

Appendix Report

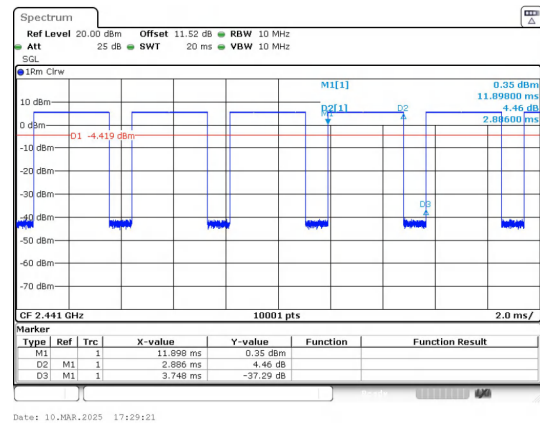
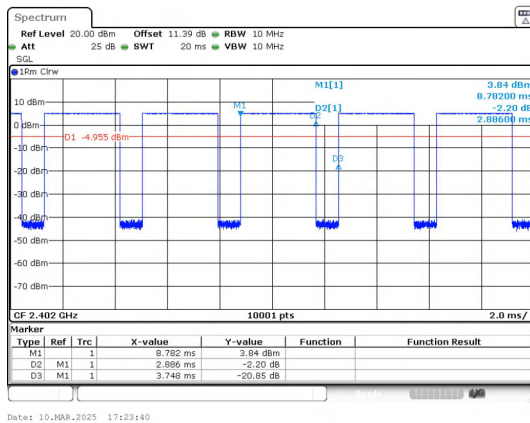
Report No.:	CISRR25030705804
Test Engineer:	Mark Fu
Supervised by:	Rory Huang

1) Duty Cycle

Test Result

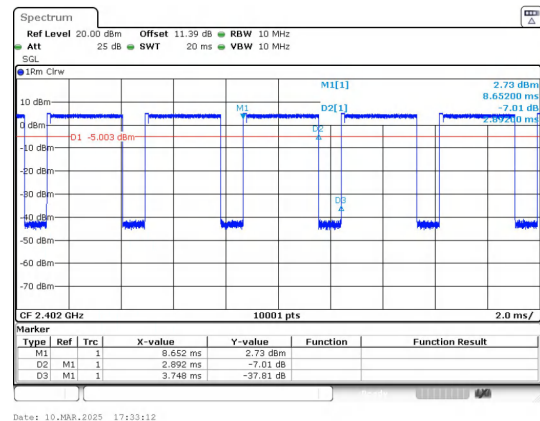
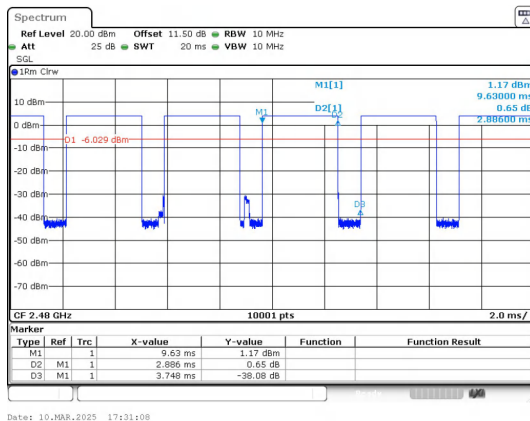
Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.886	3.748	77.00	0.7700	1.1351	0.3465
		39	2.886	3.748	77.00	0.7700	1.1351	0.3465
		78	2.886	3.748	77.00	0.7700	1.1351	0.3465
$\pi/4$ DQPSK	2-DH5	0	2.892	3.748	77.16	0.7716	1.1261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



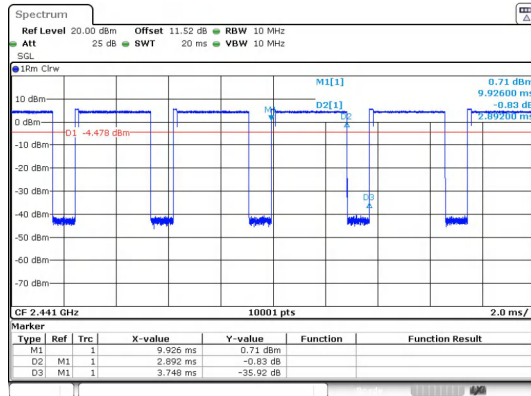
GFSK(DH5)_Channel 0

GFSK(DH5)_Channel 39

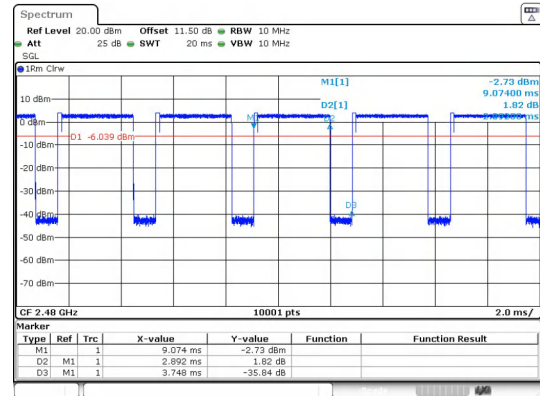


GFSK(DH5)_Channel 78

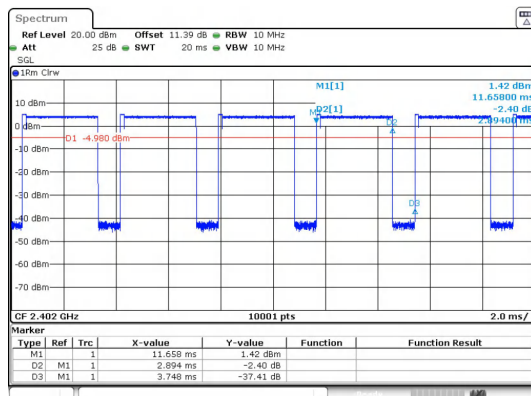
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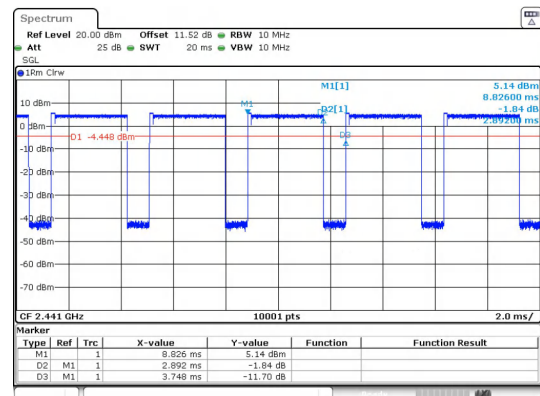
$\pi/4$ DQPSK(2-DH5)_Channel 39



