

Appendix B

RF Test Data for BT V5.0(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth Speaker

Trade Mark: Origaudio

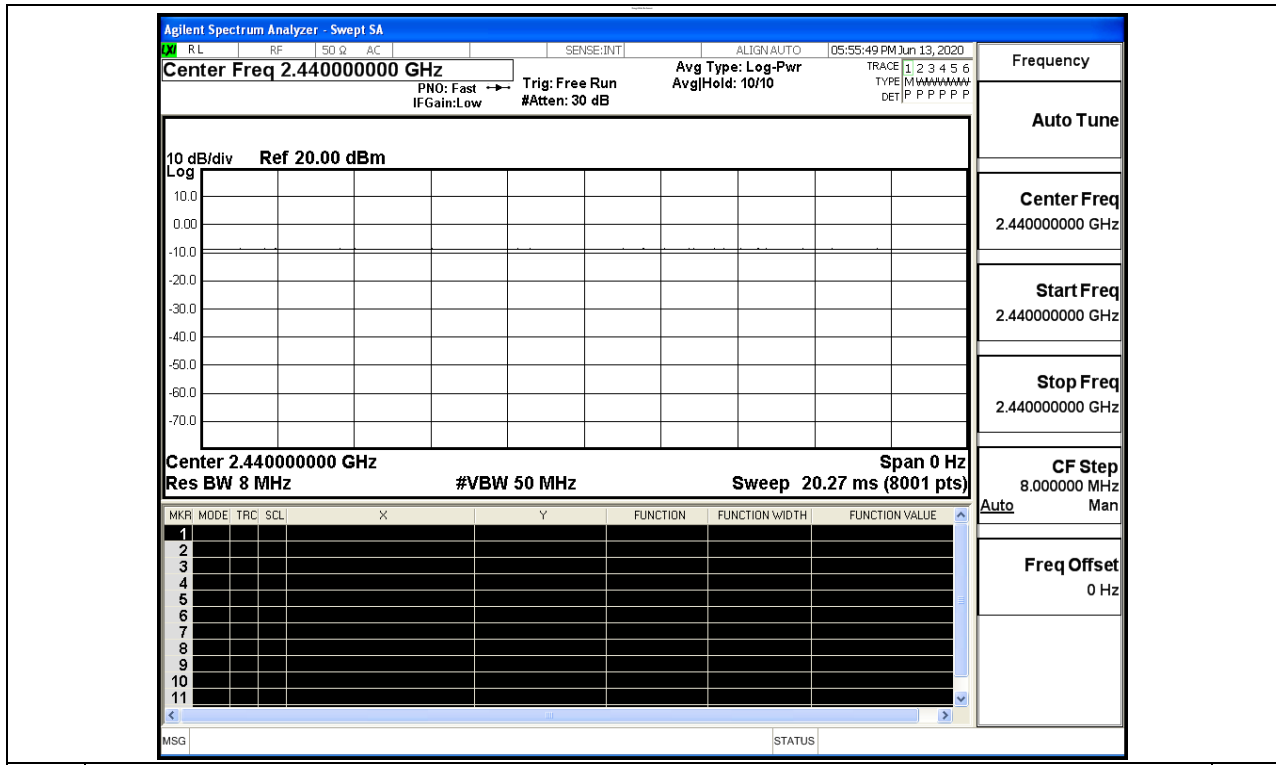
Test Model: Hydrobump

Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Scout Wu
Supervised by:	Li Huan

