

Fig.109. Carrier frequency separation measurement: 8DPSK, Channel 39

A.9. Number of Hopping Channels

Method of Measurement: See ANSI C63.10-clause 7.8.3

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

- Span = the frequency band of operation
- RBW = 500kHz
- VBW = 500kHz
- Sweep = auto
- Detector function = peak
- Trace = max hold
- Allow the trace to stabilize

It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies. Compliance of an EUT with the appropriate regulatory limit shall be determined for the number of hopping channels. A plot of the data shall be included in the test report.

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(a) (1)(iii)	At least 15 non-overlapping channels

Measurement Result:

For GFSK

Channel	Number of hopping channels		Conclusion
0~39	Fig.110	79	P
40~78	Fig.111		

For $\pi/4$ DQPSK

Channel	Number of hopping channels		Conclusion
0~39	Fig.112	79	P
40~78	Fig.113		

For 8DPSK

Channel	Number of hopping channels		Conclusion
0~39	Fig.114	79	P
40~78	Fig.115		

Conclusion: PASS

Test graphs as below:

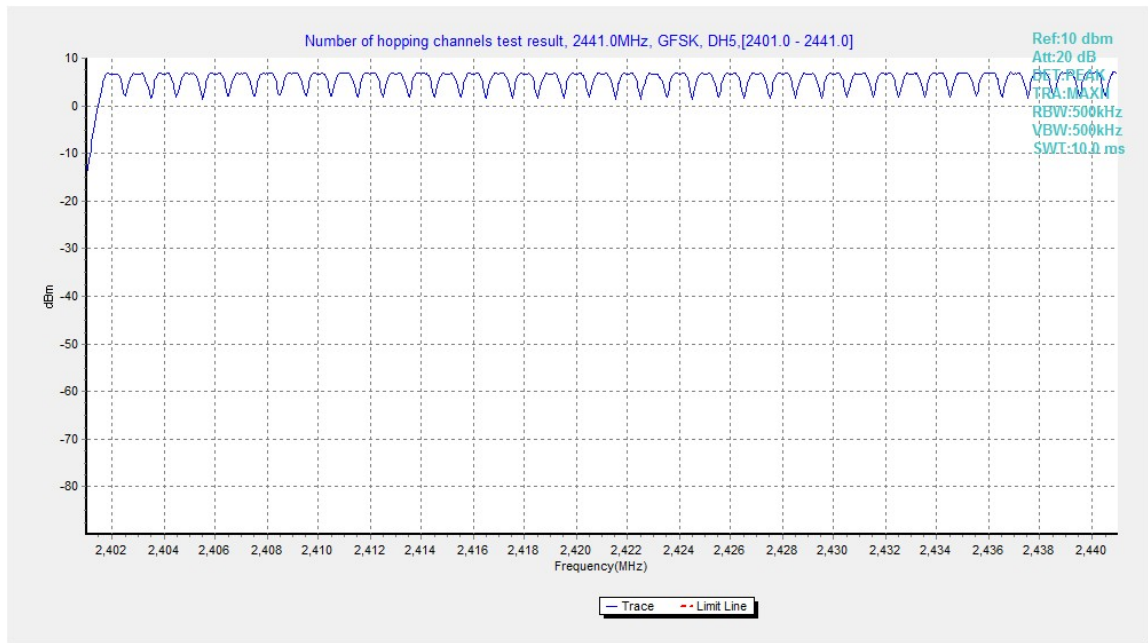


