

Appendix A Test Results of Bluetooth BR&EDR

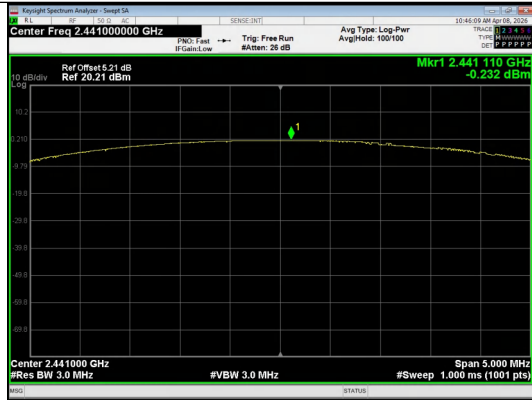
Conducted Output Power

Test Result

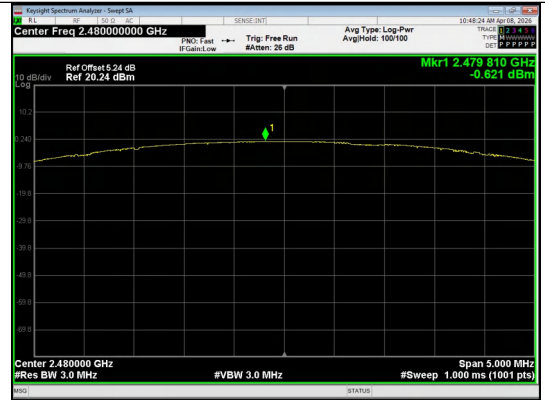
Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Max. Avg. Power (dBm)	Limit (dBm)	Result
GFSK	DH5	0	-0.218	0.95	None	≤30	PASS
		39	-0.264	0.94	None		PASS
		78	-0.630	0.86	None		PASS
$\pi/4$ DQPSK	2-DH5	0	-0.159	0.96	None		PASS
		39	-0.232	0.95	None		PASS
		78	-0.621	0.87	None		PASS
8DPSK	3-DH5	0	-0.157	0.96	None		PASS
		39	-0.205	0.95	None		PASS
		78	-0.638	0.86	None		PASS

Test Graphs

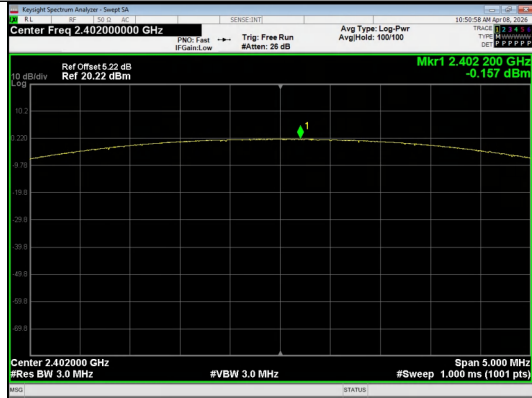




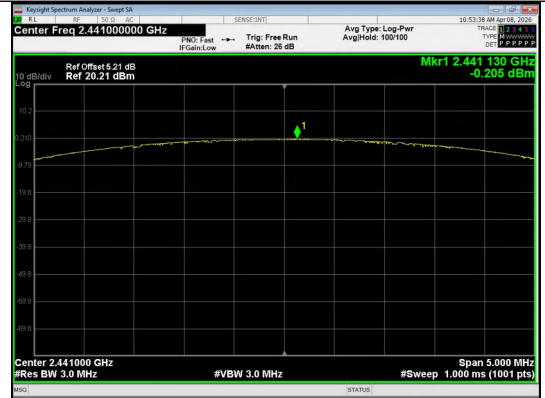
Peak Output Power
 $\pi/4$ DQPSK_Channel 39



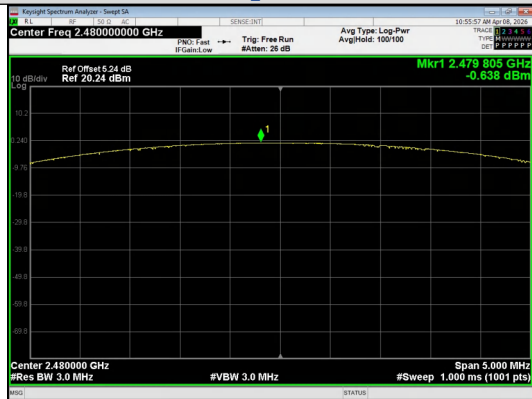
Peak Output Power
 $\pi/4$ DQPSK_Channel 78



