

Fig. 62 Radiated Spurious Emission (8DPSK, Ch78, 1GHz ~ 6GHz)

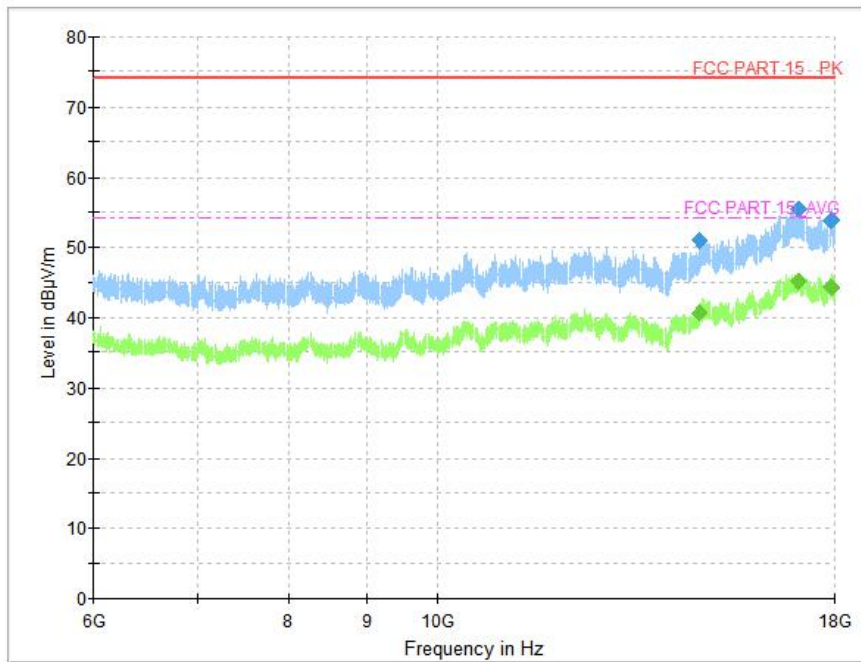


Fig. 63 Radiated Spurious Emission (8DPSK, Ch78, 6GHz ~ 18GHz)

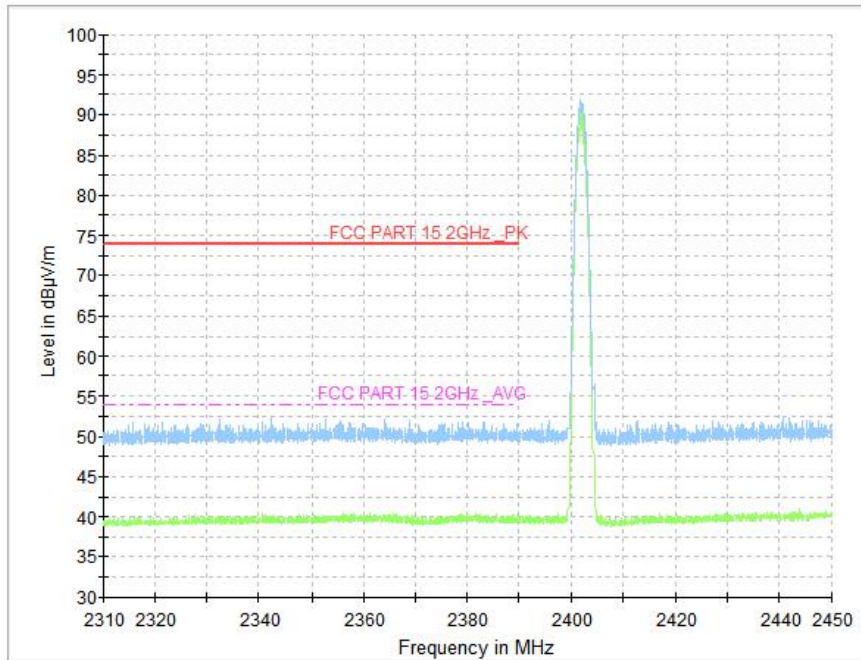


Fig. 64 Radiated Band Edges (8DPSK, Ch0, 2380GHz ~ 2450GHz)

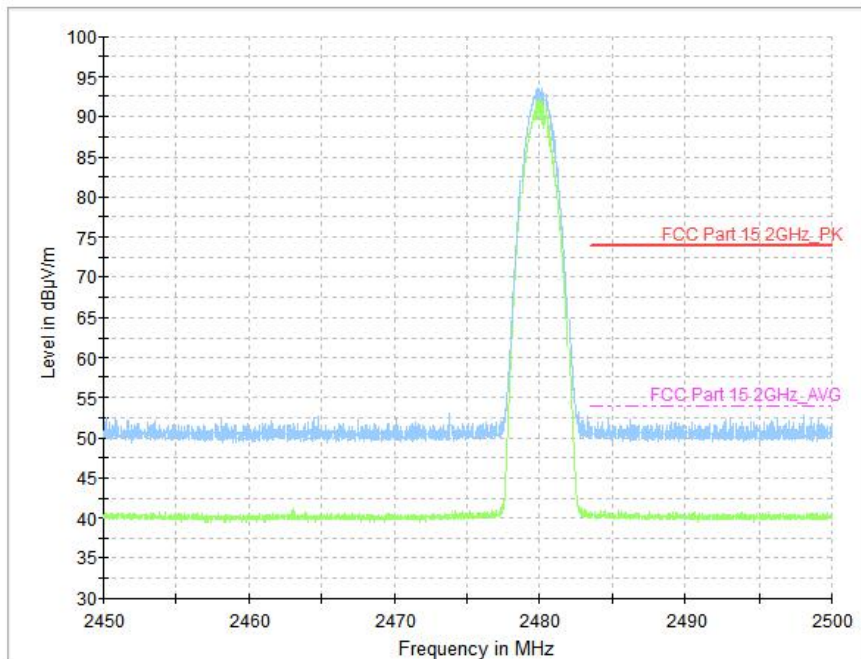


Fig. 65 Radiated Band Edges (8DPSK, Ch78, 2450GHz ~ 2500GHz)

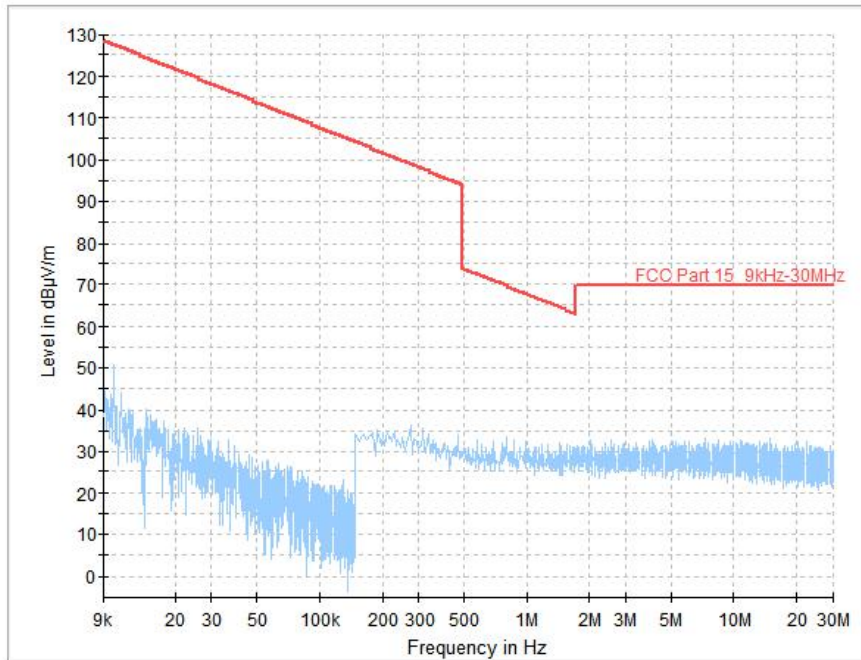


Fig. 66 Radiated Spurious Emission (All Channels, 9kHz ~ 30MHz)

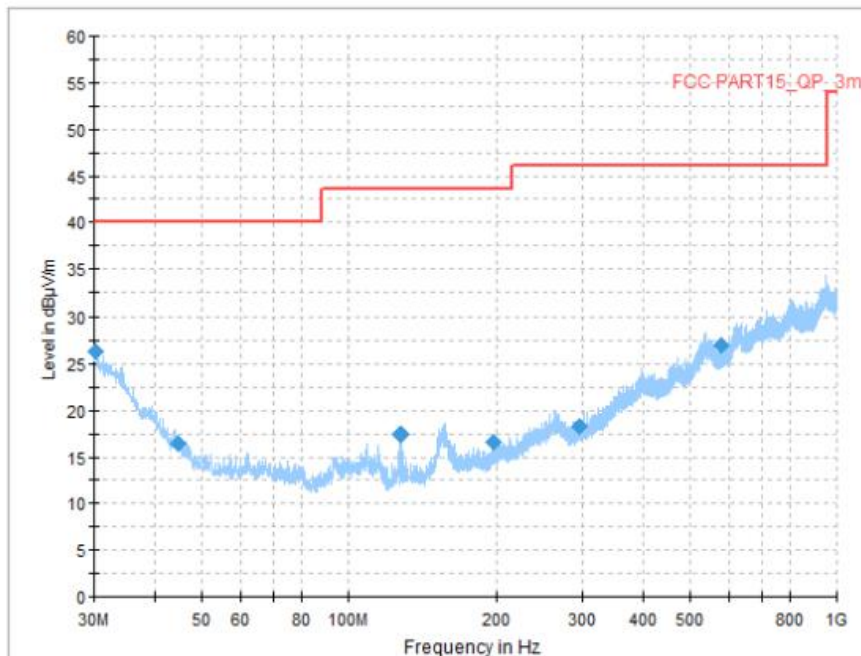


Fig. 67 Radiated Spurious Emission (All Channels, 30MHz ~ 1GHz)

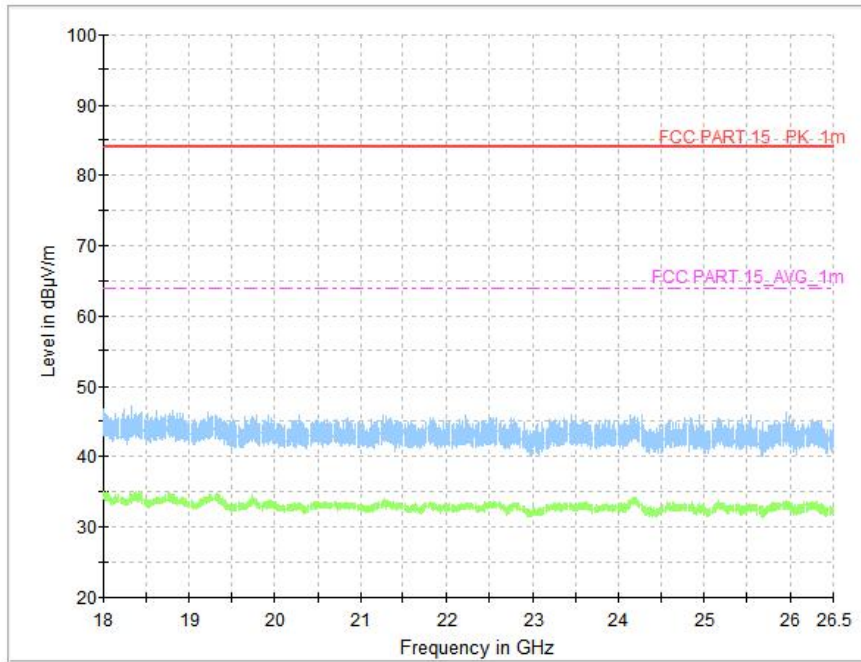


Fig. 68 Radiated Spurious Emission (All Channels, 18GHz ~ 26.5GHz)

A.5 20dB Bandwidth

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	/

Measurement Result:

Mode	Channel	20dB Bandwidth (kHz)		conclusion
GFSK	0	Fig.69	976.50	/
	39	Fig.70	971.25	
	78	Fig.71	988.50	
$\pi/4$ DQPSK	0	Fig.72	1270.50	/
	39	Fig.73	1284.00	
	78	Fig.74	1287.75	
8DPSK	0	Fig.75	1271.25	/
	39	Fig.76	1265.25	
	78	Fig.77	1261.50	

See below for test graphs.

