

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

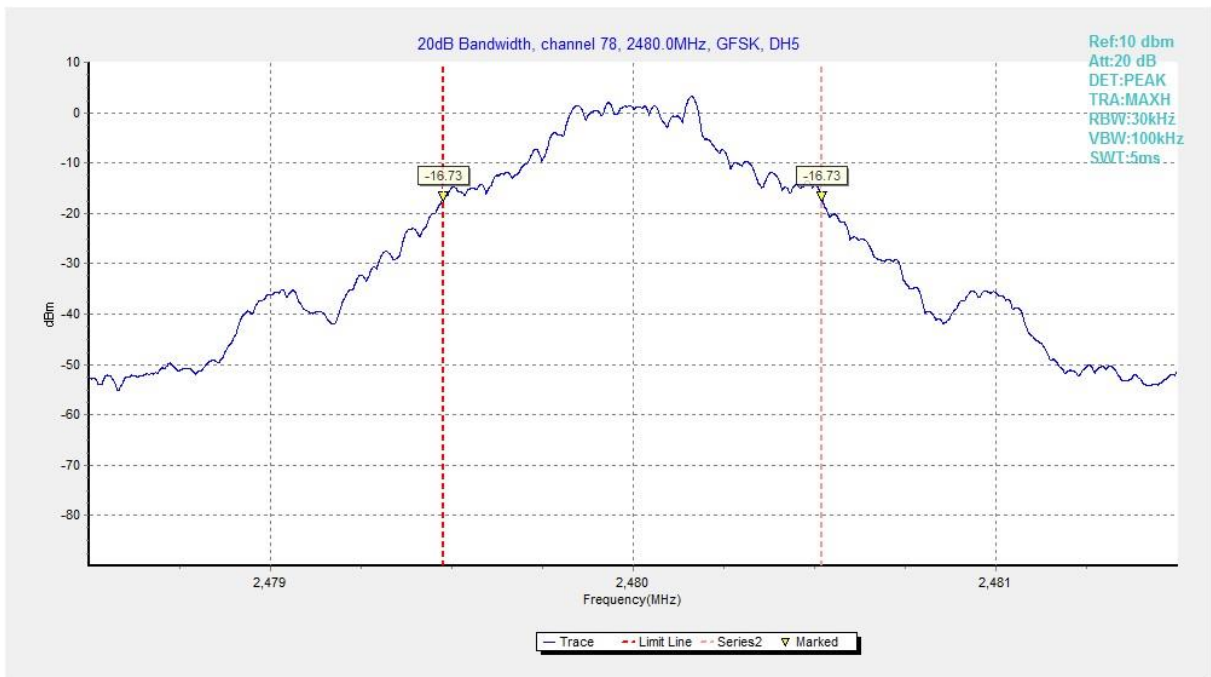


Fig. 71 20dB Bandwidth (GFSK, Ch 78)

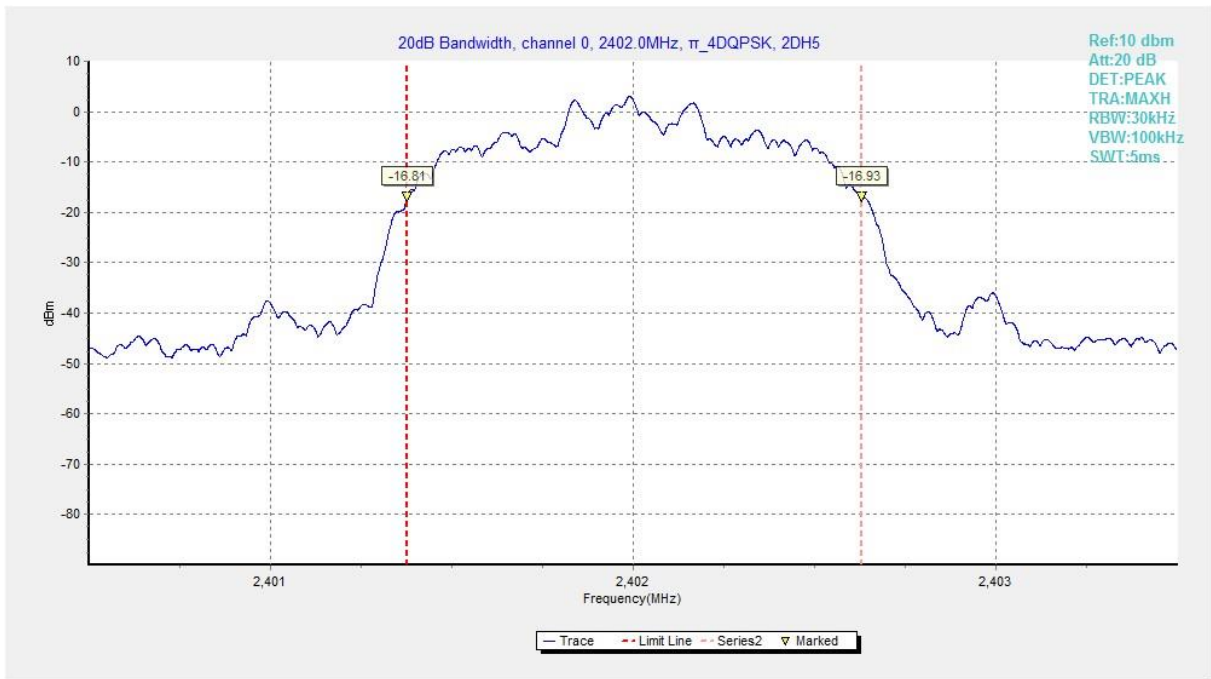


Fig. 72 20dB Bandwidth (π /4 DQPSK, Ch 0)

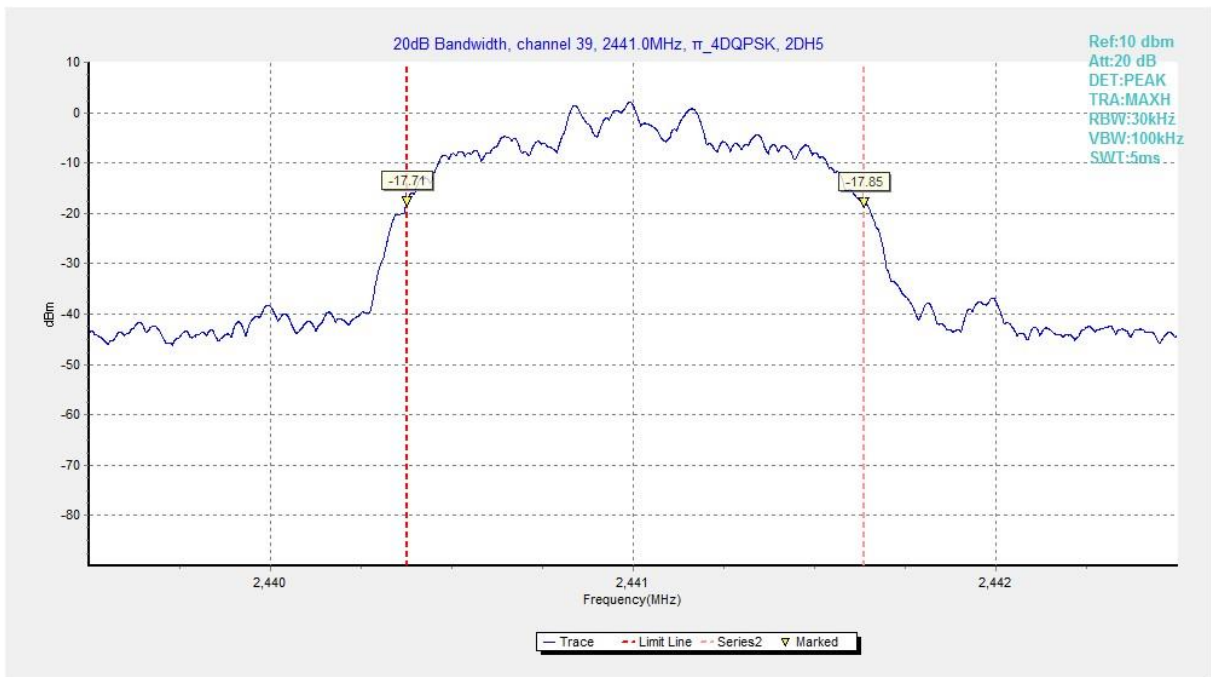


Fig. 73 20dB Bandwidth (π /4 DQPSK, Ch 39)

