

Appendix Report

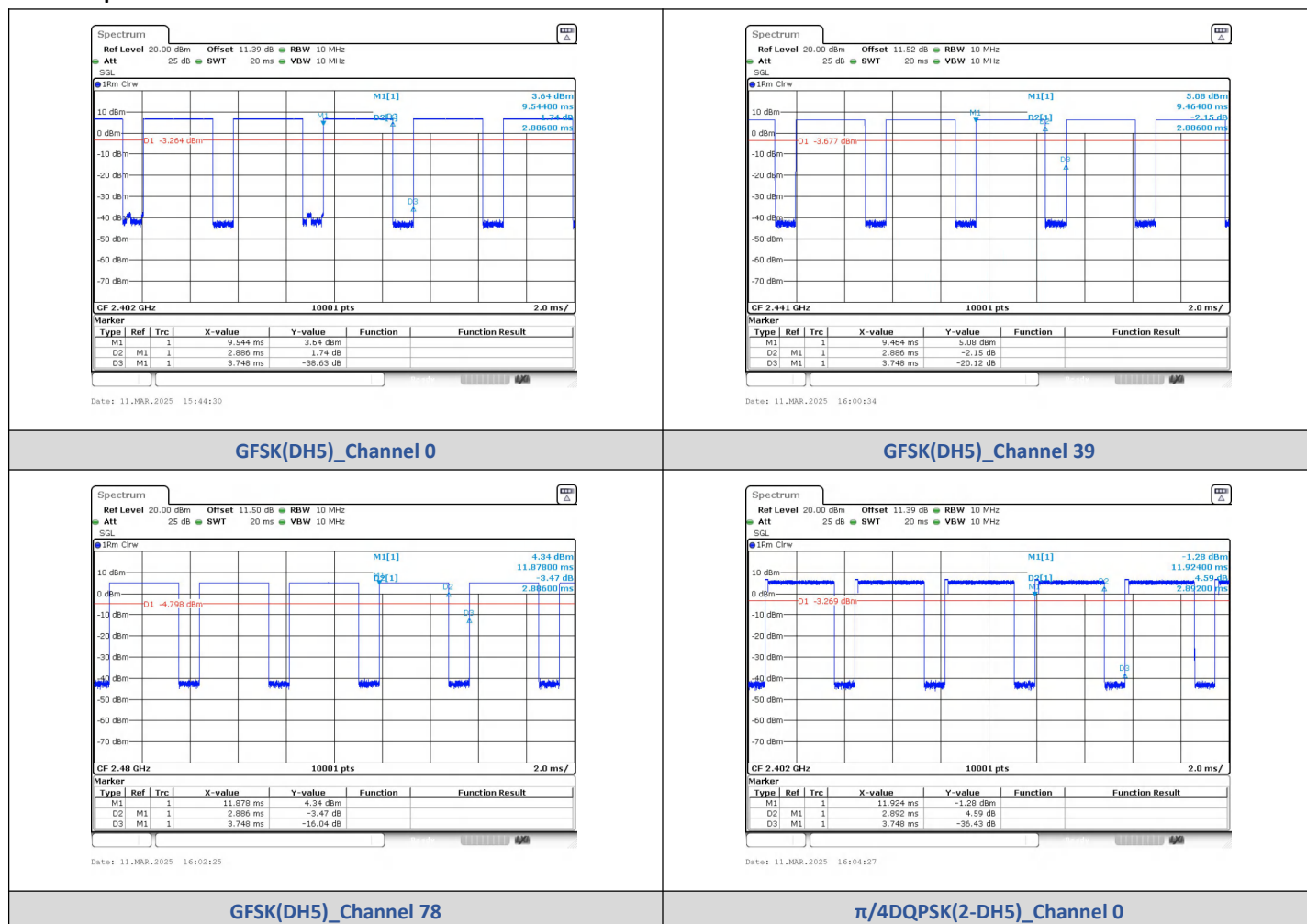
Report No.:	CISRR25031008101
Test Engineer:	Mark Fu
Supervised by:	Rory Huang

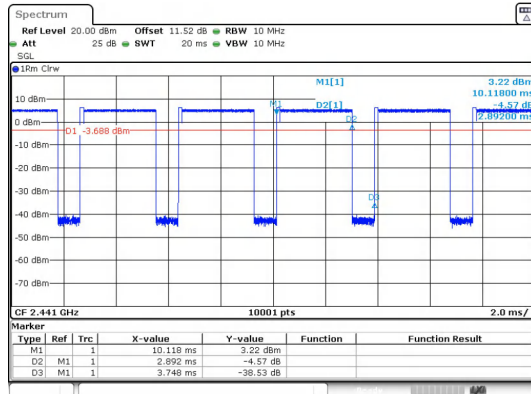
1) Duty Cycle

Test Result

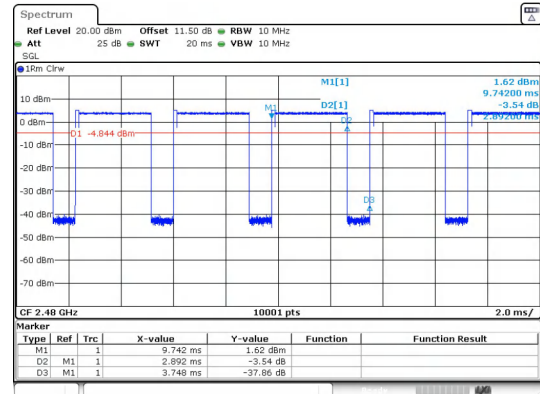
Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.886	3.748	77.00	0.7700	1.1351	0.3465
		39	2.886	3.748	77.00	0.7700	1.1351	0.3465
		78	2.886	3.748	77.00	0.7700	1.1351	0.3465
$\pi/4$ DQPSK	2-DH5	0	2.892	3.748	77.16	0.7716	1.1261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

