# 1. Effective (Isotropic) Radiated Power Output Data

## 1.1 Test Result

| Test Band: PCS1900 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Test Mode | | Conducted Power (dBm) | | | Antenna gain | | EIRP(dBm) | | | Limit (dBm) | Verdict |
| | | LCH | MCH | HCH | (dBd) | (dBi) | LCH | MCH | HCH | | |
| GSM | GSM | 30.44 | 30.46 | 30.18 | / | 0.9 | 31.34 | 31.36 | 31.08 | 33.01 | PASS |
| EGPRS | 1 TX Slot | 29.36 | 29.49 | 29.51 | / | 0.9 | 30.26 | 30.39 | 30.41 | 33.01 | PASS |
| | 2 TX Slots | 27.23 | 27.22 | 27.02 | / | 0.9 | 28.13 | 28.12 | 27.92 | 33.01 | PASS |
| | 3 TX Slots | 25.74 | 25.72 | 25.57 | / | 0.9 | 26.64 | 26.62 | 26.47 | 33.01 | PASS |
| | 4 TX Slots | 23.81 | 23.79 | 23.64 | / | 0.9 | 24.71 | 24.69 | 24.54 | 33.01 | PASS |
| GPRS | 1 TX Slot | 29.38 | 29.45 | 29.47 | / | 0.9 | 30.28 | 30.35 | 30.37 | 33.01 | PASS |
| | 2 TX Slots | 27.24 | 27.18 | 26.98 | / | 0.9 | 28.14 | 28.08 | 27.88 | 33.01 | PASS |
| | 3 TX Slots | 25.74 | 25.69 | 25.51 | / | 0.9 | 26.64 | 26.59 | 26.41 | 33.01 | PASS |
| | 4 TX Slots | 23.80 | 23.76 | 23.59 | / | 0.9 | 24.7 | 24.66 | 24.49 | 33.01 | PASS |

Note:
1) dBd = dBi - 2.15
2) EIRP = Conducted output power + Antenna gain (dBi)

| Test Band: GSM850 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Test Mode | | Conducted Power (dBm) | | | Antenna gain | | ERP(dBm) | | | Limit (dBm) | Verdict |
| | | LCH | MCH | HCH | (dBd) | (dBi) | LCH | MCH | HCH | | |
| GSM | GSM | 34.10 | 34.42 | 34.09 | -1.85 | 0.3 | 32.25 | 32.57 | 32.24 | 38.45 | PASS |
| EGPRS | 1 TX Slot | 33.15 | 33.13 | 28.96 | -1.85 | 0.3 | 31.3 | 31.28 | 27.11 | 38.45 | PASS |
| | 2 TX Slots | 26.52 | 31.34 | 31.38 | -1.85 | 0.3 | 24.67 | 29.49 | 29.53 | 38.45 | PASS |
| | 3 TX Slots | 29.46 | 29.52 | 25.07 | -1.85 | 0.3 | 27.61 | 27.67 | 23.22 | 38.45 | PASS |
| | 4 TX Slots | 23.16 | 27.53 | 23.15 | -1.85 | 0.3 | 21.31 | 25.68 | 21.3 | 38.45 | PASS |
| GPRS | 1 TX Slot | 33.14 | 33.10 | 32.99 | -1.85 | 0.3 | 31.29 | 31.25 | 31.14 | 38.45 | PASS |
| | 2 TX Slots | 31.31 | 31.34 | 31.37 | -1.85 | 0.3 | 29.46 | 29.49 | 29.52 | 38.45 | PASS |
| | 3 TX Slots | 29.47 | 29.52 | 29.54 | -1.85 | 0.3 | 27.62 | 27.67 | 27.69 | 38.45 | PASS |
| | 4 TX Slots | 27.45 | 27.53 | 27.61 | -1.85 | 0.3 | 25.6 | 25.68 | 25.76 | 38.45 | PASS |

Note:
1) dBd = dBi - 2.15
2) EIRP = Conducted output power + Antenna gain (dBi)
3) ERP = Conducted output power + Antenna gain (dBd)

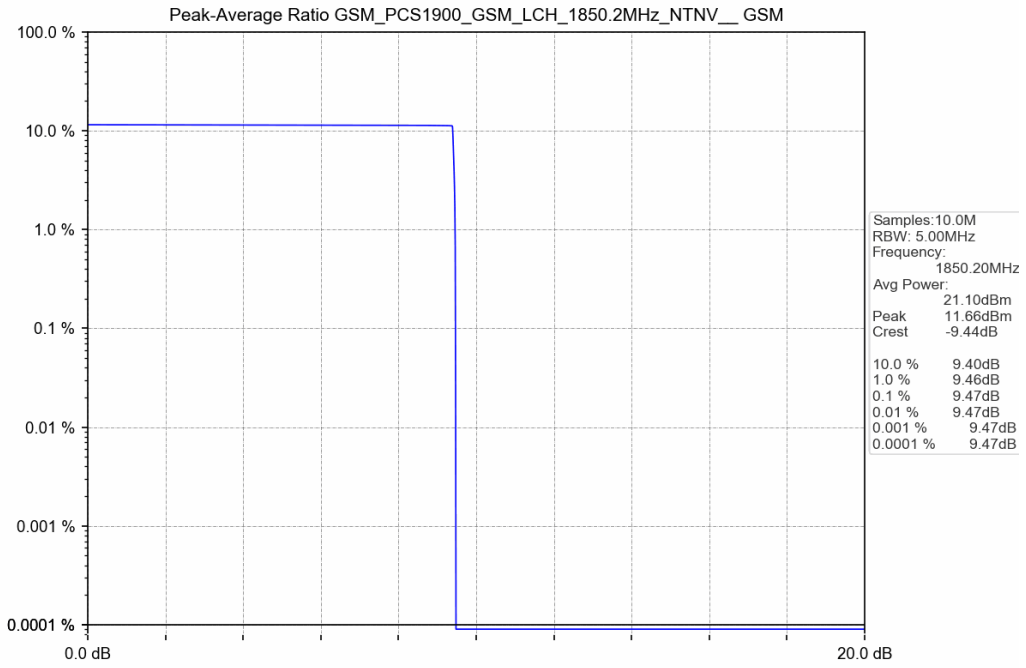
# 2. Peak-Average Ratio

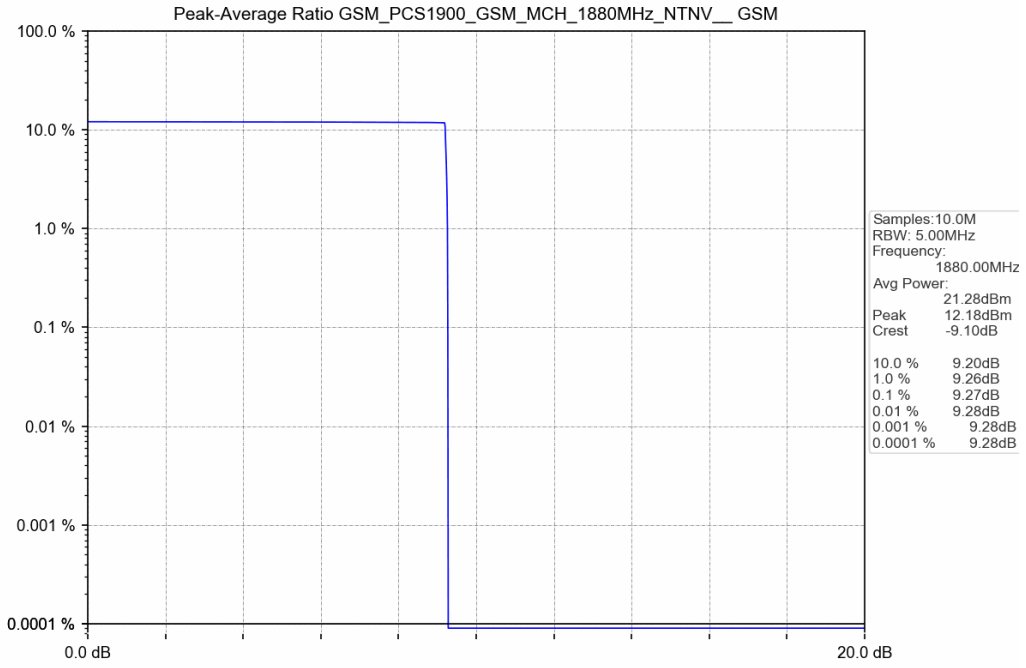
## 2.1 Test Result

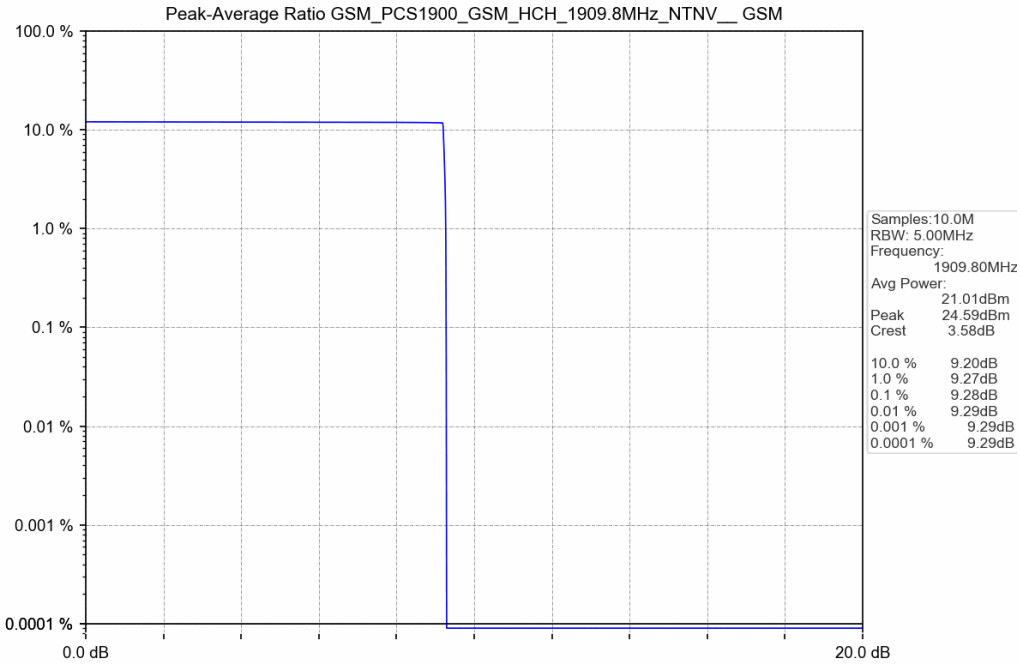
| Test Band: PCS1900 | | | | | |
|---|---|---|---|---|---|
| Test Mode | Test result (dB) | | | Limit (dB) | Verdict |
| | LCH | MCH | HCH | | |
| GSM | 9.47 | 9.27 | 9.28 | 13 | PASS |
| EGPRS | 3.54 | 3.50 | 3.49 | 13 | PASS |
| GPRS | 3.63 | 3.50 | 3.58 | 13 | PASS |

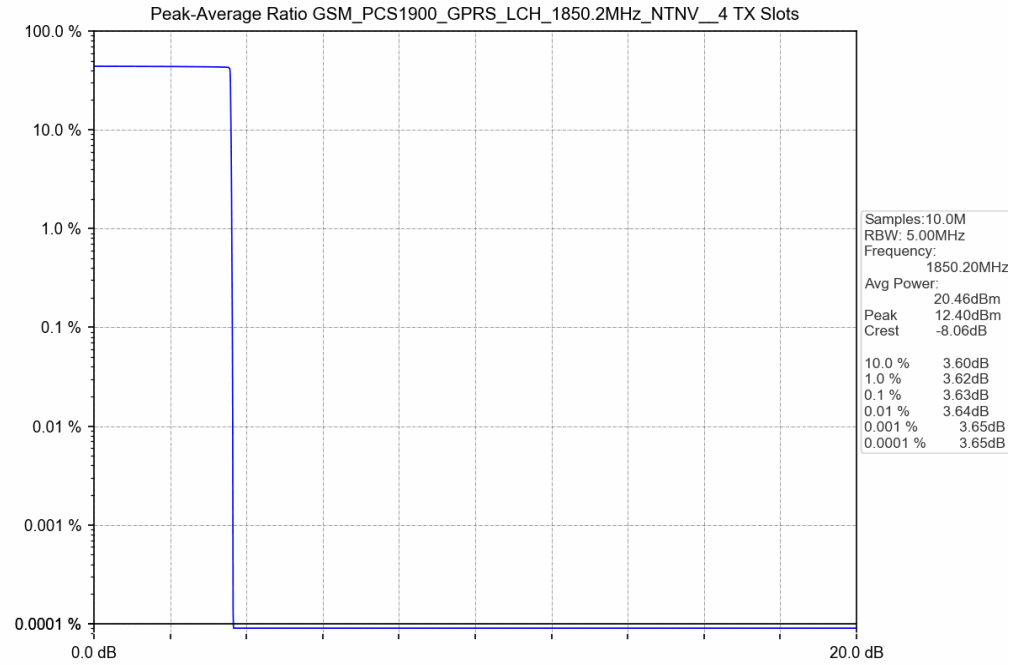
| Test Band: GSM850 | | | | | |
|---|---|---|---|---|---|
| Test Mode | Test result (dB) | | | Limit (dB) | Verdict |
| | LCH | MCH | HCH | | |
| EGPRS | 9.10 | 9.10 | 9.52 | 13 | PASS |
| GPRS | 3.48 | 3.48 | 3.55 | 13 | PASS |

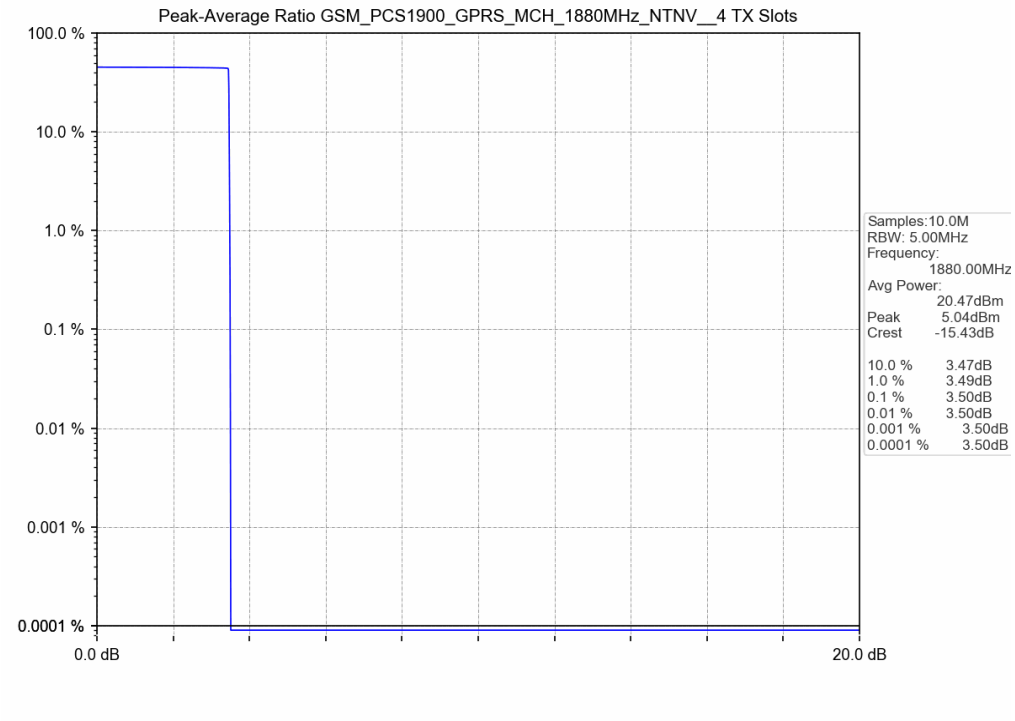
## 2.2 Test Graph

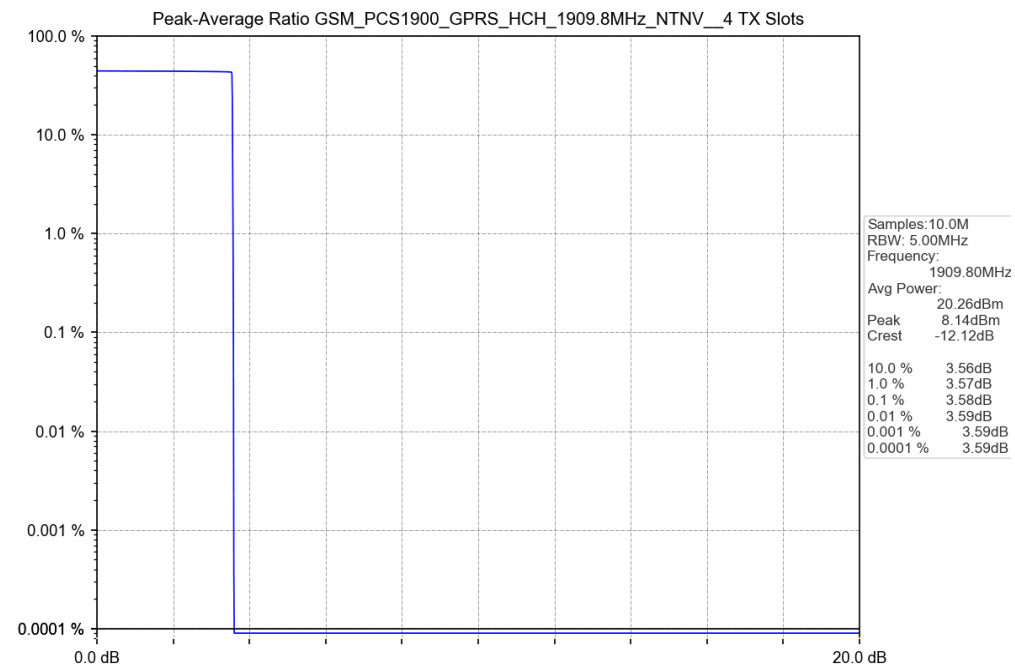


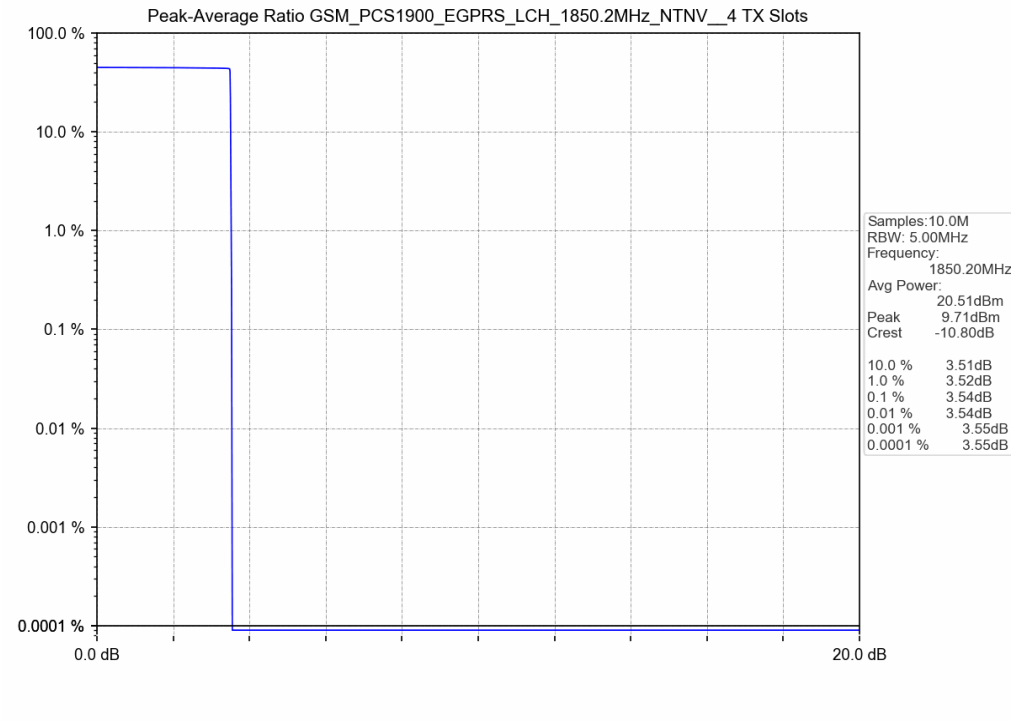



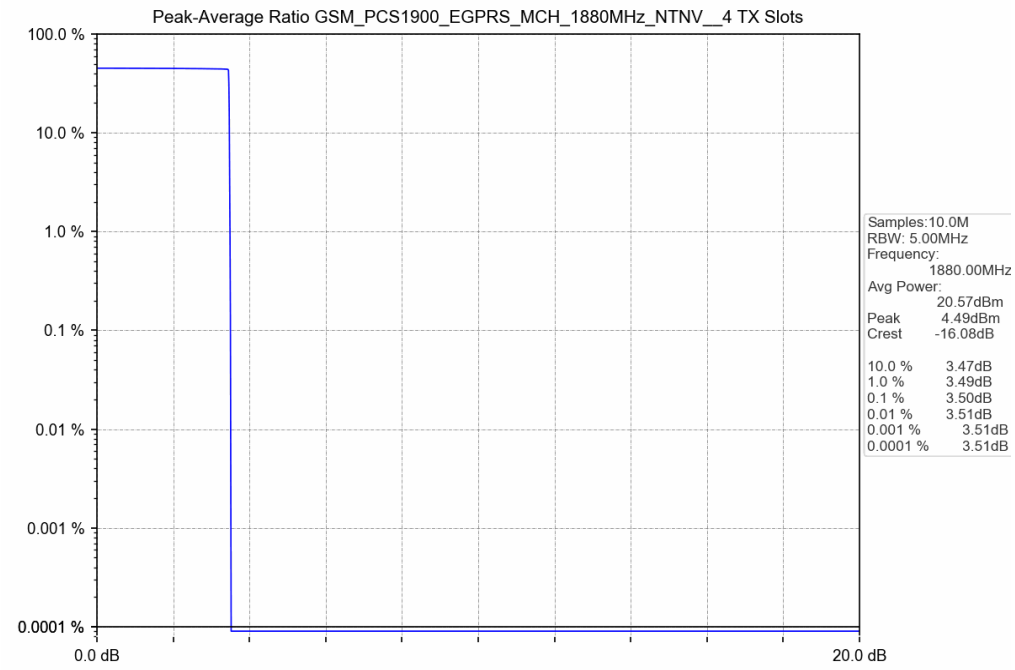

Peak-Average Ratio GSM_PCS1900_GSM_HCH_1909.8MHz_NTNV__ GSM
100.0 %
10.0 %
1.0 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.0 dB
20.0 dB
Samples:10.0M
RBW: 5.00MHz
Frequency:
1909.80MHz
Avg Power:
21.01dBm
Peak 24.59dBm
Crest 3.58dB
10.0 % 9.20dB
1.0 % 9.27dB
0.1 % 9.28dB
0.01 % 9.29dB
0.001 % 9.29dB
0.0001 % 9.29dB

