

Appendix Report

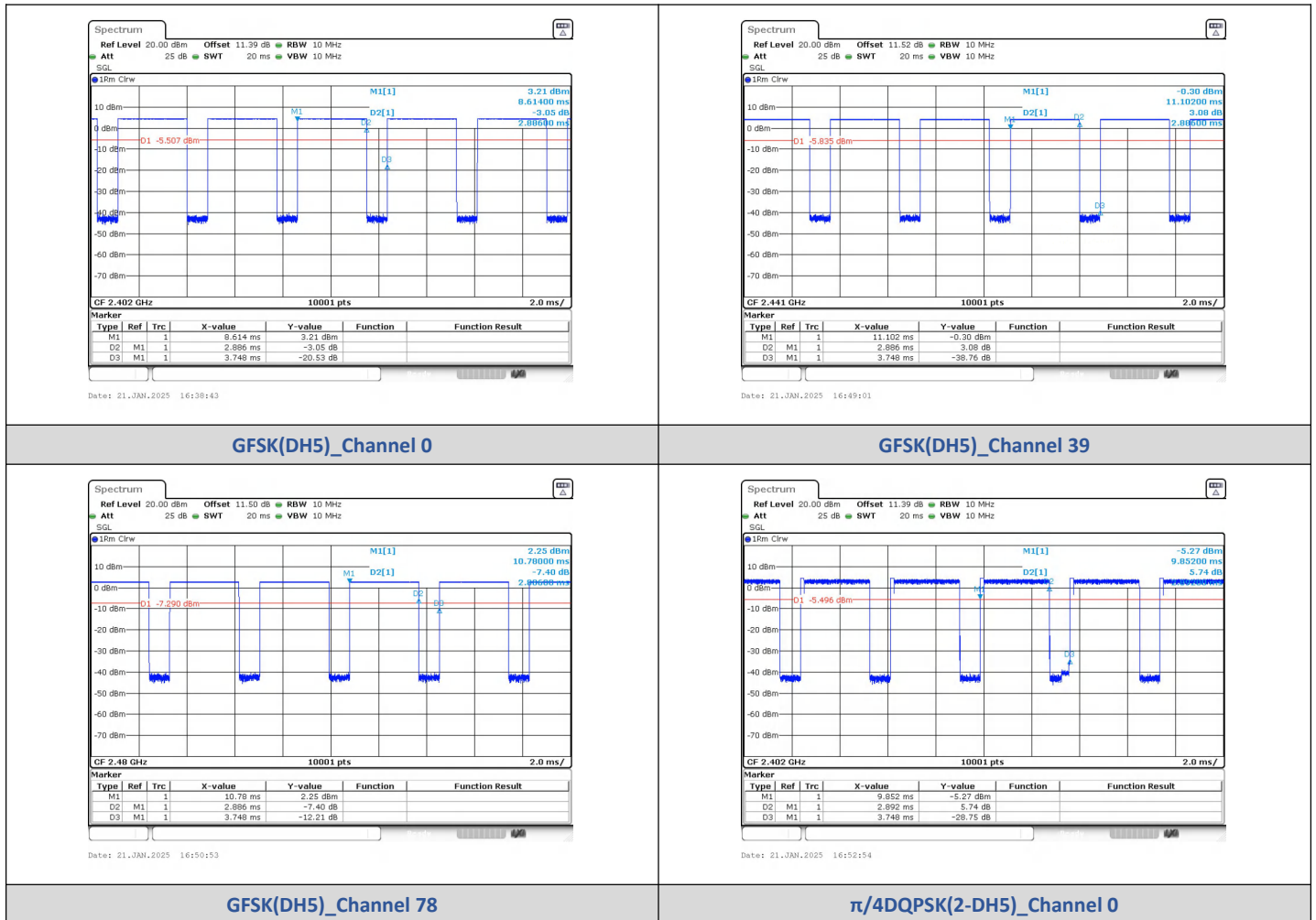
Report No.:	CISRR25011716104
Test Engineer:	Mark Fu
Supervised by:	Rory Huang

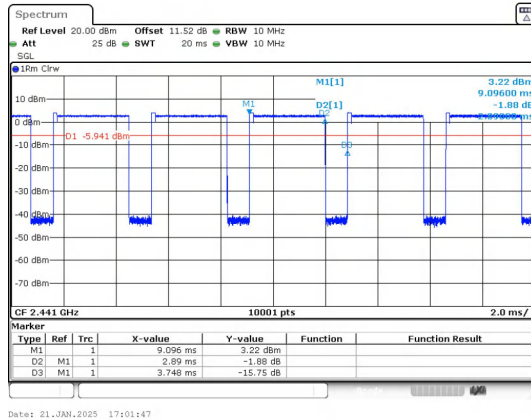
1) Duty Cycle

Test Result

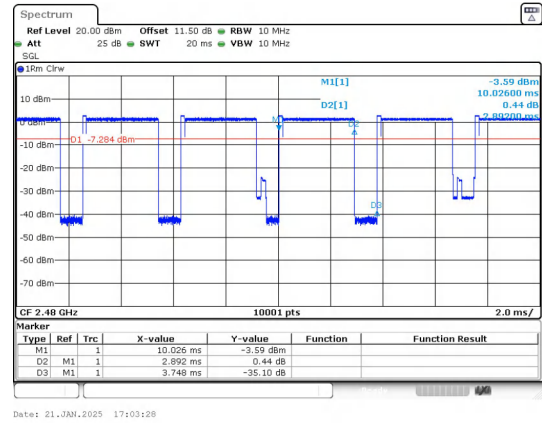
Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.886	3.748	77.00	0.7700	1.1351	0.3465
		39	2.886	3.748	77.00	0.7700	1.1351	0.3465
		78	2.886	3.748	77.00	0.7700	1.1351	0.3465
$\pi/4$ DQPSK	2-DH5	0	2.892	3.748	77.16	0.7716	1.1261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

