

Appendix A

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

Product Name: Mibro Air

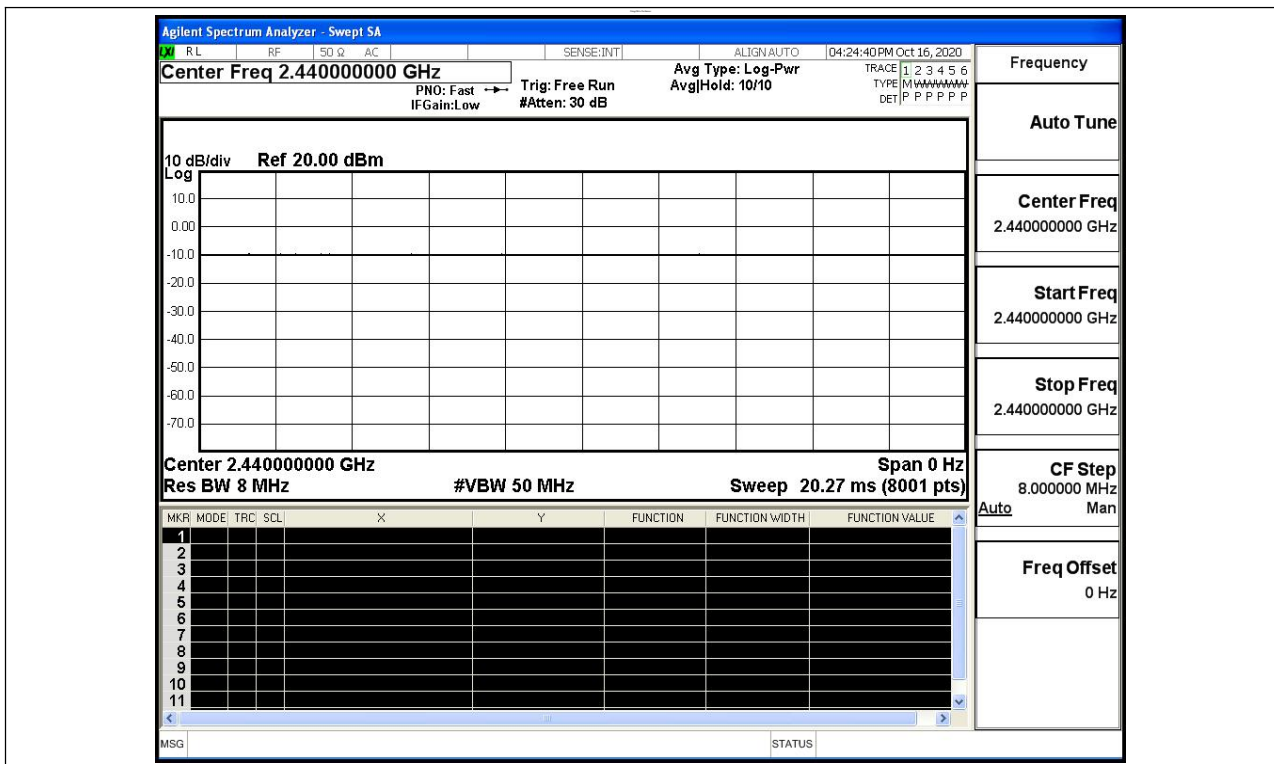
Trade Mark: **mibro**
 Test Model: XPAW001

Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ken He
Supervised by:	Li Huan