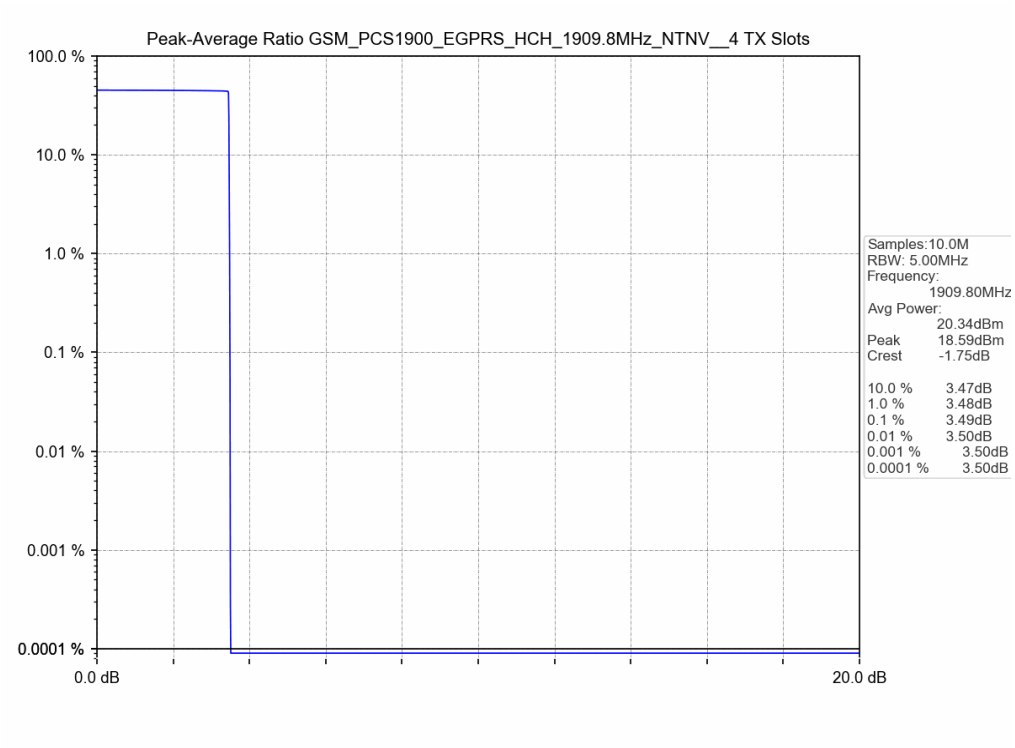

Peak-Average Ratio GSM_PCS1900_GPRS_LCH_1850.2MHz_NTNV__4 TX Slots
100.0 %
10.0 %
1.0 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.0 dB
20.0 dB
Samples:10.0M
RBW: 5.00MHz
Frequency:
1850.20MHz
Avg Power:
20.46dBm
Peak 12.40dBm
Crest -8.06dB
10.0 % 3.60dB
1.0 % 3.62dB
0.1 % 3.63dB
0.01 % 3.64dB
0.001 % 3.65dB
0.0001 % 3.65dB

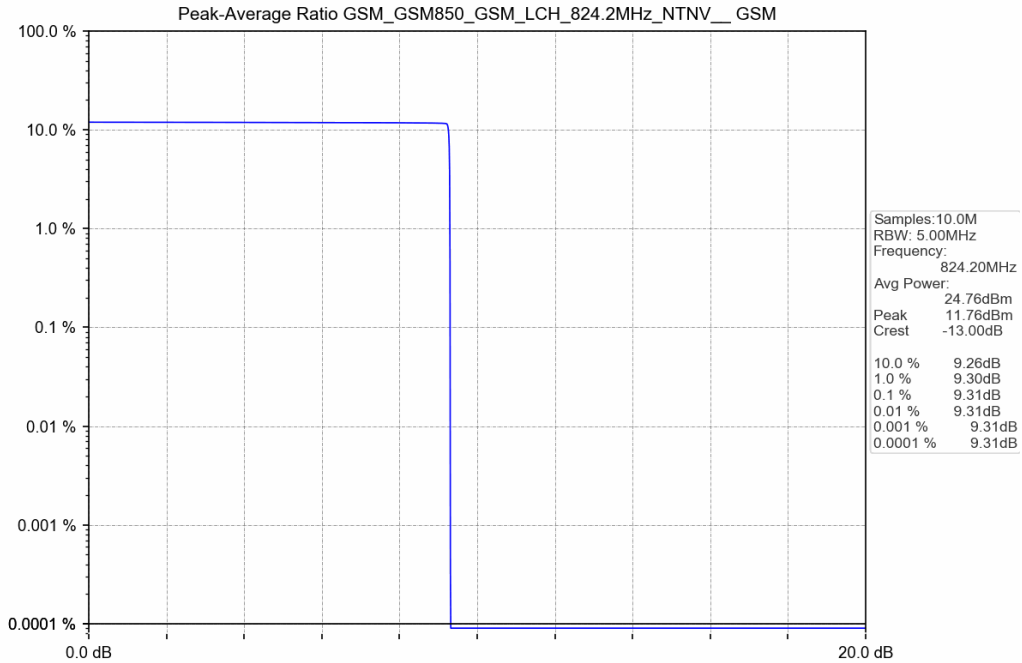

Peak-Average Ratio GSM_PCS1900_GPRS_MCH_1880MHz_NTNV__4 TX Slots
100.0 %
10.0 %
1.0 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.0 dB
20.0 dB
Samples:10.0M
RBW: 5.00MHz
Frequency:
1880.00MHz
Avg Power:
20.47dBm
Peak 5.04dBm
Crest -15.43dB
10.0 % 3.47dB
1.0 % 3.49dB
0.1 % 3.50dB
0.01 % 3.50dB
0.001 % 3.50dB
0.0001 % 3.50dB

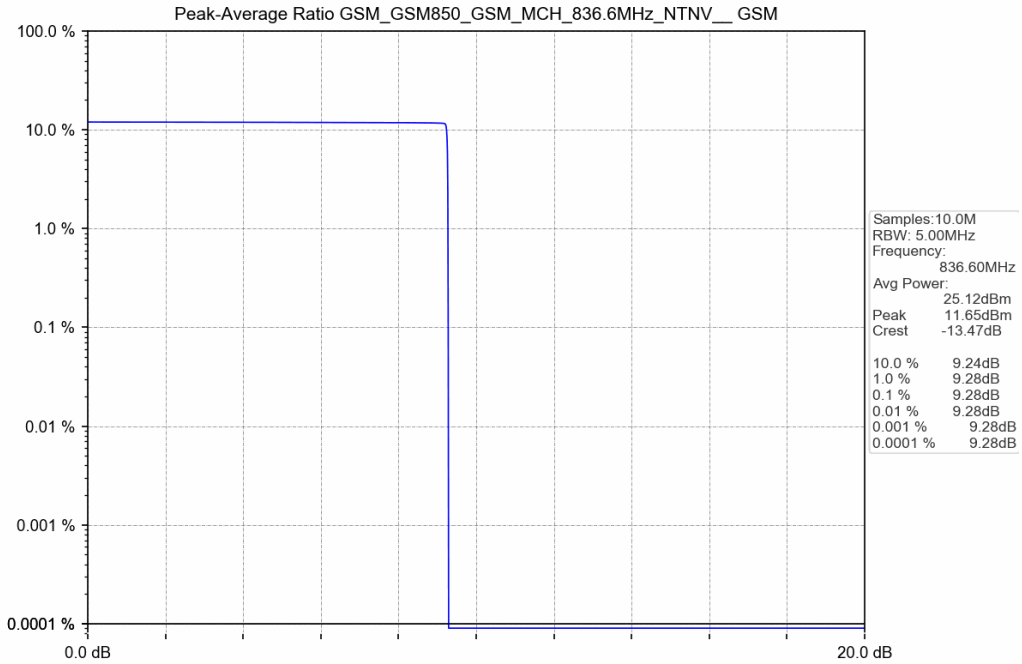

Peak-Average Ratio GSM_PCS1900_GPRS_HCH_1909.8MHz_NTNV__4 TX Slots
100.0 %
10.0 %
1.0 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.0 dB
20.0 dB
Samples:10.0M
RBW: 5.00MHz
Frequency:
1909.80MHz
Avg Power:
20.26dBm
Peak 8.14dBm
Crest -12.12dB
10.0 % 3.56dB
1.0 % 3.57dB
0.1 % 3.58dB
0.01 % 3.59dB
0.001 % 3.59dB
0.0001 % 3.59dB

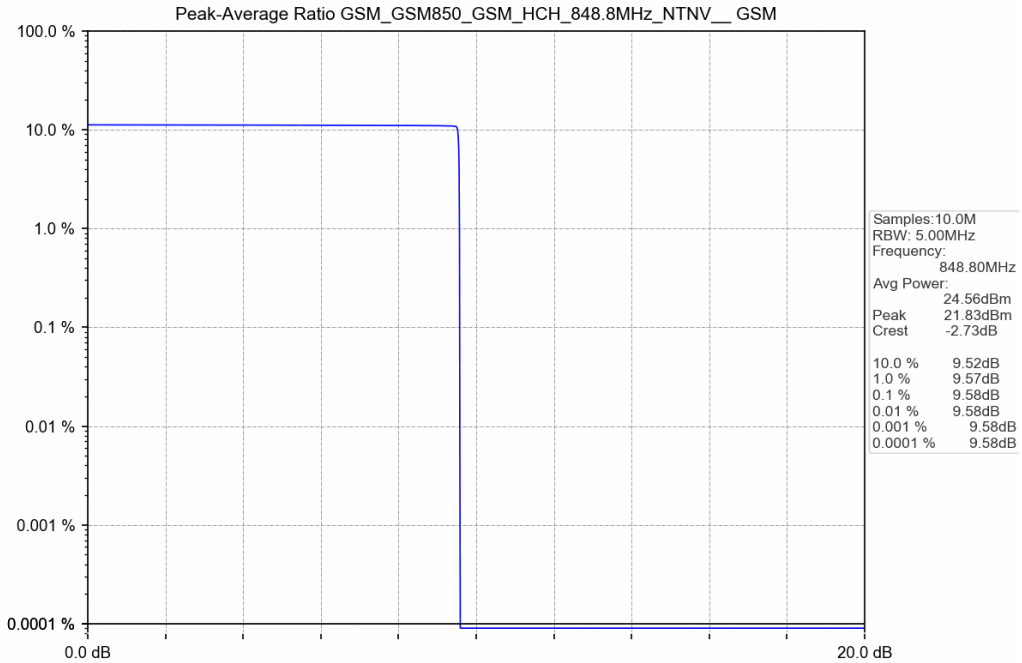

Peak-Average Ratio GSM_PCS1900_EGPRS_LCH_1850.2MHz_NTNV__4 TX Slots
100.0 %
10.0 %
1.0 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.0 dB
20.0 dB
Samples:10.0M
RBW: 5.00MHz
Frequency:
1850.20MHz
Avg Power:
20.51dBm
Peak 9.71dBm
Crest -10.80dB
10.0 % 3.51dB
1.0 % 3.52dB
0.1 % 3.54dB
0.01 % 3.54dB
0.001 % 3.55dB
0.0001 % 3.55dB

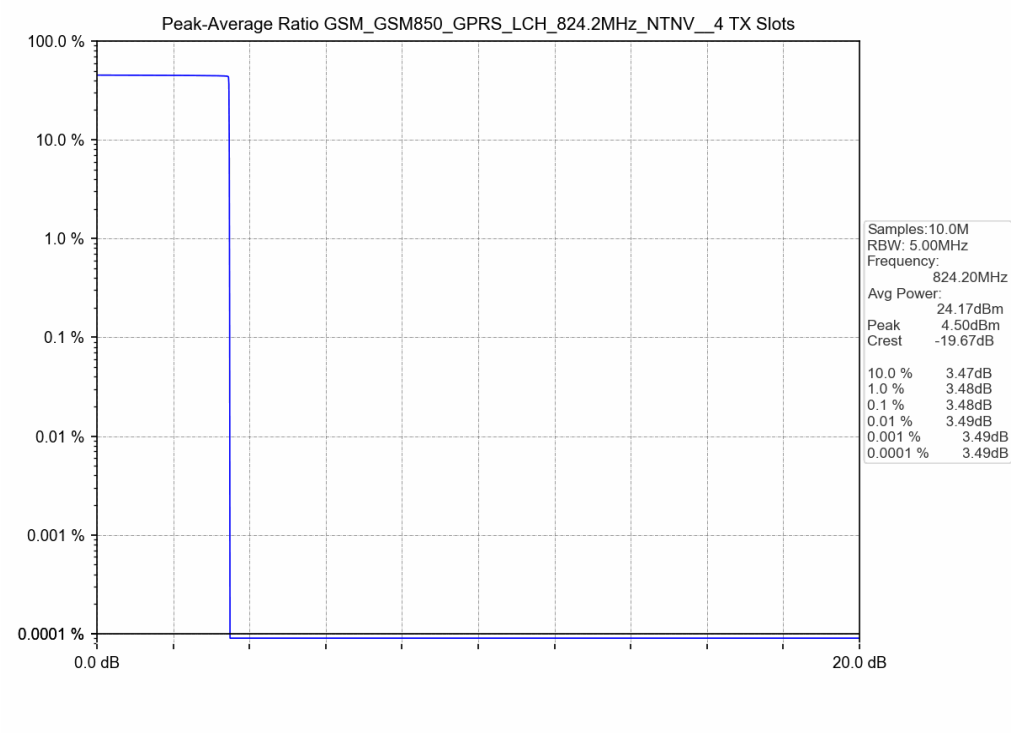

Peak-Average Ratio GSM_PCS1900_EGPRS_MCH_1880MHz_NTNV__4 TX Slots
100.0 %
10.0 %
1.0 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.0 dB
20.0 dB
Samples:10.0M
RBW: 5.00MHz
Frequency:
1880.00MHz
Avg Power:
20.57dBm
Peak 4.49dBm
Crest -16.08dB
10.0 % 3.47dB
1.0 % 3.49dB
0.1 % 3.50dB
0.01 % 3.51dB
0.001 % 3.51dB
0.0001 % 3.51dB

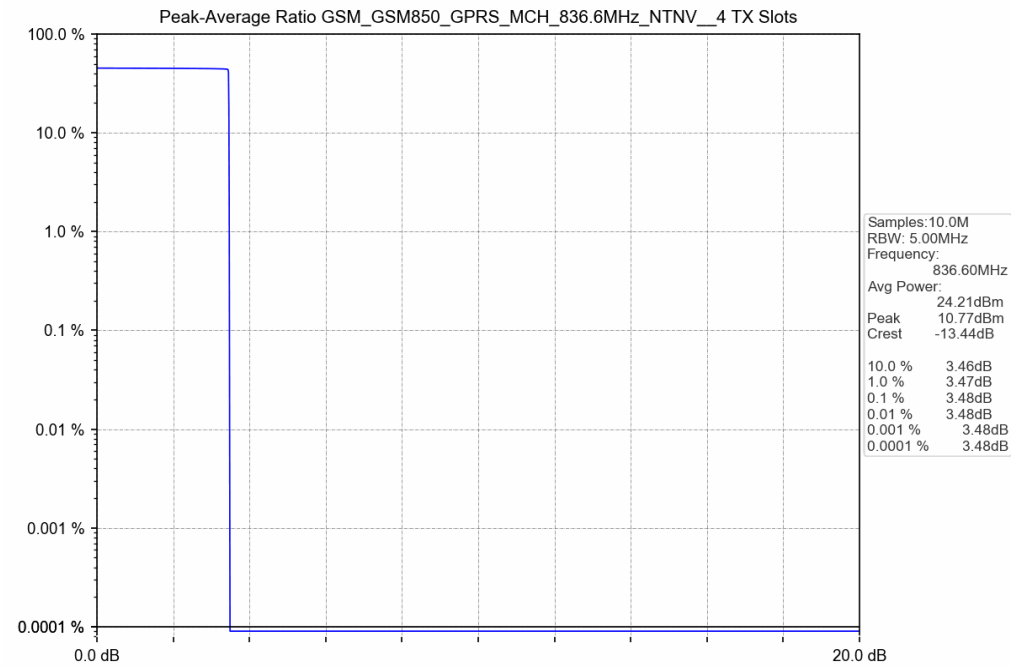

Peak-Average Ratio GSM_PCS1900_EGPRS_HCH_1909.8MHz_NTNV__4 TX Slots
100.0 %
10.0 %
1.0 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.0 dB
20.0 dB
Samples:10.0M
RBW: 5.00MHz
Frequency:
1909.80MHz
Avg Power:
20.34dBm
Peak 18.59dBm
Crest -1.75dB
10.0 % 3.47dB
1.0 % 3.48dB
0.1 % 3.49dB
0.01 % 3.50dB
0.001 % 3.50dB
0.0001 % 3.50dB

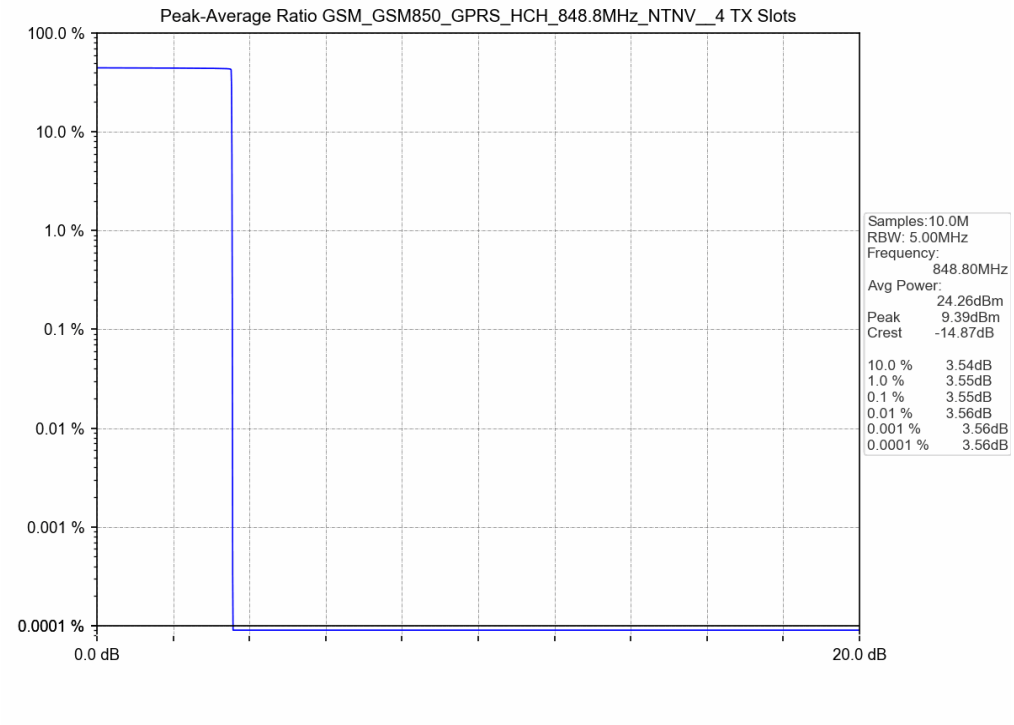

Peak-Average Ratio GSM_GSM850_GSM_LCH_824.2MHz_NTNV__ GSM
100.0 %
10.0 %
1.0 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.0 dB
20.0 dB
Samples:10.0M
RBW: 5.00MHz
Frequency:
824.20MHz
Avg Power:
24.76dBm
Peak 11.76dBm
Crest -13.00dB
10.0 % 9.26dB
1.0 % 9.30dB
0.1 % 9.31dB
0.01 % 9.31dB
0.001 % 9.31dB
0.0001 % 9.31dB

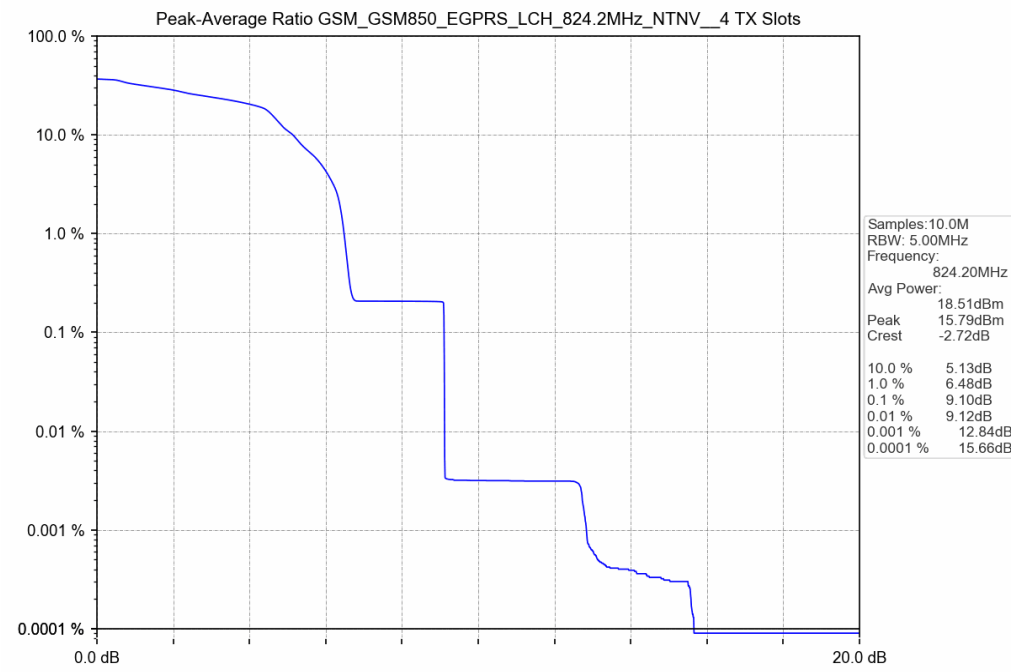

Peak-Average Ratio GSM_GSM850_GSM_MCH_836.6MHz_NTNV__ GSM
100.0 %
10.0 %
1.0 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.0 dB
20.0 dB
Samples:10.0M
RBW: 5.00MHz
Frequency:
836.60MHz
Avg Power:
25.12dBm
Peak 11.65dBm
Crest -13.47dB
10.0 % 9.24dB
1.0 % 9.28dB
0.1 % 9.28dB
0.01 % 9.28dB
0.001 % 9.28dB
0.0001 % 9.28dB

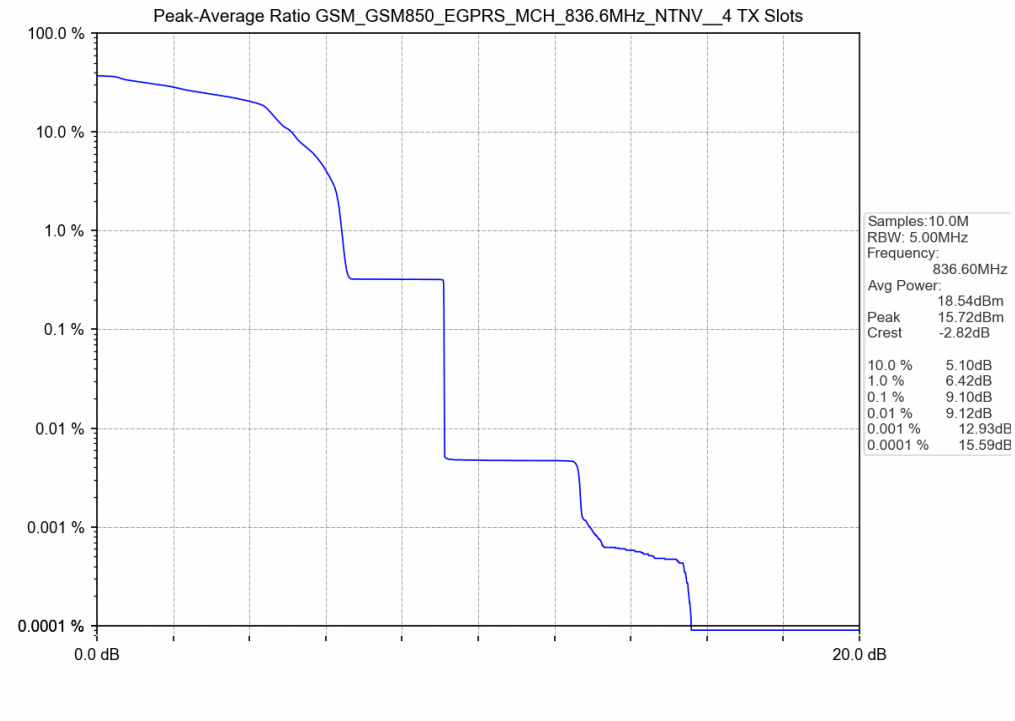

Peak-Average Ratio GSM_GSM850_GSM_HCH_848.8MHz_NTNV__ GSM
100.0 %
10.0 %
1.0 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.0 dB
20.0 dB
Samples:10.0M
RBW: 5.00MHz
Frequency:
848.80MHz
Avg Power:
24.56dBm
Peak 21.83dBm
Crest -2.73dB
10.0 % 9.52dB
1.0 % 9.57dB
0.1 % 9.58dB
0.01 % 9.58dB
0.001 % 9.58dB
0.0001 % 9.58dB

