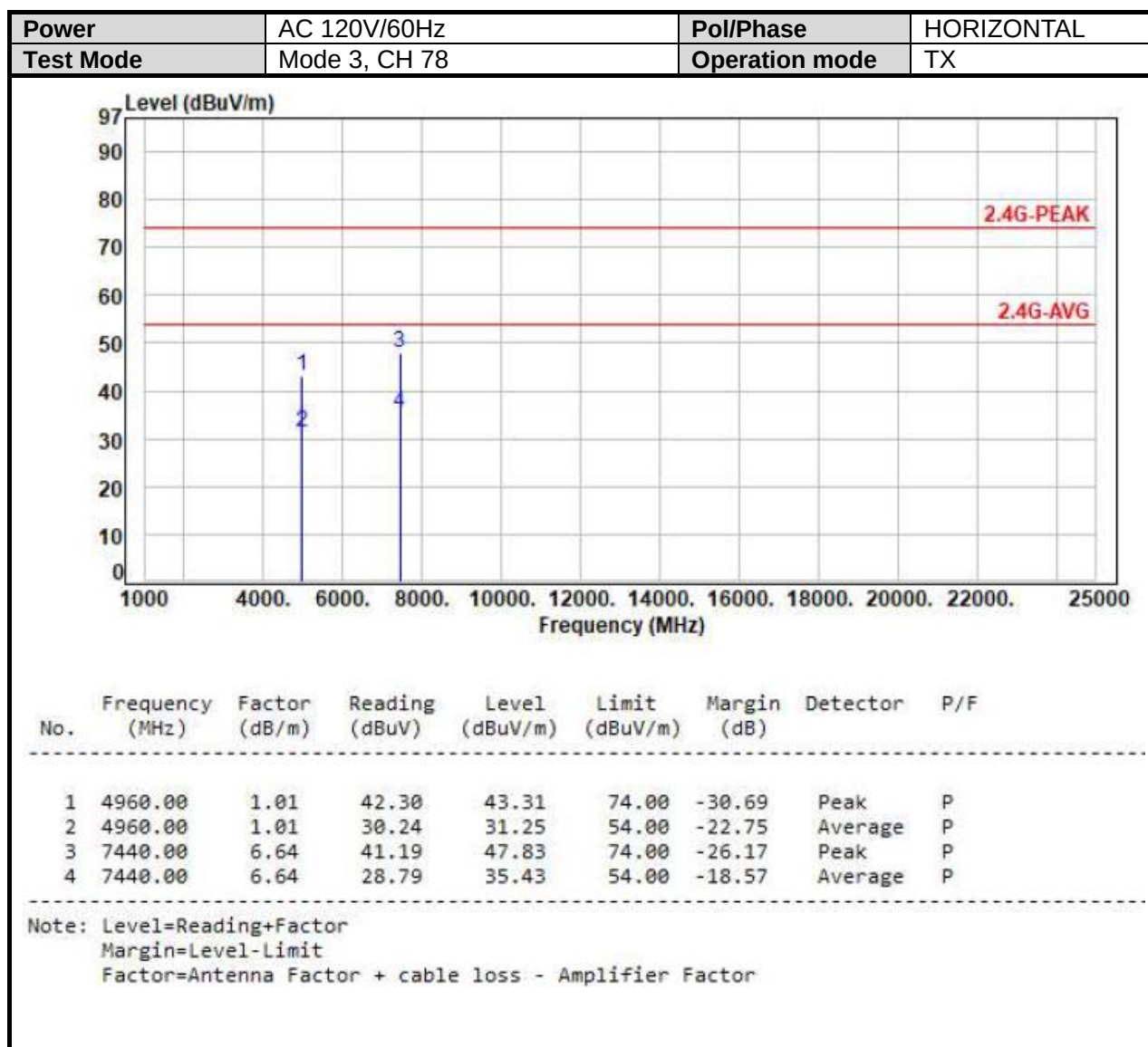




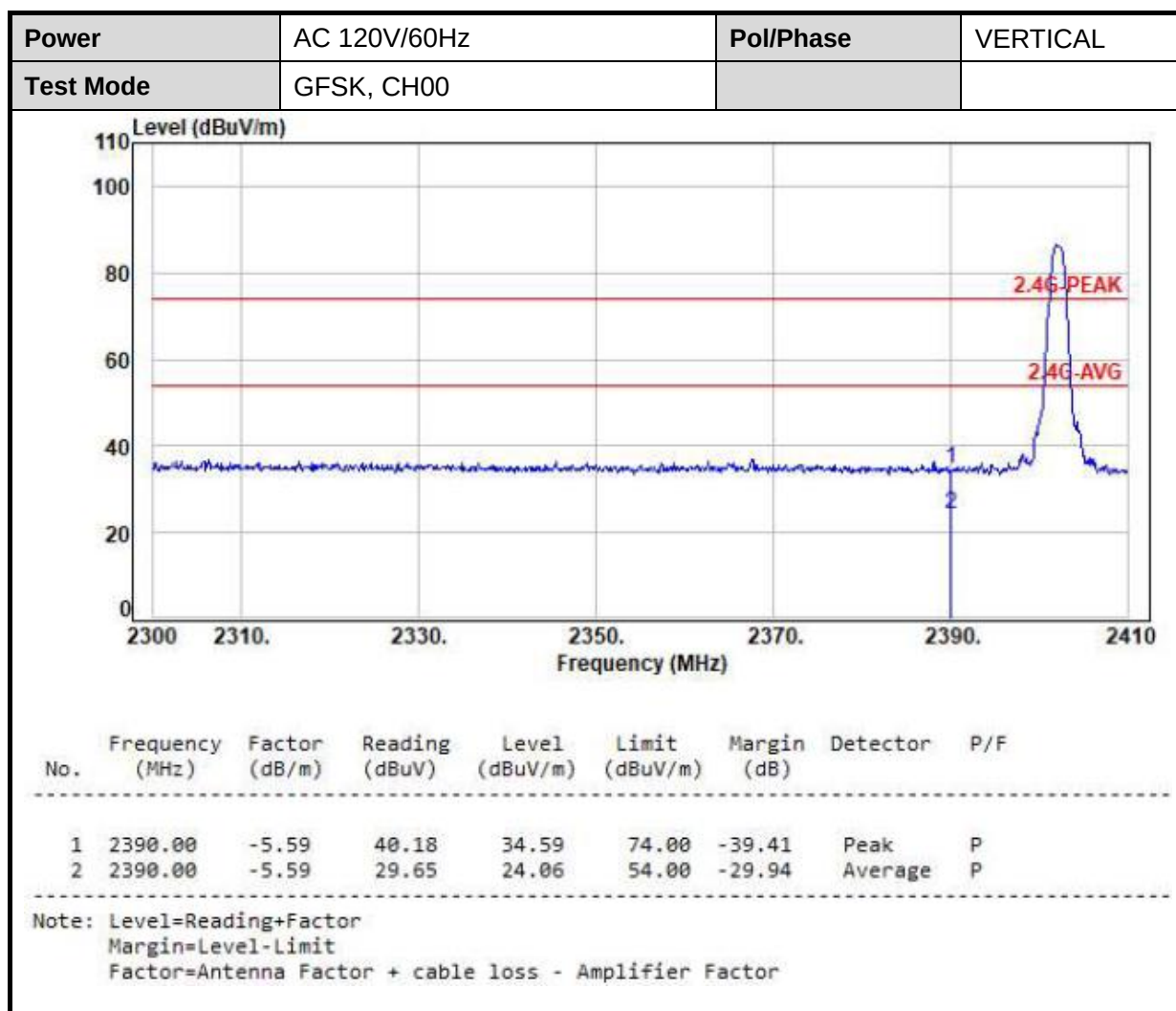


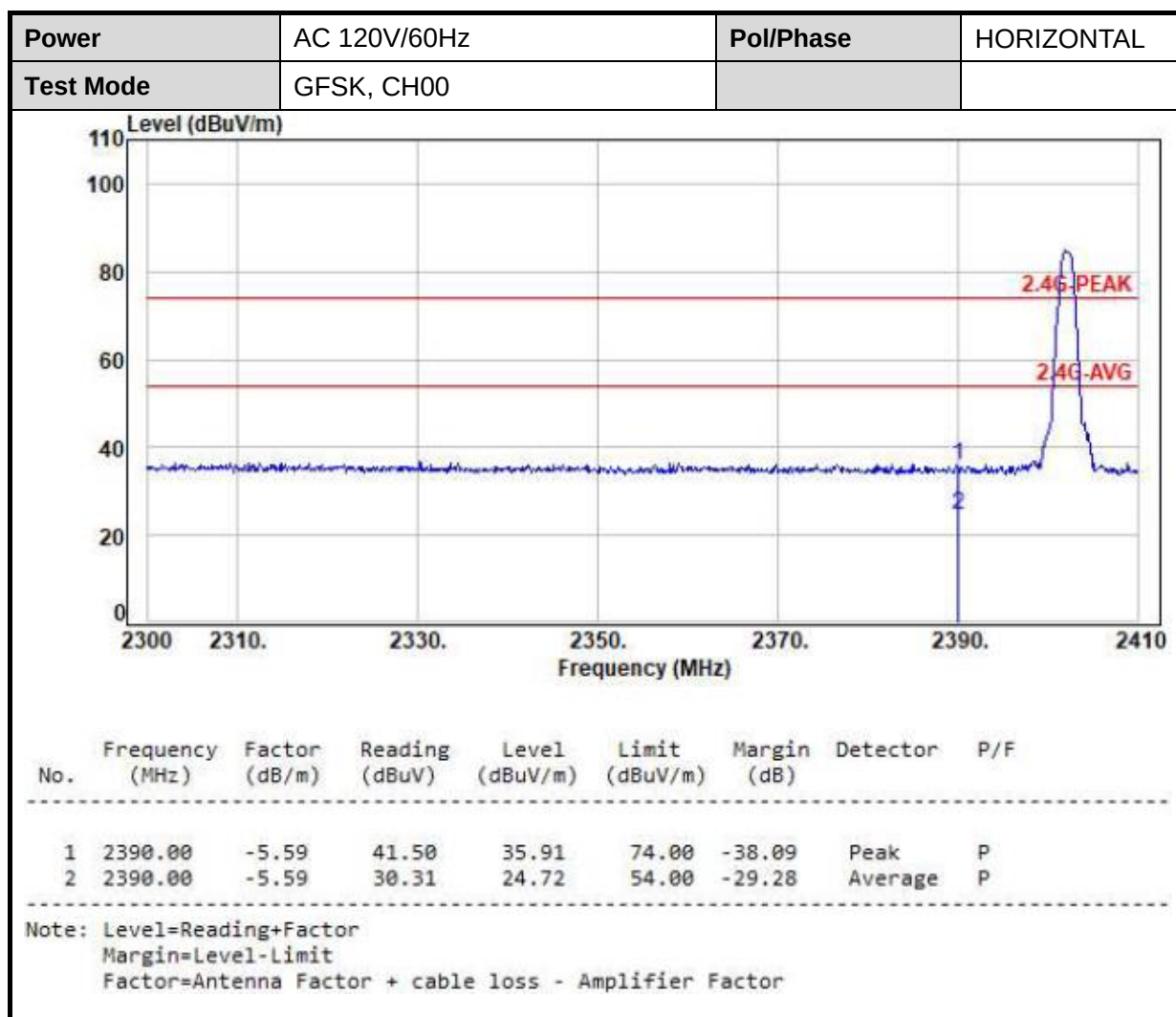
6.7 Restricted Bands of Operation

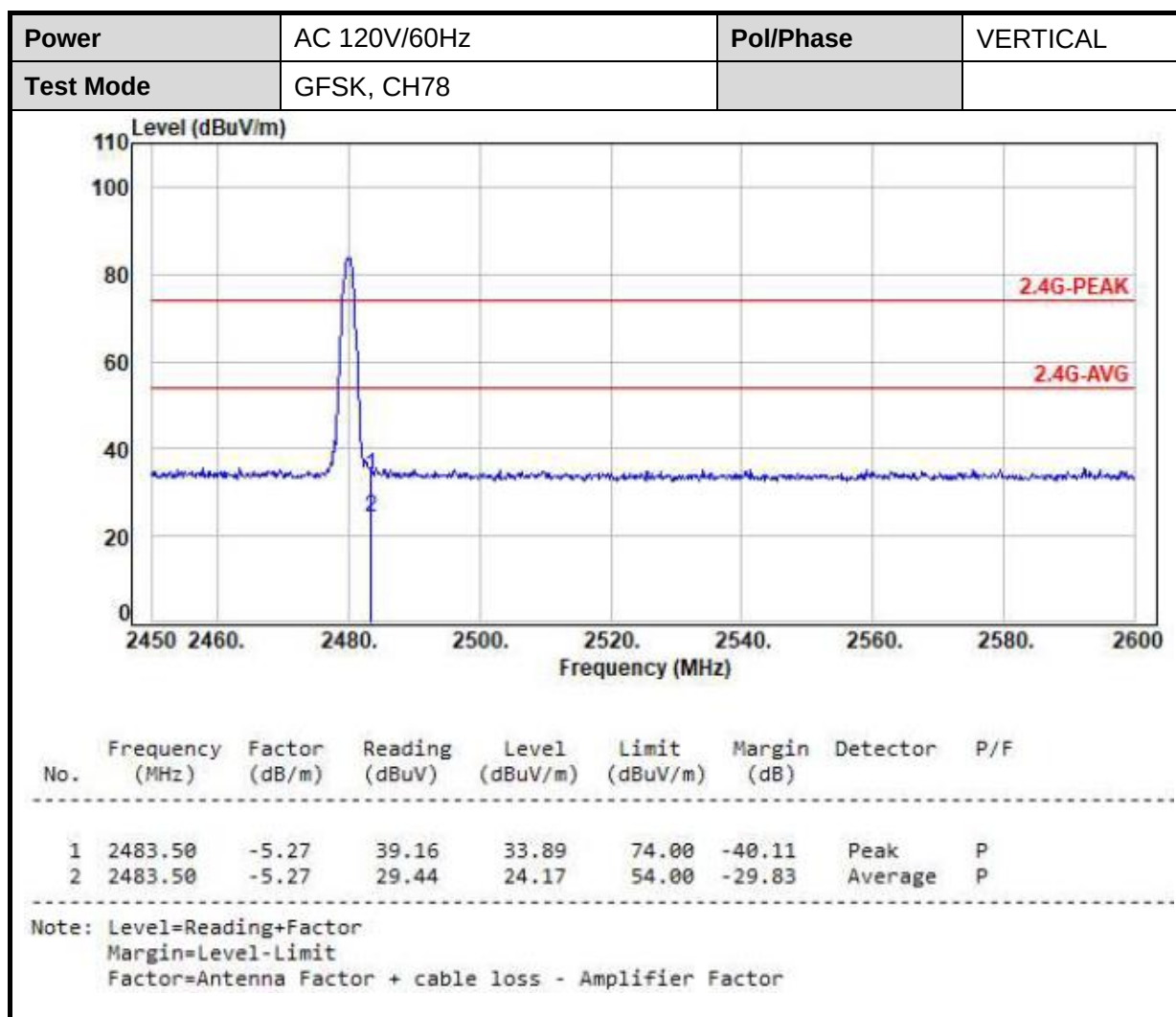
Only spurious emissions are permitted in any of the frequency bands listed below:

