

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

### 1.1 Test Result

#### 1.1.1 GSM850\_ERP

| Band: GSM850 |         |            |                 |                       |            |           |         |         |
|--------------|---------|------------|-----------------|-----------------------|------------|-----------|---------|---------|
| ENV          | Mode    |            | Frequency (MHz) | Conducted Power (dBm) | Gain (dBi) | ERP (dBm) |         | Verdict |
|              | Network | Subset     |                 |                       |            | Result    | Limit   |         |
| NTNV         | GSM     | GSM        | 824.2           | 32.94                 | -5.70      | 25.09     | <=38.45 | Pass    |
|              |         |            | 836.6           | 33.13                 | -5.70      | 25.28     | <=38.45 | Pass    |
|              |         |            | 848.8           | 32.80                 | -5.70      | 24.95     | <=38.45 | Pass    |
|              | GPRS    | 1 TX Slot  | 824.2           | 32.94                 | -5.70      | 25.09     | <=38.45 | Pass    |
|              |         | 2 TX Slots | 824.2           | 30.95                 | -5.70      | 23.10     | <=38.45 | Pass    |
|              |         | 3 TX Slots | 824.2           | 28.95                 | -5.70      | 21.10     | <=38.45 | Pass    |
|              |         | 4 TX Slots | 824.2           | 27.35                 | -5.70      | 19.50     | <=38.45 | Pass    |
|              |         | 1 TX Slot  | 836.6           | 33.13                 | -5.70      | 25.28     | <=38.45 | Pass    |
|              |         | 2 TX Slots | 836.6           | 31.16                 | -5.70      | 23.31     | <=38.45 | Pass    |
|              |         | 3 TX Slots | 836.6           | 29.16                 | -5.70      | 21.31     | <=38.45 | Pass    |
|              |         | 4 TX Slots | 836.6           | 27.55                 | -5.70      | 19.70     | <=38.45 | Pass    |
|              |         | 1 TX Slot  | 848.8           | 32.80                 | -5.70      | 24.95     | <=38.45 | Pass    |
|              |         | 2 TX Slots | 848.8           | 30.83                 | -5.70      | 22.98     | <=38.45 | Pass    |
|              |         | 3 TX Slots | 848.8           | 28.85                 | -5.70      | 21.00     | <=38.45 | Pass    |
|              |         | 4 TX Slots | 848.8           | 27.25                 | -5.70      | 19.40     | <=38.45 | Pass    |
|              | EGPRS   | 1 TX Slot  | 824.2           | 27.18                 | -5.70      | 19.33     | <=38.45 | Pass    |
|              |         | 2 TX Slots | 824.2           | 24.09                 | -5.70      | 16.24     | <=38.45 | Pass    |
|              |         | 3 TX Slots | 824.2           | 23.09                 | -5.70      | 15.24     | <=38.45 | Pass    |
|              |         | 4 TX Slots | 824.2           | 22.09                 | -5.70      | 14.24     | <=38.45 | Pass    |
|              |         | 1 TX Slot  | 836.6           | 27.63                 | -5.70      | 19.78     | <=38.45 | Pass    |
|              |         | 2 TX Slots | 836.6           | 24.33                 | -5.70      | 16.48     | <=38.45 | Pass    |
|              |         | 3 TX Slots | 836.6           | 23.12                 | -5.70      | 15.27     | <=38.45 | Pass    |
|              |         | 4 TX Slots | 836.6           | 22.36                 | -5.70      | 14.51     | <=38.45 | Pass    |
|              |         | 1 TX Slot  | 848.8           | 26.94                 | -5.70      | 19.09     | <=38.45 | Pass    |
|              |         | 2 TX Slots | 848.8           | 24.80                 | -5.70      | 16.95     | <=38.45 | Pass    |
|              |         | 3 TX Slots | 848.8           | 23.17                 | -5.70      | 15.32     | <=38.45 | Pass    |
|              |         | 4 TX Slots | 848.8           | 21.91                 | -5.70      | 14.06     | <=38.45 | Pass    |

Note1: ERP=Conducted Power+Antenna Gain-2.15

## 2. Frequency Stability

### 2.1 Test Result

#### 2.1.1 GSM850

| Band: GSM850 |                 |            |         |                  |                       |             |         |
|--------------|-----------------|------------|---------|------------------|-----------------------|-------------|---------|
| Network      | Frequency (MHz) | Temp. (°C) | Voltage | Freq. Error (Hz) | Freq. vs. Rated (ppm) |             | Verdict |
|              |                 |            |         |                  | Result                | Limit       |         |
| GSM          | 824.2           | 20         | LV      | -5.511           | -0.0067               | -2.5 to 2.5 | Pass    |
|              |                 |            | NV      | -7.523           | -0.0091               | -2.5 to 2.5 | Pass    |
|              |                 |            | HV      | -5.434           | -0.0066               | -2.5 to 2.5 | Pass    |
|              |                 | -30        | NV      | -7.468           | -0.0091               | -2.5 to 2.5 | Pass    |
|              |                 | -20        | NV      | -8.012           | -0.0097               | -2.5 to 2.5 | Pass    |
|              |                 | -10        | NV      | -2.231           | -0.0027               | -2.5 to 2.5 | Pass    |
|              |                 | 0          | NV      | -6.793           | -0.0082               | -2.5 to 2.5 | Pass    |
|              |                 | 10         | NV      | -6.159           | -0.0075               | -2.5 to 2.5 | Pass    |
|              |                 | 30         | NV      | -1.498           | -0.0018               | -2.5 to 2.5 | Pass    |
|              |                 | 40         | NV      | -2.961           | -0.0036               | -2.5 to 2.5 | Pass    |
|              |                 | 50         | NV      | -5.777           | -0.0070               | -2.5 to 2.5 | Pass    |
|              | 836.6           | 20         | LV      | -6.143           | -0.0073               | -2.5 to 2.5 | Pass    |
|              |                 |            | NV      | -6.988           | -0.0084               | -2.5 to 2.5 | Pass    |

|       |       |     |    |         |         |             |      |
|-------|-------|-----|----|---------|---------|-------------|------|
|       |       |     | HV | -4.427  | -0.0053 | -2.5 to 2.5 | Pass |
|       |       | -30 | NV | -2.677  | -0.0032 | -2.5 to 2.5 | Pass |
|       |       | -20 | NV | -9.585  | -0.0115 | -2.5 to 2.5 | Pass |
|       |       | -10 | NV | -8.609  | -0.0103 | -2.5 to 2.5 | Pass |
|       |       | 0   | NV | -5.026  | -0.0060 | -2.5 to 2.5 | Pass |
|       |       | 10  | NV | -4.639  | -0.0055 | -2.5 to 2.5 | Pass |
|       |       | 30  | NV | -7.904  | -0.0094 | -2.5 to 2.5 | Pass |
|       |       | 40  | NV | -4.809  | -0.0057 | -2.5 to 2.5 | Pass |
|       |       | 50  | NV | -6.656  | -0.0080 | -2.5 to 2.5 | Pass |
|       | 848.8 | 20  | LV | -6.854  | -0.0081 | -2.5 to 2.5 | Pass |
|       |       |     | NV | -6.898  | -0.0081 | -2.5 to 2.5 | Pass |
|       |       |     | HV | -8.126  | -0.0096 | -2.5 to 2.5 | Pass |
|       |       | -30 | NV | -9.039  | -0.0106 | -2.5 to 2.5 | Pass |
|       |       | -20 | NV | -10.381 | -0.0122 | -2.5 to 2.5 | Pass |
|       |       | -10 | NV | -8.629  | -0.0102 | -2.5 to 2.5 | Pass |
|       |       | 0   | NV | -10.150 | -0.0120 | -2.5 to 2.5 | Pass |
|       |       | 10  | NV | -4.948  | -0.0058 | -2.5 to 2.5 | Pass |
|       |       | 30  | NV | -4.326  | -0.0051 | -2.5 to 2.5 | Pass |
|       |       | 40  | NV | -6.844  | -0.0081 | -2.5 to 2.5 | Pass |
|       |       | 50  | NV | -6.507  | -0.0077 | -2.5 to 2.5 | Pass |
| GPRS  | 824.2 | 20  | LV | -4.179  | -0.0051 | -2.5 to 2.5 | Pass |
|       |       |     | NV | -5.791  | -0.0070 | -2.5 to 2.5 | Pass |
|       |       |     | HV | -5.557  | -0.0067 | -2.5 to 2.5 | Pass |
|       |       | -30 | NV | -9.189  | -0.0111 | -2.5 to 2.5 | Pass |
|       |       | -20 | NV | -8.099  | -0.0098 | -2.5 to 2.5 | Pass |
|       |       | -10 | NV | -4.056  | -0.0049 | -2.5 to 2.5 | Pass |
|       |       | 0   | NV | -5.237  | -0.0064 | -2.5 to 2.5 | Pass |
|       |       | 10  | NV | -3.003  | -0.0036 | -2.5 to 2.5 | Pass |
|       |       | 30  | NV | -3.923  | -0.0048 | -2.5 to 2.5 | Pass |
|       |       | 40  | NV | -4.979  | -0.0060 | -2.5 to 2.5 | Pass |
|       |       | 50  | NV | -6.588  | -0.0080 | -2.5 to 2.5 | Pass |
|       | 836.6 | 20  | LV | -7.472  | -0.0089 | -2.5 to 2.5 | Pass |
|       |       |     | NV | -11.870 | -0.0142 | -2.5 to 2.5 | Pass |
|       |       |     | HV | -10.057 | -0.0120 | -2.5 to 2.5 | Pass |
|       |       | -30 | NV | -7.342  | -0.0088 | -2.5 to 2.5 | Pass |
|       |       | -20 | NV | -8.324  | -0.0099 | -2.5 to 2.5 | Pass |
|       |       | -10 | NV | -6.410  | -0.0077 | -2.5 to 2.5 | Pass |
|       |       | 0   | NV | -4.200  | -0.0050 | -2.5 to 2.5 | Pass |
|       |       | 10  | NV | -6.264  | -0.0075 | -2.5 to 2.5 | Pass |
|       |       | 30  | NV | -4.506  | -0.0054 | -2.5 to 2.5 | Pass |
|       |       | 40  | NV | -11.326 | -0.0135 | -2.5 to 2.5 | Pass |
|       |       | 50  | NV | -3.137  | -0.0037 | -2.5 to 2.5 | Pass |
|       | 848.8 | 20  | LV | -6.266  | -0.0074 | -2.5 to 2.5 | Pass |
|       |       |     | NV | -6.019  | -0.0071 | -2.5 to 2.5 | Pass |
|       |       |     | HV | -5.777  | -0.0068 | -2.5 to 2.5 | Pass |
|       |       | -30 | NV | -9.399  | -0.0111 | -2.5 to 2.5 | Pass |
|       |       | -20 | NV | -7.557  | -0.0089 | -2.5 to 2.5 | Pass |
|       |       | -10 | NV | -10.139 | -0.0119 | -2.5 to 2.5 | Pass |
|       |       | 0   | NV | -6.173  | -0.0073 | -2.5 to 2.5 | Pass |
|       |       | 10  | NV | -10.597 | -0.0125 | -2.5 to 2.5 | Pass |
|       |       | 30  | NV | -6.935  | -0.0082 | -2.5 to 2.5 | Pass |
|       |       | 40  | NV | -6.113  | -0.0072 | -2.5 to 2.5 | Pass |
| EGPRS | 824.2 | 20  | NV | -8.735  | -0.0103 | -2.5 to 2.5 | Pass |
|       |       |     | LV | -9.659  | -0.0117 | -2.5 to 2.5 | Pass |
|       |       |     | NV | -9.050  | -0.0110 | -2.5 to 2.5 | Pass |
|       |       | -30 | NV | -9.365  | -0.0114 | -2.5 to 2.5 | Pass |
|       |       | -20 | NV | -11.431 | -0.0139 | -2.5 to 2.5 | Pass |
|       |       | -10 | NV | -3.983  | -0.0048 | -2.5 to 2.5 | Pass |
|       |       | 0   | NV | -5.478  | -0.0066 | -2.5 to 2.5 | Pass |
|       |       | 10  | NV | -4.999  | -0.0061 | -2.5 to 2.5 | Pass |
|       |       | 30  | NV | -5.753  | -0.0070 | -2.5 to 2.5 | Pass |
|       |       | 40  | NV | -6.866  | -0.0083 | -2.5 to 2.5 | Pass |
|       |       | 50  | NV | -3.164  | -0.0038 | -2.5 to 2.5 | Pass |

