

Appendix A

RF Test Data for BT V5.1(DSS) (Conducted Measurement)

Product Name: BLUETOOTH HEADPHONE

Trade Mark: N/A

Test Model: PDB1077B-HP

Environmental Conditions

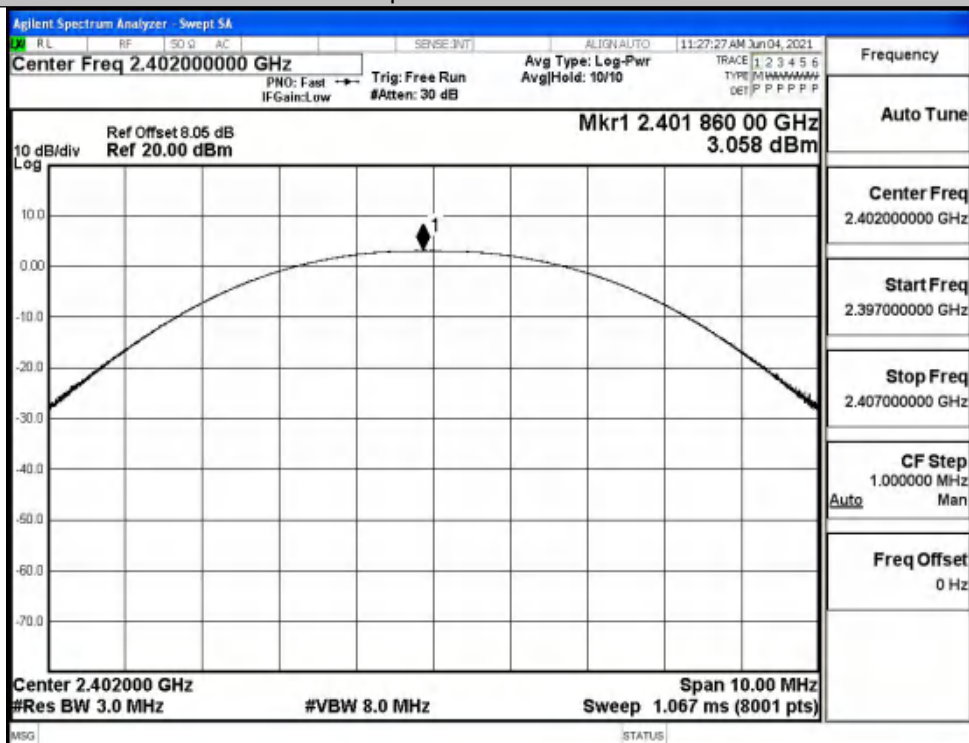
Temperature:	24.3 ° C
Relative Humidity:	52.8%
ATM Pressure:	100.0 kPa
Test Engineer:	Carl Fu
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

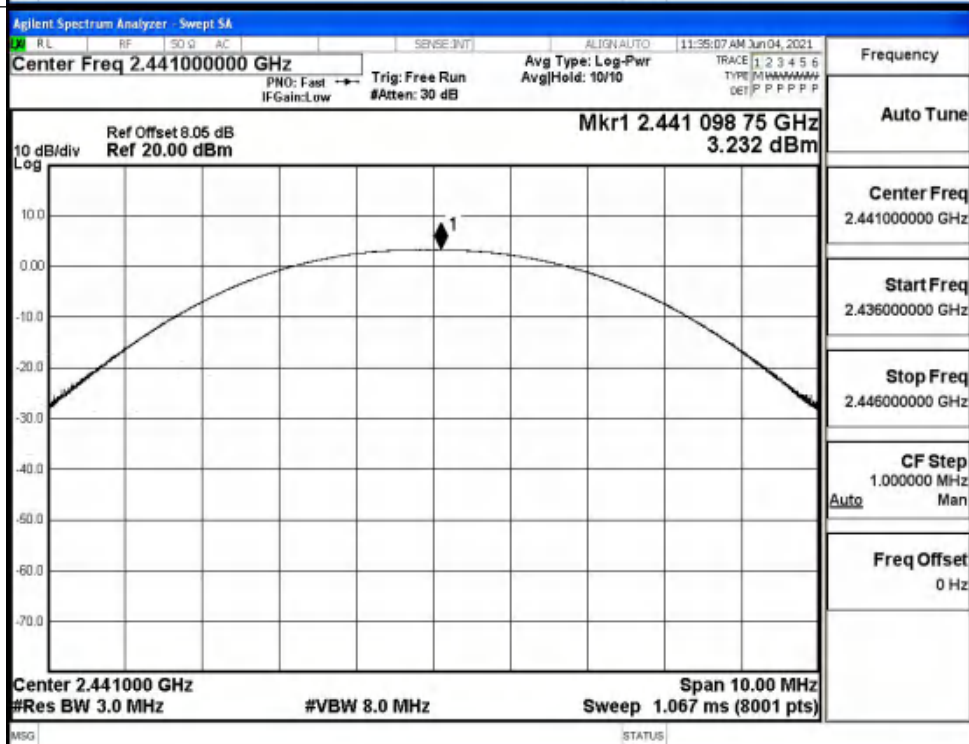
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.058	21	PASS
	MCH	3.232	21	PASS
	HCH	3.678	21	PASS
π/4DQPSK	LCH	5.824	21	PASS
	MCH	6.138	21	PASS
	HCH	6.784	21	PASS

Test Graphs

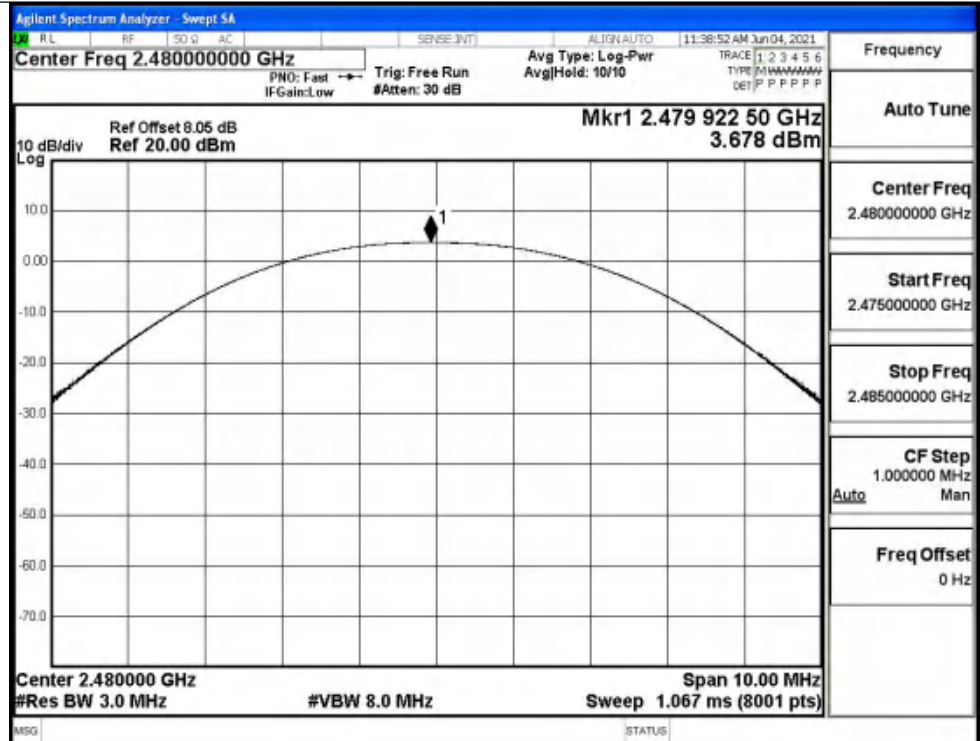
GFSK/LCH



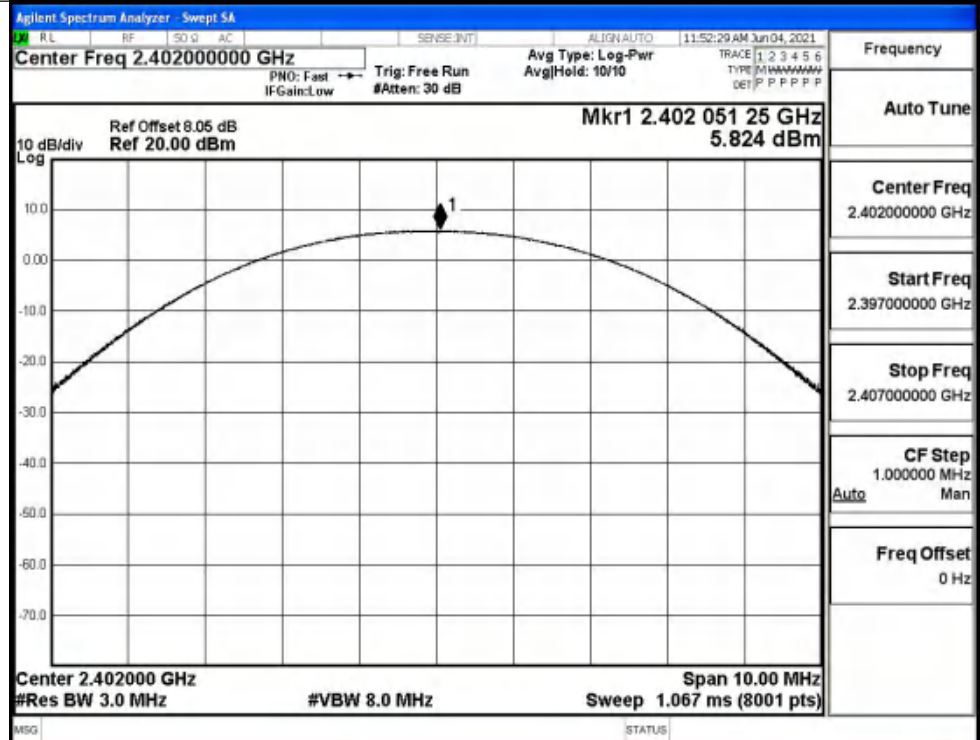
GFSK/MCH

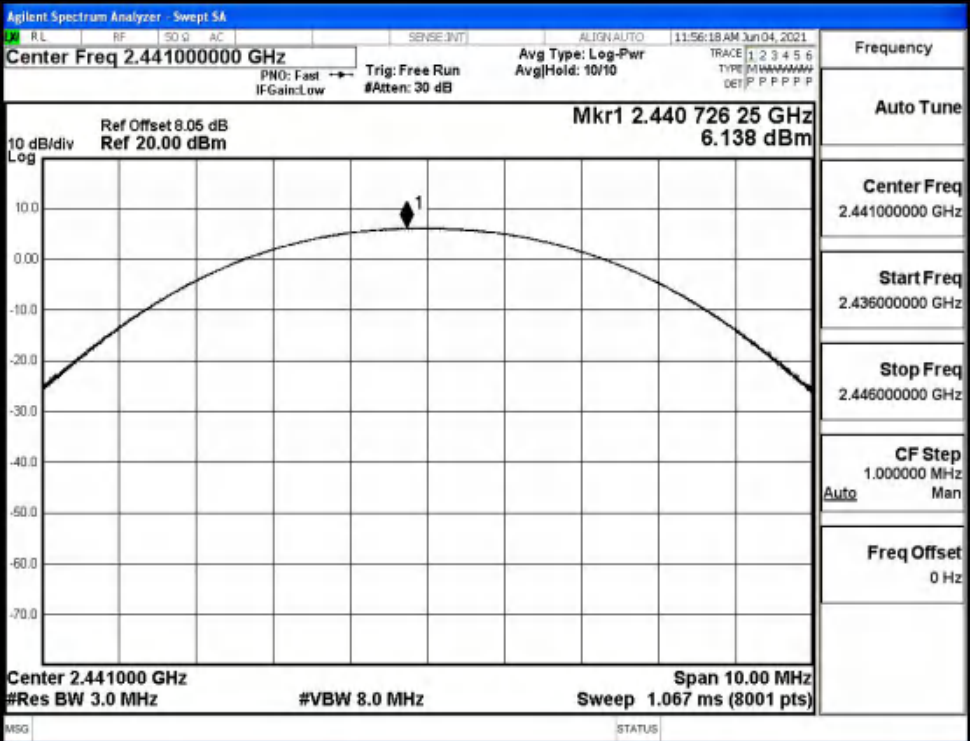
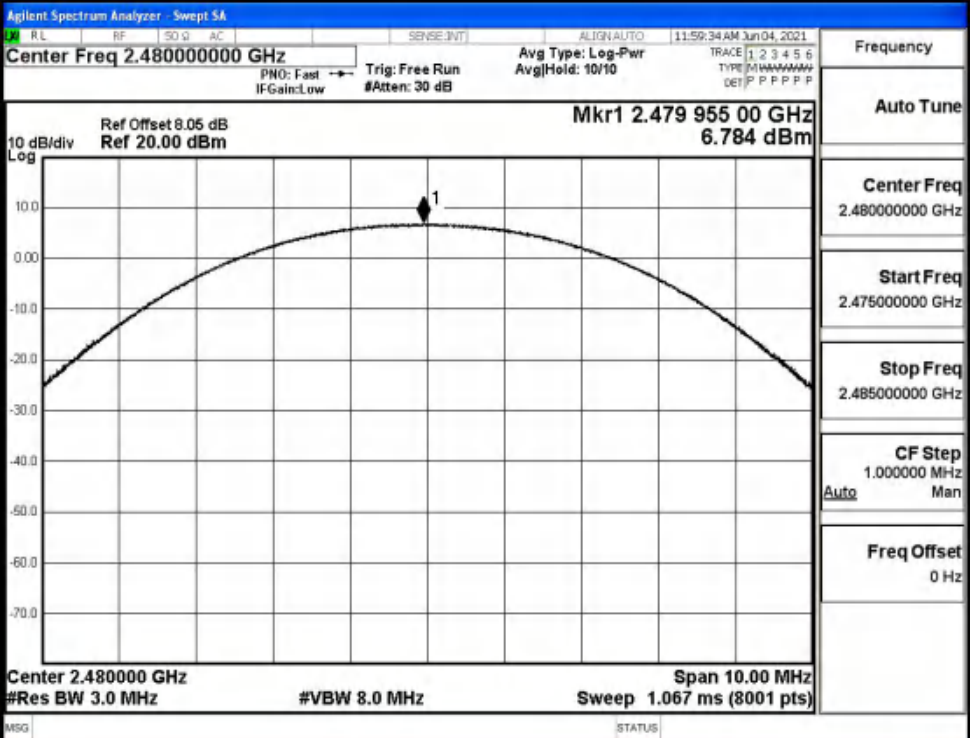


