

## Appendix B

### RF Test Data for BT V4.0(BDR/EDR) (Conducted Measurement)

Product Name: HyBook Plus

Trade Mark: Hyundai

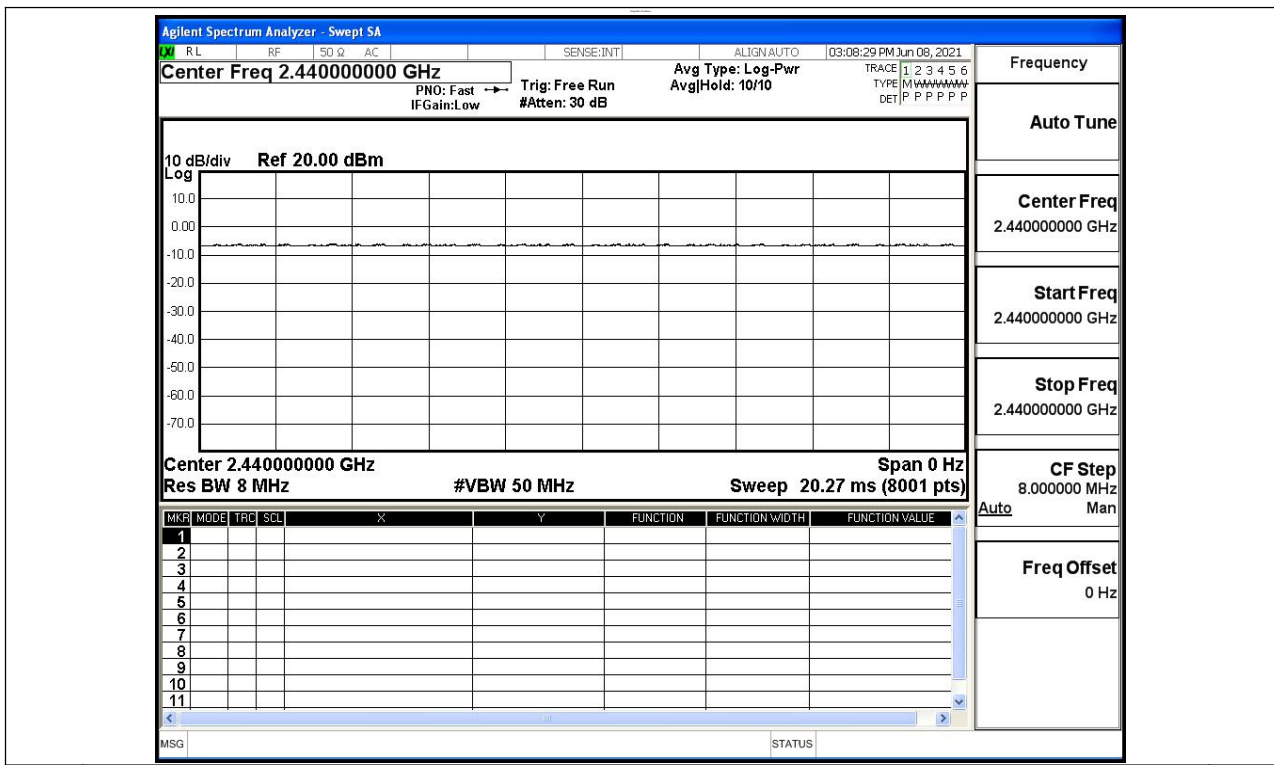
Test Model: HT14CBI581SG

#### Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ken He
Supervised by:	Li Huan

