

## 1. Effective (Isotropic) Radiated Power Output Data

### 1.1 GSM850\_ERP

#### 1.1.1 Test Result

| Band: GSM850 |         |            |                 |                       |            |           |         |         |
|--------------|---------|------------|-----------------|-----------------------|------------|-----------|---------|---------|
| ENV          | Mode    |            | Frequency (MHz) | Conducted Power (dBm) | Gain (dbi) | ERP (dBm) |         | Verdict |
|              | Network | Subset     |                 |                       |            | Result    | Limit   |         |
| NTNV         | GSM     | GSM        | 824.2           | 32.99                 | 0.94       | 31.78     | <=38.45 | Pass    |
|              |         |            | 836.6           | 32.92                 | 0.94       | 31.71     | <=38.45 | Pass    |
|              |         |            | 848.8           | 32.82                 | 0.94       | 31.61     | <=38.45 | Pass    |
|              | GPRS    | 1 TX Slot  | 824.2           | 33.05                 | 0.94       | 31.84     | <=38.45 | Pass    |
|              |         | 2 TX Slots | 824.2           | 30.78                 | 0.94       | 29.57     | <=38.45 | Pass    |
|              |         | 3 TX Slots | 824.2           | 29.04                 | 0.94       | 27.83     | <=38.45 | Pass    |
|              |         | 4 TX Slots | 824.2           | 27.24                 | 0.94       | 26.03     | <=38.45 | Pass    |
|              |         | 1 TX Slot  | 836.6           | 32.99                 | 0.94       | 31.78     | <=38.45 | Pass    |
|              |         | 2 TX Slots | 836.6           | 30.71                 | 0.94       | 29.50     | <=38.45 | Pass    |
|              |         | 3 TX Slots | 836.6           | 28.97                 | 0.94       | 27.76     | <=38.45 | Pass    |
|              |         | 4 TX Slots | 836.6           | 27.14                 | 0.94       | 25.93     | <=38.45 | Pass    |
|              |         | 1 TX Slot  | 848.8           | 32.85                 | 0.94       | 31.64     | <=38.45 | Pass    |
|              |         | 2 TX Slots | 848.8           | 30.50                 | 0.94       | 29.29     | <=38.45 | Pass    |
|              |         | 3 TX Slots | 848.8           | 28.72                 | 0.94       | 27.51     | <=38.45 | Pass    |
|              |         | 4 TX Slots | 848.8           | 26.88                 | 0.94       | 25.67     | <=38.45 | Pass    |

Note1: ERP=Conducted Power+Antenna Gain-2.15

## 2. Frequency Stability

### 2.1 GSM850

#### 2.1.1 Test Result

| Band: GSM850 |                 |            |               |                  |                       |             |         |
|--------------|-----------------|------------|---------------|------------------|-----------------------|-------------|---------|
| Network      | Frequency (MHz) | Temp. (°C) | Voltage (VDC) | Freq. Error (Hz) | Freq. vs. Rated (ppm) |             | Verdict |
|              |                 |            |               |                  | Result                | Limit       |         |
| GSM          | 824.2           | 20         | 3.27          | 16.563           | 0.0201                | -2.5 to 2.5 | Pass    |
|              |                 |            | 3.85          | 15.400           | 0.0187                | -2.5 to 2.5 | Pass    |
|              |                 |            | 4.43          | 19.049           | 0.0231                | -2.5 to 2.5 | Pass    |
|              |                 | -30        | 3.85          | 16.434           | 0.0199                | -2.5 to 2.5 | Pass    |
|              |                 | -20        | 3.85          | 16.595           | 0.0201                | -2.5 to 2.5 | Pass    |
|              |                 | -10        | 3.85          | 17.015           | 0.0206                | -2.5 to 2.5 | Pass    |
|              |                 | 0          | 3.85          | 16.756           | 0.0203                | -2.5 to 2.5 | Pass    |
|              |                 | 10         | 3.85          | 14.819           | 0.0180                | -2.5 to 2.5 | Pass    |
|              |                 | 30         | 3.85          | 16.821           | 0.0204                | -2.5 to 2.5 | Pass    |
|              |                 | 40         | 3.85          | 17.241           | 0.0209                | -2.5 to 2.5 | Pass    |
|              |                 | 50         | 3.85          | 14.755           | 0.0179                | -2.5 to 2.5 | Pass    |
|              | 836.6           | 20         | 3.27          | 17.757           | 0.0212                | -2.5 to 2.5 | Pass    |
|              |                 |            | 3.85          | 15.465           | 0.0185                | -2.5 to 2.5 | Pass    |
|              |                 |            | 4.43          | 13.011           | 0.0156                | -2.5 to 2.5 | Pass    |
|              |                 | -30        | 3.85          | 9.427            | 0.0113                | -2.5 to 2.5 | Pass    |
|              |                 | -20        | 3.85          | 14.625           | 0.0175                | -2.5 to 2.5 | Pass    |
|              |                 | -10        | 3.85          | 13.043           | 0.0156                | -2.5 to 2.5 | Pass    |
|              |                 | 0          | 3.85          | 11.332           | 0.0135                | -2.5 to 2.5 | Pass    |
|              |                 | 10         | 3.85          | 13.495           | 0.0161                | -2.5 to 2.5 | Pass    |
|              |                 | 30         | 3.85          | 16.660           | 0.0199                | -2.5 to 2.5 | Pass    |

|      |       |     |      |        |        |             |      |
|------|-------|-----|------|--------|--------|-------------|------|
|      | 848.8 | 40  | 3.85 | 12.301 | 0.0147 | -2.5 to 2.5 | Pass |
|      |       | 50  | 3.85 | 11.558 | 0.0138 | -2.5 to 2.5 | Pass |
|      |       | 20  | 3.27 | 16.660 | 0.0196 | -2.5 to 2.5 | Pass |
|      |       |     | 3.85 | 16.111 | 0.0190 | -2.5 to 2.5 | Pass |
|      |       |     | 4.43 | 14.367 | 0.0169 | -2.5 to 2.5 | Pass |
|      |       | -30 | 3.85 | 16.530 | 0.0195 | -2.5 to 2.5 | Pass |
|      |       | -20 | 3.85 | 16.498 | 0.0194 | -2.5 to 2.5 | Pass |
|      |       | -10 | 3.85 | 16.498 | 0.0194 | -2.5 to 2.5 | Pass |
|      |       | 0   | 3.85 | 16.434 | 0.0194 | -2.5 to 2.5 | Pass |
|      |       | 10  | 3.85 | 16.692 | 0.0197 | -2.5 to 2.5 | Pass |
|      |       | 30  | 3.85 | 15.497 | 0.0183 | -2.5 to 2.5 | Pass |
|      |       | 40  | 3.85 | 15.594 | 0.0184 | -2.5 to 2.5 | Pass |
|      |       | 50  | 3.85 | 16.014 | 0.0189 | -2.5 to 2.5 | Pass |
| GPRS | 824.2 | 20  | 3.27 | 19.468 | 0.0236 | -2.5 to 2.5 | Pass |
|      |       |     | 3.85 | 20.502 | 0.0249 | -2.5 to 2.5 | Pass |
|      |       |     | 4.43 | 18.177 | 0.0221 | -2.5 to 2.5 | Pass |
|      |       | -30 | 3.85 | 19.372 | 0.0235 | -2.5 to 2.5 | Pass |
|      |       | -20 | 3.85 | 18.371 | 0.0223 | -2.5 to 2.5 | Pass |
|      |       | -10 | 3.85 | 18.694 | 0.0227 | -2.5 to 2.5 | Pass |
|      |       | 0   | 3.85 | 18.112 | 0.0220 | -2.5 to 2.5 | Pass |
|      |       | 10  | 3.85 | 17.499 | 0.0212 | -2.5 to 2.5 | Pass |
|      |       | 30  | 3.85 | 18.564 | 0.0225 | -2.5 to 2.5 | Pass |
|      |       | 40  | 3.85 | 19.307 | 0.0234 | -2.5 to 2.5 | Pass |
|      |       | 50  | 3.85 | 18.080 | 0.0219 | -2.5 to 2.5 | Pass |
|      | 836.6 | 20  | 3.27 | 20.243 | 0.0242 | -2.5 to 2.5 | Pass |
|      |       |     | 3.85 | 18.726 | 0.0224 | -2.5 to 2.5 | Pass |
|      |       |     | 4.43 | 19.016 | 0.0227 | -2.5 to 2.5 | Pass |
|      |       | -30 | 3.85 | 18.629 | 0.0223 | -2.5 to 2.5 | Pass |
|      |       | -20 | 3.85 | 17.434 | 0.0208 | -2.5 to 2.5 | Pass |
|      |       | -10 | 3.85 | 17.660 | 0.0211 | -2.5 to 2.5 | Pass |
|      |       | 0   | 3.85 | 18.887 | 0.0226 | -2.5 to 2.5 | Pass |
|      |       | 10  | 3.85 | 21.180 | 0.0253 | -2.5 to 2.5 | Pass |
|      |       | 30  | 3.85 | 20.243 | 0.0242 | -2.5 to 2.5 | Pass |
|      |       | 40  | 3.85 | 19.630 | 0.0235 | -2.5 to 2.5 | Pass |
|      |       | 50  | 3.85 | 17.951 | 0.0215 | -2.5 to 2.5 | Pass |
|      | 848.8 | 20  | 3.27 | 14.561 | 0.0172 | -2.5 to 2.5 | Pass |
|      |       |     | 3.85 | 17.015 | 0.0200 | -2.5 to 2.5 | Pass |
|      |       |     | 4.43 | 17.079 | 0.0201 | -2.5 to 2.5 | Pass |
|      |       | -30 | 3.85 | 16.982 | 0.0200 | -2.5 to 2.5 | Pass |
|      |       | -20 | 3.85 | 15.885 | 0.0187 | -2.5 to 2.5 | Pass |
|      |       | -10 | 3.85 | 16.466 | 0.0194 | -2.5 to 2.5 | Pass |
|      |       | 0   | 3.85 | 16.272 | 0.0192 | -2.5 to 2.5 | Pass |
|      |       | 10  | 3.85 | 17.176 | 0.0202 | -2.5 to 2.5 | Pass |
|      |       | 30  | 3.85 | 16.627 | 0.0196 | -2.5 to 2.5 | Pass |
|      |       | 40  | 3.85 | 16.078 | 0.0189 | -2.5 to 2.5 | Pass |
|      |       | 50  | 3.85 | 16.046 | 0.0189 | -2.5 to 2.5 | Pass |