Fig.110. Number of hopping frequencies: GFSK, Channel 0 - 39

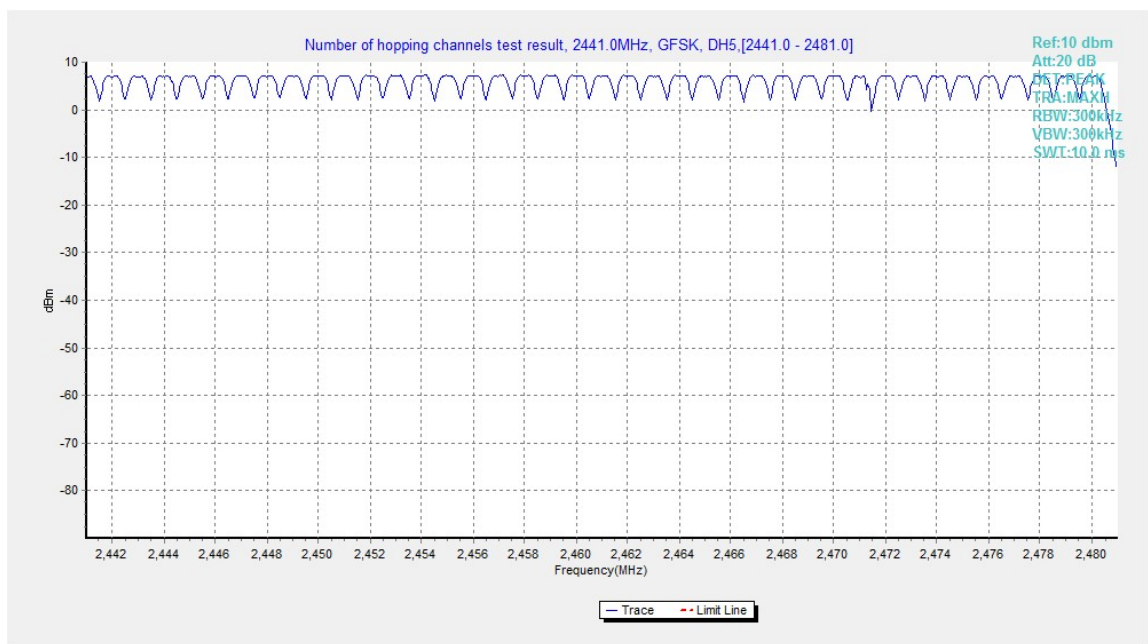


Fig.111. Number of hopping frequencies: GFSK, Channel 40 - 78

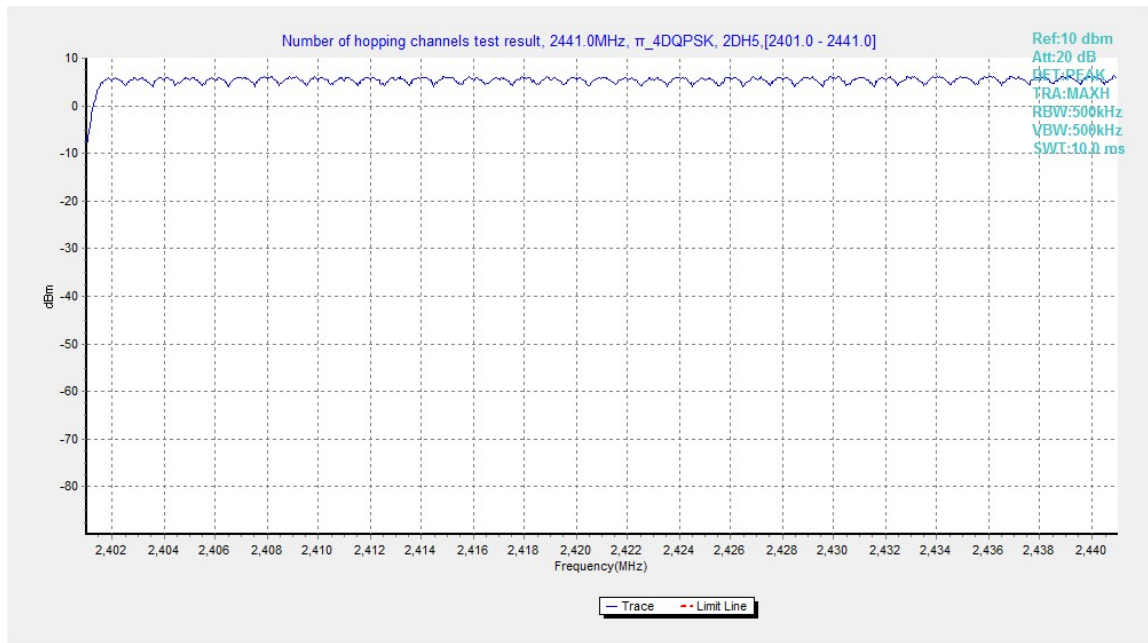


Fig.112. Number of hopping frequencies: $\pi/4$ DQPSK, Channel 0 - 39

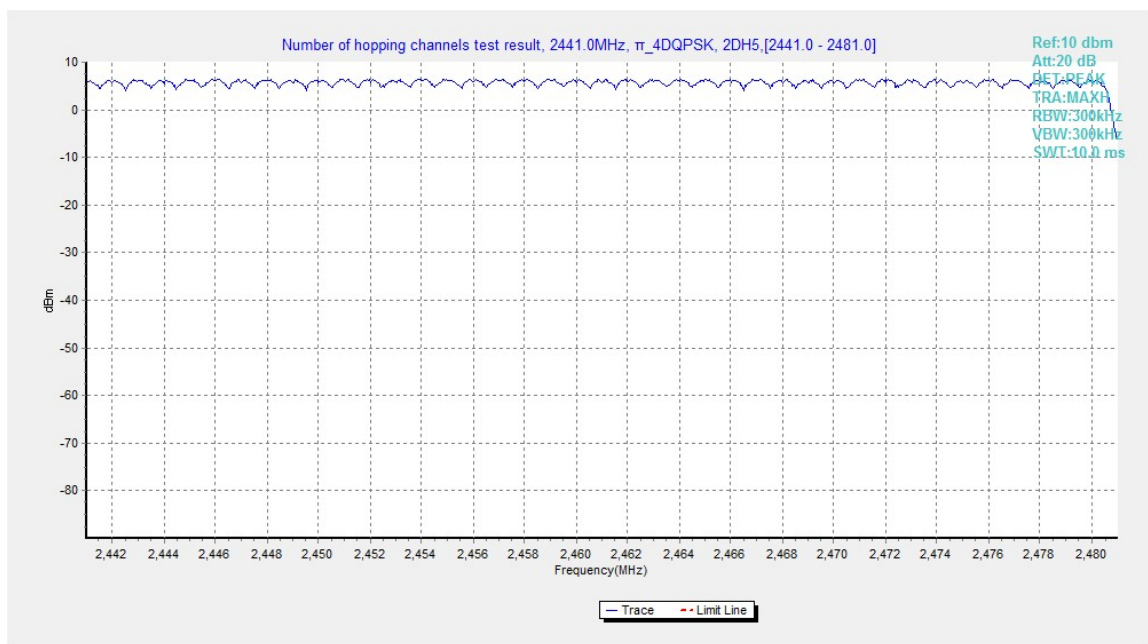


Fig.113. Number of hopping frequencies: $\pi/4$ DQPSK, Channel 40 - 78

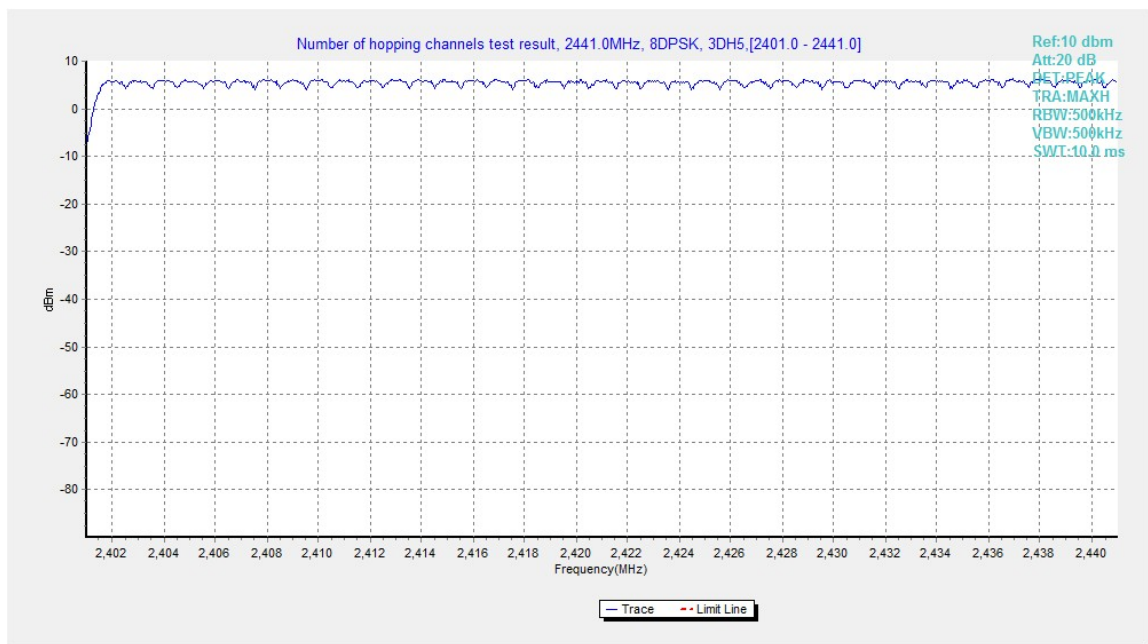


Fig.114. Number of hopping frequencies: 8DPSK, Channel 0 - 39

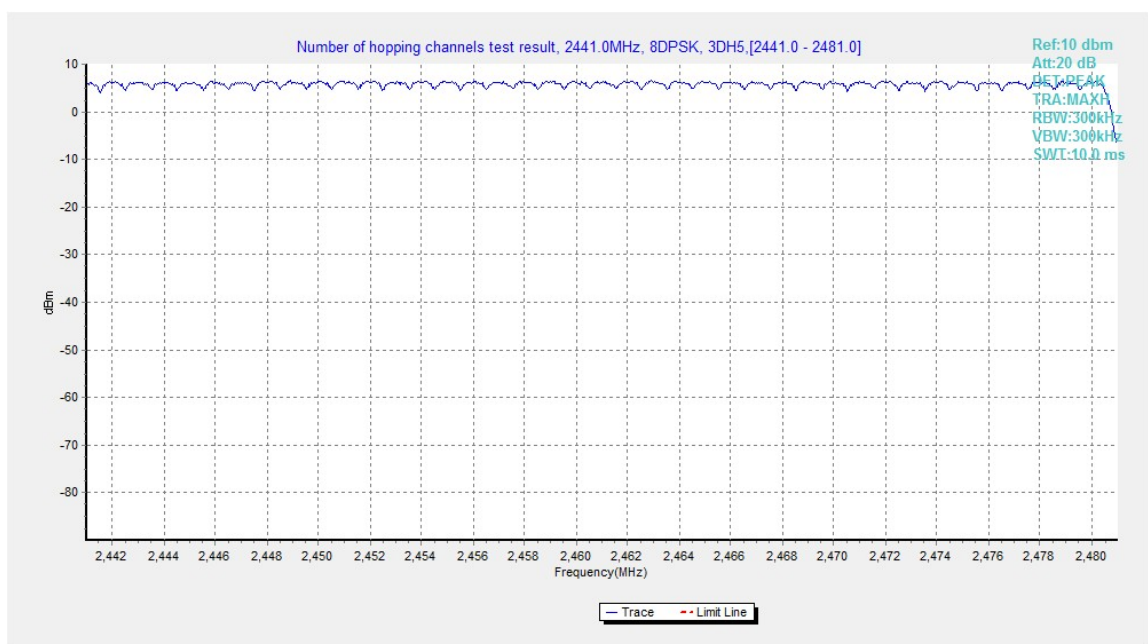


