

## Appendix A

### RF Test Data for BT V3.0(BDR) (Conducted Measurement)

Product Name: Bluetooth Keyboard with led backlight

Trade Mark: /

Test Model: CBT002

#### Environmental Conditions

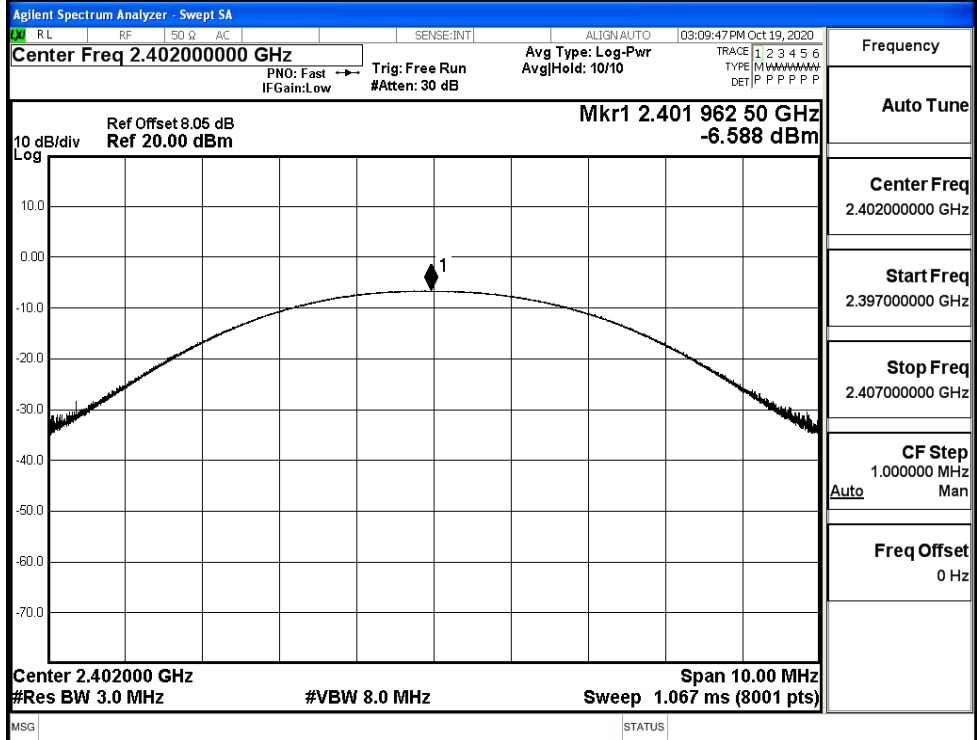
Temperature:	24.1 ° C
Relative Humidity:	53.9%
ATM Pressure:	100.0 kPa
Test Engineer:	Jam Zheng
Supervised by:	Tom.Liu

#### A.1 Maximum Conducted Peak Output Power

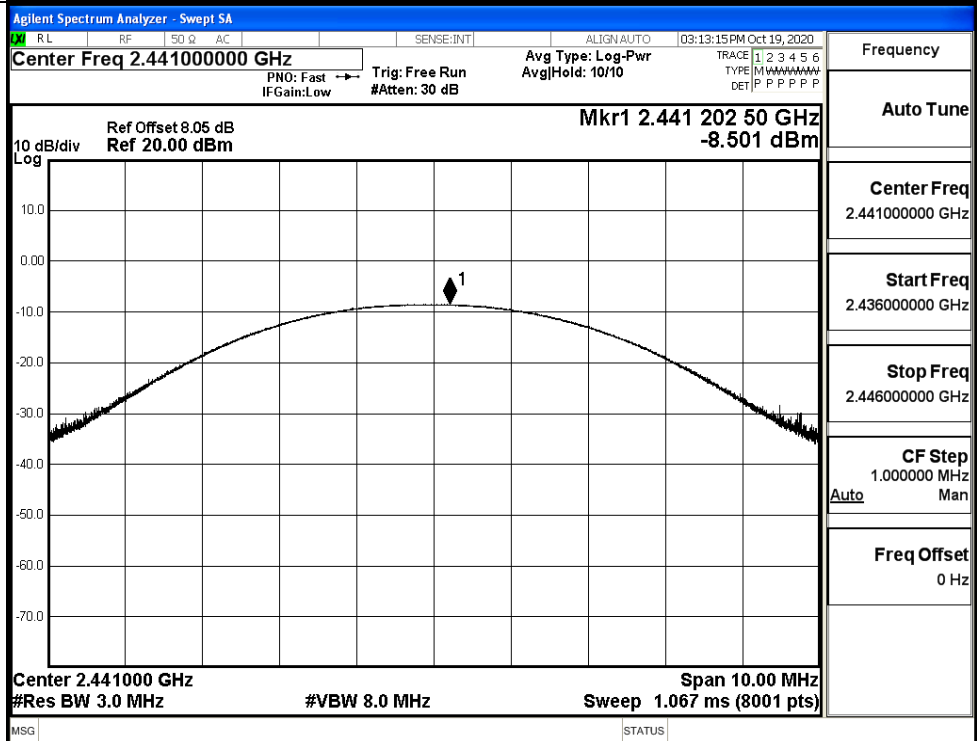
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-6.588	21	PASS
	MCH	-8.501	21	PASS
	HCH	-10.025	21	PASS