Test Graphs





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



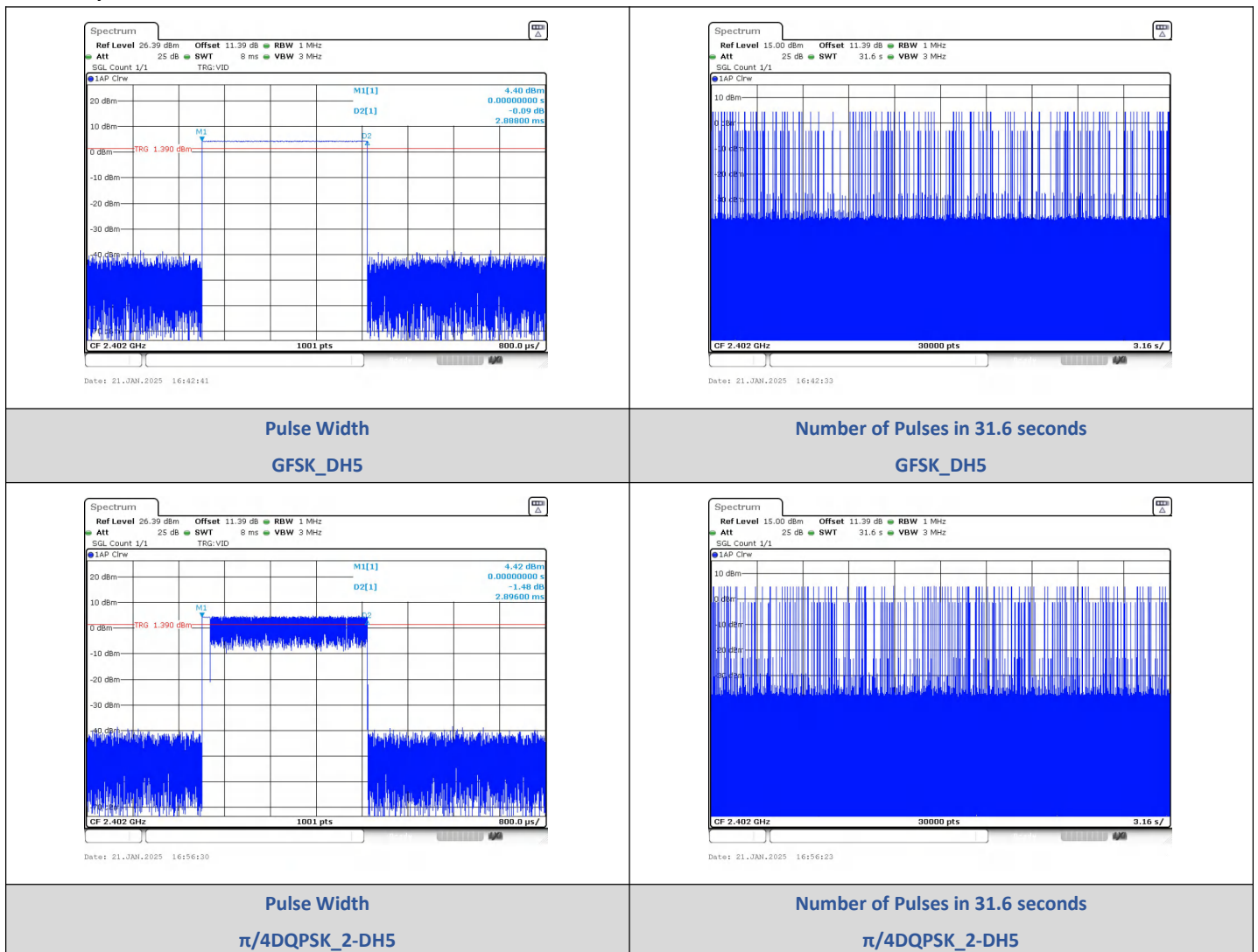
$\pi/4$ DQPSK(2-DH5)_Channel 78

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	2.888	117	337.9	< 400	PASS
$\pi/4$ DQPSK	2-DH5	(2402MHz)	2.896	118	341.73		PASS

