

Appendix RF test data for BT

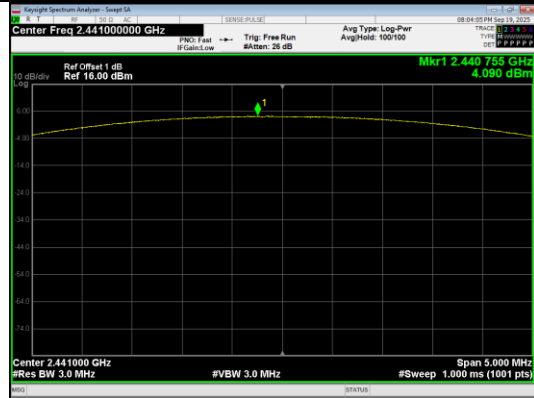
Conducted Output Power

Test Result

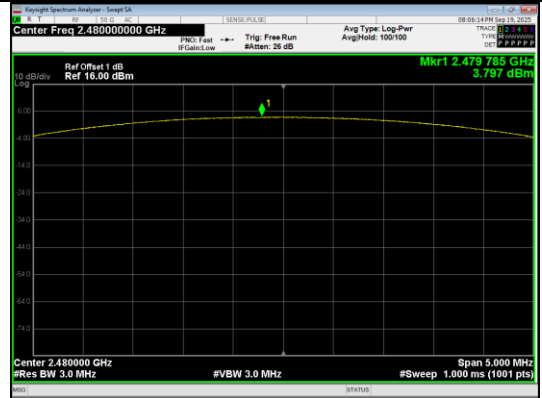
Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Max. Avg. Power (dBm)	Limit (dBm)	Result
GFSK	DH5	0	3.49	2.23	3.35	≤20.97	PASS
		39	3.27	2.12	3.16		PASS
		78	2.85	1.93	2.63		PASS
$\pi/4$ DQPSK	2-DH5	0	4.29	2.69	1.75		PASS
		39	4.09	2.56	1.48		PASS
		78	3.80	2.40	1.26		PASS
8DPSK	3-DH5	0	4.68	2.94	1.74		PASS
		39	4.51	2.82	1.67		PASS
		78	4.16	2.61	1.22		PASS

Test Graphs

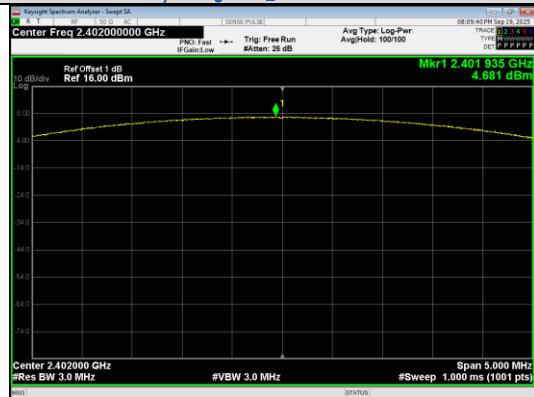




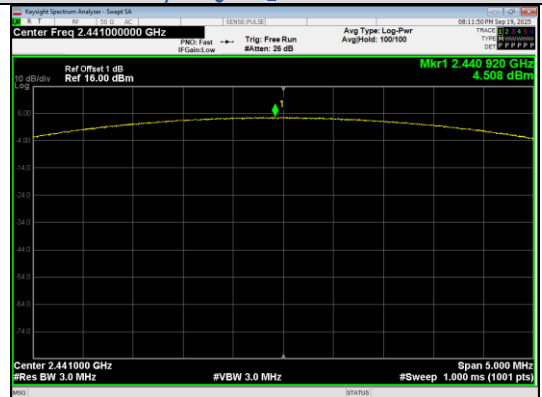
Peak Output Power
 $\pi/4$ DQPSK_Channel 39



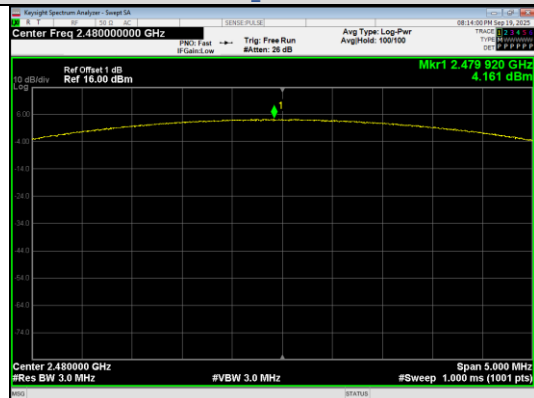
Peak Output Power
 $\pi/4$ DQPSK_Channel 78



