

Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: Electronic Lock

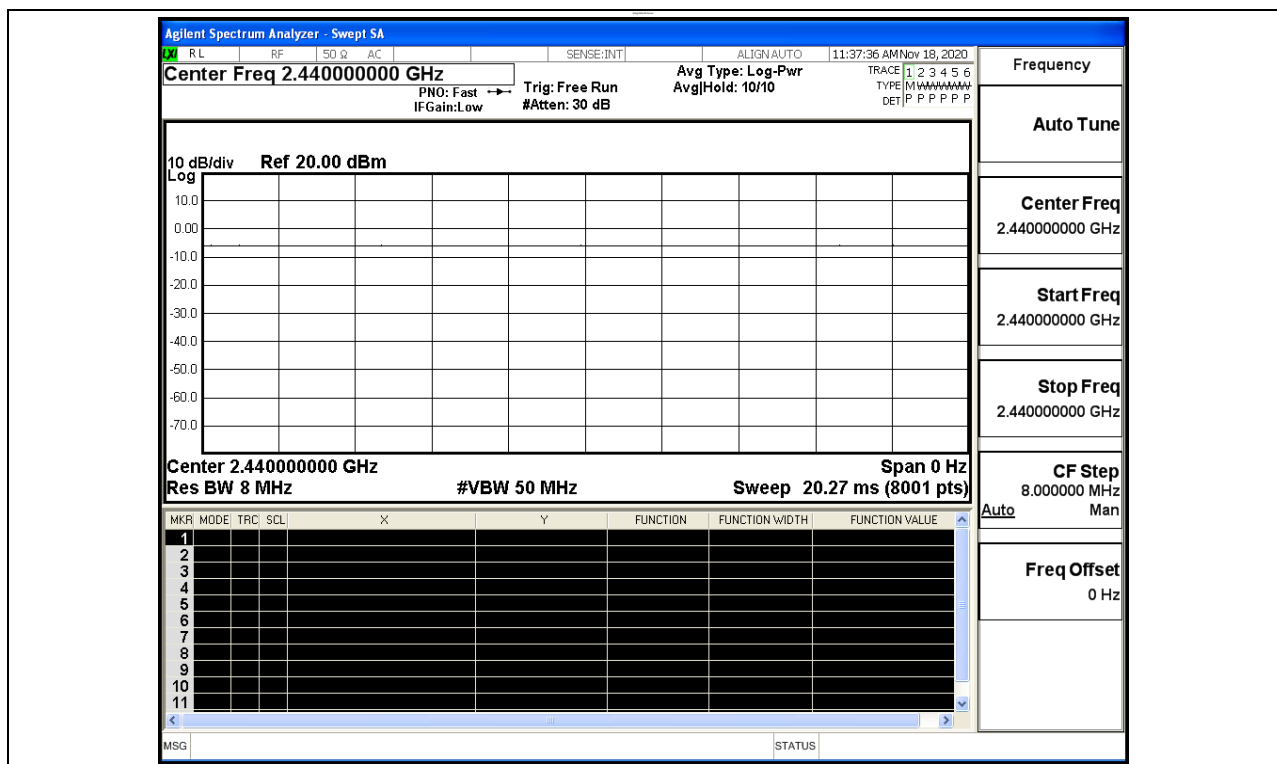
Test Model: S110BBL

Environmental Conditions

Temperature:	24.8 ° C
Relative Humidity:	51.9%
ATM Pressure:	100.0 kPa
Test Engineer:	Ben Jin
Supervised by:	Li Huan

