Appendix B

RF Test Data for BT V4.2 (BT LE) (Conducted Measurement)

Product Name: Surface mounted Ceiling Lamp LED 24W

Trade Mark: Artika

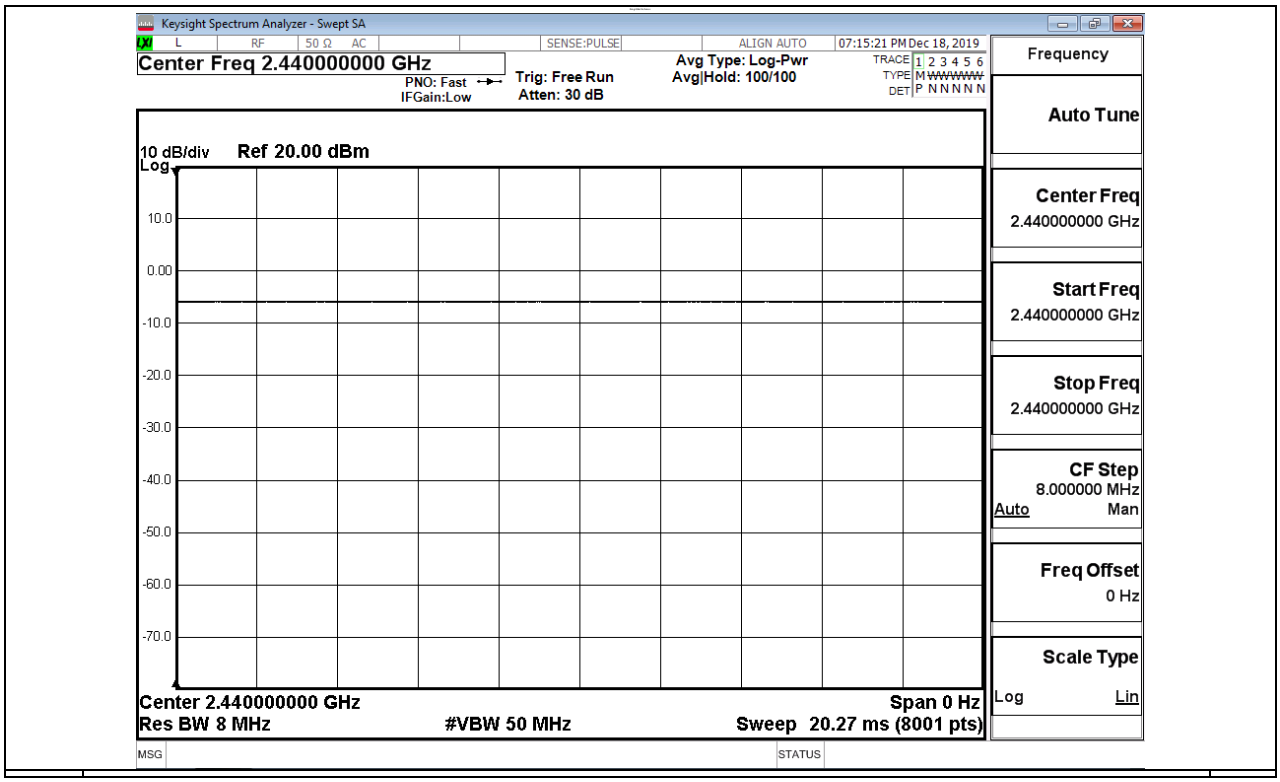
Test Model: CL-GLX-C

Environmental Conditions

Temperature:	23.6° C
Relative Humidity:	53.5%
ATM Pressure:	100.0 kPa
Test Engineer:	Dana Tang
Supervised by:	Jayden Zhuo

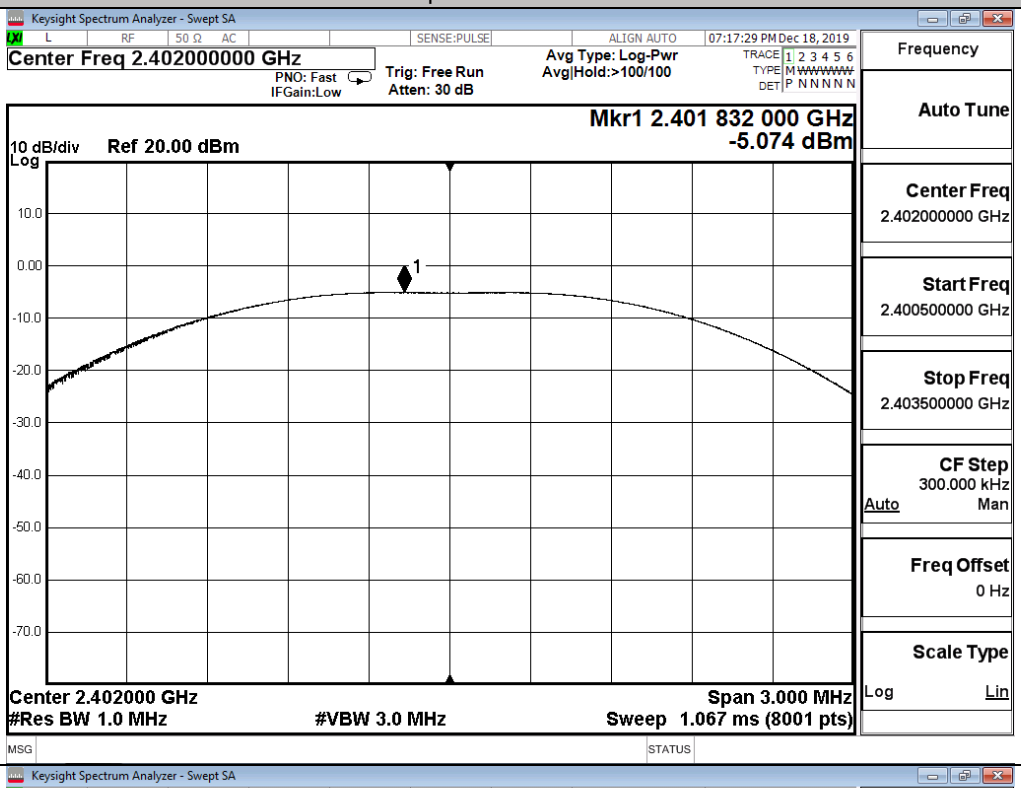
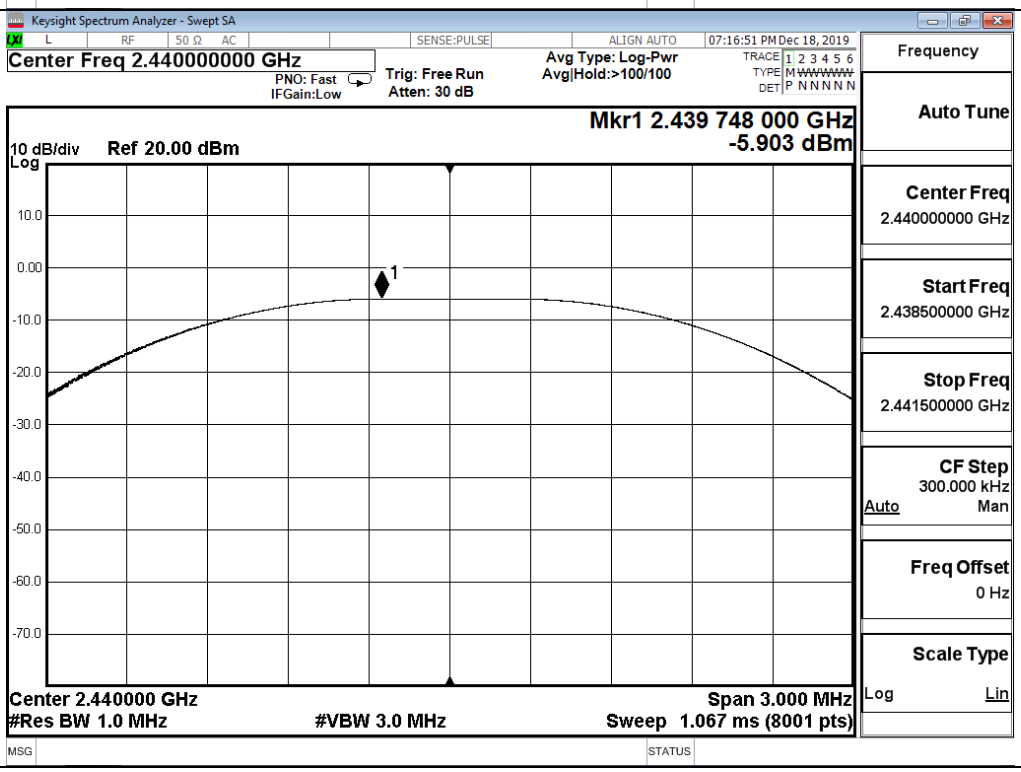
A.1 Duty Cycle

