| | DH3 | Fig.96 | 262.02 | P |
| | DH5 | Fig.97 | 308.11 | P |

Conclusion: PASS

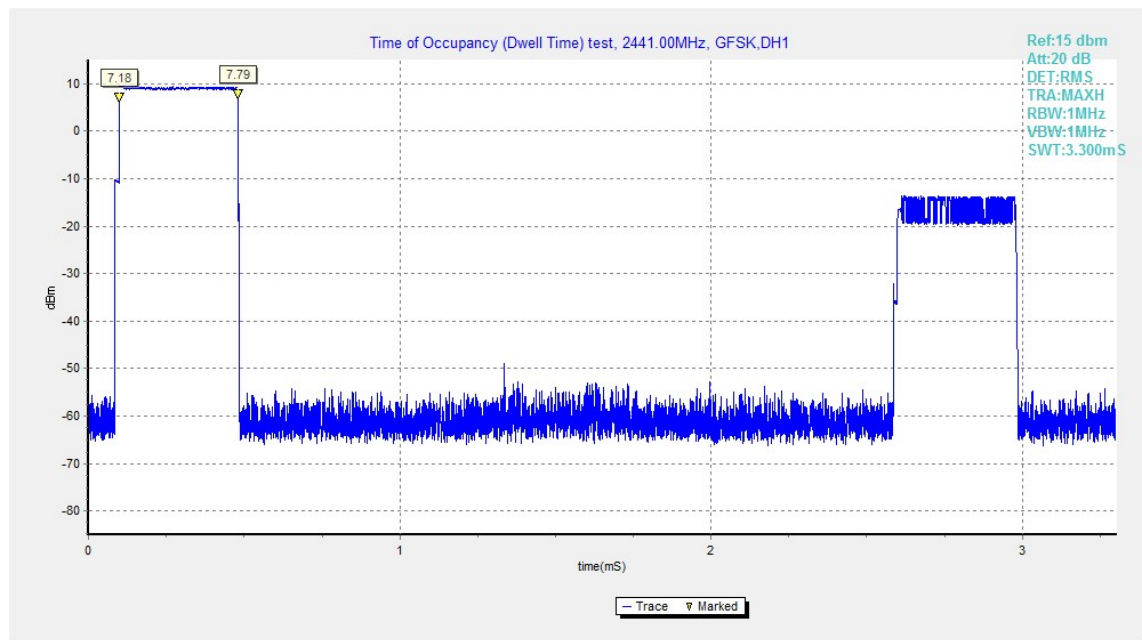**Test graphs as below:**

Fig.89. Time of occupancy (Dwell Time): Channel 39, Packet DH1
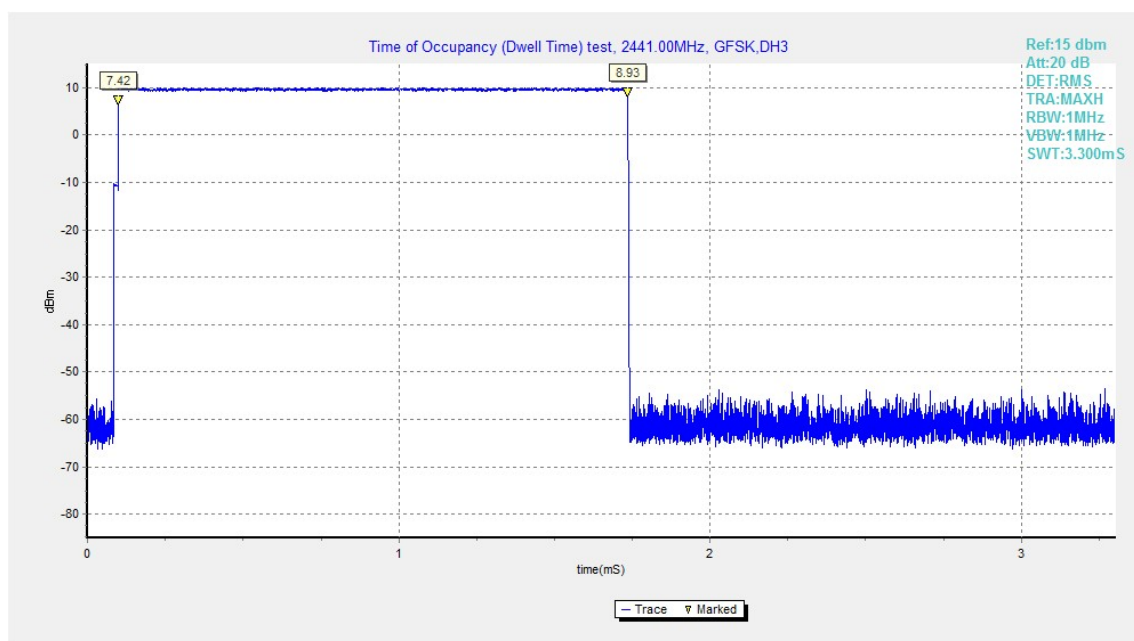

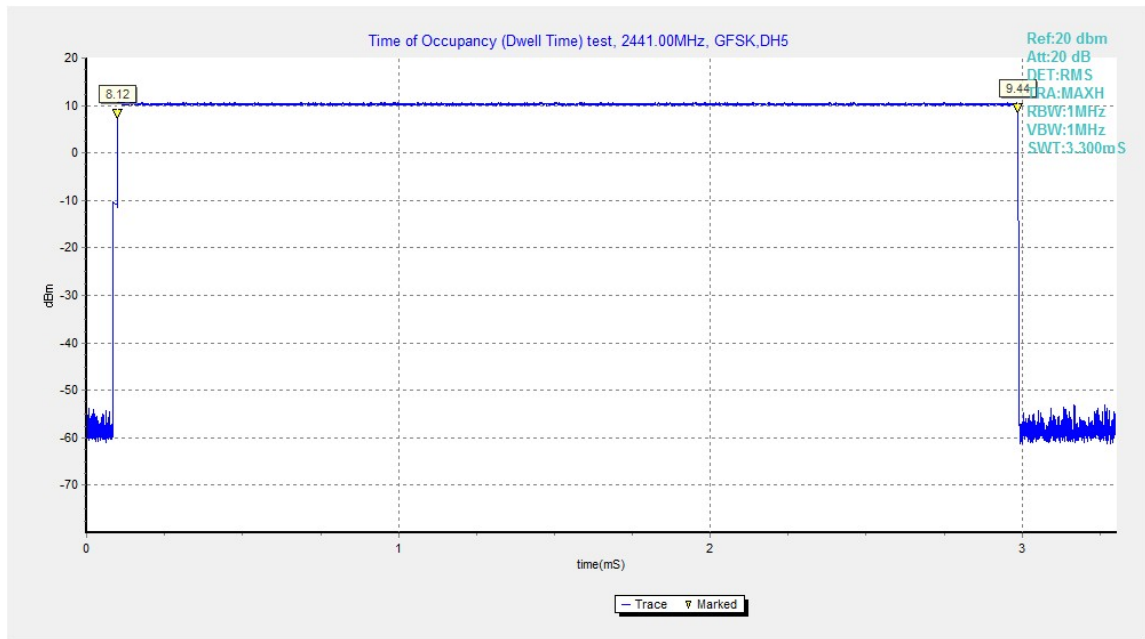Fig.90. Time of occupancy (Dwell Time): Channel 39, Packet DH3