Peak Output Power
8DPSK_Channel 0



Peak Output Power
8DPSK_Channel 39



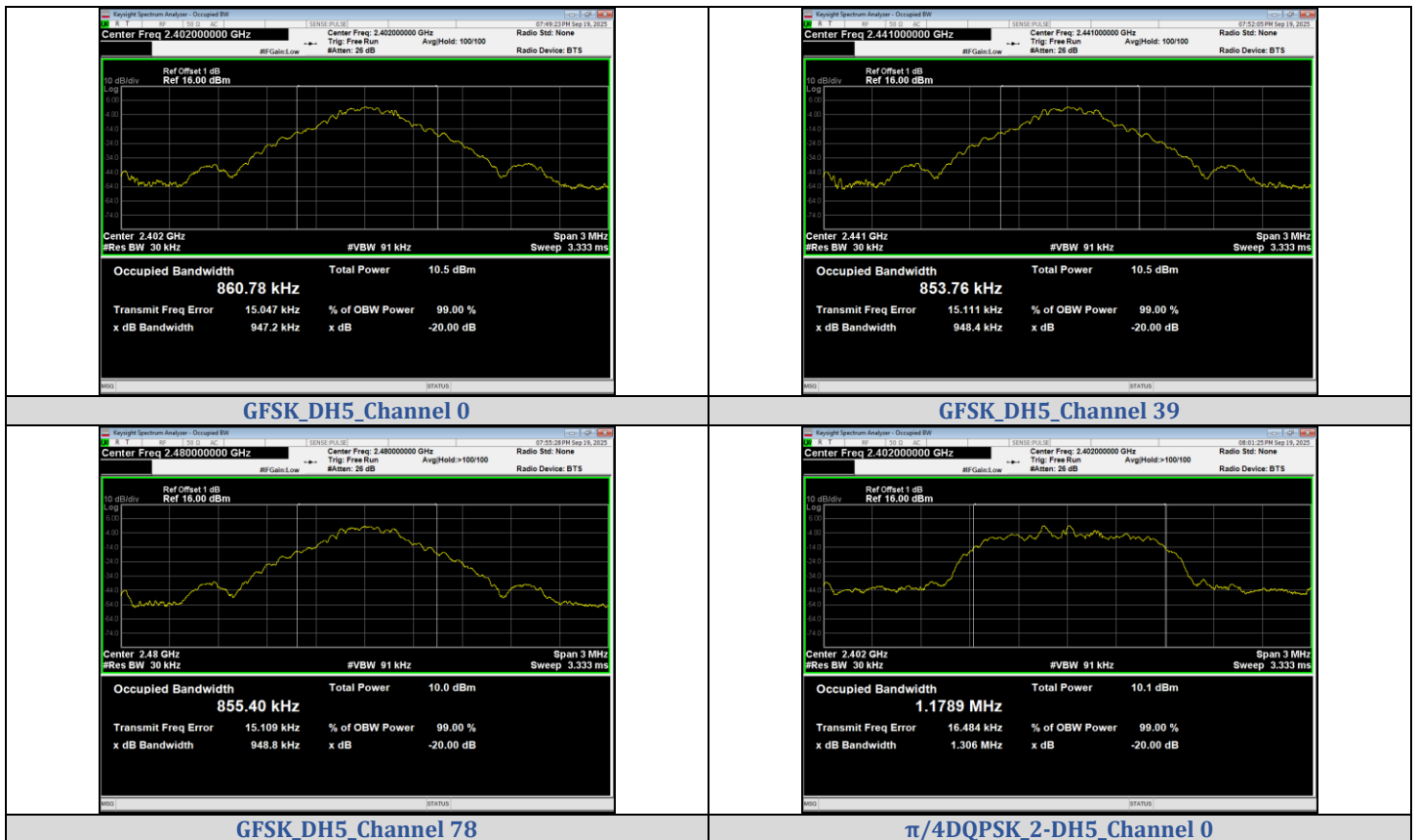
Peak Output Power
8DPSK_Channel 78

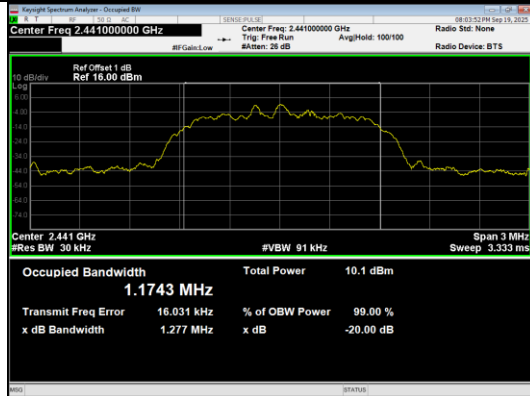
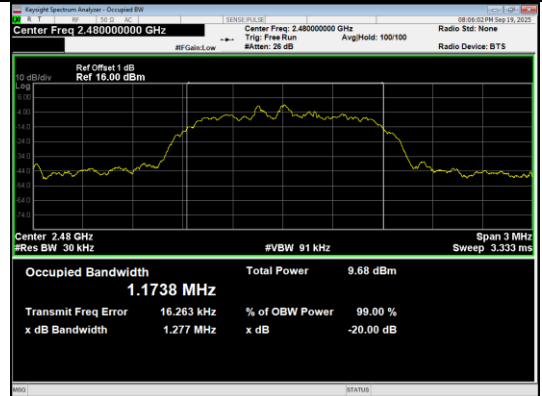
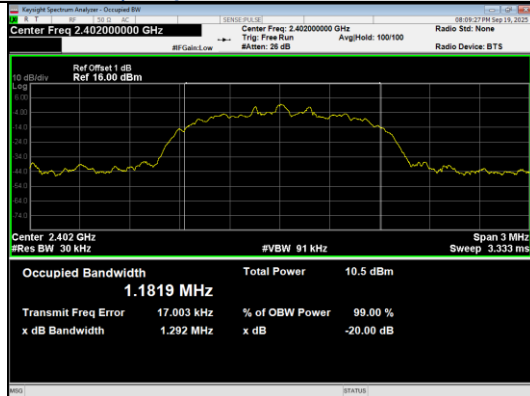
20dB Bandwidth

Test Result

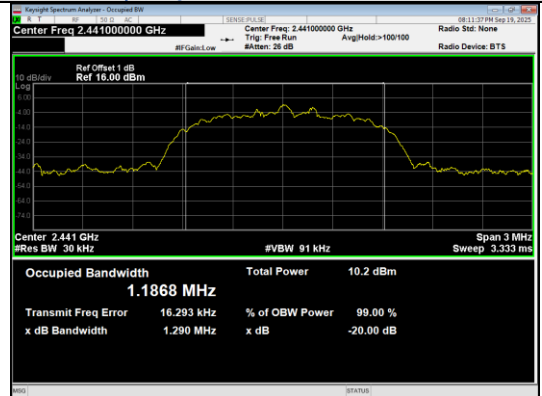
Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	0.9500
	39	2441 MHz	0.9500
	78	2480 MHz	0.9500
$\pi/4$ DQPSK	0	2402 MHz	1.310
	39	2441 MHz	1.280
	78	2480 MHz	1.280
8DPSK	0	2402 MHz	1.290
	39	2441 MHz	1.290
	78	2480 MHz	1.290

Test Graphs

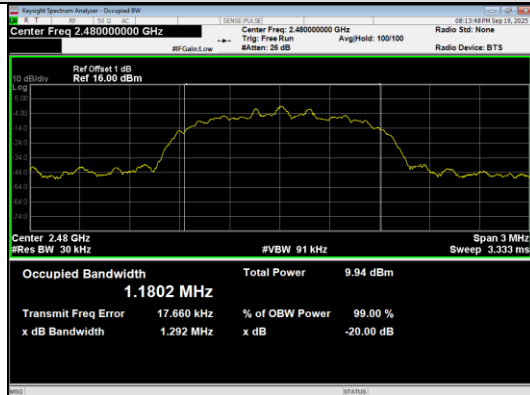



 $\pi/4$ DQPSK 2-DH5_Channel 39

 $\pi/4$ DQPSK 2-DH5_Channel 78


8DPSK 3-DH5_Channel 0



8DPSK 3-DH5_Channel 78



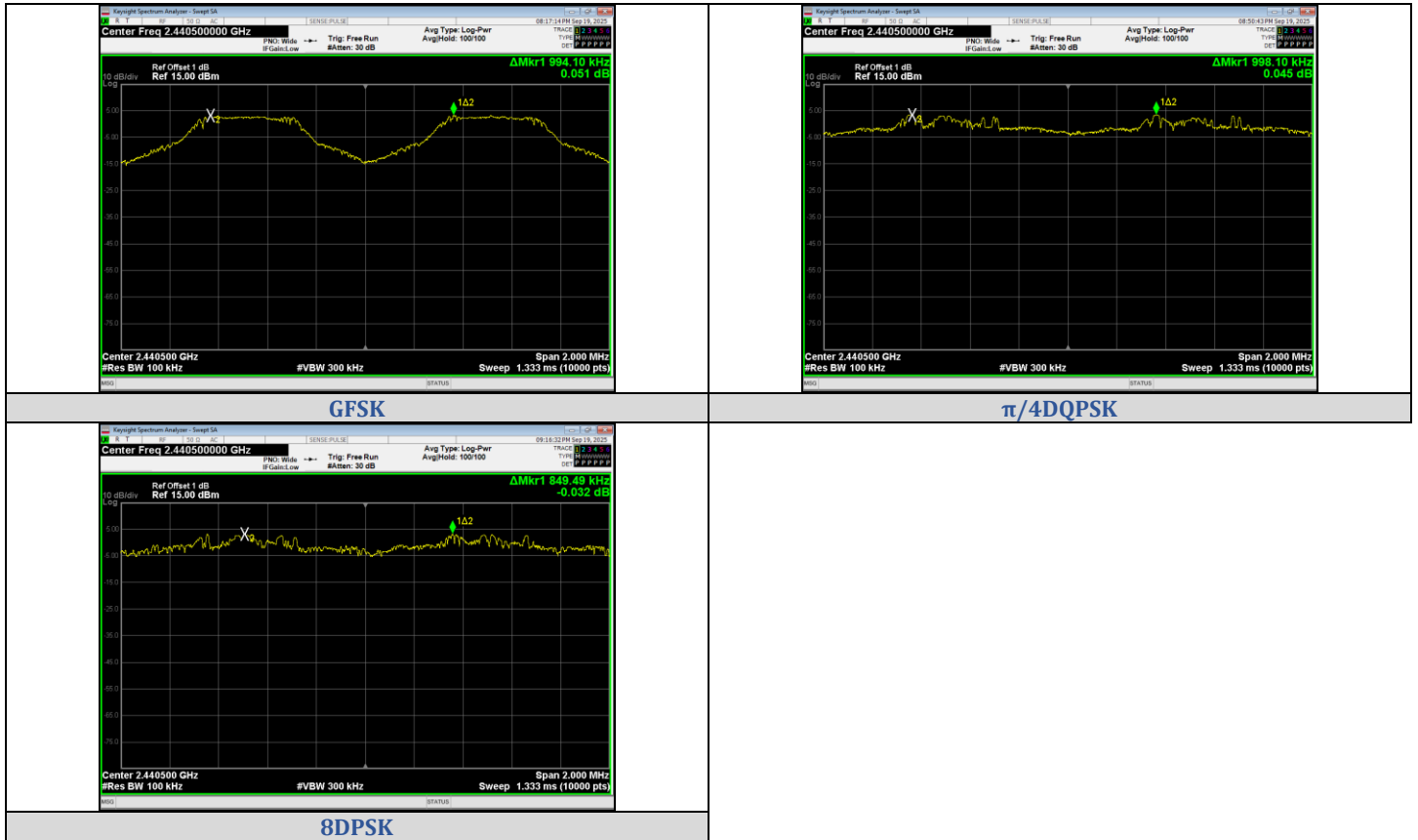
8DPSK 3-DH5_Channel 78

Carrier Frequencies Separation

Test Result

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Limit (MHz)	Result
GFSK	DH5	2439.8668	2440.8609	0.9941	0.633	PASS
$\pi/4$ DQPSK	2-DH5	2439.8618	2440.8599	0.9981	0.873	PASS
8DPSK	3-DH5	2440.0061	2440.8555	0.8495	0.860	PASS