Conclusion: PASS

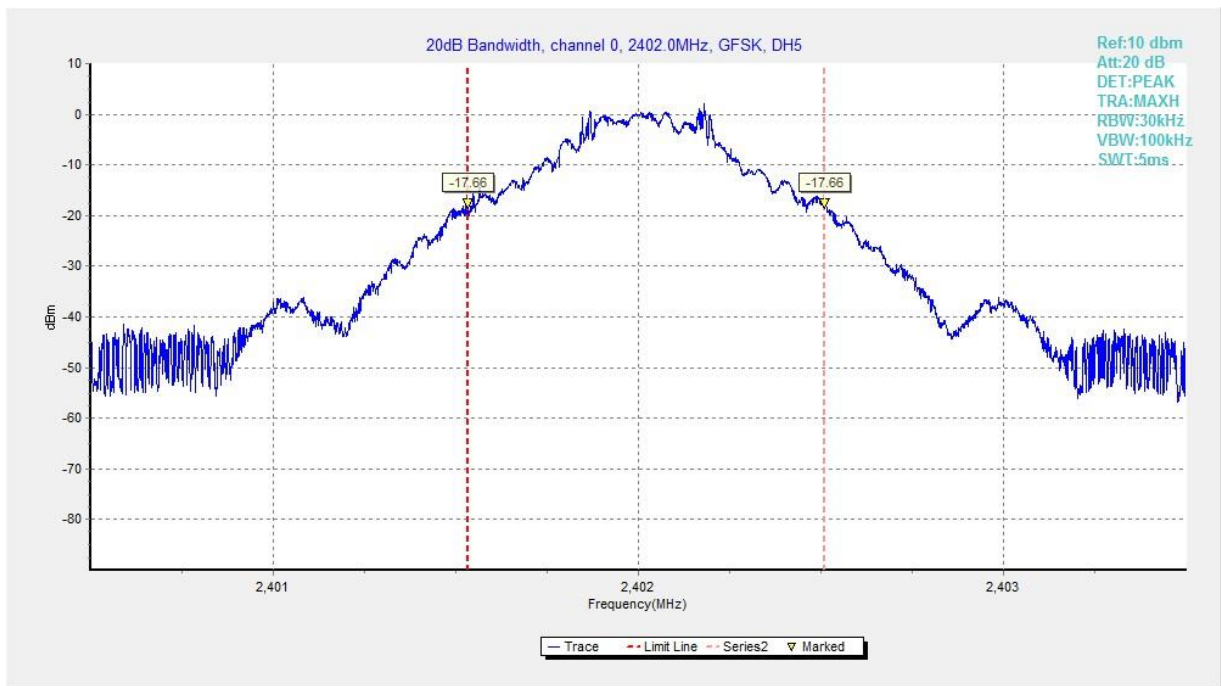


Fig. 69 20dB Bandwidth (GFSK, Ch 0)

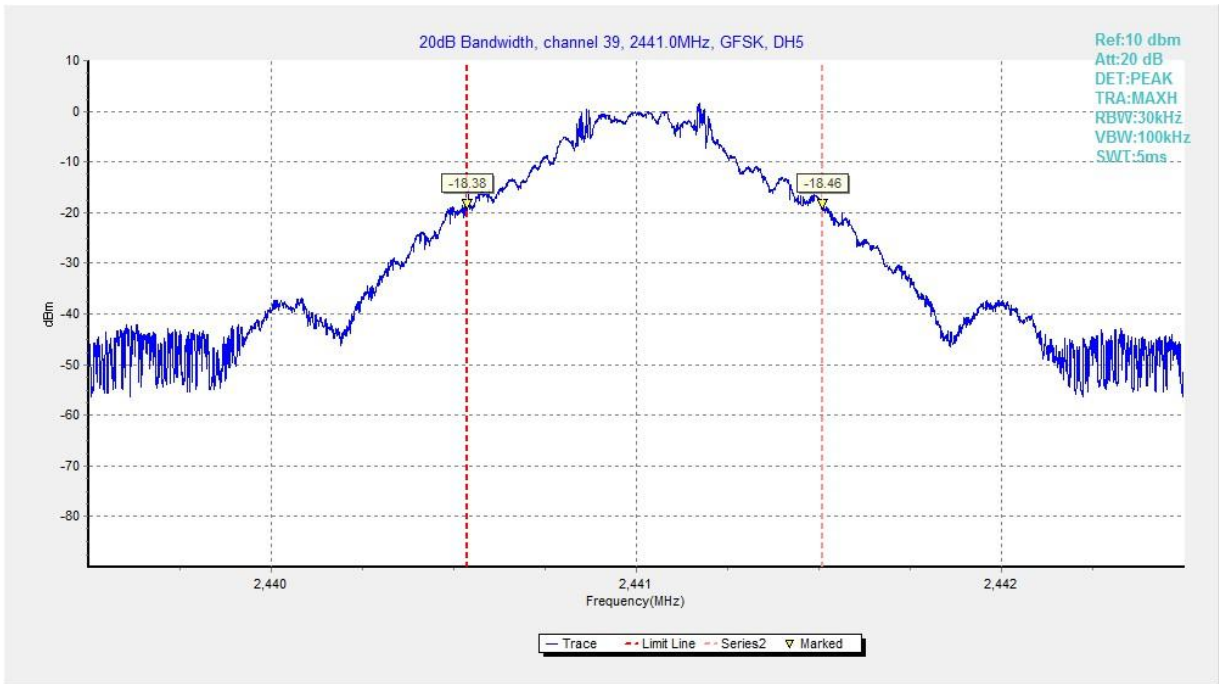


Fig. 70 20dB Bandwidth (GFSK, Ch 39)

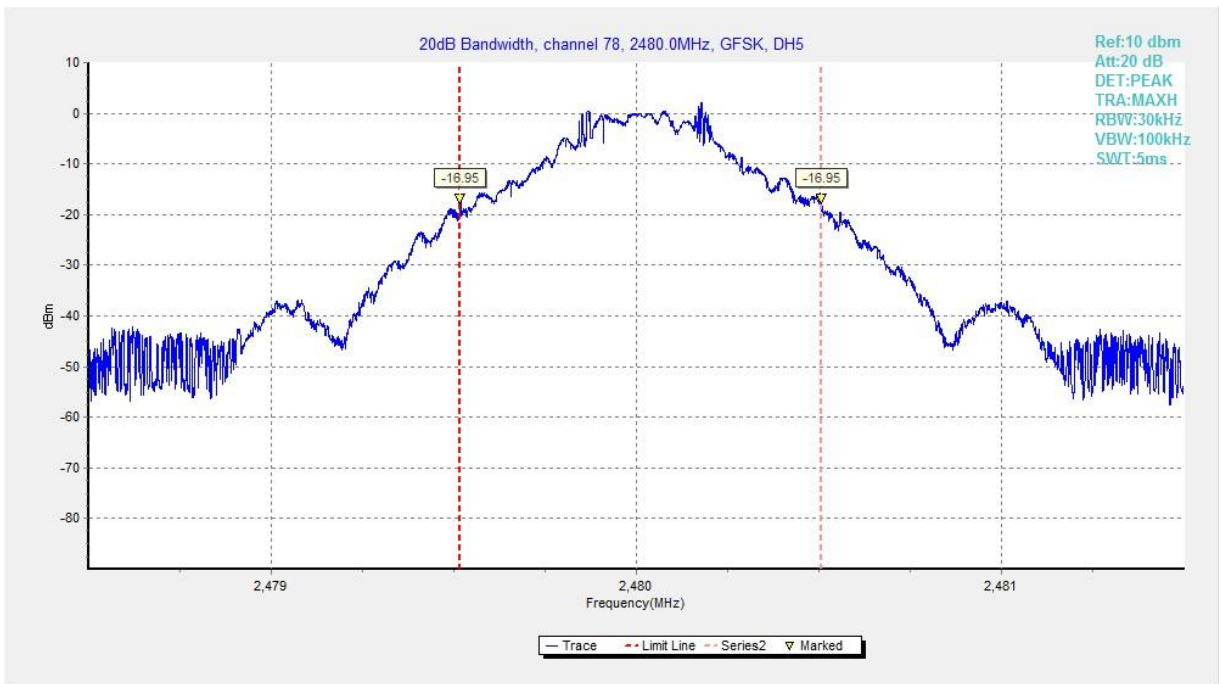


Fig. 71 20dB Bandwidth (GFSK, Ch 78)

