

Appendix B

RF Test Data for BT V4.2(BDR/EDR) (Conducted Measurement)

Product Name: Remote

Trade Mark: N/A

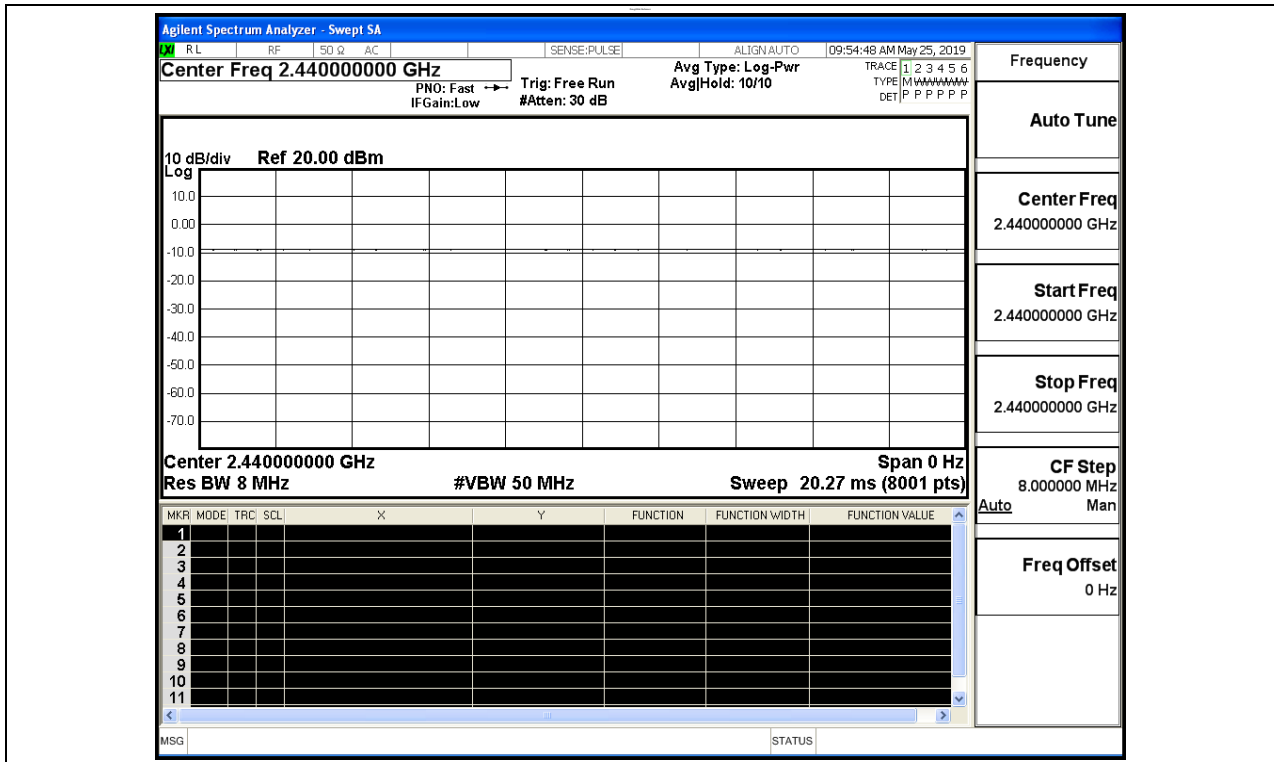
Test Model: i580

Environmental Conditions

Temperature:	24.2 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	JERRY.ZENG
Supervised by:	Tom.Liu