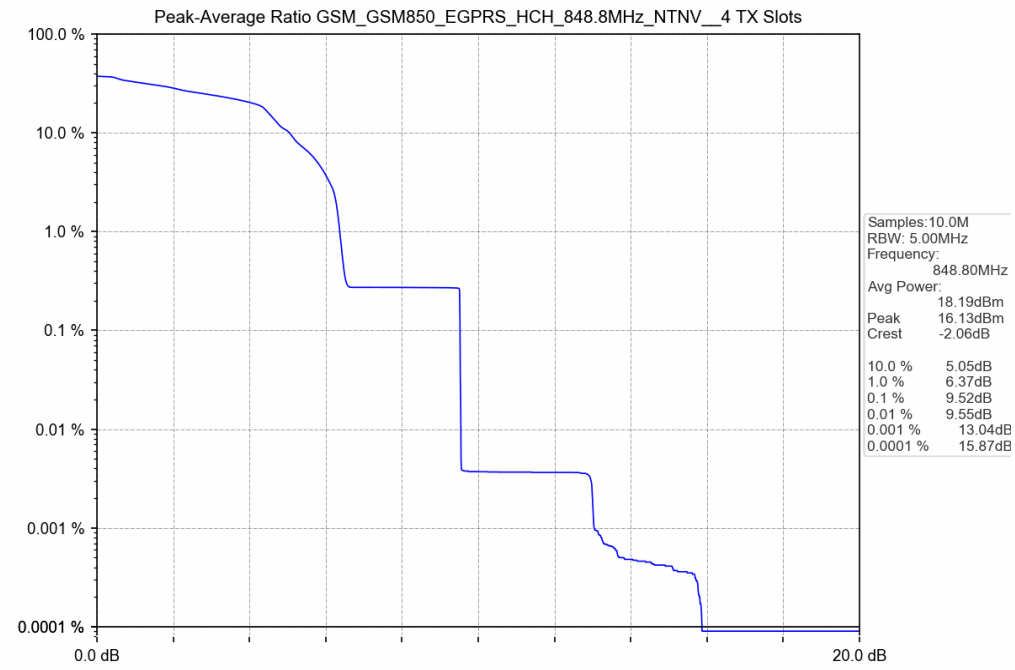

Peak-Average Ratio GSM_GSM850_GPRS_LCH_824.2MHz_NTNV__4 TX Slots
100.0 %
10.0 %
1.0 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.0 dB
20.0 dB
Samples:10.0M
RBW: 5.00MHz
Frequency:
824.20MHz
Avg Power:
24.17dBm
Peak 4.50dBm
Crest -19.67dB
10.0 % 3.47dB
1.0 % 3.48dB
0.1 % 3.48dB
0.01 % 3.49dB
0.001 % 3.49dB
0.0001 % 3.49dB


Peak-Average Ratio GSM_GSM850_GPRS_MCH_836.6MHz_NTNV__4 TX Slots
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
Frequency:
836.60MHz
Avg Power:
24.21dBm
Peak 10.77dBm
Crest -13.44dB
10.0 % 3.46dB
1.0 % 3.47dB
0.1 % 3.48dB
0.01 % 3.48dB
0.001 % 3.48dB
0.0001 % 3.48dB


Peak-Average Ratio GSM_GSM850_GPRS_HCH_848.8MHz_NTNV__4 TX Slots
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
Frequency:
848.80MHz
Avg Power:
24.26dBm
Peak 9.39dBm
Crest -14.87dB
10.0 % 3.54dB
1.0 % 3.55dB
0.1 % 3.55dB
0.01 % 3.56dB
0.001 % 3.56dB
0.0001 % 3.56dB


Peak-Average Ratio GSM_GSM850_EGPRS_LCH_824.2MHz_NTNV__4 TX Slots
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
Frequency:
824.20MHz
Avg Power:
18.51dBm
Peak 15.79dBm
Crest -2.72dB
10.0 % 5.13dB
1.0 % 6.48dB
0.1 % 9.10dB
0.01 % 9.12dB
0.001 % 12.84dB
0.0001 % 15.66dB


Peak-Average Ratio GSM_GSM850_EGPRS_MCH_836.6MHz_NTNV__4 TX Slots
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
Frequency:
836.60MHz
Avg Power:
18.54dBm
Peak 15.72dBm
Crest -2.82dB
10.0 % 5.10dB
1.0 % 6.42dB
0.1 % 9.10dB
0.01 % 9.12dB
0.001 % 12.93dB
0.0001 % 15.59dB


Peak-Average Ratio GSM_GSM850_EGPRS_HCH_848.8MHz_NTNV__4 TX Slots
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
Frequency:
848.80MHz
Avg Power:
18.19dBm
Peak 16.13dBm
Crest -2.06dB
10.0 % 5.05dB
1.0 % 6.37dB
0.1 % 9.52dB
0.01 % 9.55dB
0.001 % 13.04dB
0.0001 % 15.87dB

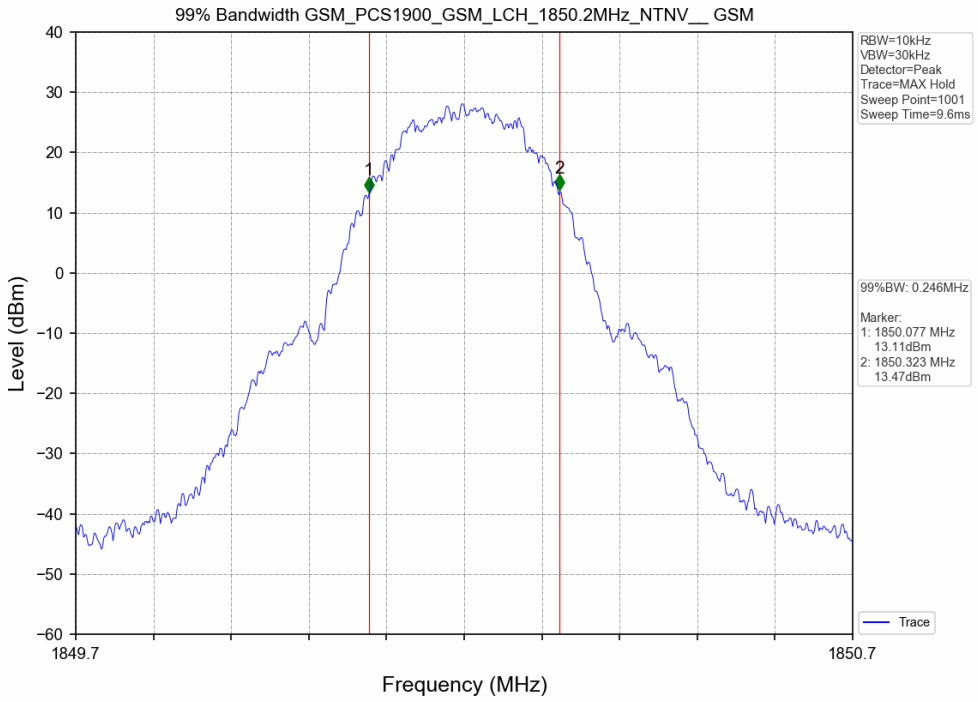
# 3. 99% Bandwidth

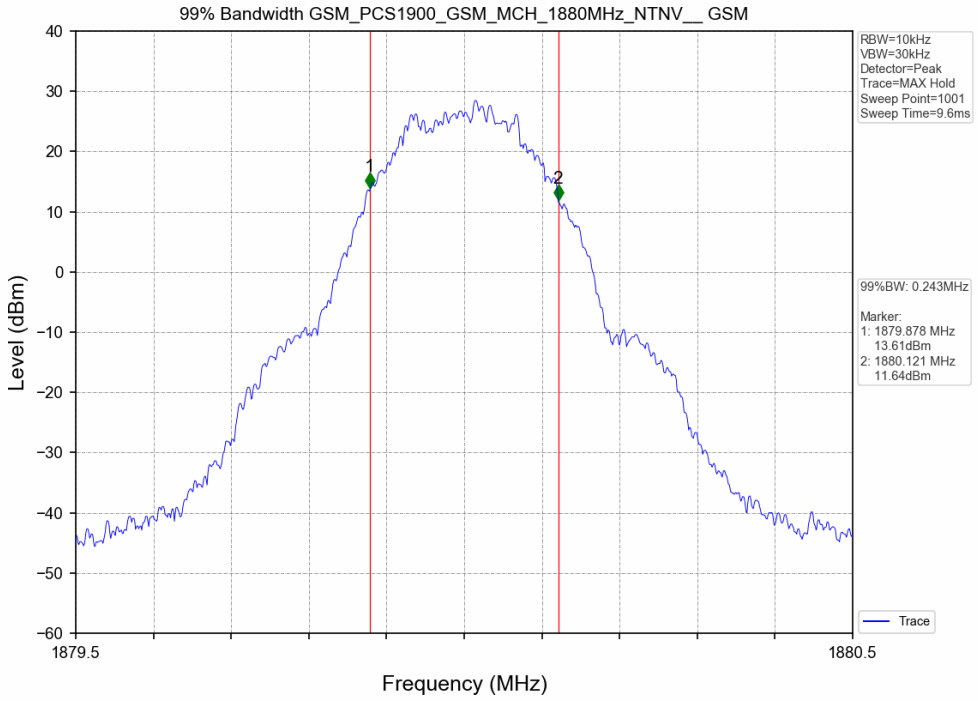
## 3.1 Test Result

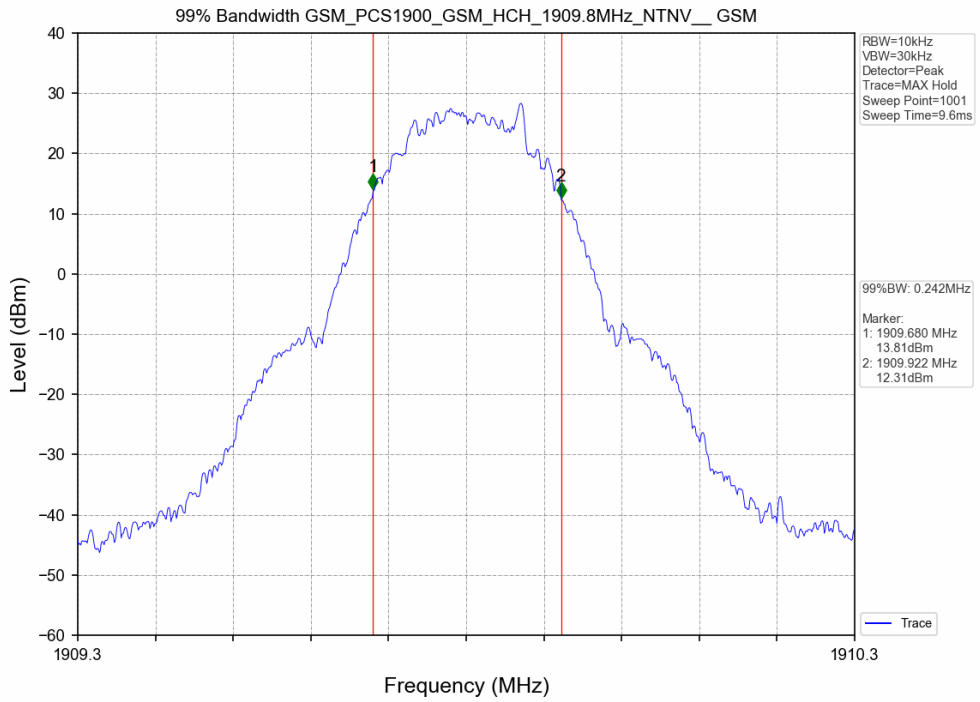
| Test Band: PCS1900 | | | | | |
|---|---|---|---|---|---|
| Test Mode | 99% Occupied Bandwidth (MHz) | | | Limit | Verdict |
| | LCH | MCH | HCH | | |
| GSM | 0.246 | 0.243 | 0.242 | N/A | PASS |
| EGPRS | 0.245 | 0.243 | 0.243 | N/A | PASS |
| GPRS | 0.247 | 0.245 | 0.245 | N/A | PASS |

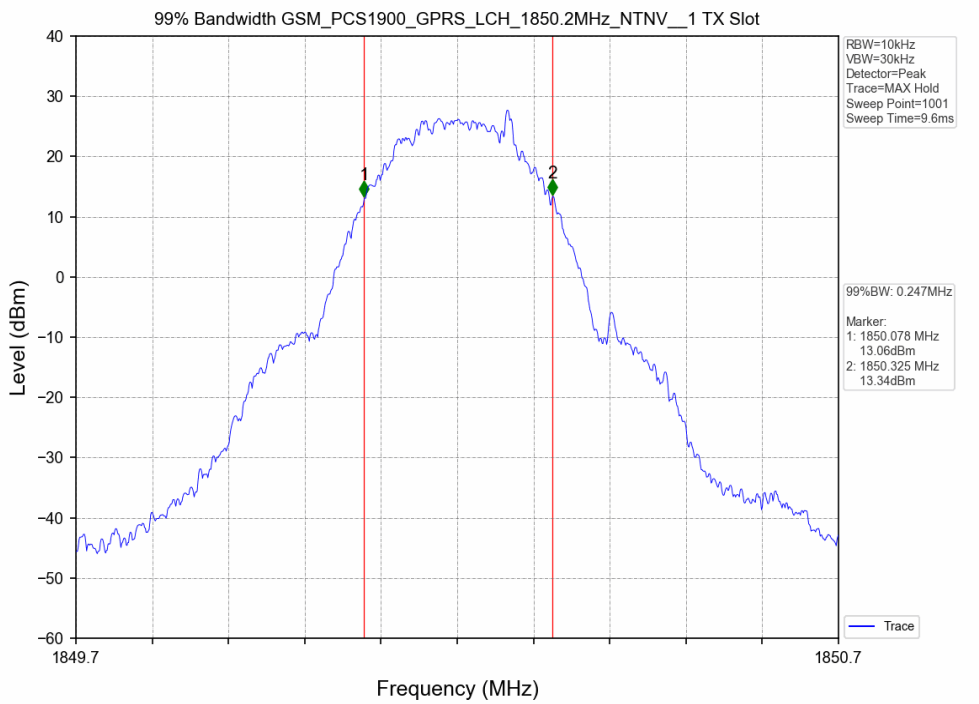
| Test Band: GSM850 | | | | | |
|---|---|---|---|---|---|
| Test Mode | 99% Occupied Bandwidth (MHz) | | | Limit | Verdict |
| | LCH | MCH | HCH | | |
| GSM | 0.243 | 0.246 | 0.244 | N/A | PASS |
| EGPRS | 0.244 | 0.230 | 0.239 | N/A | PASS |
| GPRS | 0.248 | 0.245 | 0.249 | N/A | PASS |

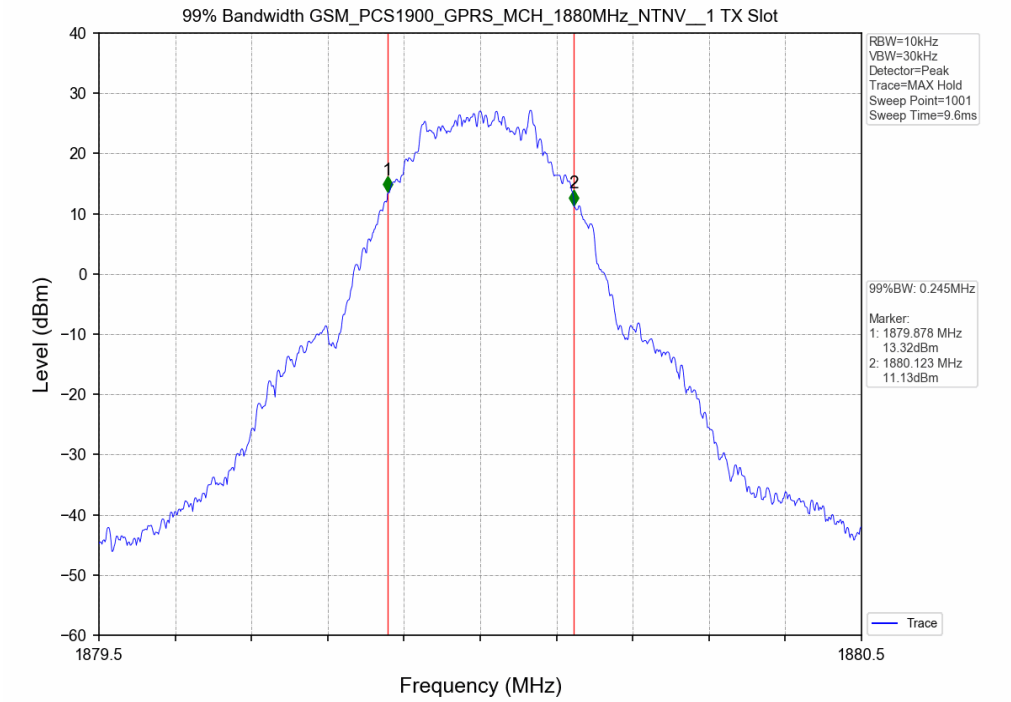
## 3.2 Test Graph

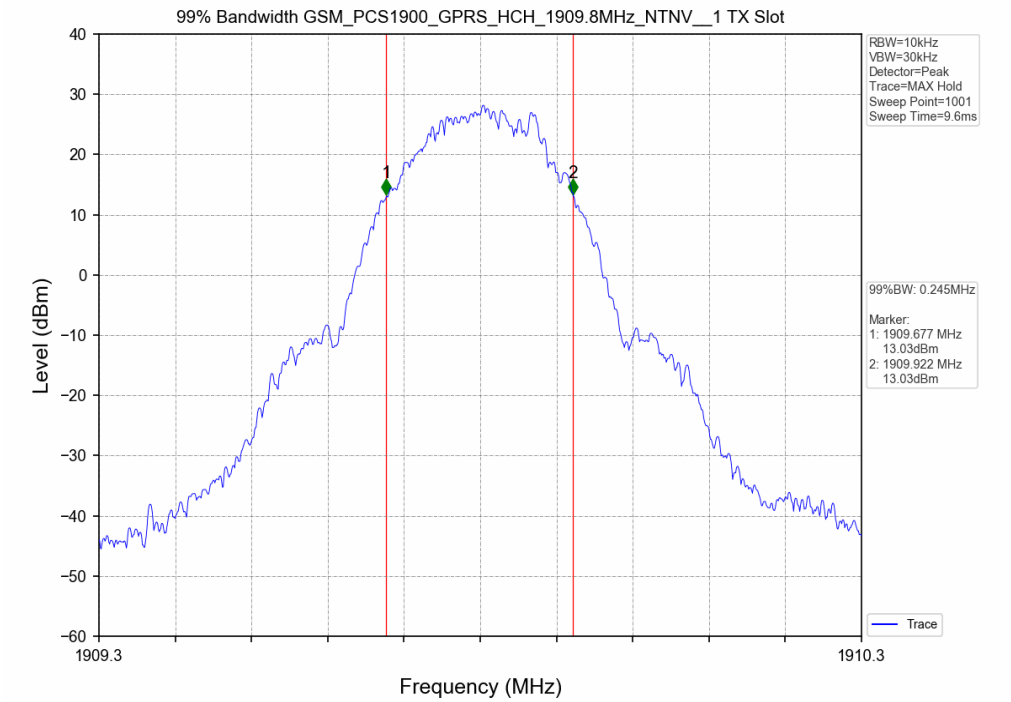


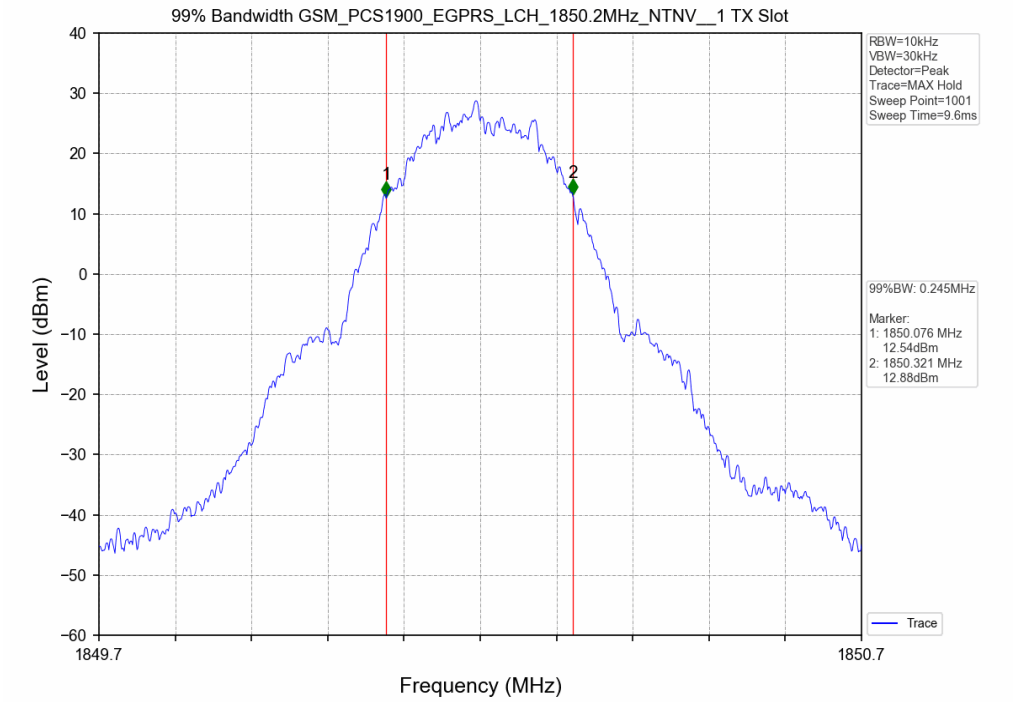



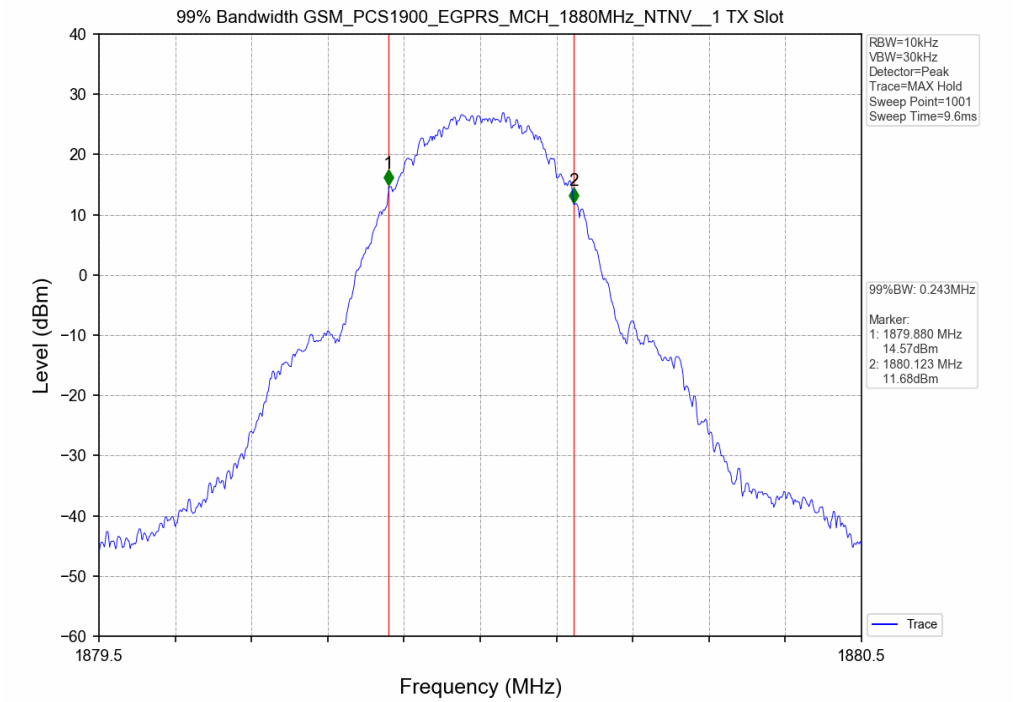

99% Bandwidth GSM_PCS1900_GSM_HCH_1909.8MHz_NTNV__ GSM
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.242MHz
Marker:
1: 1909.680 MHz
13.81dBm
2: 1909.922 MHz
12.31dBm
Trace
Level (dBm)
Frequency (MHz)
1909.3
1910.3

