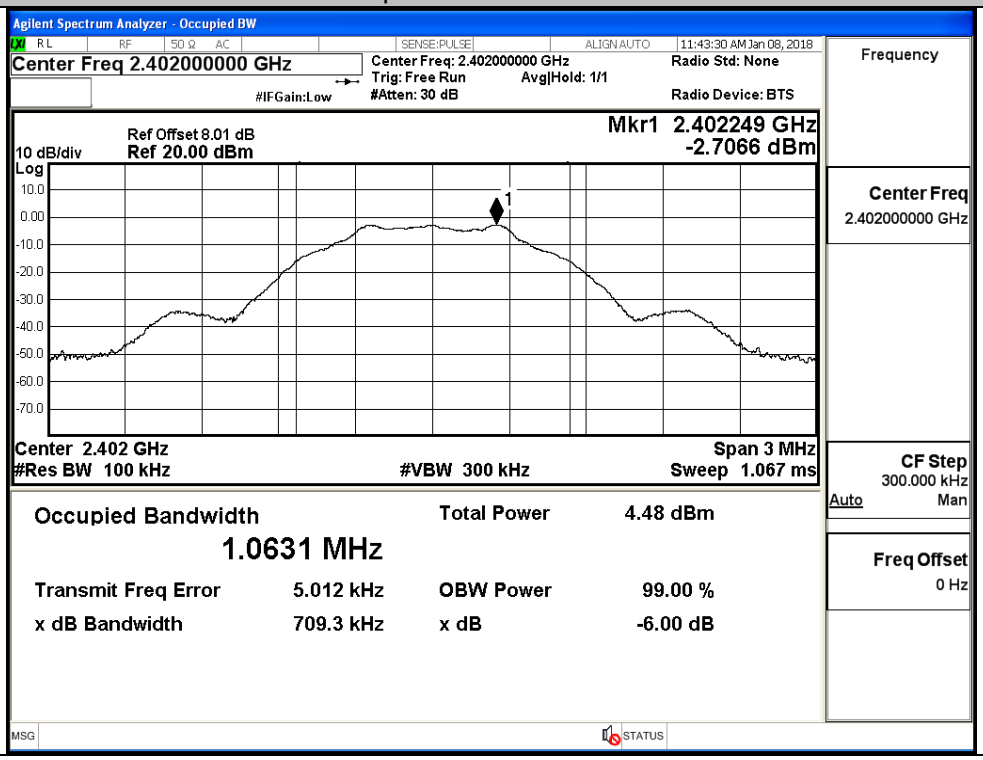
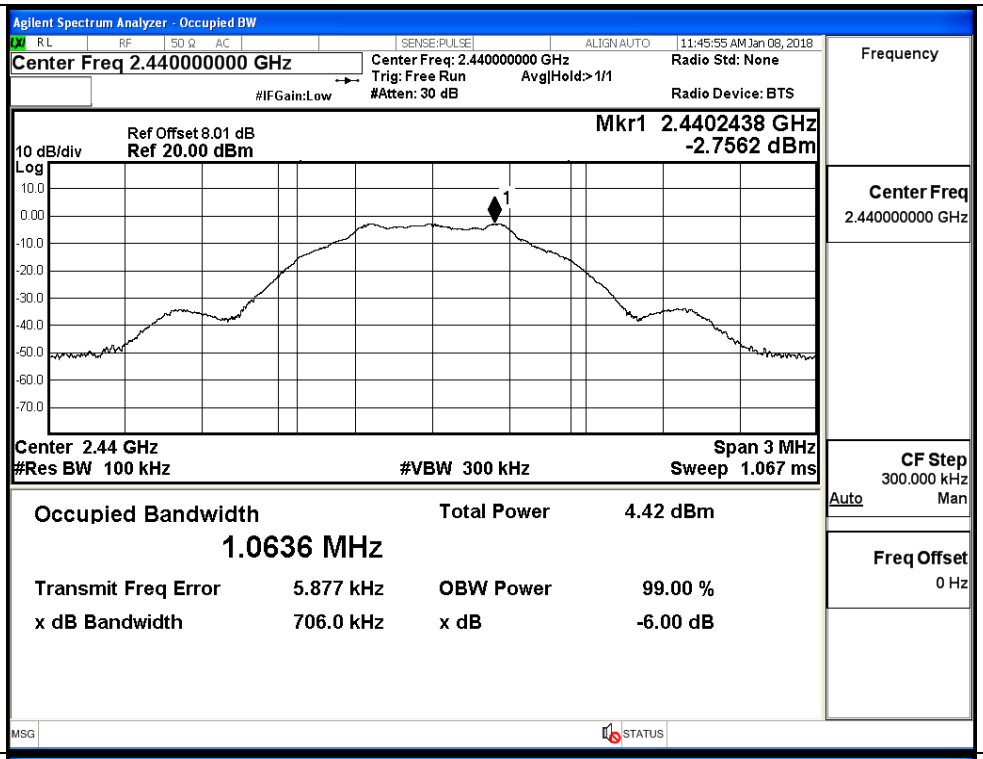
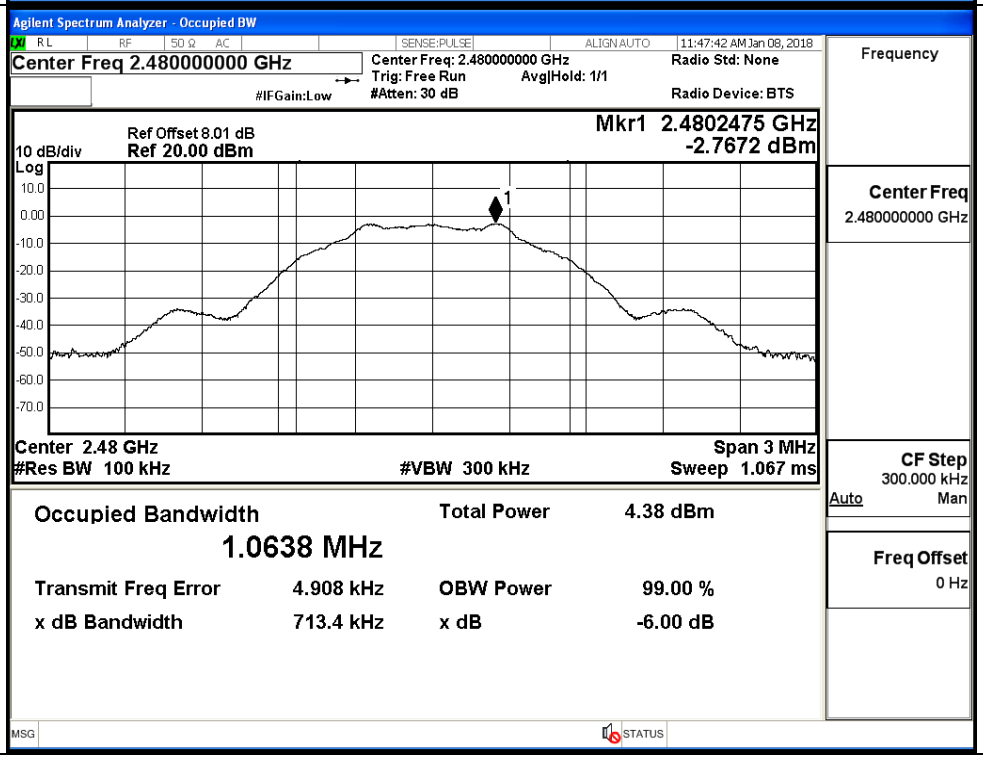
Section A): 6dB Bandwidth and 99% Bandwidth

