

Appendix A

RF Test Data for BT V5.0(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth Earbuds With Charging Case

Trade Mark: N/A

Test Model: DRIPZ

Environmental Conditions

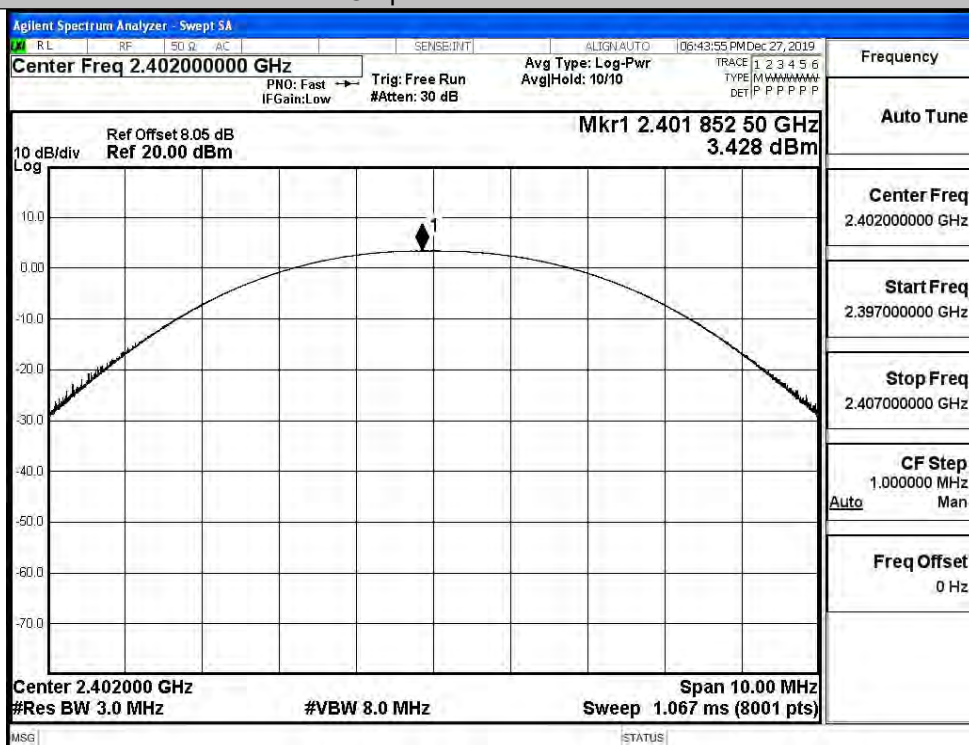
Temperature:	24.3 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Scout Wu
Supervised by:	Wang Chuang

A.1 Maximum Conducted Peak Output Power

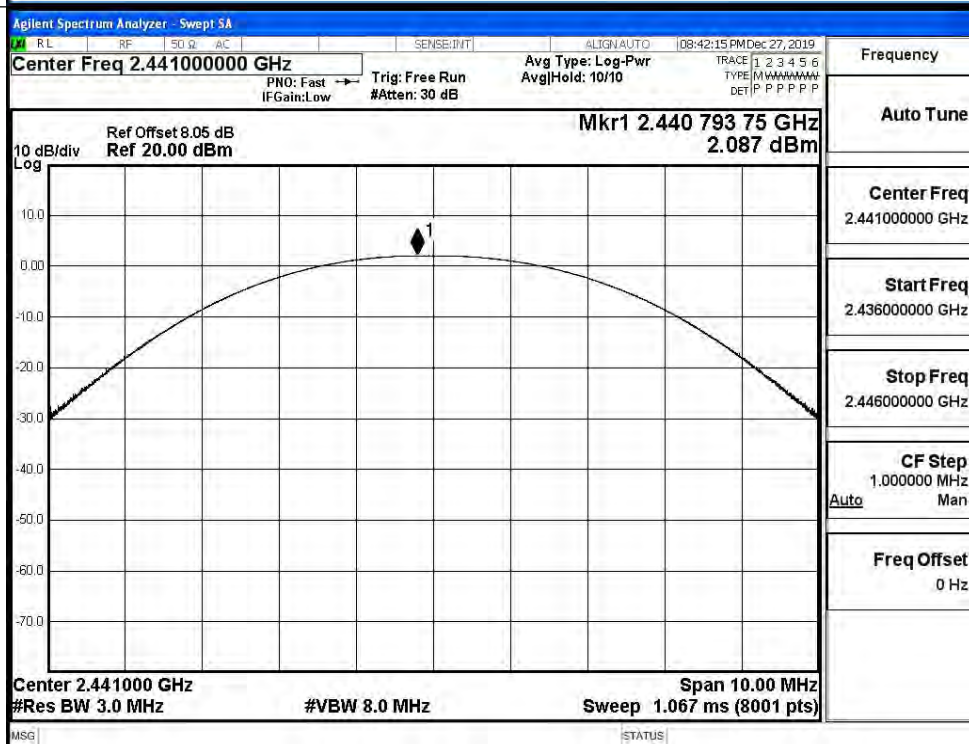
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.428	21	PASS
	MCH	2.087	21	PASS
	HCH	0.459	21	PASS
π/4DQPSK	LCH	3.080	21	PASS
	MCH	1.516	21	PASS
	HCH	2.729	21	PASS

Test Graphs

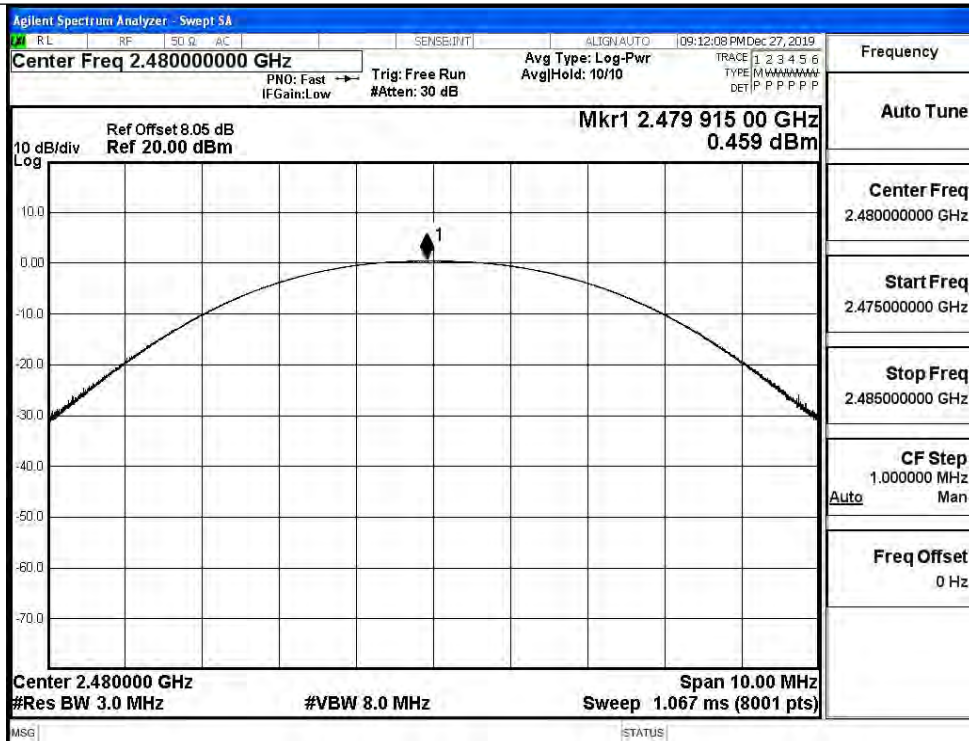
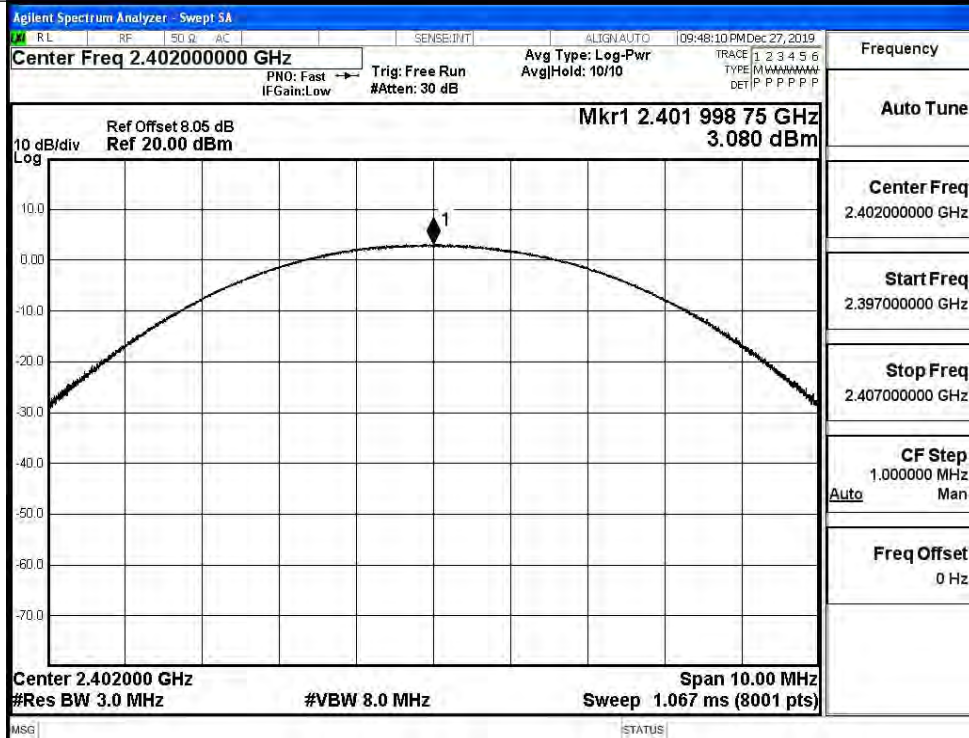
GFSK/LCH

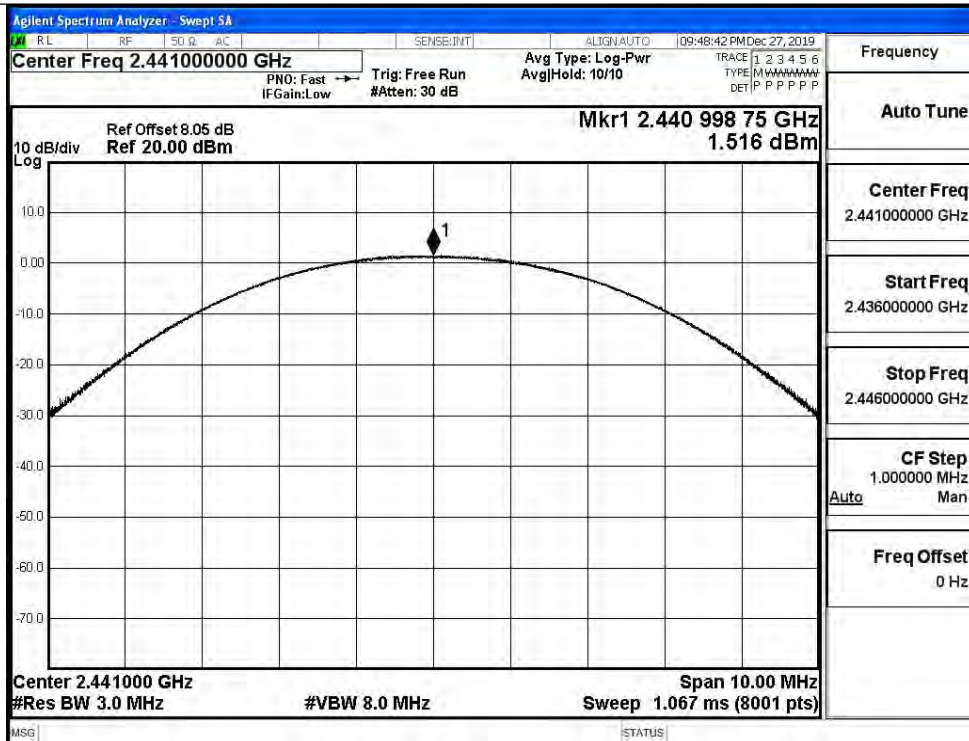
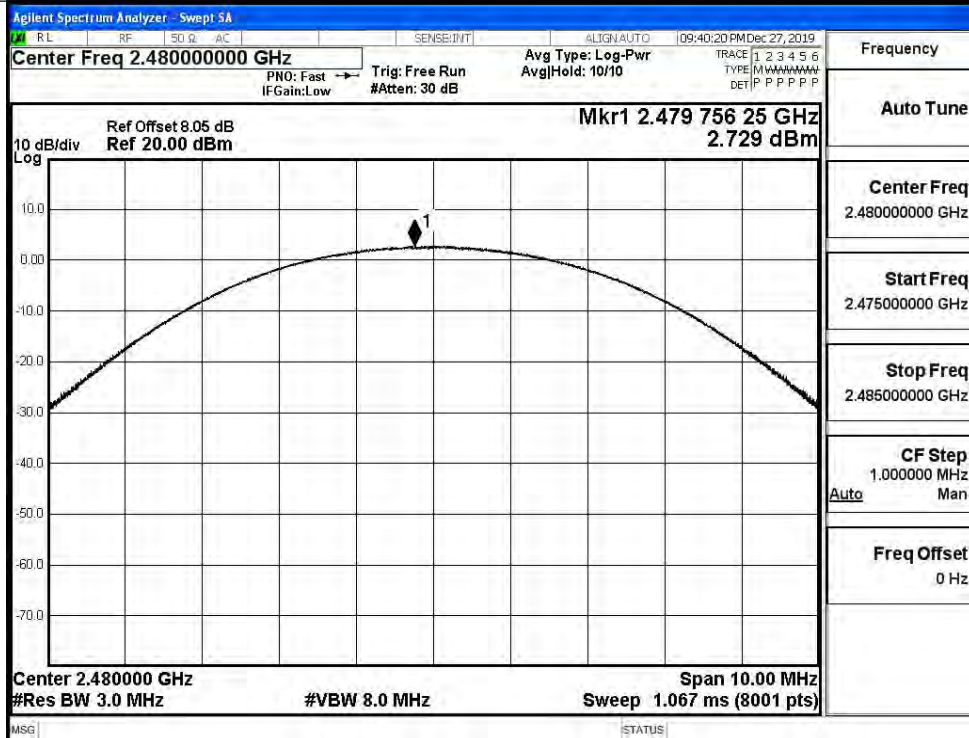