Test Graphs



Conducted Out Of Band Emission

Test Result

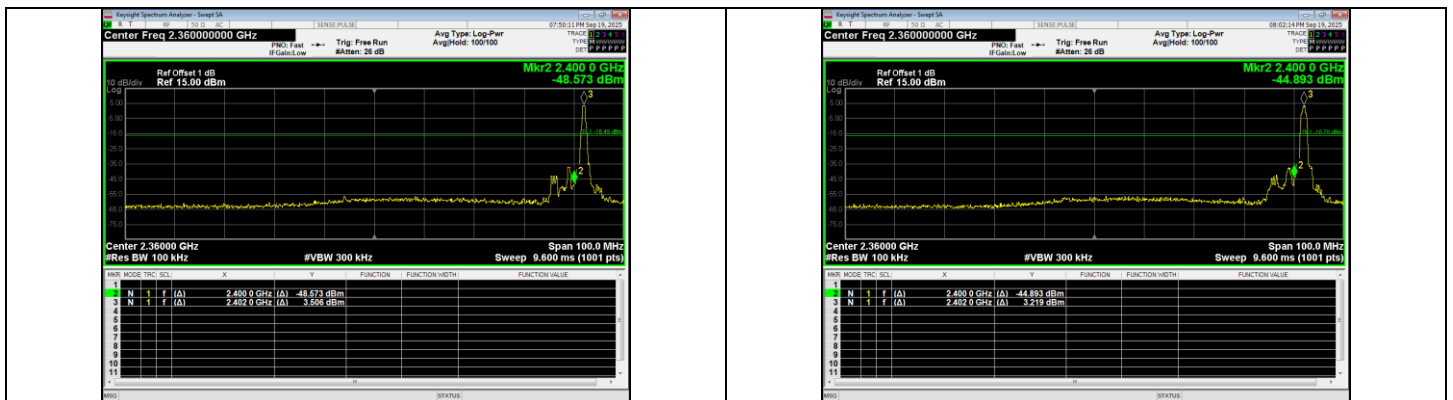
Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2399.00	-37.257	-16.49	-20.767	PASS
			2400.00	-48.570	-16.49	-32.080	PASS
			9602.20	-31.173	-16.49	-14.683	PASS
		39	9758.31	-31.444	-16.72	-14.724	PASS
		78	2483.50	-46.000	-17.15	-28.850	PASS
			9914.37	-32.342	-17.15	-15.192	PASS
$\pi/4$ DQPSK	2-DH5	0	2399.00	-37.624	-16.78	-20.844	PASS
			2400.00	-44.890	-16.78	-28.110	PASS
			9602.20	-31.013	-16.78	-14.233	PASS
		39	9758.31	-31.096	-16.72	-14.376	PASS
		78	2483.50	-49.350	-17.03	-32.320	PASS
			9914.37	-32.071	-17.03	-15.041	PASS
8DPSK	3-DH5	0	2398.90	-37.058	-16.69	-20.368	PASS
			2400.00	-45.530	-16.69	-28.840	PASS
			9602.20	-30.952	-16.69	-14.262	PASS
		39	9758.31	-31.198	-16.79	-14.408	PASS
		78	2483.50	-45.940	-17.2	-28.740	PASS
			9914.37	-32.007	-17.2	-14.807	PASS

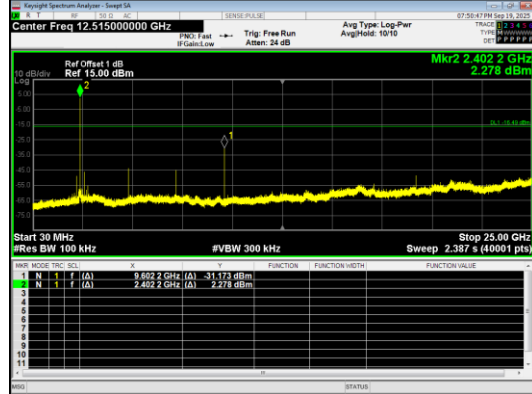
Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2400.00	-37.770	-16.64	-21.130	PASS
π/4DQPSK	2-DH5		2483.50	-45.480	-16.92	-28.560	PASS
			2398.90	-38.206	-16.41	-21.796	PASS
			2400.00	-38.680	-16.41	-22.270	PASS
8DPSK	3-DH5		2483.50	-45.870	-17.0	-28.870	PASS
			2400.00	-37.430	-16.44	-20.990	PASS
			2483.50	-48.130	-17.04	-31.090	PASS

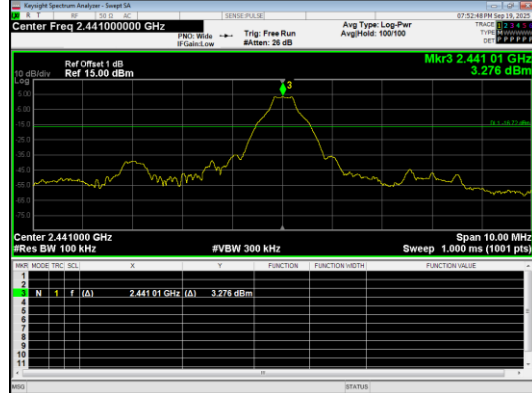
Test Graphs



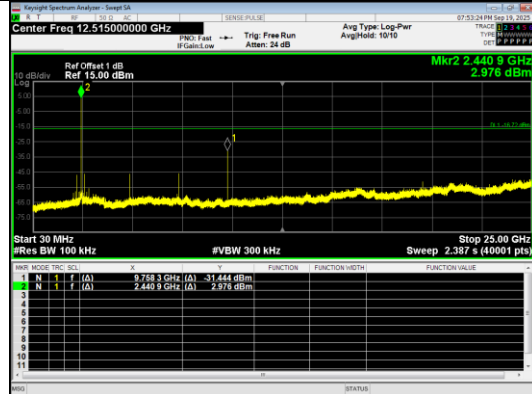
Out Of Band Emission GFSK_DH5_Channel 0



30.0 MHz - 25000.0 MHz GFSK_DH5_Channel 0

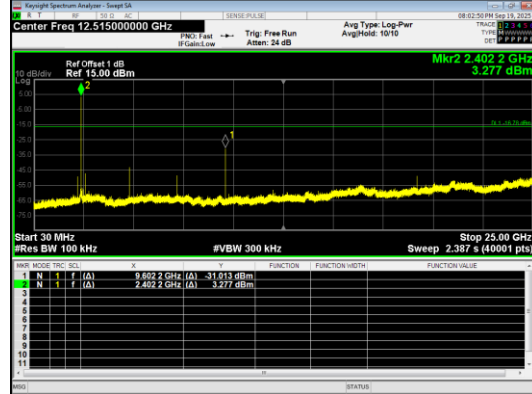


Out Of Band Emission GFSK_DH5_Channel 39

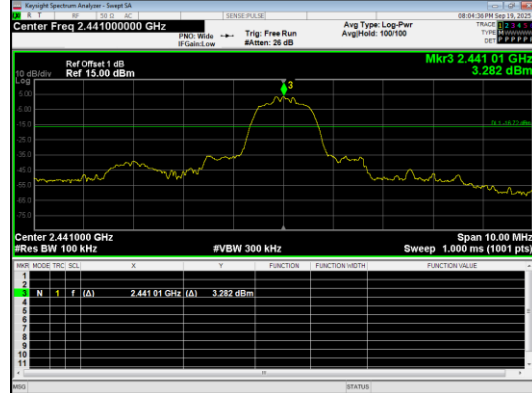


30.0 MHz - 25000.0 MHz GFSK_DH5_Channel 39

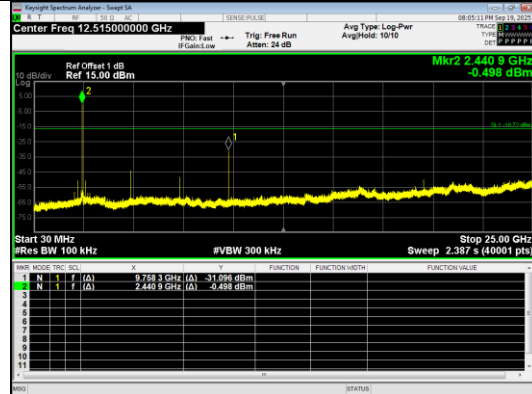
Out Of Band Emission $\pi/4$ DQPSK_2-DH5_Channel 0



