

Appendix

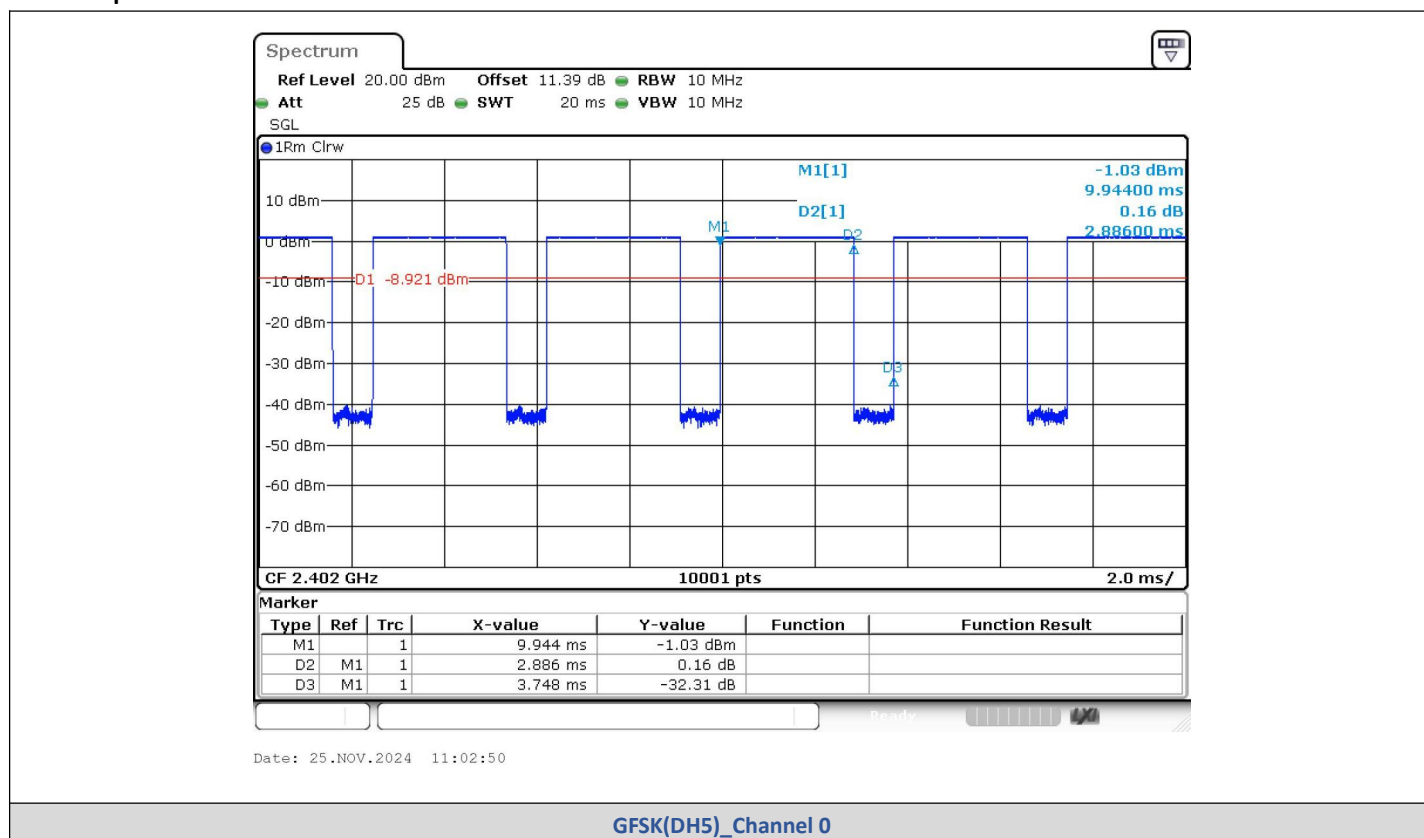
Report No.:	CISRR24111911405
FCC ID:	2BF2Q-KW01
Product Name:	White noise speaker 01
Model No.:	KW01
Test Engineer:	Lucas Huang
Supervised by:	Rory Huang

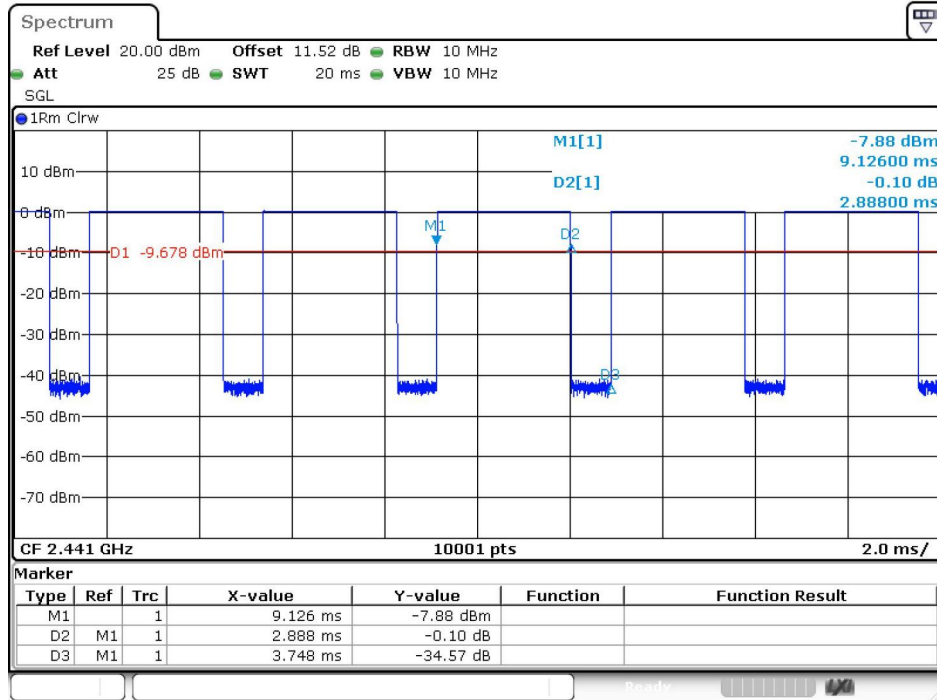
1) Duty Cycle

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	0.3465
		39	2.888	3.748	77.05	0.7705	1.1323	0.3463
		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

