

Fig. 62 Radiated Spurious Emission (8DPSK, Ch78, 1 GHz ~3 GHz)

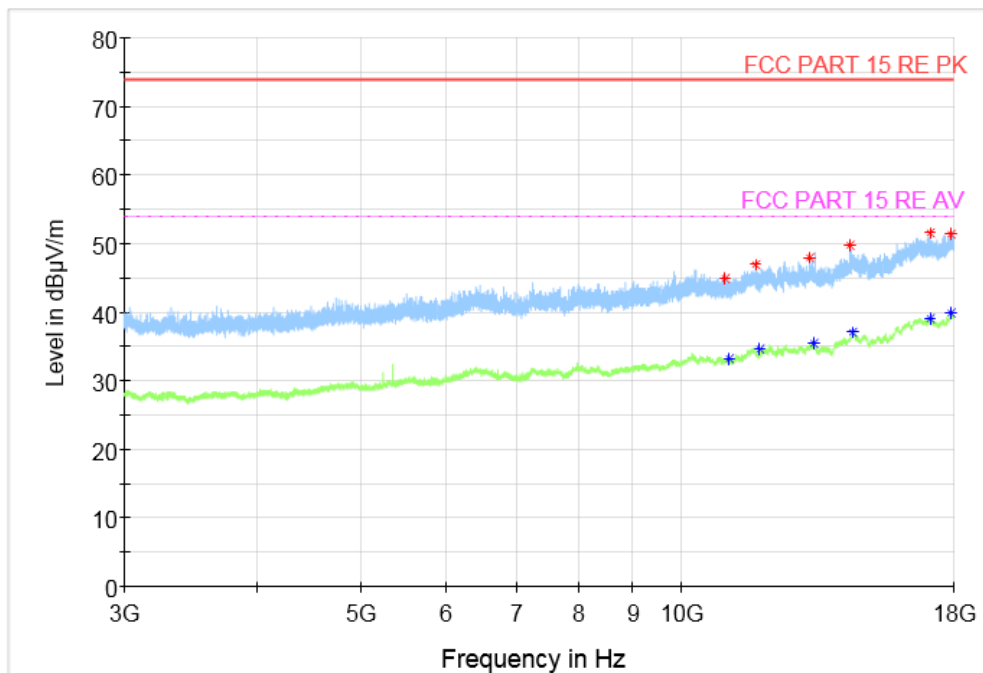


Fig. 63 Radiated Spurious Emission (8DPSK, Ch78, 3 GHz ~18 GHz)

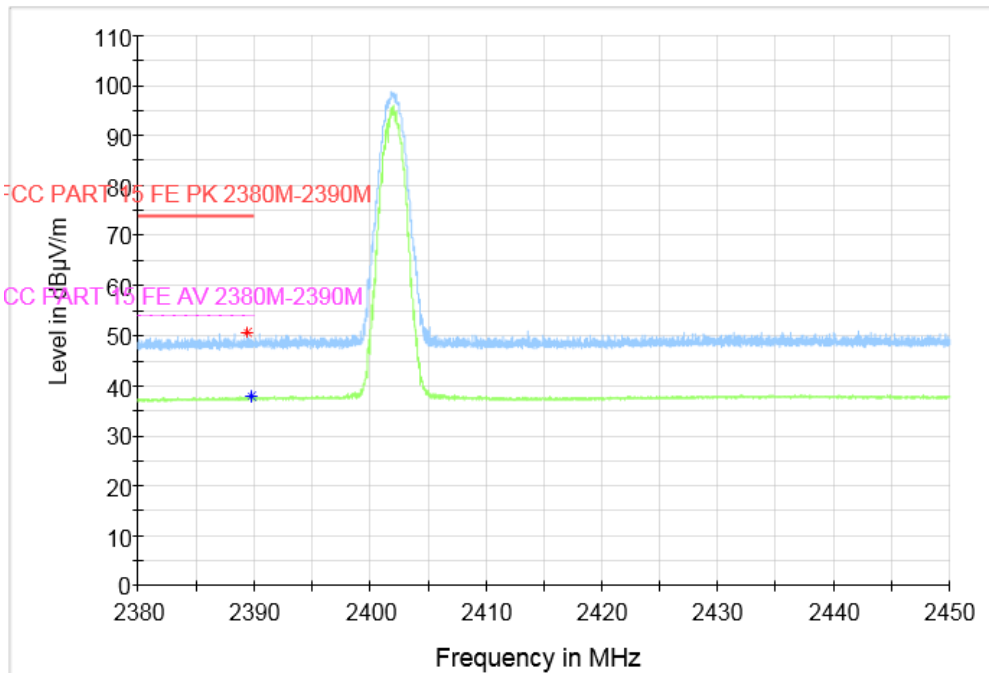


Fig. 64 Radiated Band Edges (8DPSK, Ch0, 2380GHz~2450GHz)

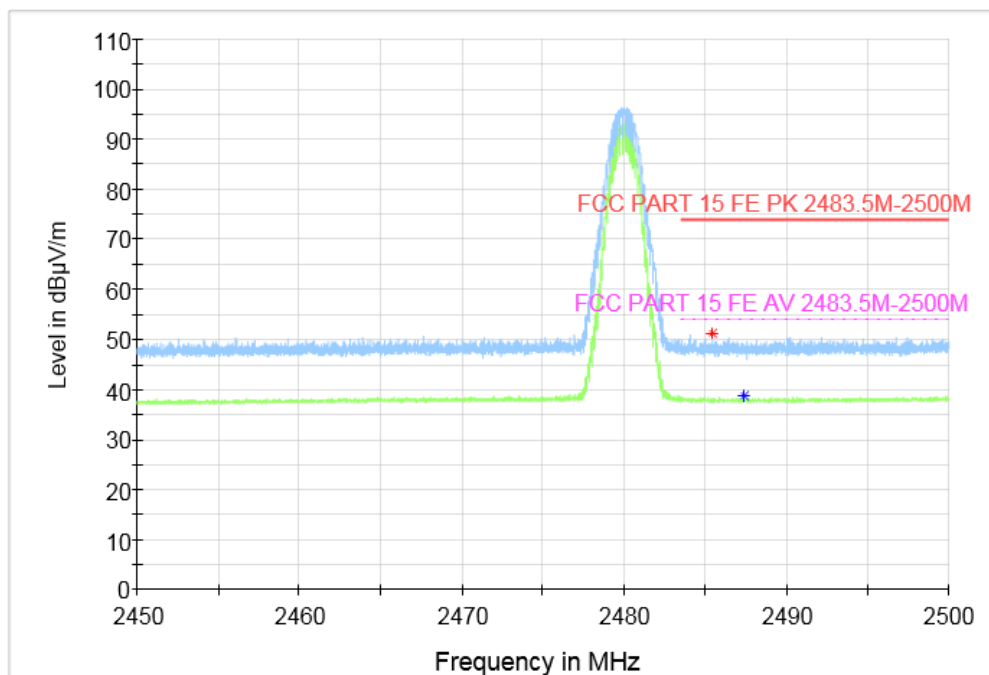


Fig. 65 Radiated Band Edges (8DPSK, Ch78, 2450GHz~2500GHz)

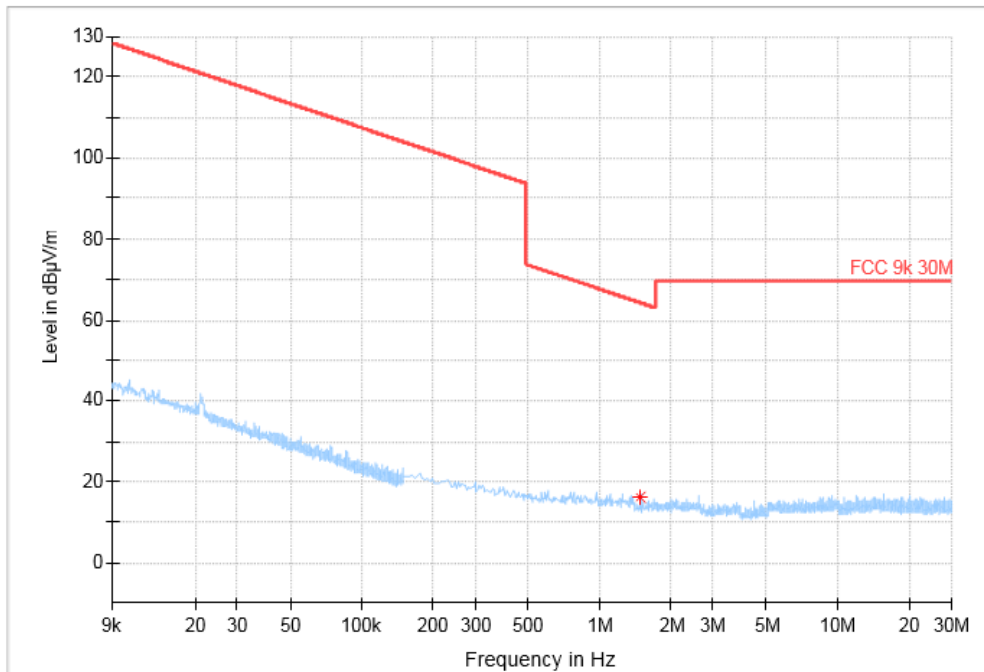


Fig. 66 Radiated Spurious Emission (All Channels, 9 kHz ~30 MHz)

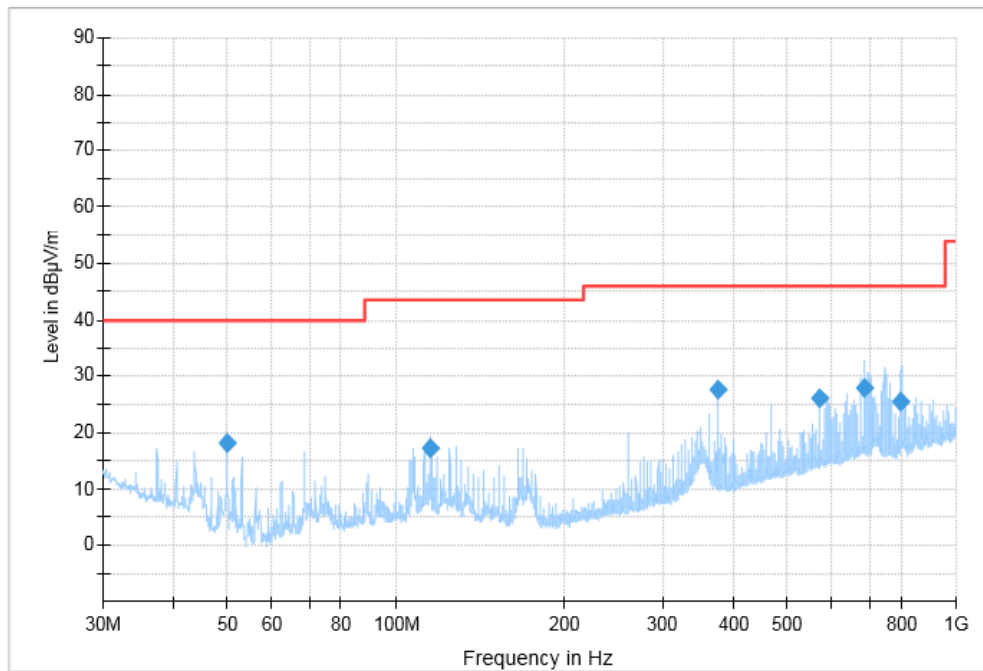


Fig. 67 Radiated Spurious Emission (All Channels, 30 MHz ~1 GHz)

