Appendix A

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

Product Name: Bluetooth Headphone

Trade Mark: GoldenPlayer

Test Model: GP102BT

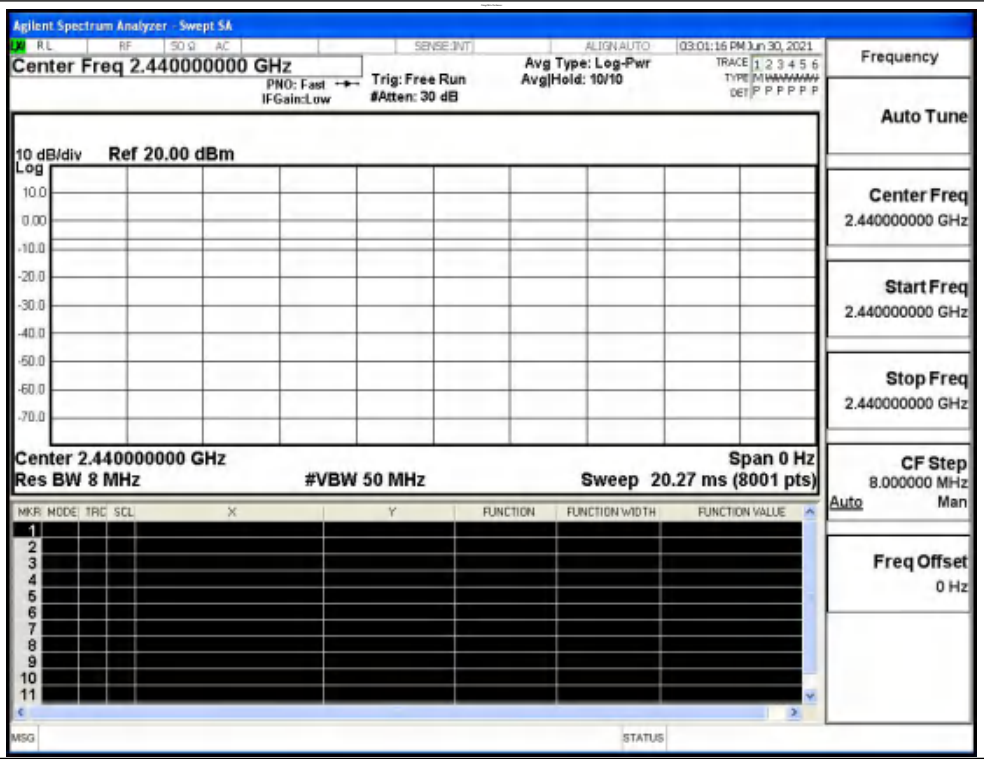
Environmental Conditions

Temperature:	22.0℃
Relative Humidity:	53.0%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

A.1 Duty Cycle

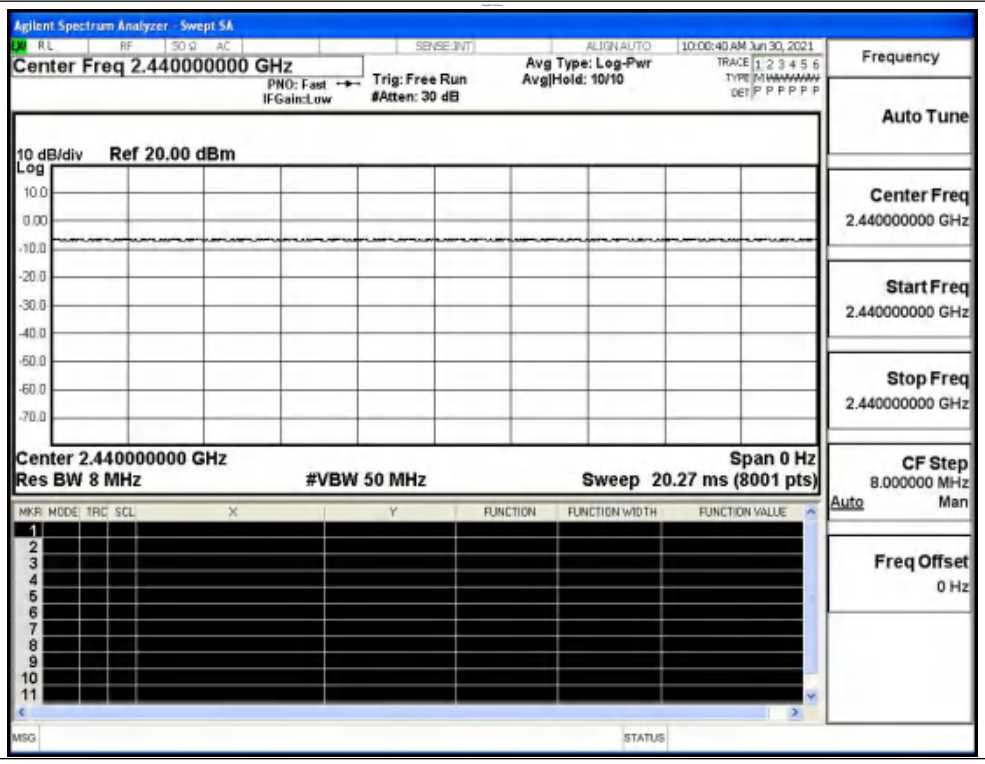
BT LE

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



BT 2LE

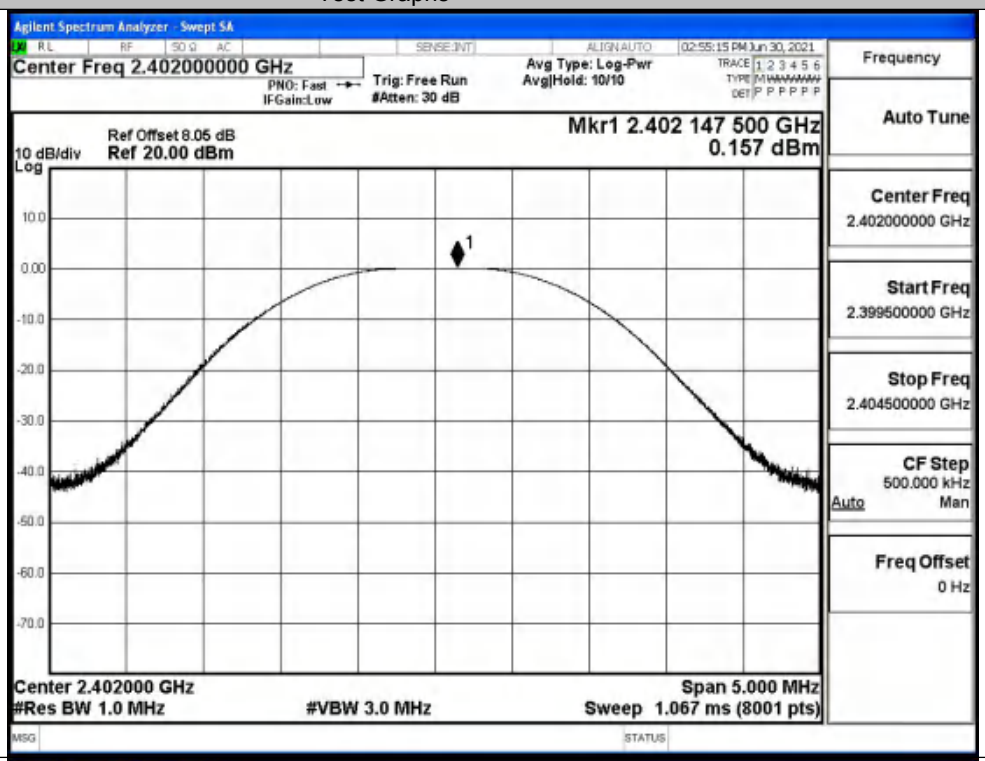
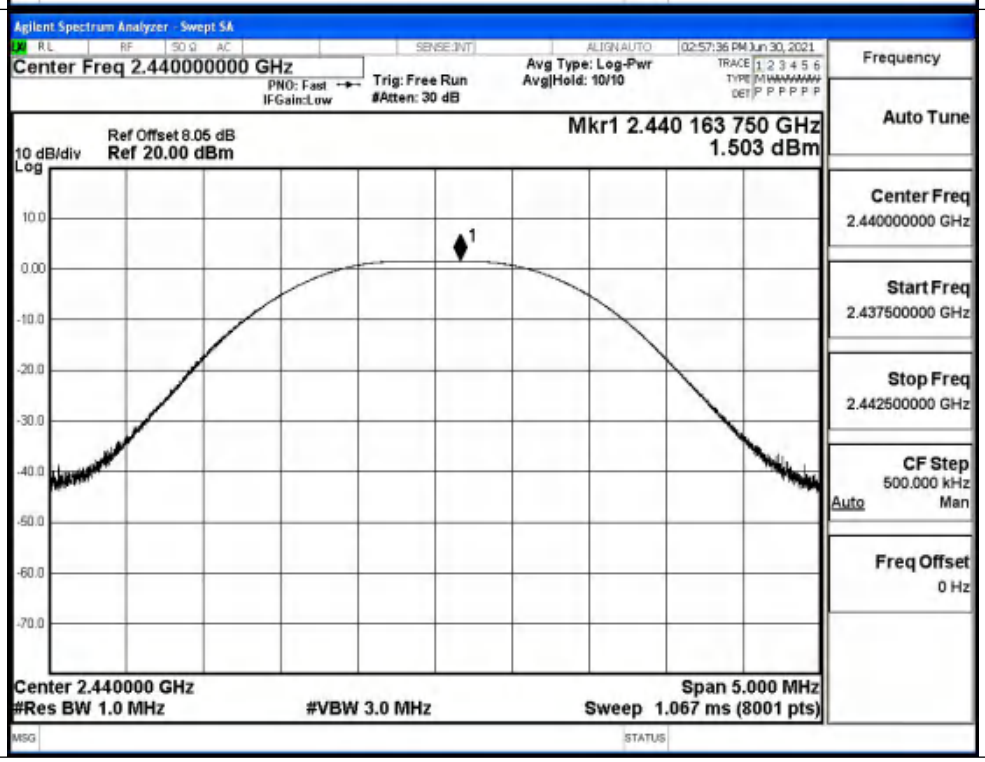
Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
BT 2LE	2440	Ant1	100	PASS

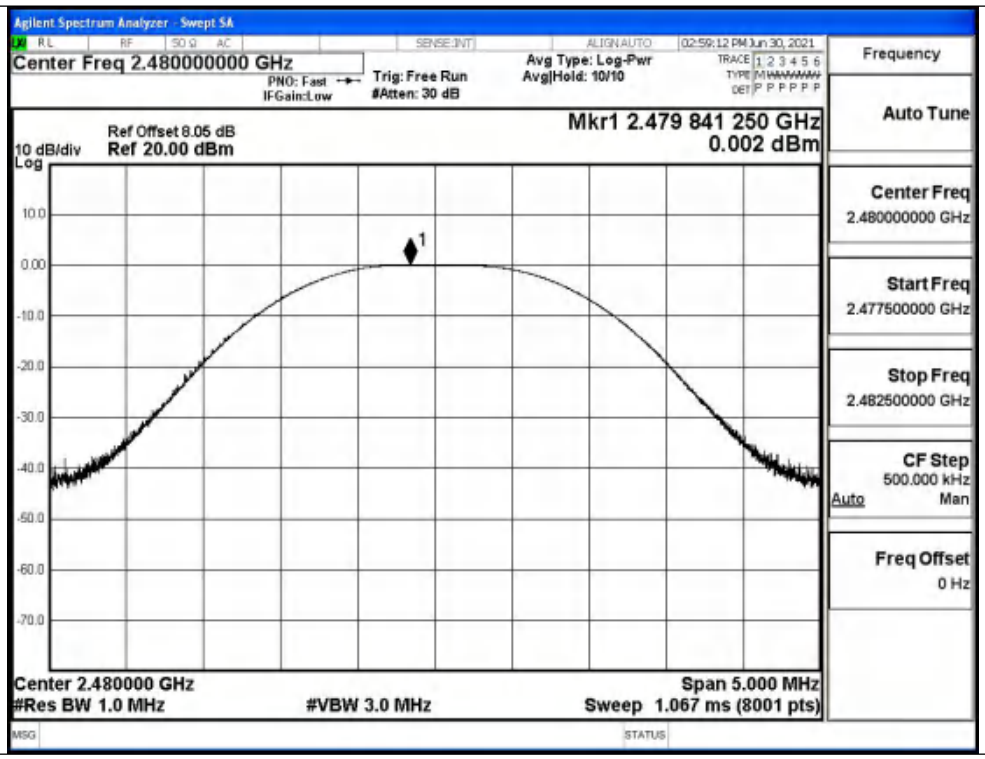


A.2 Maximum Conducted Peak Output Power

BT LE

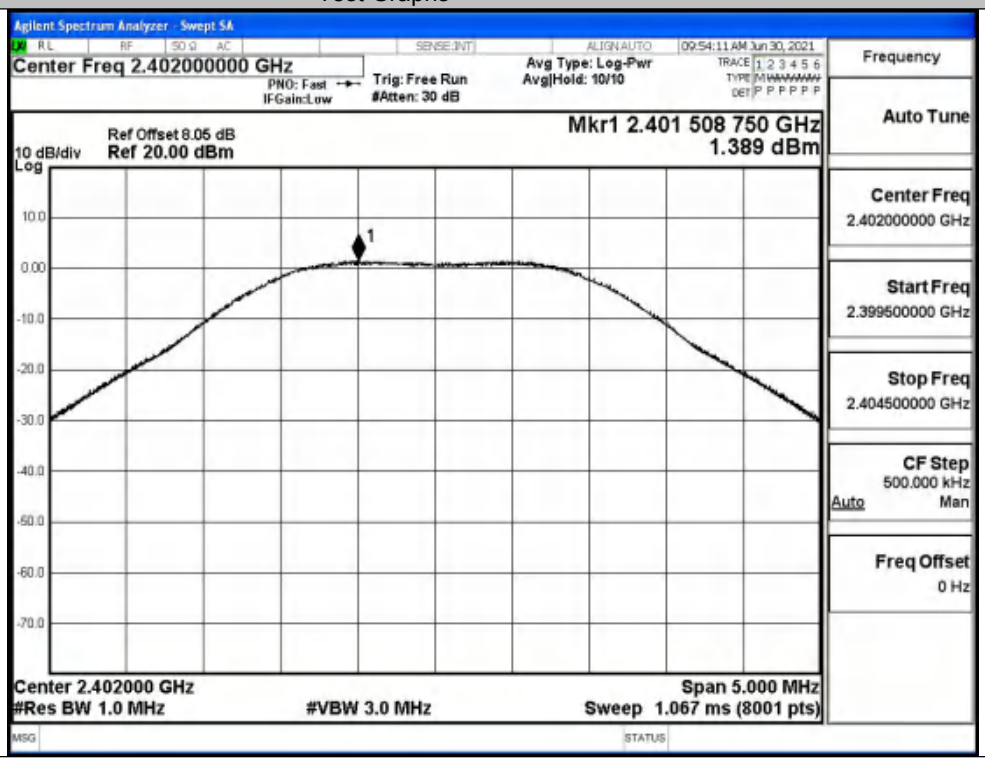
Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.157	30	PASS
BT LE	MCH	1.503	30	PASS
BT LE	HCH	0.002	30	PASS

