

# 1. Effective (Isotropic) Radiated Power Output Data

## 1.1 Test Result

### 1.1.1 B13\_5MHz\_ERP

| Band: 13 / Bandwidth: 5MHz / NTNV |                 |               |        |                       |            |           |         |         |
|-----------------------------------|-----------------|---------------|--------|-----------------------|------------|-----------|---------|---------|
| Modulation                        | Frequency (MHz) | RB Allocation |        | Conducted Power (dBm) | Gain (dBi) | ERP (dBm) |         | Verdict |
|                                   |                 | Size          | Offset |                       |            | Result    | Limit   |         |
| QPSK                              | 779.5           | 1             | 0      | 24.75                 | -4.10      | 18.50     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 24.85                 | -4.10      | 18.60     | <=34.77 | Pass    |
|                                   |                 |               | 24     | 24.68                 | -4.10      | 18.43     | <=34.77 | Pass    |
|                                   |                 | 12            | 0      | 23.61                 | -4.10      | 17.36     | <=34.77 | Pass    |
|                                   |                 |               | 6      | 23.74                 | -4.10      | 17.49     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 23.75                 | -4.10      | 17.50     | <=34.77 | Pass    |
|                                   |                 | 25            | 0      | 23.69                 | -4.10      | 17.44     | <=34.77 | Pass    |
|                                   | 782             | 1             | 0      | 24.72                 | -4.10      | 18.47     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 24.80                 | -4.10      | 18.55     | <=34.77 | Pass    |
|                                   |                 |               | 24     | 24.66                 | -4.10      | 18.41     | <=34.77 | Pass    |
|                                   |                 | 12            | 0      | 23.67                 | -4.10      | 17.42     | <=34.77 | Pass    |
|                                   |                 |               | 6      | 23.76                 | -4.10      | 17.51     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 23.64                 | -4.10      | 17.39     | <=34.77 | Pass    |
|                                   |                 | 25            | 0      | 23.67                 | -4.10      | 17.42     | <=34.77 | Pass    |
|                                   | 784.5           | 1             | 0      | 24.70                 | -4.10      | 18.45     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 24.82                 | -4.10      | 18.57     | <=34.77 | Pass    |
|                                   |                 |               | 24     | 24.63                 | -4.10      | 18.38     | <=34.77 | Pass    |
|                                   |                 | 12            | 0      | 23.68                 | -4.10      | 17.43     | <=34.77 | Pass    |
|                                   |                 |               | 6      | 23.70                 | -4.10      | 17.45     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 23.62                 | -4.10      | 17.37     | <=34.77 | Pass    |
|                                   |                 | 25            | 0      | 23.68                 | -4.10      | 17.43     | <=34.77 | Pass    |
| 16QAM                             | 779.5           | 1             | 0      | 23.52                 | -4.10      | 17.27     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 23.61                 | -4.10      | 17.36     | <=34.77 | Pass    |
|                                   |                 |               | 24     | 23.51                 | -4.10      | 17.26     | <=34.77 | Pass    |
|                                   |                 | 12            | 0      | 22.58                 | -4.10      | 16.33     | <=34.77 | Pass    |
|                                   |                 |               | 6      | 22.71                 | -4.10      | 16.46     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 22.71                 | -4.10      | 16.46     | <=34.77 | Pass    |
|                                   |                 | 25            | 0      | 22.70                 | -4.10      | 16.45     | <=34.77 | Pass    |
|                                   | 782             | 1             | 0      | 23.89                 | -4.10      | 17.64     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 24.03                 | -4.10      | 17.78     | <=34.77 | Pass    |
|                                   |                 |               | 24     | 23.82                 | -4.10      | 17.57     | <=34.77 | Pass    |
|                                   |                 | 12            | 0      | 22.74                 | -4.10      | 16.49     | <=34.77 | Pass    |
|                                   |                 |               | 6      | 22.77                 | -4.10      | 16.52     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 22.70                 | -4.10      | 16.45     | <=34.77 | Pass    |
|                                   |                 | 25            | 0      | 22.66                 | -4.10      | 16.41     | <=34.77 | Pass    |
|                                   | 784.5           | 1             | 0      | 23.77                 | -4.10      | 17.52     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 23.83                 | -4.10      | 17.58     | <=34.77 | Pass    |
|                                   |                 |               | 24     | 23.71                 | -4.10      | 17.46     | <=34.77 | Pass    |
|                                   |                 | 12            | 0      | 22.63                 | -4.10      | 16.38     | <=34.77 | Pass    |
|                                   |                 |               | 6      | 22.72                 | -4.10      | 16.47     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 22.57                 | -4.10      | 16.32     | <=34.77 | Pass    |
|                                   |                 | 25            | 0      | 22.66                 | -4.10      | 16.41     | <=34.77 | Pass    |
| 64QAM                             | 779.5           | 1             | 0      | 22.66                 | -4.10      | 16.41     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 22.72                 | -4.10      | 16.47     | <=34.77 | Pass    |
|                                   |                 |               | 24     | 22.61                 | -4.10      | 16.36     | <=34.77 | Pass    |
|                                   |                 | 12            | 0      | 21.64                 | -4.10      | 15.39     | <=34.77 | Pass    |
|                                   |                 |               | 6      | 21.78                 | -4.10      | 15.53     | <=34.77 | Pass    |
|                                   |                 |               | 13     | 21.81                 | -4.10      | 15.56     | <=34.77 | Pass    |
|                                   |                 | 25            | 0      | 21.68                 | -4.10      | 15.43     | <=34.77 | Pass    |

|  |       |    |    |       |       |       |         |      |
|--|-------|----|----|-------|-------|-------|---------|------|
|  | 782   | 1  | 0  | 23.05 | -4.10 | 16.80 | <=34.77 | Pass |
|  |       |    | 13 | 23.15 | -4.10 | 16.90 | <=34.77 | Pass |
|  |       |    | 24 | 22.99 | -4.10 | 16.74 | <=34.77 | Pass |
|  |       | 12 | 0  | 21.59 | -4.10 | 15.34 | <=34.77 | Pass |
|  |       |    | 6  | 21.69 | -4.10 | 15.44 | <=34.77 | Pass |
|  |       |    | 13 | 21.60 | -4.10 | 15.35 | <=34.77 | Pass |
|  |       | 25 | 0  | 21.70 | -4.10 | 15.45 | <=34.77 | Pass |
|  | 784.5 | 1  | 0  | 22.91 | -4.10 | 16.66 | <=34.77 | Pass |
|  |       |    | 13 | 23.00 | -4.10 | 16.75 | <=34.77 | Pass |
|  |       |    | 24 | 22.84 | -4.10 | 16.59 | <=34.77 | Pass |
|  |       | 12 | 0  | 21.76 | -4.10 | 15.51 | <=34.77 | Pass |
|  |       |    | 6  | 21.81 | -4.10 | 15.56 | <=34.77 | Pass |
|  |       |    | 13 | 21.72 | -4.10 | 15.47 | <=34.77 | Pass |
|  |       | 25 | 0  | 21.73 | -4.10 | 15.48 | <=34.77 | Pass |
|  |       |    |    |       |       |       |         |      |

