

Appendix A

RF Test Data for BT V4.0(BDR/EDR) (Conducted Measurement)

Product Name: Aquarium Luminaire

Trade Mark: Fluval

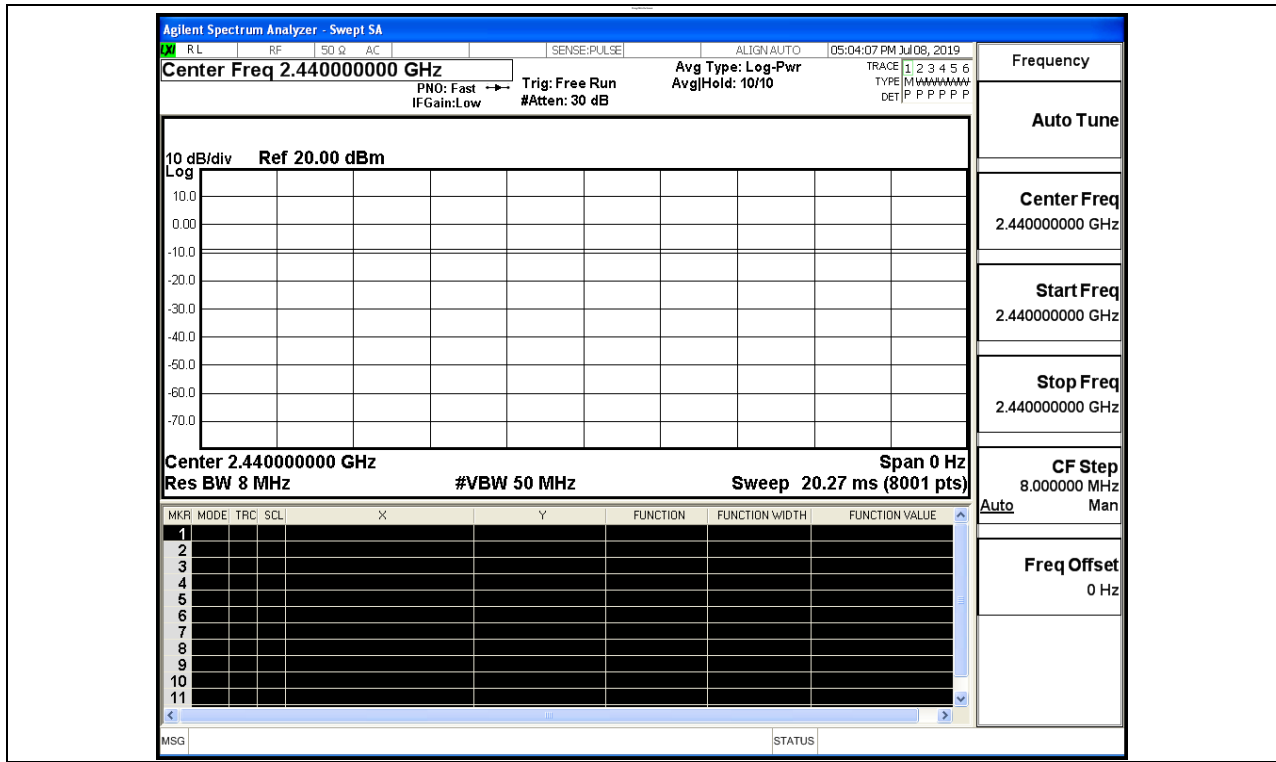
Test Model: 14520

Environmental Conditions

Temperature:	24.1 ° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	David Luo
Supervised by:	Wang.Chuang