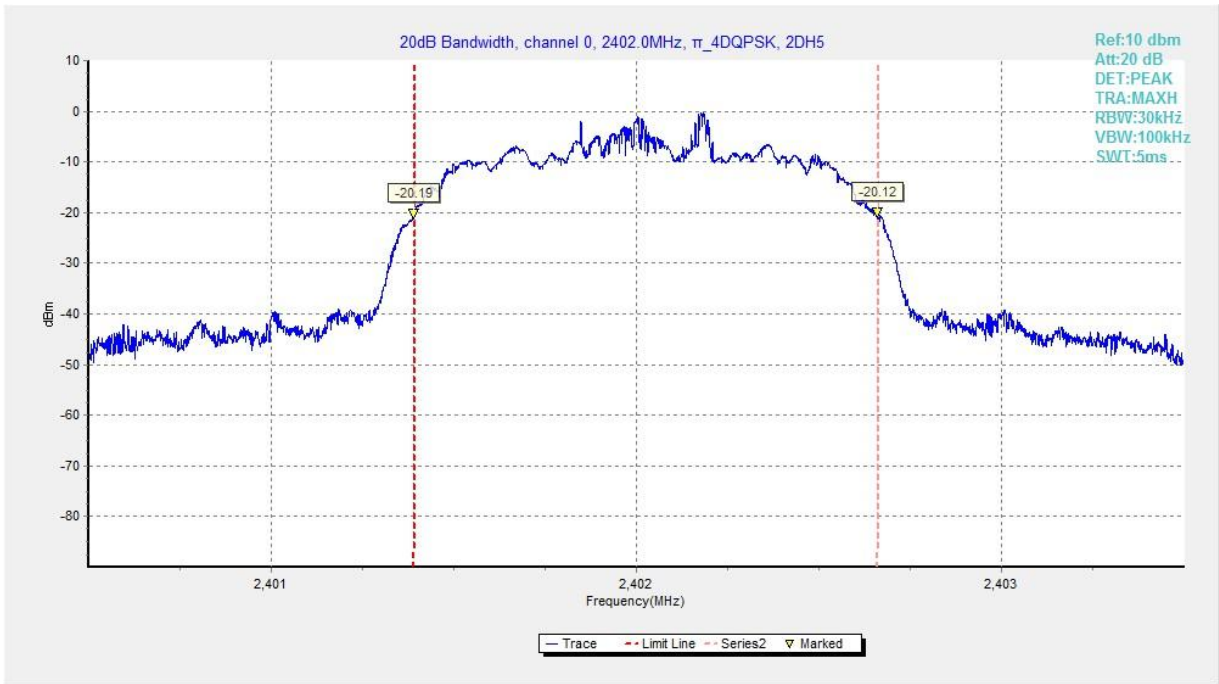


Fig. 72 20dB Bandwidth (π /4 DQPSK, Ch 0)

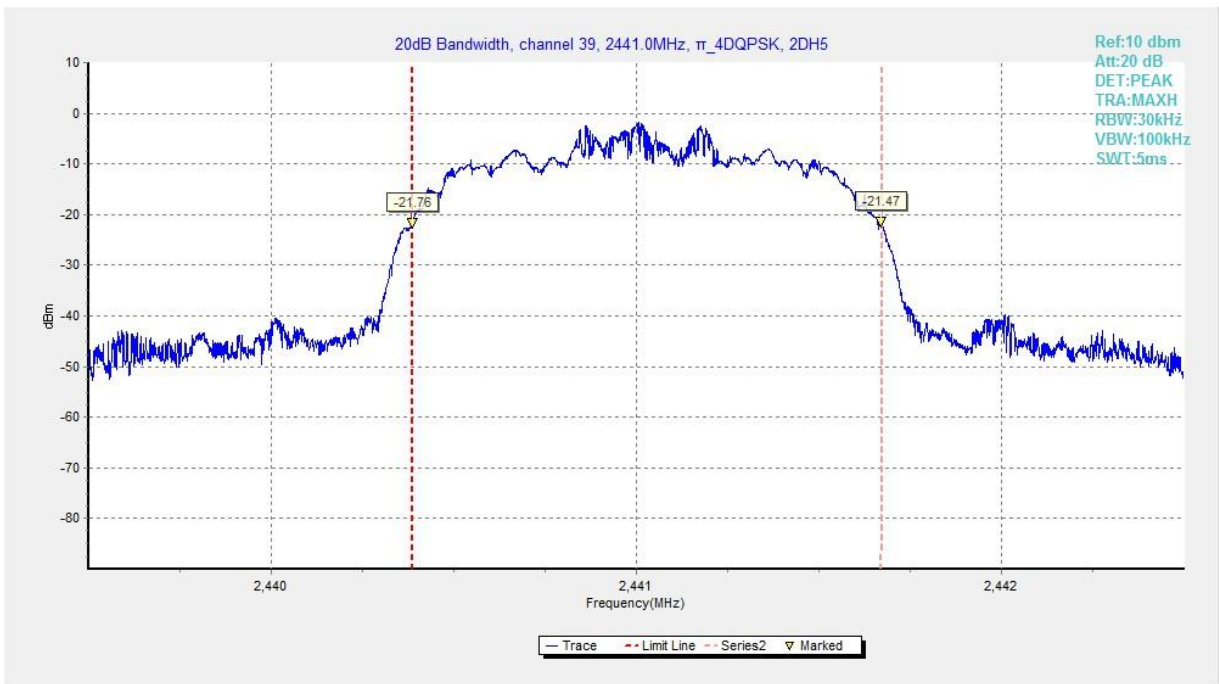


Fig. 73 20dB Bandwidth (π /4 DQPSK, Ch 39)

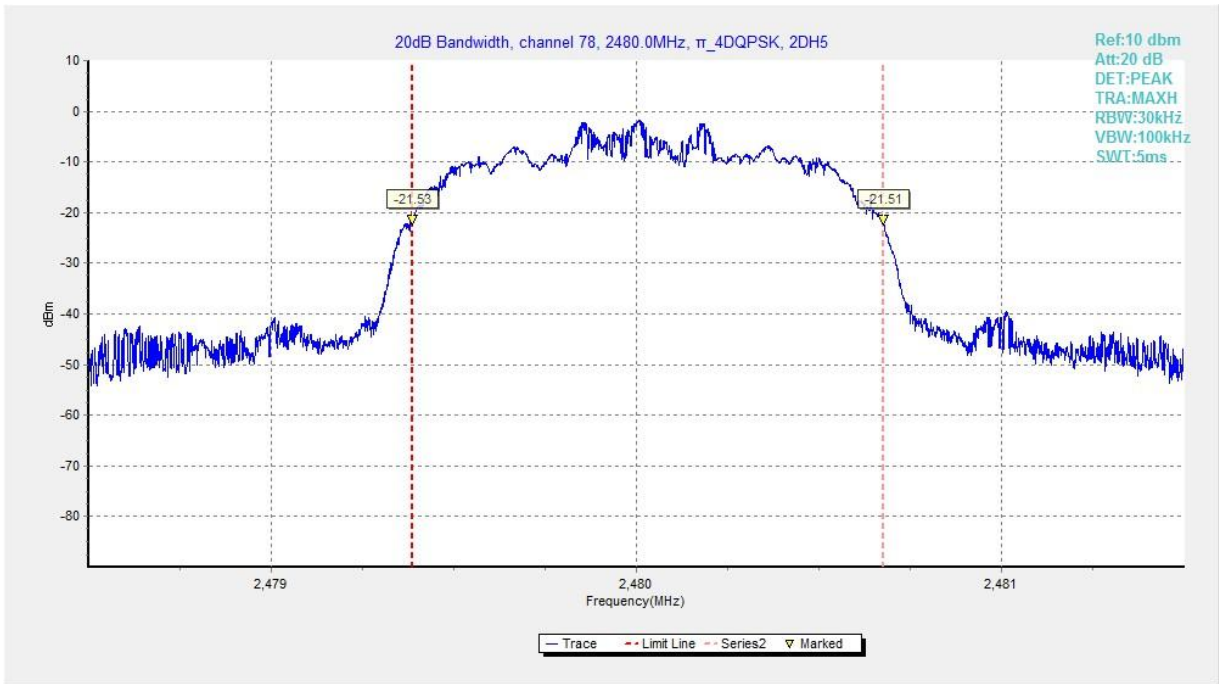


Fig. 74 20dB Bandwidth ($\pi/4$ DQPSK, Ch 78)

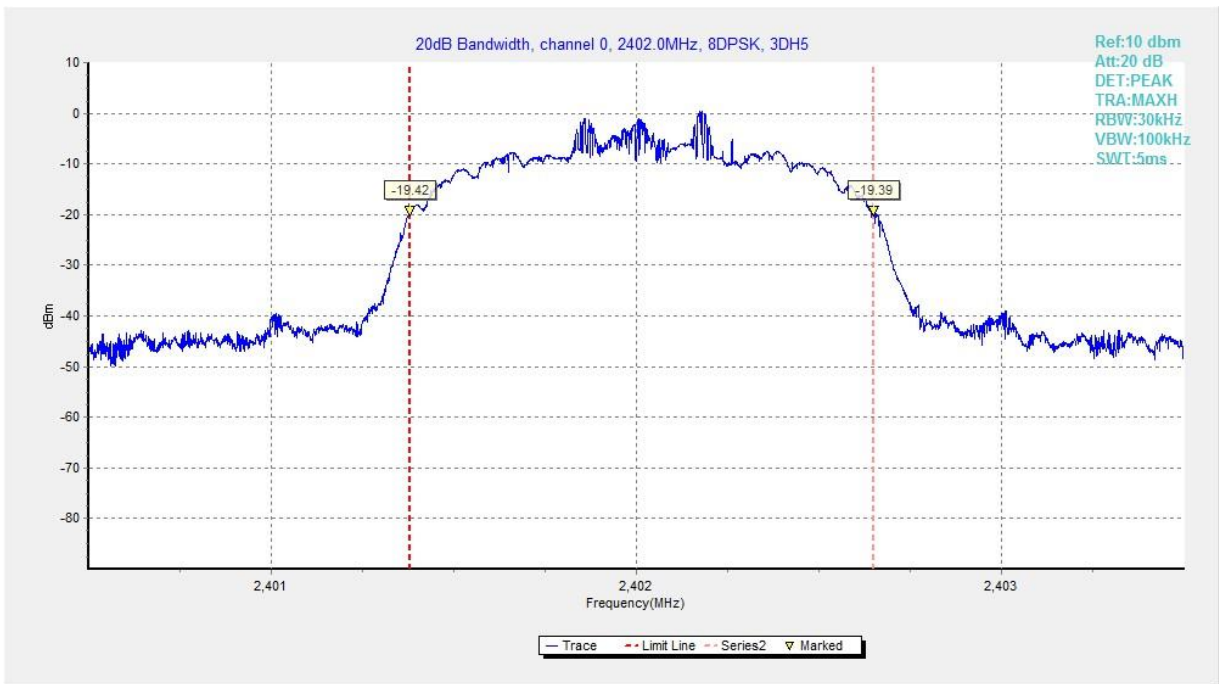


Fig. 75 20dB Bandwidth (8DPSK, Ch 0)

