

Appendix B

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

Product Name: TABLET

Trade Mark: armourphone

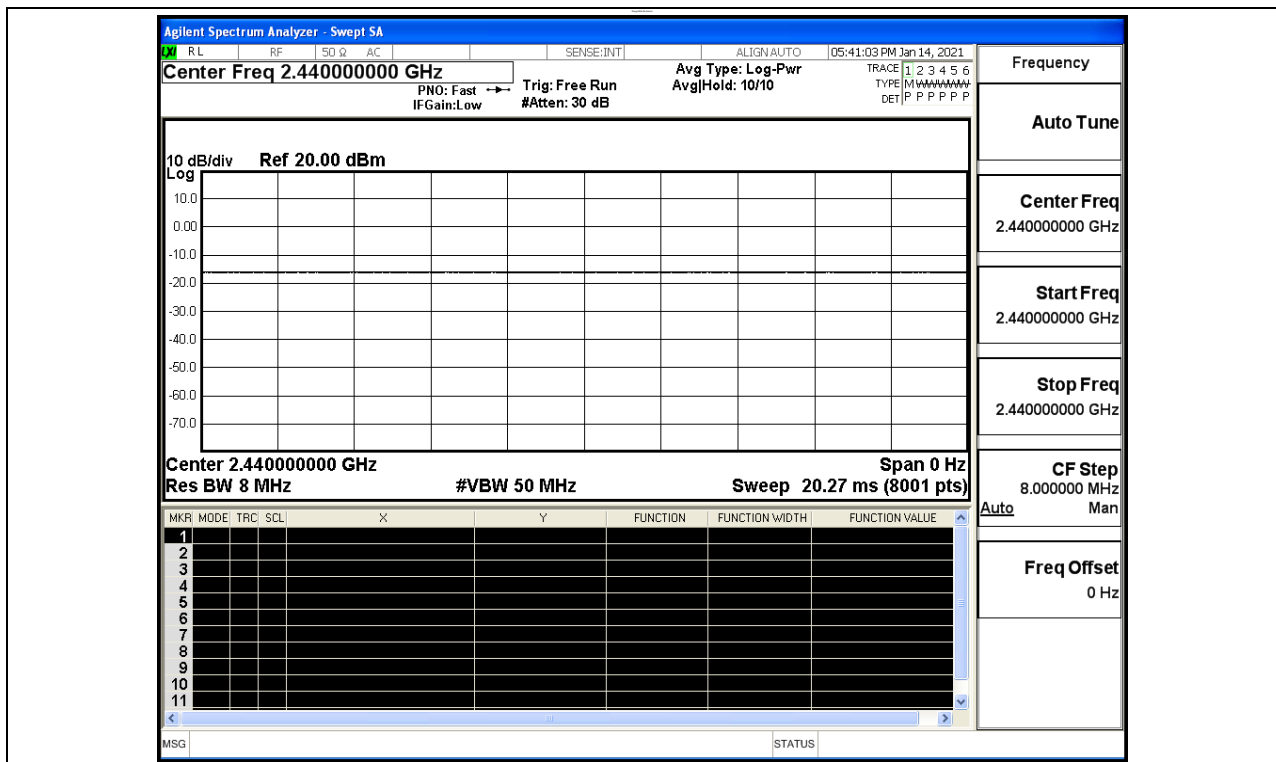
Test Model: TB8

Environmental Conditions

Temperature:	22.9° C
Relative Humidity:	53.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

