

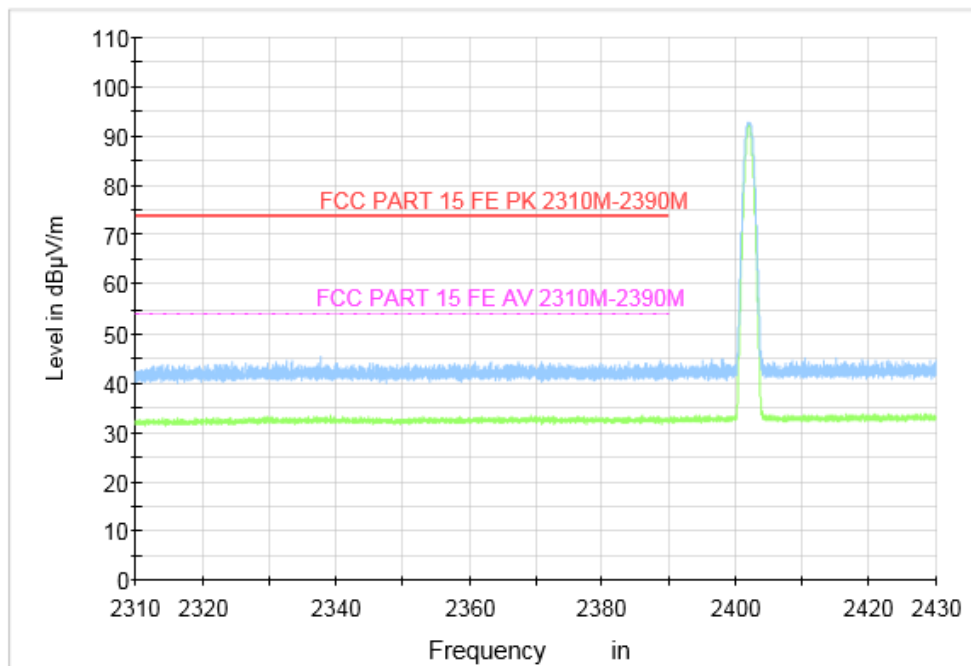


Fig. 48 Radiated Band Edges (GFSK, Ch0, 2380GHz~2450GHz)

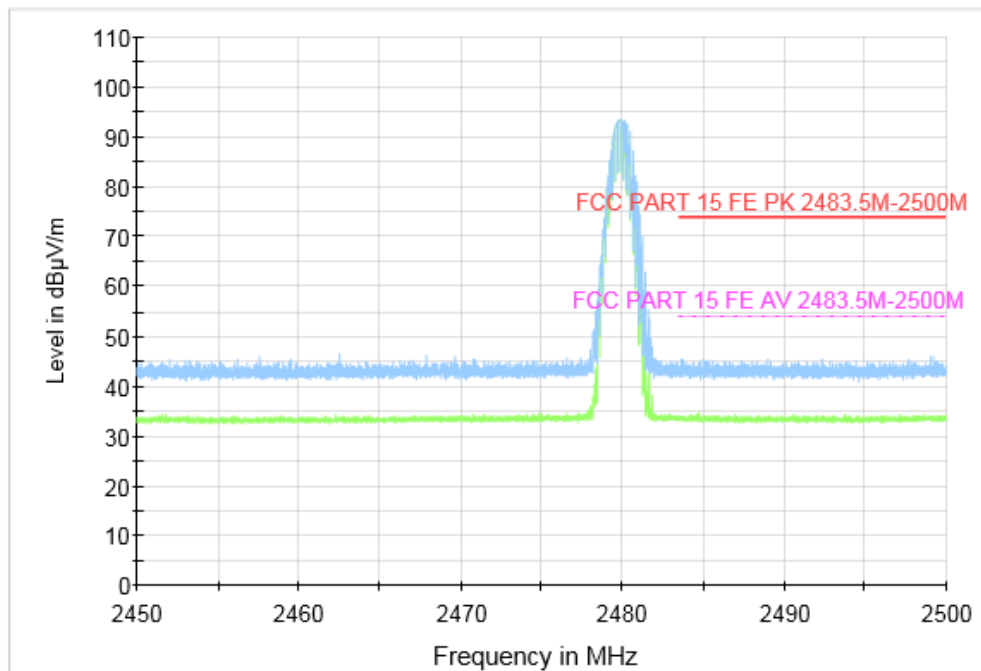
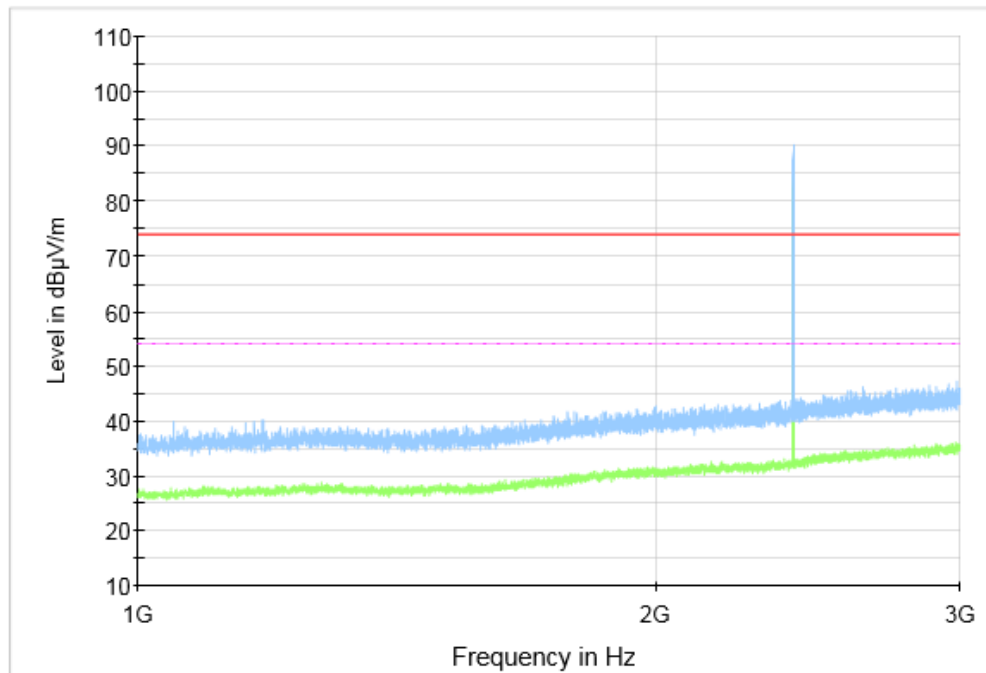
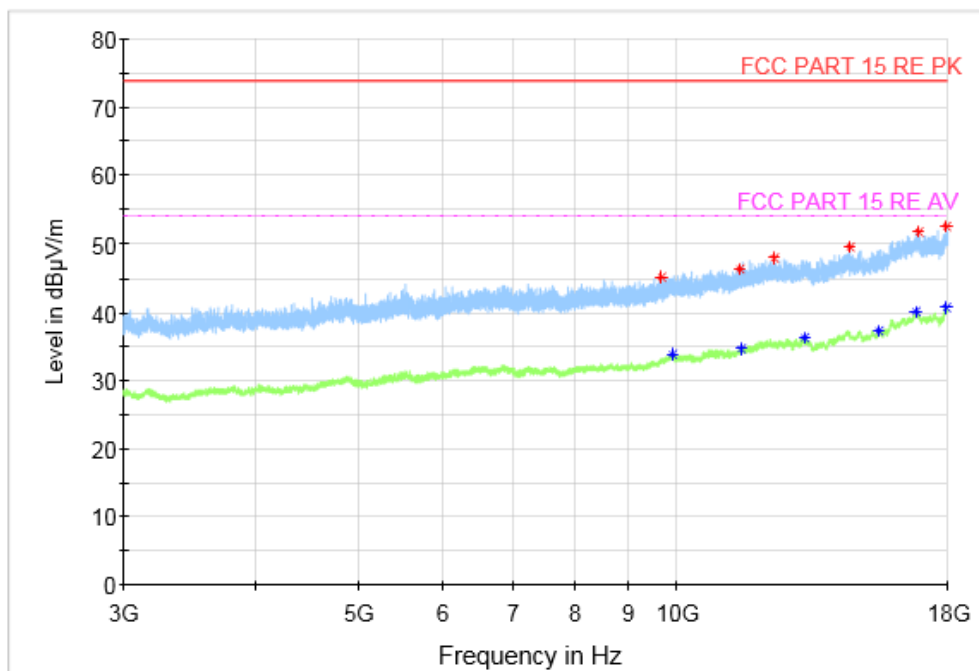


Fig. 49 Radiated Band Edges (GFSK, Ch78, 2450GHz~2500GHz)



**Fig. 50 Radiated Spurious Emission ( $\pi/4$  DQPSK, Ch0, 1 GHz ~3 GHz)**



**Fig. 51 Radiated Spurious Emission ( $\pi/4$  DQPSK, Ch0, 3 GHz ~18 GHz)**

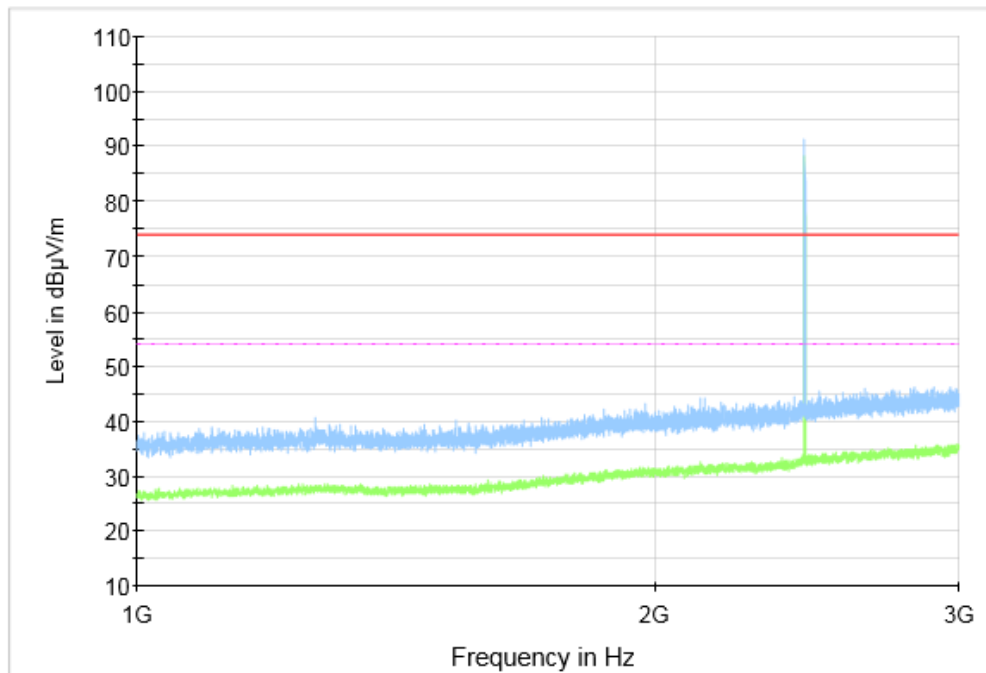


Fig. 52 Radiated Spurious Emission ( $\pi/4$  DQPSK, Ch39, 1 GHz ~3 GHz)

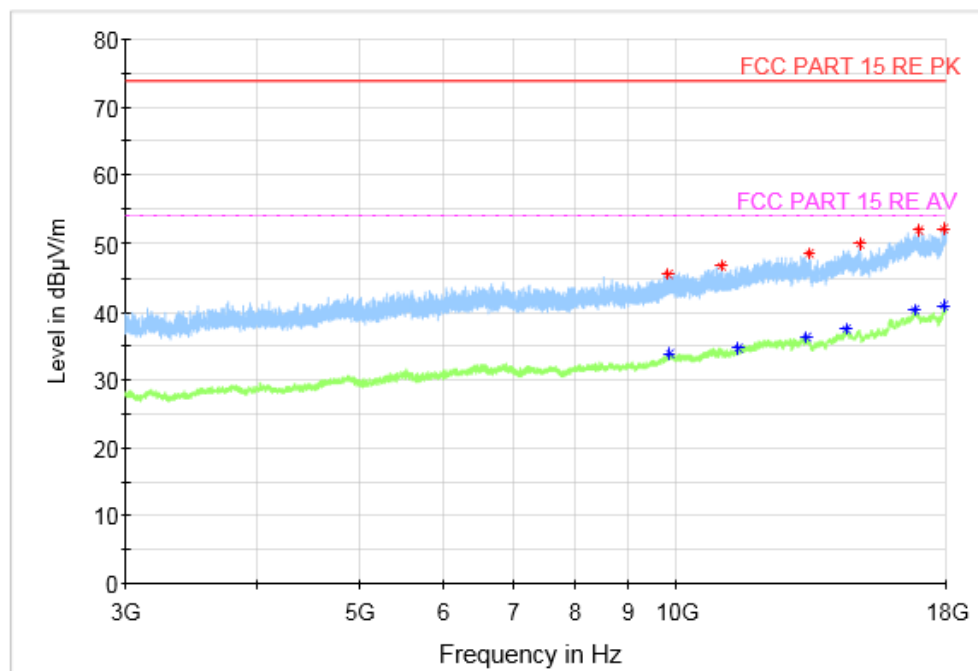


Fig. 53 Radiated Spurious Emission ( $\pi/4$  DQPSK, Ch39, 3 GHz ~18 GHz)

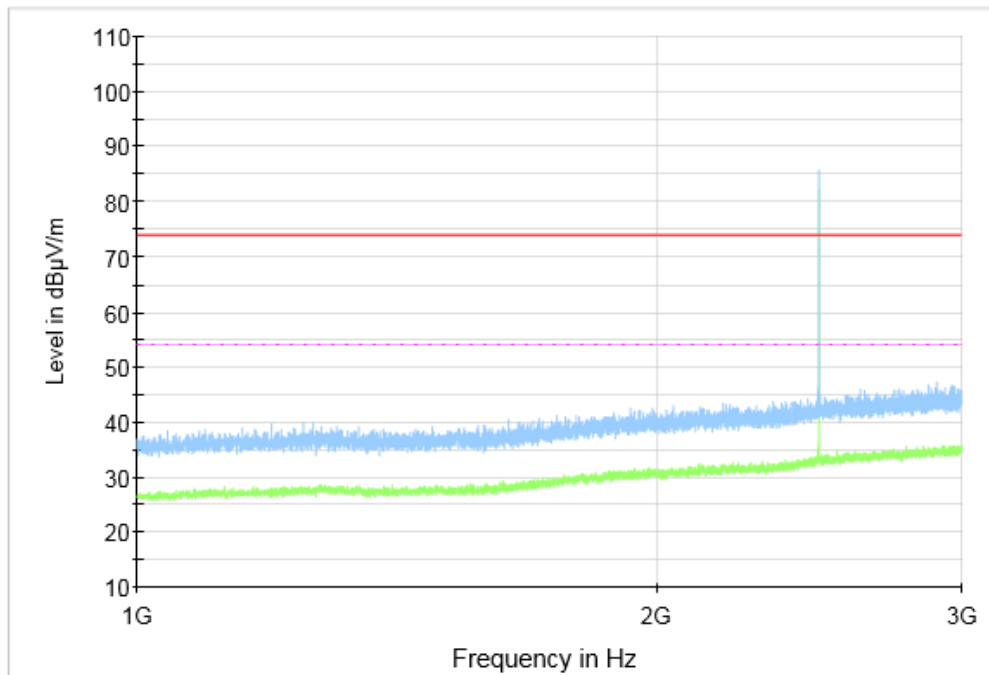


Fig. 54 Radiated Spurious Emission ( $\pi/4$  DQPSK, Ch78, 1 GHz ~3 GHz)

