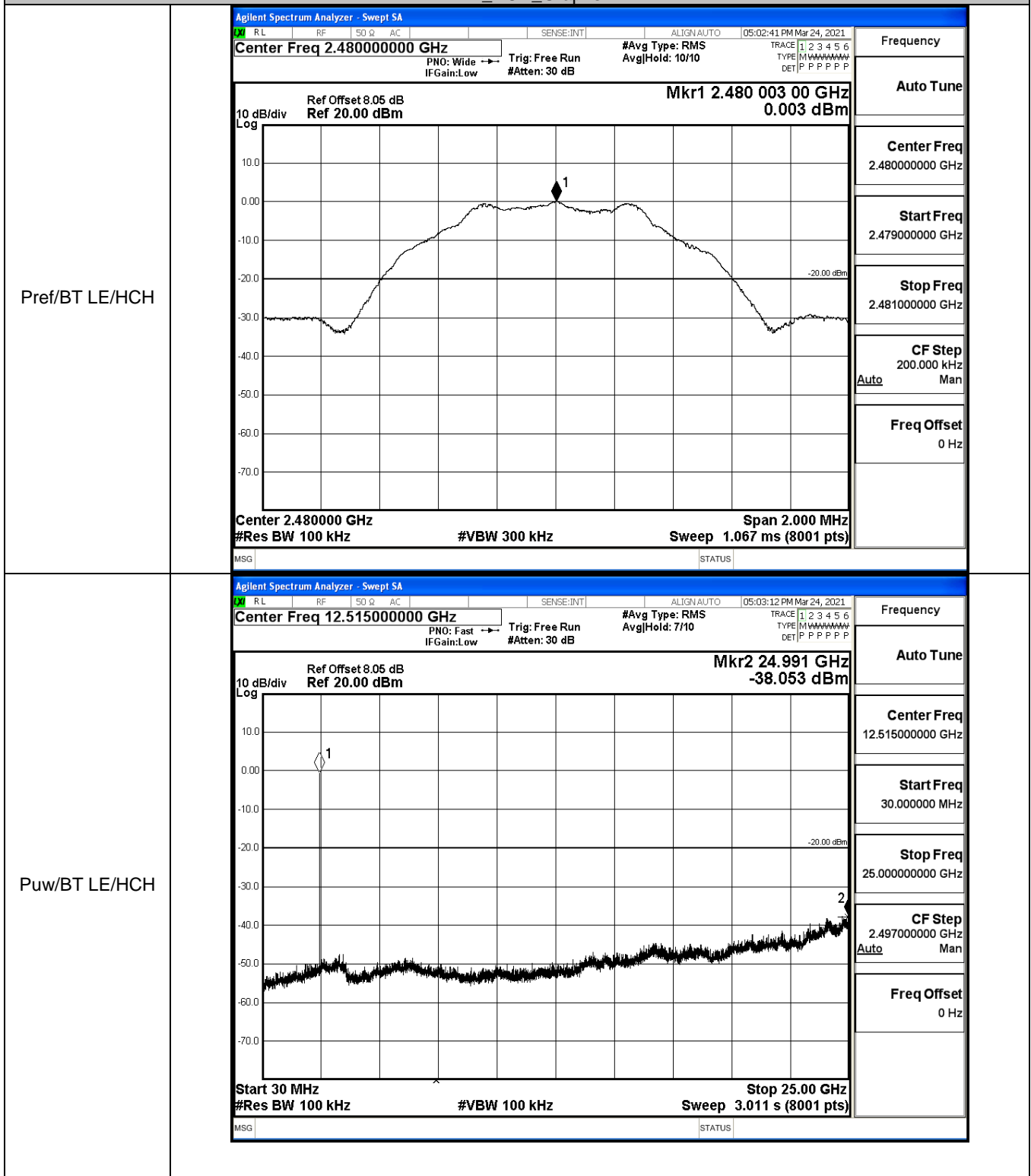
Pref/BT LE/MCH



Puw/BT LE/MCH



BT LE_HCH_Graphs

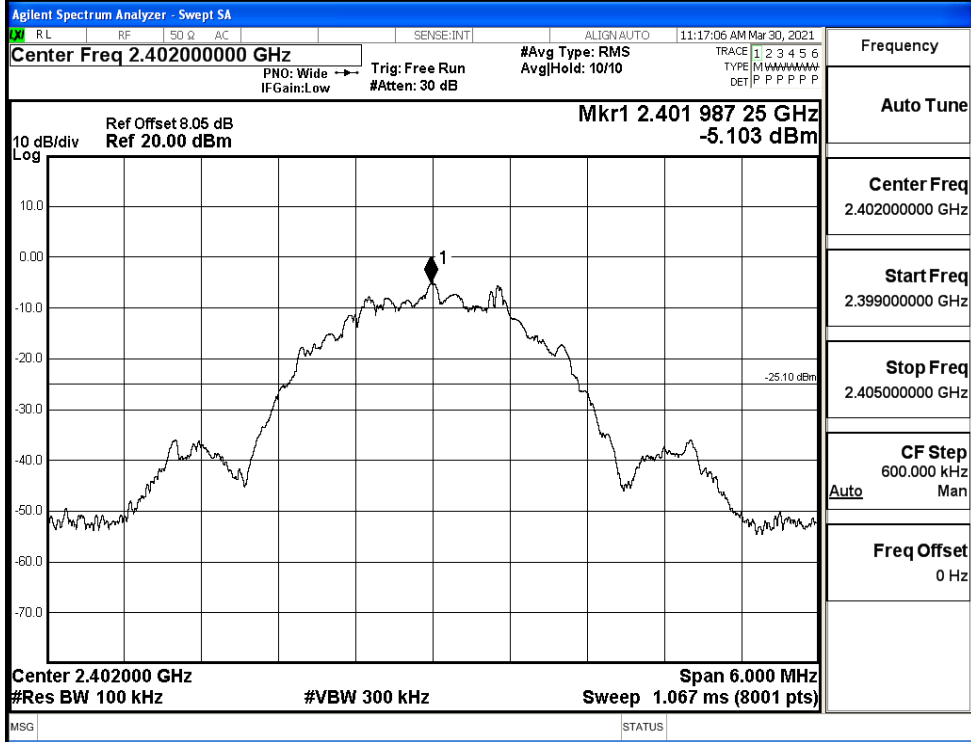


BT 2LE

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT 2LE	LCH	-5.103	-37.350	-25.103	PASS
BT 2LE	MCH	-4.858	-34.504	-24.858	PASS
BT 2LE	HCH	-5.276	-37.235	-25.276	PASS