Peak Output Power
8DPSK_Channel 0



Peak Output Power
8DPSK_Channel 39



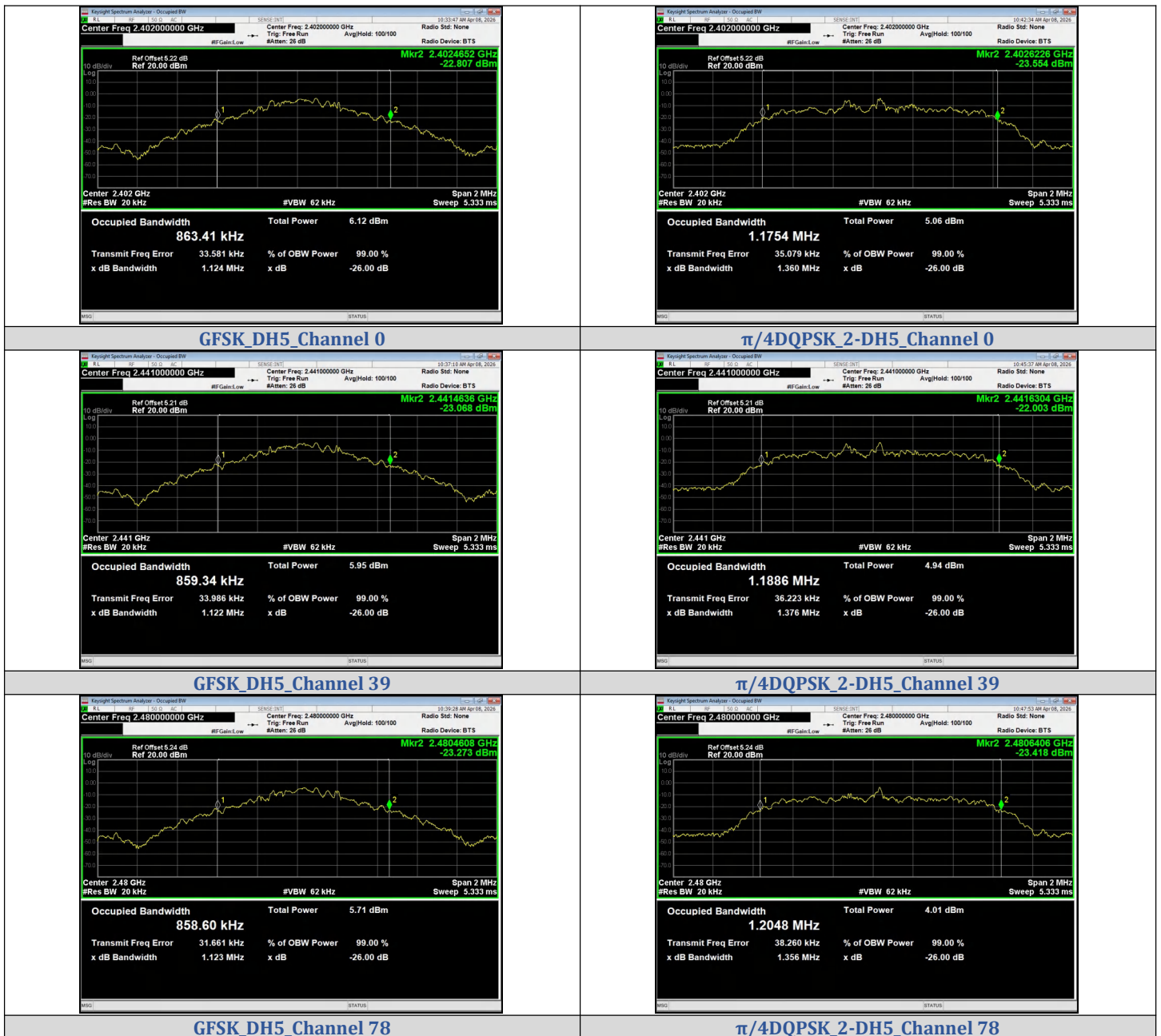
Peak Output Power
8DPSK_Channel 78

99% Bandwidth

Test Result

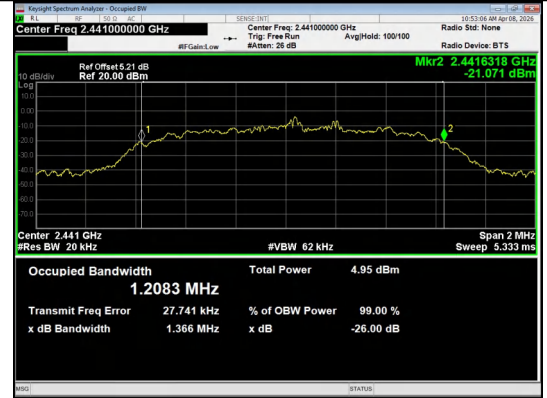
Modulation	Channel	Center Frequency (MHz)	99% BW (MHz)
GFSK	0	2402	0.86341
	39	2441	0.85934
	78	2480	0.85860
$\pi/4$ DQPSK	0	2402	1.1754
	39	2441	1.1886
	78	2480	1.2048
8DPSK	0	2402	1.2008
	39	2441	1.2083
	78	2480	1.2117