Test Graphs

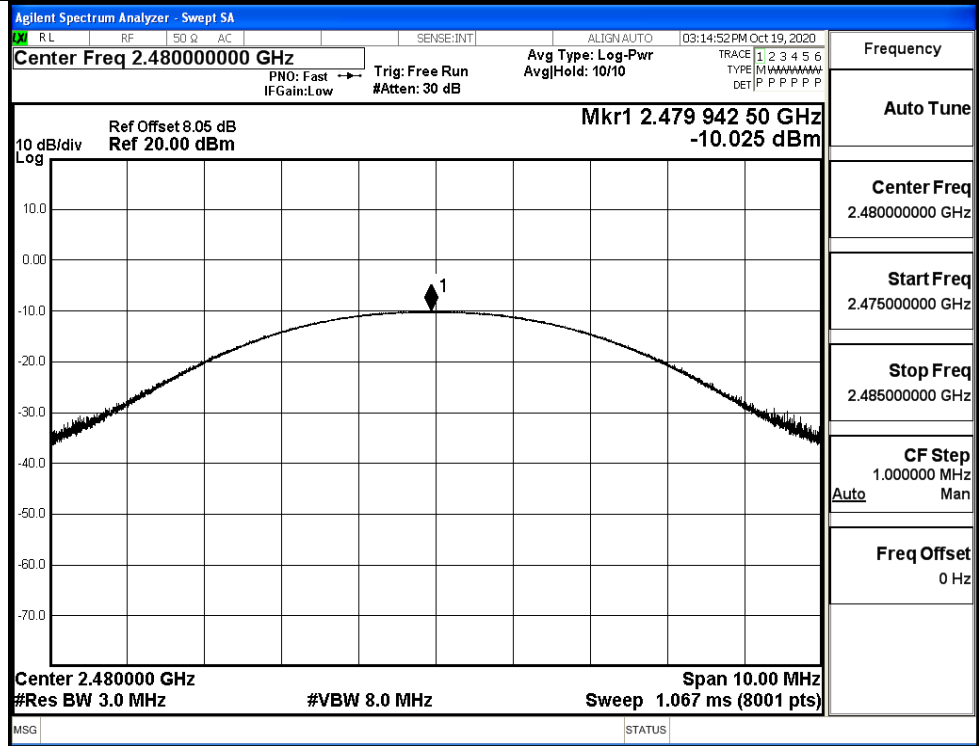
GFSK/LCH



GFSK/MCH



GFSK/HCH



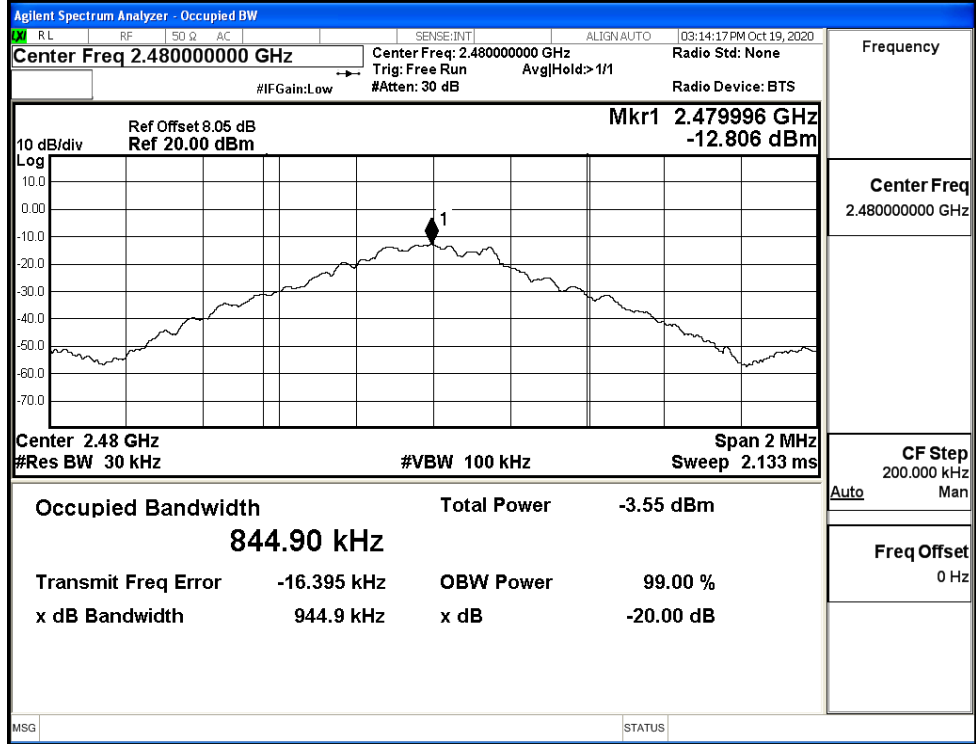
**A.2 20dB Bandwidth**

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9483	Not Specified	PASS
	MCH	0.9439	Not Specified	PASS
	HCH	0.9449	Not Specified	PASS

Test Graphs

GFSK/LCH		<p>Frequency 2.40200000 GHz</p> <p>Center Freq 2.40200000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>
GFSK/MCH		<p>Frequency 2.44100000 GHz</p> <p>Center Freq 2.44100000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>

GFSK/HCH



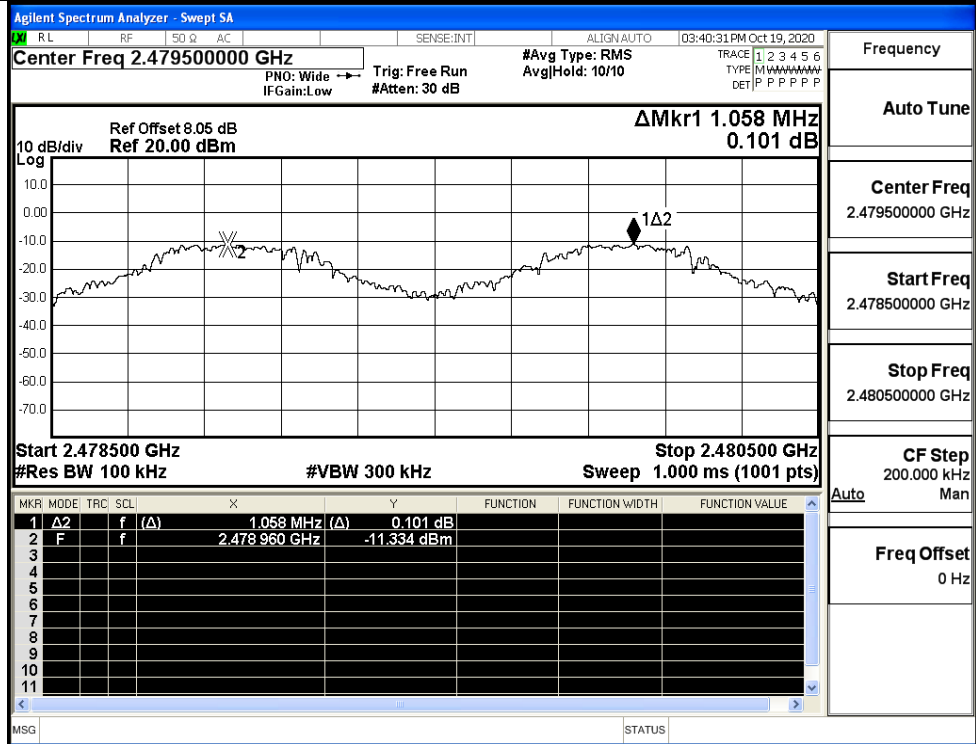
### A.3 Carrier Frequency Separation

Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.184	0.632	PASS
	MCH	1.078	0.632	PASS
	HCH	1.058	0.632	PASS

Test Graphs

GFSK/LCH	<p>Agilent Spectrum Analyzer - Swept SA                  Center Freq 2.402500000 GHz                  Ref Offset 8.05 dB                  Ref 20.00 dBm                  ΔMkr1 1.183 75 MHz                  0.210 dB                  Start 2.401500 GHz                  Stop 2.403500 GHz                  #Res BW 100 kHz                  #VBW 300 kHz                  Sweep 1.067 ms (8001 pts)</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Δ2</td> <td>f</td> <td>(Δ)</td> <td>1.183 75 MHz (Δ)</td> <td>0.210 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.401 939 50 GHz</td> <td>-7.768 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ2	f	(Δ)	1.183 75 MHz (Δ)	0.210 dB				2	F	f		2.401 939 50 GHz	-7.768 dBm				Frequency Auto Tune Center Freq 2.402500000 GHz Start Freq 2.401500000 GHz Stop Freq 2.403500000 GHz CF Step 200.000 kHz Auto Man Freq Offset 0 Hz
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GFSK/MCH	<p>Agilent Spectrum Analyzer - Swept SA                  Center Freq 2.441500000 GHz                  Ref Offset 8.05 dB                  Ref 20.00 dBm                  ΔMkr1 1.078 MHz                  0.127 dB                  Start 2.440500 GHz                  Stop 2.442500 GHz                  #Res BW 100 kHz                  #VBW 300 kHz                  Sweep 1.000 ms (1001 pts)</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Δ2</td> <td>f</td> <td>(Δ)</td> <td>1.078 MHz (Δ)</td> <td>0.127 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.440 962 GHz</td> <td>-9.655 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ2	f	(Δ)	1.078 MHz (Δ)	0.127 dB				2	F	f		2.440 962 GHz	-9.655 dBm				Frequency Auto Tune Center Freq 2.441500000 GHz Start Freq 2.440500000 GHz Stop Freq 2.442500000 GHz CF Step 200.000 kHz Auto Man Freq Offset 0 Hz
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2	F	f		2.440 962 GHz	-9.655 dBm																								

