

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

### 1.1 Test Result

#### 1.1.1 GSM850\_ERP

| Band: GSM850                                 |            |            |                    |                          |               |           |         |         |      |
|----------------------------------------------|------------|------------|--------------------|--------------------------|---------------|-----------|---------|---------|------|
| ENV                                          | Mode       |            | Frequency<br>(MHz) | Conducted Power<br>(dBm) | Gain<br>(dBi) | ERP (dBm) |         | Verdict |      |
|                                              | Network    | Subset     |                    |                          |               | Result    | Limit   |         |      |
| NTNV                                         | GSM        | GSM        | 824.2              | 32.02                    | -3.80         | 26.07     | <=38.45 | Pass    |      |
|                                              |            |            | 836.6              | 31.88                    | -3.80         | 25.93     | <=38.45 | Pass    |      |
|                                              |            |            | 848.8              | 31.97                    | -3.80         | 26.02     | <=38.45 | Pass    |      |
|                                              | GPRS       | 1 TX Slot  | 824.2              | 31.86                    | -3.80         | 25.91     | <=38.45 | Pass    |      |
|                                              |            | 2 TX Slots | 824.2              | 31.30                    | -3.80         | 25.35     | <=38.45 | Pass    |      |
|                                              |            | 3 TX Slots | 824.2              | 29.92                    | -3.80         | 23.97     | <=38.45 | Pass    |      |
|                                              |            | 4 TX Slots | 824.2              | 28.66                    | -3.80         | 22.71     | <=38.45 | Pass    |      |
|                                              |            | 1 TX Slot  | 836.6              | 31.59                    | -3.80         | 25.64     | <=38.45 | Pass    |      |
|                                              |            | 2 TX Slots | 836.6              | 31.08                    | -3.80         | 25.13     | <=38.45 | Pass    |      |
|                                              |            | 3 TX Slots | 836.6              | 29.60                    | -3.80         | 23.65     | <=38.45 | Pass    |      |
|                                              |            | 4 TX Slots | 836.6              | 28.31                    | -3.80         | 22.36     | <=38.45 | Pass    |      |
|                                              |            | 1 TX Slot  | 848.8              | 31.67                    | -3.80         | 25.72     | <=38.45 | Pass    |      |
|                                              |            | 2 TX Slots | 848.8              | 31.18                    | -3.80         | 25.23     | <=38.45 | Pass    |      |
|                                              |            | 3 TX Slots | 848.8              | 29.71                    | -3.80         | 23.76     | <=38.45 | Pass    |      |
|                                              |            | 4 TX Slots | 848.8              | 28.43                    | -3.80         | 22.48     | <=38.45 | Pass    |      |
|                                              |            | EGPRS      | 1 TX Slot          | 824.2                    | 27.49         | -3.80     | 21.54   | <=38.45 | Pass |
|                                              |            |            | 2 TX Slots         | 824.2                    | 26.49         | -3.80     | 20.54   | <=38.45 | Pass |
|                                              |            |            | 3 TX Slots         | 824.2                    | 24.95         | -3.80     | 19.00   | <=38.45 | Pass |
|                                              |            |            | 4 TX Slots         | 824.2                    | 23.47         | -3.80     | 17.52   | <=38.45 | Pass |
|                                              |            |            | 1 TX Slot          | 836.6                    | 27.31         | -3.80     | 21.36   | <=38.45 | Pass |
|                                              |            |            | 2 TX Slots         | 836.6                    | 26.38         | -3.80     | 20.43   | <=38.45 | Pass |
|                                              |            |            | 3 TX Slots         | 836.6                    | 24.73         | -3.80     | 18.78   | <=38.45 | Pass |
|                                              | 4 TX Slots |            | 836.6              | 23.44                    | -3.80         | 17.49     | <=38.45 | Pass    |      |
|                                              | 1 TX Slot  |            | 848.8              | 27.03                    | -3.80         | 21.08     | <=38.45 | Pass    |      |
|                                              | 2 TX Slots |            | 848.8              | 25.93                    | -3.80         | 19.98     | <=38.45 | Pass    |      |
|                                              | 3 TX Slots |            | 848.8              | 24.32                    | -3.80         | 18.37     | <=38.45 | Pass    |      |
|                                              | 4 TX Slots |            | 848.8              | 23.14                    | -3.80         | 17.19     | <=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 (VDC) | Freq. Error (Hz) | Freq. vs. Rated (ppm) |             | Verdict |
|              |                 |            |               |                  | Result                | Limit       |         |
| GSM          | 824.2           | 20         | 3.60          | -17.414          | -0.0211               | -2.5 to 2.5 | Pass    |
|              |                 |            | 3.91          | -5.238           | -0.0064               | -2.5 to 2.5 | Pass    |
|              |                 |            | 4.50          | 2.633            | 0.0032                | -2.5 to 2.5 | Pass    |
|              |                 | -30        | 3.91          | 2.342            | 0.0028                | -2.5 to 2.5 | Pass    |
|              |                 | -20        | 3.91          | 1.095            | 0.0013                | -2.5 to 2.5 | Pass    |
|              |                 | -10        | 3.91          | -0.501           | -0.0006               | -2.5 to 2.5 | Pass    |
|              |                 | 0          | 3.91          | -4.216           | -0.0051               | -2.5 to 2.5 | Pass    |
|              |                 | 10         | 3.91          | 1.010            | 0.0012                | -2.5 to 2.5 | Pass    |

|       |       |     |      |         |         |             |      |
|-------|-------|-----|------|---------|---------|-------------|------|
|       |       | 30  | 3.91 | 2.320   | 0.0028  | -2.5 to 2.5 | Pass |
|       |       | 40  | 3.91 | 0.129   | 0.0002  | -2.5 to 2.5 | Pass |
|       |       | 50  | 3.91 | 0.034   | 0.0000  | -2.5 to 2.5 | Pass |
|       | 836.6 | 20  | 3.60 | -0.603  | -0.0007 | -2.5 to 2.5 | Pass |
|       |       |     | 3.91 | -3.875  | -0.0046 | -2.5 to 2.5 | Pass |
|       |       |     | 4.50 | -1.617  | -0.0019 | -2.5 to 2.5 | Pass |
|       |       | -30 | 3.91 | 0.637   | 0.0008  | -2.5 to 2.5 | Pass |
|       |       | -20 | 3.91 | -0.509  | -0.0006 | -2.5 to 2.5 | Pass |
|       |       | -10 | 3.91 | -2.594  | -0.0031 | -2.5 to 2.5 | Pass |
|       |       | 0   | 3.91 | -4.713  | -0.0056 | -2.5 to 2.5 | Pass |
|       |       | 10  | 3.91 | 4.719   | 0.0056  | -2.5 to 2.5 | Pass |
|       |       | 30  | 3.91 | -1.950  | -0.0023 | -2.5 to 2.5 | Pass |
|       |       | 40  | 3.91 | 5.104   | 0.0061  | -2.5 to 2.5 | Pass |
|       |       | 50  | 3.91 | 7.682   | 0.0092  | -2.5 to 2.5 | Pass |
|       | 848.8 | 20  | 3.60 | 1.623   | 0.0019  | -2.5 to 2.5 | Pass |
|       |       |     | 3.91 | -0.863  | -0.0010 | -2.5 to 2.5 | Pass |
|       |       |     | 4.50 | 4.244   | 0.0050  | -2.5 to 2.5 | Pass |
|       |       | -30 | 3.91 | -3.795  | -0.0045 | -2.5 to 2.5 | Pass |
|       |       | -20 | 3.91 | -2.627  | -0.0031 | -2.5 to 2.5 | Pass |
|       |       | -10 | 3.91 | 1.483   | 0.0017  | -2.5 to 2.5 | Pass |
|       |       | 0   | 3.91 | -0.737  | -0.0009 | -2.5 to 2.5 | Pass |
|       |       | 10  | 3.91 | 3.985   | 0.0047  | -2.5 to 2.5 | Pass |
|       |       | 30  | 3.91 | -2.040  | -0.0024 | -2.5 to 2.5 | Pass |
|       |       | 40  | 3.91 | 0.252   | 0.0003  | -2.5 to 2.5 | Pass |
|       |       | 50  | 3.91 | 0.591   | 0.0007  | -2.5 to 2.5 | Pass |
| GPRS  | 824.2 | 20  | 3.60 | -8.305  | -0.0101 | -2.5 to 2.5 | Pass |
|       |       |     | 3.91 | -4.163  | -0.0051 | -2.5 to 2.5 | Pass |
|       |       |     | 4.50 | 0.947   | 0.0011  | -2.5 to 2.5 | Pass |
|       |       | -30 | 3.91 | -0.013  | 0.0000  | -2.5 to 2.5 | Pass |
|       |       | -20 | 3.91 | -6.733  | -0.0082 | -2.5 to 2.5 | Pass |
|       |       | -10 | 3.91 | -1.417  | -0.0017 | -2.5 to 2.5 | Pass |
|       |       | 0   | 3.91 | -3.082  | -0.0037 | -2.5 to 2.5 | Pass |
|       |       | 10  | 3.91 | -1.748  | -0.0021 | -2.5 to 2.5 | Pass |
|       |       | 30  | 3.91 | -1.872  | -0.0023 | -2.5 to 2.5 | Pass |
|       |       | 40  | 3.91 | -1.361  | -0.0017 | -2.5 to 2.5 | Pass |
|       |       | 50  | 3.91 | 10.214  | 0.0124  | -2.5 to 2.5 | Pass |
|       | 836.6 | 20  | 3.60 | -6.988  | -0.0084 | -2.5 to 2.5 | Pass |
|       |       |     | 3.91 | -0.631  | -0.0008 | -2.5 to 2.5 | Pass |
|       |       |     | 4.50 | -0.164  | -0.0002 | -2.5 to 2.5 | Pass |
|       |       | -30 | 3.91 | -10.465 | -0.0125 | -2.5 to 2.5 | Pass |
|       |       | -20 | 3.91 | -4.798  | -0.0057 | -2.5 to 2.5 | Pass |
|       |       | -10 | 3.91 | -1.951  | -0.0023 | -2.5 to 2.5 | Pass |
|       |       | 0   | 3.91 | 1.141   | 0.0014  | -2.5 to 2.5 | Pass |
|       |       | 10  | 3.91 | 2.866   | 0.0034  | -2.5 to 2.5 | Pass |
|       |       | 30  | 3.91 | 0.603   | 0.0007  | -2.5 to 2.5 | Pass |
|       |       | 40  | 3.91 | 2.430   | 0.0029  | -2.5 to 2.5 | Pass |
|       |       | 50  | 3.91 | 7.789   | 0.0093  | -2.5 to 2.5 | Pass |
|       | 848.8 | 20  | 3.60 | -0.958  | -0.0011 | -2.5 to 2.5 | Pass |
|       |       |     | 3.91 | -0.358  | -0.0004 | -2.5 to 2.5 | Pass |
|       |       |     | 4.50 | -1.743  | -0.0021 | -2.5 to 2.5 | Pass |
|       |       | -30 | 3.91 | -3.547  | -0.0042 | -2.5 to 2.5 | Pass |
|       |       | -20 | 3.91 | -1.203  | -0.0014 | -2.5 to 2.5 | Pass |
|       |       | -10 | 3.91 | 0.130   | 0.0002  | -2.5 to 2.5 | Pass |
|       |       | 0   | 3.91 | -0.368  | -0.0004 | -2.5 to 2.5 | Pass |
|       |       | 10  | 3.91 | -1.158  | -0.0014 | -2.5 to 2.5 | Pass |
|       |       | 30  | 3.91 | -0.569  | -0.0007 | -2.5 to 2.5 | Pass |
|       |       | 40  | 3.91 | -1.842  | -0.0022 | -2.5 to 2.5 | Pass |
|       |       | 50  | 3.91 | -0.395  | -0.0005 | -2.5 to 2.5 | Pass |
| EGPRS | 824.2 | 20  | 3.60 | -0.007  | 0.0000  | -2.5 to 2.5 | Pass |