GFSK/HCH



$\pi/4$ DQPSK/LCH



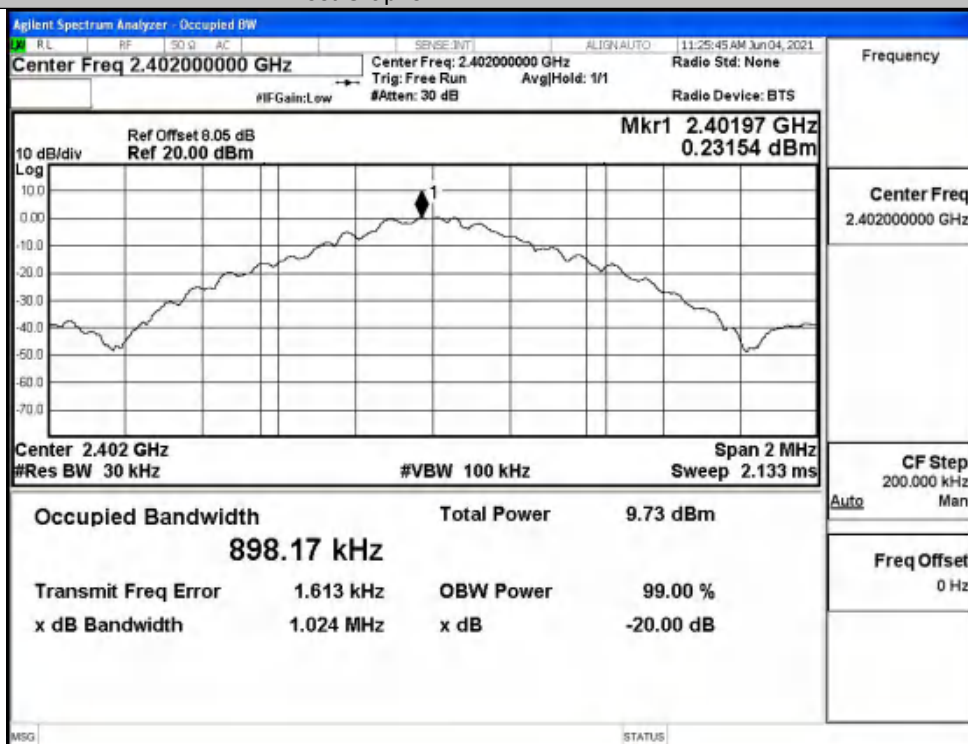
$\pi/4$DQPSK/MCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.441000000 GHz Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.440 726 25 GHz 6.138 dBm 10 dB/div Log Center 2.441000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Sweep 1.067 ms (8001 pts) Span 10.00 MHz Frequency Auto Tune Center Freq 2.441000000 GHz Start Freq 2.436000000 GHz Stop Freq 2.446000000 GHz CF Step 1.000000 MHz Auto Man Freq Offset 0 Hz
$\pi/4$DQPSK/HCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.480000000 GHz Ref Offset 8.05 dB Ref 20.00 dBm Mkr1 2.479 955 00 GHz 6.784 dBm 10 dB/div Log Center 2.480000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Sweep 1.067 ms (8001 pts) Span 10.00 MHz Frequency Auto Tune Center Freq 2.480000000 GHz Start Freq 2.475000000 GHz Stop Freq 2.485000000 GHz CF Step 1.000000 MHz Auto Man Freq Offset 0 Hz

A.2 20dB Bandwidth

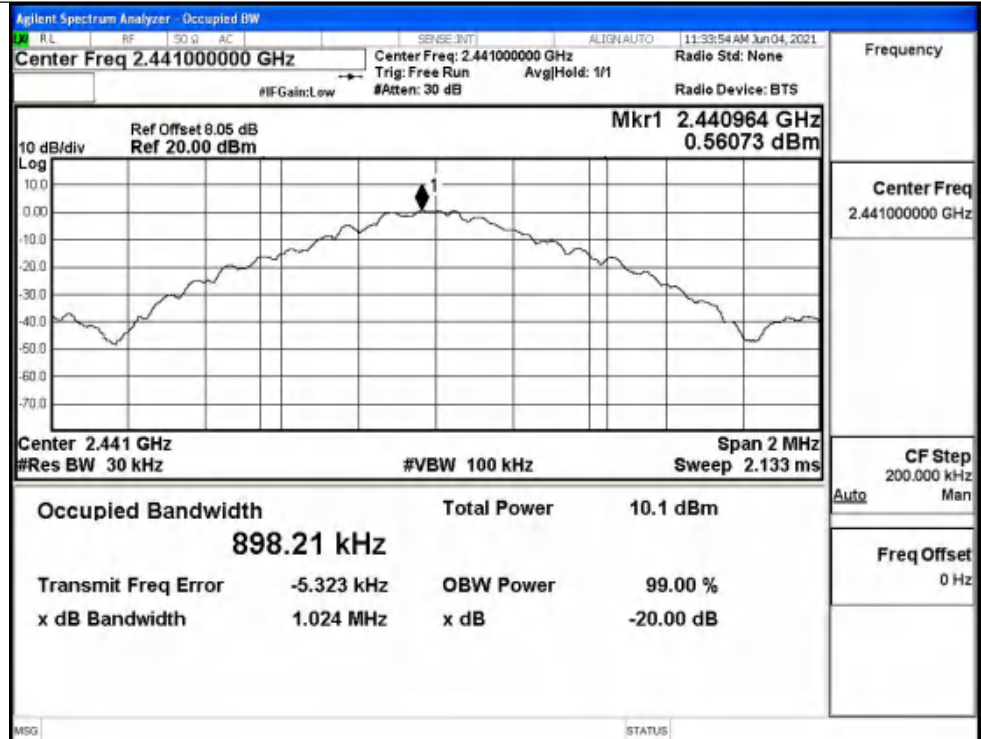
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.024	Not Specified	PASS
	MCH	1.024	Not Specified	PASS
	HCH	1.027	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.371	Not Specified	PASS
	MCH	1.371	Not Specified	PASS
	HCH	1.370	Not Specified	PASS

Test Graphs

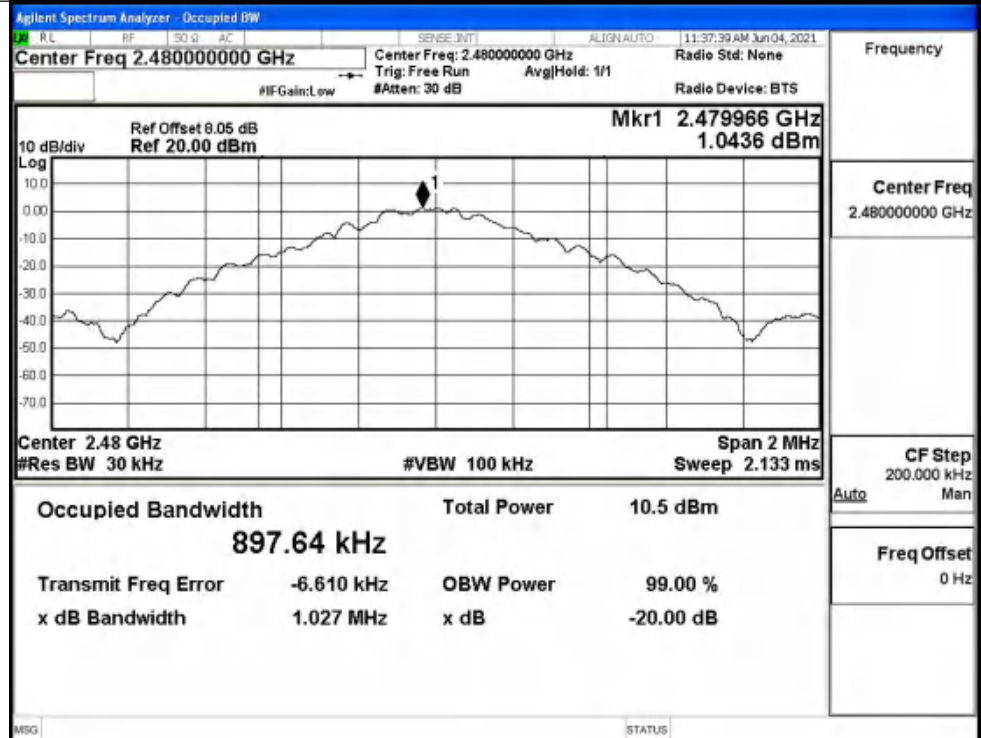
GFSK/LCH



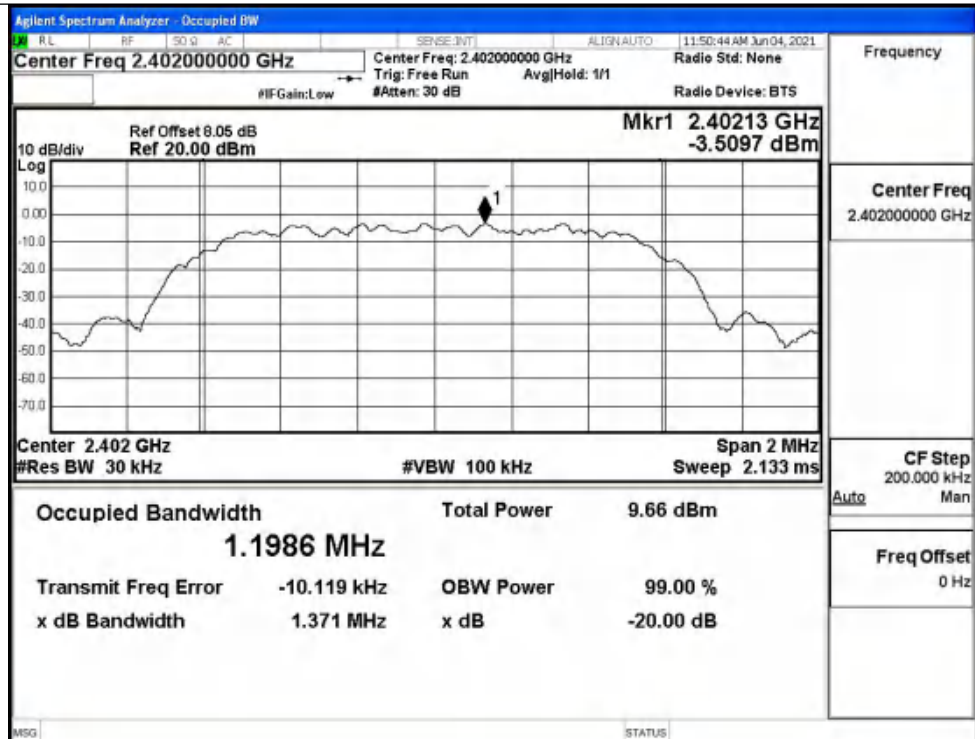
GFSK/MCH



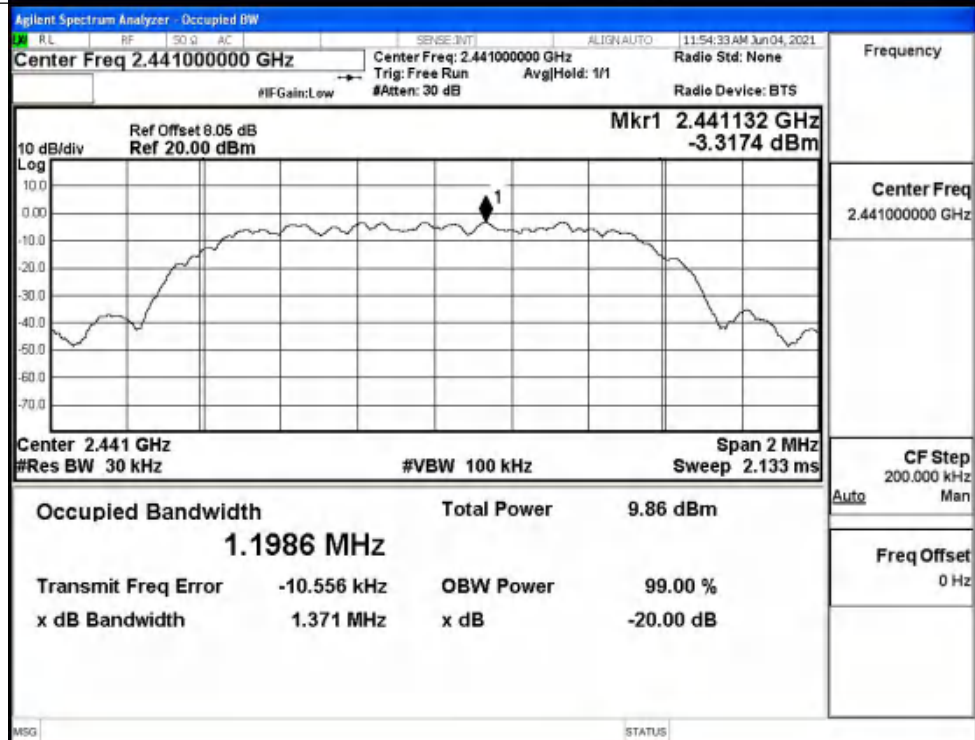
GFSK/HCH



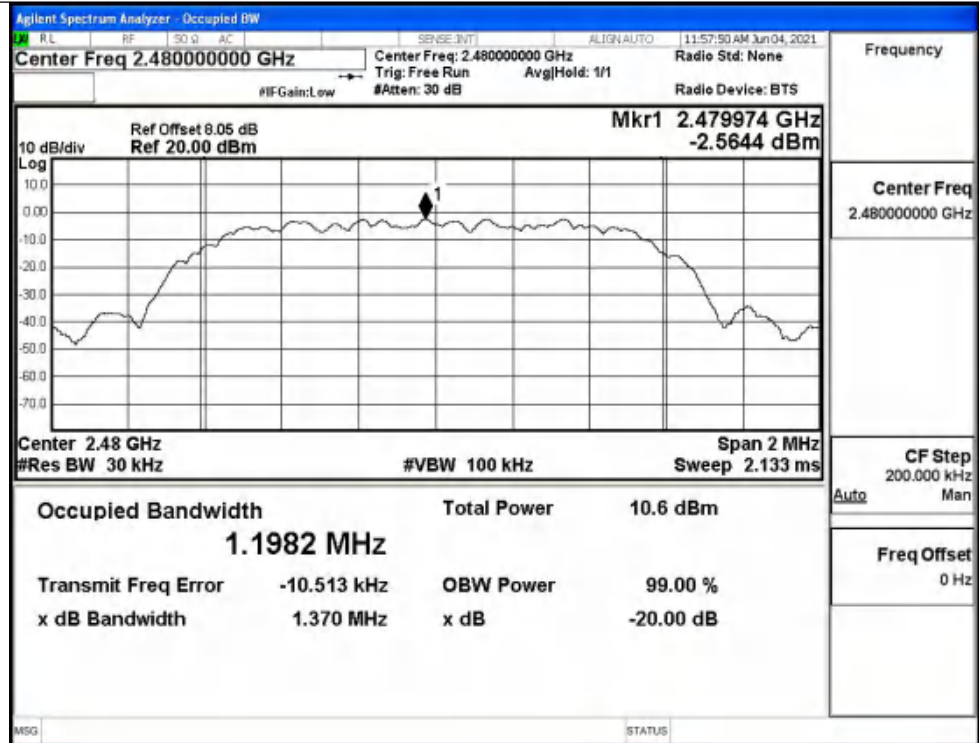
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