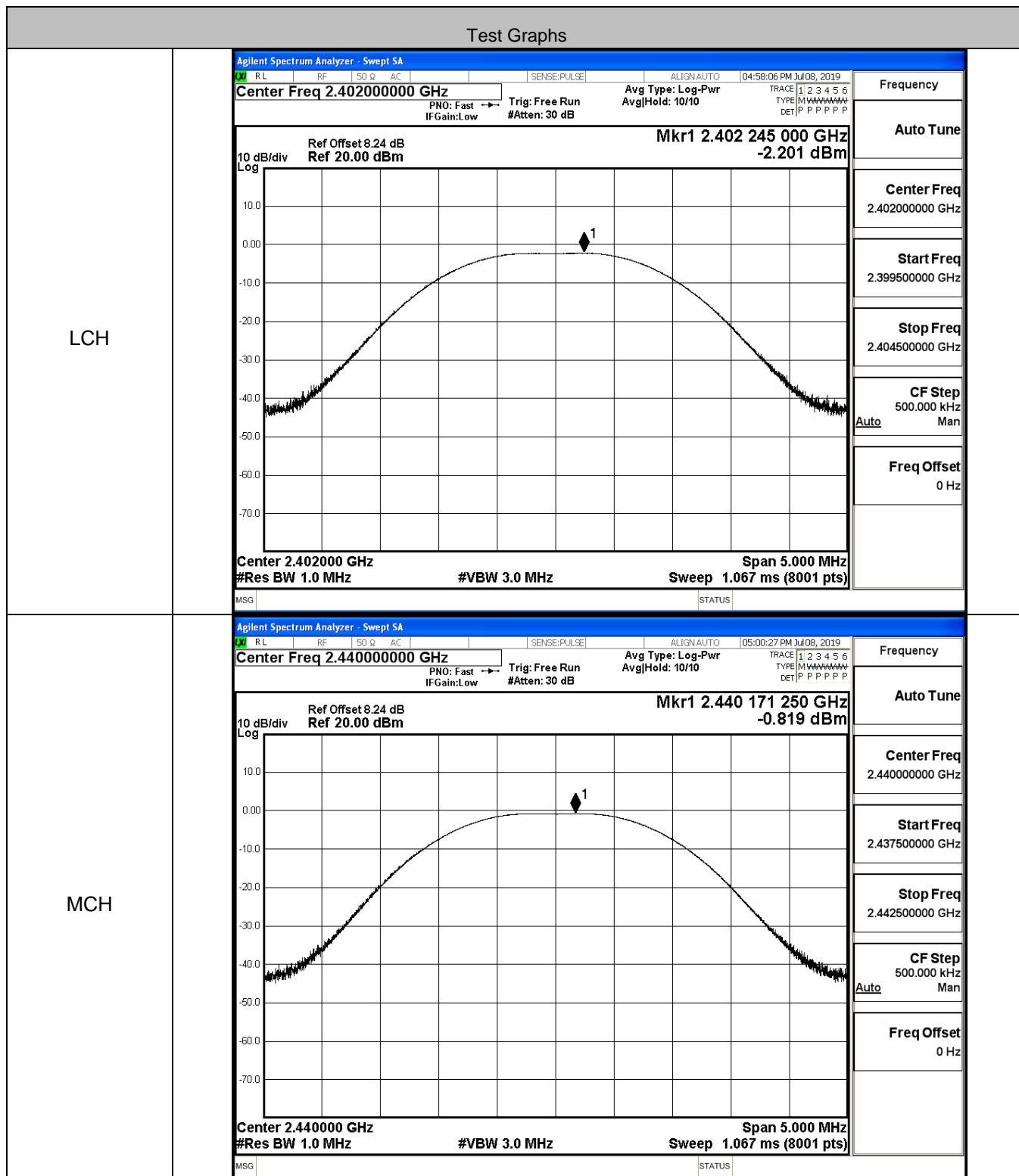
B.1 Duty Cycle

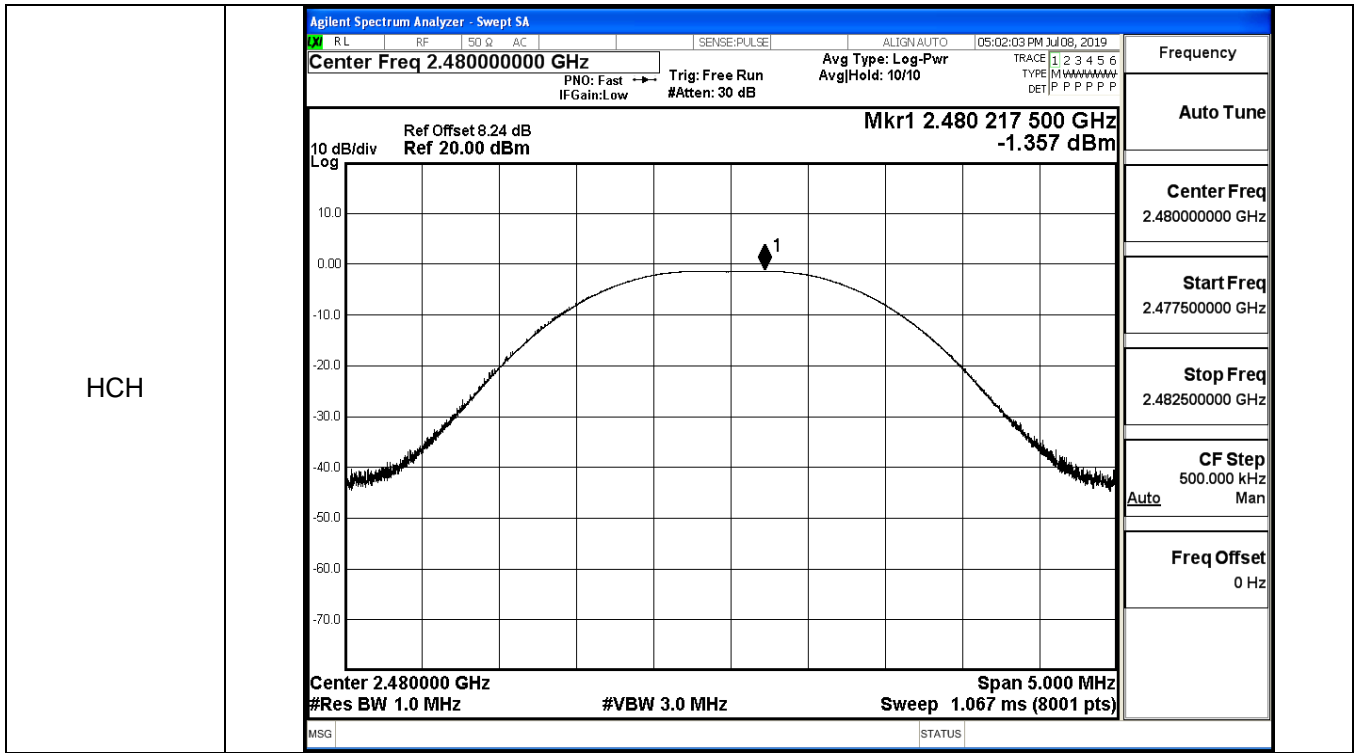
Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
BT LE	2440	Ant1	100	PASS