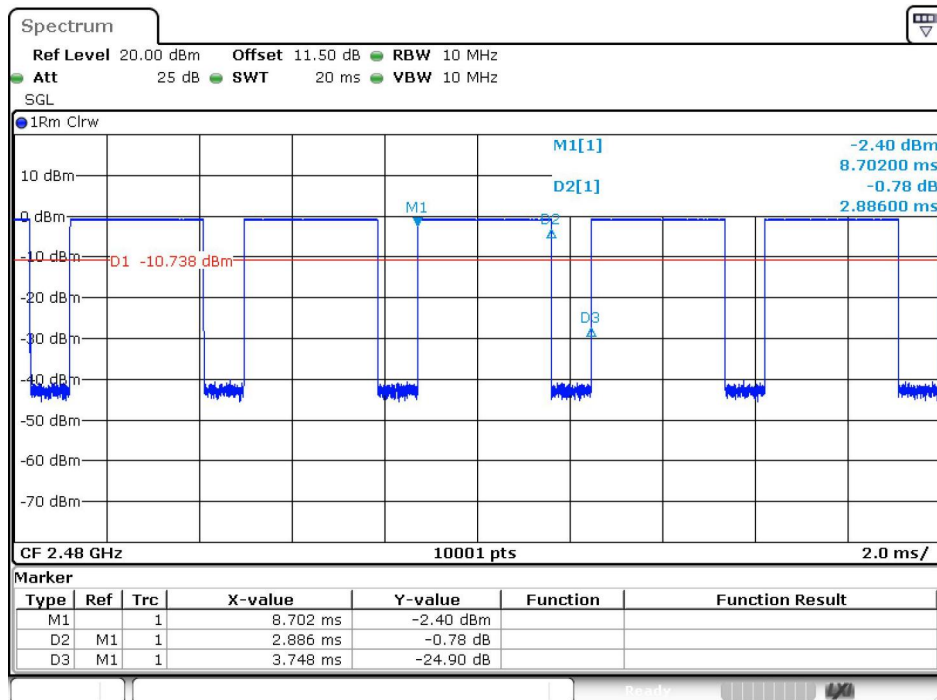
Test Graphs





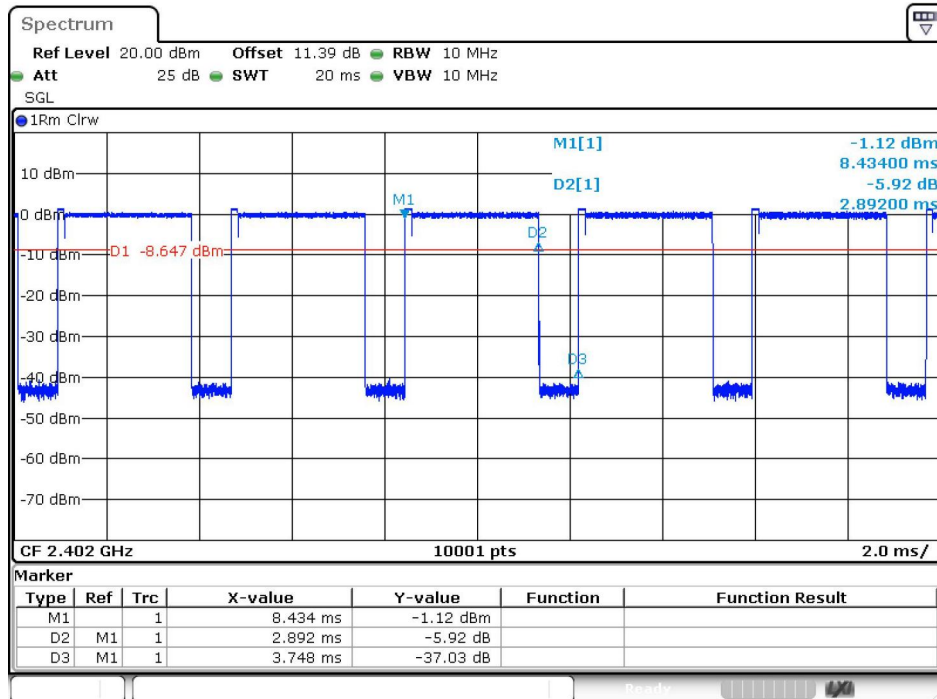
Date: 25.NOV.2024 11:10:29

GFSK(DH5)_Channel 39



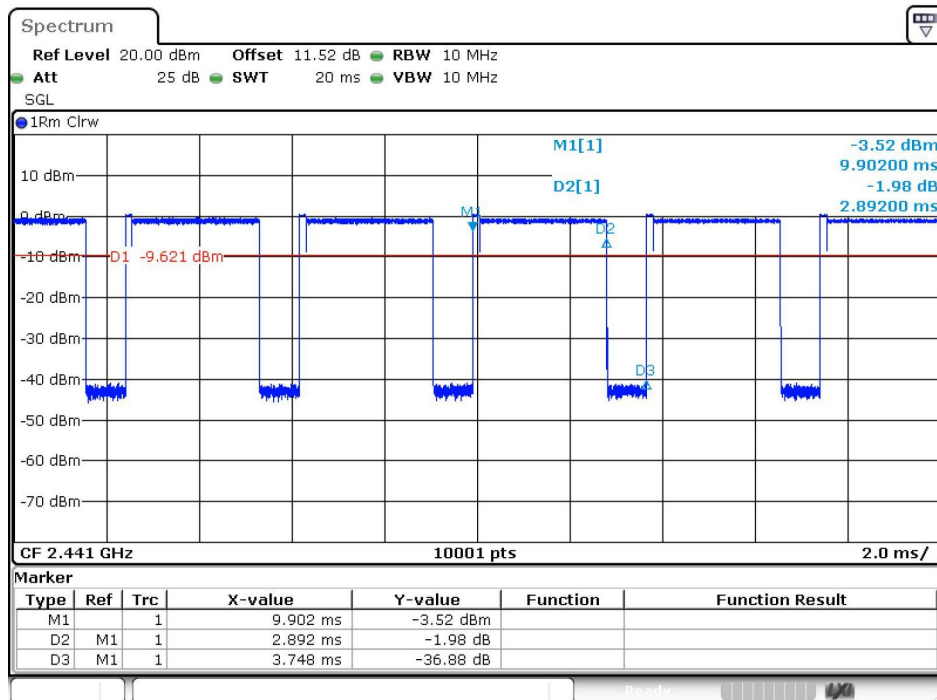
Date: 25.NOV.2024 11:12:38

GFSK(DH5)_Channel 78



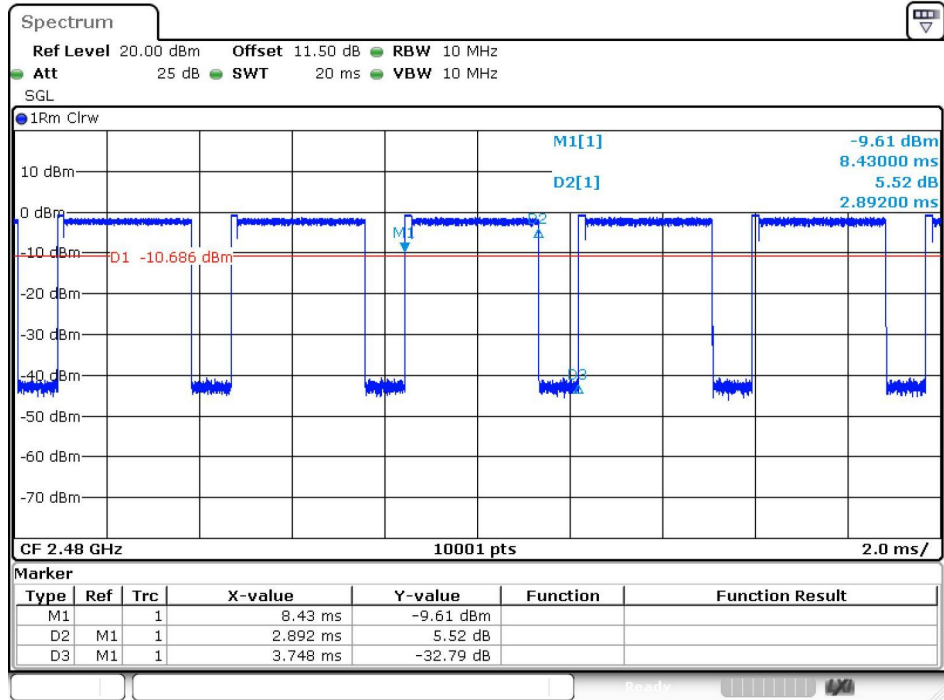
Date: 25.NOV.2024 11:15:04

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



