

Appendix A

RF Test Data for BT V4.2(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth headphones

Trade Mark: N/A

Test Model: AZ10012

Environmental Conditions

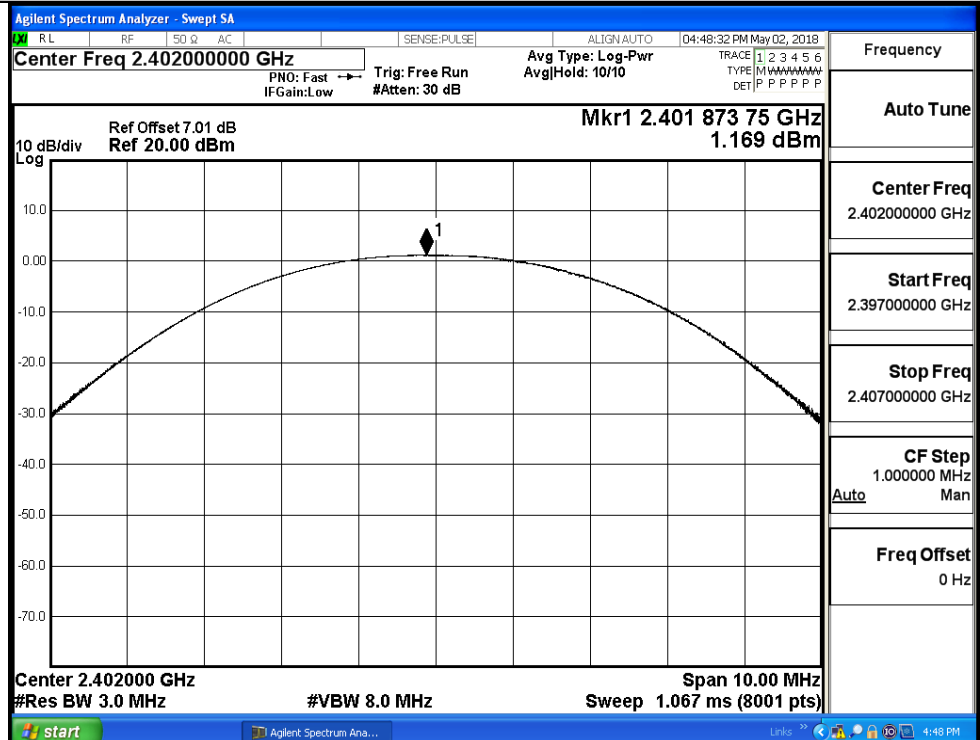
Temperature:	21.3 ° C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	WANGCHUANG
Supervised by:	Jayden.Zhuo

A.1 Maxmum Conducted Peak Output Power

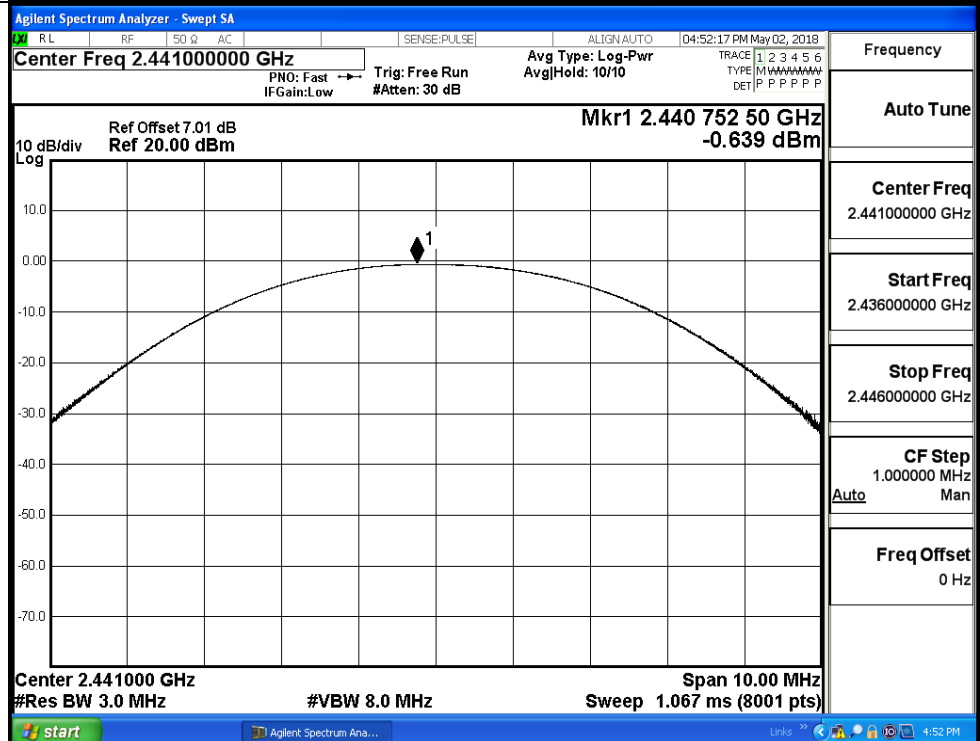
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.169	30	PASS
	MCH	-0.639	30	PASS
	HCH	-0.629	30	PASS
$\pi/4$ DQPSK	LCH	0.055	21	PASS
	MCH	-1.470	21	PASS
	HCH	-1.735	21	PASS

Test Graphs

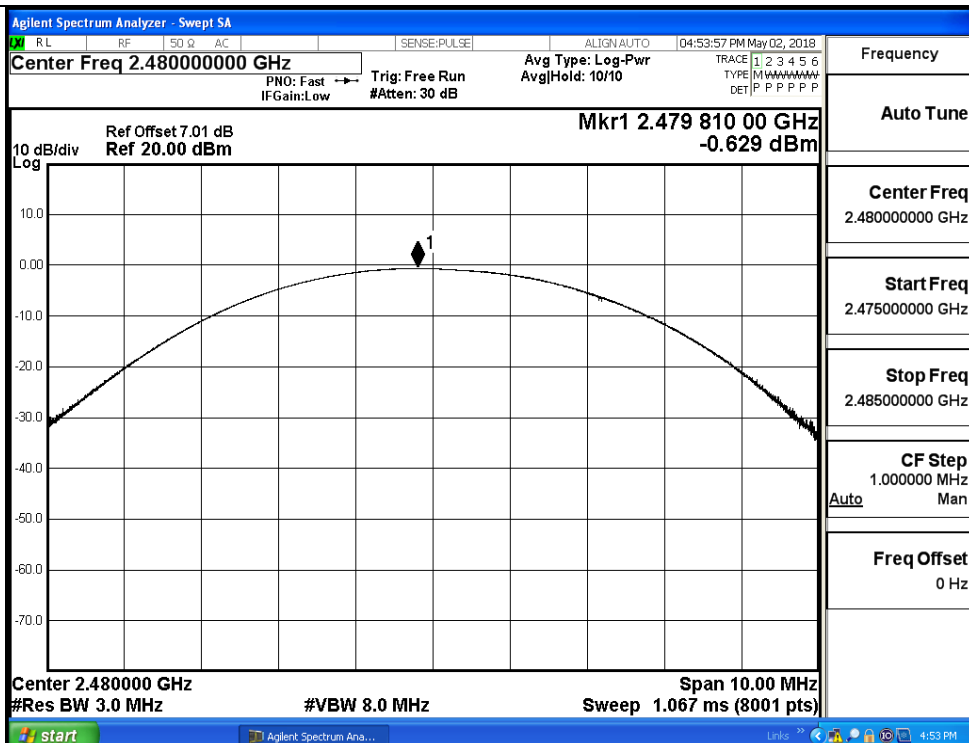
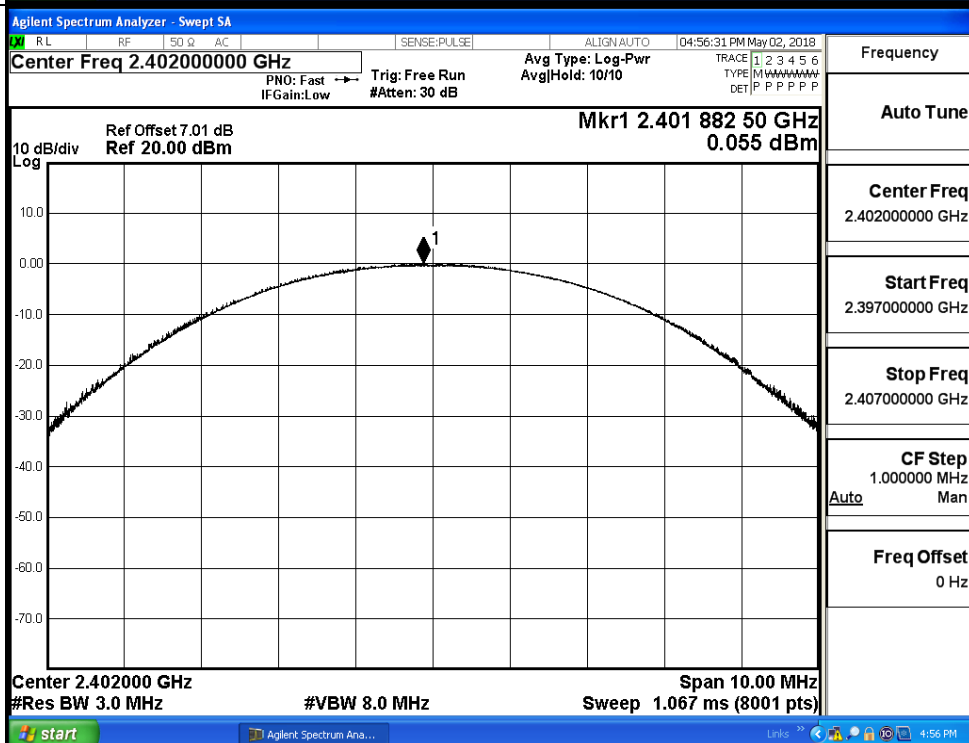
GFSK/LCH

