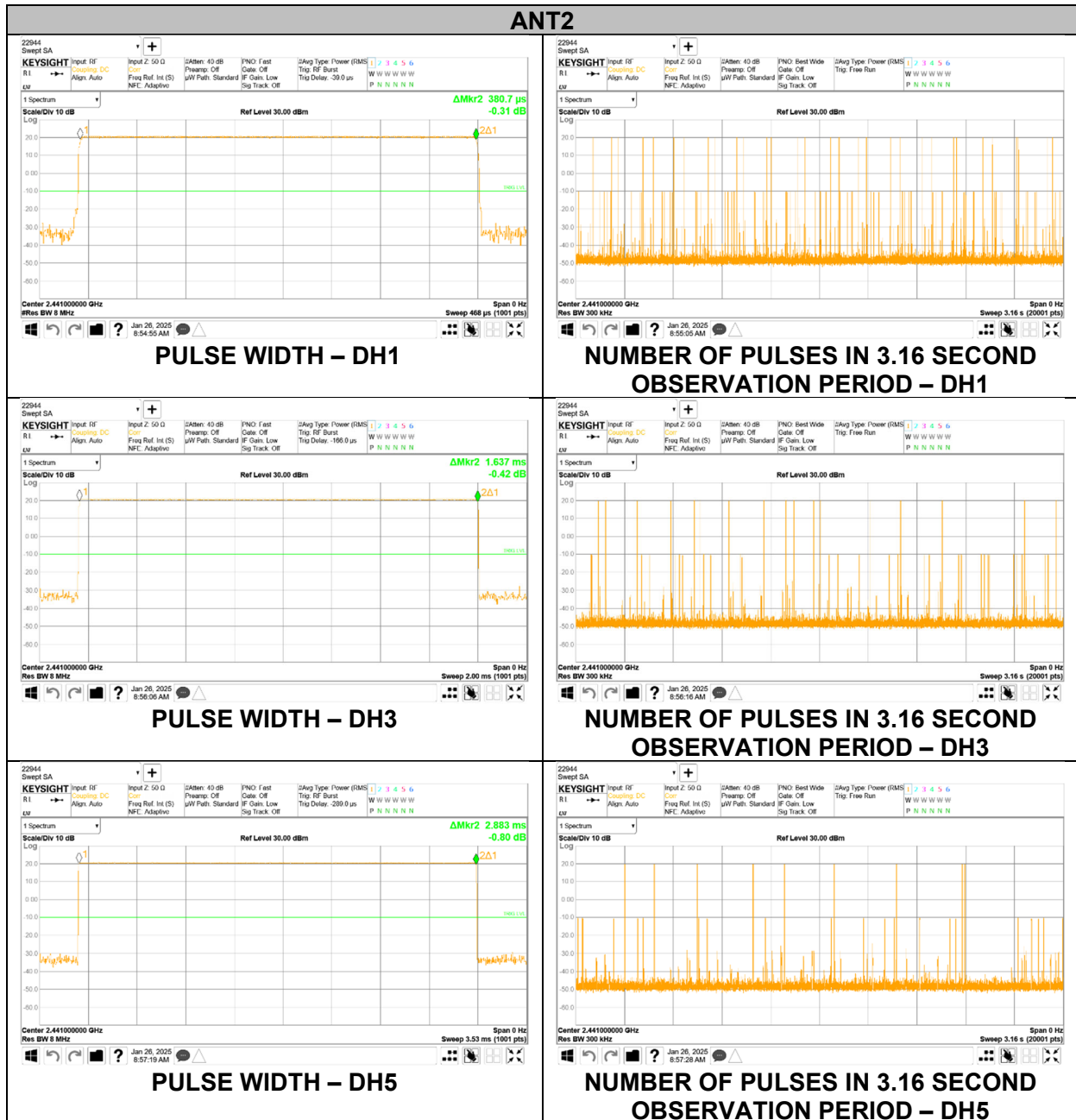