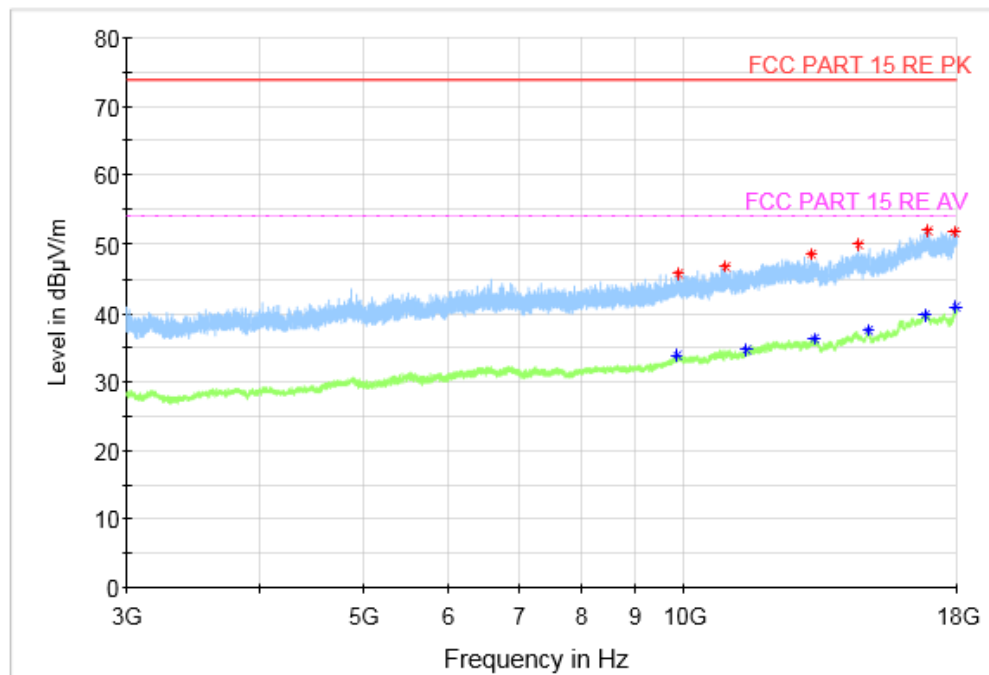
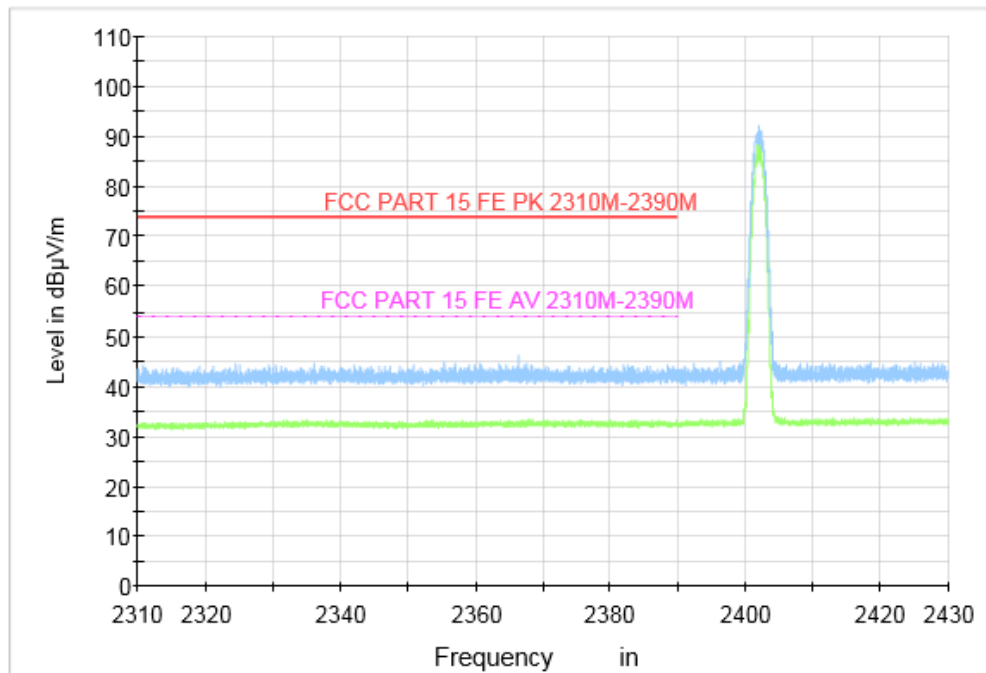
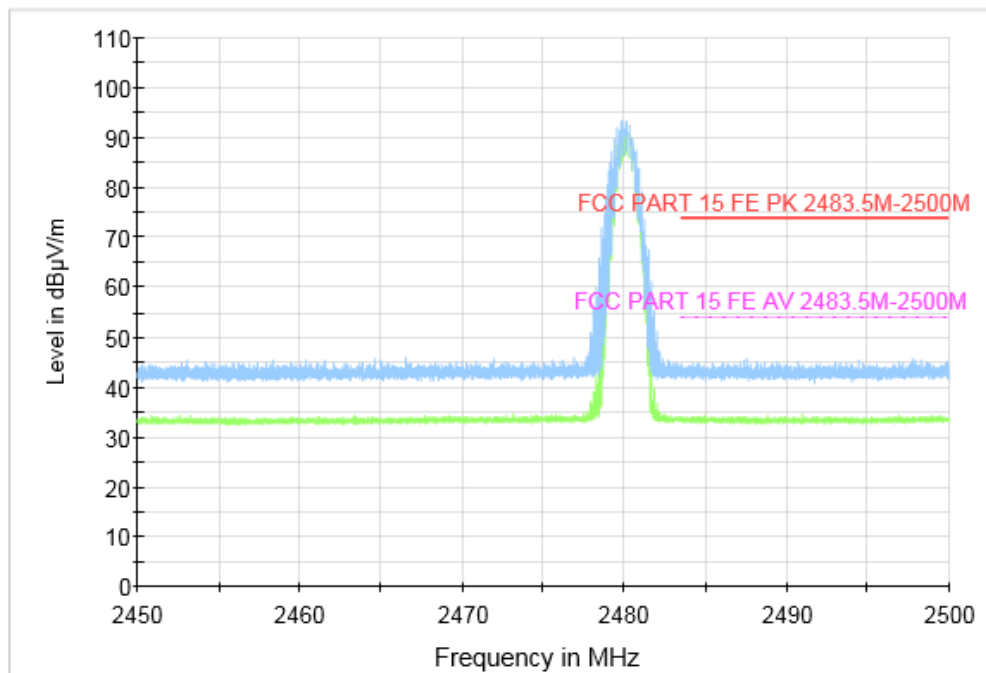


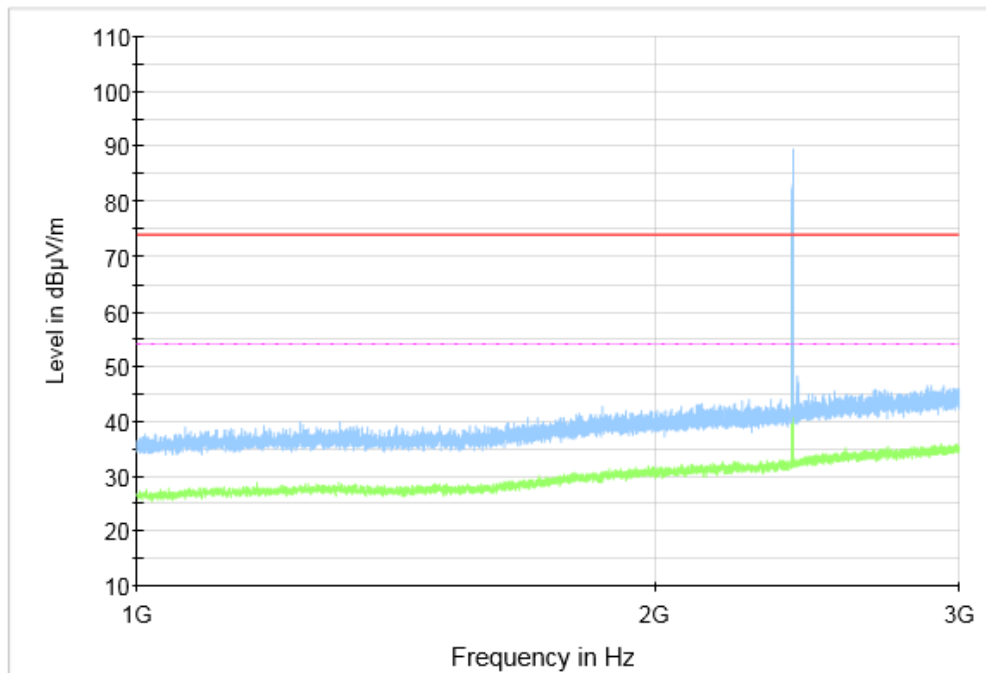
Fig. 55 Radiated Spurious Emission ( $\pi/4$  DQPSK, Ch78, 3 GHz ~18 GHz)



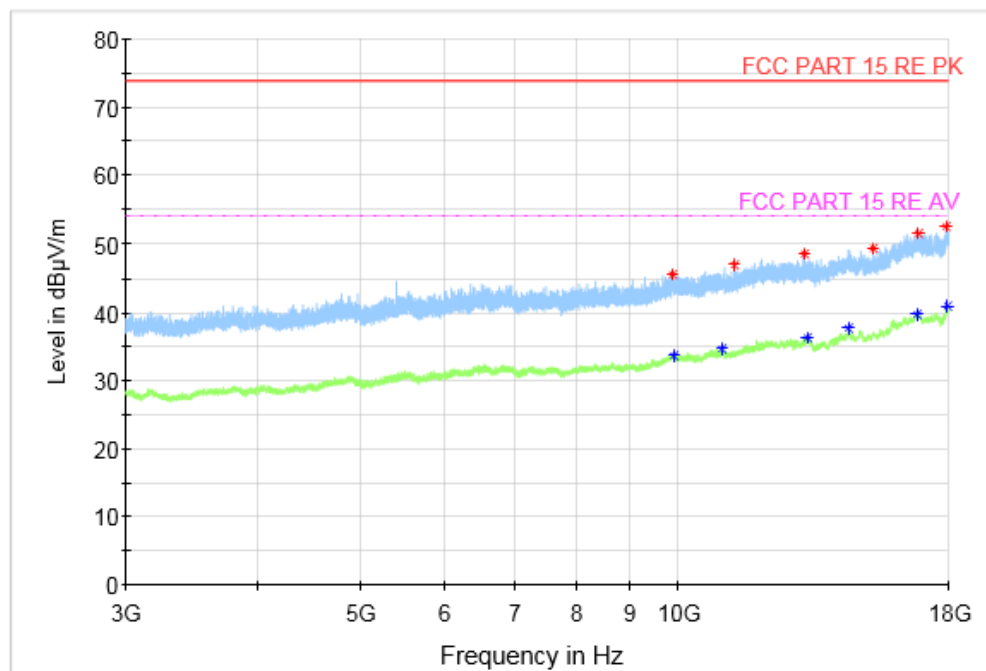
**Fig. 56 Radiated Band Edges ( $\pi/4$  DQPSK, Ch0, 2380GHz~2450GHz)**



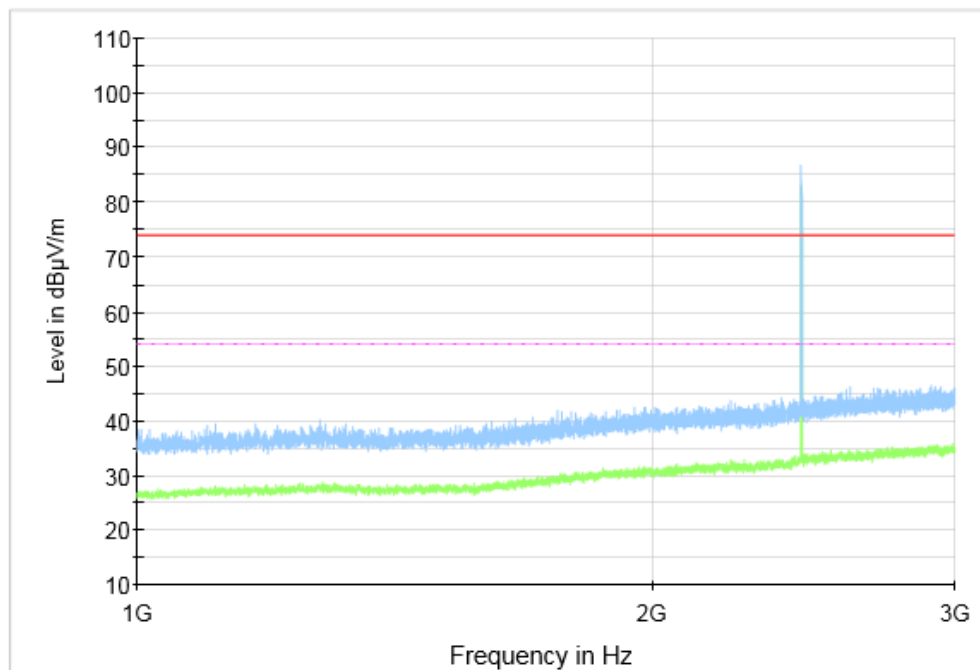
**Fig. 57 Radiated Band Edges ( $\pi/4$  DQPSK, Ch78, 2450GHz~2500GHz)**



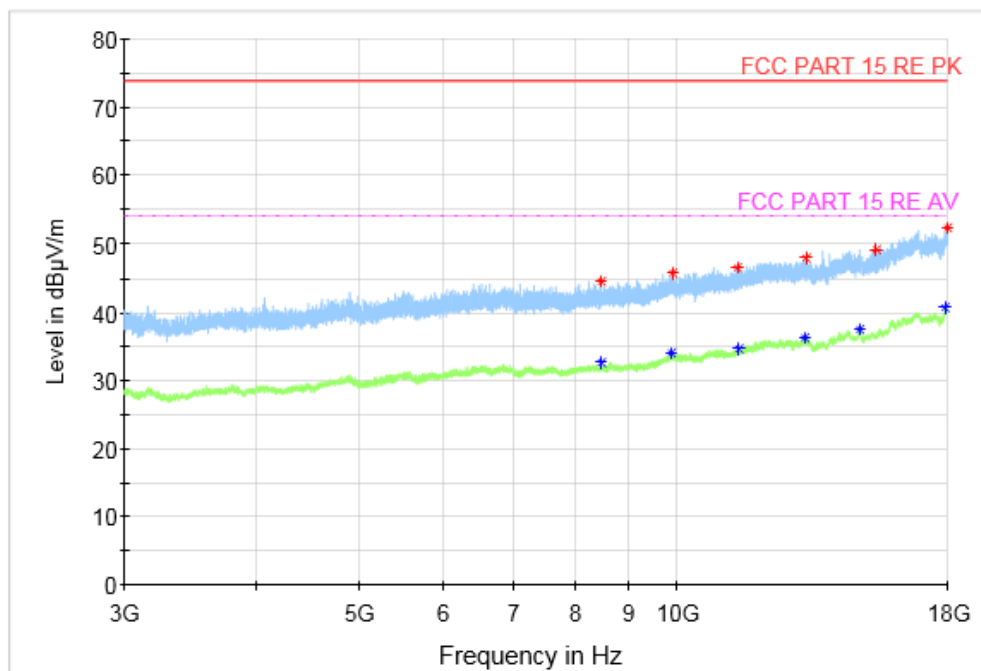
**Fig. 58 Radiated Spurious Emission (8DPSK, Ch0, 1 GHz ~3 GHz)**