|  |       |     |      |        |         |             |      |
|--|-------|-----|------|--------|---------|-------------|------|
|  |       |     | 3.91 | -1.613 | -0.0020 | -2.5 to 2.5 | Pass |
|  |       |     | 4.50 | -1.916 | -0.0023 | -2.5 to 2.5 | Pass |
|  |       | -30 | 3.91 | -3.452 | -0.0042 | -2.5 to 2.5 | Pass |
|  |       | -20 | 3.91 | -1.995 | -0.0024 | -2.5 to 2.5 | Pass |
|  |       | -10 | 3.91 | -1.757 | -0.0021 | -2.5 to 2.5 | Pass |
|  |       | 0   | 3.91 | 2.042  | 0.0025  | -2.5 to 2.5 | Pass |
|  |       | 10  | 3.91 | -2.638 | -0.0032 | -2.5 to 2.5 | Pass |
|  |       | 30  | 3.91 | -1.684 | -0.0020 | -2.5 to 2.5 | Pass |
|  |       | 40  | 3.91 | 0.042  | 0.0001  | -2.5 to 2.5 | Pass |
|  |       | 50  | 3.91 | 0.400  | 0.0005  | -2.5 to 2.5 | Pass |
|  | 836.6 | 20  | 3.60 | 0.481  | 0.0006  | -2.5 to 2.5 | Pass |
|  |       |     | 3.91 | 0.219  | 0.0003  | -2.5 to 2.5 | Pass |
|  |       |     | 4.50 | -1.465 | -0.0018 | -2.5 to 2.5 | Pass |
|  |       | -30 | 3.91 | -2.671 | -0.0032 | -2.5 to 2.5 | Pass |
|  |       | -20 | 3.91 | -1.086 | -0.0013 | -2.5 to 2.5 | Pass |
|  |       | -10 | 3.91 | -2.676 | -0.0032 | -2.5 to 2.5 | Pass |
|  |       | 0   | 3.91 | -1.871 | -0.0022 | -2.5 to 2.5 | Pass |
|  |       | 10  | 3.91 | -2.021 | -0.0024 | -2.5 to 2.5 | Pass |
|  |       | 30  | 3.91 | -1.799 | -0.0022 | -2.5 to 2.5 | Pass |
|  |       | 40  | 3.91 | 0.467  | 0.0006  | -2.5 to 2.5 | Pass |
|  |       | 50  | 3.91 | -3.694 | -0.0044 | -2.5 to 2.5 | Pass |
|  | 848.8 | 20  | 3.60 | 0.637  | 0.0008  | -2.5 to 2.5 | Pass |
|  |       |     | 3.91 | 1.034  | 0.0012  | -2.5 to 2.5 | Pass |
|  |       |     | 4.50 | -1.336 | -0.0016 | -2.5 to 2.5 | Pass |
|  |       | -30 | 3.91 | -0.432 | -0.0005 | -2.5 to 2.5 | Pass |
|  |       | -20 | 3.91 | -2.104 | -0.0025 | -2.5 to 2.5 | Pass |
|  |       | -10 | 3.91 | -2.977 | -0.0035 | -2.5 to 2.5 | Pass |
|  |       | 0   | 3.91 | -2.439 | -0.0029 | -2.5 to 2.5 | Pass |
|  |       | 10  | 3.91 | -4.476 | -0.0053 | -2.5 to 2.5 | Pass |
|  |       | 30  | 3.91 | 1.025  | 0.0012  | -2.5 to 2.5 | Pass |
|  |       | 40  | 3.91 | -1.386 | -0.0016 | -2.5 to 2.5 | Pass |
|  |       | 50  | 3.91 | 1.781  | 0.0021  | -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           | 0.247                        | /     | Pass    |
|              |         |           | 836.6           | 0.245                        | /     | Pass    |
|              |         |           | 848.8           | 0.241                        | /     | Pass    |
|              | GPRS    | 1 TX Slot | 824.2           | 0.245                        | /     | Pass    |
|              |         |           | 836.6           | 0.240                        | /     | Pass    |
|              |         |           | 848.8           | 0.243                        | /     | Pass    |
|              | EGPRS   | 1 TX Slot | 824.2           | 0.256                        | /     | Pass    |
|              |         |           | 836.6           | 0.245                        | /     | Pass    |
|              |         |           | 848.8           | 0.254                        | /     | Pass    |

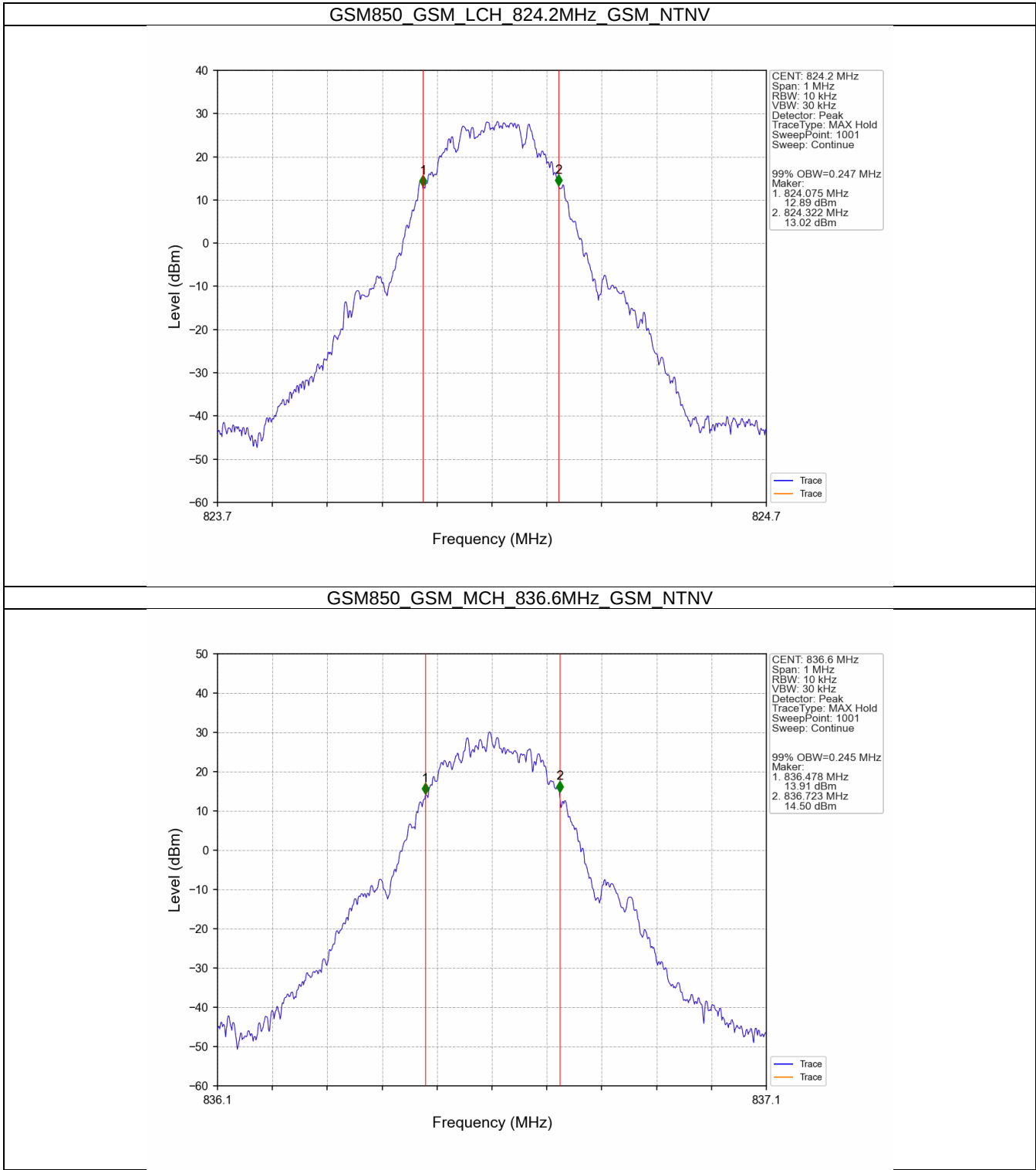
##### 3.1.2 GSM850\_XDB

|              |
|--------------|
| Band: GSM850 |
|--------------|

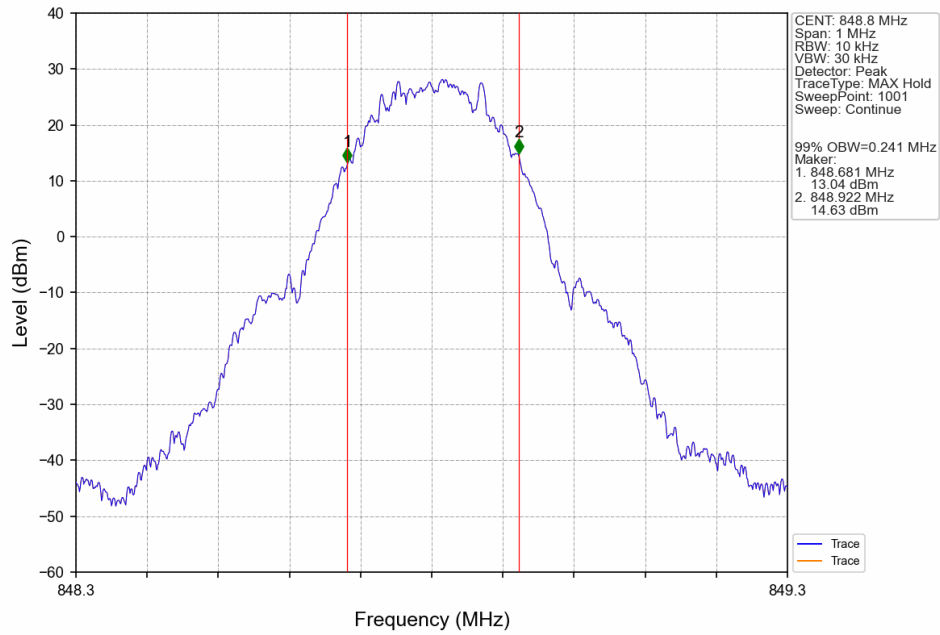
| ENV  | Mode    |           | Frequency<br>(MHz) | 26dB Bandwidth (MHz) |       | Verdict |
|------|---------|-----------|--------------------|----------------------|-------|---------|
|      | Network | Subset    |                    | Result               | Limit |         |
| NTNV | GSM     | GSM       | 824.2              | 0.316                | /     | Pass    |
|      |         |           | 836.6              | 0.310                | /     | Pass    |
|      |         |           | 848.8              | 0.316                | /     | Pass    |
|      | GPRS    | 1 TX Slot | 824.2              | 0.321                | /     | Pass    |
|      |         |           | 836.6              | 0.312                | /     | Pass    |
|      |         |           | 848.8              | 0.318                | /     | Pass    |
|      | EGPRS   | 1 TX Slot | 824.2              | 0.332                | /     | Pass    |
|      |         |           | 836.6              | 0.309                | /     | Pass    |
|      |         |           | 848.8              | 0.318                | /     | Pass    |