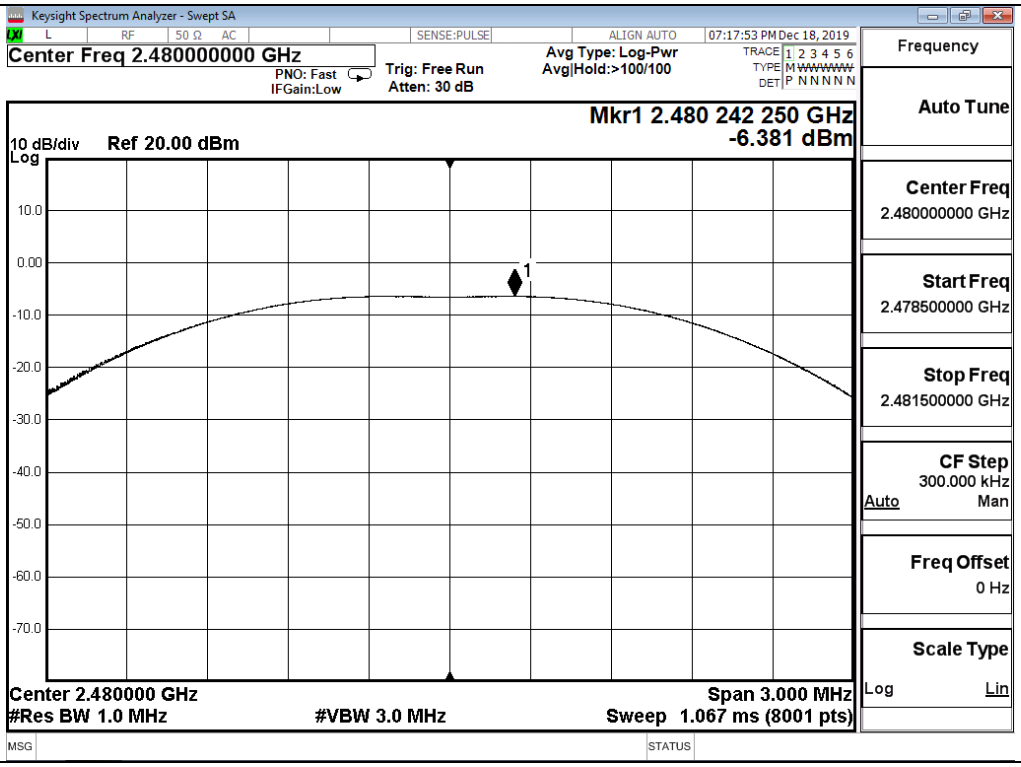
Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
BT LE	2440	Ant1	100	PASS



A.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	-5.074	30	PASS
BT LE	MCH	-5.903	30	PASS
BT LE	HCH	-6.381	30	PASS

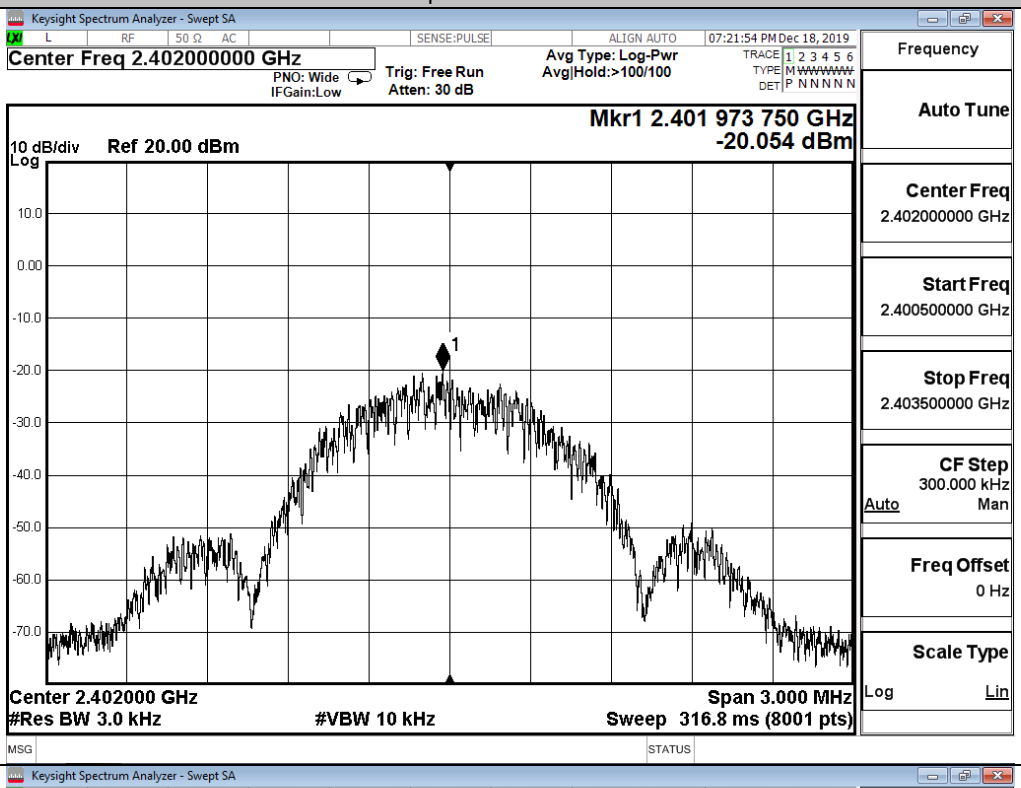
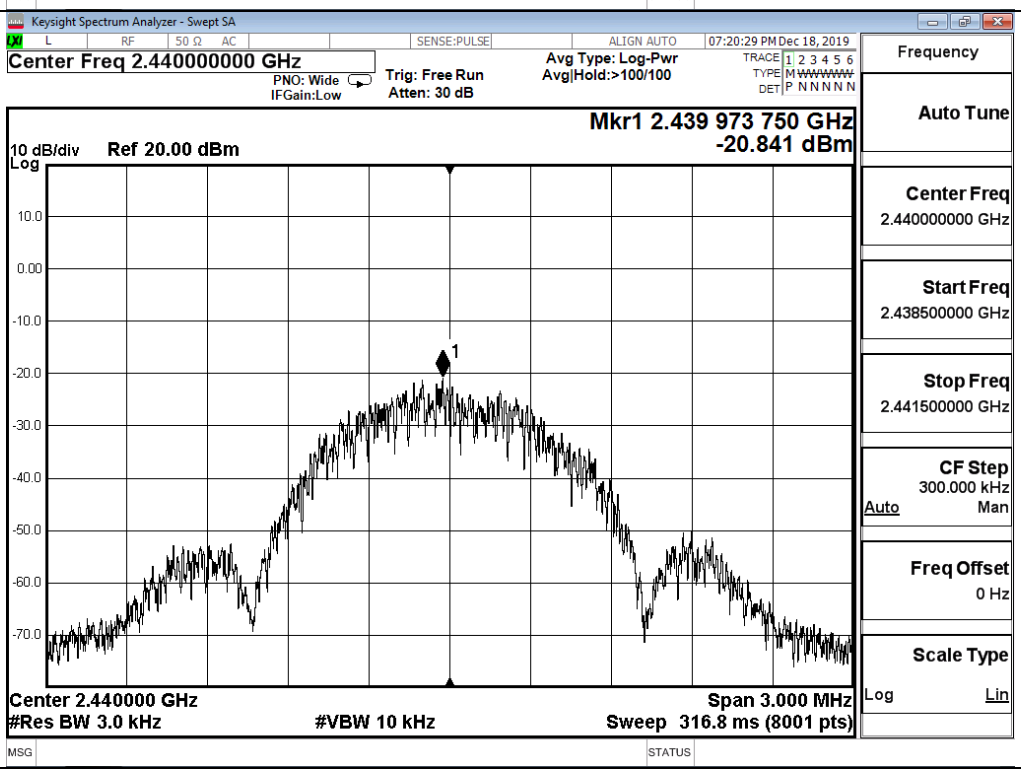
Test Graphs	
LCH	
MCH	