BT 2LE_LCH_Graphs

Pref/BT 2LE/LCH

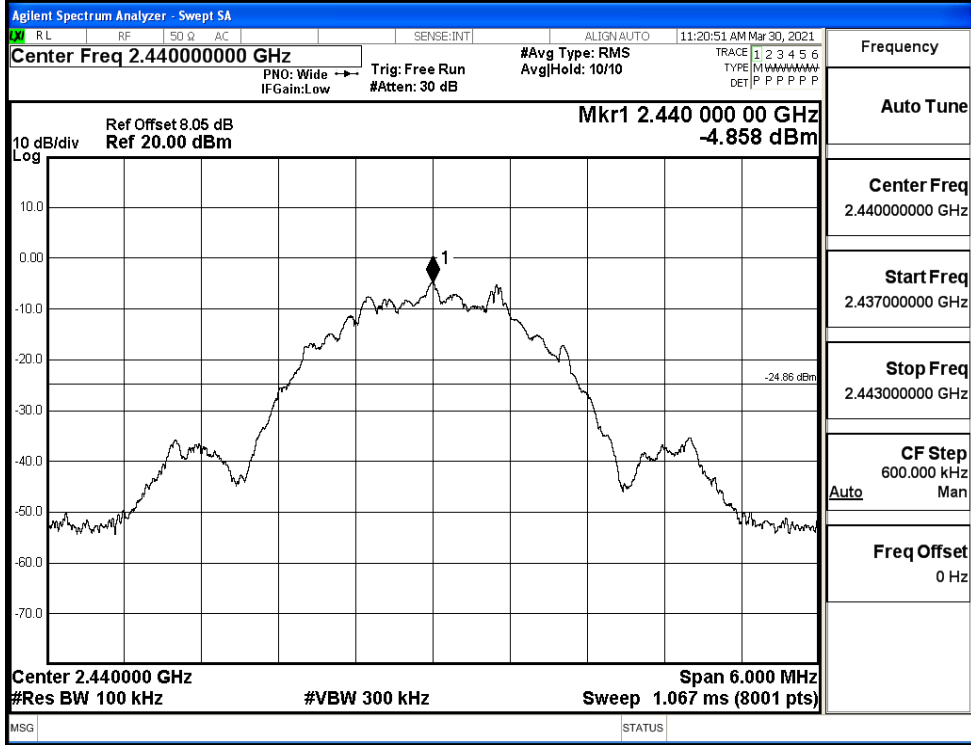


Puw/BT 2LE/LCH

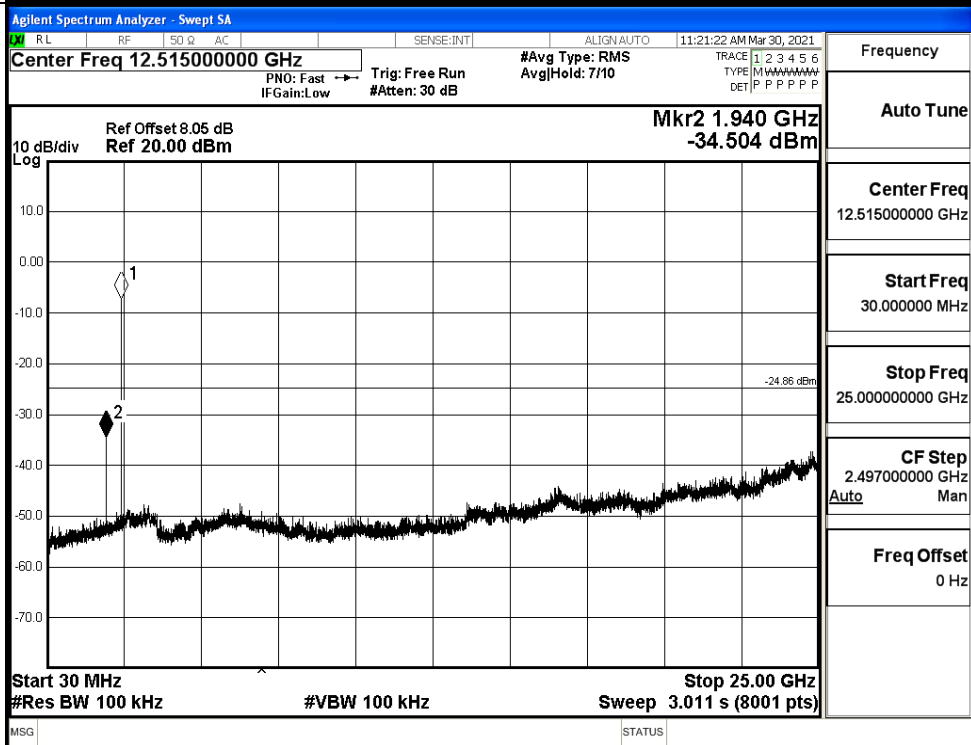


BT 2LE_MCH_Graphs

Pref/BT
2LE/MCH