Test Result

Mode	Channel	6dB Bandwidth [MHz]	99% Bandwidth [MHz]	Verdict
BLE	LCH	0.7093	1.0631	PASS
BLE	MCH	0.7060	1.0636	PASS
BLE	HCH	0.7134	1.0638	PASS

Test Graphs

Graphs	
LCH	

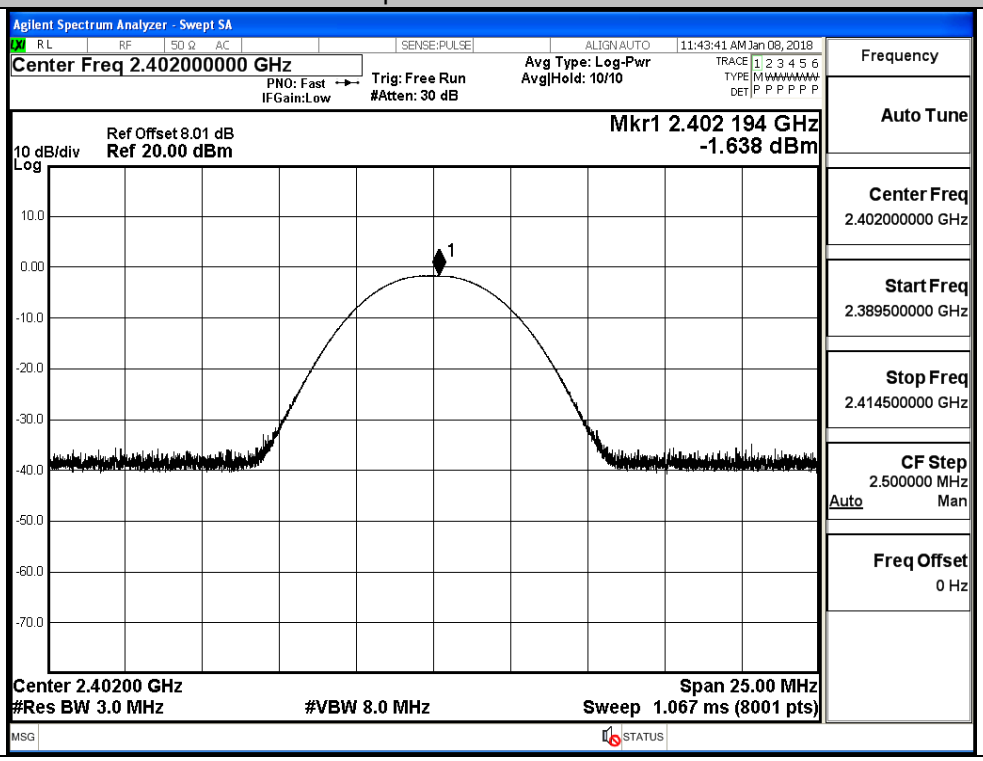
MCH		 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.440000000 GHz Center Freq: 2.440000000 GHz Trig: Free Run Avg|Hold:>1/1 #Atten: 30 dB #IFGain:Low Radio Std: None Radio Device: BTS 11:45:55 AM Jan 08, 2018 Ref Offset 8.01 dB 10 dB/div Ref 20.00 dBm Log Mkr1 2.4402438 GHz -2.7562 dBm Center 2.44 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1.067 ms Occupied Bandwidth 1.0636 MHz Total Power 4.42 dBm Transmit Freq Error 5.877 kHz OBW Power 99.00 % x dB Bandwidth 706.0 kHz x dB -6.00 dB Frequency Center Freq 2.440000000 GHz CF Step 300.000 kHz Auto Man Freq Offset 0 Hz MSG STATUS
HCH		 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.480000000 GHz Center Freq: 2.480000000 GHz Trig: Free Run Avg|Hold: 1/1 #Atten: 30 dB #IFGain:Low Radio Std: None Radio Device: BTS 11:47:42 AM Jan 08, 2018 Ref Offset 8.01 dB 10 dB/div Ref 20.00 dBm Log Mkr1 2.4802475 GHz -2.7672 dBm Center 2.48 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1.067 ms Occupied Bandwidth 1.0638 MHz Total Power 4.38 dBm Transmit Freq Error 4.908 kHz OBW Power 99.00 % x dB Bandwidth 713.4 kHz x dB -6.00 dB Frequency Center Freq 2.480000000 GHz CF Step 300.000 kHz Auto Man Freq Offset 0 Hz MSG STATUS

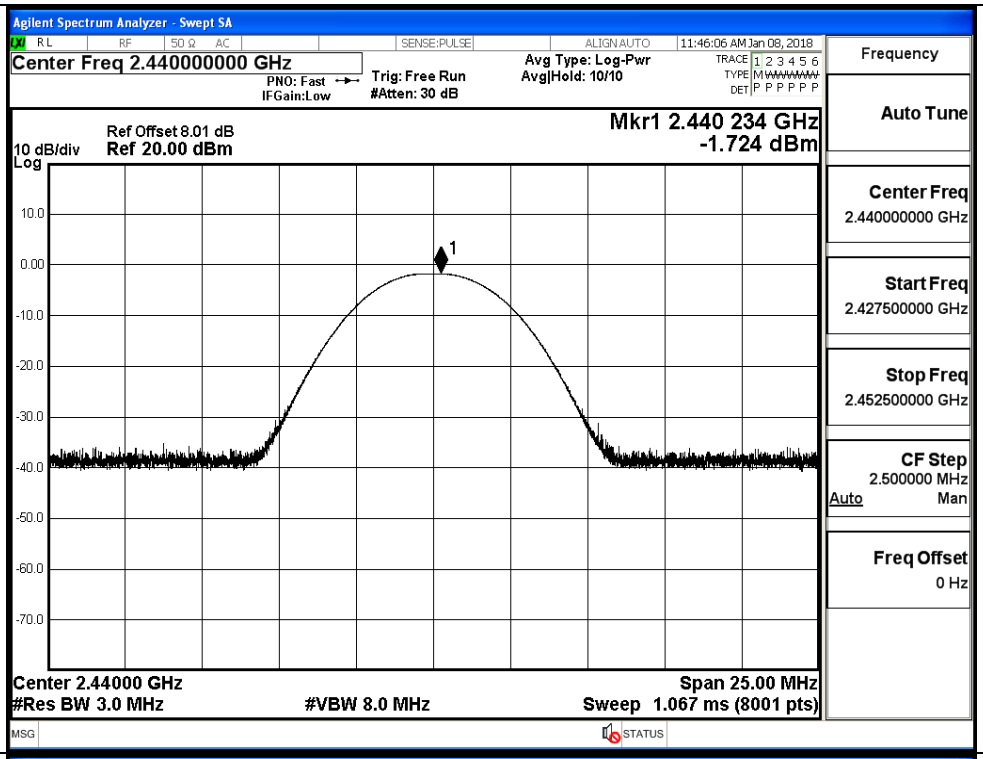
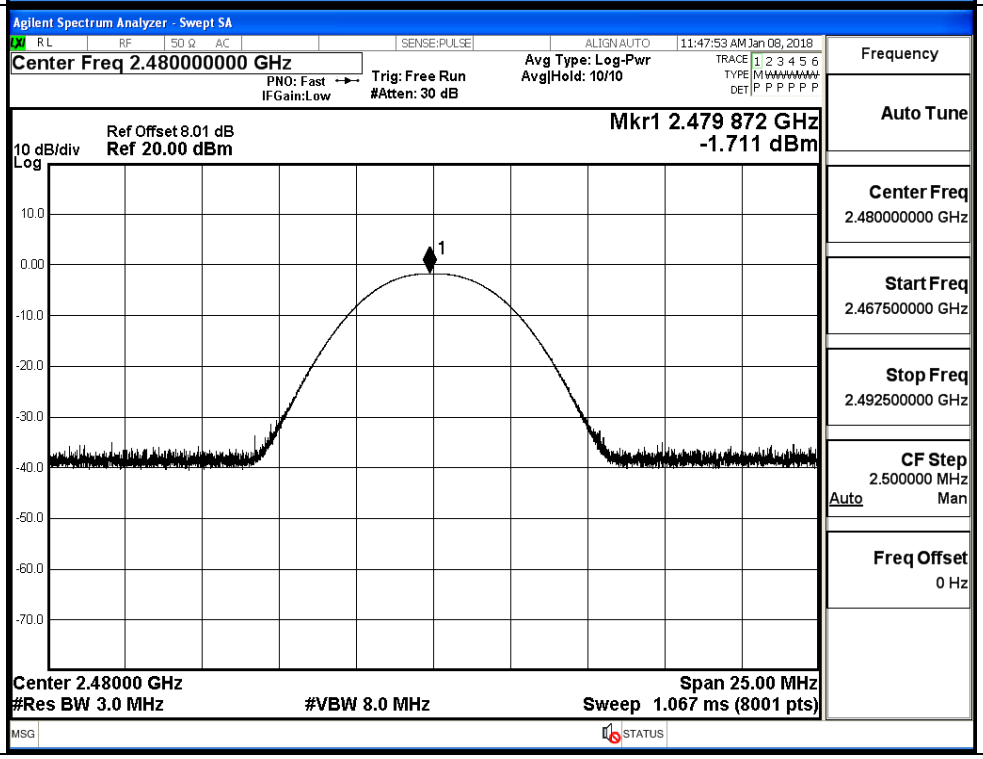
Section B): Conducted Peak Output Power