B.2 Maximum Conducted Peak Output Power

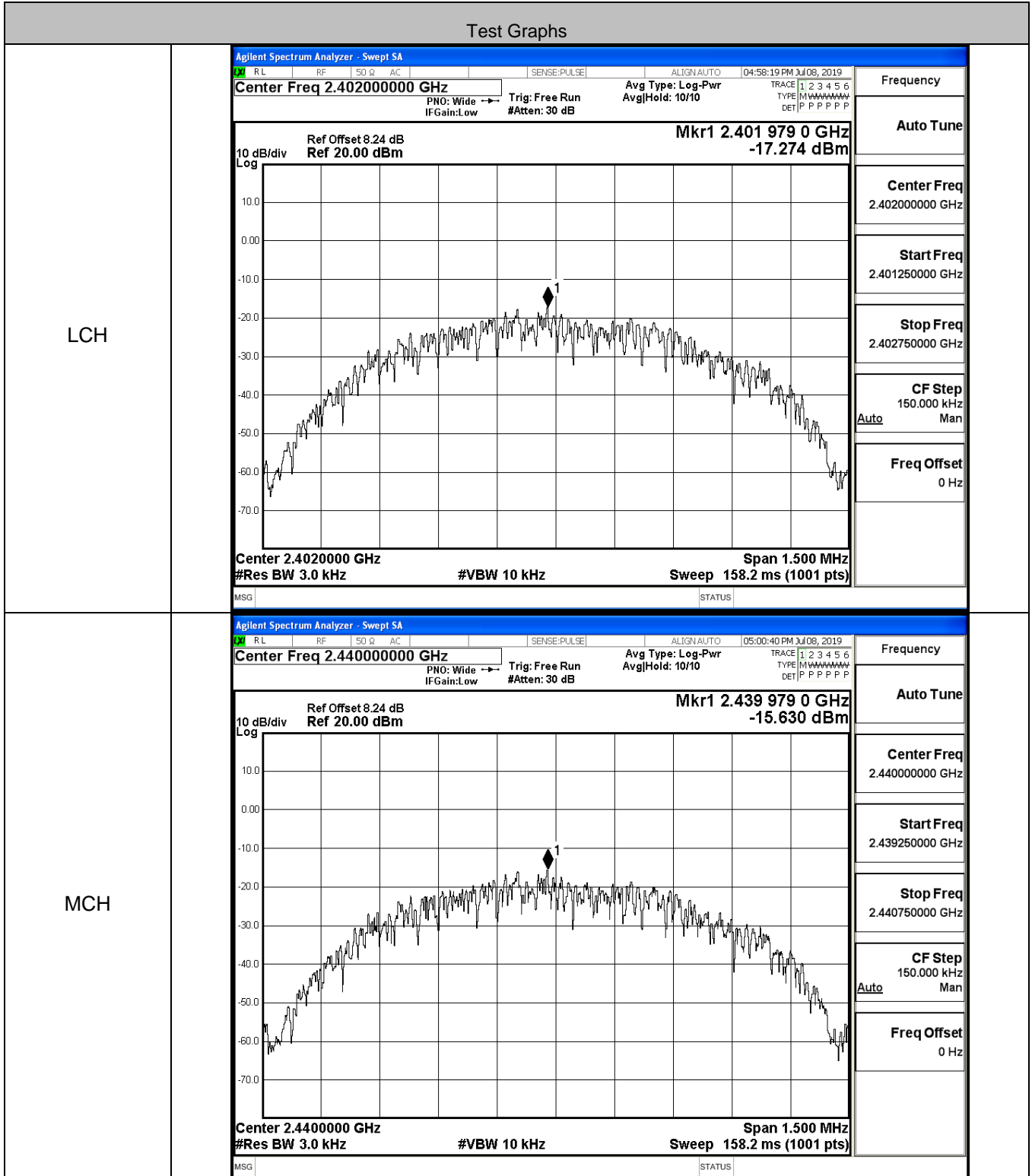
Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	-2.201	30	PASS
BT LE	MCH	-0.819	30	PASS
BT LE	HCH	-1.357	30	PASS



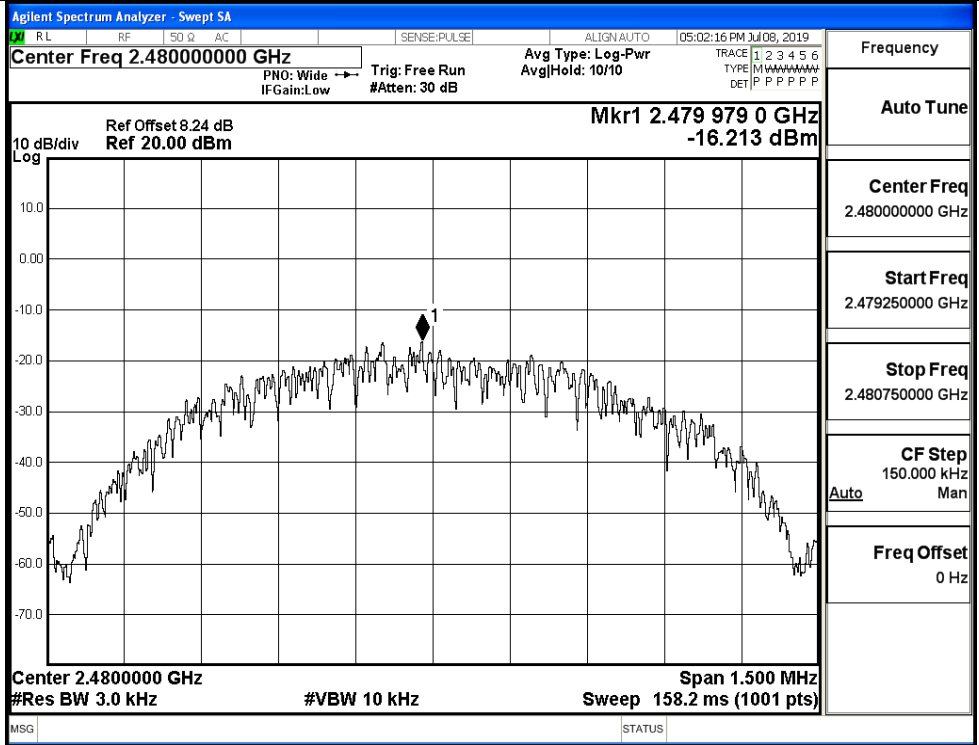


B.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-17.274	8	PASS
BT LE	MCH	-15.630	8	PASS
BT LE	HCH	-16.213	8	PASS