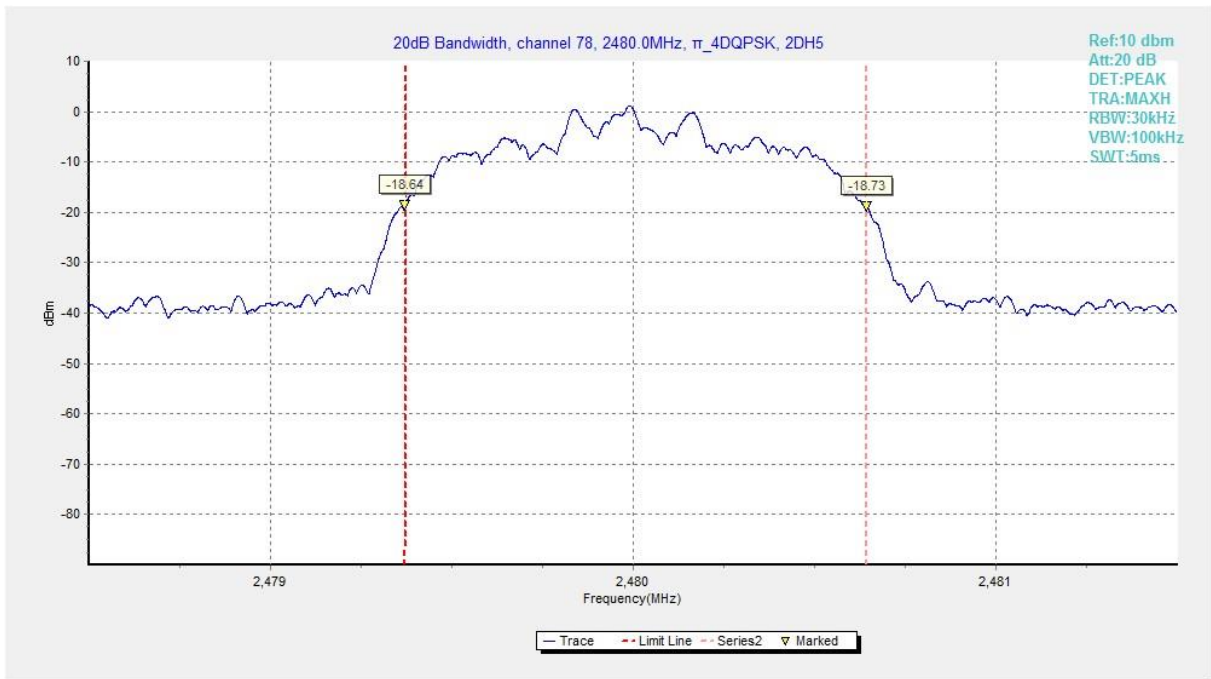


Fig. 74 20dB Bandwidth ($\pi/4$ DQPSK, Ch 78)

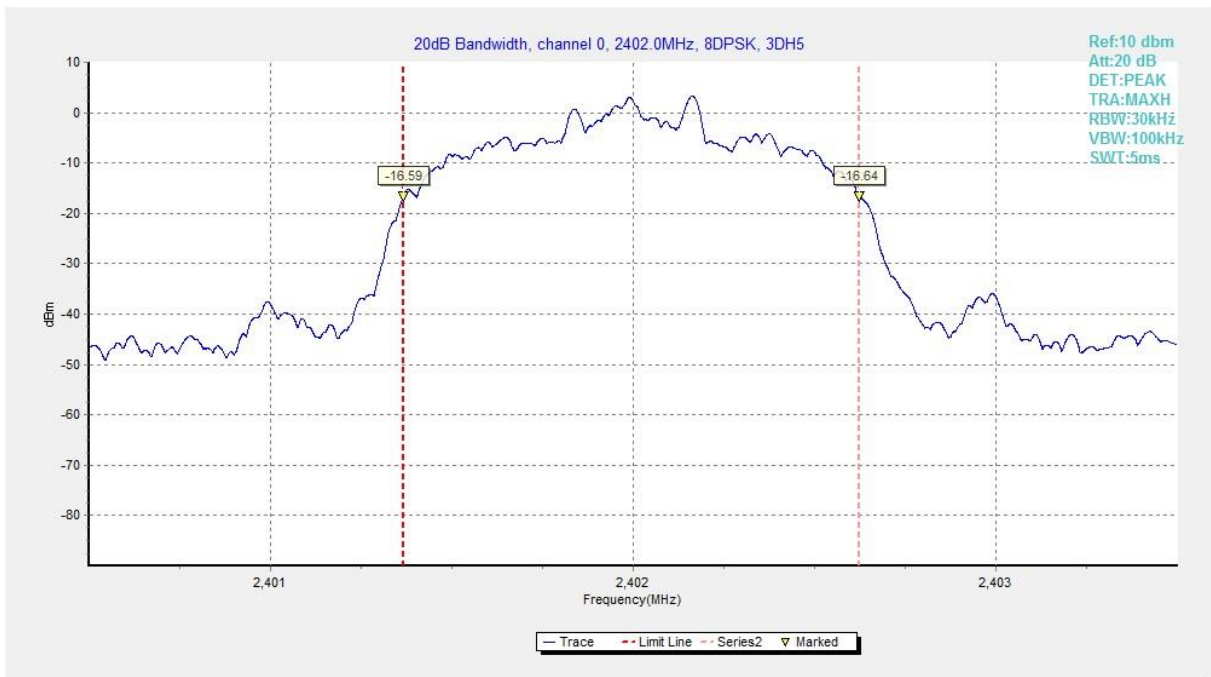


Fig. 75 20dB Bandwidth (8DPSK, Ch 0)

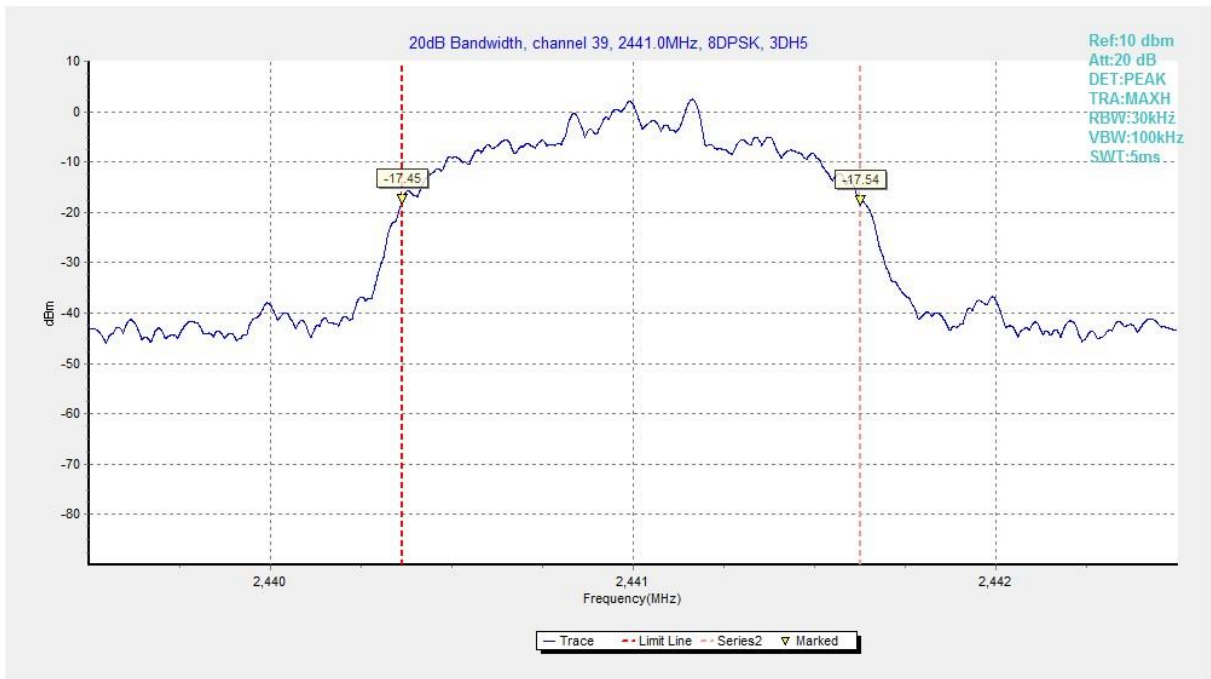


Fig. 76 20dB Bandwidth (8DPSK, Ch 39)