|  |       |     |    |         |         |             |      |
|--|-------|-----|----|---------|---------|-------------|------|
|  | 836.6 | 20  | LV | -12.321 | -0.0147 | -2.5 to 2.5 | Pass |
|  |       |     | NV | -12.664 | -0.0151 | -2.5 to 2.5 | Pass |
|  |       |     | HV | -16.473 | -0.0197 | -2.5 to 2.5 | Pass |
|  |       | -30 | NV | -10.863 | -0.0130 | -2.5 to 2.5 | Pass |
|  |       | -20 | NV | -10.296 | -0.0123 | -2.5 to 2.5 | Pass |
|  |       | -10 | NV | -8.217  | -0.0098 | -2.5 to 2.5 | Pass |
|  |       | 0   | NV | -8.232  | -0.0098 | -2.5 to 2.5 | Pass |
|  |       | 10  | NV | -9.694  | -0.0116 | -2.5 to 2.5 | Pass |
|  |       | 30  | NV | -8.060  | -0.0096 | -2.5 to 2.5 | Pass |
|  |       | 40  | NV | -7.486  | -0.0089 | -2.5 to 2.5 | Pass |
|  |       | 50  | NV | -8.534  | -0.0102 | -2.5 to 2.5 | Pass |
|  | 848.8 | 20  | LV | -12.111 | -0.0143 | -2.5 to 2.5 | Pass |
|  |       |     | NV | -9.580  | -0.0113 | -2.5 to 2.5 | Pass |
|  |       |     | HV | -11.244 | -0.0132 | -2.5 to 2.5 | Pass |
|  |       | -30 | NV | -8.357  | -0.0098 | -2.5 to 2.5 | Pass |
|  |       | -20 | NV | -11.421 | -0.0135 | -2.5 to 2.5 | Pass |
|  |       | -10 | NV | -13.113 | -0.0154 | -2.5 to 2.5 | Pass |
|  |       | 0   | NV | -9.170  | -0.0108 | -2.5 to 2.5 | Pass |
|  |       | 10  | NV | -12.020 | -0.0142 | -2.5 to 2.5 | Pass |
|  |       | 30  | NV | -9.194  | -0.0108 | -2.5 to 2.5 | Pass |
|  |       | 40  | NV | -12.108 | -0.0143 | -2.5 to 2.5 | Pass |
|  |       | 50  | NV | -13.797 | -0.0163 | -2.5 to 2.5 | Pass |

### 3. 99% & 26dB Bandwidth

#### 3.1 Test Result

##### 3.1.1 GSM850\_OBW

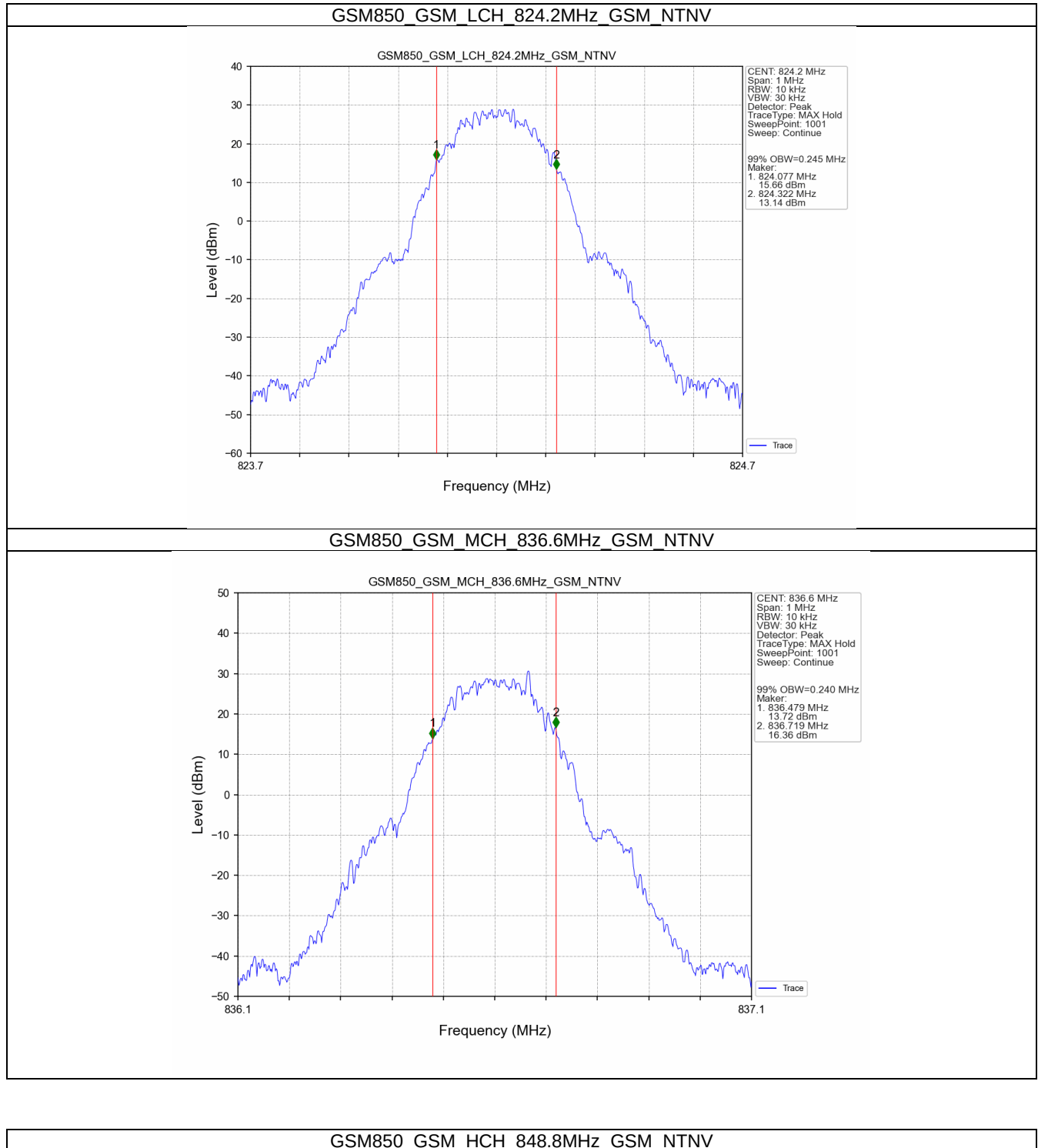
| Band: GSM850 |         |           |                 |                              |       |         |
|--------------|---------|-----------|-----------------|------------------------------|-------|---------|
| ENV          | Mode    |           | Frequency (MHz) | 99% Occupied Bandwidth (MHz) |       | Verdict |
|              | Network | Subset    |                 | Result                       | Limit |         |
| NTNV         | GSM     | GSM       | 824.2           | 0.245                        | /     | Pass    |
|              |         |           | 836.6           | 0.240                        | /     | Pass    |
|              |         |           | 848.8           | 0.247                        | /     | Pass    |
|              | GPRS    | 1 TX Slot | 824.2           | 0.247                        | /     | Pass    |
|              |         |           | 836.6           | 0.248                        | /     | Pass    |
|              |         |           | 848.8           | 0.245                        | /     | Pass    |
|              | EGPRS   | 1 TX Slot | 824.2           | 0.240                        | /     | Pass    |
|              |         |           | 836.6           | 0.242                        | /     | Pass    |
|              |         |           | 848.8           | 0.238                        | /     | Pass    |

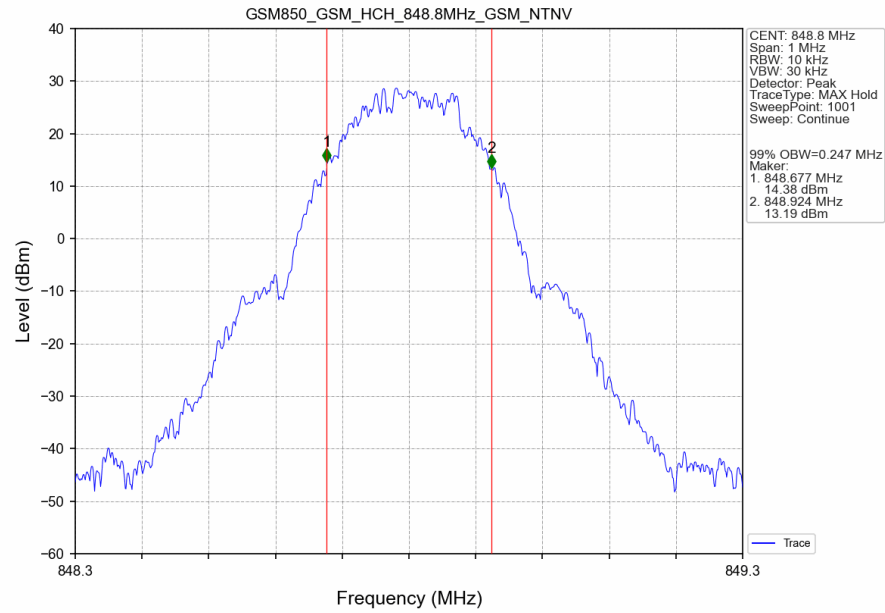
##### 3.1.2 GSM850\_XDB

| Band: GSM850 |         |           |                 |                      |       |         |
|--------------|---------|-----------|-----------------|----------------------|-------|---------|
| ENV          | Mode    |           | Frequency (MHz) | 26dB Bandwidth (MHz) |       | Verdict |
|              | Network | Subset    |                 | Result               | Limit |         |
| NTNV         | GSM     | GSM       | 824.2           | 0.319                | /     | Pass    |
|              |         |           | 836.6           | 0.313                | /     | Pass    |
|              |         |           | 848.8           | 0.318                | /     | Pass    |
|              | GPRS    | 1 TX Slot | 824.2           | 0.319                | /     | Pass    |
|              |         |           | 836.6           | 0.317                | /     | Pass    |
|              |         |           | 848.8           | 0.316                | /     | Pass    |
|              | EGPRS   | 1 TX Slot | 824.2           | 0.308                | /     | Pass    |
|              |         |           | 836.6           | 0.307                | /     | Pass    |
|              |         |           | 848.8           | 0.282                | /     | Pass    |