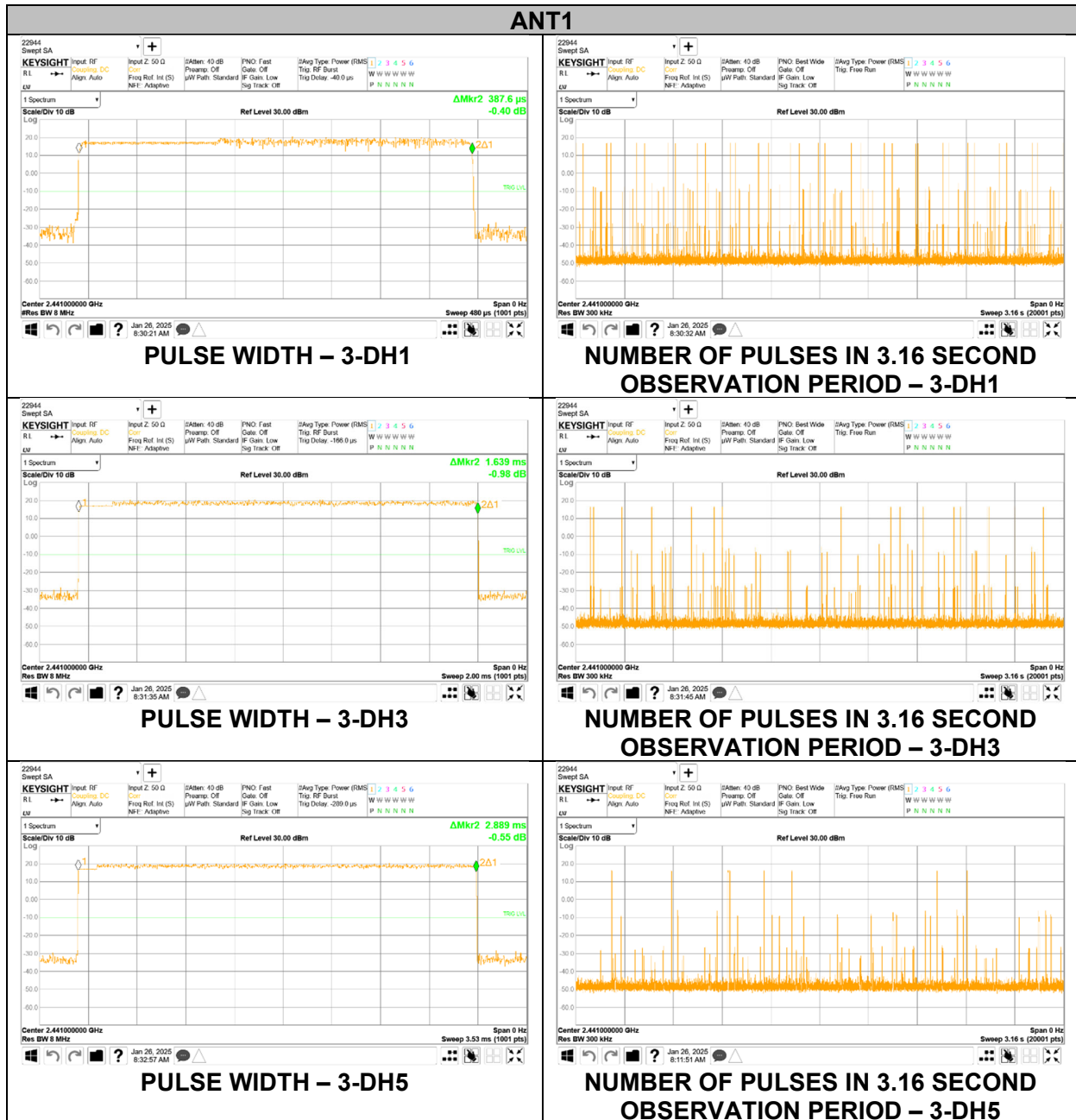