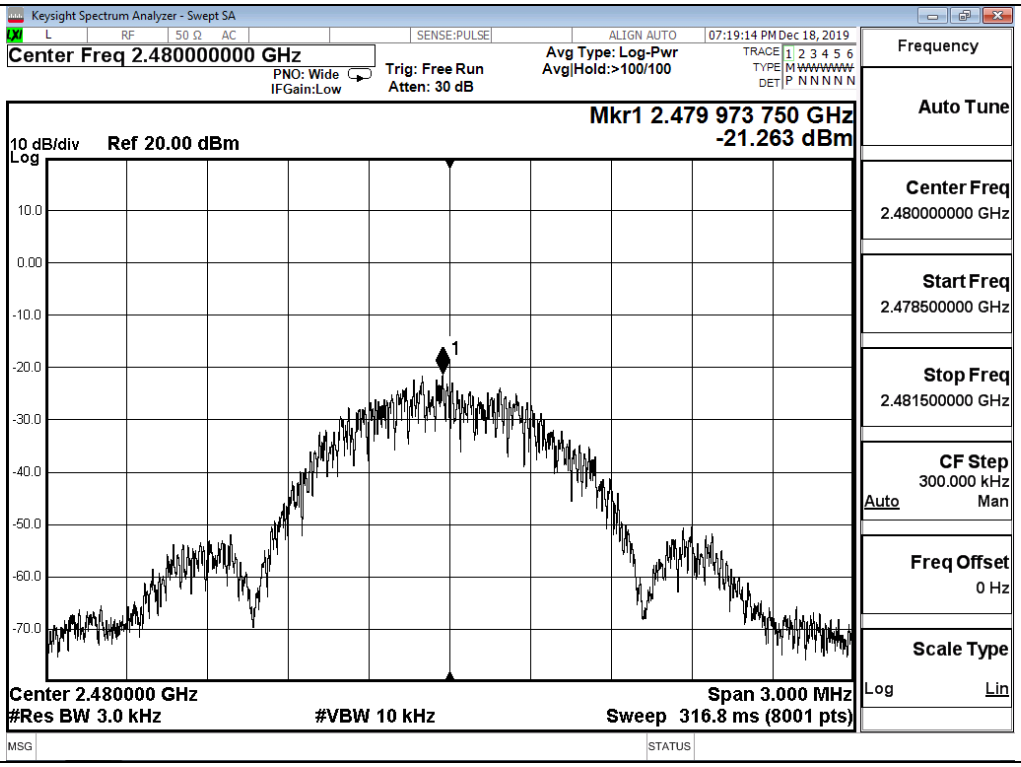
HCH	

Keysight Spectrum Analyzer - Swept SA
L RF 50 Ω AC SENSE:PULSE ALIGN AUTO 07:17:53 PM Dec 18, 2019
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M WWWWWW
DET P N N N N N
Mkr1 2.480 242 250 GHz
-6.381 dBm
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
1
Center 2.480000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 3.000 MHz
Sweep 1.067 ms (8001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.481500000 GHz
CF Step
300.000 kHz
Auto Man
Freq Offset
0 Hz
Scale Type
Log Lin

A.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-20.054	8	PASS
BT LE	MCH	-20.841	8	PASS
BT LE	HCH	-21.263	8	PASS

Test Graphs	
LCH	
MCH	

HCH	

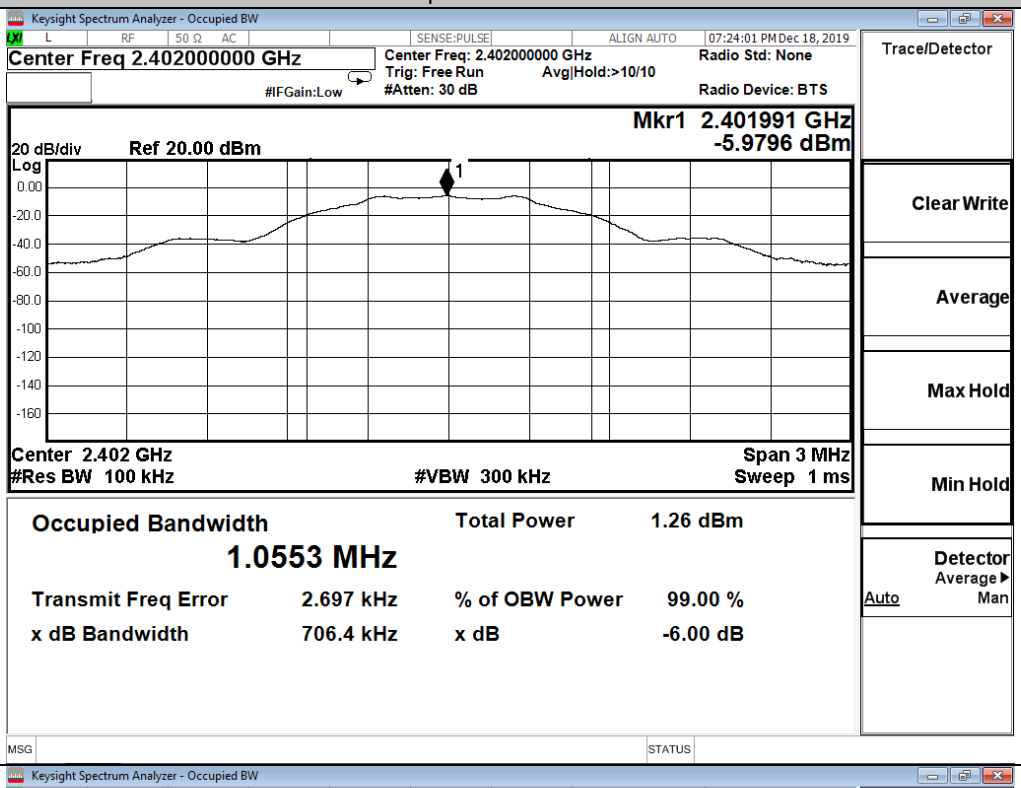
Keysight Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
07:19:14 PM Dec 18, 2019
Mkr1 2.479 973 750 GHz
-21.263 dBm
10 dB/div Ref 20.00 dBm
Log
Center 2.480000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 3.000 MHz
Sweep 316.8 ms (8001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.481500000 GHz
CF Step
300.000 kHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin

A.4 6dB Bandwidth

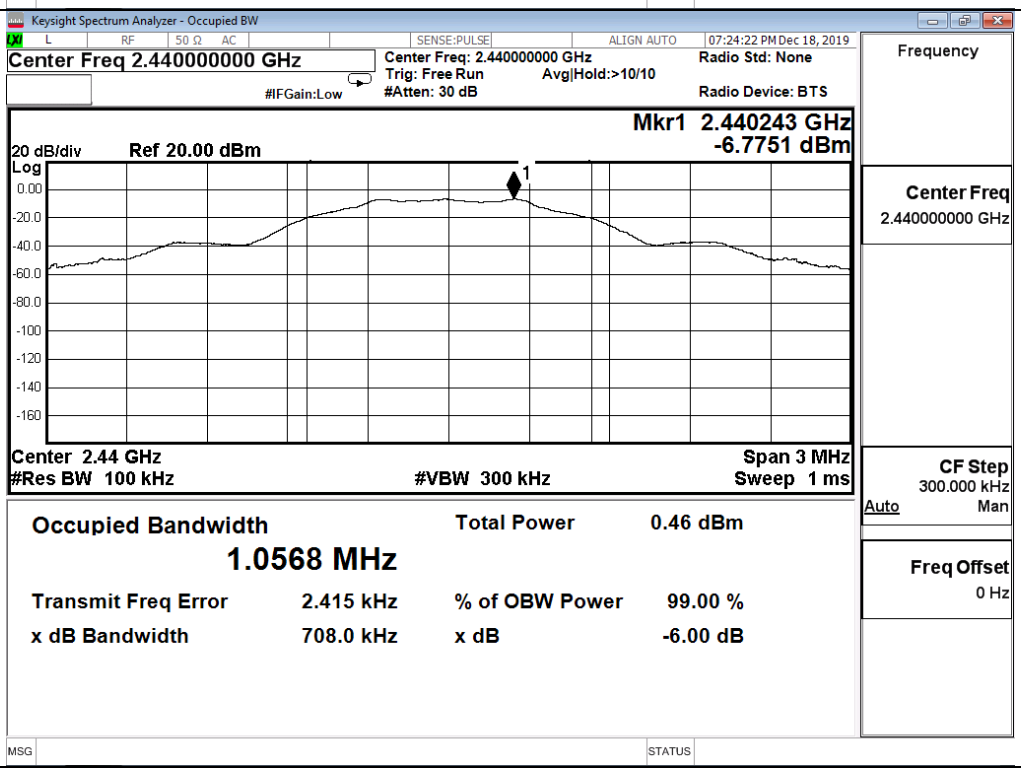
Mode	Channel	6dB Bandwidth [MHz]	6dB Bandwidth Limit [MHz]	Verdict
BT LE	LCH	0.7064	≥0.5	PASS
BT LE	MCH	0.7080	≥0.5	PASS
BT LE	HCH	0.7019	≥0.5	PASS