Fig.91.   Time of occupancy (Dwell Time): Channel 39, Packet DH5

Fig.92.   Time of occupancy (Dwell Time): Channel 39, Packet 2-DH1

Fig.93.　Time of occupancy (Dwell Time): Channel 39, Packet 2-DH3

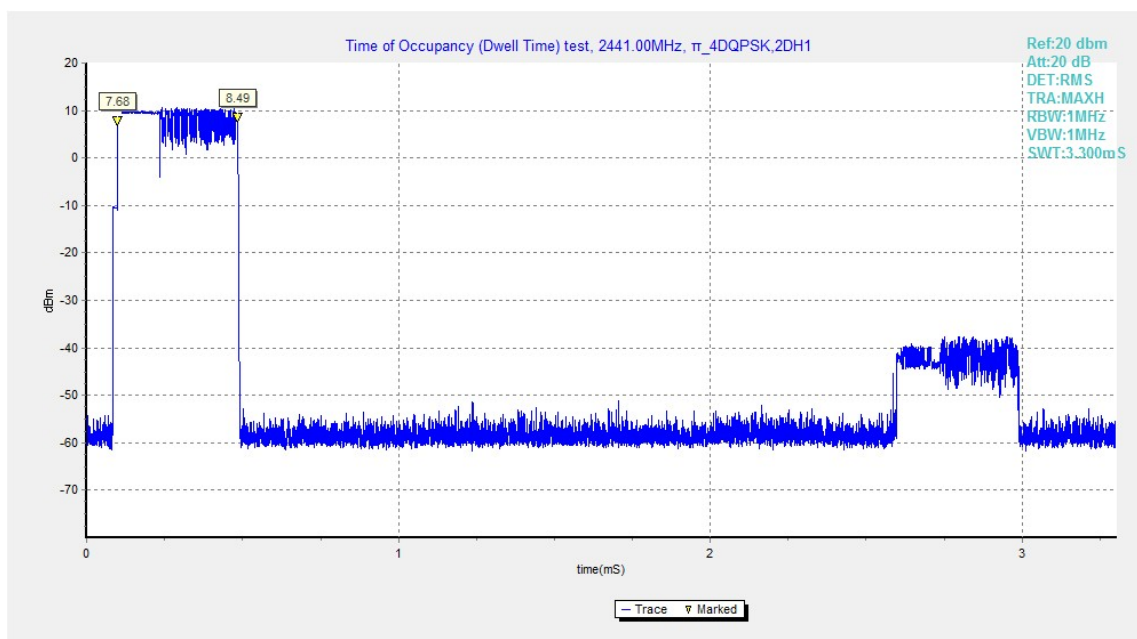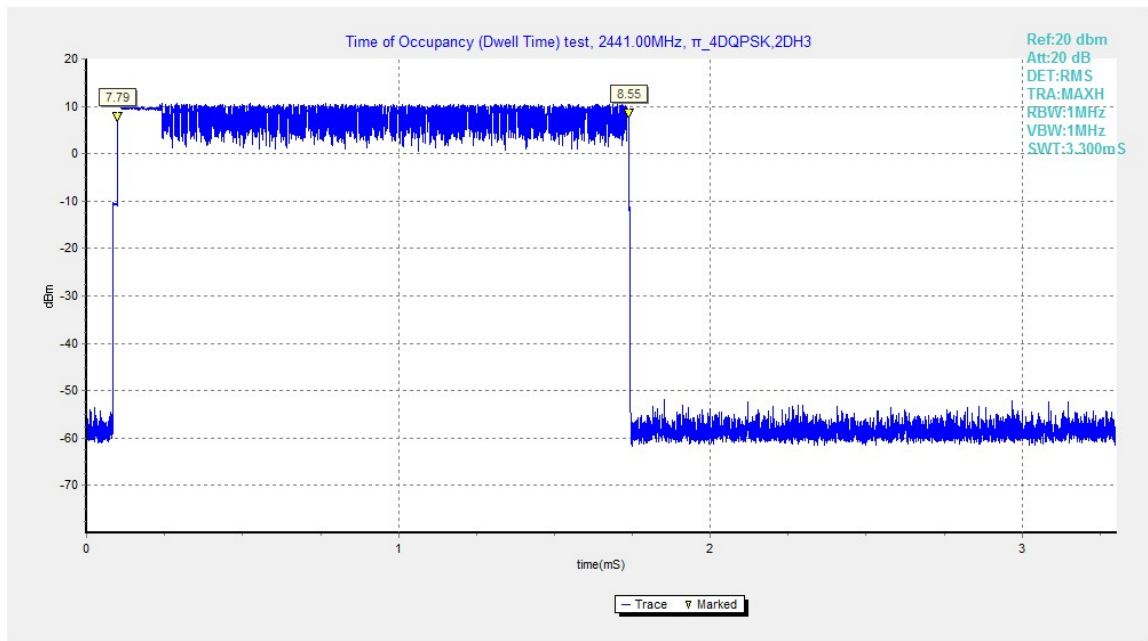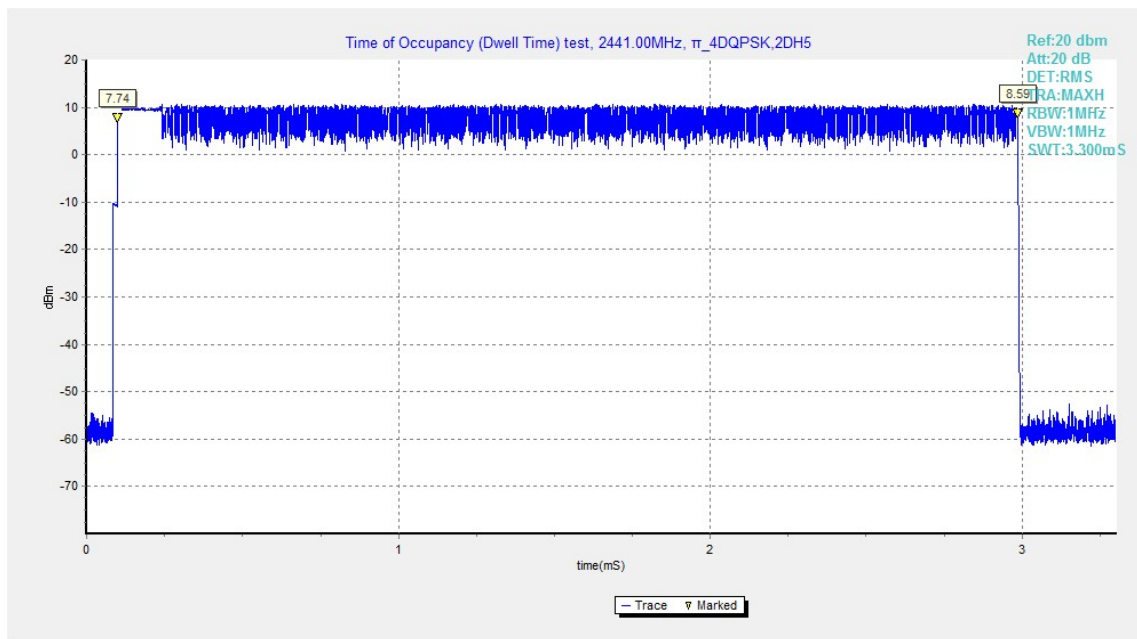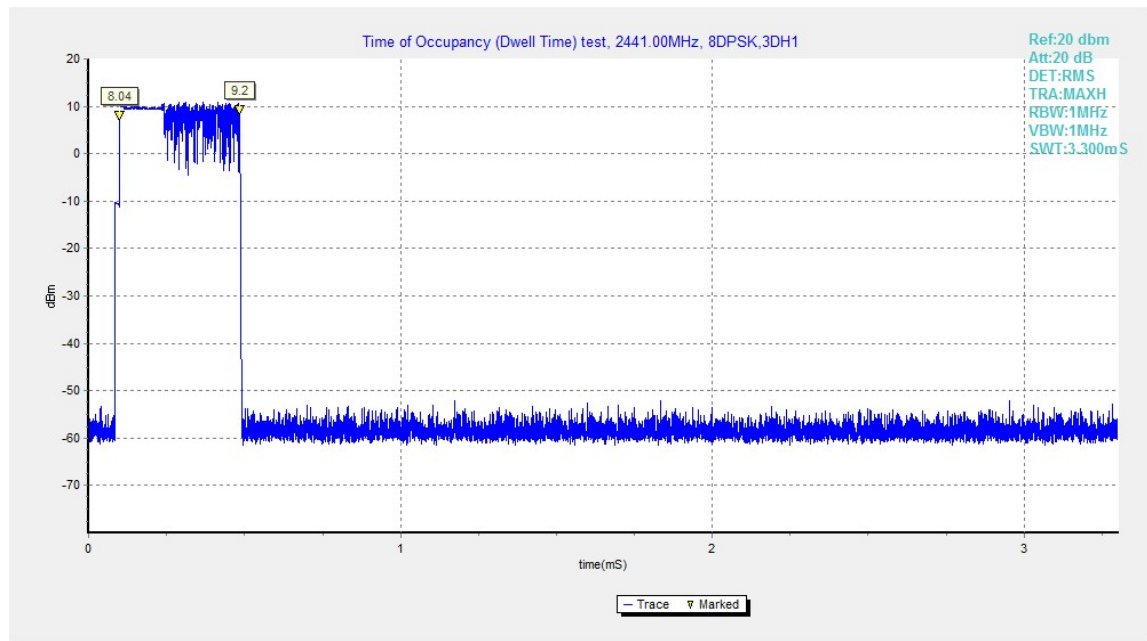Fig.94.　Time of occupancy (Dwell Time): Channel 39, Packet 2-DH5

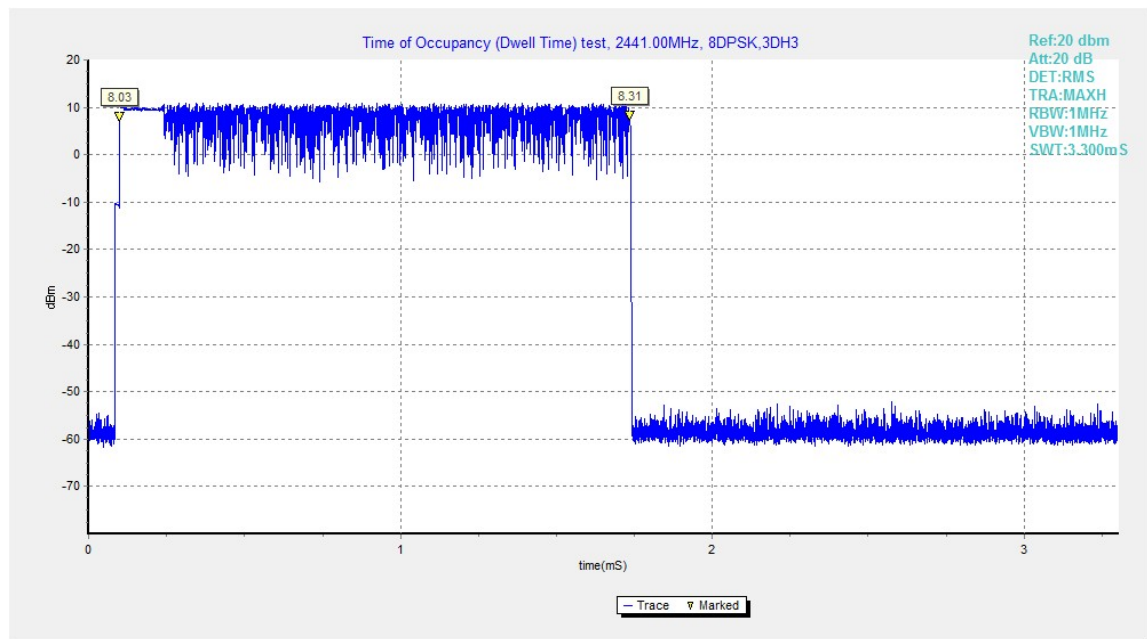Fig.95.   Time of occupancy (Dwell Time): Channel 39, Packet 3-DH1

