

Fig. 72 Time of Occupancy(Dwell Time) (π /4 DQPSK, Ch39)

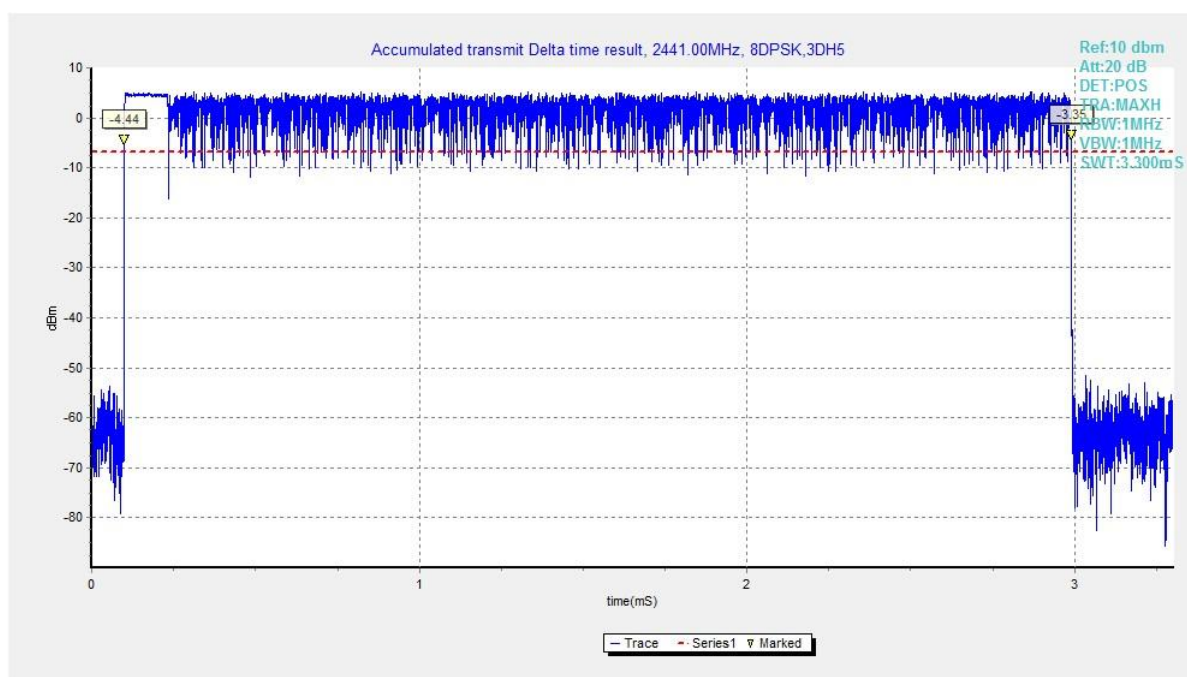


Fig. 73 Time of Occupancy(Dwell Time) (8DPSK, Ch39)

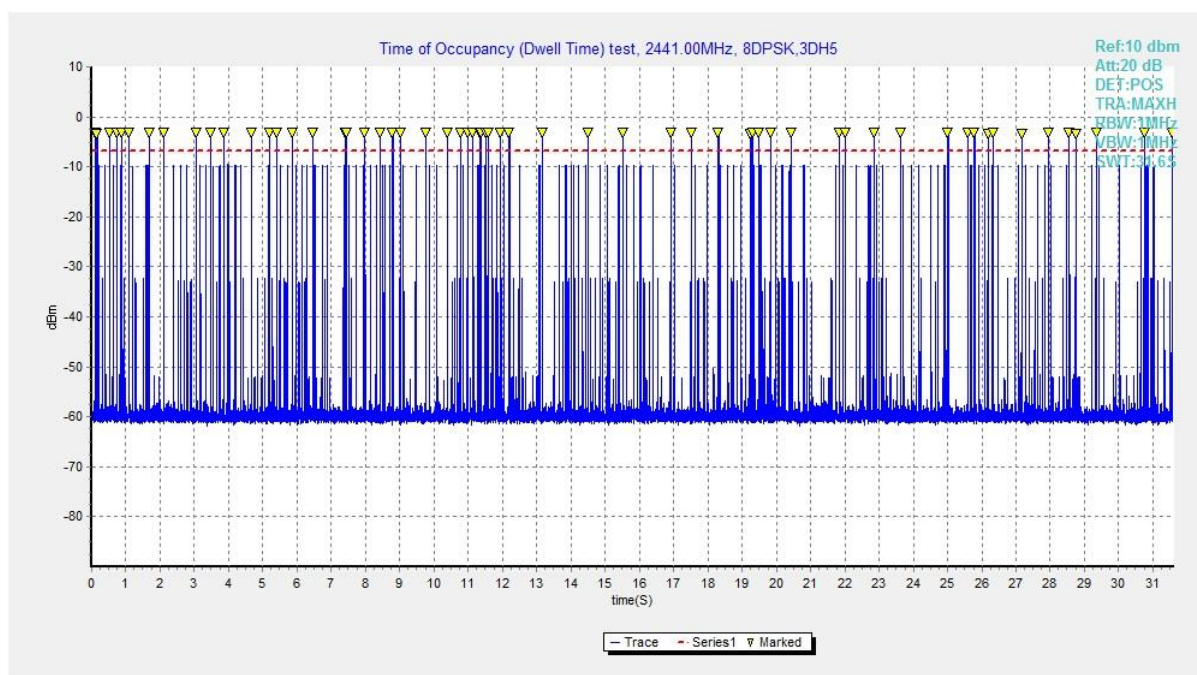


Fig. 74 Time of Occupancy(Dwell Time) (8DPSK, Ch39)

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.75	Fig.76	79	P
$\pi/4$ DQPSK	2-DH5	Fig.77	Fig.78	79	P
8DPSK	3-DH5	Fig.79	Fig.80	79	P

See below for test graphs.

