

Appendix A

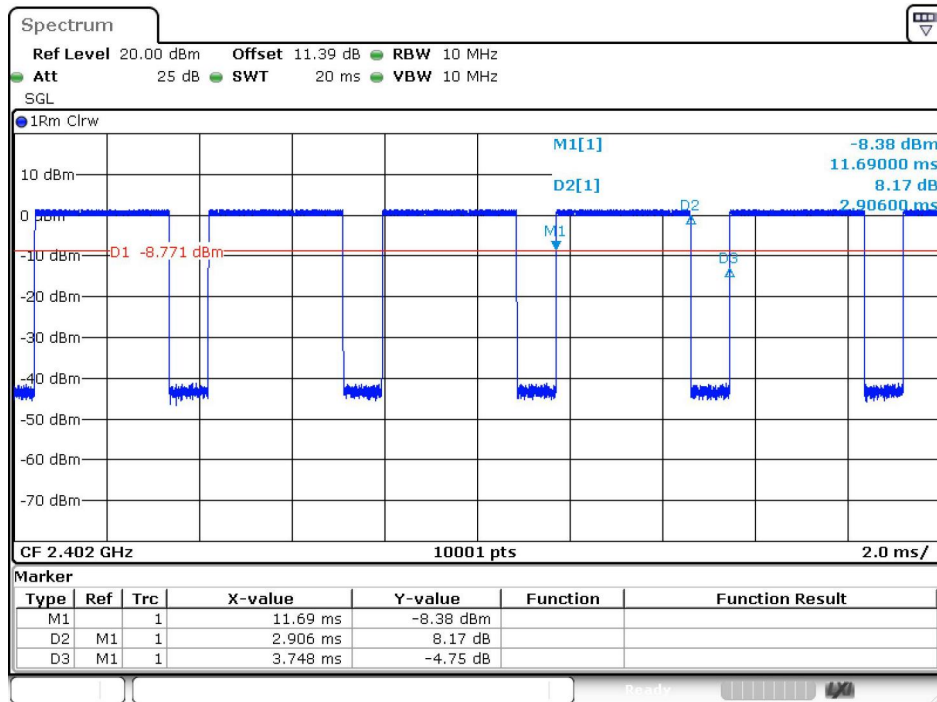
| | |
|----------------|-----------------------------------|
| Report No.: | CISRR241015066 |
| FCC ID: | 2BLOE-TYD-KLD-001 |
| Product Name: | Dinosaur Egg Starry Sky Projector |
| Model No.: | TYD-KLD-001 |
| Test Engineer: | Lucas Huang |
| Supervised by: | Rory Huang |

1) Duty Cycle

Test Result

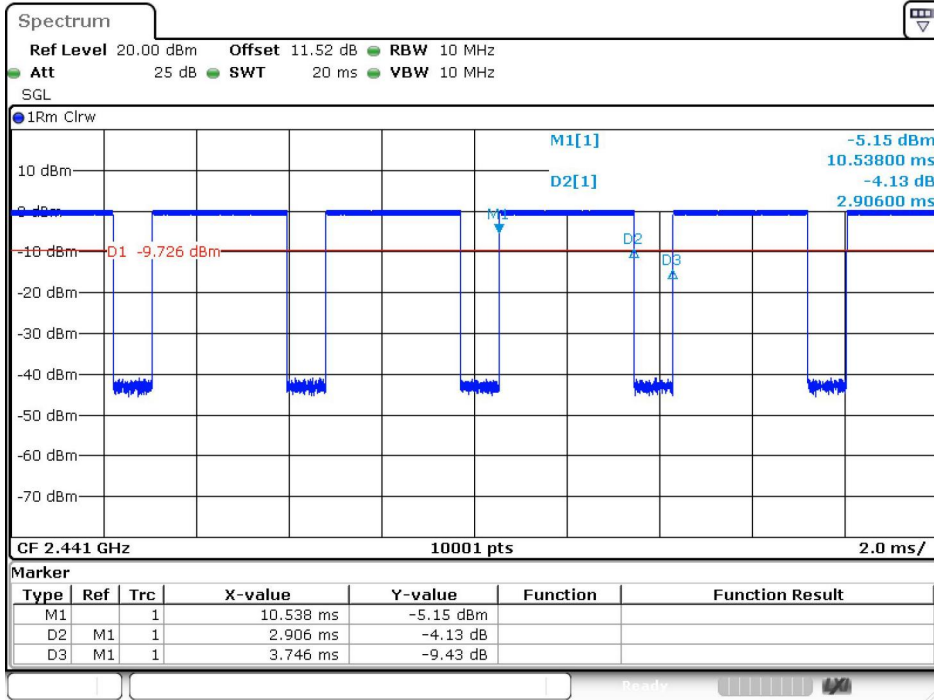
| Modulation | Packets | Channel | On Time (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle (linear) | Duty Cycle Factor (dB) | 1/T |
|---------------|---------|---------|--------------|-------------|----------------|---------------------|------------------------|------|
| GFSK | DH5 | 0 | 2.906 | 3.748 | 77.53 | 0.7753 | 1.1053 | 0.34 |
| | | 39 | 2.906 | 3.746 | 77.58 | 0.7758 | 1.1025 | 0.34 |
| | | 78 | 2.906 | 3.748 | 77.53 | 0.7753 | 1.1053 | 0.34 |
| $\pi/4$ DQPSK | 2-DH5 | 0 | 2.912 | 3.748 | 77.69 | 0.7769 | 1.0963 | 0.34 |
| | | 39 | 2.912 | 3.748 | 77.69 | 0.7769 | 1.0963 | 0.34 |
| | | 78 | 2.912 | 3.748 | 77.69 | 0.7769 | 1.0963 | 0.34 |
| 8DPSK | 3-DH5 | 0 | 2.914 | 3.748 | 77.75 | 0.7775 | 1.093 | 0.34 |
| | | 39 | 2.914 | 3.748 | 77.75 | 0.7775 | 1.093 | 0.34 |
| | | 78 | 2.916 | 3.748 | 77.80 | 0.7780 | 1.0902 | 0.34 |