GFSK/HCH



### A.4 Hopping Channel Number

Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS

**Test Graphs**

GFSK/Hop

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.441750000 GHz

Start 2.40000 GHz #Res BW 100 kHz

Stop 2.48350 GHz Sweep 8.000 ms (8001 pts)

#VBW 300 kHz

ΔMkr1 77.916 MHz -2.625 dB

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	Δ2	f	(Δ)	77.916 MHz (Δ)	-2.625 dB			
2	F	f		2.402077 GHz	-8.102 dBm			

Frequency

Auto Tune

Center Freq  
2.441750000 GHz

Start Freq  
2.400000000 GHz

Stop Freq  
2.483500000 GHz

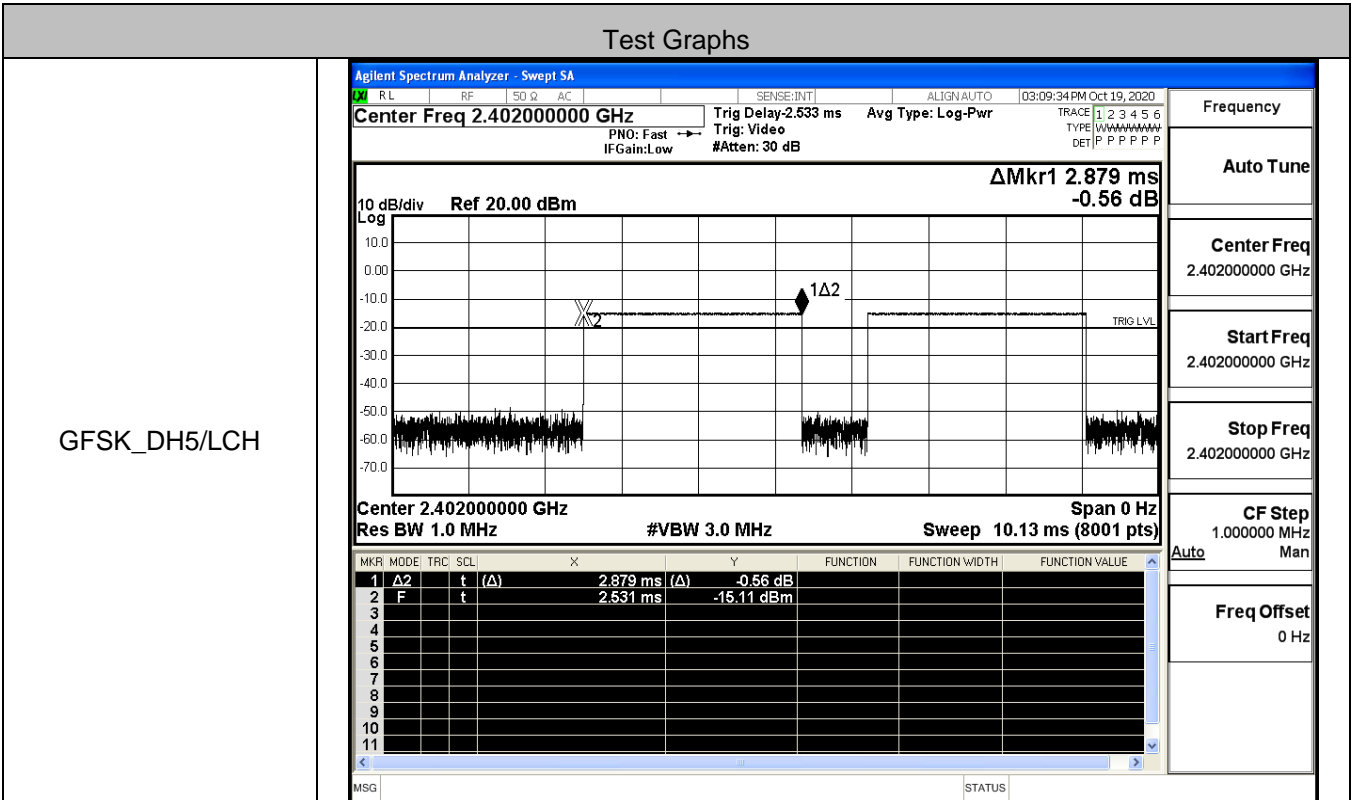
CF Step  
8.350000 MHz  
Auto Man

Freq Offset  
0 Hz

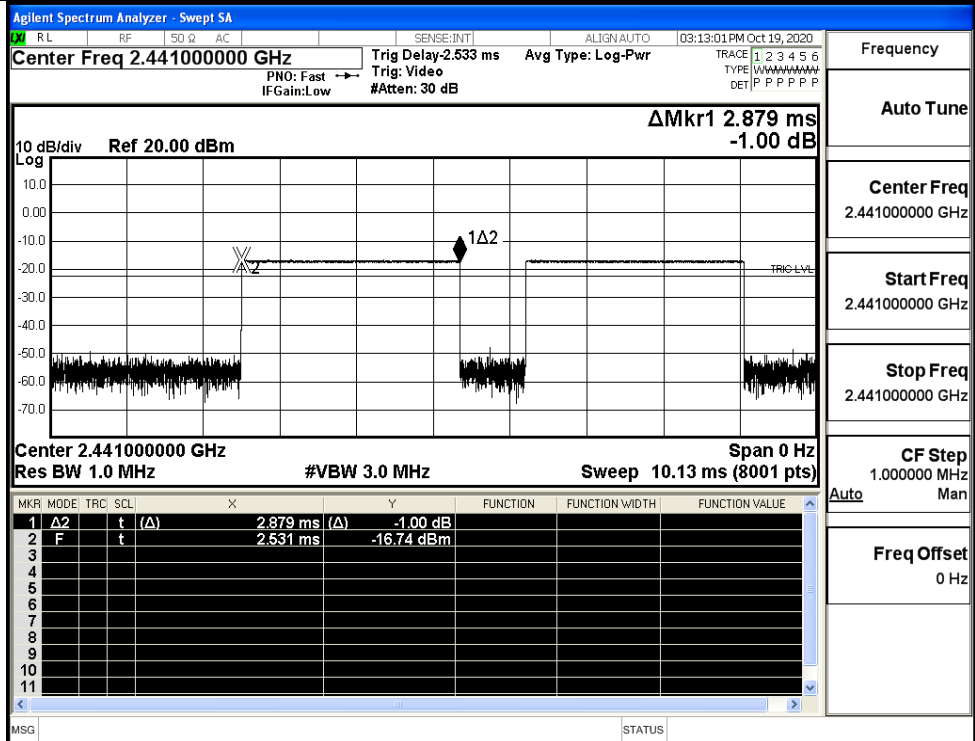


### A.5 Dwell Time

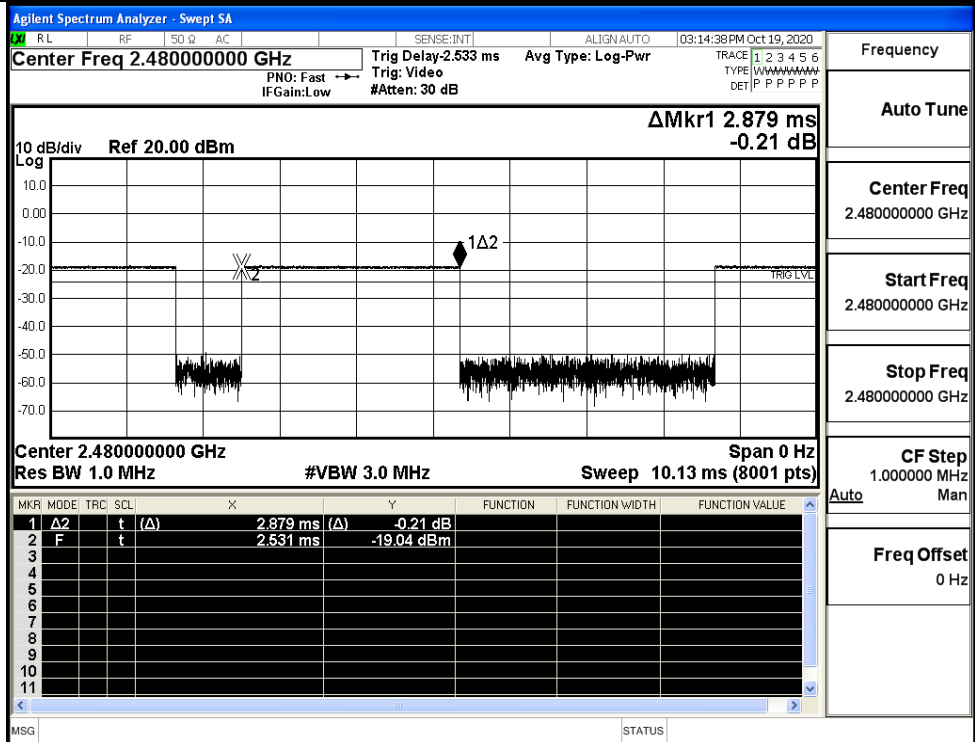
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS



GFSK\_DH5/MCH



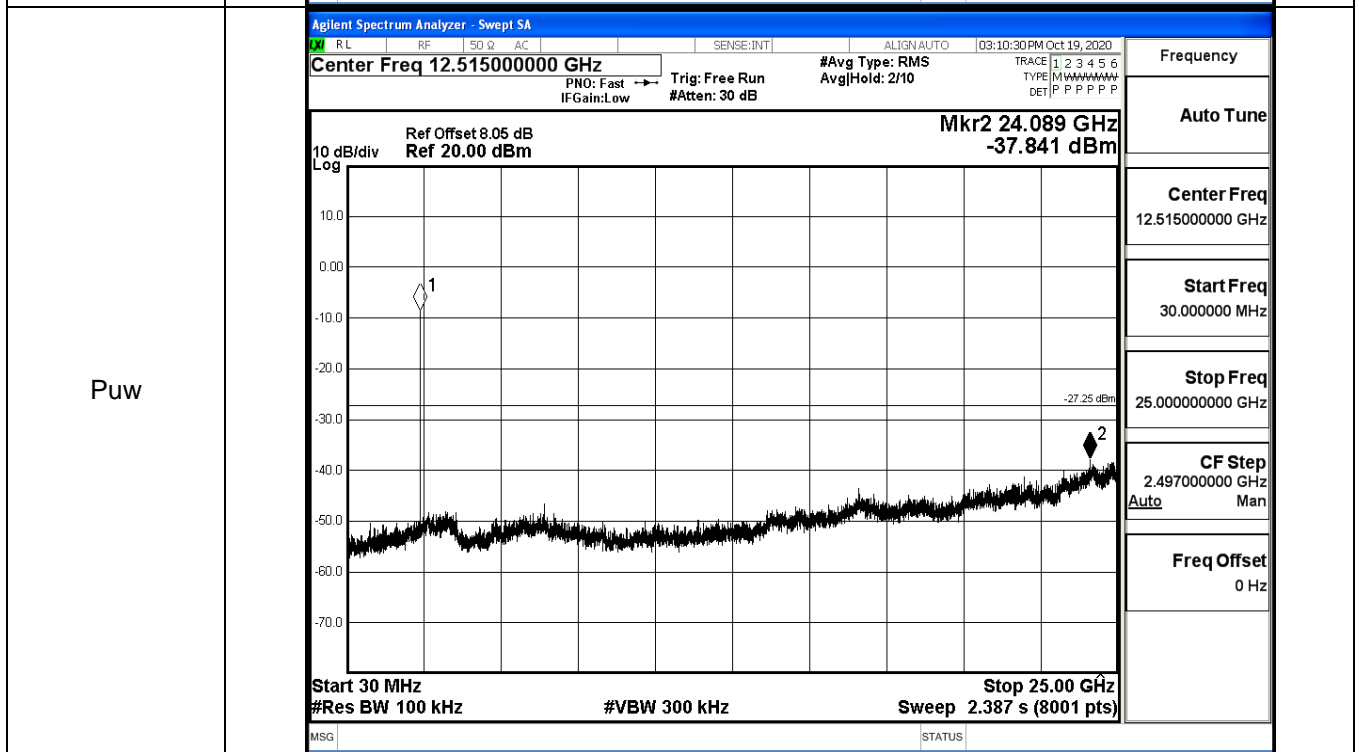
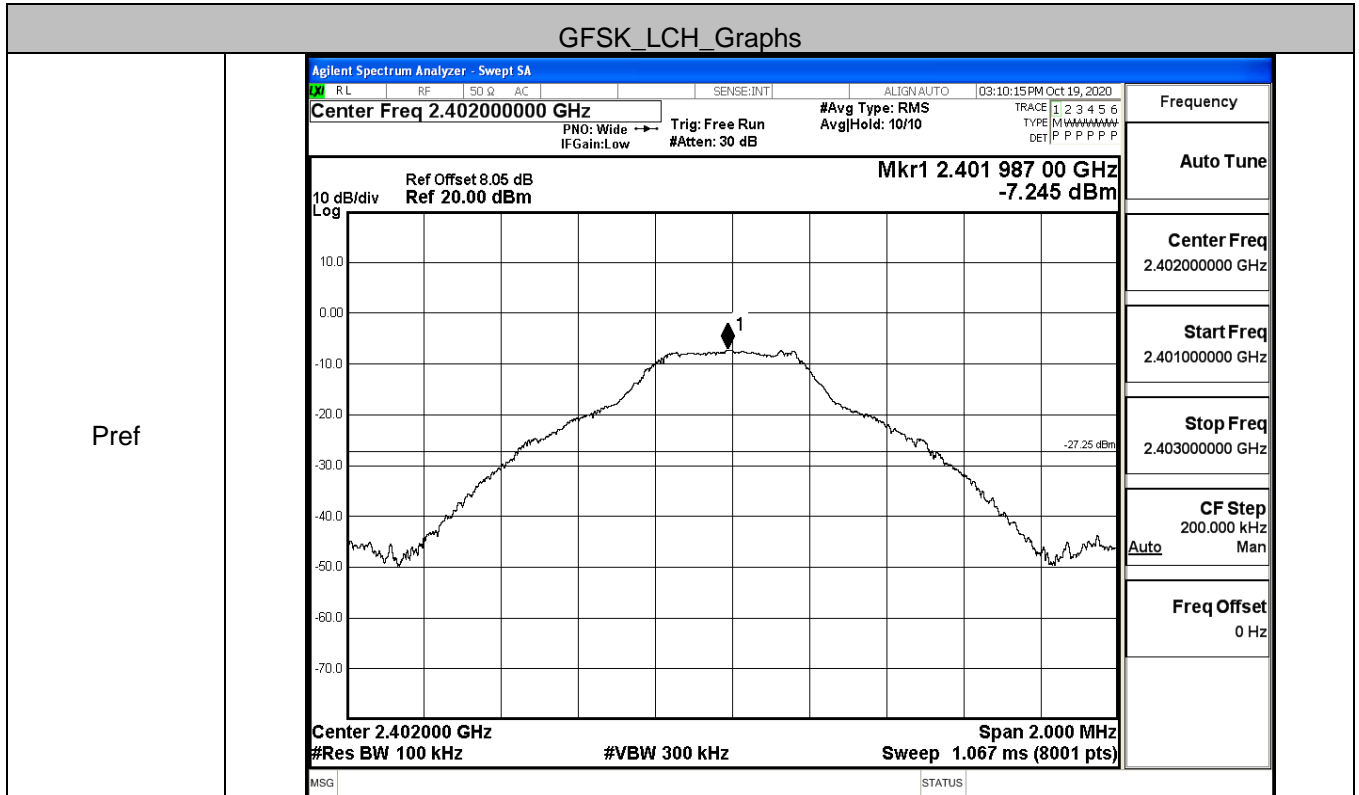
GFSK\_DH5/HCH