Conclusion: Pass

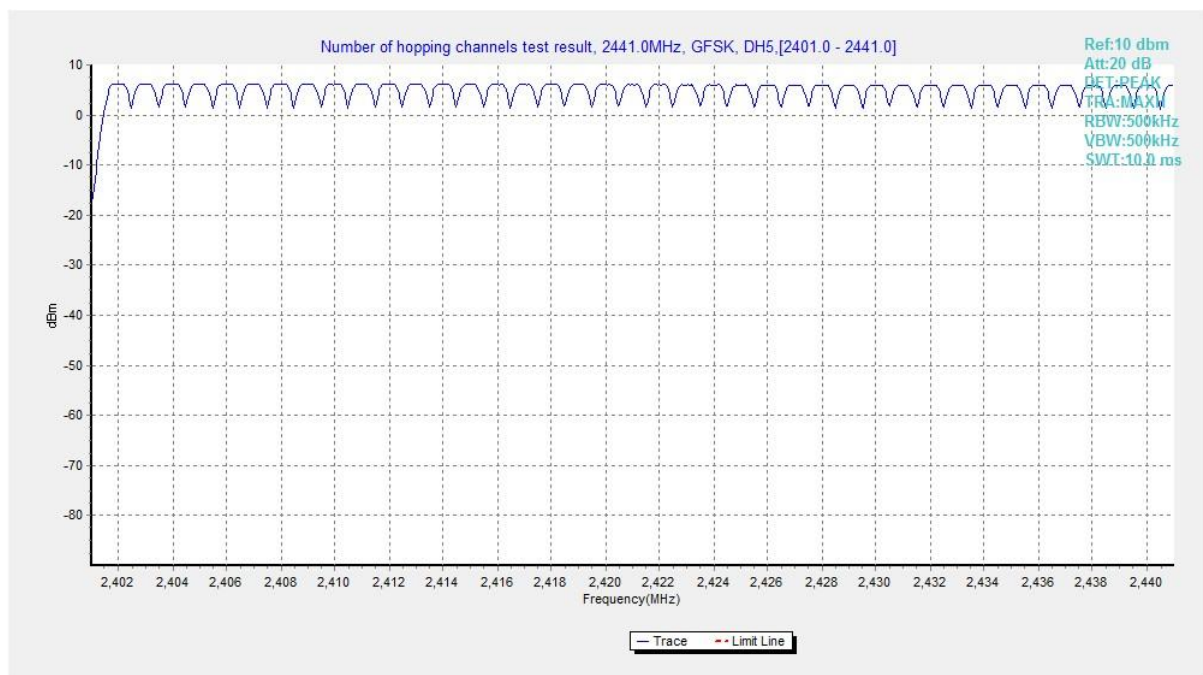


Fig. 75 Hopping channel ch0~39 (GFSK, Ch39)

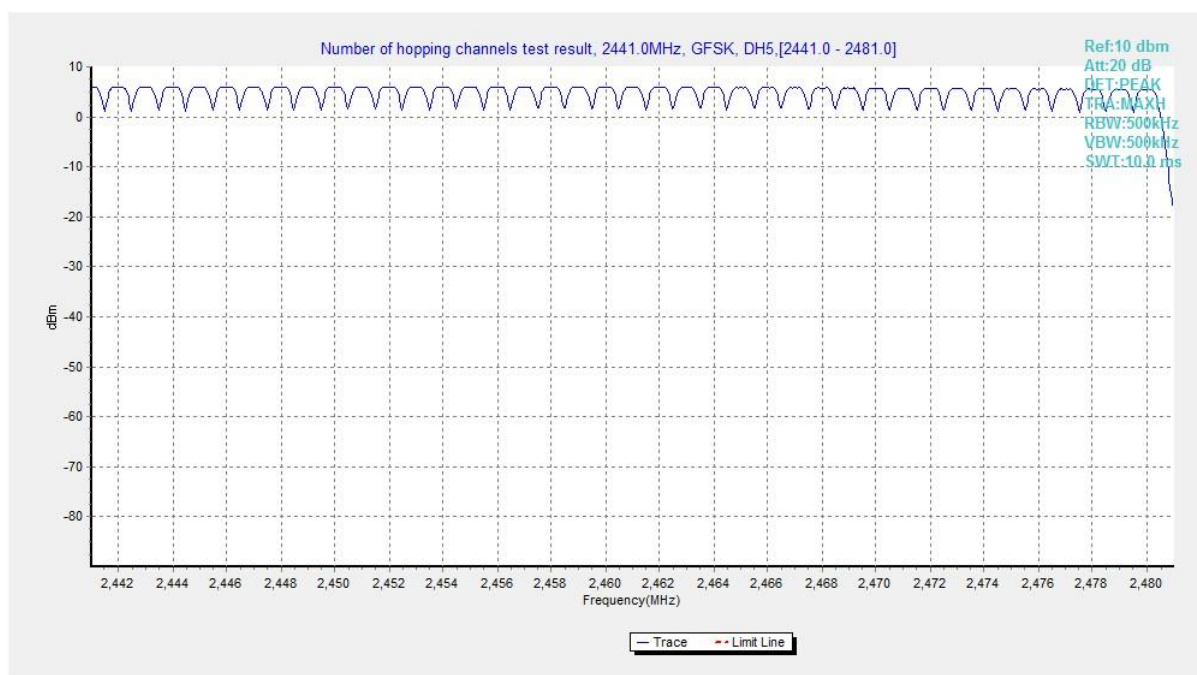


Fig. 76 Hopping channel ch40~78 (GFSK, Ch39)