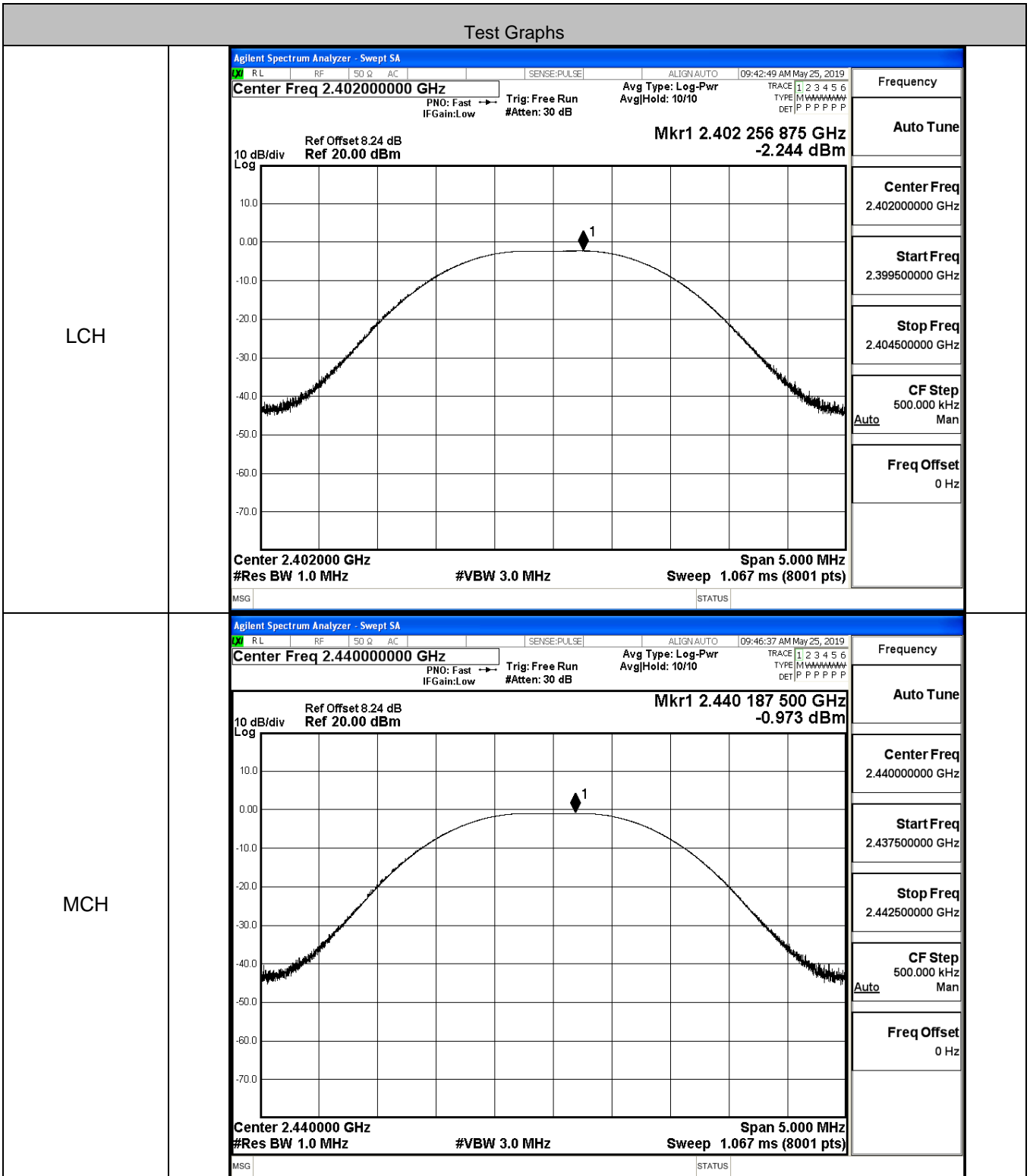
B.1 Duty Cycle

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

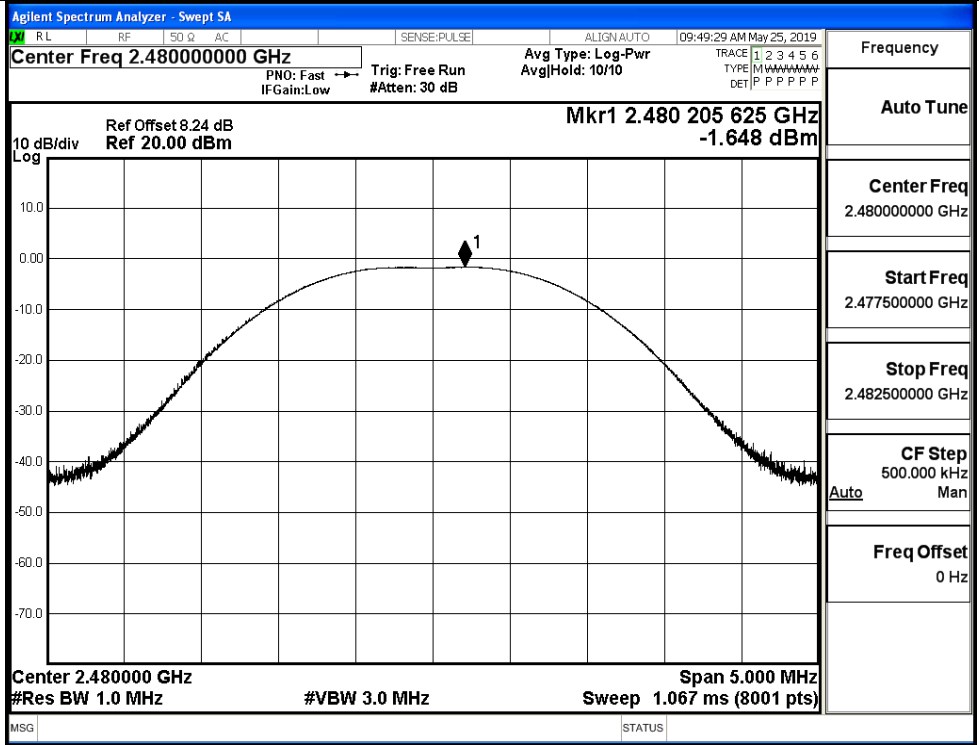


B.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	-2.244	30	PASS
BT LE	MCH	-0.973	30	PASS
BT LE	HCH	-1.648	30	PASS