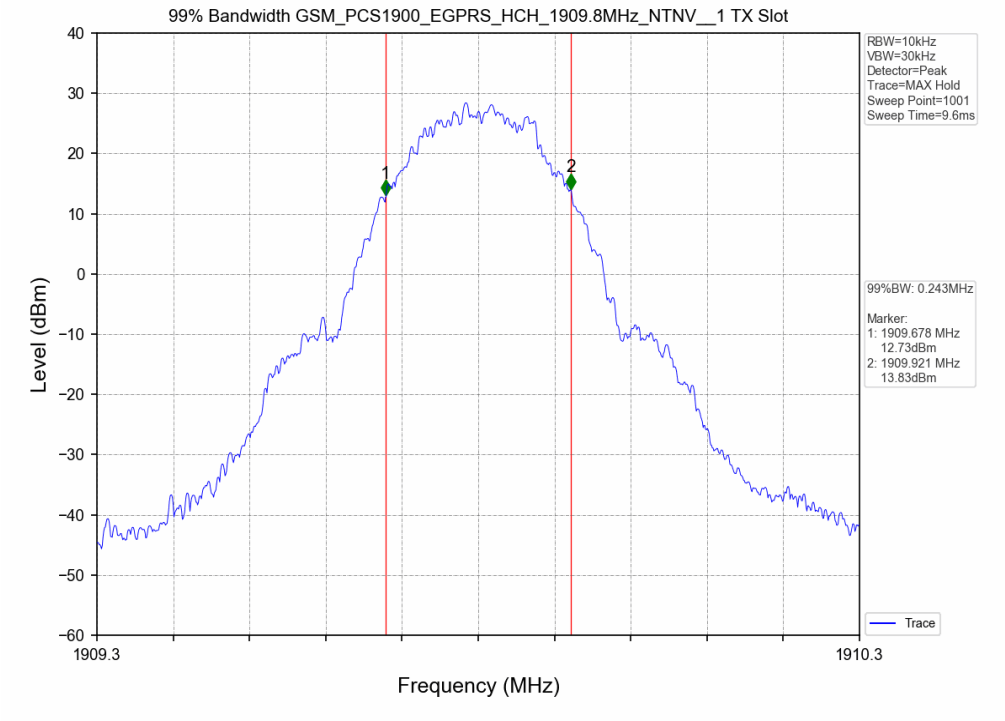

99% Bandwidth GSM_PCS1900_GPRS_LCH_1850.2MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.247MHz
Marker:
1: 1850.078 MHz
13.06dBm
2: 1850.325 MHz
13.34dBm
Trace
Level (dBm)
Frequency (MHz)
1849.7
1850.7

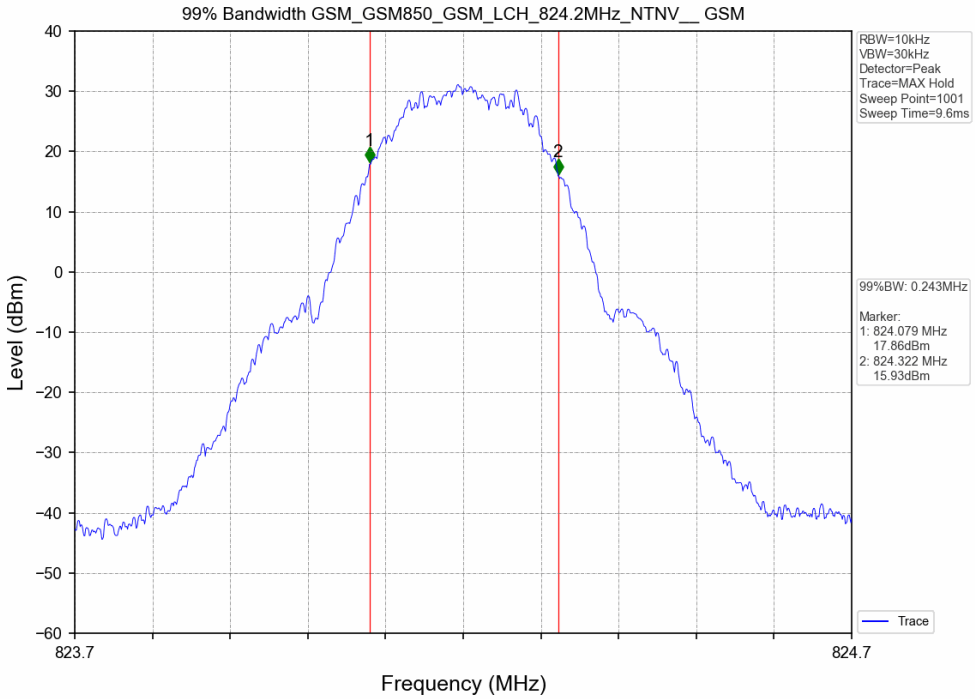

99% Bandwidth GSM_PCS1900_GPRS_MCH_1880MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.245MHz
Marker:
1: 1879.878 MHz
13.32dBm
2: 1880.123 MHz
11.13dBm
Trace
Level (dBm)
Frequency (MHz)
1879.5
1880.5

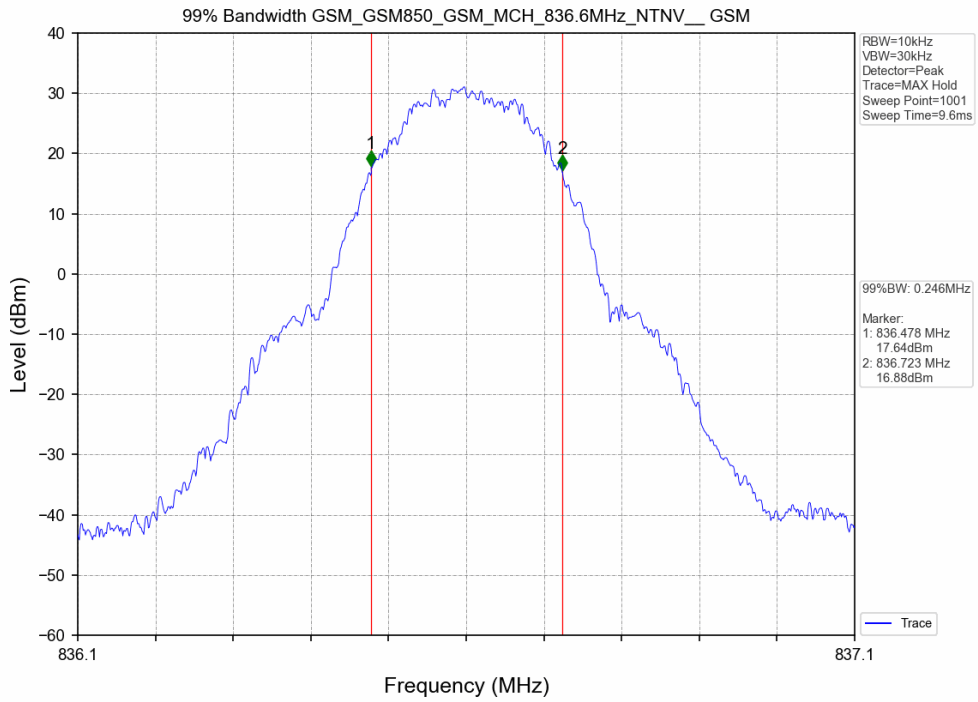

99% Bandwidth GSM_PCS1900_GPRS_HCH_1909.8MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.245MHz
Marker:
1: 1909.677 MHz
13.03dBm
2: 1909.922 MHz
13.03dBm
Trace
Level (dBm)
Frequency (MHz)
1909.3
1910.3

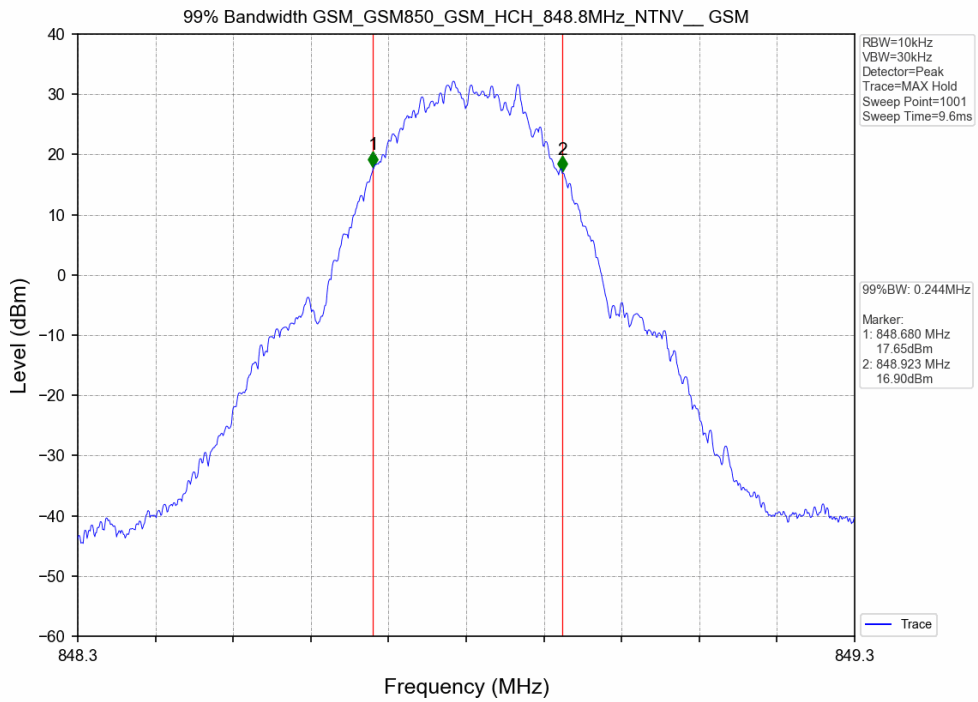

99% Bandwidth GSM_PCS1900_EGPRS_LCH_1850.2MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.245MHz
Marker:
1: 1850.076 MHz
12.54dBm
2: 1850.321 MHz
12.88dBm
Trace
Level (dBm)
Frequency (MHz)
1849.7
1850.7

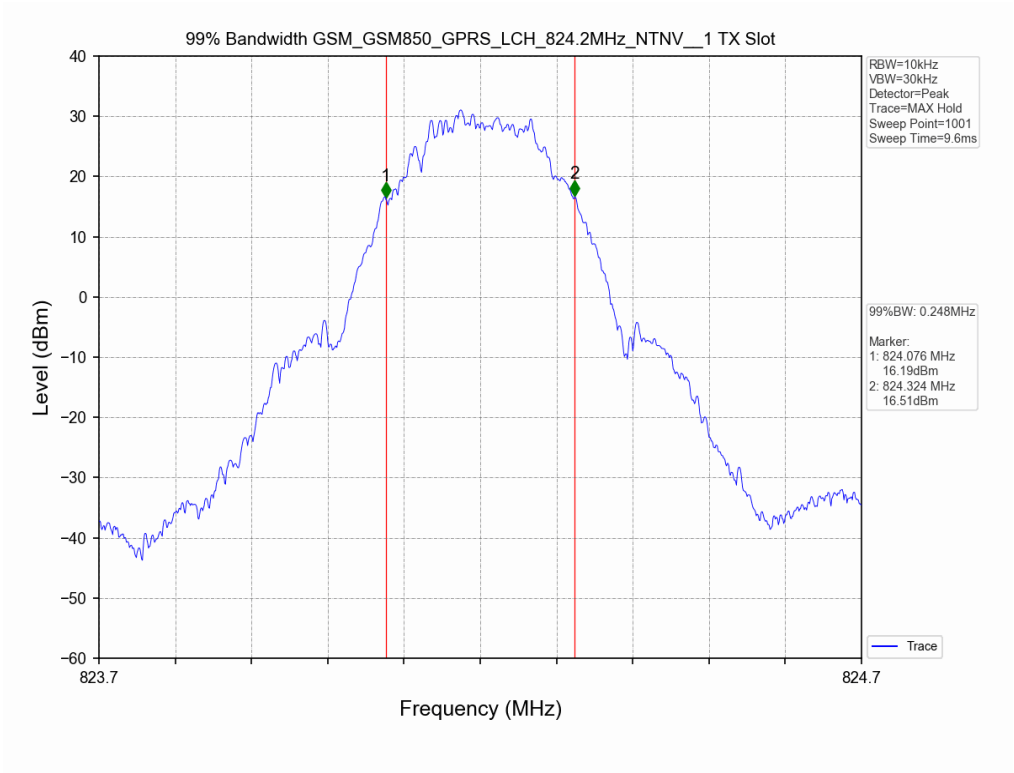

99% Bandwidth GSM_PCS1900_EGPRS_MCH_1880MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.243MHz
Marker:
1: 1879.880 MHz
14.57dBm
2: 1880.123 MHz
11.68dBm
Trace
Level (dBm)
Frequency (MHz)
1879.5
1880.5

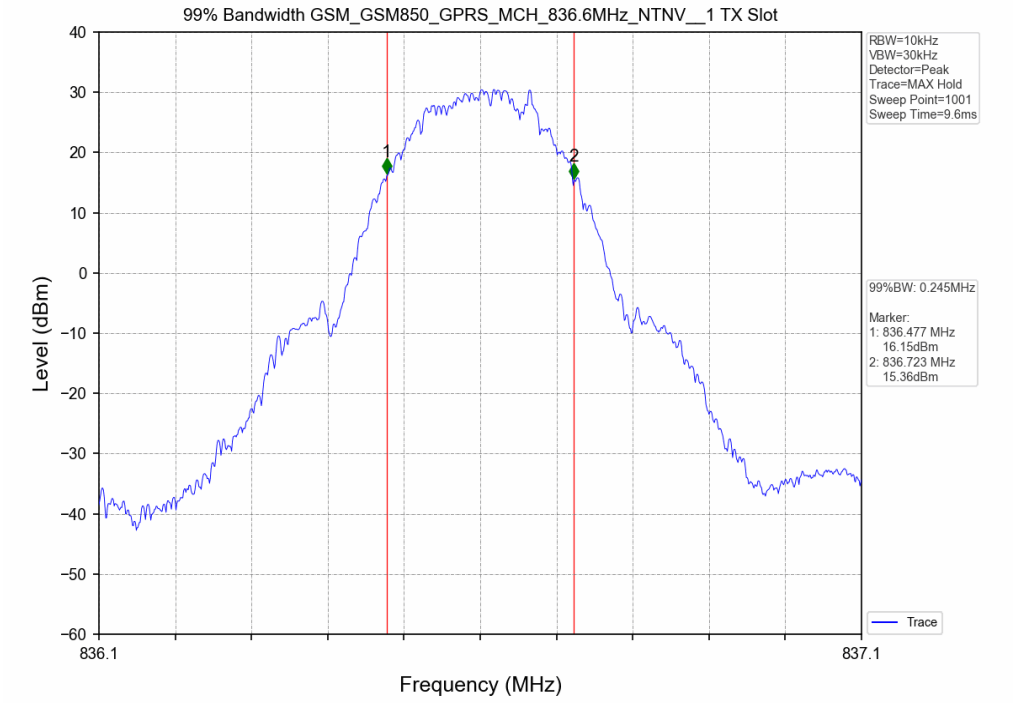

99% Bandwidth GSM_PCS1900_EGPRS_HCH_1909.8MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.243MHz
Marker:
1: 1909.678 MHz
12.73dBm
2: 1909.921 MHz
13.83dBm
Trace
Level (dBm)
Frequency (MHz)
1909.3
1910.3

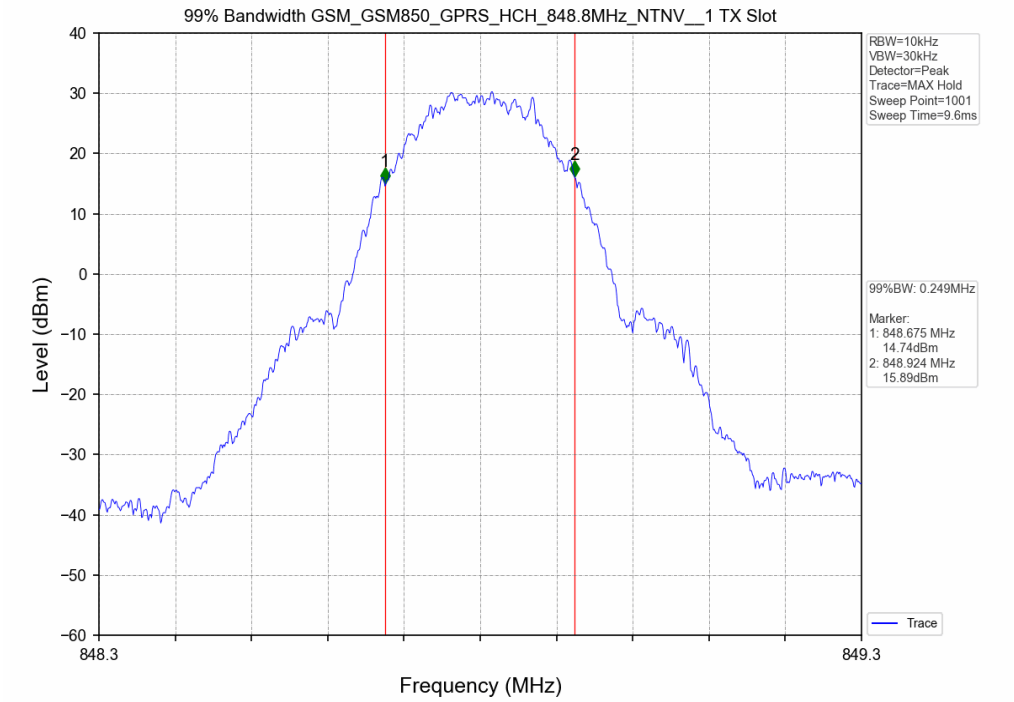

99% Bandwidth GSM_GSM850_GSM_LCH_824.2MHz_NTNV__ GSM
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.243MHz
Marker:
1: 824.079 MHz
17.86dBm
2: 824.322 MHz
15.93dBm
Trace
Level (dBm)
Frequency (MHz)
823.7
824.7

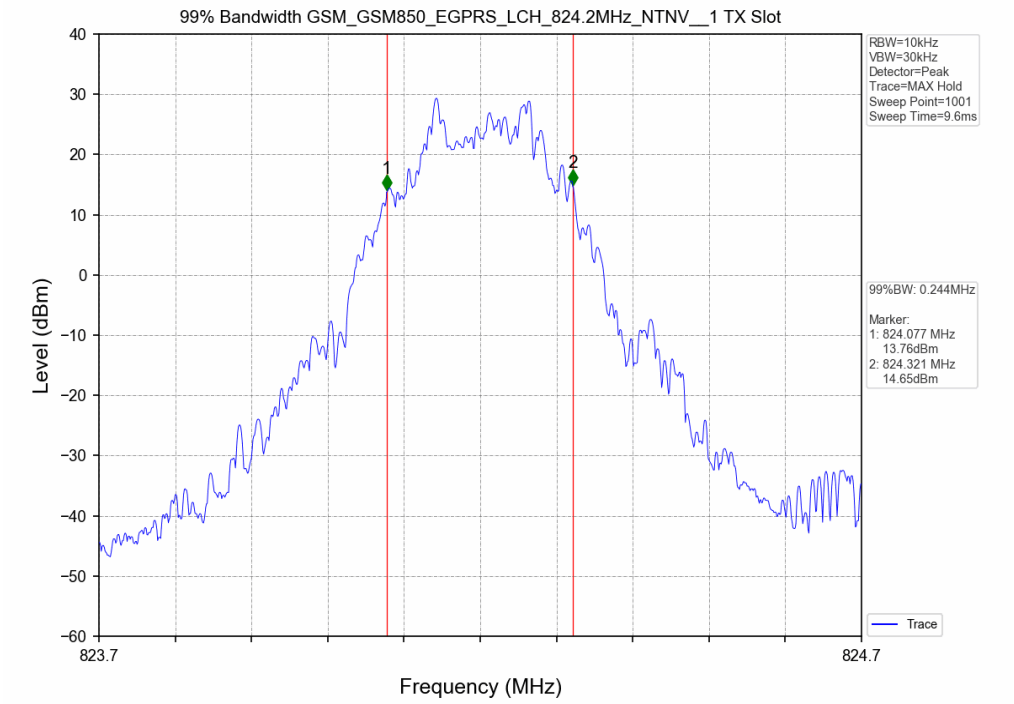

99% Bandwidth GSM_GSM850_GSM_MCH_836.6MHz_NTNV__ GSM
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.246MHz
Marker:
1: 836.478 MHz
17.64dBm
2: 836.723 MHz
16.88dBm
Trace
Level (dBm)
Frequency (MHz)
836.1
837.1

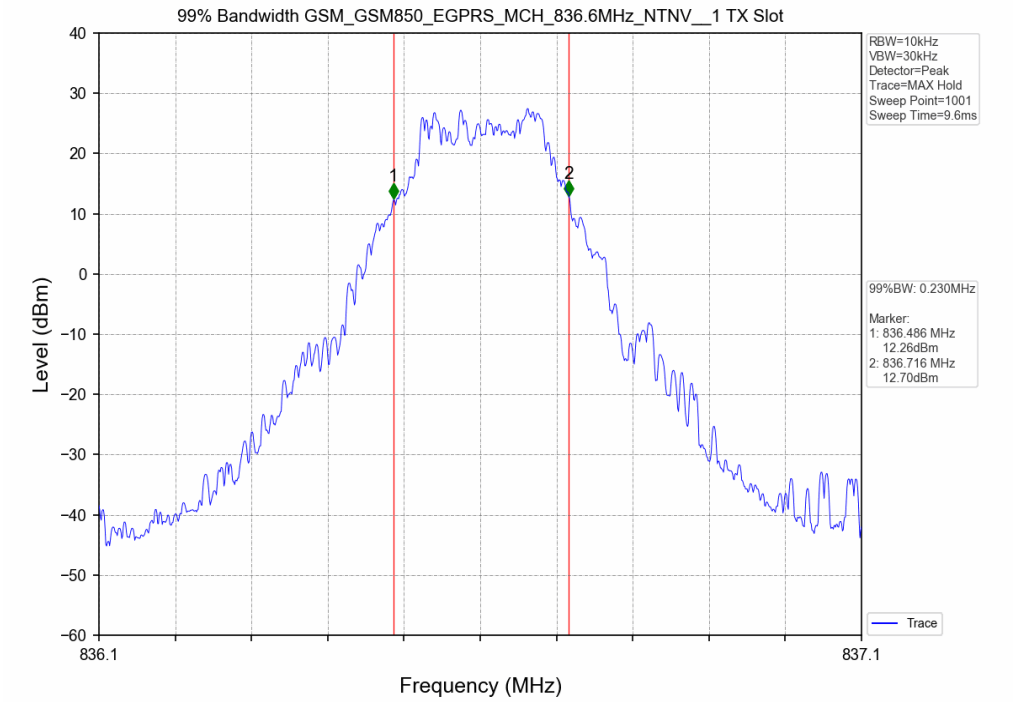

99% Bandwidth GSM_GSM850_GSM_HCH_848.8MHz_NTNV__ GSM
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.244MHz
Marker:
1: 848.680 MHz
17.65dBm
2: 848.923 MHz
16.90dBm
Trace
Level (dBm)
Frequency (MHz)
848.3
849.3