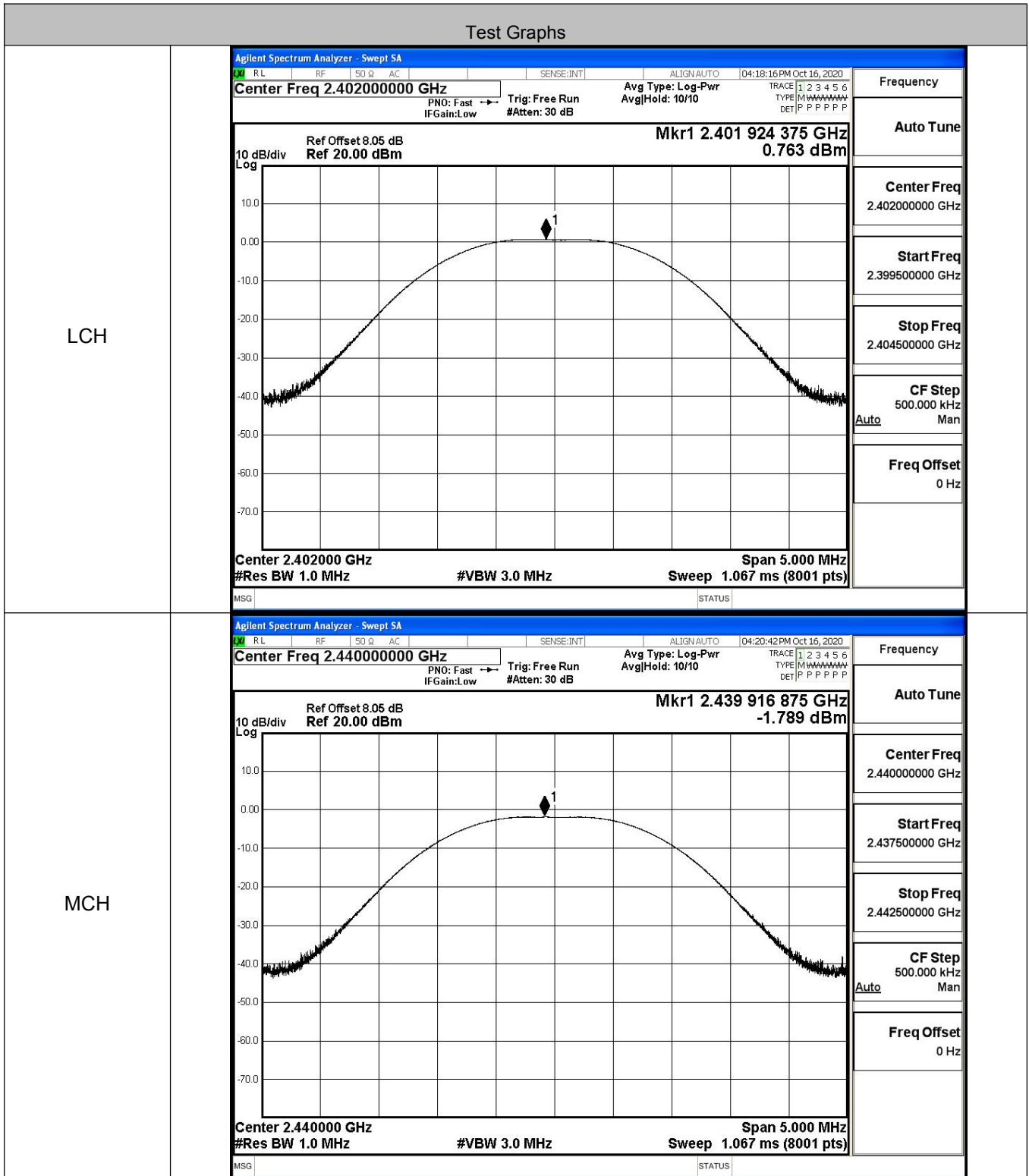
A.1 Duty Cycle

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



A.2 Maximum Conducted Peak Output Power

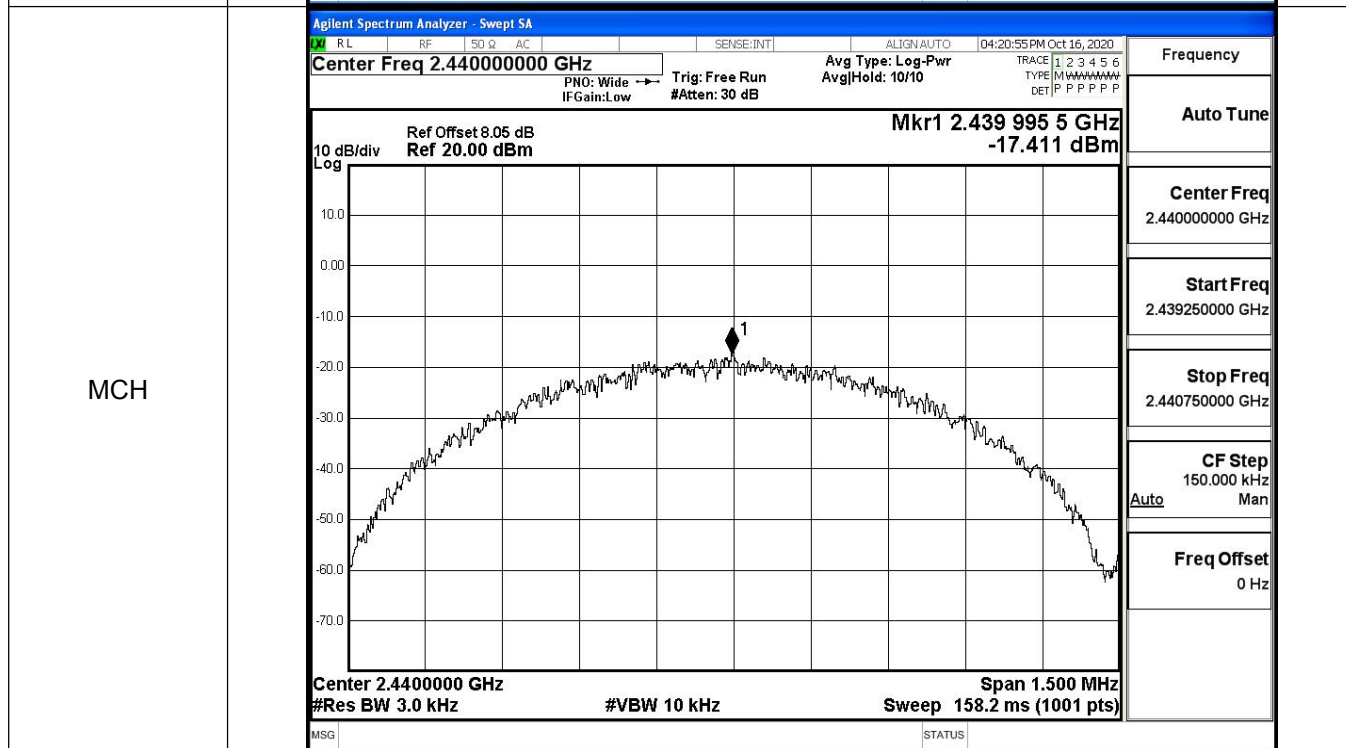
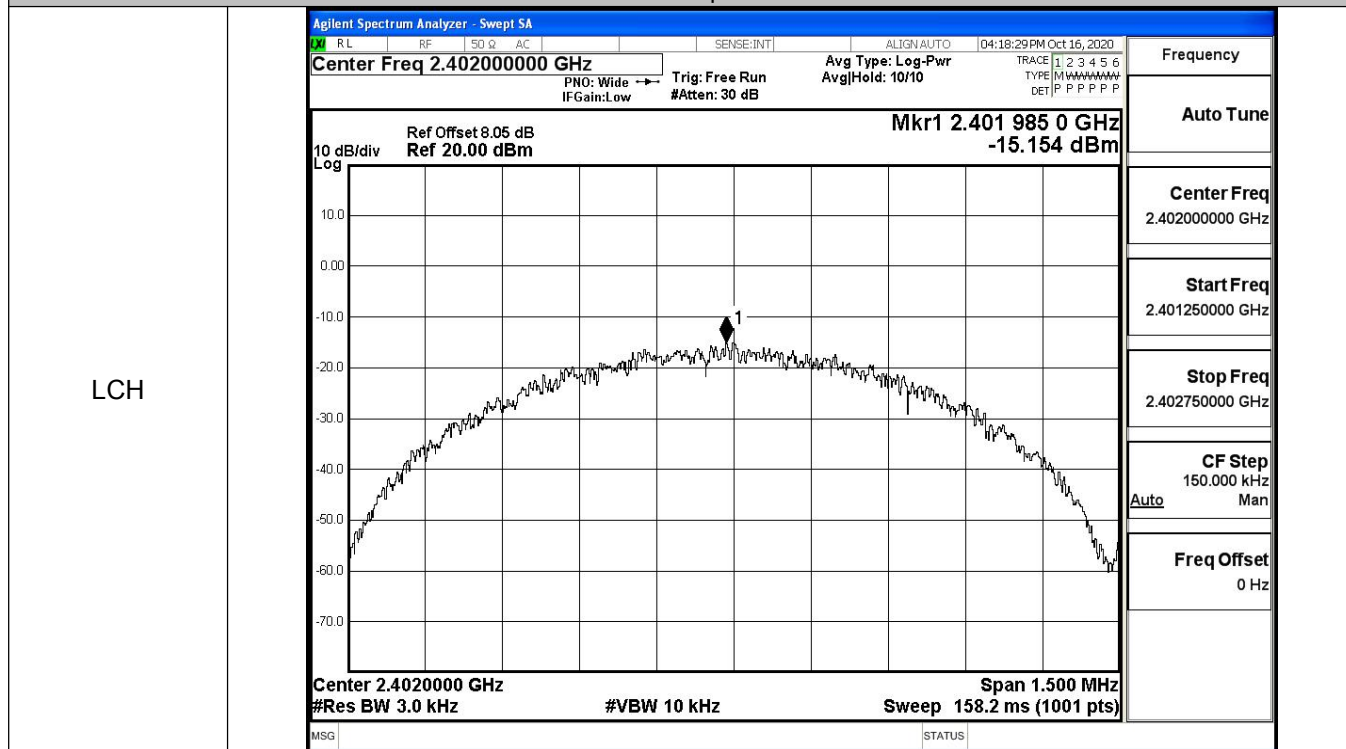
Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.763	30	PASS
BT LE	MCH	-1.789	30	PASS
BT LE	HCH	-4.311	30	PASS



A.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-15.154	8	PASS
BT LE	MCH	-17.411	8	PASS
BT LE	HCH	-20.208	8	PASS