Test Graphs

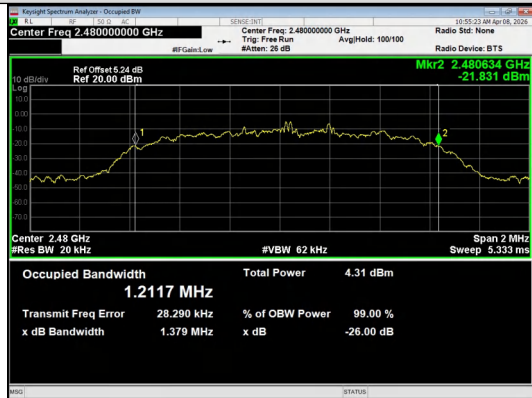




8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



8DPSK_3-DH5_Channel 78

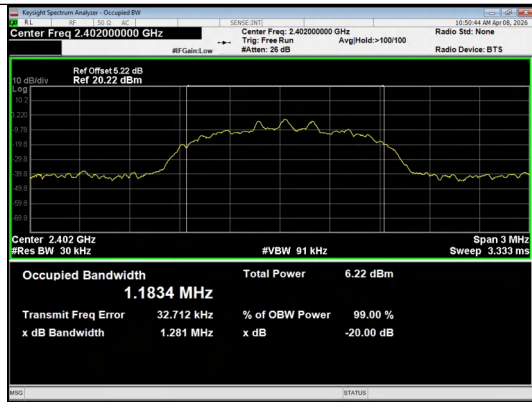
20dB Bandwidth

Test Result

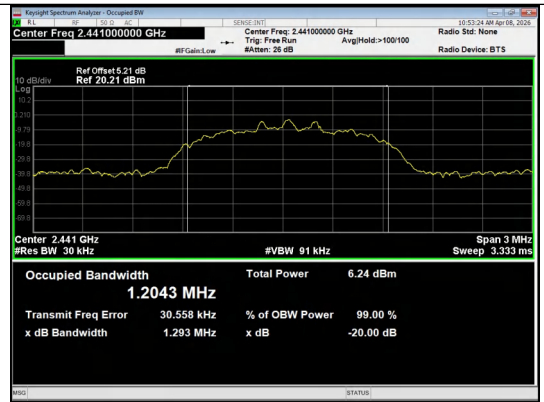
Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	0.9649
	39	2441 MHz	0.9564
	78	2480 MHz	0.9578
$\pi/4$ DQPSK	0	2402 MHz	1.269
	39	2441 MHz	1.276
	78	2480 MHz	1.277
8DPSK	0	2402 MHz	1.281
	39	2441 MHz	1.293
	78	2480 MHz	1.290

