

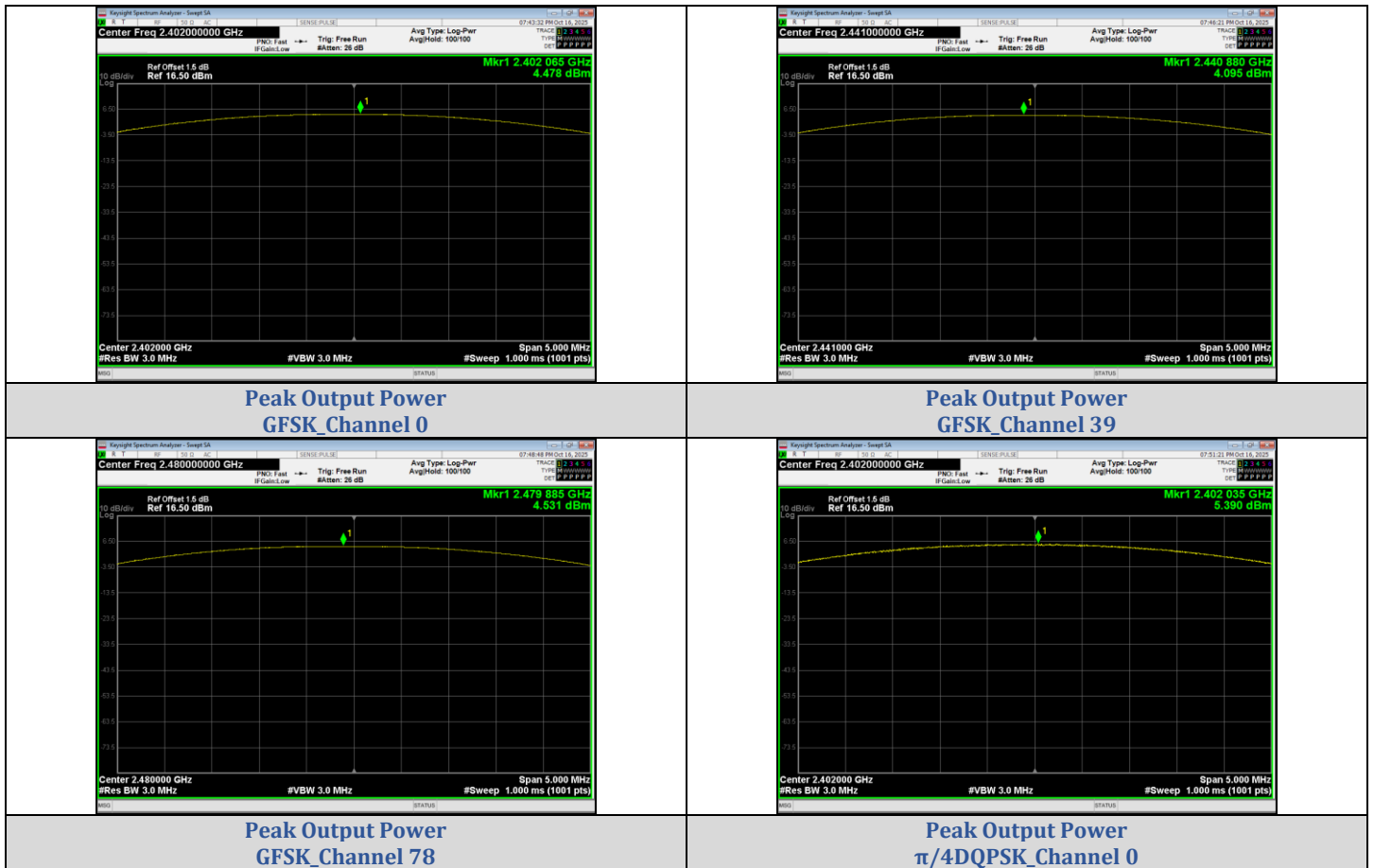
Appendix RF test data for BT

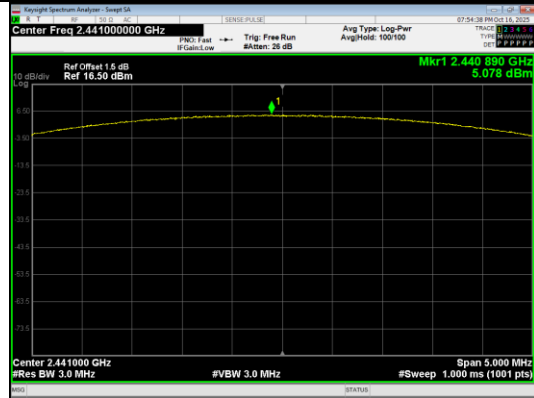
Conducted Output Power

Test Result

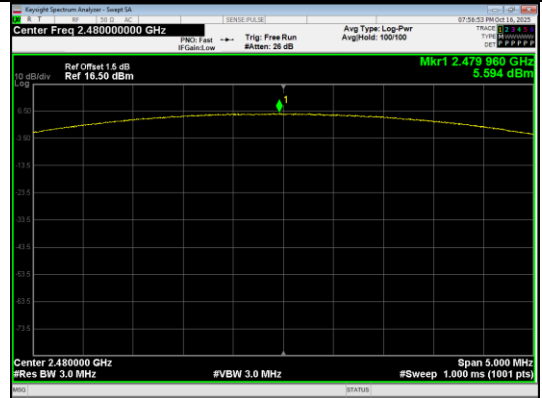
Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Max. Avg. Power (dBm)	Limit (dBm)	Result
GFSK	DH5	0	4.48	2.81	4.05	≤20.97	PASS
		39	4.09	2.56	3.76		PASS
		78	4.53	2.84	4.10		PASS
$\pi/4$ DQPSK	2-DH5	0	5.39	3.46	2.40		PASS
		39	5.08	3.22	2.01		PASS
		78	5.59	3.62	2.69		PASS
8DPSK	3-DH5	0	5.52	3.56	2.32		PASS
		39	5.24	3.34	1.87		PASS
		78	5.75	3.76	2.57		PASS

Test Graphs

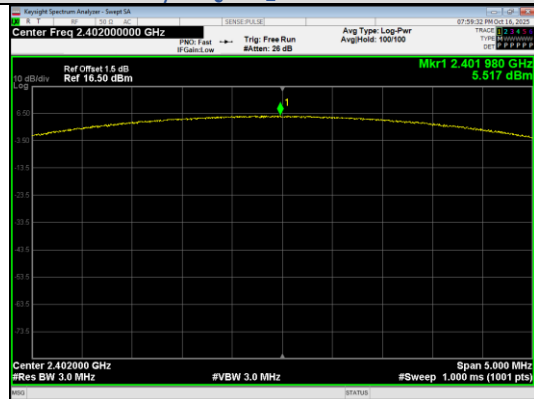




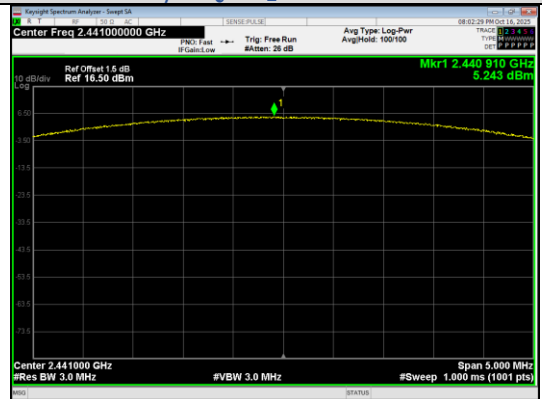
Peak Output Power
 $\pi/4$ DQPSK_Channel 39



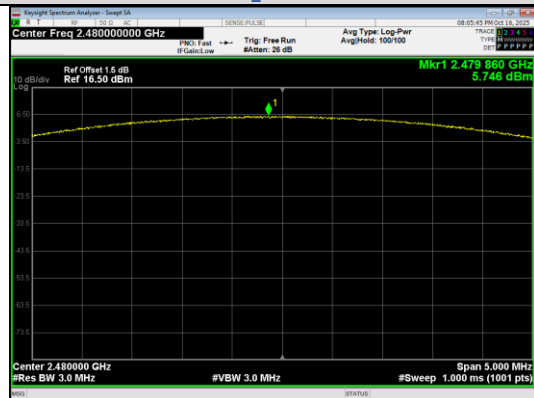
Peak Output Power
 $\pi/4$ DQPSK_Channel 78