Test Graphs



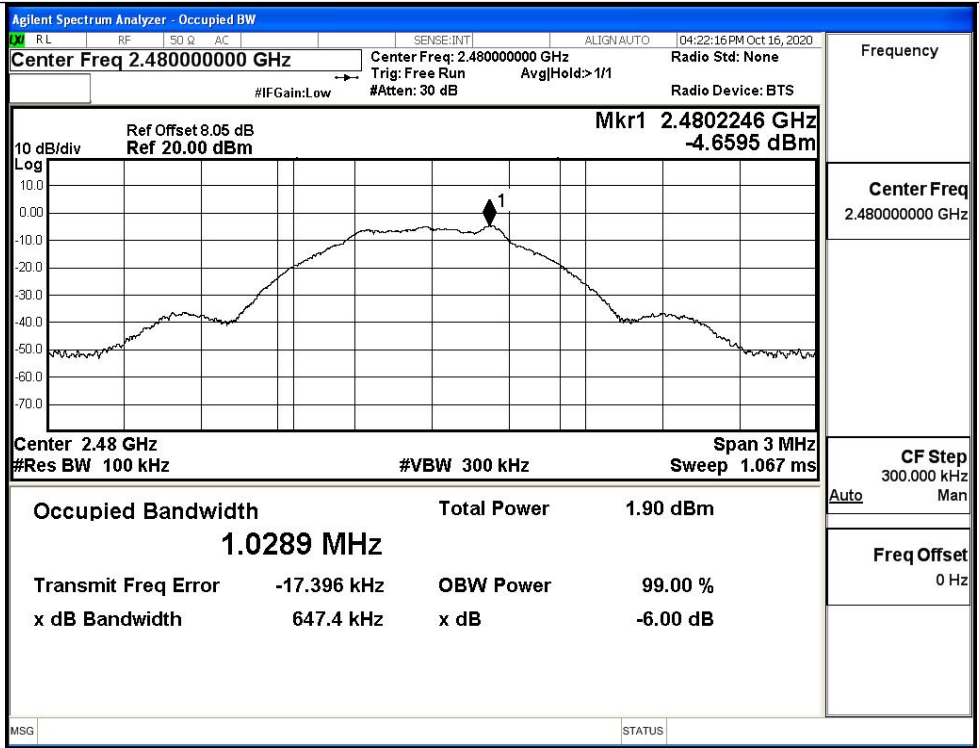
A.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6523	≥0.5	PASS
BT LE	MCH	0.6479	≥0.5	PASS
BT LE	HCH	0.6474	≥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 Trig: Free Run Avg/Hold: 1/1 #IFGain: Low #Atten: 30 dB Radio Device: BTS</p> <p>10 dB/div Ref Offset 8.05 dB Mkr1 2.402336 GHz Log Ref 20.00 dBm 0.43822 dBm</p> <p>Center 2.402 GHz Span 3 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <p>Occupied Bandwidth 1.0310 MHz Total Power 6.97 dBm</p> <p>Transmit Freq Error -16.452 kHz OBW Power 99.00 % x dB Bandwidth 652.3 kHz x dB -6.00 dB</p>	Frequency Center Freq 2.402000000 GHz CF Step 300.000 kHz Auto Man Freq Offset 0 Hz
MCH	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.440000000 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>10 dB/div Ref Offset 8.05 dB Mkr1 2.4402351 GHz Log Ref 20.00 dBm -2.2070 dBm</p> <p>Center 2.44 GHz Span 3 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <p>Occupied Bandwidth 1.0336 MHz Total Power 4.30 dBm</p> <p>Transmit Freq Error -17.139 kHz OBW Power 99.00 % x dB Bandwidth 647.9 kHz x dB -6.00 dB</p>	Frequency Center Freq 2.440000000 GHz CF Step 300.000 kHz Auto Man Freq Offset 0 Hz