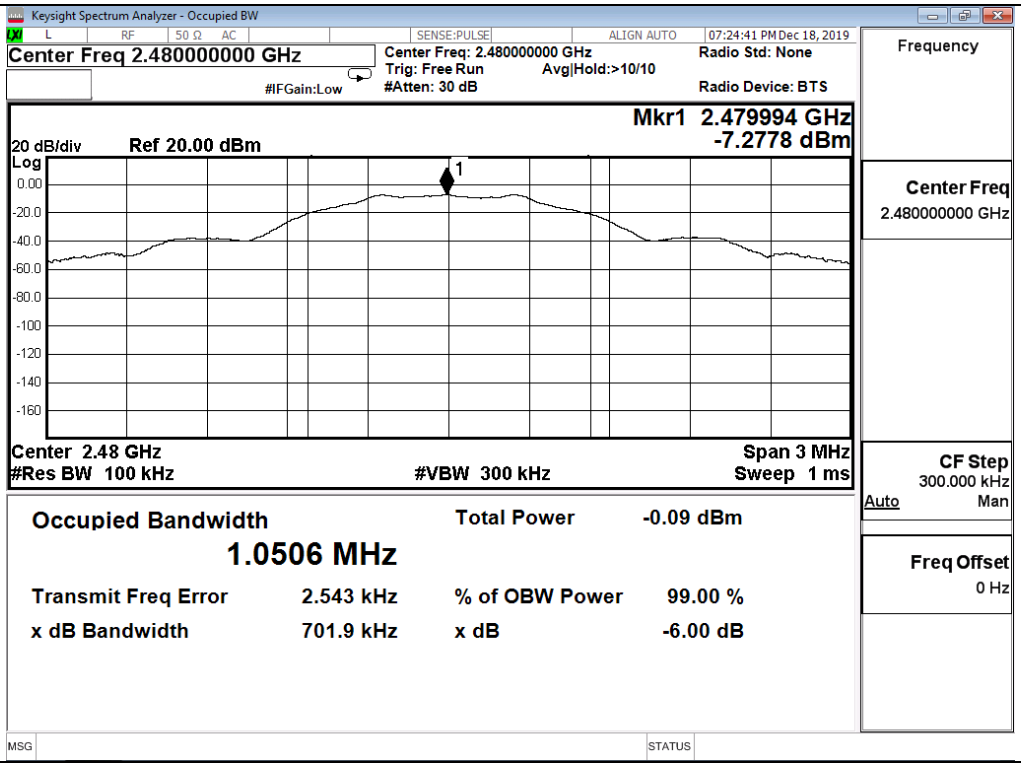
Test Graphs

LCH



MCH

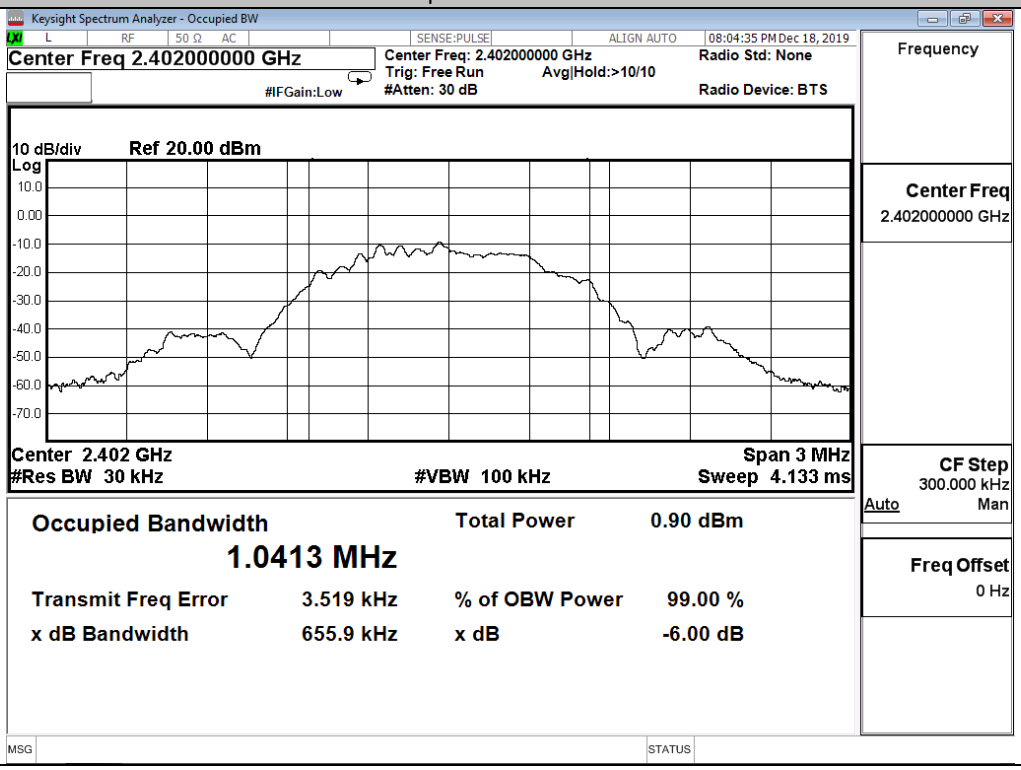


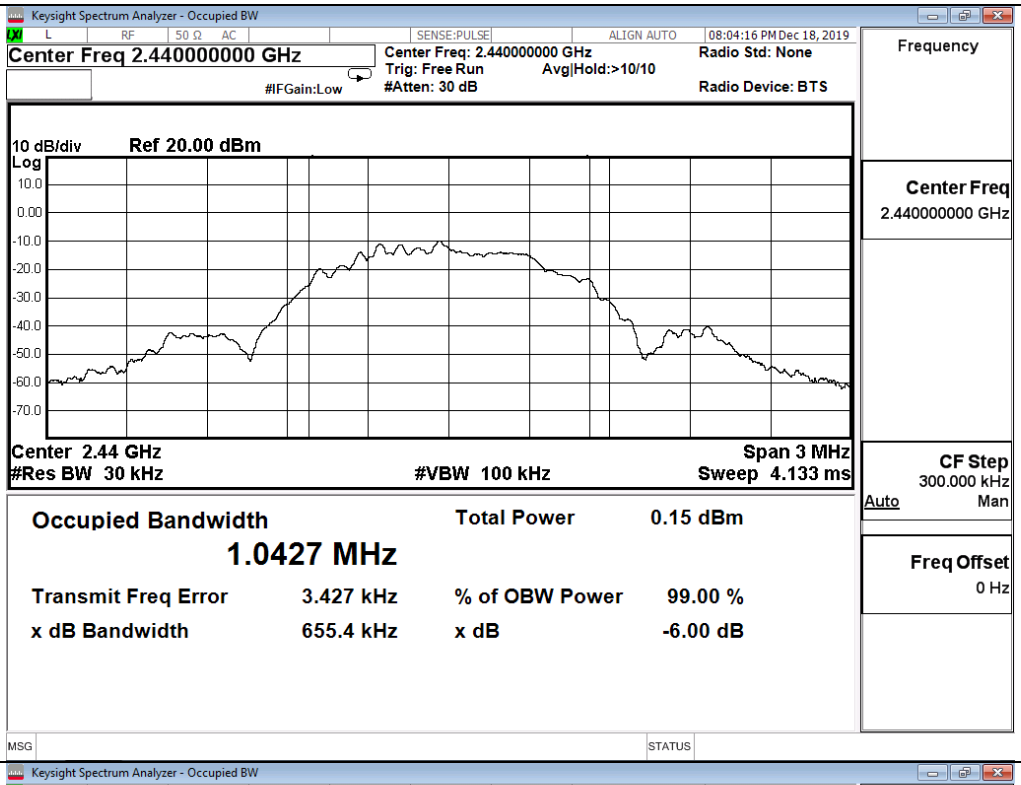
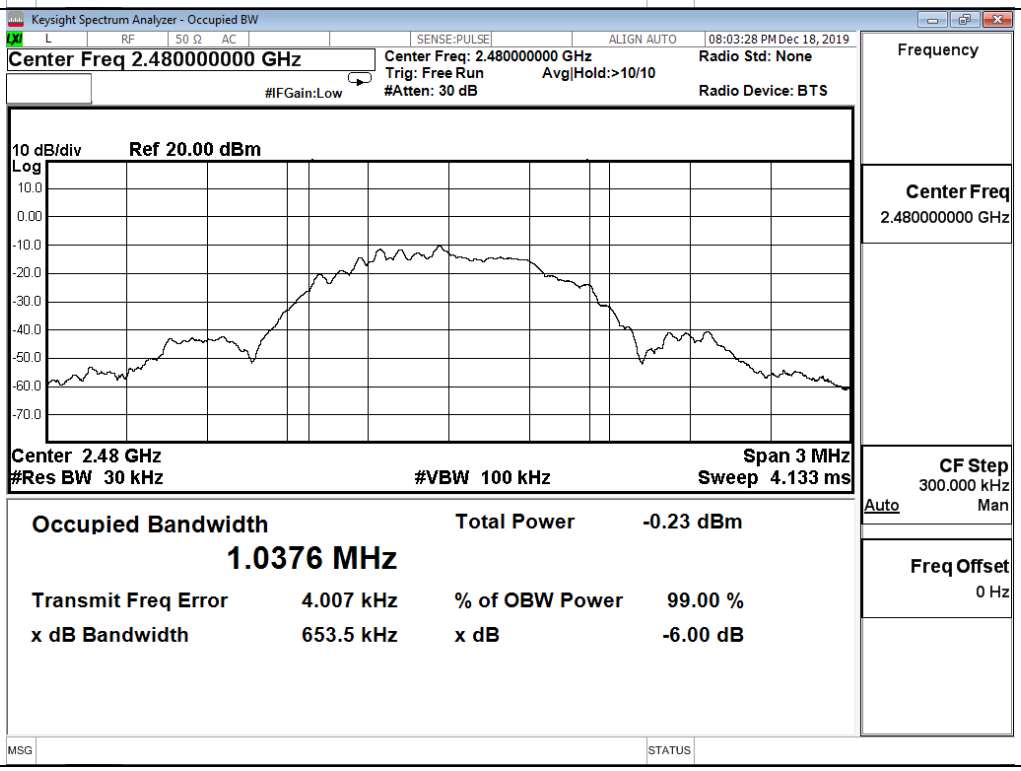
HCH	