Test Graphs

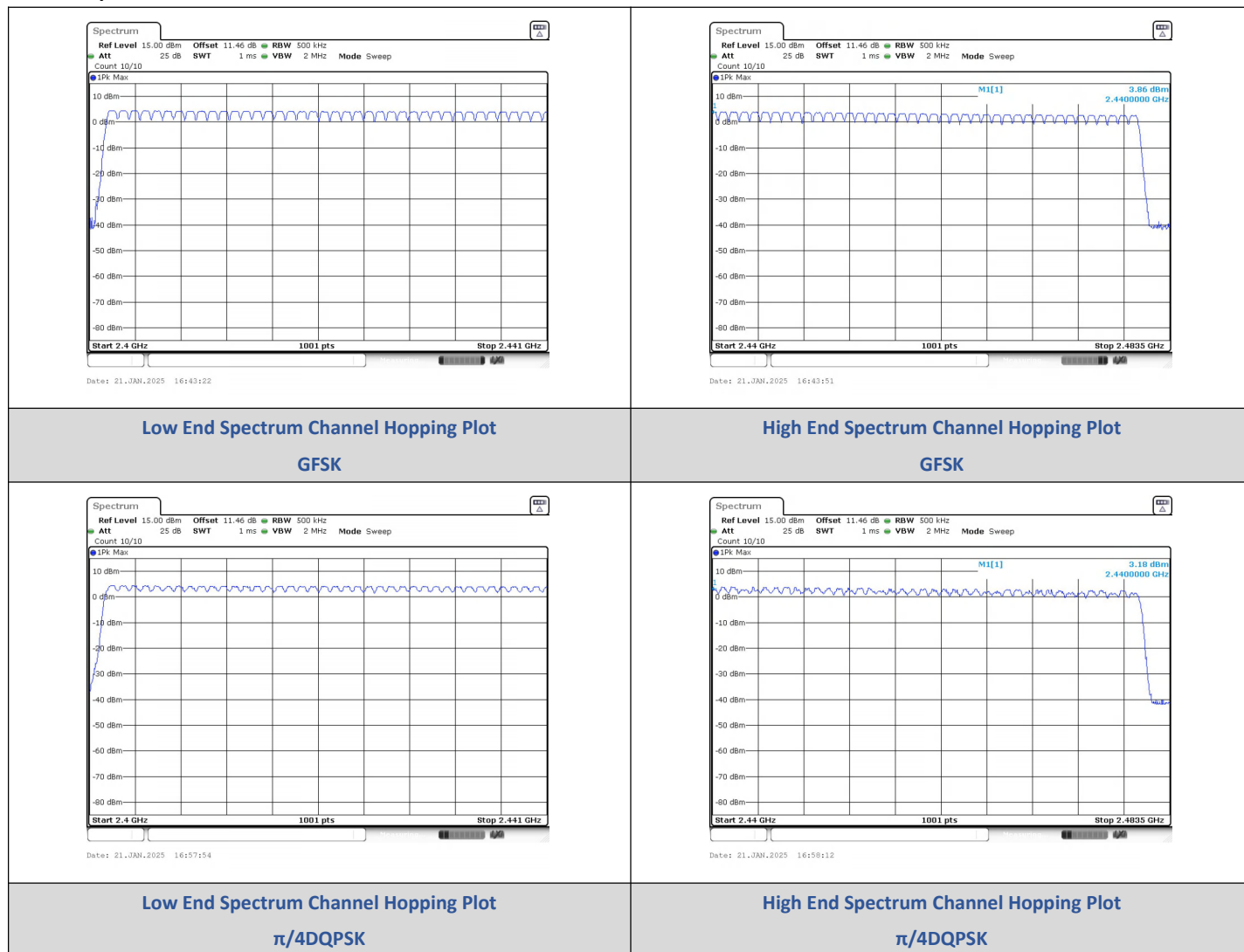


3) Number Of Hopping Channel

Test Result

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

Test Graphs

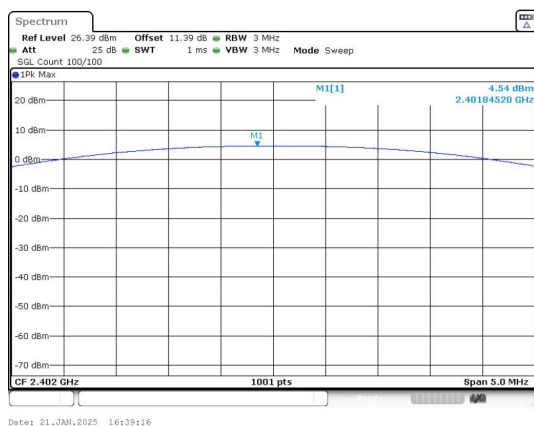


4) Conducted Output Power

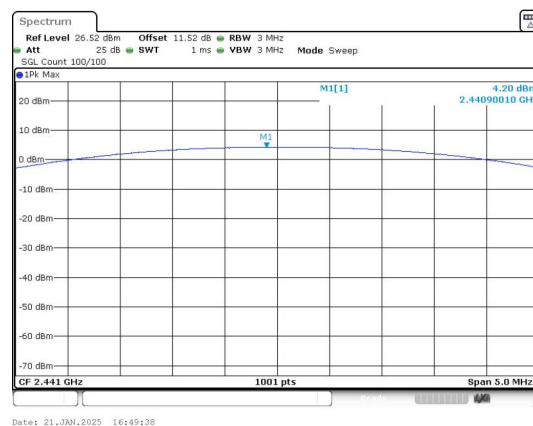
Test Result

Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
GFSK	DH5	0	4.54	2.84	≤30	PASS
		39	4.20	2.63		PASS
		78	2.75	1.88		PASS
$\pi/4$ DQPSK	2-DH5	0	5.28	3.37	≤20.97	PASS
		39	4.96	3.13		PASS
		78	3.60	2.29		PASS