Fig.96.   Time of occupancy (Dwell Time): Channel 39, Packet 3-DH3
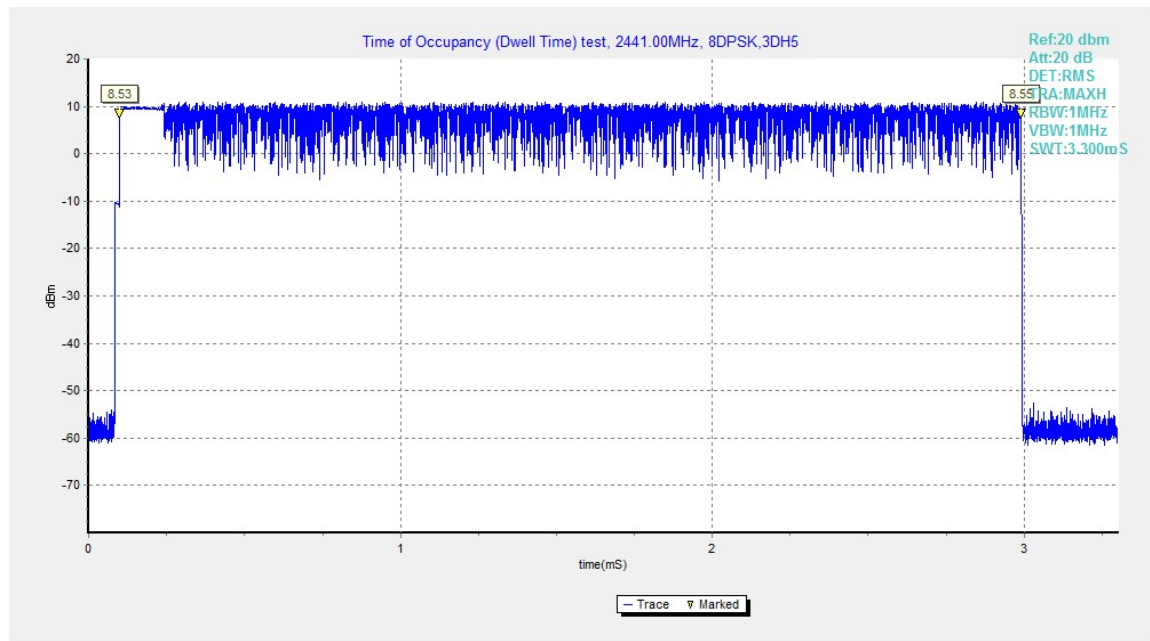
Fig.97.　Time of occupancy (Dwell Time): Channel 39, Packet 3-DH5

A.7. 20dB Bandwidth

Method of Measurement: See ANSI C63.10-clause 6.9.2

Measurement Procedure - Unwanted Emissions

1. Set RBW = 30kHz.

2. Set VBW = 100 kHz.

3. Set span to 3MHz

4. Detector = peak.

5. Trace Mode = max hold.

6. Sweep = auto couple.

7. Allow the trace to stabilize (this may take some time, depending on the extent of the span).

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(a)(1)	NA *

Use NdB Down function of the SA to measure the 20dB Bandwidth

 * Comment: This test case is not required according to the latest FCC 47 CFR Part 15.247. But the test results are necessary for "carrier frequency separation" test case, in Annex A.8.

Measurement Results:

For GFSK

Channel	20dB Bandwidth (kHz)		Conclusion
0	Fig.98	938.00	NA
39	Fig.99	946.00	NA
78	Fig.100	942.00	NA

Forπ/4 DQPSK

Channel	20dB Bandwidth (kHz)		Conclusion
0	Fig.101	1281.00	NA
39	Fig.102	1308.00	NA
78	Fig.103	1290.00	NA

For 8DPSK

Channel	20dB Bandwidth (kHz)		Conclusion
0	Fig.104	1292.00	NA
39	Fig.105	1284.00	NA
78	Fig.106	1280.00	NA

Conclusion: NA
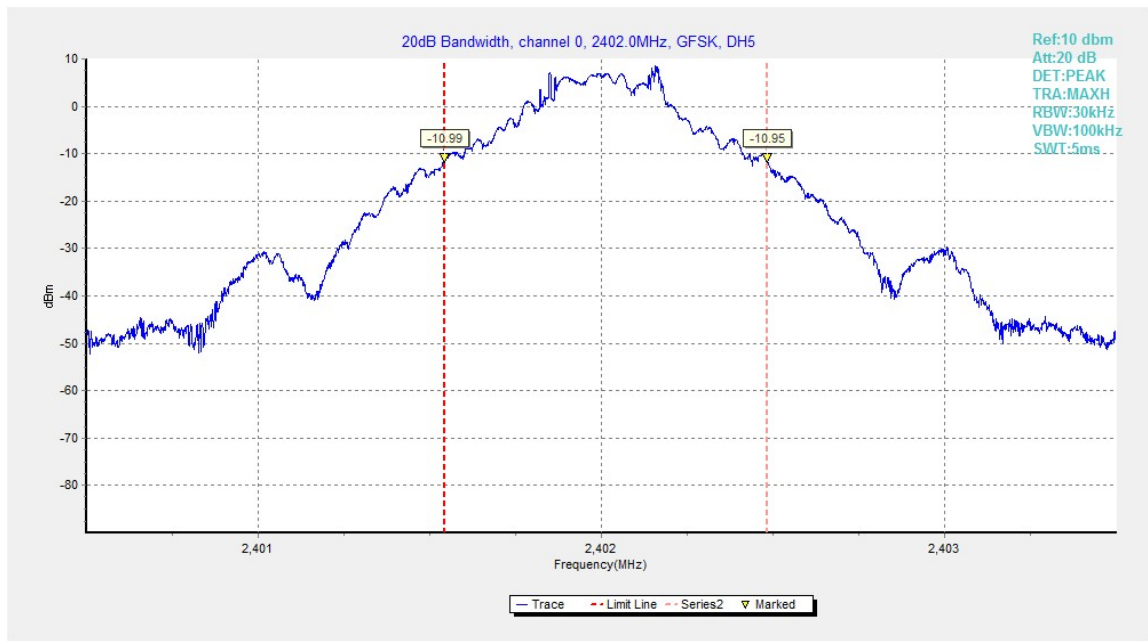
Test graphs as below:

Fig.98.   20dB Bandwidth: GFSK, Channel 0

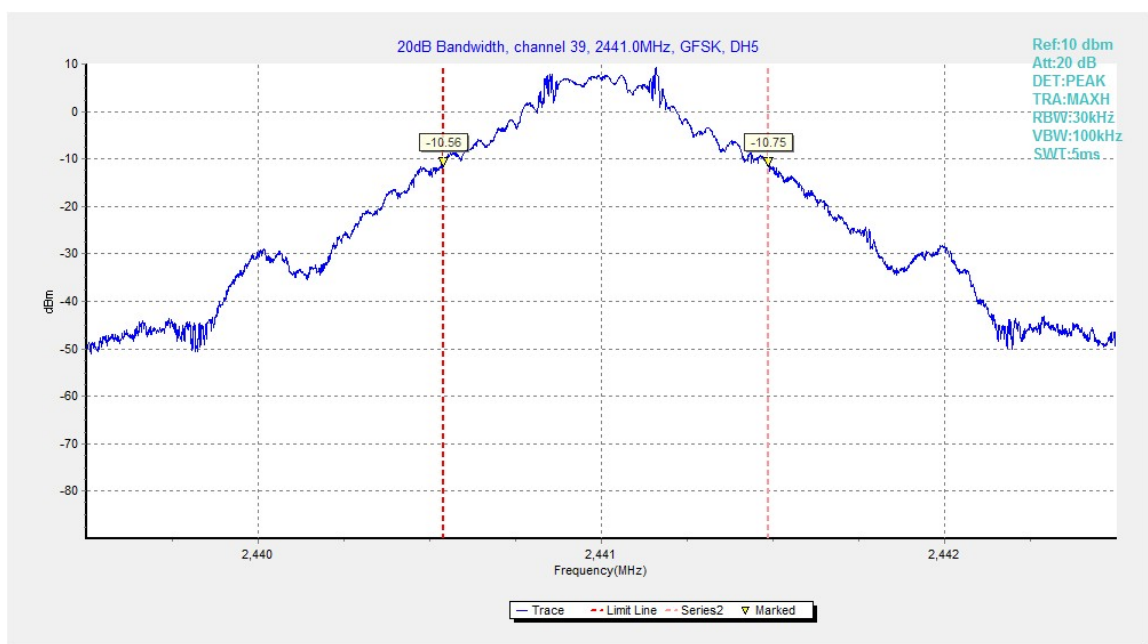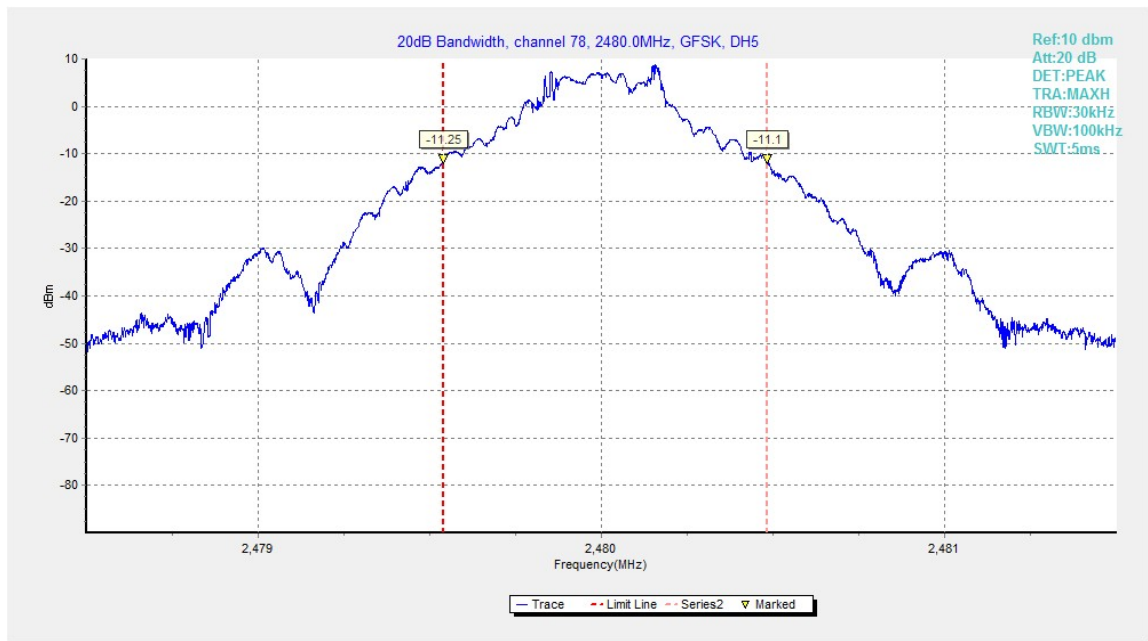
Fig.99.   20dB Bandwidth: GFSK, Channel 39