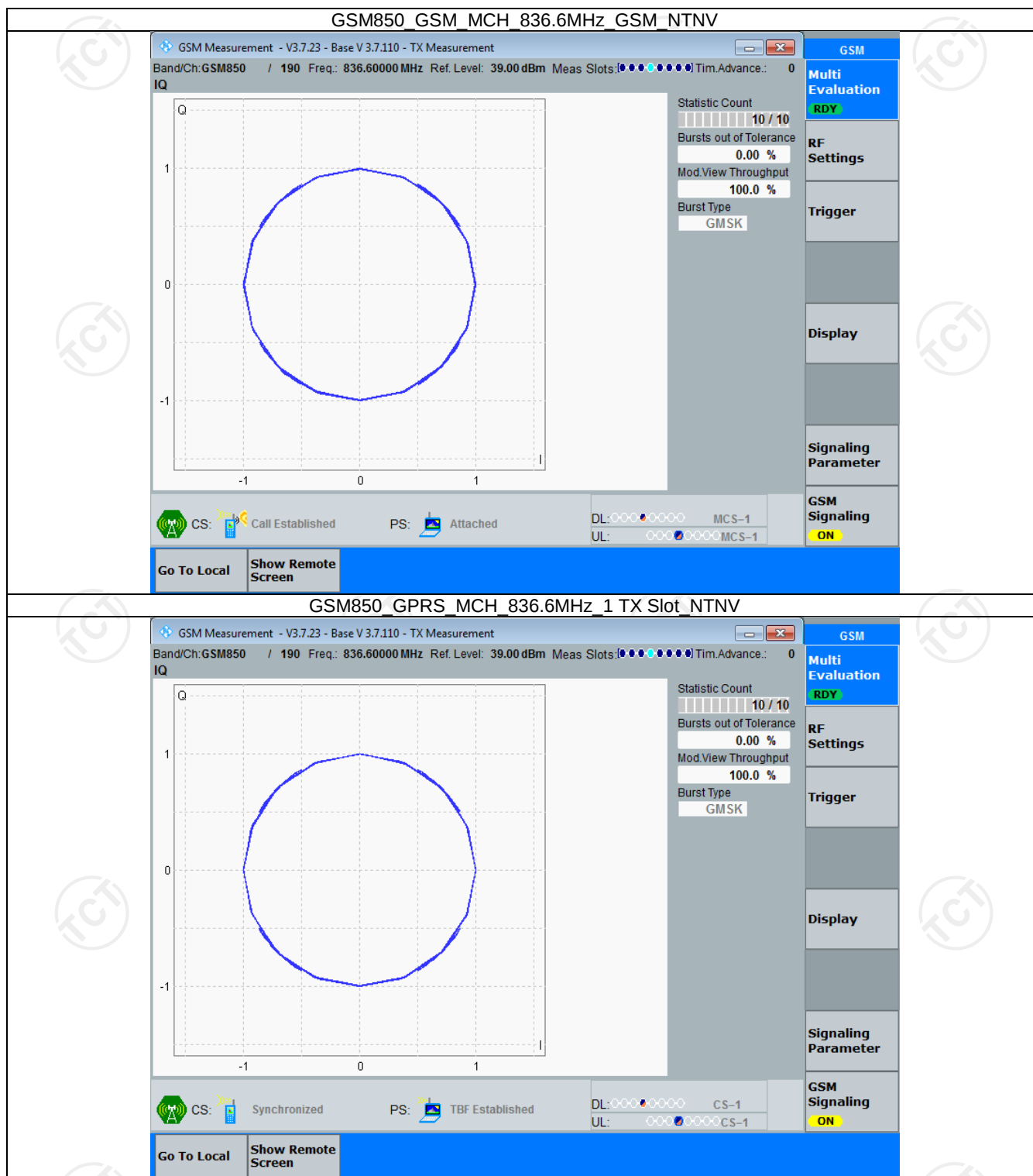
### 3. Modulation Characteristics

#### 3.1 GSM850

##### 3.1.1 Test Result

| Band: GSM850 |         |           |                    |                            |       |
|--------------|---------|-----------|--------------------|----------------------------|-------|
| ENV          | Mode    |           | Frequency<br>(MHz) | Modulation Characteristics |       |
|              | Network | Subset    |                    | Result                     | Limit |
| NTNV         | GSM     | GSM       | 836.6              | Refer To Test Graph        | Pass  |
|              | GPRS    | 1 TX Slot | 836.6              | Refer To Test Graph        | Pass  |