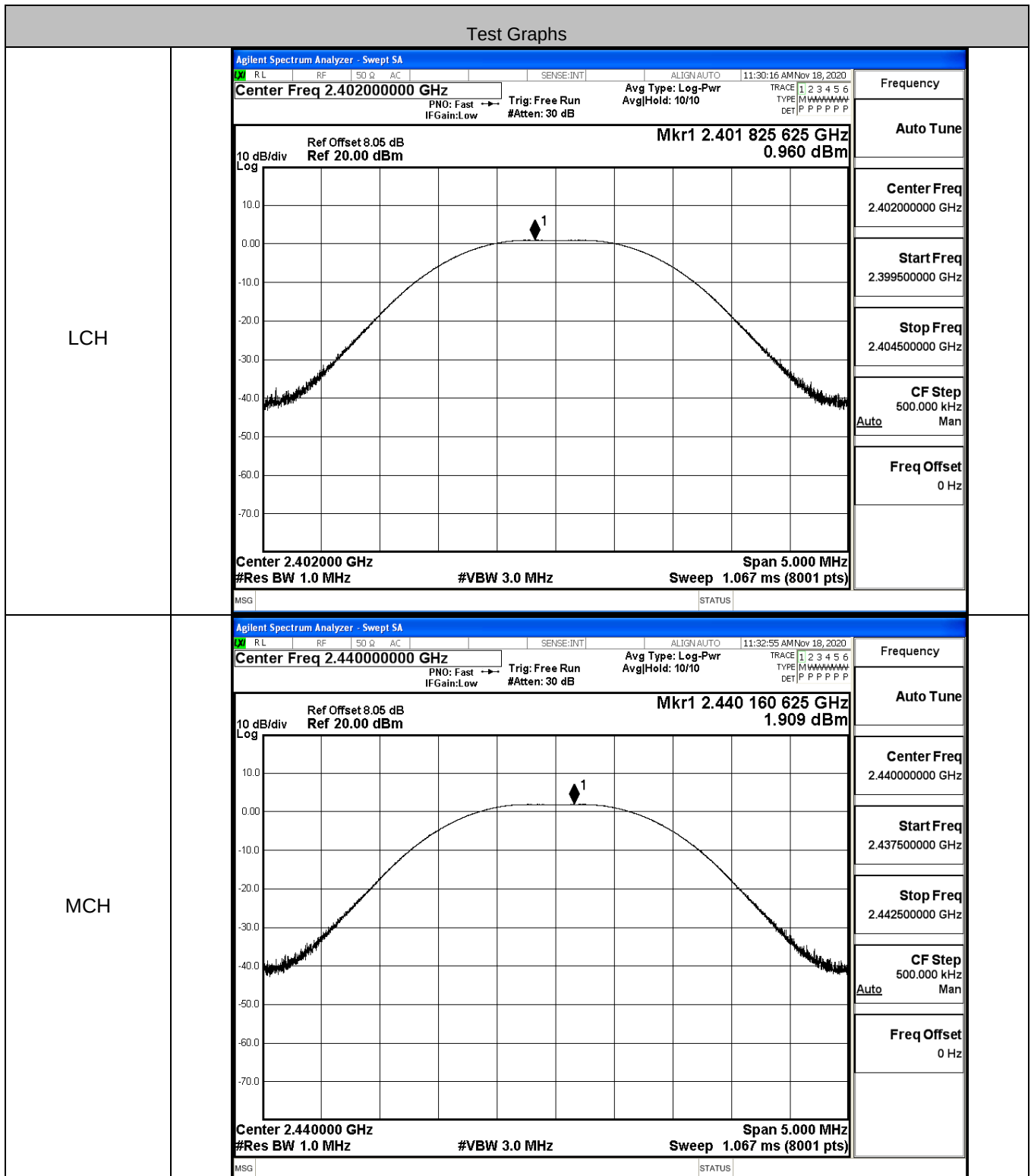
A.1 Duty Cycle

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	0.96	30	PASS
BT LE	MCH	1.909	30	PASS
BT LE	HCH	1.939	30	PASS



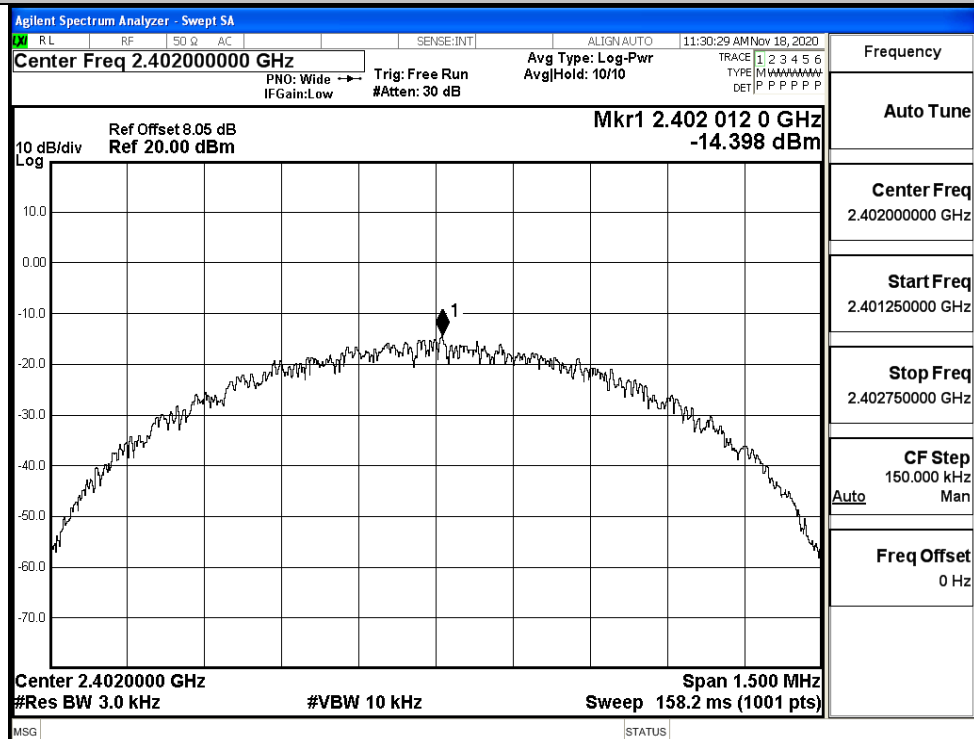


A.3 Maximum Power Spectral Density

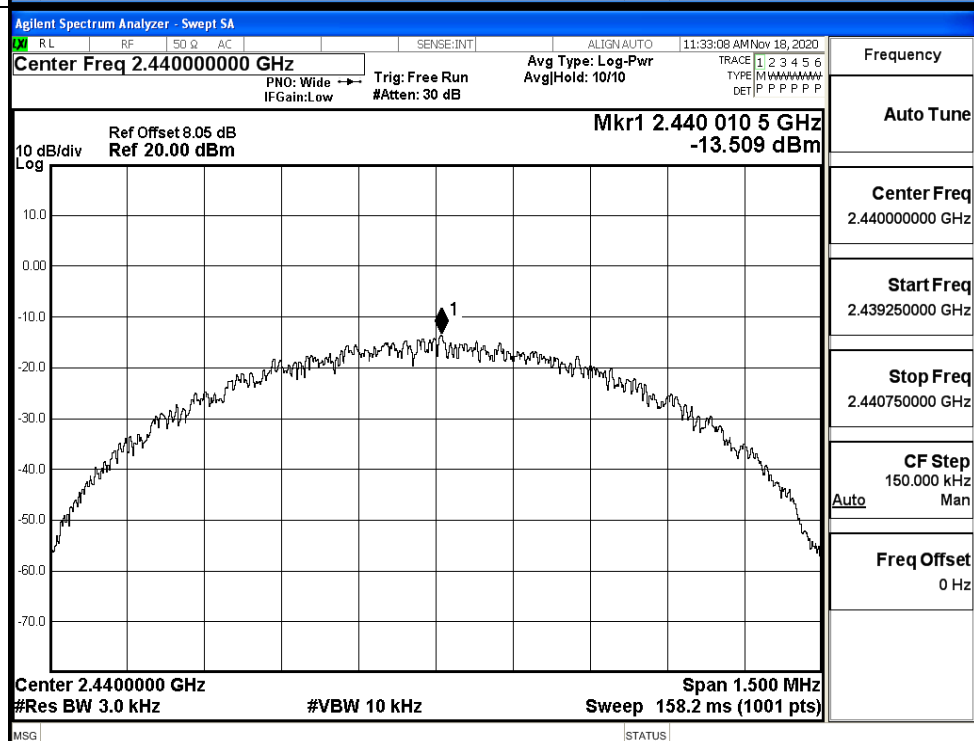
Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-14.398	8	PASS
BT LE	MCH	-13.509	8	PASS
BT LE	HCH	-13.452	8	PASS