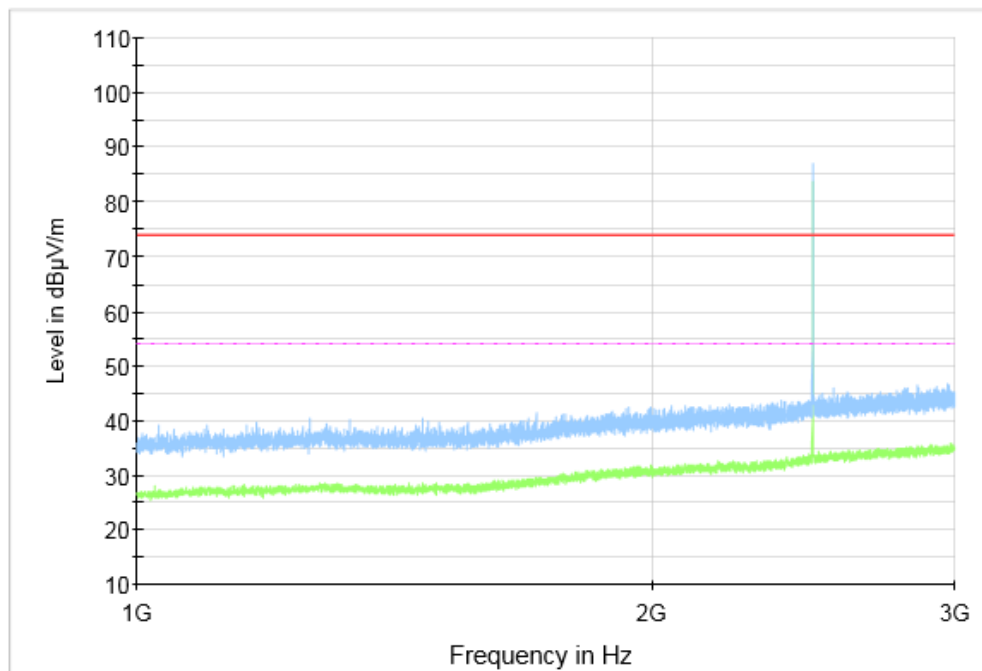
**Fig. 59 Radiated Spurious Emission (8DPSK, Ch0, 3 GHz ~18 GHz)**



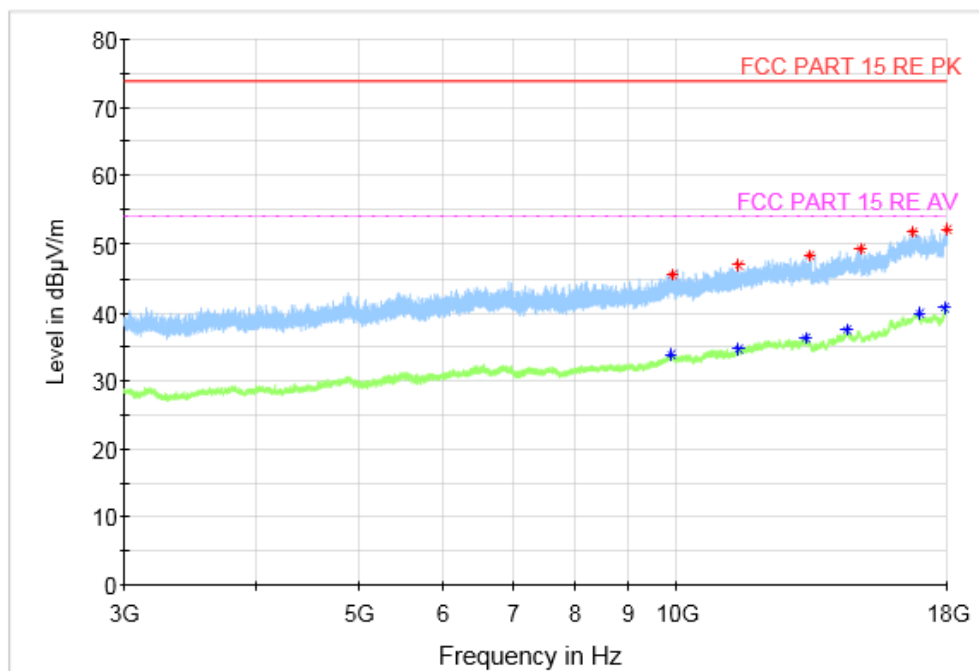
**Fig. 60 Radiated Spurious Emission (8DPSK, Ch39, 1 GHz ~3 GHz)**



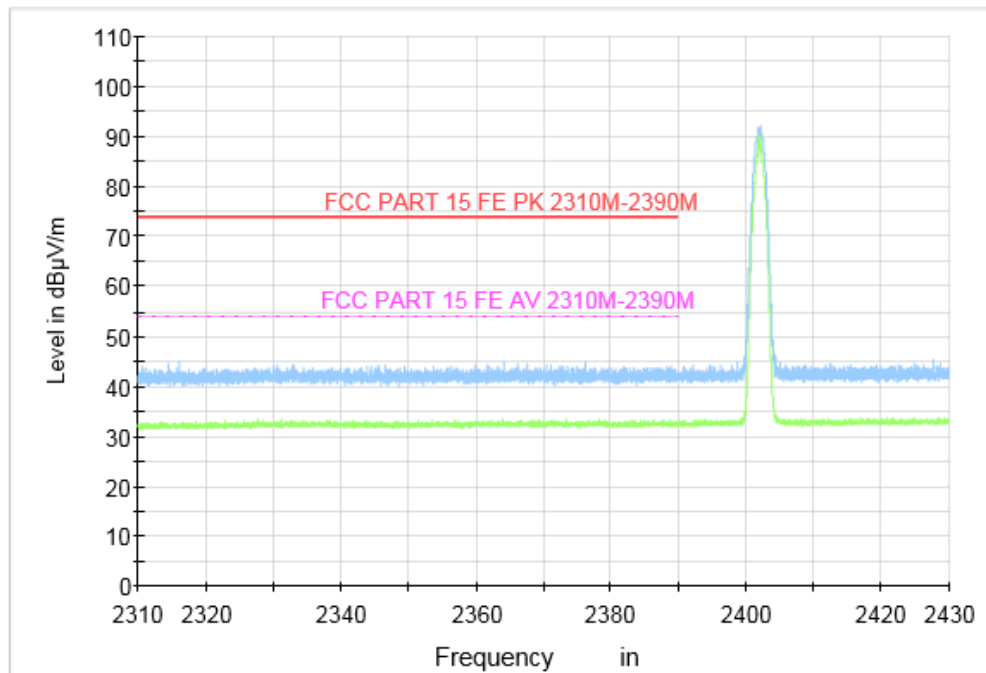
**Fig. 61 Radiated Spurious Emission (8DPSK, Ch39, 3 GHz ~18 GHz)**



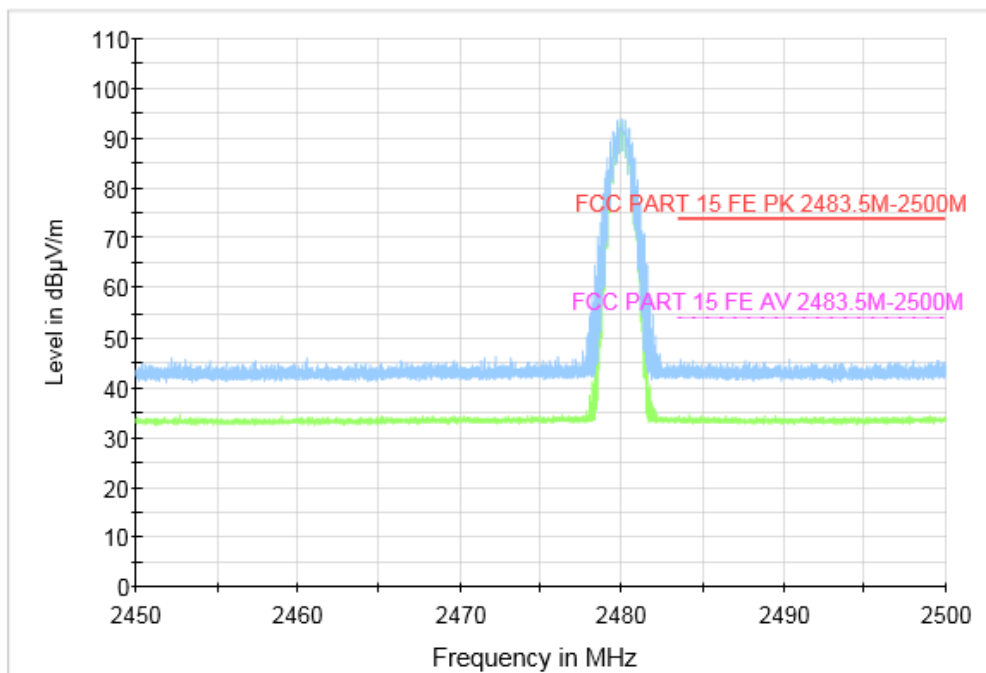
**Fig. 62 Radiated Spurious Emission (8DPSK, Ch78, 1 GHz ~3 GHz)**



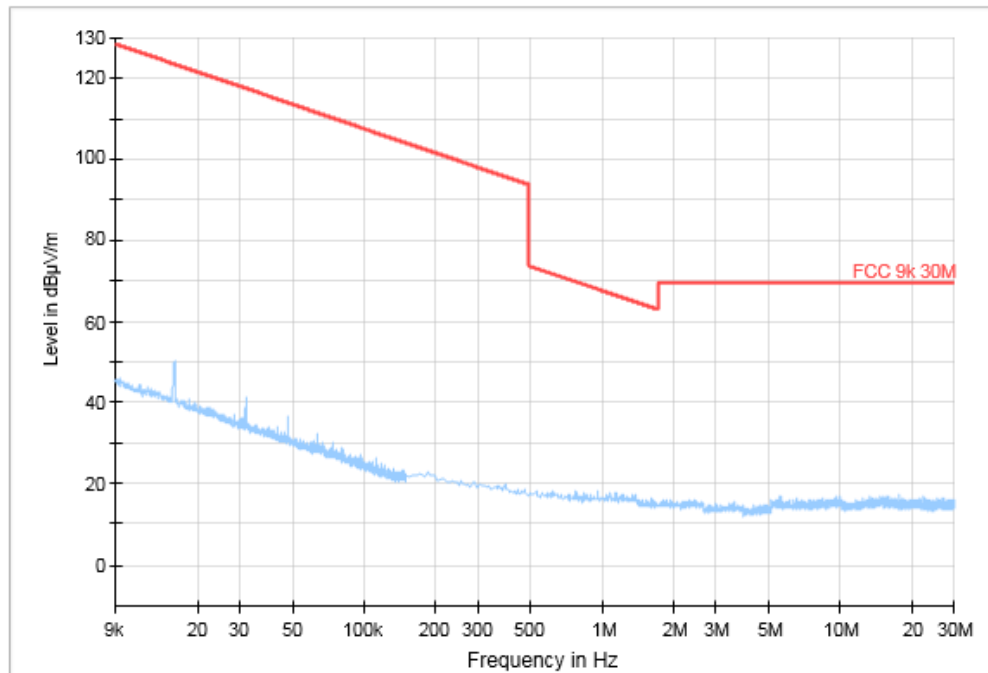
**Fig. 63 Radiated Spurious Emission (8DPSK, Ch78, 3 GHz ~18 GHz)**



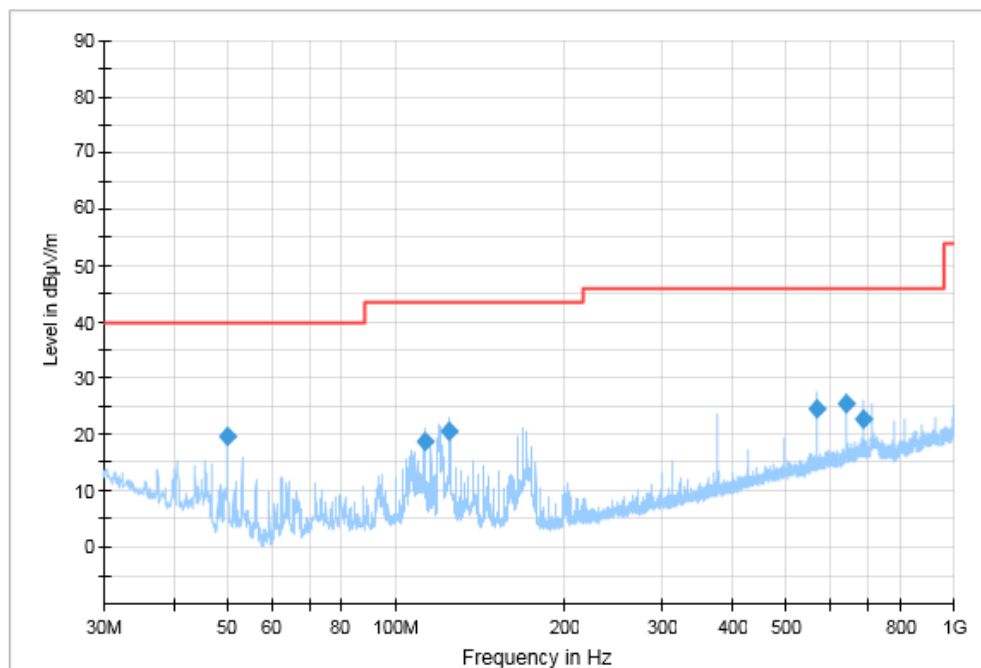
**Fig. 64 Radiated Band Edges (8DPSK, Ch0, 2380GHz~2450GHz)**



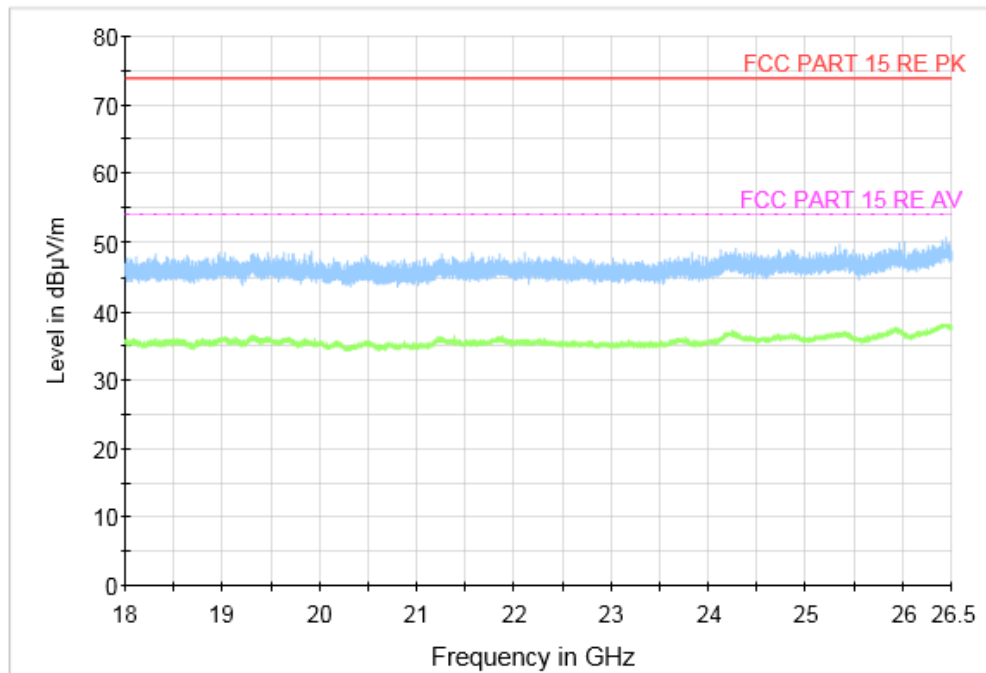
**Fig. 65 Radiated Band Edges (8DPSK, Ch78, 2450GHz~2500GHz)**



**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 |
|---------------|---------|-----------------------|---------|------------|
| GFSK          | 0       | Fig.69                | 941.25  | /          |
|               | 39      | Fig.70                | 940.50  |            |
|               | 78      | Fig.71                | 942.00  |            |
| $\pi/4$ DQPSK | 0       | Fig.72                | 1254.00 | /          |
|               | 39      | Fig.73                | 1257.75 |            |
|               | 78      | Fig.74                | 1234.50 |            |
| 8DPSK         | 0       | Fig.75                | 1256.25 | /          |
|               | 39      | Fig.76                | 1243.50 |            |
|               | 78      | Fig.77                | 1245.00 |            |

See below for test graphs.