Test Result

Mode	Channel	Conduct Peak Power[dBm]	Verdict
BLE	LCH	-1.638	PASS
BLE	MCH	-1.724	PASS
BLE	HCH	-1.711	PASS

Test Graphs

Graphs		
LCH		

MCH		
HCH		

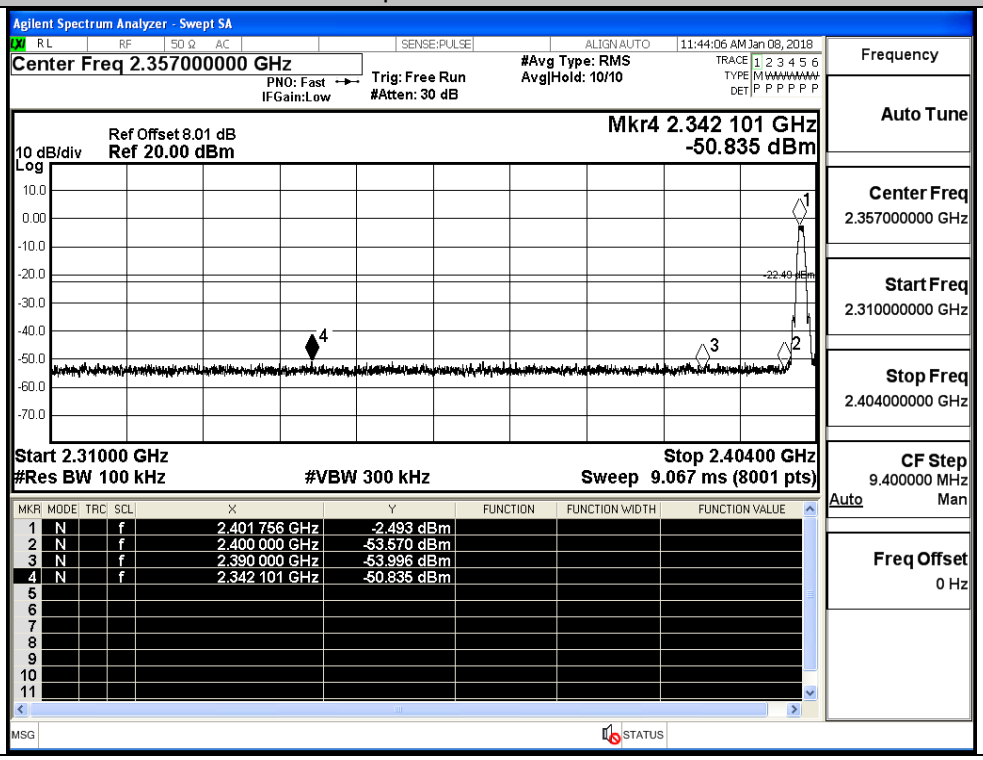
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.440000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
11:46:06 AM Jan 08, 2018
Ref Offset 8.01 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.440 234 GHz
-1.724 dBm
Center 2.44000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 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
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
11:47:53 AM Jan 08, 2018
Ref Offset 8.01 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.479 872 GHz
-1.711 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

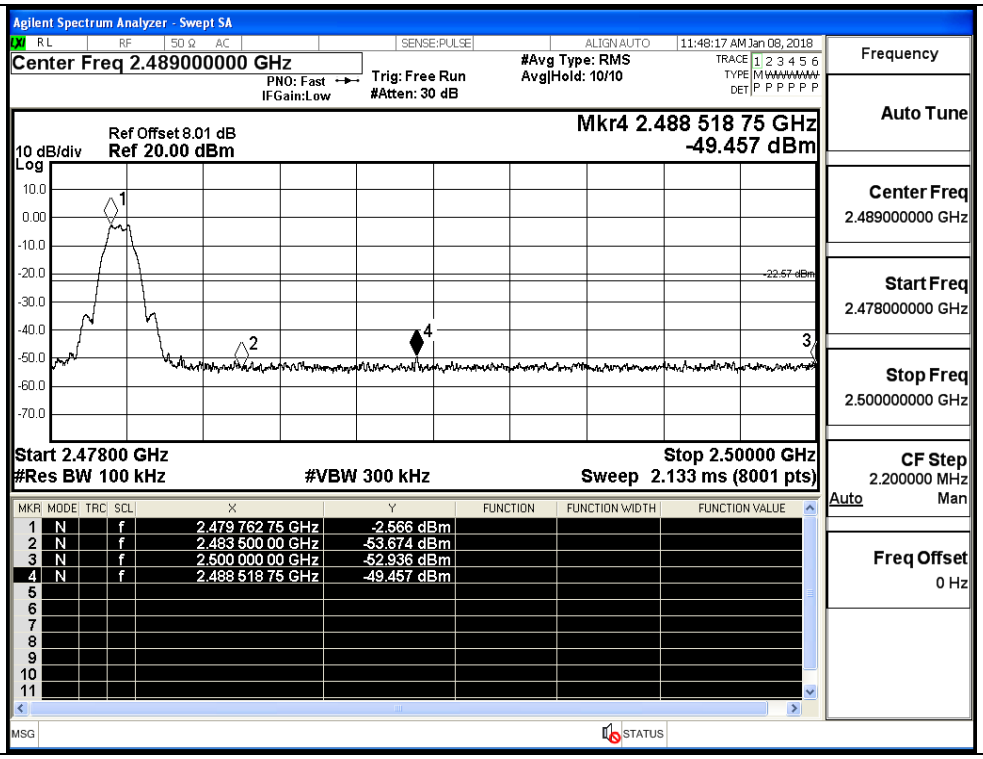
Section C): Band-edge for RF Conducted Emissions