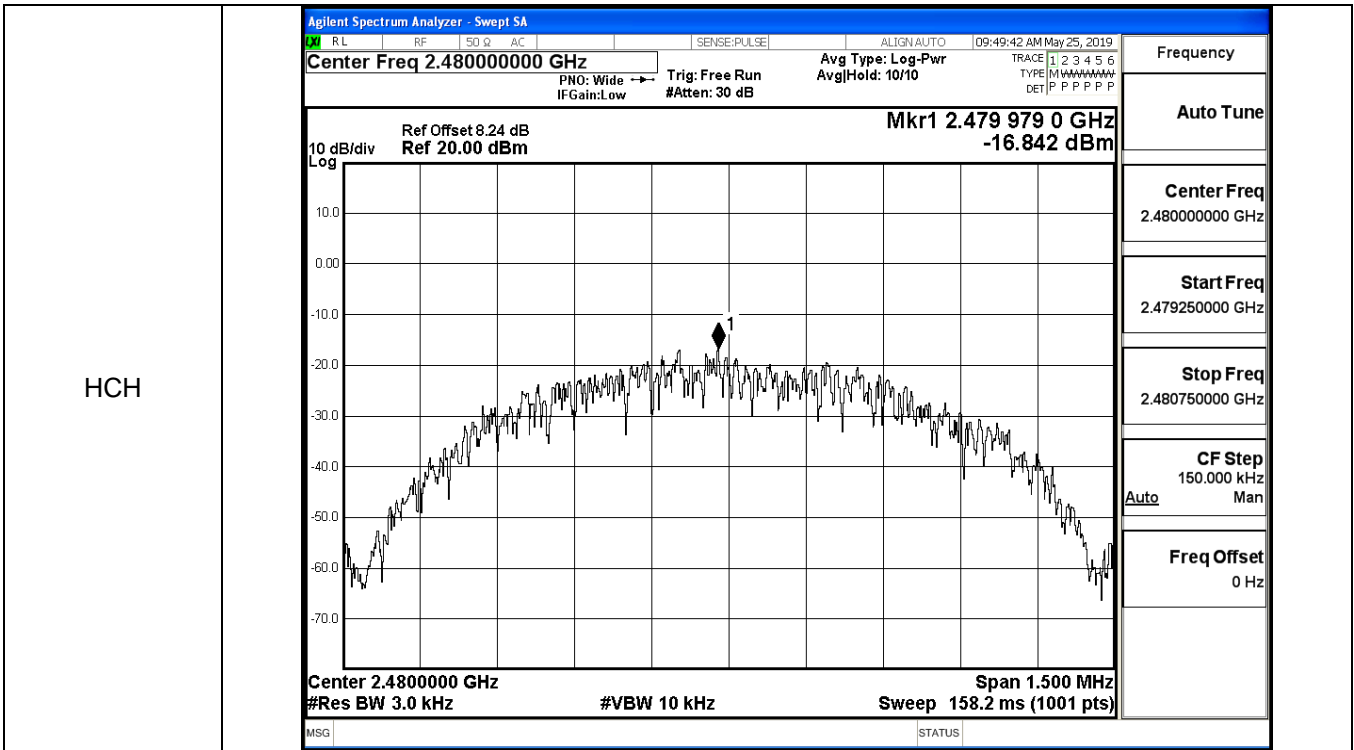
HCH



B.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-17.791	8	PASS
BT LE	MCH	-15.956	8	PASS
BT LE	HCH	-16.842	8	PASS