Note1: ERP=Conducted Power+Antenna Gain-2.15

### 1.1.2 B13\_10MHz\_ERP

| Band: 13 / Bandwidth: 10MHz / NTNV |                 |               |        |                       |            |           |         |         |
|------------------------------------|-----------------|---------------|--------|-----------------------|------------|-----------|---------|---------|
| Modulation                         | Frequency (MHz) | RB Allocation |        | Conducted Power (dBm) | Gain (dBi) | ERP (dBm) |         | Verdict |
|                                    |                 | Size          | Offset |                       |            | Result    | Limit   |         |
| QPSK                               | 782             | 1             | 0      | 24.87                 | -4.10      | 18.62     | <=34.77 | Pass    |
|                                    |                 |               | 25     | 24.79                 | -4.10      | 18.54     | <=34.77 | Pass    |
|                                    |                 |               | 49     | 24.69                 | -4.10      | 18.44     | <=34.77 | Pass    |
|                                    |                 | 25            | 0      | 23.61                 | -4.10      | 17.36     | <=34.77 | Pass    |
|                                    |                 |               | 13     | 23.74                 | -4.10      | 17.49     | <=34.77 | Pass    |
|                                    |                 |               | 25     | 23.62                 | -4.10      | 17.37     | <=34.77 | Pass    |
|                                    |                 | 50            | 0      | 23.64                 | -4.10      | 17.39     | <=34.77 | Pass    |
|                                    |                 |               |        |                       |            |           |         |         |
| 16QAM                              | 782             | 1             | 0      | 24.29                 | -4.10      | 18.04     | <=34.77 | Pass    |
|                                    |                 |               | 25     | 24.26                 | -4.10      | 18.01     | <=34.77 | Pass    |
|                                    |                 |               | 49     | 24.17                 | -4.10      | 17.92     | <=34.77 | Pass    |
|                                    |                 | 25            | 0      | 22.58                 | -4.10      | 16.33     | <=34.77 | Pass    |
|                                    |                 |               | 13     | 22.84                 | -4.10      | 16.59     | <=34.77 | Pass    |
|                                    |                 |               | 25     | 22.63                 | -4.10      | 16.38     | <=34.77 | Pass    |
|                                    |                 | 50            | 0      | 22.62                 | -4.10      | 16.37     | <=34.77 | Pass    |
|                                    |                 |               |        |                       |            |           |         |         |
| 64QAM                              | 782             | 1             | 0      | 23.12                 | -4.10      | 16.87     | <=34.77 | Pass    |
|                                    |                 |               | 25     | 23.10                 | -4.10      | 16.85     | <=34.77 | Pass    |
|                                    |                 |               | 49     | 22.98                 | -4.10      | 16.73     | <=34.77 | Pass    |
|                                    |                 | 25            | 0      | 21.64                 | -4.10      | 15.39     | <=34.77 | Pass    |
|                                    |                 |               | 13     | 21.82                 | -4.10      | 15.57     | <=34.77 | Pass    |
|                                    |                 |               | 25     | 21.74                 | -4.10      | 15.49     | <=34.77 | Pass    |
|                                    |                 | 50            | 0      | 21.64                 | -4.10      | 15.39     | <=34.77 | Pass    |
|                                    |                 |               |        |                       |            |           |         |         |

Note1: ERP=Conducted Power+Antenna Gain-2.15

## 2. Frequency Stability

### 2.1 Test Result

#### 2.1.1 B13\_10MHz

| Band: 13 / Bandwidth: 10MHz |                 |               |        |            |         |                  |                       |             |         |
|-----------------------------|-----------------|---------------|--------|------------|---------|------------------|-----------------------|-------------|---------|
| Modulation                  | Frequency (MHz) | RB Allocation |        | Temp. (°C) | Voltage | Freq. Error (Hz) | Freq. vs. Rated (ppm) |             | Verdict |
|                             |                 | Size          | Offset |            |         |                  | Result                | Limit       |         |
| QPSK                        | 782             | 50            | 0      | 20         | LV      | -5.268           | -0.0067               | -2.5 to 2.5 | Pass    |
|                             |                 |               |        |            | NV      | -3.848           | -0.0049               | -2.5 to 2.5 | Pass    |
|                             |                 |               |        |            | HV      | 1.172            | 0.0015                | -2.5 to 2.5 | Pass    |
|                             |                 |               |        | -30        | NV      | -3.850           | -0.0049               | -2.5 to 2.5 | Pass    |
|                             |                 |               |        | -20        | NV      | -0.969           | -0.0012               | -2.5 to 2.5 | Pass    |
|                             |                 |               |        | -10        | NV      | -2.112           | -0.0027               | -2.5 to 2.5 | Pass    |
|                             |                 |               |        | 0          | NV      | -5.905           | -0.0076               | -2.5 to 2.5 | Pass    |
|                             |                 |               |        | 10         | NV      | -1.925           | -0.0025               | -2.5 to 2.5 | Pass    |
|                             |                 |               |        | 30         | NV      | -1.508           | -0.0019               | -2.5 to 2.5 | Pass    |
|                             |                 |               |        | 40         | NV      | -3.912           | -0.0050               | -2.5 to 2.5 | Pass    |
|                             |                 |               |        | 50         | NV      | -0.030           | 0.0000                | -2.5 to 2.5 | Pass    |

## 3. 99% & 26dB Bandwidth

### 3.1 Test Result

#### 3.1.1 Band13\_OBW

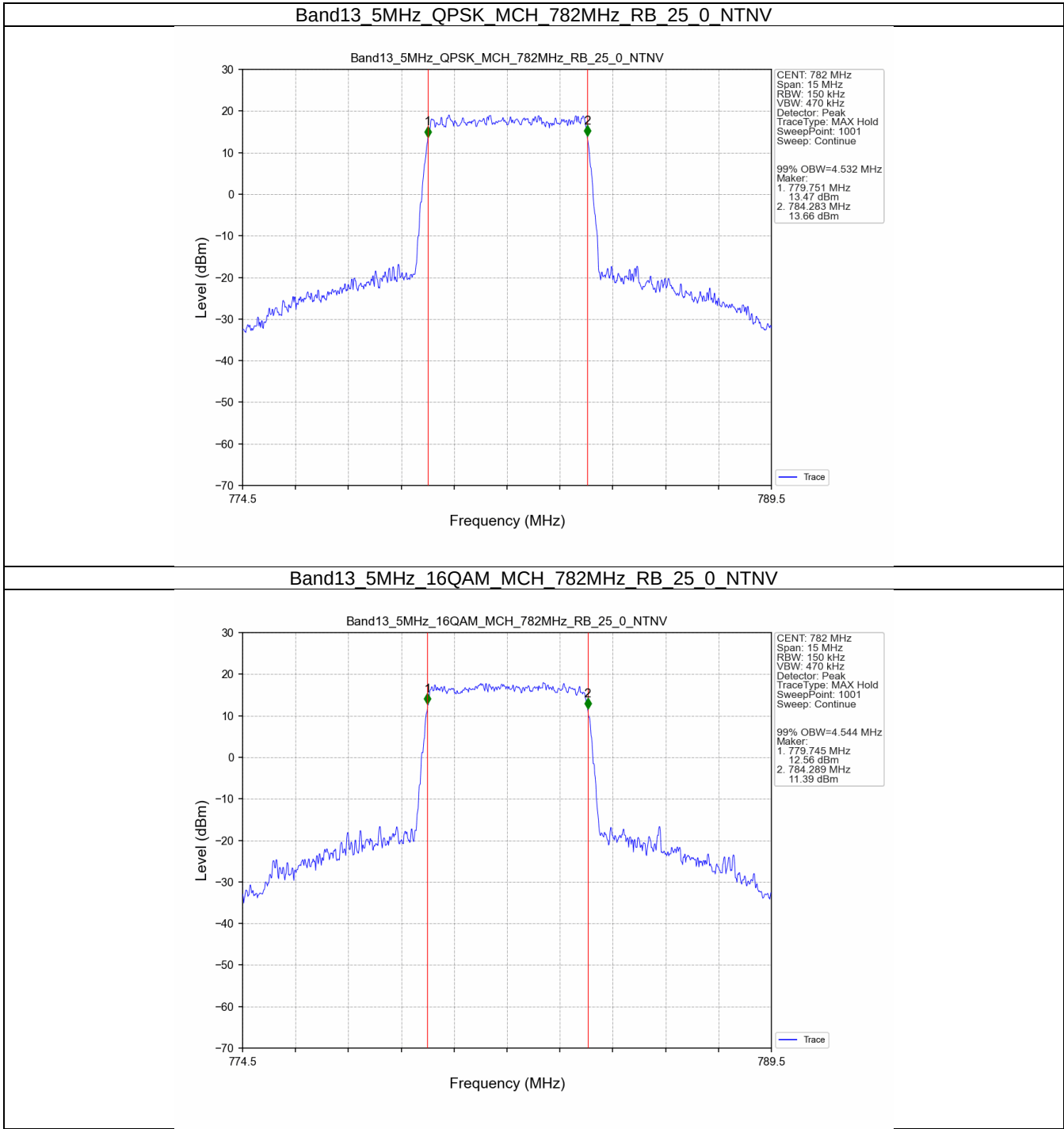
| Band: 13 / NTNV |            |                 |               |        |                              |       |         |
|-----------------|------------|-----------------|---------------|--------|------------------------------|-------|---------|
| Bandwidth (MHz) | Modulation | Frequency (MHz) | RB Allocation |        | 99% Occupied Bandwidth (MHz) |       | Verdict |
|                 |            |                 | Size          | Offset | Result                       | Limit |         |
| 5               | QPSK       | 782             | 25            | 0      | 4.532                        | /     | Pass    |
|                 | 16QAM      | 782             | 25            | 0      | 4.544                        | /     | Pass    |
|                 | 64QAM      | 782             | 25            | 0      | 4.531                        | /     | Pass    |
| 10              | QPSK       | 782             | 50            | 0      | 9.014                        | /     | Pass    |
|                 | 16QAM      | 782             | 50            | 0      | 8.998                        | /     | Pass    |
|                 | 64QAM      | 782             | 50            | 0      | 9.018                        | /     | Pass    |