Test Graphs

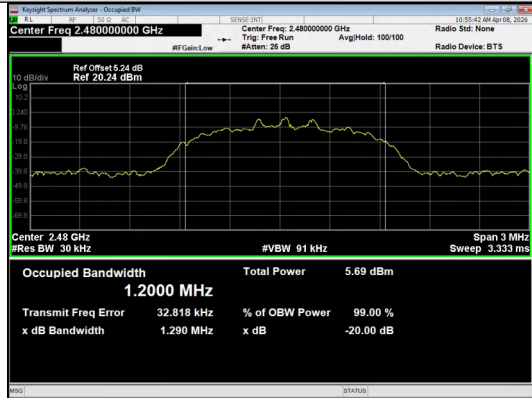




8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



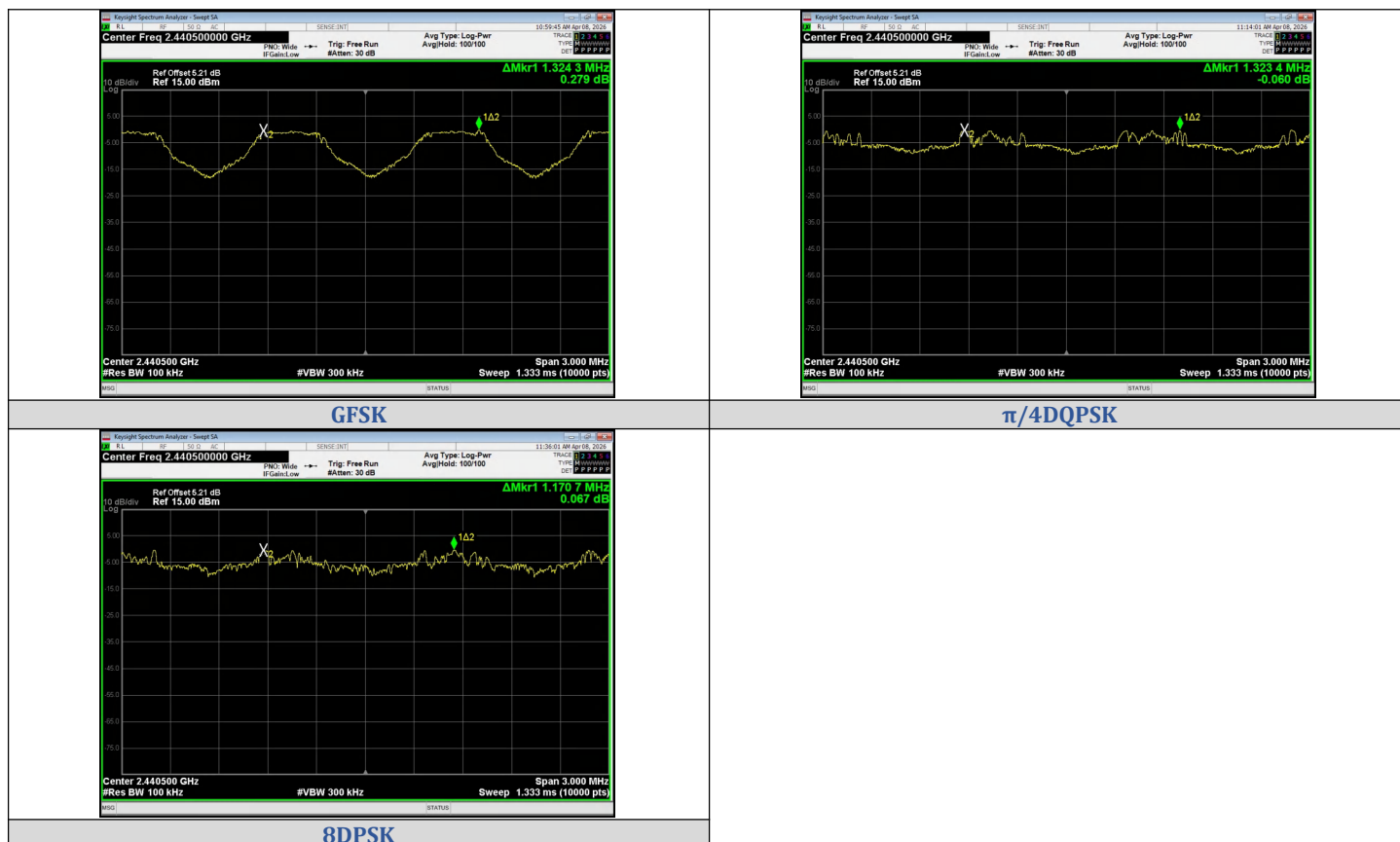
8DPSK_3-DH5_Channel 78

Carrier Frequencies Separation

Test Result

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Limit (MHz)	Result
GFSK	DH5	2439.8728	2441.1971	1.3243	0.643	PASS
$\pi/4$ DQPSK	2-DH5	2439.8734	2441.1968	1.3234	0.851	PASS
8DPSK	3-DH5	2439.8725	2441.0432	1.1707	0.862	PASS

Test Graphs



Conducted Spurious & Band Edge Emission

Test Result

Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2400.00	-52.468	-20.33	-32.138	PASS
			7206.38	-44.792	-20.33	-24.462	PASS
		39	7322.49	-44.537	-20.35	-24.187	PASS
			2483.50	-57.836	-20.73	-37.106	PASS
			7439.85	-47.995	-20.73	-27.265	PASS
$\pi/4$ DQPSK	2-DH5	0	2400.00	-51.951	-20.25	-31.701	PASS
			7205.75	-45.081	-20.25	-24.831	PASS
		39	9763.93	-51.152	-20.35	-30.802	PASS
			2287.91	-48.197	-20.73	-27.467	PASS
			2483.50	-57.392	-20.73	-36.662	PASS
8DPSK	3-DH5	0	2400.00	-51.187	-20.24	-30.947	PASS
			7205.75	-45.771	-20.24	-25.531	PASS
		39	9763.93	-50.706	-20.29	-30.416	PASS
			2287.91	-47.880	-20.69	-27.190	PASS
			2483.50	-57.401	-20.69	-36.711	PASS

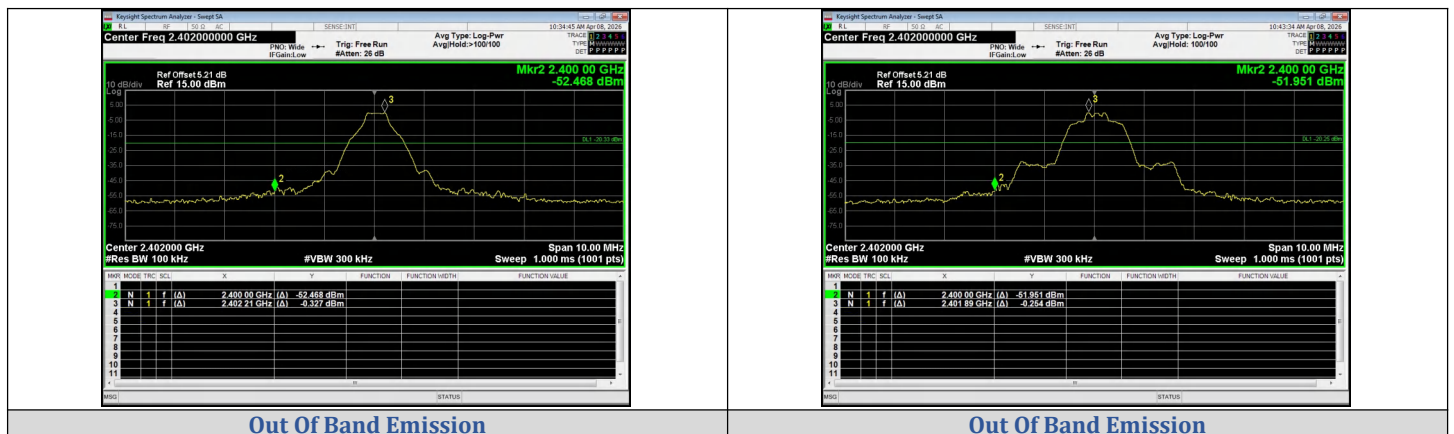
Note: input compensation coefficient (dB)= Cable Loss (dB)