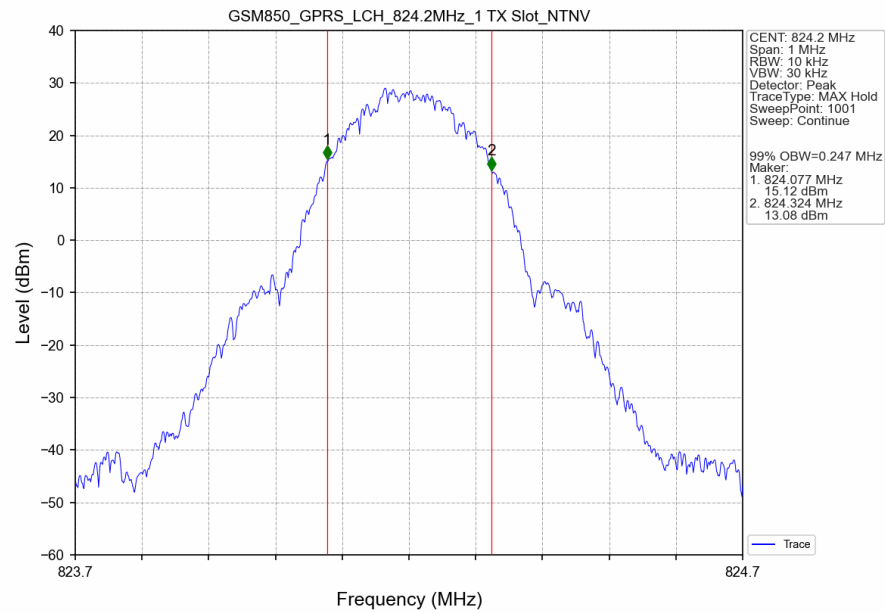
## 3.2 Test Graph

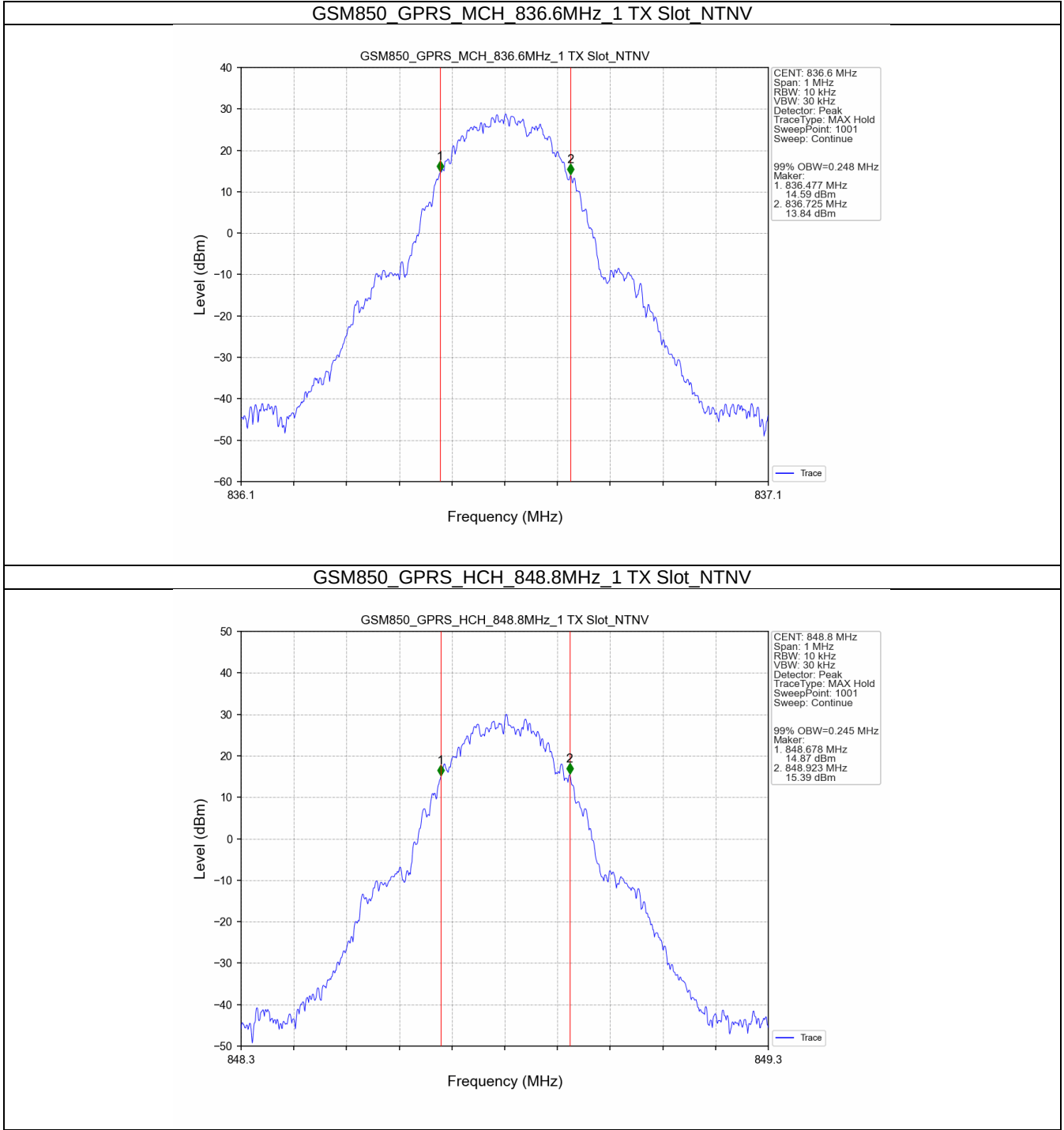
## 3.2.1 GSM850\_OBW

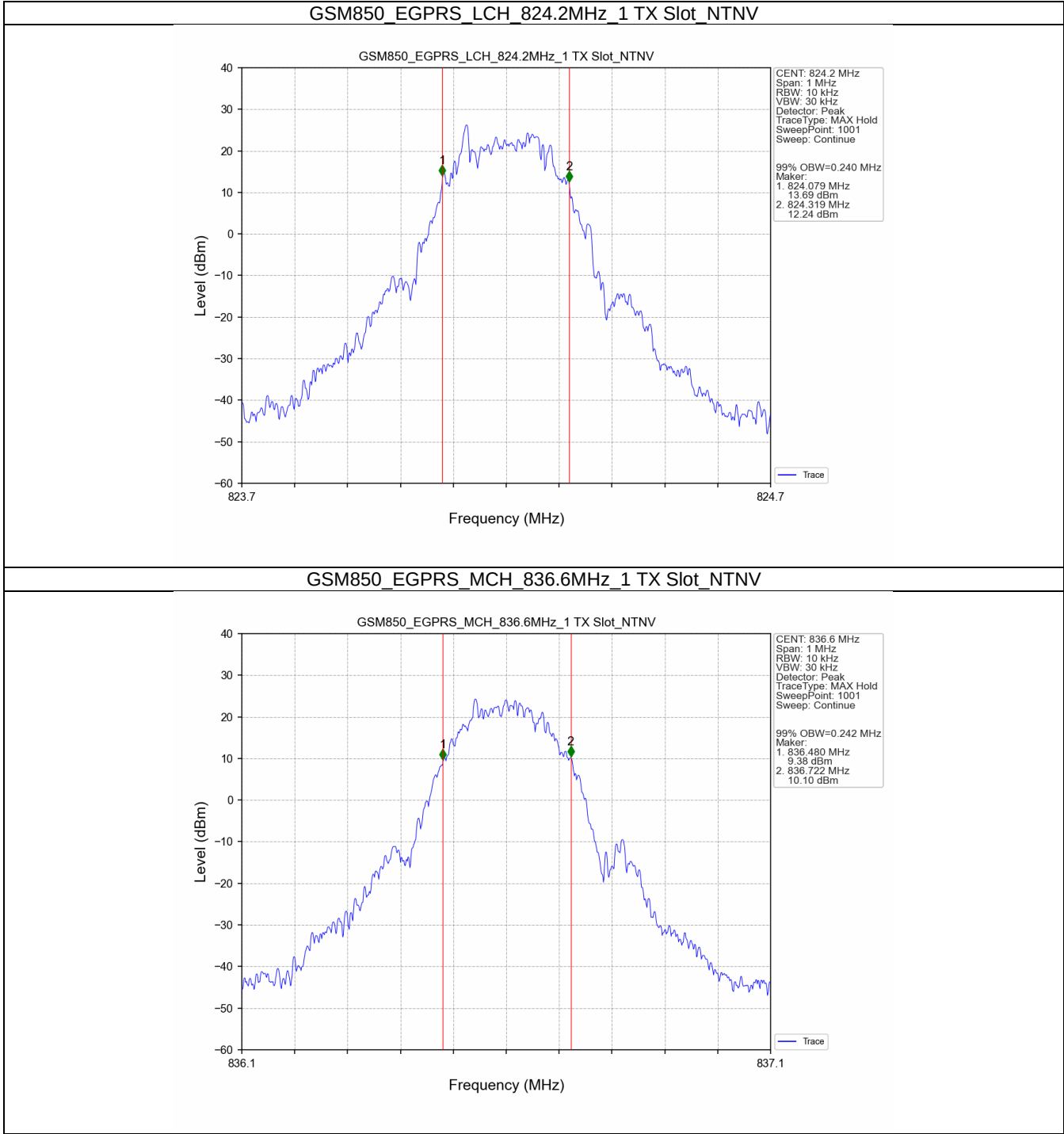


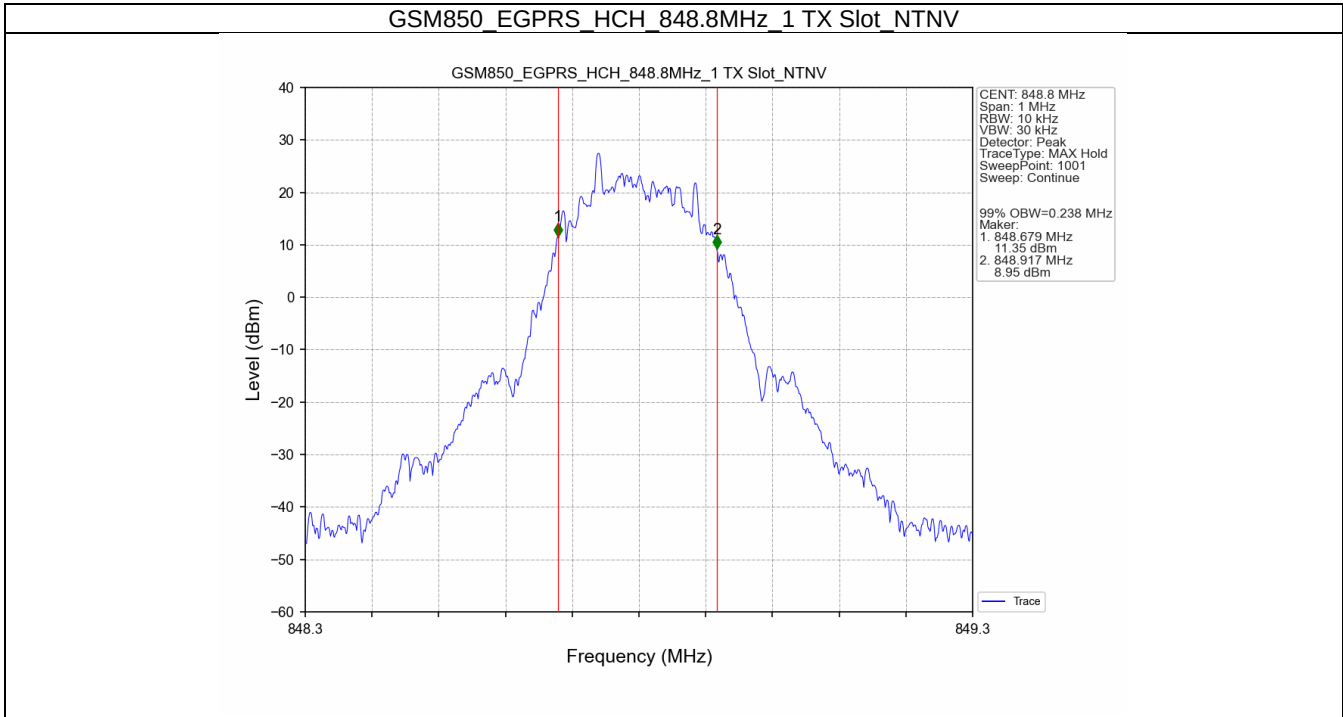


GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV

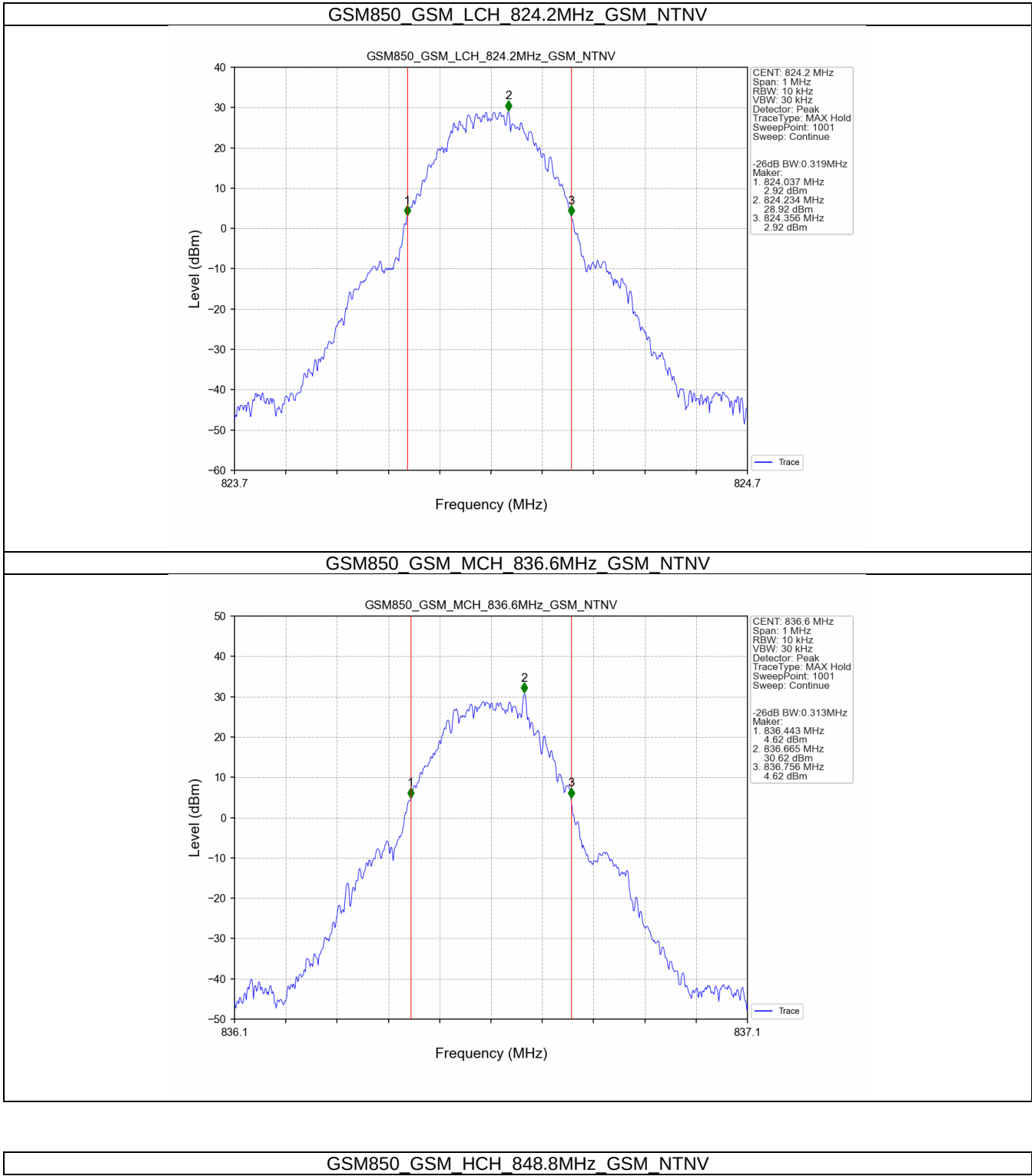


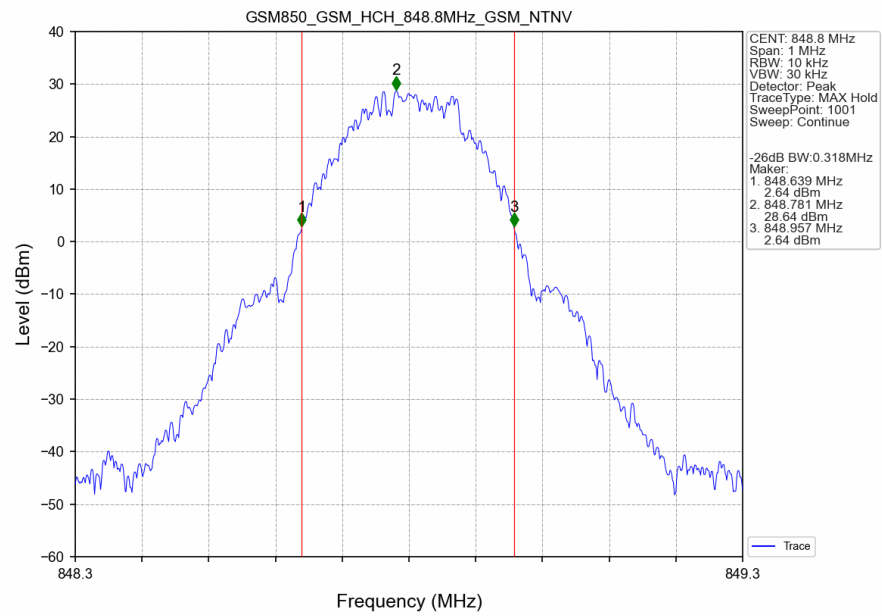




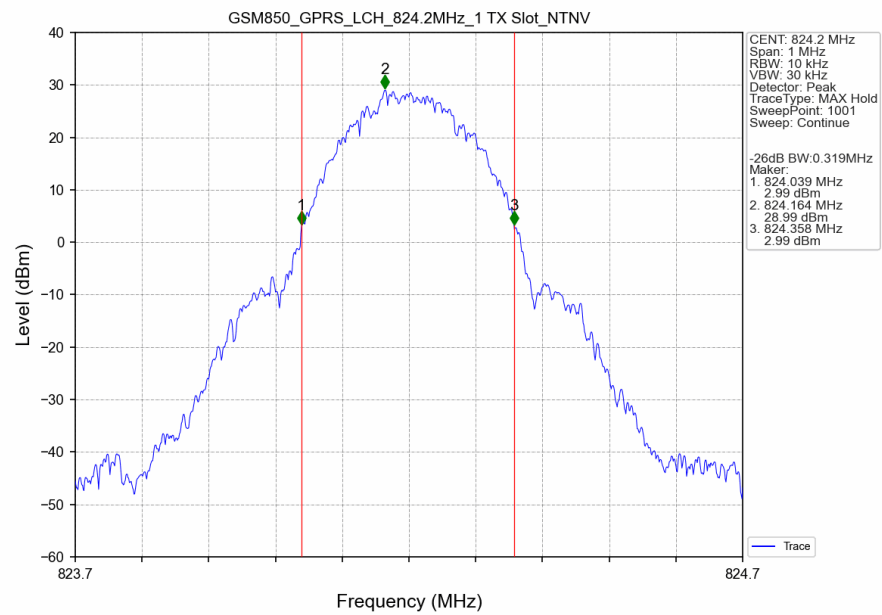


3.2.2 GSM850\_XDB

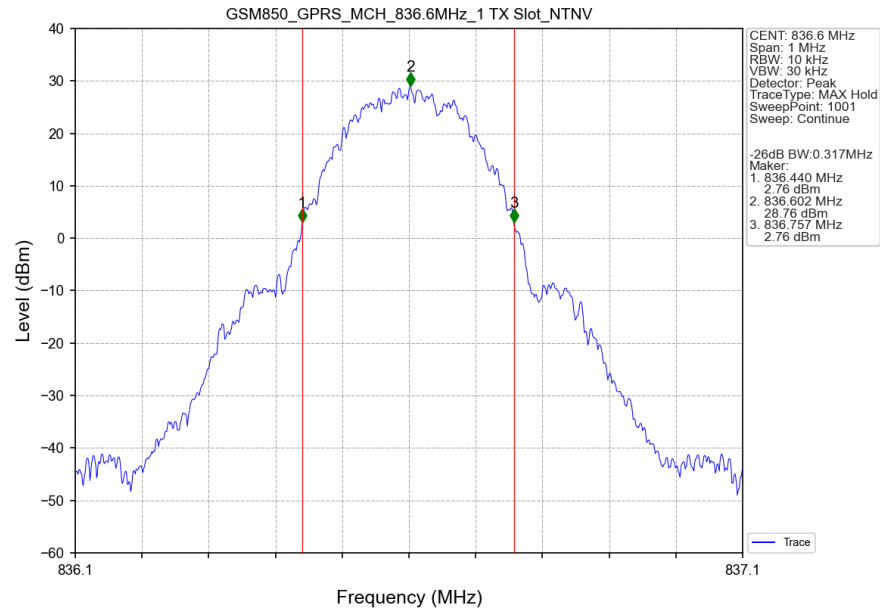




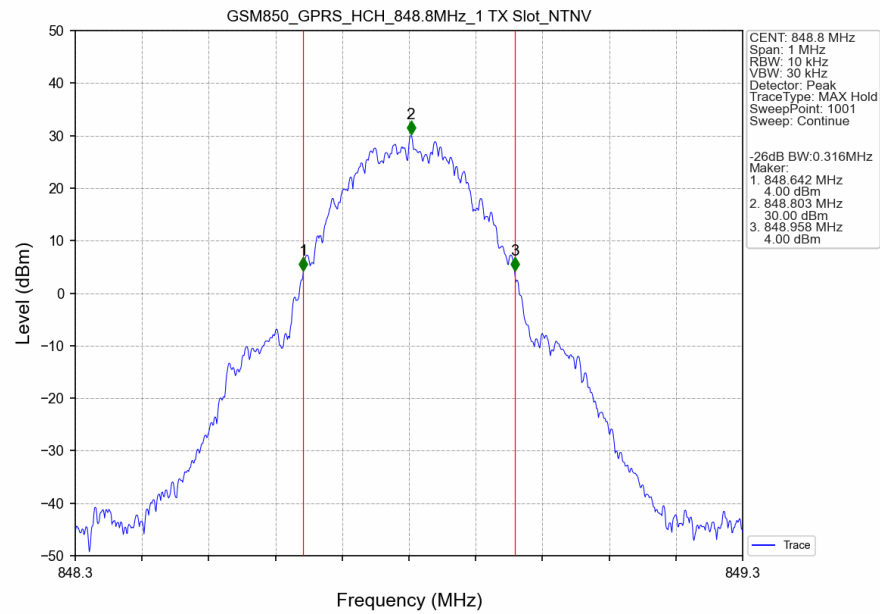
GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



