

Appendix A

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

Product Name: BT Mesh Smart Switch

Trade Mark: N/A

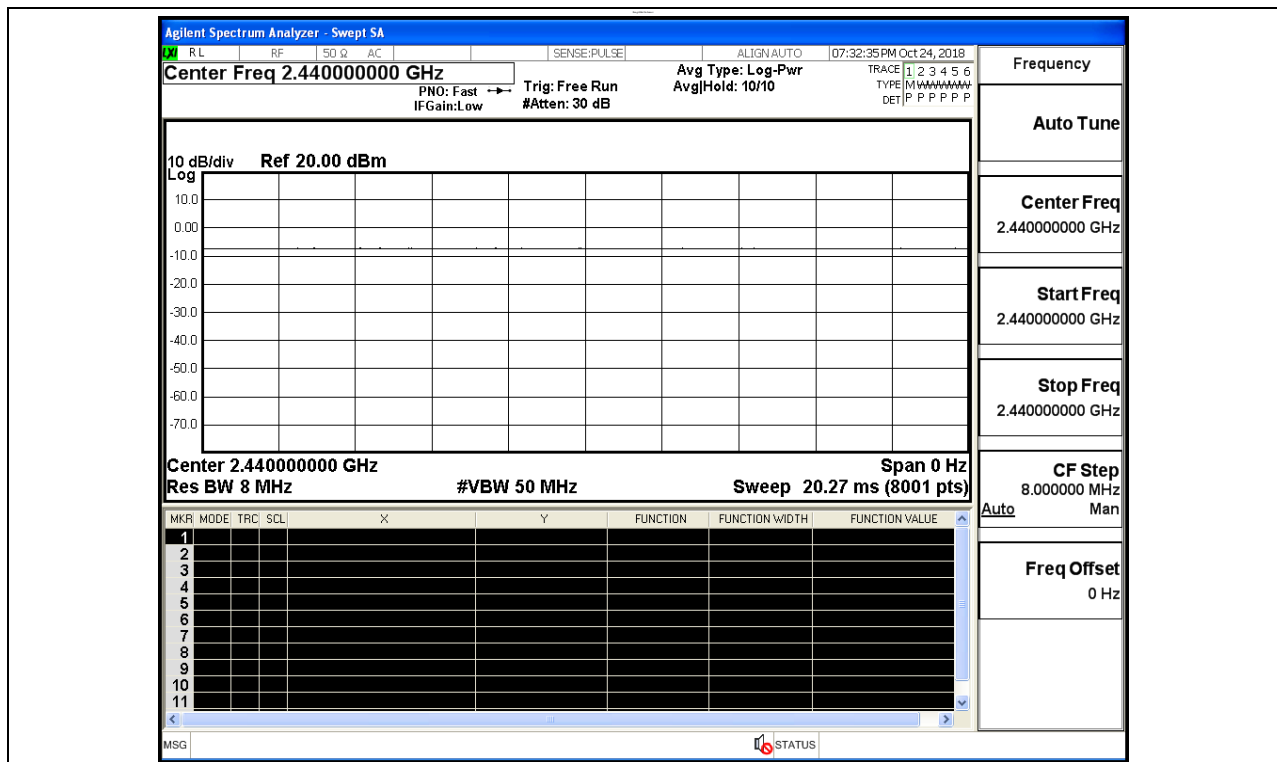
Test Model: ZJ-BM-AD01

Environmental Conditions

Temperature:	24.3 ° C
Relative Humidity:	52.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.Xu
Supervised by:	Jayden.Zhuo