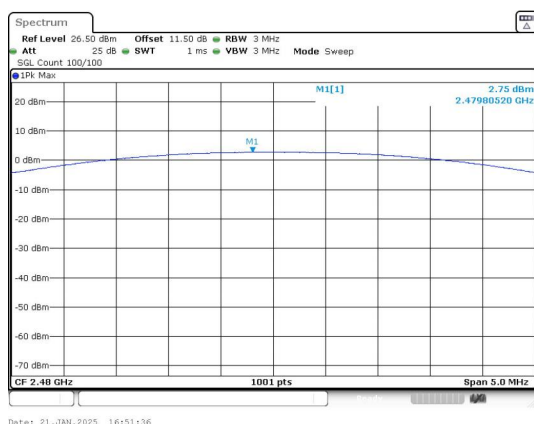
Test Graphs



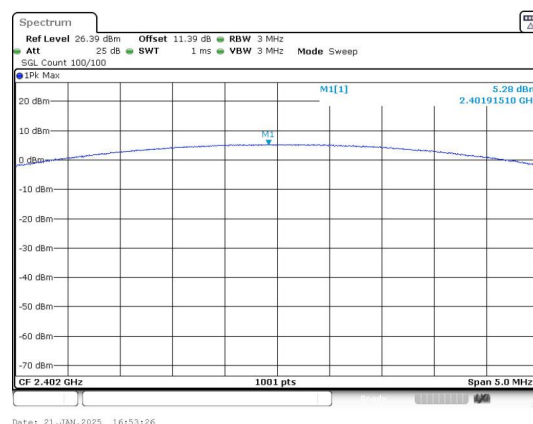
Peak Output Power
GFSK_Channel 0



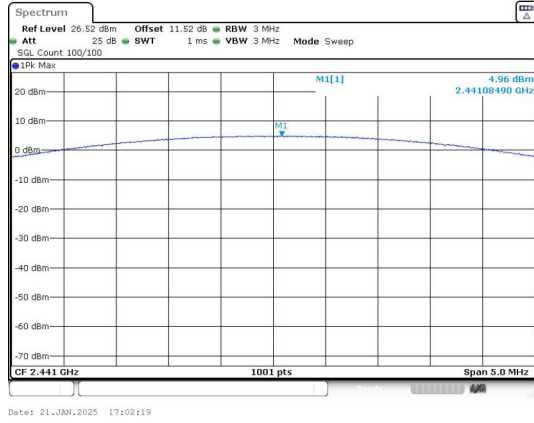
Peak Output Power
GFSK_Channel 39



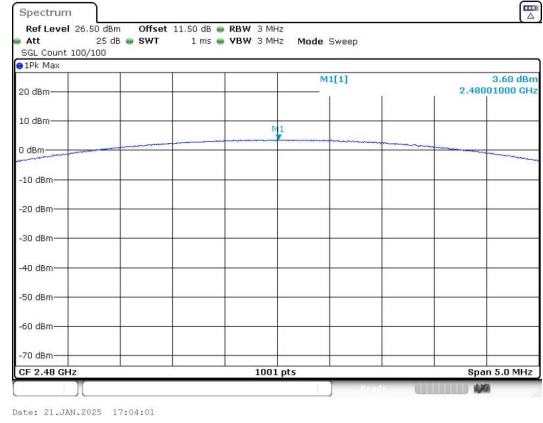
Peak Output Power
GFSK_Channel 78



Peak Output Power
 $\pi/4$ DQPSK_Channel 0



Peak Output Power
 $\pi/4$ DQPSK_Channel 39



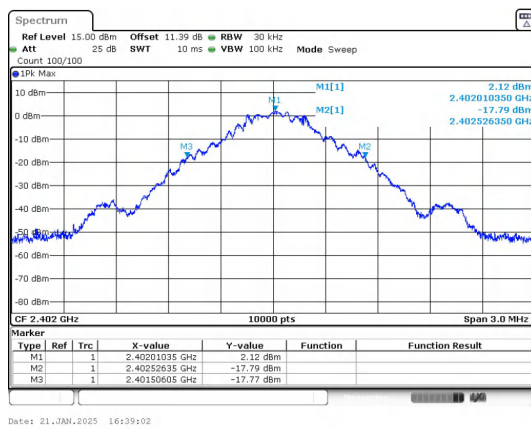
Peak Output Power
 $\pi/4$ DQPSK_Channel 78

