

Appendix A

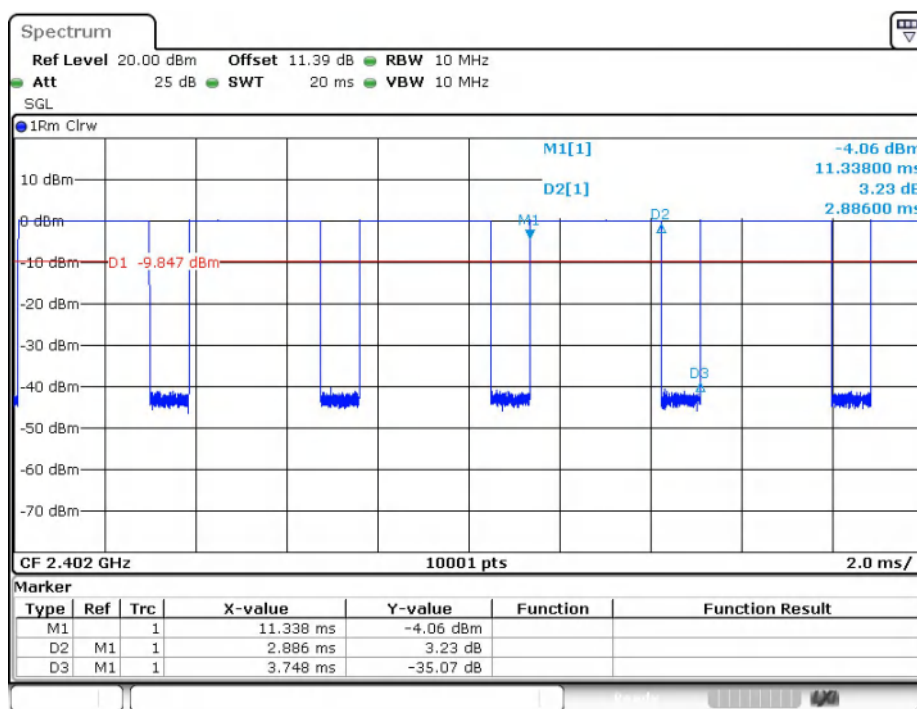
Report No.:	CISRR24082215301
FCC ID:	2A3VP-Q37
Product Name:	Wireless Gaming Controller
Model No.:	Q37
Test Engineer:	Jimmy Huang
Supervised by:	Rory Huang

1) Duty Cycle

Test Result

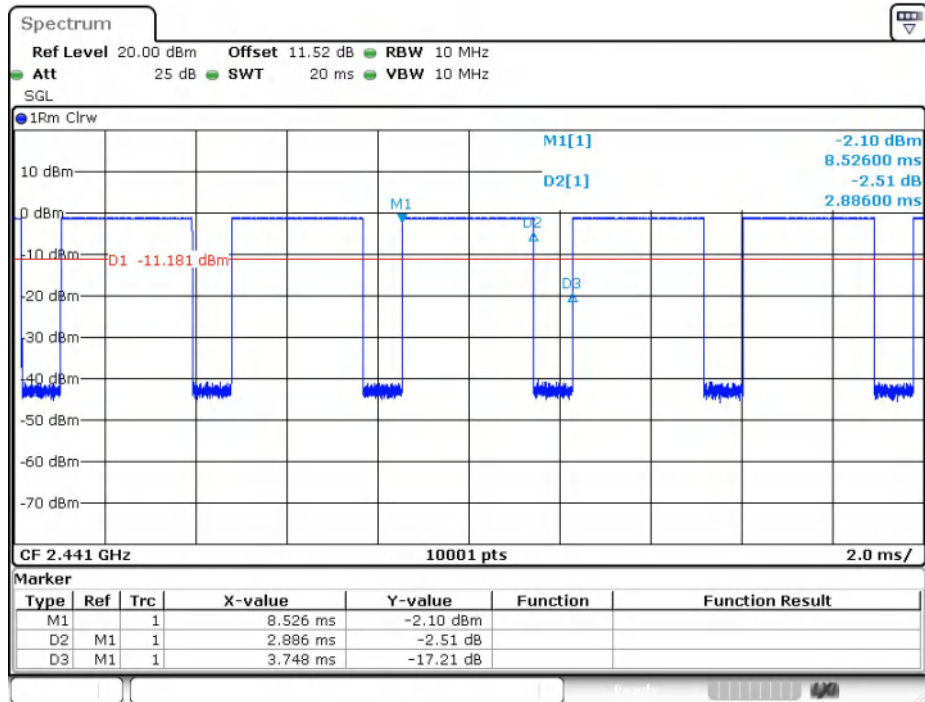
Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.886	3.748	77.00	0.7700	1.1351	0.35
		39	2.886	3.748	77.00	0.7700	1.1351	0.35
		78	2.886	3.748	77.00	0.7700	1.1351	0.35
$\pi/4$ DQPSK	2-DH5	0	2.892	3.748	77.16	0.7716	1.1261	0.35
		39	2.890	3.748	77.11	0.7711	1.1289	0.35
		78	2.892	3.748	77.16	0.7716	1.1261	0.35
8DPSK	3-DH5	0	2.894	3.748	77.21	0.7721	1.1233	0.35
		39	2.894	3.748	77.21	0.7721	1.1233	0.35
		78	2.894	3.748	77.21	0.7721	1.1233	0.35