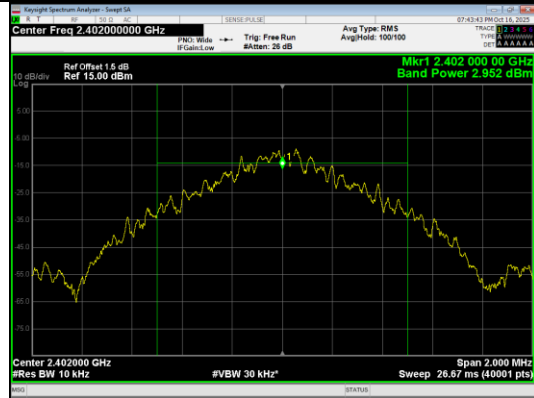
Peak Output Power
8DPSK_Channel 0



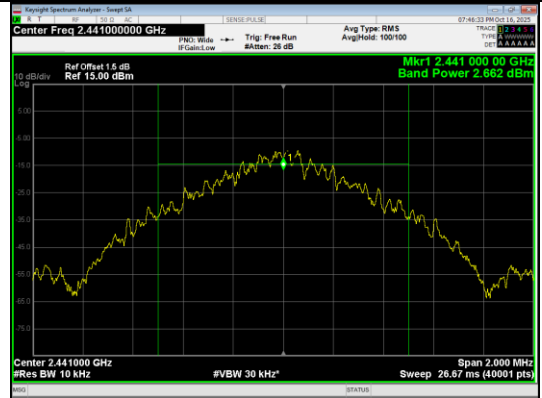
Peak Output Power
8DPSK_Channel 39



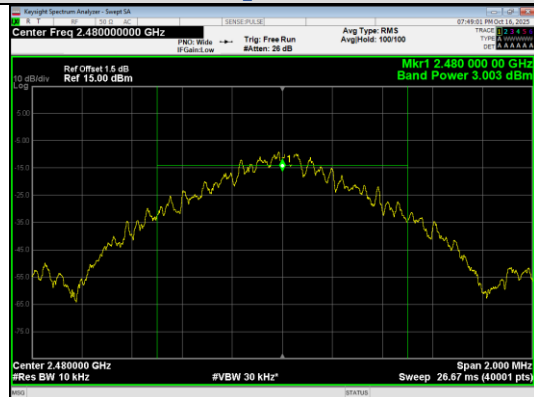
Peak Output Power
8DPSK_Channel 78



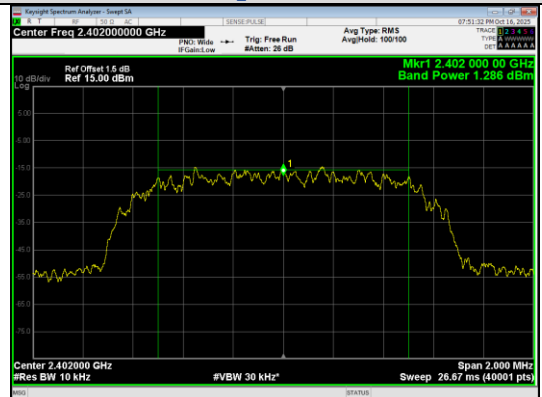
Average Output Power
GFSK_Channel 0



Average Output Power
GFSK_Channel 39



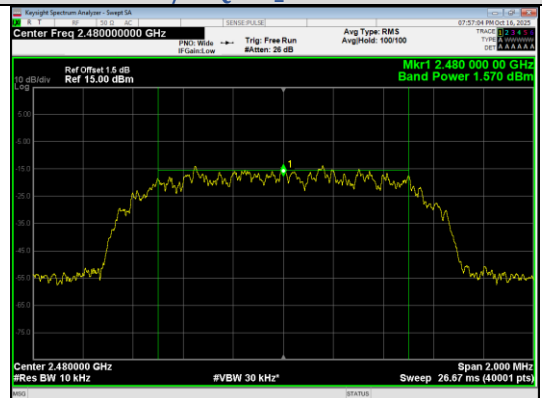
Average Output Power
GFSK_Channel 78



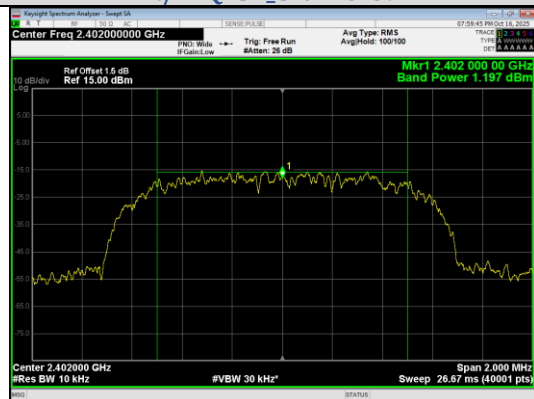
Average Output Power
 $\pi/4$ QPSK_Channel 0



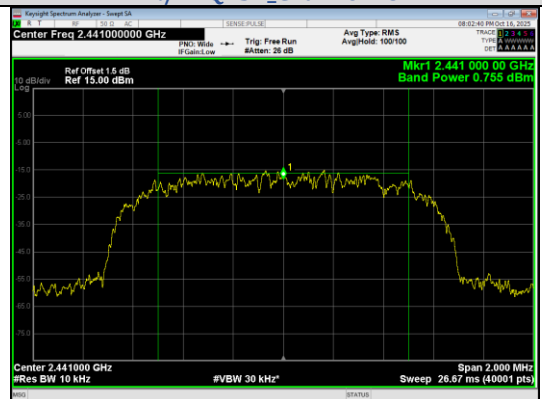
Average Output Power
 $\pi/4$ QPSK_Channel 39



