

Appendix B

RF Test Data for BT V5.0(DTS) (Conducted Measurement)

Product Name: Smart Brightness Thermometer

Trade Mark: **SWE SWE**®, 

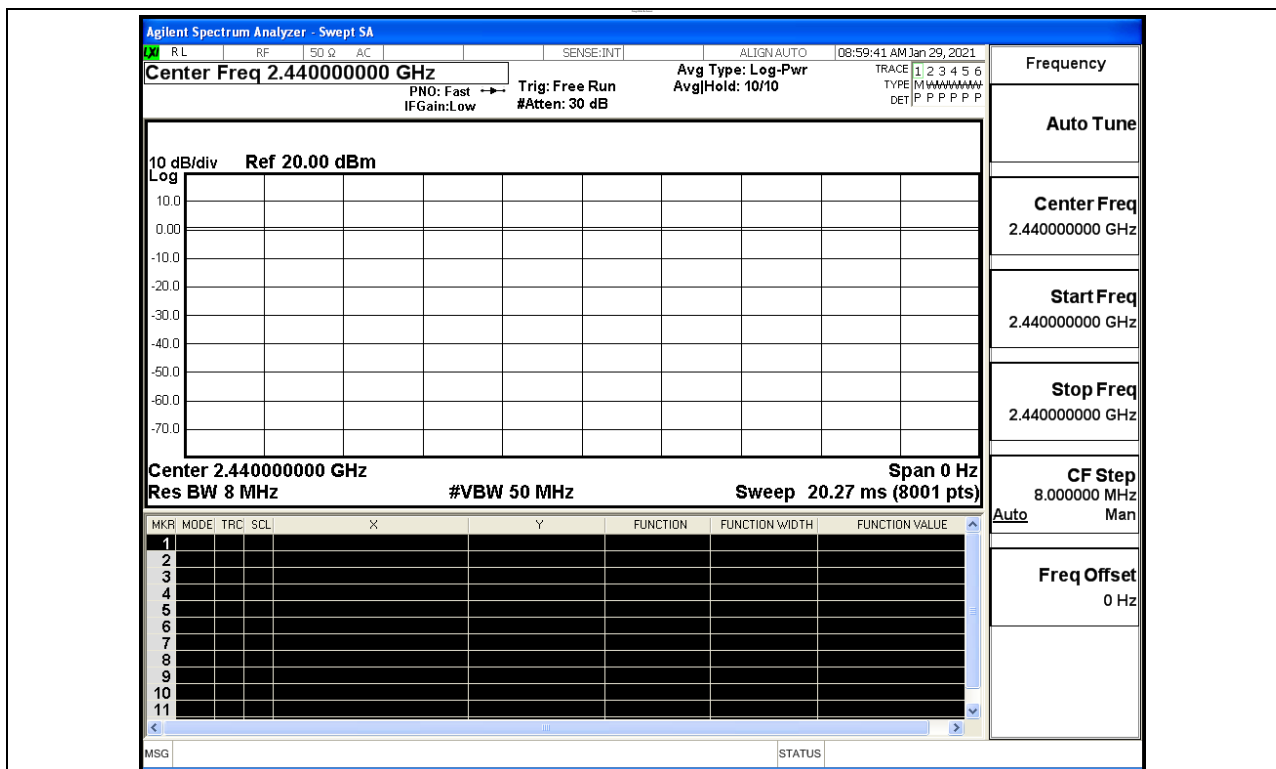
Test Model: XZ-WSD02

Environmental Conditions

Temperature:	24.6 ° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ben Jin
Supervised by:	Li Huan

