

Appendix B

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

Product Name: Urbanista Miami

Trade Mark: Urbanista

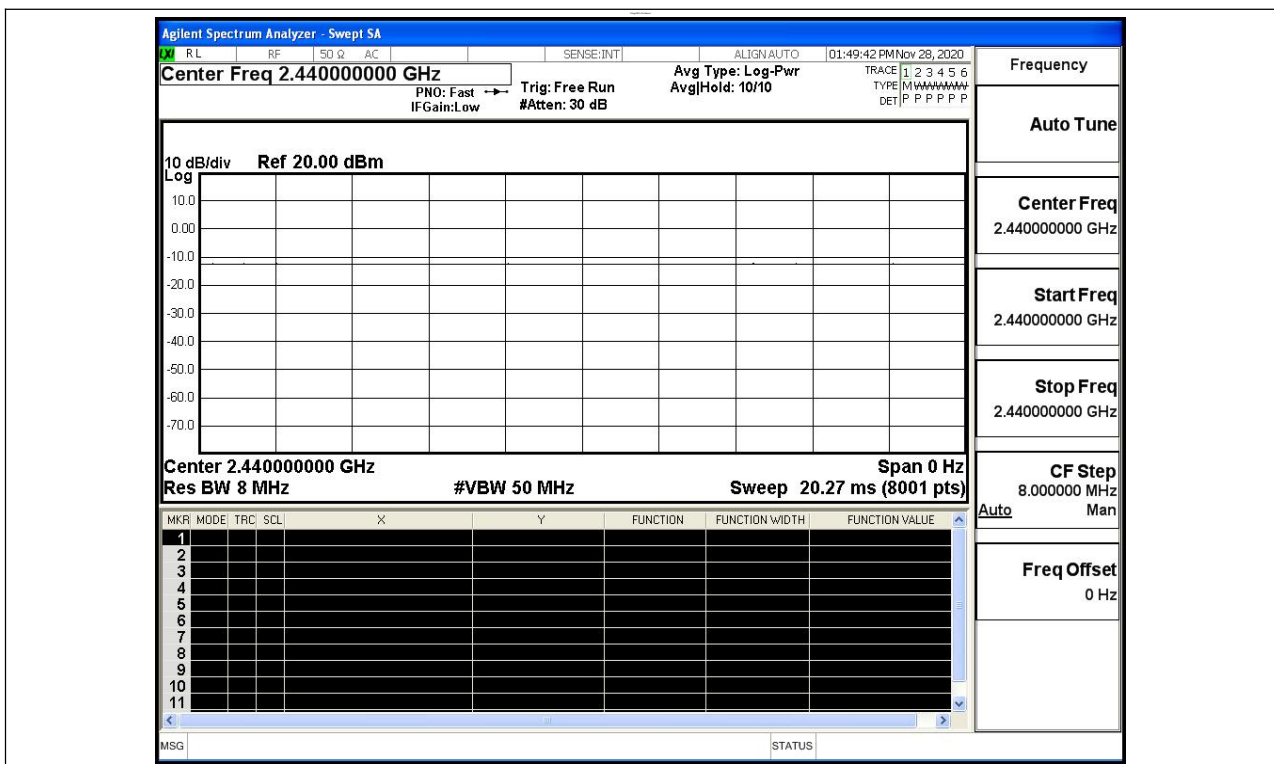
Test Model: Urbanista Miami

Environmental Conditions

Temperature:	22.3° C
Relative Humidity:	53.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

