

Appendix B

RF Test Data for BT V4.0(BT LE) (Conducted Measurement)

Product Name: Smart Phone

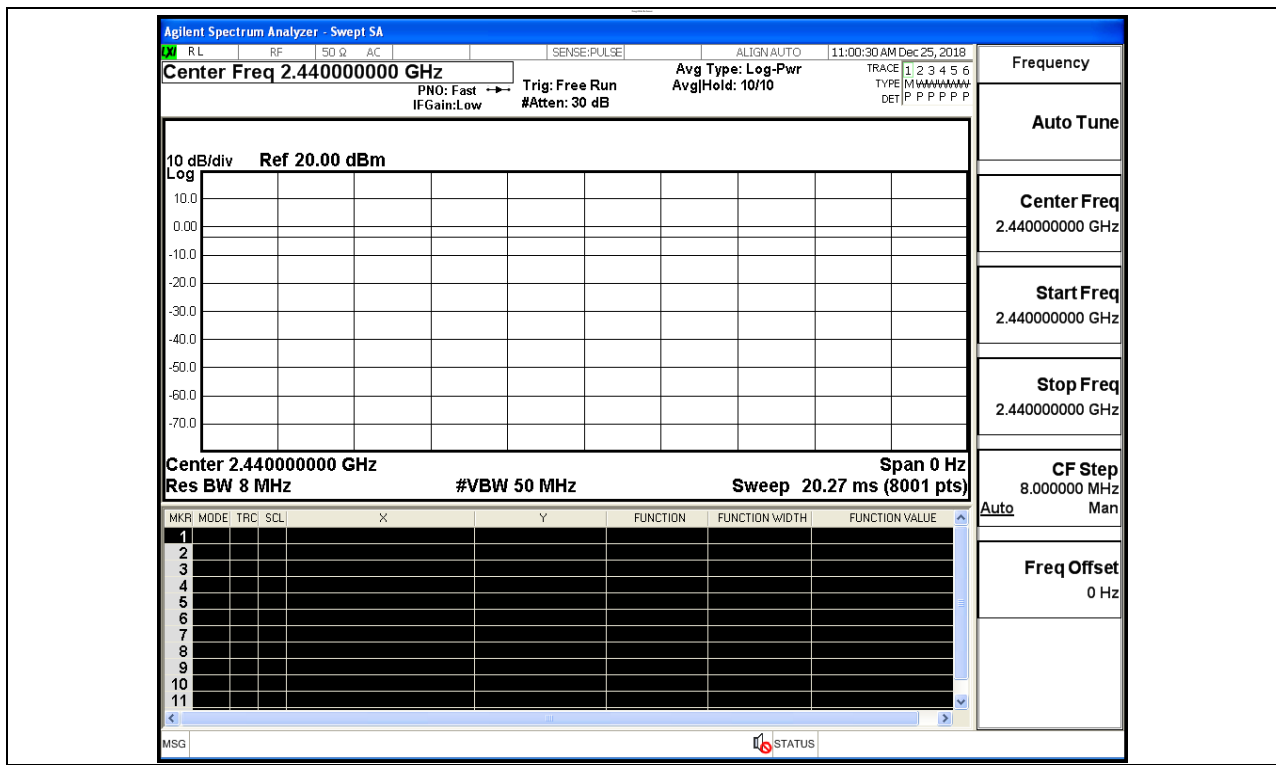
Test Model: W55s

Environmental Conditions

Temperature:	23.5 °C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina Xu
Supervised by:	Jayden Zhuo