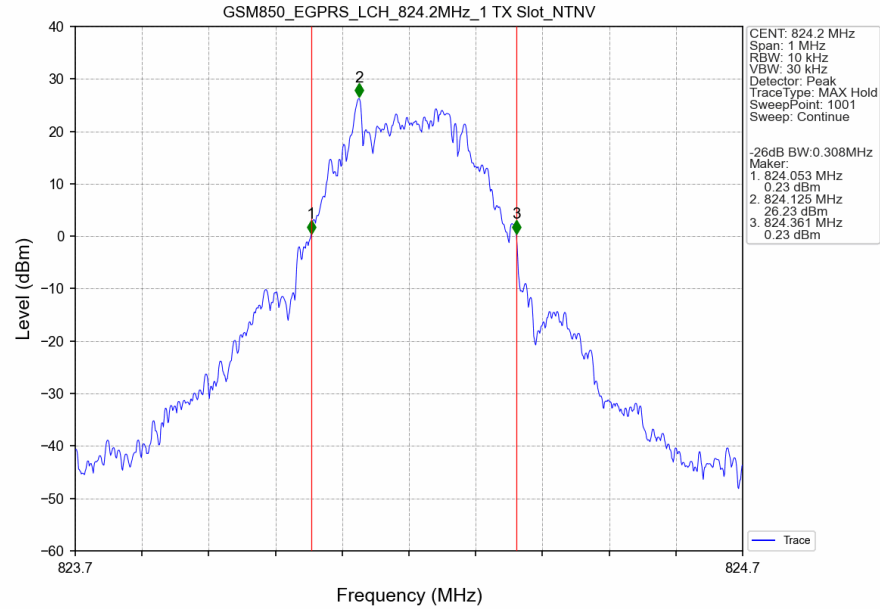
## GSM850\_GPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV



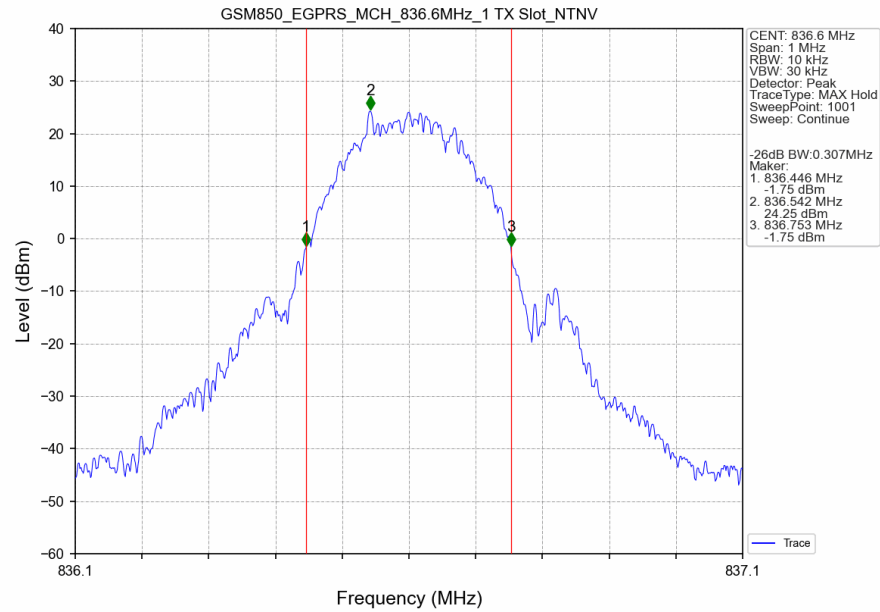
## GSM850\_GPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV