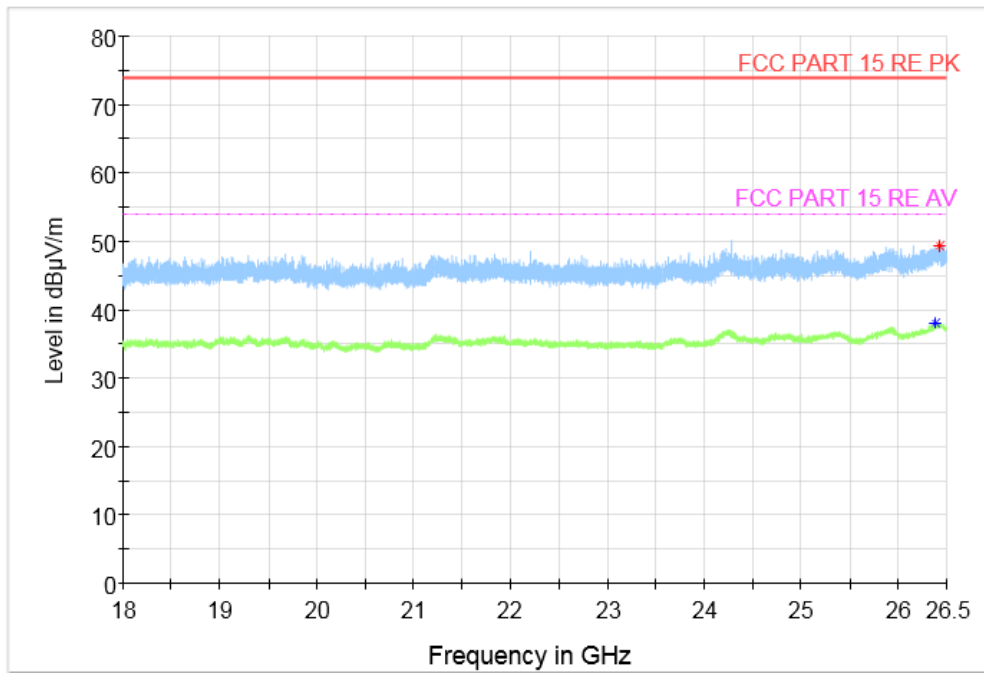


Fig. 68 Radiated Spurious Emission (All Channels, 18 GHz ~26.5 GHz)

A.5 20dB Bandwidth

Measurement Limit:

| Standard | Limit (kHz) |
|----------------------------|-------------|
| FCC 47 CFR Part 15.247 (a) | / |

Measurement Result:

| Mode | Channel | 20dB Bandwidth (KHz) | | conclusion |
|---------------|---------|-----------------------|---------|------------|
| | | Fig. | Value | |
| GFSK | 0 | Fig.69 | 943.50 | / |
| | 39 | Fig.70 | 944.25 | |
| | 78 | Fig.71 | 945.00 | |
| $\pi/4$ DQPSK | 0 | Fig.72 | 1276.50 | / |
| | 39 | Fig.73 | 1293.00 | |
| | 78 | Fig.74 | 1270.50 | |
| 8DPSK | 0 | Fig.75 | 1290.00 | / |
| | 39 | Fig.76 | 1291.50 | |
| | 78 | Fig.77 | 1260.75 | |

See below for test graphs.

Conclusion: PASS

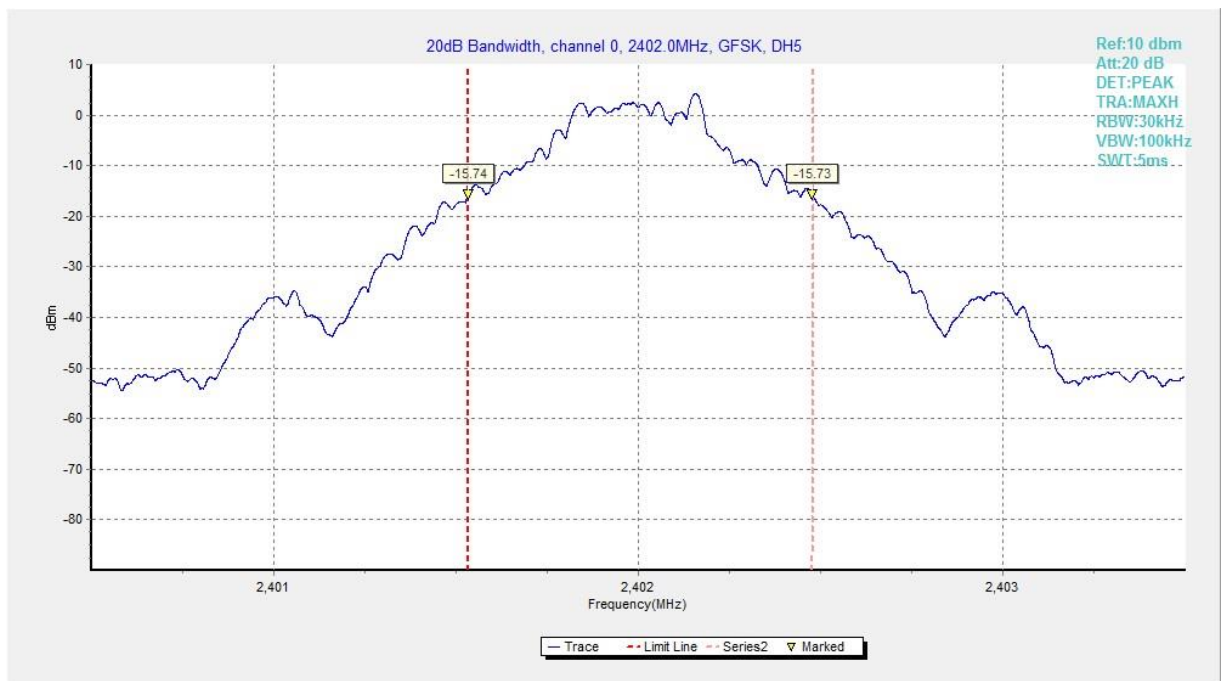


Fig. 69 20dB Bandwidth (GFSK, Ch 0)

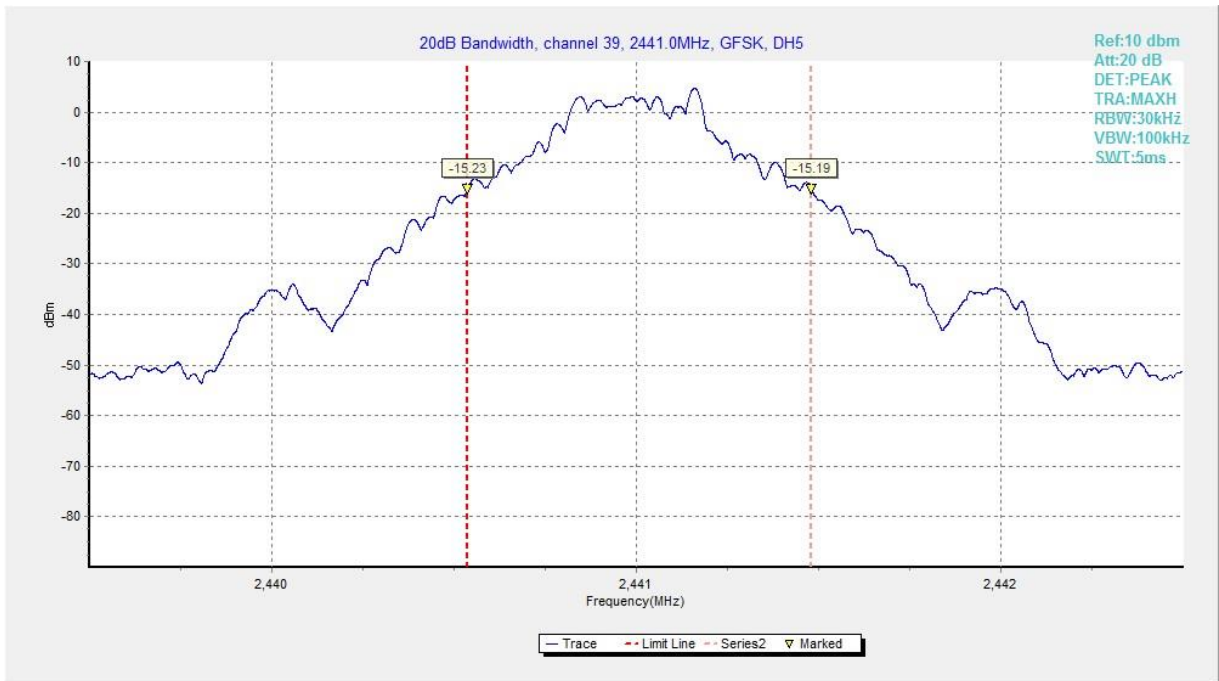


Fig. 70 20dB Bandwidth (GFSK, Ch 39)

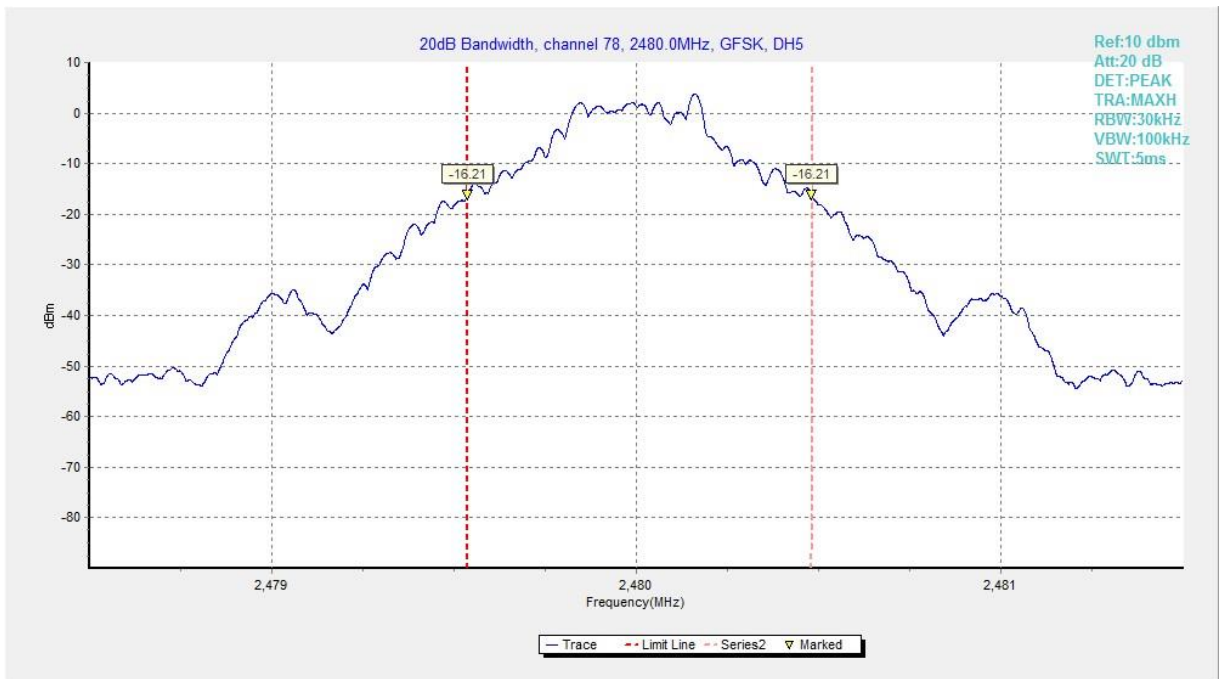


Fig. 71 20dB Bandwidth (GFSK, Ch 78)