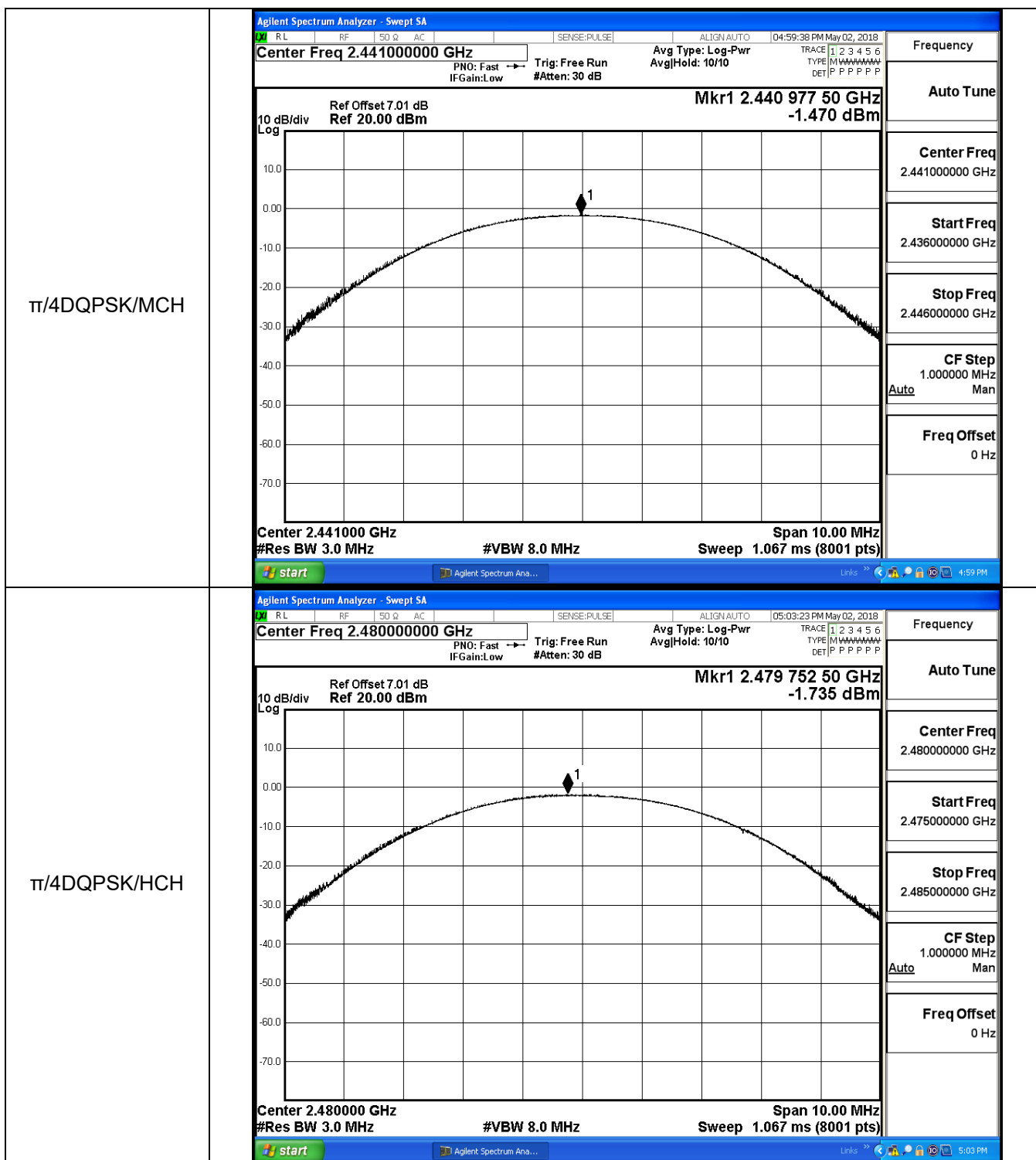


GFSK/MCH



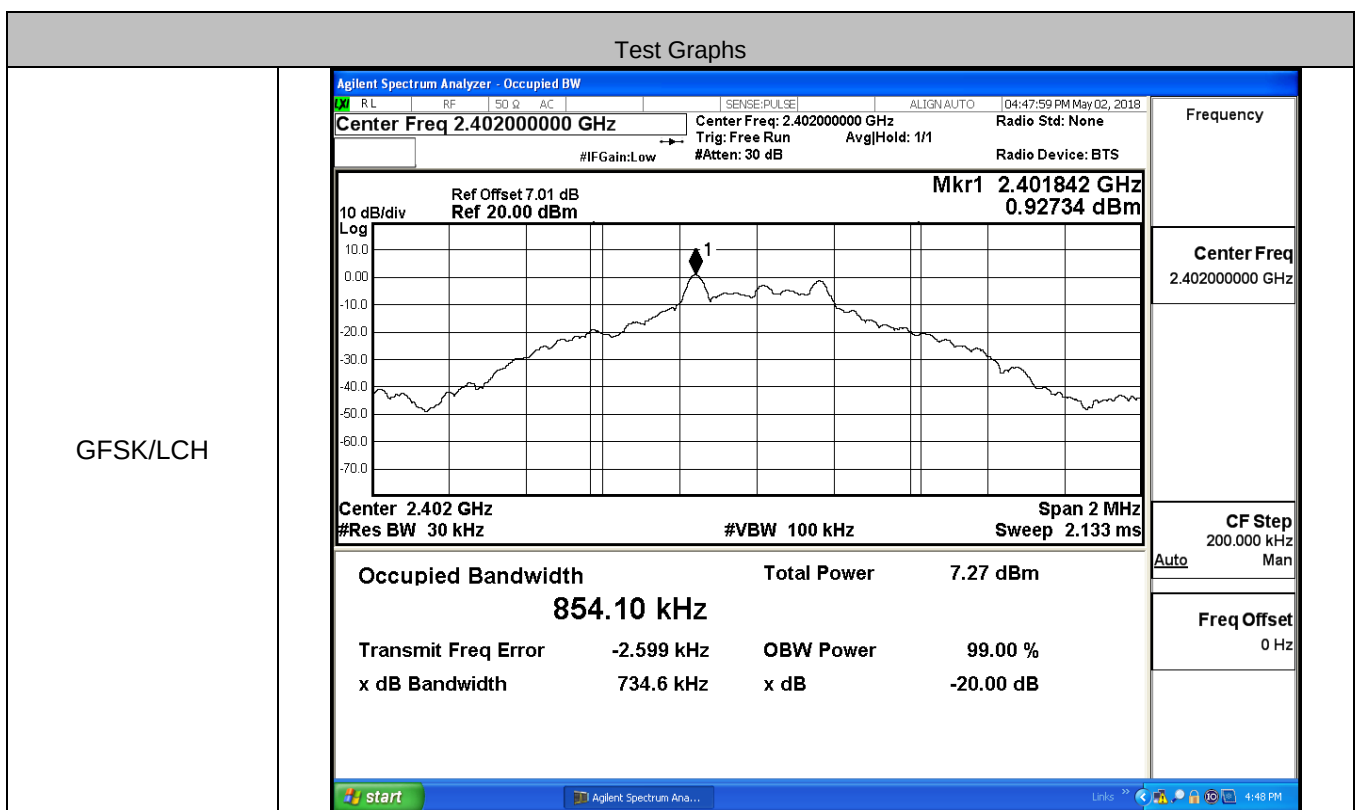
GFSK/HCH

 π /4DQPSK/LCH

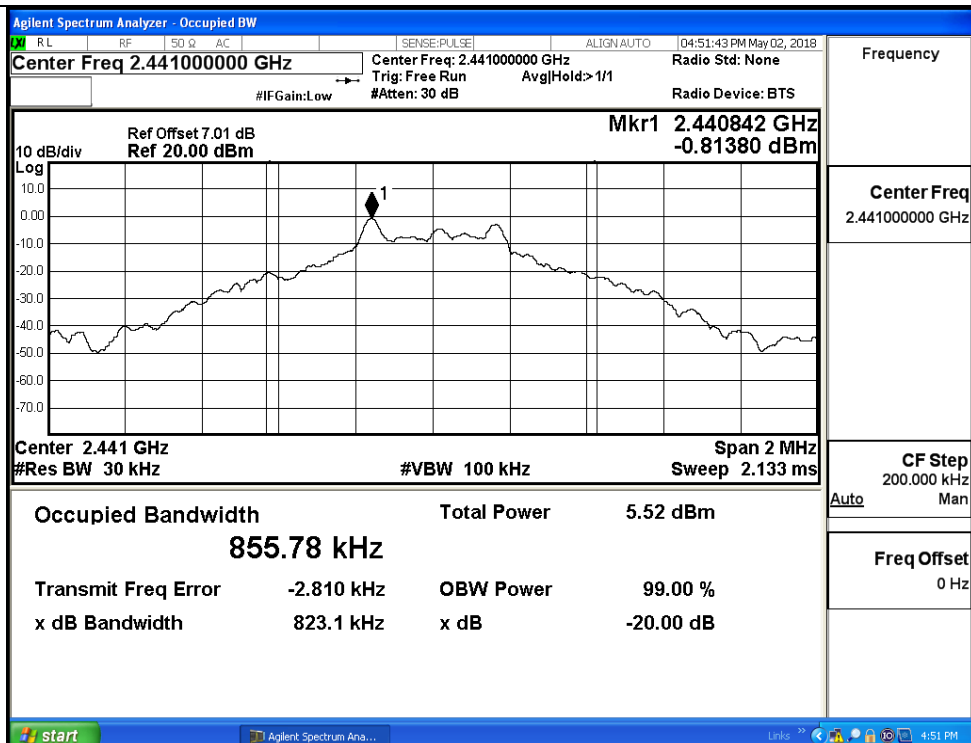


A.2 20dB Bandwidth

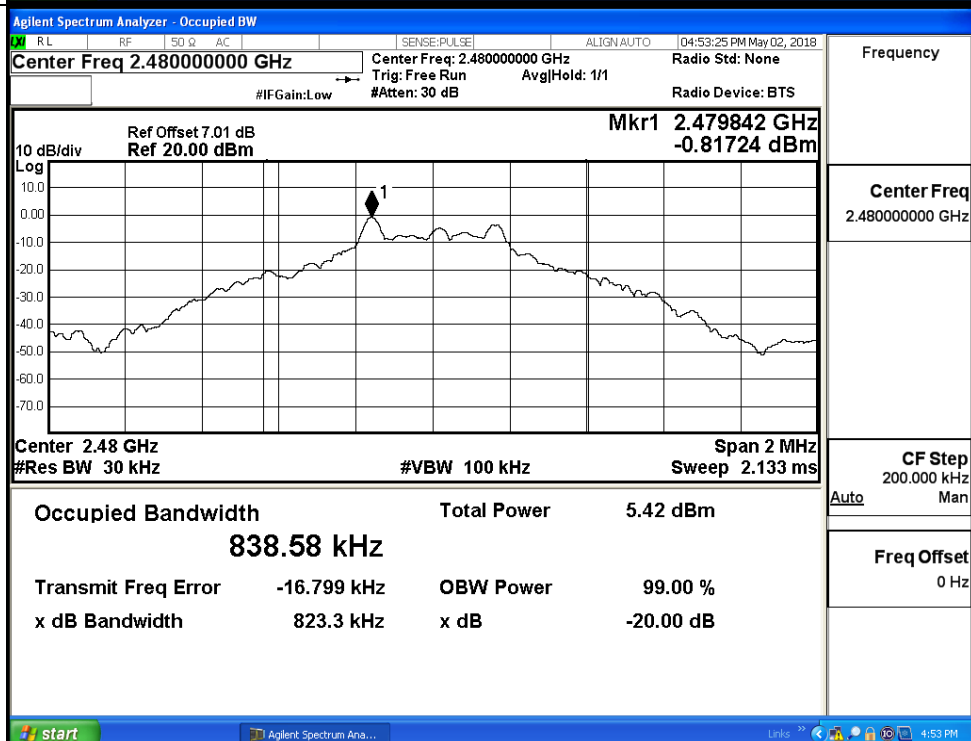
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.7346	Not Specified	PASS
	MCH	0.8231	Not Specified	PASS
	HCH	0.8233	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.135	Not Specified	PASS
	MCH	1.121	Not Specified	PASS
	HCH	1.116	Not Specified	PASS

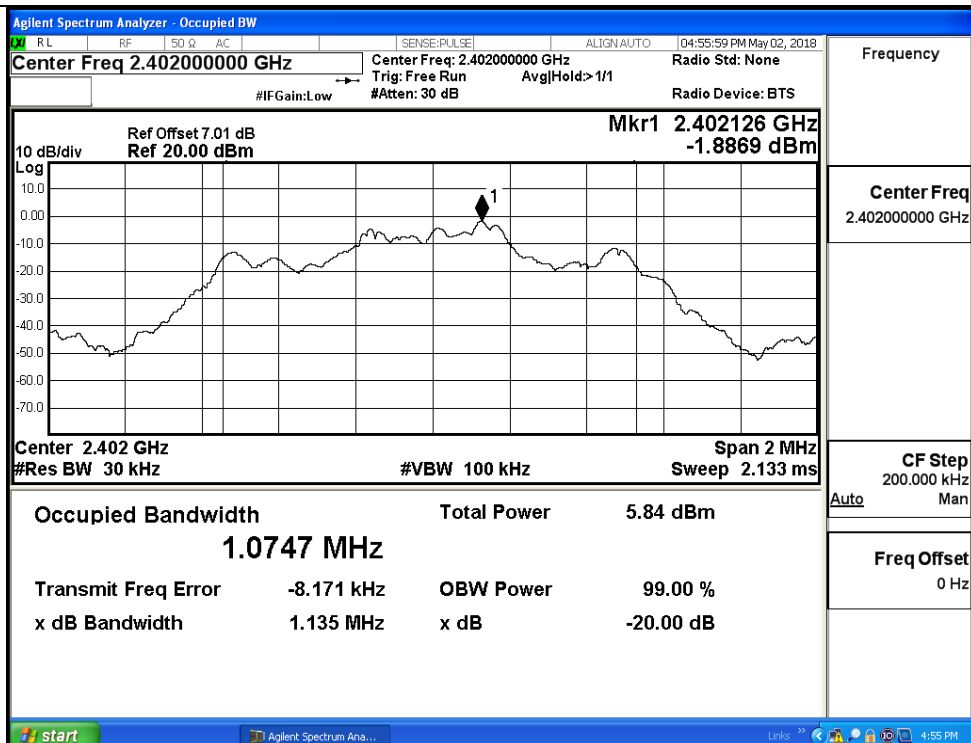


GFSK/MCH

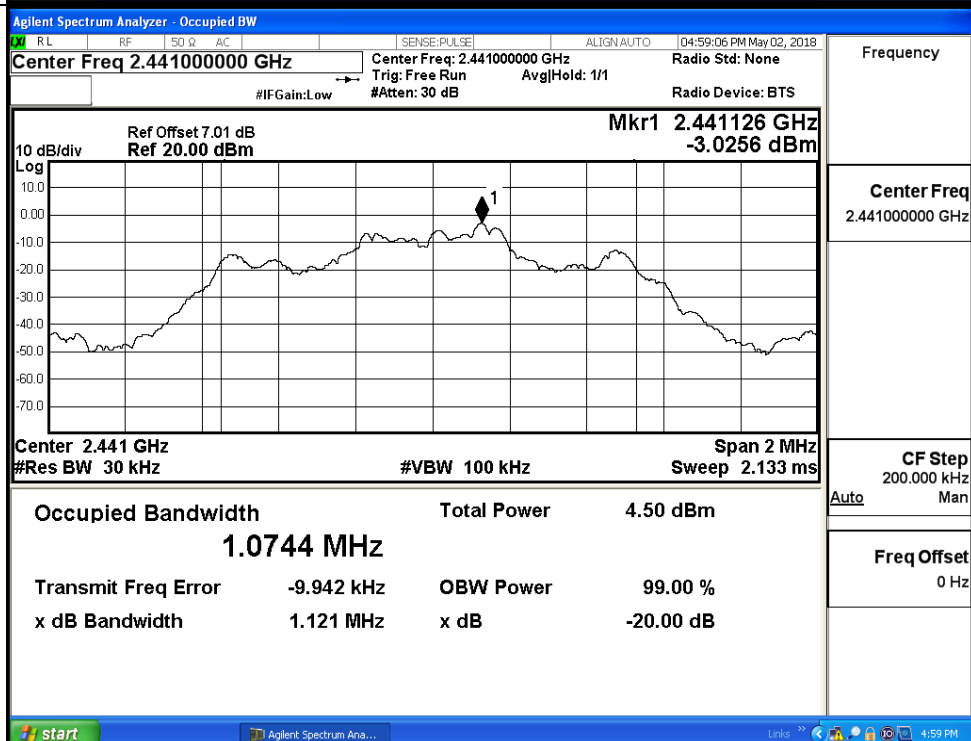


GFSK/HCH



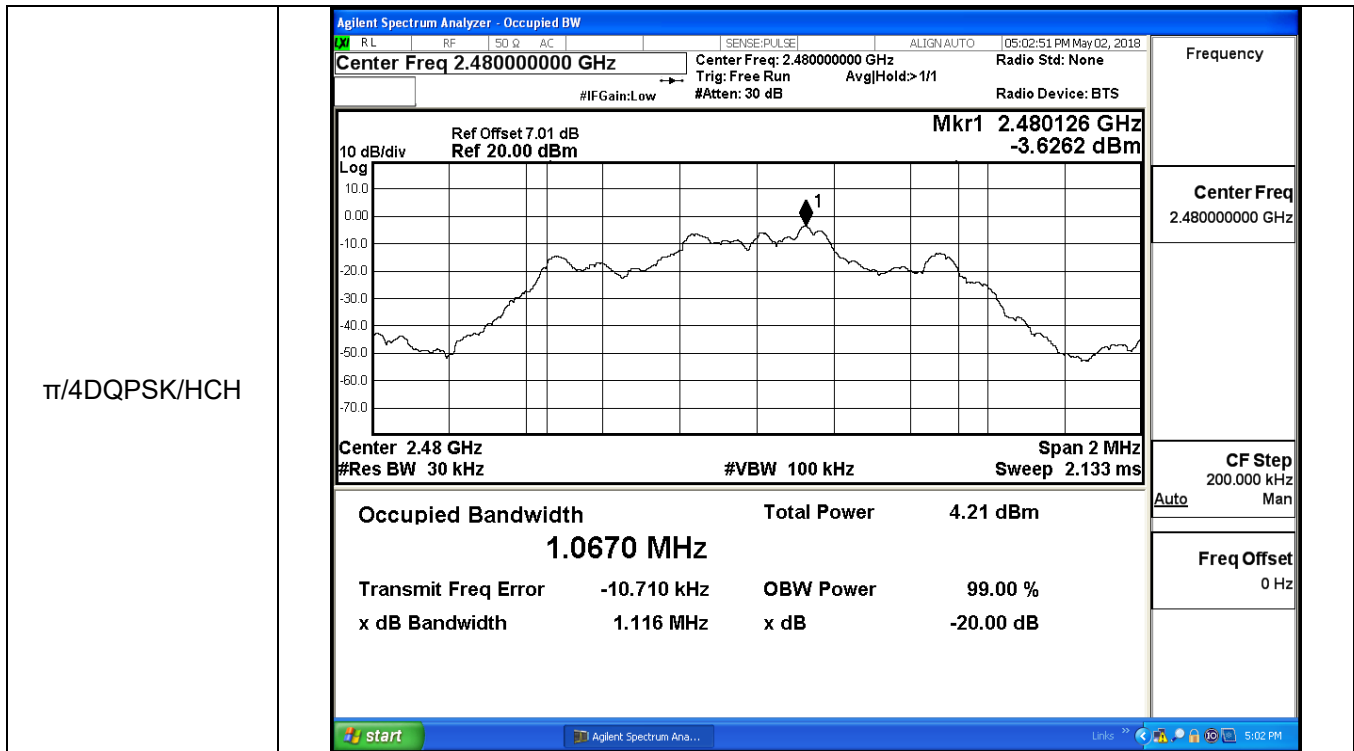
$\pi/4$ DQPSK/LCH

Frequency

Center Freq
2.402000000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz $\pi/4$ DQPSK/MCH