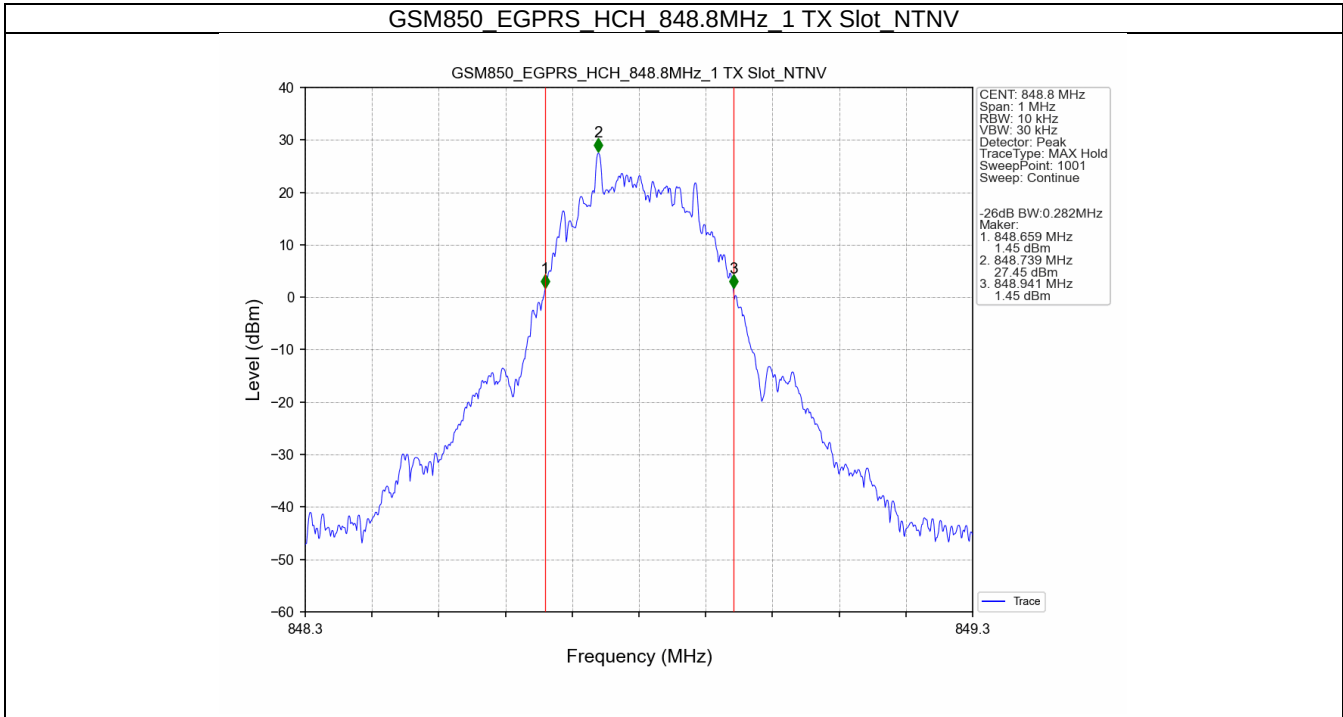


## GSM850\_EGPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



## GSM850\_EGPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV





## 4. Peak-Average Ratio

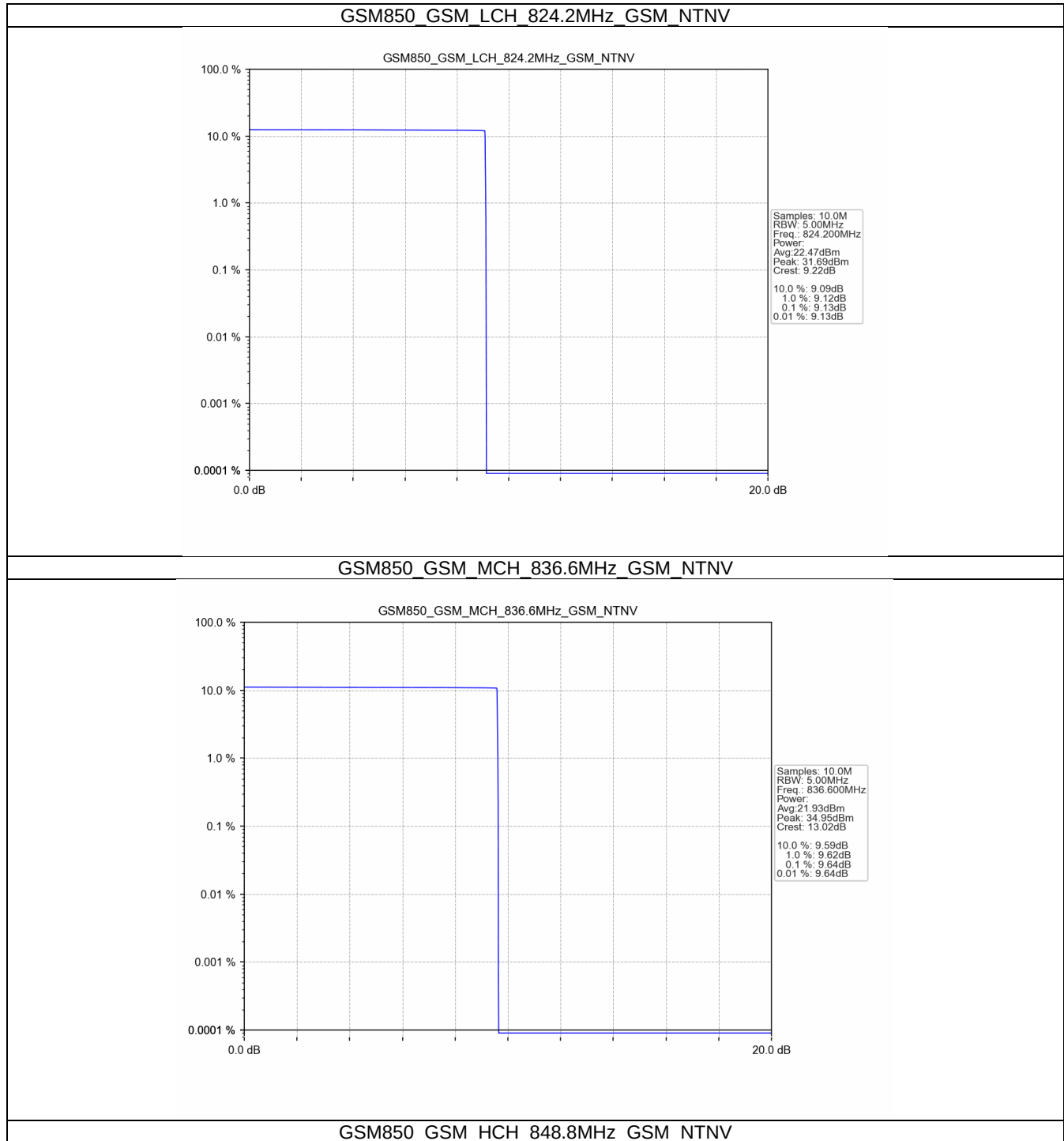
### 4.1 Test Result

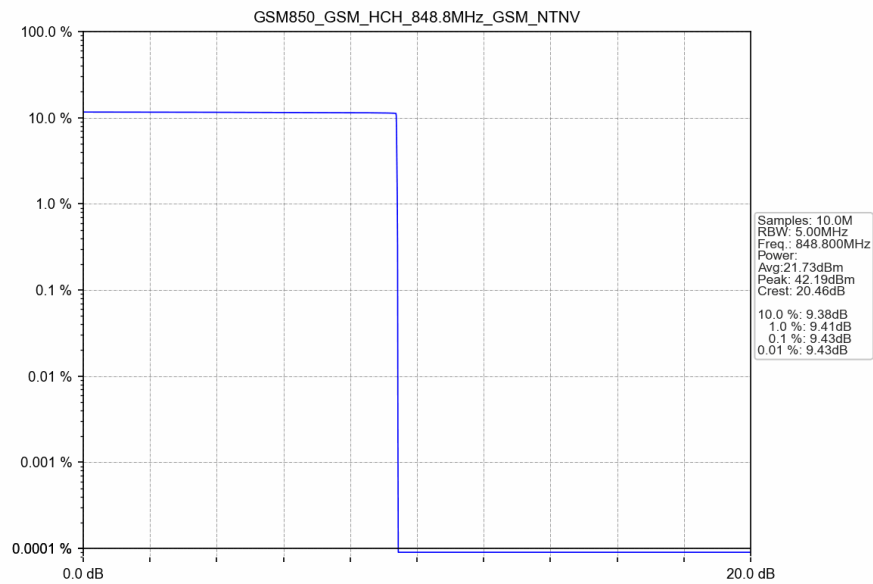
#### 4.1.1 GSM850

| Band: GSM850 |         |            |                 |                         |       |         |
|--------------|---------|------------|-----------------|-------------------------|-------|---------|
| ENV          | Mode    |            | Frequency (MHz) | Peak-Average Ratio (dB) |       | Verdict |
|              | Network | Subset     |                 | Result                  | Limit |         |
| NTNV         | GSM     | GSM        | 824.2           | 9.13                    | <=13  | Pass    |
|              |         |            | 836.6           | 9.64                    | <=13  | Pass    |
|              |         |            | 848.8           | 9.43                    | <=13  | Pass    |
|              | GPRS    | 4 TX Slots | 824.2           | 3.45                    | <=13  | Pass    |
|              |         |            | 836.6           | 3.54                    | <=13  | Pass    |
|              |         |            | 848.8           | 3.63                    | <=13  | Pass    |
|              | EGPRS   | 4 TX Slots | 824.2           | 8.85                    | <=13  | Pass    |
|              |         |            | 836.6           | 8.73                    | <=13  | Pass    |
|              |         |            | 848.8           | 8.99                    | <=13  | Pass    |

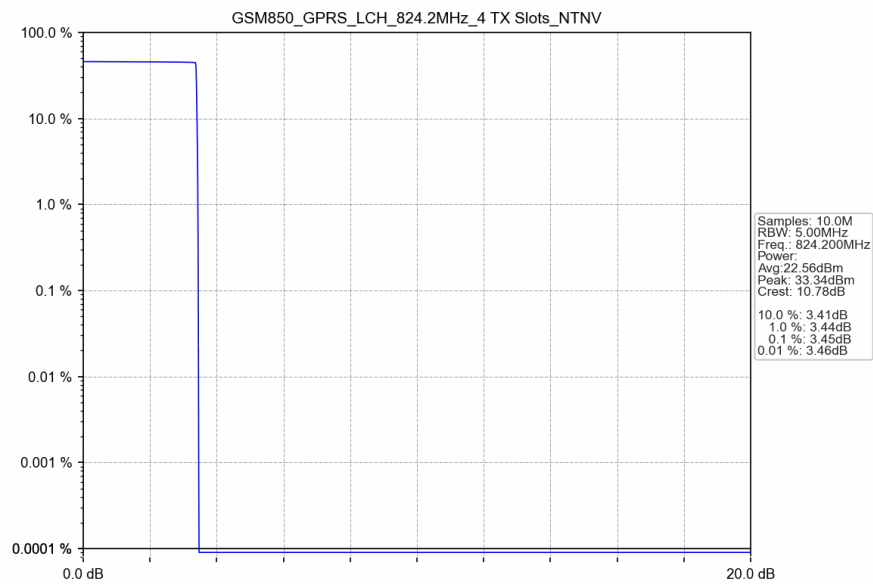
## 4.2 Test Graph

## 4.2.1 GSM850

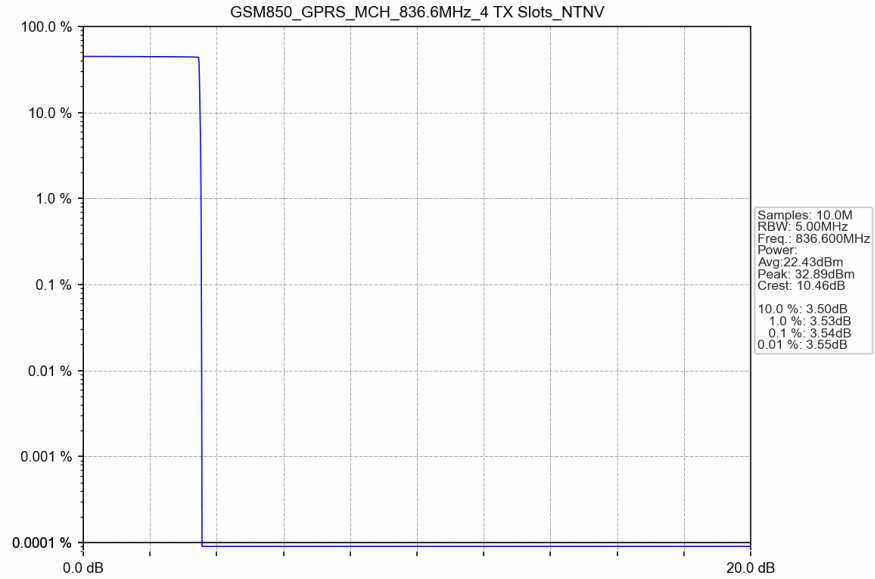




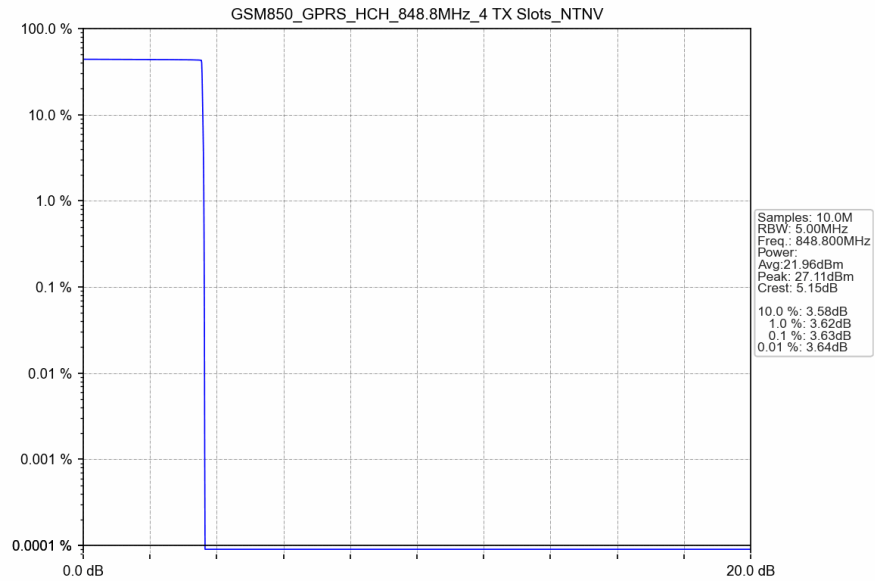
GSM850\_GPRS\_LCH\_824.2MHz\_4 TX Slots\_NTNV



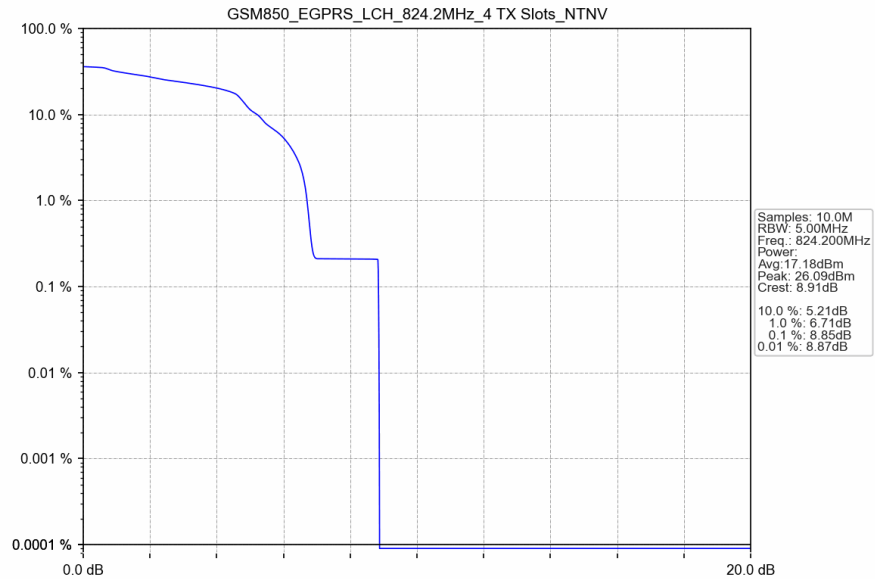
## GSM850\_GPRS\_MCH\_836.6MHz\_4 TX Slots\_NTNV



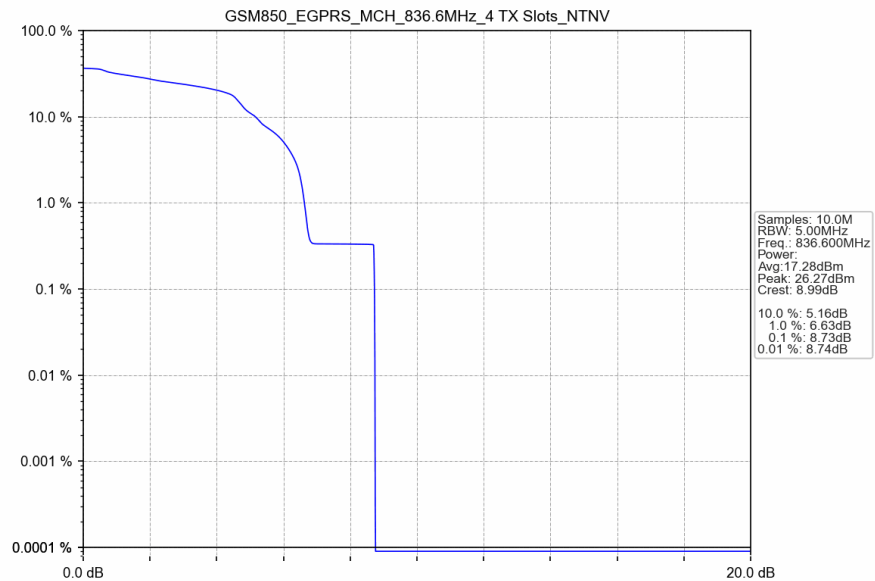
## GSM850\_GPRS\_HCH\_848.8MHz\_4 TX Slots\_NTNV