### 3.1.2 Test Graph



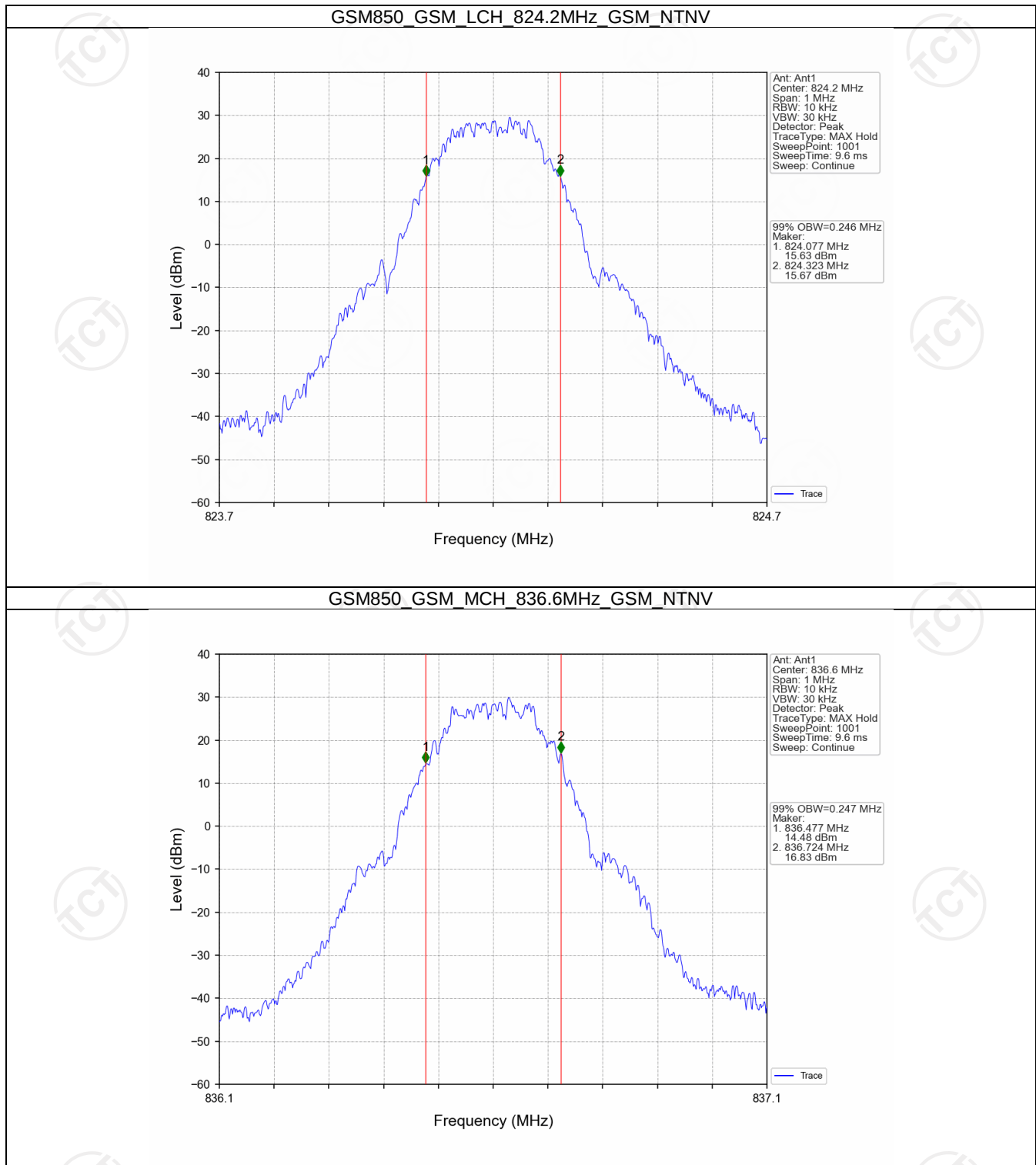
#### 4. 99% & 26dB Bandwidth

##### 4.1 GSM850\_OBW

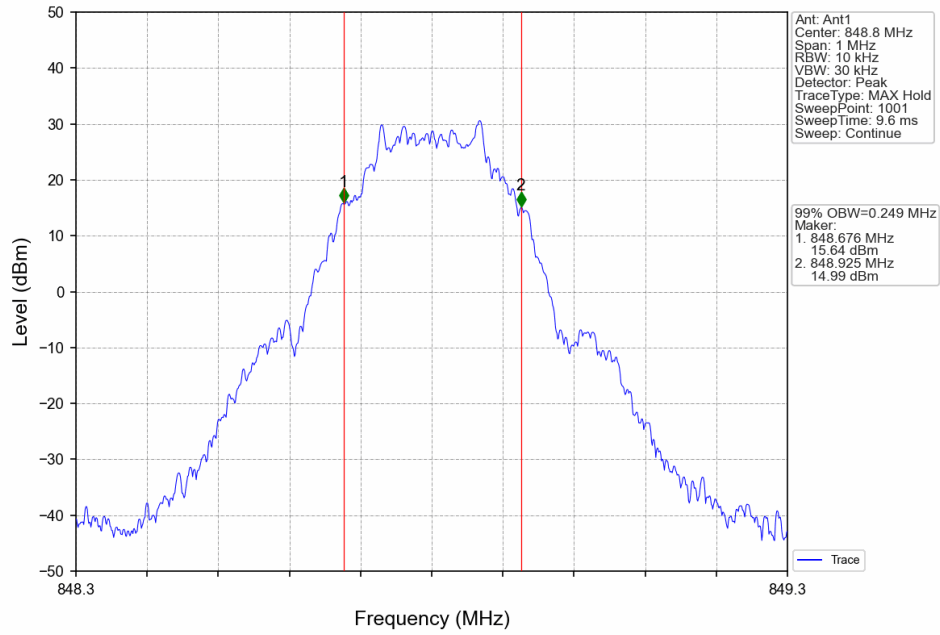
##### 4.1.1 Test Result

| Band: GSM850 |         |           |                 |                              |         |
|--------------|---------|-----------|-----------------|------------------------------|---------|
| ENV          | Mode    |           | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Verdict |
|              | Network | Subset    |                 | Result                       |         |
| NTNV         | GSM     | GSM       | 824.2           | 0.246                        | Pass    |
|              |         |           | 836.6           | 0.247                        | Pass    |
|              |         |           | 848.8           | 0.249                        | Pass    |
|              | GPRS    | 1 TX Slot | 824.2           | 0.246                        | Pass    |
|              |         |           | 836.6           | 0.251                        | Pass    |
|              |         |           | 848.8           | 0.242                        | Pass    |

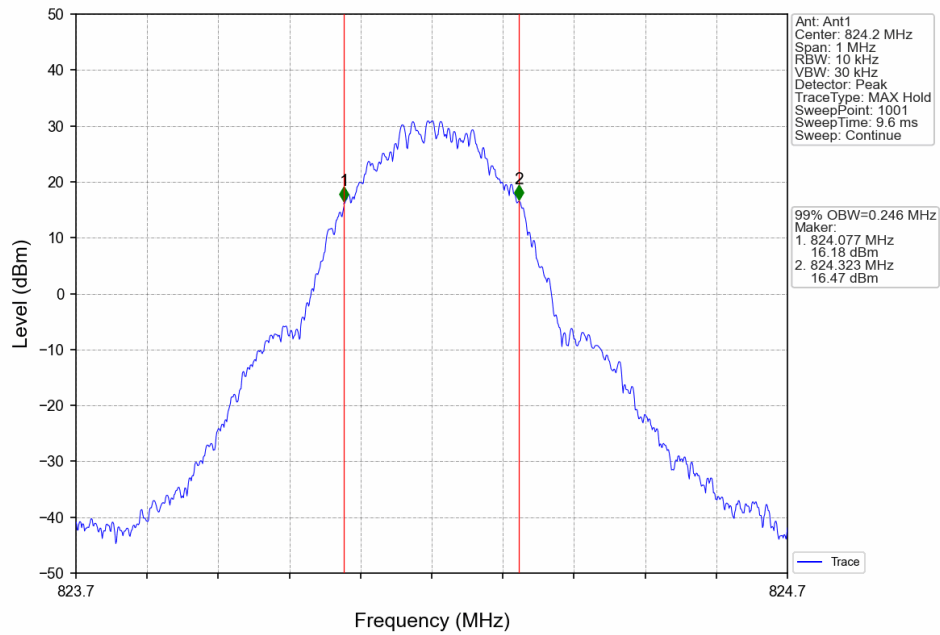
#### 4.1.2 Test Graph



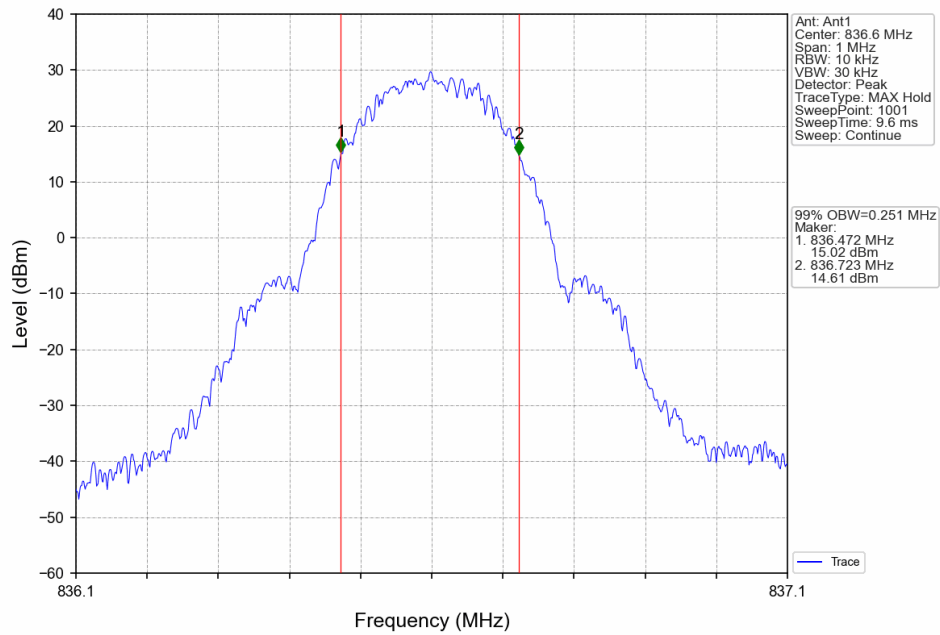
GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



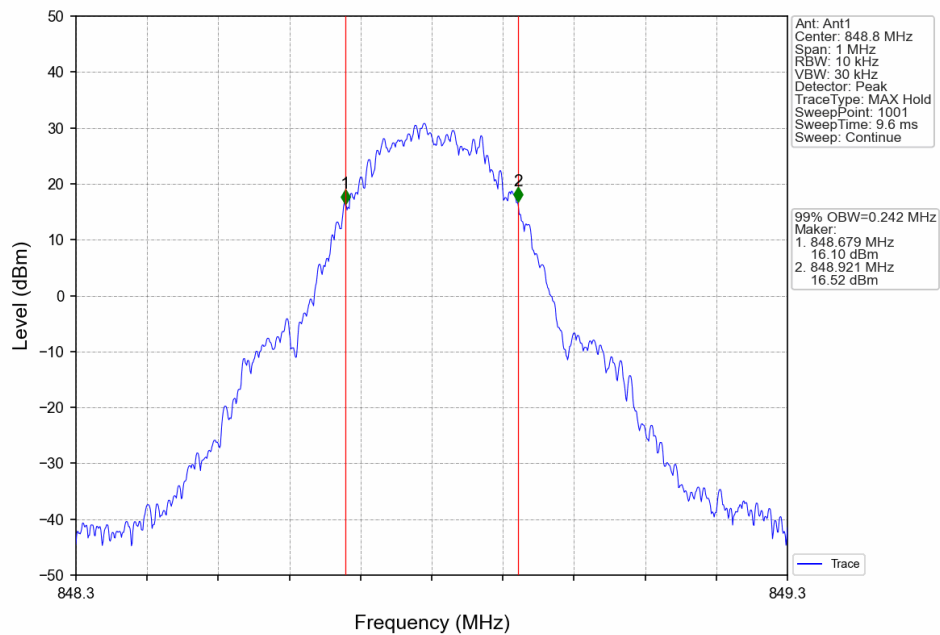
GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