Keysight Spectrum Analyzer - Occupied BW
L RF 50 Ω AC SENSE:PULSE ALIGN AUTO 07:24:41 PM Dec 18, 2019
Center Freq 2.480000000 GHz
#IFGain:Low
Center Freq: 2.480000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
Mkr1 2.479994 GHz
-7.2778 dBm
20 dB/div Ref 20.00 dBm
Log
0.00
-20.0
-40.0
-60.0
-80.0
-100
-120
-140
-160
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 3 MHz
Sweep 1 ms
CF Step
300.000 kHz
Auto Man
Occupied Bandwidth
1.0506 MHz
Total Power -0.09 dBm
Transmit Freq Error 2.543 kHz
% of OBW Power 99.00 %
x dB Bandwidth 701.9 kHz
x dB -6.00 dB
Freq Offset
0 Hz
MSG
STATUS

A.5 Occupied Bandwidth

Mode	Channel	Occupied Bandwidth (99%)[MHz]	Occupied Bandwidth Limit [MHz]	Verdict
BT LE	LCH	1.0413	--	PASS
BT LE	MCH	1.0427	--	PASS
BT LE	HCH	1.0376	--	PASS

Test Graphs	
LCH	

MCH	
HCH	

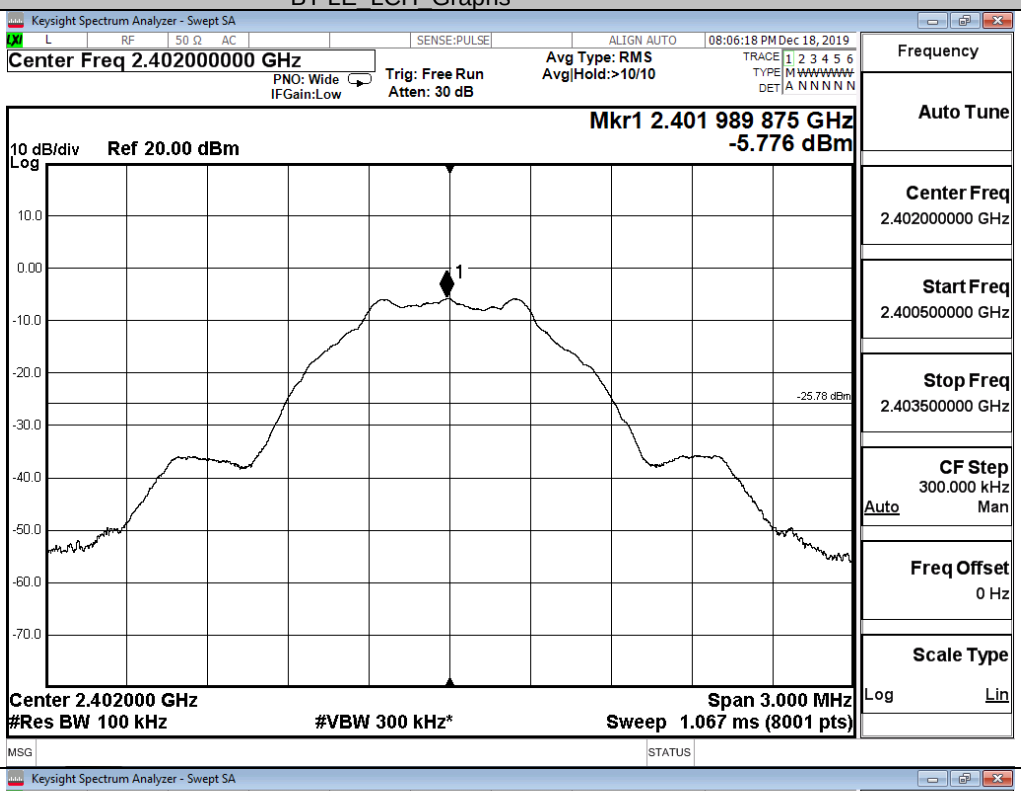
Keysight Spectrum Analyzer - Occupied BW
Center Freq 2.440000000 GHz
Center Freq: 2.440000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
08:04:16 PM Dec 18, 2019
#IFGain:Low
10 dB/div
Ref 20.00 dBm
Center 2.44 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 4.133 ms
Occupied Bandwidth
1.0427 MHz
Total Power 0.15 dBm
Transmit Freq Error 3.427 kHz
% of OBW Power 99.00 %
x dB Bandwidth 655.4 kHz
x dB -6.00 dB
Frequency
Center Freq
2.440000000 GHz
CF Step
300.000 kHz
Auto Man
Freq Offset
0 Hz
Keysight Spectrum Analyzer - Occupied BW
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
08:03:28 PM Dec 18, 2019
#IFGain:Low
10 dB/div
Ref 20.00 dBm
Center 2.48 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 4.133 ms
Occupied Bandwidth
1.0376 MHz
Total Power -0.23 dBm
Transmit Freq Error 4.007 kHz
% of OBW Power 99.00 %
x dB Bandwidth 653.5 kHz
x dB -6.00 dB
Frequency
Center Freq
2.480000000 GHz
CF Step
300.000 kHz
Auto Man
Freq Offset
0 Hz

A.6 RF Conducted Spurious Emissions

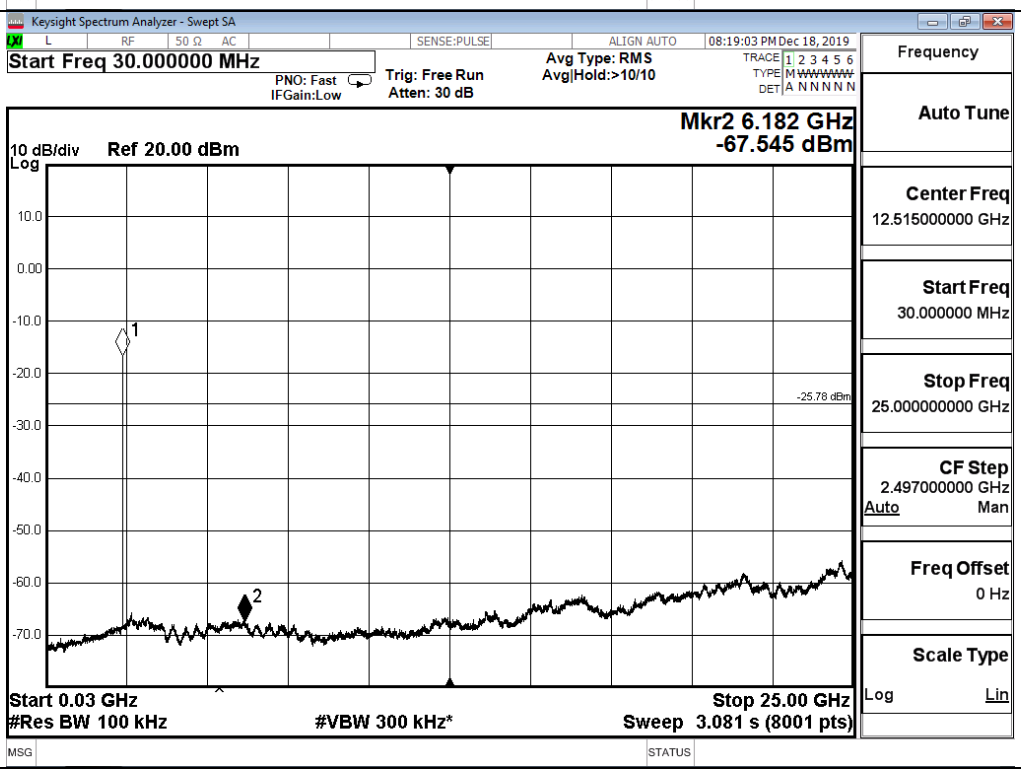
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-5.776	-67.545	-25.78	PASS
BT LE	MCH	-6.607	-67.244	-26.61	PASS
BT LE	HCH	-7.013	-67.415	-27.04	PASS