Fig.100. 20dB Bandwidth: GFSK, Channel 78

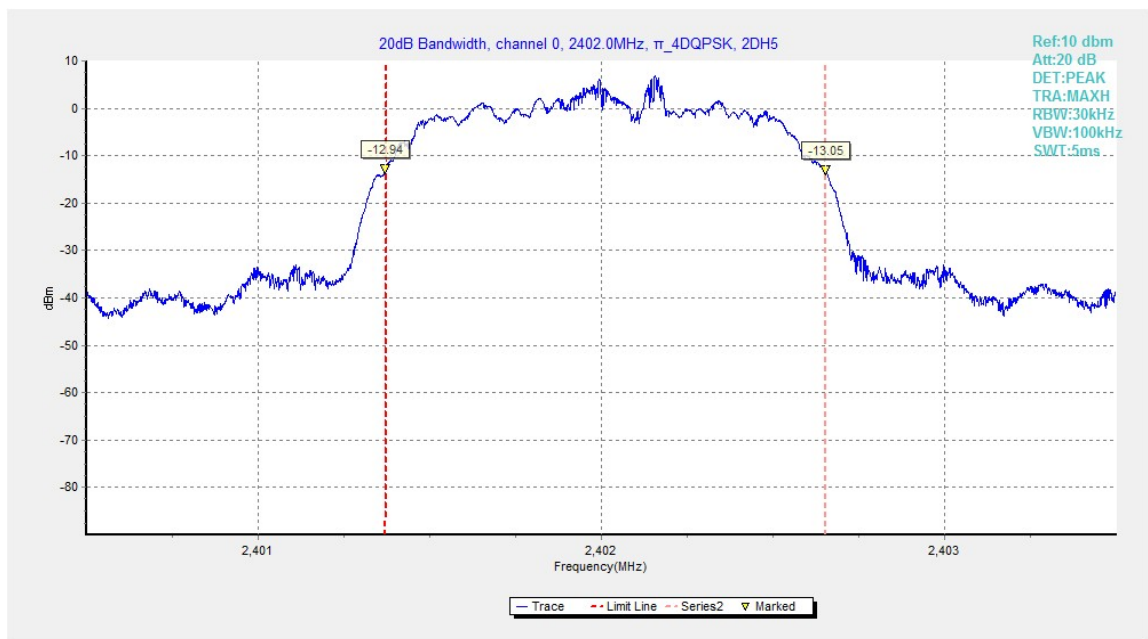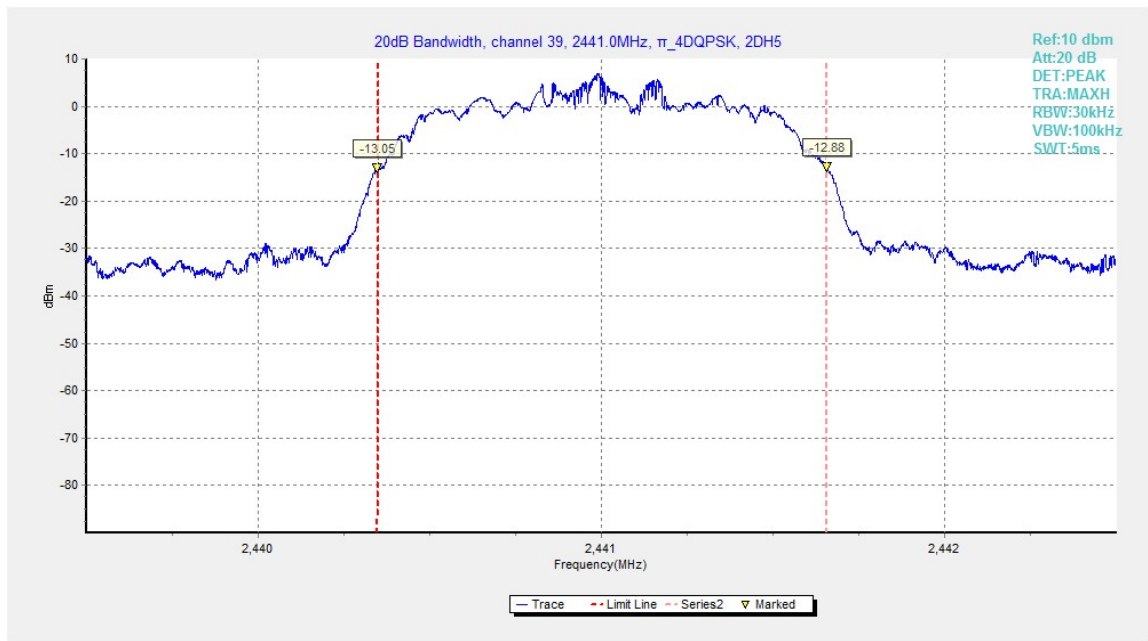
Fig.101. 20dB Bandwidth: π/4 DQPSK, Channel 0
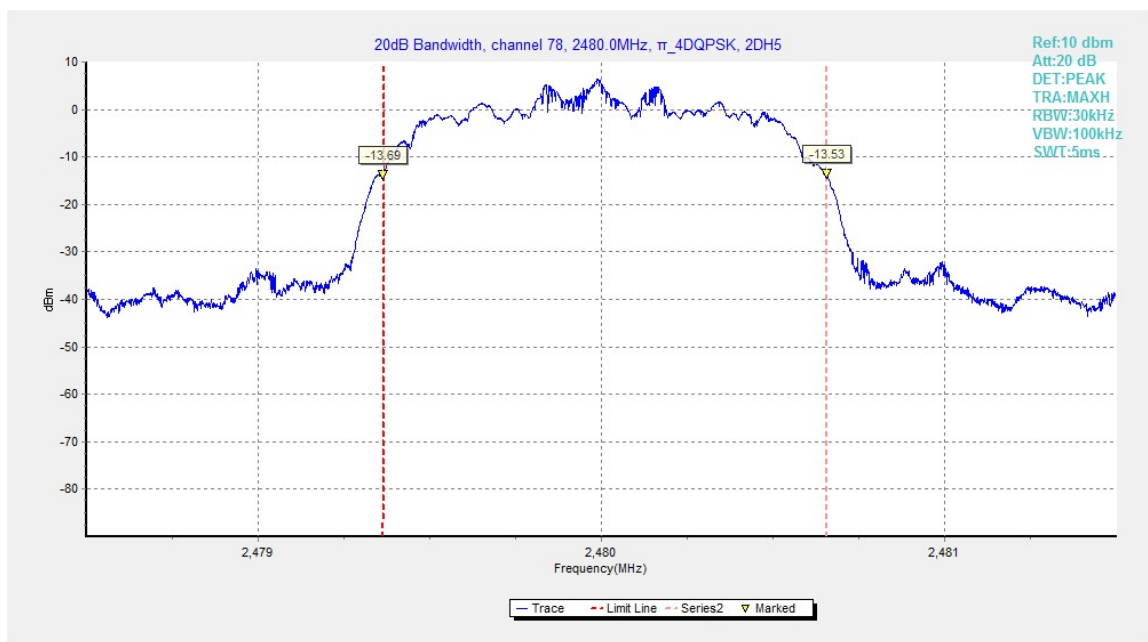
Fig.102. 20dB Bandwidth: π/4 DQPSK, Channel 39