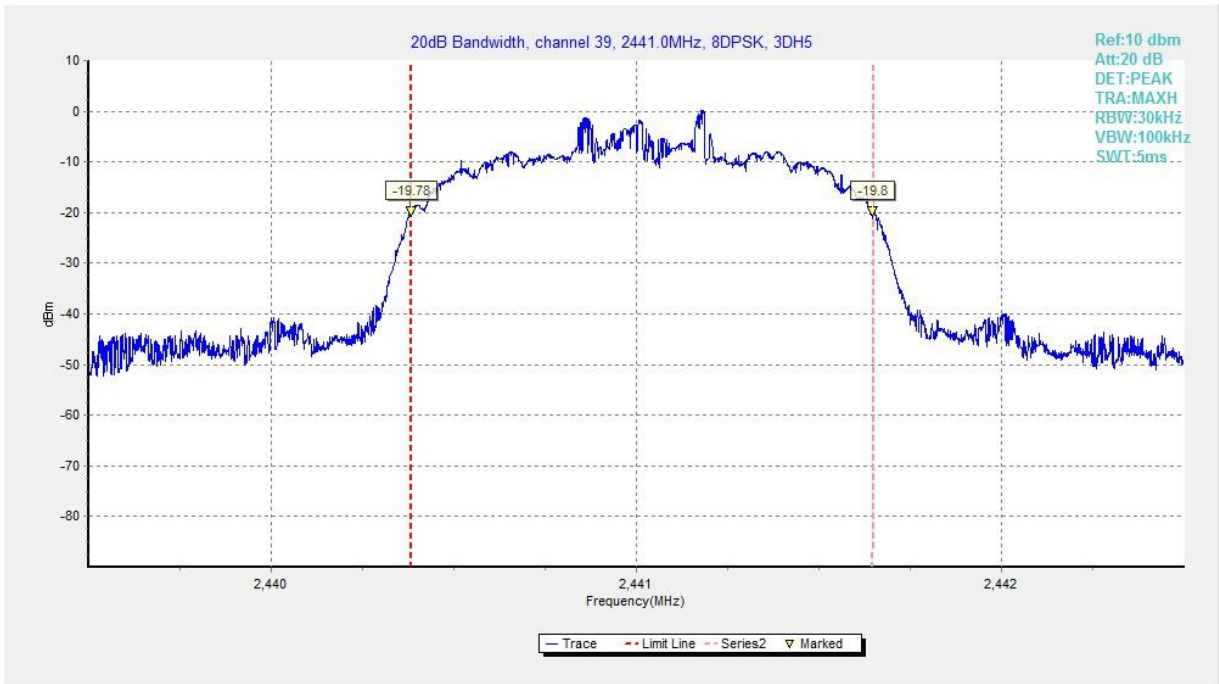


Fig. 76 20dB Bandwidth (8DPSK, Ch 39)

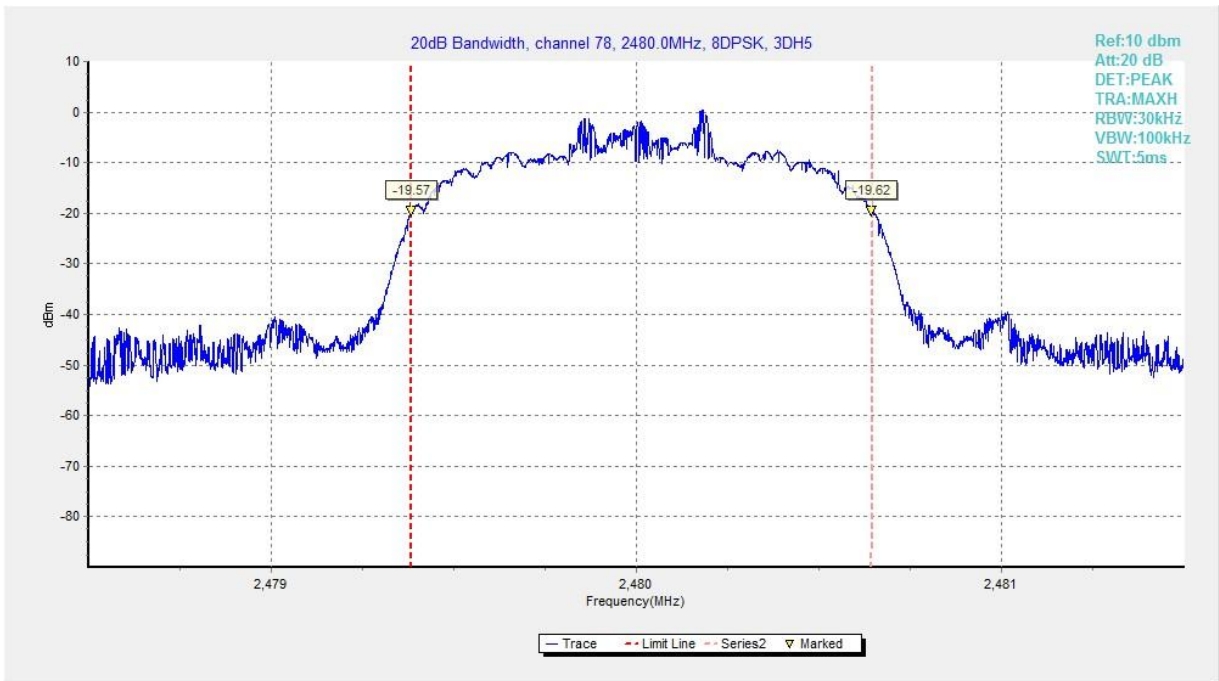


Fig. 77 20dB Bandwidth (8DPSK, Ch 78)

A.6 Time of Occupancy (Dwell Time)

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (a)	< 400 ms

Measurement Results:

Mode	Channel	Packet	Dwell Time(ms)	Conclusion	
GFSK	39	DH5	Fig.78	209.63	P
			Fig.79		
$\pi/4$ DQPSK	39	2-DH5	Fig.80	187.36	P
			Fig.81		
8DPSK	39	3-DH5	Fig.82	164.15	P
			Fig.83		

See below for test graphs.

Conclusion: Pass

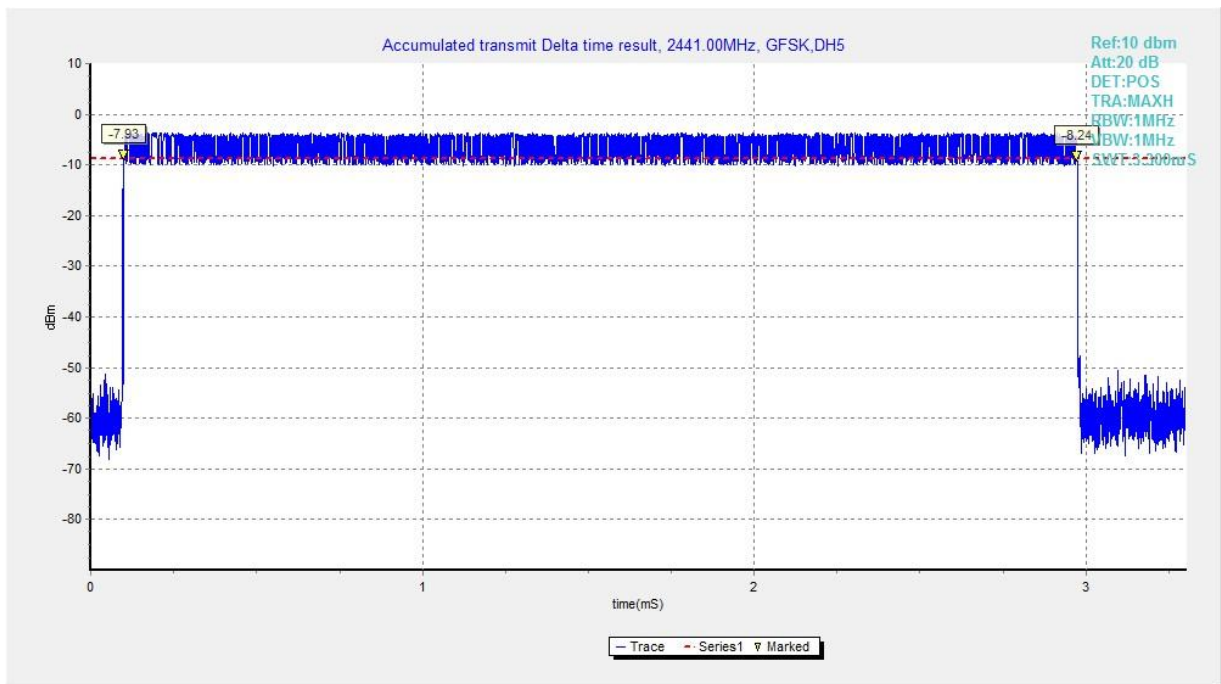


Fig. 78 Time of Occupancy (Dwell Time) (GFSK, Ch39)

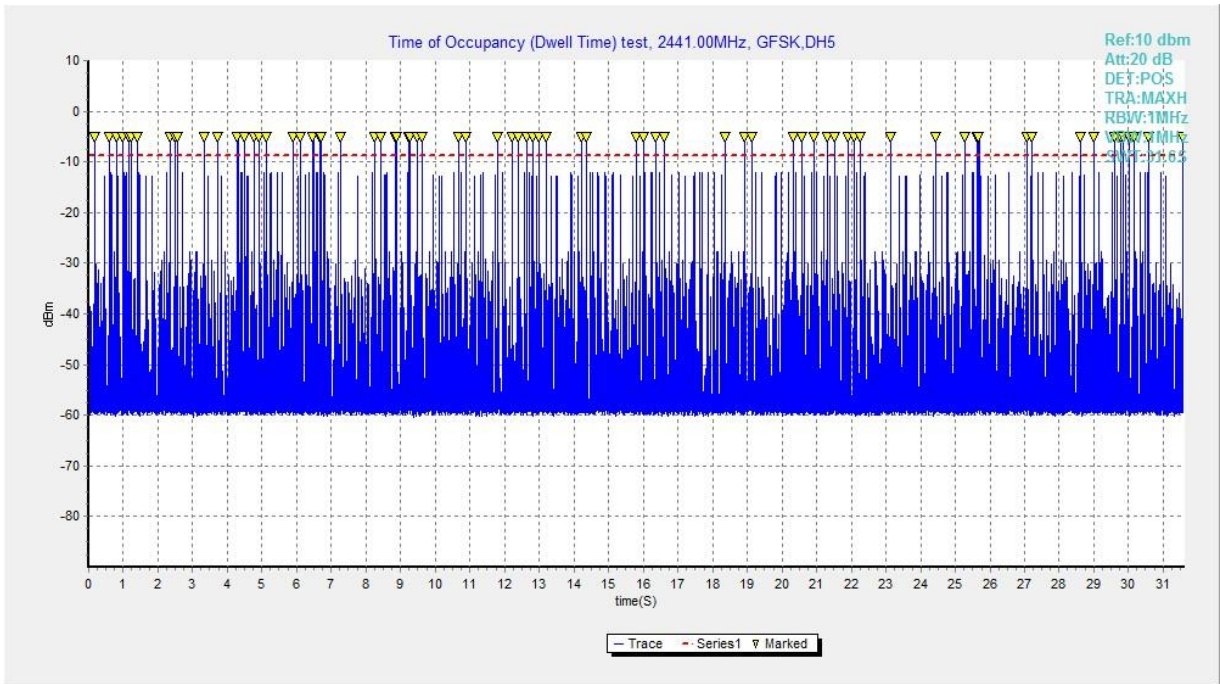


Fig. 79 Time of Occupancy (Dwell Time) (GFSK, Ch39)