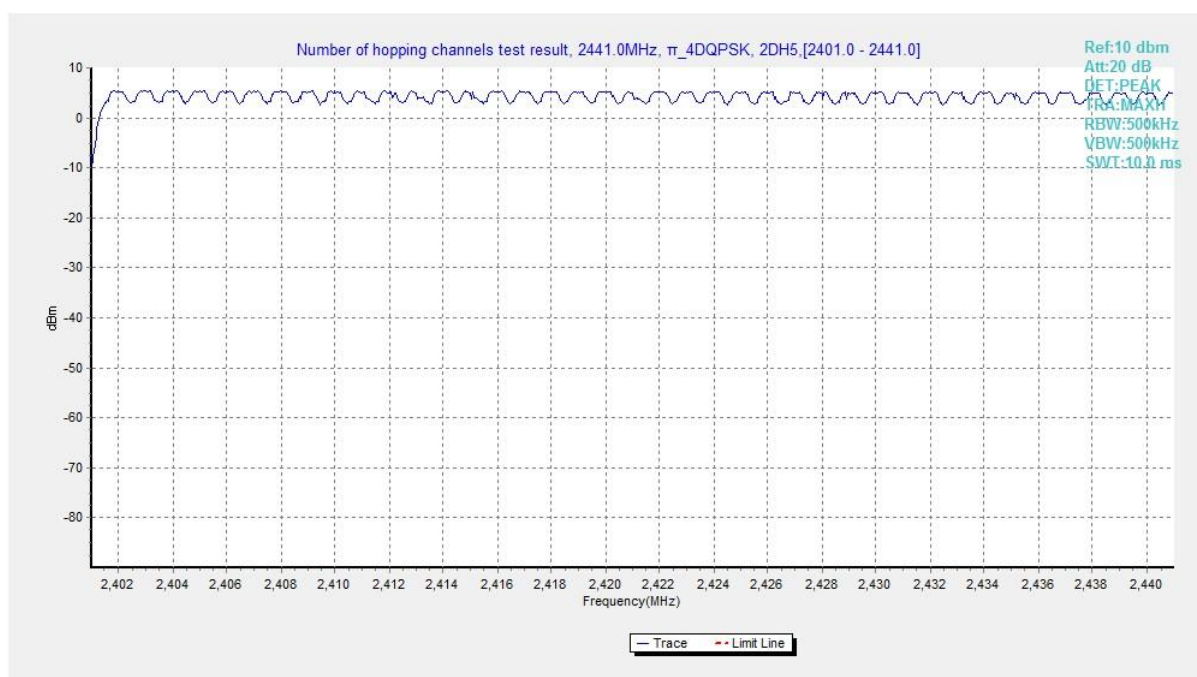


Fig. 77 Hopping channel ch0~39 (π /4 DQPSK, Ch39)

