

Fig. 71 Time of Occupancy(Dwell Time) (GFSK, Ch39)

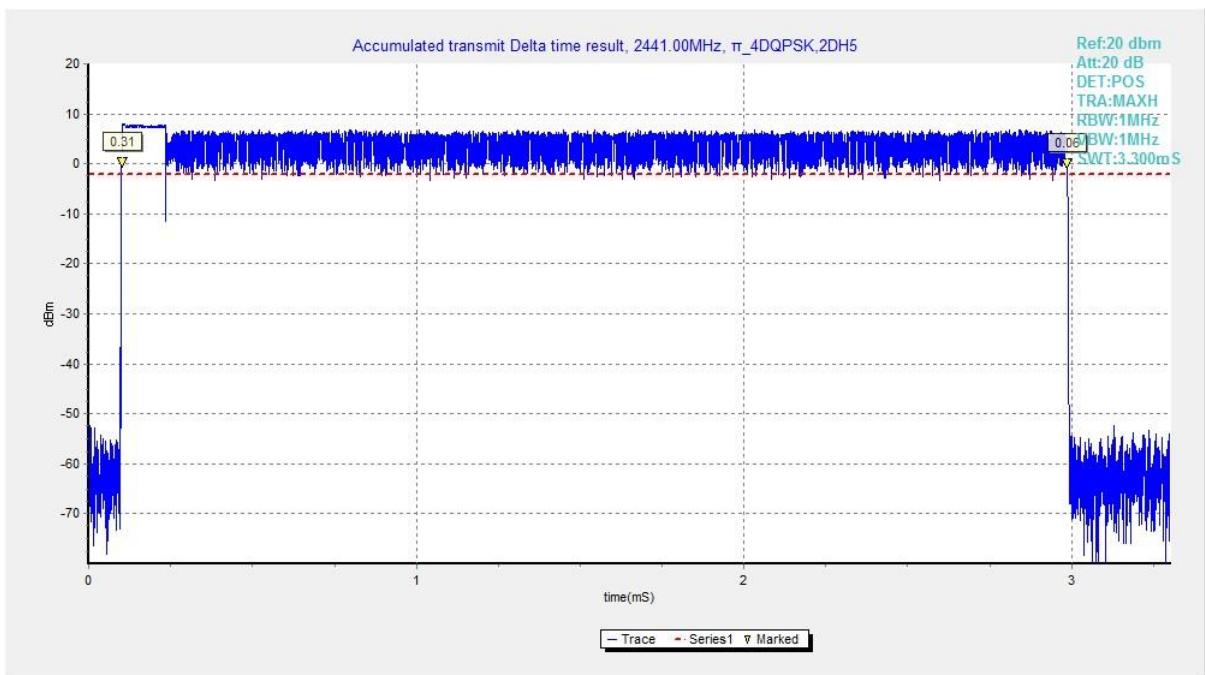


Fig. 72 Time of Occupancy(Dwell Time) ( $\pi/4$  DQPSK, Ch39)

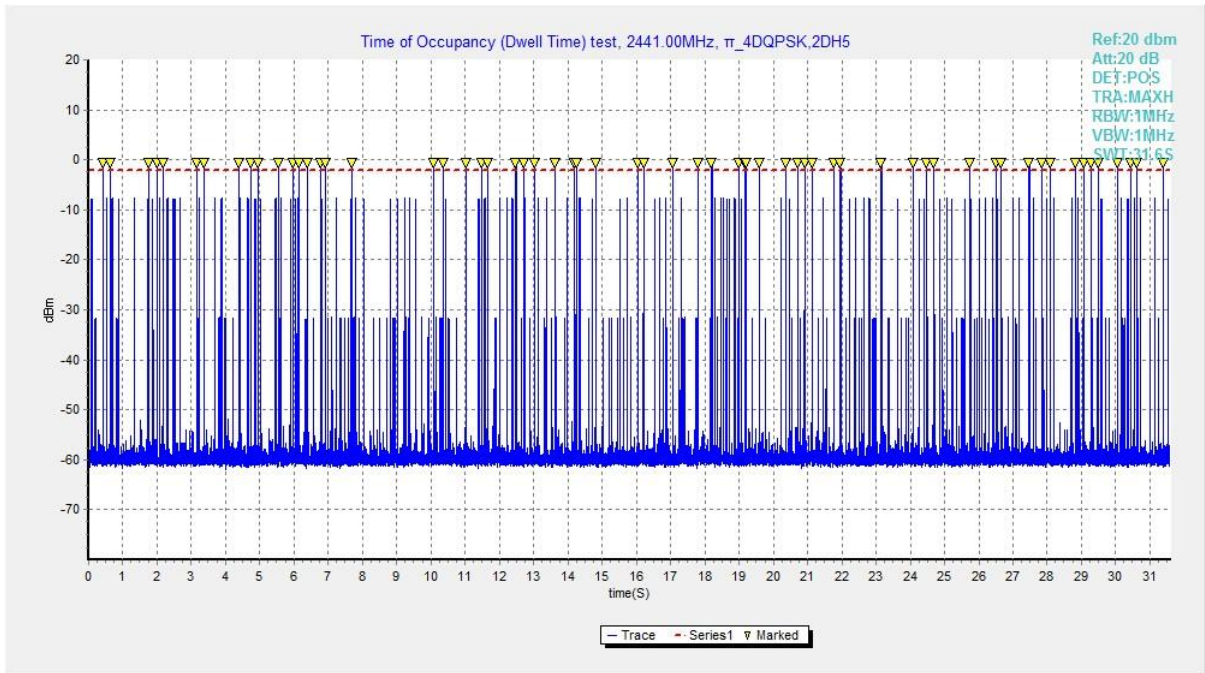


Fig. 73 Time of Occupancy(Dwell Time) ( $\pi$  /4 DQPSK, Ch39)