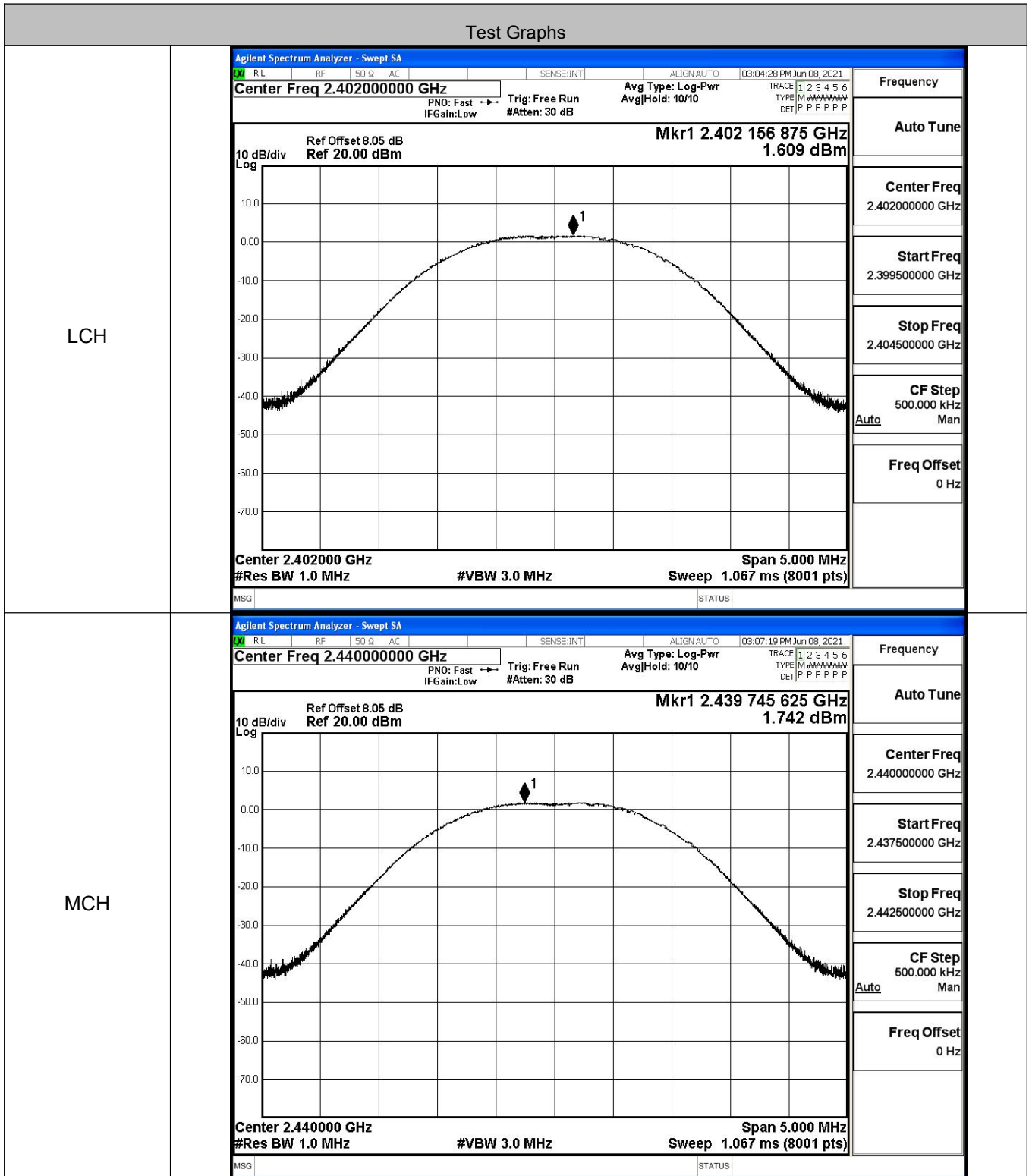
#### B.1 Duty Cycle

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

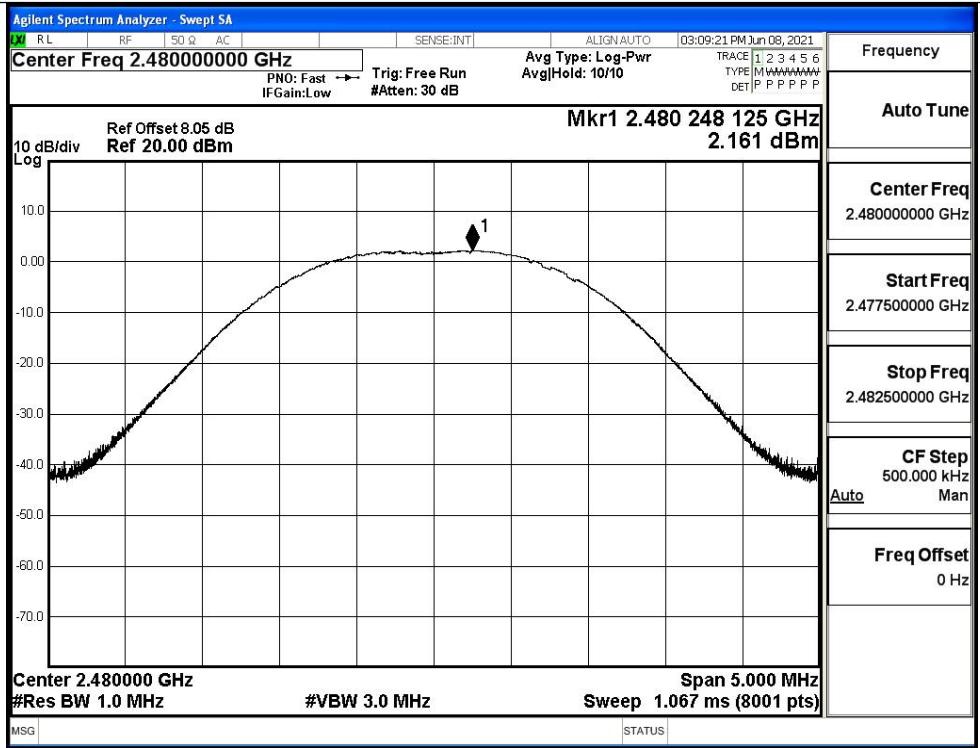


### B.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	1.609	30	PASS
BT LE	MCH	1.742	30	PASS
BT LE	HCH	2.161	30	PASS