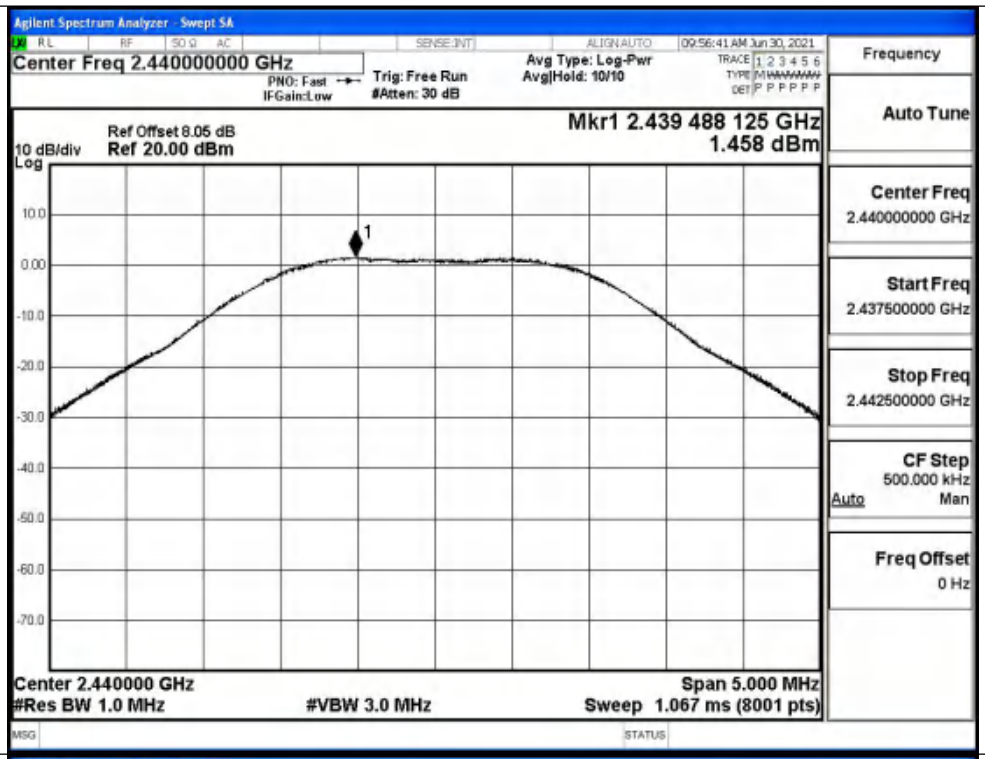
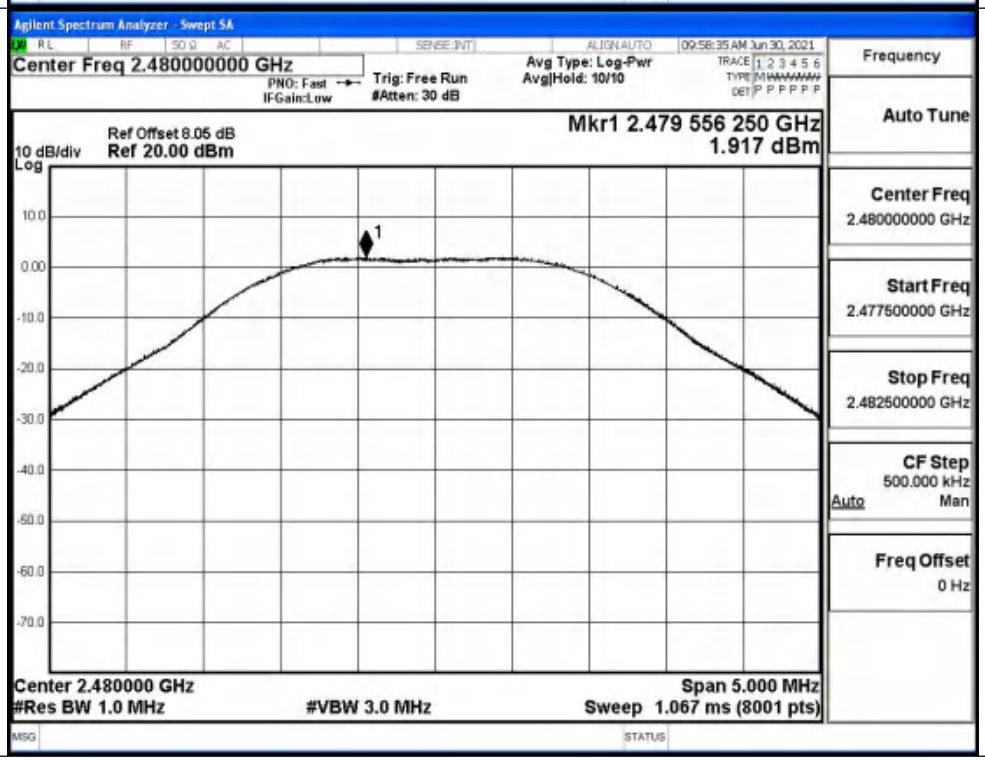
Test Graphs		
LCH		
MCH		

HCH		

BT 2LE

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT 2LE	LCH	1.389	30	PASS
BT 2LE	MCH	1.458	30	PASS
BT 2LE	HCH	1.917	30	PASS

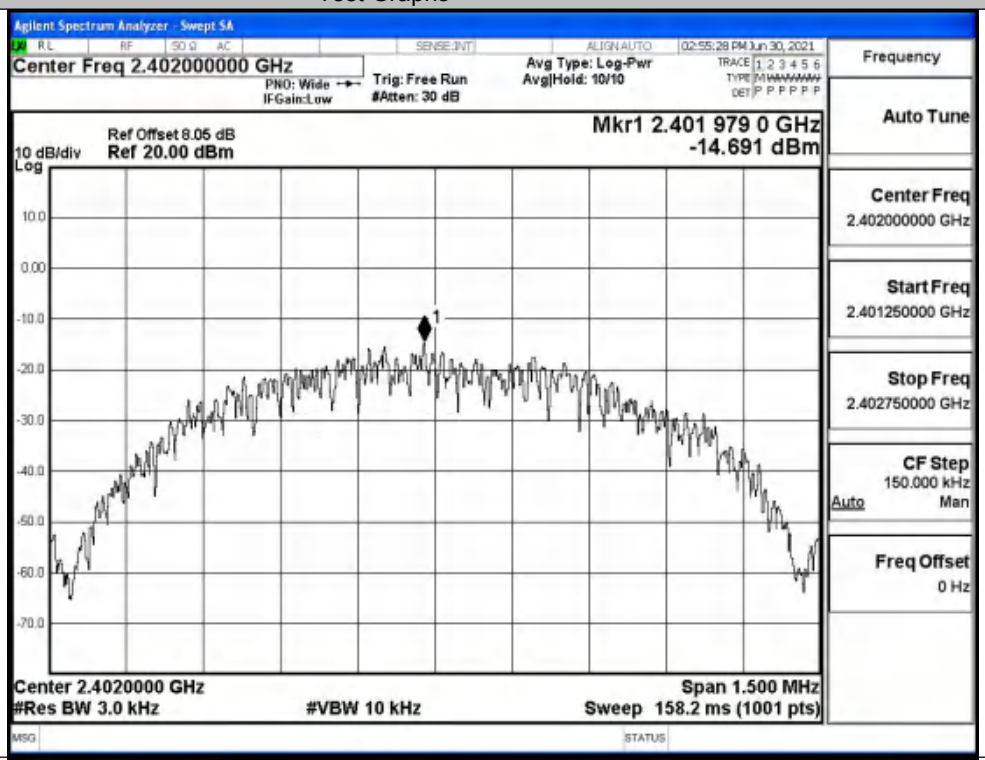
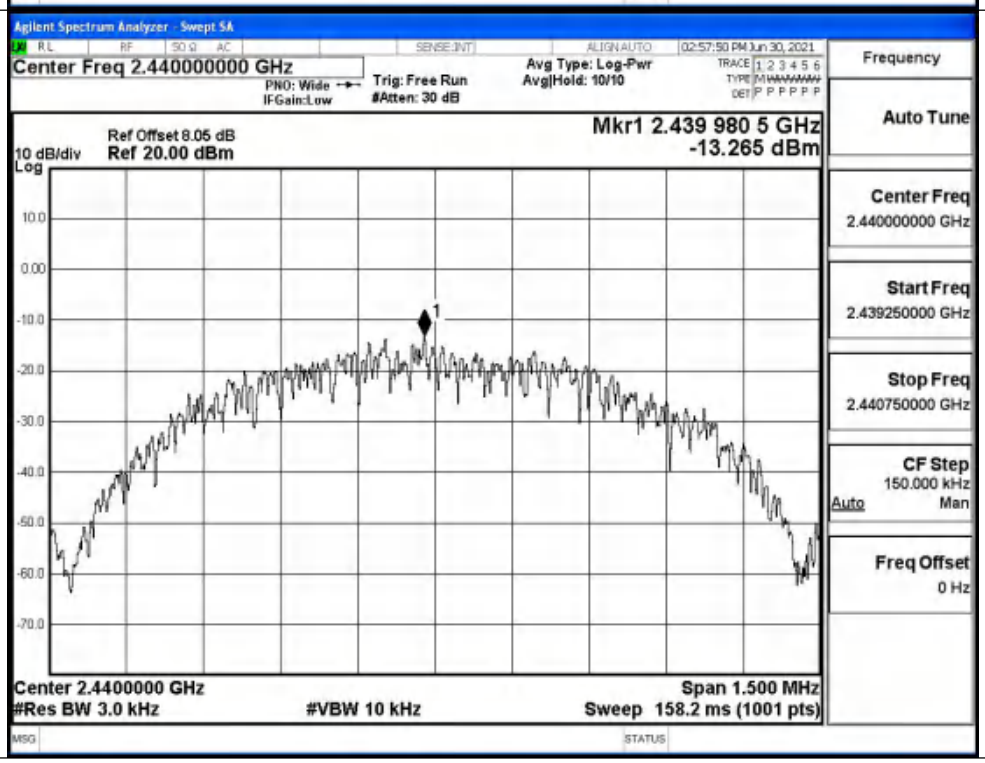
Test Graphs		
LCH		

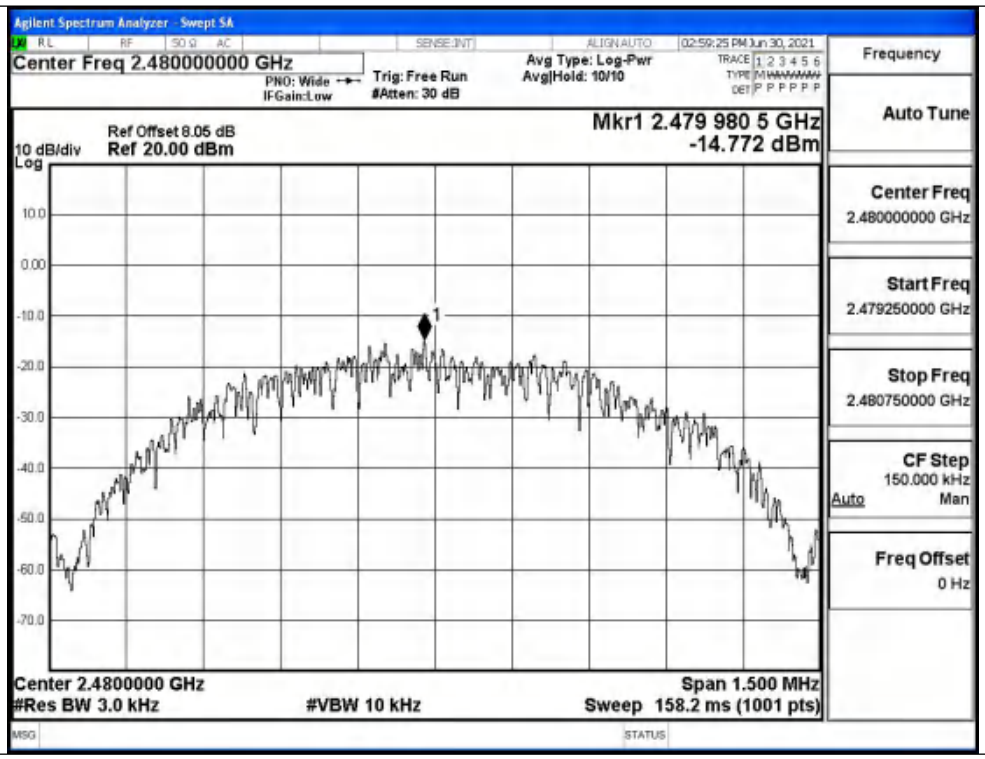
MCH		 Agilent Spectrum Analyzer - Swept SA Center Freq 2.440000000 GHz PNO: Fast IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg|Hold: 10/10 09:56:41 AM Jun 30, 2021 Ref Offset 8.05 dB 10 dB/div Ref 20.00 dBm Mkr1 2.439 488 125 GHz 1.458 dBm Center 2.440000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 5.000 MHz Sweep 1.067 ms (8001 pts) Frequency Auto Tune Center Freq 2.440000000 GHz Start Freq 2.437500000 GHz Stop Freq 2.442500000 GHz CF Step 500.000 kHz 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 09:58:35 AM Jun 30, 2021 Ref Offset 8.05 dB 10 dB/div Ref 20.00 dBm Mkr1 2.479 556 250 GHz 1.917 dBm Center 2.480000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 5.000 MHz Sweep 1.067 ms (8001 pts) Frequency Auto Tune Center Freq 2.480000000 GHz Start Freq 2.477500000 GHz Stop Freq 2.482500000 GHz CF Step 500.000 kHz Auto Man Freq Offset 0 Hz