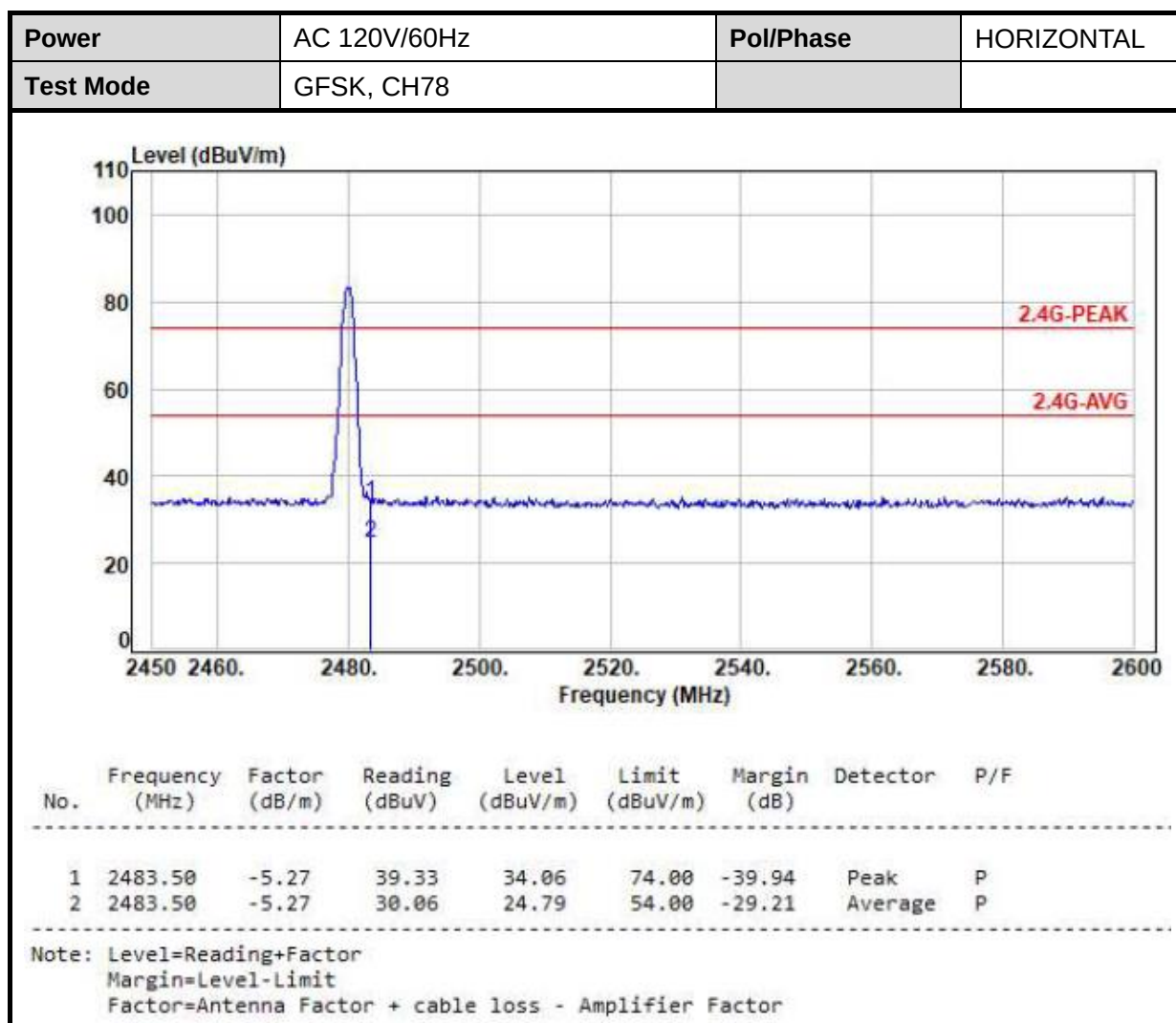
MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

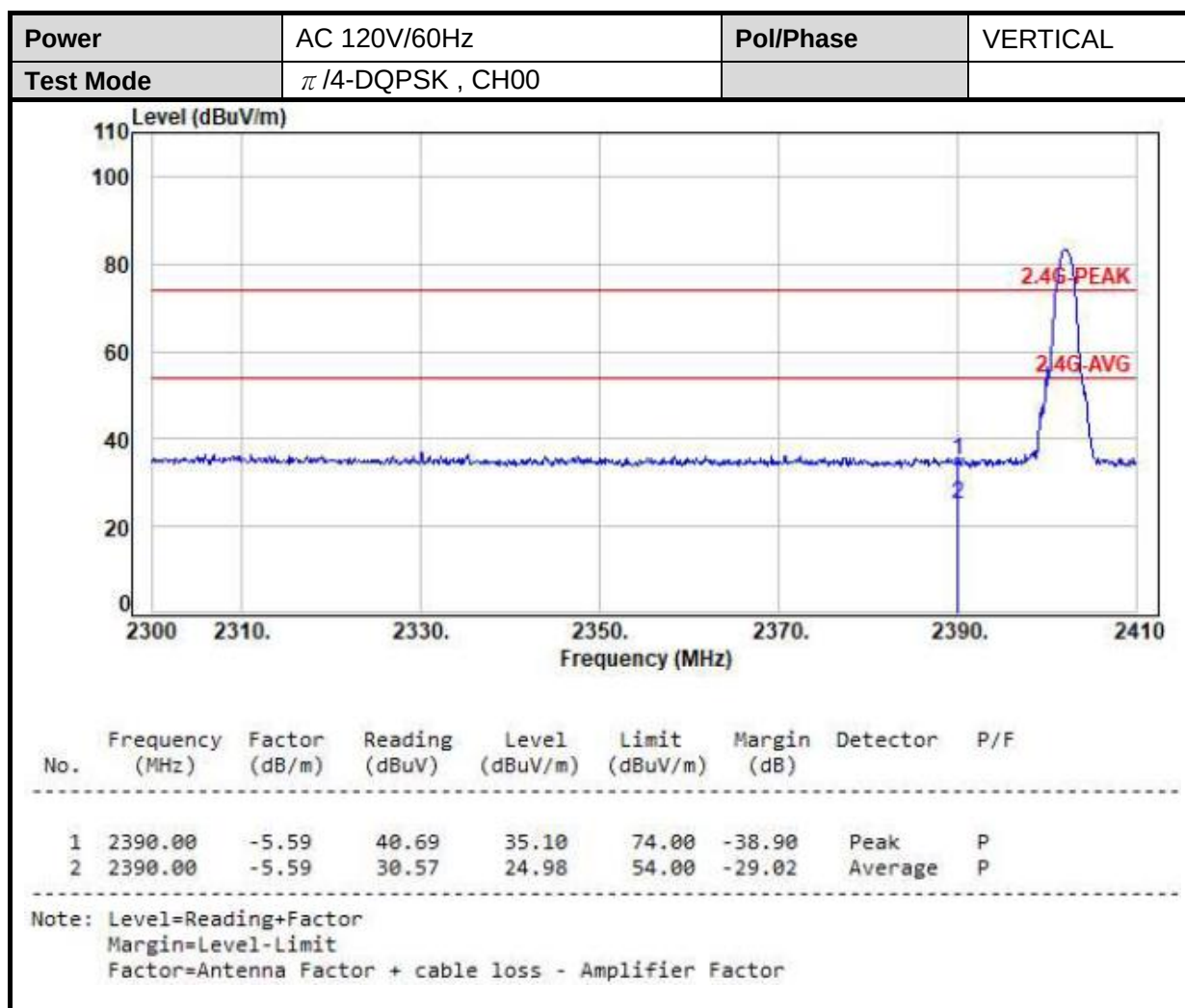
** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