Test Graphs



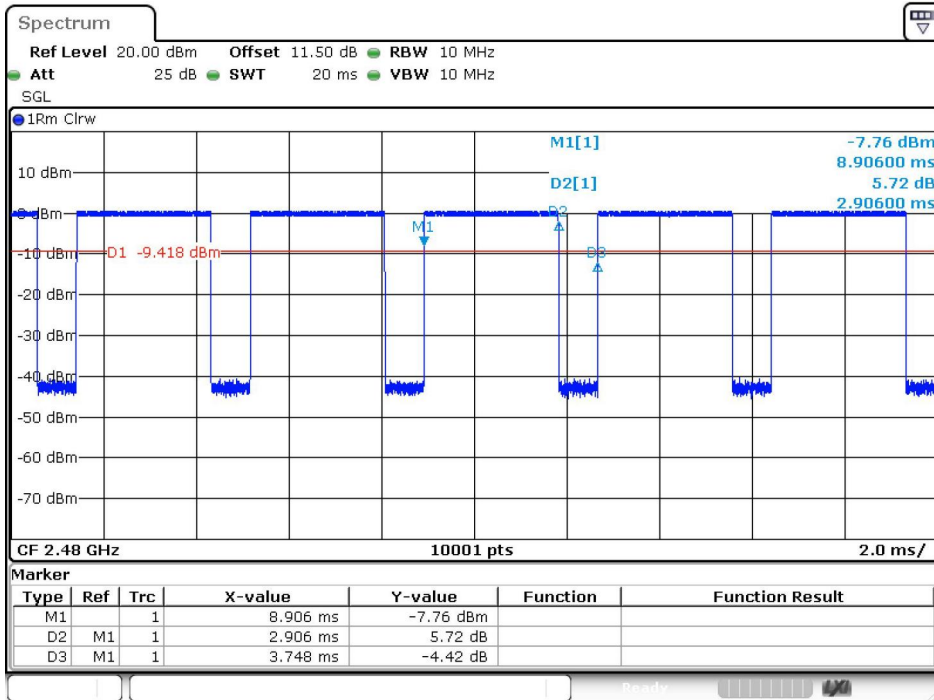
Date: 21.OCT.2024 11:32:02

GFSK(DH5)_Channel 0



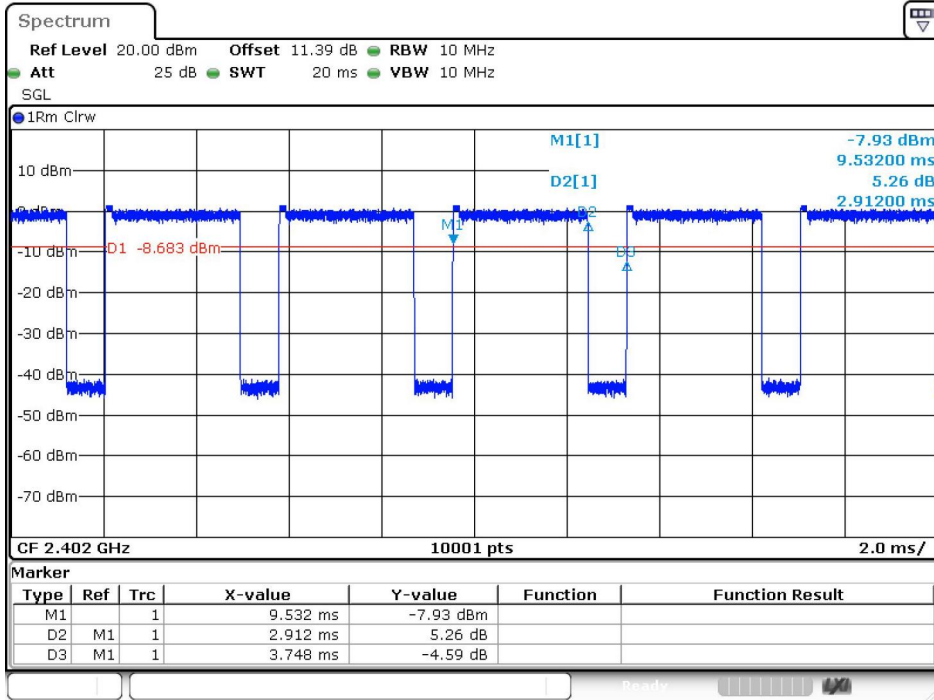
Date: 21.OCT.2024 11:40:15

GFSK(DH5)_Channel 39



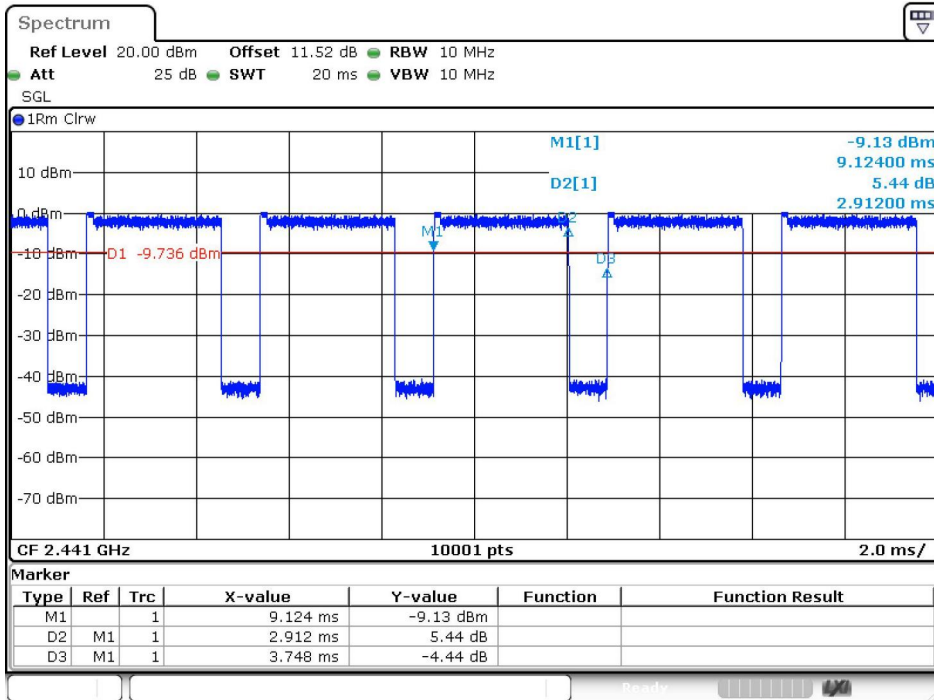
Date: 21.OCT.2024 11:42:09

GFSK(DH5)_Channel 78



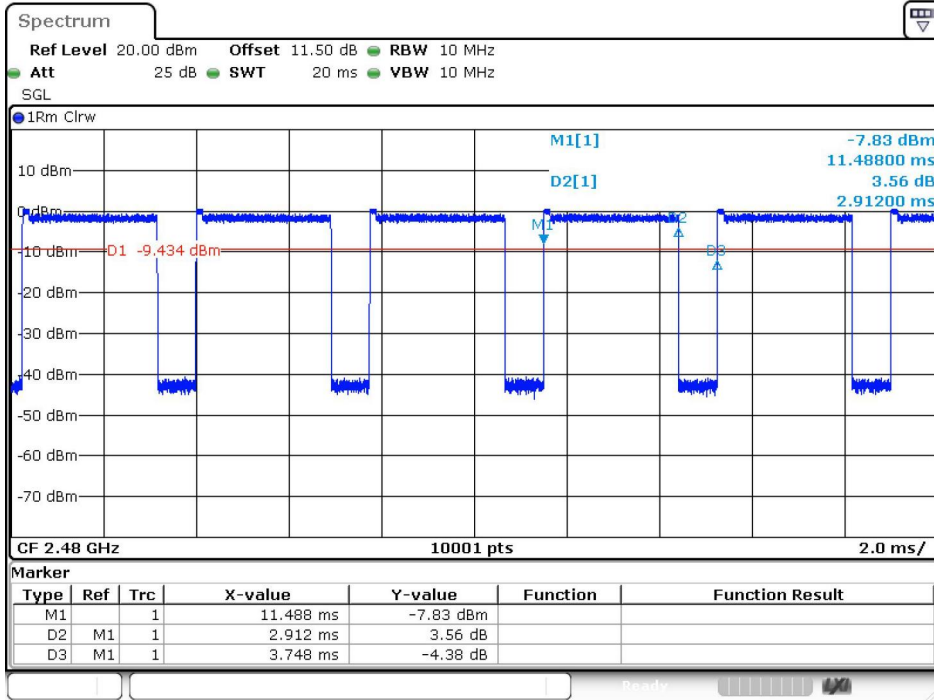
Date: 21.OCT.2024 11:44:38

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



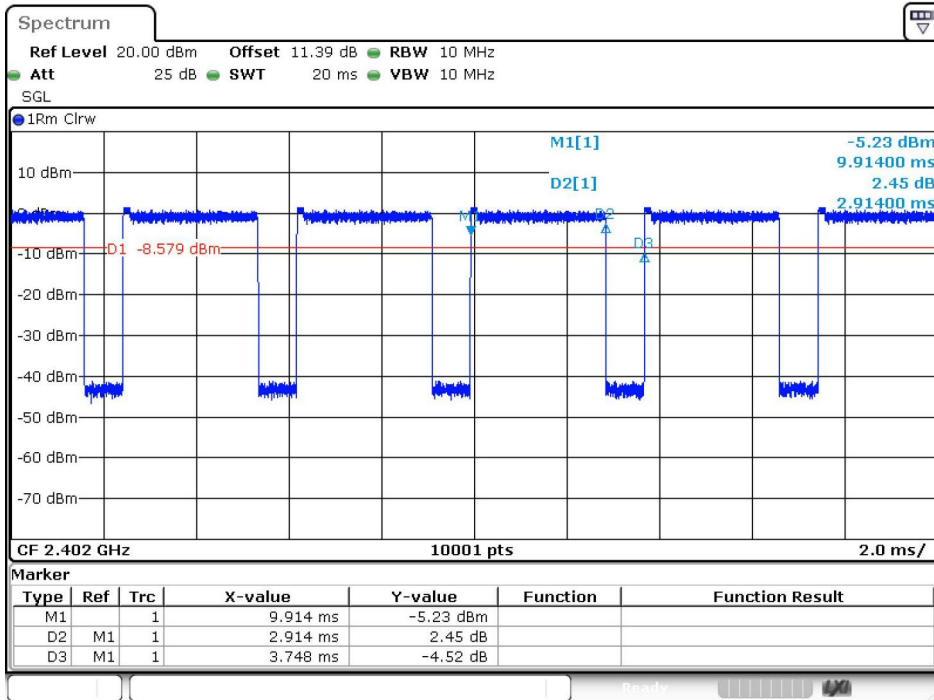
Date: 21.OCT.2024 11:50:28

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



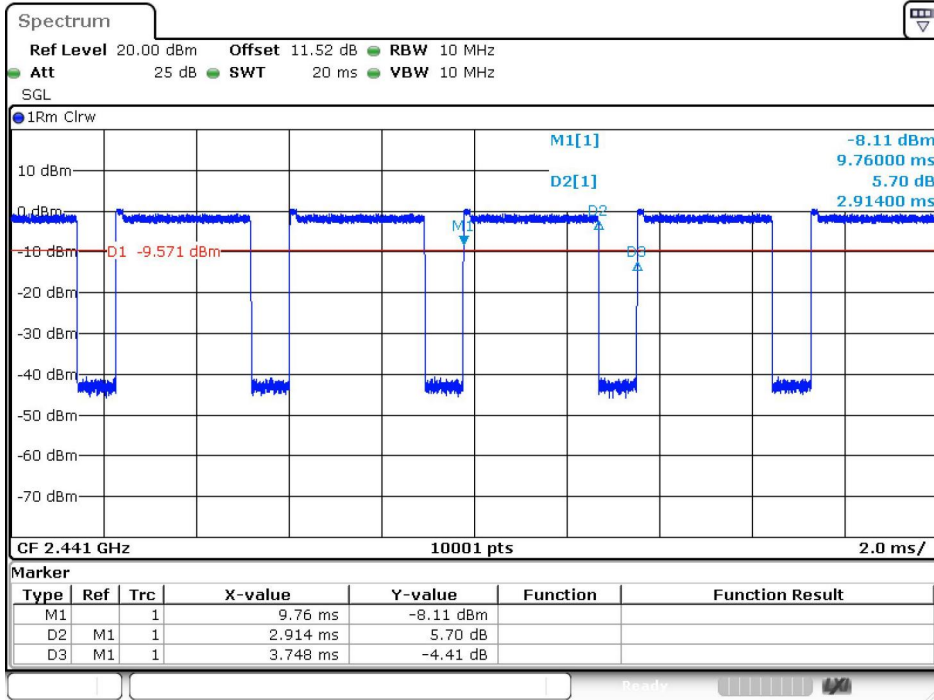
Date: 21.OCT.2024 11:52:27

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



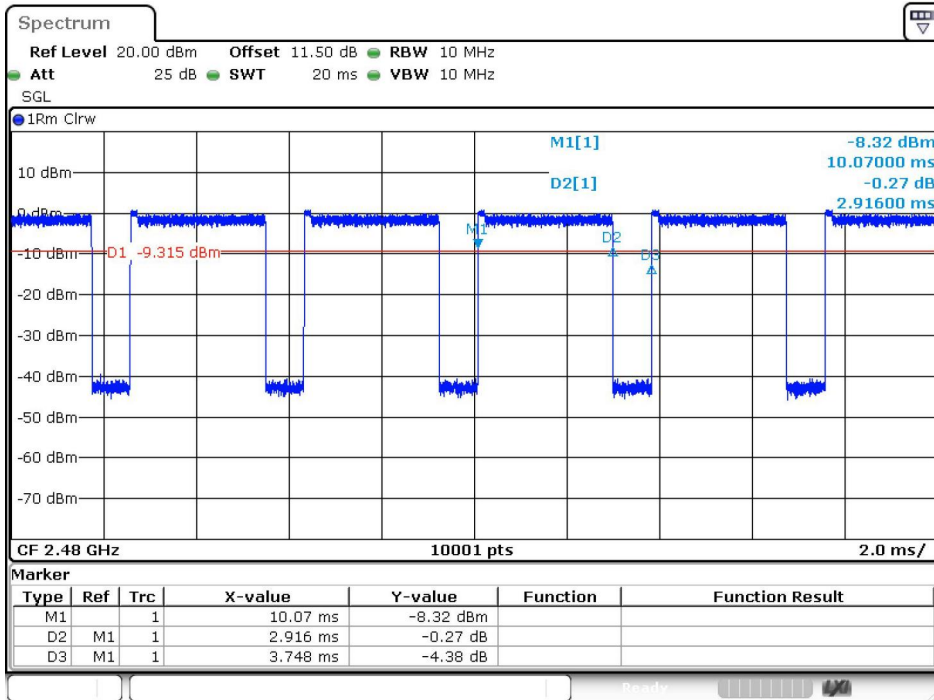
Date: 21.OCT.2024 11:54:35

8DPSK(3-DH5)_Channel 0



Date: 21.OCT.2024 12:00:04

