# 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 | 31.87 | 0.62 | 30.34 | <=38.45 | Pass |
| | | | 836.6 | 31.86 | 0.62 | 30.33 | <=38.45 | Pass |
| | | | 848.8 | 31.71 | 0.62 | 30.18 | <=38.45 | Pass |
| | GPRS | 1 TX Slot | 824.2 | 31.87 | 0.62 | 30.34 | <=38.45 | Pass |
| | | 2 TX Slots | 824.2 | 31.09 | 0.62 | 29.56 | <=38.45 | Pass |
| | | 3 TX Slots | 824.2 | 29.42 | 0.62 | 27.89 | <=38.45 | Pass |
| | | 4 TX Slots | 824.2 | 28.41 | 0.62 | 26.88 | <=38.45 | Pass |
| | | 1 TX Slot | 836.6 | 31.85 | 0.62 | 30.32 | <=38.45 | Pass |
| | | 2 TX Slots | 836.6 | 31.09 | 0.62 | 29.56 | <=38.45 | Pass |
| | | 3 TX Slots | 836.6 | 29.41 | 0.62 | 27.88 | <=38.45 | Pass |
| | | 4 TX Slots | 836.6 | 28.39 | 0.62 | 26.86 | <=38.45 | Pass |
| | | 1 TX Slot | 848.8 | 31.71 | 0.62 | 30.18 | <=38.45 | Pass |
| | | 2 TX Slots | 848.8 | 30.98 | 0.62 | 29.45 | <=38.45 | Pass |
| | | 3 TX Slots | 848.8 | 29.34 | 0.62 | 27.81 | <=38.45 | Pass |
| | | 4 TX Slots | 848.8 | 28.34 | 0.62 | 26.81 | <=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 | 12.882 | 0.0156 | -2.5 to 2.5 | Pass |
| | | | 3.85 | 8.168 | 0.0099 | -2.5 to 2.5 | Pass |
| | | | 4.43 | 8.265 | 0.0100 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | 9.524 | 0.0116 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | 7.426 | 0.0090 | -2.5 to 2.5 | Pass |
| | | -10 | 3.85 | 3.713 | 0.0045 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | 0.678 | 0.0008 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | -2.777 | -0.0034 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | -3.551 | -0.0043 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | -4.423 | -0.0054 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | 0.097 | 0.0001 | -2.5 to 2.5 | Pass |
| | 836.6 | 20 | 3.27 | 7.264 | 0.0087 | -2.5 to 2.5 | Pass |
| | | | 3.85 | -9.686 | -0.0116 | -2.5 to 2.5 | Pass |
| | | | 4.43 | 0.452 | 0.0005 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | -0.678 | -0.0008 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | 0.517 | 0.0006 | -2.5 to 2.5 | Pass |
| | | -10 | 3.85 | -2.647 | -0.0032 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | 0.194 | 0.0002 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | 3.842 | 0.0046 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | -3.067 | -0.0037 | -2.5 to 2.5 | Pass |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 40 | 3.85 | -3.681 | -0.0044 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | 0.936 | 0.0011 | -2.5 to 2.5 | Pass |
| | | | 3.27 | 1.098 | 0.0013 | -2.5 to 2.5 | Pass |
| | | 20 | 3.85 | 1.065 | 0.0013 | -2.5 to 2.5 | Pass |
| | | | 4.43 | 4.552 | 0.0054 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | -2.551 | -0.0030 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | -1.033 | -0.0012 | -2.5 to 2.5 | Pass |
| | 848.8 | -10 | 3.85 | 2.583 | 0.0030 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | 0.517 | 0.0006 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | 3.681 | 0.0043 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | 8.297 | 0.0098 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | 2.292 | 0.0027 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | 2.647 | 0.0031 | -2.5 to 2.5 | Pass |
| | | | 3.27 | 8.071 | 0.0098 | -2.5 to 2.5 | Pass |
| | | 20 | 3.85 | 3.035 | 0.0037 | -2.5 to 2.5 | Pass |
| | | | 4.43 | 4.165 | 0.0051 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | -0.097 | -0.0001 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | 3.325 | 0.0040 | -2.5 to 2.5 | Pass |
| | 824.2 | -10 | 3.85 | 4.681 | 0.0057 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | 8.717 | 0.0106 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | 8.265 | 0.0100 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | 10.816 | 0.0131 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | 5.521 | 0.0067 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | 9.234 | 0.0112 | -2.5 to 2.5 | Pass |
| | | | 3.27 | 10.590 | 0.0127 | -2.5 to 2.5 | Pass |
| | | 20 | 3.85 | 9.040 | 0.0108 | -2.5 to 2.5 | Pass |
| | | | 4.43 | 3.422 | 0.0041 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | 11.494 | 0.0137 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | 9.815 | 0.0117 | -2.5 to 2.5 | Pass |
| GPRS | 836.6 | -10 | 3.85 | 7.329 | 0.0088 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | 8.136 | 0.0097 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | 9.201 | 0.0110 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | 14.981 | 0.0179 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | 15.045 | 0.0180 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | 12.688 | 0.0152 | -2.5 to 2.5 | Pass |
| | | | 3.27 | -1.259 | -0.0015 | -2.5 to 2.5 | Pass |
| | | 20 | 3.85 | -1.776 | -0.0021 | -2.5 to 2.5 | Pass |
| | | | 4.43 | 3.261 | 0.0038 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | 2.163 | 0.0025 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | 2.195 | 0.0026 | -2.5 to 2.5 | Pass |
| | 848.8 | -10 | 3.85 | 1.065 | 0.0013 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | 0.936 | 0.0011 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | 0.032 | 0.0000 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | 1.259 | 0.0015 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | 1.937 | 0.0023 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | -3.261 | -0.0038 | -2.5 to 2.5 | Pass |

# 3. Modulation Characteristics

## 3.1 GSM850

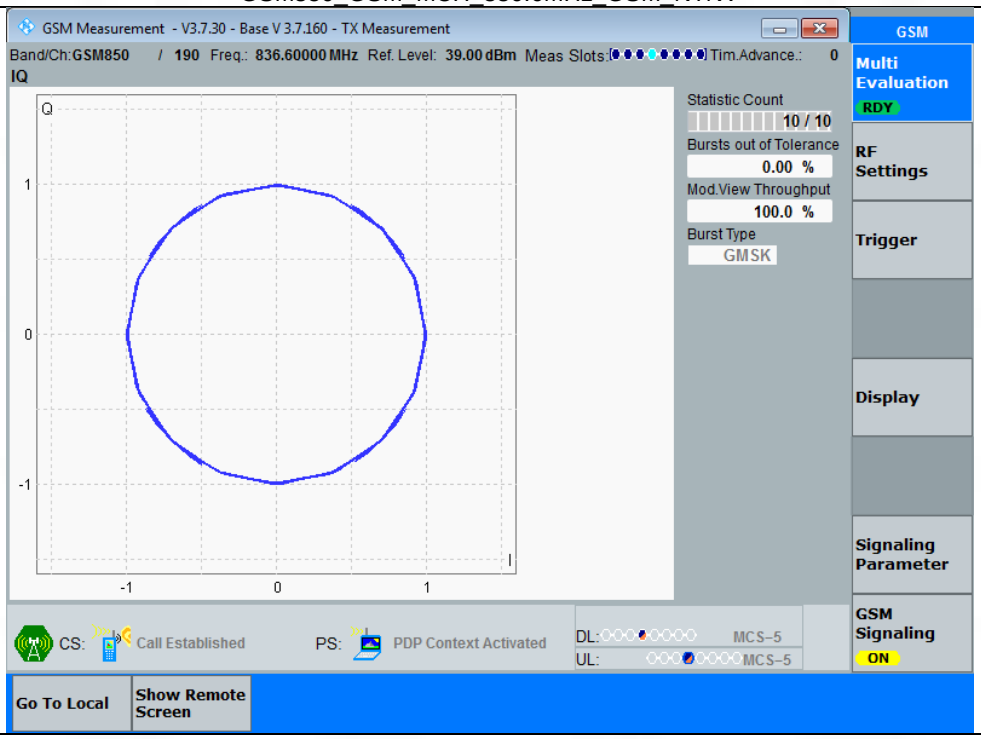
### 3.1.1 Test Result

| Band: GSM850 | | | | | | |
|---|---|---|---|---|---|---|
| ENV | Mode | | Frequency (MHz) | Modulation Characteristics | | Verdict |
| | Network | Subset | | Result | Limit | |

