

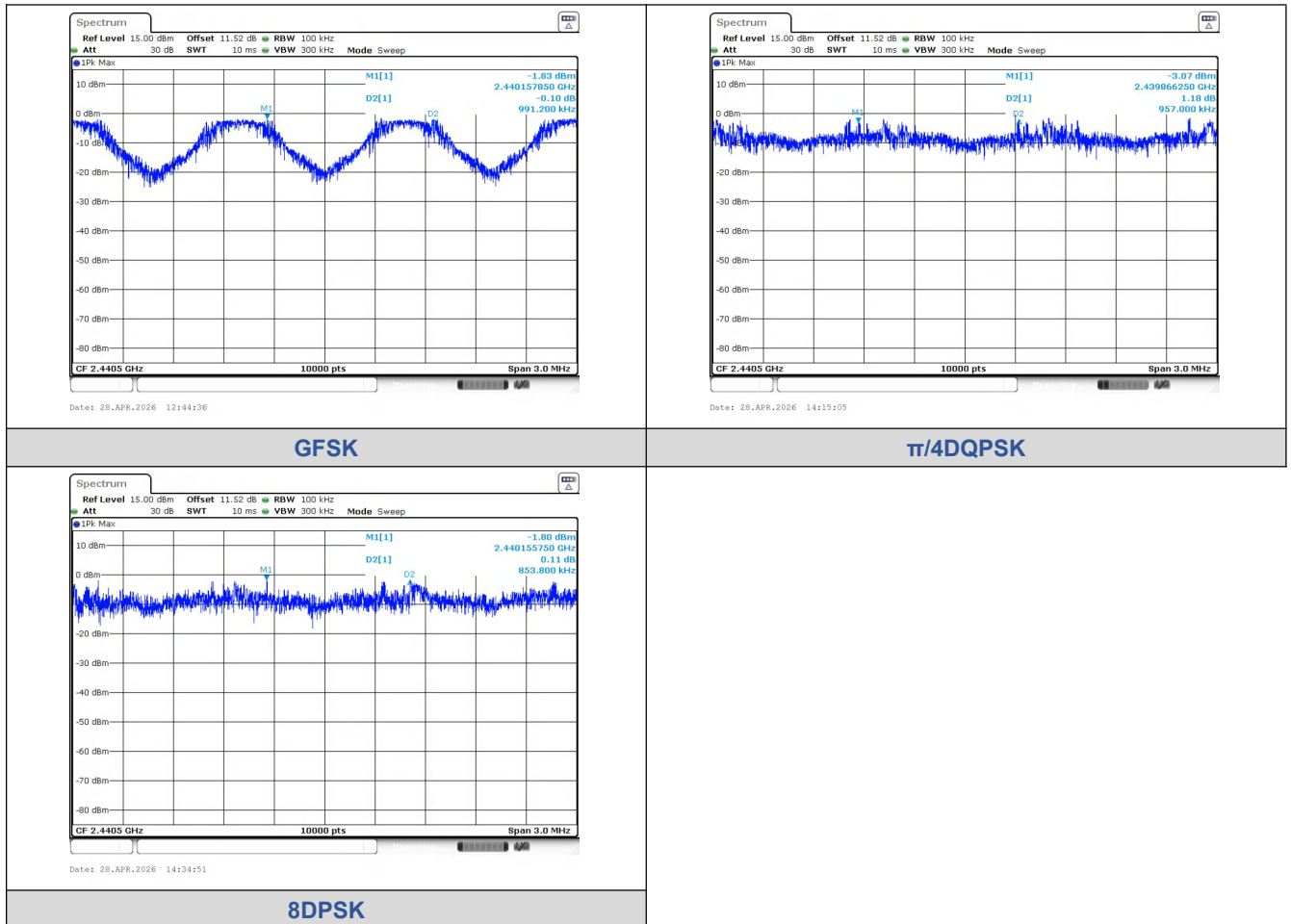
7.4. Carrier Frequencies Separation

Test Result

Left:

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Minimum Limit (MHz)	Result
GFSK	DH5	2440.1579	2441.149	0.9912	0.94	PASS
$\pi/4$ DQPSK	2-DH5	2439.8663	2440.8232	0.9570	0.827	PASS
8DPSK	3-DH5	2440.1557	2441.0096	0.8538	0.833	PASS

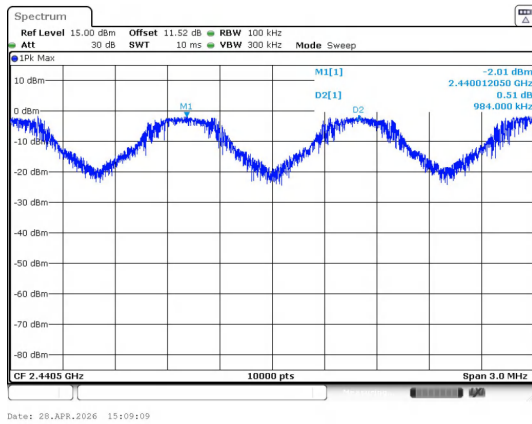
Test Graphs



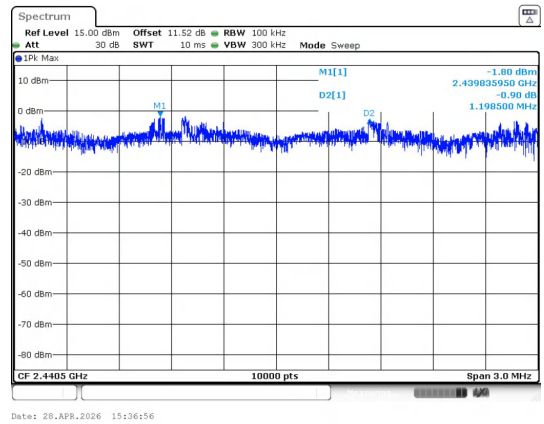
Right:

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Minimum Limit (MHz)	Result
GFSK	DH5	2440.012	2440.9961	0.9840	0.93	PASS
$\pi/4$ DQPSK	2-DH5	2439.836	2441.0345	1.1985	0.88	PASS
8DPSK	3-DH5	2439.8068	2440.9486	1.1418	0.847	PASS