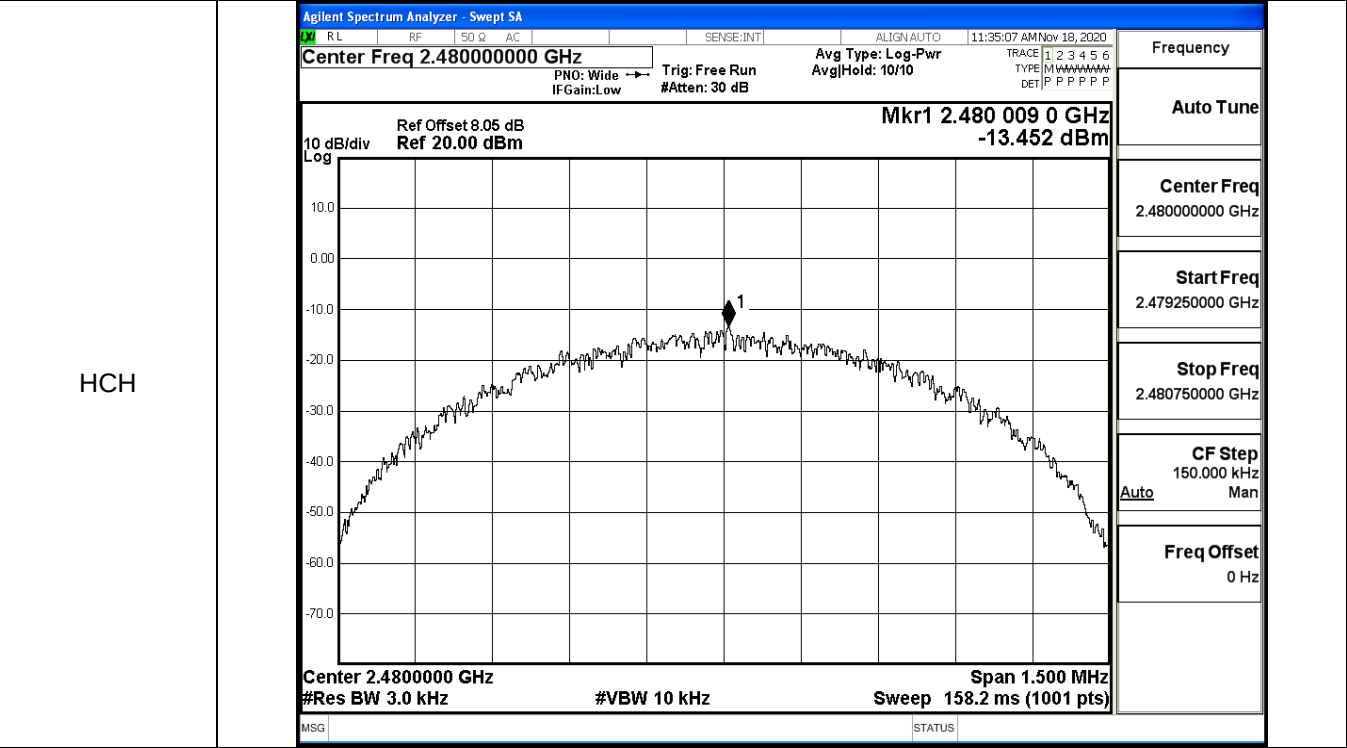
Test Graphs

LCH



MCH



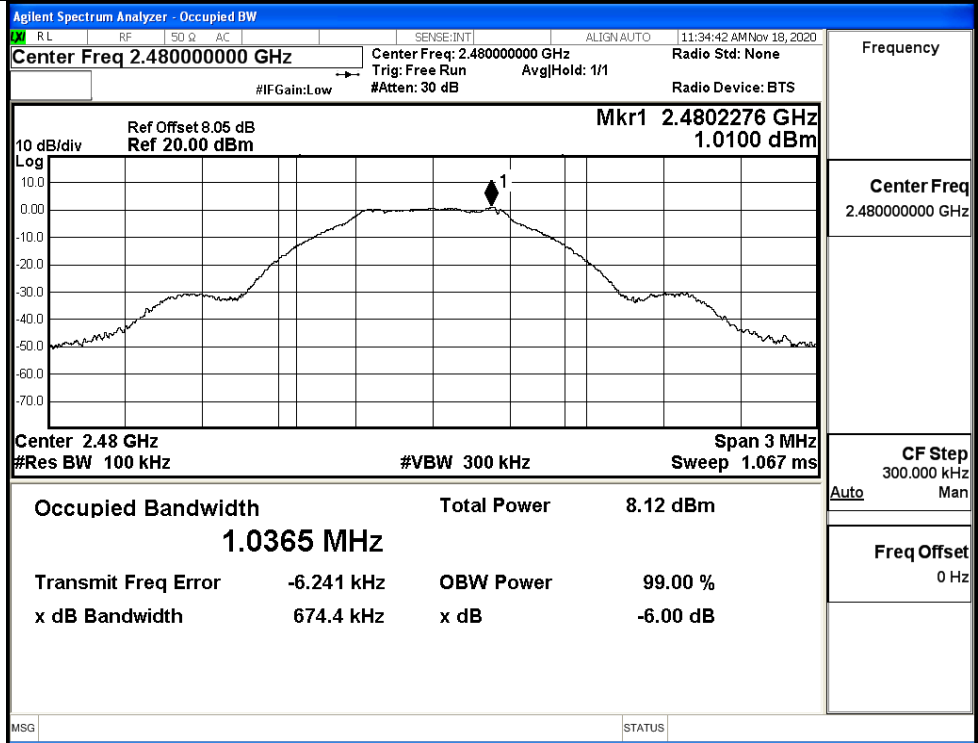


A.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6710	≥ 0.5	PASS
BT LE	MCH	0.6877	≥ 0.5	PASS
BT LE	HCH	0.6744	≥ 0.5	PASS

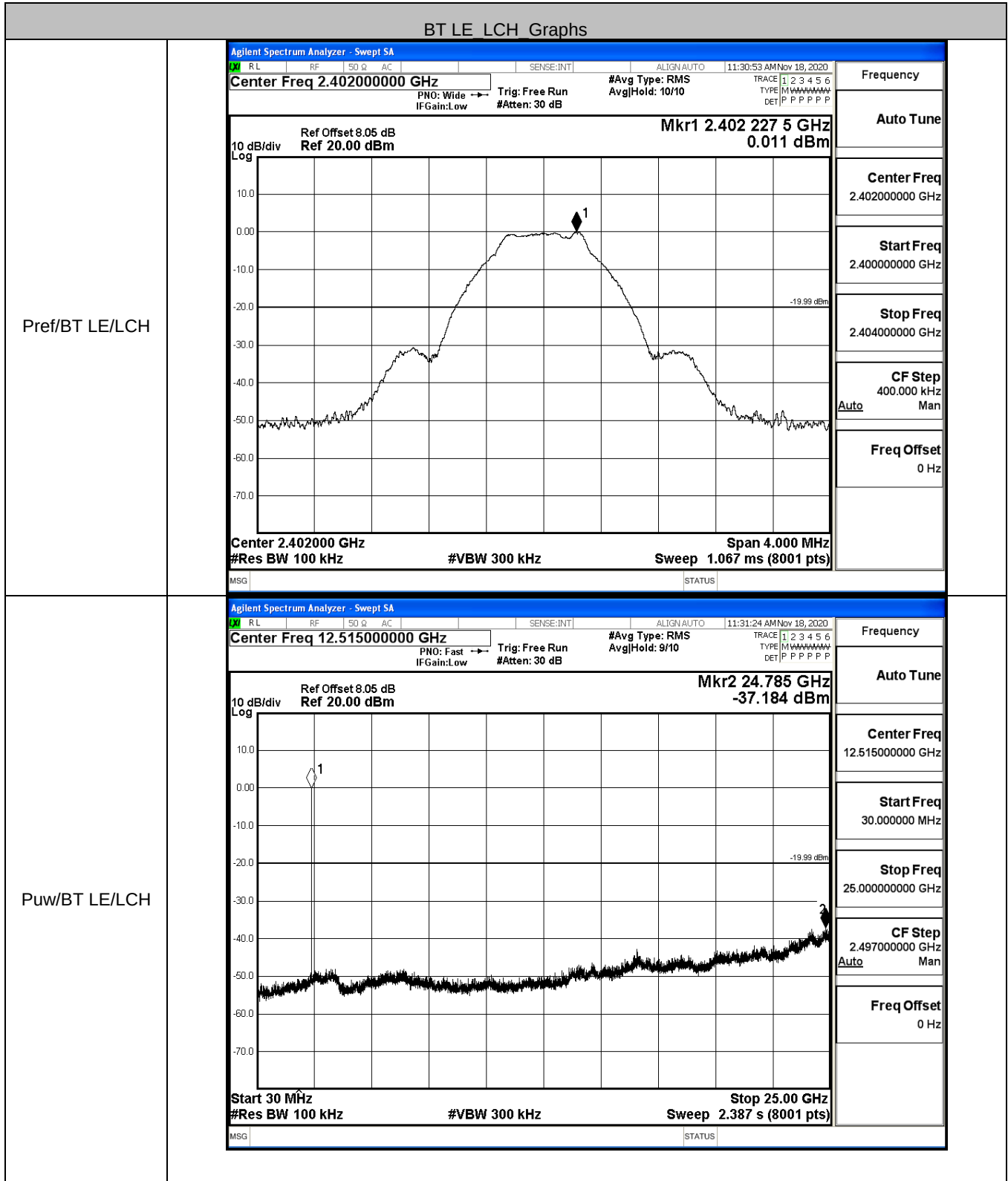
Test Graphs			
LCH		Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 11:30:04 AM Nov 18, 2020 Center Freq 2.402000000 GHz Center Freq: 2.402000000 GHz Radio Std: None Trig: Free Run AvgHold: 1/1 #IFGain: Low #Atten: 30 dB Radio Device: BTS Ref Offset 8.05 dB Mkr1 2.4022363 GHz Ref 20.00 dBm -0.0052664 dBm Center 2.402 GHz Span 3 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms Occupied Bandwidth Total Power 7.15 dBm 1.0383 MHz Transmit Freq Error -2.283 kHz OBW Power 99.00 % x dB Bandwidth 671.0 kHz x dB -6.00 dB MSG STATUS	Frequency Center Freq 2.402000000 GHz CF Step 300.000 kHz Auto Man Freq Offset 0 Hz
		Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 11:32:43 AM Nov 18, 2020 Center Freq 2.440000000 GHz Center Freq: 2.440000000 GHz Radio Std: None Trig: Free Run AvgHold: 1/1 #IFGain: Low #Atten: 30 dB Radio Device: BTS Ref Offset 8.05 dB Mkr1 2.4402355 GHz Ref 20.00 dBm 0.96916 dBm Center 2.44 GHz Span 3 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms Occupied Bandwidth Total Power 8.12 dBm 1.0386 MHz Transmit Freq Error -4.200 kHz OBW Power 99.00 % x dB Bandwidth 687.7 kHz x dB -6.00 dB MSG STATUS	Frequency Center Freq 2.440000000 GHz CF Step 300.000 kHz Auto Man Freq Offset 0 Hz
MCH			