Hopping

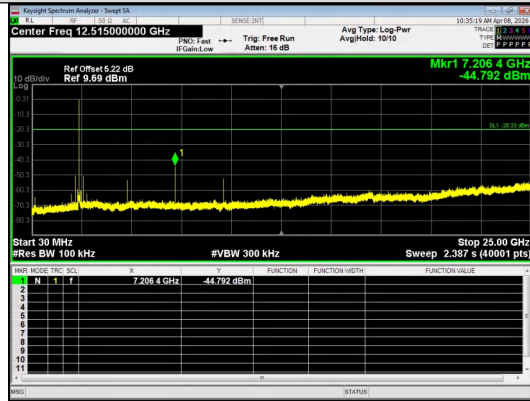
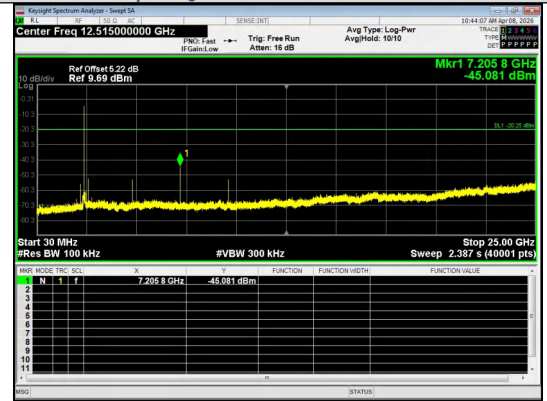
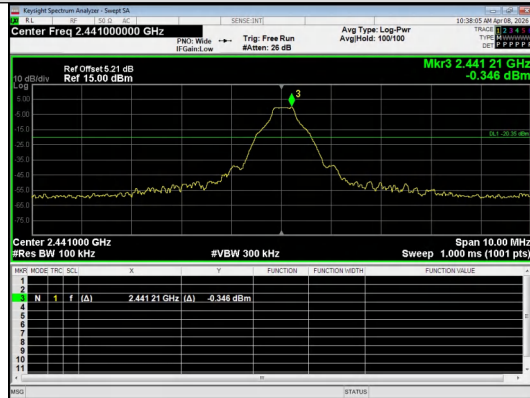
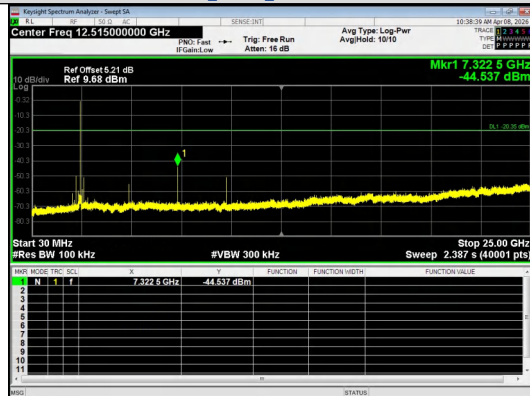
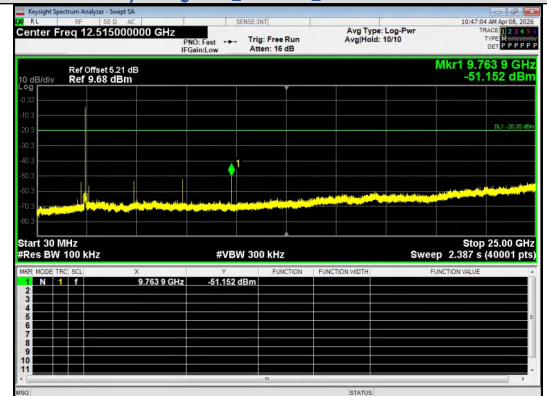
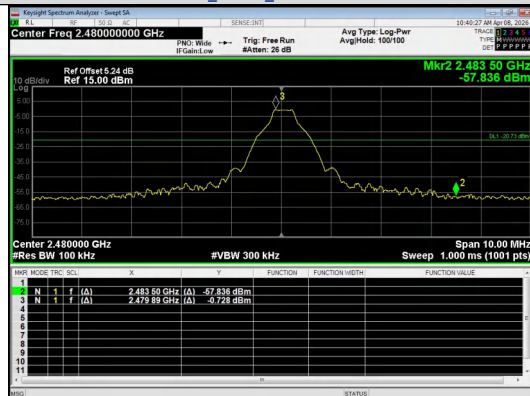
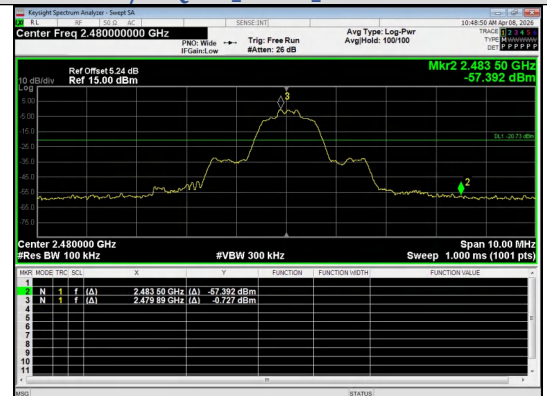
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2352.08	-54.073	-20.16	-33.913	PASS
			2400.00	-57.186	-20.16	-37.026	PASS
			2483.50	-57.924	-20.66	-37.264	PASS
π/4DQPSK	2-DH5		2400.00	-52.708	-20.5	-32.208	PASS
			2483.50	-56.962	-20.65	-36.312	PASS
8DPSK	3-DH5		2381.16	-54.734	-20.55	-34.184	PASS
			2400.00	-55.709	-20.55	-35.159	PASS
			2483.50	-56.480	-20.75	-35.730	PASS
Note: input compensation coefficient (dB)= Cable Loss (dB)							