Conclusion: PASS

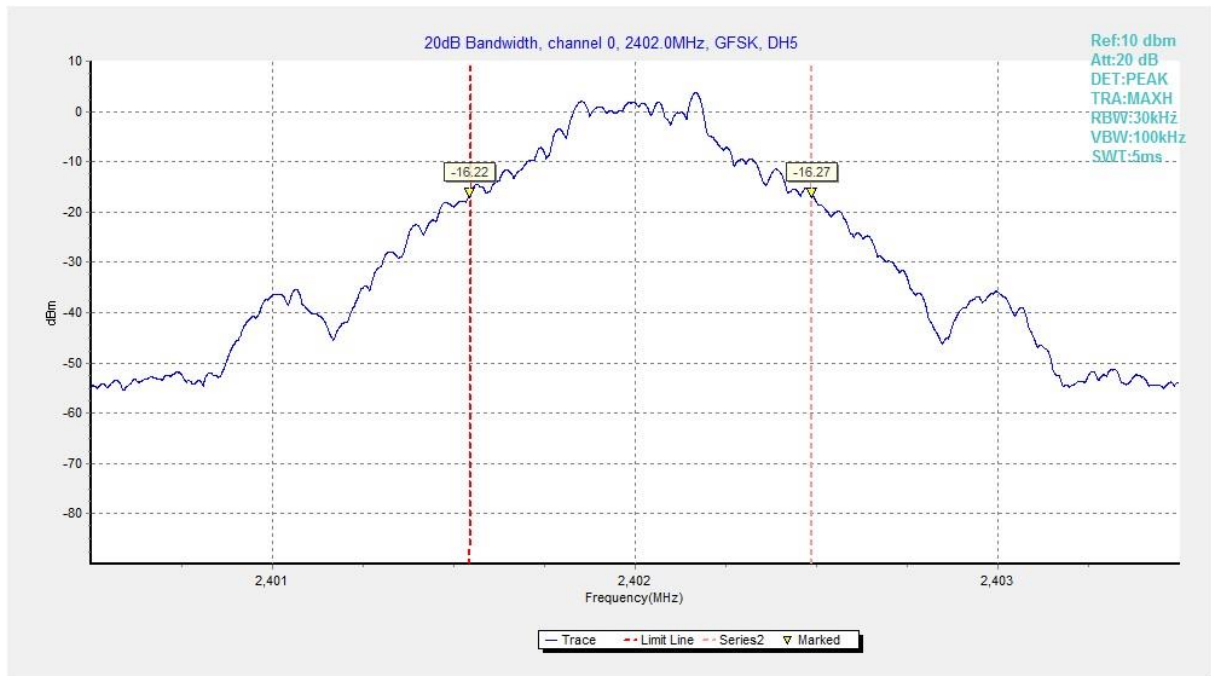


Fig. 69 20dB Bandwidth (GFSK, Ch 0)

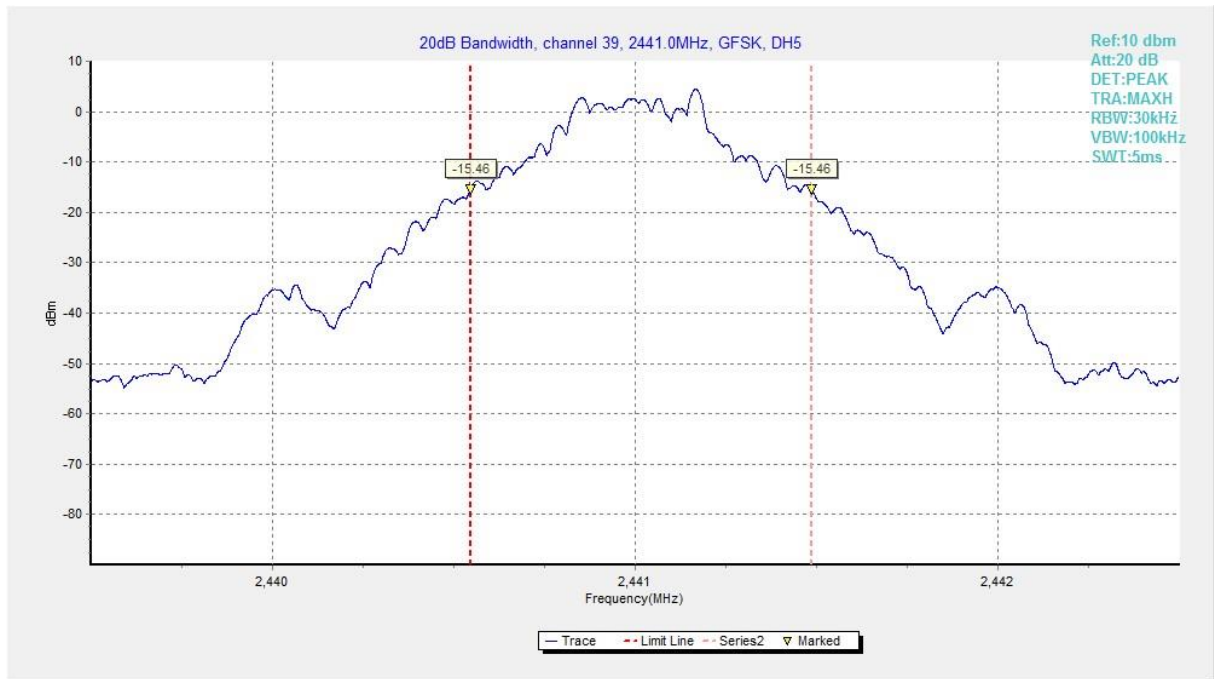


Fig. 70 20dB Bandwidth (GFSK, Ch 39)

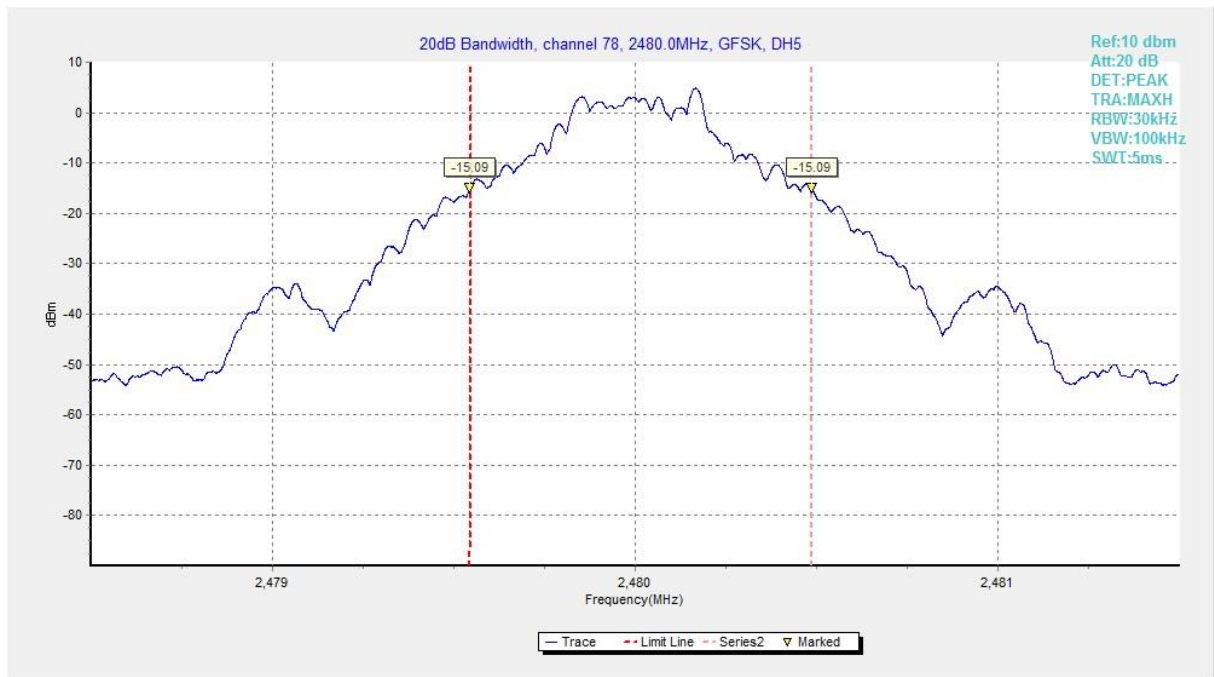


Fig. 71 20dB Bandwidth (GFSK, Ch 78)

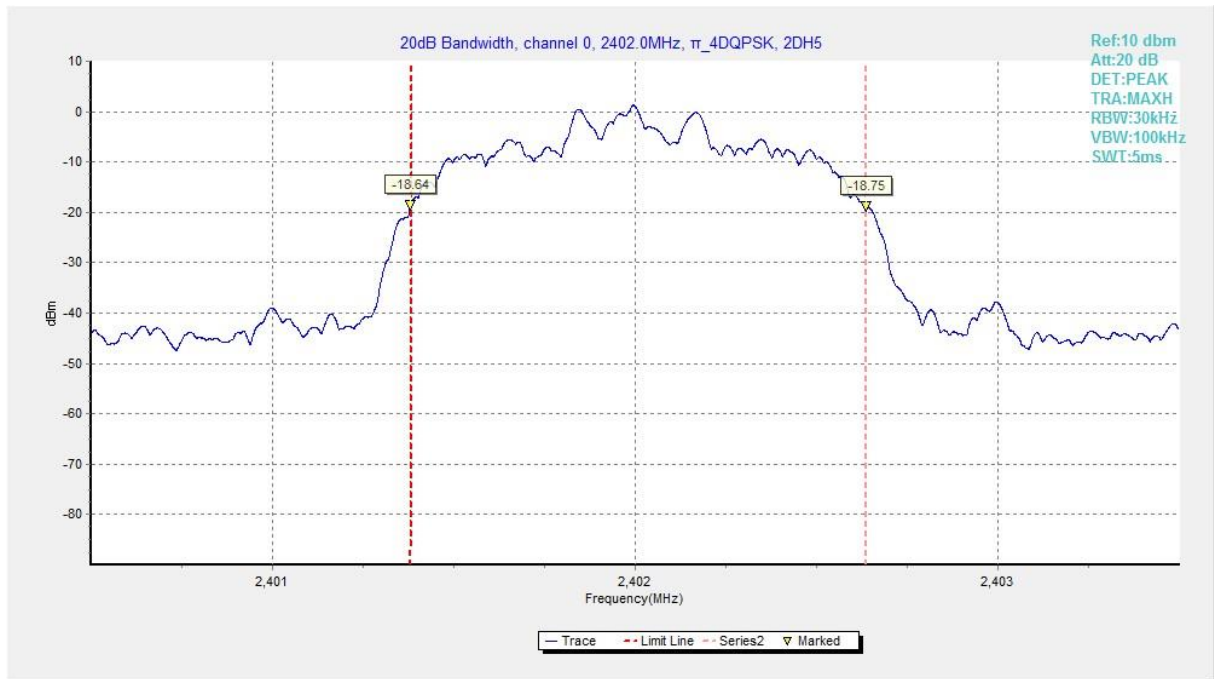


Fig. 72 20dB Bandwidth ( $\pi$ /4 DQPSK, Ch 0)

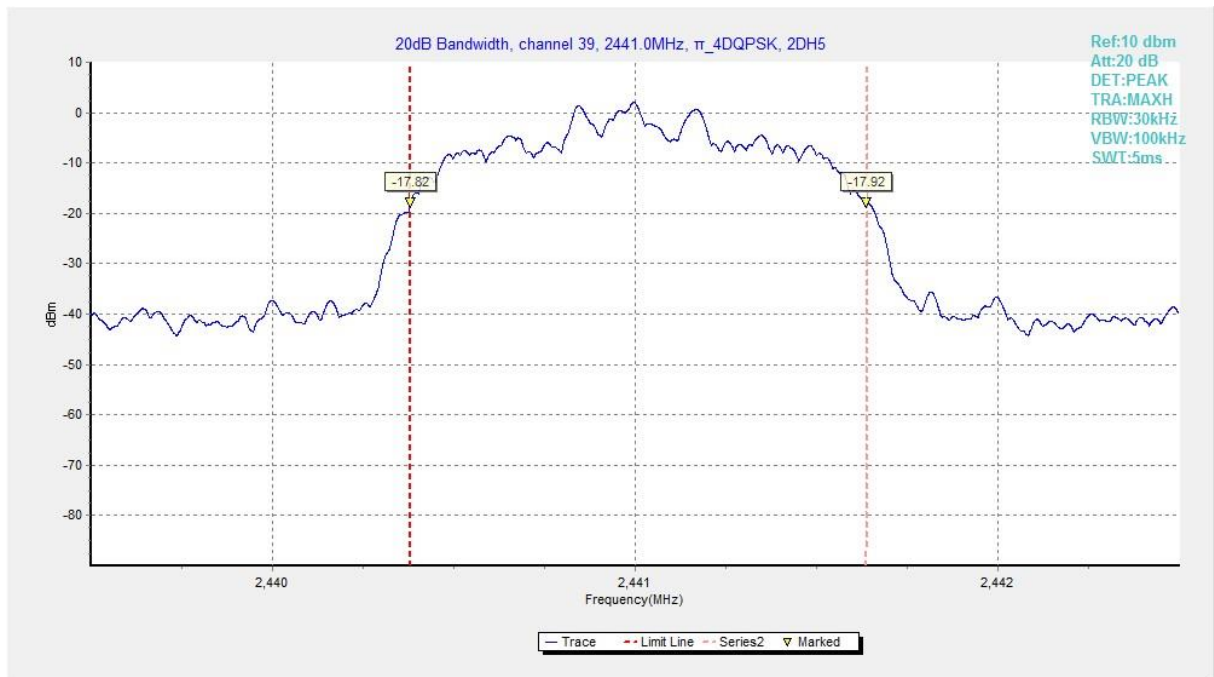


Fig. 73 20dB Bandwidth ( $\pi$ /4 DQPSK, Ch 39)

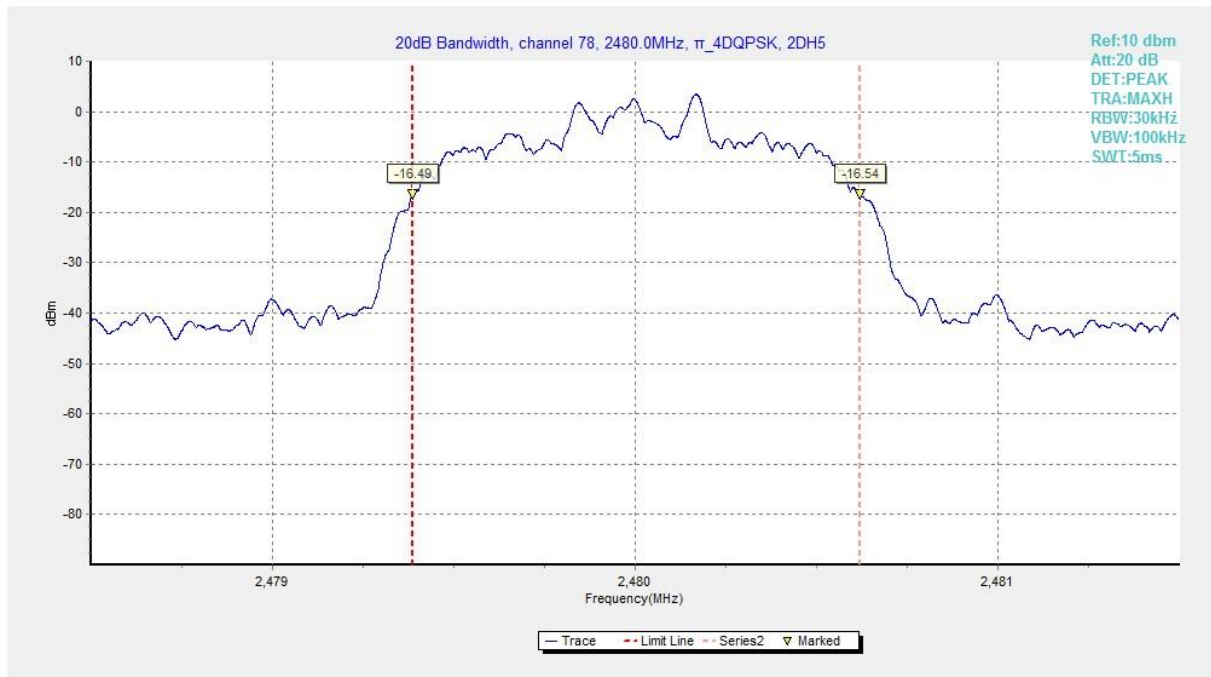


Fig. 74 20dB Bandwidth ( $\pi/4$  DQPSK, Ch 78)