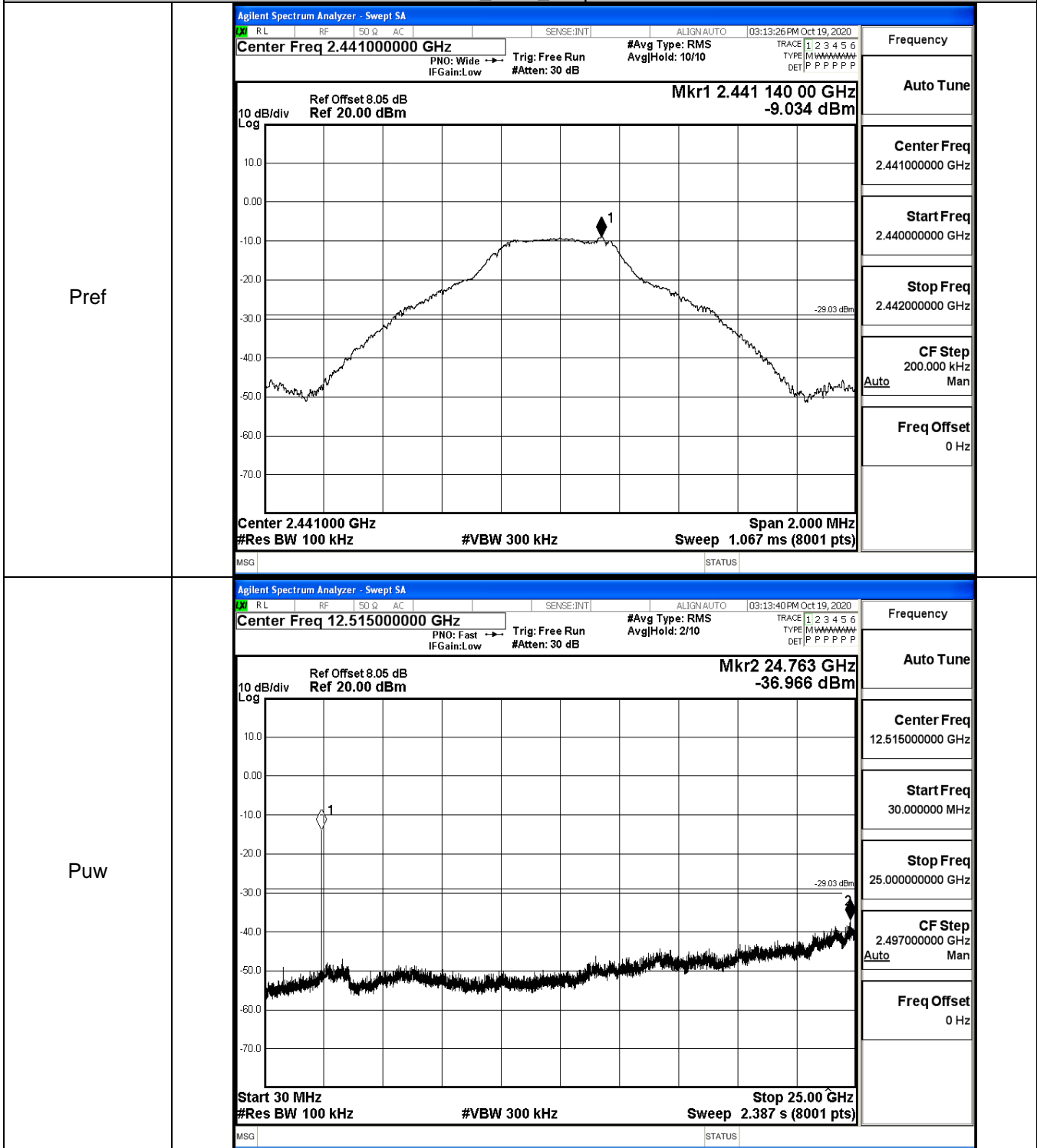
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-7.245	-37.841	-27.245	PASS
	MCH	-9.034	-36.966	-29.034	PASS
	HCH	-10.577	-37.599	-30.577	PASS