Note: input compensation coefficient (dB)= Cable Loss (dB)

Test Graphs



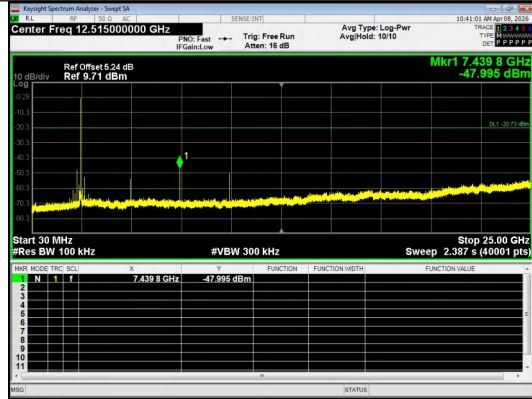
GFSK_DH5_Channel 0

 $\pi/4$ DQPSK_2-DH5_Channel 030.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 030.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 0Out Of Band Emission
GFSK_DH5_Channel 39Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 3930.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 3930.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 39

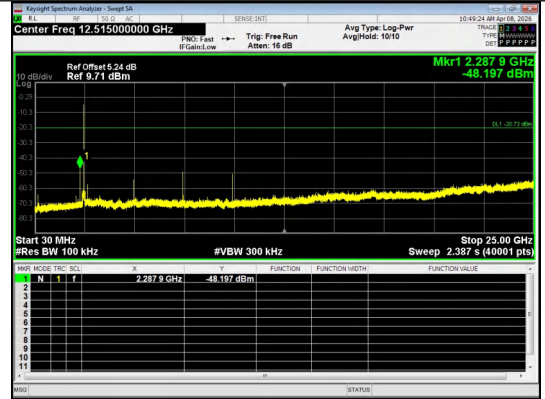
Out Of Band Emission

Out Of Band Emission

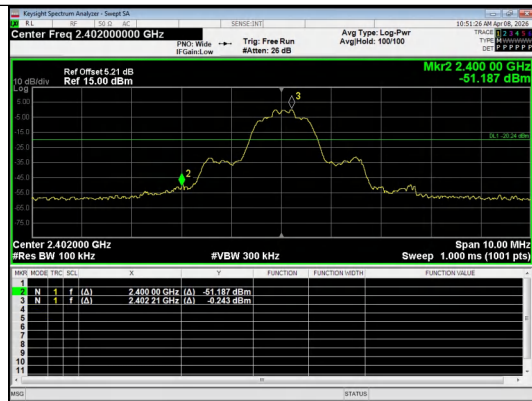
GFSK_DH5_Channel 78



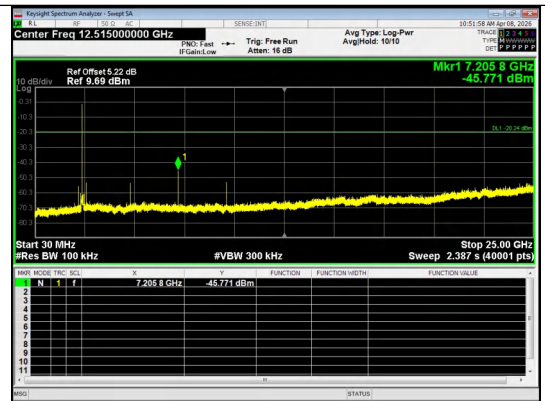
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78

 $\pi/4$ DQPSK_2-DH5_Channel 78

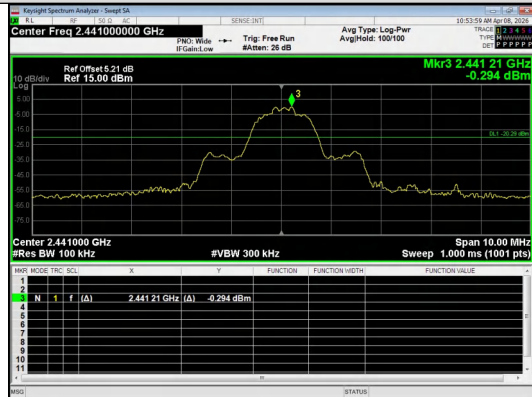
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 78