GSM850\_GPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV



GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV

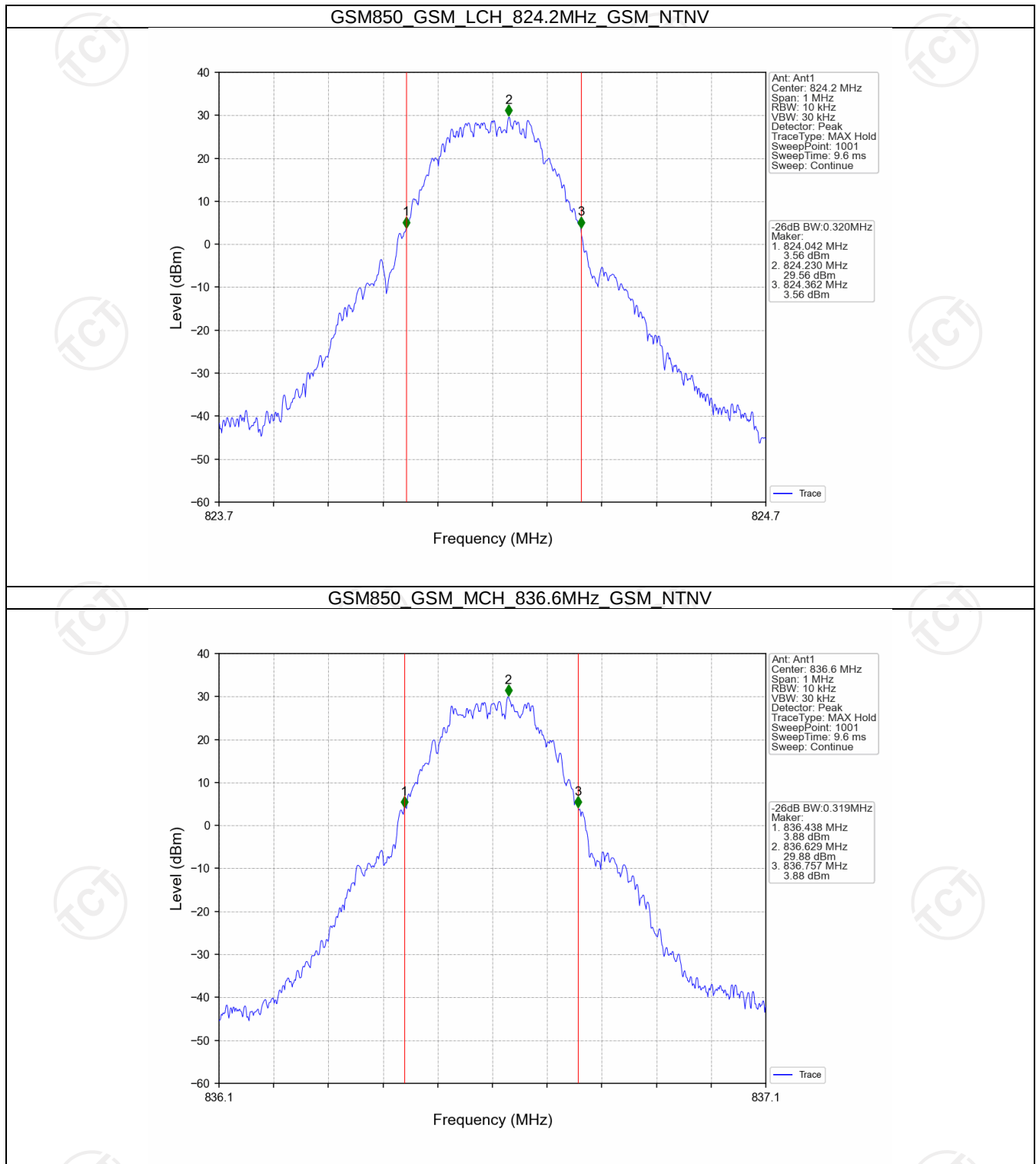


## 4.2 GSM850\_XDB

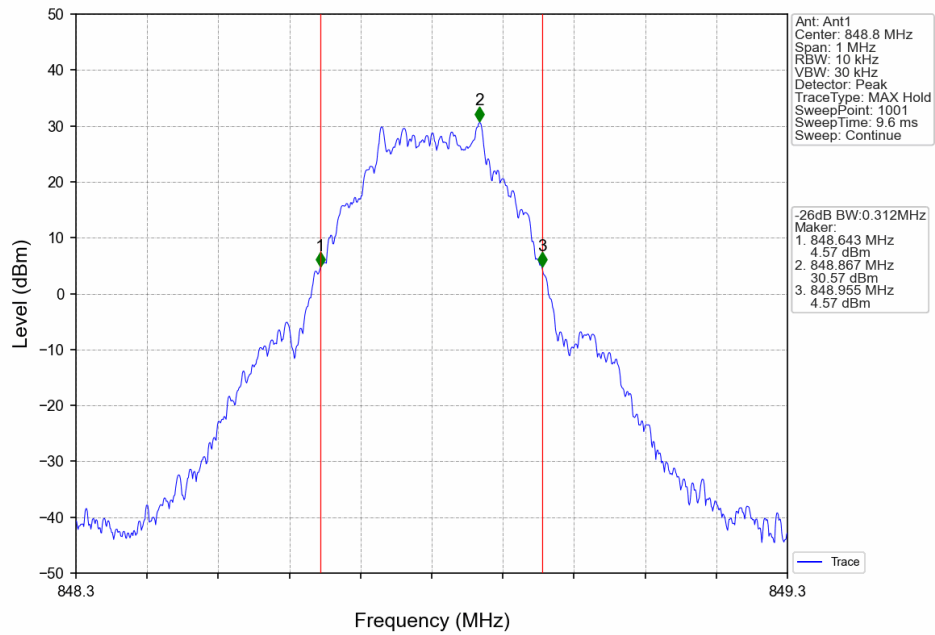
### 4.2.1 Test Result

| Band: GSM850 |         |           |                 |                      |         |
|--------------|---------|-----------|-----------------|----------------------|---------|
| ENV          | Mode    |           | Frequency (MHz) | 26dB Bandwidth (MHz) | Verdict |
|              | Network | Subset    |                 | Result               |         |
| NTNV         | GSM     | GSM       | 824.2           | 0.320                | Pass    |
|              |         |           | 836.6           | 0.319                | Pass    |
|              |         |           | 848.8           | 0.312                | Pass    |
|              | GPRS    | 1 TX Slot | 824.2           | 0.308                | Pass    |
|              |         |           | 836.6           | 0.320                | Pass    |
|              |         |           | 848.8           | 0.318                | Pass    |

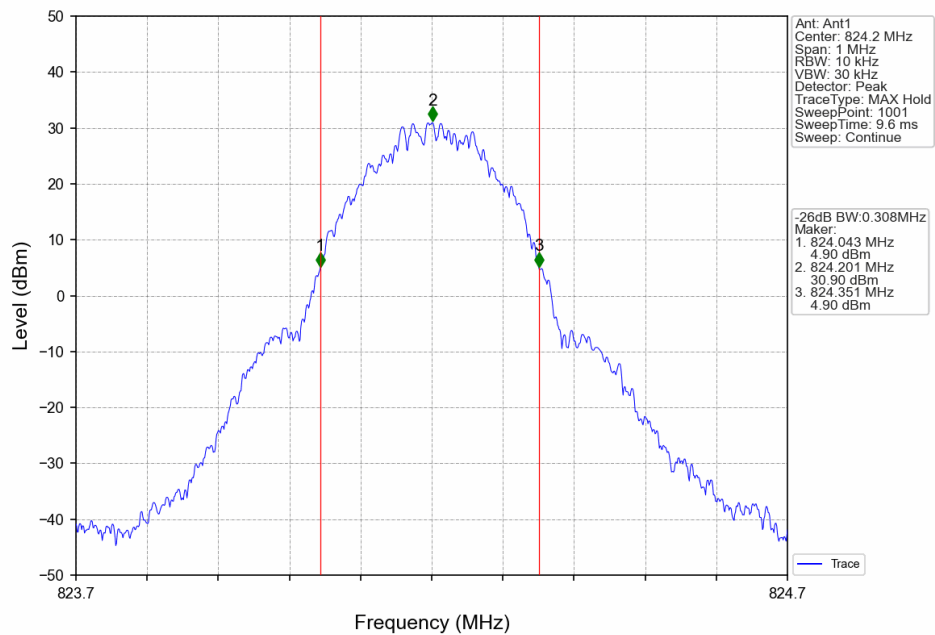
## 4.2.2 Test Graph



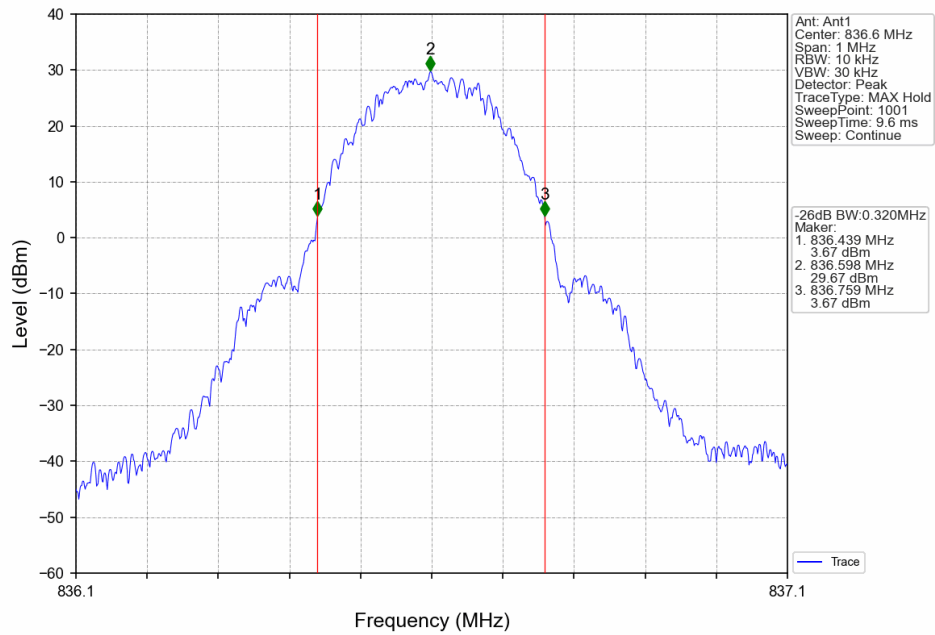
GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