#### 3.1.2 Band13\_XDB

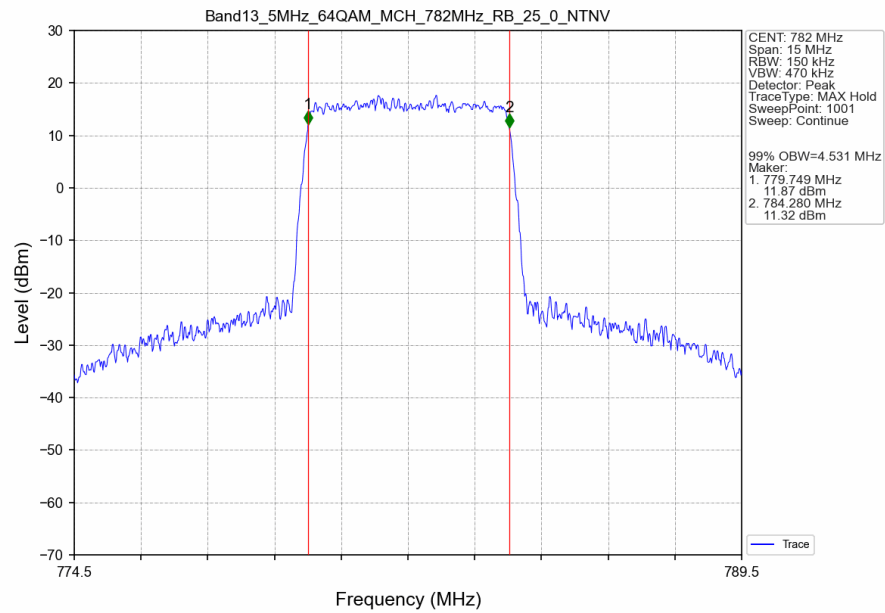
| Band: 13 / NTNV |            |                 |               |        |                      |       |         |
|-----------------|------------|-----------------|---------------|--------|----------------------|-------|---------|
| Bandwidth (MHz) | Modulation | Frequency (MHz) | RB Allocation |        | 26dB Bandwidth (MHz) |       | Verdict |
|                 |            |                 | Size          | Offset | Result               | Limit |         |
| 5               | QPSK       | 782             | 25            | 0      | 5.006                | /     | Pass    |
|                 | 16QAM      | 782             | 25            | 0      | 5.028                | /     | Pass    |
|                 | 64QAM      | 782             | 25            | 0      | 5.001                | /     | Pass    |
| 10              | QPSK       | 782             | 50            | 0      | 9.967                | /     | Pass    |
|                 | 16QAM      | 782             | 50            | 0      | 9.832                | /     | Pass    |
|                 | 64QAM      | 782             | 50            | 0      | 9.865                | /     | Pass    |

3.2 Test Graph

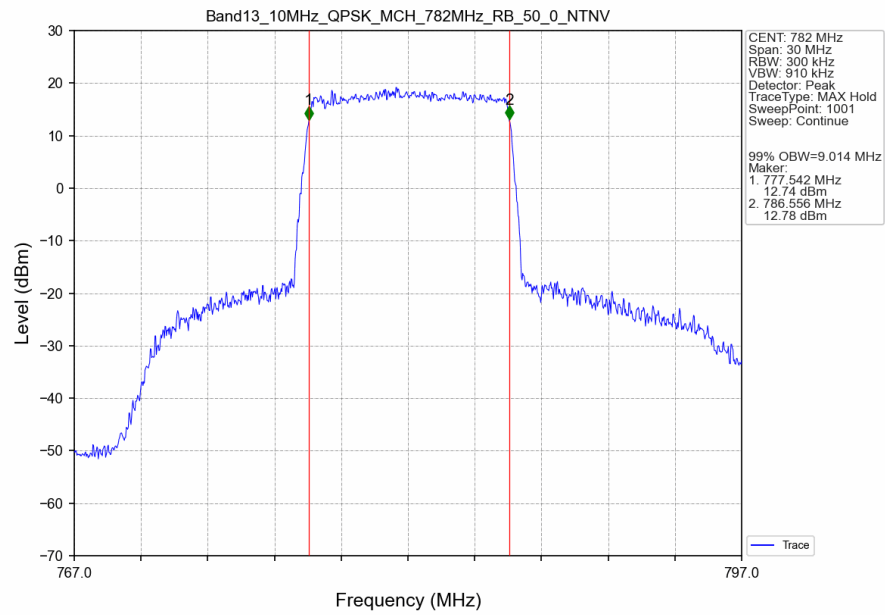
3.2.1 Band13\_OBW



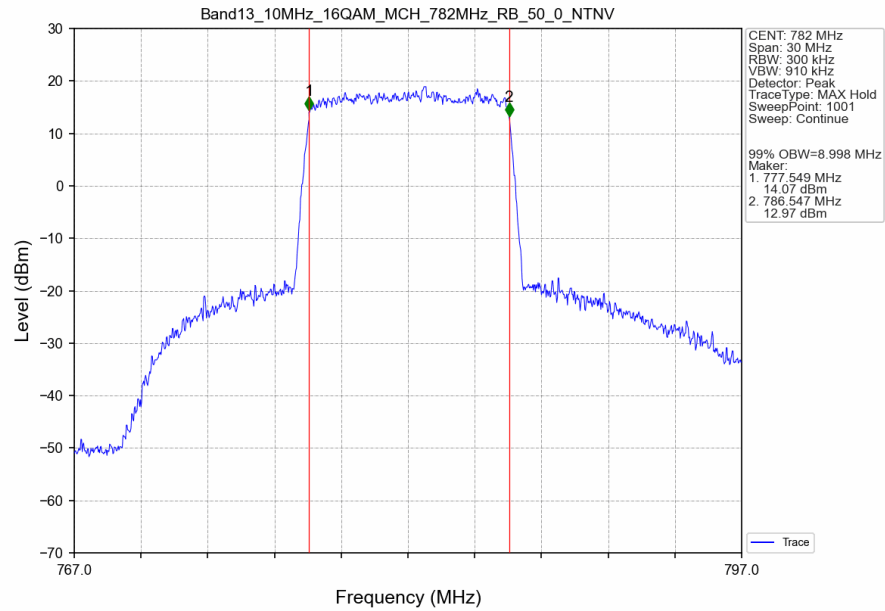
Band13 5MHz 64QAM MCH 782MHz RB 25 0 NTNV



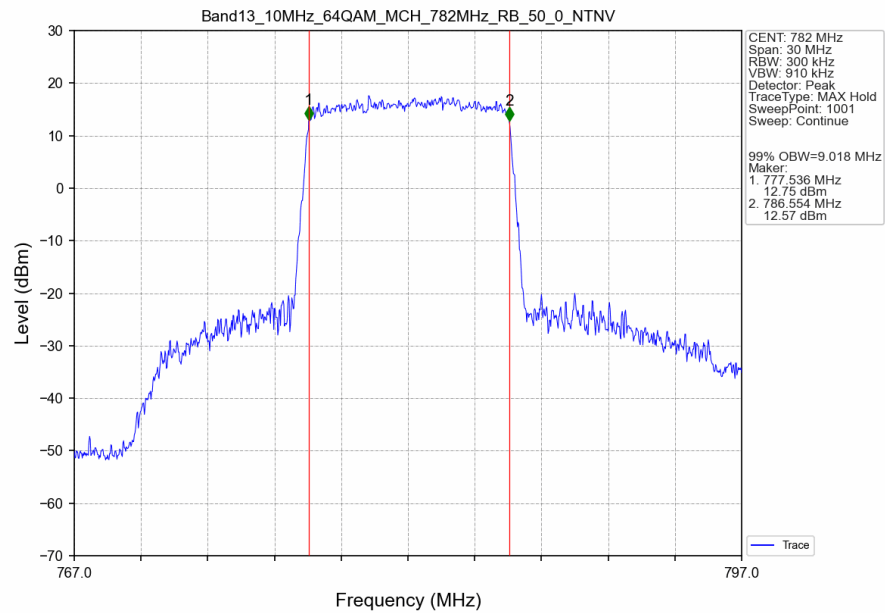
Band13 10MHz QPSK MCH 782MHz RB 50 0 NTNV