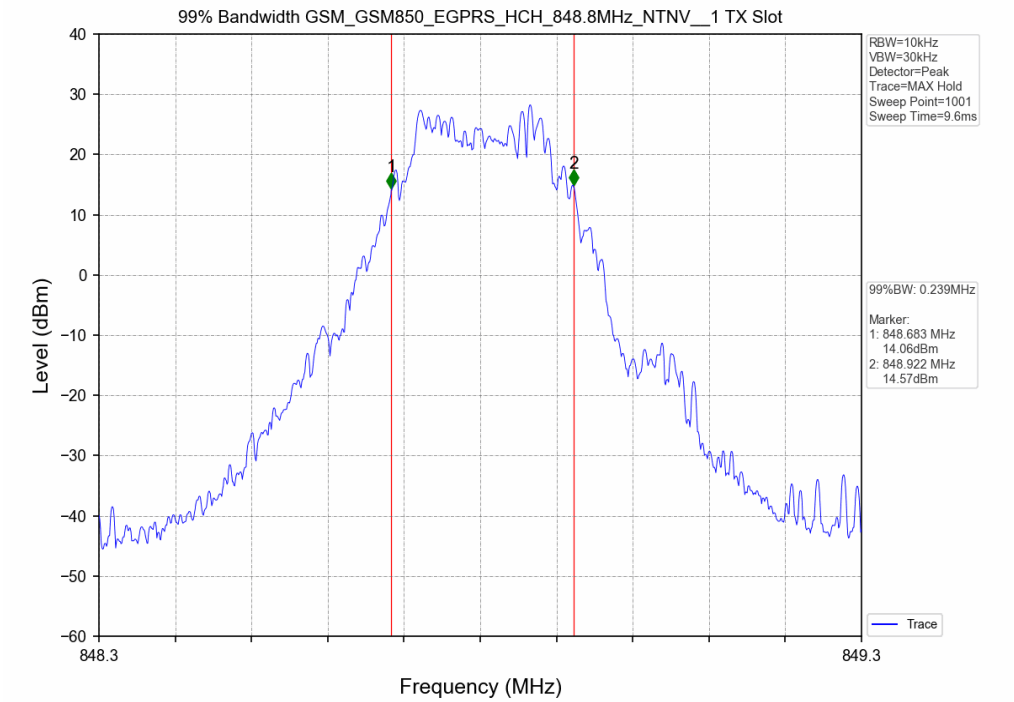

99% Bandwidth GSM_GSM850_GPRS_LCH_824.2MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.248MHz
Marker:
1: 824.076 MHz
16.19dBm
2: 824.324 MHz
16.51dBm
Trace
Level (dBm)
Frequency (MHz)
823.7
824.7


99% Bandwidth GSM_GSM850_GPRS_MCH_836.6MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.245MHz
Marker:
1: 836.477 MHz
16.15dBm
2: 836.723 MHz
15.36dBm
Trace
Level (dBm)
Frequency (MHz)
836.1
837.1


99% Bandwidth GSM_GSM850_GPRS_HCH_848.8MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.249MHz
Marker:
1: 848.675 MHz
14.74dBm
2: 848.924 MHz
15.89dBm
Trace
Level (dBm)
Frequency (MHz)
848.3
849.3


99% Bandwidth GSM_GSM850_EGPRS_LCH_824.2MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.244MHz
Marker:
1: 824.077 MHz
13.76dBm
2: 824.321 MHz
14.65dBm
Trace
Level (dBm)
Frequency (MHz)
823.7
824.7


99% Bandwidth GSM_GSM850_EGPRS_MCH_836.6MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.230MHz
Marker:
1: 836.486 MHz
12.26dBm
2: 836.716 MHz
12.70dBm
Trace
Level (dBm)
Frequency (MHz)
836.1
837.1

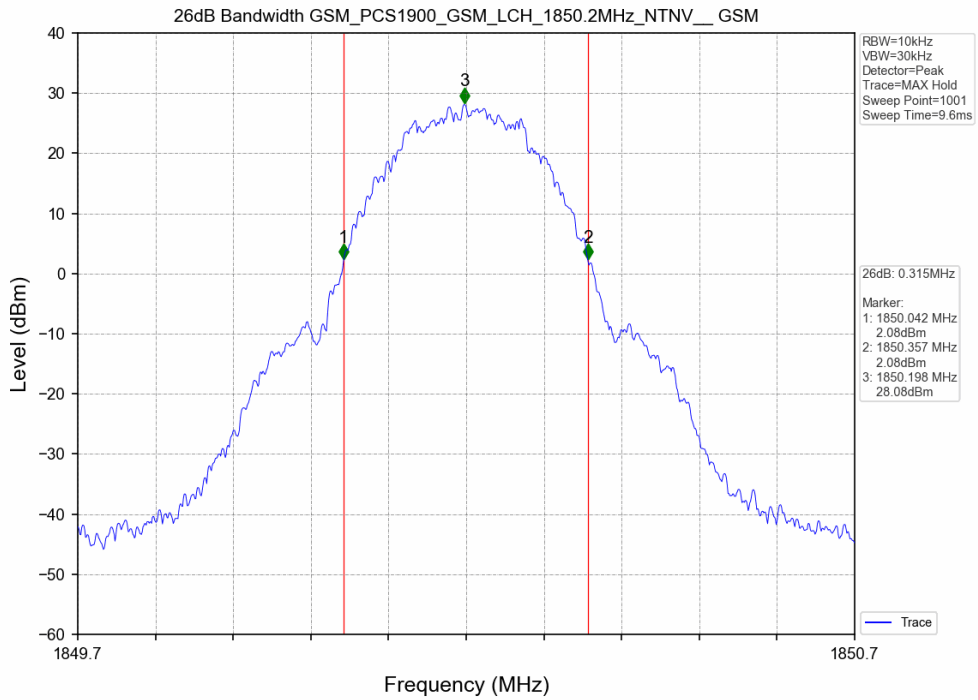

99% Bandwidth GSM_GSM850_EGPRS_HCH_848.8MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
99%BW: 0.239MHz
Marker:
1: 848.683 MHz
14.06dBm
2: 848.922 MHz
14.57dBm
Trace
Level (dBm)
Frequency (MHz)
848.3
849.3

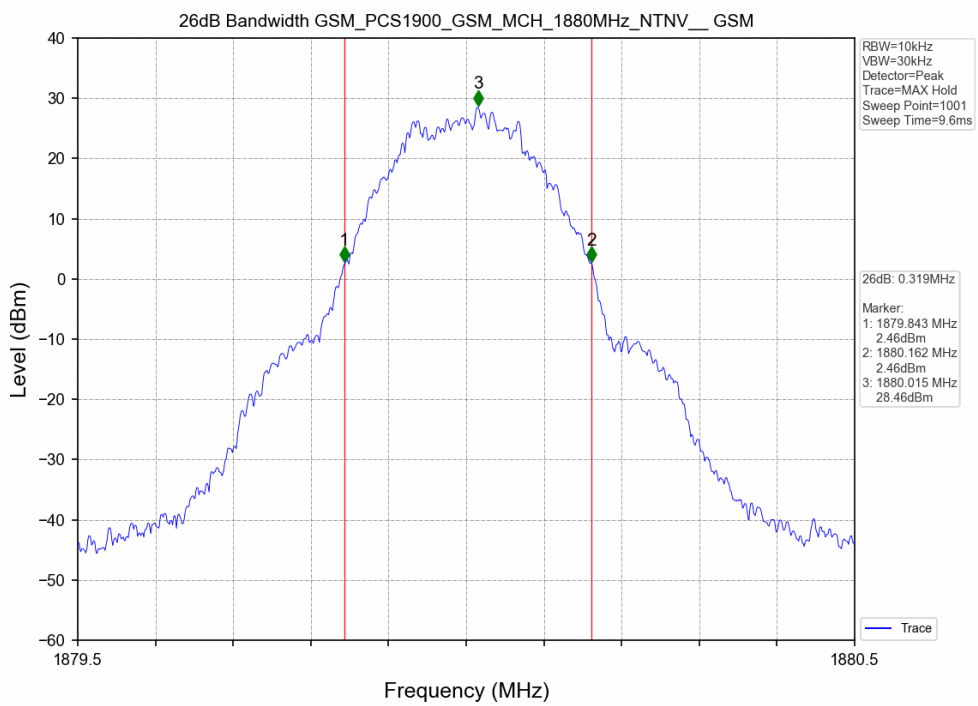
## 3.3 Test Result

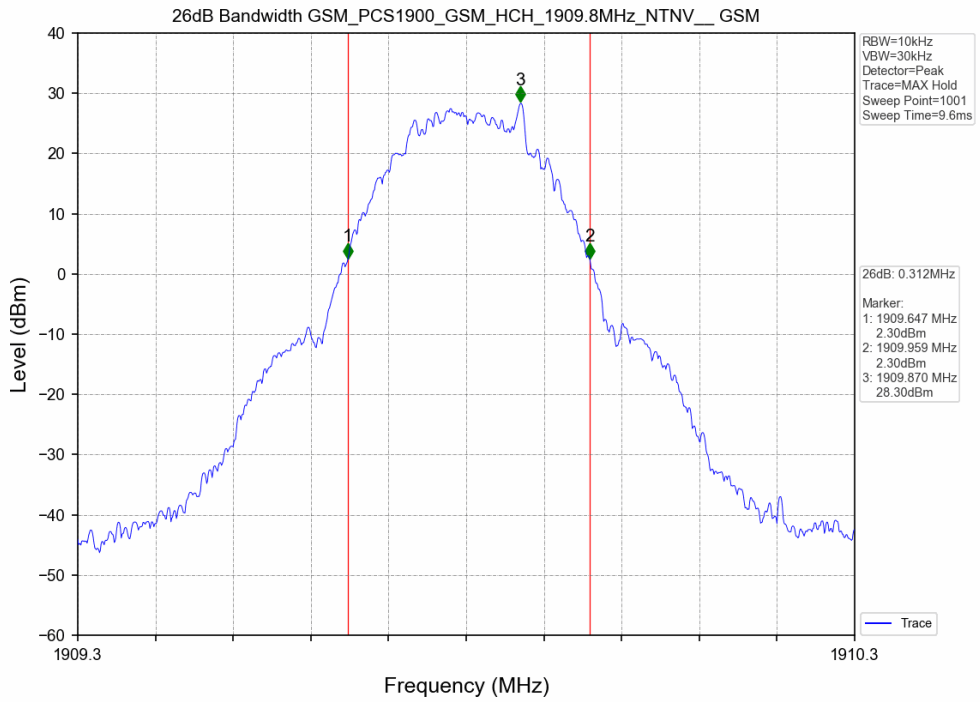
| Test Band: PCS1900 | | | | | |
|---|---|---|---|---|---|
| Test Mode | 26dB Bandwidth (MHz) | | | Limit | Verdict |
| | LCH | MCH | HCH | | |
| GSM | 0.315 | 0.319 | 0.312 | N/A | PASS |
| EGPRS | 0.310 | 0.317 | 0.321 | N/A | PASS |
| GPRS | 0.314 | 0.320 | 0.315 | N/A | PASS |

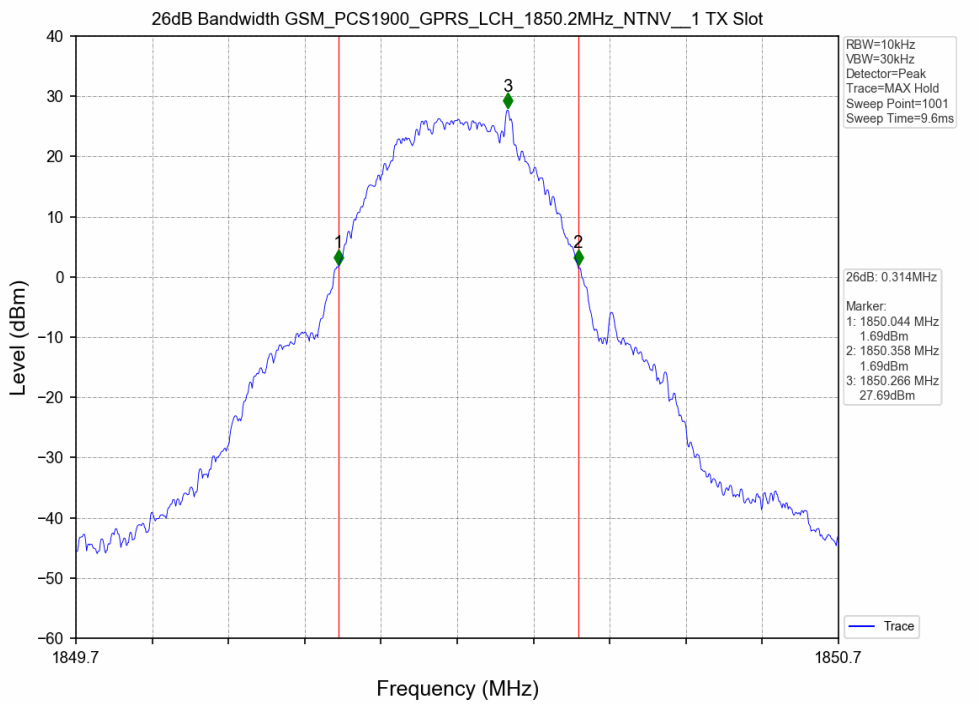
| Test Band: GSM850 | | | | | |
|---|---|---|---|---|---|
| Test Mode | 26dB Bandwidth (MHz) | | | Limit | Verdict |
| | LCH | MCH | HCH | | |
| GSM | 0.323 | 0.320 | 0.319 | N/A | PASS |
| EGPRS | 0.311 | 0.325 | 0.316 | N/A | PASS |
| GPRS | 0.318 | 0.322 | 0.321 | N/A | PASS |

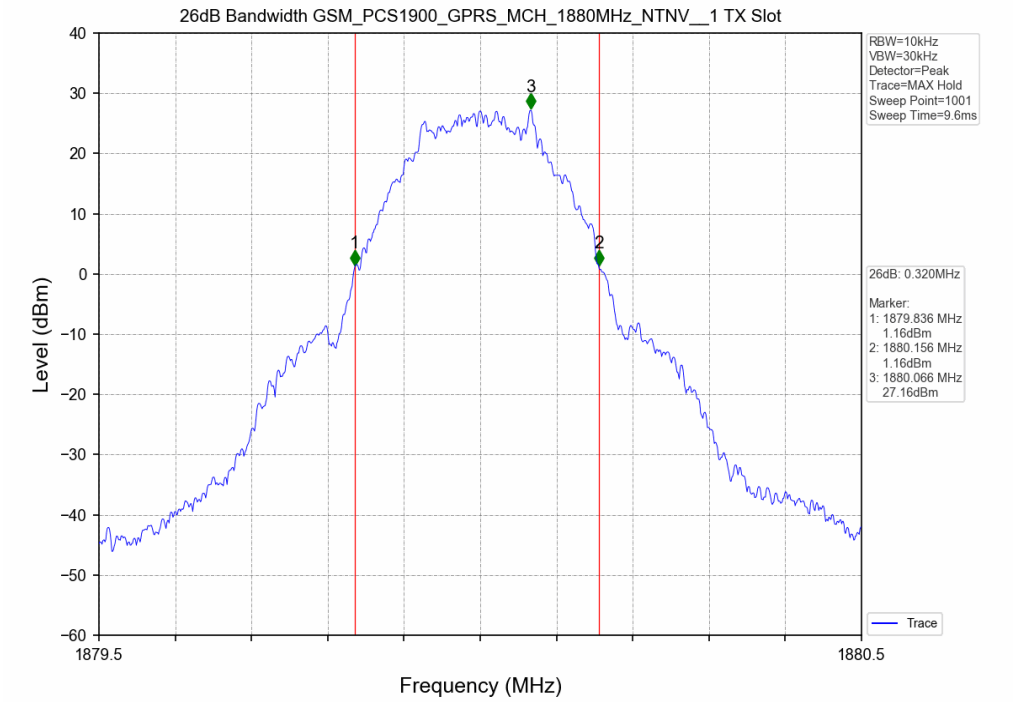
## 3.4 Test Graph

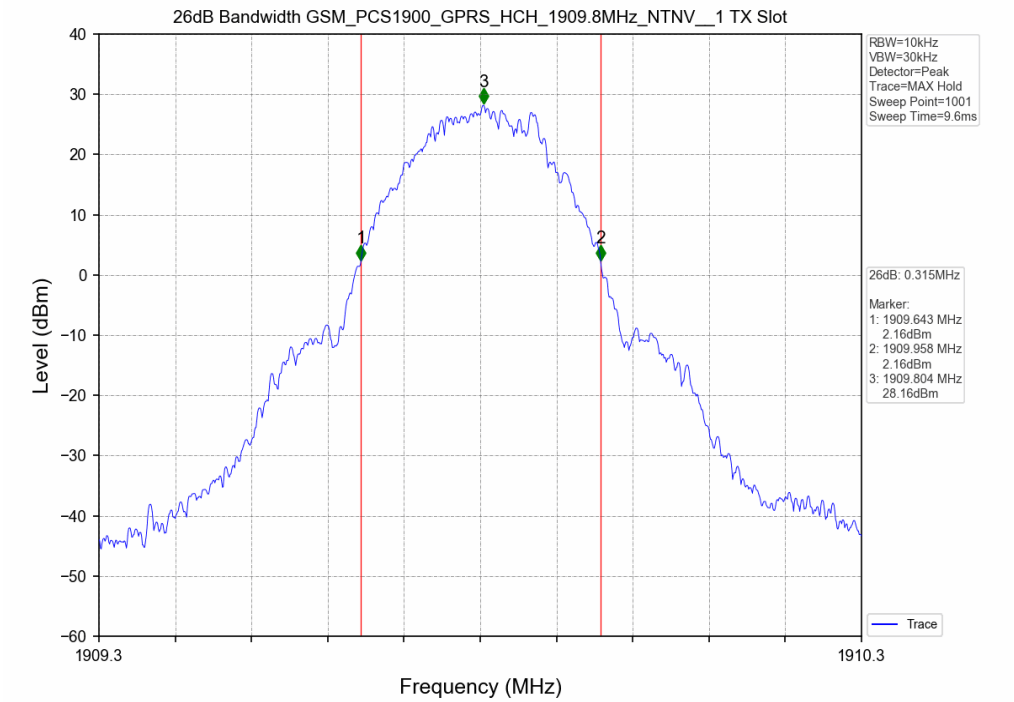


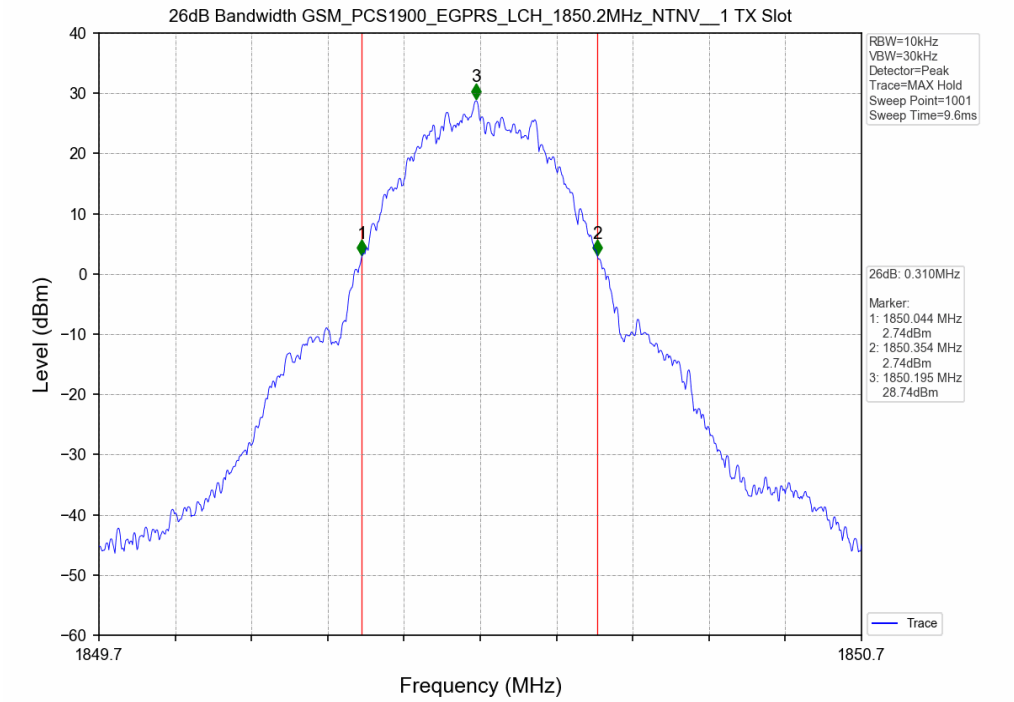



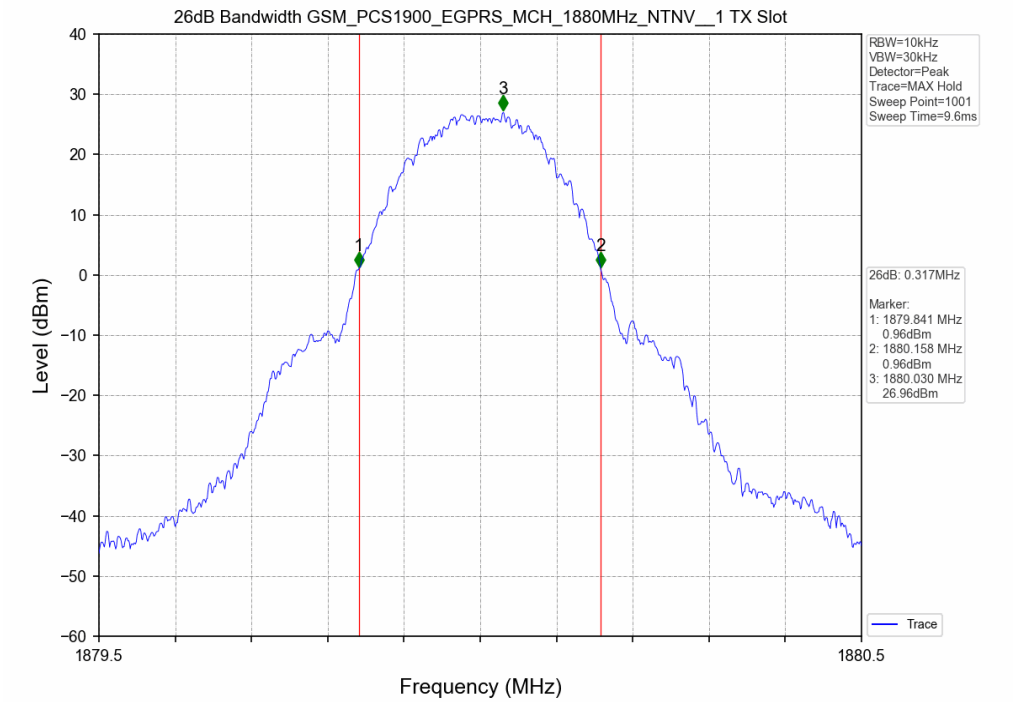

26dB Bandwidth GSM_PCS1900_GSM_HCH_1909.8MHz_NTNV__ GSM
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.312MHz
Marker:
1: 1909.647 MHz
2.30dBm
2: 1909.959 MHz
2.30dBm
3: 1909.870 MHz
28.30dBm
Trace
Level (dBm)
Frequency (MHz)
1909.3
1910.3

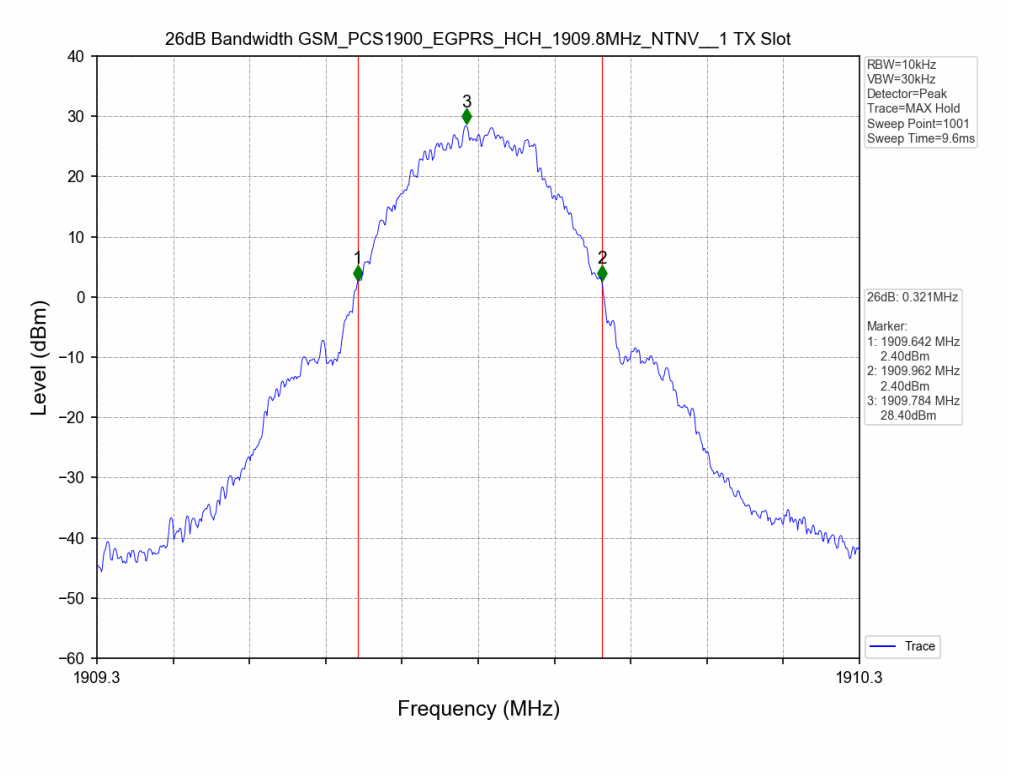

26dB Bandwidth GSM_PCS1900_GPRS_LCH_1850.2MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.314MHz
Marker:
1: 1850.044 MHz
1.69dBm
2: 1850.358 MHz
1.69dBm
3: 1850.266 MHz
27.69dBm
Trace
Level (dBm)
Frequency (MHz)
1849.7
1850.7

