Appendix B

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

Product Name: t-Seven True Wireless

Trade Mark: Jays

Test Model: T7TW01

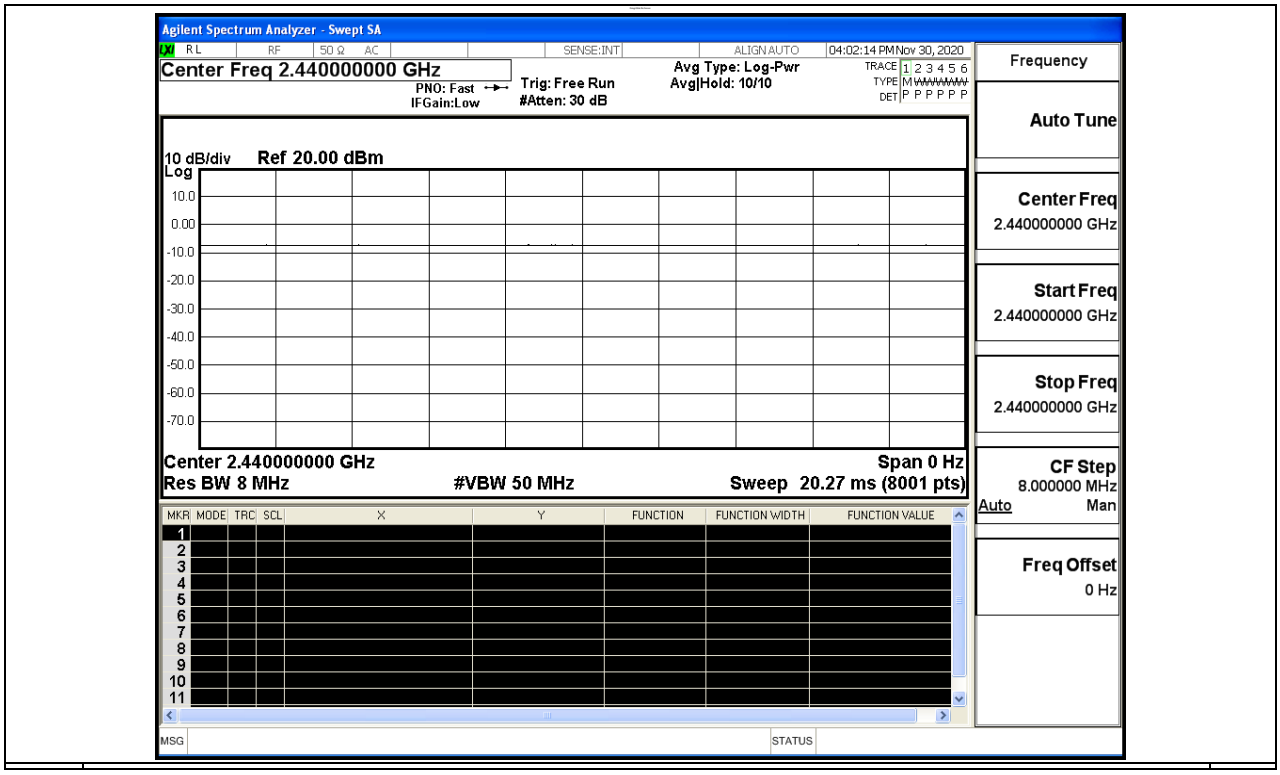
Environmental Conditions

Temperature:	22.2° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

B.1 Duty Cycle

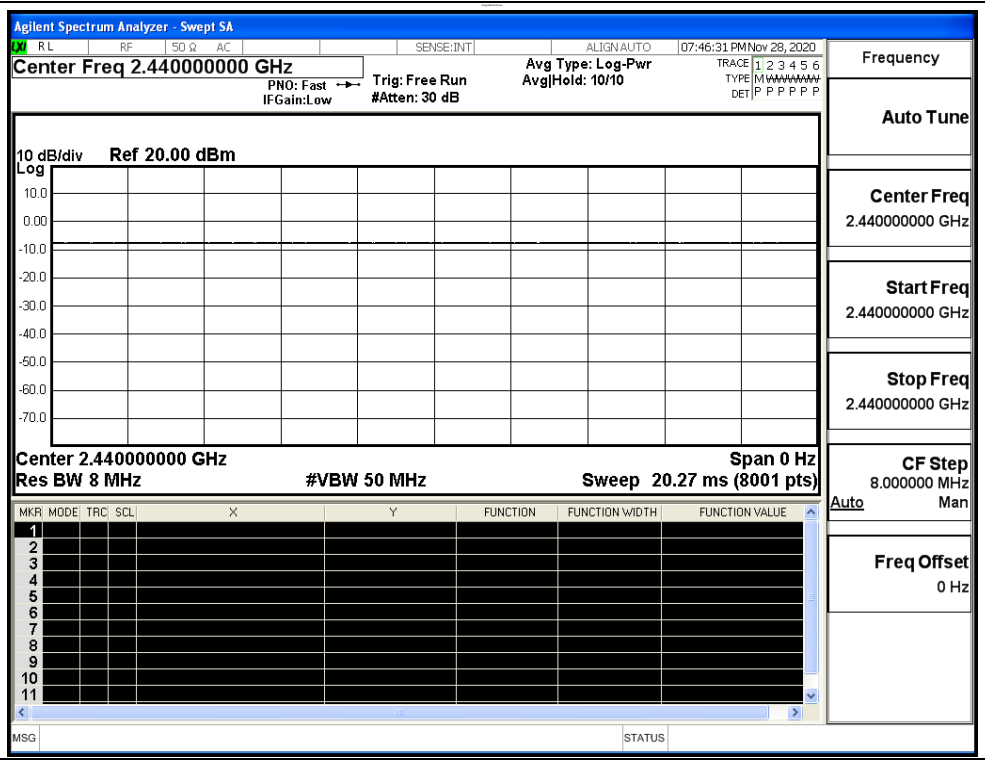
Right

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



Left

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



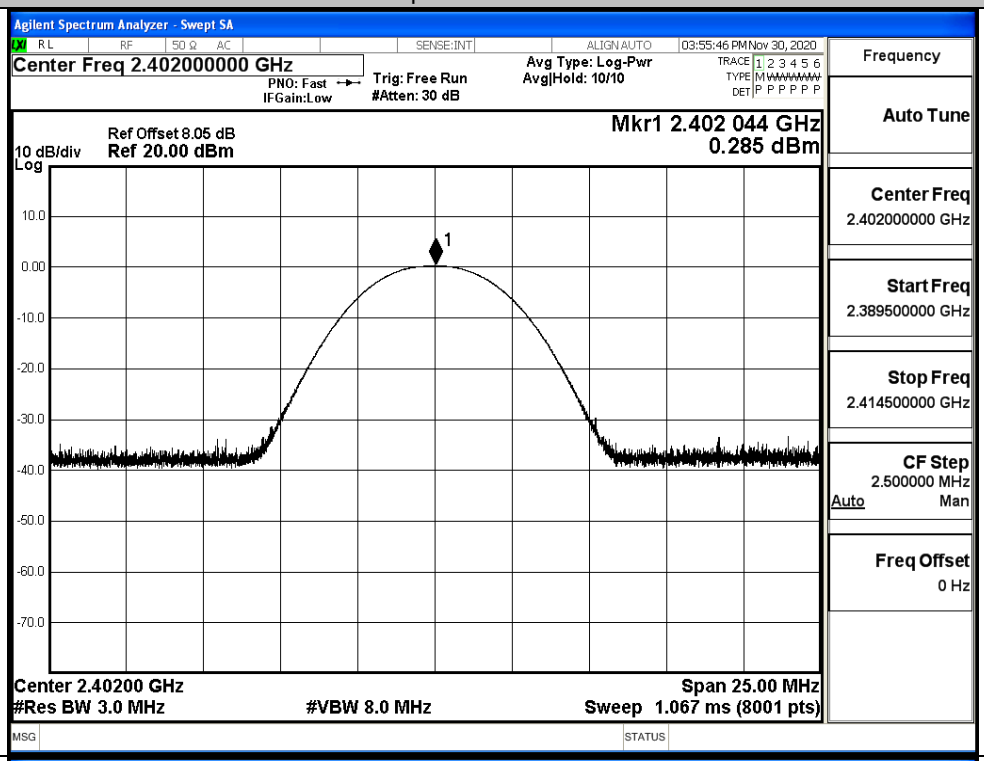
B.2 Maximum Conducted Peak Output Power

Right

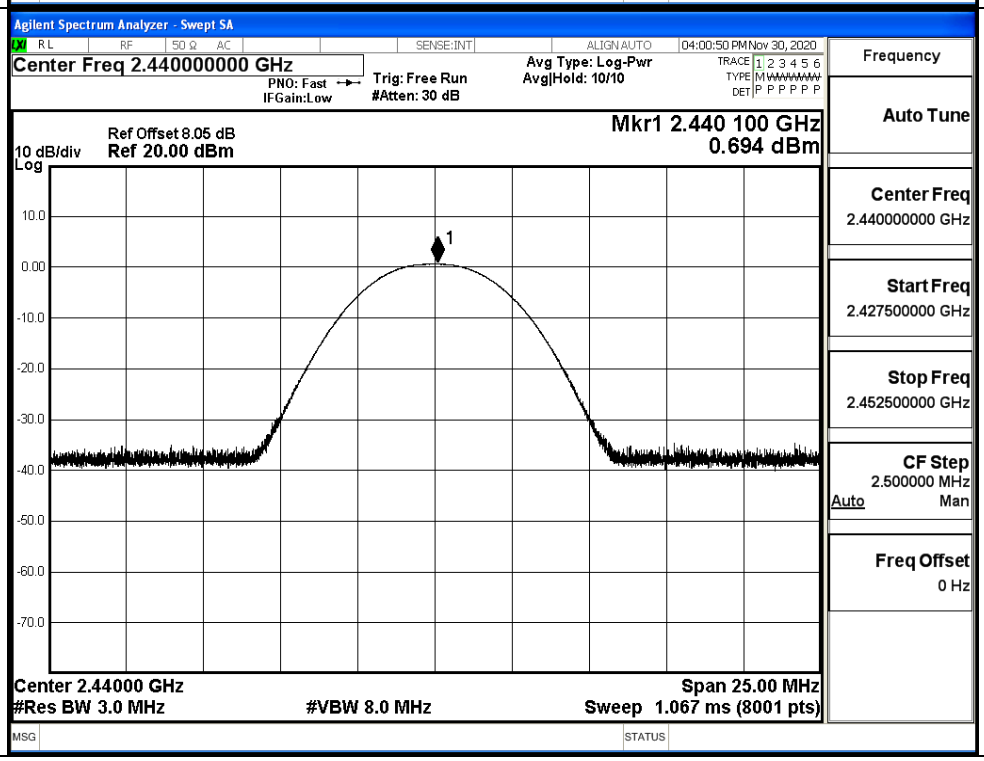
Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.285	30	PASS
BT LE	MCH	**0.694**	30	PASS
BT LE	HCH	0.460	30	PASS