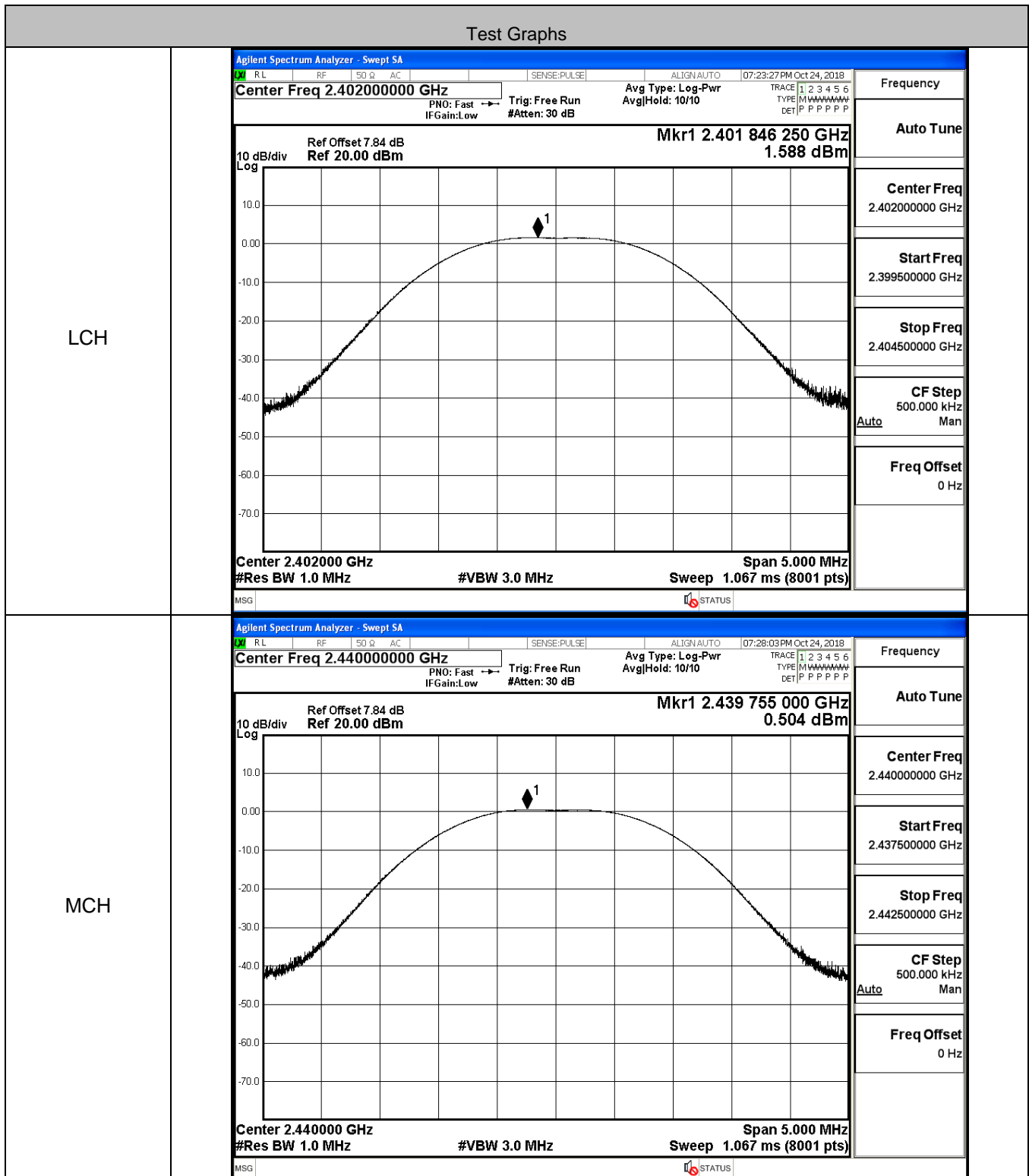
A.1 Duty Cycle

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



A.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	1.588	30	PASS
BT LE	MCH	0.504	30	PASS
BT LE	HCH	1.122	30	PASS



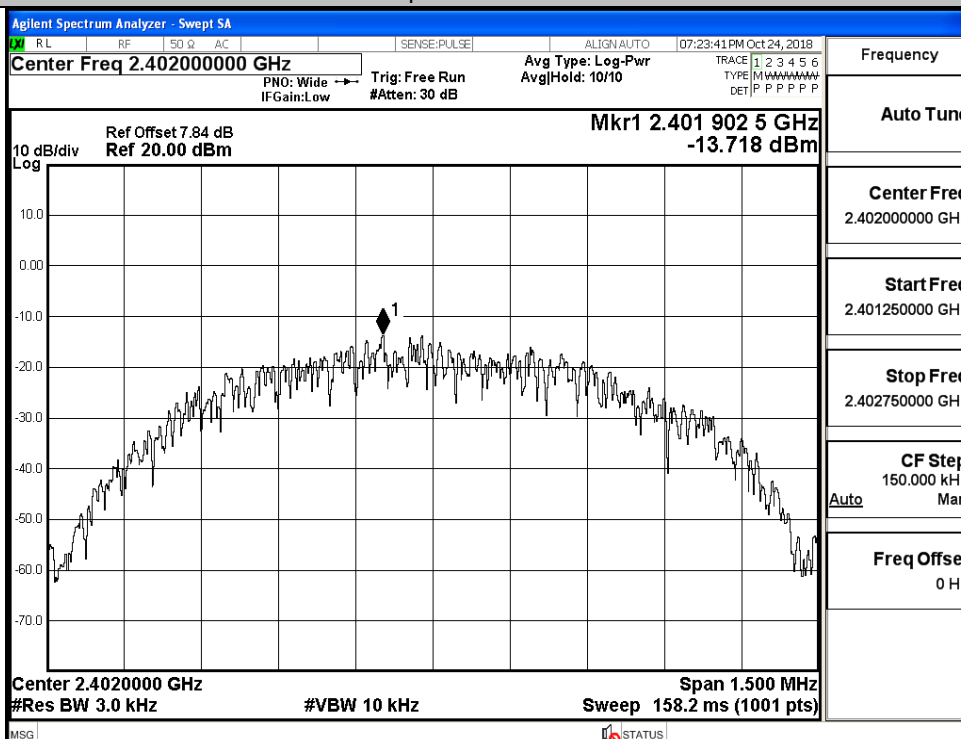


A.3 Maximum Power Spectral Density

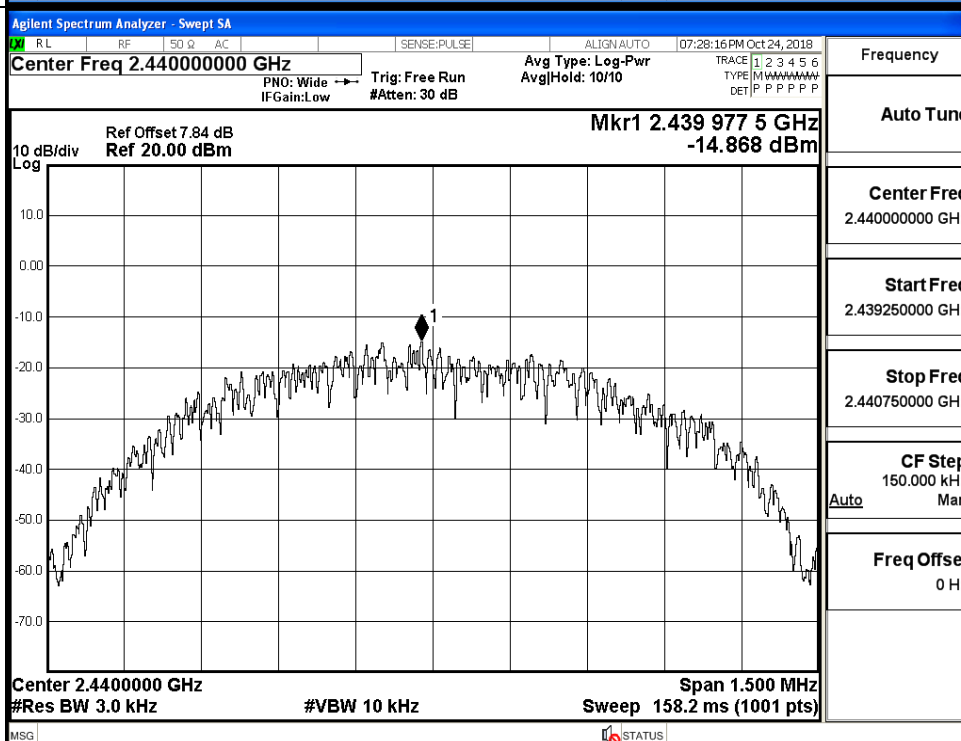
Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-13.718	8	PASS
BT LE	MCH	-14.868	8	PASS
BT LE	HCH	-14.260	8	PASS