A.3 Maximum Power Spectral Density

BT LE

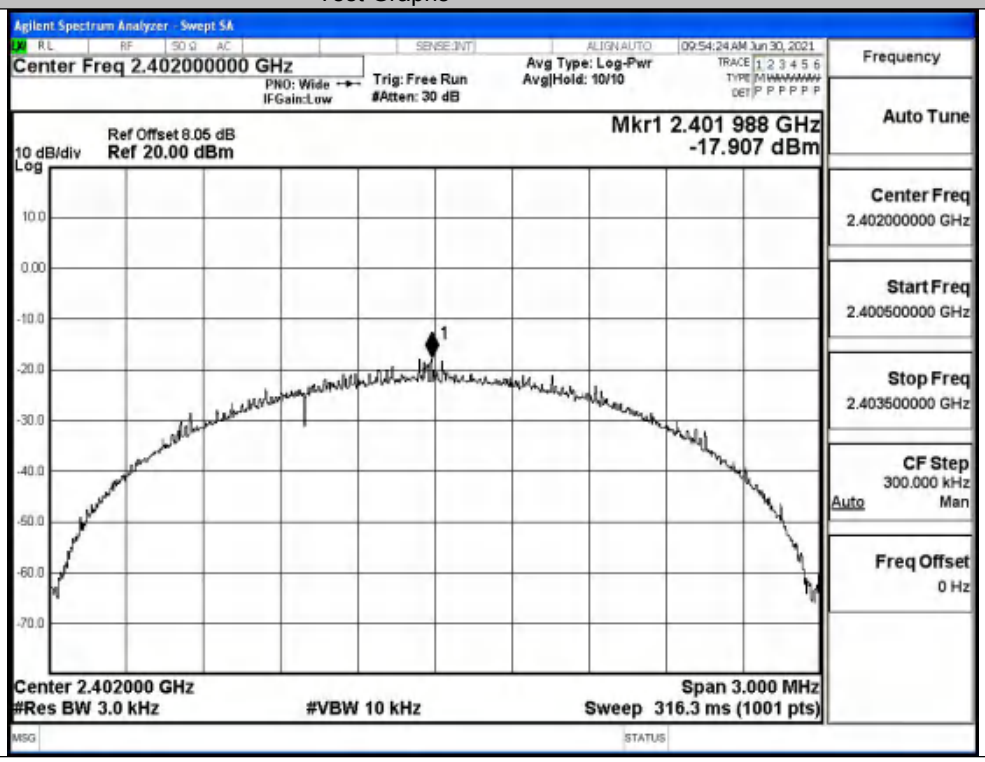
Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-14.691	8	PASS
BT LE	MCH	-13.265	8	PASS
BT LE	HCH	-14.772	8	PASS

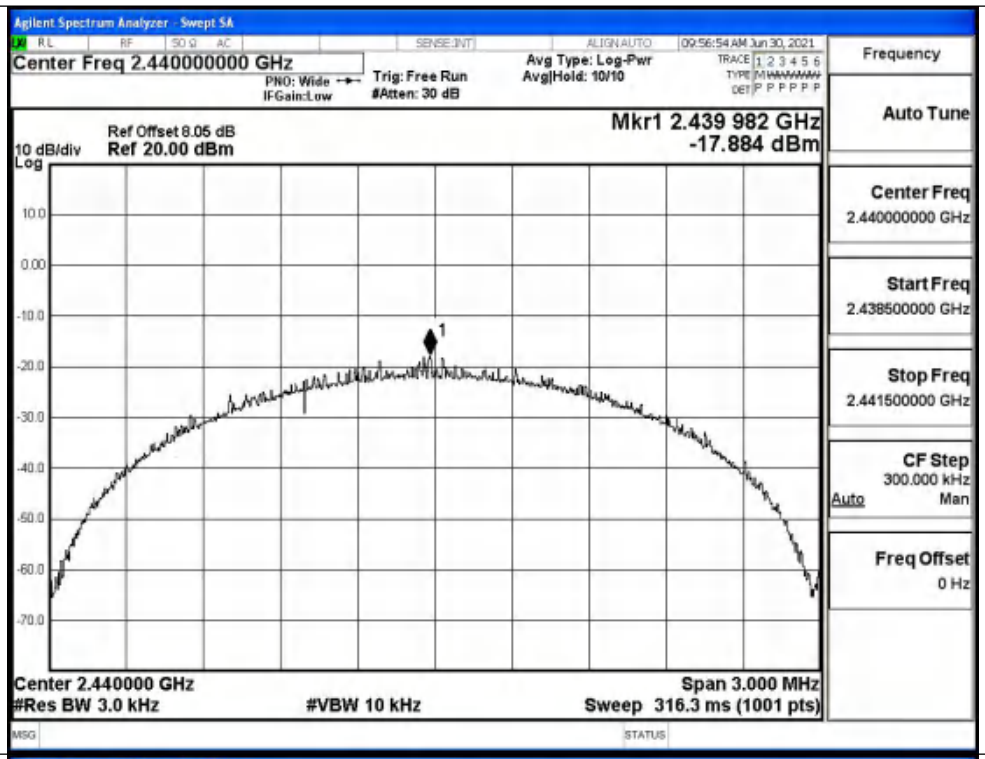
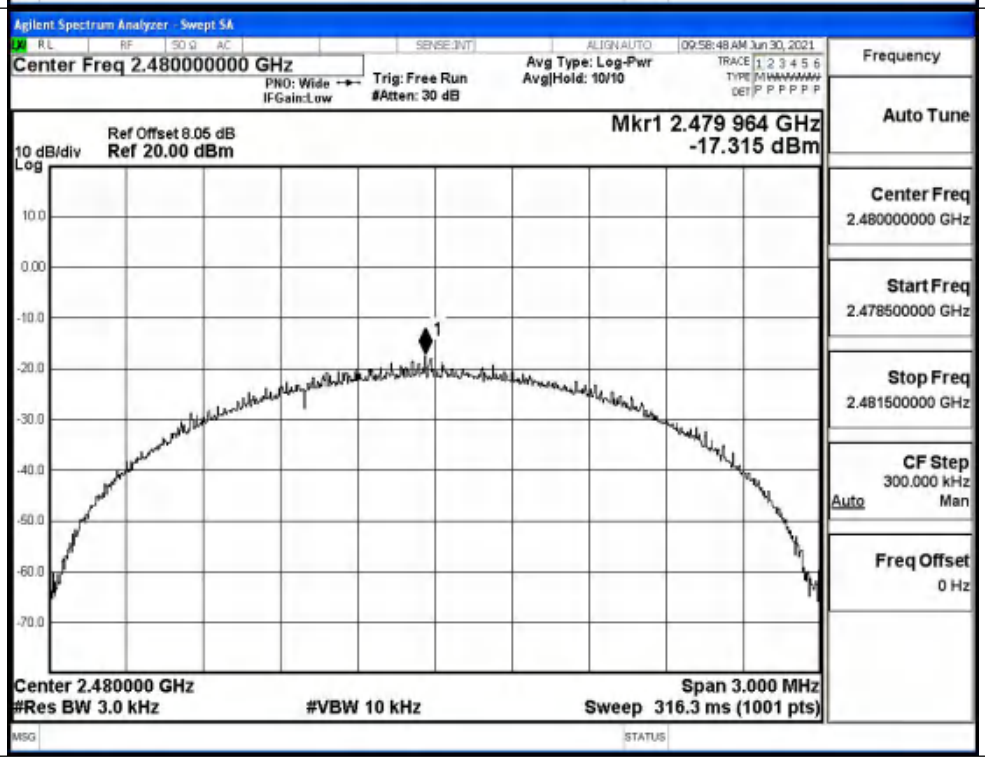
Test Graphs		
LCH		
MCH		

HCH		

BT 2LE

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT 2LE	LCH	-17.907	8	PASS
BT 2LE	MCH	-17.884	8	PASS
BT 2LE	HCH	-17.315	8	PASS

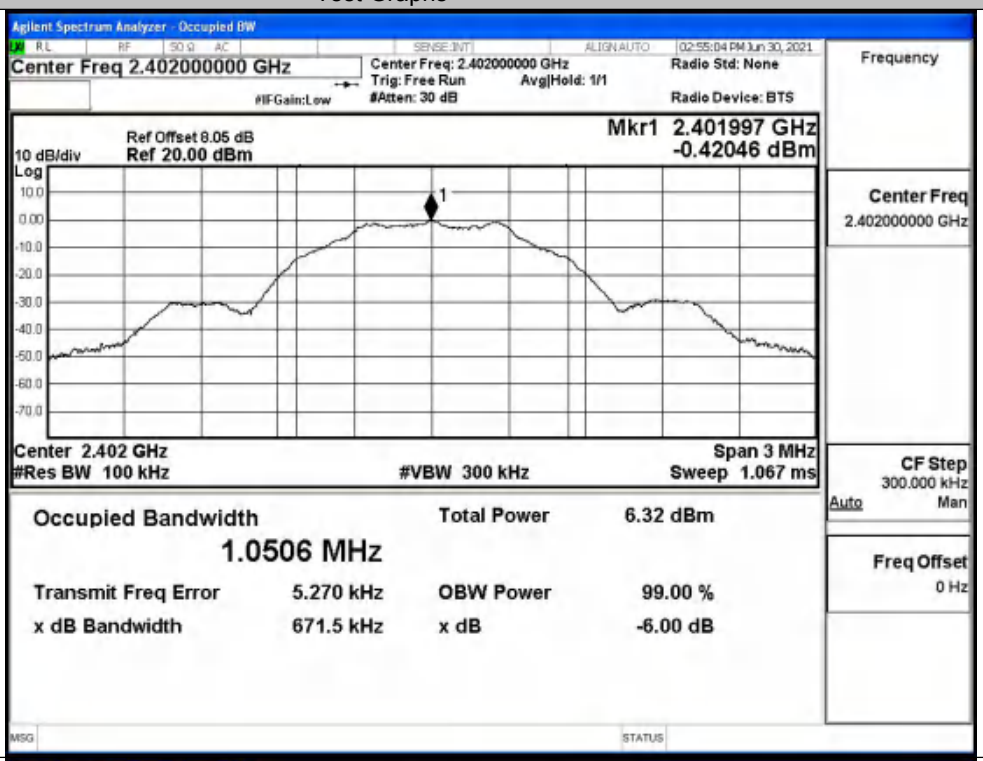
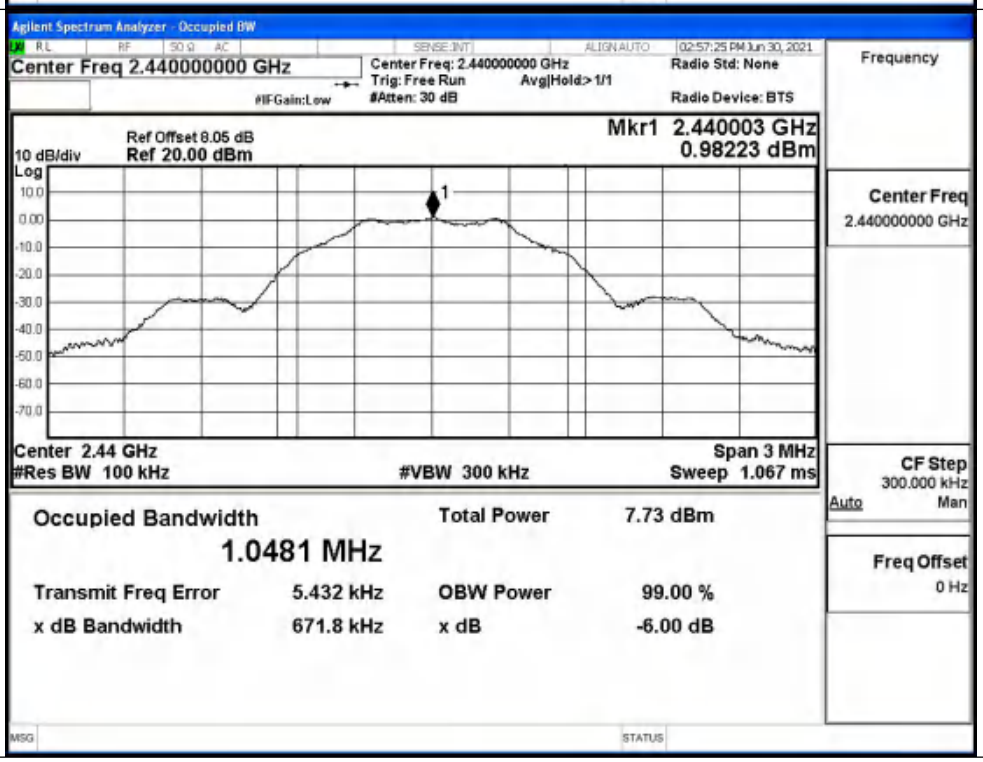
Test Graphs		
LCH		

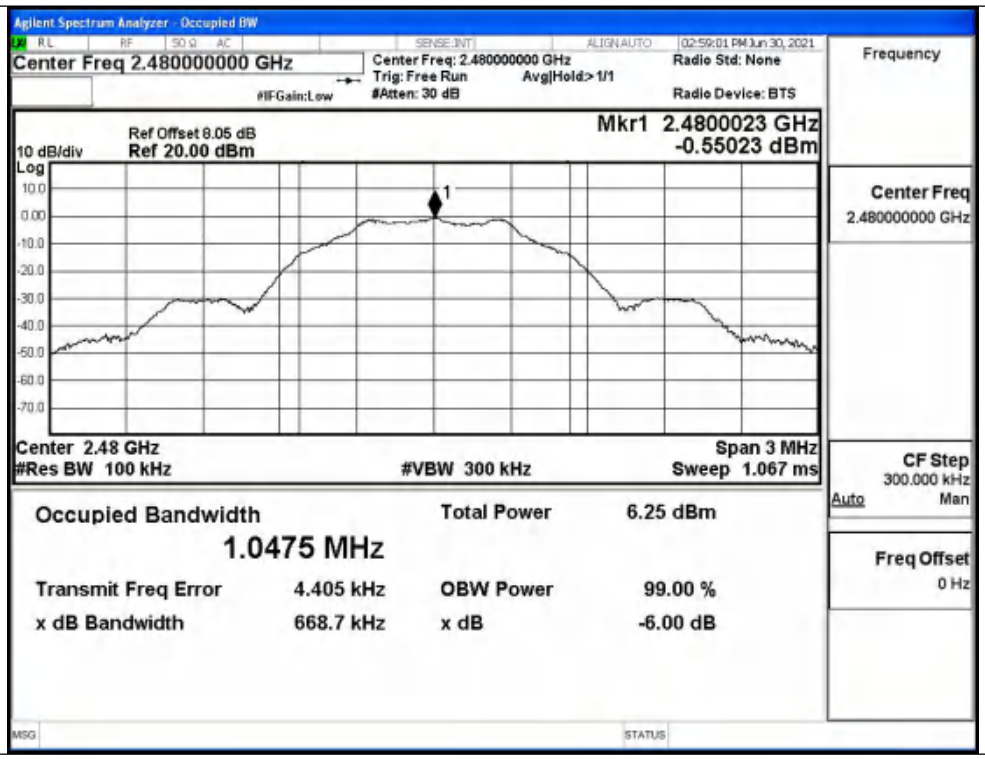
MCH		 Agilent Spectrum Analyzer - Swept SA Center Freq 2.440000000 GHz PNO: Wide IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg|Hold: 10/10 09:56:54 AM Jun 30, 2021 Ref Offset 8.05 dB 10 dB/div Ref 20.00 dBm Mkr1 2.439 982 GHz -17.884 dBm Center 2.440000 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 3.000 MHz Sweep 316.3 ms (1001 pts) Frequency Auto Tune Center Freq 2.440000000 GHz Start Freq 2.438500000 GHz Stop Freq 2.441500000 GHz CF Step 300.000 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 09:58:48 AM Jun 30, 2021 Ref Offset 8.05 dB 10 dB/div Ref 20.00 dBm Mkr1 2.479 964 GHz -17.315 dBm Center 2.480000 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 3.000 MHz Sweep 316.3 ms (1001 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