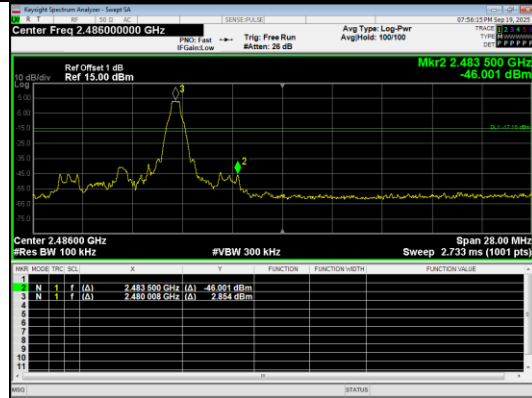
30.0 MHz - 25000.0 MHz $\pi/4$ DQPSK_2-DH5_Channel 0



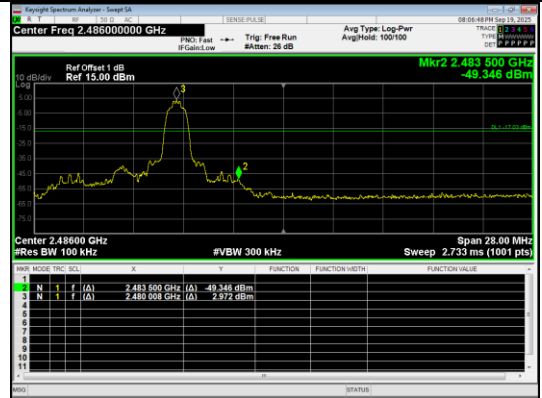
Out Of Band Emission $\pi/4$ DQPSK_2-DH5_Channel 39



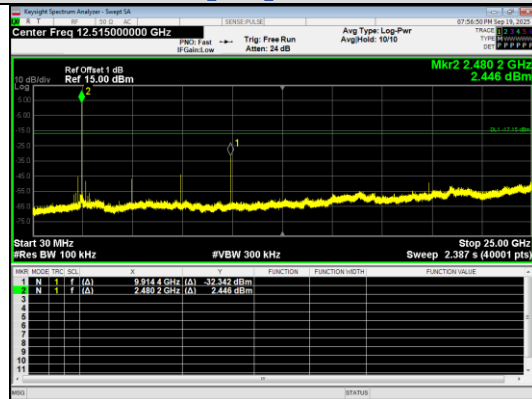
30.0 MHz - 25000.0 MHz $\pi/4$ DQPSK_2-DH5_Channel 39



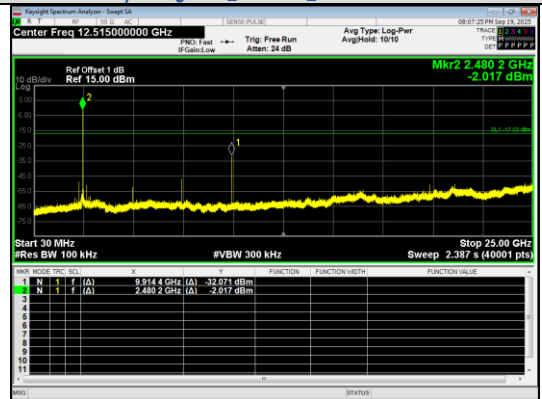
Out Of Band Emission
GFSK_DH5_Channel 78



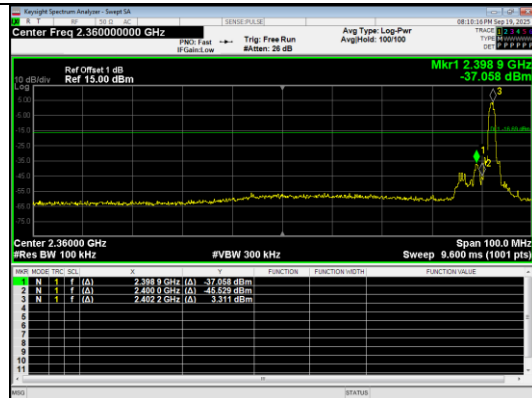
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 78



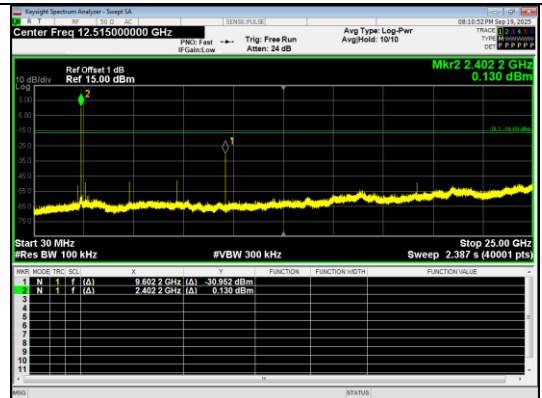
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78



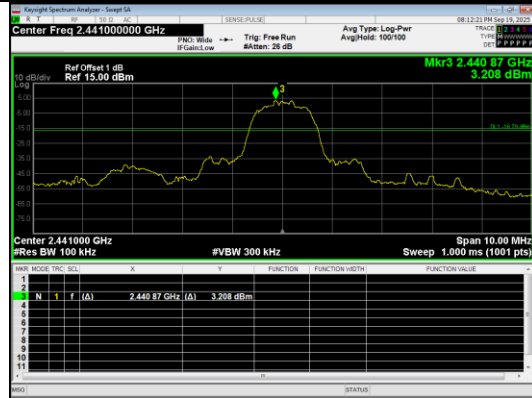
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 78



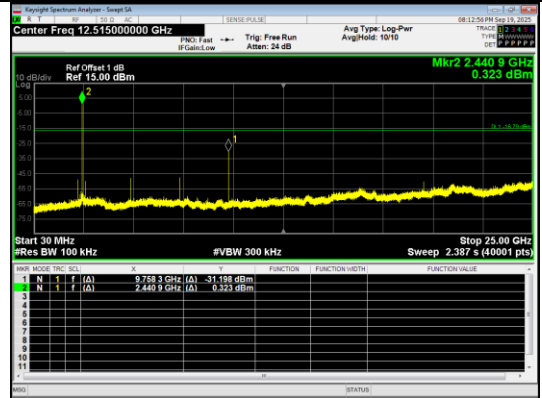
Out Of Band Emission
8DPSK_3-DH5_Channel 0



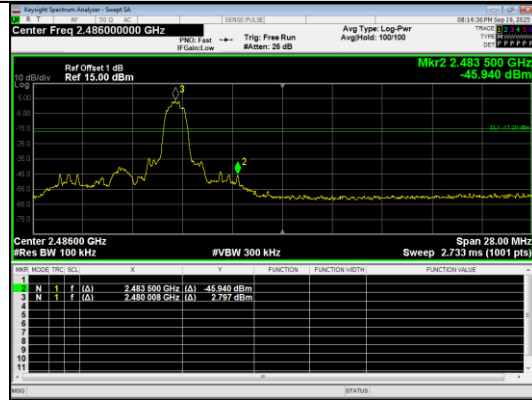
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 0



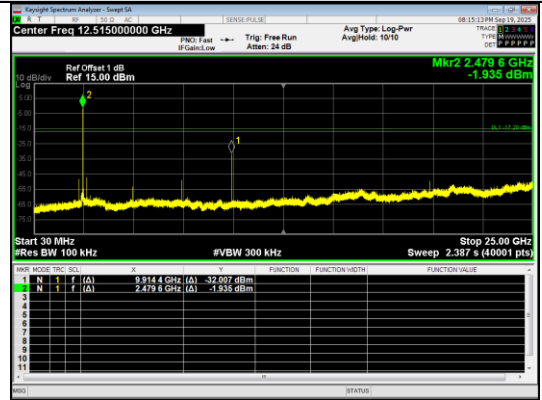
Out Of Band Emission
8DPSK_3-DH5_Channel 39