Test Graphs

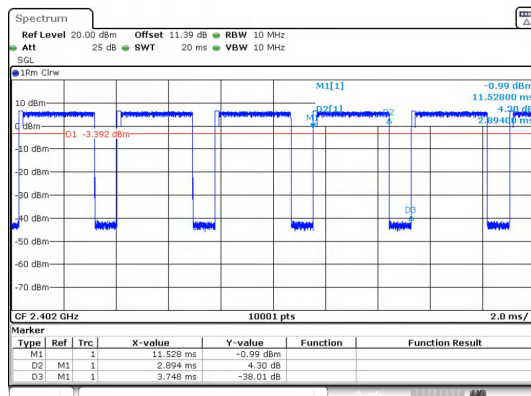




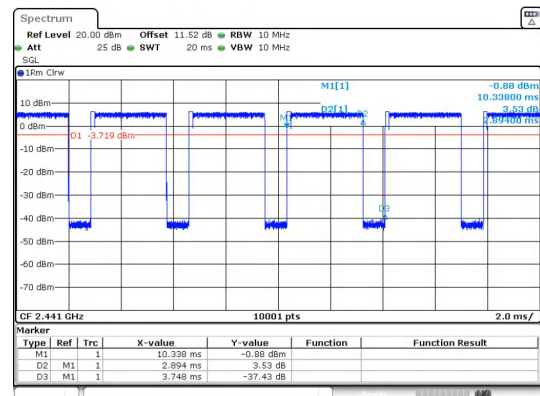
$\pi/4$ DQPSK(2-DH5)_Channel 39



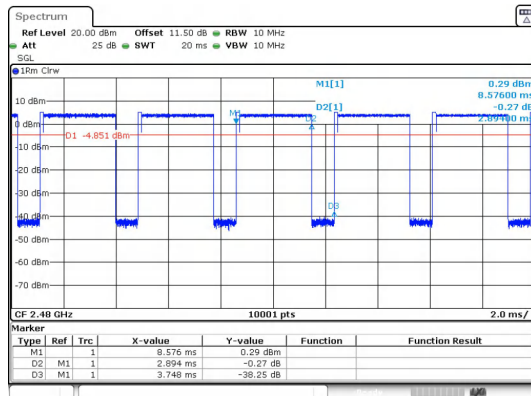
$\pi/4$ DQPSK(2-DH5)_Channel 78



8DPSK(3-DH5)_Channel 0



8DPSK(3-DH5)_Channel 39



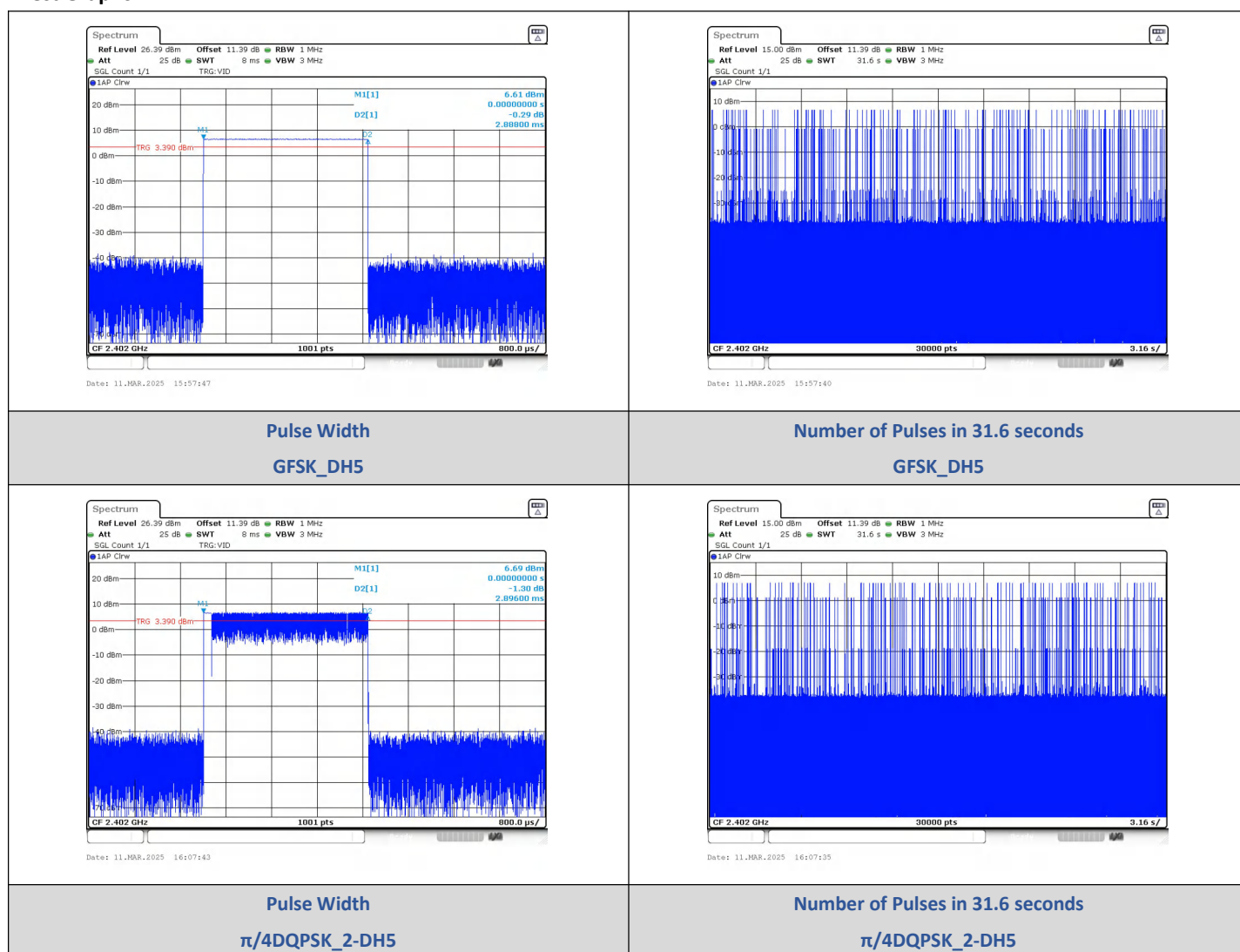
8DPSK(3-DH5)_Channel 78

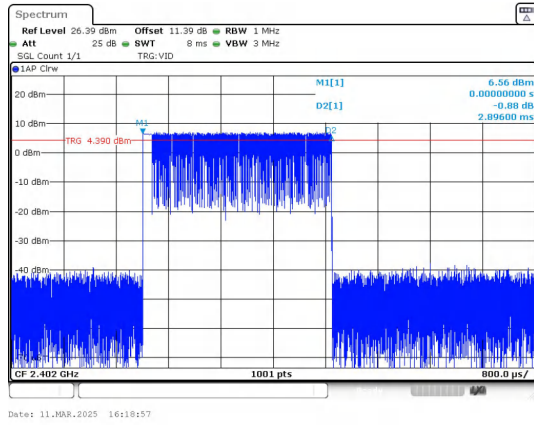
2) Dwell Time

Test Result

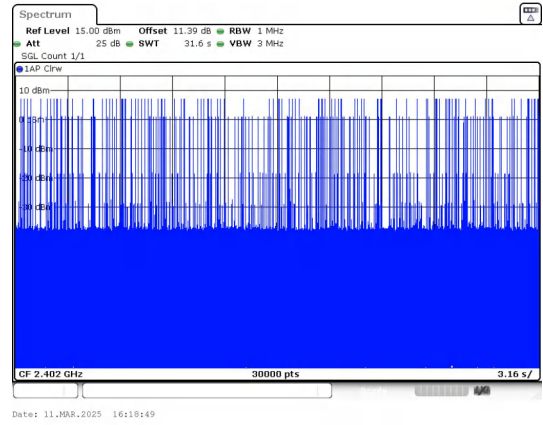
Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	CH0 (2402MHz)	2.888	114	329.23	< 400	PASS
$\pi/4$ DQPSK	2-DH5		2.896	102	295.39		PASS
8DPSK	3-DH5		2.896	109	315.66		PASS