Date: 25.NOV.2024 11:22:25

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



Date: 25.NOV.2024 11:24:31

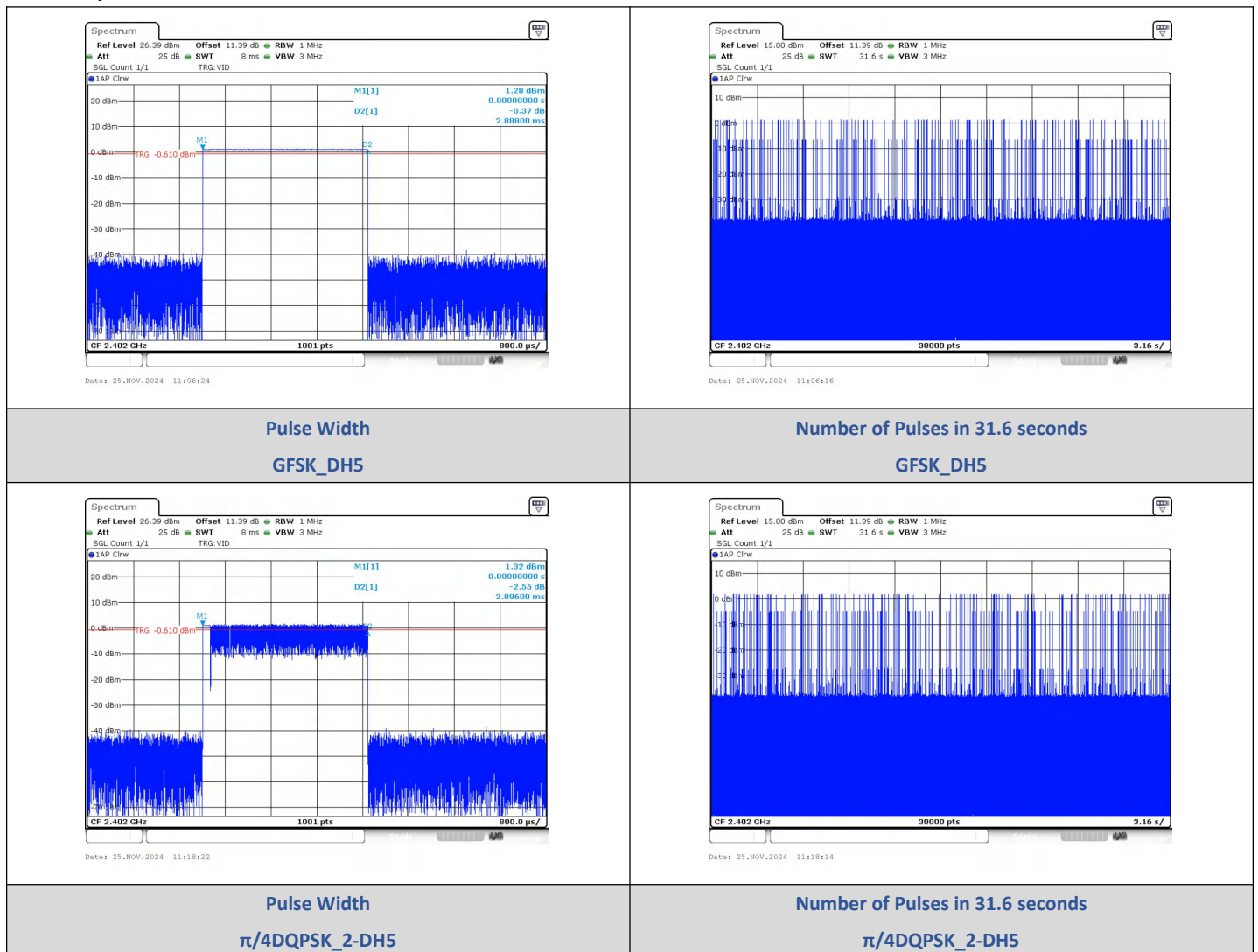
$\pi/4$ DQPSK(2-DH5)_Channel 78

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	111	320.57	< 400	PASS
$\pi/4$ DQPSK	2-DH5	(2402MHz)	2.896	107	309.87		PASS