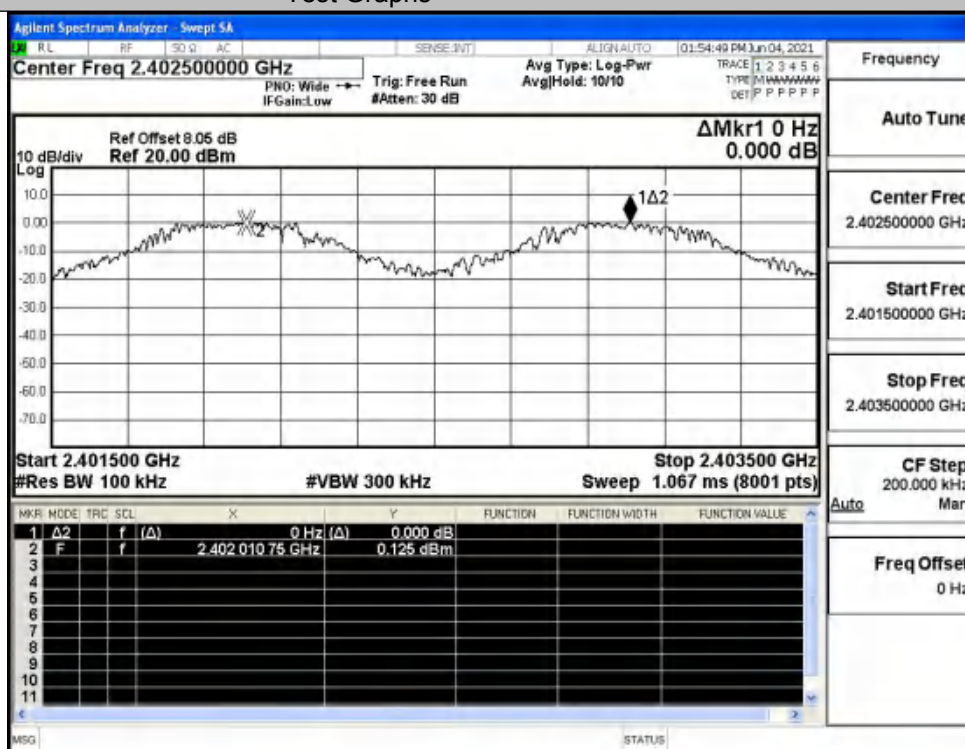


A.3 Carrier Frequency Separation

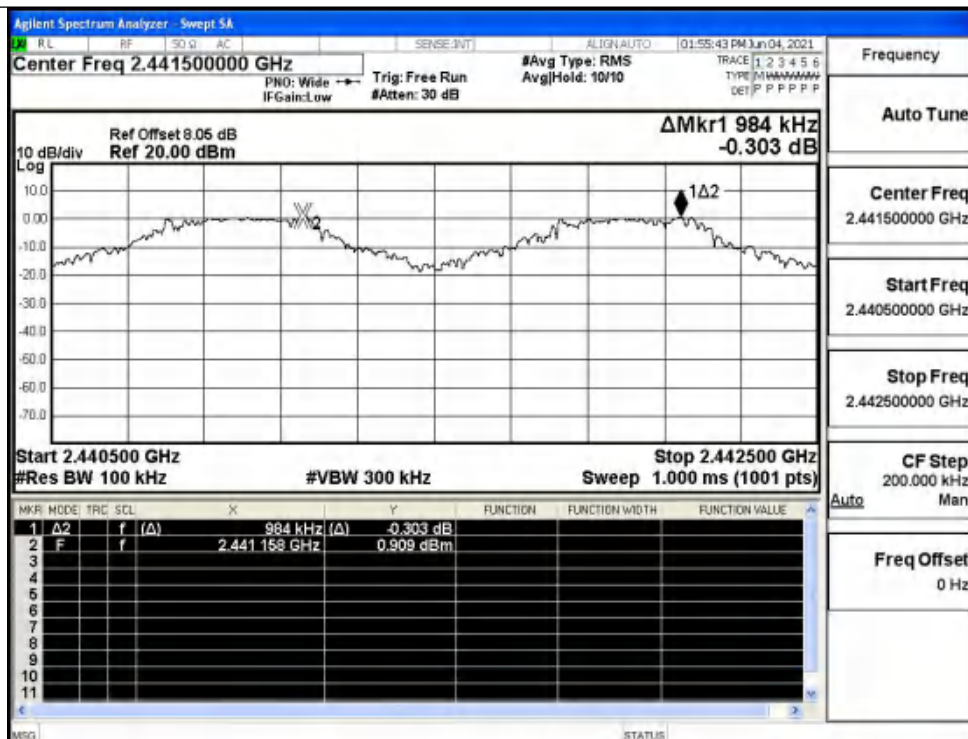
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.998	0.685	PASS
	MCH	0.984	0.685	PASS
	HCH	0.966	0.685	PASS
$\pi/4$ DQPSK	LCH	1.342	0.914	PASS
	MCH	1.084	0.914	PASS
	HCH	1.104	0.914	PASS

Test Graphs

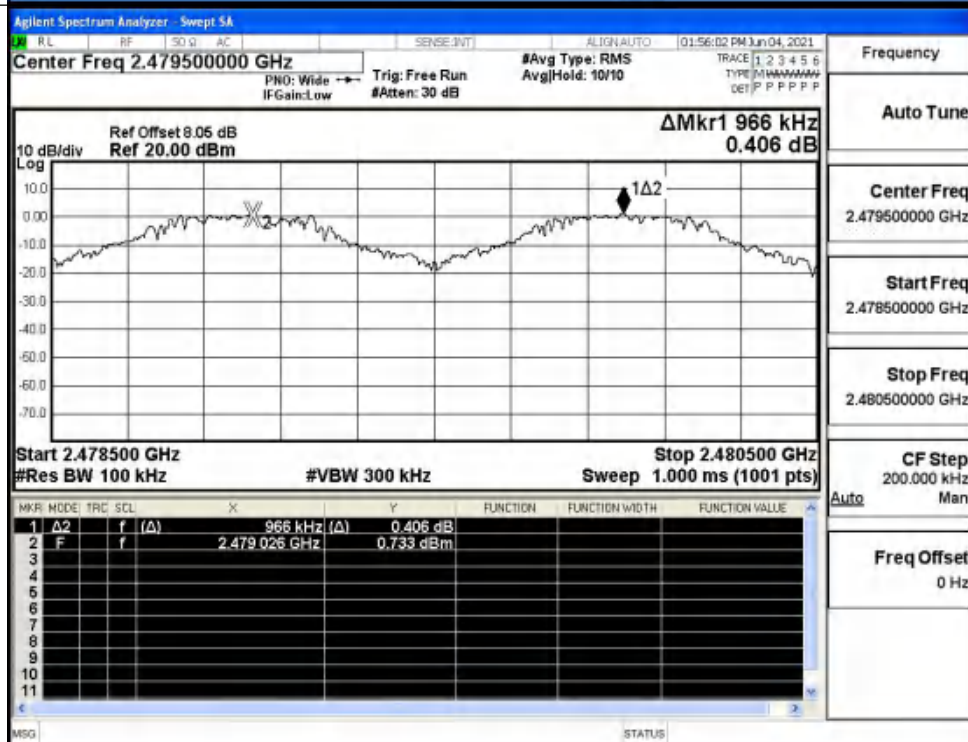
GFSK/LCH



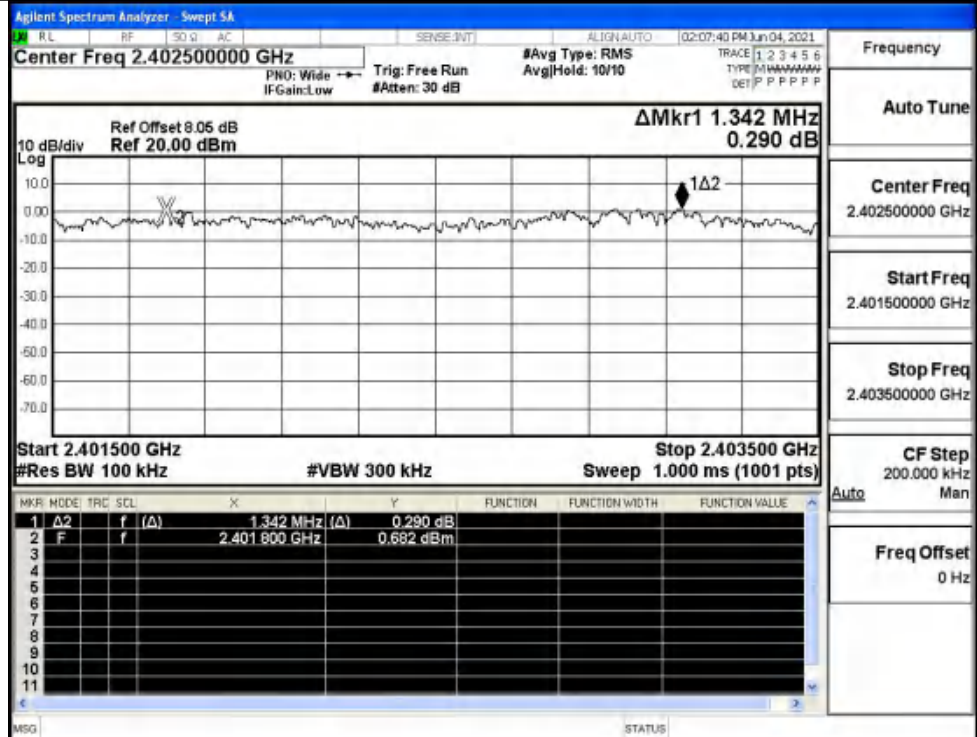
GFSK/MCH



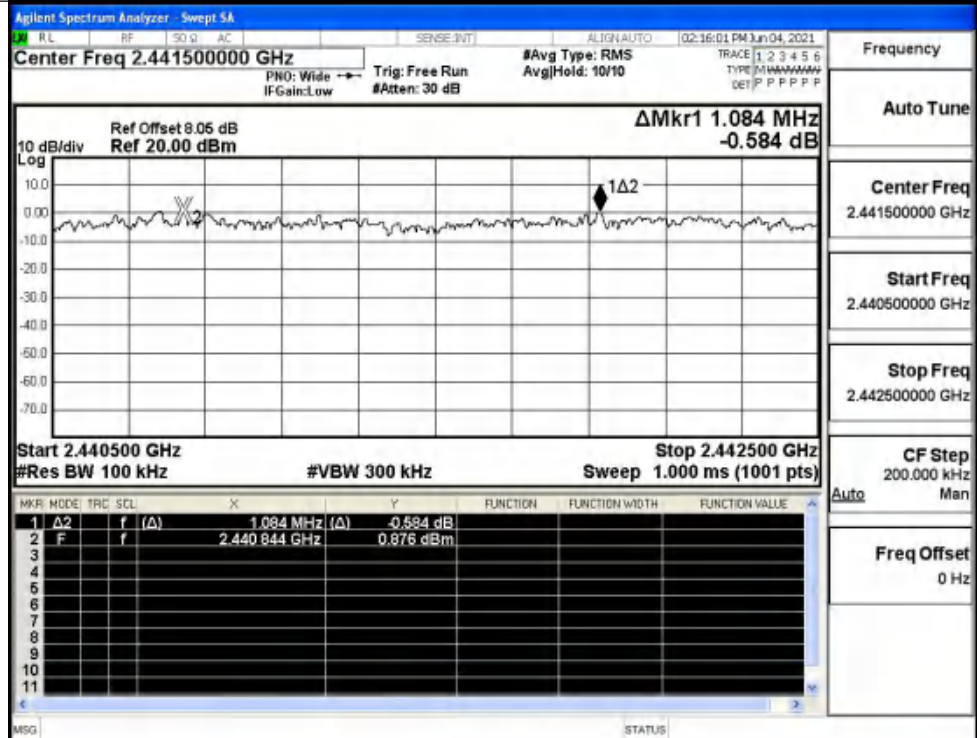
GFSK/HCH



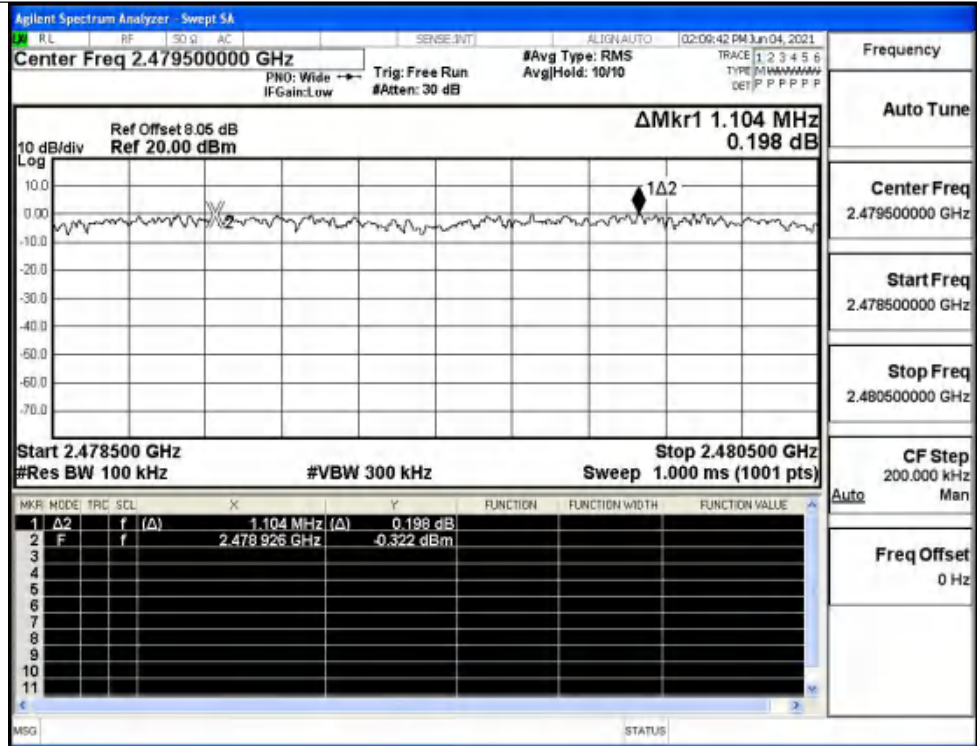
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

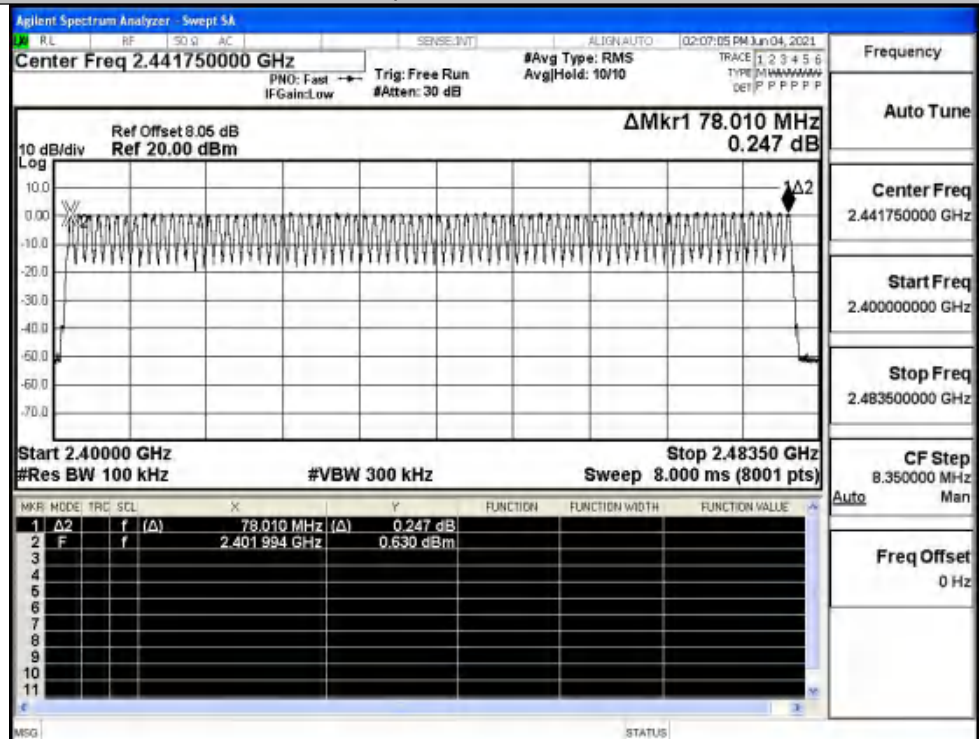


A.4 Hopping Channel Number

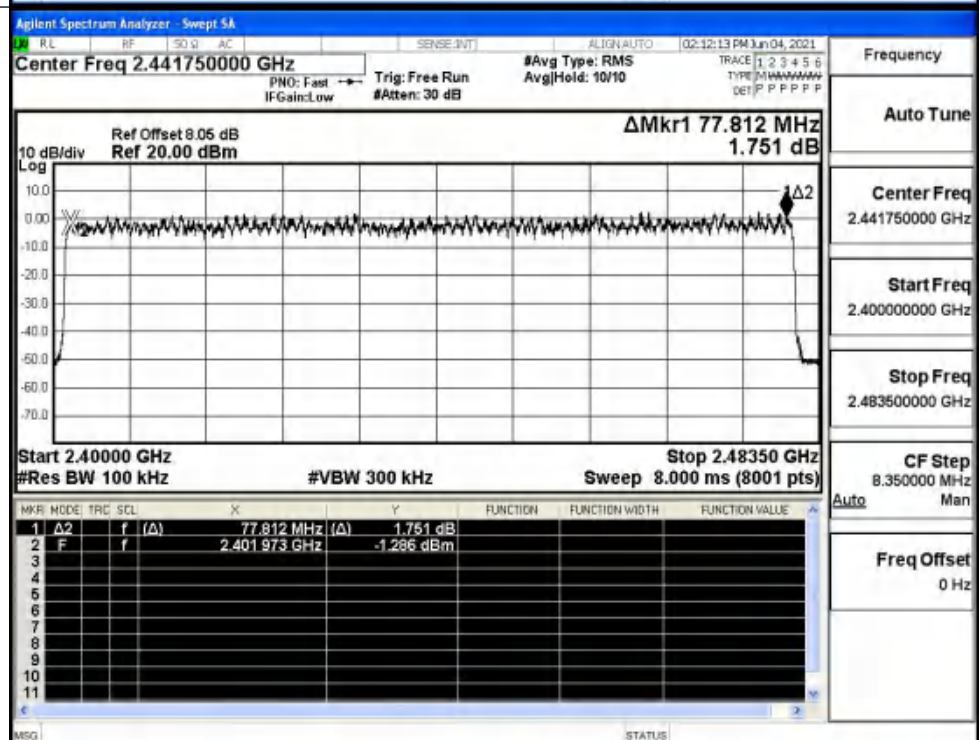
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop