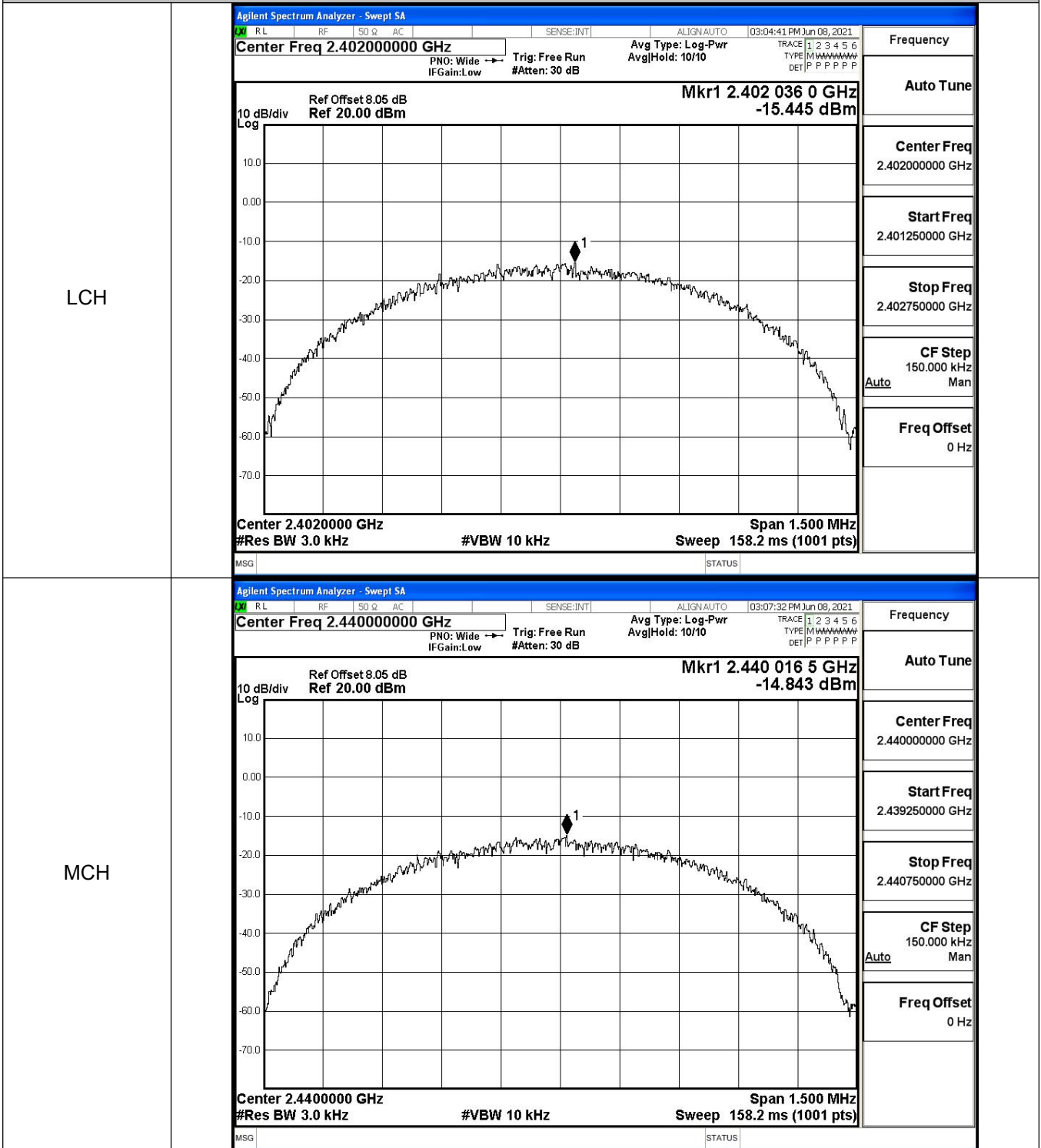
HCH



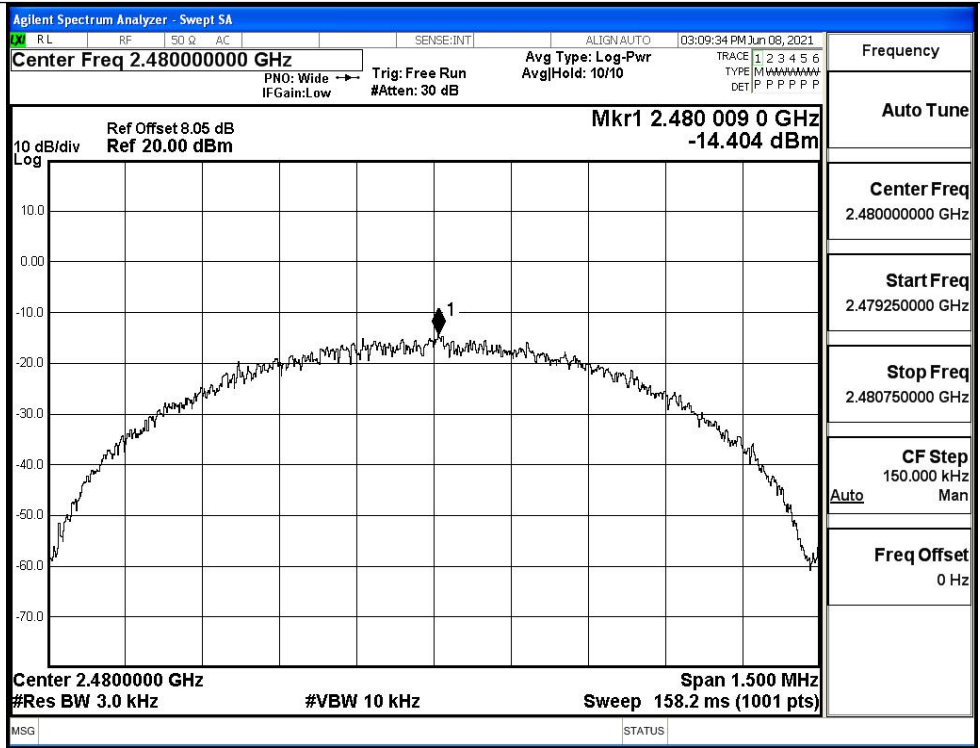
### B.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-15.445	8	PASS
BT LE	MCH	-14.843	8	PASS
BT LE	HCH	-14.404	8	PASS