Test Graphs

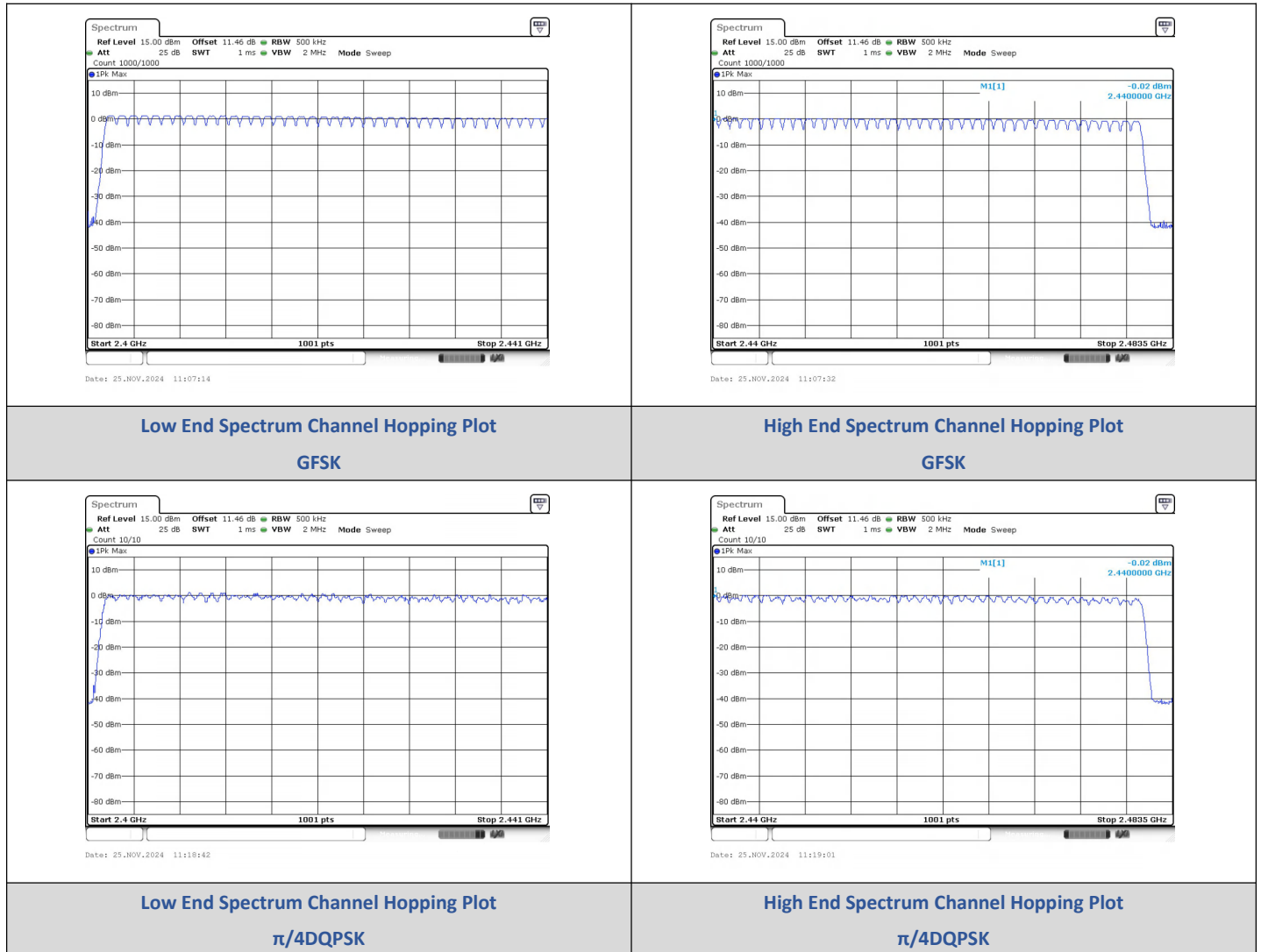


3) Number Of Hopping Channel

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

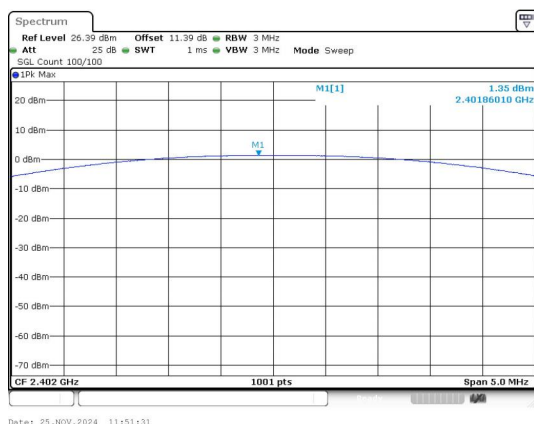


4) Conducted Peak Output Power

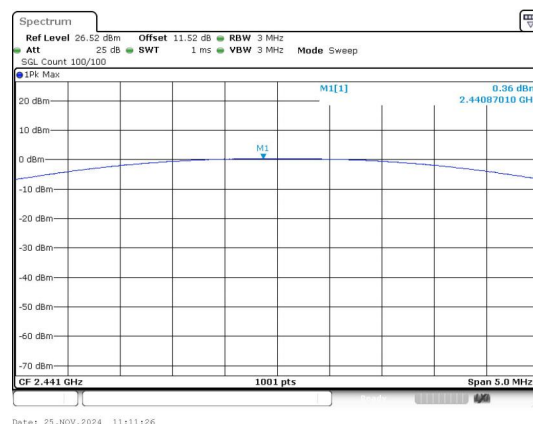
Test Result

Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
GFSK	DH5	0	1.35	1.36	≤30	PASS
		39	0.36	1.09		PASS
		78	-0.69	0.85		PASS
$\pi/4$ DQPSK	2-DH5	0	2.20	1.66	≤20.97	PASS
		39	1.31	1.35		PASS
		78	0.21	1.05		PASS

