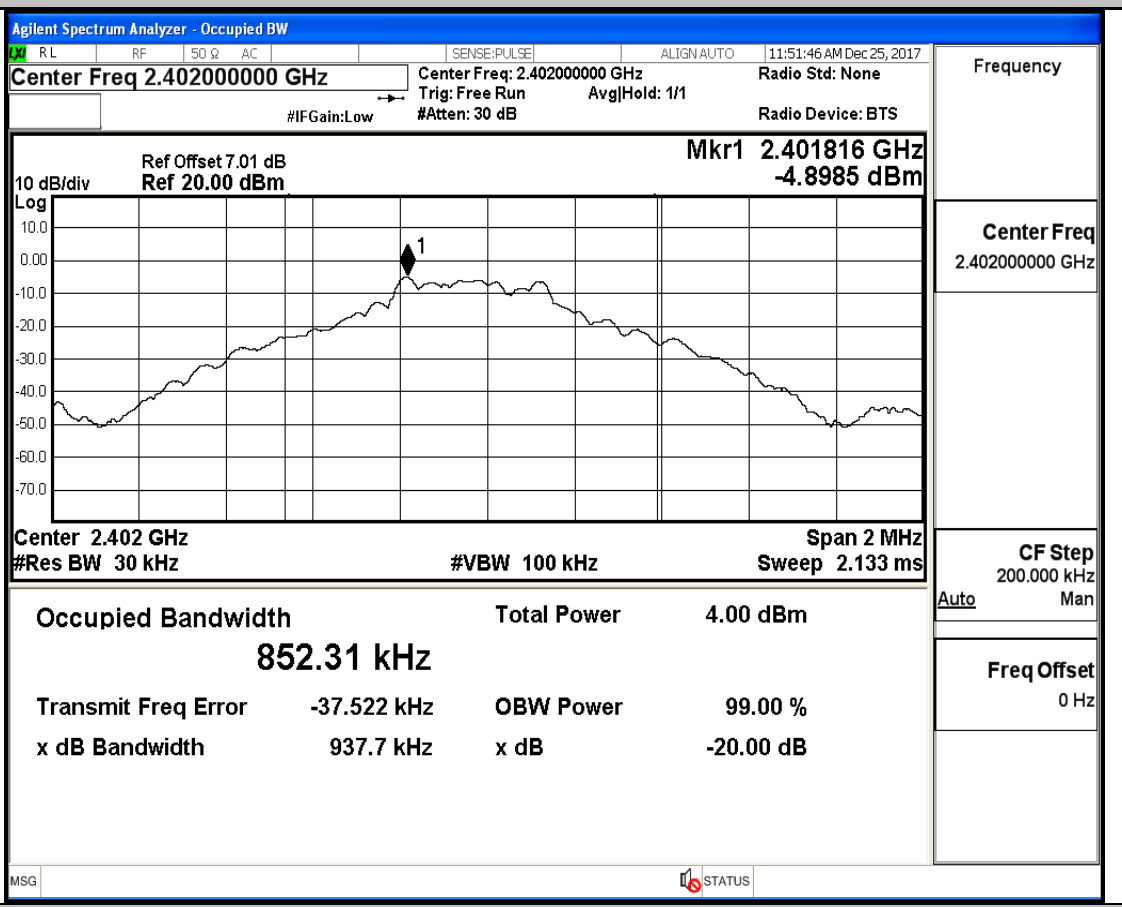
Appendix A
RF Test Data for BT V4.1(BDR/EDR) (Conducted Measurement)

Product Name: BLUETOOTH IN-EAR HEADPHONES
Trade Mark: ONN
Test Model: 17LY80
FCC ID: 2AKI8-ONNBTINEAR

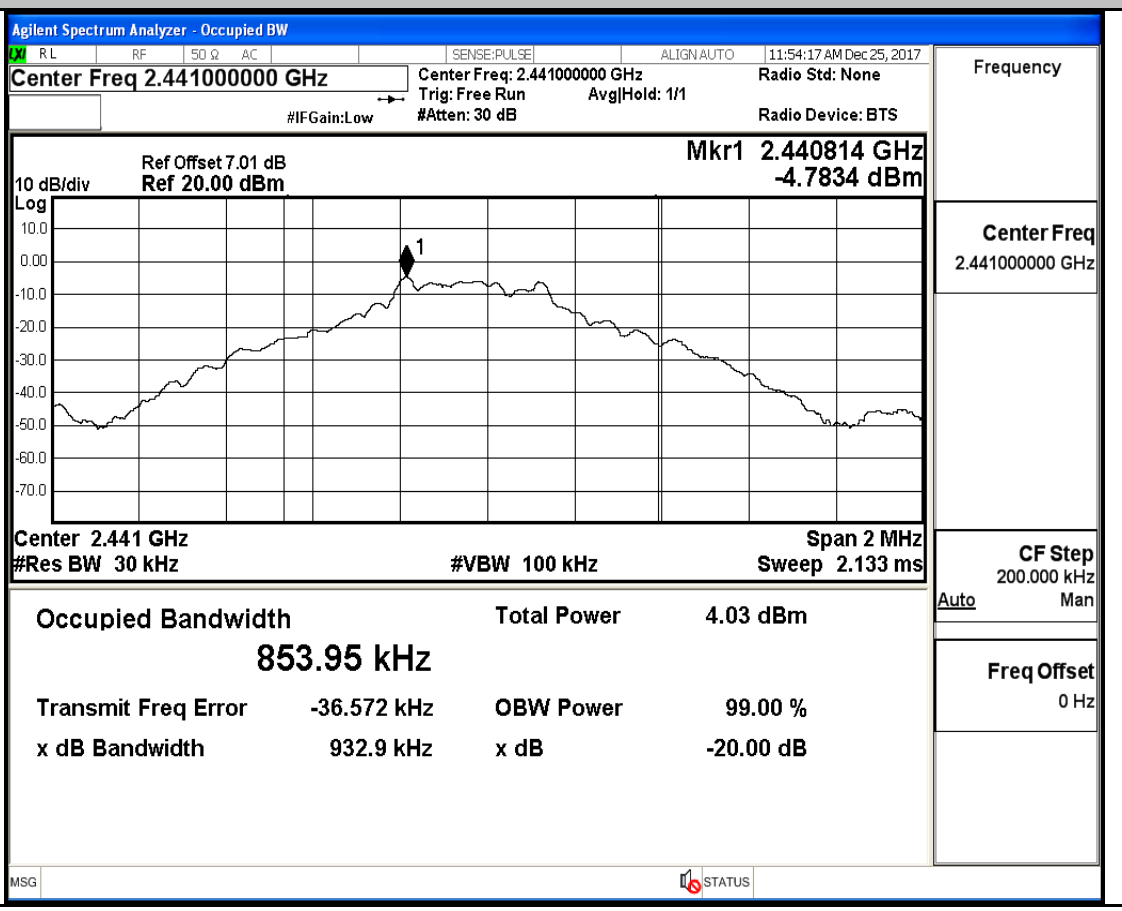
A.1 20 dB Bandwidth

Test Mode	Test Channel	EBW[MHz]	Limit[MHz]	Verdict
GFSK	2402	0.9377	---	PASS
	2441	0.9329	---	PASS
	2480	0.9407	---	PASS
π/4-DQPSK	2402	1.262	---	PASS
	2441	1.262	---	PASS
	2480	1.266	---	PASS
8-DPSK	2402	1.271	---	PASS
	2441	1.273	---	PASS
	2480	1.276	---	PASS

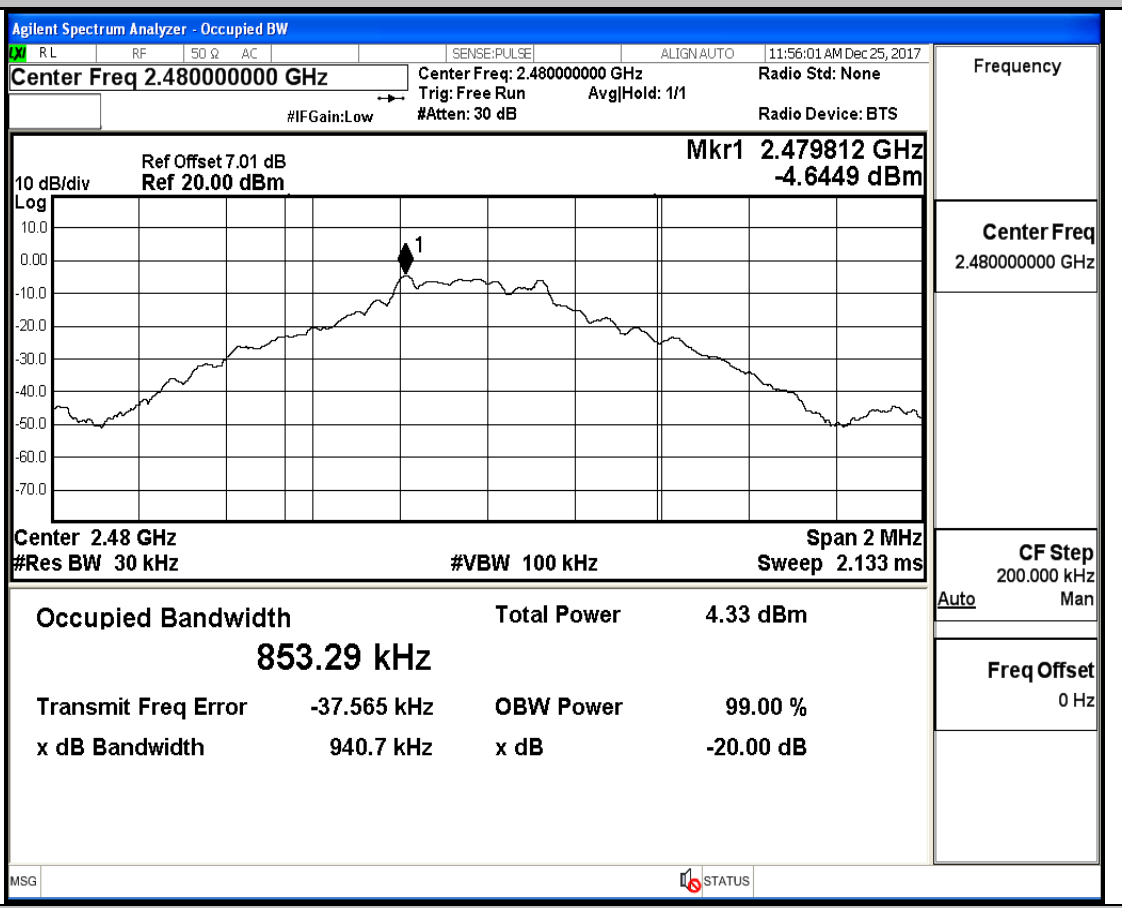
20 dB Bandwidth_GFSK_2402



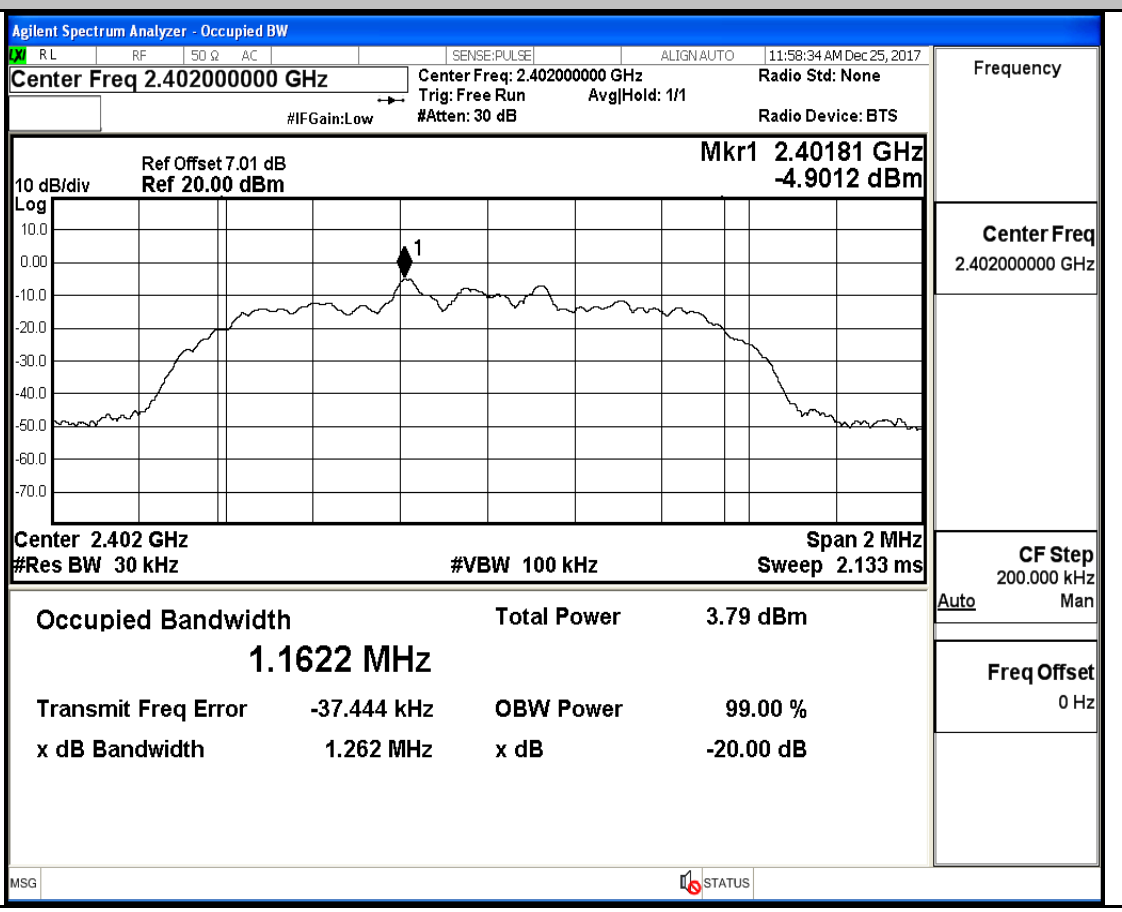
20 dB Bandwidth_GFSK_2441



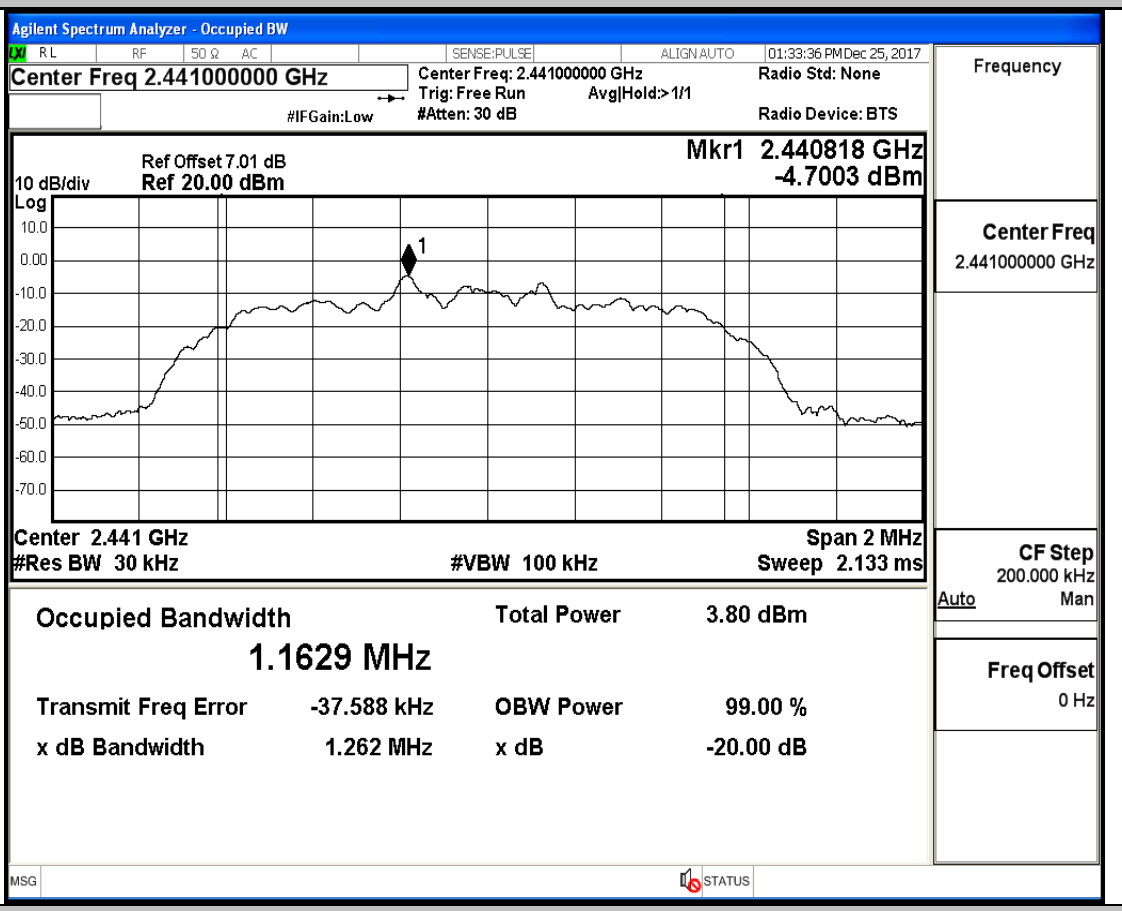
20 dB Bandwidth_GFSK_2480



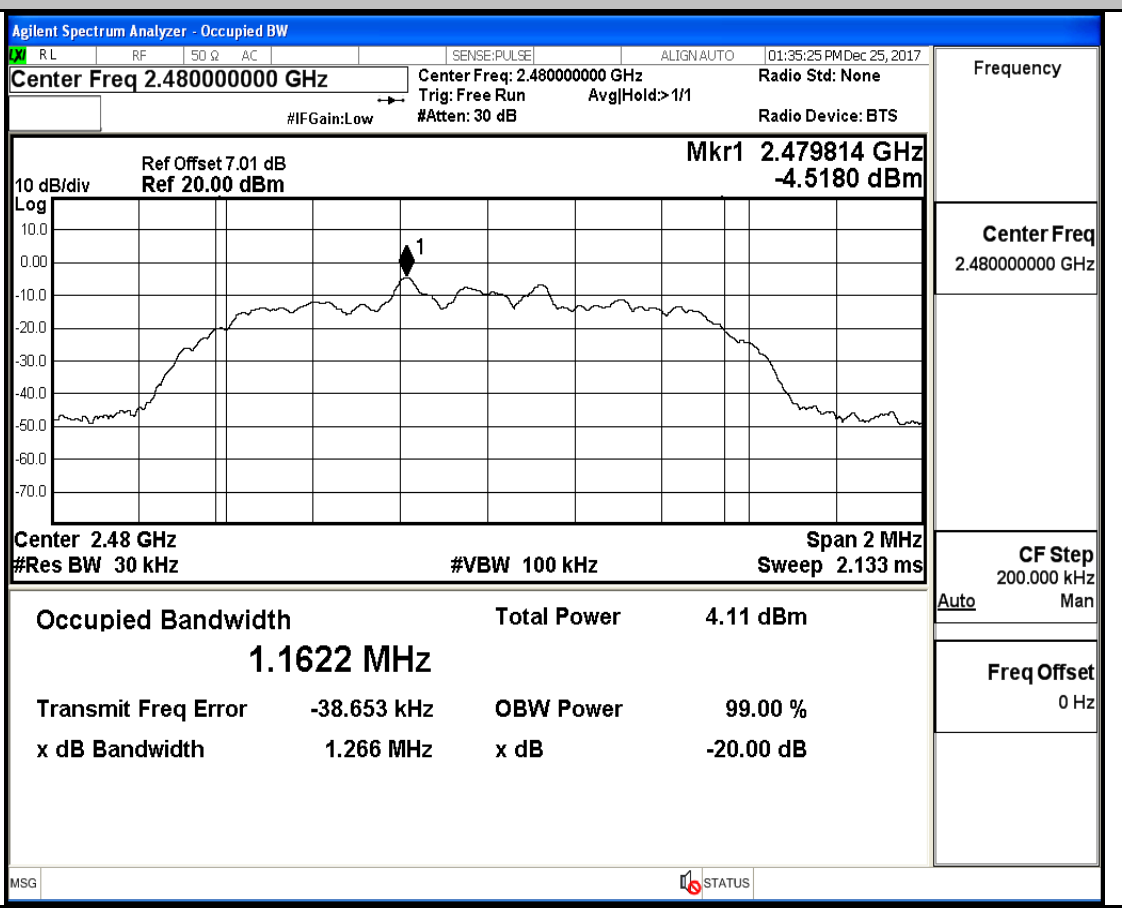
20 dB Bandwidth_π/4-DQPSK_2402



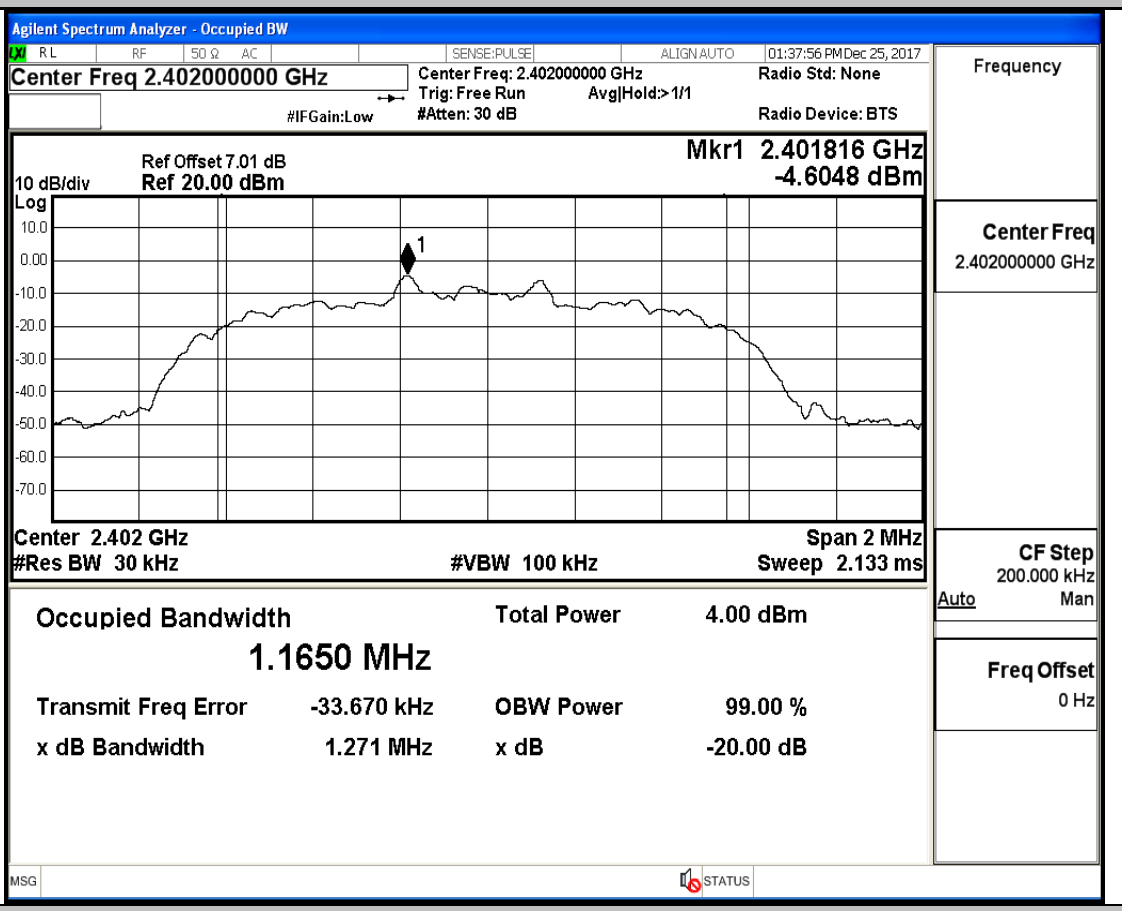
20 dB Bandwidth_π/4-DQPSK_2441



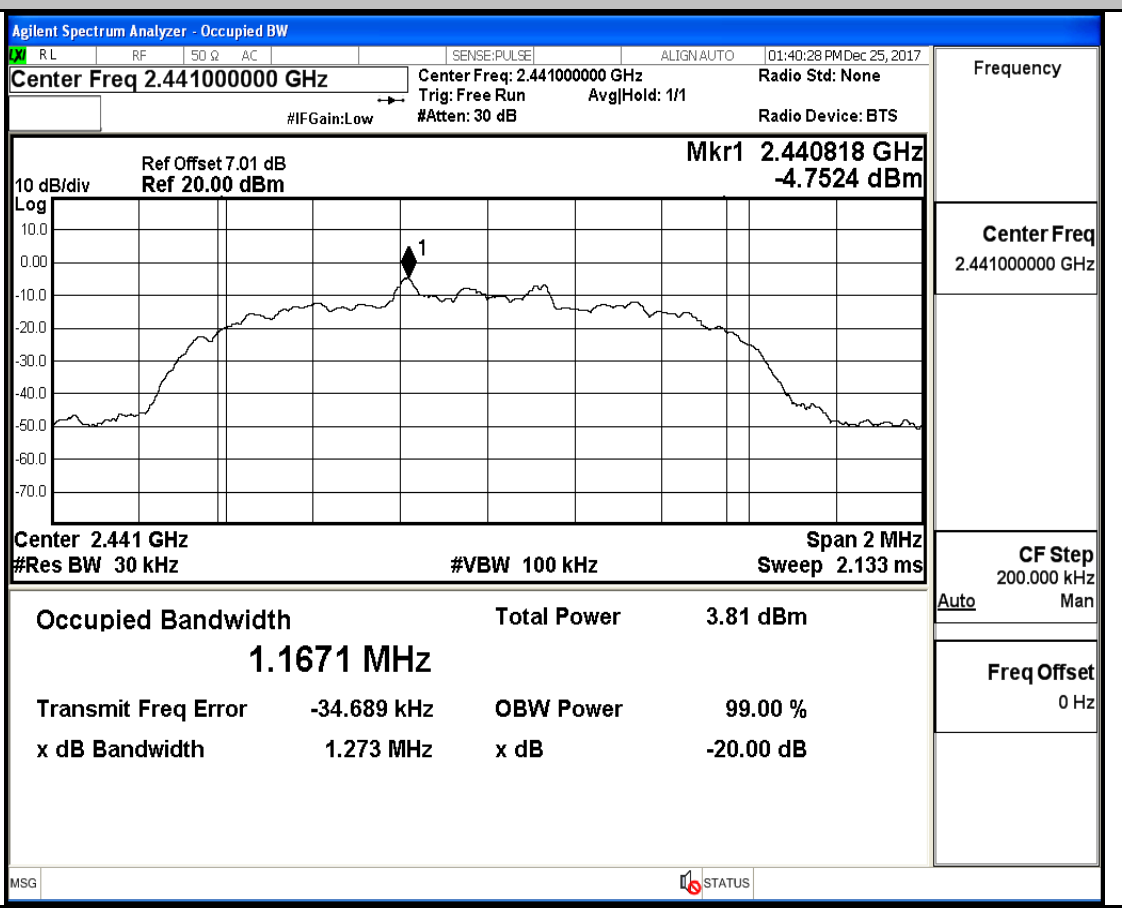
20 dB Bandwidth_π/4-DQPSK_2480



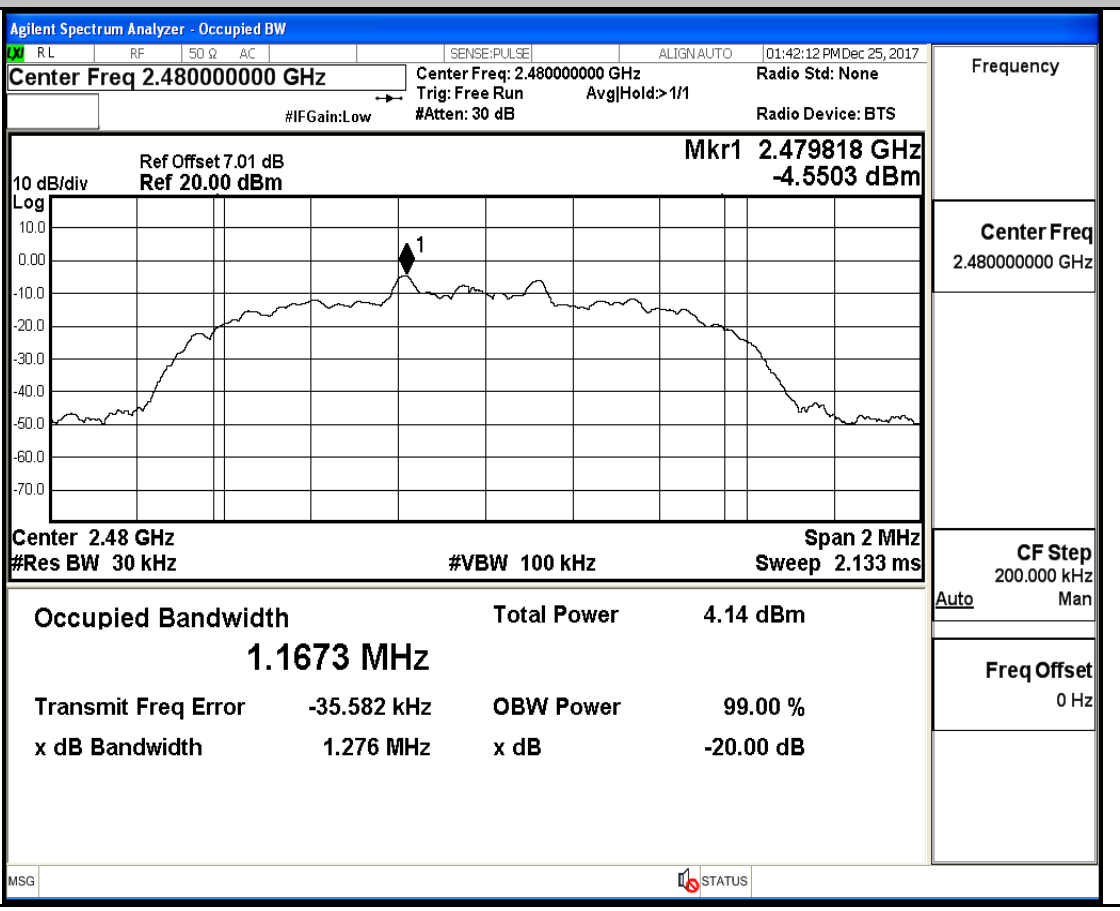
20 dB Bandwidth_8-DPSK_2402



20 dB Bandwidth_8-DPSK_2441



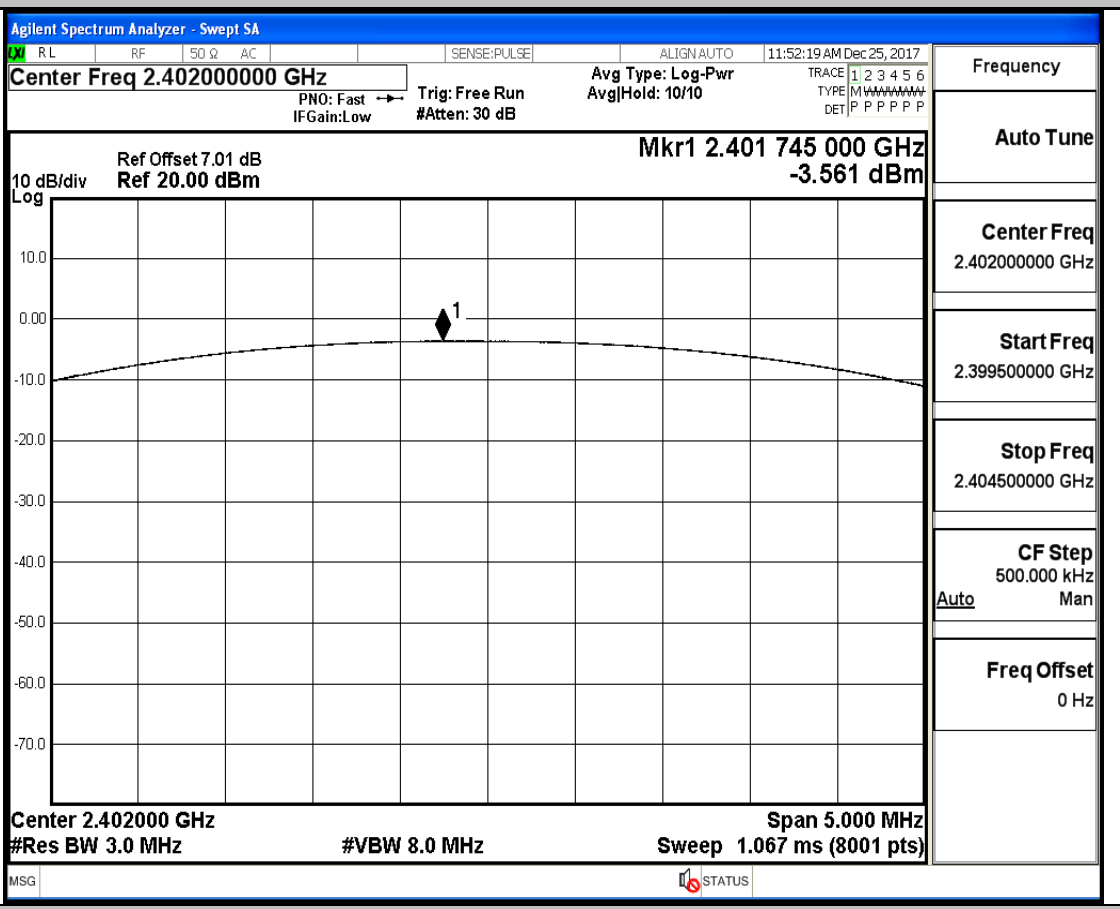
20 dB Bandwidth_8-DPSK_2480



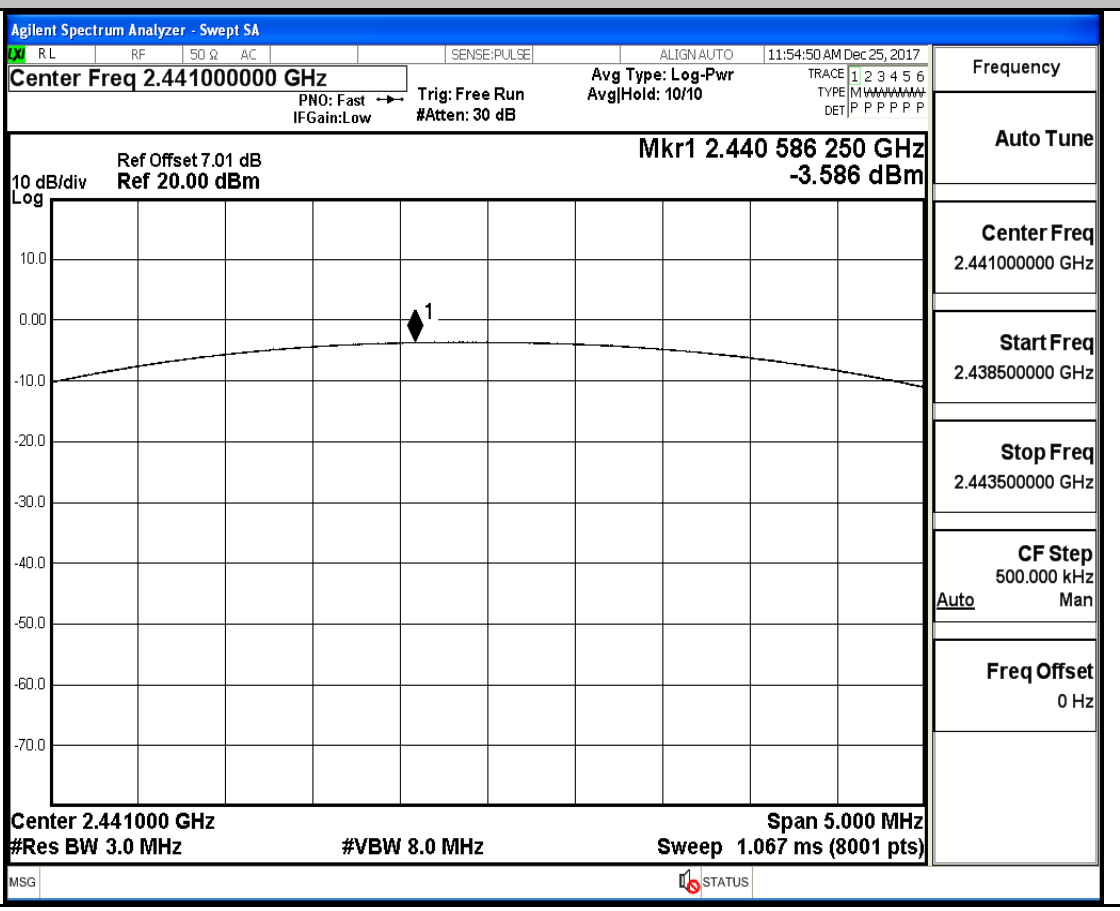
A.2 Conducted Peak Output Power

Test Mode	Test Channel	Power[dBm]	Limit[dBm]	Verdict
GFSK	2402	-3.561	30	PASS
	2441	-3.586	30	PASS
	2480	-3.327	30	PASS
π/4-DQPSK	2402	-2.731	21	PASS
	2441	-2.752	21	PASS
	2480	-2.521	21	PASS
8-DPSK	2402	-2.174	21	PASS
	2441	-2.292	21	PASS
	2480	-2.050	21	PASS