Test Graphs



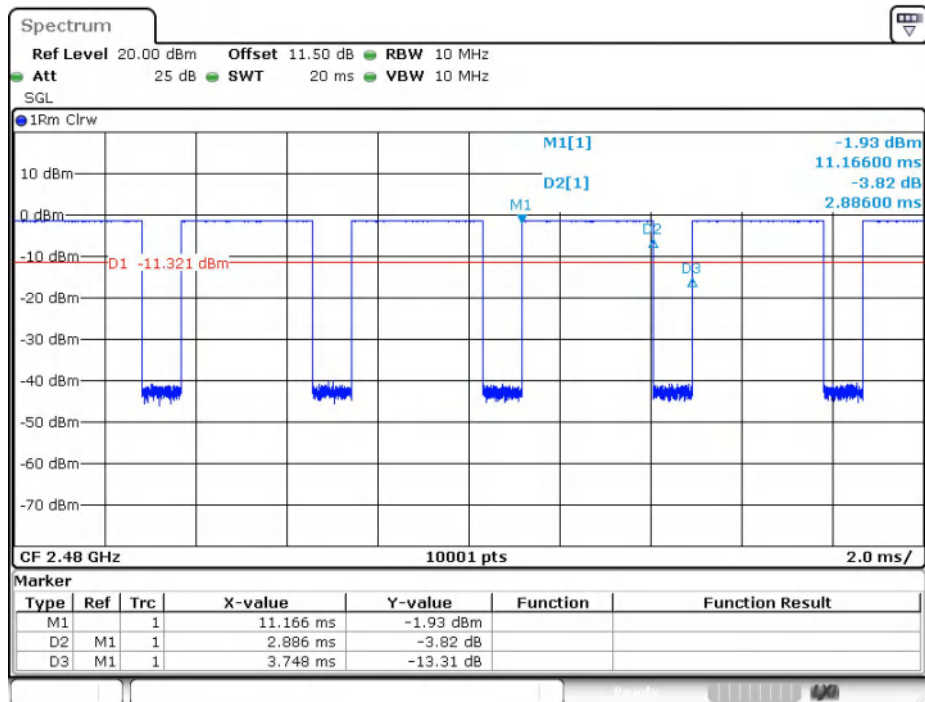
Date: 5.SEP.2024 11:21:18

GFSK(DH5)_Channel 0



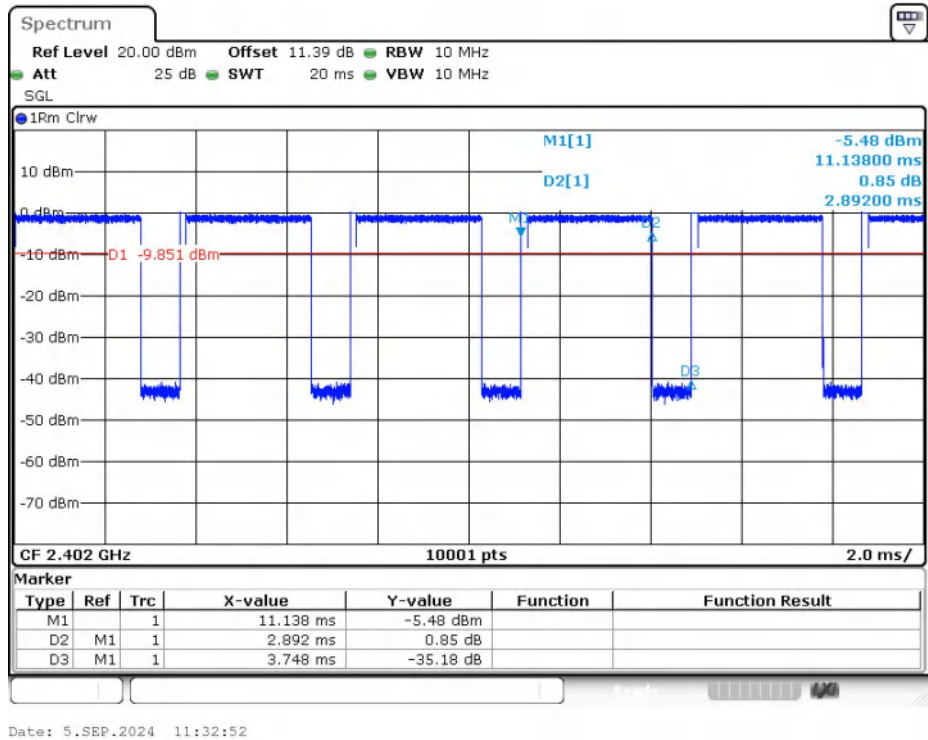
Date: 5.SEP.2024 11:27:32

GFSK(DH5)_Channel 39

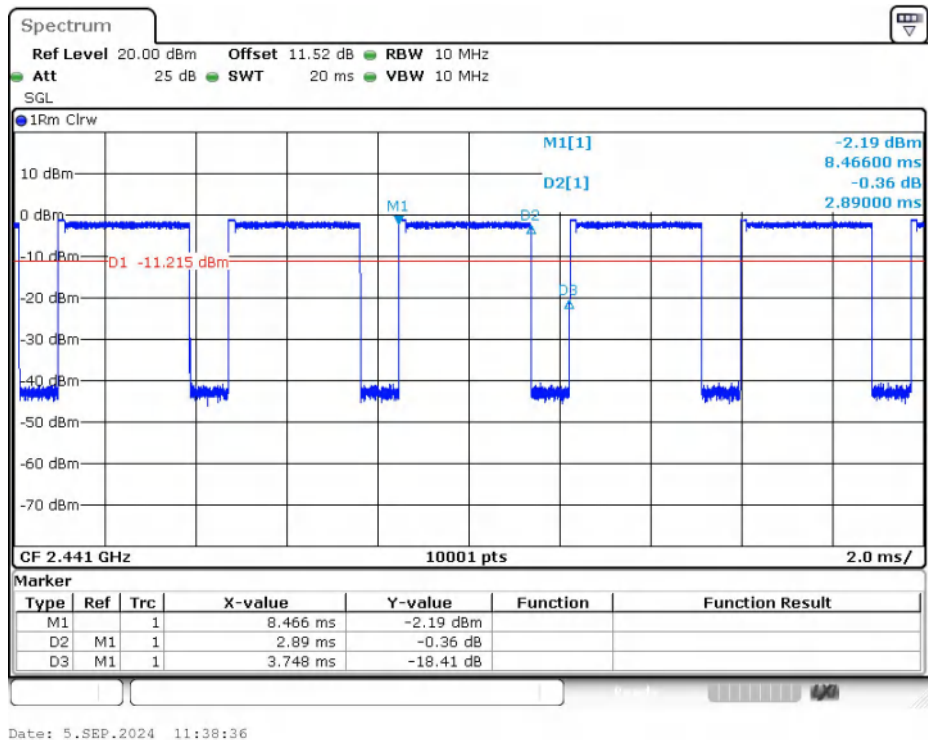


Date: 5.SEP.2024 11:30:07

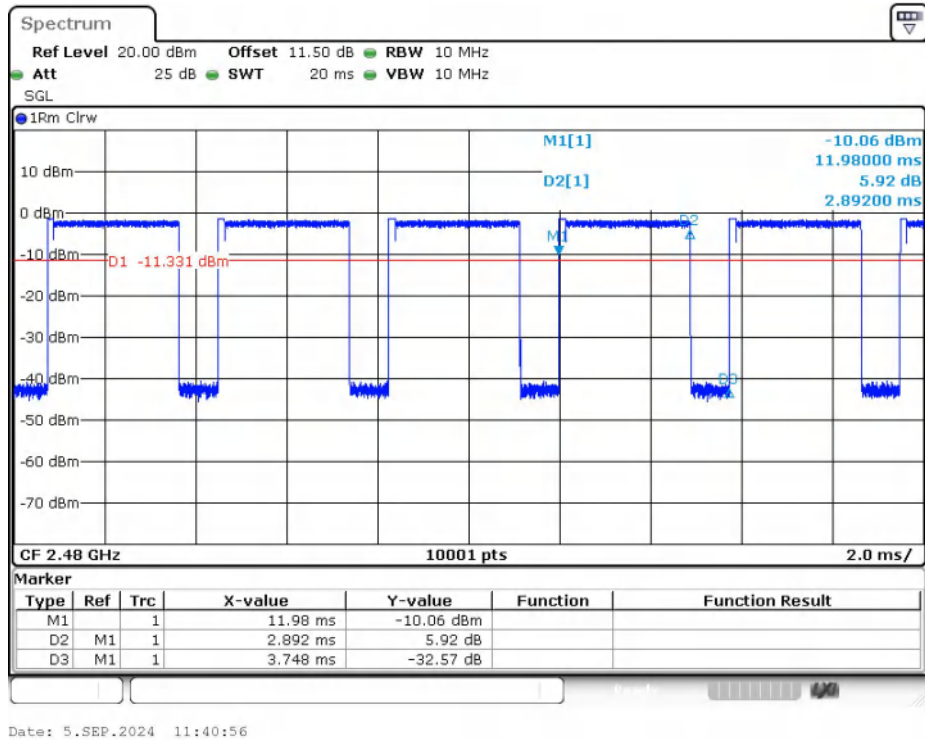
GFSK(DH5)_Channel 78



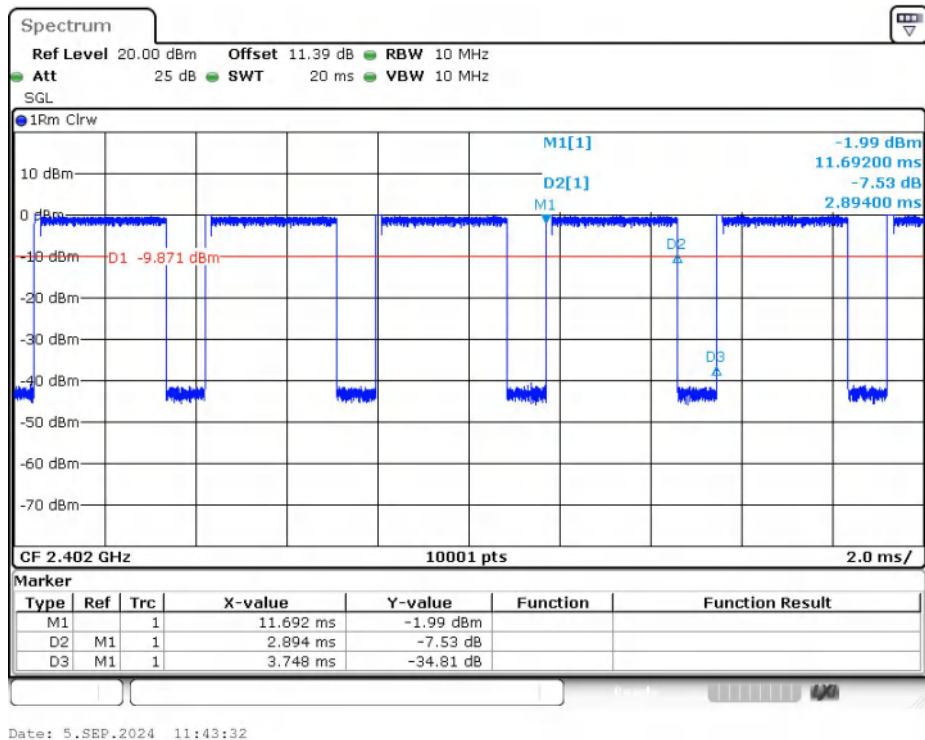
$\pi/4$ DQPSK(2-DH5)_Channel 0



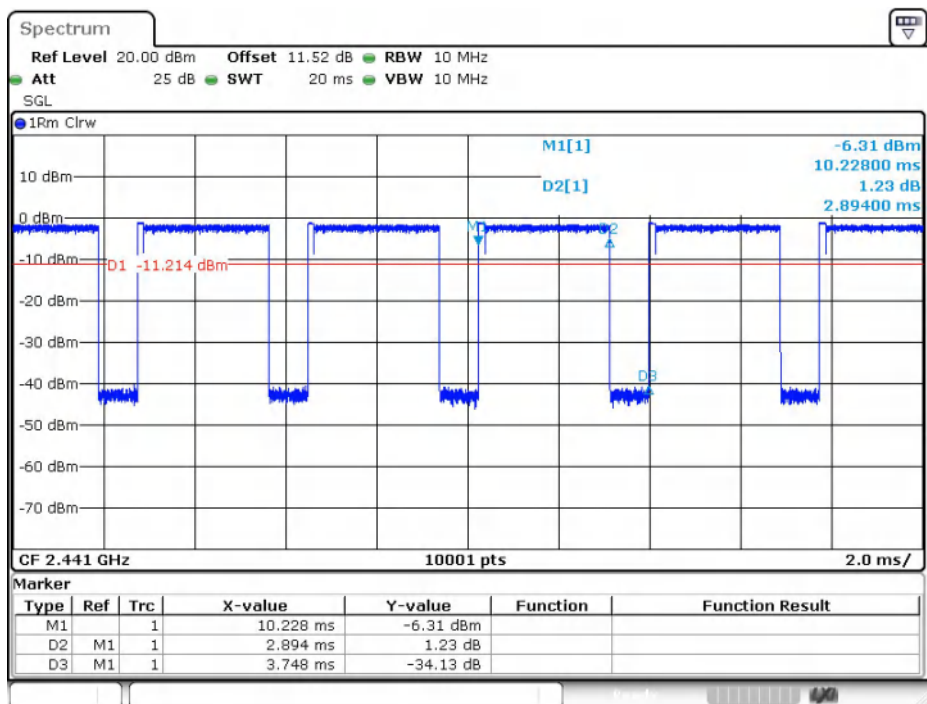
$\pi/4$ DQPSK(2-DH5)_Channel 39



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

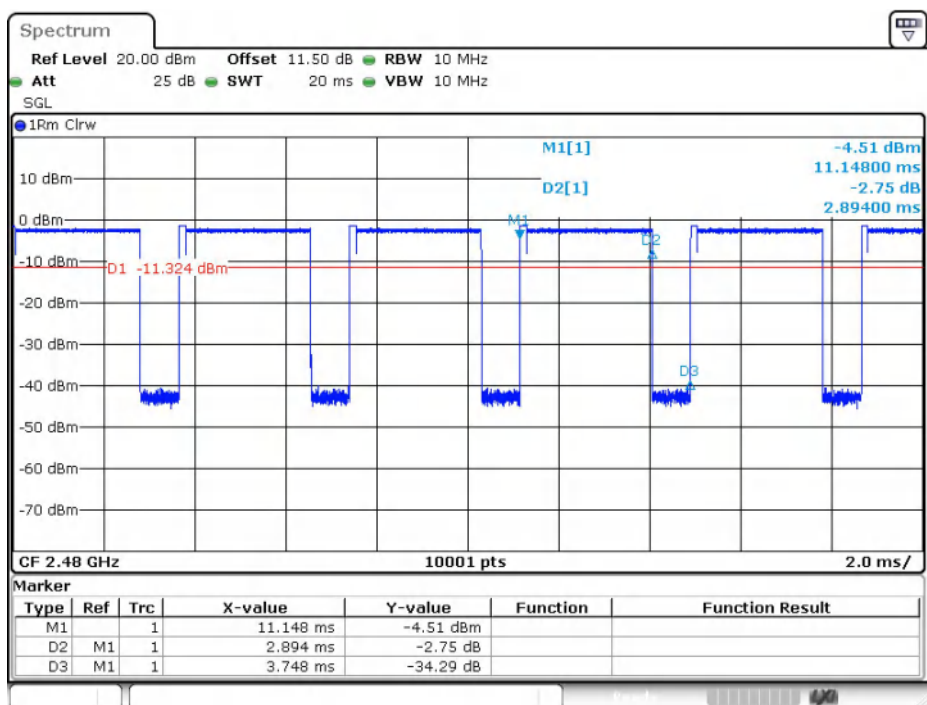