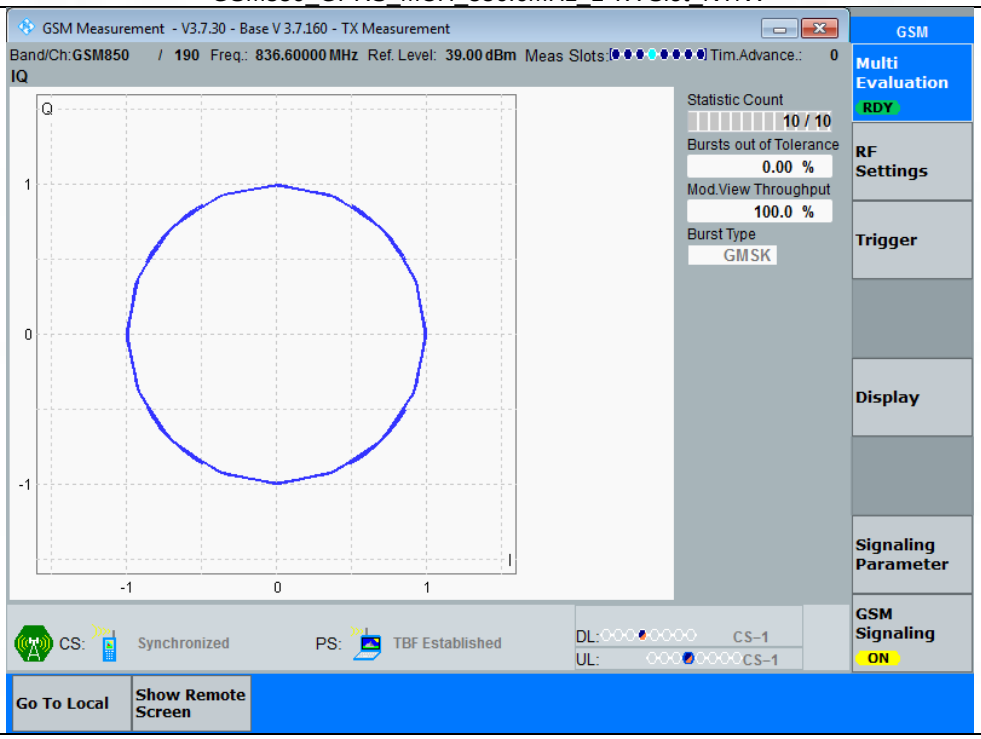
| | | | | | |
|---|---|---|---|---|---|
| NTNV | GSM | GSM | 836.6 | Refer To Test Graph | Pass |
| | GPRS | 1 TX Slot | 836.6 | Refer To Test Graph | Pass |

### 3.1.2 Test Graph

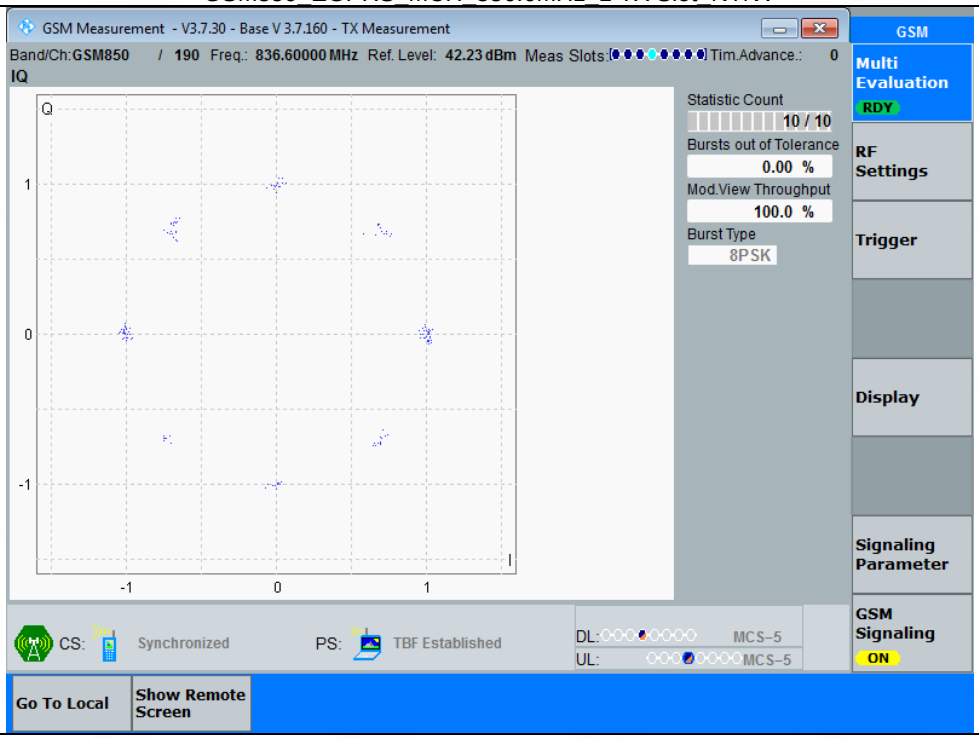
GSM850_GSM_MCH_836.6MHz_GSM_NTNV




GSM850_GPRS_MCH_836.6MHz_1 TX Slot_NTNV



GSM850_EGPRS_MCH_836.6MHz_1 TX Slot_NTNV



# 4. 99% & 26dB Bandwidth

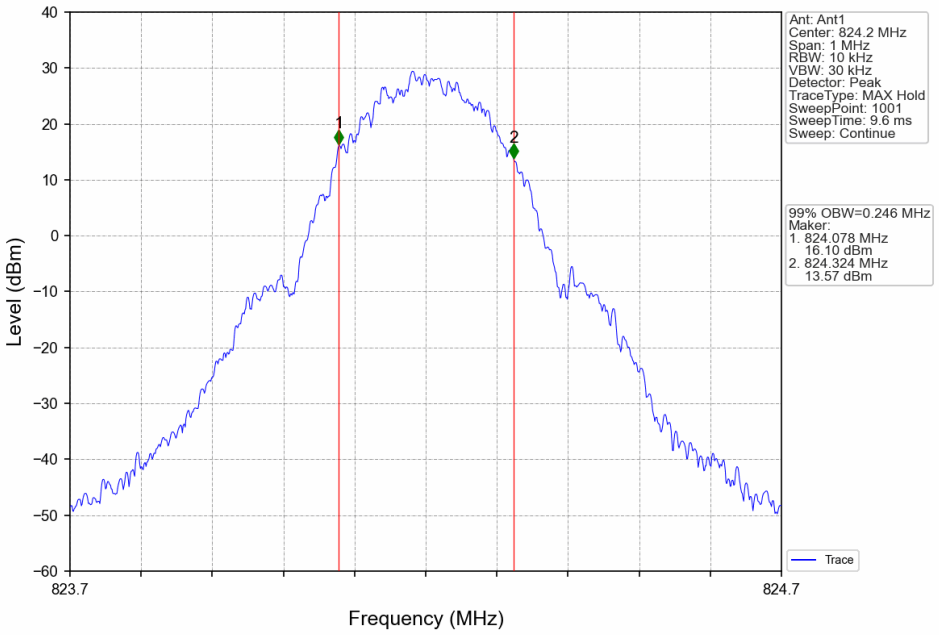
## 4.1 GSM850_OBW

### 4.1.1 Test Result

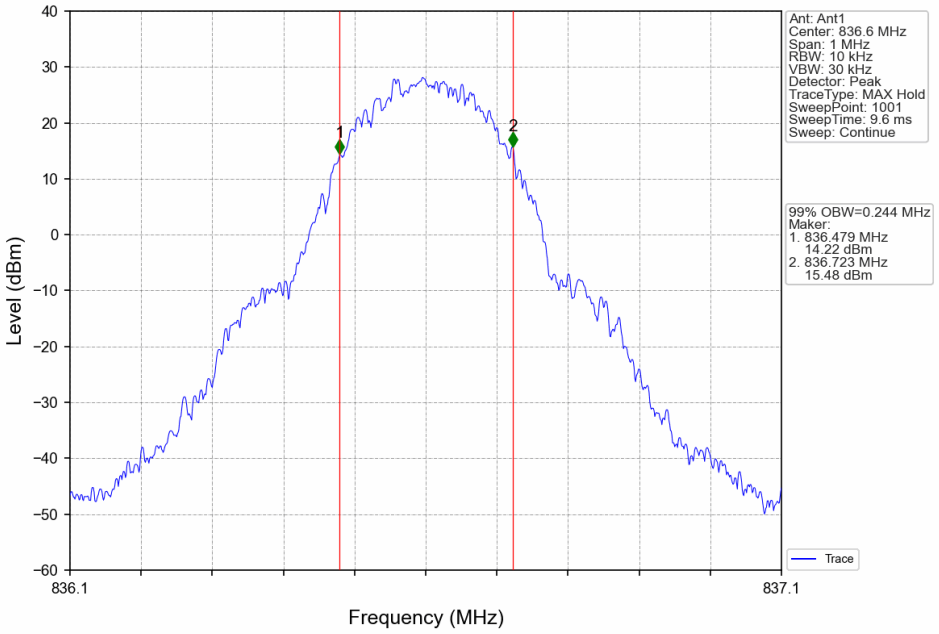
| Band: GSM850 | | | | | | |
|---|---|---|---|---|---|---|
| ENV | Mode | | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | | Verdict |
| | Network | Subset | | Result | Limit | |
| NTNV | GSM | GSM | 824.2 | 824.2 | 0.246 | Pass |
| | | | 836.6 | 836.6 | 0.244 | Pass |
| | | | 848.8 | 848.8 | 0.251 | Pass |
| | GPRS | 1 TX Slot | 824.2 | 824.2 | 0.250 | Pass |
| | | | 836.6 | 836.6 | 0.244 | Pass |
| | | | 848.8 | 848.8 | 0.246 | Pass |