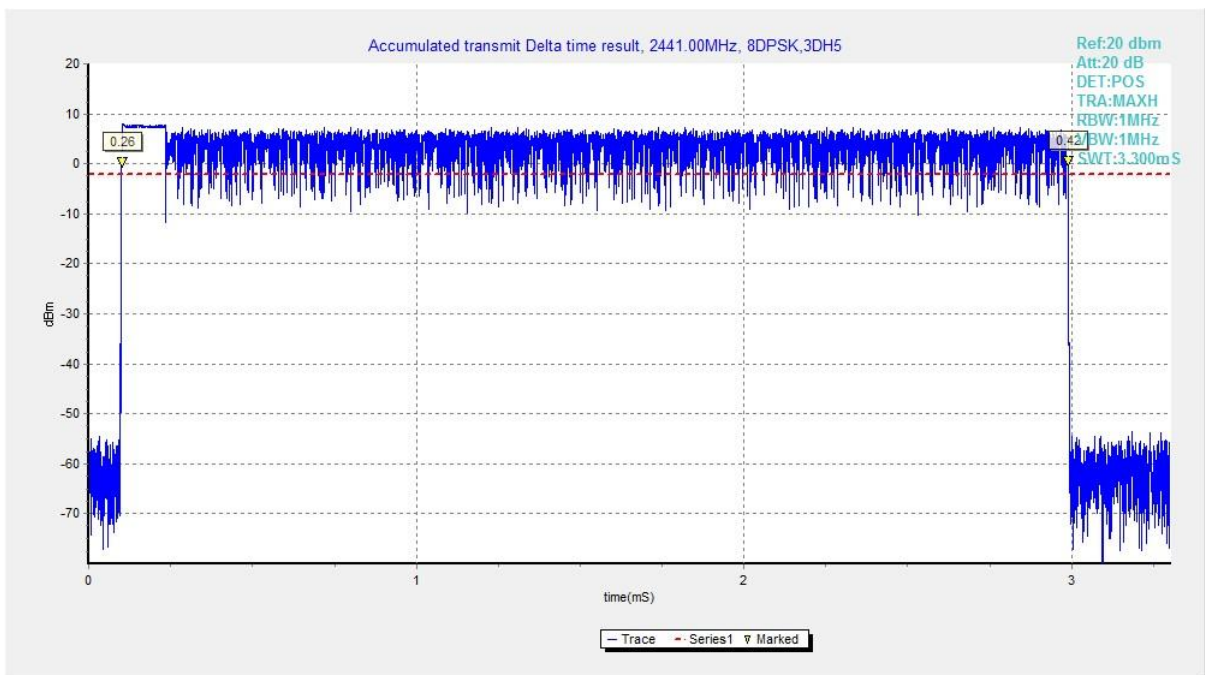


Fig. 74 Time of Occupancy(Dwell Time) (8DPSK, Ch39)

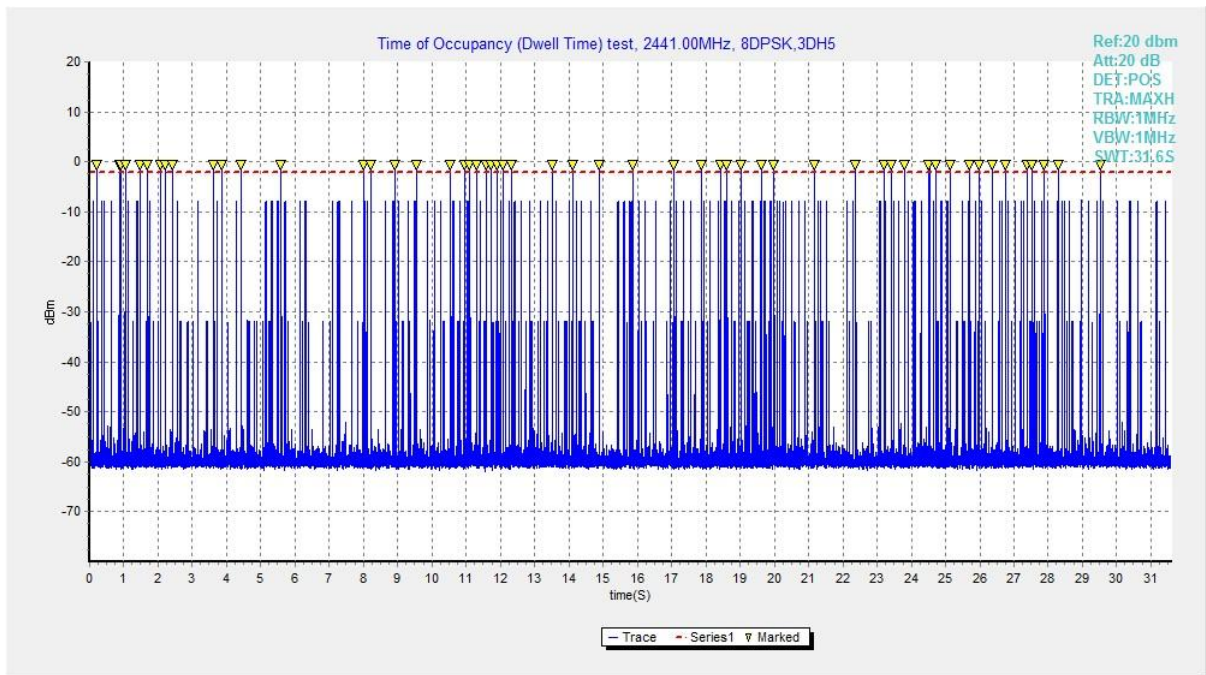


Fig. 75 Time of Occupancy(Dwell Time) (8DPSK, Ch39)

### 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.76	Fig.77	79	<b>P</b>
$\pi/4$ DQPSK	2-DH5	Fig.78	Fig.79	79	<b>P</b>
8DPSK	3-DH5	Fig.80	Fig.81	79	<b>P</b>

See below for test graphs.

