

## Appendix A

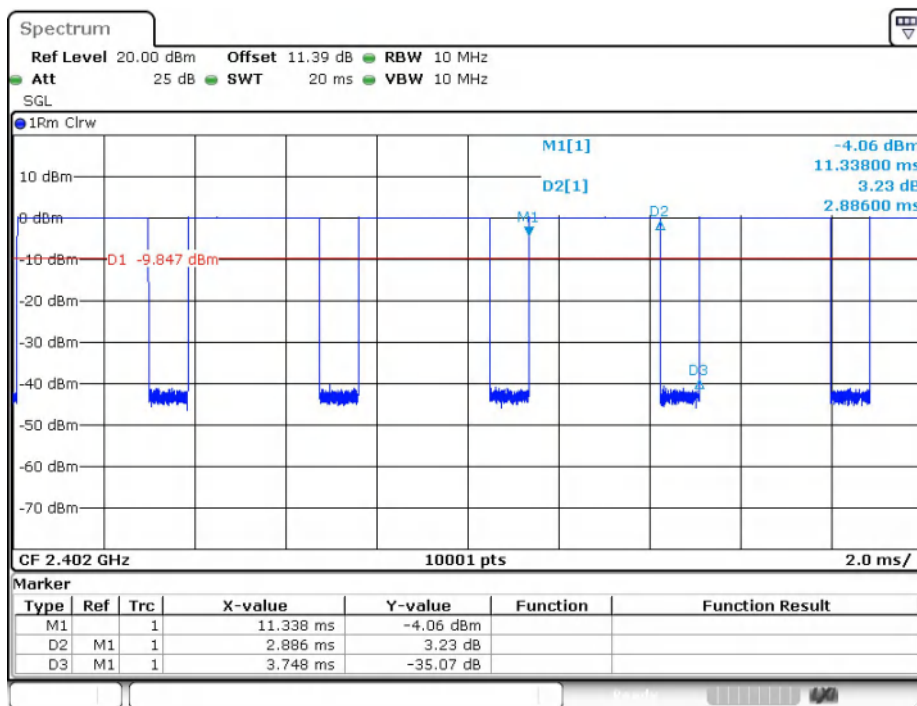
Report No.:	CISRR24082215301
FCC ID:	2A3VP-Q37
Product Name:	Wireless Gaming Controller
Model No.:	Q37
Test Engineer:	Jimmy Huang
Supervised by:	Rory Huang

# 1) Duty Cycle

## Test Result

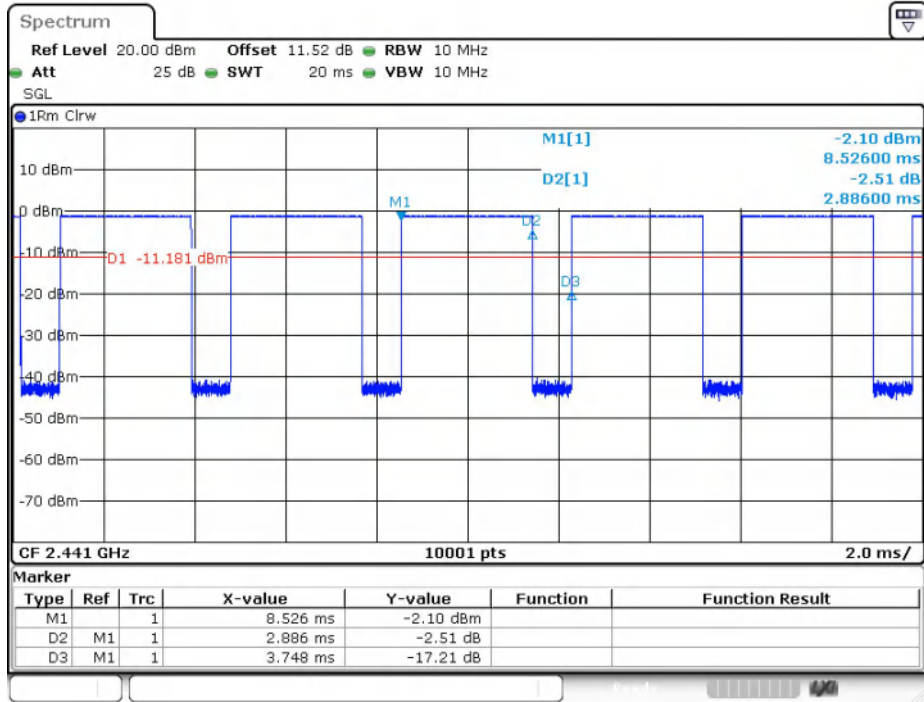
Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.886	3.748	77.00	0.7700	1.1351	0.35
		39	2.886	3.748	77.00	0.7700	1.1351	0.35
		78	2.886	3.748	77.00	0.7700	1.1351	0.35
$\pi/4$ DQPSK	2-DH5	0	2.892	3.748	77.16	0.7716	1.1261	0.35
		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