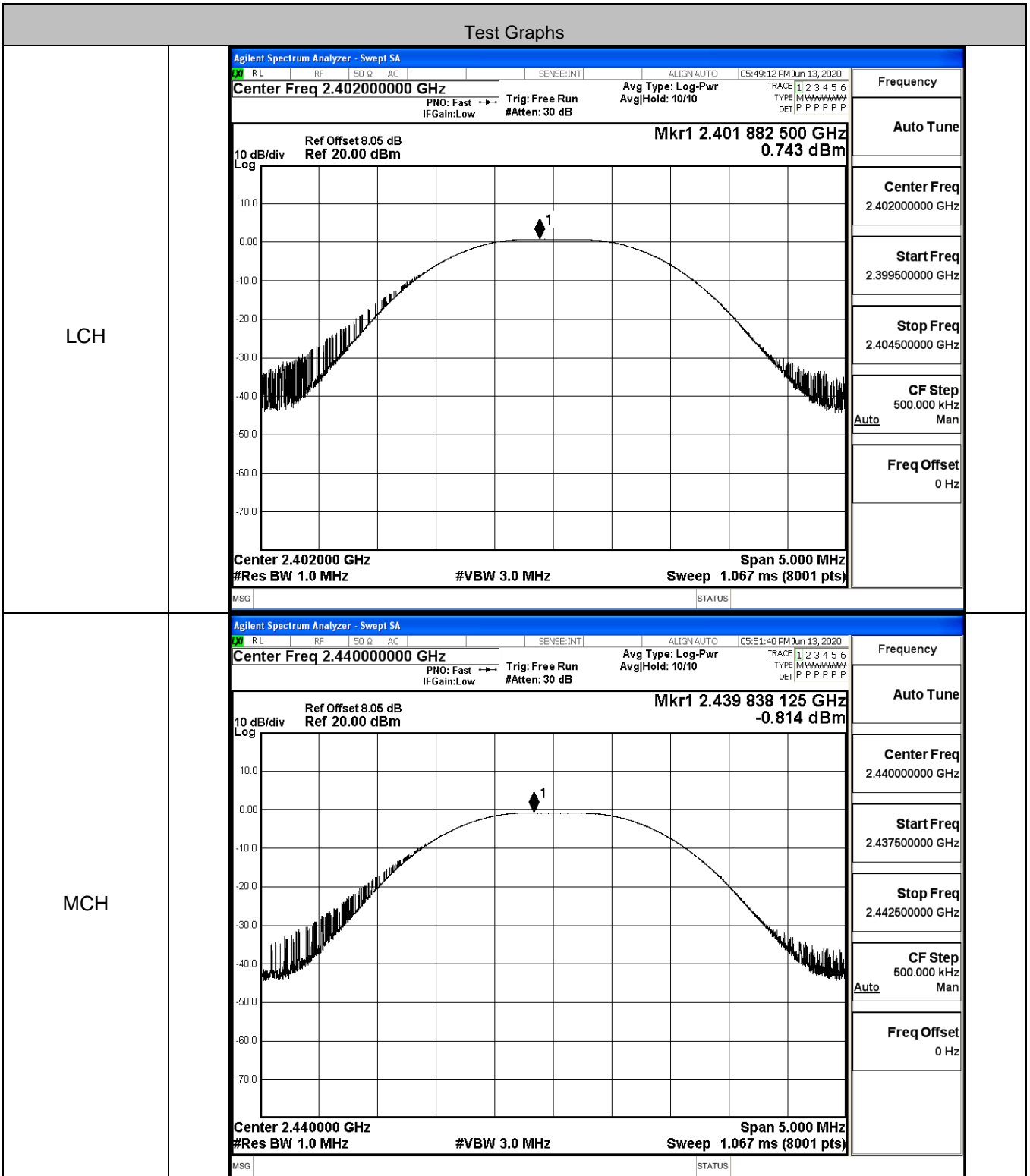
B.1 Duty Cycle

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

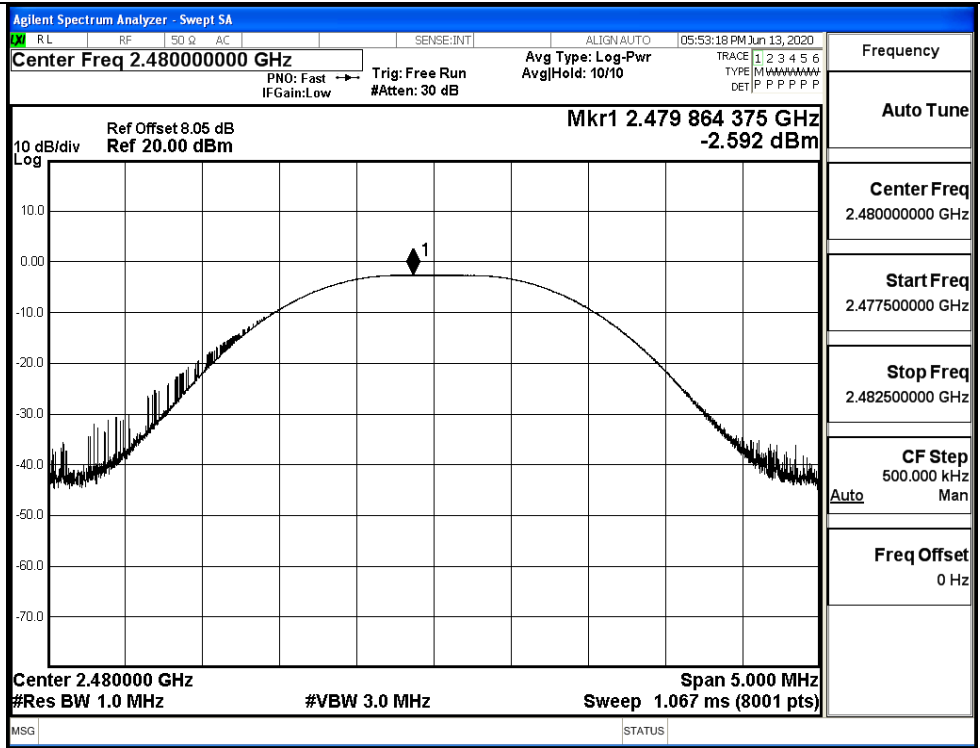


B.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.743	30	PASS
BT LE	MCH	-0.814	30	PASS
BT LE	HCH	-2.592	30	PASS