## 4.1.2 Test Graph

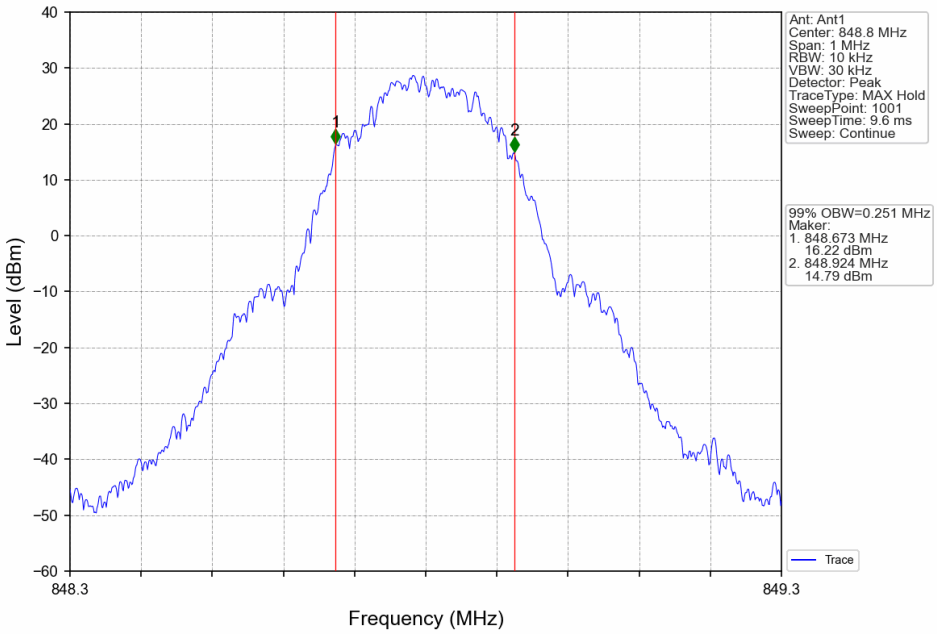
GSM850_GSM_LCH_824.2MHz_GSM_NTNV



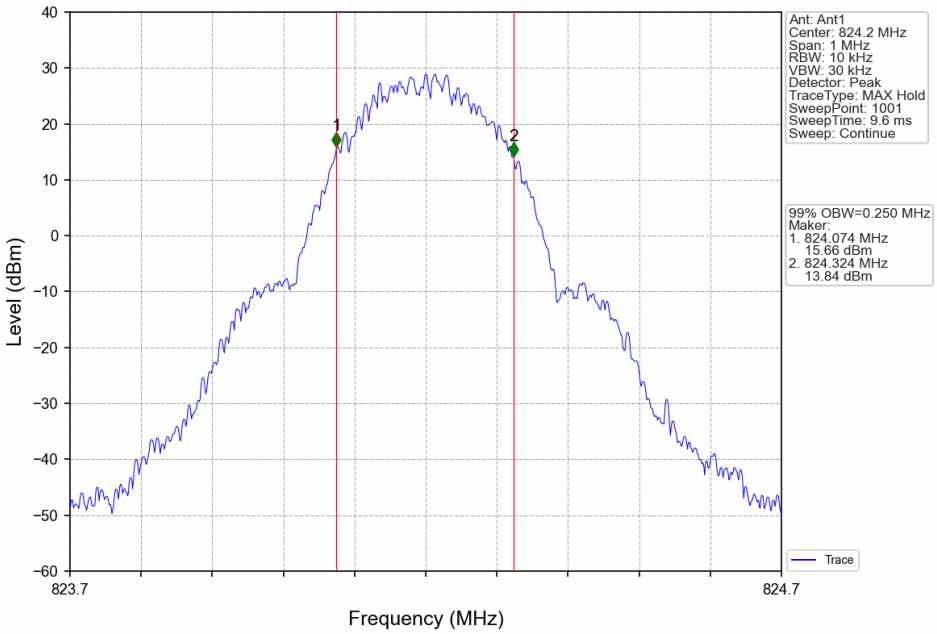

GSM850_GSM_MCH_836.6MHz_GSM_NTNV



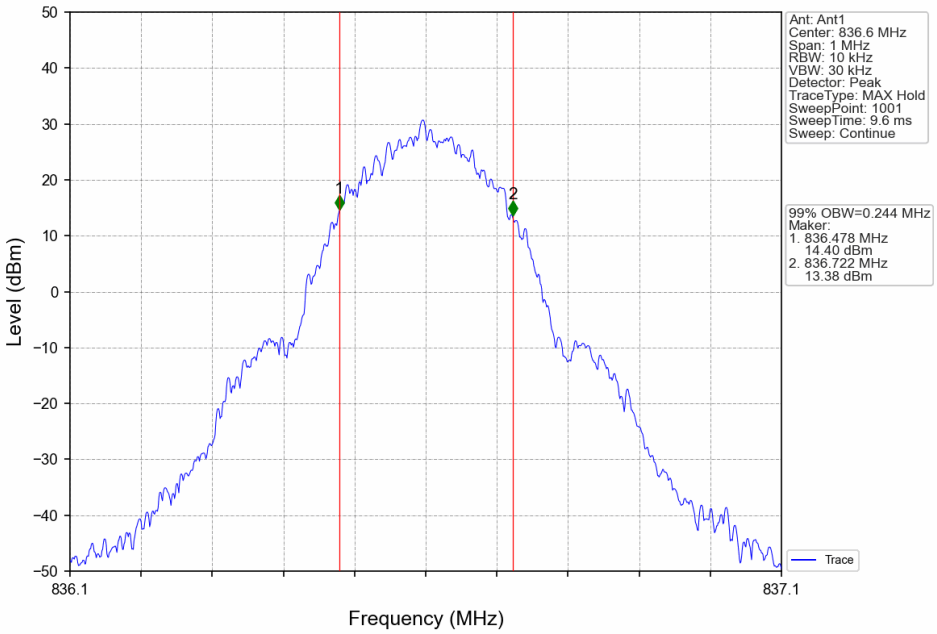
GSM850_GSM_HCH_848.8MHz_GSM_NTNV



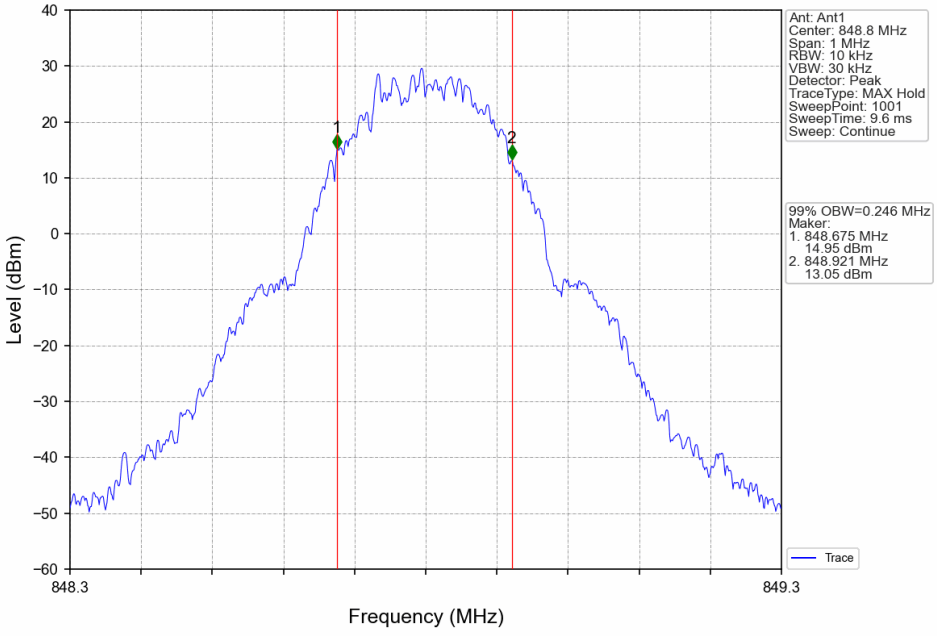

GSM850_GPRS_LCH_824.2MHz_1 TX Slot_NTNV



GSM850_GPRS_MCH_836.6MHz_1 TX Slot_NTNV




GSM850_GPRS_HCH_848.8MHz_1 TX Slot_NTNV



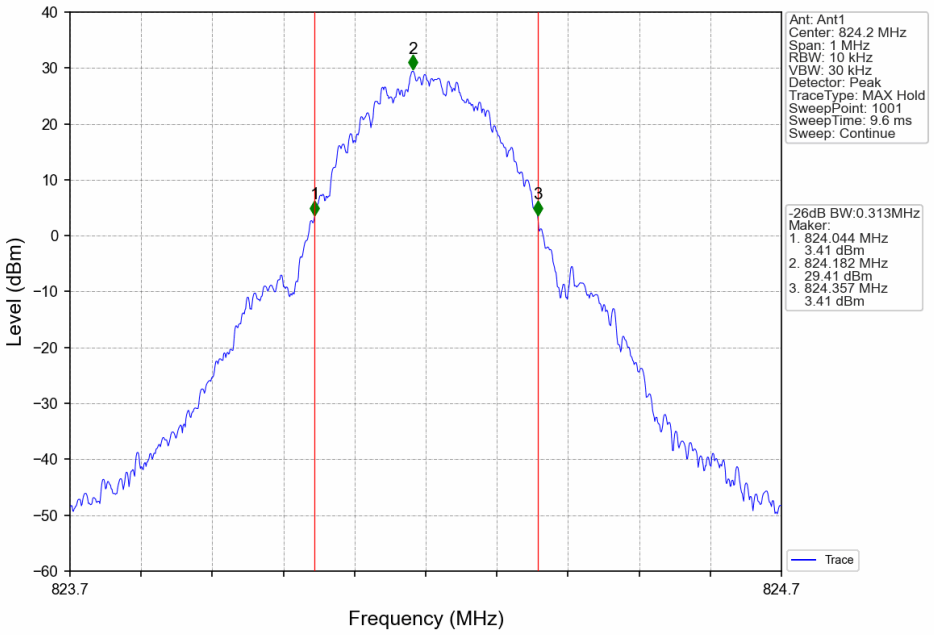
## 4.2 GSM850_XDB

### 4.2.1 Test Result

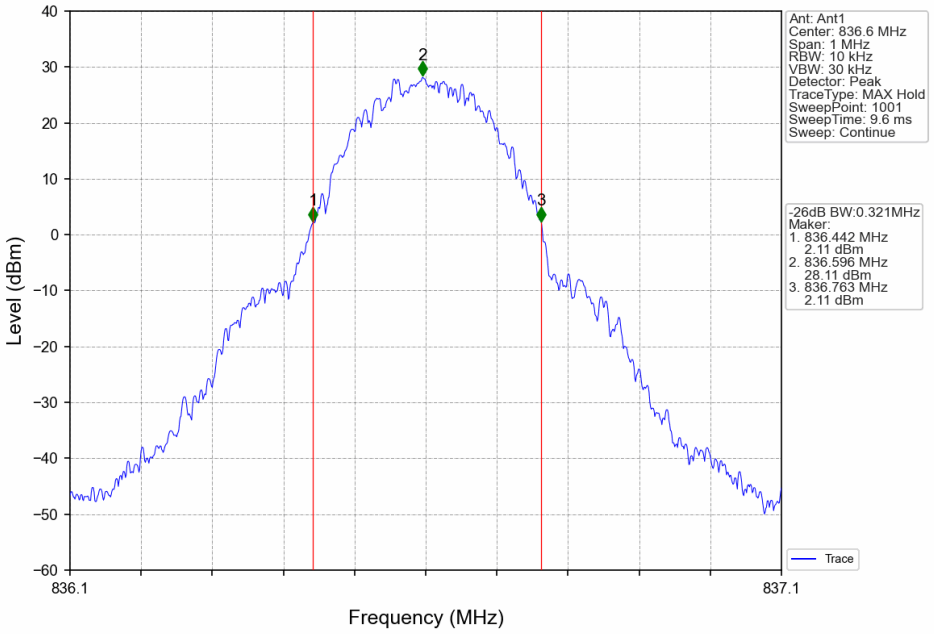
| Band: GSM850 | | | | | | |
|---|---|---|---|---|---|---|
| ENV | Mode | | Frequency (MHz) | 26dB Bandwidth (MHz) | | Verdict |
| | Network | Subset | | Result | Limit | |
| NTNV | GSM | GSM | 824.2 | 0.313 | / | Pass |
| | | | 836.6 | 0.321 | / | Pass |
| | | | 848.8 | 0.319 | / | Pass |
| | GPRS | 1 TX Slot | 824.2 | 0.317 | / | Pass |
| | | | 836.6 | 0.300 | / | Pass |
| | | | 848.8 | 0.319 | / | Pass |