$\pi/4$ DQPSK/Hop

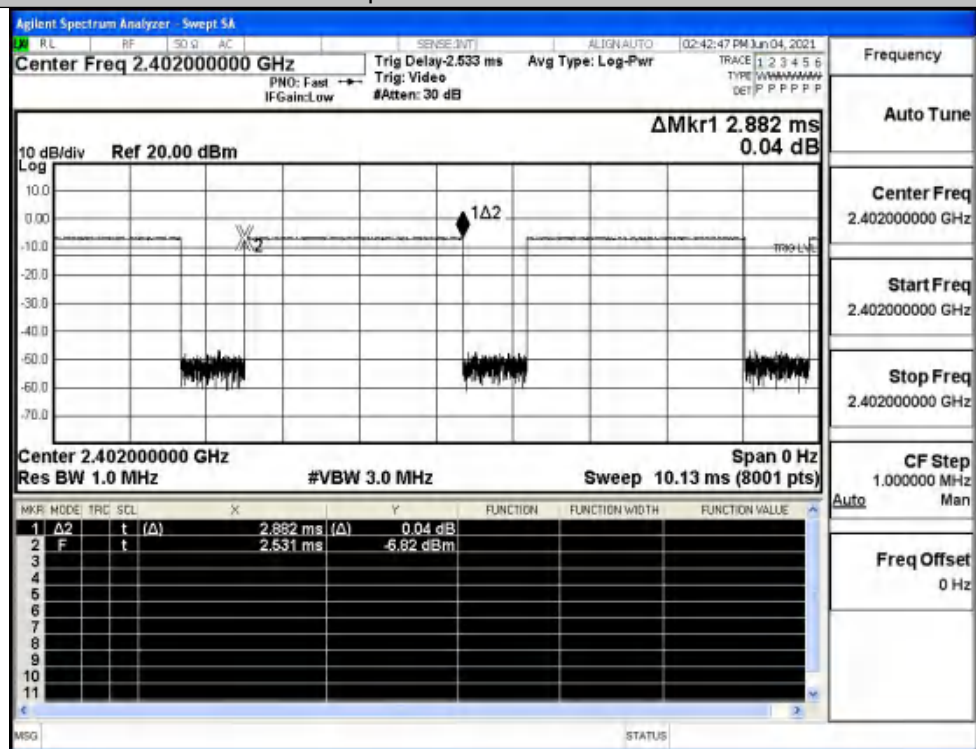


A.5 Dwell Time

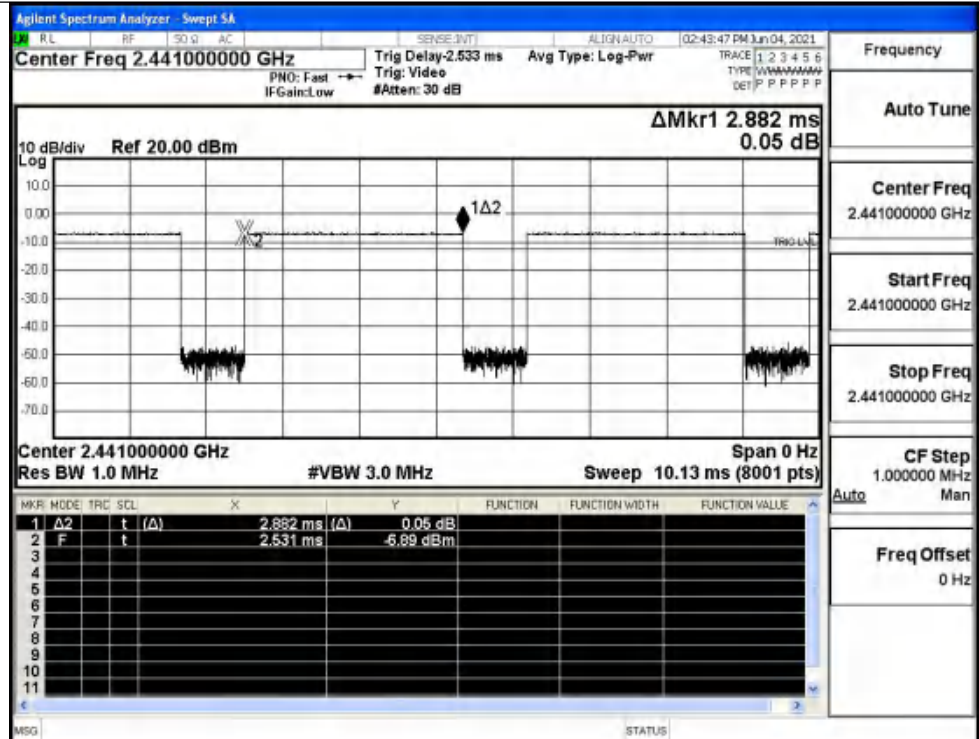
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.308	0.4	PASS

Test Graphs

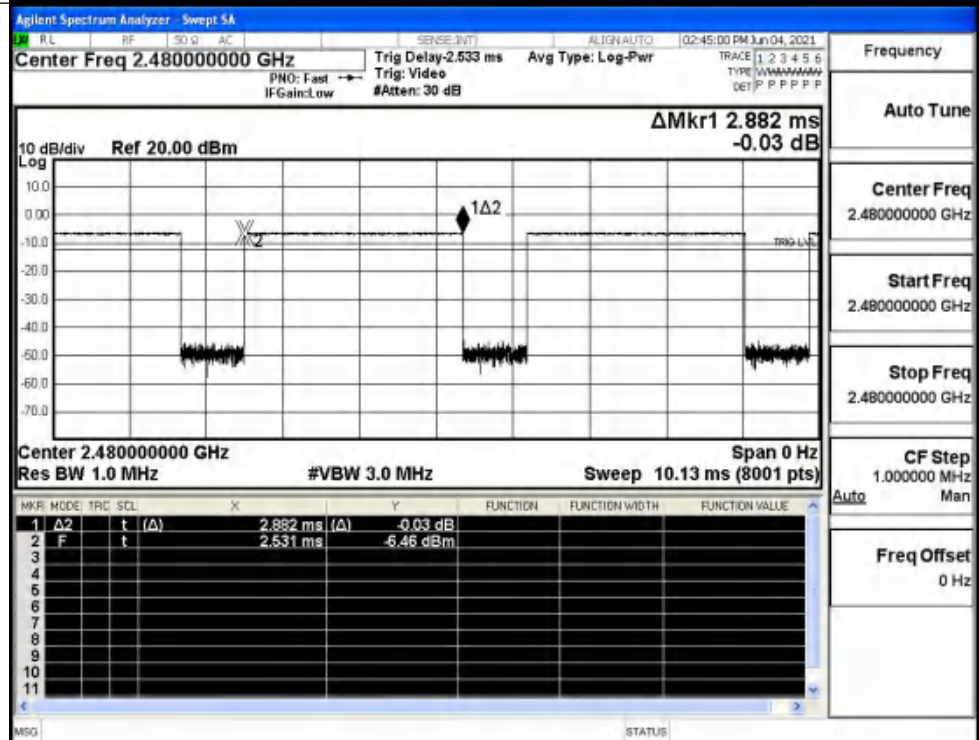
GFSK_DH5/LCH



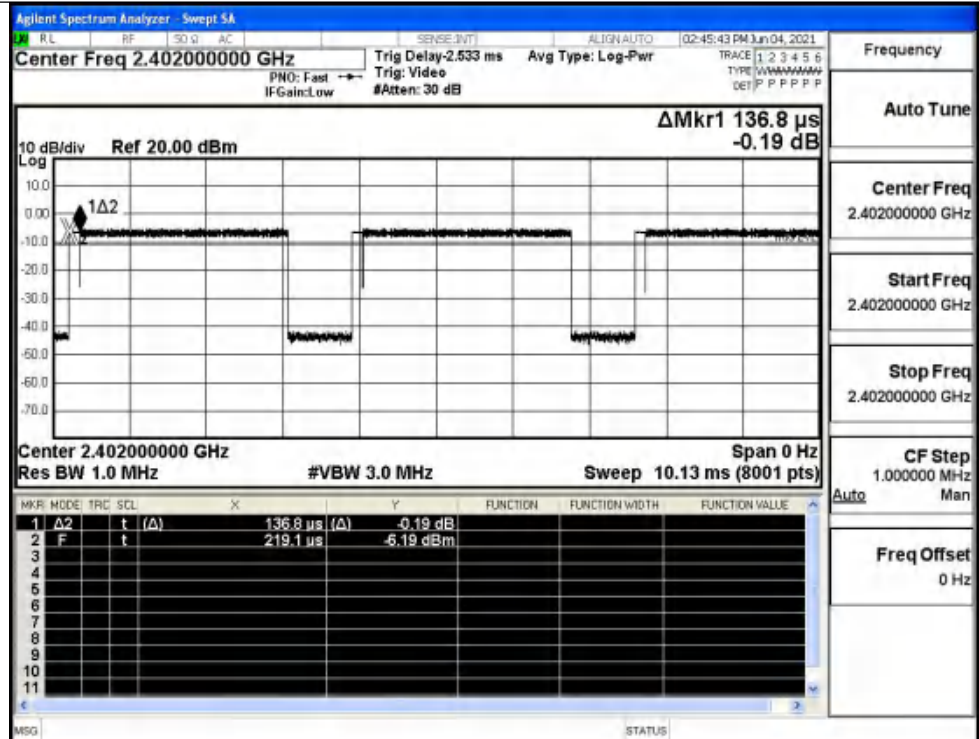
GFSK_DH5/MCH



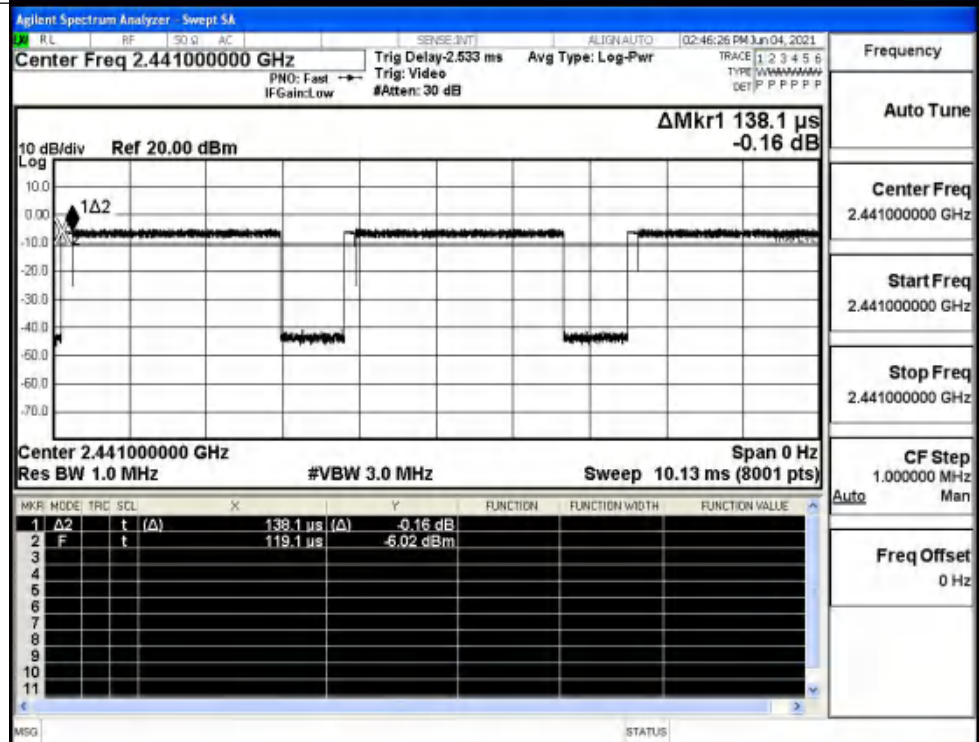
GFSK_DH5/HCH



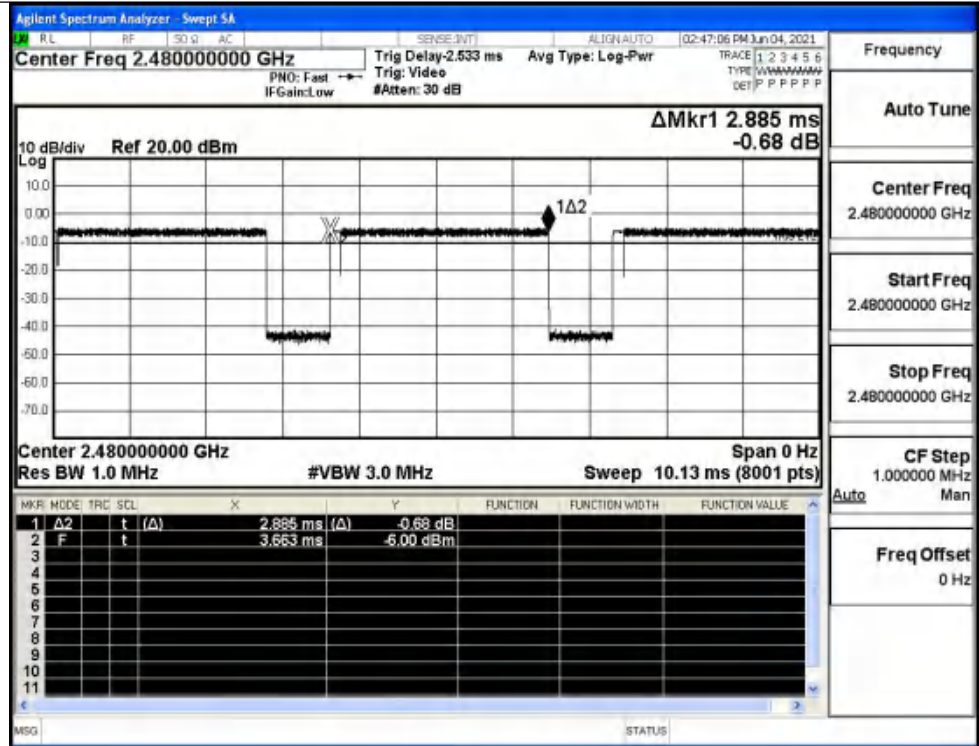
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