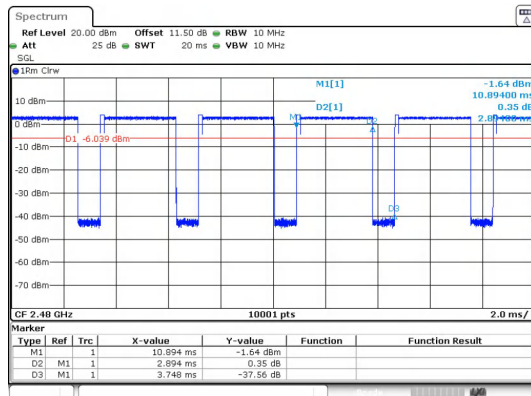
$\pi/4$ DQPSK(2-DH5)_Channel 78



8DPSK(3-DH5)_Channel 0



8DPSK(3-DH5)_Channel 39



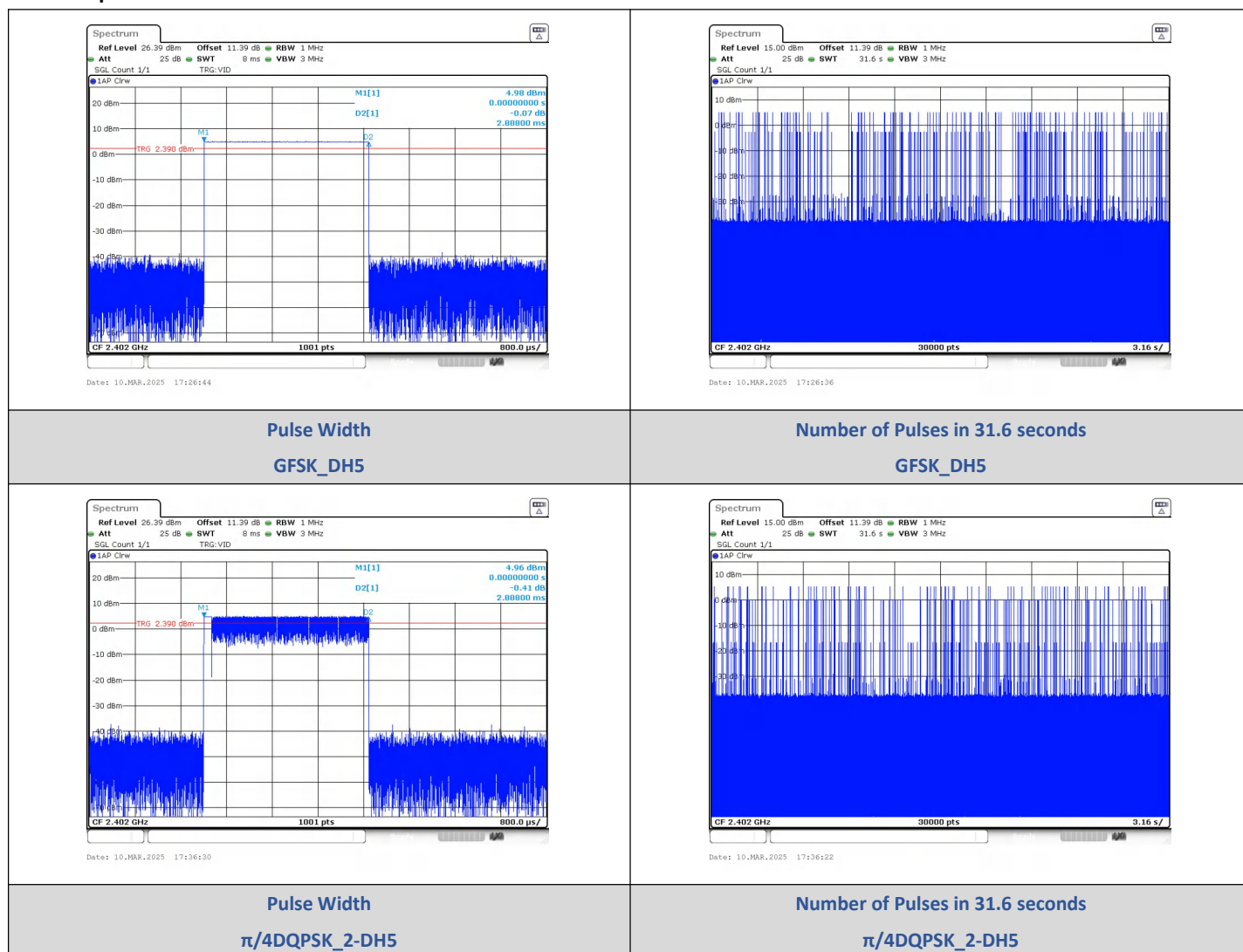
8DPSK(3-DH5)_Channel 78

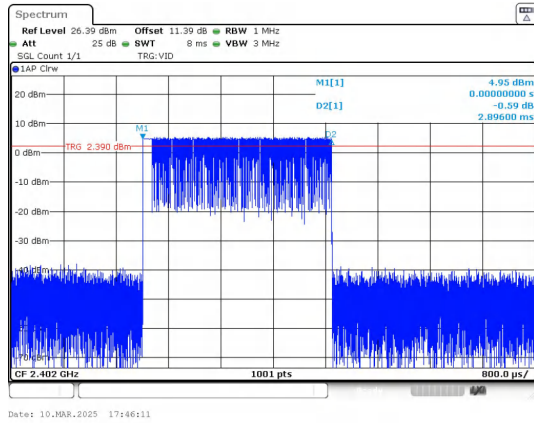
2) Dwell Time

Test Result

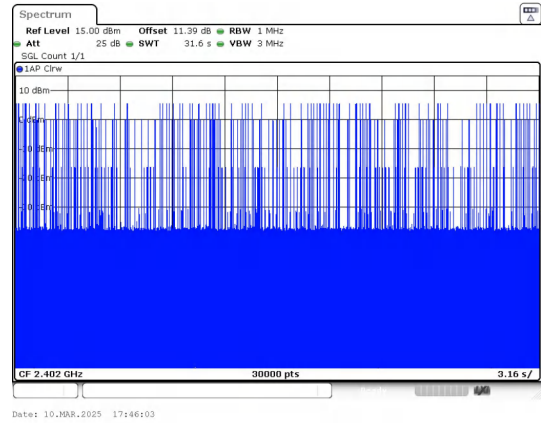
Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	CH0 (2402MHz)	2.888	108	311.9	< 400	PASS
$\pi/4$ DQPSK	2-DH5		2.888	85	245.48		PASS
8DPSK	3-DH5		2.896	100	289.6		PASS