## 4.2.2 Test Graph

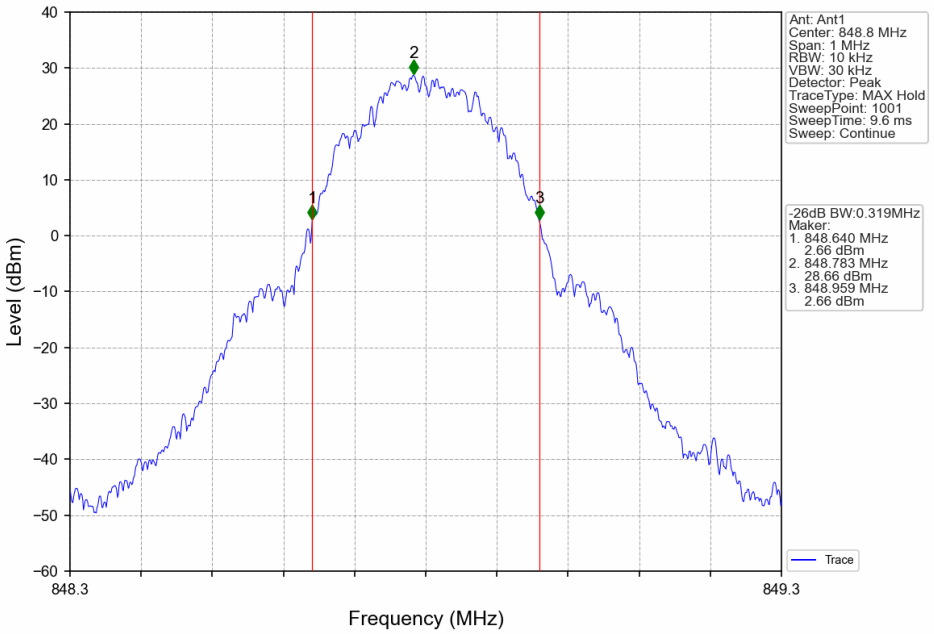
GSM850_GSM_LCH_824.2MHz_GSM_NTNV



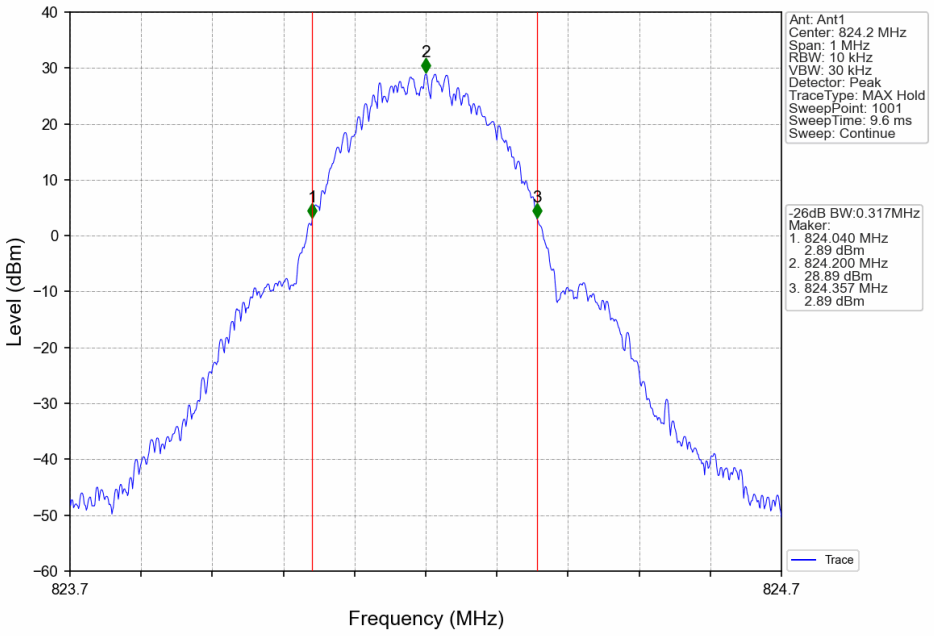

GSM850_GSM_MCH_836.6MHz_GSM_NTNV



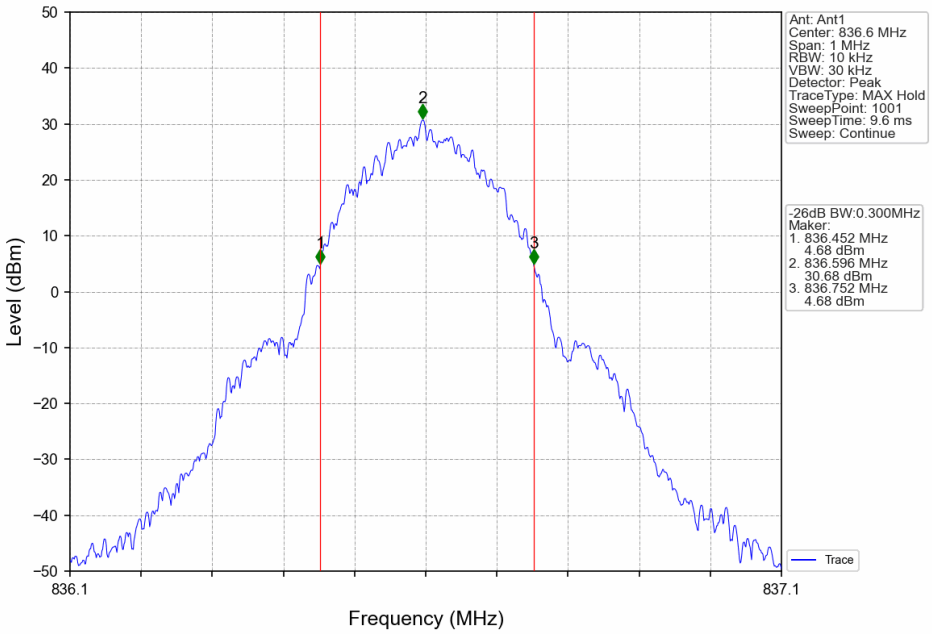
GSM850_GSM_HCH_848.8MHz_GSM_NTNV



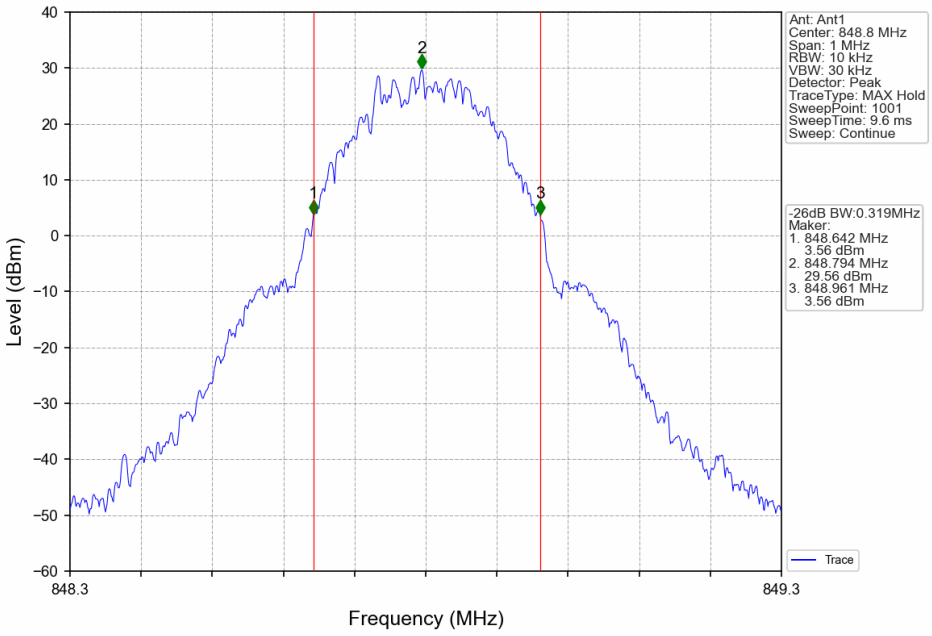

GSM850_GPRS_LCH_824.2MHz_1 TX Slot_NTNV



GSM850_GPRS_MCH_836.6MHz_1 TX Slot_NTNV




GSM850_GPRS_HCH_848.8MHz_1 TX Slot_NTNV



# 5. Peak-Average Ratio

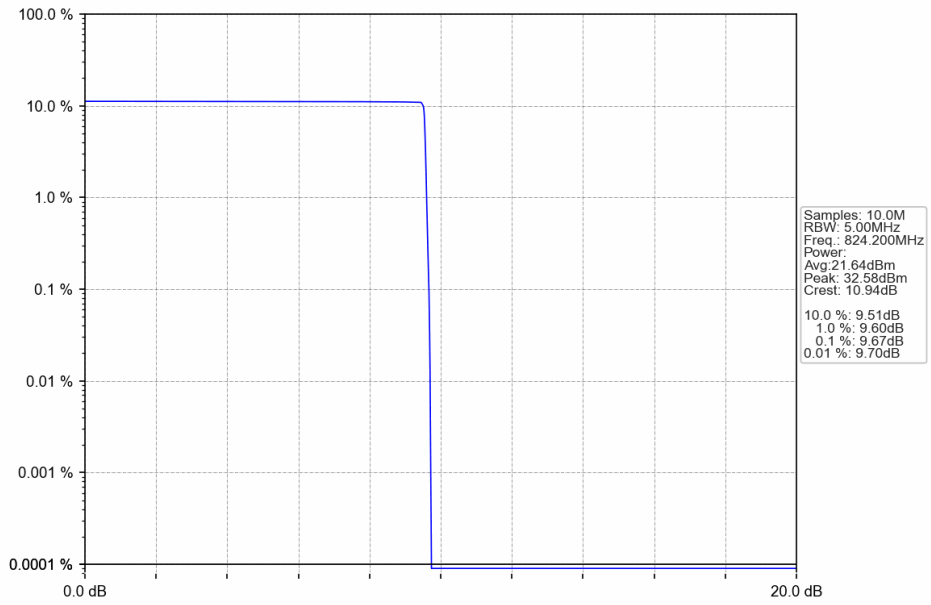
## 5.1 GSM850

### 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 | 9.65 | <=13 | Pass |
| | | | 836.6 | 9.61 | <=13 | Pass |
| | | | 848.8 | 8.91 | <=13 | Pass |
| | GPRS | 4 TX Slots | 824.2 | 10.11 | <=13 | Pass |
| | | | 836.6 | 3.62 | <=13 | Pass |
| | | | 848.8 | 3.55 | <=13 | Pass |