8DPSK(3-DH5)_Channel 39



Date: 21.OCT.2024 12:02:03

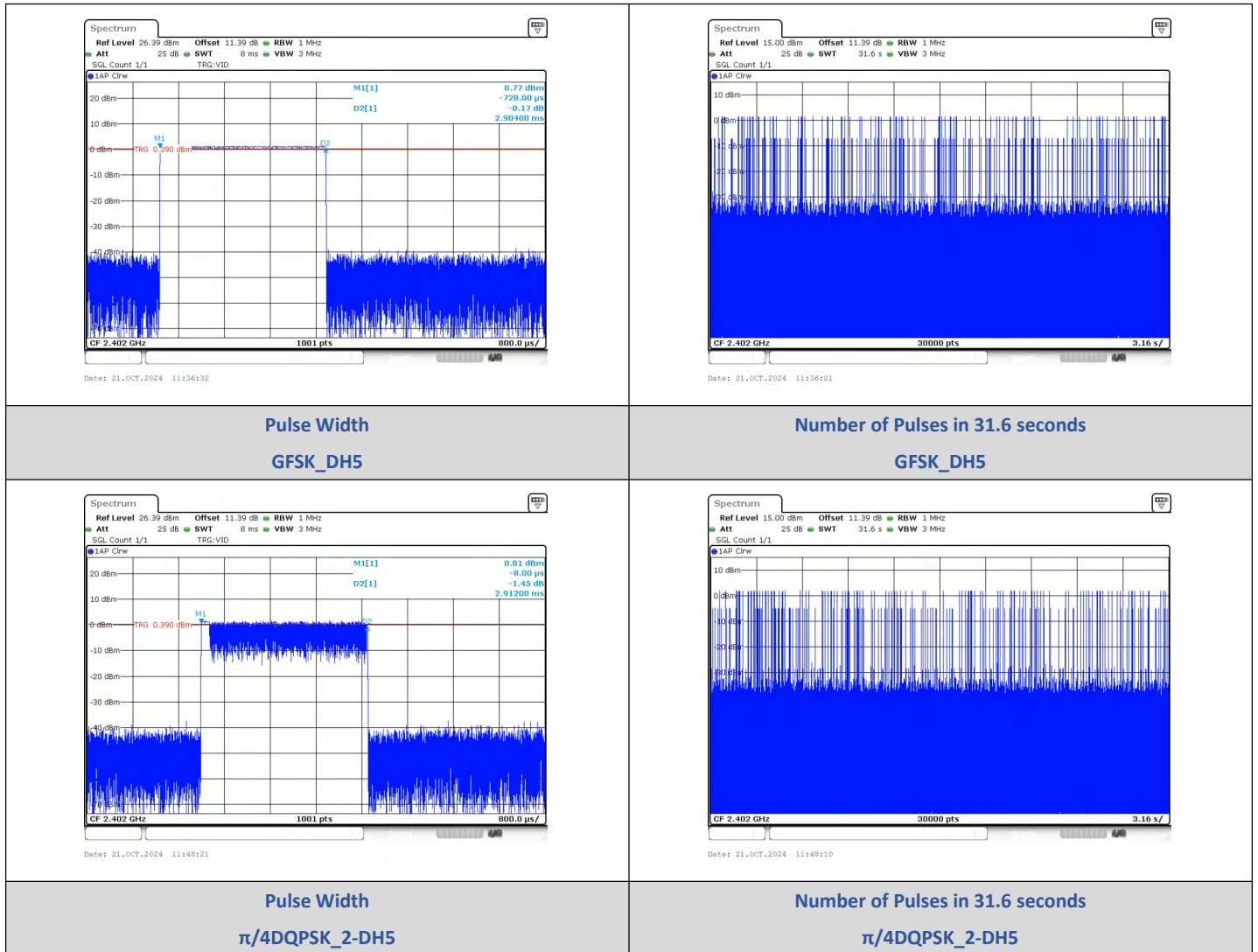
8DPSK(3-DH5)_Channel 78

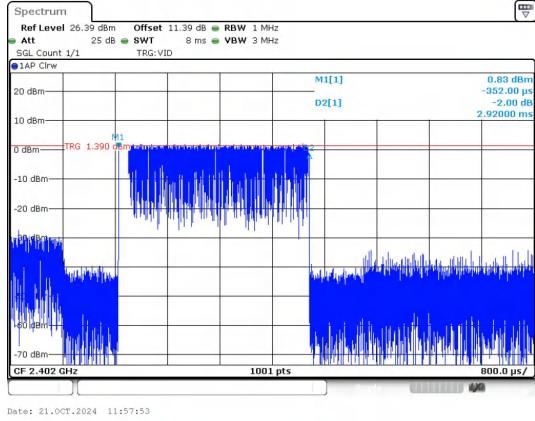
2) Dwell Time

Test Result

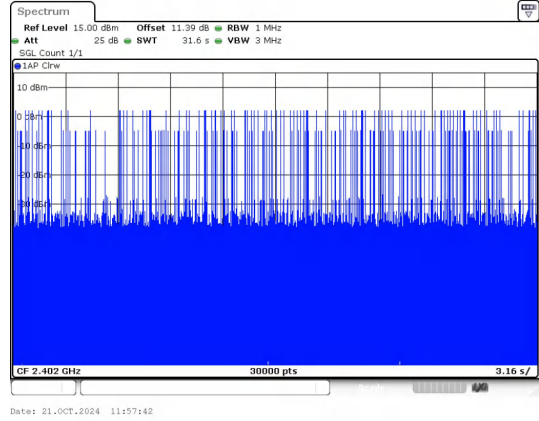
| Modulation | Packet | Channel | Pulse Width (ms) | Number of Pulses in 31.6 seconds | Dwell Time (ms) | Limit (ms) | Result |
|---------------|--------|------------------|------------------|----------------------------------|-----------------|------------|--------|
| GFSK | DH5 | CHO (2402MHz) | 2.904 | 101 | 293.3 | < 400 | PASS |
| $\pi/4$ DQPSK | 2-DH5 | | 2.912 | 112 | 326.14 | | PASS |
| 8DPSK | 3-DH5 | | 2.920 | 106 | 309.52 | | PASS |

Test Graphs





Pulse Width
8DPSK_3-DH5



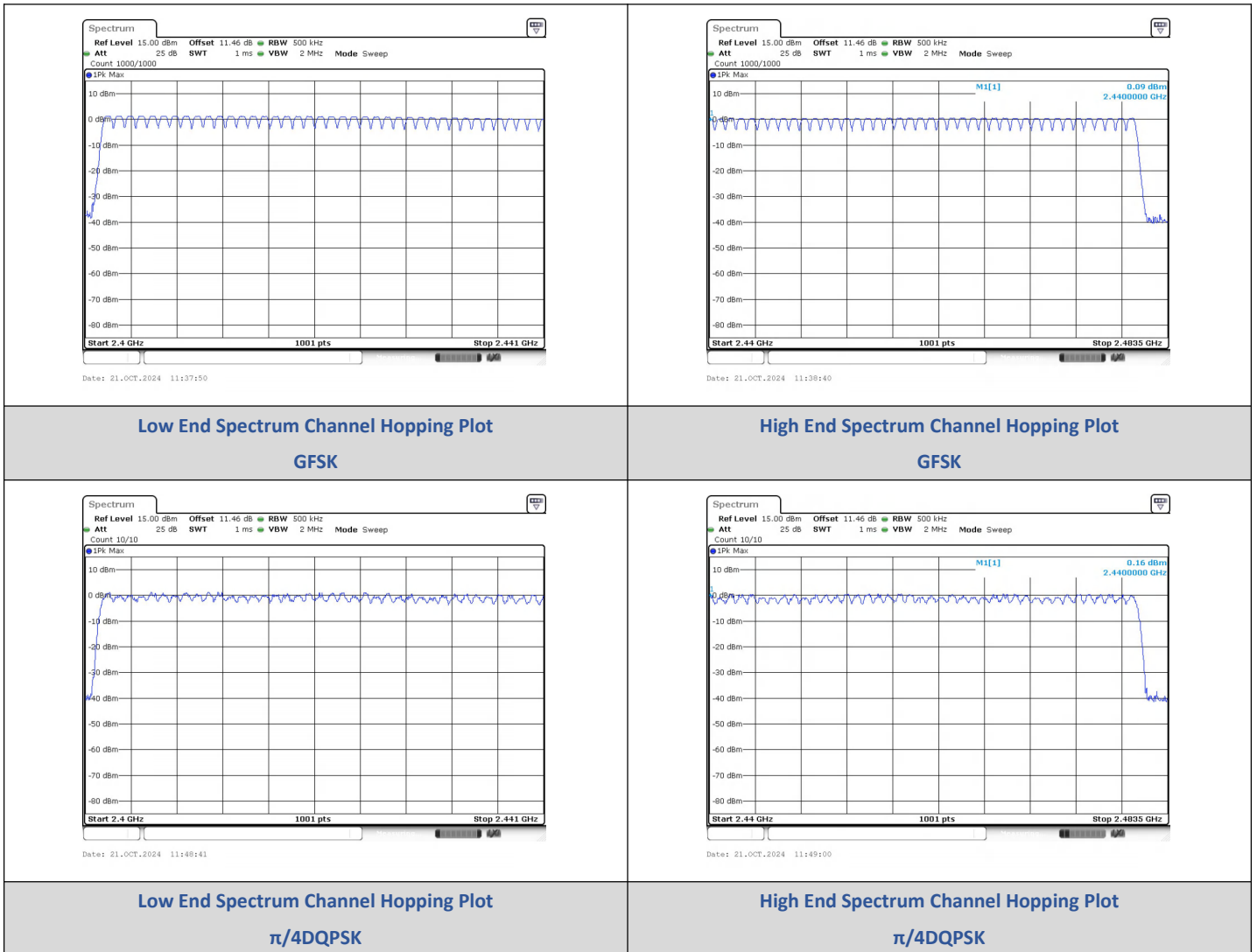
Number of Pulses in 31.6 seconds
8DPSK_3-DH5