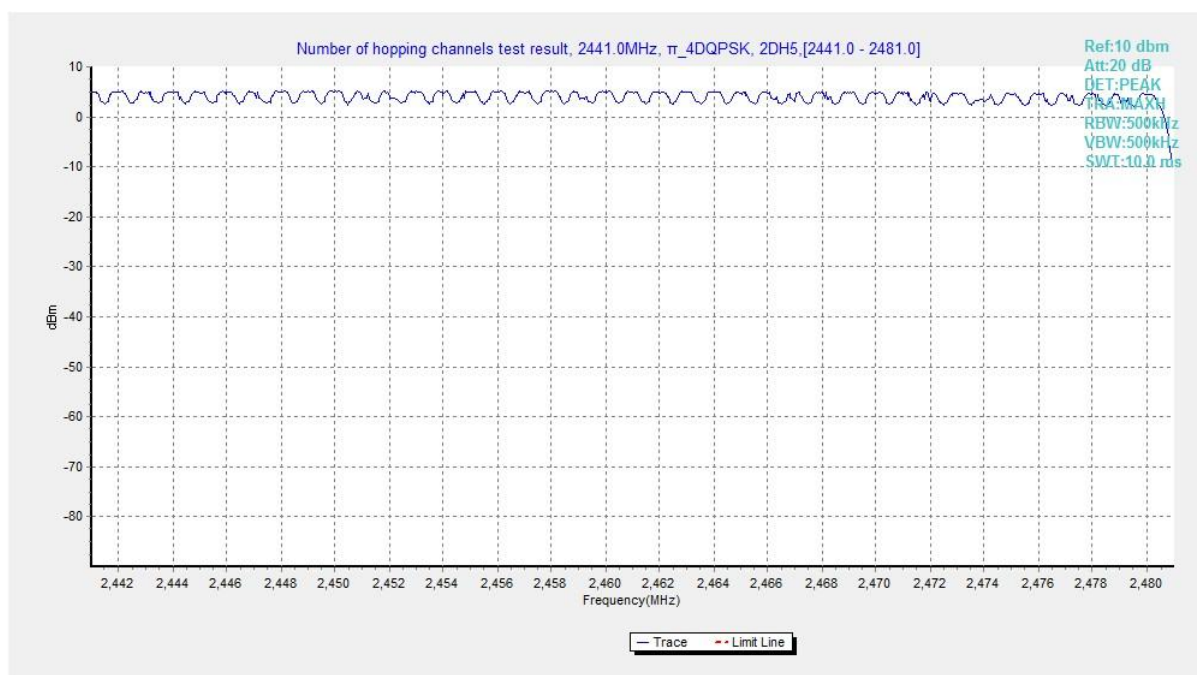


Fig. 78 Hopping channel ch40~78 ($\pi/4$ DQPSK, Ch39)

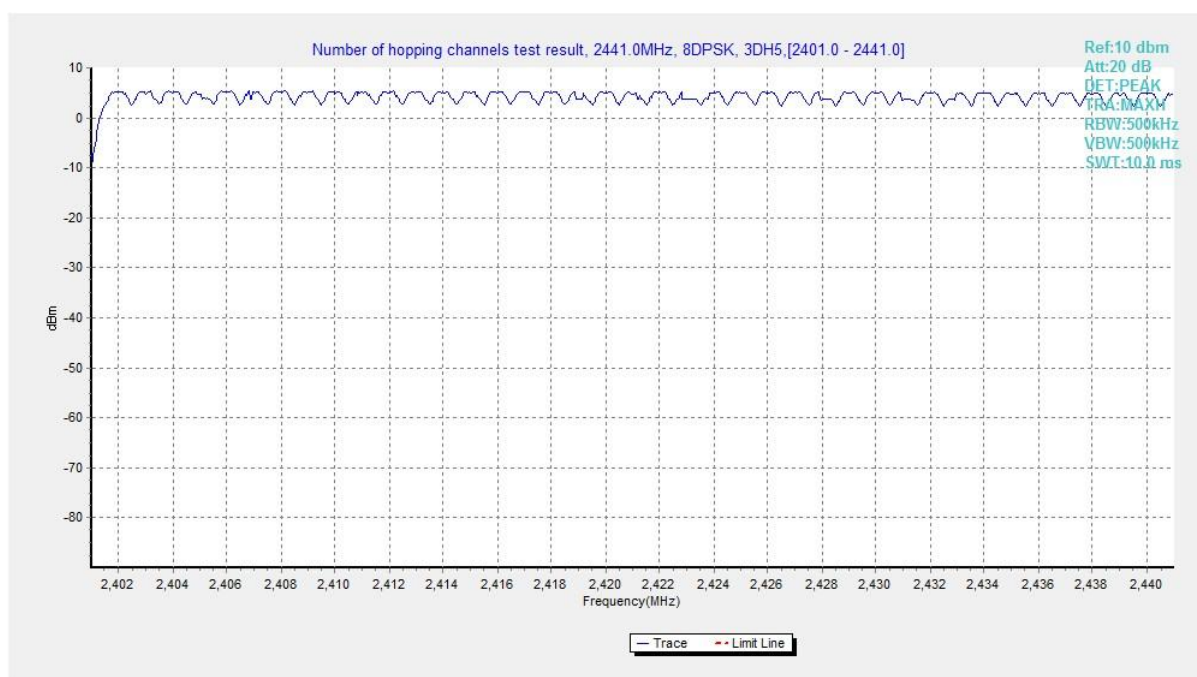


Fig. 79 Hopping channel ch0~39 (8DPSK, Ch39)