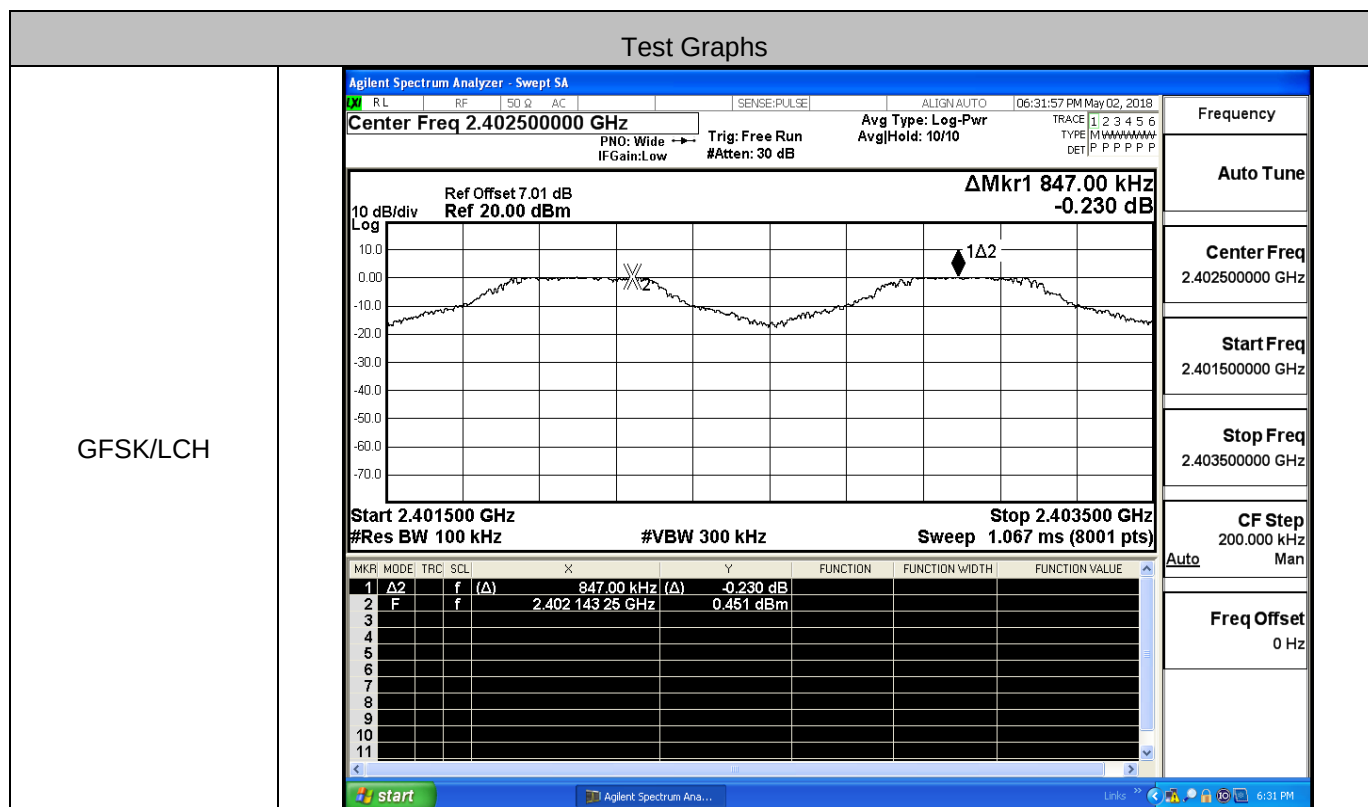
Frequency

Center Freq
2.441000000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz

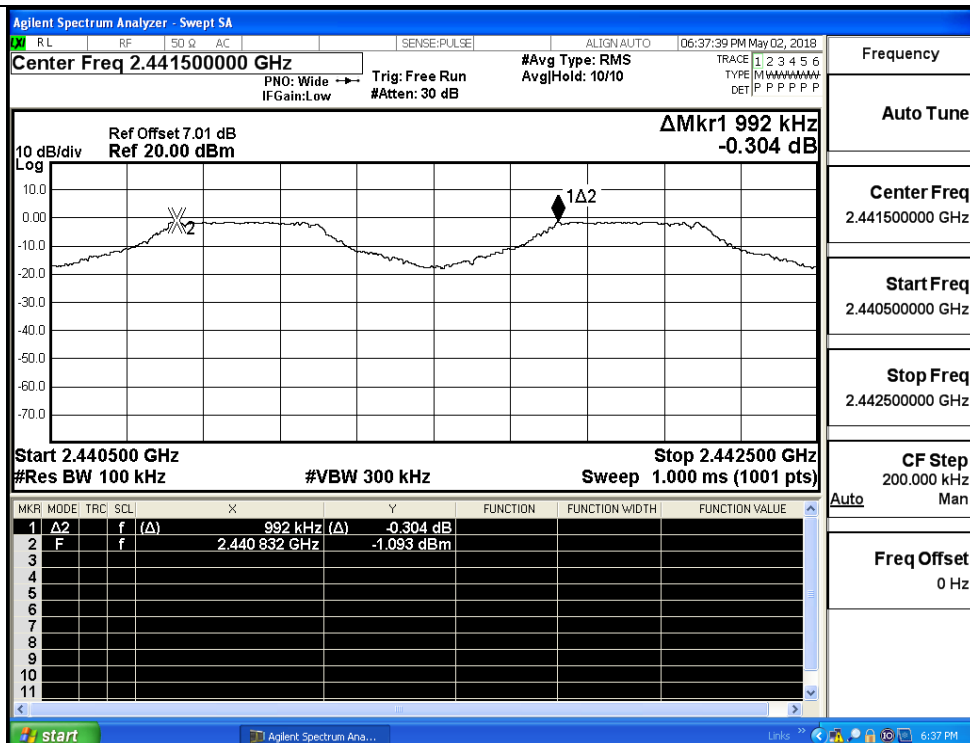


A.3 Carrier Frequency Separation

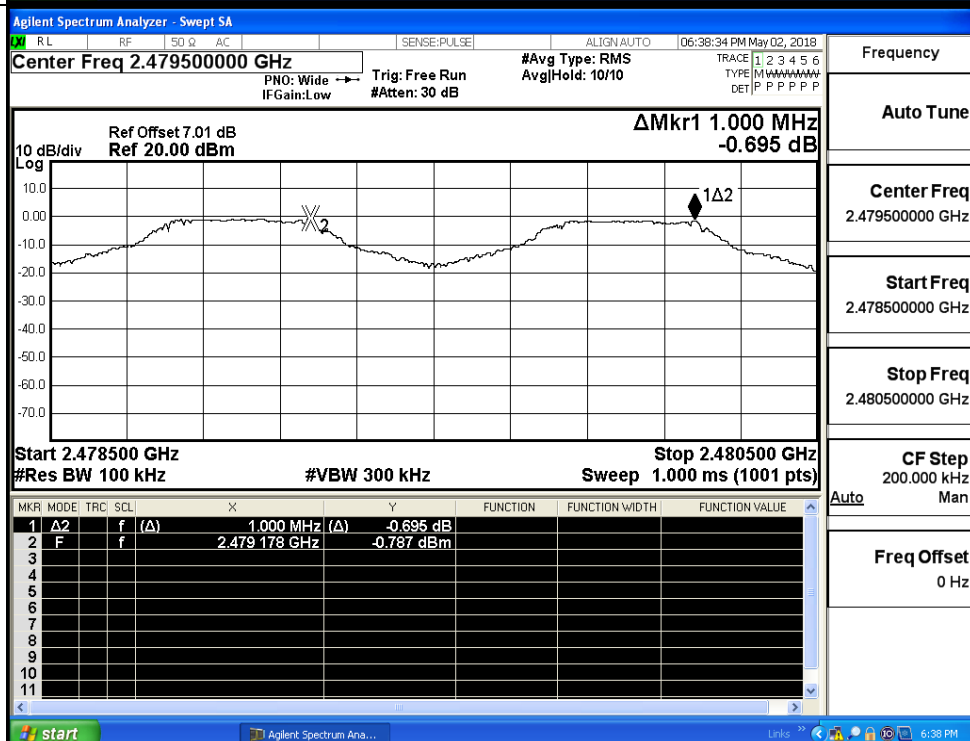
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.847	0.549	PASS
	MCH	0.992	0.549	PASS
	HCH	1.000	0.549	PASS
$\pi/4$ DQPSK	LCH	1.008	0.757	PASS
	MCH	0.998	0.757	PASS
	HCH	0.994	0.757	PASS

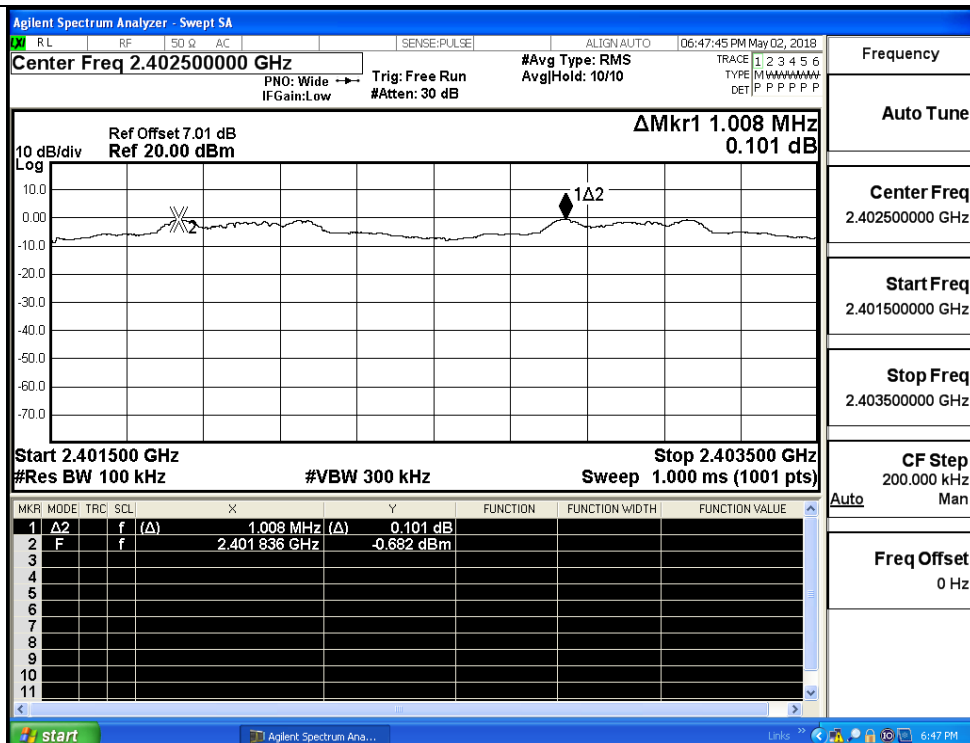
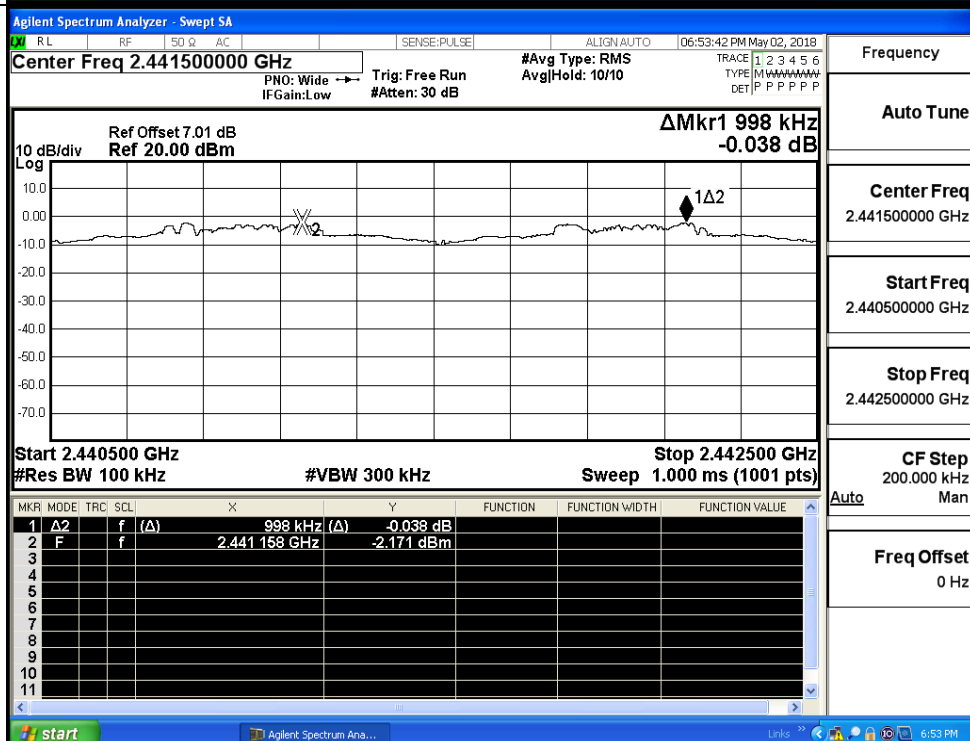