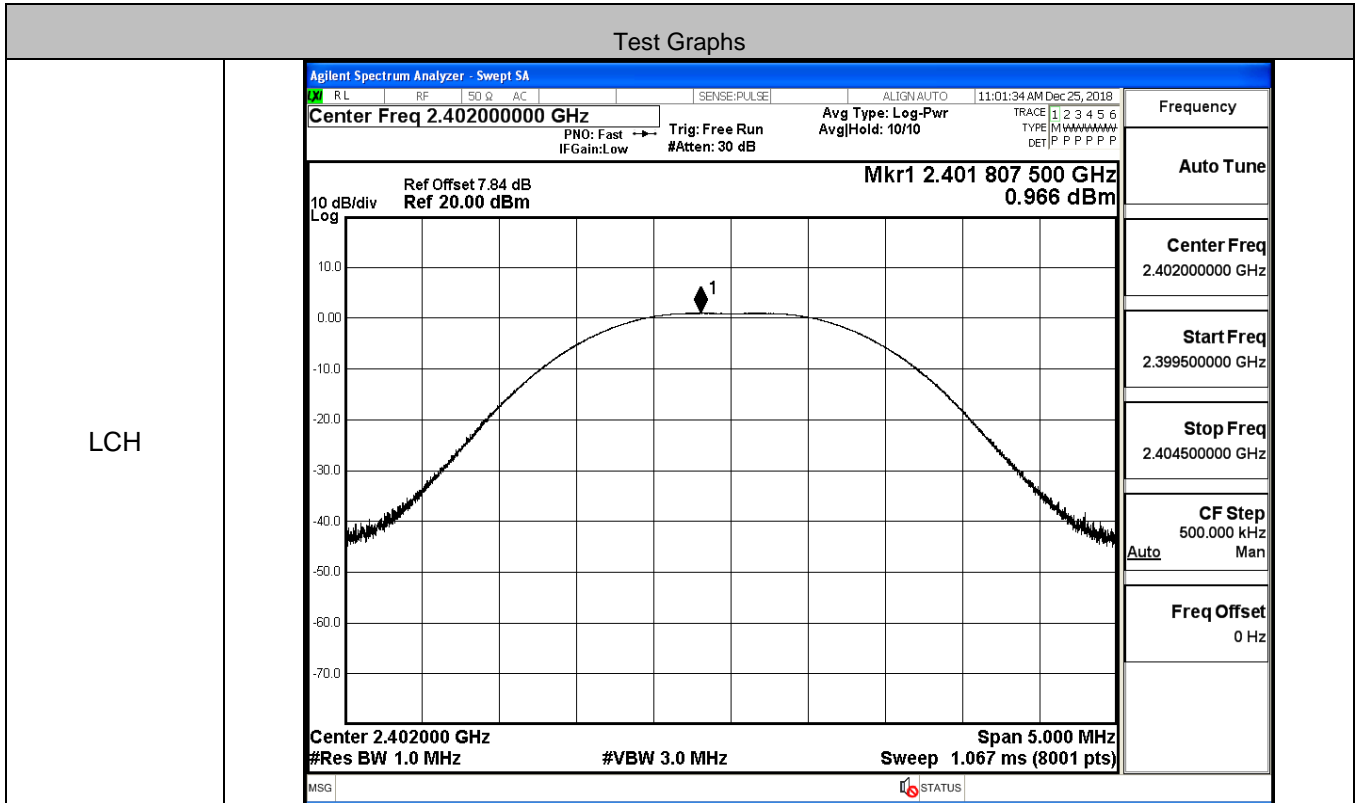
B.1 Duty Cycle

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

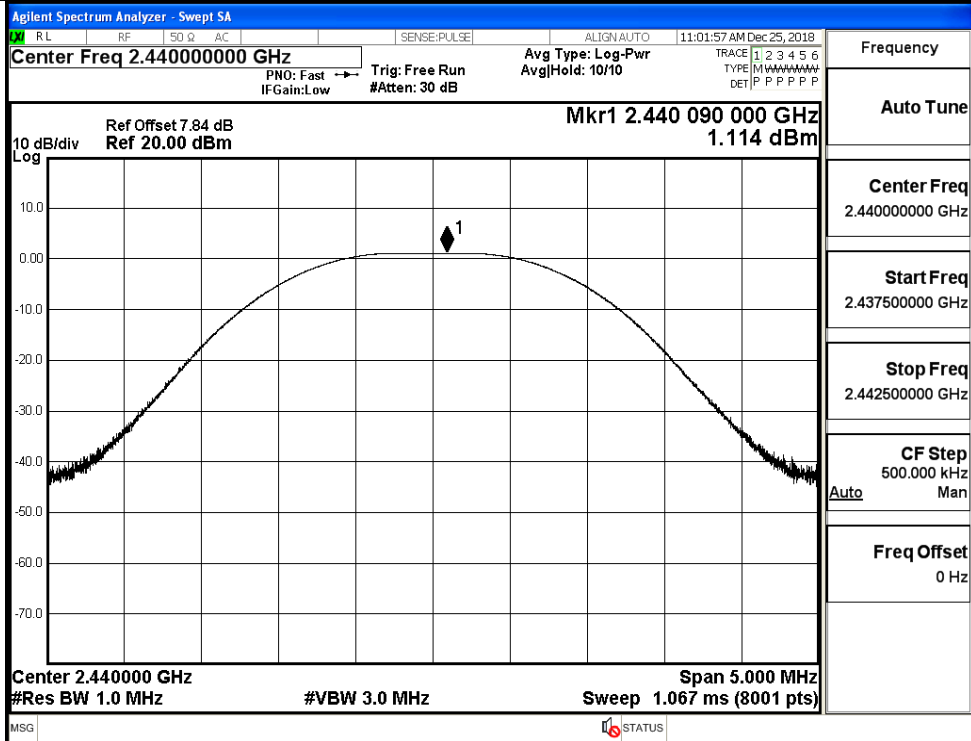


B.2 Maximum Conducted Peak Output Power

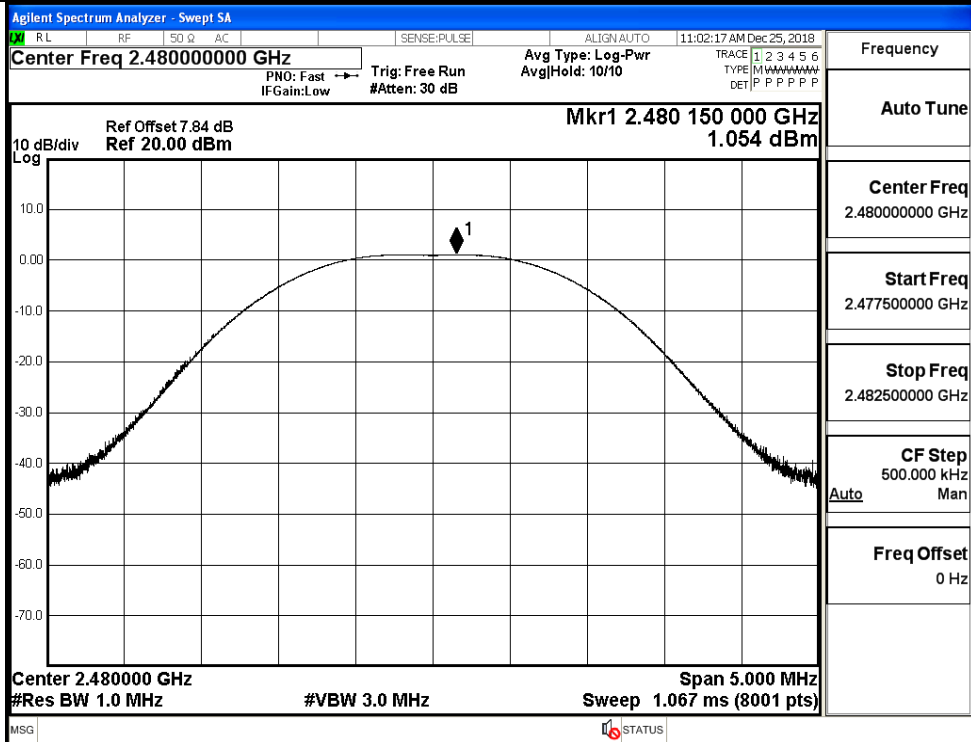
Mode	Channel	Conduct Peak Power[dBm]	Conduct Average Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.966	0.744	30	PASS
BT LE	MCH	1.114	0.950	30	PASS
BT LE	HCH	1.054	0.845	30	PASS