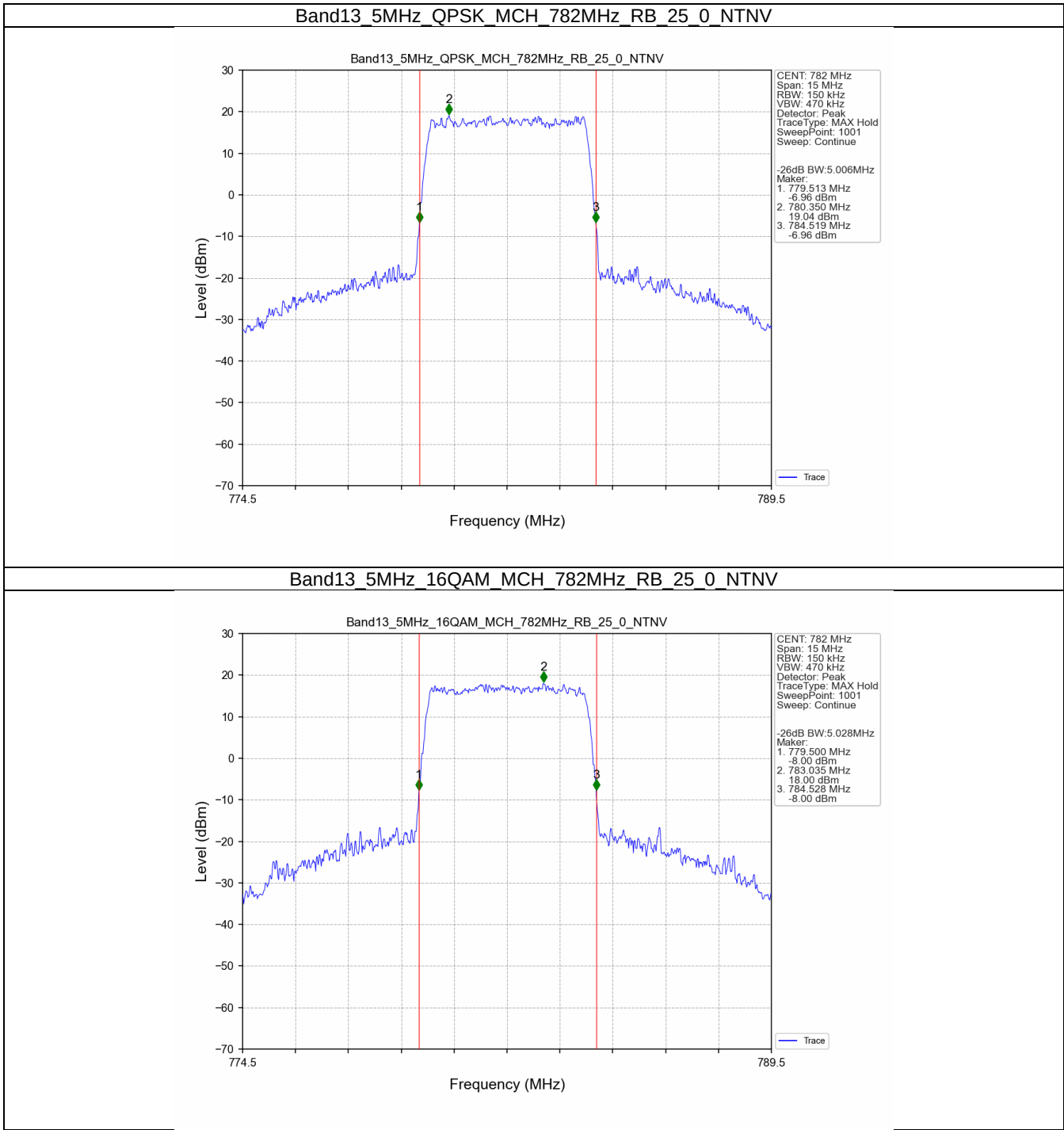
Band13 10MHz 16QAM MCH 782MHz RB 50 0 NTV



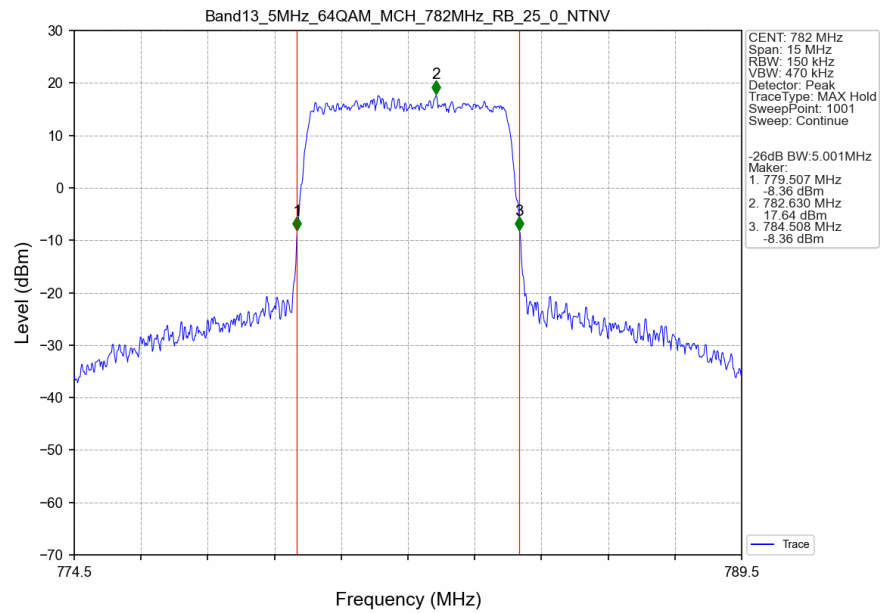
Band13 10MHz 64QAM MCH 782MHz RB 50 0 NTV



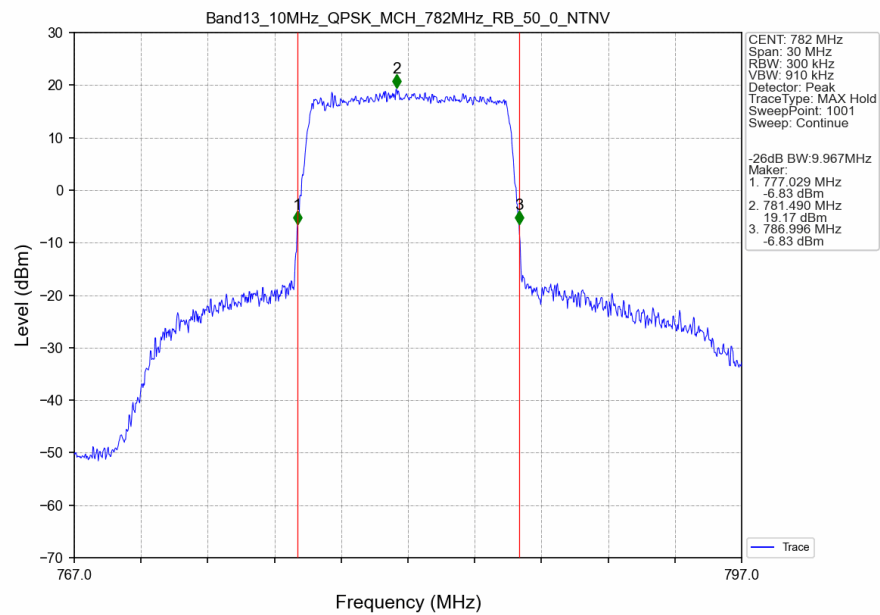
3.2.2 Band13\_XDB



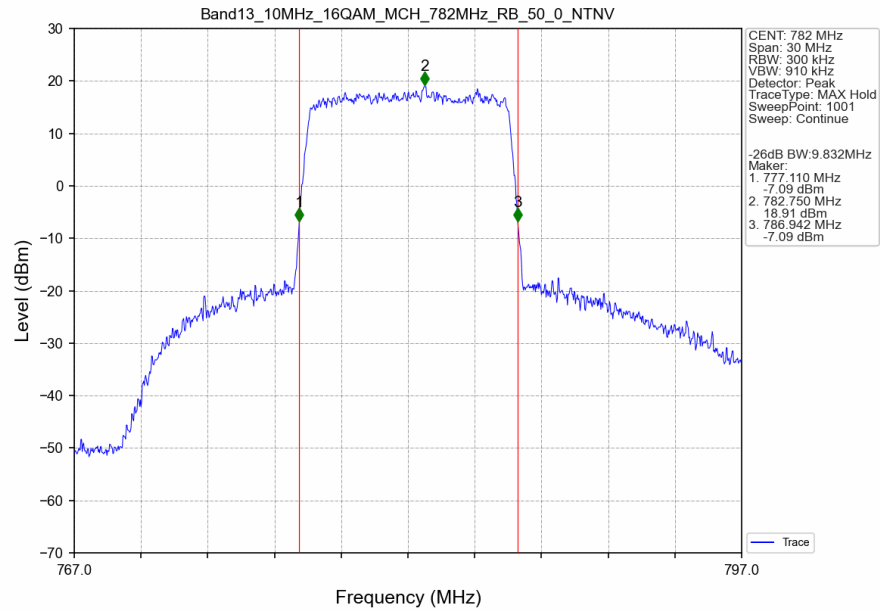
# Band13 5MHz 64QAM MCH 782MHz RB 25 0 NTN