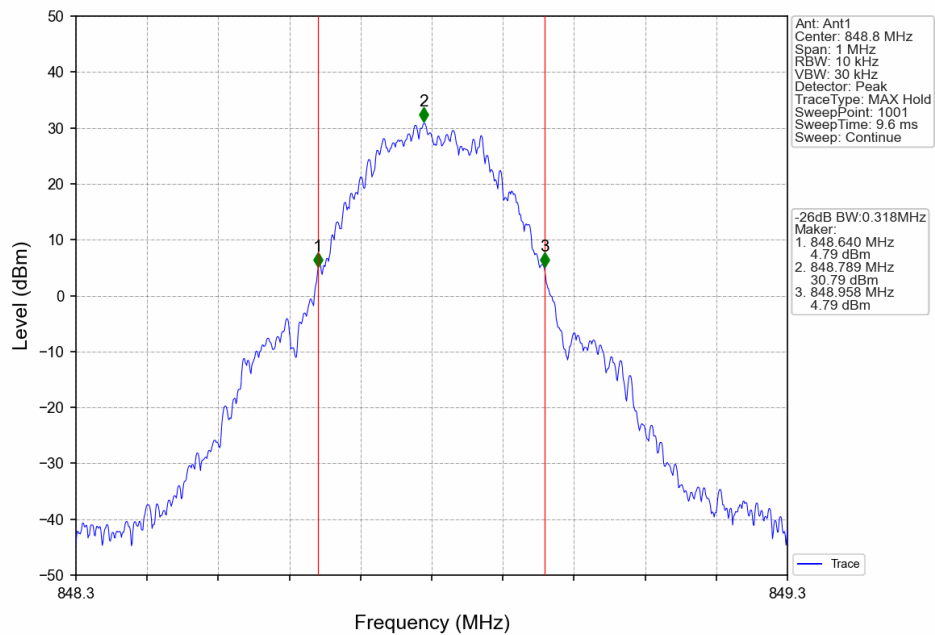
GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



GSM850\_GPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV



GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV



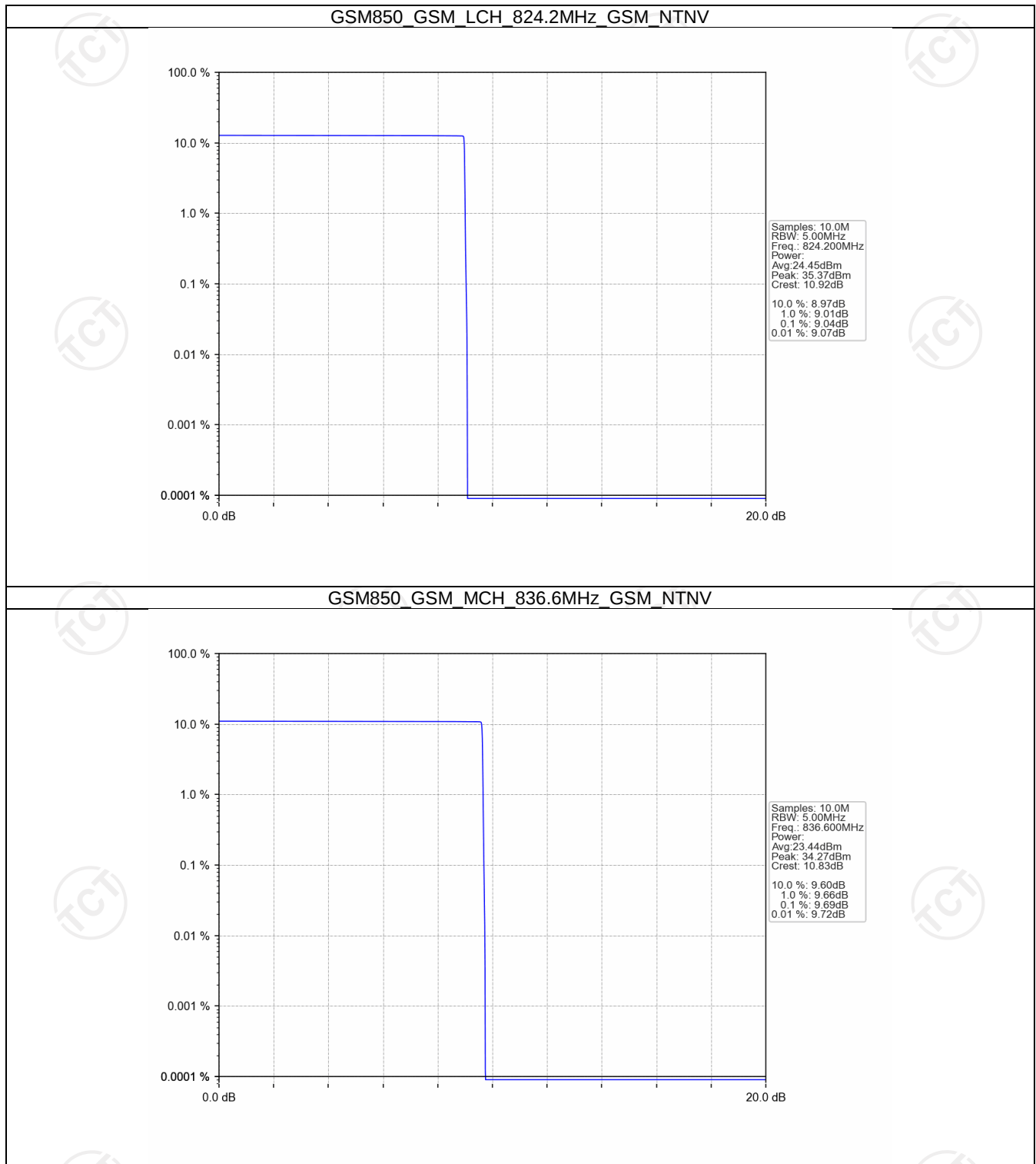
## 5. Peak-Average Ratio

### 5.1 GSM850

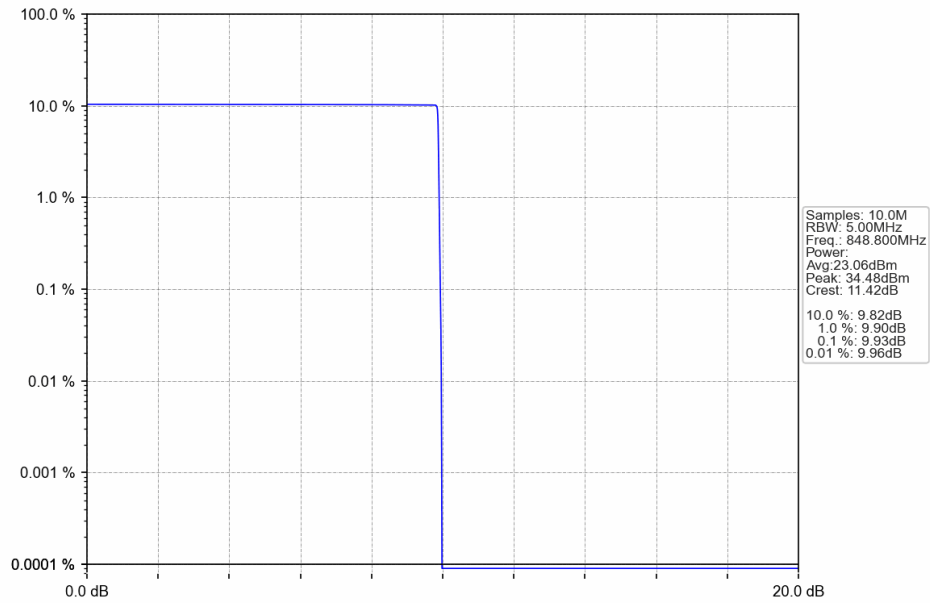
#### 5.1.1 Test Result

| Band: GSM850 |         |            |                 |                         |       |         |
|--------------|---------|------------|-----------------|-------------------------|-------|---------|
| ENV          | Mode    |            | Frequency (MHz) | Peak-Average Ratio (dB) |       | Verdict |
|              | Network | Subset     |                 | Result                  | Limit |         |
| NTNV         | GSM     | GSM        | 824.2           | 9.04                    | <=13  | Pass    |
|              |         |            | 836.6           | 9.69                    | <=13  | Pass    |
|              |         |            | 848.8           | 9.93                    | <=13  | Pass    |
|              | GPRS    | 4 TX Slots | 824.2           | 9.56                    | <=13  | Pass    |
|              |         |            | 836.6           | 3.61                    | <=13  | Pass    |
|              |         |            | 848.8           | 3.55                    | <=13  | Pass    |