HCH



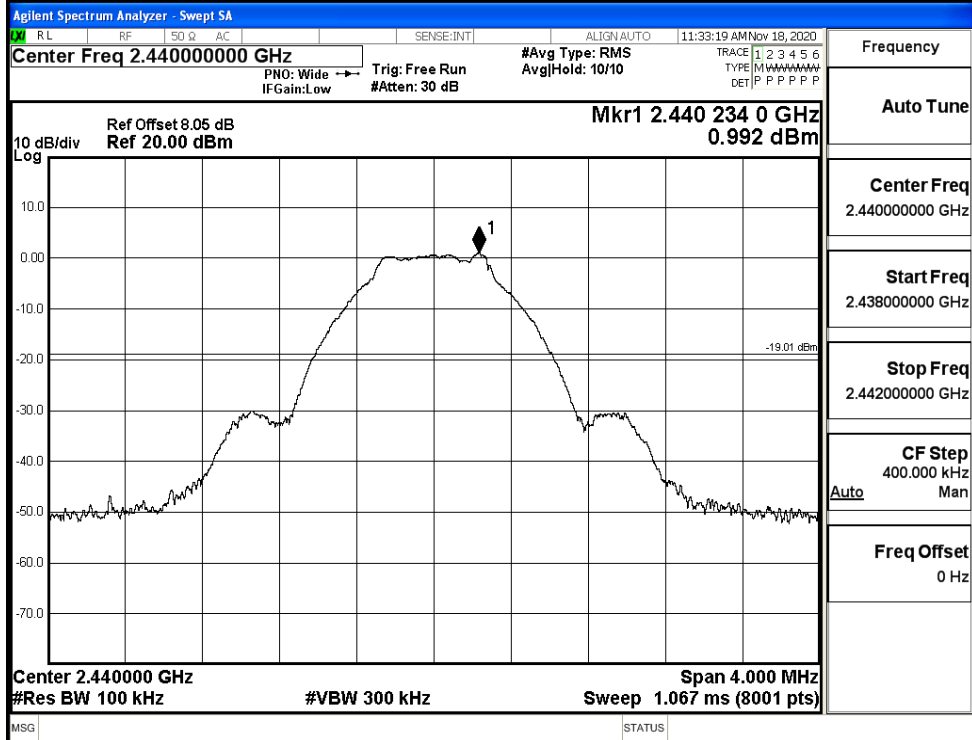
A.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.011	-37.184	-19.989	PASS
BT LE	MCH	0.992	-36.288	-19.008	PASS
BT LE	HCH	0.991	-37.521	-19.009	PASS