#### Test Graphs

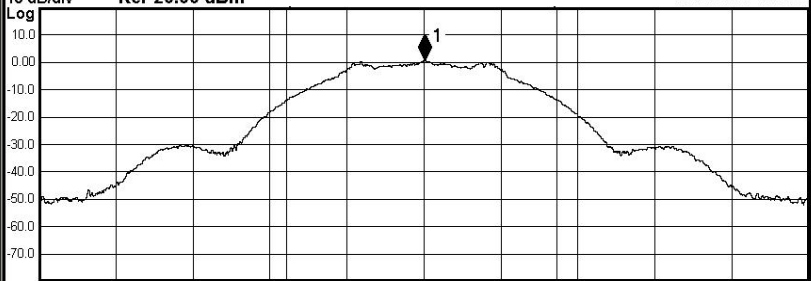
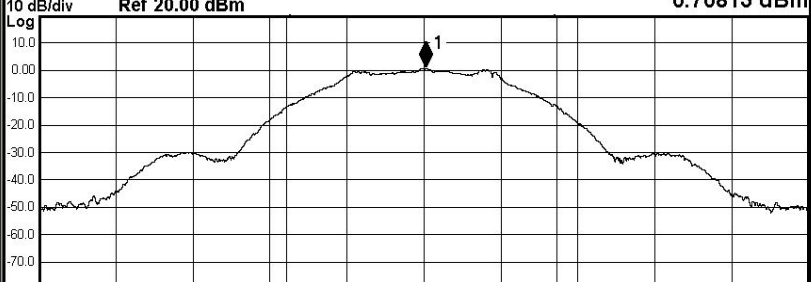


HCH

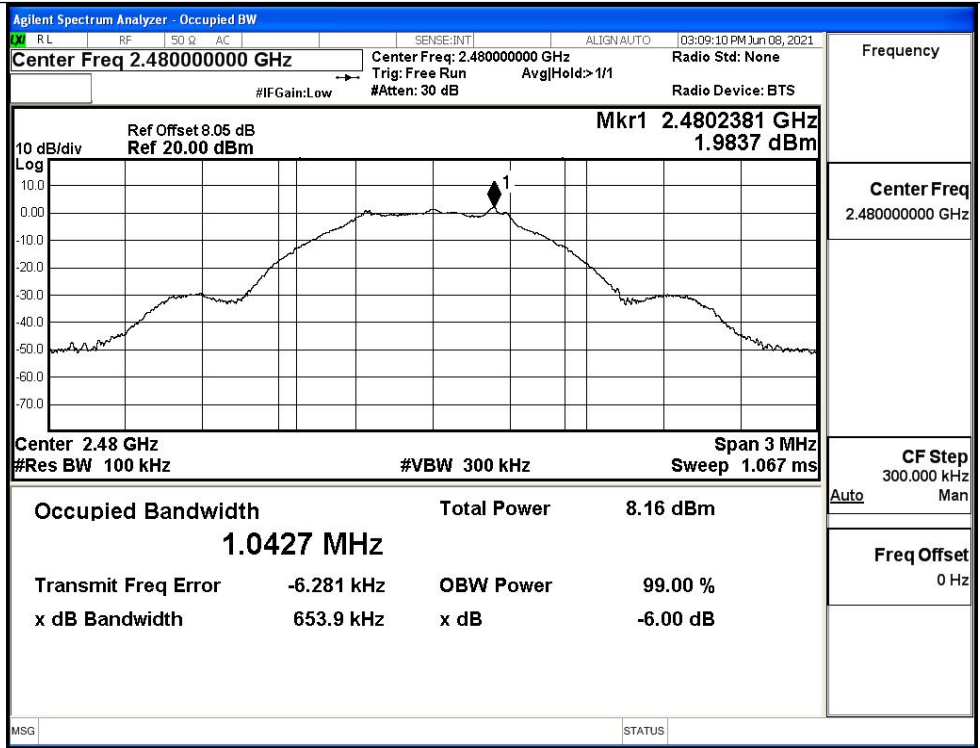


**B.4 6dB Bandwidth**

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6651	≥0.5	PASS
BT LE	MCH	0.6746	≥0.5	PASS
BT LE	HCH	0.6539	≥0.5	PASS