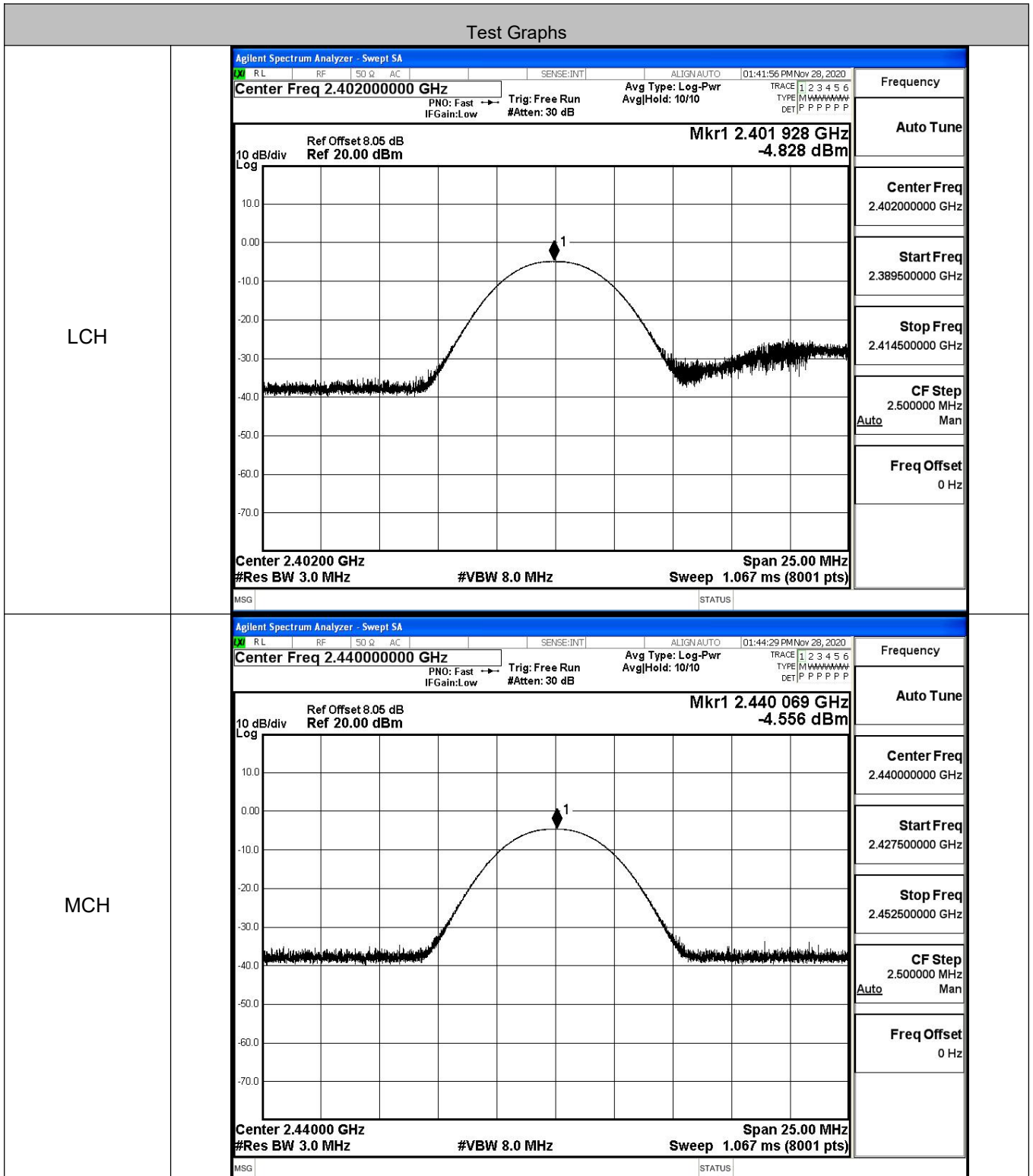
B.1 Duty Cycle

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

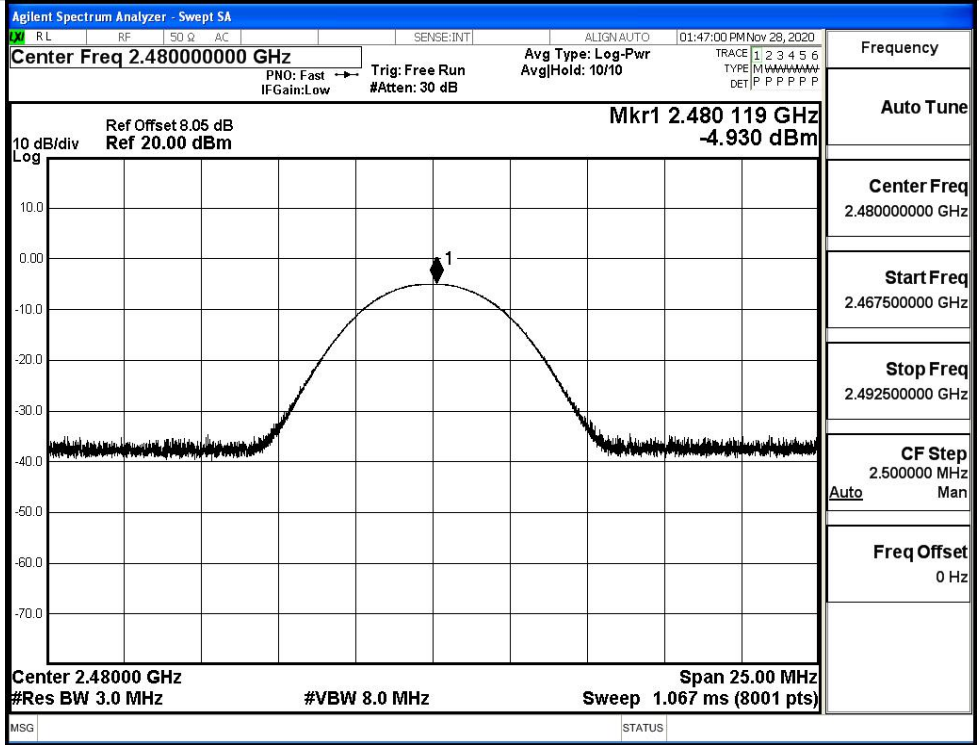


B.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	-4.828	30	PASS
BT LE	MCH	-4.556	30	PASS
BT LE	HCH	-4.93	30	PASS