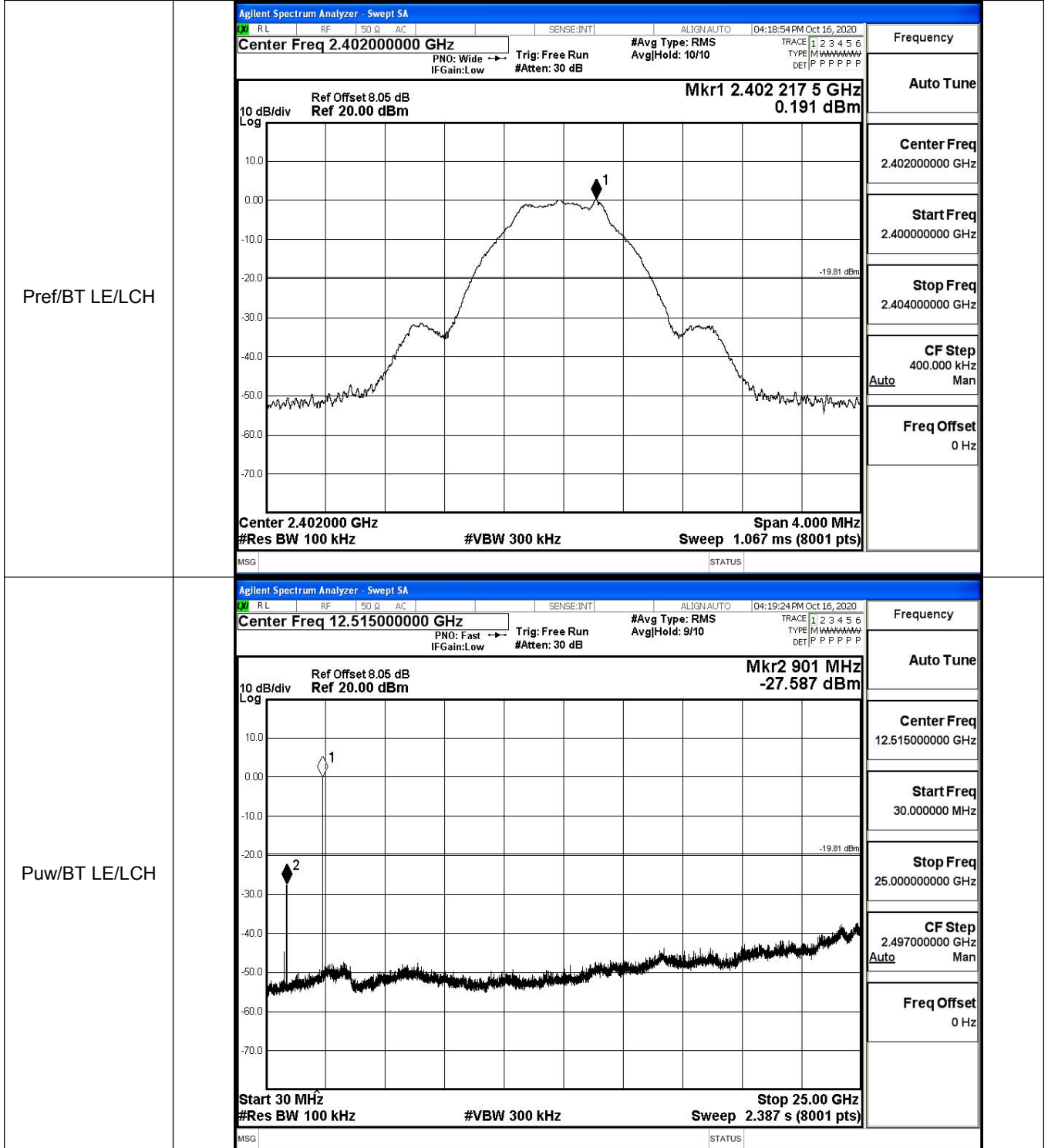
HCH



A.5 RF Conducted Spurious Emissions

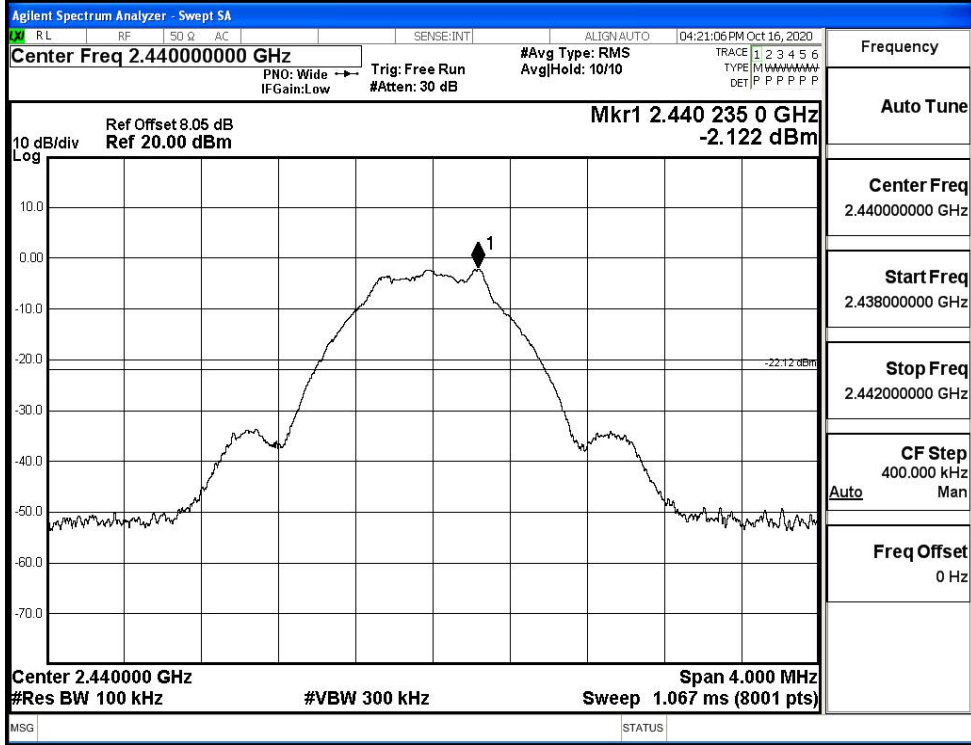
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.191	-27.587	-19.809	PASS
BT LE	MCH	-2.122	-37.222	-22.122	PASS
BT LE	HCH	-4.902	-37.104	-24.902	PASS