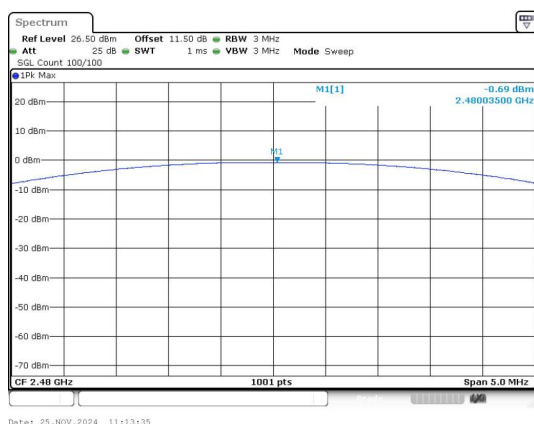
Test Graphs



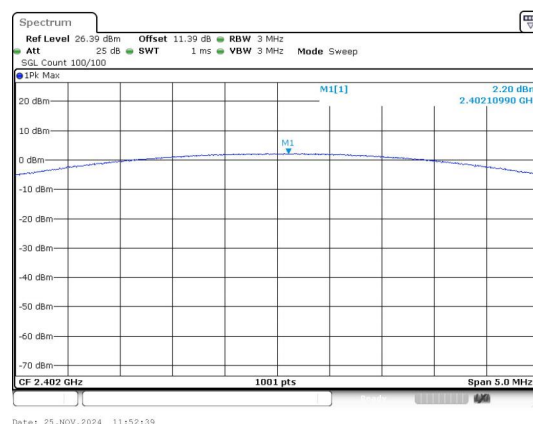
Peak Output Power
GFSK_Channel 0



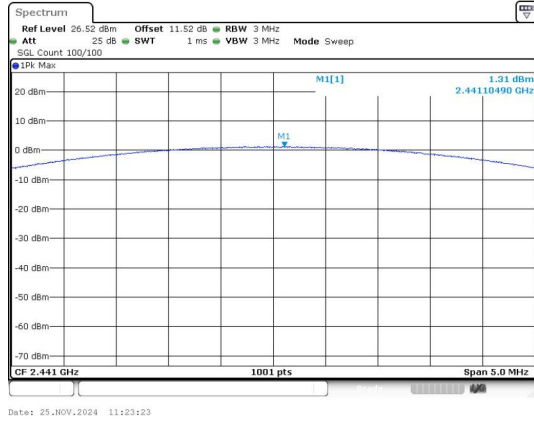
Peak Output Power
GFSK_Channel 39



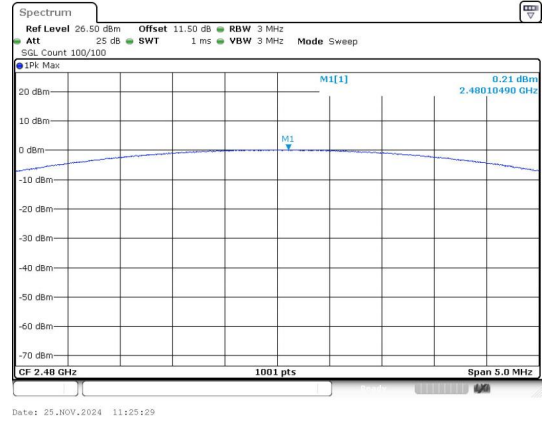
Peak Output Power
GFSK_Channel 78



Peak Output Power
 $\pi/4$ DQPSK_Channel 0



Peak Output Power
 $\pi/4$ DQPSK_Channel 39



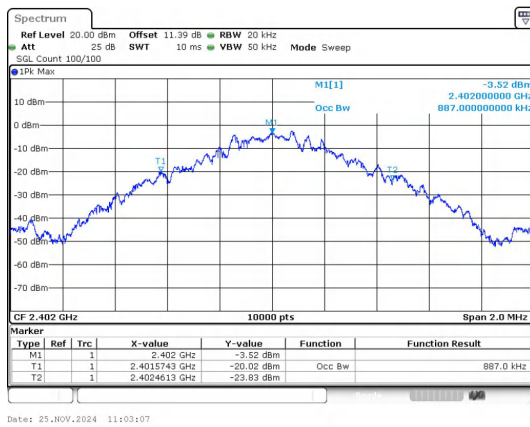
Peak Output Power
 $\pi/4$ DQPSK_Channel 78

5) 99% Bandwidth

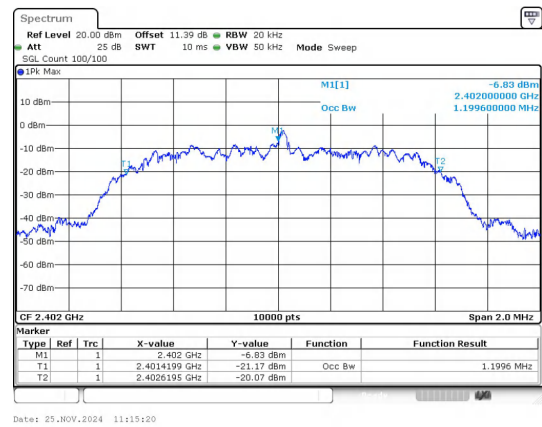
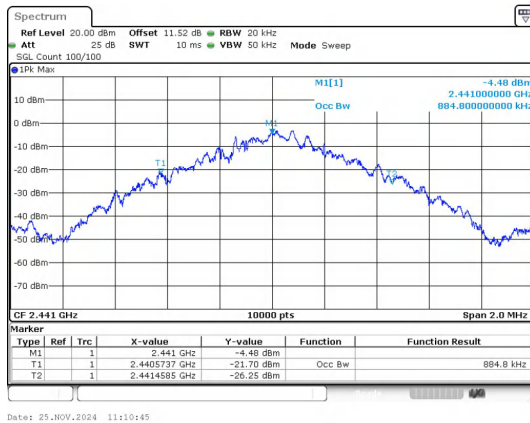
Test Result

Modulation	Channel	Center Frequency (MHz)	99% BW (MHz)
GFSK	0	2402	0.88700
	39	2441	0.88480
	78	2480	0.87620
$\pi/4$ DQPSK	0	2402	1.1996
	39	2441	1.2124
	78	2480	1.2008

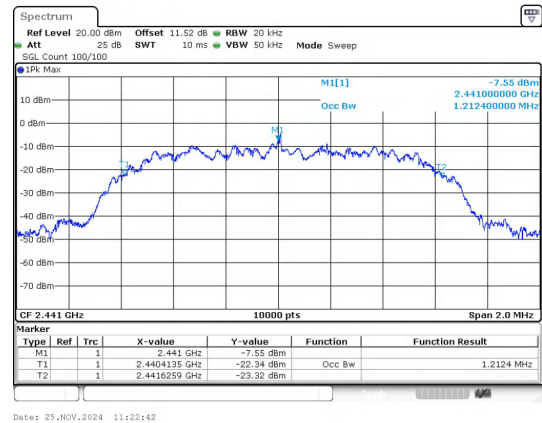
Test Graphs

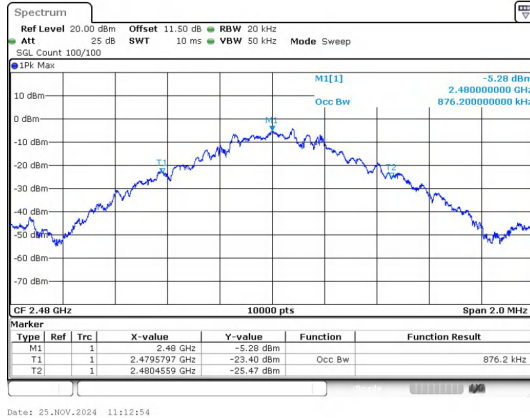


GFSK_DH5_Channel 0

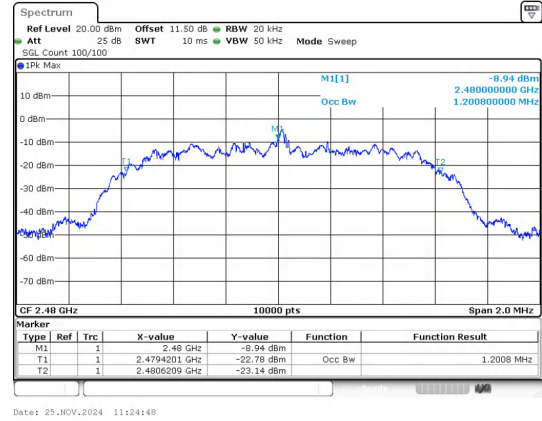

 $\pi/4$ DQPSK_2-DH5_Channel 0


GFSK_DH5_Channel 39


 $\pi/4$ DQPSK_2-DH5_Channel 39



GFSK_DH5_Channel 78



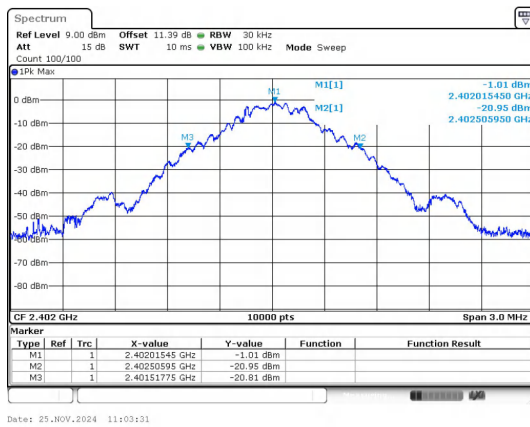
$\pi/4$ DQPSK_2-DH5_Channel 78

6) 20dB Bandwidth

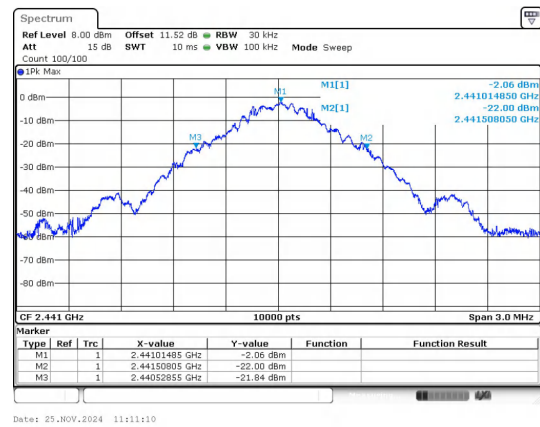
Test Result

Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	0.9900
	39	2441 MHz	0.9800
	78	2480 MHz	0.9800
$\pi/4$ DQPSK	0	2402 MHz	1.280
	39	2441 MHz	1.280
	78	2480 MHz	1.280