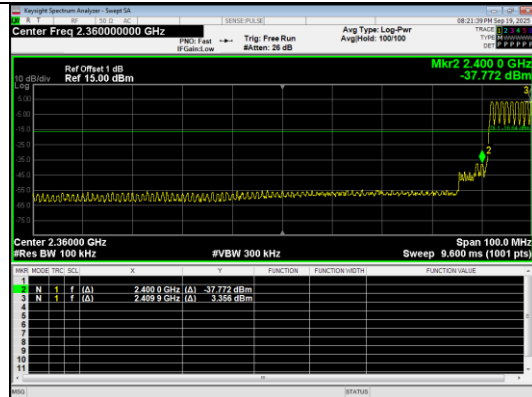
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 39



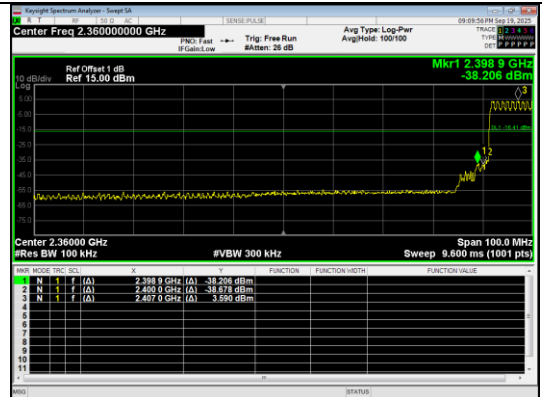
Out Of Band Emission
8DPSK_3-DH5_Channel 78



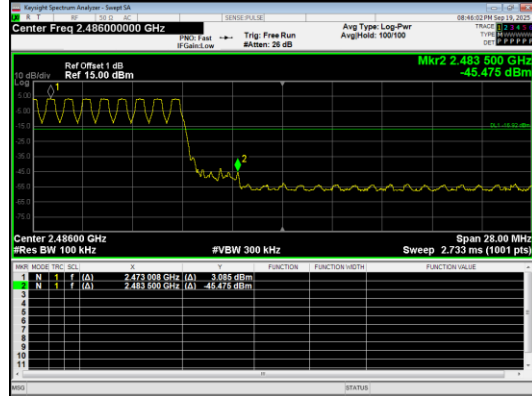
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 78



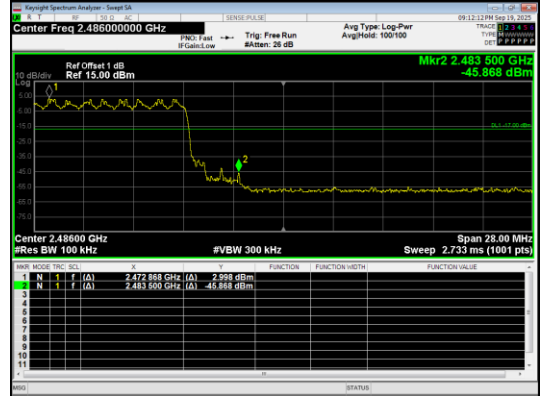
Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



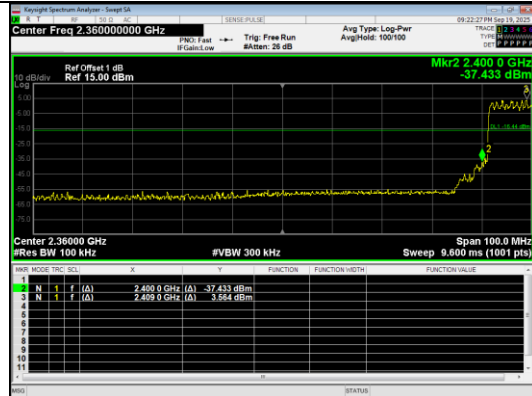
Out Of Band Emission(Left)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



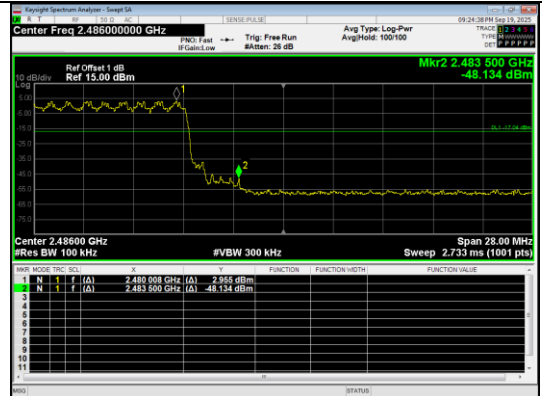
Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping



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



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



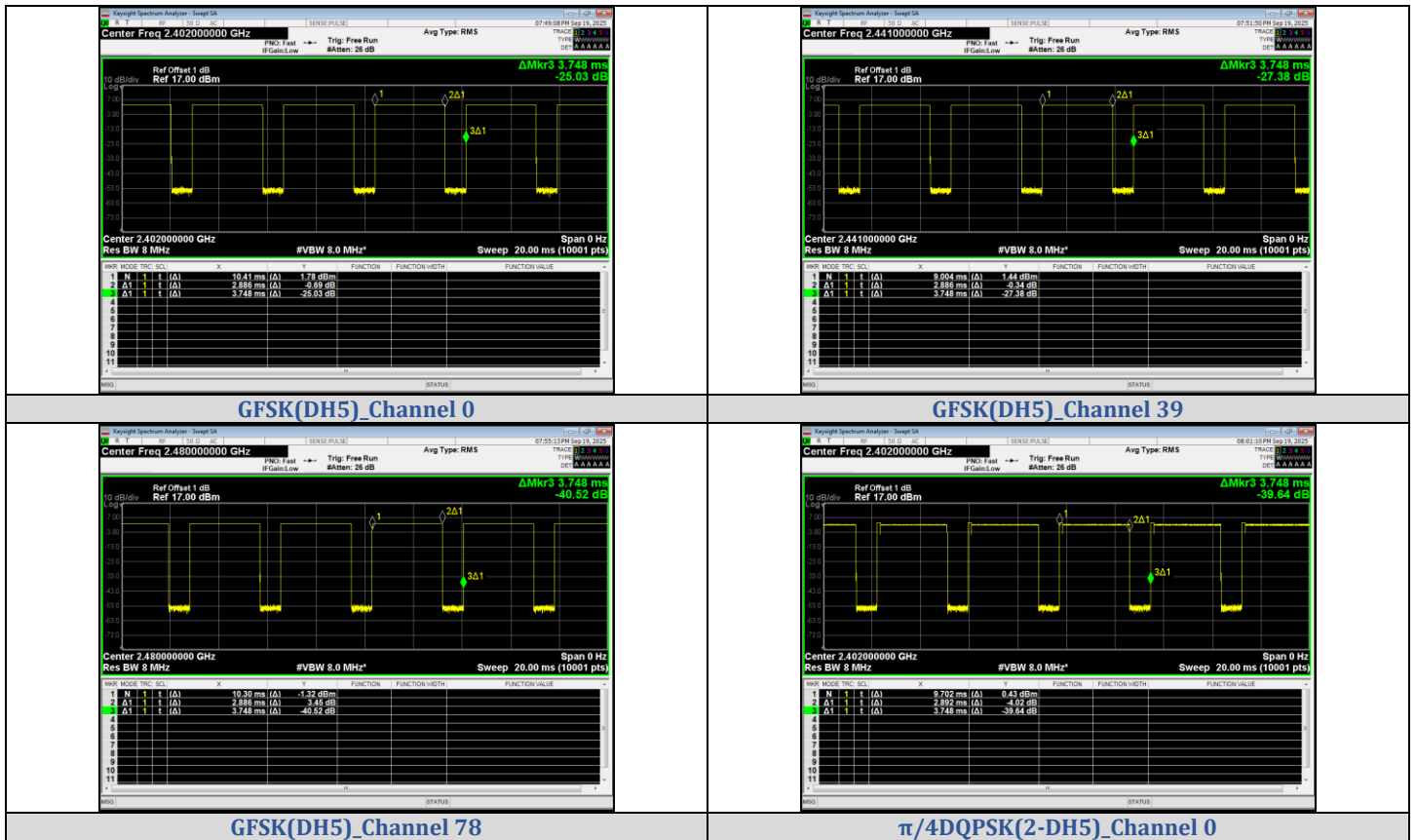
Out Of Band Emission(Right)
8DPSK_3-DH5_Channel Hopping