MCH



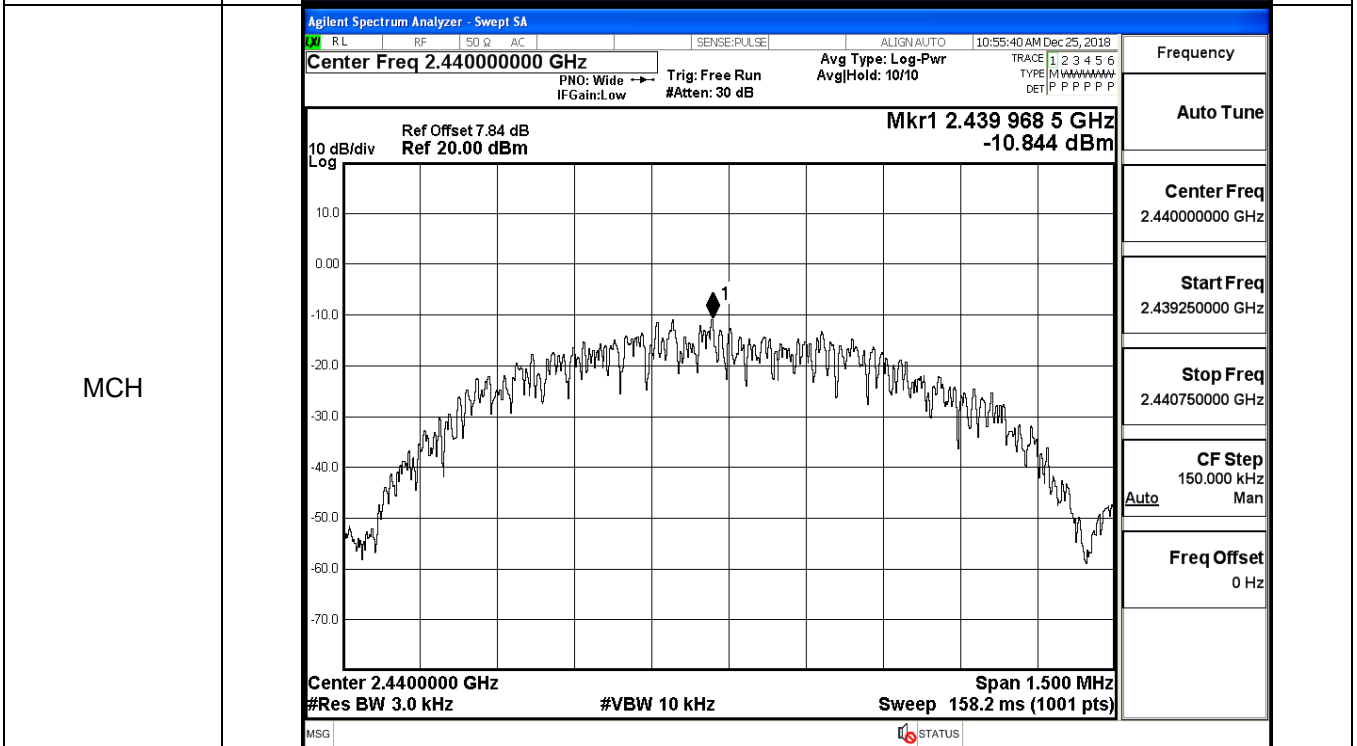
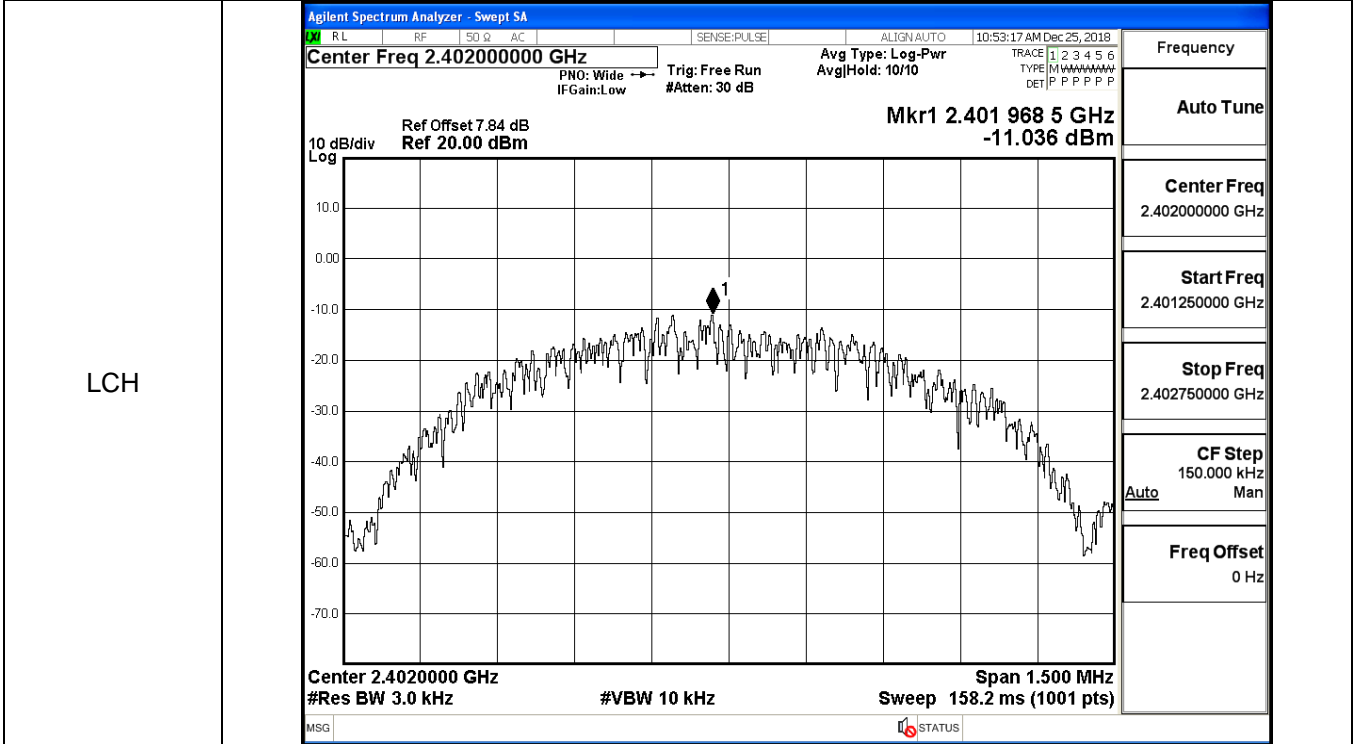
HCH