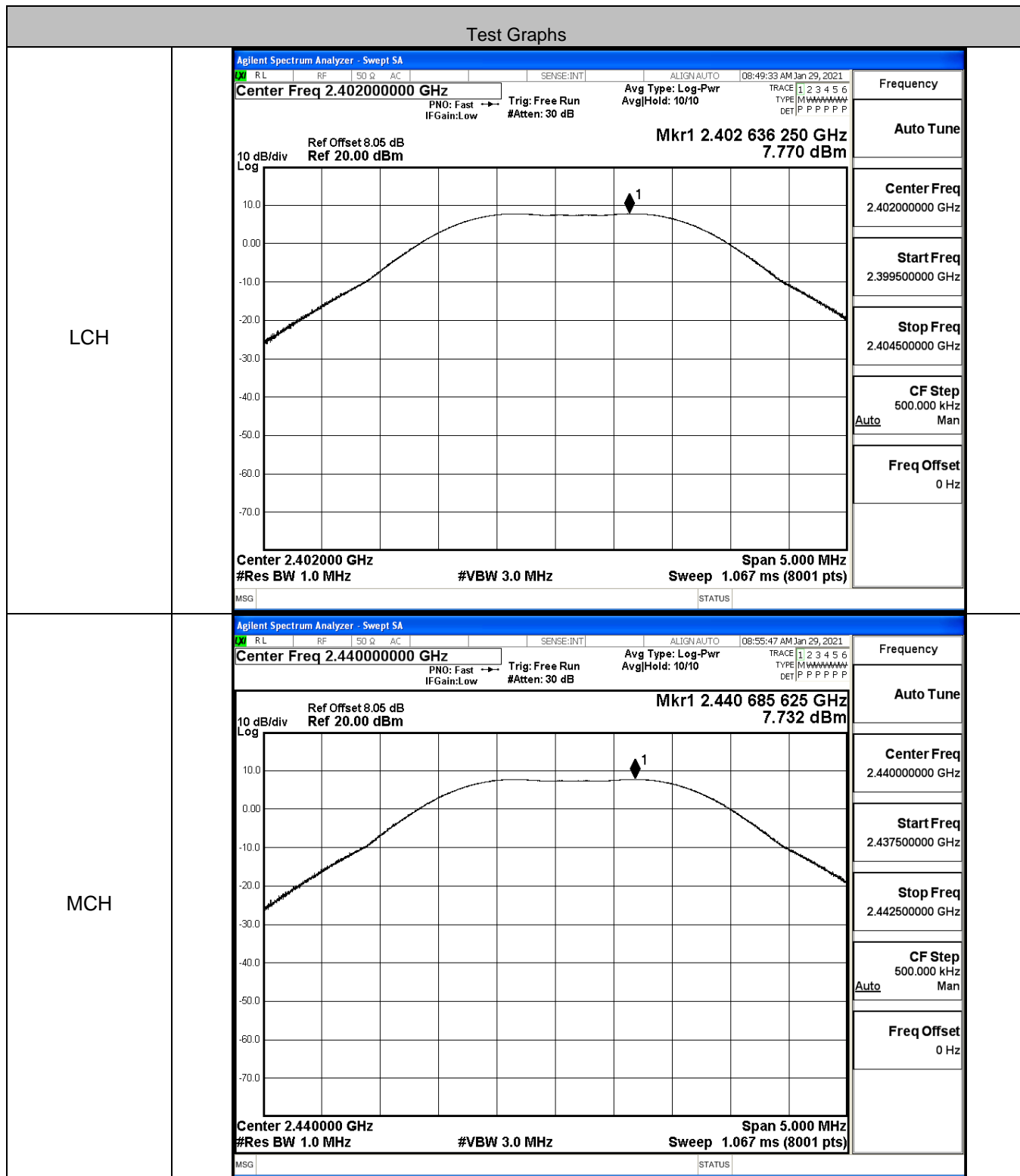
B.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
BT 2LE	2440	Ant1	100	PASS

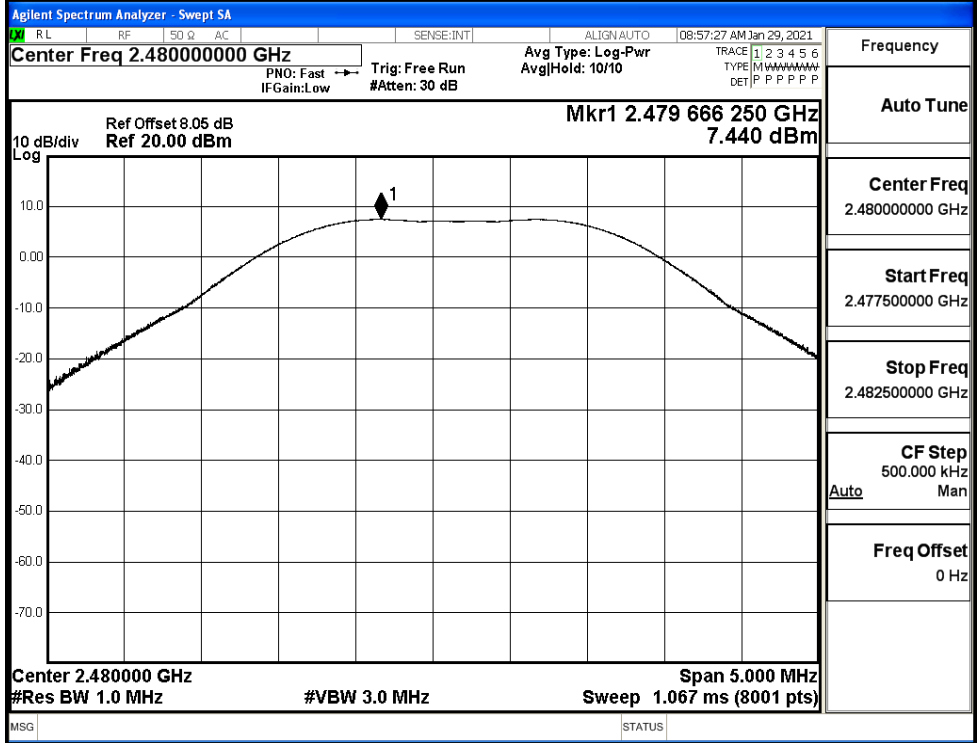


B.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	7.77	30	PASS
BT LE	MCH	7.732	30	PASS
BT LE	HCH	7.44	30	PASS