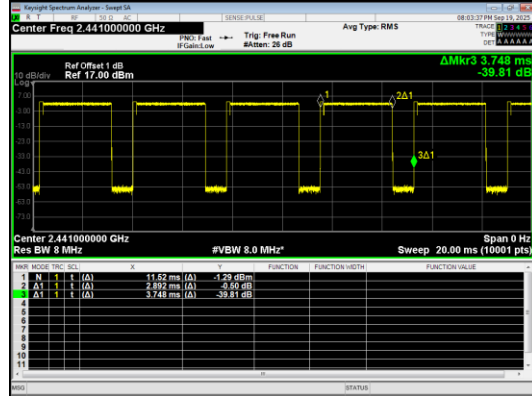
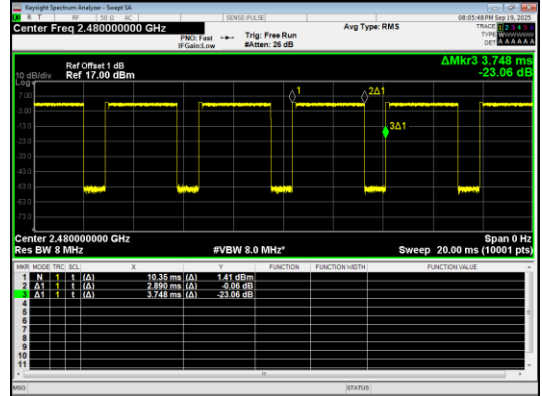
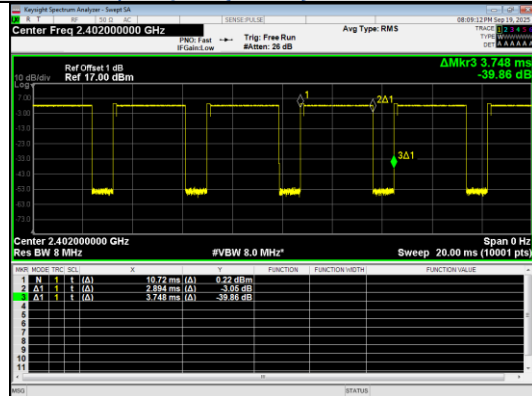
Duty Cycle

Test Result

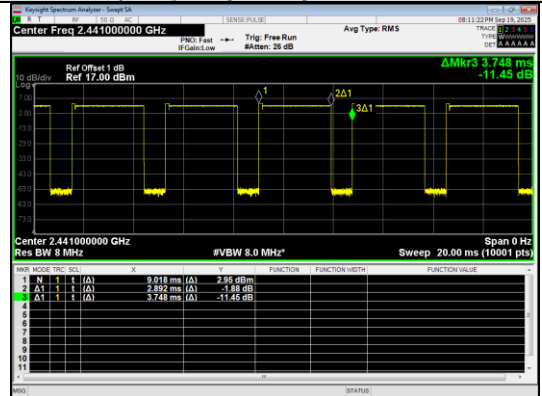
Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.886	3.748	77.00	0.7700	1.1351	0.3465
		39	2.886	3.748	77.00	0.7700	1.1351	0.3465
		78	2.886	3.748	77.00	0.7700	1.1351	0.3465
$\pi/4$ DQPSK	2-DH5	0	2.892	3.748	77.16	0.7716	1.1261	0.3458
		39	2.892	3.748	77.16	0.7716	1.1261	0.3458
		78	2.890	3.748	77.11	0.7711	1.1289	0.3460
8DPSK	3-DH5	0	2.894	3.748	77.21	0.7721	1.1233	0.3455
		39	2.892	3.748	77.16	0.7716	1.1261	0.3458
		78	2.894	3.748	77.21	0.7721	1.1233	0.3455

