Environmental Conditions

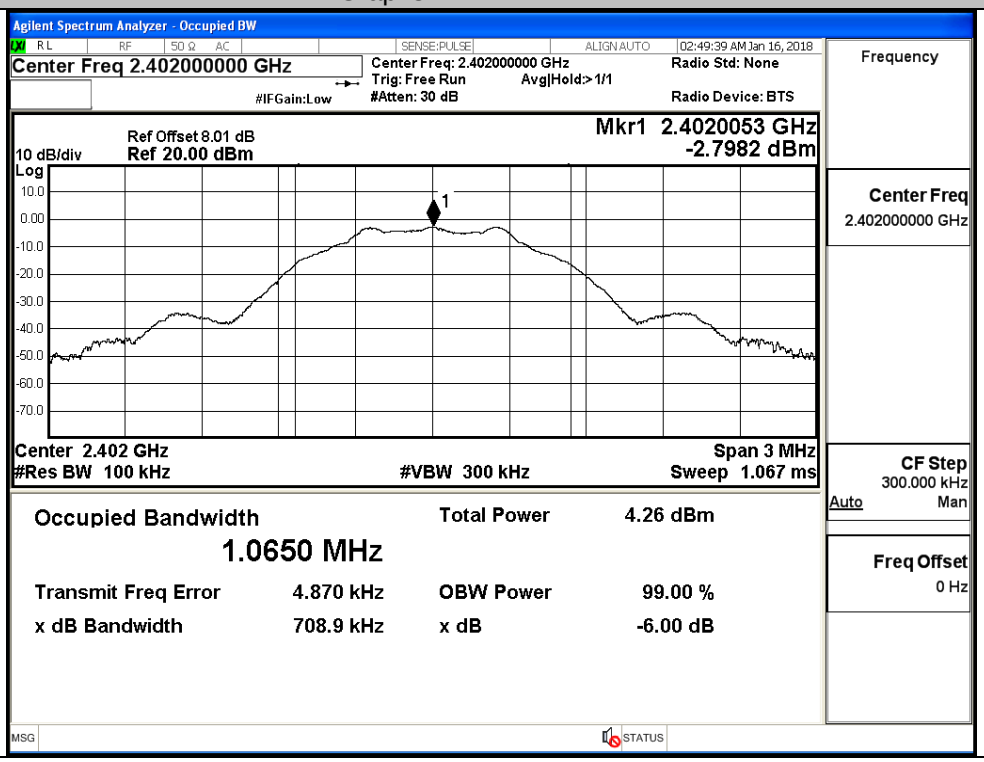
Temperature:	24.6 ° C
Relative Humidity:	48%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.xu
Supervised by:	Tom.Liu

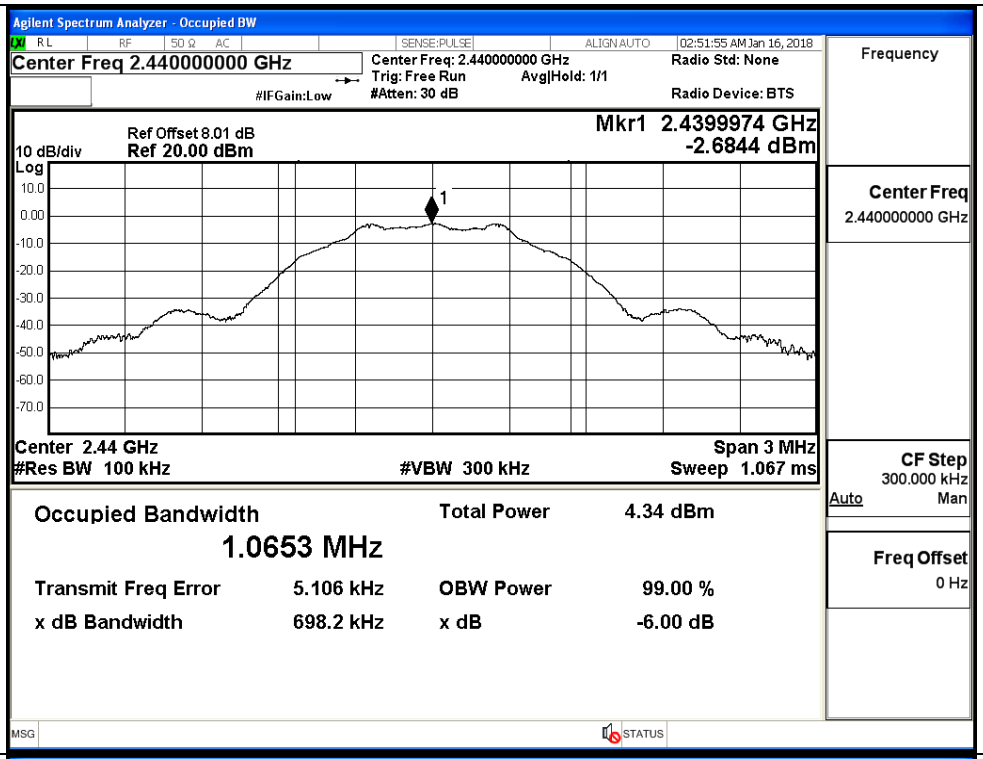
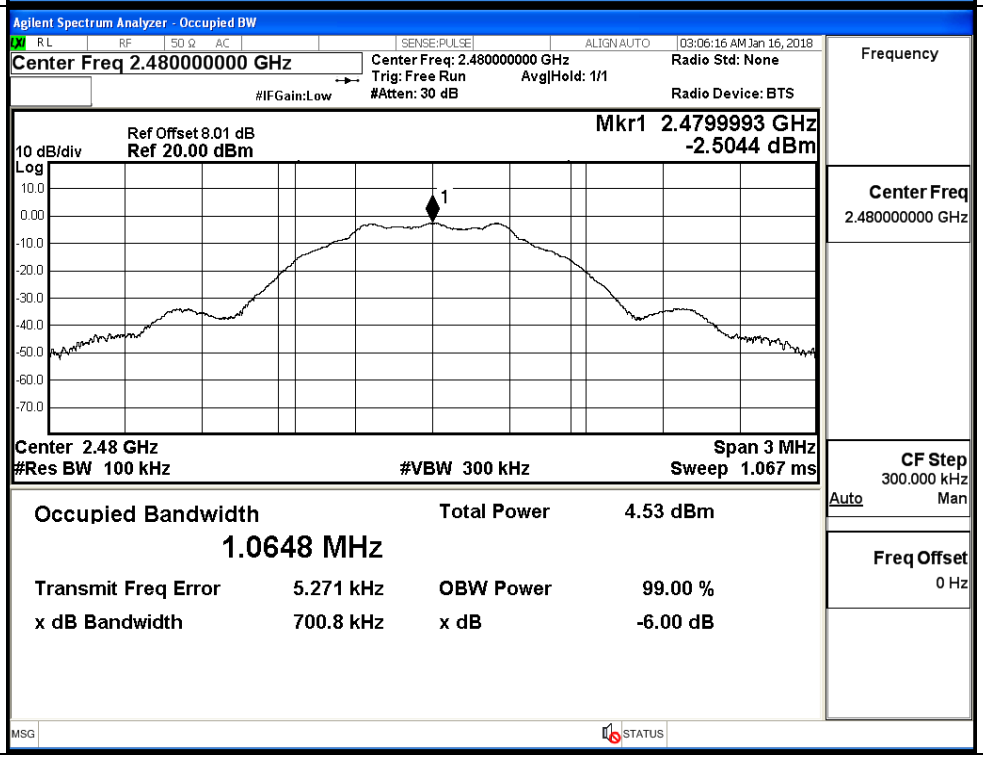
Section A): 6dB Bandwidth