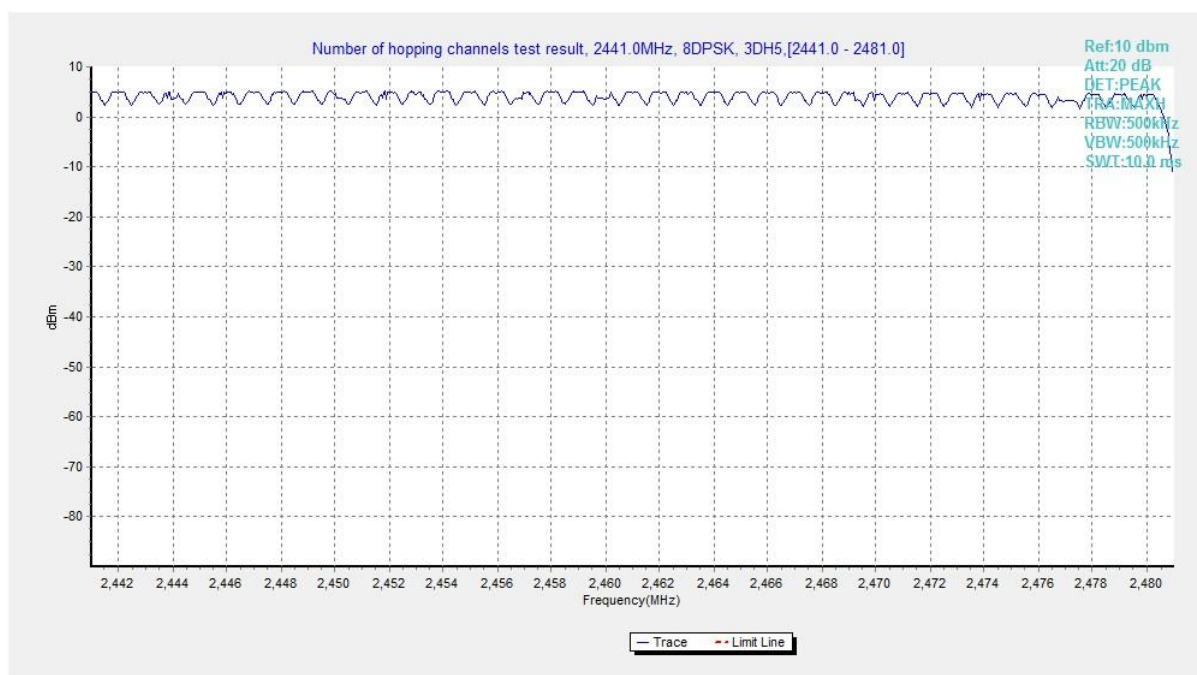


Fig. 80 Hopping channel ch40~78 (8DPSK, Ch39)

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.81	1.00	P
$\pi/4$ DQPSK	39	2-DH5	Fig.82	1.00	P
8DPSK	39	3-DH5	Fig.83	1.01	P

See below for test graphs.

Conclusion: Pass

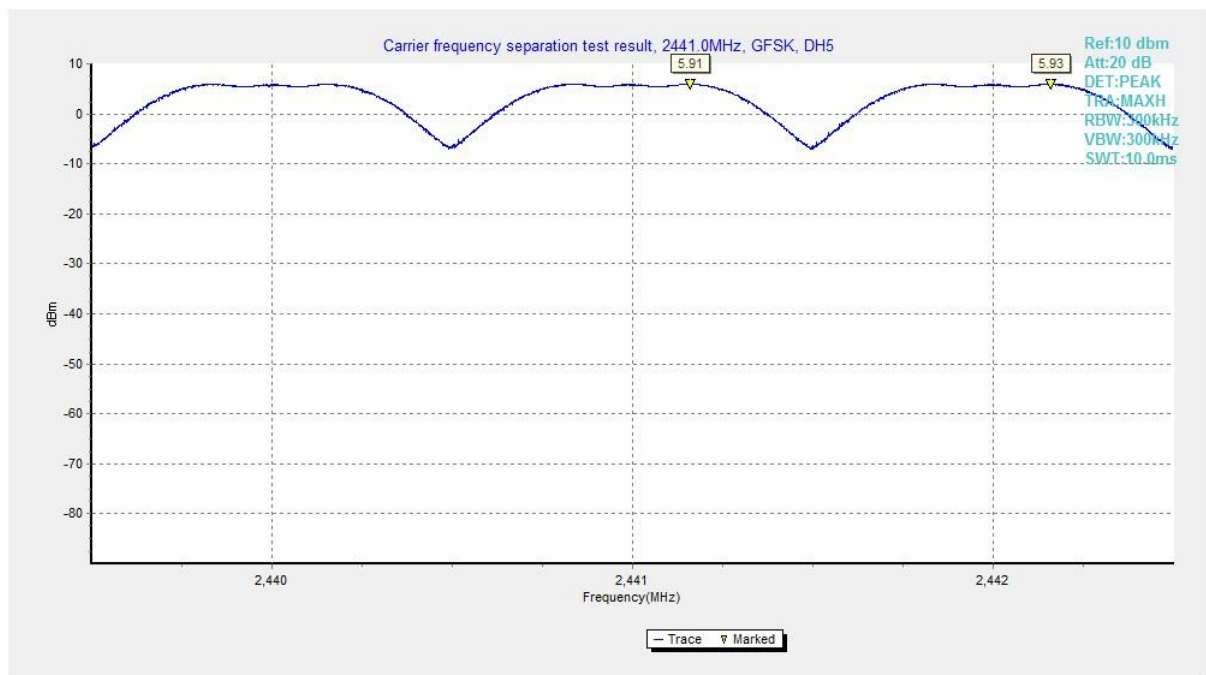


Fig. 81 Carrier Frequency Separation (GFSK, Ch39)