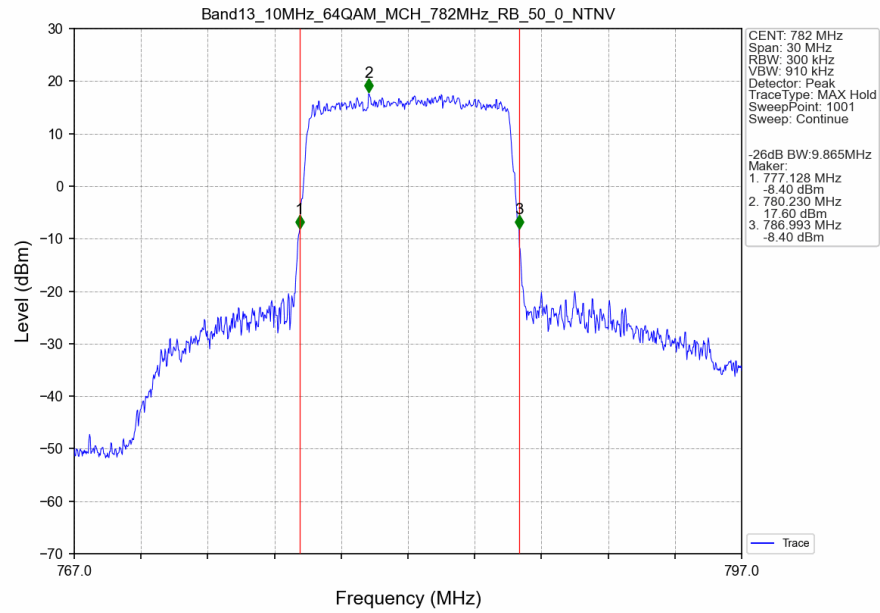
# Band13 10MHz QPSK MCH 782MHz RB 50 0 NTN



# Band13 10MHz 16QAM MCH 782MHz RB 50 0 NTNV



# Band13 10MHz 64QAM MCH 782MHz RB 50 0 NTNV



## 4. Peak-Average Ratio

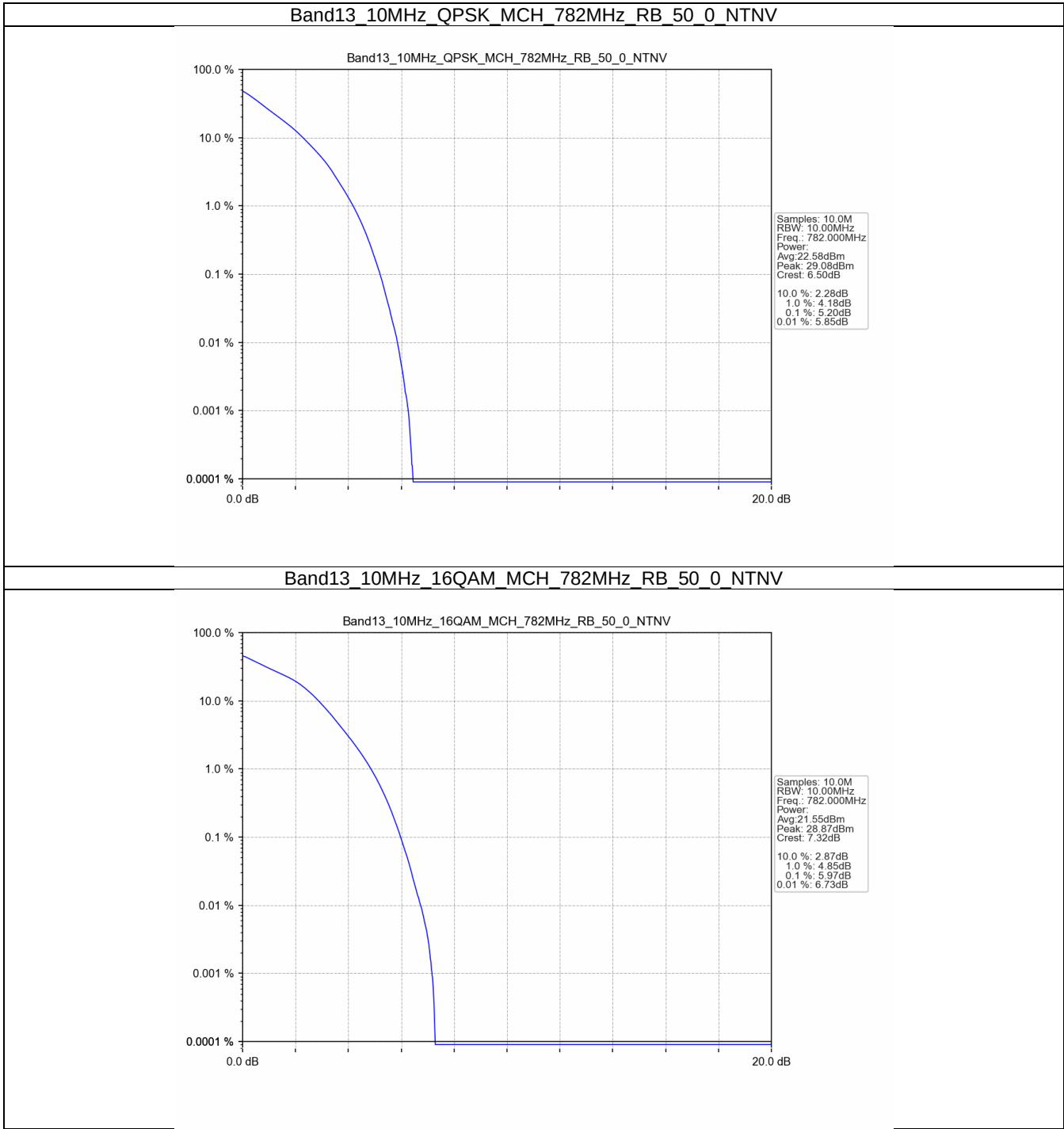
### 4.1 Test Result

#### 4.1.1 B13\_10MHz

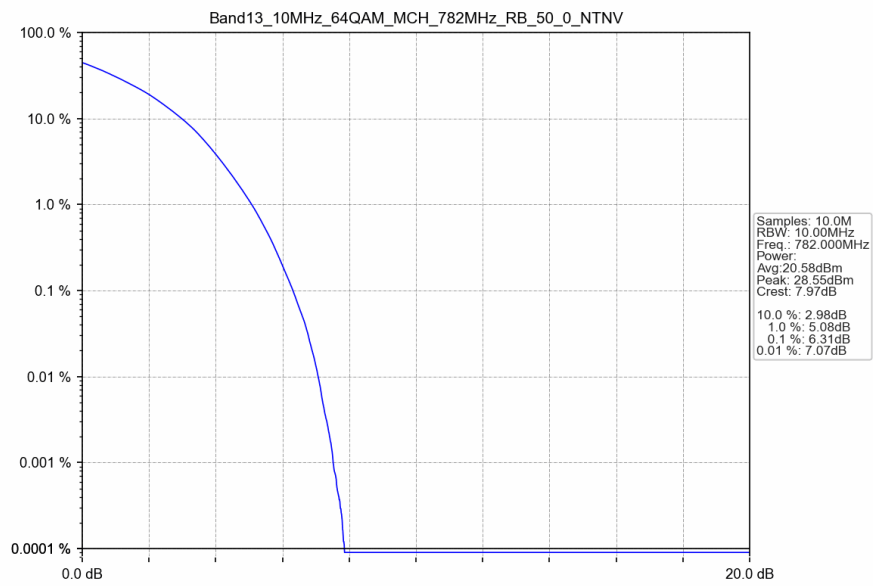
| Band: 13 / Bandwidth: 10MHz / NTNV |                    |               |        |                         |       |         |
|------------------------------------|--------------------|---------------|--------|-------------------------|-------|---------|
| Modulation                         | Frequency<br>(MHz) | RB Allocation |        | Peak-Average Ratio (dB) |       | Verdict |
|                                    |                    | Size          | Offset | Result                  | Limit |         |
| QPSK                               | 782                | 50            | 0      | 5.20                    | <=13  | Pass    |
| 16QAM                              | 782                | 50            | 0      | 5.97                    | <=13  | Pass    |
| 64QAM                              | 782                | 50            | 0      | 6.31                    | <=13  | Pass    |