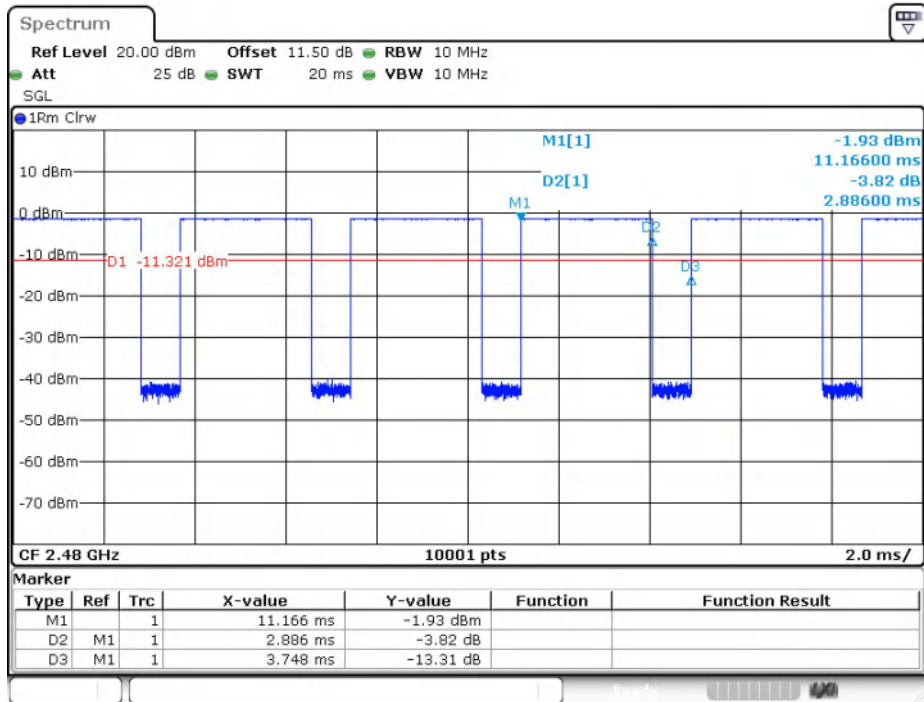
Date: 5.SEP.2024 11:21:18

GFSK(DH5)\_Channel 0



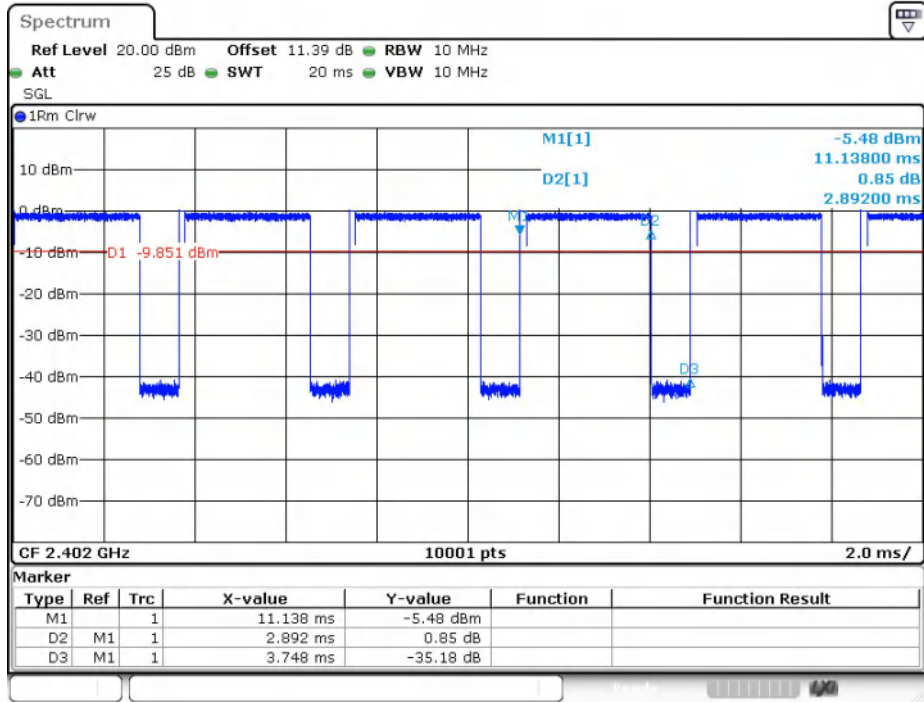
Date: 5.SEP.2024 11:27:32

GFSK(DH5)\_Channel 39



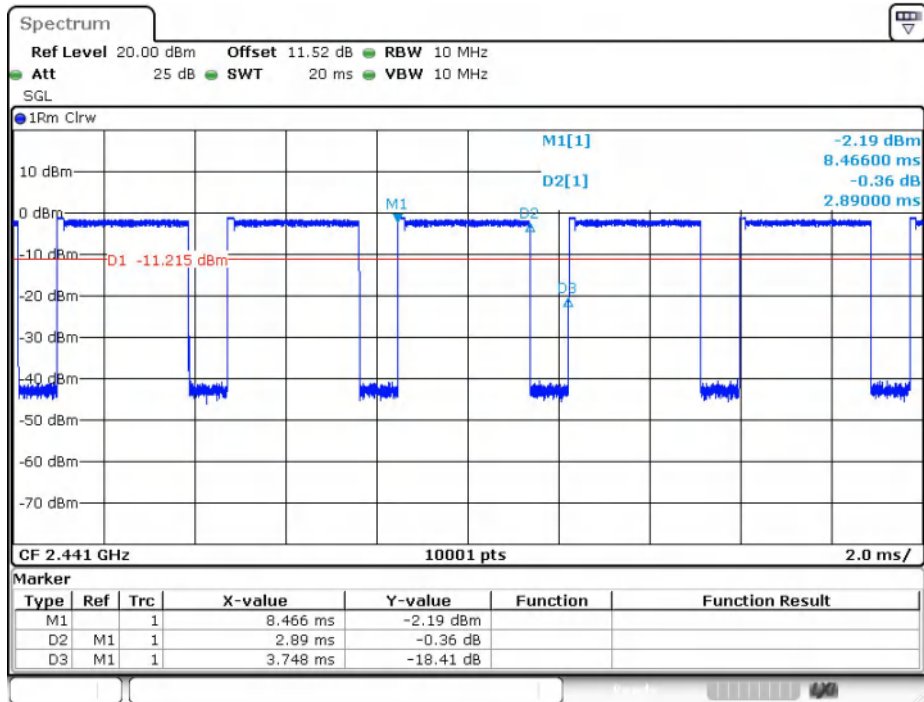
Date: 5.SEP.2024 11:30:07

GFSK(DH5)\_Channel 78



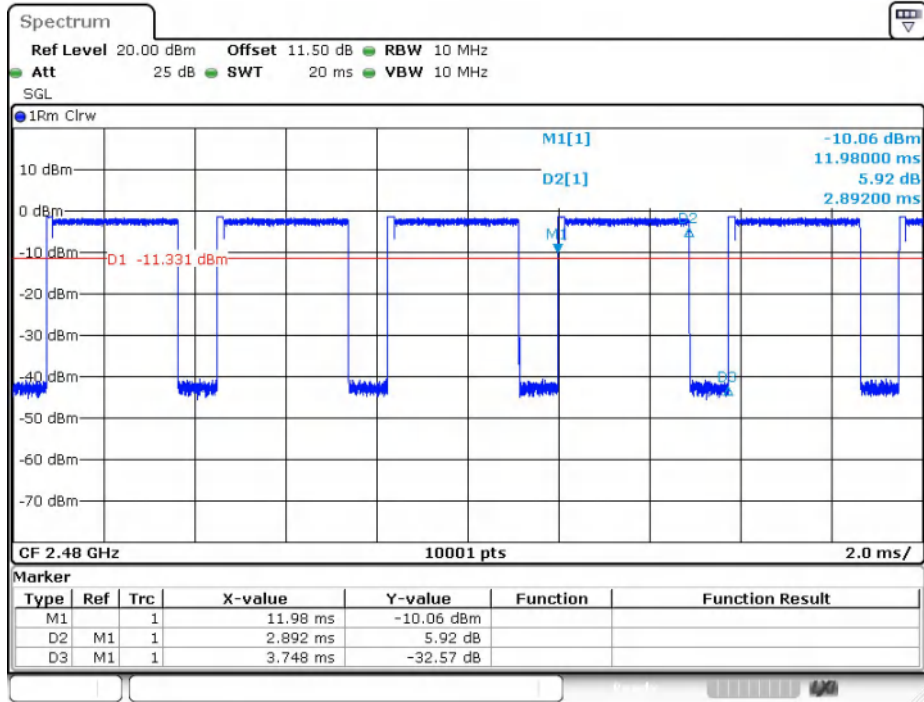
Date: 5.SEP.2024 11:32:52

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



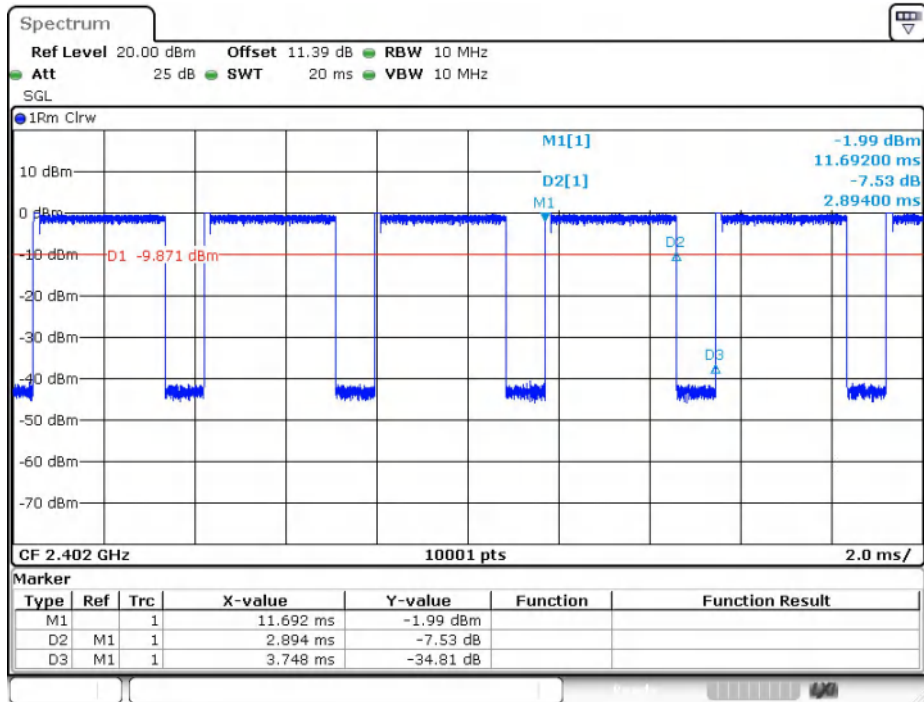
Date: 5.SEP.2024 11:38:36

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



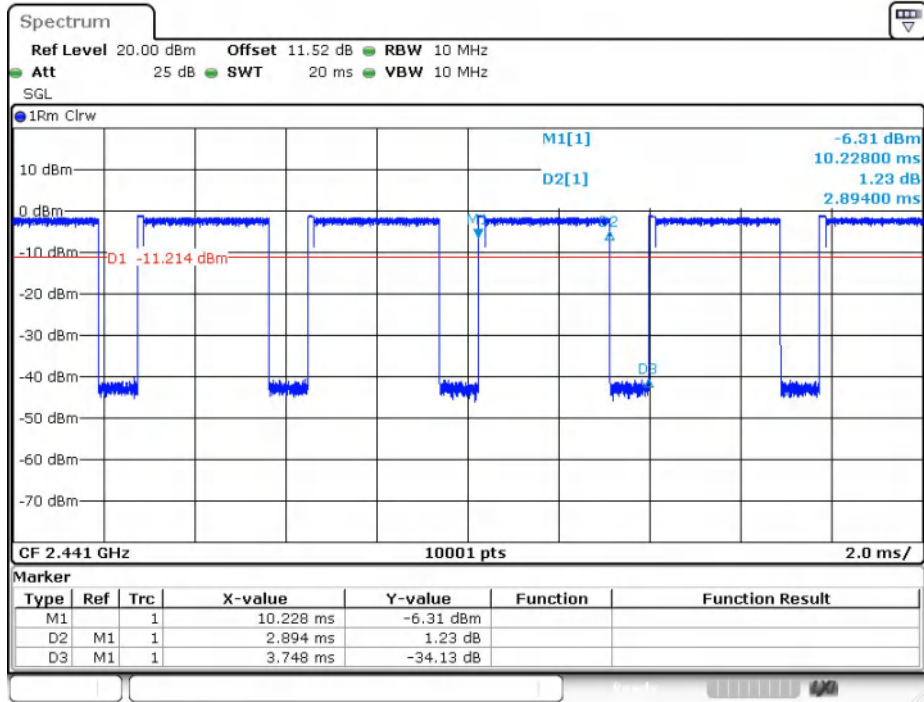
Date: 5.SEP.2024 11:40:56

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



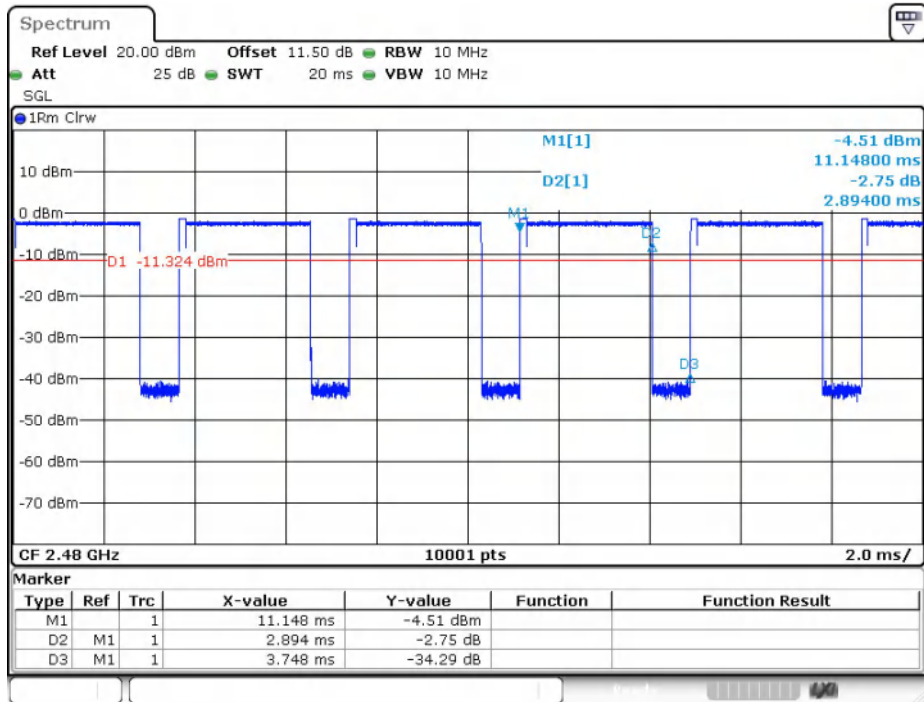
Date: 5.SEP.2024 11:43:32

8DPSK(3-DH5)\_Channel 0



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

8DPSK(3-DH5)\_Channel 39