3.2 Test Graph

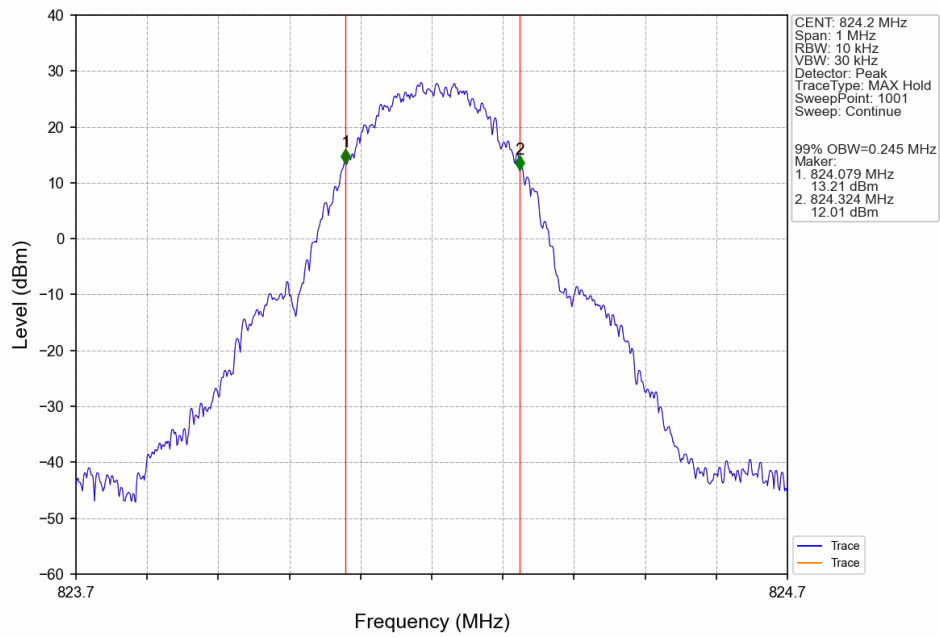
3.2.1 GSM850\_OBW



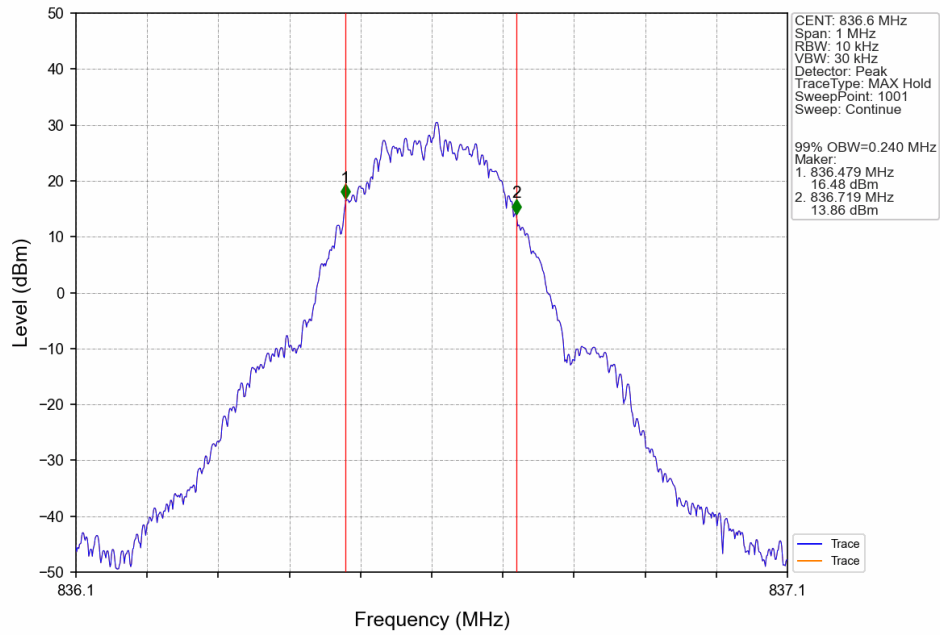
# GSM850 GSM HCH 848.8MHz GSM NTNV



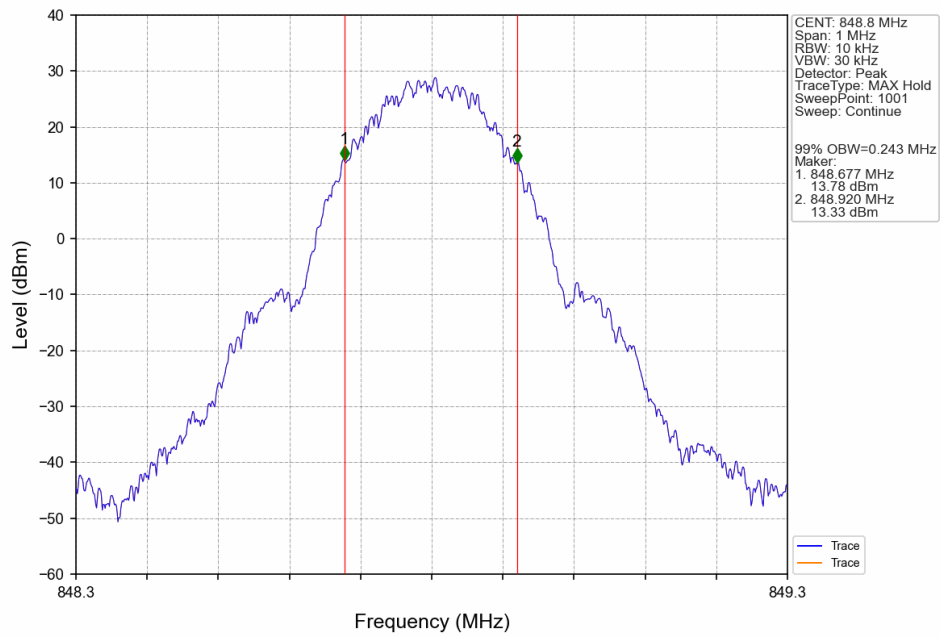
# GSM850 GPRS LCH 824.2MHz 1 TX Slot NTNV



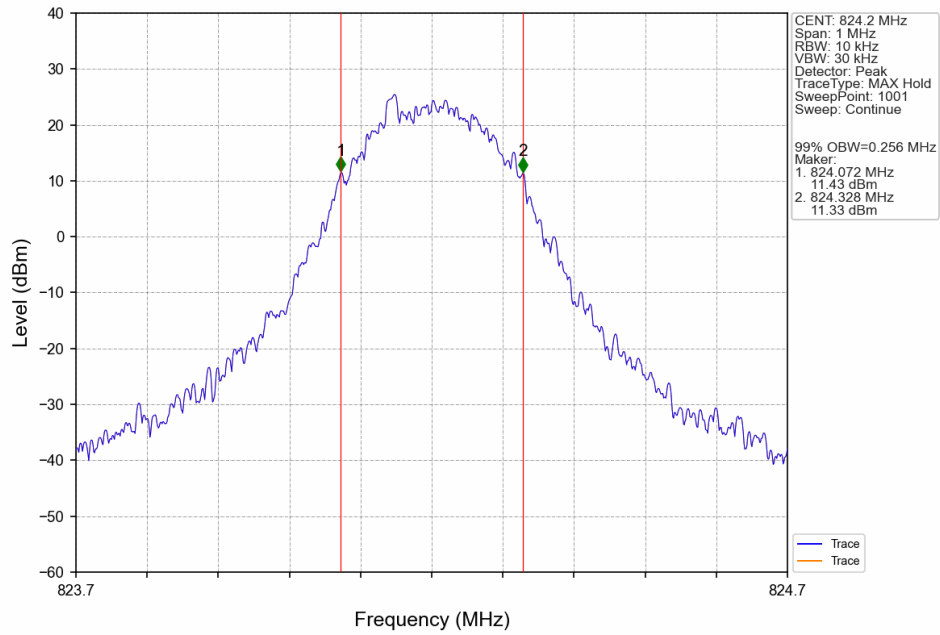
# GSM850 GPRS MCH 836.6MHz 1 TX Slot NTN



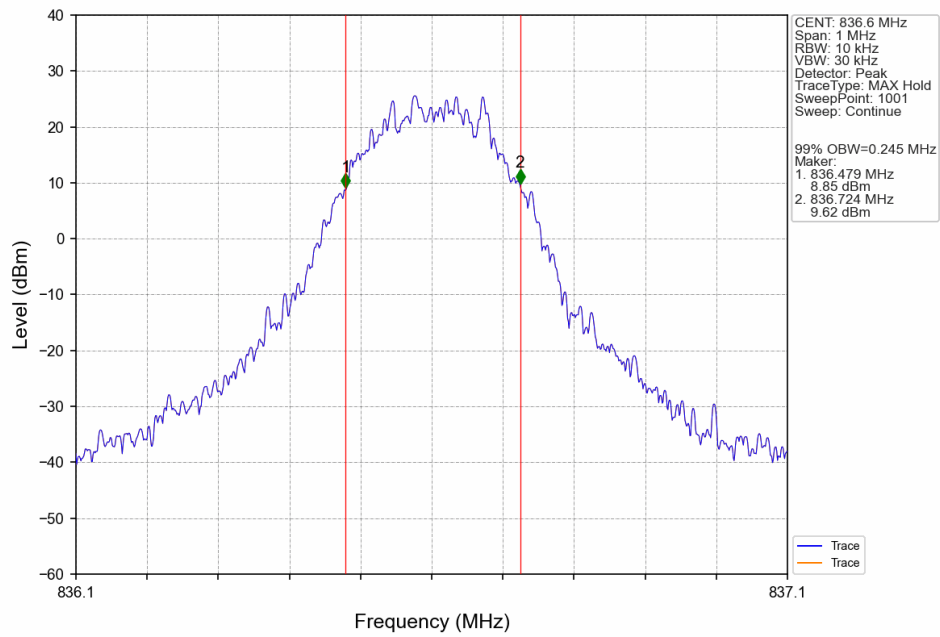
# GSM850 GPRS HCH 848.8MHz 1 TX Slot NTN



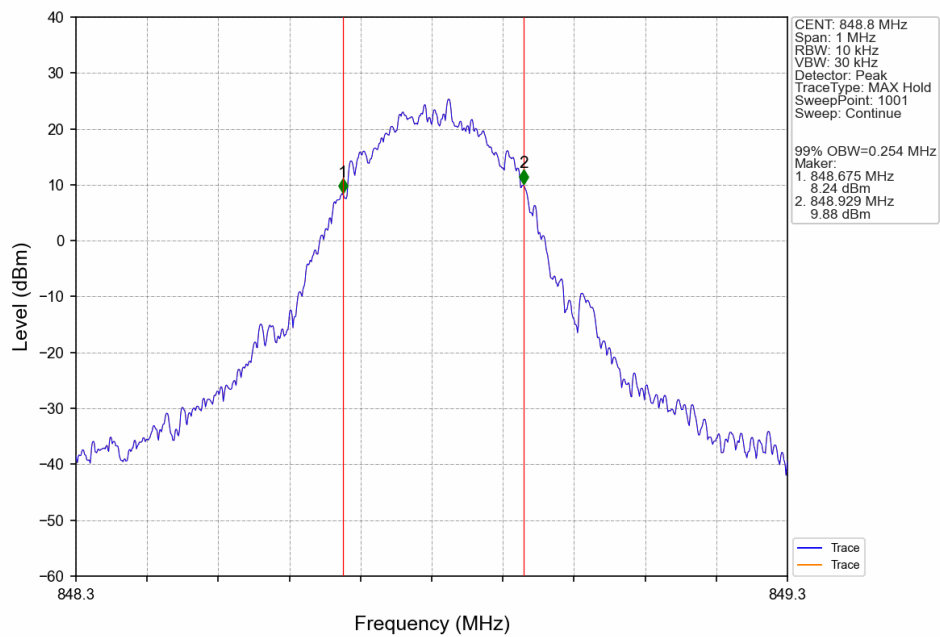
# GSM850 EGPRS LCH 824.2MHz 1 TX Slot NTNV



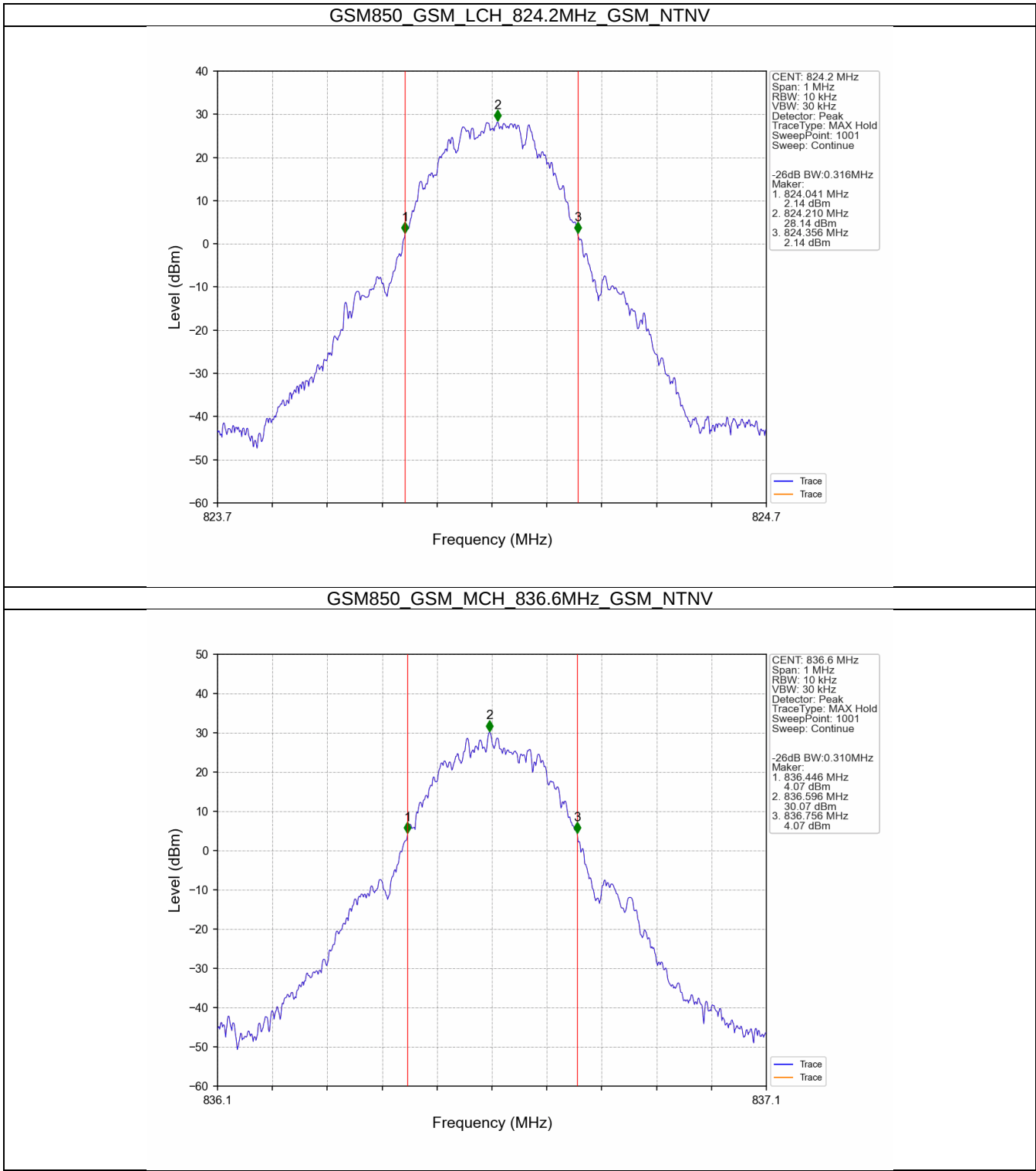
# GSM850 EGPRS MCH 836.6MHz 1 TX Slot NTNV