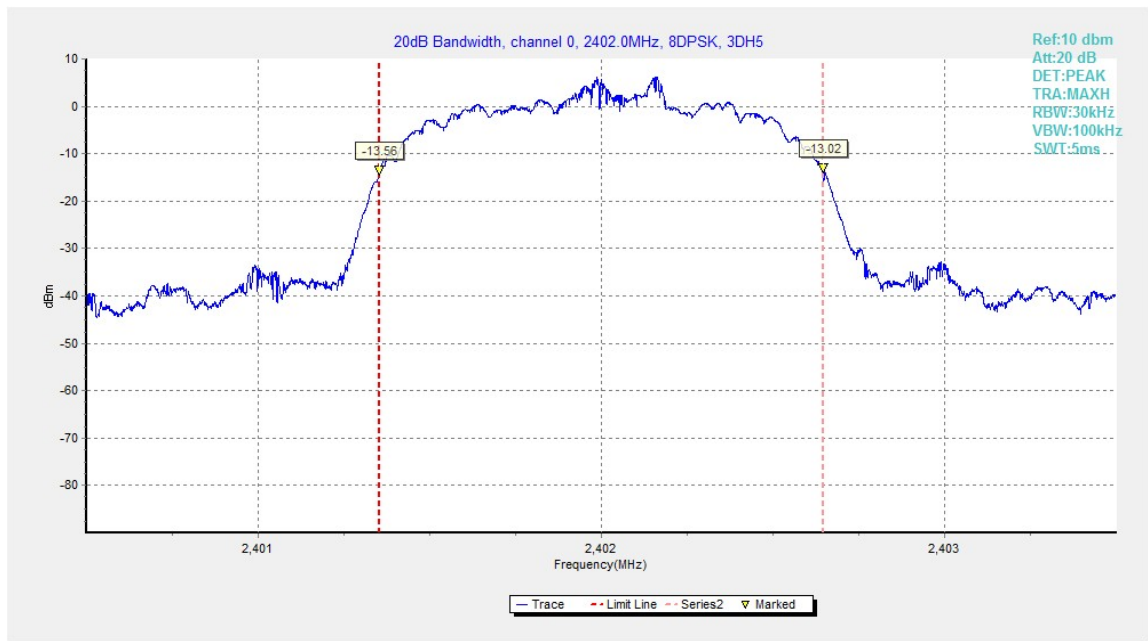Fig.103. 20dB Bandwidth: π/4 DQPSK, Channel 78
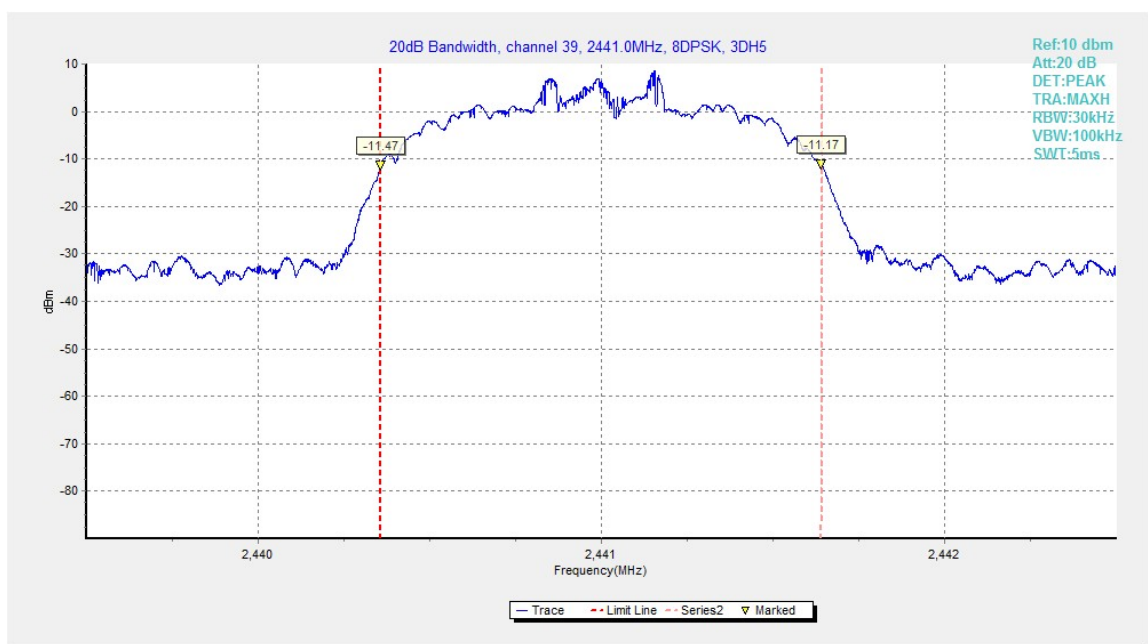
Fig.104. 20dB Bandwidth: 8DPSK, Channel 0

Fig.105. 20dB Bandwidth: 8DPSK, Channel 39
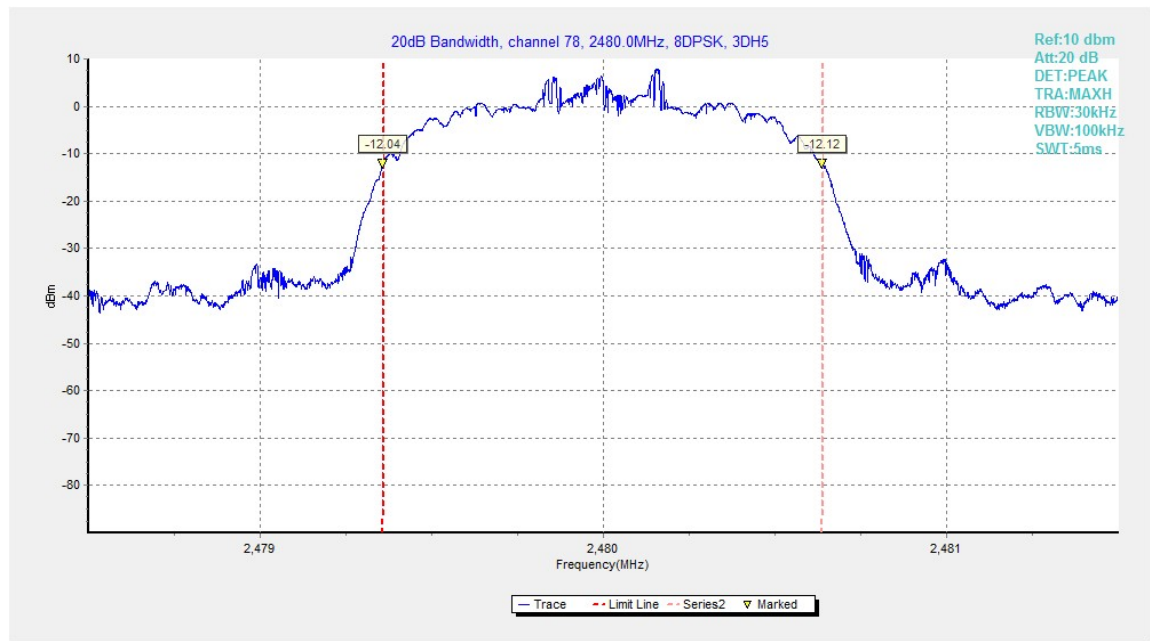
Fig.106. 20dB Bandwidth: 8DPSK, Channel 78

A.8. Carrier Frequency Separation

Method of Measurement: See ANSI C63.10-clause 7.8.2

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

- Span = 3MHz

- RBW=300kHz

- VBW=300kHz

- Sweep = auto

- Detector function = peak

- Trace = max hold

- Allow the trace to stabilize

Search the peak marks of the middle frequency and adjacent channel, then record the separation between them.

 * Comment: This limit should be over 25 kHz or (2/3) * 20dB bandwidth, whichever is greater.