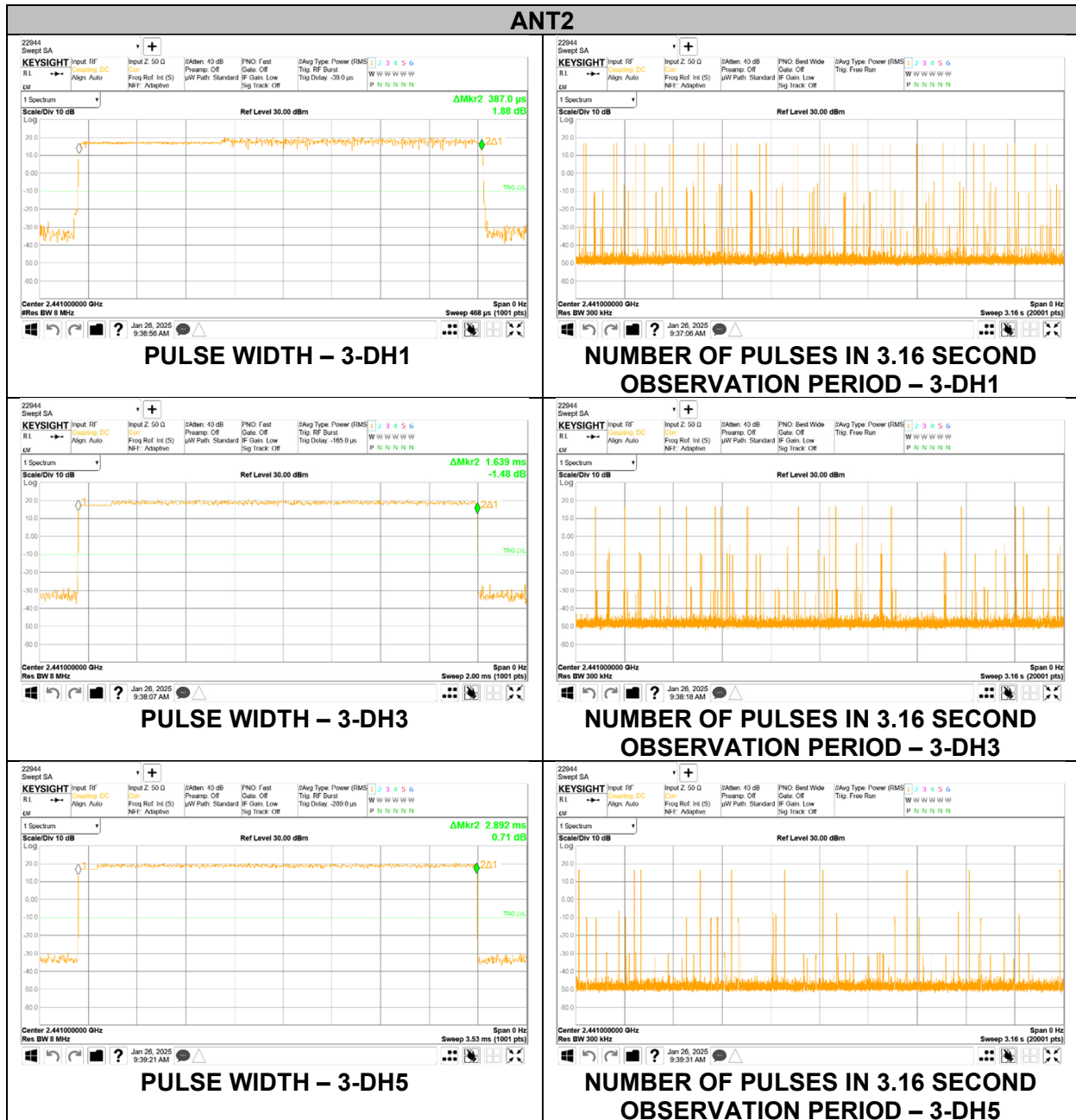


## 9.5.2. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

| DH Packet        | Pulse Width<br>[msec] | Number of Pulses in<br>3.16 seconds | Average Time of Occupancy<br>[sec] | Limit<br>[sec] | Margin<br>[sec] |
|------------------|-----------------------|-------------------------------------|------------------------------------|----------------|-----------------|
| 8PSK Normal ANT1 |                       |                                     |                                    |                |                 |
| DH1              | 0.388                 | 33                                  | 0.128                              | 0.4            | -0.272          |
| DH3              | 1.639                 | 17                                  | 0.279                              | 0.4            | -0.121          |
| DH5              | 2.889                 | 8                                   | 0.231                              | 0.4            | -0.169          |
|                  |                       |                                     |                                    |                |                 |
| DH Packet        | Pulse Width<br>[msec] | Number of Pulses in<br>0.8 seconds  | Average Time of Occupancy<br>[sec] | Limit<br>[sec] | Margin<br>[sec] |
| 8PSK AFH ANT1    |                       |                                     |                                    |                |                 |
| DH1              | 0.388                 | 8                                   | 0.031                              | 0.4            | -0.369          |
| DH3              | 1.639                 | 4                                   | 0.066                              | 0.4            | -0.334          |
| DH5              | 2.889                 | 2                                   | 0.058                              | 0.4            | -0.342          |



| DH Packet        | Pulse Width [msec] | Number of Pulses in 3.16 seconds | Average Time of Occupancy [sec] | Limit [sec] | Margin [sec] |
|------------------|--------------------|----------------------------------|---------------------------------|-------------|--------------|
| 8PSK Normal ANT2 |                    |                                  |                                 |             |              |
| DH1              | 0.387              | 32                               | 0.124                           | 0.4         | -0.276       |
| DH3              | 1.639              | 17                               | 0.279                           | 0.4         | -0.121       |
| DH5              | 2.892              | 10                               | 0.289                           | 0.4         | -0.111       |
|                  |                    |                                  |                                 |             |              |