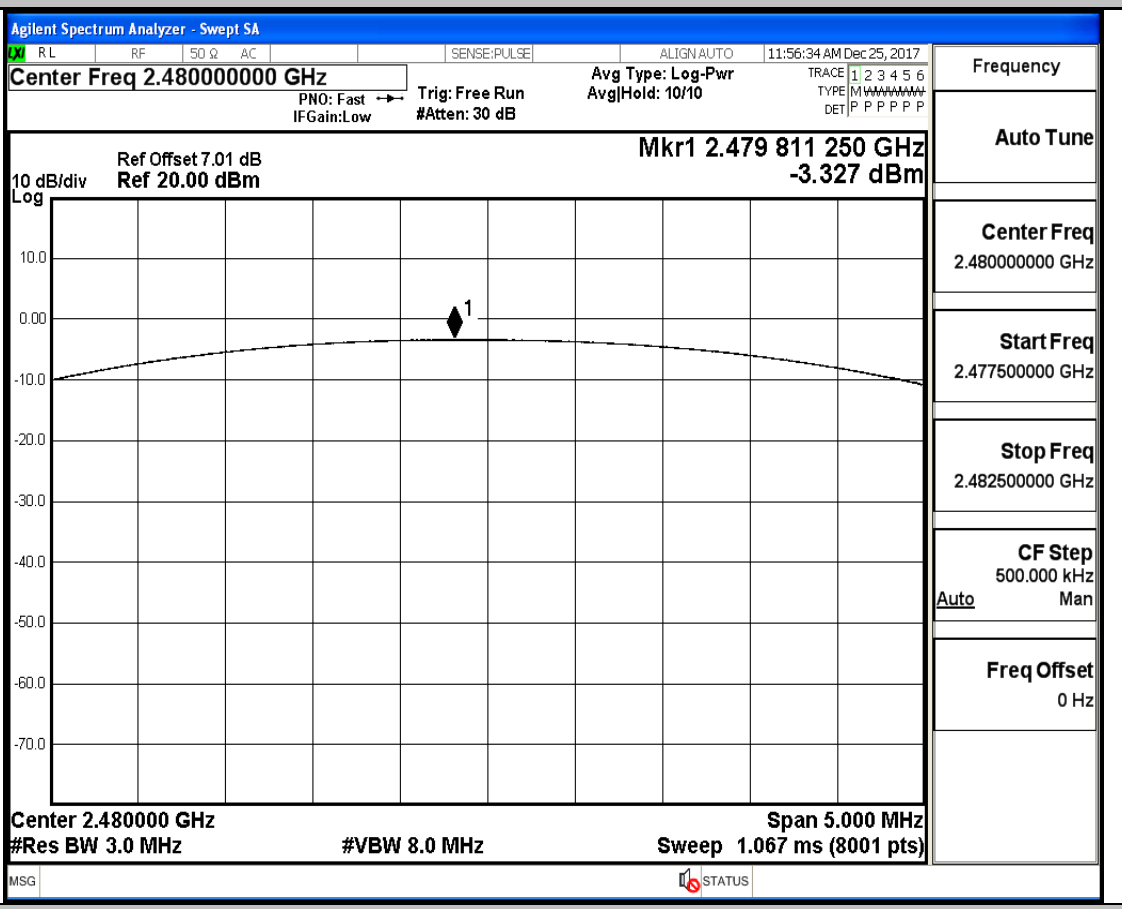
Conducted Peak Output Power_GFSK_2402



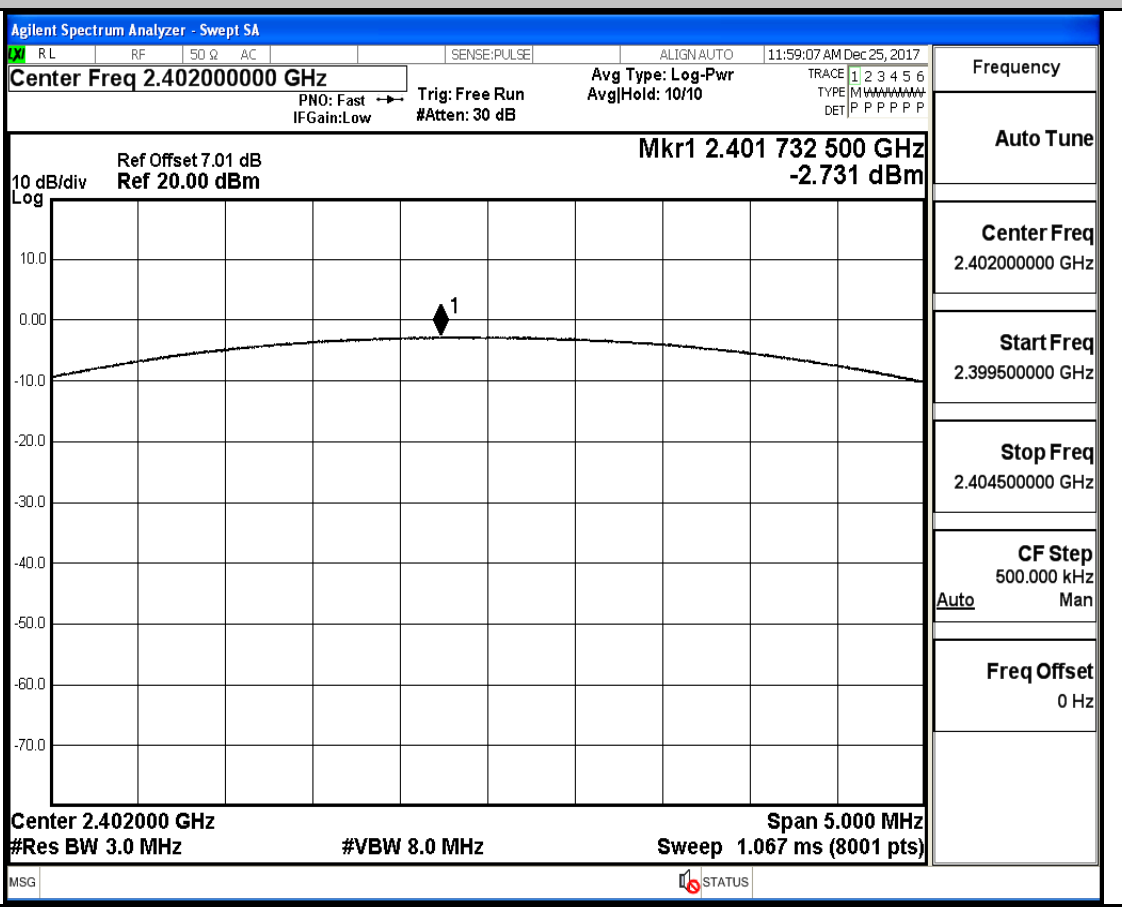
Conducted Peak Output Power_GFSK_2441



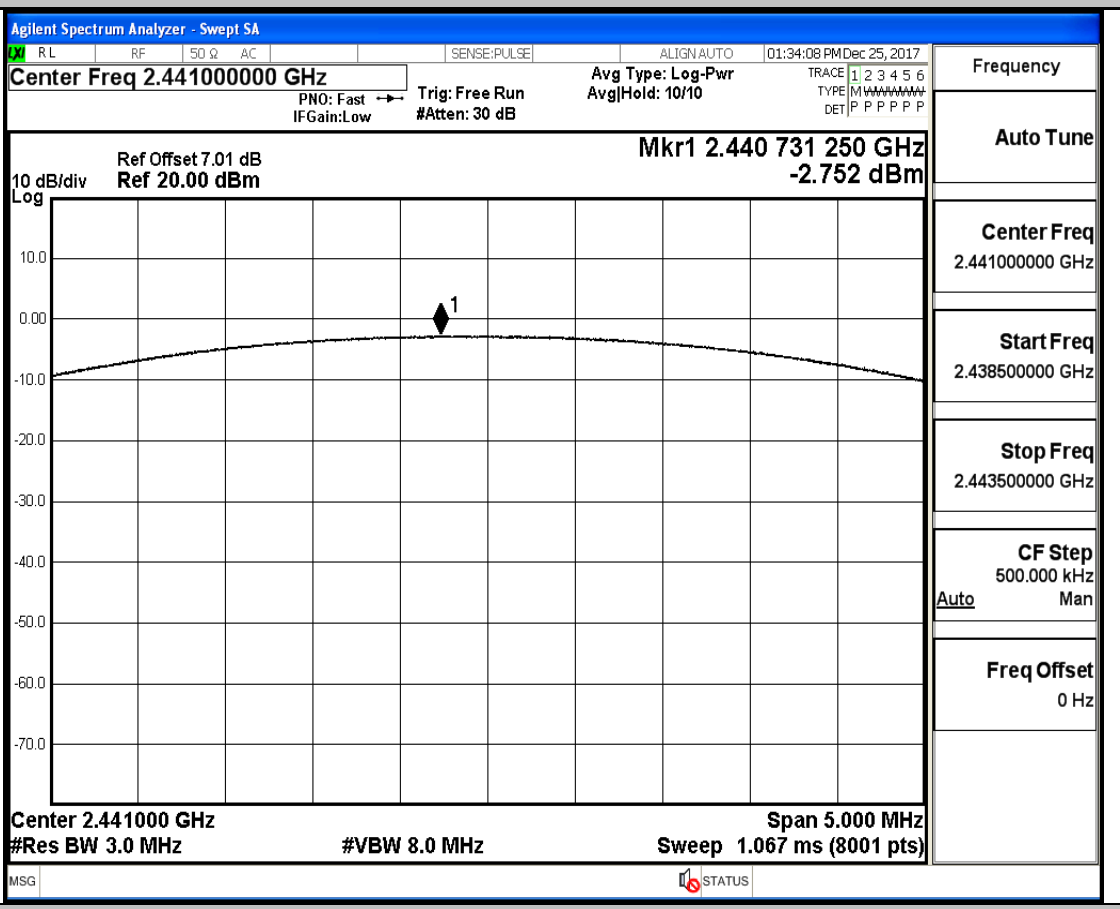
Conducted Peak Output Power_GFSK_2480



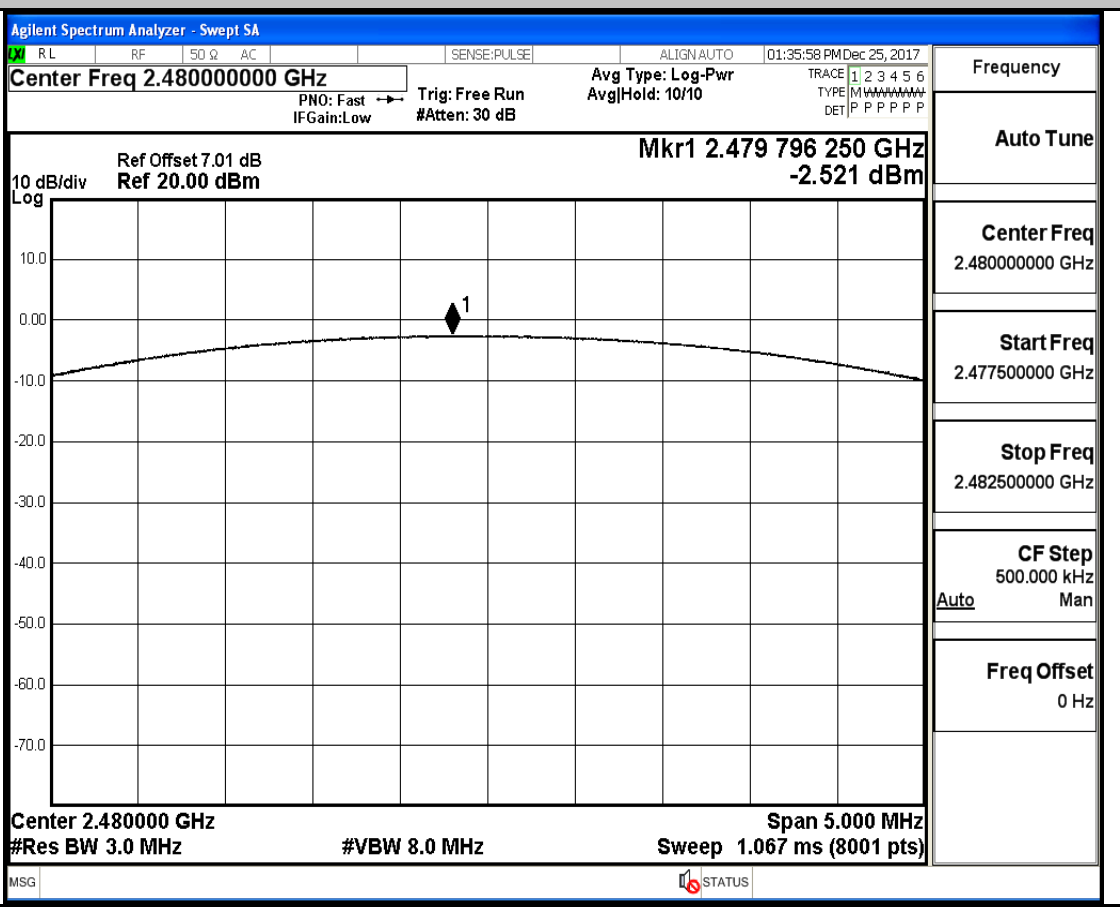
Conducted Peak Output Power_π/4-DQPSK_2402



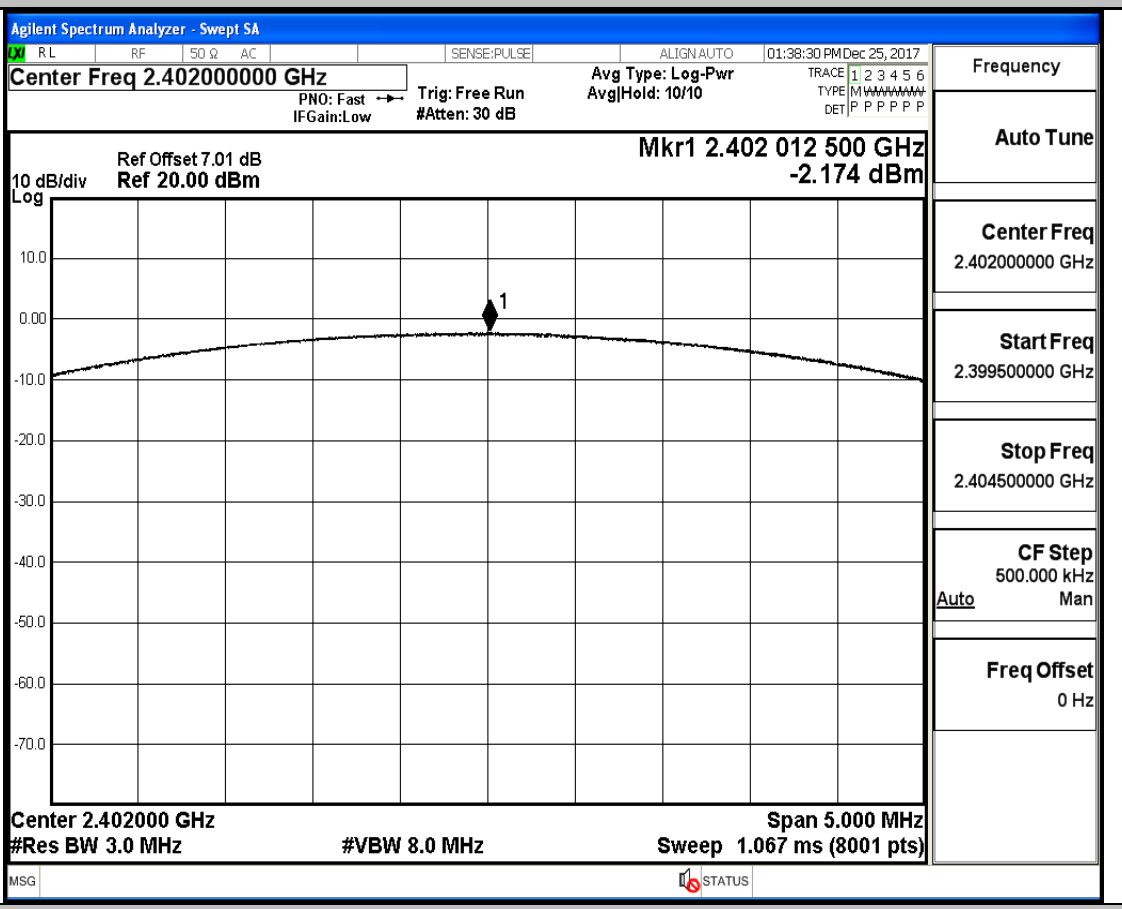
Conducted Peak Output Power_π/4-DQPSK_2441



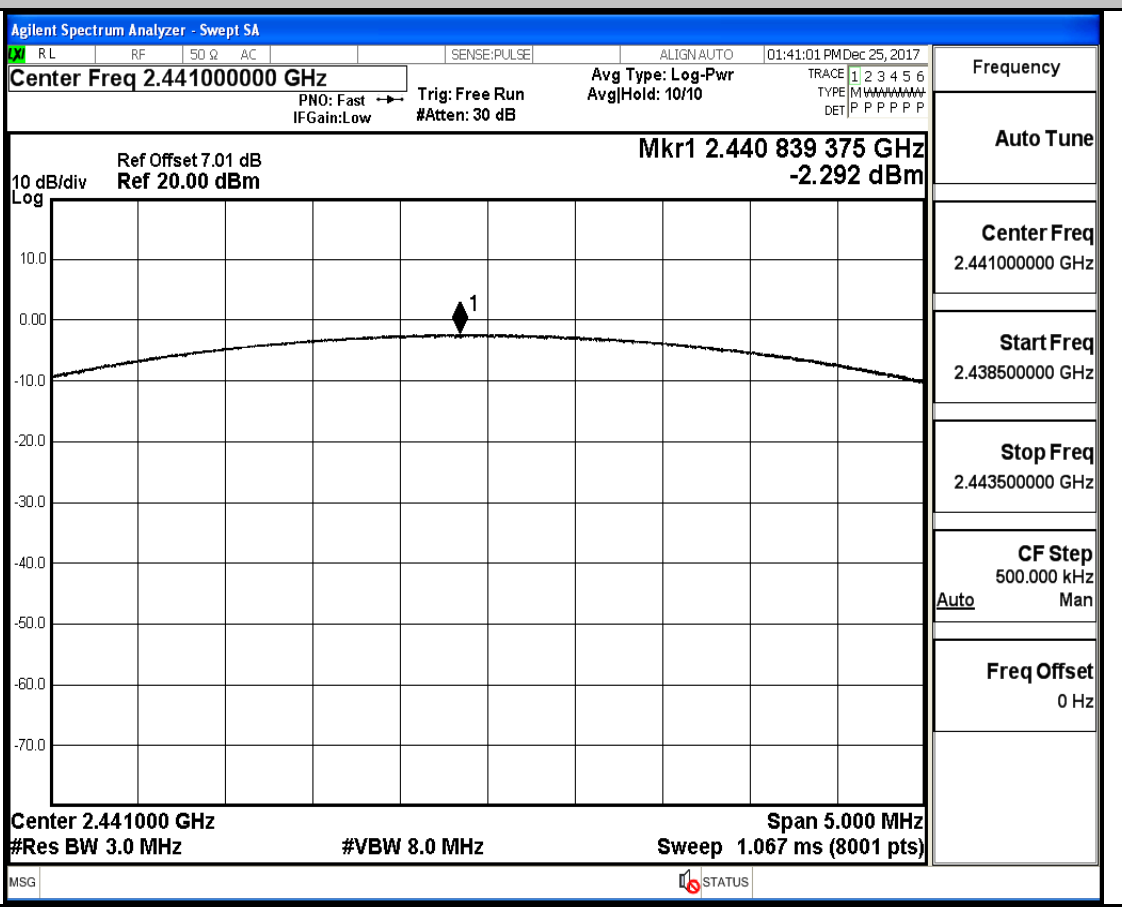
Conducted Peak Output Power_π/4-DQPSK_2480



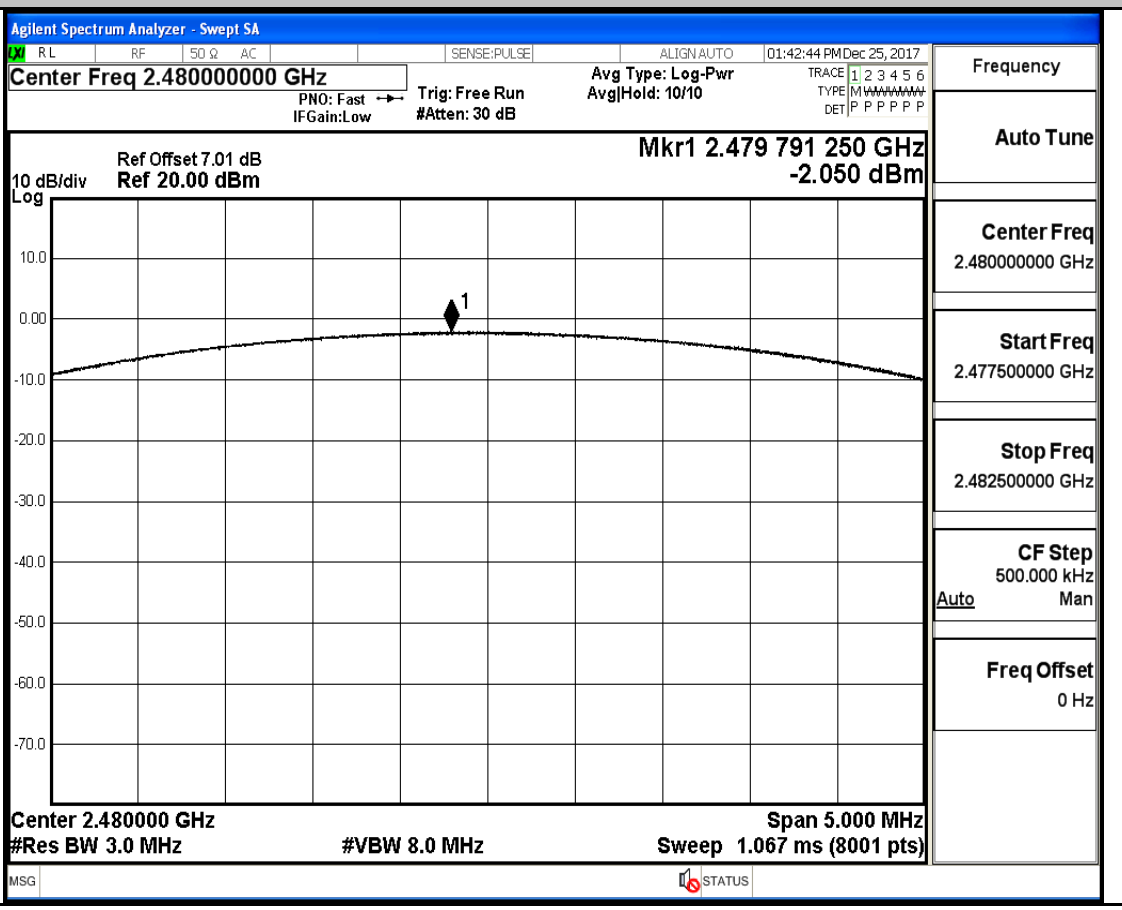
Conducted Peak Output Power_8-DPSK_2402



Conducted Peak Output Power_8-DPSK_2441



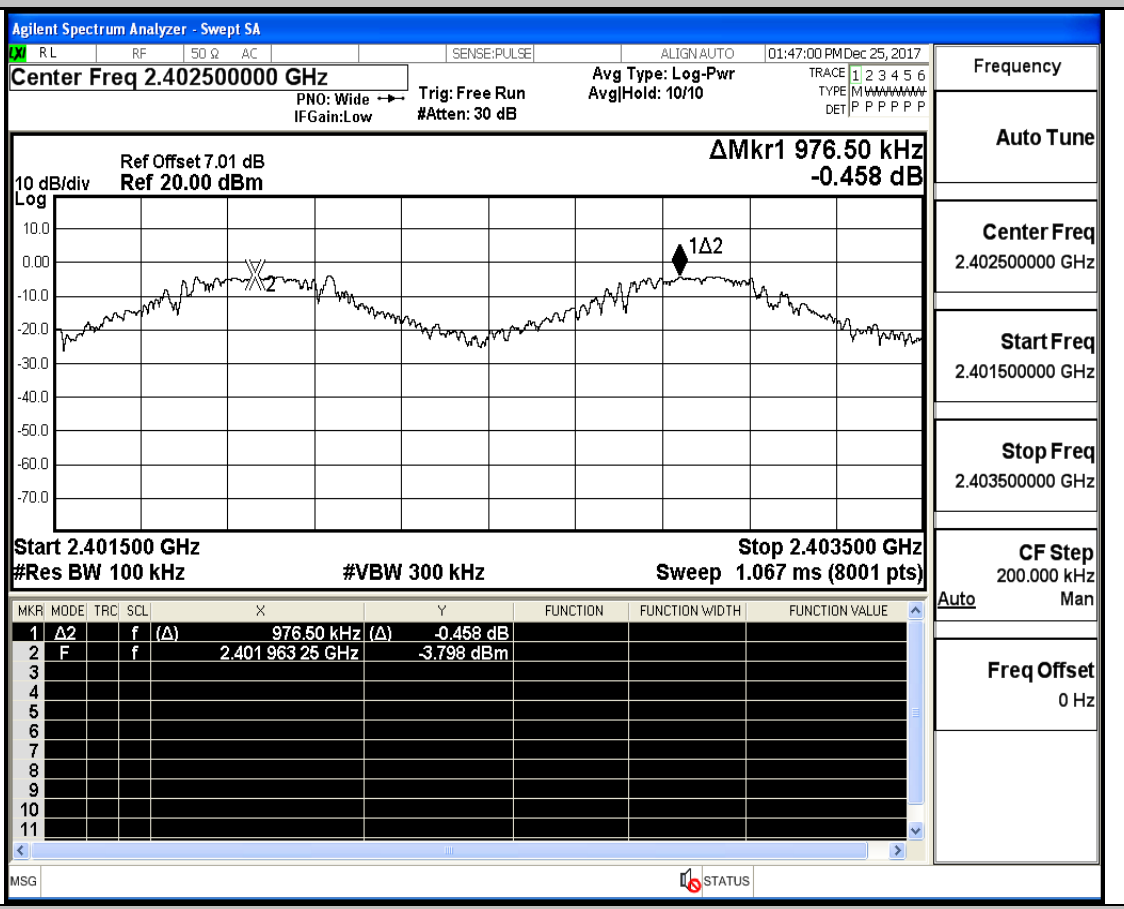
Conducted Peak Output Power_8-DPSK_2480



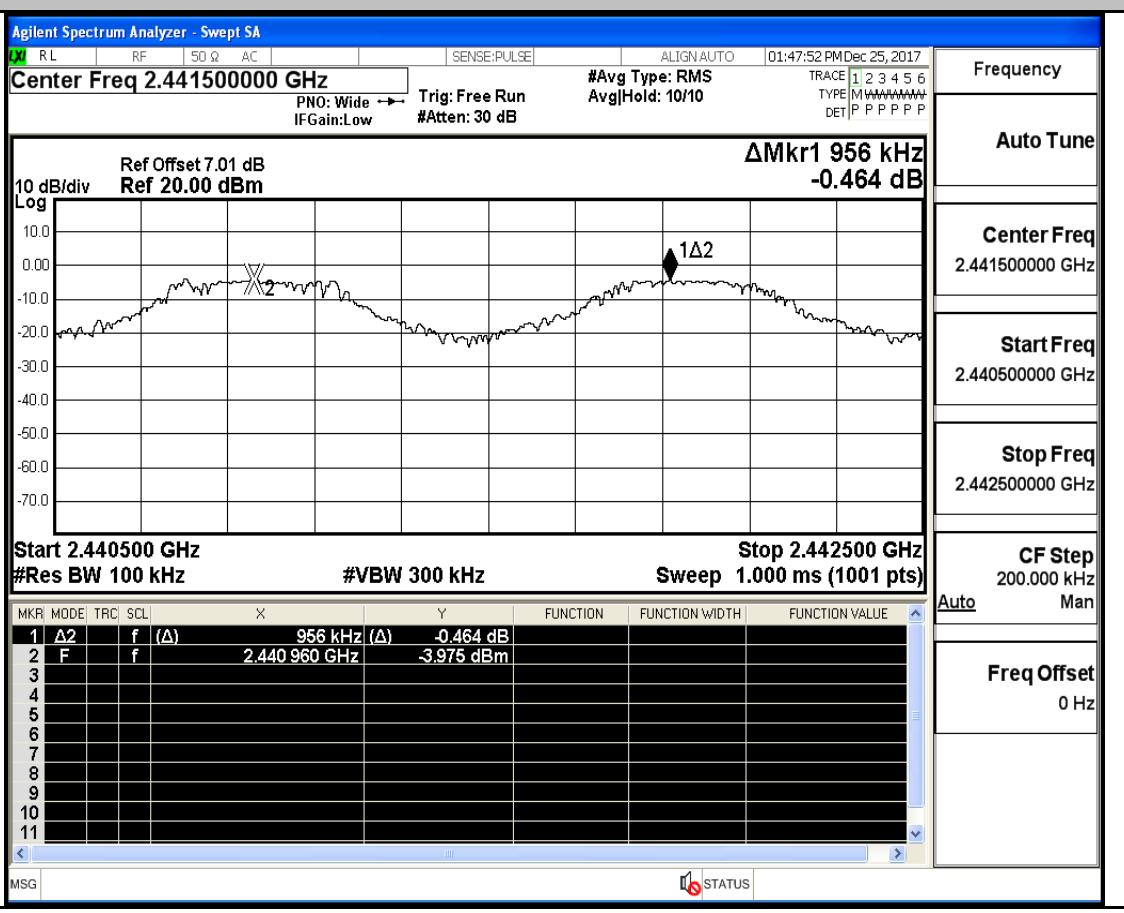
A.3 Carrier Frequency Separation

Test Mode	Test Channel	Result[MHz]	Limit[MHz]	Verdict
GFSK	2402	0.977	0.9377	PASS
	2441	0.956	0.9329	PASS
	2480	0.788	0.63	PASS
π/4-DQPSK	2402	1.284	0.84	PASS
	2441	1.294	0.84	PASS
	2480	1.022	0.84	PASS
8-DPSK	2402	1.002	0.85	PASS
	2441	1.202	0.85	PASS
	2480	1.262	0.85	PASS