4.2 Test Graph

4.2.1 B13\_10MHz



Band13 10MHz 64QAM MCH 782MHz RB 50 0 NTNV



## 5. Spurious Emission

### 5.1 Test Result

#### 5.1.1 B13\_5MHz

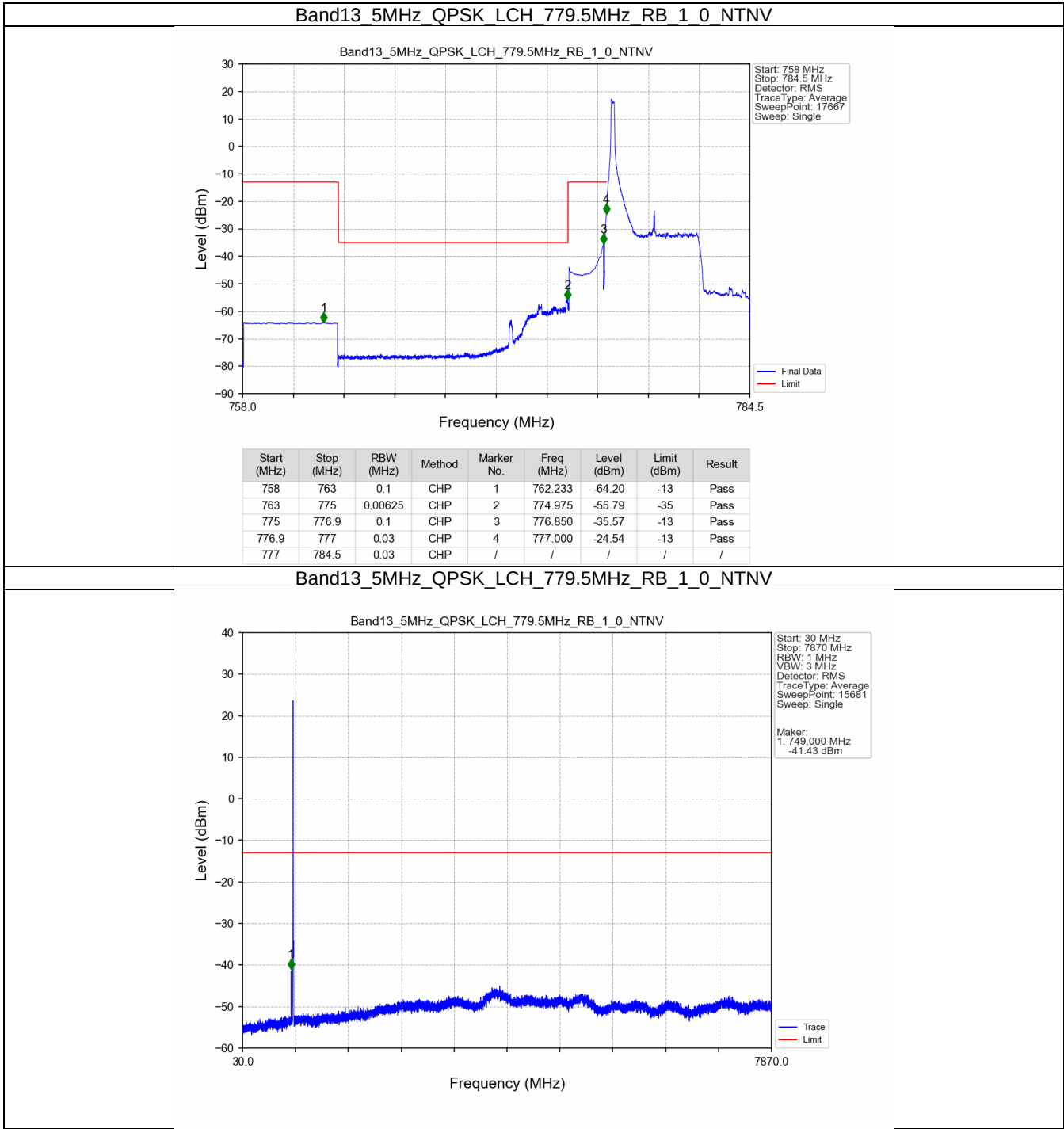
| Band: 13 / Bandwidth: 5MHz / NTNV |                 |               |        |                     |       |         |
|-----------------------------------|-----------------|---------------|--------|---------------------|-------|---------|
| Modulation                        | Frequency (MHz) | RB Allocation |        | Spurious Emission   |       | Verdict |
|                                   |                 | Size          | Offset | Result              | Limit |         |
| QPSK                              | 779.5           | 1             | 0      | Refer To Test Graph |       | Pass    |
|                                   |                 | 25            | 0      | Refer To Test Graph |       | Pass    |
|                                   | 782             | 1             | 0      | Refer To Test Graph |       | Pass    |
|                                   | 784.5           | 1             | 0      | Refer To Test Graph |       | Pass    |
|                                   |                 |               | 24     | Refer To Test Graph |       | Pass    |
|                                   |                 | 25            | 0      | Refer To Test Graph |       | Pass    |

#### 5.1.2 B13\_10MHz

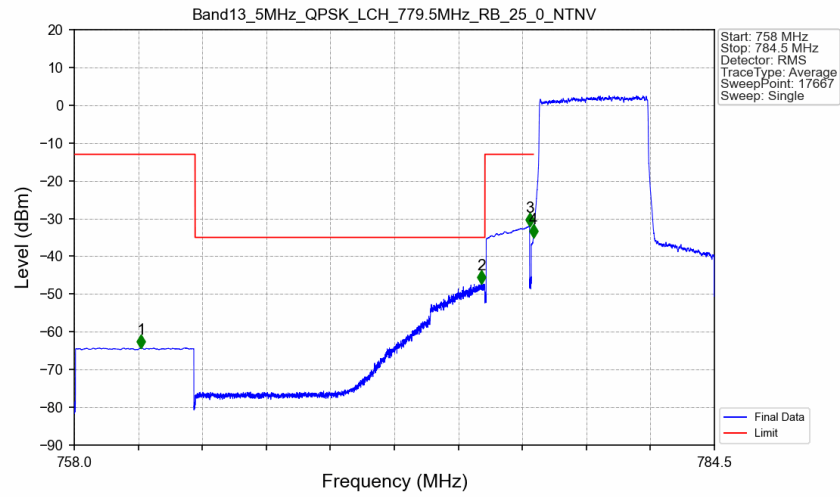
| Band: 13 / Bandwidth: 10MHz / NTNV |                 |               |        |                     |       |         |
|------------------------------------|-----------------|---------------|--------|---------------------|-------|---------|
| Modulation                         | Frequency (MHz) | RB Allocation |        | Spurious Emission   |       | Verdict |
|                                    |                 | Size          | Offset | Result              | Limit |         |
| QPSK                               | 782             | 1             | 0      | Refer To Test Graph |       | Pass    |
|                                    |                 | 50            | 0      | Refer To Test Graph |       | Pass    |
|                                    | 782             | 1             | 49     | Refer To Test Graph |       | Pass    |
|                                    |                 | 50            | 0      | Refer To Test Graph |       | Pass    |