B.1 Duty Cycle

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

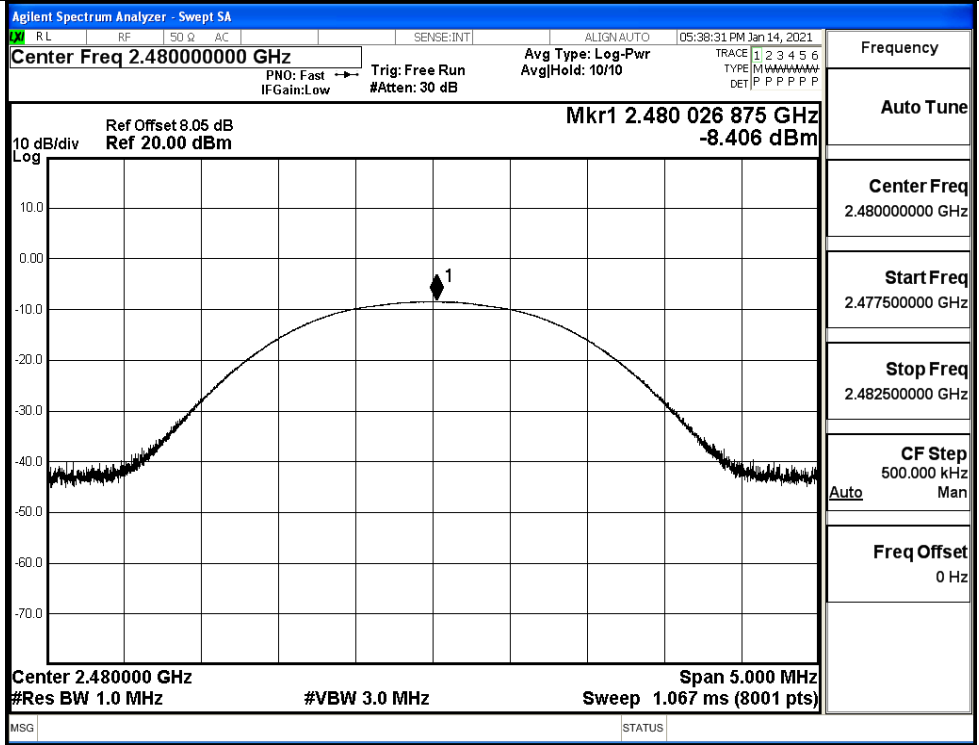


B.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	-8.004	30	PASS
BT LE	MCH	-8.405	30	PASS
BT LE	HCH	-8.406	30	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:INT ALIGN:AUTO 05:34:16 PM Jan 14, 2021</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: Fast Trig: Free Run AvgHold: 10/10 TYPE M W M M M M M M M M</p> <p style="font-size: x-small; margin: 0;">IFGain:Low #Atten: 30 dB DET P P P P P P P</p> <div style="display: flex; justify-content: space-between; font-size: small;"> Ref Offset 8.05 dB Mkr1 2.402 006 875 GHz </div> <div style="display: flex; justify-content: space-between; font-size: small;"> Ref 20.00 dBm -8.004 dBm </div> <div style="display: flex; justify-content: space-between; font-size: x-small; margin-top: 5px;"> Center 2.402000 GHz Span 5.000 MHz </div> <div style="display: flex; justify-content: space-between; font-size: x-small; margin-top: 0;"> #Res BW 1.0 MHz #VBW 3.0 MHz Sweep 1.067 ms (8001 pts) </div> <p style="font-size: x-small; margin-top: 5px;">MSG STATUS</p> </div> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr><td style="text-align: center;">Frequency</td></tr> <tr><td style="text-align: center;">Auto Tune</td></tr> <tr><td style="text-align: center;">Center Freq 2.402000000 GHz</td></tr> <tr><td style="text-align: center;">Start Freq 2.399500000 GHz</td></tr> <tr><td style="text-align: center;">Stop Freq 2.404500000 GHz</td></tr> <tr><td style="text-align: center;">CF Step 500.000 kHz</td></tr> <tr><td style="text-align: center;">Auto</td></tr> <tr><td style="text-align: center;">Man</td></tr> <tr><td style="text-align: center;">Freq Offset 0 Hz</td></tr> </table>	Frequency	Auto Tune	Center Freq 2.402000000 GHz	Start Freq 2.399500000 GHz	Stop Freq 2.404500000 GHz	CF Step 500.000 kHz	Auto	Man	Freq Offset 0 Hz
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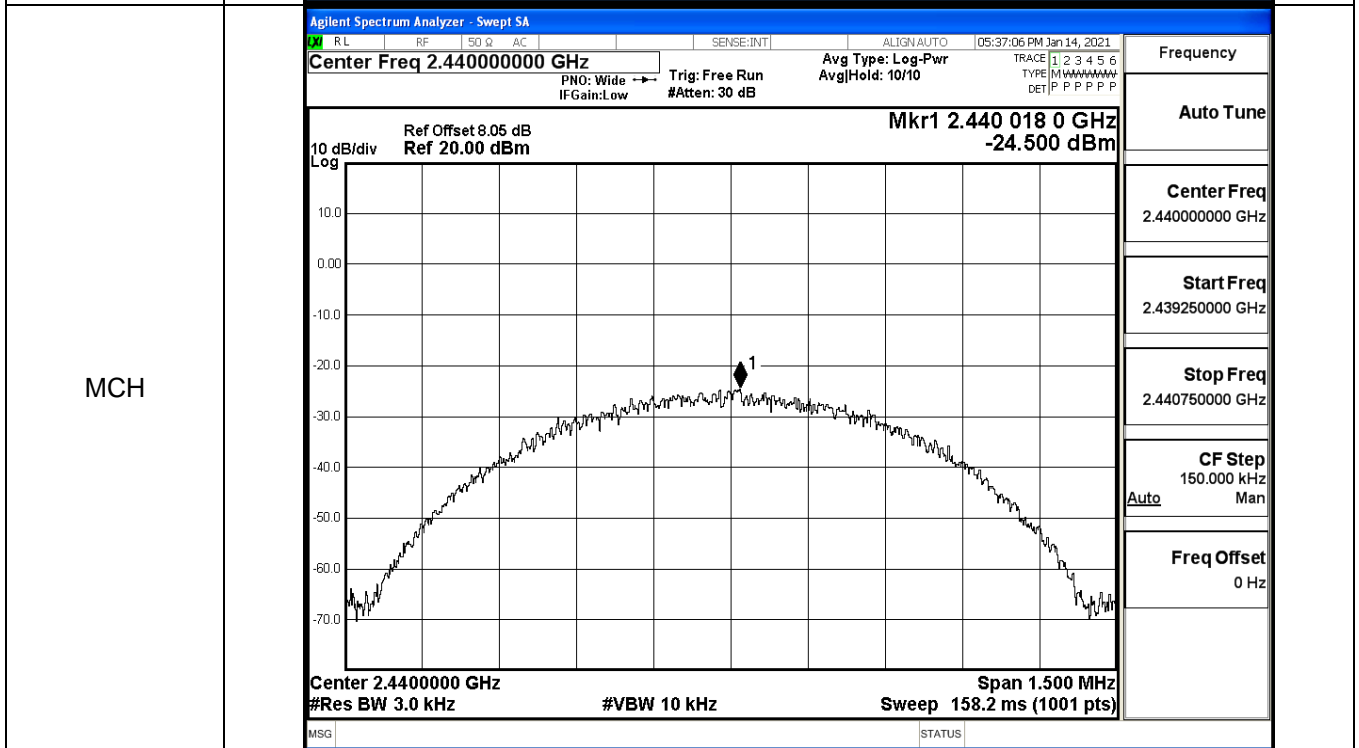
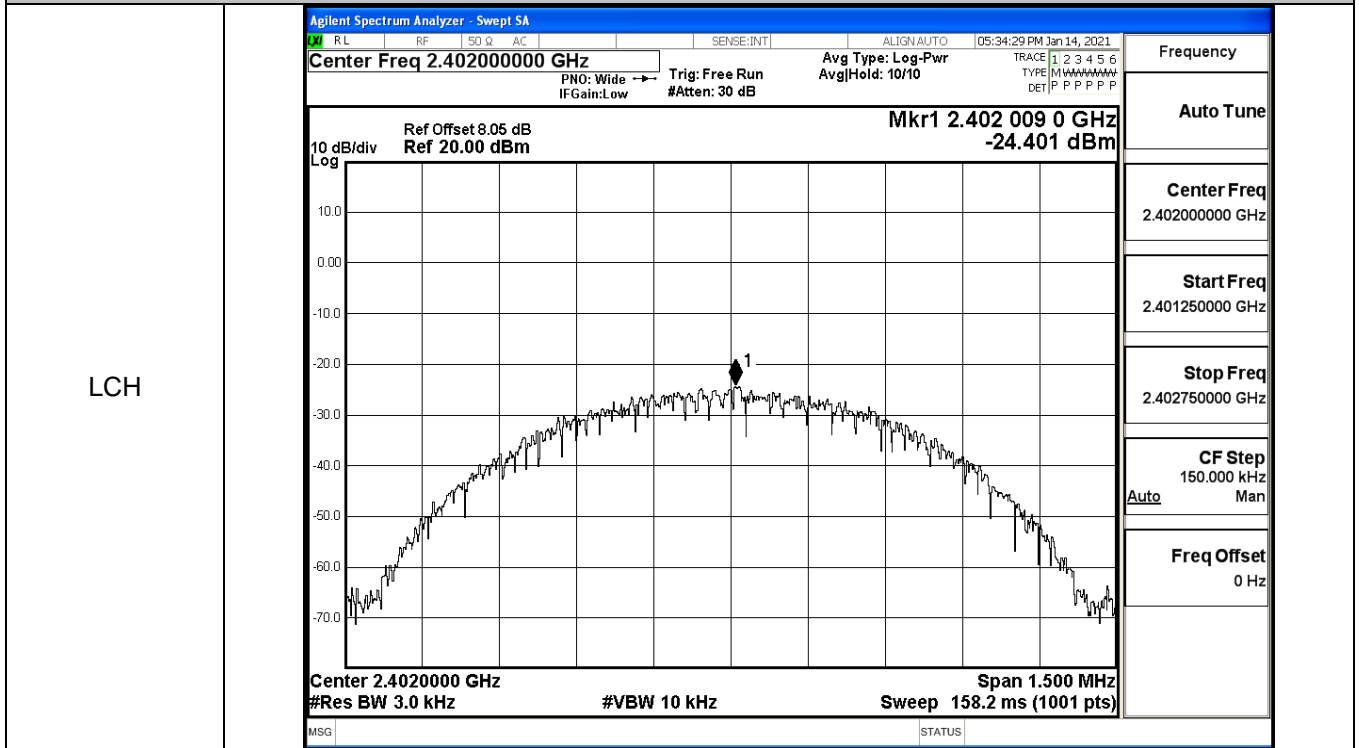
HCH