Test Graphs

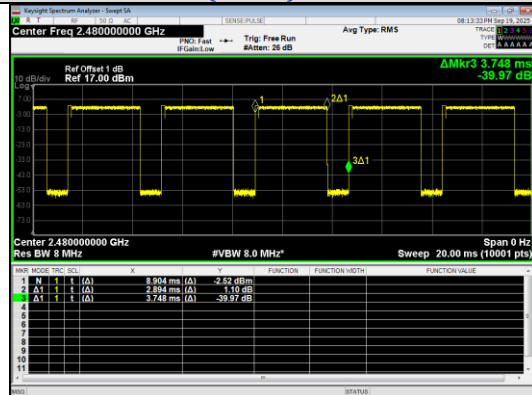



 $\pi/4$ DQPSK(2-DH5)_Channel 39

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


8DPSK(3-DH5)_Channel 0



8DPSK(3-DH5)_Channel 39



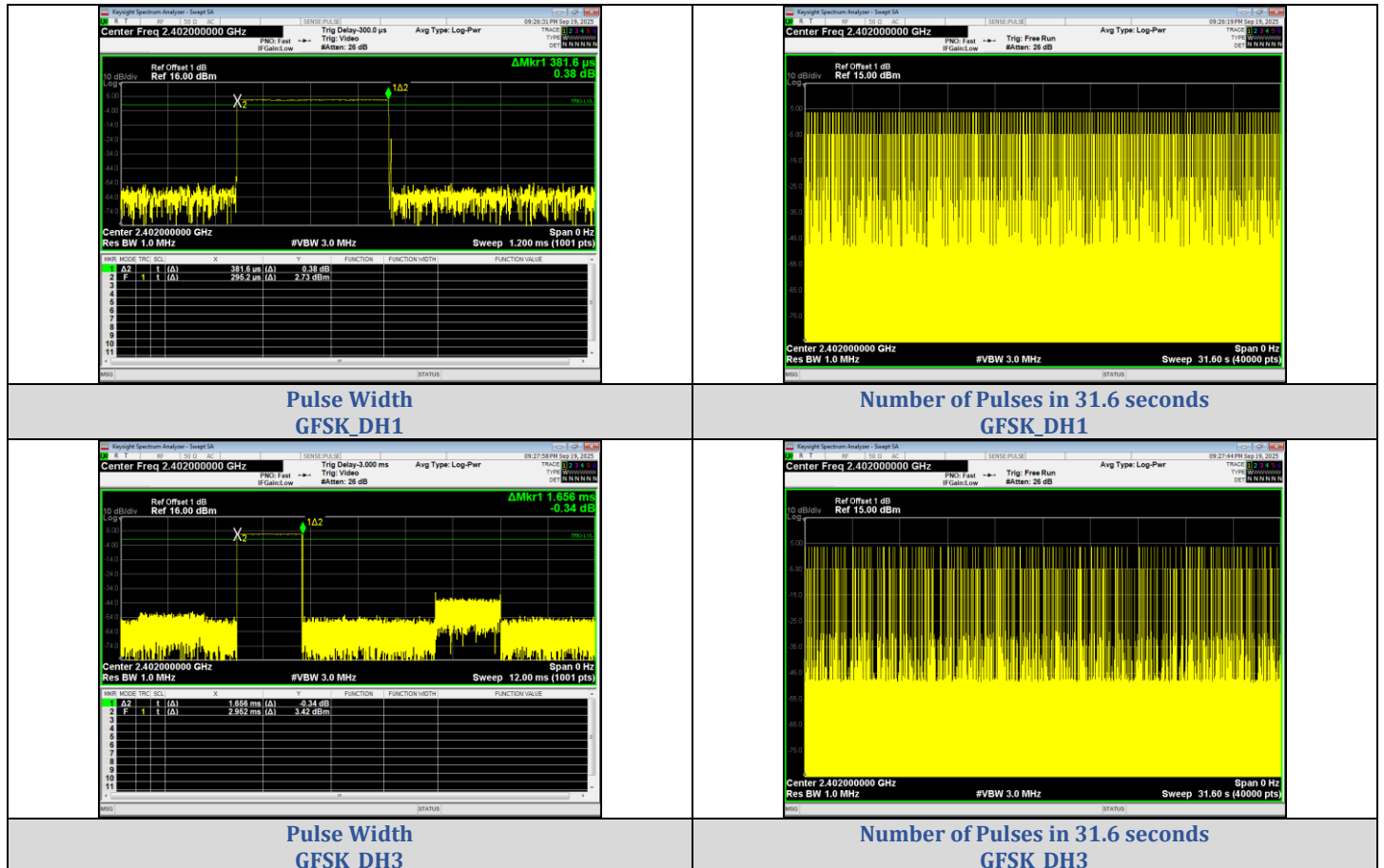
8DPSK(3-DH5)_Channel 78

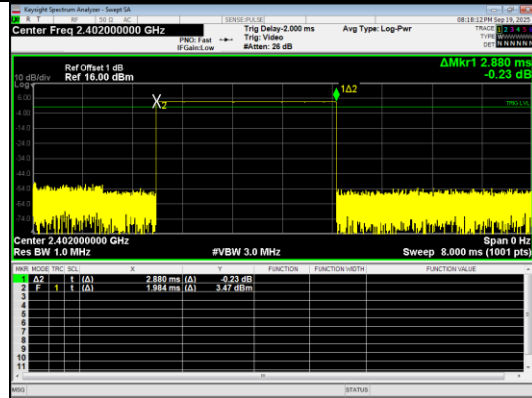
Dwell Time

Test Result

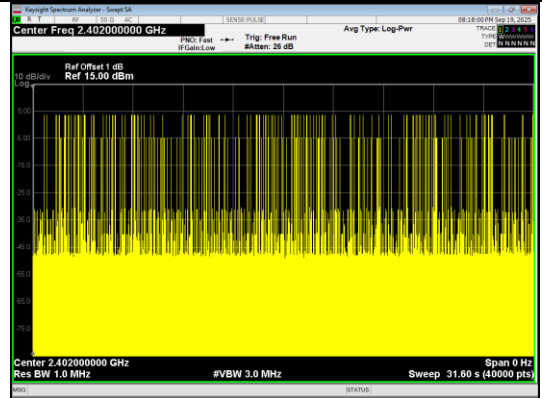
Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH1	Hopping	0.3816	318	121.35	< 400	PASS
	DH3		1.656	172	284.83		PASS
	DH5		2.880	128	368.64		PASS
$\pi/4$ DQPSK	2-DH1		0.3900	317	123.63		PASS
	2-DH3		1.656	160	264.96		PASS
	2-DH5		2.896	95	275.12		PASS
8DPSK	3-DH1		0.3900	318	124.02		PASS
	3-DH3		1.632	158	257.86		PASS
	3-DH5		2.896	106	306.98		PASS

Test Graphs

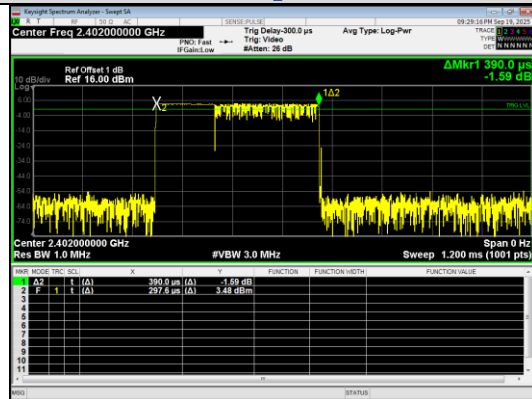




Pulse Width
GFSK_DH5



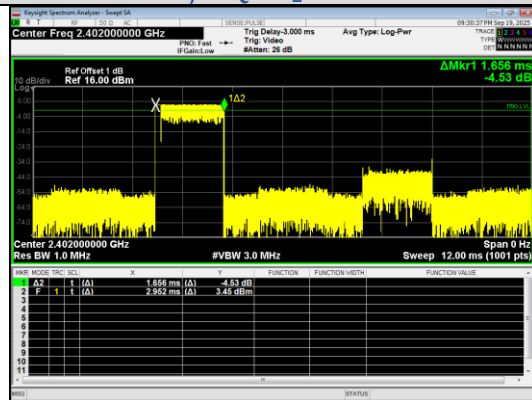
Number of Pulses in 31.6 seconds
GFSK_DH5



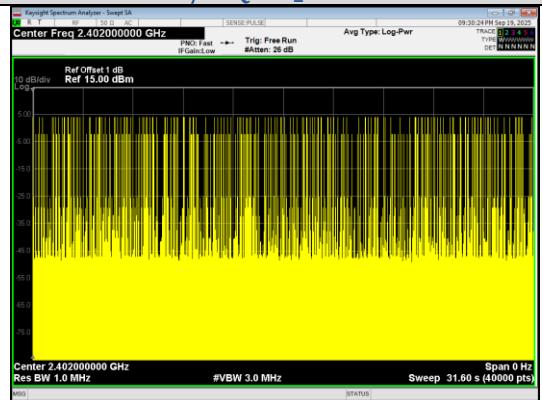
Pulse Width
 $\pi/4$ DQPSK_2-DH1



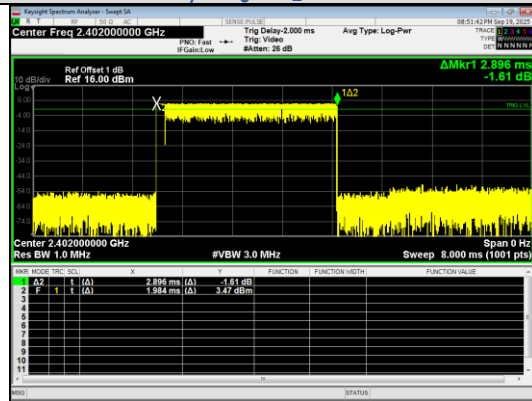
Number of Pulses in 31.6 seconds
 $\pi/4$ DQPSK_2-DH1