HCH



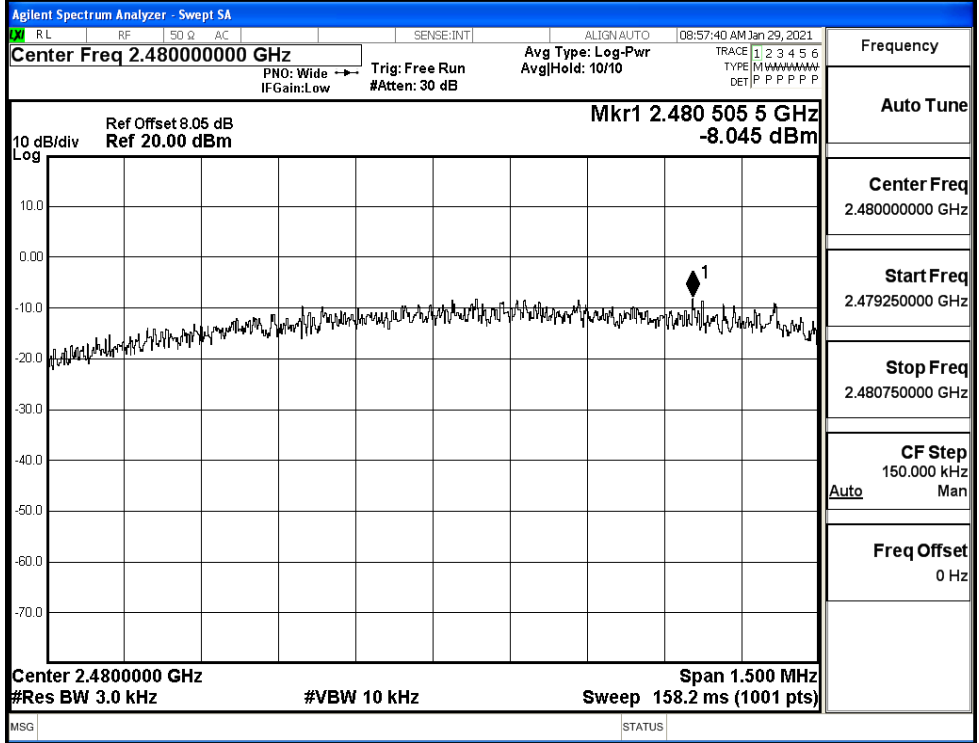
B.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-7.654	8	PASS
BT LE	MCH	-8.131	8	PASS
BT LE	HCH	-8.045	8	PASS

Test Graphs

LCH		<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.40200000 GHz</p> <p>Mkr1 2.402 270 0 GHz -7.654 dBm</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>10 dB/div Log</p> <p>Center 2.4020000 GHz #Res BW 3.0 kHz</p> <p>#VBW 10 kHz</p> <p>Span 1.500 MHz Sweep 158.2 ms (1001 pts)</p> <p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.40200000 GHz</p> <p>Start Freq 2.401250000 GHz</p> <p>Stop Freq 2.402750000 GHz</p> <p>CF Step 150.000 kHz Auto Man</p> <p>Freq Offset 0 Hz</p>
MCH		<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.44000000 GHz</p> <p>Mkr1 2.440 364 5 GHz -8.131 dBm</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>10 dB/div Log</p> <p>Center 2.4400000 GHz #Res BW 3.0 kHz</p> <p>#VBW 10 kHz</p> <p>Span 1.500 MHz Sweep 158.2 ms (1001 pts)</p> <p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.44000000 GHz</p> <p>Start Freq 2.439250000 GHz</p> <p>Stop Freq 2.440750000 GHz</p> <p>CF Step 150.000 kHz Auto Man</p> <p>Freq Offset 0 Hz</p>

HCH



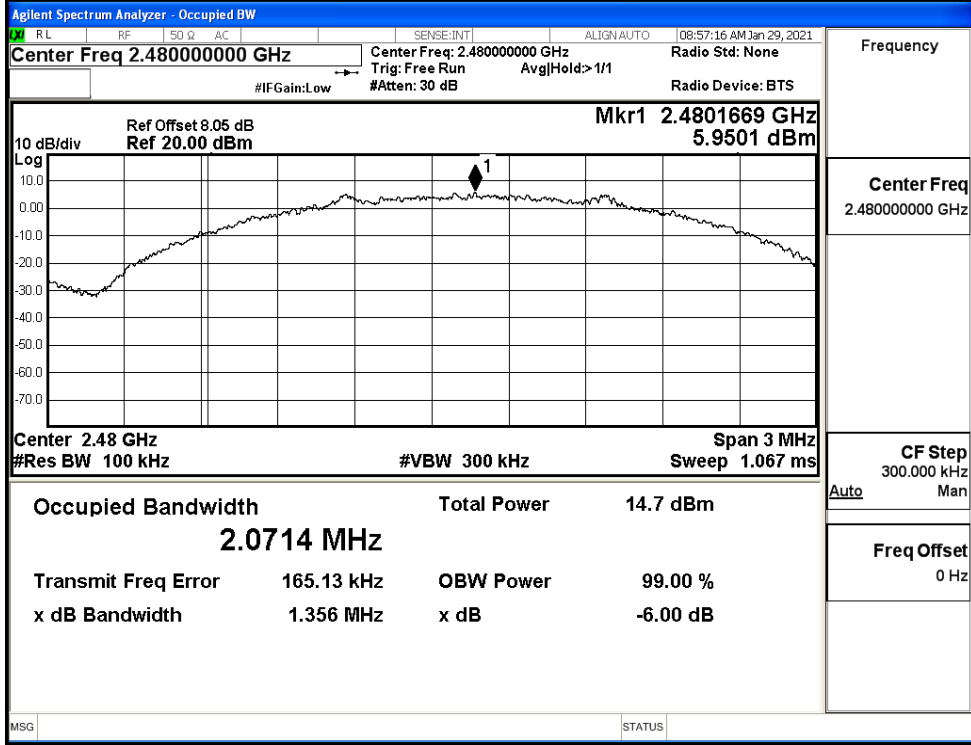
B.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	1.385	≥0.5	PASS
BT LE	MCH	1.449	≥0.5	PASS
BT LE	HCH	1.356	≥0.5	PASS