Test Graphs





Pulse Width
8DPSK_3-DH5



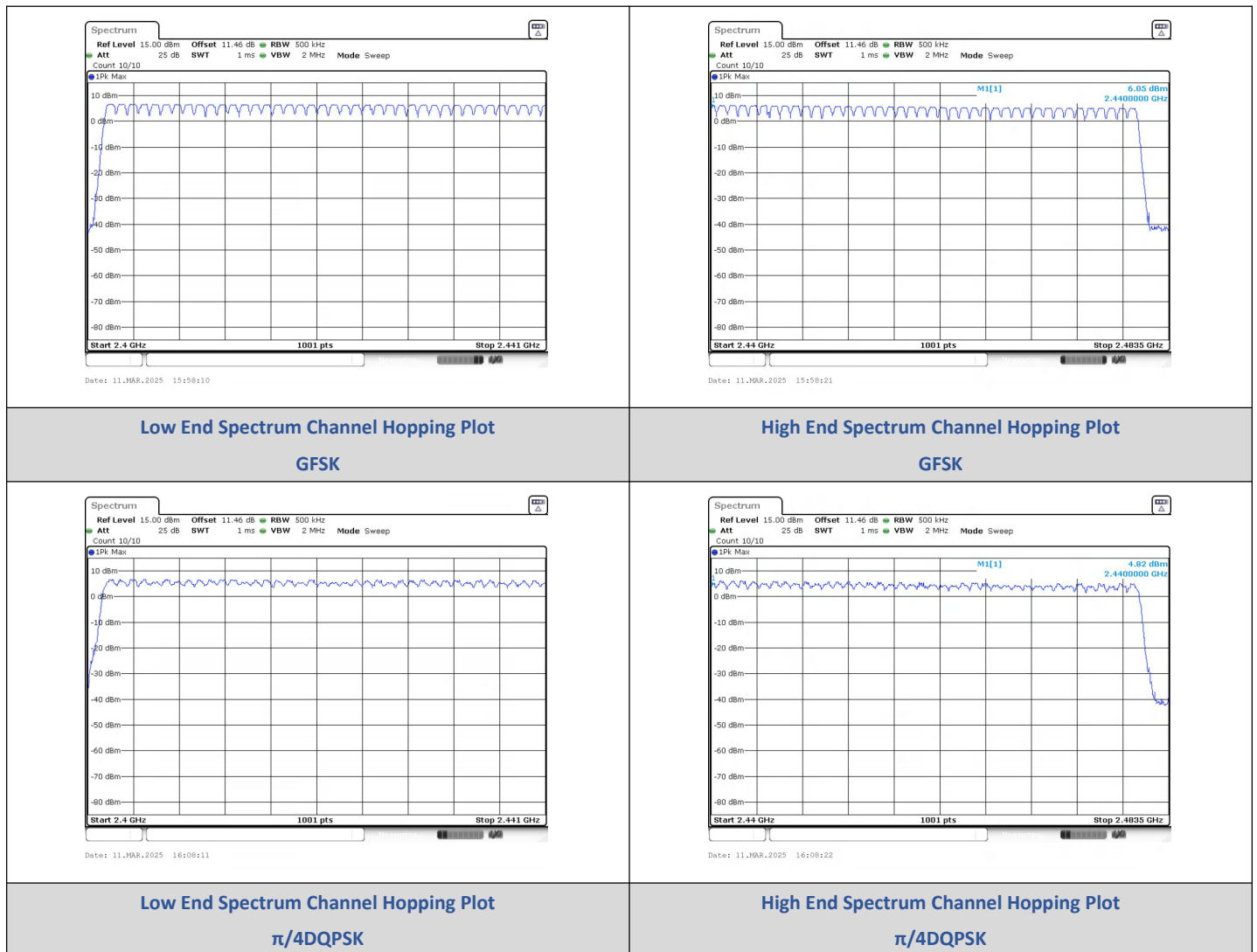
Number of Pulses in 3.16 seconds
8DPSK_3-DH5

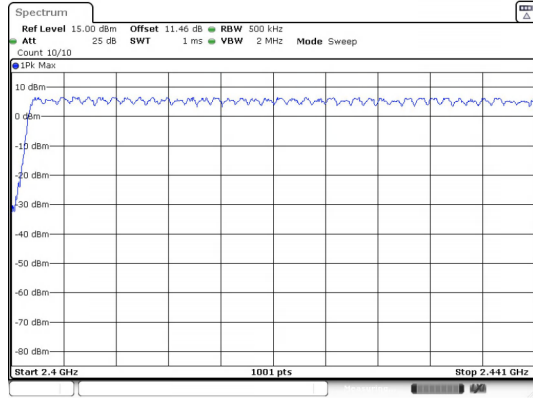
3) Number Of Hopping Channel

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

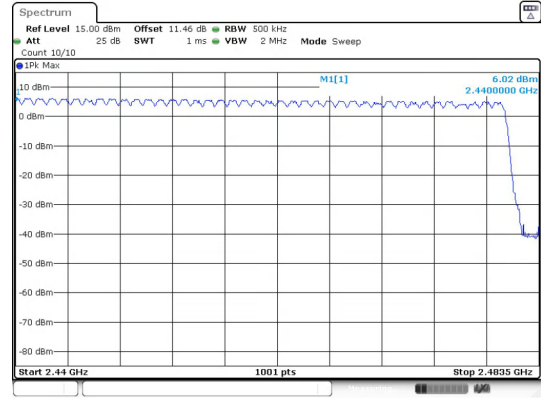
Test Graphs





Date: 11.MAR.2025 16:19:27

Low End Spectrum Channel Hopping Plot
8DPSK



Date: 11.MAR.2025 16:20:17

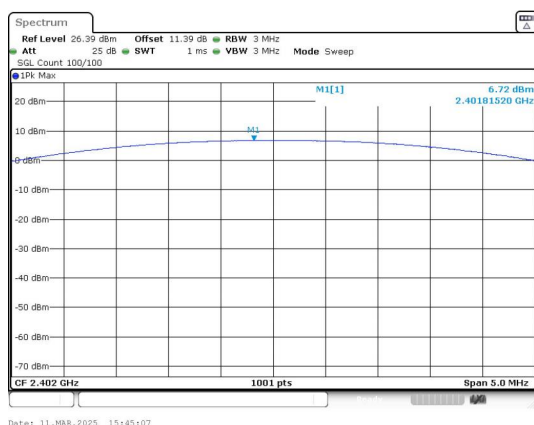
High End Spectrum Channel Hopping Plot
8DPSK

4) Conducted Output Power

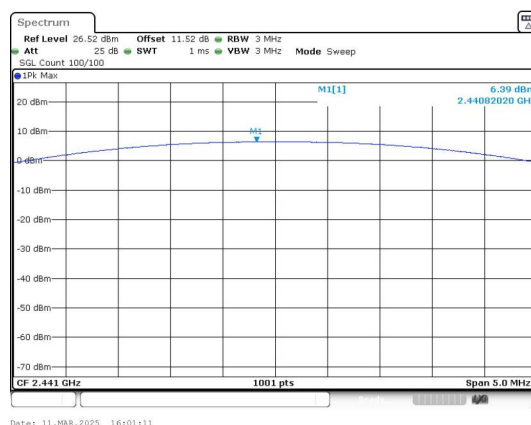
Test Result

Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
GFSK	DH5	0	6.72	4.70	≤30	PASS
		39	6.39	4.36		PASS
		78	5.28	3.37		PASS
$\pi/4$ DQPSK	2-DH5	0	7.36	5.45	≤20.97	PASS
		39	6.99	5.00		PASS
		78	5.87	3.86		PASS
8DPSK	3-DH5	0	7.43	5.53		PASS
		39	7.17	5.21		PASS
		78	6.09	4.06		PASS