Fig.115. Number of hopping frequencies: 8DPSK, Channel 40 - 78

A.10. AC Powerline Conducted Emission**Test Condition**

Voltage (V)	Frequency (Hz)
120	60

Measurement Result and limit:**Bluetooth (Quasi-peak Limit)**

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Conclusion
0.15 to 0.5	66 to 56	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.

Bluetooth (Average Limit)

Frequency range (MHz)	Average Limit (dB μ V)	Conclusion
0.15 to 0.5	56 to 46	P
0.5 to 5	46	
5 to 30	50	

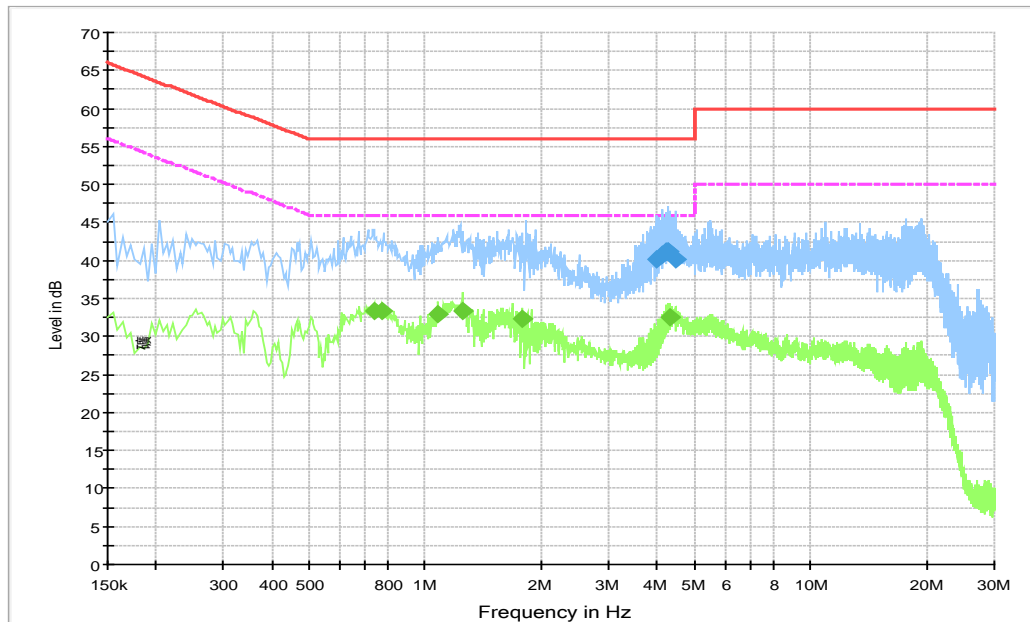
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