Measurement Limit:

Standard	Limit(kHz)
FCC 47 CFR Part 15.247(a)(1)	over 25 kHz or (2/3) * 20dB bandwidth

Measurement Result:
For GFSK

Channel	Carrier frequency separation (kHz)		Conclusion
39	Fig.107	1002.00	P

For π/4 DQPSK

Channel	Carrier frequency separation (kHz)		Conclusion
39	Fig.108	1000.00	P

For 8DPSK

Channel	Carrier frequency separation (kHz)		Conclusion
39	Fig.109	1016.00	P

Conclusion: PASS

Test graphs as below:

Fig.107. Carrier frequency separation measurement: GFSK, Channel 39

Fig.108. Carrier frequency separation measurement: π/4 DQPSK, Channel 39
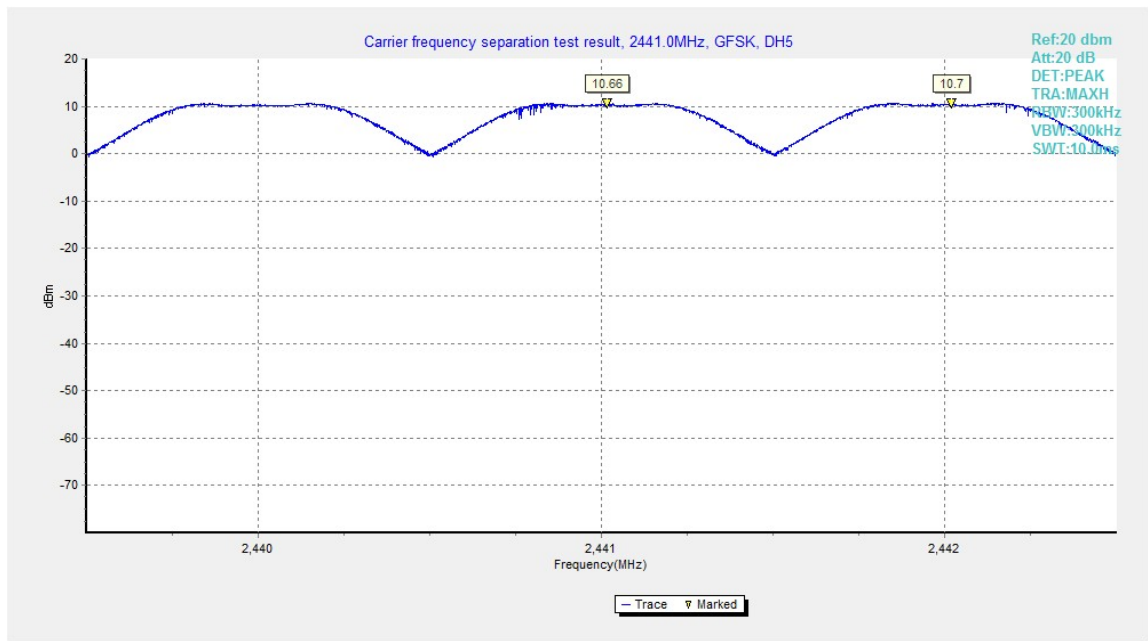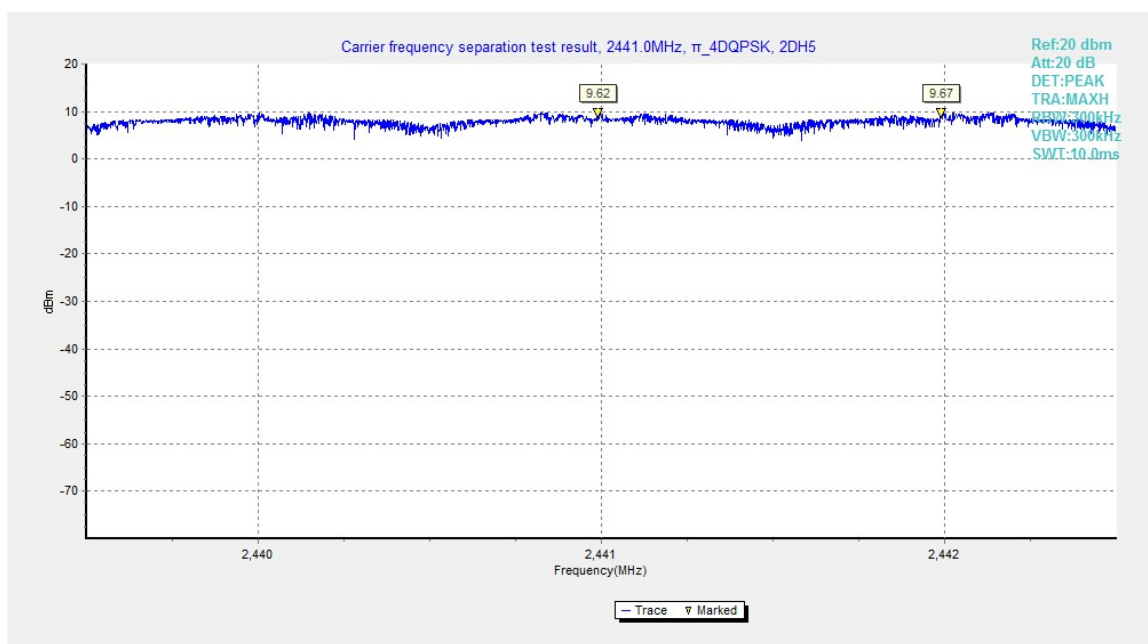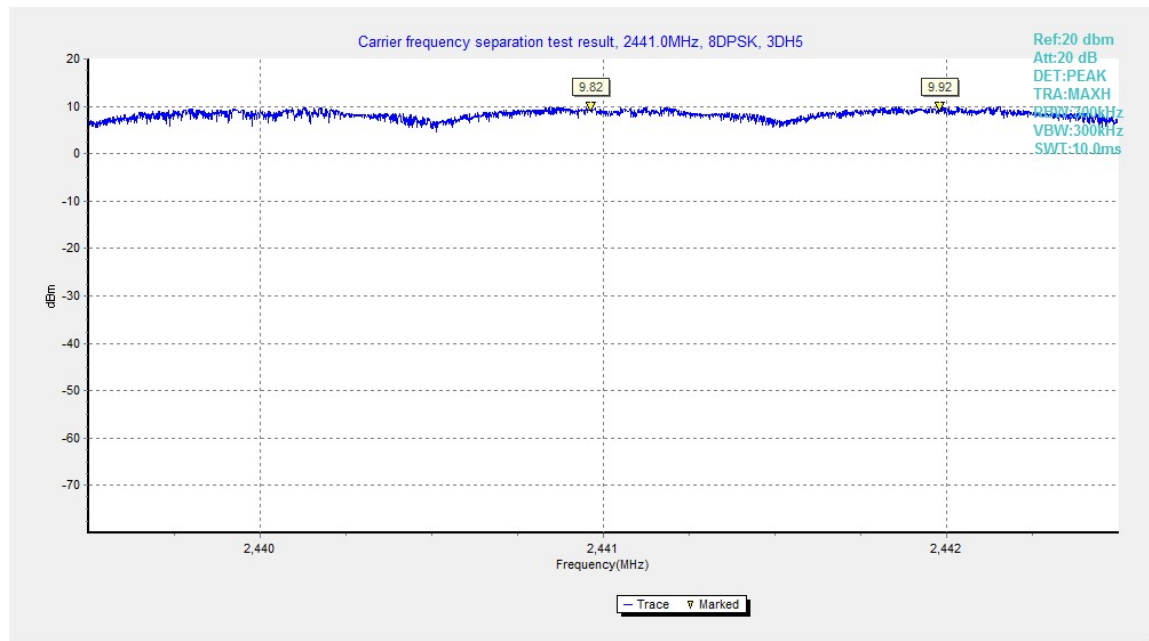
Fig.109. Carrier frequency separation measurement: 8DPSK, Channel 39

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		

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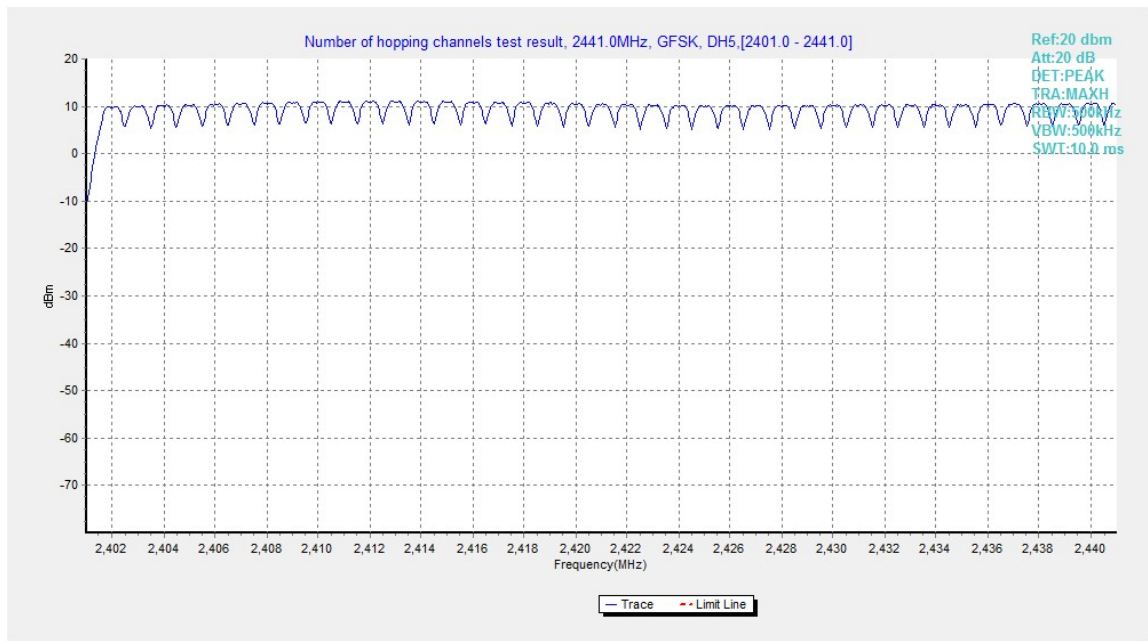
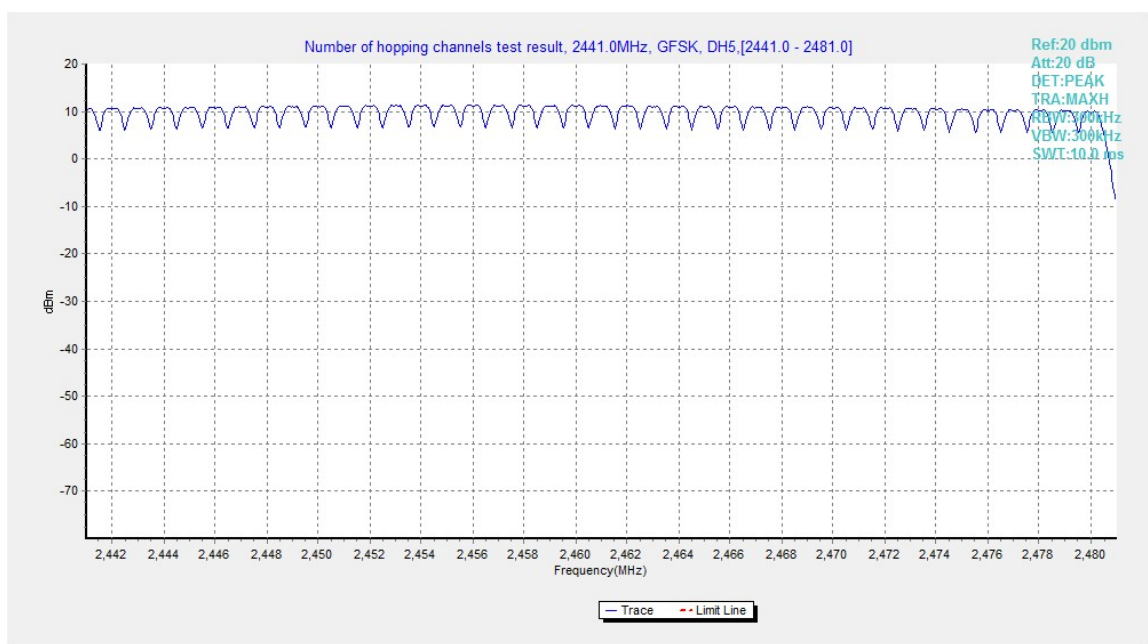Fig.110. Number of hopping frequencies: GFSK, Channel 0 - 39