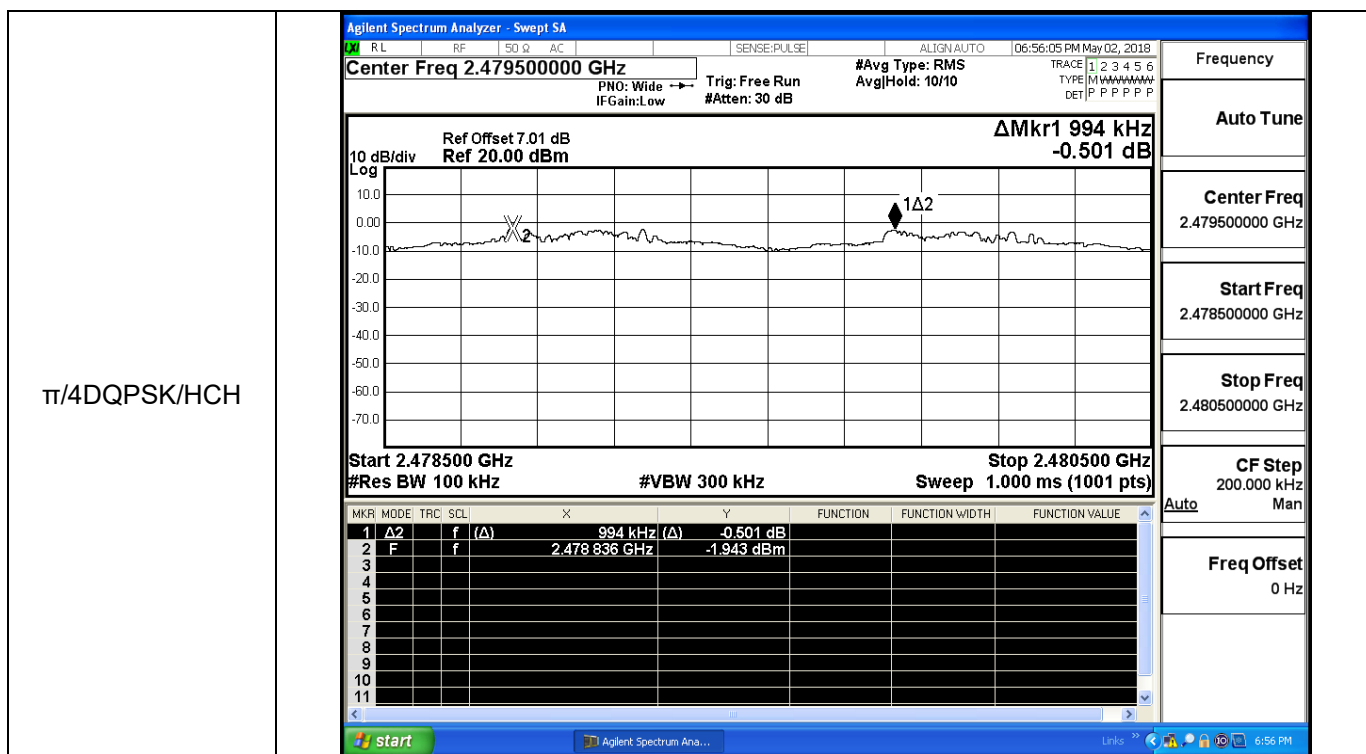
GFSK/MCH



GFSK/HCH



$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

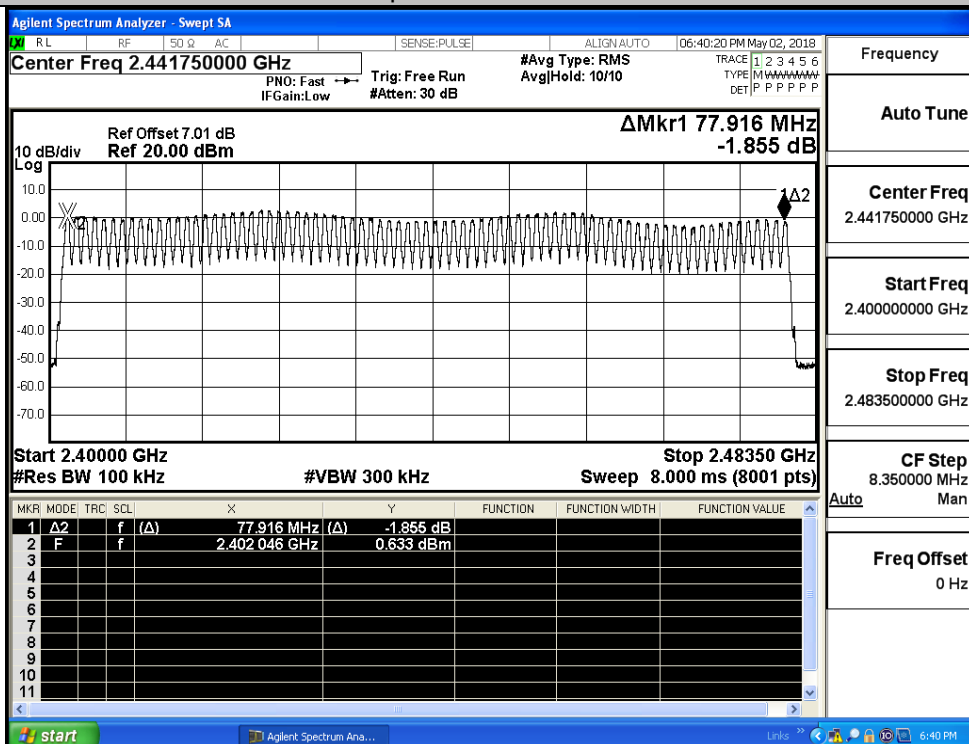


A.4 Hopping Channel Number

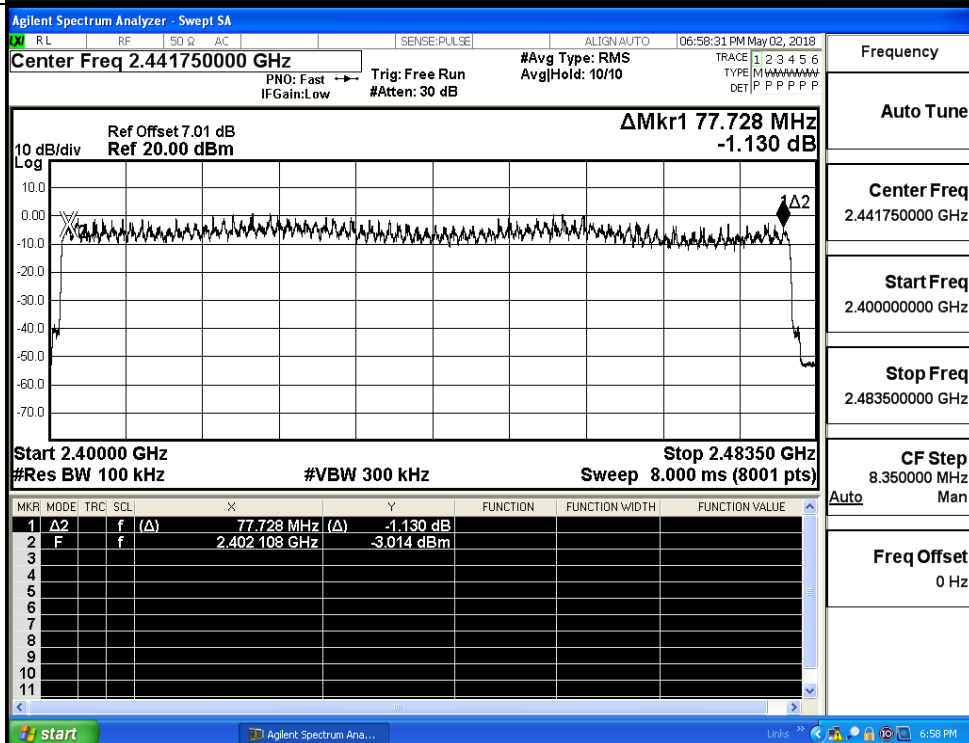
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop



π/4DQPSK/Hop

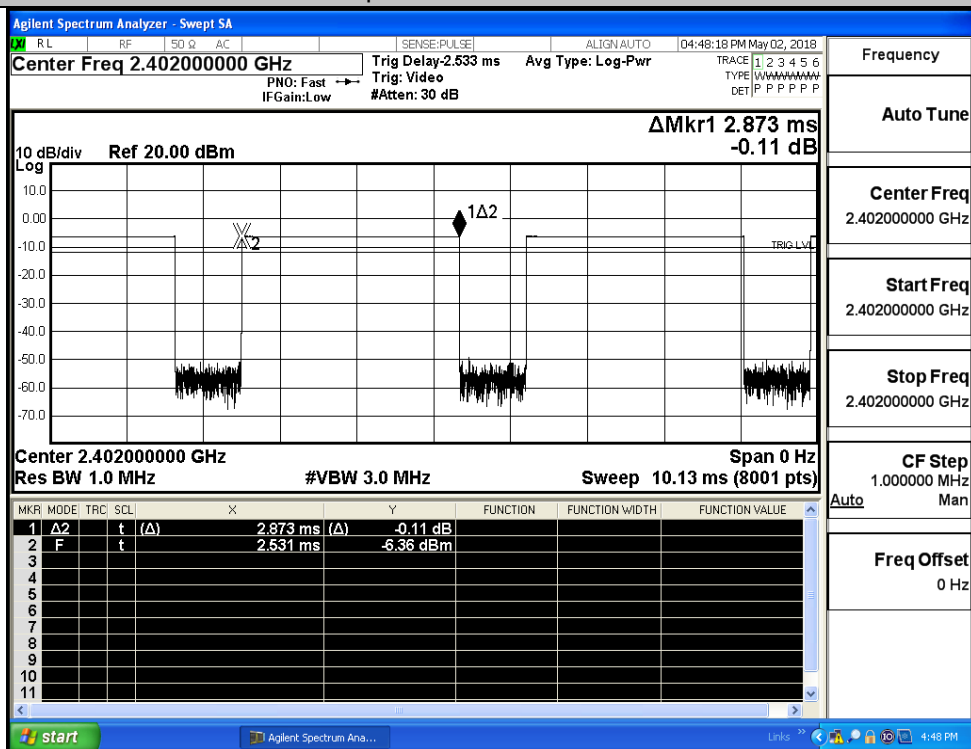


A.5 Dwell Time

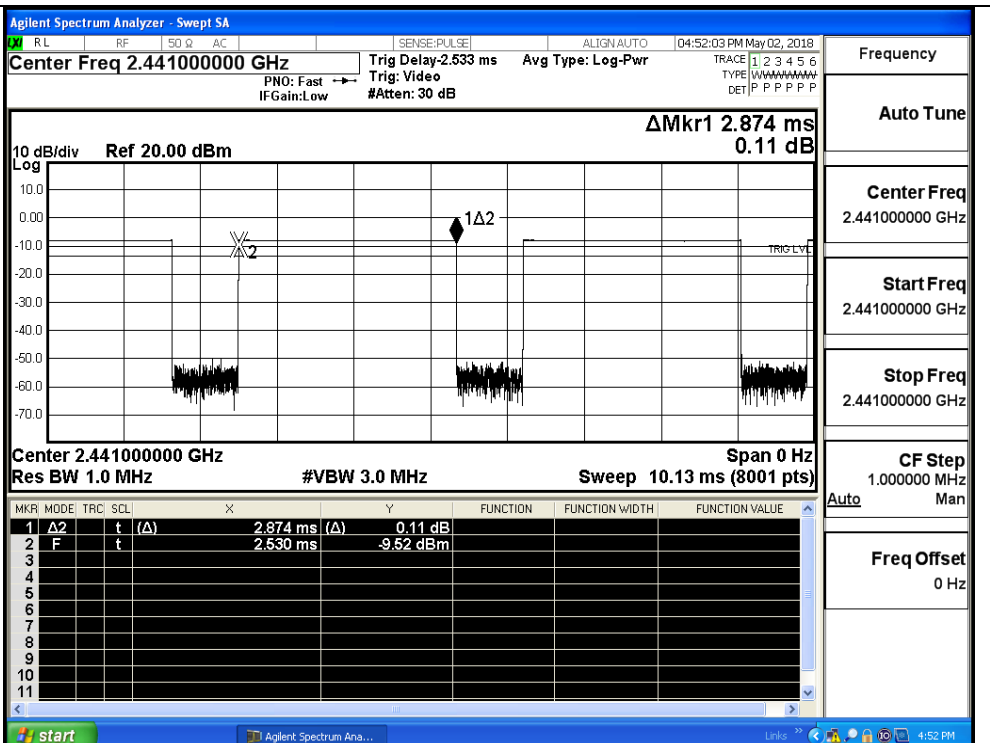
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.87	106.7	0.306	0.4	PASS
	DH5	MCH	2.87	106.7	0.306	0.4	PASS
	DH5	HCH	2.87	106.7	0.306	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.87	106.7	0.307	0.4	PASS
	2DH5	MCH	2.87	106.7	0.307	0.4	PASS
	2DH5	HCH	2.87	106.7	0.307	0.4	PASS

Test Graphs

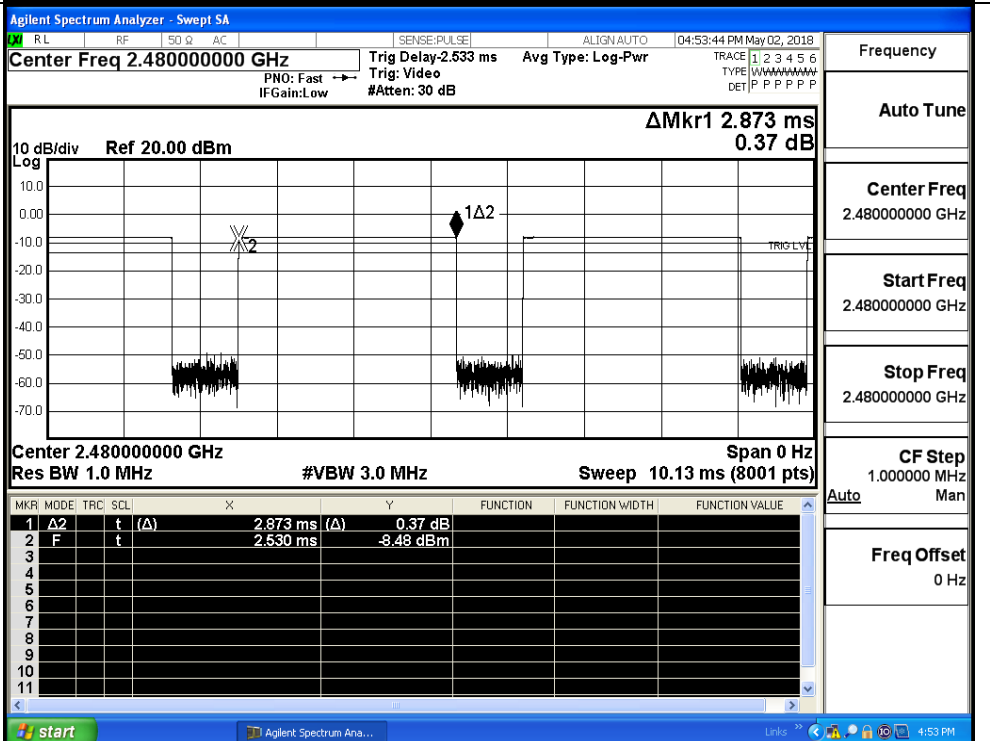
GFSK_DH5/LCH



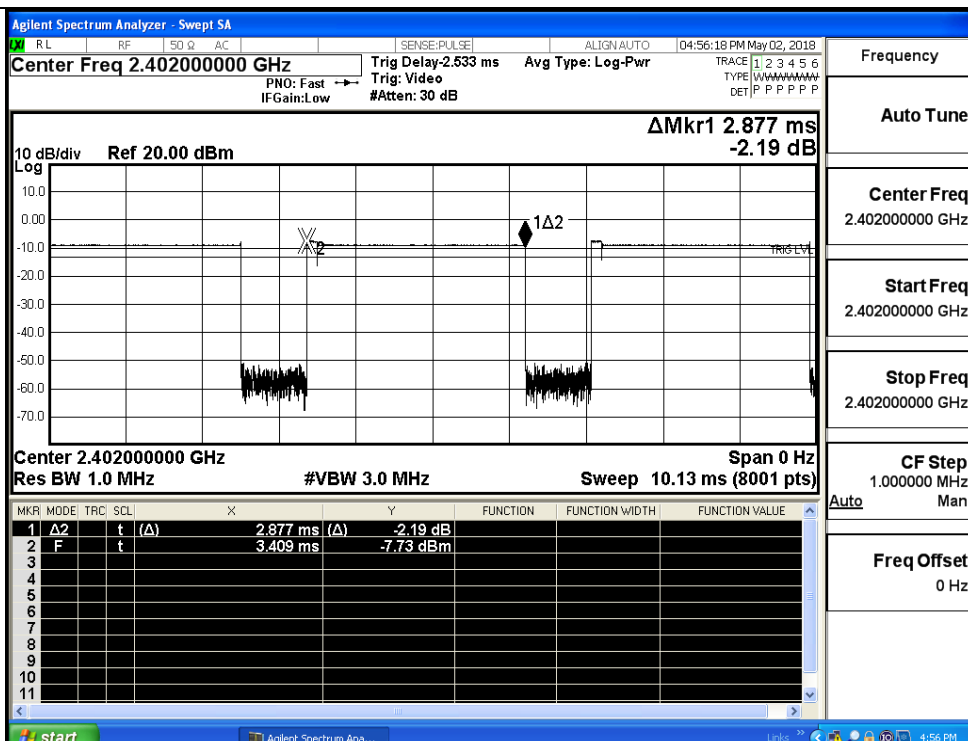
GFSK_DH5/MCH



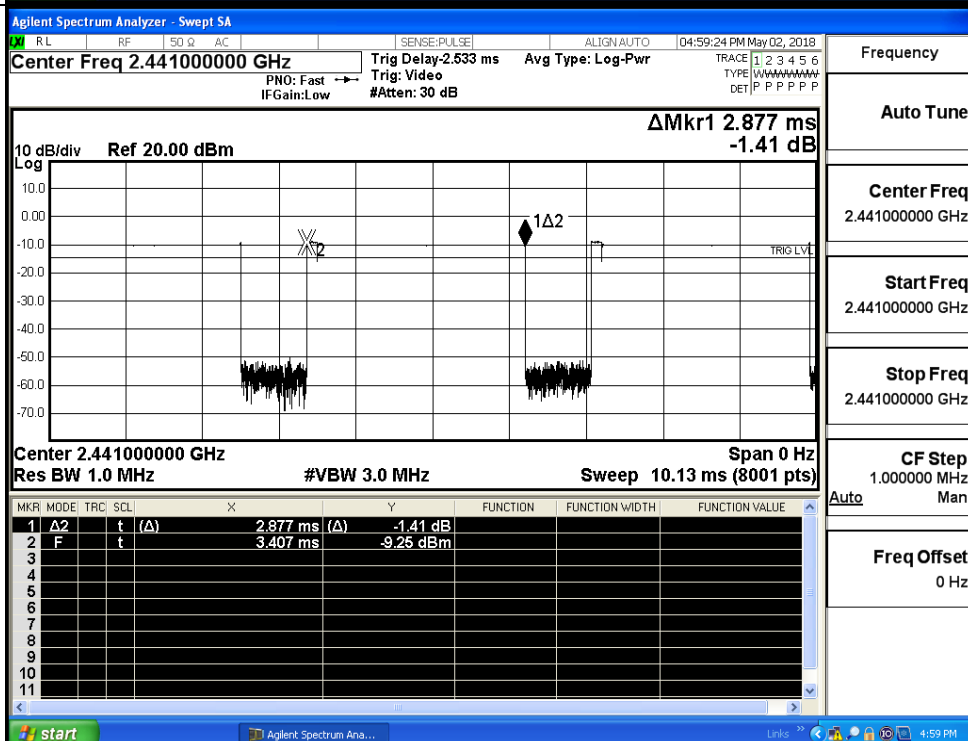
GFSK_DH5/HCH



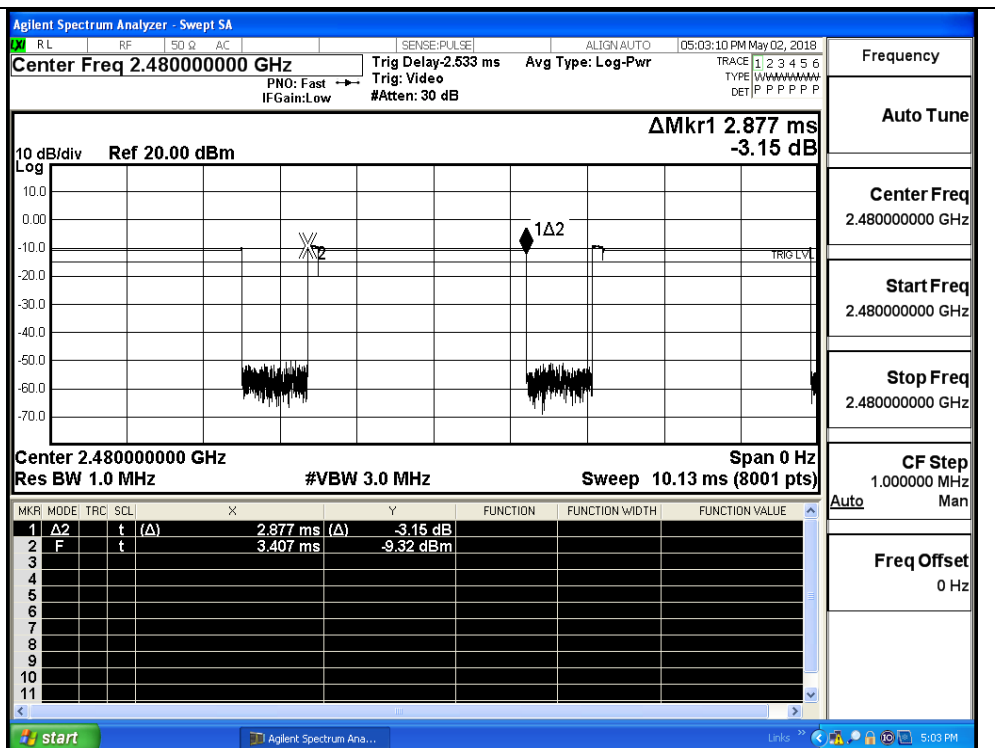
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