B.3 Maximum Power Spectral Density

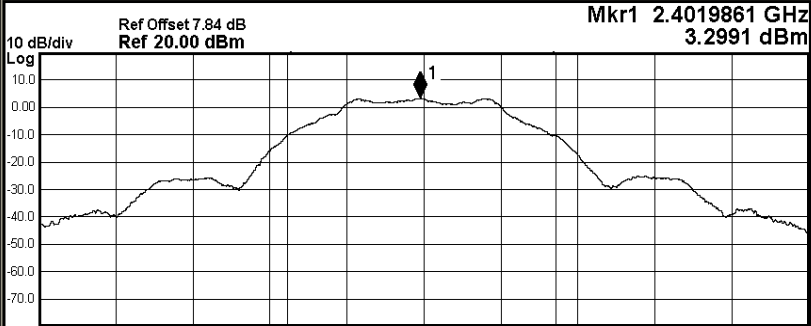
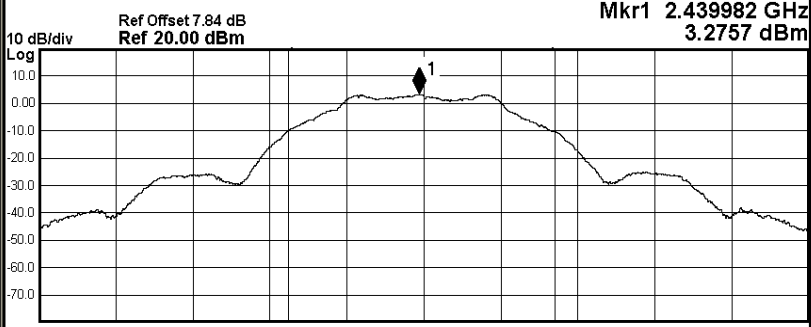
Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-11.036	8	PASS
BT LE	MCH	-10.844	8	PASS
BT LE	HCH	-10.931	8	PASS