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

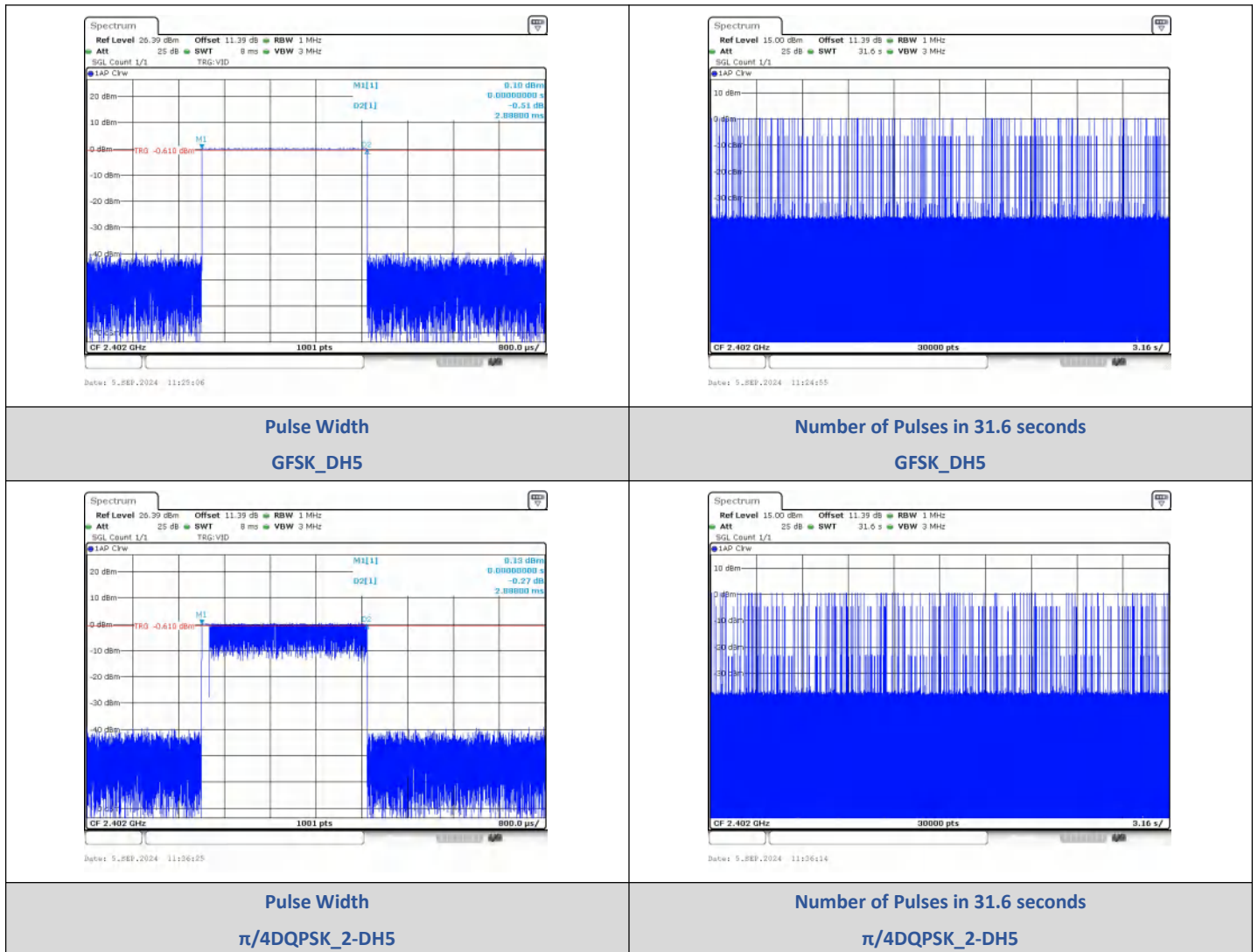
8DPSK(3-DH5)\_Channel 78

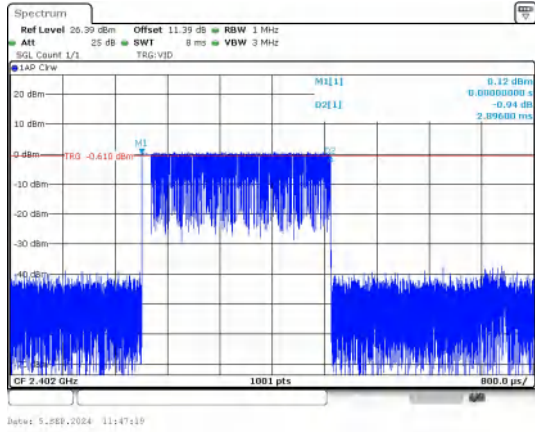
## 2) Dwell Time

### Test Result

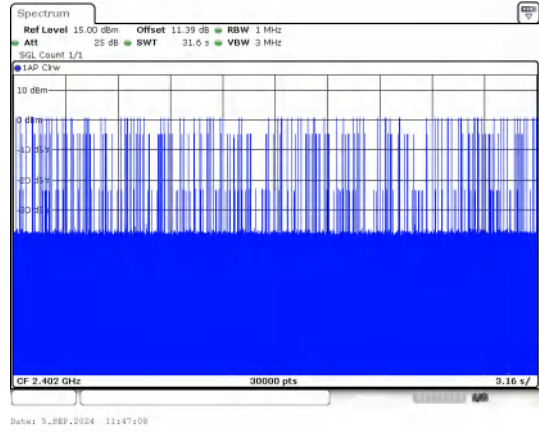
Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	CHO (2402MHz)	2.888	115	332.12	< 400	PASS
$\pi/4$ DQPSK	2-DH5		2.888	107	309.02		PASS
8DPSK	3-DH5		2.896	103	298.29		PASS

### Test Graphs





**Pulse Width**  
**8DPSK\_3-DH5**



**Number of Pulses in 31.6 seconds**  
**8DPSK\_3-DH5**

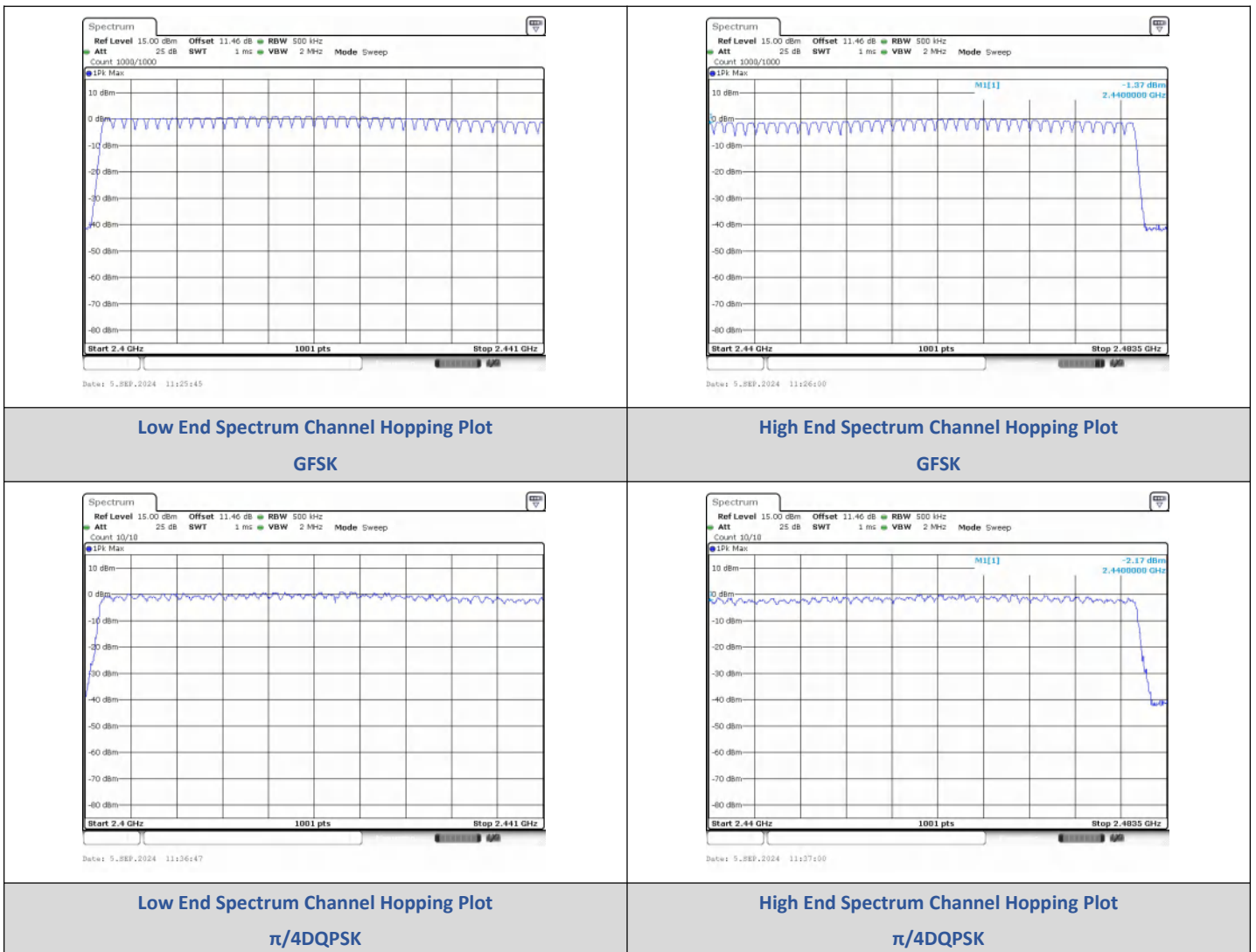


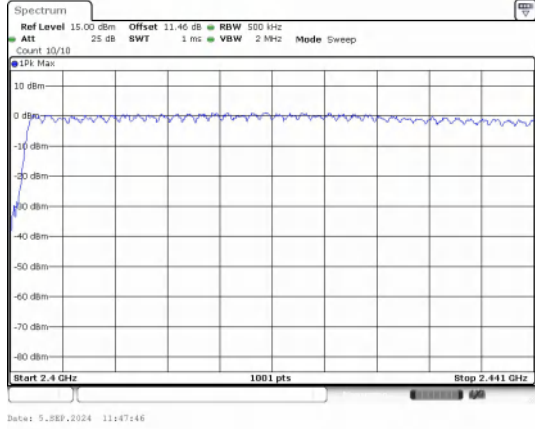
### 3) Number Of Hopping Channel

**Test Result**

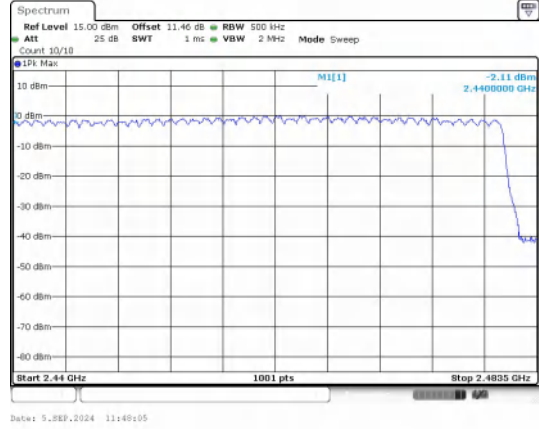
Modulation	Packet	Number of Hopping Channel	Limit	Result
GFSK	DH5	79	15	PASS
$\pi/4$ DQPSK	2-DH5	79	15	PASS
8DPSK	3-DH5	79	15	PASS