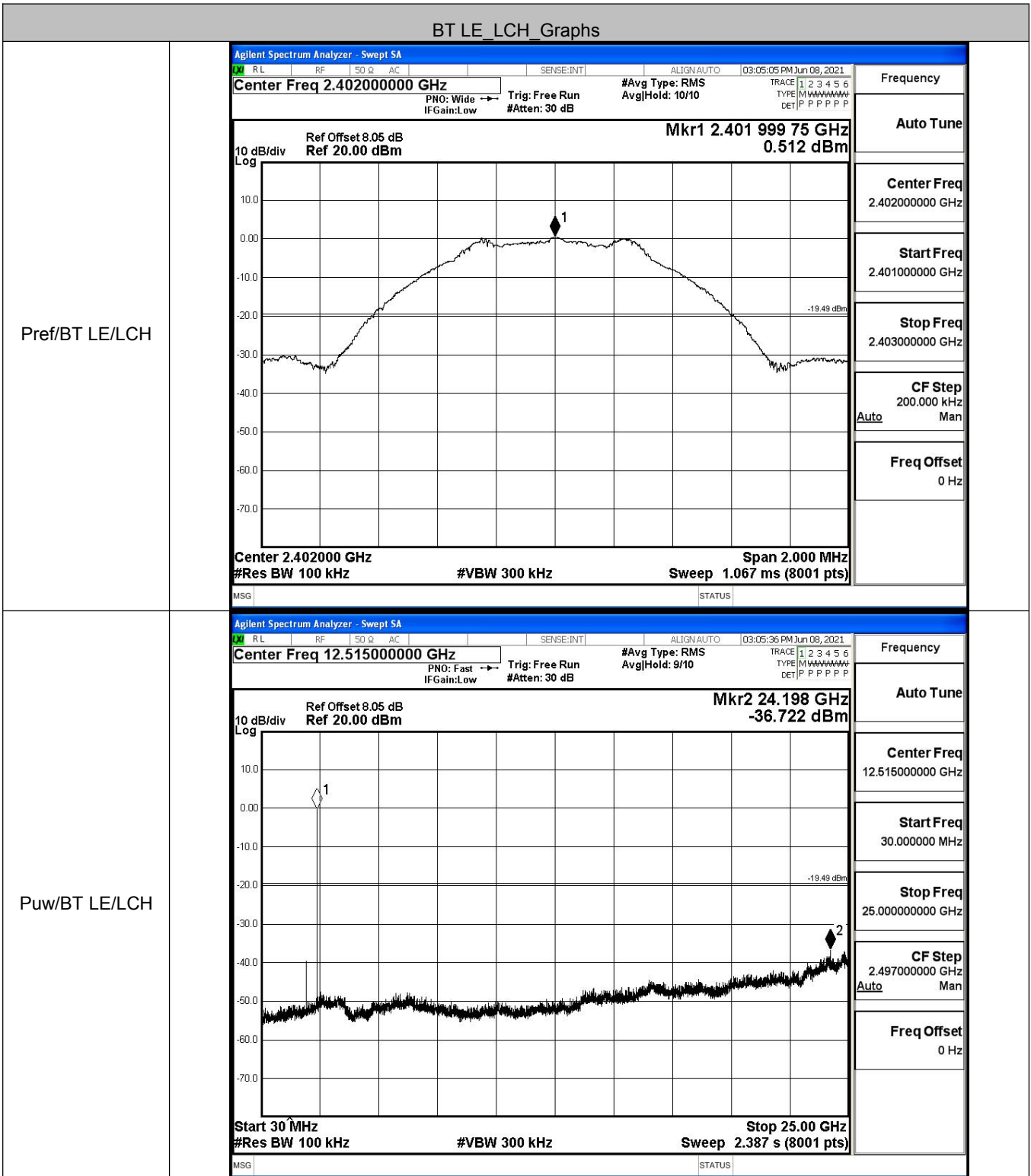
Test Graphs													
LCH	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: small; margin: 0;">RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 03:04:15 PM Jun 08, 2021</p> <p style="margin: 0;">Center Freq: 2.402000000 GHz Center Freq: 2.402000000 GHz Radio Std: None                      Trig: Free Run AvgHold: &gt;1/1                      #IFGain: Low #Atten: 30 dB Radio Device: BTS</p> <div style="border: 1px solid black; padding: 2px;"> <p style="font-size: x-small; margin: 0;">10 dB/div Ref Offset 8.05 dB Mkr1 2.4020034 GHz                          Log Ref 20.00 dBm 0.54234 dBm</p>  </div> <p style="font-size: x-small; margin: 0;">Center 2.402 GHz Span 3 MHz                      #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td style="width: 33%;">Occupied Bandwidth</td> <td style="width: 33%;">Total Power</td> <td style="width: 33%;">7.28 dBm</td> </tr> <tr> <td style="text-align: center;"><b>1.0474 MHz</b></td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>x dB Bandwidth</td> <td>x dB</td> <td>-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	7.28 dBm	<b>1.0474 MHz</b>			Transmit Freq Error	OBW Power	99.00 %	x dB Bandwidth	x dB	-6.00 dB
Occupied Bandwidth	Total Power	7.28 dBm											
<b>1.0474 MHz</b>													
Transmit Freq Error	OBW Power	99.00 %											
x dB Bandwidth	x dB	-6.00 dB											
MCH	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: small; margin: 0;">RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 03:07:08 PM Jun 08, 2021</p> <p style="margin: 0;">Center Freq: 2.440000000 GHz Center Freq: 2.440000000 GHz Radio Std: None                      Trig: Free Run AvgHold: 1/1                      #IFGain: Low #Atten: 30 dB Radio Device: BTS</p> <div style="border: 1px solid black; padding: 2px;"> <p style="font-size: x-small; margin: 0;">10 dB/div Ref Offset 8.05 dB Mkr1 2.4400079 GHz                          Log Ref 20.00 dBm 0.70813 dBm</p>  </div> <p style="font-size: x-small; margin: 0;">Center 2.44 GHz Span 3 MHz                      #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td style="width: 33%;">Occupied Bandwidth</td> <td style="width: 33%;">Total Power</td> <td style="width: 33%;">7.54 dBm</td> </tr> <tr> <td style="text-align: center;"><b>1.0474 MHz</b></td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>x dB Bandwidth</td> <td>x dB</td> <td>-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">MSG STATUS</p> </div>	Occupied Bandwidth	Total Power	7.54 dBm	<b>1.0474 MHz</b>			Transmit Freq Error	OBW Power	99.00 %	x dB Bandwidth	x dB	-6.00 dB
Occupied Bandwidth	Total Power	7.54 dBm											
<b>1.0474 MHz</b>													
Transmit Freq Error	OBW Power	99.00 %											
x dB Bandwidth	x dB	-6.00 dB											