5) 20dB Bandwidth

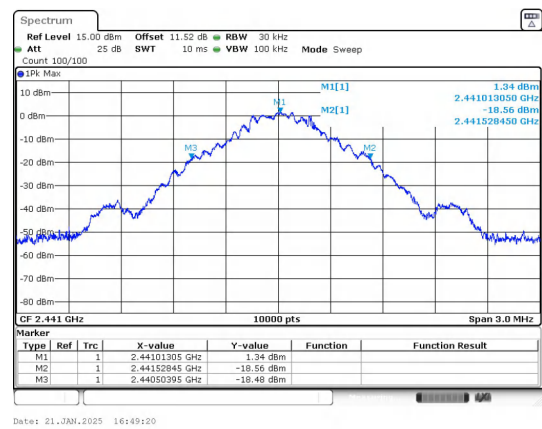
Test Result

Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	1.020
	39	2441 MHz	1.030
	78	2480 MHz	1.010
π /4DQPSK	0	2402 MHz	1.280
	39	2441 MHz	1.310
	78	2480 MHz	1.290

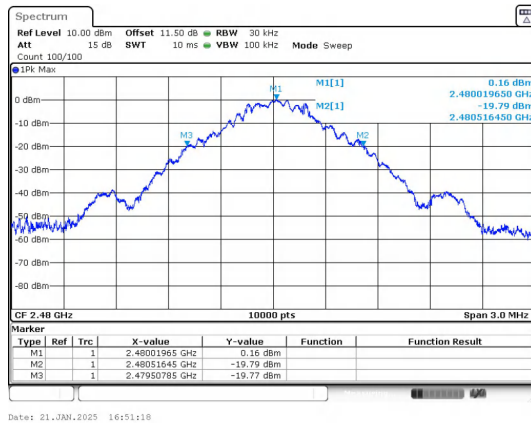
Test Graphs



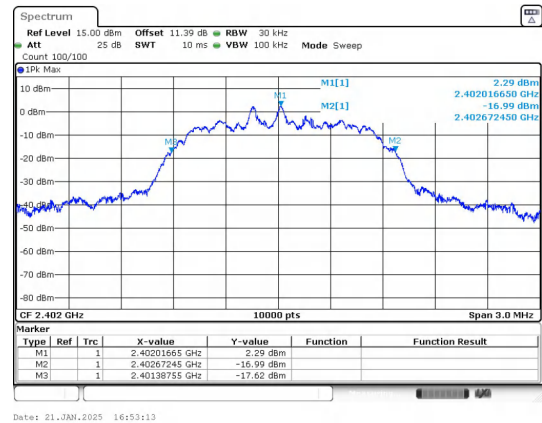
GFSK_DH5_Channel 0

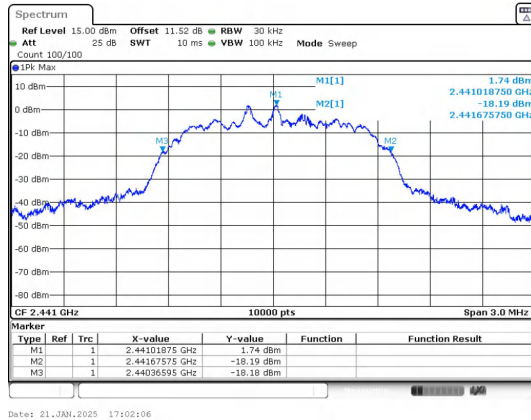


GFSK_DH5_Channel 39

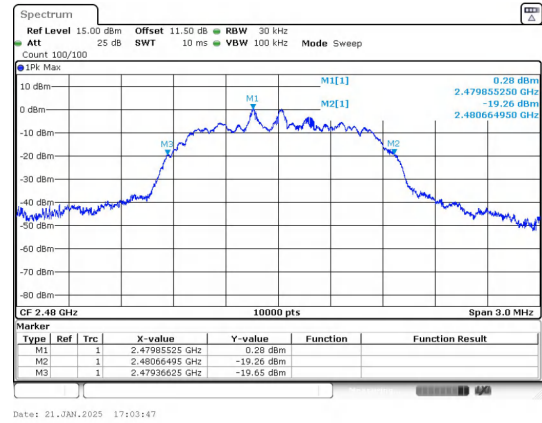


GFSK_DH5_Channel 78


 π /4DQPSK_2-DH5_Channel 0



$\pi/4$ DQPSK_2-DH5_Channel 39



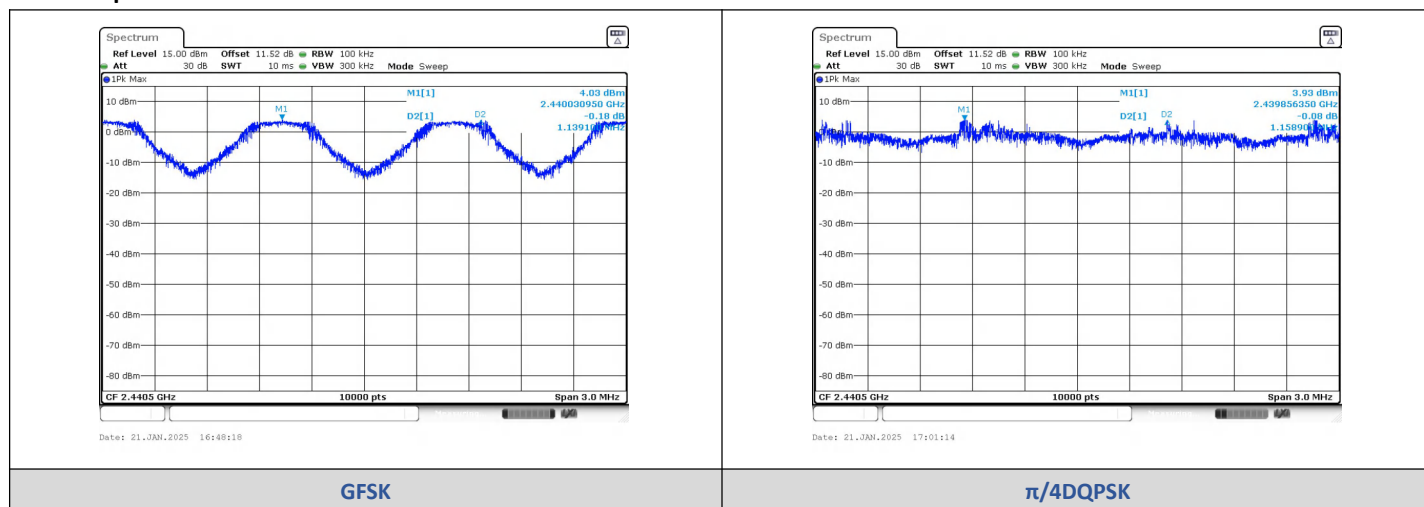
$\pi/4$ DQPSK_2-DH5_Channel 78

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	2440.0309	2441.1701	1.1391	1.02	PASS