Conclusion: Pass

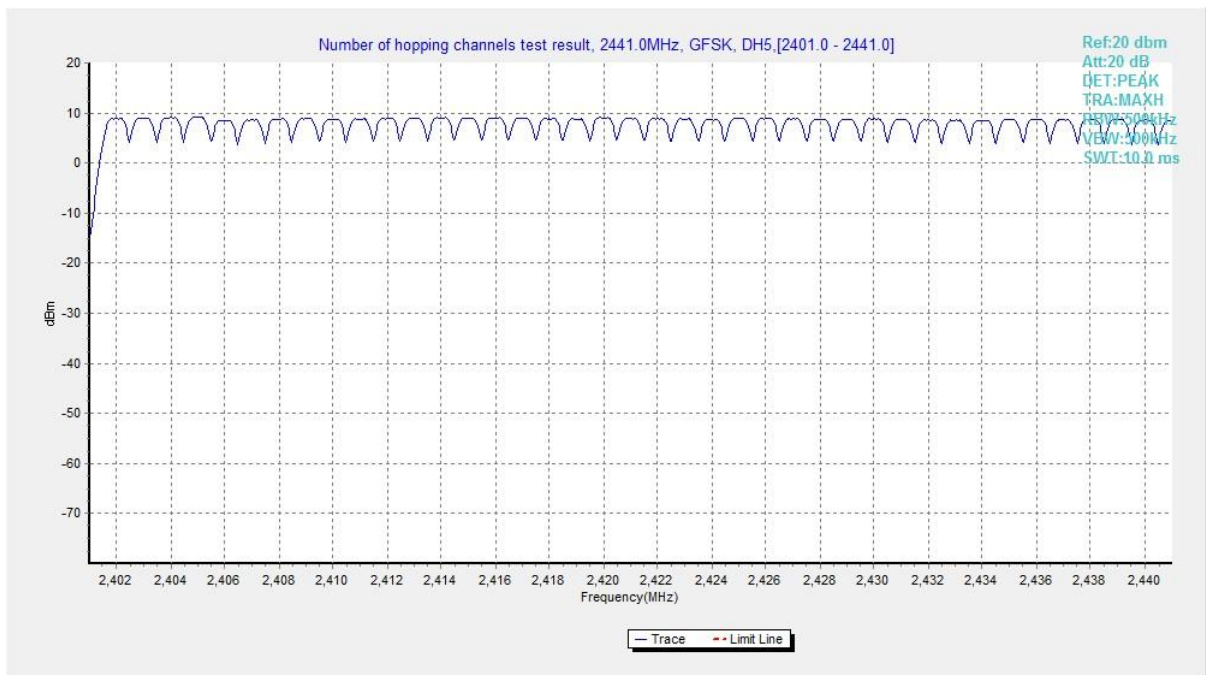


Fig. 76 Hopping channel ch0~39 (GFSK, Ch39)



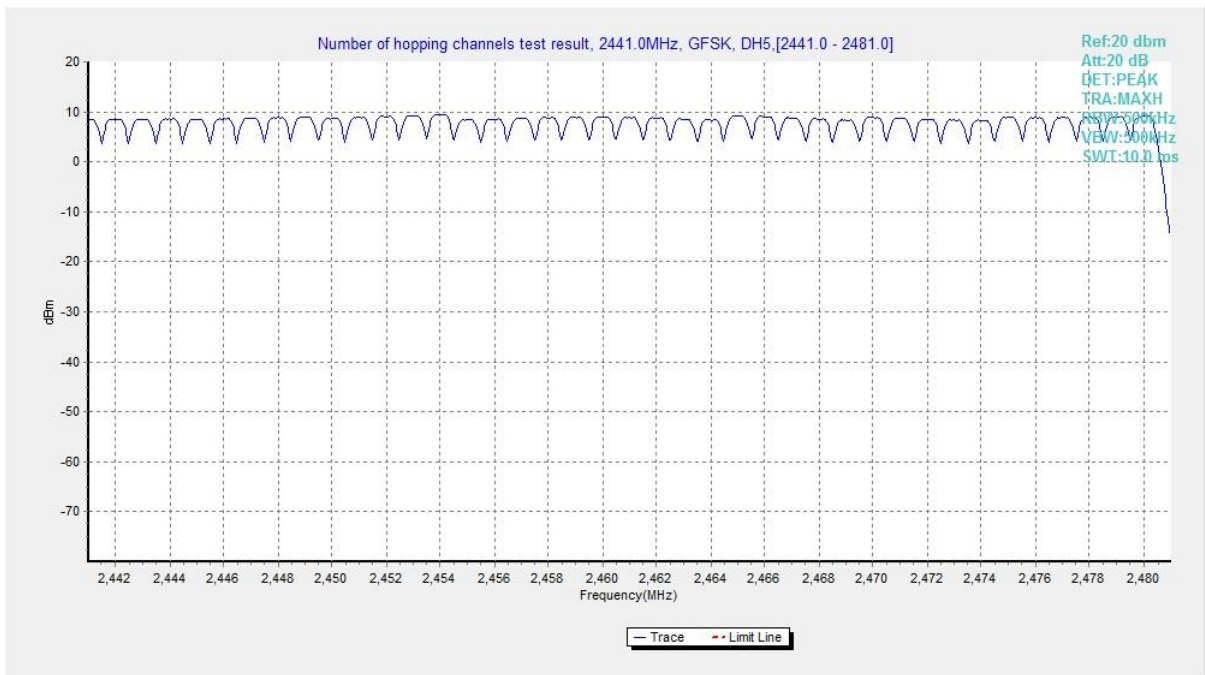


Fig. 77 Hopping channel ch40~78 (GFSK, Ch39)