Average Output Power
 $\pi/4$ QPSK_Channel 78

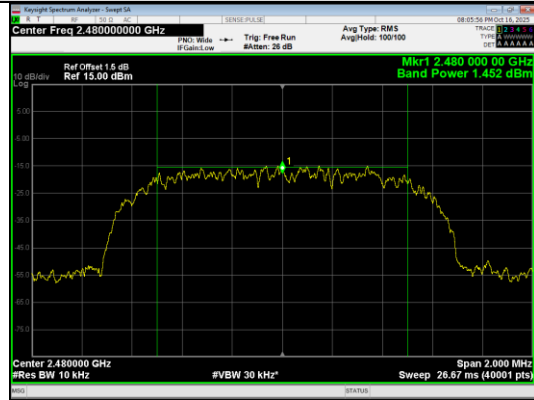


Average Output Power



Average Output Power

8DPSK_Channel 0



Average Output Power
8DPSK_Channel 78

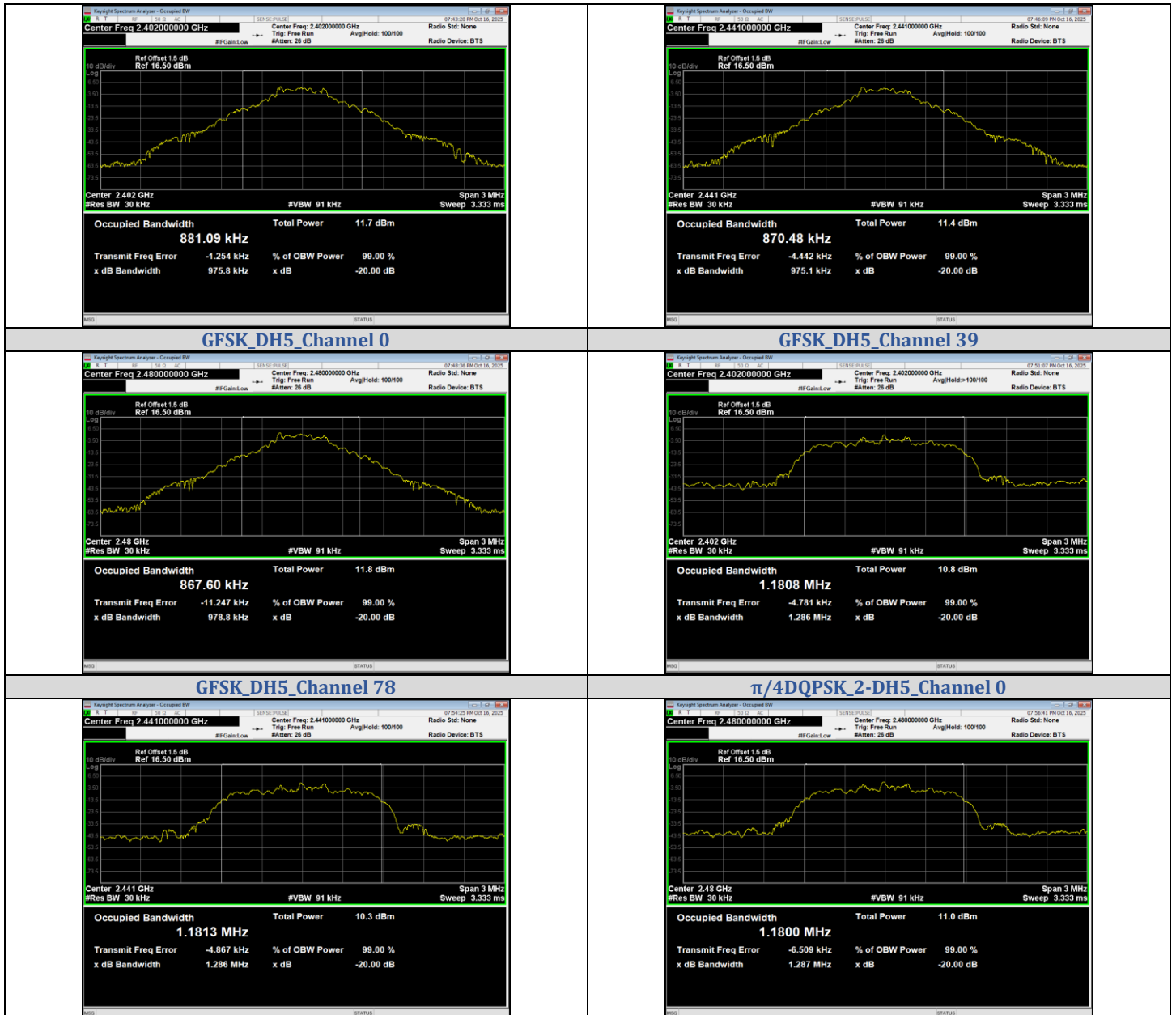
8DPSK_Channel 39

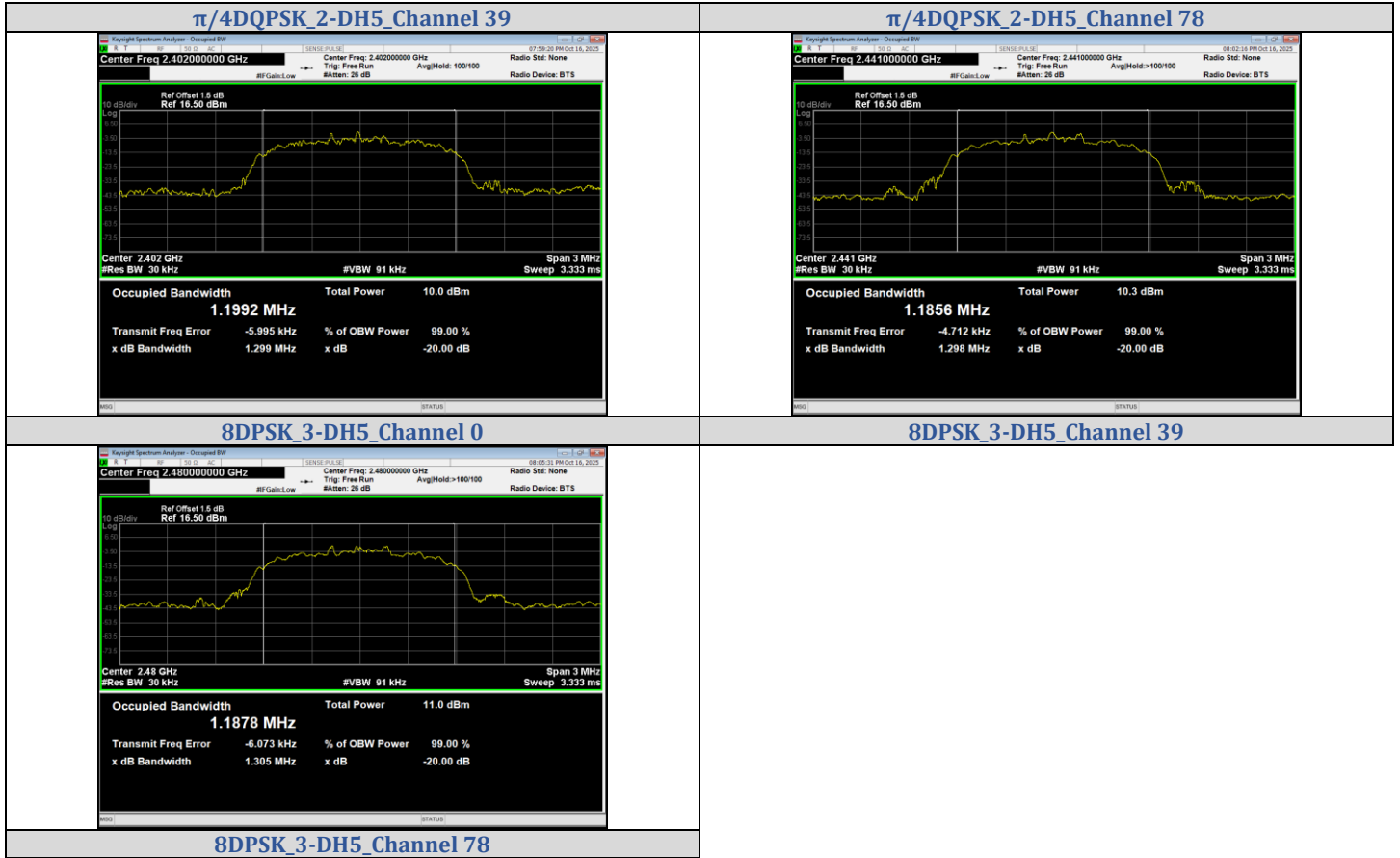
20dB Bandwidth

Test Result

Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	0.9800
	39	2441 MHz	0.9800
	78	2480 MHz	0.9800
$\pi/4$ DQPSK	0	2402 MHz	1.290
	39	2441 MHz	1.290
	78	2480 MHz	1.290
8DPSK	0	2402 MHz	1.300
	39	2441 MHz	1.300
	78	2480 MHz	1.310

Test Graphs



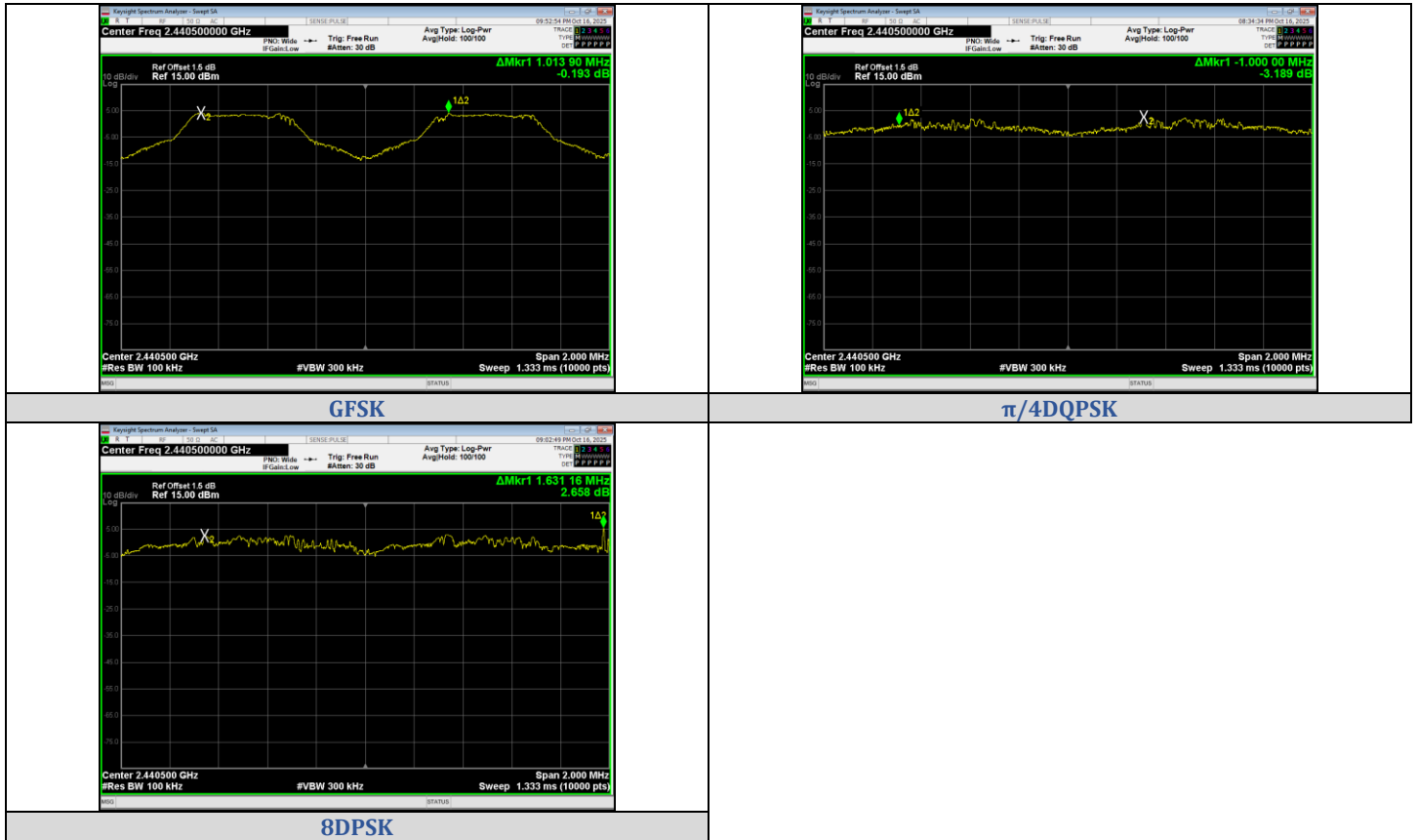


Carrier Frequencies Separation

Test Result

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Limit (MHz)	Result
GFSK	DH5	2439.827	2440.8409	1.0139	0.99	PASS
$\pi/4$ DQPSK	2-DH5	2440.1053	2440.8091	1	0.99	PASS
8DPSK	3-DH5	2439.843	2441.4742	1.6312	0.99	PASS