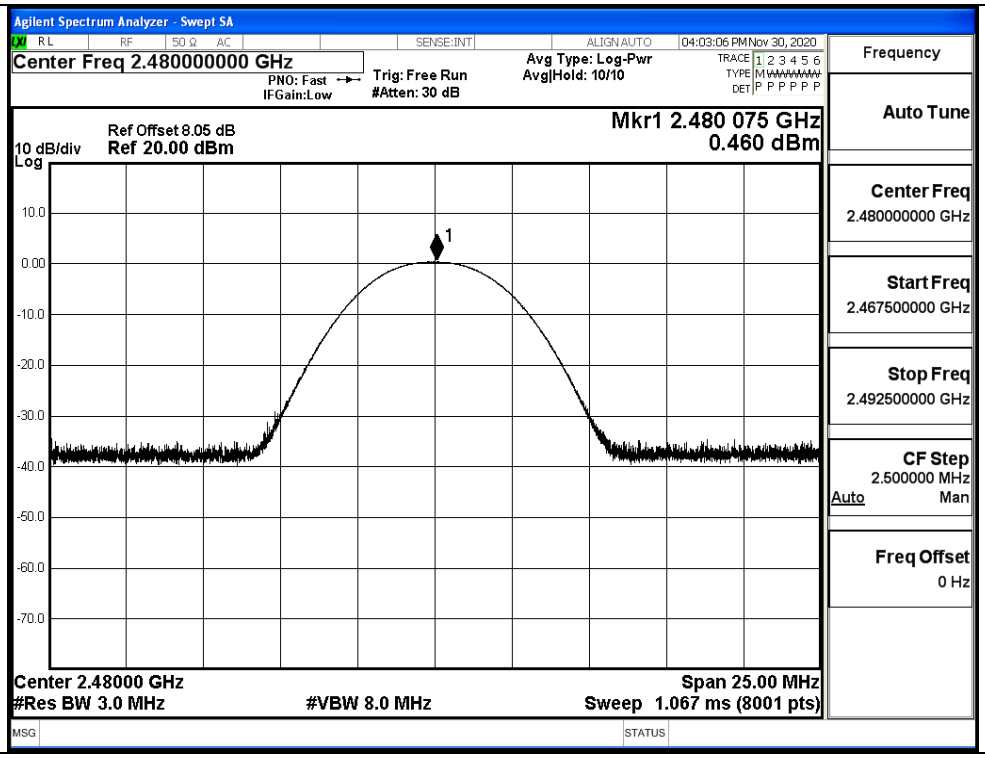
Test Graphs

LCH



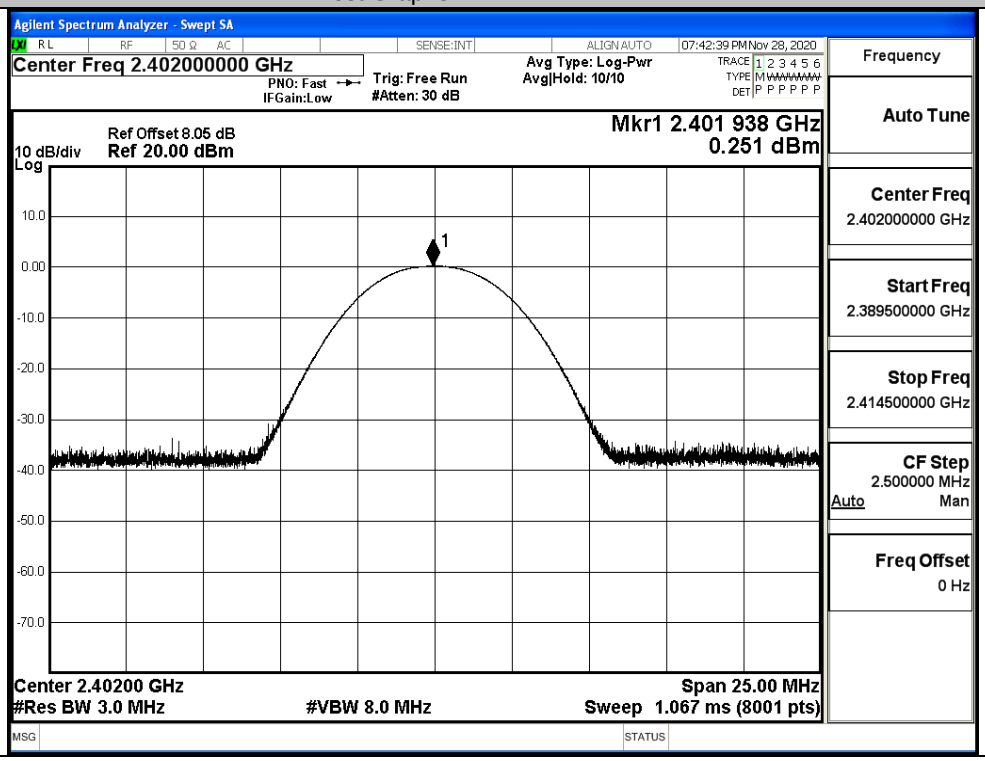
MCH

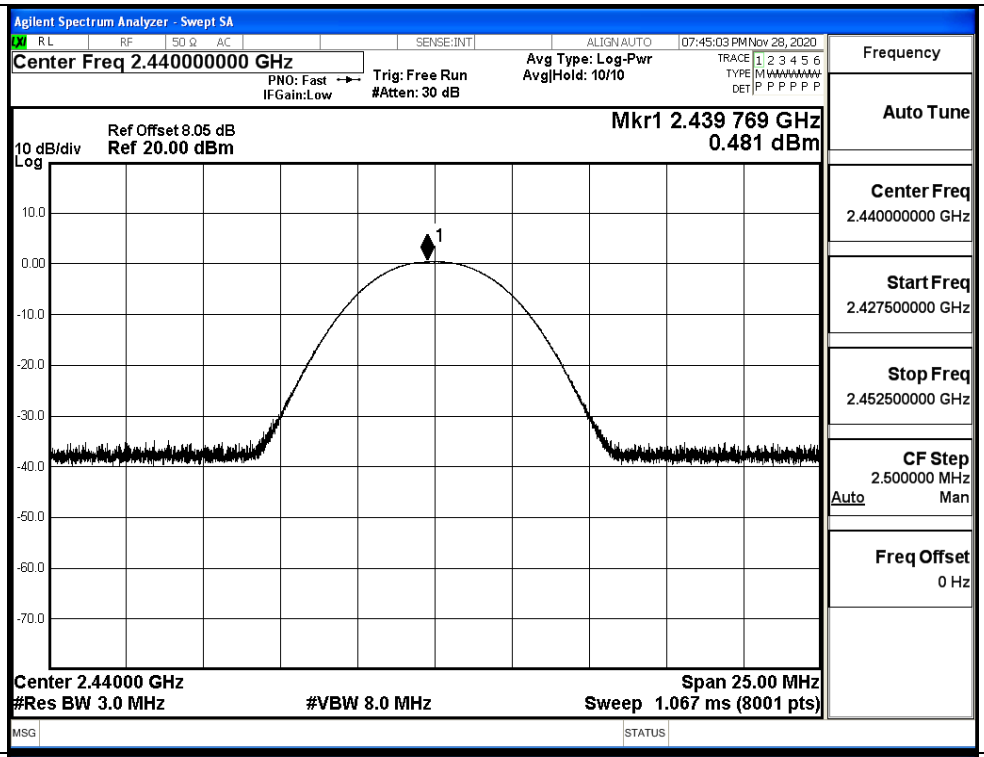
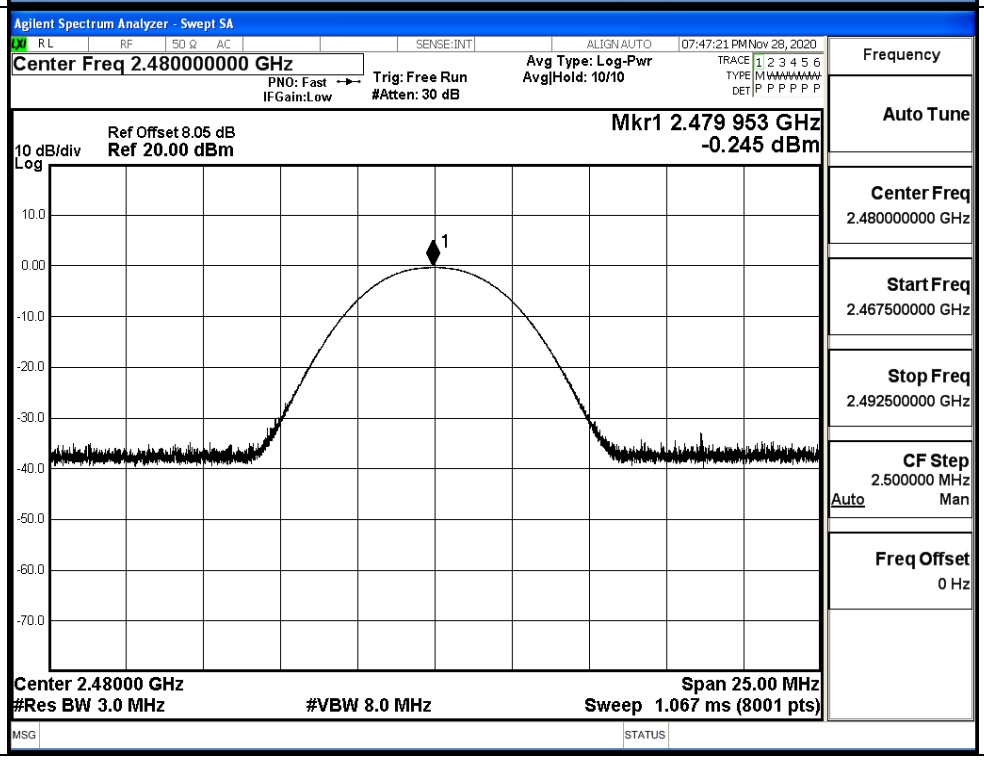


HCH	

Left

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.251	30	PASS
BT LE	MCH	0.481	30	PASS
BT LE	HCH	-0.245	30	PASS

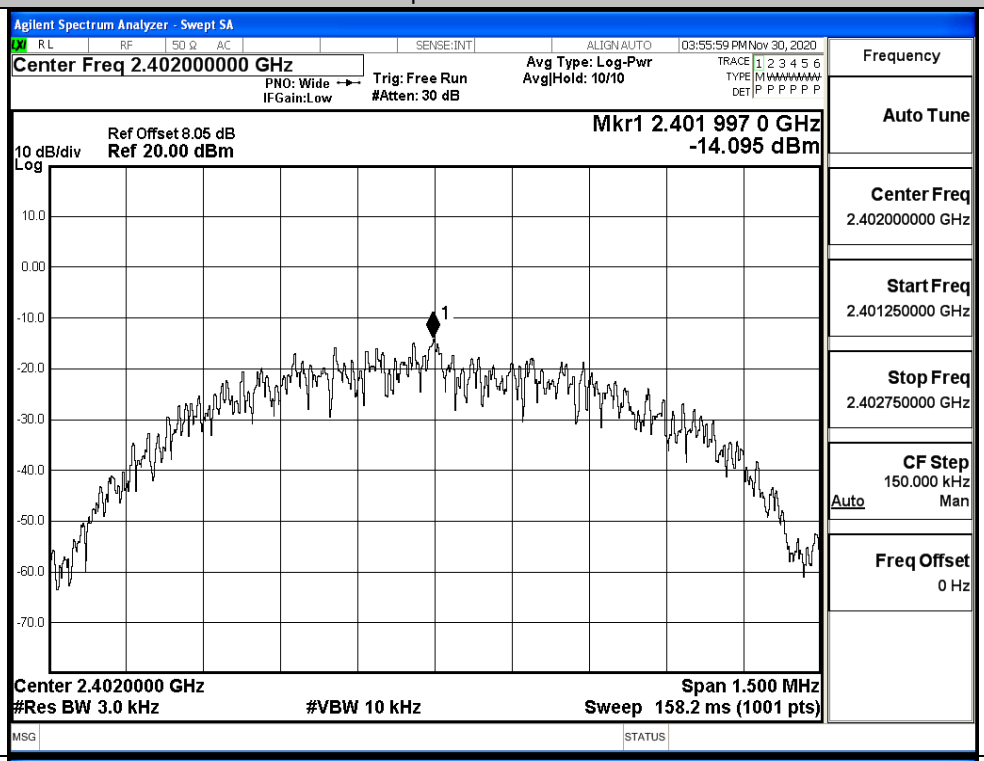
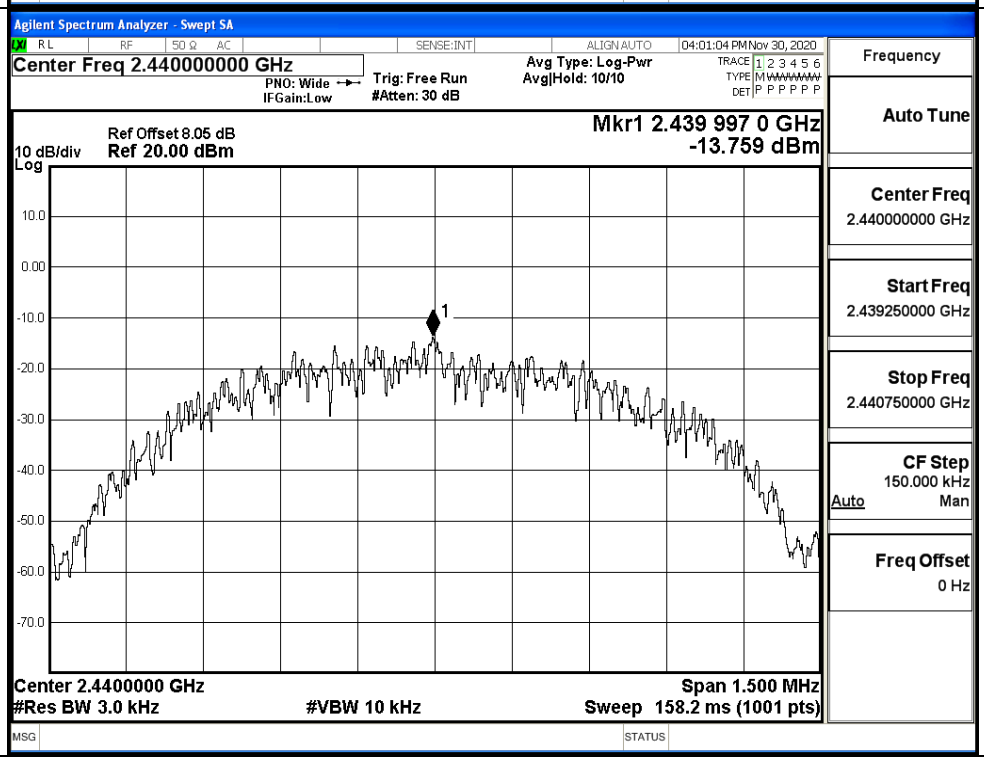
Test Graphs	
LCH	

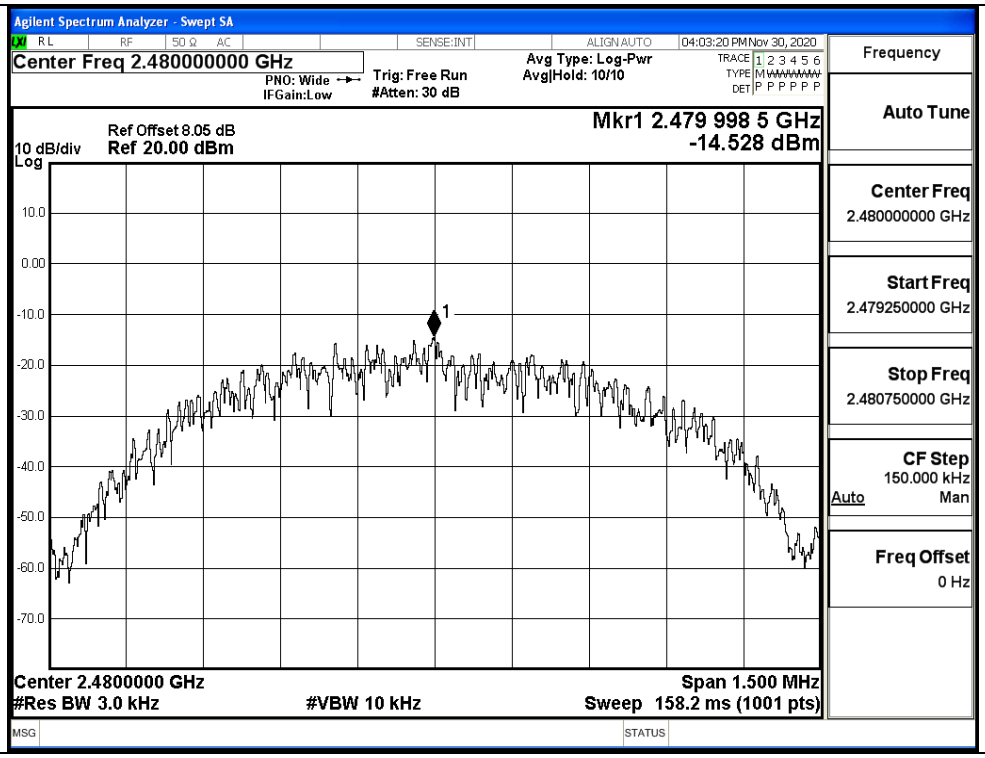
MCH		 Agilent Spectrum Analyzer - Swept SA Center Freq 2.440000000 GHz PNO: Fast IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg|Hold: 10/10 07:45:03 PM Nov 28, 2020 Ref Offset 8.05 dB 10 dB/div Log Ref 20.00 dBm Mkr1 2.439 769 GHz 0.481 dBm Center 2.44000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Span 25.00 MHz Sweep 1.067 ms (8001 pts) Frequency Auto Tune Center Freq 2.440000000 GHz Start Freq 2.427500000 GHz Stop Freq 2.452500000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz
HCH		 Agilent Spectrum Analyzer - Swept SA Center Freq 2.480000000 GHz PNO: Fast IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg|Hold: 10/10 07:47:21 PM Nov 28, 2020 Ref Offset 8.05 dB 10 dB/div Log Ref 20.00 dBm Mkr1 2.479 953 GHz -0.245 dBm Center 2.48000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Span 25.00 MHz Sweep 1.067 ms (8001 pts) Frequency Auto Tune Center Freq 2.480000000 GHz Start Freq 2.467500000 GHz Stop Freq 2.492500000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz

B.3 Maximum Power Spectral Density

Right

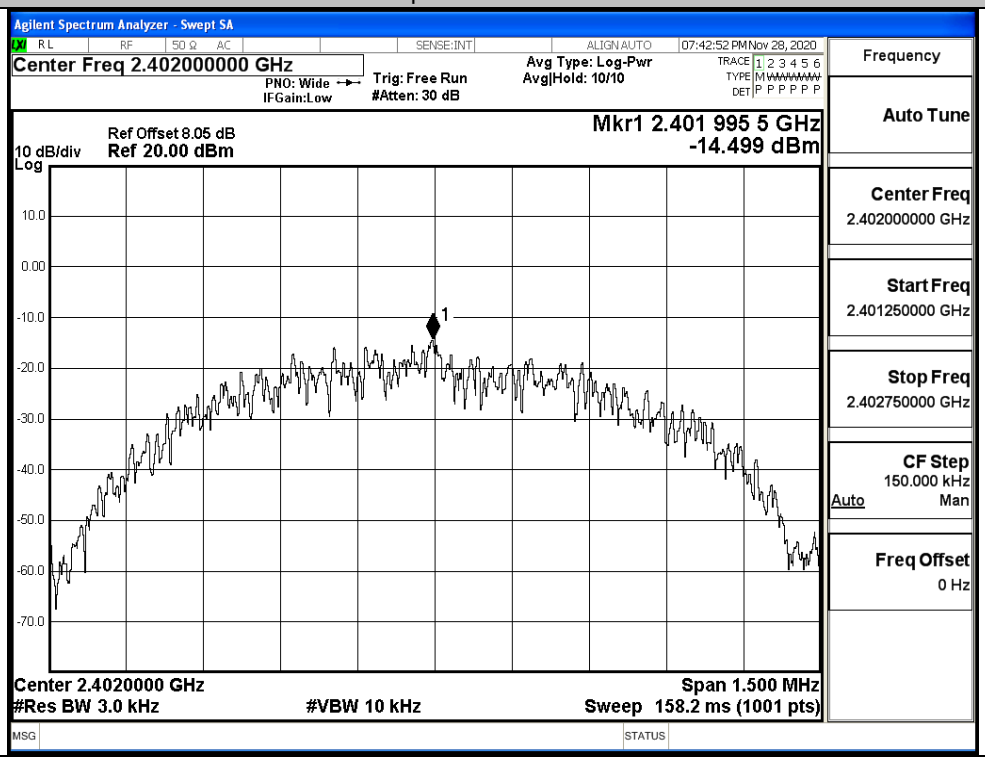
Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-14.095	8	PASS
BT LE	MCH	-13.759	8	PASS
BT LE	HCH	-14.528	8	PASS