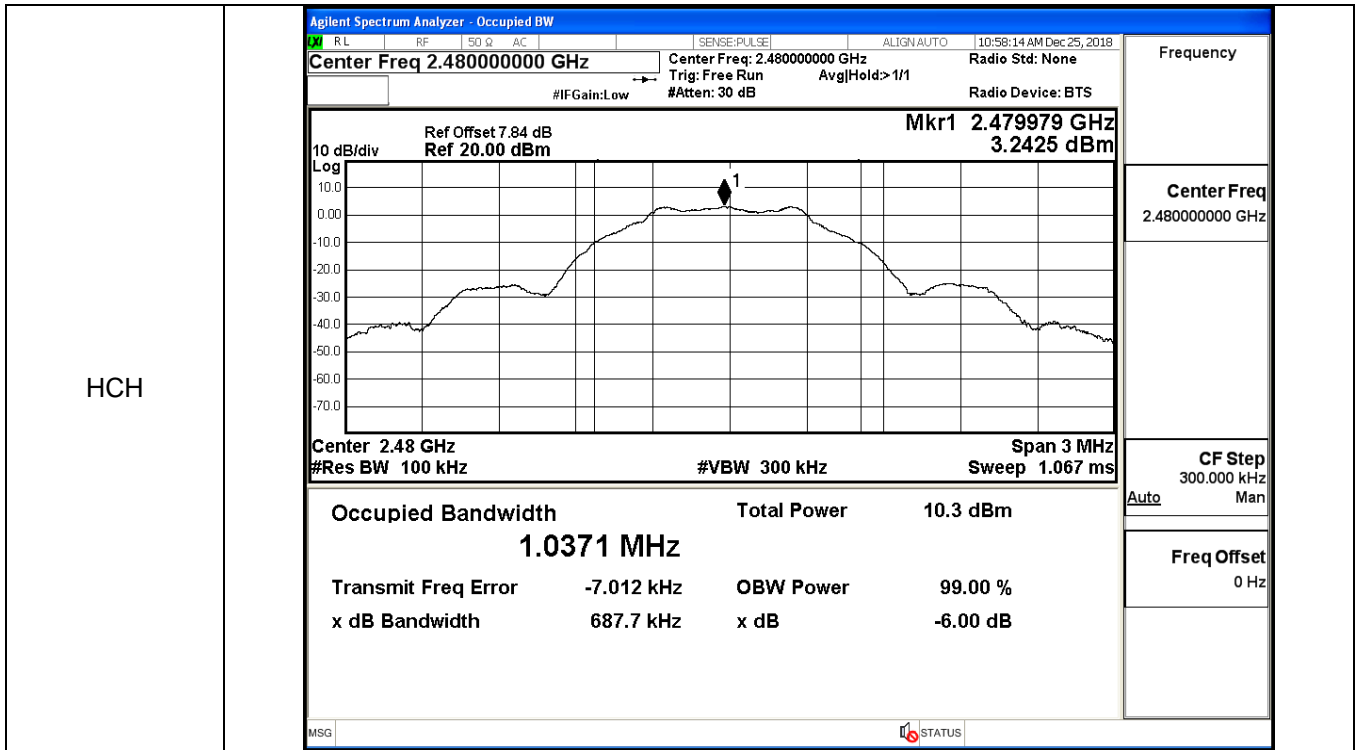
Test Graphs



B.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6990	≥0.5	PASS
BT LE	MCH	0.6966	≥0.5	PASS
BT LE	HCH	0.6877	≥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 10:52:52 AM Dec 25, 2018</p> <p style="margin: 0;">Center Freq 2.402000000 GHz Center Freq: 2.402000000 GHz Radio Std: None</p> <p style="margin: 0;">Trig: Free Run AvgHold: 1/1</p> <p style="margin: 0;">#IFGain:Low #Atten: 30 dB Radio Device: BTS</p> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p style="font-size: x-small; margin: 0;">10 dB/div Ref Offset 7.84 dB Mkr1 2.4019861 GHz</p> <p style="font-size: x-small; margin: 0;">Log Ref 20.00 dBm 3.2991 dBm</p>  </div> <p style="font-size: x-small; margin: 0;">Center 2.402 GHz Span 3 MHz</p> <p style="font-size: x-small; margin: 0;">#Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td style="width: 33%;">Occupied Bandwidth</td> <td style="width: 33%;">Total Power</td> <td style="width: 33%;">10.4 dBm</td> </tr> <tr> <td style="text-align: center;">1.0398 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>x dB Bandwidth</td> <td>x dB</td> <td>-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	10.4 dBm	1.0398 MHz			Transmit Freq Error	OBW Power	99.00 %	x dB Bandwidth	x dB	-6.00 dB
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B.5 RF Conducted Spurious Emissions

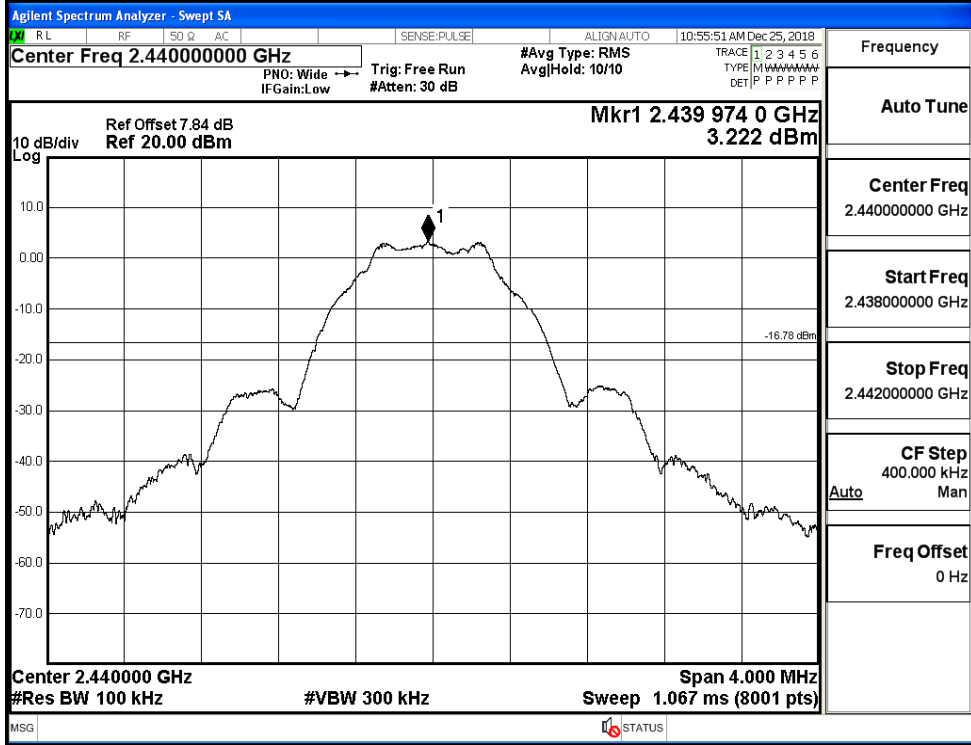
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	3.125	-43.543	-16.875	PASS
BT LE	MCH	3.222	-43.946	-16.778	PASS
BT LE	HCH	3.196	-44.322	-16.804	PASS