Test Graphs

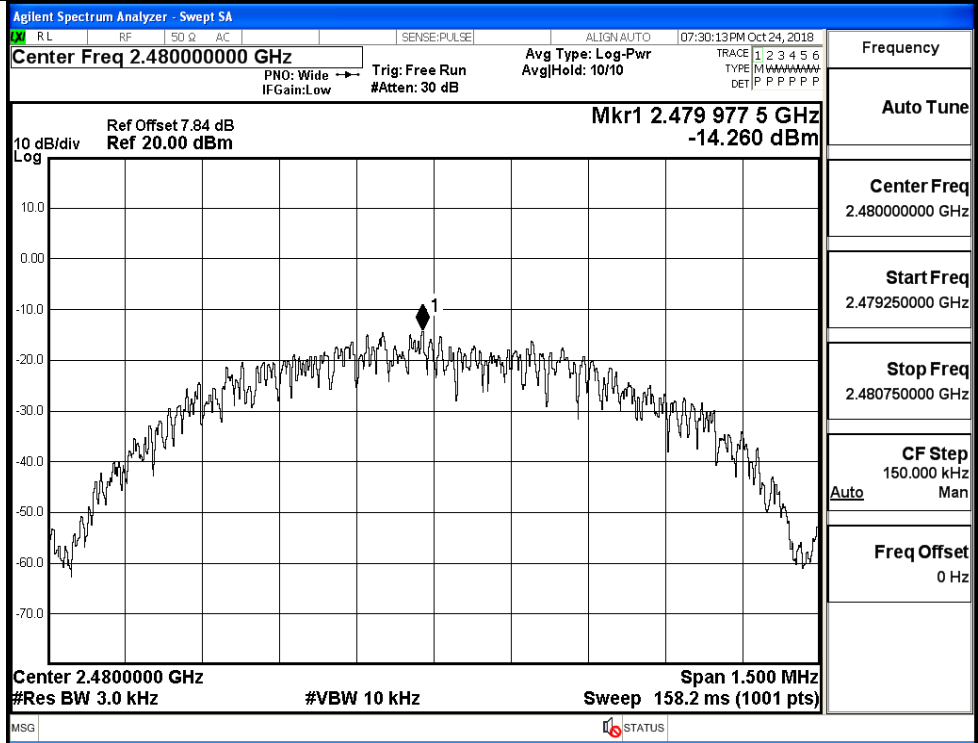
LCH



MCH



HCH

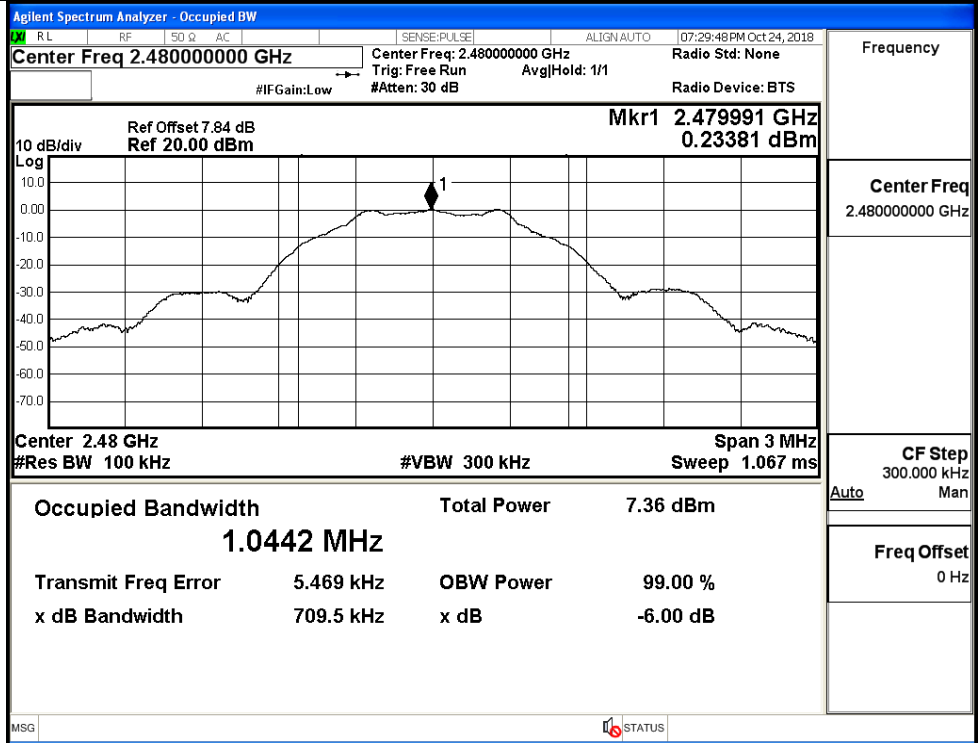


A.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6961	≥0.5	PASS
BT LE	MCH	0.7137	≥0.5	PASS
BT LE	HCH	0.7095	≥0.5	PASS