A.4 6dB Bandwidth

BT LE

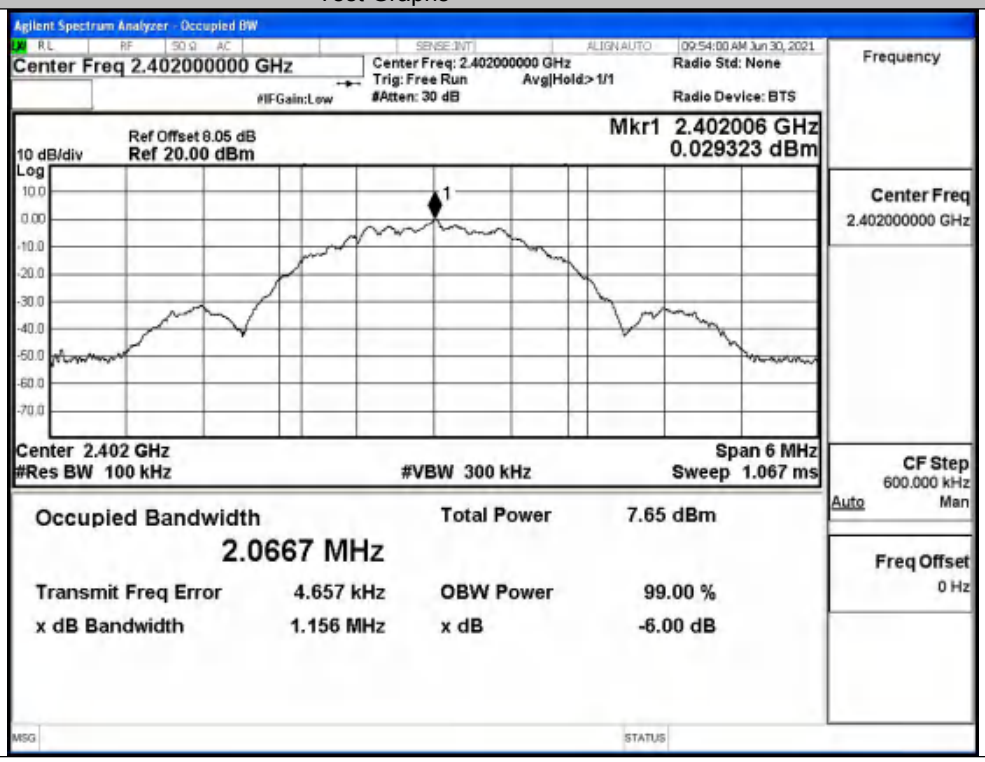
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6715	⩾0.5	PASS
BT LE	MCH	0.6718	⩾0.5	PASS
BT LE	HCH	0.6687	⩾0.5	PASS

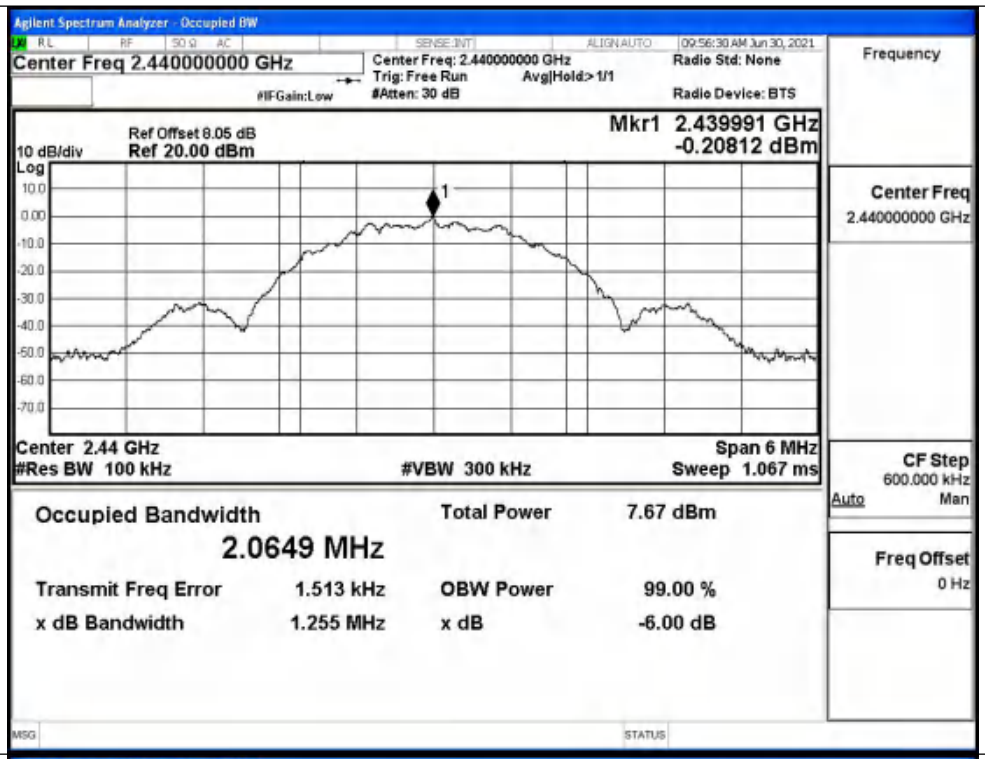
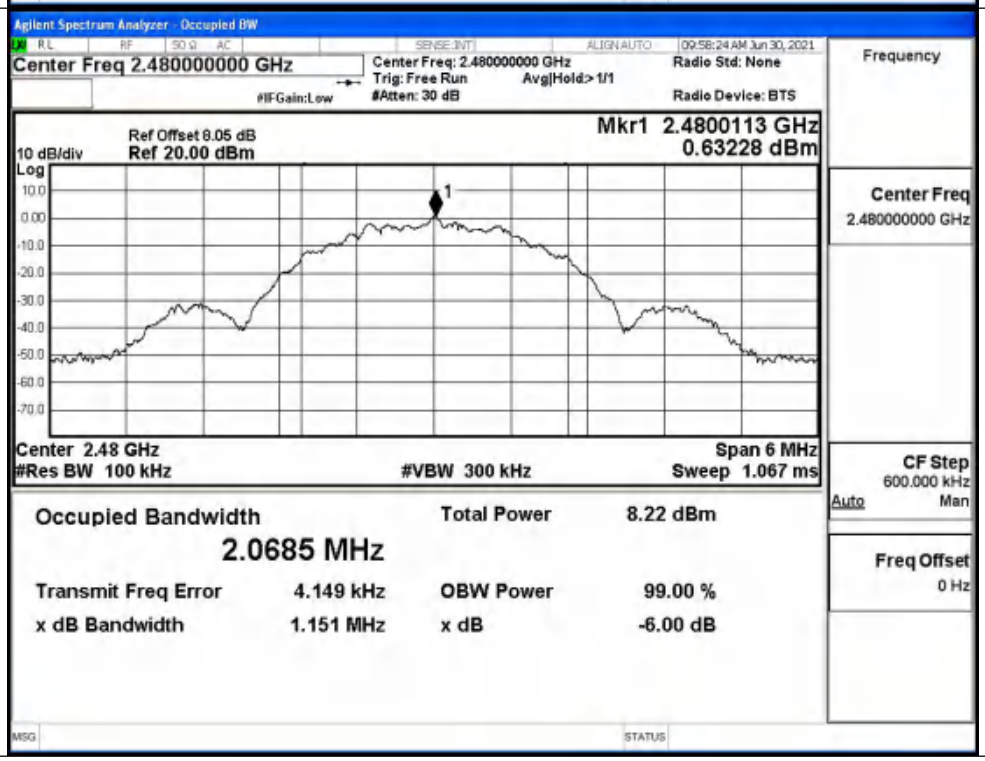
Test Graphs		
LCH		
MCH		

HCH	

BT 2LE

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT 2LE	LCH	1.156	⩾0.5	PASS
BT 2LE	MCH	1.255	⩾0.5	PASS
BT 2LE	HCH	1.151	⩾0.5	PASS

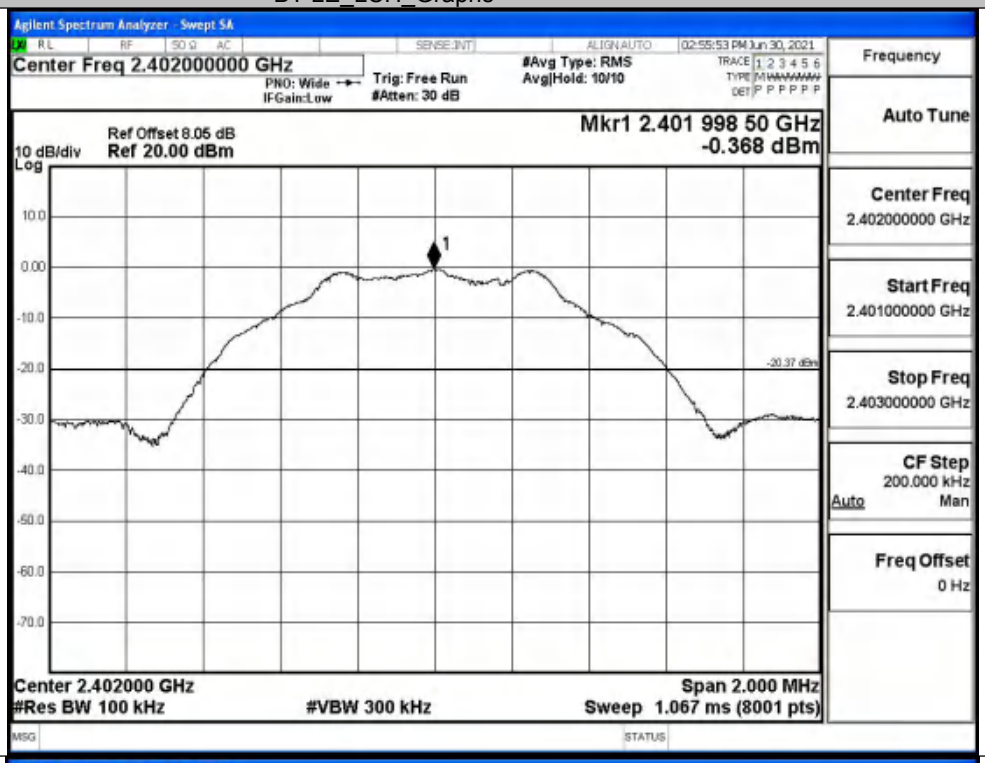
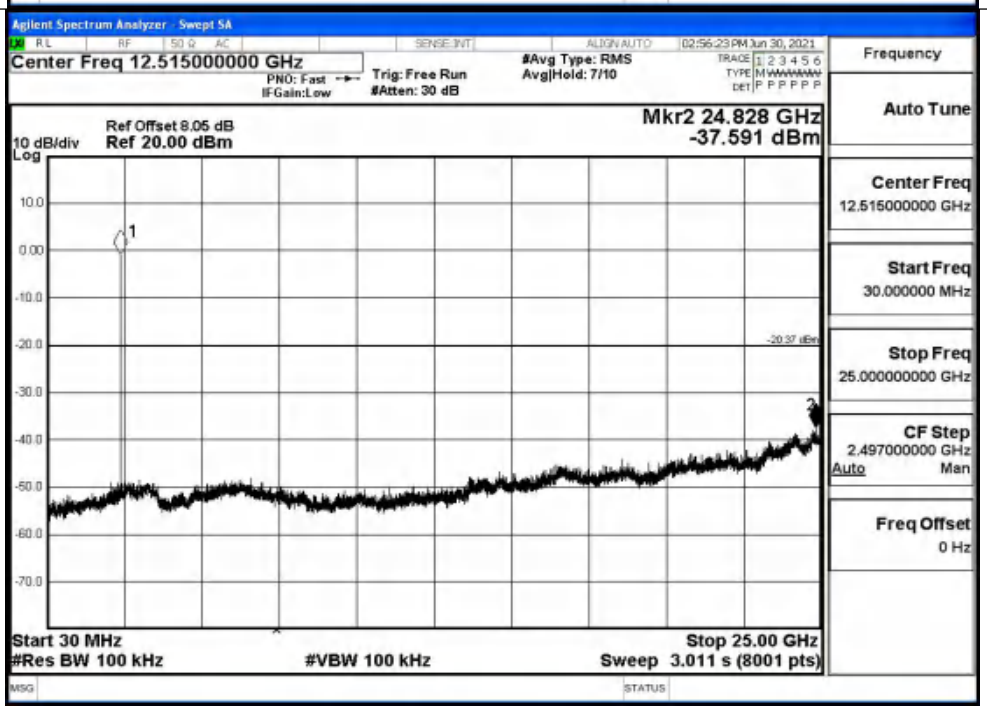
Test Graphs	
LCH	