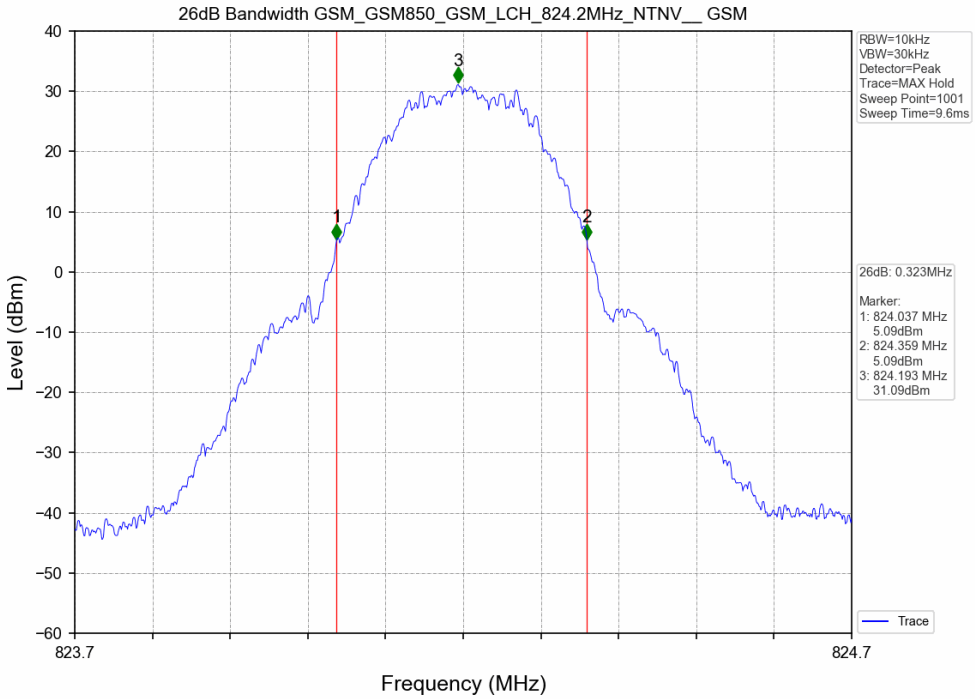

26dB Bandwidth GSM_PCS1900_GPRS_MCH_1880MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.320MHz
Marker:
1: 1879.836 MHz
1.16dBm
2: 1880.156 MHz
1.16dBm
3: 1880.066 MHz
27.16dBm
Trace
Level (dBm)
Frequency (MHz)
1879.5
1880.5

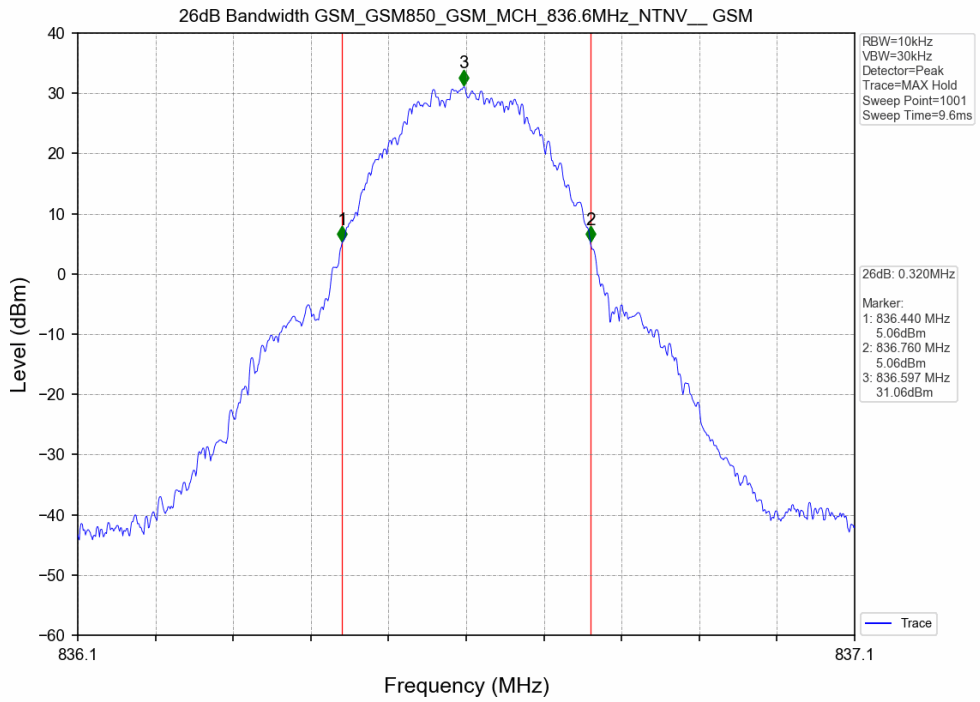

26dB Bandwidth GSM_PCS1900_GPRS_HCH_1909.8MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.315MHz
Marker:
1: 1909.643 MHz
2.16dBm
2: 1909.958 MHz
2.16dBm
3: 1909.804 MHz
28.16dBm
Trace
Level (dBm)
Frequency (MHz)
1909.3
1910.3

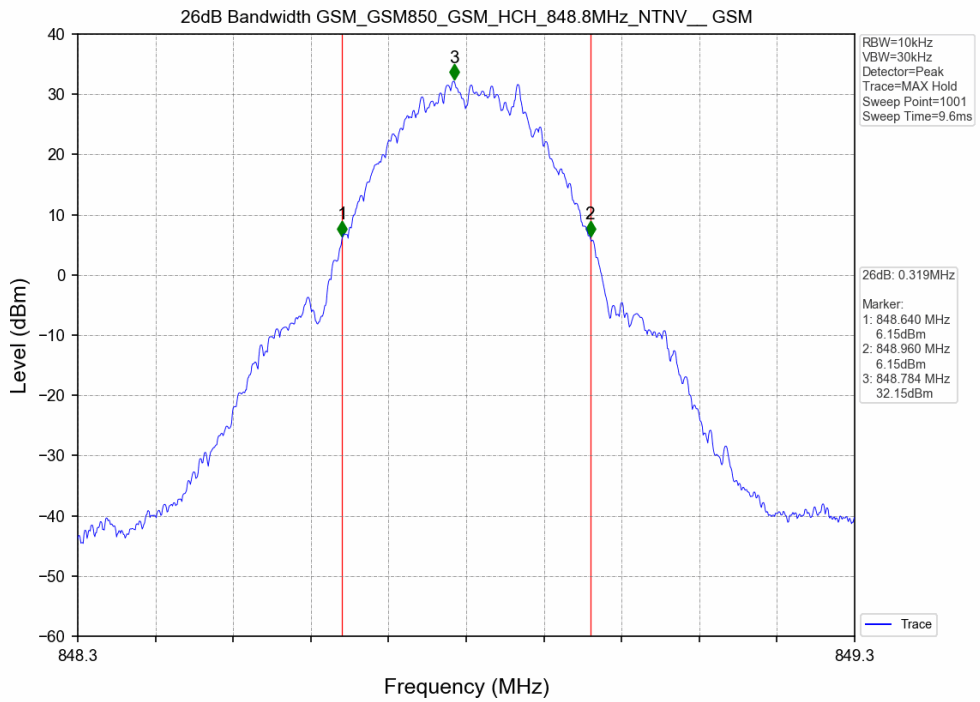

26dB Bandwidth GSM_PCS1900_EGPRS_LCH_1850.2MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.310MHz
Marker:
1: 1850.044 MHz
2.74dBm
2: 1850.354 MHz
2.74dBm
3: 1850.195 MHz
28.74dBm
Trace
Level (dBm)
Frequency (MHz)
1849.7
1850.7

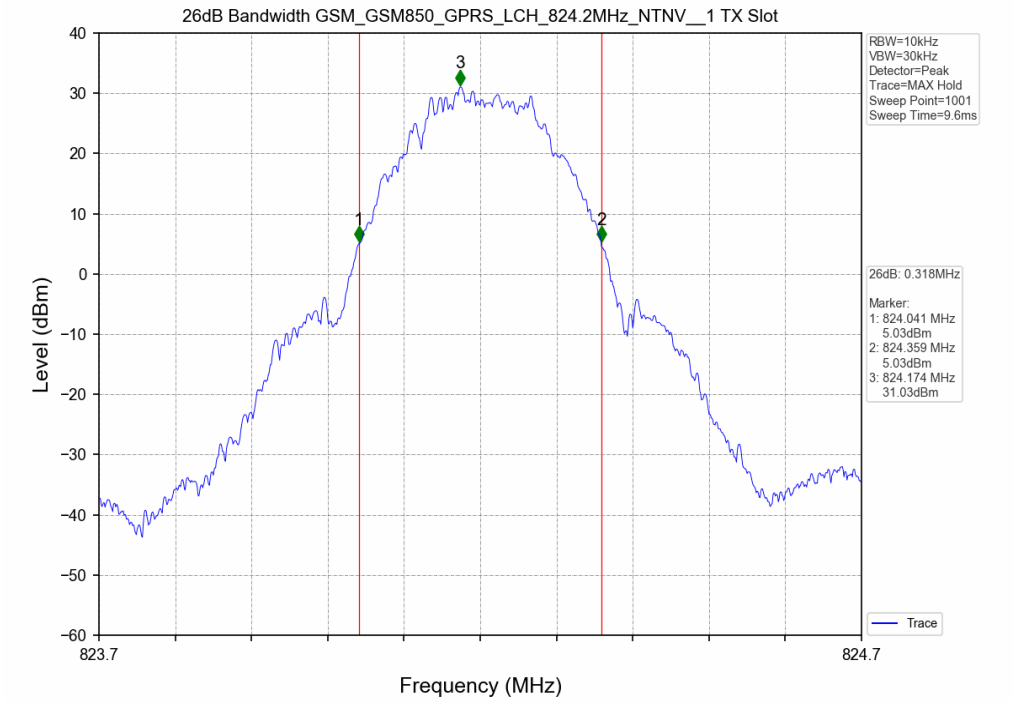

26dB Bandwidth GSM_PCS1900_EGPRS_MCH_1880MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.317MHz
Marker:
1: 1879.841 MHz
0.96dBm
2: 1880.158 MHz
0.96dBm
3: 1880.030 MHz
26.96dBm
Trace
Level (dBm)
Frequency (MHz)
1879.5
1880.5

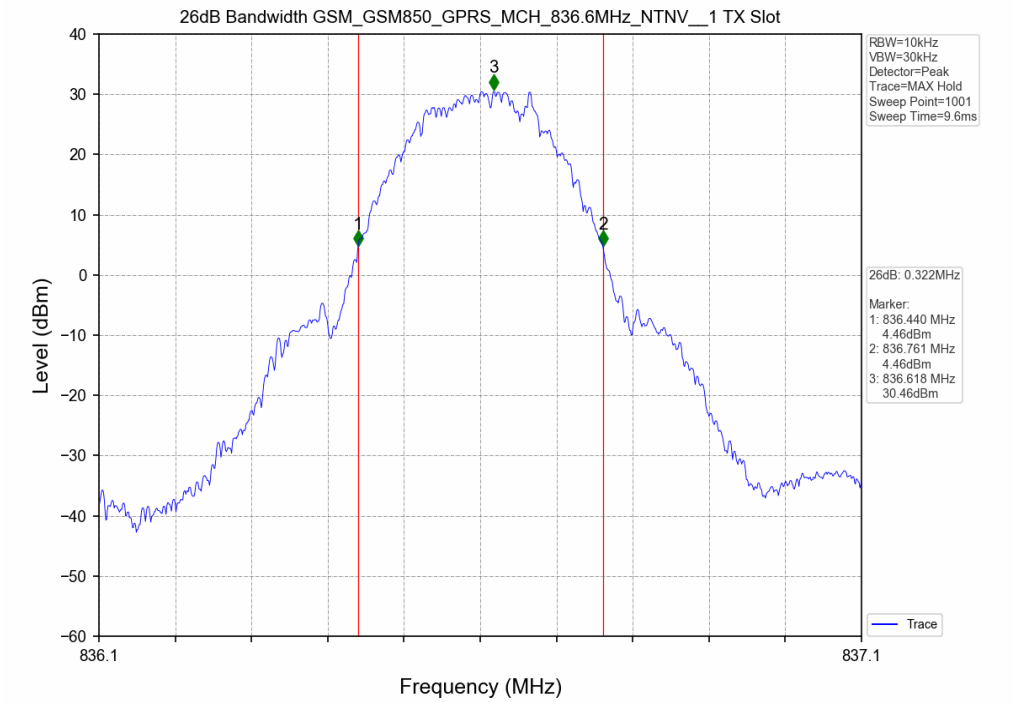

26dB Bandwidth GSM_PCS1900_EGPRS_HCH_1909.8MHz_NTNV__1 TX Slot
Level (dBm)
Frequency (MHz)
1909.3
1910.3
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.321MHz
Marker:
1: 1909.642 MHz
2.40dBm
2: 1909.962 MHz
2.40dBm
3: 1909.784 MHz
28.40dBm
Trace

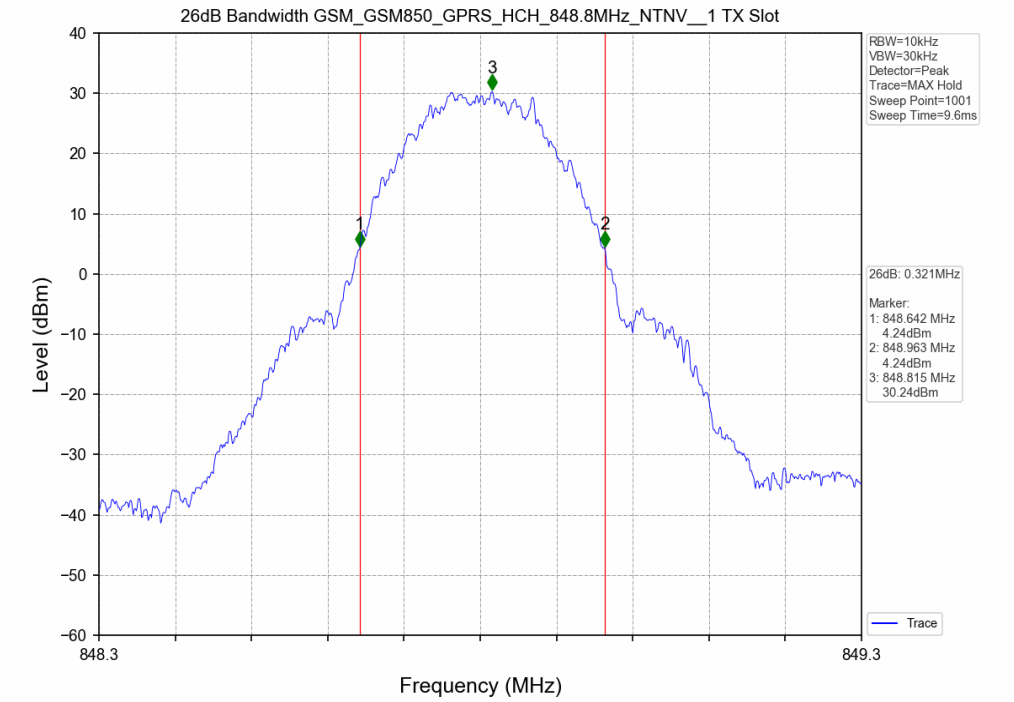

26dB Bandwidth GSM_GSM850_GSM_LCH_824.2MHz_NTNV__ GSM
Level (dBm)
Frequency (MHz)
823.7
824.7
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.323MHz
Marker:
1: 824.037 MHz
5.09dBm
2: 824.359 MHz
5.09dBm
3: 824.193 MHz
31.09dBm
Trace

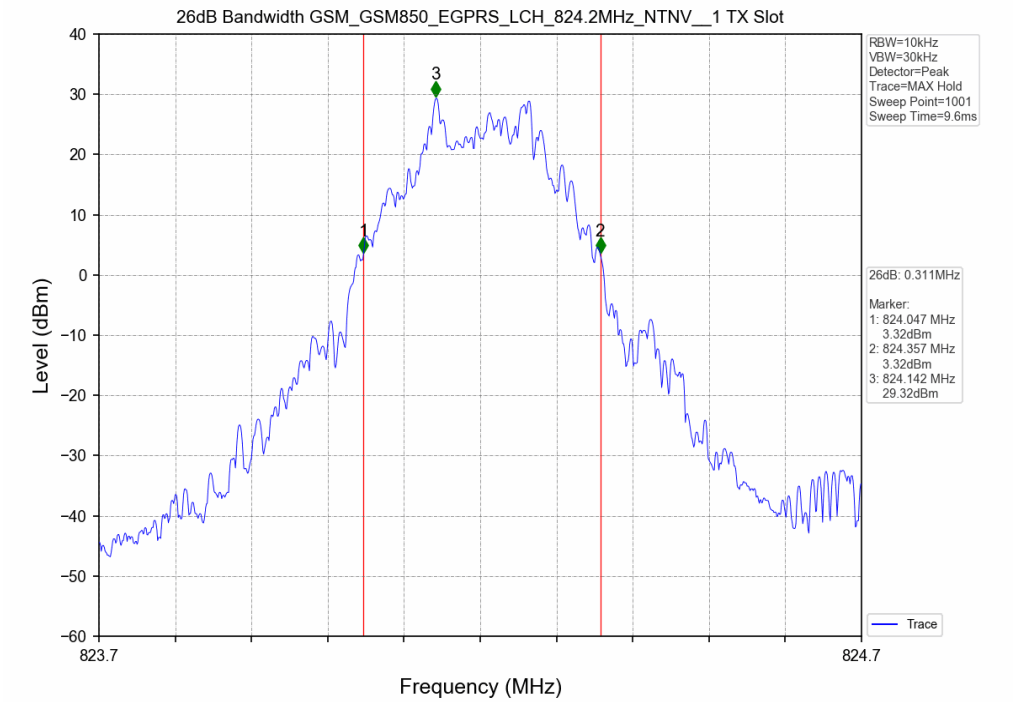

26dB Bandwidth GSM_GSM850_GSM_MCH_836.6MHz_NTNV__ GSM
Level (dBm)
Frequency (MHz)
836.1
837.1
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.320MHz
Marker:
1: 836.440 MHz
5.06dBm
2: 836.760 MHz
5.06dBm
3: 836.597 MHz
31.06dBm
Trace

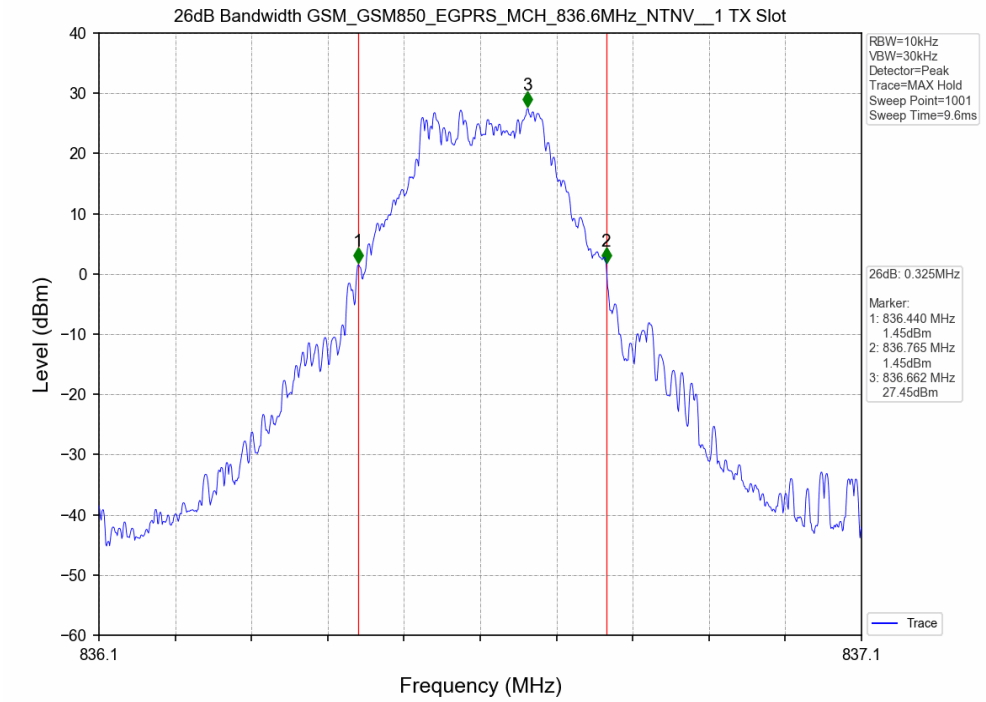

26dB Bandwidth GSM_GSM850_GSM_HCH_848.8MHz_NTNV__ GSM
Level (dBm)
Frequency (MHz)
848.3
849.3
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.319MHz
Marker:
1: 848.640 MHz
6.15dBm
2: 848.960 MHz
6.15dBm
3: 848.784 MHz
32.15dBm
Trace

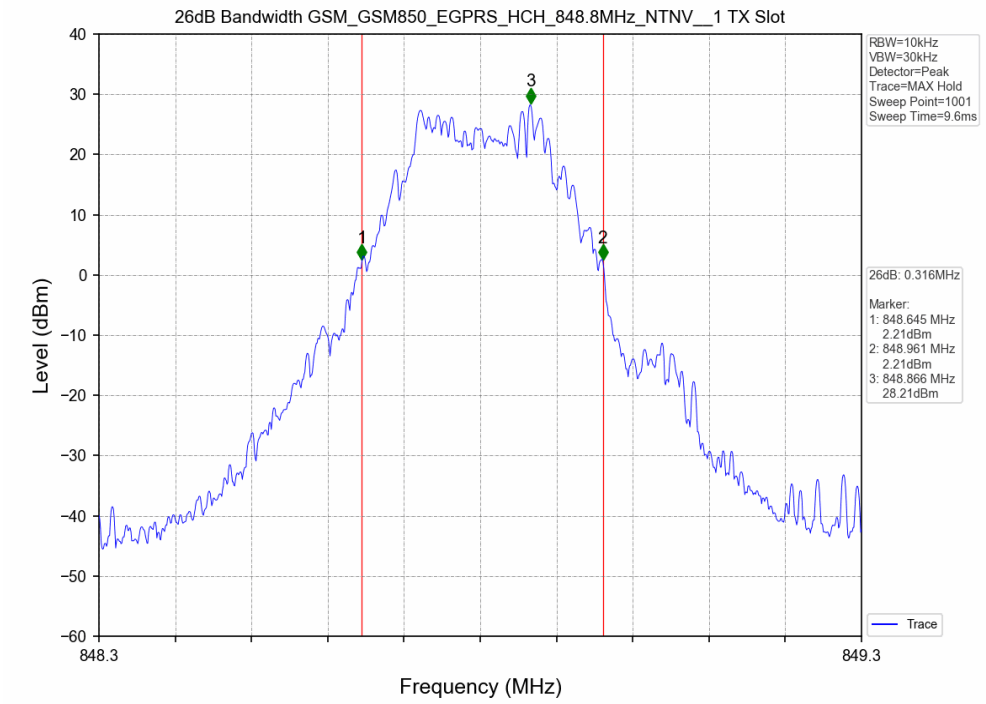

26dB Bandwidth GSM_GSM850_GPRS_LCH_824.2MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.318MHz
Marker:
1: 824.041 MHz
5.03dBm
2: 824.359 MHz
5.03dBm
3: 824.174 MHz
31.03dBm
Trace
Level (dBm)
Frequency (MHz)
823.7
824.7