Test Graphs





Pulse Width
8DPSK_3-DH5



Number of Pulses in 31.6 seconds
8DPSK_3-DH5

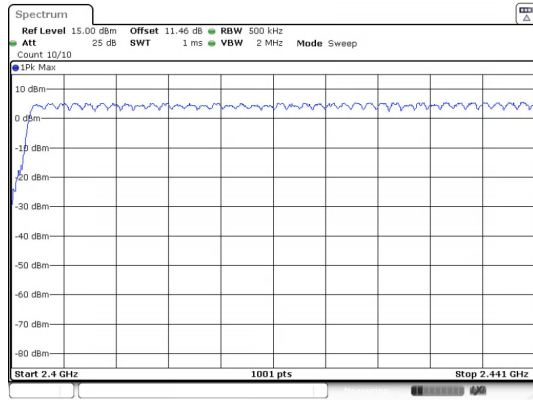
3) Number Of Hopping Channel

Test Result

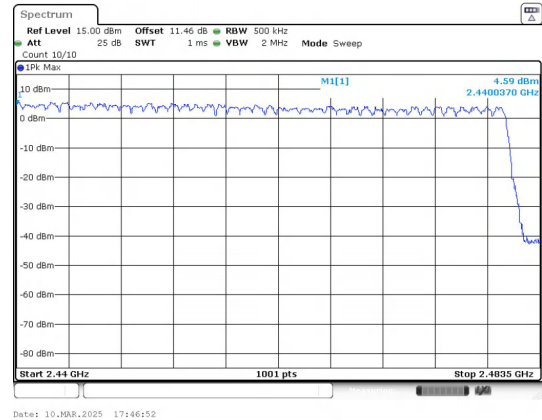
Modulation	Packet	Number of Hopping Channel	Limit	Result
GFSK	DH5	79	15	PASS
$\pi/4$ DQPSK	2-DH5	79	15	PASS
8DPSK	3-DH5	79	15	PASS

Test Graphs





Low End Spectrum Channel Hopping Plot
8DPSK



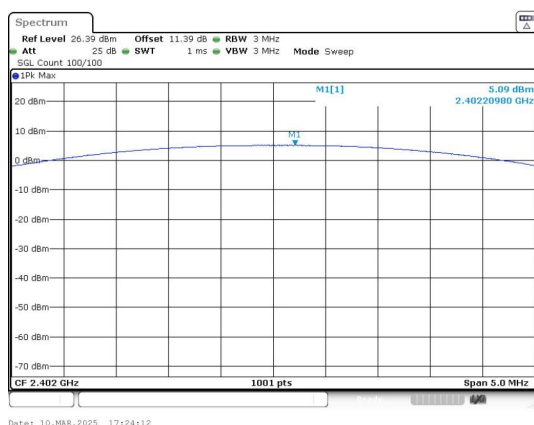
High End Spectrum Channel Hopping Plot
8DPSK

4) Conducted Output Power

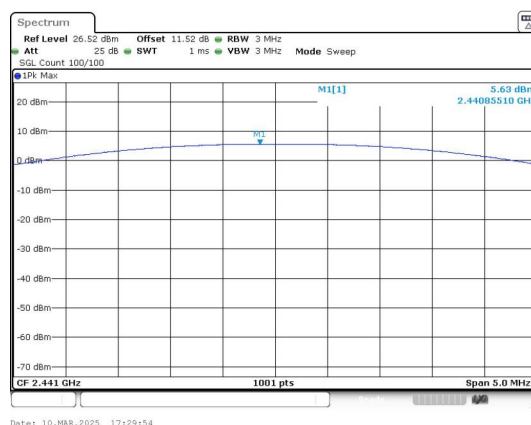
Test Result

Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
GFSK	DH5	0	5.09	3.23	≤30	PASS
		39	5.63	3.66		PASS
		78	4.04	2.54		PASS
$\pi/4$ DQPSK	2-DH5	0	5.51	3.56	≤20.97	PASS
		39	6.09	4.06		PASS
		78	4.60	2.88		PASS
8DPSK	3-DH5	0	5.68	3.70		PASS
		39	6.29	4.26		PASS
		78	4.81	3.03		PASS