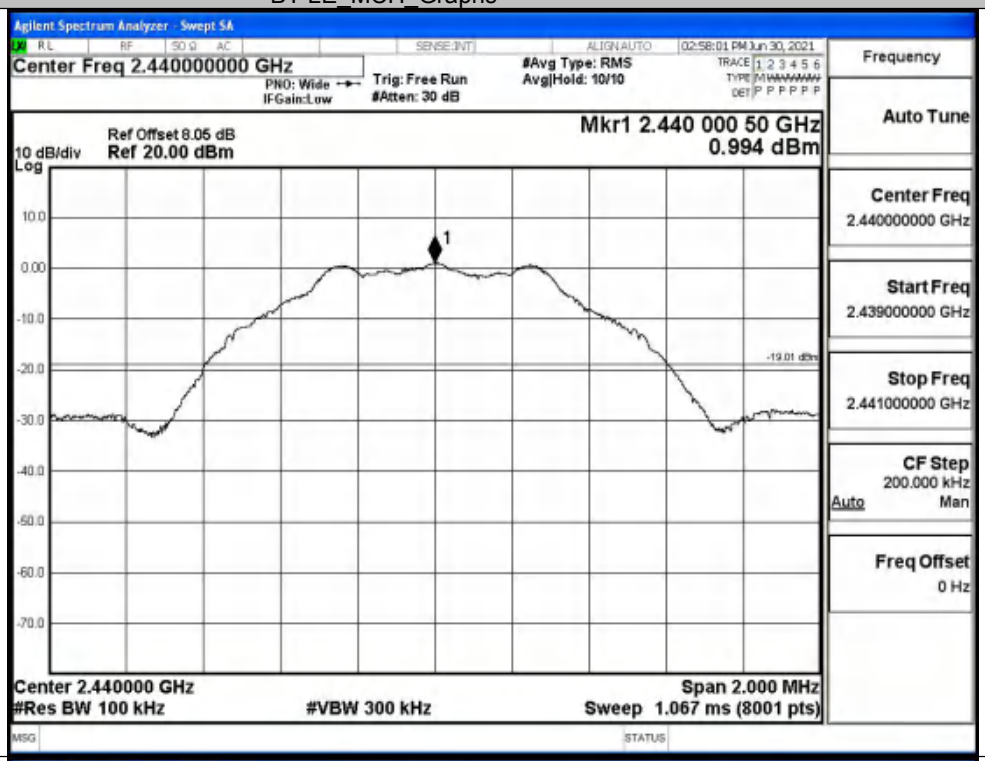
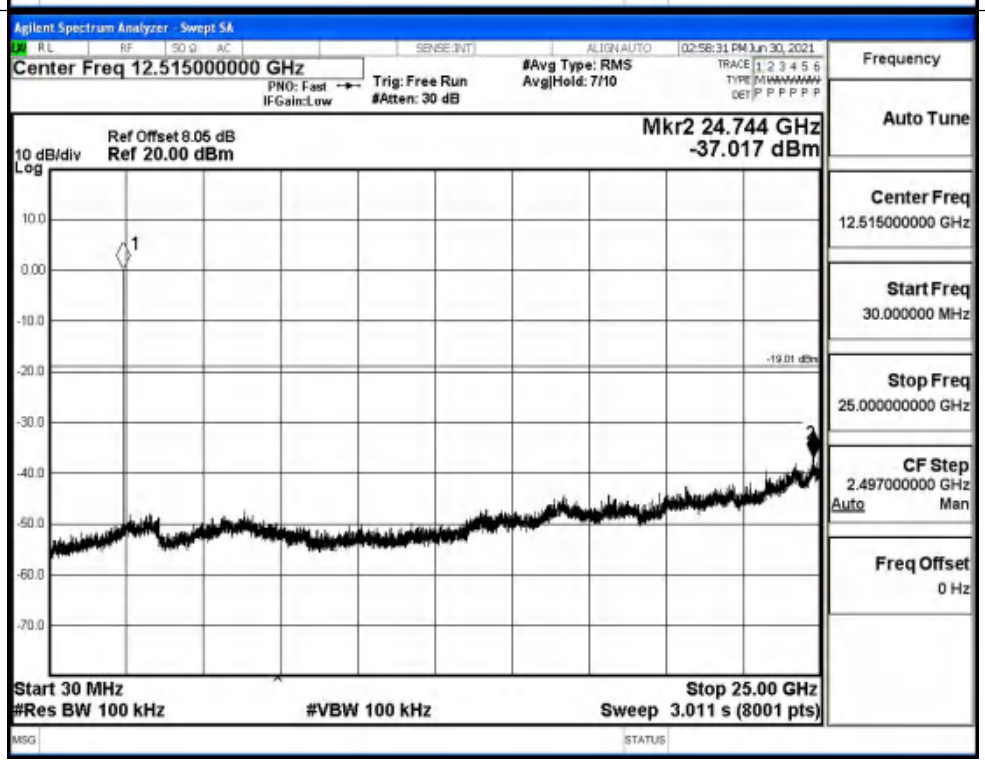
MCH		 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.440000000 GHz Center Freq: 2.440000000 GHz Trig: Free Run Avg|Hold:>1/1 #Atten: 30 dB #IFGain:Low Radio Std: None Radio Device: BTS 09:56:30 AM Jun 30, 2021 Frequency Ref Offset 8.05 dB 10 dB/div Ref 20.00 dBm Mkr1 2.439991 GHz -0.20812 dBm Center Freq 2.440000000 GHz Center 2.44 GHz #Res BW 100 kHz #VBW 300 kHz Span 6 MHz Sweep 1.067 ms CF Step 600.000 kHz Auto Man Occupied Bandwidth 2.0649 MHz Total Power 7.67 dBm Transmit Freq Error 1.513 kHz OBW Power 99.00 % x dB Bandwidth 1.255 MHz x dB -6.00 dB 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 09:58:24 AM Jun 30, 2021 Frequency Ref Offset 8.05 dB 10 dB/div Ref 20.00 dBm Mkr1 2.4800113 GHz 0.63228 dBm Center Freq 2.480000000 GHz Center 2.48 GHz #Res BW 100 kHz #VBW 300 kHz Span 6 MHz Sweep 1.067 ms CF Step 600.000 kHz Auto Man Occupied Bandwidth 2.0685 MHz Total Power 8.22 dBm Transmit Freq Error 4.149 kHz OBW Power 99.00 % x dB Bandwidth 1.151 MHz x dB -6.00 dB Freq Offset 0 Hz MSG STATUS

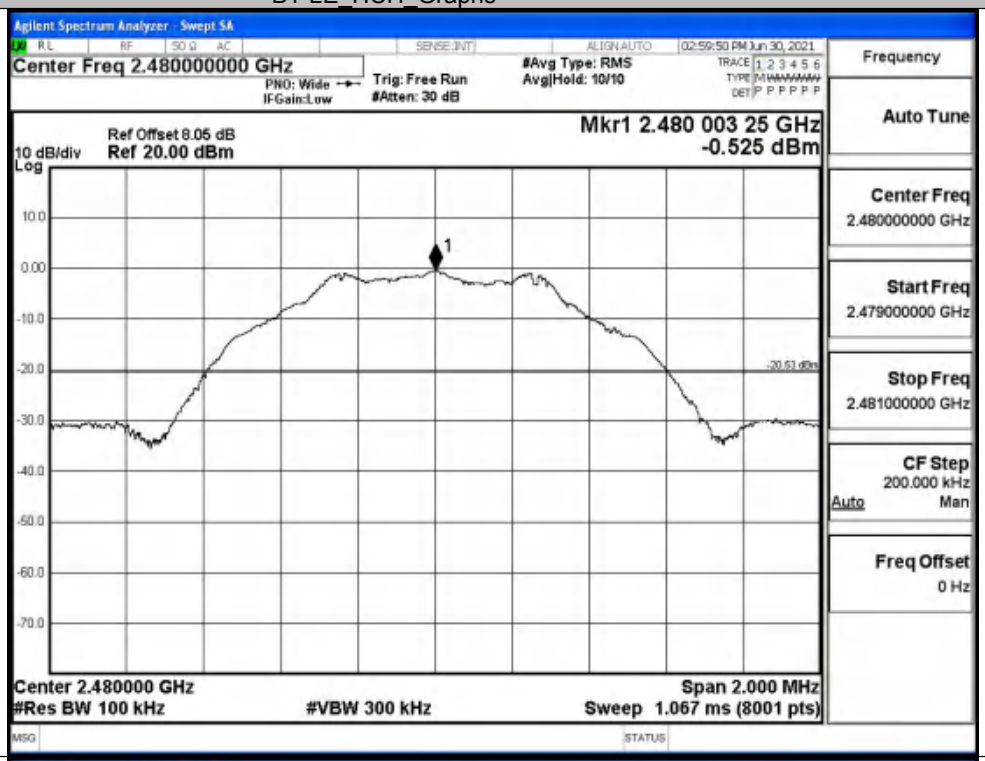
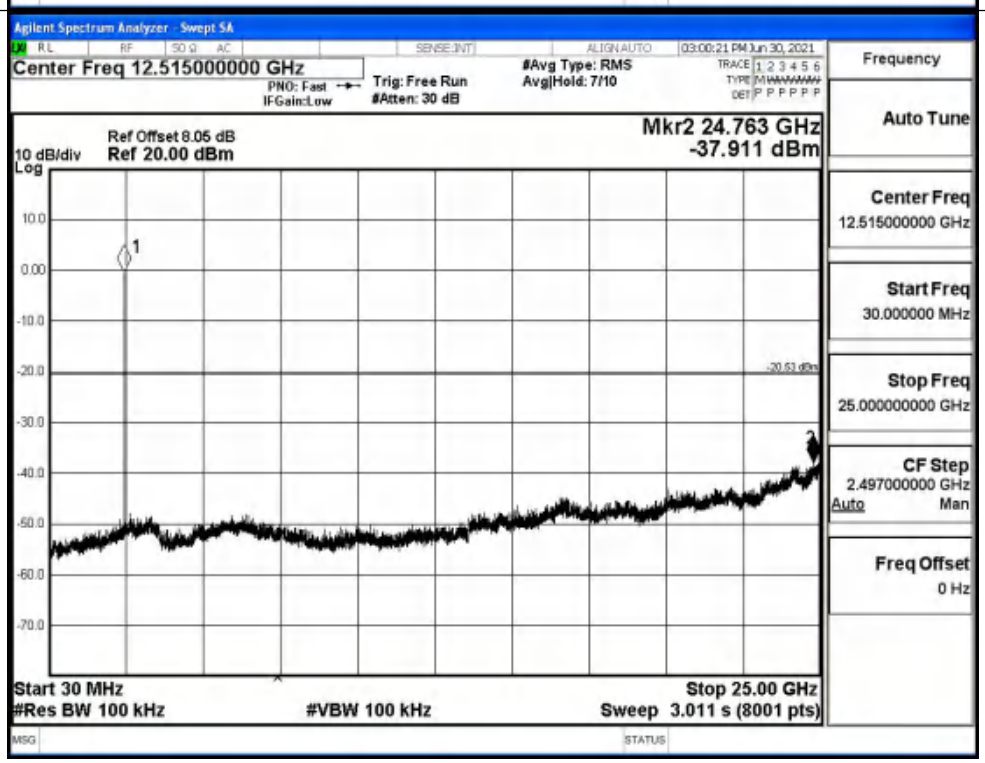
A.5 RF Conducted Spurious Emissions

BT LE

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-0.368	-37.591	-20.368	PASS
BT LE	MCH	0.994	-37.017	-19.006	PASS
BT LE	HCH	-0.525	-37.911	-20.525	PASS

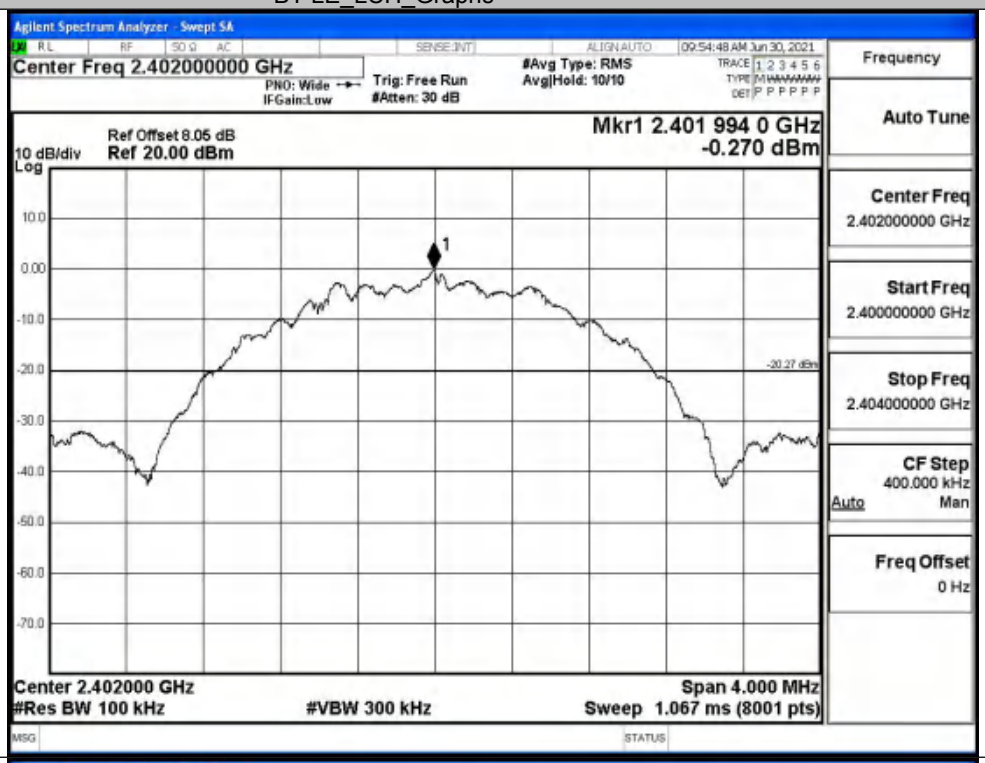
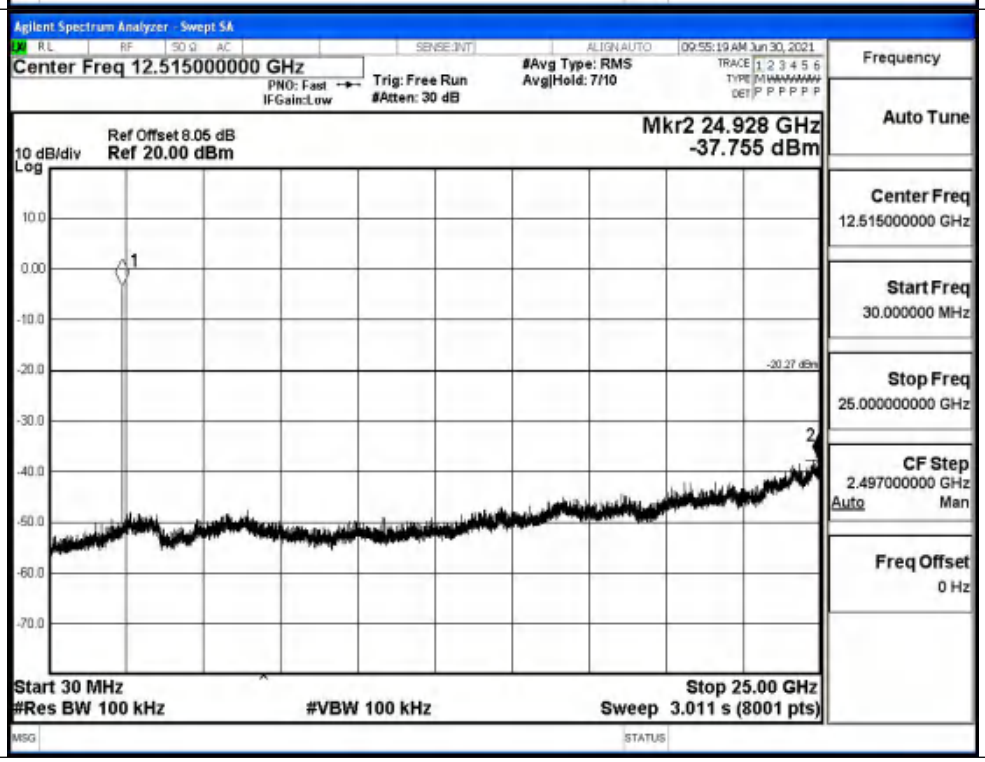
BT LE_LCH_Graphs	
Pref/BT LE/LCH	
Puw/BT LE/LCH	