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

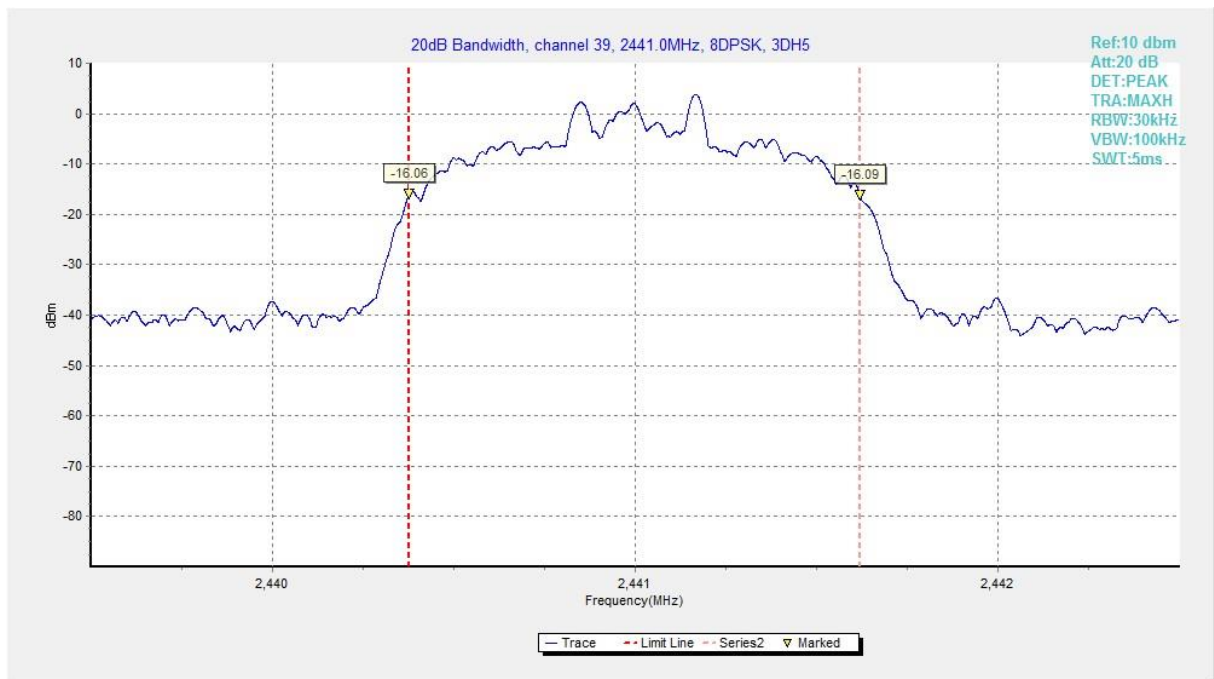


Fig. 76 20dB Bandwidth (8DPSK, Ch 39)

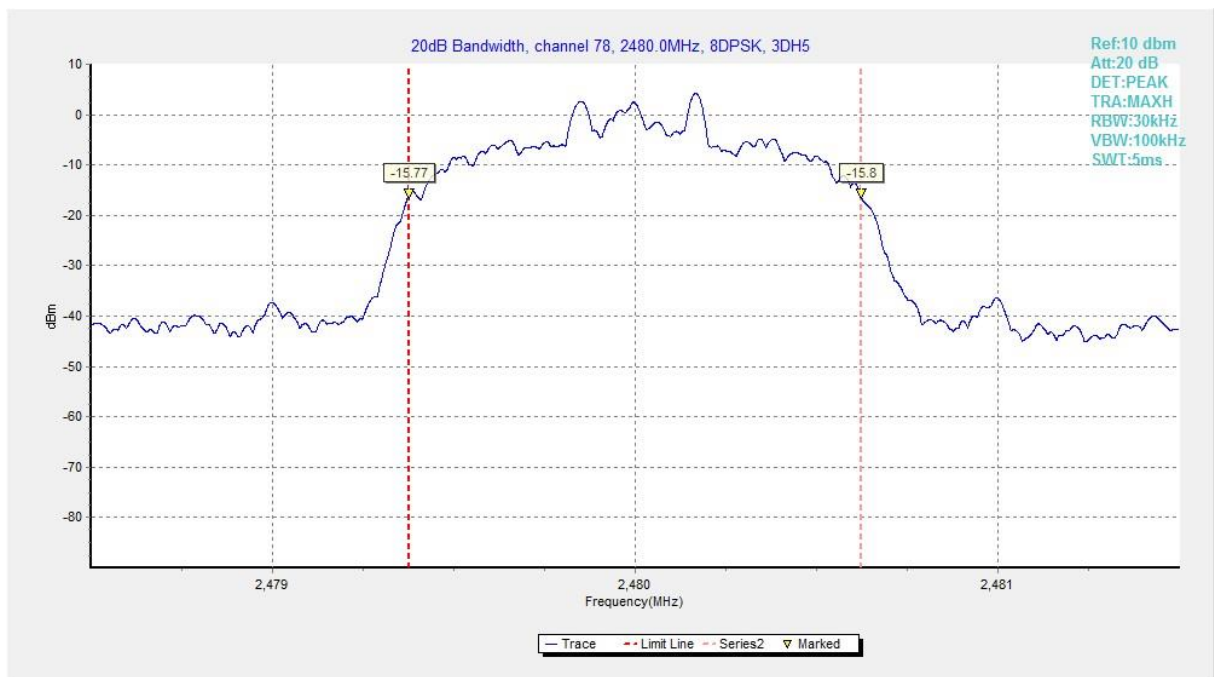


Fig. 77 20dB Bandwidth (8DPSK, Ch 78)

## 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 | <b>P</b>   |
|                  |         |        | Fig.79         |        |            |
| $\pi/4$<br>DQPSK | 39      | 2-DH5  | Fig.80         | 307.10 | <b>P</b>   |
|                  |         |        | Fig.81         |        |            |
| 8DPSK            | 39      | 3-DH5  | Fig.82         | 308.02 | <b>P</b>   |
|                  |         |        | Fig.83         |        |            |

See below for test graphs.

**Conclusion: Pass**

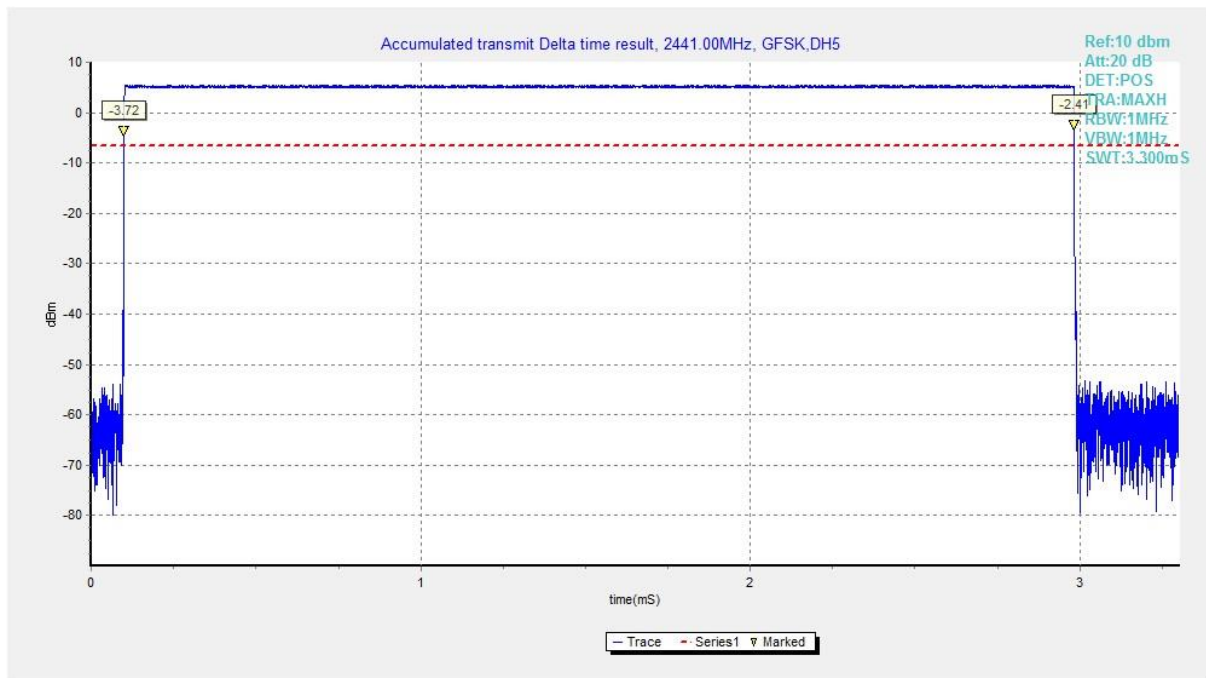


Fig. 78 Time of Occupancy(Dwell Time) (GFSK, Ch39)

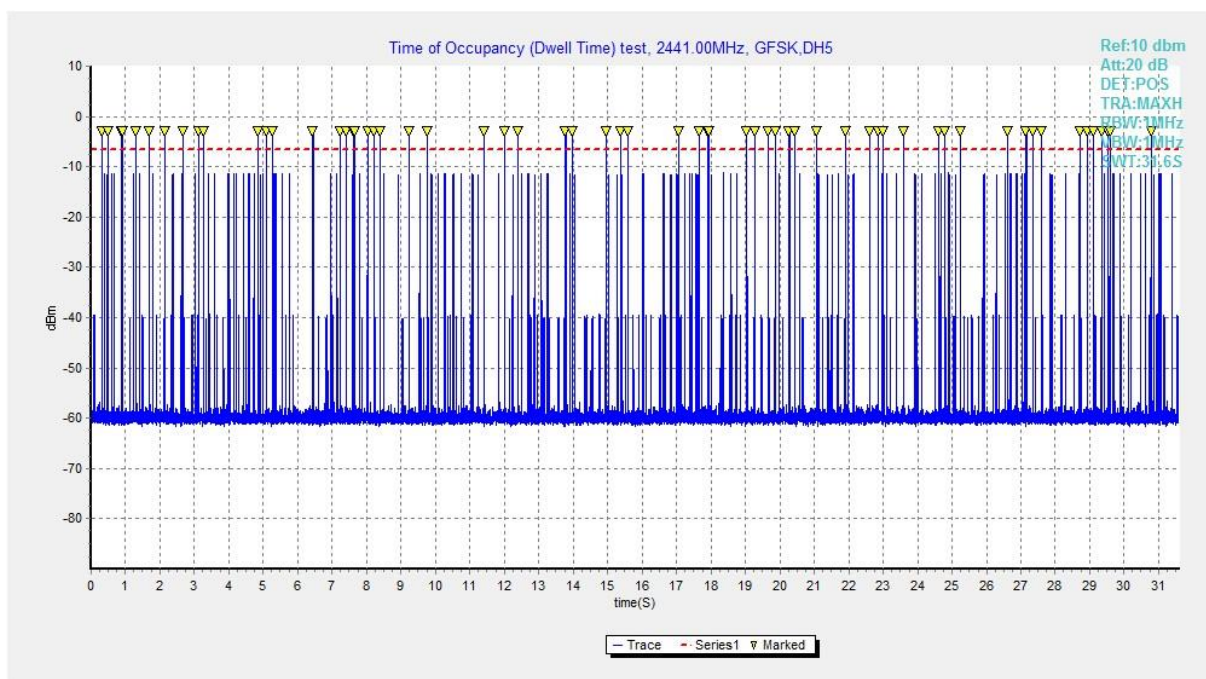


Fig. 79 Time of Occupancy(Dwell Time) (GFSK, Ch39)

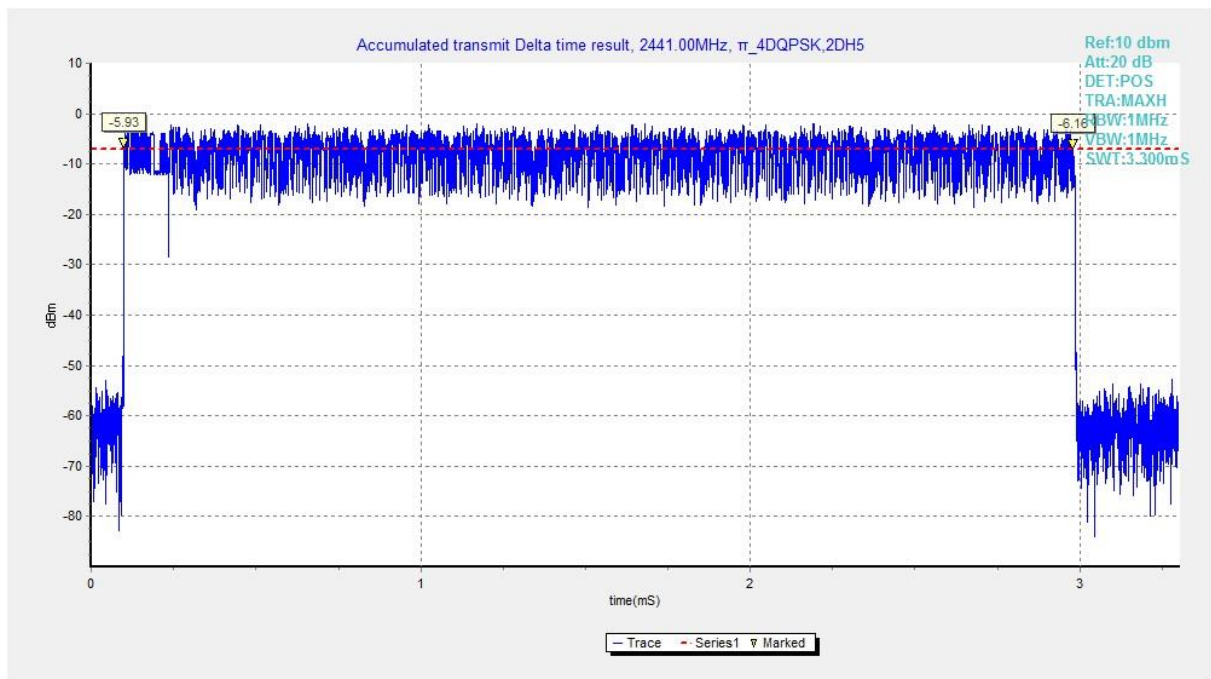


Fig. 80 Time of Occupancy(Dwell Time) ( $\pi/4$  DQPSK, Ch39)