Test Graphs



Conducted Out Of Band Emission

Test Result

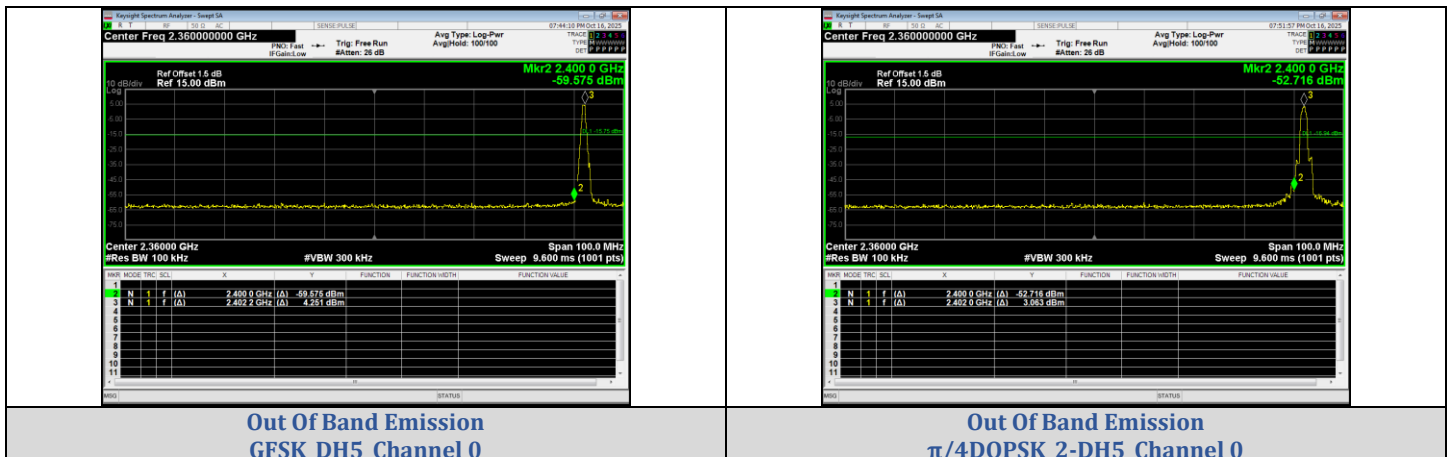
Non-Hopping

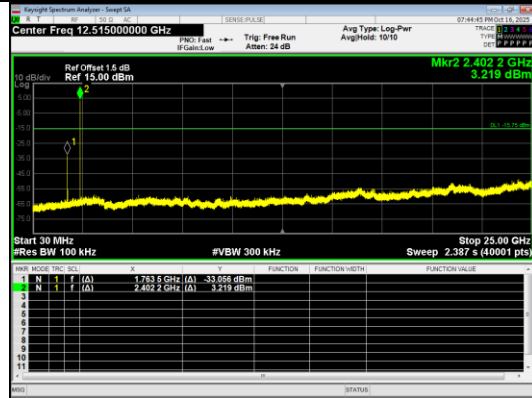
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	1763.54	-33.056	-15.75	-17.306	PASS
			2400.00	-59.580	-15.75	-43.830	PASS
		39	24949.4	-49.574	-16.13	-33.444	PASS
		78	1746.69	-33.768	-15.68	-18.088	PASS
			2483.50	-60.040	-15.68	-44.360	PASS
$\pi/4$ DQPSK	2-DH5	0	2400.00	-52.720	-16.94	-35.780	PASS
			24937.0	-48.591	-16.94	-31.651	PASS
		39	24403.2	-48.936	-17.07	-31.866	PASS
		78	2483.50	-30.570	-16.25	-14.320	PASS
			24913.2	-49.486	-16.25	-33.236	PASS
8DPSK	3-DH5	0	1754.18	-44.370	-16.74	-27.630	PASS
			2400.00	-51.440	-16.74	-34.700	PASS
		39	24922.6	-49.104	-16.98	-32.124	PASS
		78	2483.50	-56.860	-16.34	-40.520	PASS
			24505.0	-48.874	-16.34	-32.534	PASS

Hopping

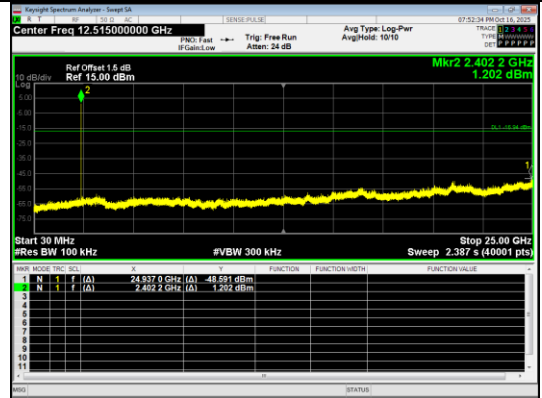
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2392.30	-54.870	-14.88	-39.990	PASS
			2400.00	-57.700	-14.88	-42.820	PASS
			2483.50	-60.670	-15.46	-45.210	PASS
π/4DQPSK	2-DH5		2400.00	-40.170	-15.43	-24.740	PASS
			2483.50	-44.840	-16.25	-28.590	PASS
			2396.00	-43.310	-15.15	-28.160	PASS
8DPSK	3-DH5		2400.00	-45.570	-15.15	-30.420	PASS
			2483.50	-58.410	-14.19	-44.220	PASS

Test Graphs

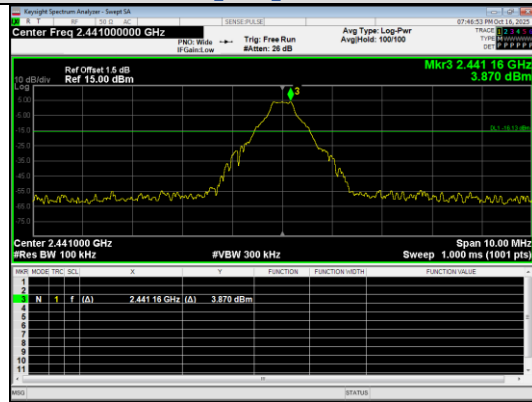




30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 0



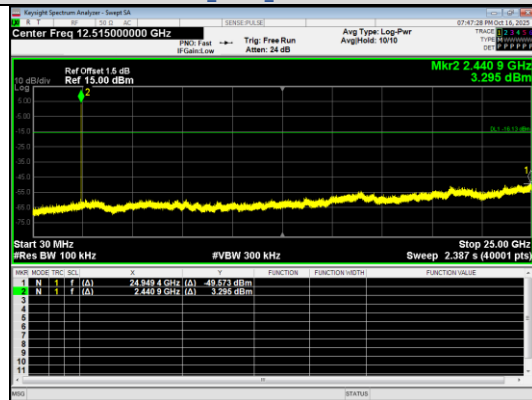
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 0



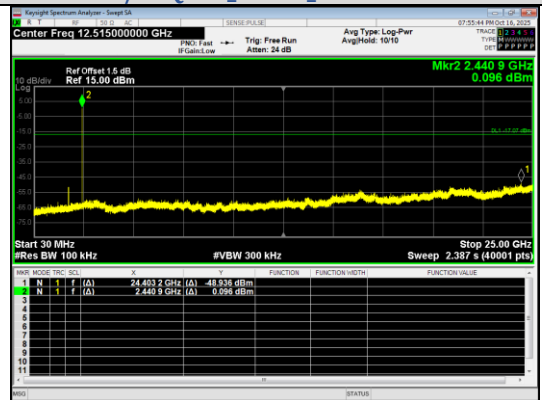
Out Of Band Emission
GFSK_DH5_Channel 39



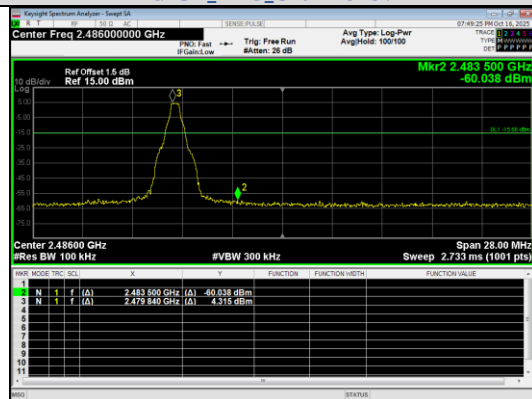
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 39