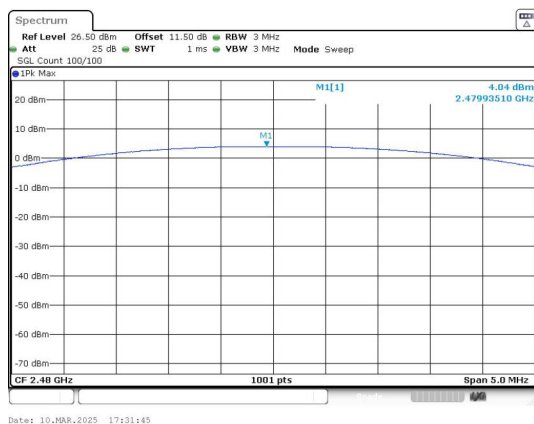
Test Graphs



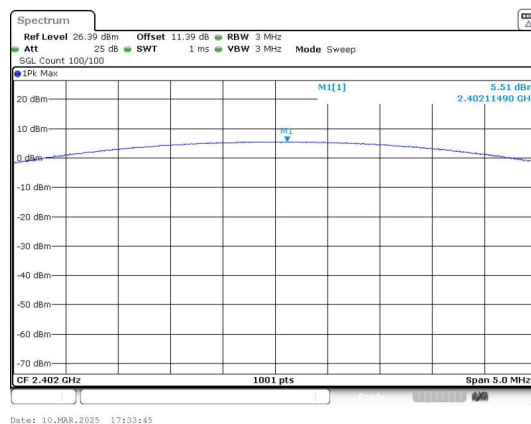
Peak Output Power
GFSK_Channel 0



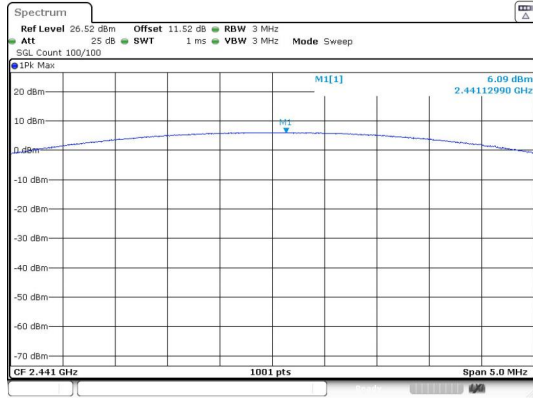
Peak Output Power
GFSK_Channel 39



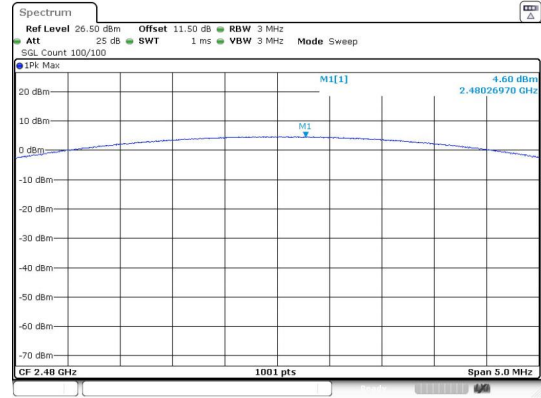
Peak Output Power
GFSK_Channel 78



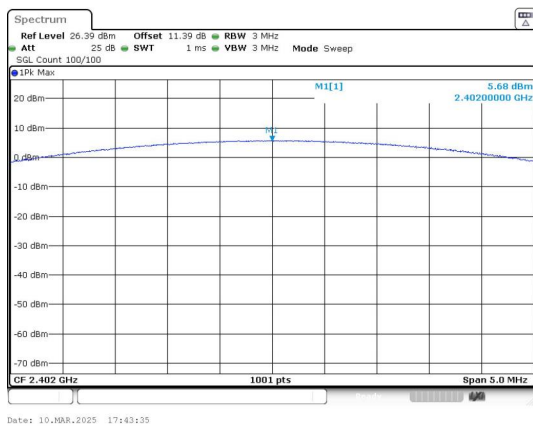
Peak Output Power
 $\pi/4$ DQPSK_Channel 0



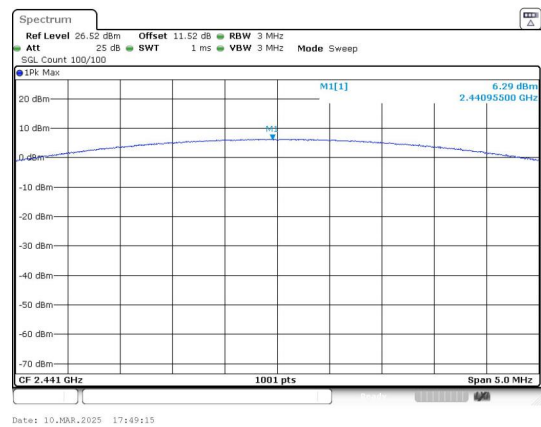
Peak Output Power
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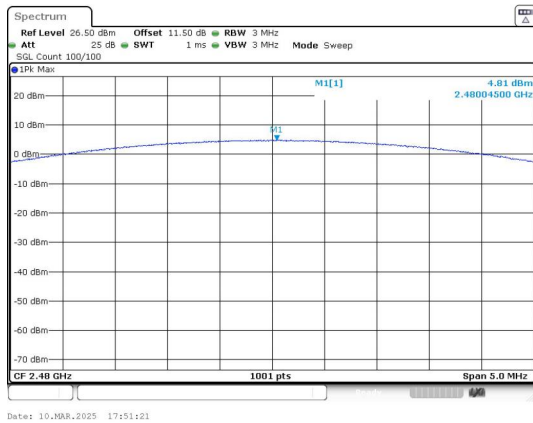
Peak Output Power
 $\pi/4$ DQPSK_Channel 78



Peak Output Power
8DPSK_Channel 0



Peak Output Power
8DPSK_Channel 39



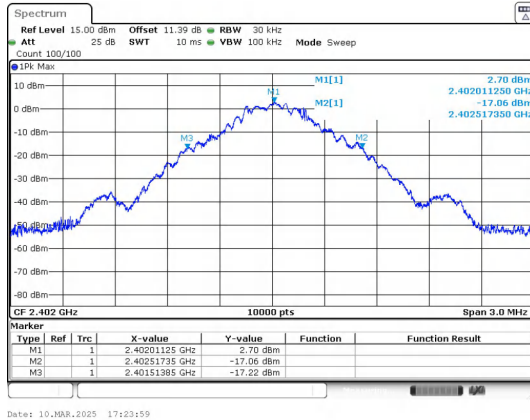
Peak Output Power
8DPSK_Channel 78

5) 20dB Bandwidth

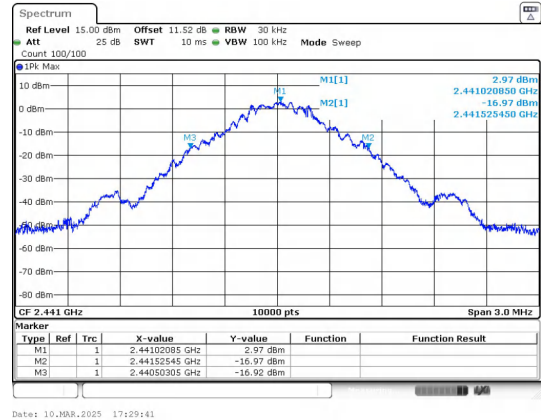
Test Result

Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	1.010
	39	2441 MHz	1.030
	78	2480 MHz	1.010
$\pi/4$ DQPSK	0	2402 MHz	1.310
	39	2441 MHz	1.320
	78	2480 MHz	1.310
8DPSK	0	2402 MHz	1.300
	39	2441 MHz	1.330
	78	2480 MHz	1.290