GFSK/MCH



GFSK/HCH

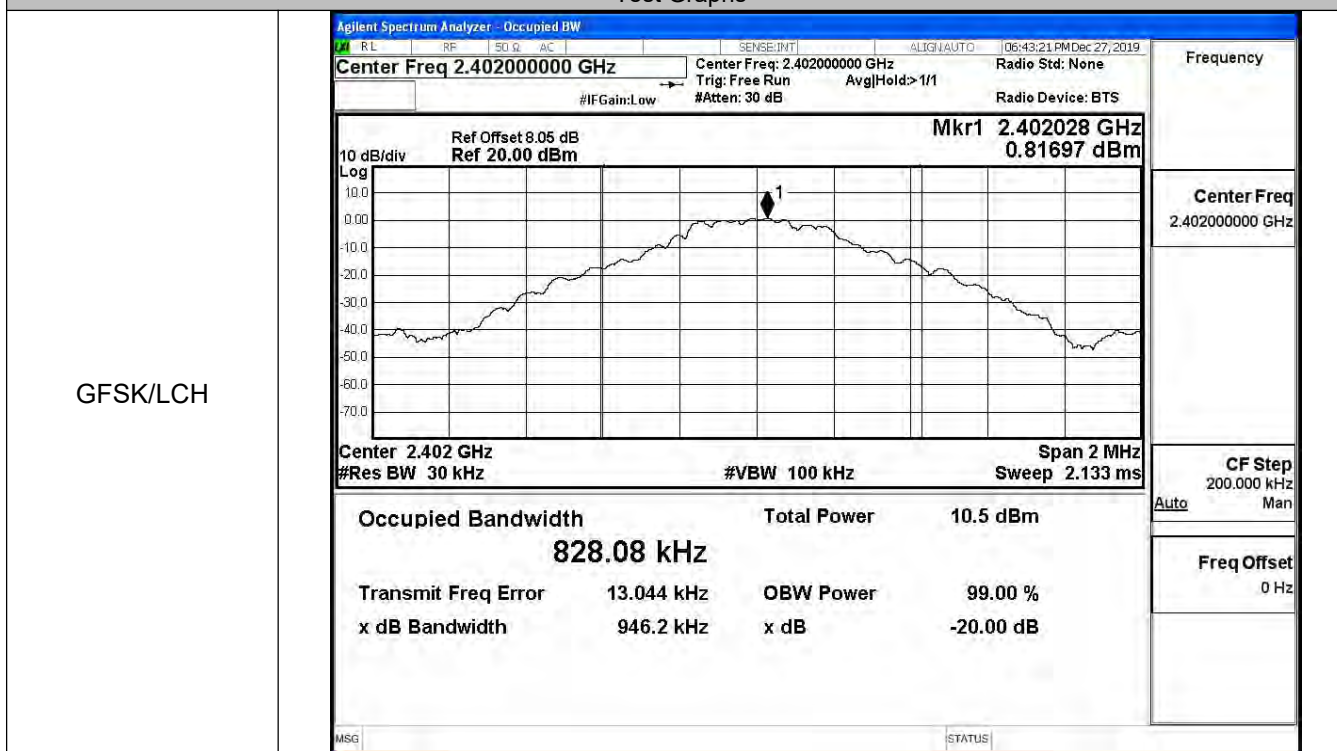
 π /4DQPSK/LCH

$\pi/4$ DQPSK/MCH $\pi/4$ DQPSK/HCH

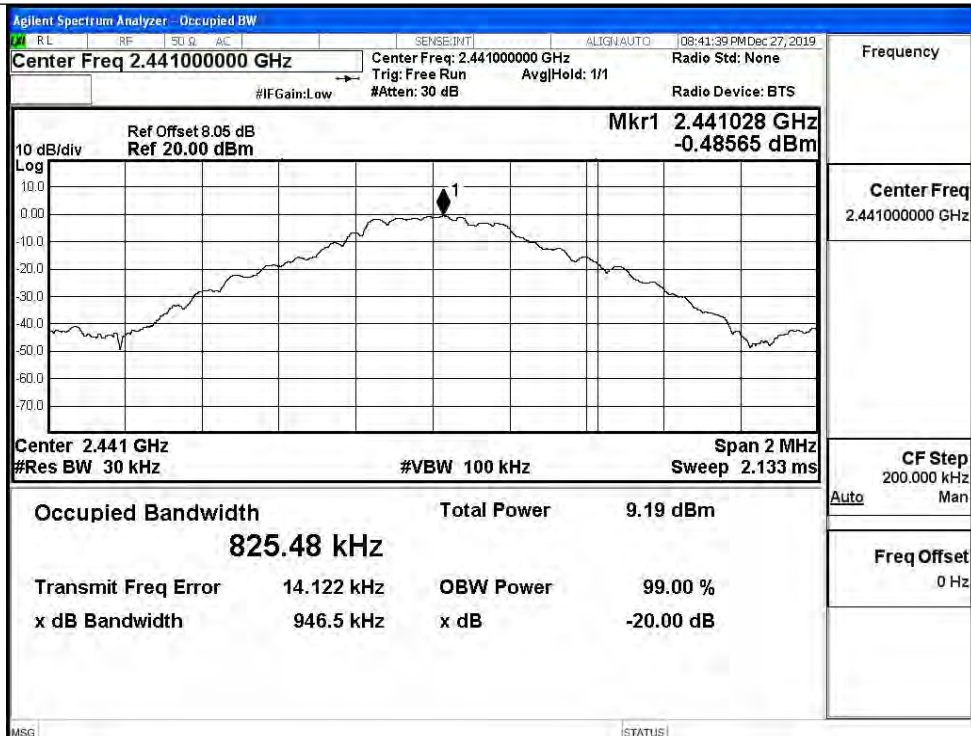
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9462	Not Specified	PASS
	MCH	0.9465	Not Specified	PASS
	HCH	0.9467	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.321	Not Specified	PASS
	MCH	1.323	Not Specified	PASS
	HCH	1.324	Not Specified	PASS

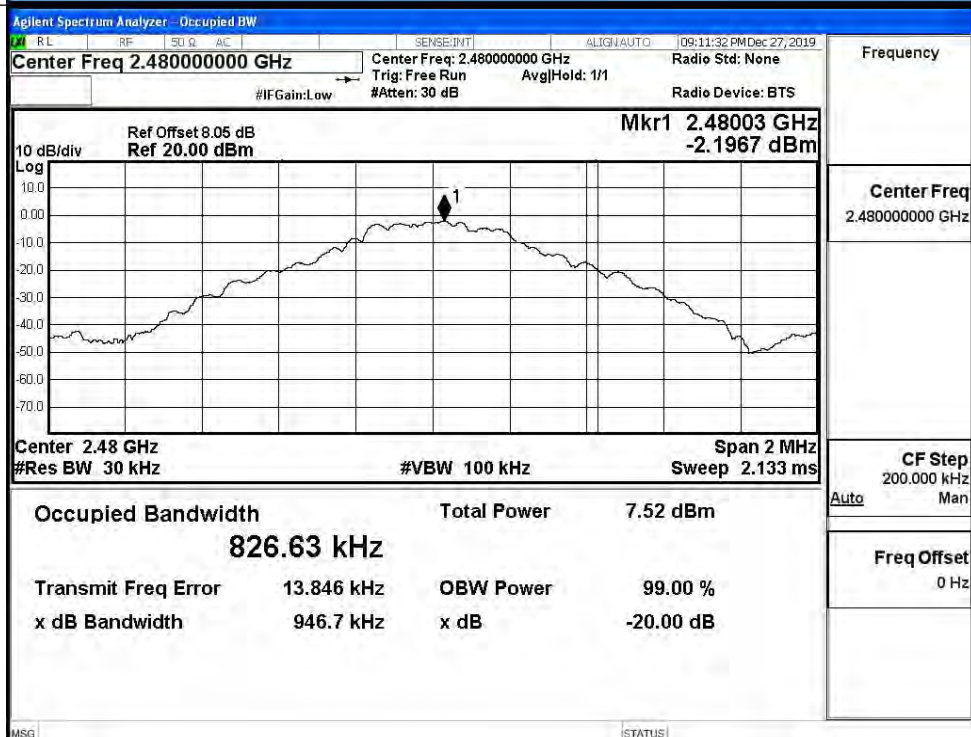
Test Graphs

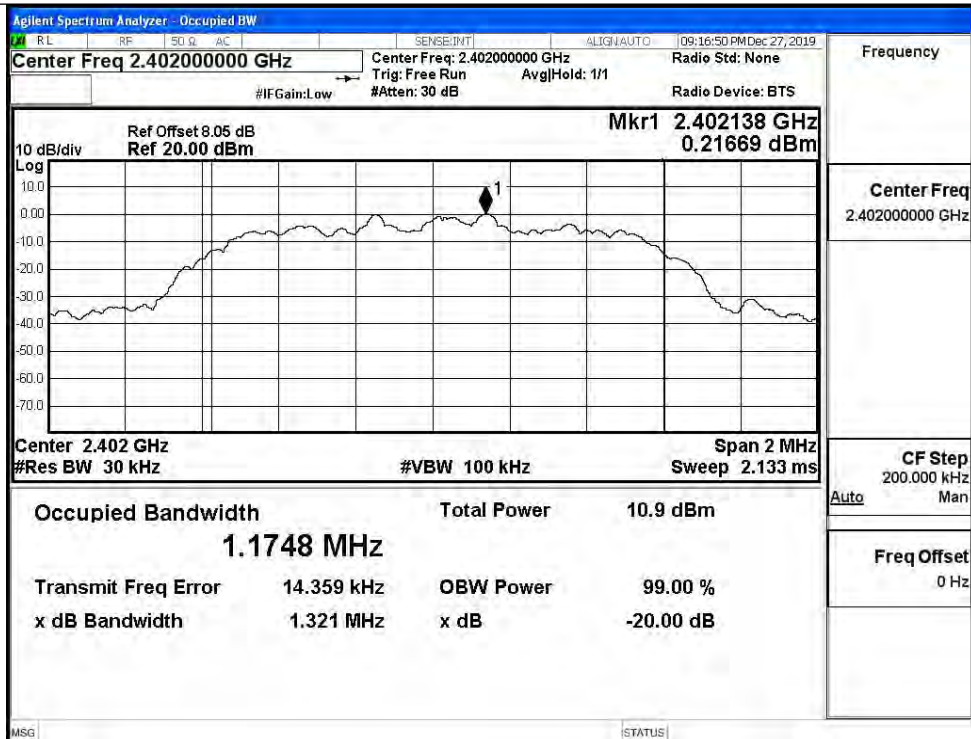
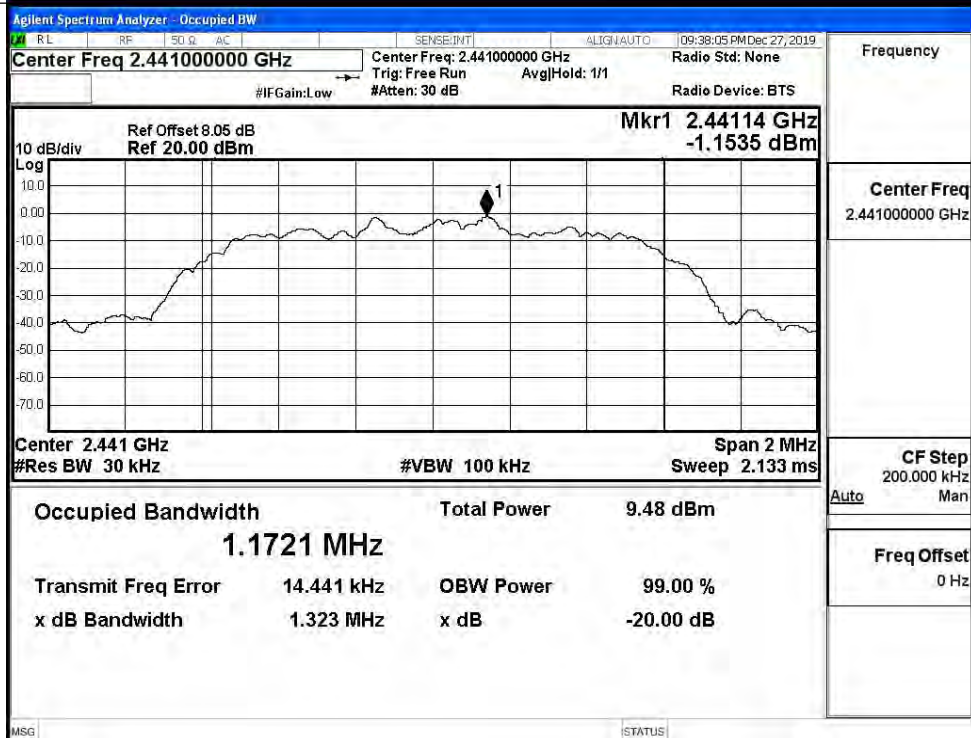


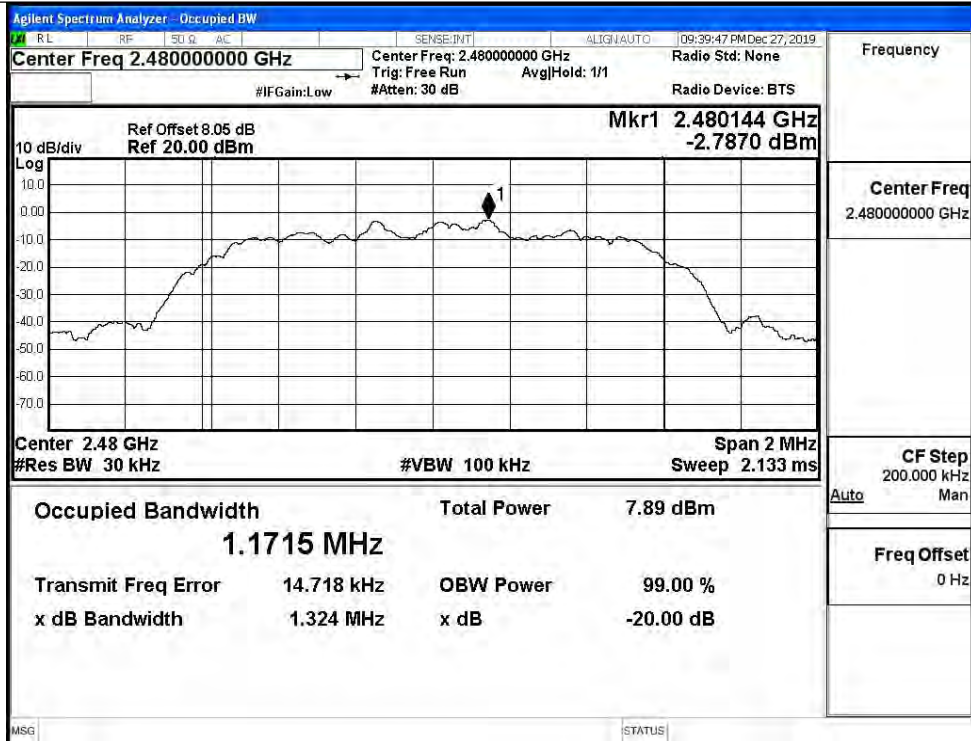
GFSK/MCH



GFSK/HCH



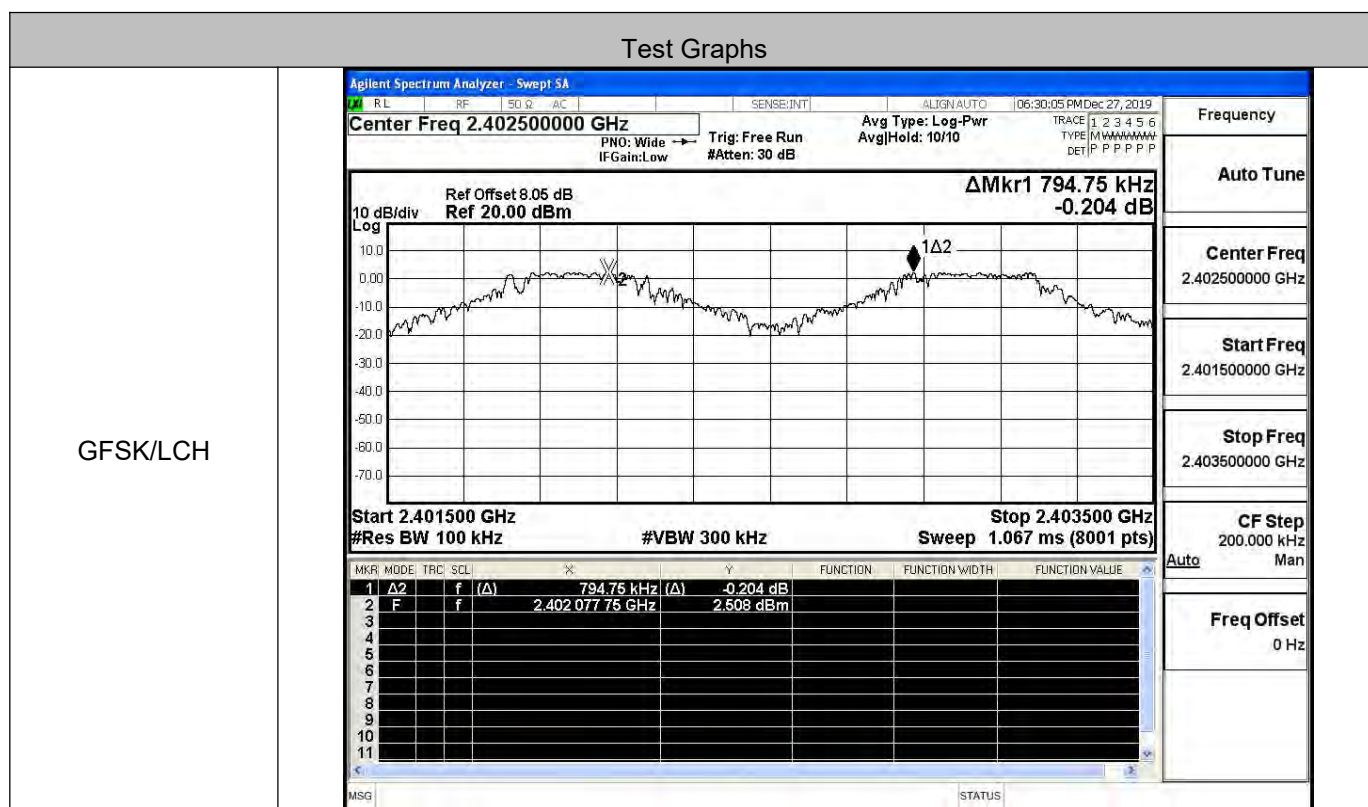
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