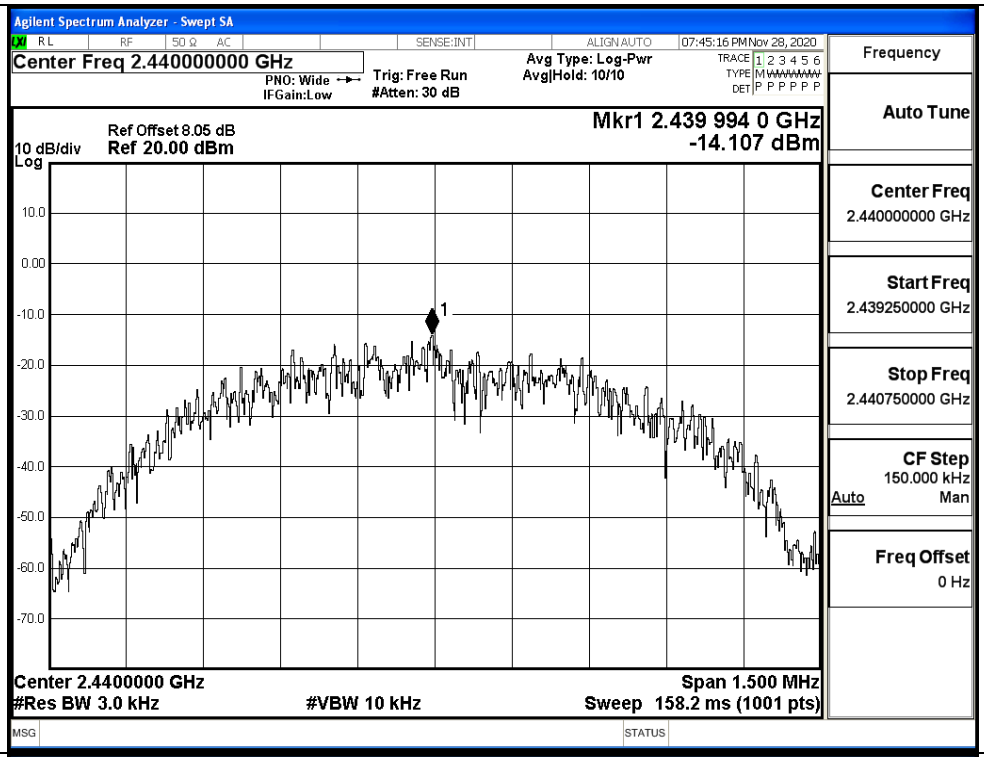
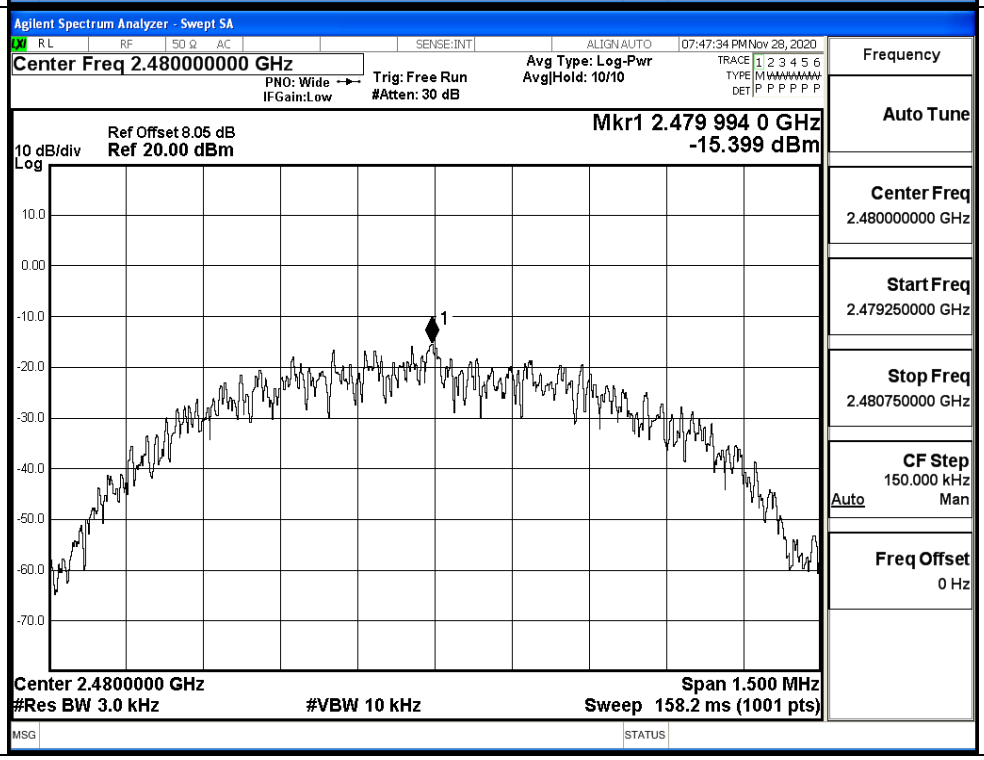
Test Graphs		
LCH		
MCH		

HCH	

Left

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-14.499	8	PASS
BT LE	MCH	-14.107	8	PASS
BT LE	HCH	-15.399	8	PASS

Test Graphs	
LCH	

MCH		
HCH		

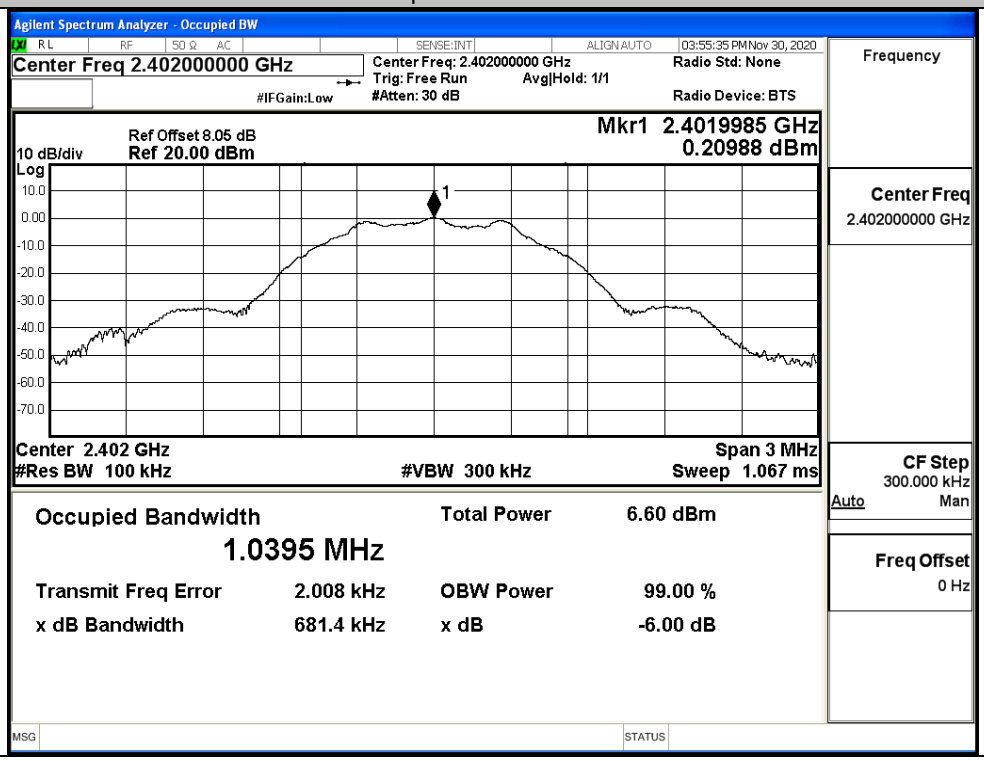
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.440000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
07:45:16 PM Nov 28, 2020
Ref Offset 8.05 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.439 994 0 GHz
-14.107 dBm
Center 2.4400000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 1.500 MHz
Sweep 158.2 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.440000000 GHz
Start Freq
2.439250000 GHz
Stop Freq
2.440750000 GHz
CF Step
150.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

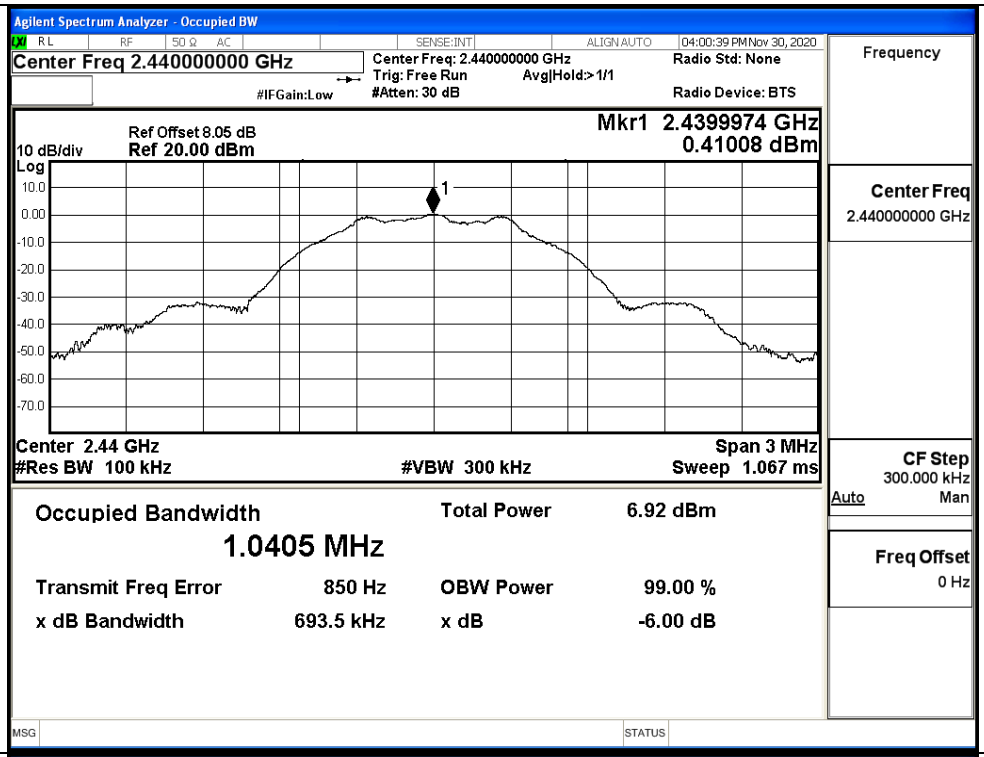
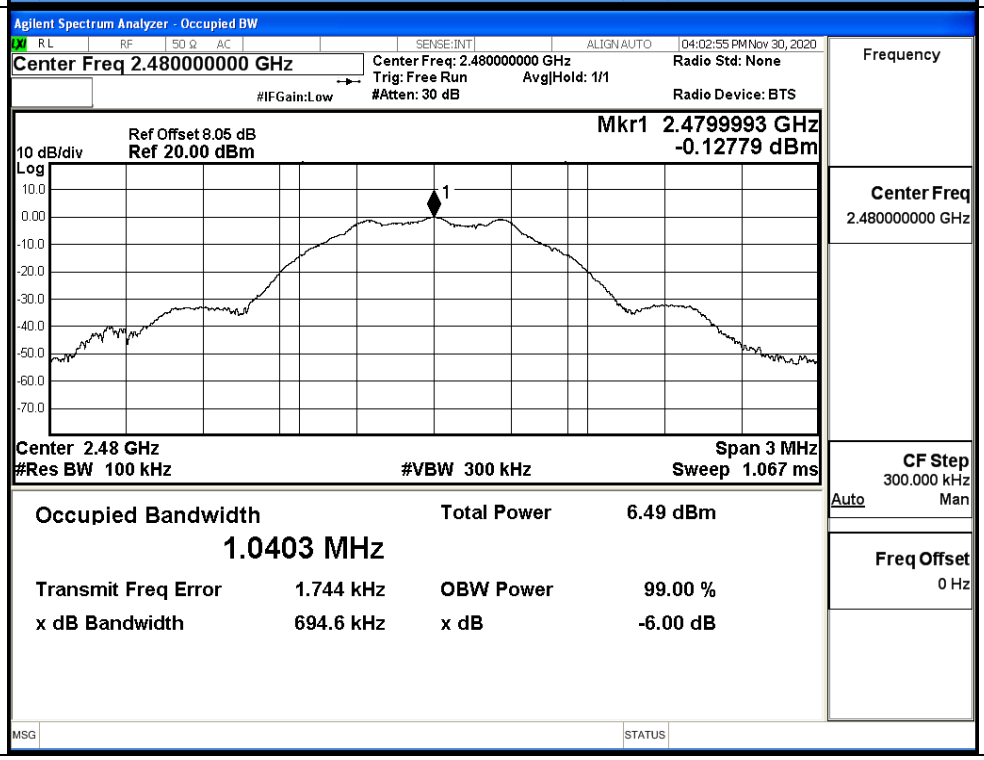
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
07:47:34 PM Nov 28, 2020
Ref Offset 8.05 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.479 994 0 GHz
-15.399 dBm
Center 2.4800000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 1.500 MHz
Sweep 158.2 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.479250000 GHz
Stop Freq
2.480750000 GHz
CF Step
150.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