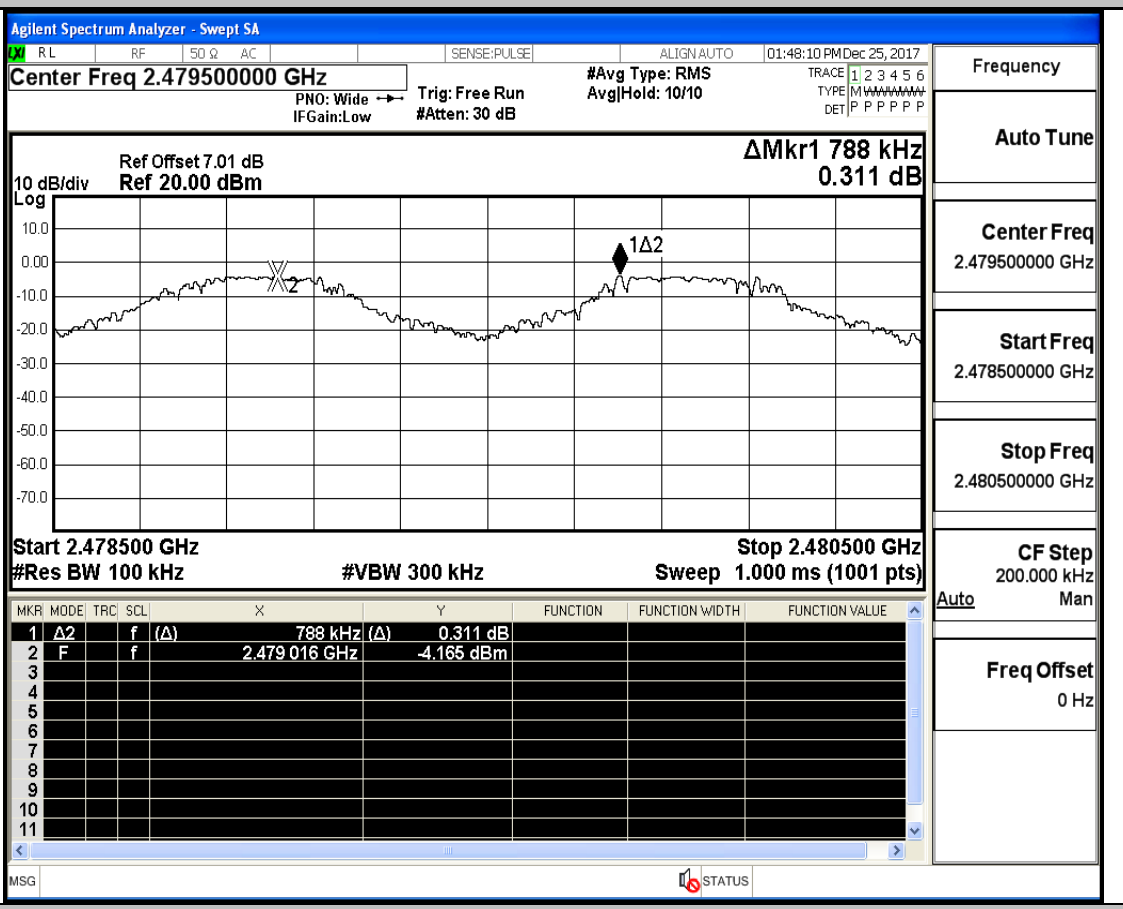
Carrier Frequency Separation_GFSK_2402



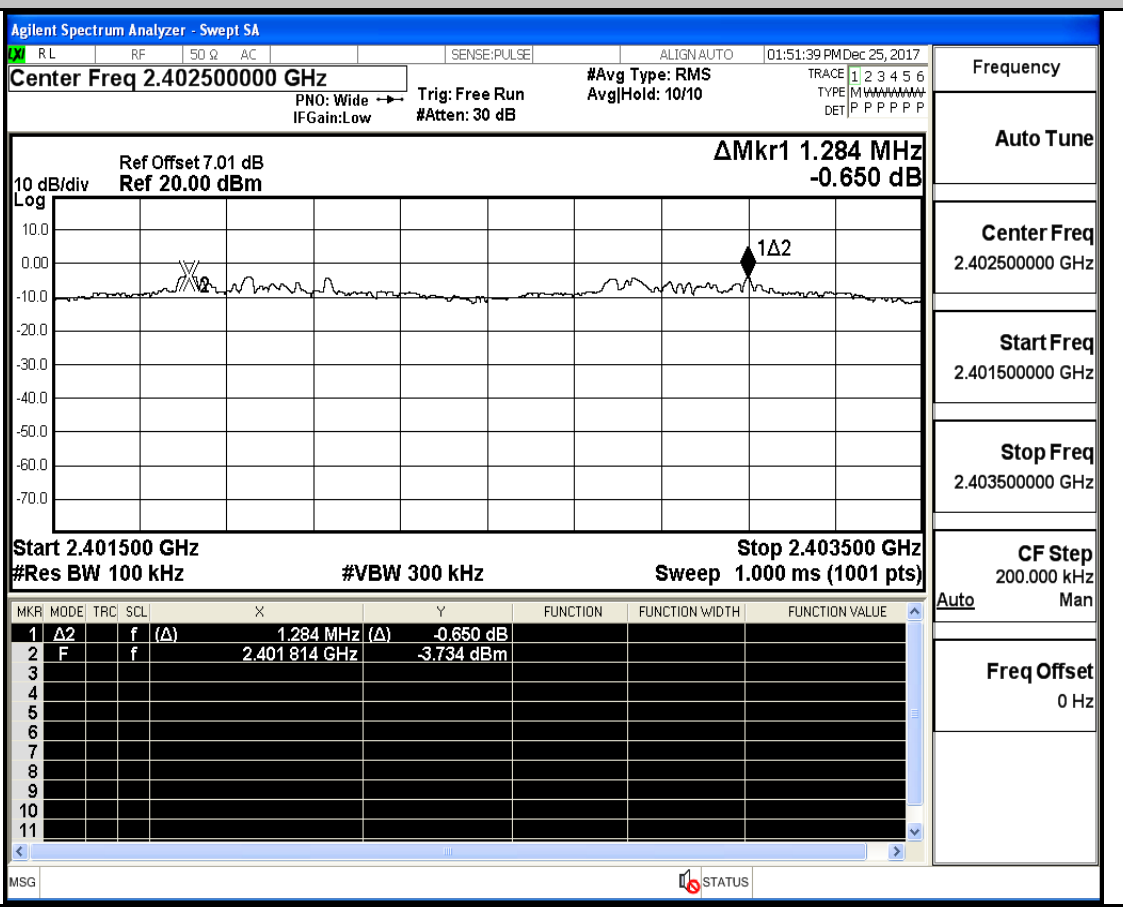
Carrier Frequency Separation_GFSK_2441



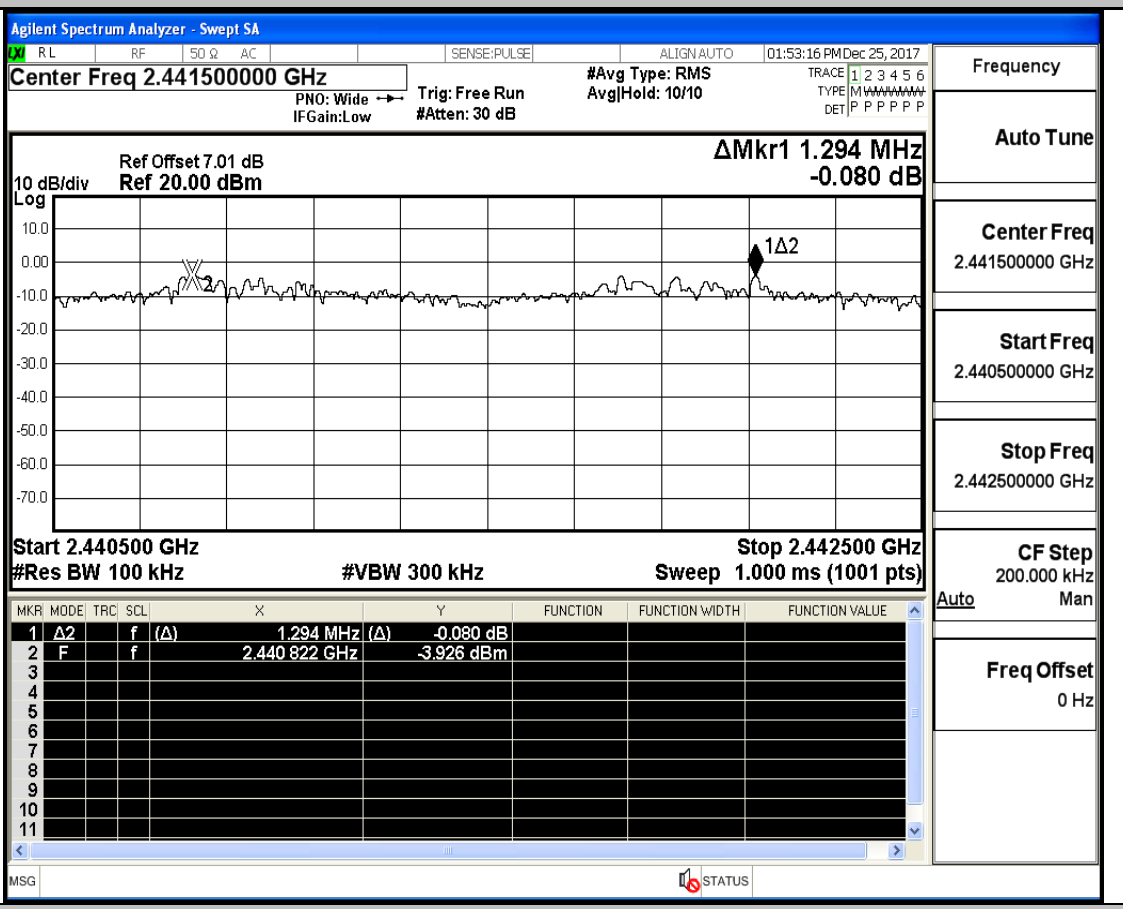
Carrier Frequency Separation_GFSK_2480



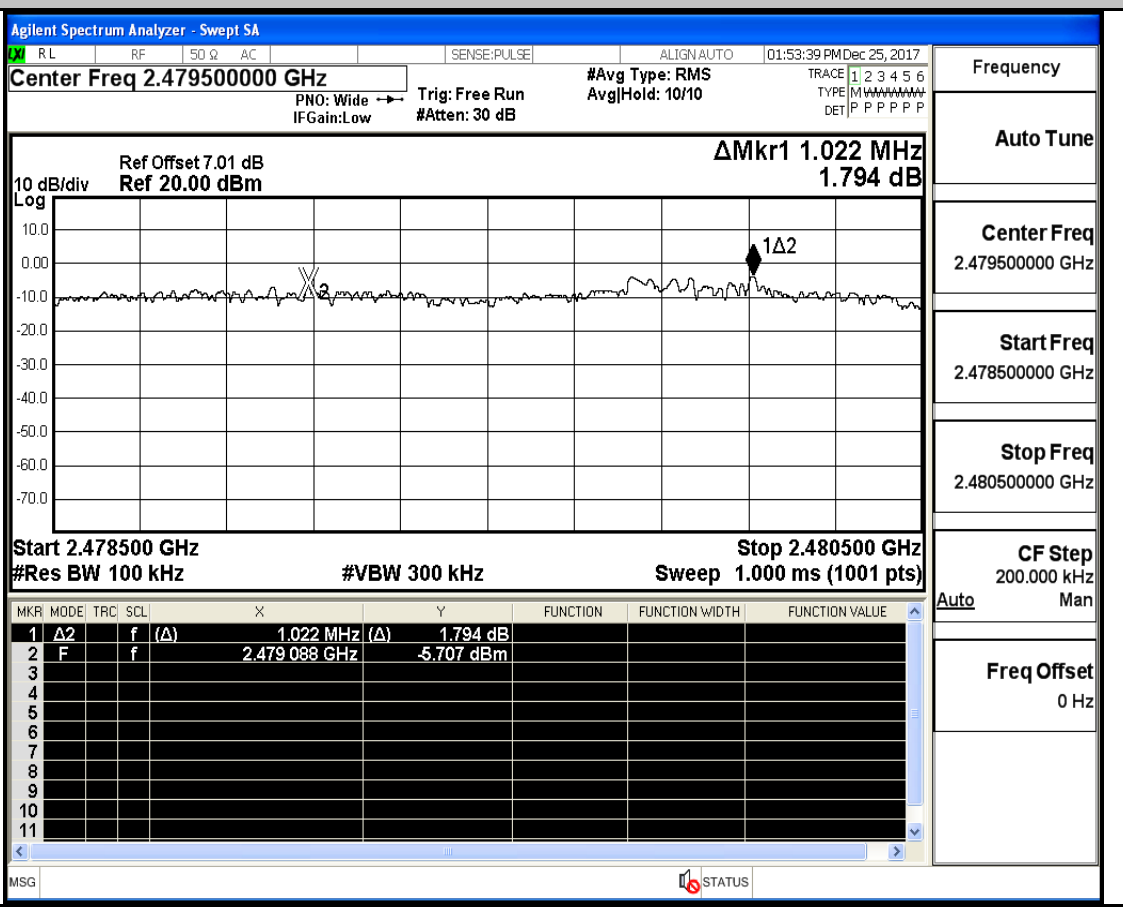
Carrier Frequency Separation_π/4-DQPSK_2402



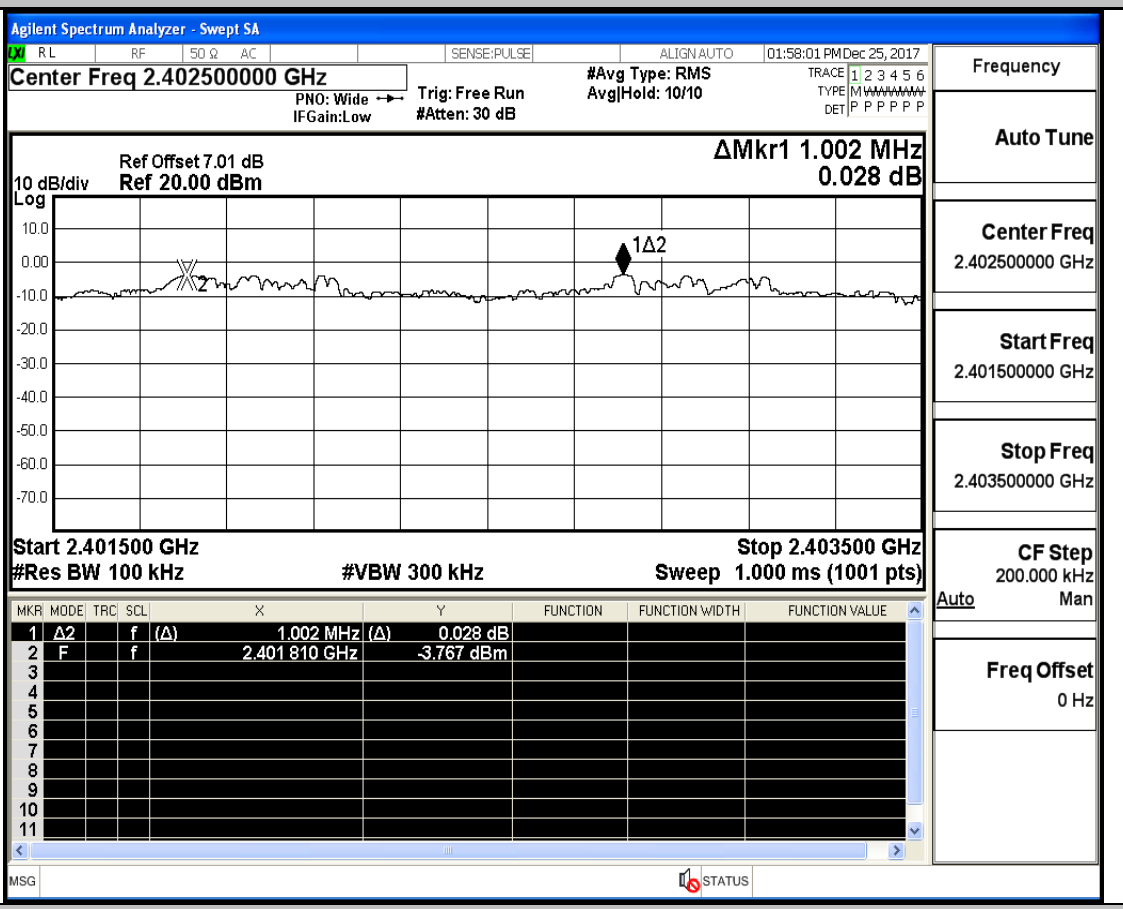
Carrier Frequency Separation_π/4-DQPSK_2441



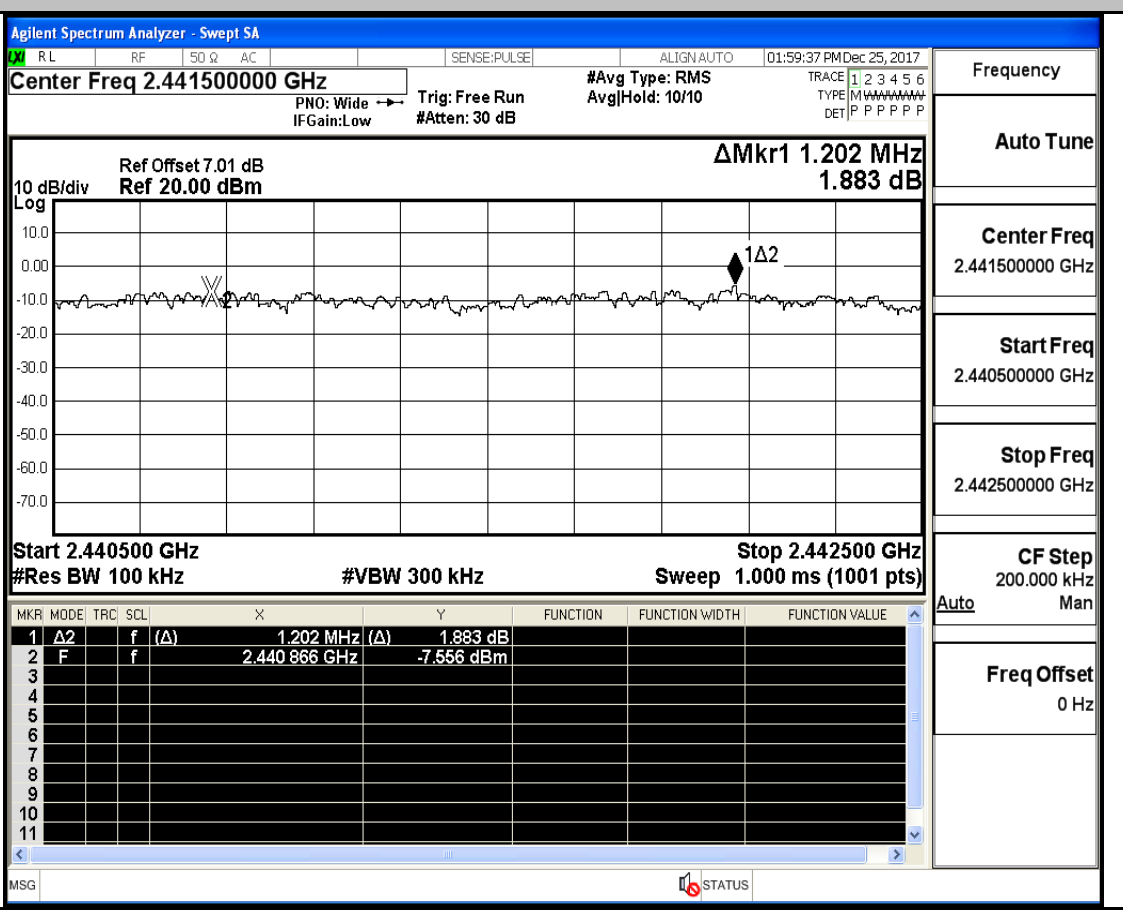
Carrier Frequency Separation_π/4-DQPSK_2480



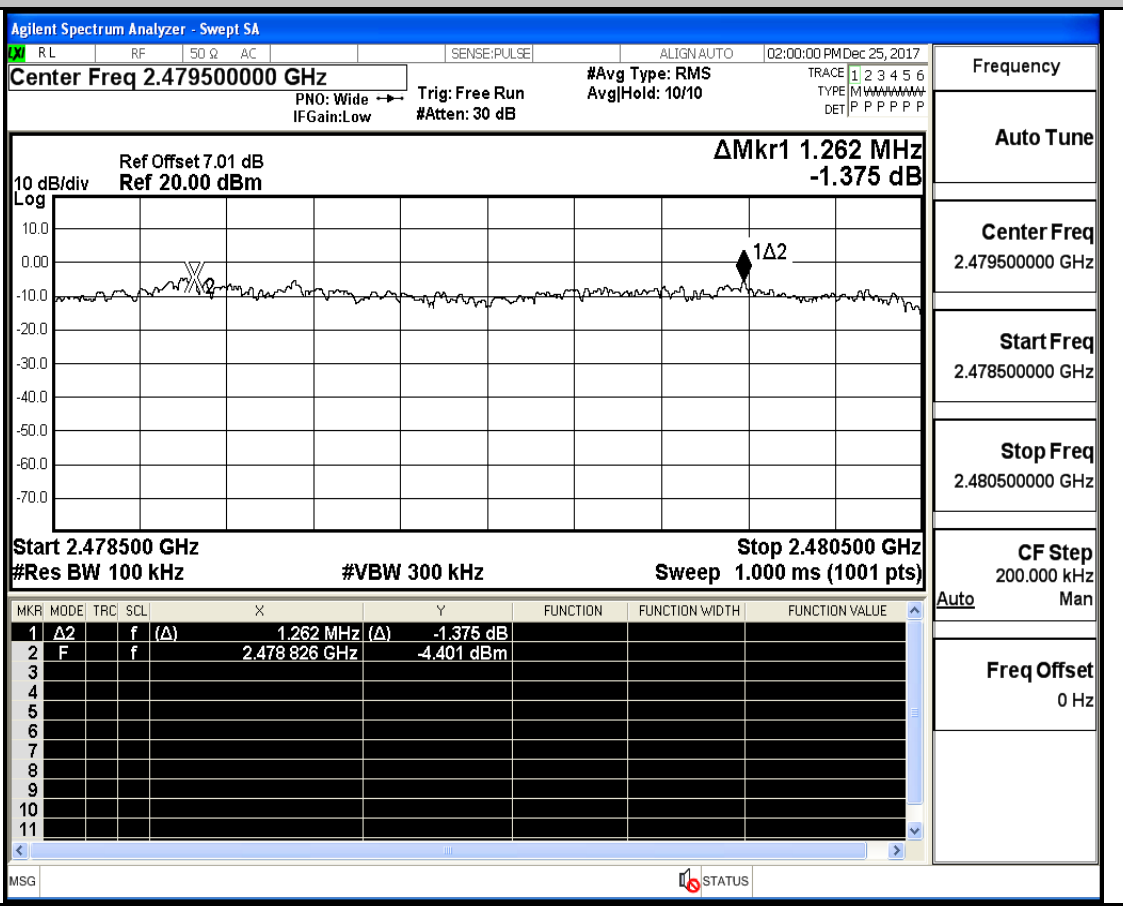
Carrier Frequency Separation_8-DPSK_2402



Carrier Frequency Separation_8-DPSK_2441



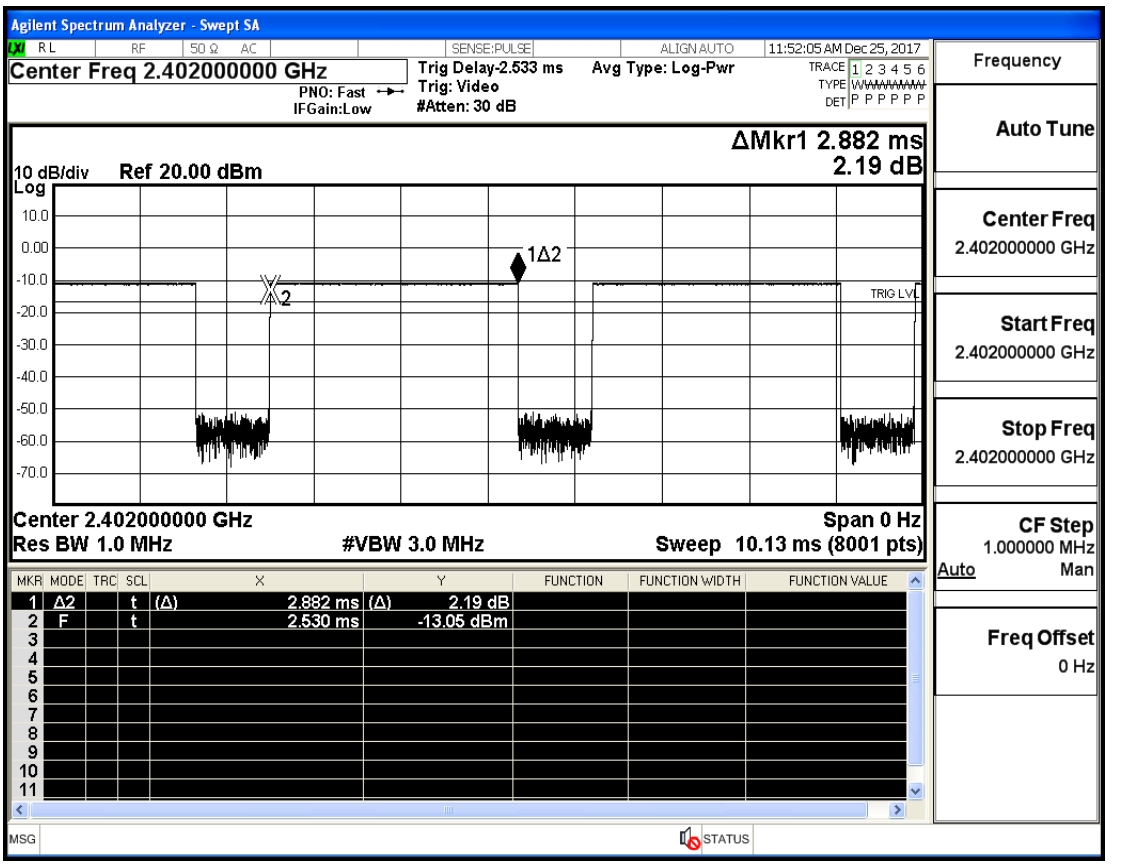
Carrier Frequency Separation_8-DPSK_2480



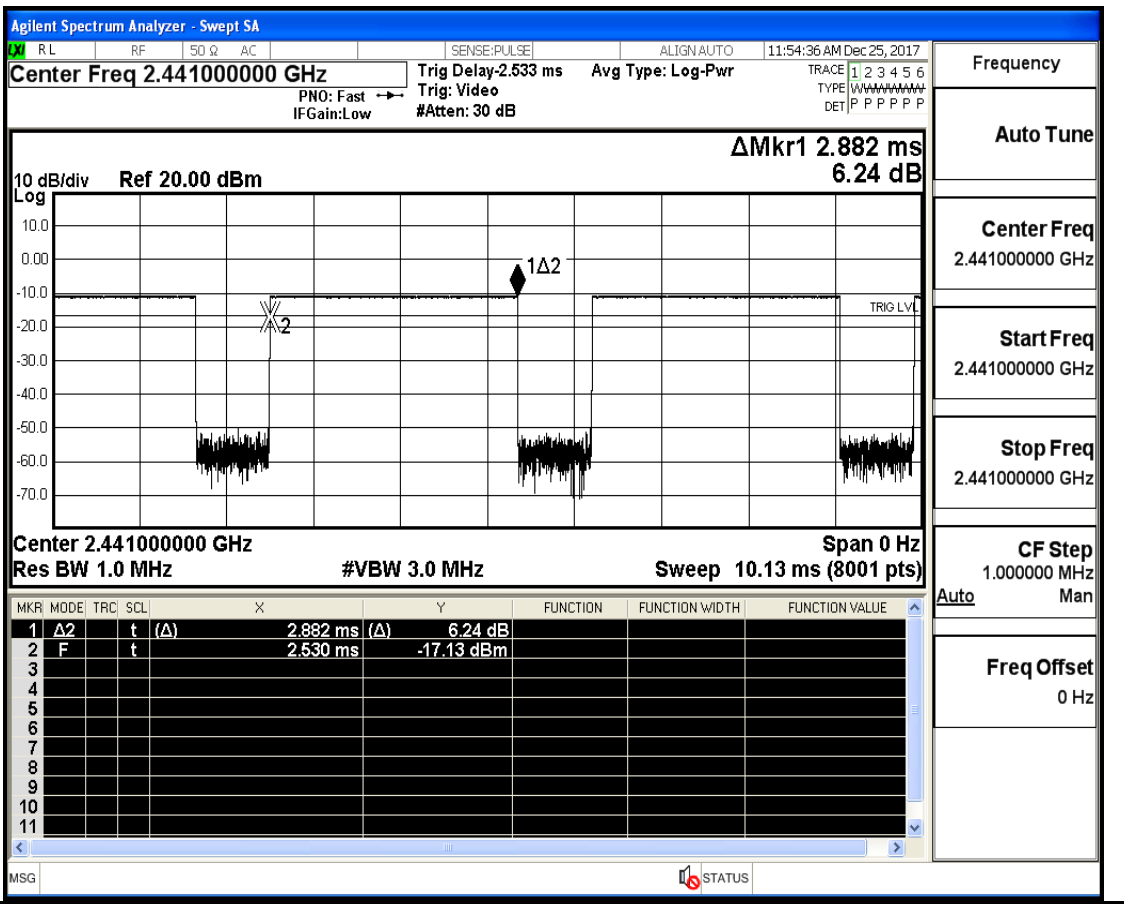
A.4 Dwell Time

Test Mode	Test Channel	Burst Width[ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit[s]	Verdict
GFSK	2402	2.88	106.7	0.307	0.4	PASS
	2441	2.88	106.7	0.307	0.4	PASS
	2480	2.88	106.7	0.307	0.4	PASS
π/4-DQPSK	2402	2.89	106.7	0.308	0.4	PASS
	2441	2.88	106.7	0.307	0.4	PASS
	2480	2.88	106.7	0.307	0.4	PASS
8-DPSK	2402	2.89	106.7	0.308	0.4	PASS
	2441	2.89	106.7	0.308	0.4	PASS
	2480	2.89	106.7	0.308	0.4	PASS