HCH



### B.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.512	-36.722	-19.488	PASS
BT LE	MCH	0.663	-37.115	-19.337	PASS
BT LE	HCH	2.026	-37.096	-17.974	PASS





BT LE MCH Graphs

<p>Pref/BT LE/MCH</p>	<p>Agilent Spectrum Analyzer - Swept SA          Center Freq 2.44000000 GHz          Ref Offset 8.05 dB          Ref 20.00 dBm          Mkr1 2.439 992 50 GHz          0.663 dBm          #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms (8001 pts)</p>	<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.440000000 GHz</p> <p>Start Freq 2.439000000 GHz</p> <p>Stop Freq 2.441000000 GHz</p> <p>CF Step 200.000 kHz Auto Man</p> <p>Freq Offset 0 Hz</p>
<p>Puw/BT LE/MCH</p>	<p>Agilent Spectrum Analyzer - Swept SA          Center Freq 12.51500000 GHz          Ref Offset 8.05 dB          Ref 20.00 dBm          Mkr2 24.931 GHz          -37.115 dBm          Start 30 MHz Stop 25.00 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.387 s (8001 pts)</p>	<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 12.515000000 GHz</p> <p>Start Freq 30.000000 MHz</p> <p>Stop Freq 25.000000000 GHz</p> <p>CF Step 2.497000000 GHz Auto Man</p> <p>Freq Offset 0 Hz</p>

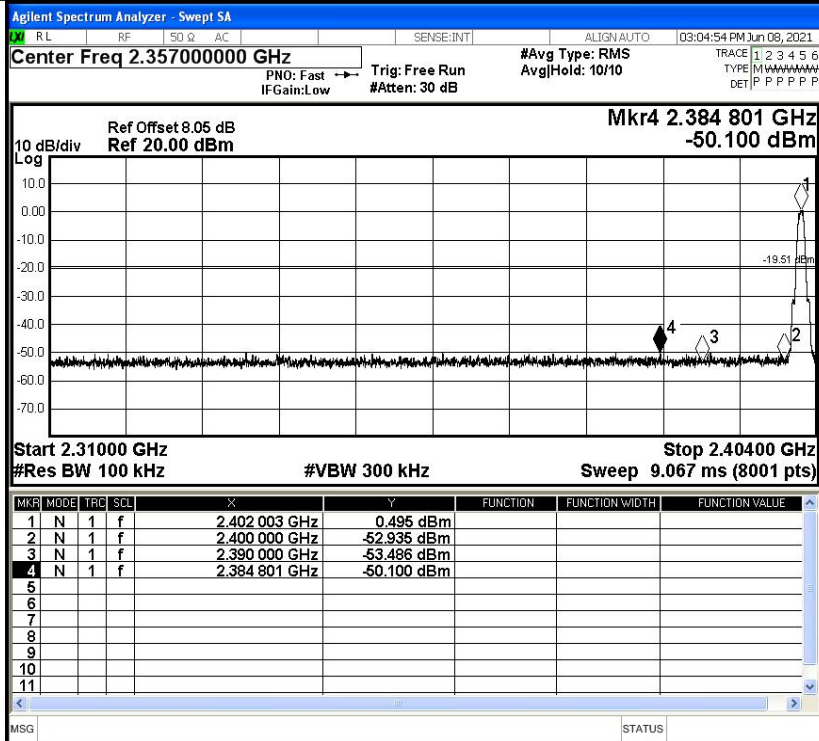
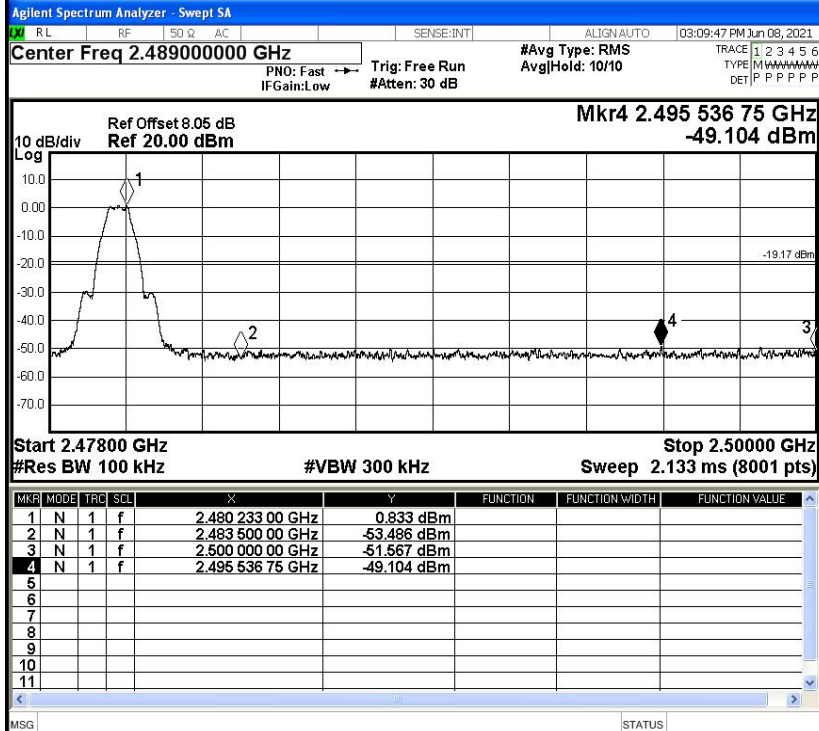
BT LE HCH Graphs