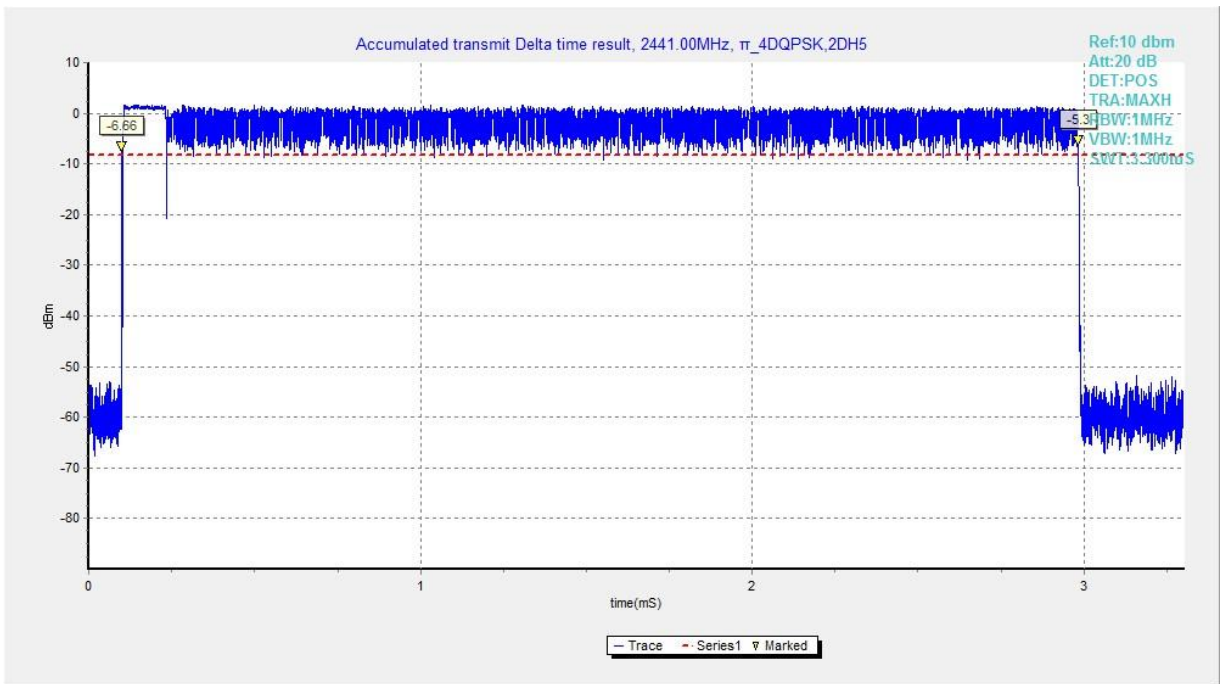


Fig. 80 Time of Occupancy (Dwell Time) ($\pi/4$ DQPSK, Ch39)

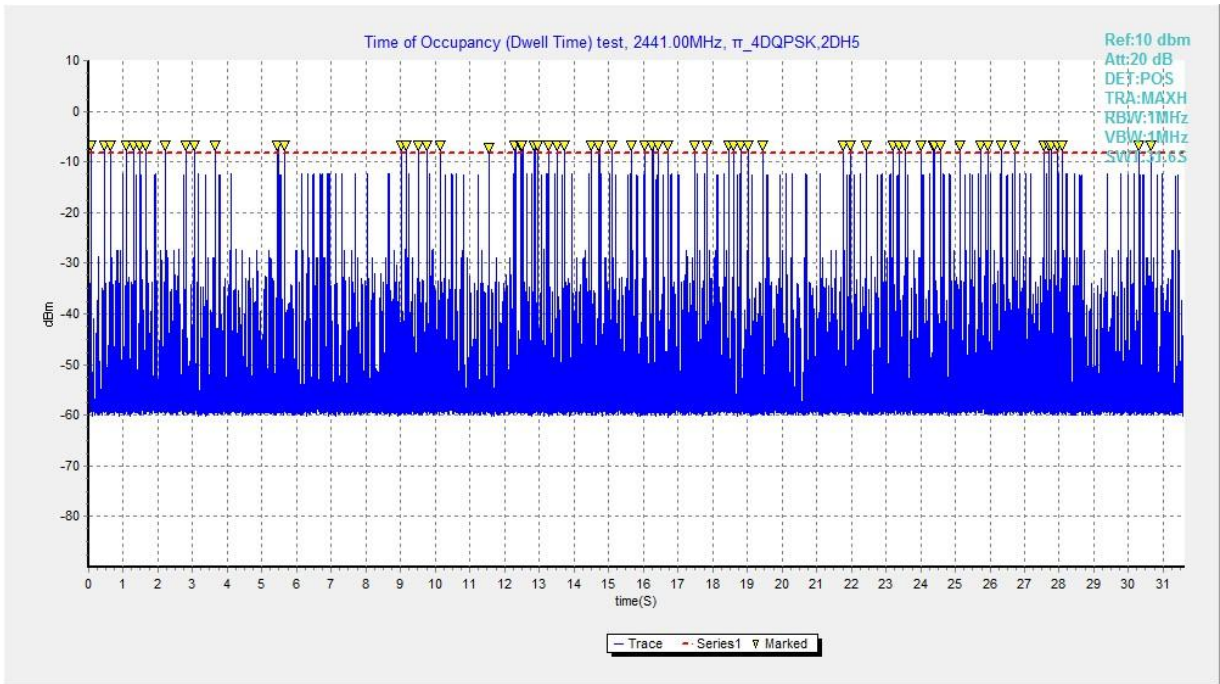


Fig. 81 Time of Occupancy (Dwell Time) (π /4 DQPSK, Ch39)

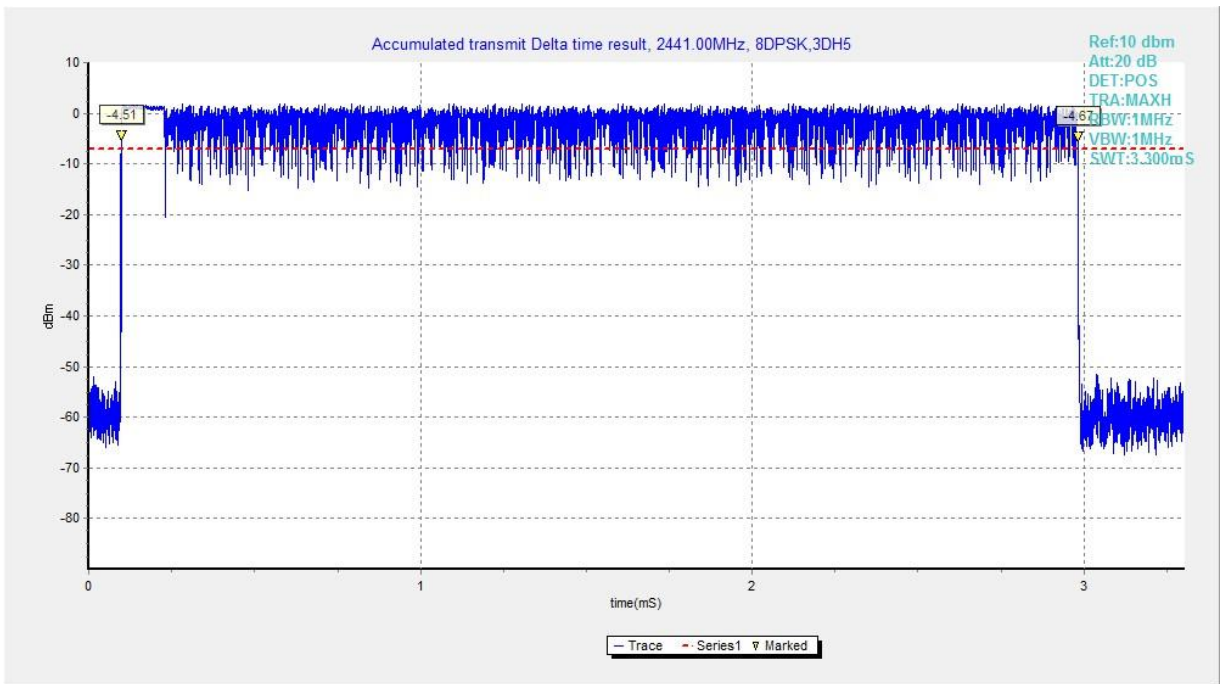


Fig. 82 Time of Occupancy (Dwell Time) (8DPSK, Ch39)

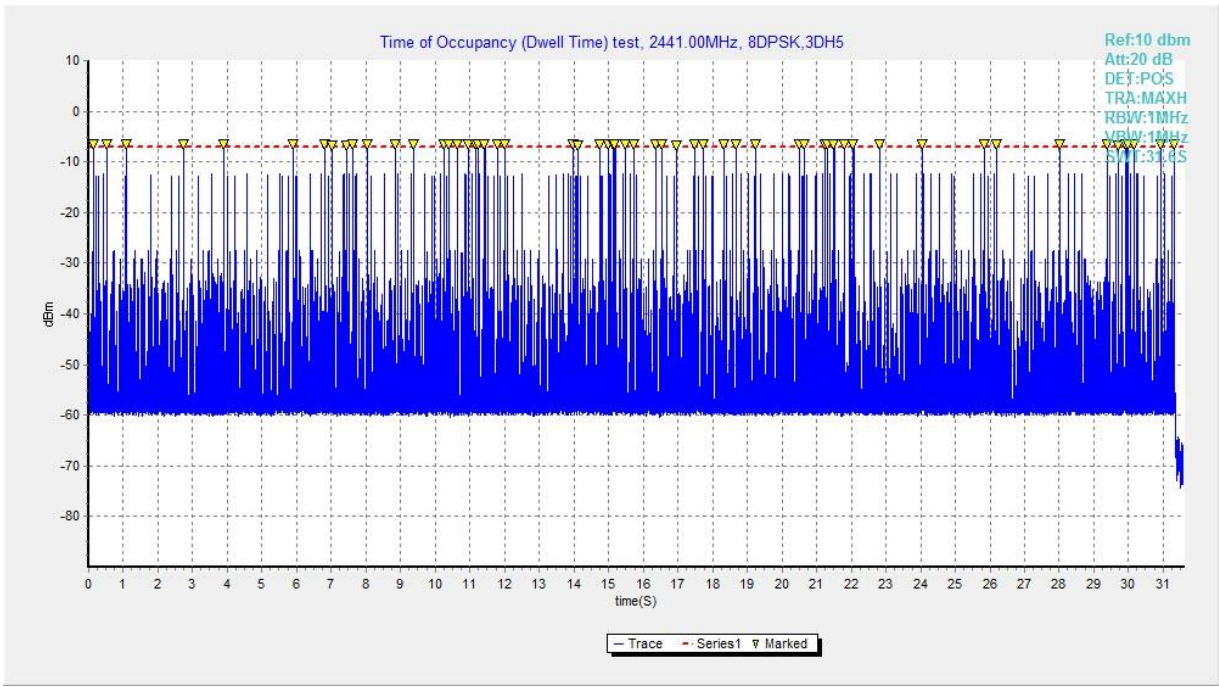


Fig. 83 Time of Occupancy (Dwell Time) (8DPSK, Ch39)

A.7 Number of Hopping Channels

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(a)	At least 15 non-overlapping channels

Measurement Results:

Mode	Packet	Number of hopping channels		Test result	Conclusion
GFSK	DH5	Fig.84	Fig.85	79	P
$\pi/4$ DQPSK	2-DH5	Fig.86	Fig.87	79	P
8DPSK	3-DH5	Fig.88	Fig.89	79	P

See below for test graphs.