8DPSK(3-DH5)_Channel 0



Date: 5.SEP.2024 11:56:42

8DPSK(3-DH5)_Channel 39



Date: 5.SEP.2024 11:58:57

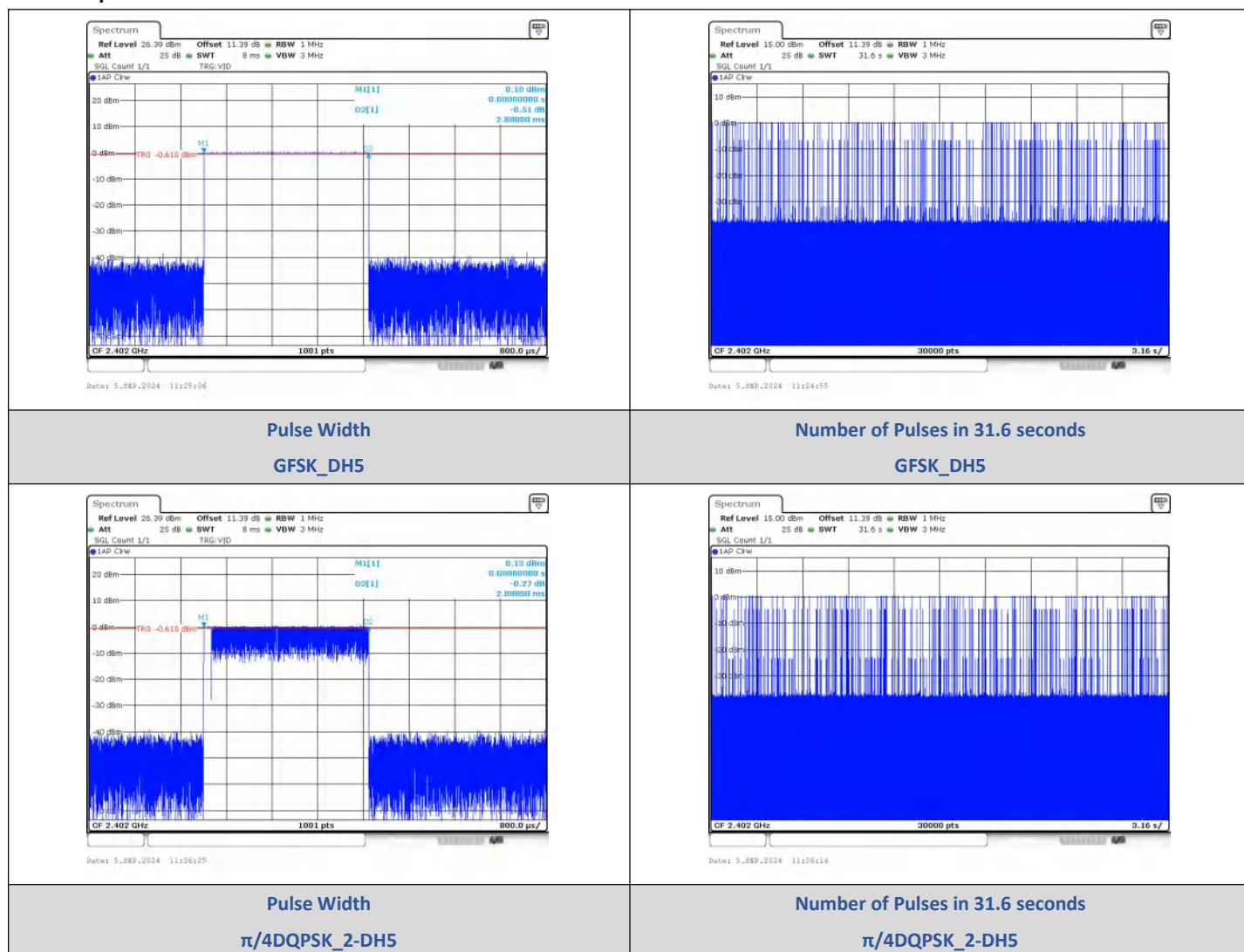
8DPSK(3-DH5)_Channel 78

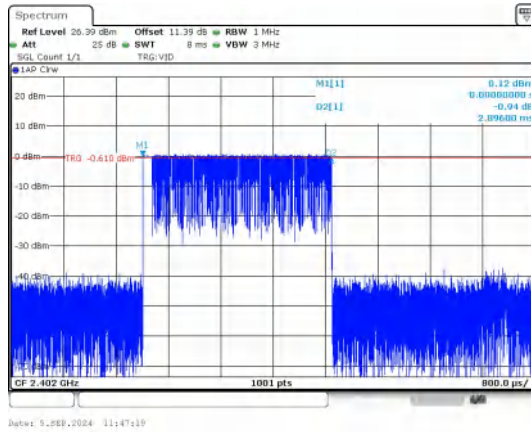
2) Dwell Time

Test Result

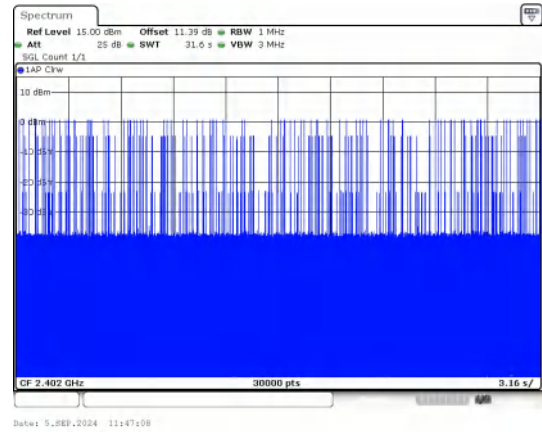
Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	CH0 (2402MHz)	2.888	115	332.12	< 400	PASS
$\pi/4$ DQPSK	2-DH5		2.888	107	309.02		PASS
8DPSK	3-DH5		2.896	103	298.29		PASS

Test Graphs





Pulse Width
8DPSK_3-DH5



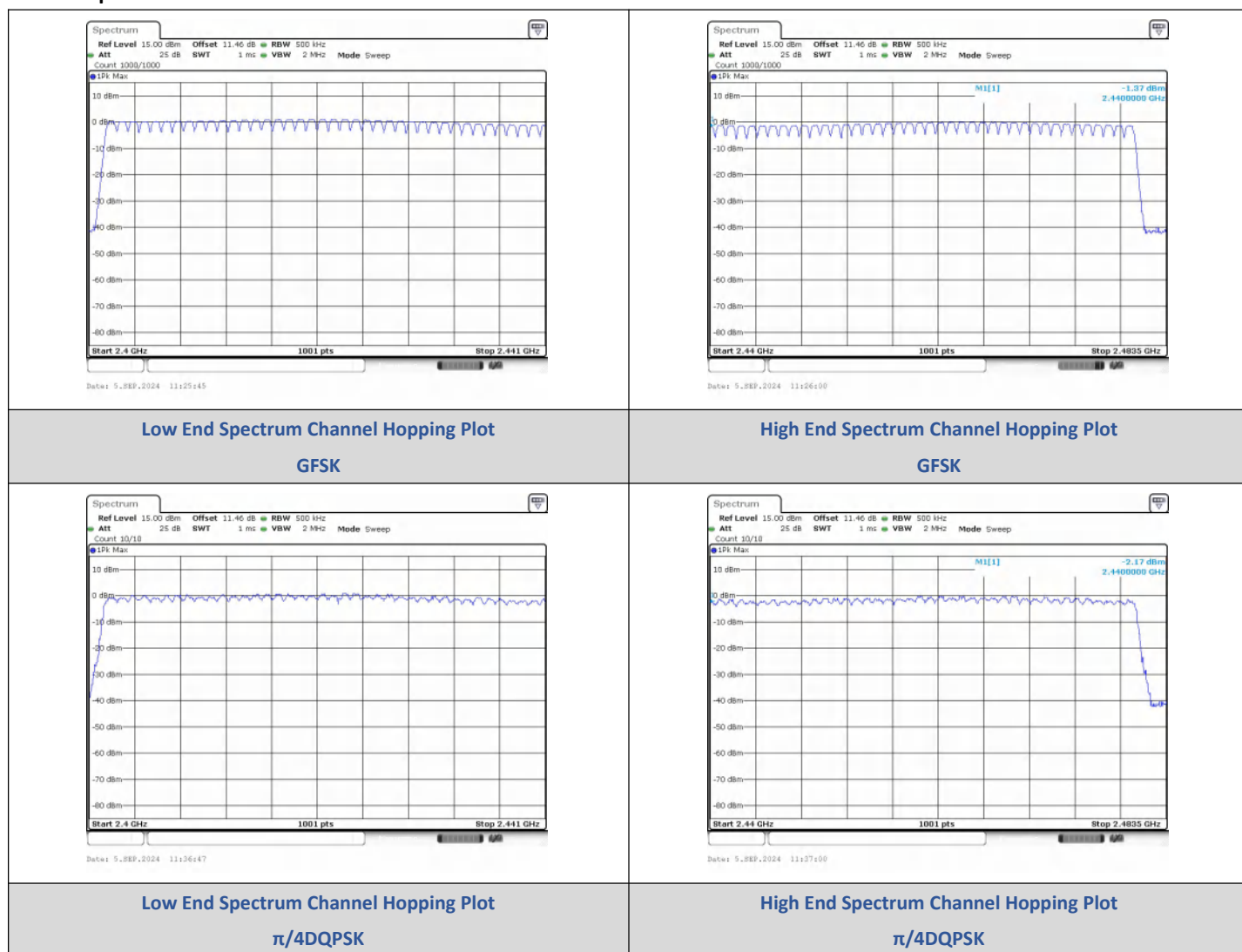
Number of Pulses in 31.6 seconds
8DPSK_3-DH5