Test Result

Mode	Channel	6dB Bandwidth [MHz]	Verdict
BLE	LCH	0.7089	PASS
BLE	MCH	0.6982	PASS
BLE	HCH	0.7008	PASS

Test Graphs

Graphs	
LCH	

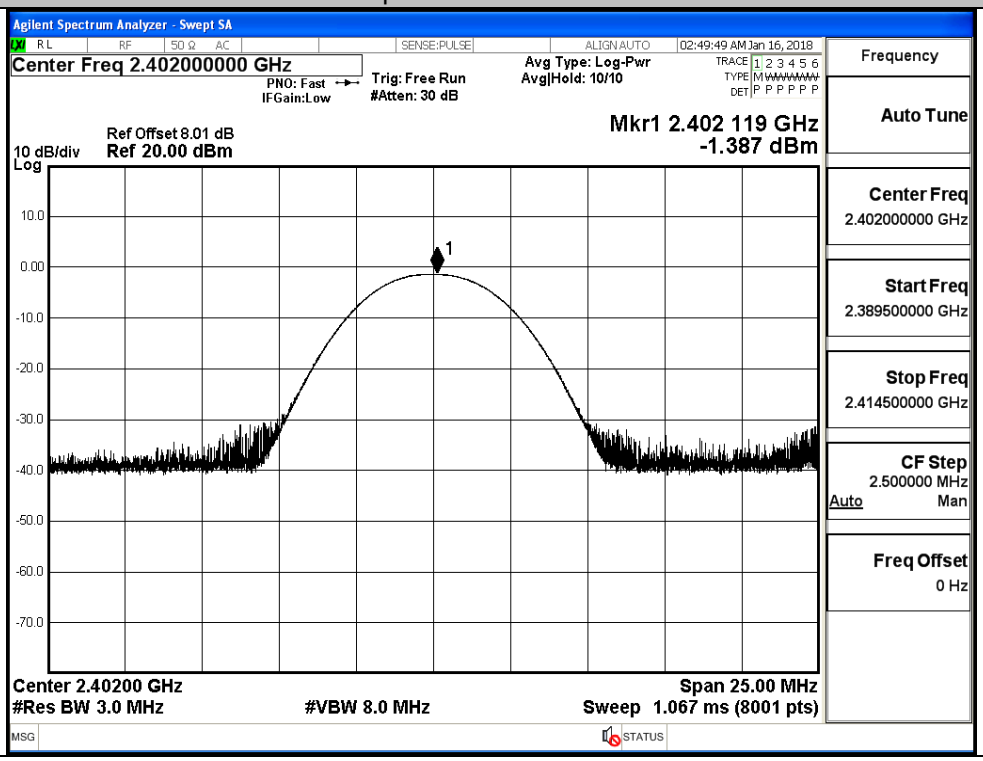
MCH		 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.440000000 GHz Center Freq: 2.440000000 GHz Trig: Free Run Avg|Hold: 1/1 #Atten: 30 dB #IFGain:Low Radio Std: None Radio Device: BTS 02:51:55 AM Jan 16, 2018 Ref Offset 8.01 dB 10 dB/div Ref 20.00 dBm Log Mkr1 2.4399974 GHz -2.6844 dBm Center 2.44 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1.067 ms Occupied Bandwidth 1.0653 MHz Total Power 4.34 dBm Transmit Freq Error 5.106 kHz OBW Power 99.00 % x dB Bandwidth 698.2 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 03:06:16 AM Jan 16, 2018 Ref Offset 8.01 dB 10 dB/div Ref 20.00 dBm Log Mkr1 2.4799993 GHz -2.5044 dBm Center 2.48 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1.067 ms Occupied Bandwidth 1.0648 MHz Total Power 4.53 dBm Transmit Freq Error 5.271 kHz OBW Power 99.00 % x dB Bandwidth 700.8 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

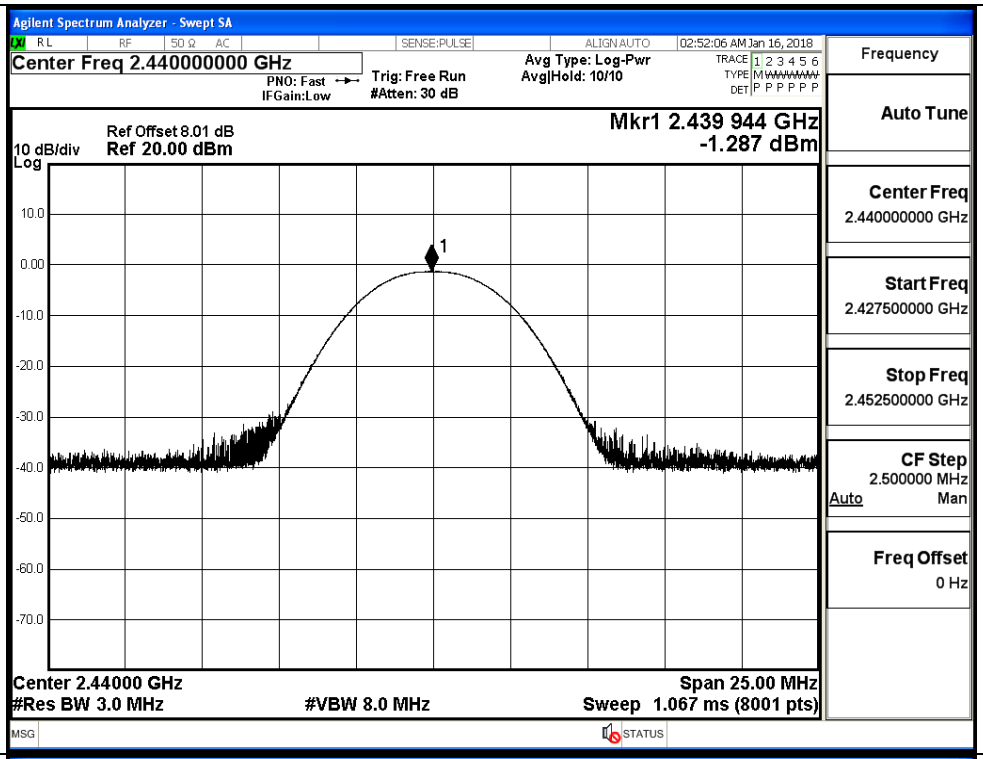
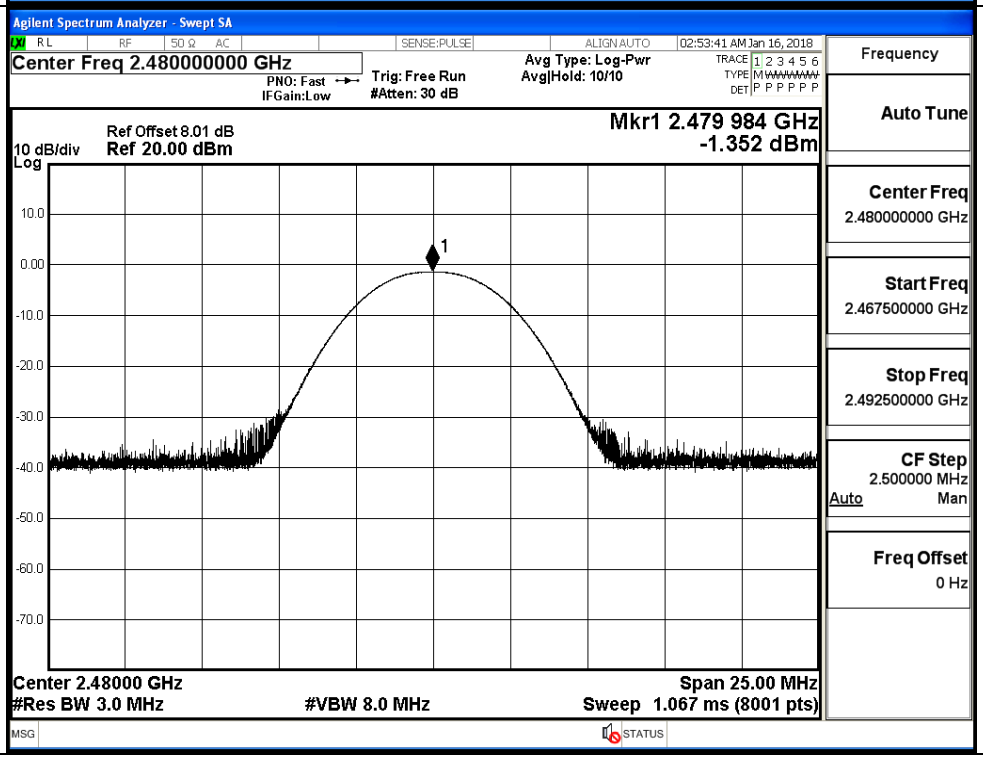
Section B): Conducted Peak Output Power