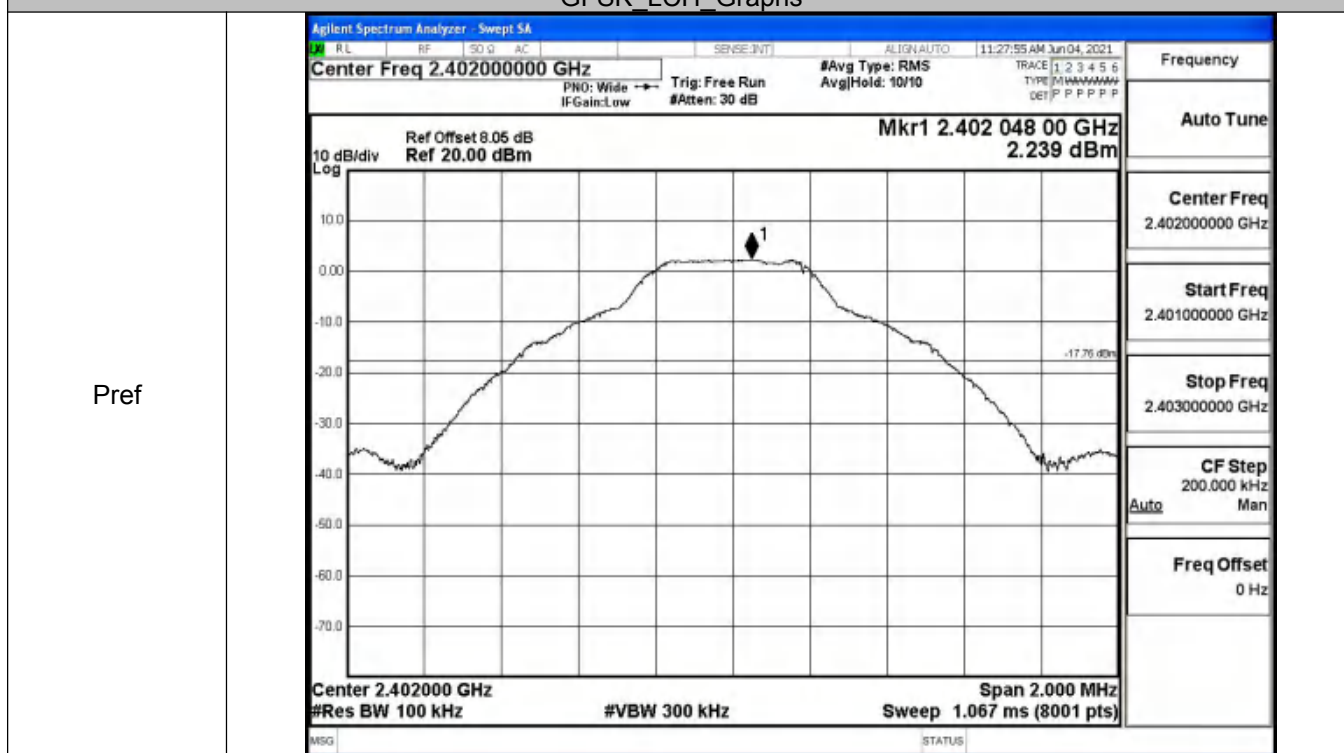
$\pi/4$ DQPSK
_2DH5/HCH



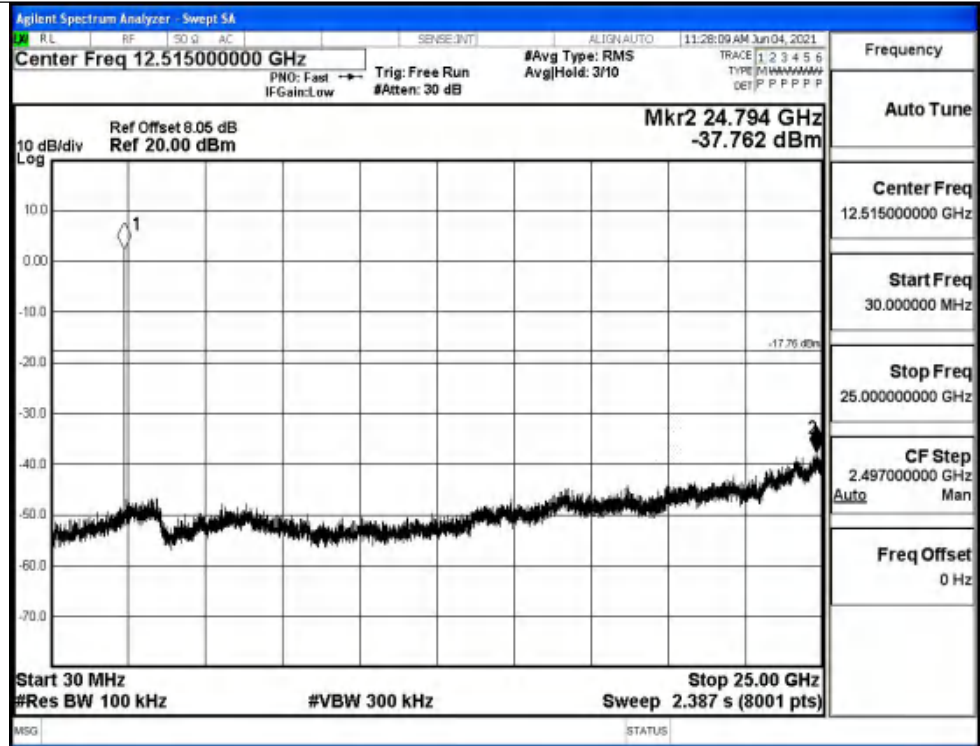
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.239	-37.762	-17.761	PASS
	MCH	2.444	-37.825	-17.556	PASS
	HCH	2.923	-38.148	-17.077	PASS
$\pi/4$ DQPSK	LCH	1.427	-37.486	-18.573	PASS
	MCH	1.227	-38.144	-18.773	PASS
	HCH	1.974	-38.006	-18.026	PASS