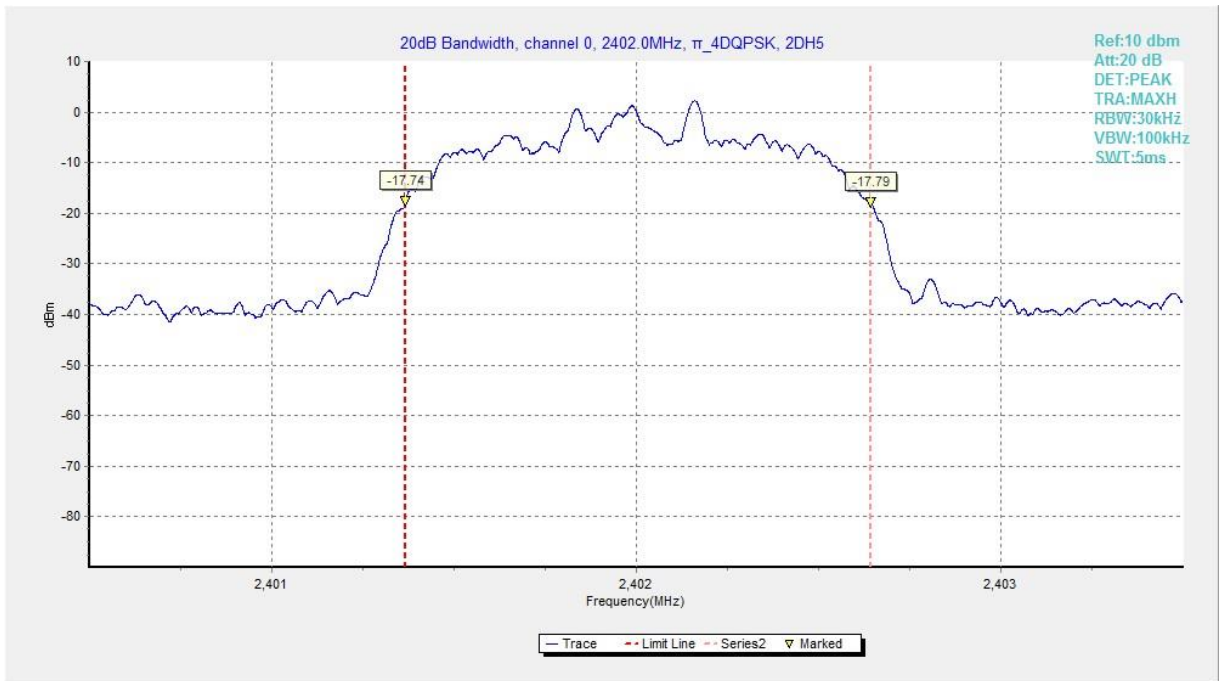


Fig. 72 20dB Bandwidth (π /4 DQPSK, Ch 0)

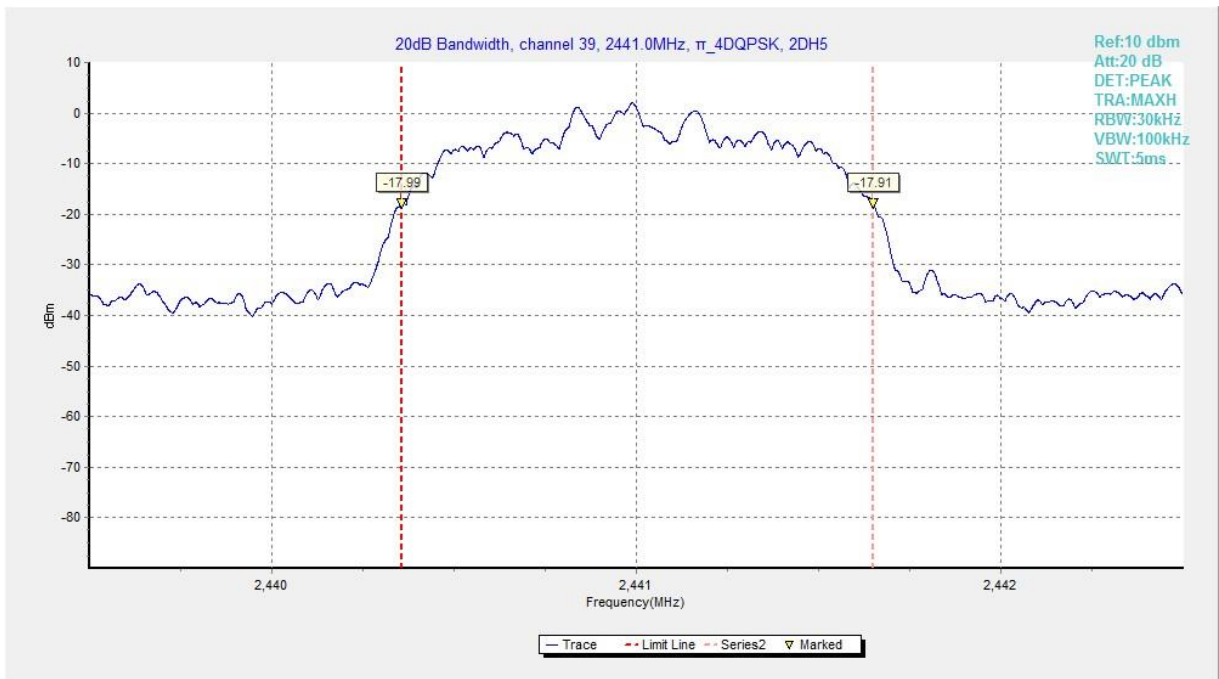


Fig. 73 20dB Bandwidth (π /4 DQPSK, Ch 39)

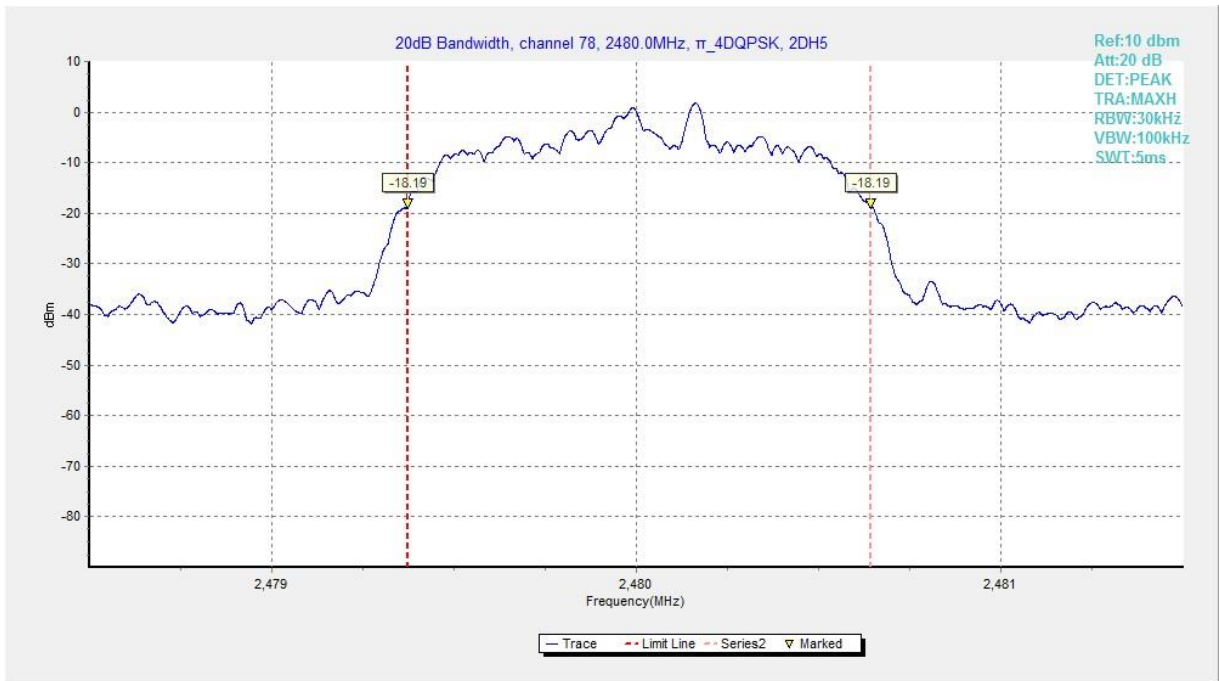


Fig. 74 20dB Bandwidth (π /4 DQPSK, Ch 78)

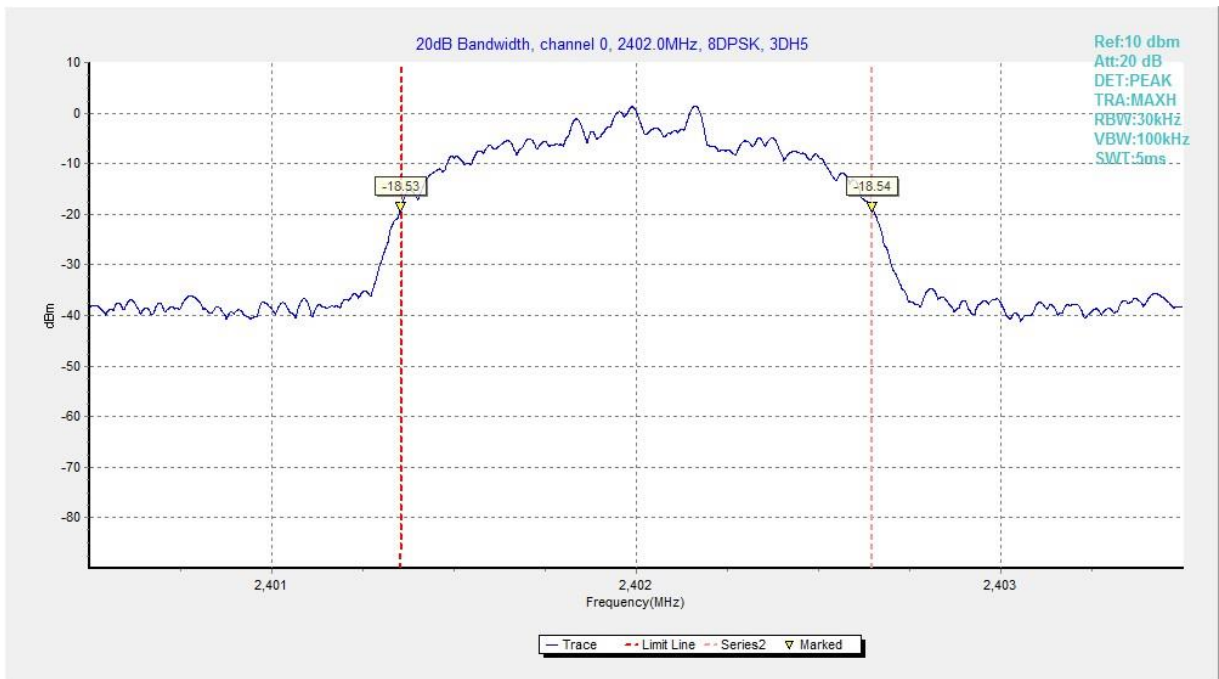


Fig. 75 20dB Bandwidth (8DPSK, Ch 0)