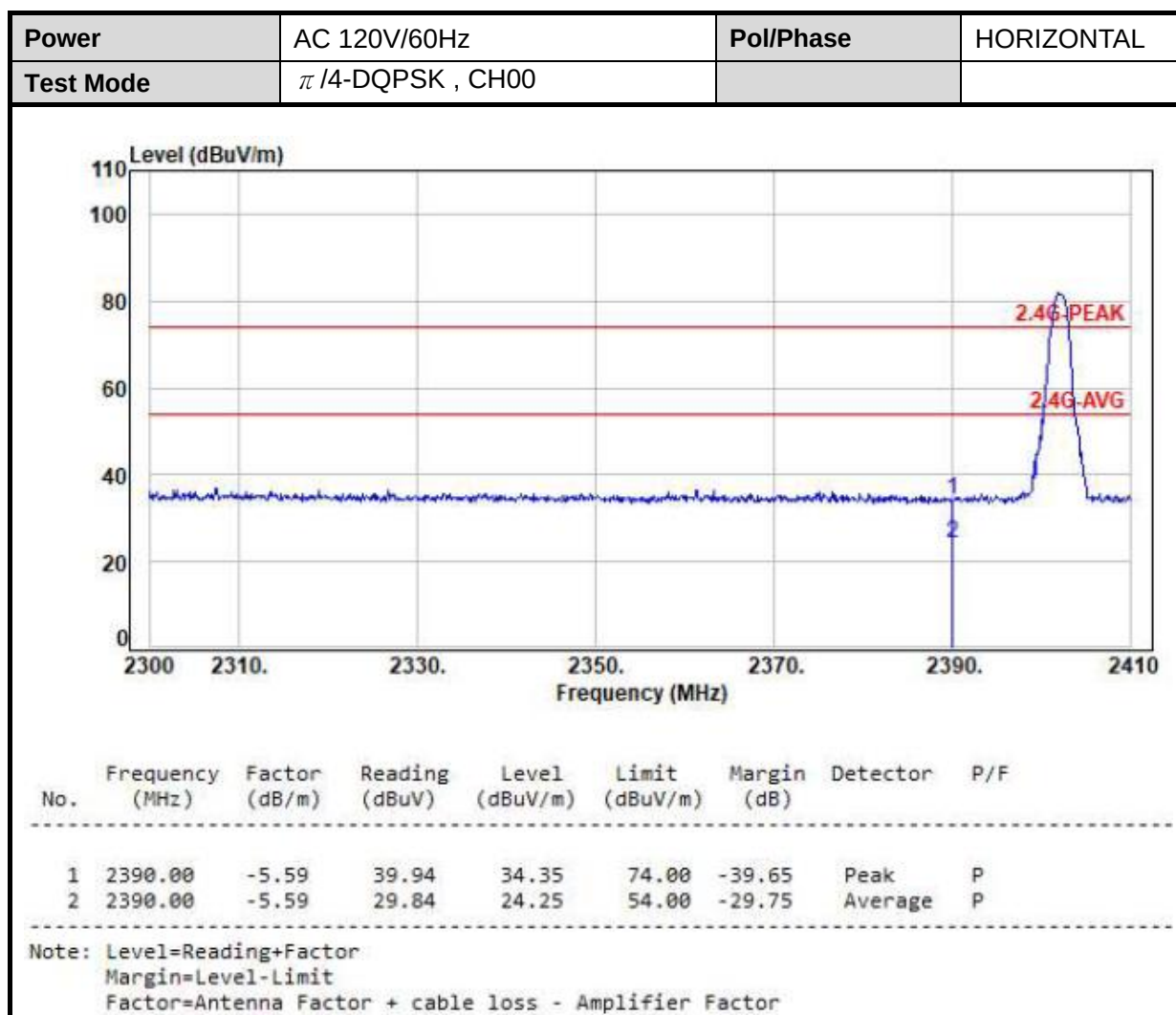


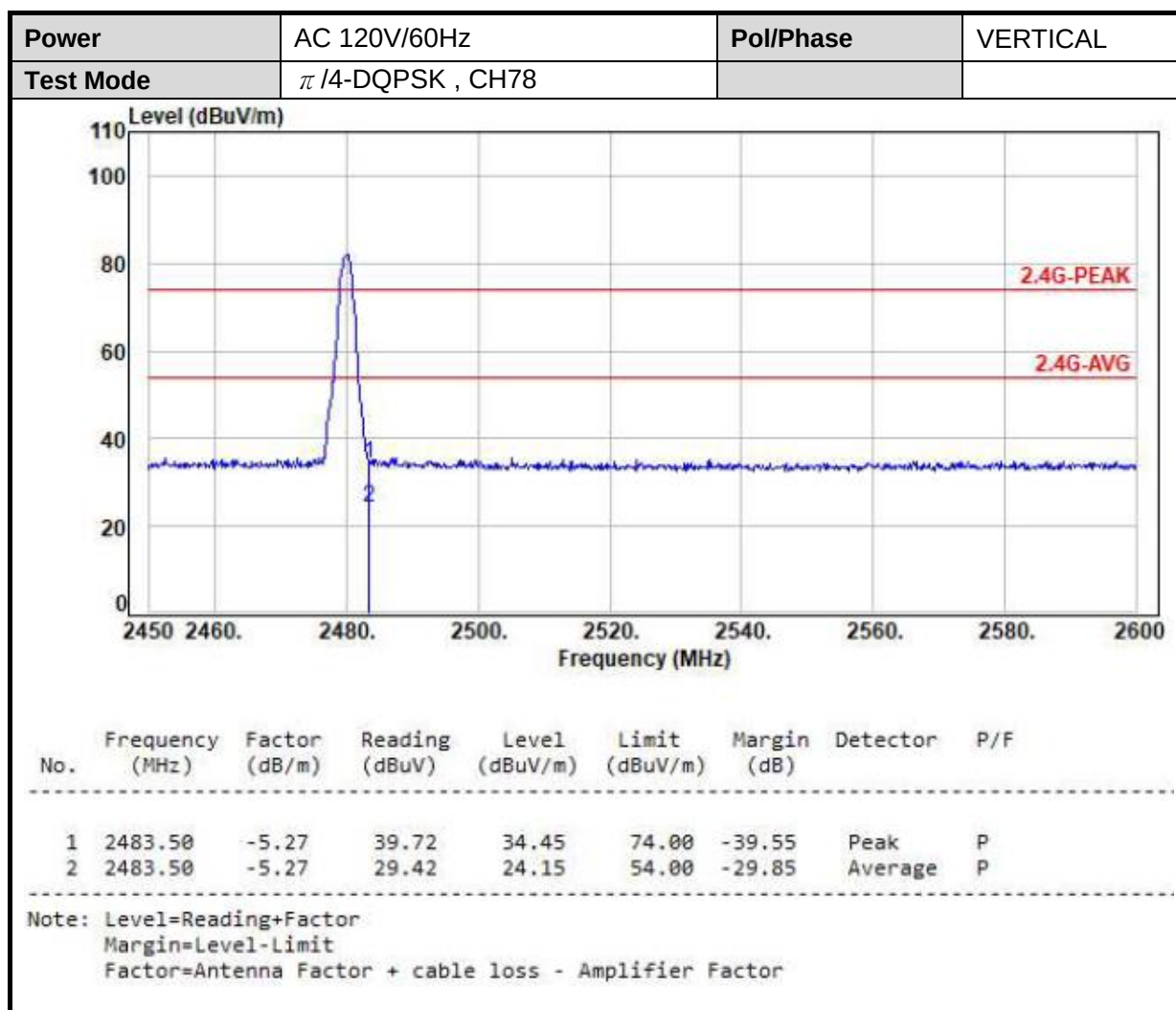


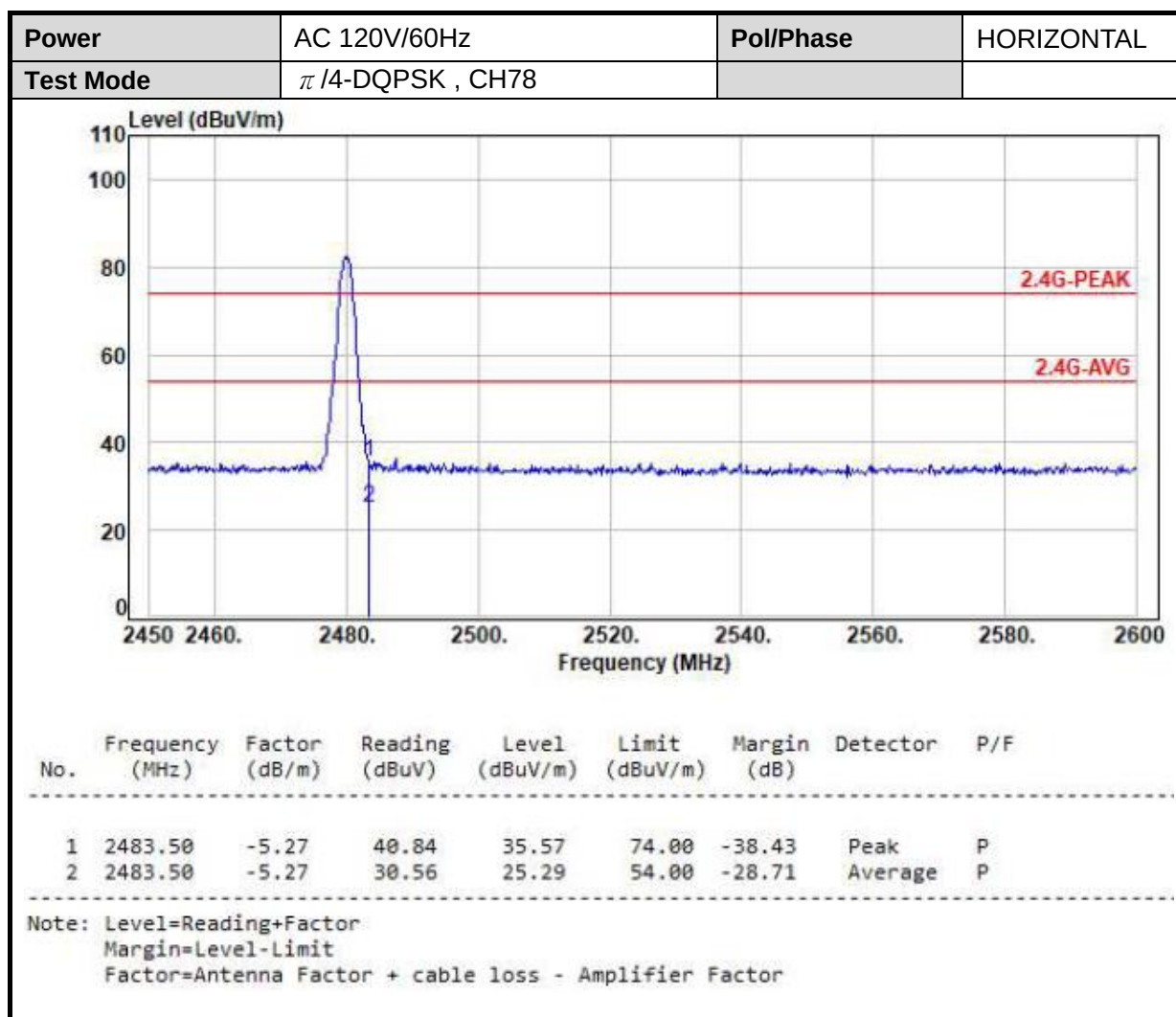


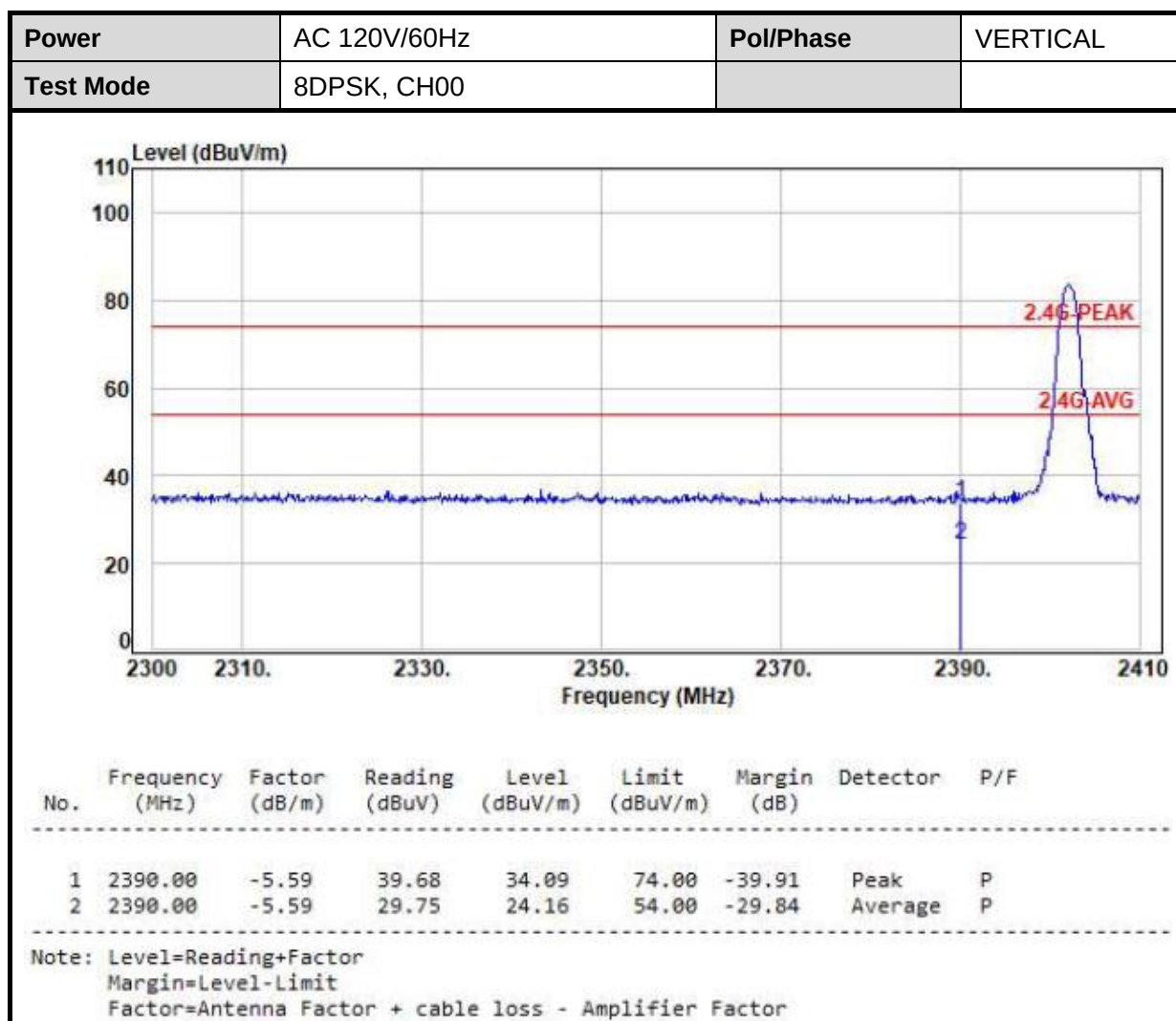


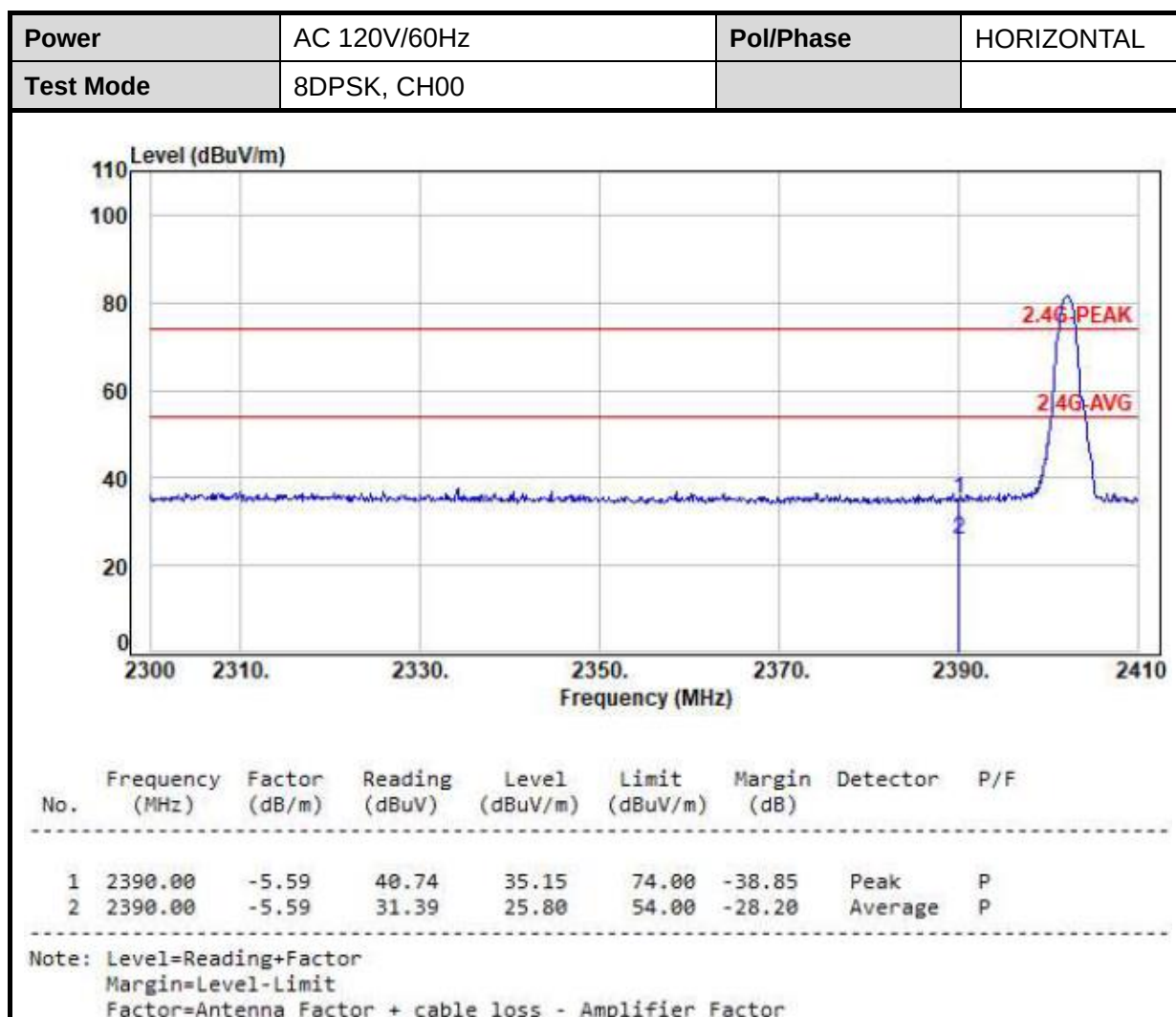


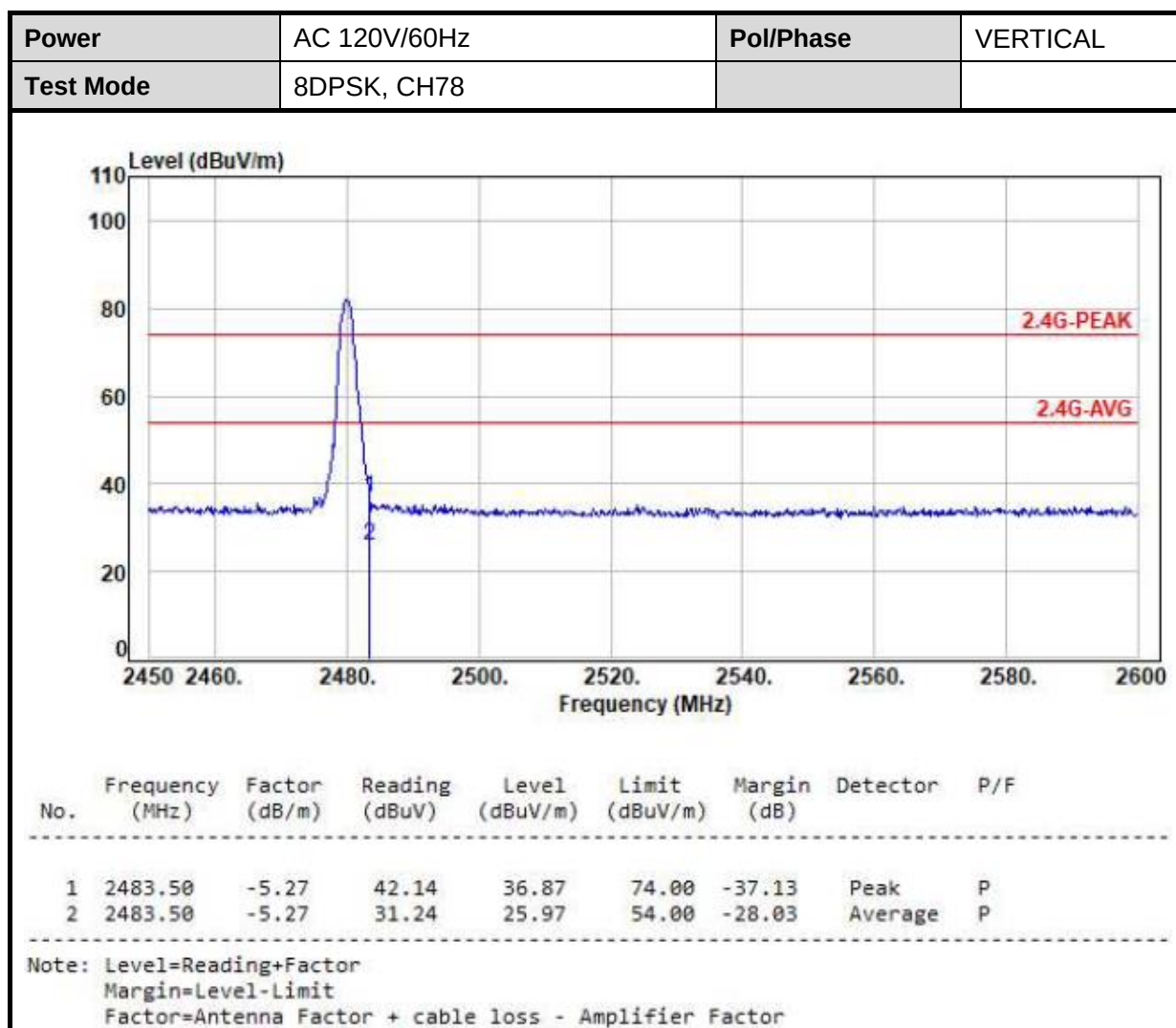


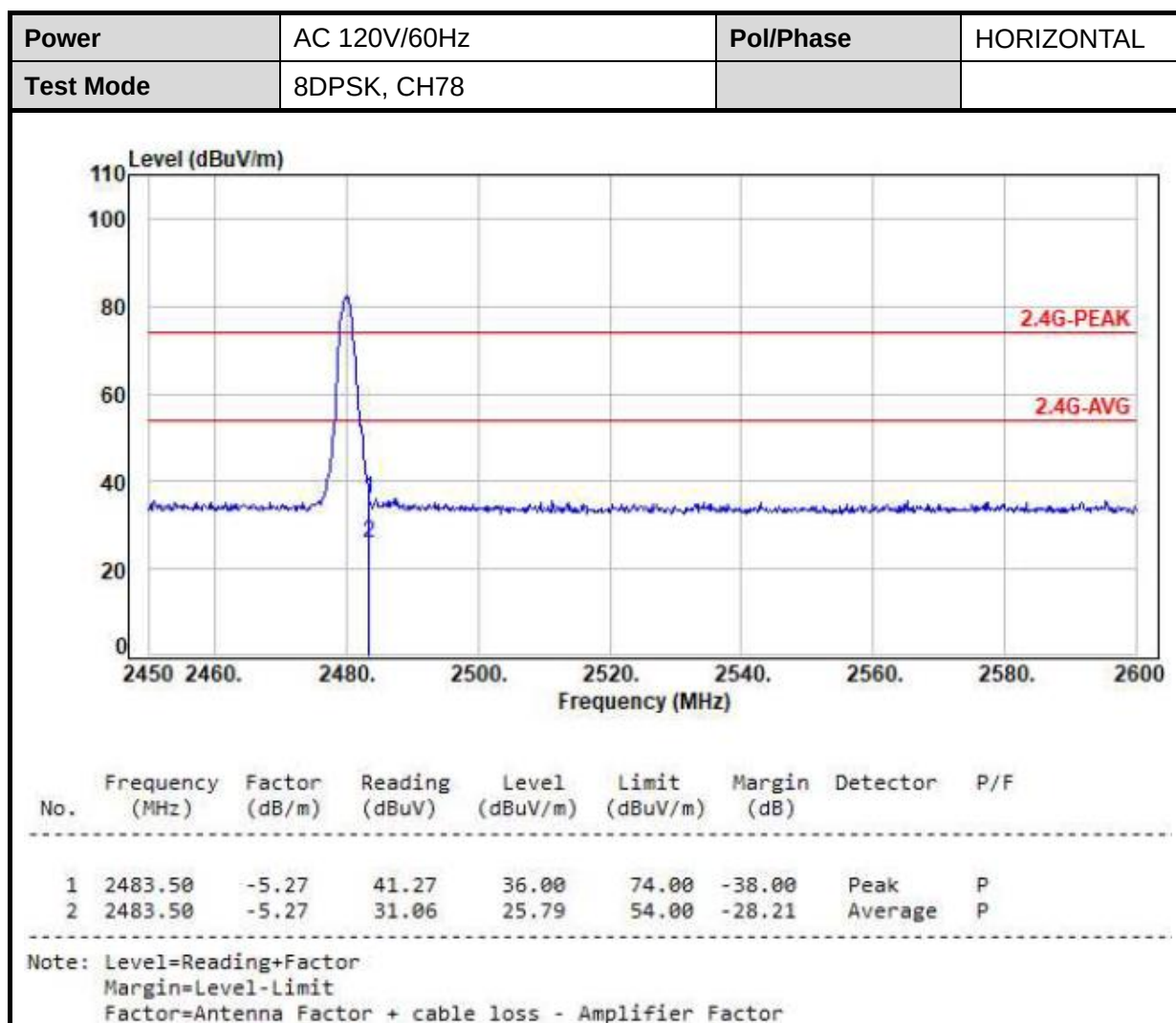














7. Test of Conducted Spurious Emission

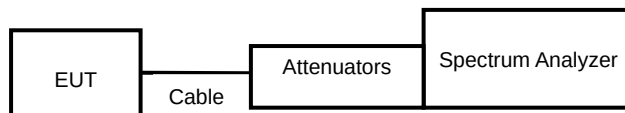
7.1 Test Limit

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

7.2 Test Procedure

- The transmitter output was connected to the spectrum analyzer via a low loss cable.
- Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