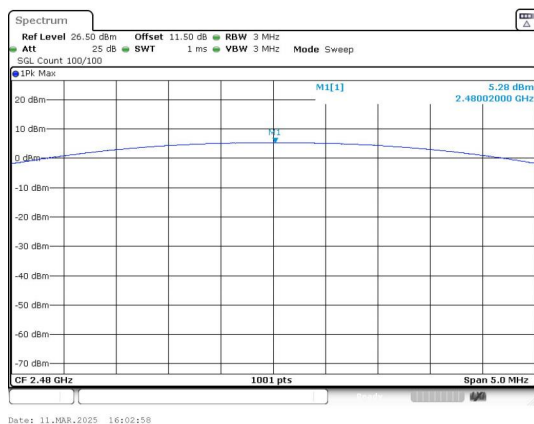
Test Graphs



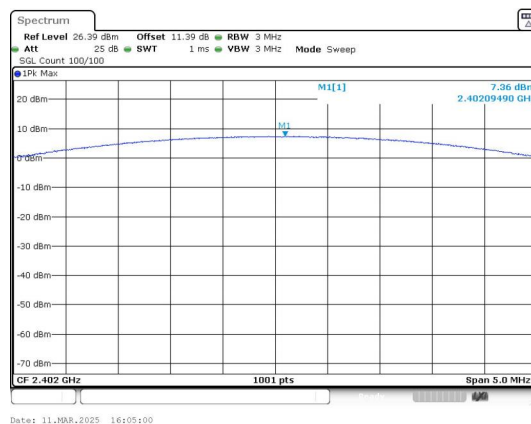
Peak Output Power
GFSK_Channel 0



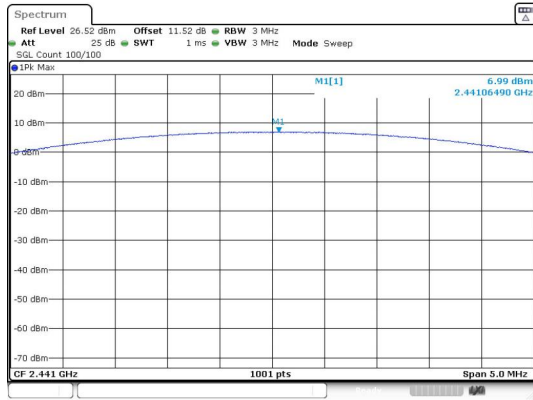
Peak Output Power
GFSK_Channel 39



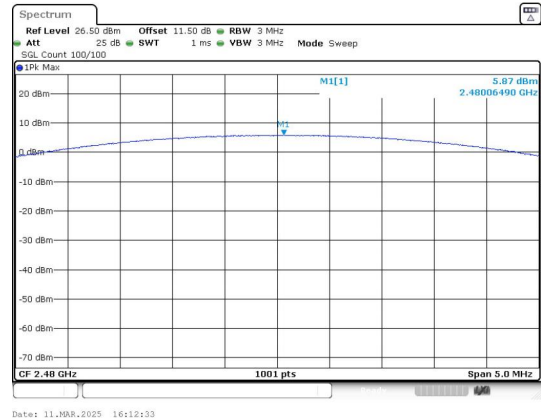
Peak Output Power
GFSK_Channel 78



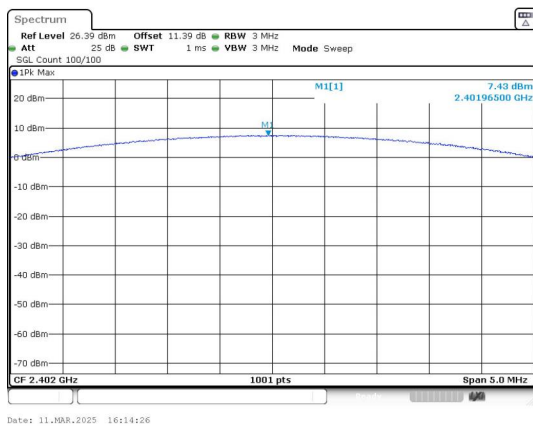
Peak Output Power
 $\pi/4$ DQPSK_Channel 0



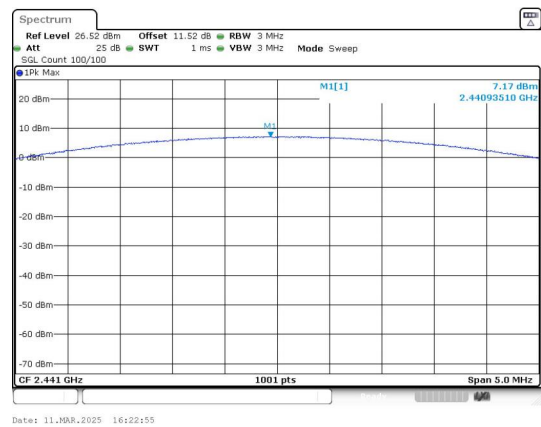
Peak Output Power
 $\pi/4$ DQPSK_Channel 39



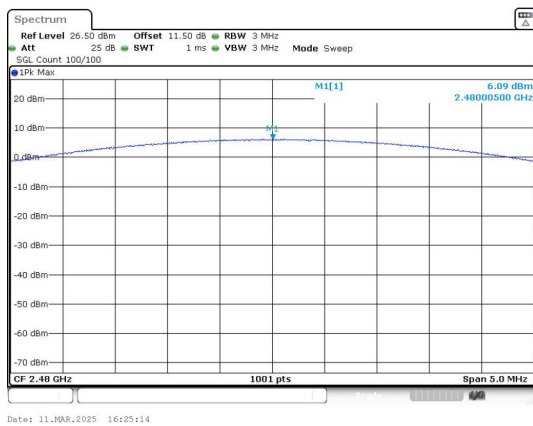
Peak Output Power
 $\pi/4$ DQPSK_Channel 78



Peak Output Power
8DPSK_Channel 0



Peak Output Power
8DPSK_Channel 39



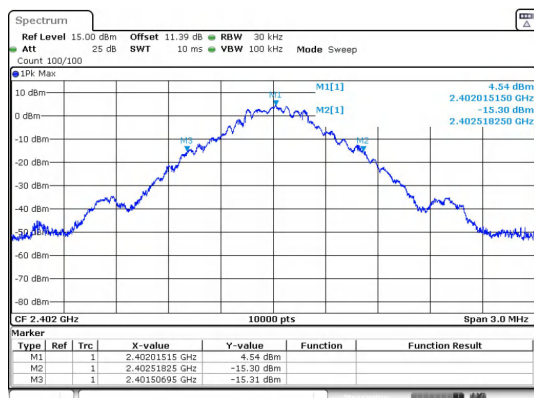
Peak Output Power
8DPSK_Channel 78

5) 20dB Bandwidth

Test Result

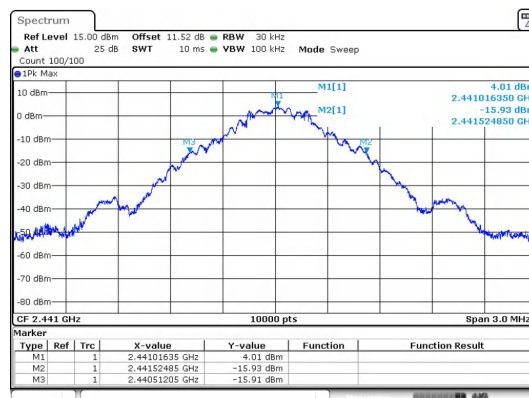
Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	1.010
	39	2441 MHz	1.010
	78	2480 MHz	1.020
$\pi/4$ DQPSK	0	2402 MHz	1.320
	39	2441 MHz	1.320
	78	2480 MHz	1.320
8DPSK	0	2402 MHz	1.290
	39	2441 MHz	1.290
	78	2480 MHz	1.290