$\pi/4$ DQPSK	2-DH5	2439.8564	2441.0152	1.1589	0.853	PASS

Test Graphs



7) Conducted Out Of Band Emission

Test Result

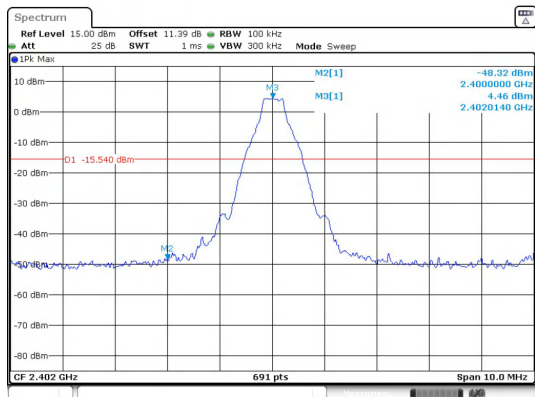
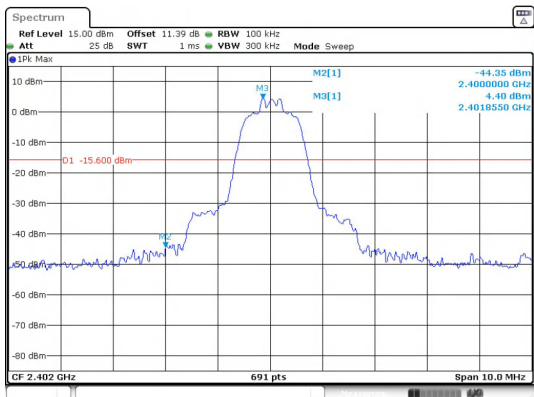
Non-Hopping

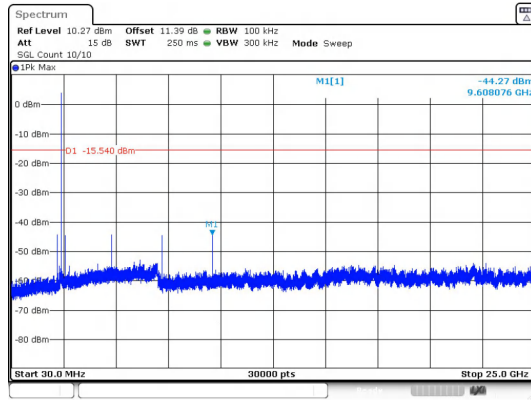
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2400.00	-48.320	-15.54	-32.780	PASS
			9608.08	-44.275	-15.54	-28.735	PASS
		39	2249.42	-43.444	-15.91	-27.534	PASS
		78	2483.50	-50.850	-17.38	-33.470	PASS
			9920.20	-39.858	-17.38	-22.478	PASS
π /4DQPSK	2-DH5	0	2400.00	-44.350	-15.6	-28.750	PASS
			9608.08	-44.453	-15.6	-28.853	PASS
		39	9763.72	-42.360	-16.03	-26.330	PASS
		78	2483.50	-49.620	-17.42	-32.200	PASS
			9920.20	-39.803	-17.42	-22.383	PASS