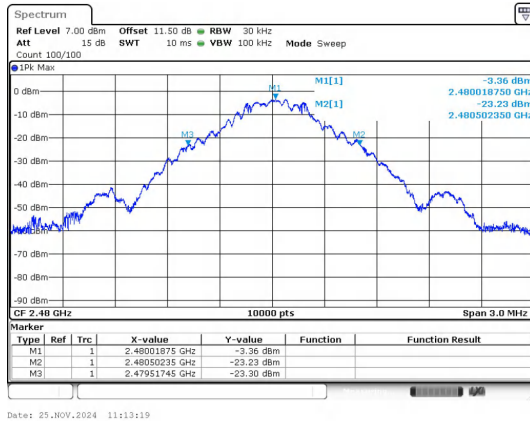
Test Graphs



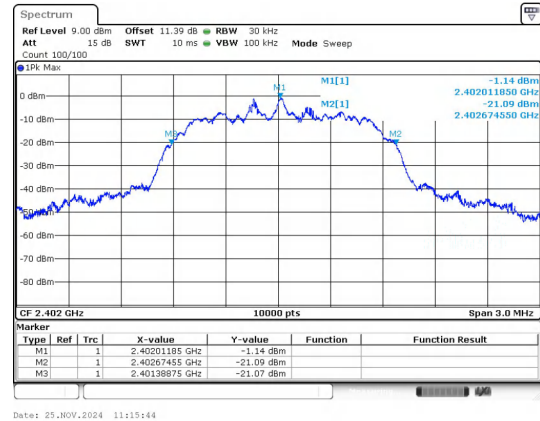
GFSK_DH5_Channel 0

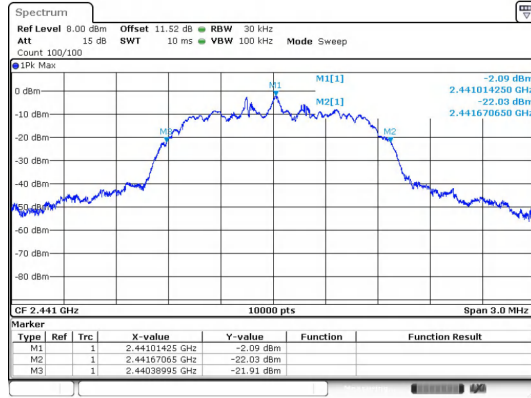


GFSK_DH5_Channel 39

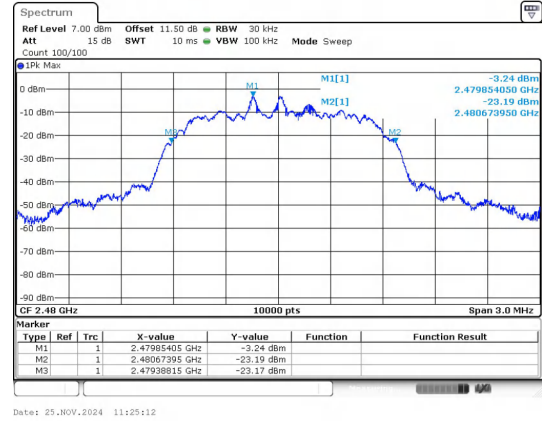


GFSK_DH5_Channel 78


 $\pi/4$ DQPSK_2-DH5_Channel 0



$\pi/4$ DQPSK_2-DH5_Channel 39



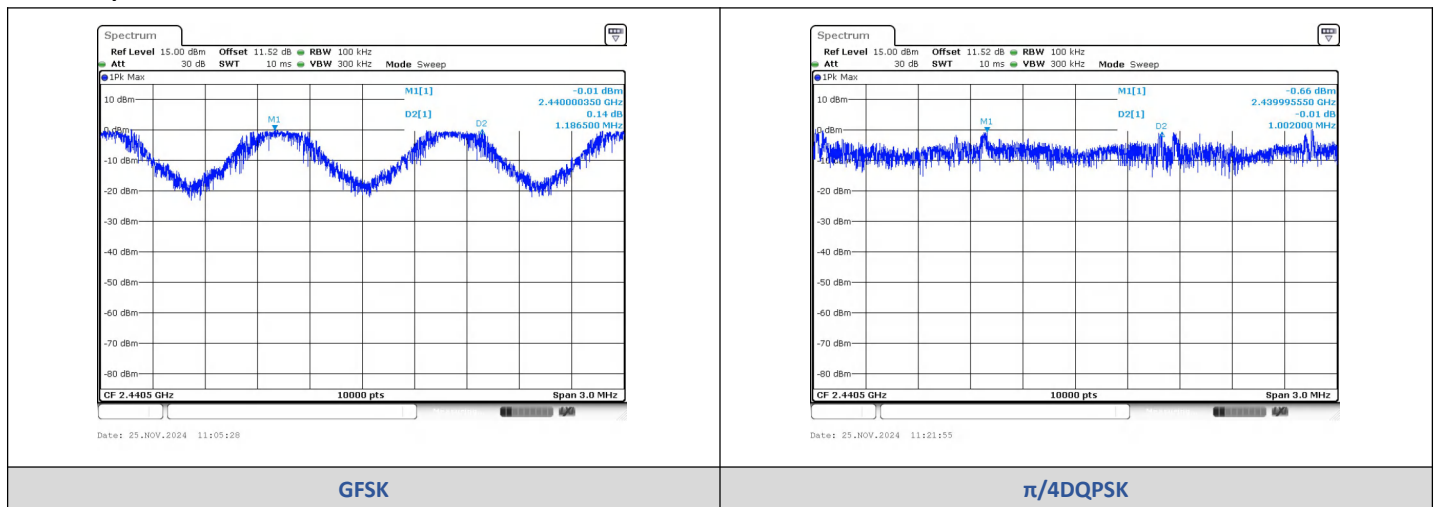
$\pi/4$ DQPSK_2-DH5_Channel 78

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	2440.0003	2441.1869	1.1865	0.99	PASS
$\pi/4$ DQPSK	2-DH5	2439.9956	2440.9976	1.0020	0.867	PASS