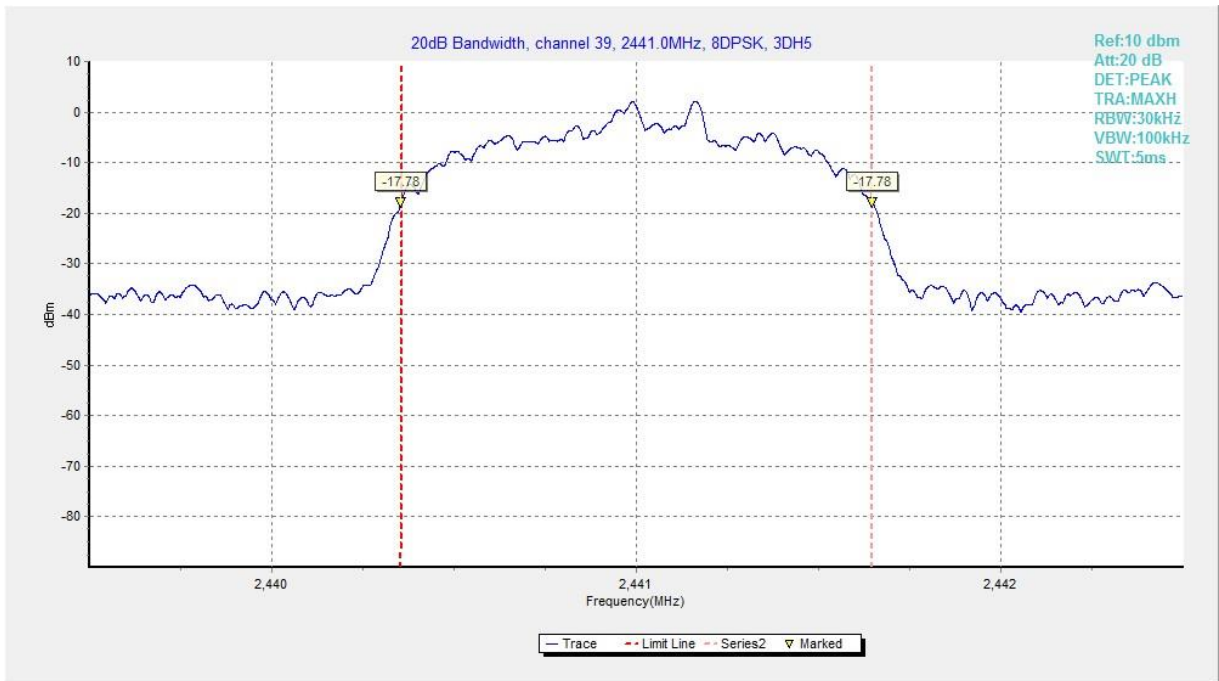


Fig. 76 20dB Bandwidth (8DPSK, Ch 39)

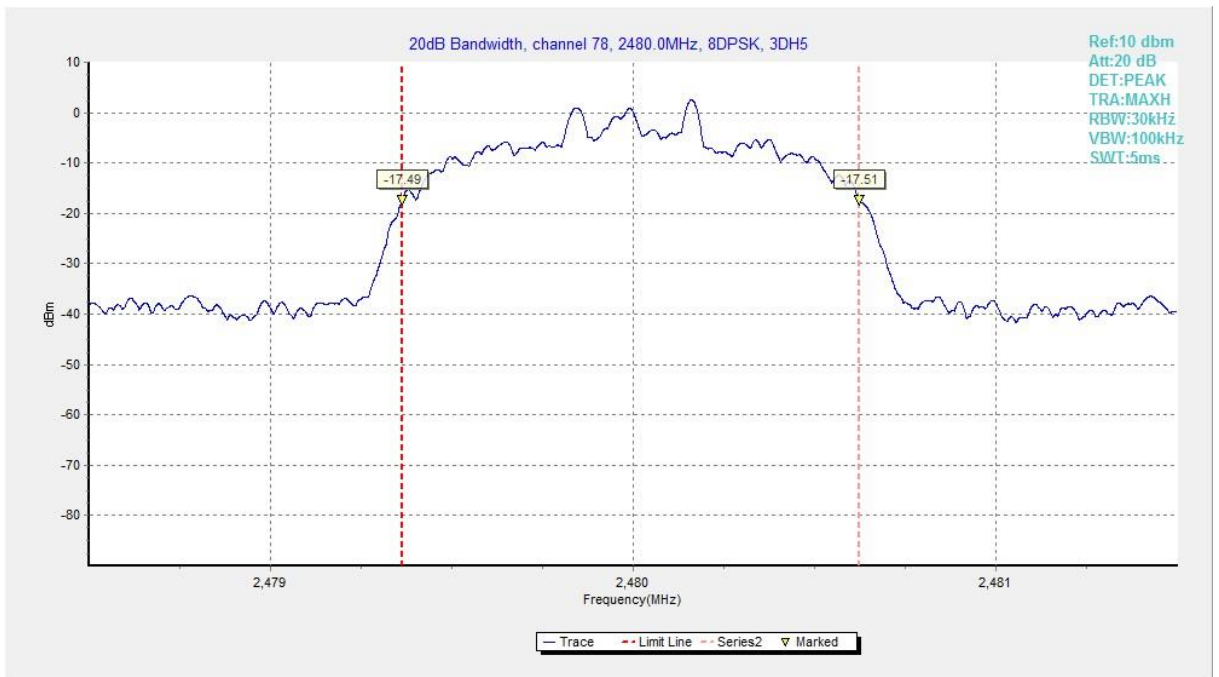


Fig. 77 20dB Bandwidth (8DPSK, Ch 78)

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 | 307.44 | P |
| | | | Fig.79 | | |
| $\pi/4$ DQPSK | 39 | 2-DH5 | Fig.80 | 307.81 | P |
| | | | Fig.81 | | |
| 8DPSK | 39 | 3-DH5 | Fig.82 | 306.87 | P |
| | | | Fig.83 | | |

See below for test graphs.

Conclusion: Pass

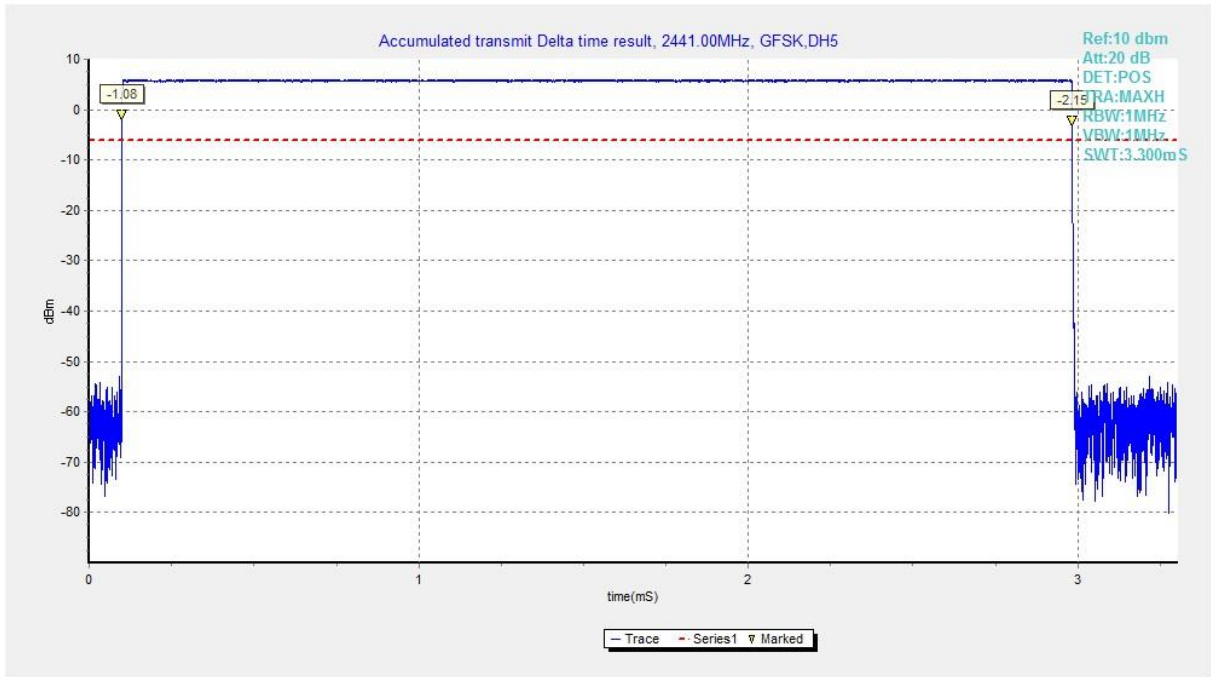


Fig. 78 Time of Occupancy(Dwell Time) (GFSK, Ch39)

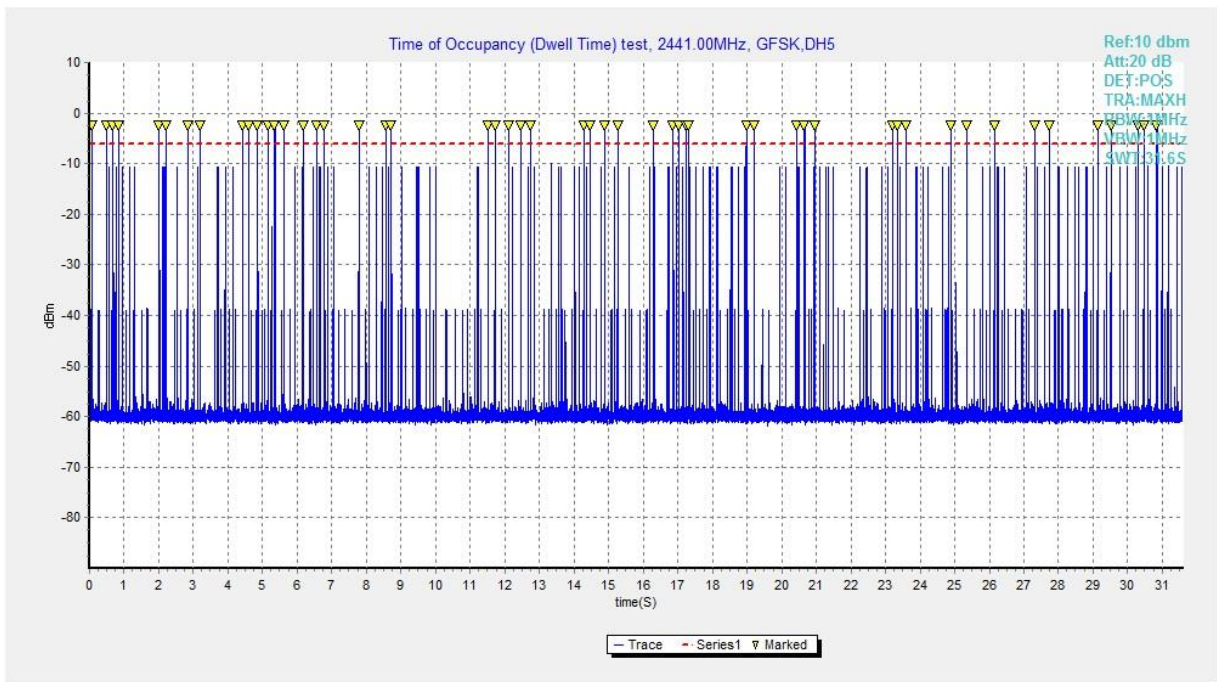


Fig. 79 Time of Occupancy(Dwell Time) (GFSK, Ch39)