BT LE_LCH_Graphs

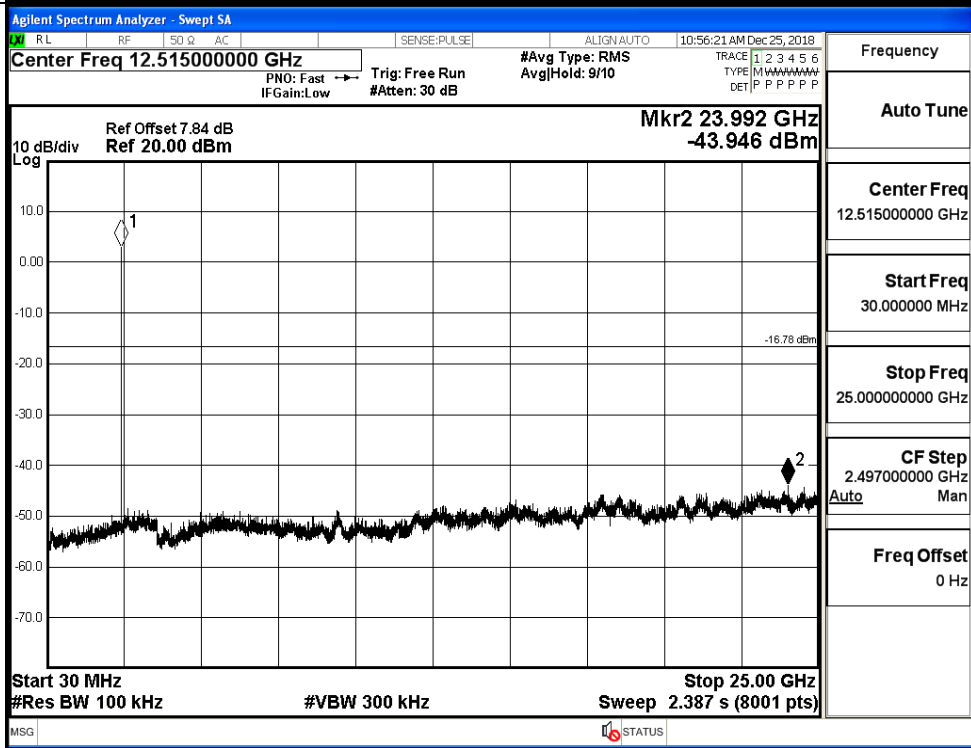
Pref/BT LE/LCH		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Frequency</td></tr> <tr><td>Auto Tune</td></tr> <tr><td>Center Freq 2.402000000 GHz</td></tr> <tr><td>Start Freq 2.400000000 GHz</td></tr> <tr><td>Stop Freq 2.404000000 GHz</td></tr> <tr><td>CF Step 400.000 kHz Man</td></tr> <tr><td>Freq Offset 0 Hz</td></tr> </table>	Frequency	Auto Tune	Center Freq 2.402000000 GHz	Start Freq 2.400000000 GHz	Stop Freq 2.404000000 GHz	CF Step 400.000 kHz Man	Freq Offset 0 Hz
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CF Step 400.000 kHz Man									
Freq Offset 0 Hz									
Puw/BT LE/LCH		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Frequency</td></tr> <tr><td>Auto Tune</td></tr> <tr><td>Center Freq 12.515000000 GHz</td></tr> <tr><td>Start Freq 30.000000000 MHz</td></tr> <tr><td>Stop Freq 25.000000000 GHz</td></tr> <tr><td>CF Step 2.497000000 GHz Man</td></tr> <tr><td>Freq Offset 0 Hz</td></tr> </table>	Frequency	Auto Tune	Center Freq 12.515000000 GHz	Start Freq 30.000000000 MHz	Stop Freq 25.000000000 GHz	CF Step 2.497000000 GHz Man	Freq Offset 0 Hz
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Freq Offset 0 Hz									