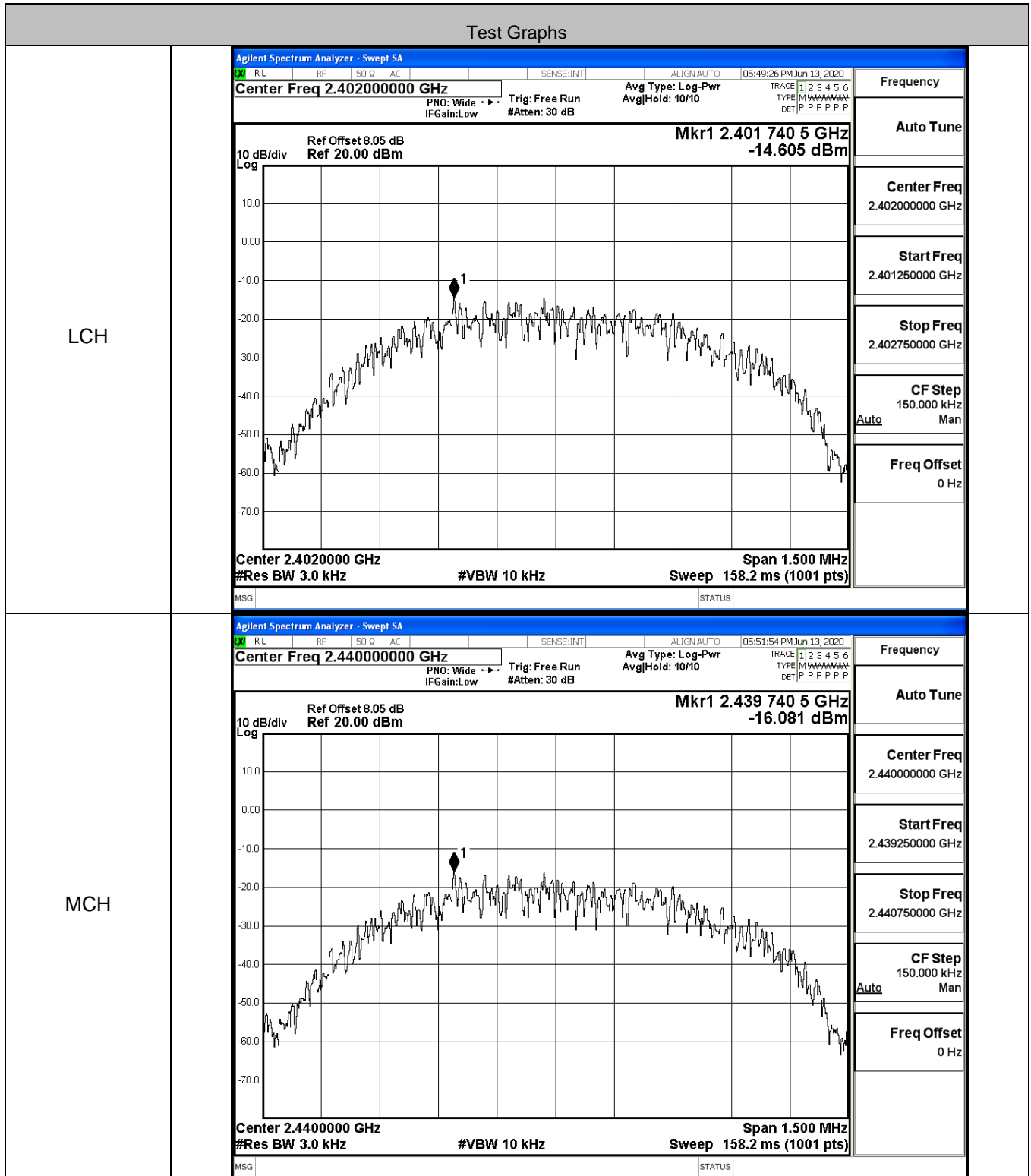


HCH

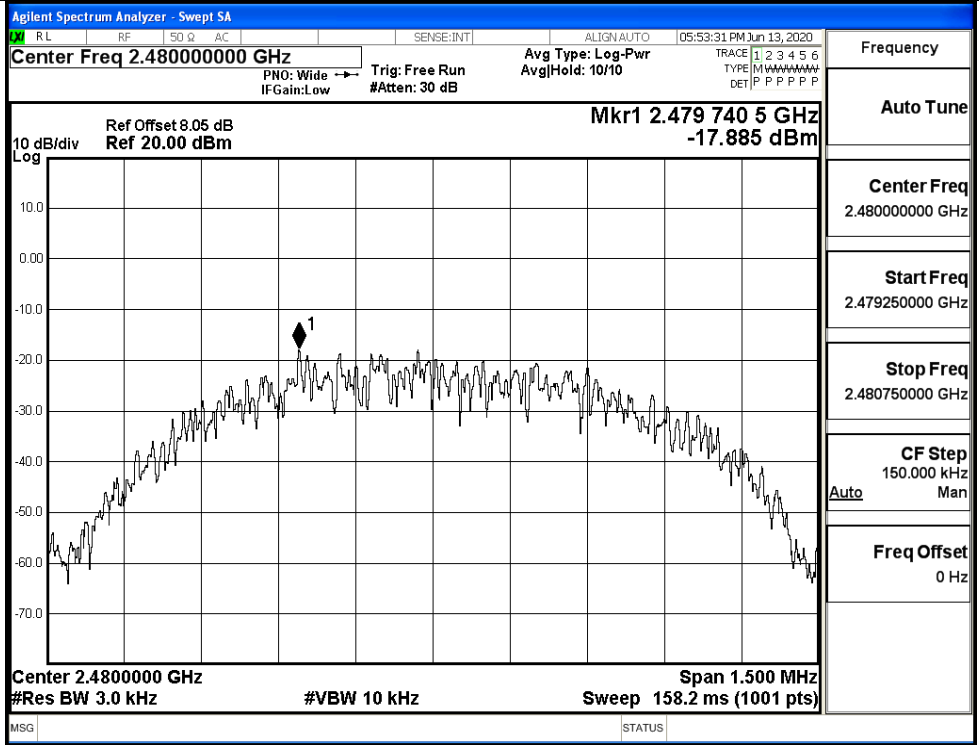


B.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-14.605	8	PASS
BT LE	MCH	-16.081	8	PASS
BT LE	HCH	-17.885	8	PASS