Result Table

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BLE	LCH	-2.493	-50.835	-22.49	PASS
BLE	HCH	-2.566	-49.457	-22.57	PASS

Test Graphs

Graphs	
LCH	

HCH		

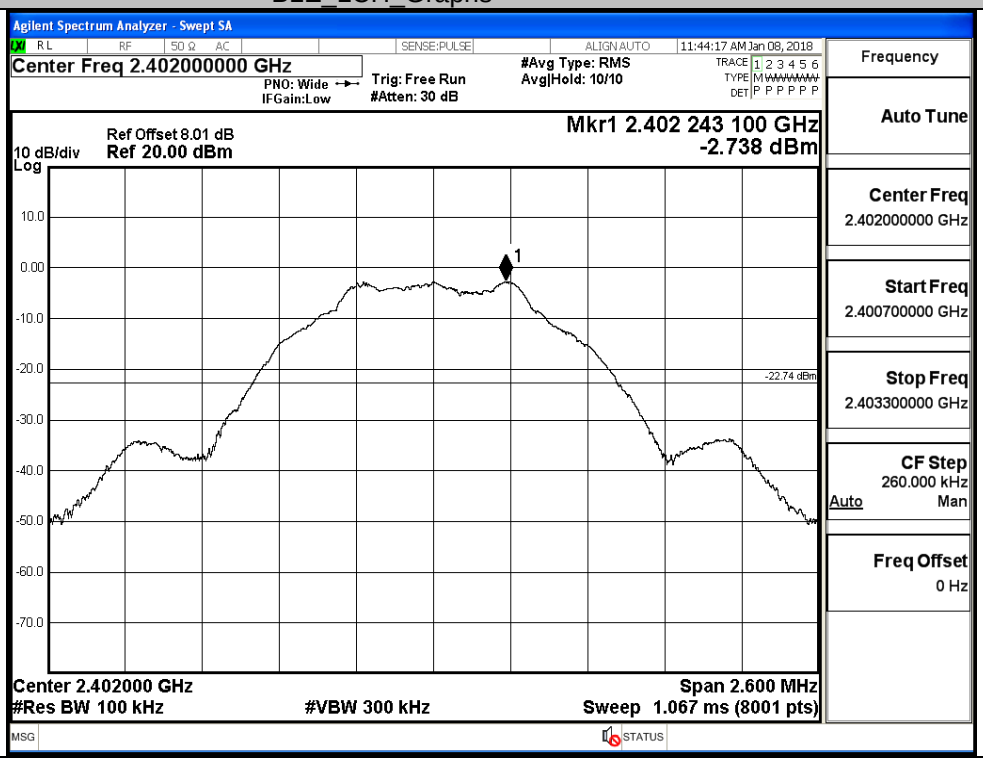
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.489000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
11:48:17 AM Jan 08, 2018
Ref Offset 8.01 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr4 2.488 518 75 GHz
-49.457 dBm
-22.57 dBm
Start 2.47800 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 2.133 ms (8001 pts)
1 N 1 f 2.479 762 75 GHz -2.566 dBm
2 N 1 f 2.483 500 00 GHz -53.674 dBm
3 N 1 f 2.500 000 00 GHz -52.936 dBm
4 N 1 f 2.488 518 75 GHz -49.457 dBm
Frequency
Auto Tune
Center Freq
2.489000000 GHz
Start Freq
2.478000000 GHz
Stop Freq
2.500000000 GHz
CF Step
2.200000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

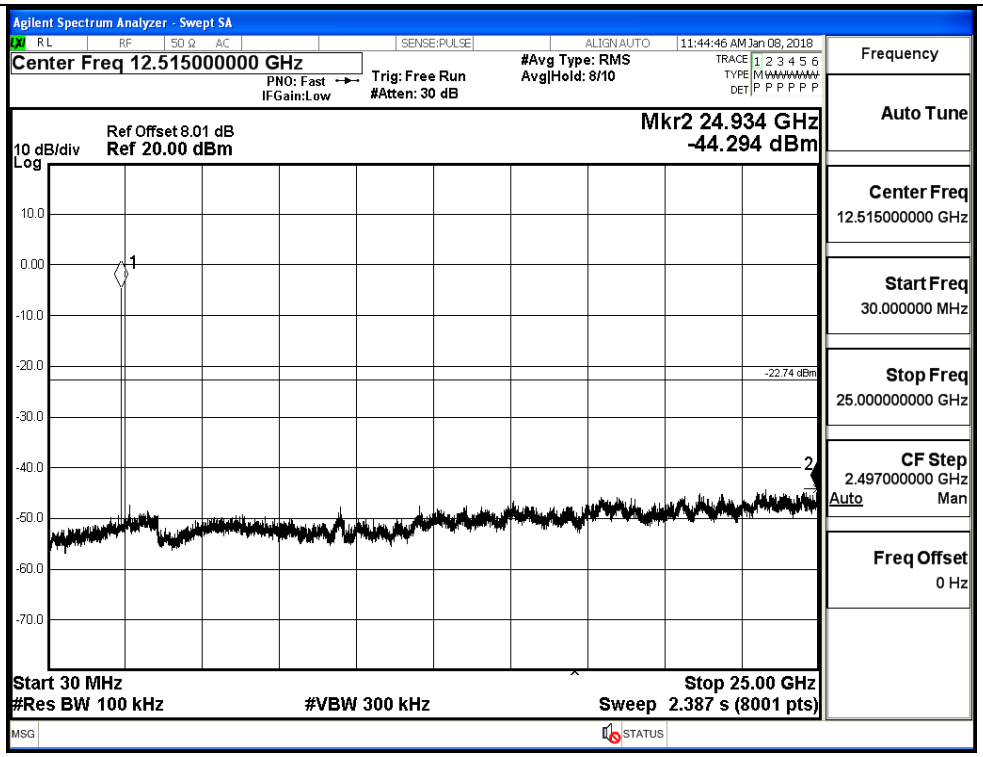
Section D): RF Conducted Spurious Emissions