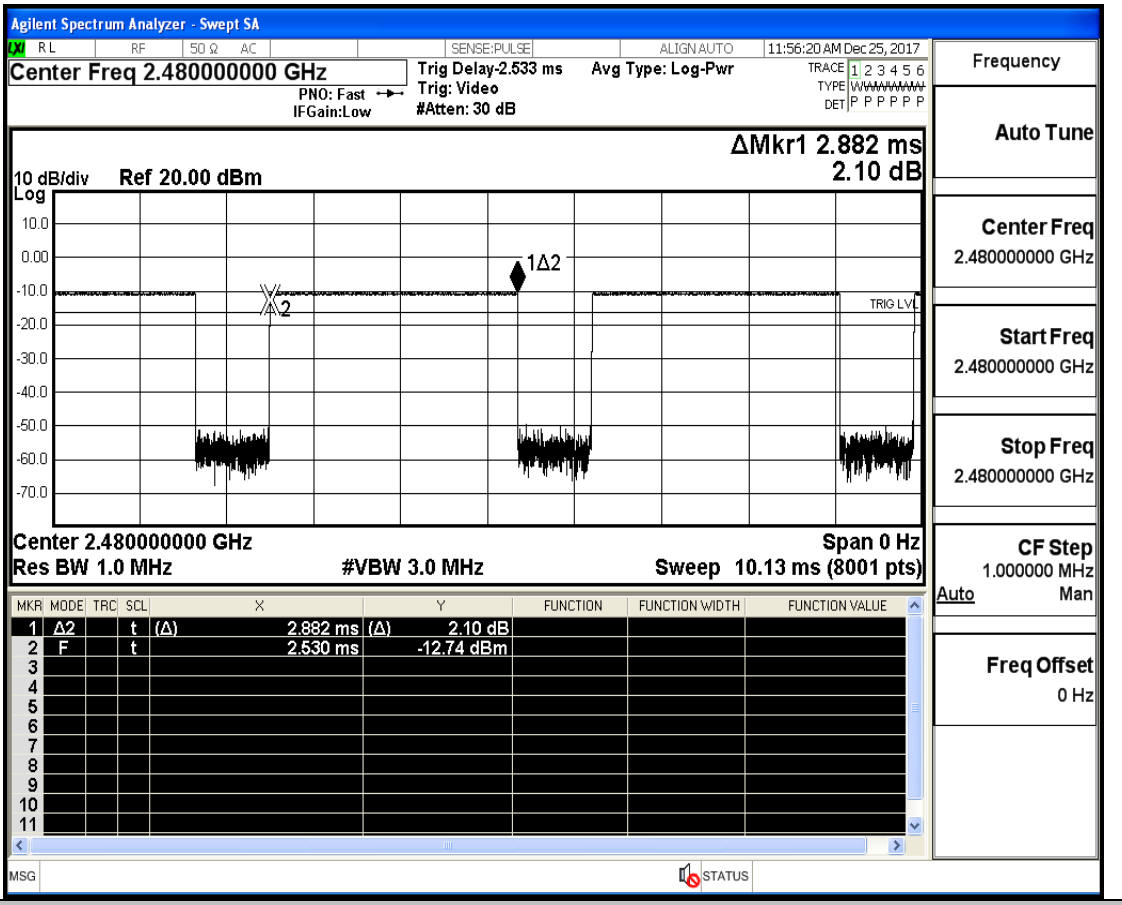
Dwell Time_GFSK_2402



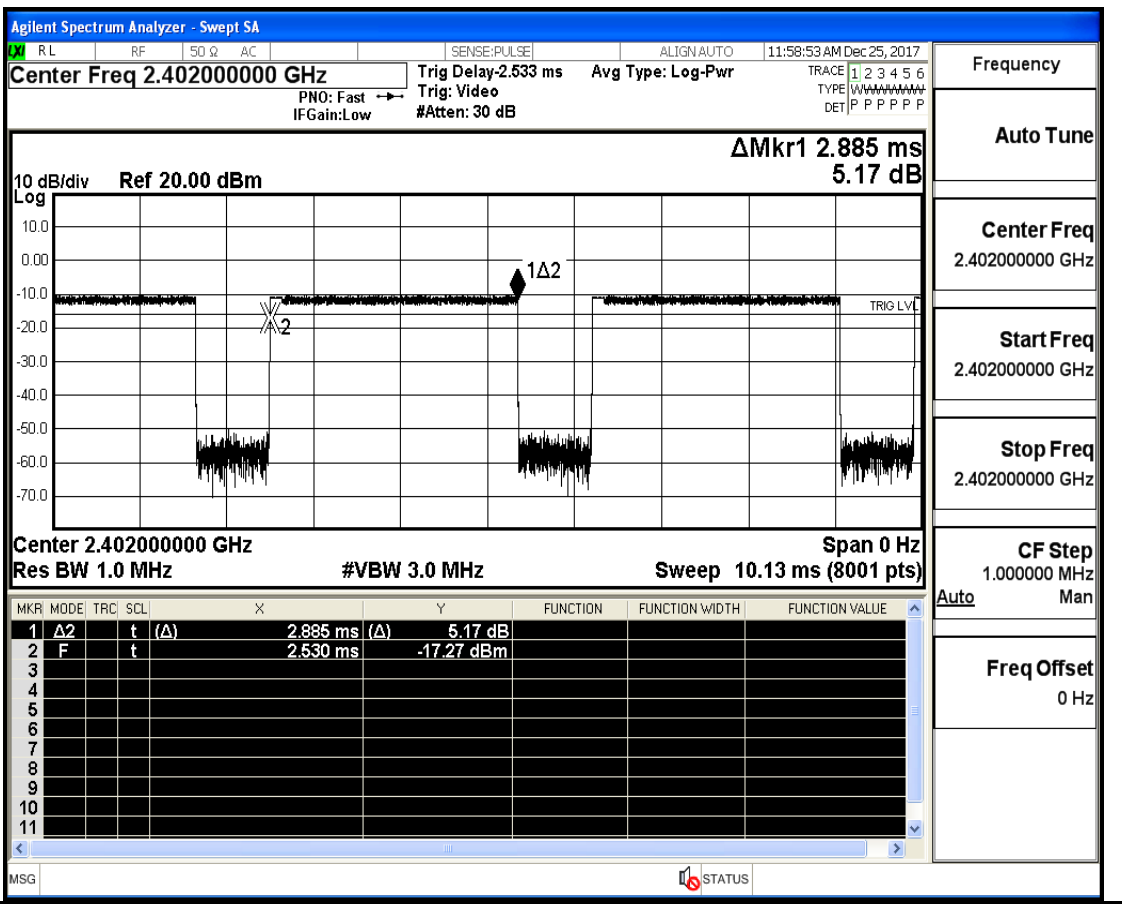
Dwell Time_GFSK_2441



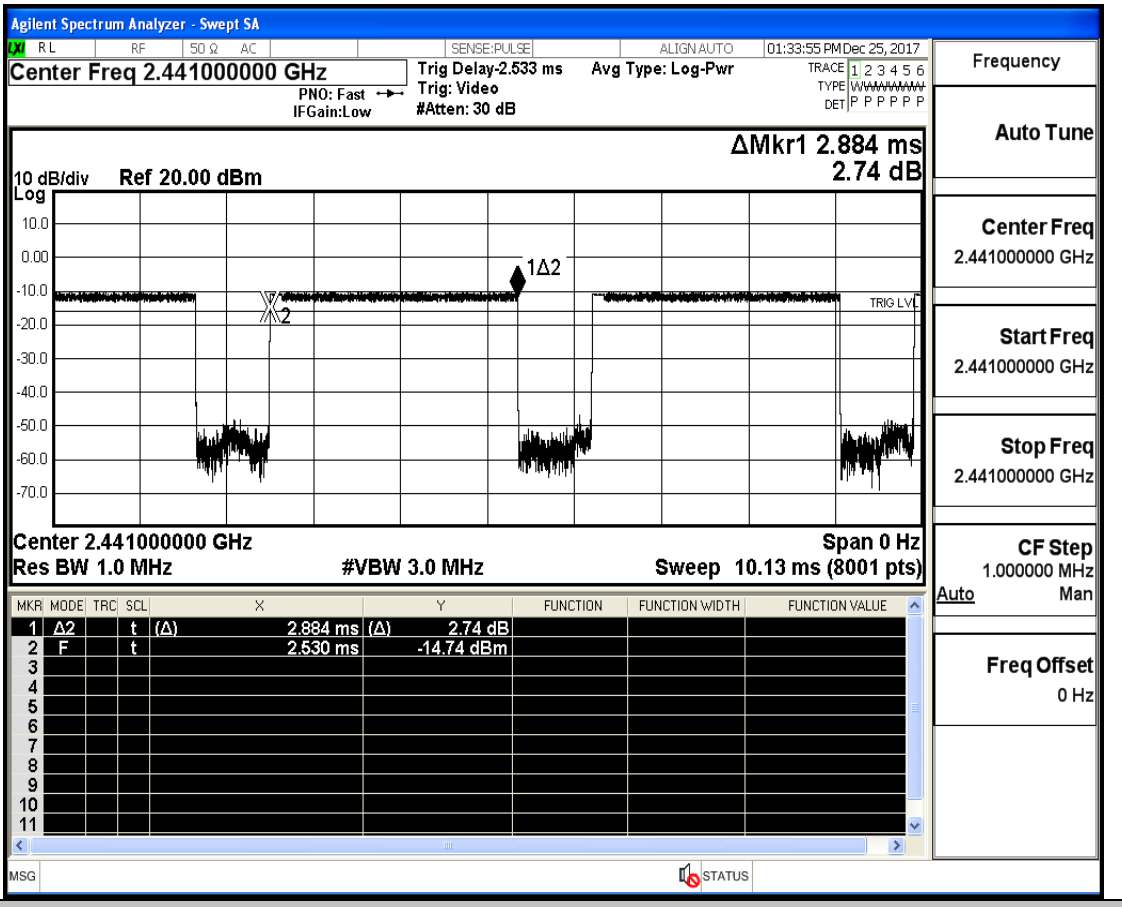
Dwell Time_GFSK_2480



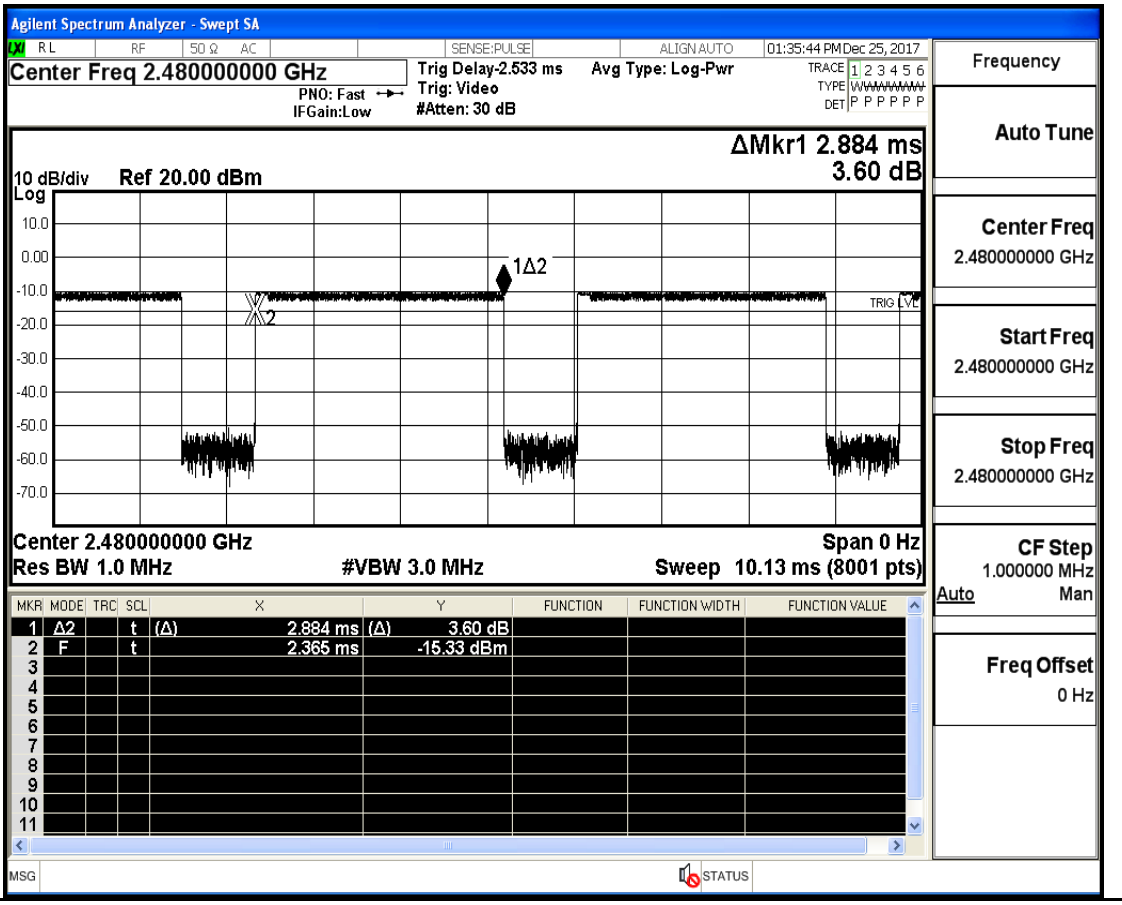
Dwell Time_π/4-DQPSK_2402



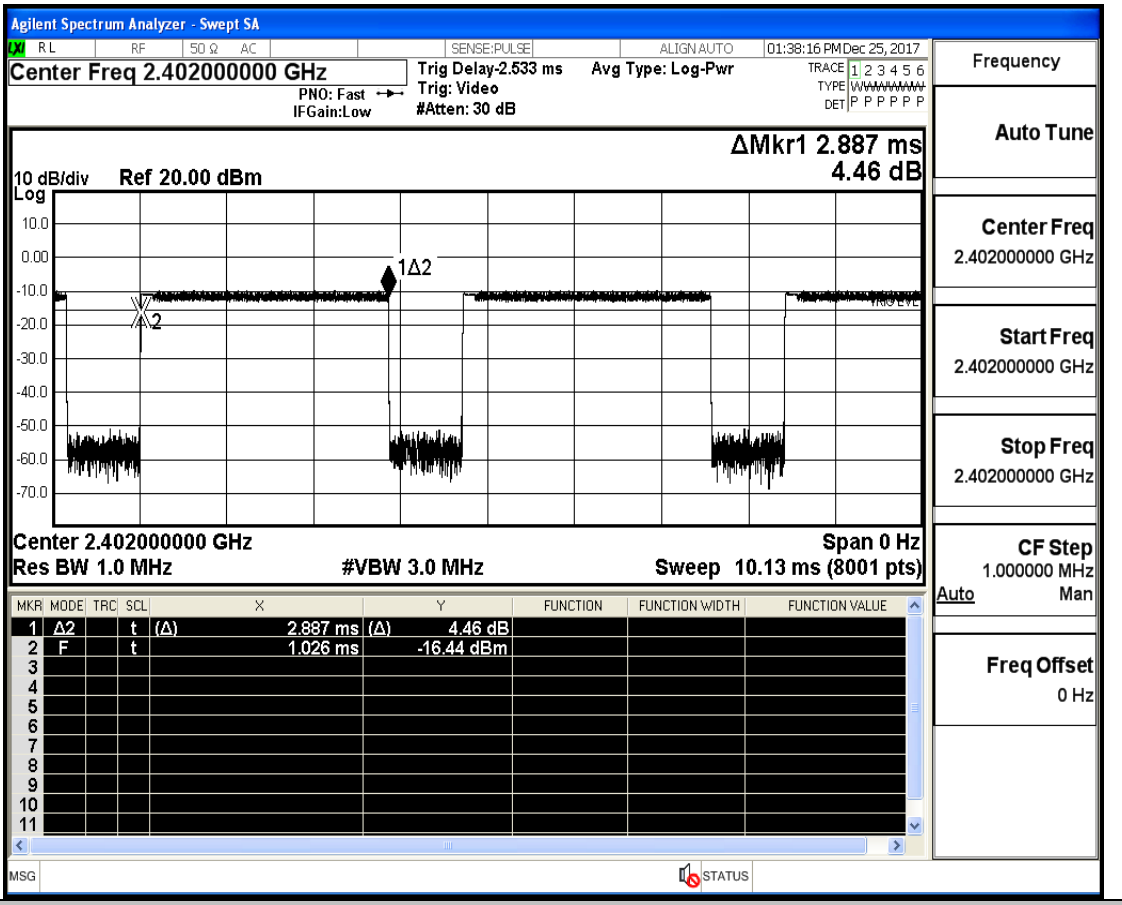
Dwell Time_π/4-DQPSK_2441



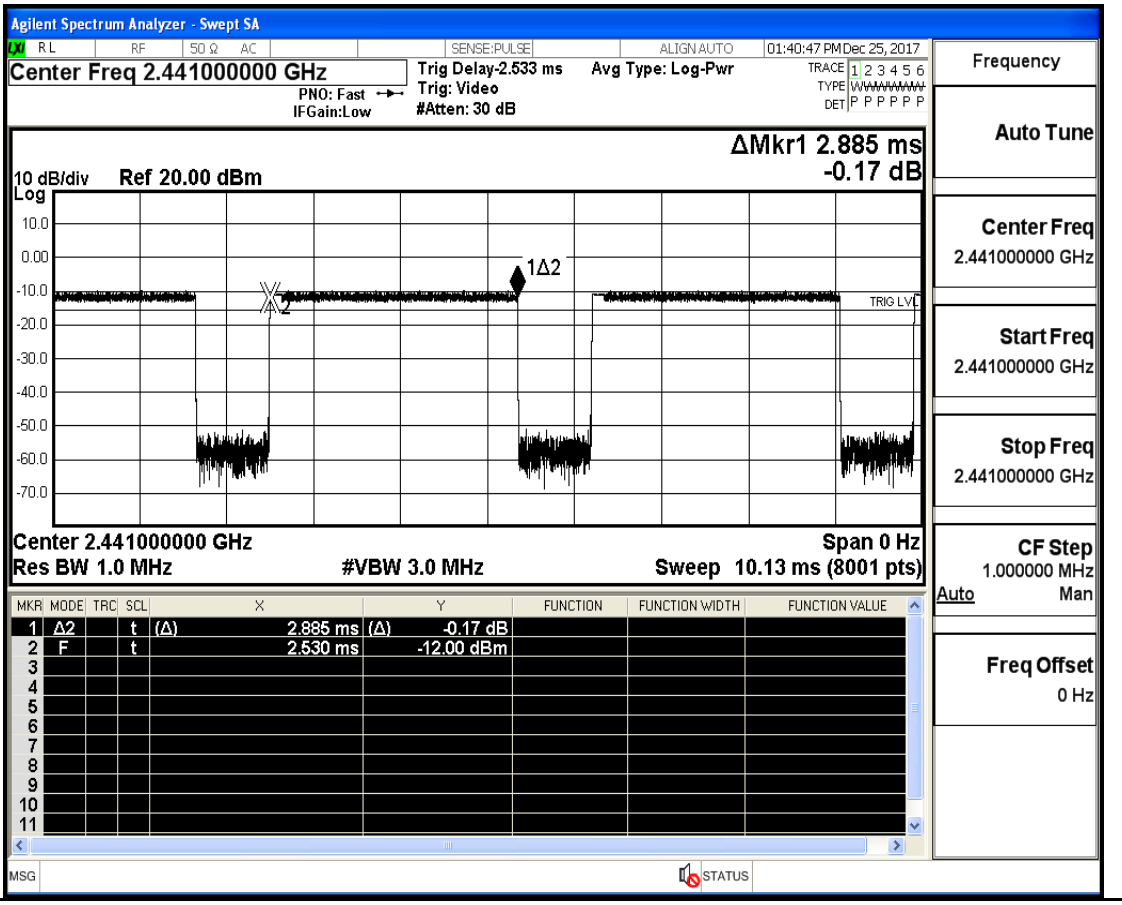
Dwell Time_π/4-DQPSK_2480



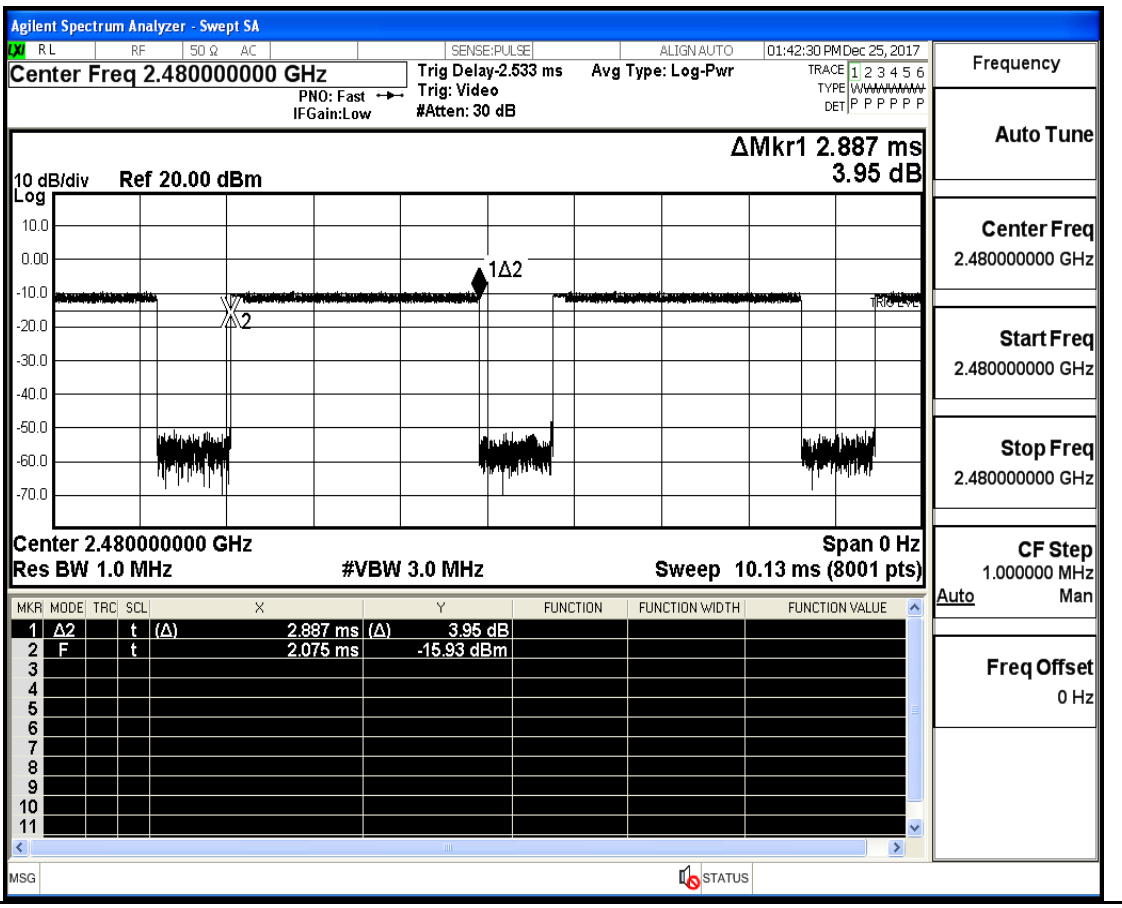
Dwell Time_8-DPSK_2402



Dwell Time_8-DPSK_2441



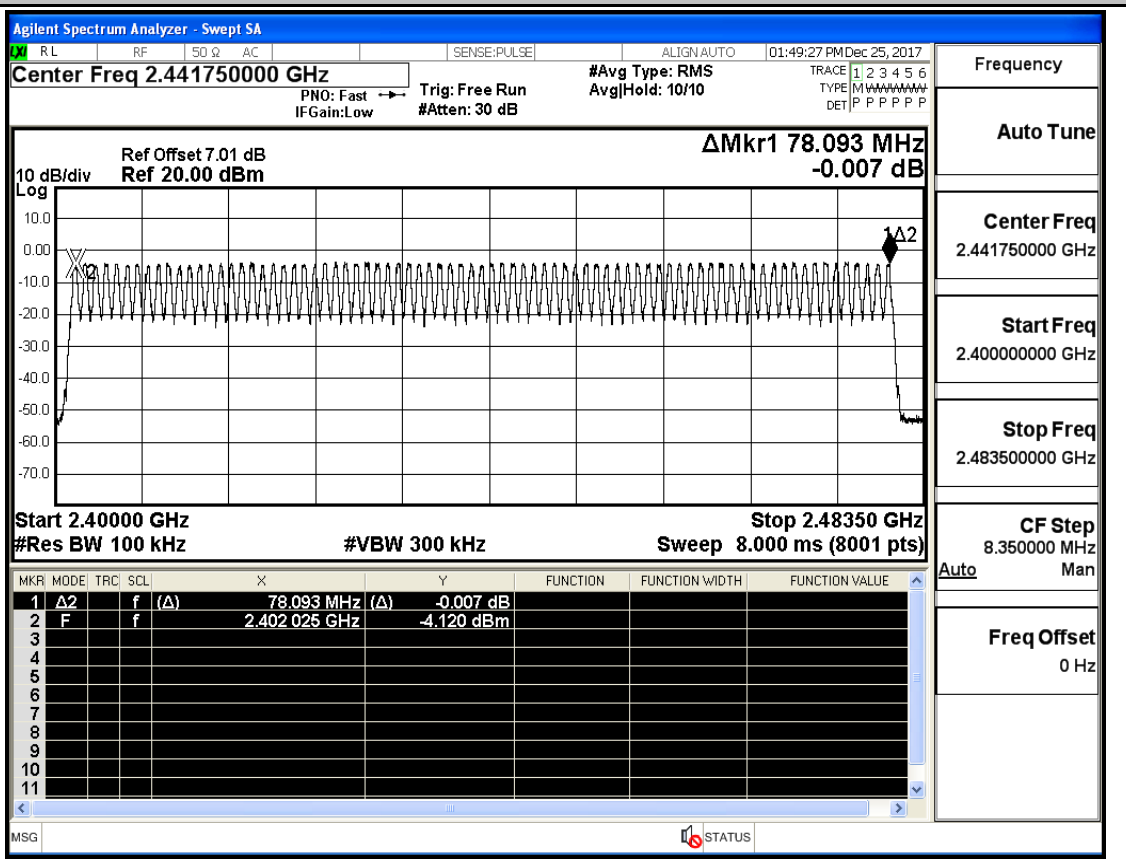
Dwell Time_8-DPSK_2480



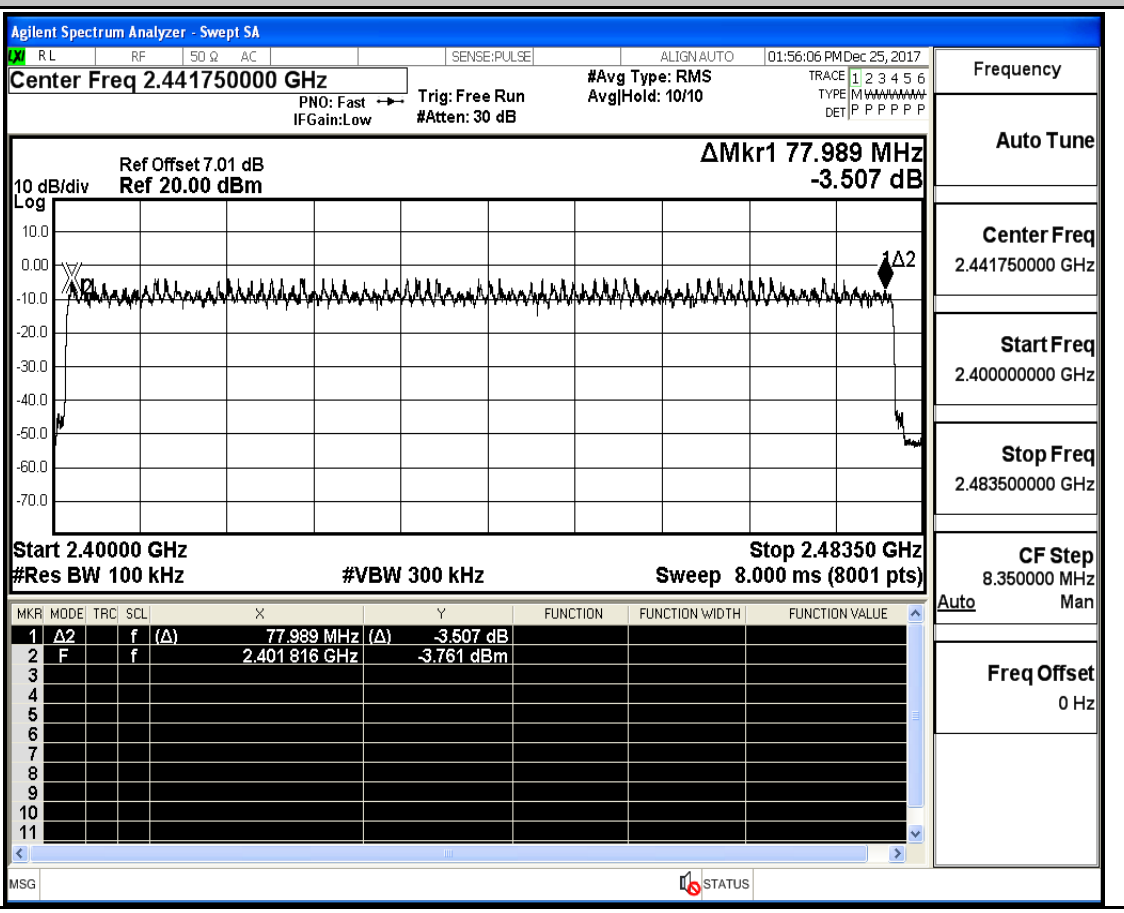
A.5 Hopping Channel Number

Test Mode	Test Channel	Number of Hopping Channel[N]	Limit[N]	Verdict
GFSK	2402	79	>=15	PASS
π/4-DQPSK	2402	79	>=15	PASS
8-DPSK	2402	79	>=15	PASS

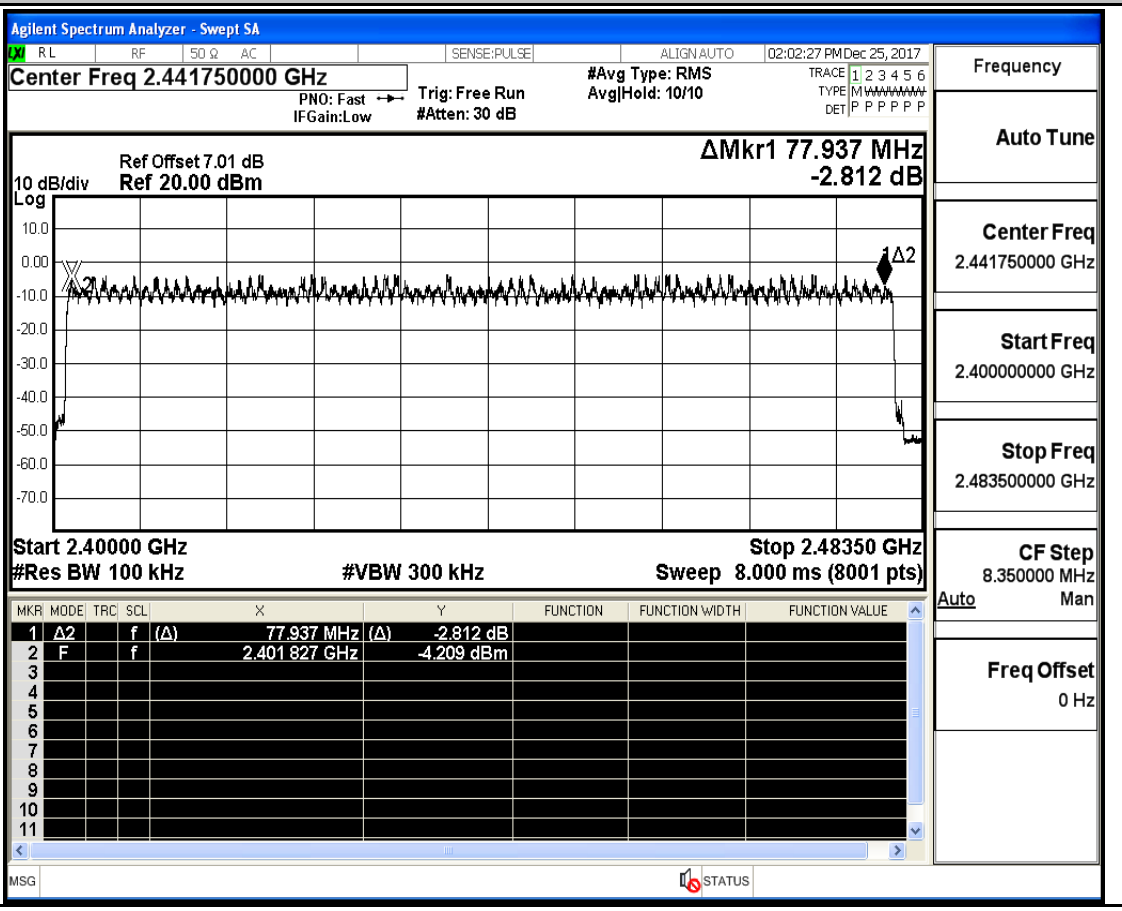
Hopping Channel Number_GFSK_2402



Hopping Channel Number_π/4-DQPSK_2402



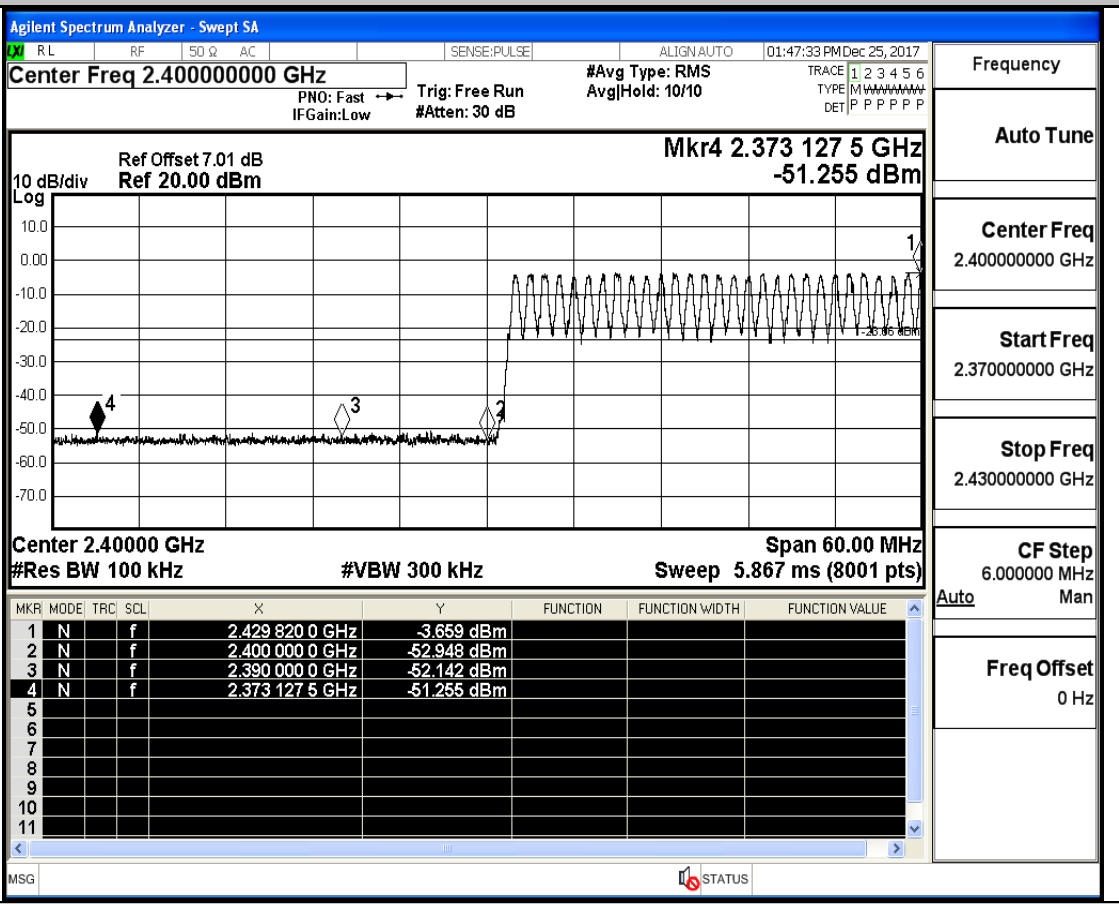
Hopping Channel Number_8-DPSK_2402



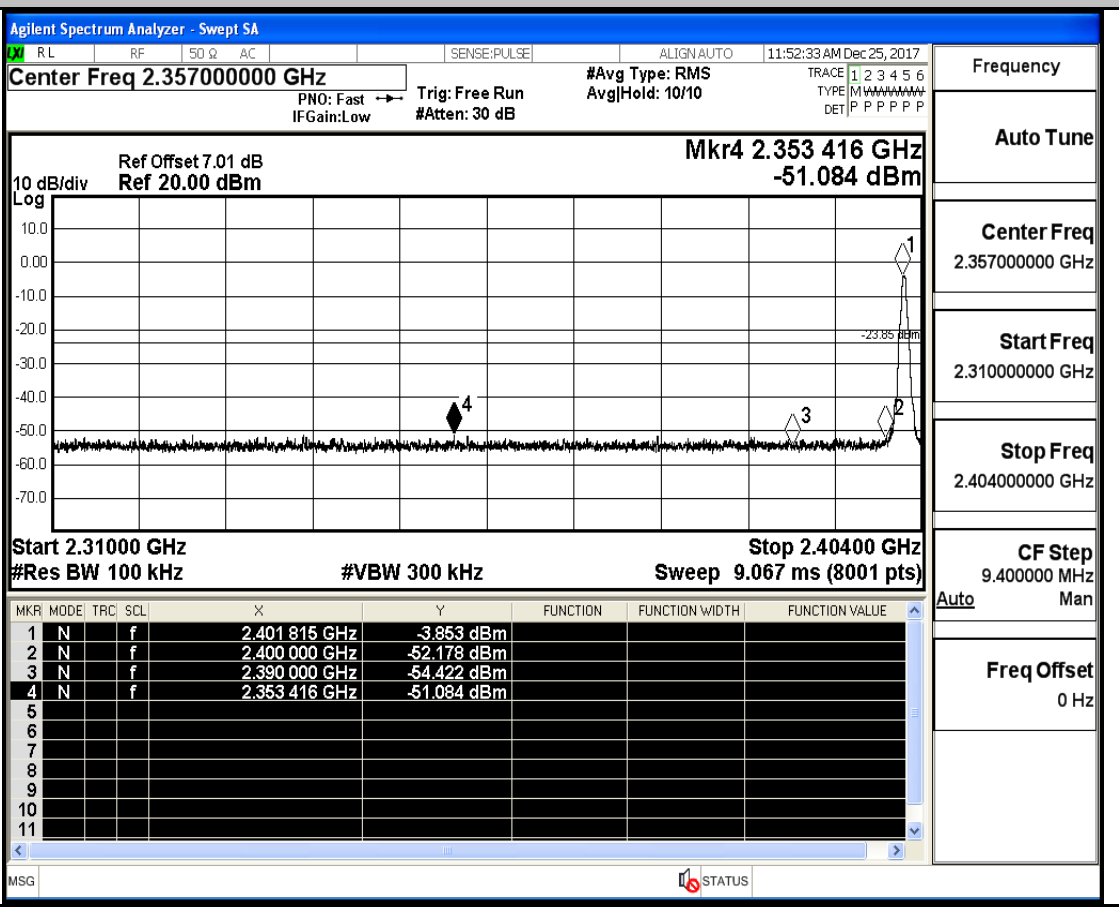
A.6 Band-edge for RF Conducted Emissions