- The band edges was measured and recorded.

7.3 Test Setup Layout



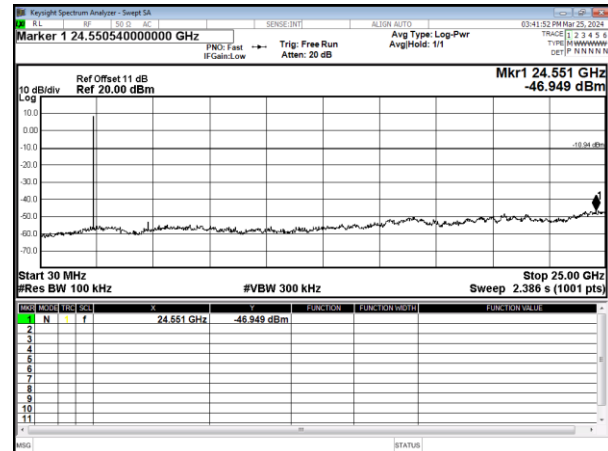
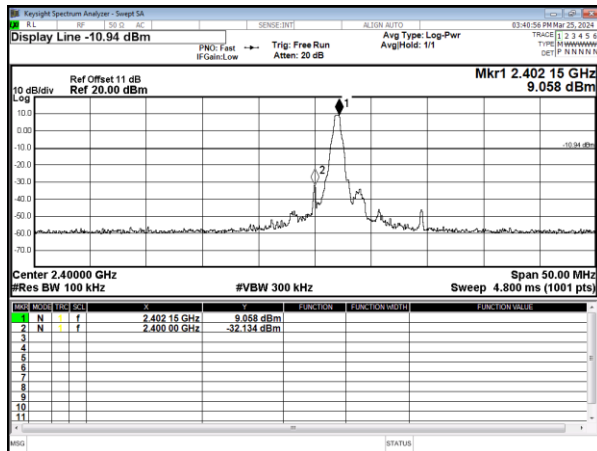
7.4 Test Result and Data

Note: Test plots refer to the following pages.

**Single test**

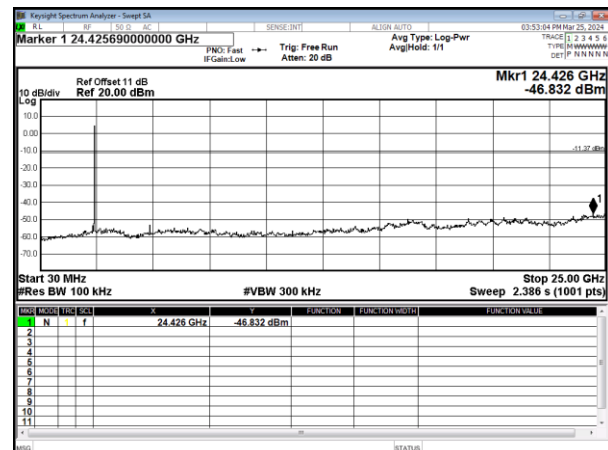
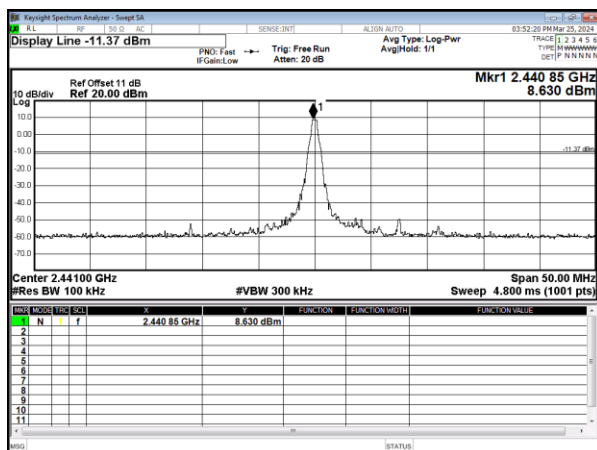
Modulation Standard: GFSK (1Mbps)

Channel: 00



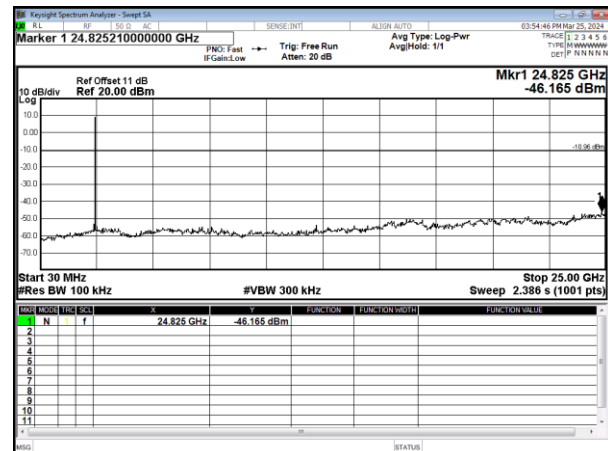
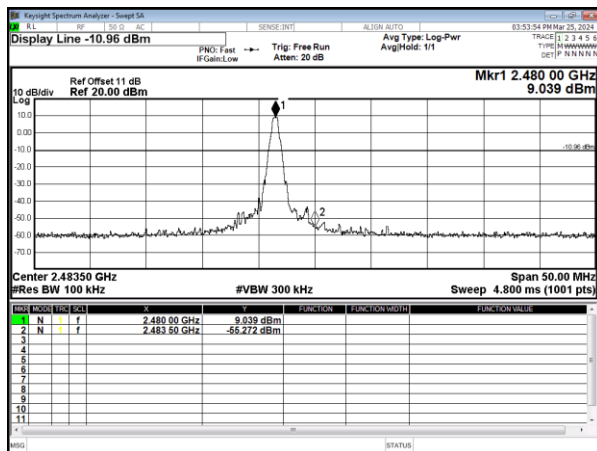
Modulation Standard: GFSK (1Mbps)

Channel: 39



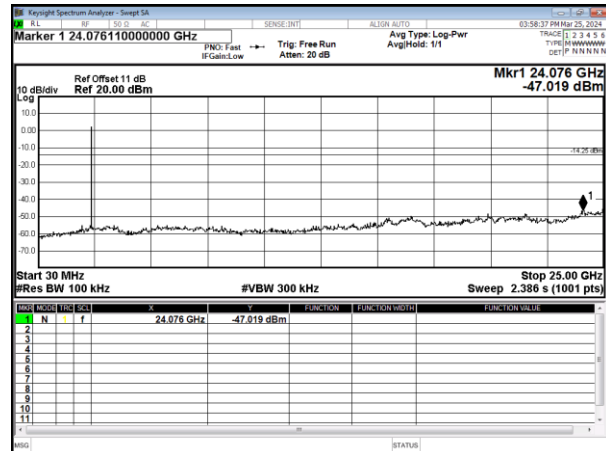
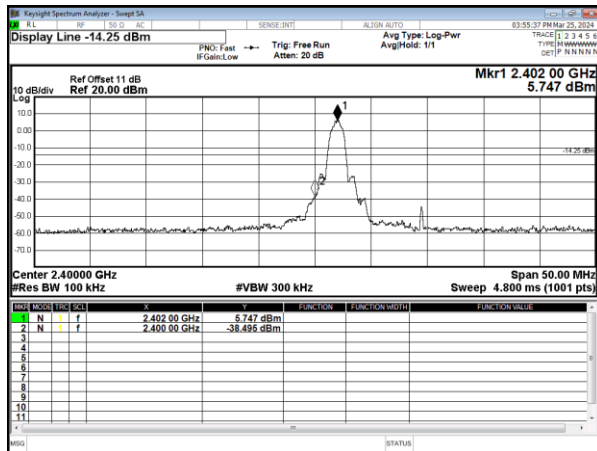
Modulation Standard: GFSK (1Mbps)