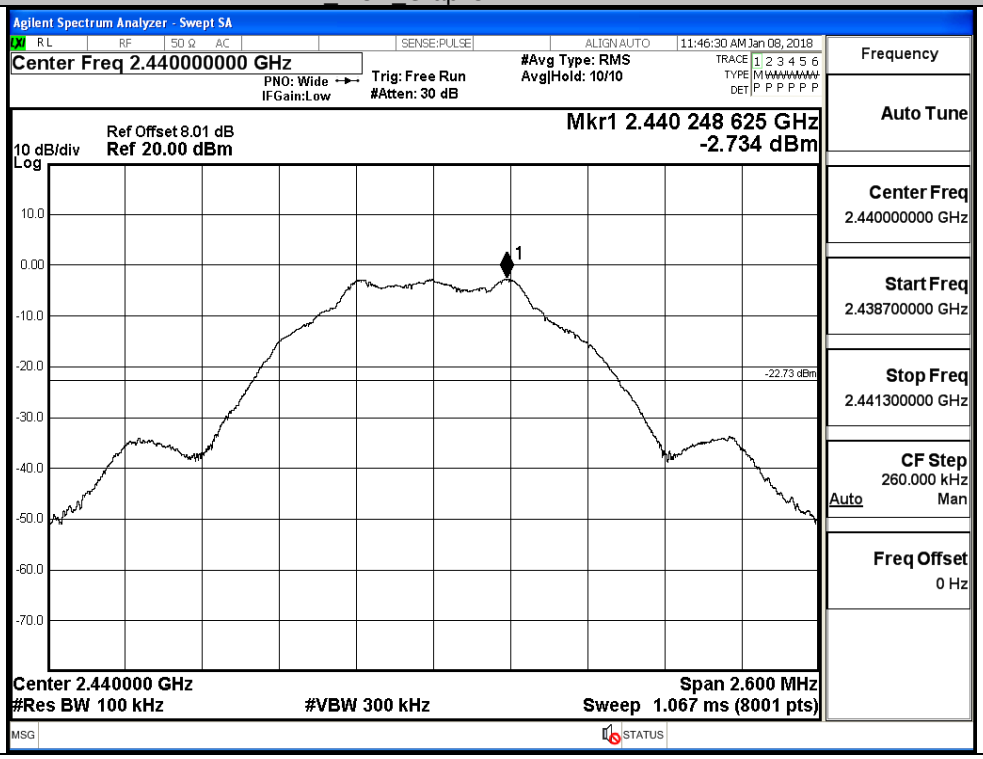
Result Table

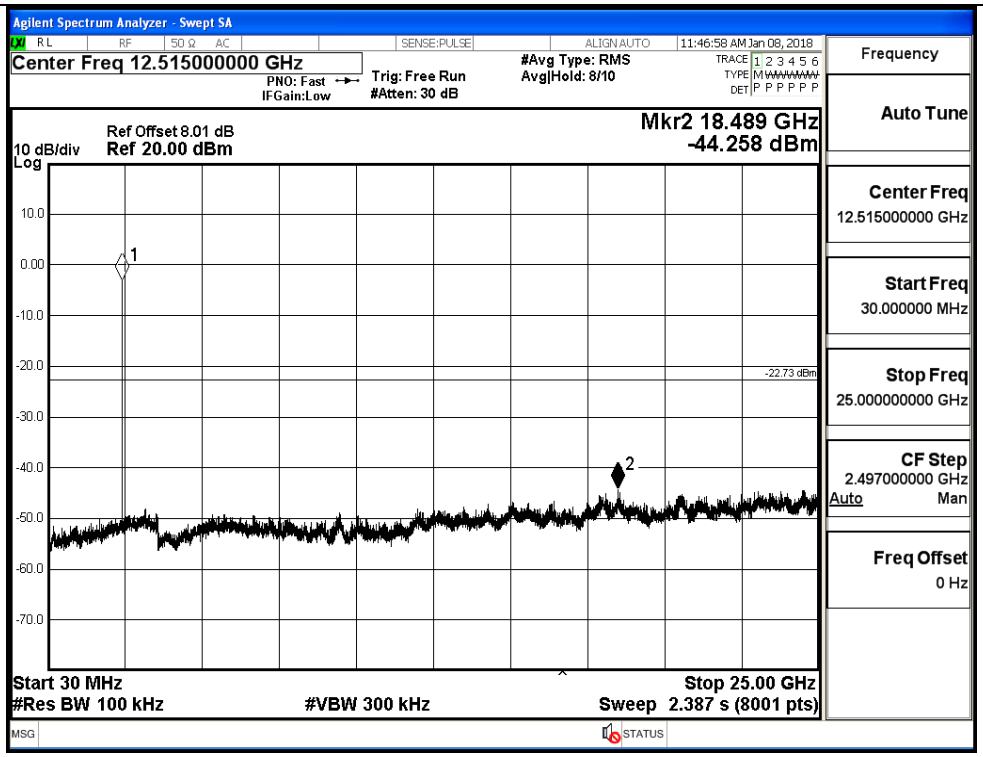
Mode	Channel	Pref [dBm]	Puw[dBm]	Verdict
BLE	LCH	-2.738	<Limit	PASS
BLE	MCH	-2.734	<Limit	PASS
BLE	HCH	-2.776	<Limit	PASS