BT LE_LCH_Graphs

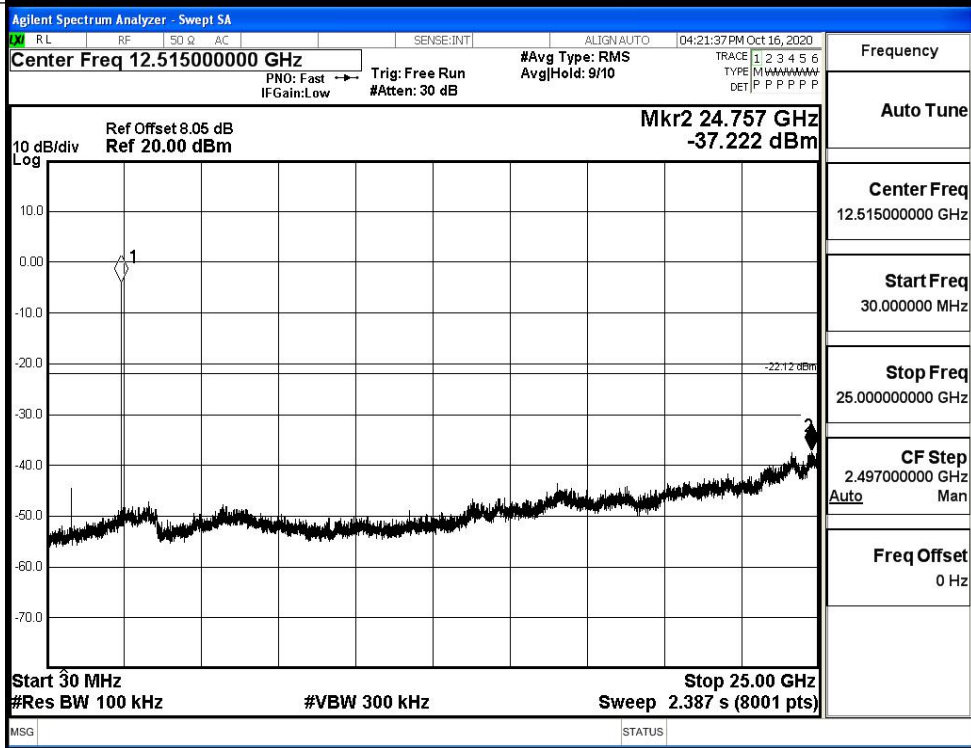


BT LE MCH Graphs

Pref/BT LE/MCH

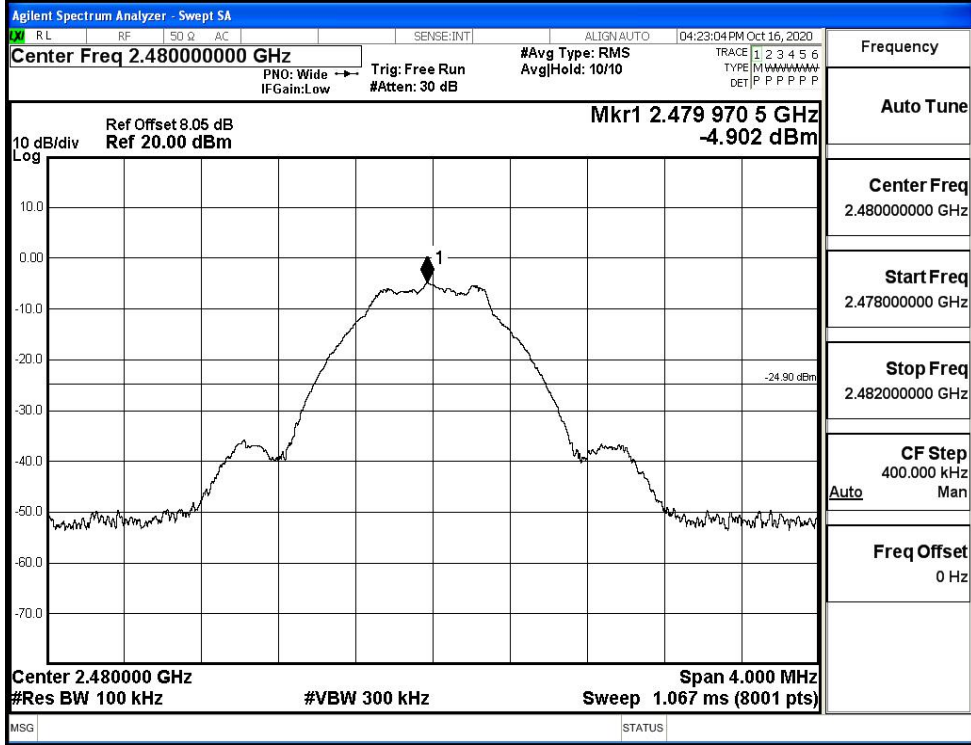


Puw/BT LE/MCH

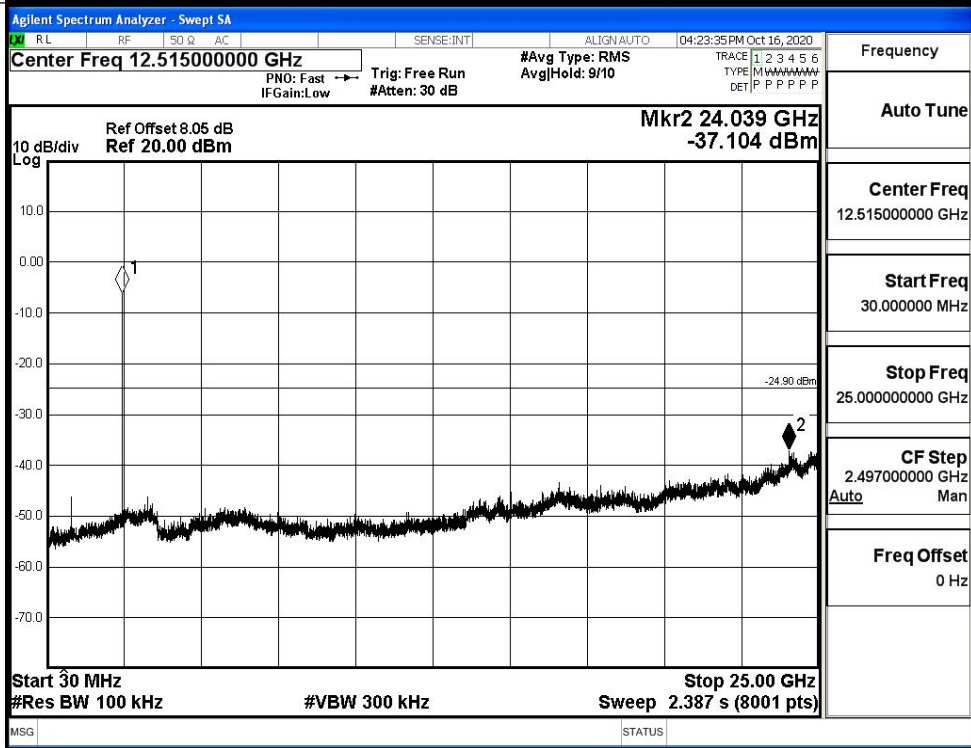


BT LE HCH Graphs

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	-0.248	-49.900	-20.25	PASS
BT LE	HCH	-4.680	-48.646	-24.68	PASS