Test Result

Mode	Channel	Conduct Peak Power[dBm]	Verdict
BLE	LCH	-1.387	PASS
BLE	MCH	-1.287	PASS
BLE	HCH	-1.352	PASS

Test Graphs

Graphs		
LCH		

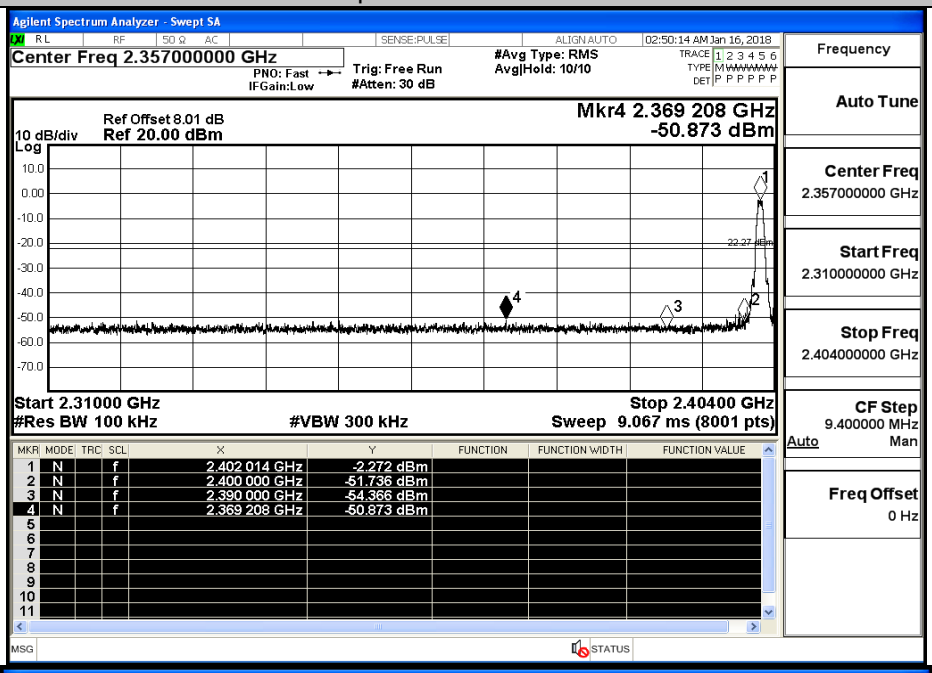
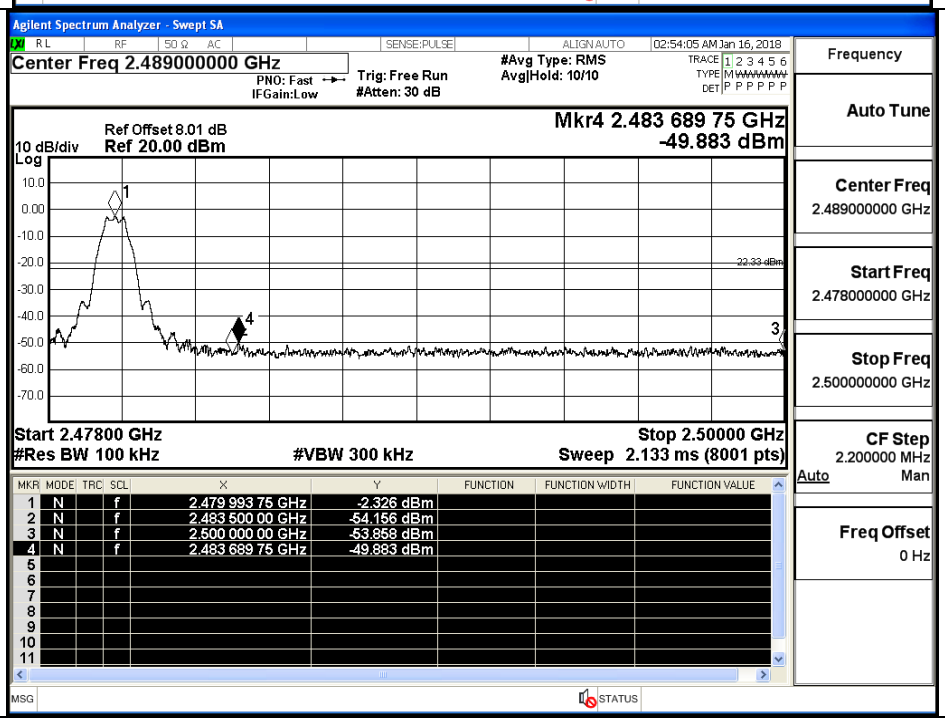
MCH		 Agilent Spectrum Analyzer - Swept SA Center Freq 2.440000000 GHz PNO: Fast IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg|Hold: 10/10 02:52:06 AM Jan 16, 2018 Ref Offset 8.01 dB 10 dB/div Ref 20.00 dBm Log Mkr1 2.439 944 GHz -1.287 dBm Center 2.44000 GHz #Res BW 3.0 MHz #VBW 8.0 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 02:53:41 AM Jan 16, 2018 Ref Offset 8.01 dB 10 dB/div Ref 20.00 dBm Log Mkr1 2.479 984 GHz -1.352 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	-2.272	-50.873	-22.27	PASS
BLE	HCH	-2.326	-49.883	-22.33	PASS