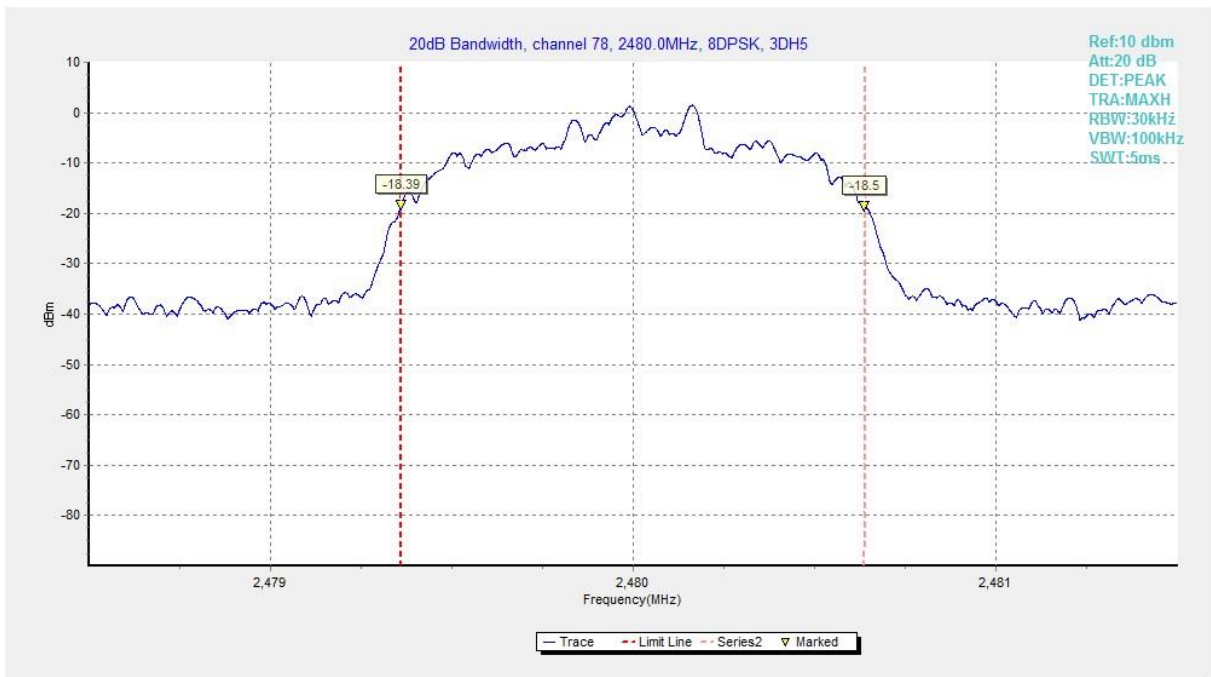


Fig. 77 20dB Bandwidth (8DPSK, Ch 78)



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	307.35	P
			Fig.79		
$\pi/4$ DQPSK	39	2-DH5	Fig.80	307.37	P
			Fig.81		
8DPSK	39	3-DH5	Fig.82	307.37	P
			Fig.83		

See below for test graphs.

Conclusion: Pass

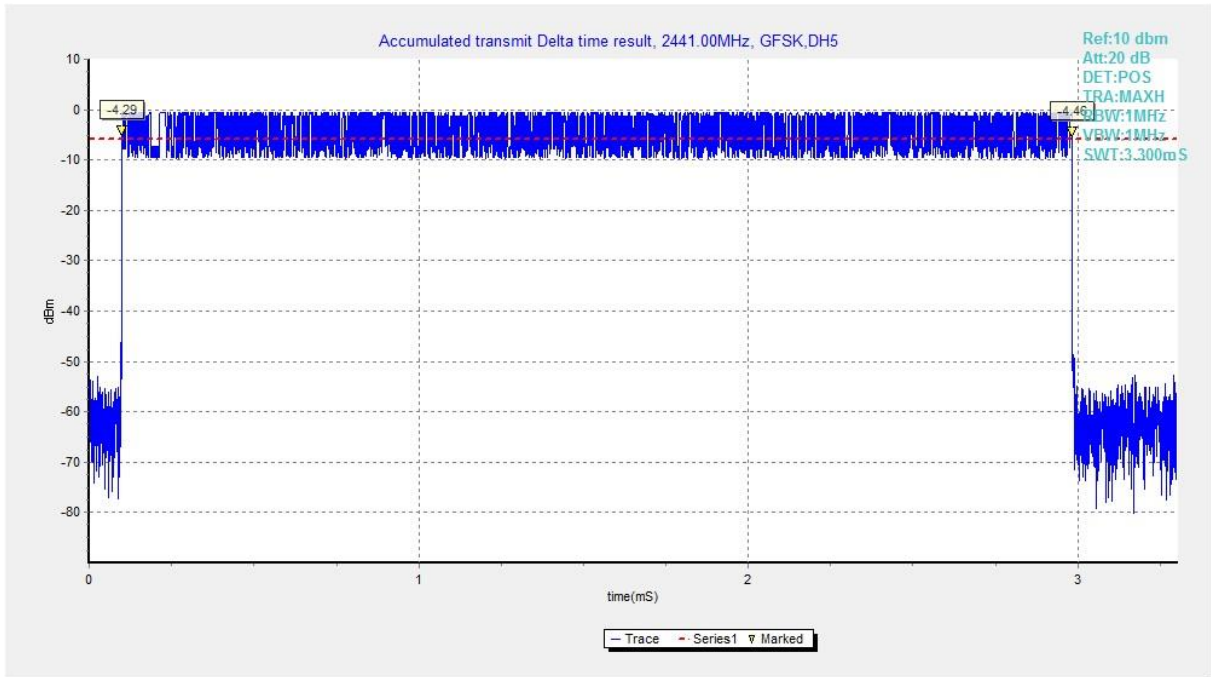


Fig. 78 Time of Occupancy (Dwell Time) (GFSK, Ch39)

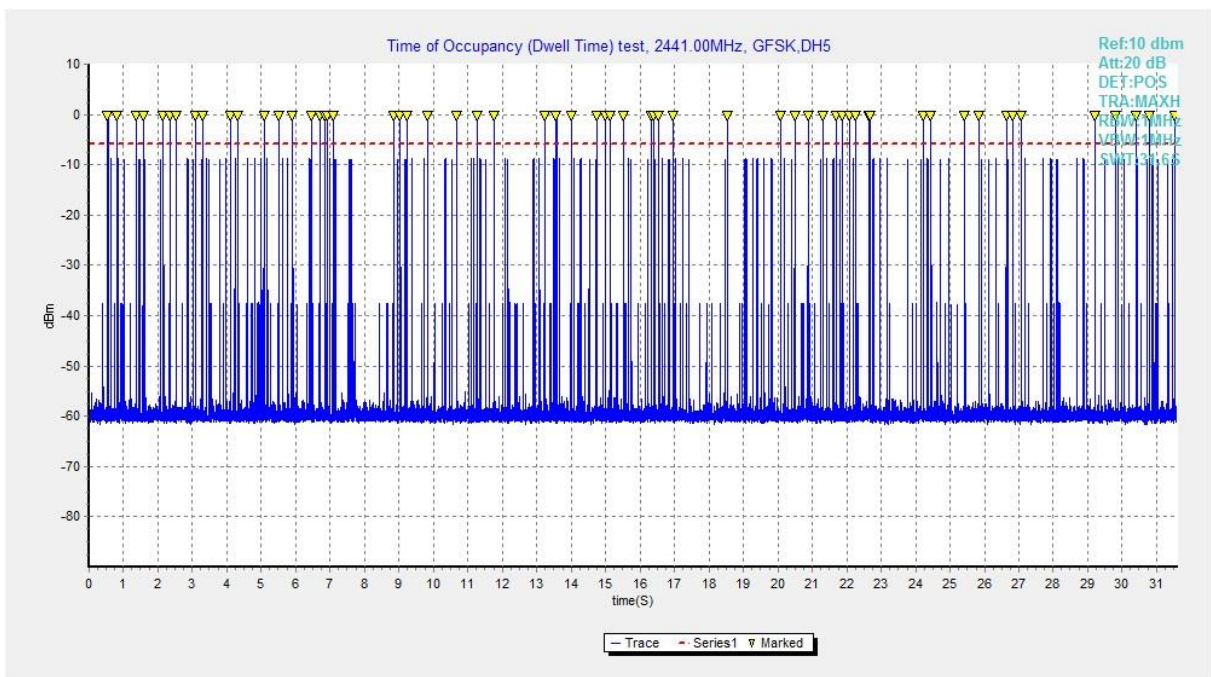


Fig. 79 Time of Occupancy (Dwell Time) (GFSK, Ch39)