B.4 6dB Bandwidth

Right

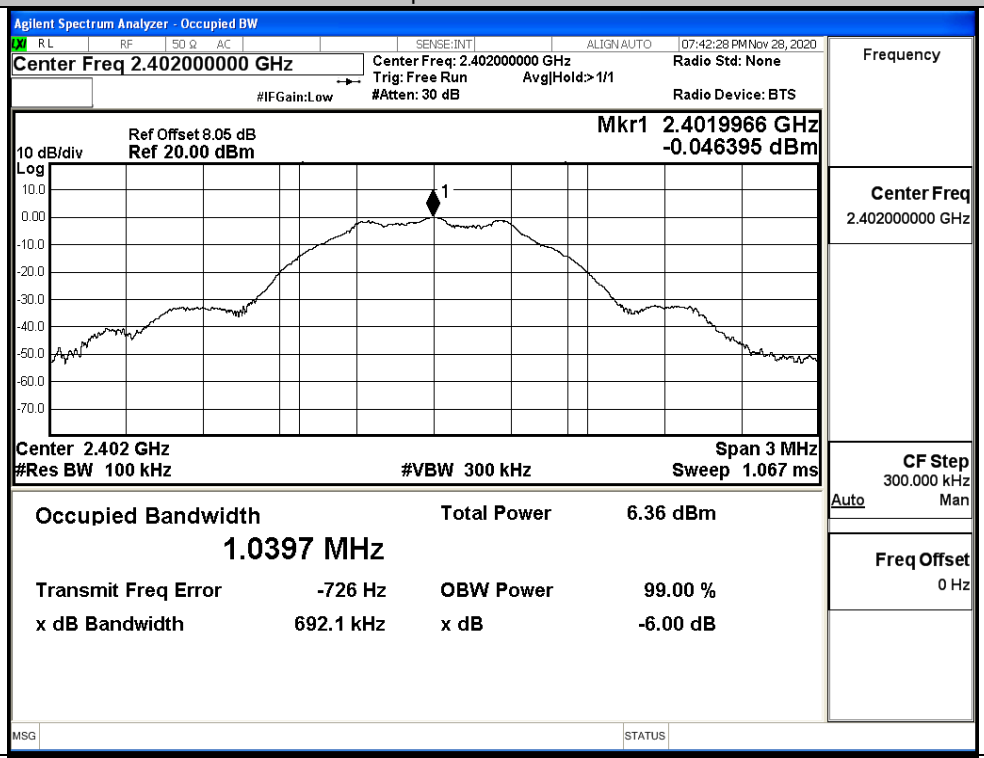
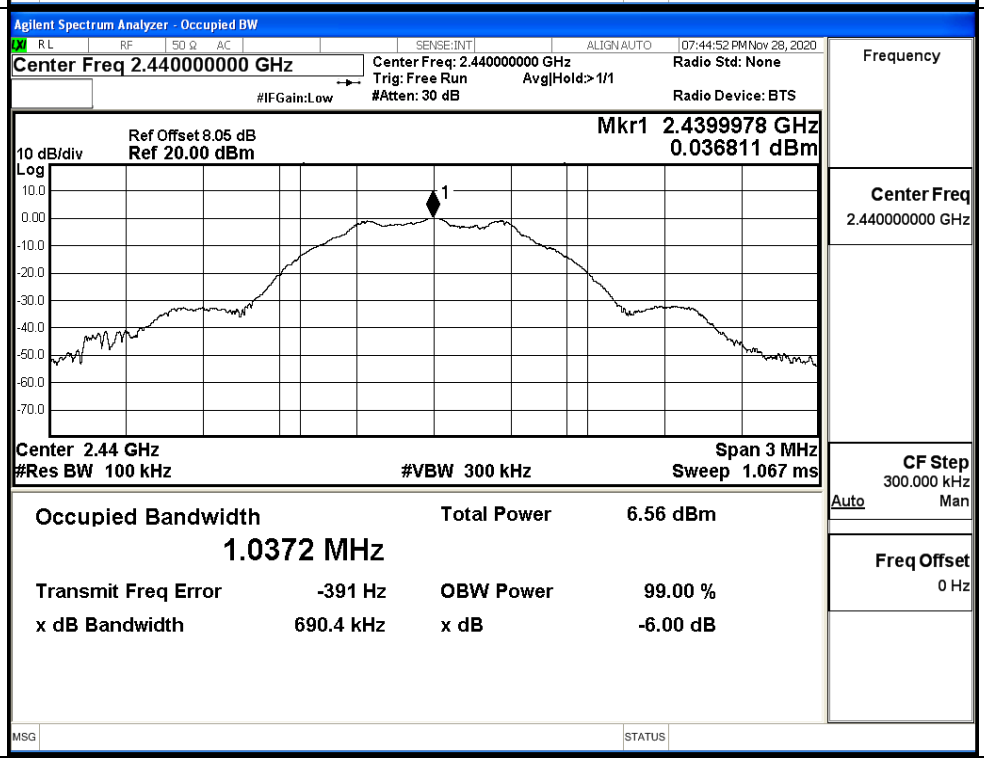
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6814	⩾0.5	PASS
BT LE	MCH	0.6935	⩾0.5	PASS
BT LE	HCH	0.6946	⩾0.5	PASS

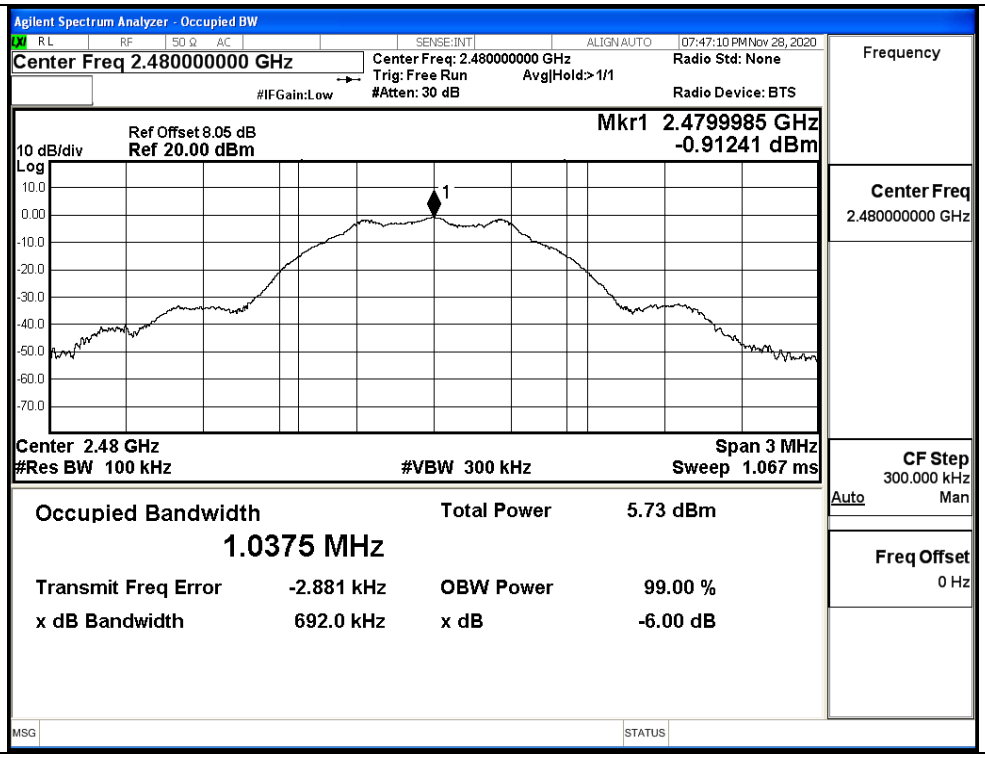
Test Graphs		
LCH		

MCH		
HCH		

Left

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6921	⩾0.5	PASS
BT LE	MCH	0.6904	⩾0.5	PASS
BT LE	HCH	0.6920	⩾0.5	PASS

Test Graphs		
LCH		
MCH		

HCH		

Agilent Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
07:47:10 PM Nov 28, 2020
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>1/1
#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 8.05 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.4799985 GHz
-0.91241 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 3 MHz
Sweep 1.067 ms
CF Step
300.000 kHz
Auto
Man
Occupied Bandwidth
1.0375 MHz
Total Power 5.73 dBm
Transmit Freq Error -2.881 kHz
OBW Power 99.00 %
x dB Bandwidth 692.0 kHz
x dB -6.00 dB
Freq Offset
0 Hz
MSG
STATUS

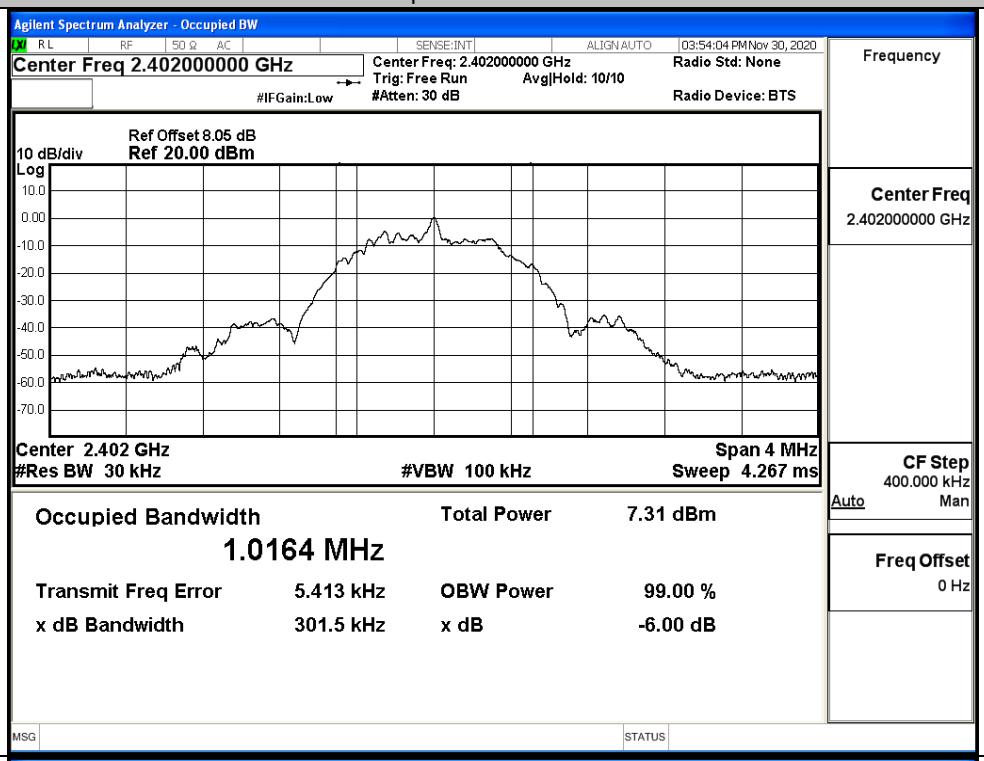
B.5 Occupied Bandwidth

Right

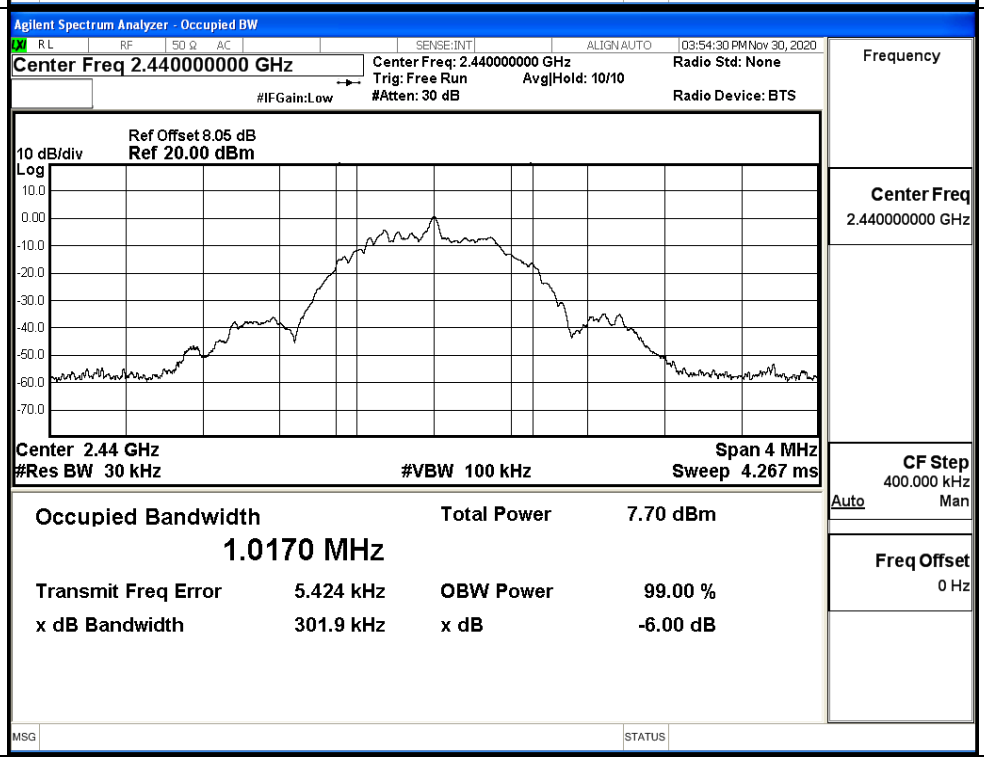
Mode	Channel	Occupied Bandwidth [MHz]	Verdict
BT LE	LCH	1.0164	PASS
BT LE	MCH	1.0170	PASS
BT LE	HCH	1.0167	PASS