$\pi/4$ DQPSK
_2DH5/HCH

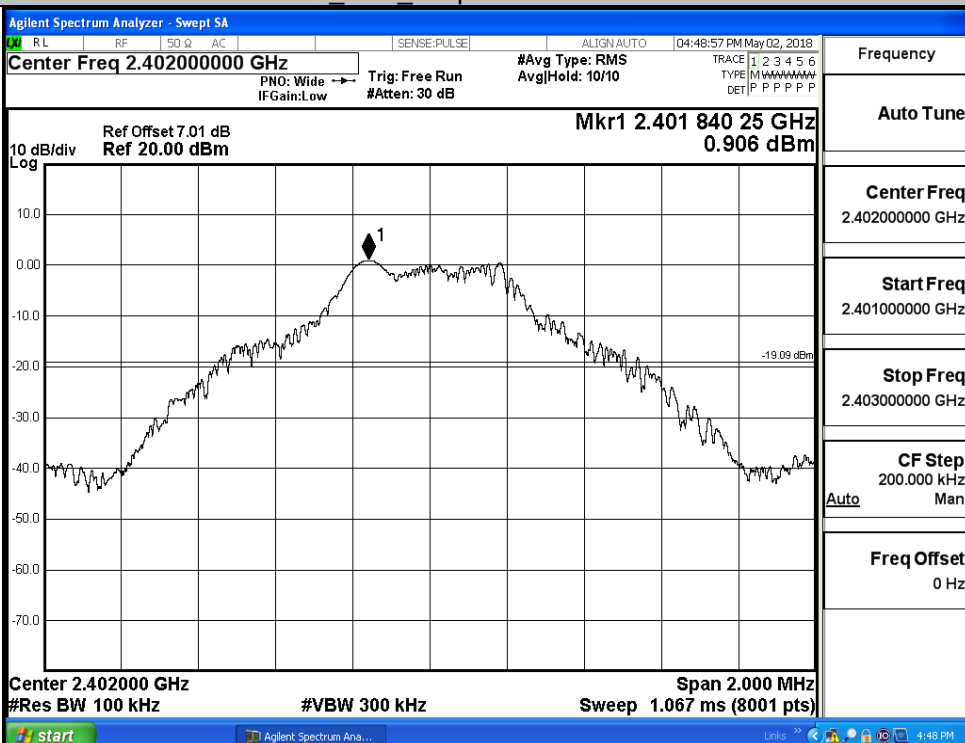


A.6 RF Conducted Spurious Emissions

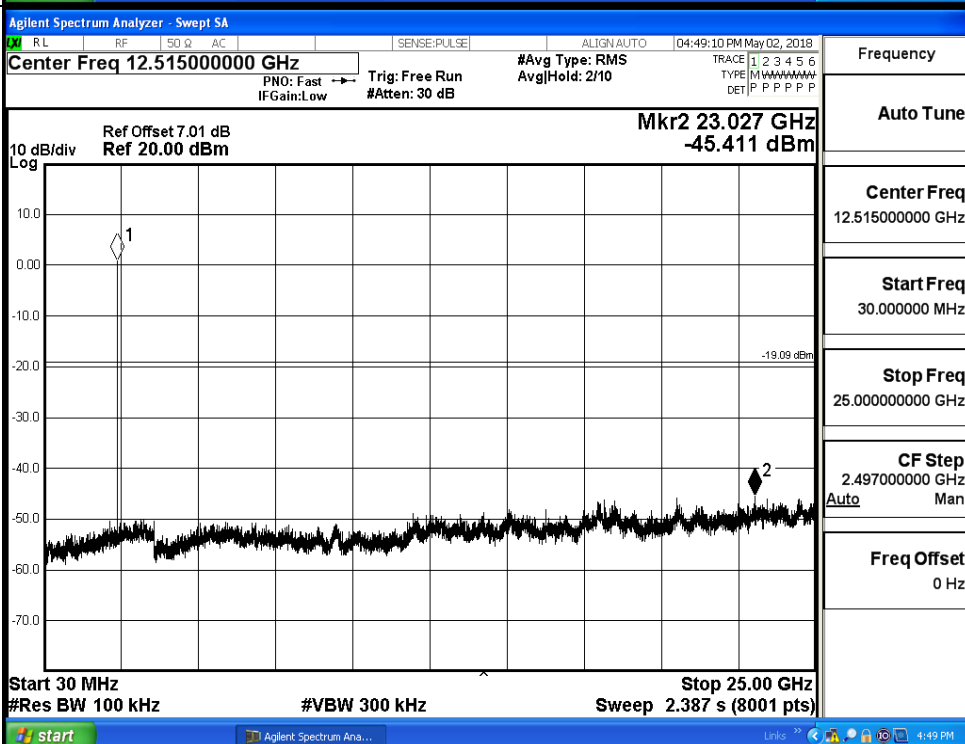
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.906	-45.411	-19.094	PASS
	MCH	-0.824	-45.720	-20.824	PASS
	HCH	-0.88	-45.426	-20.880	PASS
$\pi/4$ DQPSK	LCH	-0.577	-45.803	-20.577	PASS
	MCH	-2.298	-45.272	-22.298	PASS
	HCH	-2.577	-45.714	-22.577	PASS