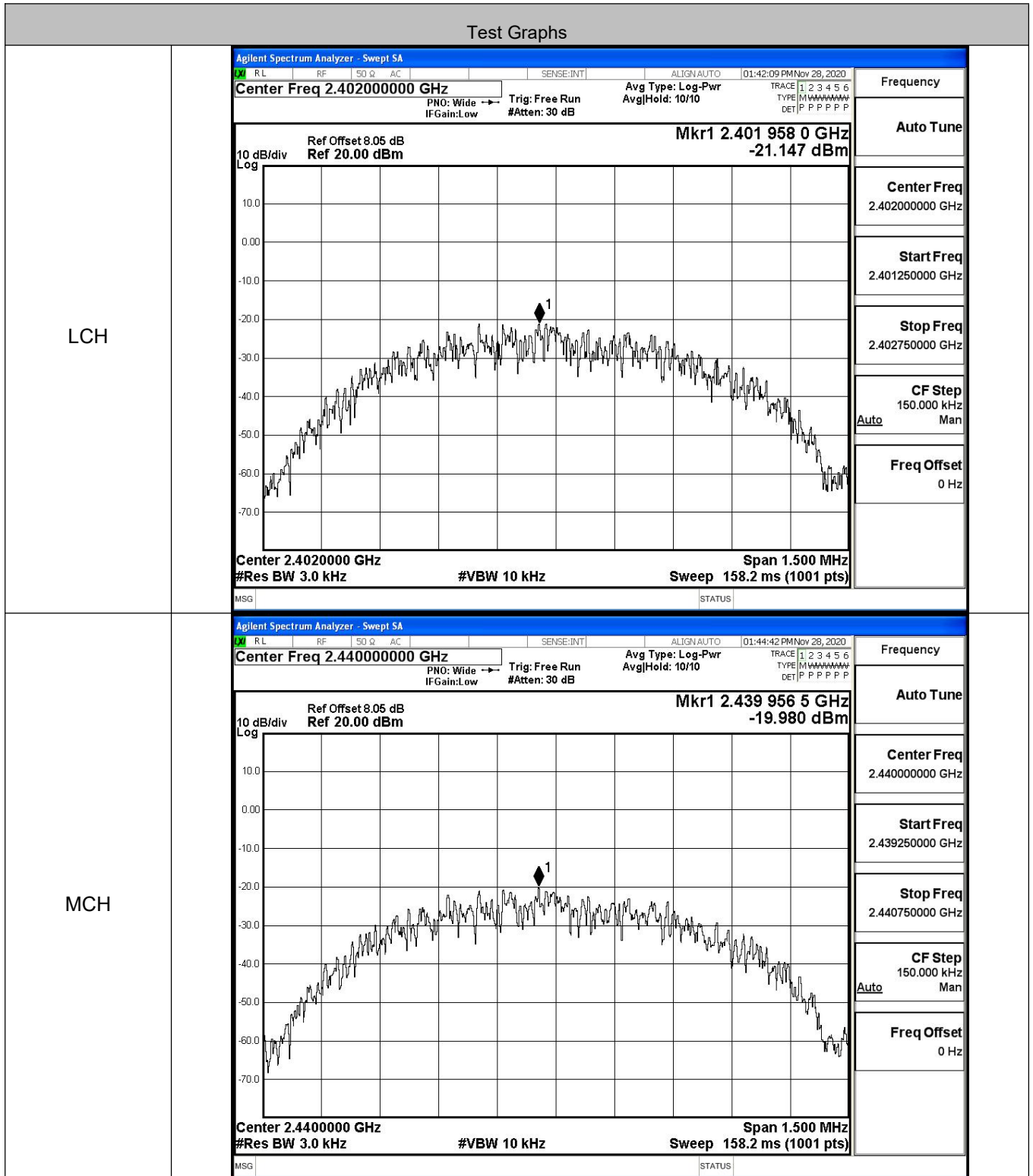
HCH



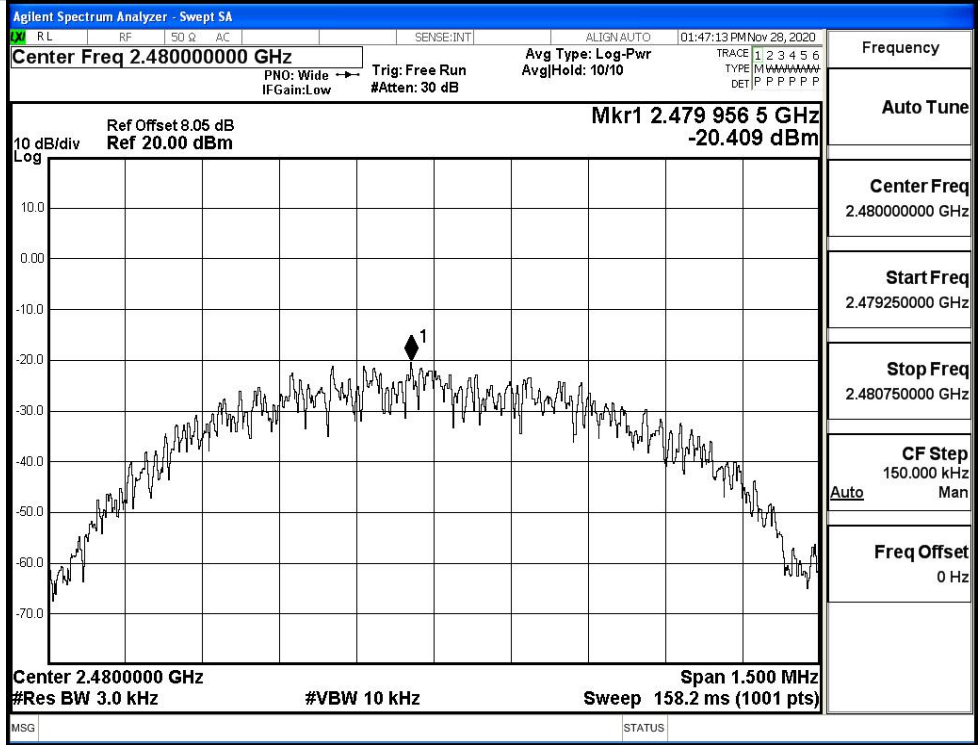
B.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-21.147	8	PASS
BT LE	MCH	-19.980	8	PASS
BT LE	HCH	-20.409	8	PASS