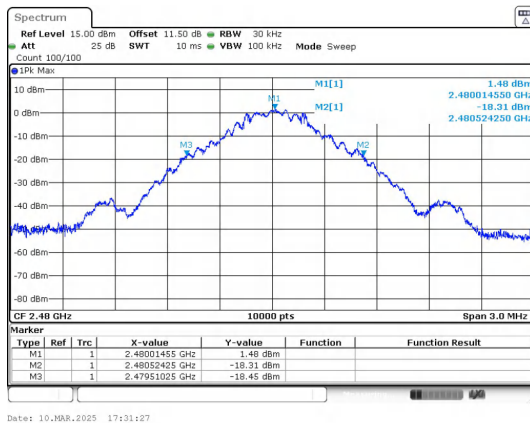
Test Graphs



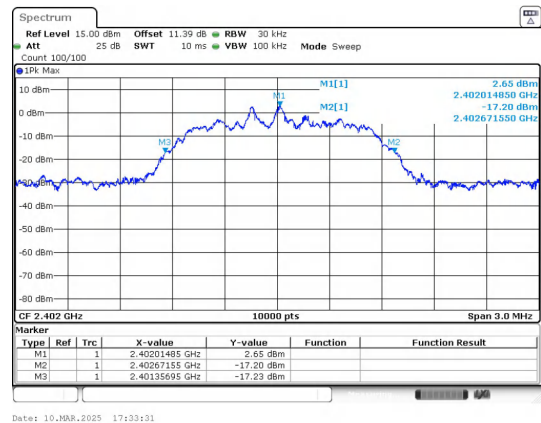
GFSK_DH5_Channel 0

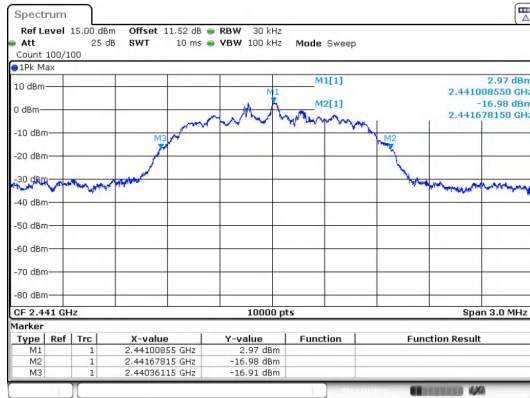


GFSK_DH5_Channel 39

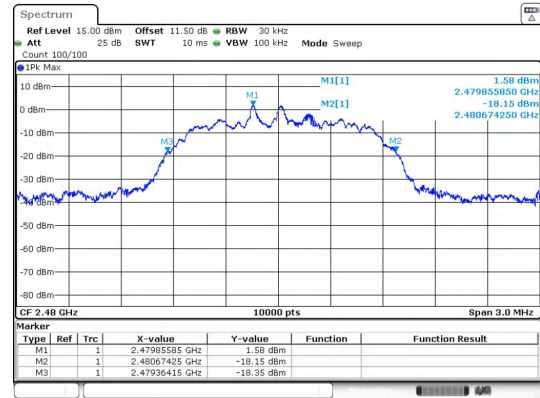


GFSK_DH5_Channel 78

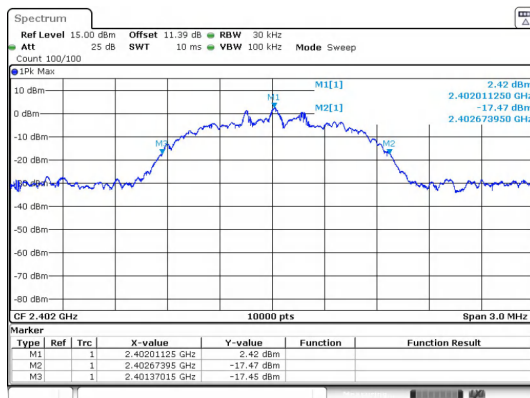

 $\pi/4$ DQPSK_2-DH5_Channel 0



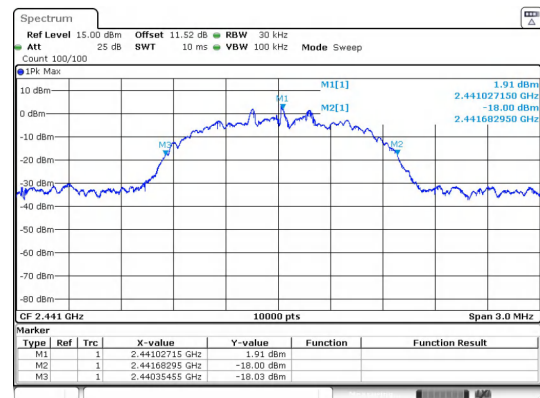
$\pi/4$ DQPSK_2-DH5_Channel 39



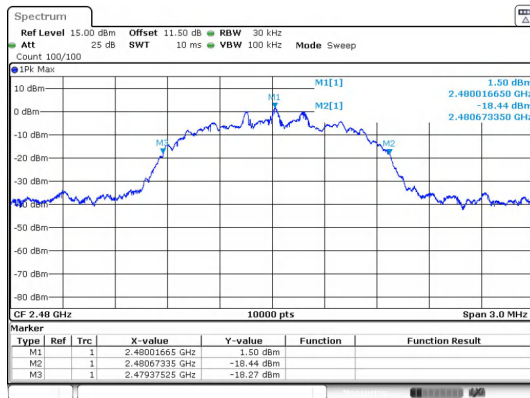
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8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