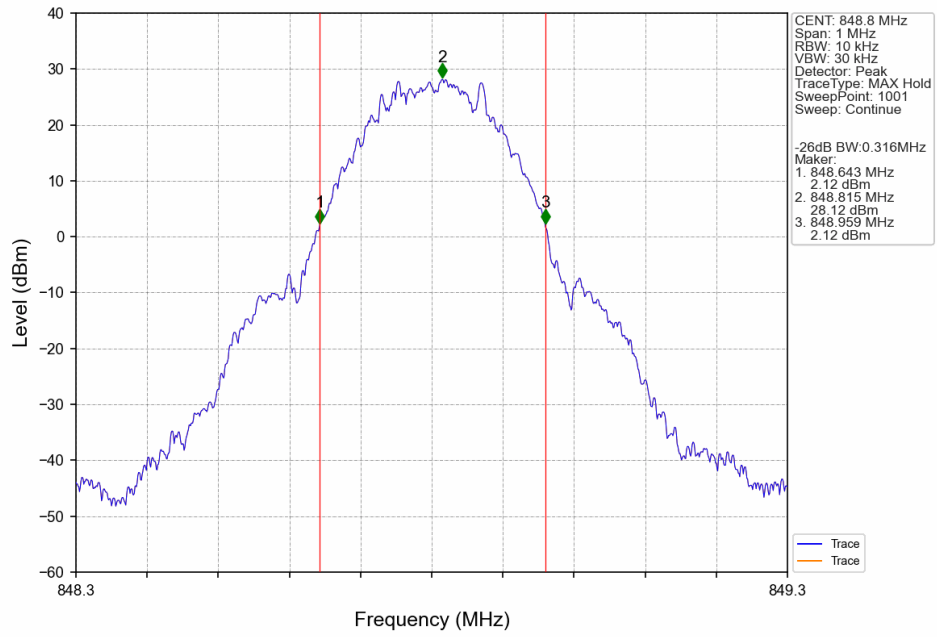
GSM850 EGPRS HCH 848.8MHz 1 TX Slot NTNV



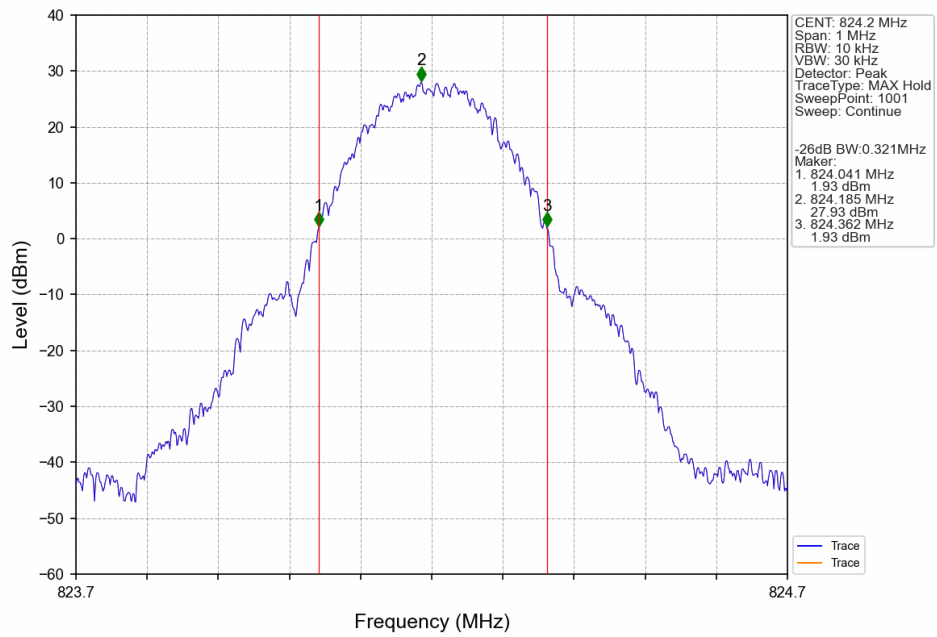
3.2.2 GSM850\_XDB



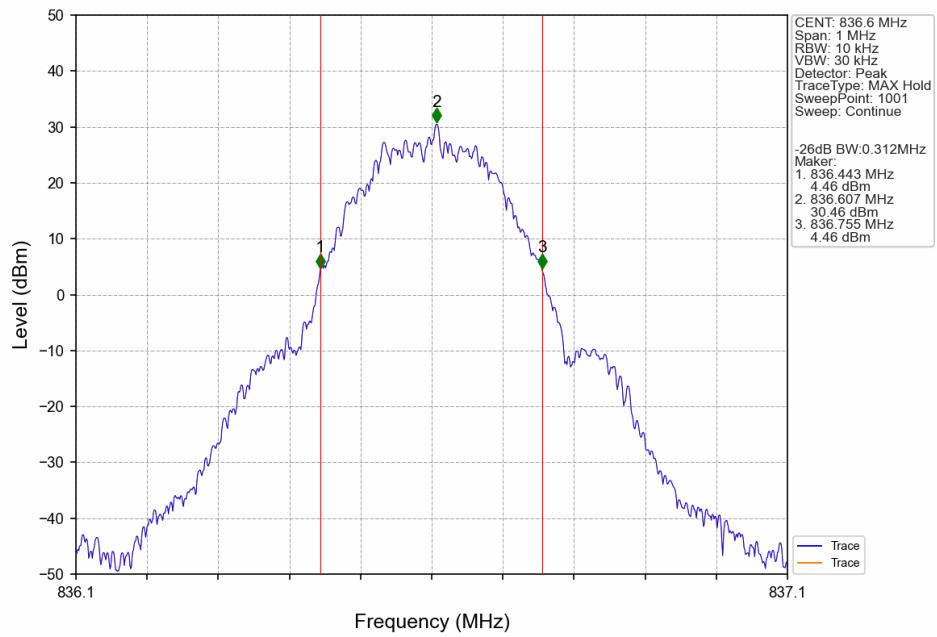
# GSM850 GSM HCH 848.8MHz GSM NTNV



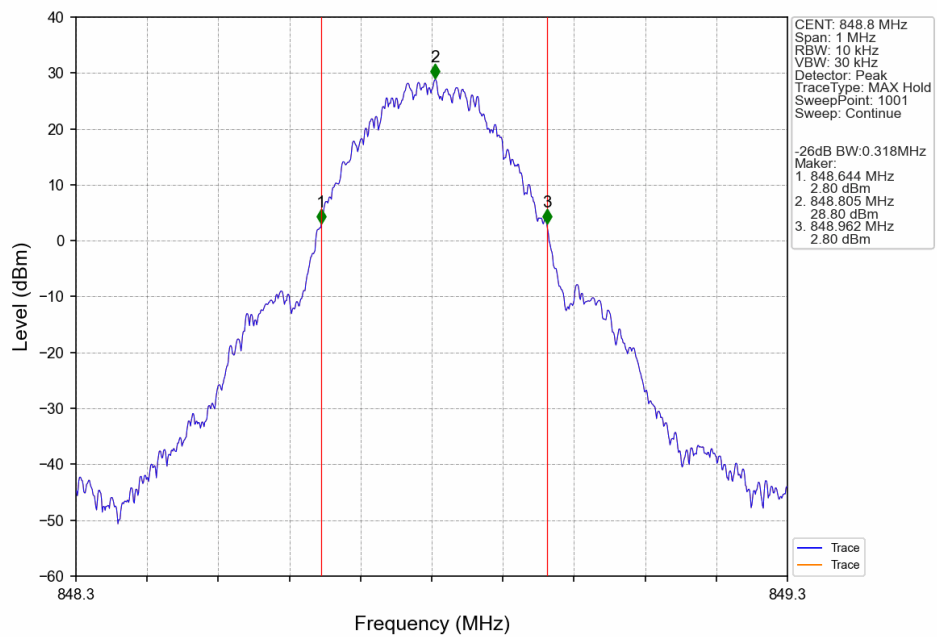
# GSM850 GPRS LCH 824.2MHz 1 TX Slot NTNV



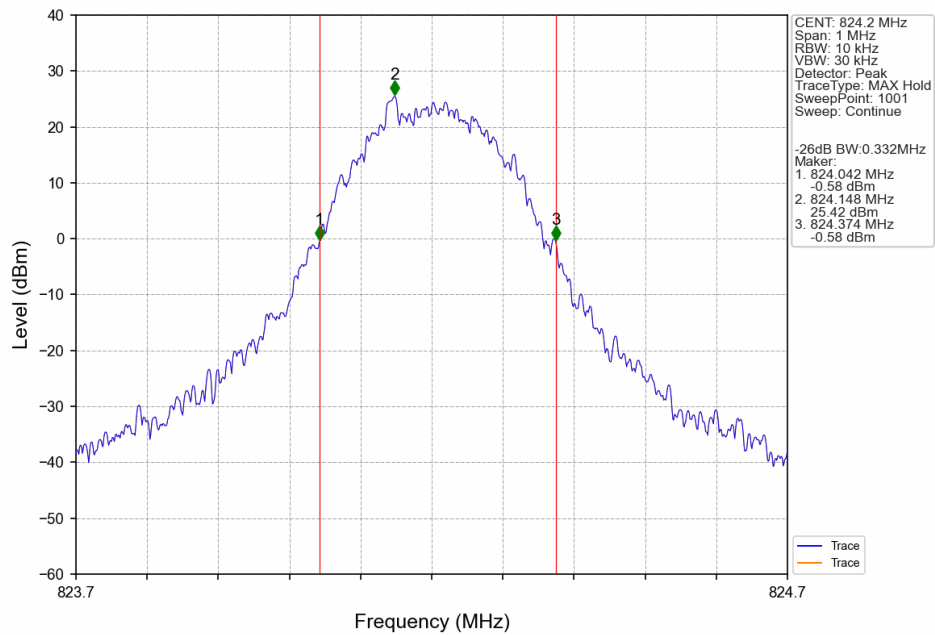
# GSM850 GPRS MCH 836.6MHz 1 TX Slot NTNV