Test Graphs

LCH	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Center Freq: 2.40200000 GHz</p> <p>Mkr1 2.4026776 GHz</p> <p>2.0538 MHz</p> <p>15.2 dBm</p> <p>1.385 MHz</p>	<p>Frequency</p> <p>Center Freq 2.40200000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Freq Offset 0 Hz</p>
	<p>MSG</p> <p>STATUS</p>	<p>MSG</p> <p>STATUS</p>
MCH	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.44000000 GHz</p> <p>Center Freq: 2.44000000 GHz</p> <p>Mkr1 2.4401316 GHz</p> <p>2.0782 MHz</p> <p>15.1 dBm</p> <p>1.449 MHz</p>	<p>Frequency</p> <p>Center Freq 2.44000000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Freq Offset 0 Hz</p>
	<p>MSG</p> <p>STATUS</p>	<p>MSG</p> <p>STATUS</p>

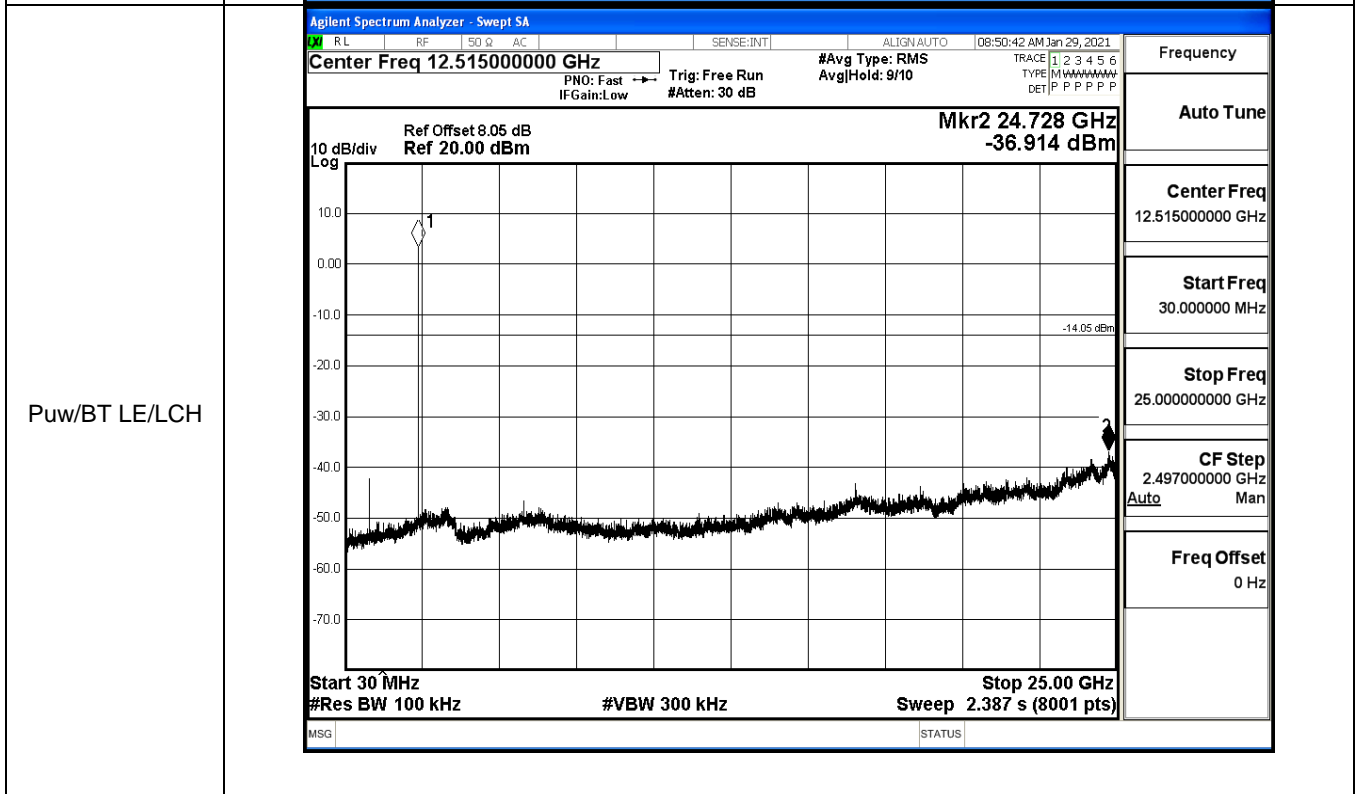
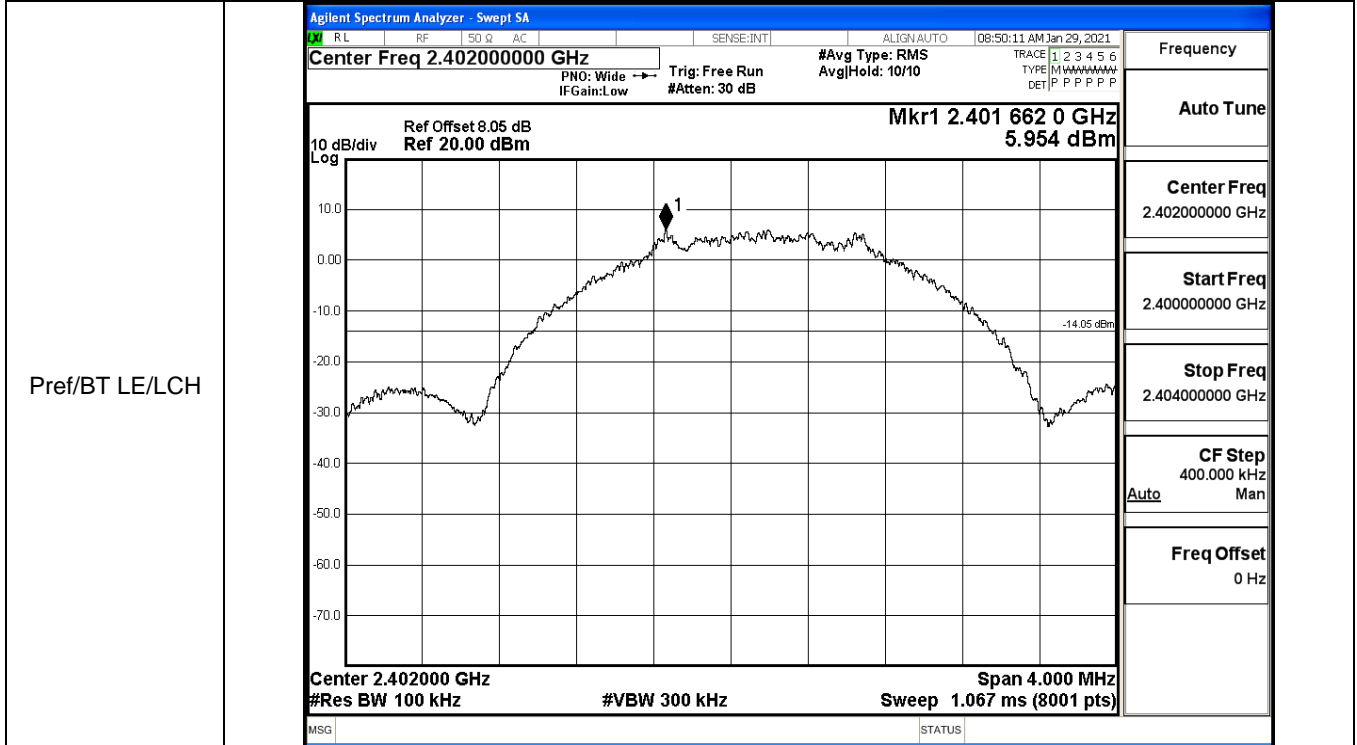
HCH