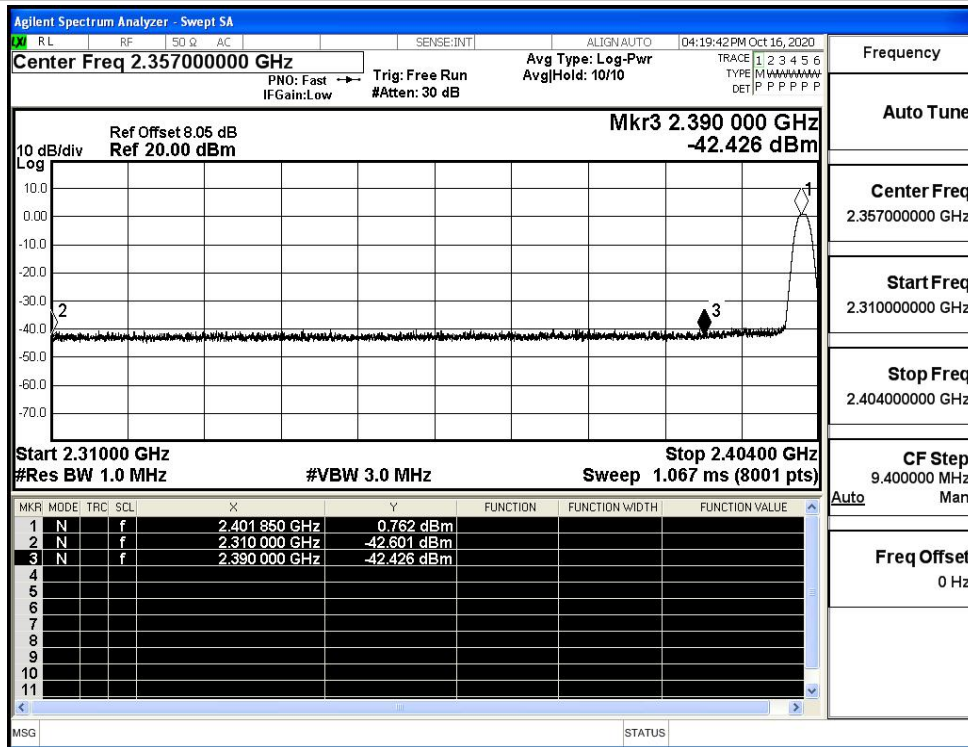
Test Graphs

LCH	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.35700000 GHz Mkr4 2.361841 GHz -49.900 dBm Start 2.31000 GHz Stop 2.40400 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 9.067 ms (8001 pts)</p> <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>2.402238 GHz</td><td>-0.248 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>-51.342 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>-53.697 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>f</td><td></td><td>2.361841 GHz</td><td>-49.900 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		2.402238 GHz	-0.248 dBm				2	N	f		2.400000 GHz	-51.342 dBm				3	N	f		2.390000 GHz	-53.697 dBm				4	N	f		2.361841 GHz	-49.900 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 Mkr4 2.48803475 GHz -48.646 dBm Start 2.47800 GHz Stop 2.50000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.133 ms (8001 pts)</p> <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>2.47998000 GHz</td><td>-4.680 dBm</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>N</td><td>f</td><td></td><td>2.48350000 GHz</td><td>-52.691 