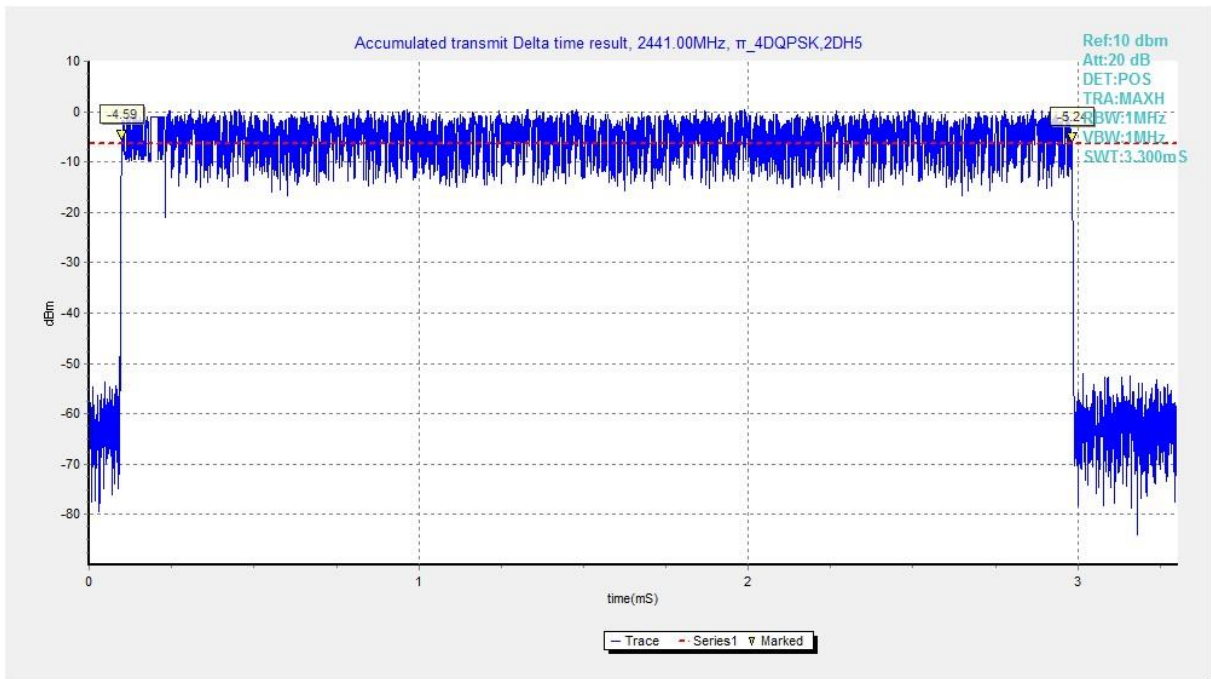


Fig. 80 Time of Occupancy(Dwell Time) (π /4 DQPSK, Ch39)

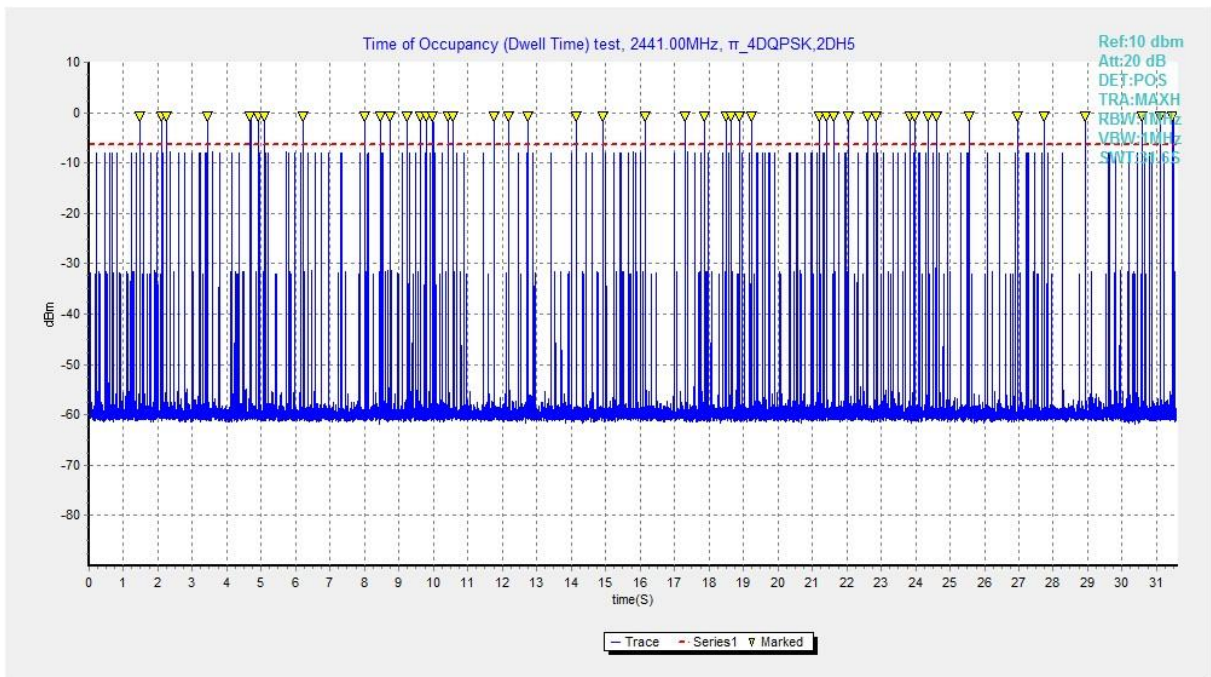


Fig. 81 Time of Occupancy(Dwell Time) (π /4 DQPSK, Ch39)

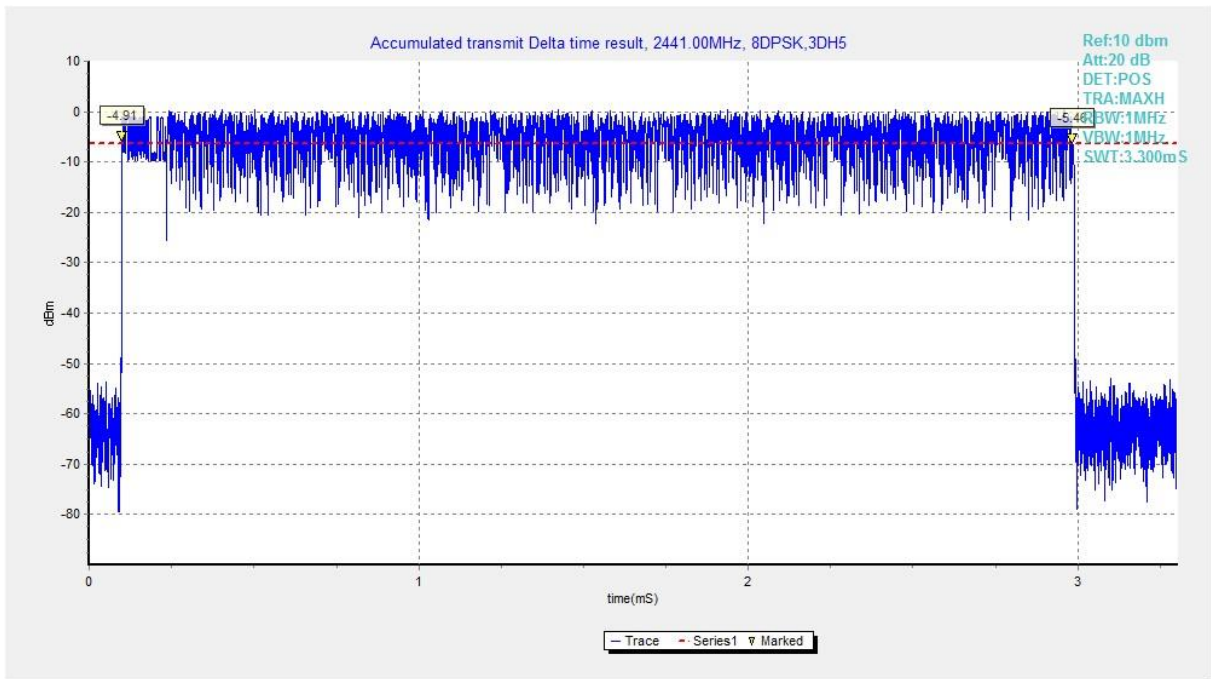


Fig. 82 Time of Occupancy (Dwell Time) (8DPSK, Ch39)