**Test Graphs**





Low End Spectrum Channel Hopping Plot  
8DPSK



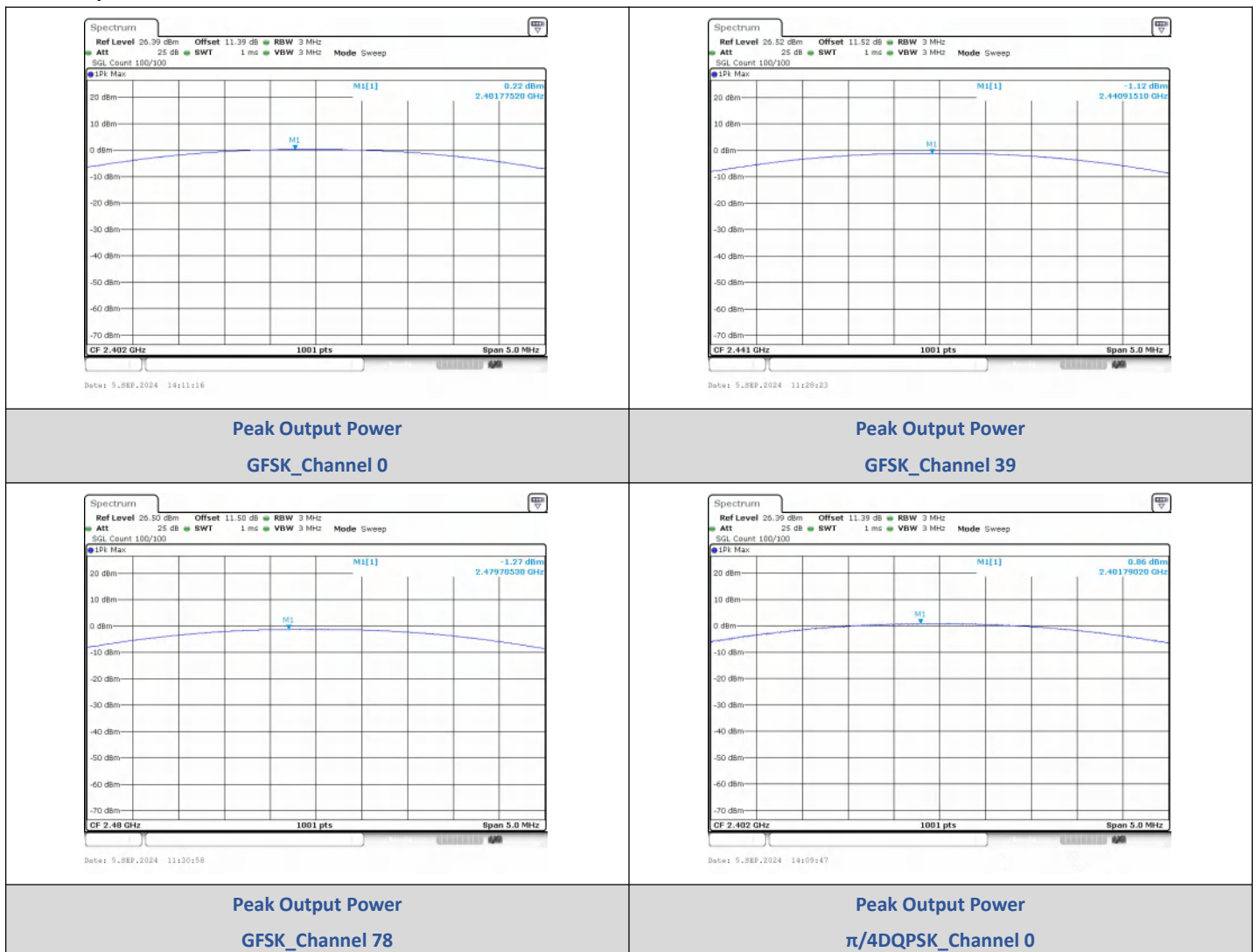
High End Spectrum Channel Hopping Plot  
8DPSK

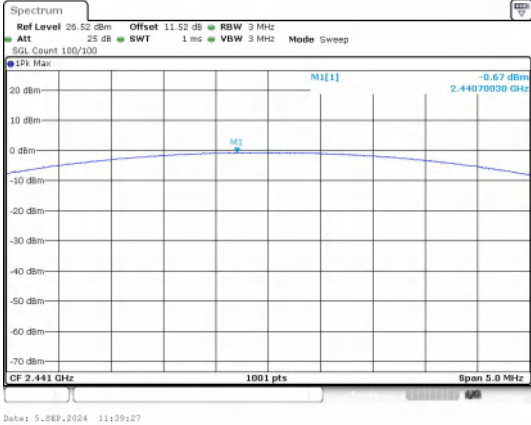
## 4) Conducted Peak Output Power

### Test Result

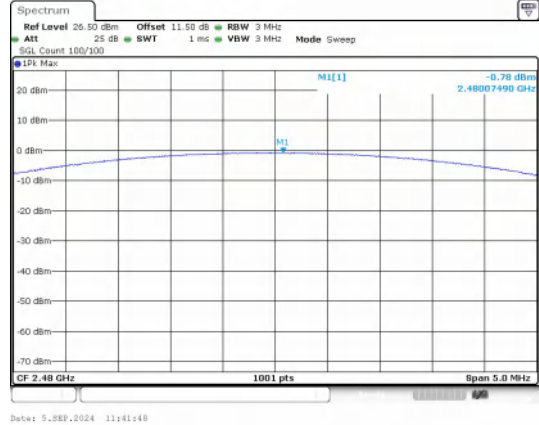
Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
GFSK	DH5	0	0.22	1.05	≤30	PASS
		39	-1.12	0.77		PASS
		78	-1.27	0.75		PASS
$\pi/4$ DQPSK	2-DH5	0	0.86	1.22	≤20.97	PASS
		39	-0.67	0.86		PASS
		78	-0.78	0.84		PASS
8DPSK	3-DH5	0	0.99	1.26	≤20.97	PASS
		39	-0.55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

### Test Graphs

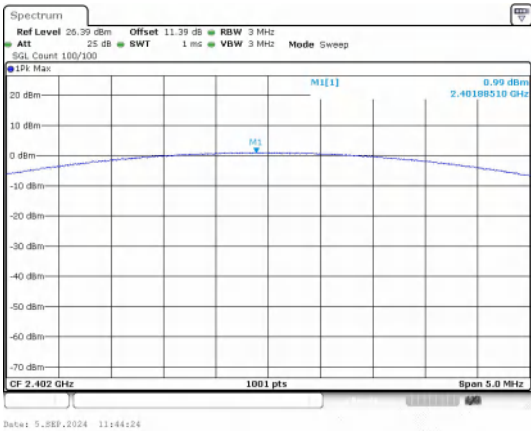




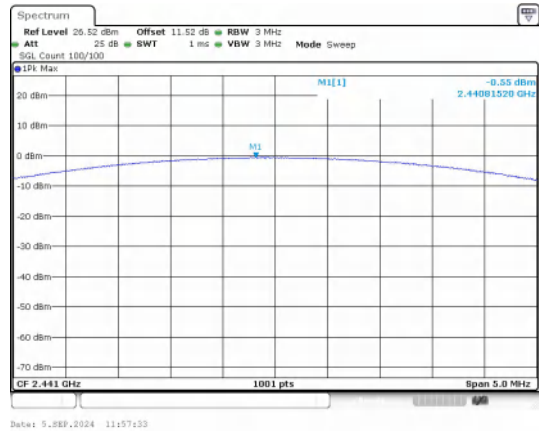
**Peak Output Power**  
 $\pi/4$ DQPSK\_Channel 39



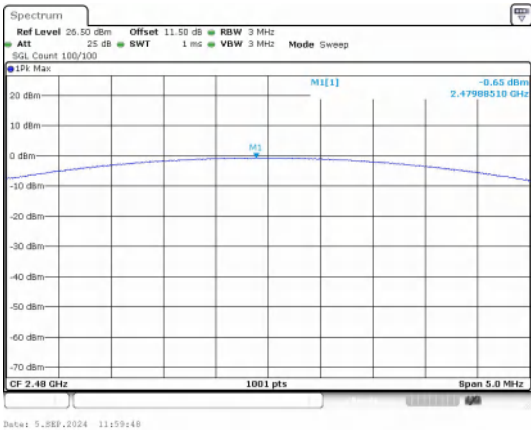
**Peak Output Power**  
 $\pi/4$ DQPSK\_Channel 78