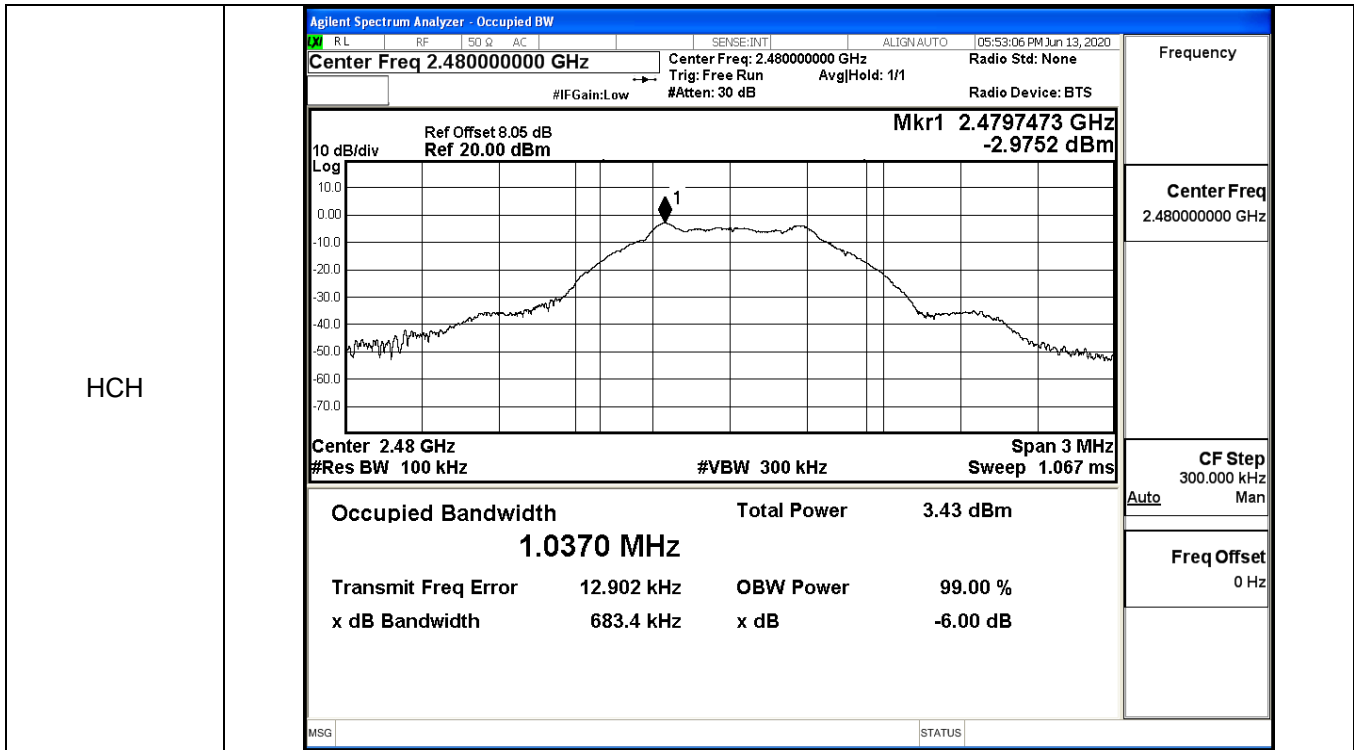
HCH



B.4 6dB Bandwidth

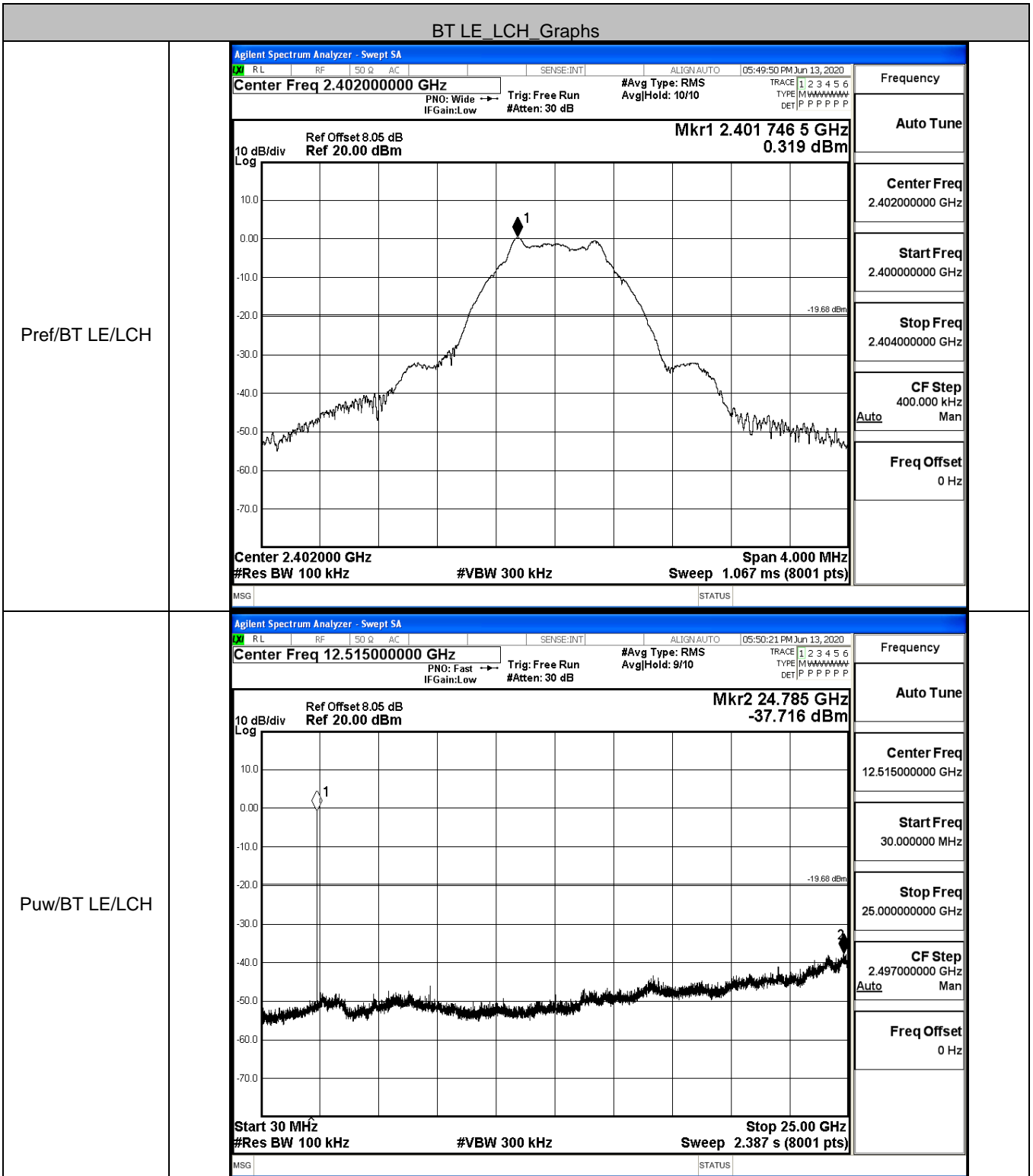
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6941	≥0.5	PASS
BT LE	MCH	0.6863	≥0.5	PASS
BT LE	HCH	0.6834	≥0.5	PASS