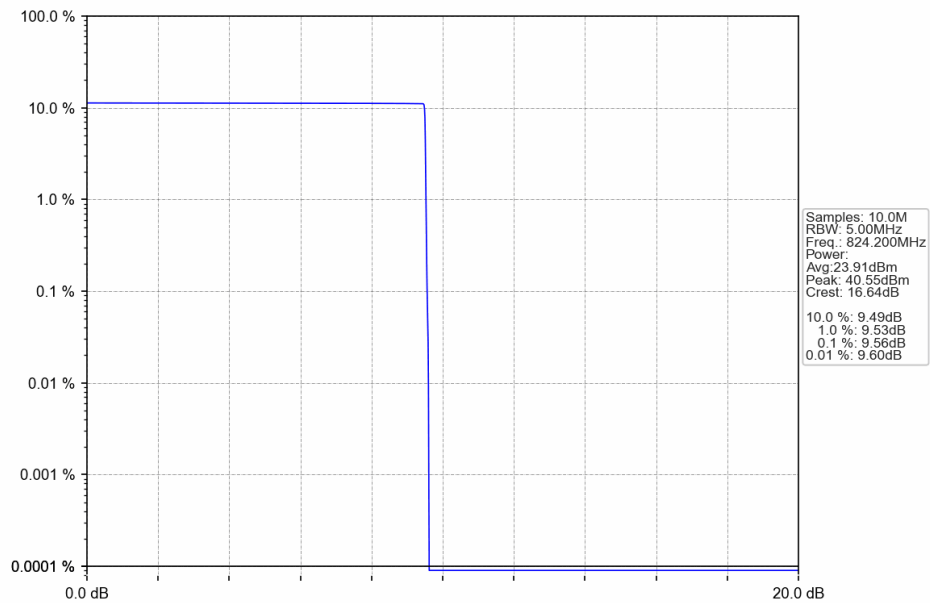
## 5.1.2 Test Graph



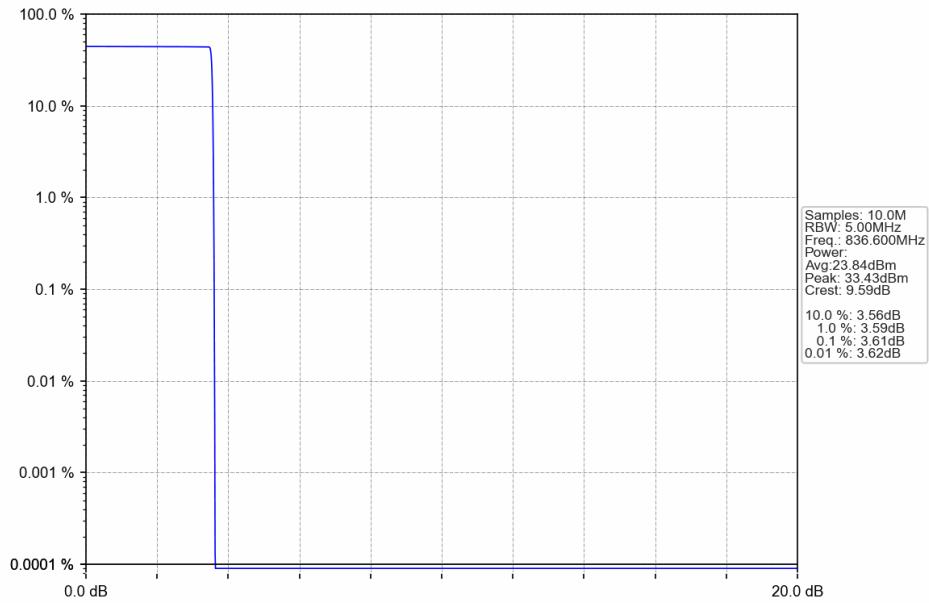
GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



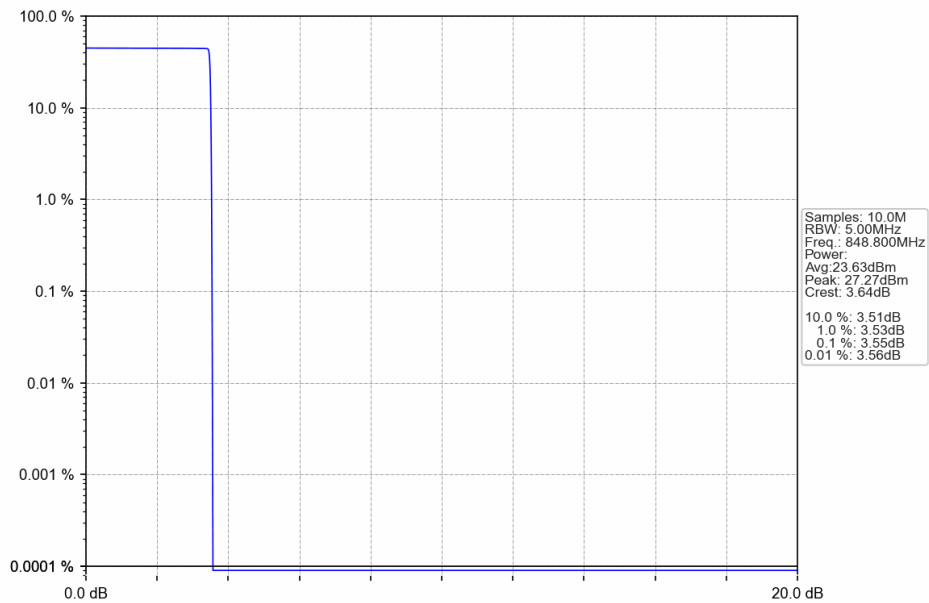
GSM850\_GPRS\_LCH\_824.2MHz\_4 TX Slots\_NTNV