30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 39



30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 39

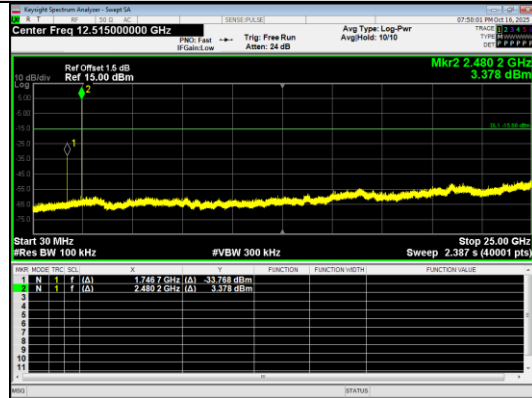


Out Of Band Emission



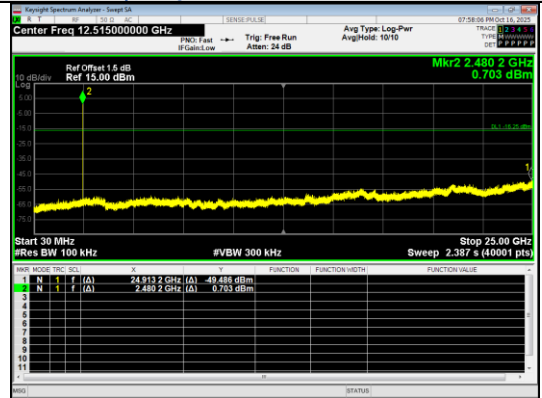
Out Of Band Emission

GFSK_DH5_Channel 78

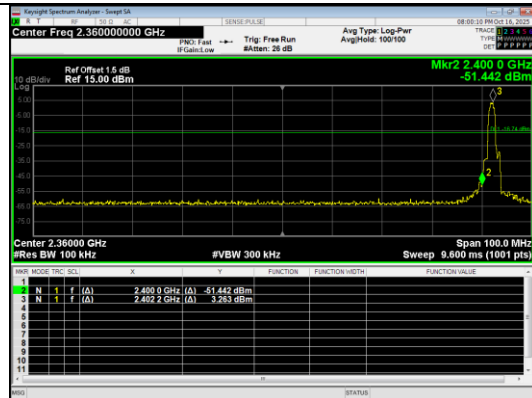


30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78

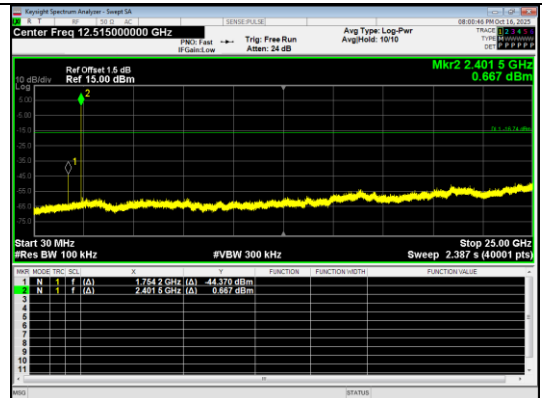
$\pi/4$ DQPSK_2-DH5_Channel 78



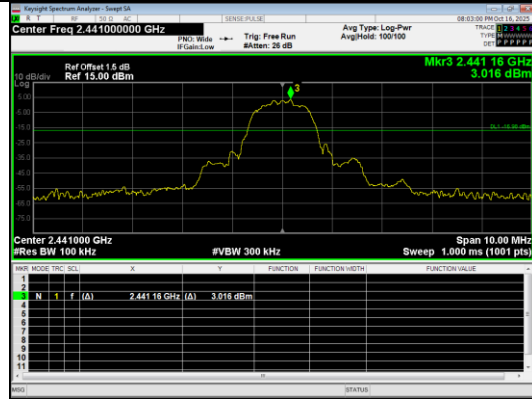
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 78



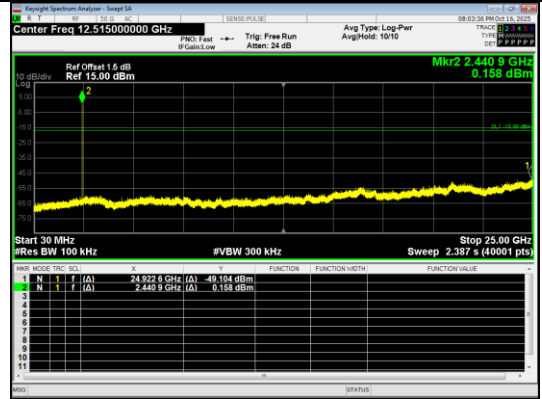
Out Of Band Emission
8DPSK_3-DH5_Channel 0



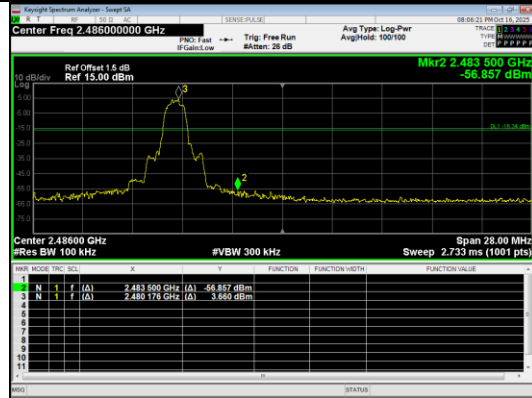
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 0



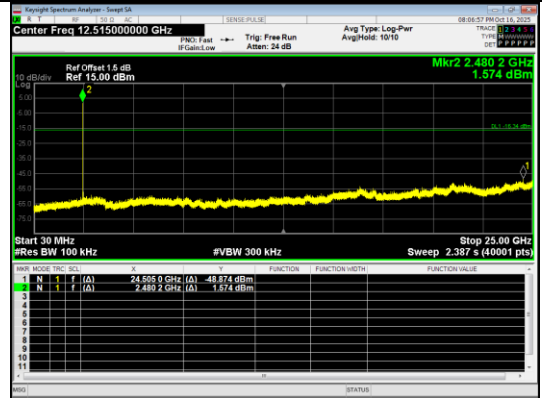
Out Of Band Emission
8DPSK_3-DH5_Channel 39



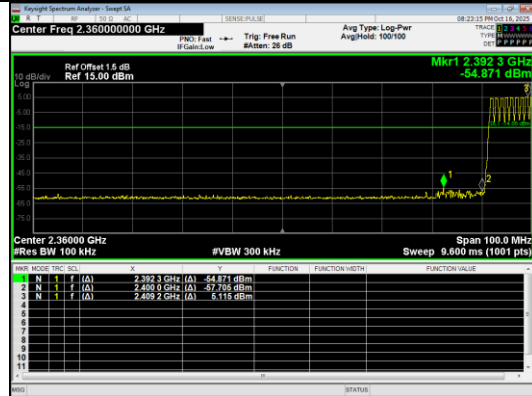
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 39



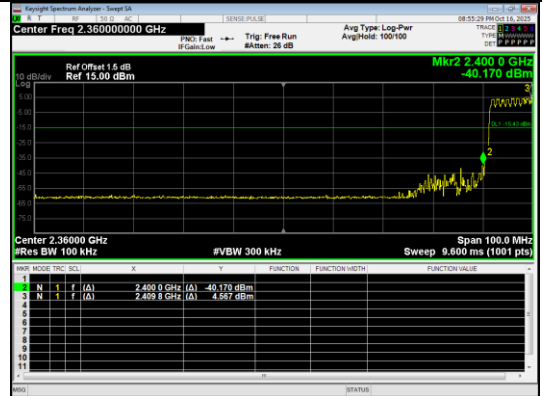
Out Of Band Emission
8DPSK_3-DH5_Channel 78



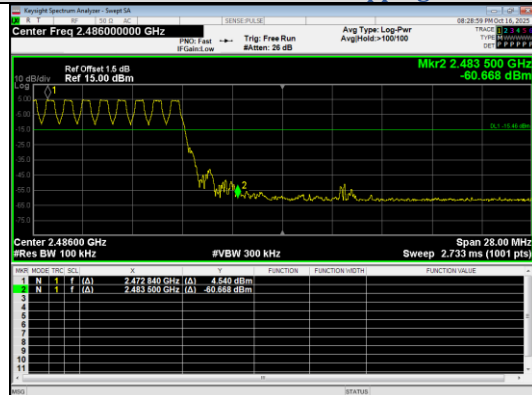
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 78



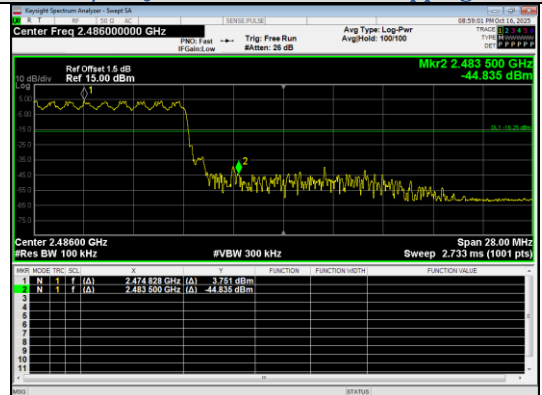
Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