Test Graphs



HCH

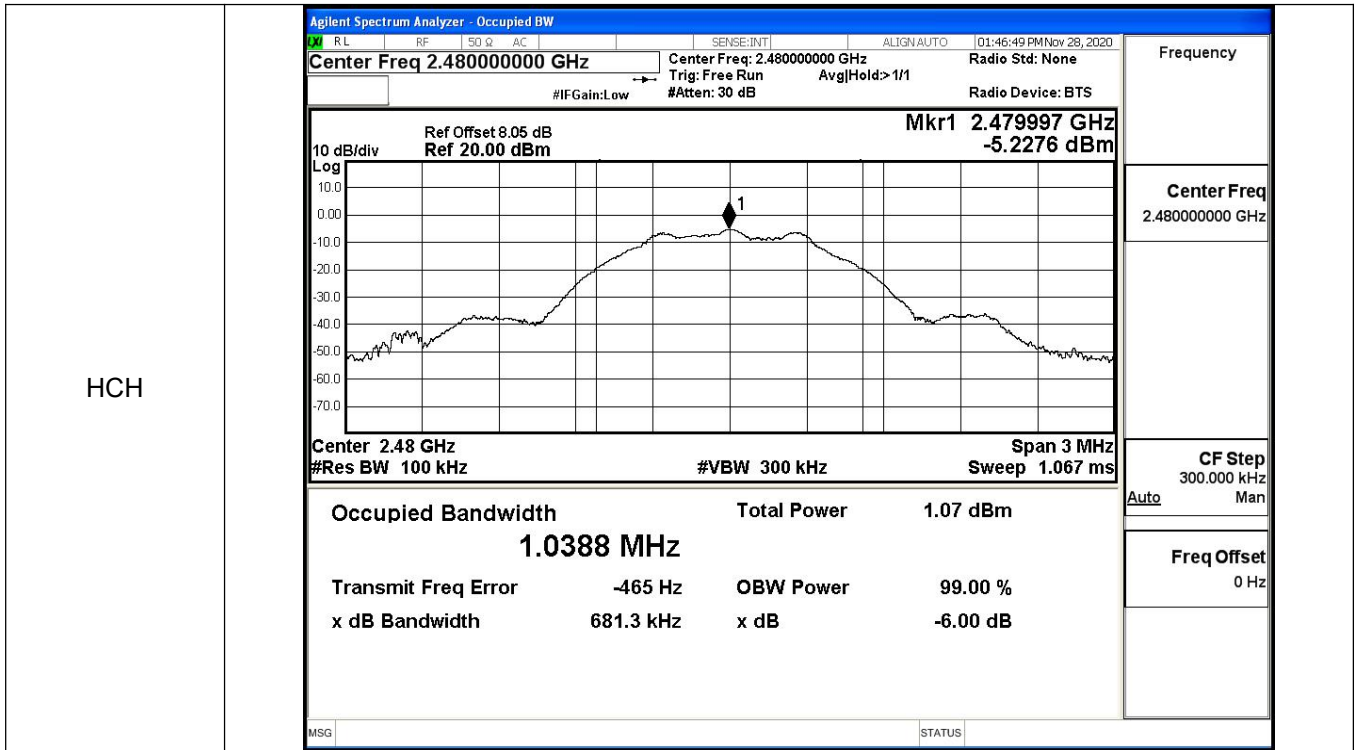


B.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6804	≥0.5	PASS
BT LE	MCH	0.6832	≥0.5	PASS
BT LE	HCH	0.6813	≥0.5	PASS

Test Graphs

LCH	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Center Freq: 2.402000000 GHz</p> <p>Mkr1 2.4019966 GHz</p> <p>Occupied Bandwidth 1.0385 MHz</p> <p>Total Power 1.14 dBm</p> <p>Transmit Freq Error -1.890 kHz</p> <p>x dB Bandwidth 680.4 kHz</p>	<p>Frequency</p> <p>Center Freq 2.402000000 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 2.440000000 GHz</p> <p>Center Freq: 2.440000000 GHz</p> <p>Mkr1 2.4399951 GHz</p> <p>Occupied Bandwidth 1.0370 MHz</p> <p>Total Power 1.44 dBm</p> <p>Transmit Freq Error -1.947 kHz</p> <p>x dB Bandwidth 683.2 kHz</p>	<p>Frequency</p> <p>Center Freq 2.440000000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Freq Offset 0 Hz</p>



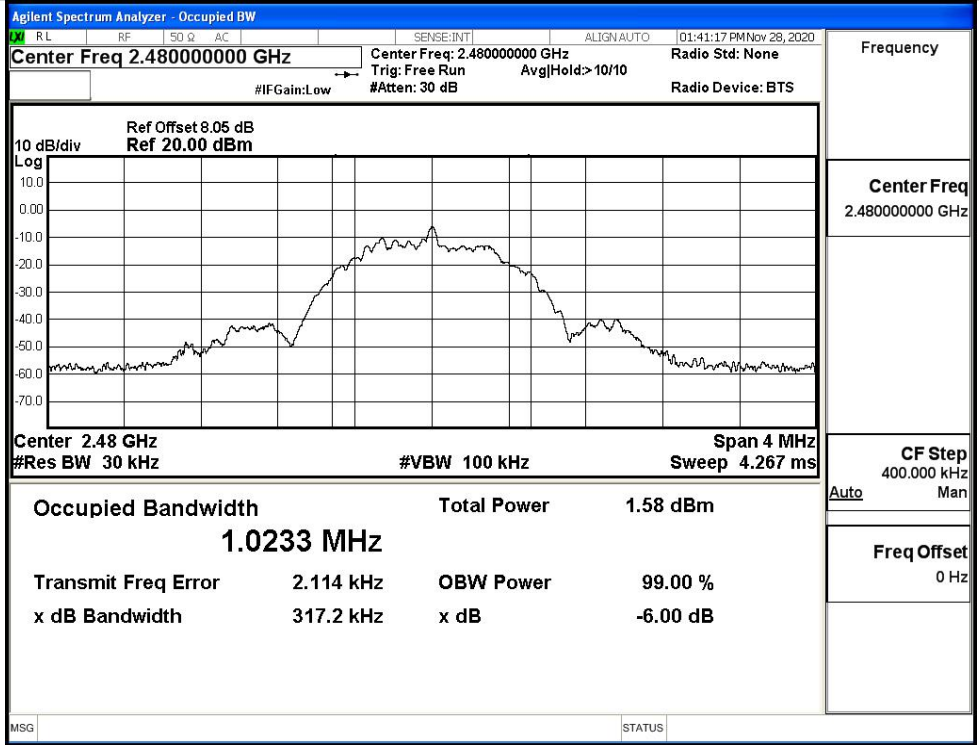
B.5 Occupied Bandwidth

Mode	Channel	Occupied Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	1.0214	≥0.5	PASS
BT LE	MCH	1.0209	≥0.5	PASS
BT LE	HCH	1.0233	≥0.5	PASS

Test Graphs

LCH	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Center Freq: 2.402000000 GHz</p> <p>Ref Offset 8.05 dB</p> <p>Ref 20.00 dBm</p> <p>Occupied Bandwidth 1.0214 MHz</p> <p>Total Power 1.72 dBm</p> <p>Transmit Freq Error 1.916 kHz</p> <p>x dB Bandwidth 313.6 kHz</p>	<p>Frequency</p> <p>Center Freq 2.402000000 GHz</p> <p>CF Step 400.000 kHz</p> <p>Freq Offset 0 Hz</p>
	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.440000000 GHz</p> <p>Center Freq: 2.440000000 GHz</p> <p>Ref Offset 8.05 dB</p> <p>Ref 20.00 dBm</p> <p>Occupied Bandwidth 1.0209 MHz</p> <p>Total Power 1.97 dBm</p> <p>Transmit Freq Error 2.189 kHz</p> <p>x dB Bandwidth 316.7 kHz</p>	<p>Frequency</p> <p>Center Freq 2.440000000 GHz</p> <p>CF Step 400.000 kHz</p> <p>Freq Offset 0 Hz</p>