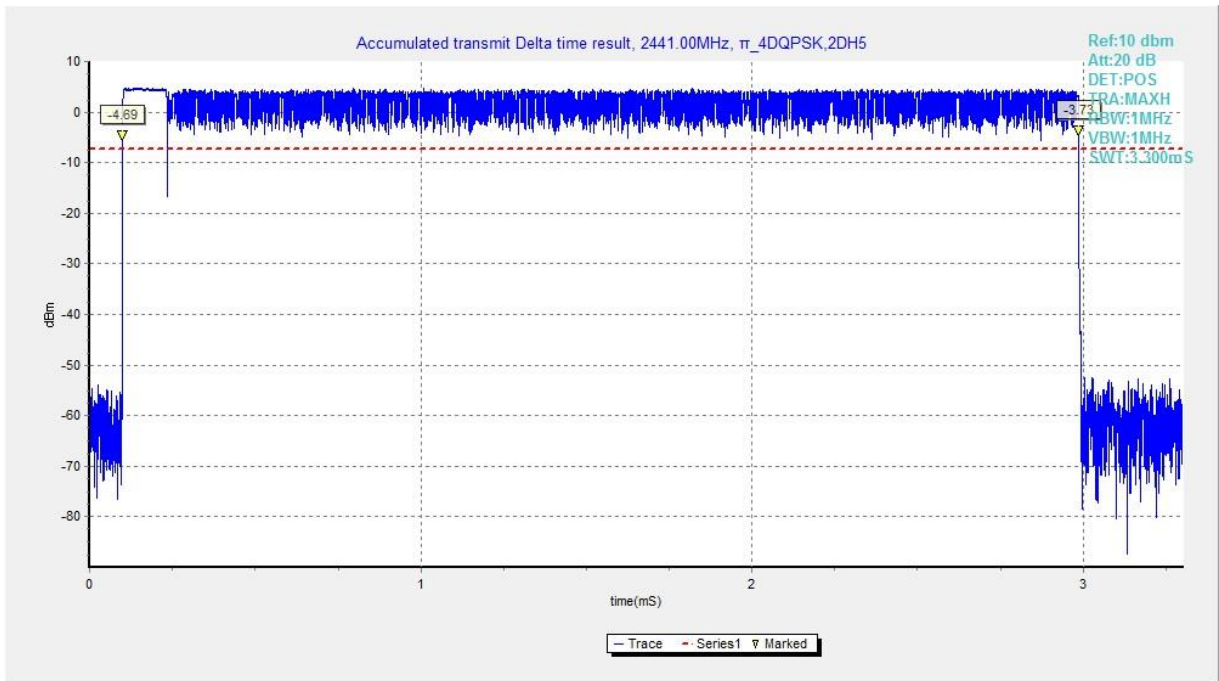


Fig. 80 Time of Occupancy(Dwell Time) ($\pi/4$ DQPSK, Ch39)

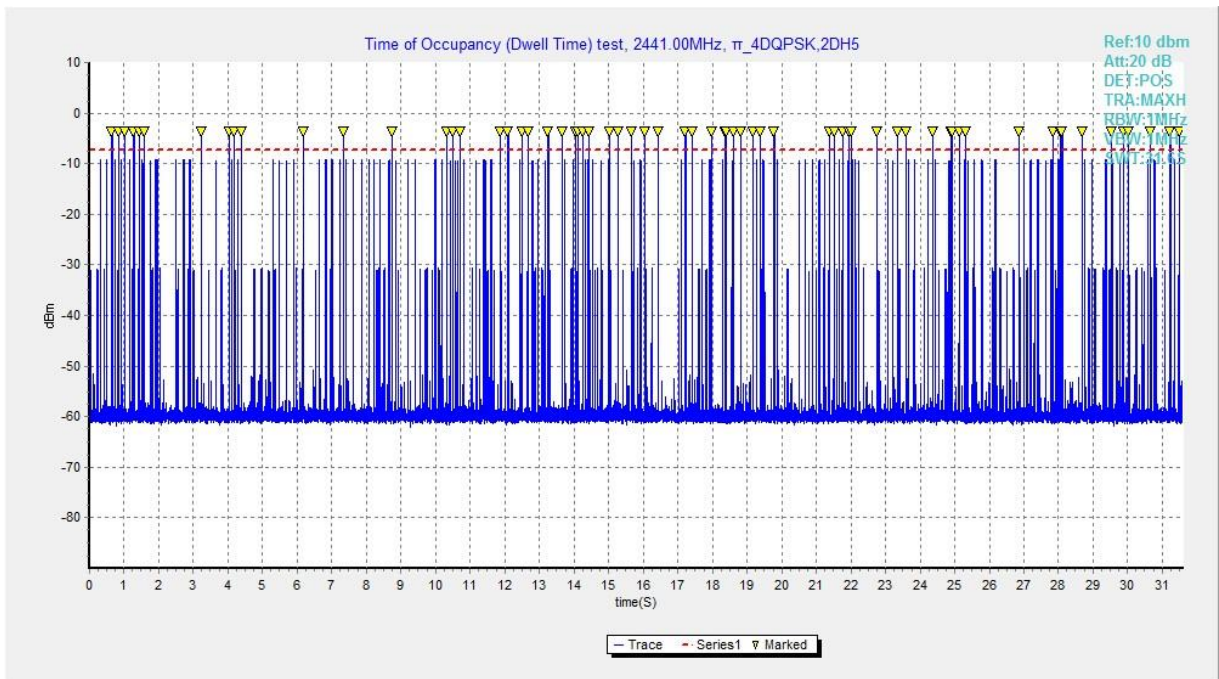


Fig. 81 Time of Occupancy(Dwell Time) ($\pi/4$ DQPSK, Ch39)

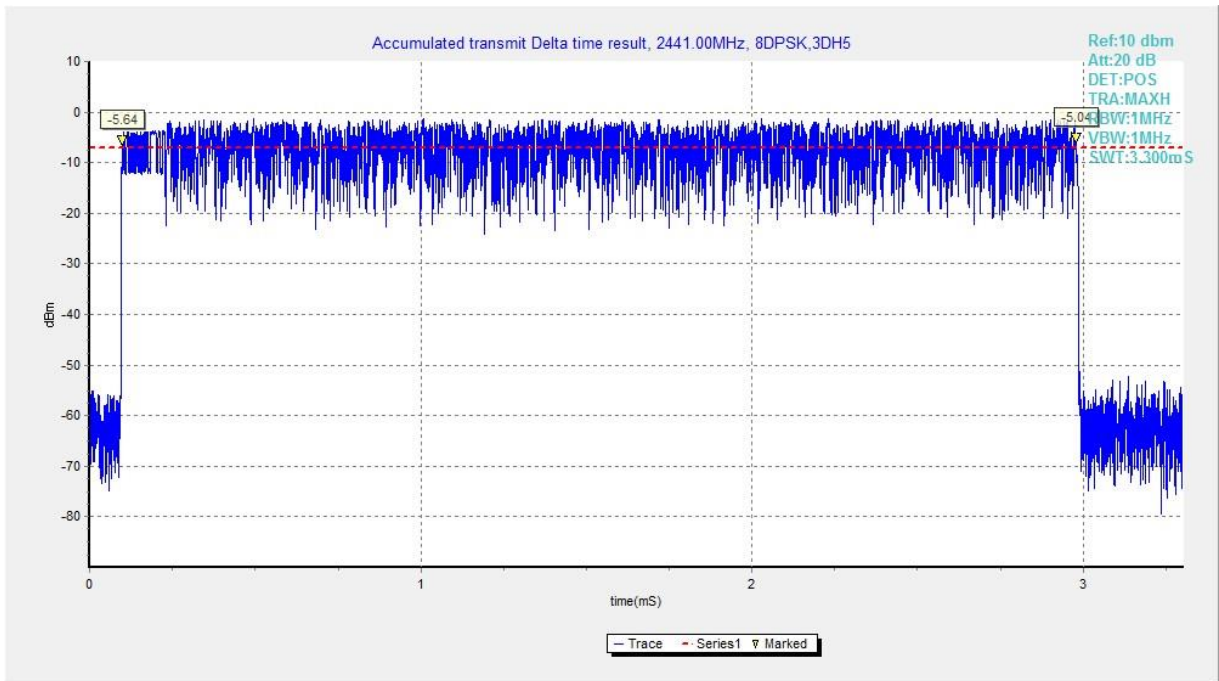


Fig. 82 Time of Occupancy(Dwell Time) (8DPSK, Ch39)

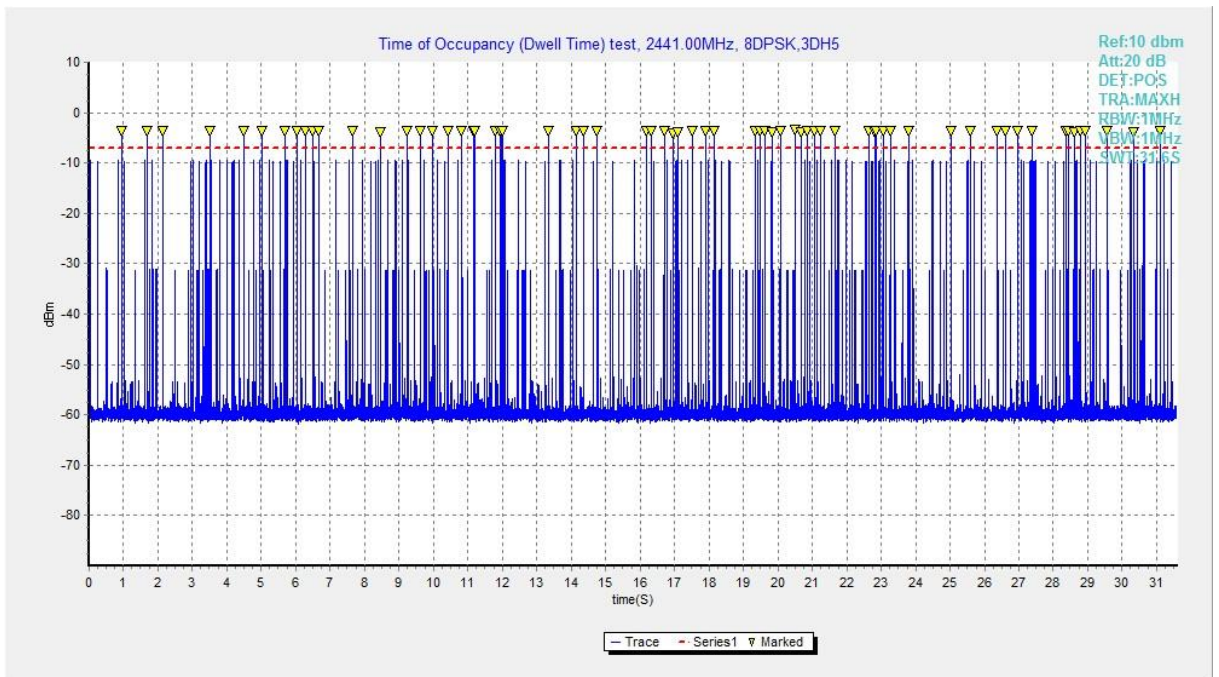


Fig. 83 Time of Occupancy(Dwell Time) (8DPSK, Ch39)