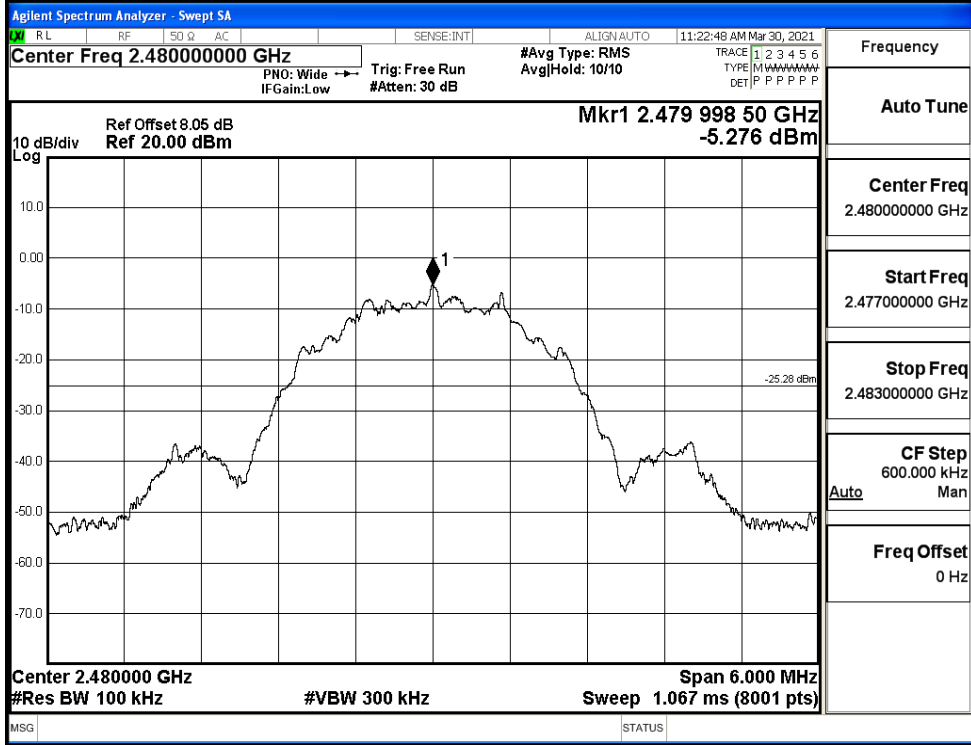


Puw/BT
2LE/MCH

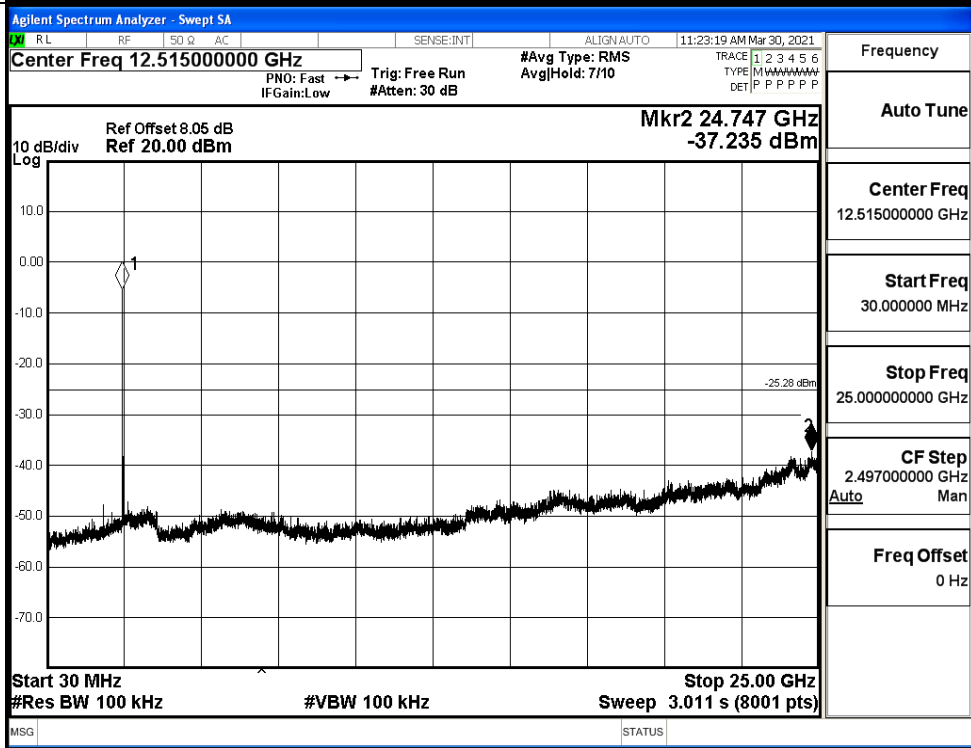


BT 2LE_HCH_Graphs

Pref/BT 2LE/HCH



Puw/BT 2LE/HCH



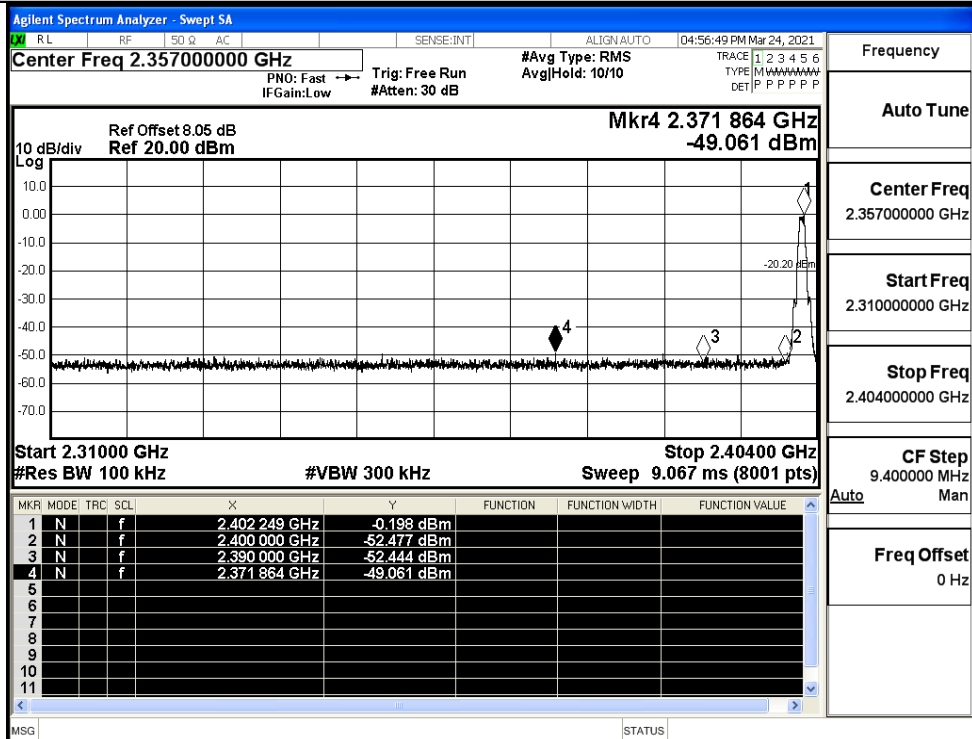