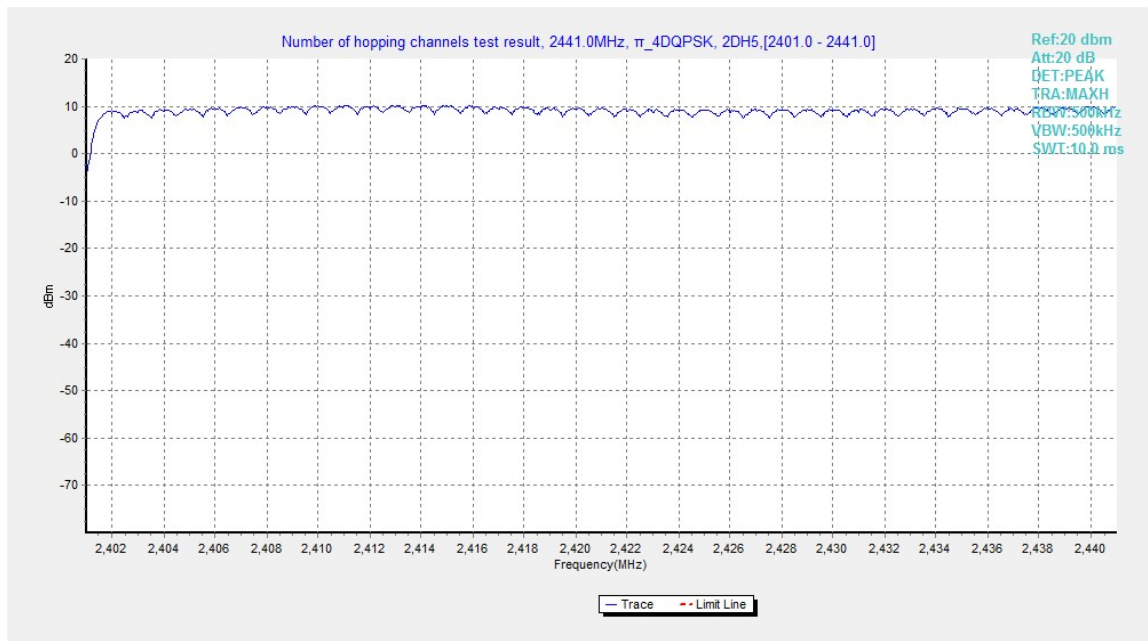
Fig.111. Number of hopping frequencies: GFSK, Channel 40 - 78

Fig.112. Number of hopping frequencies: π/4 DQPSK, Channel 0 - 39
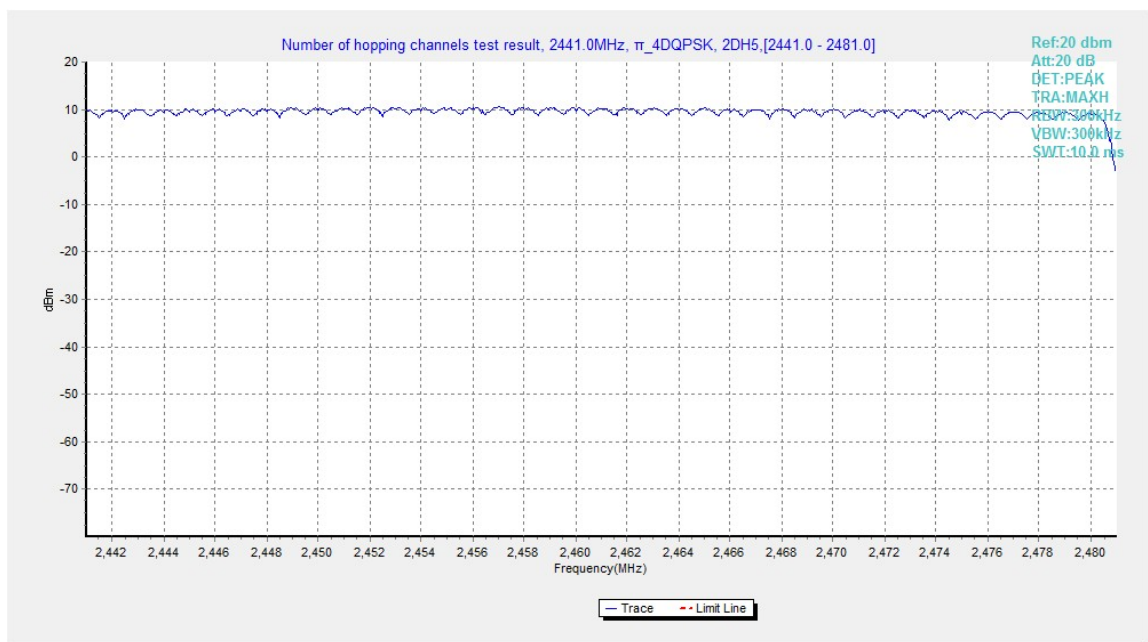
Fig.113. Number of hopping frequencies: π/4 DQPSK, Channel 40 - 78
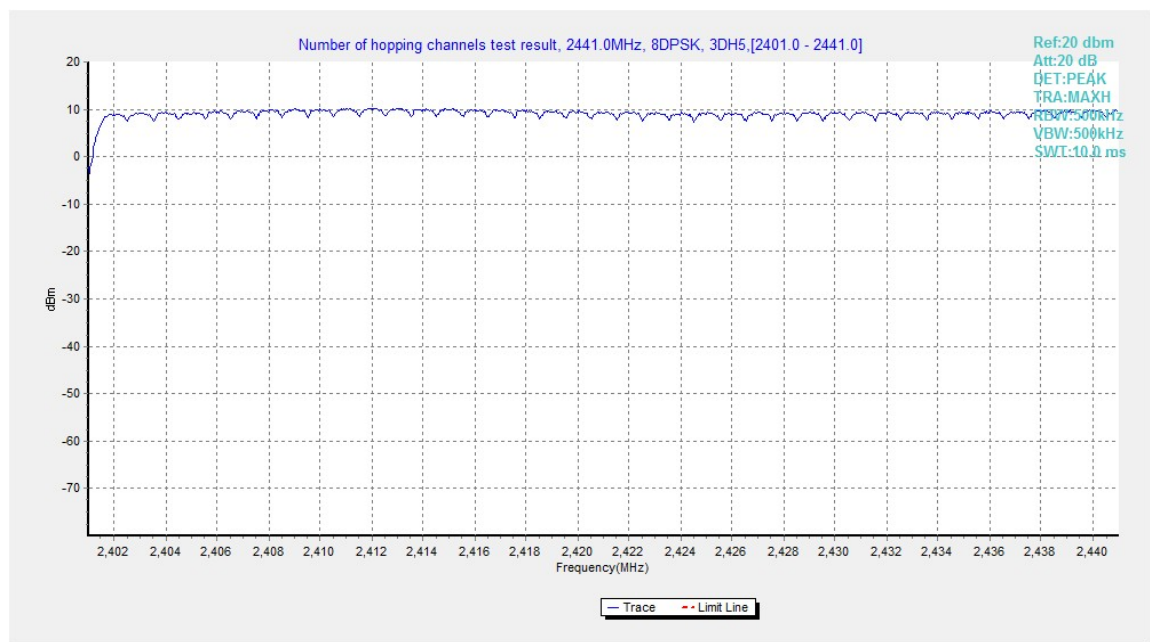
Fig.114. Number of hopping frequencies: 8DPSK, Channel 0 - 39
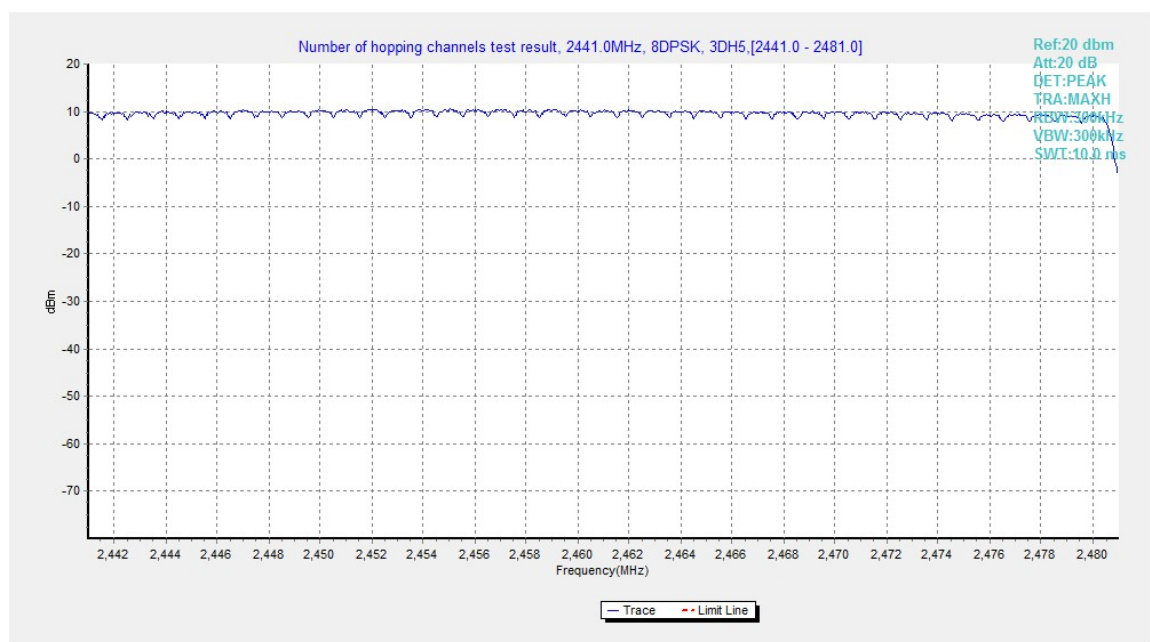
Fig.115. Number of hopping frequencies: 8DPSK, Channel 40 - 78