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

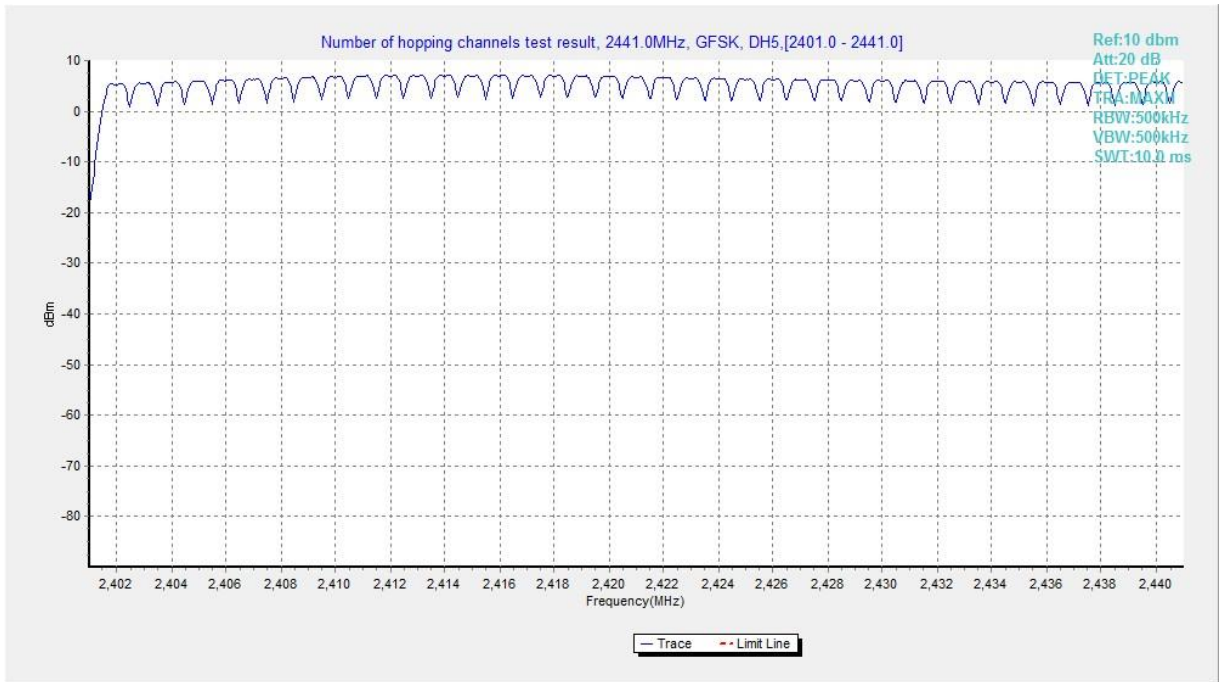


Fig. 84 Hopping channel ch0~39 (GFSK, Ch39)

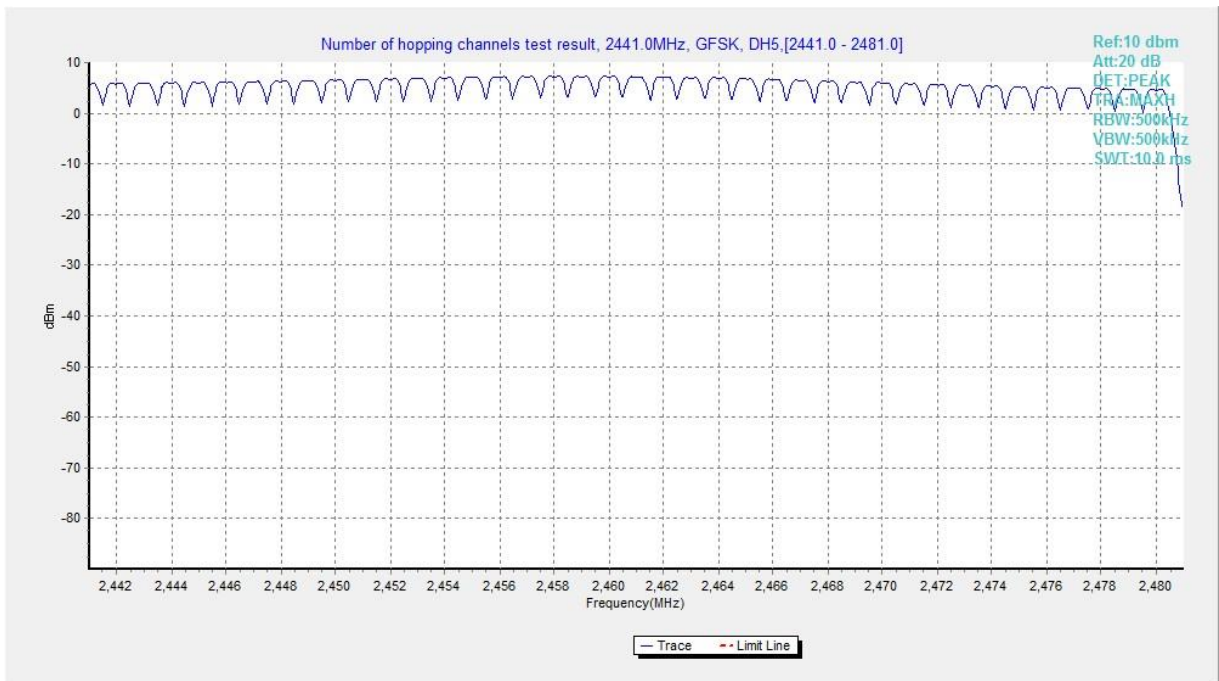


Fig. 85 Hopping channel ch39~78 (GFSK, Ch39)

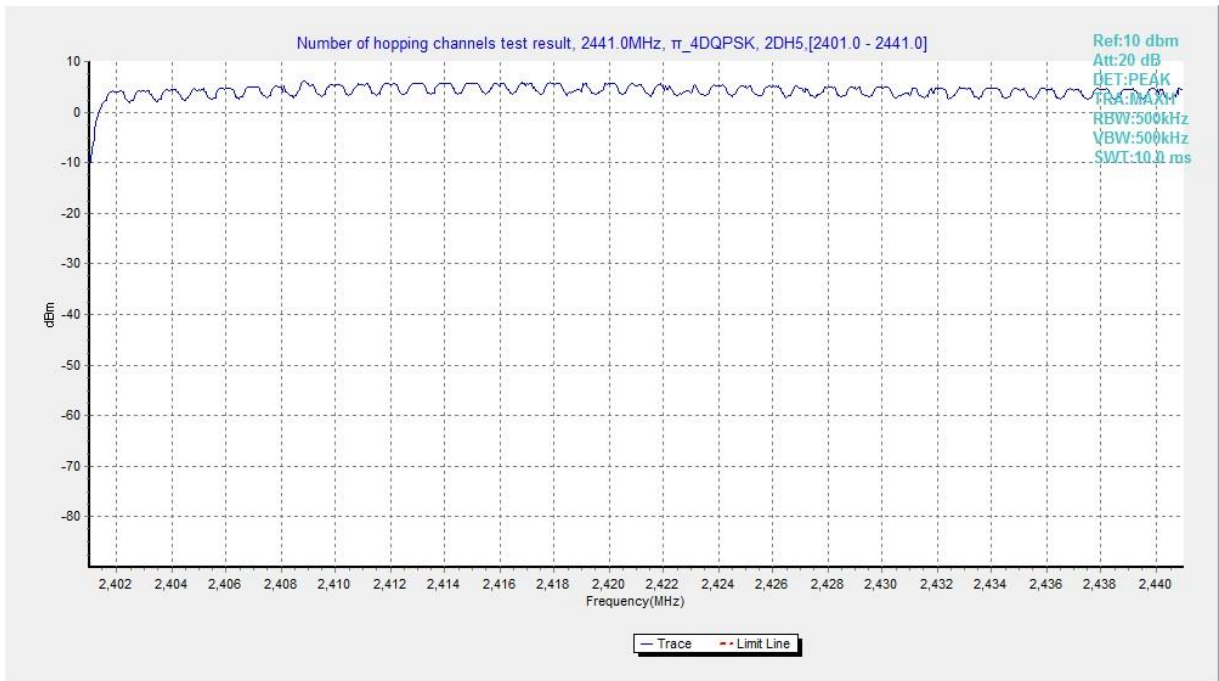


Fig. 86 Hopping channel ch0~39 ($\pi/4$ DQPSK, Ch39)

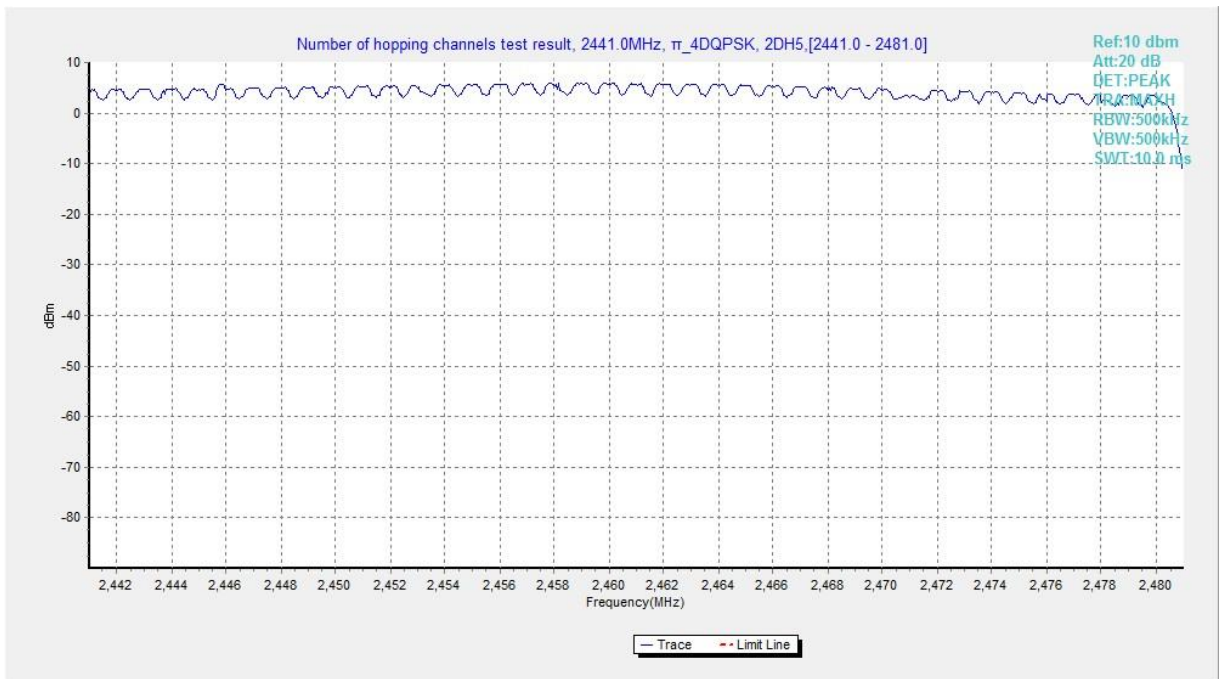


Fig. 87 Hopping channel ch39~78 ($\pi/4$ DQPSK, Ch39)