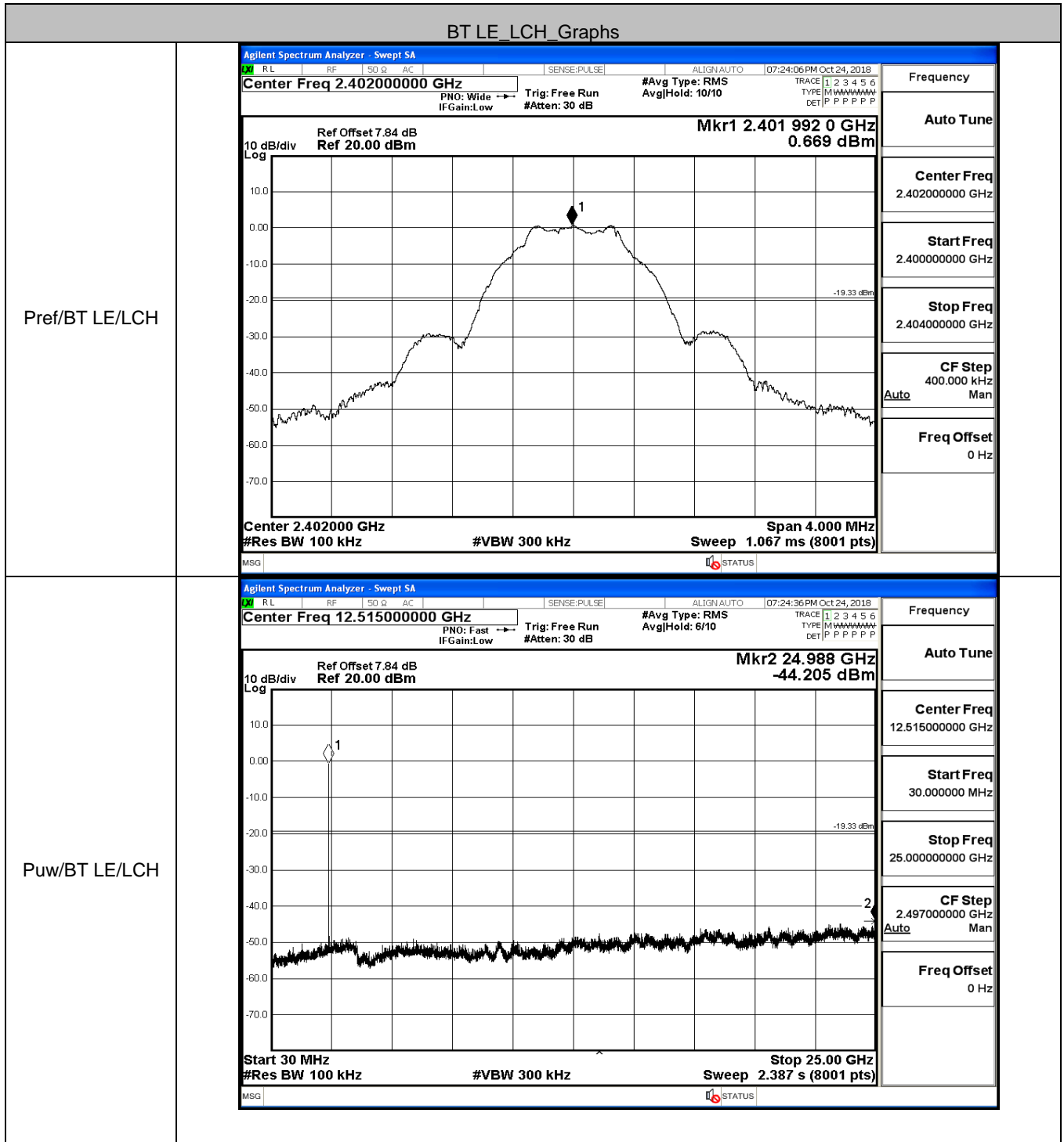
Test Graphs			
LCH		<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>RL RF 50 Ω AC SENSE:PULSE ALIGN: AUTO 07:23:16 PM Oct 24, 2018</p> <p>Center Freq 2.402000000 GHz Center Freq: 2.402000000 GHz Radio Std: None</p> <p>Trig: Free Run AvgHold: 1/1</p> <p>#IFGain: Low #Atten: 30 dB Radio Device: BTS</p> <p>Ref Offset 7.84 dB Mkr1 2.401997 GHz</p> <p>Ref 20.00 dBm 0.69488 dBm</p> <p>Center 2.402 GHz Span 3 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <p>Occupied Bandwidth Total Power 7.88 dBm</p> <p>1.0471 MHz</p> <p>Transmit Freq Error 4.413 kHz OBW Power 99.00 %</p> <p>x dB Bandwidth 696.1 kHz x dB -6.00 dB</p> <p>MSG STATUS</p>	<p>Frequency</p> <p>Center Freq 2.402000000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Auto Man</p> <p>Freq Offset 0 Hz</p>
		<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>RL RF 50 Ω AC SENSE:PULSE ALIGN: AUTO 07:27:51 PM Oct 24, 2018</p> <p>Center Freq 2.440000000 GHz Center Freq: 2.440000000 GHz Radio Std: None</p> <p>Trig: Free Run AvgHold: 1/1</p> <p>#IFGain: Low #Atten: 30 dB Radio Device: BTS</p> <p>Ref Offset 7.84 dB Mkr1 2.4400011 GHz</p> <p>Ref 20.00 dBm -0.44784 dBm</p> <p>Center 2.44 GHz Span 3 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <p>Occupied Bandwidth Total Power 6.74 dBm</p> <p>1.0517 MHz</p> <p>Transmit Freq Error 2.470 kHz OBW Power 99.00 %</p> <p>x dB Bandwidth 713.7 kHz x dB -6.00 dB</p> <p>MSG STATUS</p>	<p>Frequency</p> <p>Center Freq 2.440000000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Auto Man</p> <p>Freq Offset 0 Hz</p>