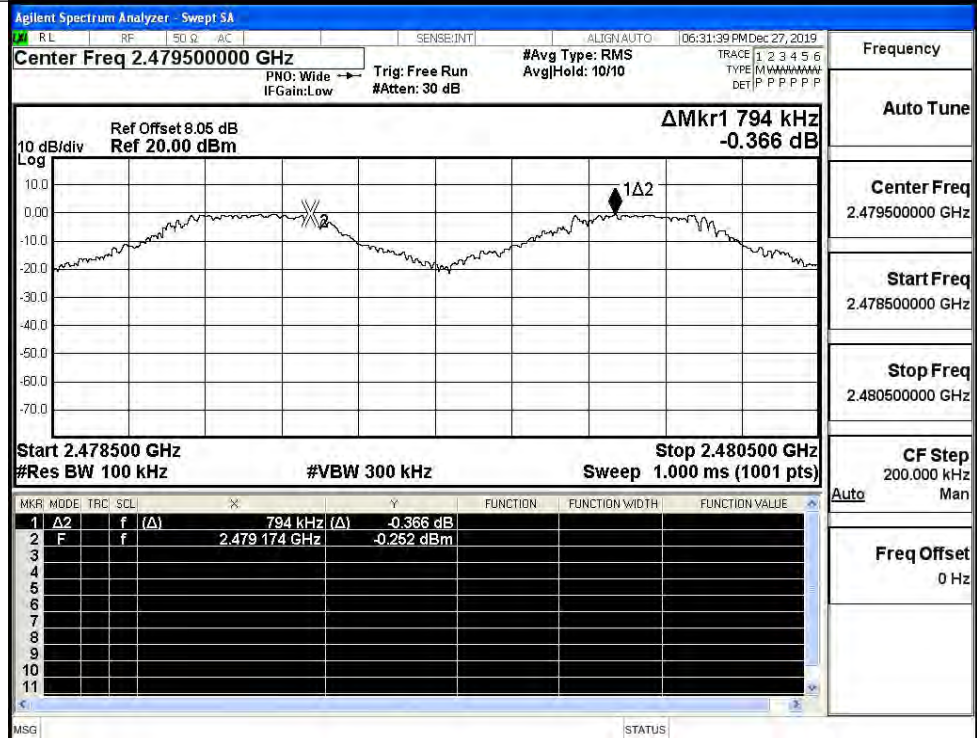
A.3 Carrier Frequency Separation

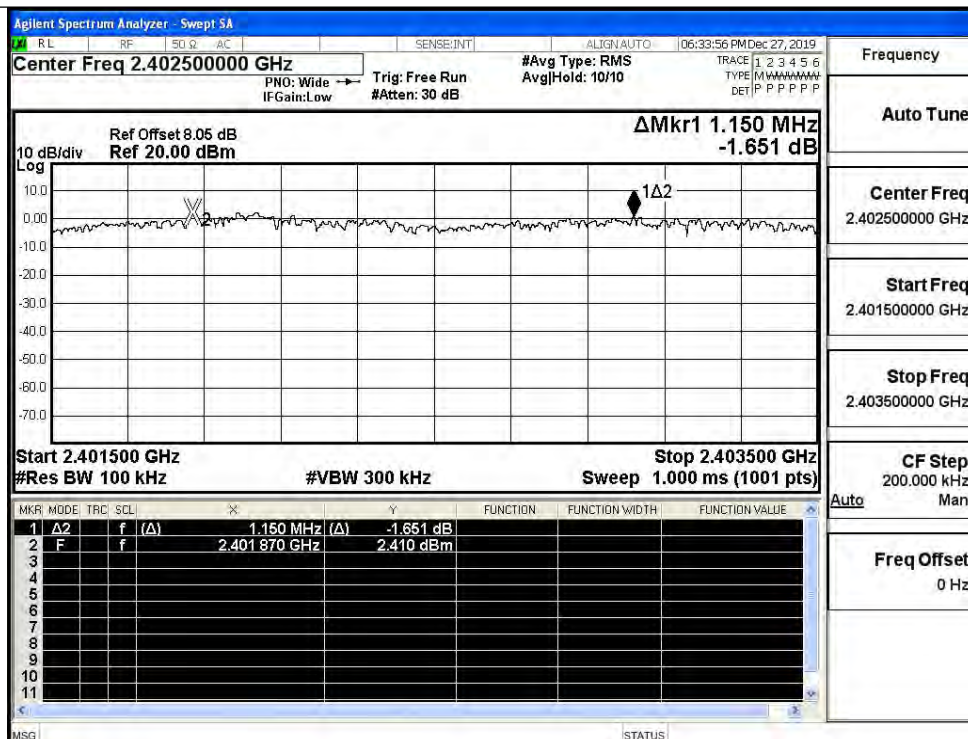
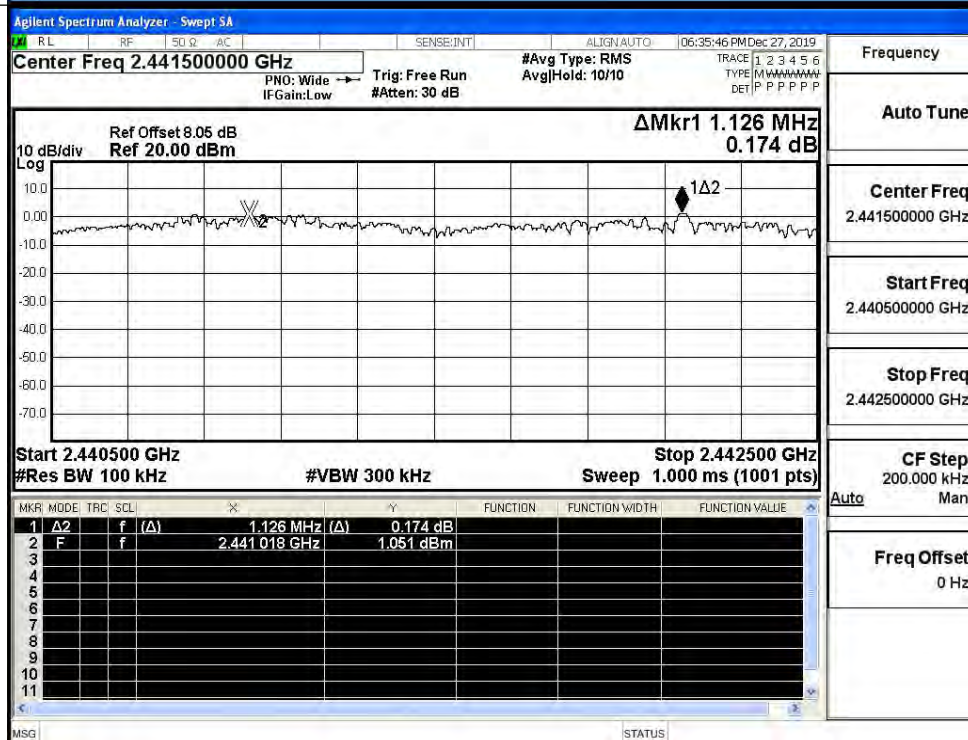
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.795	0.6308	PASS
	MCH	0.846	0.6308	PASS
	HCH	0.794	0.6308	PASS
$\pi/4$ DQPSK	LCH	1.150	0.8806	PASS
	MCH	1.126	0.8806	PASS
	HCH	1.016	0.8806	PASS

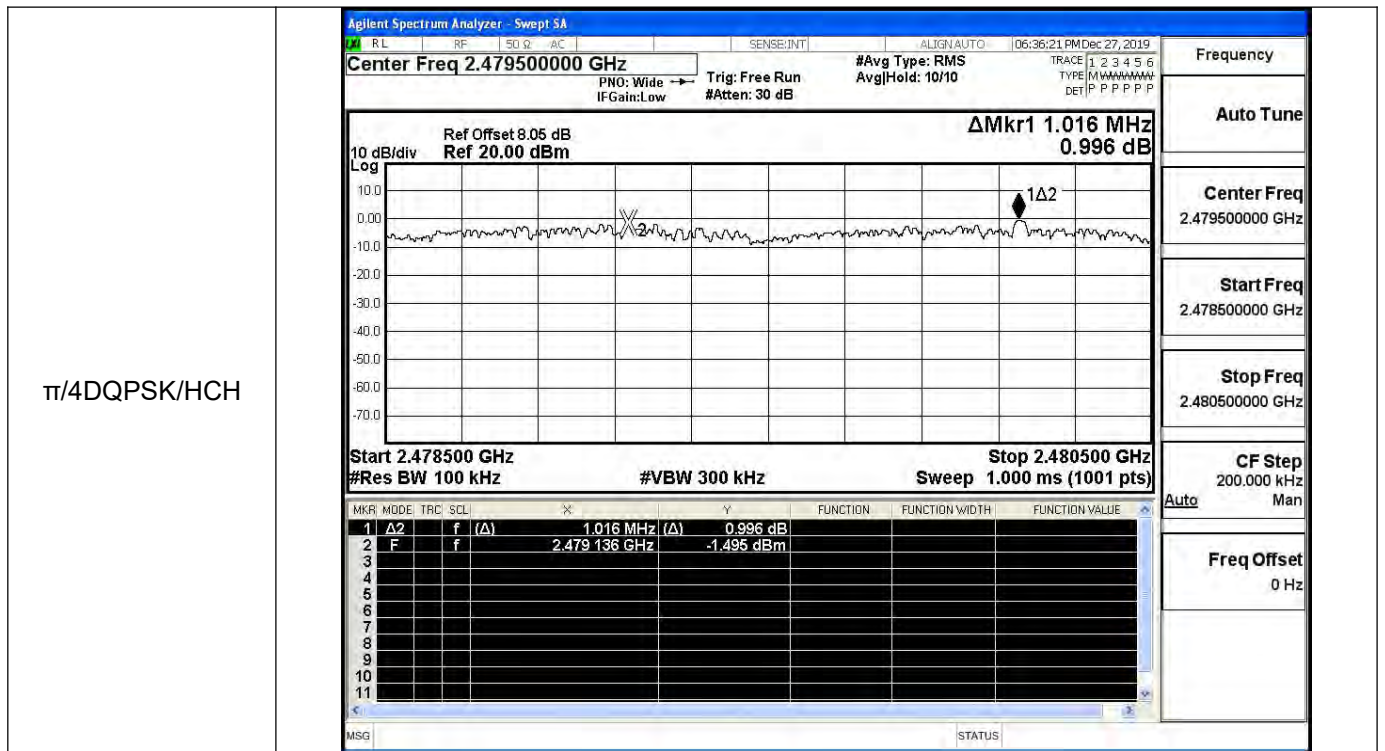
Test Graphs



GFSK/HCH



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

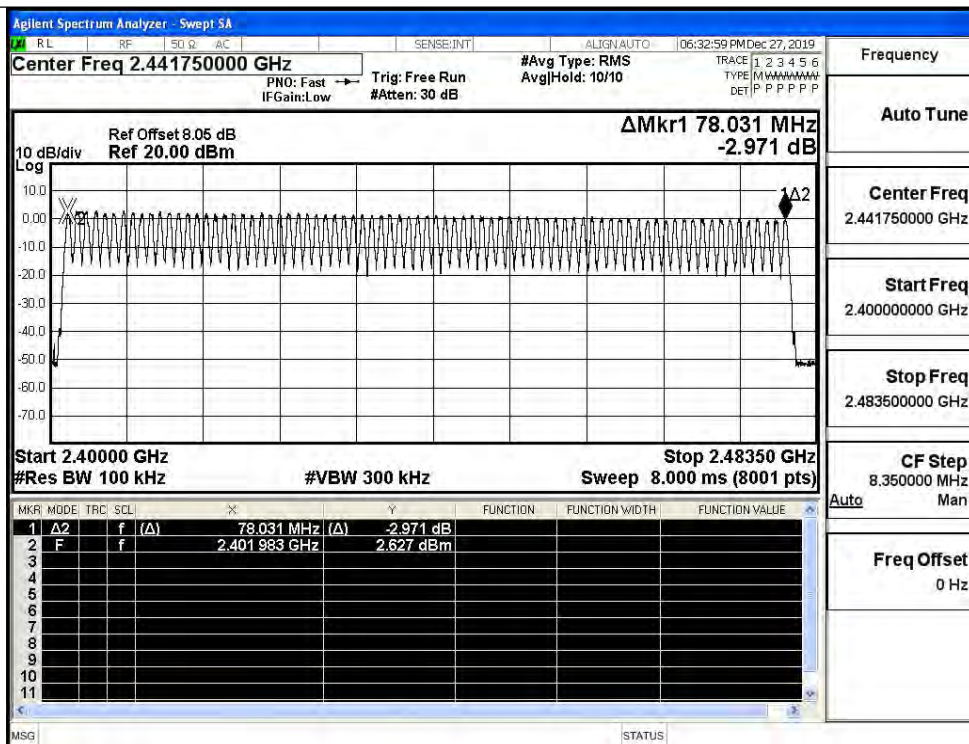


A.4 Hopping Channel Number

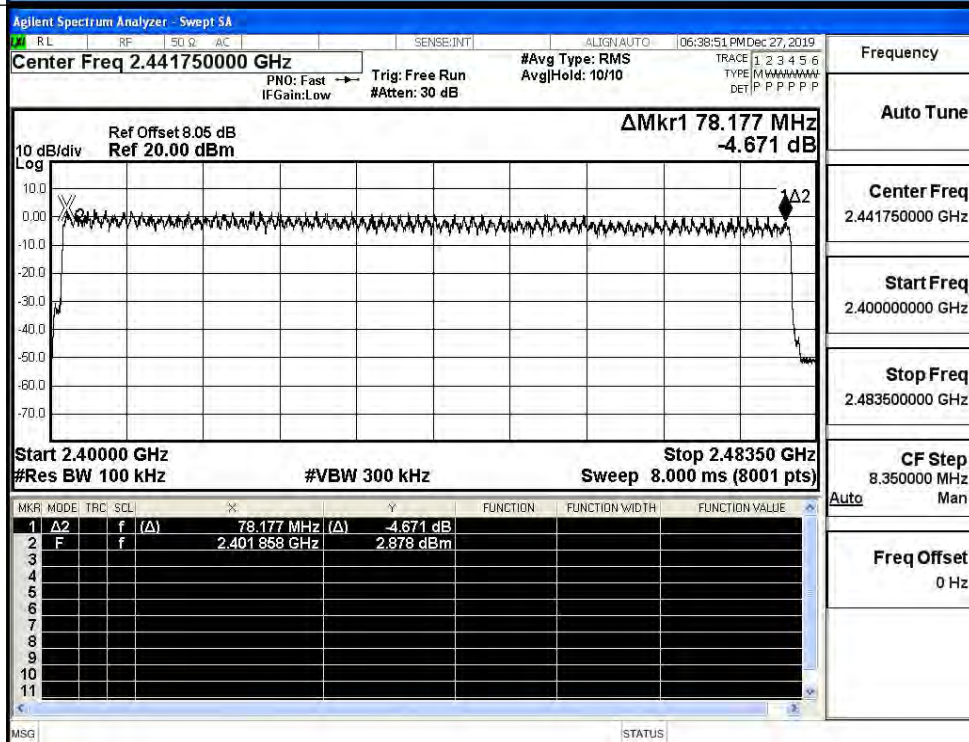
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop



π/4DQPSK/Hop

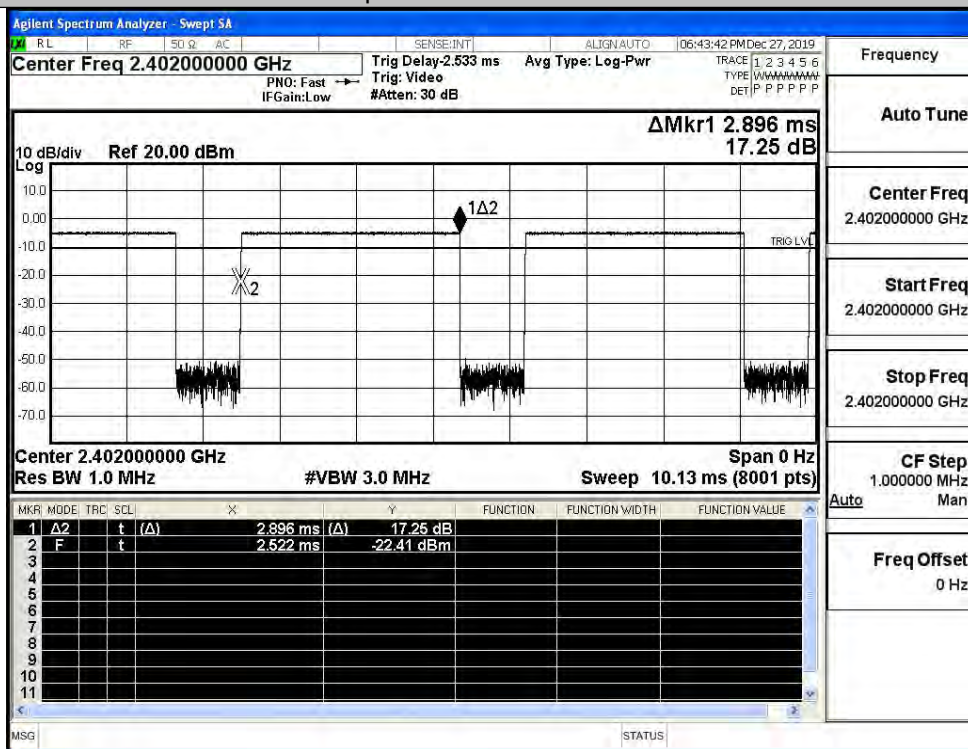


A.5 Dwell Time

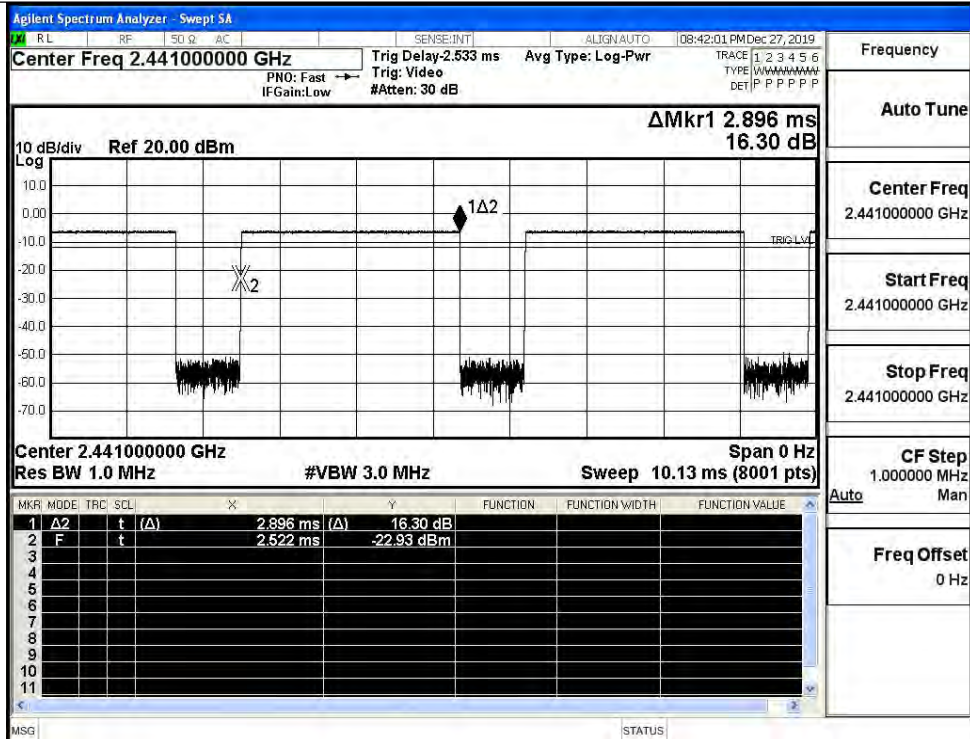
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.9	106.7	0.309	0.4	PASS
	DH5	MCH	2.9	106.7	0.309	0.4	PASS
	DH5	HCH	2.9	106.7	0.309	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.9	106.7	0.309	0.4	PASS
	2DH5	MCH	2.9	106.7	0.309	0.4	PASS
	2DH5	HCH	2.9	106.7	0.309	0.4	PASS

Test Graphs

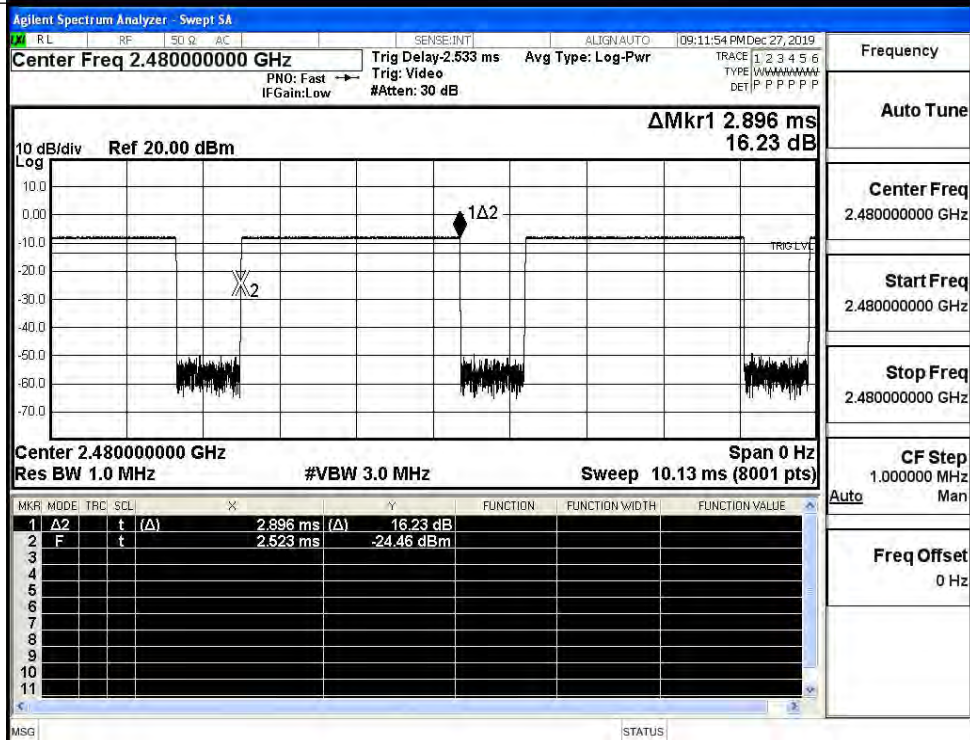
GFSK_DH5/LCH



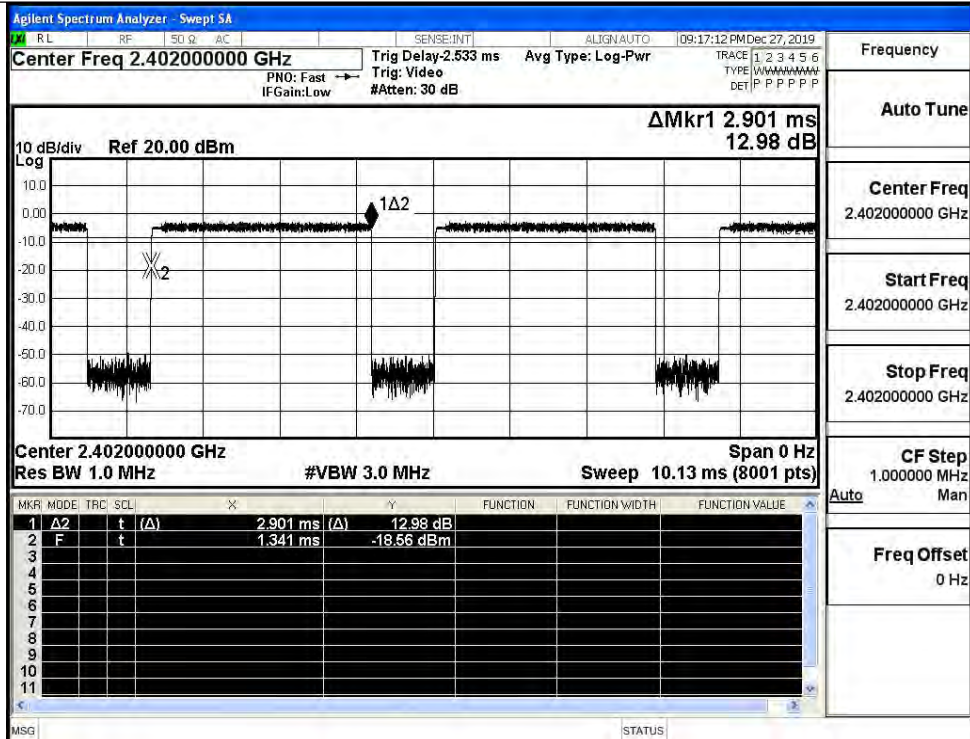
GFSK_DH5/MCH



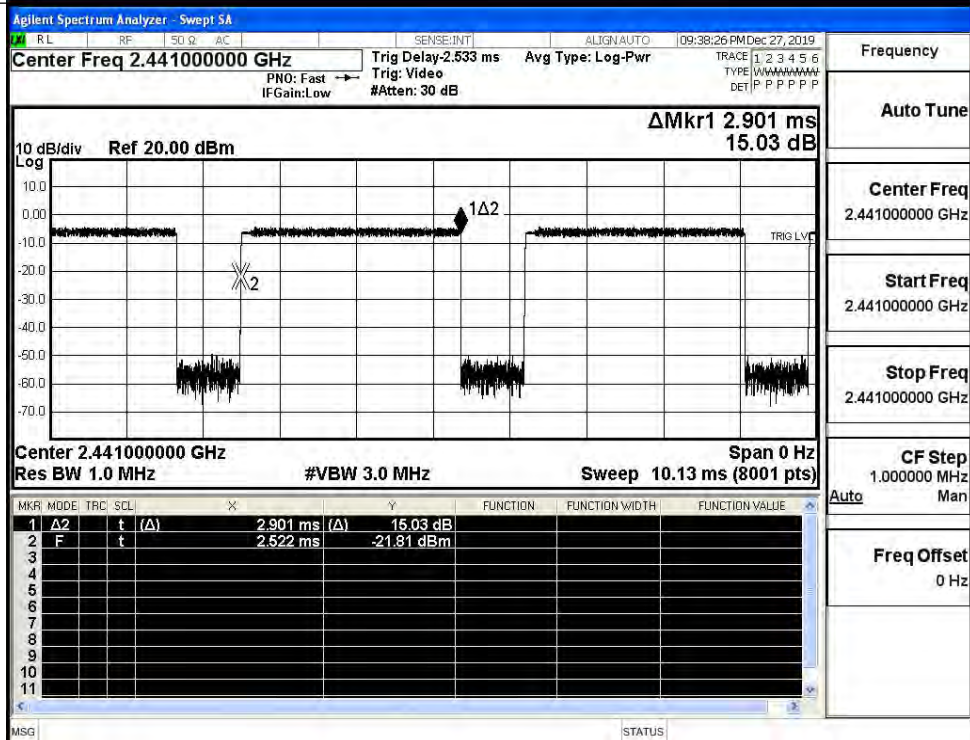
GFSK_DH5/HCH



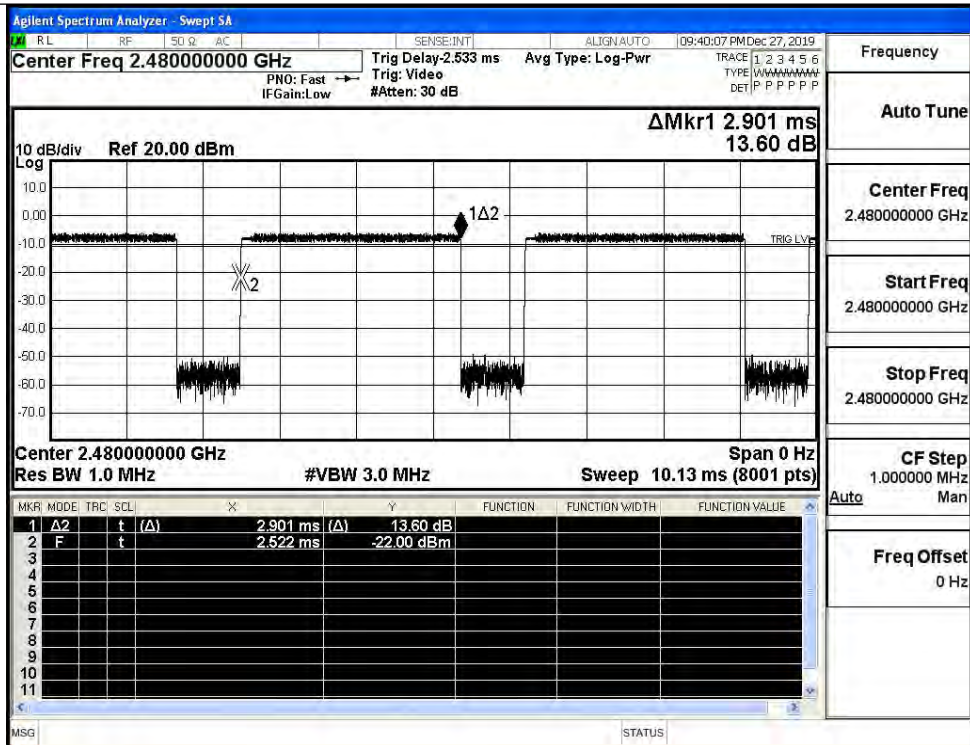
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