Test Graphs

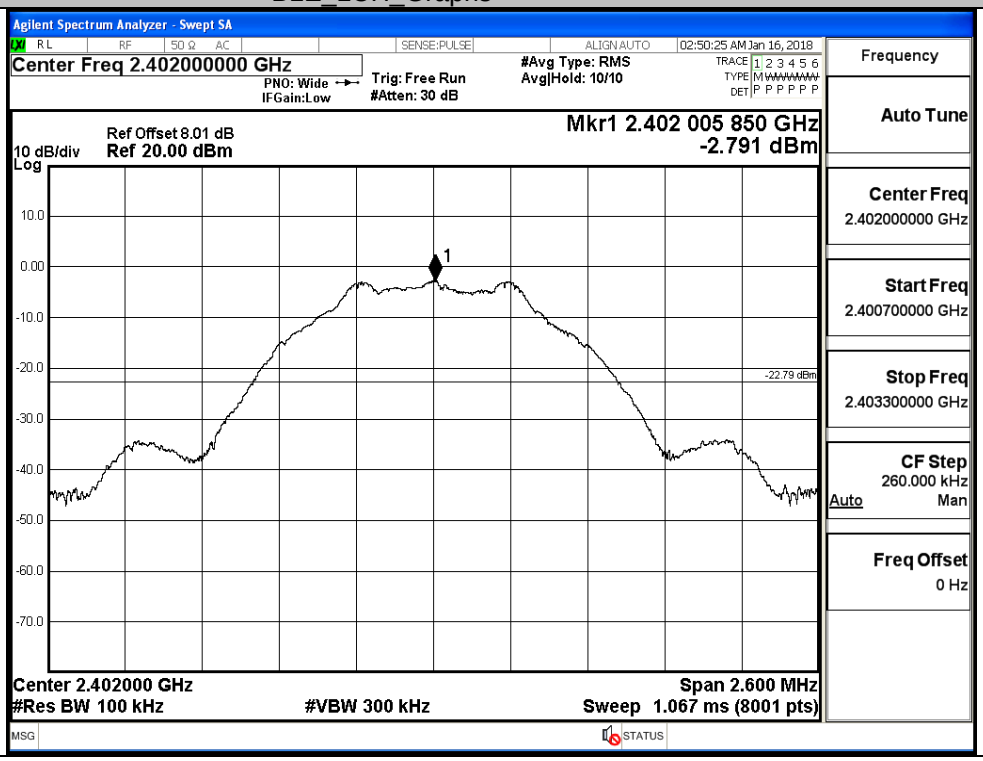
Graphs	
LCH	
HCH	

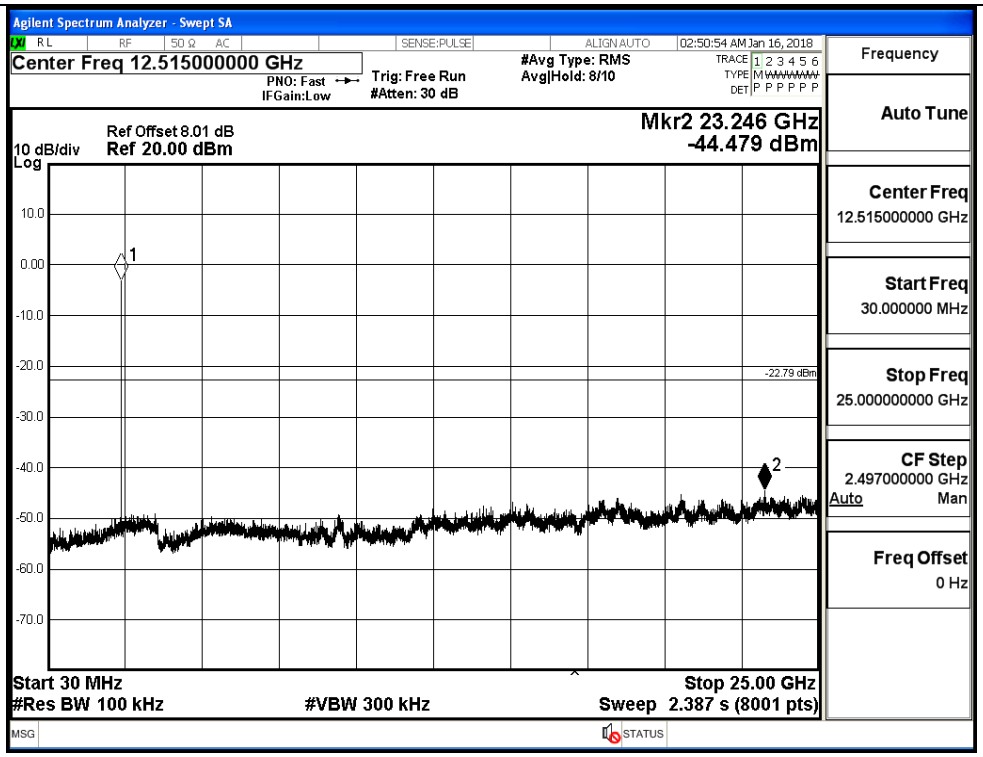
Section D): RF Conducted Spurious Emissions