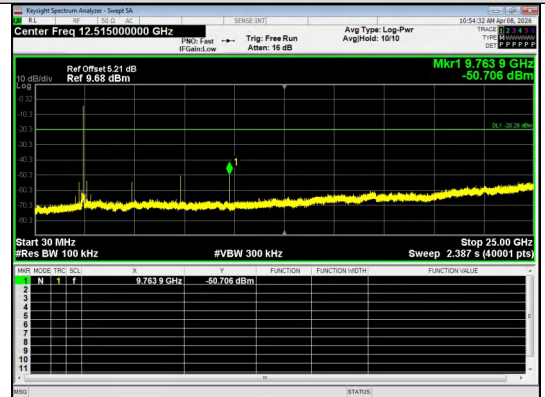
Out Of Band Emission
8DPSK_3-DH5_Channel 0



30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 0



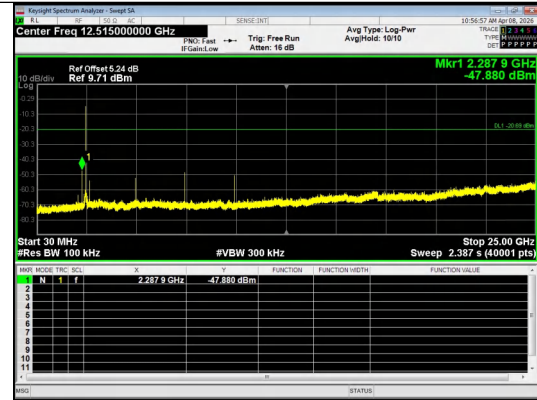
Out Of Band Emission
8DPSK_3-DH5_Channel 39



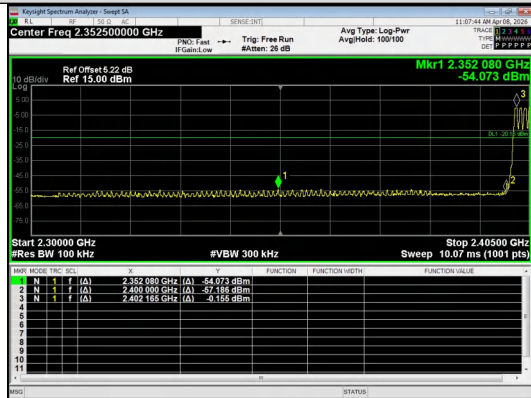
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 39



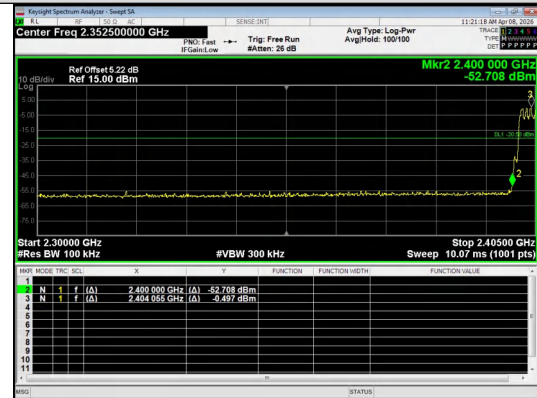
Out Of Band Emission
8DPSK_3-DH5_Channel 78



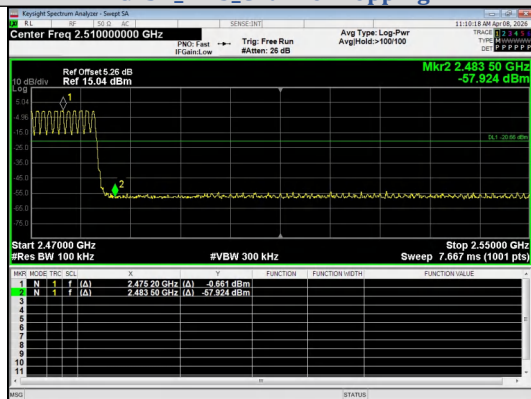
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 78



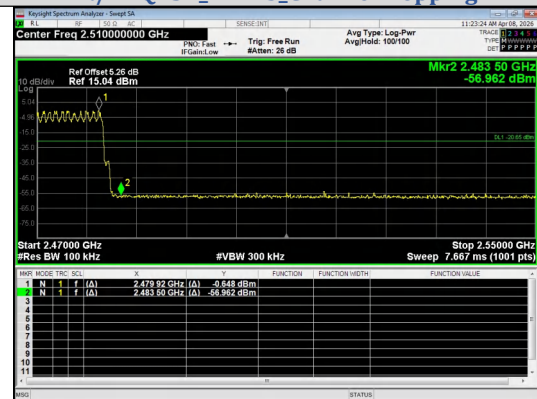
Out Of Band Emission(Left)
8DPSK_3-DH5_Channel 78



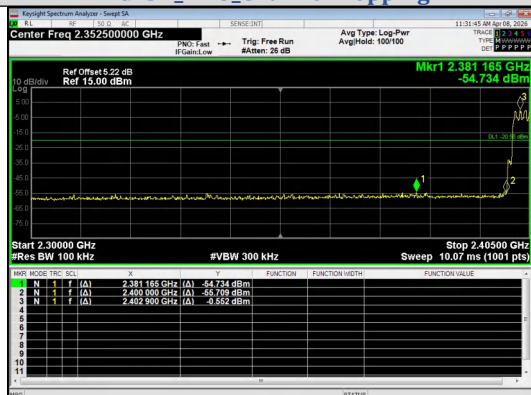
Out Of Band Emission(Left)
8DPSK_3-DH5_Channel 78