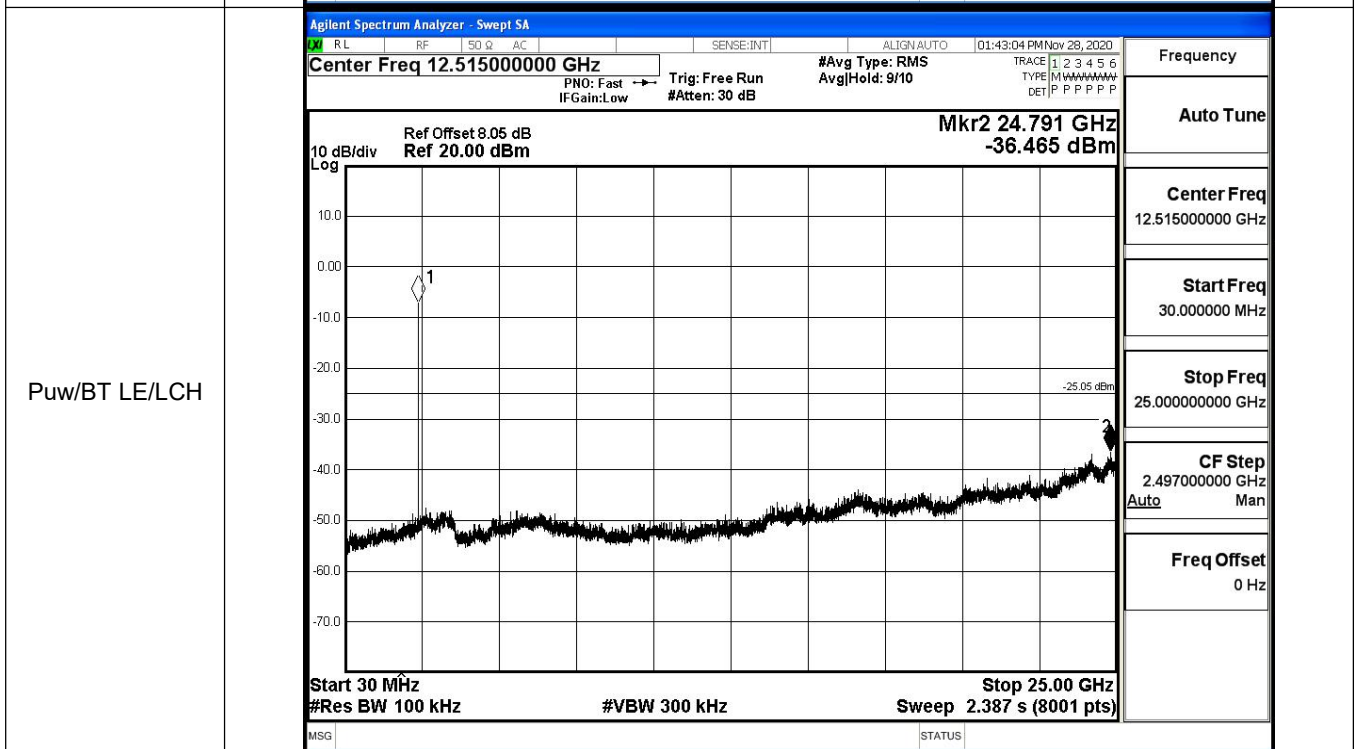
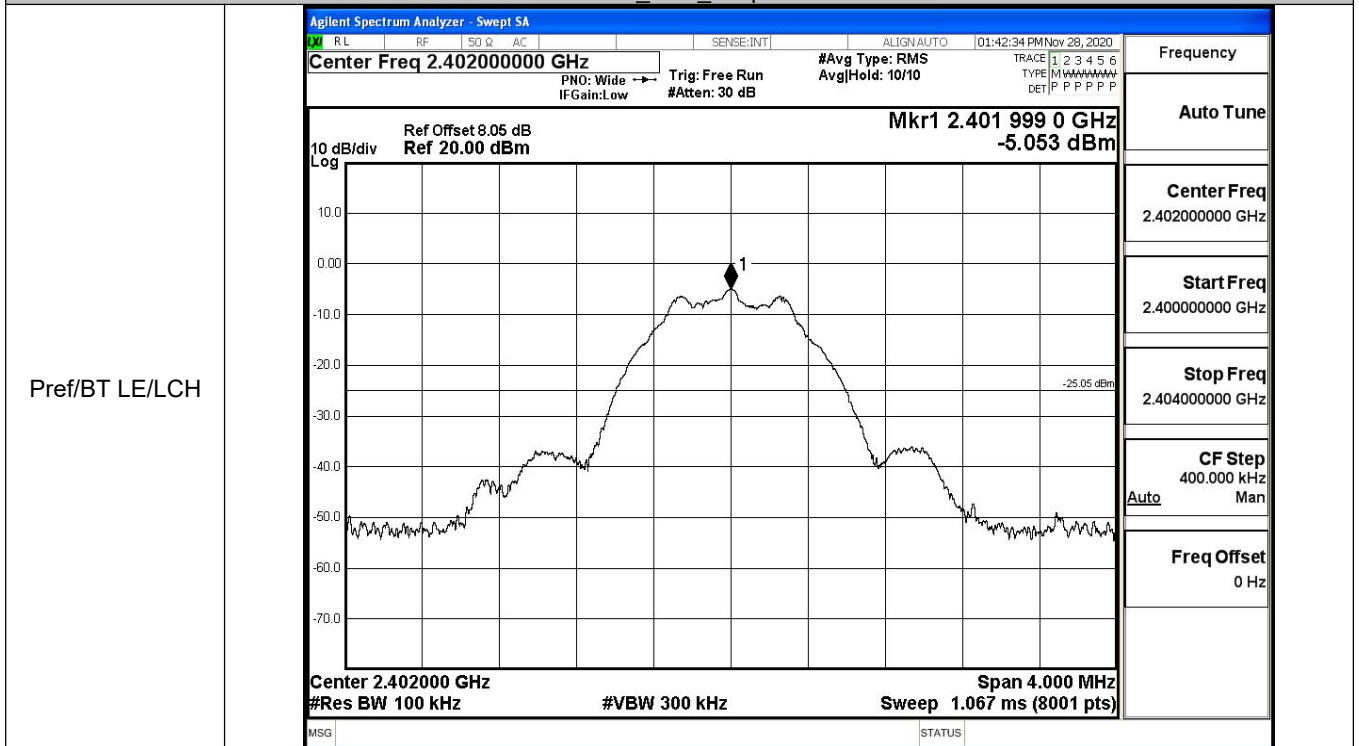
HCH