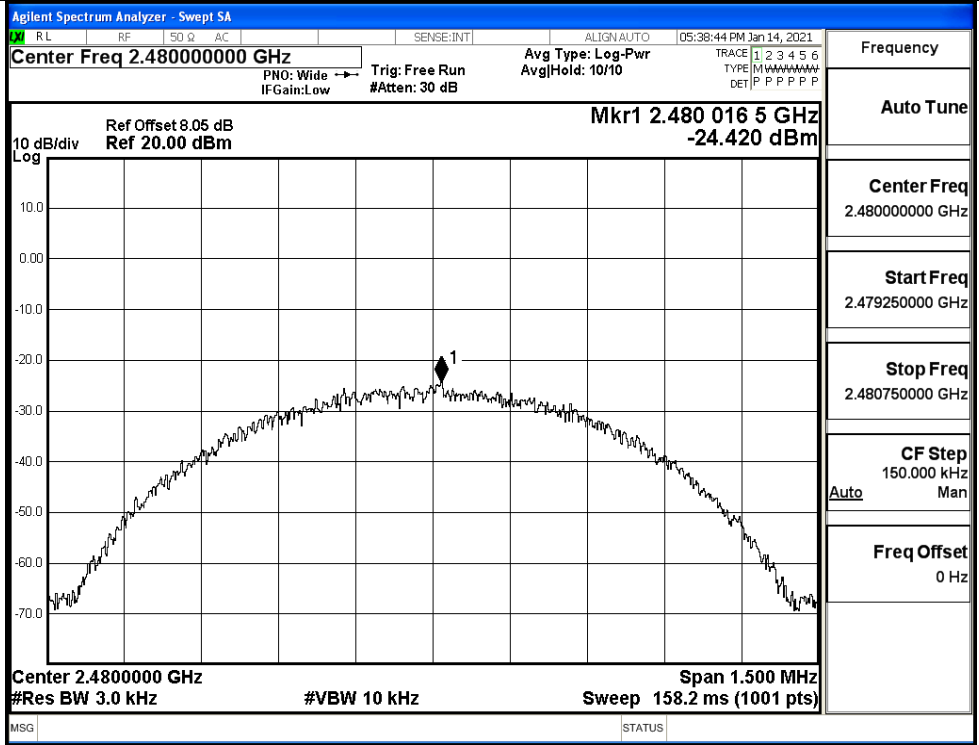
B.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-24.401	8	PASS
BT LE	MCH	-24.500	8	PASS
BT LE	HCH	-24.420	8	PASS

Test Graphs



HCH



B.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6381	≥0.5	PASS
BT LE	MCH	0.6422	≥0.5	PASS
BT LE	HCH	0.6463	≥0.5	PASS

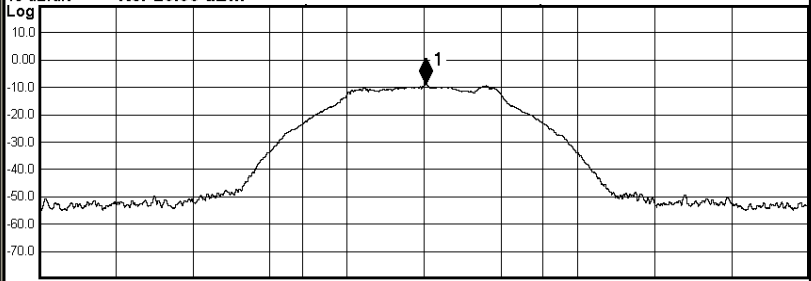
Test Graphs																			
LCH	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: small; margin: 0;">RL RF 50 Ω AC SENSE:INT ALIGN:AUTO 05:34:05 PM Jan 14, 2021</p> <p style="margin: 0;">Center 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 2.4019925 GHz -8.4241 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 style="width: 100%; font-size: x-small; margin-top: 5px;"> <tr> <td style="text-align: center;">Occupied Bandwidth</td> <td style="text-align: center;">Total Power</td> <td style="text-align: center;">-2.06 dBm</td> </tr> <tr> <td style="text-align: center;">927.84 kHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>573 Hz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>638.1 kHz</td> <td>x dB</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">99.00 %</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin-top: 5px;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	-2.06 dBm	927.84 kHz			Transmit Freq Error	573 Hz	OBW Power	x dB Bandwidth	638.1 kHz	x dB			99.00 %			-6.00 dB
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HCH

Agilent Spectrum Analyzer - Occupied BW

RL	RF	50 Ω	AC	SENSE:INT	ALIGN:AUTO	05:38:20 PM Jan 14, 2021
Center Freq 2.48000000 GHz				Center Freq: 2.48000000 GHz	Radio Std: None	Frequency
				Trig: Free Run	AvgHold>1/1	
				#IFGain:Low	#Atten: 30 dB	Radio Device: BTS

10 dB/div	Ref Offset 8.05 dB	Mkr1 2.4800079 GHz
Log	Ref 20.00 dBm	-9.0124 dBm



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

Occupied Bandwidth	Total Power	-2.49 dBm
932.22 kHz		
Transmit Freq Error	-4.923 kHz	OBW Power
x dB Bandwidth	646.3 kHz	x dB
		99.00 %
		-6.00 dB