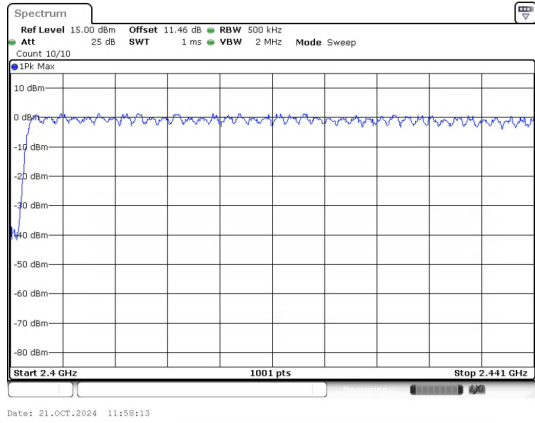
3) Number Of Hopping Channel

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 |

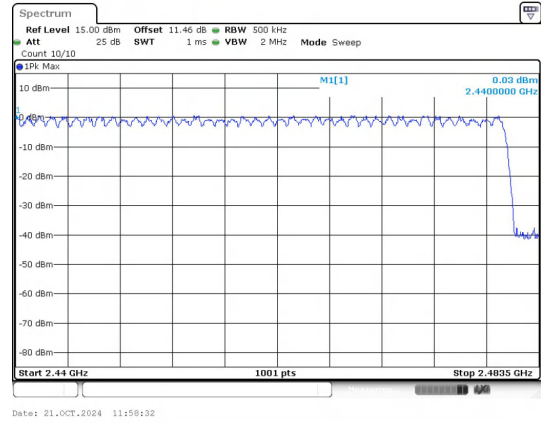
Test Graphs





Low End Spectrum Channel Hopping Plot

8DPSK



High End Spectrum Channel Hopping Plot

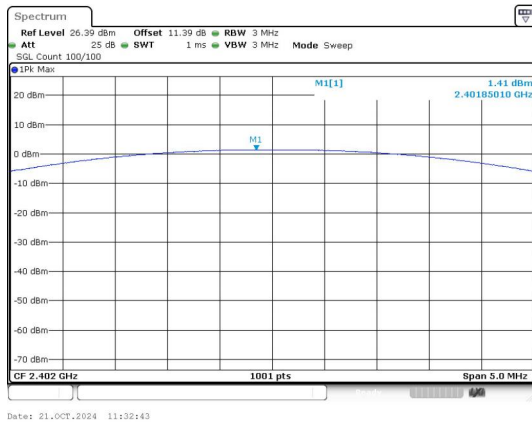
8DPSK

4) Conducted Peak Output Power

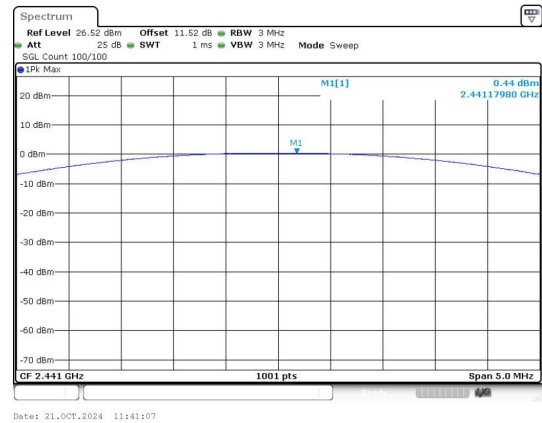
Test Result

| Modulation | Packet Type | Channel | Peak Output Power (dBm) | Peak Output Power (mW) | Limit (dBm) | Result |
|---------------|-------------|---------|-------------------------|------------------------|-------------|--------|
| GFSK | DH5 | 0 | 1.41 | 1.38 | ≤30 | PASS |
| | | 39 | 0.44 | 1.11 | | PASS |
| | | 78 | 0.73 | 1.18 | | PASS |
| $\pi/4$ DQPSK | 2-DH5 | 0 | 2.27 | 1.69 | ≤20.97 | PASS |
| | | 39 | 1.21 | 1.32 | | PASS |
| | | 78 | 1.51 | 1.42 | | PASS |
| 8DPSK | 3-DH5 | 0 | 2.66 | 1.85 | ≤20.97 | PASS |
| | | 39 | 1.52 | 1.42 | | PASS |
| | | 78 | 1.73 | 1.49 | | PASS |

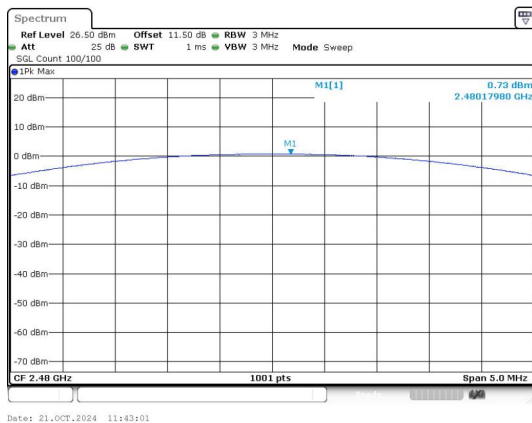
Test Graphs



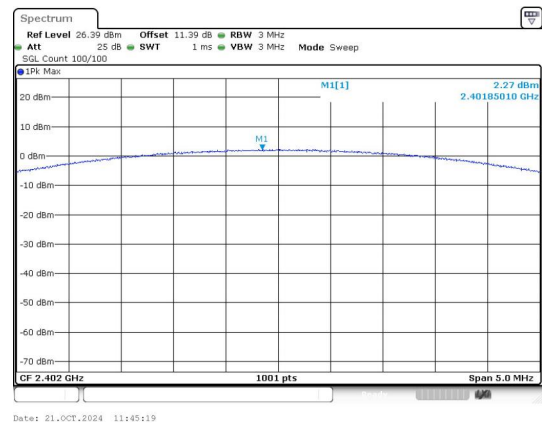
Peak Output Power
GFSK_Channel 0



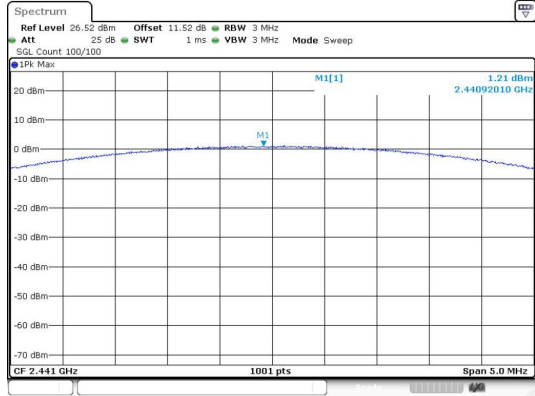
Peak Output Power
GFSK_Channel 39



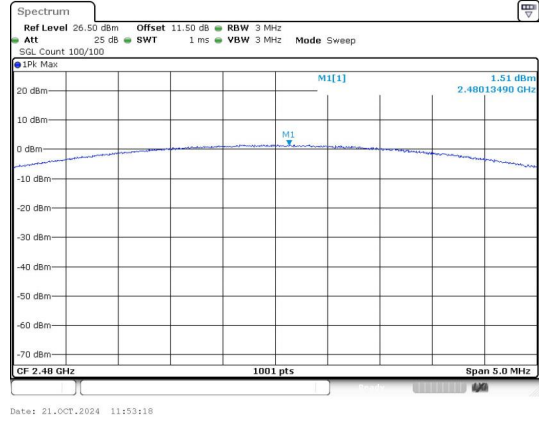
Peak Output Power
GFSK_Channel 78



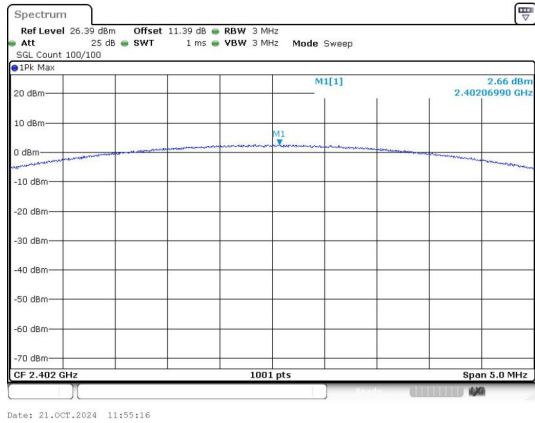
Peak Output Power
 $\pi/4$ DQPSK_Channel 0



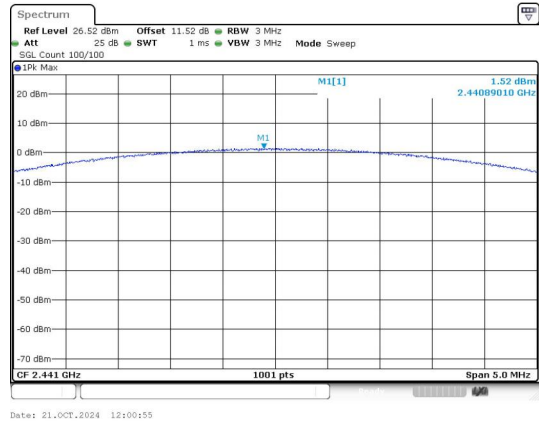
Peak Output Power
 $\pi/4$ DQPSK_Channel 39



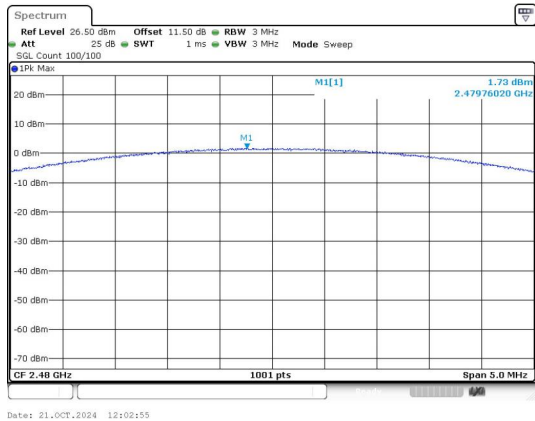
Peak Output Power
 $\pi/4$ DQPSK_Channel 78