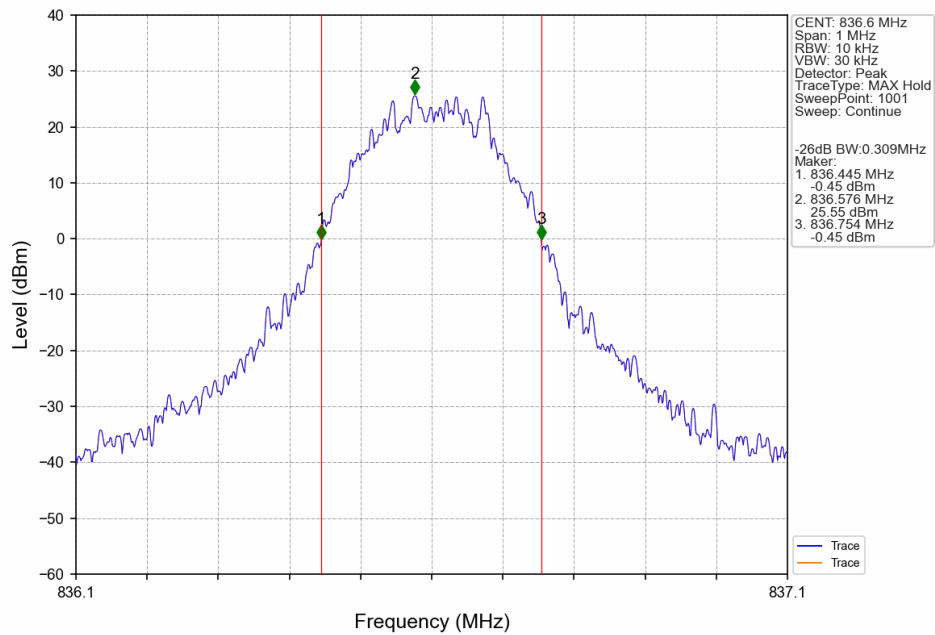
# GSM850 GPRS HCH 848.8MHz 1 TX Slot NTNV



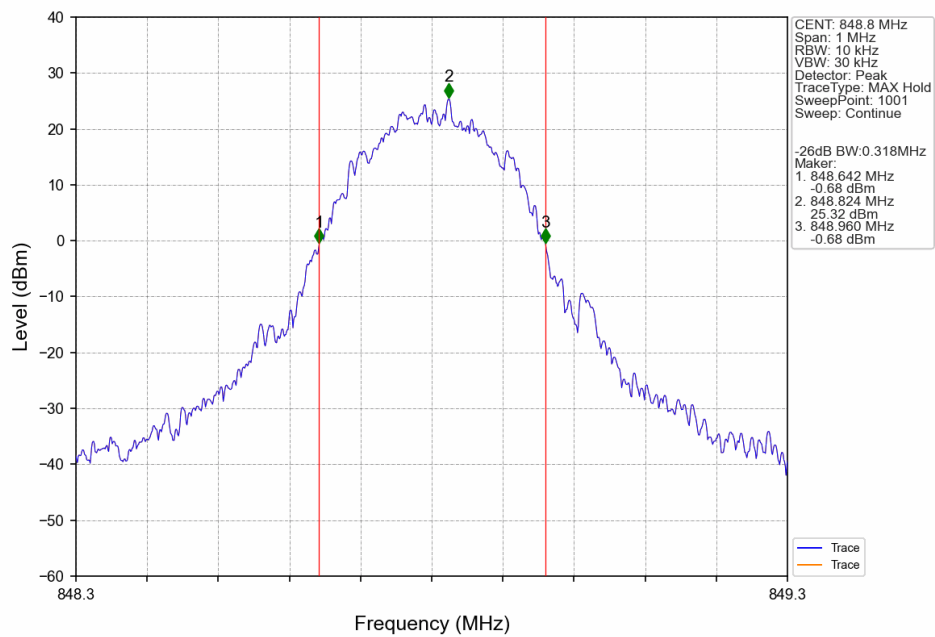
GSM850 EGPRS LCH 824.2MHz 1 TX Slot NTNV



GSM850 EGPRS MCH 836.6MHz 1 TX Slot NTNV



GSM850 EGPRS HCH 848.8MHz 1 TX Slot NTNV



4. Peak-Average Ratio

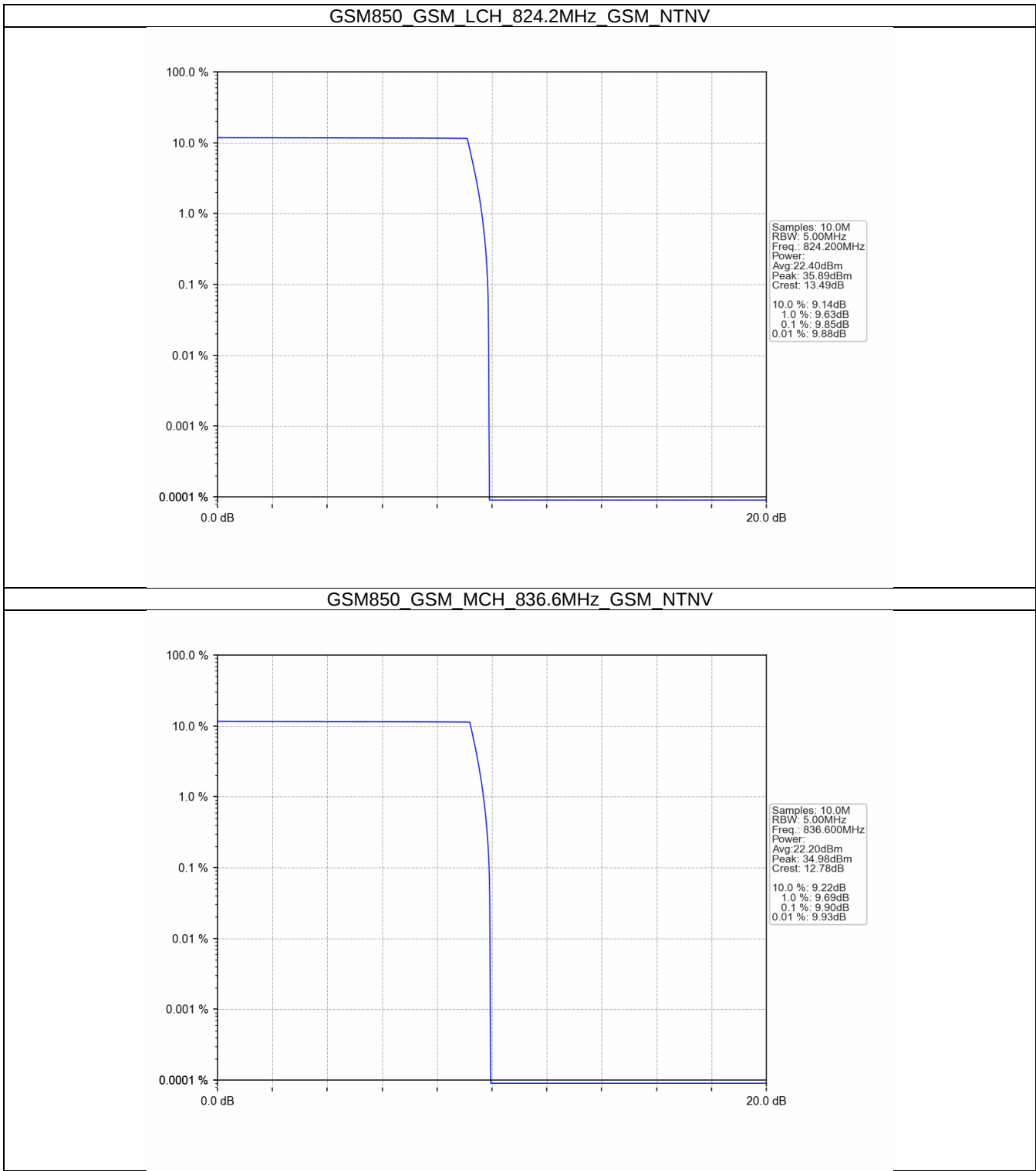
4.1 Test Result

4.1.1 GSM850

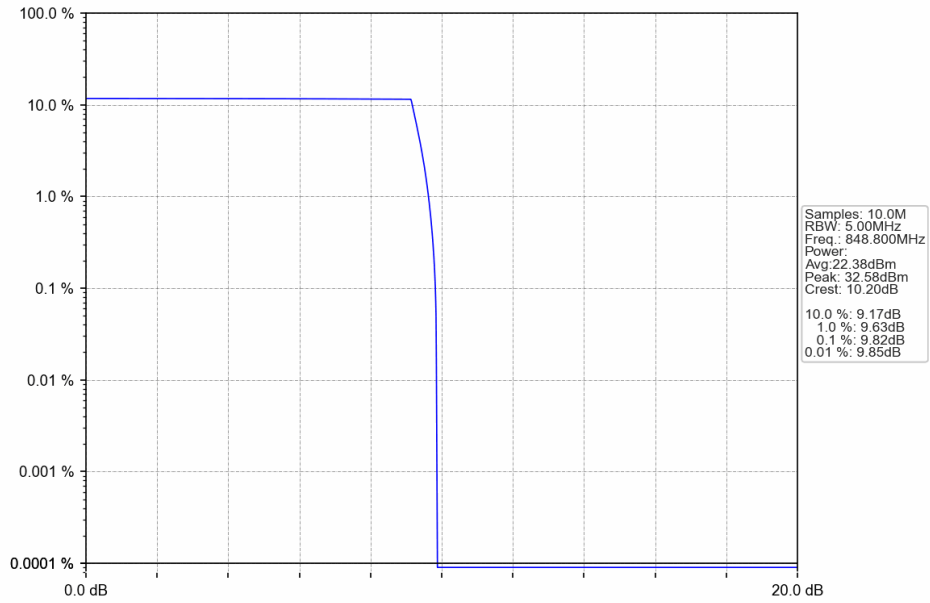
| Band: GSM850 |         |            |                 |                         |       |         |
|--------------|---------|------------|-----------------|-------------------------|-------|---------|
| ENV          | Mode    |            | Frequency (MHz) | Peak-Average Ratio (dB) |       | Verdict |
|              | Network | Subset     |                 | Result                  | Limit |         |
| NTNV         | GSM     | GSM        | 824.2           | 9.85                    | <=13  | Pass    |
|              |         |            | 836.6           | 9.90                    | <=13  | Pass    |
|              |         |            | 848.8           | 9.82                    | <=13  | Pass    |
|              | GPRS    | 4 TX Slots | 824.2           | 4.34                    | <=13  | Pass    |
|              |         |            | 836.6           | 4.36                    | <=13  | Pass    |
|              |         |            | 848.8           | 4.18                    | <=13  | Pass    |
|              | EGPRS   | 4 TX Slots | 824.2           | 8.43                    | <=13  | Pass    |
|              |         |            | 836.6           | 8.59                    | <=13  | Pass    |
|              |         |            | 848.8           | 9.05                    | <=13  | Pass    |