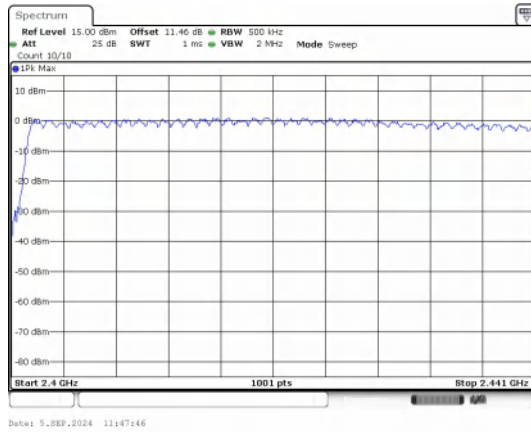
3) Number Of Hopping Channel

Test Result

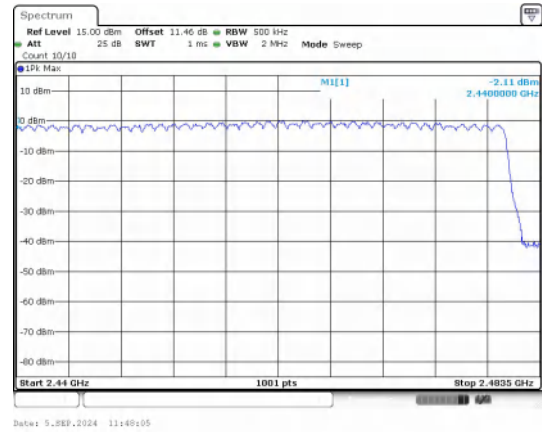
Modulation	Packet	Number of Hopping Channel	Limit	Result
GFSK	DH5	79	15	PASS
$\pi/4$ DQPSK	2-DH5	79	15	PASS
8DPSK	3-DH5	79	15	PASS

Test Graphs





Low End Spectrum Channel Hopping Plot
8DPSK



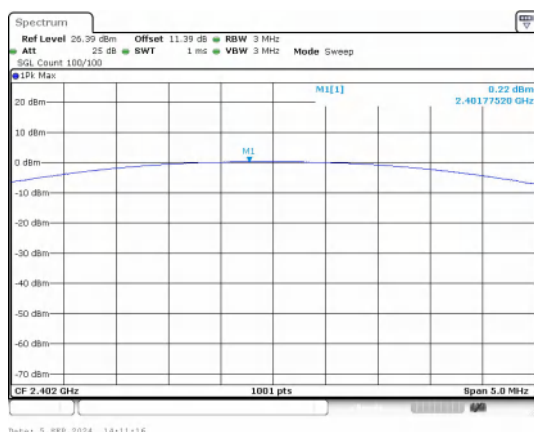
High End Spectrum Channel Hopping Plot
8DPSK

4) Conducted Peak Output Power

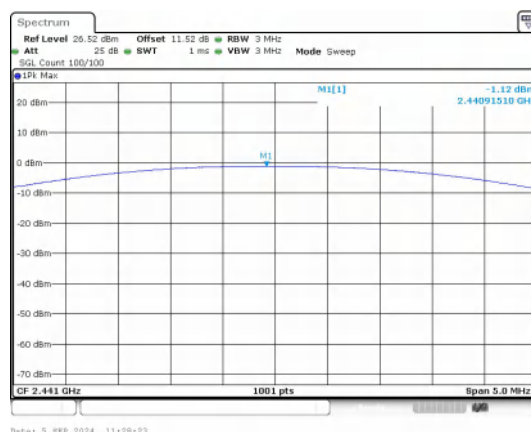
Test Result

Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
GFSK	DH5	0	0.22	1.05	≤30	PASS
		39	-1.12	0.77		PASS
		78	-1.27	0.75		PASS
$\pi/4$ DQPSK	2-DH5	0	0.86	1.22	≤20.97	PASS
		39	-0.67	0.86		PASS
		78	-0.78	0.84		PASS
8DPSK	3-DH5	0	0.99	1.26		PASS
		39	-0.55	0.88		PASS
		78	-0.65	0.86		PASS

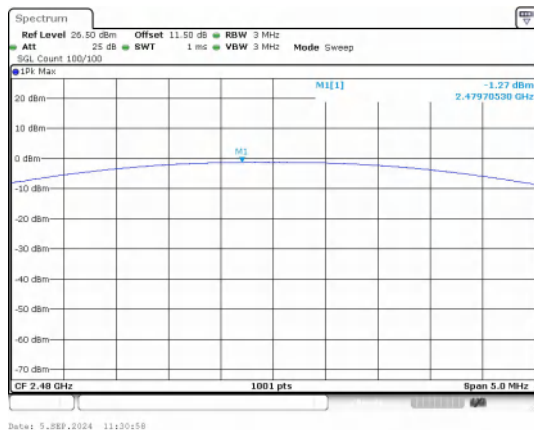
Test Graphs



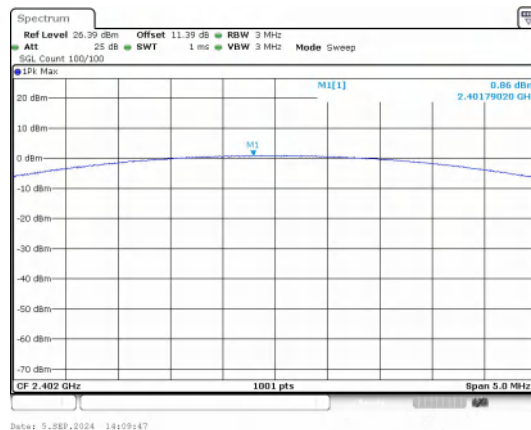
Peak Output Power
GFSK_Channel 0



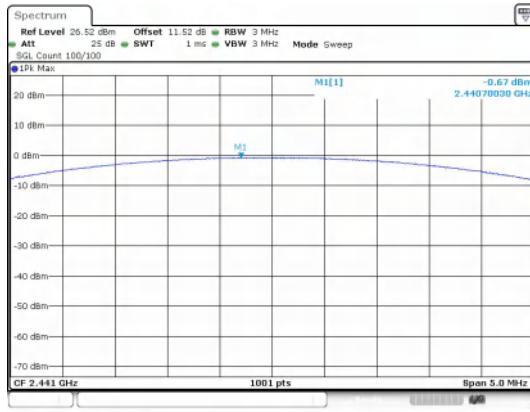
Peak Output Power
GFSK_Channel 39



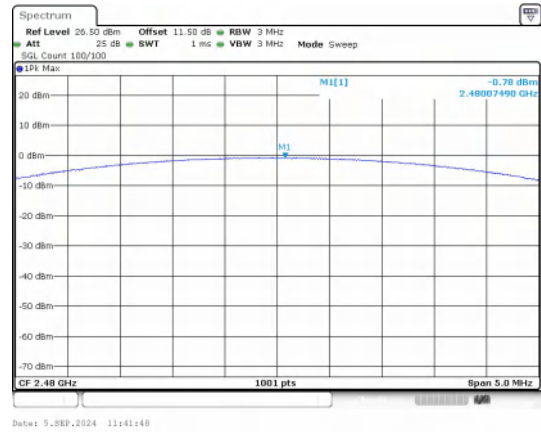
Peak Output Power
GFSK_Channel 78



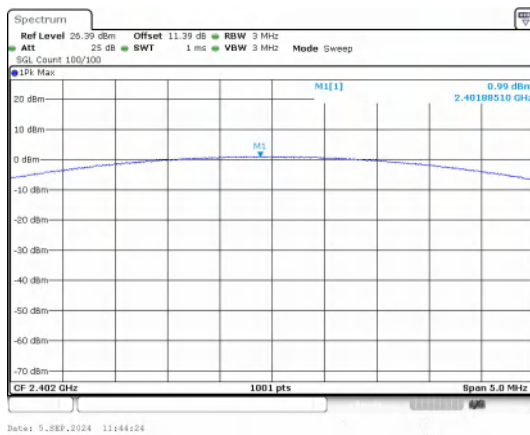
Peak Output Power
 $\pi/4$ DQPSK_Channel 0



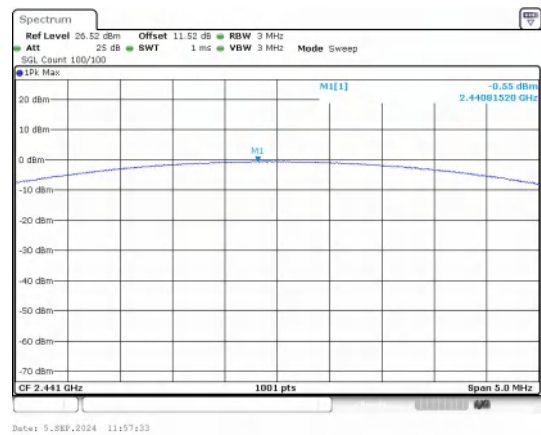
Peak Output Power
 $\pi/4$ DQPSK_Channel 39