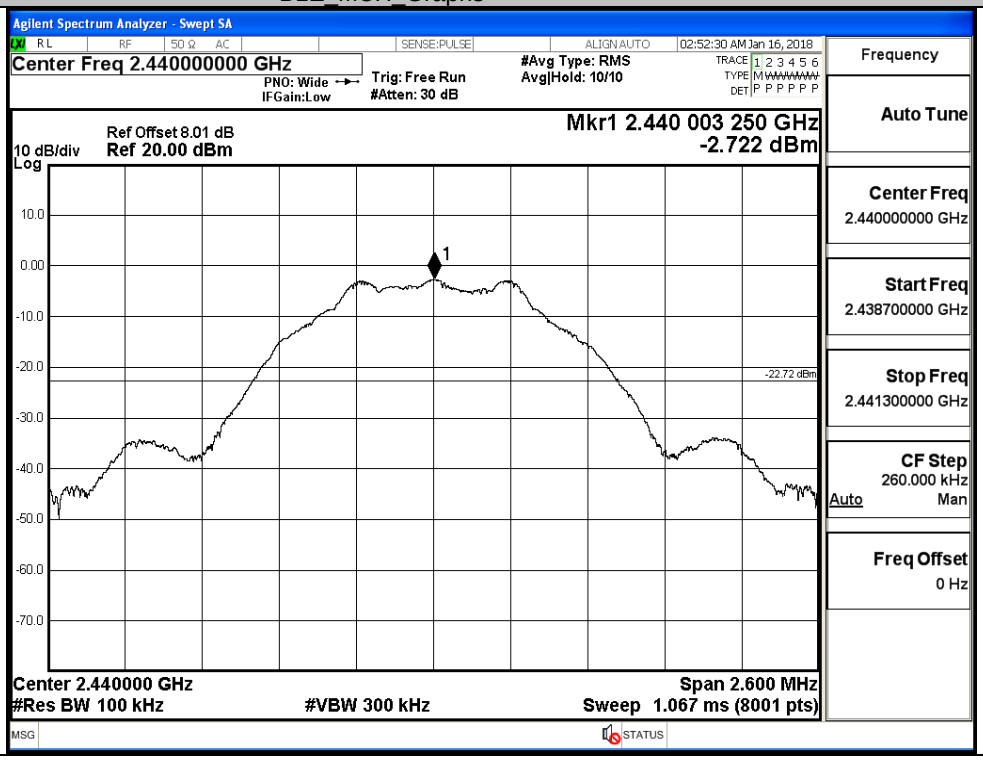
Result Table

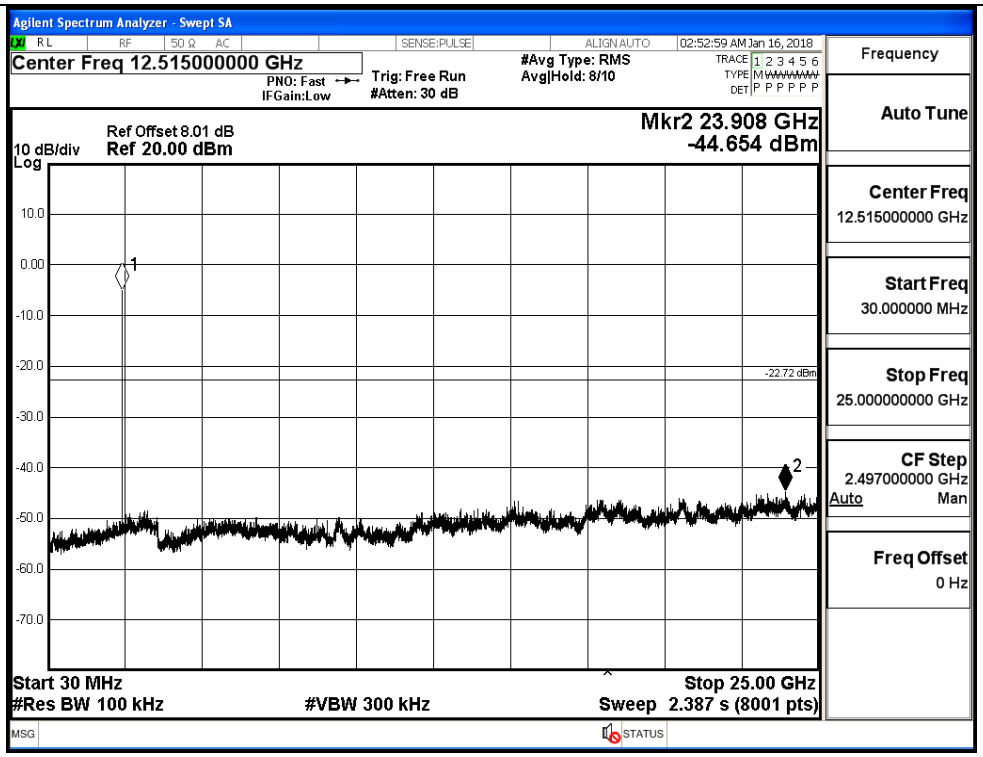
Mode	Channel	Pref [dBm]	Puw[dBm]	Verdict
BLE	LCH	-2.791	<Limit	PASS
BLE	MCH	-2.722	<Limit	PASS
BLE	HCH	-2.544	<Limit	PASS