## 5.1.2 Test Graph

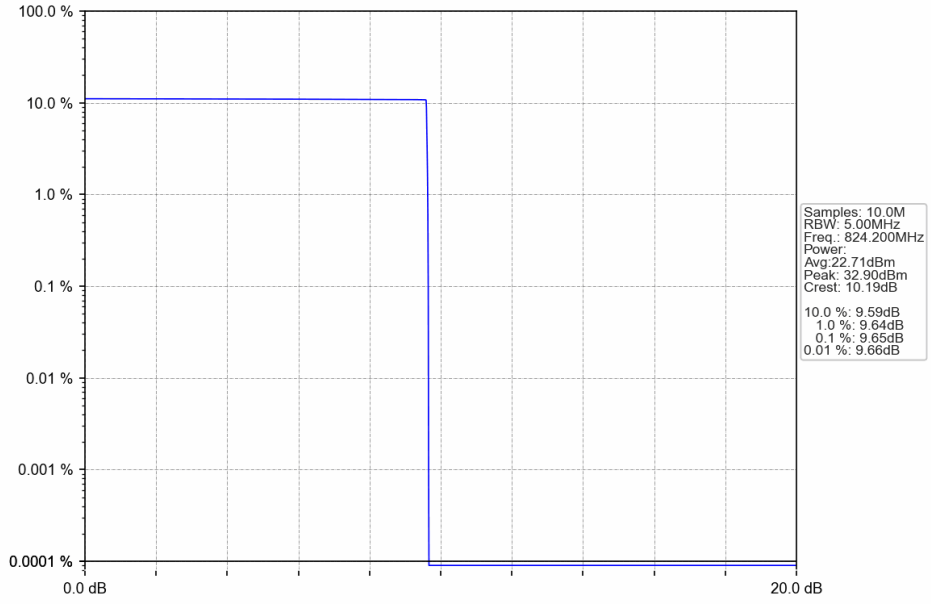
GSM850_GSM_LCH_824.2MHz_GSM_NTNV



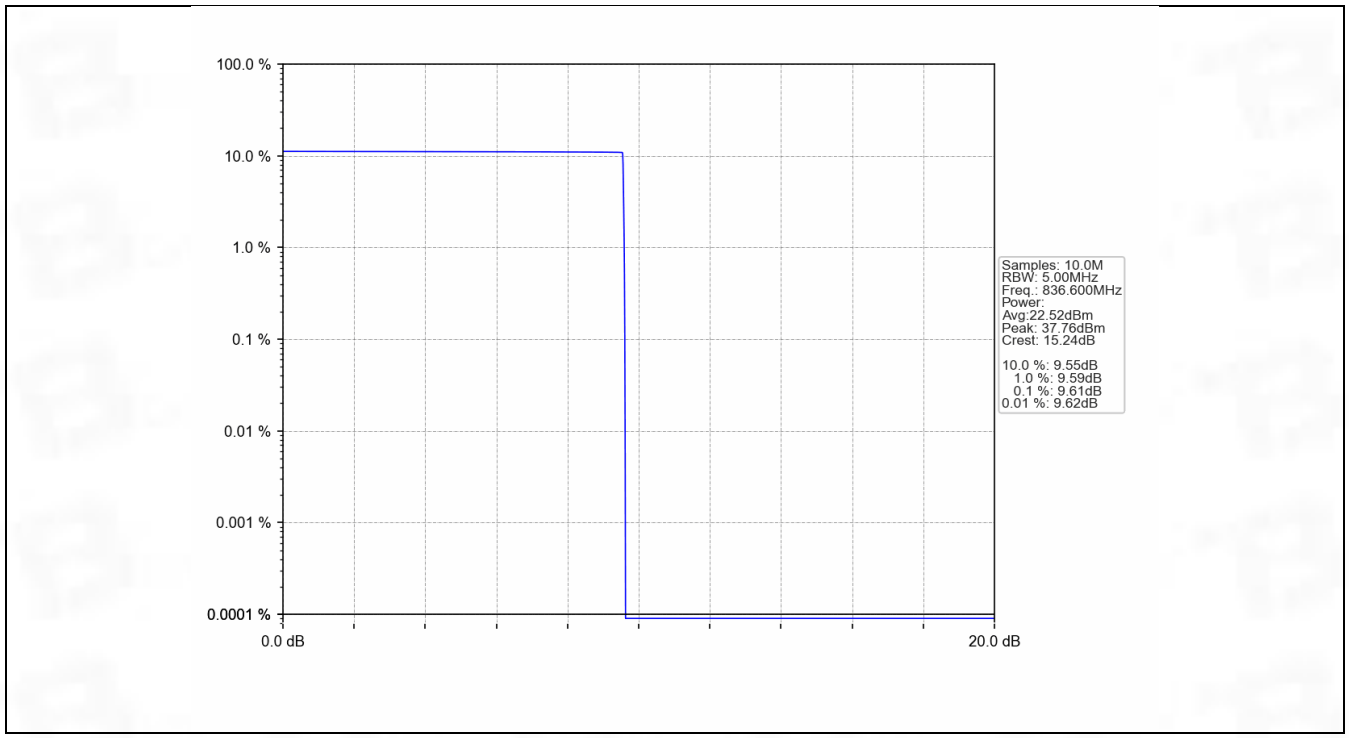

GSM850_GSM_MCH_836.6MHz_GSM_NTNV

## 5.1.2 Test Graph

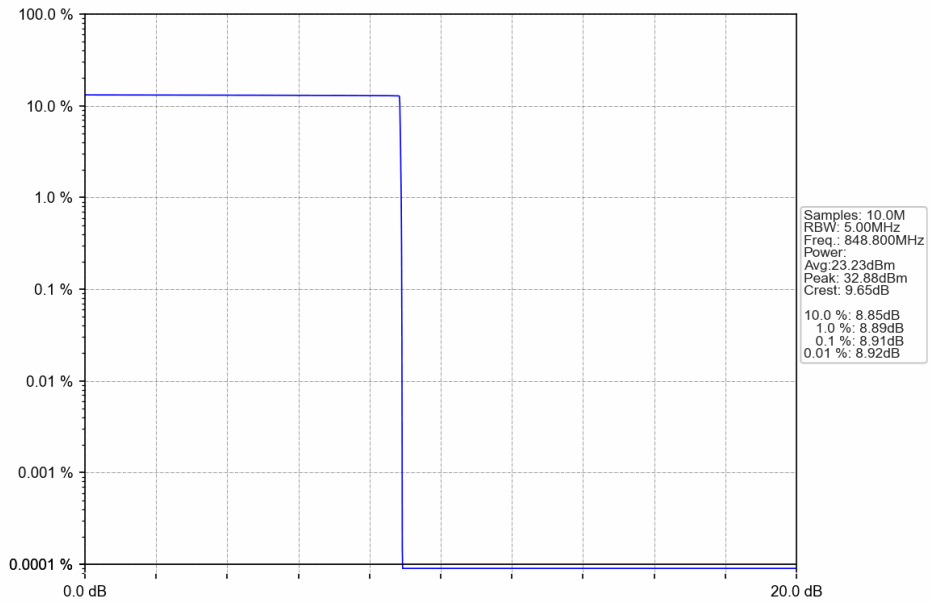
GSM850_GSM_LCH_824.2MHz_GSM_NTNV



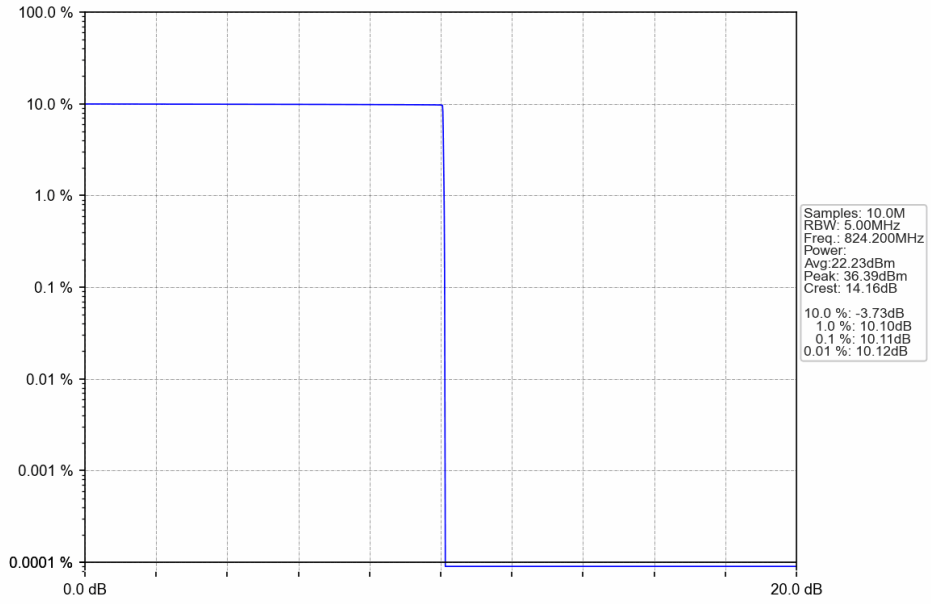

GSM850_GSM_MCH_836.6MHz_GSM_NTNV


100.0 %
10.0 %
1.0 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.0 dB
20.0 dB
Samples: 10.0M
RBW: 5.00MHz
Freq.: 836.600MHz
Power:
Avg:22.52dBm
Peak: 37.76dBm
Crest: 15.24dB
10.0 %: 9.55dB
1.0 %: 9.59dB
0.1 %: 9.61dB
0.01 %: 9.62dB