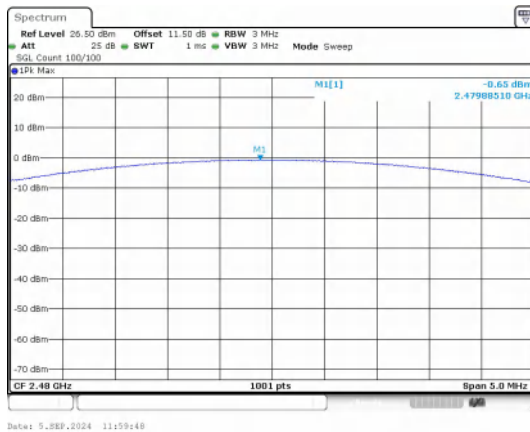
Peak Output Power
 $\pi/4$ DQPSK_Channel 78



Peak Output Power
8DPSK_Channel 0



Peak Output Power
8DPSK_Channel 39



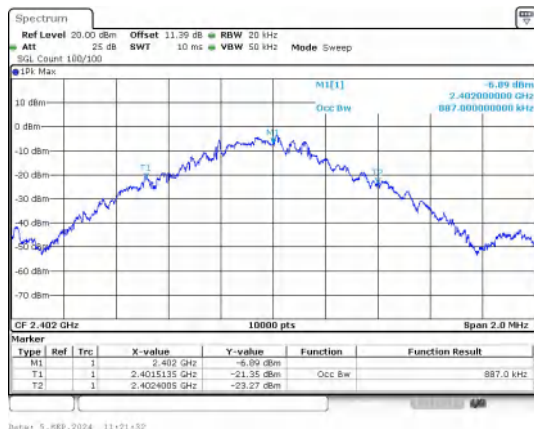
Peak Output Power
8DPSK_Channel 78

5) 99% Bandwidth

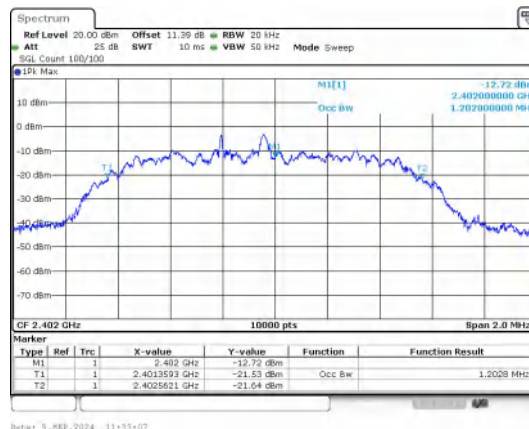
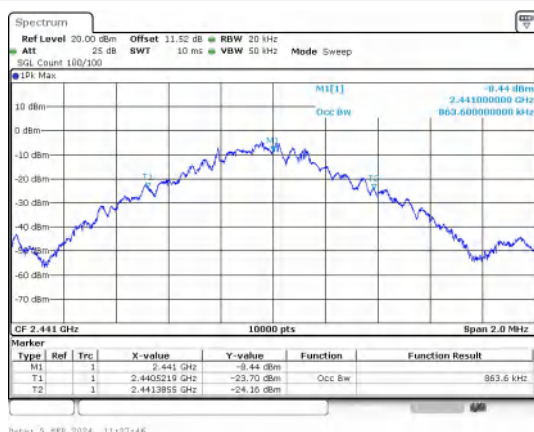
Test Result

Modulation	Channel	Center Frequency (MHz)	99% BW (MHz)
GFSK	0	2402	0.88700
	39	2441	0.86360
	78	2480	0.87500
$\pi/4$ DQPSK	0	2402	1.2028
	39	2441	1.2282
	78	2480	1.2344
8DPSK	0	2402	1.2164
	39	2441	1.2266
	78	2480	1.2168

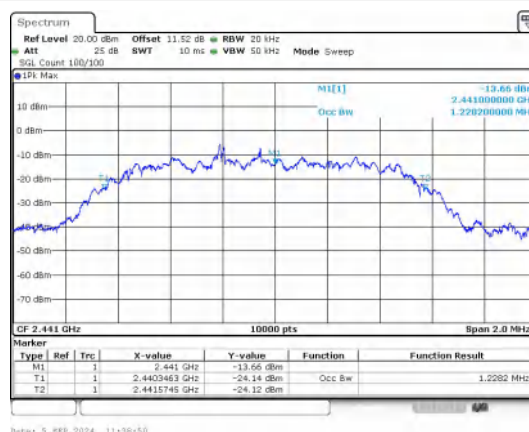
Test Graphs

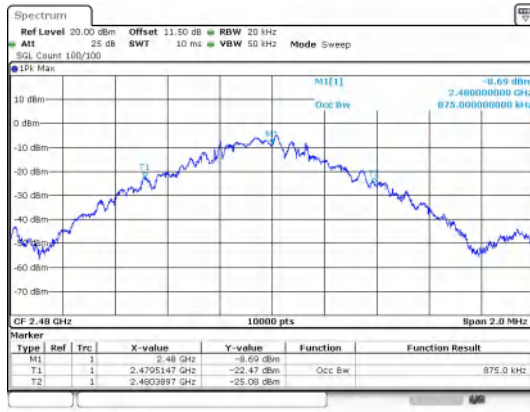


GFSK_DH5_Channel 0

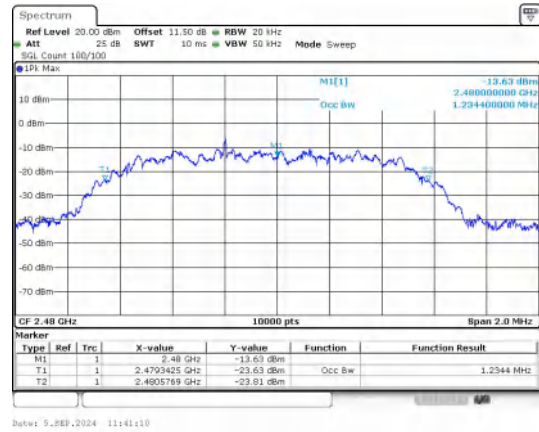

 $\pi/4$ DQPSK_2-DH5_Channel 0


GFSK_DH5_Channel 39

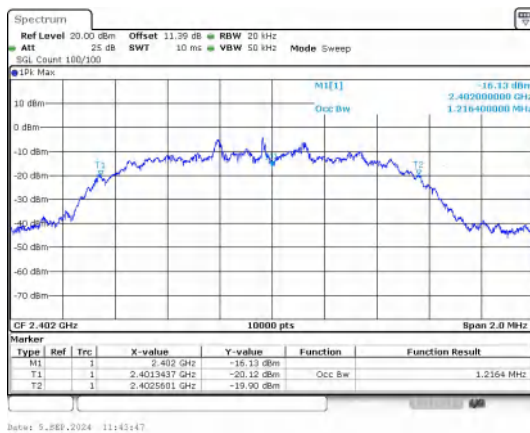

 $\pi/4$ DQPSK_2-DH5_Channel 39



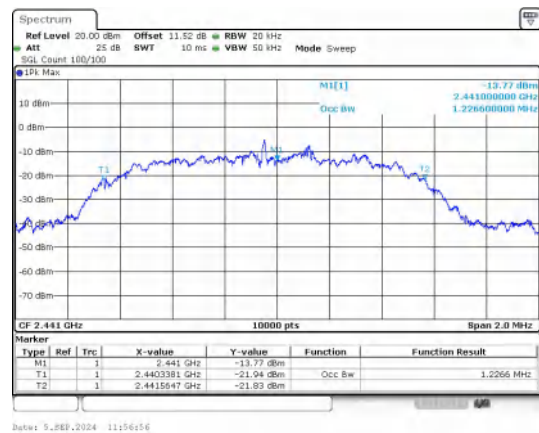
GFSK_DH5_Channel 78



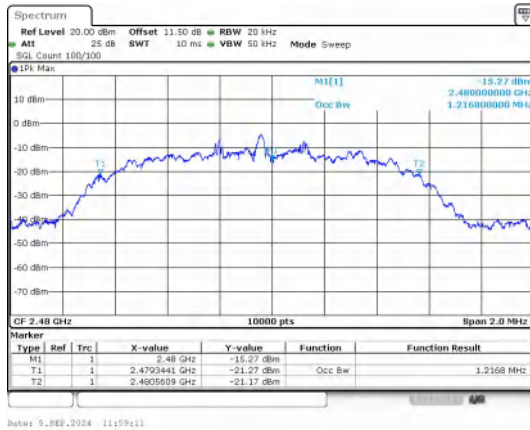
$\pi/4$ DQPSK_2-DH5_Channel 78



8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



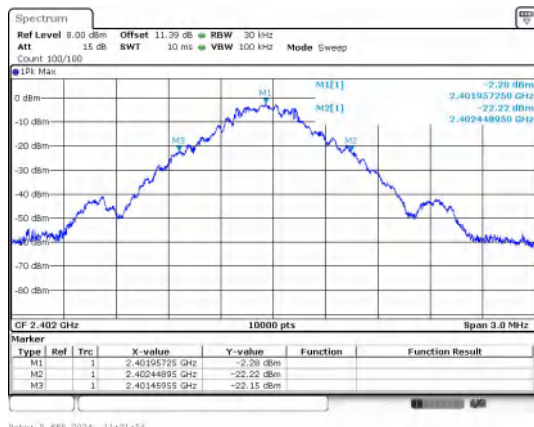
8DPSK_3-DH5_Channel 78

6) 20dB Bandwidth

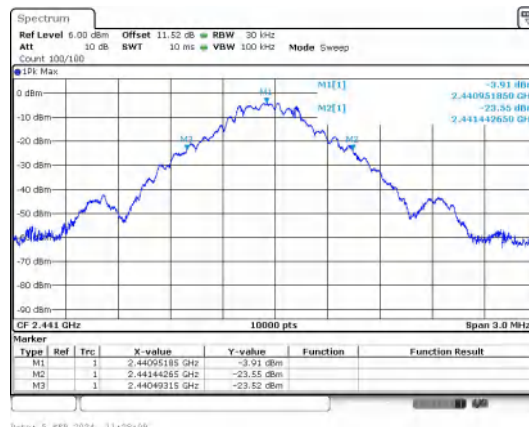
Test Result

Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	0.9900
	39	2441 MHz	0.9500
	78	2480 MHz	0.9600
$\pi/4$ DQPSK	0	2402 MHz	1.310
	39	2441 MHz	1.310
	78	2480 MHz	1.310
8DPSK	0	2402 MHz	1.300
	39	2441 MHz	1.300
	78	2480 MHz	1.300