HCH



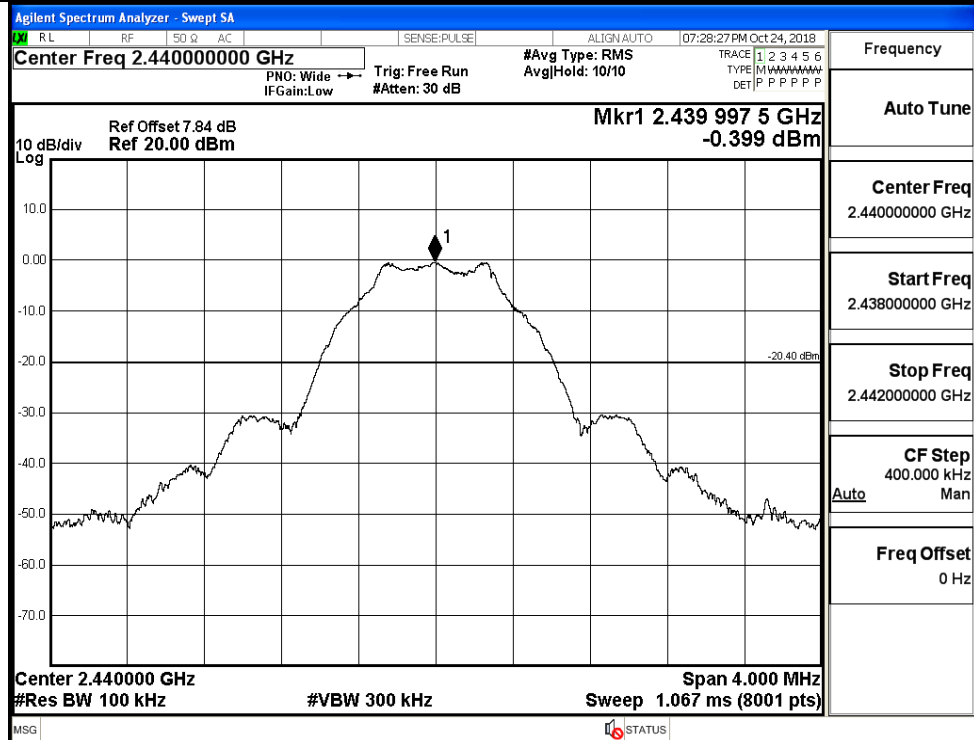
A.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.669	-44.205	-19.331	PASS
BT LE	MCH	-0.399	-44.328	-20.399	PASS
BT LE	HCH	0.239	-43.637	-19.761	PASS