Channel: 78

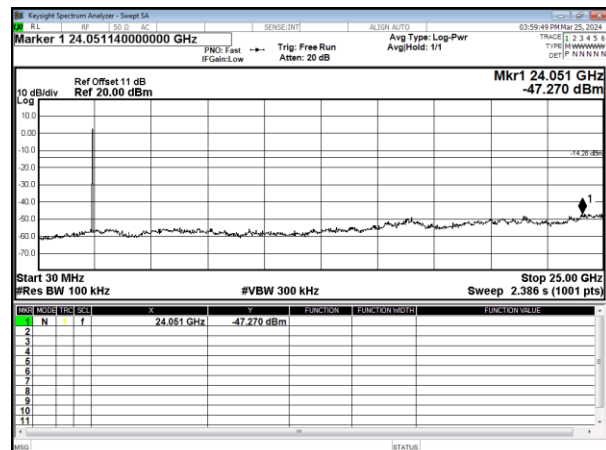
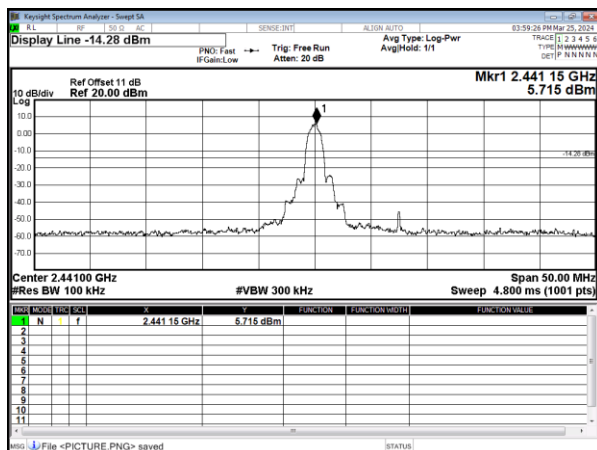




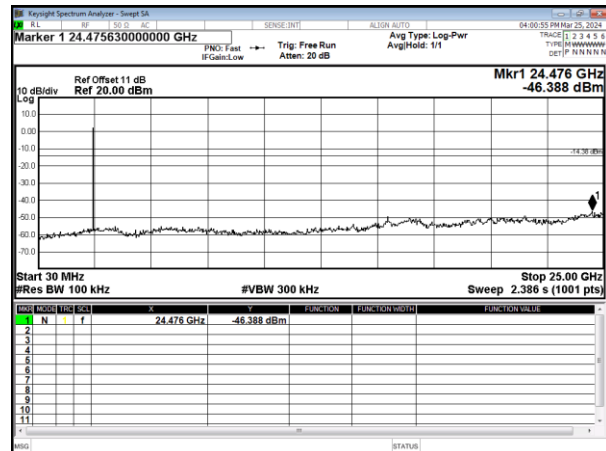
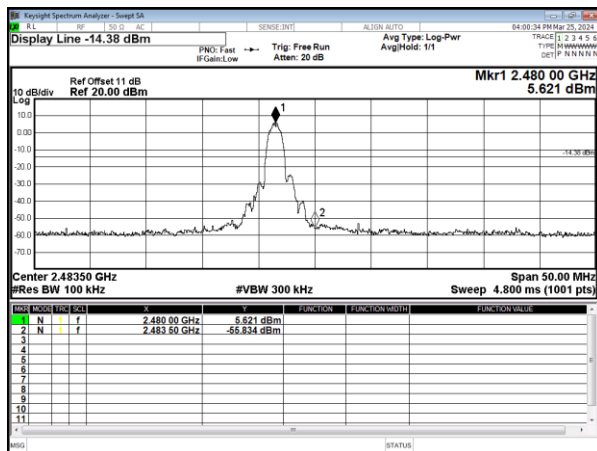
Modulation Standard: $\pi/4$ DQPSK (2Mbps)
Channel: 00



Modulation Standard: $\pi/4$ DQPSK (2Mbps)
Channel: 39

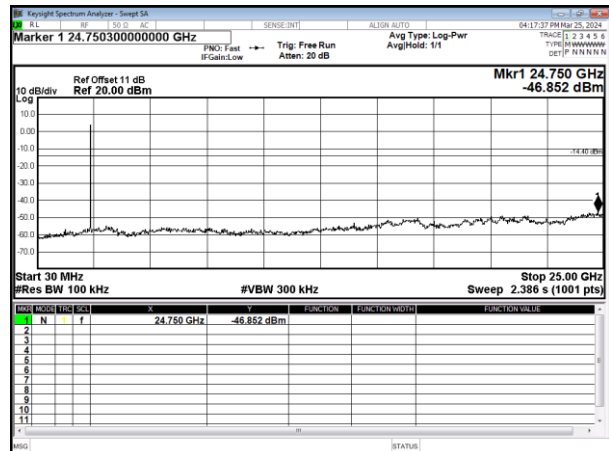
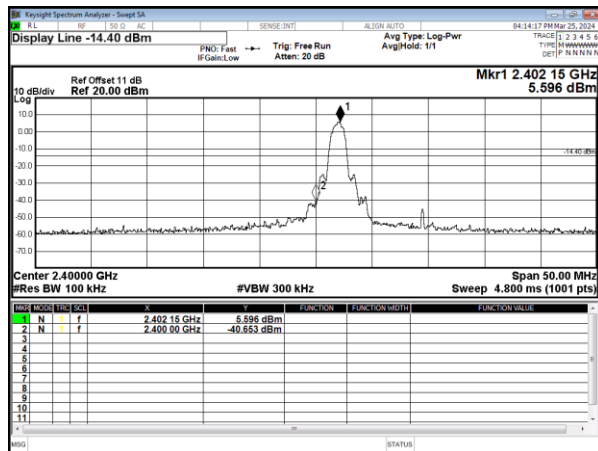


Modulation Standard: $\pi/4$ DQPSK (2Mbps)
Channel: 78

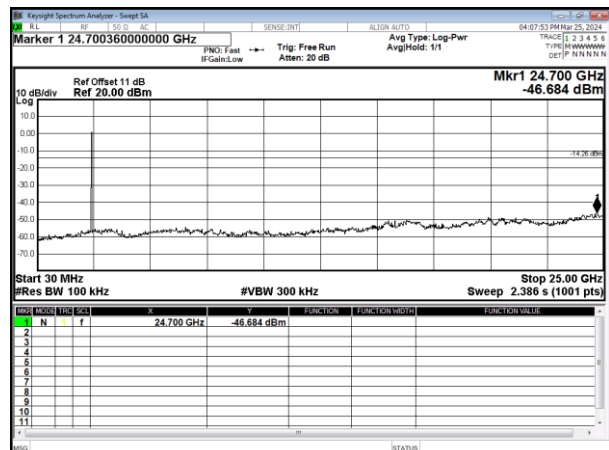
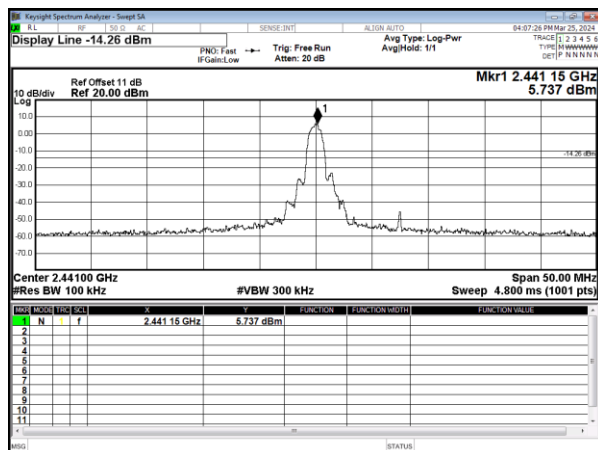




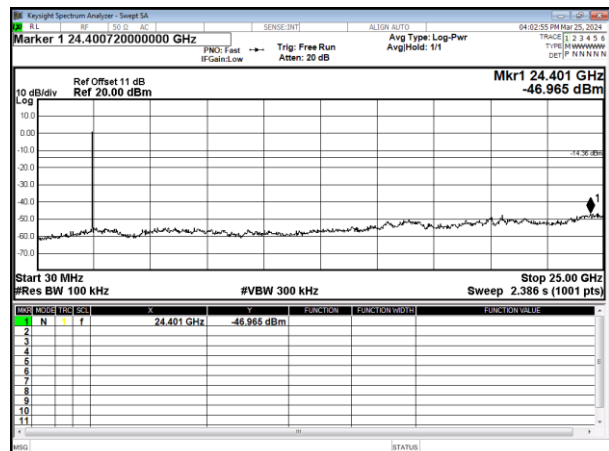
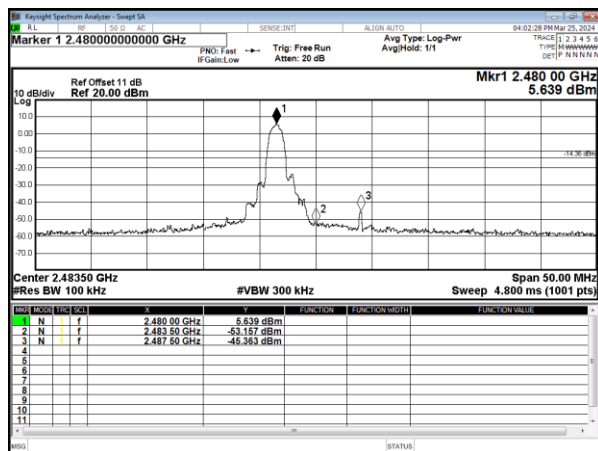
Modulation Standard: 8DPSK (3Mbps)
Channel: 00



Modulation Standard: 8DPSK (3Mbps)
Channel: 39

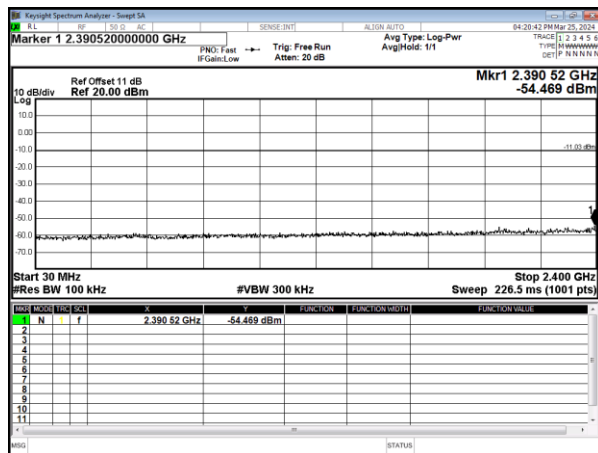


Modulation Standard: 8DPSK (3Mbps)
Channel: 78

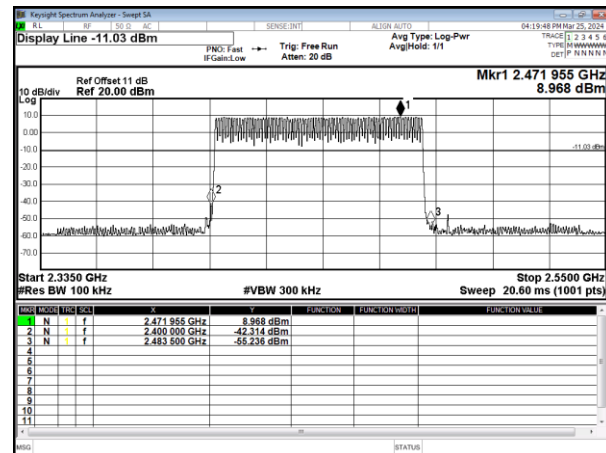


**Hopping test**

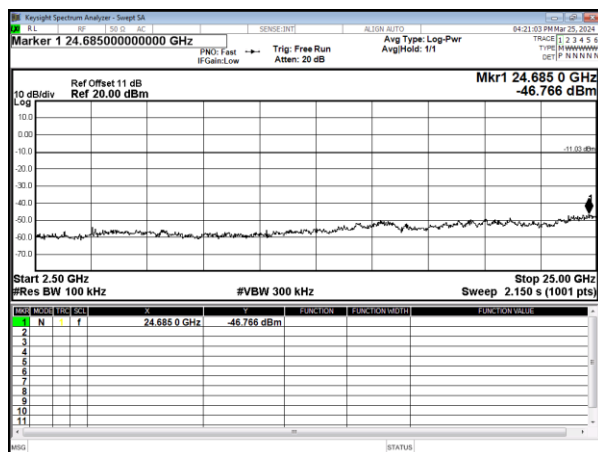
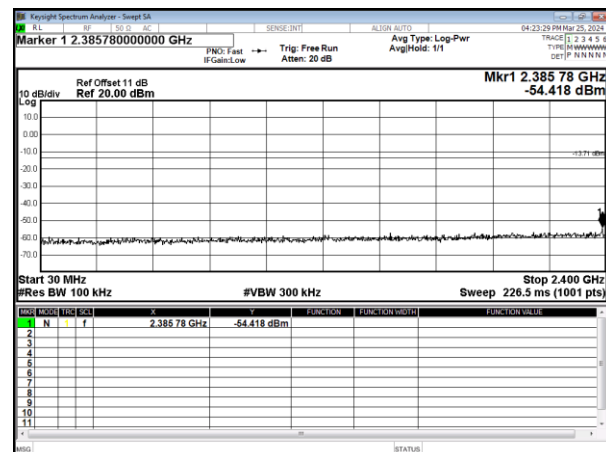
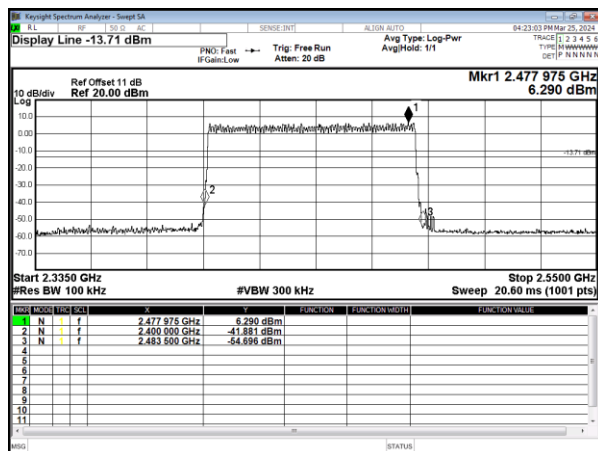
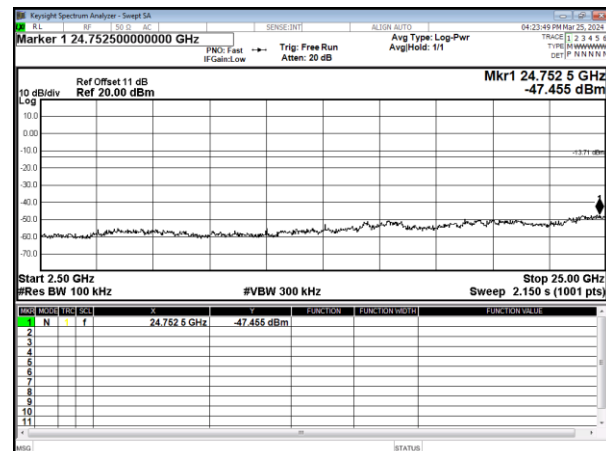
Modulation Standard: GFSK (1Mbps)