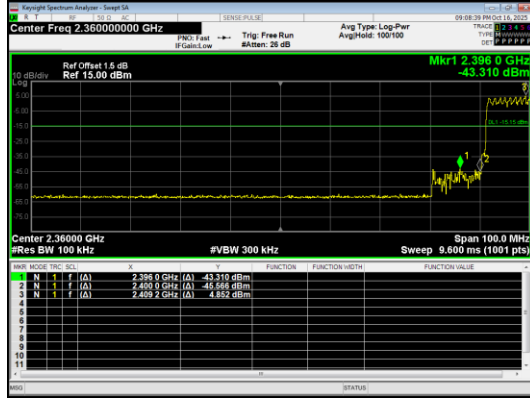
Out Of Band Emission(Left)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



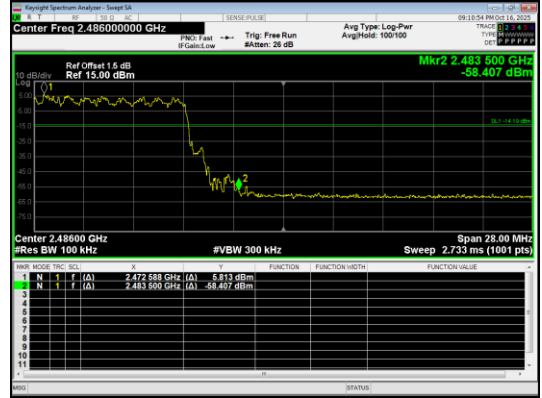
Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping



Out Of Band Emission(Right)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



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

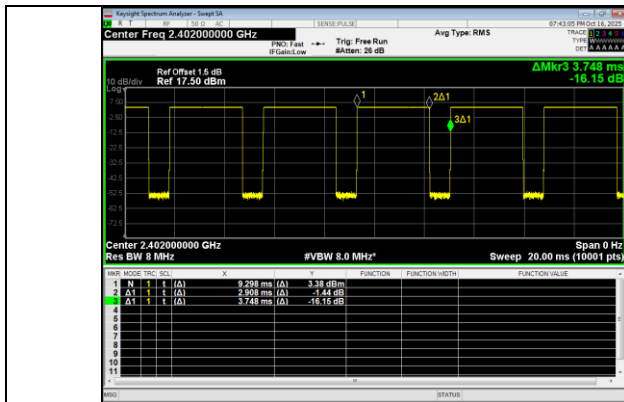


Out Of Band Emission(Right)
8DPSK_3-DH5_Channel Hopping

Duty Cycle Test Result

Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.908	3.748	77.59	0.7759	1.1019	0.3439
		39	2.908	3.748	77.59	0.7759	1.1019	0.3439
		78	2.910	3.748	77.64	0.7764	1.0991	0.3436
$\pi/4$ DQPSK	2-DH5	0	2.898	3.748	77.32	0.7732	1.1171	0.3451
		39	2.896	3.748	77.27	0.7727	1.1199	0.3453
		78	2.898	3.748	77.32	0.7732	1.1171	0.3451
8DPSK	3-DH5	0	2.898	3.750	77.28	0.7728	1.1193	0.3451
		39	2.896	3.748	77.27	0.7727	1.1199	0.3453
		78	2.896	3.748	77.27	0.7727	1.1199	0.3453