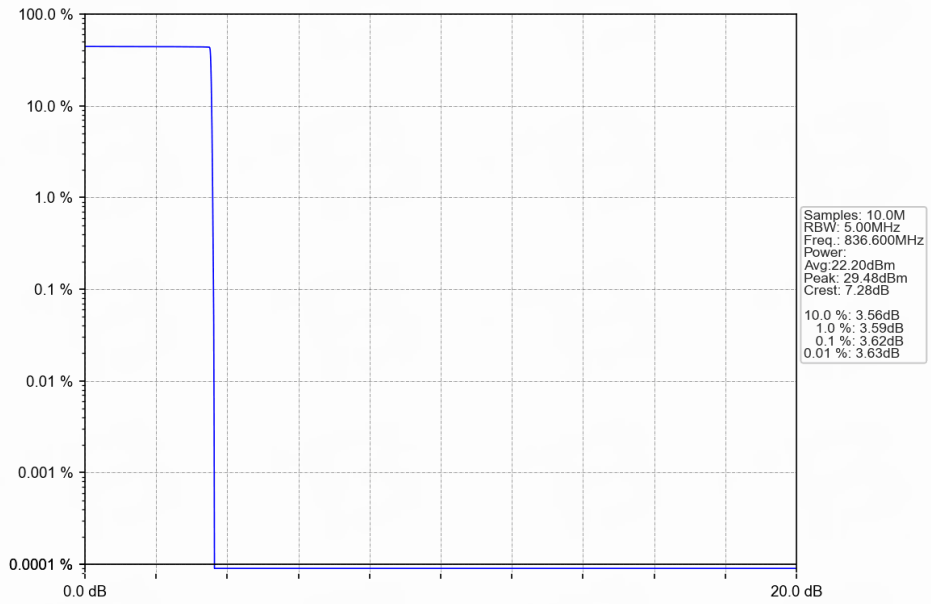
GSM850_GSM_HCH_848.8MHz_GSM_NTNV



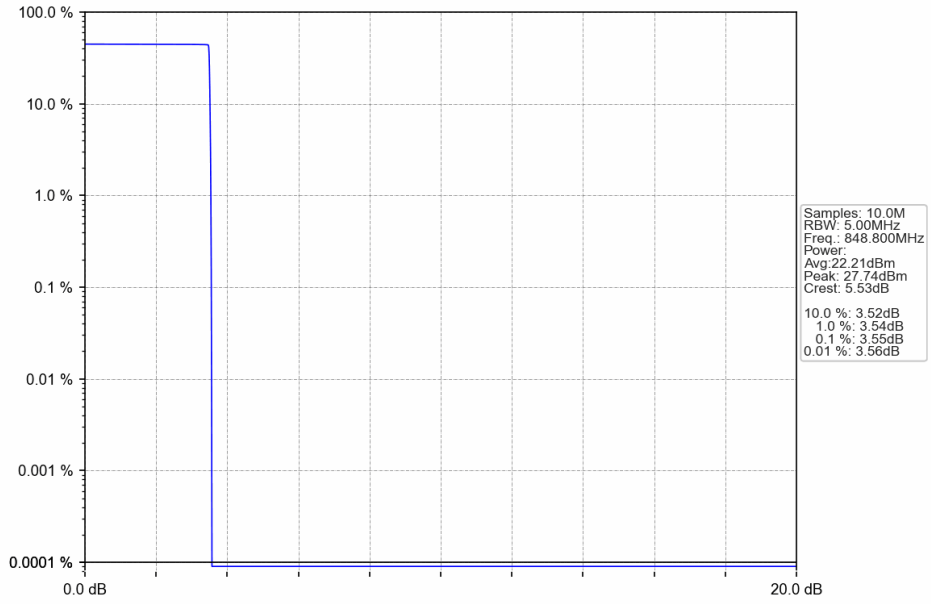

GSM850_GPRS_LCH_824.2MHz_4 TX Slots_NTNV



GSM850_GPRS_MCH_836.6MHz_4 TX Slots_NTNV




GSM850_GPRS_HCH_848.8MHz_4 TX Slots_NTNV



# 6. Spurious Emission

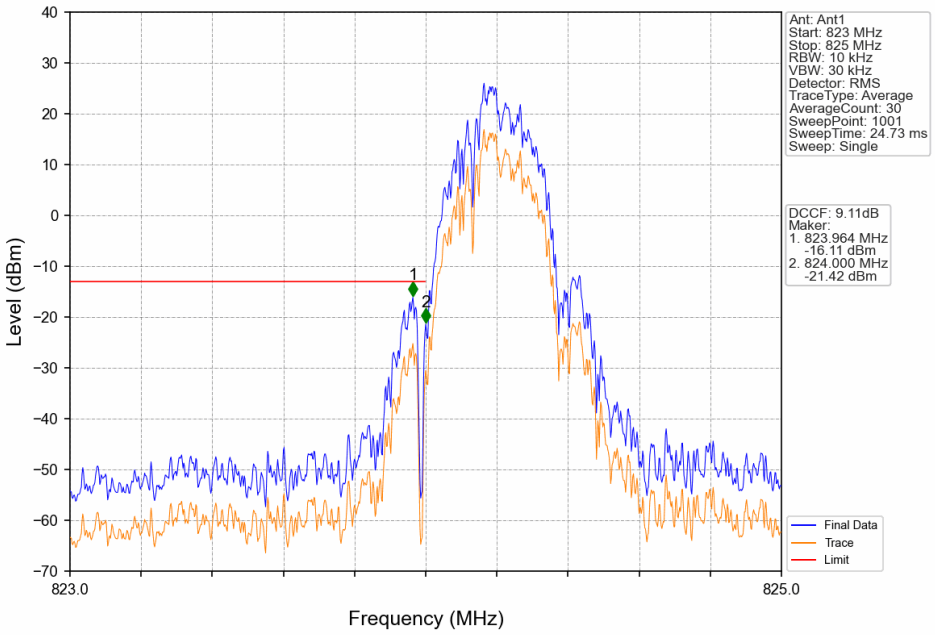
## 6.1 GSM850

### 6.1.1 Test Result

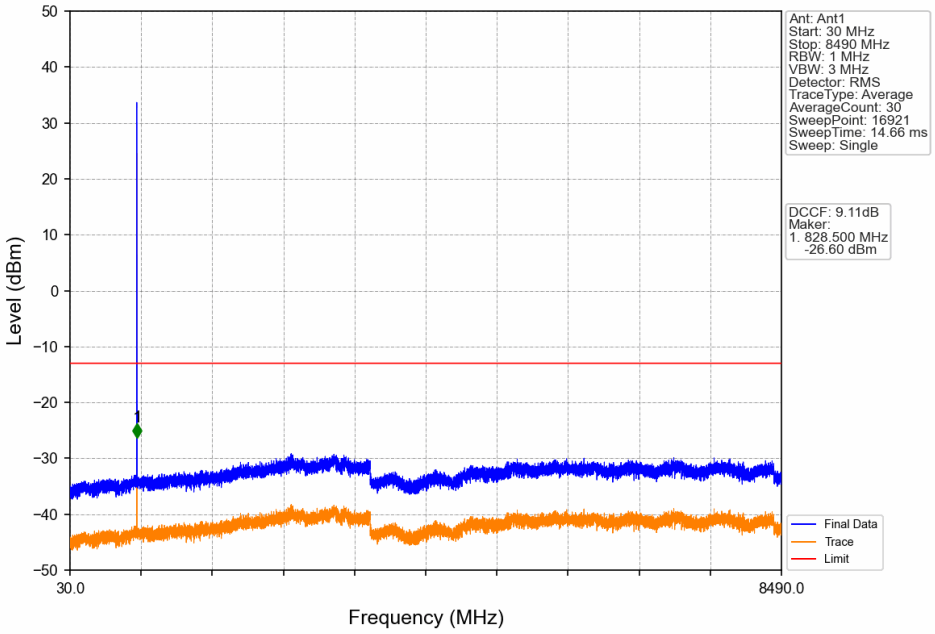
| Band: GSM850 | | | | | | |
|---|---|---|---|---|---|---|
| ENV | Mode | | Frequency (MHz) | Spurious Emission | | Verdict |
| | Network | Subset | | Result | Limit | |
| NTNV | GSM | GSM | 824.2 | Refer To Test Graph | | Pass |
| | | | 836.6 | Refer To Test Graph | | Pass |
| | | | 848.8 | Refer To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