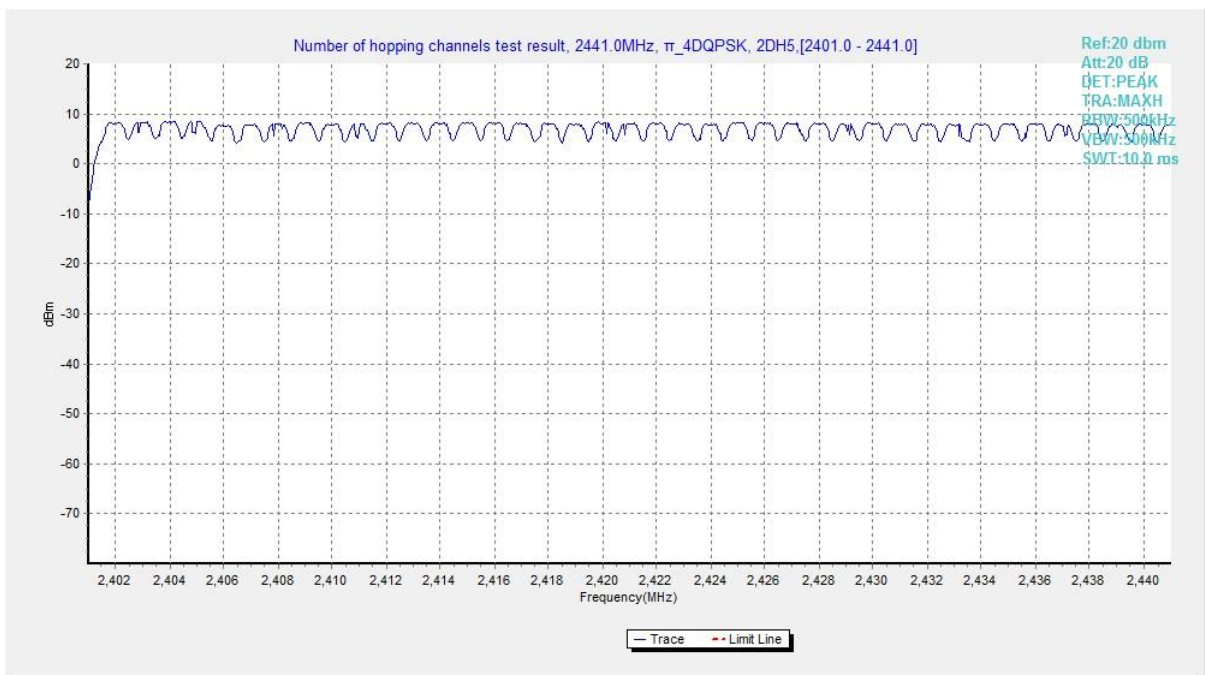


Fig. 78 Hopping channel ch0~39 ( $\pi/4$  DQPSK, Ch39)

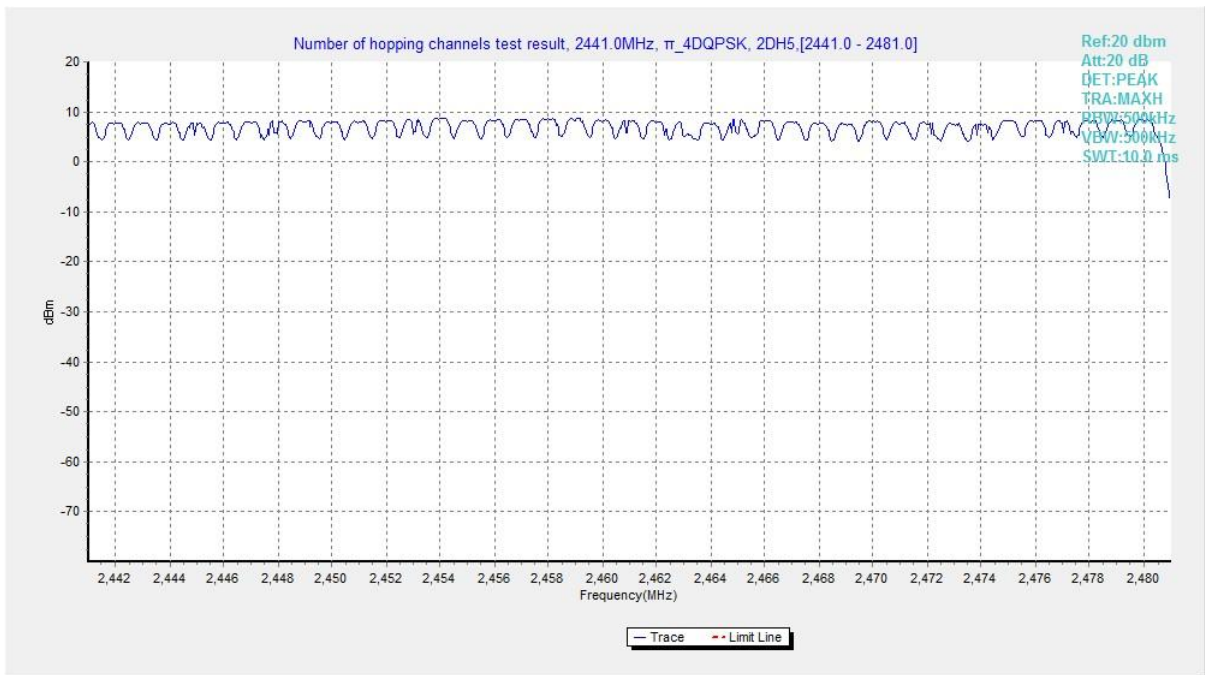


Fig. 79 Hopping channel ch40~78 ( $\pi$ /4 DQPSK, Ch39)