GFSK_LCH_Graphs

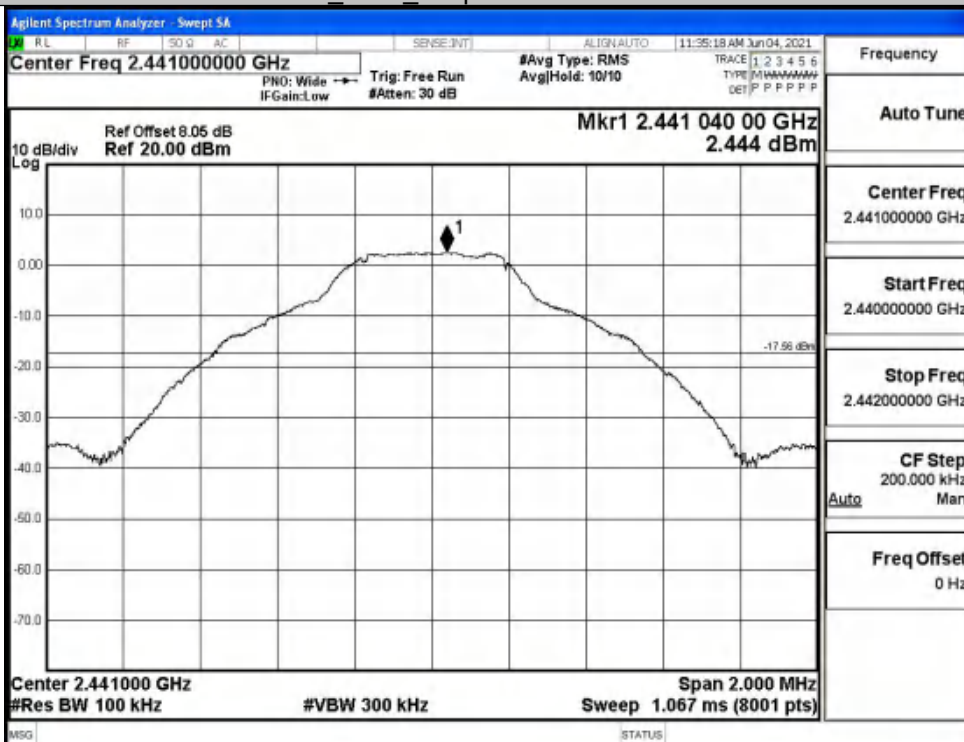


Puw

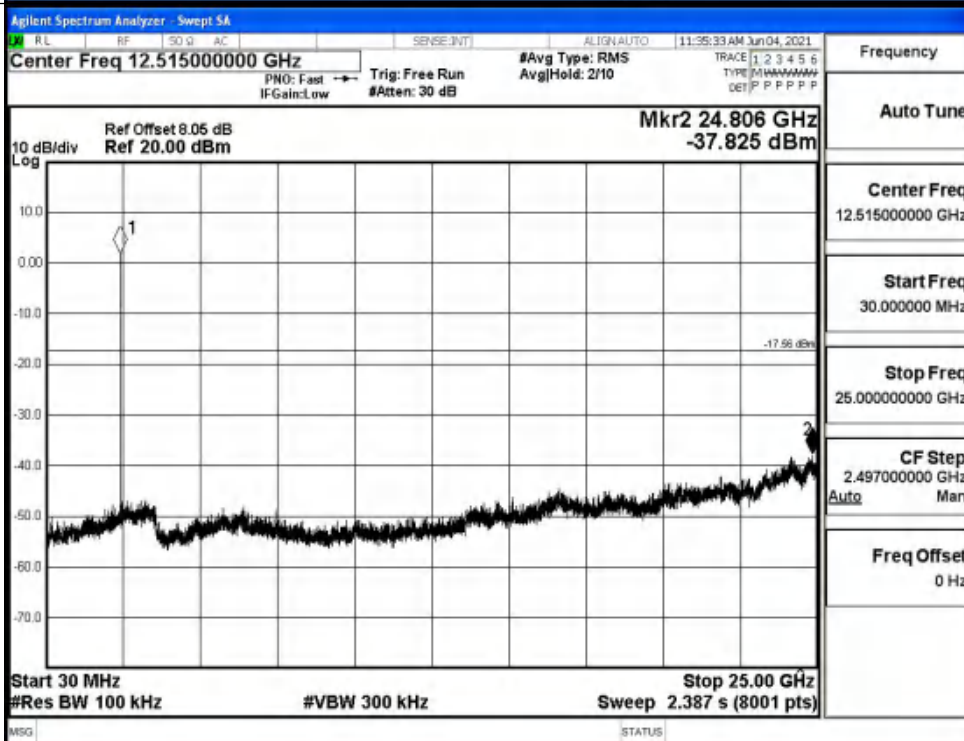


GFSK_MCH_Graphs

Pref

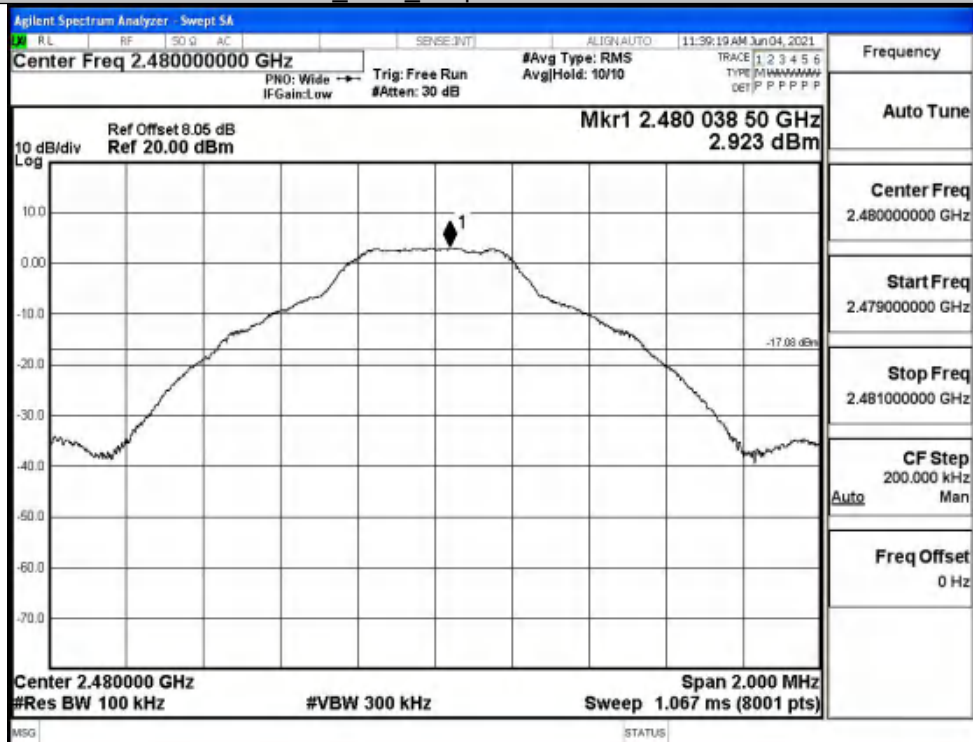


Puw

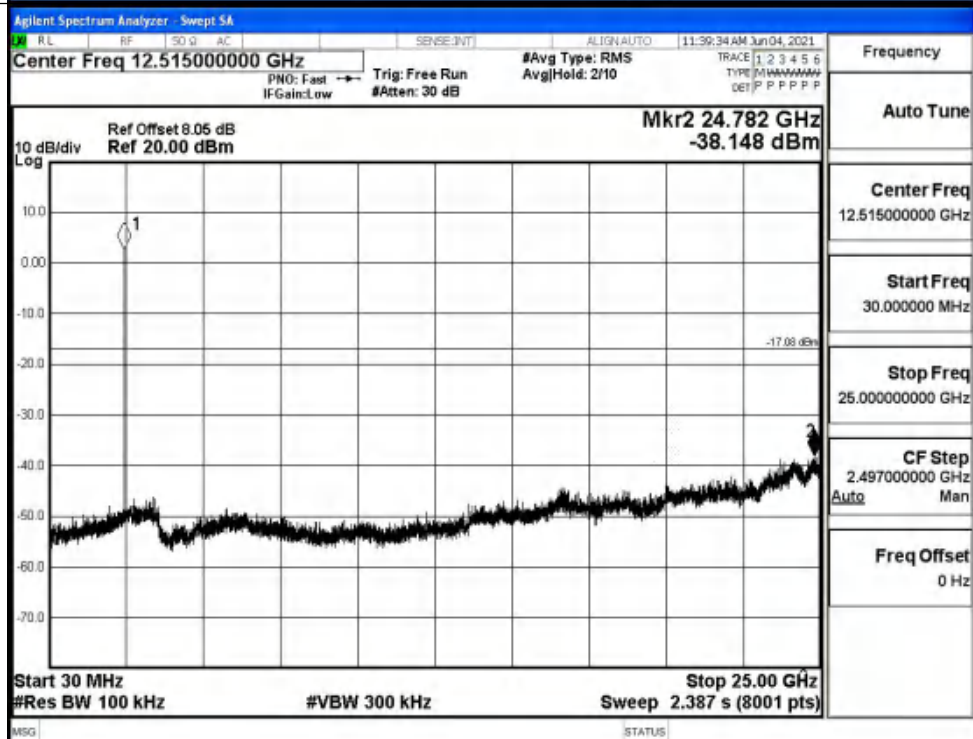


GFSK_HCH_Graphs

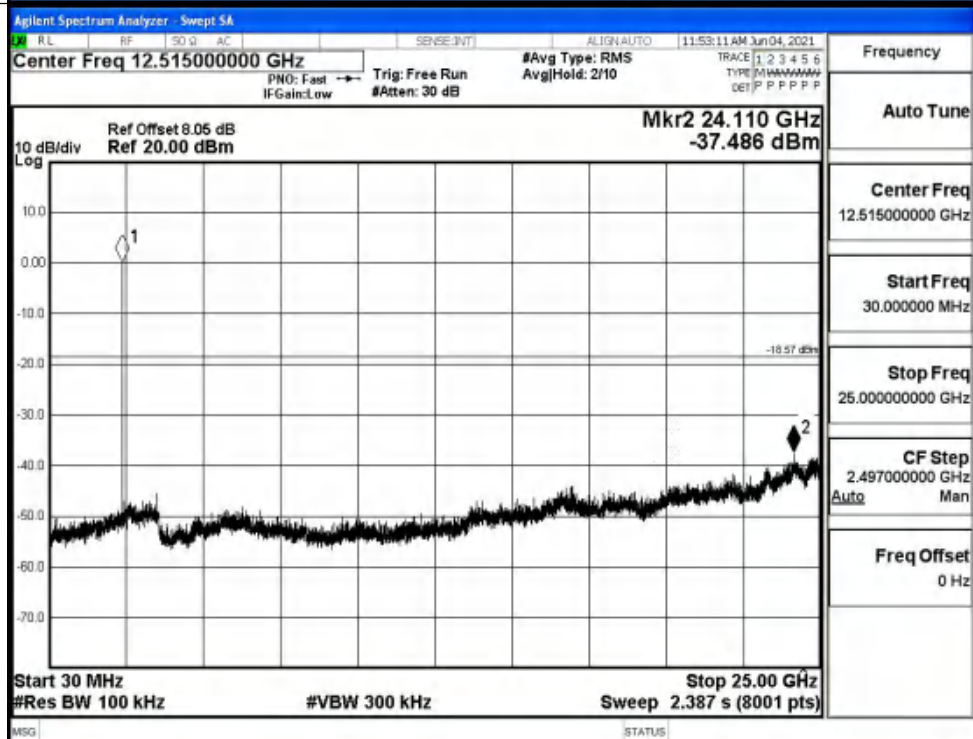
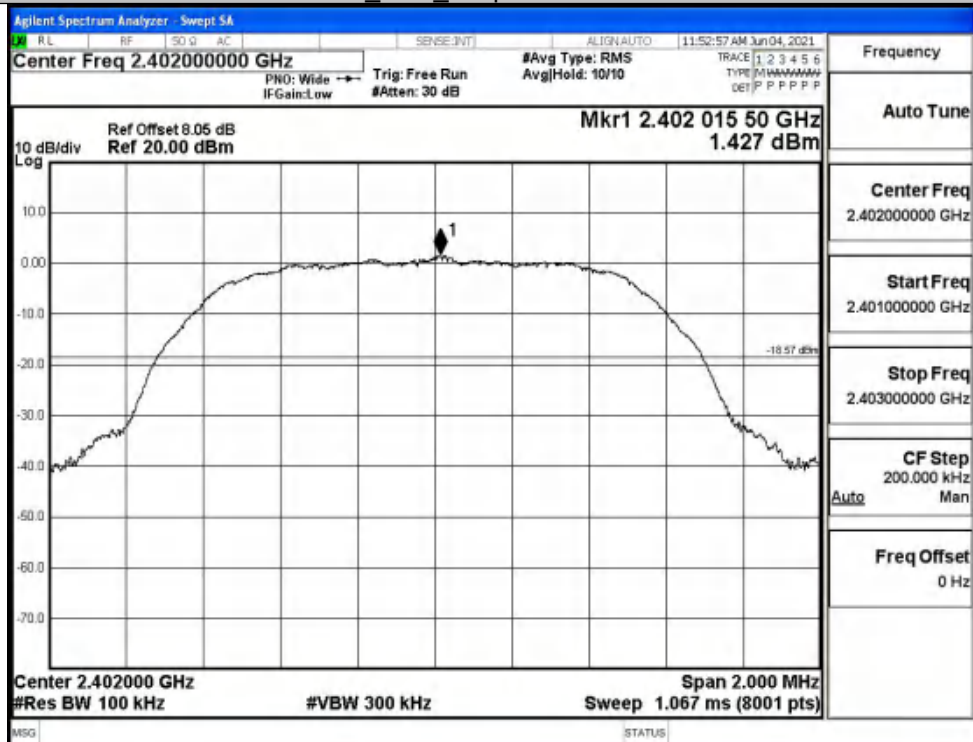
Pref



Puw

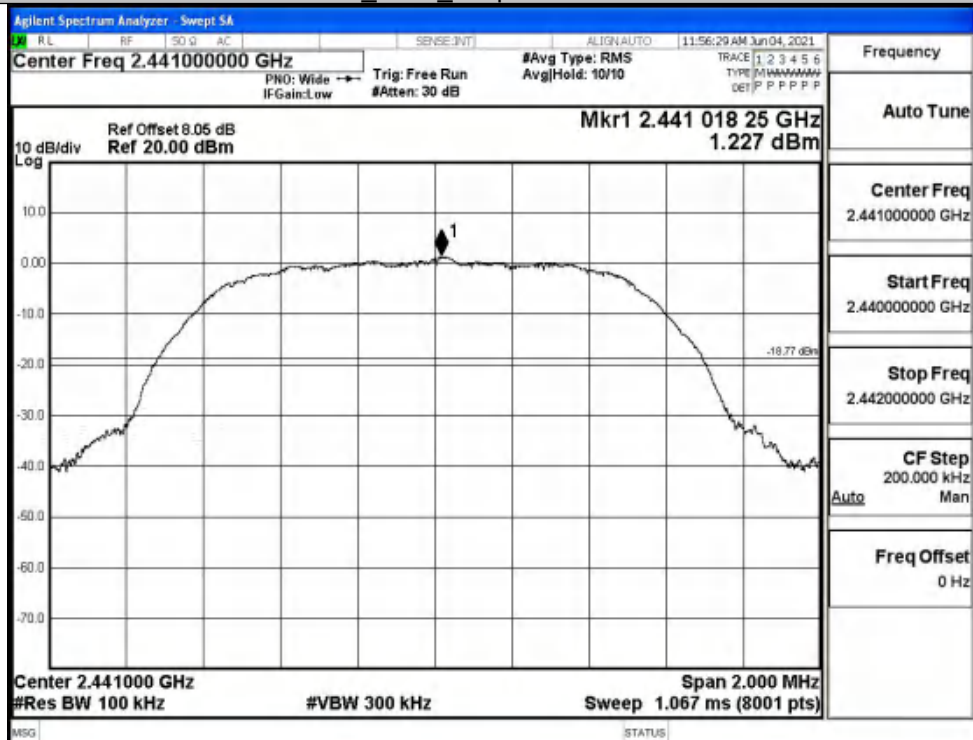


$\pi/4$ DQPSK_LCH_Graphs



$\pi/4$ DQPSK_MCH_Graphs

Pref

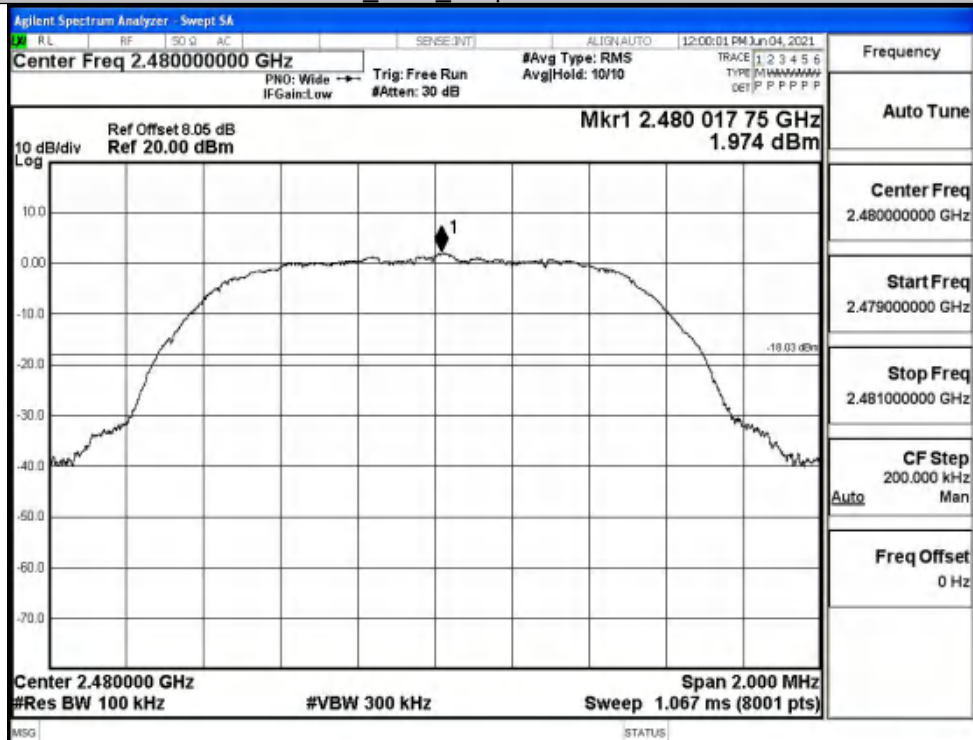


Puw

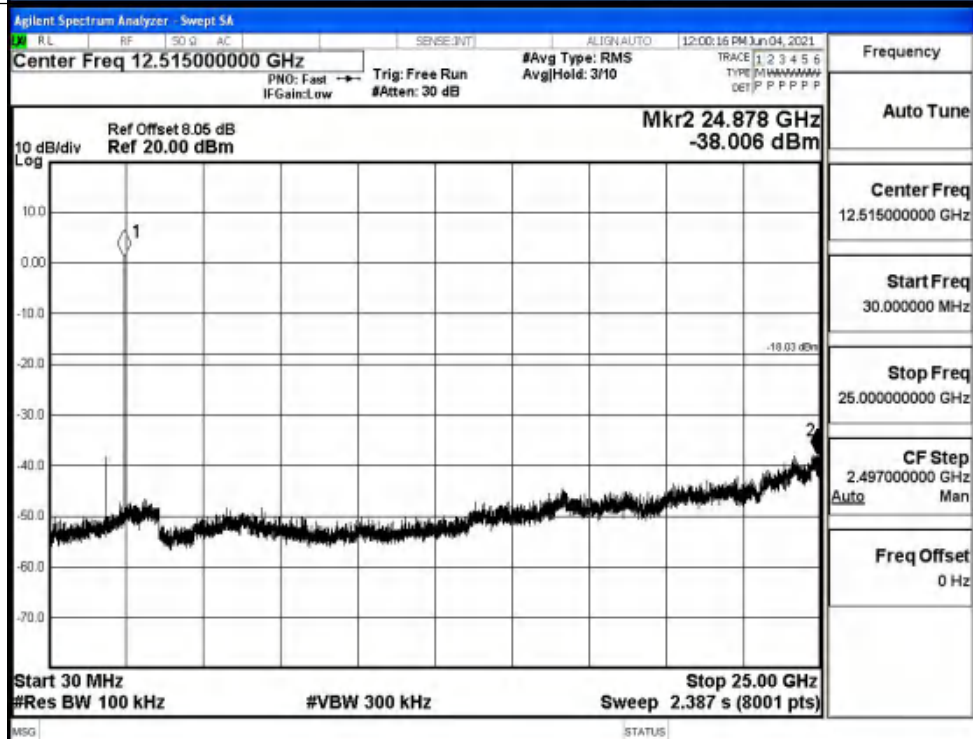


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

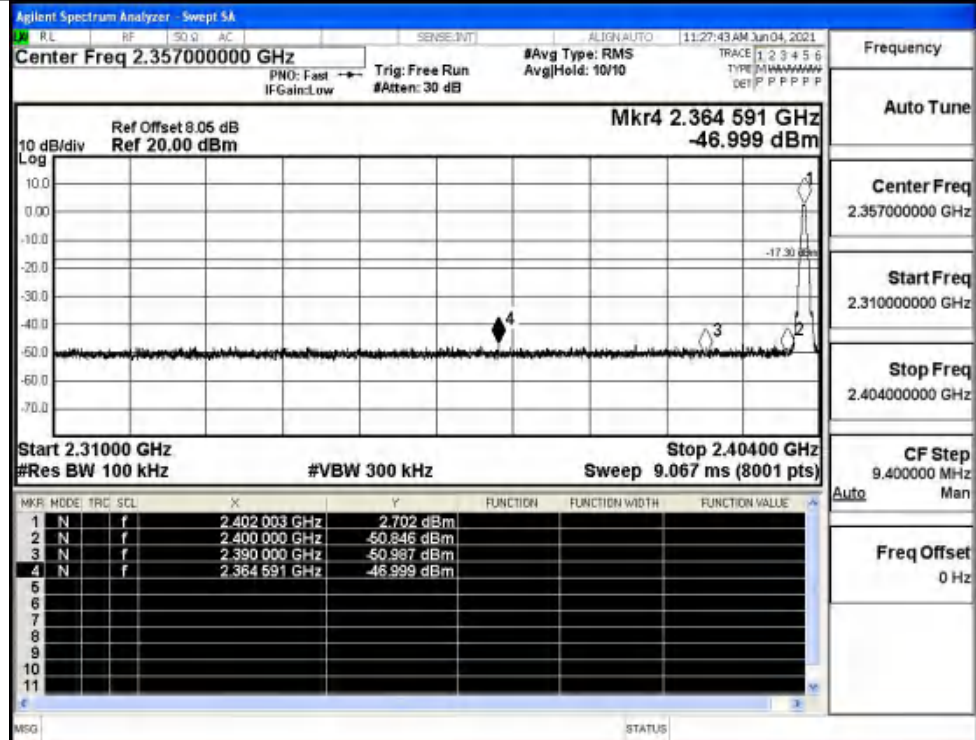


A.7 Band-edge for RF Conducted Emissions

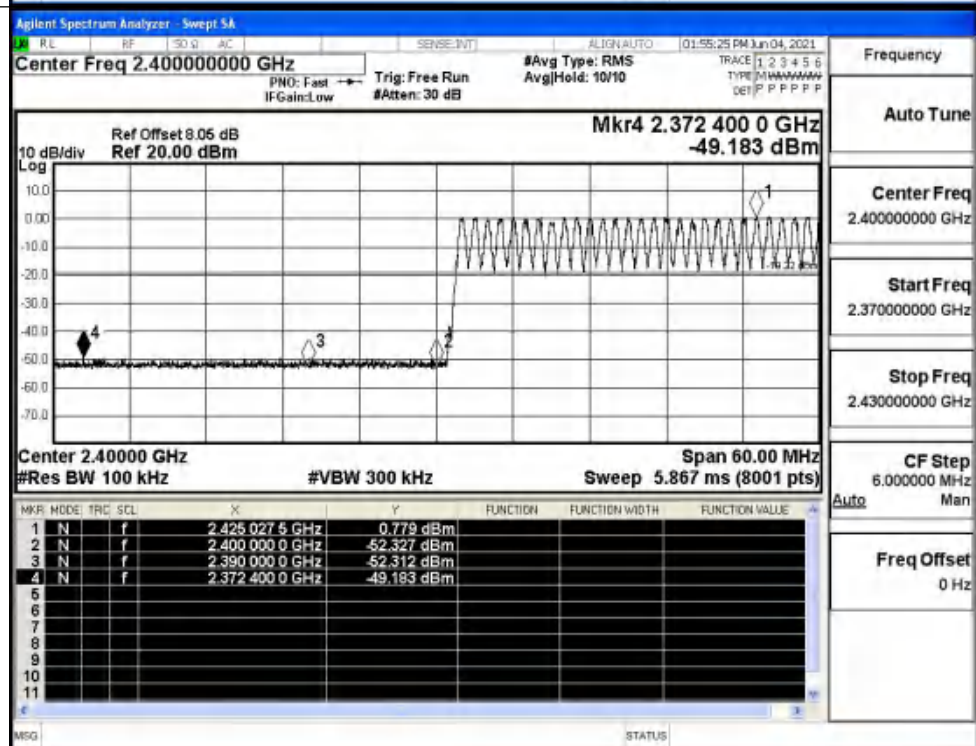
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	2.702	Off	-46.999	-17.3	PASS
			0.779	On	-49.183	-19.22	PASS
	HCH	2480	3.344	Off	-46.059	-16.66	PASS
			1.544	On	-48.879	-18.46	PASS
$\pi/4$ DQPSK	LCH	2402	1.787	Off	-46.885	-18.21	PASS
			1.368	On	-49.424	-18.63	PASS
	HCH	2480	2.437	Off	-47.071	-17.56	PASS
			2.589	On	-47.034	-17.41	PASS