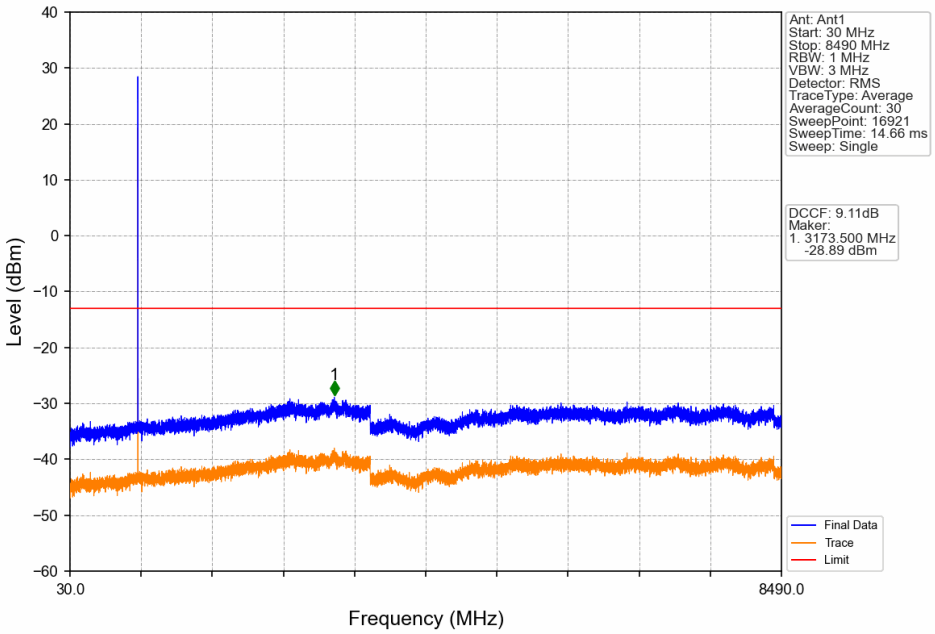
GSM850_GSM_LCH_824.2MHz_GSM_NTNV



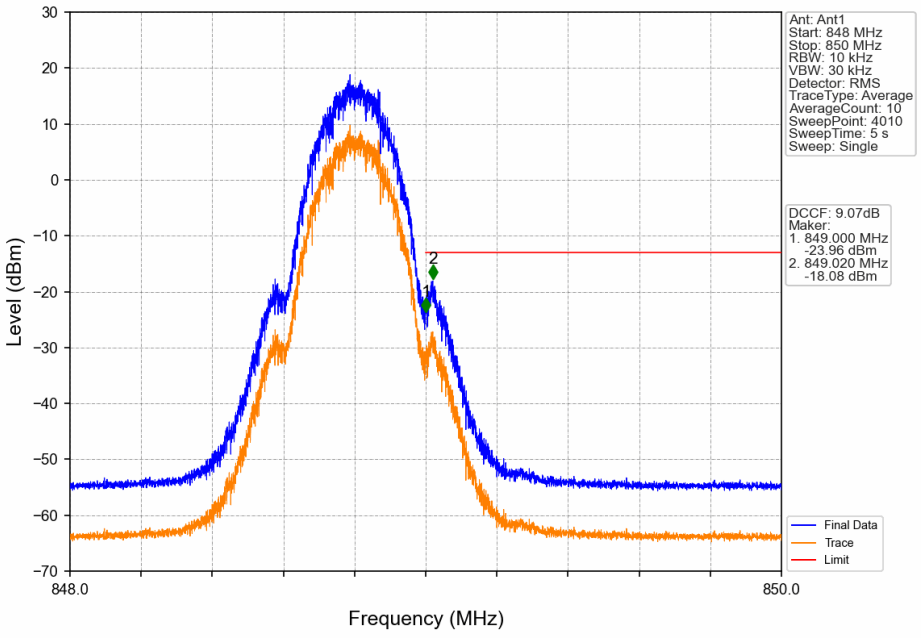

GSM850_GSM_LCH_824.2MHz_GSM_NTNV



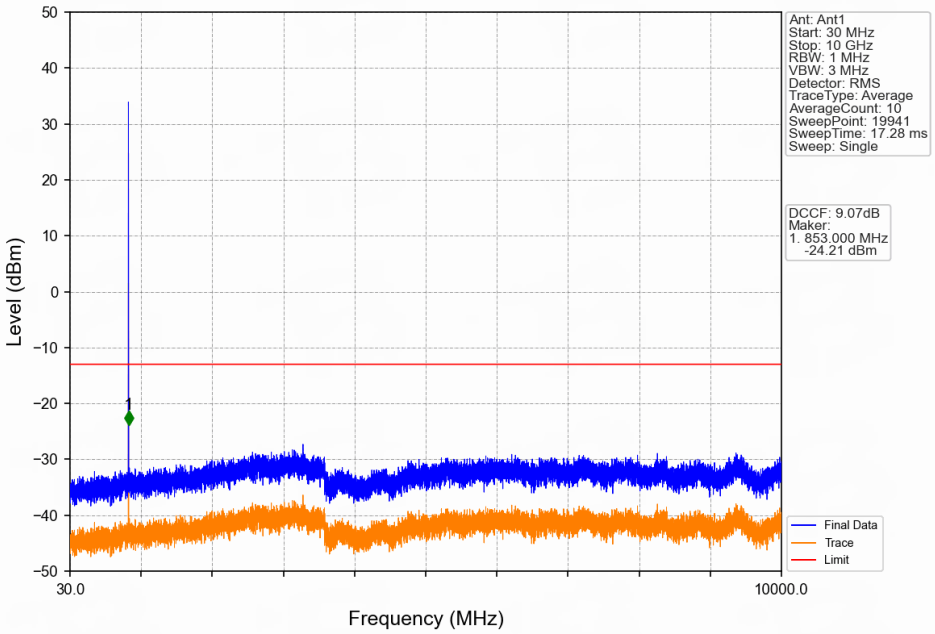
GSM850_GSM_MCH_836.6MHz_GSM_NTNV



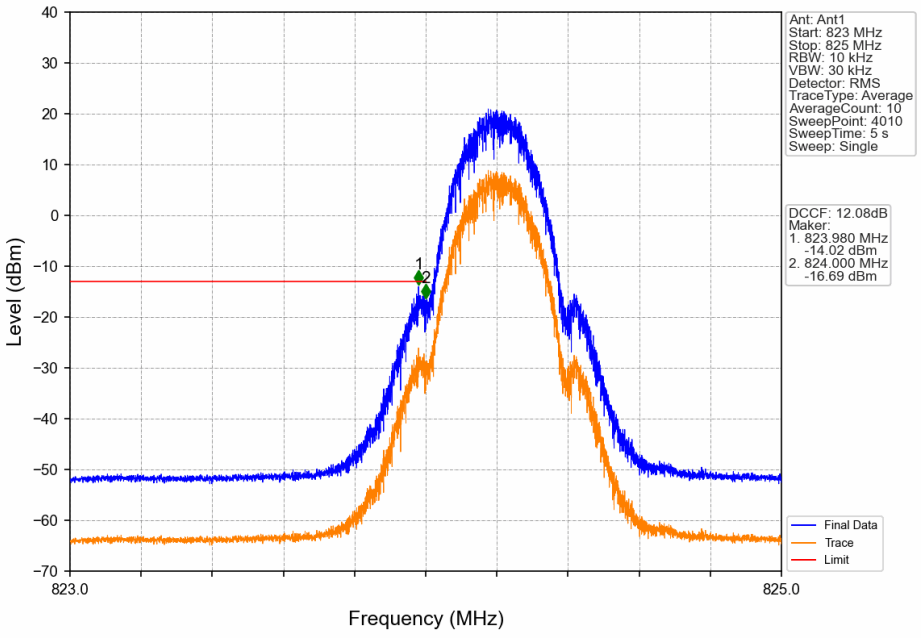

GSM850_GSM_HCH_848.8MHz_GSM_NTNV



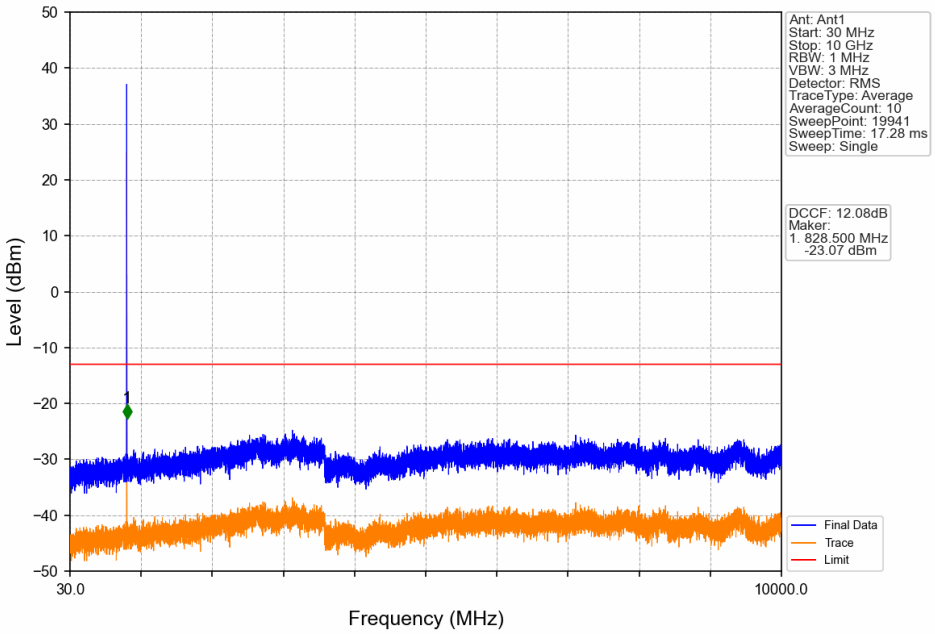
GSM850_GSM_HCH_848.8MHz_GSM_NTNV



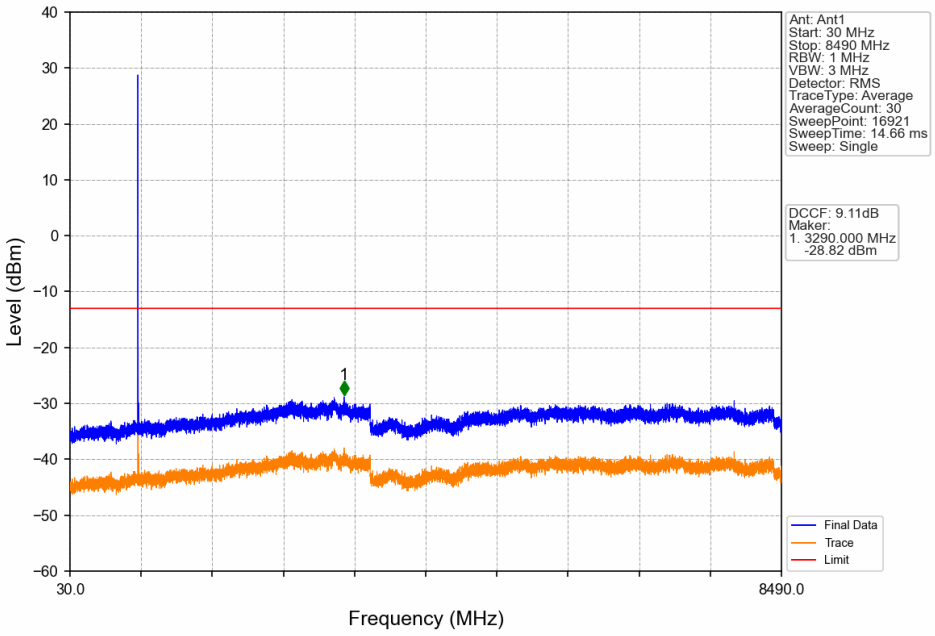