B.6 RF Conducted Spurious Emissions

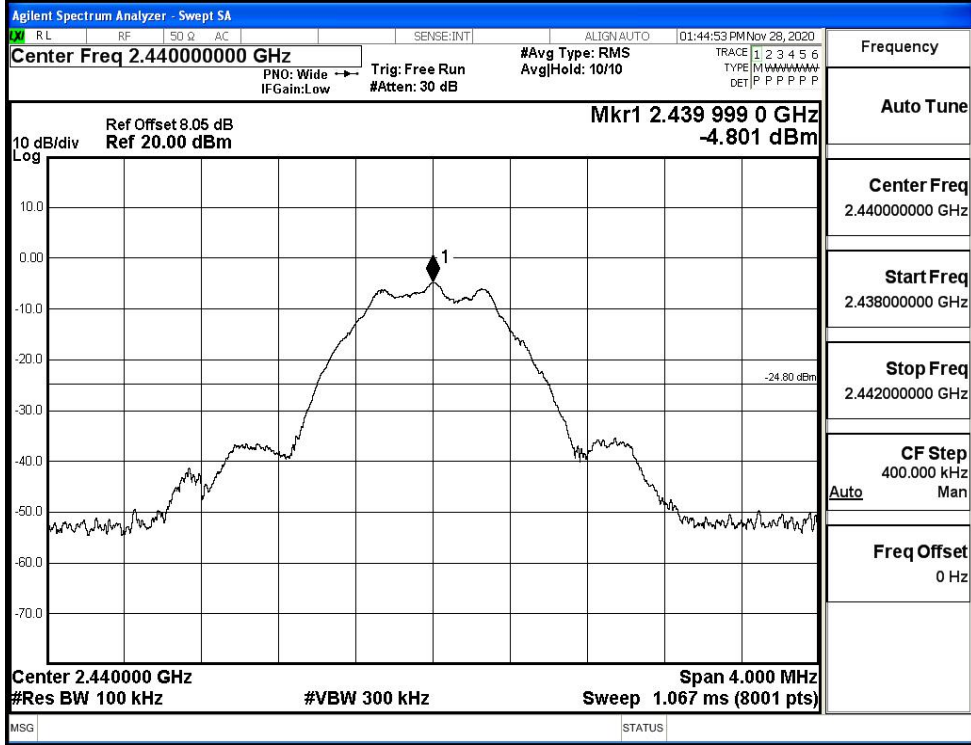
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-5.053	-36.465	-25.053	PASS
BT LE	MCH	-4.801	-36.809	-24.801	PASS
BT LE	HCH	-5.209	-36.288	-25.209	PASS