Center Freq 2.48000000 GHz
CF Step 300.000 kHz Auto Man
Freq Offset 0 Hz

B.5 RF Conducted Spurious Emissions

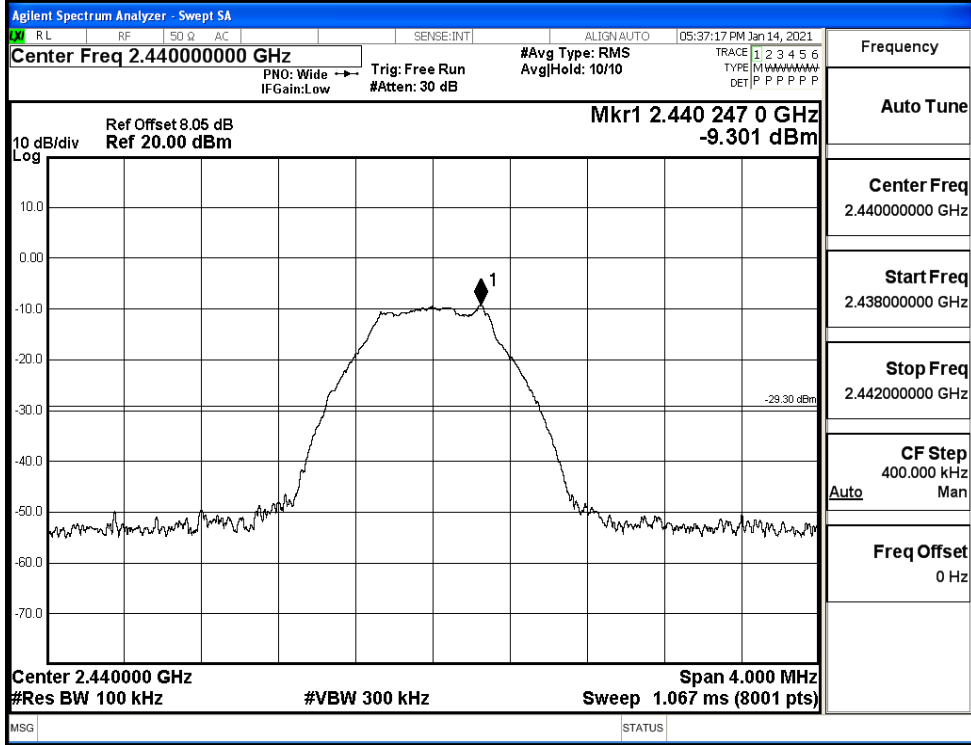
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-8.442	-36.751	-28.442	PASS
BT LE	MCH	-9.301	-37.529	-29.301	PASS
BT LE	HCH	-9.503	-37.585	-29.503	PASS

BT LE_LCH_Graphs

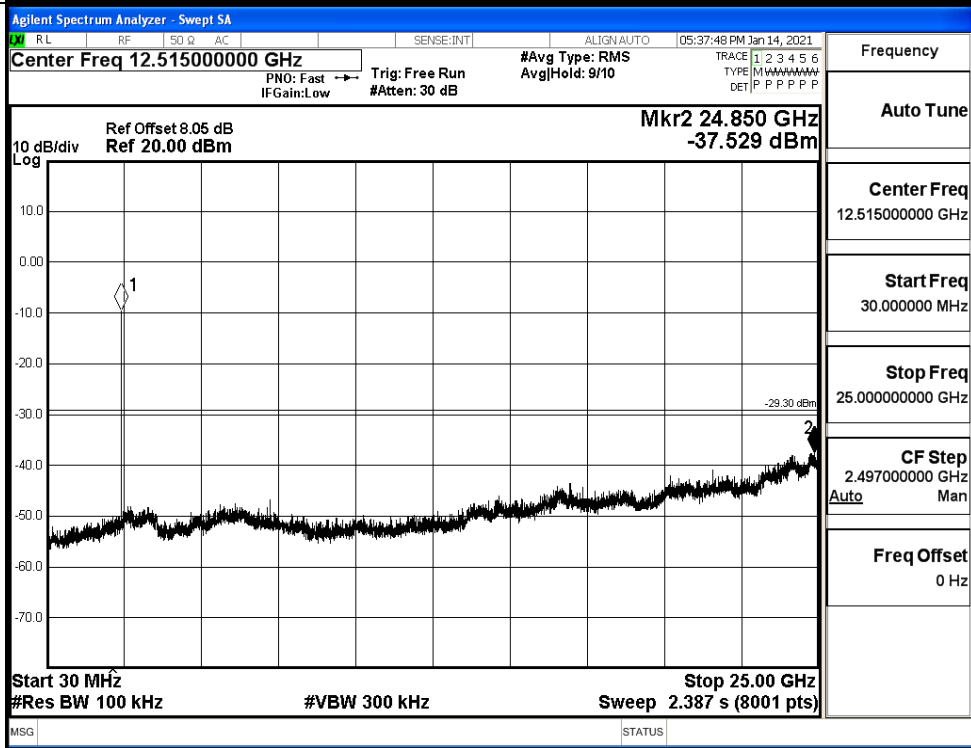
Pref/BT LE/LCH		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Frequency</td></tr> <tr><td>Auto Tune</td></tr> <tr><td>Center Freq 2.402000000 GHz</td></tr> <tr><td>Start Freq 2.400000000 GHz</td></tr> <tr><td>Stop Freq 2.404000000 GHz</td></tr> <tr><td>CF Step 400.000 kHz Auto 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 Auto Man	Freq Offset 0 Hz
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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 30.000000 MHz</td></tr> <tr><td>Stop Freq 25.000000000 GHz</td></tr> <tr><td>CF Step 2.497000000 GHz Auto Man</td></tr> <tr><td>Freq Offset 0 Hz</td></tr> </table>	Frequency	Auto Tune	Center Freq 12.515000000 GHz	Start Freq 30.000000 MHz	Stop Freq 25.000000000 GHz	CF Step 2.497000000 GHz Auto Man	Freq Offset 0 Hz
Frequency									
Auto Tune									
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Start Freq 30.000000 MHz									
Stop Freq 25.000000000 GHz									
CF Step 2.497000000 GHz Auto Man									
Freq Offset 0 Hz									