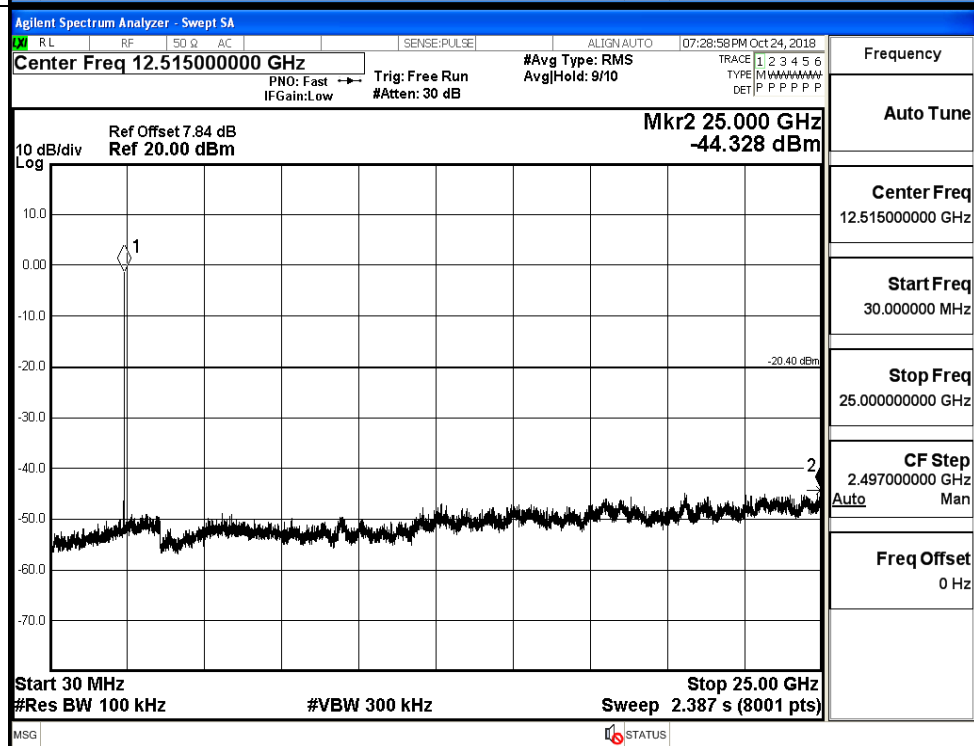


BT LE_MCH_Graphs

Pref/BT LE/MCH

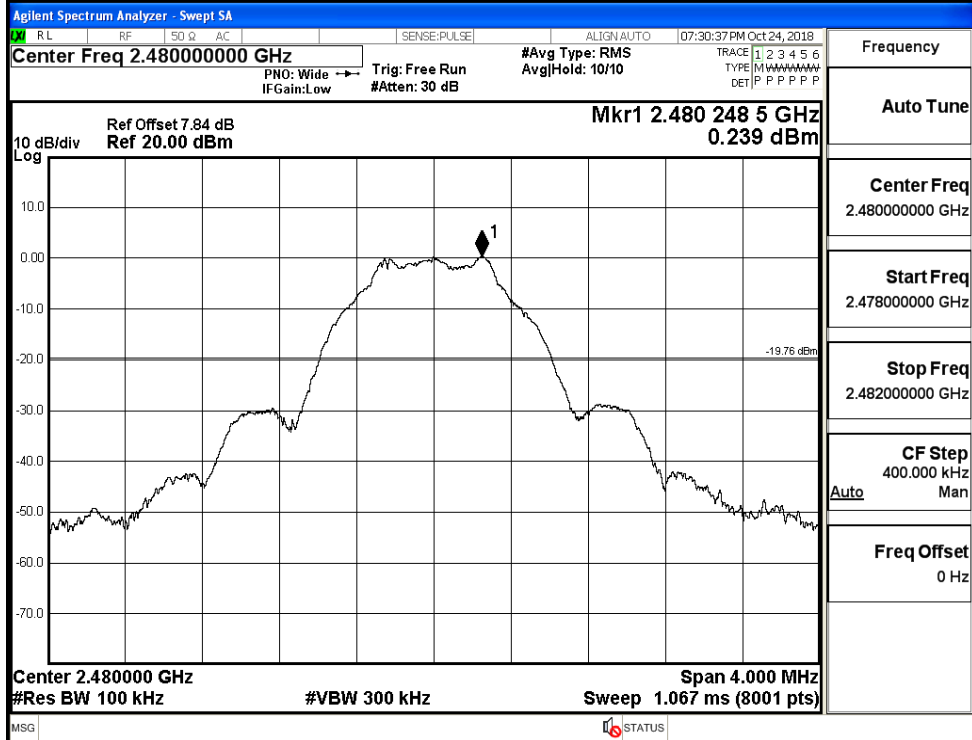


Puw/BT LE/MCH

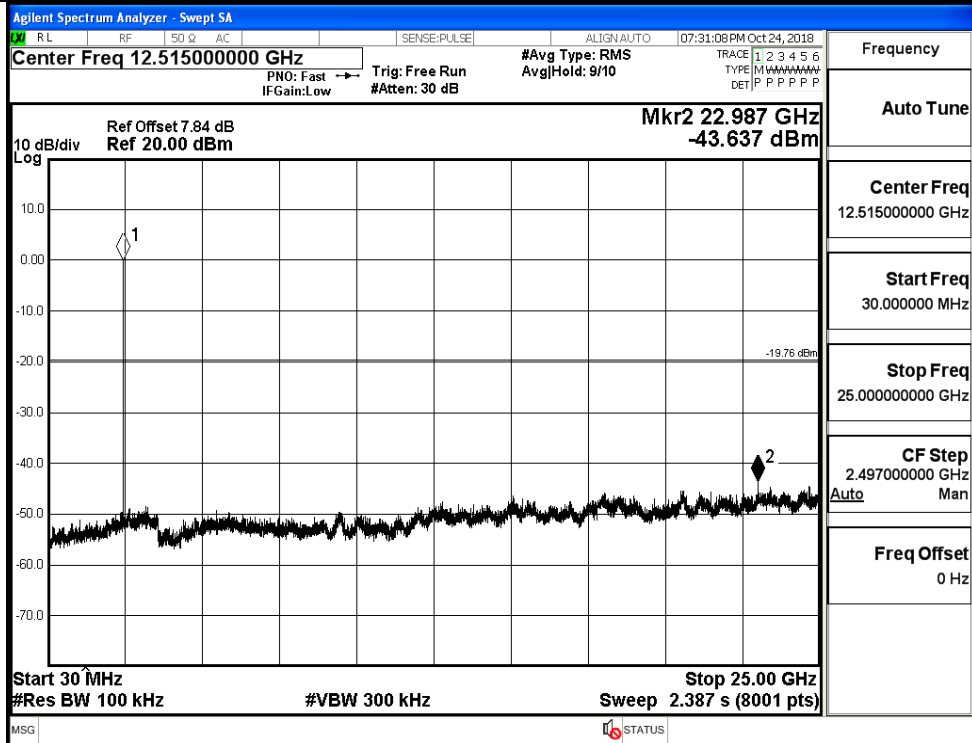


BT LE_HCH_Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH

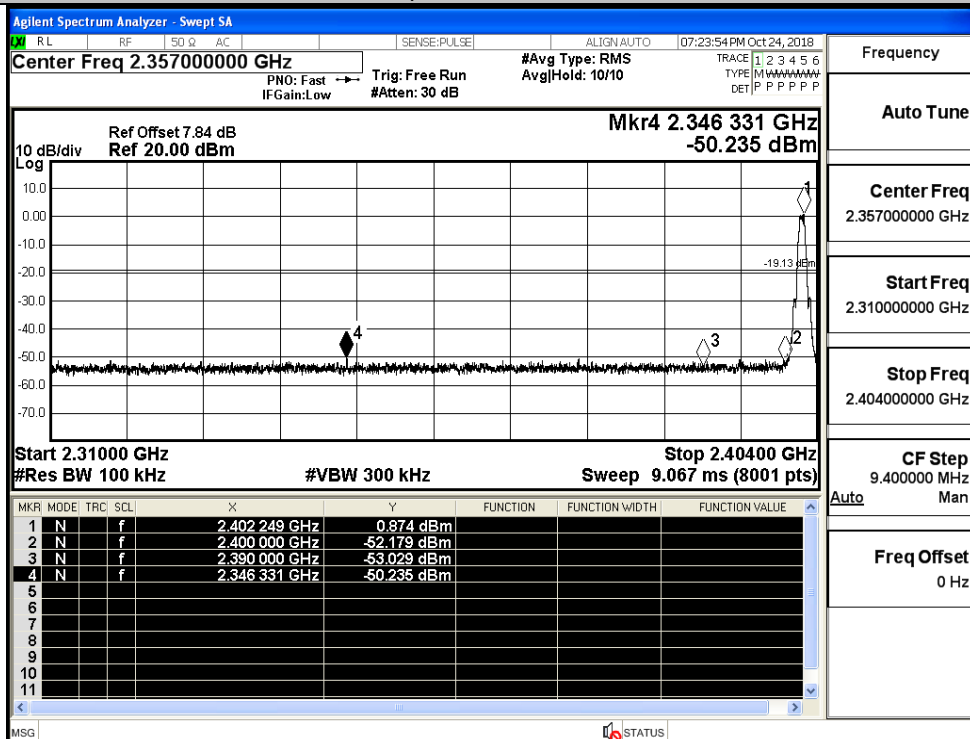


A.6 Band-edge for RF Conducted Emissions

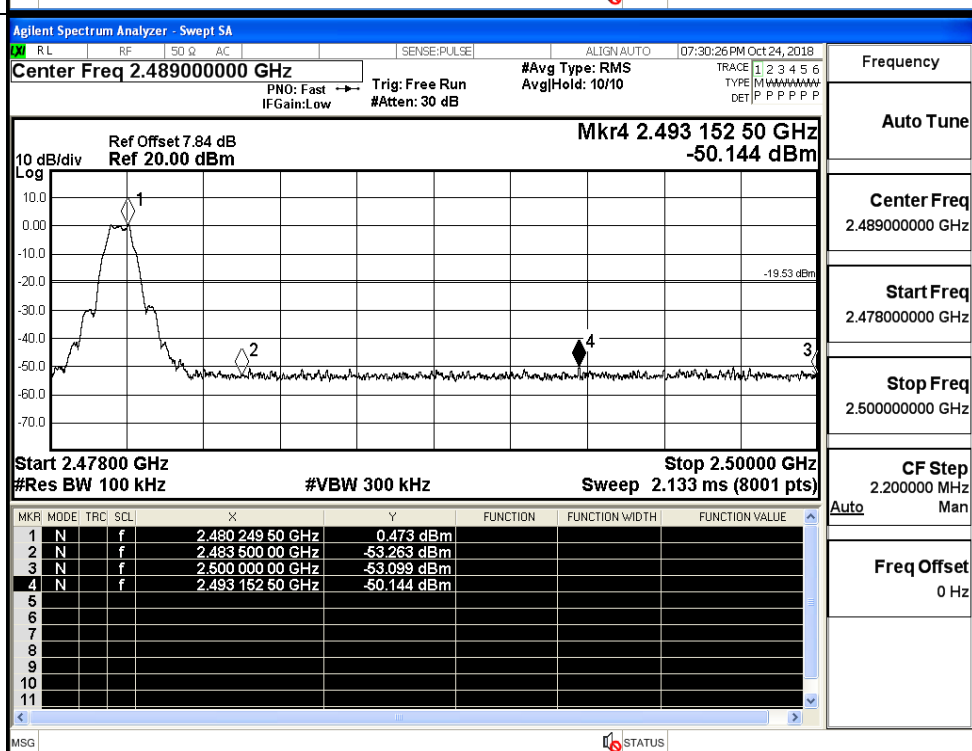
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.874	-50.235	-19.13	PASS
BT LE	HCH	0.473	-50.144	-19.53	PASS