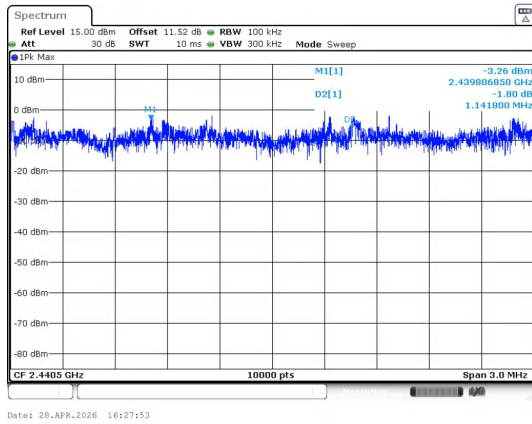
Test Graphs



GFSK



$\pi/4$ DQPSK



8DPSK

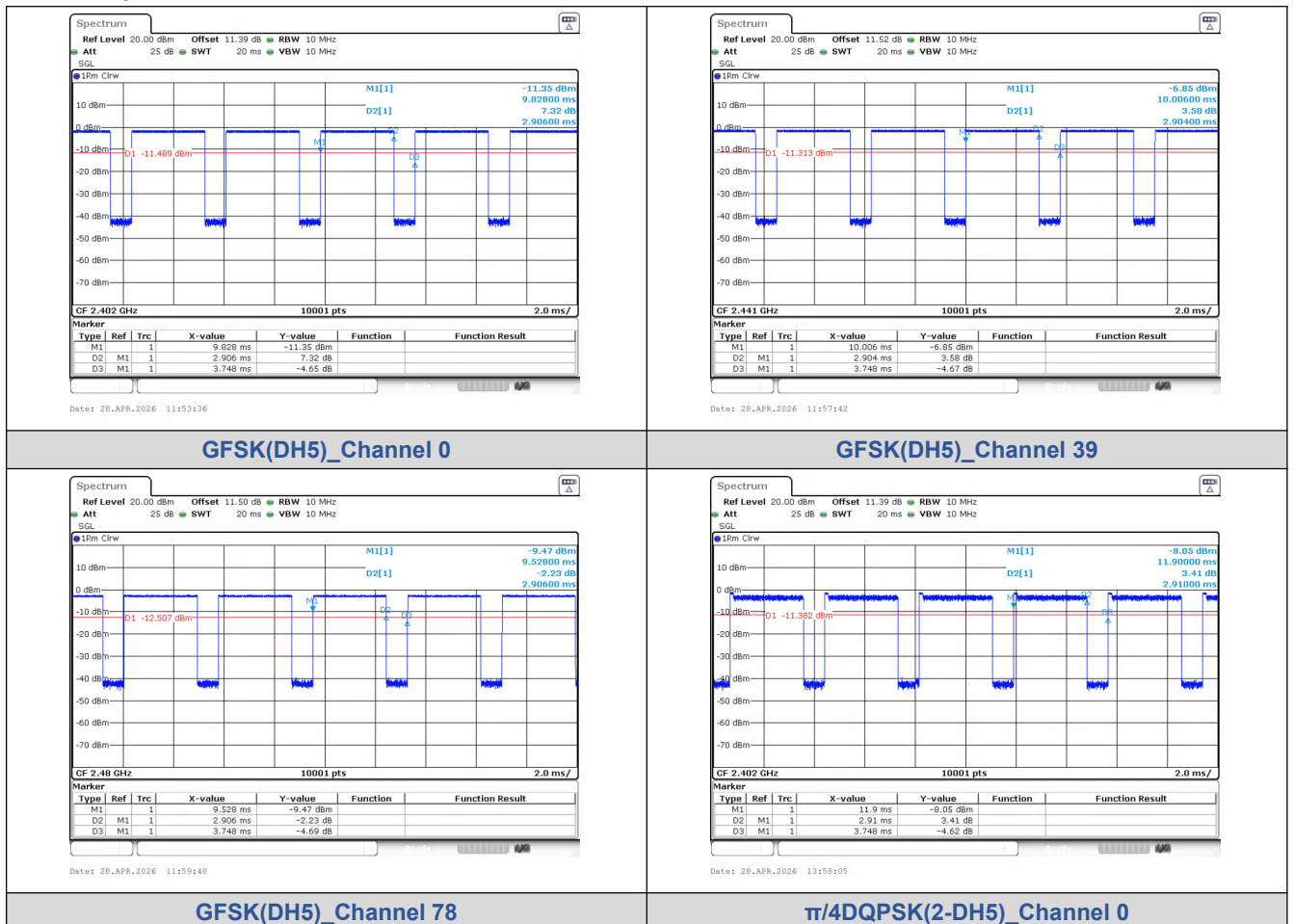
7.5. Duty Cycle

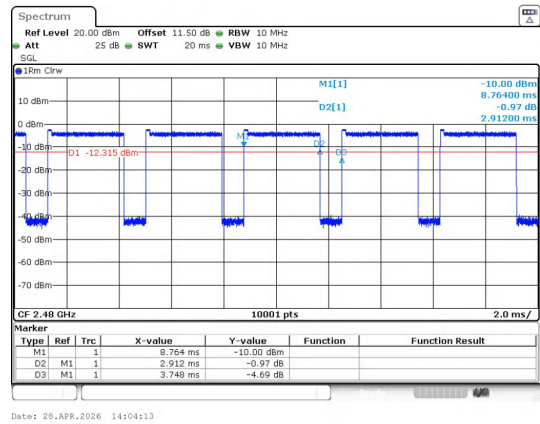
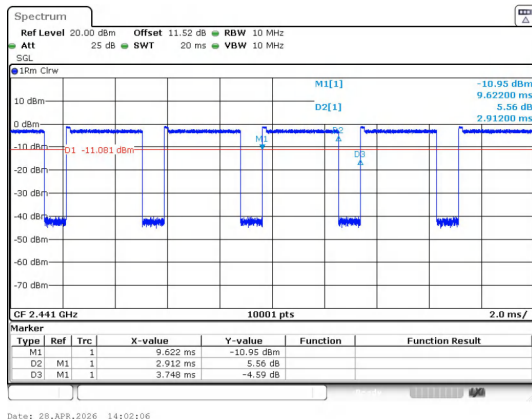
Test Result

Left:

Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.906	3.748	77.53	0.7753	1.1053	0.3441
		39	2.904	3.748	77.48	0.7748	1.1081	0.3444
		78	2.906	3.748	77.53	0.7753	1.1053	0.3441
$\pi/4$ DQPSK	2-DH5	0	2.910	3.748	77.64	0.7764	1.0991	0.3436
		39	2.912	3.748	77.69	0.7769	1.0963	0.3434
		78	2.912	3.748	77.69	0.7769	1.0963	0.3434
8DPSK	3-DH5	0	2.914	3.748	77.75	0.7775	1.093	0.3432
		39	2.914	3.748	77.75	0.7775	1.093	0.3432
		78	2.914	3.748	77.75	0.7775	1.093	0.3432

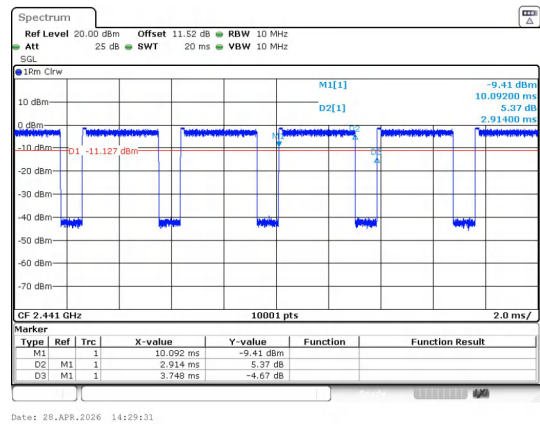
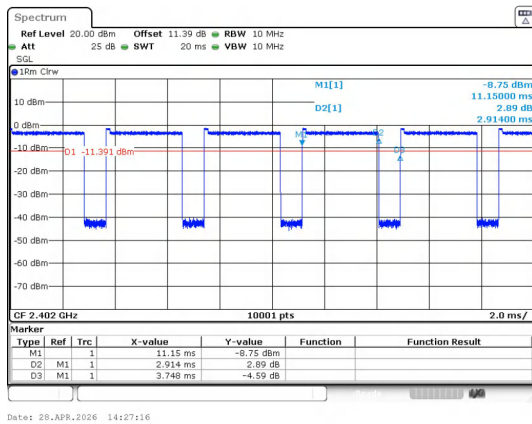
Test Graphs





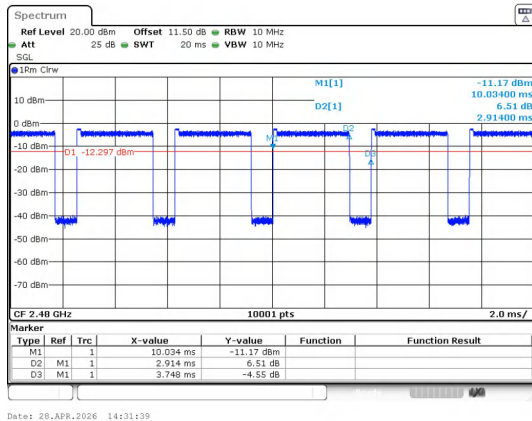
$\pi/4$ DQPSK(2-DH5)_Channel 39

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



8DPSK(3-DH5)_Channel 0

8DPSK(3-DH5)_Channel 39



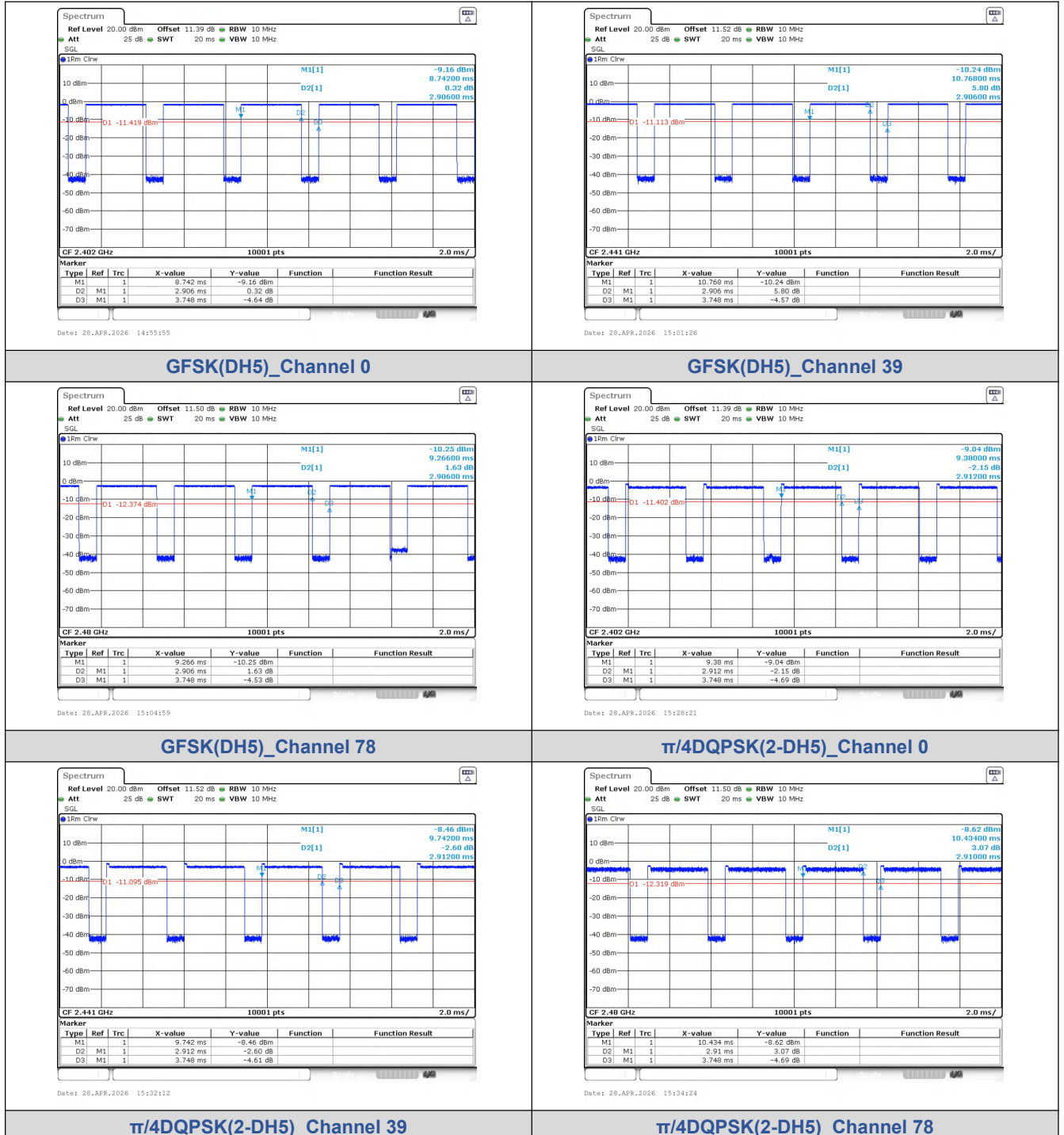
8DPSK(3-DH5)_Channel 78

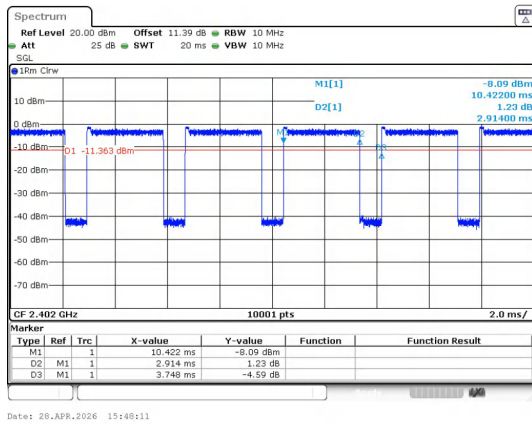
Right:

Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.906	3.748	77.53	0.7753	1.1053	0.3441
		39	2.906	3.748	77.53	0.7753	1.1053	0.3441
		78	2.906	3.748	77.53	0.7753	1.1053	0.3441
$\pi/4$ DQPSK	2-DH5	0	2.912	3.748	77.69	0.7769	1.0963	0.3434
		39	2.912	3.748	77.69	0.7769	1.0963	0.3434
		78	2.910	3.748	77.64	0.7764	1.0991	0.3436
8DPSK	3-DH5	0	2.914	3.748	77.75	0.7775	1.093	0.3432

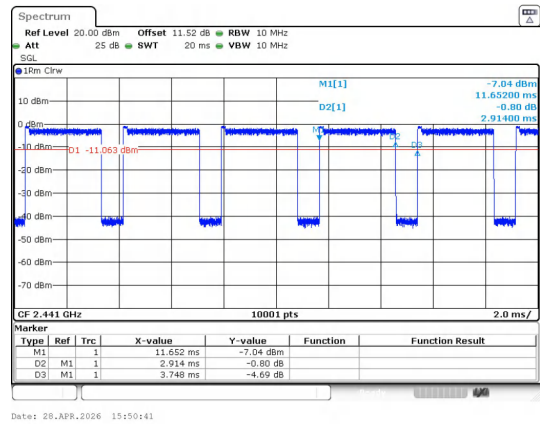
		39	2.914	3.748	77.75	0.7775	1.093	0.3432
		78	2.914	3.748	77.75	0.7775	1.093	0.3432

Test Graphs

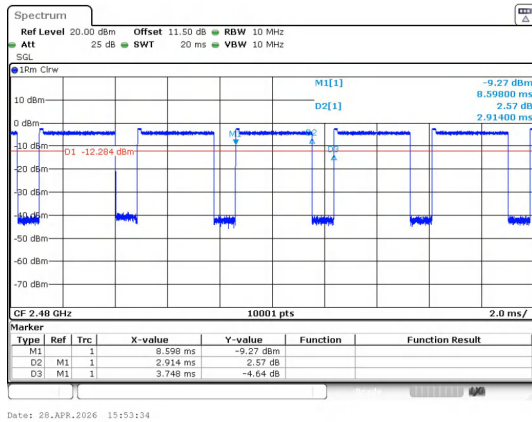




8DPSK(3-DH5)_Channel 0



8DPSK(3-DH5)_Channel 39



8DPSK(3-DH5)_Channel 78

7.6. Dwell Time

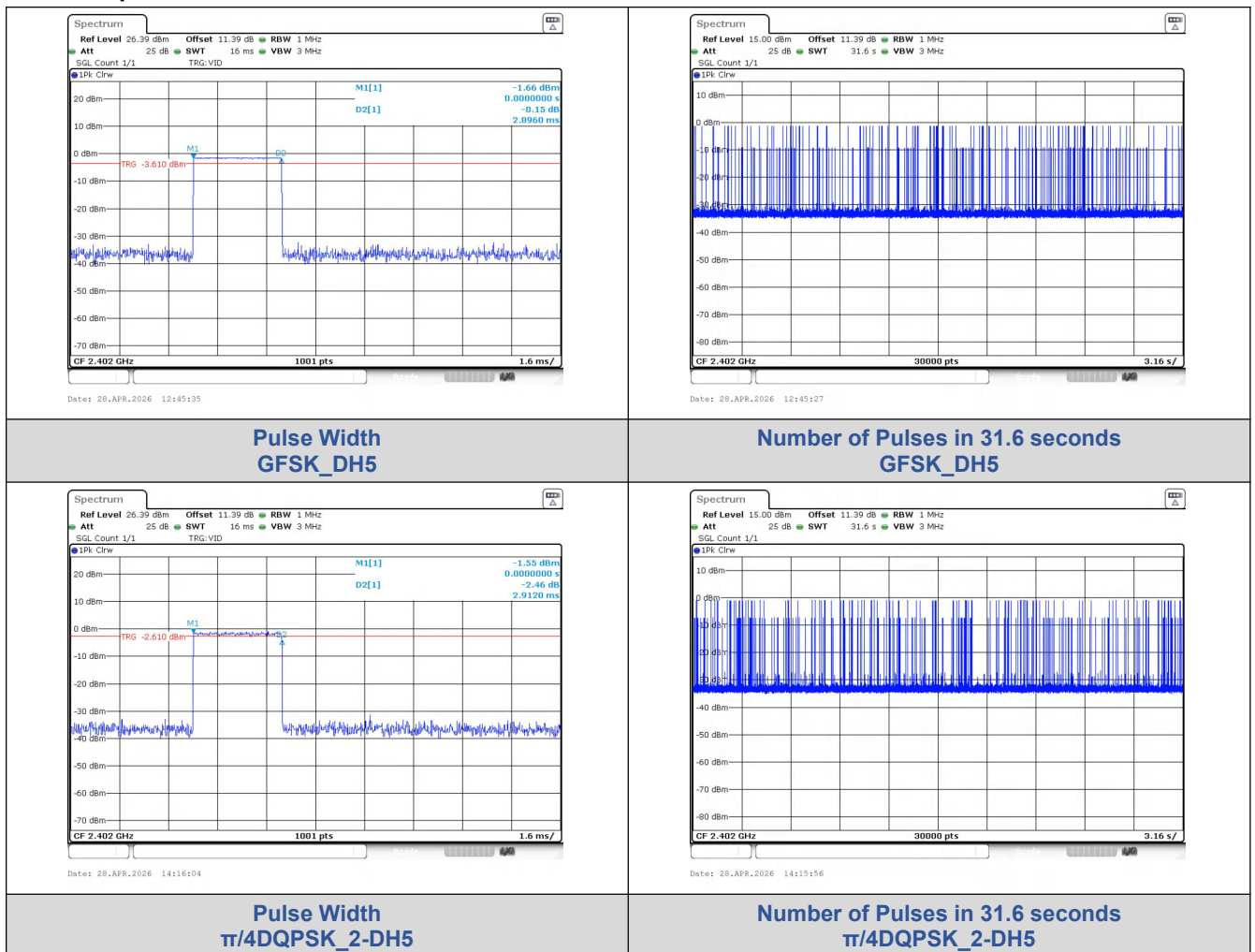
Test Result

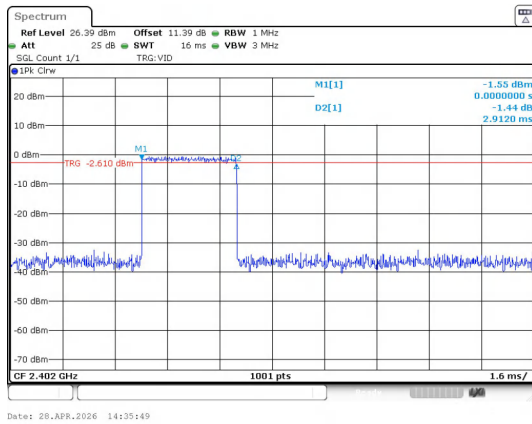
Left:

Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	Hopping	2.896	101	292.5	< 400	PASS
$\pi/4$ DQPSK	2-DH5		2.912	115	334.88		PASS
8DPSK	3-DH5		2.912	117	340.7		PASS

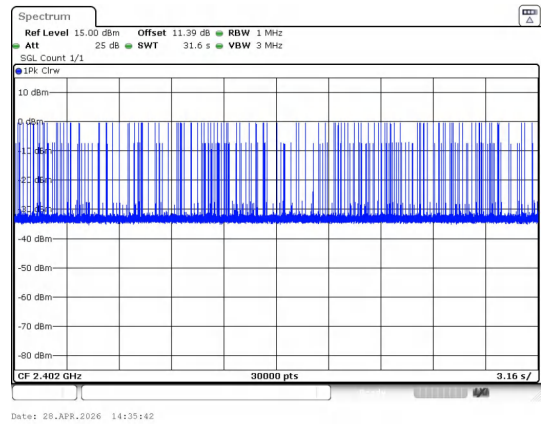
Note: Dwell time=Pulse time(ms)*Number of Pulses in 31.6 seconds

Test Graphs





**Pulse Width
8DPSK_3-DH5**



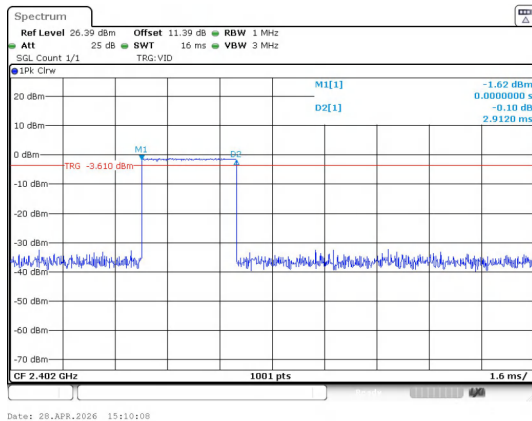
**Number of Pulses in 31.6 seconds
8DPSK_3-DH5**

Right:

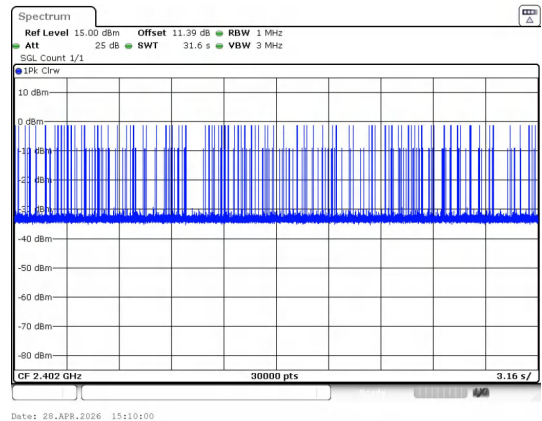
Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	Hopping	2.912	114	331.97	< 400	PASS
$\pi/4$ DQPSK	2-DH5		2.912	111	323.23		PASS
8DPSK	3-DH5		2.912	112	326.14		PASS

Note: Dwell time=Pulse time(ms)*Number of Pulses in 31.6 seconds

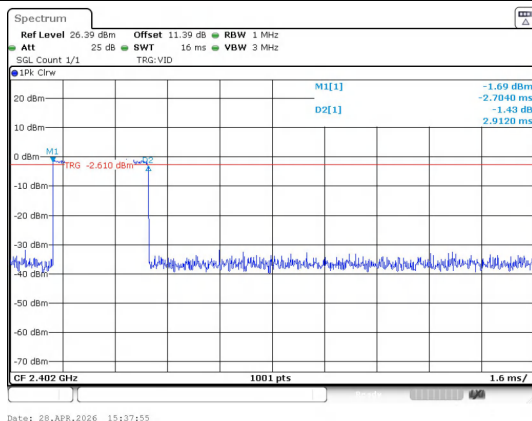
Test Graphs



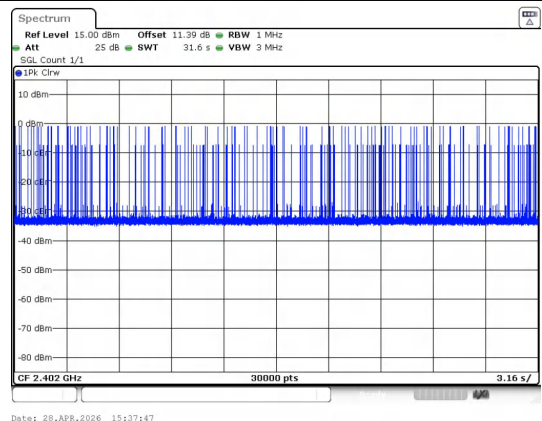
**Pulse Width
GFSK_DH5**



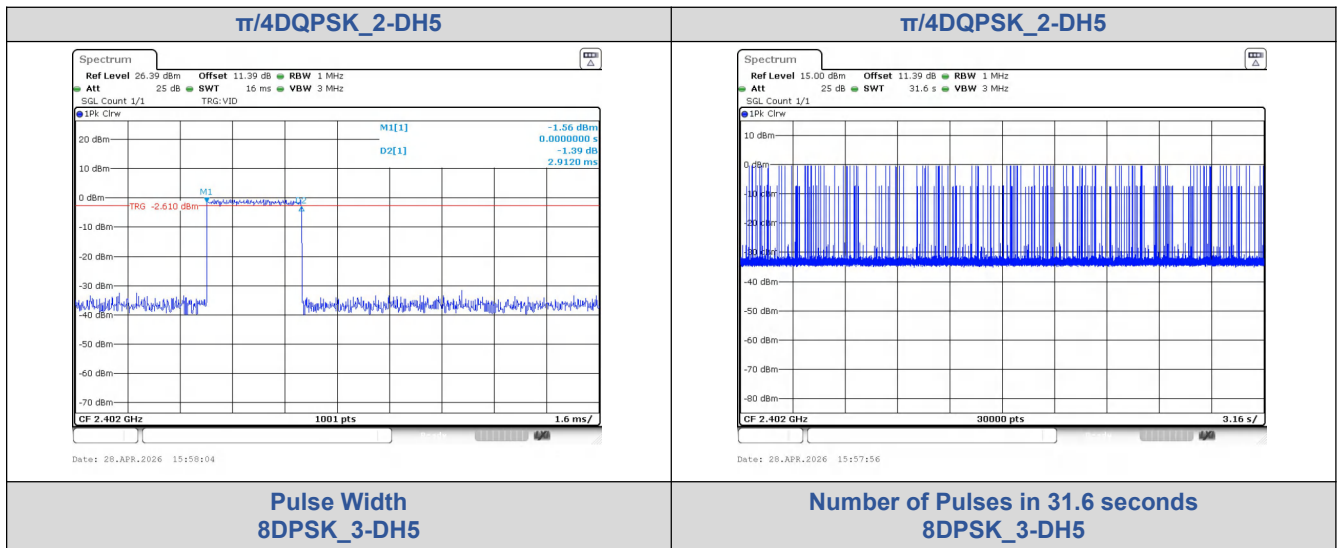
**Number of Pulses in 31.6 seconds
GFSK_DH5**



Pulse Width



Number of Pulses in 31.6 seconds



7.7. Conducted Out Of Band Emission

Test Result

Left:

Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2397.69	-46.433	-21.93	-24.503	PASS
			2400.00	-47.420	-21.93	-25.490	PASS
			22020.7	-48.360	-21.93	-26.430	PASS
		39	6942.11	-47.104	-21.69	-25.414	PASS
		78	2483.50	-47.450	-22.9	-24.550	PASS
			6932.12	-48.205	-22.9	-25.305	PASS
$\pi/4$ DQPSK	2-DH5	0	2398.18	-46.261	-21.77	-24.491	PASS
			2400.00	-48.170	-21.77	-26.400	PASS
			21960.7	-48.298	-21.77	-26.528	PASS
		39	6925.47	-47.136	-21.74	-25.396	PASS
		78	2483.50	-49.300	-22.7	-26.600	PASS
			6968.75	-47.963	-22.7	-25.263	PASS
8DPSK	3-DH5	0	2397.59	-46.642	-22.21	-24.432	PASS
			2400.00	-47.330	-22.21	-25.120	PASS
			5172.60	-45.354	-22.21	-23.144	PASS
		39	6900.50	-47.277	-21.92	-25.357	PASS
		78	2483.50	-48.420	-22.73	-25.690	PASS
			6973.74	-47.003	-22.73	-24.273	PASS

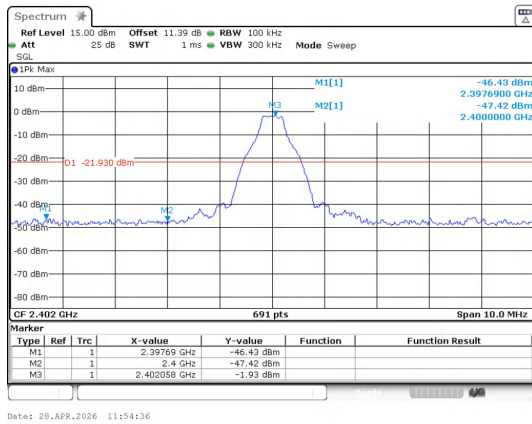
Note: input compensation coefficient (dB)= Cable Loss (dB)

Hopping

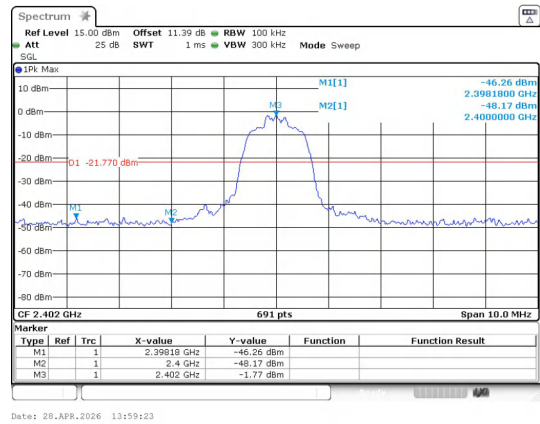
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2396.57	-44.394	-21.63	-22.764	PASS
			2400.00	-46.180	-21.63	-24.550	PASS
			2483.50	-46.220	-22.65	-23.570	PASS
π/4DQPSK	2-DH5		2397.00	-45.486	-21.78	-23.706	PASS
			2400.00	-47.030	-21.78	-25.250	PASS
			2483.50	-45.630	-22.93	-22.700	PASS
8DPSK	3-DH5		2397.67	-44.533	-22.38	-22.153	PASS
			2400.00	-46.810	-22.38	-24.430	PASS
			2483.50	-46.650	-22.79	-23.860	PASS
Note: input compensation coeffcient (dB)= Cable Loss (dB)							

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

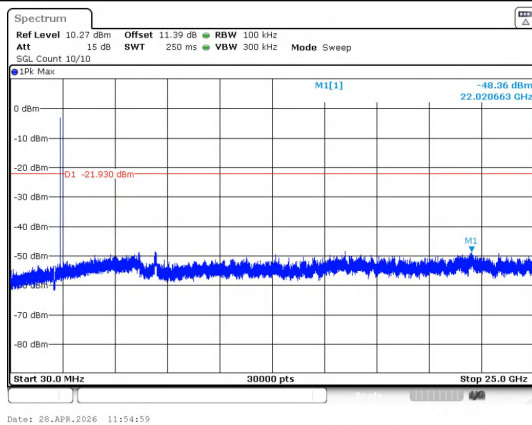
Test Graphs



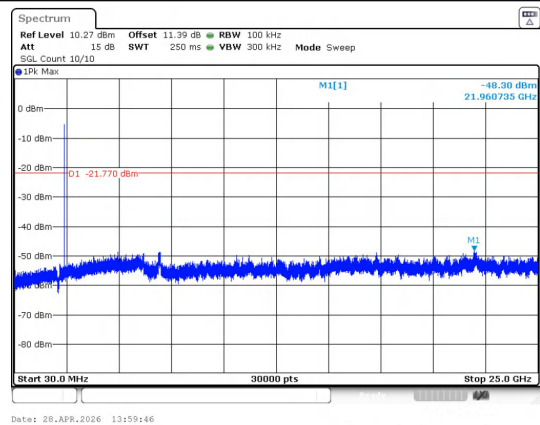
**Out Of Band Emission
GFSK_DH5_Channel 0**