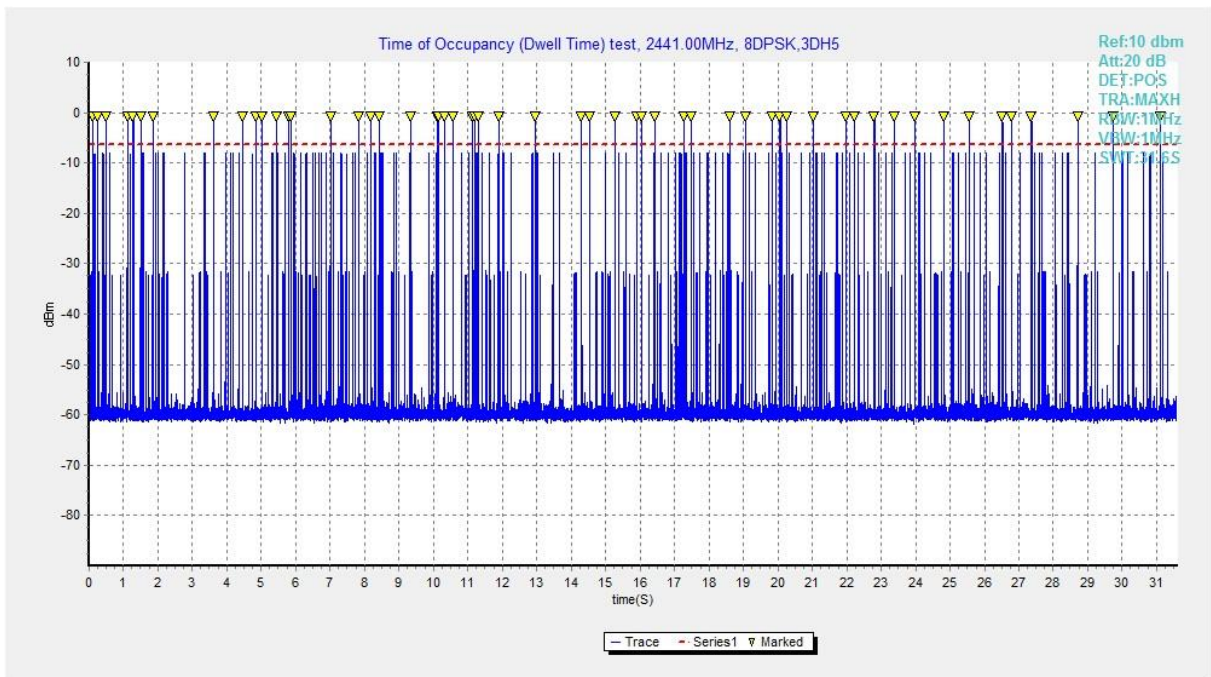


Fig. 83 Time of Occupancy (Dwell Time) (8DPSK, Ch39)



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		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

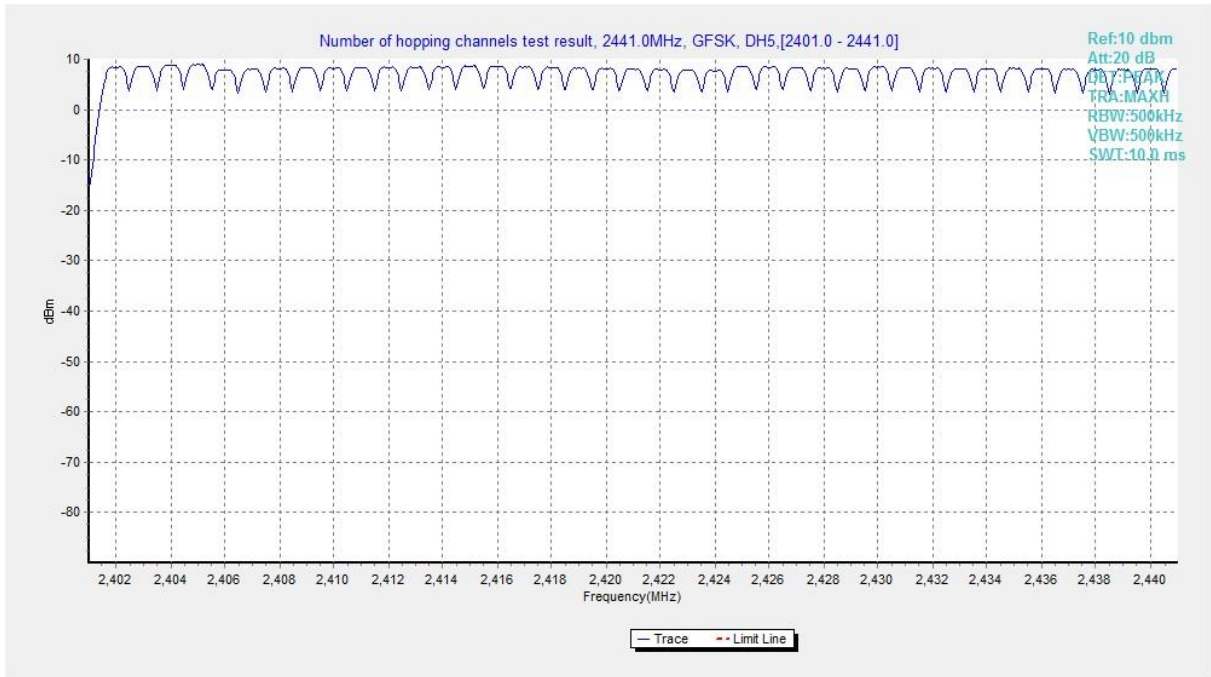


Fig. 84 Hopping channel ch0~39 (GFSK, Ch39)

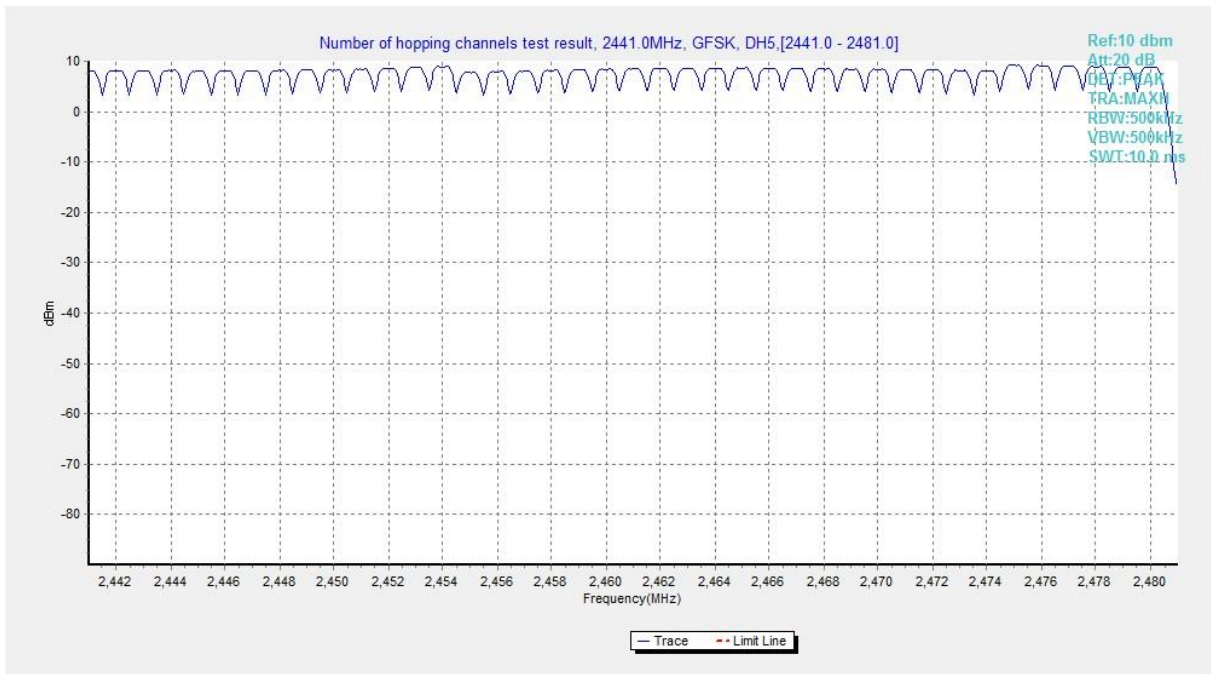


Fig. 85 Hopping channel ch39~78 (GFSK, Ch39)