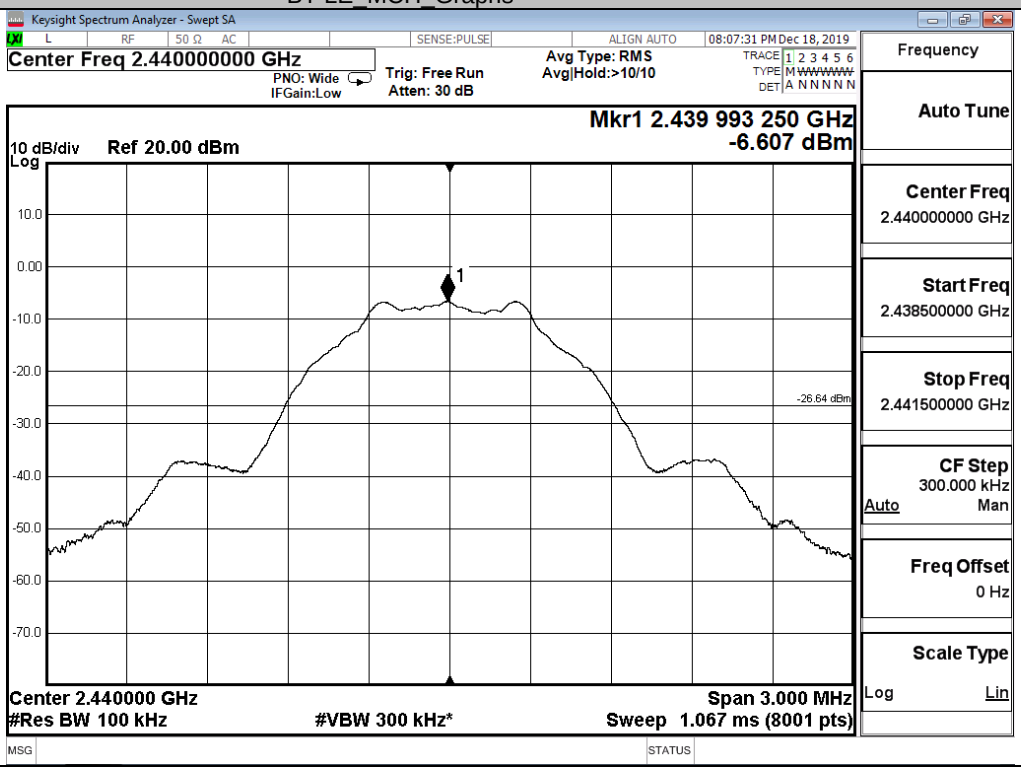
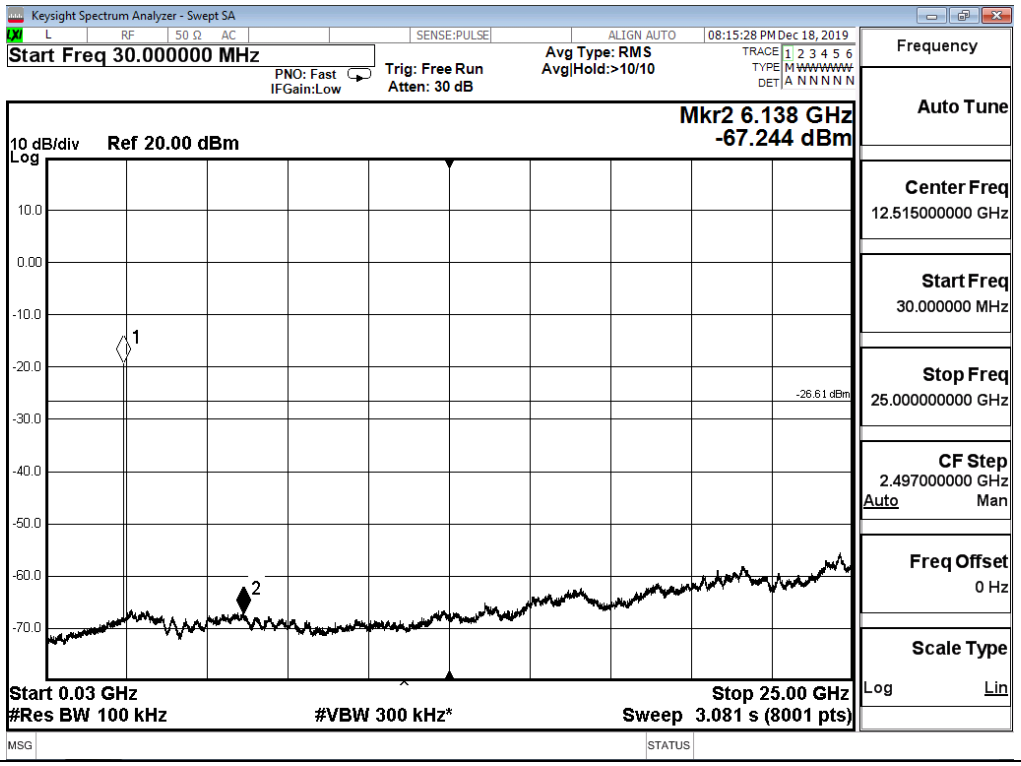
BT LE_LCH_Graphs

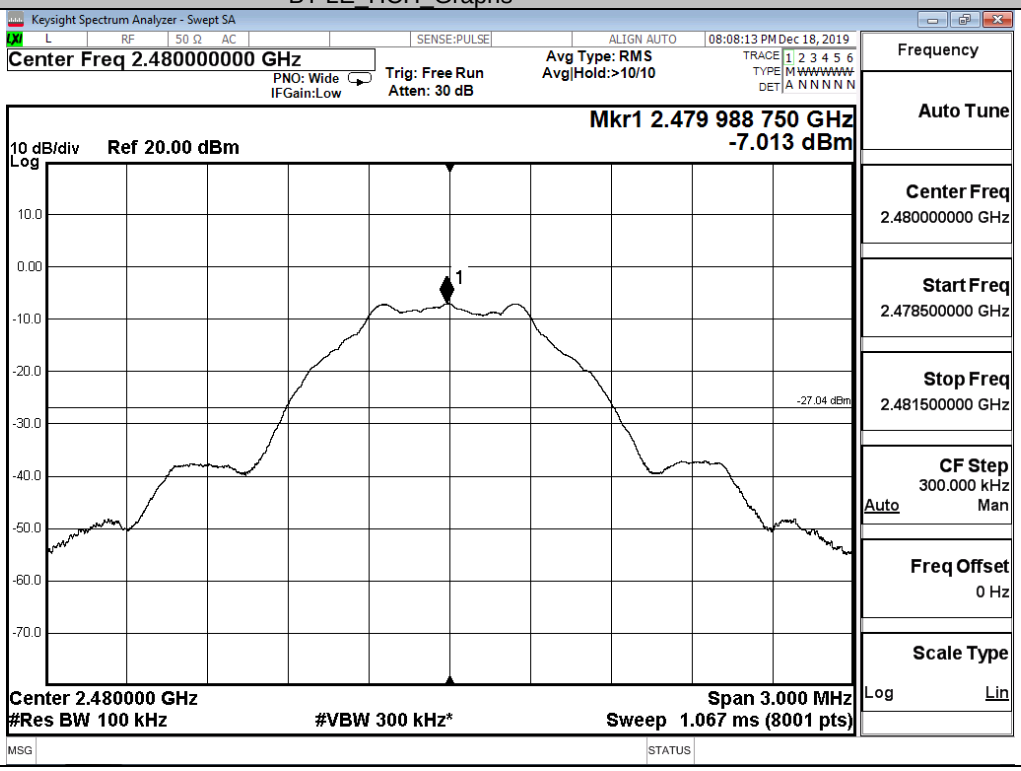
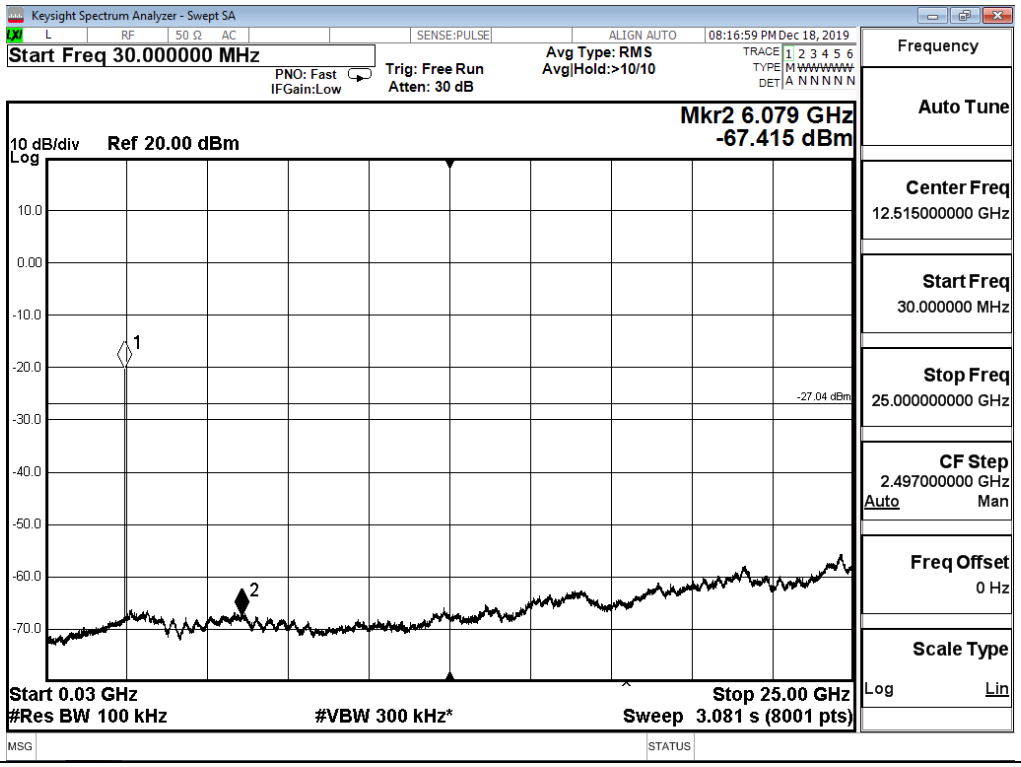
Pref/BT LE/LCH