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:INT ALIGN:AUTO 05:49:01 PM Jun 13, 2020</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="font-size: x-small;"> 10 dB/div Log Ref Offset 8.05 dB Ref 20.00 dBm </div> <div style="text-align: right;"> Mkr1 2.4017469 GHz 0.36355 dBm </div> </div> <div style="display: flex; justify-content: space-between; font-size: x-small;"> <div>Center 2.402 GHz #Res BW 100 kHz</div> <div>#VBW 300 kHz</div> <div>Span 3 MHz Sweep 1.067 ms</div> </div> <table border="0" style="width: 100%; font-size: x-small; margin-top: 5px;"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>6.81 dBm</td> </tr> <tr> <td style="text-align: center;">1.0352 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>12.424 kHz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>694.1 kHz</td> <td>x dB</td> </tr> <tr> <td></td> <td></td> <td>99.00 %</td> </tr> <tr> <td></td> <td></td> <td>-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin-top: 5px;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	6.81 dBm	1.0352 MHz			Transmit Freq Error	12.424 kHz	OBW Power	x dB Bandwidth	694.1 kHz	x dB			99.00 %			-6.00 dB
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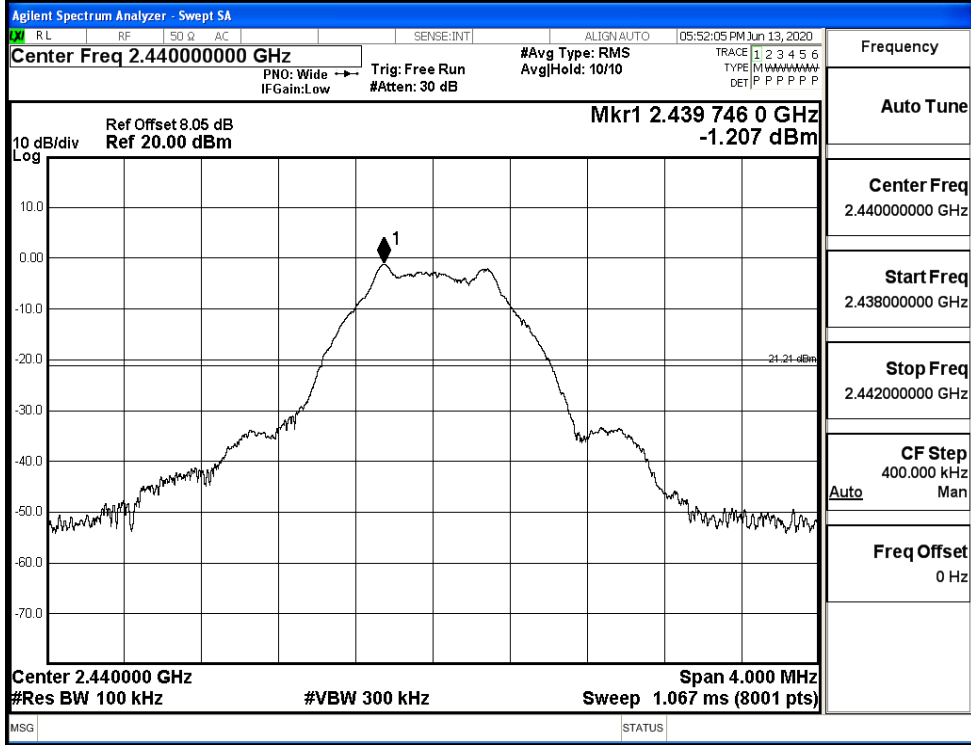
B.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.319	-37.716	-19.681	PASS
BT LE	MCH	-1.207	-37.239	-21.207	PASS
BT LE	HCH	-2.975	-36.293	-22.975	PASS