<p>Pref/BT LE/HCH</p>		<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.480000000 GHz</p> <p>Start Freq 2.479000000 GHz</p> <p>Stop Freq 2.481000000 GHz</p> <p>CF Step 200.000 kHz Auto Man</p> <p>Freq Offset 0 Hz</p>
<p>Puw/BT LE/HCH</p>		<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 12.515000000 GHz</p> <p>Start Freq 30.000000 MHz</p> <p>Stop Freq 25.000000000 GHz</p> <p>CF Step 2.497000000 GHz Auto Man</p> <p>Freq Offset 0 Hz</p>

### B.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.495	-50.100	-19.51	PASS
BT LE	HCH	0.833	-49.104	-19.17	PASS

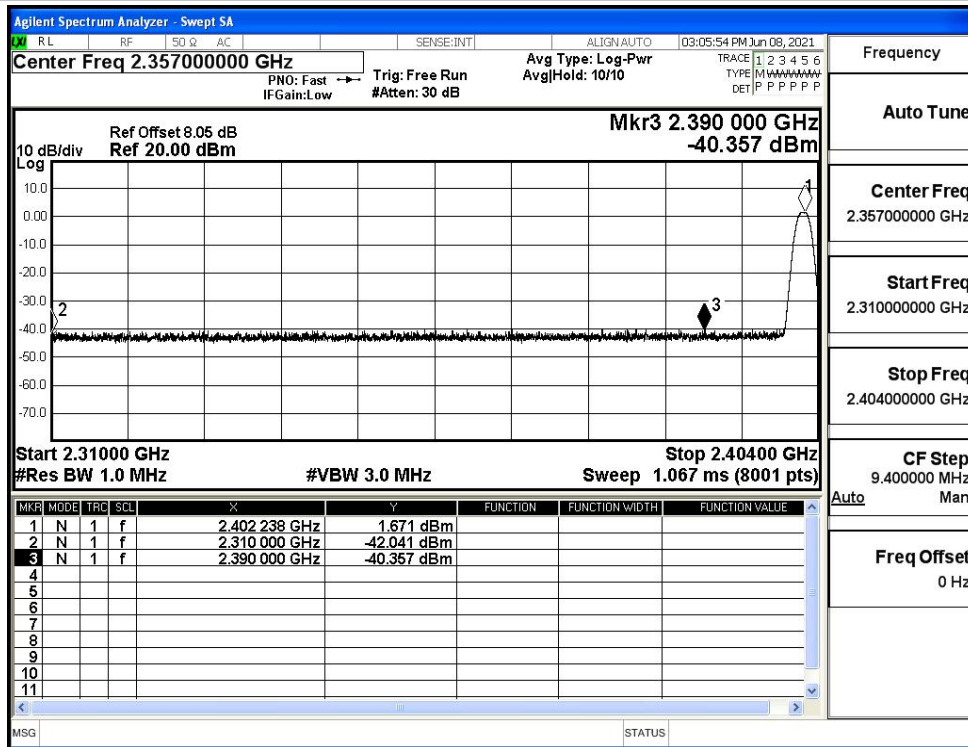
**Test Graphs**

LCH		<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.35700000 GHz</p> <p>Start Freq 2.31000000 GHz</p> <p>Stop Freq 2.40400000 GHz</p> <p>CF Step 9.400000 MHz</p> <p>Freq Offset 0 Hz</p>
HCH		<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.48900000 GHz</p> <p>Start Freq 2.47800000 GHz</p> <p>Stop Freq 2.50000000 GHz</p> <p>CF Step 2.200000 MHz</p> <p>Freq Offset 0 Hz</p>