dBm</td><td></td><td></td><td></td></tr> <tr><td>3</td><td>N</td><td>f</td><td></td><td>2.50000000 GHz</td><td>-53.017 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>f</td><td></td><td>2.48803475 GHz</td><td>-48.646 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		2.47998000 GHz	-4.680 dBm				2	N	f		2.48350000 GHz	-52.691 dBm				3	N	f		2.50000000 GHz	-53.017 dBm				4	N	f		2.48803475 GHz	-48.646 dBm				Frequency Auto Tune Center Freq 2.48900000 GHz Start Freq 2.478000000 GHz Stop Freq 2.500000000 GHz CF Step 2.200000 MHz Freq Offset 0 Hz
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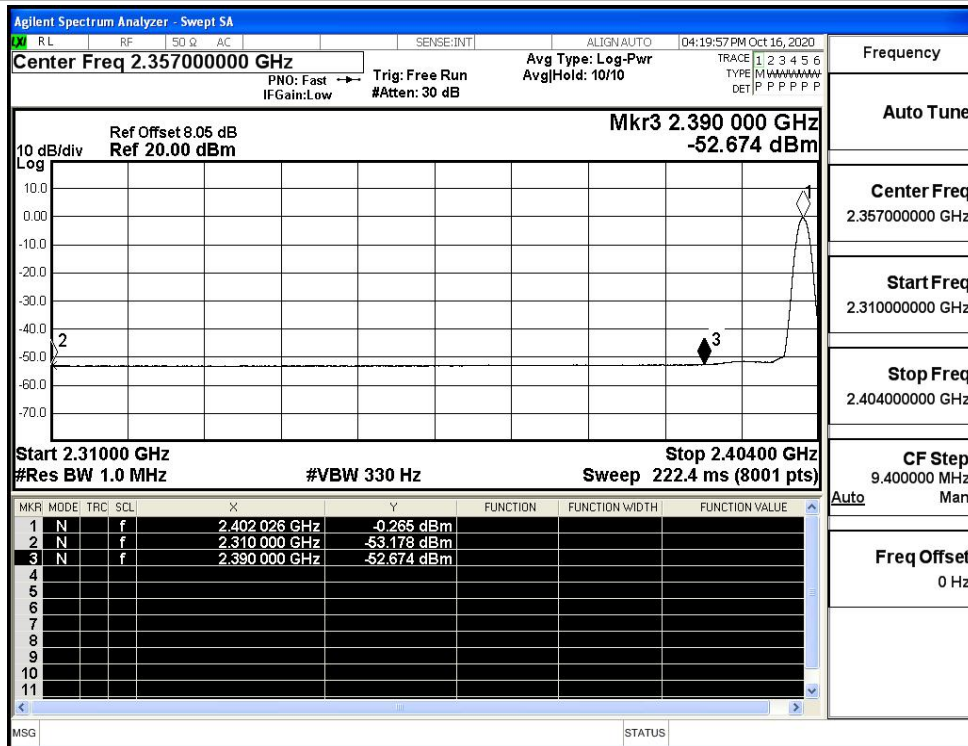
A.7 Restrict-band band-edge measurements

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	-42.60	3.0	0	54.63	PEAK	74	PASS
		Ant1	2310.0	-53.18	3.0	0	44.05	AV	54	PASS
		Ant1	2390.0	-42.43	3.0	0	54.80	PEAK	74	PASS
		Ant1	2390.0	-52.67	3.0	0	44.56	AV	54	PASS
	2480	Ant1	2483.5	-41.07	3.0	0	56.16	PEAK	74	PASS
		Ant1	2483.5	-51.85	3.0	0	45.38	AV	54	PASS
		Ant1	2500.0	-40.32	3.0	0	56.91	PEAK	74	PASS
		Ant1	2500.0	-52.21	3.0	0	45.02	AV	54	PASS

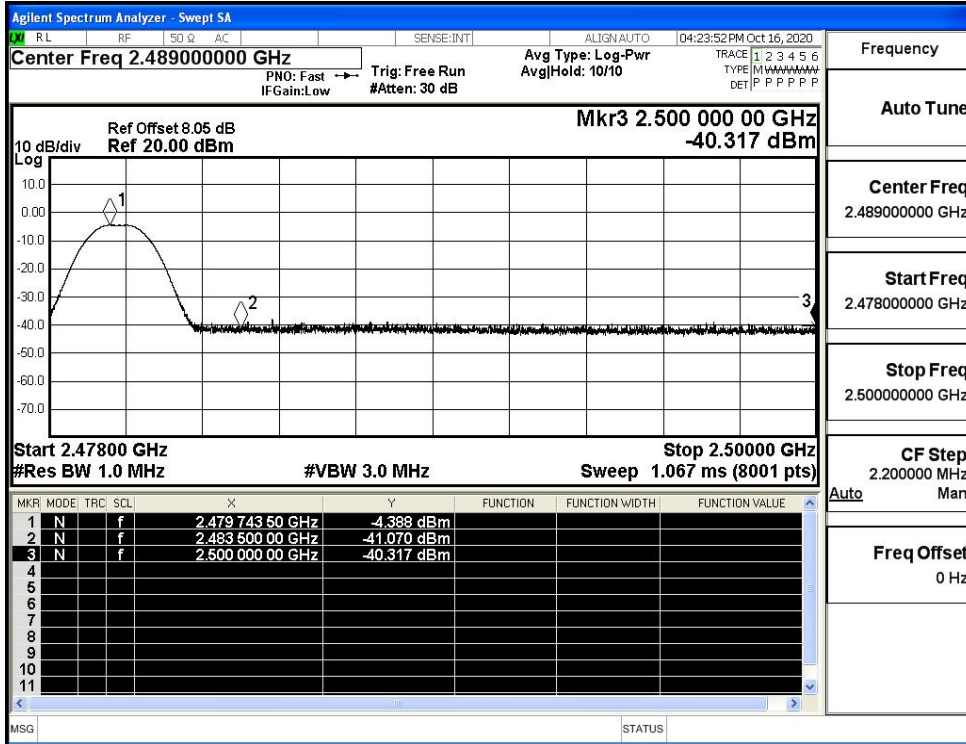
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