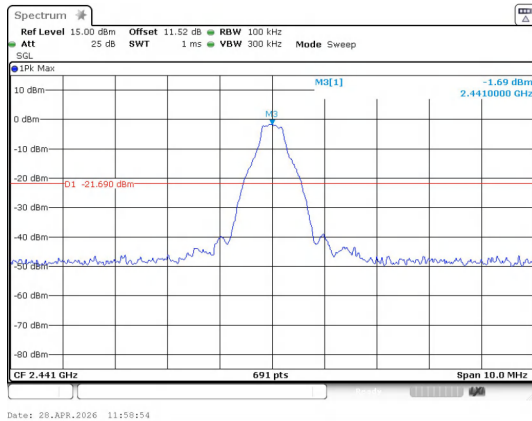
**Out Of Band Emission
π/4DQPSK_2-DH5_Channel 0**



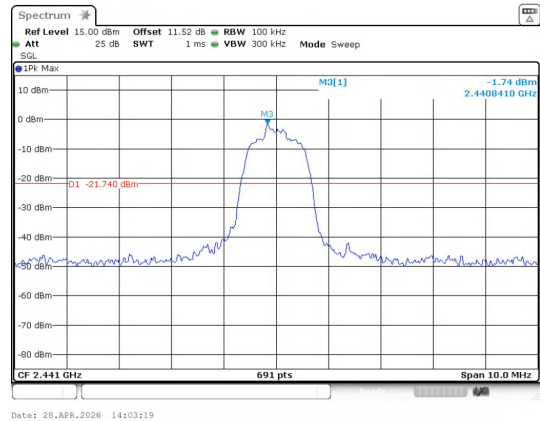
**30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 0**



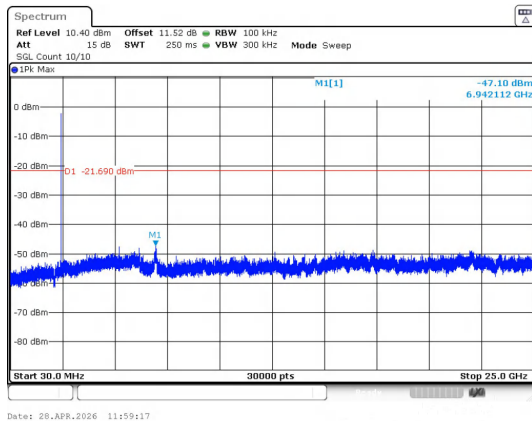
**30.0 MHz - 25000.0 MHz
π/4DQPSK_2-DH5_Channel 0**



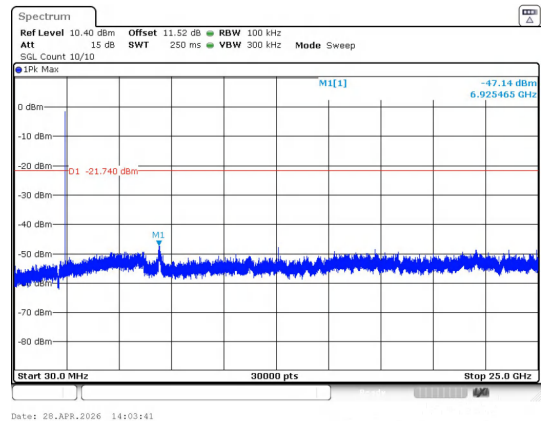
**Out Of Band Emission
GFSK_DH5_Channel 39**



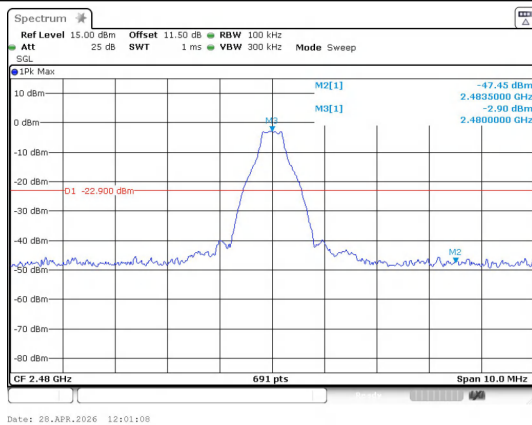
**Out Of Band Emission
π/4DQPSK_2-DH5_Channel 39**



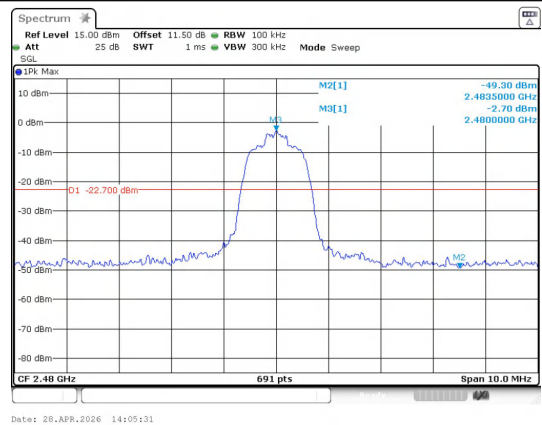
**30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 39**



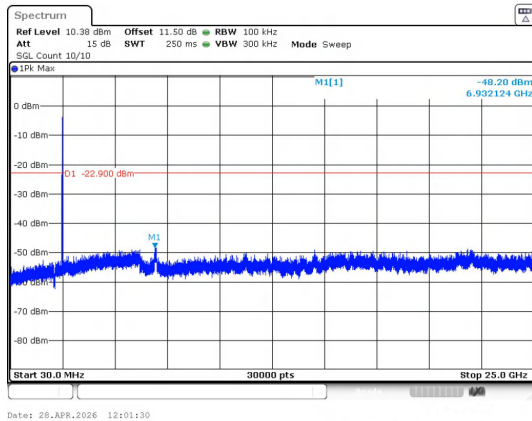
**30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 39**



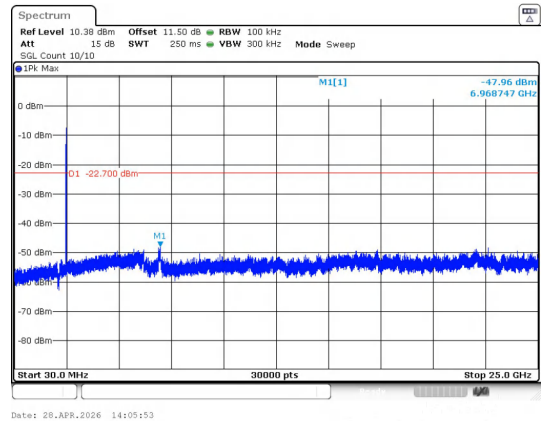
**Out Of Band Emission
GFSK_DH5_Channel 78**



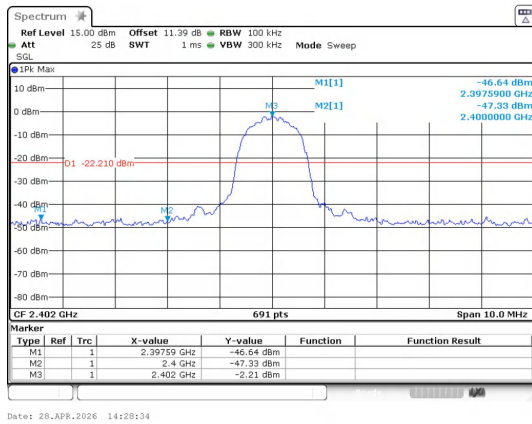
**Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 78**



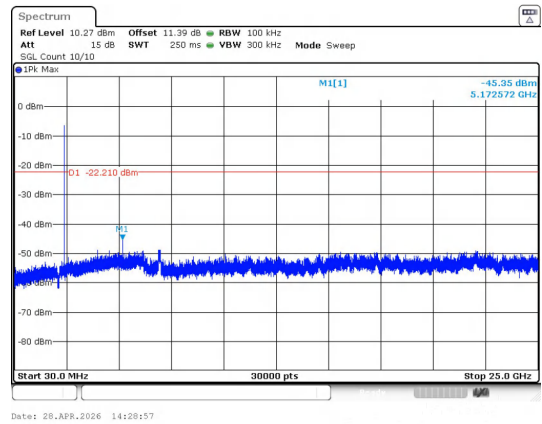
**30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78**



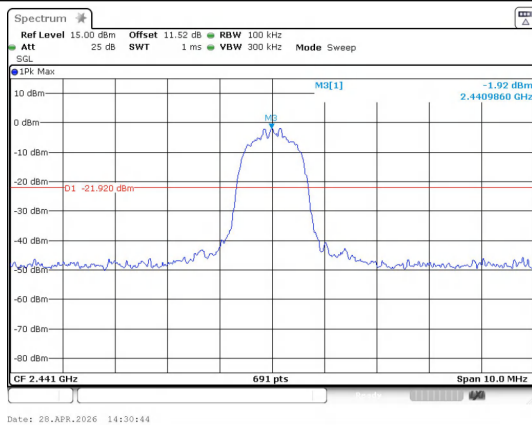
**30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 78**