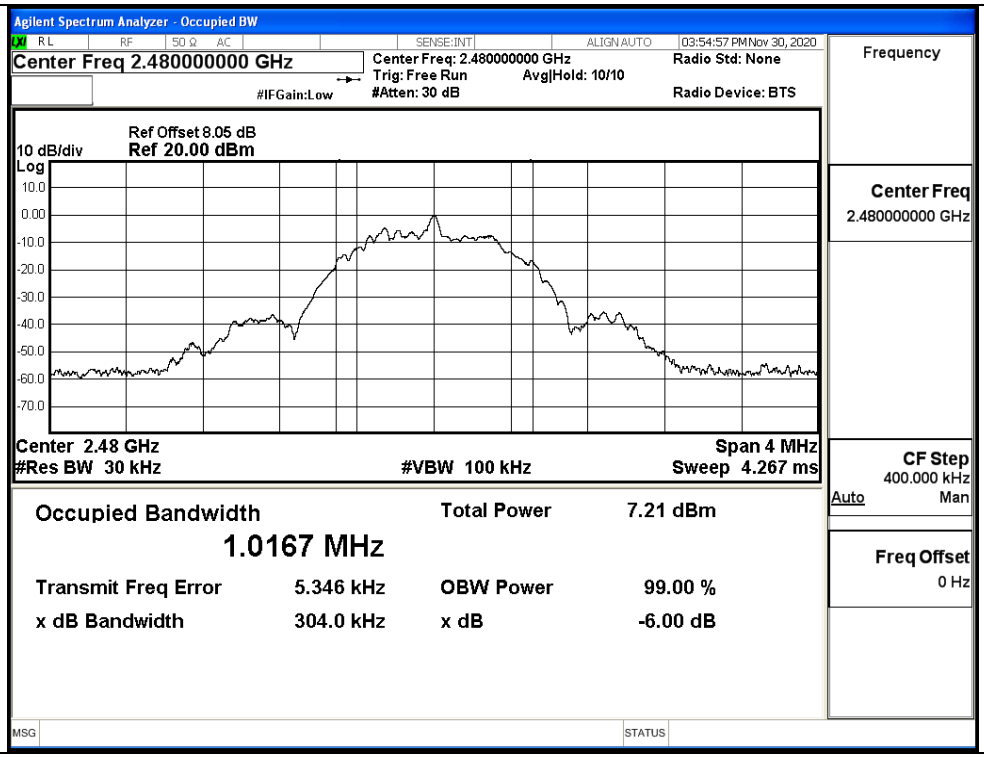
Test Graphs

LCH



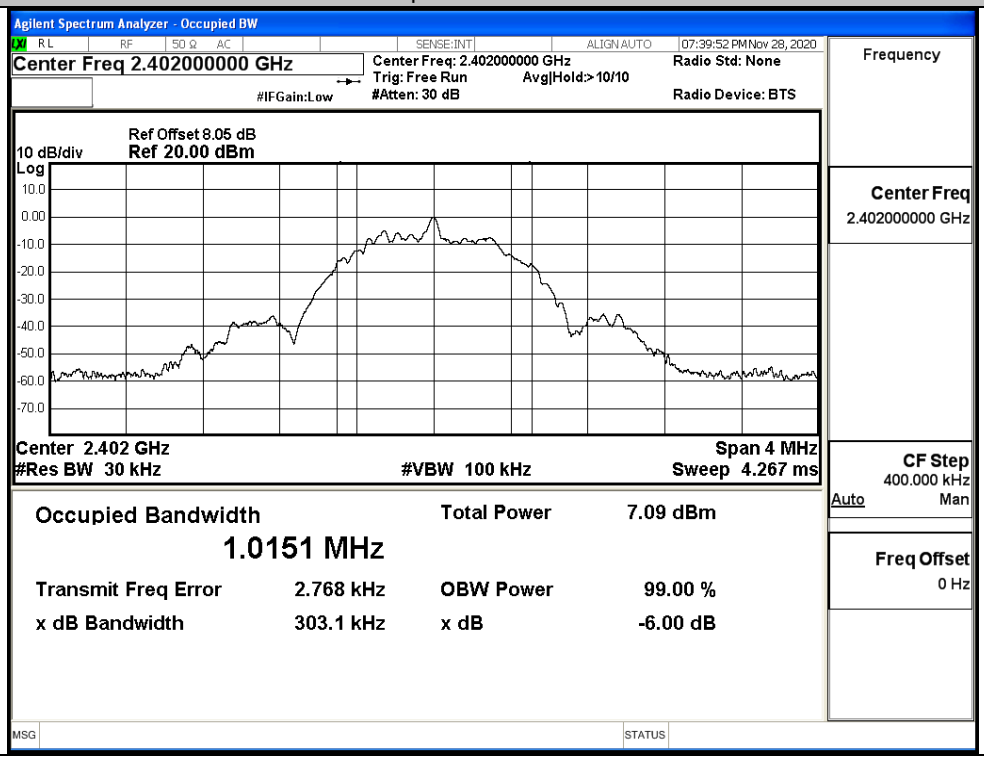
MCH

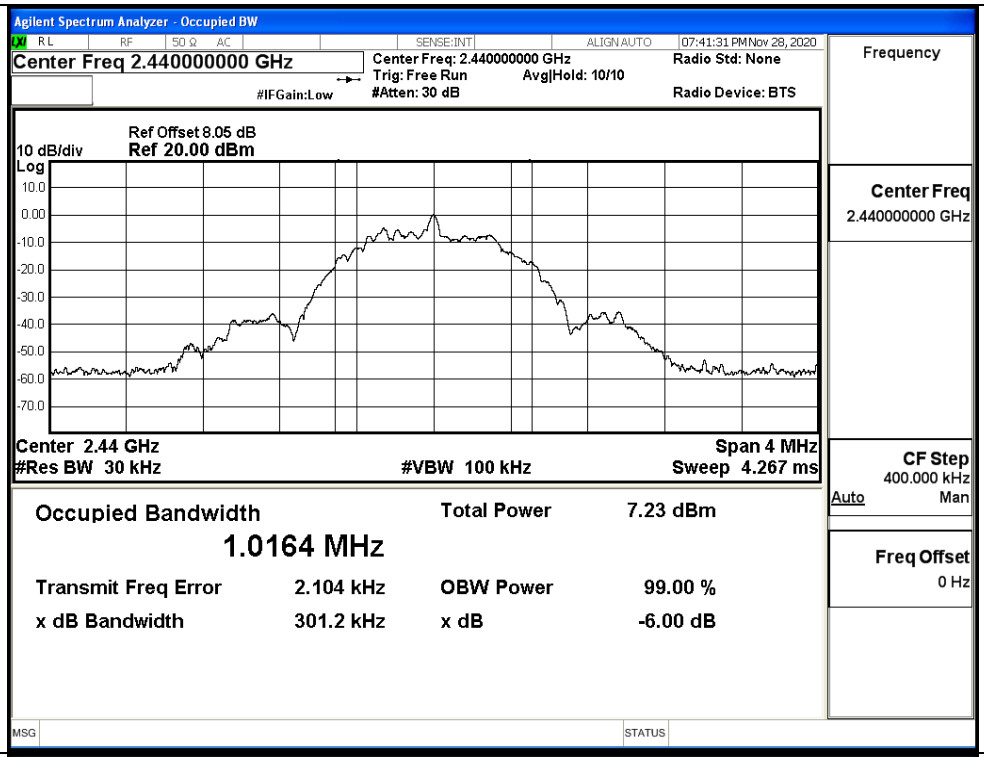


HCH	

Left

Mode	Channel	Occupied Bandwidth [MHz]	Verdict
BT LE	LCH	1.0151	PASS
BT LE	MCH	1.0164	PASS
BT LE	HCH	1.0155	PASS

Test Graphs	
LCH	

MCH		
HCH		

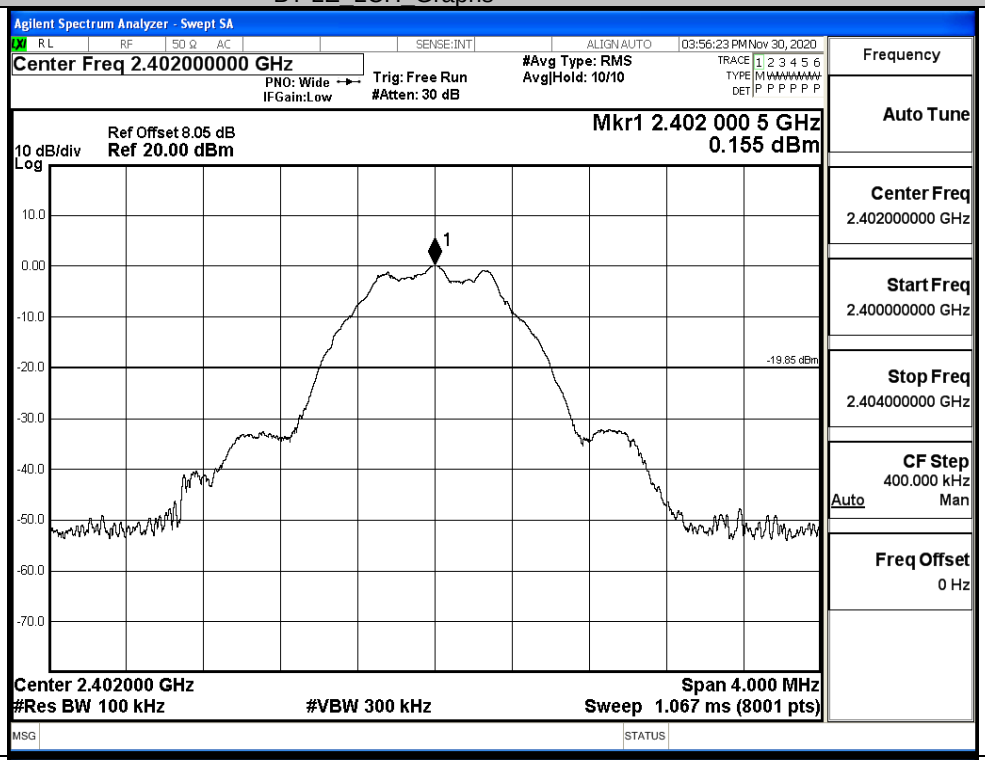
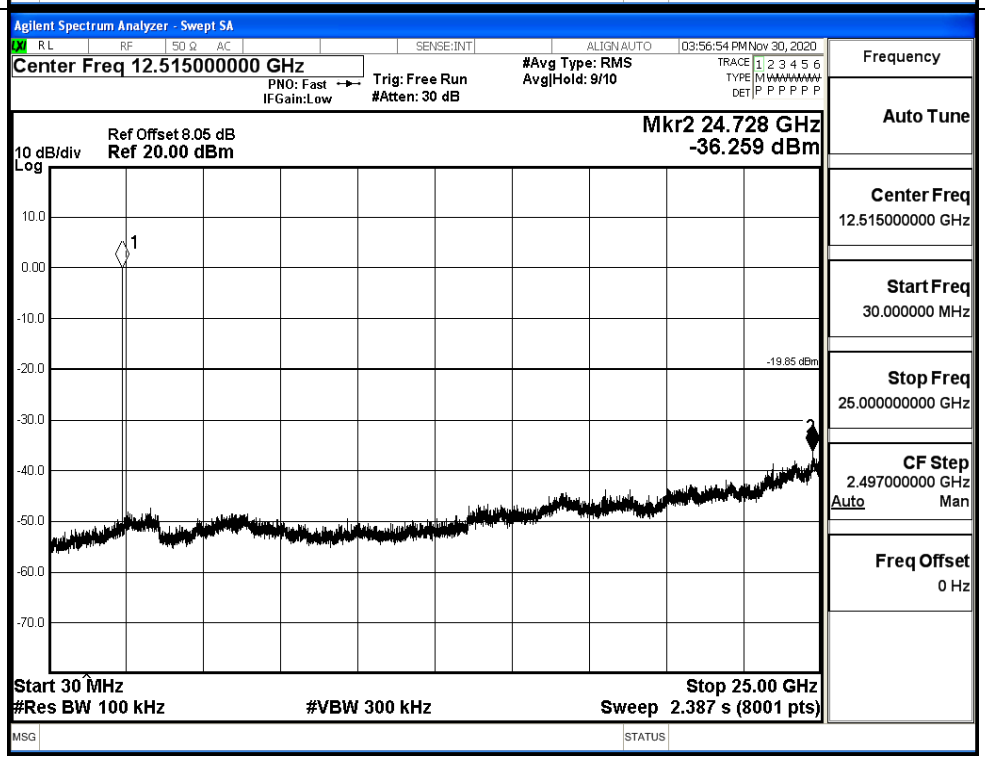
Agilent Spectrum Analyzer - Occupied BW
RL RF 50 Ω AC SENSE:INT ALIGN AUTO 07:41:31 PM Nov 28, 2020
Center Freq 2.440000000 GHz
Center Freq: 2.440000000 GHz
Trig: Free Run Avg|Hold: 10/10
#IFGain:Low #Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.05 dB
10 dB/div Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.44 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 4 MHz
Sweep 4.267 ms
Occupied Bandwidth
1.0164 MHz
Total Power 7.23 dBm
Transmit Freq Error 2.104 kHz
OBW Power 99.00 %
x dB Bandwidth 301.2 kHz
x dB -6.00 dB
MSG
STATUS
Frequency
Center Freq
2.440000000 GHz
CF Step
400.000 kHz
Auto Man
Freq Offset
0 Hz

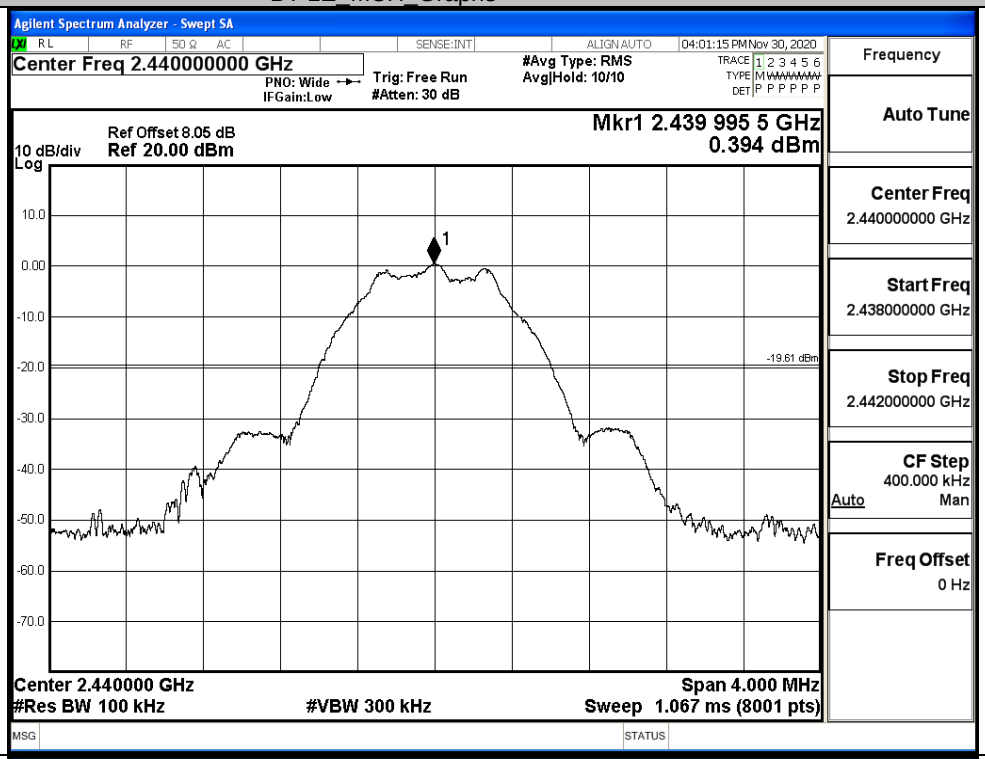
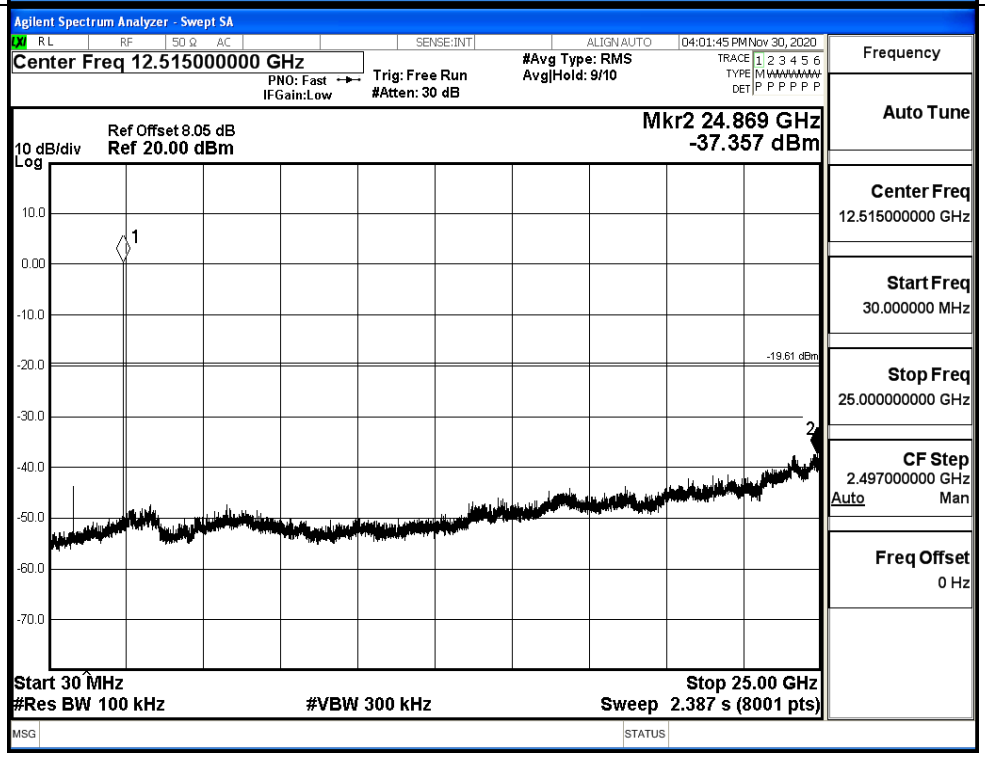
Agilent Spectrum Analyzer - Occupied BW
RL RF 50 Ω AC SENSE:INT ALIGN AUTO 07:41:56 PM Nov 28, 2020
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run Avg|Hold: 10/10
#IFGain:Low #Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.05 dB
10 dB/div Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.48 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 4 MHz
Sweep 4.267 ms
Occupied Bandwidth
1.0155 MHz
Total Power 6.48 dBm
Transmit Freq Error 3.097 kHz
OBW Power 99.00 %
x dB Bandwidth 304.7 kHz
x dB -6.00 dB
MSG
STATUS
Frequency
Center Freq
2.480000000 GHz
CF Step
400.000 kHz
Auto Man
Freq Offset
0 Hz