BT LE_LCH_Graphs

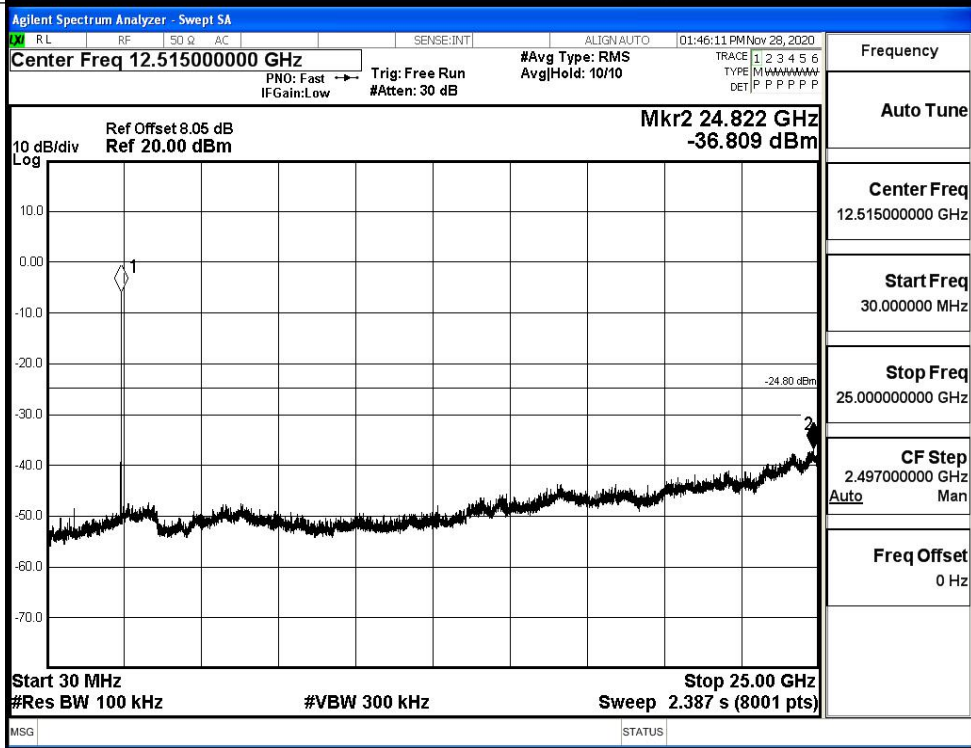


BT LE MCH Graphs

Pref/BT LE/MCH

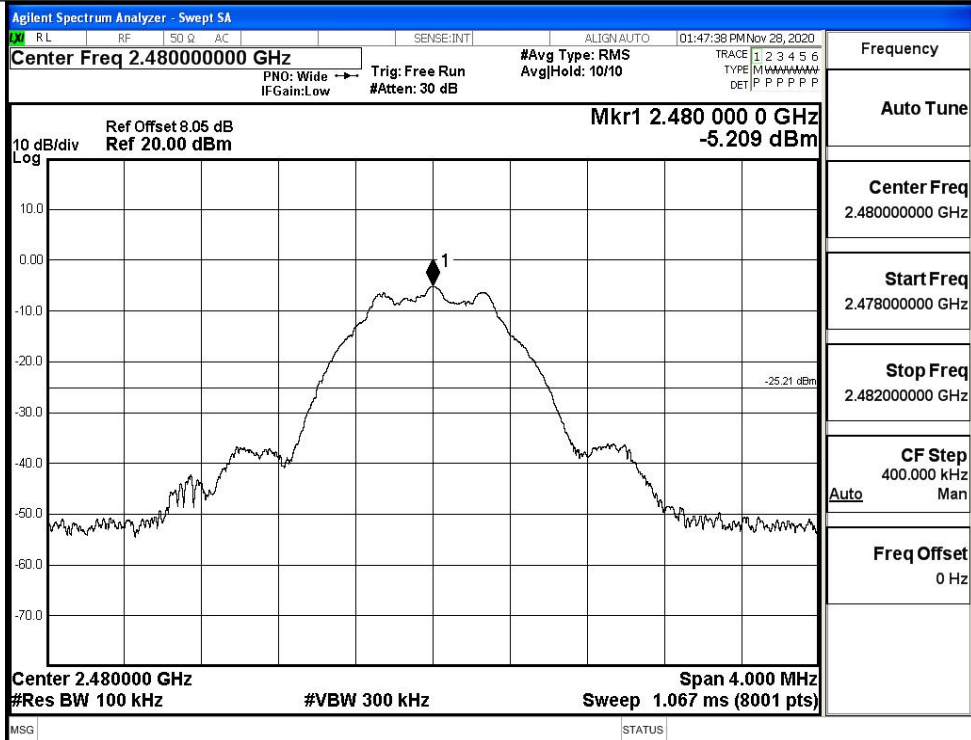


Puw/BT LE/MCH

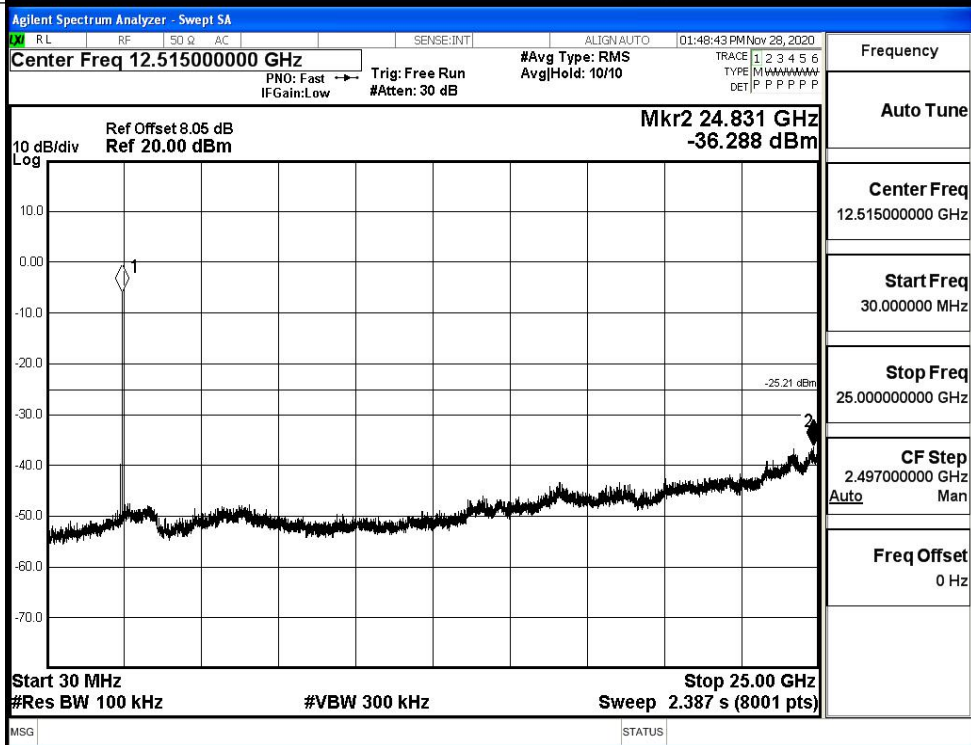


BT LE HCH Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH



B.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-4.903	-49.982	-24.9	PASS
BT LE	HCH	-5.242	-49.331	-25.24	PASS