Test Mode	Test Channel	Hopping	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit[dBm]	Verdict
GFSK	2402	On	-3.659	-51.255	-23.66	PASS
	2402	Off	-3.853	-51.084	-23.85	PASS
	2480	On	-3.660	-50.761	-23.66	PASS
	2480	Off	-3.569	-51.294	-23.57	PASS
π/4-DQPSK	2402	On	-3.687	-50.578	-23.69	PASS
	2402	Off	-3.794	-50.829	-23.79	PASS
	2480	On	-3.627	-49.927	-23.63	PASS
	2480	Off	-3.516	-51.006	-23.52	PASS
8-DPSK	2402	On	-3.756	-50.982	-23.76	PASS
	2402	Off	-3.712	-51.256	-23.71	PASS
	2480	On	-3.668	-50.247	-23.67	PASS
	2480	Off	-3.341	-50.762	-23.34	PASS

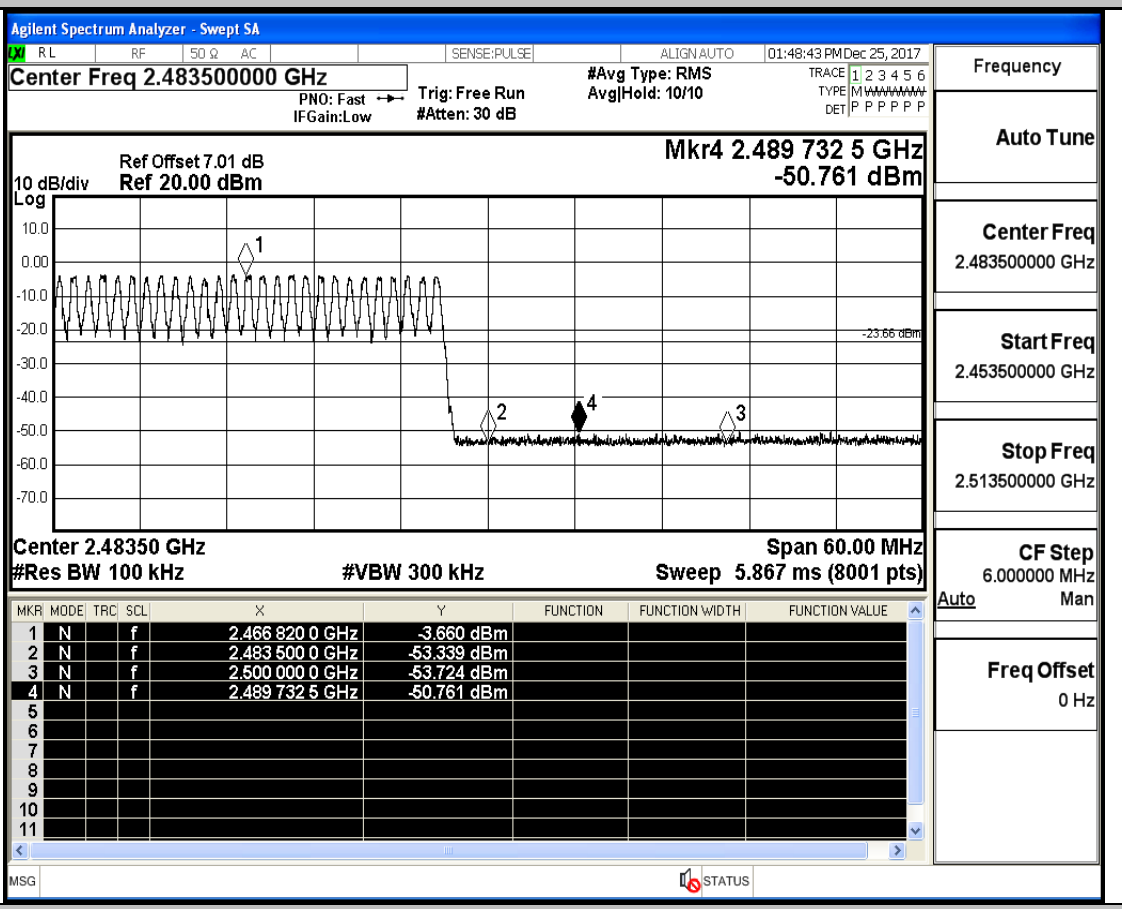
Band-edge for RF Conducted Emissions_GFSK_2402_Hopping On



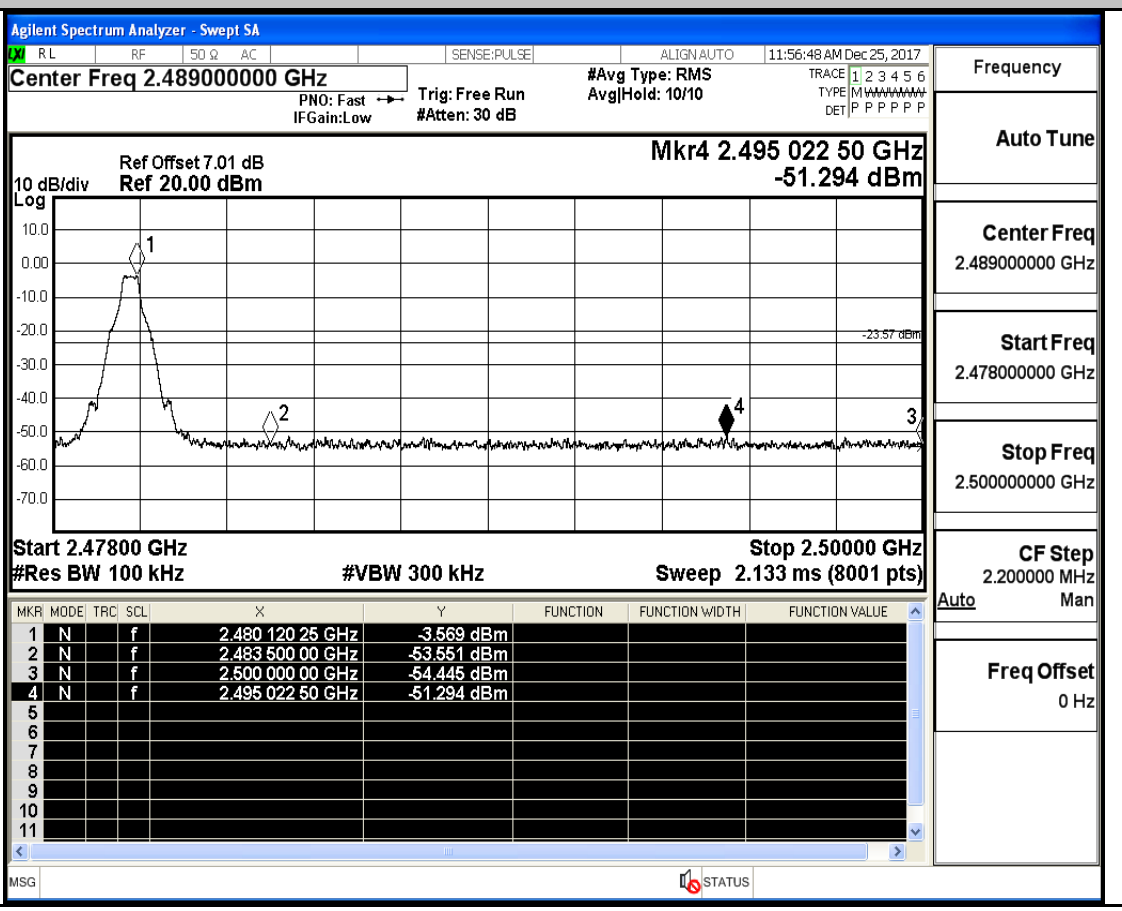
Band-edge for RF Conducted Emissions_GFSK_2402_Hopping Off



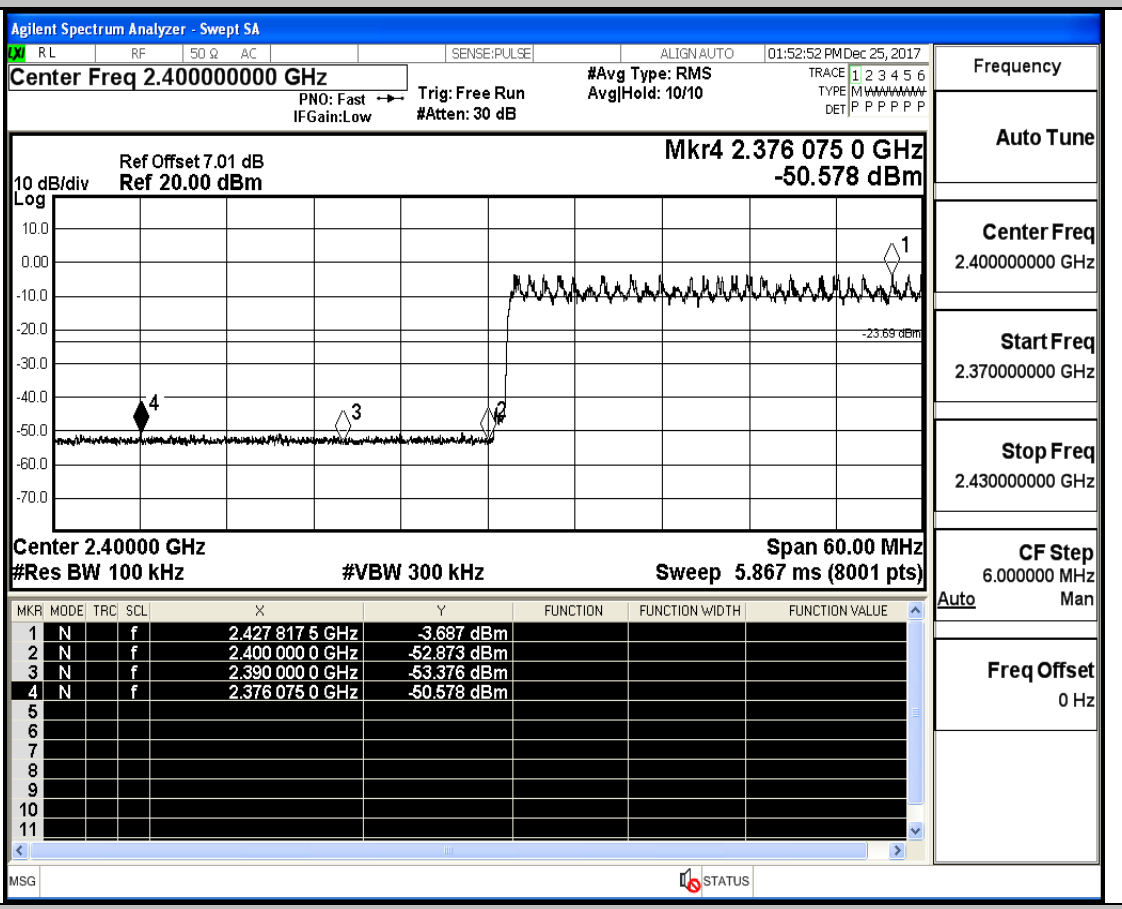
Band-edge for RF Conducted Emissions_GFSK_2480_Hopping On



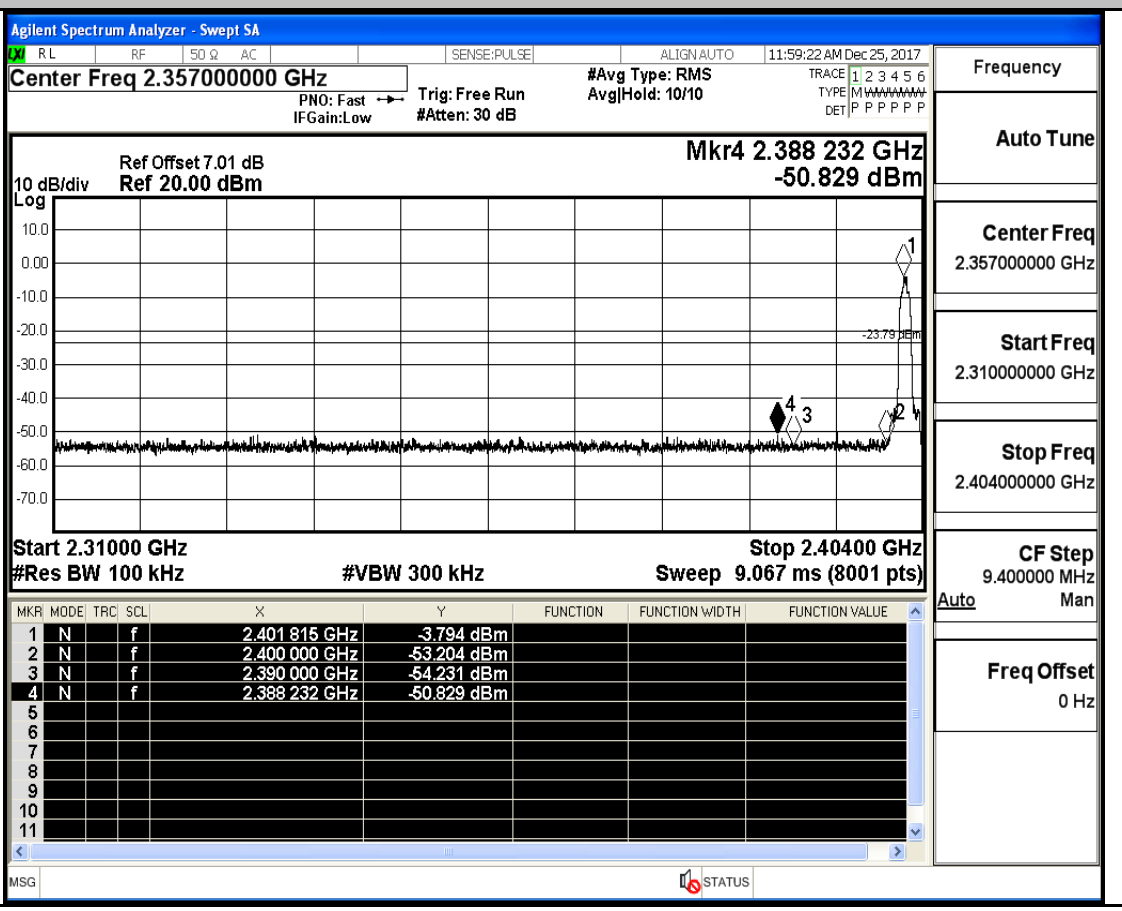
Band-edge for RF Conducted Emissions_GFSK_2480_Hopping Off



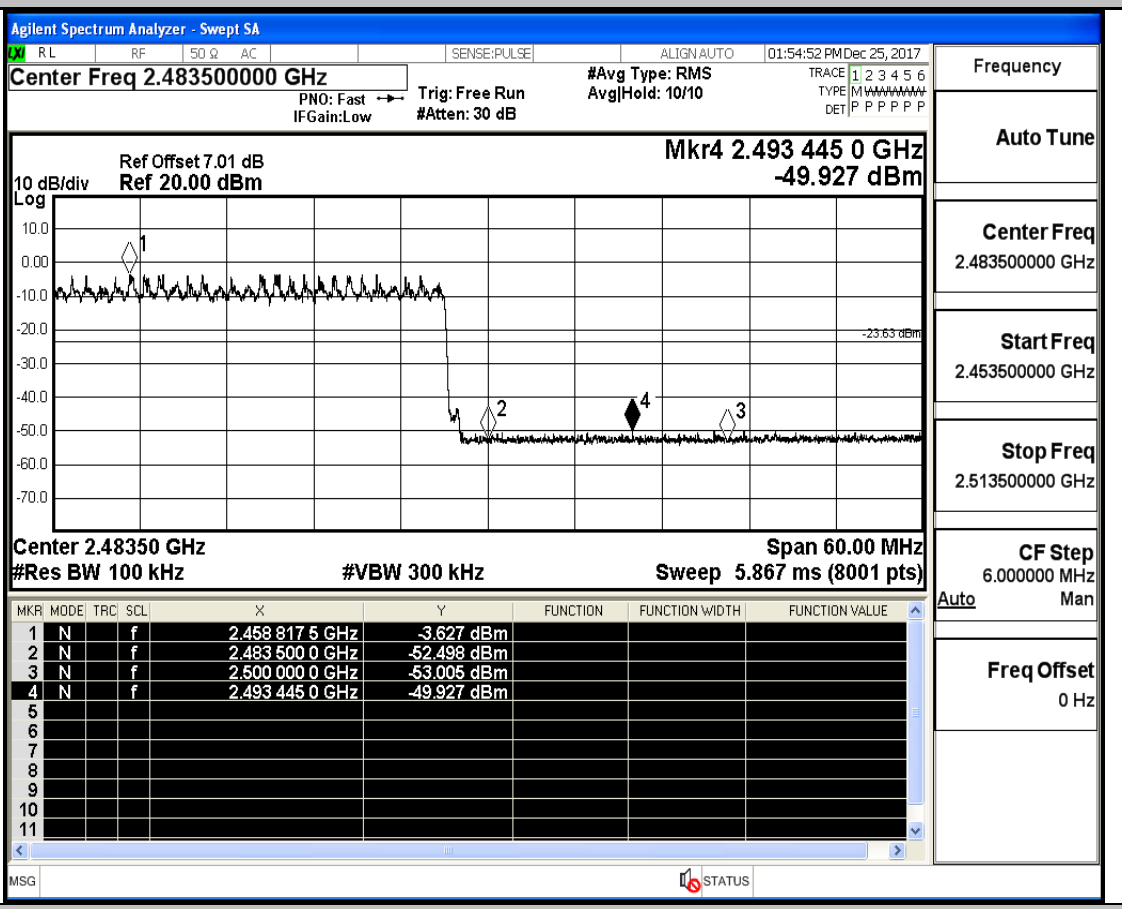
Band-edge for RF Conducted Emissions_π/4-DQPSK_2402_Hopping On



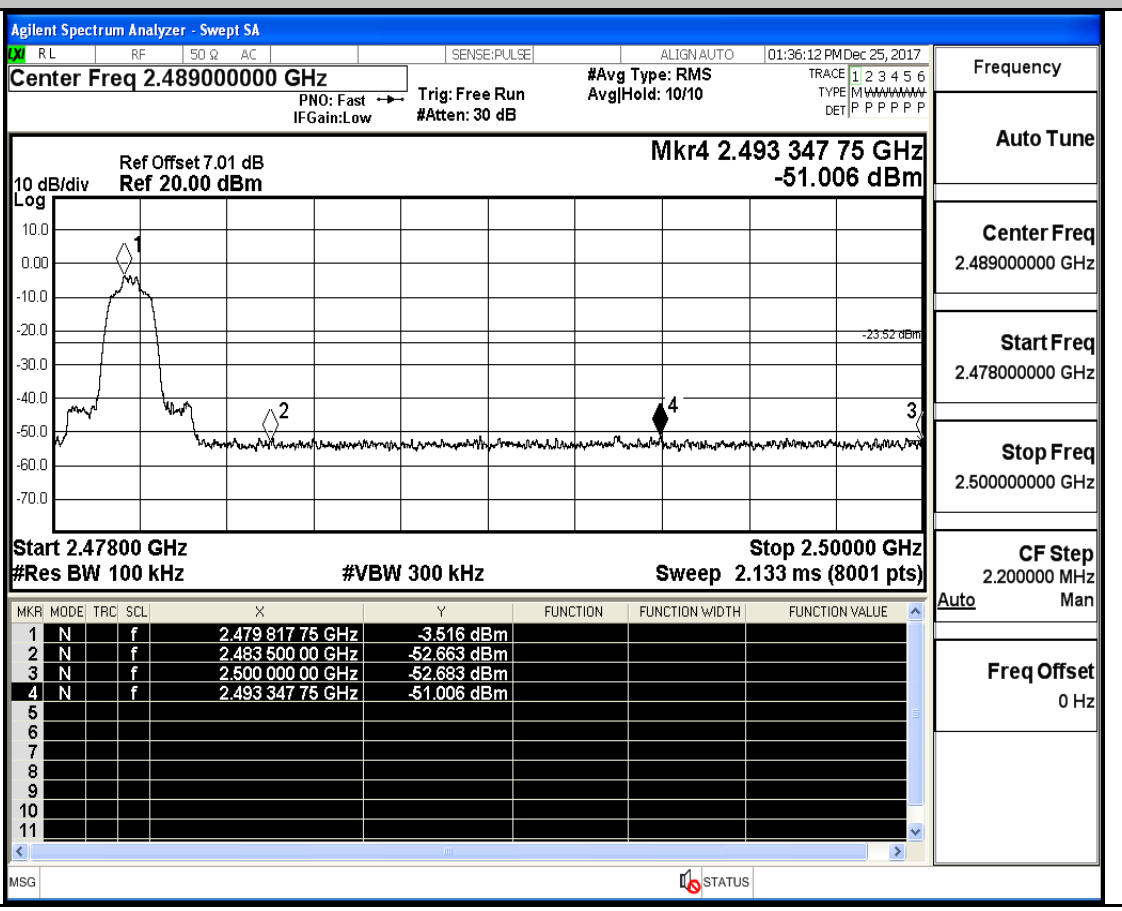
Band-edge for RF Conducted Emissions_π/4-DQPSK_2402_Hopping Off



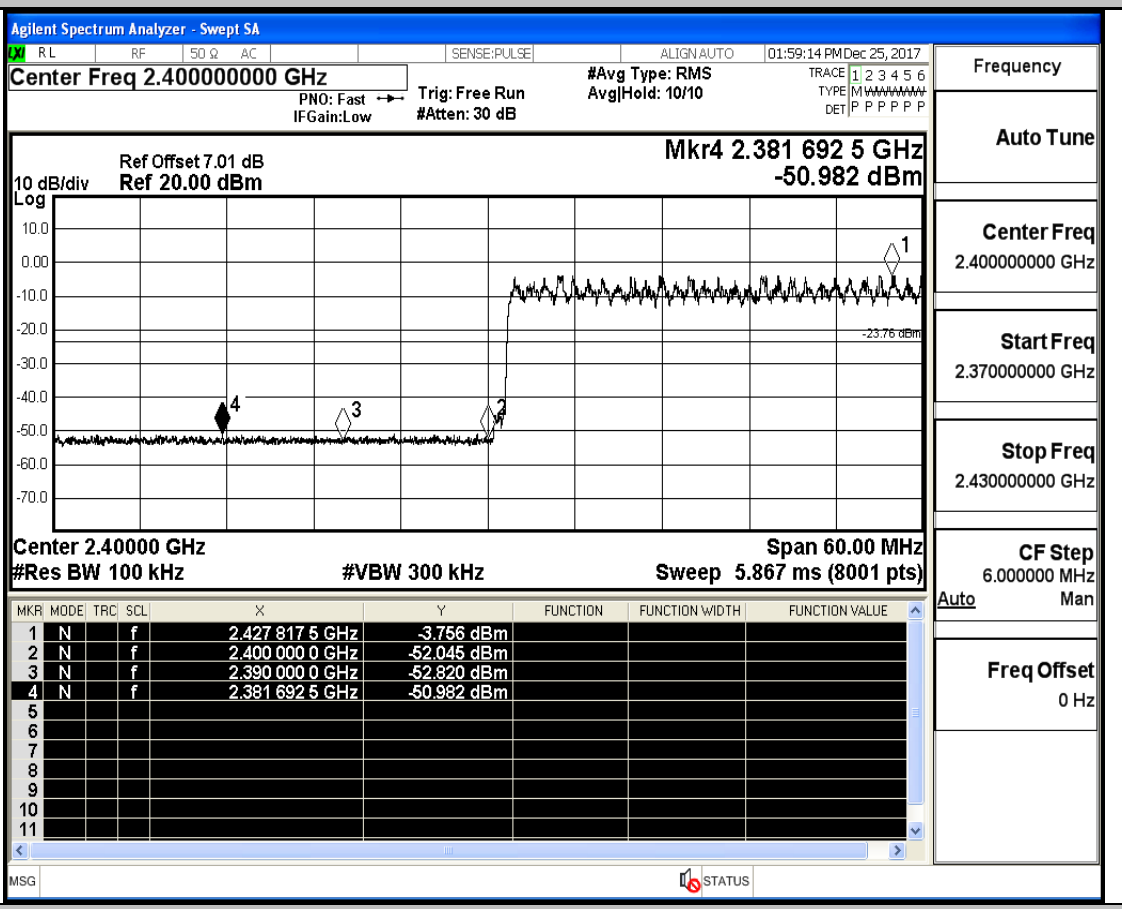
Band-edge for RF Conducted Emissions_π/4-DQPSK_2480_Hopping On



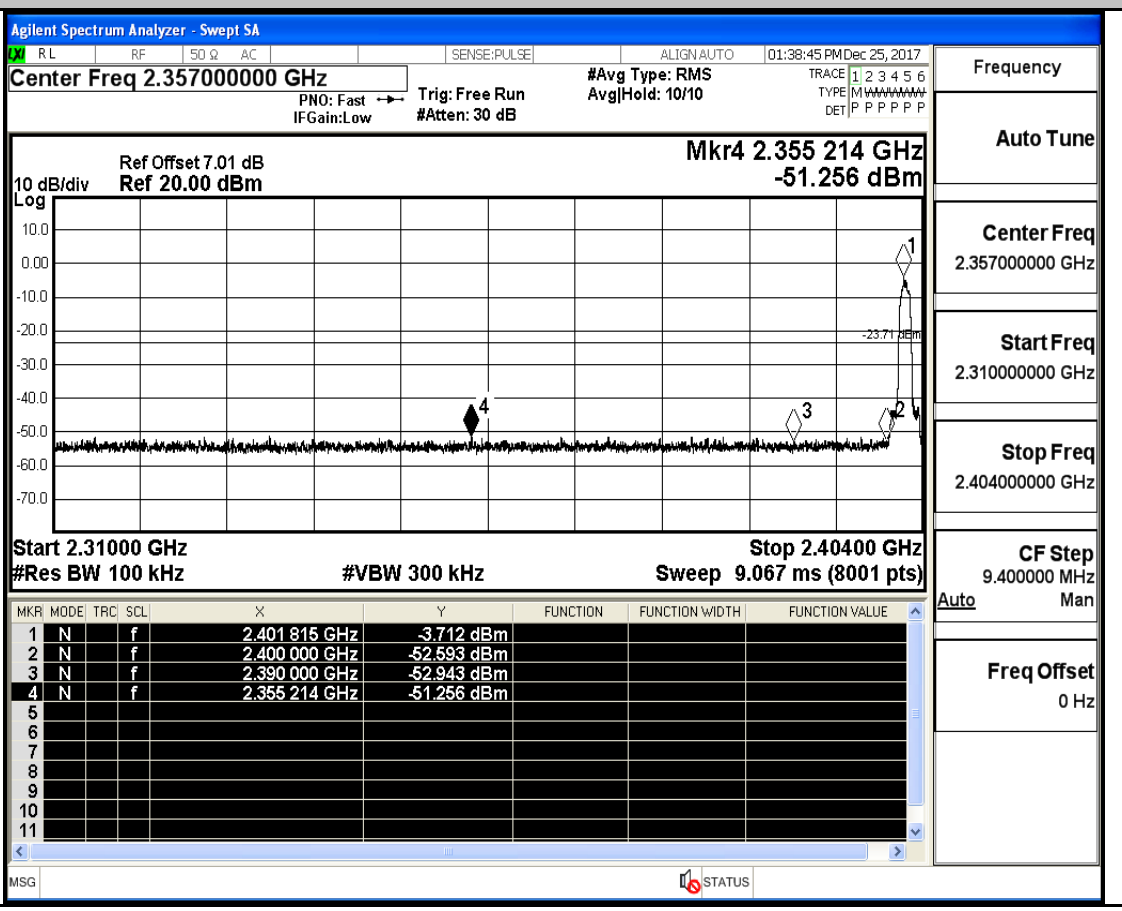
Band-edge for RF Conducted Emissions_π/4-DQPSK_2480_Hopping Off



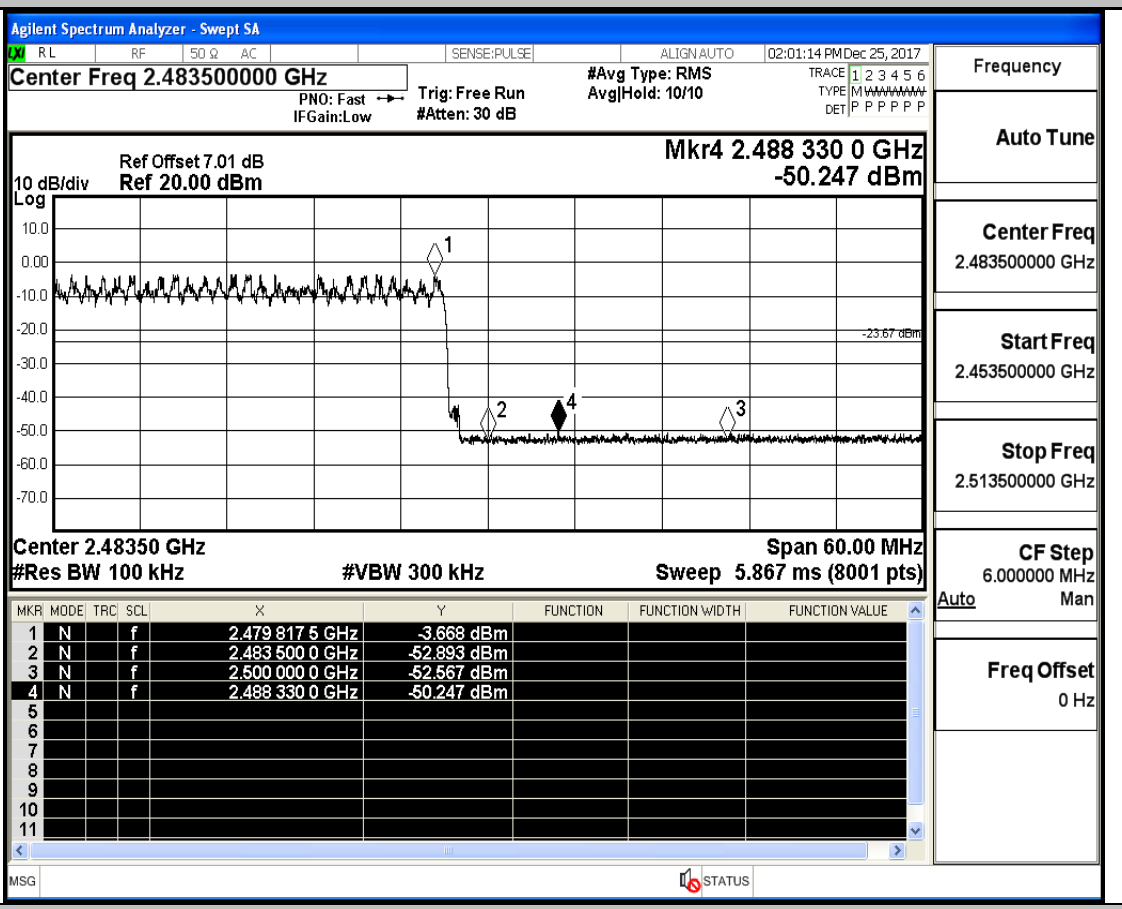
Band-edge for RF Conducted Emissions_8-DPSK_2402_Hopping On