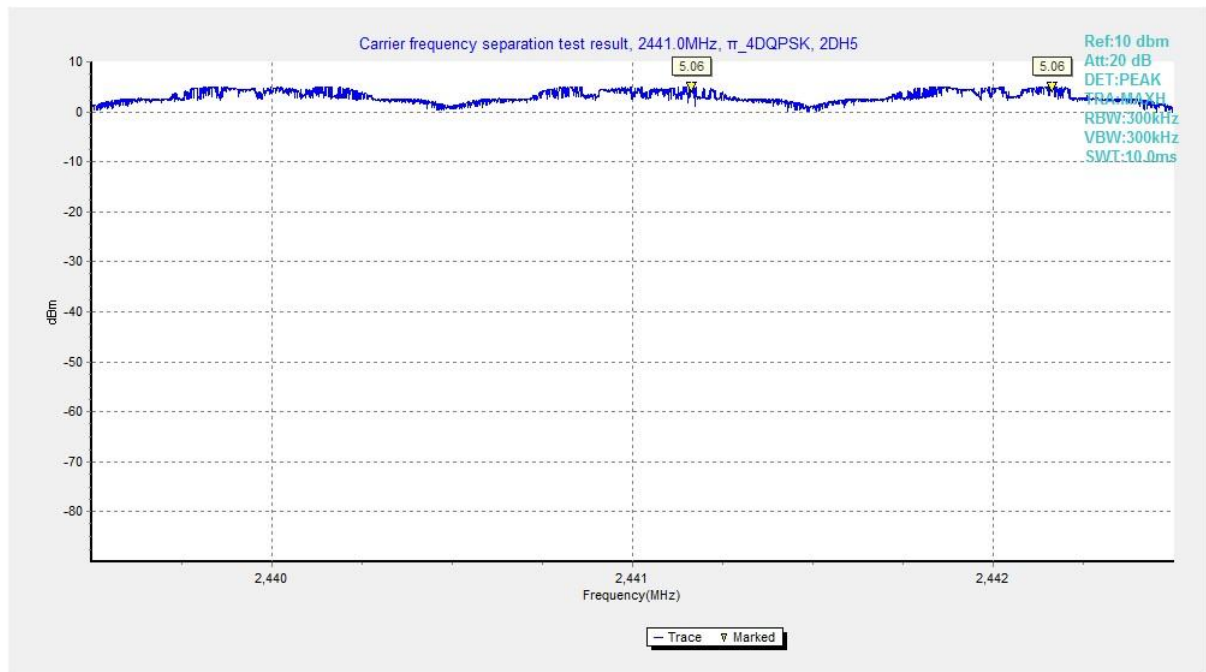


Fig. 82 Carrier Frequency Separation (π /4 DQPSK, Ch39)

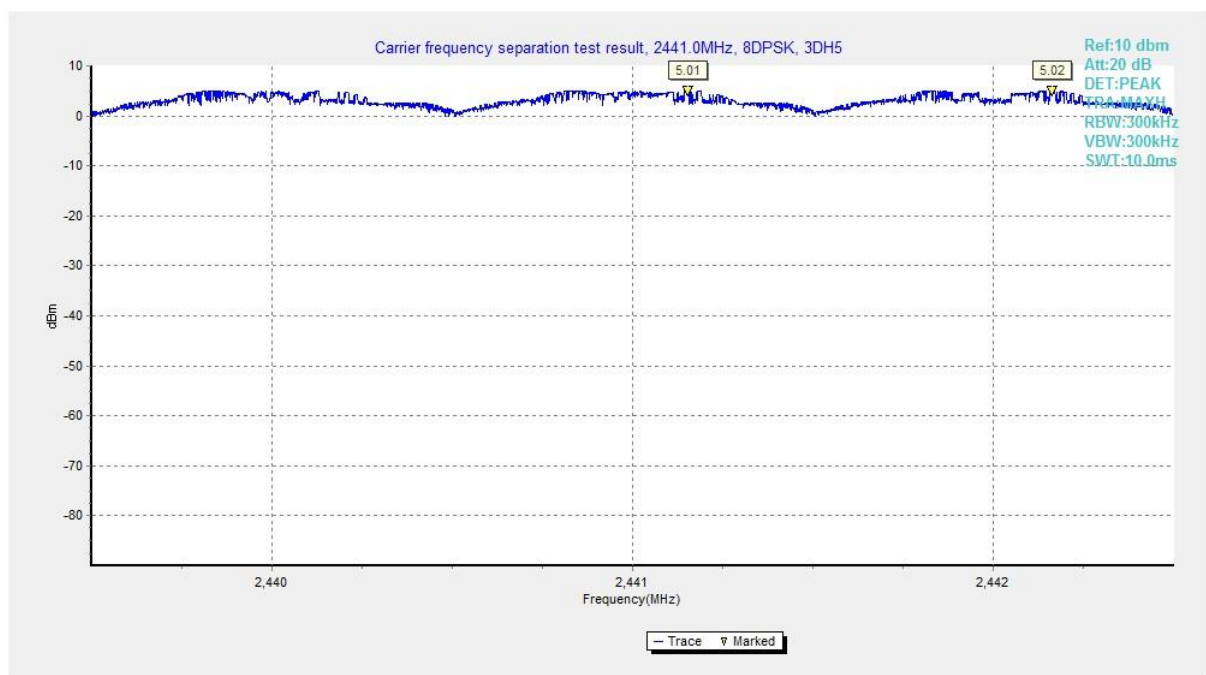


Fig. 83 Carrier Frequency Separation (8DPSK, Ch39)

A.9 AC Power line Conducted Emission

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Measurement Result and limit:

BT (Quasi-peak Limit) - AE3

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.84	Fig.85	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) - AE3

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.84	Fig.85	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.

BT (Quasi-peak Limit) - AE4

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.86	Fig.87	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) - AE4

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.86	Fig.87	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.



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

See below for test graphs.