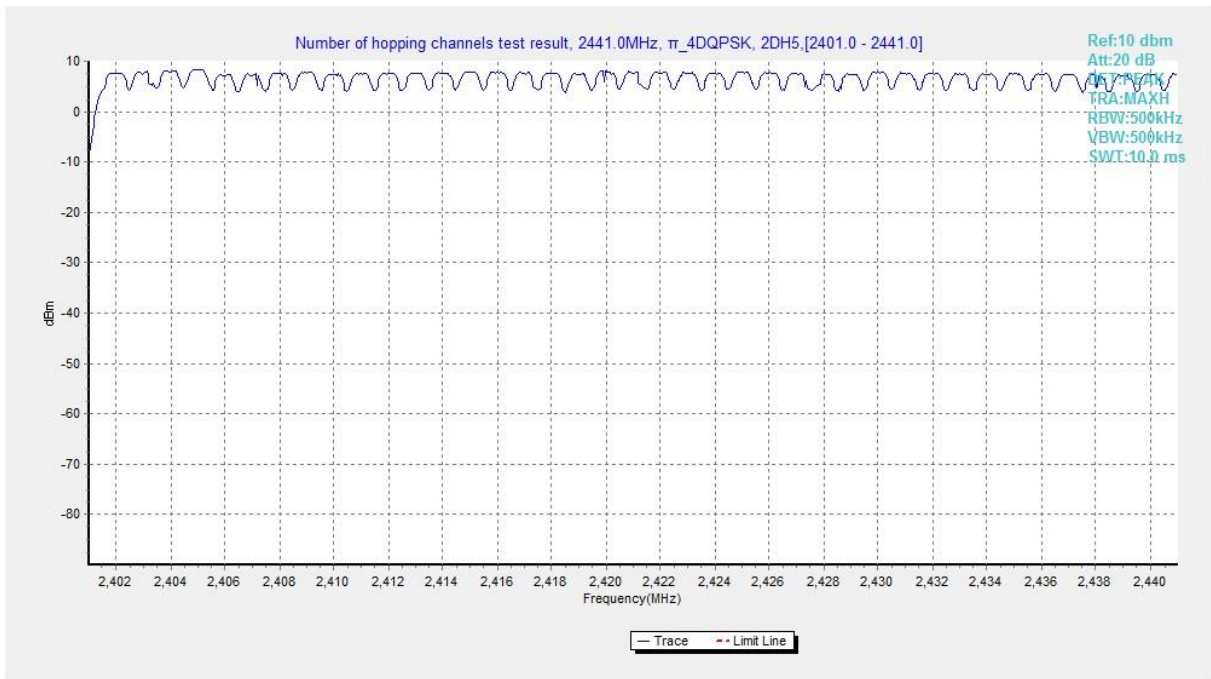


Fig. 86 Hopping channel ch0~39 ($\pi/4$ DQPSK, Ch39)

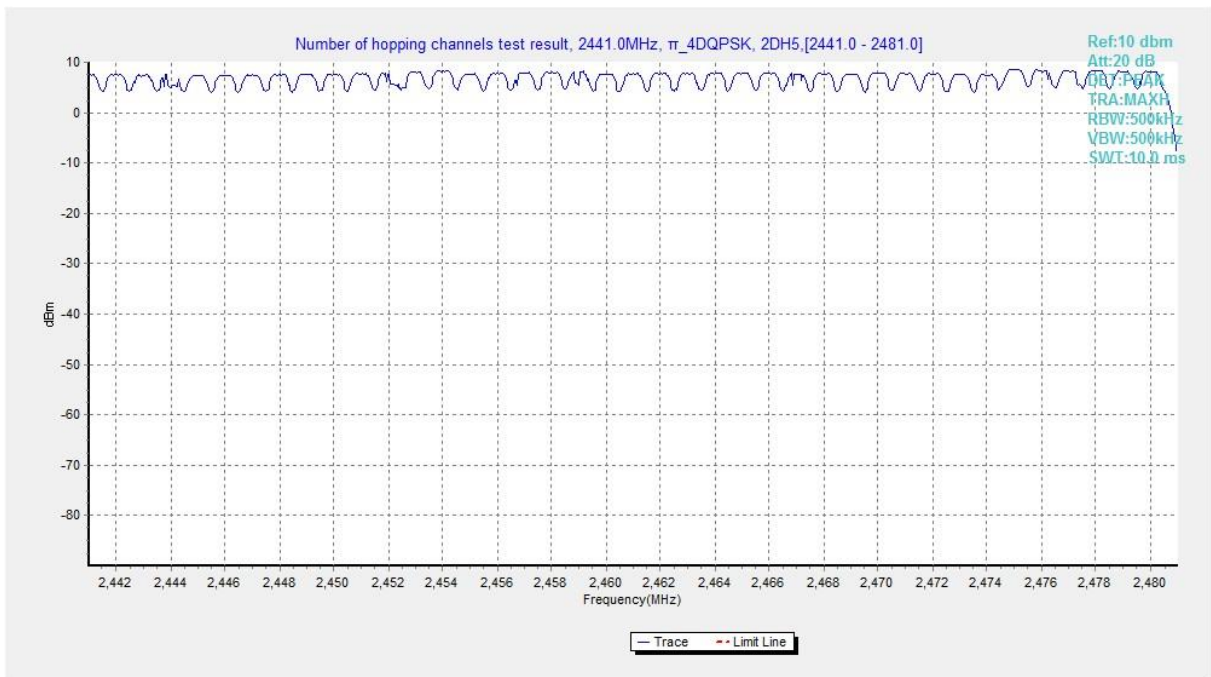


Fig. 87 Hopping channel ch39~78 ($\pi/4$ DQPSK, Ch39)

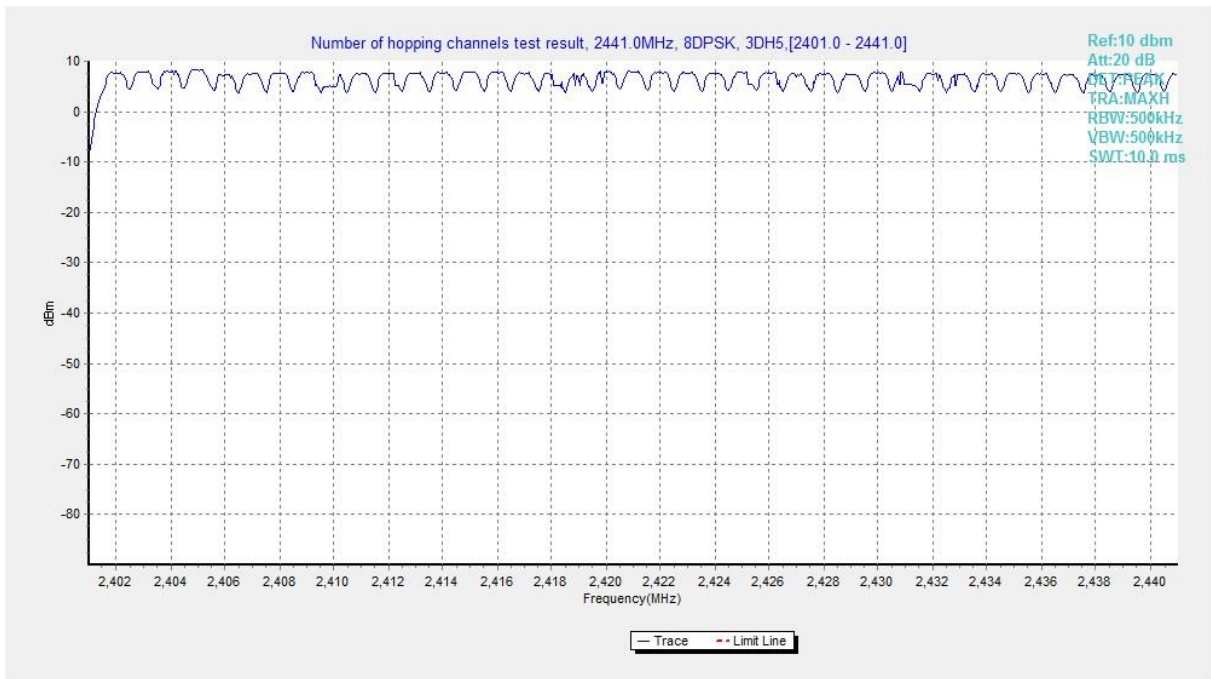


Fig. 88 Hopping channel ch0~39 (8DPSK, Ch39)