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 (dBμV)	Conclusion
0.15 to 0.5	66 to 56	
0.5 to 5	56	P
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 (dBμV)	Conclusion
0.15 to 0.5	56 to 46	
0.5 to 5	46	P
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:
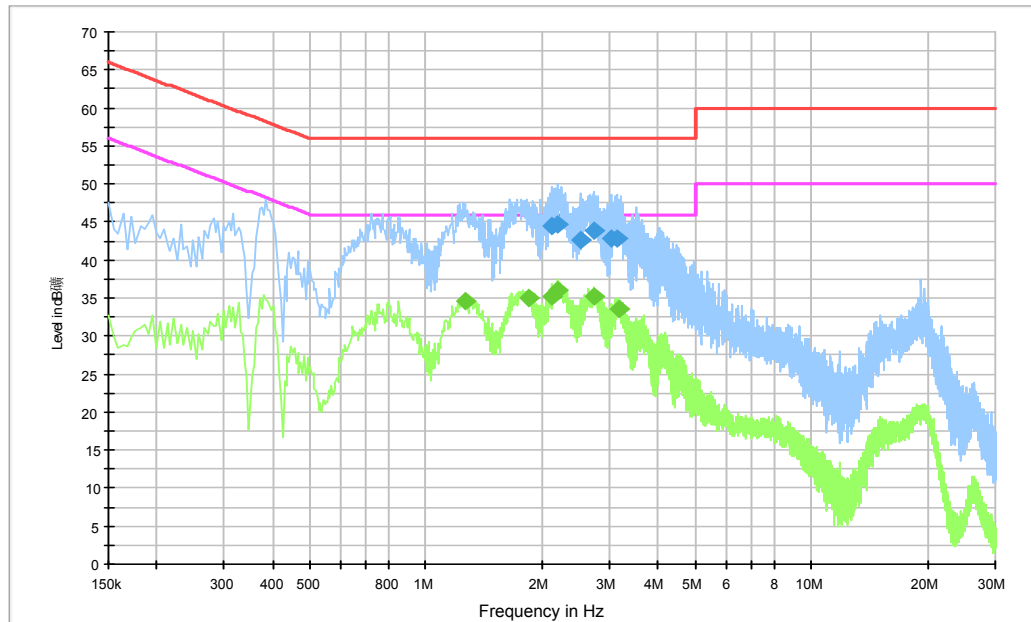
Final Result 1

Frequency	QuasiPeak	PE	Line	Corr.	Margin	Limit
(MHz)	(dBμV)			(dB)	(dB)	(dBμV)
2.116500	44.4	GND	L1	10.4	11.6	56.0
2.206500	44.7	GND	L1	10.4	11.3	56.0
2.508000	42.7	GND	L1	10.4	13.3	56.0
2.715000	43.8	GND	L1	10.4	12.2	56.0
3.034500	42.7	GND	L1	10.4	13.3	56.0
3.142500	42.9	GND	L1	10.4	13.1	56.0

Final Result 2

Frequency	Average	PE	Line	Corr.	Margin	Limit
(MHz)	(dBμV)			(dB)	(dB)	(dBμV)
1.266000	34.6	GND	L1	10.3	11.4	46.0
1.842000	35.0	GND	L1	10.4	11.0	46.0
2.116500	35.1	GND	L1	10.4	10.9	46.0
2.206500	36.1	GND	L1	10.4	9.9	46.0
2.715000	35.3	GND	L1	10.4	10.7	46.0
3.151500	33.7	GND	L1	10.4	12.4	46.0

Idle:
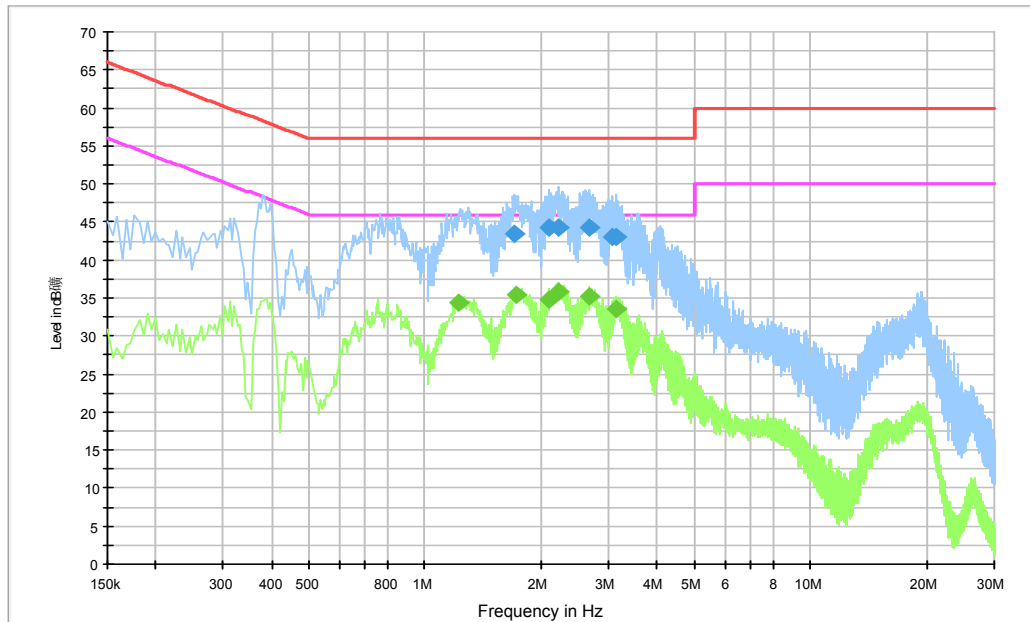
Final Result 1

Frequency	QuasiPeak	PE	Line	Corr.	Margin	Limit
(MHz)	(dBµV)			(dB)	(dB)	(dBµV)
1.702500	43.5	GND	L1	10.3	12.5	56.0
2.103000	44.2	GND	L1	10.4	11.8	56.0
2.224500	44.4	GND	L1	10.4	11.6	56.0
2.661000	44.2	GND	L1	10.4	11.8	56.0
3.052500	43.0	GND	L1	10.4	13.0	56.0
3.120000	43.0	GND	L1	10.4	13.0	56.0

Final Result 2

Frequency	Average	PE	Line	Corr.	Margin	Limit
(MHz)	(dBµV)			(dB)	(dB)	(dBµV)
1.230000	34.3	GND	L1	10.3	11.7	46.0
1.729500	35.5	GND	L1	10.3	10.5	46.0
2.103000	34.7	GND	L1	10.4	11.3	46.0
2.211000	35.9	GND	L1	10.4	10.1	46.0
2.679000	35.3	GND	L1	10.4	10.7	46.0
3.120000	33.5	GND	L1	10.4	12.5	46.0

China National Accreditation Service for Conformity Assessment

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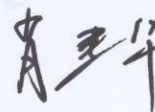
The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule form an integral part of this certificate.

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Date of Initial Accreditation: 1998-07-03

Signed on behalf of China National Accreditation Service for Conformity Assessment

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END OF REPORT