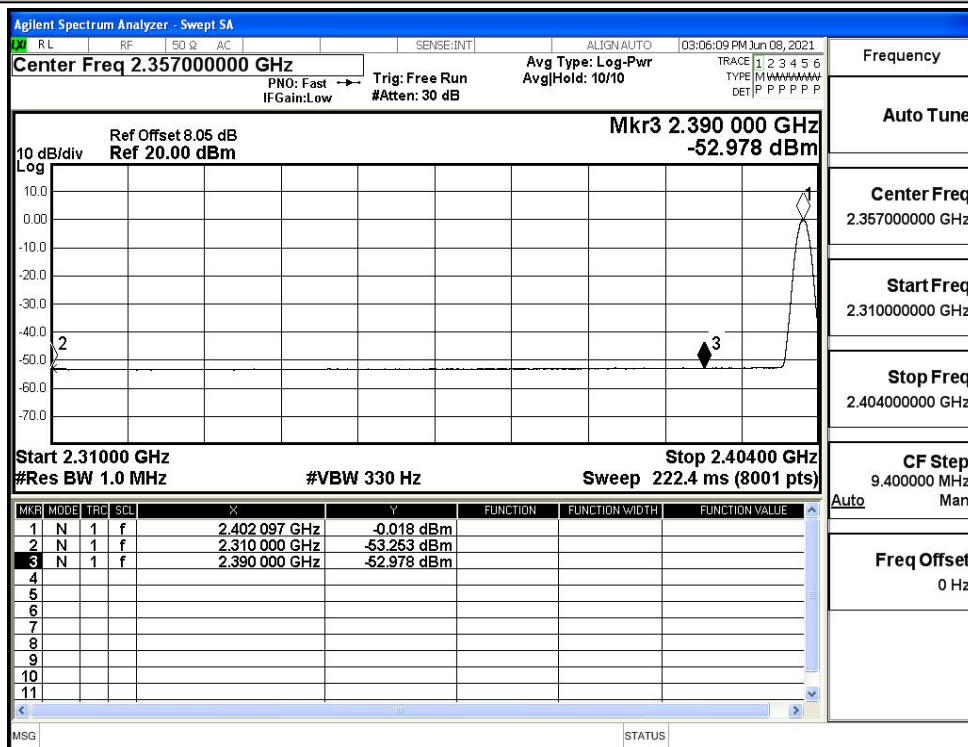
### B.7 Restrict-band band-edge measurements

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	-42.04	2.0	0	55.19	PEAK	74	PASS
		Ant1	2310.0	-53.25	2.0	0	43.98	AV	54	PASS
		Ant1	2390.0	-40.36	2.0	0	56.87	PEAK	74	PASS
		Ant1	2390.0	-52.98	2.0	0	44.25	AV	54	PASS
	2480	Ant1	2483.5	-41.01	2.0	0	56.22	PEAK	74	PASS
		Ant1	2483.5	-52.39	2.0	0	44.84	AV	54	PASS
		Ant1	2500.0	-42.31	2.0	0	54.92	PEAK	74	PASS
		Ant1	2500.0	-52.27	2.0	0	44.96	AV	54	PASS

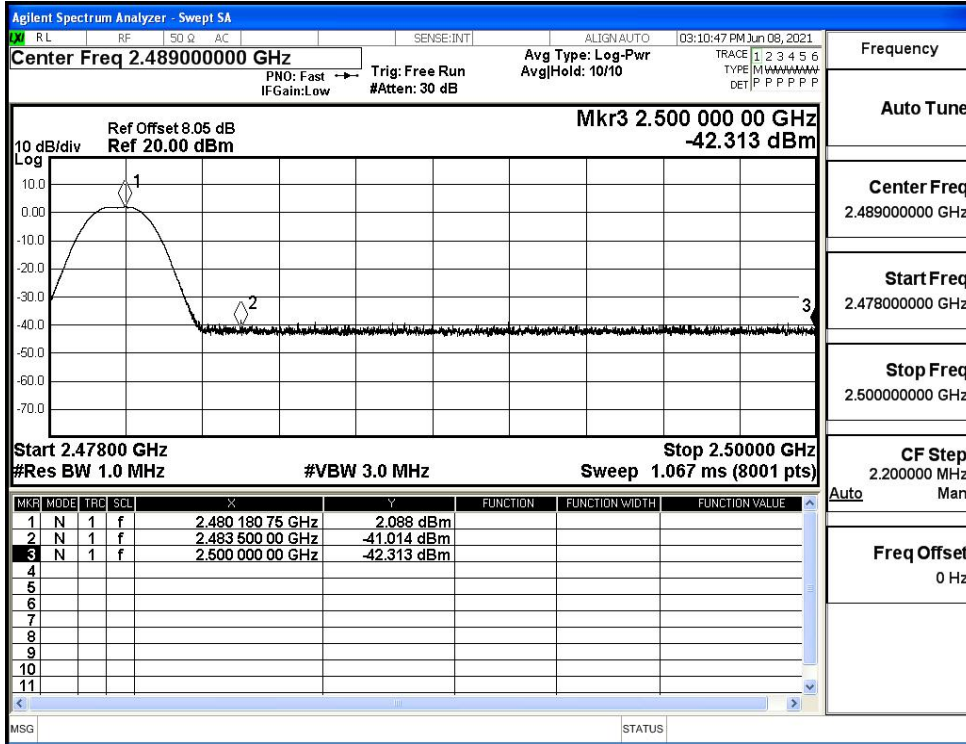
Restrict-band band-edge measurements\_BT LE\_2402\_Ant1\_PEAK



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