Conclusion: Pass

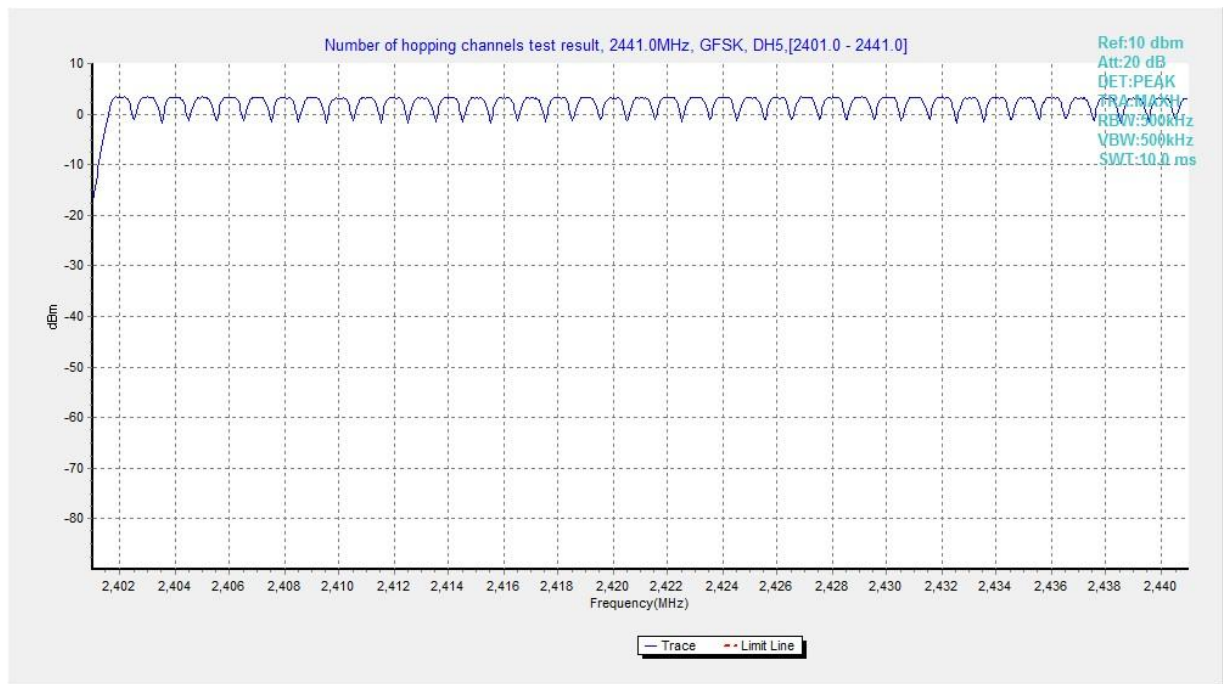


Fig. 84 Hopping channel ch0~39 (GFSK, Ch39)

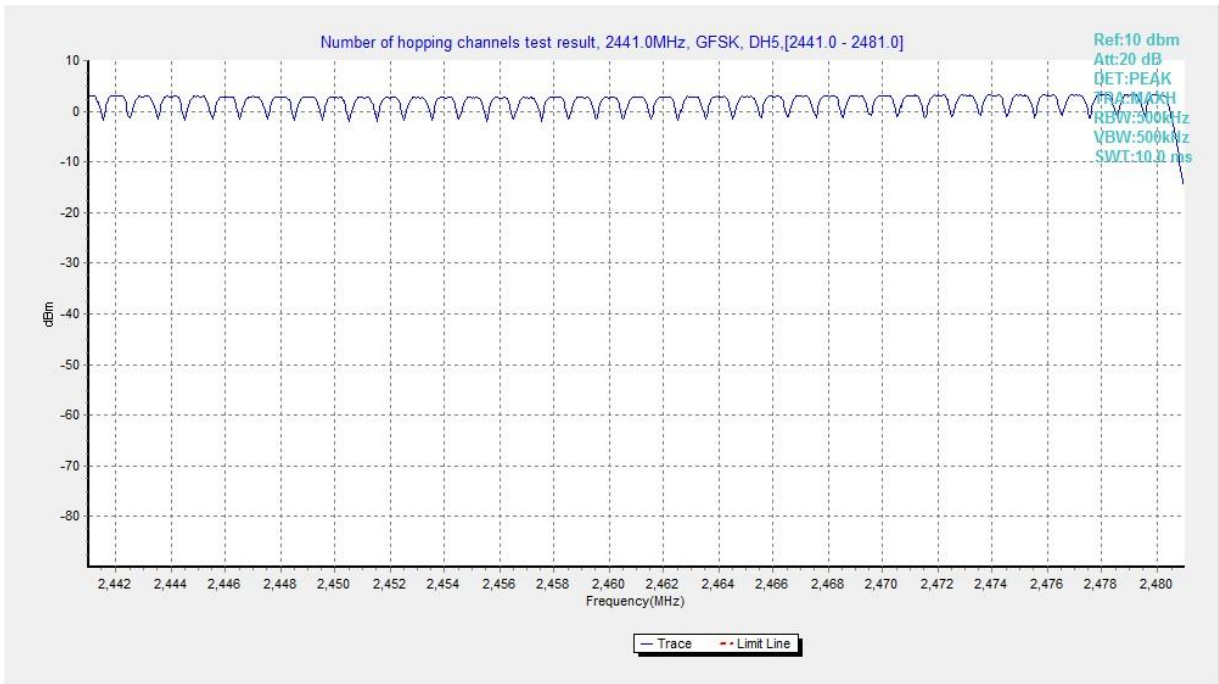


Fig. 85 Hopping channel ch40~78 (GFSK, Ch39)

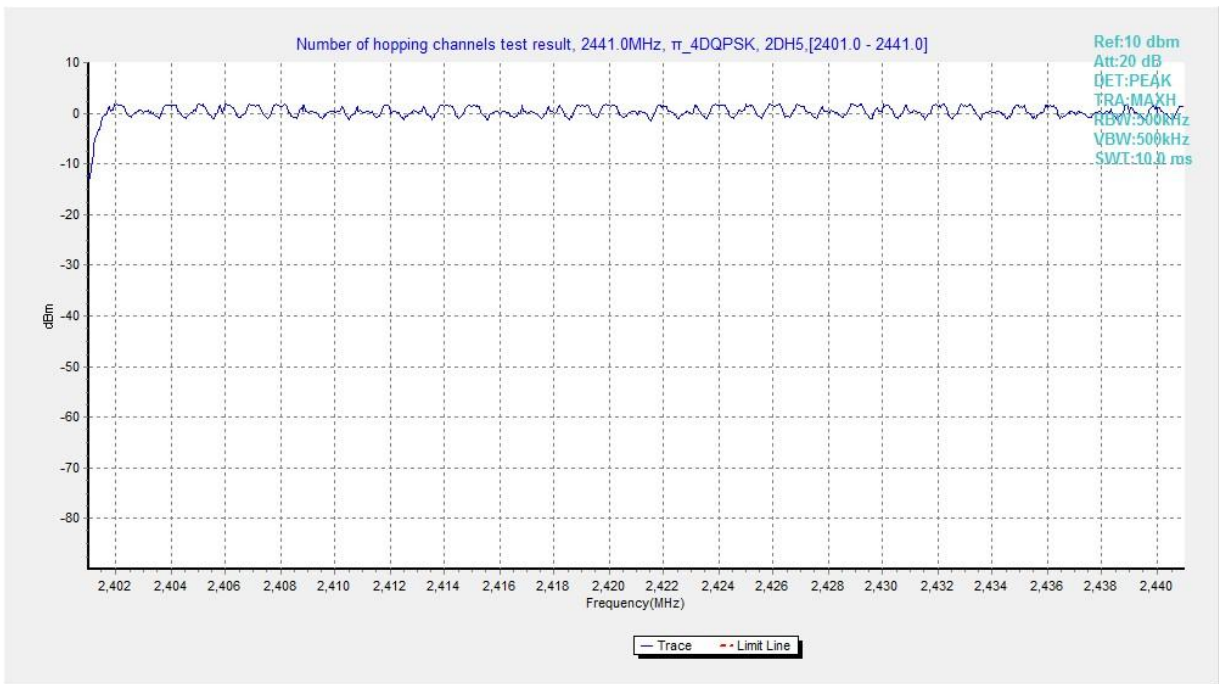


Fig. 86 Hopping channel ch0~39 ($\pi/4$ DQPSK, Ch39)

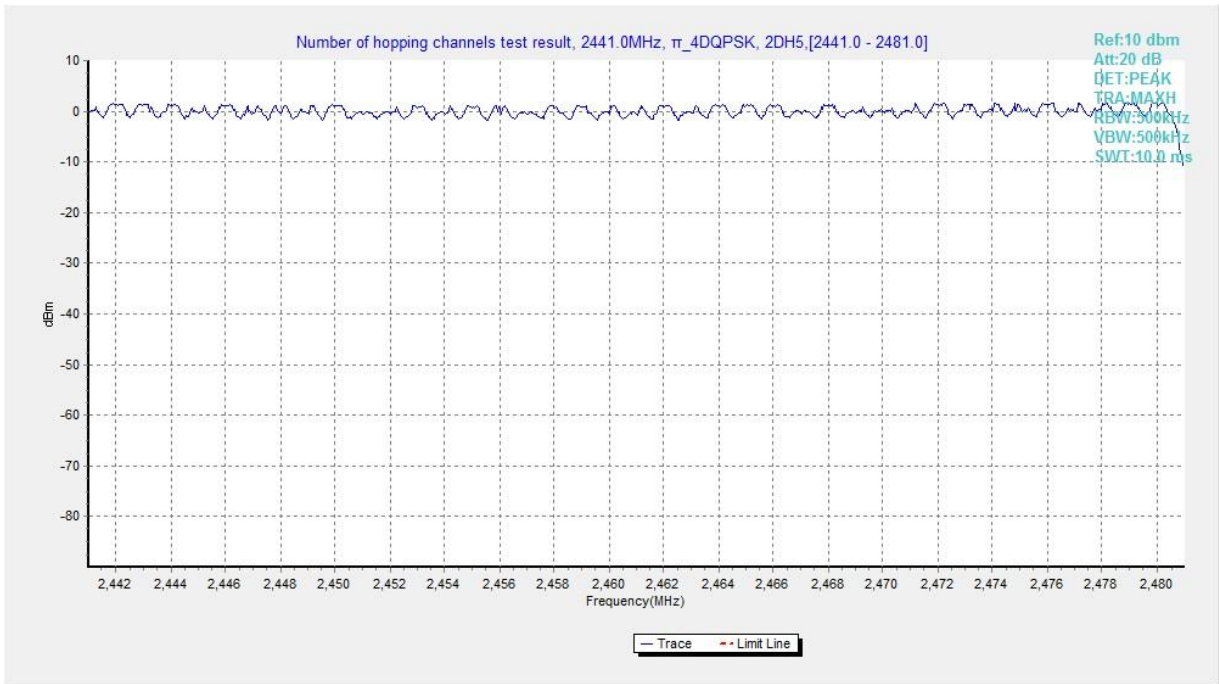


Fig. 87 Hopping channel ch40~78 ($\pi/4$ DQPSK, Ch39)