26dB Bandwidth GSM_GSM850_GPRS_MCH_836.6MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.322MHz
Marker:
1: 836.440 MHz
4.46dBm
2: 836.761 MHz
4.46dBm
3: 836.618 MHz
30.46dBm
Trace
Level (dBm)
Frequency (MHz)
836.1
837.1


26dB Bandwidth GSM_GSM850_GPRS_HCH_848.8MHz_NTNV__1 TX Slot
Level (dBm)
Frequency (MHz)
848.3
849.3
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.321MHz
Marker:
1: 848.642 MHz
4.24dBm
2: 848.963 MHz
4.24dBm
3: 848.815 MHz
30.24dBm
Trace

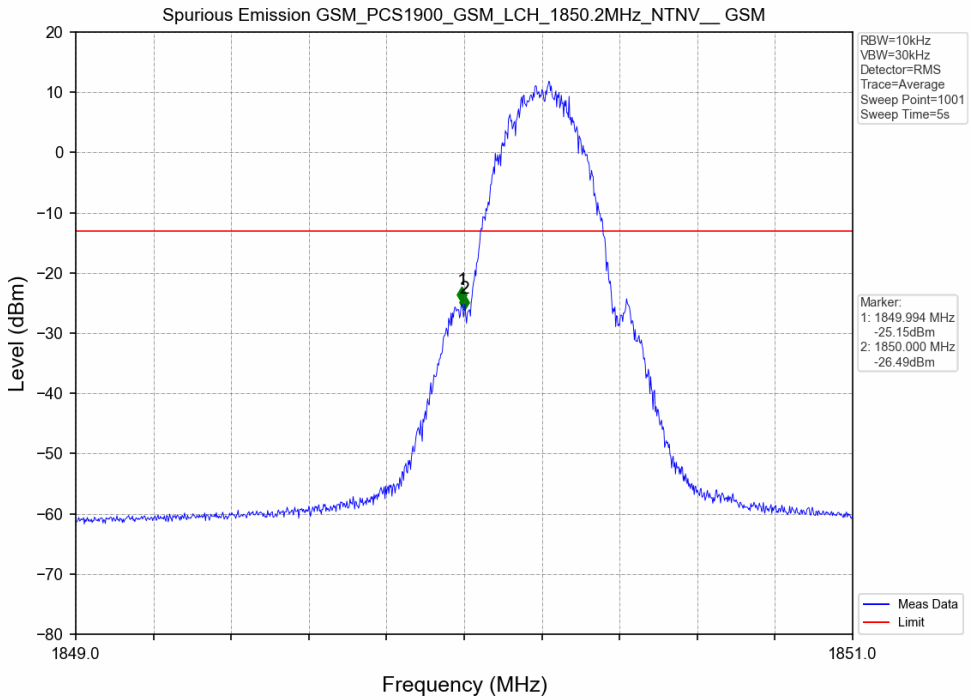

26dB Bandwidth GSM_GSM850_EGPRS_LCH_824.2MHz_NTNV__1 TX Slot
Level (dBm)
Frequency (MHz)
823.7
824.7
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.311MHz
Marker:
1: 824.047 MHz
3.32dBm
2: 824.357 MHz
3.32dBm
3: 824.142 MHz
29.32dBm
Trace

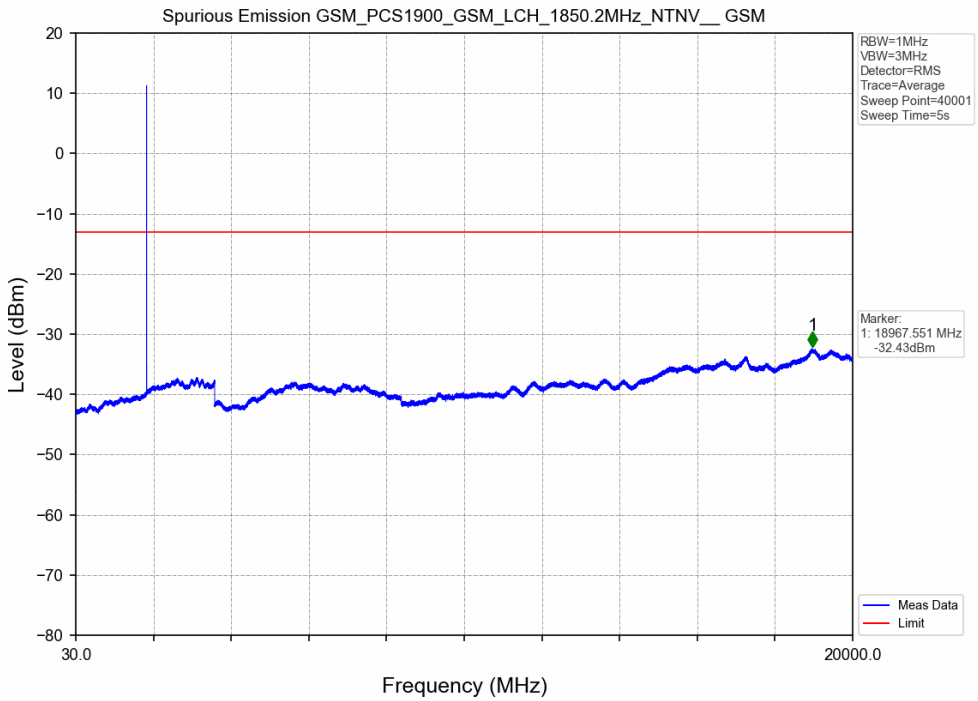

26dB Bandwidth GSM_GSM850_EGPRS_MCH_836.6MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.325MHz
Marker:
1: 836.440 MHz
1.45dBm
2: 836.765 MHz
1.45dBm
3: 836.662 MHz
27.45dBm
Trace
Level (dBm)
Frequency (MHz)
836.1
837.1

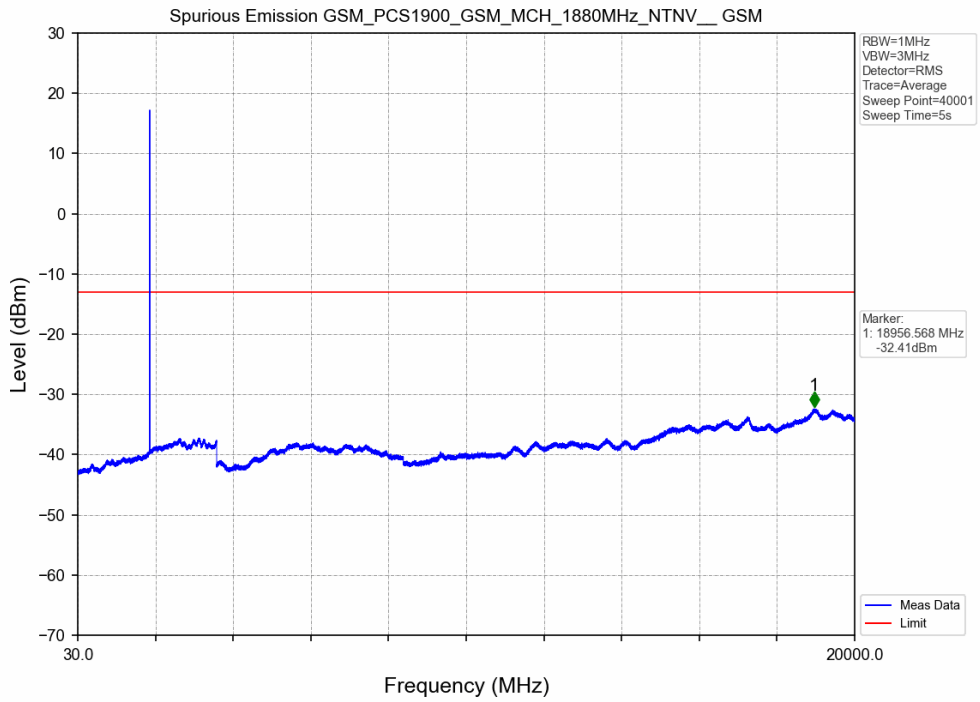

26dB Bandwidth GSM_GSM850_EGPRS_HCH_848.8MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=9.6ms
26dB: 0.316MHz
Marker:
1: 848.645 MHz
2.21dBm
2: 848.961 MHz
2.21dBm
3: 848.866 MHz
28.21dBm
Trace
Level (dBm)
Frequency (MHz)
848.3
849.3

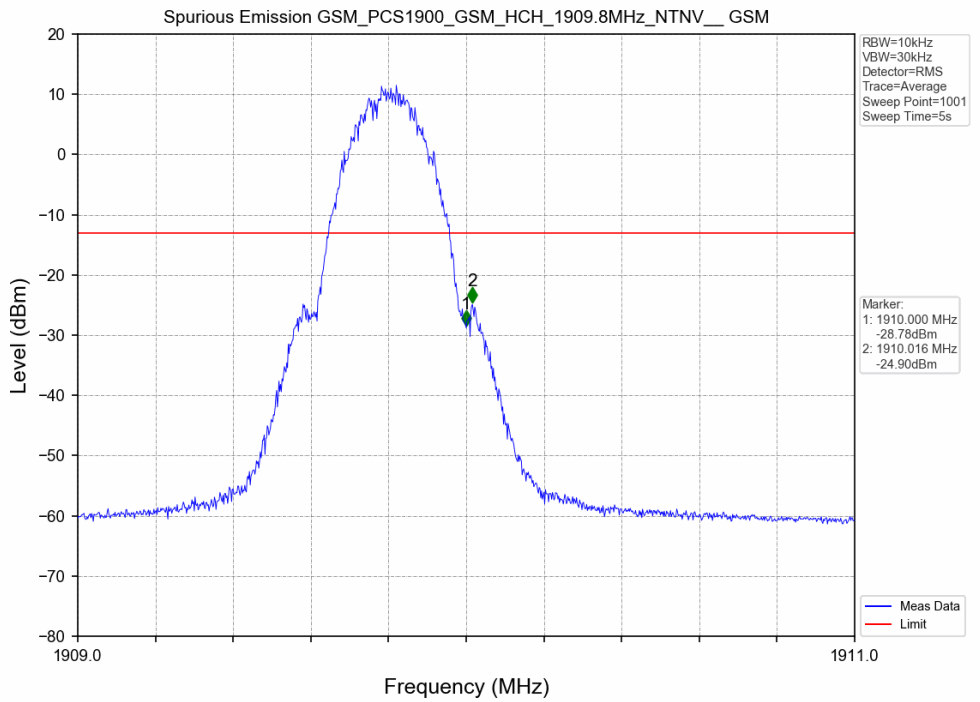
# 4. Spurious Emission

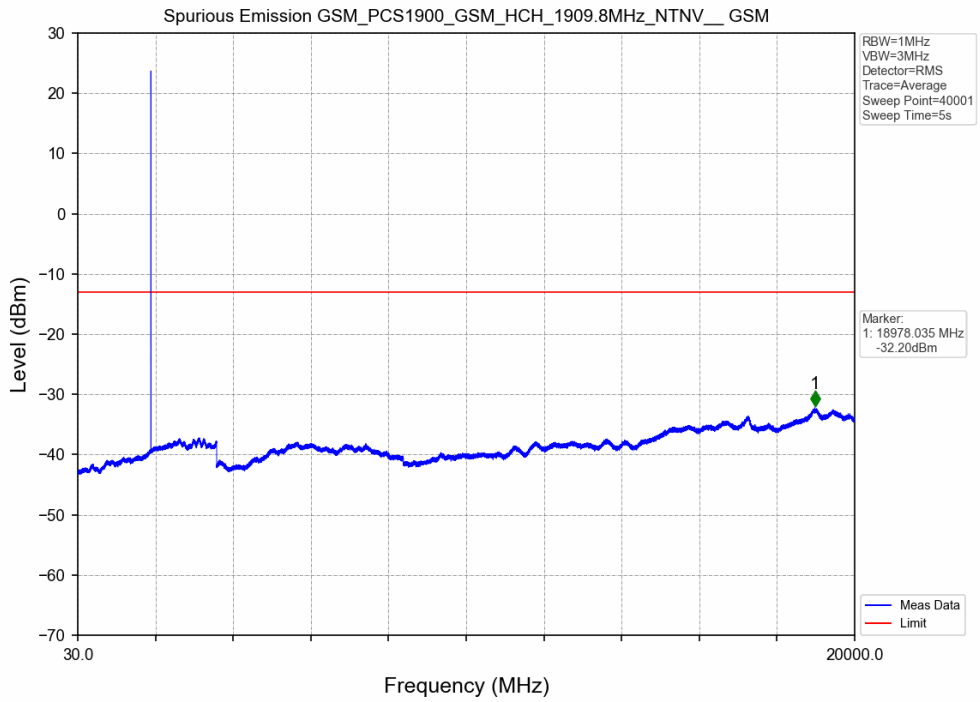
## 4.1 Test Graph

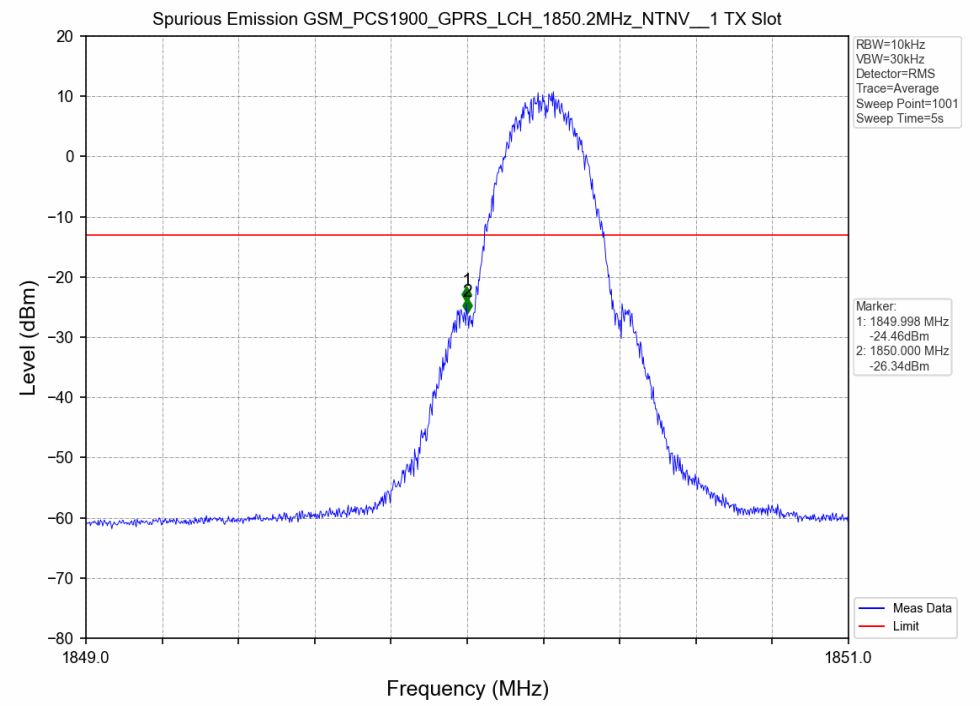


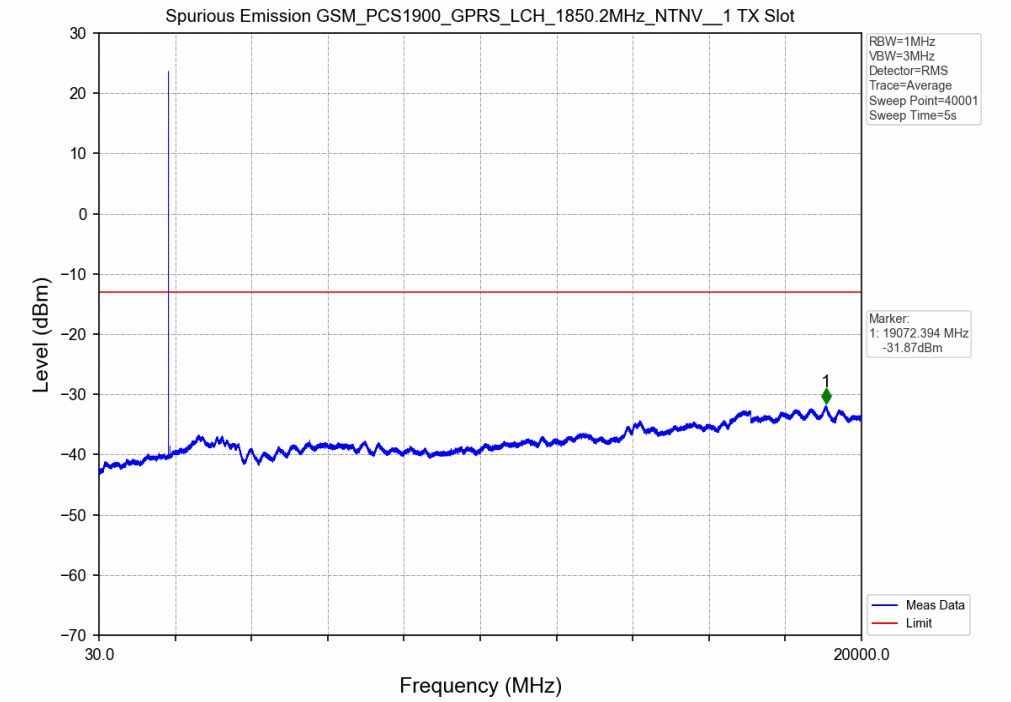



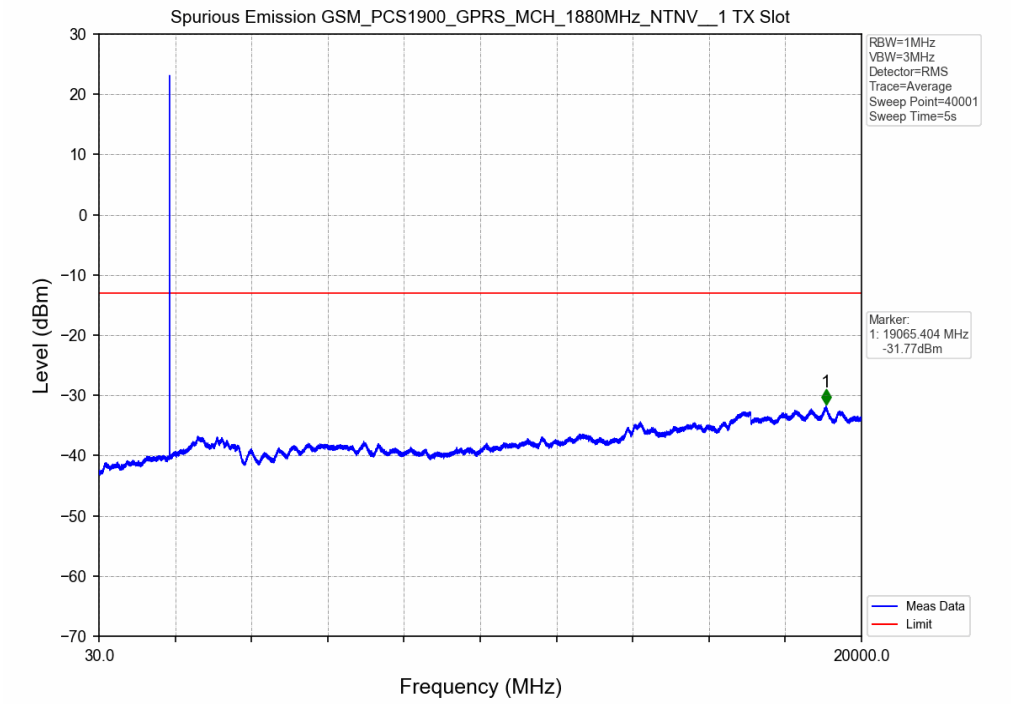

Spurious Emission GSM_PCS1900_GSM_MCH_1880MHz_NTNV__ GSM
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 18956.568 MHz
-32.41dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
20000.0

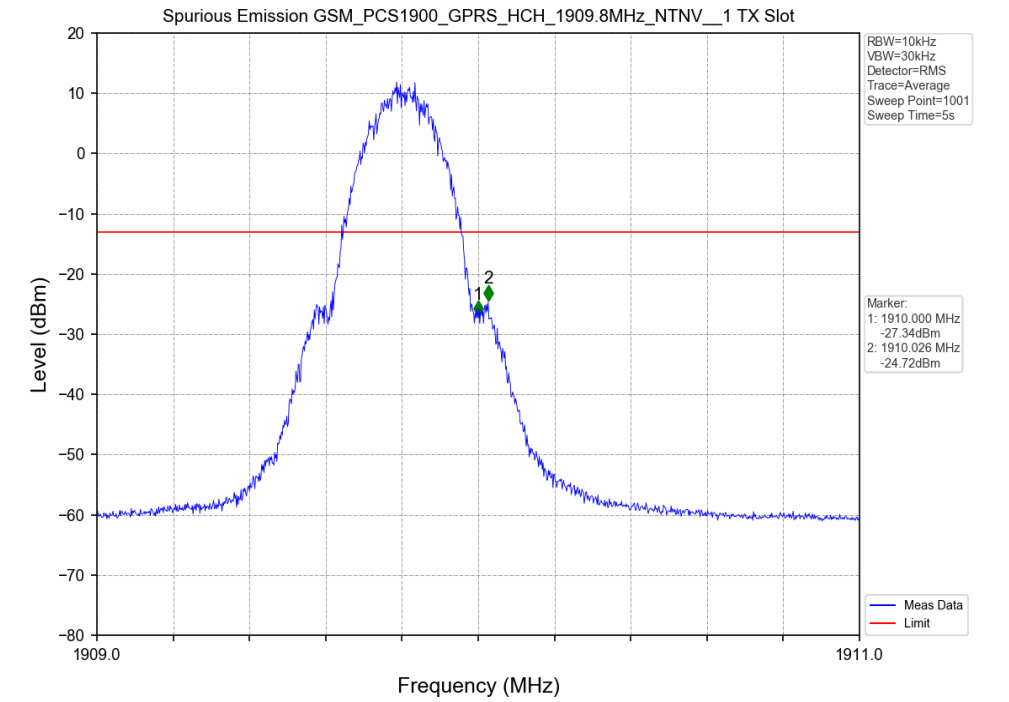

Spurious Emission GSM_PCS1900_GSM_HCH_1909.8MHz_NTNV__ GSM
RBW=10kHz
VBW=30kHz
Detector=RMS
Trace=Average
Sweep Point=1001
Sweep Time=5s
Marker:
1: 1910.000 MHz
-28.78dBm
2: 1910.016 MHz
-24.90dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
1909.0
1911.0