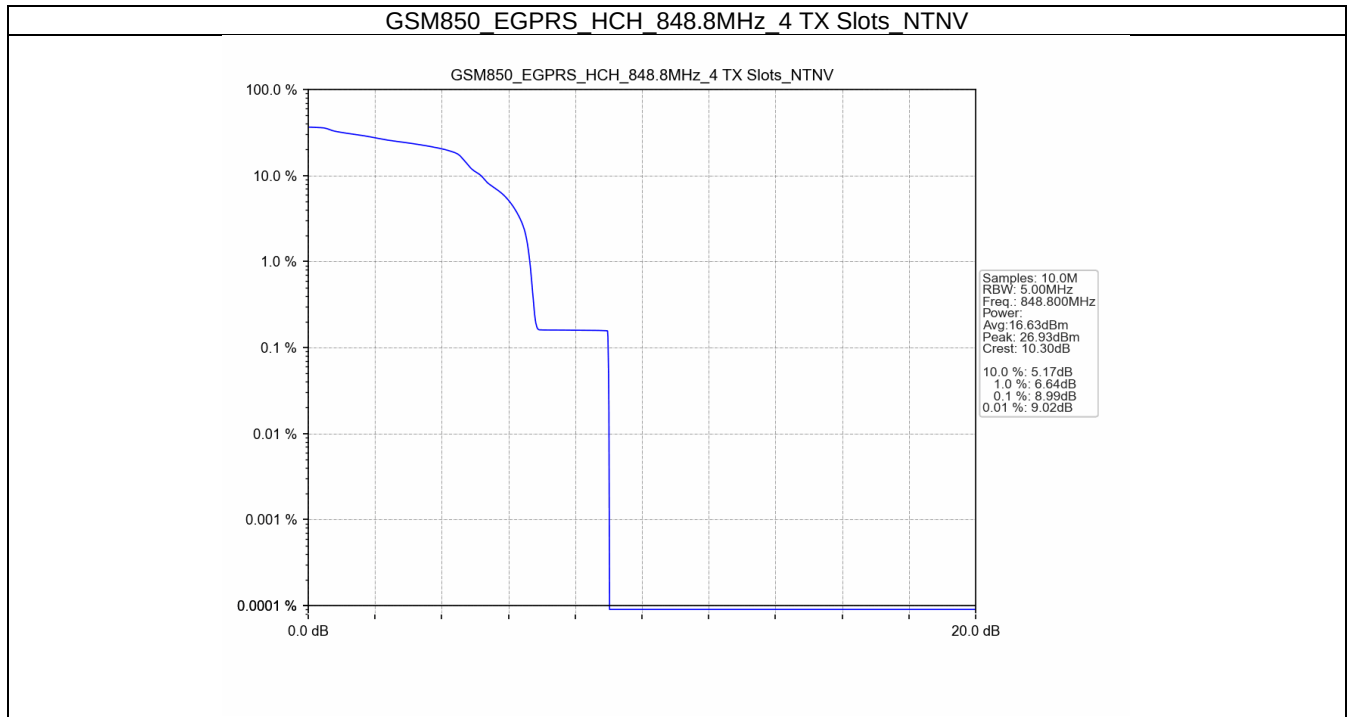


## GSM850\_EGPRS\_LCH\_824.2MHz\_4 TX Slots\_NTNV



## GSM850\_EGPRS\_MCH\_836.6MHz\_4 TX Slots\_NTNV





## 5. Spurious Emission

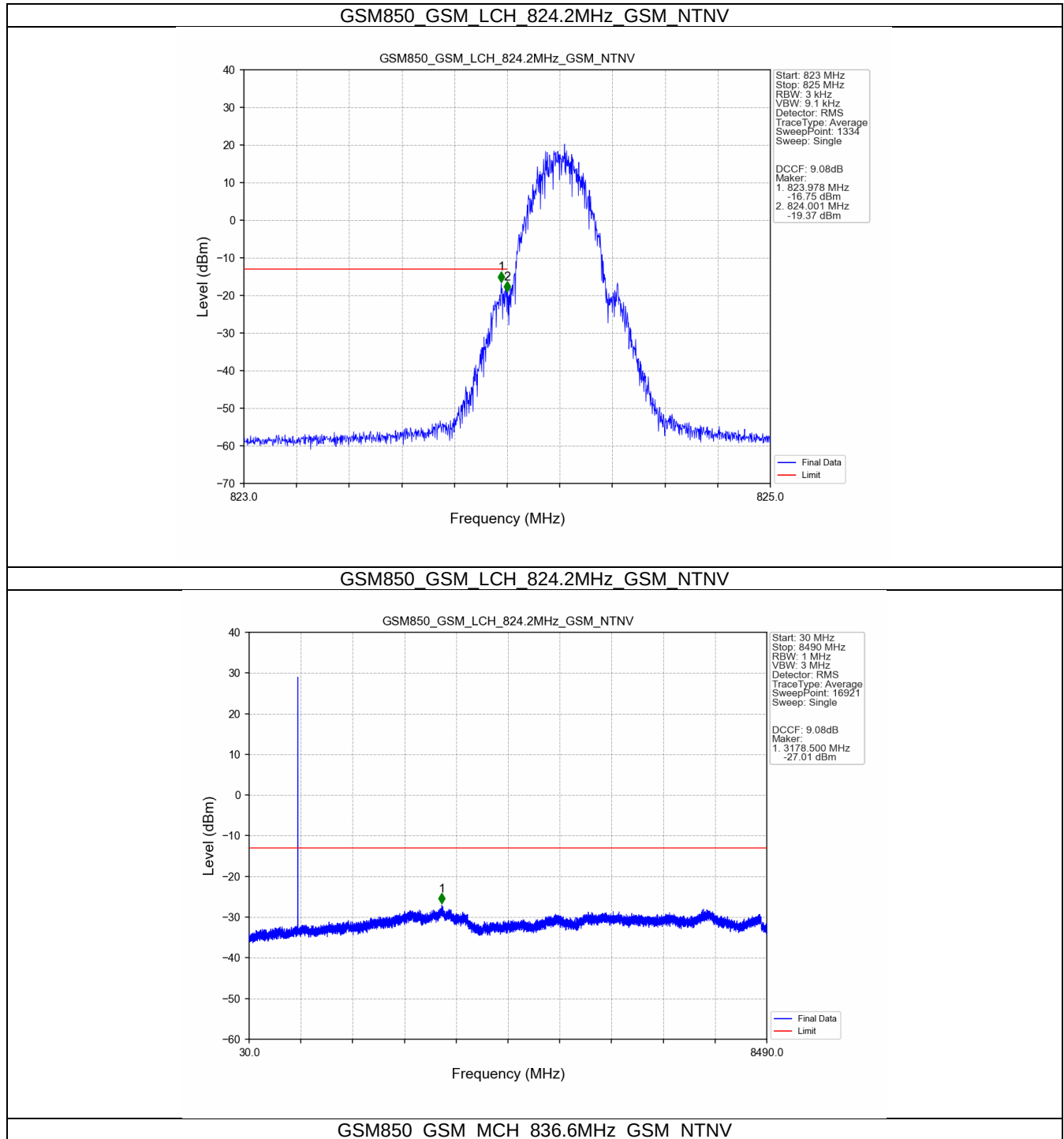
### 5.1 Test Result

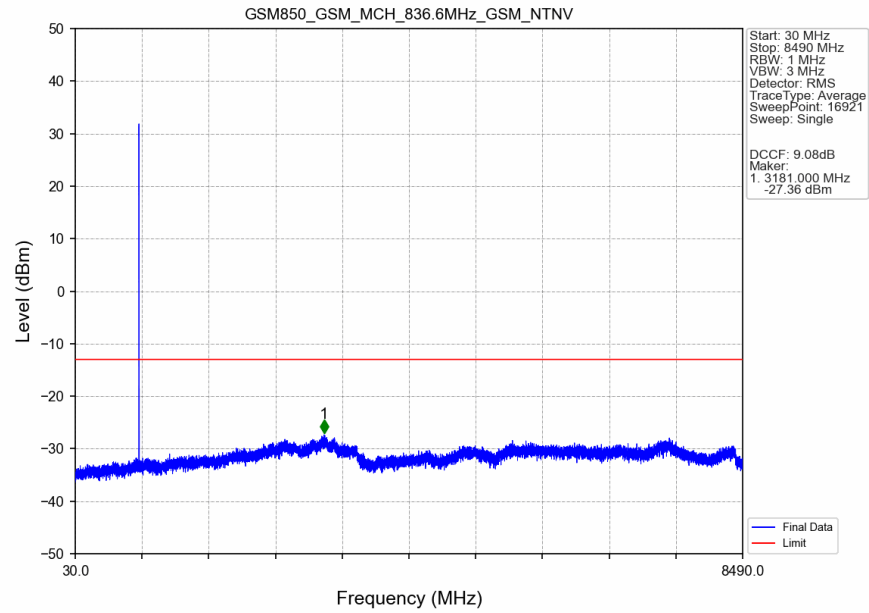
#### 5.1.1 GSM850

| 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    |
|              | EGPRS   | 1 TX Slot | 824.2           | Refer To Test Graph |       | Pass    |
|              |         |           | 836.6           | Refer To Test Graph |       | Pass    |
|              |         |           | 848.8           | Refer To Test Graph |       | Pass    |