GFSK\_LCH\_Graphs

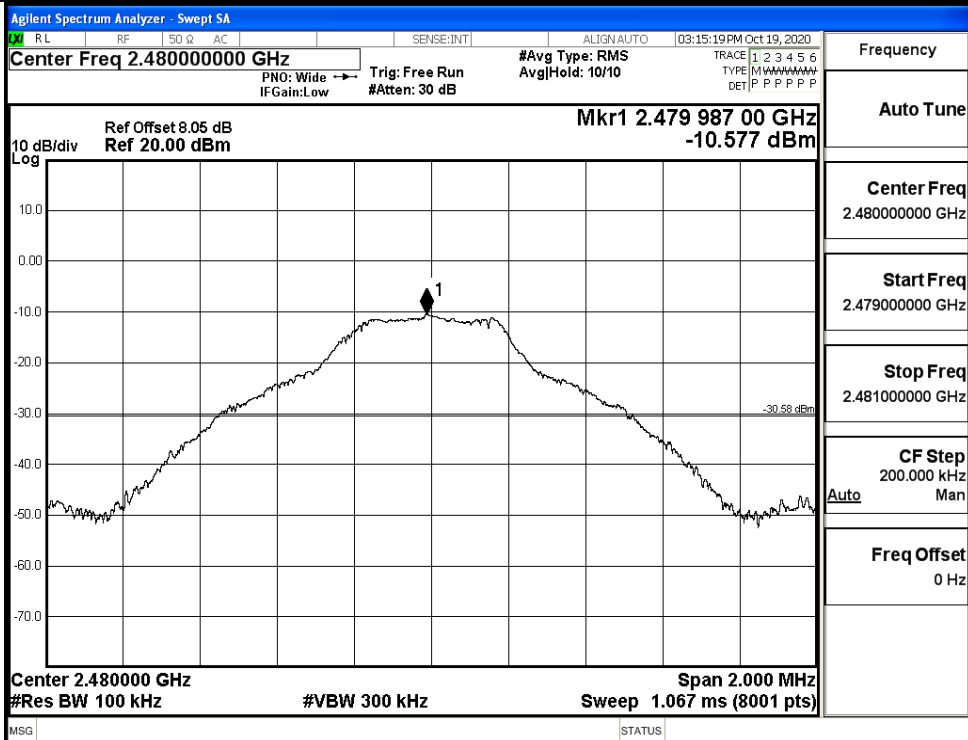


GFSK\_MCH\_Graphs

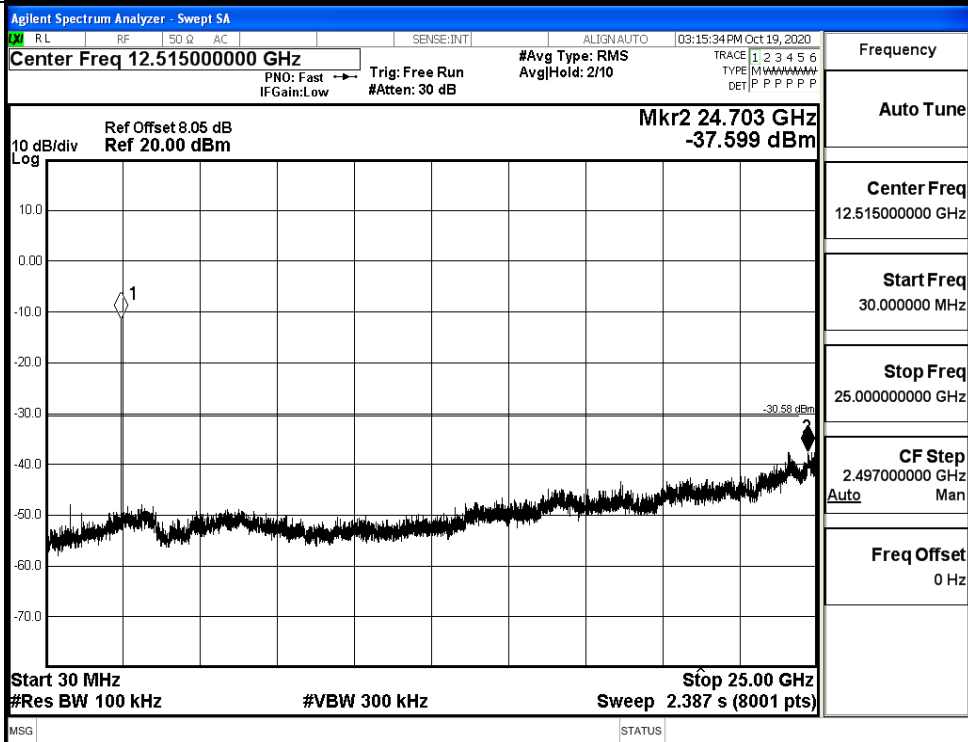


GFSK\_HCH\_Graphs

Pref



Puw

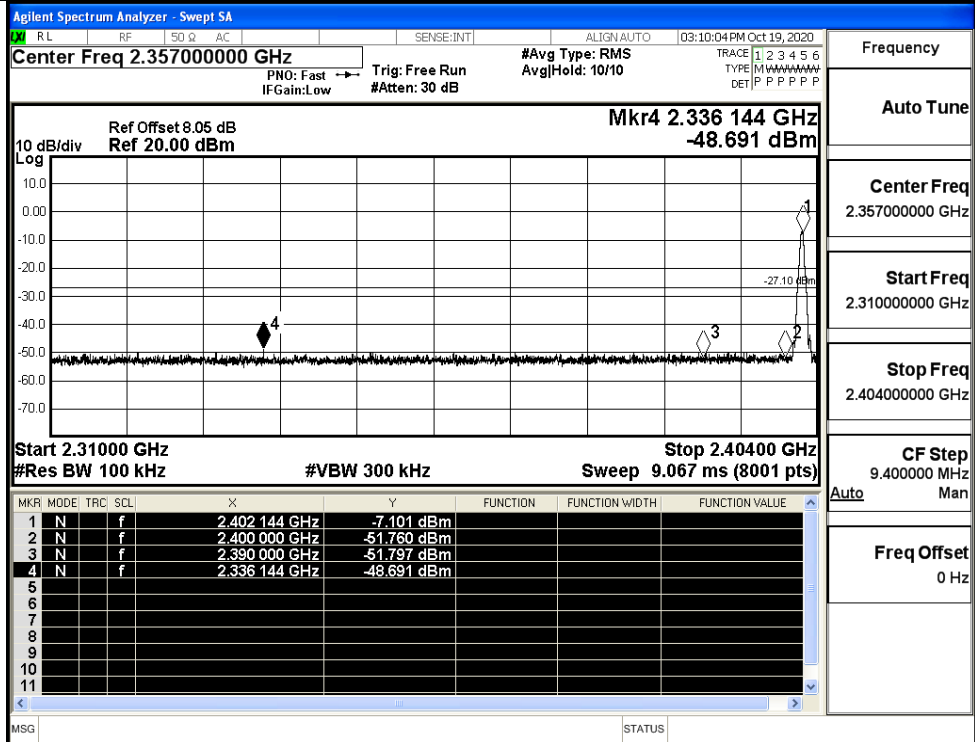


**A.7 Band-edge for RF Conducted Emissions**

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-7.101	Off	-48.691	-27.1	PASS
			-7.034	On	-49.275	-27.03	PASS
	HCH	2480	-10.579	Off	-48.798	-30.58	PASS
			-10.241	On	-48.620	-30.24	PASS