Test Graphs



8) Conducted Out Of Band Emission

Test Result

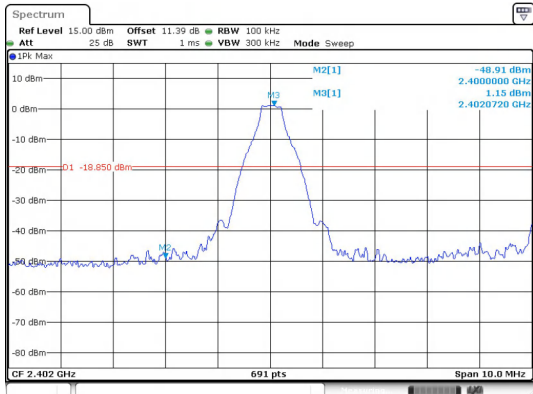
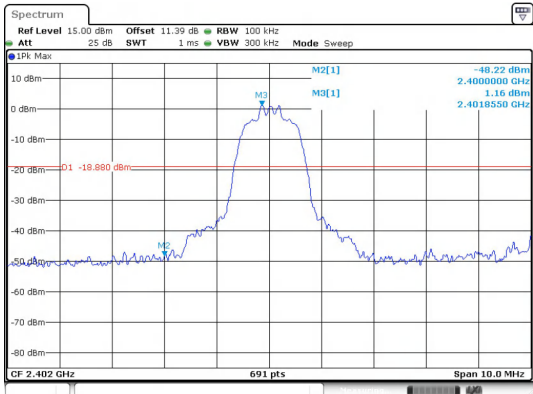
Non-Hopping

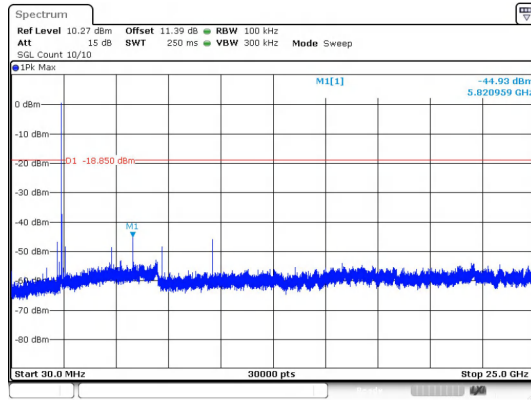
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2400.00	-48.910	-18.85	-30.060	PASS
			5820.96	-44.928	-18.85	-26.078	PASS
		39	9763.72	-41.771	-19.77	-22.001	PASS
		78	2483.50	-49.390	-20.86	-28.530	PASS
			9920.20	-41.814	-20.86	-20.954	PASS
$\pi/4$ DQPSK	2-DH5	0	2400.00	-48.220	-18.88	-29.340	PASS
			9608.08	-45.682	-18.88	-26.802	PASS
		39	1958.93	-39.423	-19.93	-19.493	PASS
		78	2483.50	-50.390	-20.93	-29.460	PASS
			9920.20	-41.743	-20.93	-20.813	PASS

Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2395.25	-48.354	-18.82	-29.534	PASS
			2400.00	-49.420	-18.82	-30.600	PASS
			2483.50	-50.030	-20.88	-29.150	PASS
$\pi/4$ DQPSK	2-DH5		2395.70	-48.459	-19.12	-29.339	PASS
			2400.00	-50.720	-19.12	-31.600	PASS
			2483.50	-49.350	-21.15	-28.200	PASS

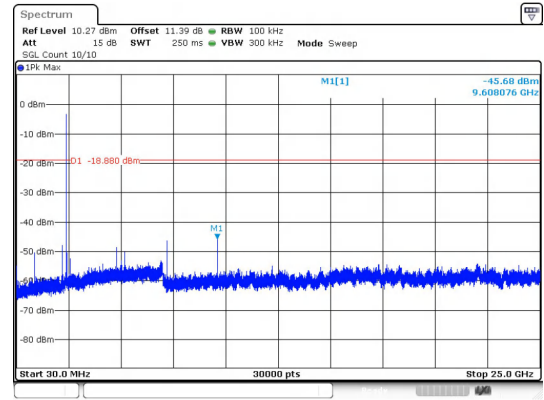
Test Graphs

 Date: 25.NOV.2024 11:51:52	 Date: 25.NOV.2024 11:56:17
Out Of Band Emission GFSK_DH5_Channel 0	Out Of Band Emission $\pi/4$DQPSK_2-DH5_Channel 0