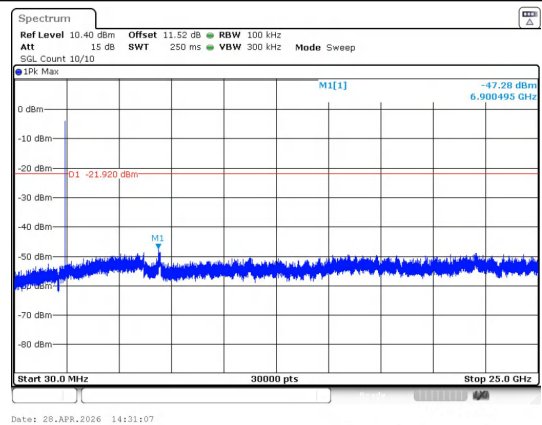
**Out Of Band Emission
8DPSK_3-DH5_Channel 0**



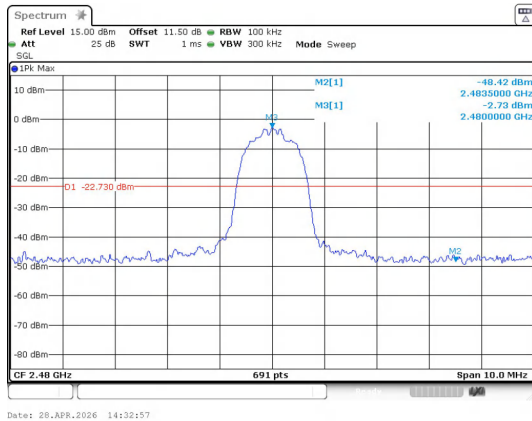
**30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 0**



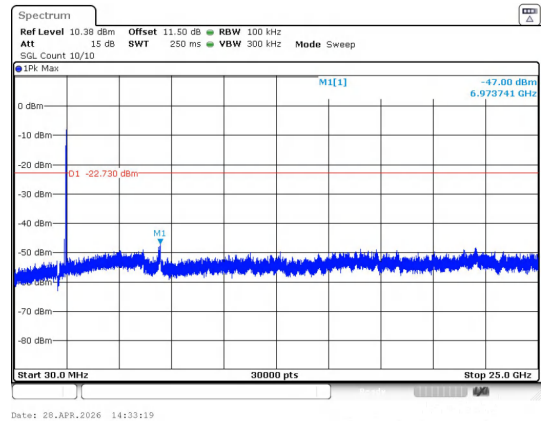
**Out Of Band Emission
8DPSK_3-DH5_Channel 39**



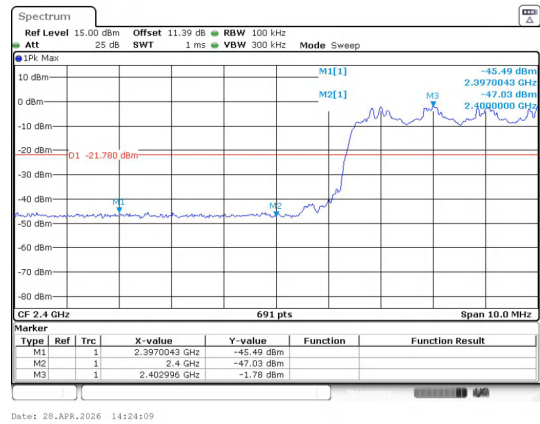
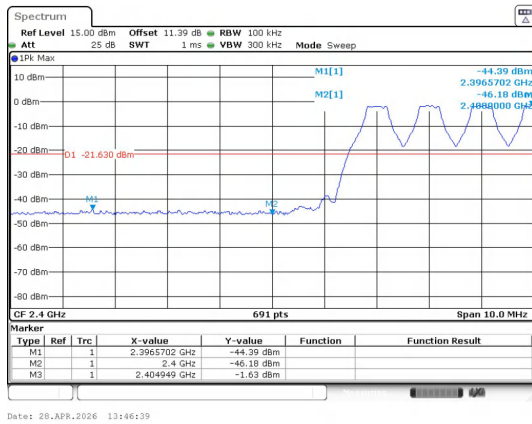
**30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 39**



**Out Of Band Emission
8DPSK_3-DH5_Channel 78**

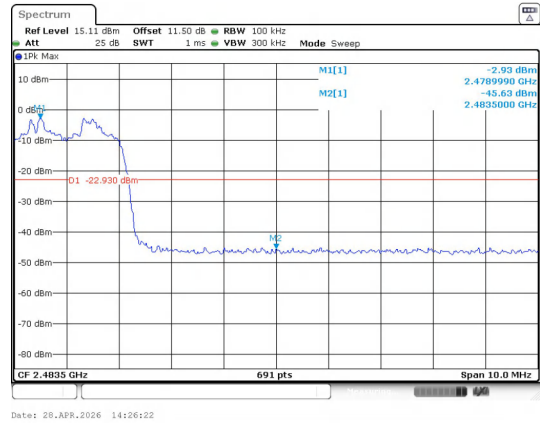
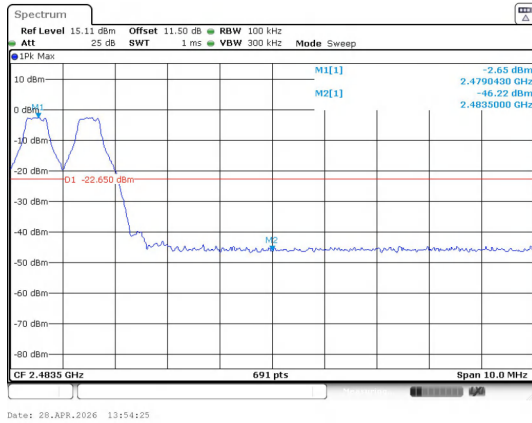


**30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 78**



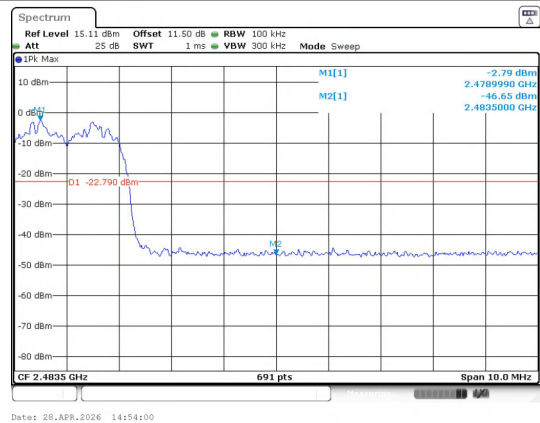
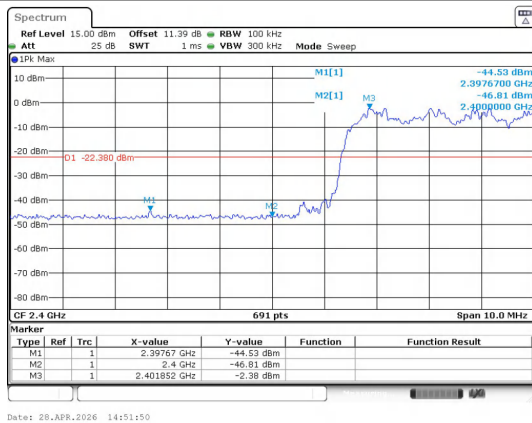
**Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping**

**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**

**Right:
Non-Hopping**

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2398.40	-46.700	-21.83	-24.870	PASS
			2400.00	-47.470	-21.83	-25.640	PASS
			6952.10	-48.185	-21.83	-26.355	PASS

		39	21994.9	-48.713	-21.55	-27.163	PASS
		78	2483.50	-47.390	-22.71	-24.680	PASS
			6902.16	-48.185	-22.71	-25.475	PASS
	$\pi/4$ DQPSK	0	2398.15	-46.811	-21.78	-25.031	PASS
			2400.00	-47.580	-21.78	-25.800	PASS
			6944.60	-47.978	-21.78	-26.198	PASS
		39	6907.15	-48.096	-21.51	-26.586	PASS
		78	2483.50	-47.170	-22.72	-24.450	PASS
			6929.63	-48.050	-22.72	-25.330	PASS
8DPSK	3-DH5	0	2397.82	-46.329	-21.76	-24.569	PASS
			2400.00	-47.660	-21.76	-25.900	PASS
			6908.00	-47.459	-21.76	-25.699	PASS
		39	6914.65	-48.072	-21.52	-26.552	PASS
		78	2483.50	-48.780	-22.66	-26.120	PASS
			6901.33	-48.328	-22.66	-25.668	PASS

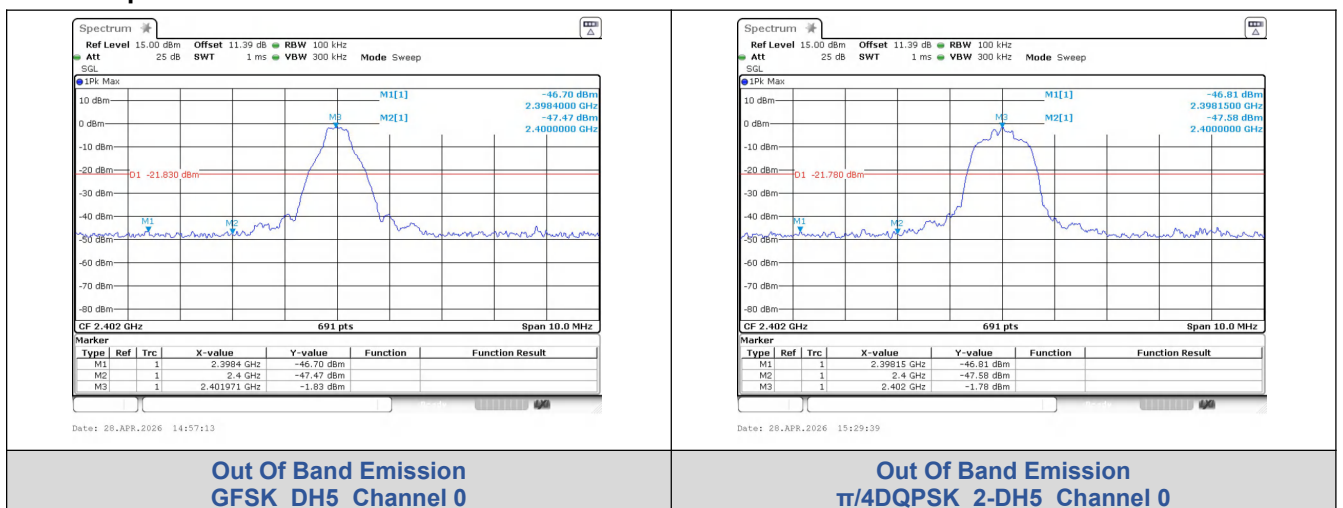
Note: input compensation coefficient (dB)= Cable Loss (dB)