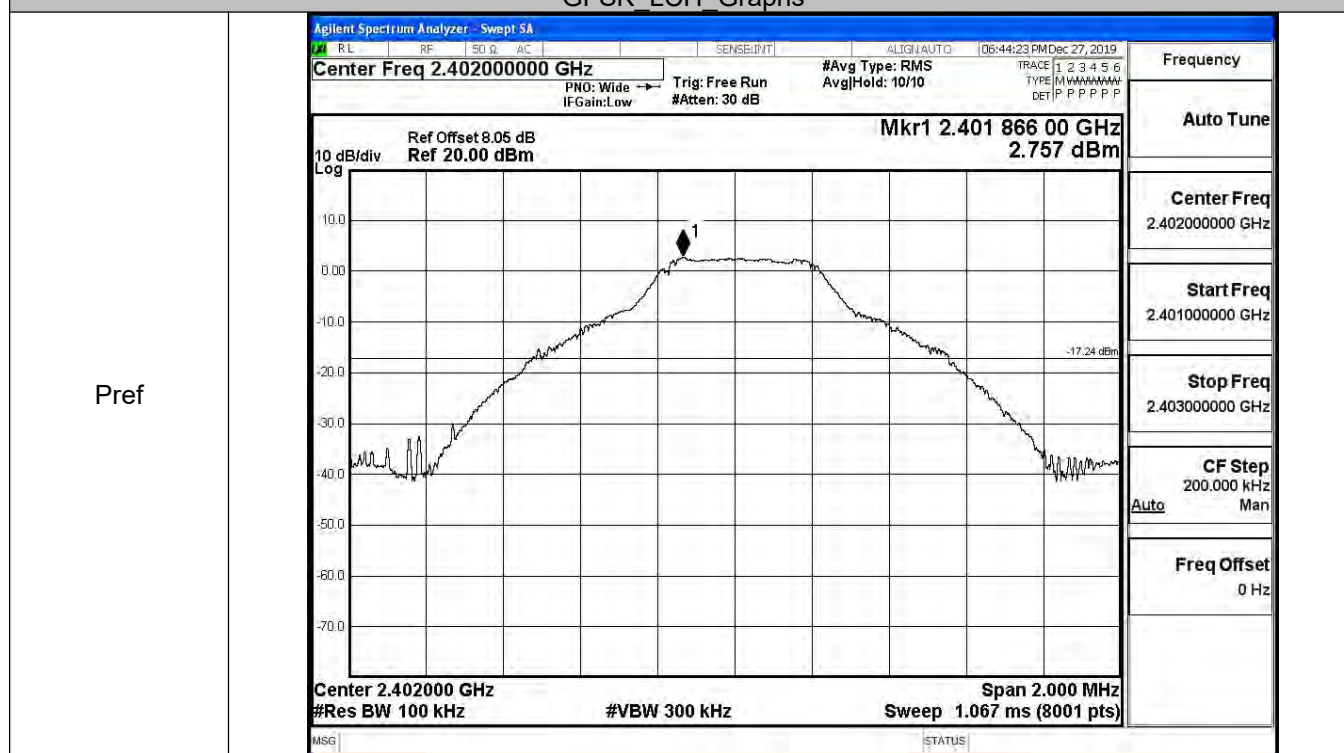
$\pi/4$ DQPSK
_2DH5/HCH



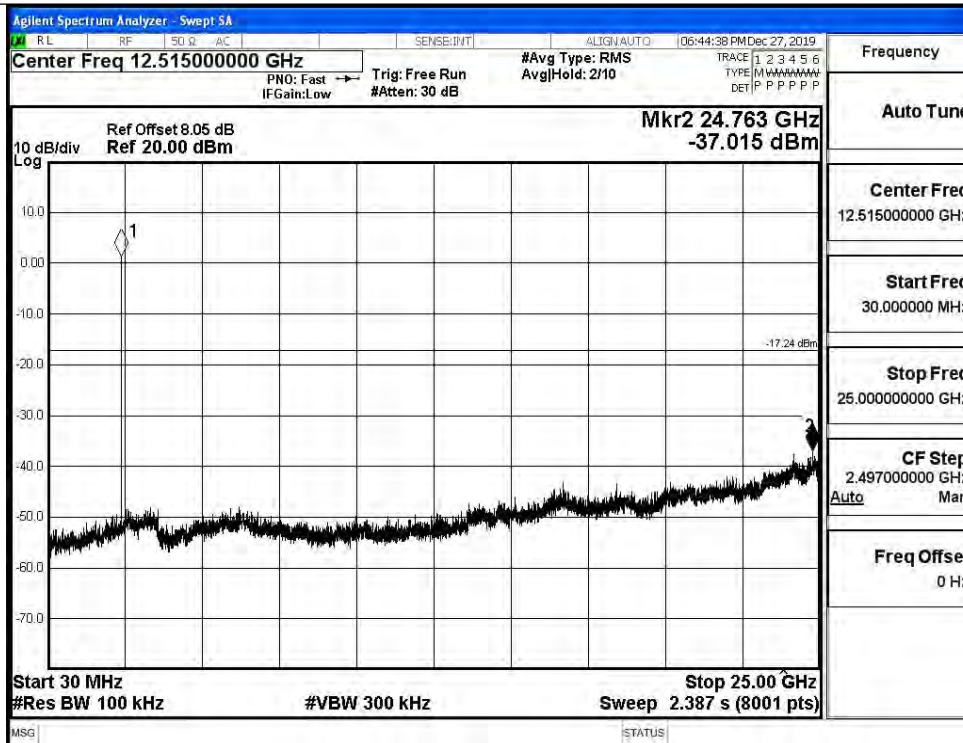
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.757	-37.015	-17.243	PASS
	MCH	1.474	-37.241	-18.526	PASS
	HCH	-0.087	-37.056	-20.087	PASS
$\pi/4$ DQPSK	LCH	2.788	-36.943	-17.212	PASS
	MCH	1.461	-37.772	-18.539	PASS
	HCH	-0.174	-37.357	-20.174	PASS