Conclusion: Pass

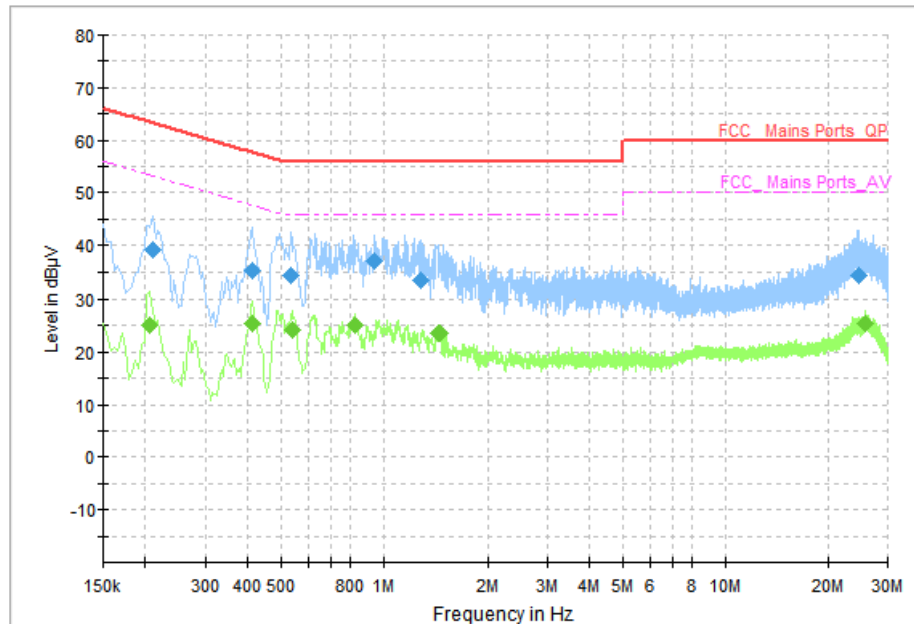


Fig. 84 AC Powerline Conducted Emission (Traffic, AE3, 120V)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBμV)	Limit (dBμV)	Margin (dB)	Line	Filter	Corr. (dB)
0.210000	39.13	63.21	24.07	L1	ON	10
0.410000	35.17	57.65	22.48	N	ON	10
0.534000	34.31	56.00	21.69	N	ON	10
0.942000	37.01	56.00	18.99	N	ON	10
1.294000	33.25	56.00	22.75	N	ON	10
24.650000	34.21	60.00	25.79	N	ON	10

Measurement Results: Average

Frequency (MHz)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Filter	Corr. (dB)
0.206000	25.19	53.37	28.17	N	ON	10
0.410000	25.40	47.65	22.25	N	ON	10
0.538000	24.29	46.00	21.71	N	ON	10
0.826000	25.06	46.00	20.94	N	ON	10
1.450000	23.58	46.00	22.42	N	ON	10
25.758000	25.40	50.00	24.60	N	ON	10

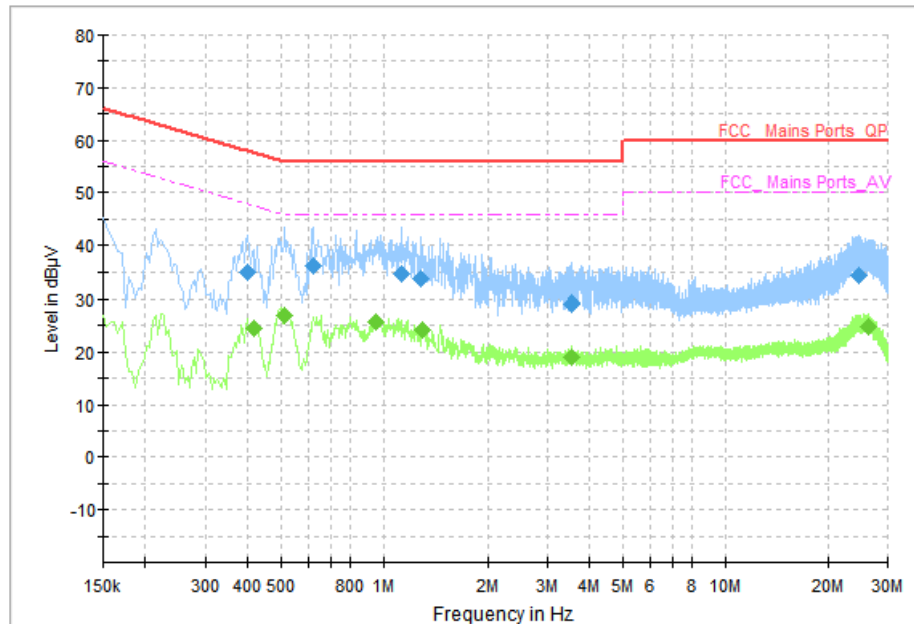


Fig. 85 AC Power line Conducted Emission (Idle, AE3, 120V)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBμV)	Limit (dBμV)	Margin (dB)	Line	Filter	Corr. (dB)
0.398000	34.85	57.90	23.04	N	ON	10
0.622000	36.11	56.00	19.89	N	ON	10
1.134000	34.59	56.00	21.41	N	ON	10
1.294000	33.65	56.00	22.35	N	ON	10
3.542000	28.95	56.00	27.05	N	ON	10
24.566000	34.22	60.00	25.78	N	ON	10

Measurement Results: Average

Frequency (MHz)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Filter	Corr. (dB)
0.414000	24.63	47.57	22.94	N	ON	10
0.510000	27.04	46.00	18.96	N	ON	10
0.954000	25.62	46.00	20.38	N	ON	10
1.306000	24.30	46.00	21.70	N	ON	10
3.546000	19.11	46.00	26.89	N	ON	10
26.454000	24.93	50.00	25.07	N	ON	10