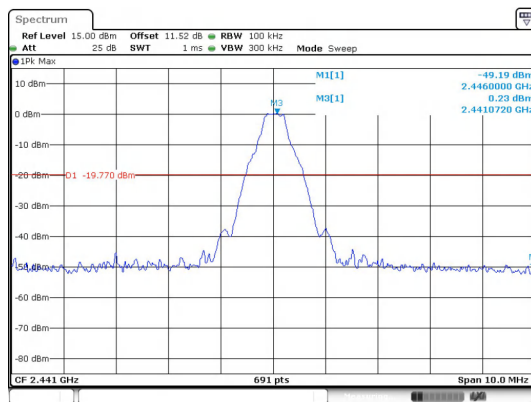
Date: 25.NOV.2024 11:52:15

30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 0



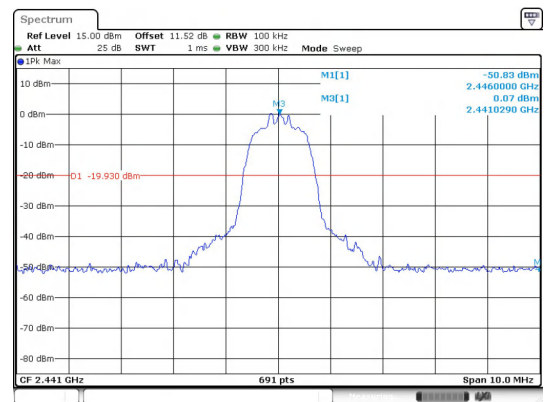
Date: 25.NOV.2024 11:56:39

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



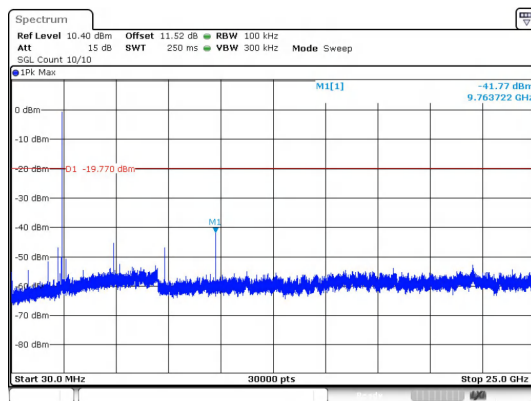
Date: 25.NOV.2024 11:11:43

Out Of Band Emission
GFSK_DH5_Channel 39



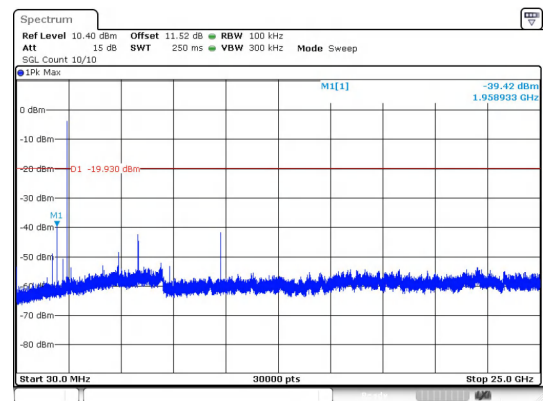
Date: 25.NOV.2024 11:23:39

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



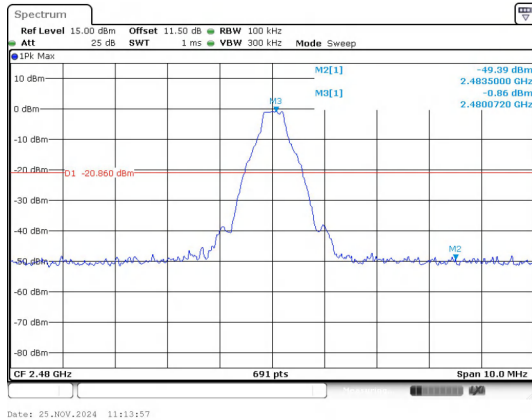
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30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 39



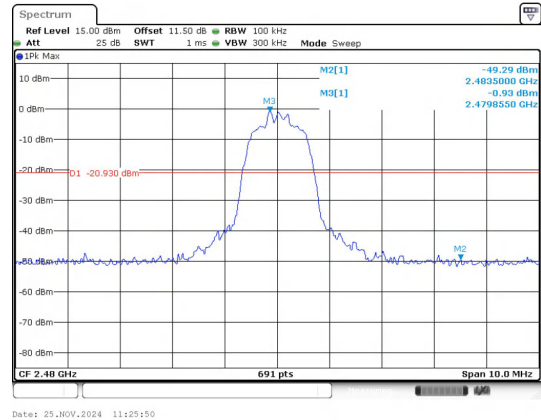
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30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 39



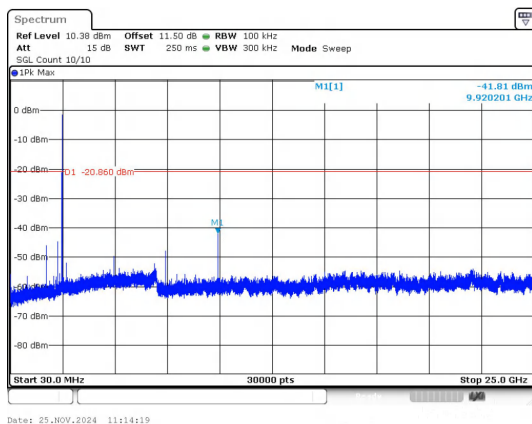
Date: 25.NOV.2024 11:13:57

Out Of Band Emission
GFSK_DH5_Channel 78



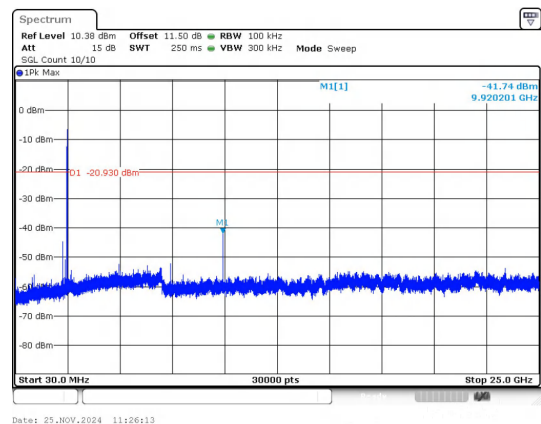
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Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 78



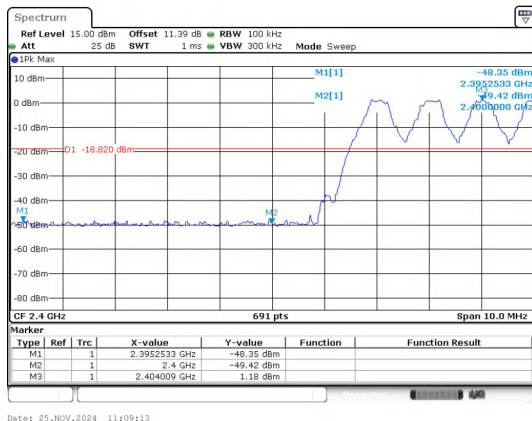
Date: 25.NOV.2024 11:14:19

30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78



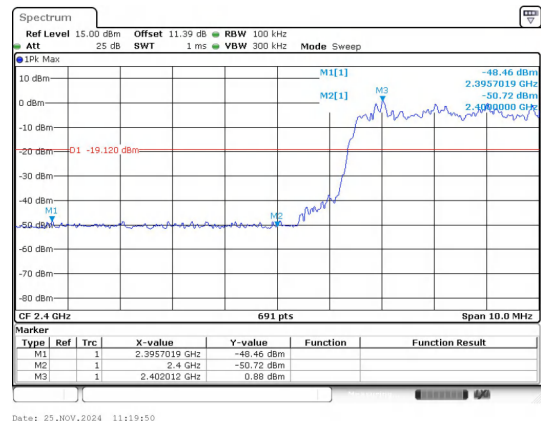
Date: 25.NOV.2024 11:26:13

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



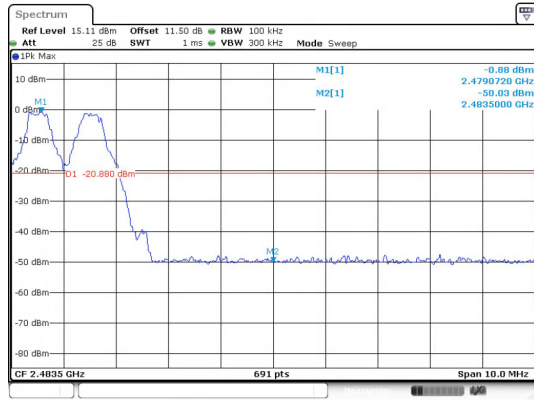
Date: 25.NOV.2024 11:09:13

Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping

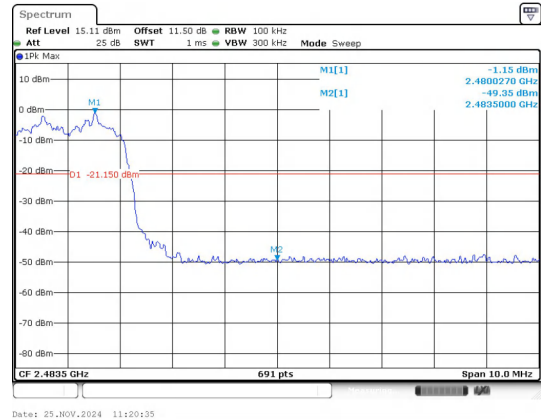


Date: 25.NOV.2024 11:19:50

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

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