Hopping

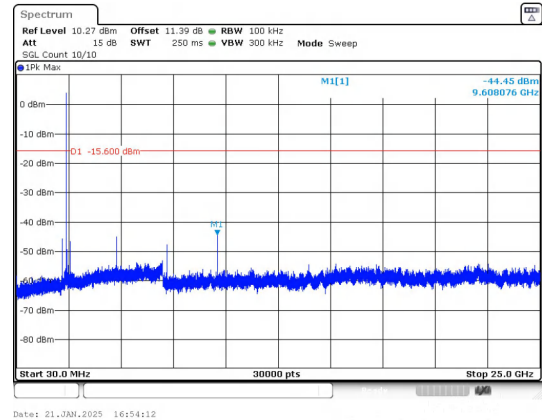
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2396.56	-47.031	-15.57	-31.461	PASS
			2400.00	-49.250	-15.57	-33.680	PASS
			2483.50	-50.340	-17.8	-32.540	PASS
π /4DQPSK	2-DH5		2396.43	-47.928	-16.02	-31.908	PASS
			2400.00	-50.490	-16.02	-34.470	PASS
			2483.50	-48.840	-18.49	-30.350	PASS

Test Graphs

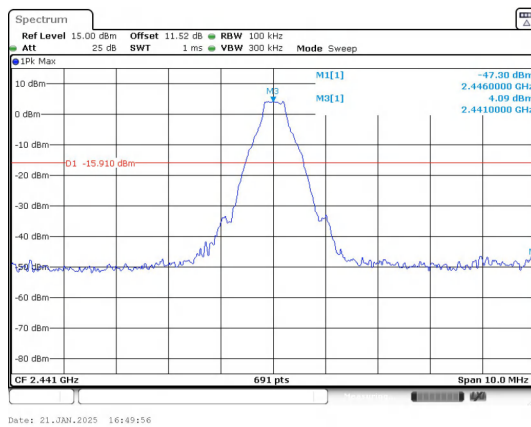
 Date: 21.JAN.2025 16:39:39	 Date: 21.JAN.2025 16:53:49
Out Of Band Emission GFSK_DH5_Channel 0	Out Of Band Emission π/4DQPSK_2-DH5_Channel 0



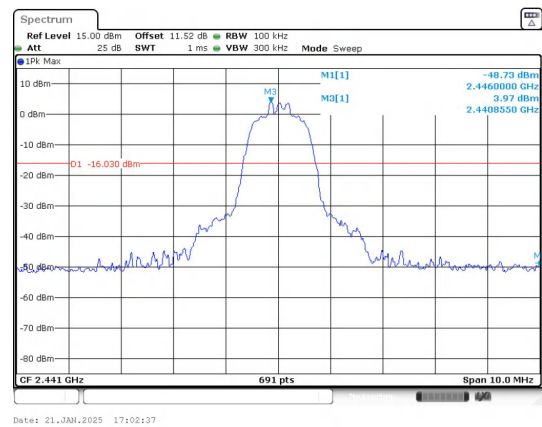
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 0



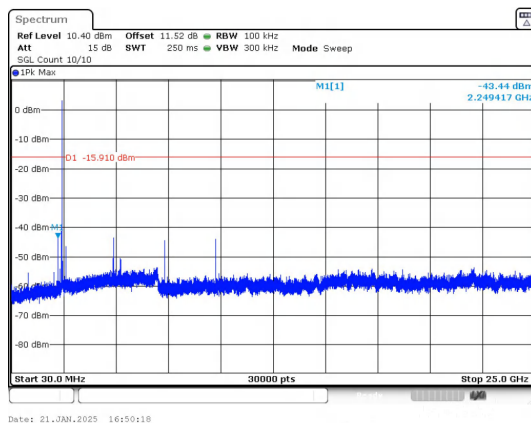
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 0



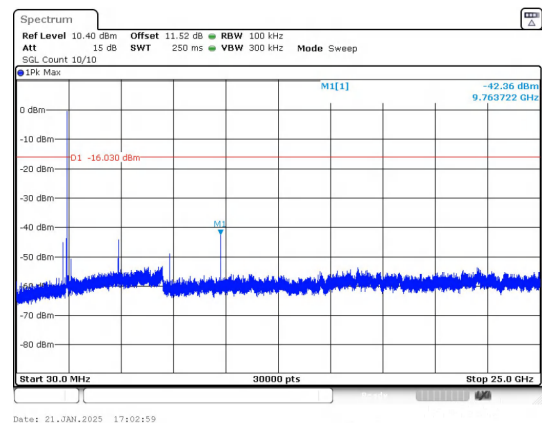
Out Of Band Emission
GFSK_DH5_Channel 39



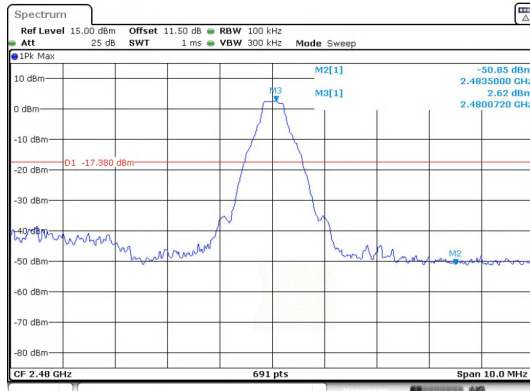
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 39