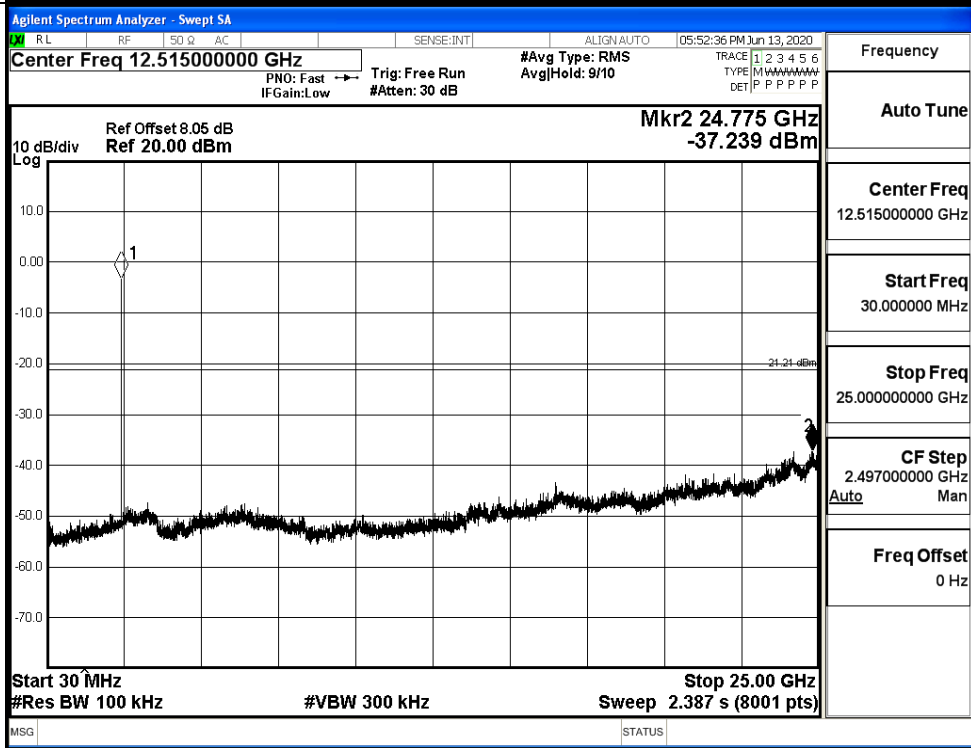


BT LE_MCH_Graphs

Pref/BT LE/MCH

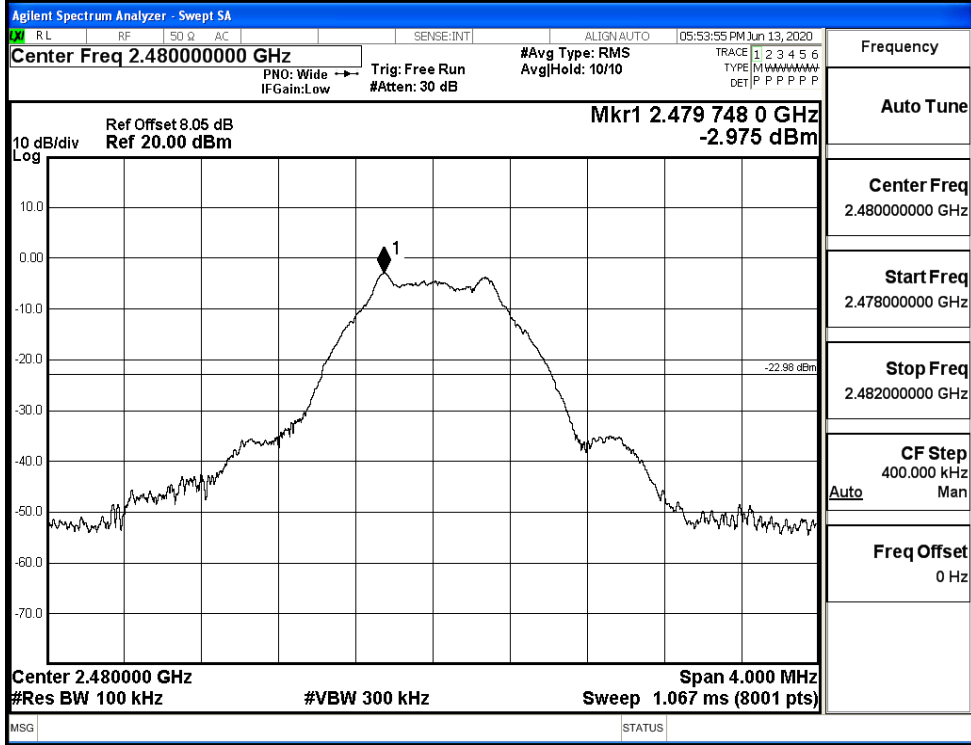


Puw/BT LE/MCH

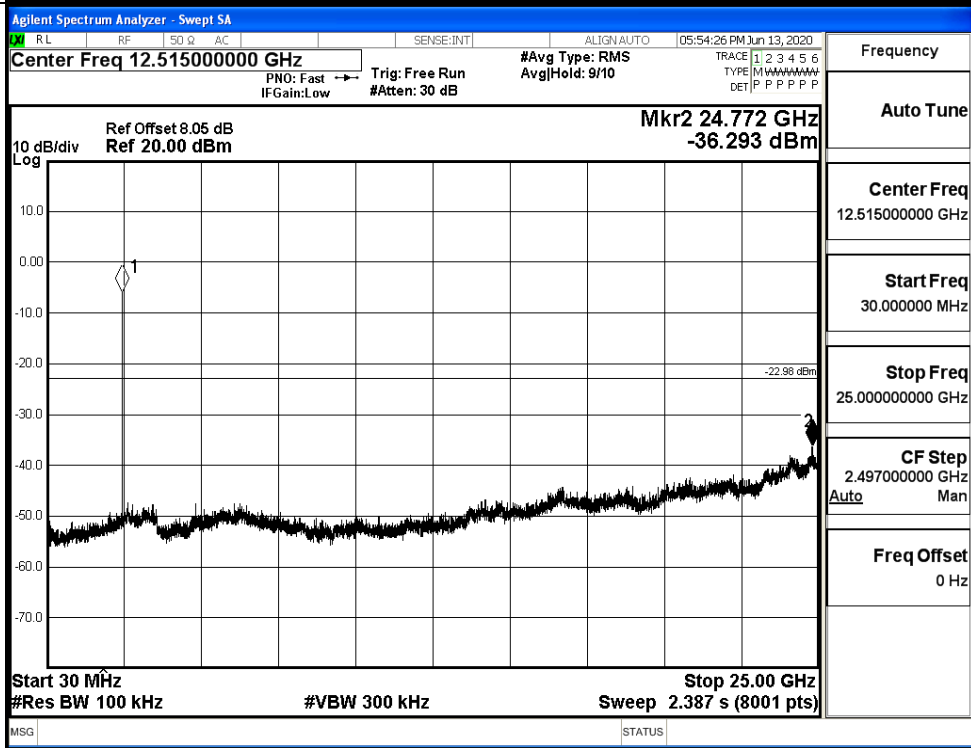


BT LE_HCH_Graphs

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	0.302	-49.631	-19.7	PASS
BT LE	HCH	-2.924	-49.443	-22.92	PASS

Test Graphs

LCH

Agilent Spectrum Analyzer - Swept SA
 Center Freq 2.35700000 GHz
 Max Spurious Level -49.631 dBm
 Mkr4 2.386 563 GHz
 Start 2.31000 GHz Stop 2.40400 GHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 9.067 ms (8001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.401 756 GHz	0.302 dBm			
2	N	f		2.400 000 GHz	-50.449 dBm			
3	N	f		2.390 000 GHz	-52.378 dBm			
4	N	f		2.386 563 GHz	-49.631 dBm			

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

Agilent Spectrum Analyzer - Swept SA
 Center Freq 2.48900000 GHz
 Max Spurious Level -49.443 dBm
 Mkr4 2.479 751 75 GHz
 Start 2.47800 GHz Stop 2.50000 GHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 2.133 ms (8001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.479 751 75 GHz	-2.924 dBm			
2	N	f		2.483 500 00 GHz	-52.957 dBm			
3	N	f		2.500 000 00 GHz	-51.622 dBm			
4	N	f		2.498 528 75 GHz	-49.443 dBm			