B.6 Band-edge for RF Conducted Emissions

BT LE

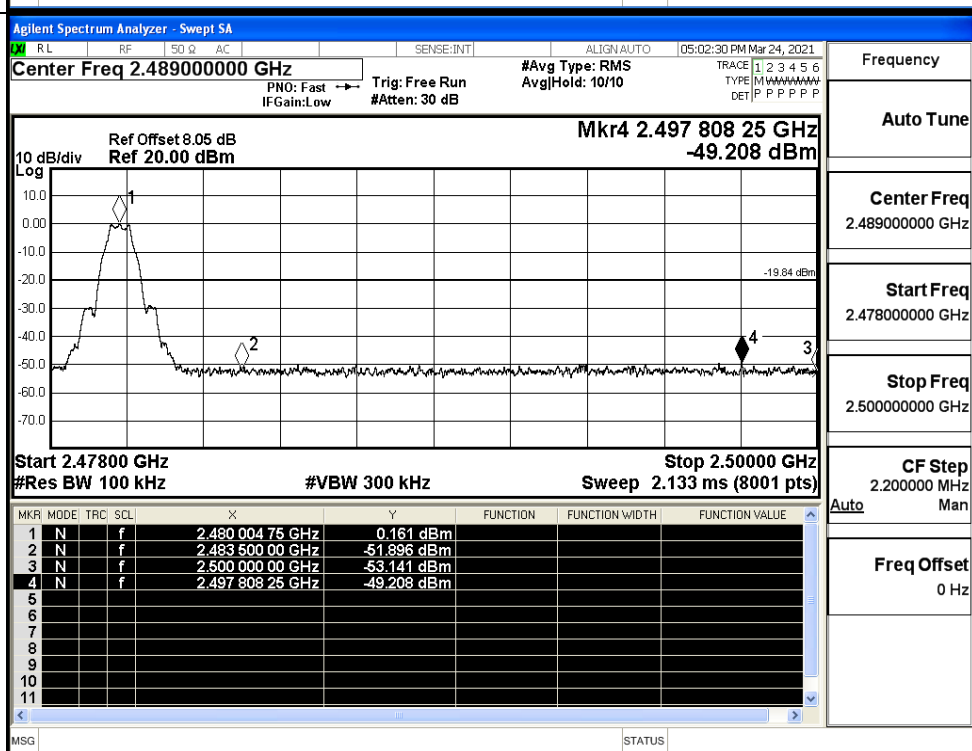
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-0.198	-49.061	-20.2	PASS
BT LE	HCH	0.161	-49.208	-19.84	PASS