Pulse Width
 $\pi/4$ DQPSK_2-DH3



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

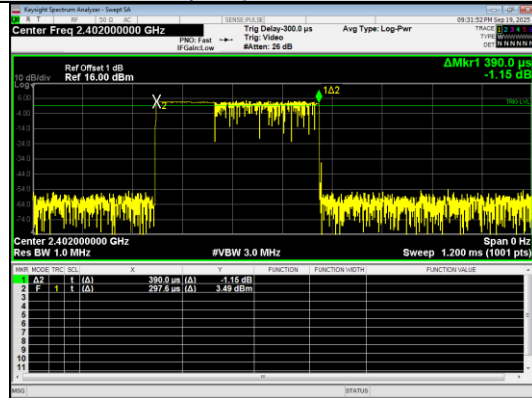


Pulse Width

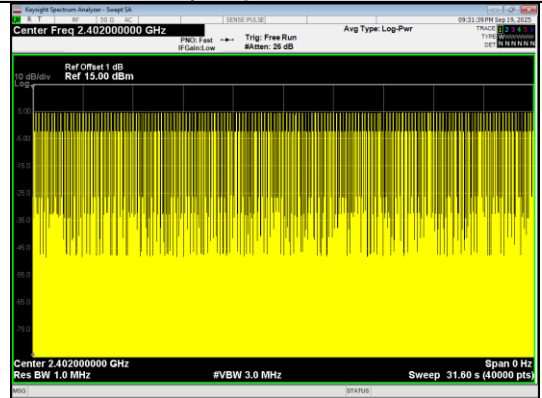


Number of Pulses in 31.6 seconds

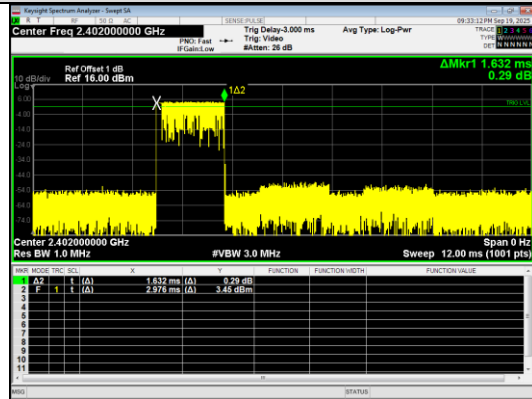
$\pi/4$ DQPSK_2-DH5



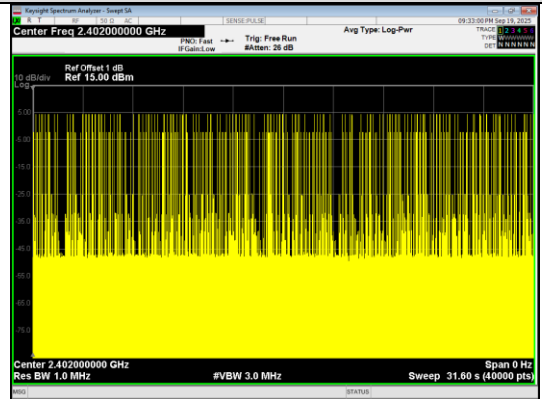
$\pi/4$ DQPSK_2-DH5



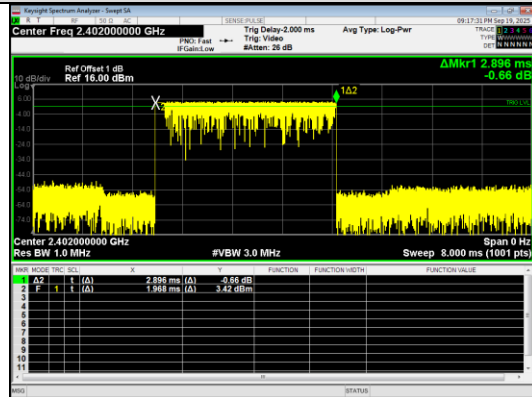
Pulse Width 8DPSK_3-DH1



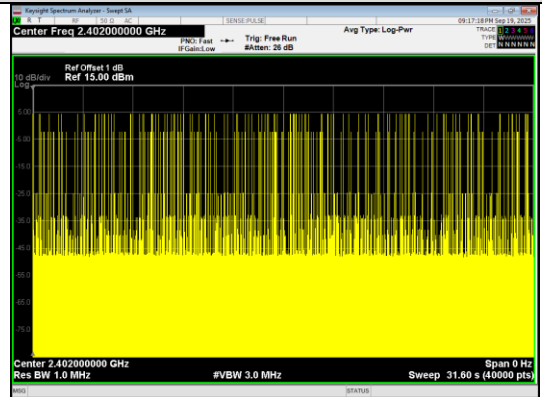
Number of Pulses in 31.6 seconds 8DPSK_3-DH1



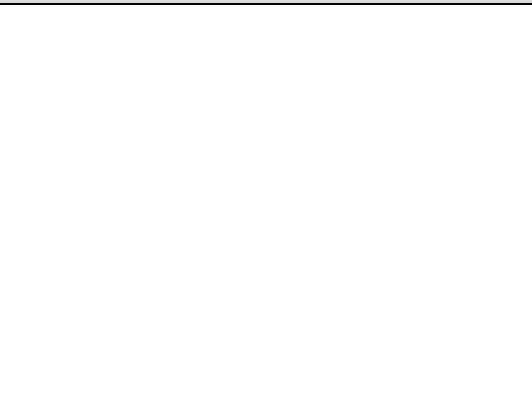
Pulse Width 8DPSK_3-DH3



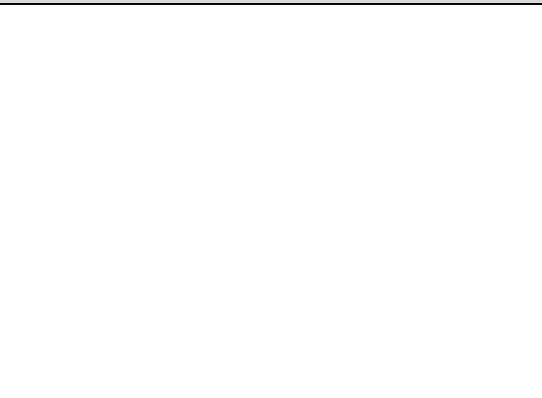
Number of Pulses in 31.6 seconds 8DPSK_3-DH3



Pulse Width 8DPSK_3-DH5



Number of Pulses in 31.6 seconds 8DPSK_3-DH5

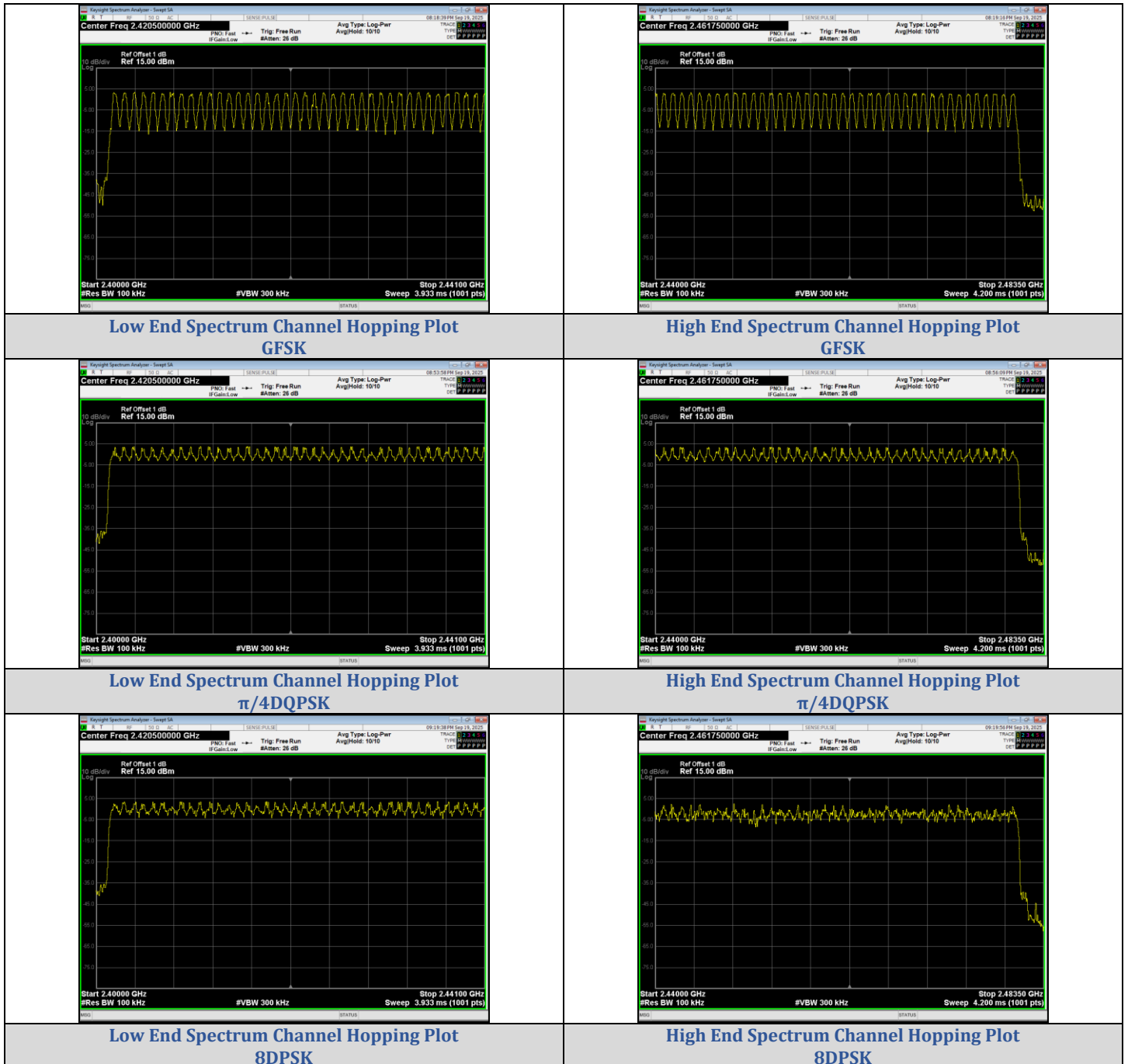


Number Of Hopping Channel

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 *****