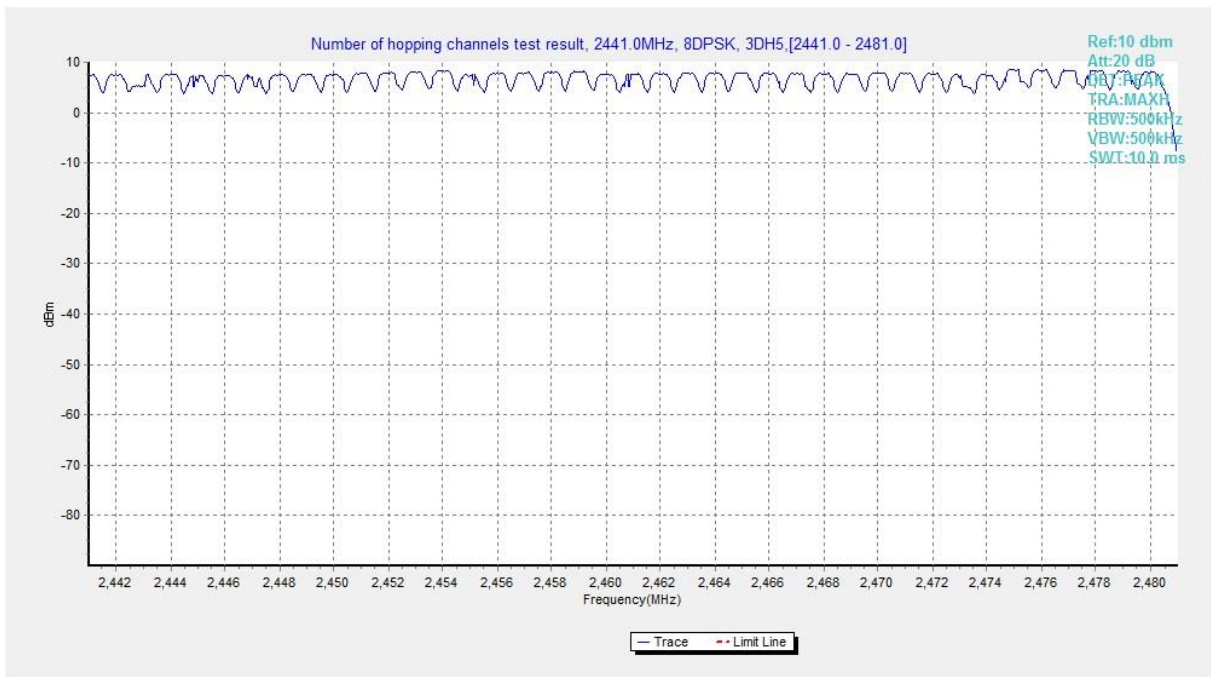


Fig. 89 Hopping channel ch39~78 (8DPSK, Ch39)

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 (kHz)	Conclusion
GFSK	39	DH5	Fig.90	995.25	P
$\pi/4$ DQPSK	39	2-DH5	Fig.91	996.00	P
8DPSK	39	3-DH5	Fig.92	1005.75	P

See below for test graphs.

Conclusion: Pass

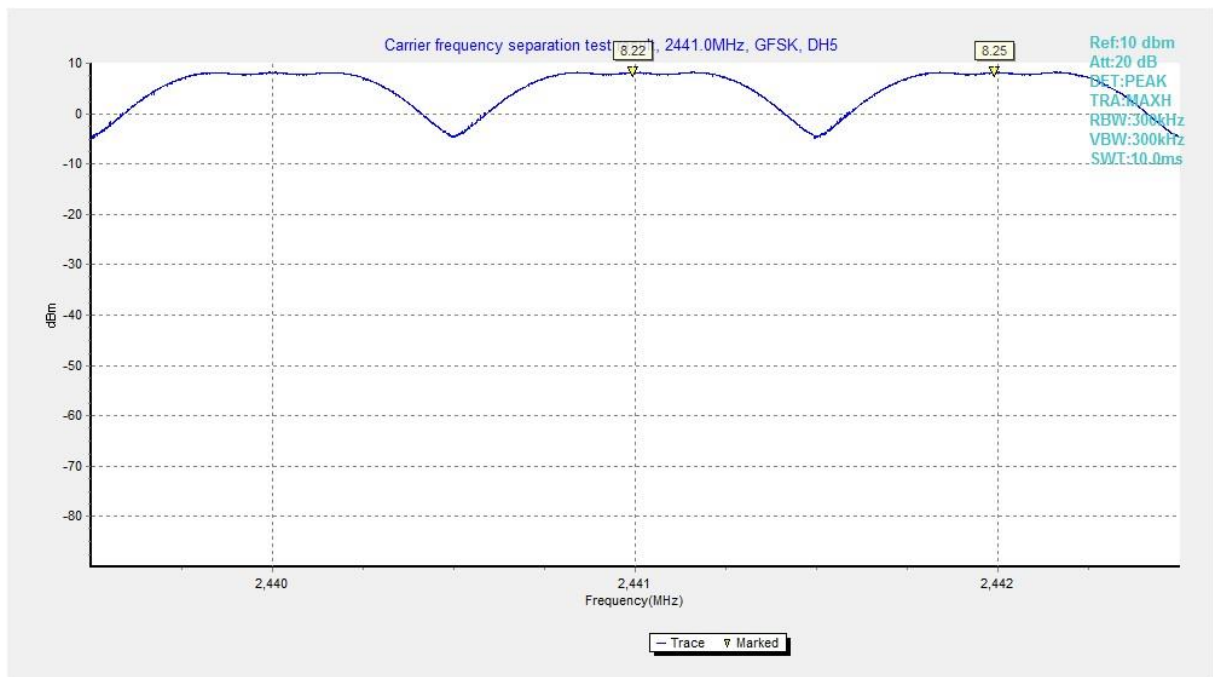


Fig. 90 Carrier Frequency Separation (GFSK, Ch39)

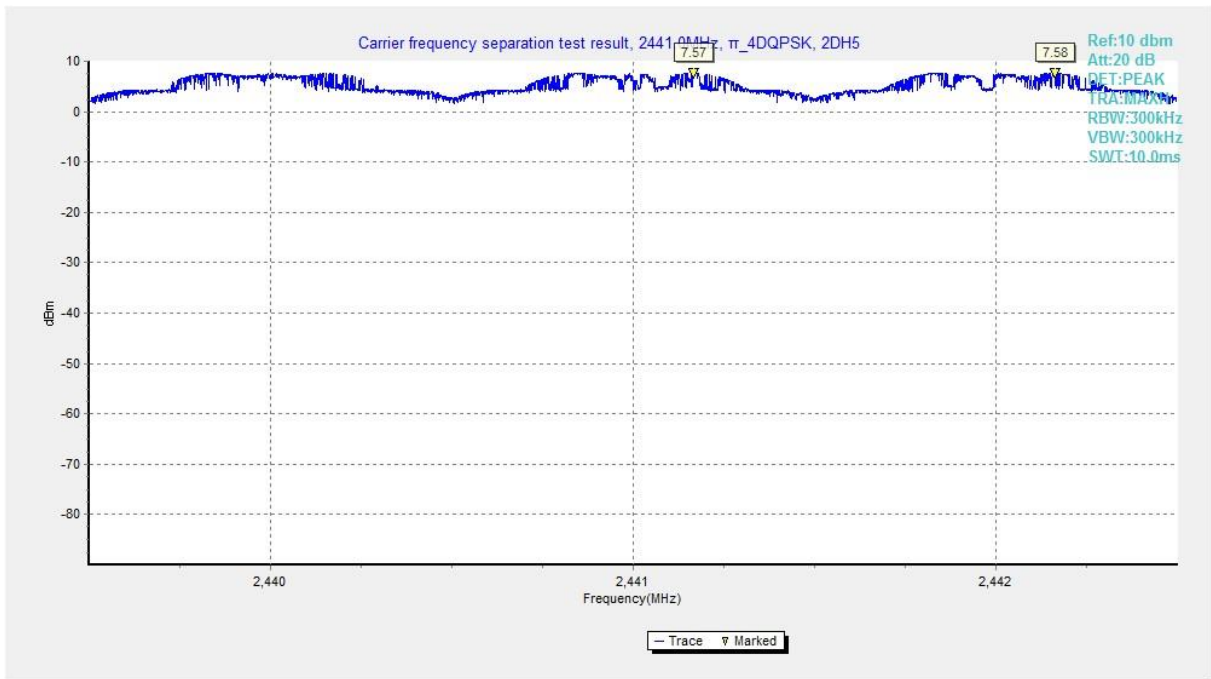


Fig. 91 Carrier Frequency Separation ($\pi/4$ DQPSK, Ch39)