| DH Packet        | Pulse Width [msec] | Number of Pulses in 0.8 seconds  | Average Time of Occupancy [sec] | Limit [sec] | Margin [sec] |
| 8PSK AFH ANT2    |                    |                                  |                                 |             |              |
| DH1              | 0.387              | 8                                | 0.031                           | 0.4         | -0.369       |
| DH3              | 1.639              | 4                                | 0.066                           | 0.4         | -0.334       |
| DH5              | 2.892              | 3                                | 0.087                           | 0.4         | -0.313       |



## 9.6. OUTPUT POWER

### LIMITS

§15.247 (b) (1)

The peak conducted output power limit is 0.125 W (21 dBm) since Bluetooth AFH mode can be used at least 20 non-overlapping hopping channels.

### TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer the analyzer bandwidth is set to a value greater than the 20 dB bandwidth of the EUT.

### RESULTS

#### 9.6.1. BASIC DATA RATE GFSK MODULATION

| Antenna | Channel | Frequency [MHz] | Peak Output Power [dBm] | Limit [dBm] | Margin [dB] |
|---------|---------|-----------------|-------------------------|-------------|-------------|
| ANT1    | 0       | 2 402           | 19.57                   | 21.00       | -1.43       |
|         | 39      | 2 441           | 19.25                   |             | -1.75       |
|         | 78      | 2 480           | 19.75                   |             | -1.25       |
| ANT2    | 0       | 2 402           | 18.96                   |             | -2.04       |
|         | 39      | 2 441           | 19.74                   |             | -1.26       |
|         | 78      | 2 480           | 20.13                   |             | -0.87       |
| Worst   |         |                 | 20.13                   |             | -0.87       |

#### 9.6.2. ENHANCED DATA RATE Pi/4-DPSK MODULATION

| Antenna | Channel | Frequency [MHz] | Peak Output Power [dBm] | Limit [dBm] | Margin [dB] |
|---------|---------|-----------------|-------------------------|-------------|-------------|
| ANT1    | 0       | 2 402           | 17.61                   | 21.00       | -3.39       |
|         | 39      | 2 441           | 17.57                   |             | -3.43       |
|         | 78      | 2 480           | 19.18                   |             | -1.82       |
| ANT2    | 0       | 2 402           | 18.23                   |             | -2.77       |
|         | 39      | 2 441           | 18.79                   |             | -2.21       |
|         | 78      | 2 480           | 18.88                   |             | -2.12       |
| Worst   |         |                 | 19.18                   |             | -1.82       |