GFSK LCH Graphs

Pref

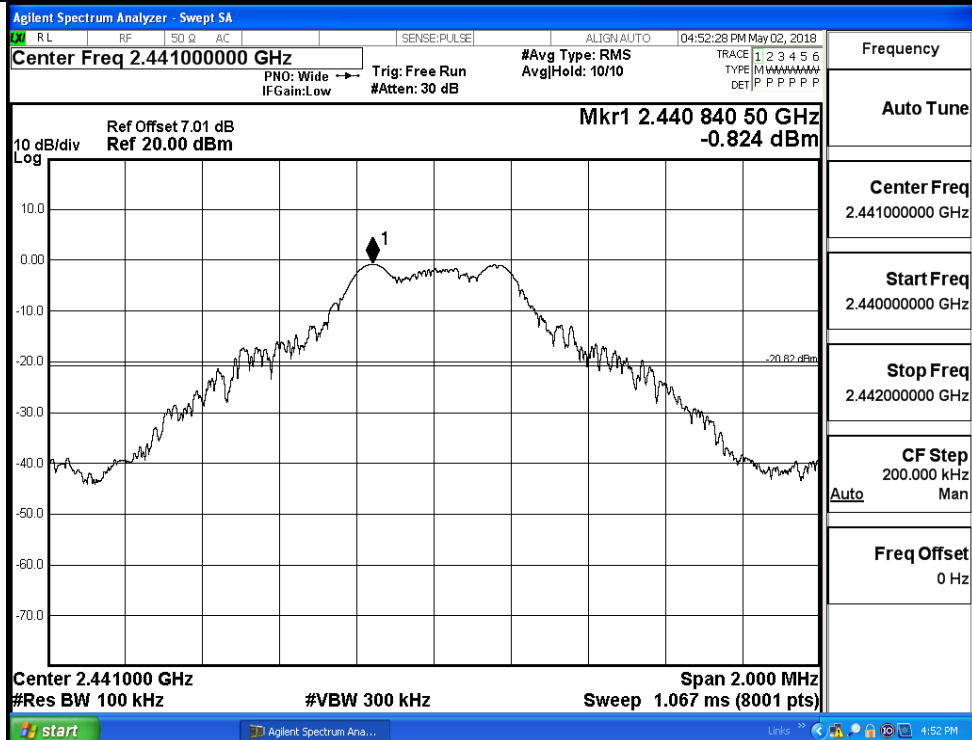


Puw

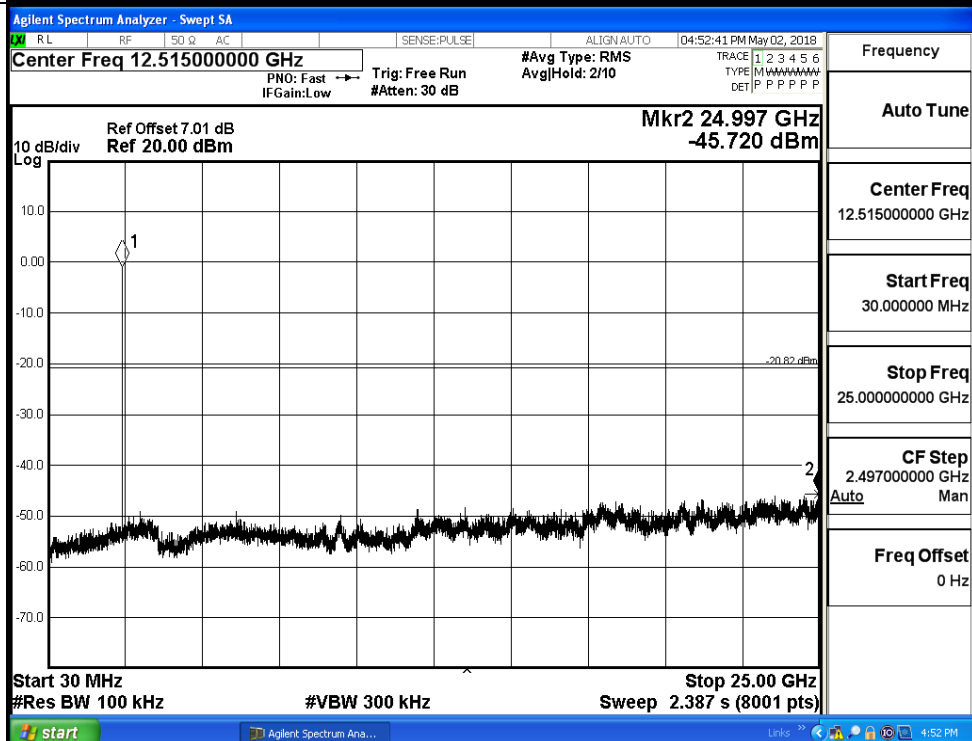


GFSK MCH_Graphs

Pref

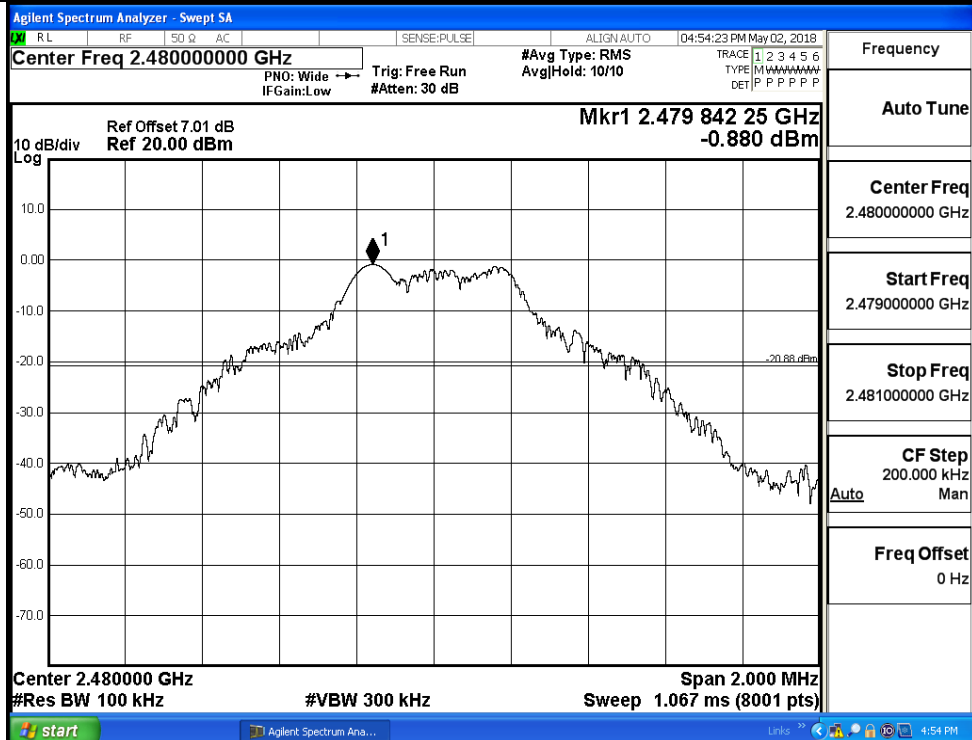


Puw

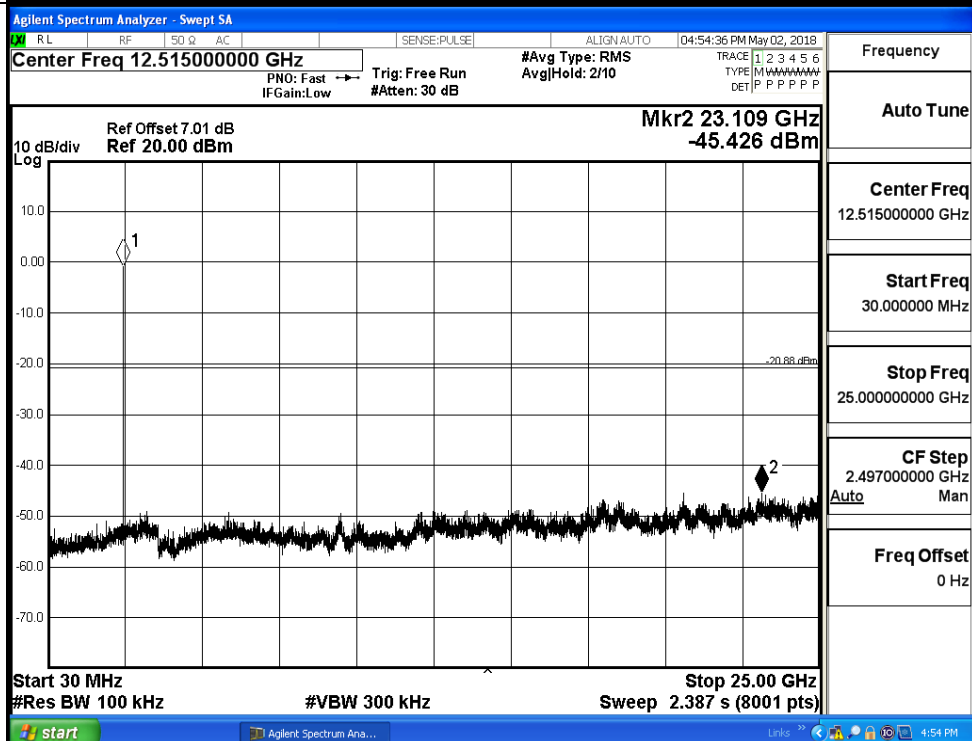


GFSK HCH Graphs

Pref



Puw

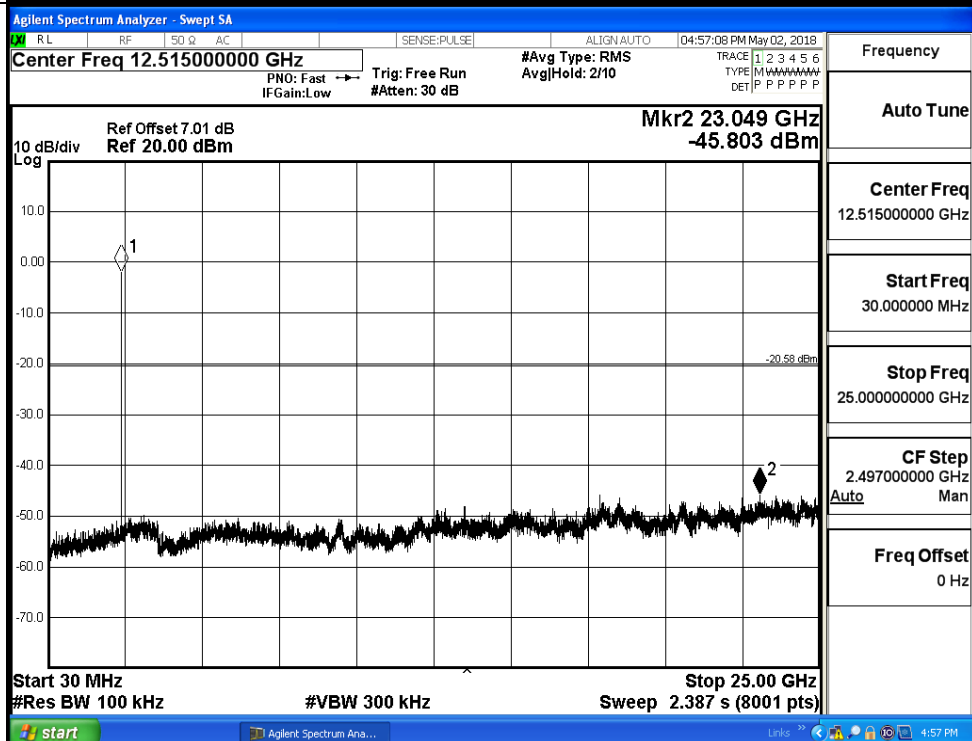


$\pi/4$ DQPSK LCH_Graphs

Pref

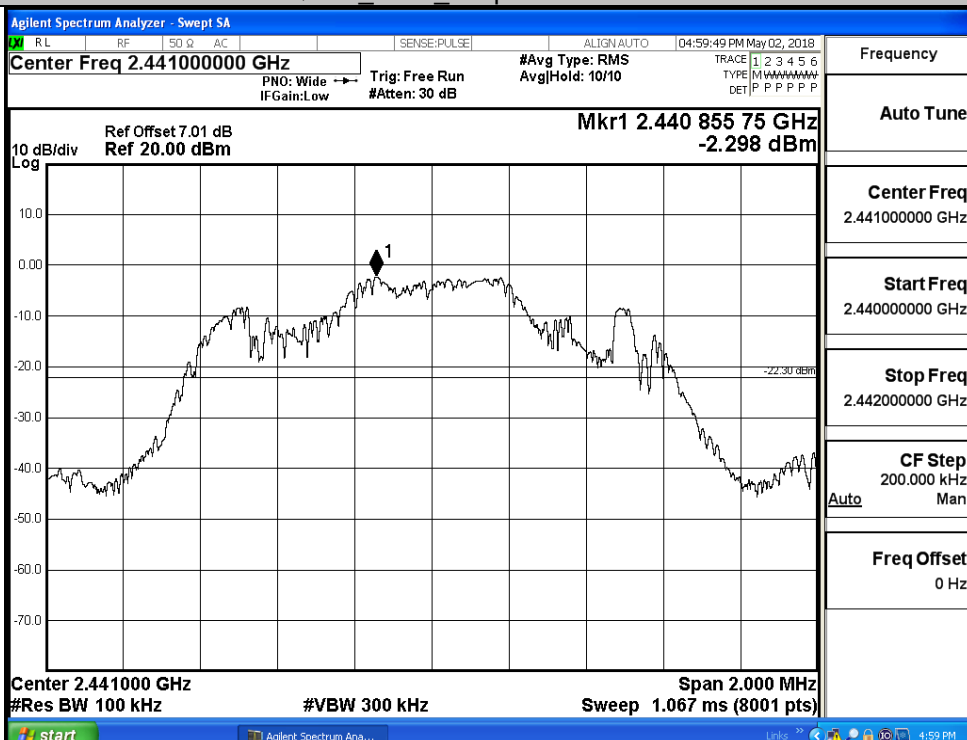


Puw

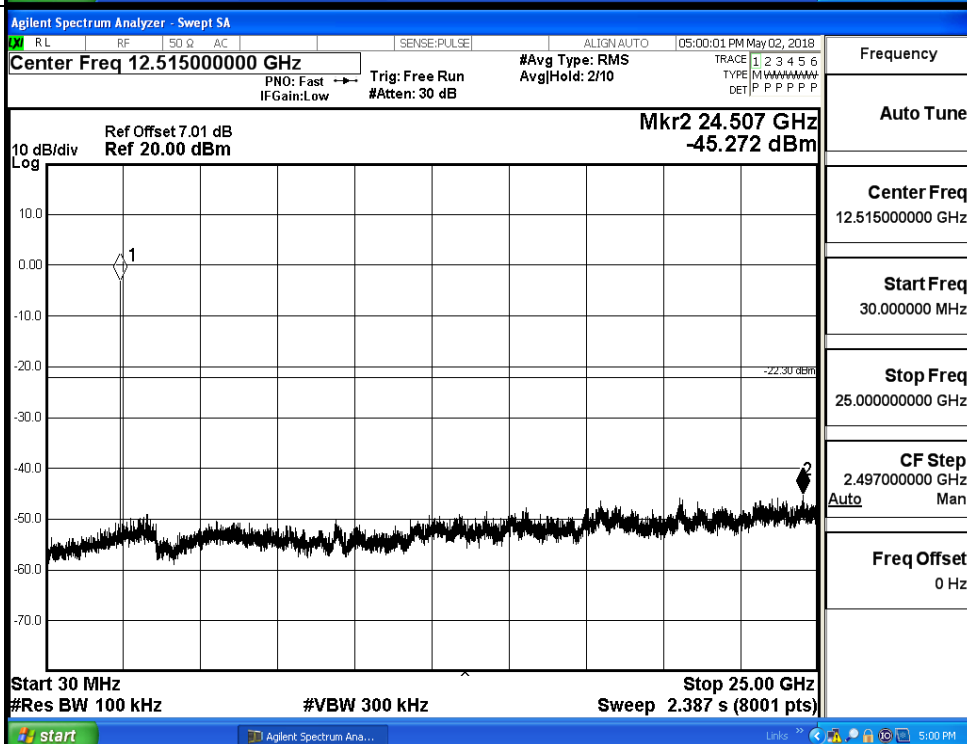


$\pi/4$ DQPSK MCH_Graphs

Pref



Puw

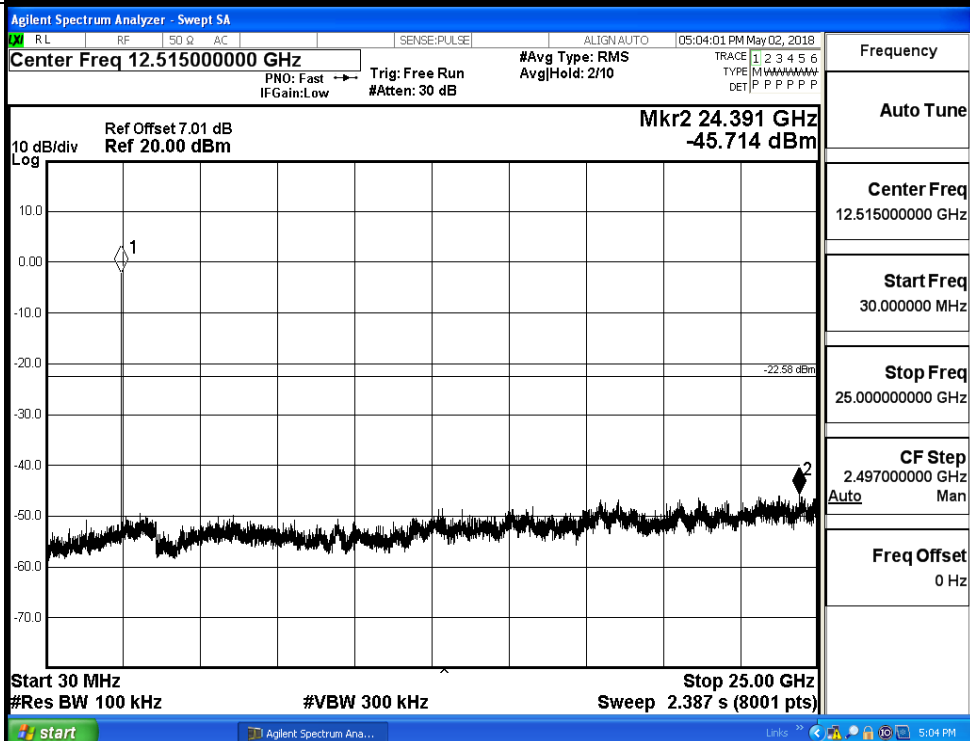


$\pi/4$ DQPSK HCH Graphs

Pref



Puw

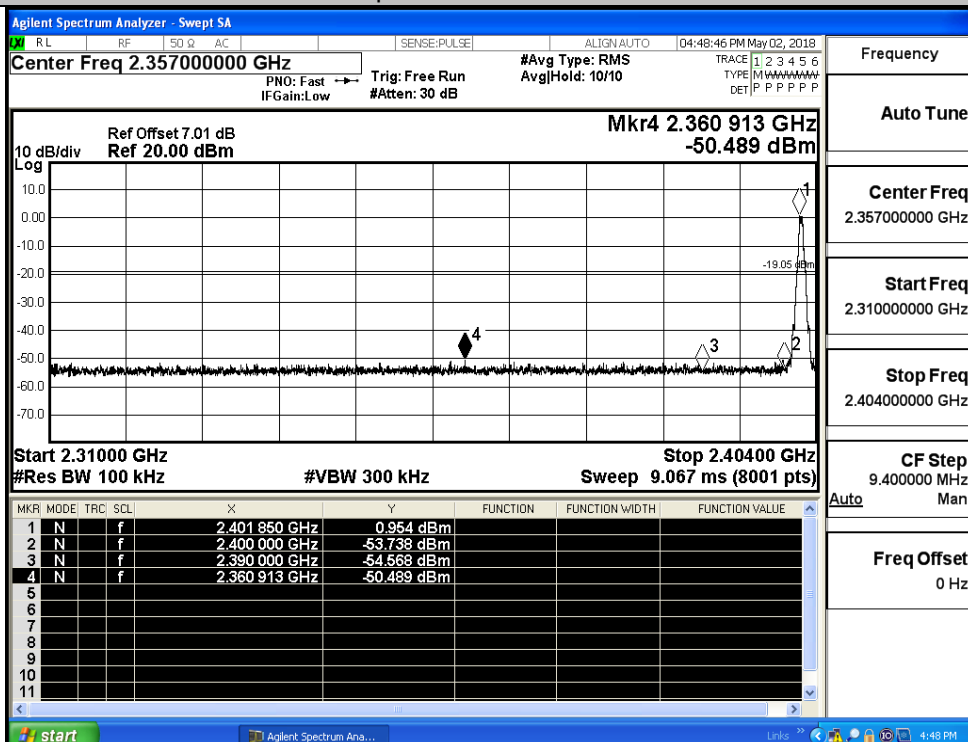


A.7 Band-edge for RF Conducted Emissions

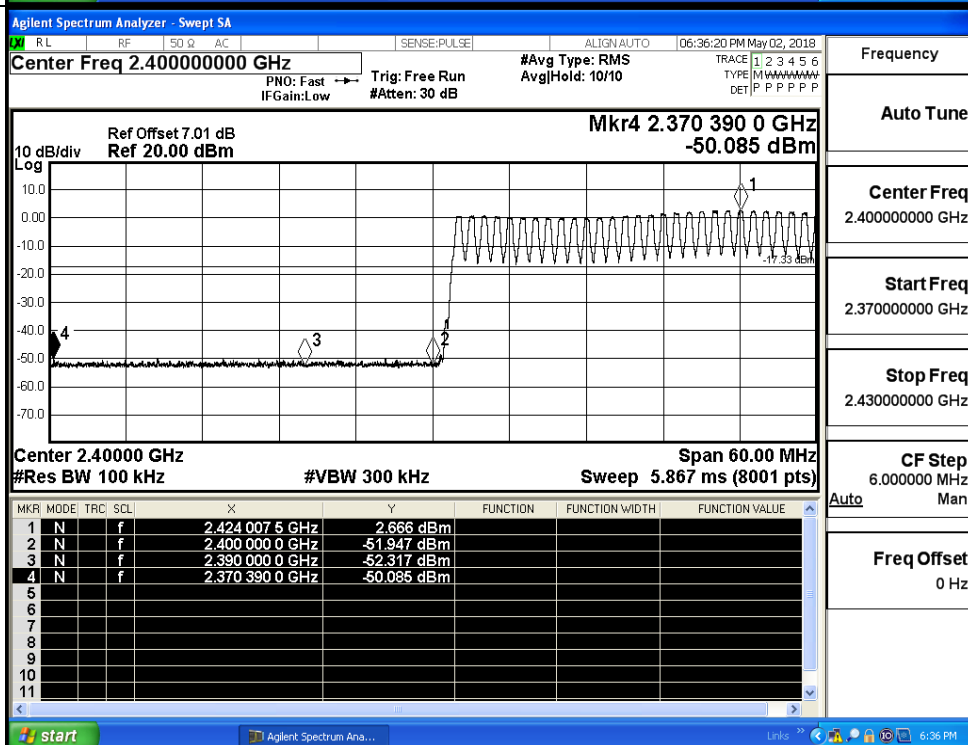
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.954	Off	-50.489	-19.05	PASS
			2.666	On	-50.085	-17.33	PASS
	HCH	2480	-0.818	Off	-50.939	-20.82	PASS
			1.941	On	-49.450	-18.06	PASS
$\pi/4$ DQPSK	LCH	2402	-0.552	Off	-49.452	-20.55	PASS
			0.746	On	-50.294	-19.25	PASS
	HCH	2480	-2.459	Off	-50.707	-22.46	PASS
			0.583	On	-50.092	-19.42	PASS