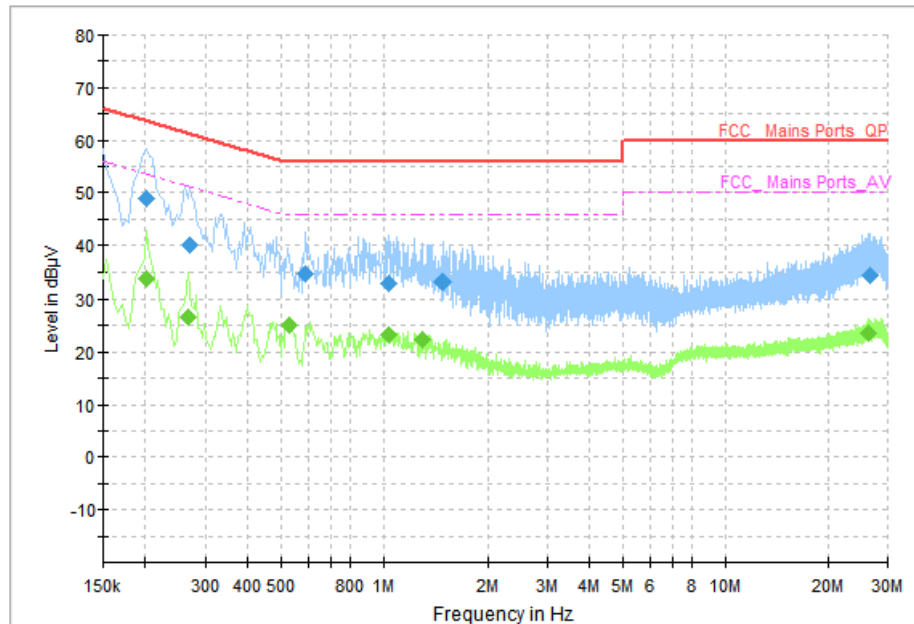


Fig. 86 AC Powerline Conducted Emission (Traffic, AE4, 120V)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBμV)	Limit (dBμV)	Margin (dB)	Line	Filter	Corr. (dB)
0.202000	48.82	63.53	14.71	N	ON	10
0.270000	40.04	61.12	21.07	N	ON	10
0.590000	34.48	56.00	21.52	L1	ON	10
1.038000	32.85	56.00	23.15	L1	ON	10
1.490000	33.08	56.00	22.92	L1	ON	10
26.662000	34.35	60.00	25.65	L1	ON	10

Measurement Results: Average

Frequency (MHz)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Filter	Corr. (dB)
0.202000	33.77	53.53	19.76	N	ON	10
0.266000	26.57	51.24	24.67	N	ON	10
0.530000	25.03	46.00	20.97	N	ON	10
1.034000	23.20	46.00	22.80	L1	ON	10
1.306000	22.25	46.00	23.75	L1	ON	10
26.230000	23.71	50.00	26.29	L1	ON	10

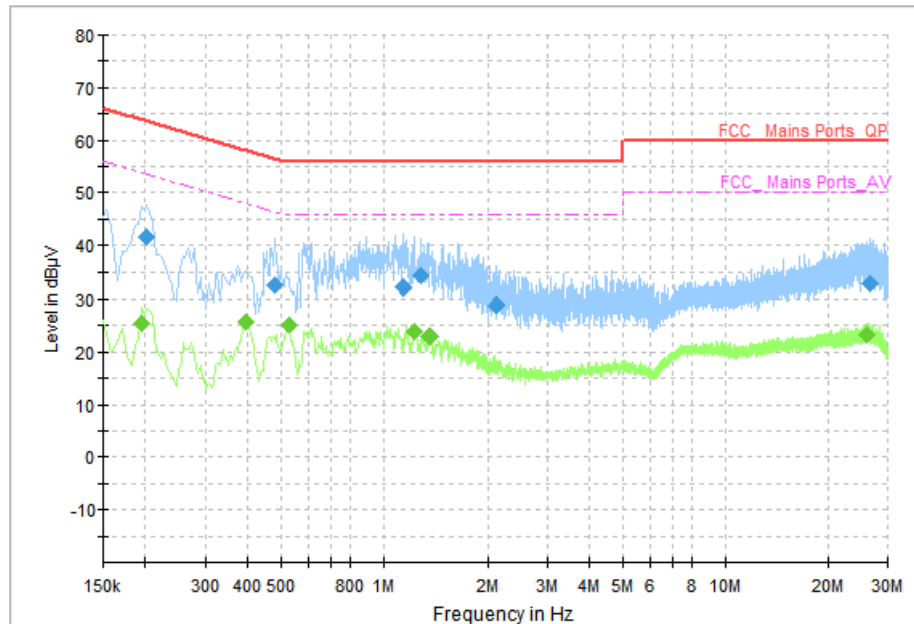


Fig. 87 AC Power line Conducted Emission (Idle, AE4, 120V)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBμV)	Limit (dBμV)	Margin (dB)	Line	Filter	Corr. (dB)
0.202000	41.46	63.53	22.07	L1	ON	10
0.478000	32.31	56.37	24.06	L1	ON	10
1.138000	32.07	56.00	23.93	L1	ON	10
1.290000	34.31	56.00	21.69	L1	ON	10
2.122000	28.63	56.00	27.37	L1	ON	10
26.502000	32.83	60.00	27.17	L1	ON	10

Measurement Results: Average

Frequency (MHz)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Filter	Corr. (dB)
0.194000	25.32	53.86	28.54	N	ON	10
0.394000	25.70	47.98	22.28	N	ON	10
0.526000	25.06	46.00	20.94	N	ON	10
1.234000	23.83	46.00	22.17	L1	ON	10
1.362000	22.86	46.00	23.14	L1	ON	10
26.182000	23.18	50.00	26.82	L1	ON	10

END OF REPORT