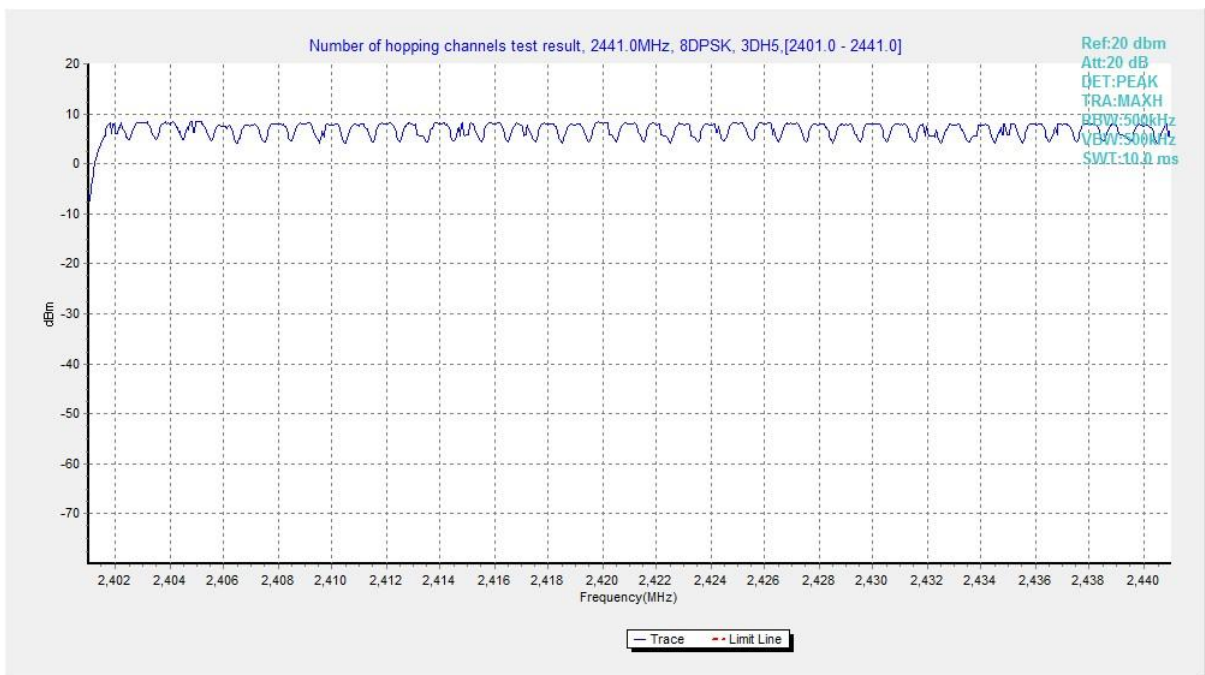


Fig. 80 Hopping channel ch0~39 (8DPSK, Ch39)

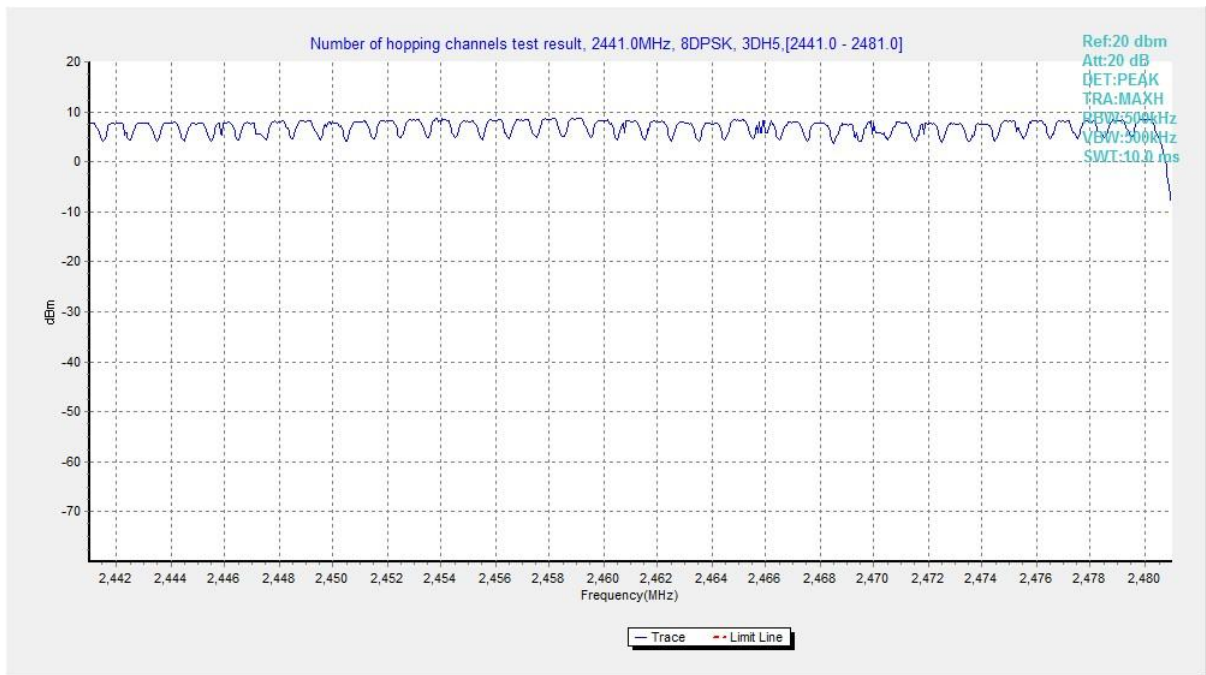


Fig. 81 Hopping channel ch40~78 (8DPSK, Ch39)

### 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.82	1.00	<b>P</b>
$\pi/4$ DQPSK	39	2-DH5	Fig.83	1.01	<b>P</b>
8DPSK	39	3-DH5	Fig.84	1.00	<b>P</b>

See below for test graphs.