# 4.2 Test Graph

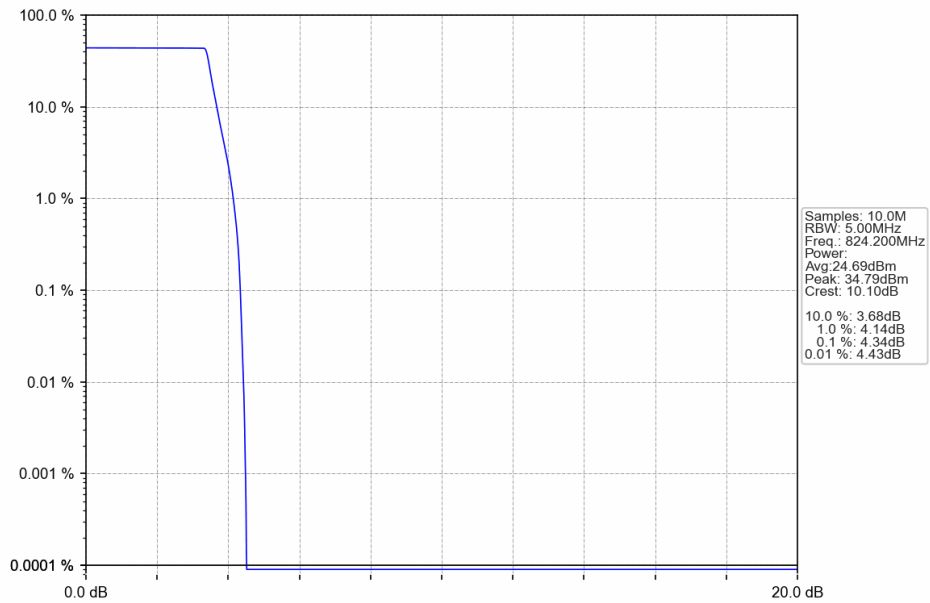
## 4.2.1 GSM850



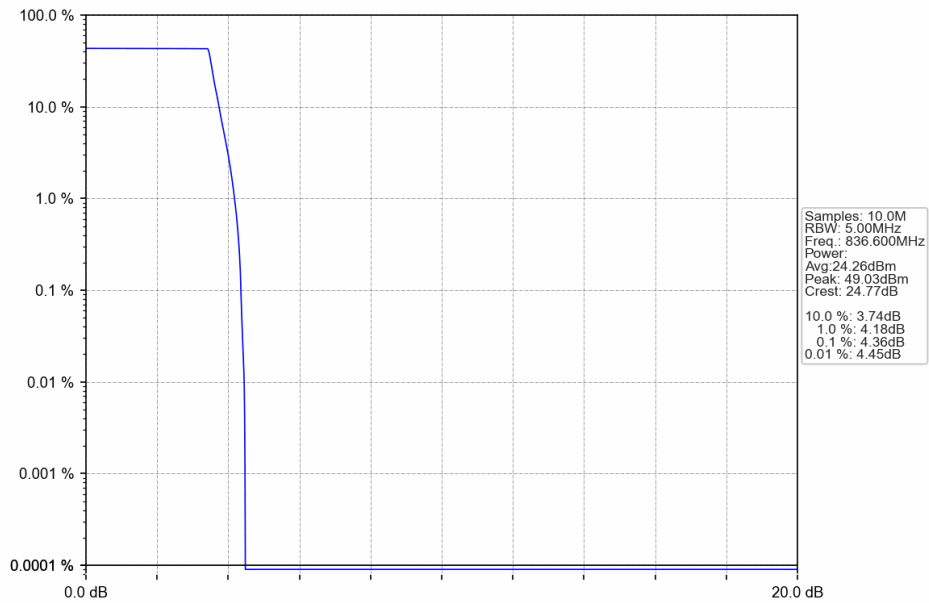
# GSM850 GSM HCH 848.8MHz GSM NTN



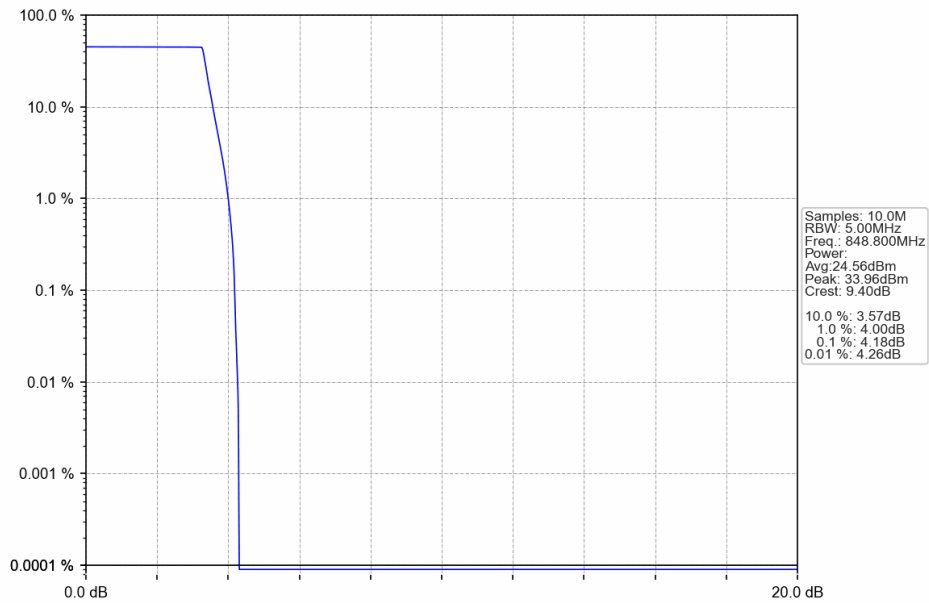
# GSM850 GPRS LCH 824.2MHz 4 TX Slots NTN



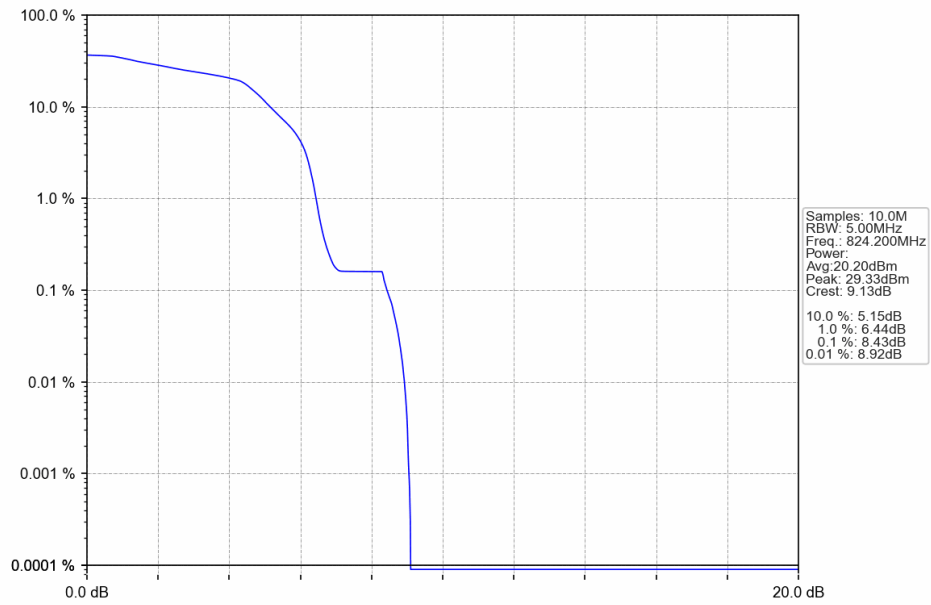
GSM850 GPRS MCH 836.6MHz 4 TX Slots NTNV



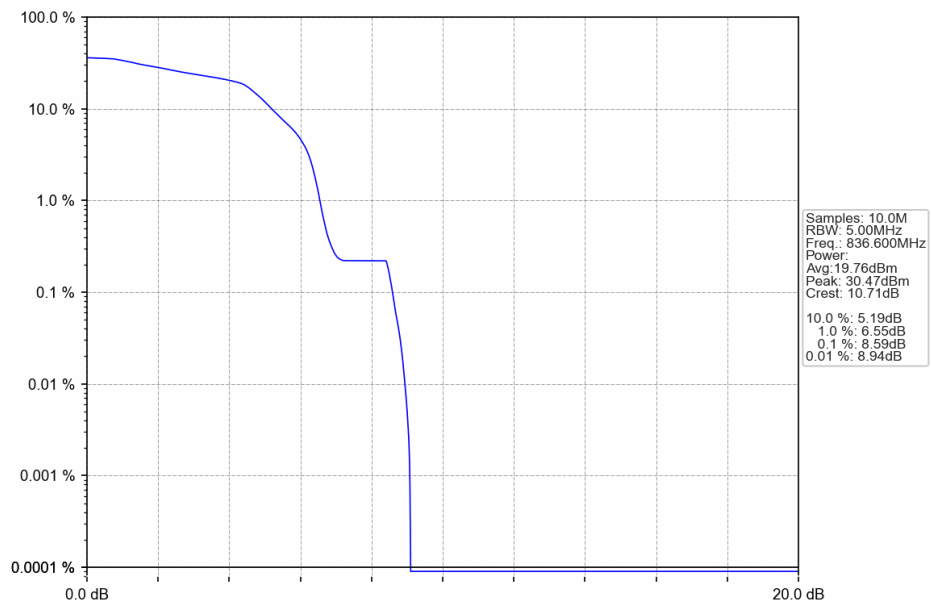
GSM850 GPRS HCH 848.8MHz 4 TX Slots NTNV



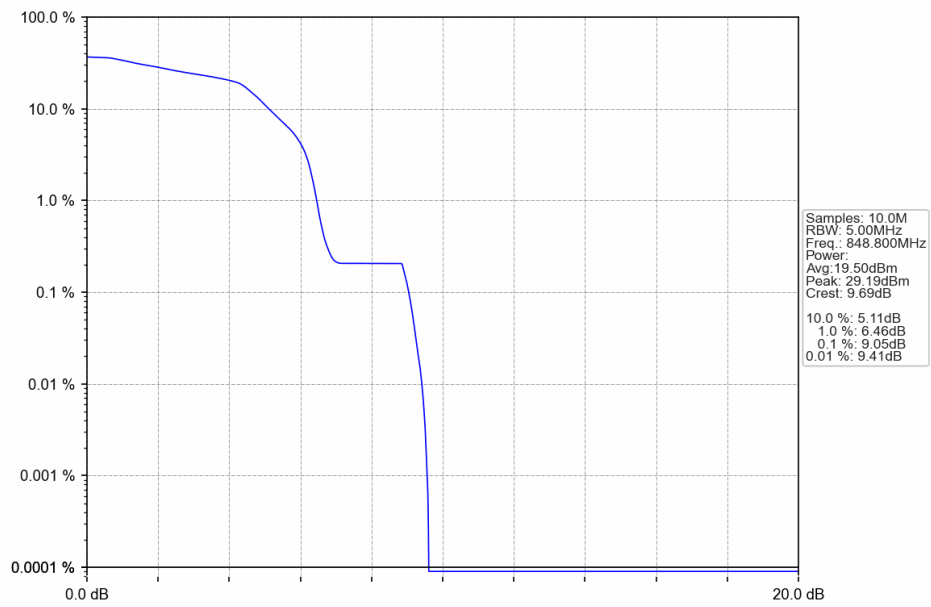
# GSM850 EGPRS LCH 824.2MHz 4 TX Slots NTNV