BT LE_MCH_Graphs

Pref/BT LE/MCH

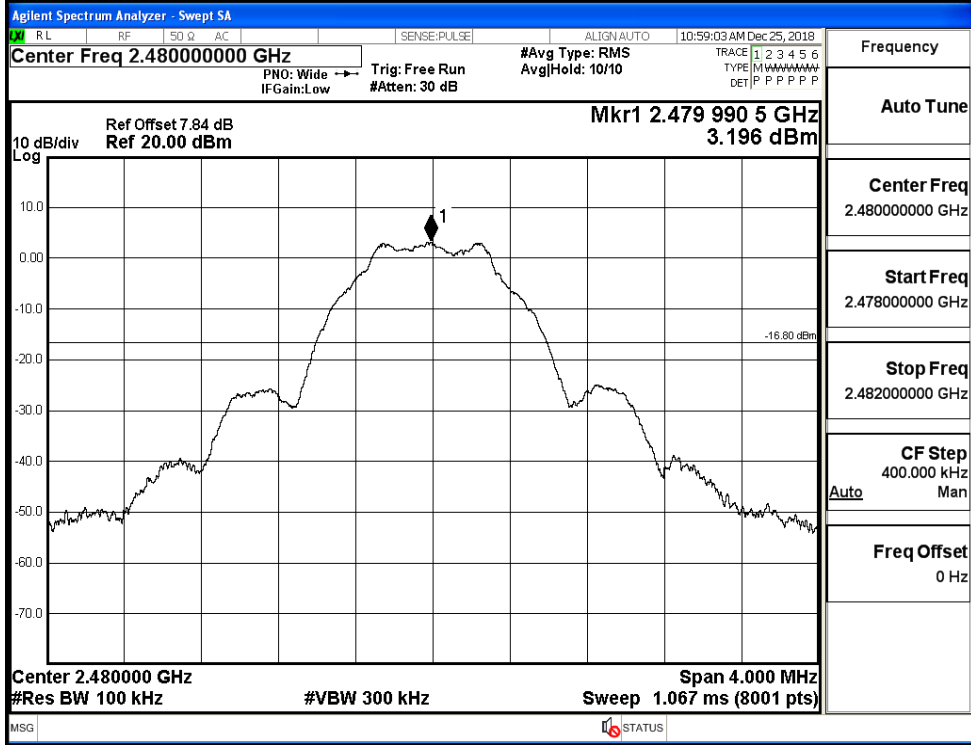


Puw/BT LE/MCH

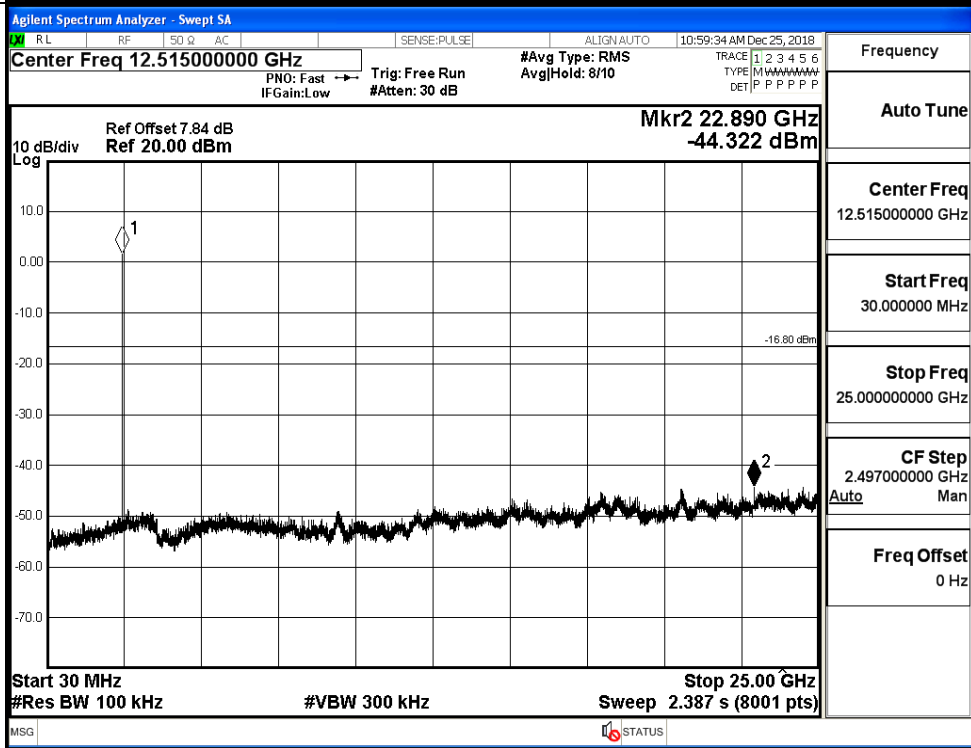


BT LE_HCH_Graphs

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	2.798	-50.909	-17.2	PASS
BT LE	HCH	3.275	-50.376	-16.73	PASS