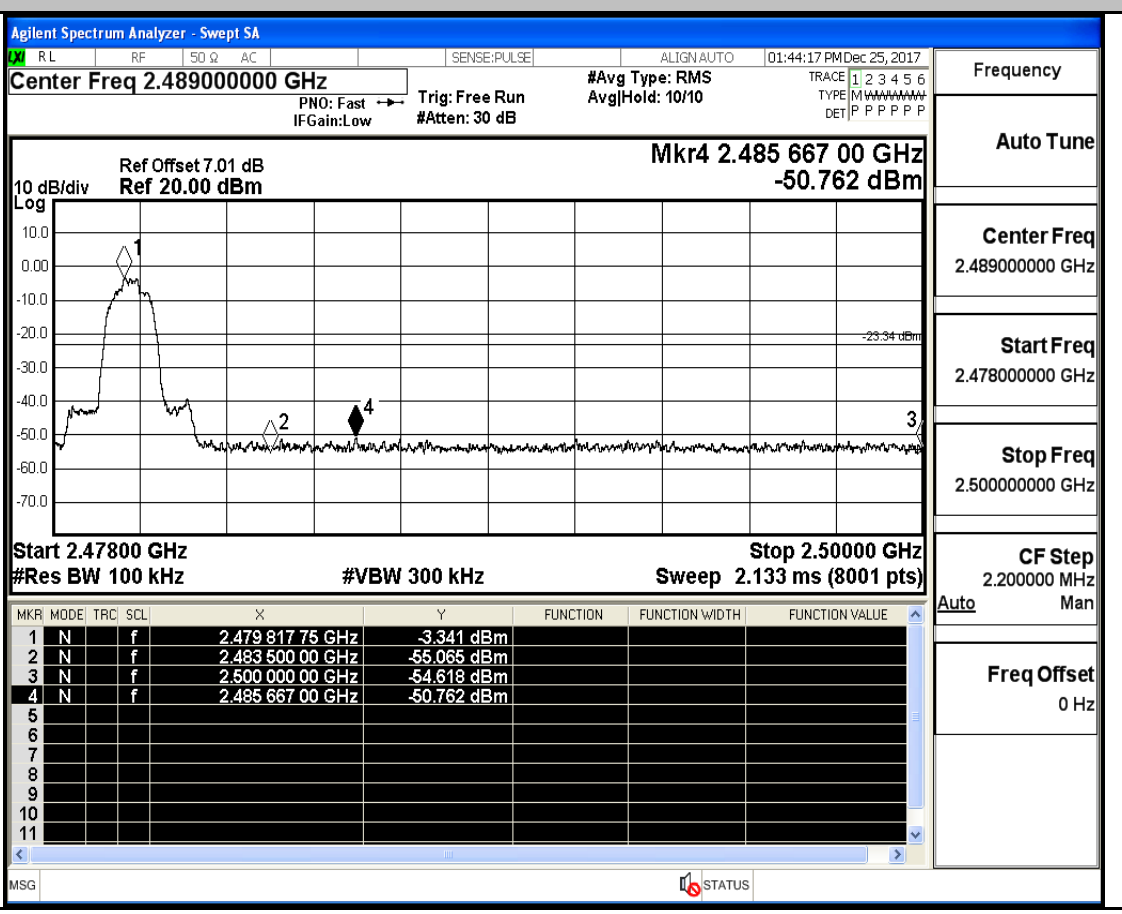
Band-edge for RF Conducted Emissions_8-DPSK_2402_Hopping Off



Band-edge for RF Conducted Emissions_8-DPSK_2480_Hopping On



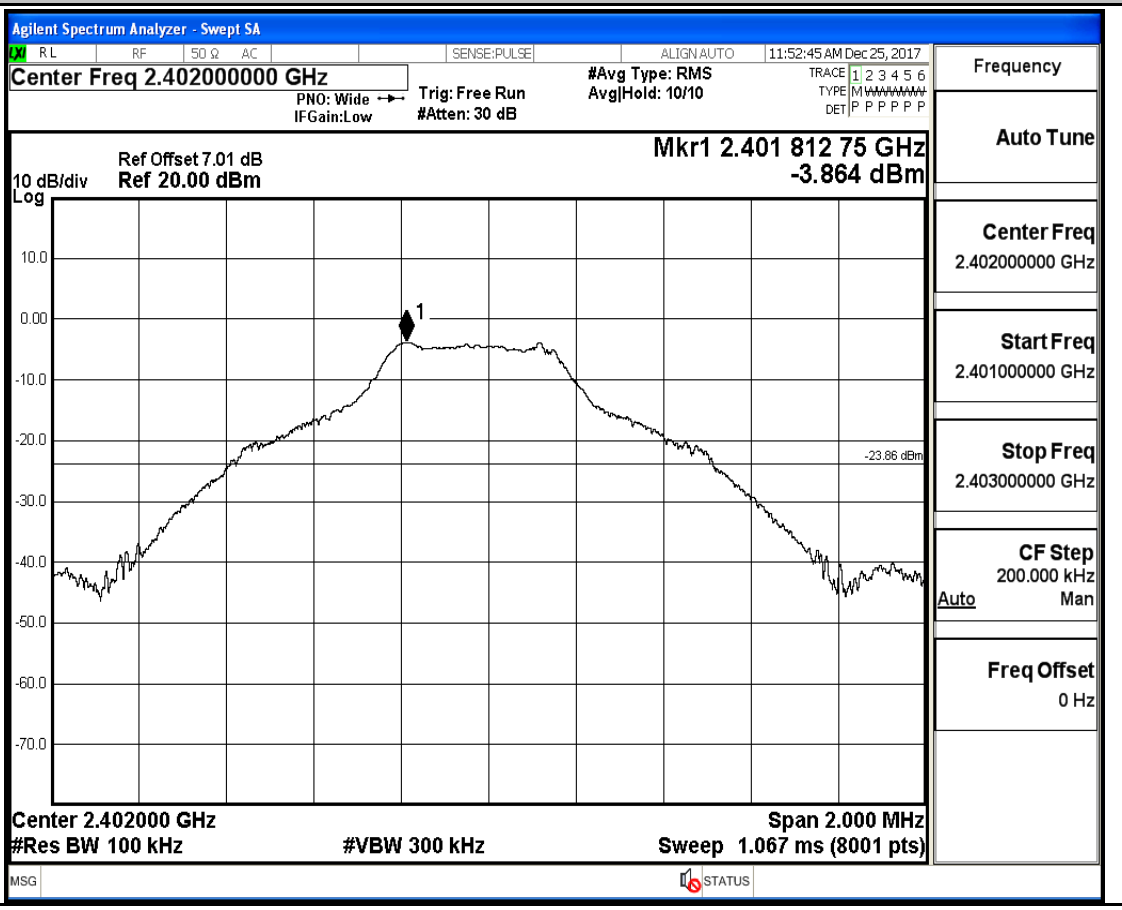
Band-edge for RF Conducted Emissions_8-DPSK_2480_Hopping Off

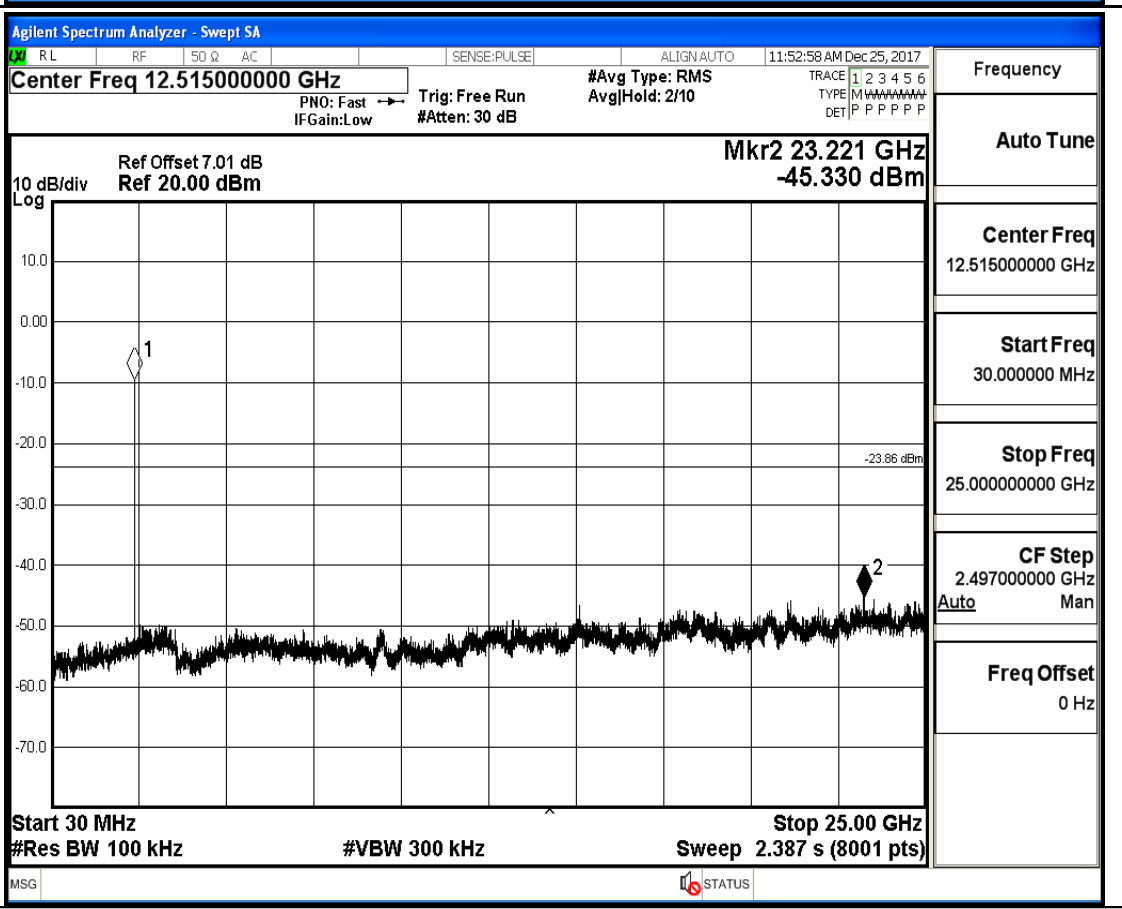


A.7 RF Conducted Spurious Emissions

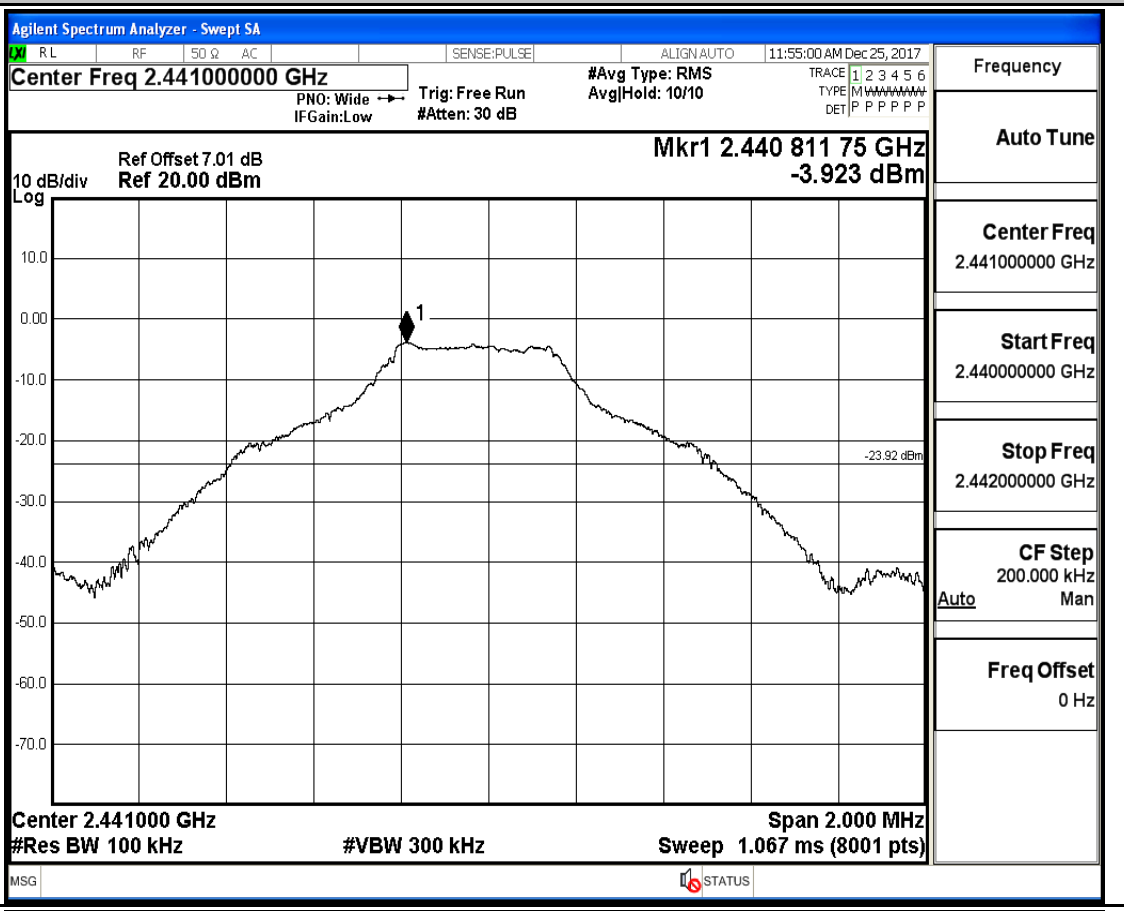
Test Mode	Test Channel	StartFre [MHz]	StopFre [MHz]	RBW [kHz]	VBW [kHz]	Pref[dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	2402	30	25000	100	300	-3.864	-45.330	<-23.864	PASS
	2441	30	25000	100	300	-3.923	-44.476	<-23.923	PASS
	2480	30	25000	100	300	-3.675	-44.900	<-23.675	PASS
π/4-DQPSK	2402	30	25000	100	300	-3.516	-45.646	<-23.516	PASS
	2441	30	25000	100	300	-3.932	-45.690	<-23.932	PASS
	2480	30	25000	100	300	-3.579	-35.939	<-23.579	PASS
8-DPSK	2402	30	25000	100	300	-3.85	-45.215	<-23.85	PASS
	2441	30	25000	100	300	-3.815	-45.572	<-23.815	PASS
	2480	30	25000	100	300	-3.443	-45.439	<-23.443	PASS

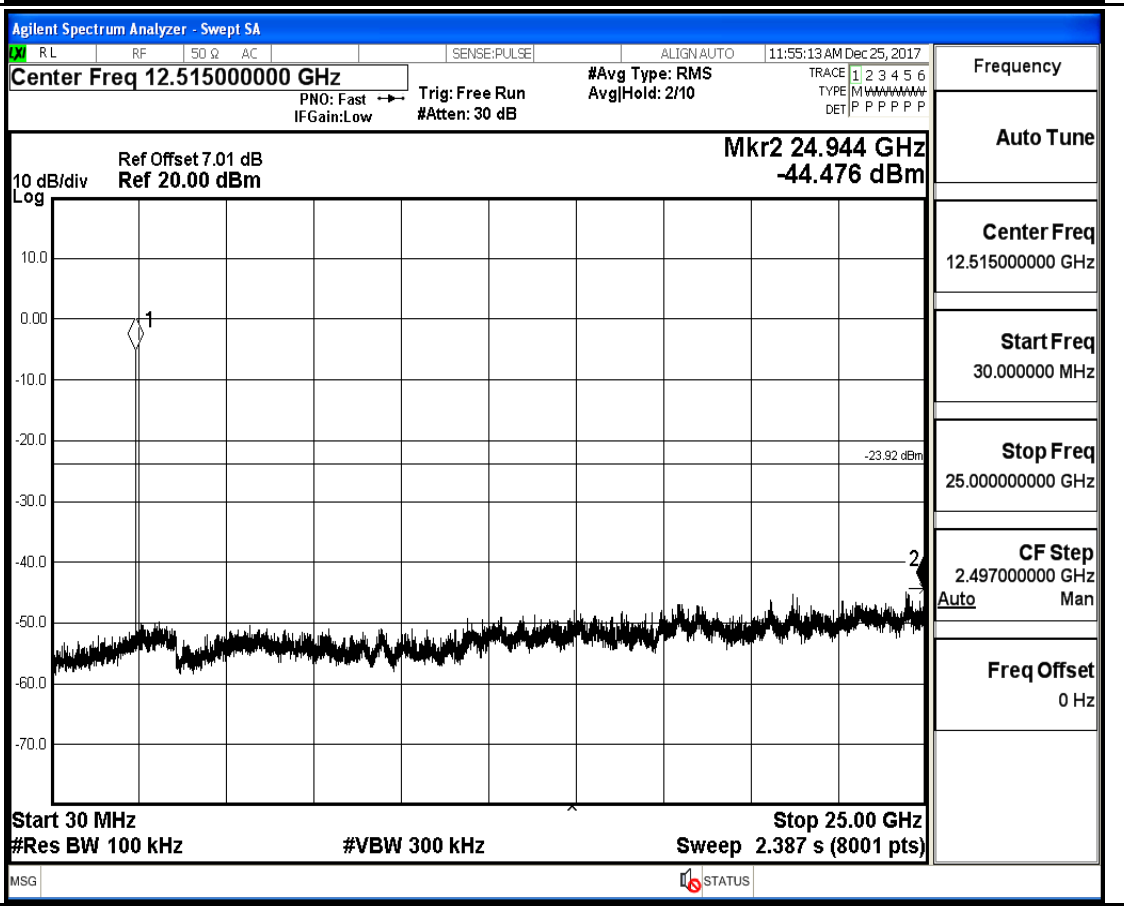
RF Conducted Spurious Emissions_GFSK_2402



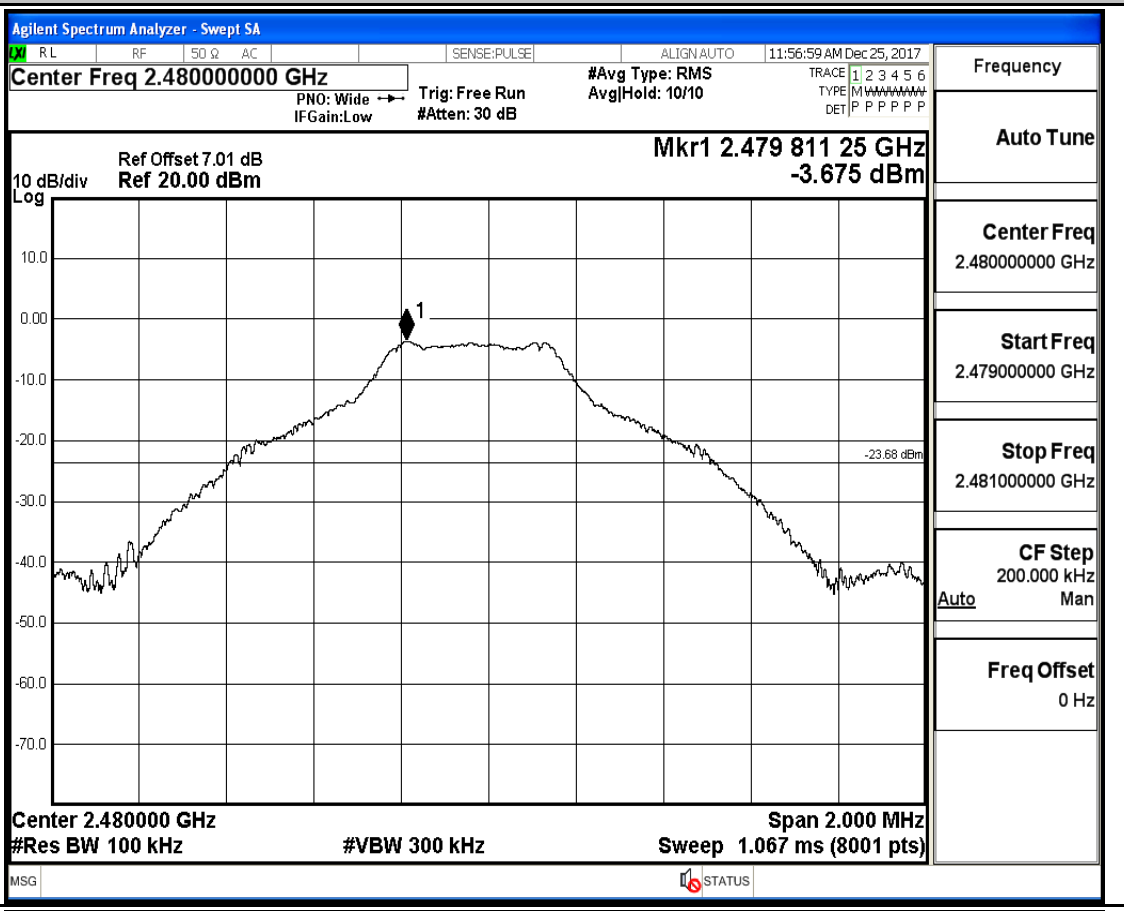


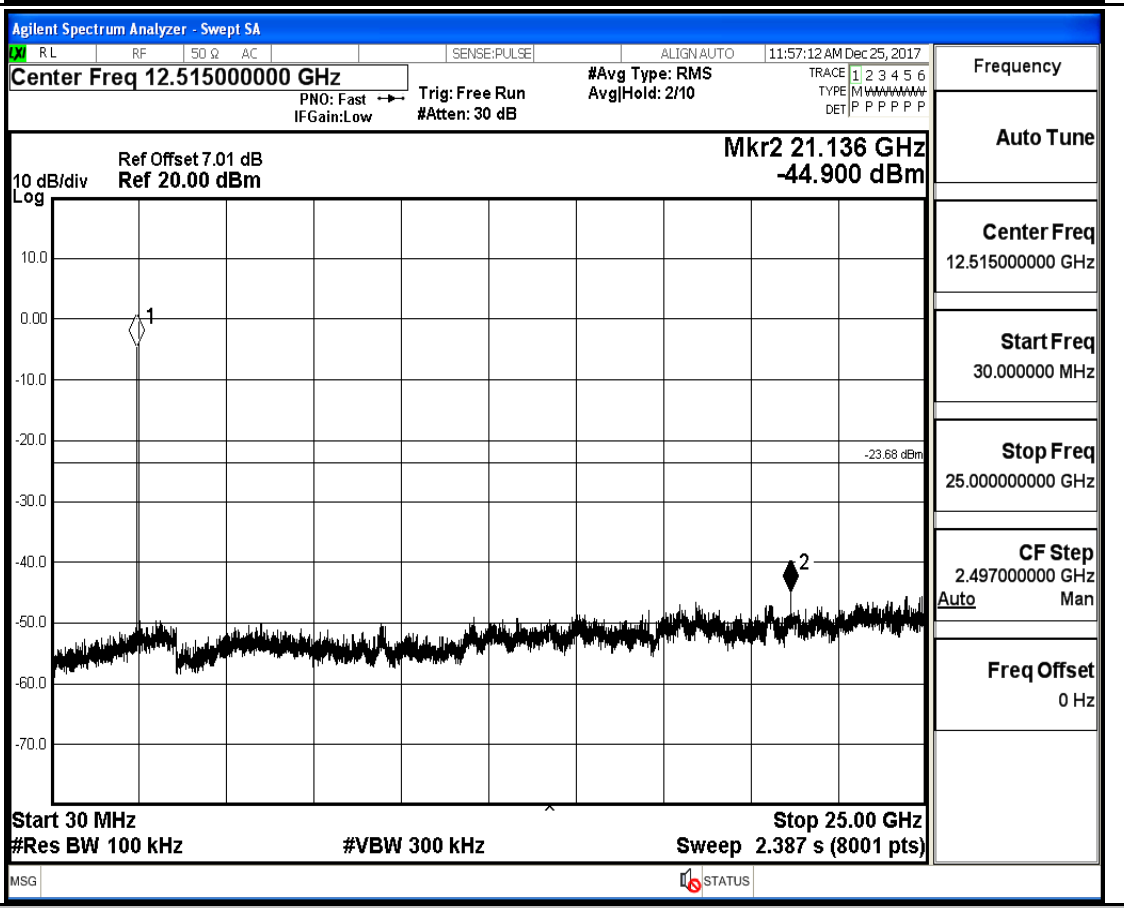
RF Conducted Spurious Emissions_GFSK_2441



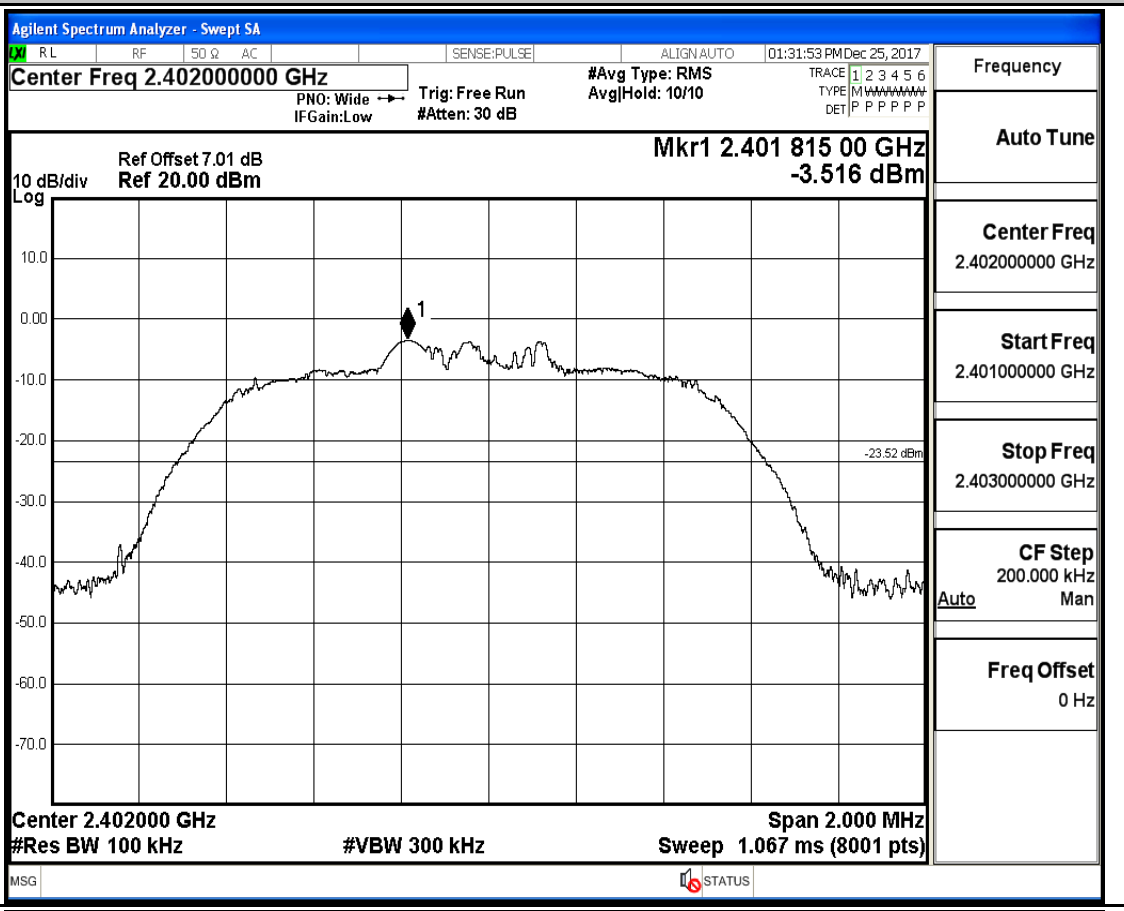


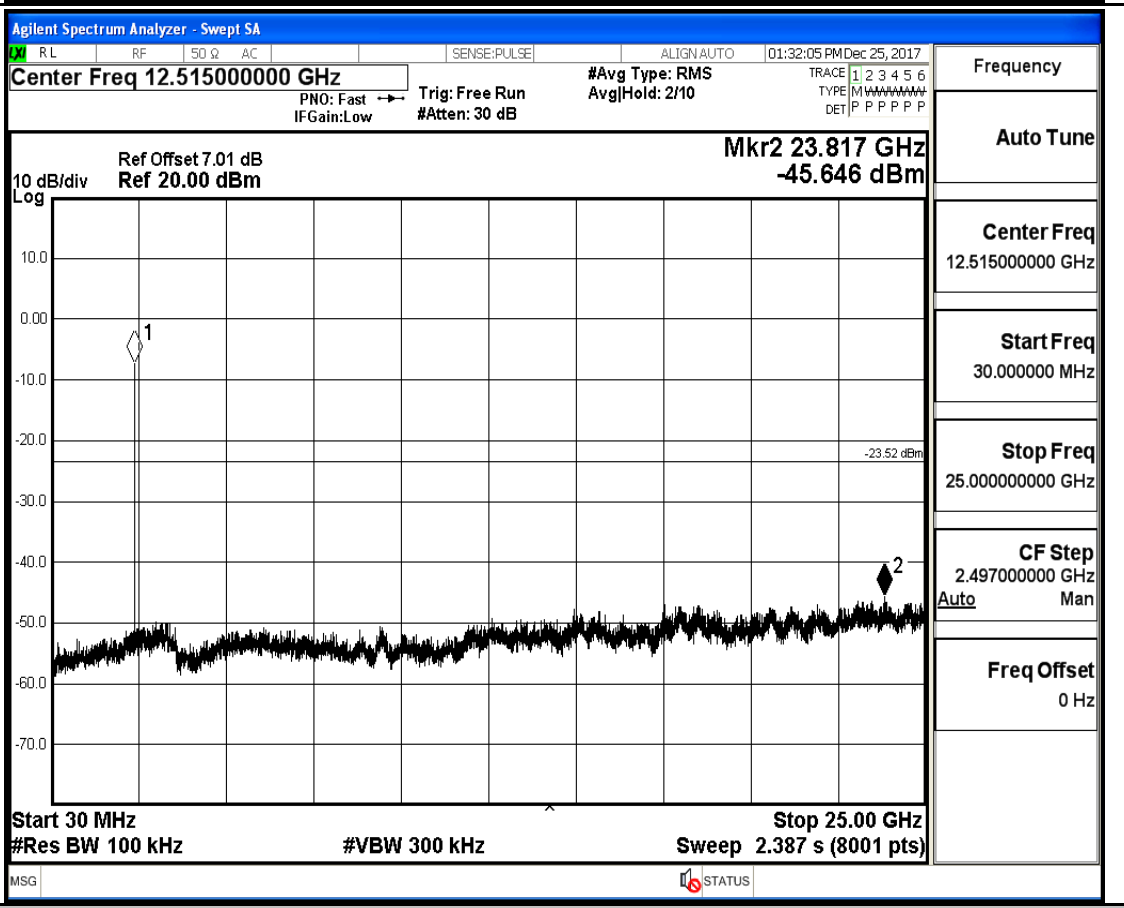
RF Conducted Spurious Emissions_GFSK_2480



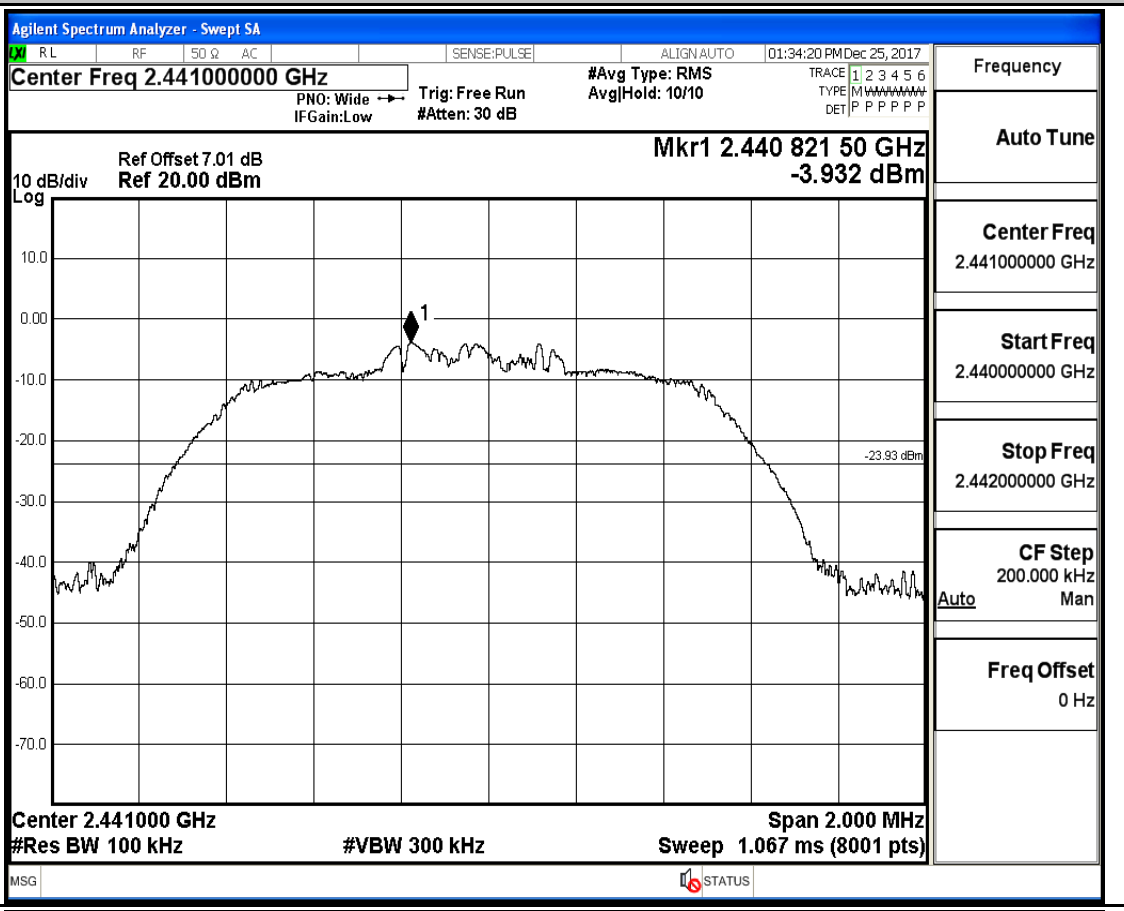


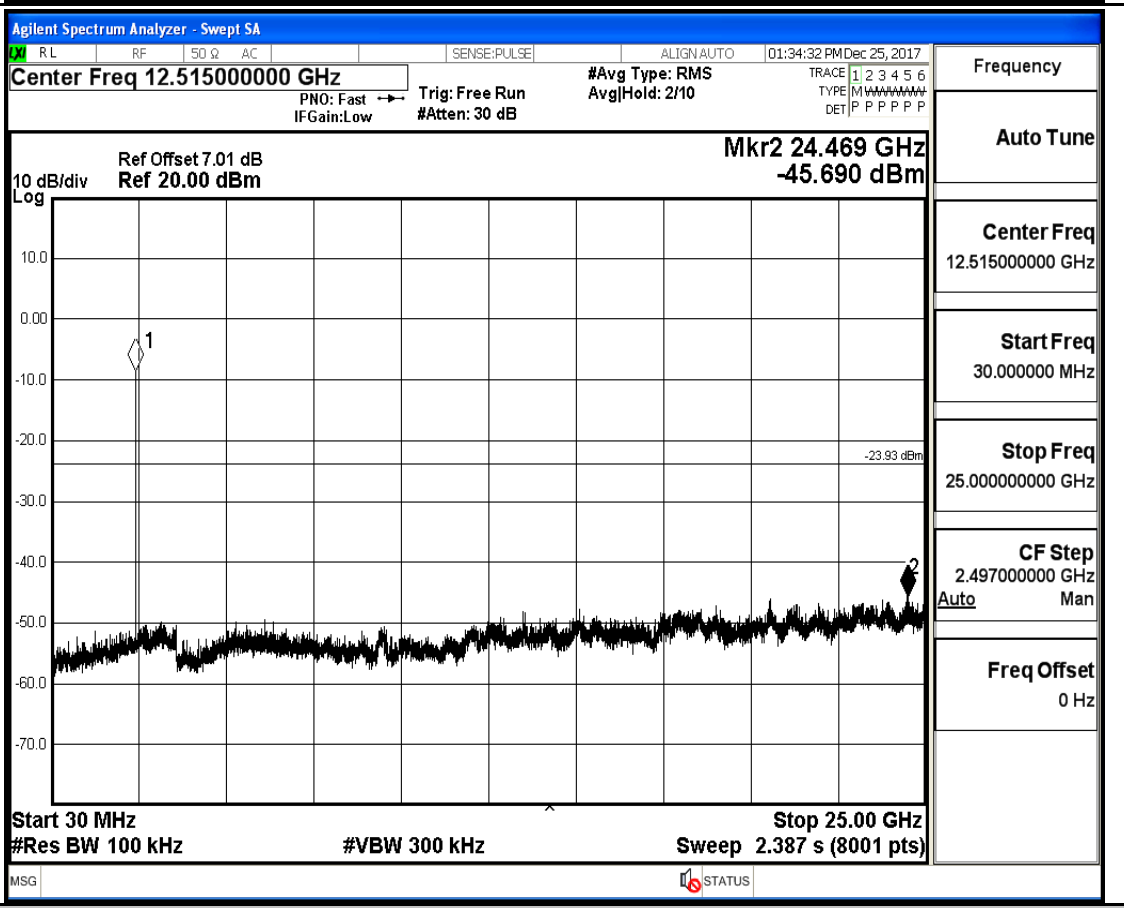
RF Conducted Spurious Emissions_π/4-DQPSK_2402