Test Graphs																	
LCH	<div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Swept SA</p> <p style="font-size: x-small; margin: 0;">RL RF 50 Ω AC SENSE:PULSE ALIGN:AUTO 09:43:03 AM May 25, 2019</p> <p style="font-size: small; margin: 0;">Center Freq 2.40200000 GHz Avg Type: Log-Pwr TRACE 1 2 3 4 5 6</p> <p style="font-size: x-small; margin: 0;">PNO: Wide → Trig: Free Run #Atten: 30 dB AvgHold: 10/10 TYPE M W W W W W W W W</p> <p style="font-size: x-small; margin: 0;">IFGain:Low DET P P P P P P P</p> <p style="font-size: small; margin: 0;">Ref Offset 8.24 dB Mkr1 2.401 904 0 GHz</p> <p style="font-size: small; margin: 0;">Ref 20.00 dBm -17.791 dBm</p> <p style="font-size: small; margin: 0;">10 dB/div Log</p> <p style="font-size: small; margin: 0;">Center 2.4020000 GHz Span 1.500 MHz</p> <p style="font-size: small; margin: 0;">#Res BW 3.0 kHz #VBW 10 kHz Sweep 158.2 ms (1001 pts)</p> <p style="font-size: x-small; margin: 0;">MSG STATUS</p> </div> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr><td>Frequency</td><td></td></tr> <tr><td>Auto Tune</td><td></td></tr> <tr><td>Center Freq</td><td>2.402000000 GHz</td></tr> <tr><td>Start Freq</td><td>2.401250000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.402750000 GHz</td></tr> <tr><td>CF Step</td><td>150.000 kHz</td></tr> <tr><td>Auto</td><td>Man</td></tr> <tr><td>Freq Offset</td><td>0 Hz</td></tr> </table>	Frequency		Auto Tune		Center Freq	2.402000000 GHz	Start Freq	2.401250000 GHz	Stop Freq	2.402750000 GHz	CF Step	150.000 kHz	Auto	Man	Freq Offset	0 Hz
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B.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6965	≥0.5	PASS
BT LE	MCH	0.6776	≥0.5	PASS
BT LE	HCH	0.6850	≥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 09:42:38 AM May 25, 2019</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;"> <p style="text-align: right; margin: 0;">Mkr1 2.4019963 GHz</p> <p style="text-align: right; margin: 0;">-3.2027 dBm</p> </div> <p style="margin: 0;">Center 2.402 GHz Span 3 MHz</p> <p style="margin: 0;">#Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Occupied Bandwidth</td> <td style="width: 50%;">Total Power</td> <td style="width: 50%;">3.91 dBm</td> </tr> <tr> <td style="text-align: center;">1.0495 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>6.529 kHz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>696.5 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: 0;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	3.91 dBm	1.0495 MHz			Transmit Freq Error	6.529 kHz	OBW Power	x dB Bandwidth	696.5 kHz	x dB			99.00 %			-6.00 dB
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MCH	<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 09:46:26 AM May 25, 2019</p> <p style="margin: 0;">Center Freq: 2.440000000 GHz Center Freq: 2.440000000 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;"> <p style="text-align: right; margin: 0;">Mkr1 2.4399918 GHz</p> <p style="text-align: right; margin: 0;">-1.7612 dBm</p> </div> <p style="margin: 0;">Center 2.44 GHz Span 3 MHz</p> <p style="margin: 0;">#Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Occupied Bandwidth</td> <td style="width: 50%;">Total Power</td> <td style="width: 50%;">5.26 dBm</td> </tr> <tr> <td style="text-align: center;">1.0468 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>5.927 kHz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>677.6 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: 0;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	5.26 dBm	1.0468 MHz			Transmit Freq Error	5.927 kHz	OBW Power	x dB Bandwidth	677.6 kHz	x dB			99.00 %			-6.00 dB
Occupied Bandwidth	Total Power	5.26 dBm																	
1.0468 MHz																			
Transmit Freq Error	5.927 kHz	OBW Power																	
x dB Bandwidth	677.6 kHz	x dB																	
		99.00 %																	
		-6.00 dB																	

HCH

Agilent Spectrum Analyzer - Occupied BW

RL	RF	50 Ω	AC	SENSE:PULSE	ALIGN:AUTO	09:49:17 AM May 25, 2019
Center Freq 2.480000000 GHz			Center Freq: 2.480000000 GHz		Radio Std: None	
			Trig: Free Run		AvgHold>1/1	
			#IFGain:Low		#Atten: 30 dB	
			Radio Device: BTS			

10 dB/div	Ref Offset 8.24 dB	Mkr1 2.4799936 GHz
Log	Ref 20.00 dBm	-2.3817 dBm

Center 2.48 GHz	#VBW 300 kHz	Span 3 MHz
#Res BW 100 kHz		Sweep 1.067 ms

Occupied Bandwidth	Total Power	4.69 dBm
1.0439 MHz		
Transmit Freq Error	5.338 kHz	OBW Power
x dB Bandwidth	685.0 kHz	x dB
		99.00 %
		-6.00 dB

Frequency	2.480000000 GHz
Center Freq	2.480000000 GHz
CF Step	300.000 kHz
Auto	Man
Freq Offset	0 Hz