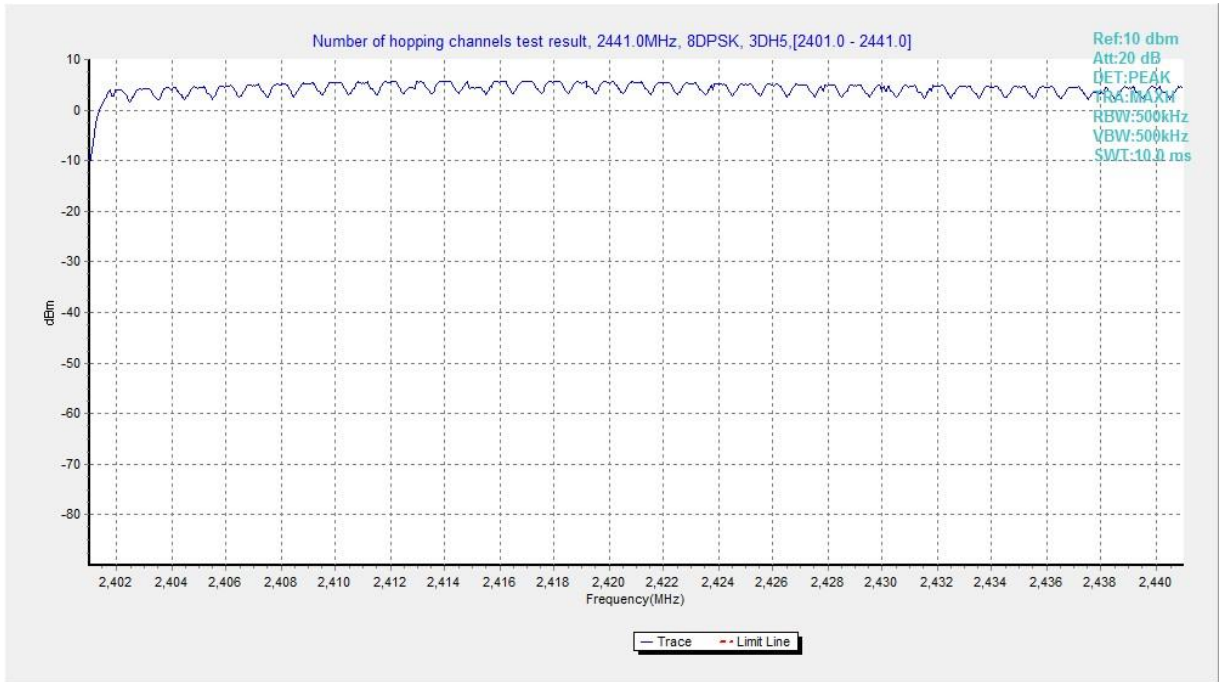


Fig. 88 Hopping channel ch0~39 (8DPSK, Ch39)

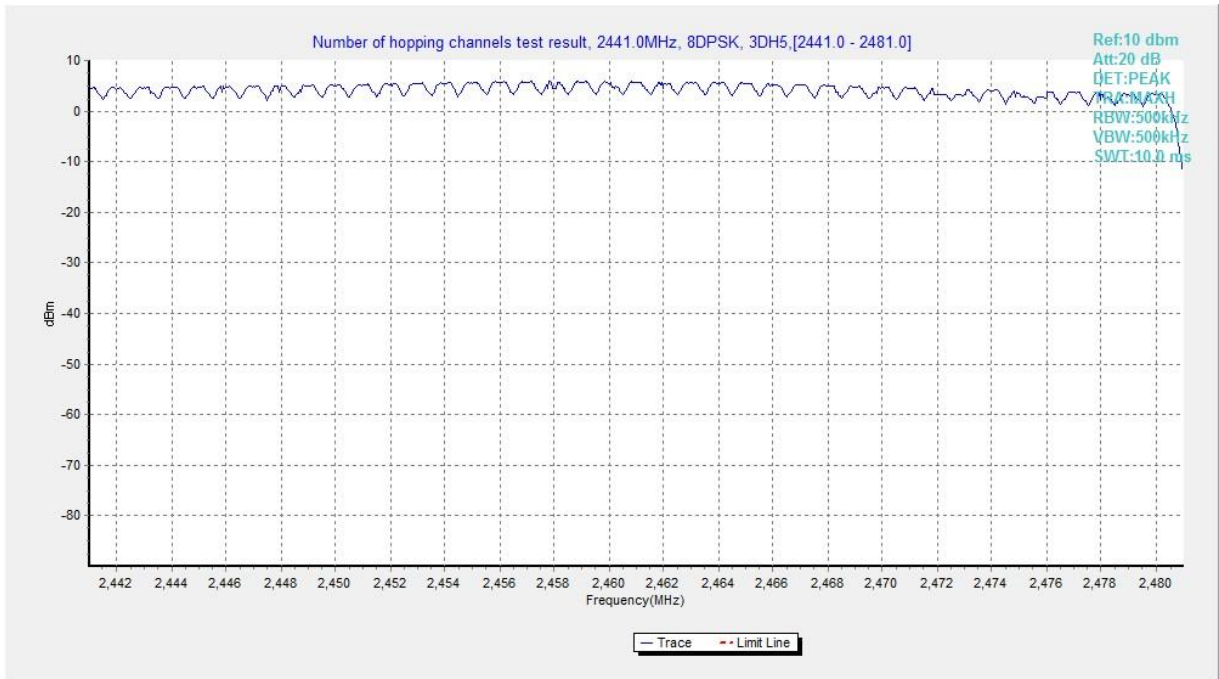


Fig. 89 Hopping channel ch39~78 (8DPSK, Ch39)

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 | 997.50 | P |
| $\pi/4$ DQPSK | 39 | 2-DH5 | Fig.91 | 1023.00 | P |
| 8DPSK | 39 | 3-DH5 | Fig.92 | 999.75 | P |

See below for test graphs.

Conclusion: Pass

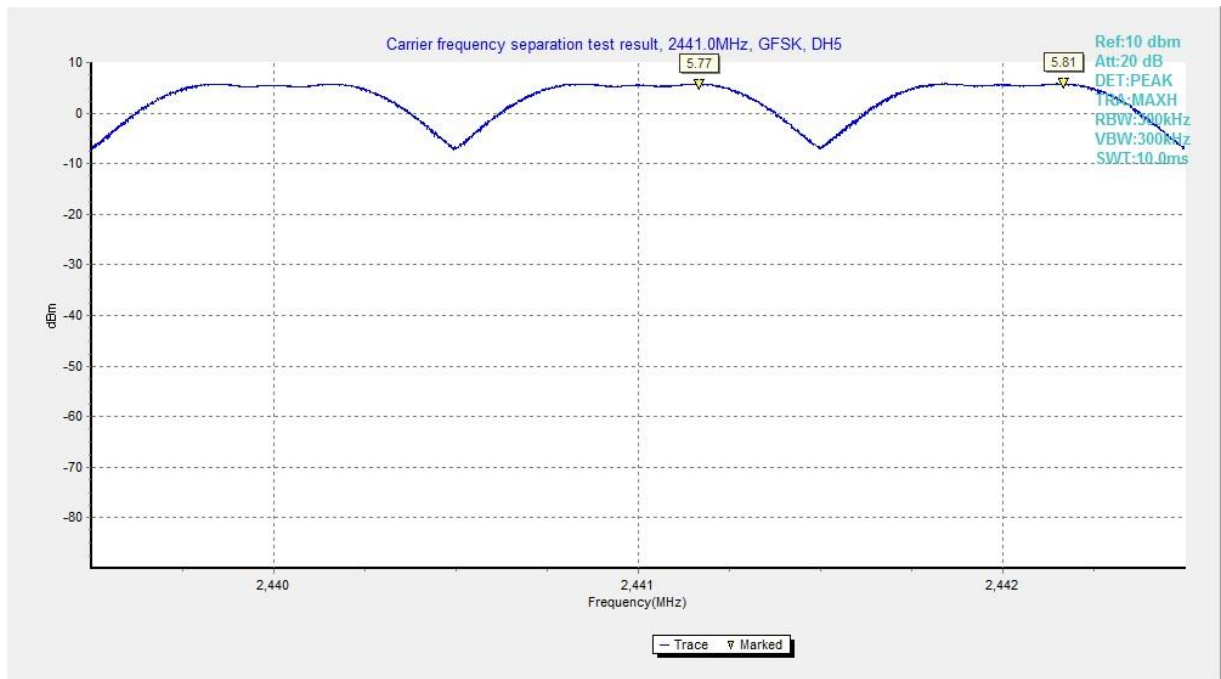


Fig. 90 Carrier Frequency Separation (GFSK, Ch39)

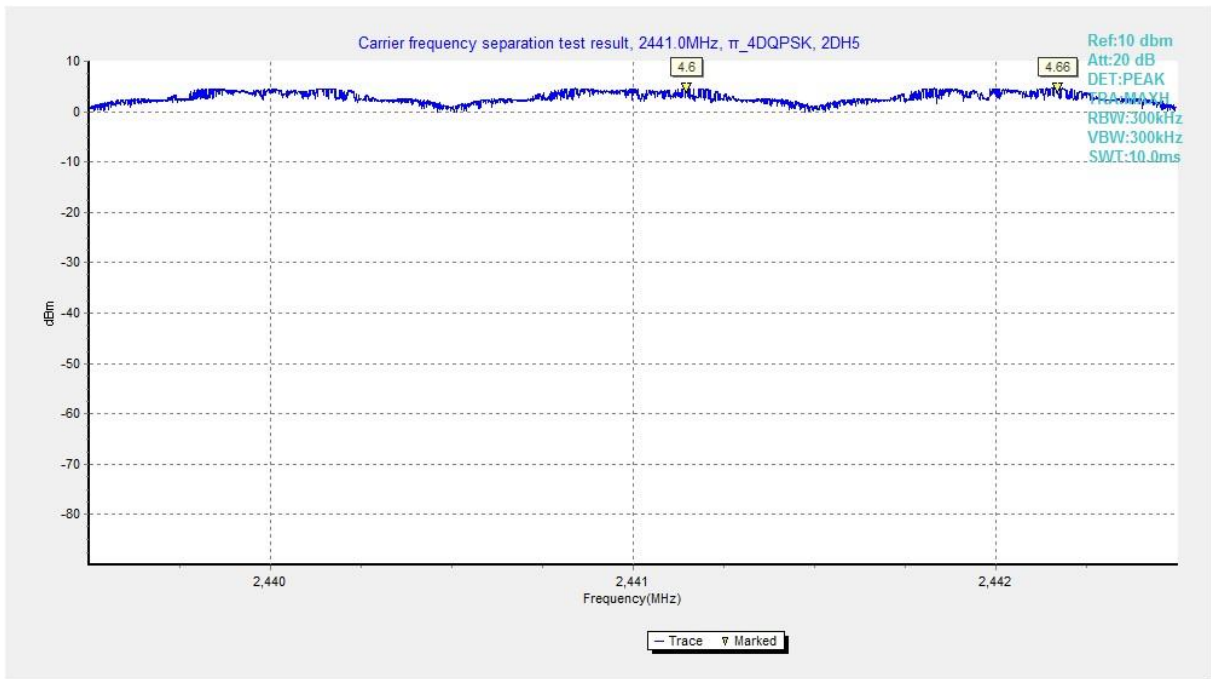


Fig. 91 Carrier Frequency Separation ($\pi/4$ DQPSK, Ch39)