Puw/BT LE/LCH



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

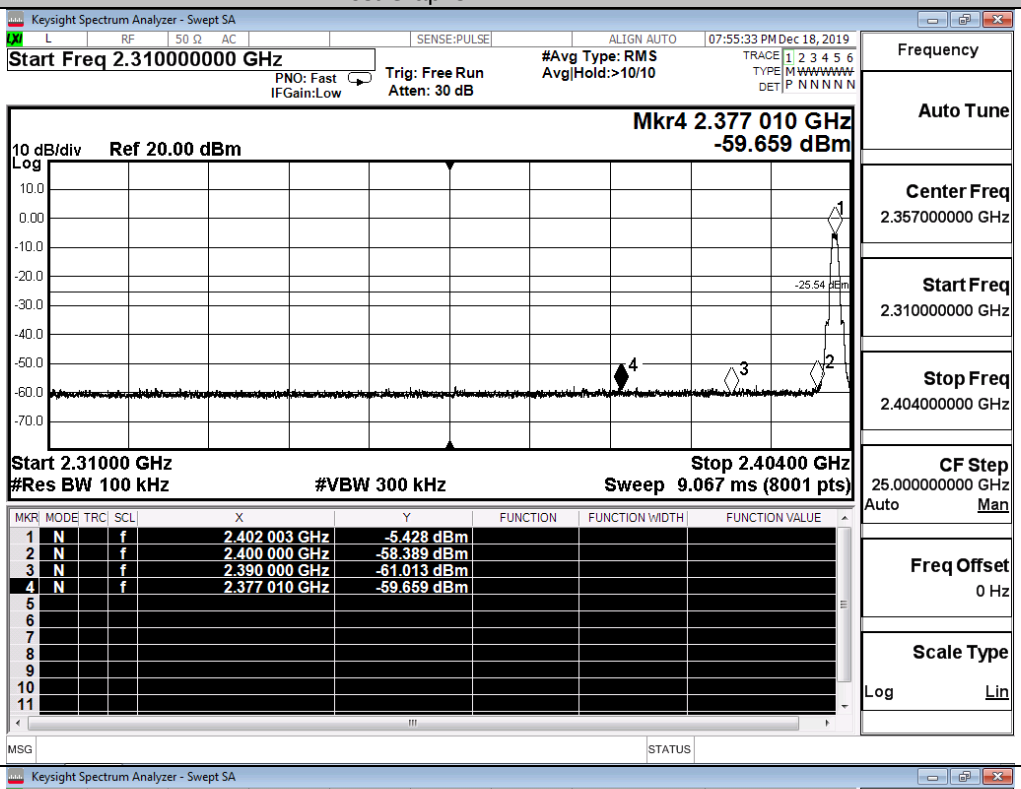
BT LE_HCH_Graphs	
Pref/BT LE/HCH	
Puw/BT LE/HCH	

A.7 Band-edge for RF Conducted Emissions

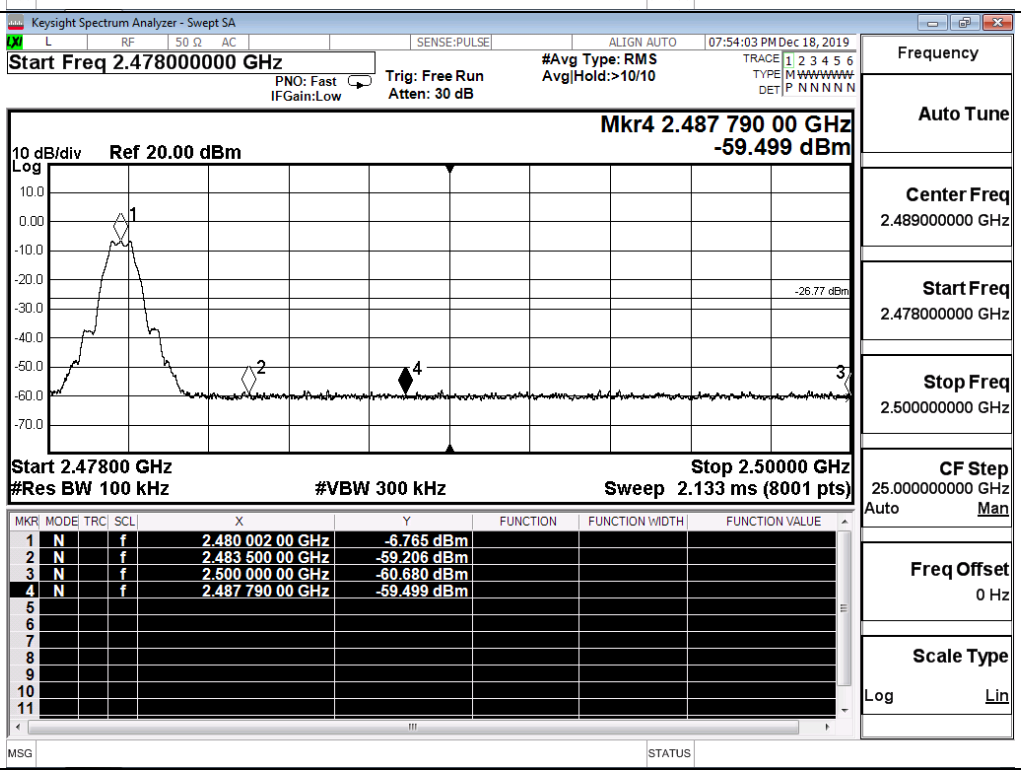
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-5.428	-59.659	-25.54	PASS
BT LE	HCH	-6.765	-59.499	-26.77	PASS