BT LE_MCH_Graphs

Pref/BT LE/MCH

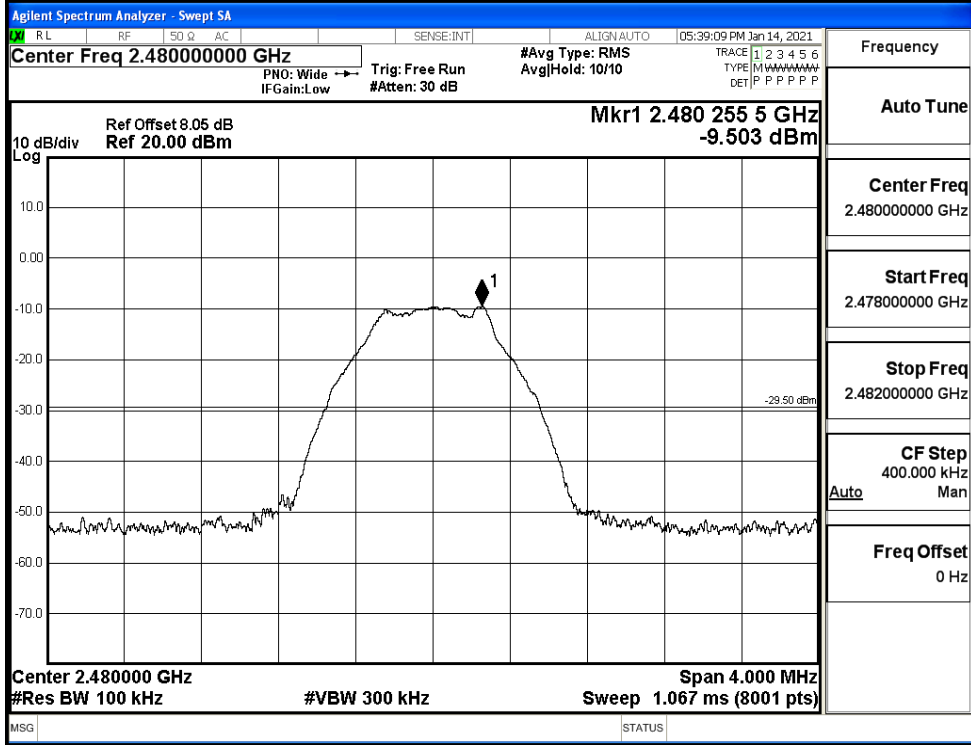


Puw/BT LE/MCH

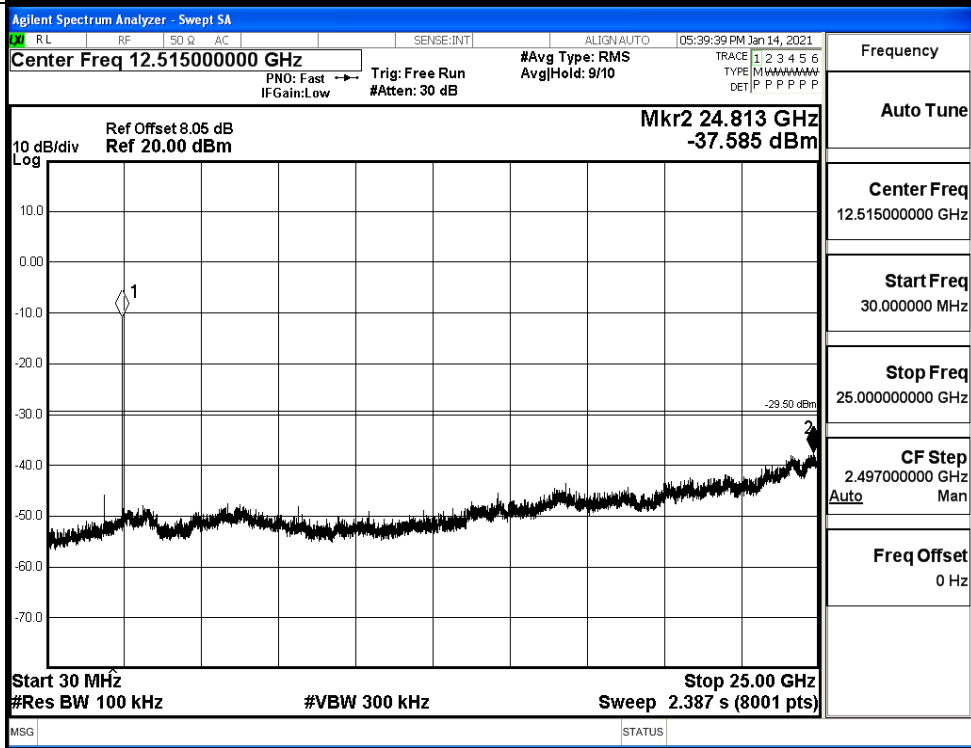


BT LE_HCH_Graphs

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	-8.594	-49.788	-28.59	PASS
BT LE	HCH	-8.825	-49.386	-28.83	PASS

Test Graphs

LCH

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.401 991 GHz	-8.594 dBm			
2	N	f		2.400 000 GHz	-53.212 dBm			
3	N	f		2.390 000 GHz	-53.152 dBm			
4	N	f		2.370 630 GHz	-49.788 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

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.479 999 25 GHz	-8.825 dBm			
2	N	f		2.483 500 00 GHz	-50.700 dBm			
3	N	f		2.500 000 00 GHz	-51.977 dBm			
4	N	f		2.495 212 25 GHz	-49.386 dBm			