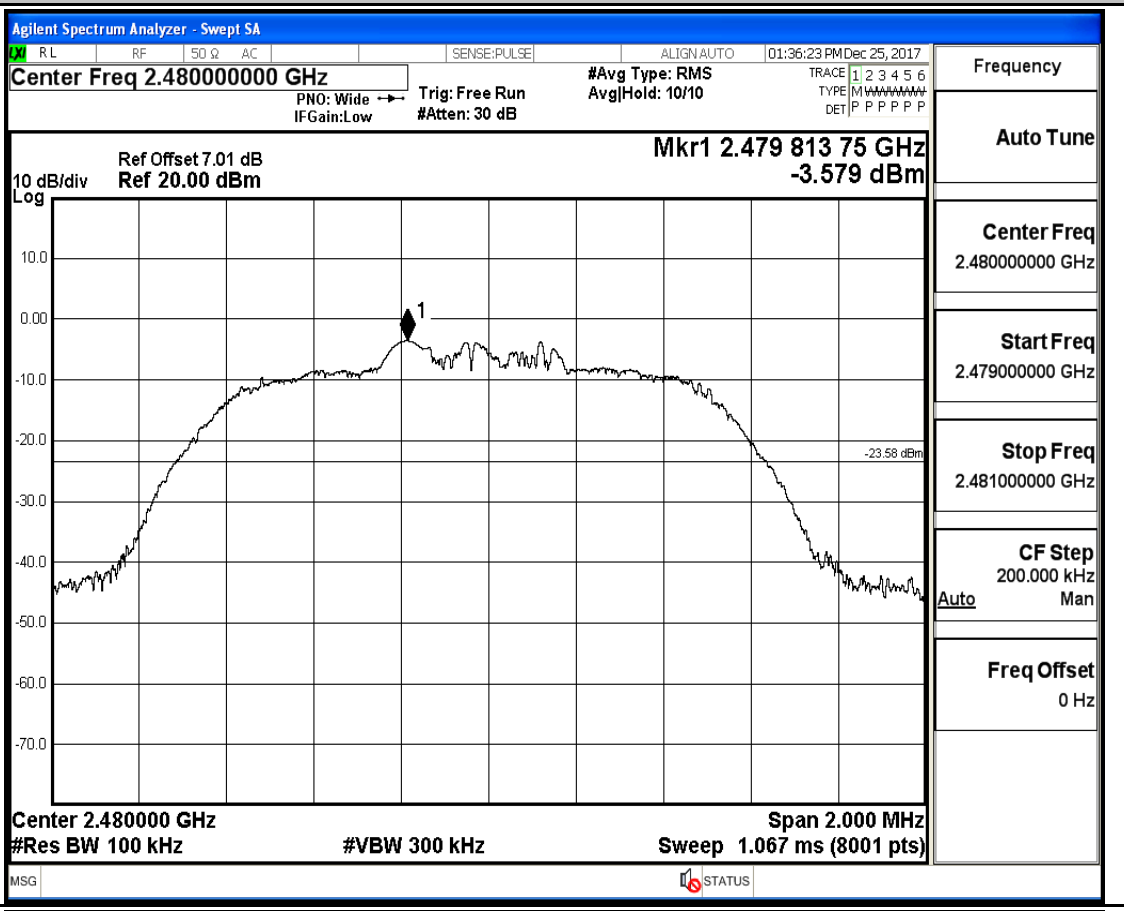


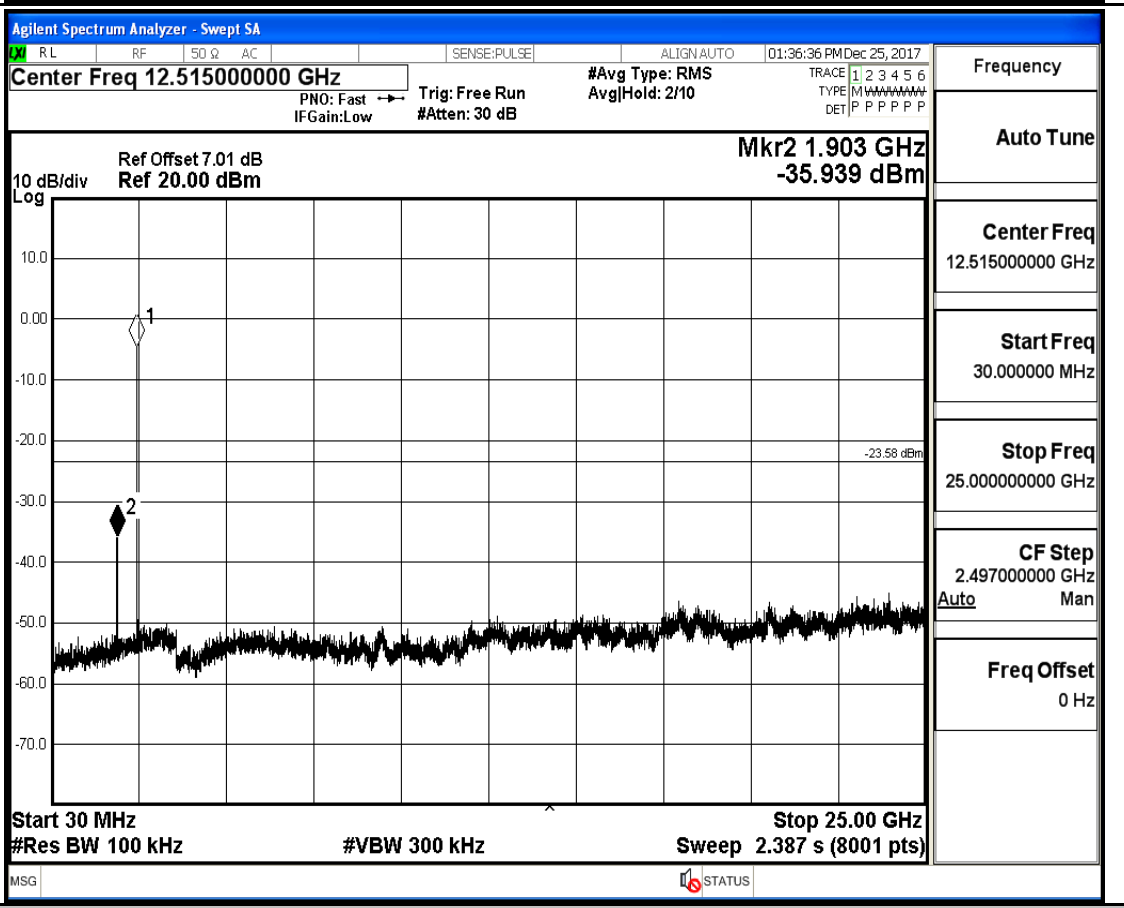
RF Conducted Spurious Emissions_π/4-DQPSK_2441



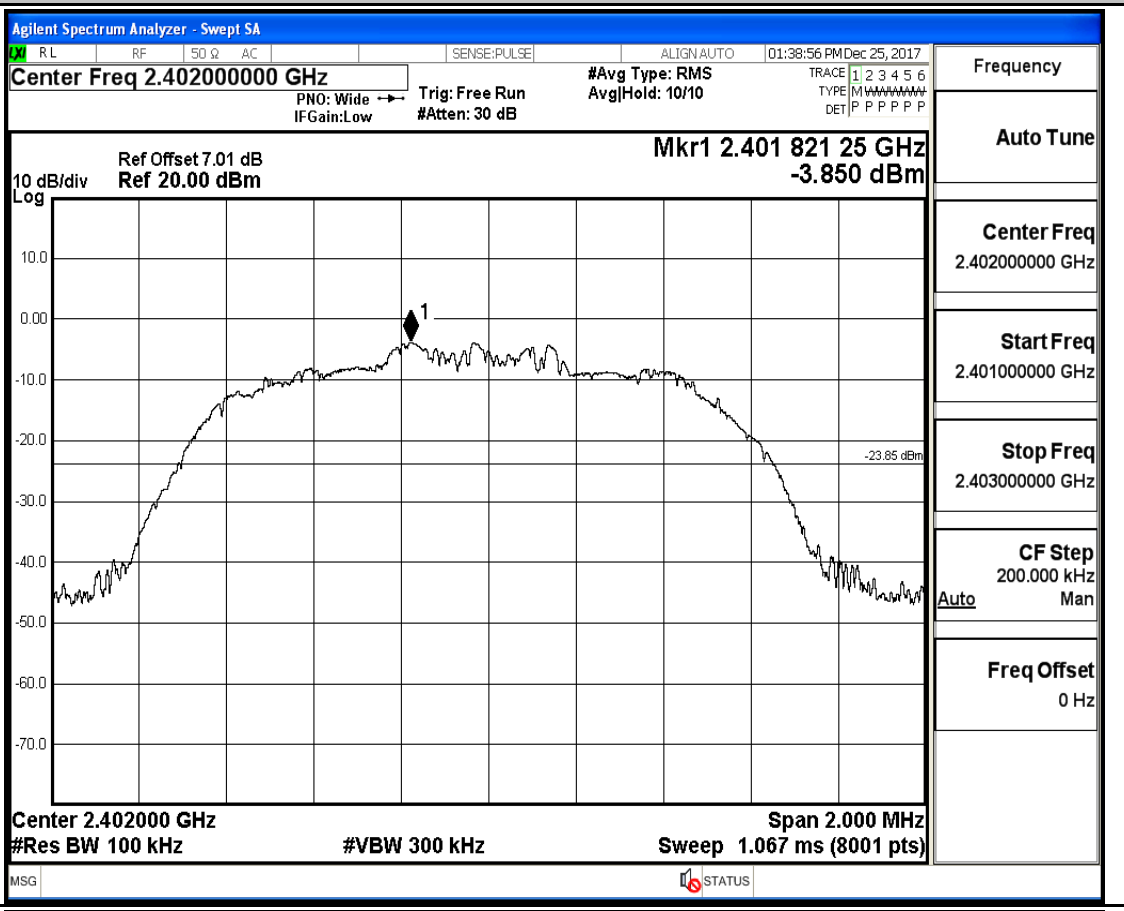


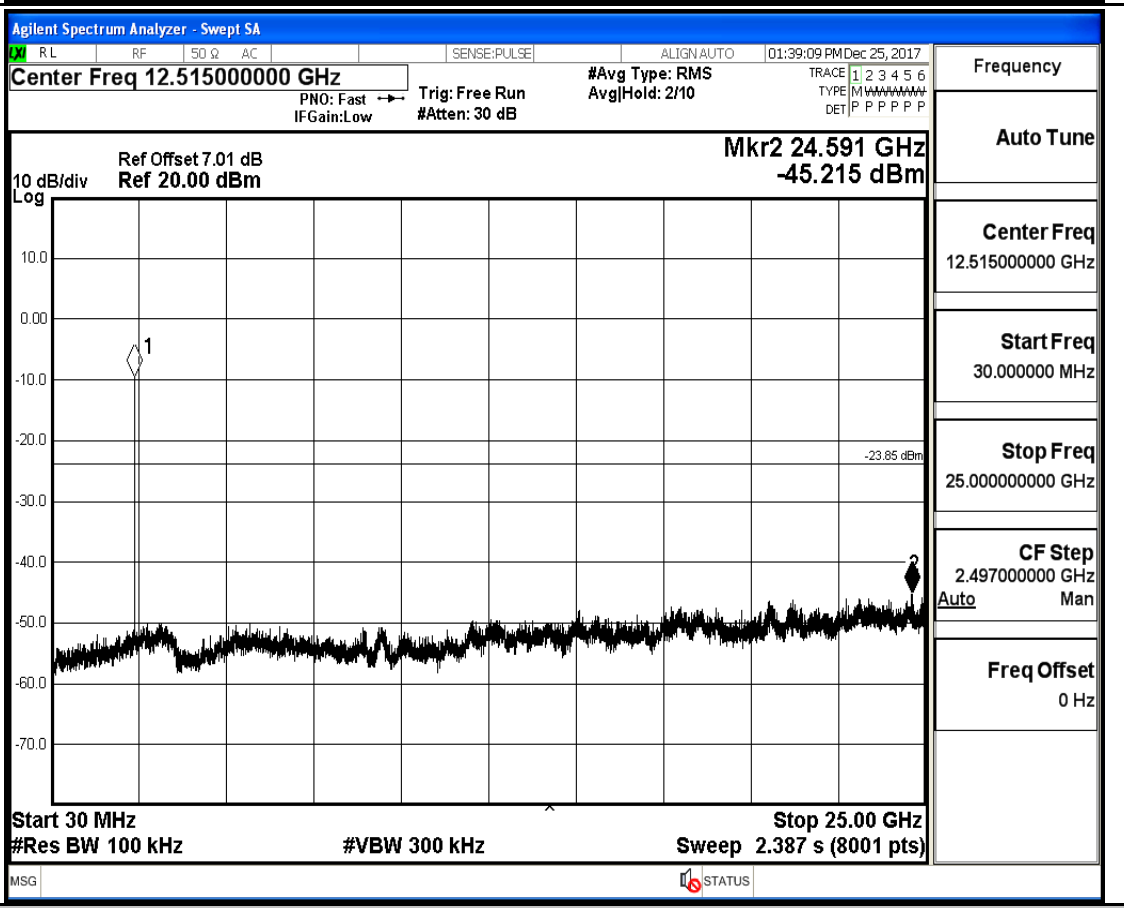
RF Conducted Spurious Emissions_π/4-DQPSK_2480



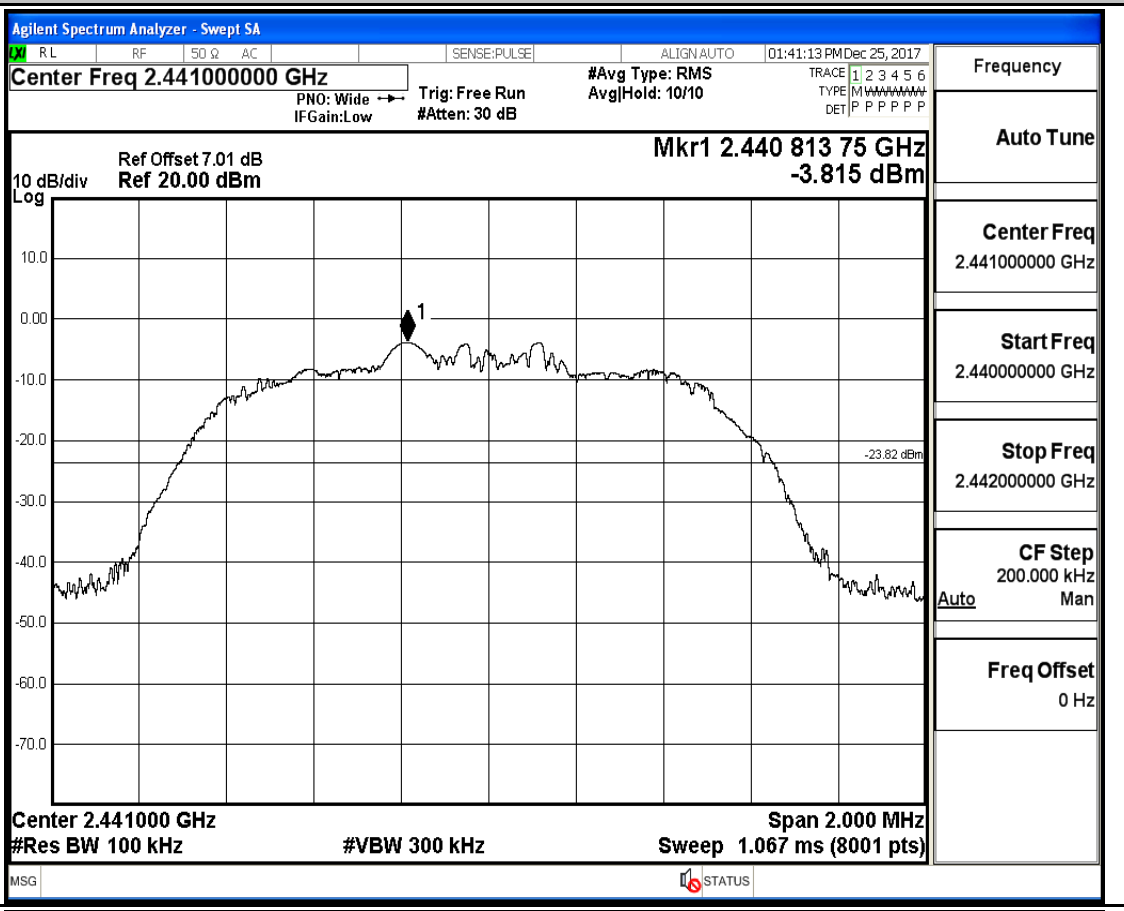


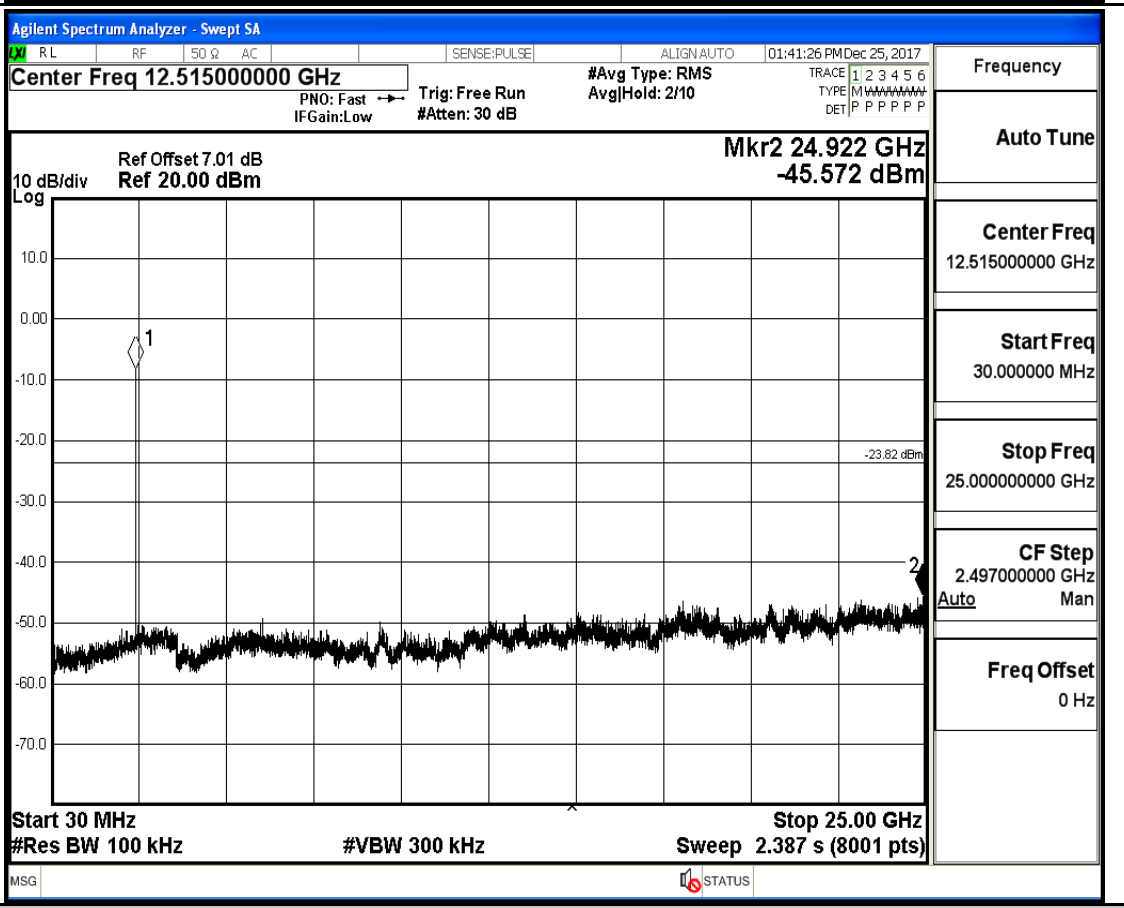
RF Conducted Spurious Emissions_8-DPSK_2402



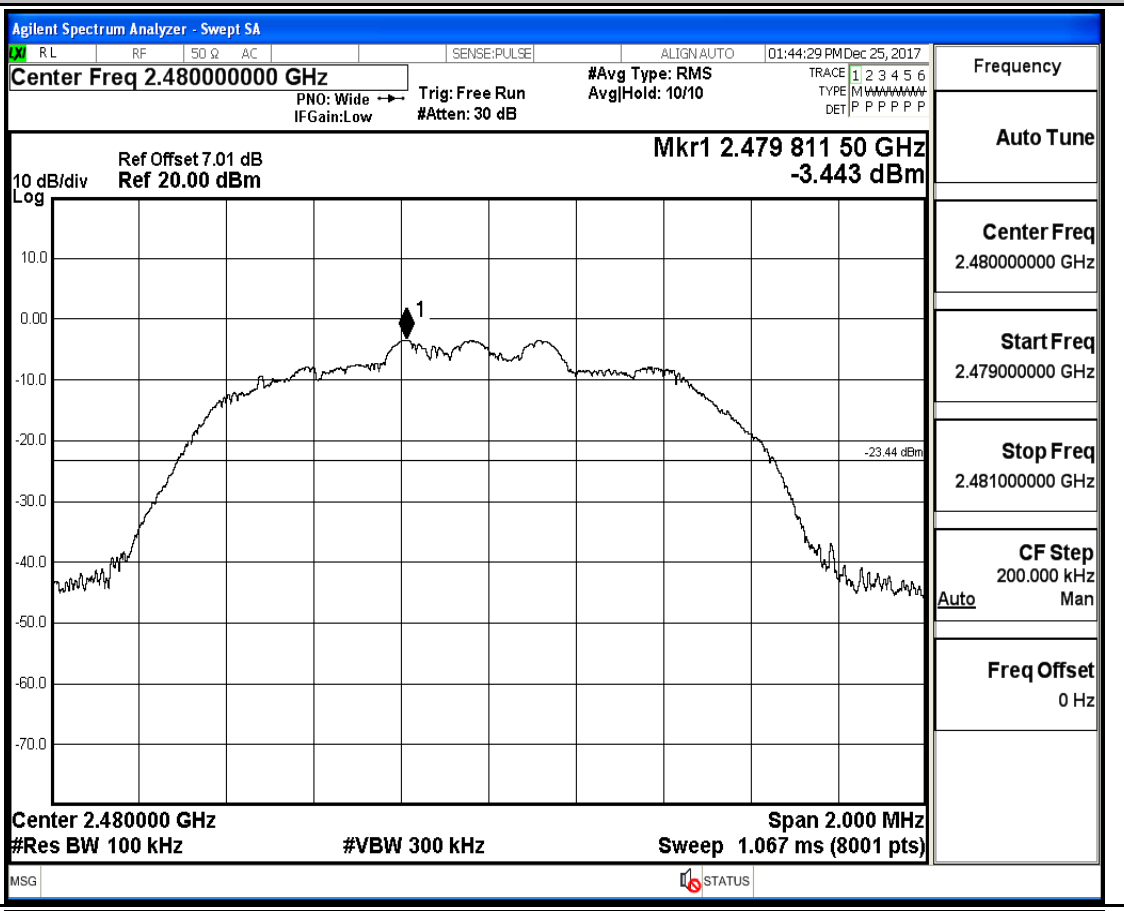


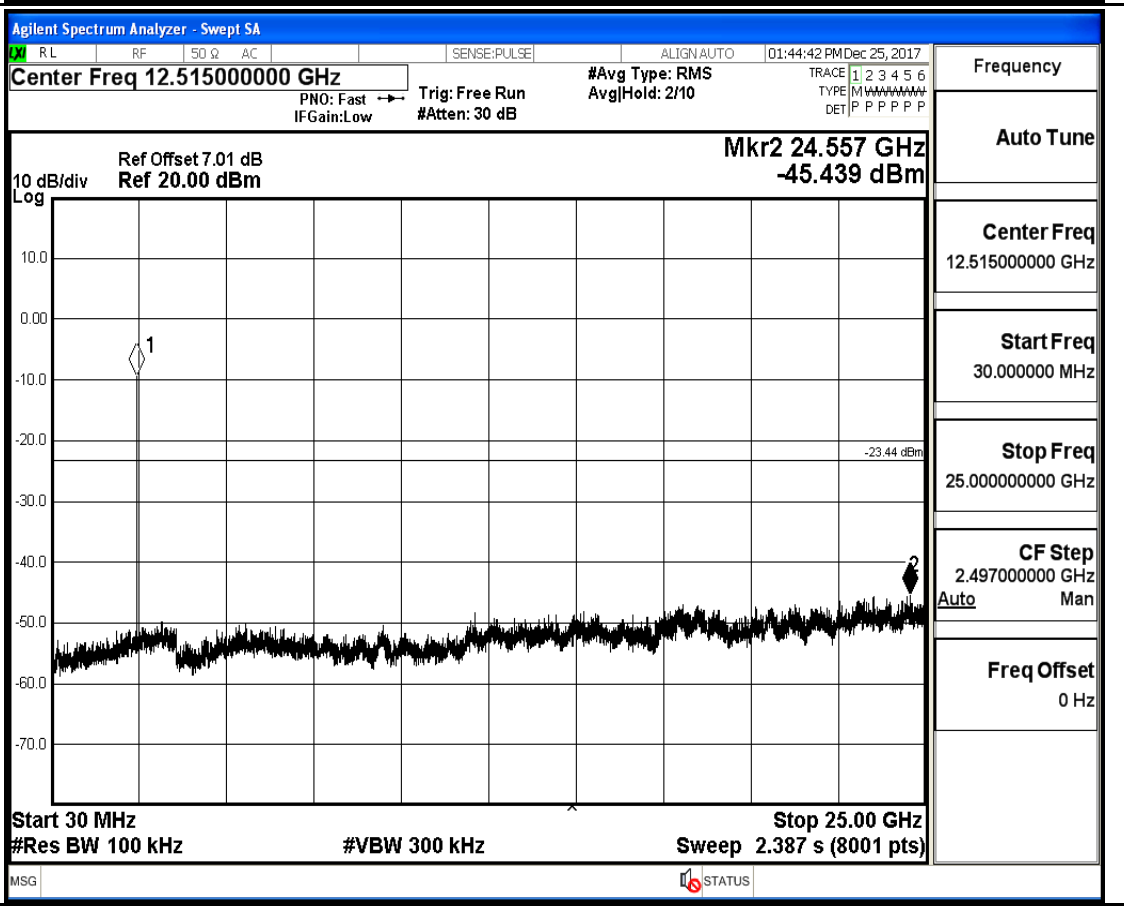
RF Conducted Spurious Emissions_8-DPSK_2441





RF Conducted Spurious Emissions_8-DPSK_2480

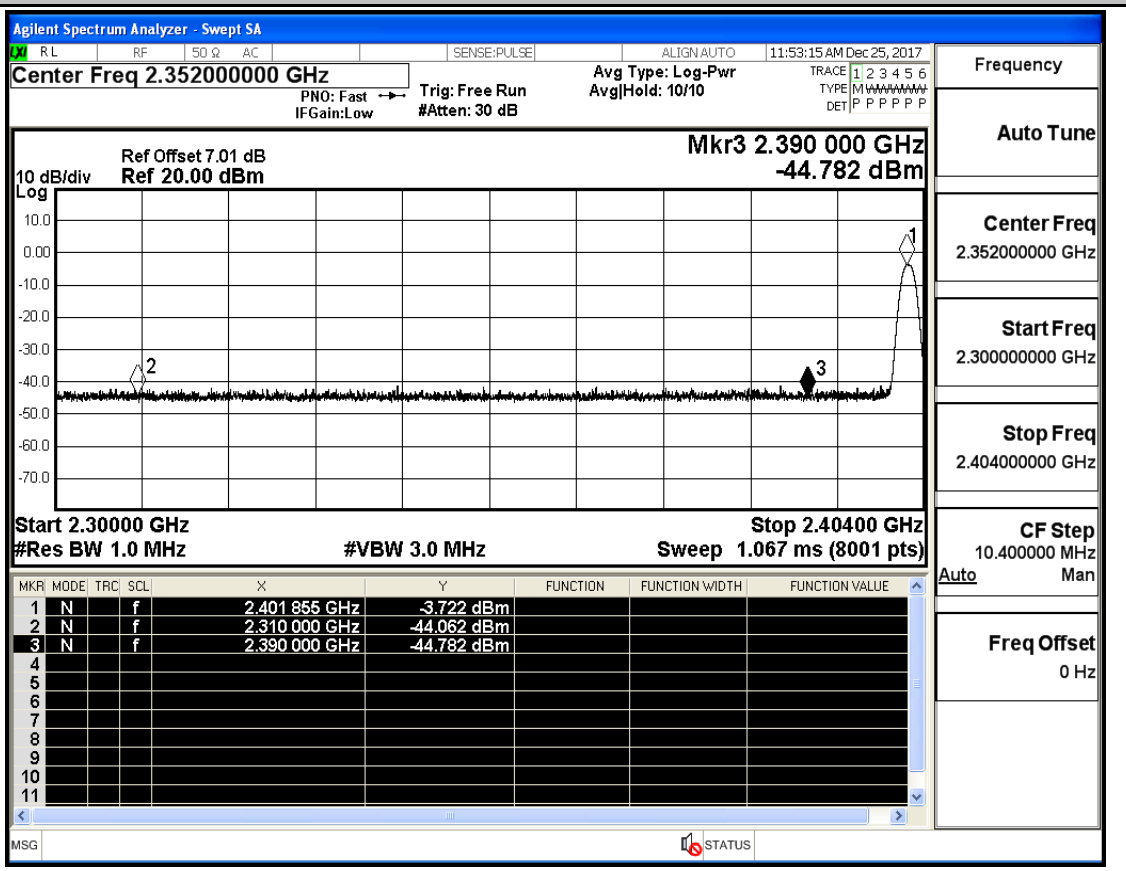




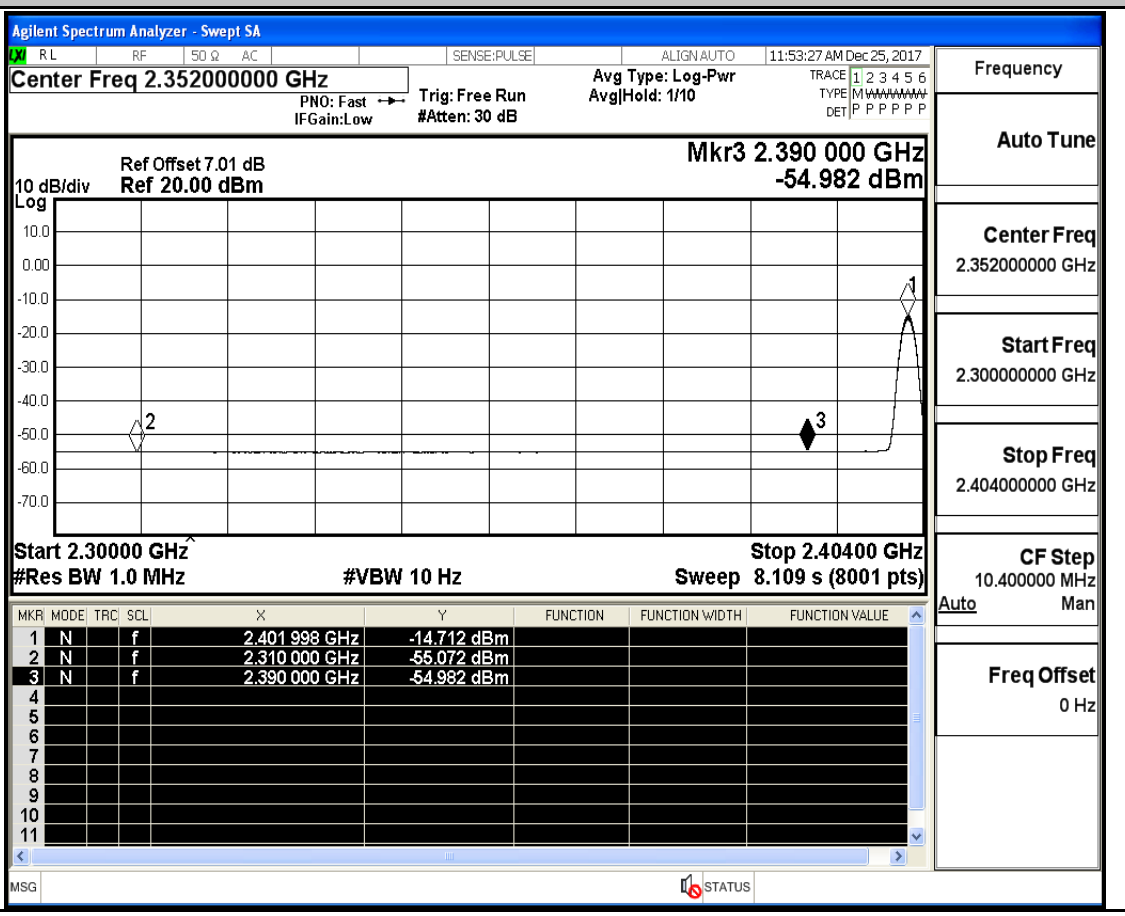
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-44.06	0	0	53.20	PEAK	74	PASS
	Off	2310.0	-55.07	0	0	42.19	AV	54	PASS
	Off	2390.0	-44.78	0	0	52.48	PEAK	74	PASS
	Off	2390.0	-54.98	0	0	42.28	AV	54	PASS
	Off	2483.5	-44.74	0	0	52.52	PEAK	74	PASS
	Off	2483.5	-54.69	0	0	42.57	AV	54	PASS
	Off	2500.0	-44.52	0	0	52.74	PEAK	74	PASS
	Off	2500.0	-54.59	0	0	42.67	AV	54	PASS
π/4-DQPSK	Off	2310.0	-44.20	0	0	53.06	PEAK	74	PASS
	Off	2310.0	-55.06	0	0	42.20	AV	54	PASS
	Off	2390.0	-44.14	0	0	53.11	PEAK	74	PASS
	Off	2390.0	-54.90	0	0	42.35	AV	54	PASS
	Off	2483.5	-43.90	0	0	53.36	PEAK	74	PASS
	Off	2483.5	-54.66	0	0	42.60	AV	54	PASS
	Off	2500.0	-44.93	0	0	52.33	PEAK	74	PASS
	Off	2500.0	-54.57	0	0	42.69	AV	54	PASS
8-DPSK	Off	2310.0	-45.03	0	0	52.23	PEAK	74	PASS
	Off	2310.0	-55.08	0	0	42.18	AV	54	PASS
	Off	2390.0	-45.11	0	0	52.15	PEAK	74	PASS
	Off	2390.0	-54.92	0	0	42.34	AV	54	PASS
	Off	2483.5	-44.16	0	0	53.10	PEAK	74	PASS
	Off	2483.5	-54.67	0	0	42.59	AV	54	PASS
	Off	2500.0	-43.26	0	0	54.00	PEAK	74	PASS
	Off	2500.0	-54.57	0	0	42.69	AV	54	PASS