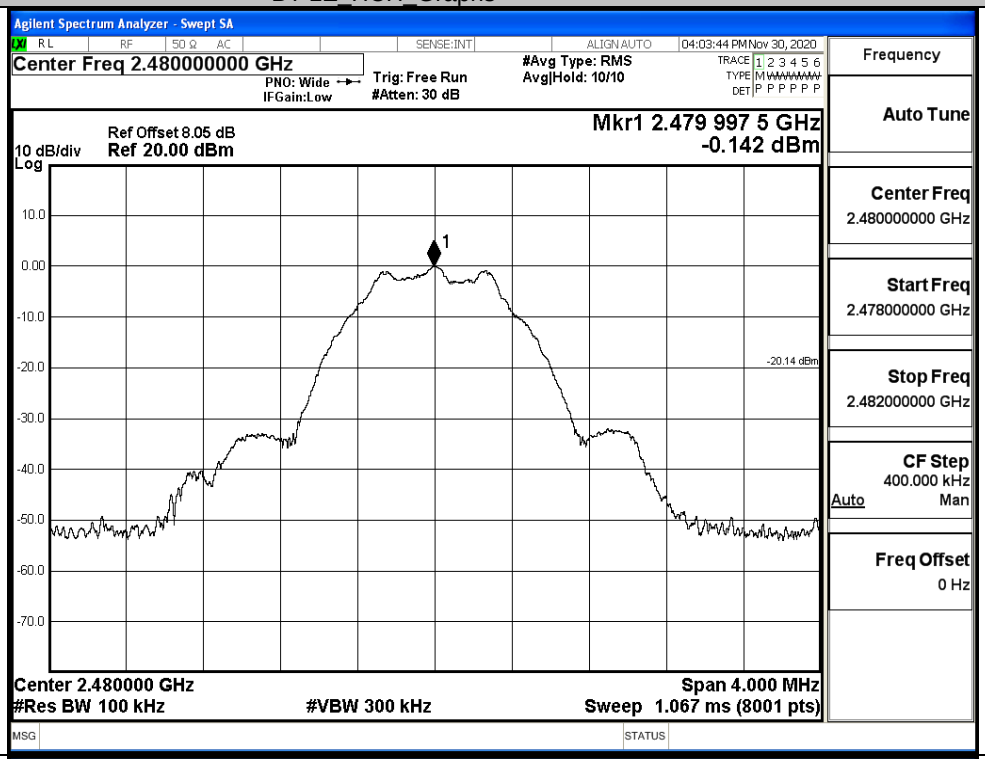
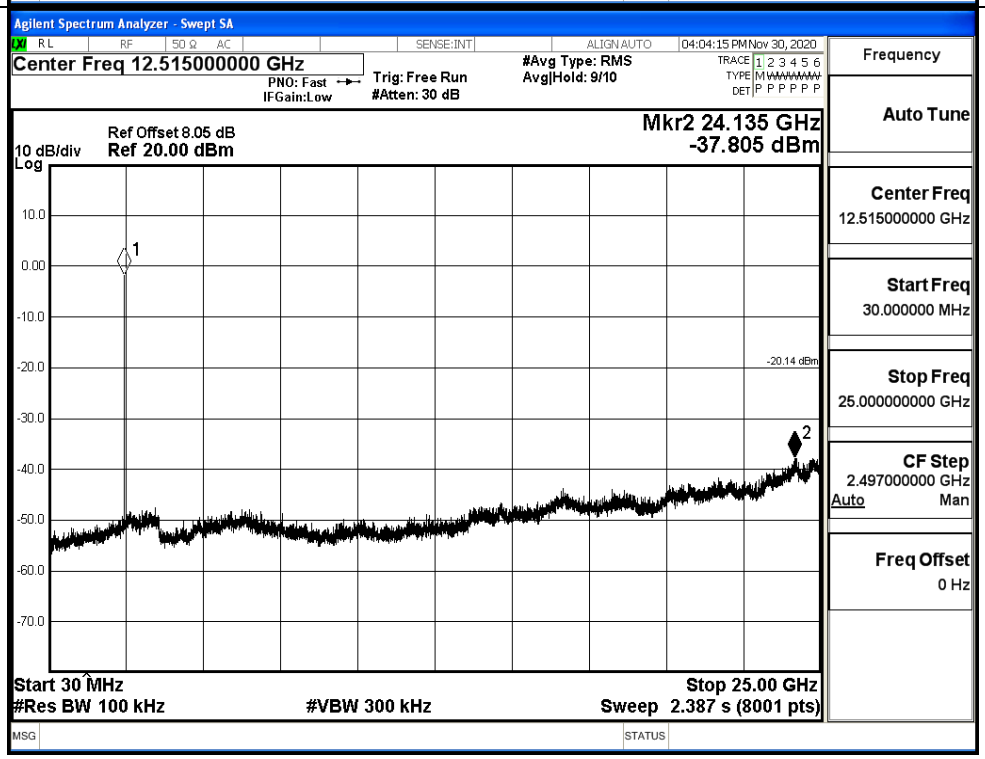
B.6 RF Conducted Spurious Emissions

Right

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.155	-36.259	-19.845	PASS
BT LE	MCH	0.394	-37.357	-19.606	PASS
BT LE	HCH	-0.142	-37.805	-20.142	PASS

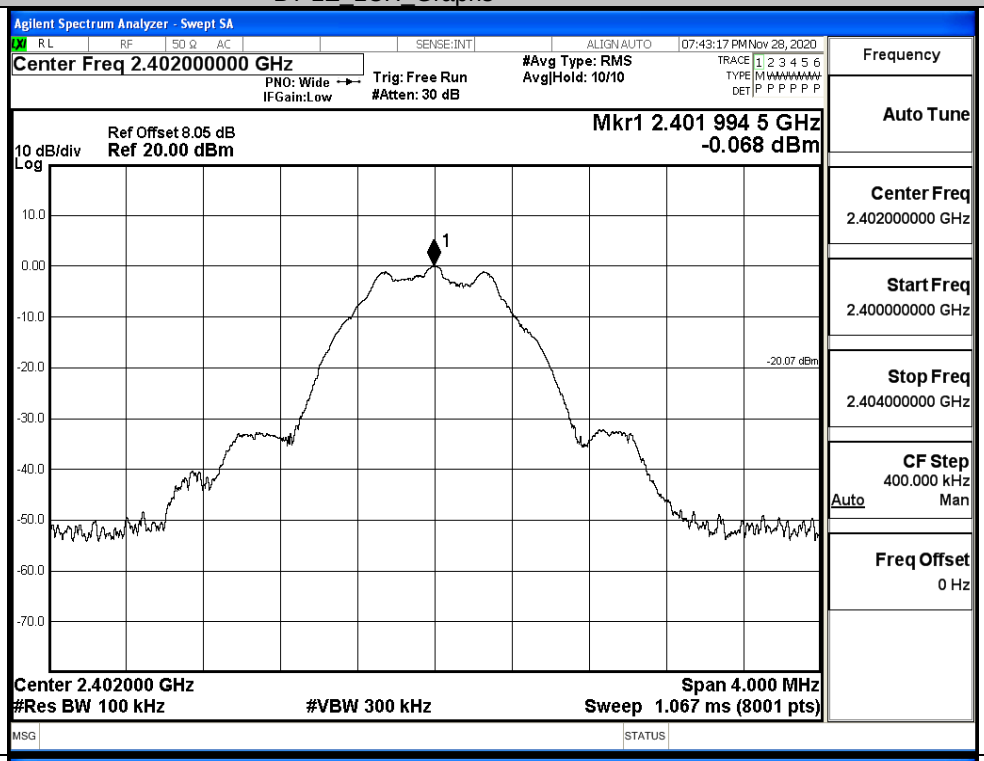
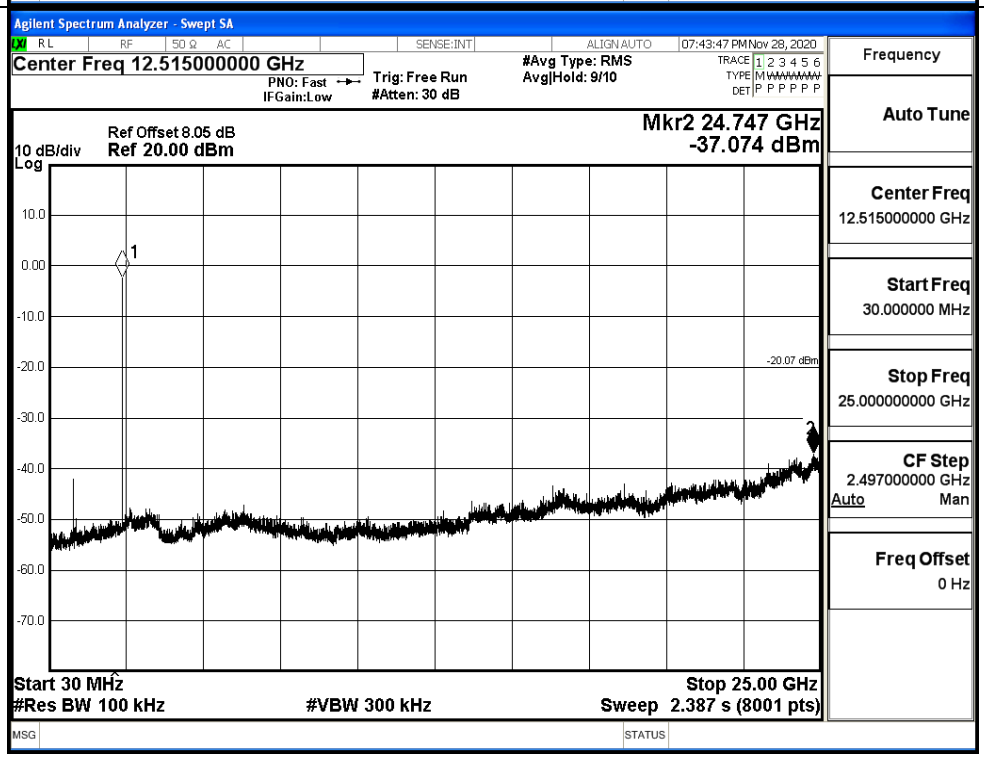
BT LE_LCH_Graphs	
Pref/BT LE/LCH	
Puw/BT LE/LCH	

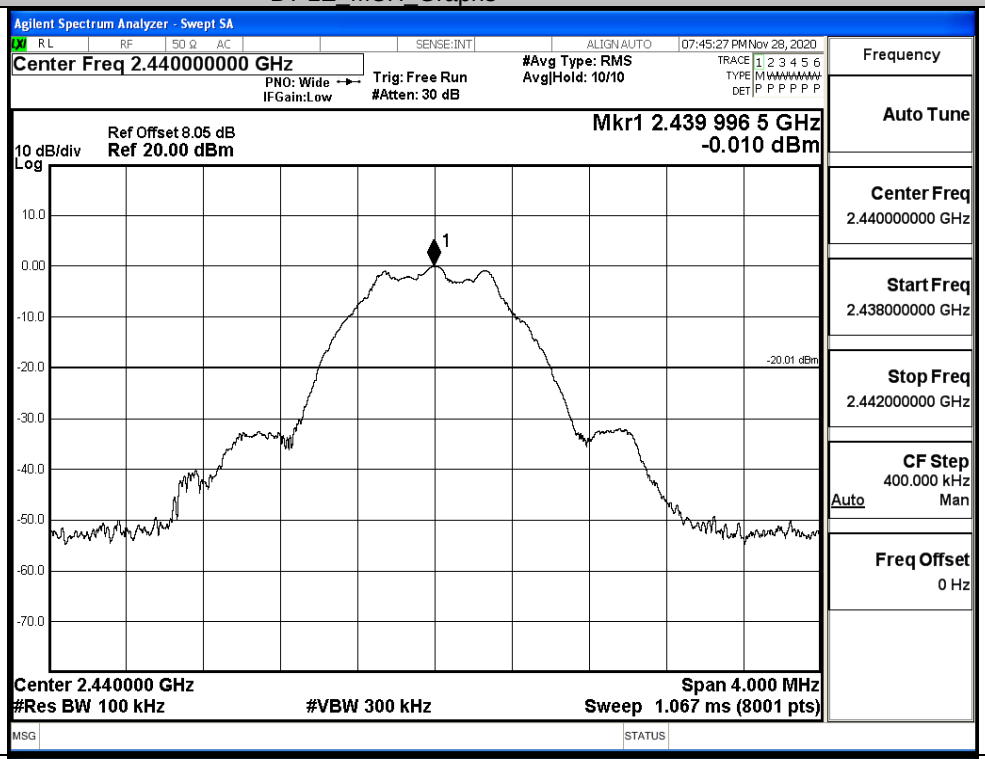
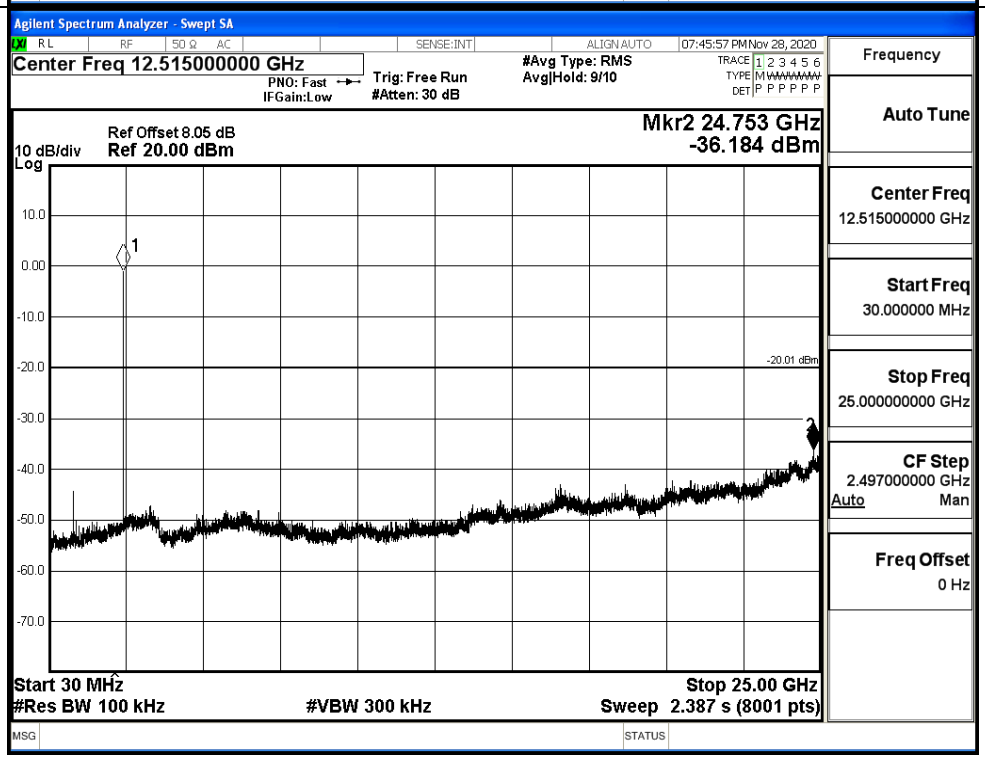
BT LE_MCH_Graphs	
Pref/BT LE/MCH	
Puw/BT LE/MCH	