**Peak Output Power**  
 8DPSK\_Channel 0



**Peak Output Power**  
 8DPSK\_Channel 39



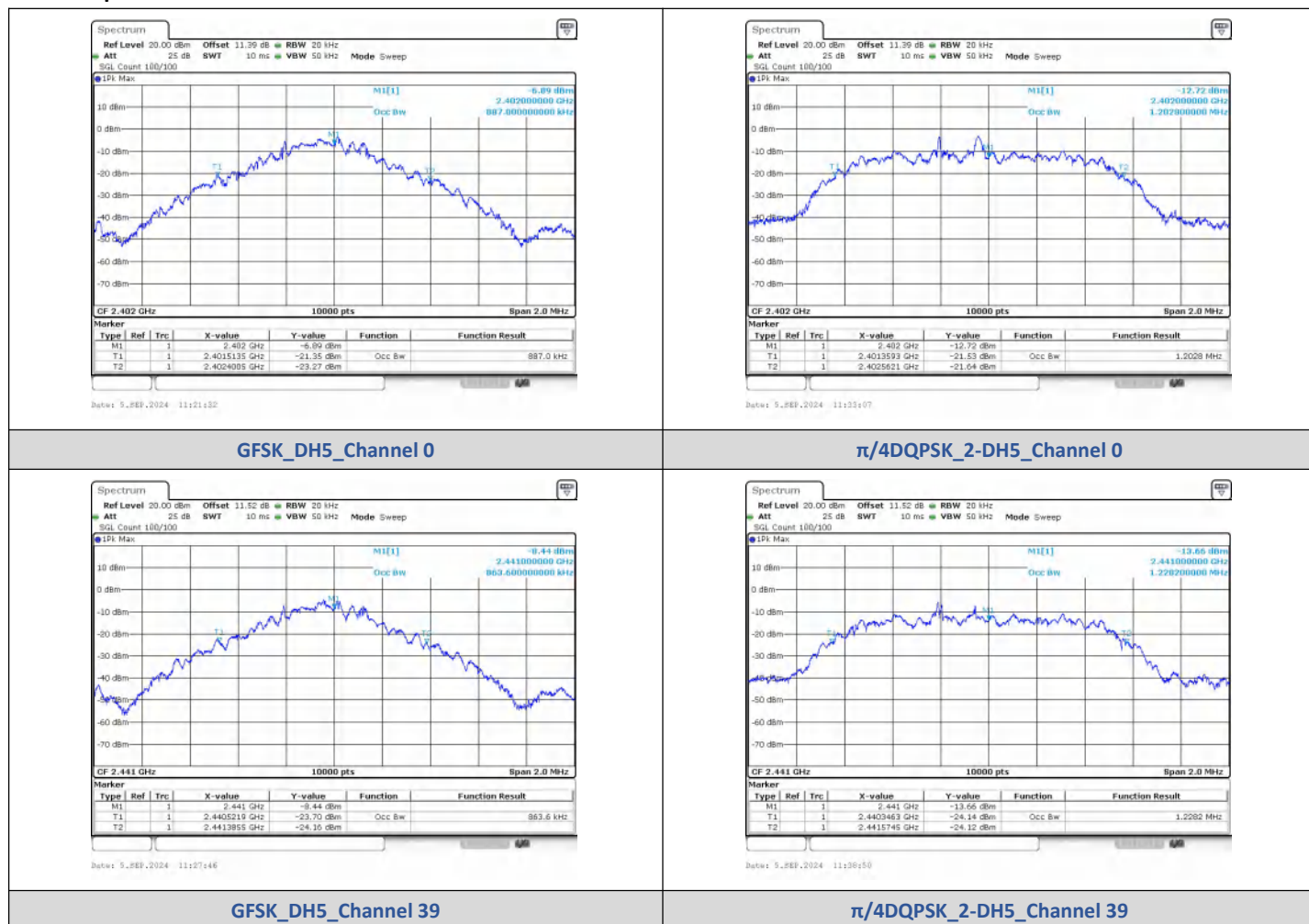
**Peak Output Power**  
 8DPSK\_Channel 78

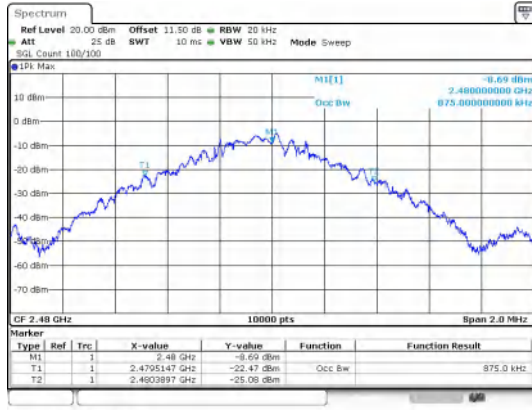
## 5) 99% Bandwidth

### Test Result

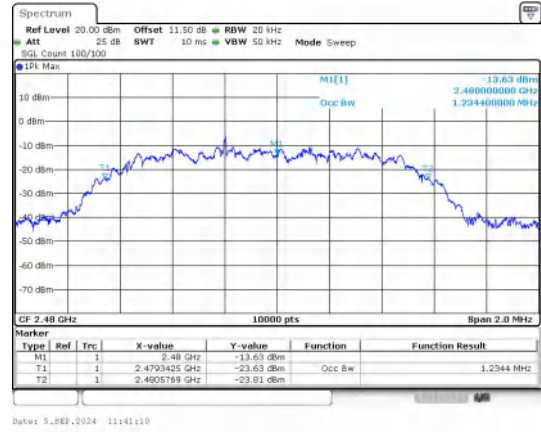
Modulation	Channel	Center Frequency (MHz)	99% BW (MHz)
GFSK	0	2402	0.88700
	39	2441	0.86360
	78	2480	0.87500
$\pi/4$ DQPSK	0	2402	1.2028
	39	2441	1.2282
	78	2480	1.2344
8DPSK	0	2402	1.2164
	39	2441	1.2266
	78	2480	1.2168