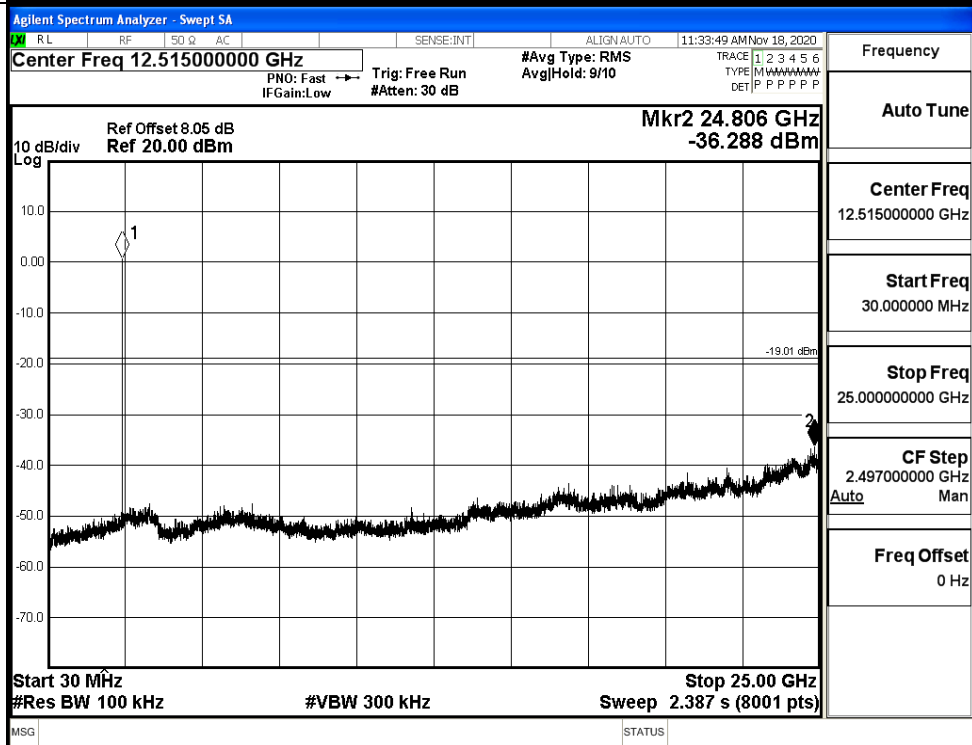


BT LE MCH Graphs

Pref/BT LE/MCH

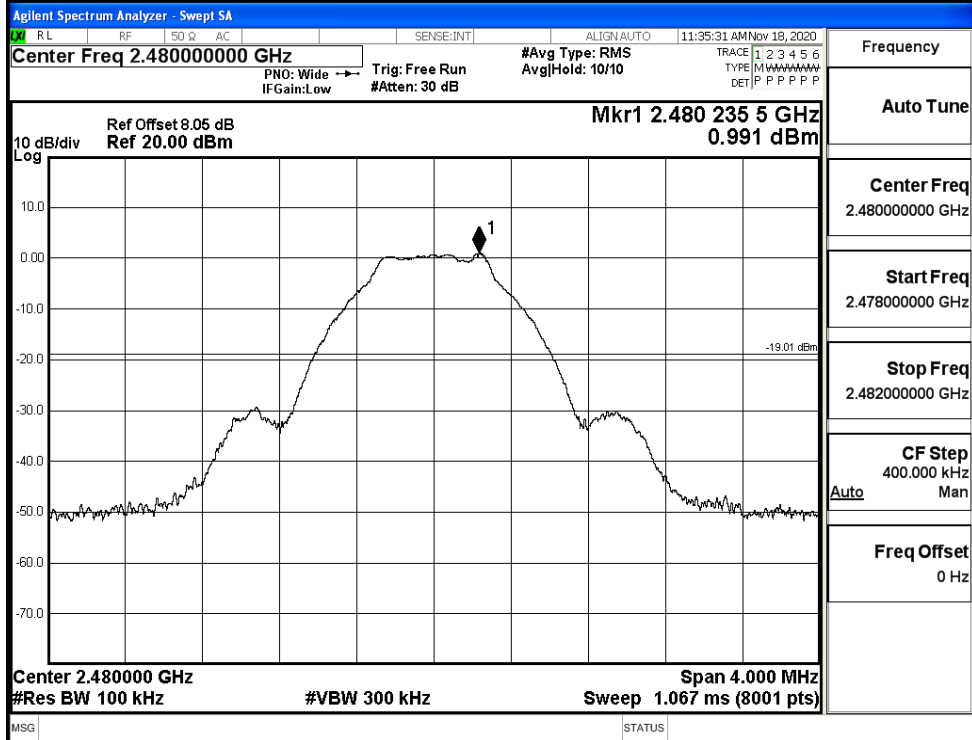


Puw/BT LE/MCH

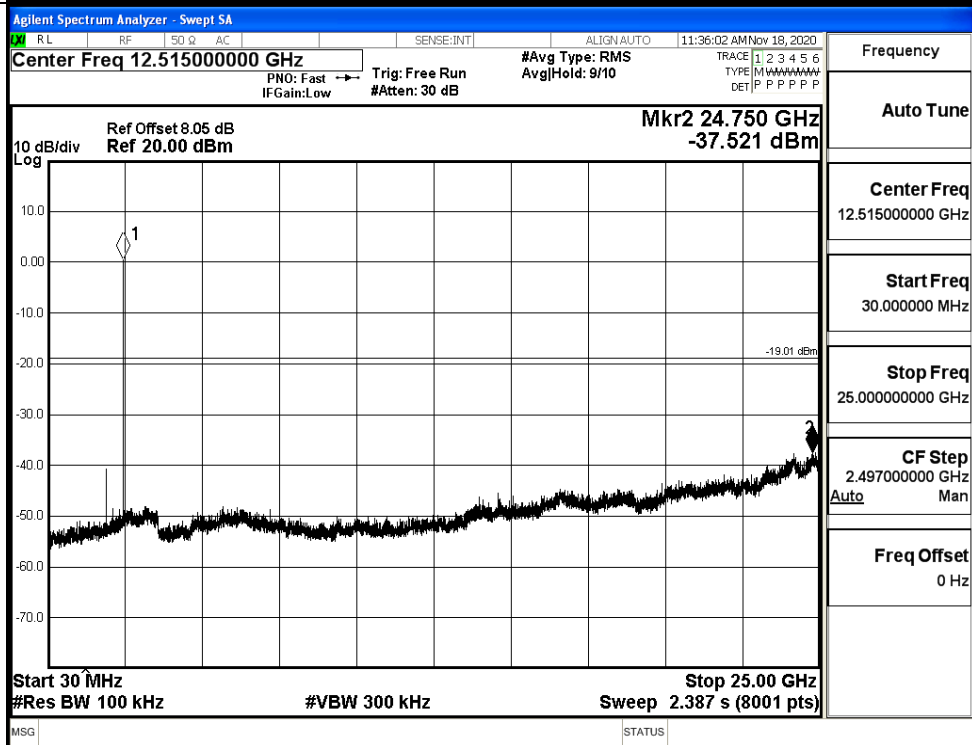


BT LE HCH Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH