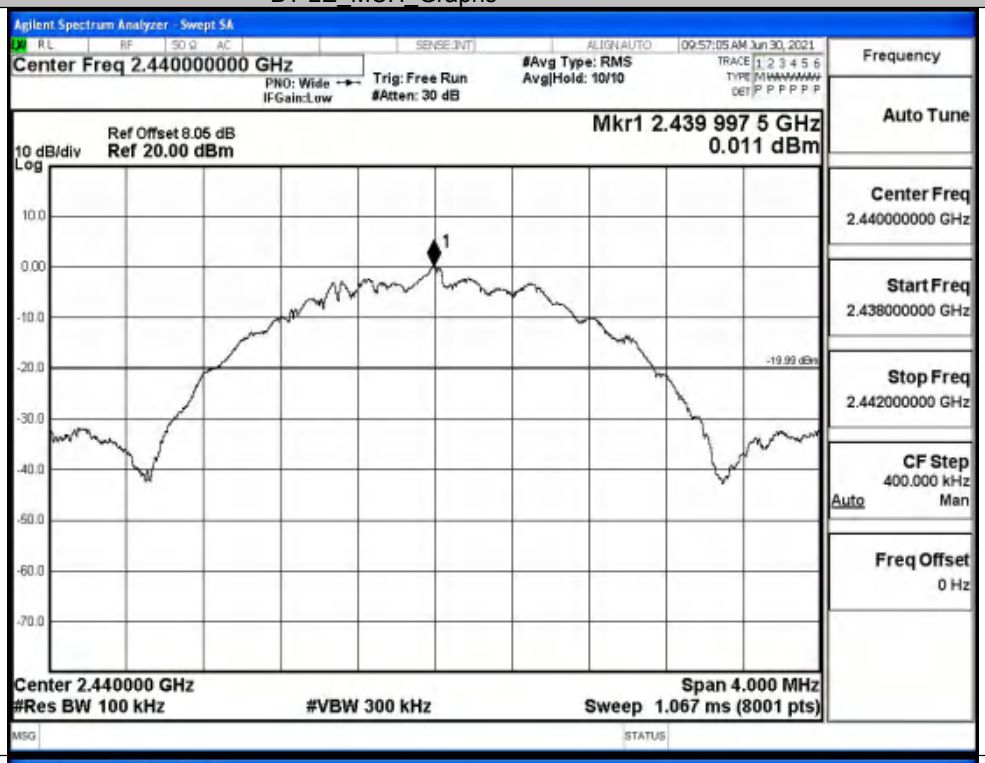
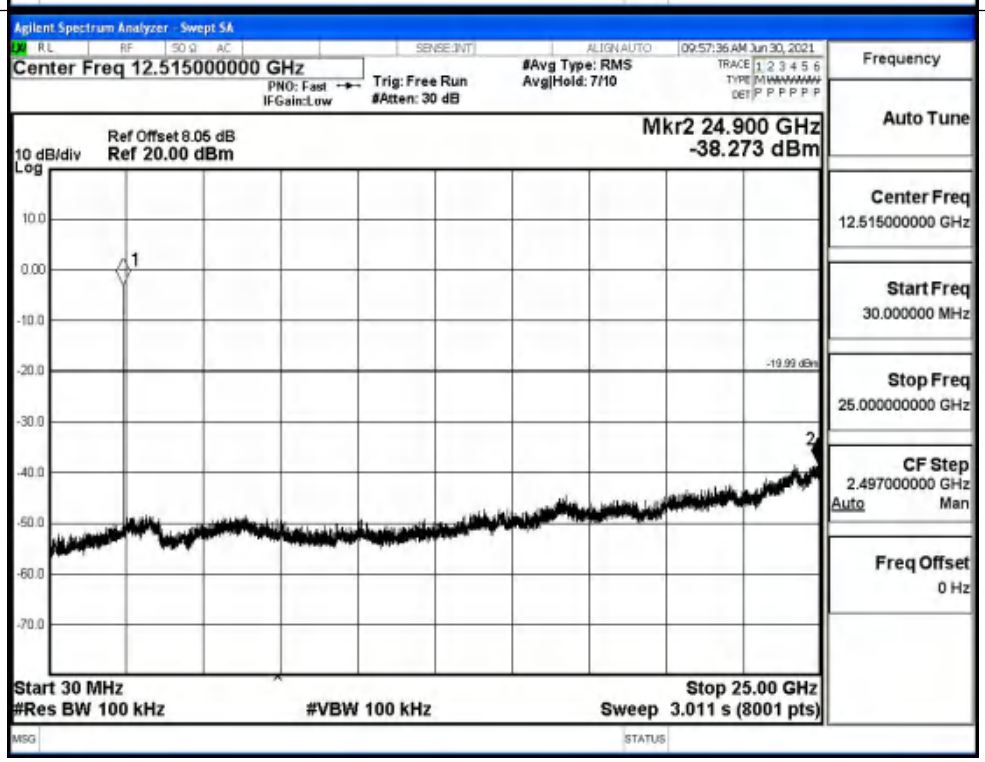
BT LE_MCH_Graphs		
Pref/BT LE/MCH		
Puw/BT LE/MCH		

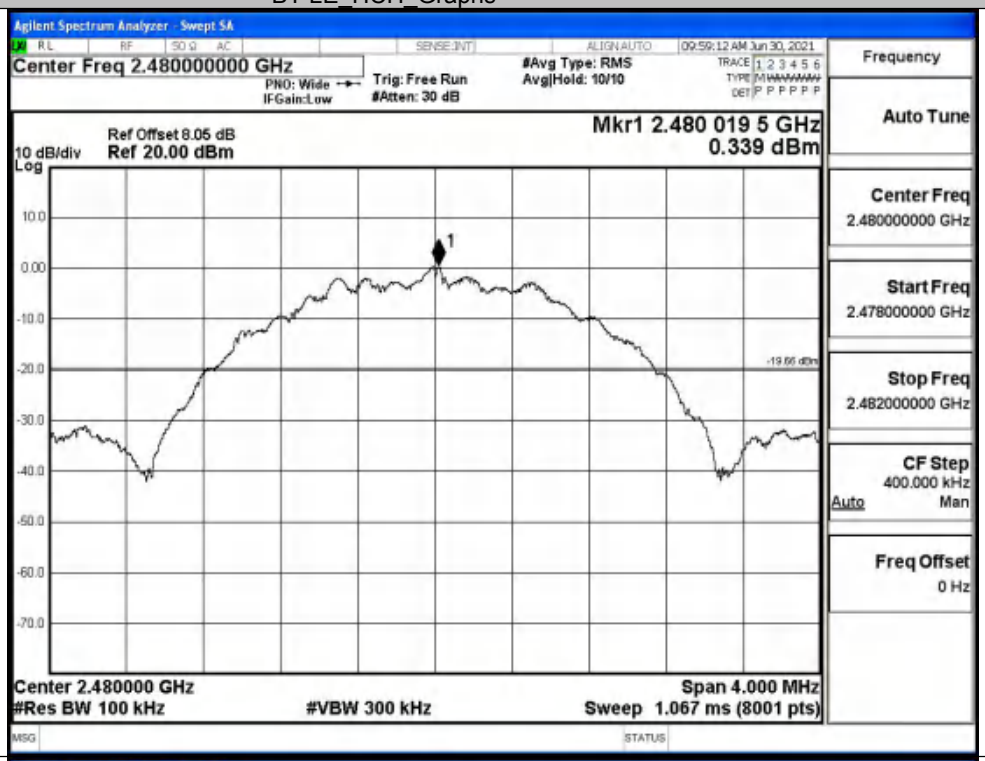
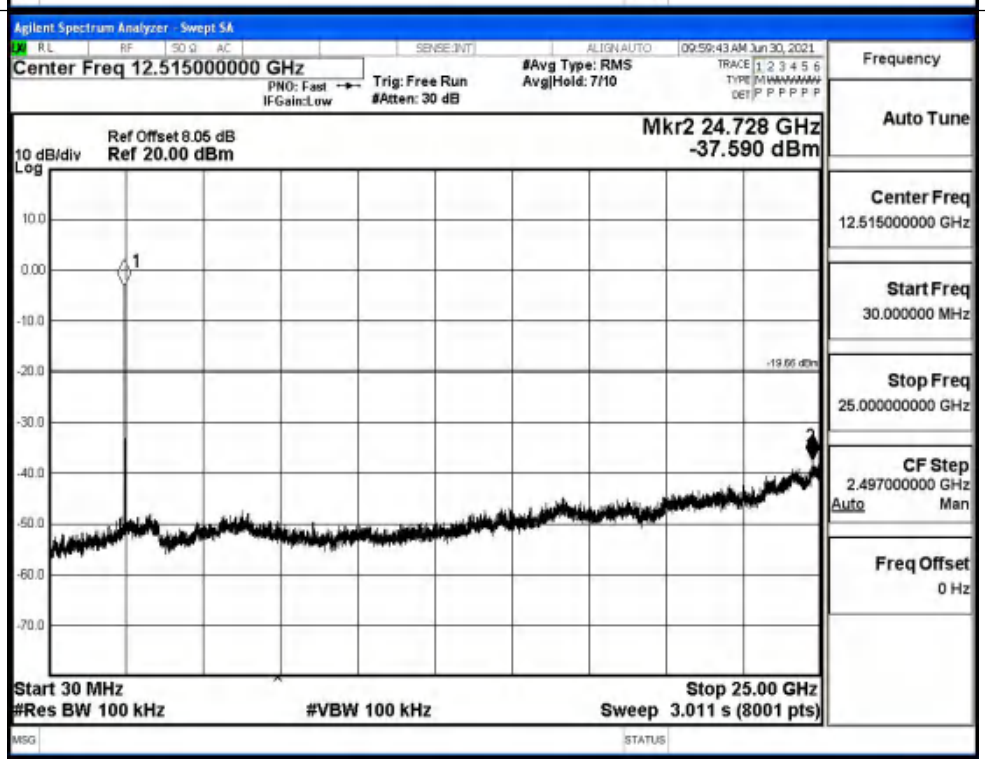
BT LE_HCH_Graphs	
Pref/BT LE/HCH	
Puw/BT LE/HCH	

BT 2LE

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT 2LE	LCH	-0.27	-37.755	-20.270	PASS
BT 2LE	MCH	0.011	-38.273	-19.989	PASS
BT 2LE	HCH	0.339	-37.590	-19.661	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		

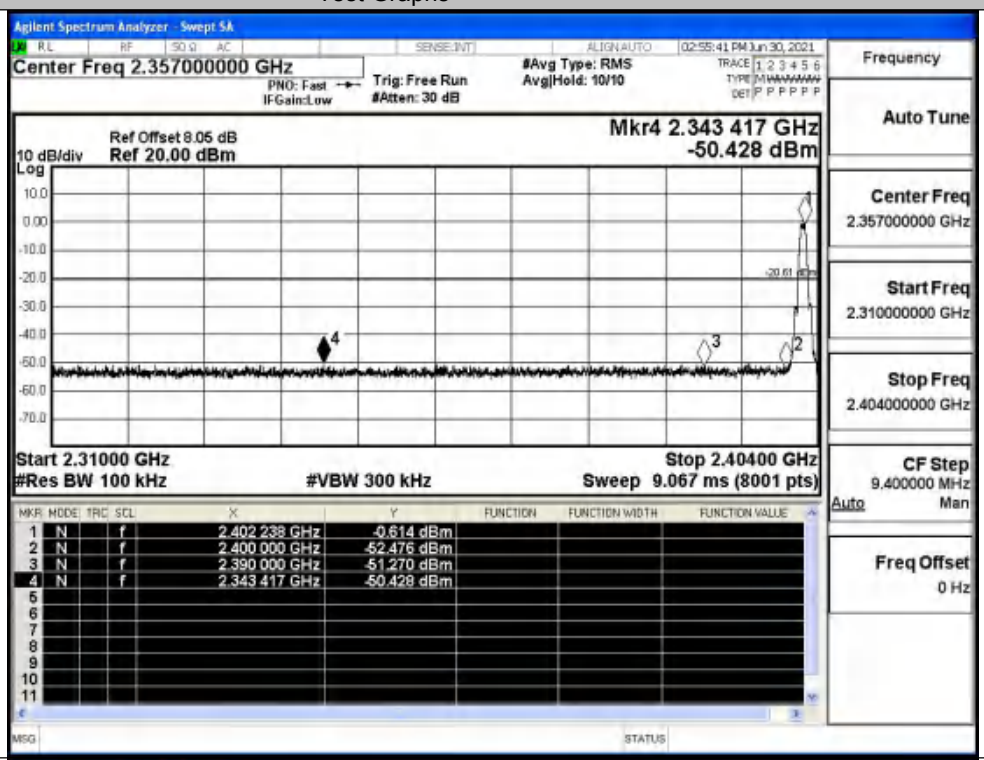
A.6 Band-edge for RF Conducted Emissions