### Test Graphs

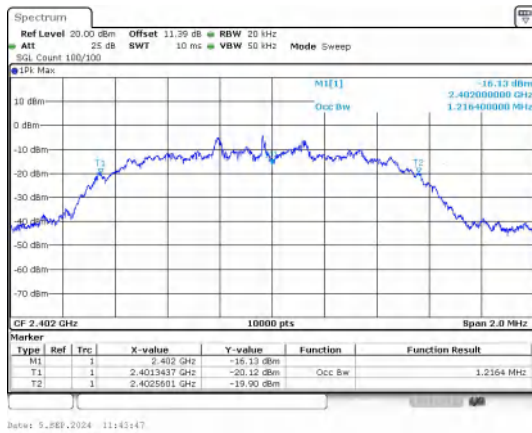




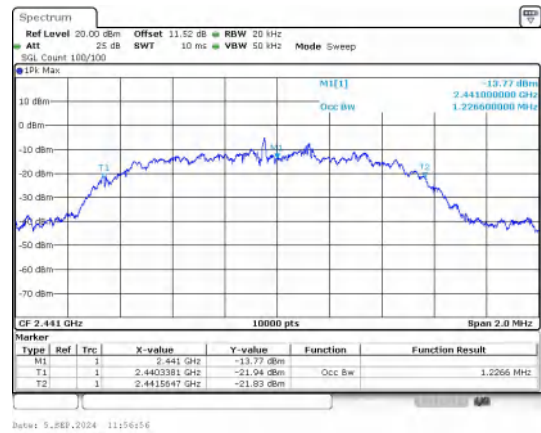
GFSK\_DH5\_Channel 78



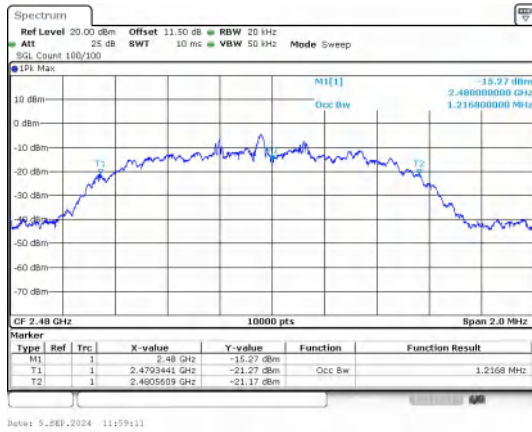
$\pi/4$ DQPSK\_2-DH5\_Channel 78



8DPSK\_3-DH5\_Channel 0



8DPSK\_3-DH5\_Channel 39



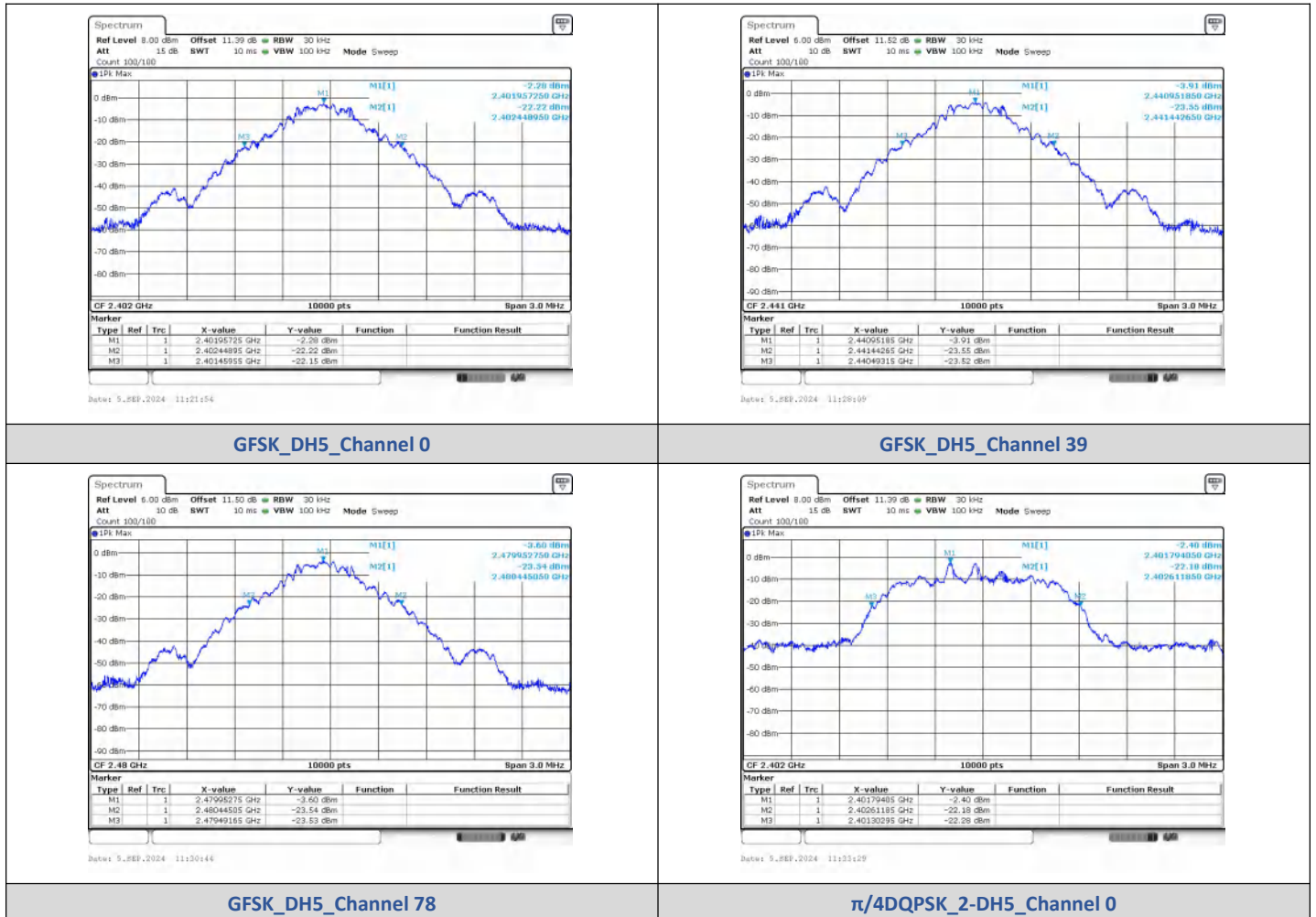
8DPSK\_3-DH5\_Channel 78

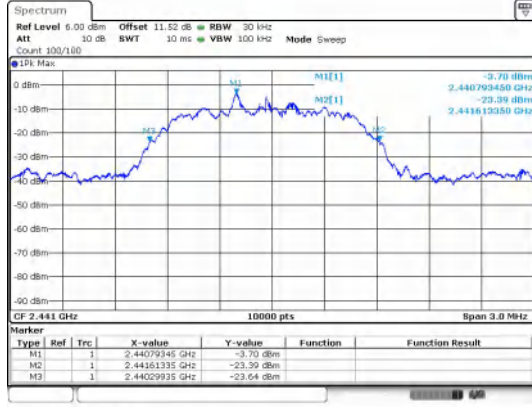
## 6) 20dB Bandwidth

### 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

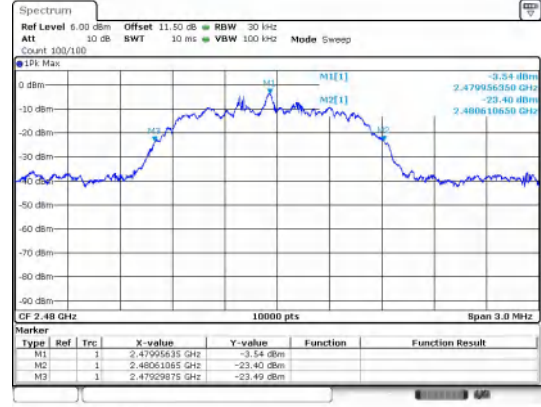
### Test Graphs





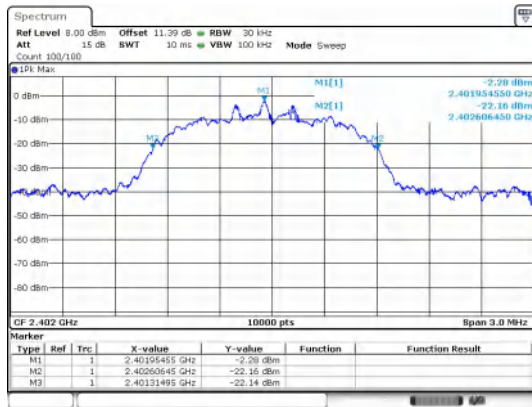
Date: 5.8EP.2024 11:39:13

$\pi/4$ DQPSK\_2-DH5\_Channel 39



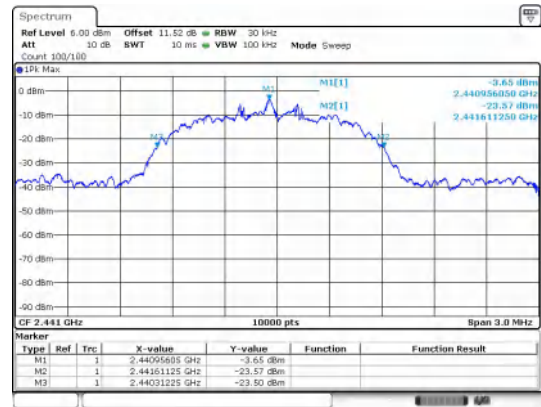
Date: 5.8EP.2024 11:41:33

$\pi/4$ DQPSK\_2-DH5\_Channel 78



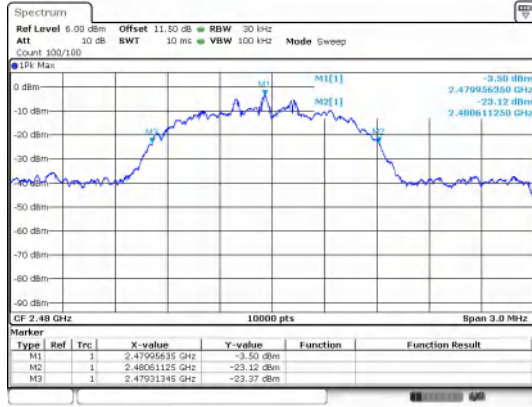
Date: 5.8EP.2024 11:44:09

8DPSK\_3-DH5\_Channel 0



Date: 5.8EP.2024 11:57:19

8DPSK\_3-DH5\_Channel 39



Date: 5.8EP.2024 11:59:34

8DPSK\_3-DH5\_Channel 78

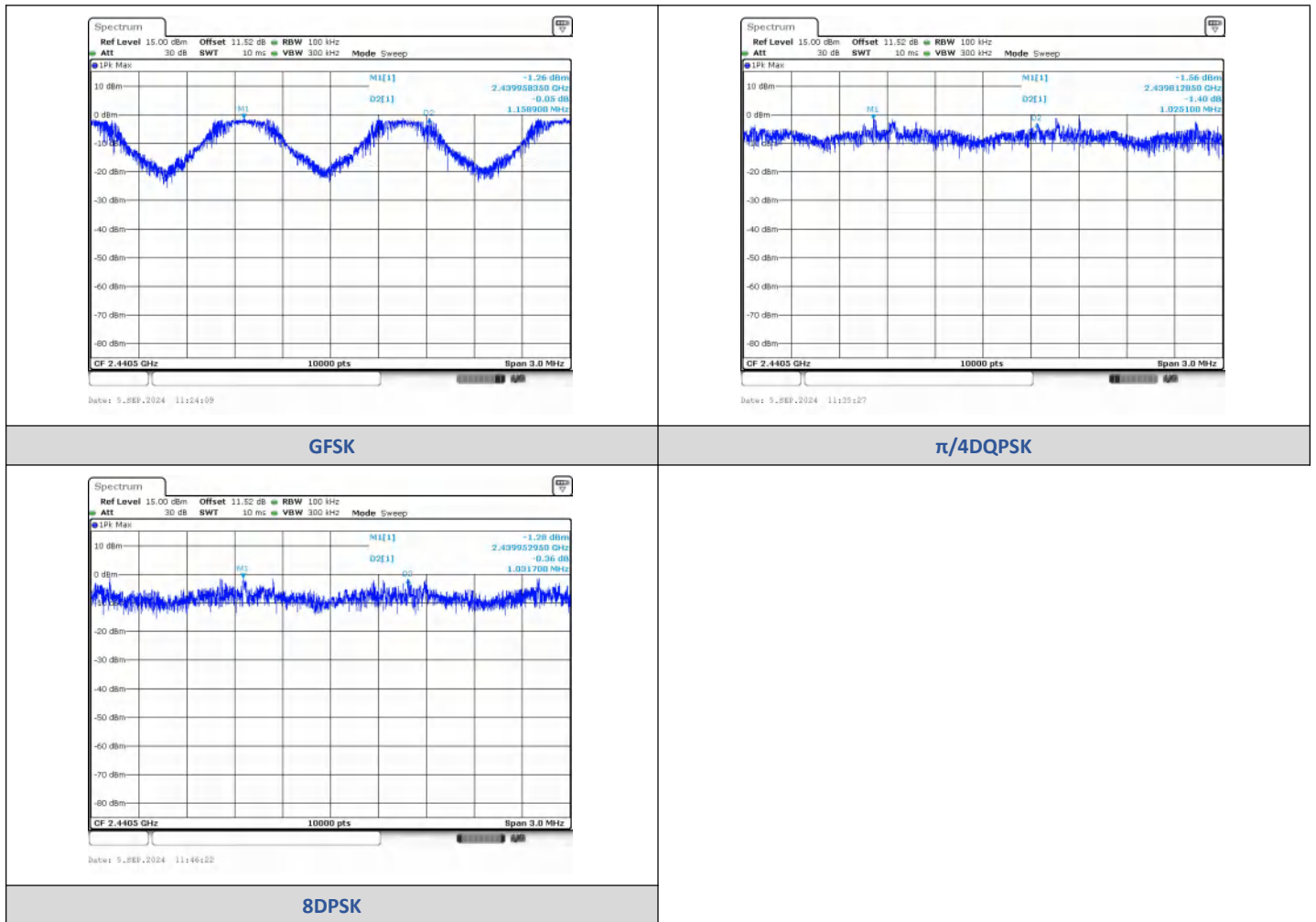


## 7) Carrier Frequencies Separation

### 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

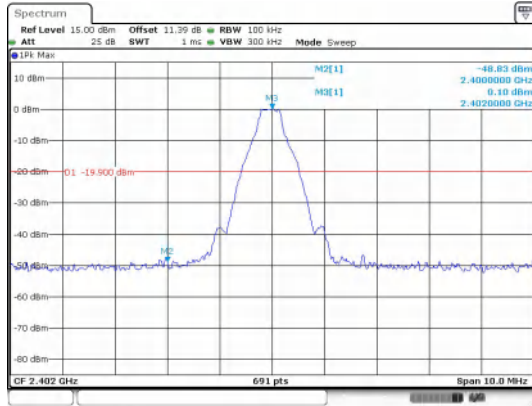
#### Non-Hopping

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