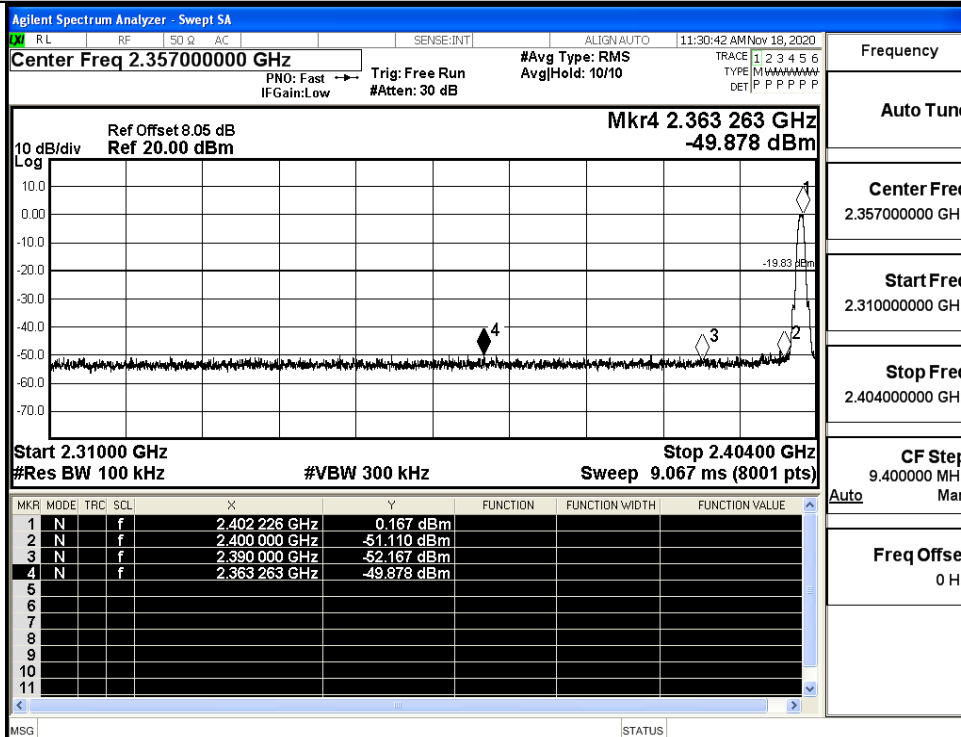


A.6 Band-edge for RF Conducted Emissions

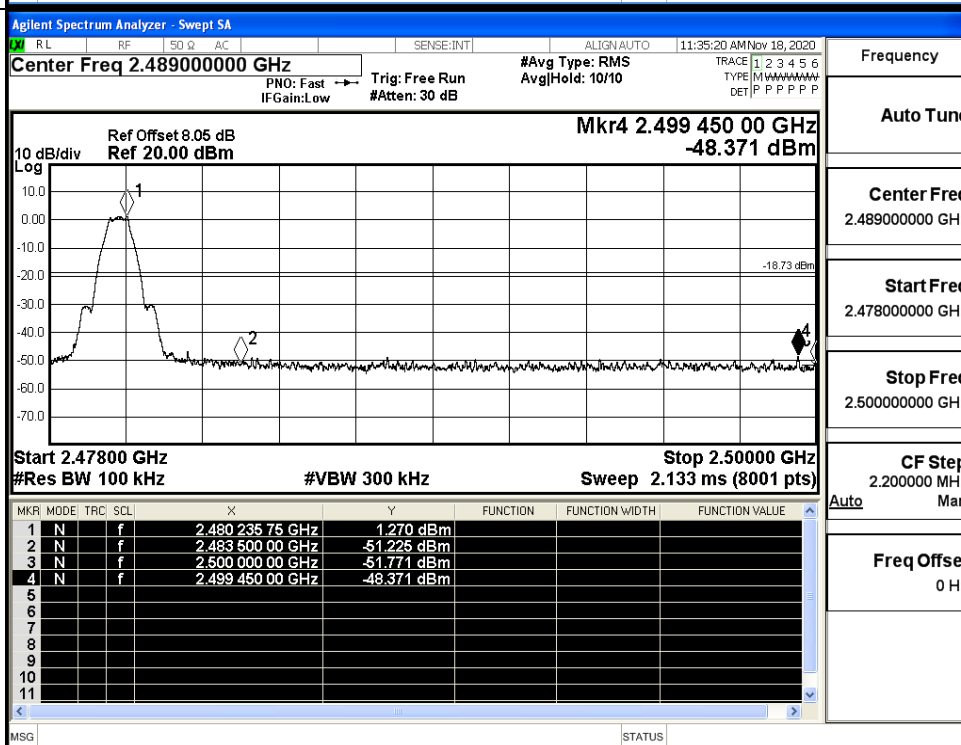
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.167	-49.878	-19.83	PASS
BT LE	HCH	1.270	-48.371	-18.73	PASS