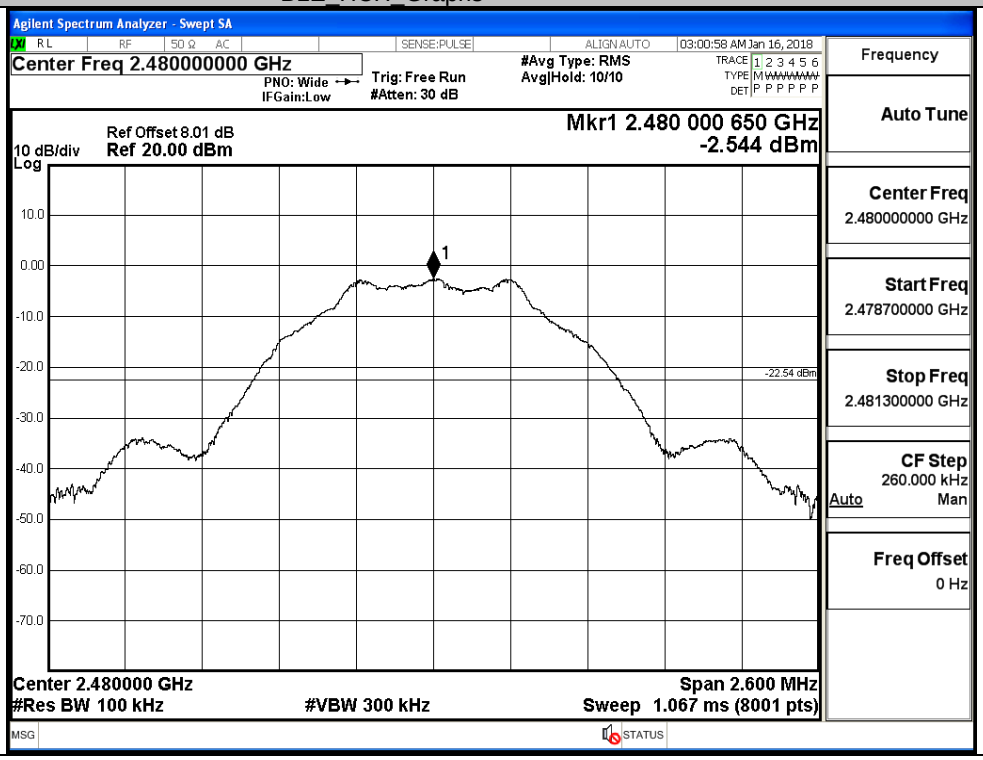
Test Graphs

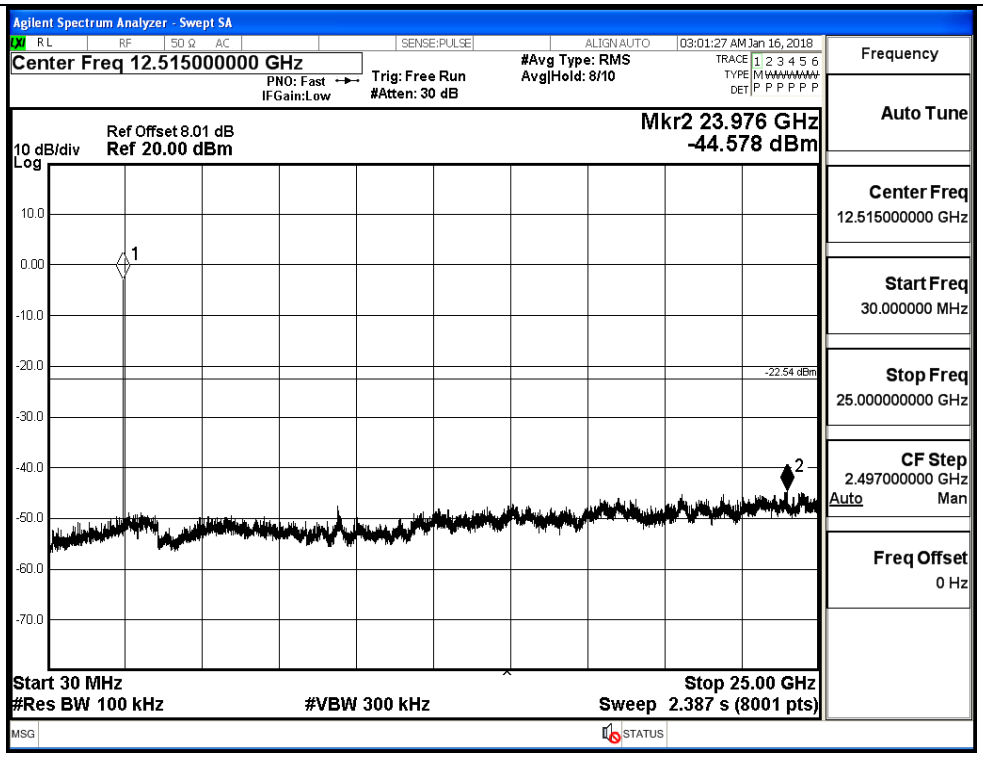
BLE_LCH_Graphs	
Pref/BLE/LCH	

Puw/BLE/LCH	

BLE_MCH_Graphs	
Pref/BLE/MCH	

Puw/BLE/MCH	

BLE_HCH_Graphs	
Pref/BLE/HCH	

Puw/BLE/HCH	

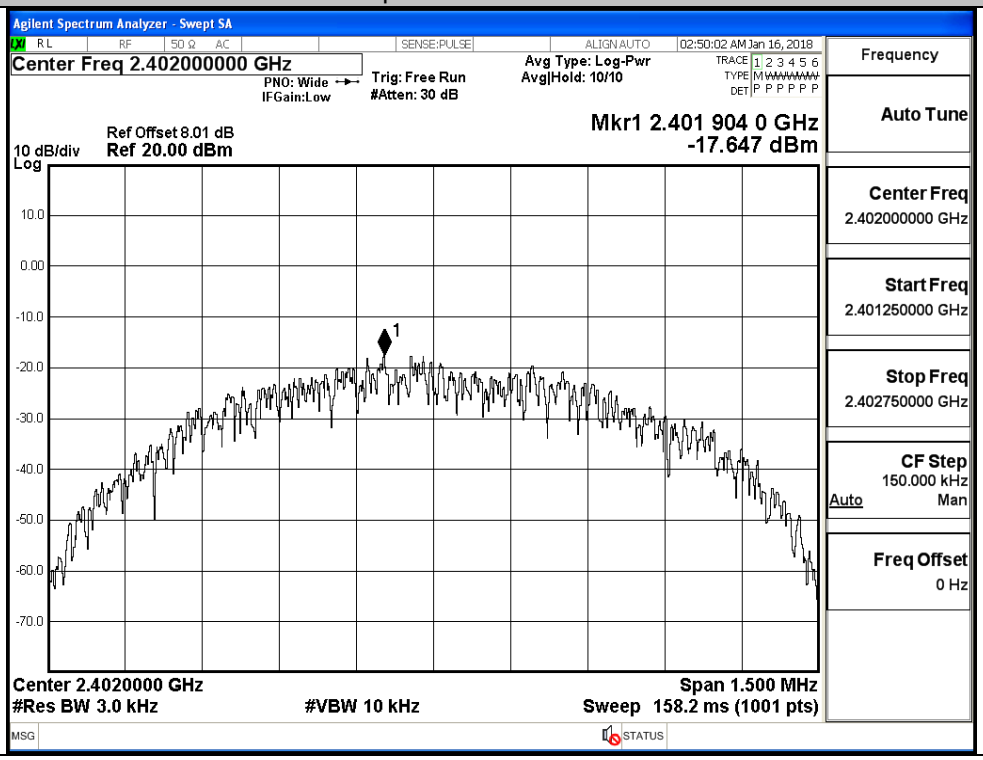
Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 8/10
03:01:27 AM Jan 16, 2018
Ref Offset 8.01 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr2 23.976 GHz
-44.578 dBm
-22.54 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 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
MSG
STATUS