The measurement is made according to ANSI C63.10

Conclusion: PASS

Test graphs as below:

Traffic:



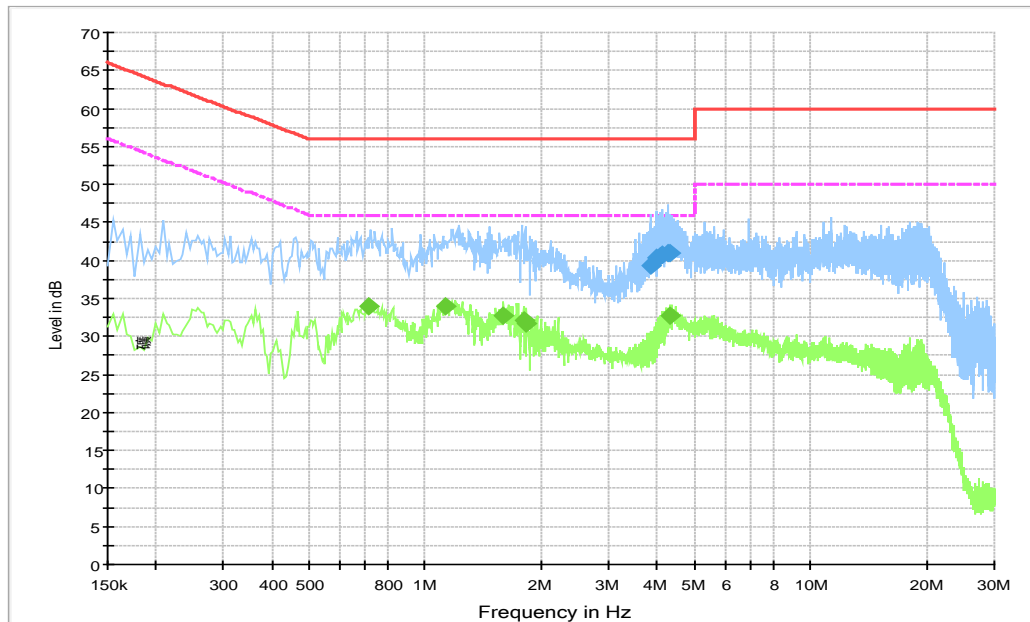
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
4.002000	40.2	GND	L1	10.4	15.8	56.0
4.128000	40.8	GND	L1	10.5	15.2	56.0
4.227000	41.2	GND	L1	10.5	14.8	56.0
4.263000	41.2	GND	L1	10.5	14.8	56.0
4.272000	41.1	GND	L1	10.5	14.9	56.0
4.461000	40.1	GND	L1	10.5	15.9	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.735000	33.3	GND	L1	10.3	12.7	46.0
0.775500	33.4	GND	L1	10.3	12.6	46.0
1.081500	32.9	GND	L1	10.3	13.1	46.0
1.252500	33.3	GND	L1	10.3	12.7	46.0
1.783500	32.2	GND	L1	10.4	13.8	46.0
4.303500	32.6	GND	L1	10.5	13.4	46.0

Idle:



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
3.858000	39.2	GND	L1	10.4	16.8	56.0
3.984000	40.3	GND	L1	10.4	15.7	56.0
4.069500	40.5	GND	L1	10.5	15.5	56.0
4.132500	40.9	GND	L1	10.5	15.1	56.0
4.285500	41.0	GND	L1	10.5	15.0	56.0
4.326000	41.0	GND	L1	10.5	15.0	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.712500	33.9	GND	L1	10.3	12.1	46.0
1.126500	33.9	GND	L1	10.3	12.1	46.0
1.599000	32.8	GND	L1	10.3	13.2	46.0
1.797000	32.1	GND	L1	10.4	13.9	46.0
1.837500	31.7	GND	L1	10.4	14.3	46.0
4.344000	32.7	GND	L1	10.5	13.3	46.0

END OF REPORT