Peak Output Power
8DPSK_Channel 0



Peak Output Power
8DPSK_Channel 39



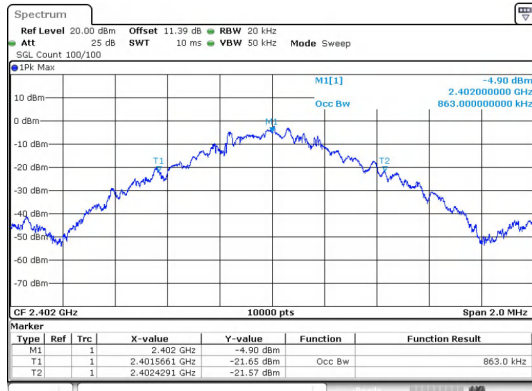
Peak Output Power
8DPSK_Channel 78

5) 99% Bandwidth

Test Result

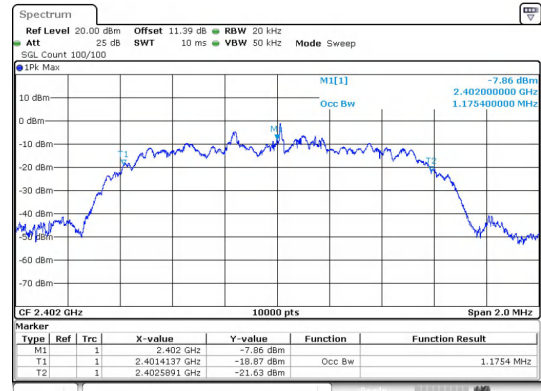
| Modulation | Channel | Center Frequency (MHz) | 99% BW (MHz) |
|---------------|---------|------------------------|--------------|
| GFSK | 0 | 2402 | 0.86300 |
| | 39 | 2441 | 0.85000 |
| | 78 | 2480 | 0.87360 |
| $\pi/4$ DQPSK | 0 | 2402 | 1.1754 |
| | 39 | 2441 | 1.1812 |
| | 78 | 2480 | 1.1736 |
| 8DPSK | 0 | 2402 | 1.1734 |
| | 39 | 2441 | 1.1858 |
| | 78 | 2480 | 1.1848 |