GSM850\_GPRS\_MCH\_836.6MHz\_4 TX Slots\_NTNV



GSM850\_GPRS\_HCH\_848.8MHz\_4 TX Slots\_NTNV



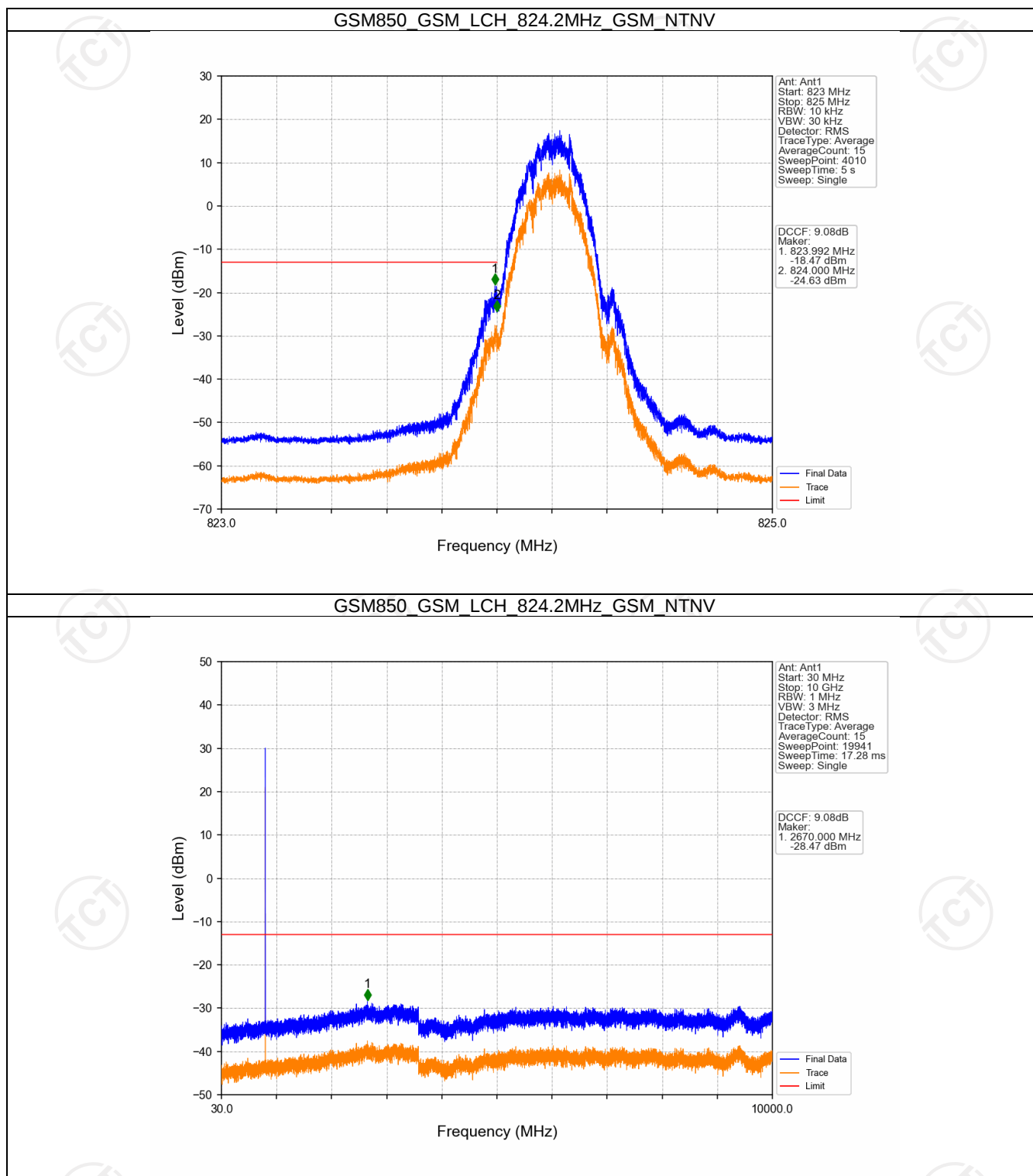
## 6. Spurious Emission

### 6.1 GSM850

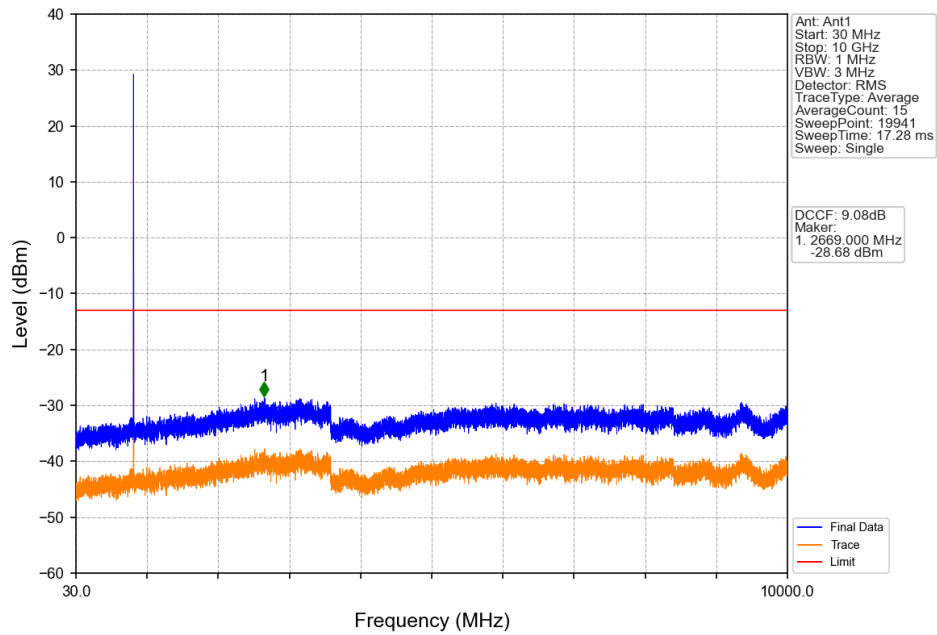
#### 6.1.1 Test Result

| Band: GSM850 |         |           |                 |                     |       |         |
|--------------|---------|-----------|-----------------|---------------------|-------|---------|
| ENV          | Mode    |           | Frequency (MHz) | Spurious Emission   |       | Verdict |
|              | Network | Subset    |                 | Result              | Limit |         |
| NTNV         | GSM     | GSM       | 824.2           | Refer To Test Graph | Pass  |         |
|              |         |           | 836.6           | Refer To Test Graph | Pass  |         |
|              |         |           | 848.8           | Refer To Test Graph | Pass  |         |
|              | GPRS    | 1 TX Slot | 824.2           | Refer To Test Graph | Pass  |         |
|              |         |           | 836.6           | Refer To Test Graph | Pass  |         |
|              |         |           | 848.8           | Refer To Test Graph | Pass  |         |

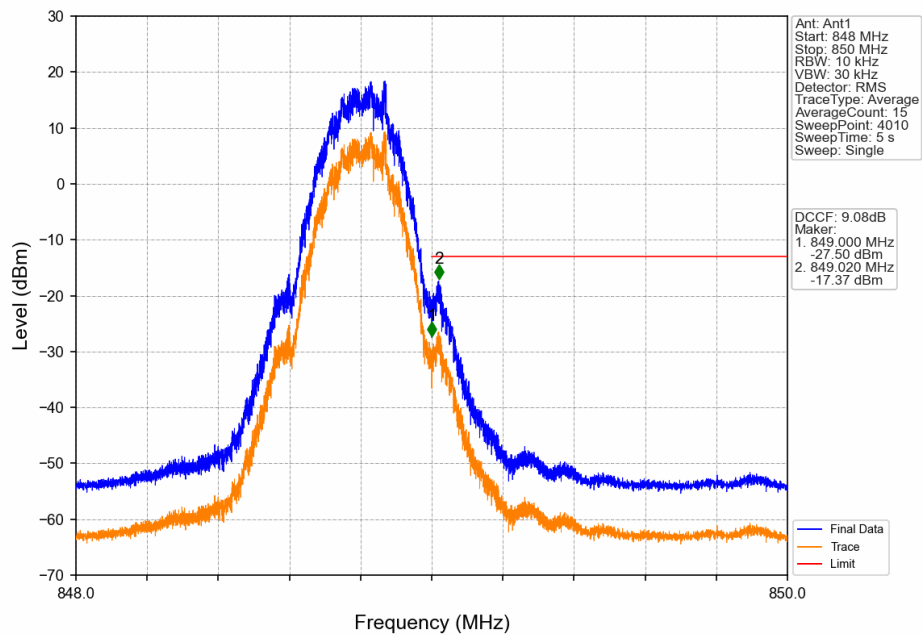
## 6.1.2 Test Graph



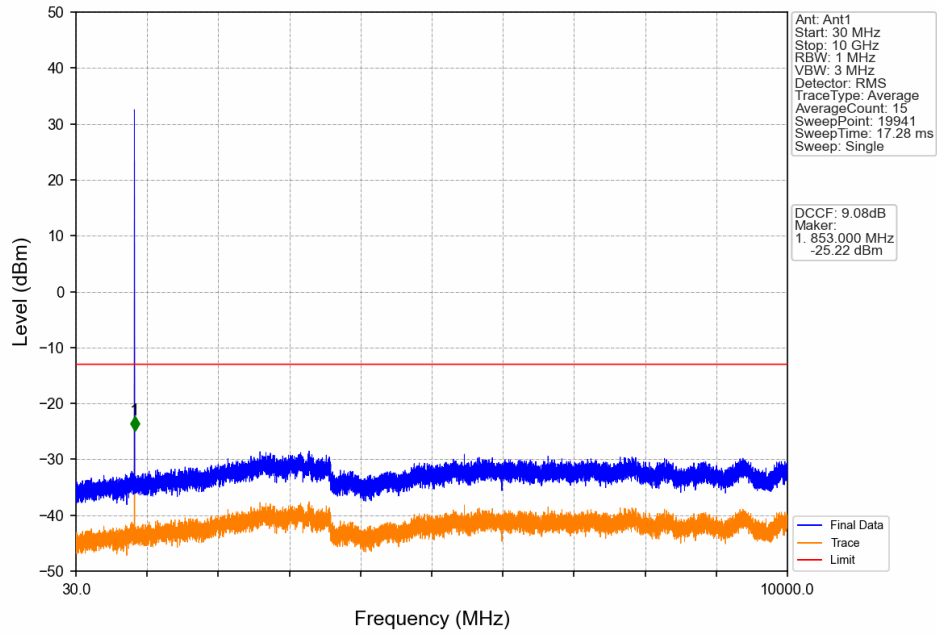
GSM850\_GSM\_MCH\_836.6MHz\_GSM\_NTNV



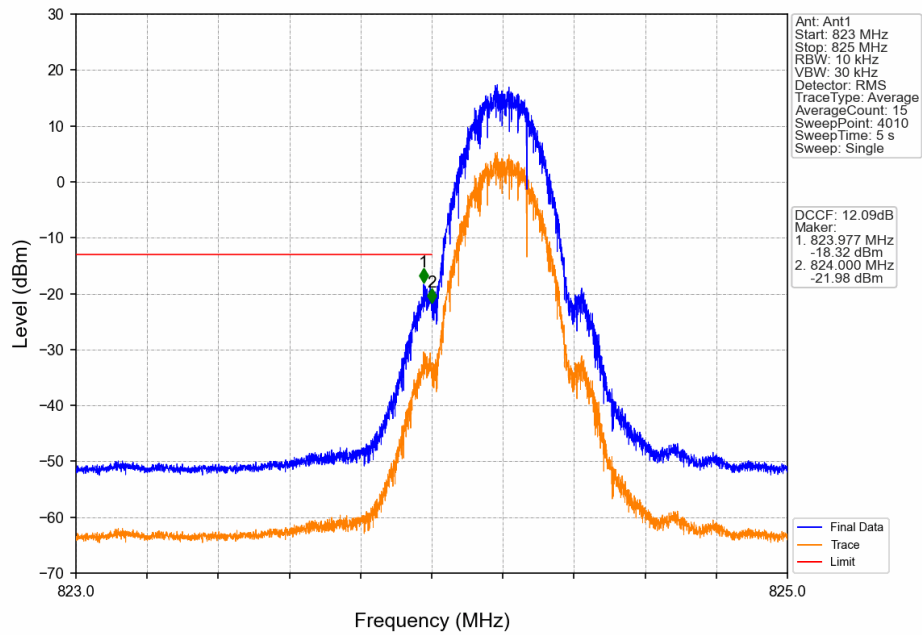
GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