5.2 Test Graph

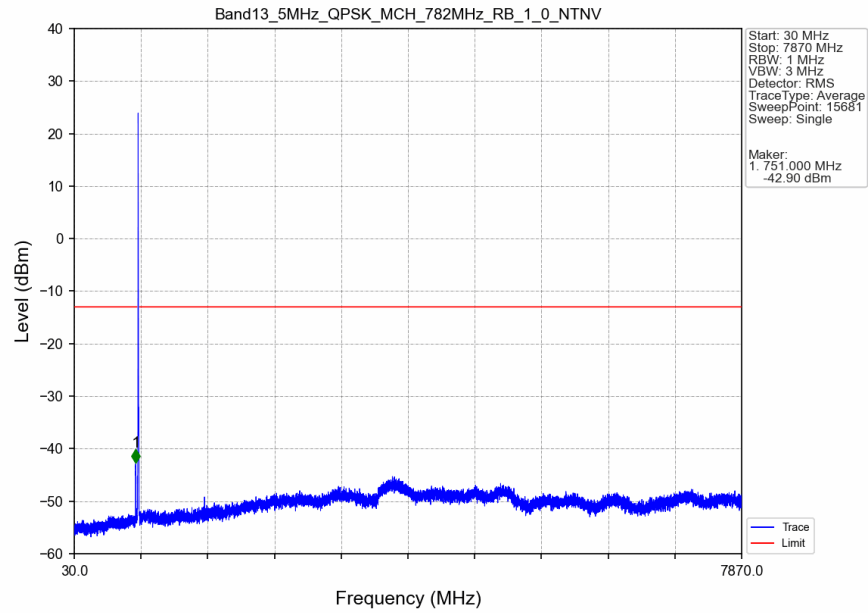
5.2.1 B13\_5MHz



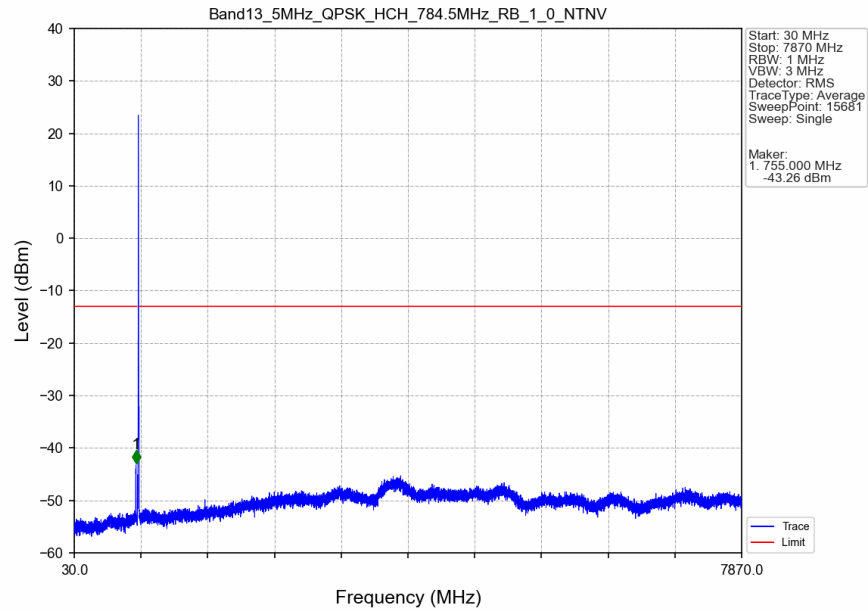
# Band13 5MHz QPSK LCH 779.5MHz RB 25 0 NTNV



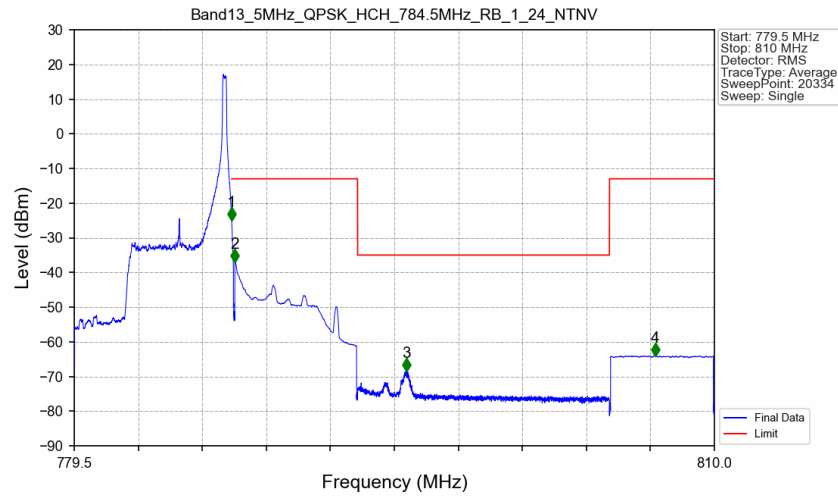
# Band13 5MHz QPSK MCH 782MHz RB 1 0 NTNV



### Band13 5MHz QPSK HCH 784.5MHz RB 1 0 NTV

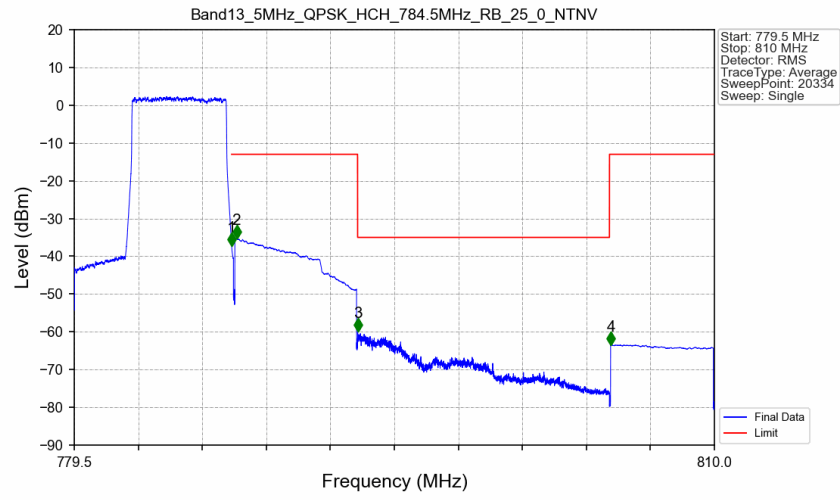


### Band13 5MHz QPSK HCH 784.5MHz RB 1 24 NTV



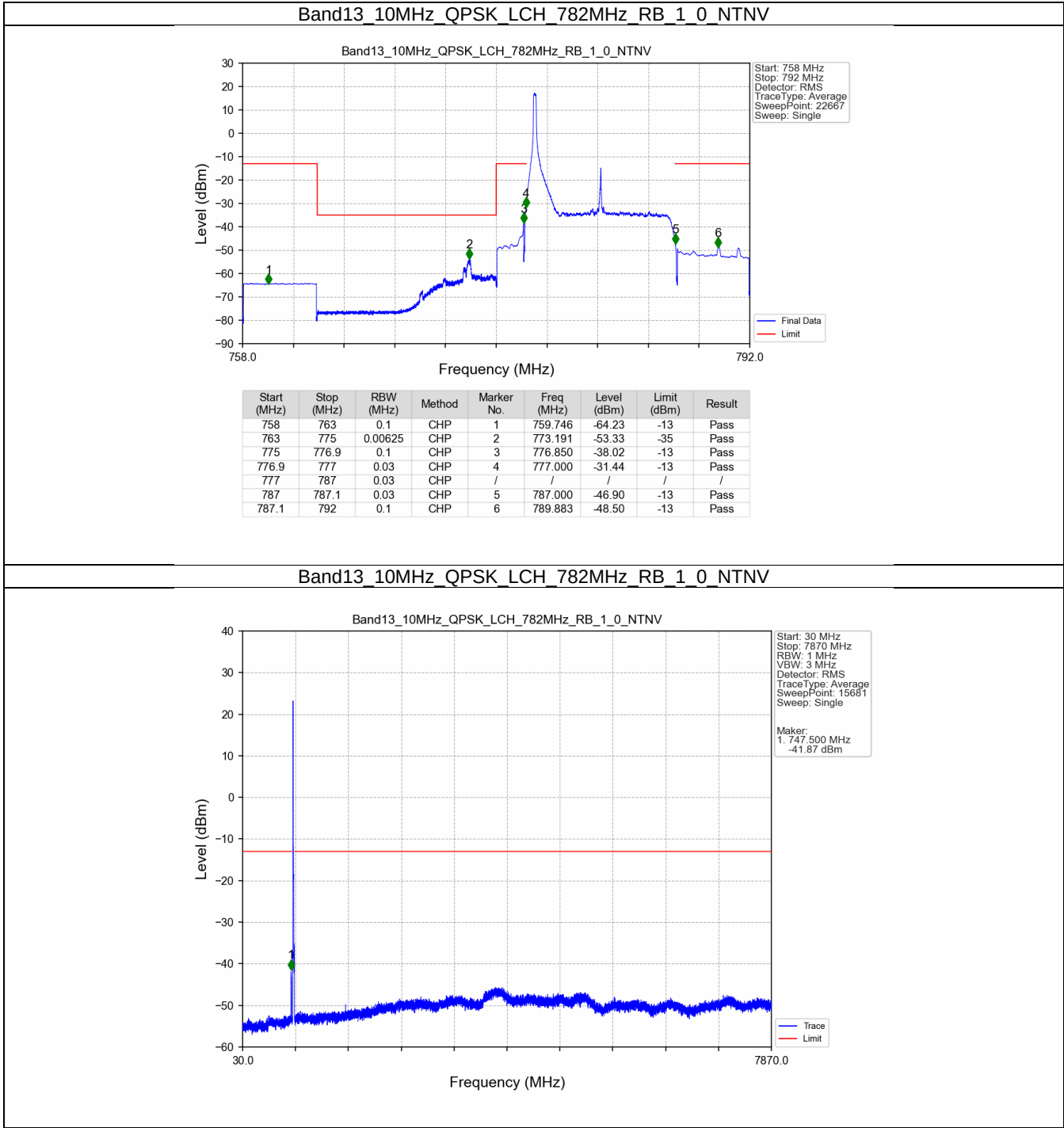
| Start (MHz) | Stop (MHz) | RBW (MHz) | Method | Marker No. | Freq (MHz) | Level (dBm) | Limit (dBm) | Result |
|-------------|------------|-----------|--------|------------|------------|-------------|-------------|--------|
| 779.5       | 787        | 0.03      | CHP    | /          | /          | /           | /           | /      |
| 787         | 787.1      | 0.03      | CHP    | 1          | 787.000    | -24.97      | -13         | Pass   |
| 787.1       | 793        | 0.1       | CHP    | 2          | 787.152    | -37.03      | -13         | Pass   |
| 793         | 805        | 0.00625   | CHP    | 3          | 795.321    | -68.57      | -35         | Pass   |
| 805         | 810        | 0.1       | CHP    | 4          | 807.177    | -64.05      | -13         | Pass   |