MSG
STATUS

B.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-3.066	-44.884	-23.066	PASS
BT LE	MCH	-1.809	-44.959	-21.809	PASS
BT LE	HCH	-2.389	-43.993	-22.389	PASS

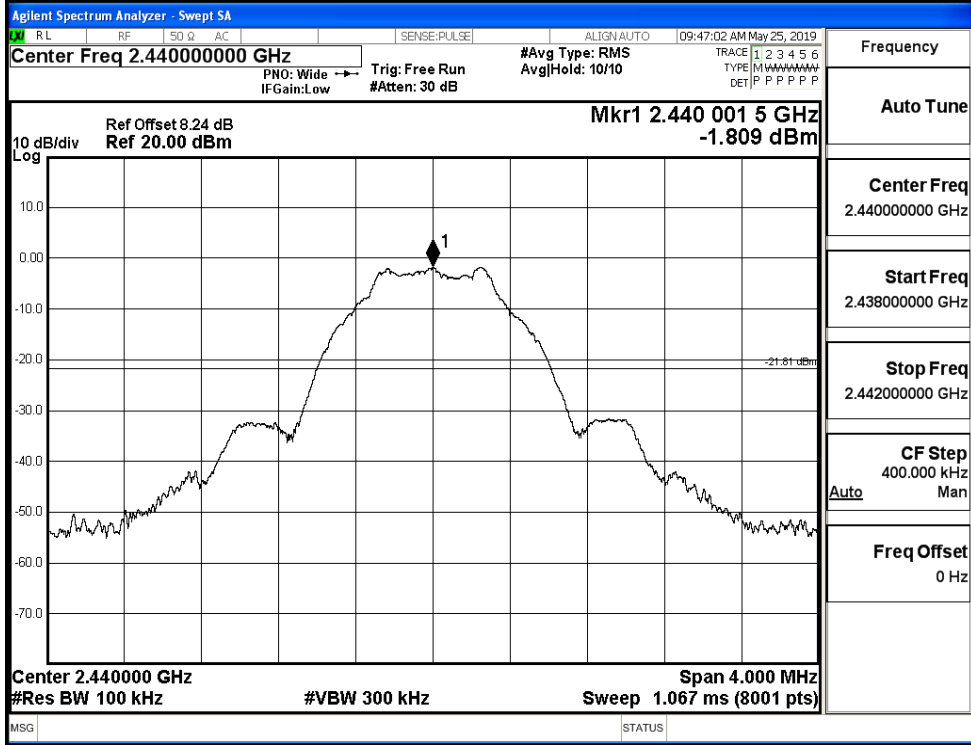
BT LE_LCH_Graphs

Pref/BT LE/LCH	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.40200000 GHz Ref Offset 8.24 dB Ref 20.00 dBm Mkr1 2.4019955 GHz -3.066 dBm 10 dB/div Log Center 2.402000 GHz Span 4.000 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms (8001 pts)</p>	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
Puw/BT LE/LCH	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 12.51500000 GHz Ref Offset 8.24 dB Ref 20.00 dBm Mkr2 24.972 GHz -44.884 dBm 10 dB/div Log Start 30 MHz Stop 25.00 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.387 s (8001 pts)</p>	Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.0000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Man Freq Offset 0 Hz

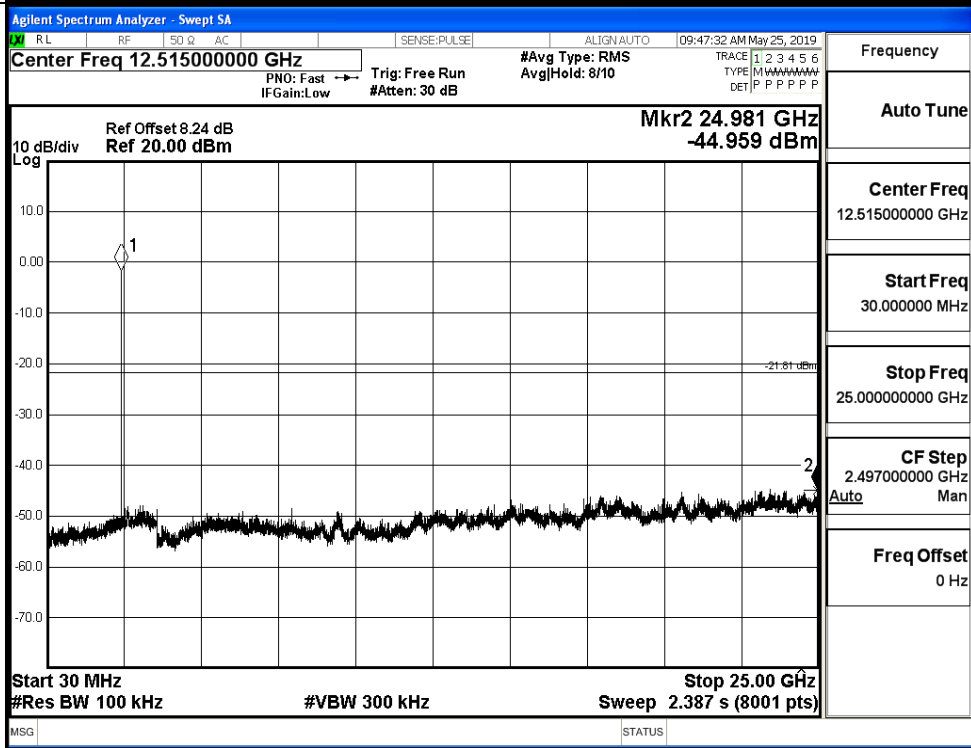
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BT LE_MCH_Graphs