Modulation Standard: GFSK (1Mbps)

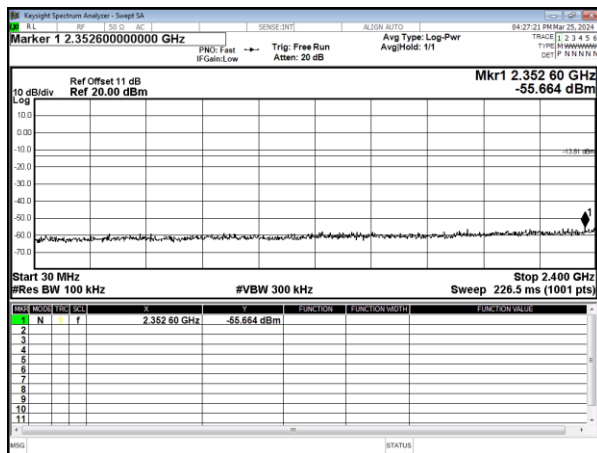


Modulation Standard: GFSK (1Mbps)

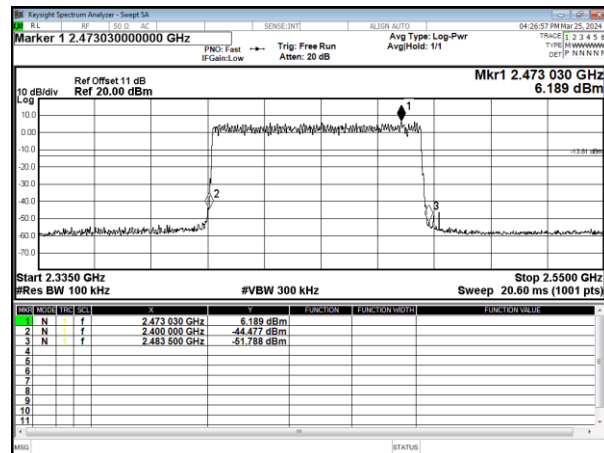
Modulation Standard: $\pi/4$ DQPSK (2Mbps)Modulation Standard: $\pi/4$ DQPSK (2Mbps)Modulation Standard: $\pi/4$ DQPSK (2Mbps)



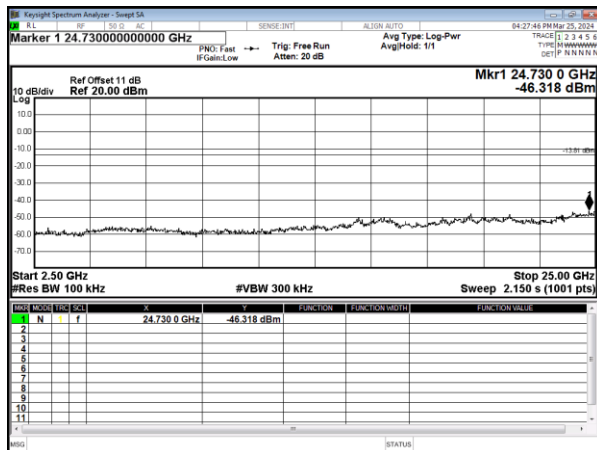
Modulation Standard: 8DPSK (3Mbps)



Modulation Standard: 8DPSK (3Mbps)



Modulation Standard: 8DPSK (3Mbps)





8. 20dB Bandwidth Measurement Data

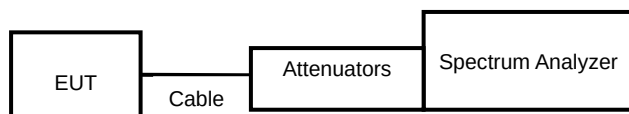
8.1 Test Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

8.2 Test Procedures

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 30 KHz and VBW to 100 KHz.
- The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

8.3 Test Setup Layout

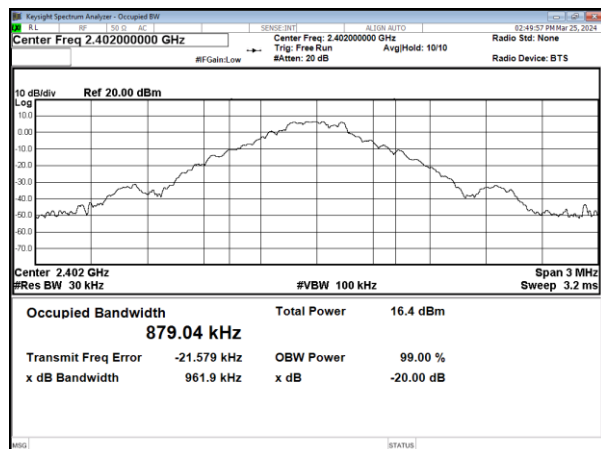


8.4 Test Result and Data

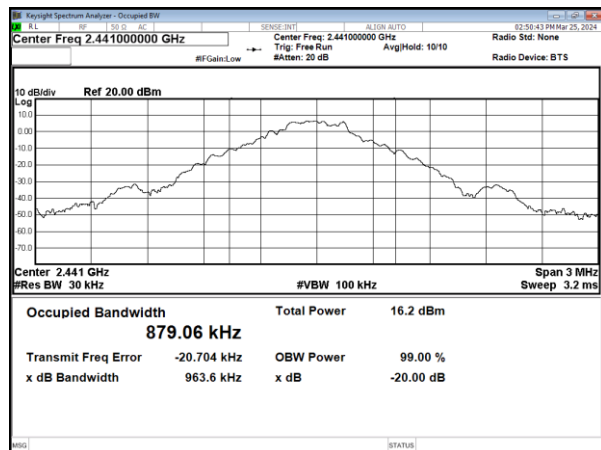
Modulation Type	Channel	Frequency (MHz)	20dB Bandwidth (MHz)	2/3 20dB Bandwidth(MHz)
GFSK (1Mbps)	00	2402	0.962	0.641
	39	2441	0.964	0.642
	78	2480	0.967	0.645
$\pi/4$ -DQPSK (2Mbps)	00	2402	1.490	0.993
	39	2441	1.495	0.997
	78	2480	1.490	0.993
8DPSK (3Mbps)	00	2402	1.491	0.994
	39	2441	1.491	0.994
	78	2480	1.488	0.992
Note	2/3*20dB Bandwidth=20dB Bandwidth x 2/3			



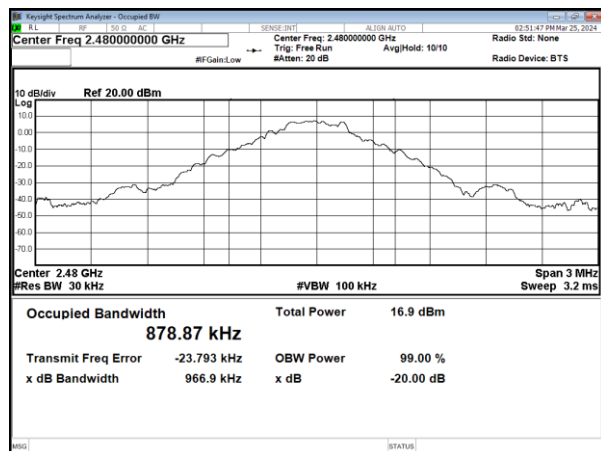
Modulation Type: GFSK (1Mbps)
Channel: 00



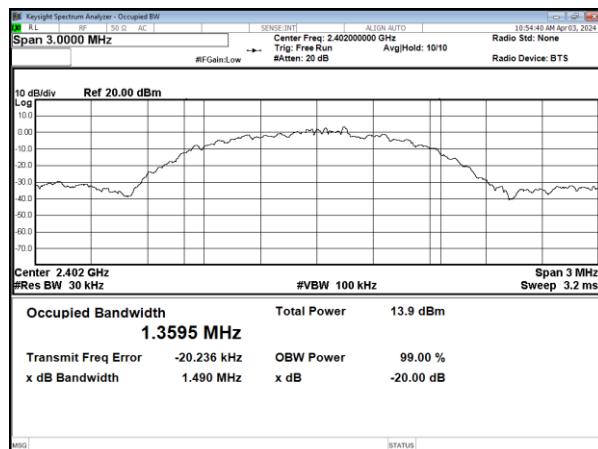
CH39



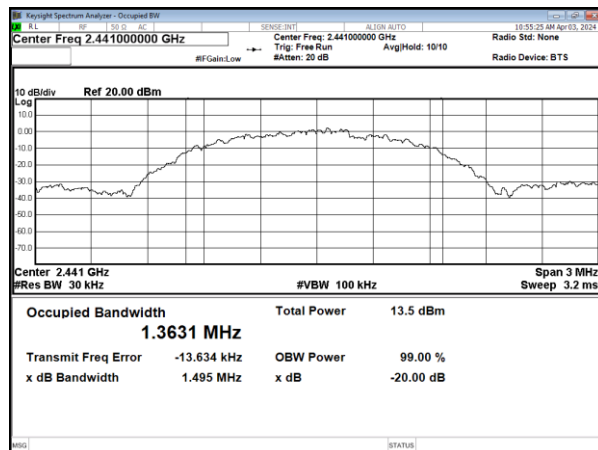
CH78



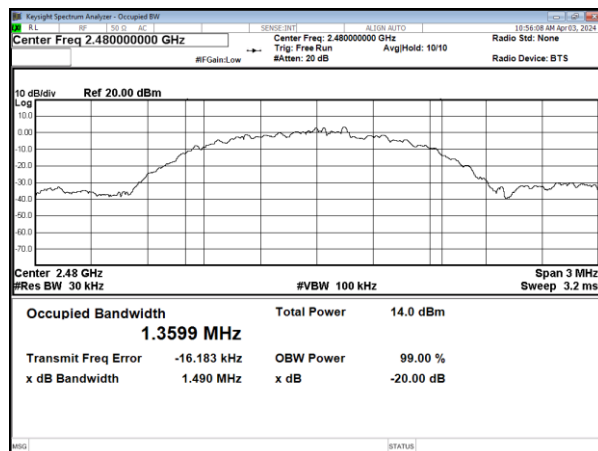
Modulation Type: $\pi/4$ -DQPSK (2Mbps)
Channel: 00



CH39

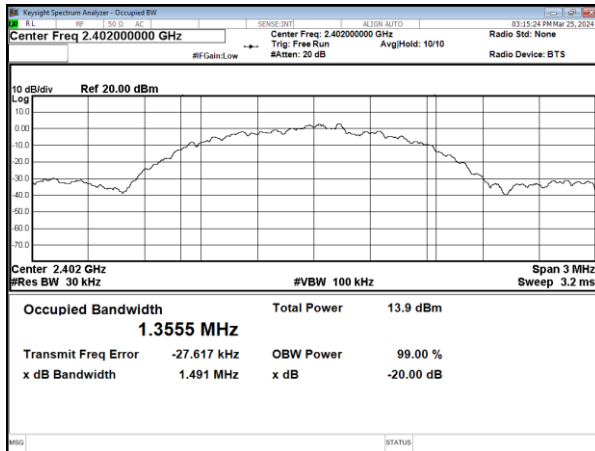


CH78

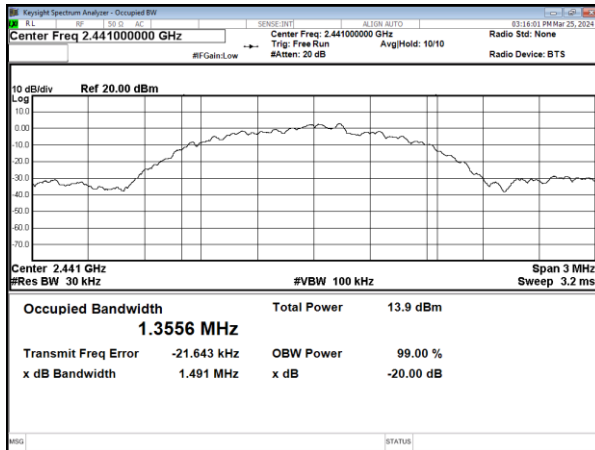




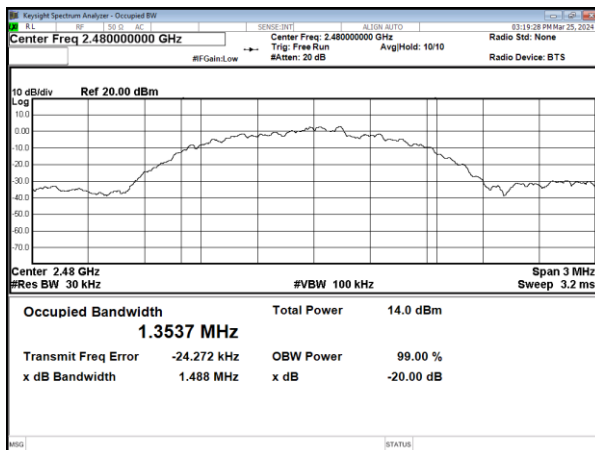
Modulation Type: 8DPSK (3Mbps)
Channel: 00



CH39



CH78





9. Frequencies Separation

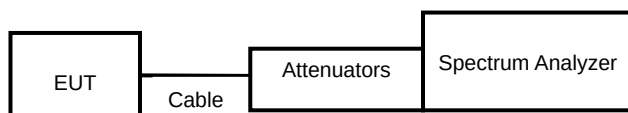
9.1 Test Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

9.2 Test Procedures

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 30 KHz and VBW to 100 KHz.
- By using the MaxHold function record the separation of two adjacent channels.
- Measure the frequency difference of these two adjacent channels.