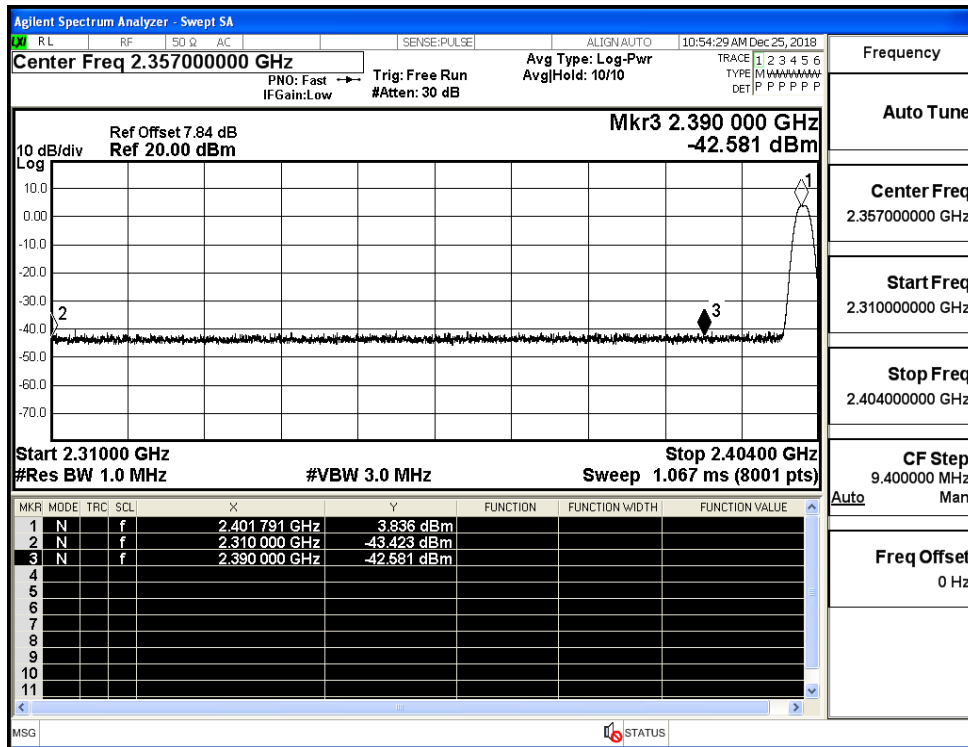
Test Graphs

LCH	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.35700000 GHz #Avg Type: RMS AvgHold: 10/10 Mkr4 2.351 912 GHz -50.909 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>2.402 003 GHz</td><td>2.798 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>-51.512 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>-52.522 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>f</td><td></td><td>2.351 912 GHz</td><td>-50.909 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	2.798 dBm				2	N	f		2.400 000 GHz	-51.512 dBm				3	N	f		2.390 000 GHz	-52.522 dBm				4	N	f		2.351 912 GHz	-50.909 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 #Avg Type: RMS AvgHold: 10/10 Mkr1 2.480 237 5 GHz -50.376 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>2.480 244 00 GHz</td><td>3.275 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>-51.942 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>-52.745 dBm</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>N</td><td>f</td><td></td><td>2.499 023 75 GHz</td><td>-50.376 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		2.480 244 00 GHz	3.275 dBm				2	N	f		2.483 500 00 GHz	-51.942 dBm				3	N	f		2.500 000 00 GHz	-52.745 dBm				4	N	f		2.499 023 75 GHz	-50.376 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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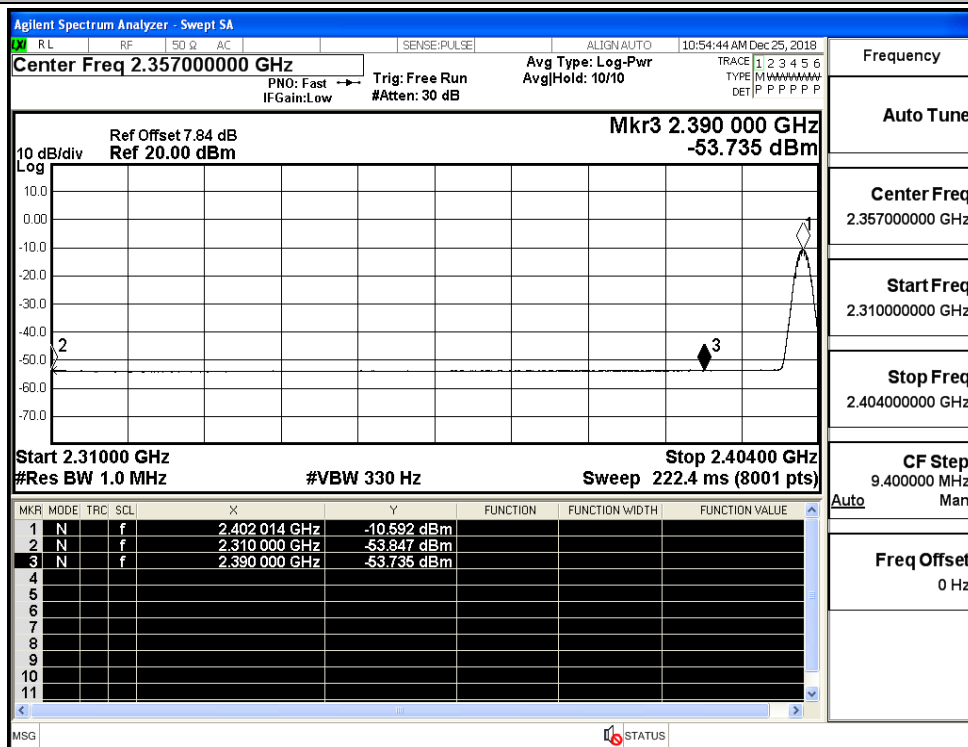
B.7 Restrict-band band-edge measurements

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	-43.42	2.0	0	53.83	PEAK	74	PASS
		Ant1	2310.0	-53.85	2.0	0	43.41	AV	54	PASS
		Ant1	2390.0	-42.58	2.0	0	54.68	PEAK	74	PASS
		Ant1	2390.0	-53.74	2.0	0	43.52	AV	54	PASS
	2480	Ant1	2483.5	-43.10	2.0	0	54.16	PEAK	74	PASS
		Ant1	2483.5	-53.43	2.0	0	43.82	AV	54	PASS
		Ant1	2500.0	-42.94	2.0	0	54.32	PEAK	74	PASS
		Ant1	2500.0	-53.30	2.0	0	43.95	AV	54	PASS

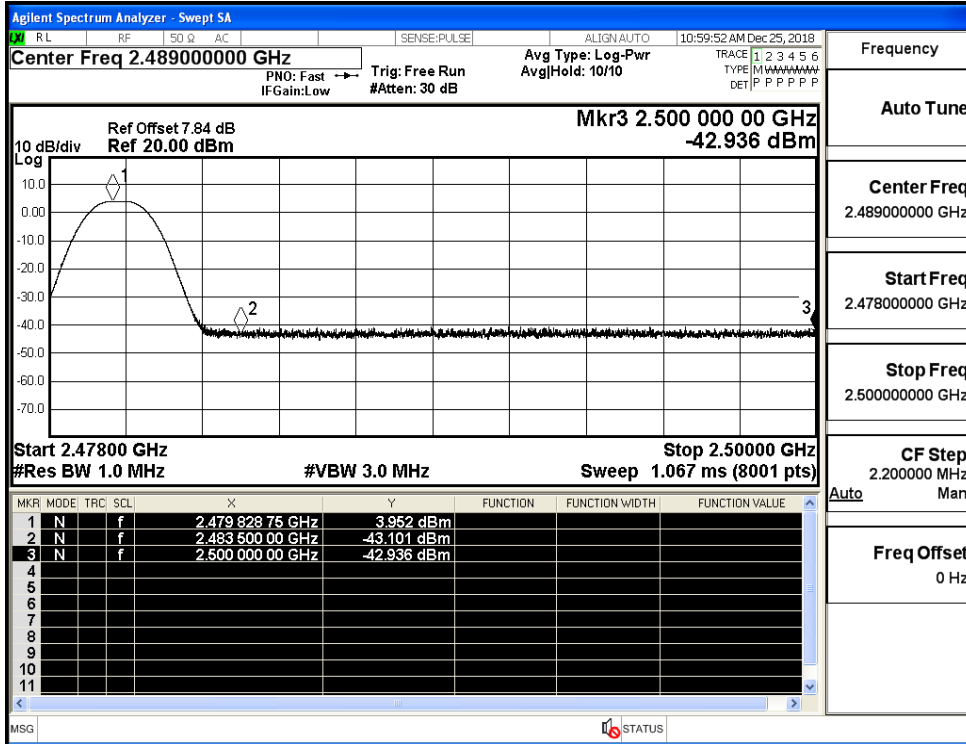
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