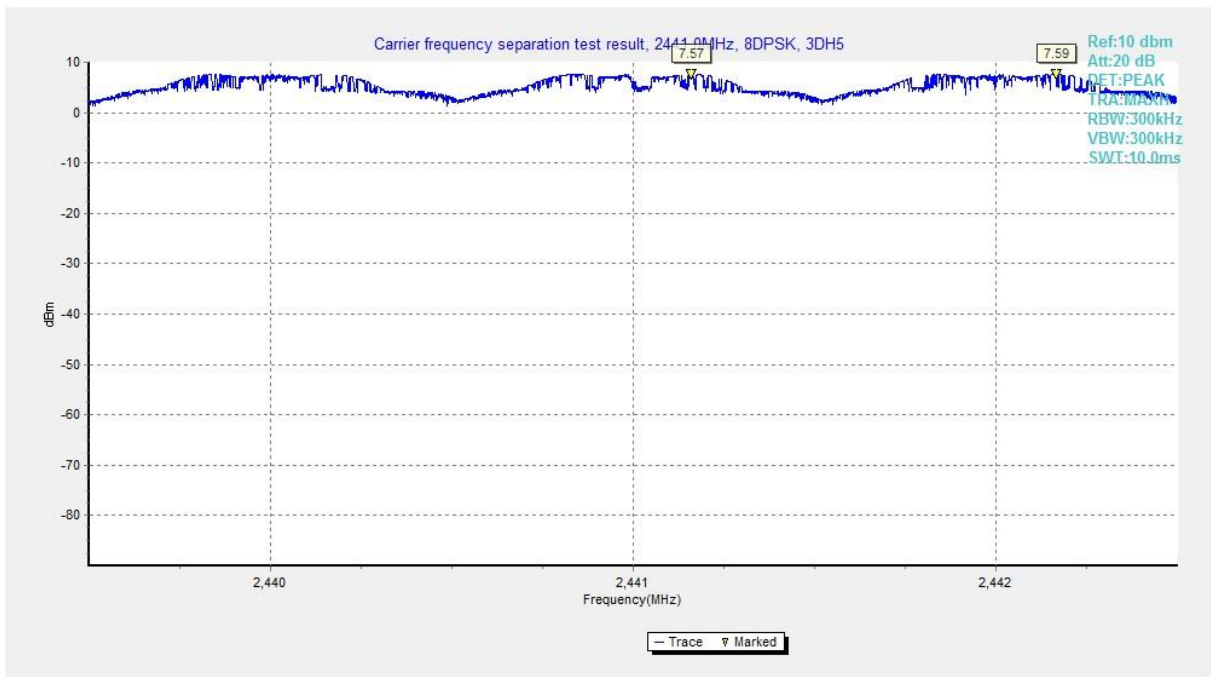


Fig. 92 Carrier Frequency Separation (8DPSK, Ch39)



A.9 AC Power line Conducted Emission

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Measurement Result and limit:

BT (Quasi-peak Limit)

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)

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.93	Fig.94	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

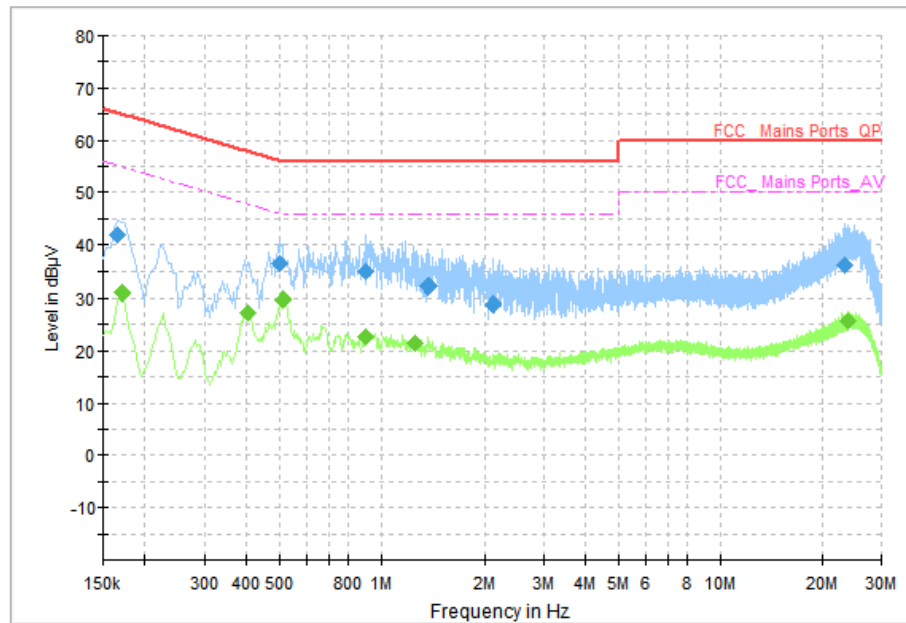


Fig. 93 AC Powerline Conducted Emission (Traffic)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.166000	41.97	65.16	23.19	L1	ON	10
0.502000	36.51	56.00	19.49	N	ON	10
0.902000	34.98	56.00	21.02	N	ON	10
1.378000	32.15	56.00	23.85	N	ON	10
2.126000	28.77	56.00	27.23	N	ON	10
23.446000	36.14	60.00	23.86	N	ON	10

Measurement Results: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.170000	30.99	54.96	23.97	N	ON	10
0.402000	27.36	47.81	20.46	L1	ON	10
0.514000	29.84	46.00	16.16	L1	ON	10
0.902000	22.77	46.00	23.23	N	ON	10
1.262000	21.61	46.00	24.39	N	ON	10
23.818000	25.73	50.00	24.27	N	ON	10

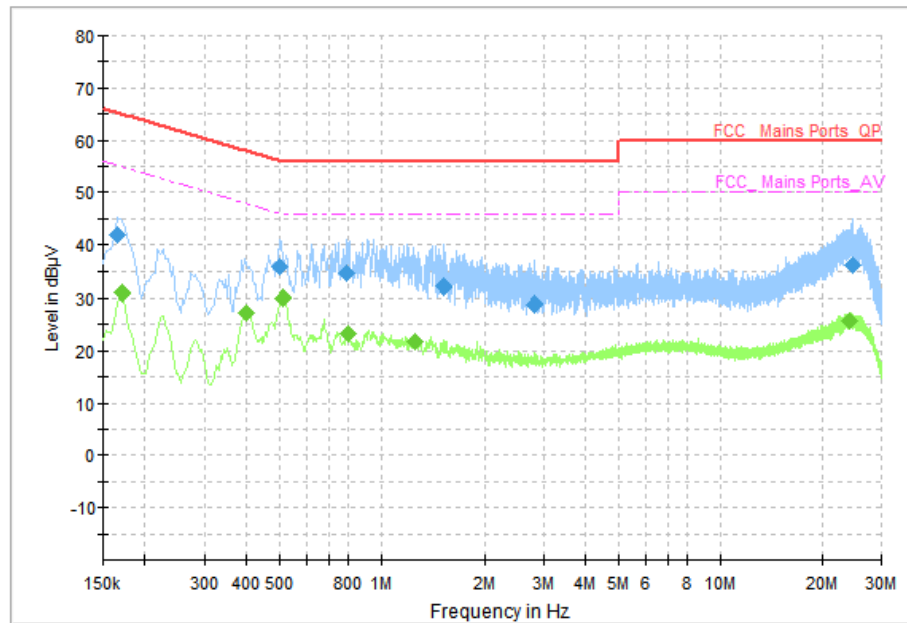


Fig. 94 AC Power line Conducted Emission (Idle)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.166000	41.84	65.16	23.32	N	ON	10
0.498000	35.71	56.03	20.32	N	ON	10
0.790000	34.58	56.00	21.42	N	ON	10
1.510000	32.04	56.00	23.96	N	ON	10
2.802000	28.82	56.00	27.18	N	ON	10
24.626000	36.11	60.00	23.89	N	ON	10

Measurement Results: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.170000	30.83	54.96	24.13	L1	ON	10
0.398000	27.25	47.90	20.65	L1	ON	10
0.514000	29.86	46.00	16.14	L1	ON	10
0.798000	23.21	46.00	22.79	N	ON	10
1.258000	21.65	46.00	24.35	N	ON	10
24.034000	25.87	50.00	24.13	N	ON	10

END OF REPORT