Conclusion: Pass

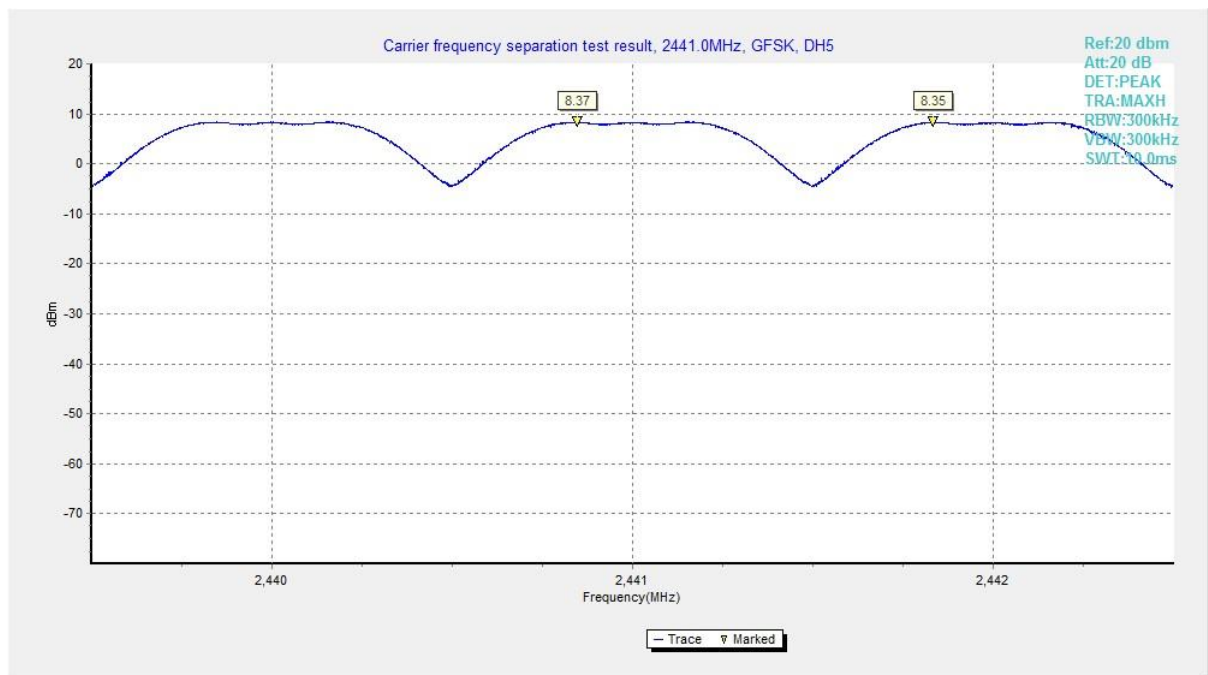


Fig. 82 Carrier Frequency Separation (GFSK, Ch39)



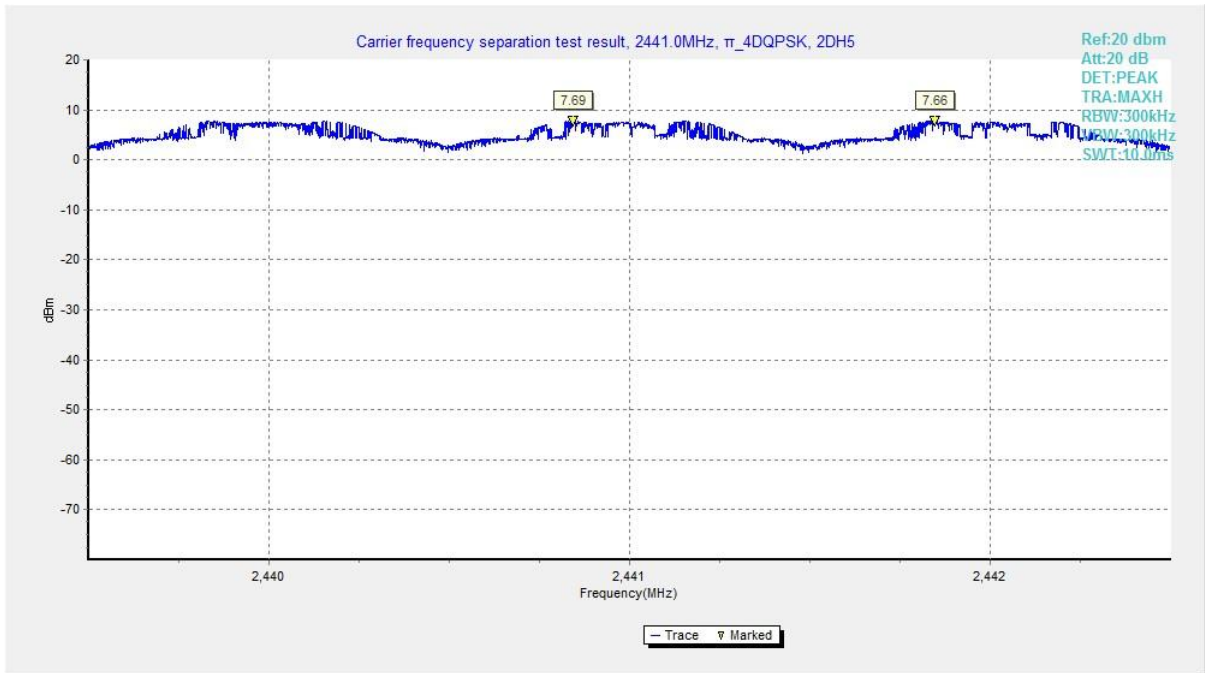


Fig. 83 Carrier Frequency Separation ( $\pi$  /4 DQPSK, Ch39)

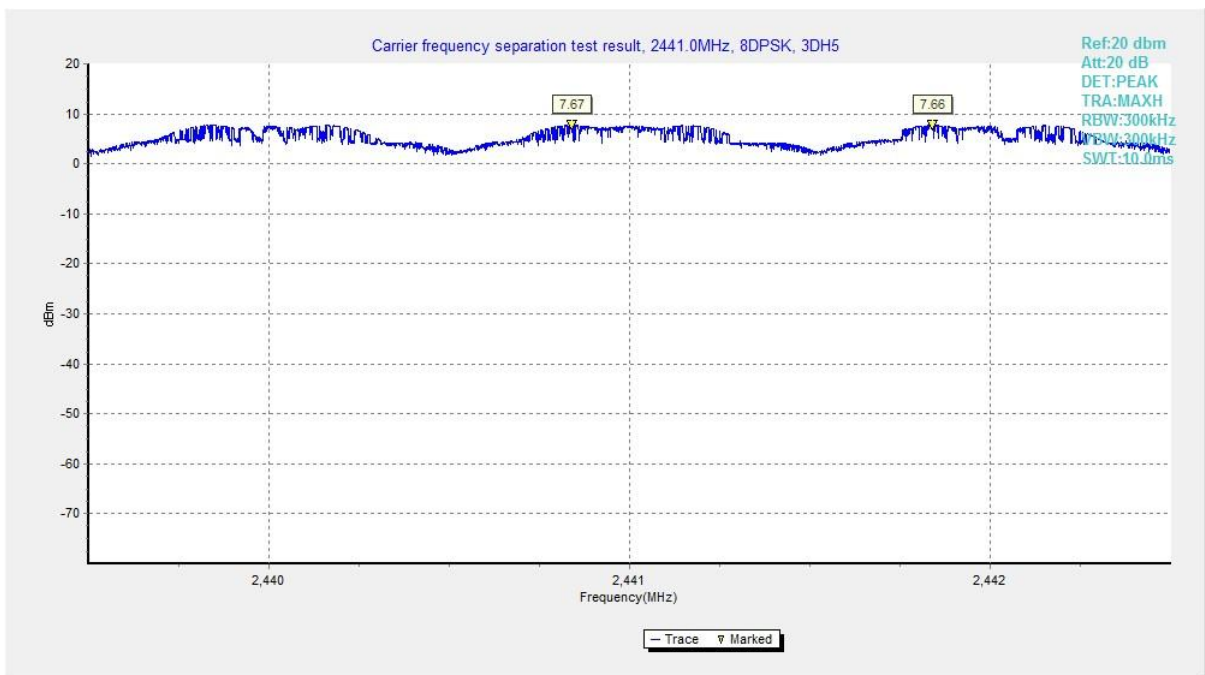


Fig. 84 Carrier Frequency Separation (8DPSK, Ch39)

## 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 $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		Traffic	Idle	
0.15 to 0.5	66 to 56	Fig.85	Fig.86	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 $\mu$ V)	Result (dB $\mu$ 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.