Test Graphs

LCH



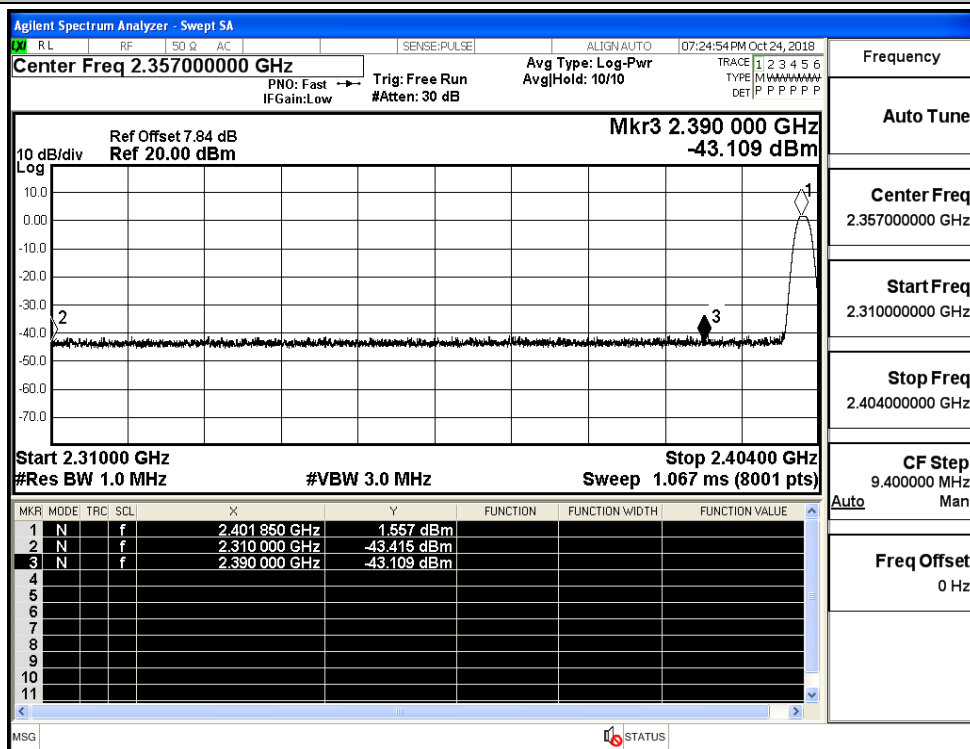
HCH



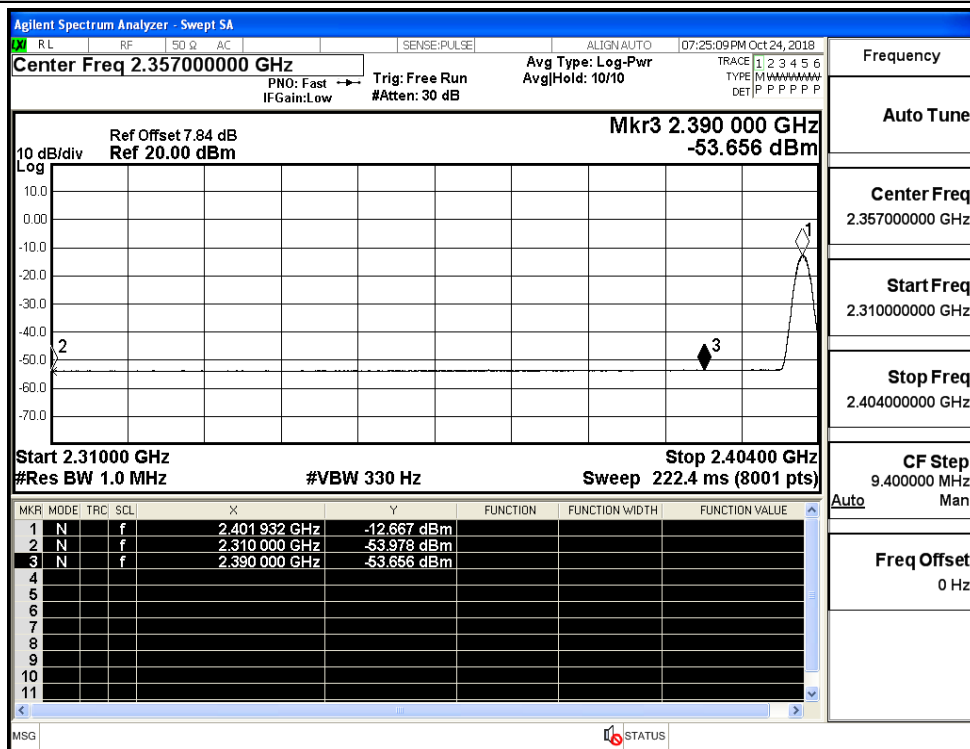
A.7 Restrict-band band-edge measurements

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	51.84	PEAK	74	PASS
		Ant1	2310.0	-53.98	2.0	0	41.28	AV	54	PASS
		Ant1	2390.0	-43.11	2.0	0	52.15	PEAK	74	PASS
		Ant1	2390.0	-53.66	2.0	0	41.60	AV	54	PASS
	2480	Ant1	2483.5	-42.90	2.0	0	52.36	PEAK	74	PASS
		Ant1	2483.5	-53.33	2.0	0	41.93	AV	54	PASS
		Ant1	2500.0	-43.33	2.0	0	51.92	PEAK	74	PASS
		Ant1	2500.0	-53.29	2.0	0	41.97	AV	54	PASS

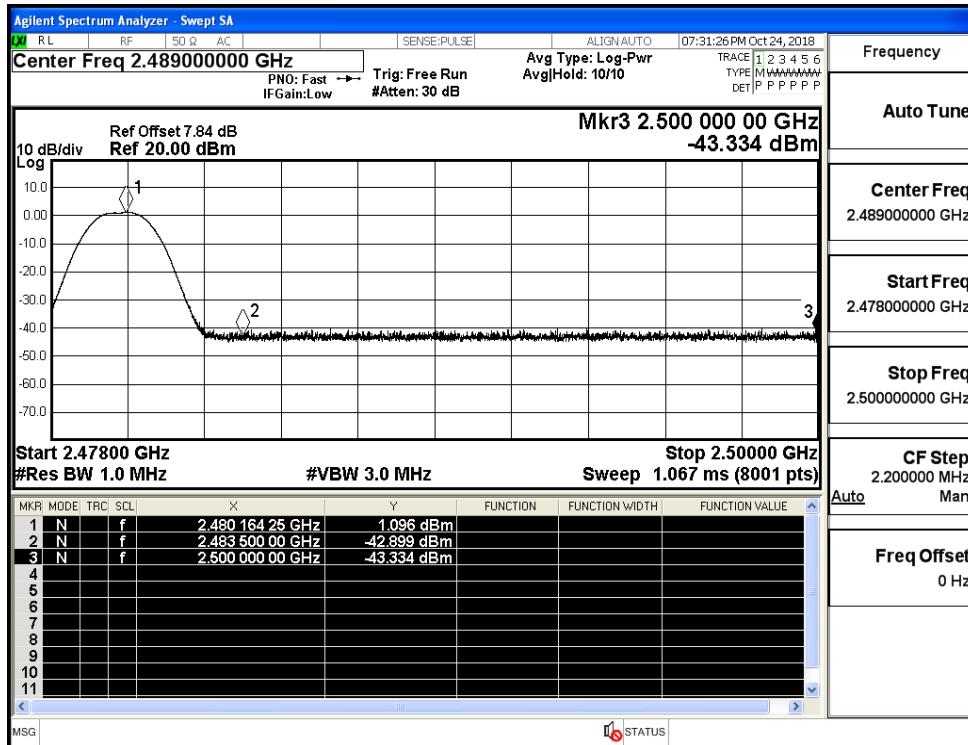
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