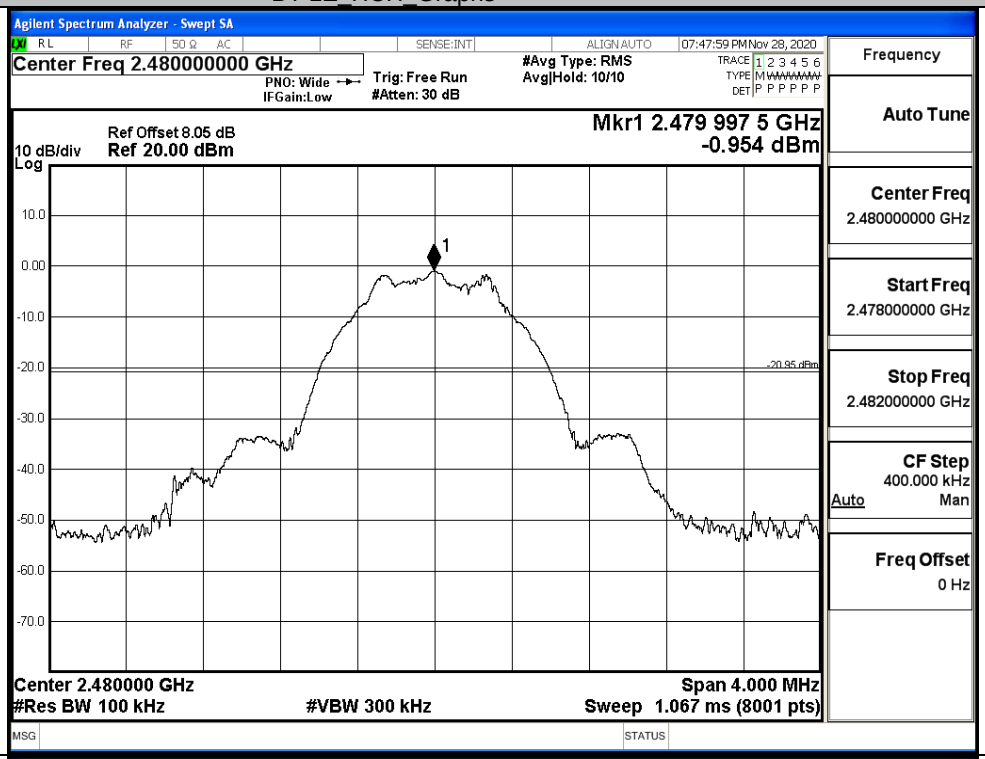
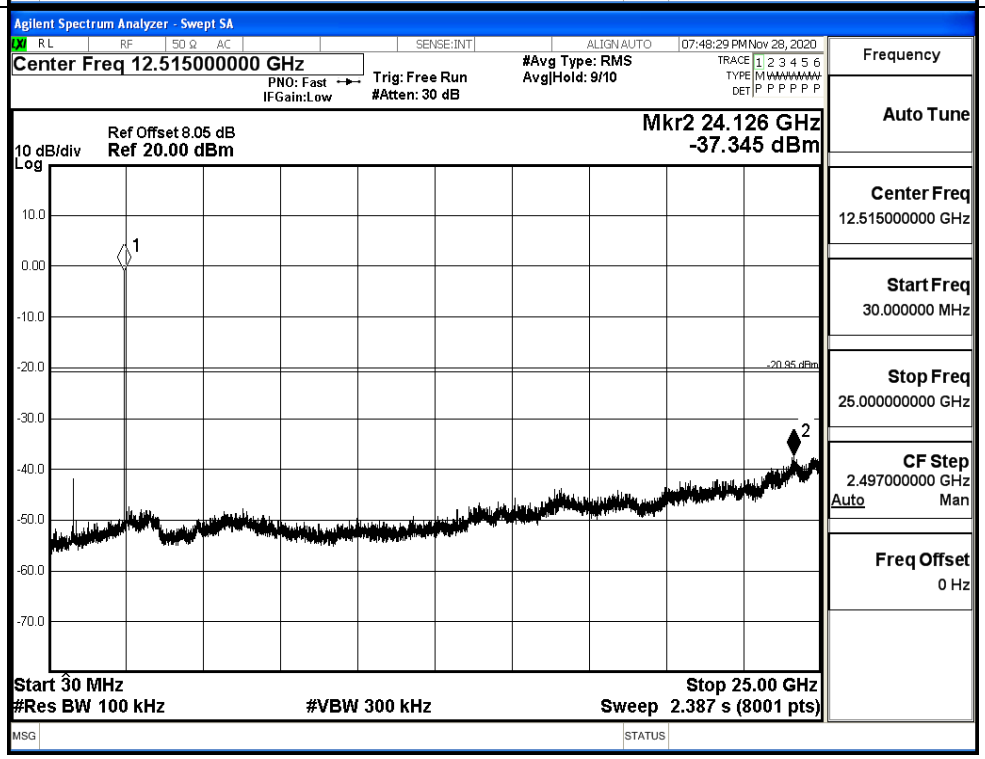
BT LE_HCH_Graphs	
Pref/BT LE/HCH	
Puw/BT LE/HCH	

Left

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-0.068	-37.074	-20.068	PASS
BT LE	MCH	-0.01	-36.184	-20.010	PASS
BT LE	HCH	-0.954	-37.345	-20.954	PASS

BT LE_LCH_Graphs	
Pref/BT LE/LCH	
Puw/BT LE/LCH	

BT LE_MCH_Graphs	
Pref/BT LE/MCH	
Puw/BT LE/MCH	

BT LE_HCH_Graphs	
Pref/BT LE/HCH	
Puw/BT LE/HCH	

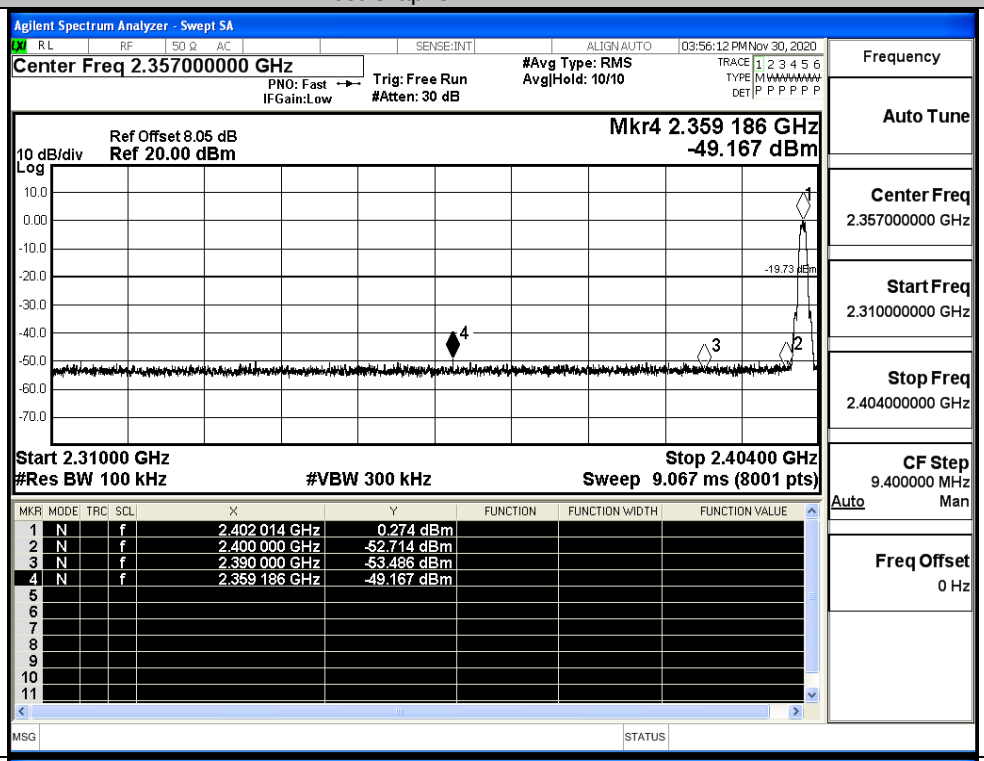
B.7 Band-edge for RF Conducted Emissions

Right

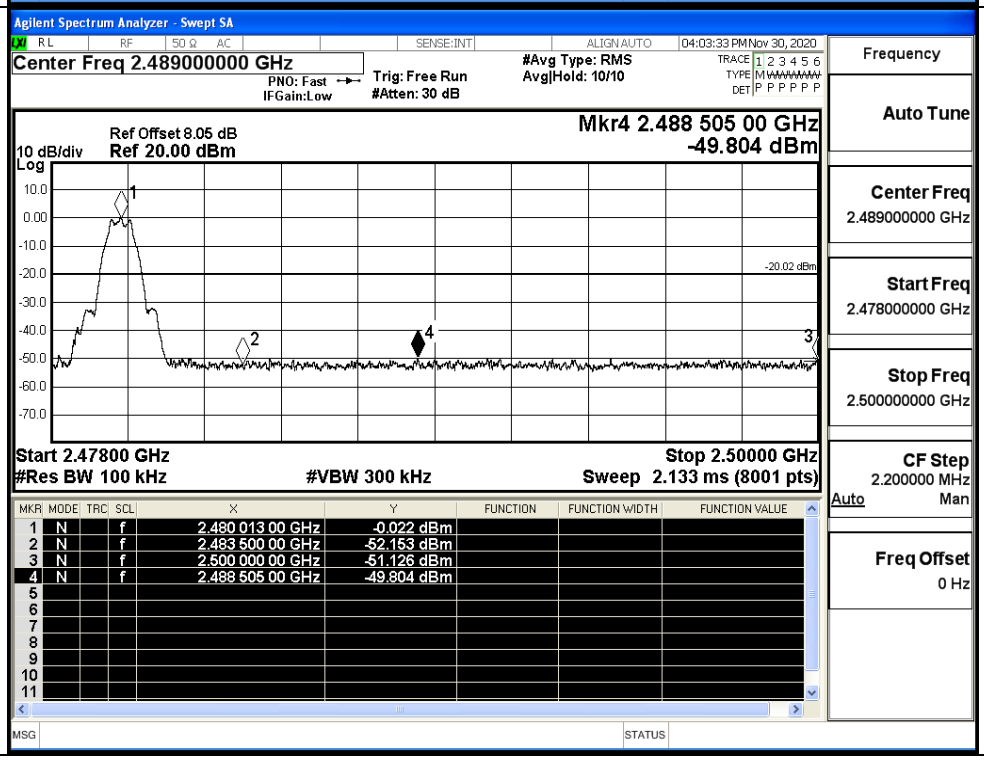
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.274	-49.167	-19.73	PASS
BT LE	HCH	-0.022	-49.804	-20.02	PASS

Test Graphs

LCH



HCH

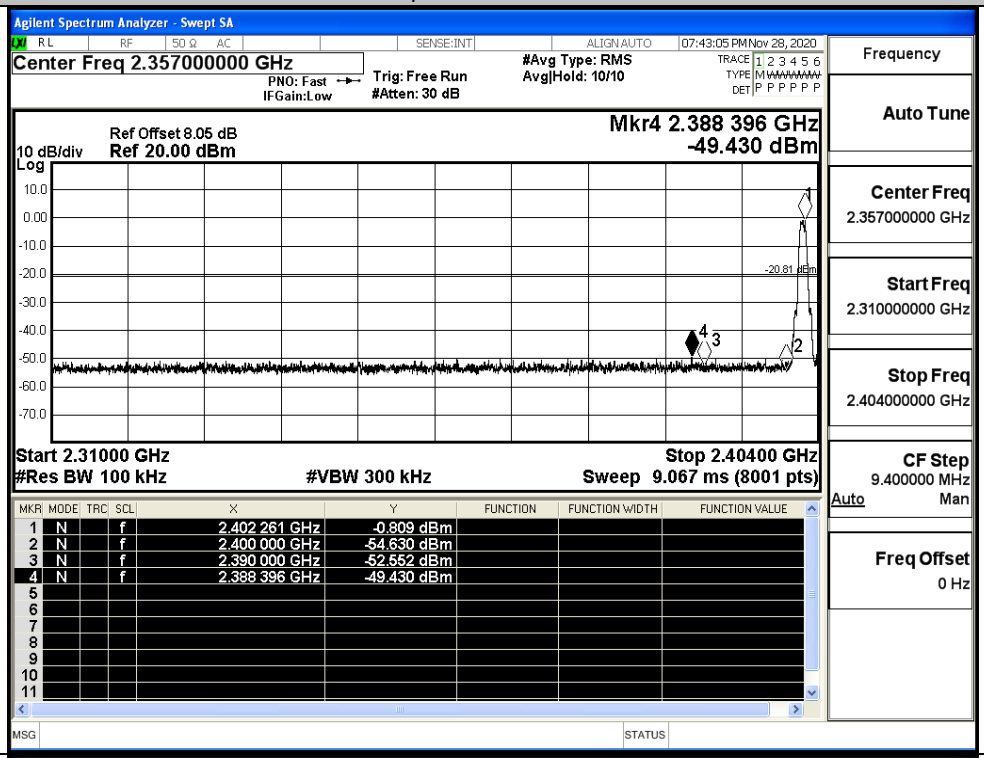


Left

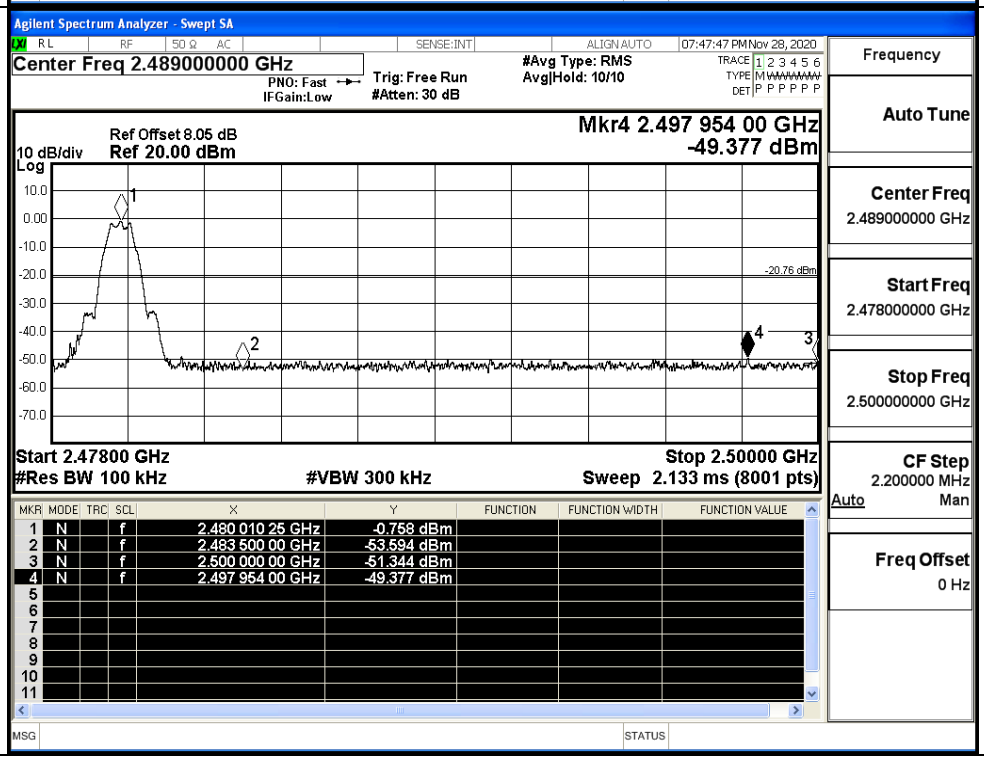
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-0.809	-49.430	-20.81	PASS
BT LE	HCH	-0.758	-49.377	-20.76	PASS