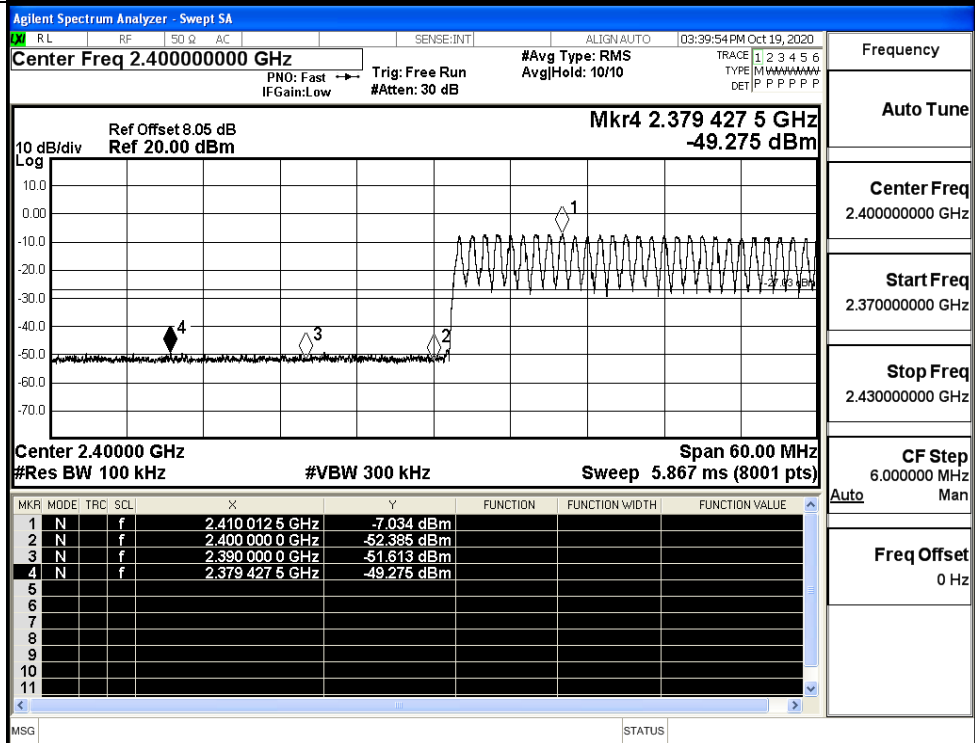
Test Graphs

GFSK/LCH/No Hop



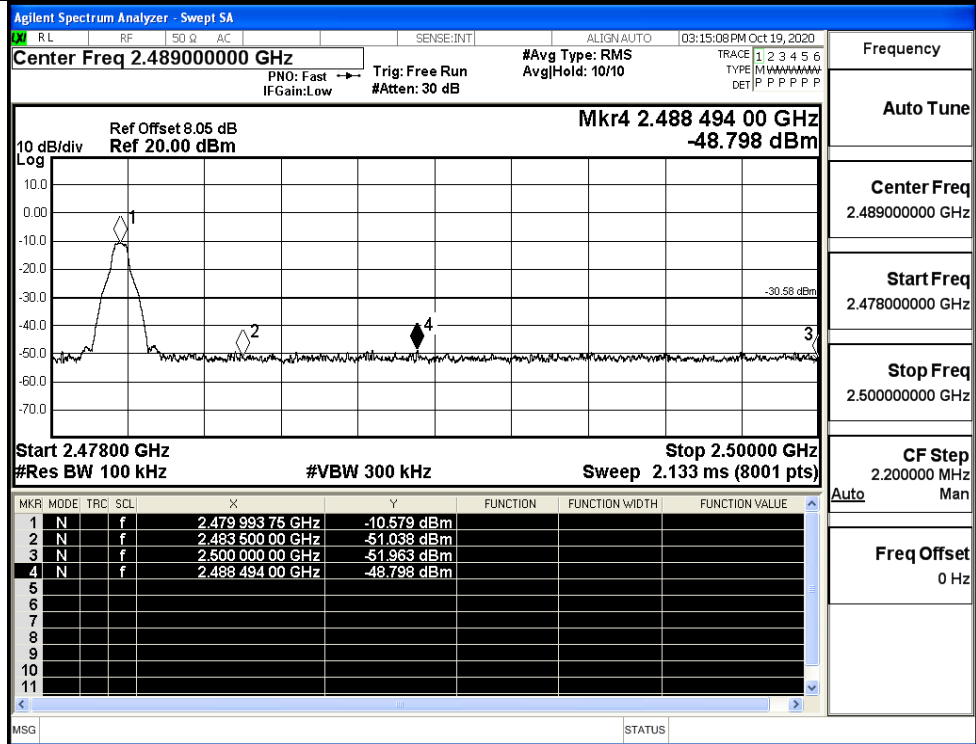
Frequency	Auto Tune
Center Freq	2.35700000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.40400000 GHz
CF Step	9.400000 MHz
Auto	Man
Freq Offset	0 Hz

GFSK/LCH/Hop

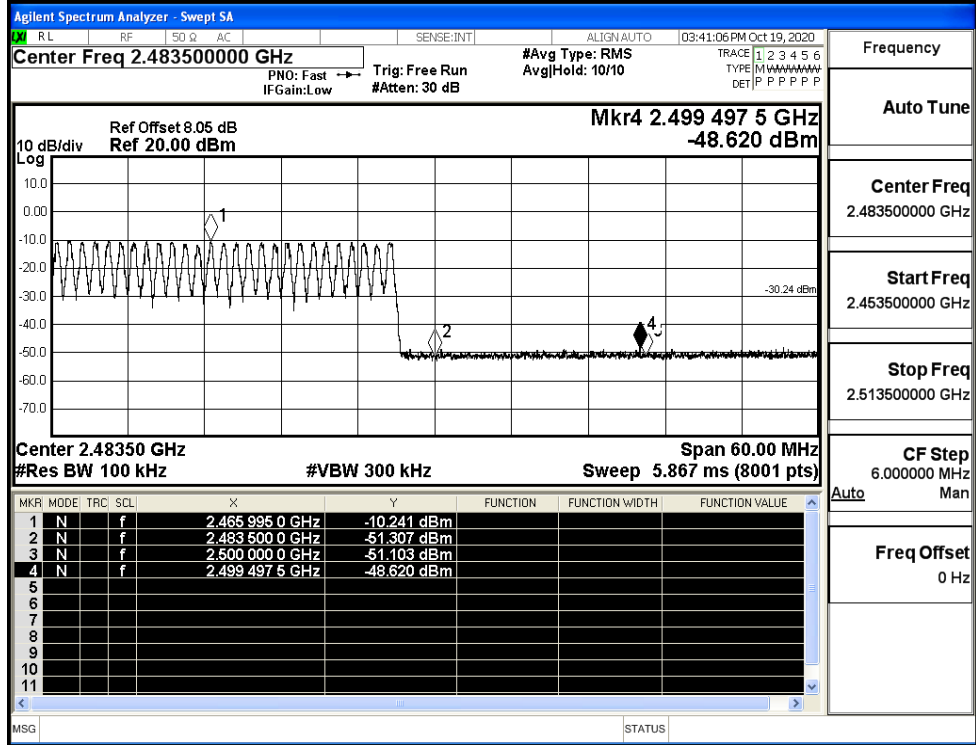


Frequency	Auto Tune
Center Freq	2.40000000 GHz
Start Freq	2.37000000 GHz
Stop Freq	2.43000000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