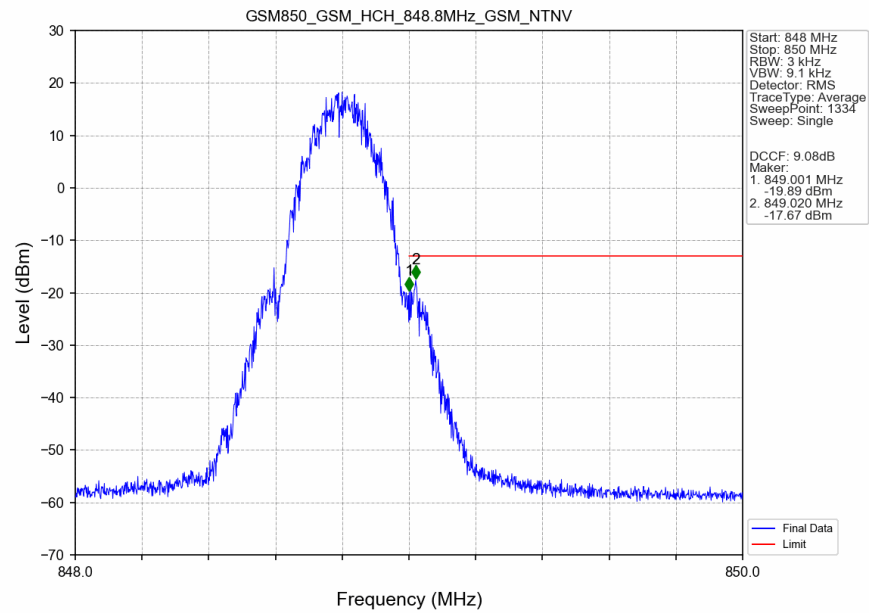
## 5.2 Test Graph

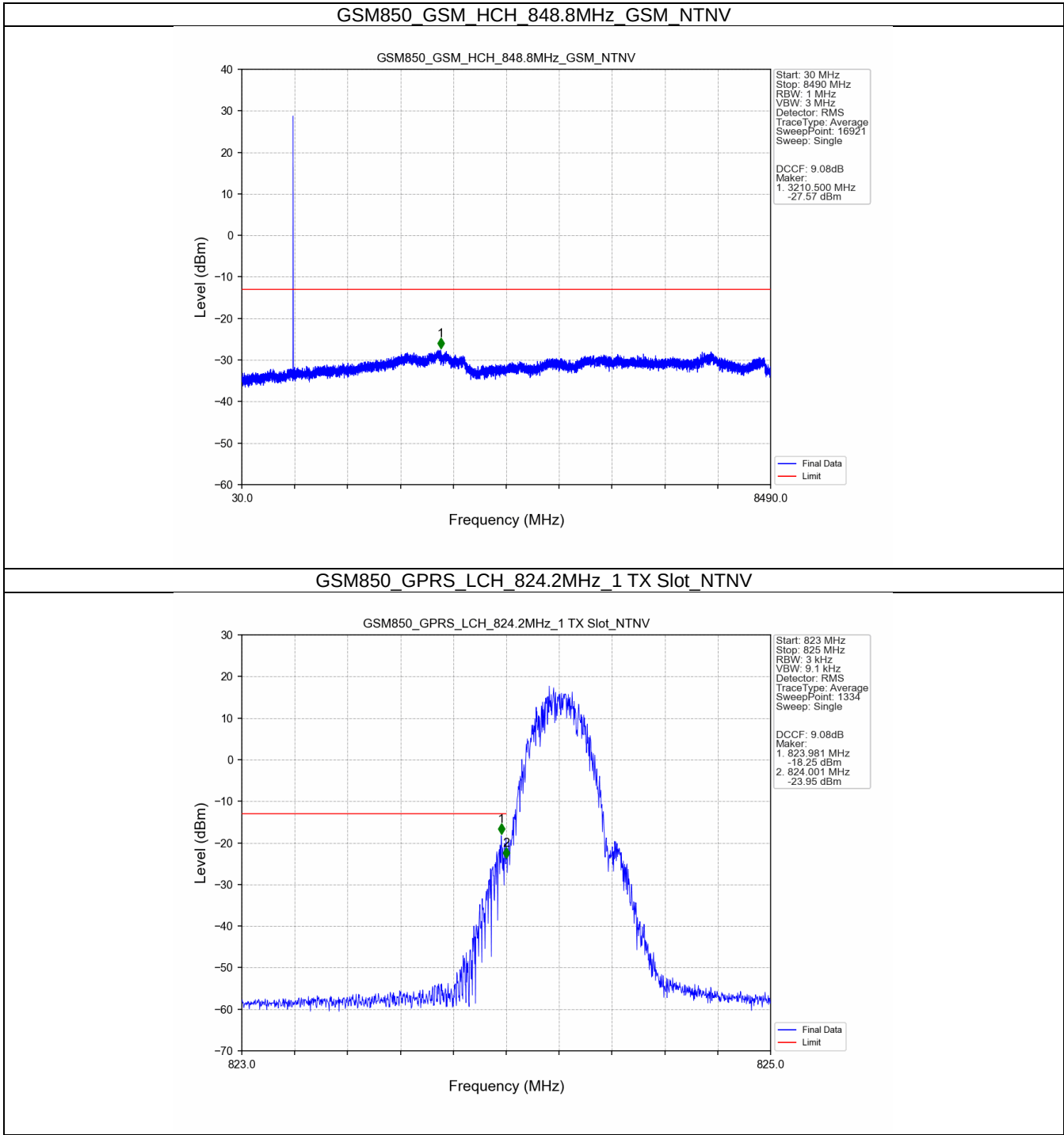
## 5.2.1 GSM850



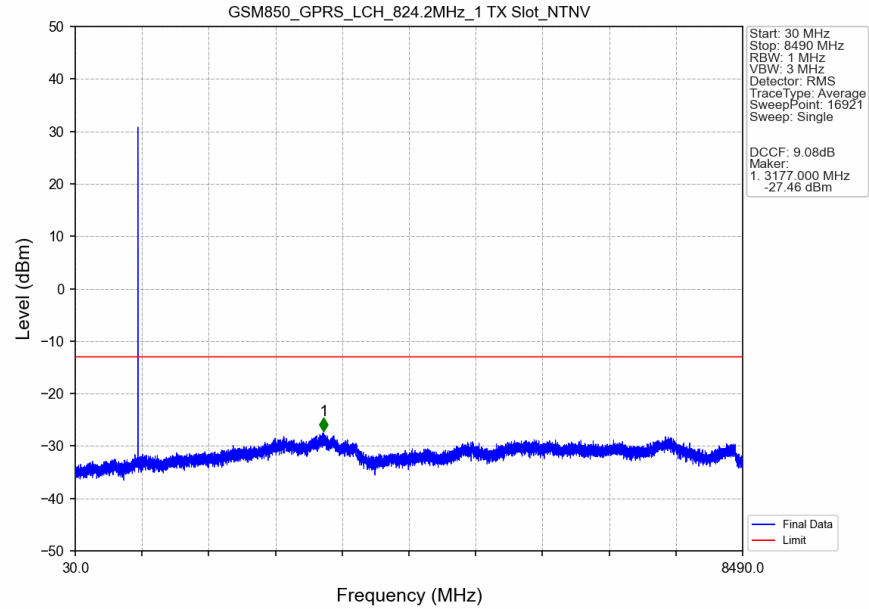


GSM850 GSM HCH 848.8MHz GSM NTN

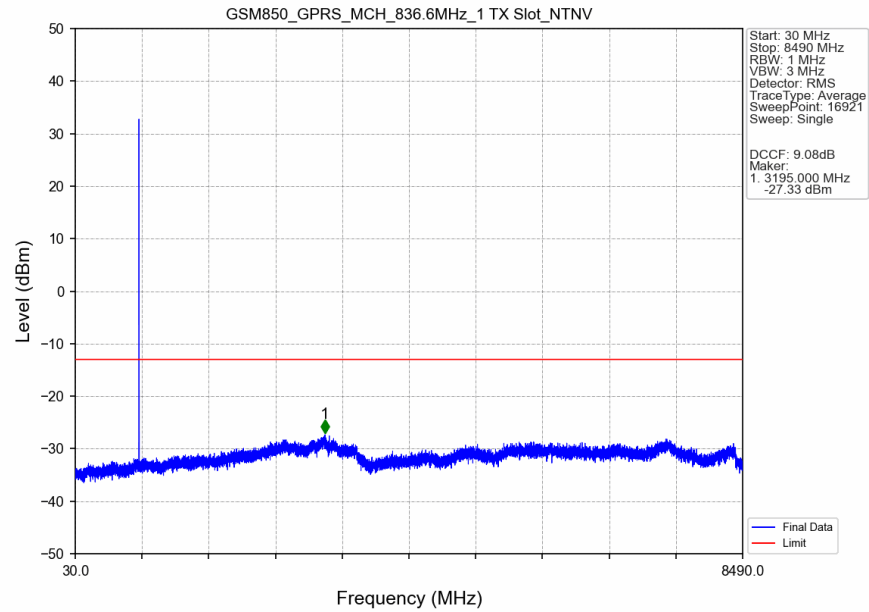




## GSM850\_GPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV

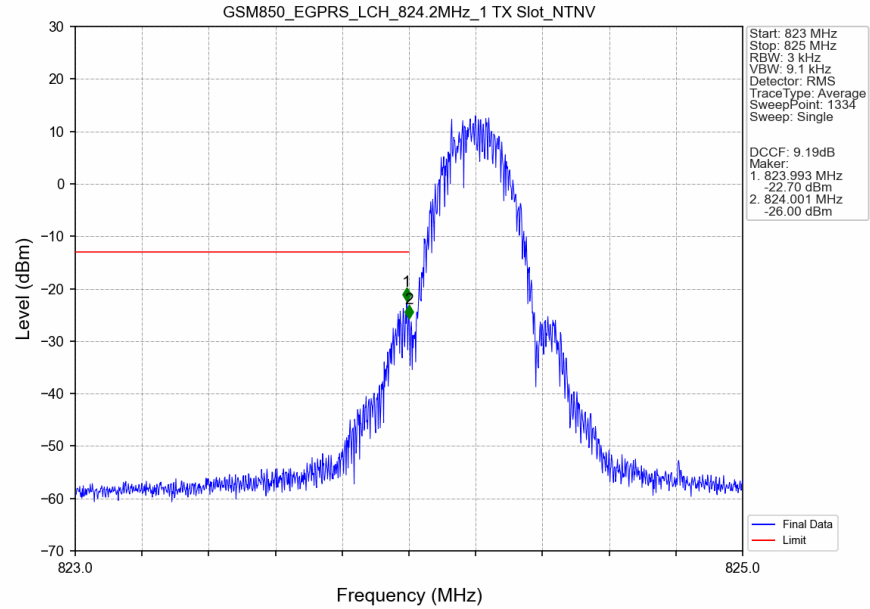


## GSM850\_GPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV

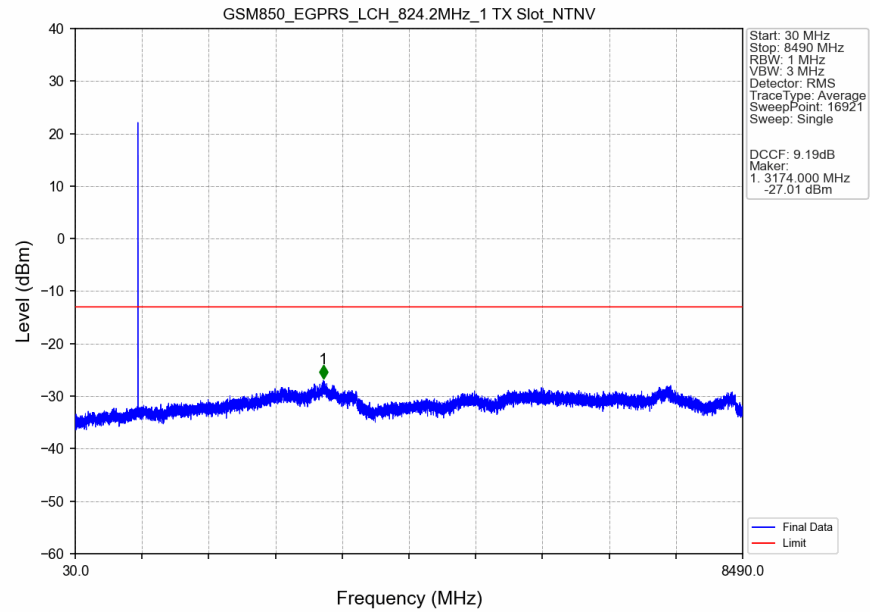




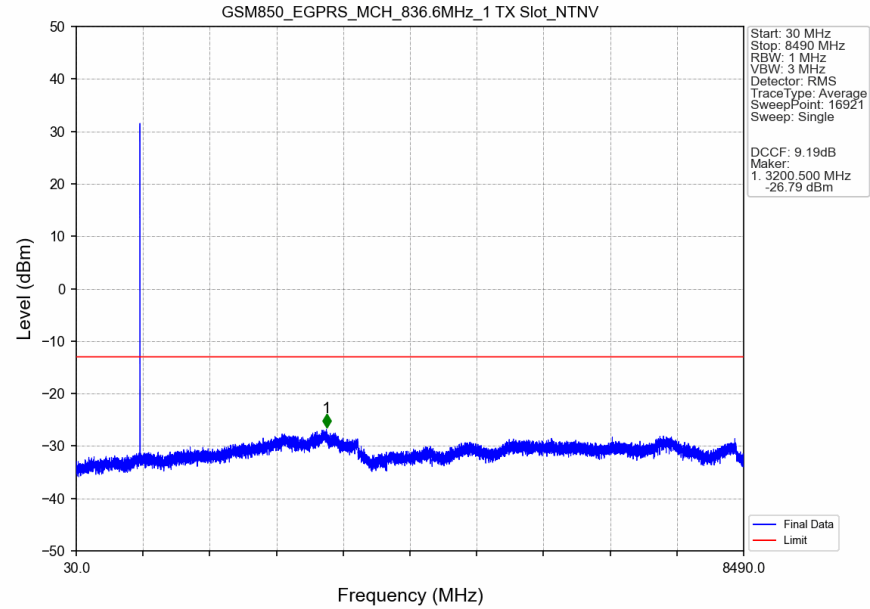
## GSM850\_EGPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



## GSM850\_EGPRS\_LCH\_824.2MHz\_1 TX Slot\_NTNV



## GSM850\_EGPRS\_MCH\_836.6MHz\_1 TX Slot\_NTNV



## GSM850\_EGPRS\_HCH\_848.8MHz\_1 TX Slot\_NTNV