Test Graphs

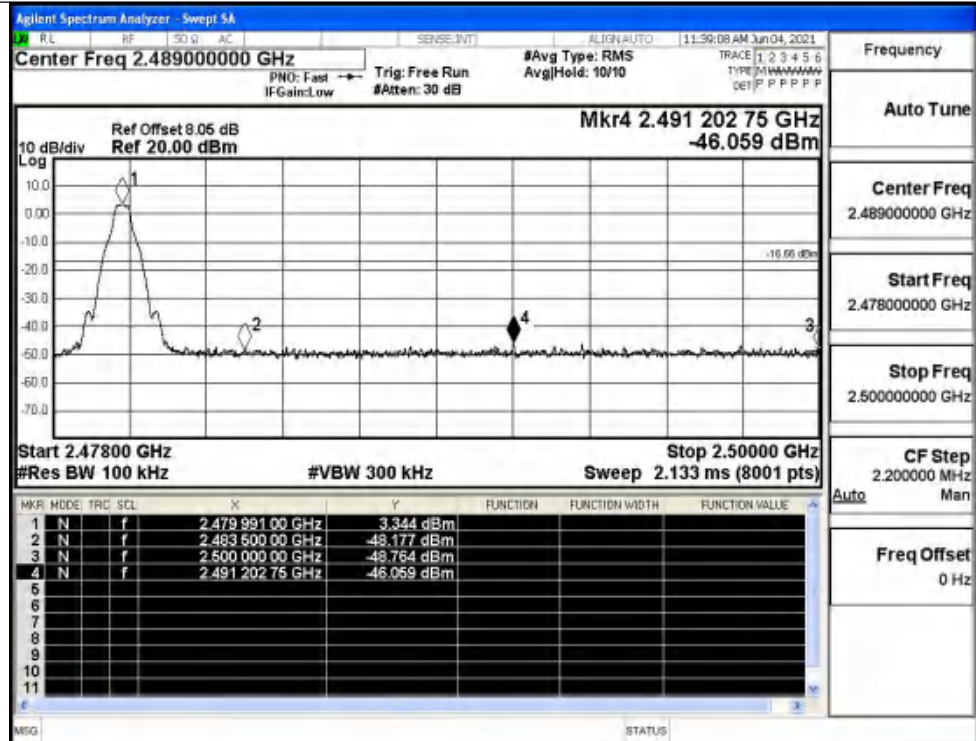
GFSK/LCH/No Hop



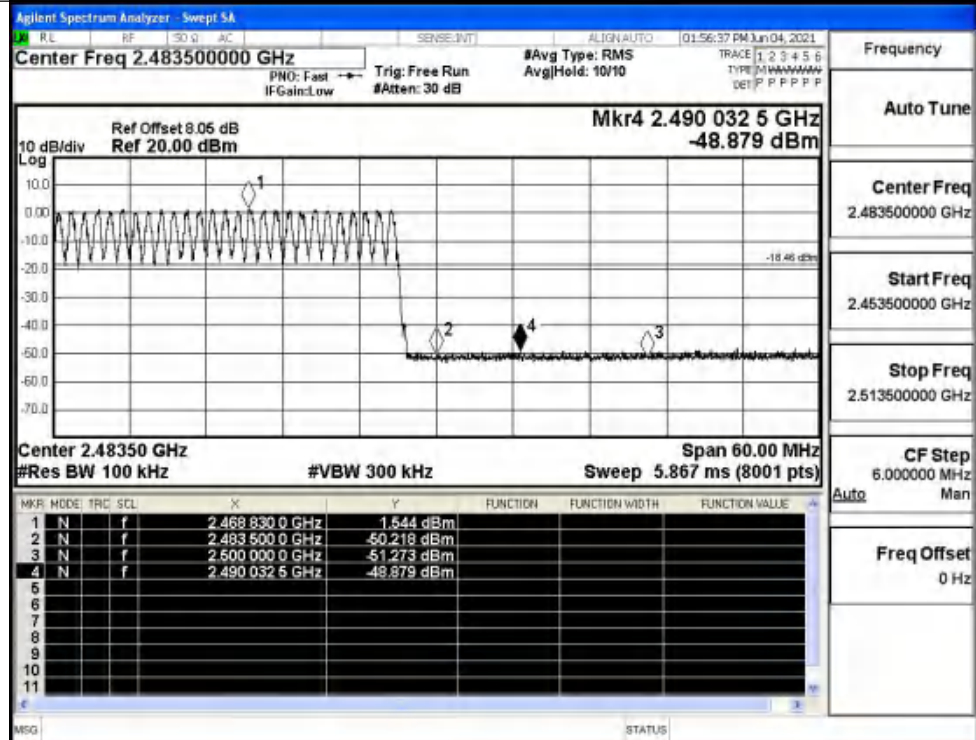
GFSK/LCH/Hop



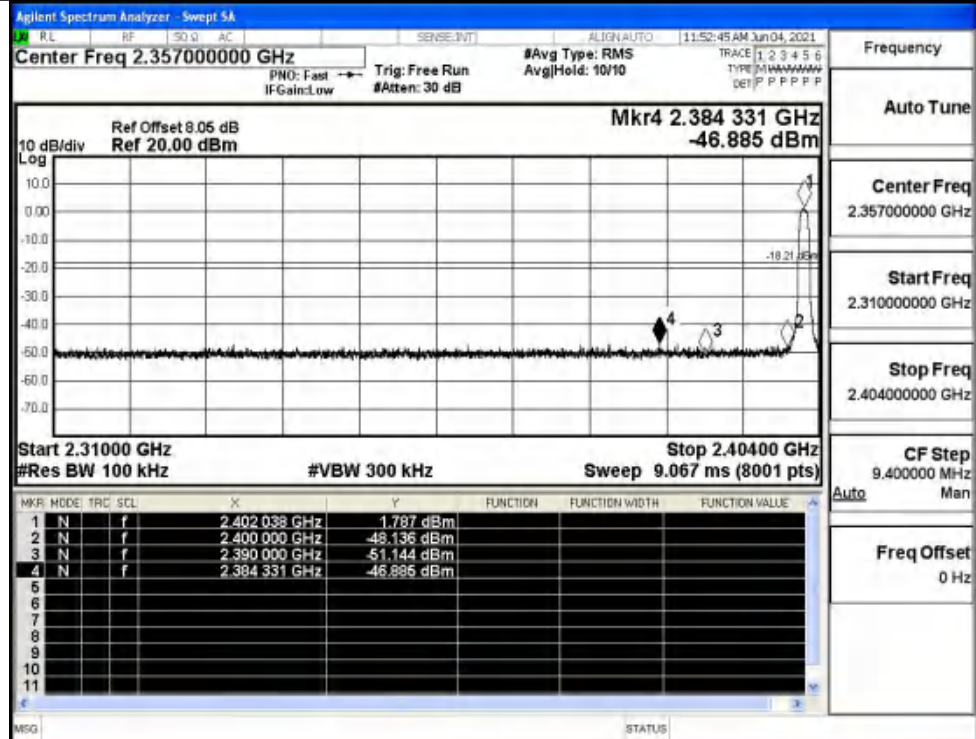
GFSK/HCH/No Hop



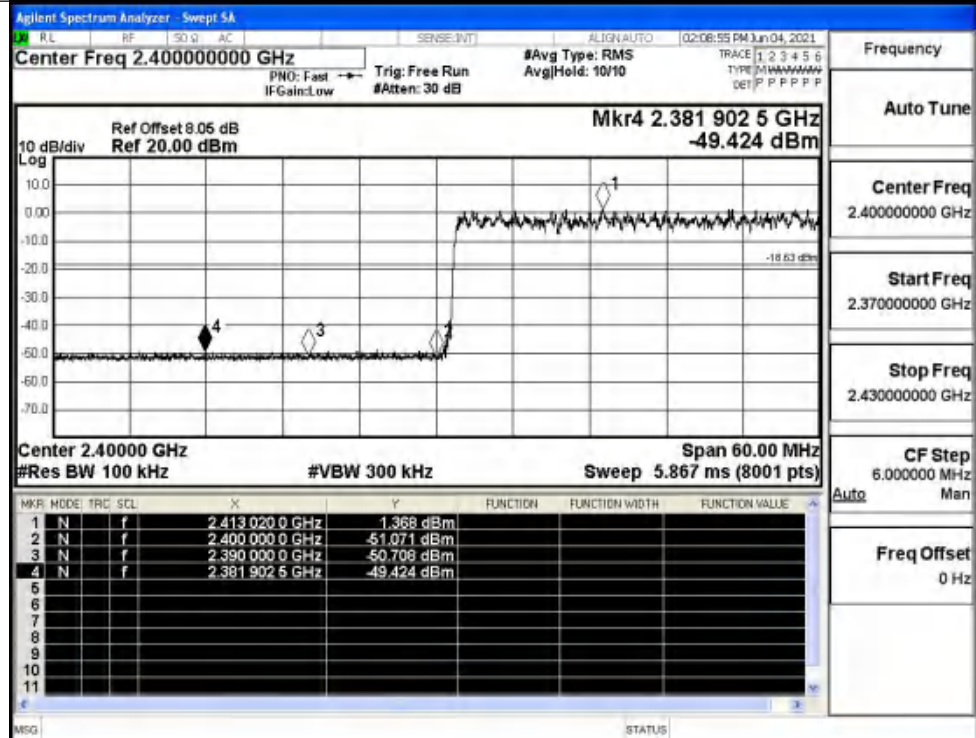
GFSK/HCH/Hop



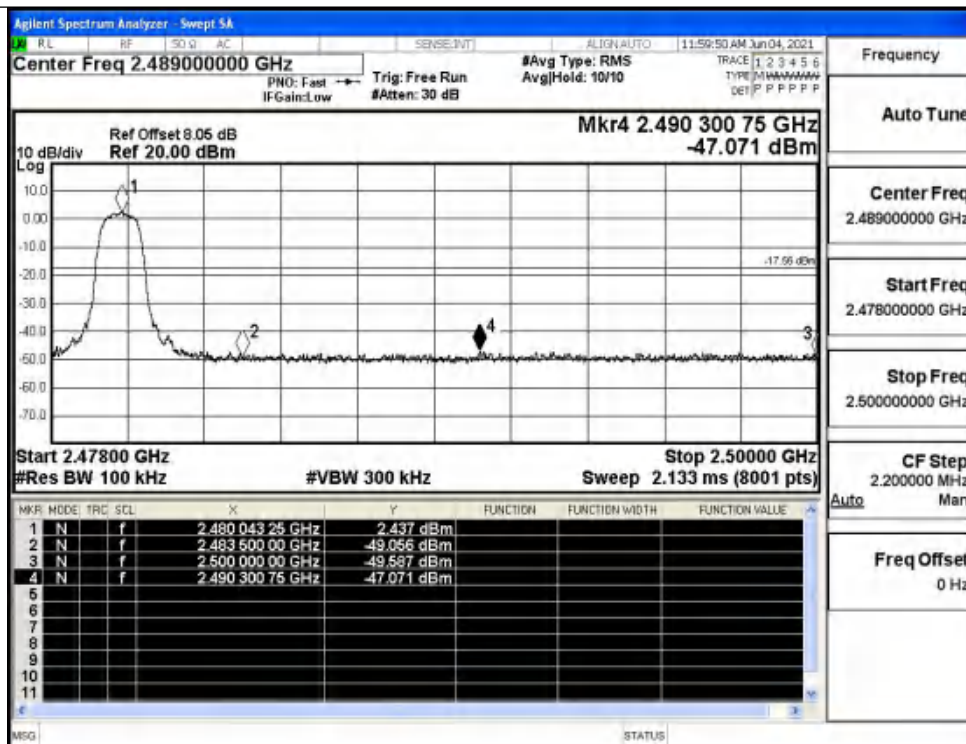
$\pi/4$ DQPSK/LCH/No
Hop



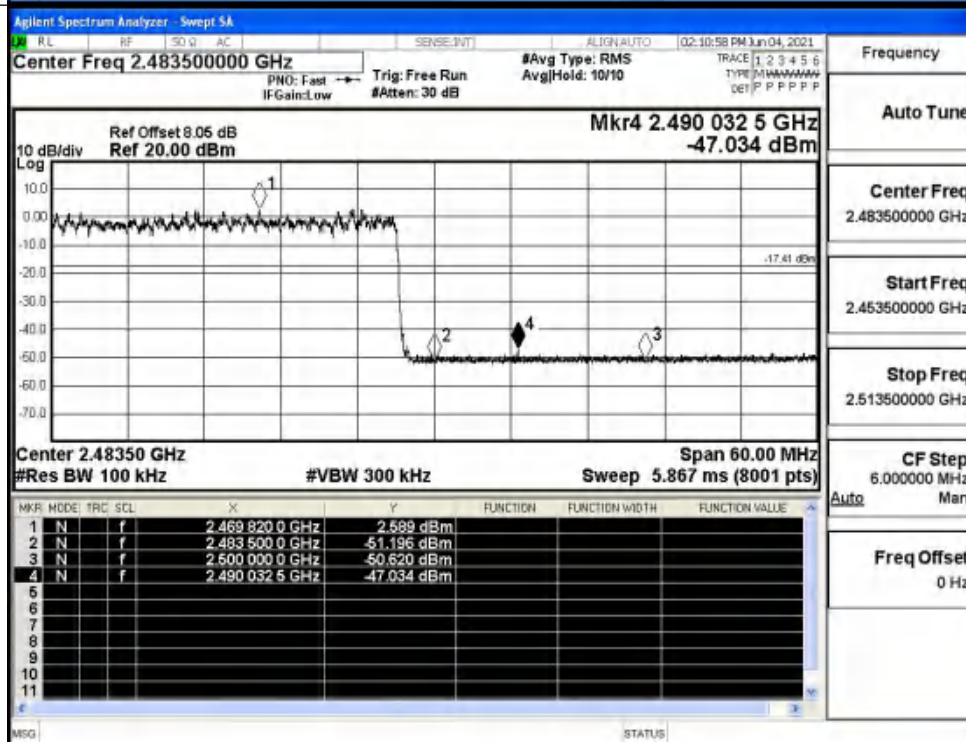
$\pi/4$ DQPSK/LCH/Hop



$\pi/4$ DQPSK/HCH/No
Hop



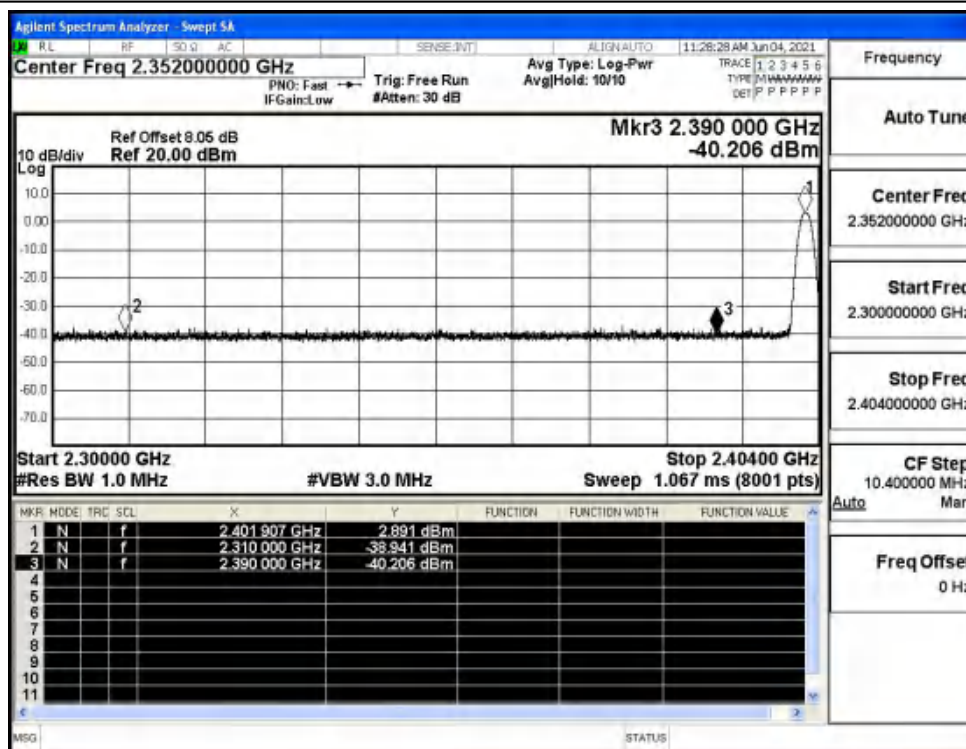
$\pi/4$ DQPSK/HCH/Hop



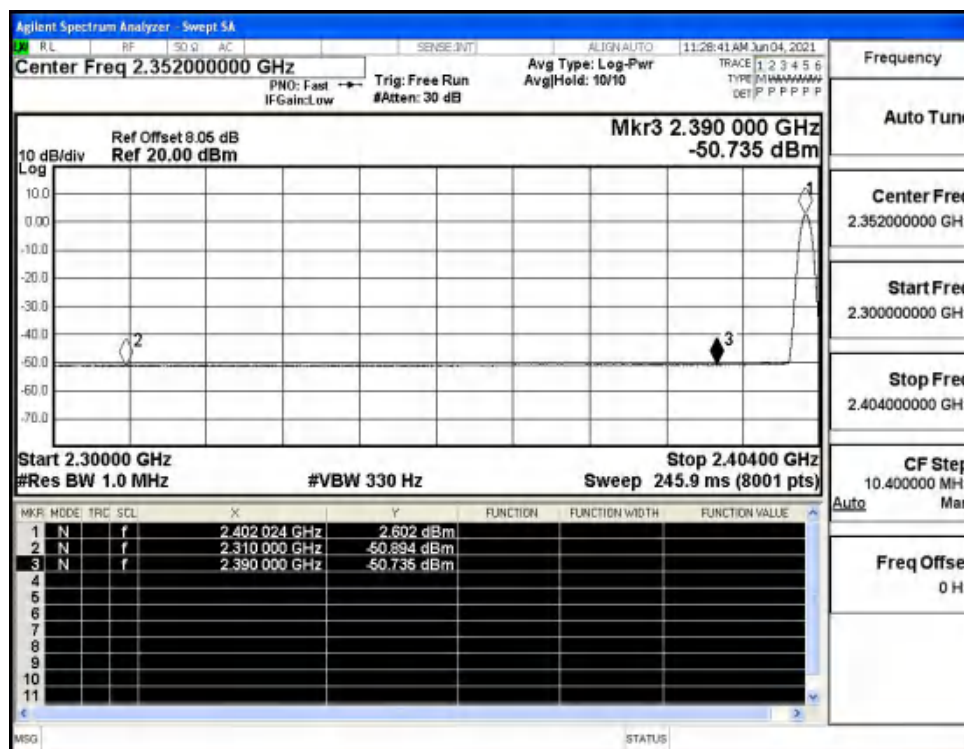
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-38.94	2.0	0	58.29	PEAK	74	PASS
	Off	2310.0	-50.89	2.0	0	46.34	AV	54	PASS
	Off	2390.0	-40.21	2.0	0	57.02	PEAK	74	PASS
	Off	2390.0	-50.74	2.0	0	46.49	AV	54	PASS
	Off	2483.5	-41.09	2.0	0	56.14	PEAK	74	PASS
	Off	2483.5	-49.98	2.0	0	47.25	AV	54	PASS
	Off	2500.0	-40.70	2.0	0	56.53	PEAK	74	PASS
	Off	2500.0	-49.91	2.0	0	47.32	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-40.11	2.0	0	57.12	PEAK	74	PASS