GFSK/HCH/No Hop



GFSK/HCH/Hop

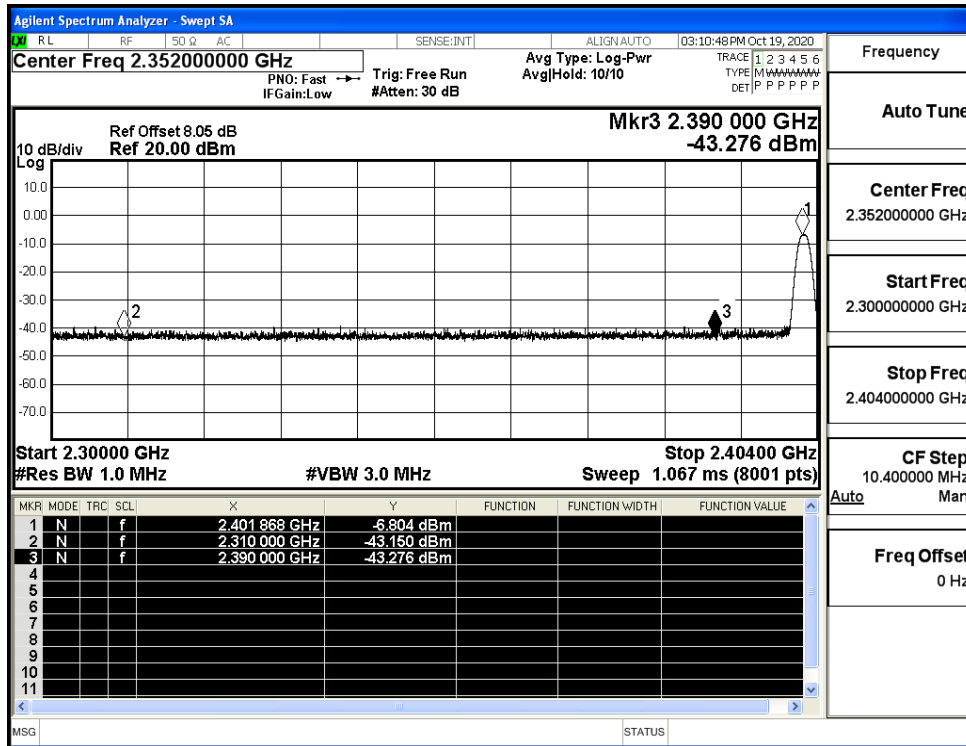




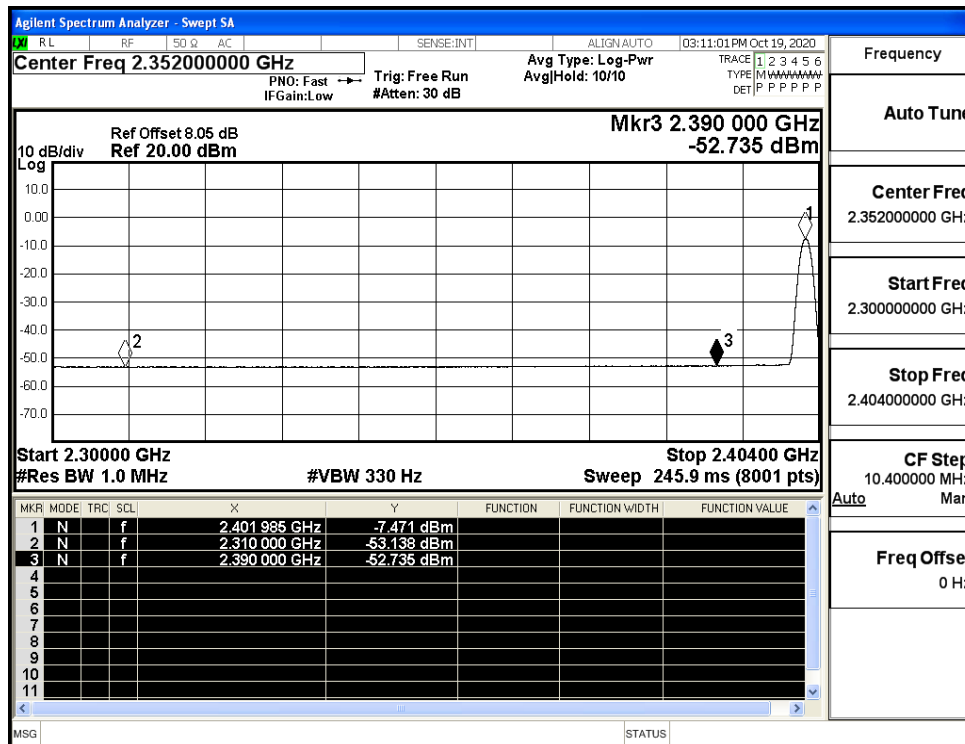
## A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.15	2.0	0	52.11	PEAK	74	PASS
	Off	2310.0	-53.14	2.0	0	42.12	AV	54	PASS
	Off	2390.0	-43.28	2.0	0	51.98	PEAK	74	PASS
	Off	2390.0	-52.74	2.0	0	42.52	AV	54	PASS
	Off	2483.5	-42.94	2.0	0	52.31	PEAK	74	PASS
	Off	2483.5	-52.23	2.0	0	43.03	AV	54	PASS
	Off	2500.0	-41.91	2.0	0	53.35	PEAK	74	PASS
	Off	2500.0	-52.15	2.0	0	43.11	AV	54	PASS

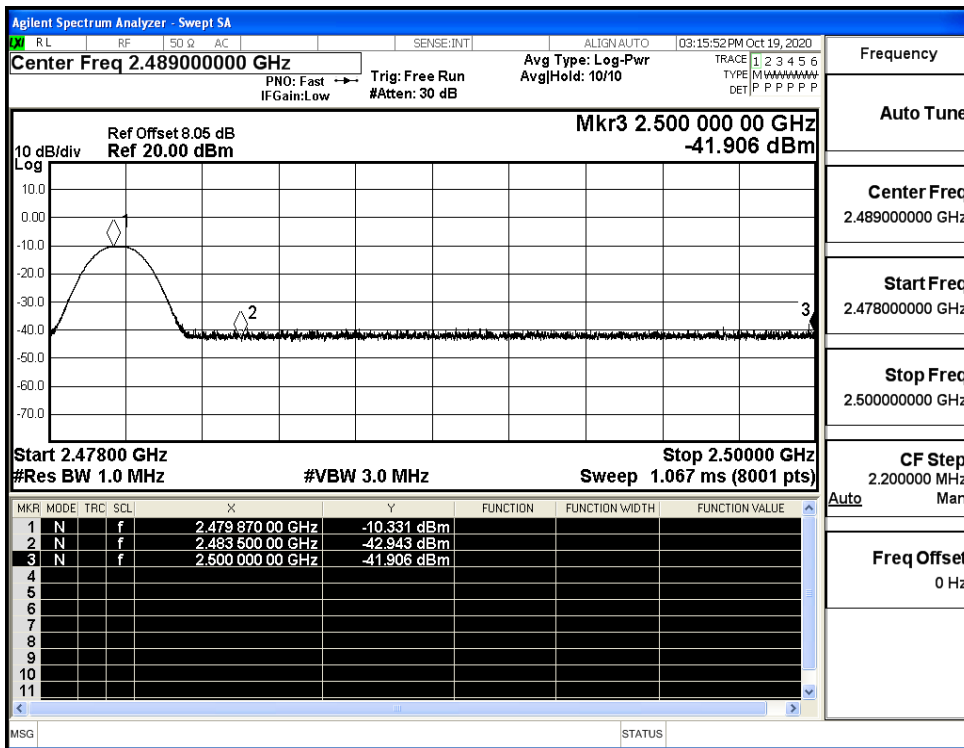
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (Low Channel)



Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (Low Channel)



Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (High Channel)



Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)