Frequency

Auto Tune

Center Freq
2.48900000 GHz

Start Freq
2.47800000 GHz

Stop Freq
2.50000000 GHz

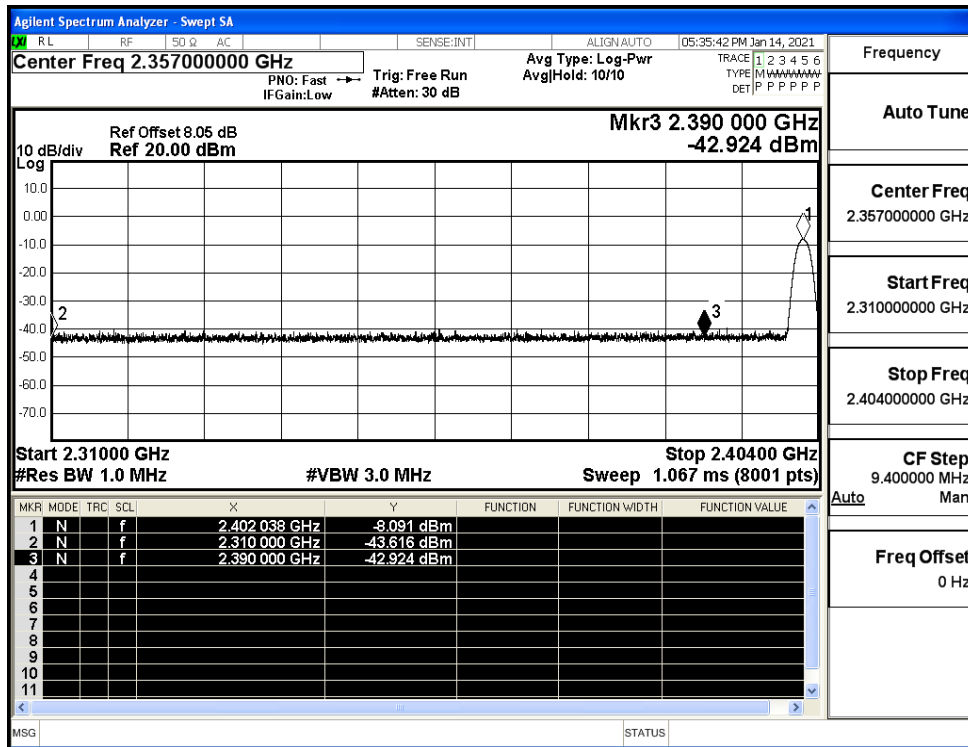
CF Step
2.200000 MHz

Freq Offset
0 Hz

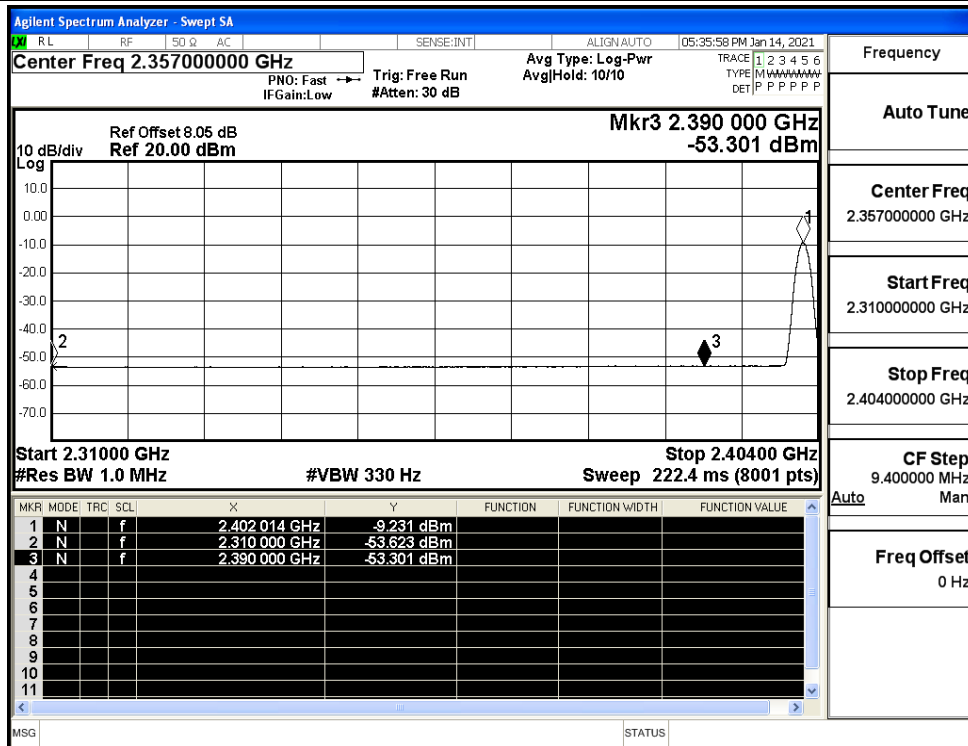
B.7 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
BT LE	2402	Ant1	2310.0	-43.62	2.0	0	53.61	PEAK	74	PASS
		Ant1	2310.0	-53.62	2.0	0	43.61	AV	54	PASS