	Off	2310.0	-51.03	2.0	0	46.20	AV	54	PASS
	Off	2390.0	-40.61	2.0	0	56.62	PEAK	74	PASS
	Off	2390.0	-50.58	2.0	0	46.65	AV	54	PASS
	Off	2483.5	-39.07	2.0	0	58.16	PEAK	74	PASS
	Off	2483.5	-49.99	2.0	0	47.24	AV	54	PASS
	Off	2500.0	-39.90	2.0	0	57.33	PEAK	74	PASS
	Off	2500.0	-49.89	2.0	0	47.34	AV	54	PASS

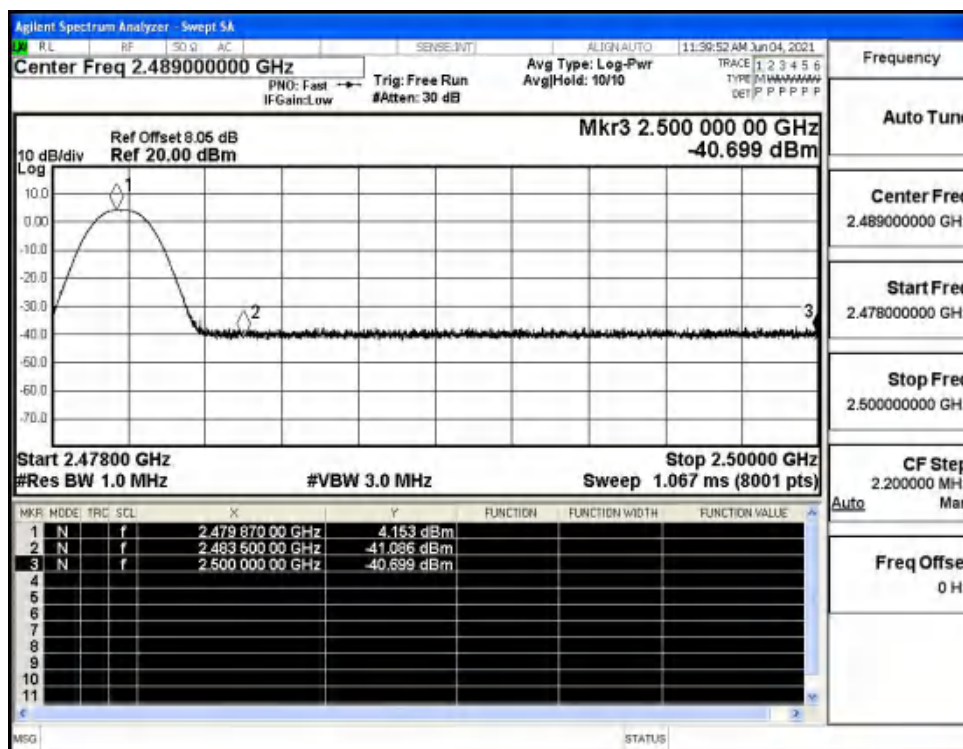
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



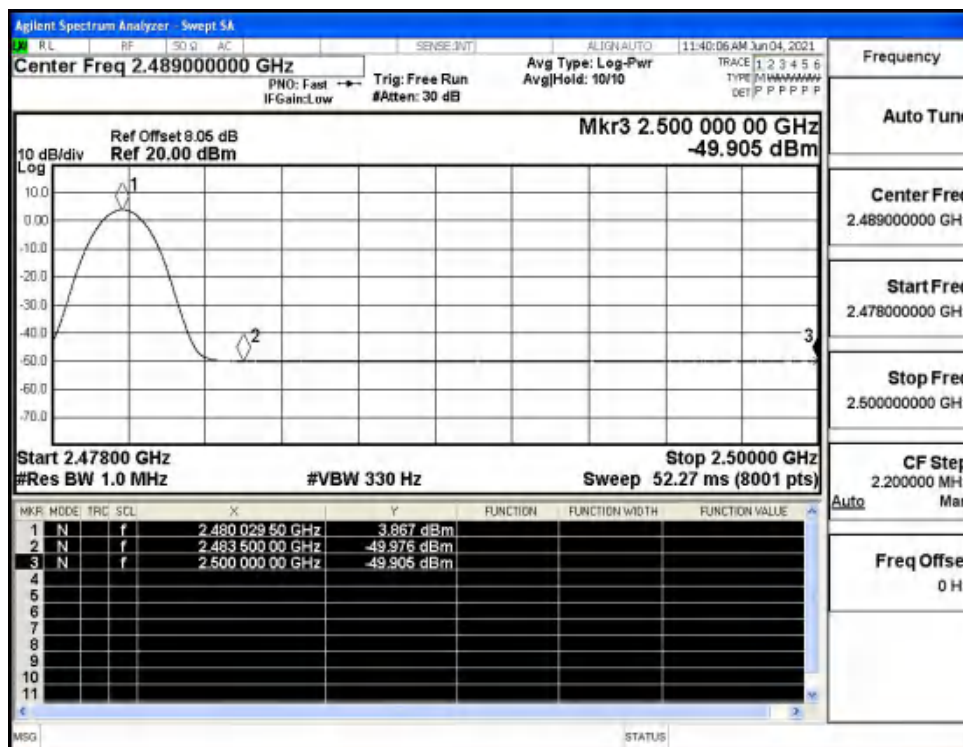
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



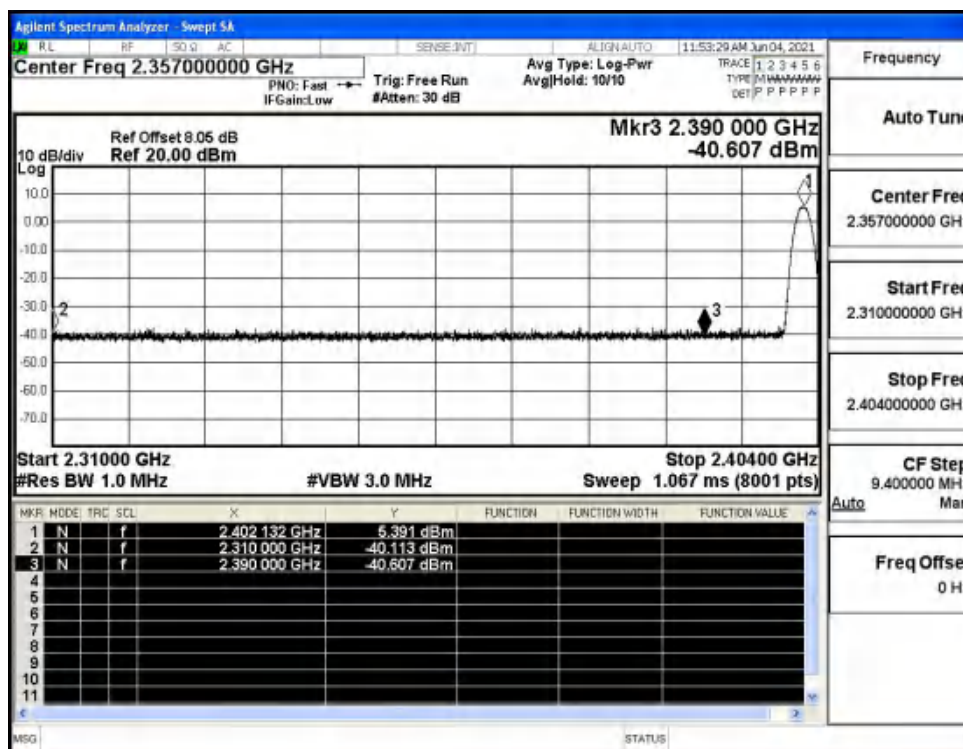
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



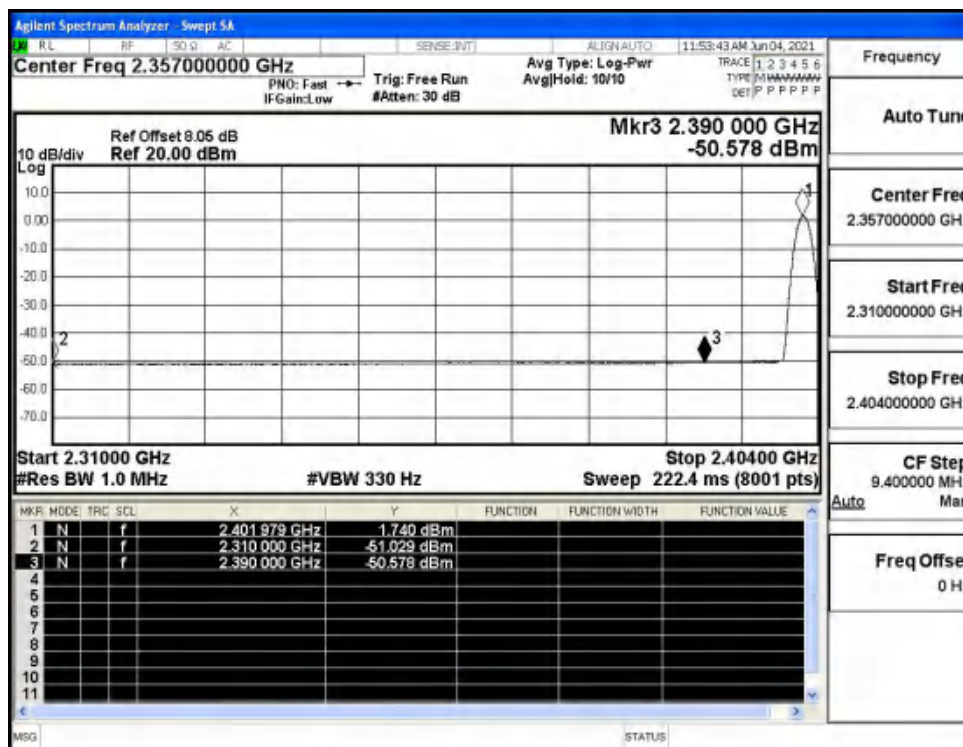
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



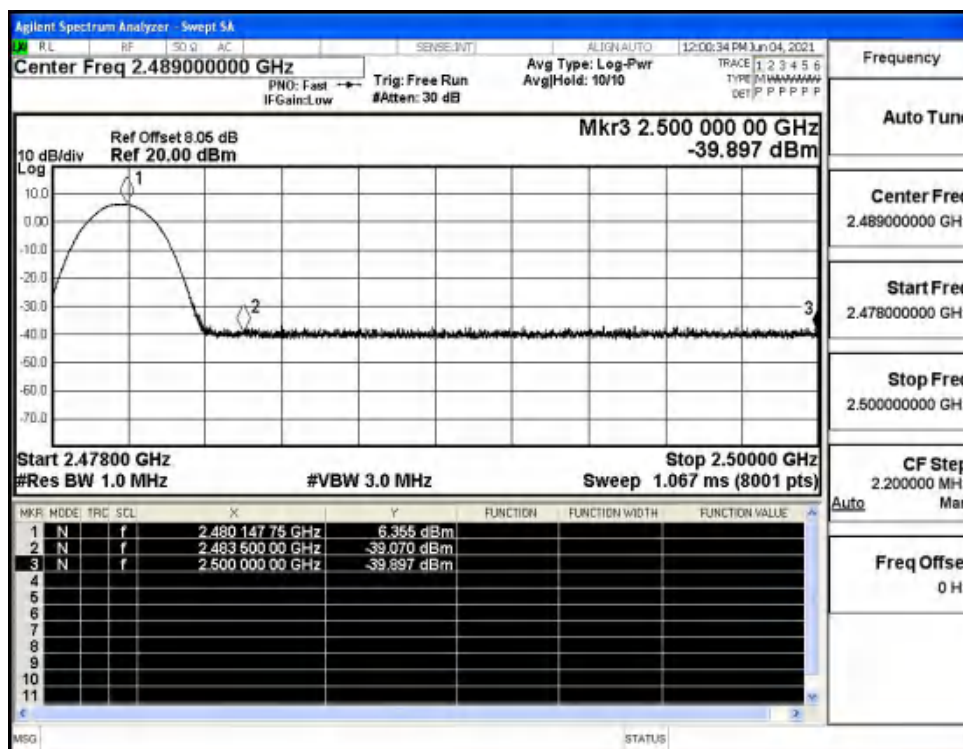
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (High Channel)



Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (High Channel)