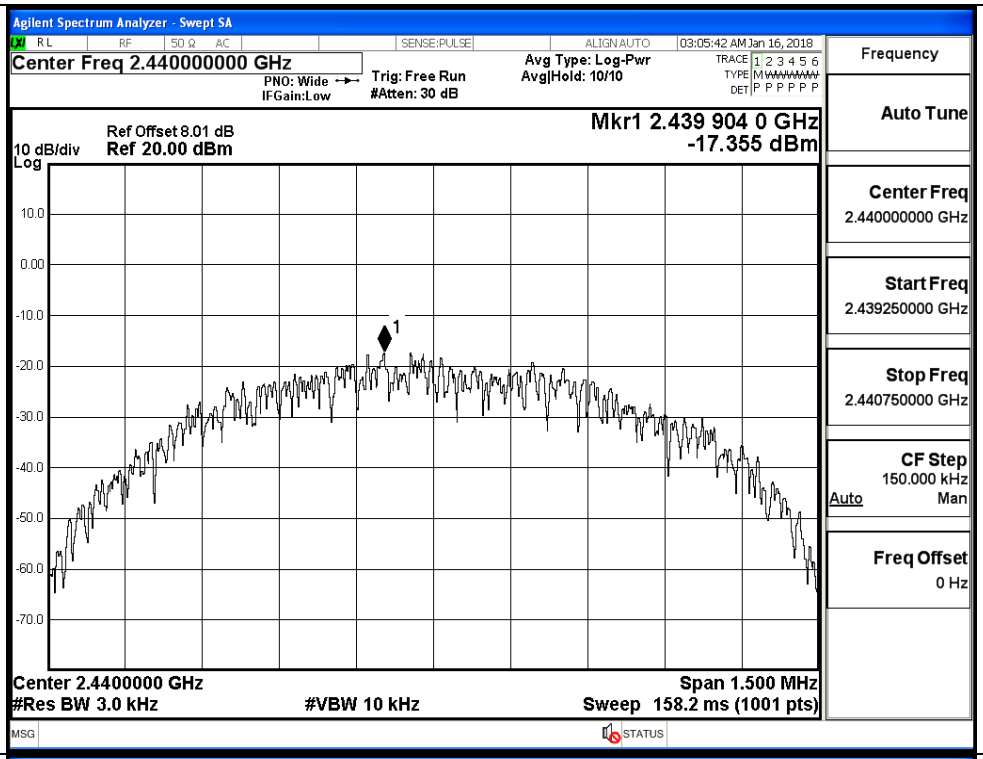
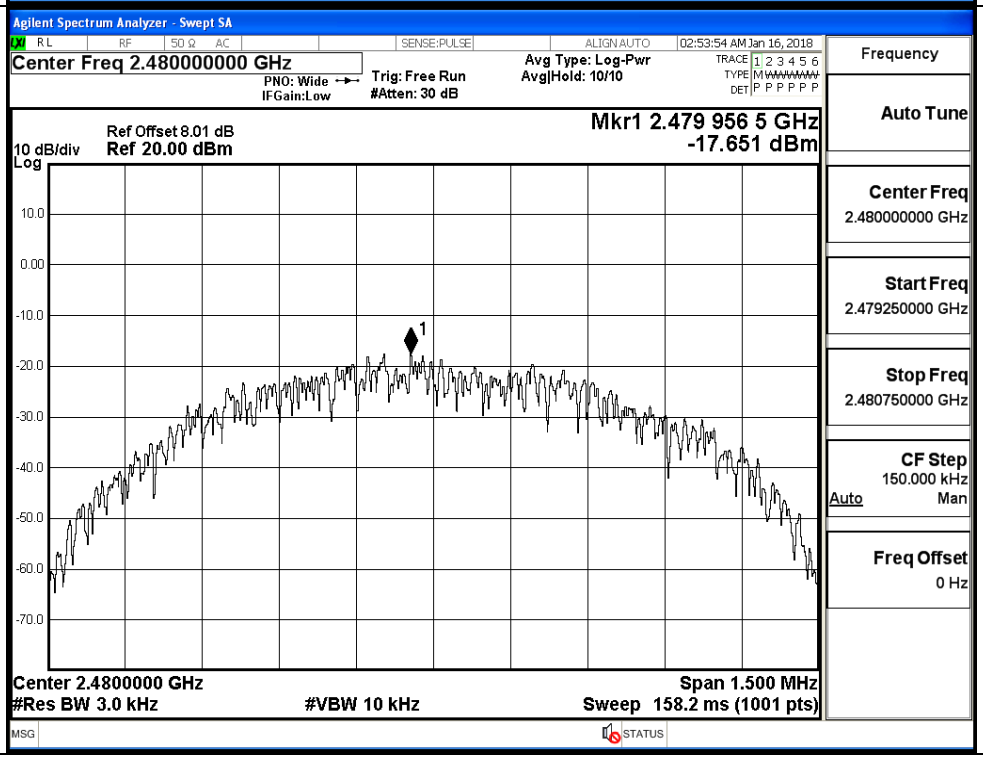
Section E): Power Spectral Density

Result Table

Mode	Channel	PSD [dBm]	Verdict
BLE	LCH	-17.647	PASS
BLE	MCH	-17.355	PASS
BLE	HCH	-17.651	PASS

Test Graphs

Graphs	
LCH	

MCH		 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 03:05:42 AM Jan 16, 2018 Ref Offset 8.01 dB 10 dB/div Ref 20.00 dBm Log Mkr1 2.439 904 0 GHz -17.355 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
HCH		 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 02:53:54 AM Jan 16, 2018 Ref Offset 8.01 dB 10 dB/div Ref 20.00 dBm Log Mkr1 2.479 956 5 GHz -17.651 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

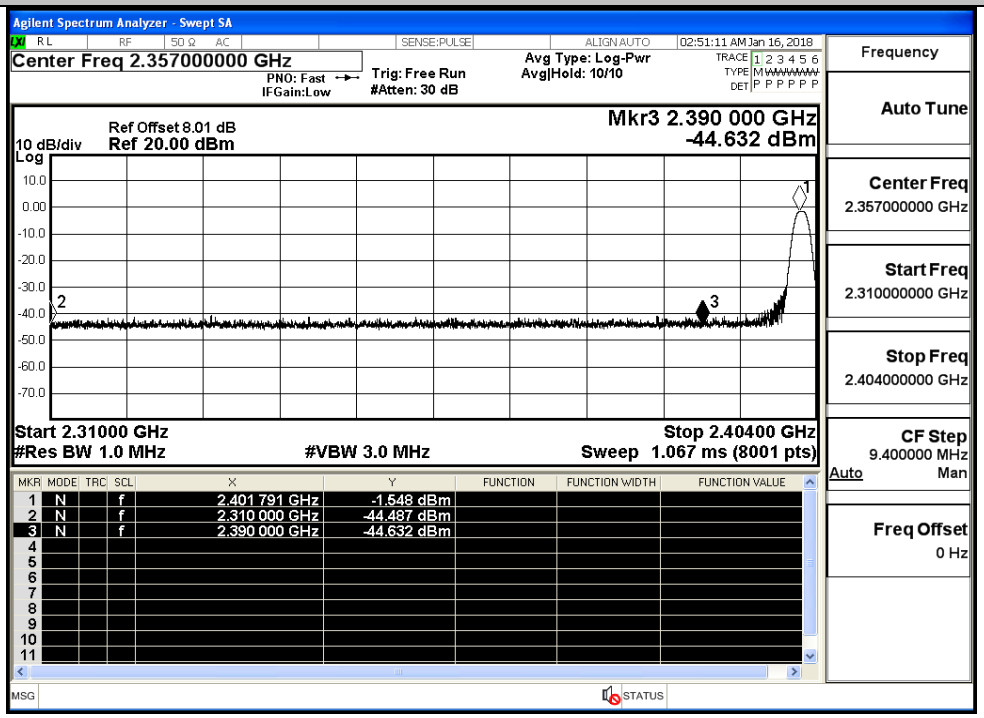
Section F):Restrict-band band-edge measurements