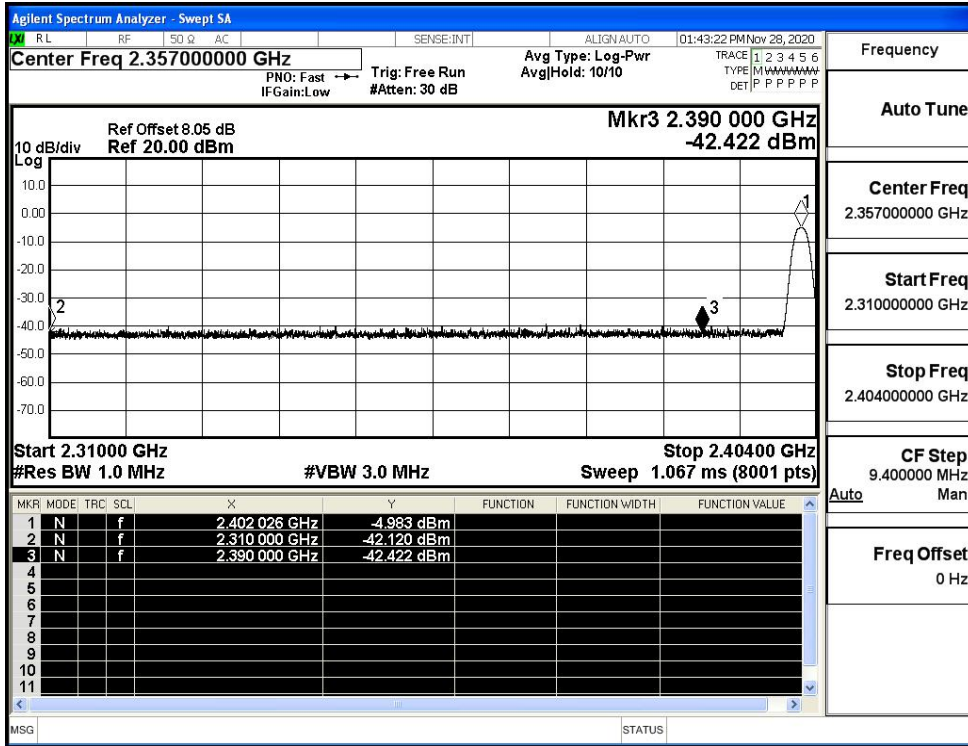
Test Graphs

LCH	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.35700000 GHz Mkr4 2.355 003 GHz -49.982 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"> <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>2.402 003 GHz</td><td>-4.903 dBm</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>N</td><td>f</td><td></td><td>2.400 000 GHz</td><td>-53.207 dBm</td><td></td><td></td><td></td></tr> <tr><td>3</td><td>N</td><td>f</td><td></td><td>2.390 000 GHz</td><td>-53.790 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>f</td><td></td><td>2.355 003 GHz</td><td>-49.982 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		2.402 003 GHz	-4.903 dBm				2	N	f		2.400 000 GHz	-53.207 dBm				3	N	f		2.390 000 GHz	-53.790 dBm				4	N	f		2.355 003 GHz	-49.982 dBm				<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>
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HCH	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.48900000 GHz Mkr4 2.493 765 75 GHz -49.331 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"> <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>2.480 002 00 GHz</td><td>-5.242 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>-52.181 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>-52.587 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>f</td><td></td><td>2.493 765 75 GHz</td><td>-49.331 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		2.480 002 00 GHz	-5.242 dBm				2	N	f		2.483 500 00 GHz	-52.181 dBm				3	N	f		2.500 000 00 GHz	-52.587 dBm				4	N	f		2.493 765 75 GHz	-49.331 dBm				<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>
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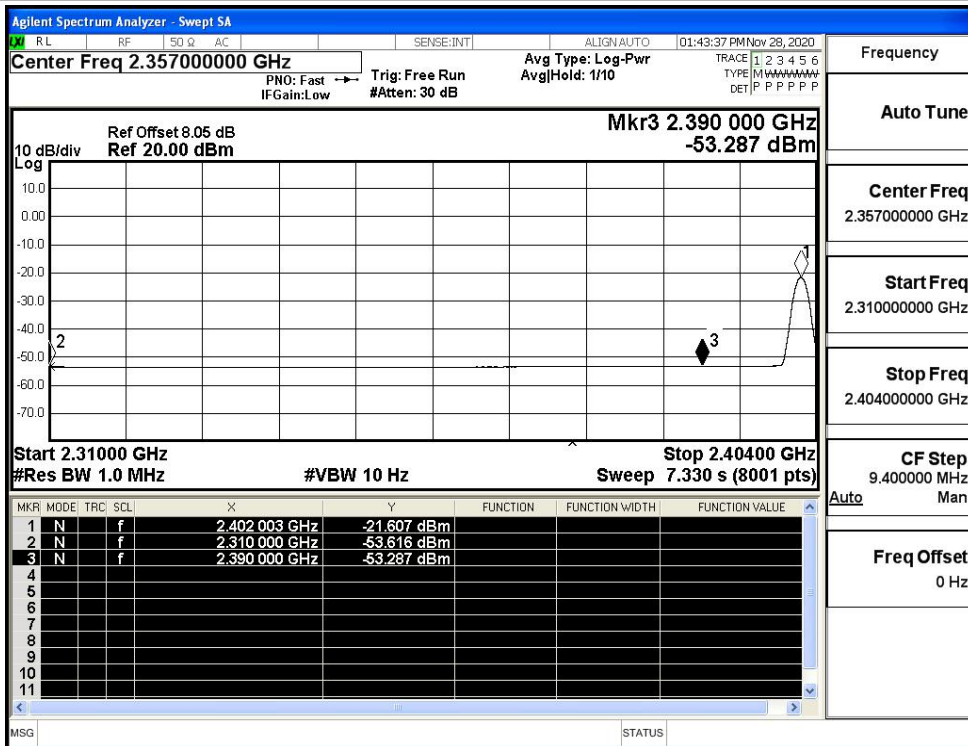
B.8 Restrict-band band-edge measurements

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	-42.12	2.0	0	53.14	PEAK	74	PASS
		Ant1	2310.0	-53.62	2.0	0	41.64	AV	54	PASS
		Ant1	2390.0	-42.42	2.0	0	52.84	PEAK	74	PASS
		Ant1	2390.0	-53.29	2.0	0	41.97	AV	54	PASS
	2480	Ant1	2483.5	-41.34	2.0	0	53.92	PEAK	74	PASS
		Ant1	2483.5	-52.80	2.0	0	42.45	AV	54	PASS
		Ant1	2500.0	-41.43	2.0	0	53.83	PEAK	74	PASS
		Ant1	2500.0	-52.63	2.0	0	42.63	AV	54	PASS

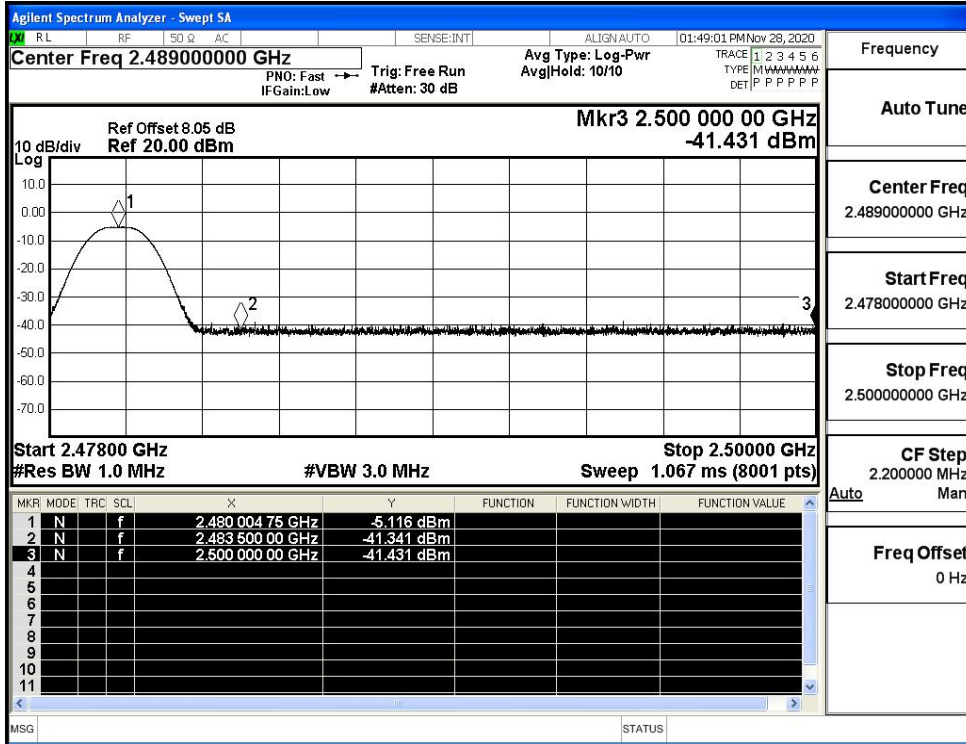
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