# GSM850 EGPRS MCH 836.6MHz 4 TX Slots NTNV



# GSM850 EGPRS HCH 848.8MHz 4 TX Slots NTNV



## 5. Spurious Emission

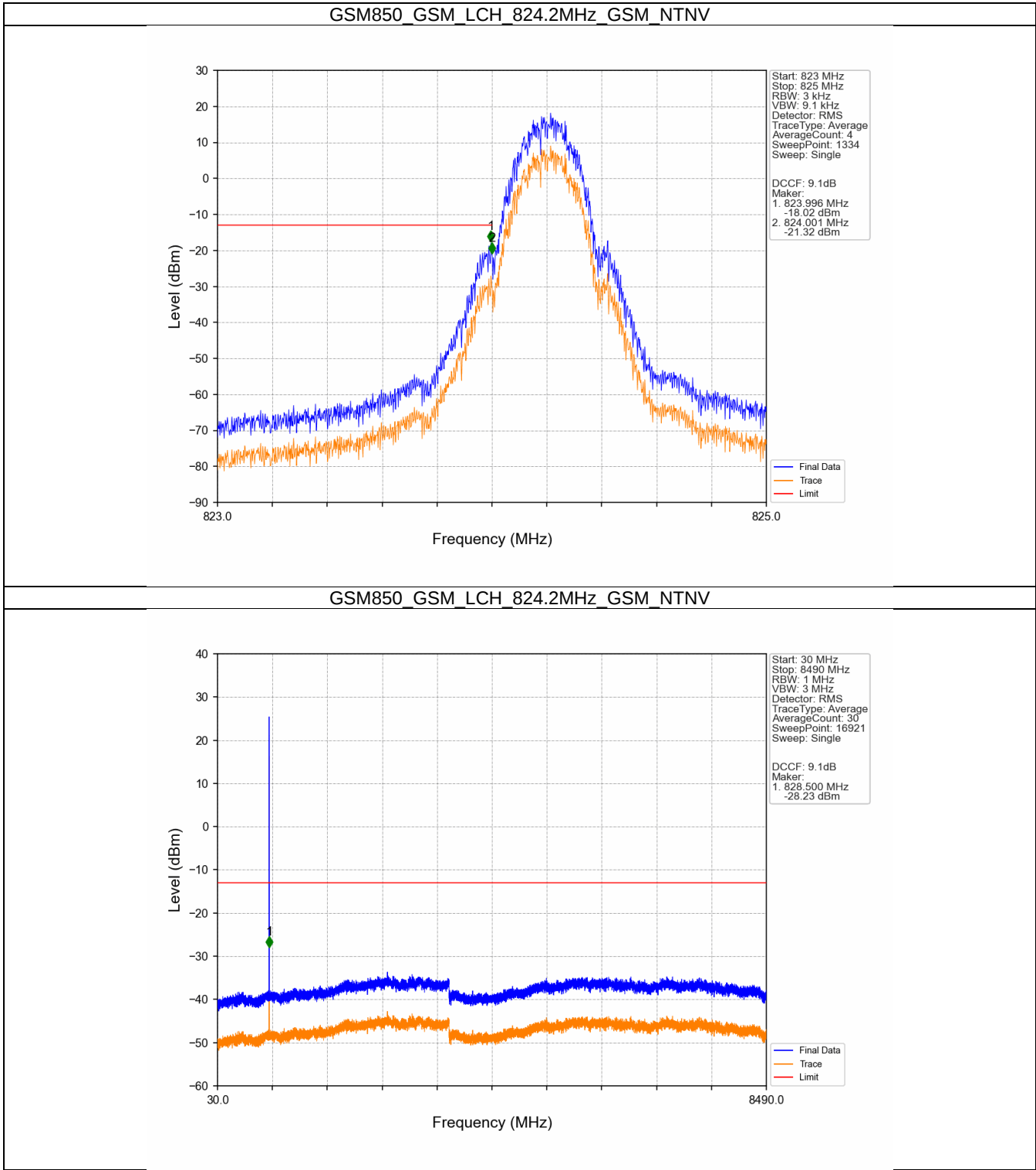
### 5.1 Test Result

#### 5.1.1 GSM850

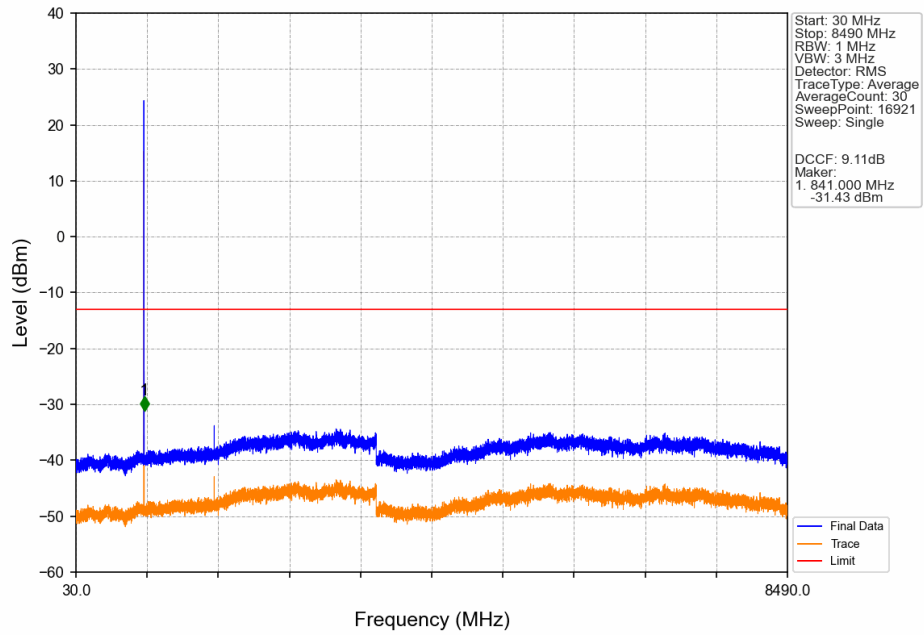
| Band: GSM850 |         |           |                    |                     |       |
|--------------|---------|-----------|--------------------|---------------------|-------|
| ENV          | Mode    |           | Frequency<br>(MHz) | Spurious Emission   |       |
|              | Network | Subset    |                    | 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

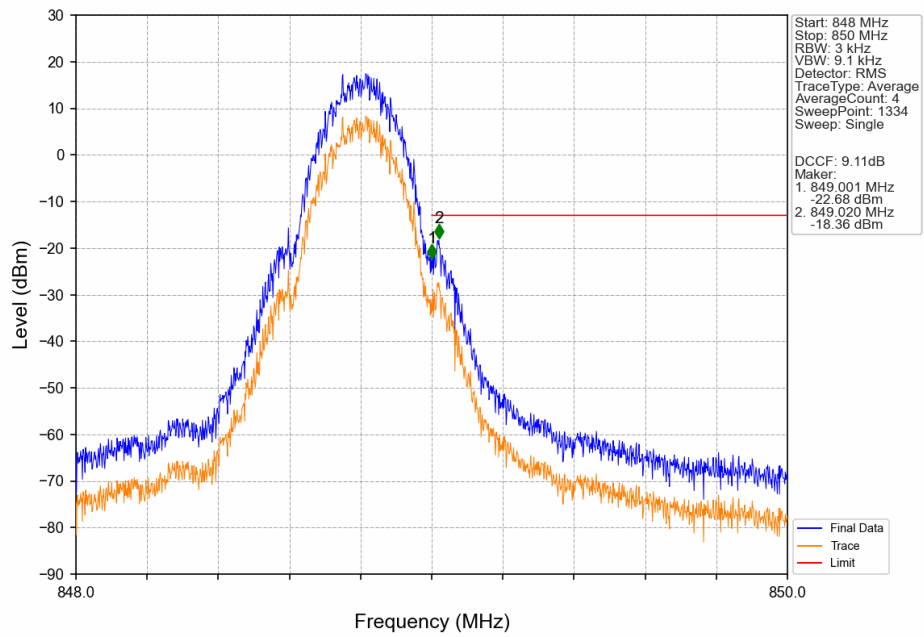
5.2.1 GSM850



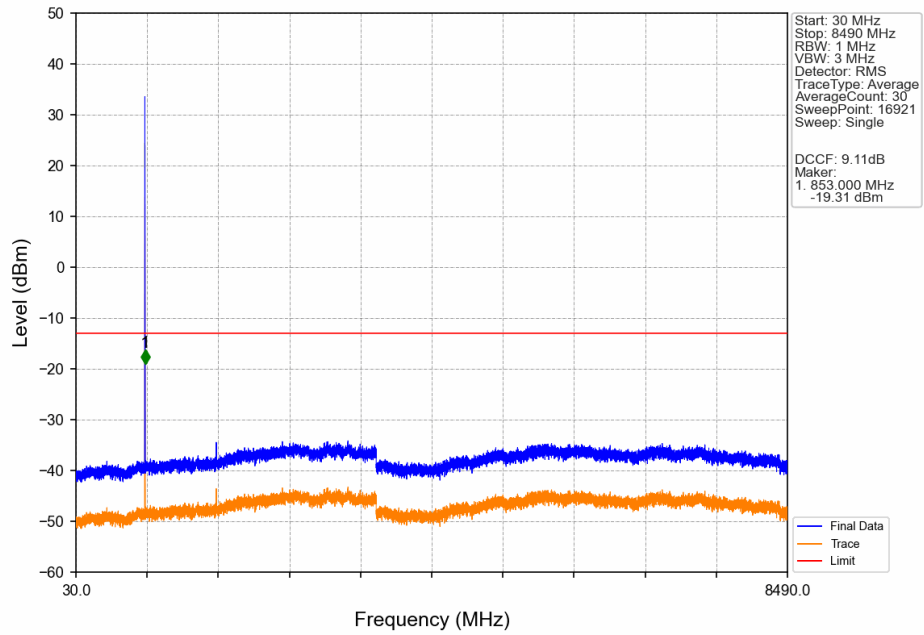
# GSM850 GSM MCH 836.6MHz GSM NTNV



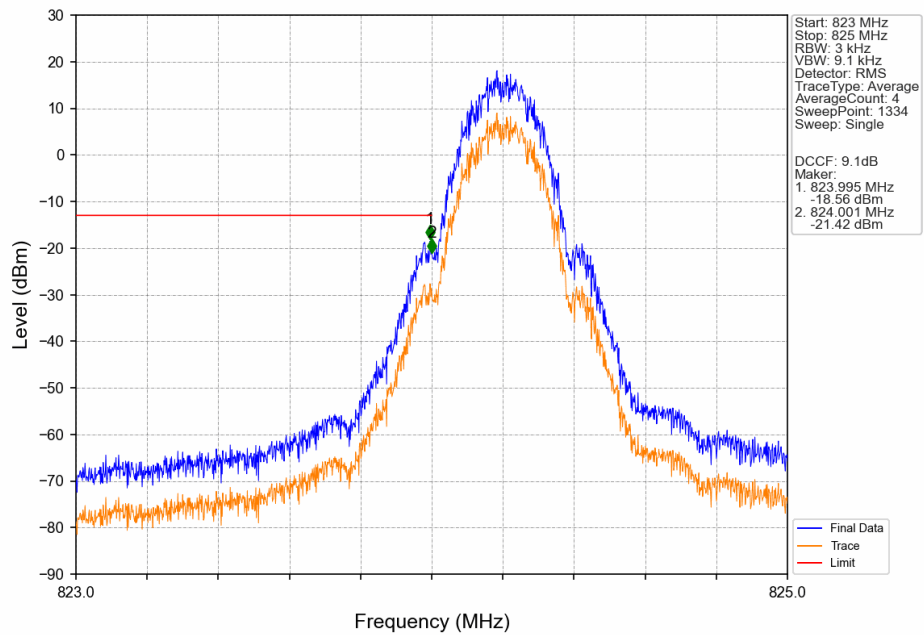
# GSM850 GSM HCH 848.8MHz GSM NTNV



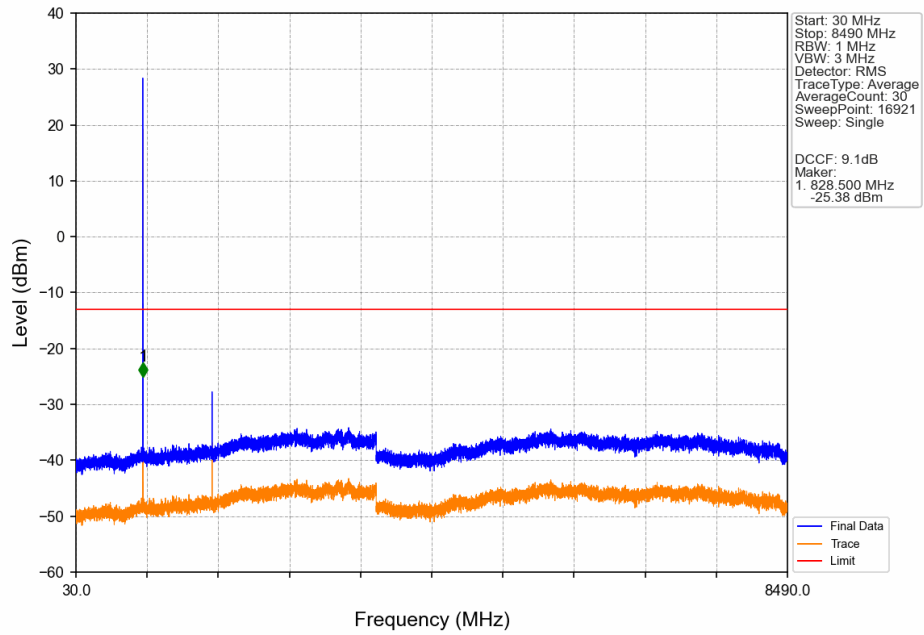
# GSM850 GSM HCH 848.8MHz GSM NTV



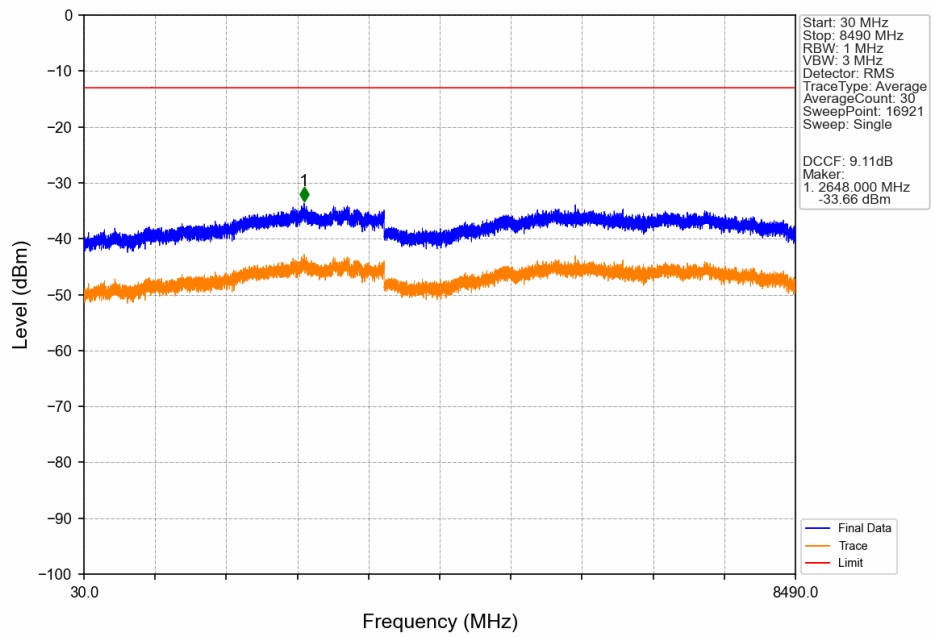
# GSM850 GPRS LCH 824.2MHz 1 TX Slot NTV