9.3 Test Setup Layout

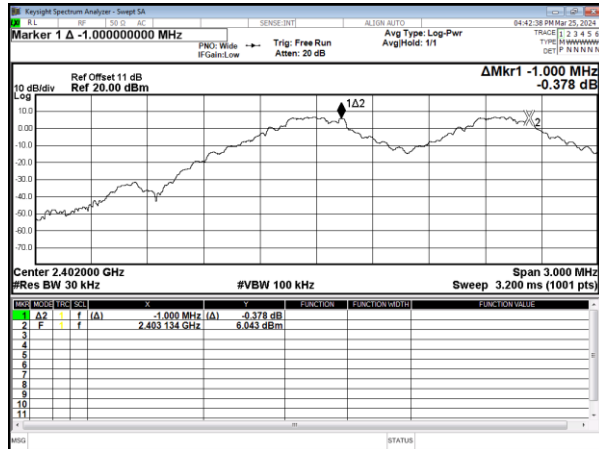


9.4 Test Result and Data

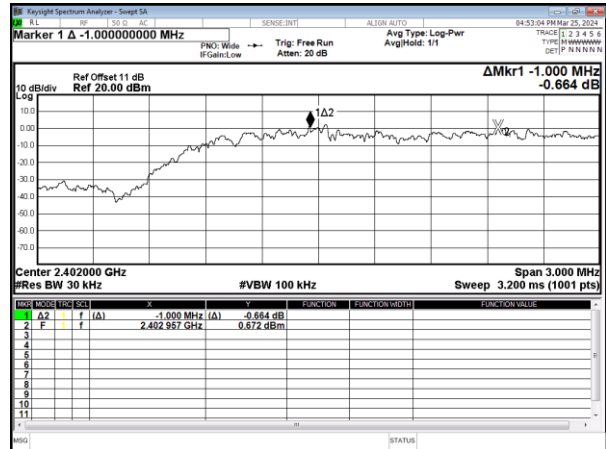
Modulation Type	Channel	Channel Separation (MHz)	Limit (MHz)
GFSK	00	1.000	0.641
	39	1.000	0.642
	78	1.000	0.645
$\pi/4$ -DQPSK	00	1.000	0.993
	39	1.000	0.997
	78	1.000	0.993
8DPSK	00	1.000	0.994
	39	1.000	0.994
	78	1.000	0.992



Modulation Type: GFSK (1Mbps)
Channel: 00

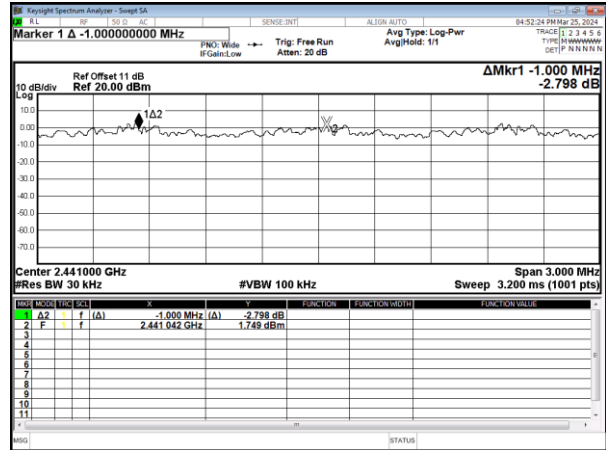
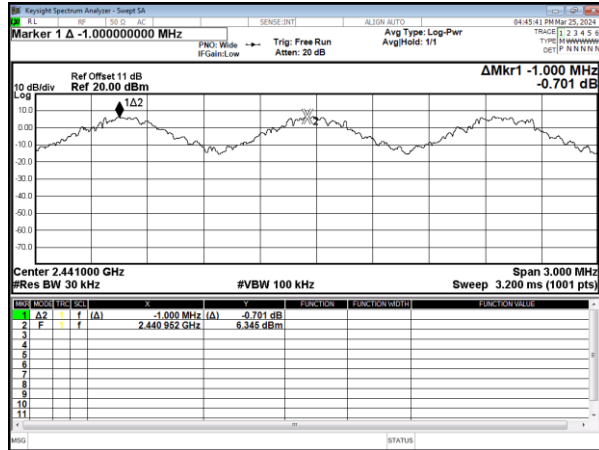


Modulation Type: $\pi/4$ -DQPSK (2Mbps)
Channel: 00



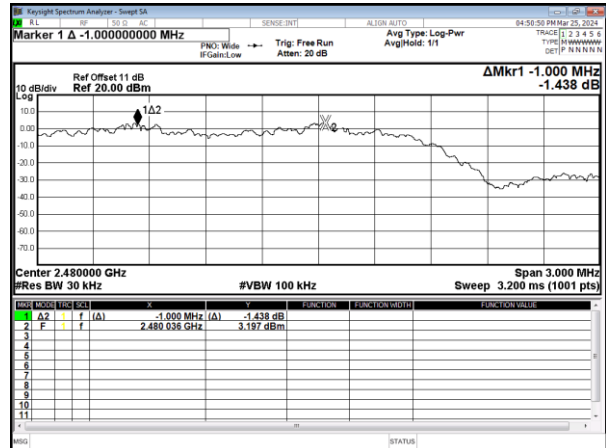
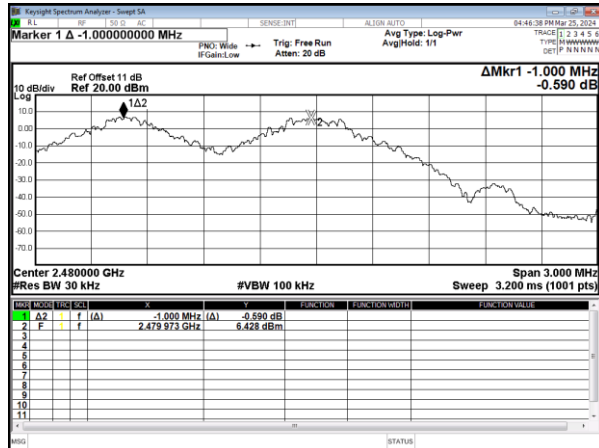
CH39

CH39



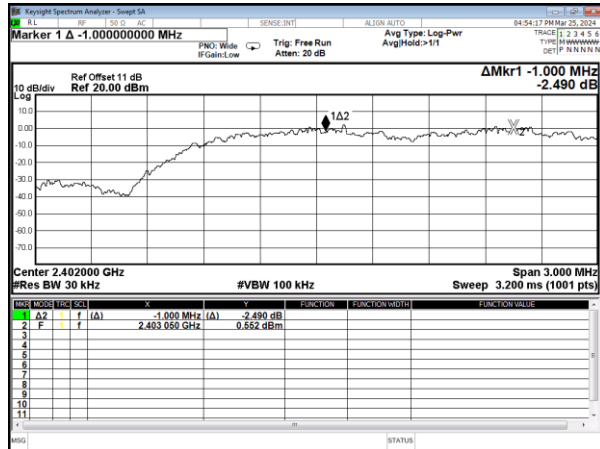
CH78

CH78

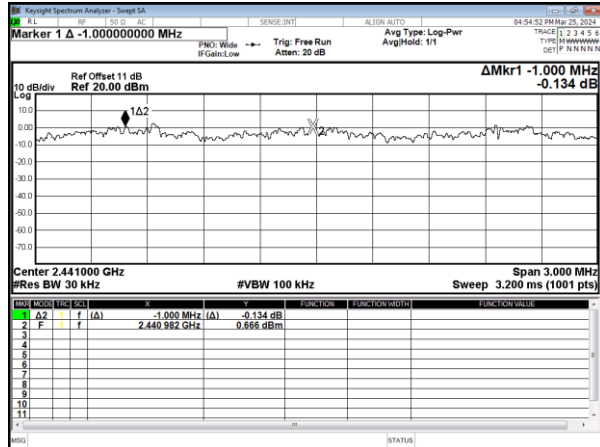




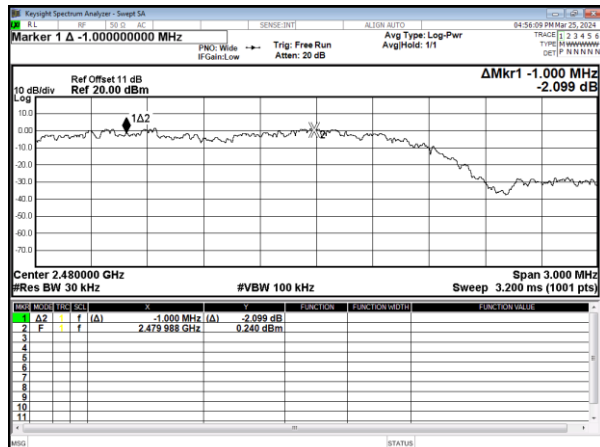
Modulation Type: 8DPSK (3Mbps)
Channel: 00



CH39



CH78





10. Dwell Time on each channel

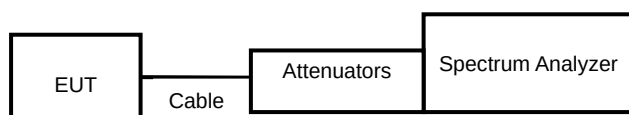
10.1 Test Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

10.2 Test Procedures

1. The transmitter output was connected to the spectrum analyzer.
2. Adjust the center frequency to measure frequency, then set zero span mode.
2. Set RBW of spectrum analyzer to 1 MHz and VBW to 1 MHz.
4. Measure the time duration of one transmission on the measured frequency.

10.3 Test Setup Layout



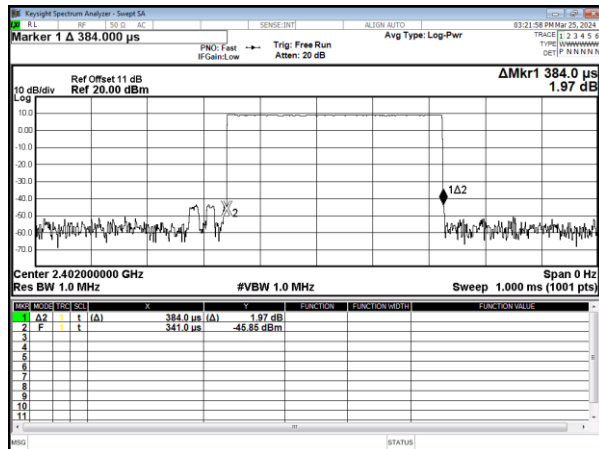
10.4 Test Result and Data

Test Period = 0.4 (second/ channel) x 79 Channel = 31.6 sec

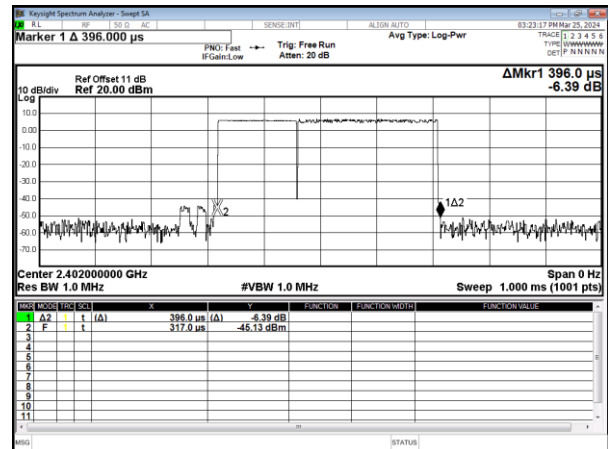
Modulation Type	Frequency (MHz)	Length of transmission time (ms)	Number of transmission in a 31.6 (79 Hopping*0.4)	Dwell Time (ms)	Limit (ms)
GFSK (DH1)	2402	0.384	320.00	122.88	400
GFSK (DH3)	2402	1.647	160.00	263.52	400
GFSK (DH5)	2402	2.900	106.67	309.33	400
$\pi/4$ -DQPSK (DH1)	2402	0.396	320.00	126.72	400
$\pi/4$ -DQPSK (DH3)	2402	1.653	160.00	264.48	400
$\pi/4$ -DQPSK (DH5)	2402	2.900	106.67	309.33	400
8DPSK (DH1)	2402	0.393	320.00	125.76	400
8DPSK (DH3)	2402	1.653	160.00	264.48	400
8DPSK (DH5)	2402	2.905	106.67	309.87	400