Test Graphs



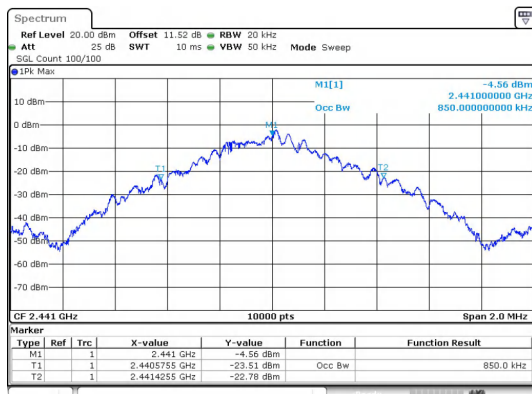
Date: 21.OCT.2024 11:32:17

GFSK_DH5_Channel 0



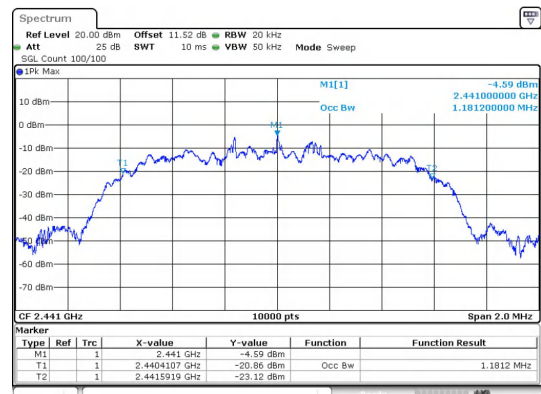
Date: 21.OCT.2024 11:44:52

$\pi/4$ DQPSK_2-DH5_Channel 0



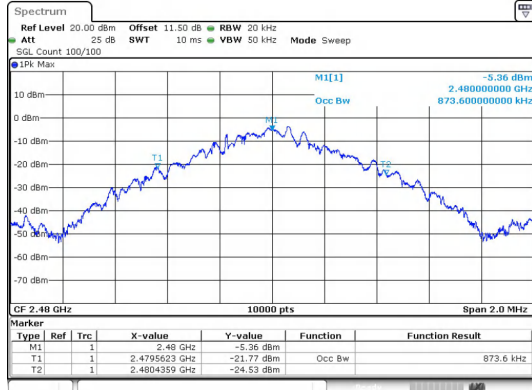
Date: 21.OCT.2024 11:40:30

GFSK_DH5_Channel 39



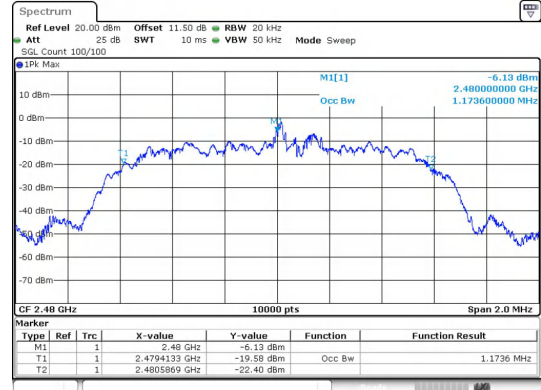
Date: 21.OCT.2024 11:54:42

$\pi/4$ DQPSK_2-DH5_Channel 39



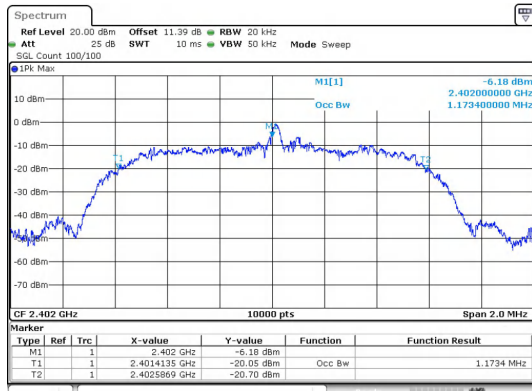
Date: 21.OCT.2024 11:42:24

GFSK_DH5_Channel 78



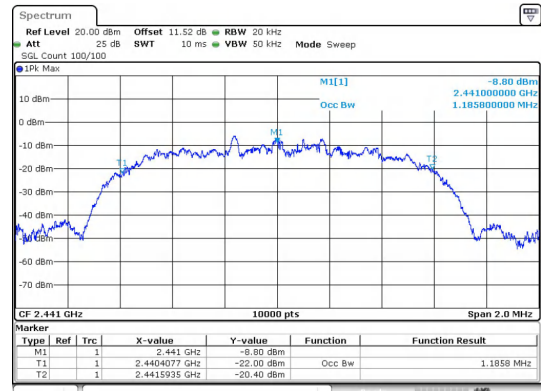
Date: 21.OCT.2024 11:52:41

$\pi/4$ DQPSK_2-DH5_Channel 78



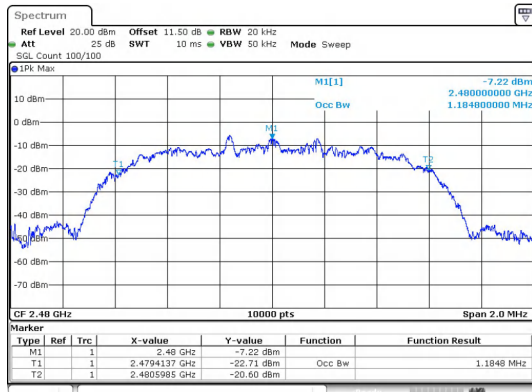
Date: 21.OCT.2024 11:54:50

8DPSK_3-DH5_Channel 0



Date: 21.OCT.2024 12:00:18

8DPSK_3-DH5_Channel 39



Date: 21.OCT.2024 12:02:17

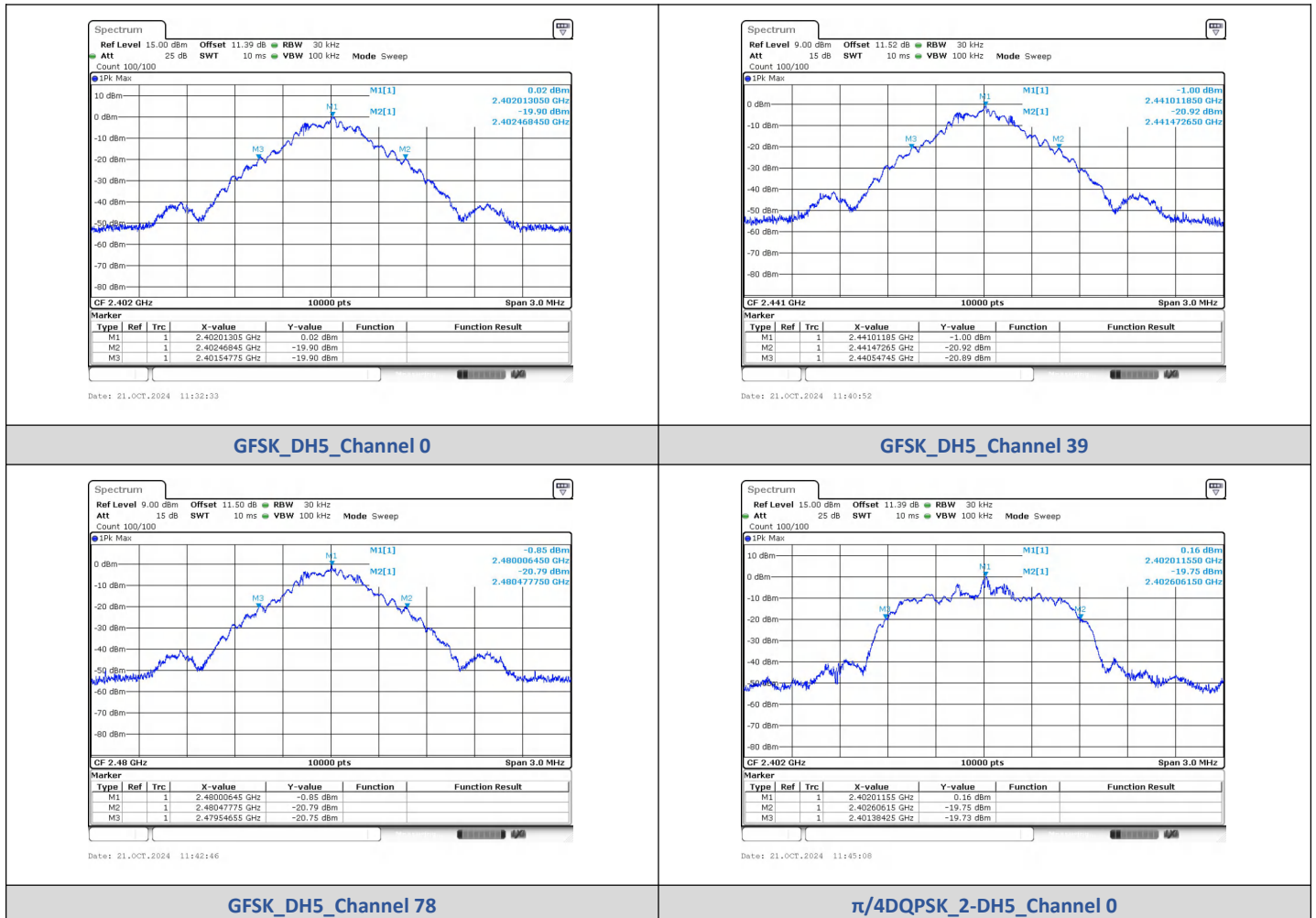
8DPSK_3-DH5_Channel 78

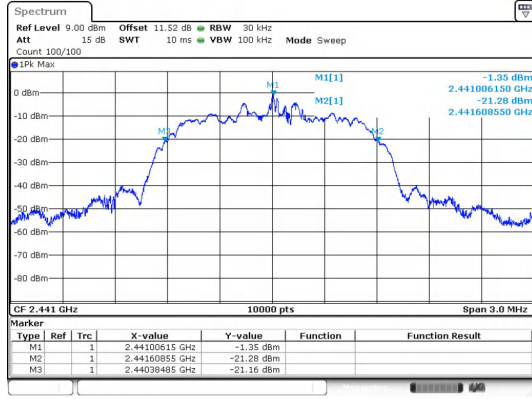
6) 20dB Bandwidth

Test Result

| Modulation | Channel | Center Frequency (MHz) | 20 dB Bandwidth (MHz) |
|---------------|---------|------------------------|-----------------------|
| GFSK | 0 | 2402 MHz | 0.9200 |
| | 39 | 2441 MHz | 0.9200 |
| | 78 | 2480 MHz | 0.9300 |
| $\pi/4$ DQPSK | 0 | 2402 MHz | 1.230 |
| | 39 | 2441 MHz | 1.230 |
| | 78 | 2480 MHz | 1.200 |
| 8DPSK | 0 | 2402 MHz | 1.250 |
| | 39 | 2441 MHz | 1.240 |
| | 78 | 2480 MHz | 1.240 |

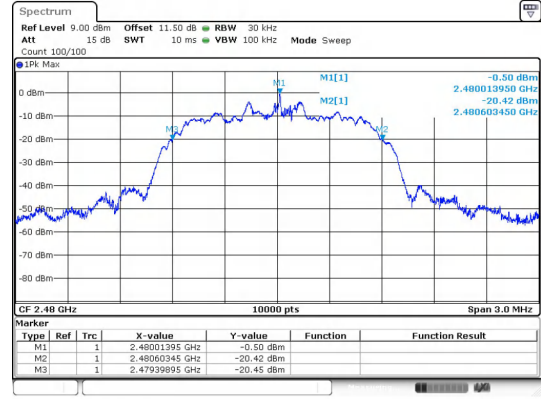
Test Graphs





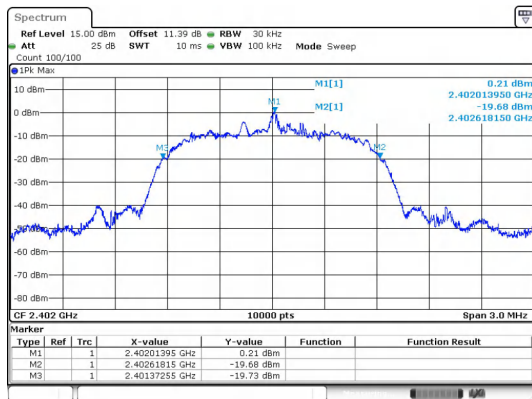
Date: 21.OCT.2024 11:51:05

$\pi/4$ DQPSK_2-DH5_Channel 39



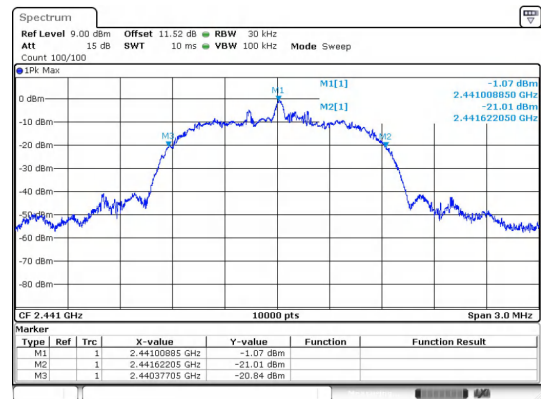
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$\pi/4$ DQPSK_2-DH5_Channel 78



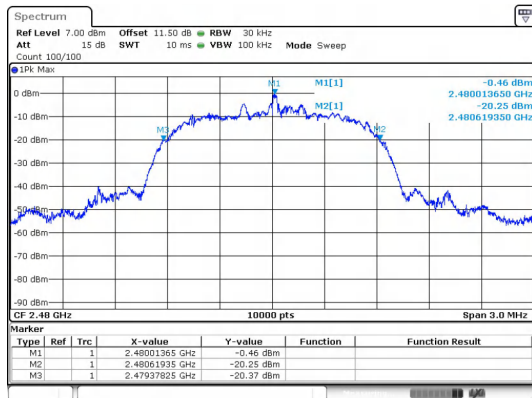
Date: 21.OCT.2024 11:55:06

8DPSK_3-DH5_Channel 30



Date: 21.OCT.2024 12:00:41

8DPSK_3-DH5_Channel 39



Date: 21.OCT.2024 12:02:40

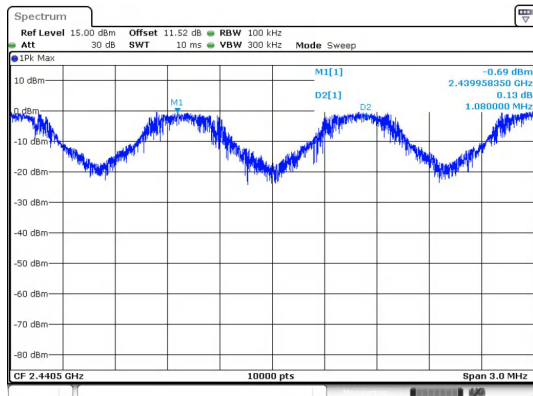
8DPSK_3-DH5_Channel 78

7) Carrier Frequencies Separation

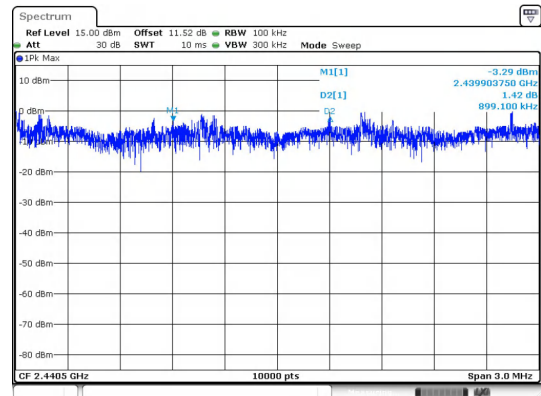
Test Result

| Modulation | Packet | Left Center frequency (MHz) | Right Center frequency (MHz) | Hopping Frequency Separation (MHz) | Limit (MHz) | Result |
|---------------|--------|-----------------------------|------------------------------|------------------------------------|-------------|--------|
| GFSK | DH5 | 2439.9583 | 2441.0383 | 1.0800 | 0.9300 | PASS |
| $\pi/4$ DQPSK | 2-DH5 | 2439.9037 | 2440.8029 | 0.8991 | 0.82 | PASS |
| 8DPSK | 3-DH5 | 2439.8279 | 2440.811 | 0.9831 | 0.833 | PASS |

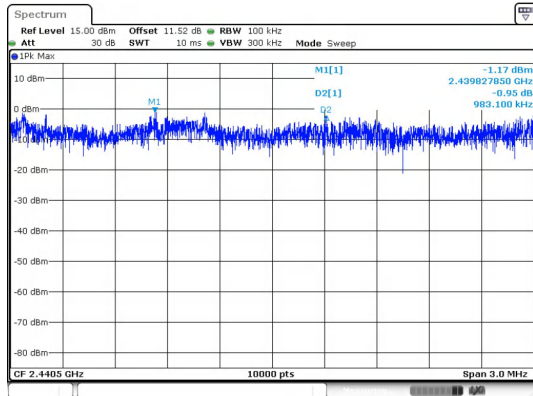
Test Graphs



GFSK



$\pi/4$ DQPSK



8DPSK

8) Conducted Out Of Band Emission

Test Result

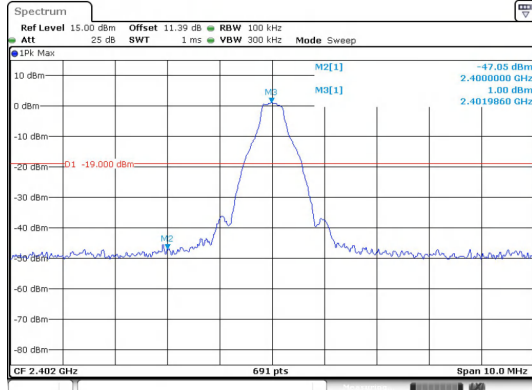
Non-Hopping

| Modulation | Packet | Channel | OOB Emission Frequency (MHz) | OOB Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result |
|---------------|--------|---------|------------------------------|--------------------------|-------------|-----------------|--------|
| GFSK | DH5 | 0 | 2400.00 | -47.050 | -19.0 | -28.050 | PASS |
| | | | 4803.85 | -40.891 | -19.0 | -21.891 | PASS |
| | | 39 | 4882.09 | -45.909 | -20.11 | -25.799 | PASS |
| | | 78 | 2483.50 | -48.191 | -19.78 | -28.411 | PASS |
| | | | 4960.33 | -45.878 | -19.78 | -26.098 | PASS |
| $\pi/4$ DQPSK | 2-DH5 | 0 | 2400.00 | -47.494 | -18.88 | -28.614 | PASS |
| | | | 4803.85 | -39.635 | -18.88 | -20.755 | PASS |
| | | 39 | 4882.09 | -48.264 | -20.2 | -28.064 | PASS |
| | | 78 | 2483.50 | -49.886 | -19.75 | -30.136 | PASS |
| | | | 4959.49 | -47.569 | -19.75 | -27.819 | PASS |
| 8DPSK | 3-DH5 | 0 | 2400.00 | -46.955 | -18.9 | -28.055 | PASS |
| | | | 4803.85 | -45.341 | -18.9 | -26.441 | PASS |
| | | 39 | 4882.09 | -48.564 | -20.04 | -28.524 | PASS |
| | | 78 | 2483.50 | -48.526 | -19.61 | -28.916 | PASS |
| | | | 4960.33 | -49.990 | -19.61 | -30.380 | PASS |