Test Graphs

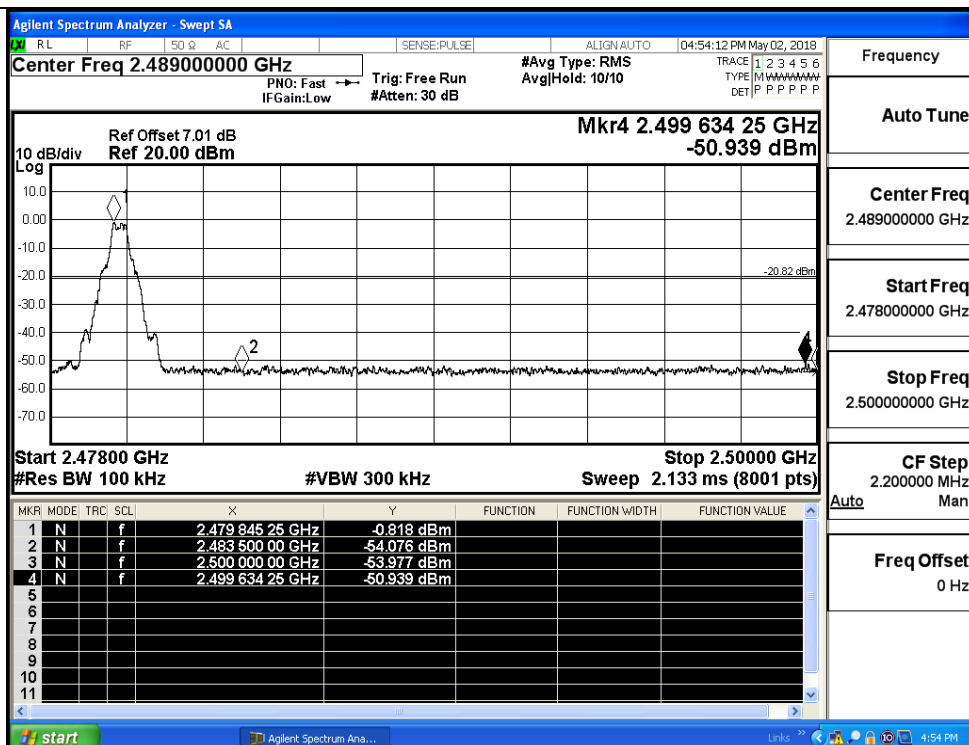
GFSK/LCH/No Hop



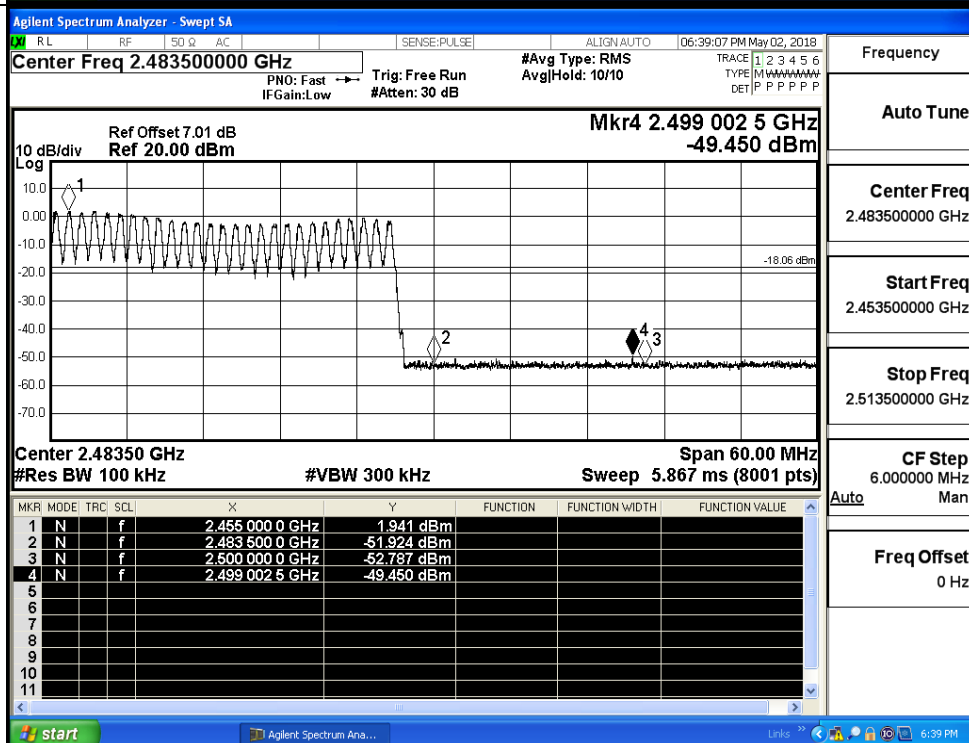
GFSK/LCH/Hop



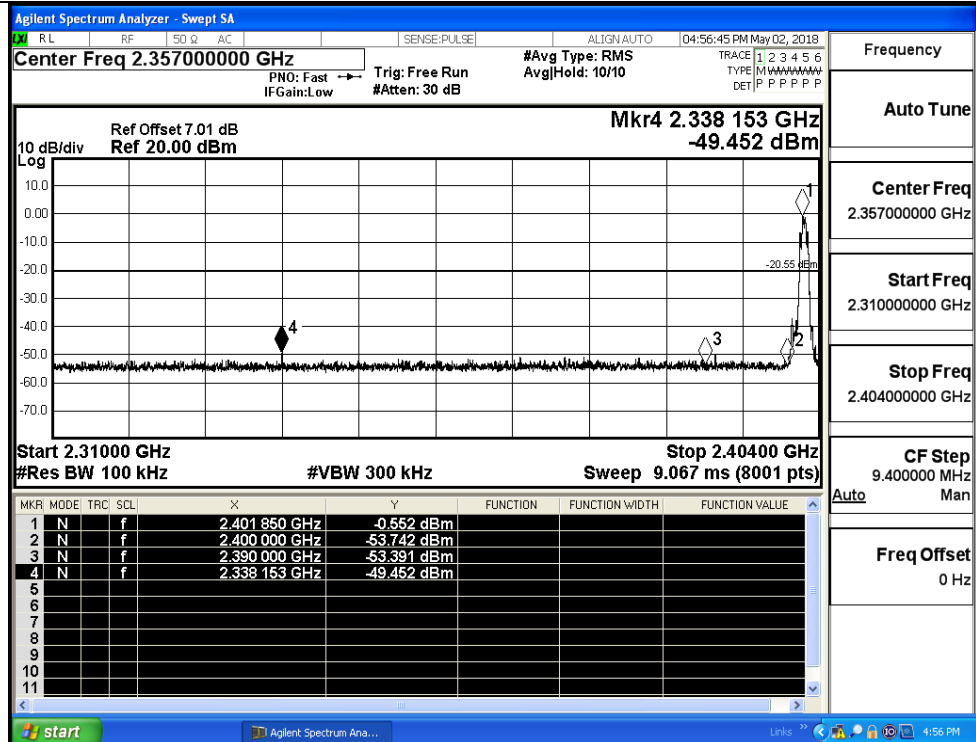
GFSK/HCH/No Hop



GFSK/HCH/Hop



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

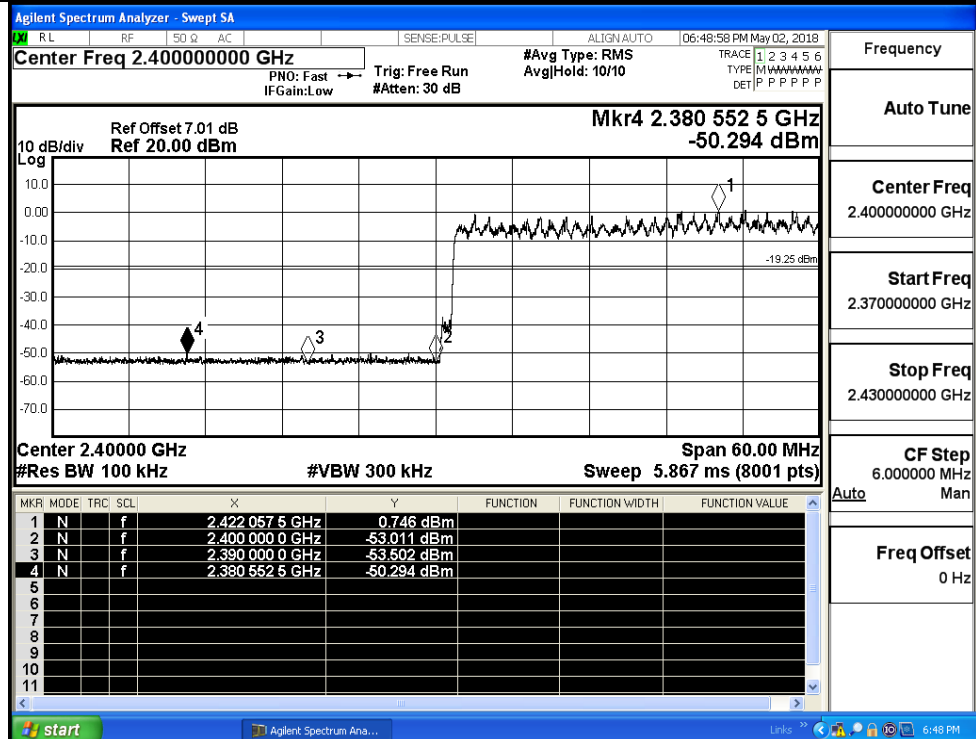


Frequency

Auto Tune

Center Freq
2.357000000 GHzStart Freq
2.310000000 GHzStop Freq
2.404000000 GHzCF Step
9.400000 MHz
Auto ManFreq Offset
0 Hz

$\pi/4$ DQPSK/LCH/Hop

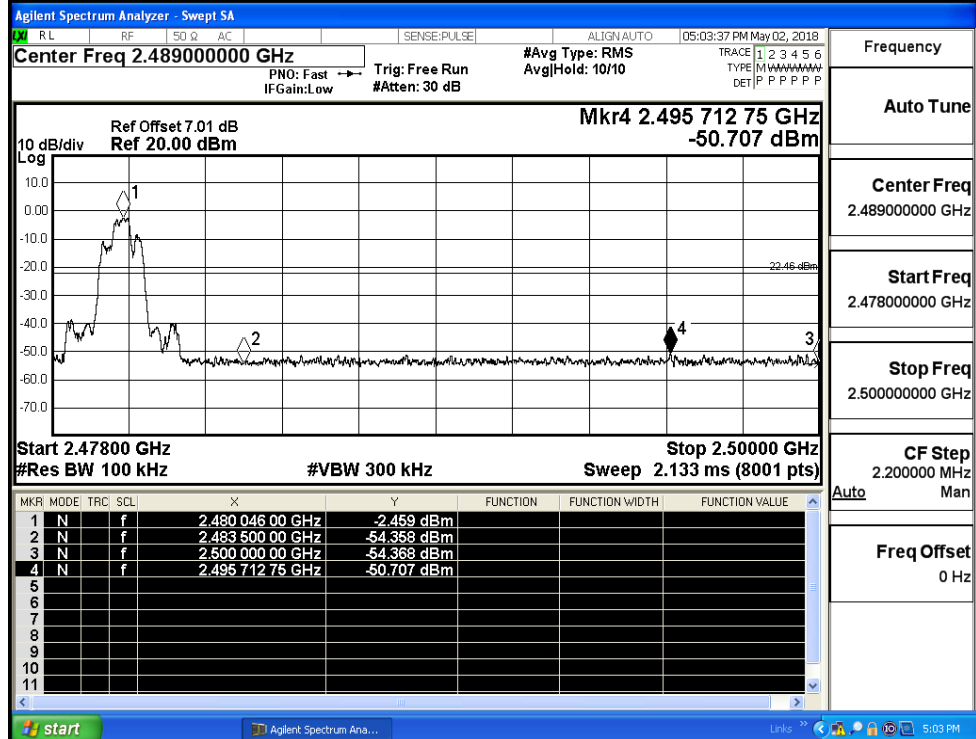


Frequency

Auto Tune

Center Freq
2.400000000 GHzStart Freq
2.370000000 GHzStop Freq
2.430000000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

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

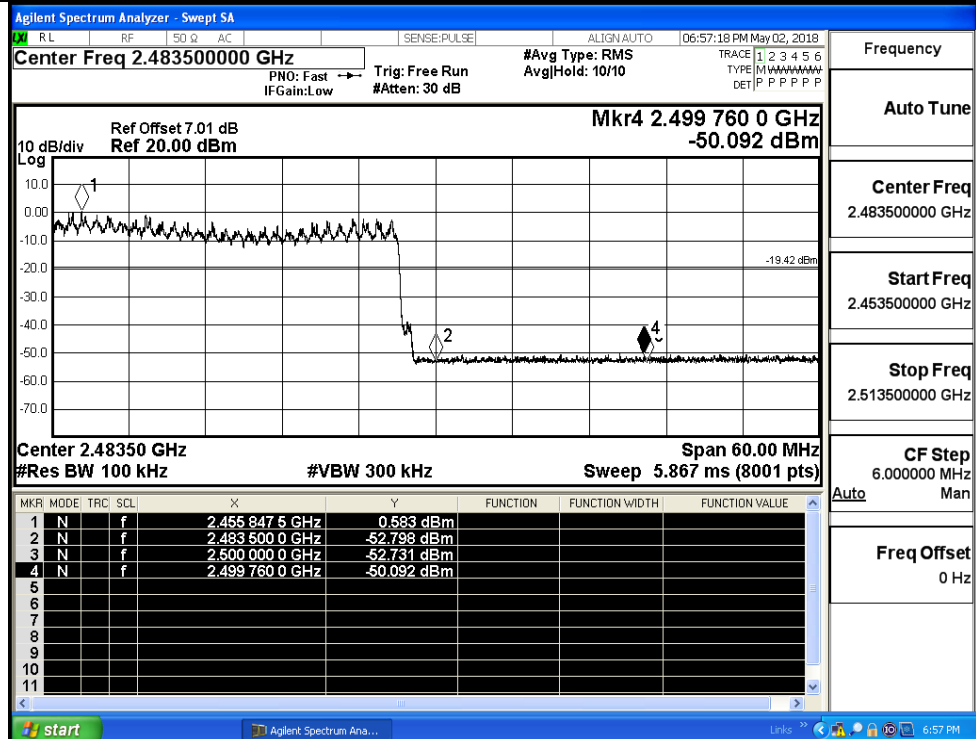


Frequency

Auto Tune

Center Freq
2.489000000 GHzStart Freq
2.478000000 GHzStop Freq
2.500000000 GHzCF Step
2.200000 MHz
Auto ManFreq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop



Frequency

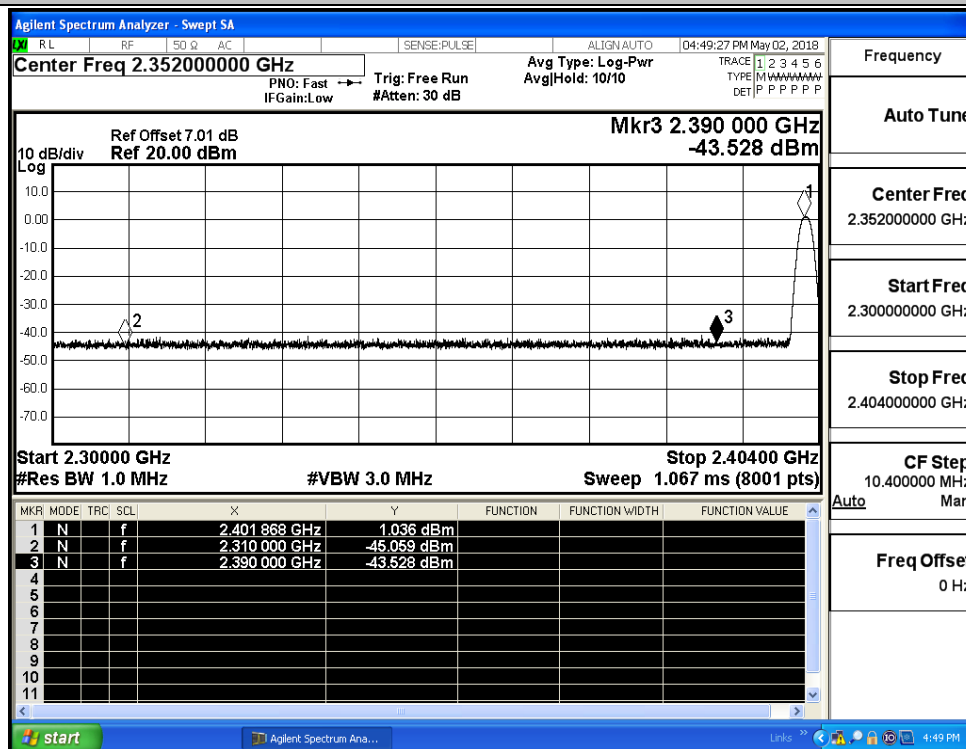
Auto Tune

Center Freq
2.483500000 GHzStart Freq
2.453500000 GHzStop Freq
2.513500000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