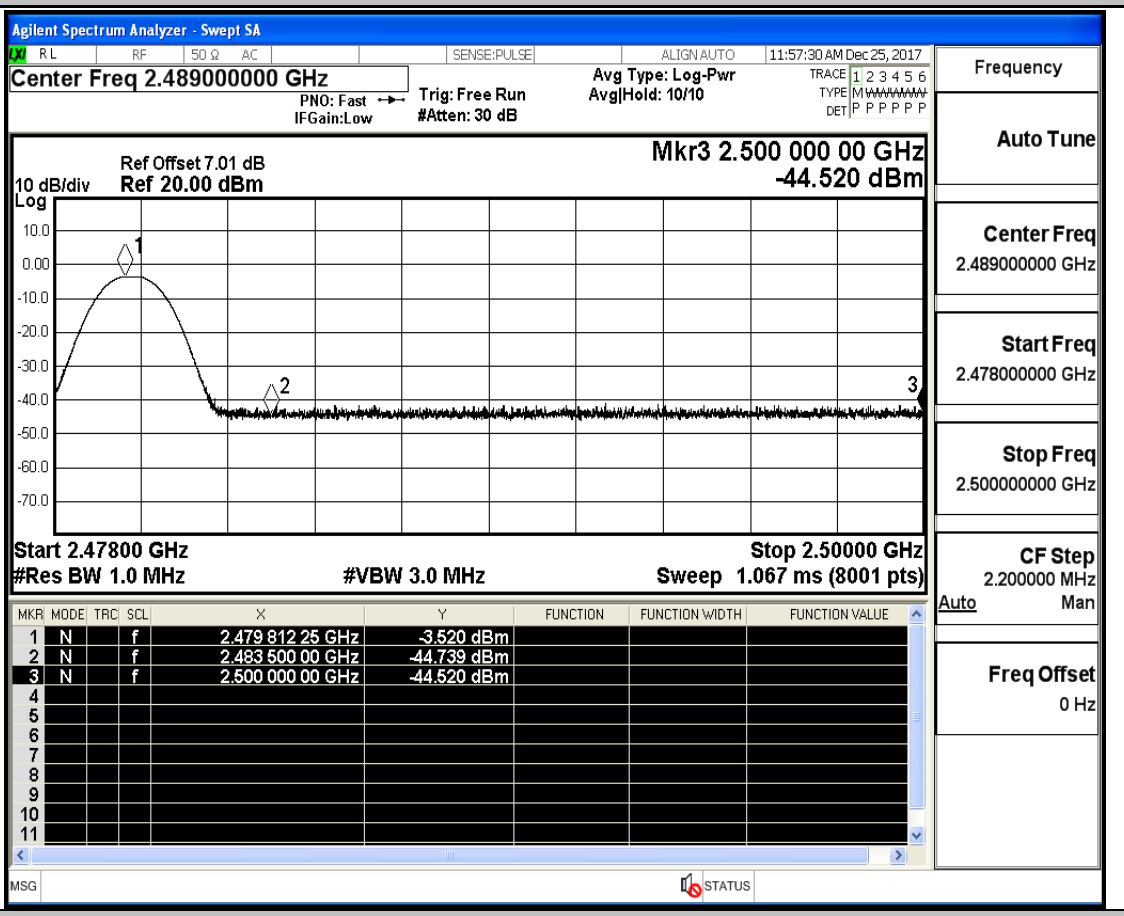
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK



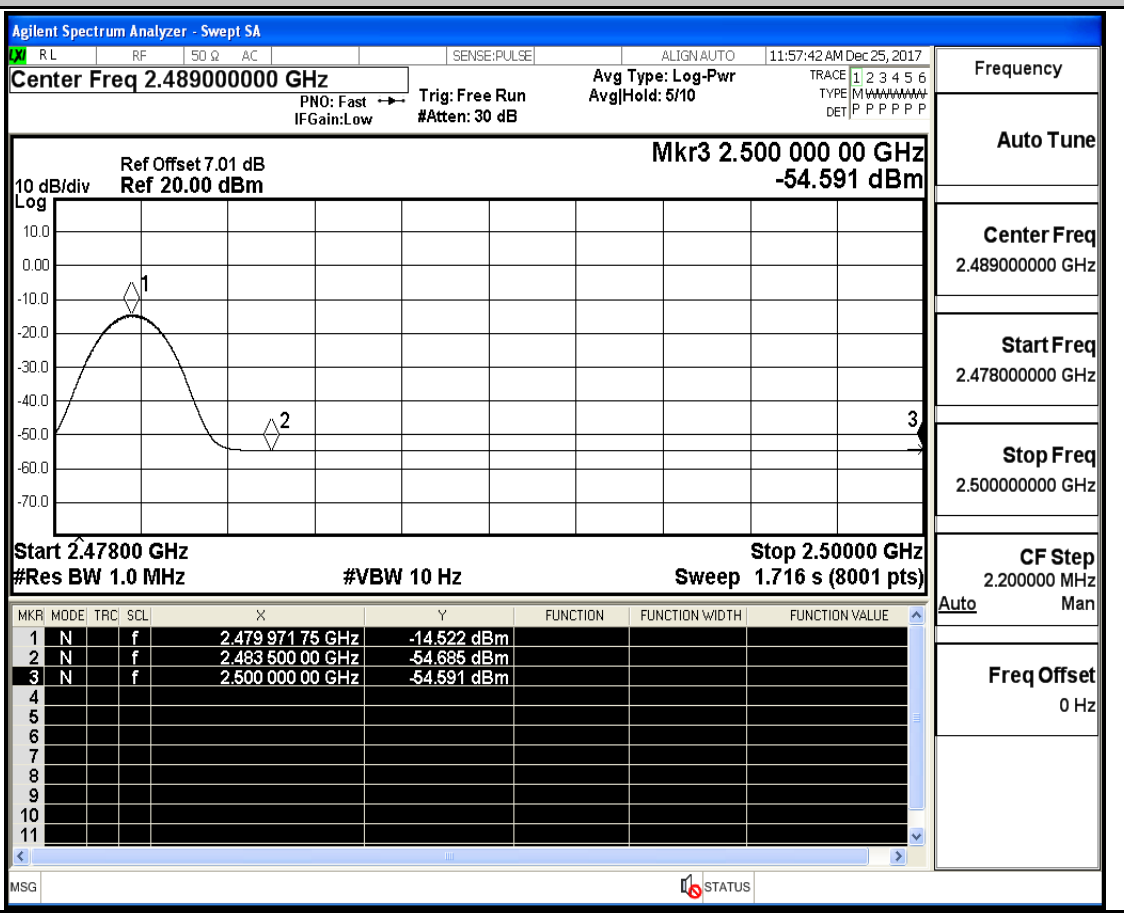
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average



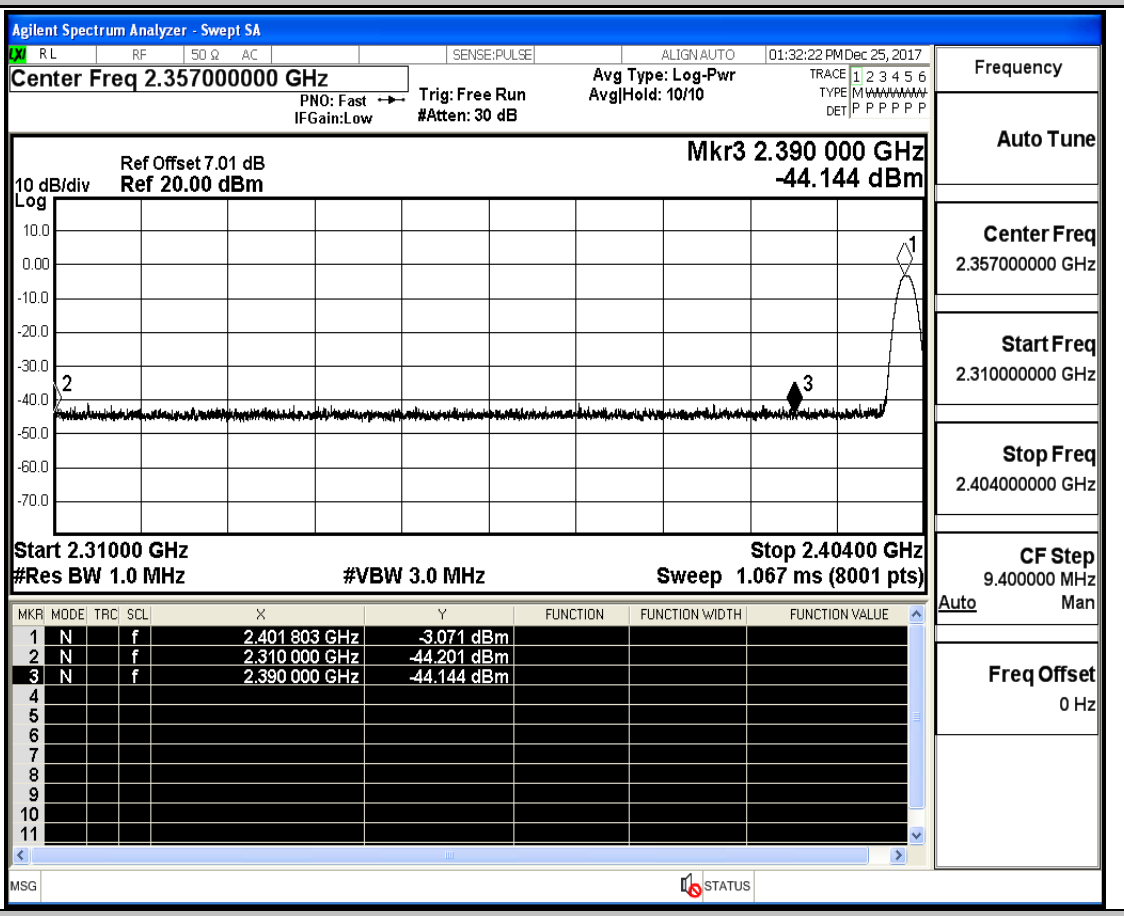
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK



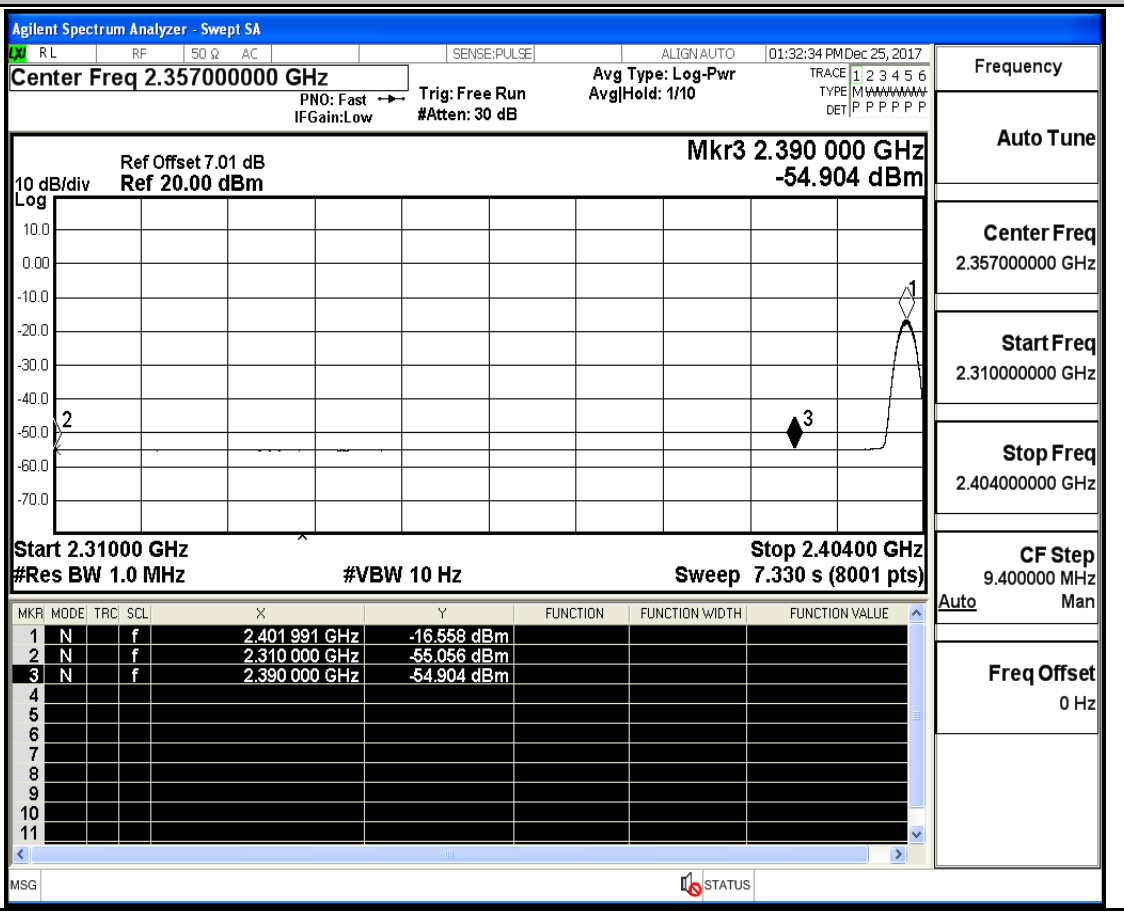
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average



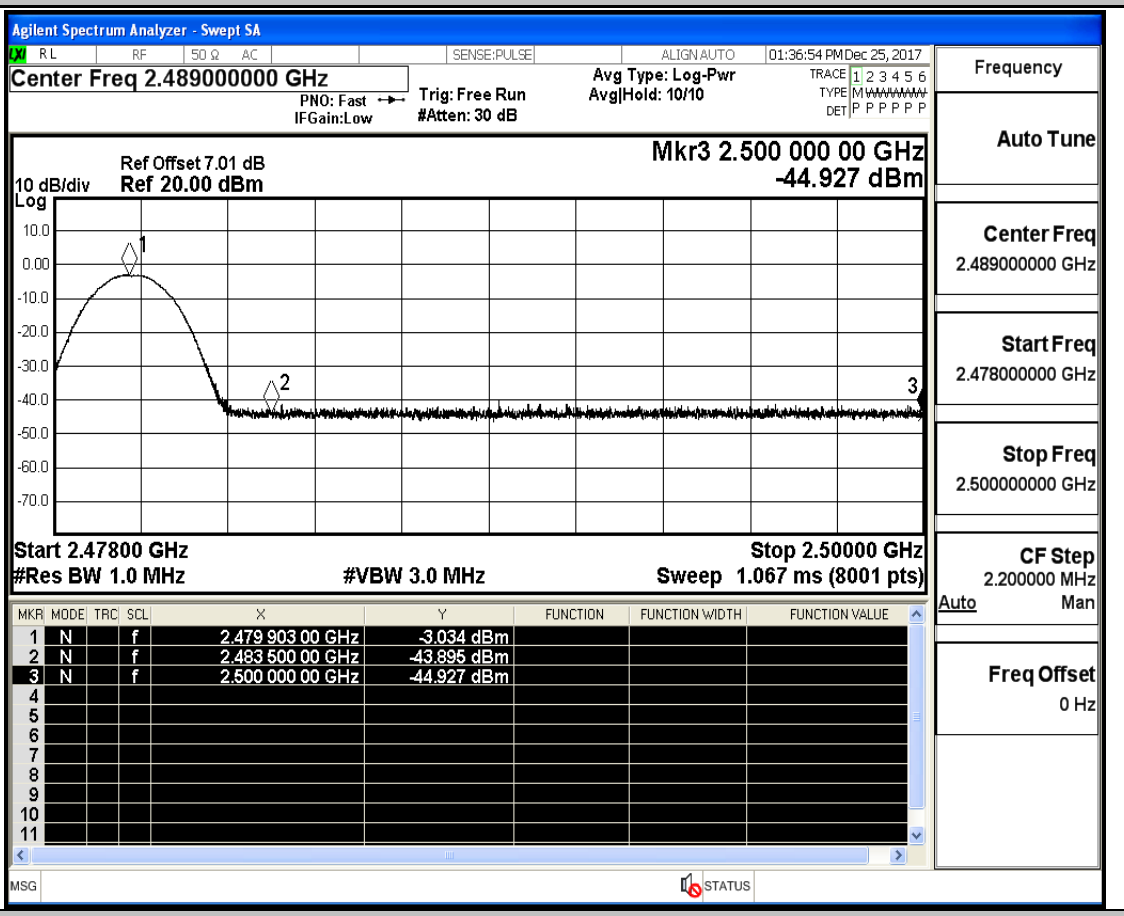
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK



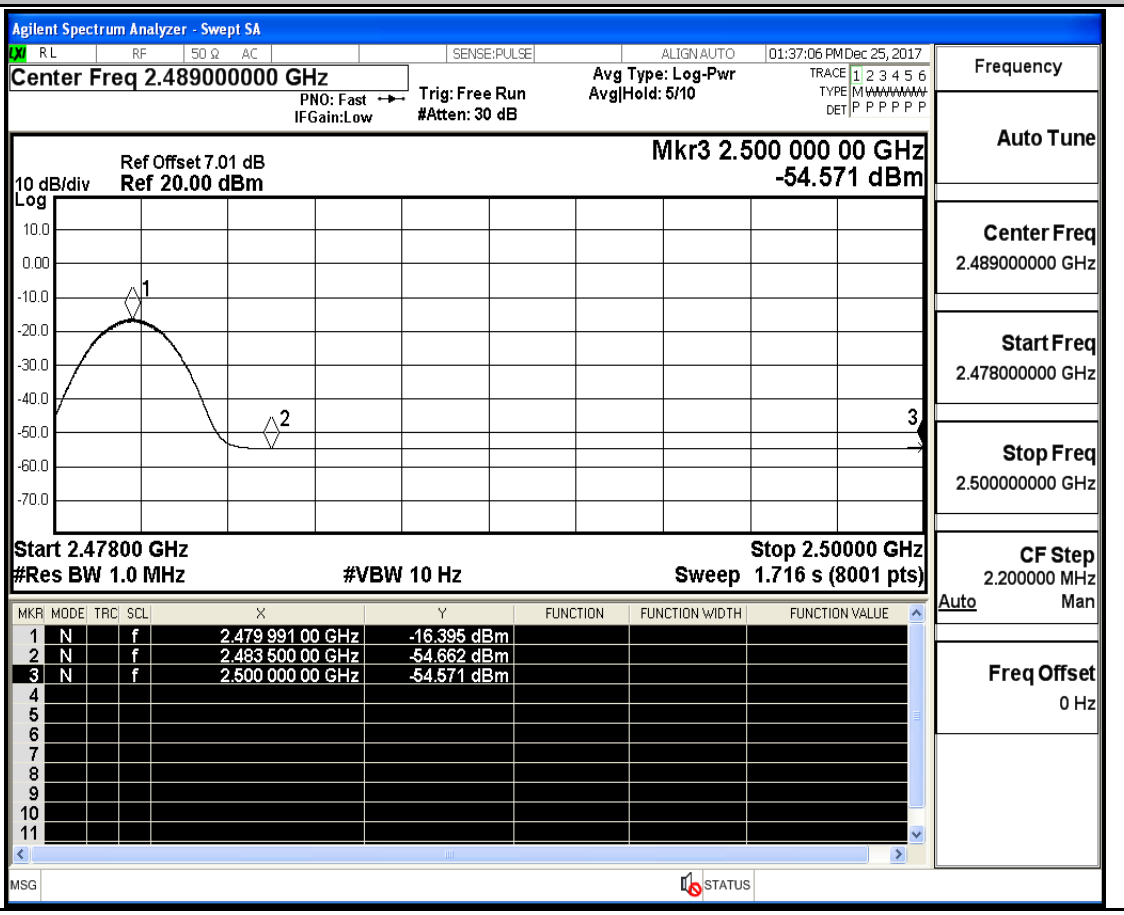
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average



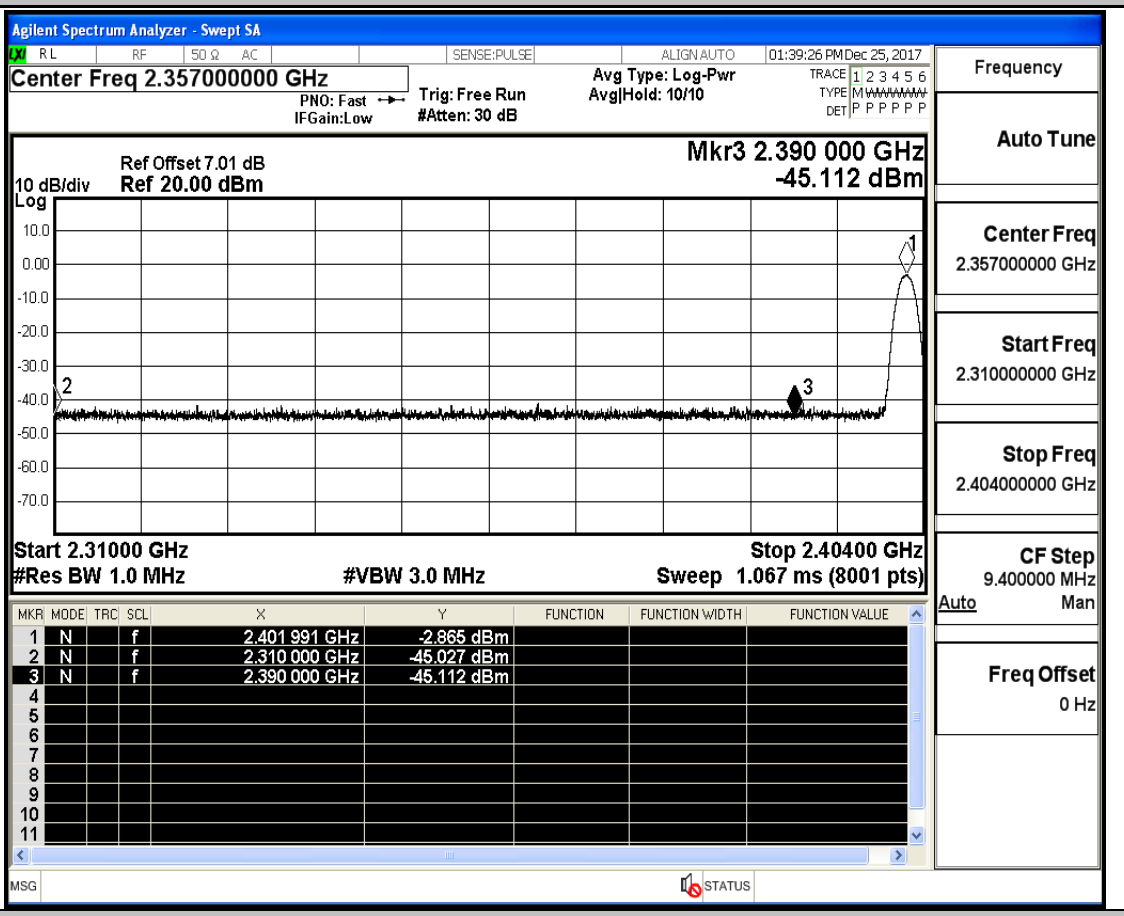
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK



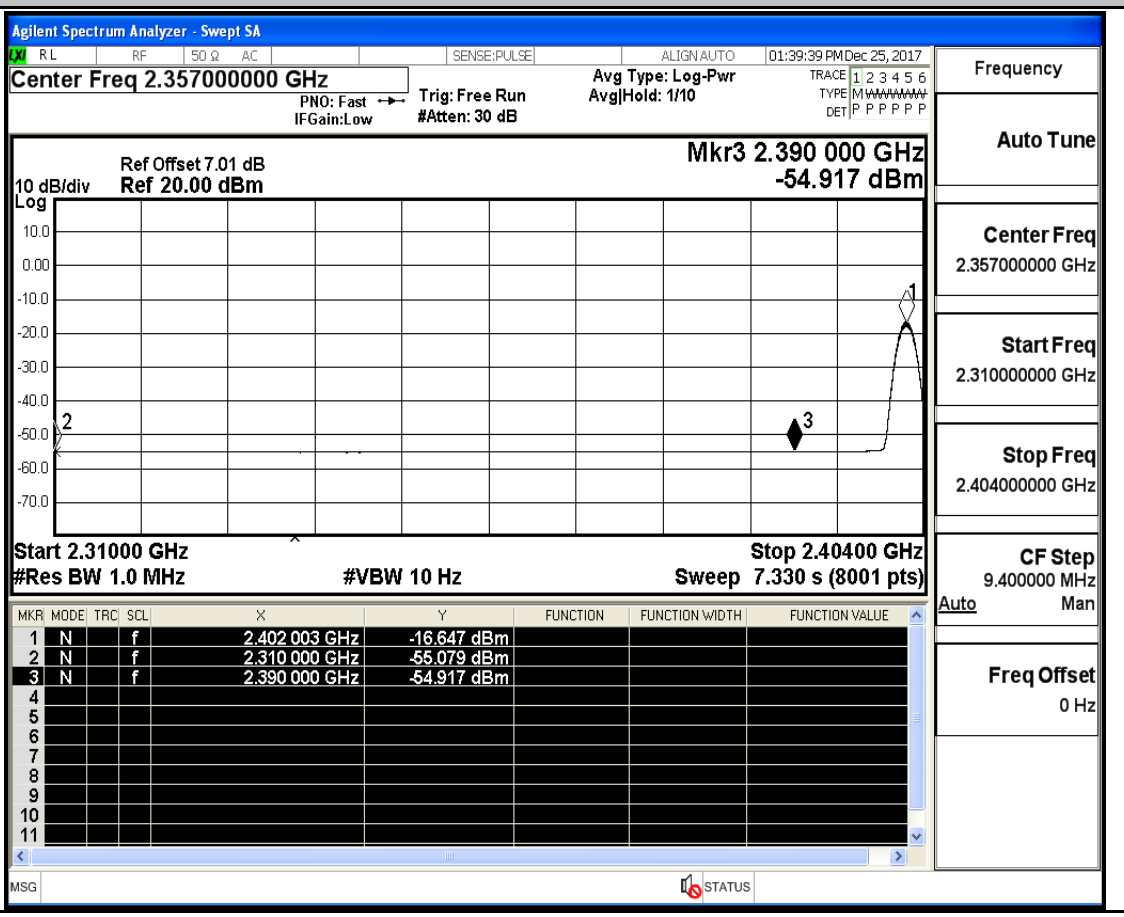
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average



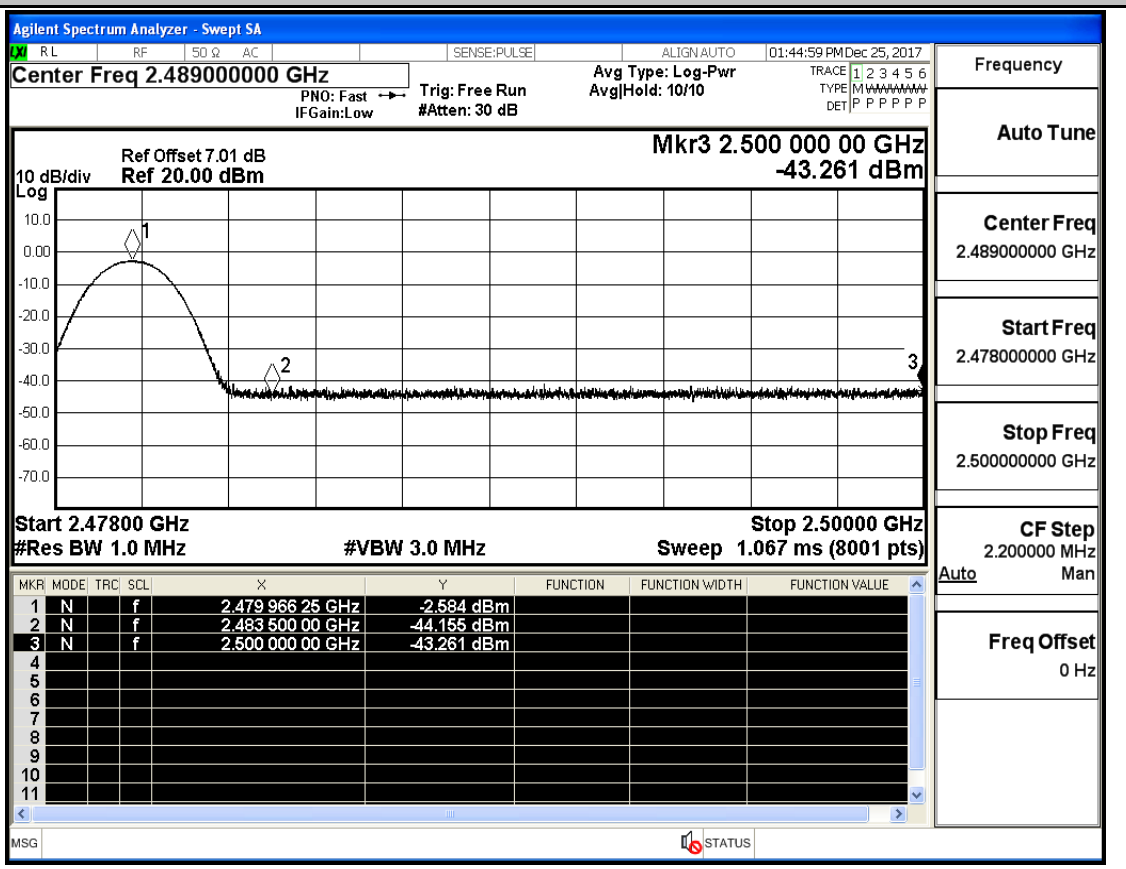
Restrict-band band-edge measurements_Hopping Off_8-DPSK_PEAK



Restrict-band band-edge measurements_Hopping Off_8-DPSK_Average



Restrict-band band-edge measurements_Hopping Off_8-DPSK_PEAK



Restrict-band band-edge measurements_Hopping Off_8-DPSK_Average