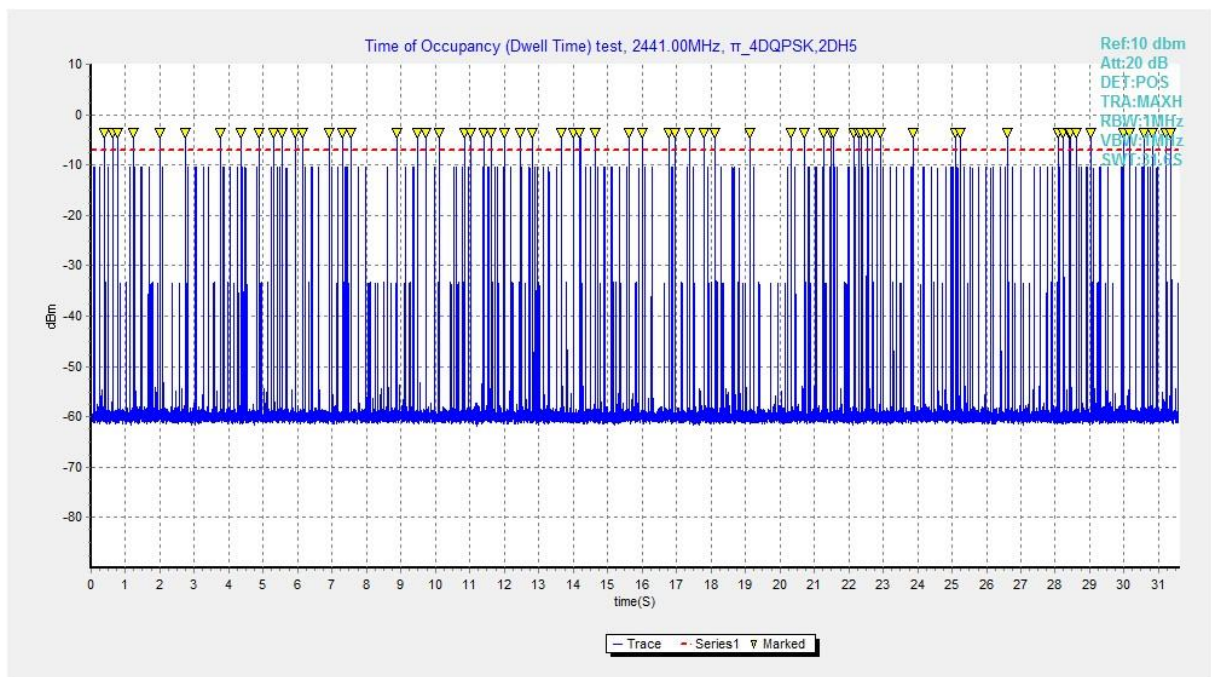


Fig. 81 Time of Occupancy(Dwell Time) ( $\pi/4$  DQPSK, Ch39)

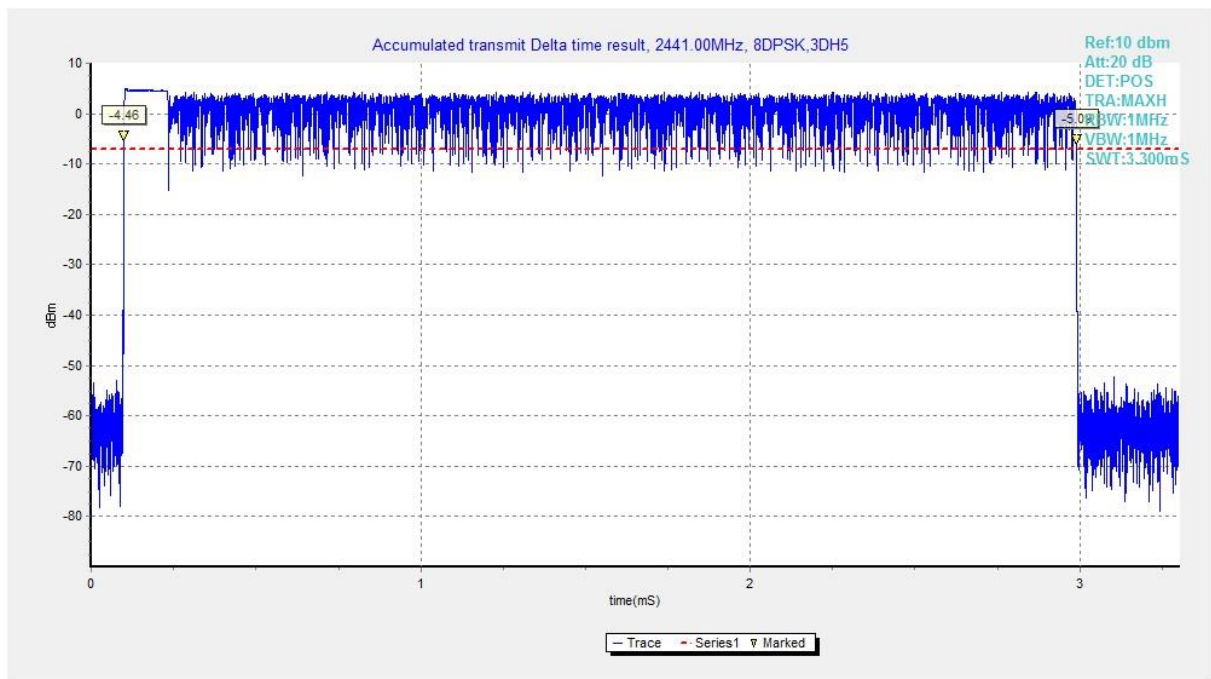


Fig. 82 Time of Occupancy(Dwell Time) (8DPSK, Ch39)

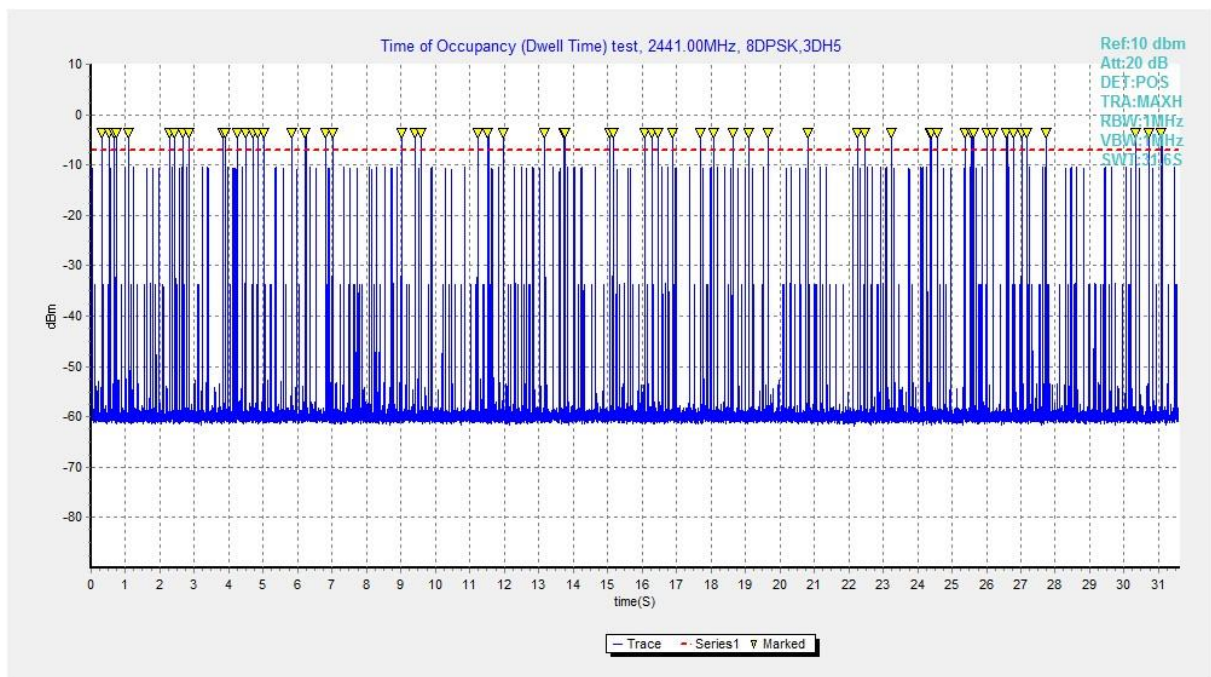


Fig. 83 Time of Occupancy(Dwell Time) (8DPSK, Ch39)

**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          | <b>P</b>   |
| $\pi/4$ DQPSK | 2-DH5  | Fig.86            | Fig.87 | 79          | <b>P</b>   |
| 8DPSK         | 3-DH5  | Fig.88            | Fig.89 | 79          | <b>P</b>   |

See below for test graphs.

**Conclusion: Pass**

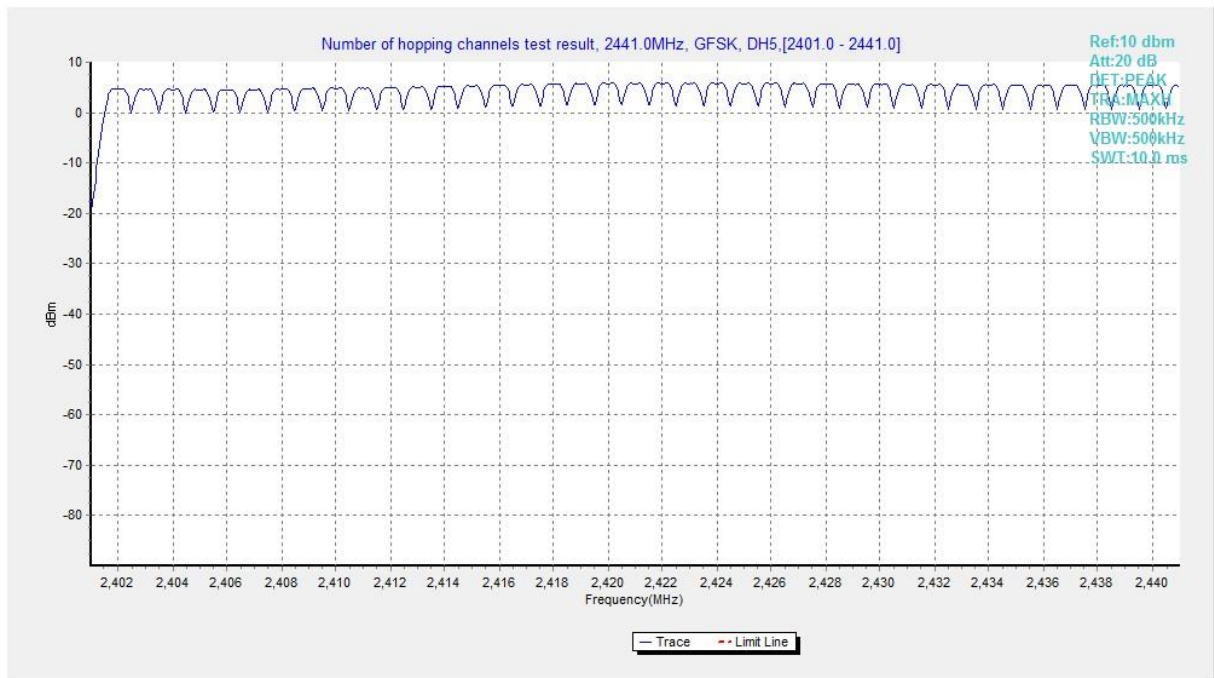


Fig. 84 Hopping channel ch0~39 (GFSK, Ch39)

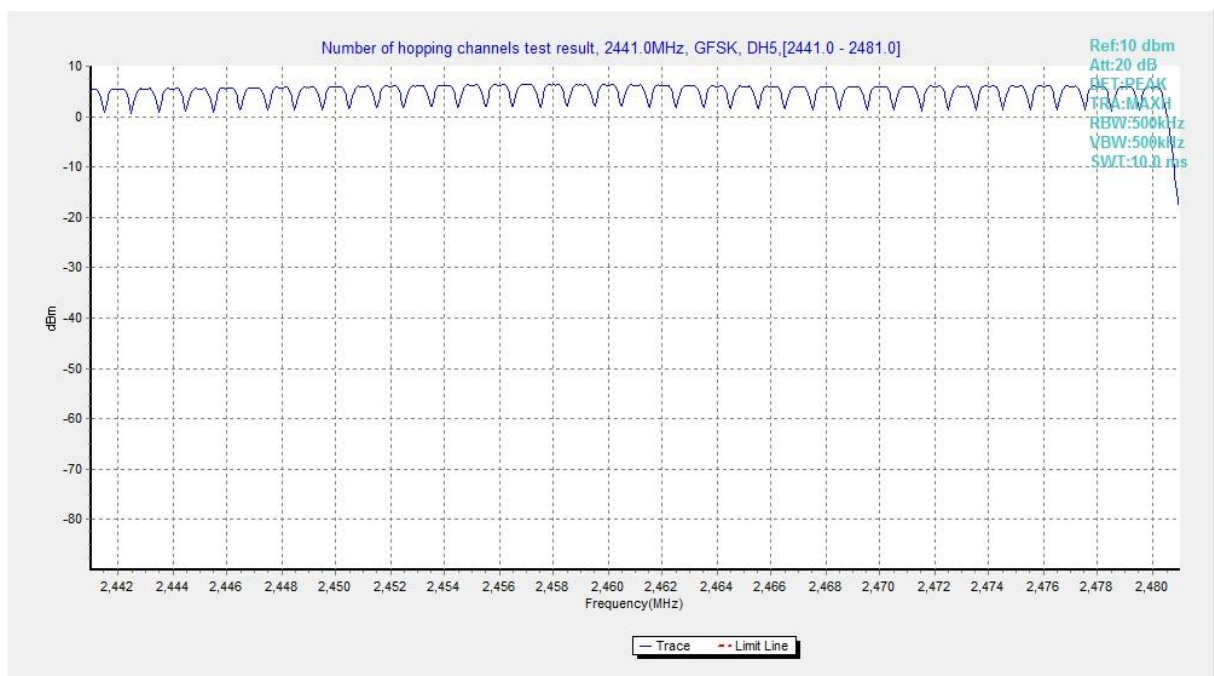


Fig. 85 Hopping channel ch39~78 (GFSK, Ch39)

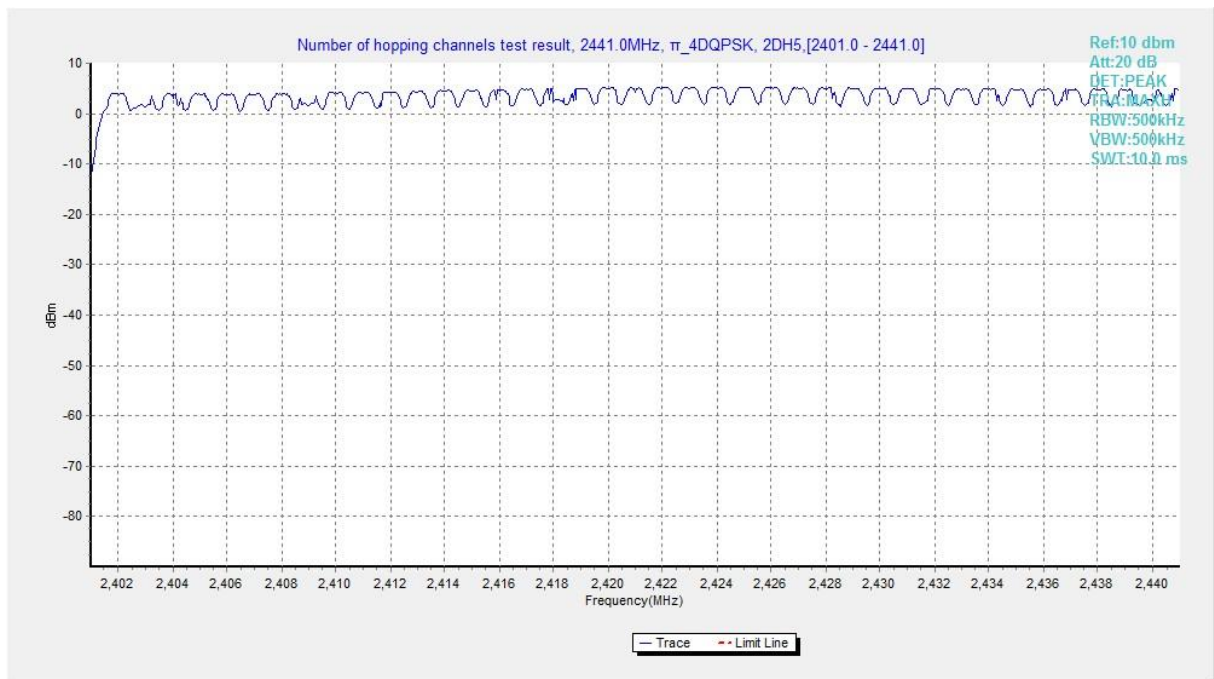


Fig. 86 Hopping channel ch0~39 ( $\pi/4$  DQPSK, Ch39)