Test Graphs

LCH



HCH



BT 2LE

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT 2LE	LCH	-4.979	-49.524	-24.98	PASS
BT 2LE	HCH	-5.214	-49.244	-25.21	PASS

Test Graphs

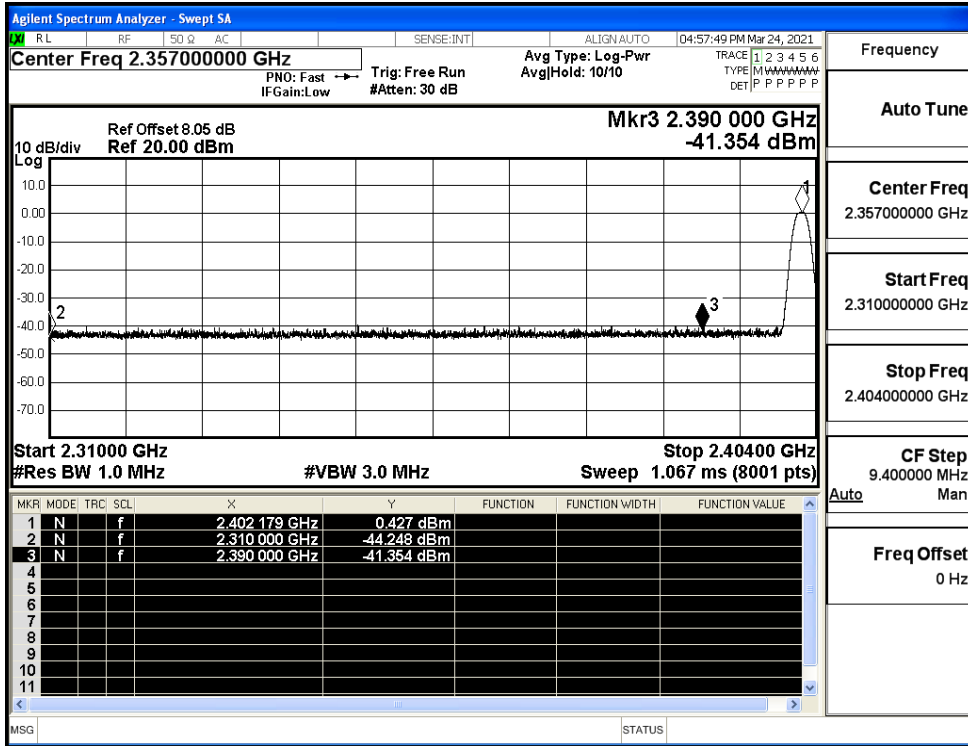
LCH	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.35700000 GHz Mkr4 2.373 579 GHz -49.524 dBm Start 2.31000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.40400 GHz Sweep 9.067 ms (8001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <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>-4.979 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>-39.909 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>-52.400 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>f</td><td></td><td>2.373579 GHz</td><td>-49.524 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		2.401991 GHz	-4.979 dBm				2	N	f		2.400000 GHz	-39.909 dBm				3	N	f		2.390000 GHz	-52.400 dBm				4	N	f		2.373579 GHz	-49.524 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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3	N	f		2.390000 GHz	-52.400 dBm																																										
4	N	f		2.373579 GHz	-49.524 dBm																																										
HCH	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.489000000 GHz Mkr4 2.499 595 75 GHz -49.244 dBm Start 2.47800 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.50000 GHz Sweep 2.133 ms (8001 pts)</p> <table border="1"> <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>2.479 999 25 GHz</td><td>-5.214 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>-51.125 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>-52.526 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>f</td><td></td><td>2.499 595 75 GHz</td><td>-49.244 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		2.479 999 25 GHz	-5.214 dBm				2	N	f		2.483 500 00 GHz	-51.125 dBm				3	N	f		2.500 000 00 GHz	-52.526 dBm				4	N	f		2.499 595 75 GHz	-49.244 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
	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																																						
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3	N	f		2.500 000 00 GHz	-52.526 dBm																																										
4	N	f		2.499 595 75 GHz	-49.244 dBm																																										