Hopping

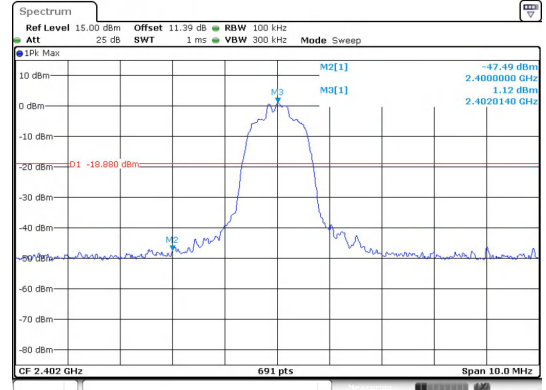
| Modulation | Packet | Channel | OOB Emission Frequency (MHz) | OOB Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result |
|---------------|--------|---------|------------------------------|--------------------------|-------------|-----------------|--------|
| GFSK | DH5 | Hopping | 2397.05 | -45.876 | -19.24 | -26.636 | PASS |
| | | | 2400.00 | -47.831 | -19.24 | -28.591 | PASS |
| | | | 2483.50 | -49.038 | -20.28 | -28.758 | PASS |
| $\pi/4$ DQPSK | 2-DH5 | | 2396.76 | -46.875 | -20.96 | -25.915 | PASS |
| | | | 2400.00 | -47.381 | -20.96 | -26.421 | PASS |
| | | | 2483.50 | -50.220 | -23.18 | -27.040 | PASS |
| 8DPSK | 3-DH5 | | 2395.04 | -47.272 | -21.96 | -25.312 | PASS |
| | | | 2400.00 | -50.669 | -21.96 | -28.709 | PASS |
| | | | 2483.50 | -50.148 | -21.58 | -28.568 | PASS |

Test Graphs



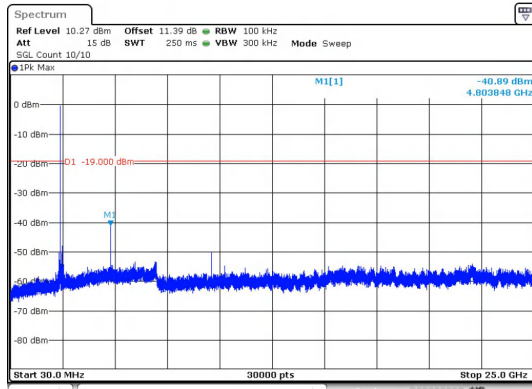
Date: 21.OCT.2024 11:34:27

**Out Of Band Emission
GFSK_DH5_Channel 0**



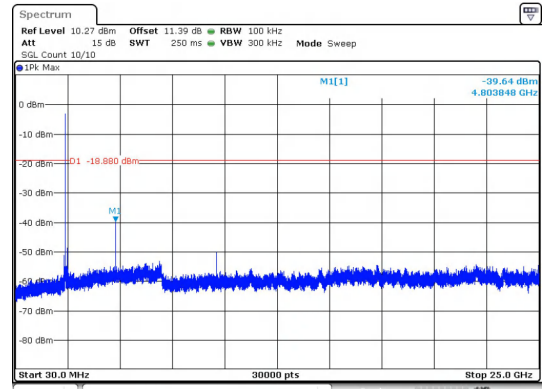
Date: 21.OCT.2024 11:46:08

**Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 0**



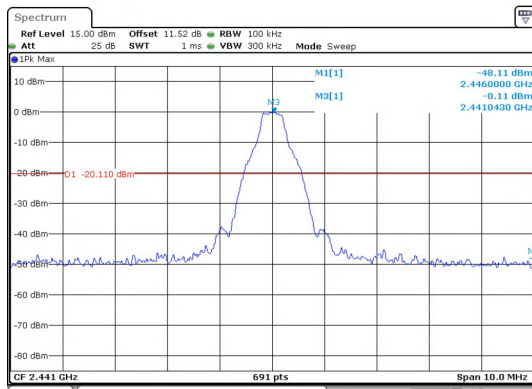
Date: 21.OCT.2024 11:34:49

**30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 0**



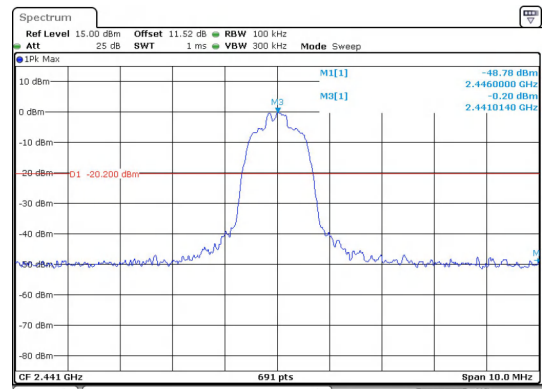
Date: 21.OCT.2024 11:46:30

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



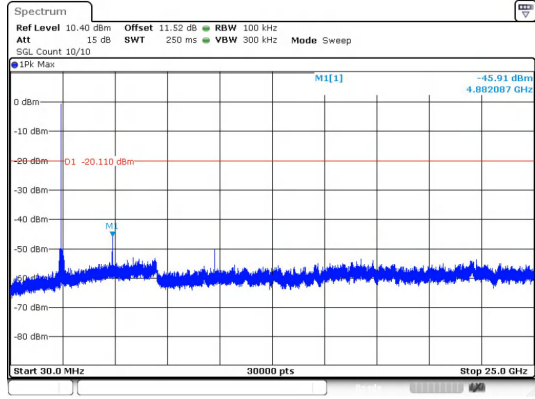
Date: 21.OCT.2024 11:41:21

**Out Of Band Emission
GFSK_DH5_Channel 39**

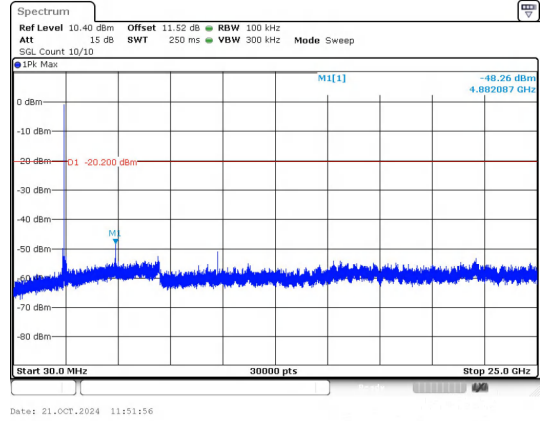


Date: 21.OCT.2024 11:51:34

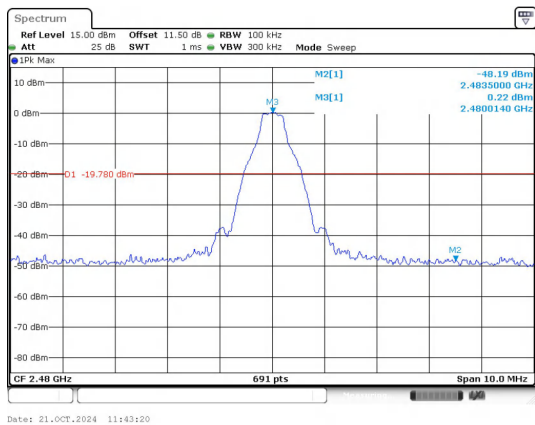
**Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 39**



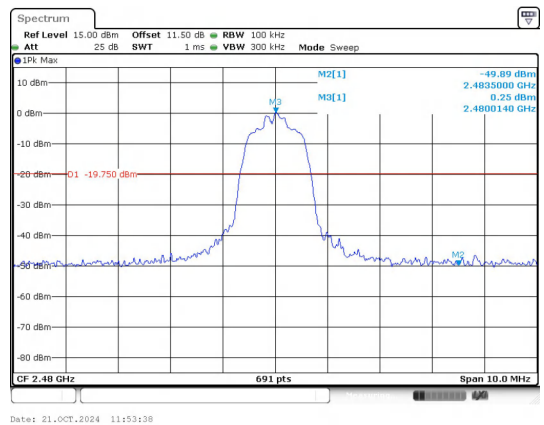
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 39



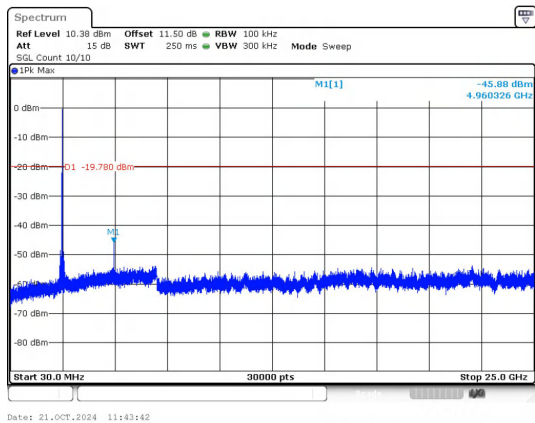
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 39