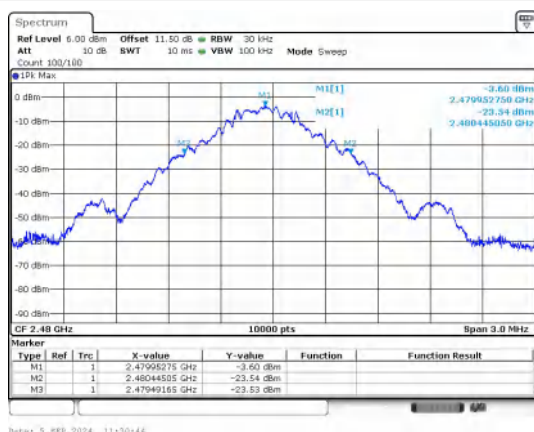
Test Graphs



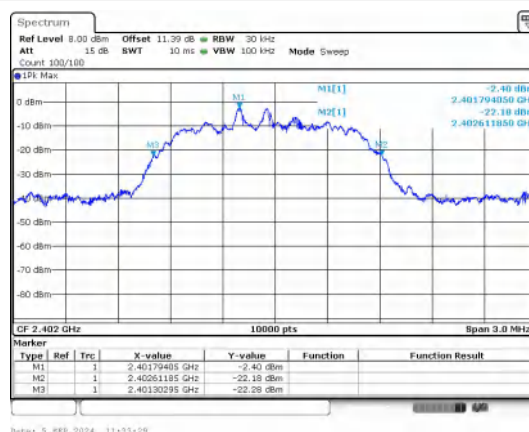
GFSK_DH5_Channel 0



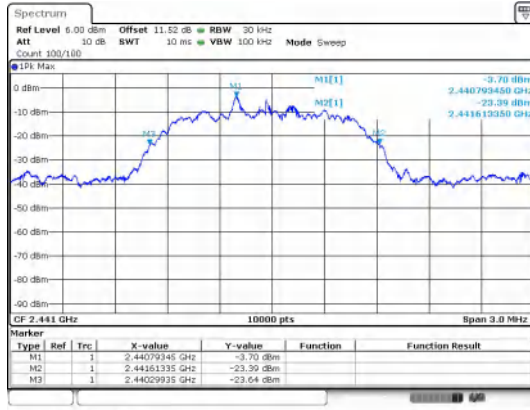
GFSK_DH5_Channel 39



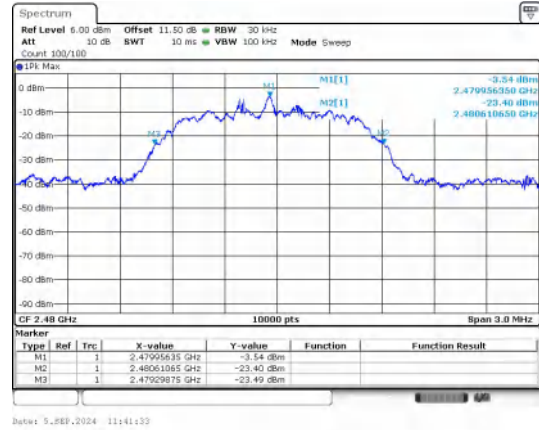
GFSK_DH5_Channel 78



$\pi/4$ DQPSK_2-DH5_Channel 0



$\pi/4$ DQPSK_2-DH5_Channel 39



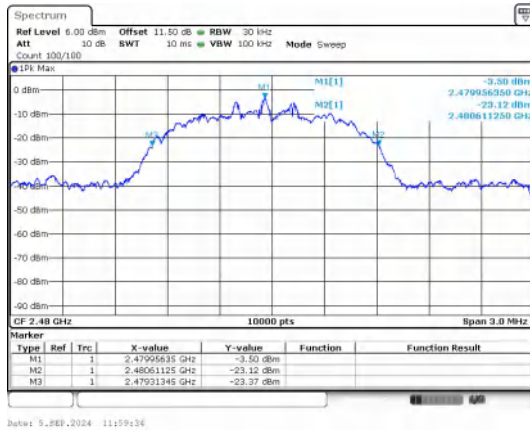
$\pi/4$ DQPSK_2-DH5_Channel 78



8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



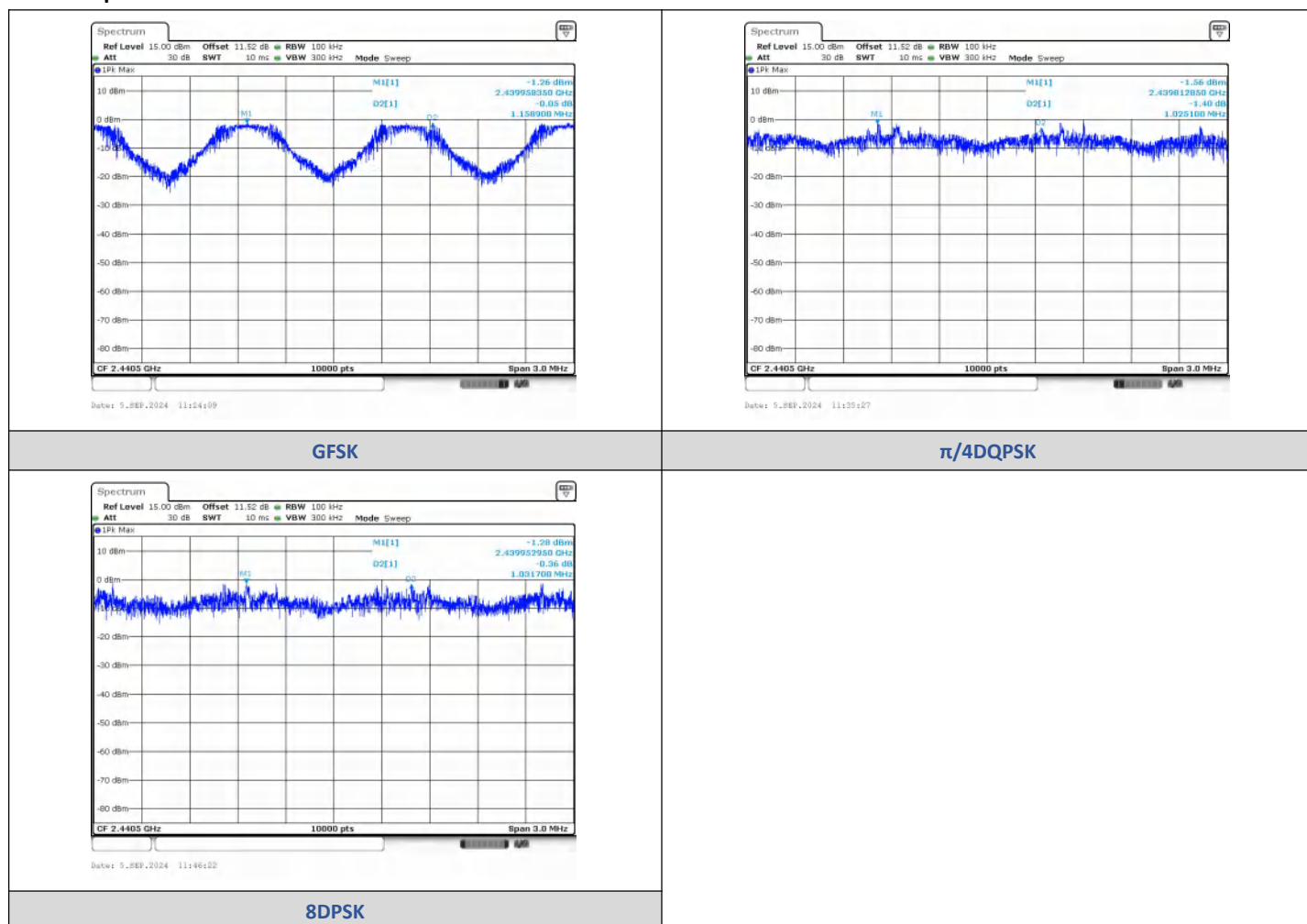
8DPSK_3-DH5_Channel 78

7) Carrier Frequencies Separation

Test Result

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Limit (MHz)	Result
GFSK	DH5	2439.9583	2441.1172	1.1589	0.9900	PASS
$\pi/4$ DQPSK	2-DH5	2439.8128	2440.838	1.0251	0.873	PASS
8DPSK	3-DH5	2439.9529	2440.9846	1.0317	0.867	PASS

Test Graphs



8) Conducted Out Of Band Emission

Test Result

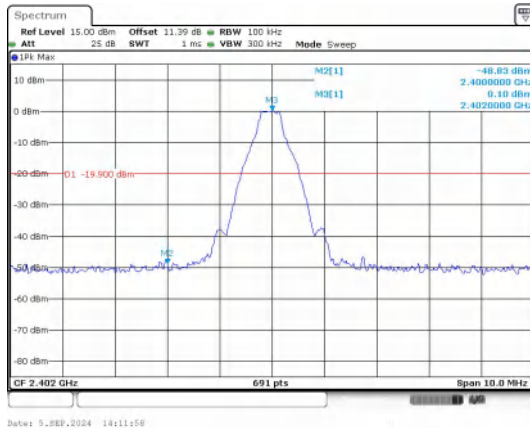
Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2400.00	-48.832	-19.9	-28.932	PASS
			7205.96	-39.866	-19.9	-19.966	PASS
		39	7322.49	-38.909	-21.23	-17.679	PASS
		78	2483.50	-50.196	-21.36	-28.836	PASS
			7440.68	-44.542	-21.36	-23.182	PASS
$\pi/4$ DQPSK	2-DH5	0	2400.00	-46.170	-19.97	-26.200	PASS
			7205.13	-44.050	-19.97	-24.080	PASS
		39	7323.32	-42.320	-21.29	-21.030	PASS
		78	2483.50	-50.282	-21.39	-28.892	PASS
			9920.20	-44.564	-21.39	-23.174	PASS
8DPSK	3-DH5	0	2400.00	-48.143	-20.04	-28.103	PASS
			7205.96	-41.201	-20.04	-21.161	PASS
		39	7322.49	-43.277	-21.34	-21.937	PASS
		78	2483.50	-50.058	-21.41	-28.648	PASS
			9920.20	-44.940	-21.41	-23.530	PASS