# Band13 5MHz QPSK HCH 784.5MHz RB 25 0 NTN

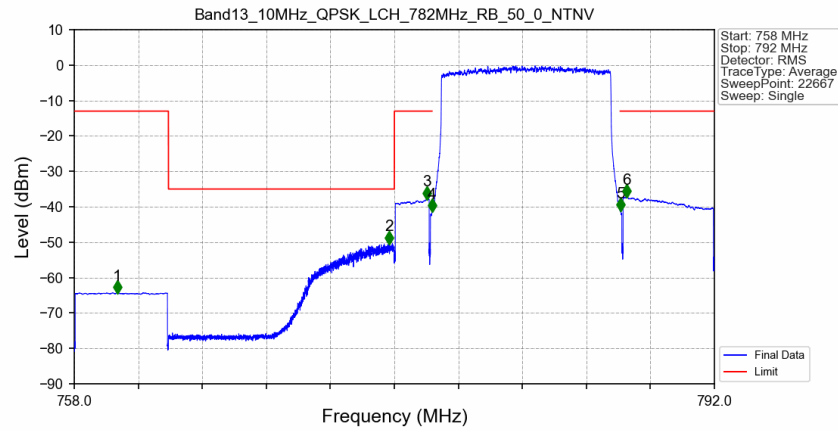


| Start (MHz) | Stop (MHz) | RBW (MHz) | Method | Marker No. | Freq (MHz) | Level (dBm) | Limit (dBm) | Result |
|-------------|------------|-----------|--------|------------|------------|-------------|-------------|--------|
| 779.5       | 787        | 0.03      | CHP    | /          | /          | /           | /           | /      |
| 787         | 787.1      | 0.03      | CHP    | 1          | 787.000    | -37.22      | -13         | Pass   |
| 787.1       | 793        | 0.1       | CHP    | 2          | 787.236    | -35.24      | -13         | Pass   |
| 793         | 805        | 0.00625   | CHP    | 3          | 793.003    | -59.83      | -35         | Pass   |
| 805         | 810        | 0.1       | CHP    | 4          | 805.065    | -63.42      | -13         | Pass   |

5.2.2 B13\_10MHz

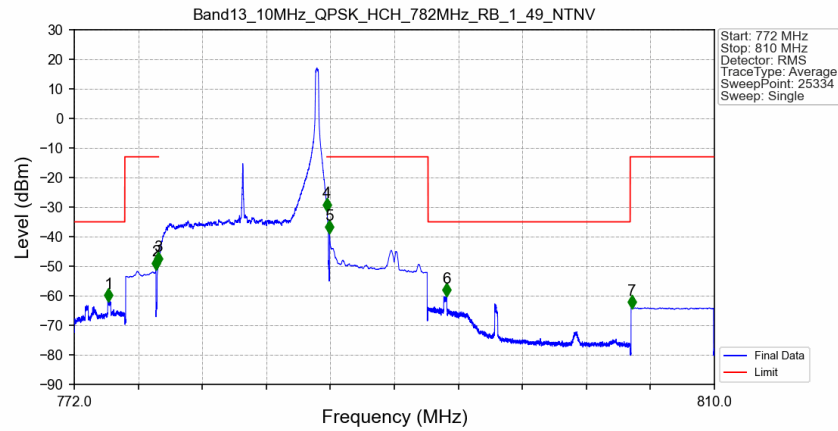


### Band13 10MHz QPSK LCH 782MHz RB 50 0 NTNV



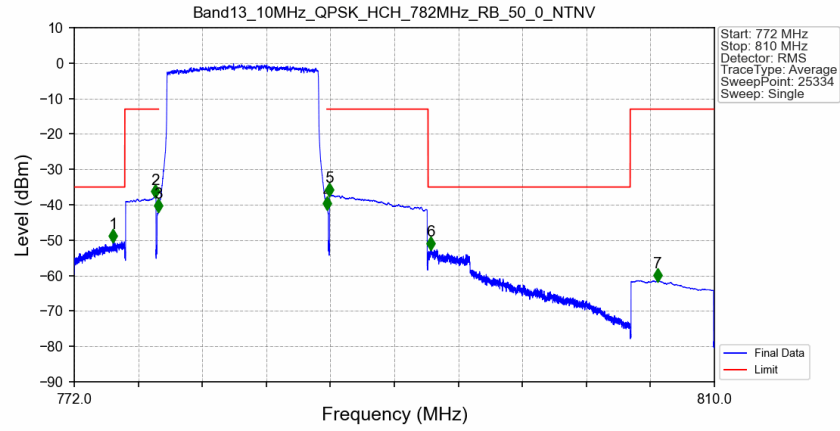
| Start (MHz) | Stop (MHz) | RBW (MHz) | Method | Marker No. | Freq (MHz) | Level (dBm) | Limit (dBm) | Result |
|-------------|------------|-----------|--------|------------|------------|-------------|-------------|--------|
| 758         | 763        | 0.1       | CHP    | 1          | 760.282    | -64.26      | -13         | Pass   |
| 763         | 775        | 0.00625   | CHP    | 2          | 774.718    | -50.28      | -35         | Pass   |
| 775         | 776.9      | 0.1       | CHP    | 3          | 776.743    | -37.63      | -13         | Pass   |
| 776.9       | 777        | 0.03      | CHP    | 4          | 777.000    | -41.13      | -13         | Pass   |
| 777         | 787        | 0.03      | CHP    | /          | /          | /           | /           | /      |
| 787         | 787.1      | 0.03      | CHP    | 5          | 787.029    | -41.03      | -13         | Pass   |
| 787.1       | 792        | 0.1       | CHP    | 6          | 787.347    | -37.17      | -13         | Pass   |

### Band13 10MHz QPSK HCH 782MHz RB 1 49 NTNV



| Start (MHz) | Stop (MHz) | RBW (MHz) | Method | Marker No. | Freq (MHz) | Level (dBm) | Limit (dBm) | Result |
|-------------|------------|-----------|--------|------------|------------|-------------|-------------|--------|
| 772         | 775        | 0.00625   | CHP    | 1          | 774.040    | -61.70      | -35         | Pass   |
| 775         | 776.9      | 0.1       | CHP    | 2          | 776.850    | -50.79      | -13         | Pass   |
| 776.9       | 777        | 0.03      | CHP    | 3          | 777.000    | -49.28      | -13         | Pass   |
| 777         | 787        | 0.03      | CHP    | /          | /          | /           | /           | /      |
| 787         | 787.1      | 0.03      | CHP    | 4          | 787.000    | -31.06      | -13         | Pass   |
| 787.1       | 793        | 0.1       | CHP    | 5          | 787.150    | -38.59      | -13         | Pass   |
| 793         | 805        | 0.00625   | CHP    | 6          | 794.107    | -59.80      | -35         | Pass   |
| 805         | 810        | 0.1       | CHP    | 7          | 805.099    | -64.01      | -13         | Pass   |

# Band13 10MHz QPSK HCH 782MHz RB 50 0 NTNV



| Start (MHz) | Stop (MHz) | RBW (MHz) | Method | Marker No. | Freq (MHz) | Level (dBm) | Limit (dBm) | Result |
|-------------|------------|-----------|--------|------------|------------|-------------|-------------|--------|
| 772         | 775        | 0.00625   | CHP    | 1          | 774.300    | -50.29      | -35         | Pass   |
| 775         | 776.9      | 0.1       | CHP    | 2          | 776.800    | -37.79      | -13         | Pass   |
| 776.9       | 777        | 0.03      | CHP    | 3          | 776.986    | -41.70      | -13         | Pass   |
| 777         | 787        | 0.03      | CHP    | /          | /          | /           | /           | /      |
| 787         | 787.1      | 0.03      | CHP    | 4          | 787.015    | -41.11      | -13         | Pass   |
| 787.1       | 793        | 0.1       | CHP    | 5          | 787.150    | -37.21      | -13         | Pass   |
| 793         | 805        | 0.00625   | CHP    | 6          | 793.150    | -52.43      | -35         | Pass   |
| 805         | 810        | 0.1       | CHP    | 7          | 806.614    | -61.37      | -13         | Pass   |