#### BT (Quasi-peak Limit) - AE3

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		Traffic	Idle	
0.15 to 0.5	66 to 56	Fig.87	Fig.88	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 $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		Traffic	Idle	
0.15 to 0.5	56 to 46	Fig.87	Fig.88	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.



No. I21N00537-BT

**See below for test graphs.**

**Conclusion: Pass**

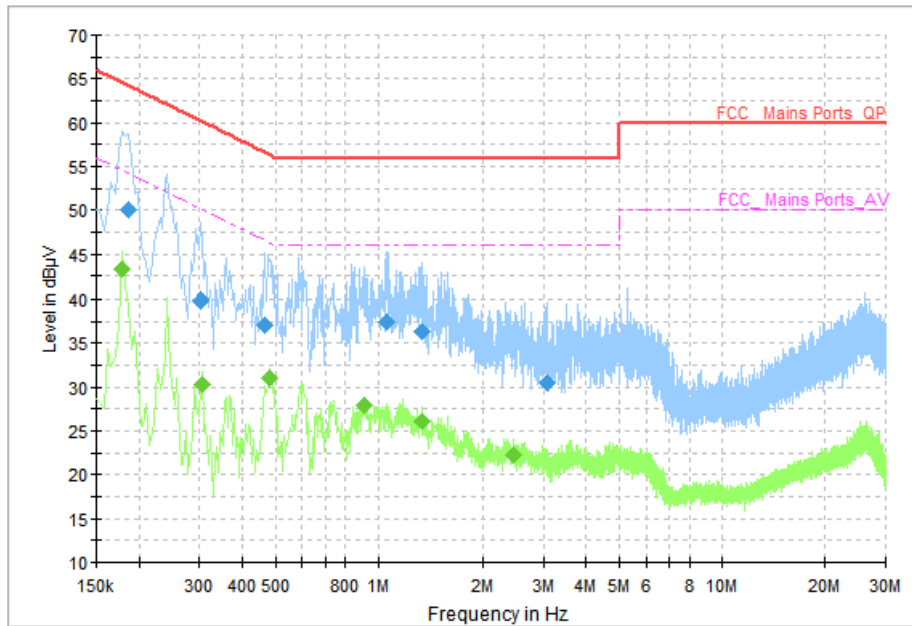


Fig. 85 AC Powerline Conducted Emission (Traffic, AE2, 120V)

**Measurement Results: Quasi Peak**

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.186000	49.99	64.21	14.22	N	ON	10
0.302000	39.85	60.19	20.34	N	ON	10
0.466000	37.03	56.59	19.55	N	ON	10
1.054000	37.37	56.00	18.63	L1	ON	10
1.338000	36.34	56.00	19.66	L1	ON	10
3.062000	30.43	56.00	25.57	L1	ON	10

**Measurement Results: Average**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.178000	43.31	54.58	11.26	N	ON	10
0.306000	30.36	50.08	19.71	N	ON	10
0.482000	31.04	46.31	15.26	L1	ON	10
0.914000	27.96	46.00	18.04	L1	ON	10
1.338000	26.05	46.00	19.95	L1	ON	10
2.462000	22.34	46.00	23.66	L1	ON	10

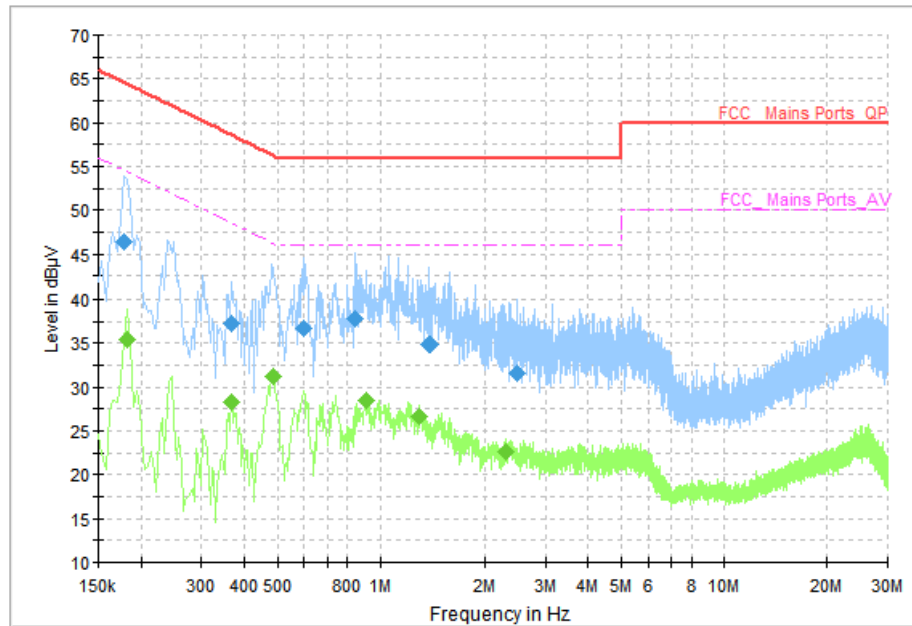


Fig. 86 AC Power line Conducted Emission (Idle, AE2, 120V)

**Measurement Results: Quasi Peak**

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.178000	46.45	64.58	18.12	N	ON	10
0.366000	37.22	58.59	21.37	L1	ON	10
0.598000	36.70	56.00	19.30	L1	ON	10
0.846000	37.86	56.00	18.14	L1	ON	10
1.382000	34.80	56.00	21.20	L1	ON	10
2.486000	31.53	56.00	24.47	L1	ON	10