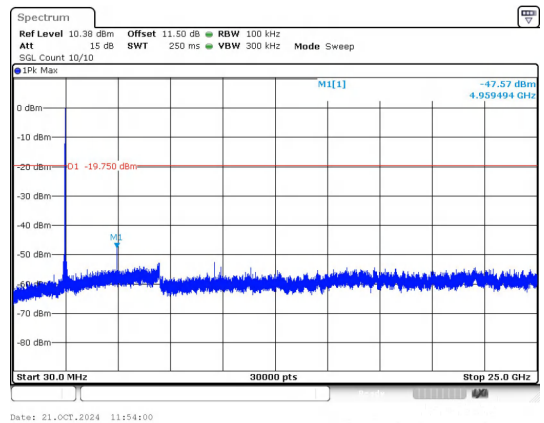
Out Of Band Emission
GFSK_DH5_Channel 78



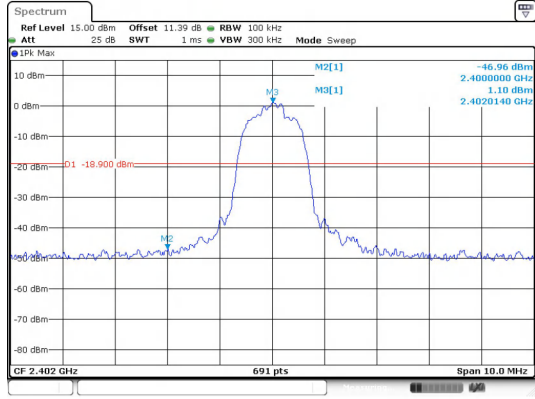
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 78



30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78

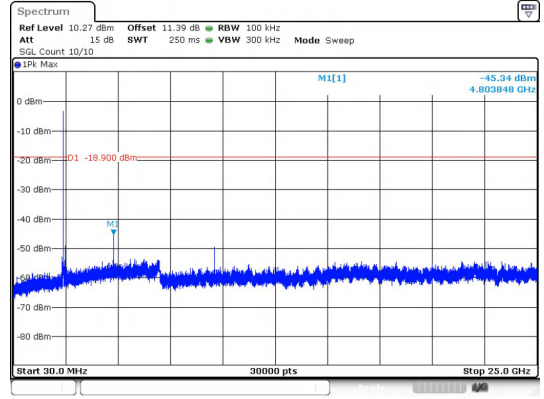


30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 78



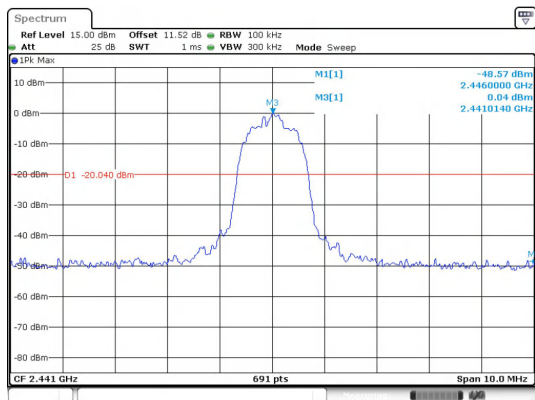
Date: 21.OCT.2024 11:55:136

Out Of Band Emission
8DPSK_3-DH5_Channel 0



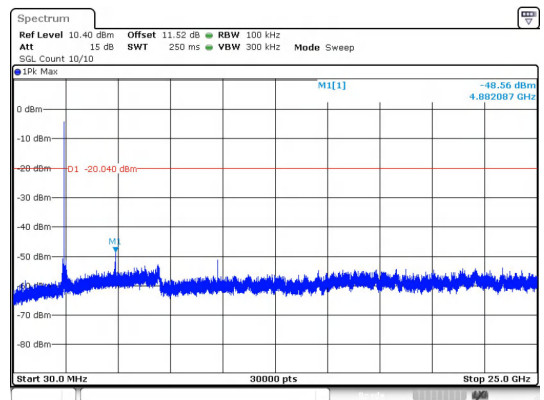
Date: 21.OCT.2024 11:55:158

30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 0



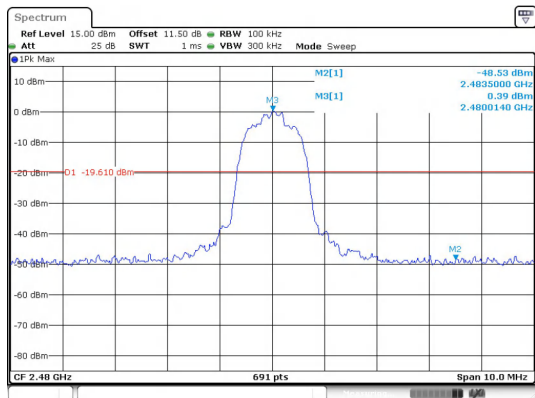
Date: 21.OCT.2024 12:01:110

Out Of Band Emission
8DPSK_3-DH5_Channel 39



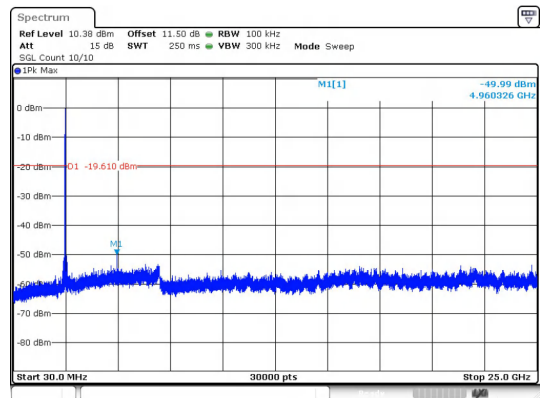
Date: 21.OCT.2024 12:01:132

30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 39



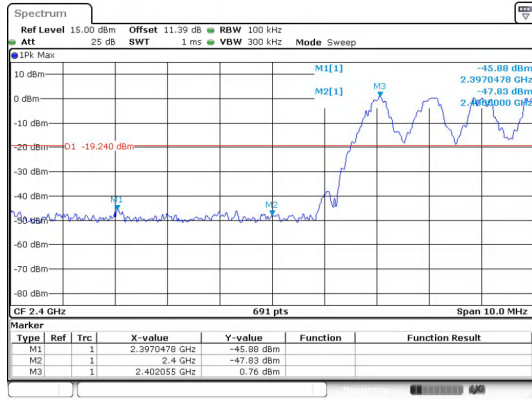
Date: 21.OCT.2024 12:03:114

Out Of Band Emission
8DPSK_3-DH5_Channel 78



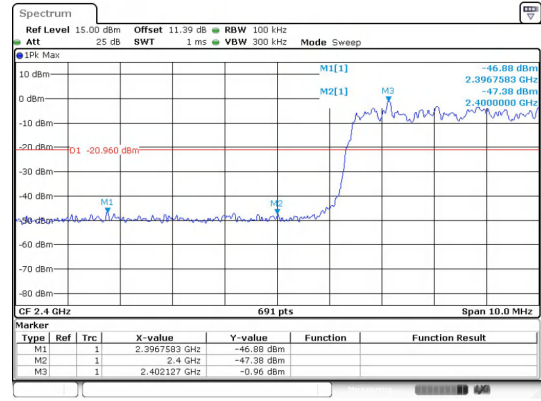
Date: 21.OCT.2024 12:03:136

30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 78



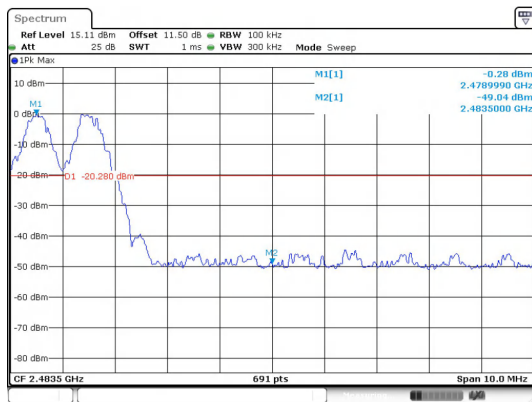
Date: 21.OCT.2024 11:39:24

Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



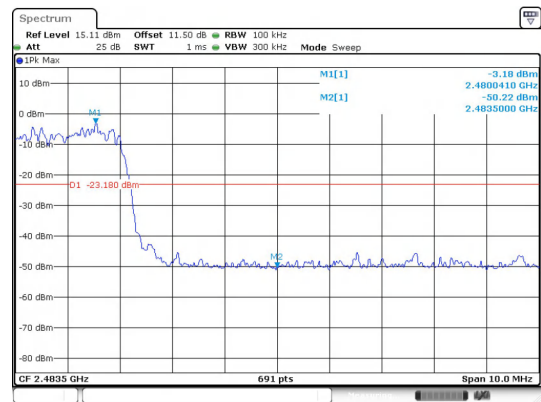
Date: 21.OCT.2024 11:49:41

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



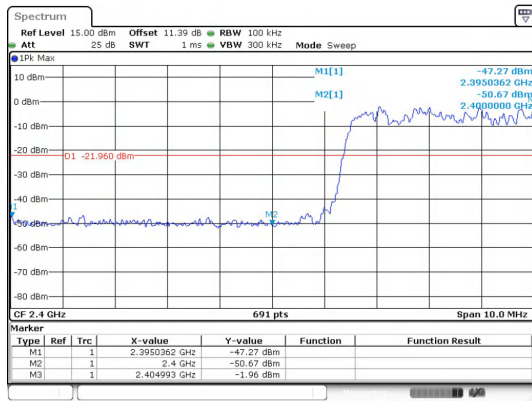
Date: 21.OCT.2024 11:39:46

Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping



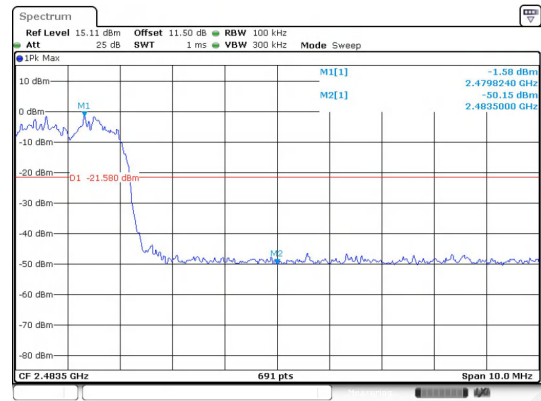
Date: 21.OCT.2024 11:50:00

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



Date: 21.OCT.2024 11:58:59

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



Date: 21.OCT.2024 11:59:34

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