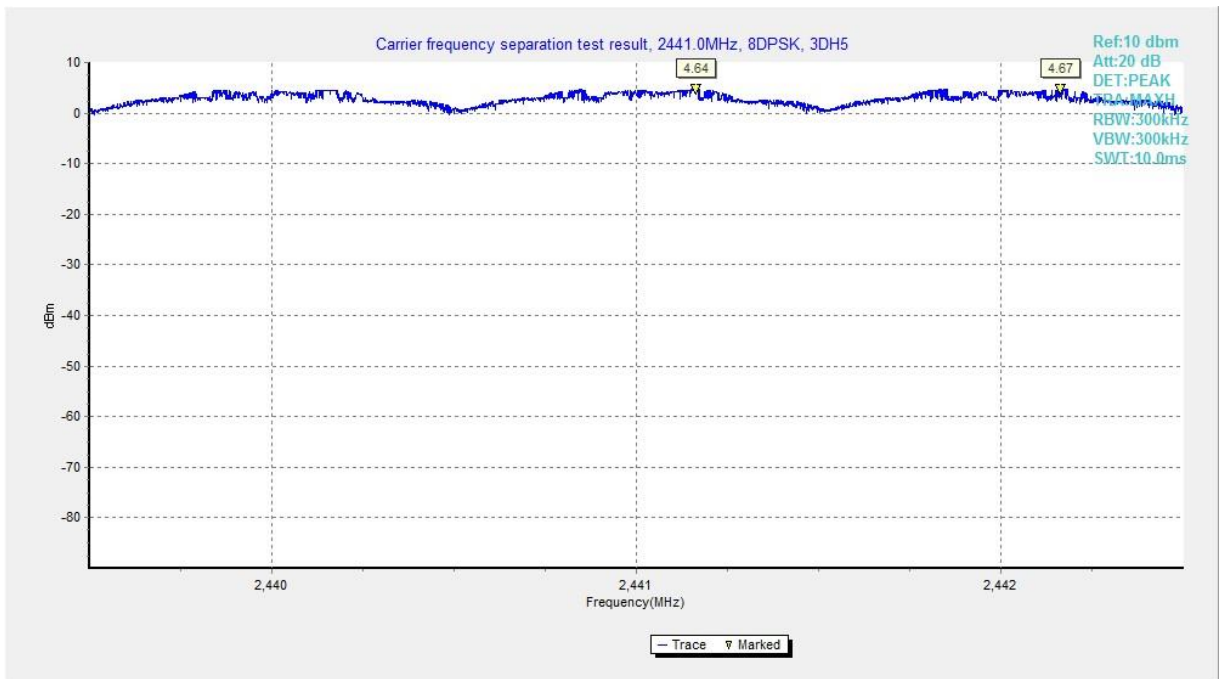


Fig. 92 Carrier Frequency Separation (8DPSK, Ch39)

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

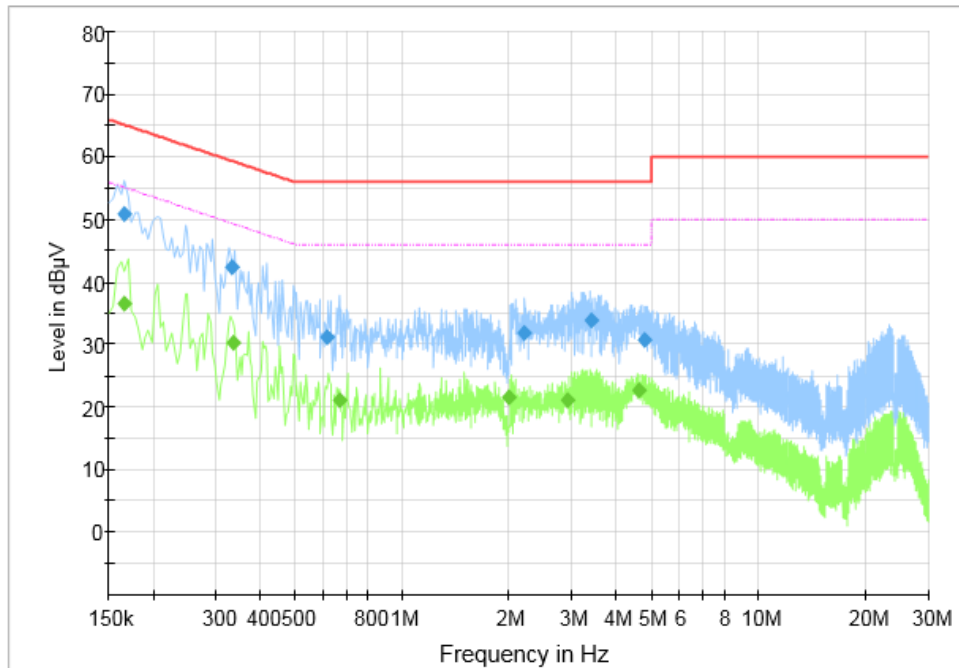


Fig. 93 AC Powerline Conducted Emission (Traffic)

Measurement Results: Quasi Peak

| Frequency (MHz) | Quasi Peak (dBµV) | Limit (dBµV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|-------------------|--------------|-------------|------|--------|------------|
| 0.166 | 50.99 | 65.16 | 14.16 | N | ON | 9.6 |
| 0.332 | 42.48 | 59.40 | 16.92 | L1 | ON | 9.6 |
| 0.616 | 31.19 | 56.00 | 24.81 | N | ON | 9.6 |
| 2.200 | 31.76 | 56.00 | 24.24 | N | ON | 9.7 |
| 3.400 | 33.85 | 56.00 | 22.15 | N | ON | 9.7 |
| 4.804 | 30.72 | 56.00 | 25.28 | N | ON | 9.7 |

Measurement Results : Average

| Frequency (MHz) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|----------------|--------------|-------------|------|--------|------------|
| 0.166 | 36.59 | 55.16 | 18.57 | N | ON | 9.6 |
| 0.336 | 30.35 | 49.30 | 18.95 | L1 | ON | 9.6 |
| 0.668 | 21.17 | 46.00 | 24.83 | N | ON | 9.6 |
| 1.984 | 21.49 | 46.00 | 24.51 | N | ON | 9.7 |
| 2.900 | 21.16 | 46.00 | 24.84 | N | ON | 9.7 |
| 4.636 | 22.75 | 46.00 | 23.25 | N | ON | 9.7 |

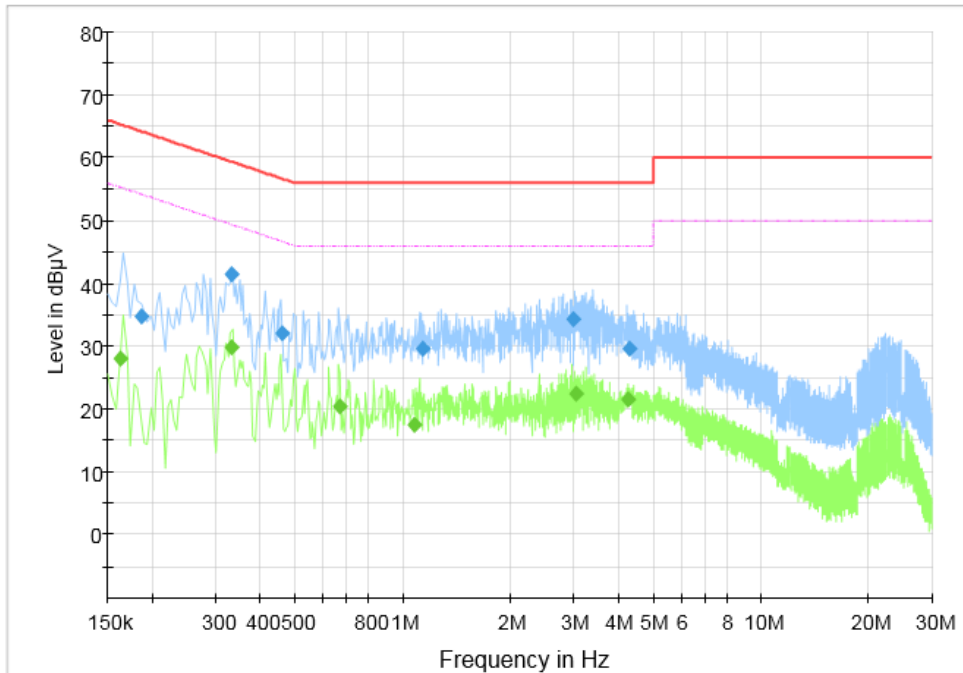


Fig. 94 AC Power line Conducted Emission (Idle)

Measurement Results: Quasi Peak

| Frequency (MHz) | Quasi Peak (dBµV) | Limit (dBµV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|-------------------|--------------|-------------|------|--------|------------|
| 0.186 | 34.75 | 64.21 | 29.47 | N | ON | 9.6 |
| 0.332 | 41.39 | 59.40 | 18.01 | N | ON | 9.6 |
| 0.460 | 31.99 | 56.69 | 24.70 | N | ON | 9.6 |
| 1.140 | 29.55 | 56.00 | 26.45 | L1 | ON | 9.7 |
| 2.980 | 34.43 | 56.00 | 21.57 | N | ON | 9.7 |
| 4.300 | 29.67 | 56.00 | 26.33 | N | ON | 9.7 |

Measurement Results : Average

| Frequency (MHz) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|----------------|--------------|-------------|------|--------|------------|
| 0.162 | 28.13 | 55.36 | 27.23 | N | ON | 9.6 |
| 0.332 | 29.80 | 49.40 | 19.60 | L1 | ON | 9.6 |
| 0.668 | 20.43 | 46.00 | 25.57 | N | ON | 9.6 |
| 1.076 | 17.52 | 46.00 | 28.48 | L1 | ON | 9.7 |
| 3.048 | 22.44 | 46.00 | 23.56 | N | ON | 9.7 |
| 4.260 | 21.62 | 46.00 | 24.38 | L1 | ON | 9.7 |

END OF REPORT