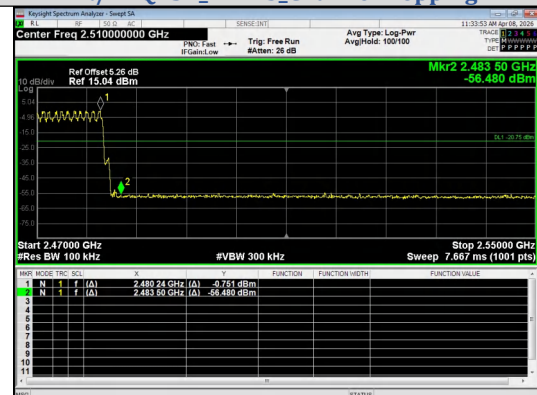
Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



Out Of Band Emission(Left)
pi/4DQPSK_2-DH5_Channel Hopping



Out Of Band Emission(Left)
8DPSK_3-DH5_Channel Hopping



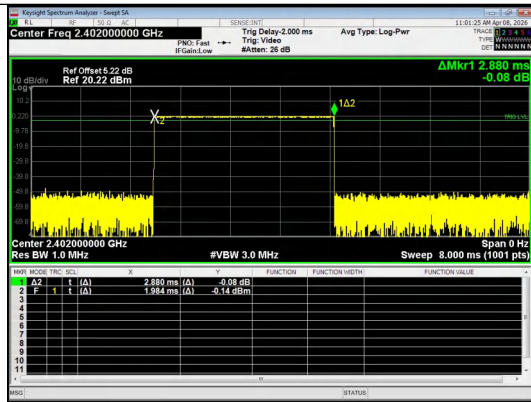
Out Of Band Emission(Left)
8DPSK_3-DH5_Channel Hopping

Dwell Time

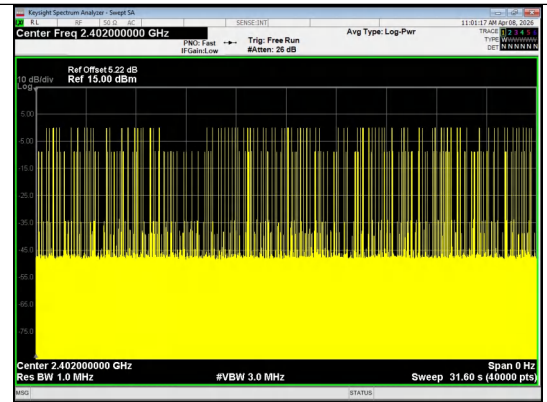
Test Result

Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	Hopping	2.880	112	322.56	< 400	PASS
$\pi/4$ DQPSK	2-DH5		2.896	94	272.22		PASS
8DPSK	3-DH5		2.896	100	289.6		PASS
Note: Dwell time=Pulse time(ms)*Number of Pulses in 31.6 seconds							

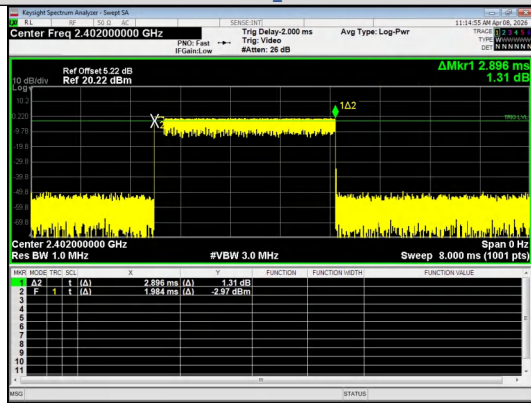
Test Graphs



Pulse Width
GFSK_DH5



Number of Pulses in 31.6 seconds
GFSK_DH5



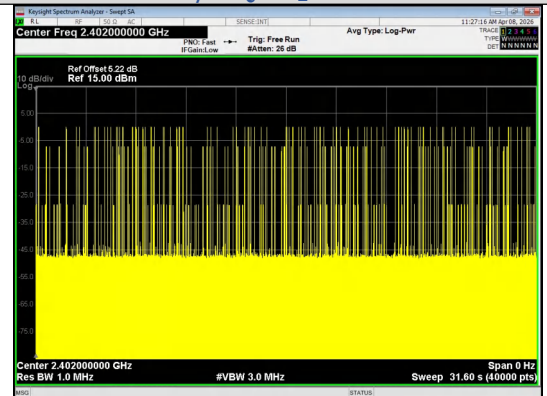
Pulse Width
 $\pi/4$ DQPSK_2-DH5



Number of Pulses in 31.6 seconds
 $\pi/4$ DQPSK_2-DH5



Pulse Width
8DPSK_3-DH5



Number of Pulses in 31.6 seconds
8DPSK_3-DH5

Number Of Hopping Channel

Test Result

Modulation	Packet	Number of Hopping Channel	Limit	Result
GFSK	DH5	79	15	PASS
$\pi/4$ DQPSK	2-DH5	79	15	PASS
8DPSK	3-DH5	79	15	PASS

Test Graphs