Test Graphs



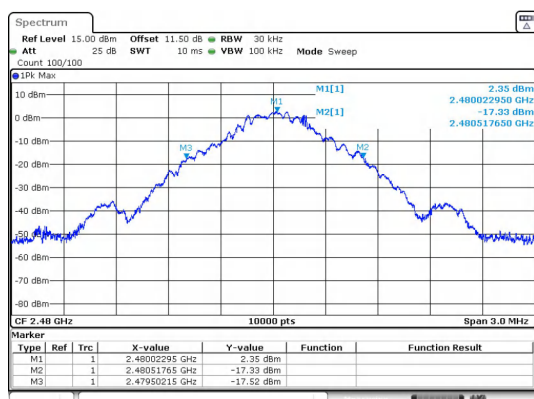
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GFSK_DH5_Channel 0



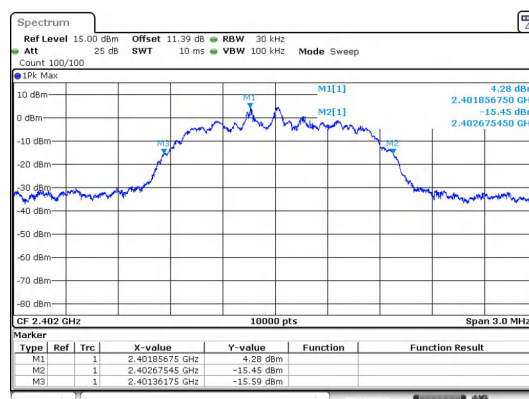
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GFSK_DH5_Channel 39



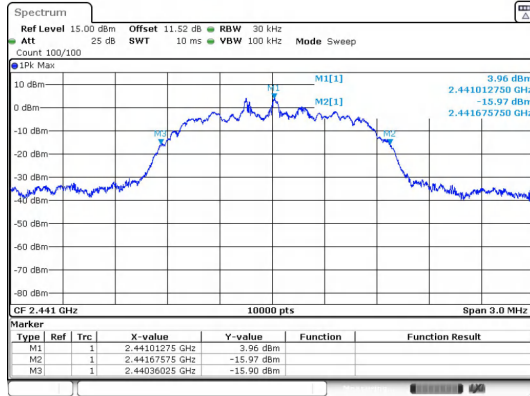
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GFSK_DH5_Channel 78

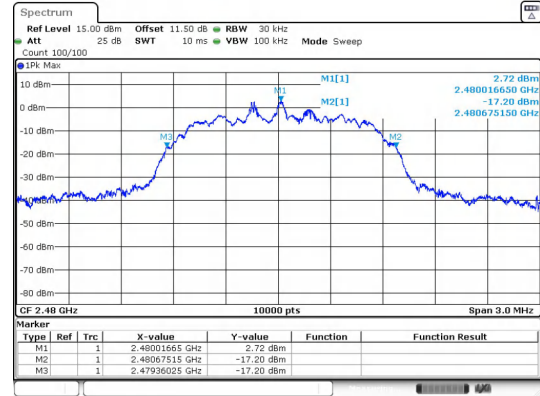


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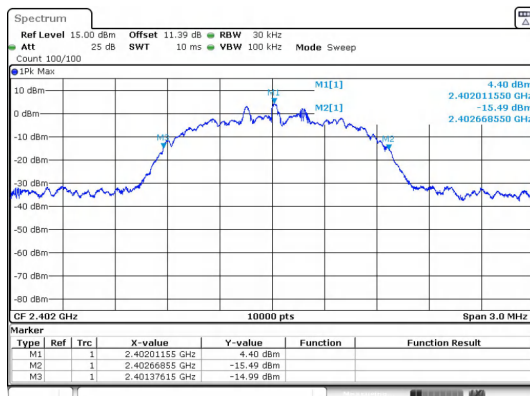
 $\pi/4$ DQPSK_2-DH5_Channel 0



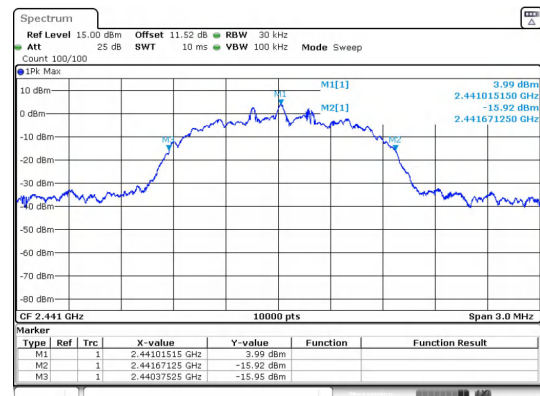
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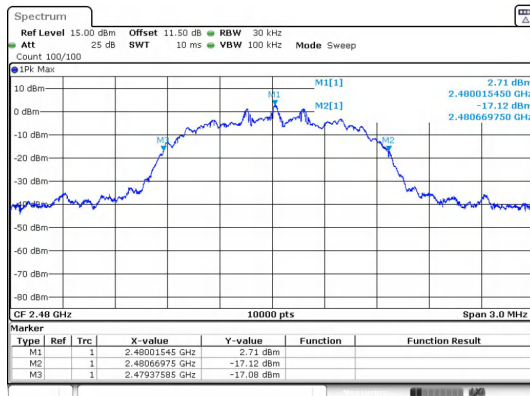
$\pi/4$ DQPSK_2-DH5_Channel 78