#### 9.6.3. ENHANCED DATA RATE 8PSK MODULATION

| Antenna | Channel | Frequency [MHz] | Peak Output Power [dBm] | Limit [dBm] | Margin [dB] |
|---------|---------|-----------------|-------------------------|-------------|-------------|
| ANT1    | 0       | 2 402           | 17.87                   | 21.00       | -3.13       |
|         | 39      | 2 441           | 18.06                   |             | -2.94       |
|         | 78      | 2 480           | 19.95                   |             | -1.05       |
| ANT2    | 0       | 2 402           | 20.18                   |             | -0.82       |
|         | 39      | 2 441           | 19.39                   |             | -1.61       |
|         | 78      | 2 480           | 19.79                   |             | -1.21       |
| Worst   |         |                 | 20.18                   |             | -0.82       |

#### 9.6.4. BASIC DATA RATE GFSK MODULATION(DUAL)

| Antenna        | Channel | Frequency<br>[MHz] | Peak Output<br>Power<br>[dBm] | Limit<br>[dBm] | Margin<br>[dB] |
|----------------|---------|--------------------|-------------------------------|----------------|----------------|
| DUAL<br>ANT1   | 0       | 2 402              | 13.16                         | 21.00          |                |
|                | 39      | 2 441              | 14.18                         |                |                |
|                | 78      | 2 480              | 13.10                         |                |                |
| DUAL<br>ANT2   | 0       | 2 402              | 13.09                         |                |                |
|                | 39      | 2 441              | 12.93                         |                |                |
|                | 78      | 2 480              | 11.46                         |                |                |
| DUAL<br>ANT1+2 | 0       | 2 402              | 16.14                         |                | -4.86          |
|                | 39      | 2 441              | 16.61                         |                | -4.39          |
|                | 78      | 2 480              | 15.37                         |                | -5.63          |
| Worst          |         |                    | <b>16.61</b>                  |                | <b>-4.39</b>   |

#### 9.6.1. ENHANCED DATA RATE Pi/4-DPSK MODULATION(DUAL)

| Antenna        | Channel | Frequency<br>[MHz] | Peak Output<br>Power<br>[dBm] | Limit<br>[dBm] | Margin<br>[dB] |
|----------------|---------|--------------------|-------------------------------|----------------|----------------|
| DUAL<br>ANT1   | 0       | 2 402              | 13.24                         | 21.00          |                |
|                | 39      | 2 441              | 13.37                         |                |                |
|                | 78      | 2 480              | 12.65                         |                |                |
| DUAL<br>ANT2   | 0       | 2 402              | 13.11                         |                |                |
|                | 39      | 2 441              | 12.84                         |                |                |
|                | 78      | 2 480              | 10.97                         |                |                |
| DUAL<br>ANT1+2 | 0       | 2 402              | 16.19                         |                | -4.81          |
|                | 39      | 2 441              | 16.12                         |                | -4.88          |
|                | 78      | 2 480              | 14.90                         |                | -6.10          |
| Worst          |         |                    | <b>16.19</b>                  |                | <b>-4.81</b>   |

#### 9.6.2. ENHANCED DATA RATE 8PSK MODULATION(DUAL)

| Antenna        | Channel | Frequency<br>[MHz] | Peak Output<br>Power<br>[dBm] | Limit<br>[dBm] | Margin<br>[dB] |
|----------------|---------|--------------------|-------------------------------|----------------|----------------|
| DUAL<br>ANT1   | 0       | 2 402              | 13.63                         | 21.00          |                |
|                | 39      | 2 441              | 13.79                         |                |                |
|                | 78      | 2 480              | 13.05                         |                |                |
| DUAL<br>ANT2   | 0       | 2 402              | 13.22                         |                |                |
|                | 39      | 2 441              | 13.07                         |                |                |
|                | 78      | 2 480              | 10.91                         |                |                |
| DUAL<br>ANT1+2 | 0       | 2 402              | 16.44                         |                | -4.56          |
|                | 39      | 2 441              | 16.46                         |                | -4.54          |
|                | 78      | 2 480              | 15.12                         |                | -5.88          |
| Worst          |         |                    | <b>16.46</b>                  |                | <b>-4.54</b>   |

## 9.6.3. OUTPUT POWER PLOTS

### PEAK OUTPUT POWER