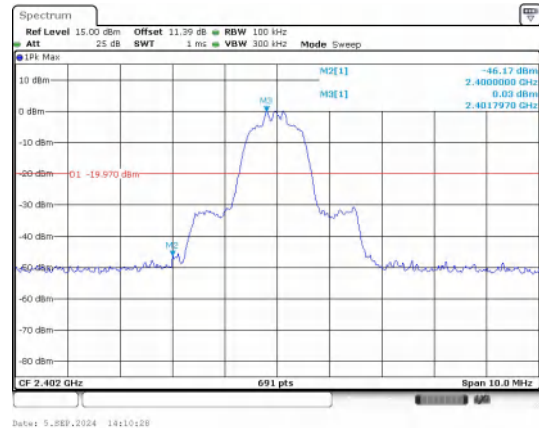
Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2395.53	-48.017	-20.19	-27.827	PASS
			2400.00	-50.992	-20.19	-30.802	PASS
			2483.50	-49.349	-21.59	-27.759	PASS
$\pi/4$ DQPSK	2-DH5		2400.00	-46.887	-22.56	-24.327	PASS
			2483.50	-50.015	-21.77	-28.245	PASS
8DPSK	3-DH5		2395.07	-47.144	-20.04	-27.104	PASS
			2400.00	-49.651	-20.04	-29.611	PASS
			2483.50	-49.671	-21.69	-27.981	PASS

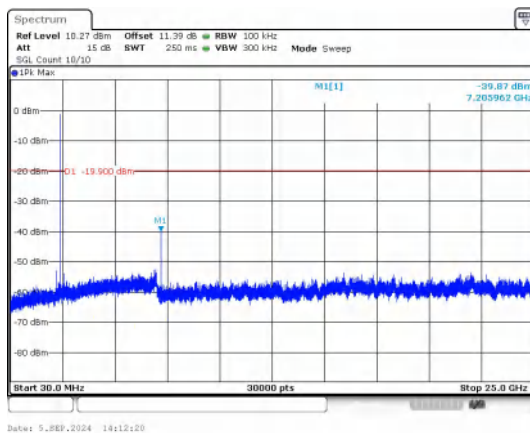
Test Graphs



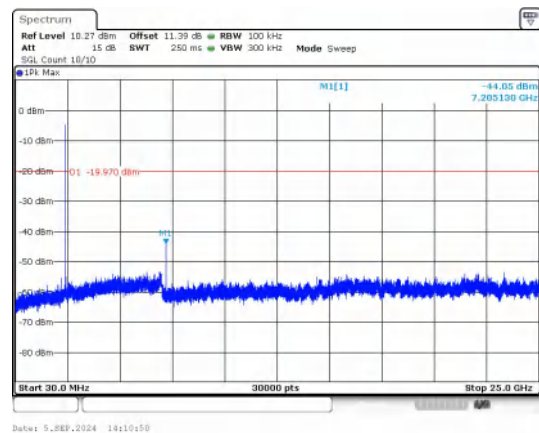
Out Of Band Emission
GFSK_DH5_Channel 0



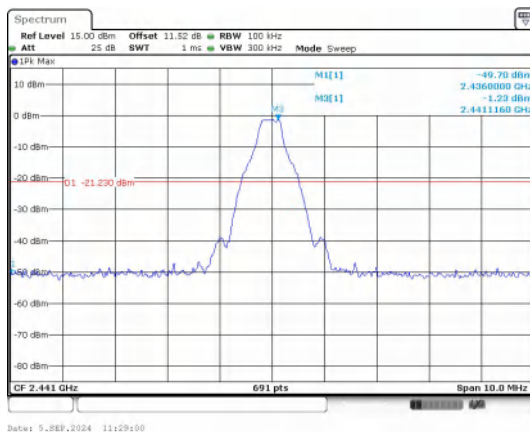
Out Of Band Emission
 $\pi/4$ QPSK_2-DH5_Channel 0



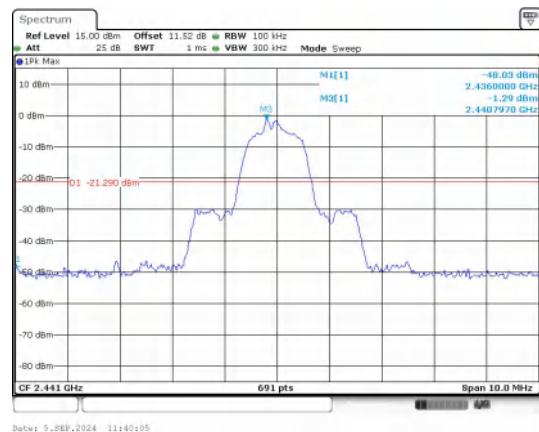
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 0



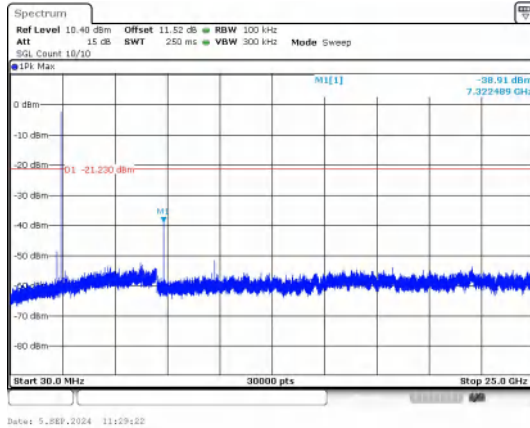
30.0 MHz - 25000.0 MHz
 $\pi/4$ QPSK_2-DH5_Channel 0



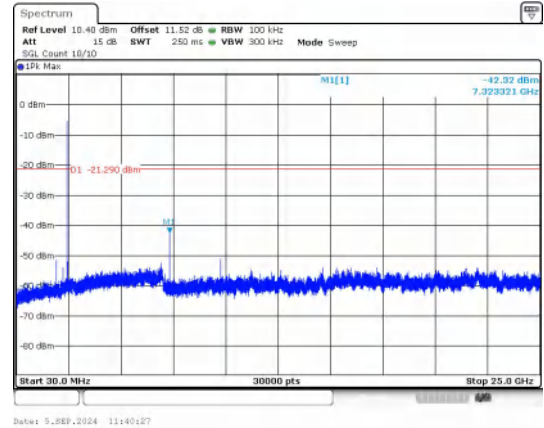
Out Of Band Emission
GFSK_DH5_Channel 39



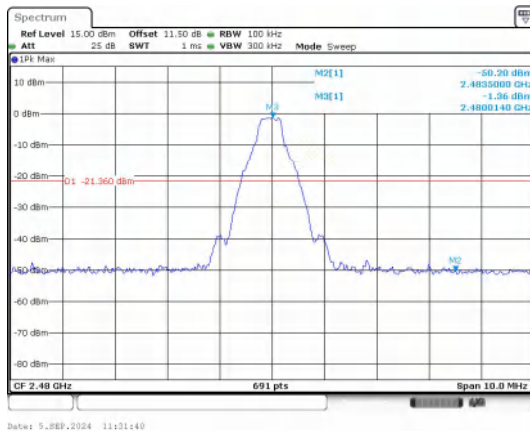
Out Of Band Emission
 $\pi/4$ QPSK_2-DH5_Channel 39



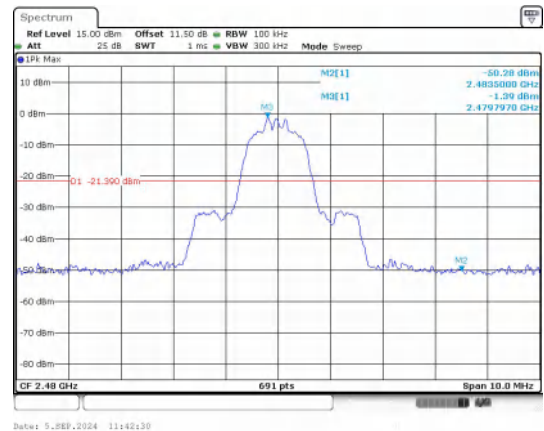
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 39



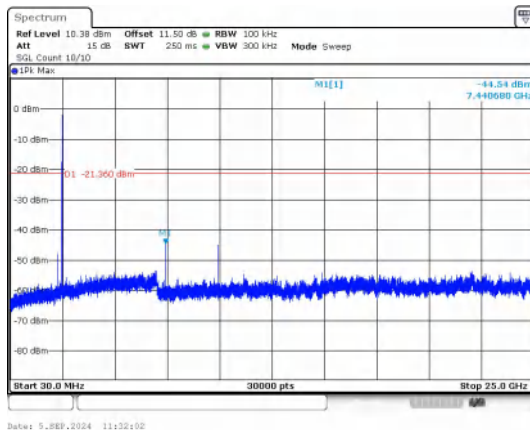
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 39



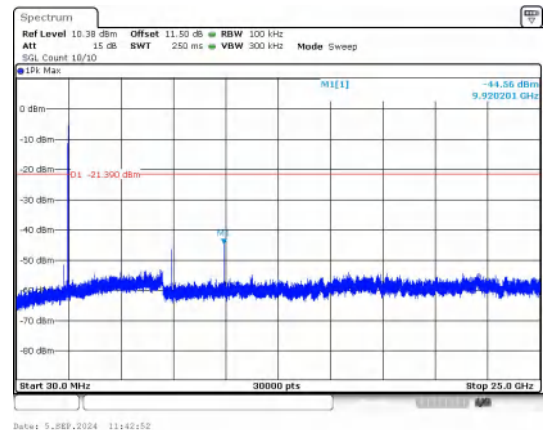
Out Of Band Emission
GFSK_DH5_Channel 78