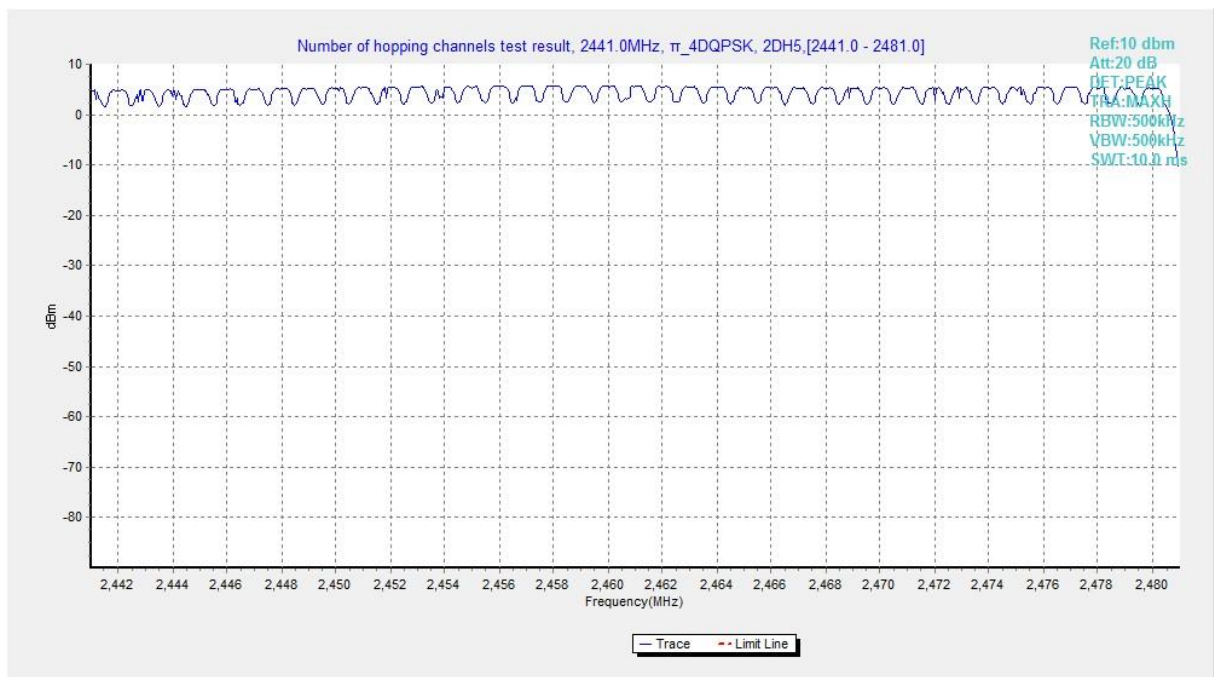
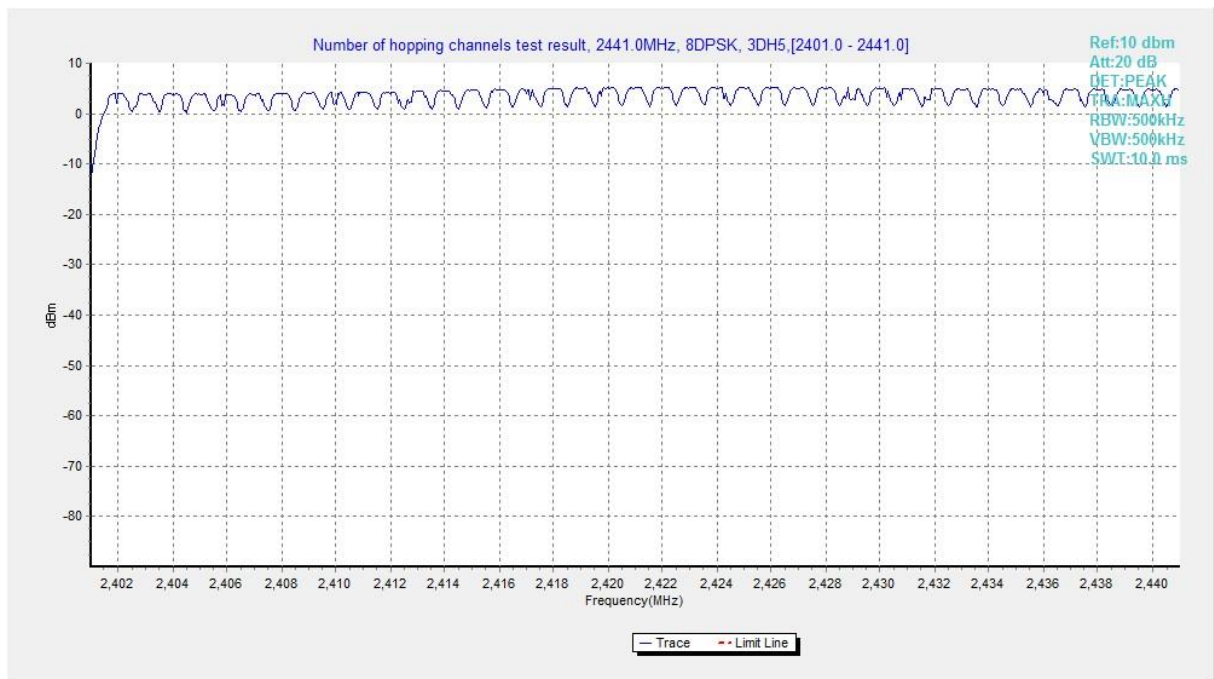
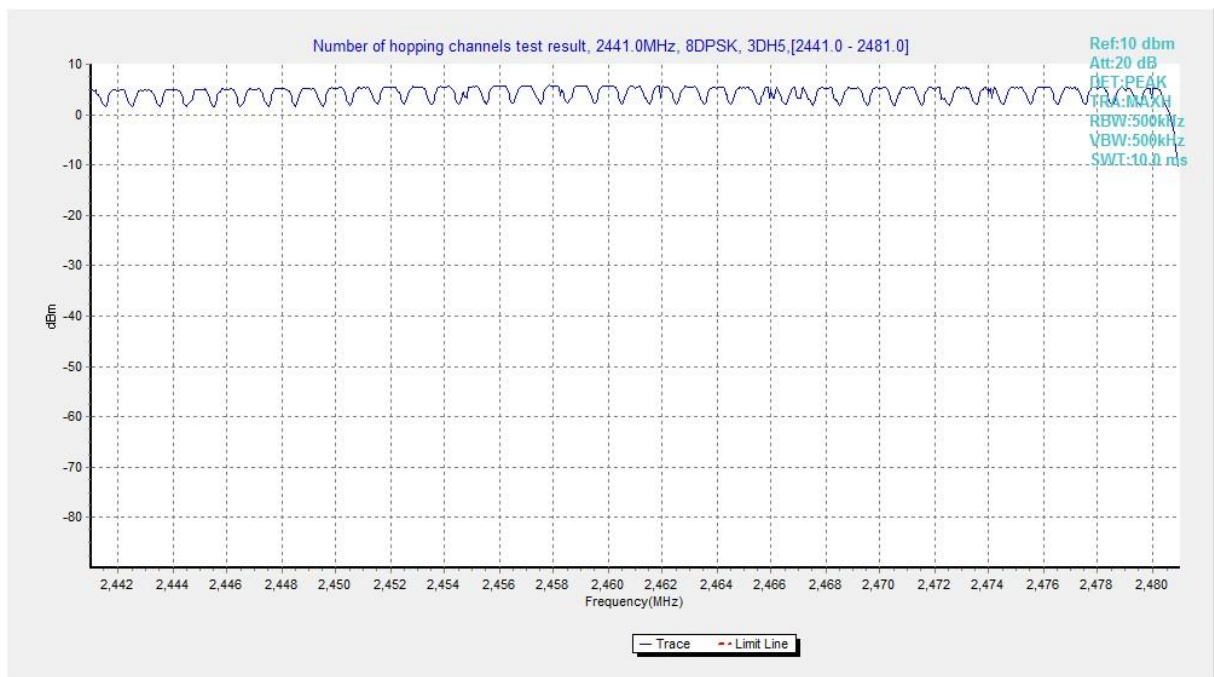


Fig. 87 Hopping channel ch39~78 ( $\pi/4$  DQPSK, Ch39)



**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                         | 1001.25           | P          |
| $\pi/4$ DQPSK | 39      | 2-DH5  | Fig.91                         | 984.00            | P          |
| 8DPSK         | 39      | 3-DH5  | Fig.92                         | 1020.75           | P          |

See below for test graphs.

Conclusion: Pass

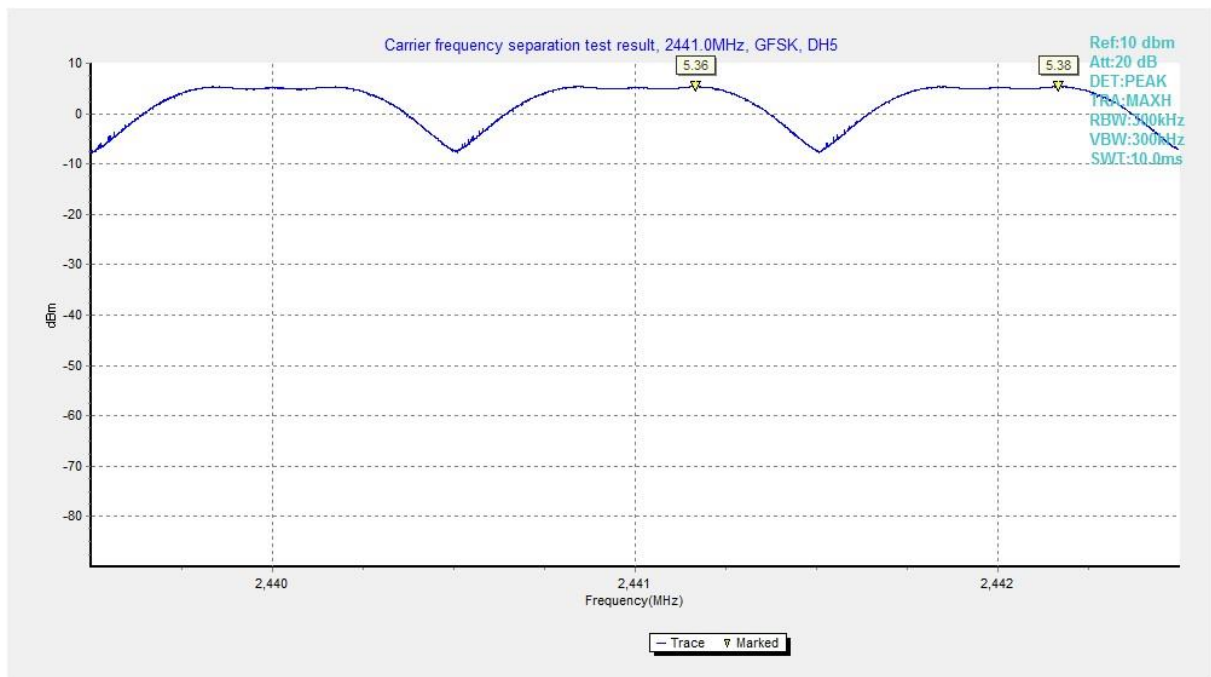


Fig. 90 Carrier Frequency Separation (GFSK, Ch39)

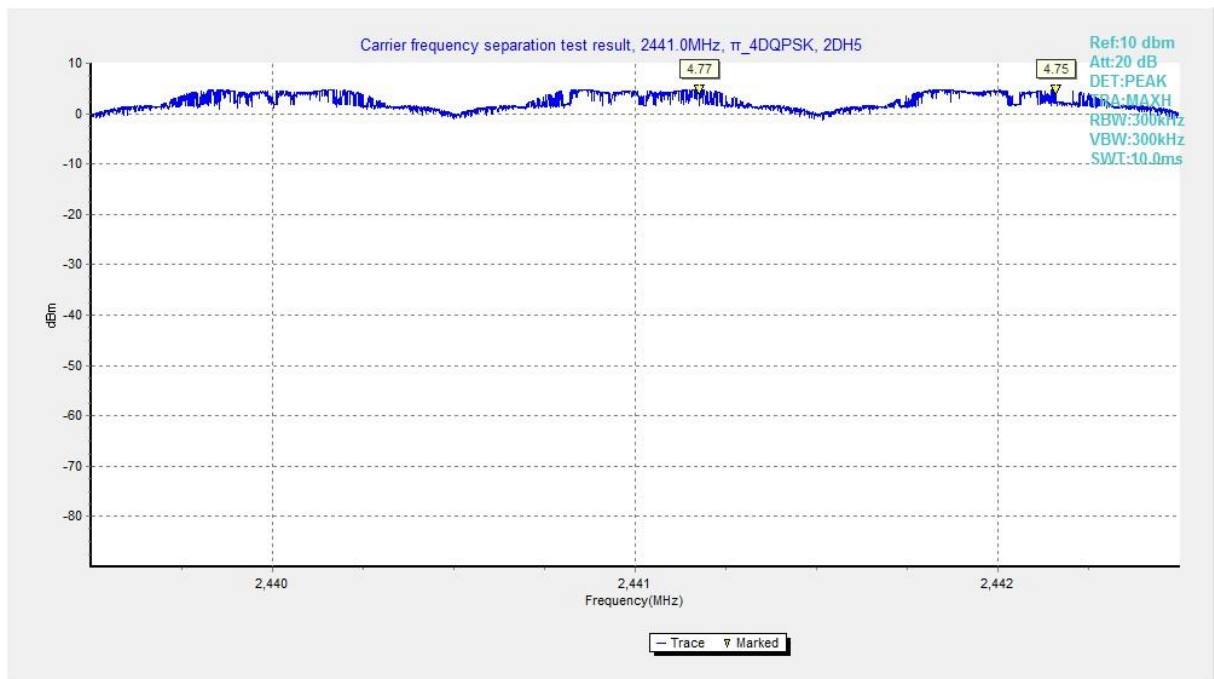


Fig. 91 Carrier Frequency Separation ( $\pi/4$  DQPSK, Ch39)

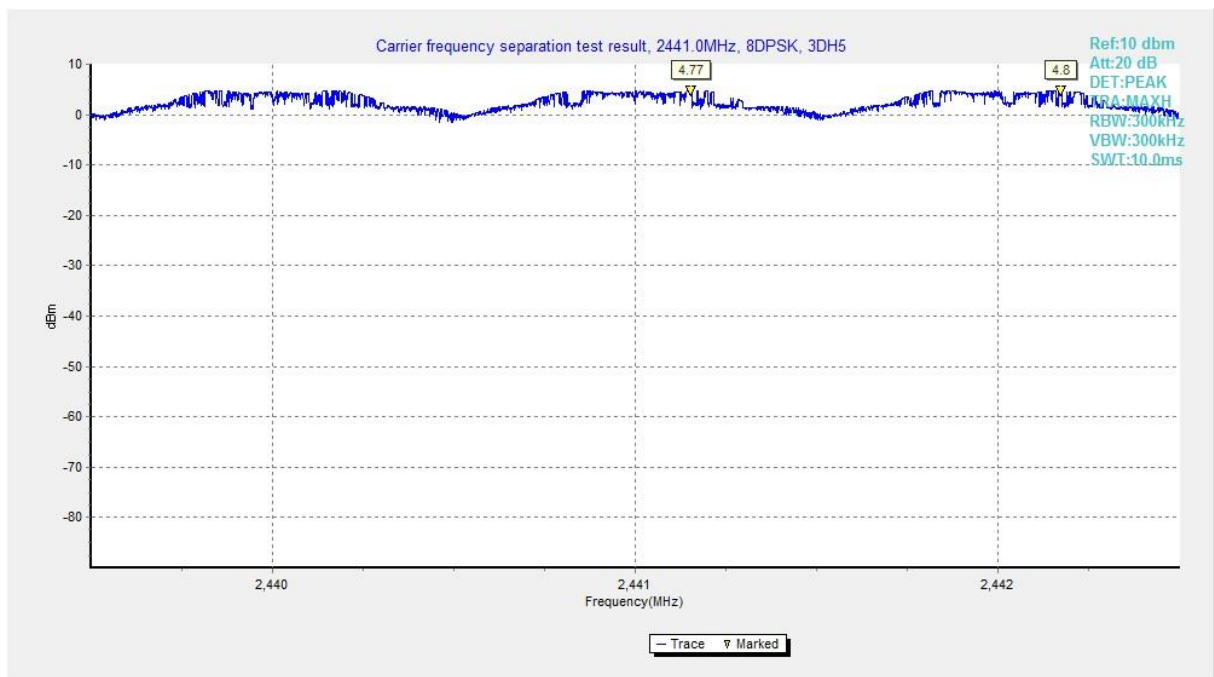


Fig. 92 Carrier Frequency Separation (8DPSK, Ch39)