B.7 Restrict-band band-edge measurements

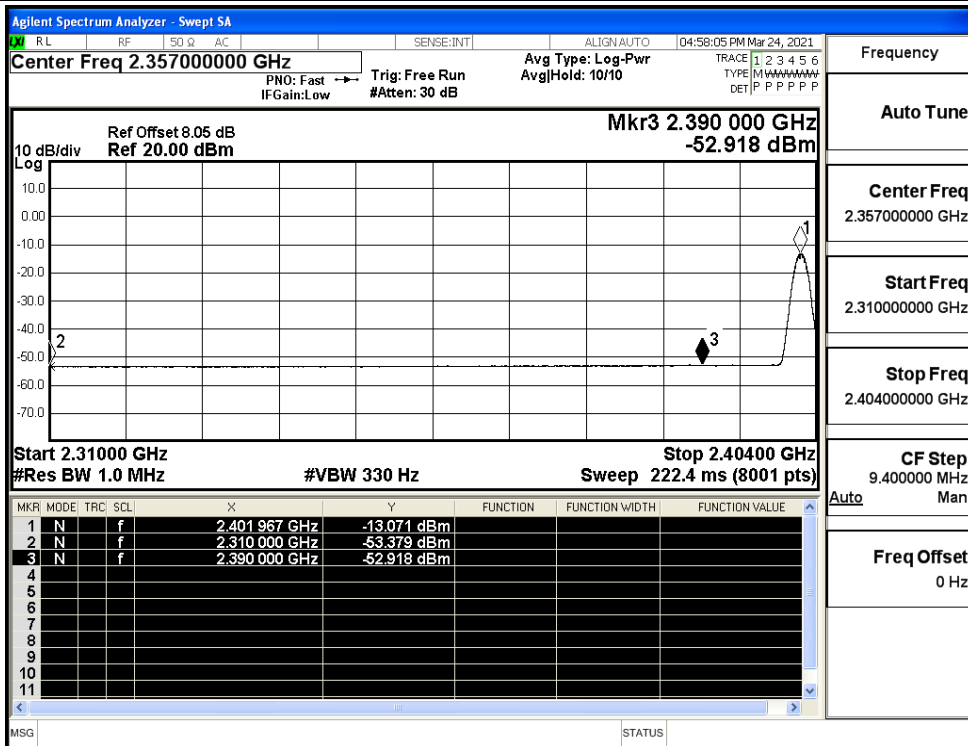
BT LE

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	-44.25	2.0	0	51.01	PEAK	74	PASS
		Ant1	2310.0	-53.38	2.0	0	41.88	AV	54	PASS
		Ant1	2390.0	-41.35	2.0	0	53.90	PEAK	74	PASS
		Ant1	2390.0	-52.92	2.0	0	42.34	AV	54	PASS
	2480	Ant1	2483.5	-42.34	2.0	0	52.92	PEAK	74	PASS
		Ant1	2483.5	-52.55	2.0	0	42.71	AV	54	PASS
		Ant1	2500.0	-41.93	2.0	0	53.33	PEAK	74	PASS
		Ant1	2500.0	-52.33	2.0	0	42.93	AV	54	PASS

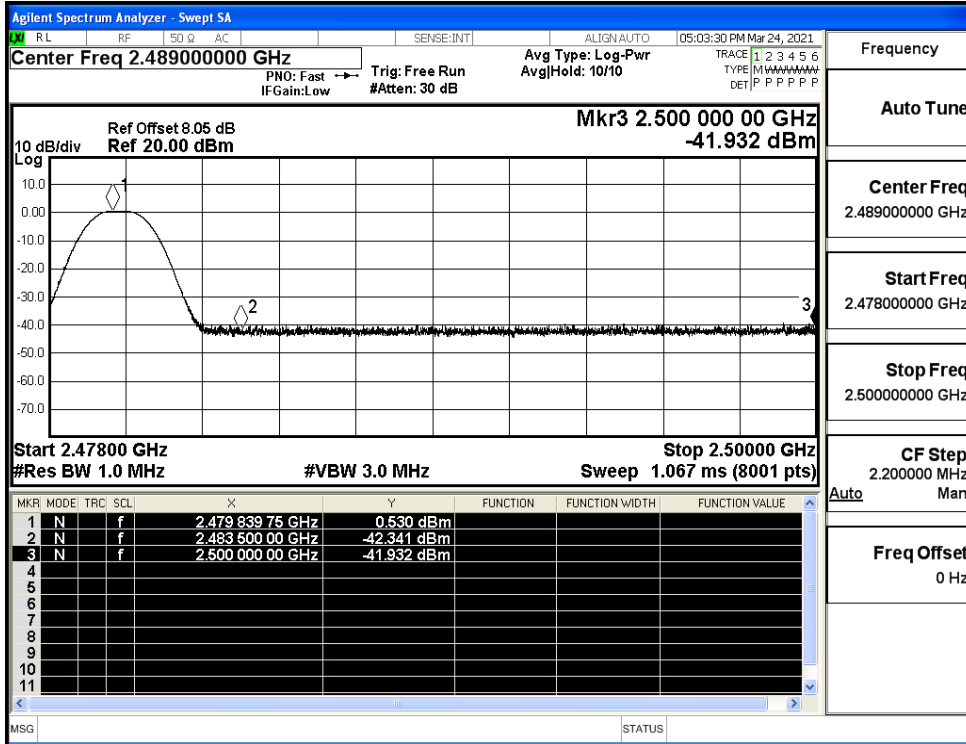
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