GFSK LCH Graphs

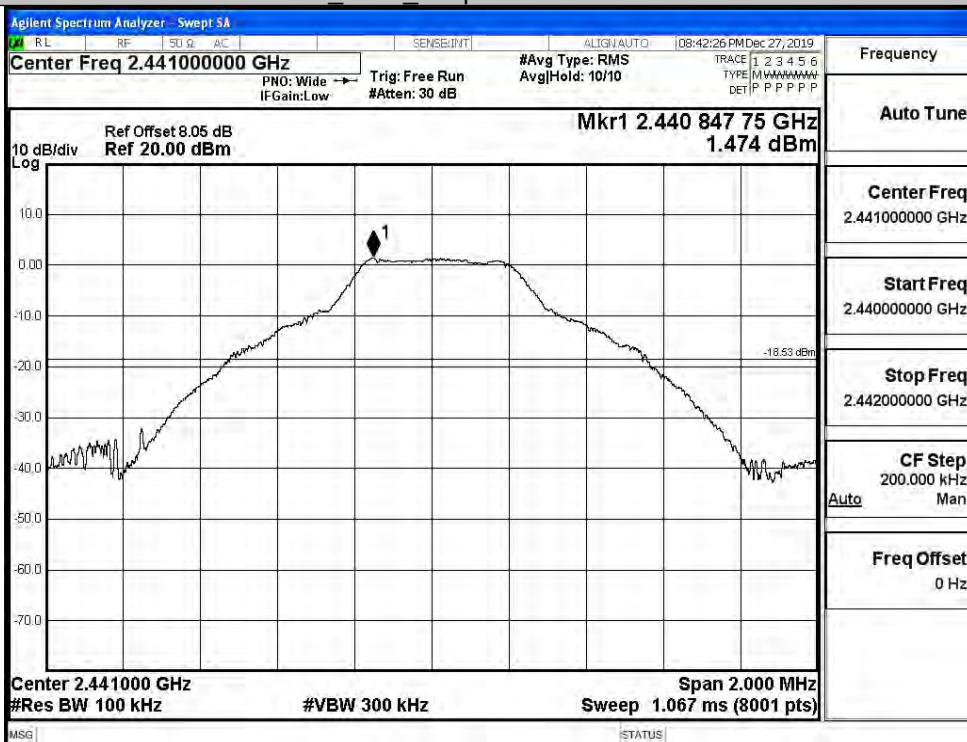


Puw

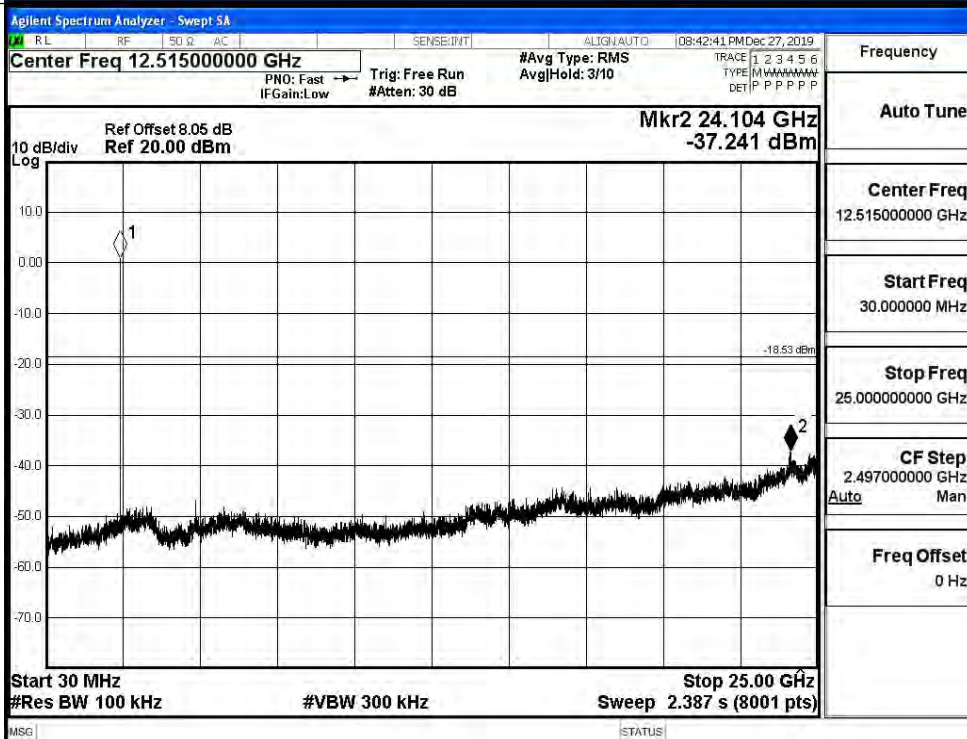


GFSK MCH_Graphs

Pref

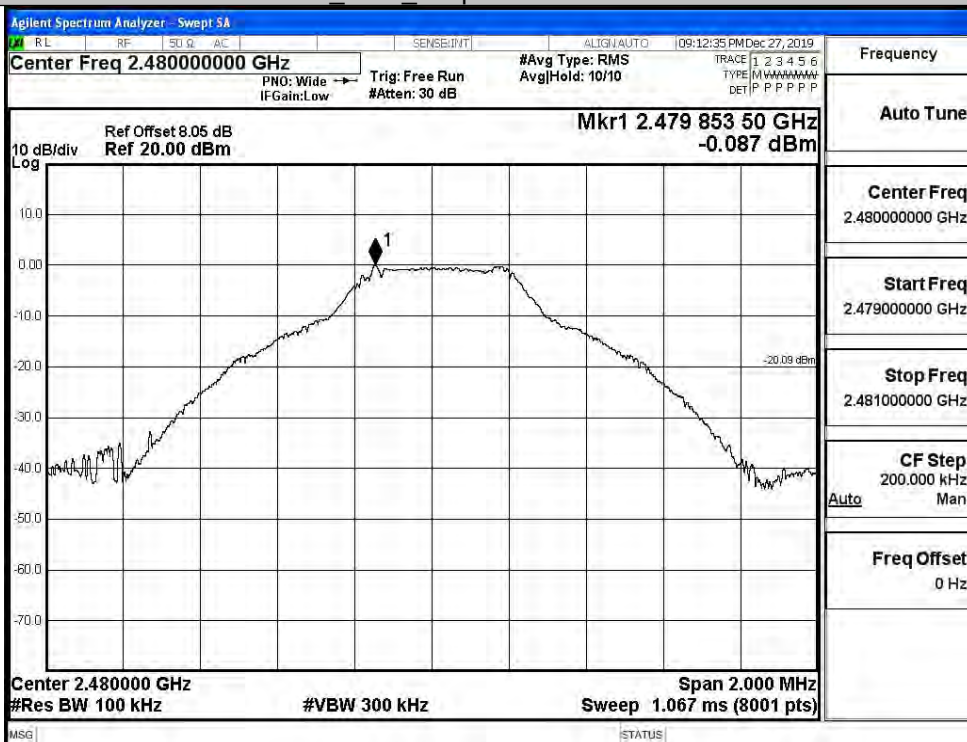


Puw

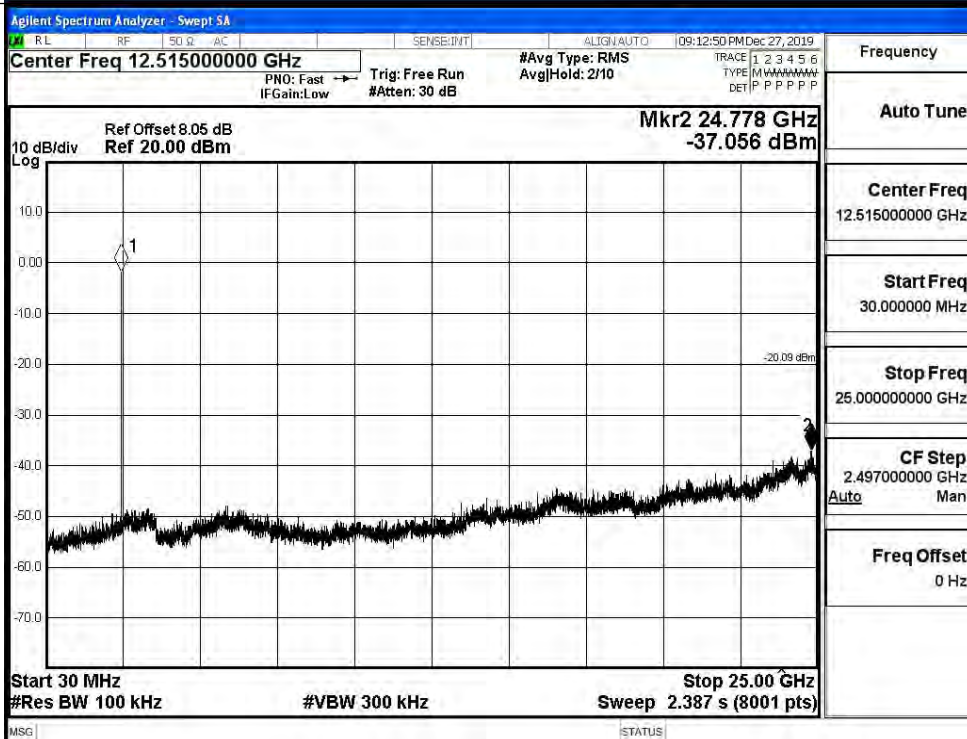


GFSK HCH_Graphs

Pref

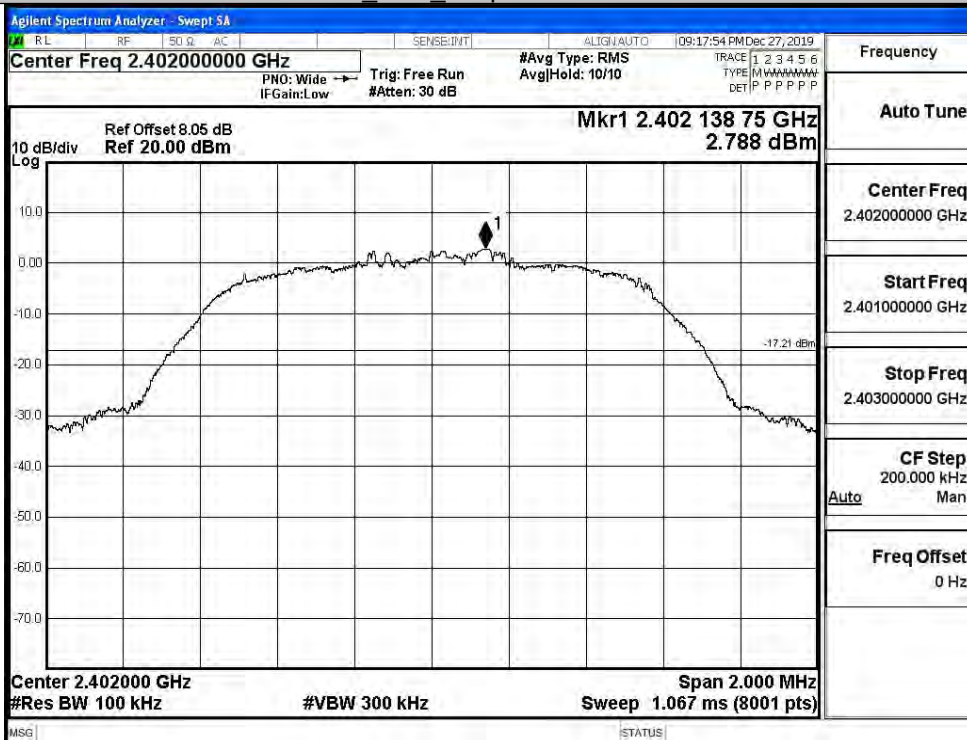


Puw

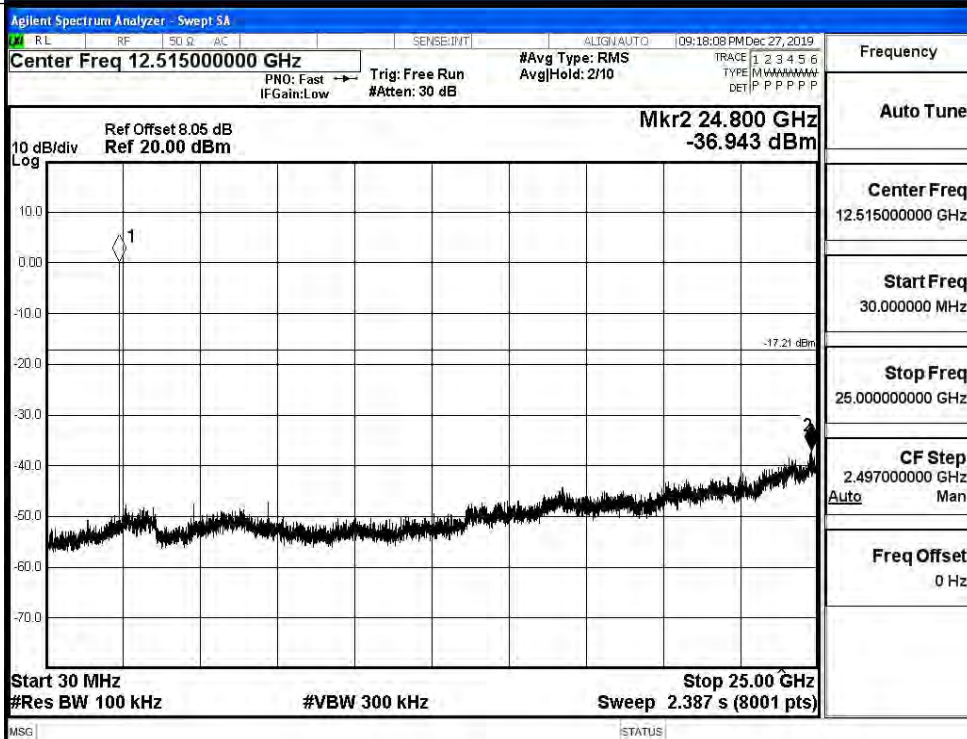


π /4DQPSK LCH_Graphs

Pref

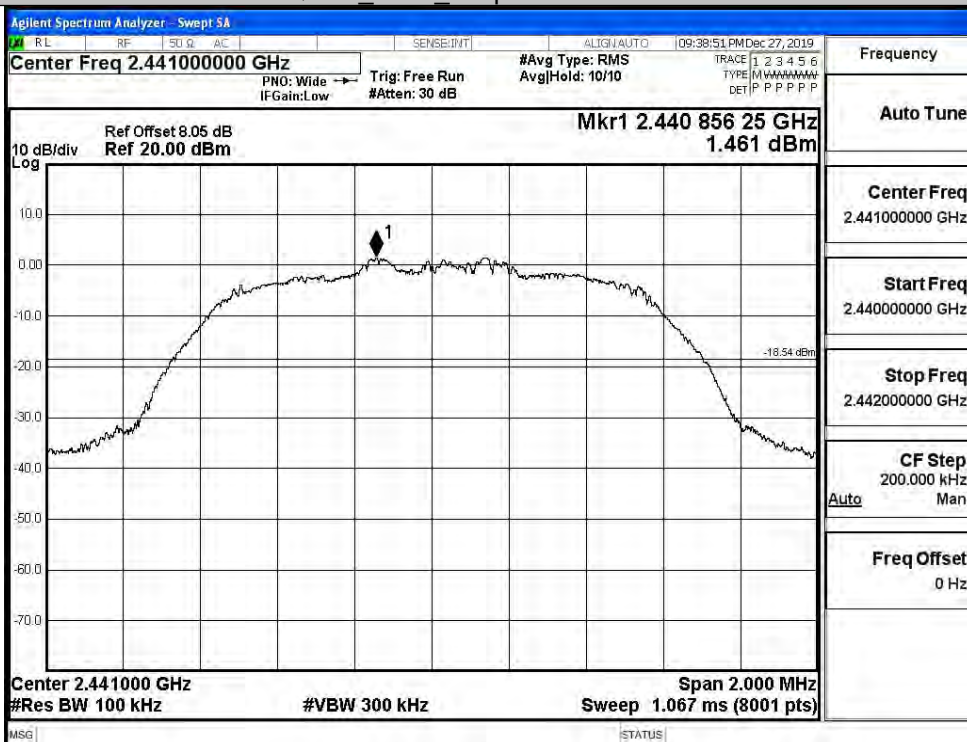


Puw



π /4DQPSK_MCH_Graphs

Pref

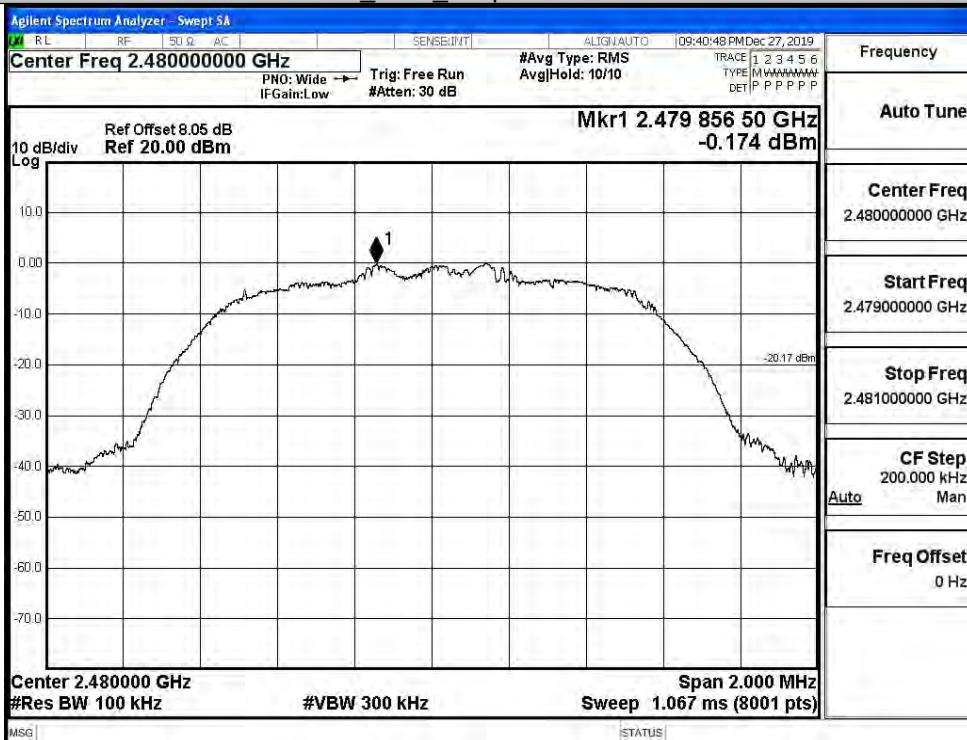


Puw

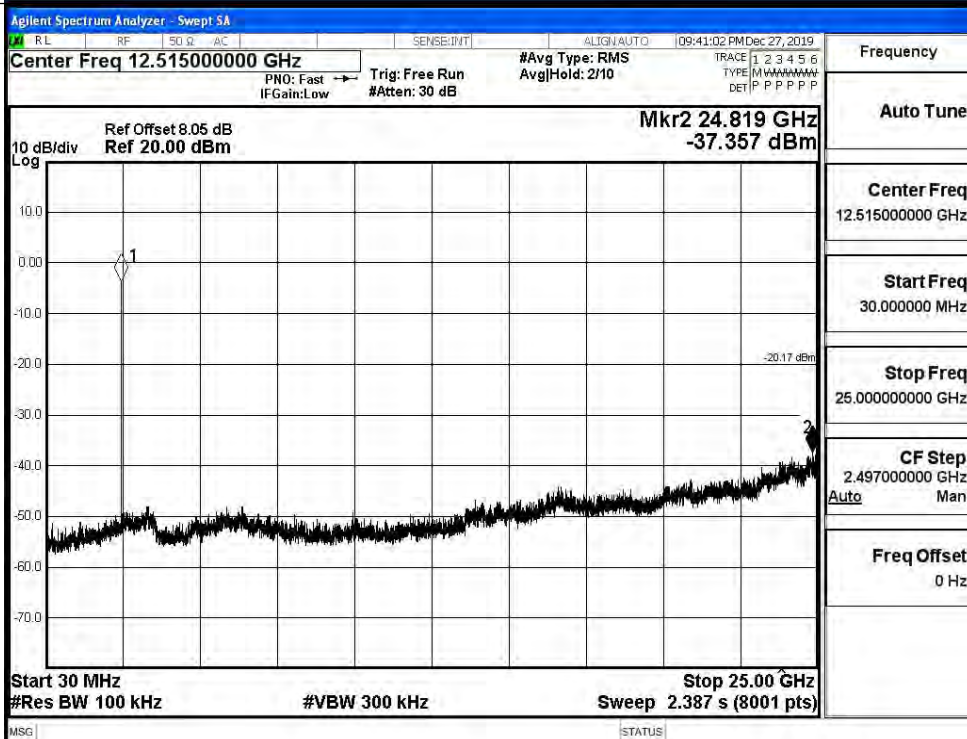


π /4DQPSK HCH_Graphs

Pref



Puw

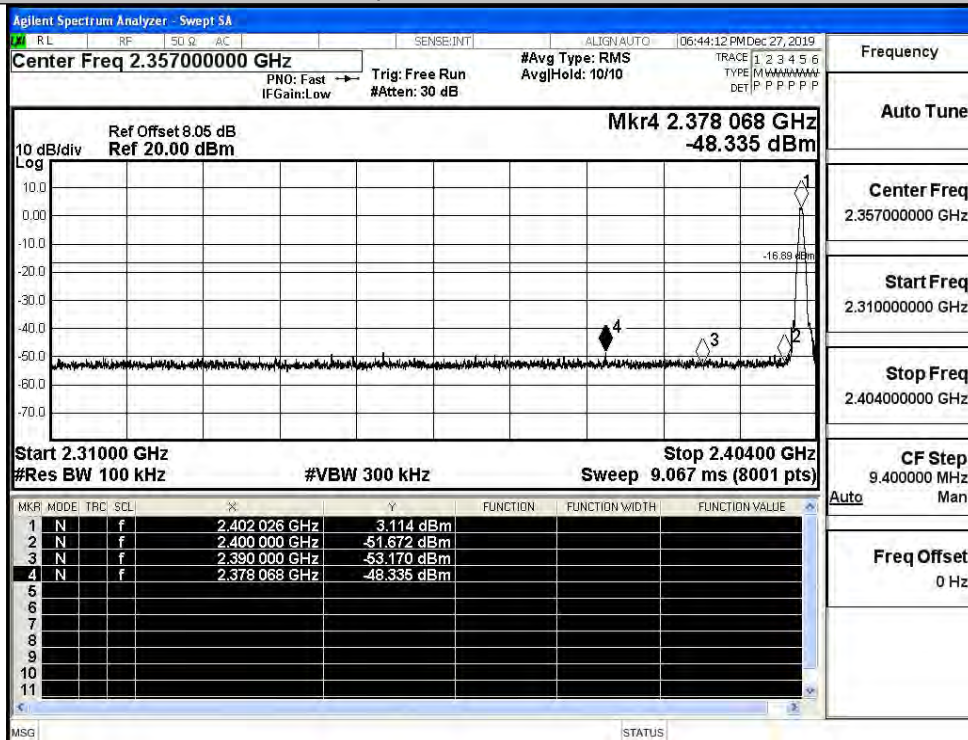


A.7 Band-edge for RF Conducted Emissions

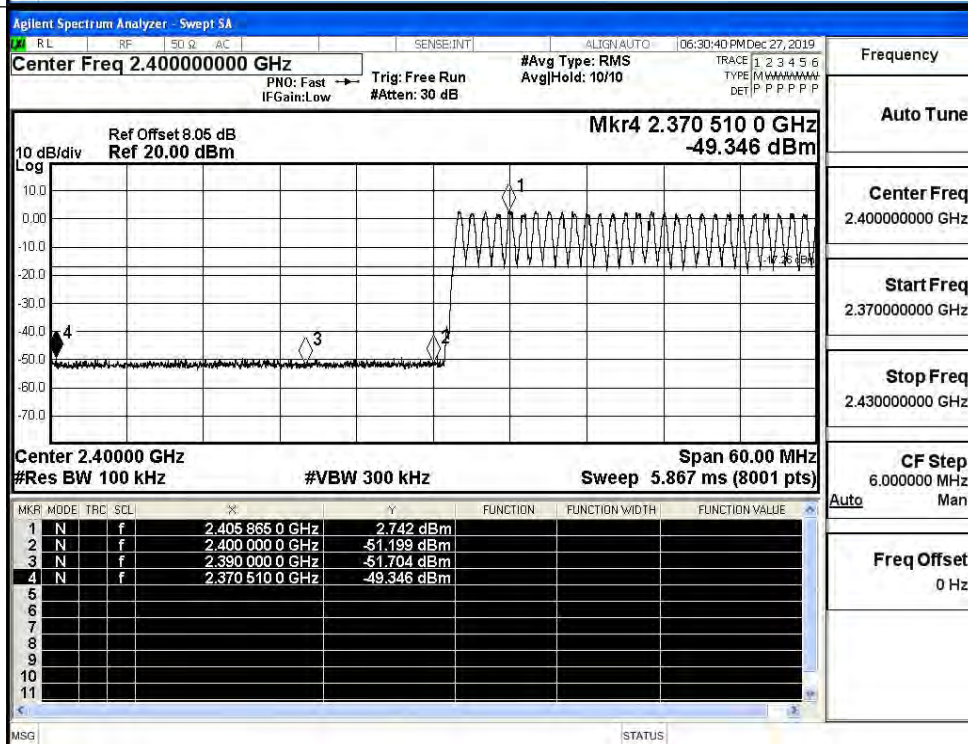
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	3.114	Off	-48.335	-16.89	PASS
			2.742	On	-49.346	-17.26	PASS
	HCH	2480	0.000	Off	-47.886	-20	PASS
			0.904	On	-48.494	-19.1	PASS
$\pi/4$ DQPSK	LCH	2402	3.101	Off	-49.827	-16.9	PASS
			2.941	On	-49.361	-17.06	PASS
	HCH	2480	0.132	Off	-49.580	-19.87	PASS
			0.663	On	-47.951	-19.34	PASS