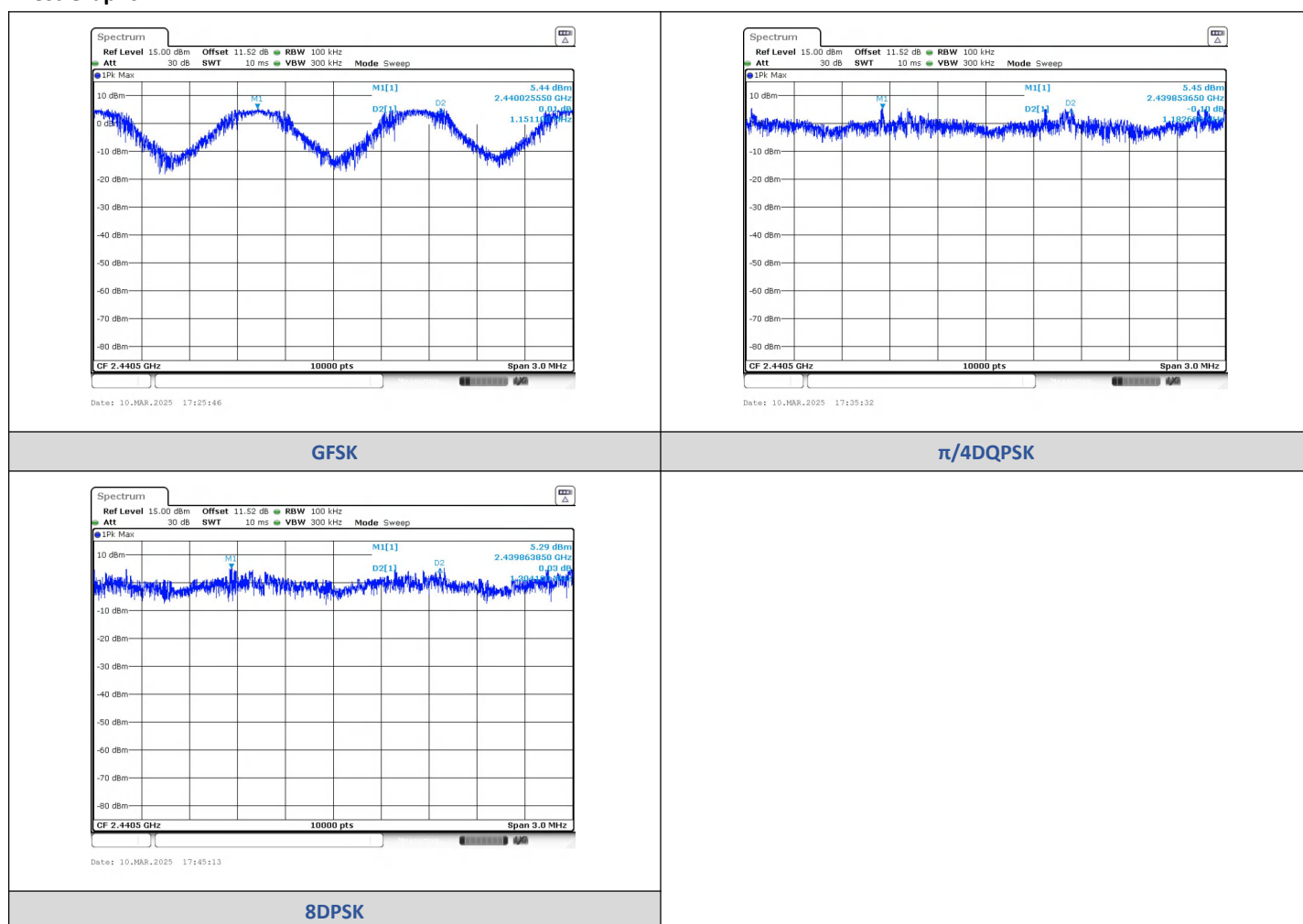
8DPSK_3-DH5_Channel 78

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	2440.0255	2441.1766	1.1511	1.01	PASS
$\pi/4$ DQPSK	2-DH5	2439.8537	2441.0363	1.1826	0.873	PASS
8DPSK	3-DH5	2439.8639	2441.168	1.3041	0.867	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	-47.830	-15.03	-32.800	PASS
			7206.79	-35.418	-15.03	-20.388	PASS
		39	9763.72	-40.181	-14.45	-25.731	PASS
		78	2483.50	-50.180	-16.09	-34.090	PASS
			9920.20	-36.933	-16.09	-20.843	PASS
$\pi/4$ DQPSK	2-DH5	0	2400.00	-42.860	-15.08	-27.780	PASS
			7205.96	-39.854	-15.08	-24.774	PASS
		39	9763.72	-39.810	-14.64	-25.170	PASS
		78	2483.50	-50.830	-16.09	-34.740	PASS
			9920.20	-37.202	-16.09	-21.112	PASS
8DPSK	3-DH5	0	2400.00	-40.940	-14.99	-25.950	PASS
			7205.96	-35.513	-14.99	-20.523	PASS
		39	9763.72	-39.711	-14.91	-24.801	PASS
		78	2483.50	-49.080	-16.18	-32.900	PASS
			9920.20	-36.830	-16.18	-20.650	PASS

Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2397.96	-47.913	-15.35	-32.563	PASS
			2400.00	-49.280	-15.35	-33.930	PASS
			2483.50	-50.150	-16.14	-34.010	PASS
$\pi/4$ DQPSK	2-DH5		2400.00	-44.380	-15.12	-29.260	PASS
			2483.50	-50.010	-17.33	-32.680	PASS
8DPSK	3-DH5		2400.00	-43.330	-15.43	-27.900	PASS
			2483.50	-48.830	-16.54	-32.290	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



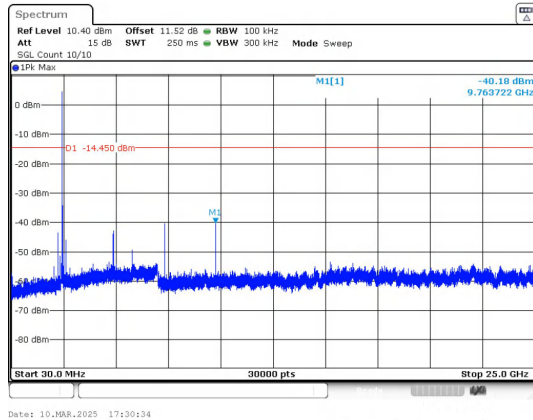
30.0 MHz - 25000.0 MHz



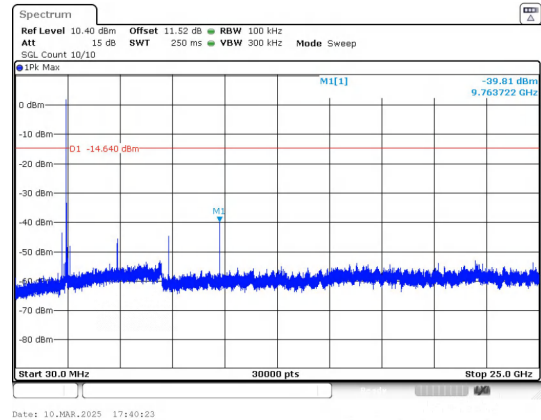
Out Of Band Emission
GFSK DH5 Channel 39