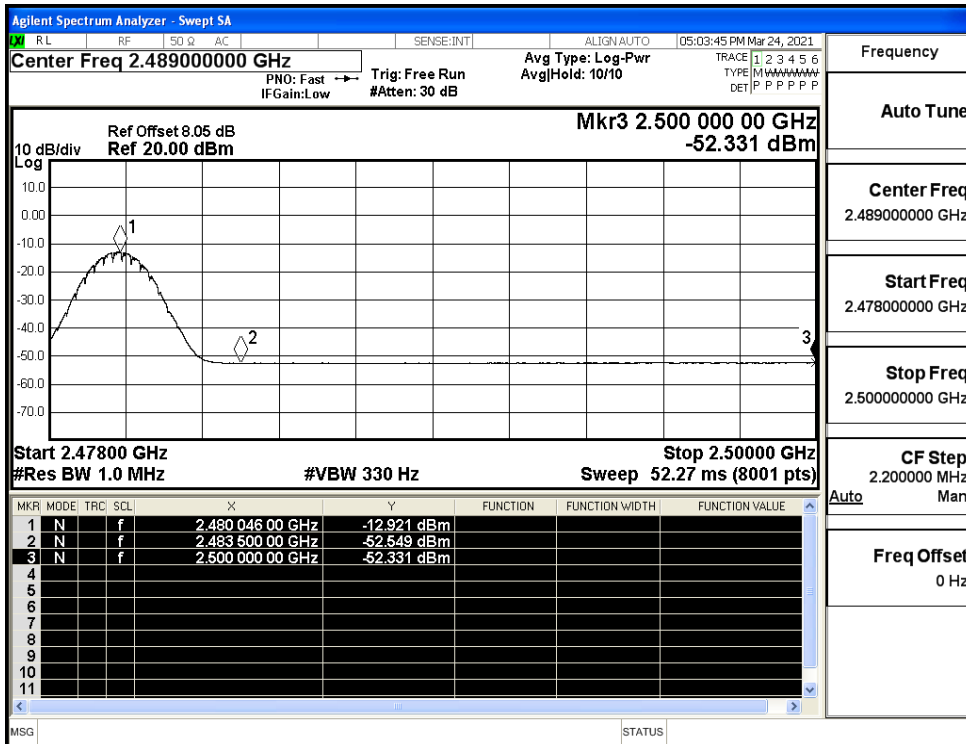
Restrict-band band-edge measurements_BT LE_2402_Ant1_AV



Restrict-band band-edge measurements_BT LE_2480_Ant1_PEAK



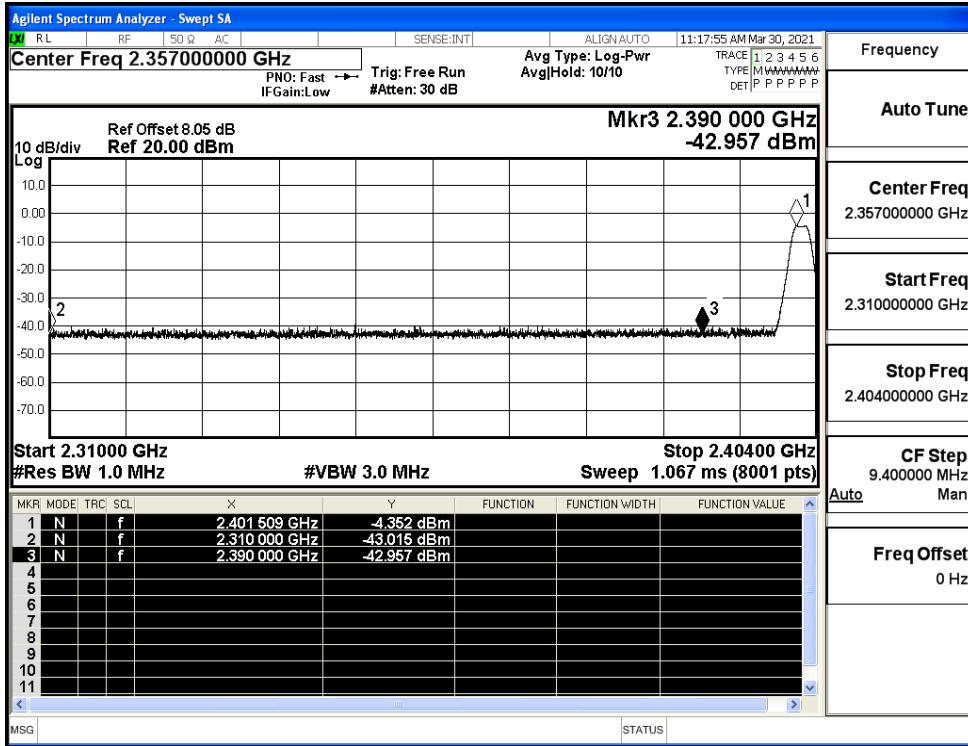
Restrict-band band-edge measurements_BT LE_2480_Ant1_AV