8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



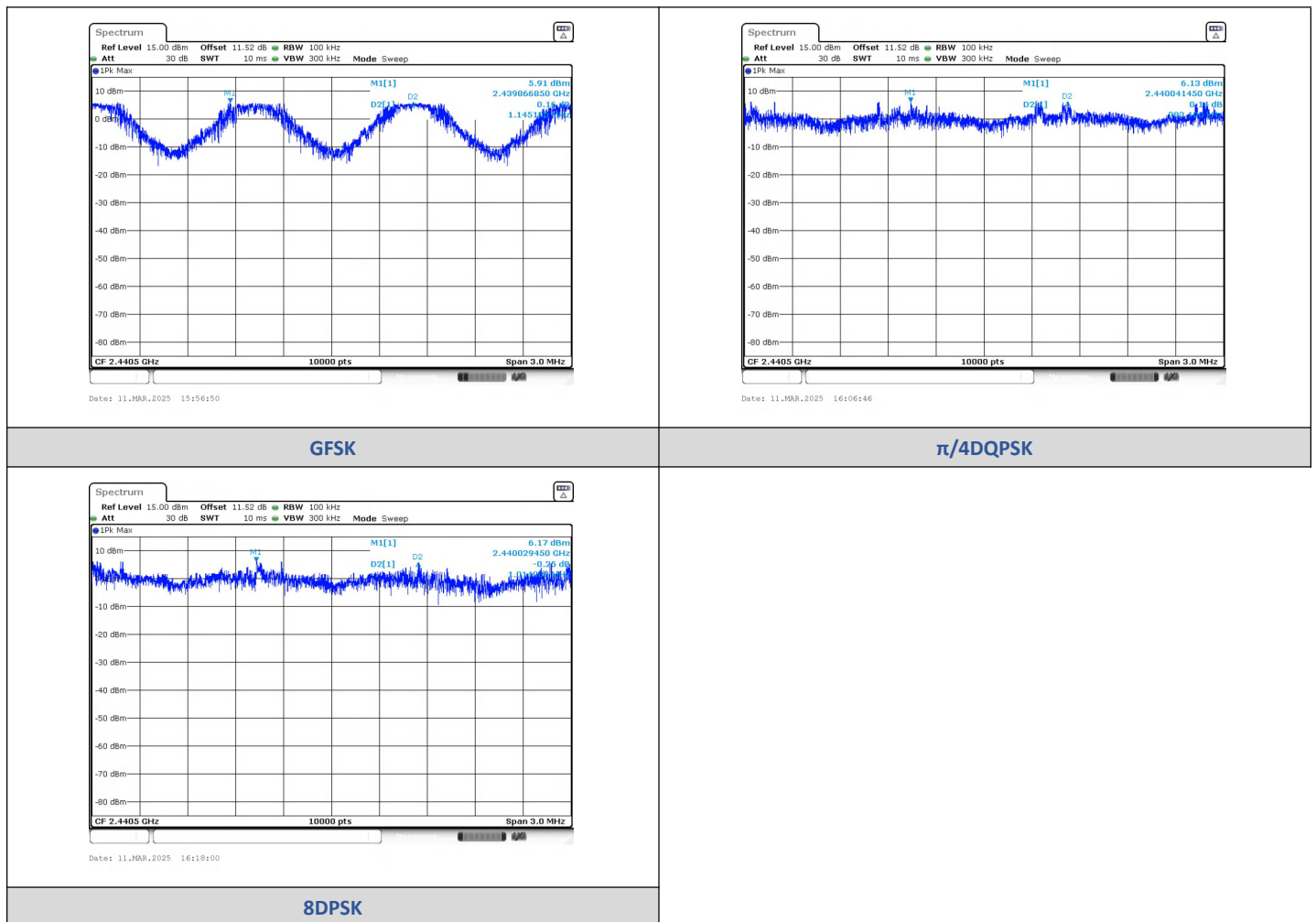
8DPSK_3-DH5_Channel 78

6) 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	2441.012	1.1451	1.01	PASS
$\pi/4$ DQPSK	2-DH5	2440.0415	2441.0246	0.9831	0.88	PASS
8DPSK	3-DH5	2440.0294	2441.0437	1.0143	0.86	PASS

Test Graphs



7) Conducted Out Of Band Emission

Test Result

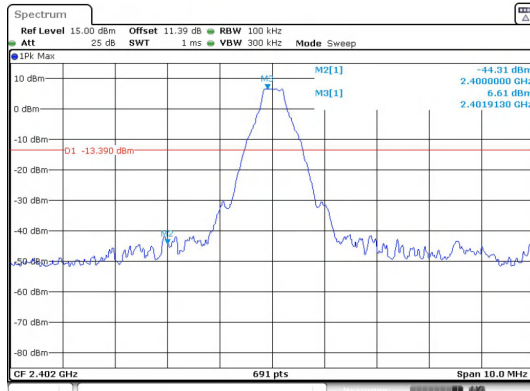
Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2400.00	-44.310	-13.39	-30.920	PASS
			7205.96	-38.907	-13.39	-25.517	PASS
		39	9763.72	-40.482	-13.74	-26.742	PASS
		78	2483.50	-50.710	-14.86	-35.850	PASS
			9920.20	-36.282	-14.86	-21.422	PASS
$\pi/4$ DQPSK	2-DH5	0	2400.00	-44.510	-13.45	-31.060	PASS
			9608.08	-41.371	-13.45	-27.921	PASS
		39	9763.72	-40.004	-13.77	-26.234	PASS
		78	2483.50	-51.280	-14.9	-36.380	PASS
			9920.20	-36.982	-14.9	-22.082	PASS
8DPSK	3-DH5	0	2400.00	-42.940	-13.56	-29.380	PASS
			9608.08	-41.477	-13.56	-27.917	PASS
		39	824.46	-34.626	-13.89	-20.736	PASS
		78	2483.50	-50.580	-14.96	-35.620	PASS
			9920.20	-36.917	-14.96	-21.957	PASS

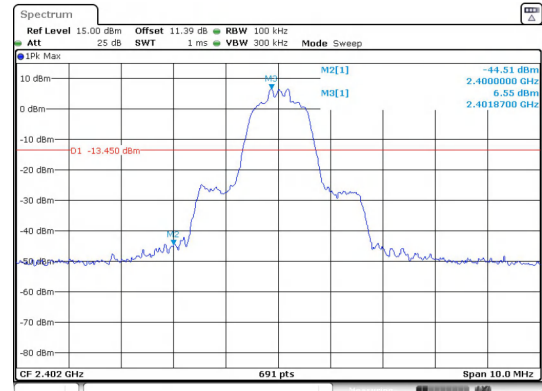
Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2398.63	-47.130	-13.74	-33.390	PASS
			2400.00	-48.280	-13.74	-34.540	PASS
			2483.50	-49.450	-15.46	-33.990	PASS
$\pi/4$ DQPSK	2-DH5		2398.12	-47.790	-13.94	-33.850	PASS
			2400.00	-49.700	-13.94	-35.760	PASS
			2483.50	-49.640	-17.47	-32.170	PASS
8DPSK	3-DH5		2395.64	-47.469	-14.1	-33.369	PASS
			2400.00	-47.770	-14.1	-33.670	PASS
			2483.50	-50.240	-16.63	-33.610	PASS

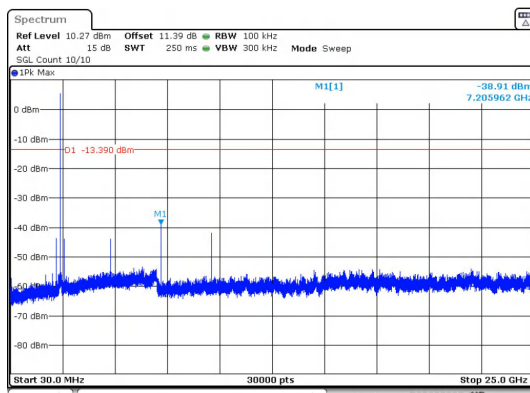
Test Graphs



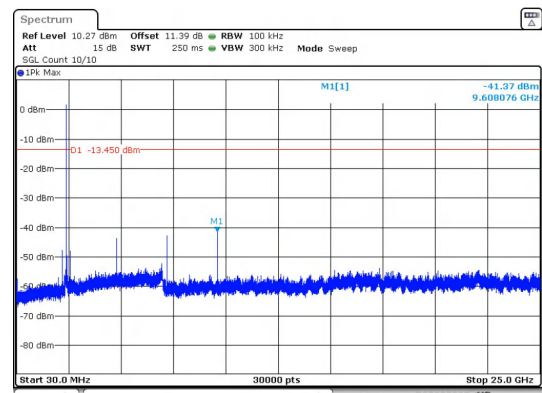
Out Of Band Emission
GFSK_DH5_Channel 0



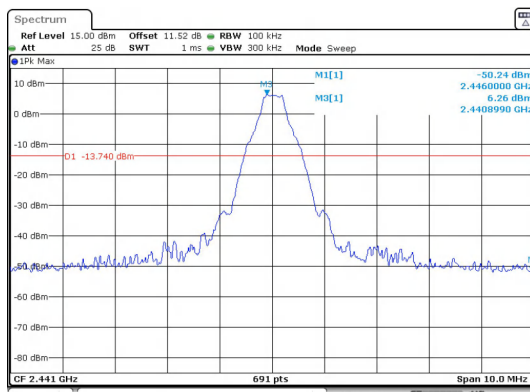
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 0