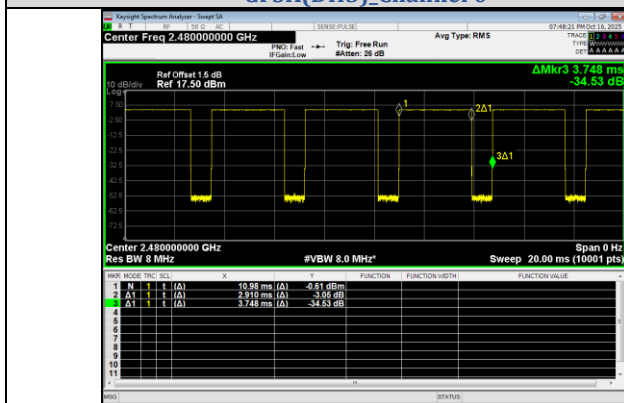
Test Graphs



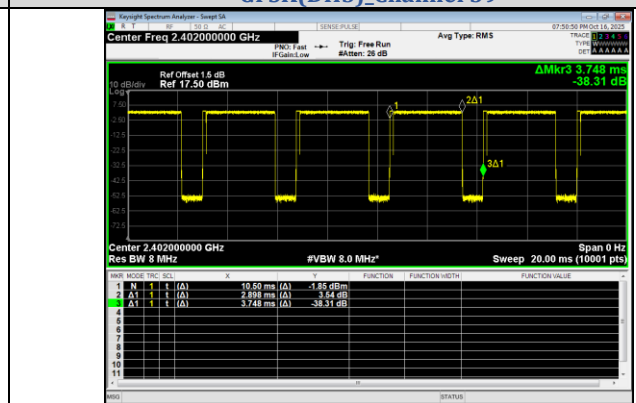
GFSK(DH5)_Channel 0

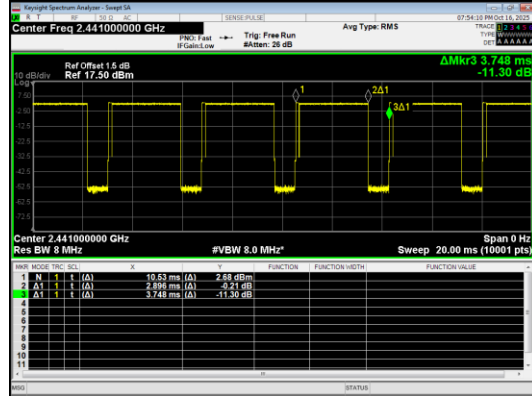


GFSK(DH5)_Channel 39

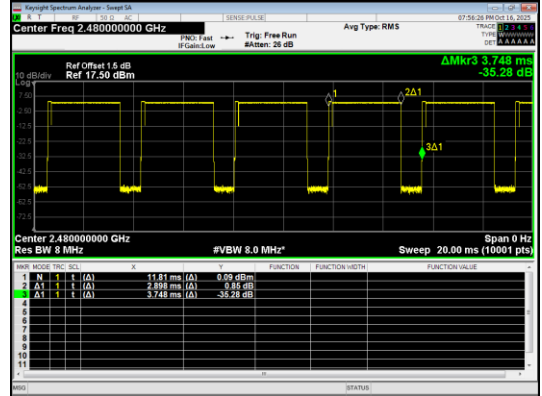


GFSK(DH5)_Channel 78

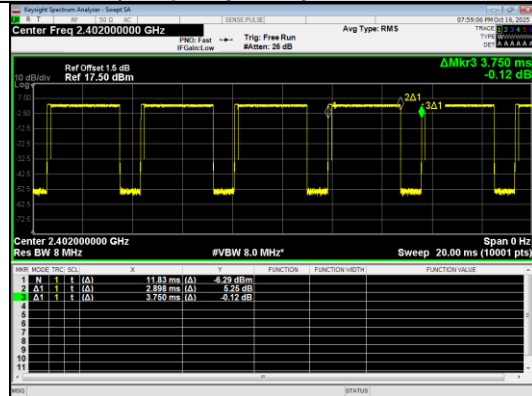

 $\pi/4$ DQPSK(2-DH5)_Channel 0



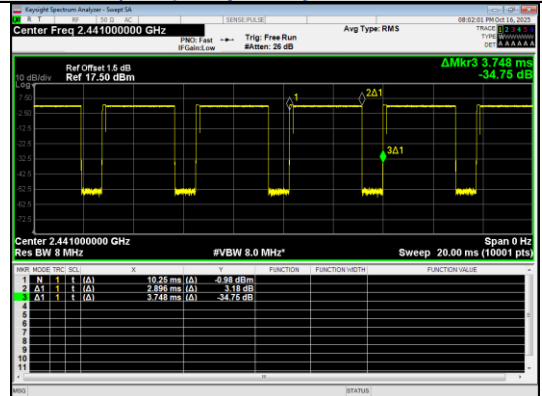
$\pi/4$ DQPSK(2-DH5)_Channel 39



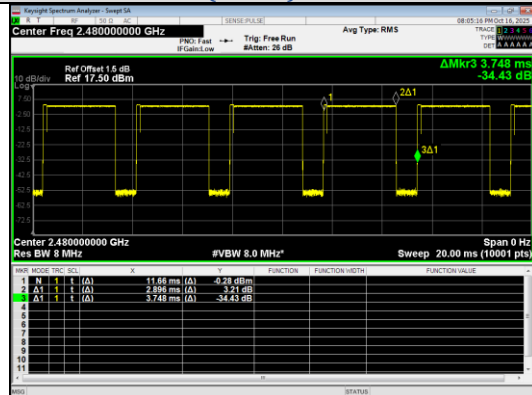
$\pi/4$ DQPSK(2-DH5)_Channel 78



8DPSK(3-DH5)_Channel 0



8DPSK(3-DH5)_Channel 39



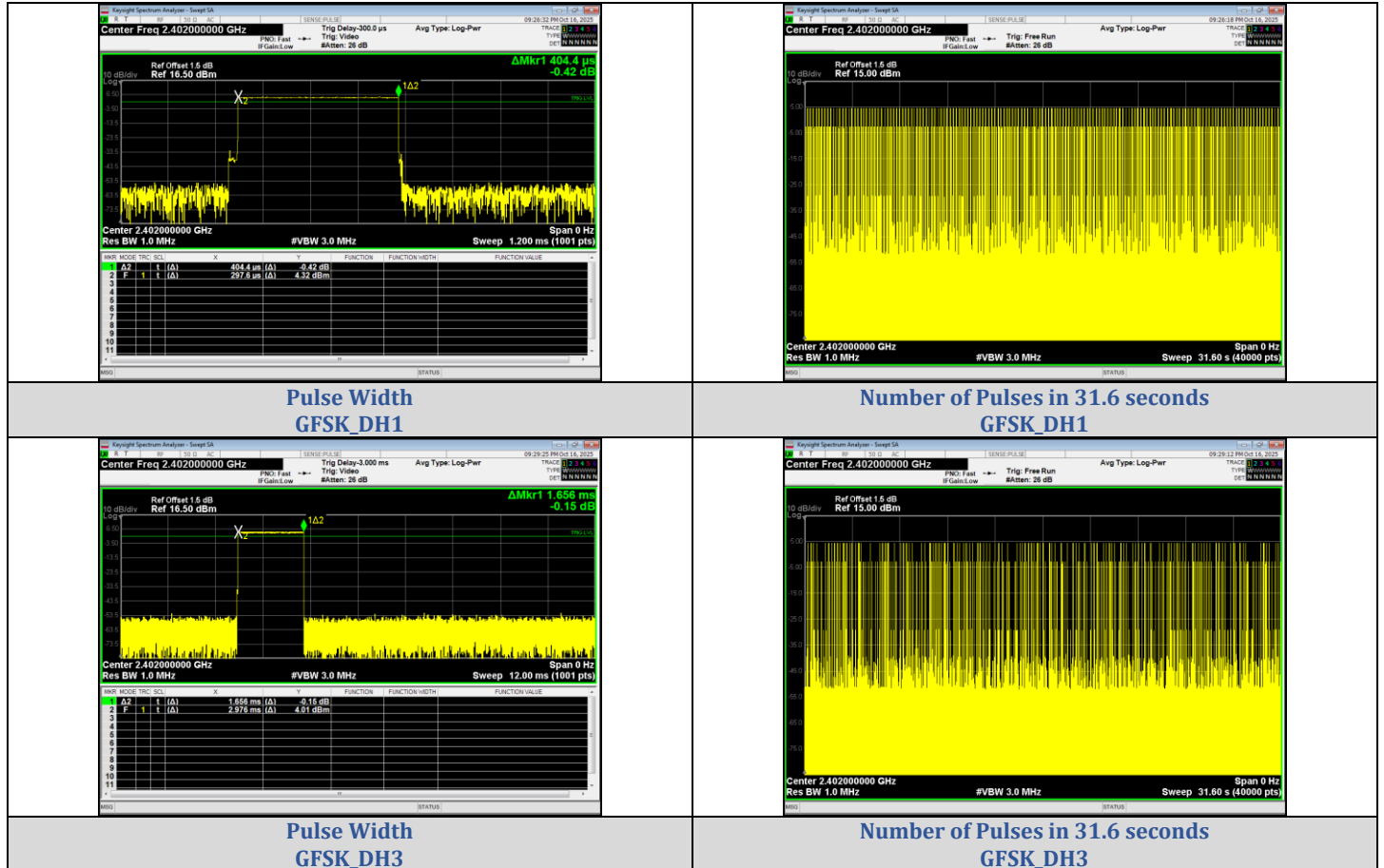
8DPSK(3-DH5)_Channel 78

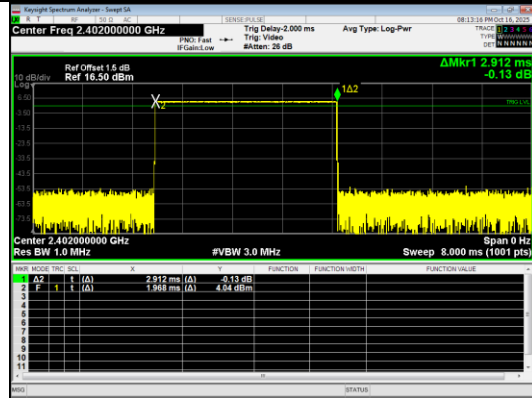
Dwell Time

Test Result

Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH1	Hopping	0.4044	317	128.19	< 400	PASS
	DH3		1.656	164	271.58		PASS
	DH5		2.912	107	311.58		PASS
$\pi/4$ DQPSK	2-DH1		0.3972	315	125.12		PASS
	2-DH3		1.644	158	259.75		PASS
	2-DH5		2.896	112	324.35		PASS
8DPSK	3-DH1		0.3960	317	125.53		PASS
	3-DH3		1.656	155	256.68		PASS
	3-DH5		2.896	100	289.6		PASS

Test Graphs

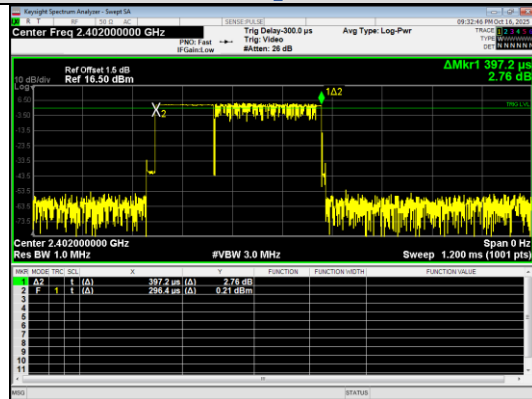




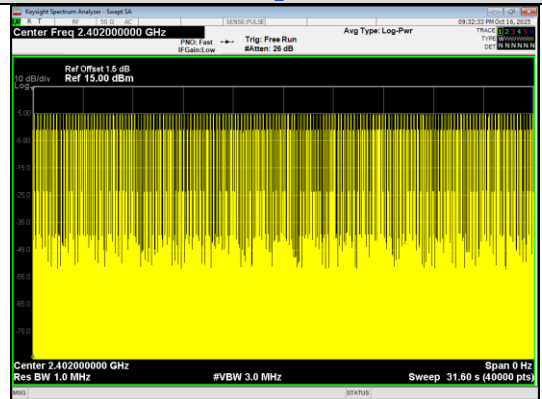
Pulse Width
GFSK_DH5



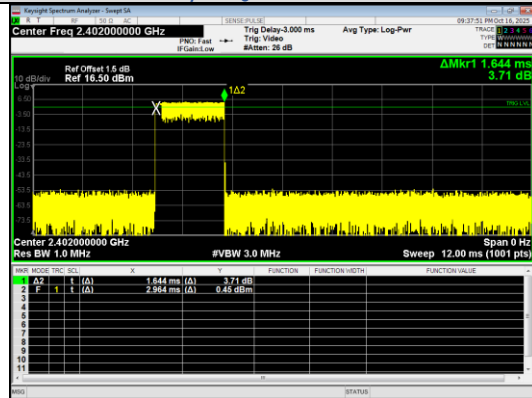
Number of Pulses in 31.6 seconds
GFSK_DH5



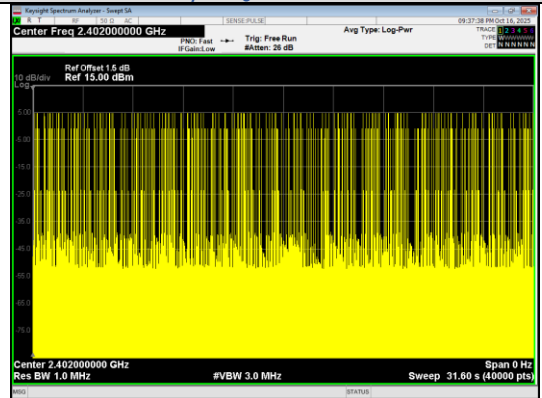
Pulse Width
 $\pi/4$ DQPSK_2-DH1



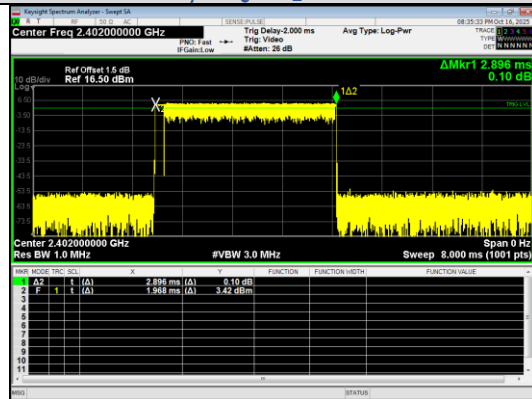
Number of Pulses in 31.6 seconds
 $\pi/4$ DQPSK_2-DH1