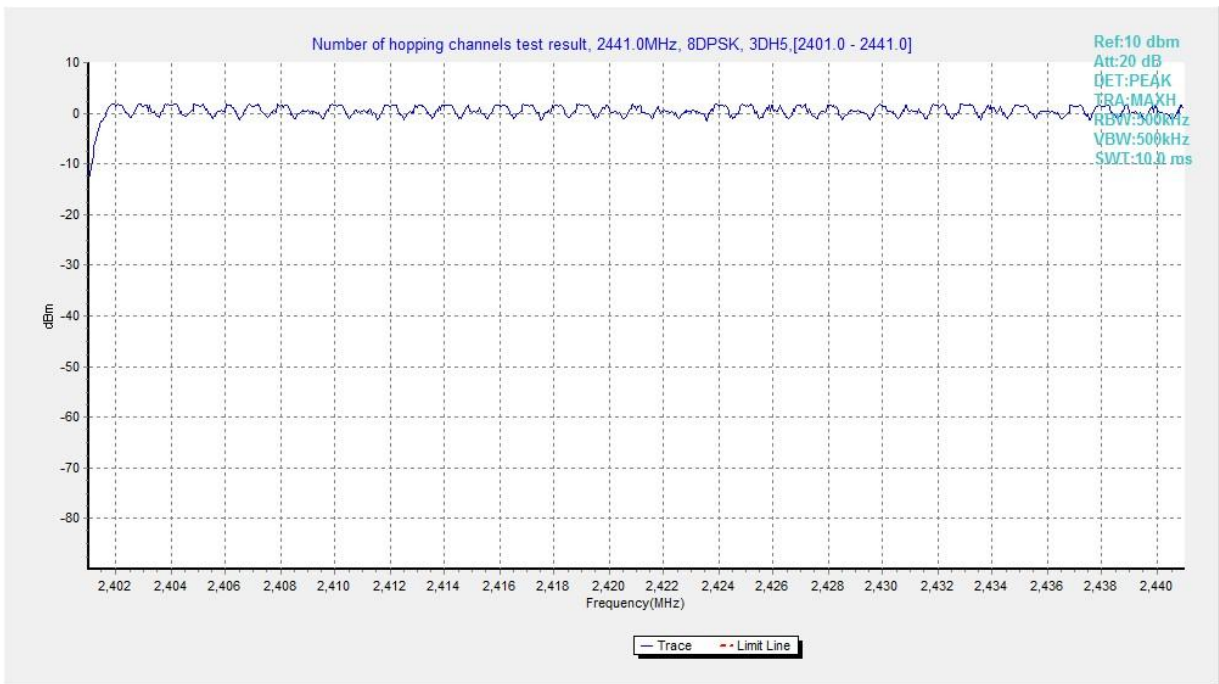


Fig. 88 Hopping channel ch0~39 (8DPSK, Ch39)

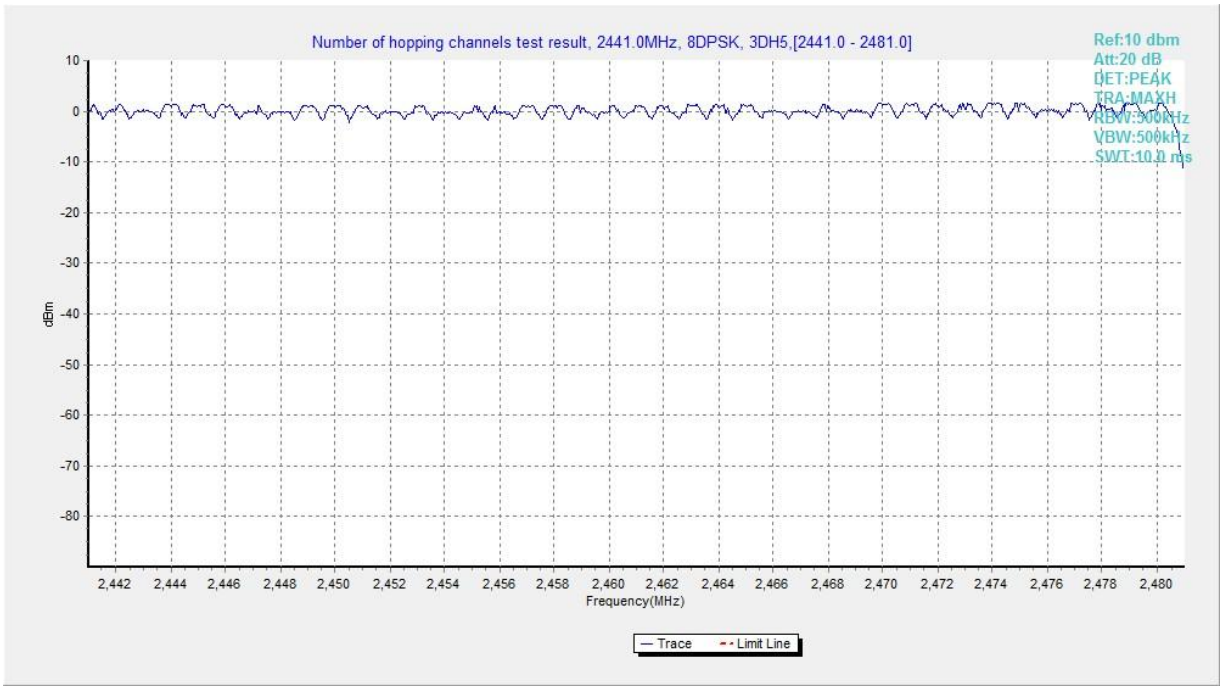


Fig. 89 Hopping channel ch40~78 (8DPSK, Ch39)

A.8 Carrier Frequency Separation

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(a)	By a minimum of 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater

Measurement Results:

Mode	Channel	Packet	Separation of hopping channels	Test result (MHz)	Conclusion
GFSK	39	DH5	Fig.90	1.00	P
$\pi/4$ DQPSK	39	2-DH5	Fig.91	1.00	P
8DPSK	39	3-DH5	Fig.92	1.00	P

See below for test graphs.

Conclusion: Pass

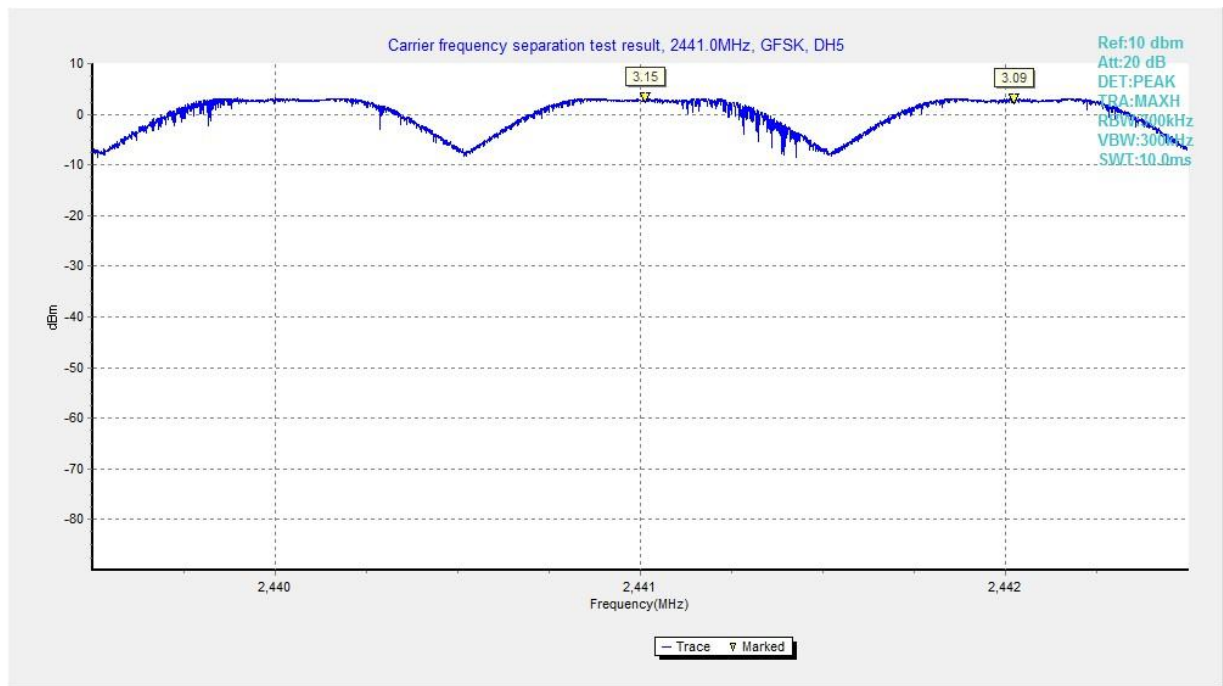


Fig. 90 Carrier Frequency Separation (GFSK, Ch39)

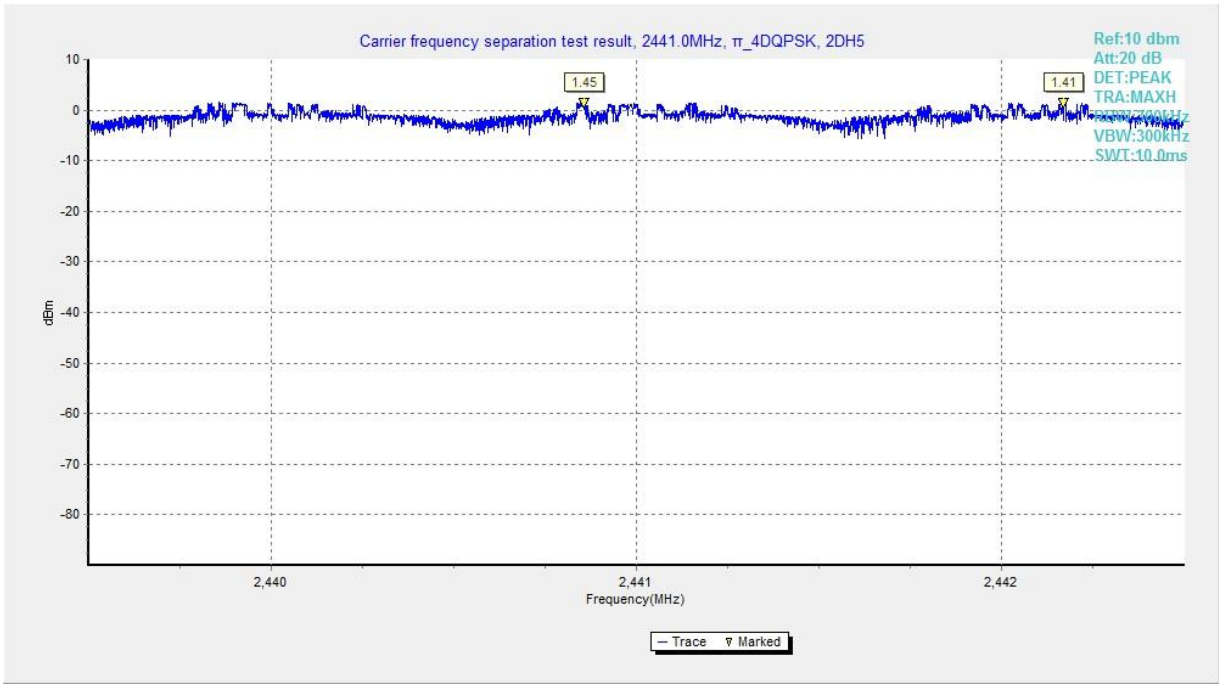


Fig. 91 Carrier Frequency Separation ($\pi/4$ DQPSK, Ch39)