Test Graphs

LCH



HCH

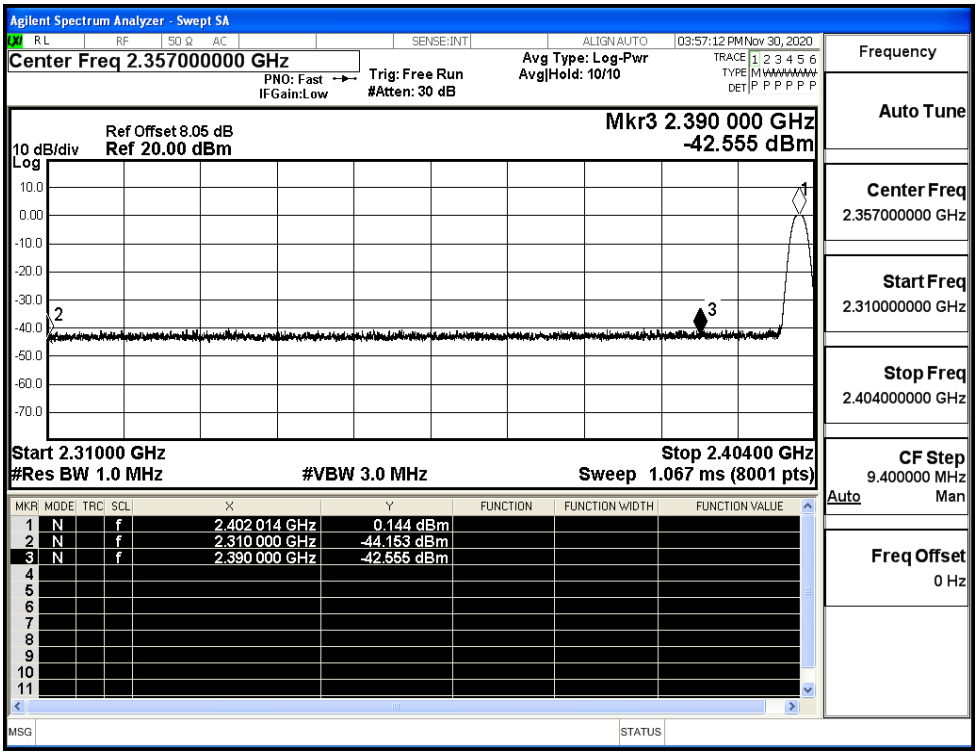


B.8 Restrict-band band-edge measurements

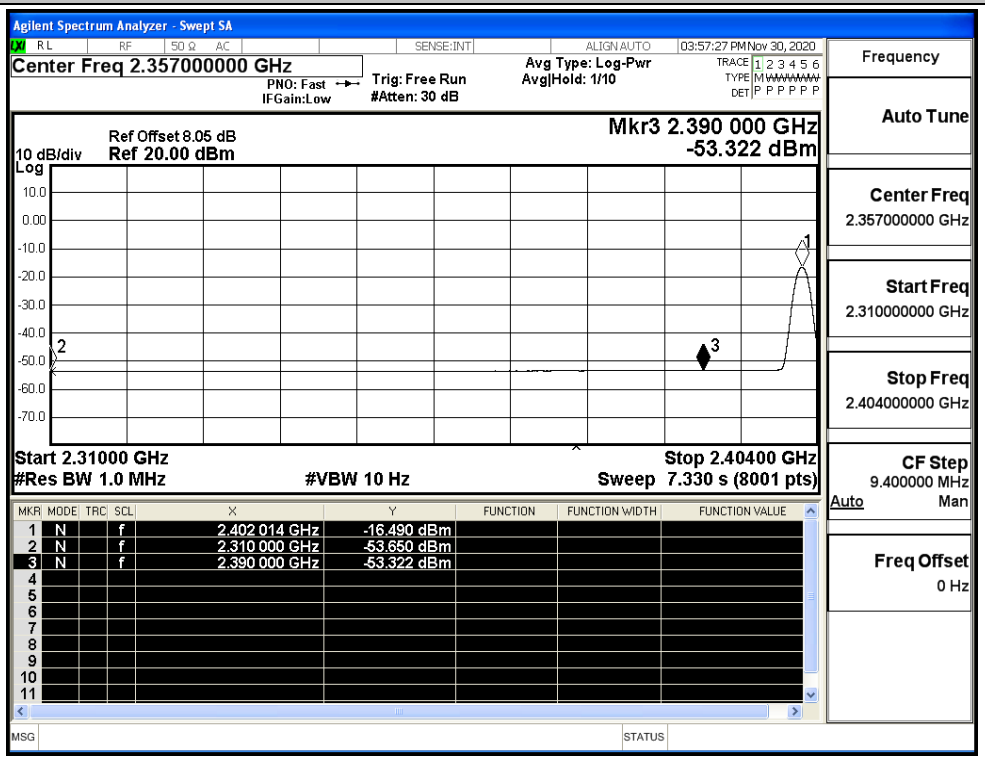
Right

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	-44.15	2.0	0	53.08	PEAK	74	PASS
		Ant1	2310.0	-53.65	2.0	0	43.58	AV	54	PASS
		Ant1	2390.0	-42.56	2.0	0	54.67	PEAK	74	PASS
		Ant1	2390.0	-53.32	2.0	0	43.91	AV	54	PASS
	2480	Ant1	2483.5	-41.40	2.0	0	55.83	PEAK	74	PASS
		Ant1	2483.5	-52.86	2.0	0	44.37	AV	54	PASS
		Ant1	2500.0	-41.81	2.0	0	55.42	PEAK	74	PASS
		Ant1	2500.0	-52.69	2.0	0	44.54	AV	54	PASS

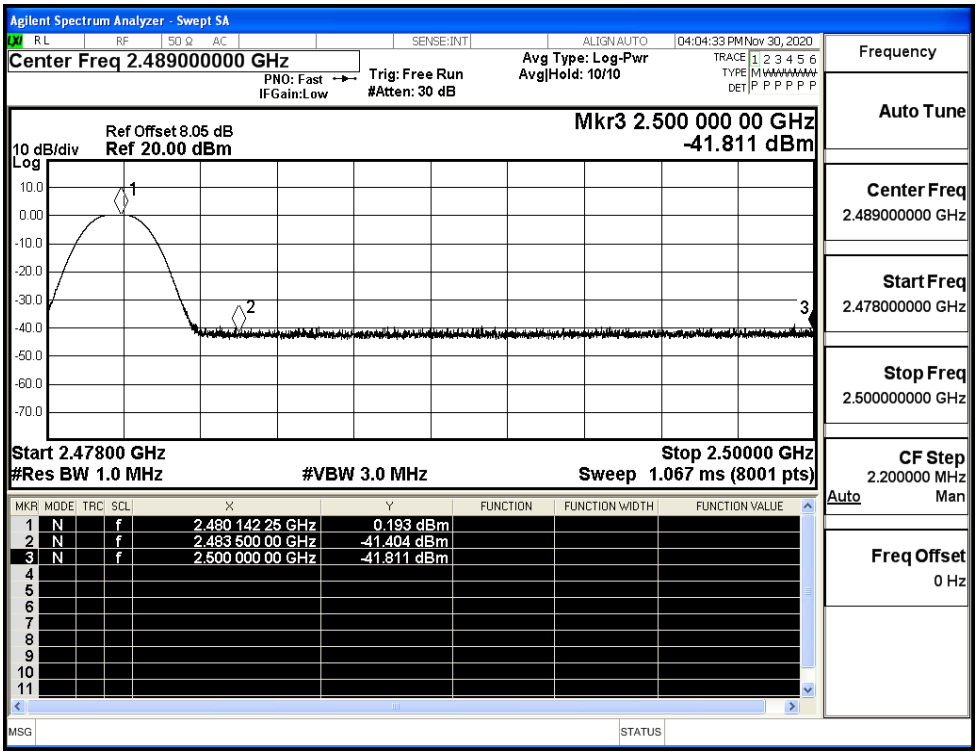
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



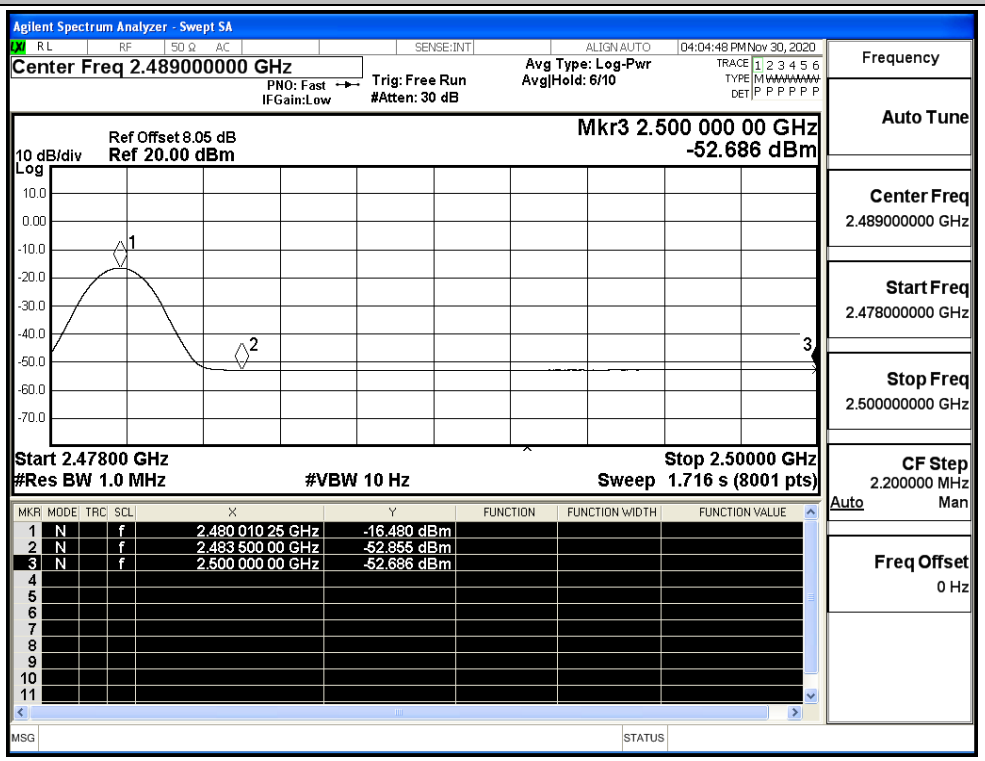
Restrict-band band-edge measurements_BT LE_2402_Ant1_AV



Restrict-band band-edge measurements_BT LE_2480_Ant1_PEAK



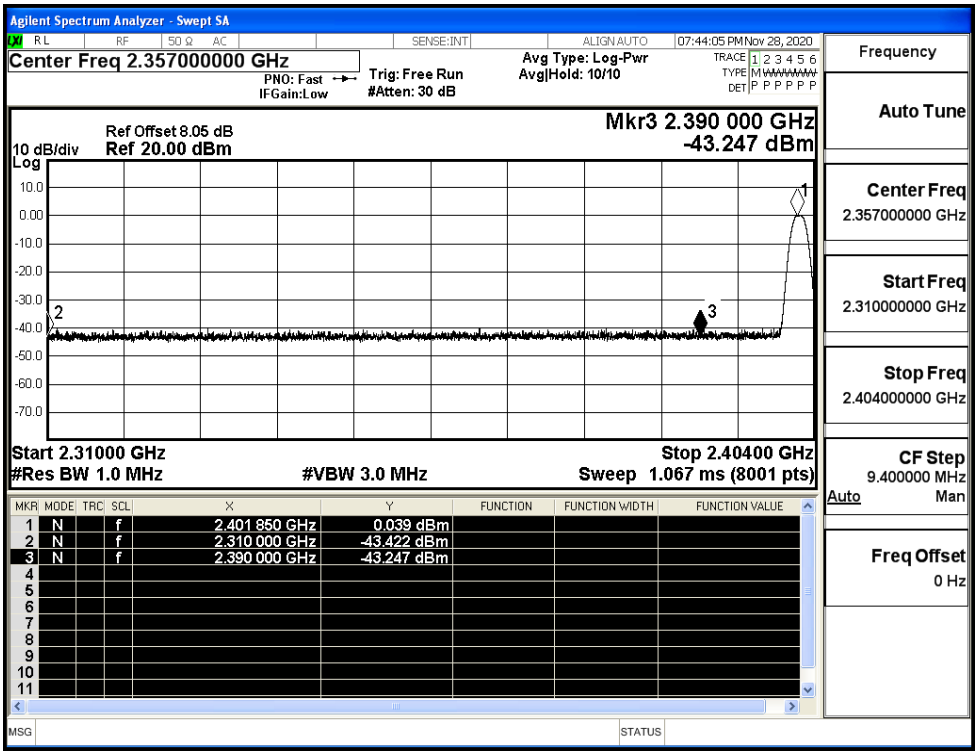
Restrict-band band-edge measurements_BT LE_2480_Ant1_AV



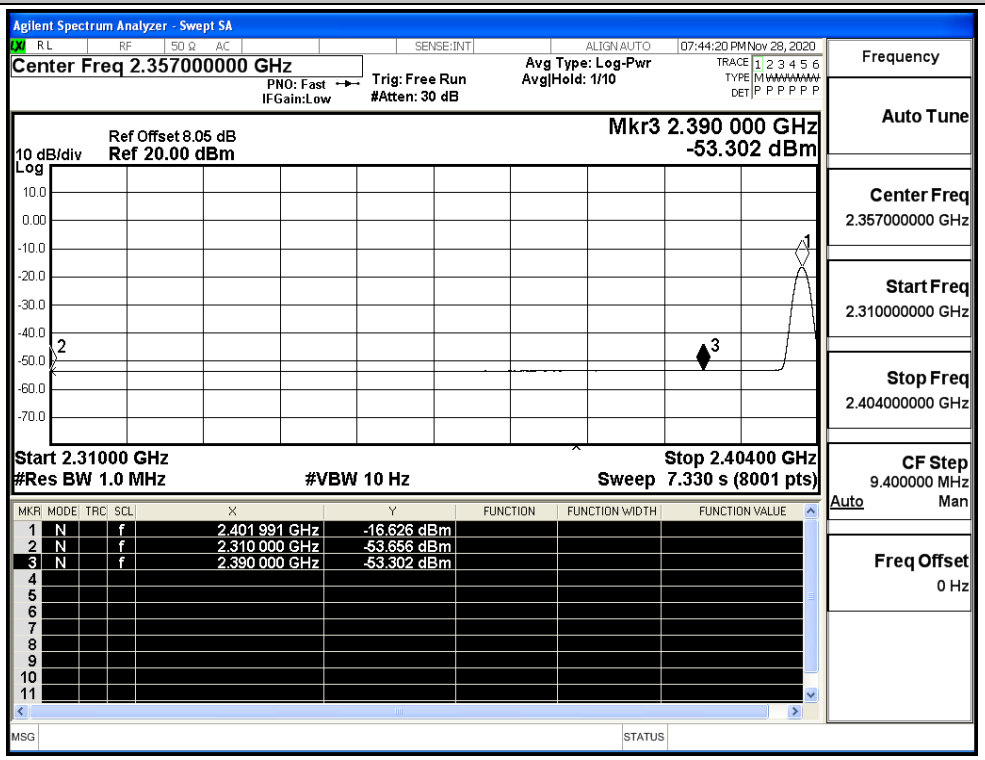
Left

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	53.81	PEAK	74	PASS
		Ant1	2310.0	-53.66	2.0	0	43.57	AV	54	PASS
		Ant1	2390.0	-43.25	2.0	0	53.98	PEAK	74	PASS
		Ant1	2390.0	-53.30	2.0	0	43.93	AV	54	PASS
	2480	Ant1	2483.5	-43.41	2.0	0	53.82	PEAK	74	PASS
		Ant1	2483.5	-52.80	2.0	0	44.43	AV	54	PASS
		Ant1	2500.0	-42.22	2.0	0	55.01	PEAK	74	PASS
		Ant1	2500.0	-52.64	2.0	0	44.59	AV	54	PASS

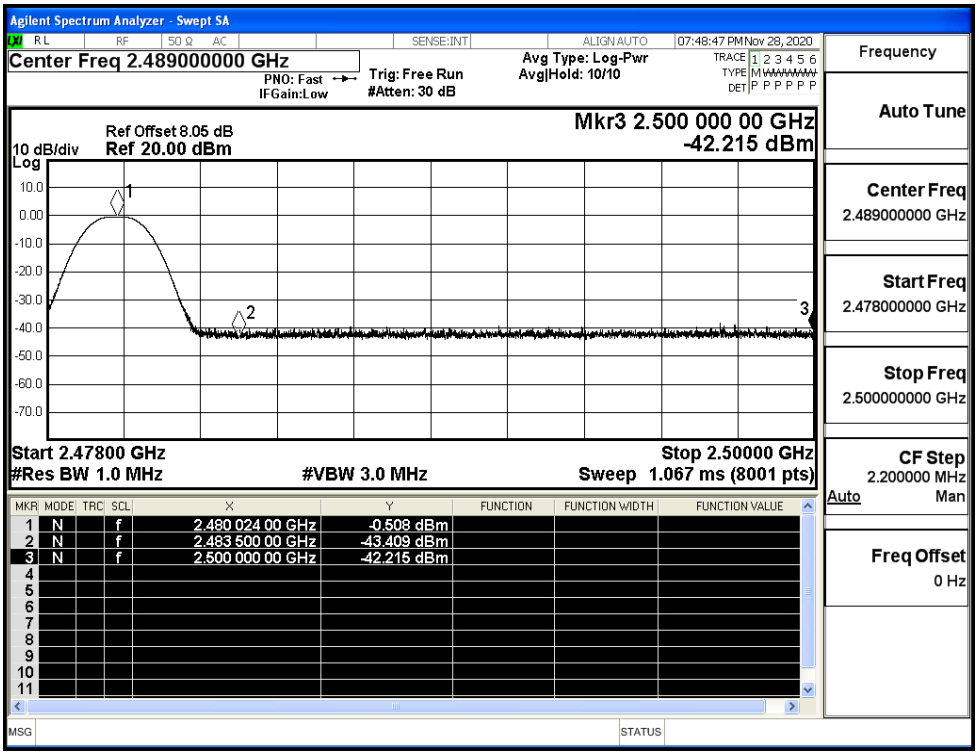
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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