BT LE

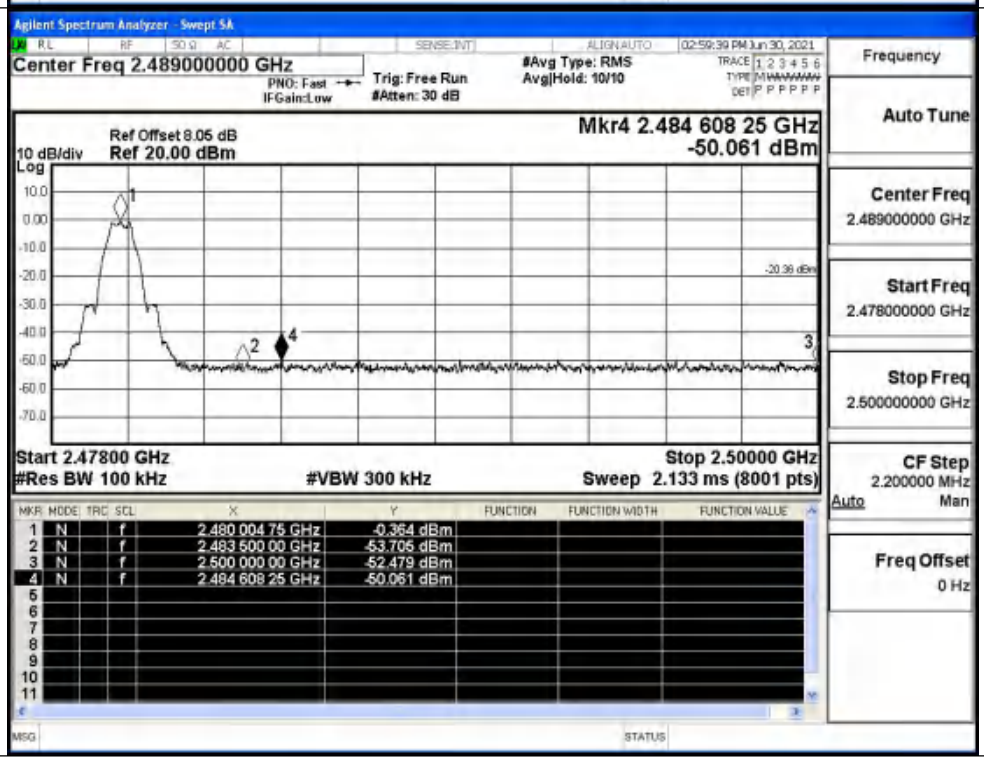
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	-0.614	-50.428	-20.61	PASS
BT LE	HCH	-0.364	-50.061	-20.36	PASS

Test Graphs

LCH



HCH

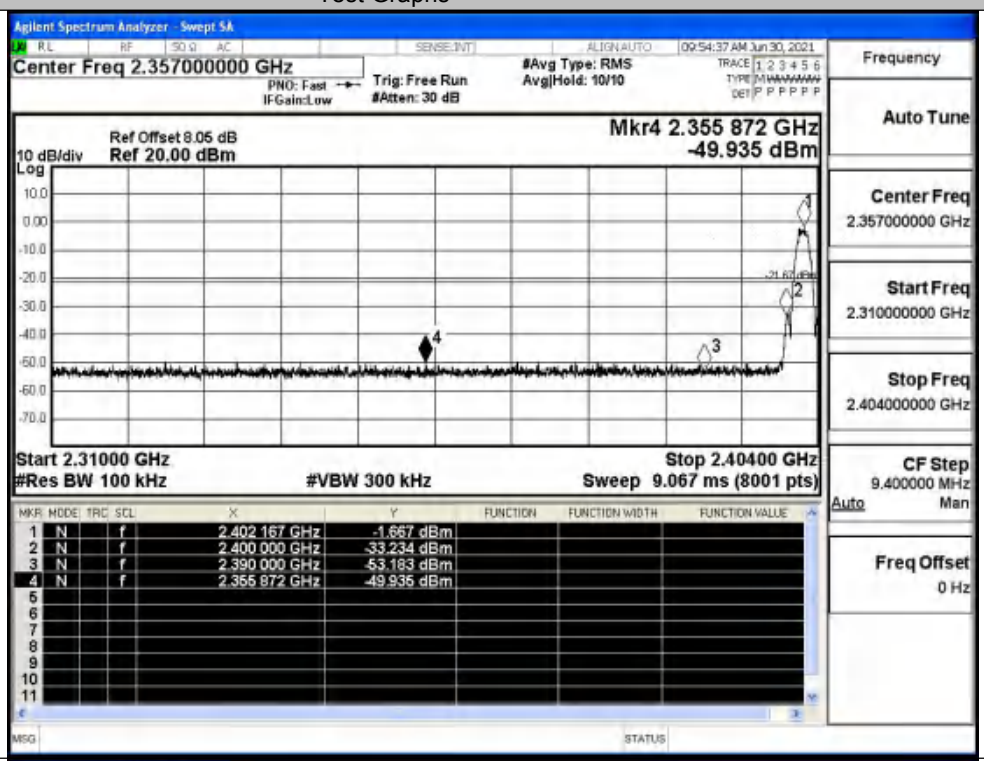


BT 2LE

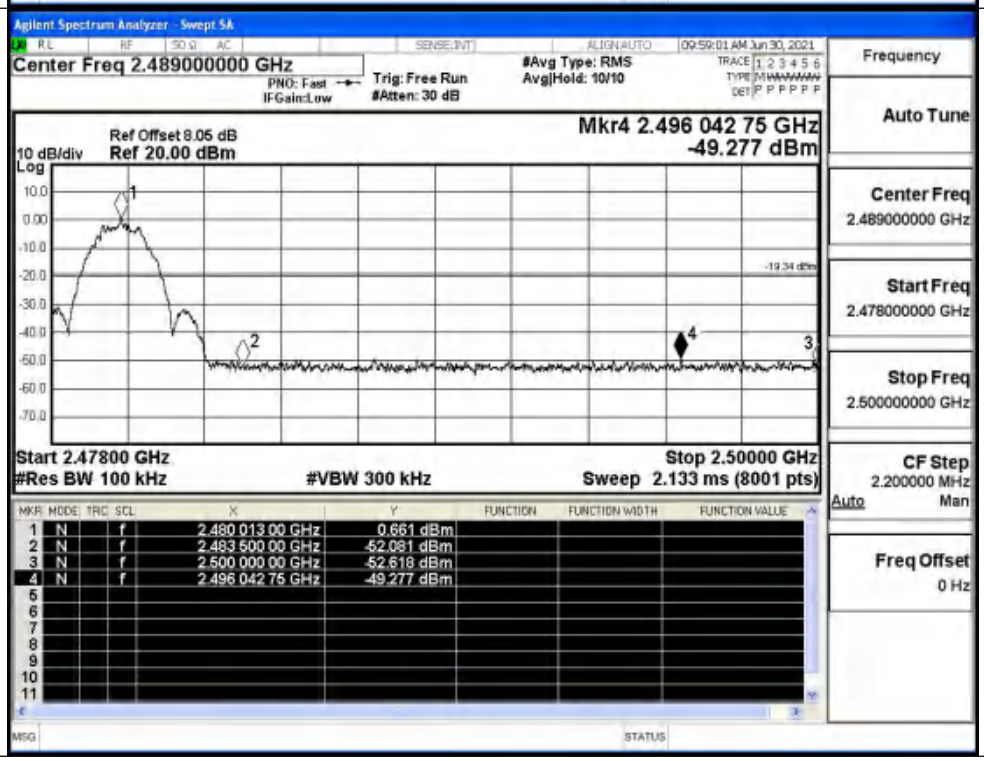
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT 2LE	LCH	-1.667	-49.935	-21.67	PASS
BT 2LE	HCH	0.661	-49.277	-19.34	PASS

Test Graphs

LCH



HCH

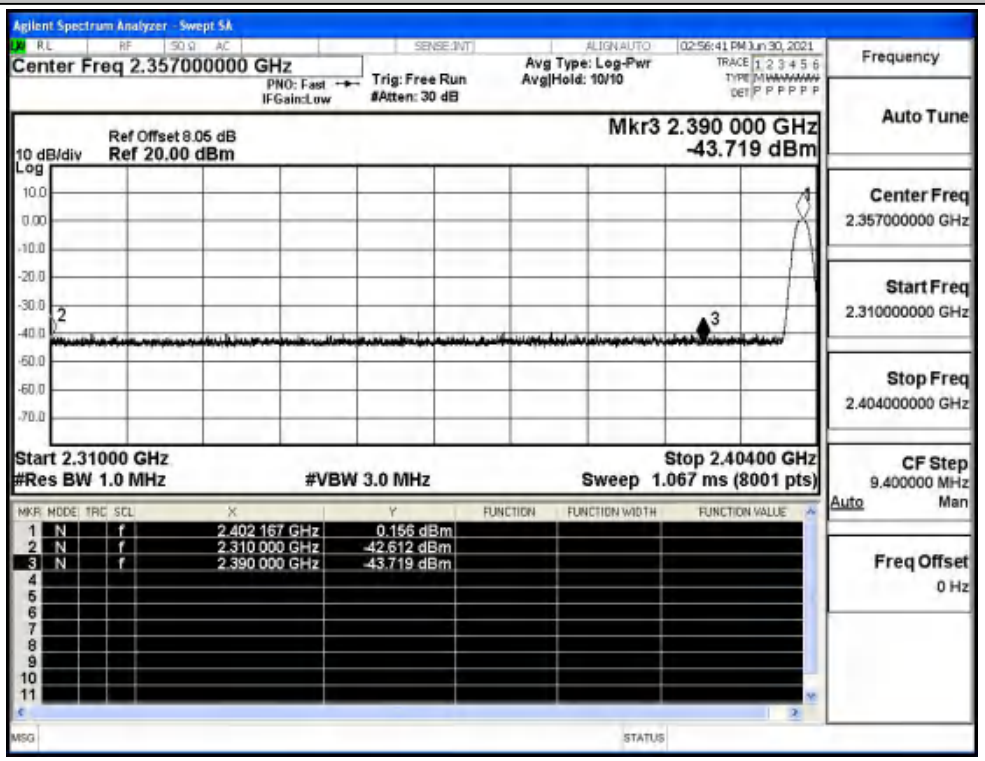


B.7 Restrict-band band-edge measurements

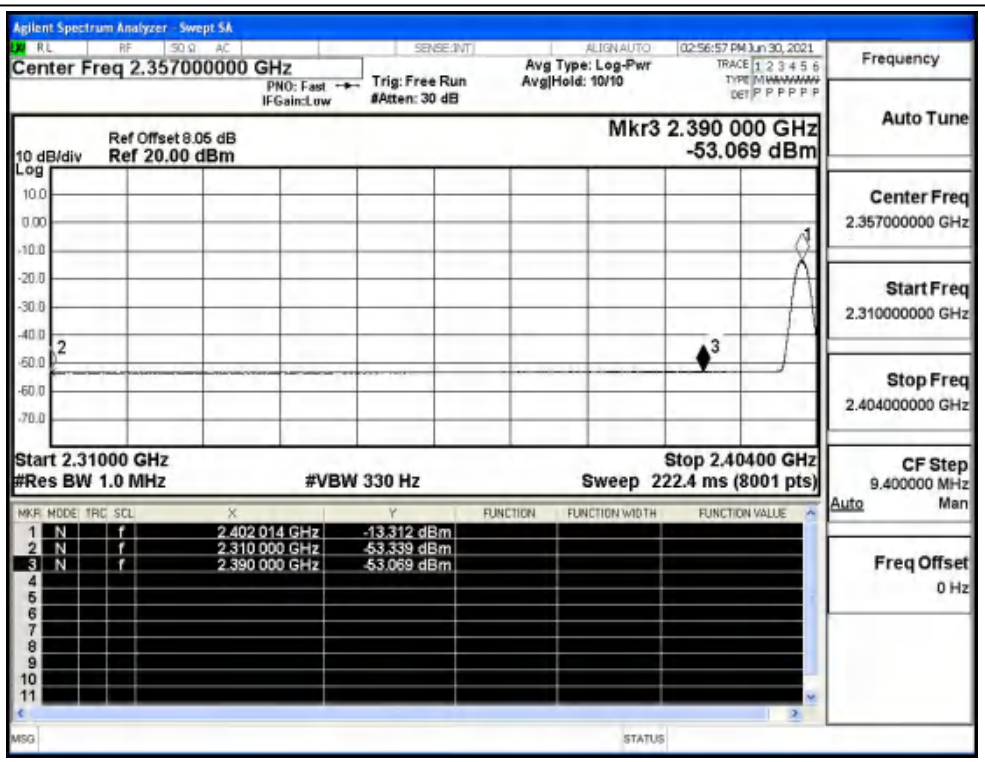
BT LE

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	-42.61	2.0	0	54.62	PEAK	74	PASS
		Ant1	2310.0	-53.34	2.0	0	43.89	AV	54	PASS
		Ant1	2390.0	-43.72	2.0	0	53.51	PEAK	74	PASS
		Ant1	2390.0	-53.07	2.0	0	44.16	AV	54	PASS
	2480	Ant1	2483.5	-43.12	2.0	0	54.11	PEAK	74	PASS
		Ant1	2483.5	-52.57	2.0	0	44.66	AV	54	PASS
		Ant1	2500.0	-41.56	2.0	0	55.67	PEAK	74	PASS
		Ant1	2500.0	-52.46	2.0	0	44.77	AV	54	PASS

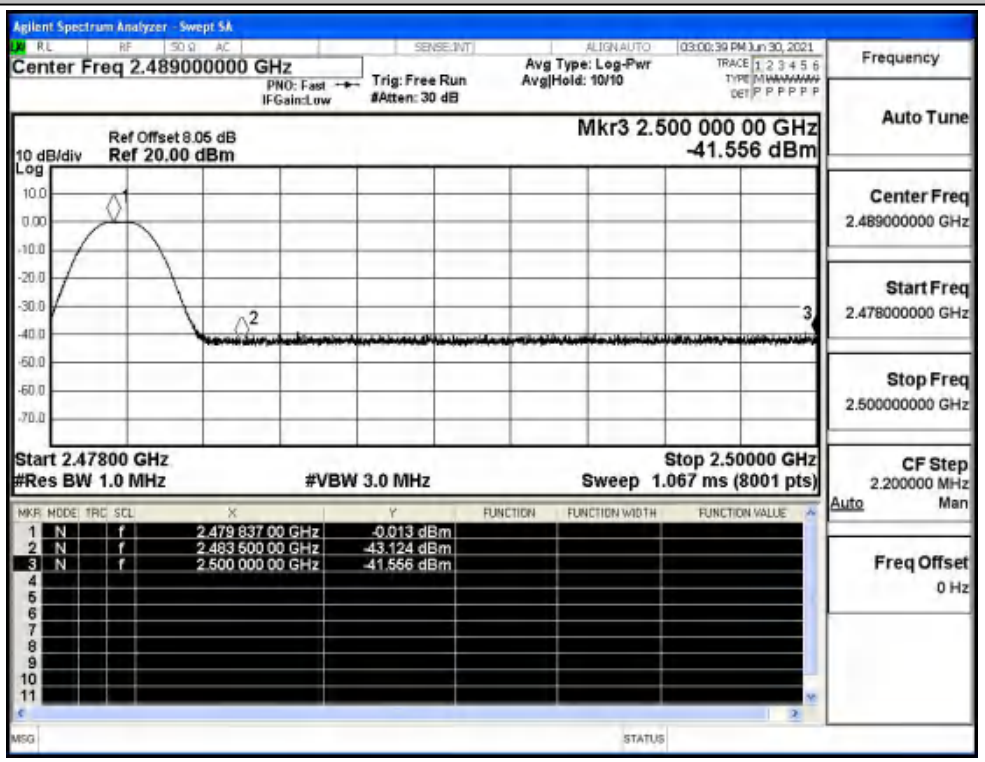
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