GSM850_GPRS_LCH_824.2MHz_1 TX Slot_NTNV



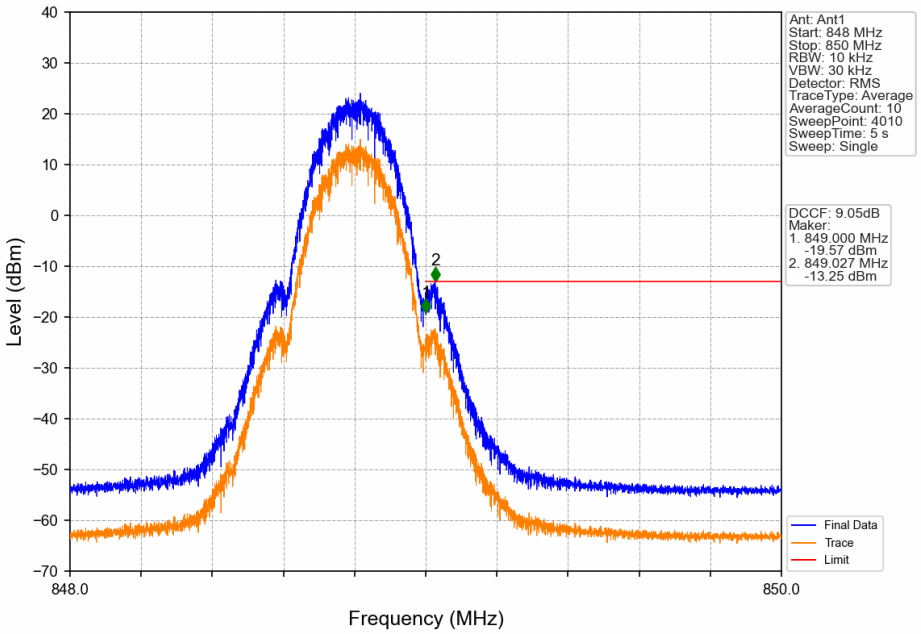
GSM850_GPRS_LCH_824.2MHz_1 TX Slot_NTNV



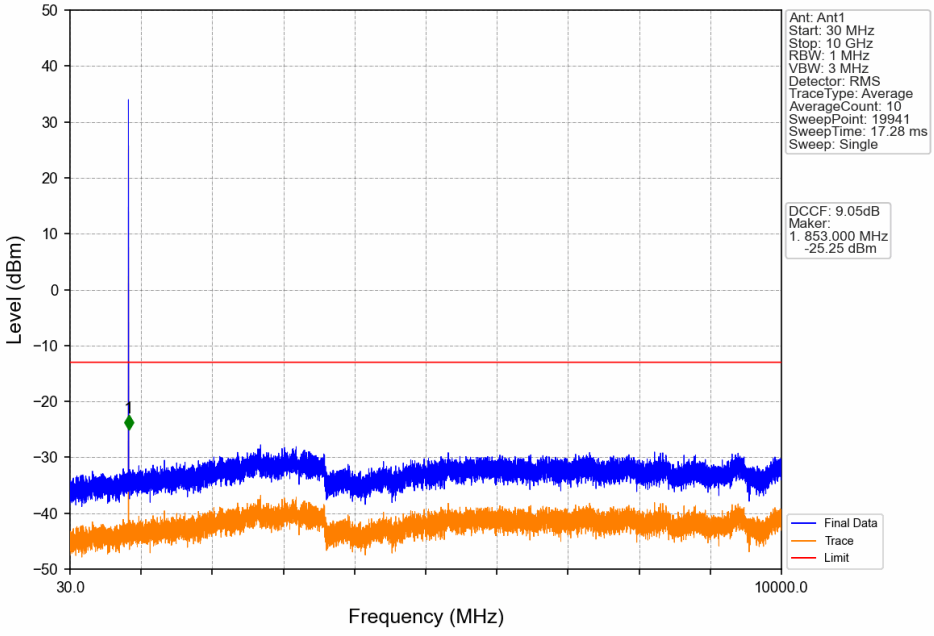

GSM850_GPRS_MCH_836.6MHz_1 TX Slot_NTNV



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 | 1.5382 | 0.0156 | ppm | 251KGXW | 22H | 31.87 |

## 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 | 1.0814 | 0.0156 | ppm | 251KGXW | 22H | 30.34 |