Frequency

Auto Tune

Center Freq
2.48900000 GHz

Start Freq
2.47800000 GHz

Stop Freq
2.50000000 GHz

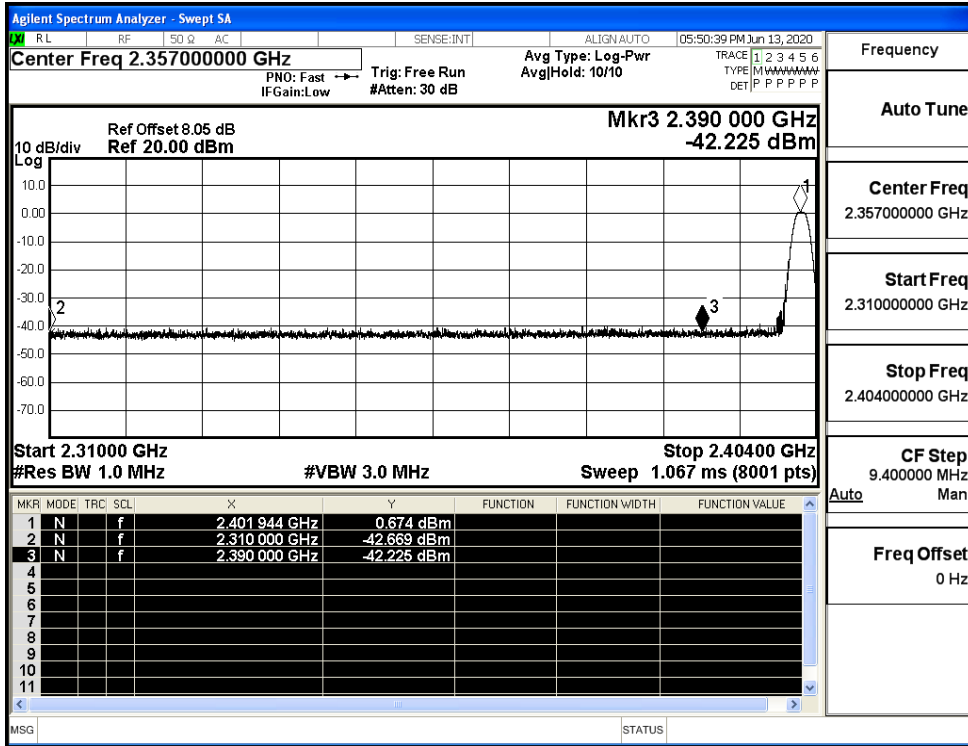
CF Step
2.200000 MHz

Freq Offset
0 Hz

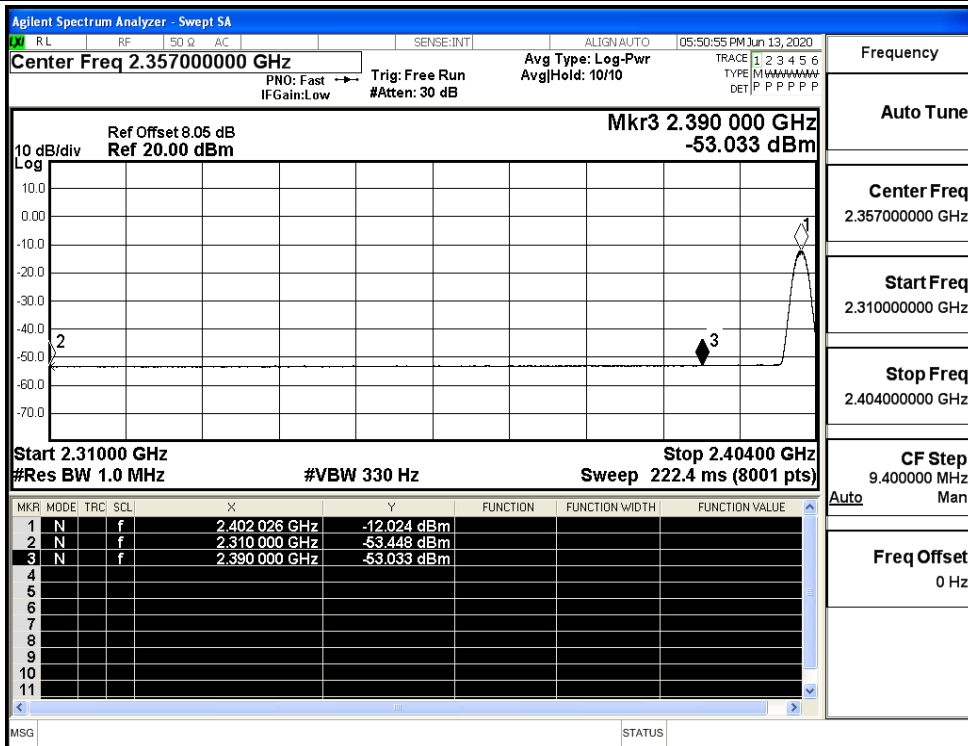
B.7 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdi
BT LE	2402	Ant1	2310.0	-42.67	2.0	0	54.59	PEAK	74	PASS
		Ant1	2310.0	-53.45	2.0	0	43.81	AV	54	PASS
		Ant1	2390.0	-42.23	2.0	0	55.03	PEAK	74	PASS
		Ant1	2390.0	-53.03	2.0	0	44.23	AV	54	PASS
	2480	Ant1	2483.5	-41.73	2.0	0	55.53	PEAK	74	PASS
		Ant1	2483.5	-52.51	2.0	0	44.75	AV	54	PASS
		Ant1	2500.0	-43.97	2.0	0	53.29	PEAK	74	PASS
		Ant1	2500.0	-52.37	2.0	0	44.89	AV	54	PASS

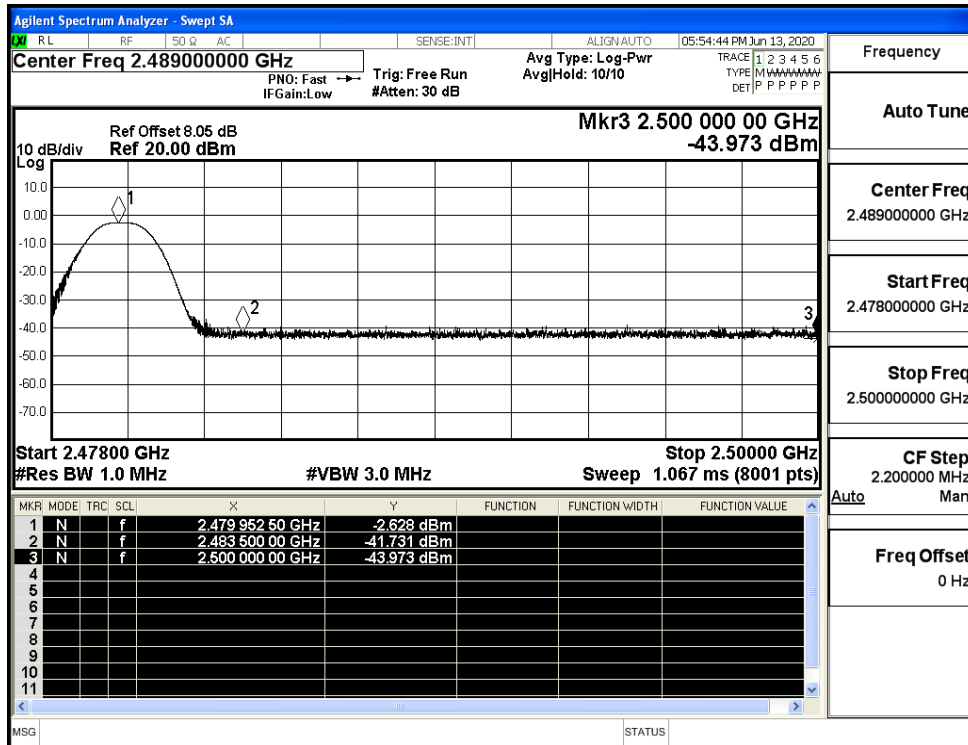
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