Pref/BT LE/MCH

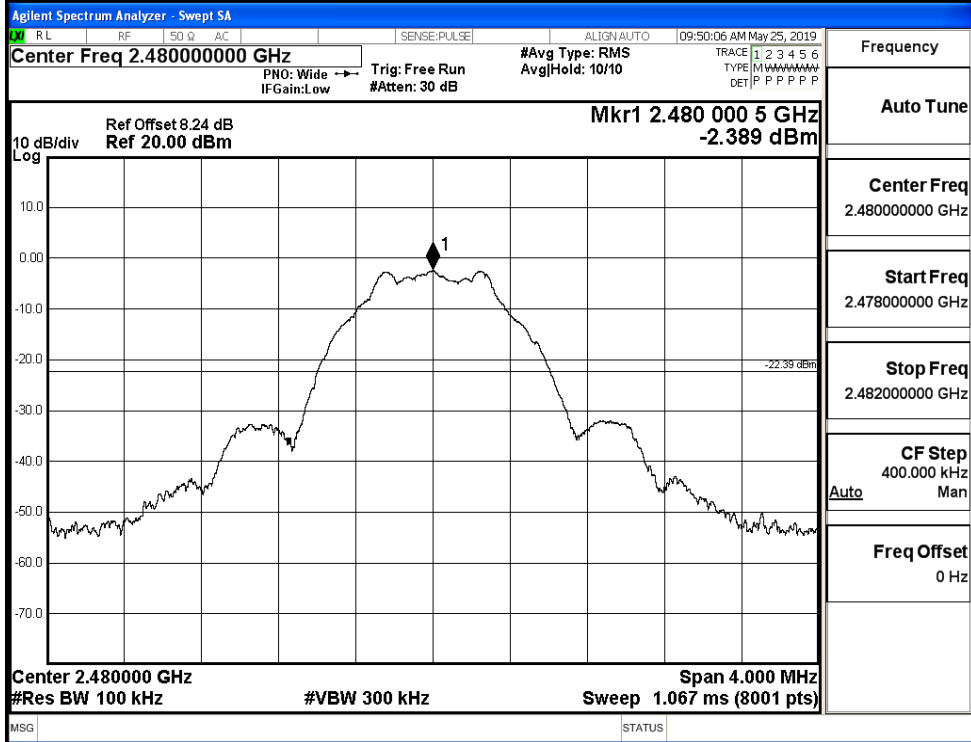


Puw/BT LE/MCH

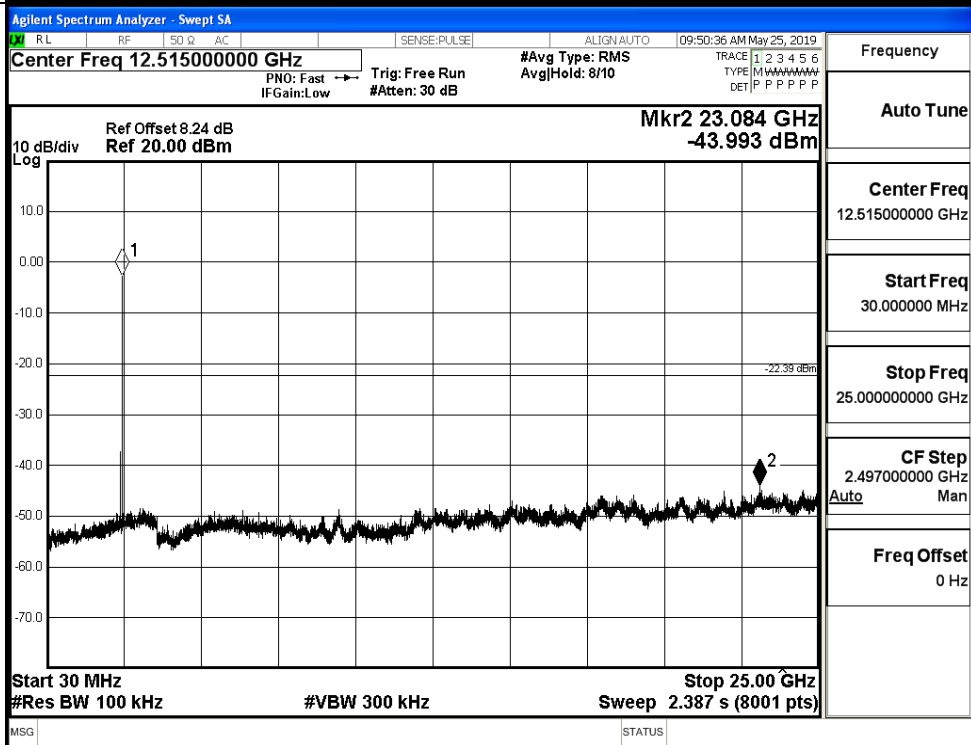


BT LE_HCH_Graphs

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	-2.913	-50.124	-22.91	PASS
BT LE	HCH	-2.250	-48.913	-22.25	PASS