**Measurement Results: Average**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.182000	35.40	54.39	19.00	L1	ON	10
0.366000	28.34	48.59	20.25	L1	ON	10
0.486000	31.15	46.24	15.09	L1	ON	10
0.914000	28.41	46.00	17.59	L1	ON	10
1.298000	26.59	46.00	19.41	L1	ON	10
2.310000	22.62	46.00	23.38	L1	ON	10



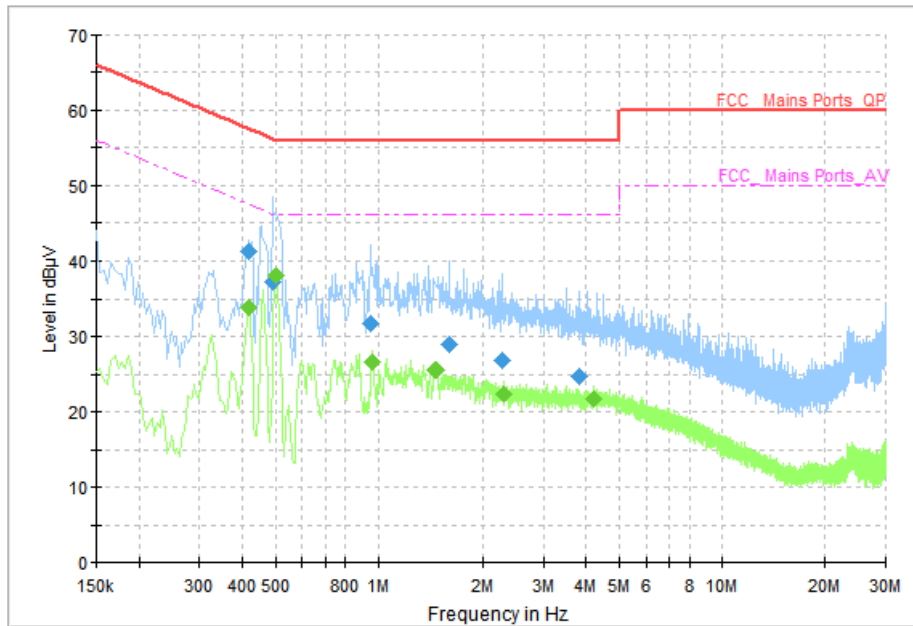


Fig. 87 AC Powerline Conducted Emission (Traffic, AE3, 120V)

**Measurement Results: Quasi Peak**

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.418000	41.19	57.49	16.30	N	ON	10
0.490000	37.22	56.17	18.95	L1	ON	10
0.950000	31.84	56.00	24.16	L1	ON	10
1.598000	28.99	56.00	27.01	L1	ON	10
2.270000	26.93	56.00	29.07	L1	ON	10
3.802000	24.86	56.00	31.14	L1	ON	10

**Measurement Results: Average**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.418000	34.02	47.49	13.47	N	ON	10
0.502000	37.96	46.00	8.04	N	ON	10
0.962000	26.62	46.00	19.38	N	ON	10
1.458000	25.56	46.00	20.44	N	ON	10
2.294000	22.51	46.00	23.49	N	ON	10
4.210000	21.83	46.00	24.17	N	ON	10

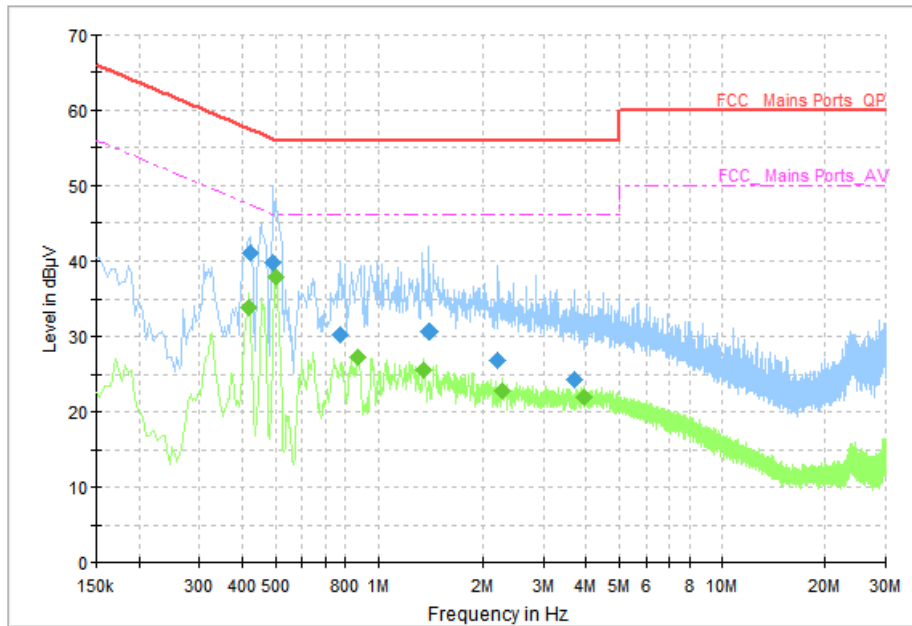


Fig. 88 AC Power line Conducted Emission (Idle, AE3, 120V)

**Measurement Results: Quasi Peak**

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.422000	40.96	57.41	16.45	N	ON	10
0.494000	39.76	56.10	16.34	L1	ON	10
0.770000	30.31	56.00	25.69	L1	ON	10
1.406000	30.83	56.00	25.17	L1	ON	10
2.198000	26.86	56.00	29.14	L1	ON	10
3.682000	24.38	56.00	31.62	L1	ON	10

**Measurement Results: Average**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.418000	33.97	47.49	13.52	N	ON	10
0.502000	37.73	46.00	8.27	N	ON	10
0.870000	27.39	46.00	18.61	N	ON	10
1.362000	25.68	46.00	20.32	N	ON	10
2.282000	22.93	46.00	23.07	N	ON	10
3.950000	22.06	46.00	23.94	N	ON	10

\*\*\*END OF REPORT\*\*\*