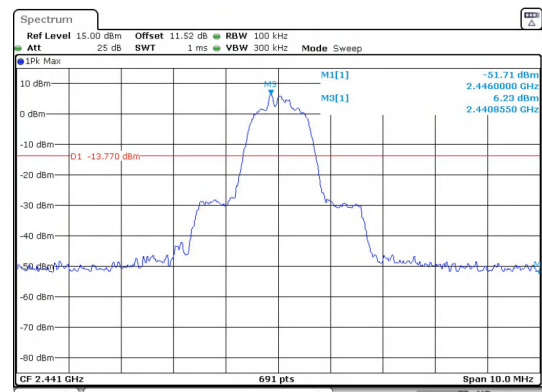
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 0



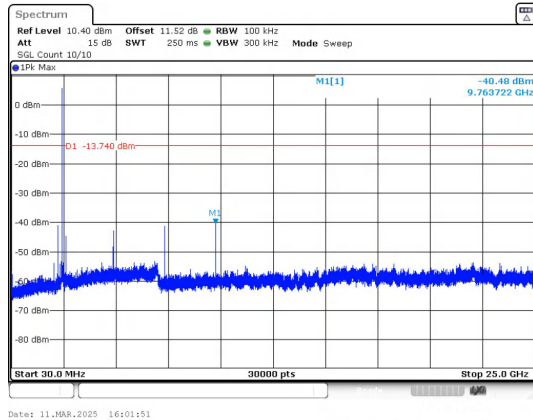
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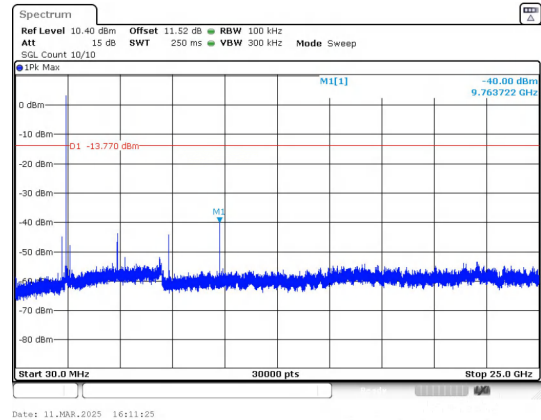
Out Of Band Emission
GFSK_DH5_Channel 39



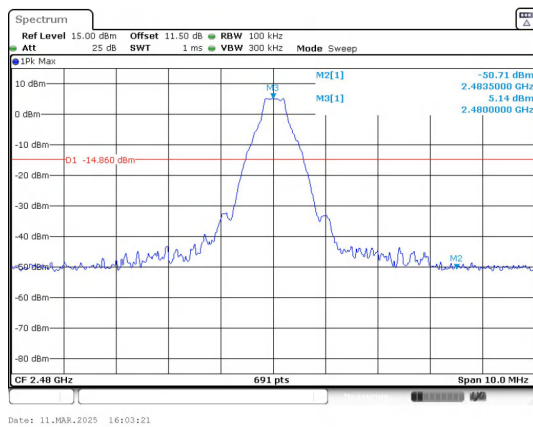
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 39



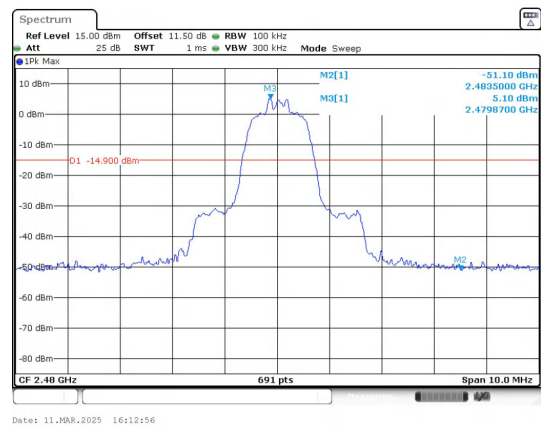
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 39



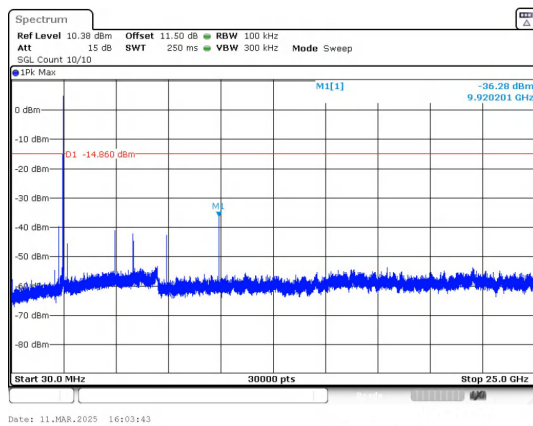
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 39



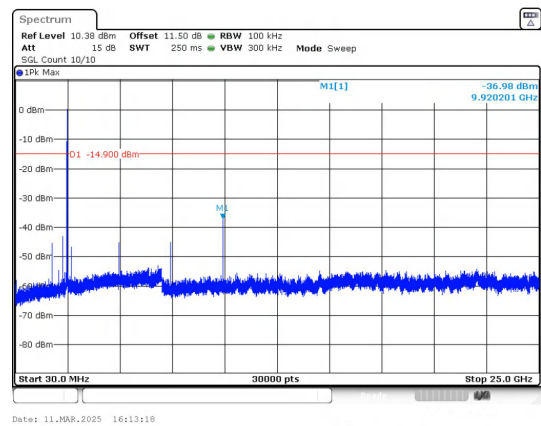
Out Of Band Emission
GFSK_DH5_Channel 78



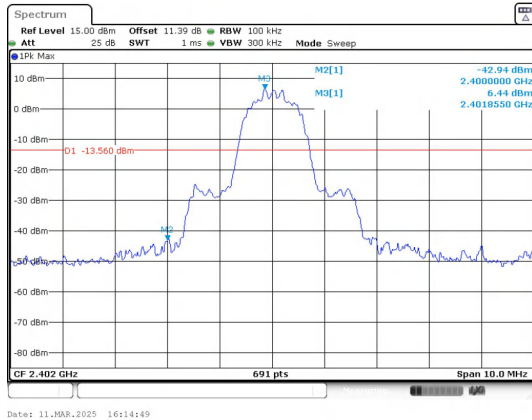
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 78



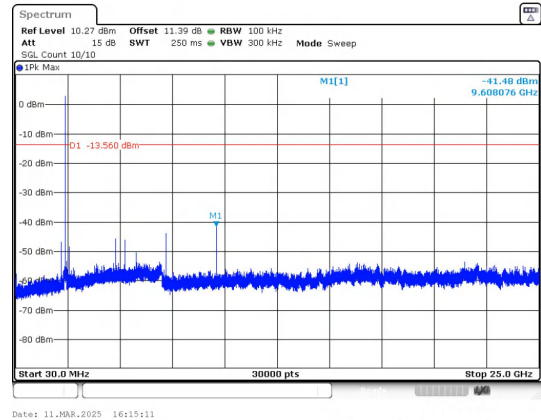
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78



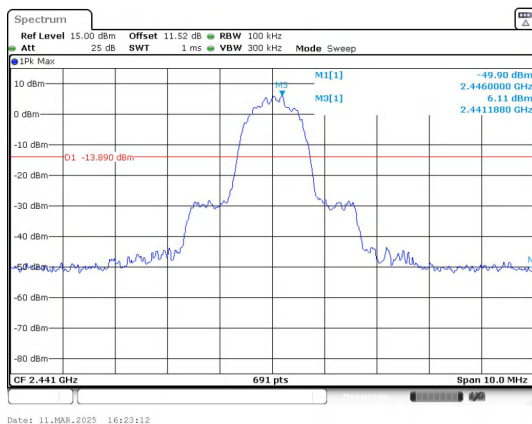
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 $\pi/4$ DQPSK_2-DH5_Channel 78