Result Table

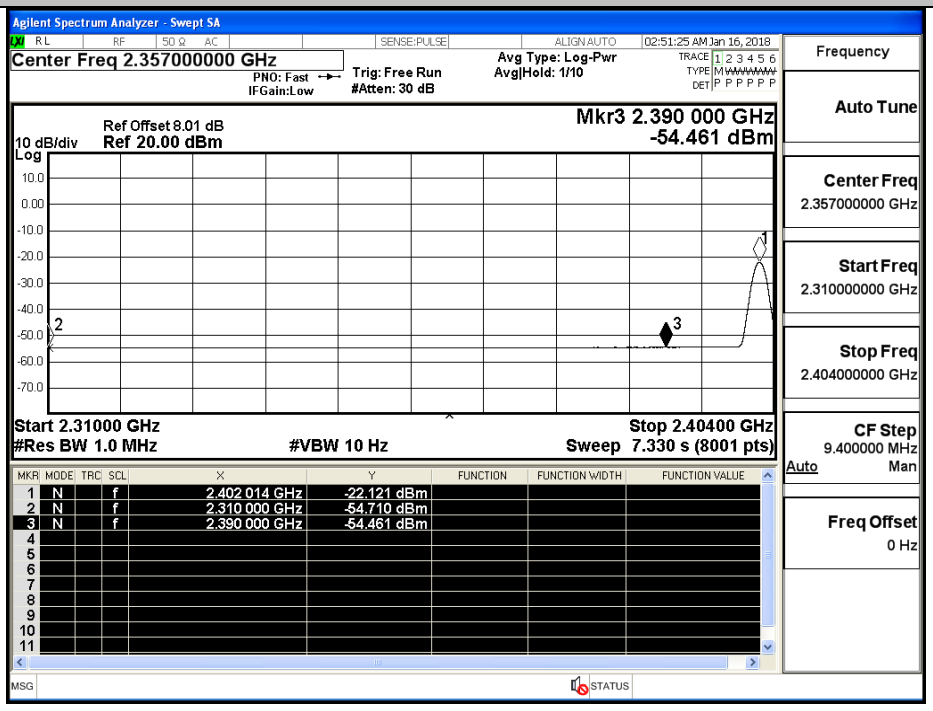
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verd
BLE	2402	Ant1	2310.0	-44.49	2	0	50.77	PEAK	74	PASS
BLE	2402	Ant1	2310.0	-54.71	2	0	40.55	AV	54	PASS
BLE	2402	Ant1	2390.0	-44.63	2	0	50.63	PEAK	74	PASS
BLE	2402	Ant1	2390.0	-54.46	2	0	40.80	AV	54	PASS
BLE	2480	Ant1	2483.5	-42.36	2	0	52.90	PEAK	74	PASS
BLE	2480	Ant1	2483.5	-54.18	2	0	41.07	AV	54	PASS
BLE	2480	Ant1	2500.0	-42.85	2	0	52.41	PEAK	74	PASS
BLE	2480	Ant1	2500.0	-54.09	2	0	41.17	AV	54	PASS

Test Graphs

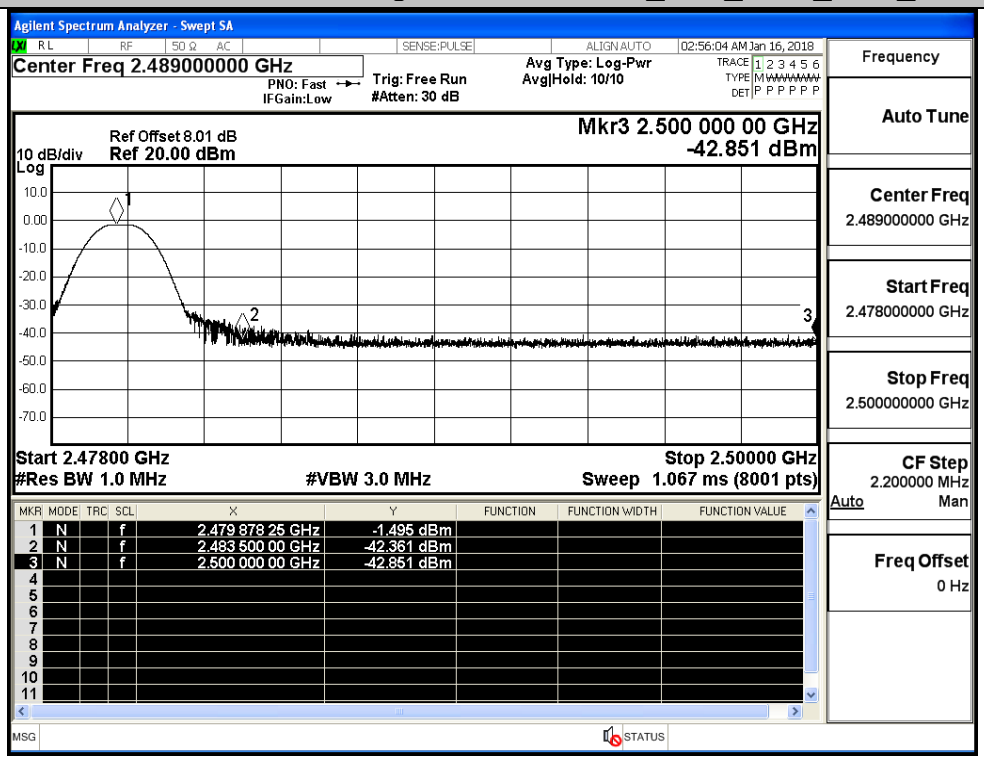
Restrict-band band-edge measurements_BLE_2402_Ant1_PEAK



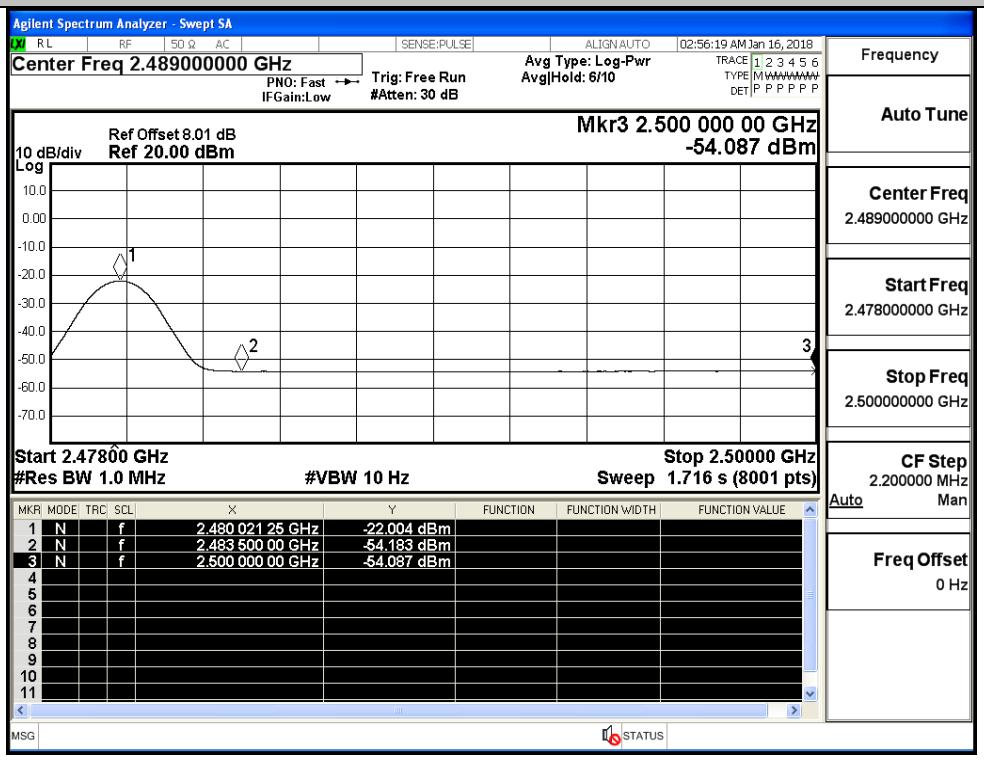
Restrict-band band-edge measurements_BLE_2402_Ant1_AV



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