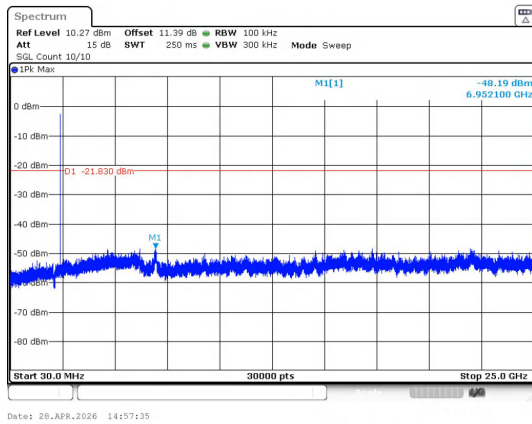
Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2395.40	-45.494	-21.76	-23.734	PASS
			2400.00	-46.710	-21.76	-24.950	PASS
			2483.50	-46.730	-22.94	-23.790	PASS
$\pi/4$ DQPSK	2-DH5		2397.15	-44.930	-21.85	-23.080	PASS
			2400.00	-47.350	-21.85	-25.500	PASS
			2483.50	-46.440	-22.81	-23.630	PASS
8DPSK	3-DH5		2397.00	-44.735	-21.76	-22.975	PASS
			2400.00	-46.390	-21.76	-24.630	PASS
			2483.50	-46.870	-22.61	-24.260	PASS

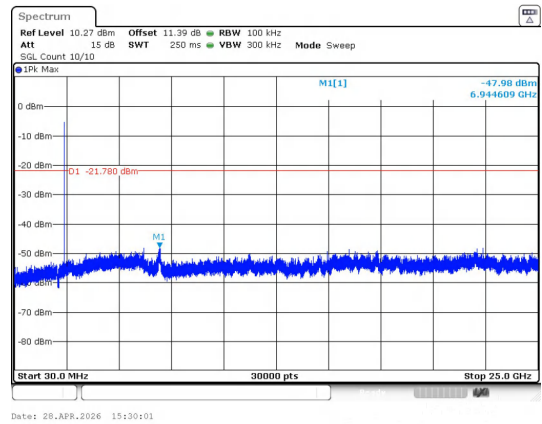
Note: input compensation coefficient (dB)= Cable Loss (dB)

Test Graphs

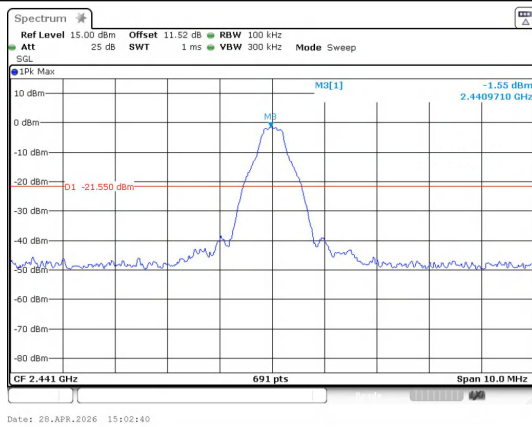




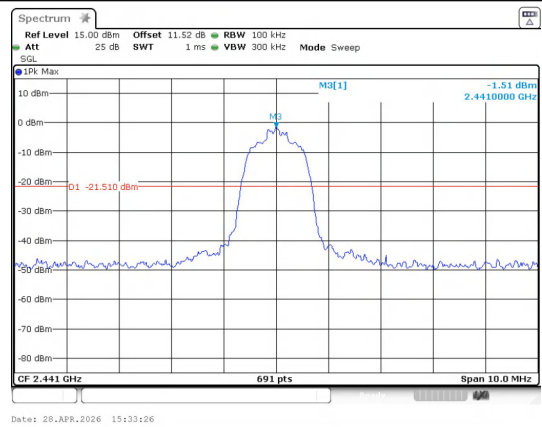
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 0



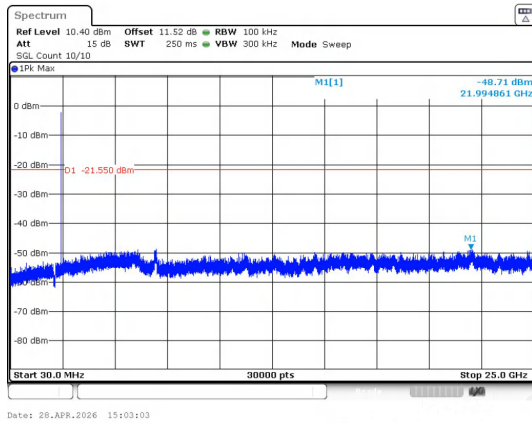
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 0



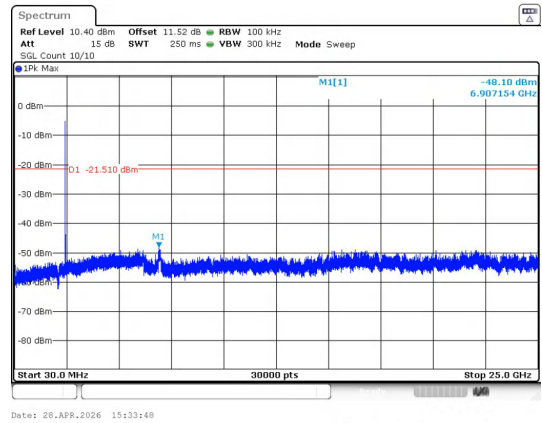
Out Of Band Emission
GFSK_DH5_Channel 39



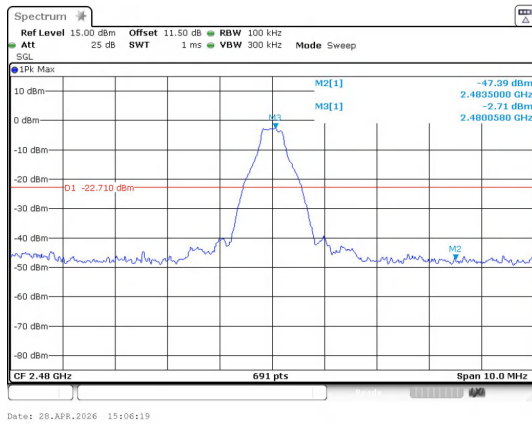
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 39



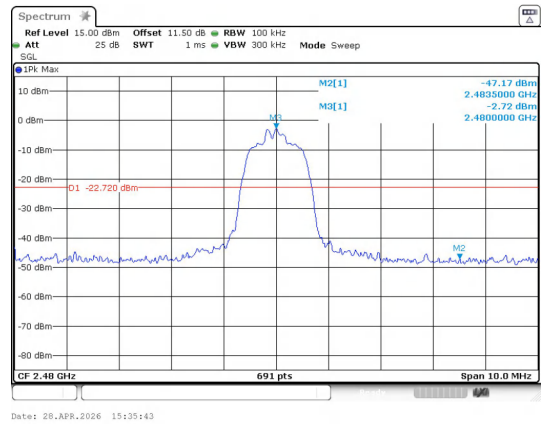
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 39



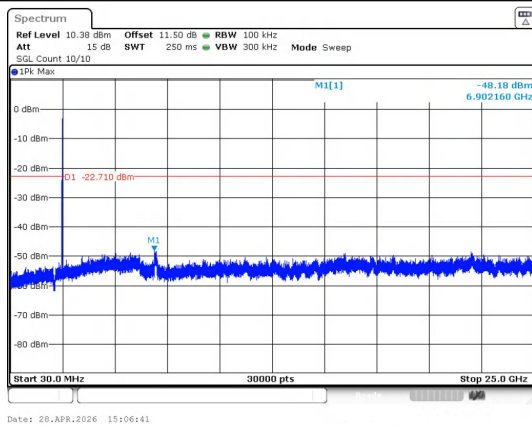
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 39



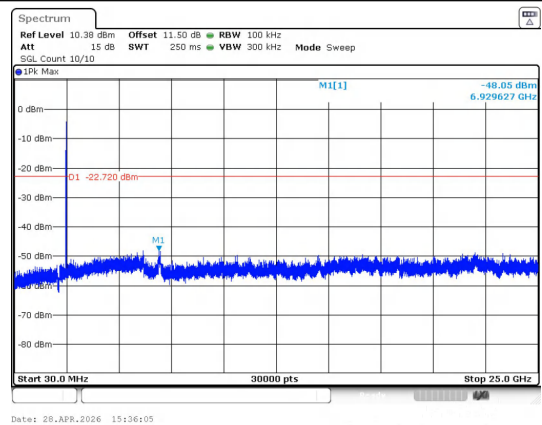
**Out Of Band Emission
GFSK_DH5_Channel 78**