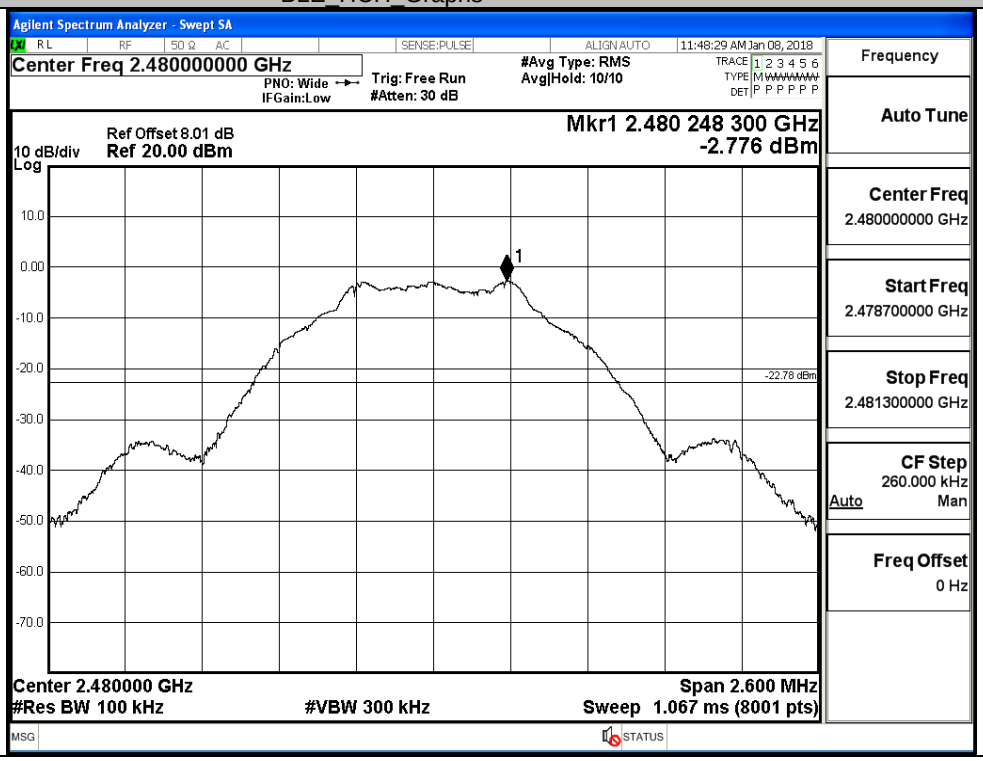
Test Graphs

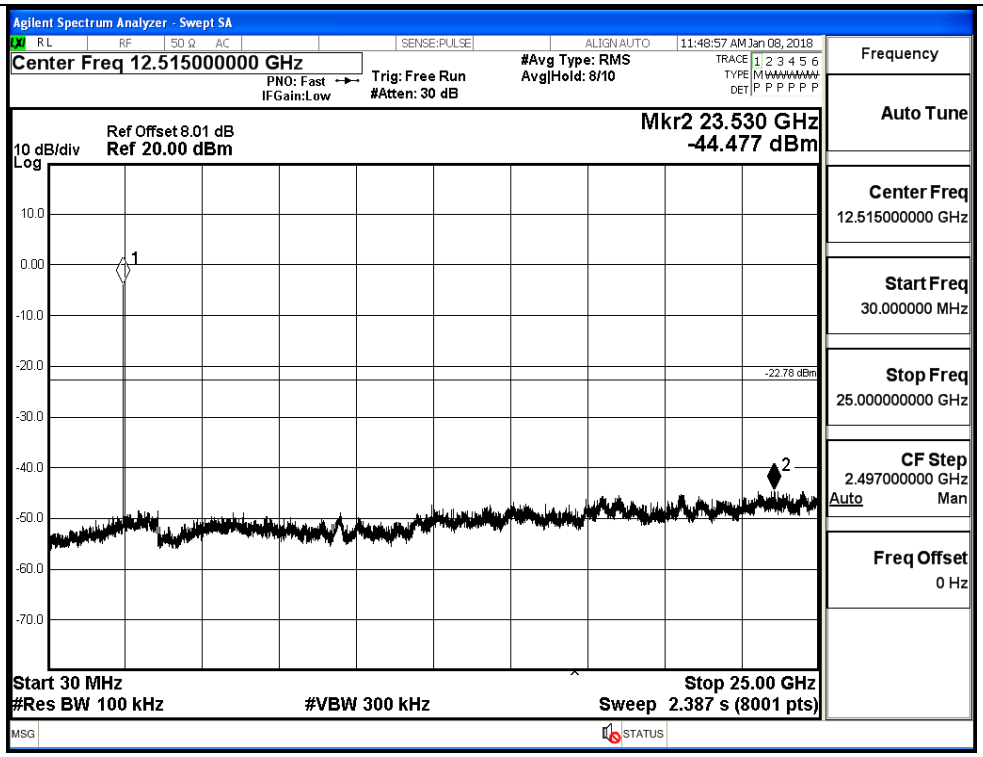
BLE_LCH_Graphs		
Pref/BLE/LCH		

Puw/BLE/LCH	

BLE_MCH_Graphs	
Pref/BLE/MCH	

Puw/BLE/MCH	

BLE_HCH_Graphs	
Pref/BLE/HCH	

Puw/BLE/HCH	

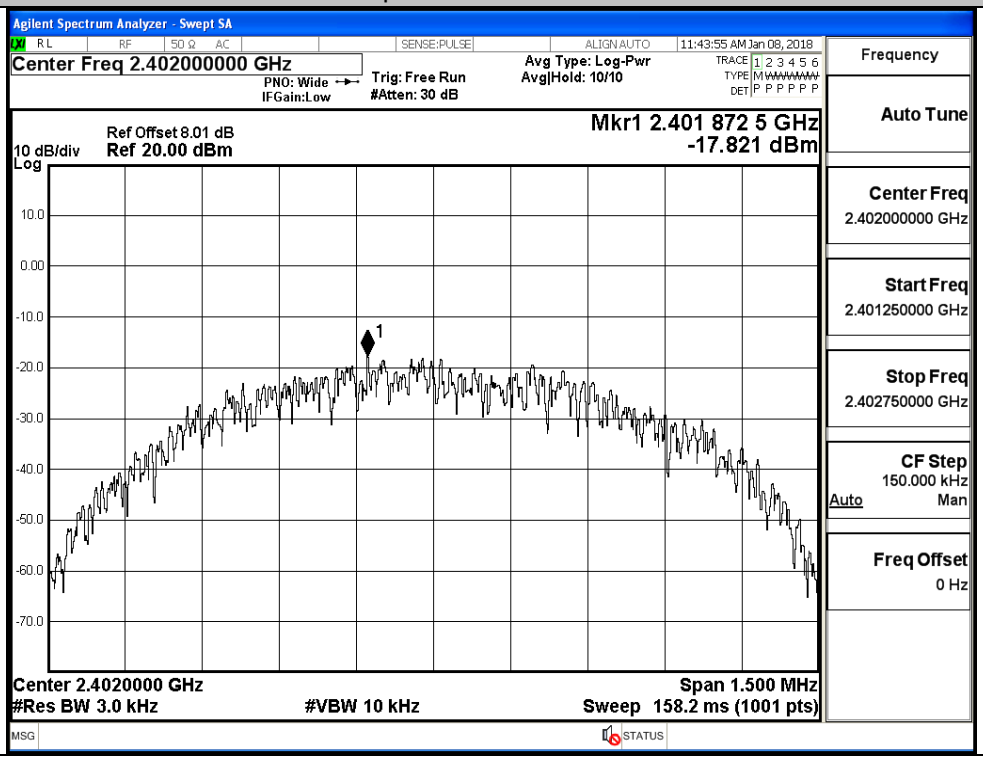
Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 8/10
11:48:57 AM Jan 08, 2018
Ref Offset 8.01 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr2 23.530 GHz
-44.477 dBm
-22.78 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.387 s (8001 pts)
Frequency
Auto Tune
Center Freq
12.515000000 GHz
Start Freq
30.000000 MHz
Stop Freq
25.000000000 GHz
CF Step
2.497000000 GHz
Auto
Man
Freq Offset
0 Hz