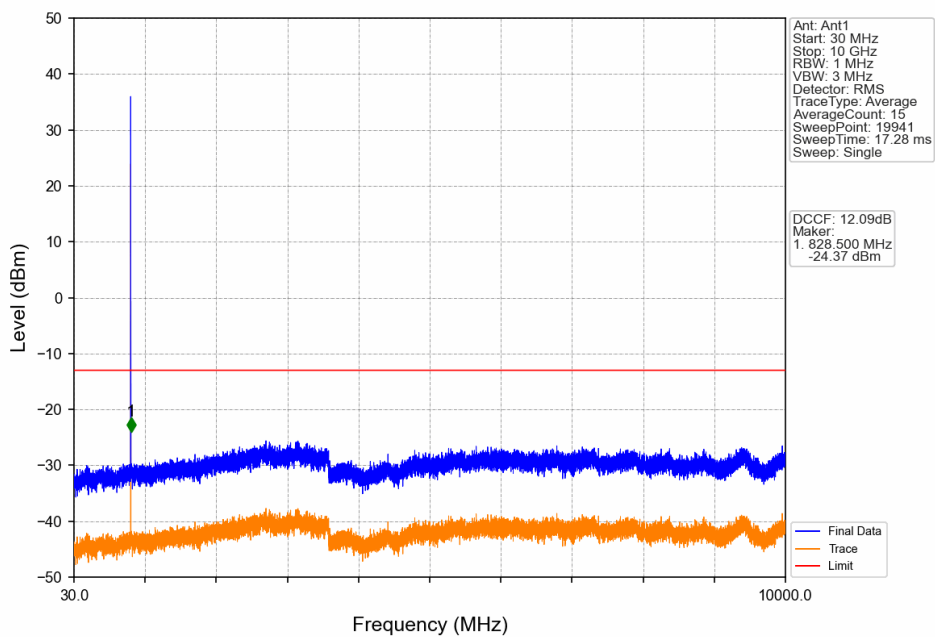
GSM850\_GSM\_HCH\_848.8MHz\_GSM\_NTNV



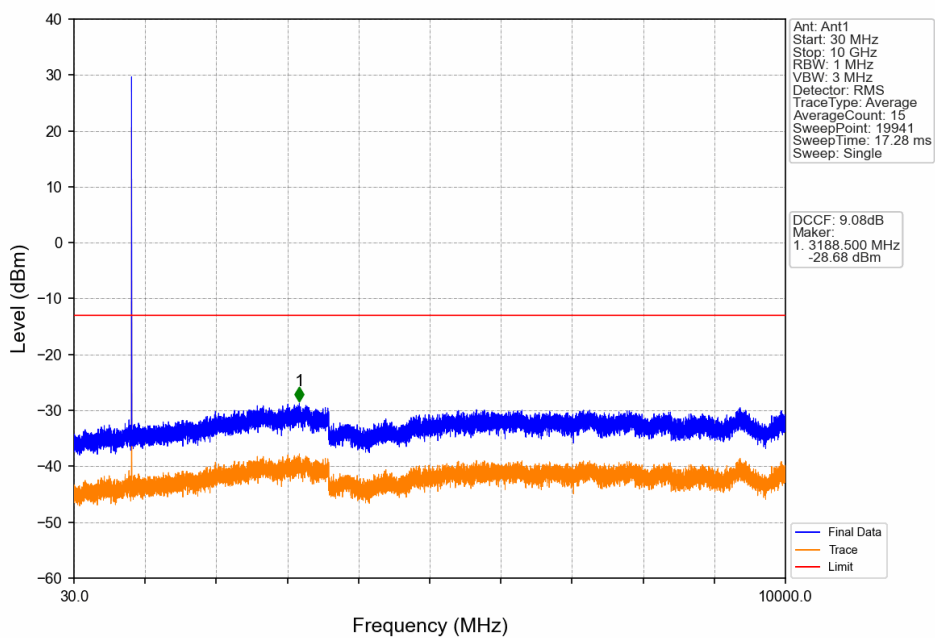
GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



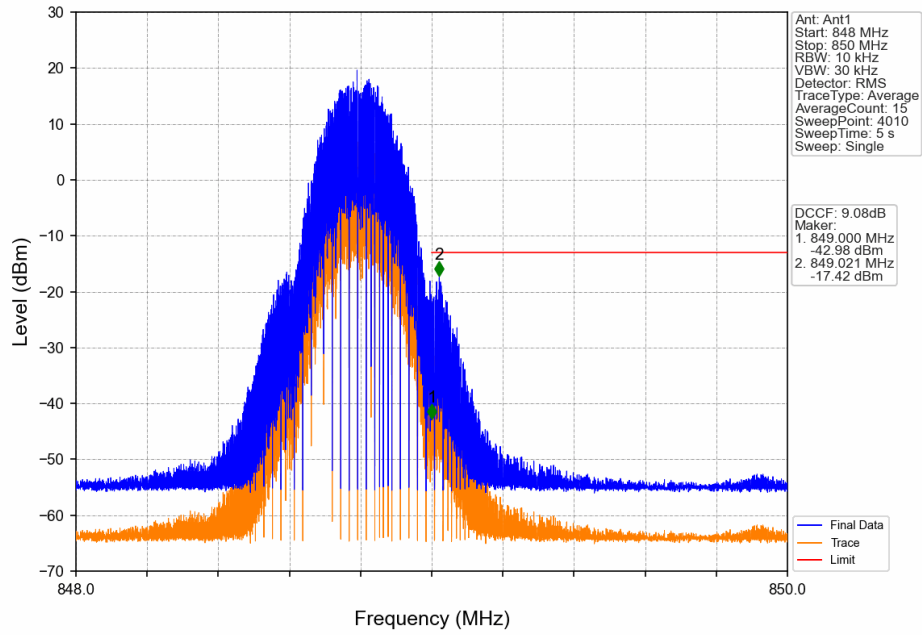
GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



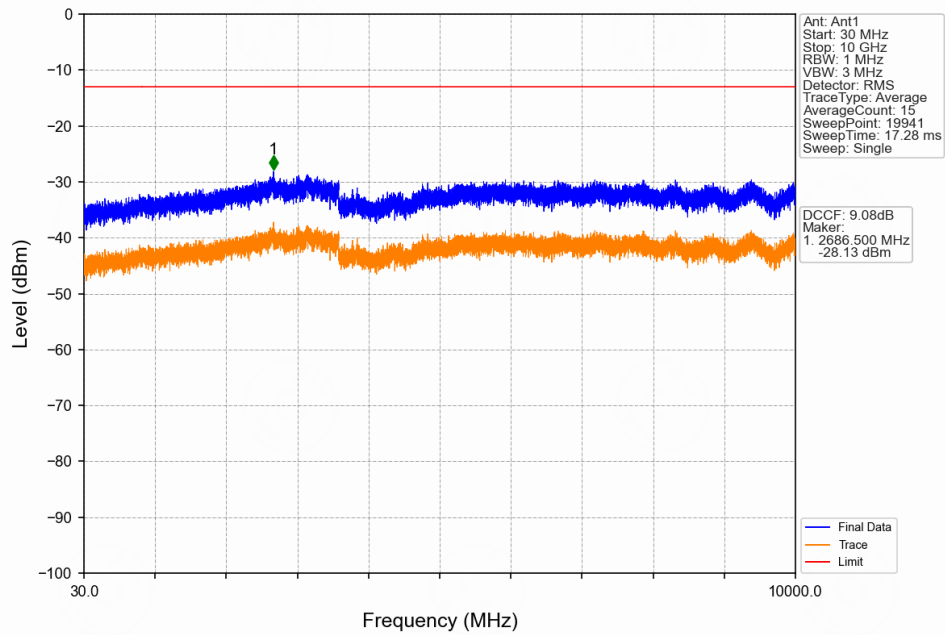
GSM850\_GPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV



GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV



GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV



## 7. Form731

### 7.1 Form731\_Power

#### 7.1.1 Test Result

| Band   | BW  | Lower Freq | High Freq | MAX Power (W) | Value  | Hz/ppm | Emission Designator | Rule Parts | MAX Power (dBm) |
|--------|-----|------------|-----------|---------------|--------|--------|---------------------|------------|-----------------|
| GSM850 | 0.2 | 824.2      | 848.8     | 2.0184        | 0.0253 | ppm    | 251KGXW             | 22H        | 33.05           |

### 7.2 Form731\_ERP

#### 7.2.1 Test Result

| Band   | BW  | Lower Freq | High Freq | MAX Power (W) | Value  | Hz/ppm | Emission Designator | Rule Parts | MAX Power (dBm) |
|--------|-----|------------|-----------|---------------|--------|--------|---------------------|------------|-----------------|
| GSM850 | 0.2 | 824.2      | 848.8     | 1.5276        | 0.0253 | ppm    | 251KGXW             | 22H        | 31.84           |