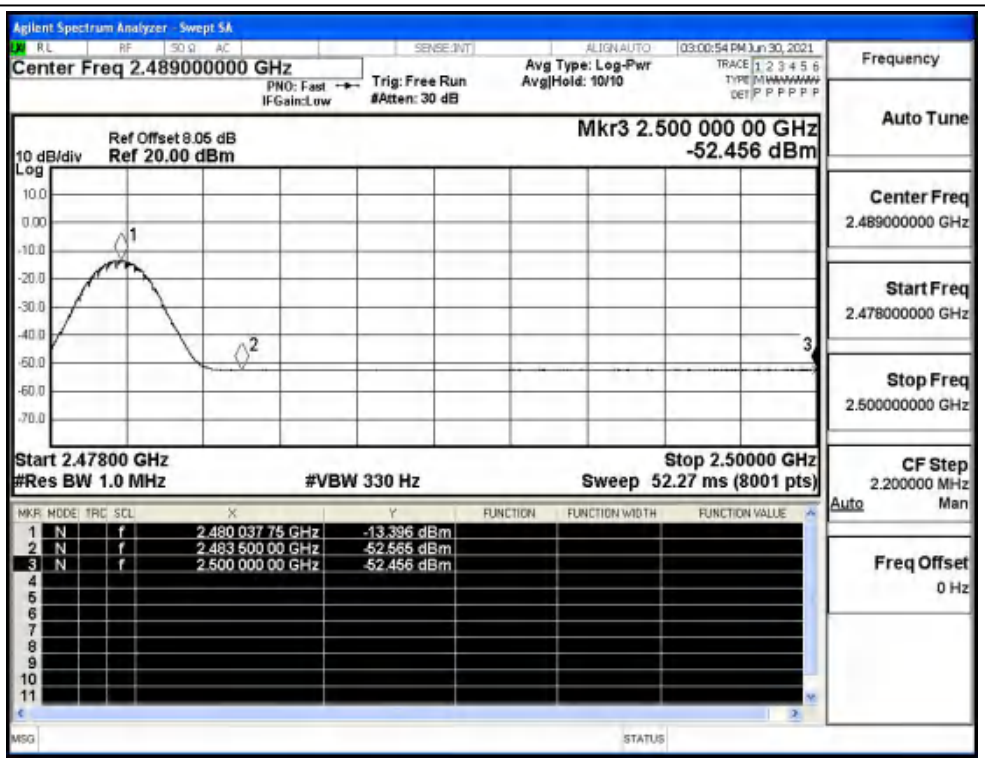
Restrict-band band-edge measurements_BT LE_2402_Ant1_AV



Restrict-band band-edge measurements_BT LE_2480_Ant1_PEAK



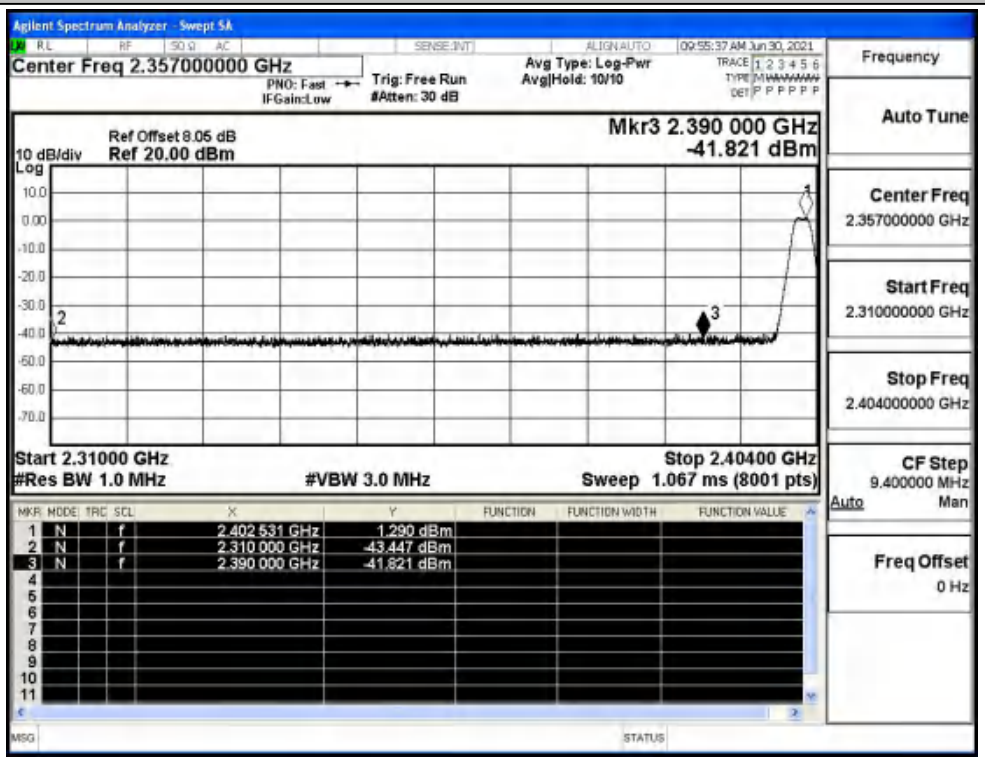
Restrict-band band-edge measurements_BT LE_2480_Ant1_AV



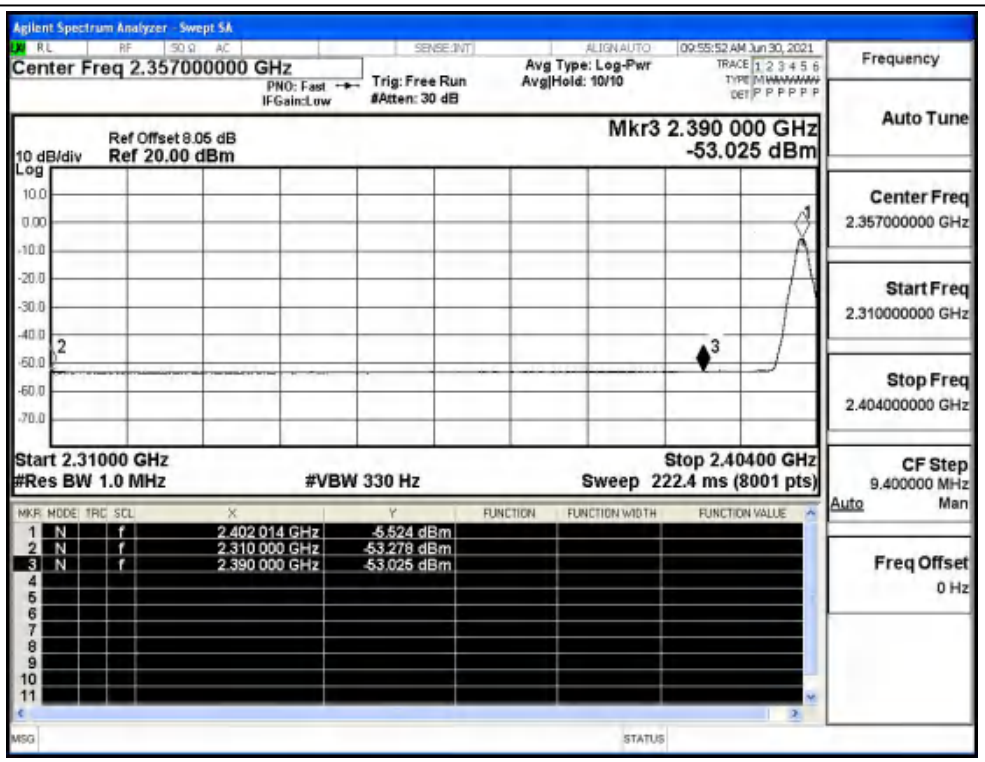
BT 2LE

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdi.
BT 2LE	2402	Ant1	2310.0	-43.45	2.0	0	53.78	PEAK	74	PASS
		Ant1	2310.0	-53.28	2.0	0	43.95	AV	54	PASS
		Ant1	2390.0	-41.82	2.0	0	55.41	PEAK	74	PASS
		Ant1	2390.0	-53.03	2.0	0	44.20	AV	54	PASS
	2480	Ant1	2483.5	-40.54	2.0	0	56.69	PEAK	74	PASS
		Ant1	2483.5	-51.47	2.0	0	45.76	AV	54	PASS
		Ant1	2500.0	-43.44	2.0	0	53.79	PEAK	74	PASS
		Ant1	2500.0	-52.28	2.0	0	44.95	AV	54	PASS

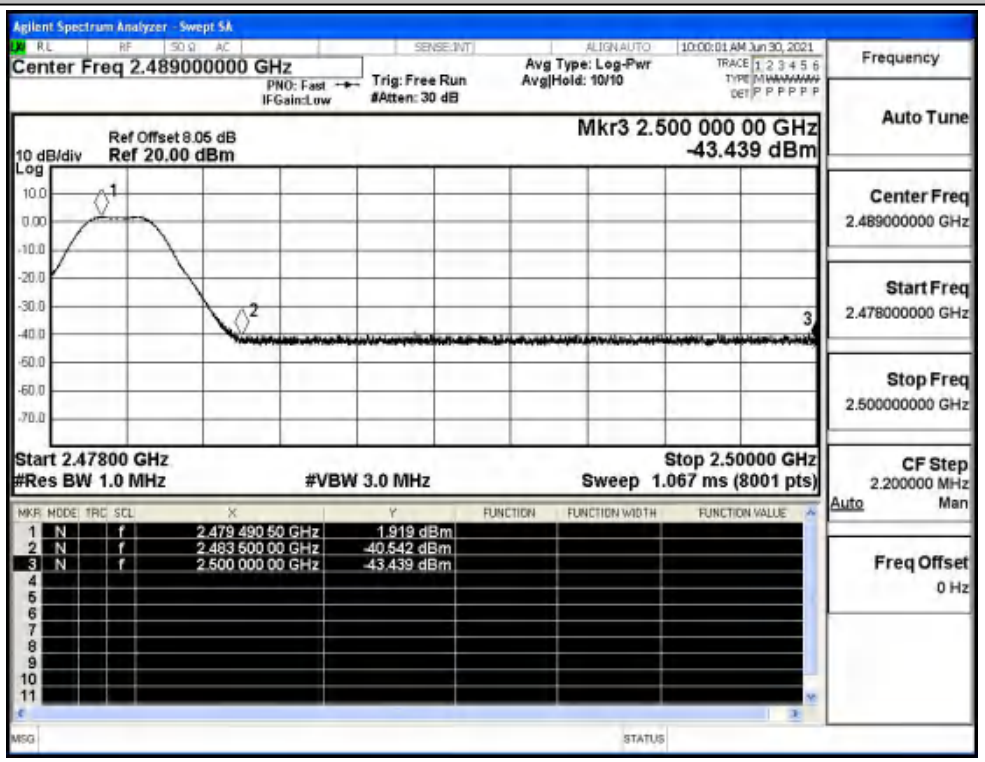
Restrict-band band-edge measurements_BT 2LE_2402_Ant1_PEAK



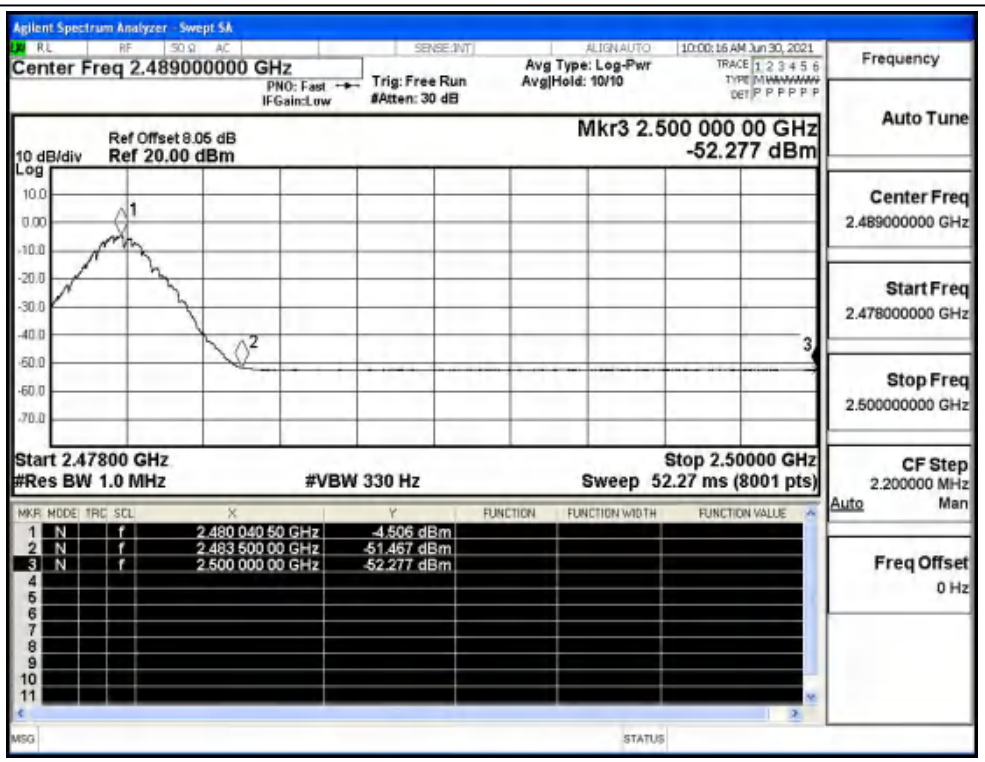
Restrict-band band-edge measurements_BT 2LE_2402_Ant1_AV



Restrict-band band-edge measurements_BT 2LE_2480_Ant1_PEAK



Restrict-band band-edge measurements_BT 2LE_2480_Ant1_AV


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.489000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
10:00:16 AM Jun 30, 2021
Ref Offset 8.05 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr3 2.500 000 00 GHz
-52.277 dBm
Start 2.47800 GHz
#Res BW 1.0 MHz
#VBW 330 Hz
Stop 2.50000 GHz
Sweep 52.27 ms (8001 pts)
1 N f 2.480 040 50 GHz -4.506 dBm
2 N f 2.483 500 00 GHz -51.467 dBm
3 N f 2.500 000 00 GHz -52.277 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