## A.9 AC Power line Conducted Emission

### Test Condition:

| Voltage (V) | Frequency (Hz) |
|-------------|----------------|
| 120         | 60             |

### Measurement Result and limit:

BT (Quasi-peak Limit)-A2-1, A3-1

| Frequency range<br>(MHz)                                                                                 | Quasi-peak<br>Limit (dBμV) | Result (dBμV) |        | 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)-A2-1, A3-1

| Frequency range<br>(MHz)                                                                                 | Average-peak<br>Limit (dBμV) | Result (dBμV) |        | 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. |                              |               |        |            |

BT (Quasi-peak Limit)-A2-2, A3-2

| Frequency range<br>(MHz)                                                                                 | Quasi-peak<br>Limit (dBμV) | Result (dBμV) |        | Conclusion |
|----------------------------------------------------------------------------------------------------------|----------------------------|---------------|--------|------------|
|                                                                                                          |                            | Traffic       | Idle   |            |
| 0.16 to 0.5                                                                                              | 66 to 56                   | Fig.95        | Fig.96 | 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)-A2-2, A3-2

| Frequency range<br>(MHz)                                                                                 | Average-peak<br>Limit (dBμV) | Result (dBμV) |        | Conclusion |
|----------------------------------------------------------------------------------------------------------|------------------------------|---------------|--------|------------|
|                                                                                                          |                              | Traffic       | Idle   |            |
| 0.15 to 0.5                                                                                              | 56 to 46                     | Fig.95        | Fig.96 | 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**

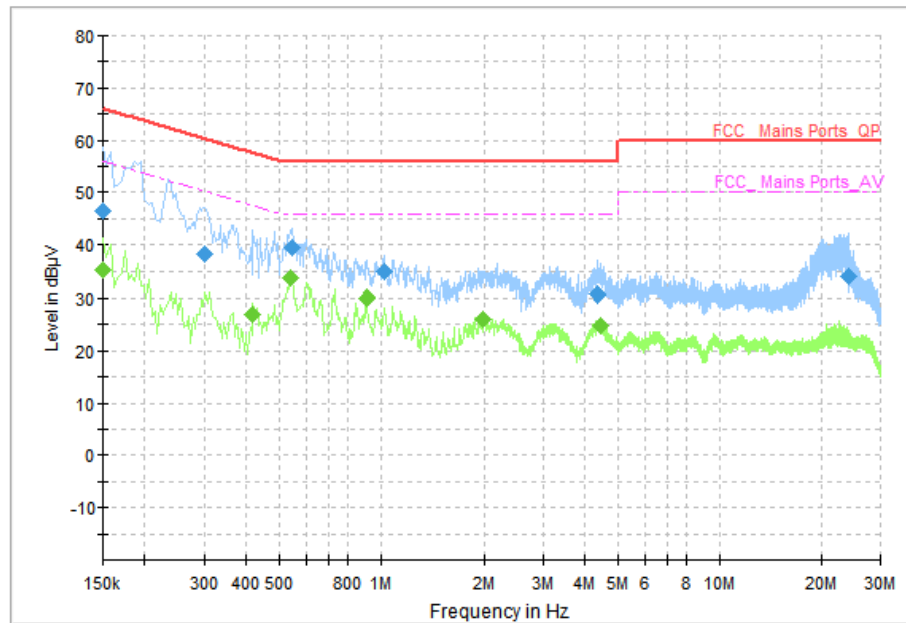


Fig. 93 AC Powerline Conducted Emission (Traffic), A2-1, A3-1

#### Measurement Results: Quasi Peak

| Frequency (MHz) | Quasi Peak (dBμV) | Limit (dBμV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|-------------------|--------------|-------------|------|--------|------------|
| 0.150000        | 46.40             | 66.00        | 19.60       | N    | ON     | 10         |
| 0.302000        | 38.34             | 60.19        | 21.85       | N    | ON     | 10         |
| 0.546000        | 39.33             | 56.00        | 16.67       | L1   | ON     | 10         |
| 1.022000        | 34.80             | 56.00        | 21.20       | L1   | ON     | 10         |
| 4.342000        | 30.68             | 56.00        | 25.32       | L1   | ON     | 10         |
| 24.030000       | 33.94             | 60.00        | 26.06       | N    | ON     | 10         |

#### Measurement Results: Average

| Frequency (MHz) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|----------------|--------------|-------------|------|--------|------------|
| 0.150000        | 35.07          | 56.00        | 20.93       | N    | ON     | 10         |
| 0.418000        | 26.96          | 47.49        | 20.53       | L1   | ON     | 10         |
| 0.538000        | 33.63          | 46.00        | 12.37       | L1   | ON     | 10         |
| 0.906000        | 29.96          | 46.00        | 16.04       | L1   | ON     | 10         |
| 1.990000        | 25.89          | 46.00        | 20.11       | L1   | ON     | 10         |
| 4.422000        | 24.95          | 46.00        | 21.05       | L1   | ON     | 10         |

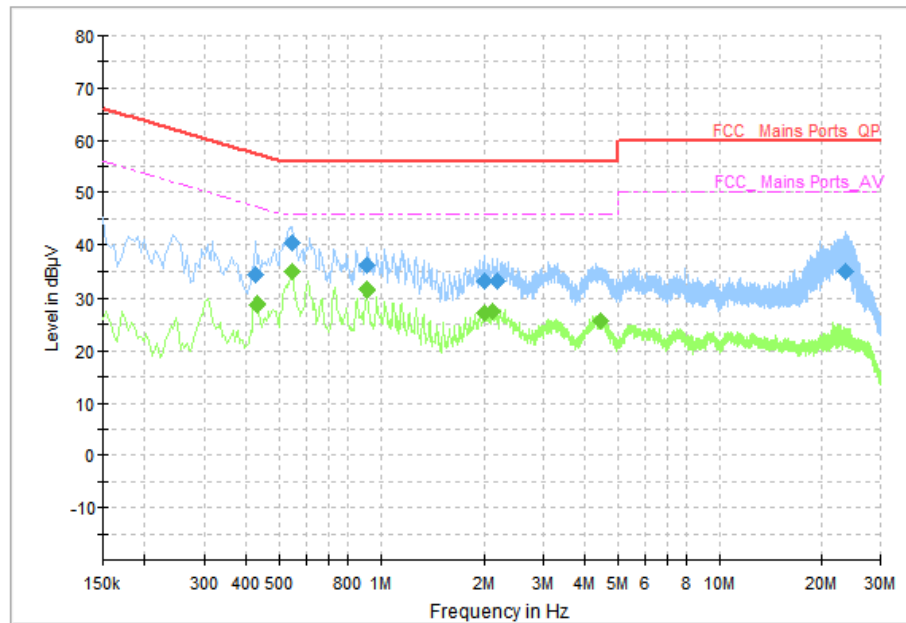


Fig. 94 AC Power line Conducted Emission (Idle), A2-1, A3-1

#### Measurement Results: Quasi Peak

| Frequency (MHz) | Quasi Peak (dBμV) | Limit (dBμV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|-------------------|--------------|-------------|------|--------|------------|
| 0.426000        | 34.14             | 57.33        | 23.19       | N    | ON     | 10         |
| 0.546000        | 40.46             | 56.00        | 15.54       | L1   | ON     | 10         |
| 0.910000        | 36.23             | 56.00        | 19.77       | L1   | ON     | 10         |
| 2.006000        | 33.04             | 56.00        | 22.96       | L1   | ON     | 10         |
| 2.186000        | 33.09             | 56.00        | 22.91       | L1   | ON     | 10         |
| 23.722000       | 34.96             | 60.00        | 25.04       | N    | ON     | 10         |

#### Measurement Results: Average

| Frequency (MHz) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|----------------|--------------|-------------|------|--------|------------|
| 0.430000        | 28.88          | 47.25        | 18.37       | L1   | ON     | 10         |
| 0.546000        | 34.75          | 46.00        | 11.25       | L1   | ON     | 10         |
| 0.910000        | 31.41          | 46.00        | 14.59       | L1   | ON     | 10         |
| 2.006000        | 27.35          | 46.00        | 18.65       | L1   | ON     | 10         |
| 2.122000        | 27.68          | 46.00        | 18.32       | L1   | ON     | 10         |
| 4.422000        | 25.69          | 46.00        | 20.31       | L1   | ON     | 10         |

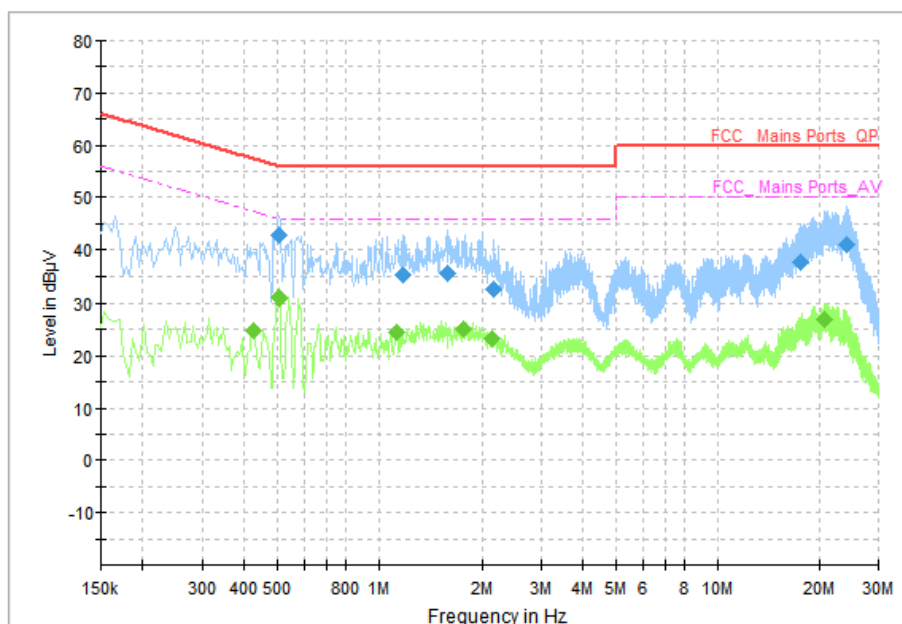


Fig. 95 AC Powerline Conducted Emission (Traffic), A2-2, A3-2

#### Measurement Results: Quasi Peak

| Frequency (MHz) | Quasi Peak (dBμV) | Limit (dBμV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|-------------------|--------------|-------------|------|--------|------------|
| 0.506000        | 42.85             | 56.00        | 13.15       | L1   | ON     | 10         |
| 1.182000        | 35.33             | 56.00        | 20.67       | L1   | ON     | 10         |
| 1.590000        | 35.37             | 56.00        | 20.63       | L1   | ON     | 10         |
| 2.170000        | 32.33             | 56.00        | 23.67       | L1   | ON     | 10         |
| 17.574000       | 37.52             | 60.00        | 22.48       | L1   | ON     | 10         |
| 24.066000       | 40.83             | 60.00        | 19.17       | L1   | ON     | 10         |

#### Measurement Results: Average

| Frequency (MHz) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|----------------|--------------|-------------|------|--------|------------|
| 0.426000        | 24.69          | 47.33        | 22.64       | L1   | ON     | 10         |
| 0.506000        | 30.76          | 46.00        | 15.24       | L1   | ON     | 10         |
| 1.126000        | 24.45          | 46.00        | 21.55       | N    | ON     | 10         |
| 1.762000        | 25.15          | 46.00        | 20.85       | N    | ON     | 10         |
| 2.138000        | 23.34          | 46.00        | 22.66       | N    | ON     | 10         |
| 20.790000       | 26.93          | 50.00        | 23.07       | L1   | ON     | 10         |

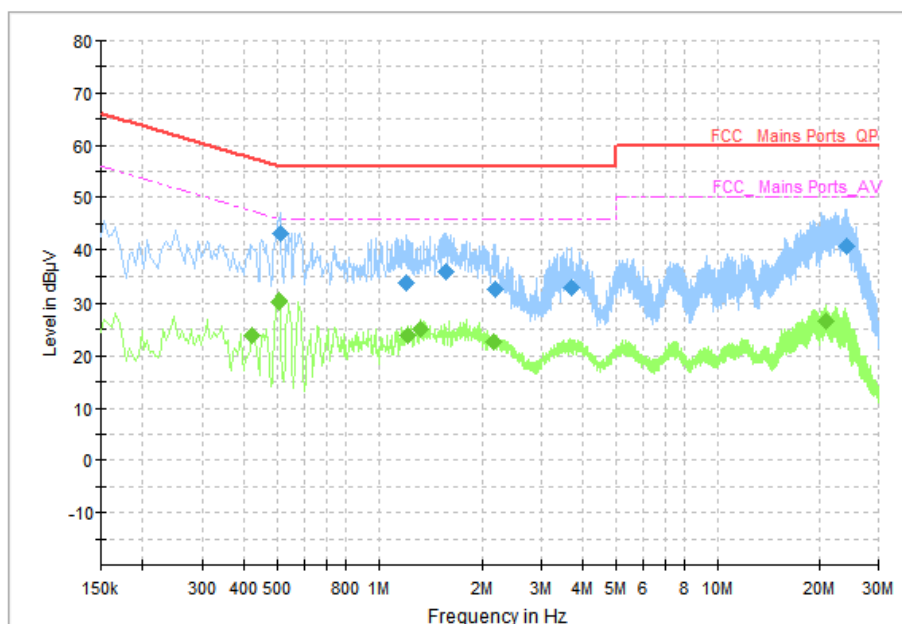


Fig. 96 AC Power line Conducted Emission (Idle), A2-2, A3-2

#### Measurement Results: Quasi Peak

| Frequency (MHz) | Quasi Peak (dBμV) | Limit (dBμV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|-------------------|--------------|-------------|------|--------|------------|
| 0.510000        | 43.15             | 56.00        | 12.85       | L1   | ON     | 10         |
| 1.210000        | 33.68             | 56.00        | 22.32       | L1   | ON     | 10         |
| 1.558000        | 35.65             | 56.00        | 20.35       | L1   | ON     | 10         |
| 2.202000        | 32.52             | 56.00        | 23.48       | L1   | ON     | 10         |
| 3.686000        | 32.74             | 56.00        | 23.26       | L1   | ON     | 10         |
| 24.066000       | 40.54             | 60.00        | 19.46       | L1   | ON     | 10         |

#### Measurement Results: Average

| Frequency (MHz) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|----------------|--------------|-------------|------|--------|------------|
| 0.422000        | 24.00          | 47.41        | 23.41       | N    | ON     | 10         |
| 0.506000        | 30.18          | 46.00        | 15.82       | N    | ON     | 10         |
| 1.218000        | 23.81          | 46.00        | 22.19       | N    | ON     | 10         |
| 1.330000        | 25.15          | 46.00        | 20.85       | N    | ON     | 10         |
| 2.166000        | 22.68          | 46.00        | 23.32       | N    | ON     | 10         |
| 21.022000       | 26.76          | 50.00        | 23.24       | L1   | ON     | 10         |

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