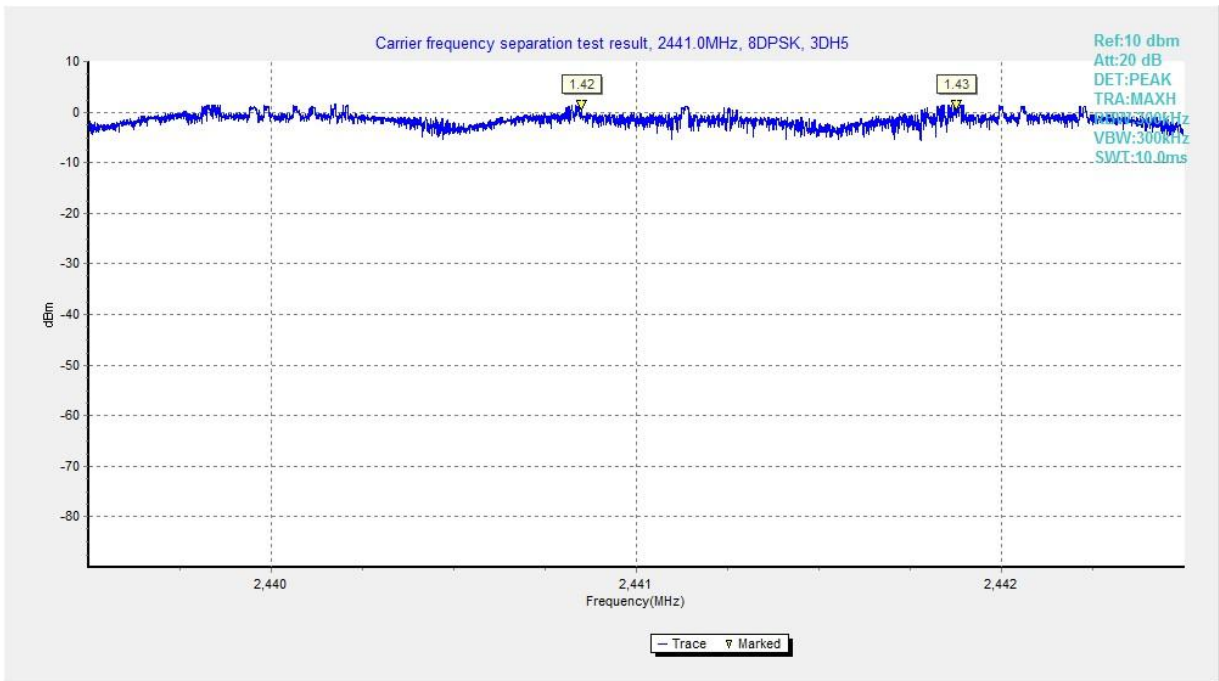


Fig. 92 Carrier Frequency Separation (8DPSK, Ch39)

A.9 AC Power line Conducted Emission

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Measurement Result and limit:

BT (Quasi-peak Limit) - AE2

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
		Traffic	Idle	
0.15 to 0.5	66 to 56	Fig.93	Fig.94	P
0.5 to 5	56			
5 to 30	60			

Note: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

BT (Average Limit) - AE2

Frequency range (MHz)	Average-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
		Traffic	Idle	
0.15 to 0.5	56 to 46	Fig.85	Fig.86	P
0.5 to 5	46			
5 to 30	50			

Note: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Note: The measurement results include the L1 and N measurements.

See below for test graphs.

Conclusion: Pass

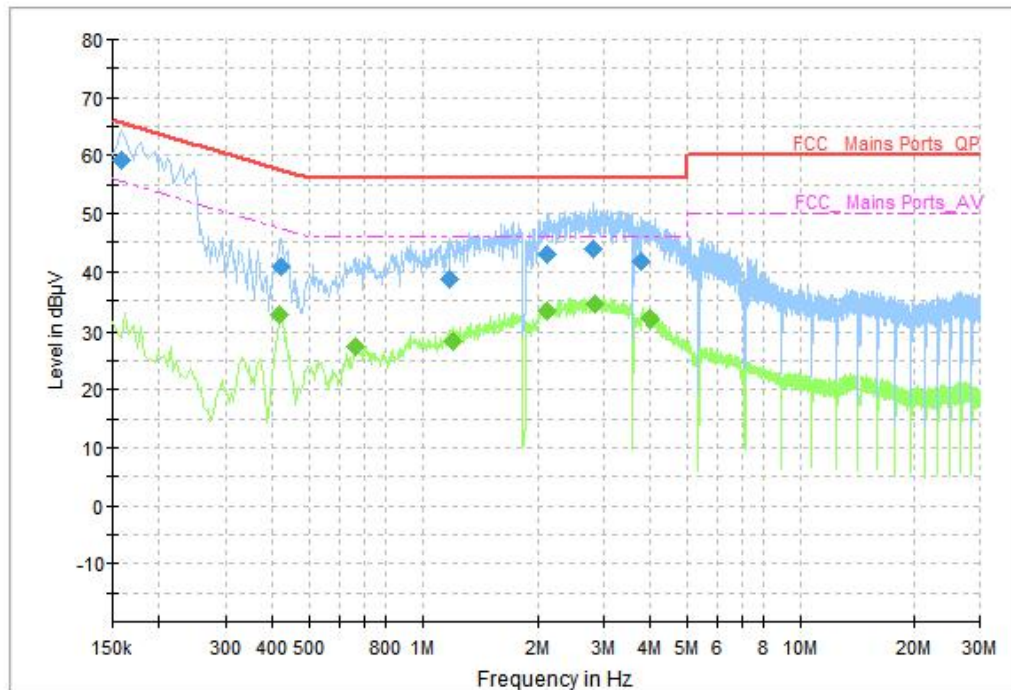


Fig. 93 AC Powerline Conducted Emission (Traffic, AE2, 120V)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.158000	59.18	65.57	6.38	N	ON	10
0.422000	40.96	57.41	16.45	N	ON	10
1.186000	38.81	56.00	17.19	N	ON	10
2.110000	43.02	56.00	12.98	N	ON	10
2.798000	43.98	56.00	12.02	N	ON	10
3.786000	41.88	56.00	14.12	N	ON	10

Measurement Results: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.418000	32.72	47.49	14.77	N	ON	10
0.662000	27.39	46.00	18.61	N	ON	10
1.210000	28.31	46.00	17.69	N	ON	10
2.118000	33.21	46.00	12.79	N	ON	10
2.854000	34.32	46.00	11.68	N	ON	10
3.978000	31.96	46.00	14.04	N	ON	10

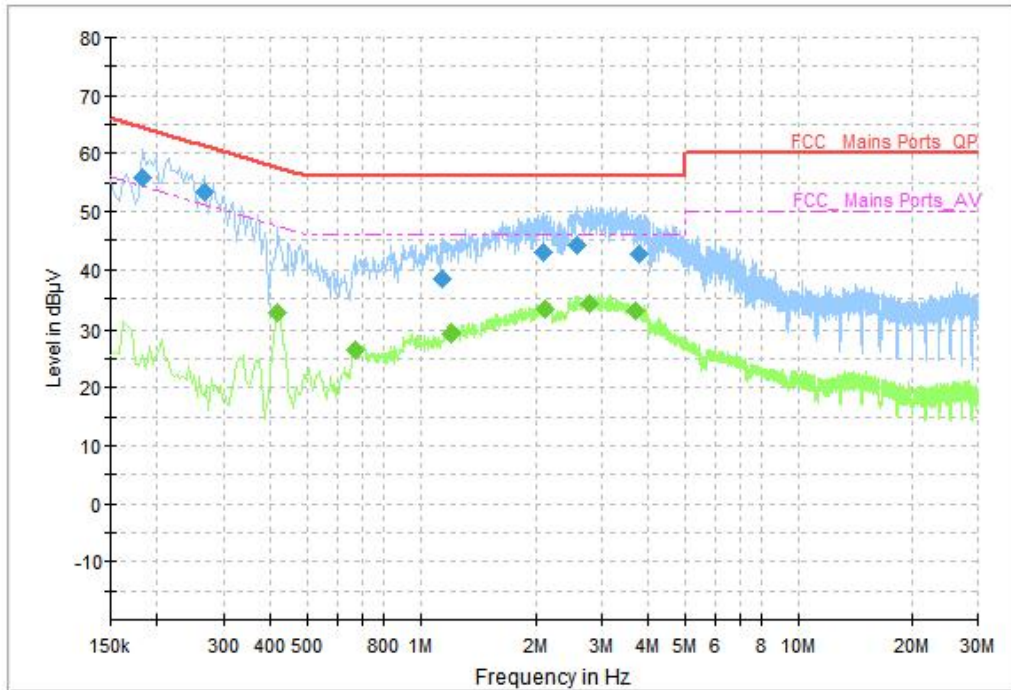


Fig. 94 AC Power line Conducted Emission (Idle, AE2, 120V)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.182000	55.83	64.39	8.56	L1	ON	10
0.266000	53.52	61.24	7.72	L1	ON	10
1.138000	38.37	56.00	17.63	N	ON	10
2.102000	43.00	56.00	13.00	N	ON	10
2.570000	44.11	56.00	11.89	N	ON	10
3.762000	42.81	56.00	13.19	N	ON	10

Measurement Results: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.418000	32.68	47.49	14.80	N	ON	10
0.674000	26.42	46.00	19.58	N	ON	10
1.202000	29.38	46.00	16.62	N	ON	10
2.110000	33.17	46.00	12.83	N	ON	10
2.782000	34.03	46.00	11.97	N	ON	10
3.694000	32.83	46.00	13.17	N	ON	10

END OF REPORT