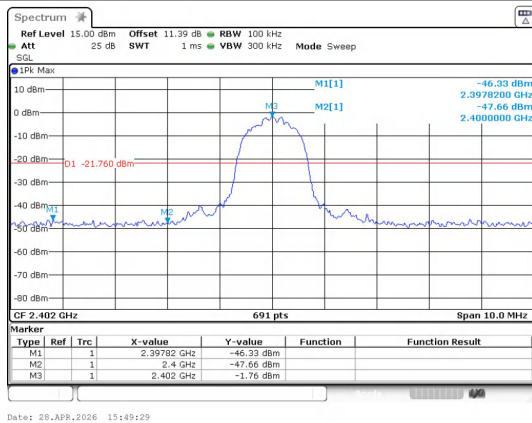
**Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 78**



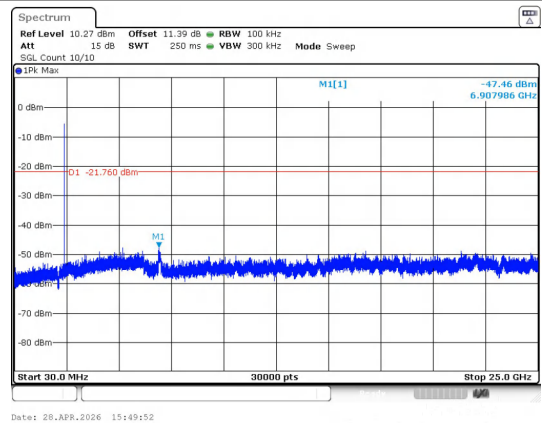
**30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78**



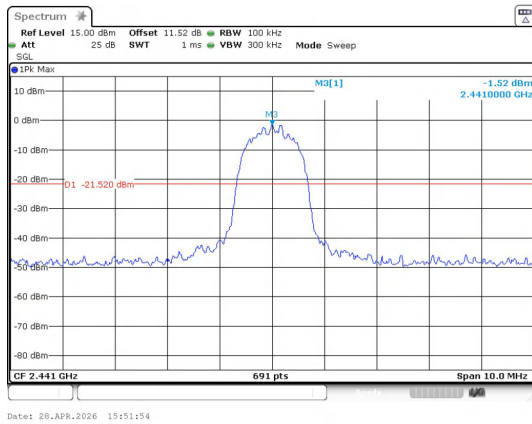
**30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 78**



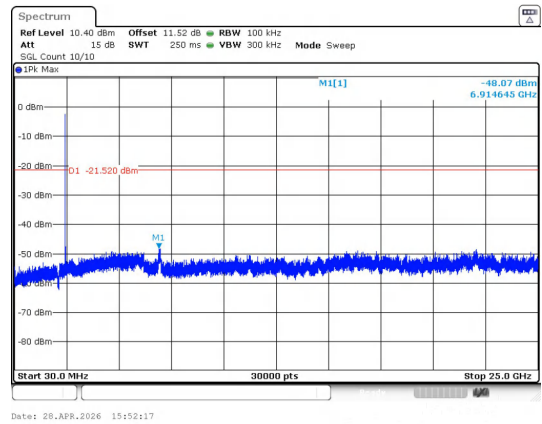
**Out Of Band Emission
8DPSK_3-DH5_Channel 0**



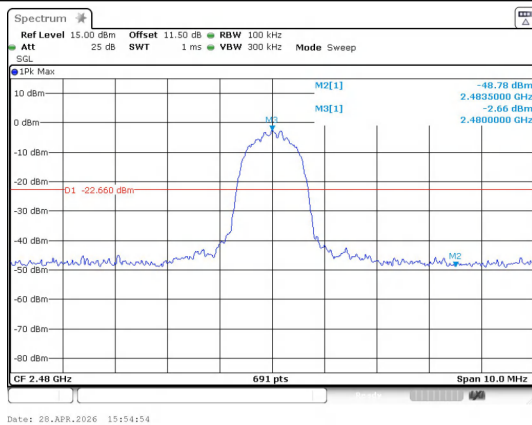
**30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 0**



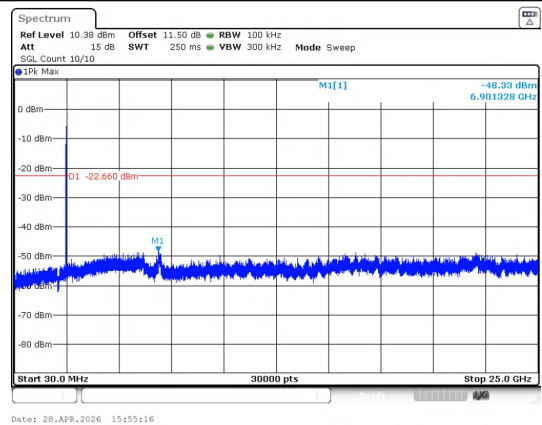
**Out Of Band Emission
8DPSK_3-DH5_Channel 39**



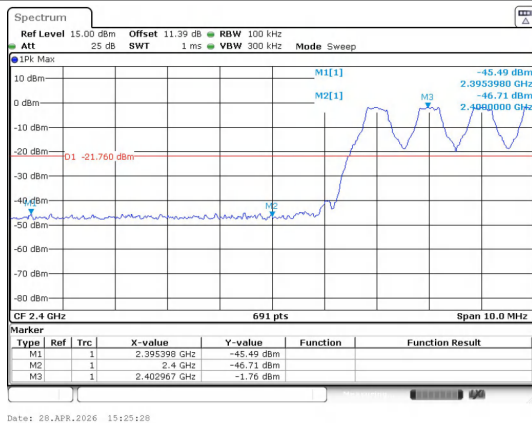
**30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 39**



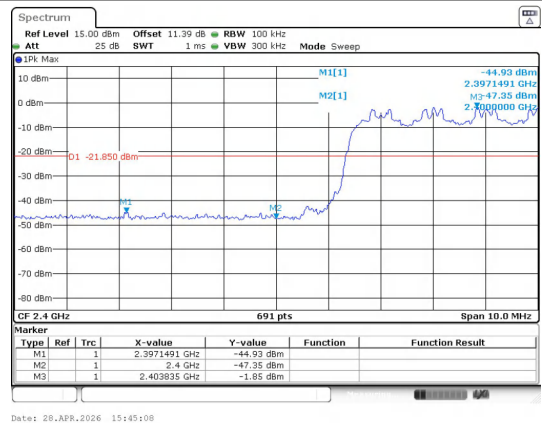
**Out Of Band Emission
8DPSK_3-DH5_Channel 78**



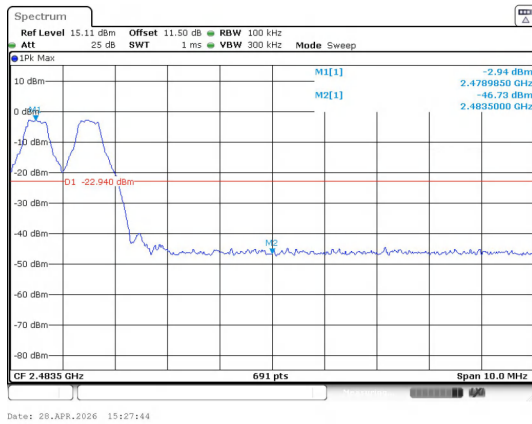
**30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 78**



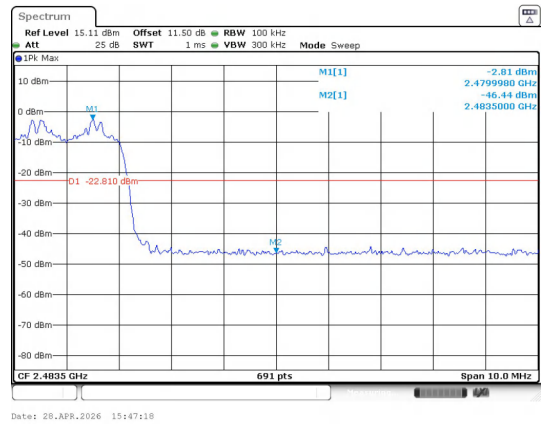
**Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping**



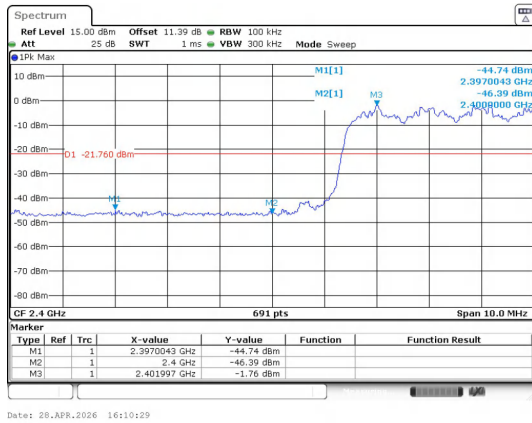
**Out Of Band Emission(Left)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping**



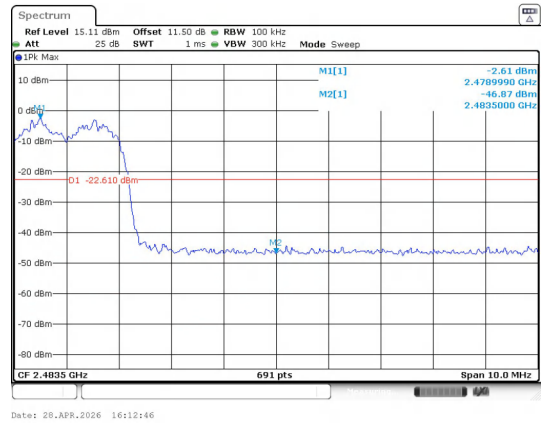
**Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping**



**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**

-----End of the report-----