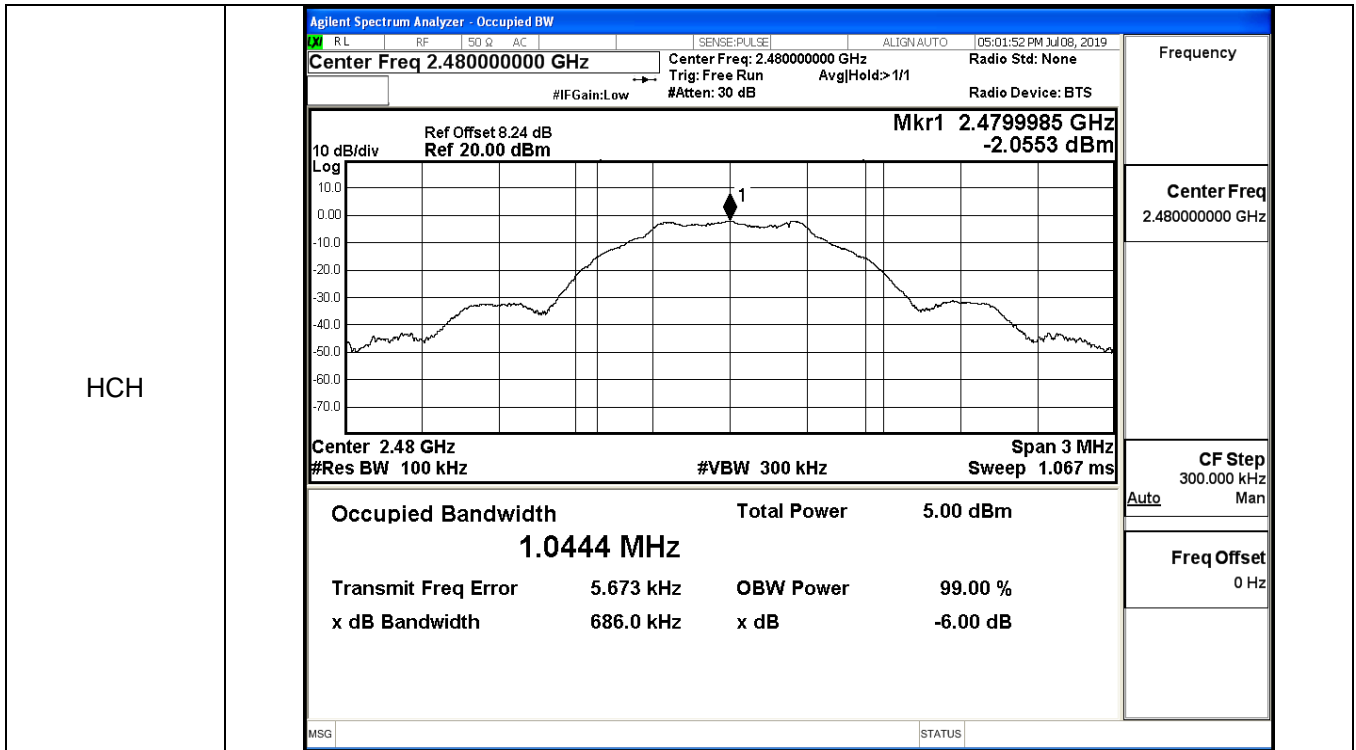
HCH



B.4 6dB Bandwidth

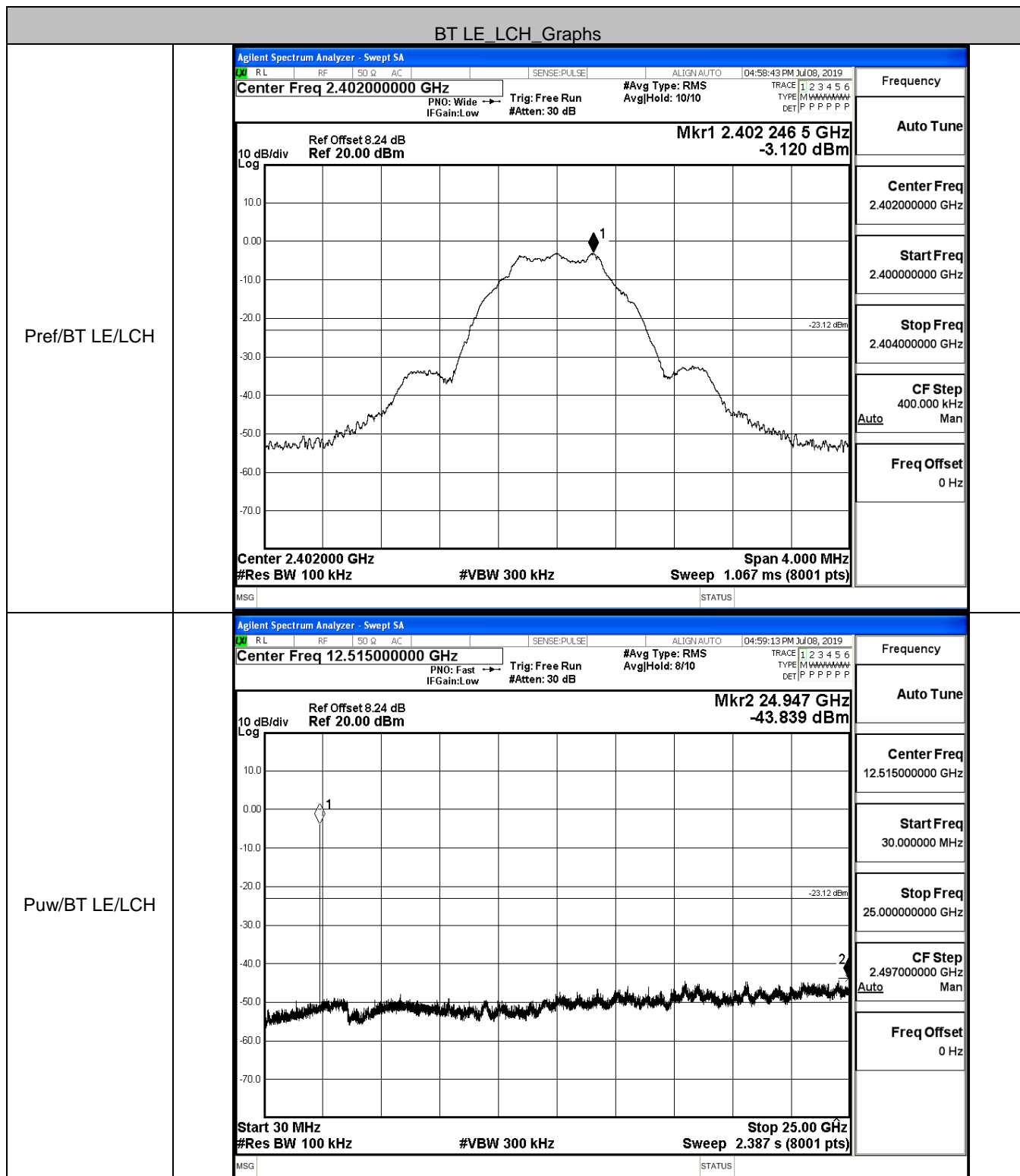
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6858	≥0.5	PASS
BT LE	MCH	0.6909	≥0.5	PASS
BT LE	HCH	0.6860	≥0.5	PASS