B.5 RF Conducted Spurious Emissions

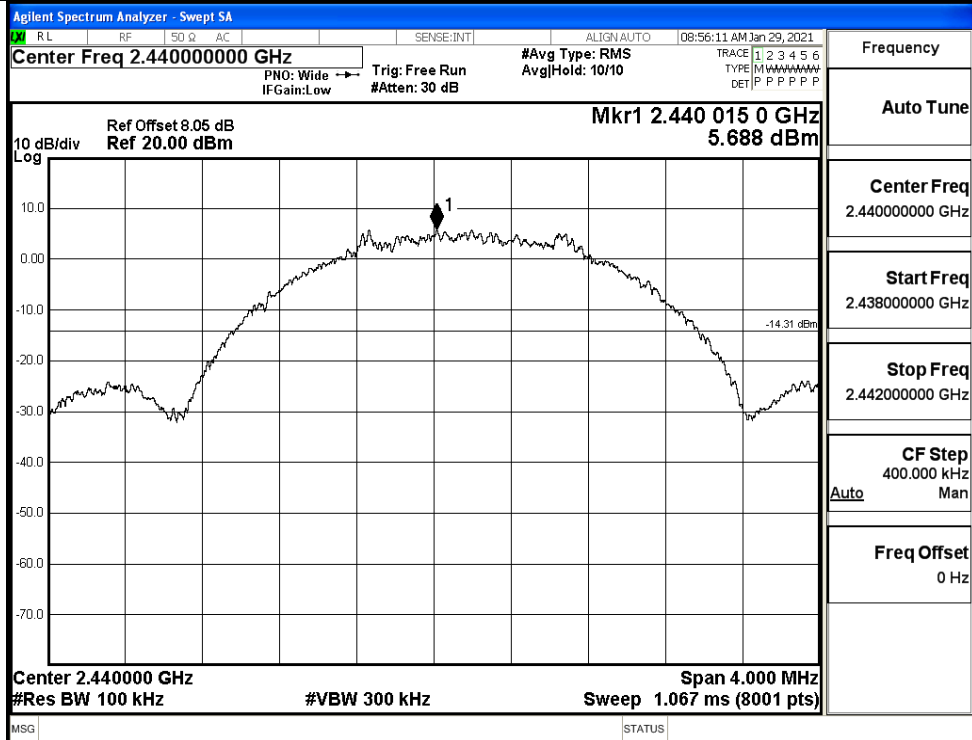
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	5.954	-36.914	-14.046	PASS
BT LE	MCH	5.688	-37.368	-14.312	PASS
BT LE	HCH	5.801	-37.088	-14.199	PASS