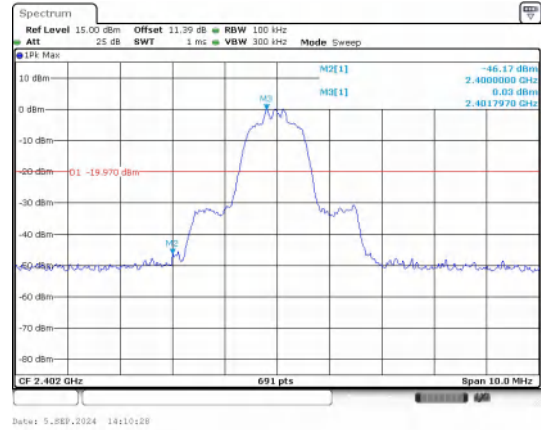
#### Hopping

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

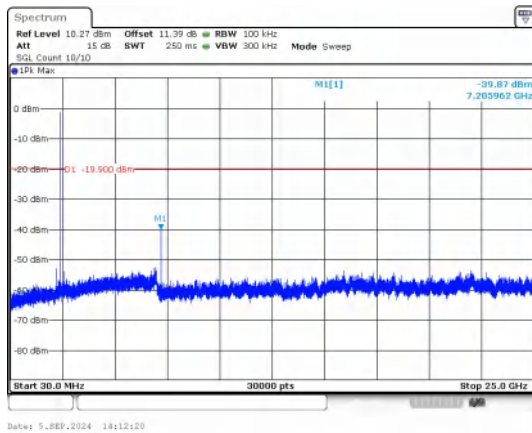
### Test Graphs



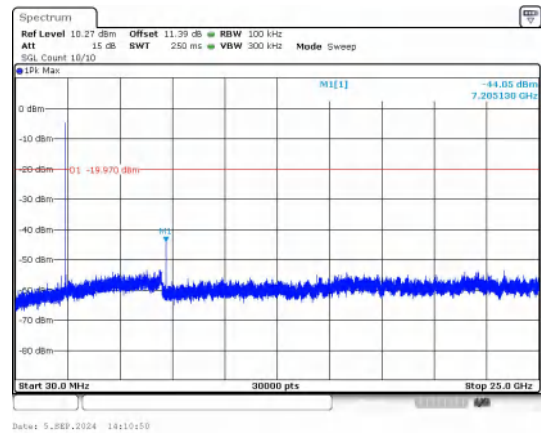
Out Of Band Emission  
GFSK\_DH5\_Channel 0



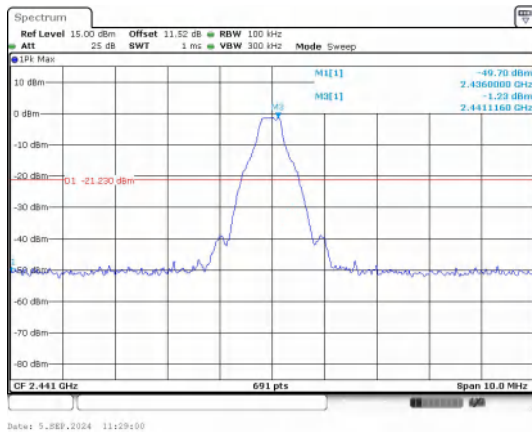
Out Of Band Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 0



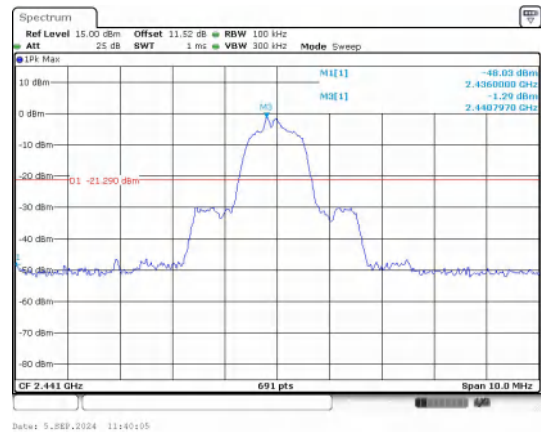
30.0 MHz - 25000.0 MHz  
GFSK\_DH5\_Channel 0



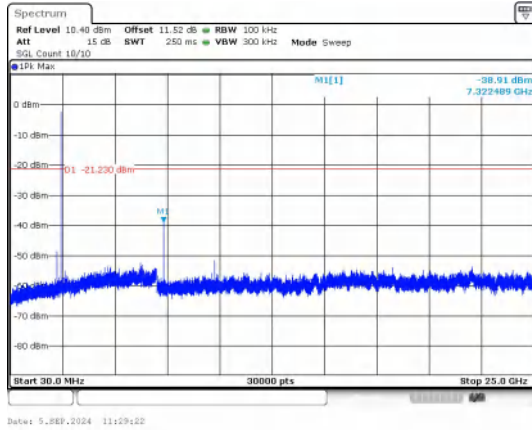
30.0 MHz - 25000.0 MHz  
 $\pi/4$ DQPSK\_2-DH5\_Channel 0



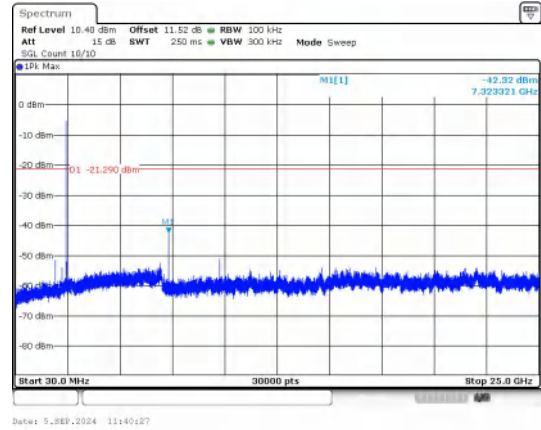
Out Of Band Emission  
GFSK\_DH5\_Channel 39



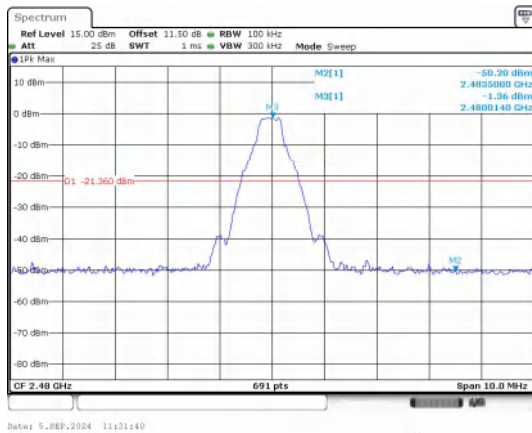
Out Of Band Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 39



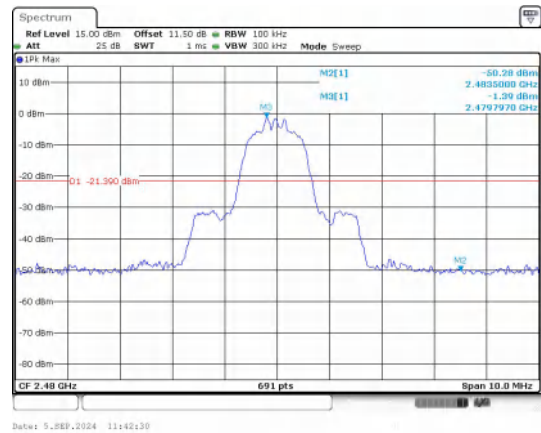
30.0 MHz - 25000.0 MHz  
GFSK\_DH5\_Channel 39



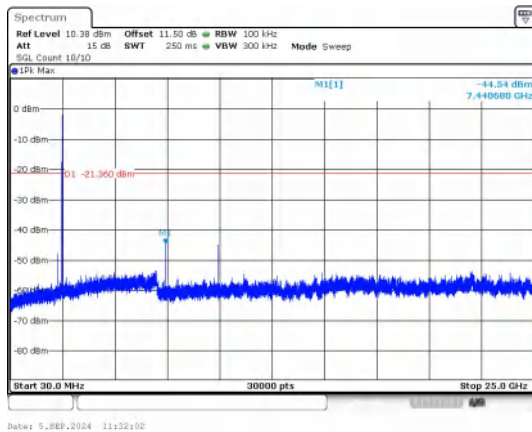
30.0 MHz - 25000.0 MHz  
 $\pi/4$ DQPSK\_2-DH5\_Channel 39



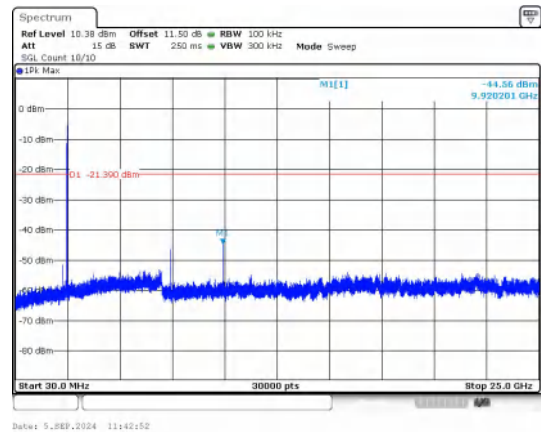
Out Of Band Emission  
GFSK\_DH5\_Channel 78



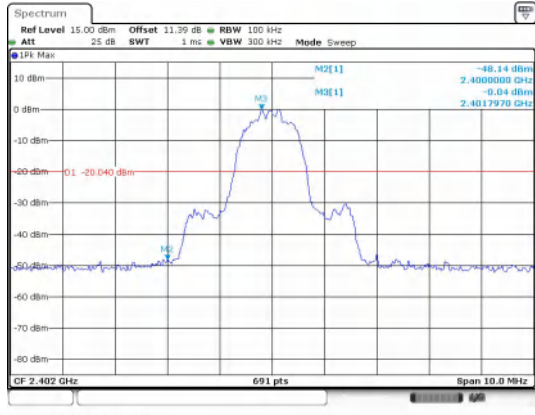
Out Of Band Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 78