Pulse Width
 $\pi/4$ DQPSK_2-DH3



Number of Pulses in 31.6 seconds
 $\pi/4$ DQPSK_2-DH3

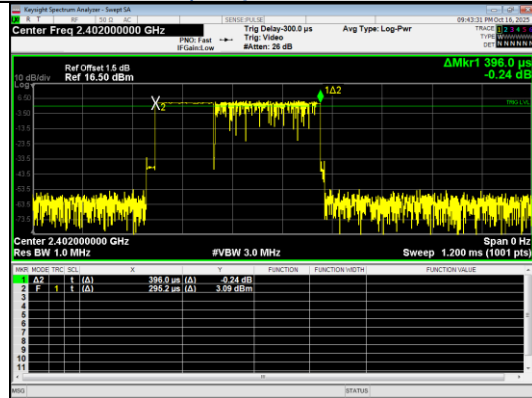


Pulse Width

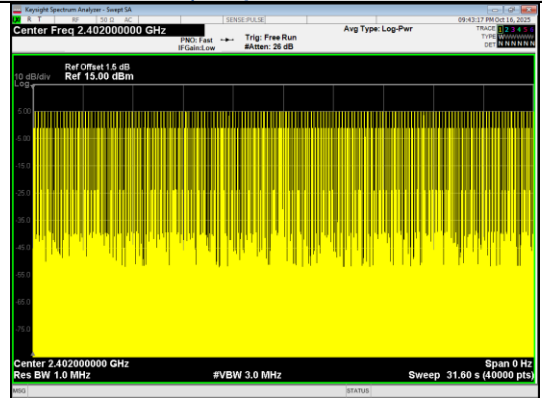


Number of Pulses in 31.6 seconds

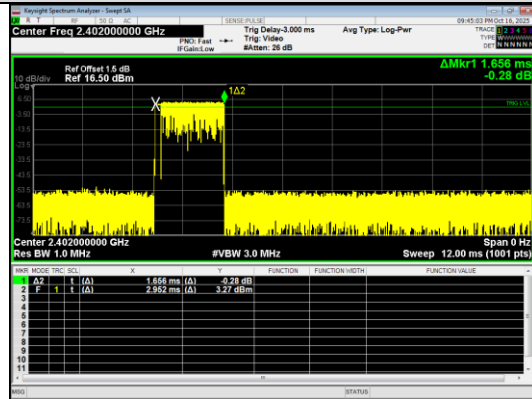
$\pi/4$ DQPSK_2-DH5



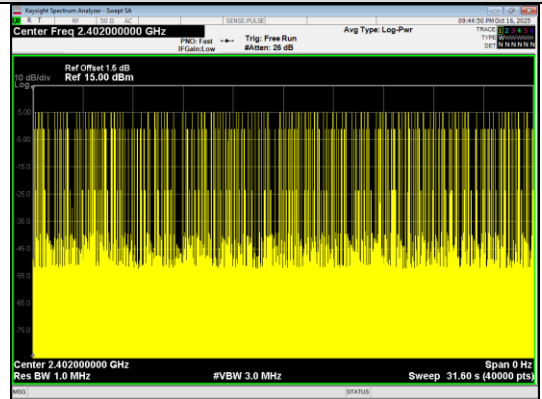
$\pi/4$ DQPSK_2-DH5



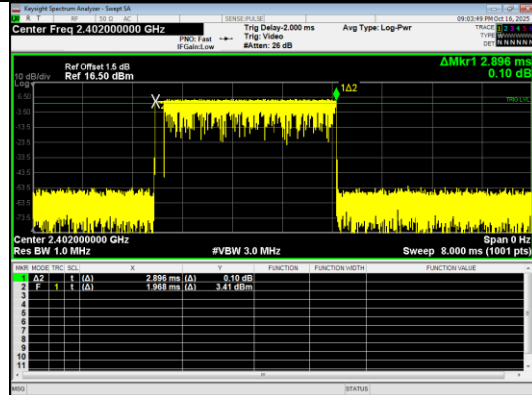
Pulse Width 8DPSK_3-DH1



Number of Pulses in 31.6 seconds 8DPSK_3-DH1



Pulse Width 8DPSK_3-DH3



Number of Pulses in 31.6 seconds 8DPSK_3-DH3



Pulse Width 8DPSK_3-DH5

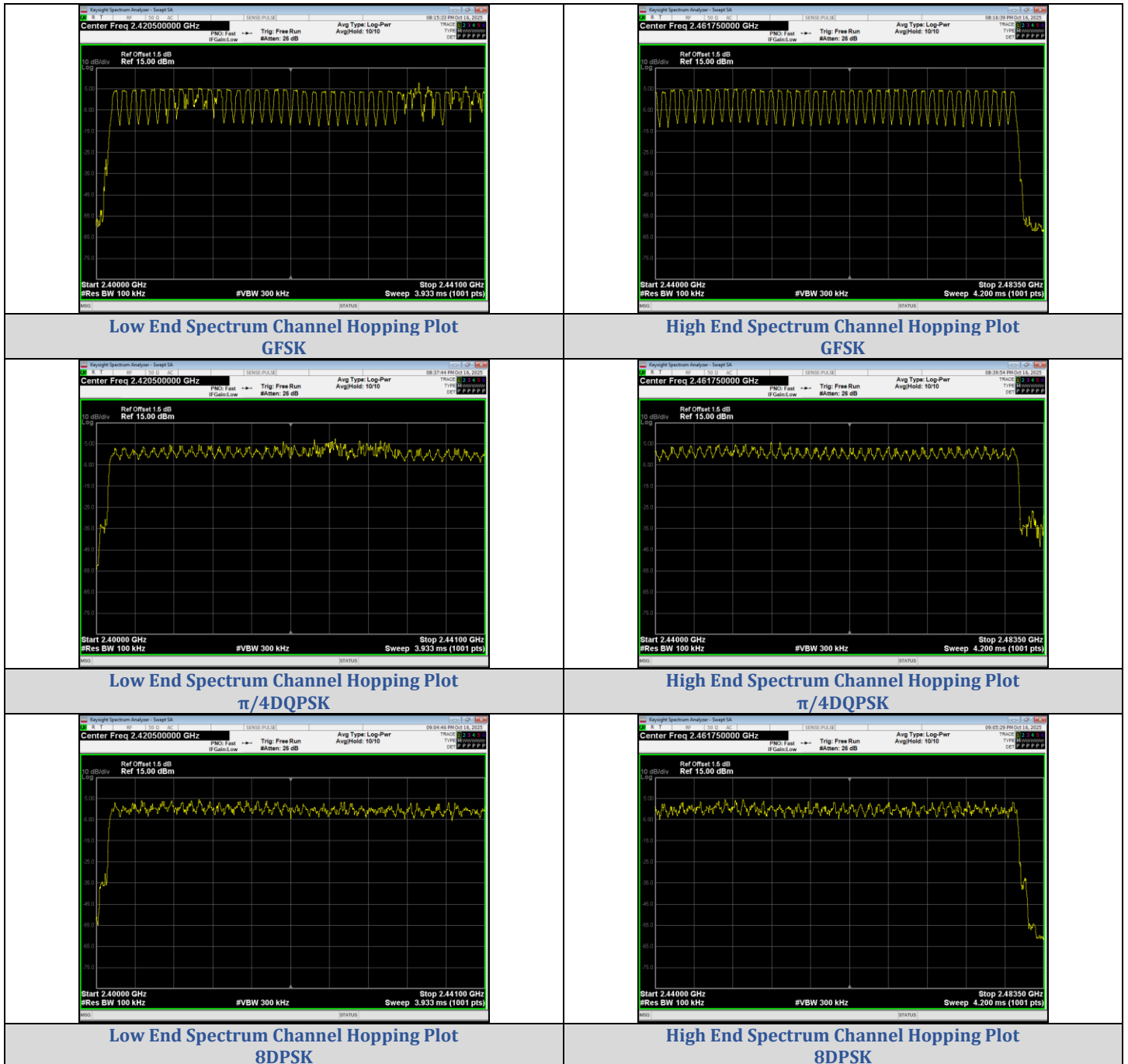
Number of Pulses in 31.6 seconds 8DPSK_3-DH5

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



***** End of Report *****