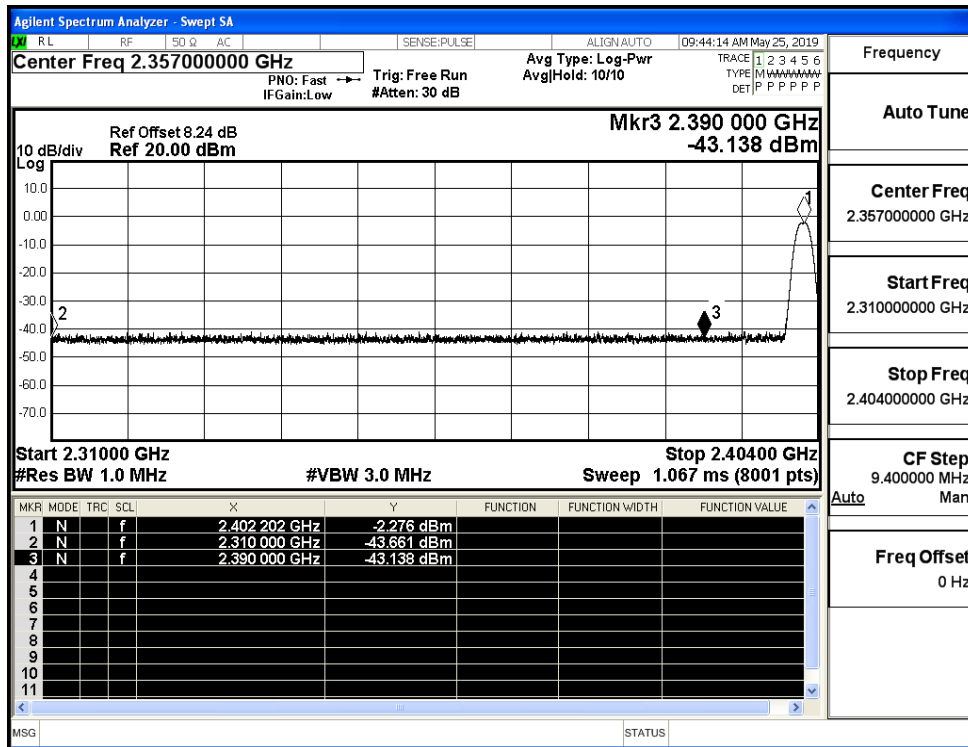
Test Graphs

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>

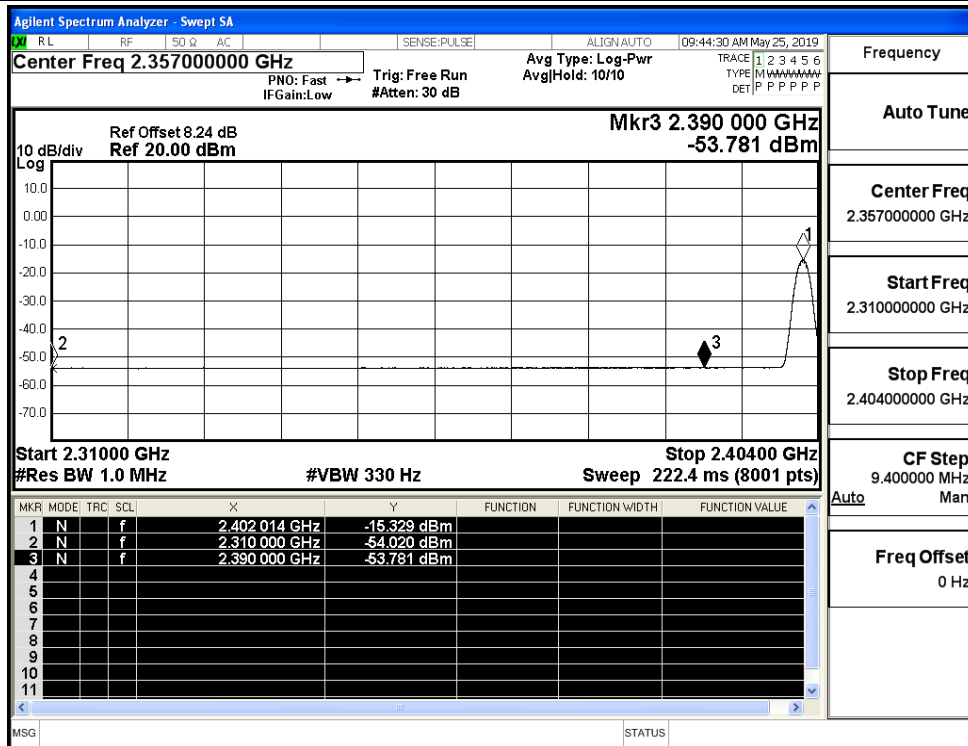
B.7 Restrict-band band-edge measurements

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	-43.66	2.0	0	53.60	PEAK	74	PASS
		Ant1	2310.0	-54.02	2.0	0	43.24	AV	54	PASS
		Ant1	2390.0	-43.14	2.0	0	54.12	PEAK	74	PASS