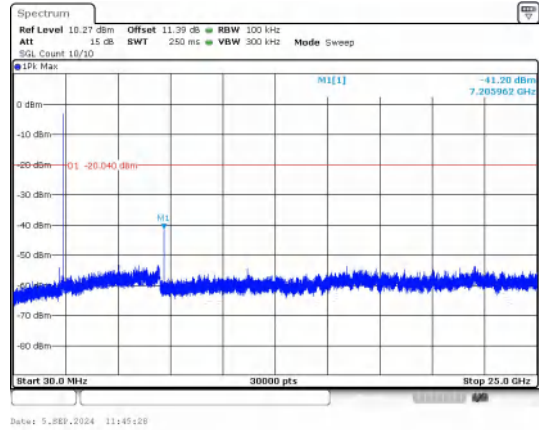
30.0 MHz - 25000.0 MHz  
GFSK\_DH5\_Channel 78



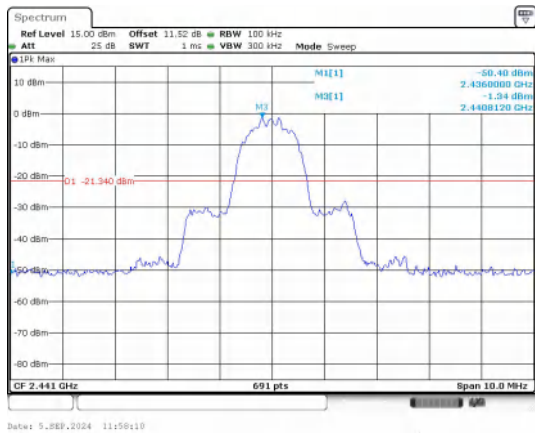
30.0 MHz - 25000.0 MHz  
 $\pi/4$ DQPSK\_2-DH5\_Channel 78



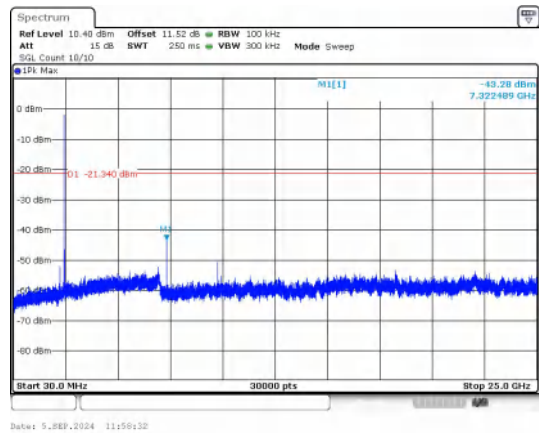
**Out Of Band Emission**  
**8DPSK\_3-DH5\_Channel 0**



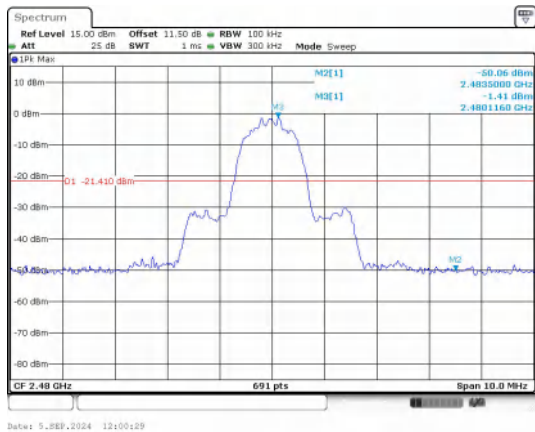
**30.0 MHz - 25000.0 MHz**  
**8DPSK\_3-DH5\_Channel 0**



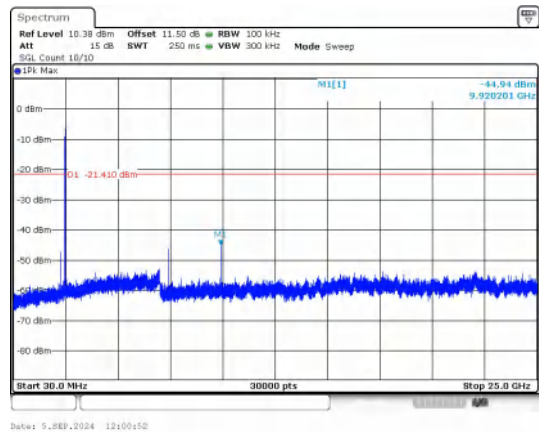
**Out Of Band Emission**  
**8DPSK\_3-DH5\_Channel 39**



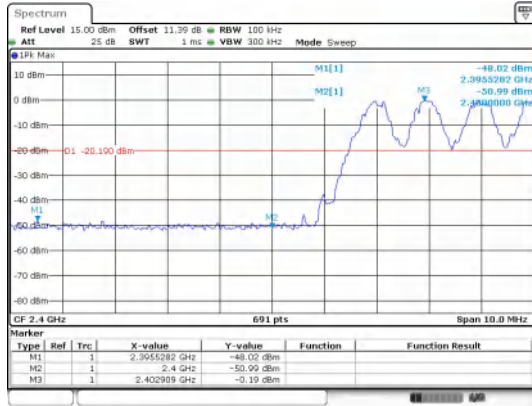
**30.0 MHz - 25000.0 MHz**  
**8DPSK\_3-DH5\_Channel 39**



**Out Of Band Emission**  
**8DPSK\_3-DH5\_Channel 78**

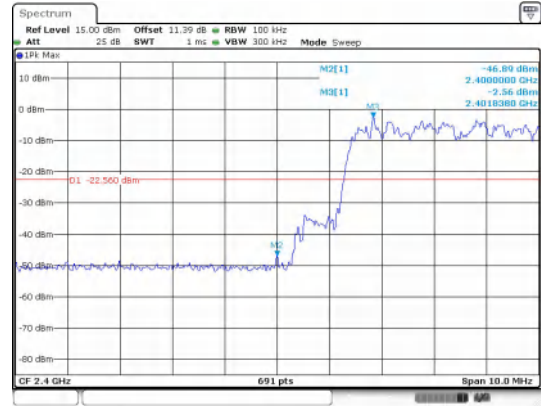


**30.0 MHz - 25000.0 MHz**  
**8DPSK\_3-DH5\_Channel 78**



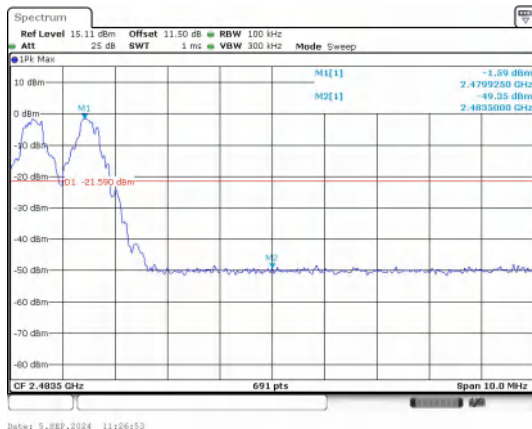
Date: 5. SEP. 2024 11:26:53

Out Of Band Emission(Left)  
GFSK\_DH5\_Channel Hopping



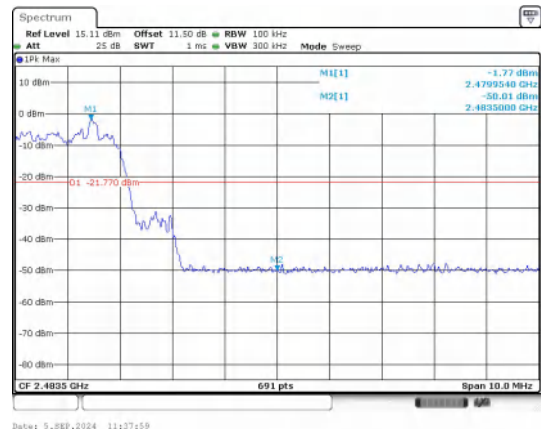
Date: 5. SEP. 2024 11:27:32

Out Of Band Emission(Left)  
 $\pi/4$ DQPSK\_2-DH5\_Channel Hopping



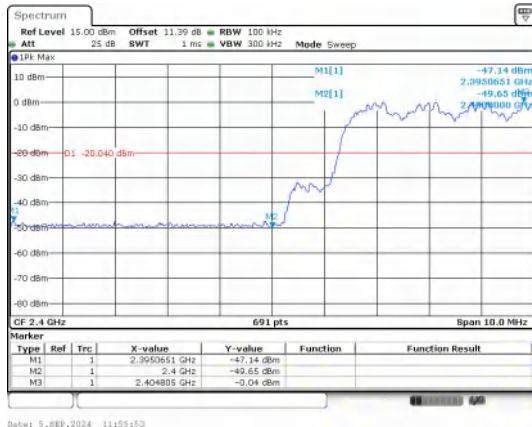
Date: 5. SEP. 2024 11:26:53

Out Of Band Emission(Right)  
GFSK\_DH5\_Channel Hopping



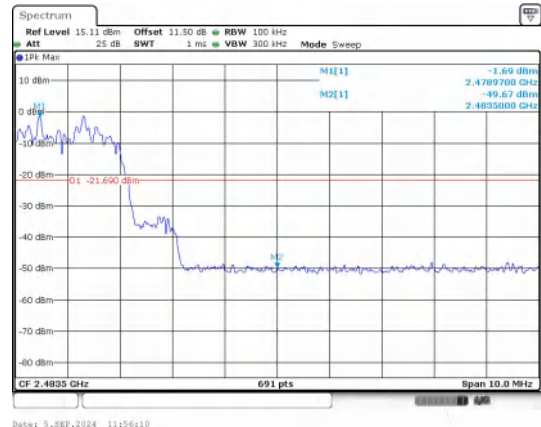
Date: 5. SEP. 2024 11:27:59

Out Of Band Emission(Right)  
 $\pi/4$ DQPSK\_2-DH5\_Channel Hopping



Date: 5. SEP. 2024 11:55:03

Out Of Band Emission(Left)  
8DPSK\_3-DH5\_Channel Hopping



Date: 5. SEP. 2024 11:56:10

Out Of Band Emission(Right)  
8DPSK\_3-DH5\_Channel Hopping