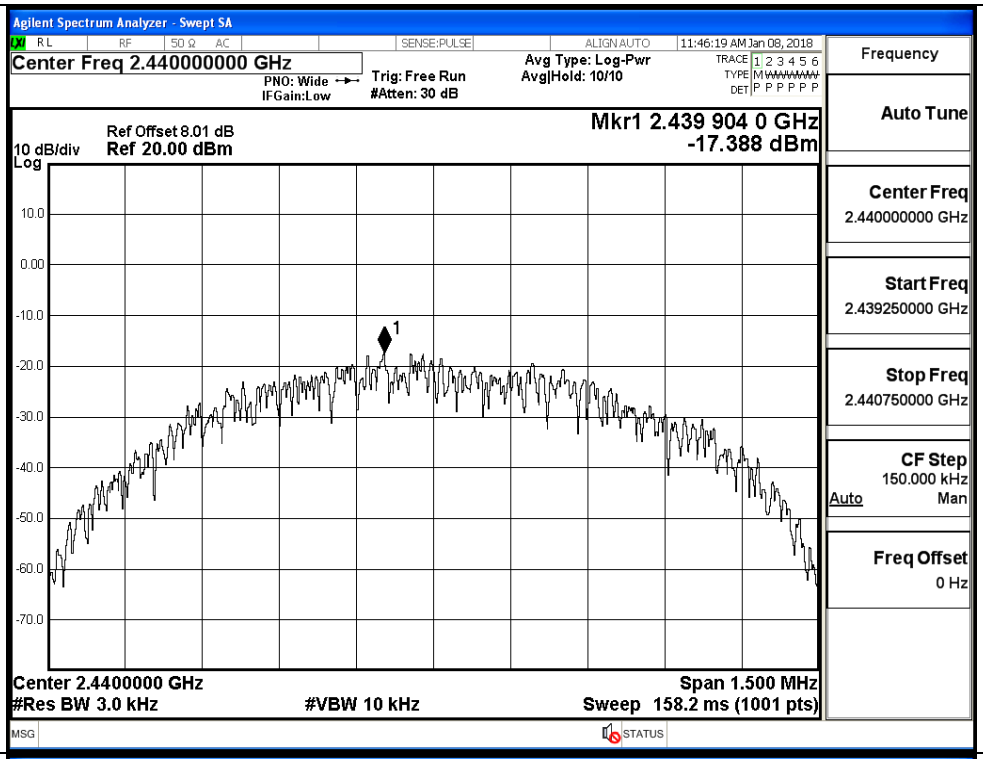
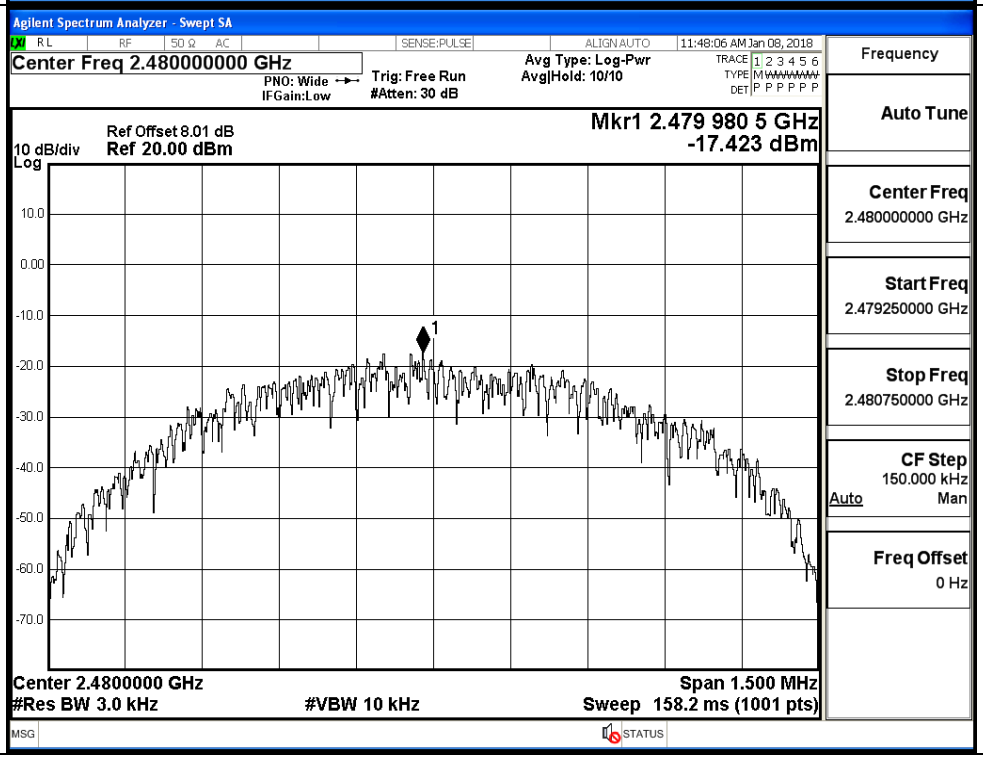
Section E): Power Spectral Density

Result Table

Mode	Channel	PSD [dBm]	Verdict
BLE	LCH	-17.821	PASS
BLE	MCH	-17.388	PASS
BLE	HCH	-17.423	PASS

Test Graphs

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
11:46:19 AM Jan 08, 2018
Ref Offset 8.01 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.439 904 0 GHz
-17.388 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

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
11:48:06 AM Jan 08, 2018
Ref Offset 8.01 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.479 980 5 GHz
-17.423 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

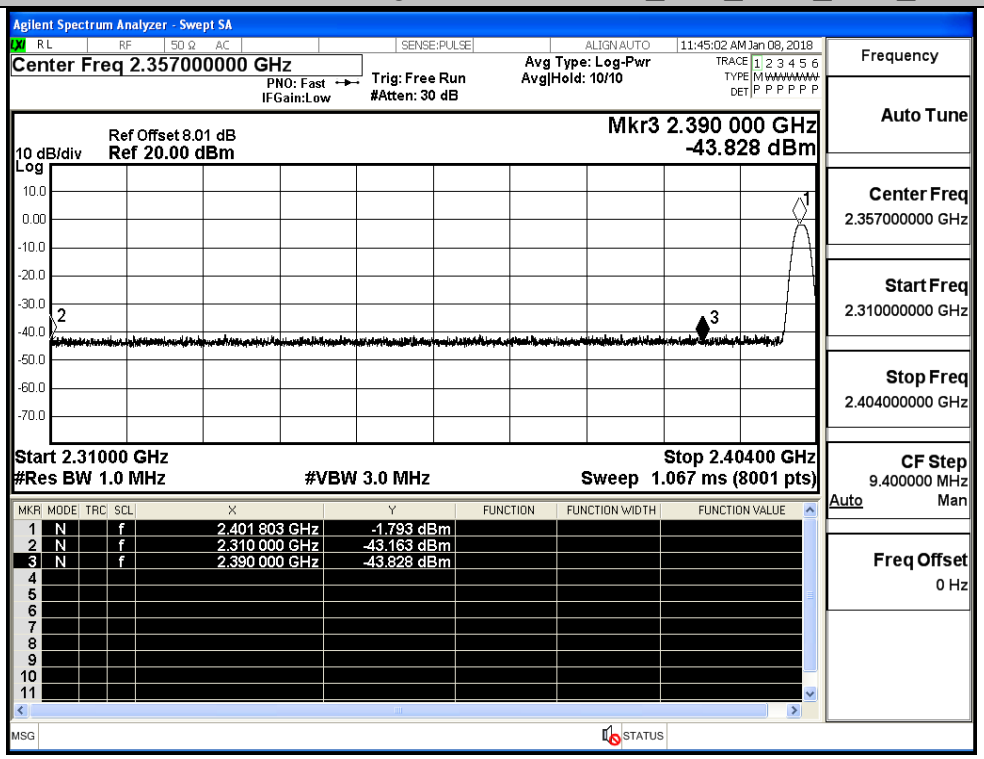
Section F):Restrict-band band-edge measurements