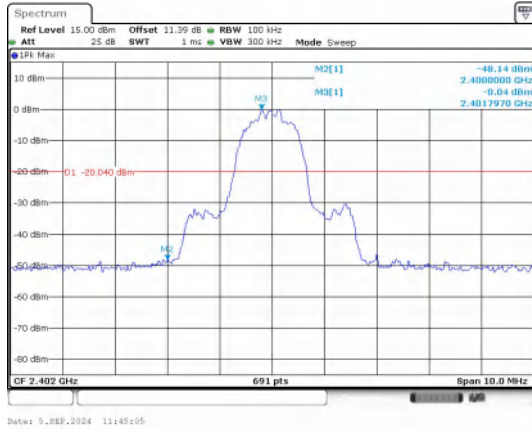
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 78



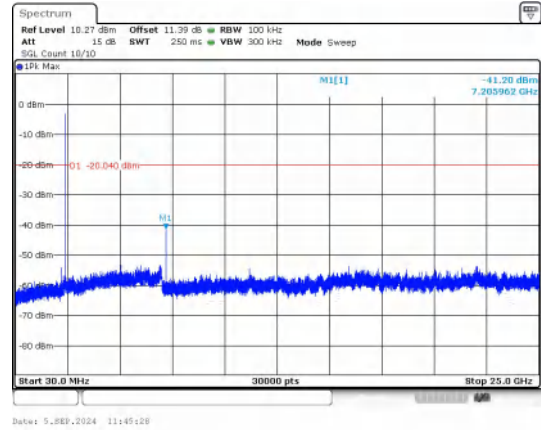
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78



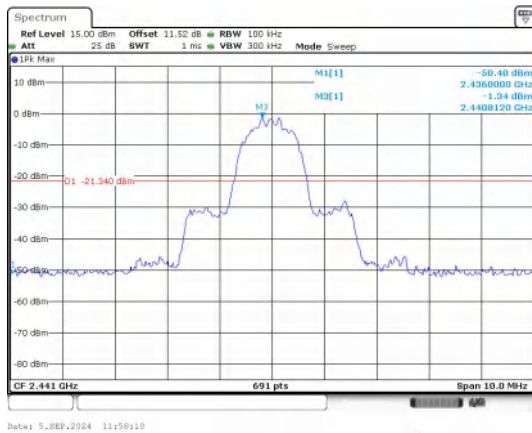
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 78



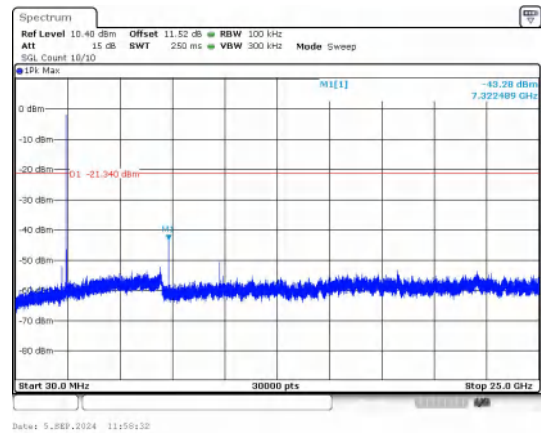
Out Of Band Emission
8DPSK_3-DH5_Channel 0



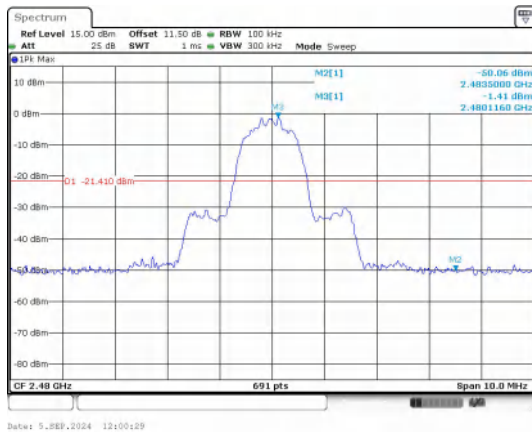
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 0



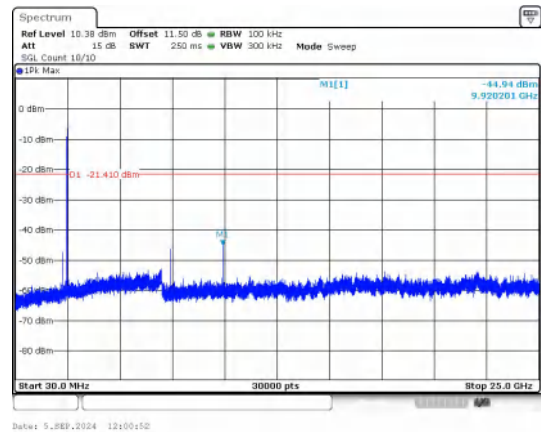
Out Of Band Emission
8DPSK_3-DH5_Channel 39



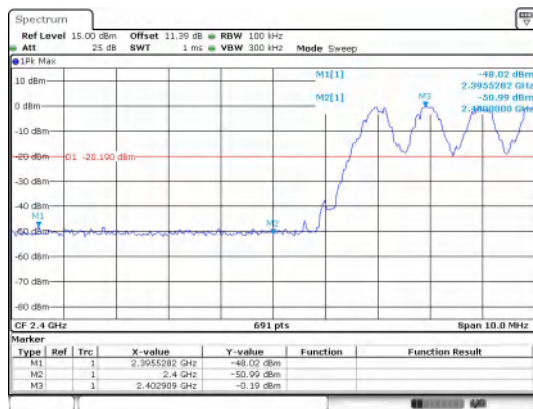
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 39



Out Of Band Emission
8DPSK_3-DH5_Channel 78

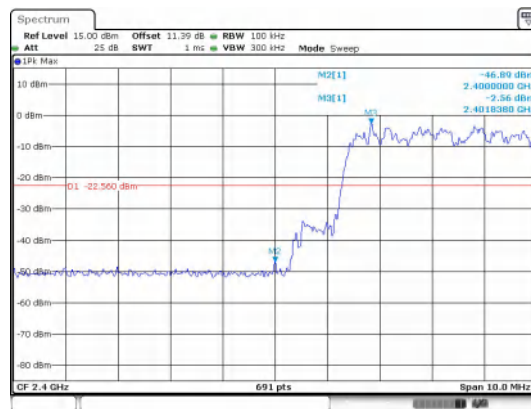


30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 78



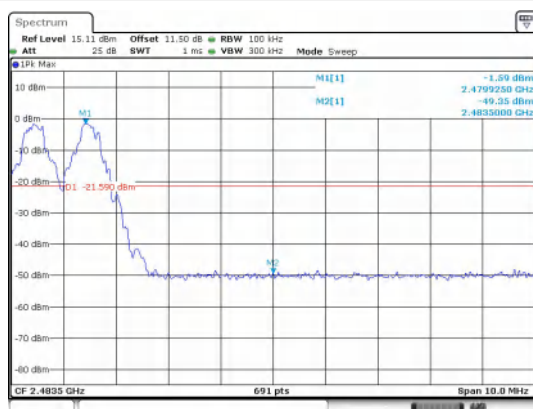
Date: 5.SEP.2024 11:12:43

Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



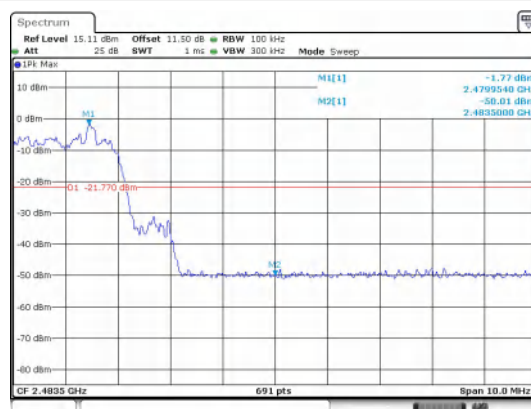
Date: 5.SEP.2024 11:13:12

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



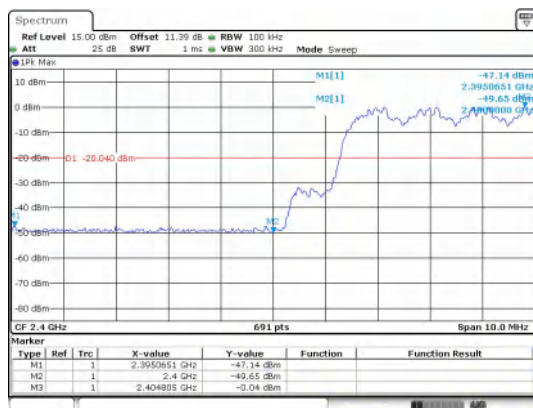
Date: 5.SEP.2024 11:12:53

Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping



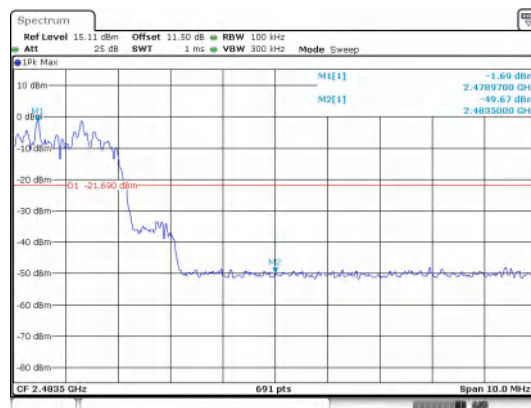
Date: 5.SEP.2024 11:13:59

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



Date: 5.SEP.2024 11:15:10

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



Date: 5.SEP.2024 11:15:10

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