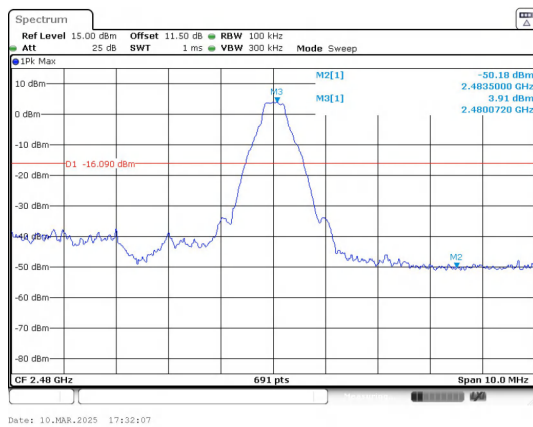
Out Of Band Emission
 $\pi/4$ DQPSK 2-DH5 Channel 39



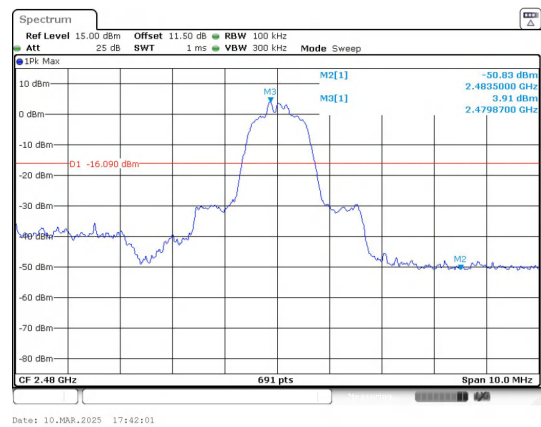
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 39



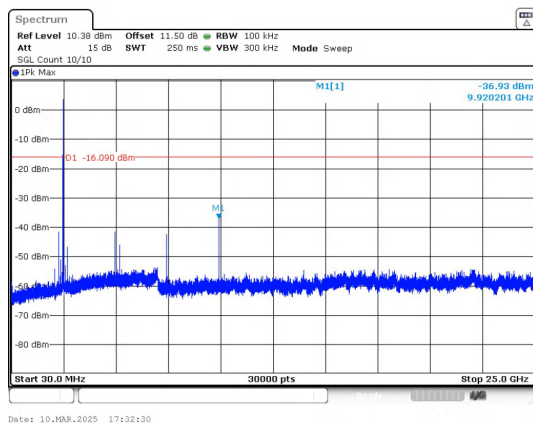
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 $\pi/4$ DQPSK_2-DH5_Channel 39



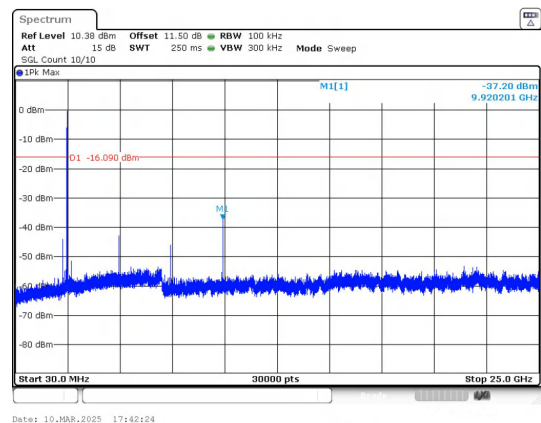
Out Of Band Emission
GFSK_DH5_Channel 78



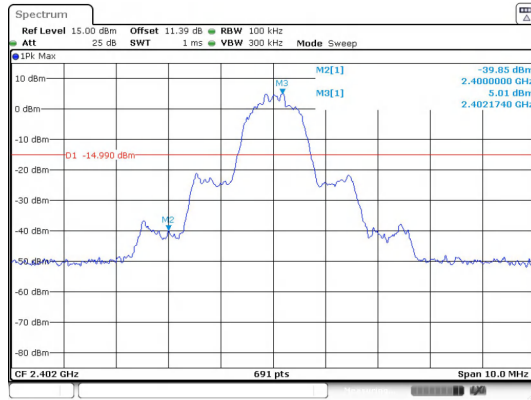
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 78



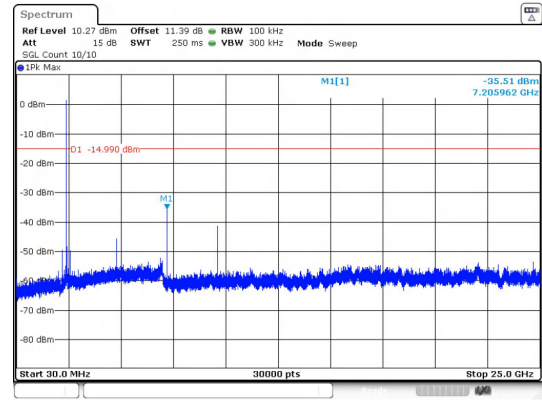
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GFSK_DH5_Channel 78



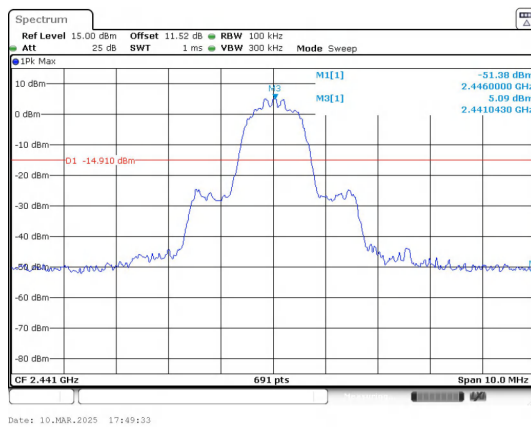
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 $\pi/4$ DQPSK_2-DH5_Channel 78



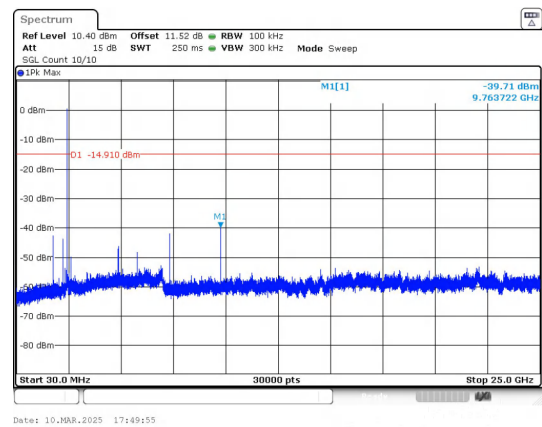
Out Of Band Emission
8DPSK_3-DH5_Channel 0