Test Graphs

LCH



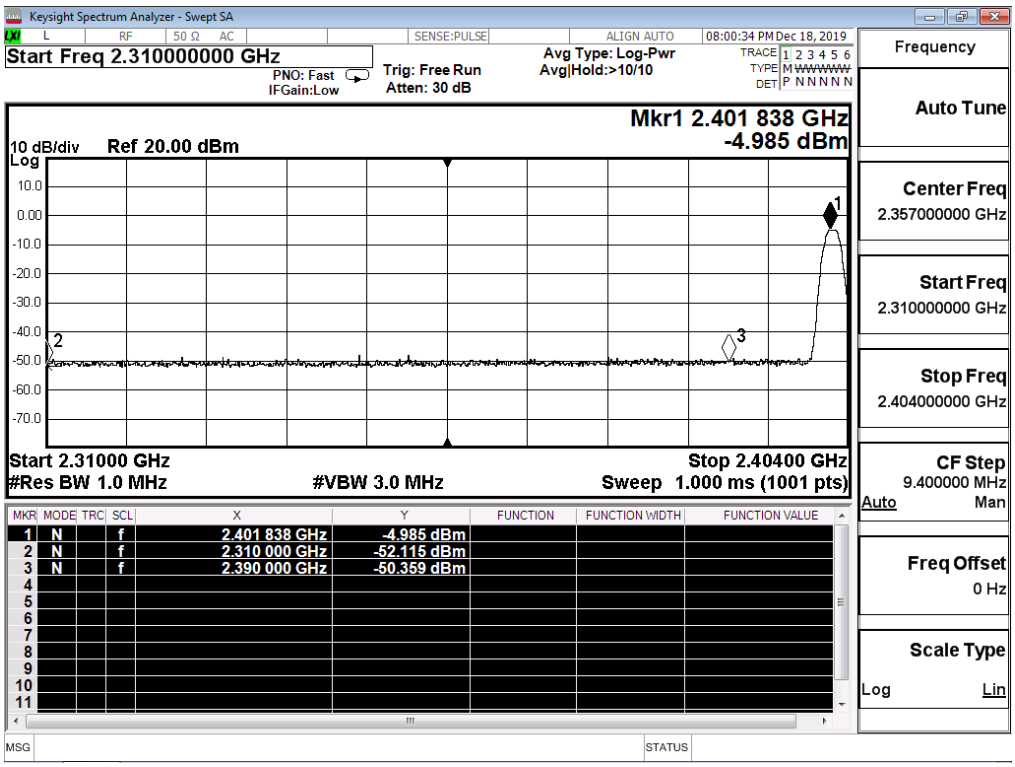
HCH



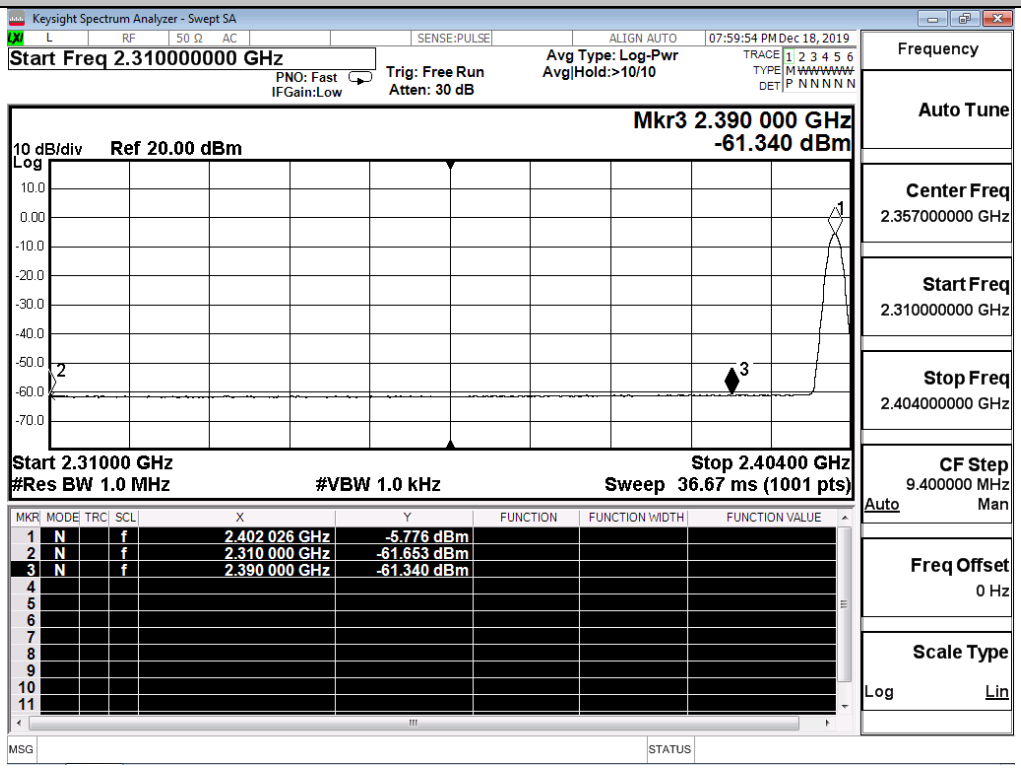
A.8 Restrict-band band-edge measurements

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	-52.115	2.5	0	45.65	PEAK	74	PASS
		Ant1	2310.0	-61.653	2.5	0	36.11	AV	54	PASS
		Ant1	2390.0	-50.359	2.5	0	47.40	PEAK	74	PASS
		Ant1	2390.0	-61.340	2.5	0	36.42	AV	54	PASS
	2480	Ant1	2483.5	-50.712	2.5	0	47.05	PEAK	74	PASS
		Ant1	2483.5	-61.000	2.5	0	36.76	AV	54	PASS
		Ant1	2500.0	-50.547	2.5	0	47.21	PEAK	74	PASS
		Ant1	2500.0	-60.717	2.5	0	37.04	AV	54	PASS

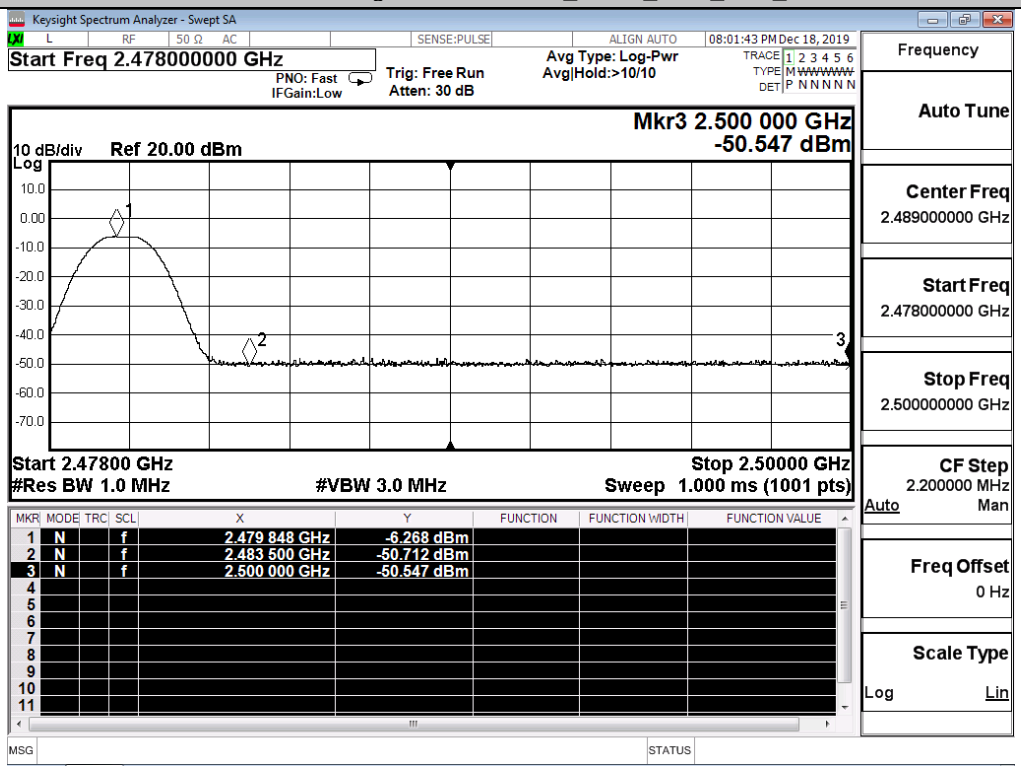
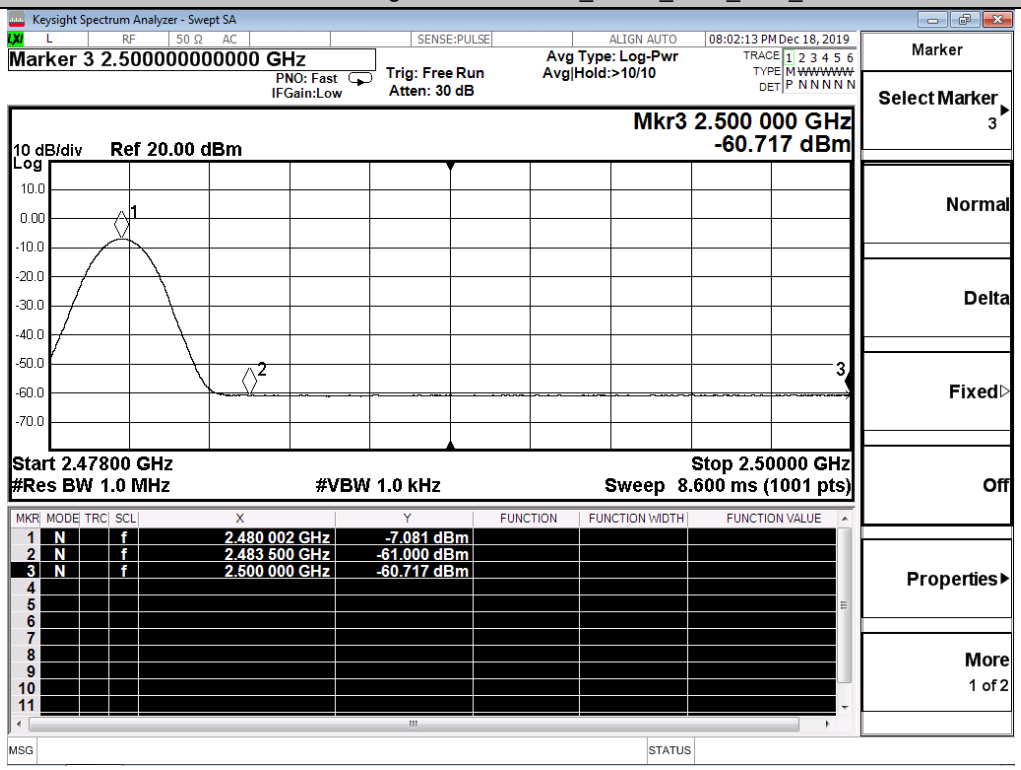
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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