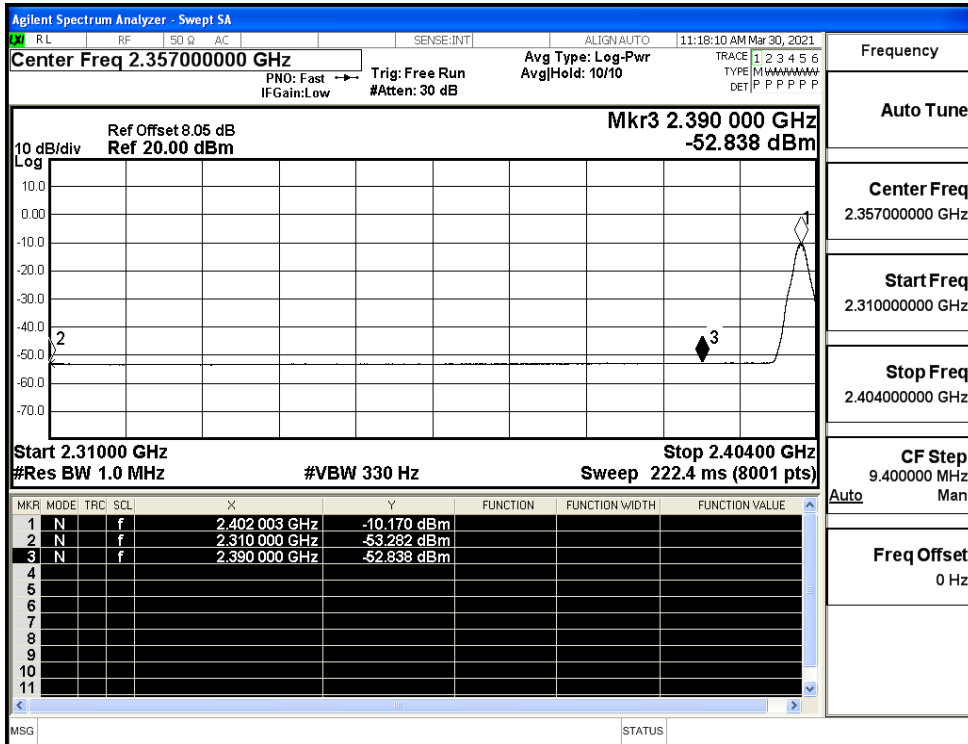
BT 2LE

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdi
BT 2LE	2402	Ant1	2310.0	-43.02	2.0	0	52.24	PEAK	74	PASS
		Ant1	2310.0	-53.28	2.0	0	41.98	AV	54	PASS
		Ant1	2390.0	-42.96	2.0	0	52.30	PEAK	74	PASS
		Ant1	2390.0	-52.84	2.0	0	42.42	AV	54	PASS
	2480	Ant1	2483.5	-41.93	2.0	0	53.33	PEAK	74	PASS
		Ant1	2483.5	-52.18	2.0	0	43.08	AV	54	PASS
		Ant1	2500.0	-42.23	2.0	0	53.03	PEAK	74	PASS
		Ant1	2500.0	-52.21	2.0	0	43.04	AV	54	PASS

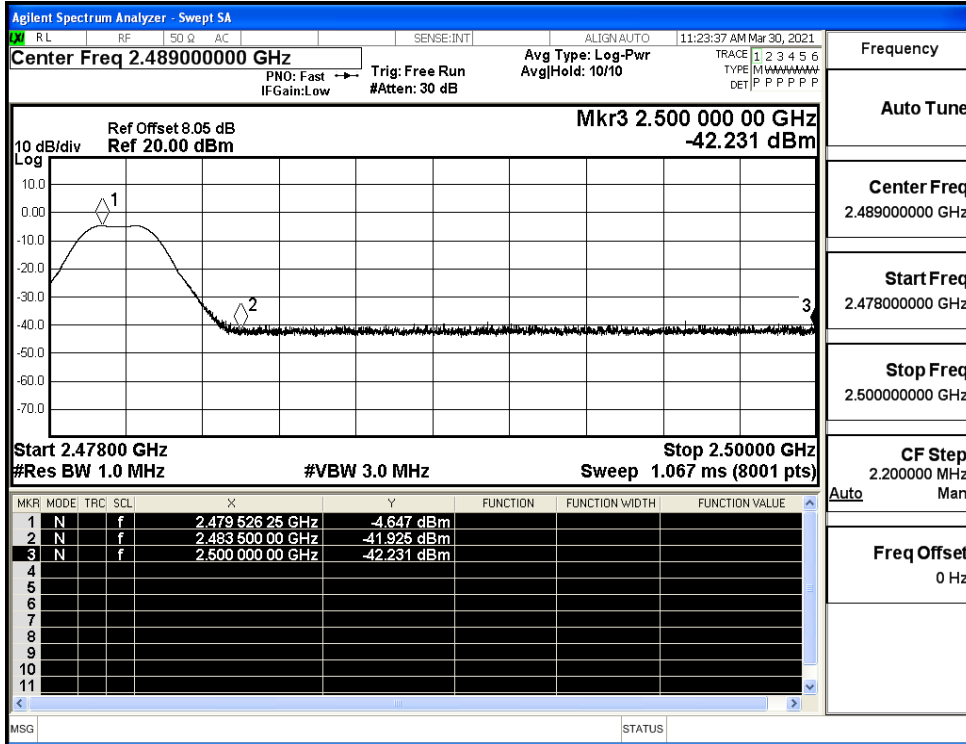
Restrict-band band-edge measurements_BT 2LE_2402_Ant1_PEAK



Restrict-band band-edge measurements_BT 2LE_2402_Ant1_AV



Restrict-band band-edge measurements_BT 2LE_2480_Ant1_PEAK



Restrict-band band-edge measurements_BT 2LE_2480_Ant1_AV