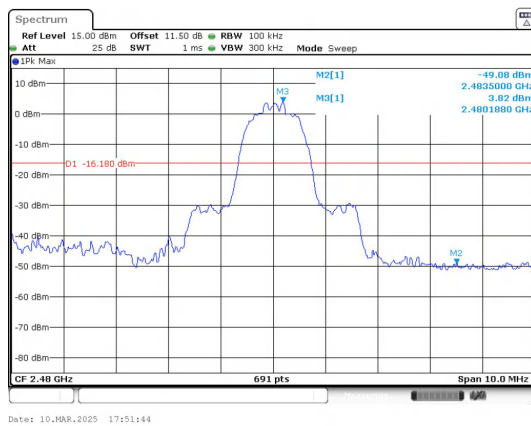
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 0



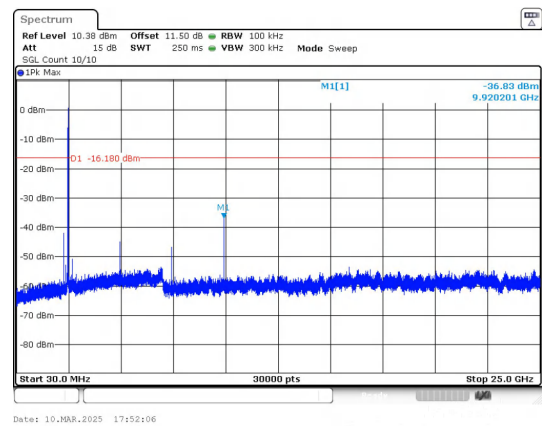
Out Of Band Emission
8DPSK_3-DH5_Channel 39



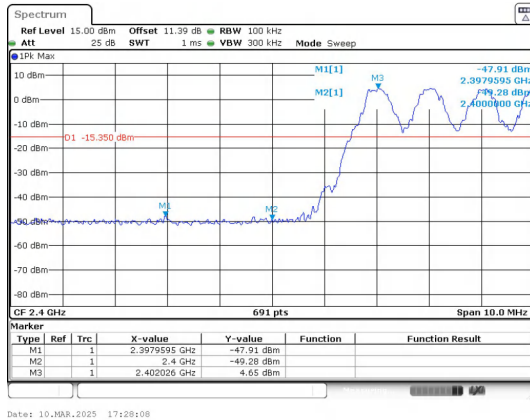
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 39



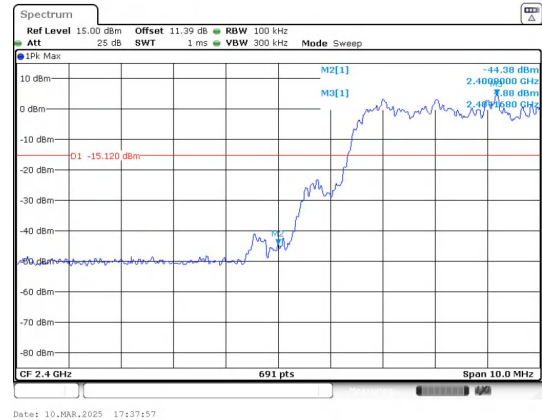
Out Of Band Emission
8DPSK_3-DH5_Channel 78



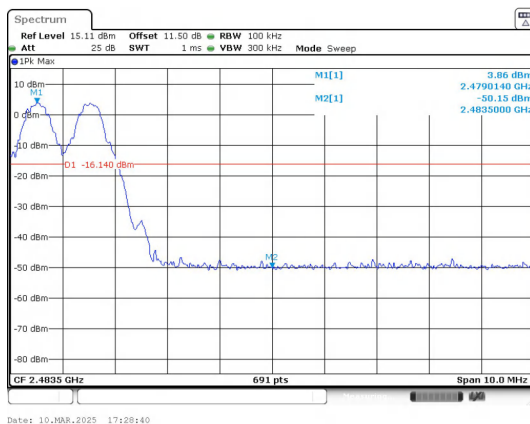
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 78



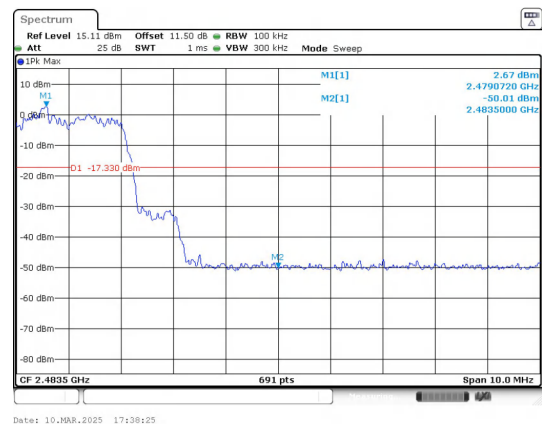
Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



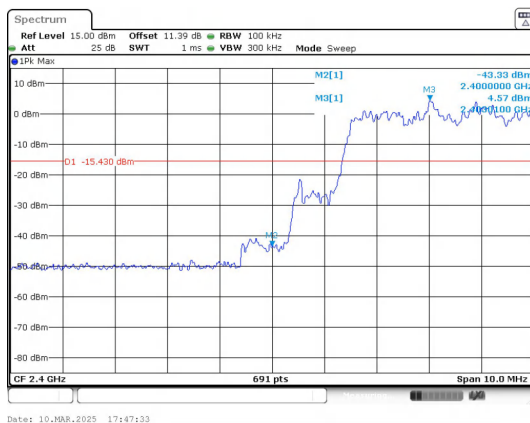
Out Of Band Emission(Left)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



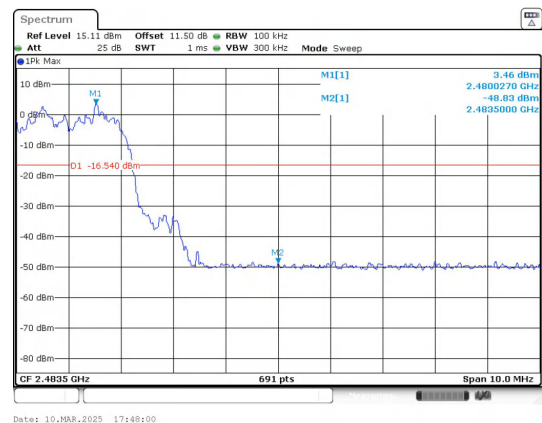
Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping



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-----