Result Table

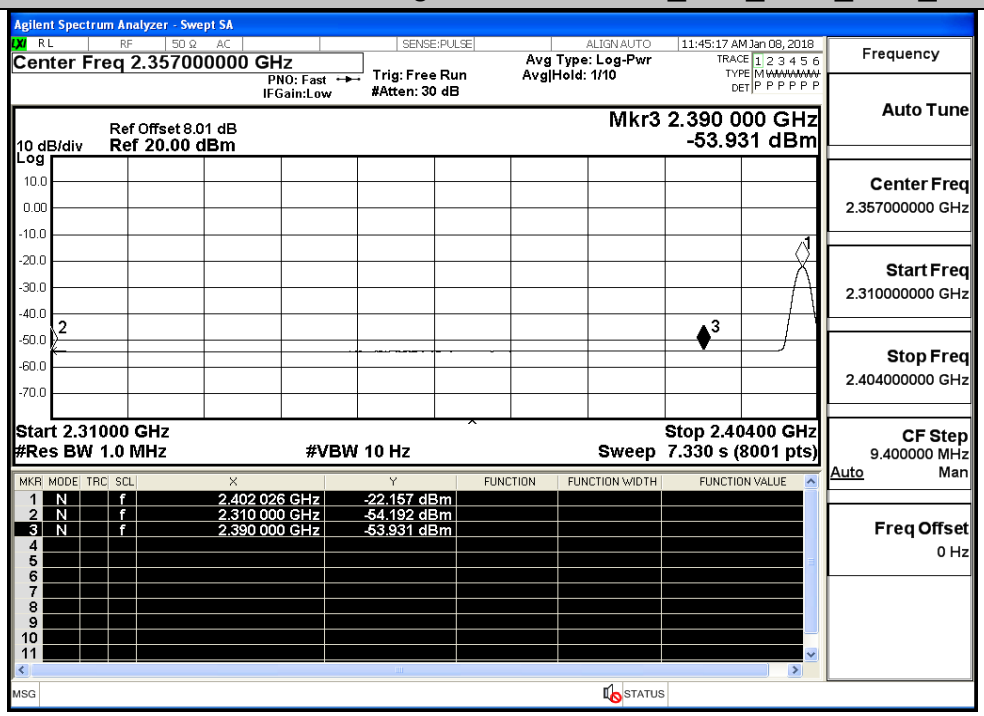
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verd . .
BLE	2402	Ant1	2310.0	-43.16	2	0	52.09	PEAK	74	PASS
BLE	2402	Ant1	2310.0	-54.19	2	0	41.07	AV	54	PASS
BLE	2402	Ant1	2390.0	-43.83	2	0	51.43	PEAK	74	PASS
BLE	2402	Ant1	2390.0	-53.93	2	0	41.33	AV	54	PASS
BLE	2480	Ant1	2483.5	-43.86	2	0	51.40	PEAK	74	PASS
BLE	2480	Ant1	2483.5	-53.75	2	0	41.50	AV	54	PASS
BLE	2480	Ant1	2500.0	-43.20	2	0	52.05	PEAK	74	PASS
BLE	2480	Ant1	2500.0	-53.62	2	0	41.64	AV	54	PASS

Test Graphs

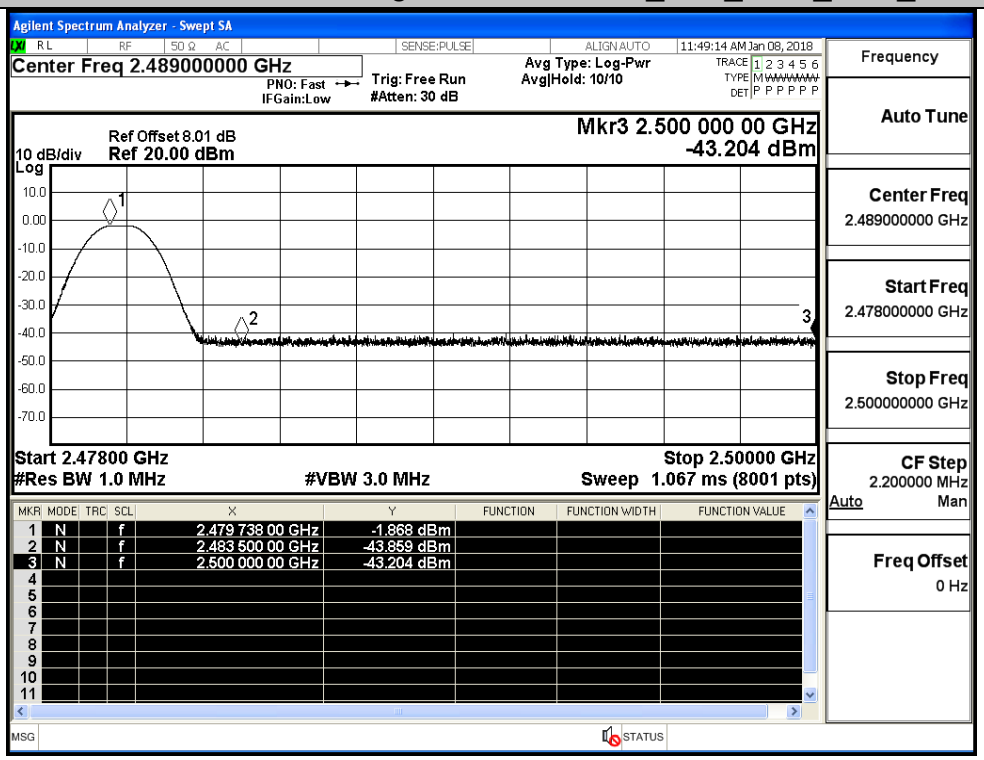
Restrict-band band-edge measurements_BLE_2402_Ant1_PEAK



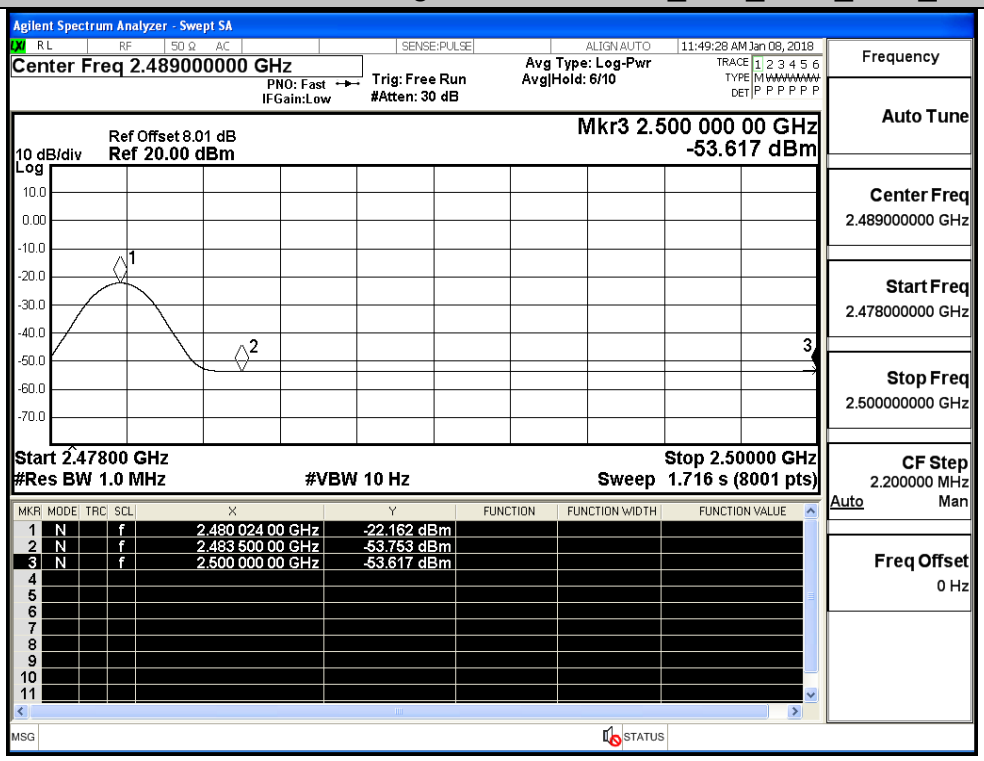
Restrict-band band-edge measurements_BLE_2402_Ant1_AV



Restrict-band band-edge measurements_BLE_2480_Ant1_PEAK



Restrict-band band-edge measurements_BLE_2480_Ant1_AV



Section G):Duty Cycle

Result Table

Test Mode	Test	Ant	Duty Cycle[%]	Verdict
BLE	2440	Ant1	100	PASS

Test Graphs