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 04:57:54 PM Jul 08, 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="border: 1px solid black; padding: 2px;"> <p style="text-align: right; margin: 0;">Mkr1 2.4019921 GHz -2.9627 dBm</p> </div> <p style="font-size: small; margin: 0;">Center 2.402 GHz Span 3 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <table style="width: 100%; border-collapse: collapse; font-size: small;"> <tr> <td style="width: 33%;">Occupied Bandwidth</td> <td style="width: 33%;">Total Power</td> <td style="width: 33%;">4.10 dBm</td> </tr> <tr> <td style="text-align: center;">1.0457 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>8.205 kHz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>685.8 kHz</td> <td>x dB</td> </tr> <tr> <td></td> <td></td> <td style="text-align: right;">99.00 %</td> </tr> <tr> <td></td> <td></td> <td style="text-align: right;">-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	4.10 dBm	1.0457 MHz			Transmit Freq Error	8.205 kHz	OBW Power	x dB Bandwidth	685.8 kHz	x dB			99.00 %			-6.00 dB
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B.5 RF Conducted Spurious Emissions

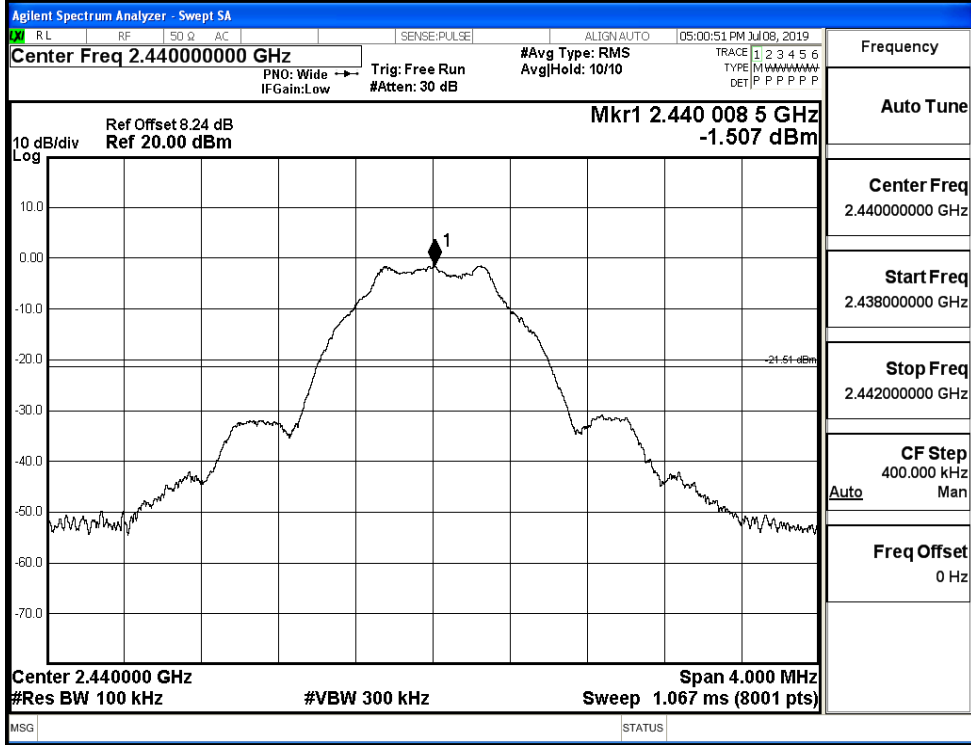
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-3.12	-43.839	-23.120	PASS
BT LE	MCH	-1.507	-44.704	-21.507	PASS
BT LE	HCH	-1.99	-43.594	-21.990	PASS



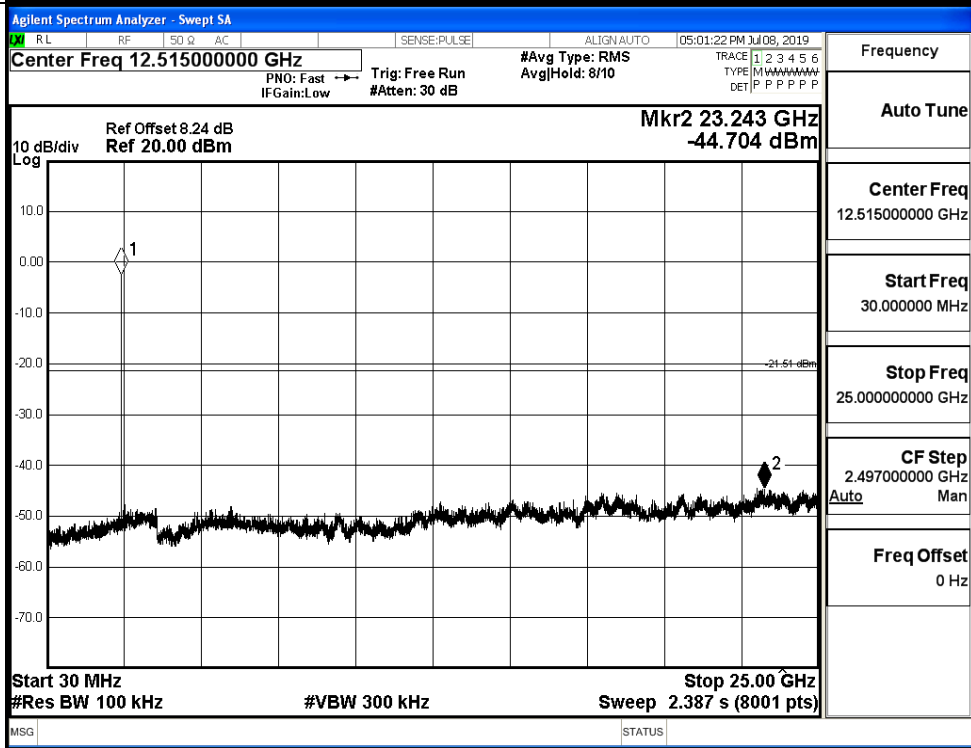
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BT LE_MCH_Graphs