BT LE_LCH_Graphs

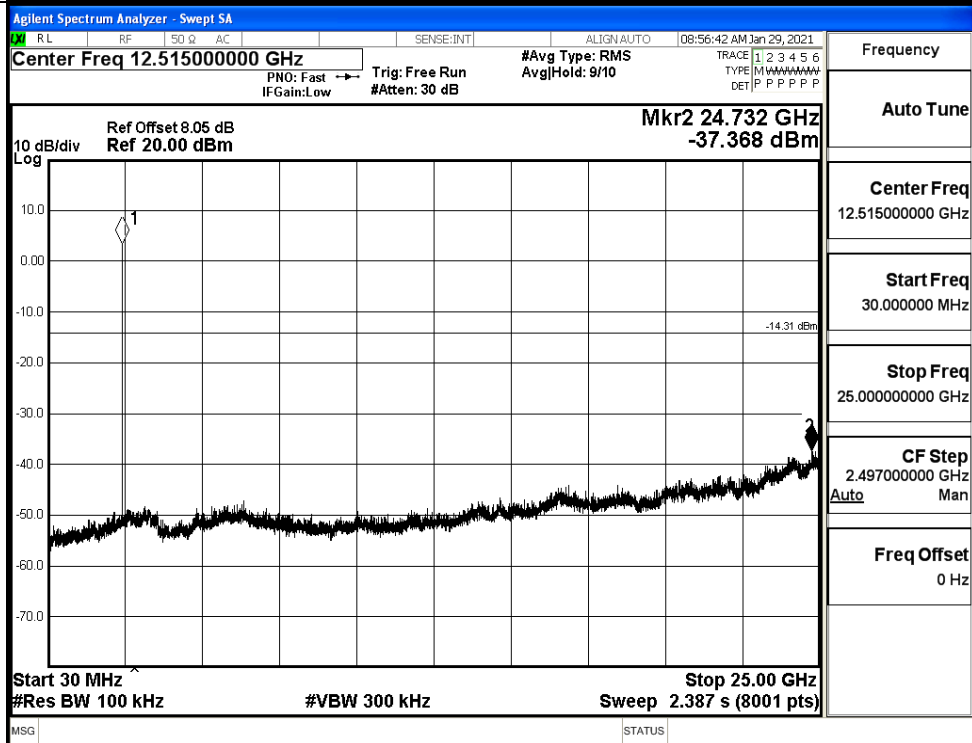


BT LE_MCH_Graphs

Pref/BT LE/MCH

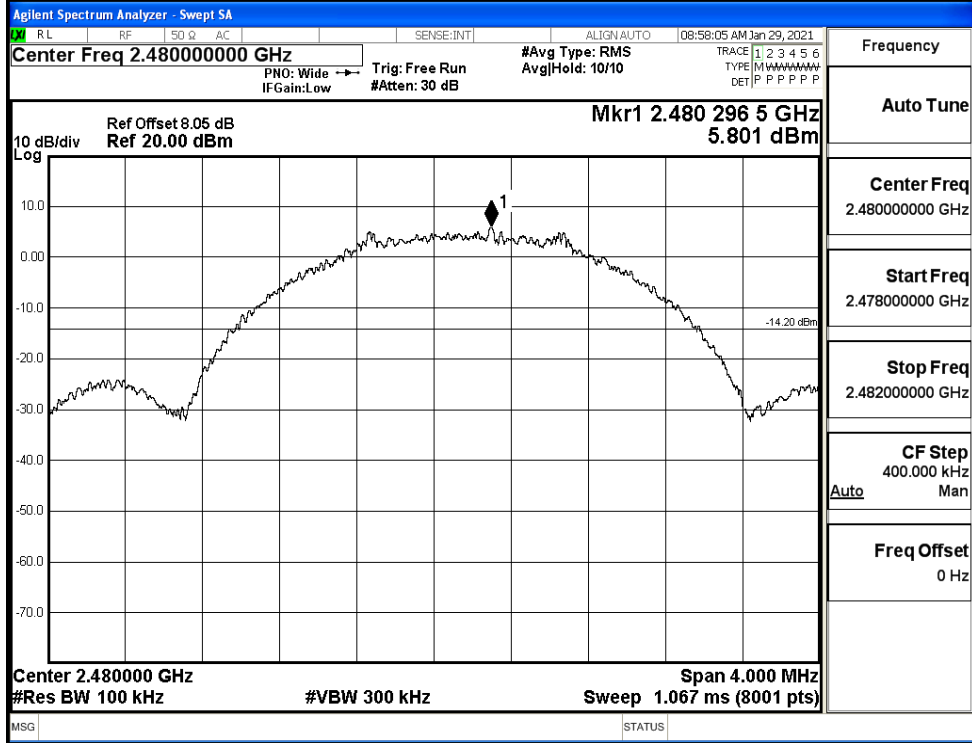


Puw/BT LE/MCH

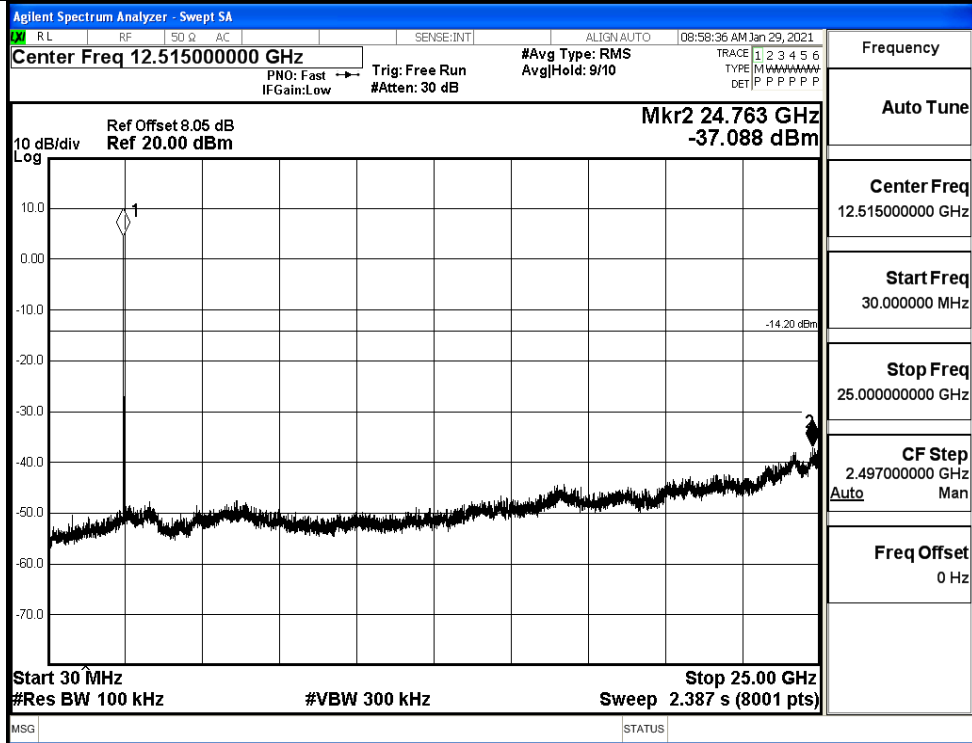


BT LE_HCH_Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH



B.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	5.659	-50.022	-14.34	PASS
BT LE	HCH	6.006	-48.104	-13.99	PASS

Test Graphs

LCH

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.402 320 GHz	5.659 dBm			
2	N	f		2.400 000 GHz	-30.151 dBm			
3	N	f		2.390 000 GHz	-53.947 dBm			
4	N	f		2.377 480 GHz	-50.022 dBm			
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.357000000 GHz

Start Freq
2.310000000 GHz

Stop Freq
2.404000000 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		2.480 139 50 GHz	6.006 dBm			
2	N	f		2.483 500 00 GHz	-50.961 dBm			
3	N	f		2.500 000 00 GHz	-50.749 dBm			
4	N	f		2.485 304 00 GHz	-48.104 dBm			
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.489000000 GHz