Test Graphs

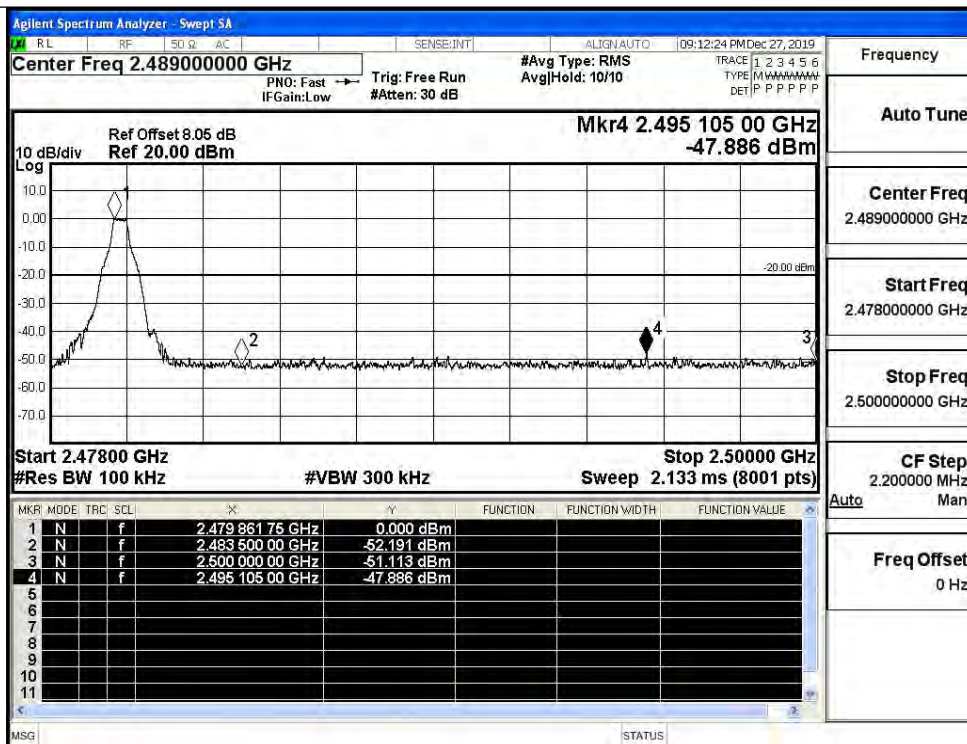
GFSK/LCH/No Hop



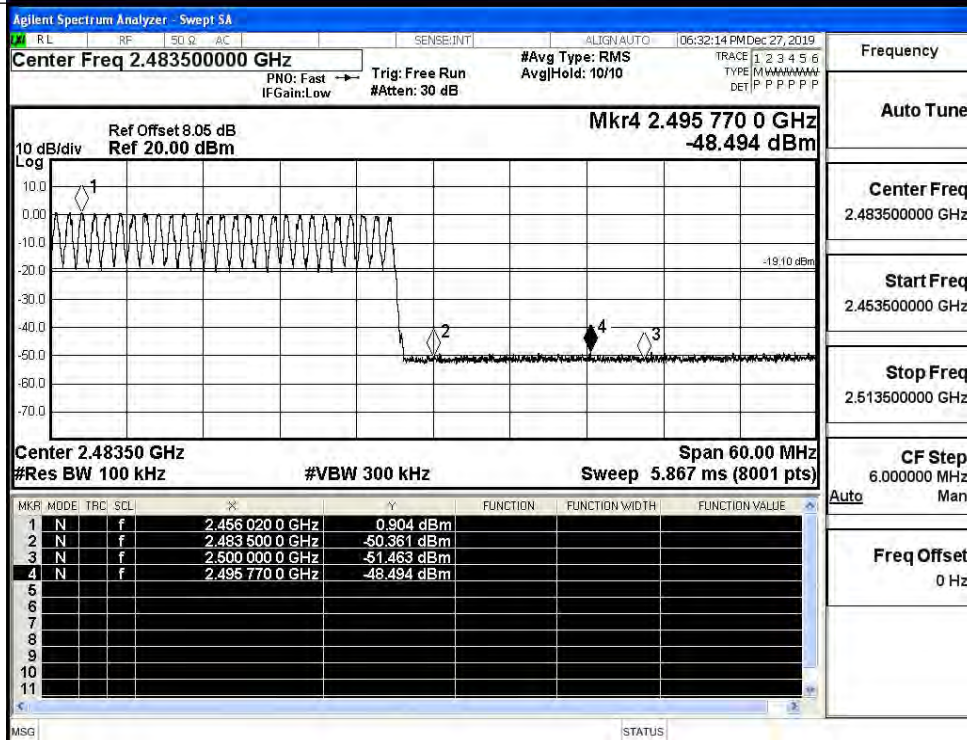
GFSK/LCH/Hop



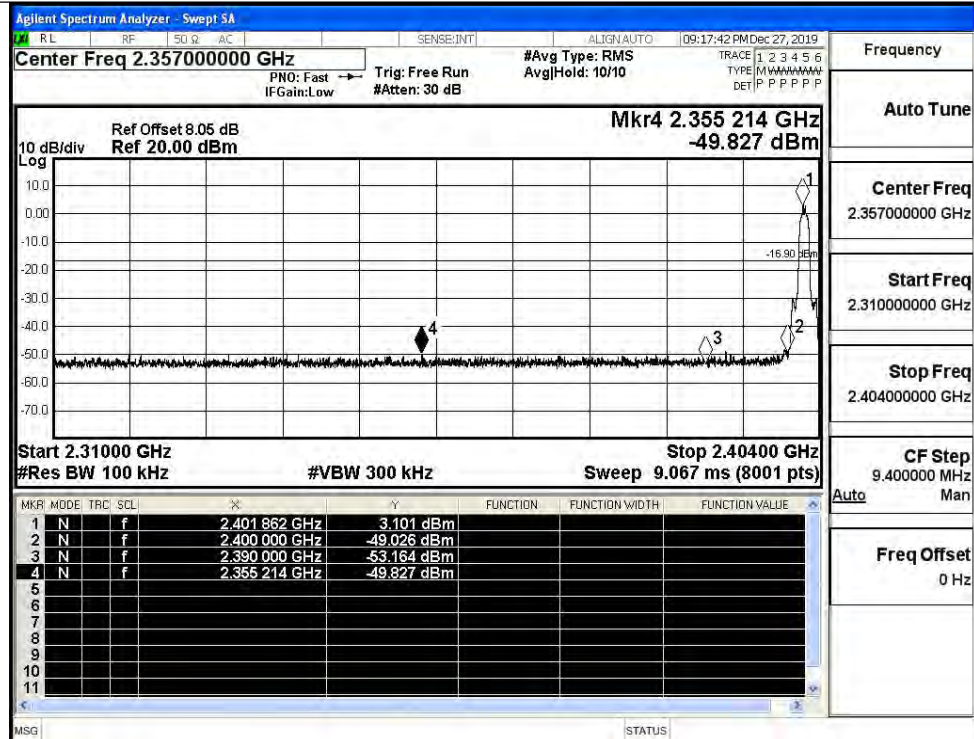
GFSK/HCH/No Hop



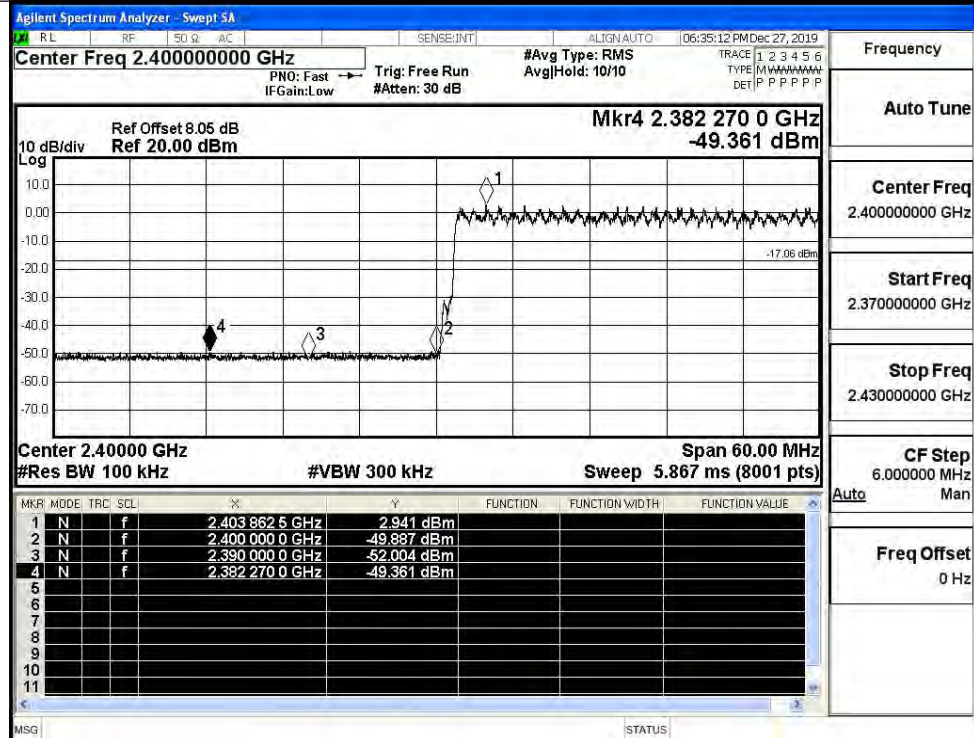
GFSK/HCH/Hop



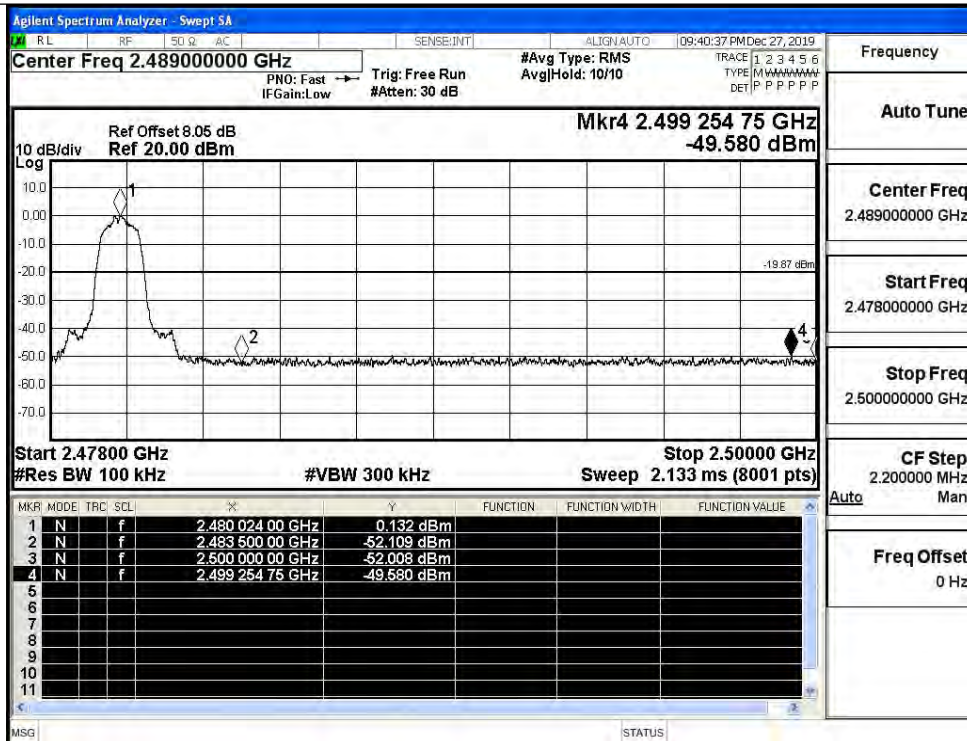
$\pi/4$ DQPSK/LCH/No
Hop



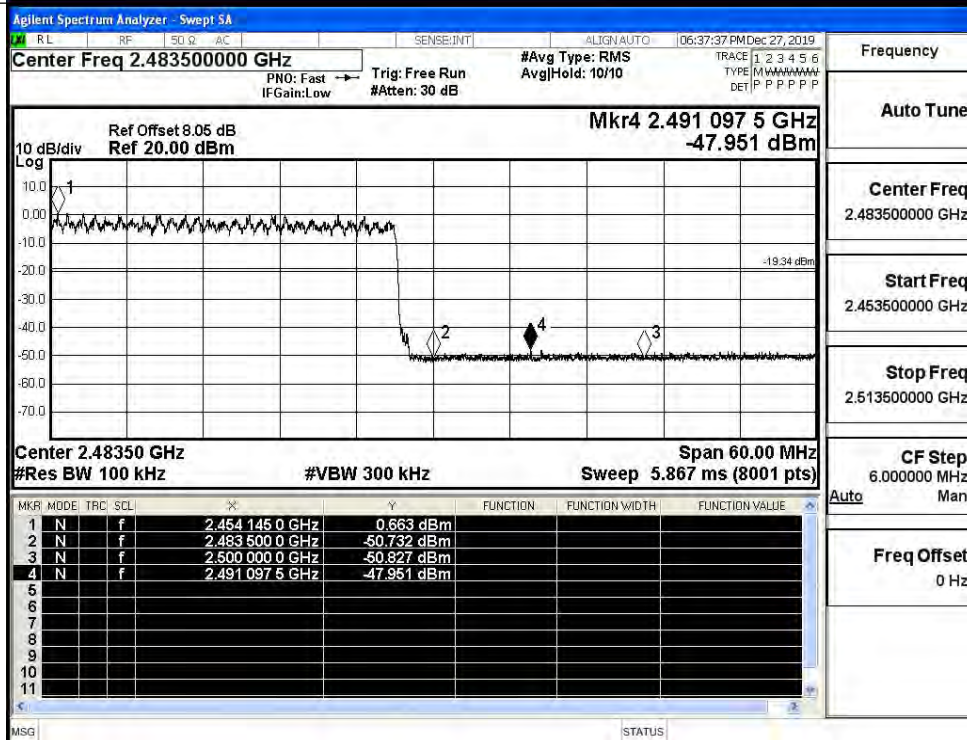
$\pi/4$ DQPSK/LCH/Hop



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



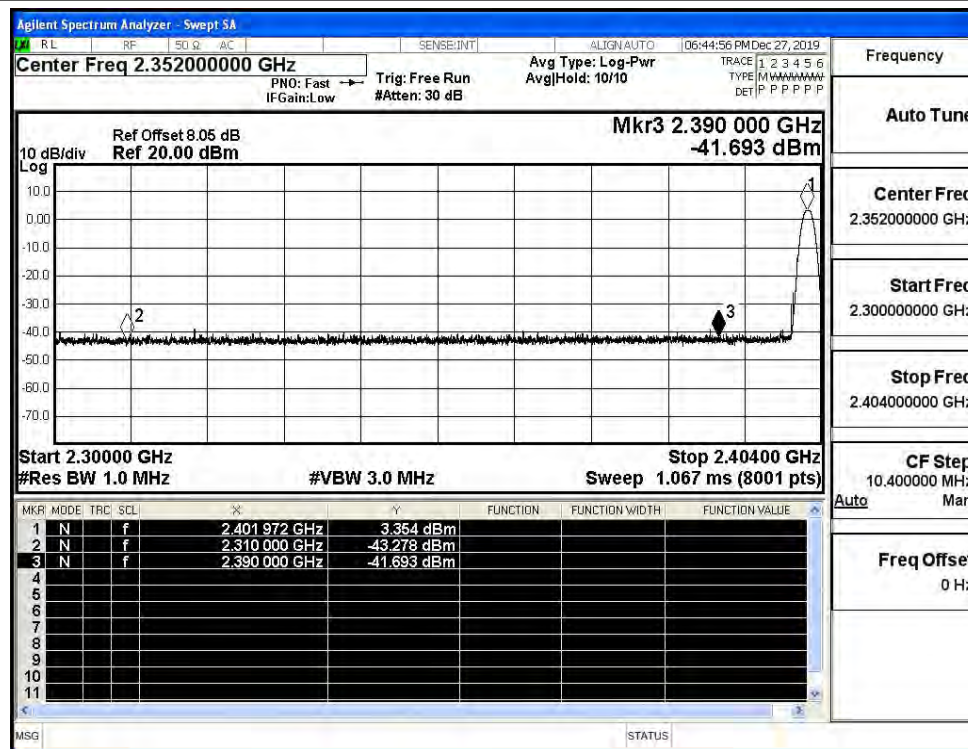
$\pi/4$ DQPSK/HCH/Hop



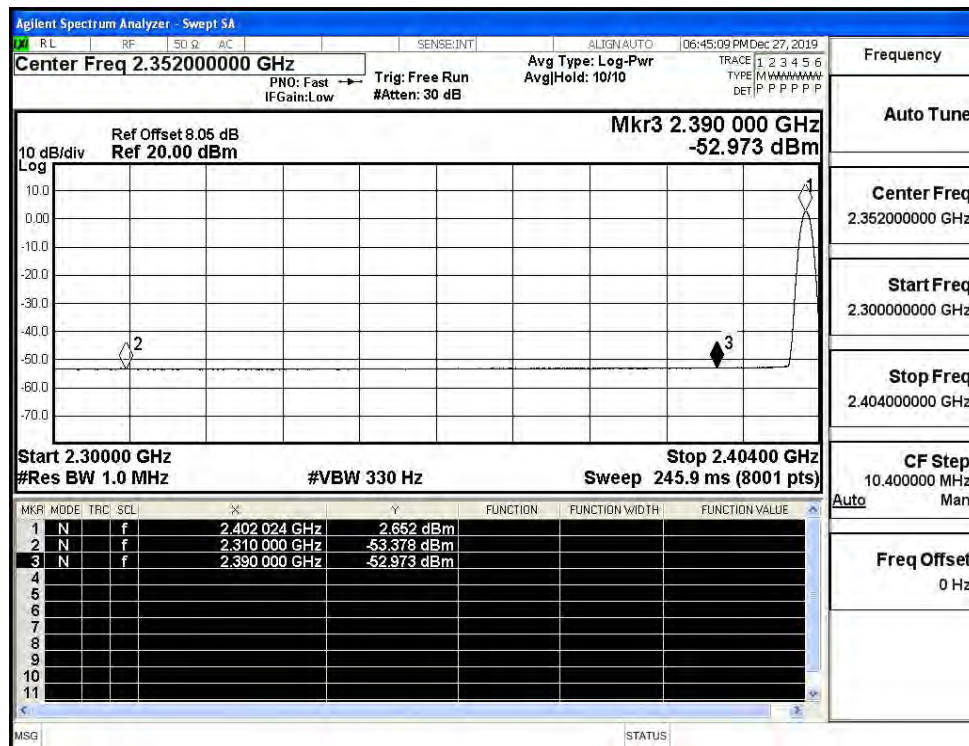
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.28	2.0	0	51.98	PEAK	74	PASS
	Off	2310.0	-53.38	2.0	0	41.88	AV	54	PASS
	Off	2390.0	-41.69	2.0	0	53.56	PEAK	74	PASS
	Off	2390.0	-52.97	2.0	0	42.28	AV	54	PASS
	Off	2483.5	-41.21	2.0	0	54.04	PEAK	74	PASS
	Off	2483.5	-52.49	2.0	0	42.77	AV	54	PASS
	Off	2500.0	-40.25	2.0	0	55.01	PEAK	74	PASS