Pref/BT LE/MCH

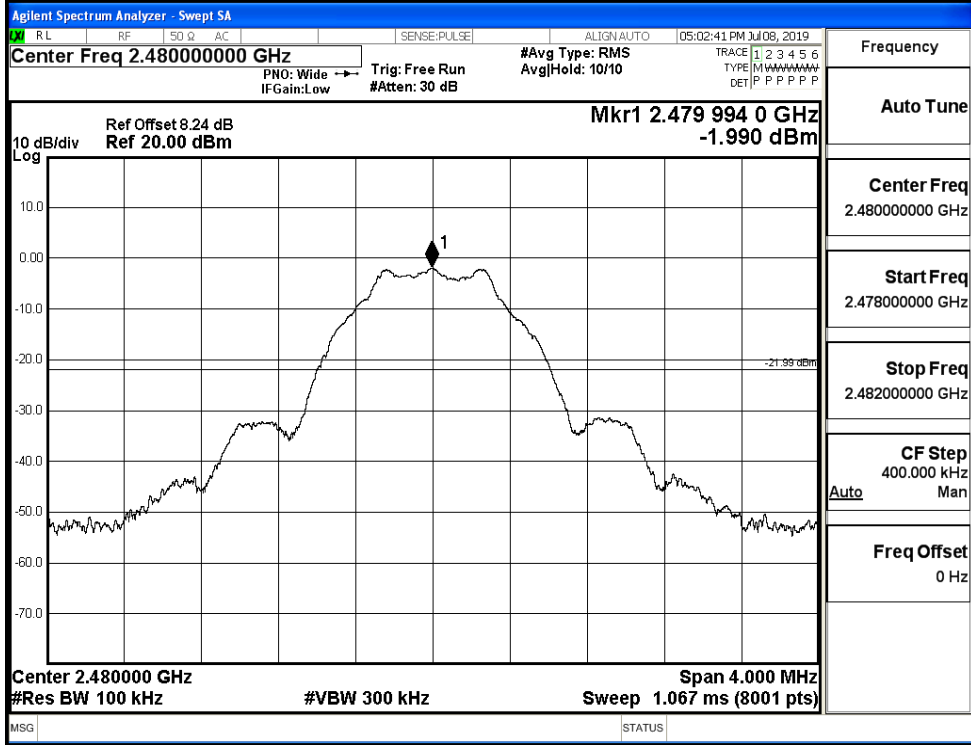


Puw/BT LE/MCH

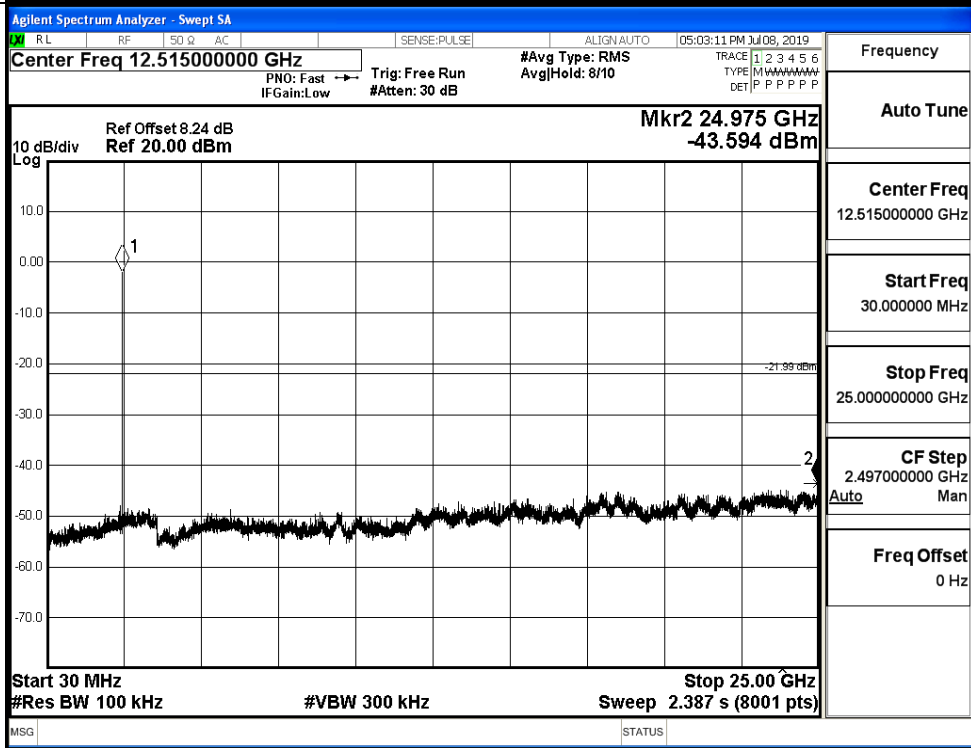


BT LE_HCH_Graphs

Pref/BT LE/HCH



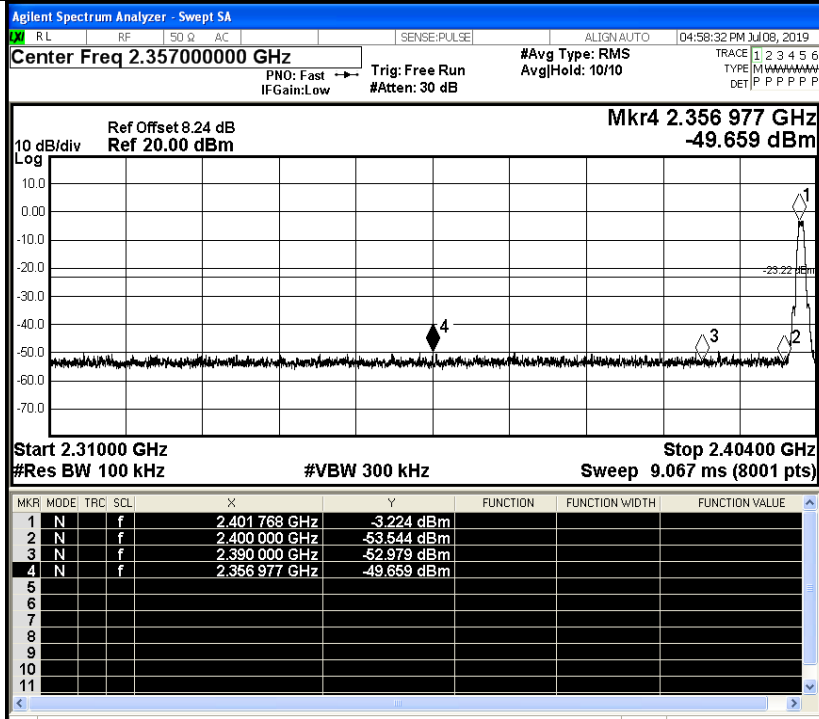
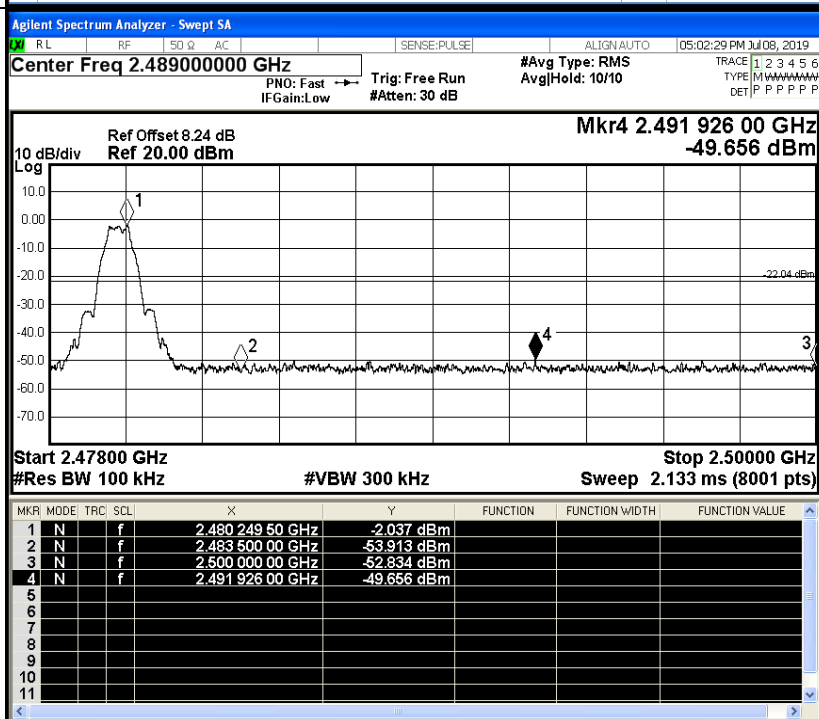
Puw/BT LE/HCH



B.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-3.224	-49.659	-23.22	PASS
BT LE	HCH	-2.037	-49.656	-22.04	PASS

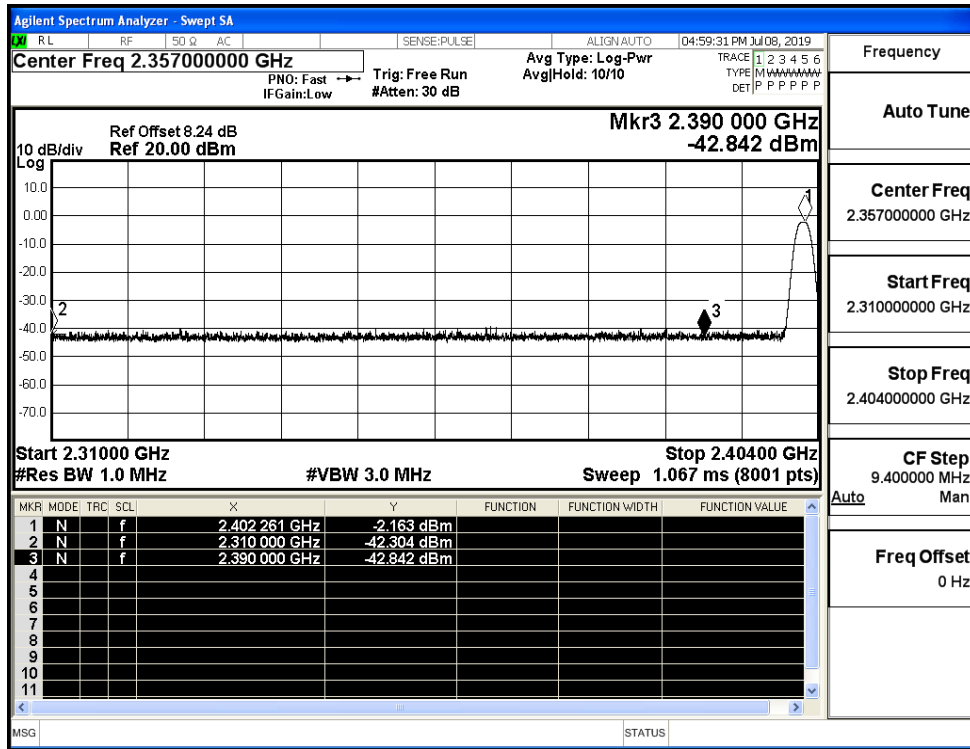
Test Graphs

LCH		<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.35700000 GHz</p> <p>Start Freq 2.31000000 GHz</p> <p>Stop Freq 2.40400000 GHz</p> <p>CF Step 9.400000 MHz</p> <p>Freq Offset 0 Hz</p>
HCH		<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.48900000 GHz</p> <p>Start Freq 2.47800000 GHz</p> <p>Stop Freq 2.50000000 GHz</p> <p>CF Step 2.200000 MHz</p> <p>Freq Offset 0 Hz</p>