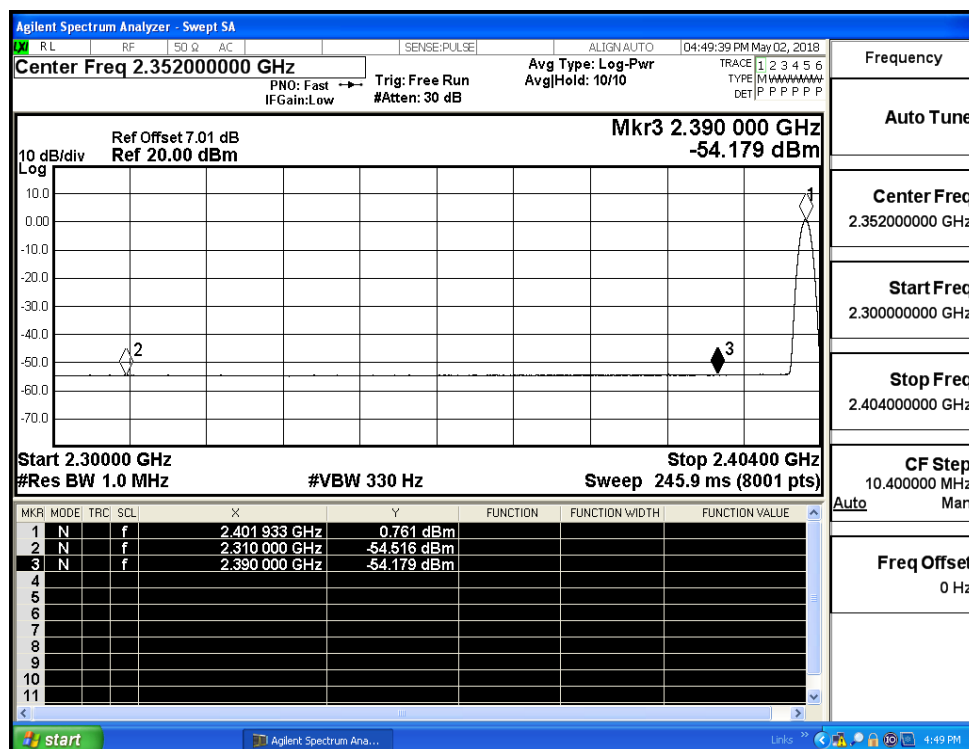
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-45.06	2.0	0	50.20	PEAK	74	PASS
	Off	2310.0	-54.52	2.0	0	40.74	AV	54	PASS
	Off	2390.0	-43.53	2.0	0	51.73	PEAK	74	PASS
	Off	2390.0	-54.18	2.0	0	41.08	AV	54	PASS
	Off	2483.5	-43.22	2.0	0	52.03	PEAK	74	PASS
	Off	2483.5	-54.14	2.0	0	41.12	AV	54	PASS
	Off	2500.0	-44.73	2.0	0	50.53	PEAK	74	PASS
	Off	2500.0	-53.98	2.0	0	41.28	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-44.78	2.0	0	50.47	PEAK	74	PASS
	Off	2310.0	-54.64	2.0	0	40.61	AV	54	PASS
	Off	2390.0	-44.11	2.0	0	51.15	PEAK	74	PASS
	Off	2390.0	-54.36	2.0	0	40.90	AV	54	PASS
	Off	2483.5	-44.57	2.0	0	50.69	PEAK	74	PASS
	Off	2483.5	-54.19	2.0	0	41.07	AV	54	PASS
	Off	2500.0	-43.68	2.0	0	51.58	PEAK	74	PASS
	Off	2500.0	-54.01	2.0	0	41.24	AV	54	PASS
	Off	2500.0	#rbr33dh51hc hnnpeak	2.0	#rbgf3dh51hc hnnpeak	#rbe33dh51 hchnnpeak	PEAK	74	PASS
	Off	2500.0	#rbr33dh51hc hnnav	2.0	#rbgf3dh51hc hnnav	#rbe33dh51 hchnnav	AV	54	PASS

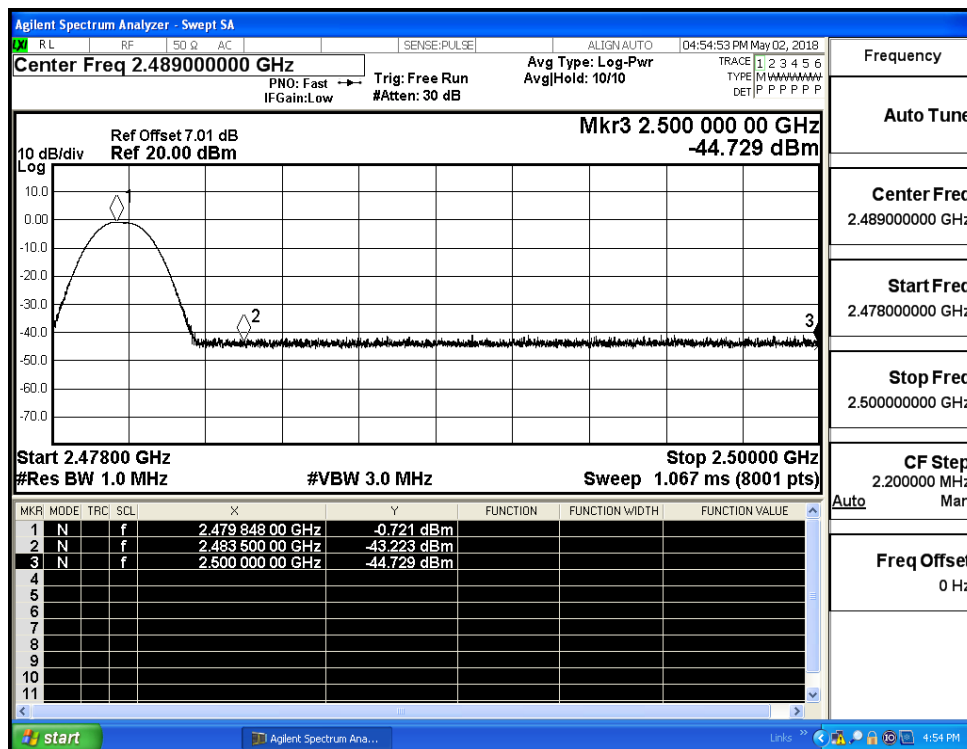
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



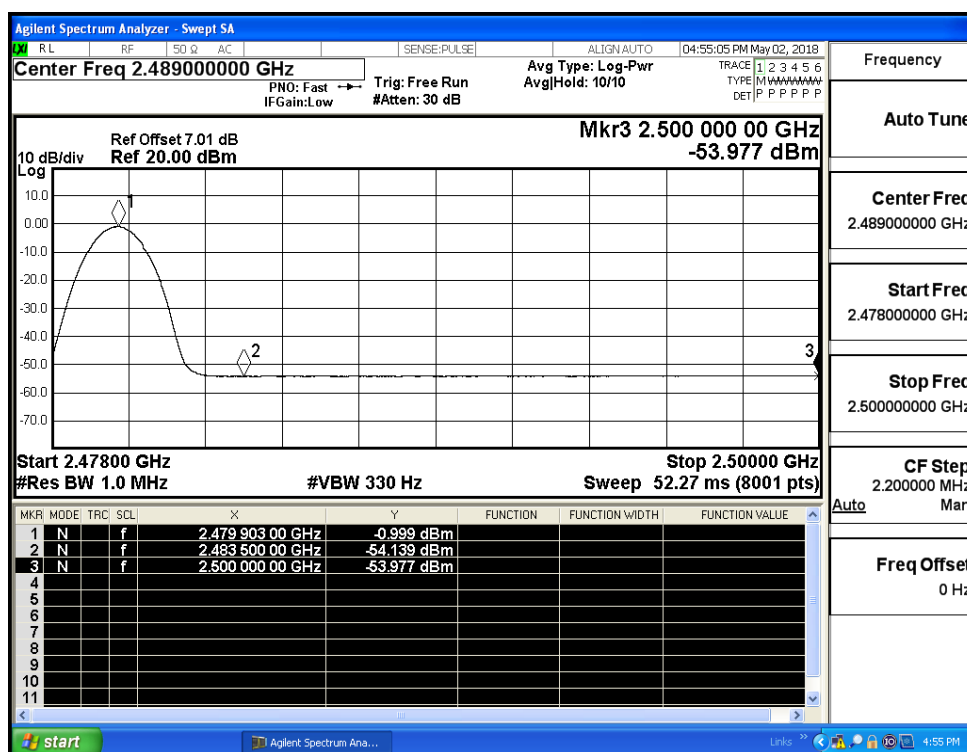
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

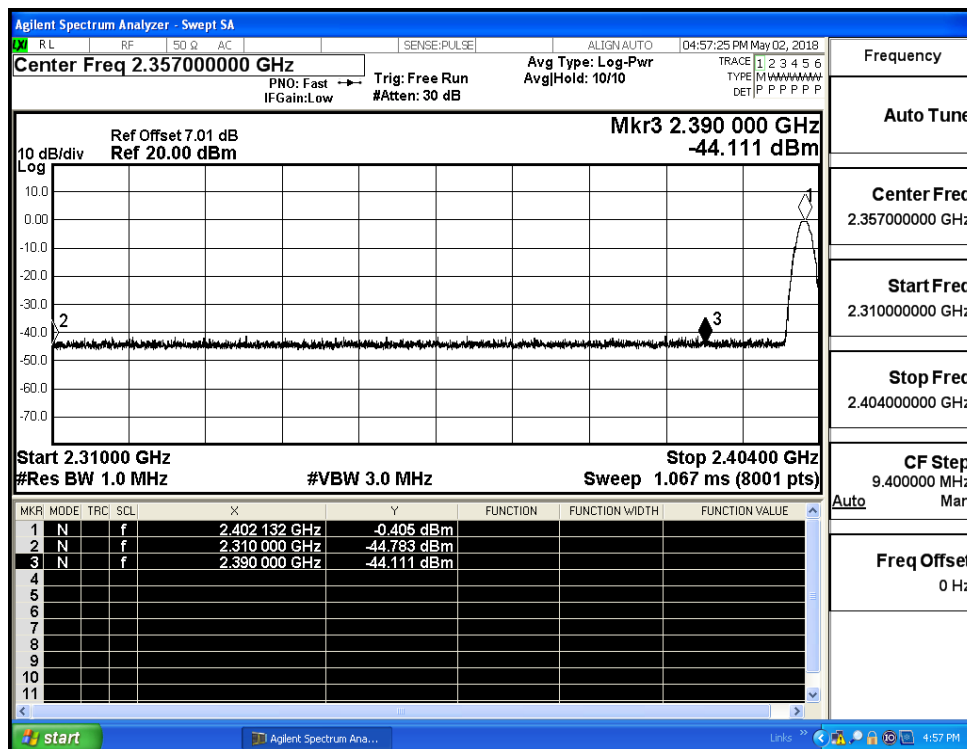
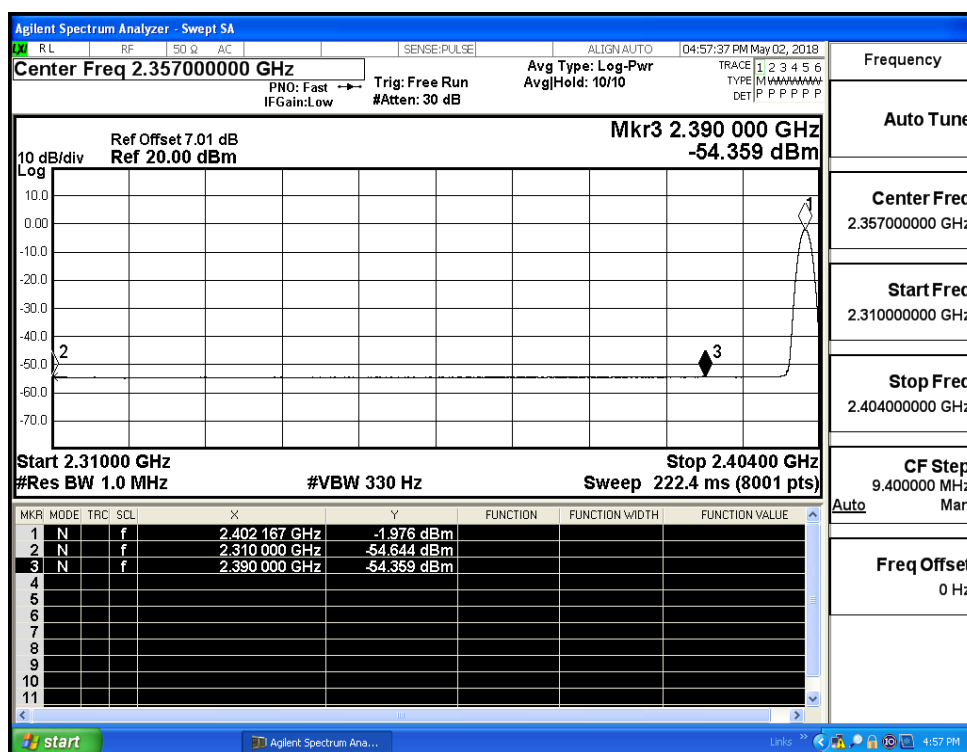


Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)

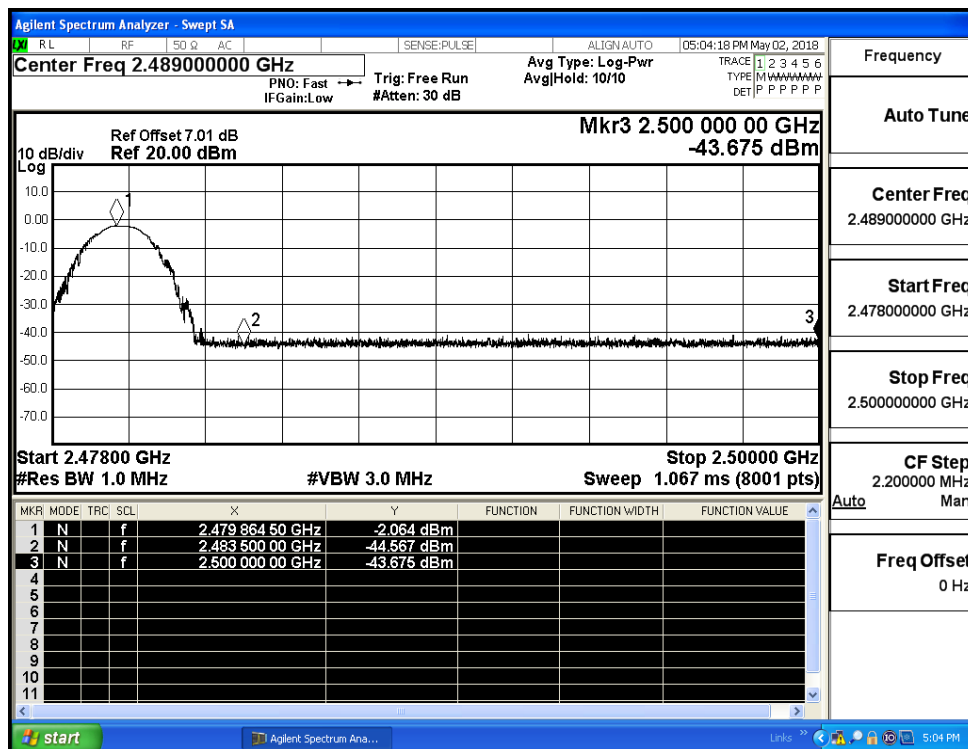


Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



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_π/4-DQPSK_PEAK (High Channel)



Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)