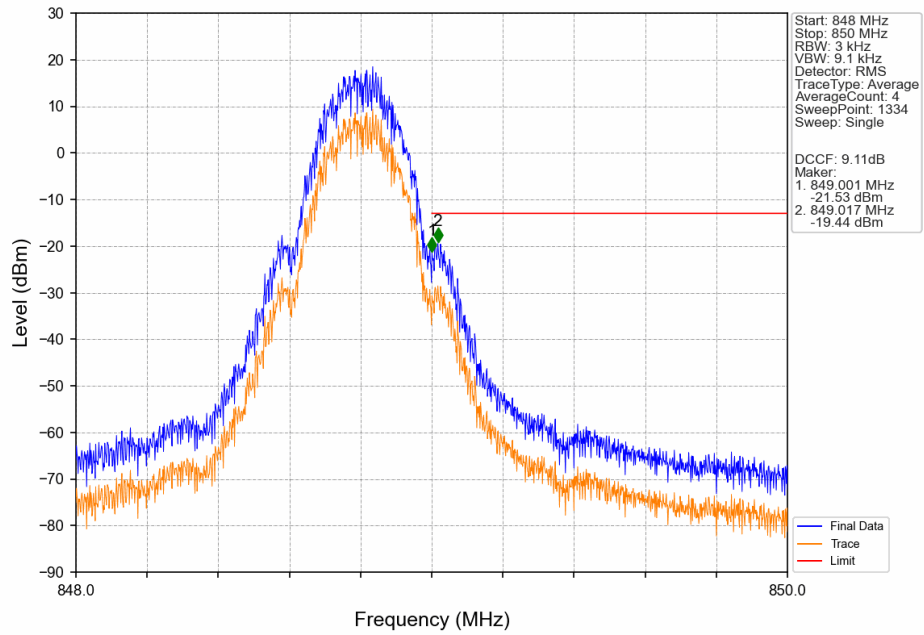
# GSM850 GPRS LCH 824.2MHz 1 TX Slot NTNV



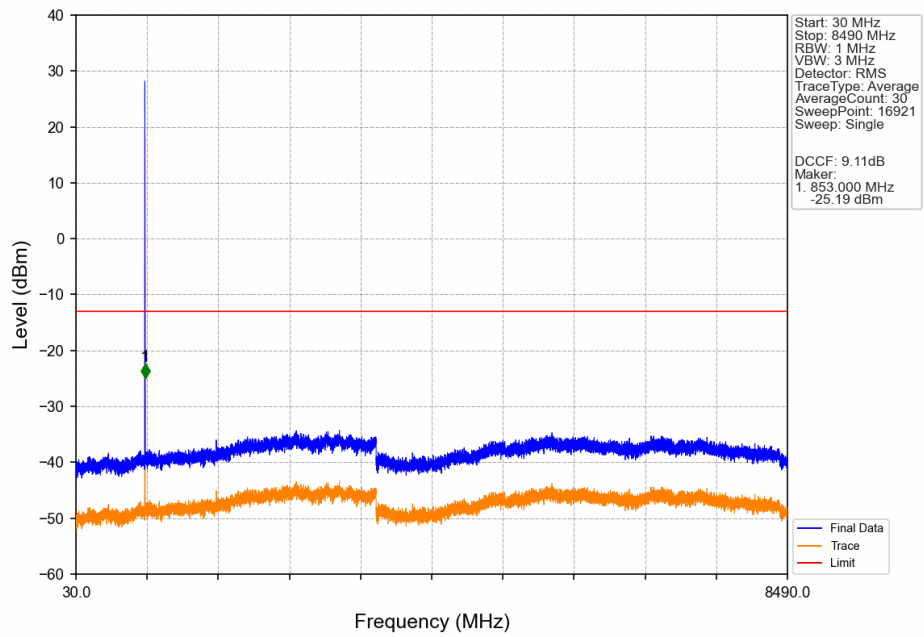
# GSM850 GPRS MCH 836.6MHz 1 TX Slot NTNV



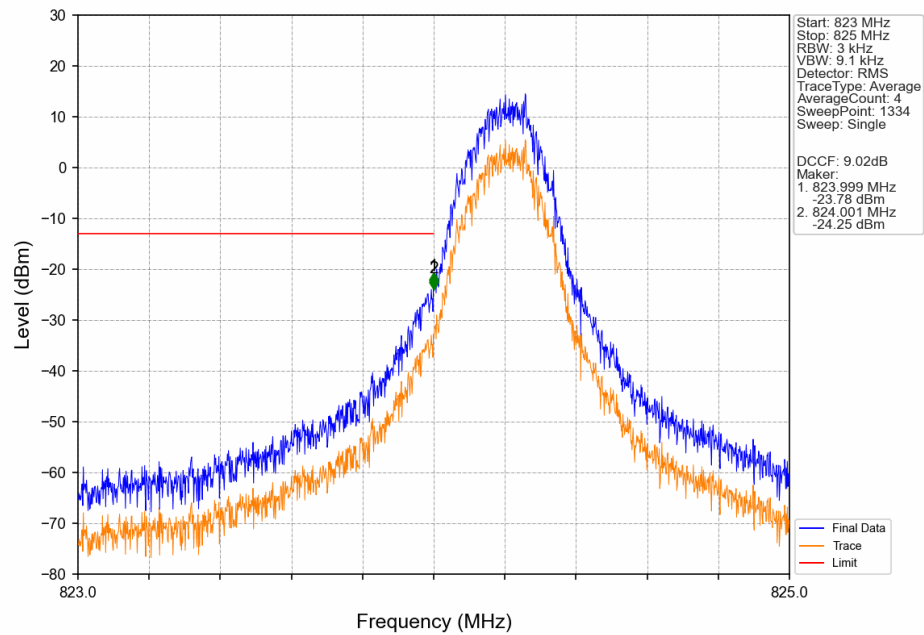
# GSM850 GPRS HCH 848.8MHz 1 TX Slot NTN



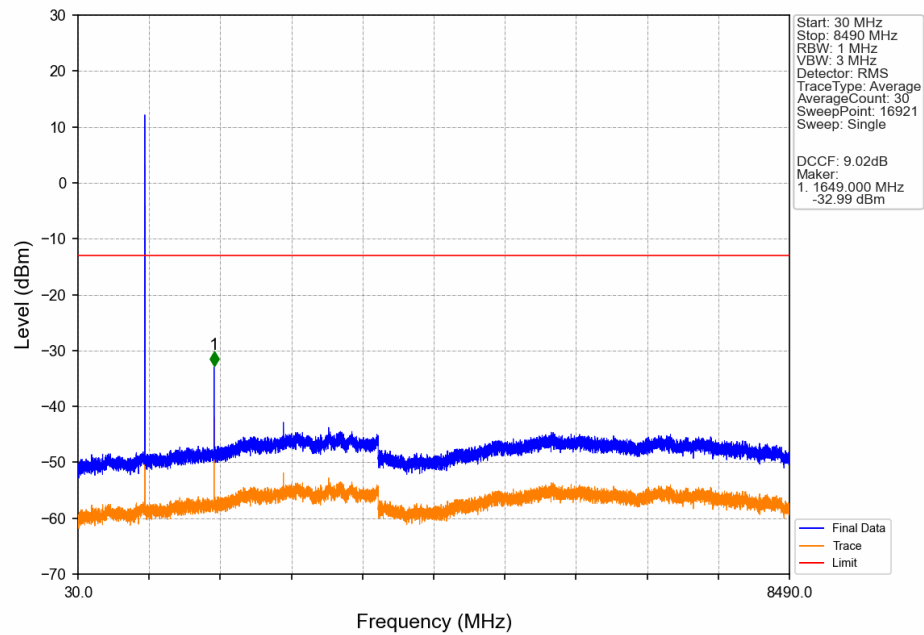
# GSM850 GPRS HCH 848.8MHz 1 TX Slot NTN



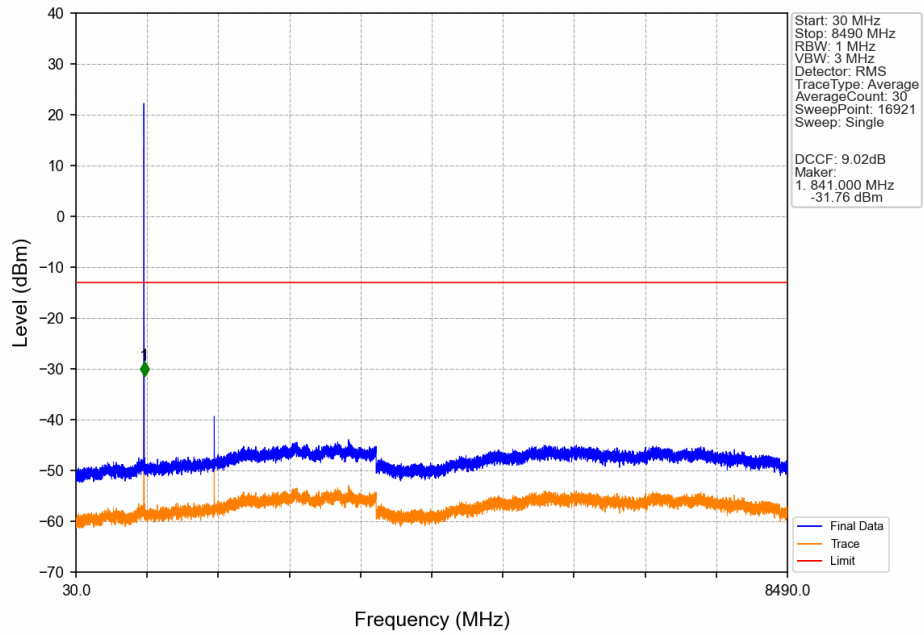
GSM850 EGPRS LCH 824.2MHz 1 TX Slot NTNV



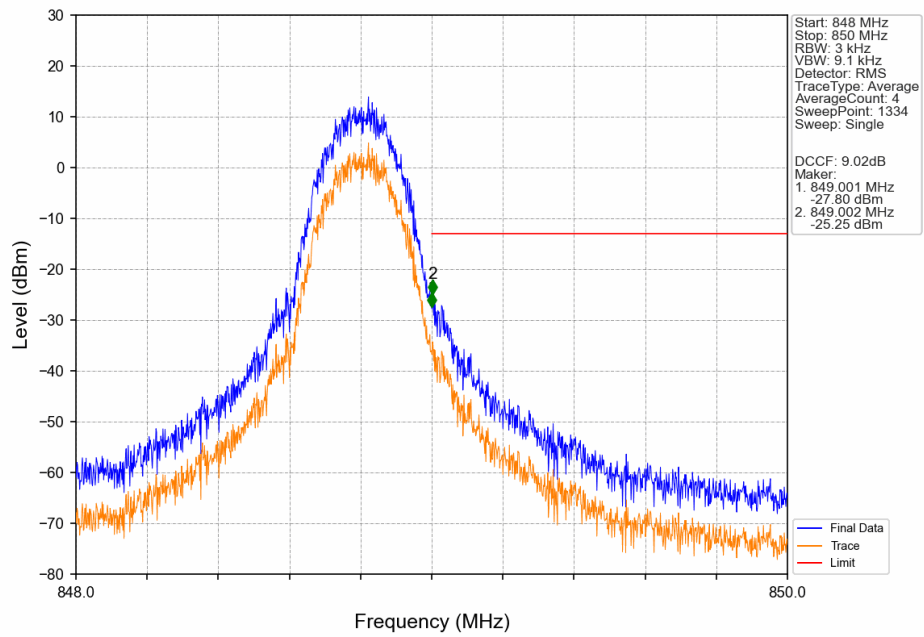
GSM850 EGPRS LCH 824.2MHz 1 TX Slot NTNV



# GSM850 EGPRS MCH 836.6MHz 1 TX Slot NTNV



# GSM850 EGPRS HCH 848.8MHz 1 TX Slot NTNV



GSM850 EGPRS HCH 848.8MHz 1 TX Slot NTNV