		Ant1	2390.0	-42.92	2.0	0	54.31	PEAK	74	PASS
		Ant1	2390.0	-53.30	2.0	0	43.93	AV	54	PASS
	2480	Ant1	2483.5	-42.09	2.0	0	55.14	PEAK	74	PASS
		Ant1	2483.5	-52.75	2.0	0	44.48	AV	54	PASS
		Ant1	2500.0	-41.62	2.0	0	55.61	PEAK	74	PASS
		Ant1	2500.0	-52.60	2.0	0	44.63	AV	54	PASS

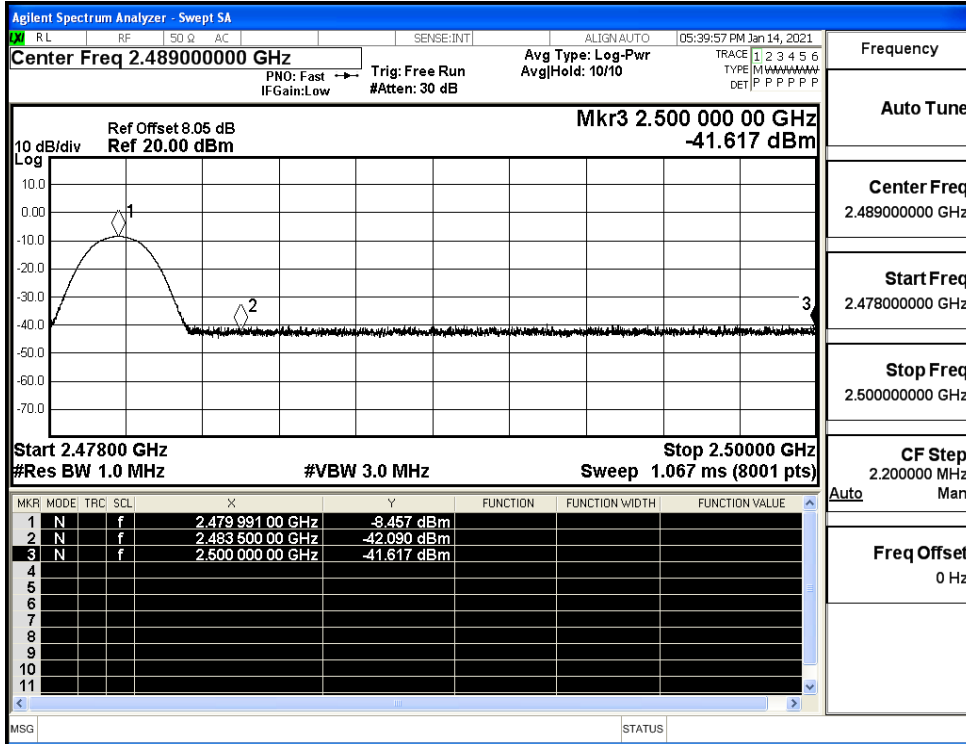
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