30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 39

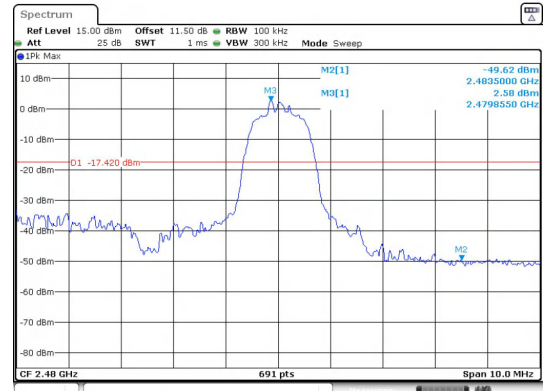


30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 39



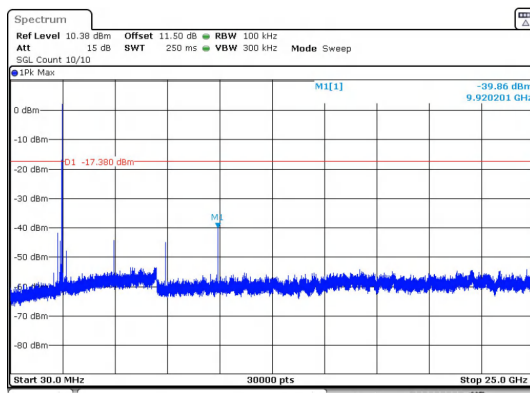
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Out Of Band Emission
GFSK_DH5_Channel 78



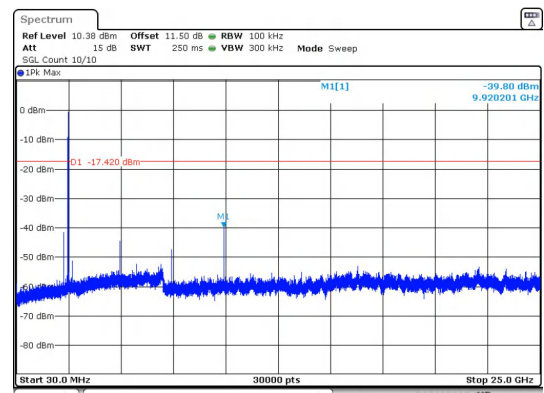
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Out Of Band Emission
π/4DQPSK_2-DH5_Channel 78



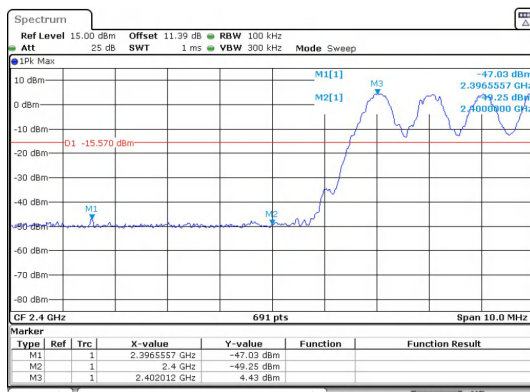
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30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78



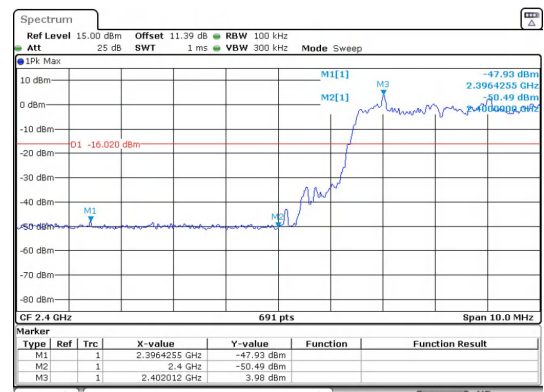
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30.0 MHz - 25000.0 MHz
π/4DQPSK_2-DH5_Channel 78



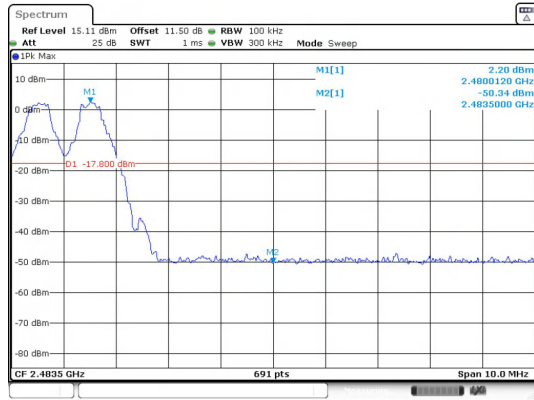
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Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping

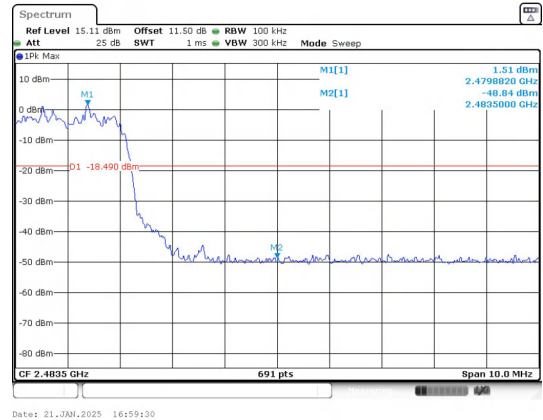


Date: 21.JAN.2025 16:58:55

Out Of Band Emission(Left)
π/4DQPSK_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

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