Start Freq
2.478000000 GHz

Stop Freq
2.500000000 GHz

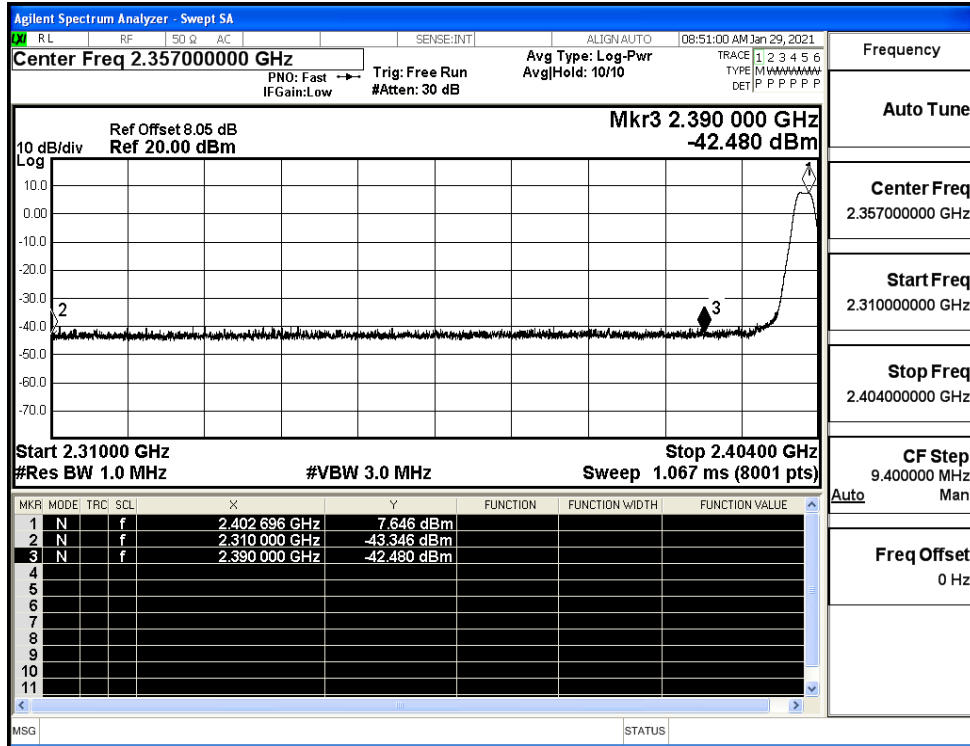
CF Step
2.200000 MHz

Freq Offset
0 Hz

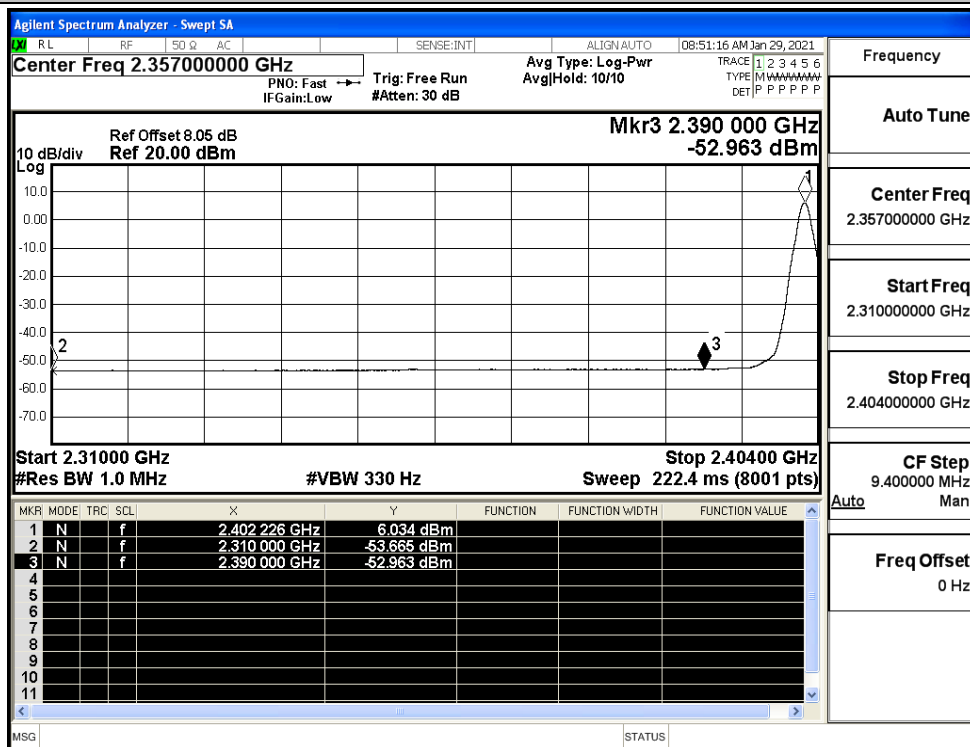
B.7 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdi
BT LE	2402	Ant1	2310.0	-43.35	2.0	0	51.91	PEAK	74	PASS
		Ant1	2310.0	-53.67	2.0	0	41.59	AV	54	PASS
		Ant1	2390.0	-42.48	2.0	0	52.78	PEAK	74	PASS
		Ant1	2390.0	-52.96	2.0	0	42.29	AV	54	PASS
	2480	Ant1	2483.5	-36.25	2.0	0	59.00	PEAK	74	PASS
		Ant1	2483.5	-44.80	2.0	0	50.46	AV	54	PASS
		Ant1	2500.0	-42.70	2.0	0	52.56	PEAK	74	PASS
		Ant1	2500.0	-52.44	2.0	0	42.82	AV	54	PASS

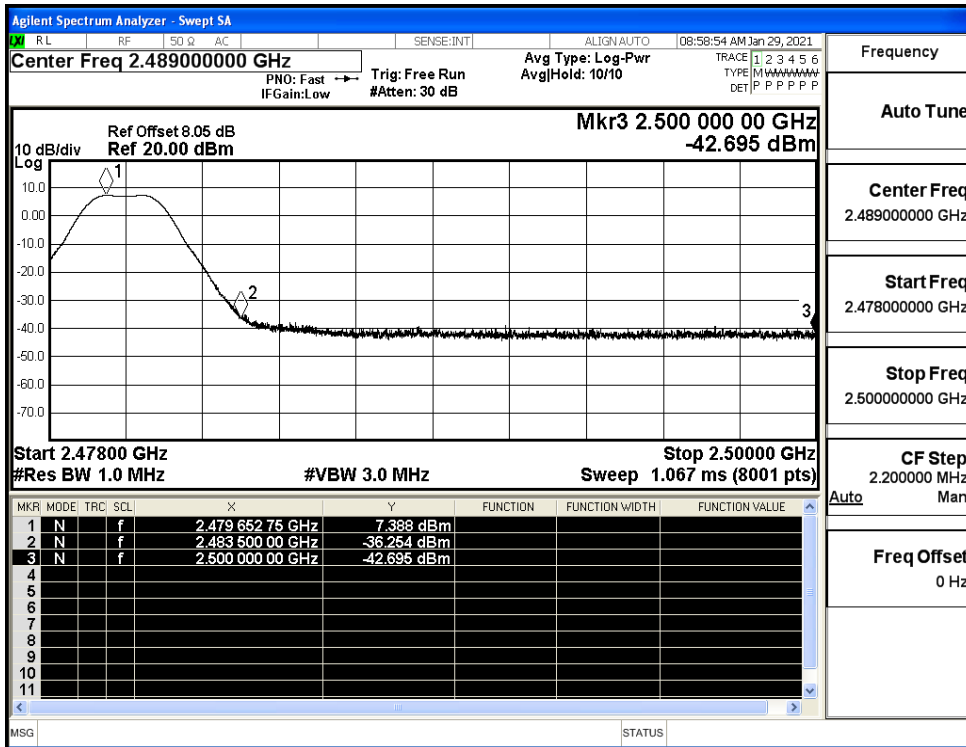
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