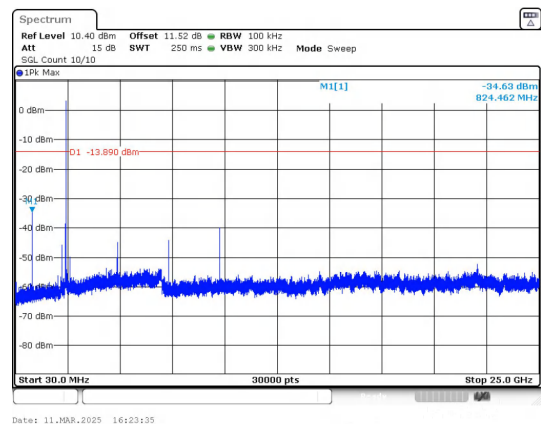
Out Of Band Emission
8DPSK_3-DH5_Channel 0



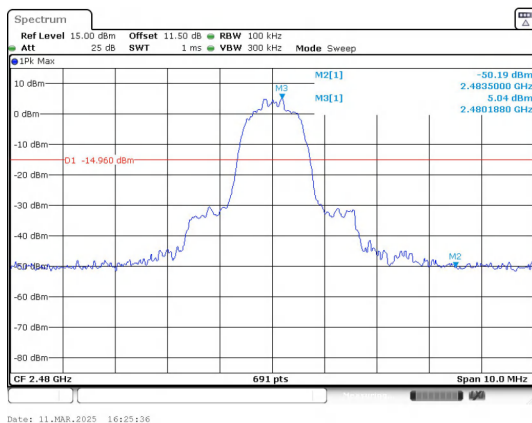
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 0



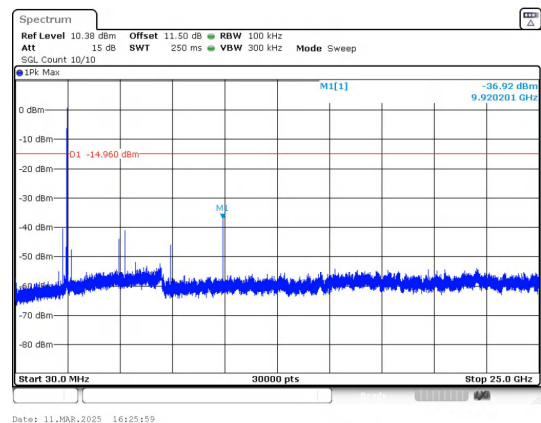
Out Of Band Emission
8DPSK_3-DH5_Channel 39



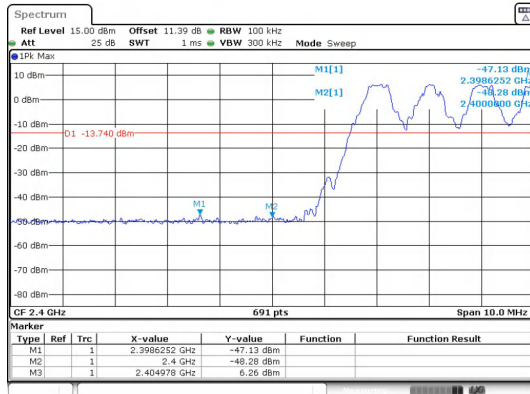
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 39



Out Of Band Emission
8DPSK_3-DH5_Channel 78

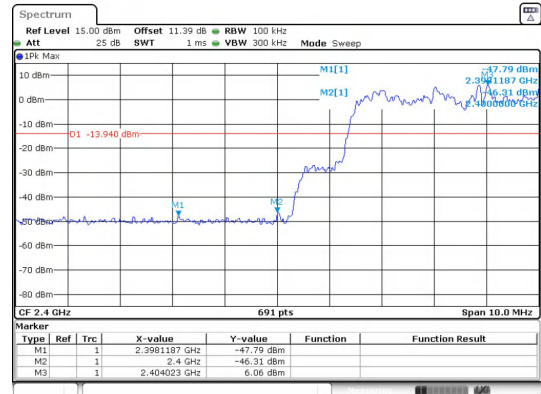


30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 78



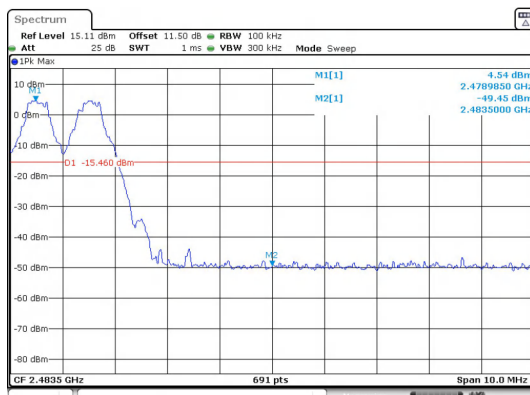
Date: 11.MAR.2025 15:59:14

Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



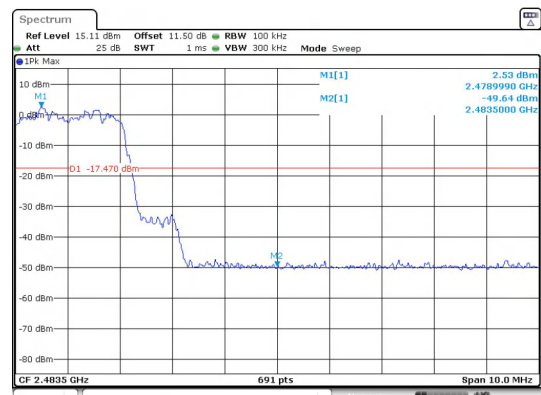
Date: 11.MAR.2025 16:09:05

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



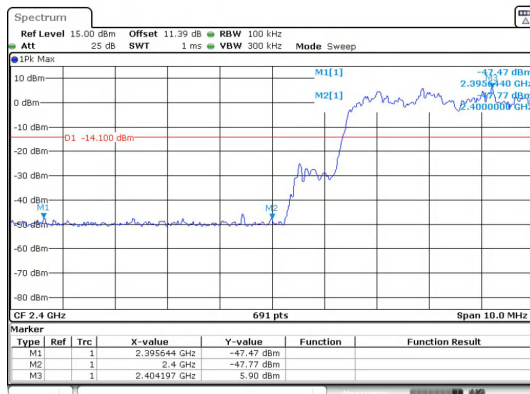
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Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping



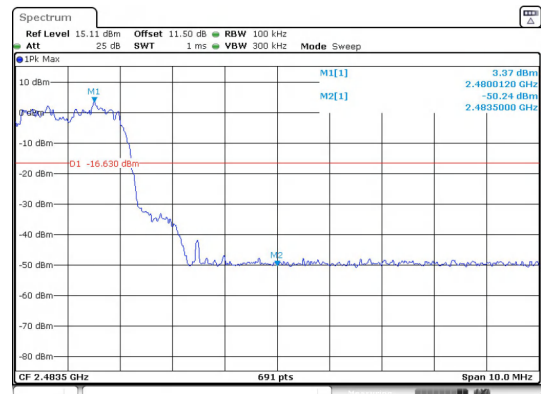
Date: 11.MAR.2025 16:09:33

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



Date: 11.MAR.2025 16:21:12

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



Date: 11.MAR.2025 16:21:44

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

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