	Off	2500.0	-52.37	2.0	0	42.89	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.33	2.0	0	51.93	PEAK	74	PASS
	Off	2310.0	-53.32	2.0	0	41.93	AV	54	PASS
	Off	2390.0	-42.62	2.0	0	52.64	PEAK	74	PASS
	Off	2390.0	-52.98	2.0	0	42.28	AV	54	PASS
	Off	2483.5	-41.94	2.0	0	53.32	PEAK	74	PASS
	Off	2483.5	-52.43	2.0	0	42.83	AV	54	PASS
	Off	2500.0	-42.62	2.0	0	52.63	PEAK	74	PASS
	Off	2500.0	-52.32	2.0	0	42.94	AV	54	PASS

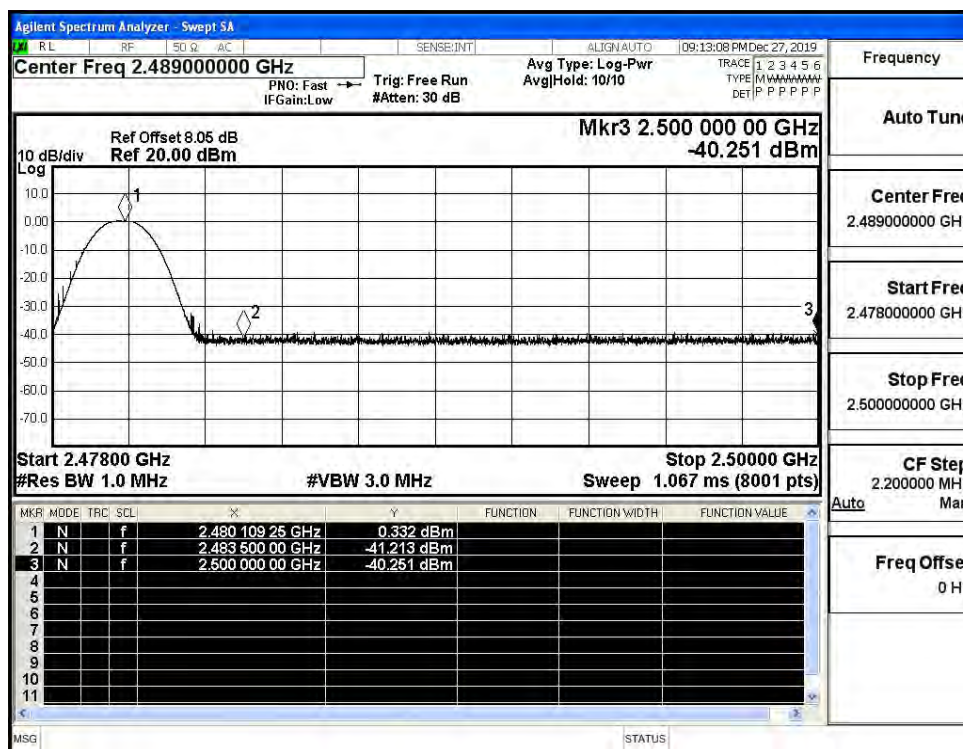
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



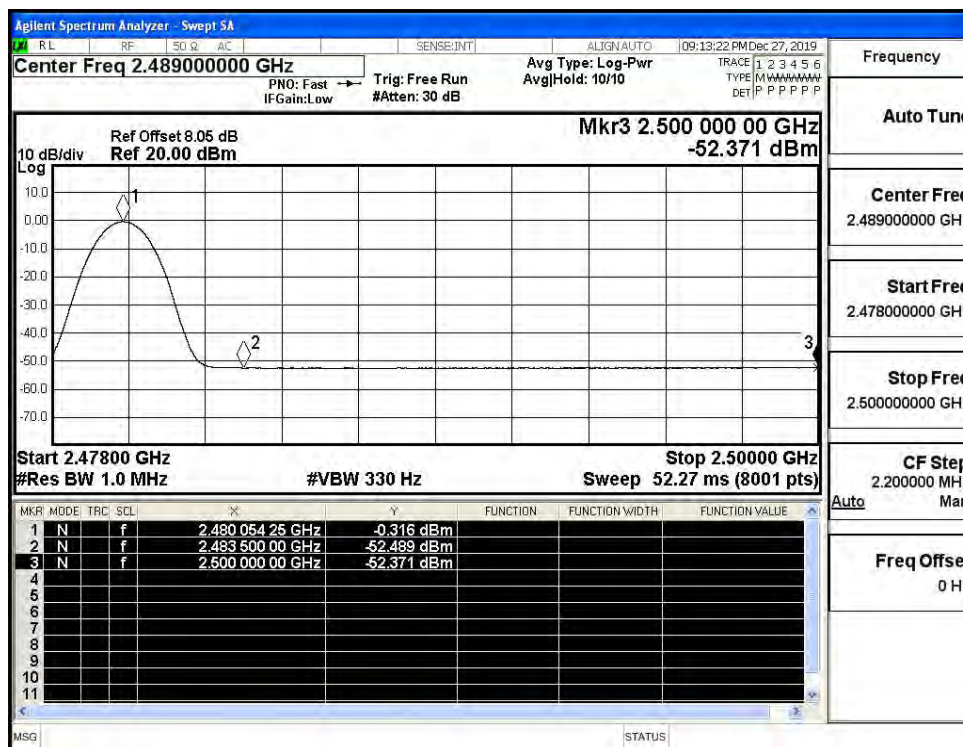
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

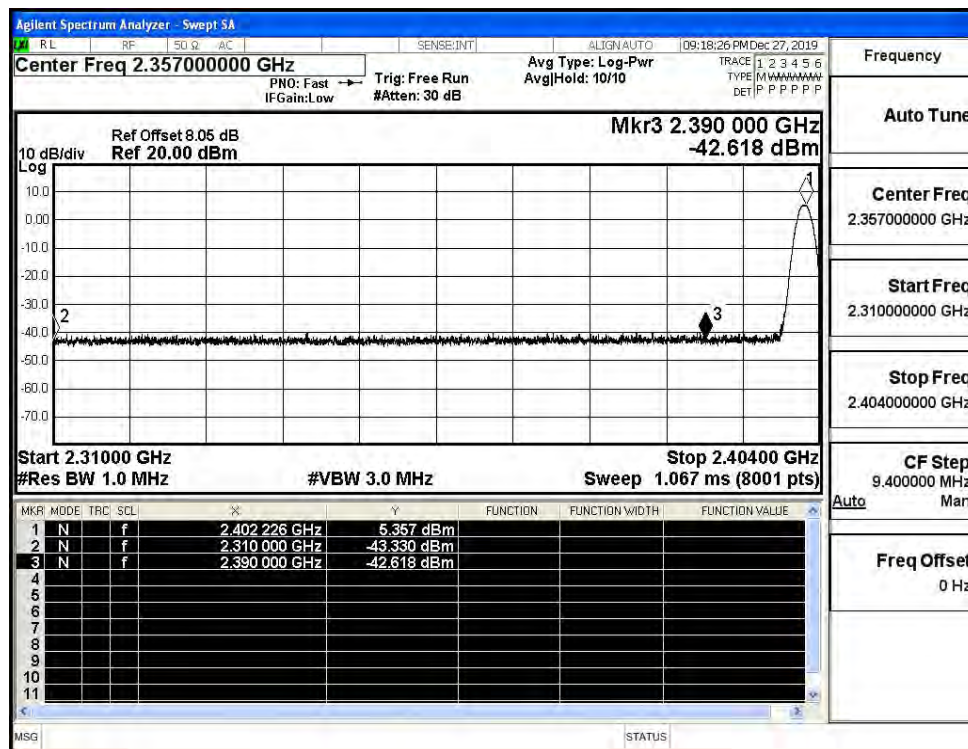
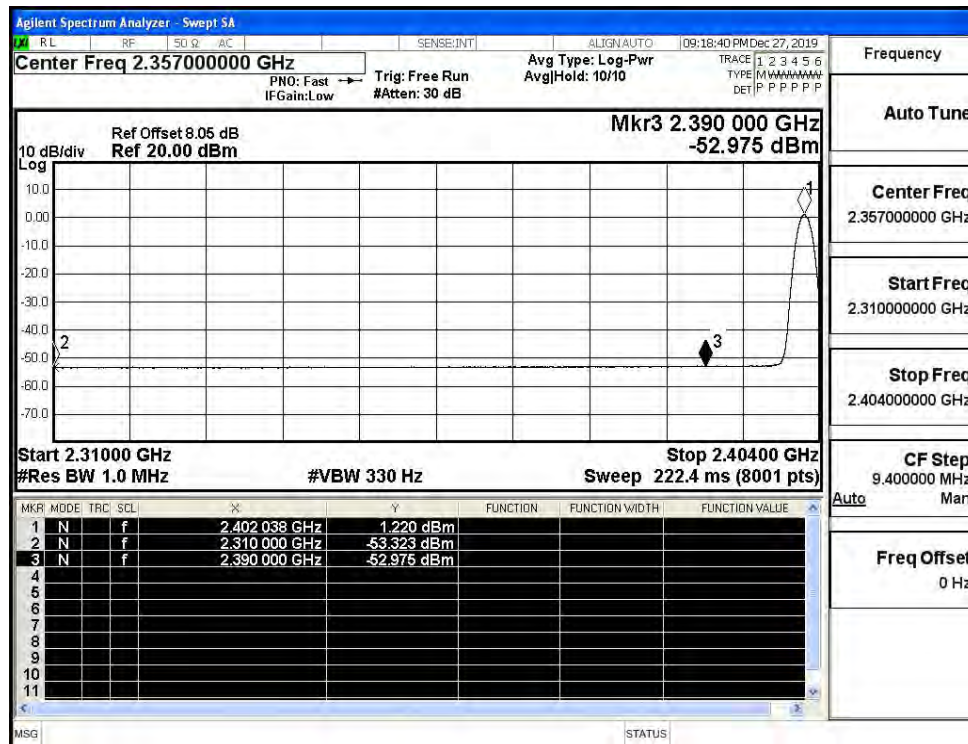


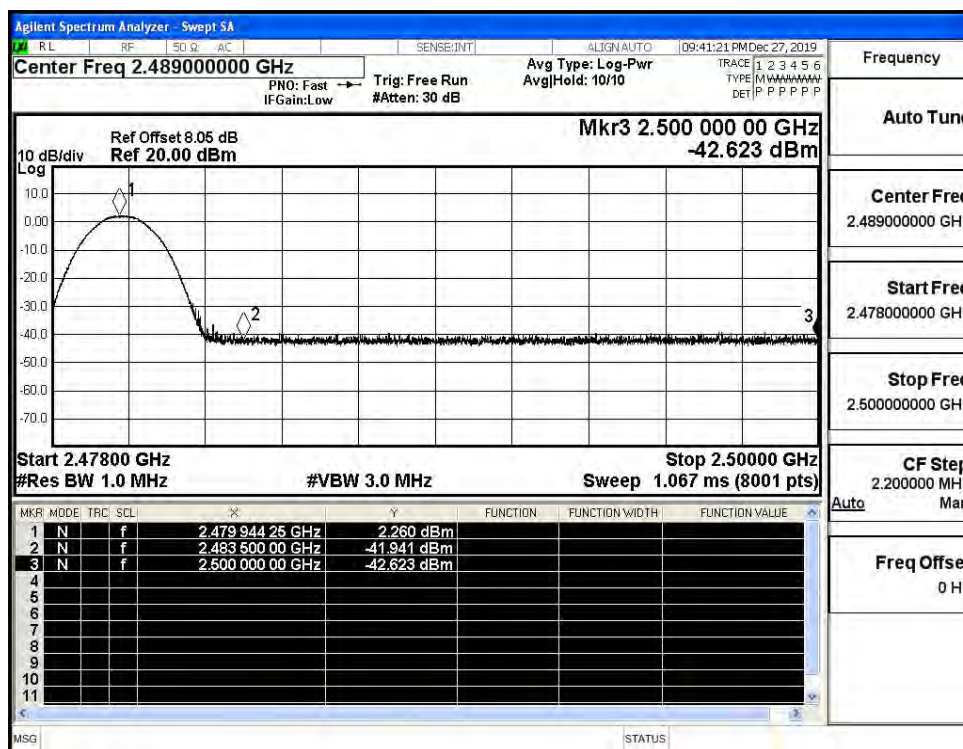
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



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)