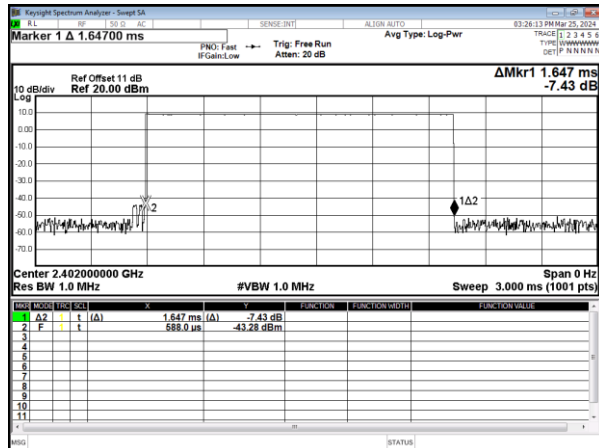
Modulation Type: GFSK (1Mbps)
DH1



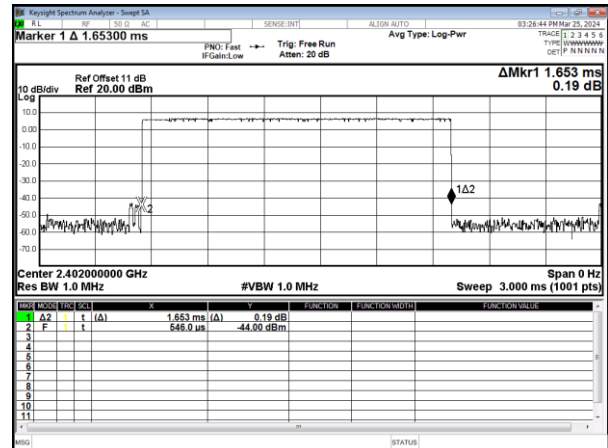
Modulation Type: $\pi/4$ -DQPSK (2Mbps)
DH1



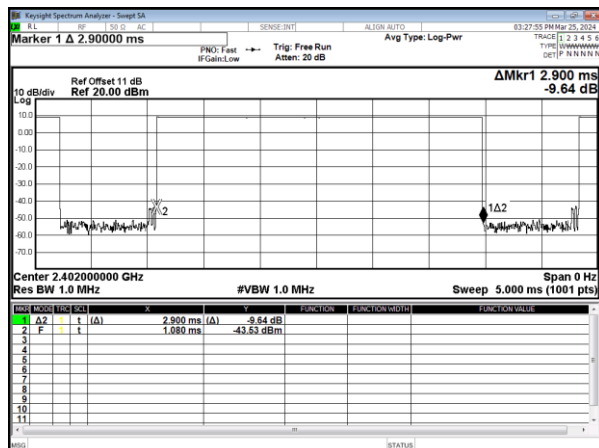
DH3



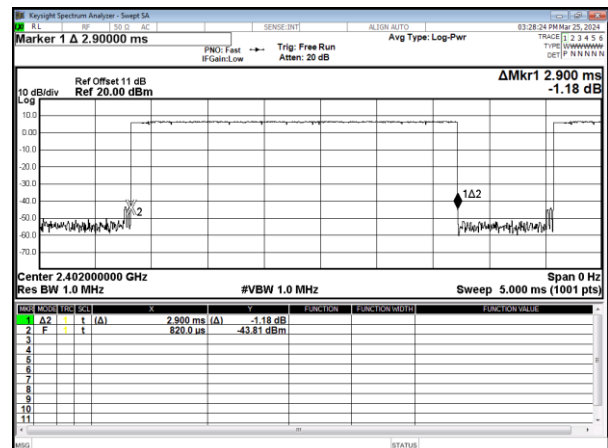
DH3



DH5

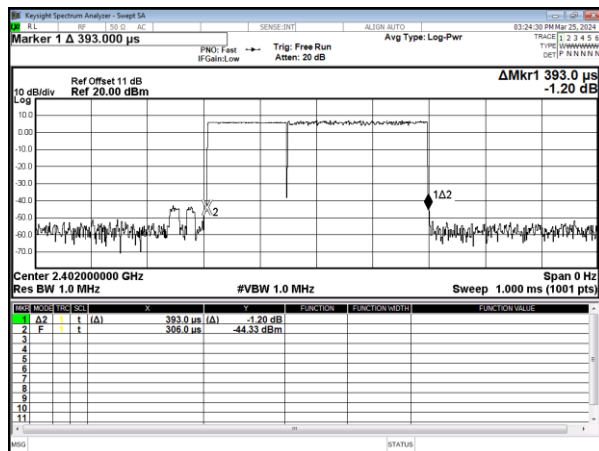


DH5

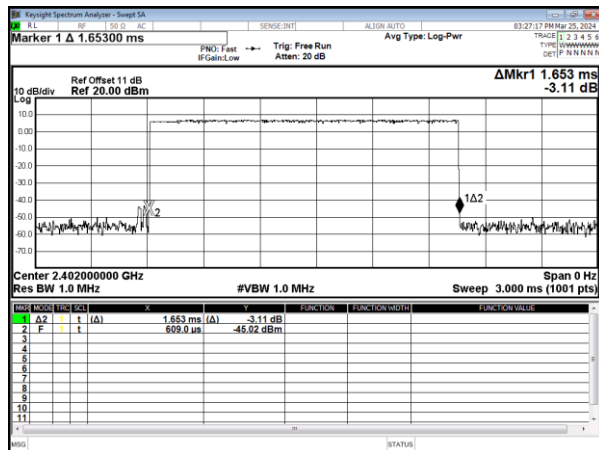




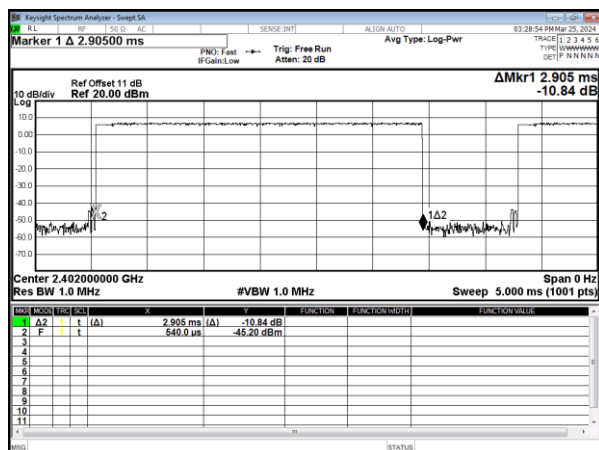
Modulation Type: 8DPSK (3Mbps)
DH1



DH3



DH5

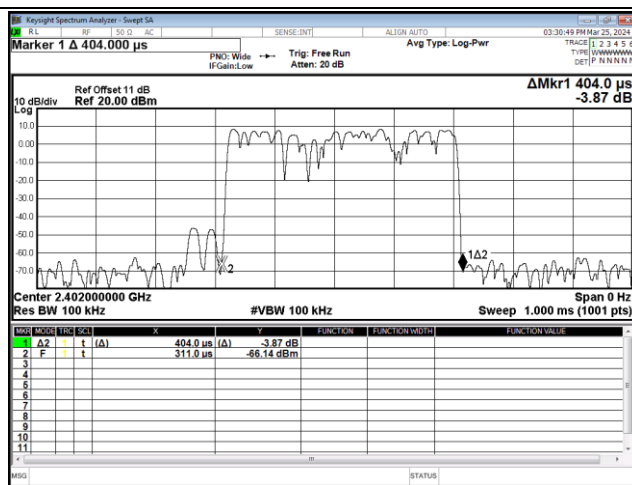




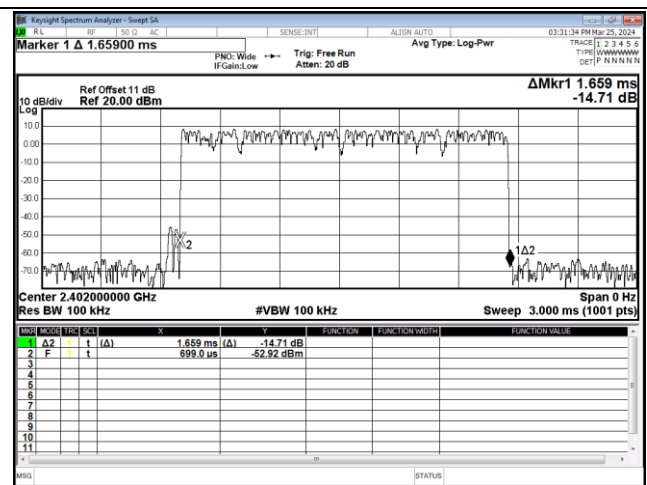
Test Period = 0.4 (second/ channel) x 20 Channel = 8 sec

Modulation Type	Frequency (MHz)	Length of transmission time (ms)	Number of transmission in a 8 (20 Hopping*0.4)	Dwell Time (ms)	Limit (ms)
AFH (DH1)	2402-2421	0.404	160	64.64	400
AFH (DH3)	2402-2421	1.659	80	132.72	400
AFH (DH5)	2402-2421	2.915	53.33	155.46	400

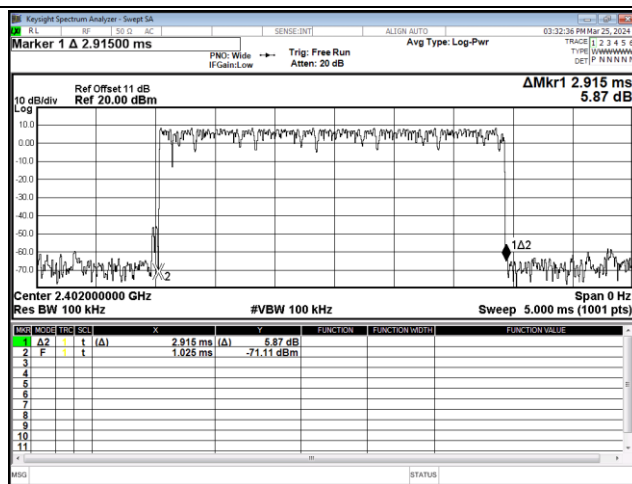
Modulation Type: AFH (DH1)



Modulation Type: AFH (DH3)



Modulation Type: AFH (DH5)





11. Number of Hopping Channels

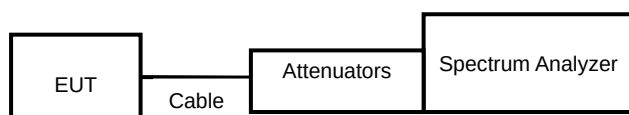
11.1 Test Limit

Frequency hopping systems in the 2400 ~ 2483.5 MHz band shall use at least 15 channels.

11.2 Test Procedures

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 300 KHz and VBW to 300 KHz.
- Set the MaxHold function, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been record.

11.3 Test Setup Layout

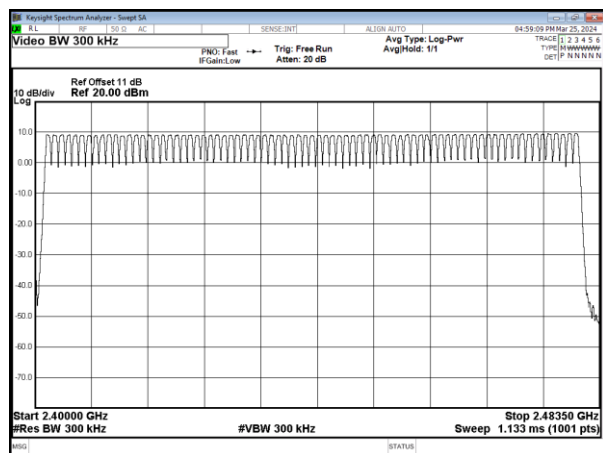


11.4 Test Result and Data

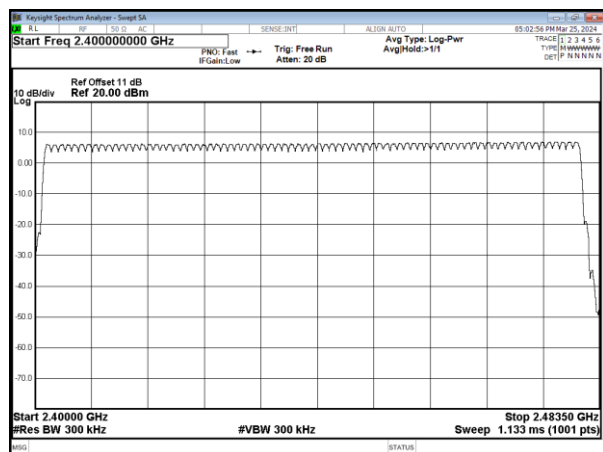
Modulation Type	Number of hopping channels
GFSK	79
$\pi/4$ -DQPSK	79
8DPSK	79



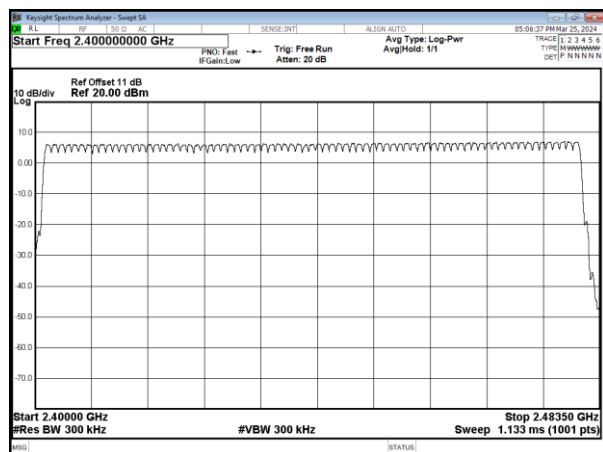
Modulation Standard: GFSK (1Mbps)



Modulation Standard: $\pi/4$ -DQPSK (2Mbps)



Modulation Standard: 8DPSK (3Mbps)





12. Maximum Peak Output Power

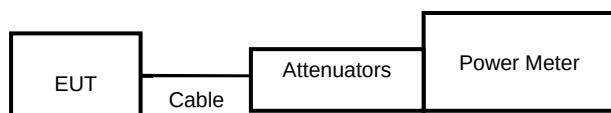
12.1 Test Limit

The Maximum Peak Output Power Measurement is 21dBm.

12.2 Test Procedures

The antenna port(RF output)of the EUT was connected to the input(RF input)of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

12.3 Test Setup Layout



12.4 Test Result and Data

Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)	Peak Power Output (mW)
GFSK (1Mbps)	00	2402	9.164	8.249
	39	2441	8.895	7.754
	78	2480	9.373	8.656
$\pi/4$ DQPSK (2Mbps)	00	2402	7.001	5.013
	39	2441	6.870	4.864
	78	2480	7.166	5.207
8DPSK (3Mbps)	00	2402	7.156	5.195
	39	2441	7.062	5.084
	78	2480	7.256	5.316

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