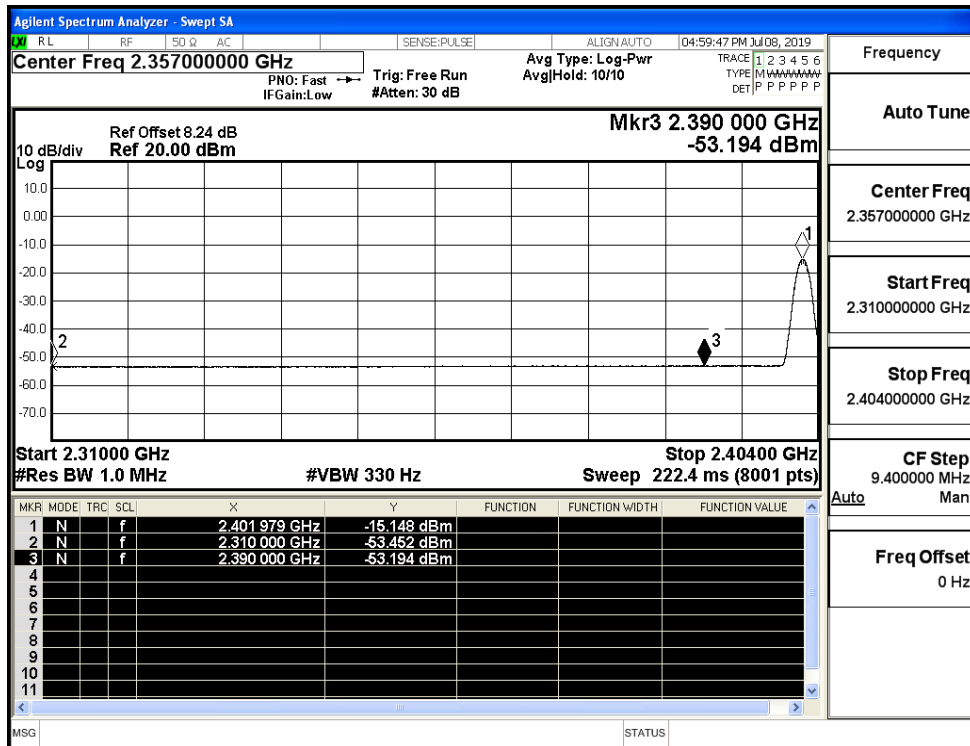
B.7 Restrict-band band-edge measurements

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	-42.30	2.0	0	54.95	PEAK	74	PASS
		Ant1	2310.0	-53.45	2.0	0	43.81	AV	54	PASS
		Ant1	2390.0	-42.84	2.0	0	54.42	PEAK	74	PASS
		Ant1	2390.0	-53.19	2.0	0	44.06	AV	54	PASS
	2480	Ant1	2483.5	-43.33	2.0	0	53.93	PEAK	74	PASS
		Ant1	2483.5	-52.92	2.0	0	44.34	AV	54	PASS
		Ant1	2500.0	-41.96	2.0	0	55.29	PEAK	74	PASS
		Ant1	2500.0	-52.61	2.0	0	44.65	AV	54	PASS

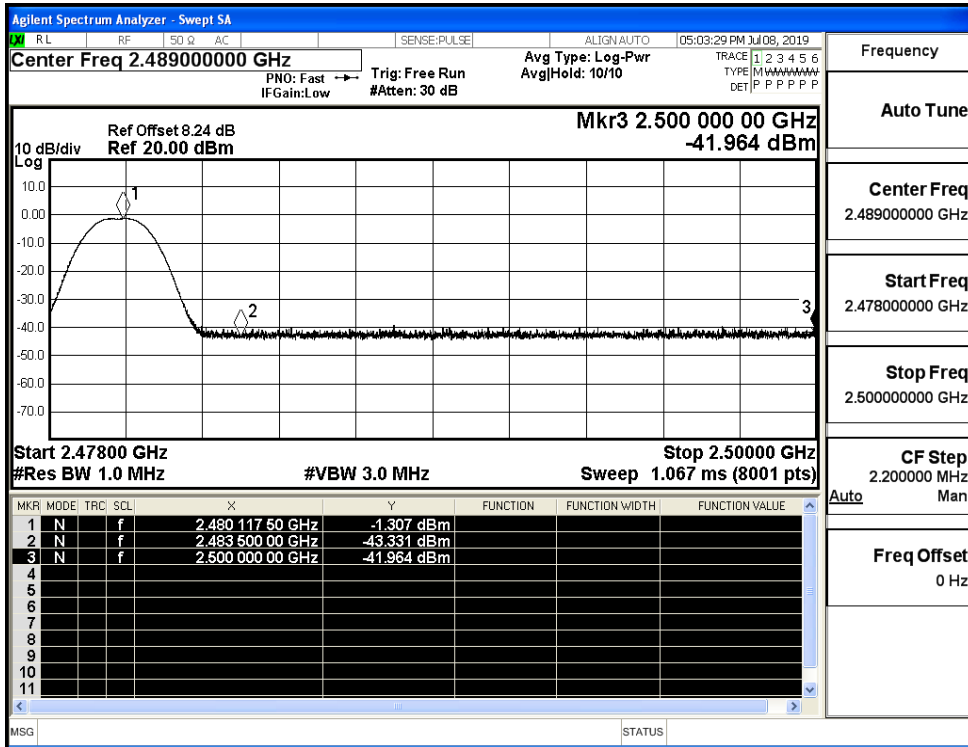
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