Test Graphs

LCH



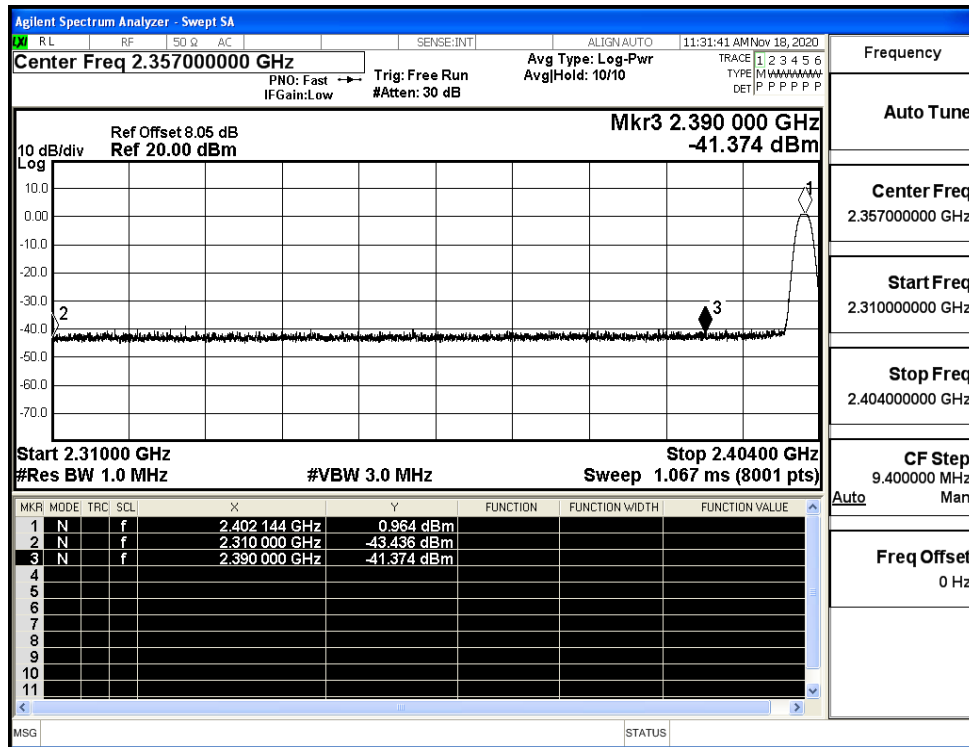
HCH



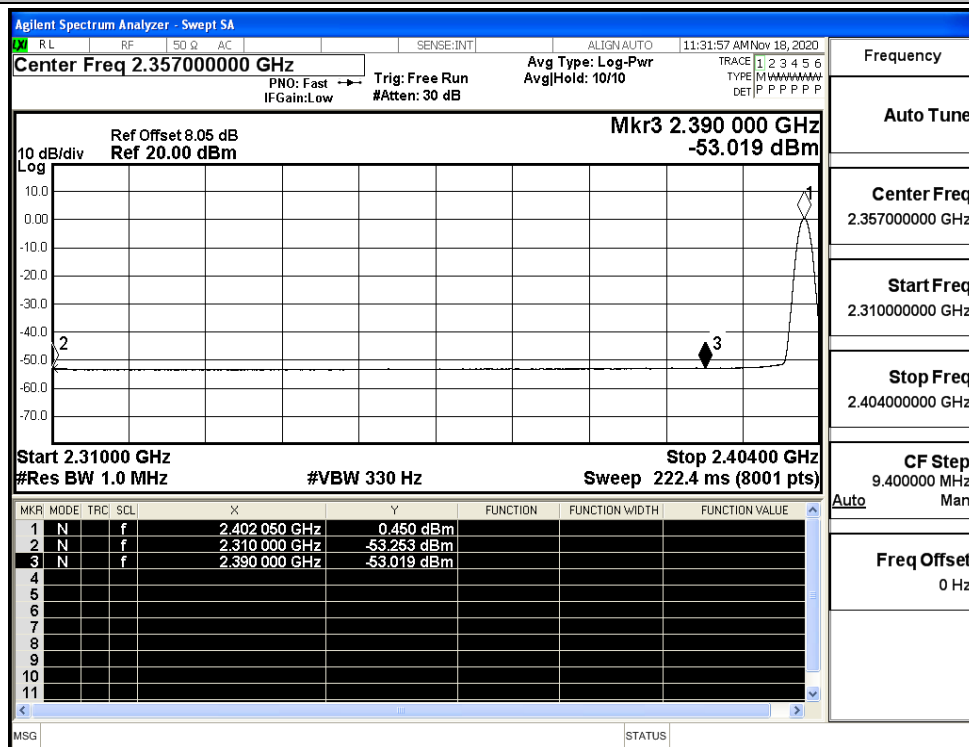
A.7 Restrict-band band-edge measurements

Test Mode	Test Channel	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
BT LE	2402	2310.0	-43.44	2.0	0	53.79	PEAK	74	PASS
		2310.0	-53.25	2.0	0	43.98	AV	54	PASS
		2390.0	-41.37	2.0	0	55.86	PEAK	74	PASS
		2390.0	-53.02	2.0	0	44.21	AV	54	PASS
	2480	2483.5	-41.53	2.0	0	55.70	PEAK	74	PASS
		2483.5	-51.20	2.0	0	46.03	AV	54	PASS
		2500.0	-41.81	2.0	0	55.42	PEAK	74	PASS
		2500.0	-52.28	2.0	0	44.95	AV	54	PASS

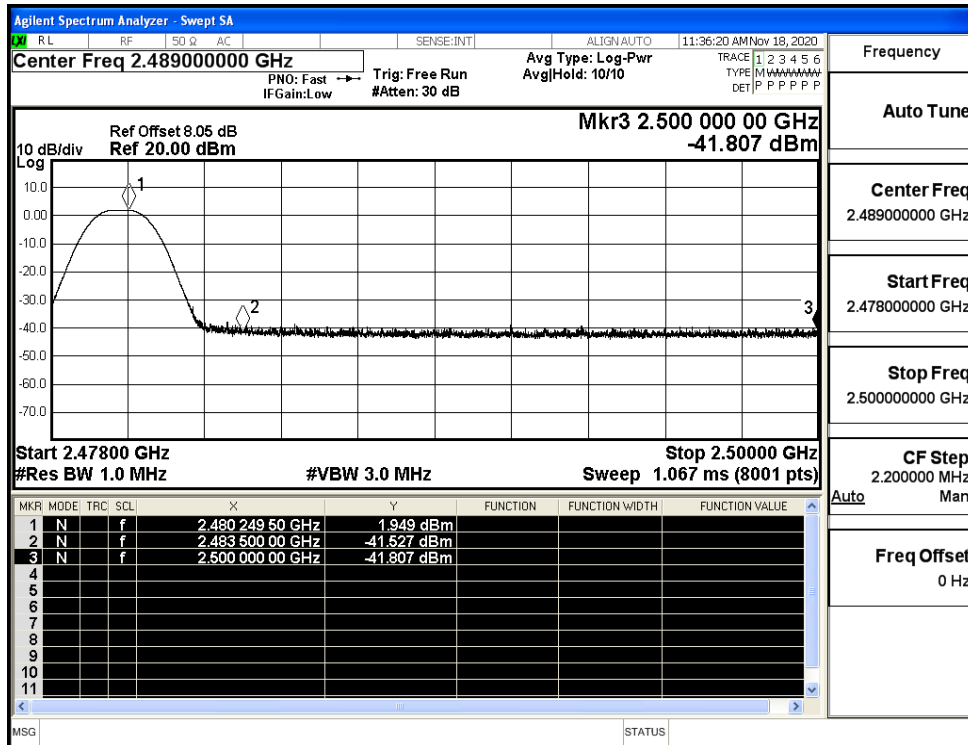
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