		Ant1	2390.0	-53.78	2.0	0	43.48	AV	54	PASS
	2480	Ant1	2483.5	-43.53	2.0	0	53.73	PEAK	74	PASS
		Ant1	2483.5	-53.40	2.0	0	43.85	AV	54	PASS
		Ant1	2500.0	-43.69	2.0	0	53.57	PEAK	74	PASS
		Ant1	2500.0	-53.37	2.0	0	43.89	AV	54	PASS

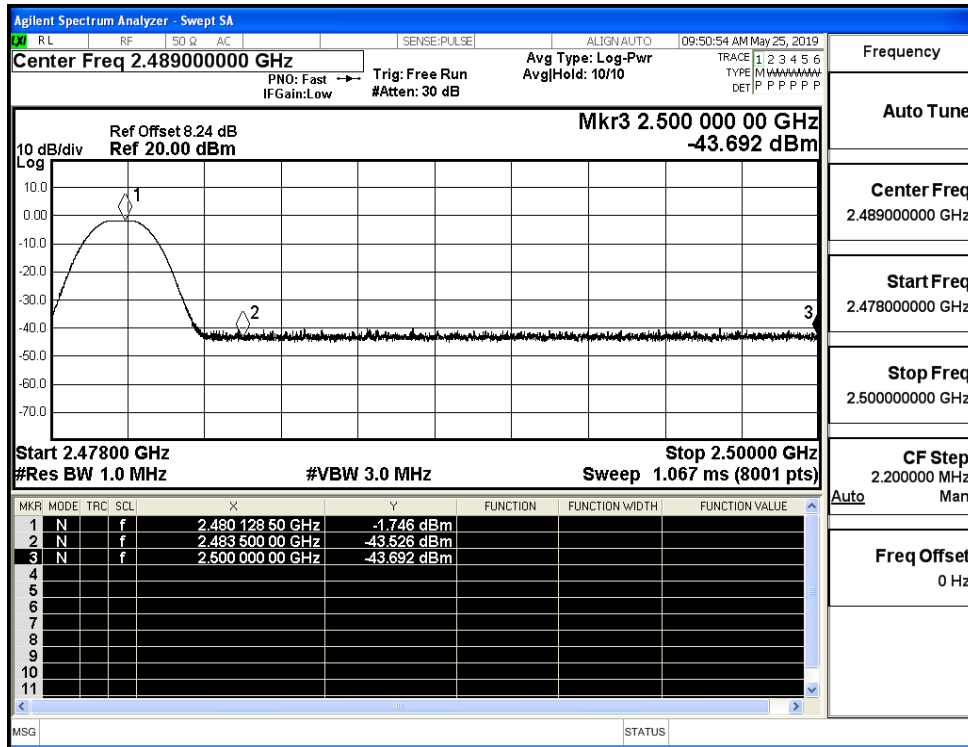
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