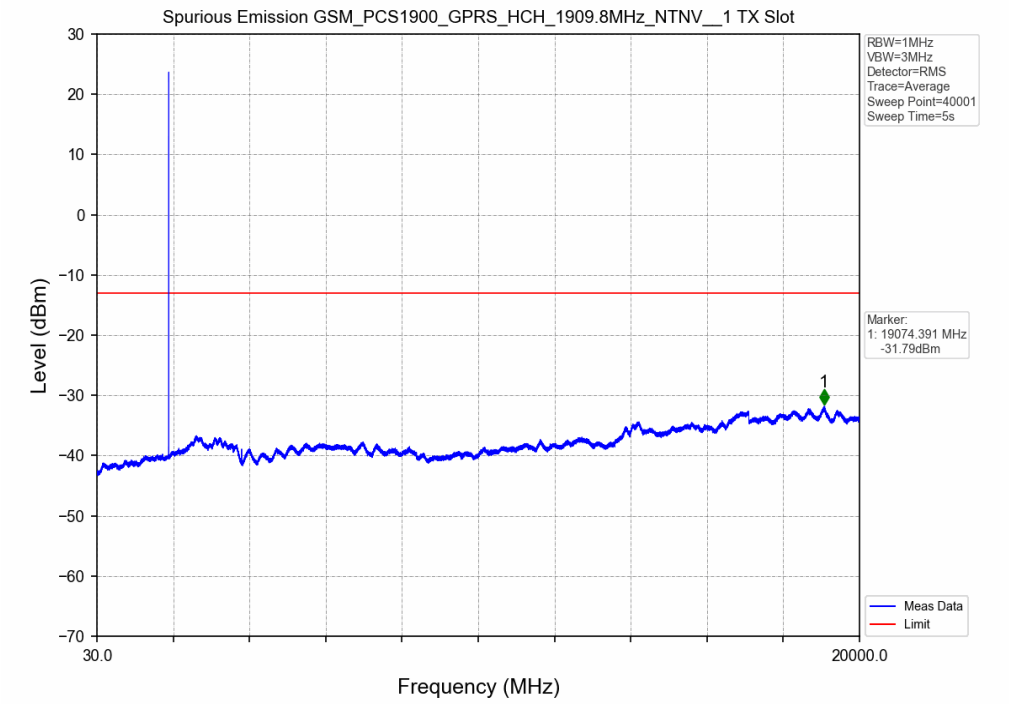

Spurious Emission GSM_PCS1900_GSM_HCH_1909.8MHz_NTNV__ GSM
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 18978.035 MHz
-32.20dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30
20
10
0
−10
−20
−30
−40
−50
−60
−70
30.0
20000.0
1

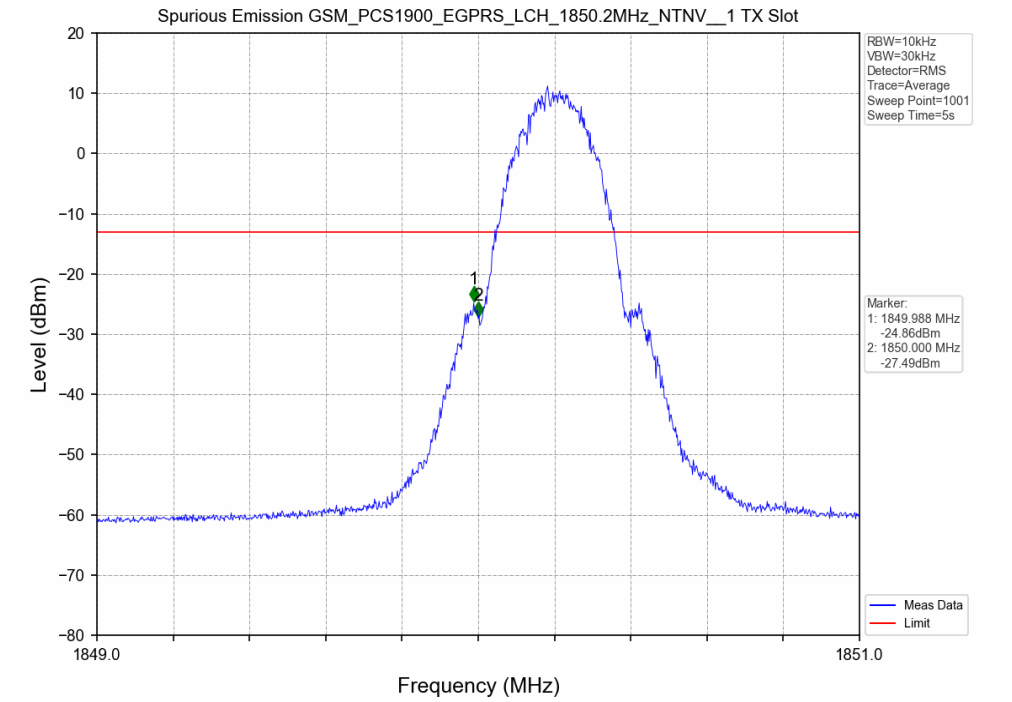

Spurious Emission GSM_PCS1900_GPRS_LCH_1850.2MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=RMS
Trace=Average
Sweep Point=1001
Sweep Time=5s
Marker:
1: 1849.998 MHz
-24.46dBm
2: 1850.000 MHz
-26.34dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
20
10
0
−10
−20
−30
−40
−50
−60
−70
−80
1849.0
1851.0
1
2

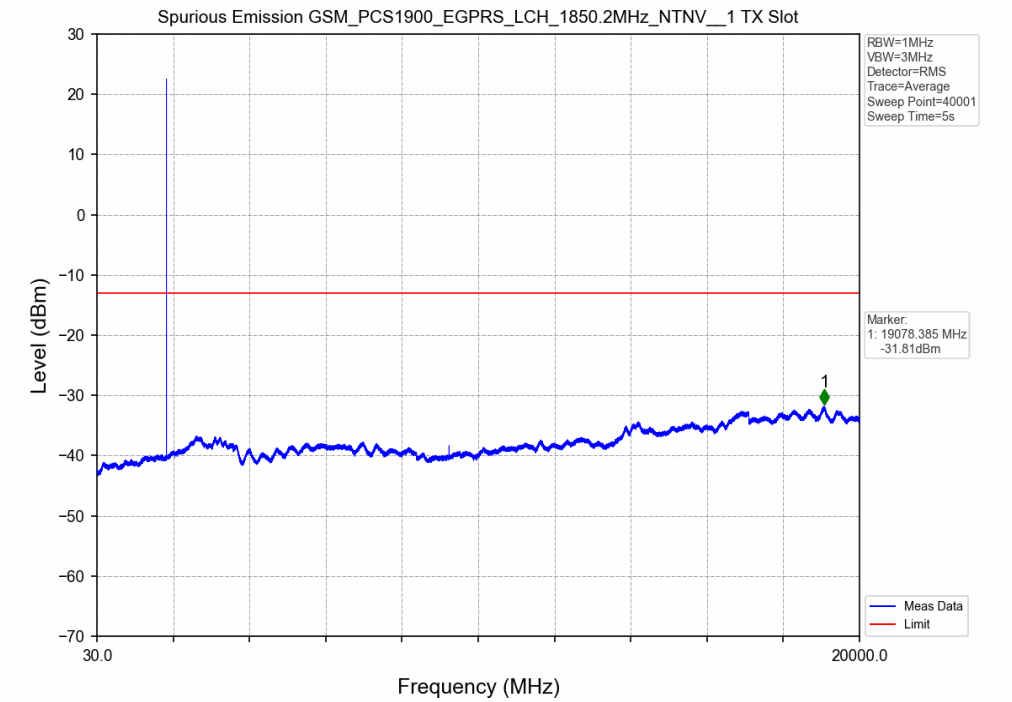

Spurious Emission GSM_PCS1900_GPRS_LCH_1850.2MHz_NTNV__1 TX Slot
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 19072.394 MHz
-31.87dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
20000.0

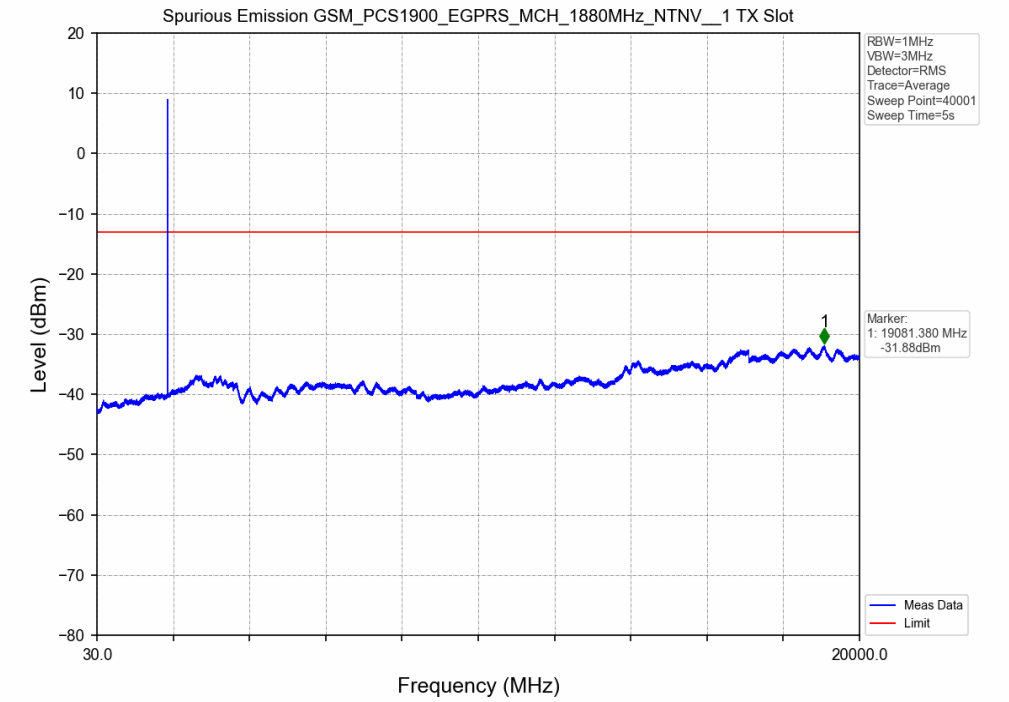

Spurious Emission GSM_PCS1900_GPRS_MCH_1880MHz_NTNV__1 TX Slot
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 19065.404 MHz
-31.77dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
20000.0

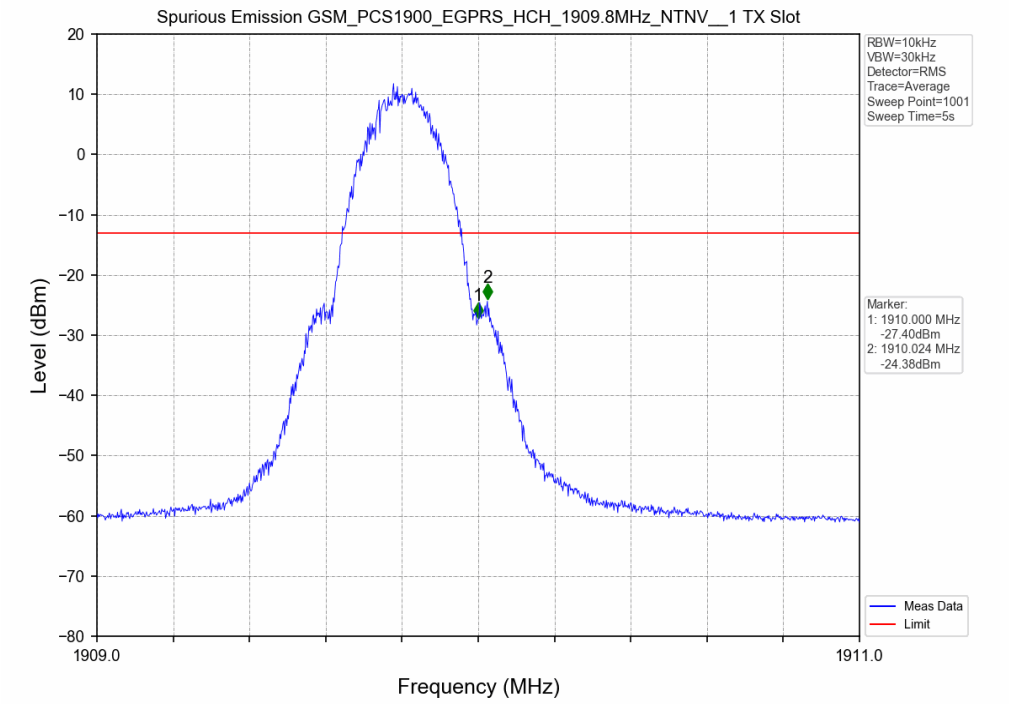

Spurious Emission GSM_PCS1900_GPRS_HCH_1909.8MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=RMS
Trace=Average
Sweep Point=1001
Sweep Time=5s
Marker:
1: 1910.000 MHz
-27.34dBm
2: 1910.026 MHz
-24.72dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
1909.0
1911.0

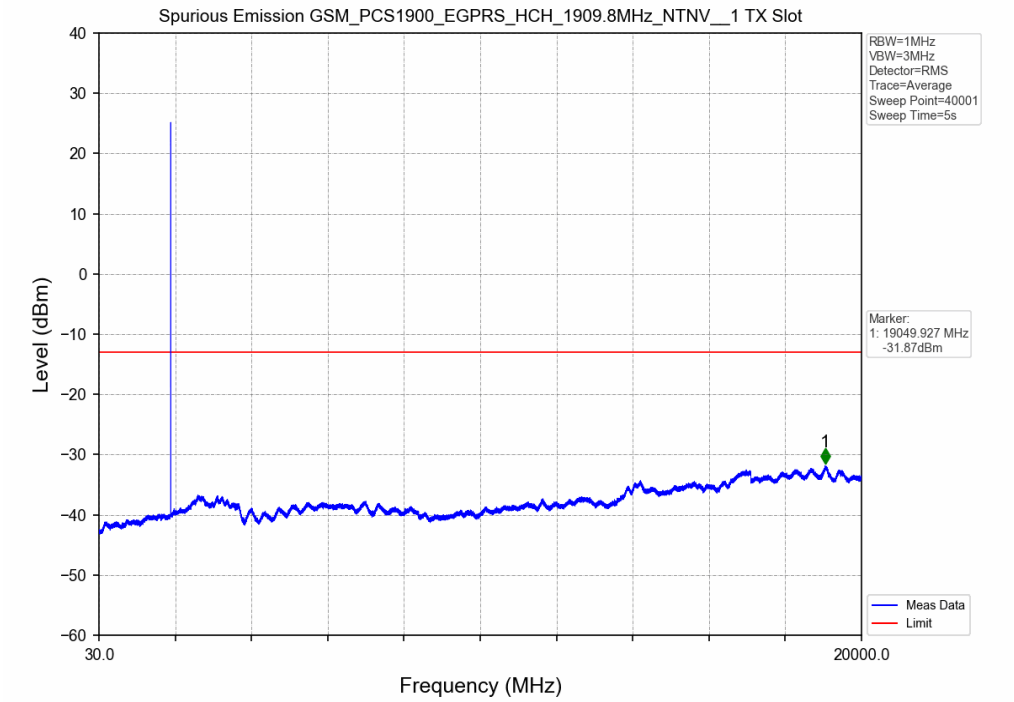

Spurious Emission GSM_PCS1900_GPRS_HCH_1909.8MHz_NTNV__1 TX Slot
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 19074.391 MHz
-31.79dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
20000.0

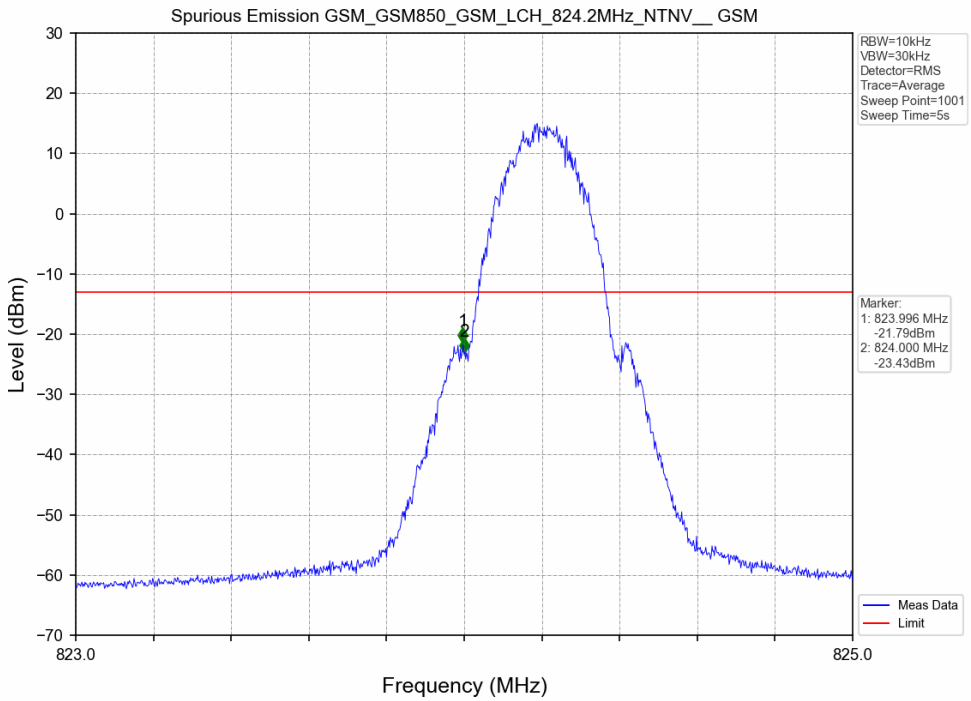

Spurious Emission GSM_PCS1900_EGPRS_LCH_1850.2MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=RMS
Trace=Average
Sweep Point=1001
Sweep Time=5s
Marker:
1: 1849.988 MHz
-24.86dBm
2: 1850.000 MHz
-27.49dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
1849.0
1851.0

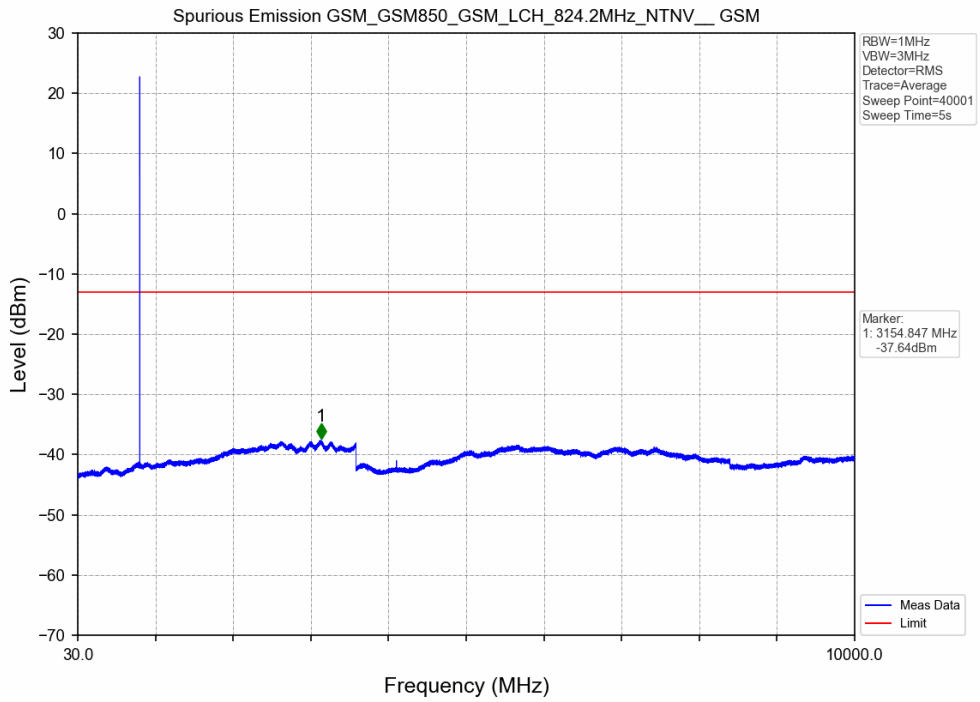

Spurious Emission GSM_PCS1900_EGPRS_LCH_1850.2MHz_NTNV__1 TX Slot
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 19078.385 MHz
-31.81dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
20000.0

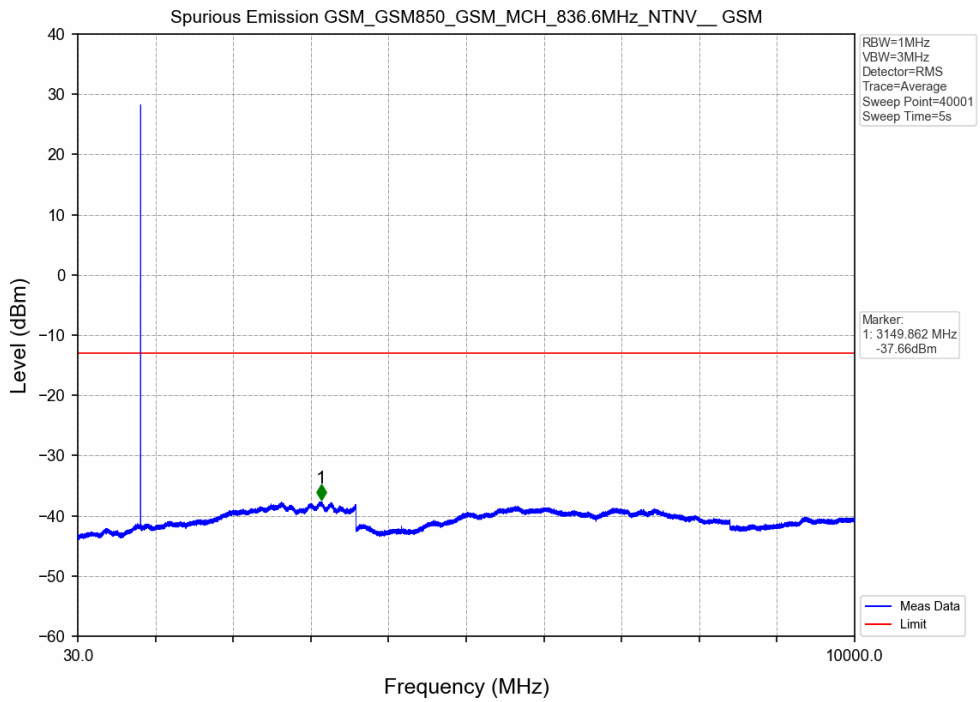

Spurious Emission GSM_PCS1900_EGPRS_MCH_1880MHz_NTNV__1 TX Slot
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 19081.380 MHz
-31.88dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
20000.0

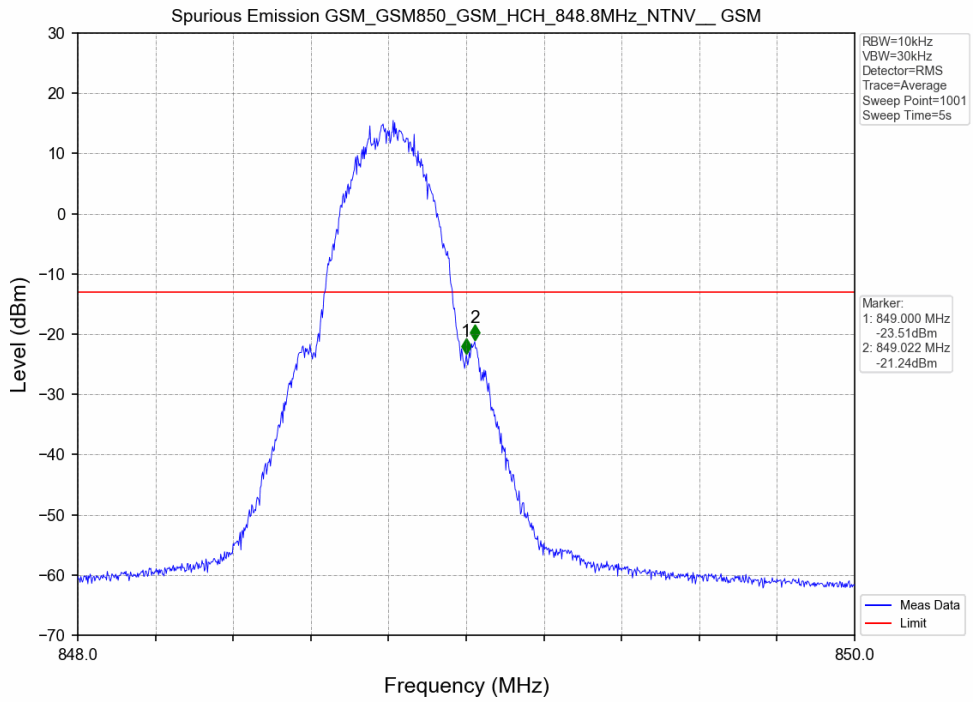

Spurious Emission GSM_PCS1900_EGPRS_HCH_1909.8MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=RMS
Trace=Average
Sweep Point=1001
Sweep Time=5s
Marker:
1: 1910.000 MHz
-27.40dBm
2: 1910.024 MHz
-24.38dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
1909.0
1911.0

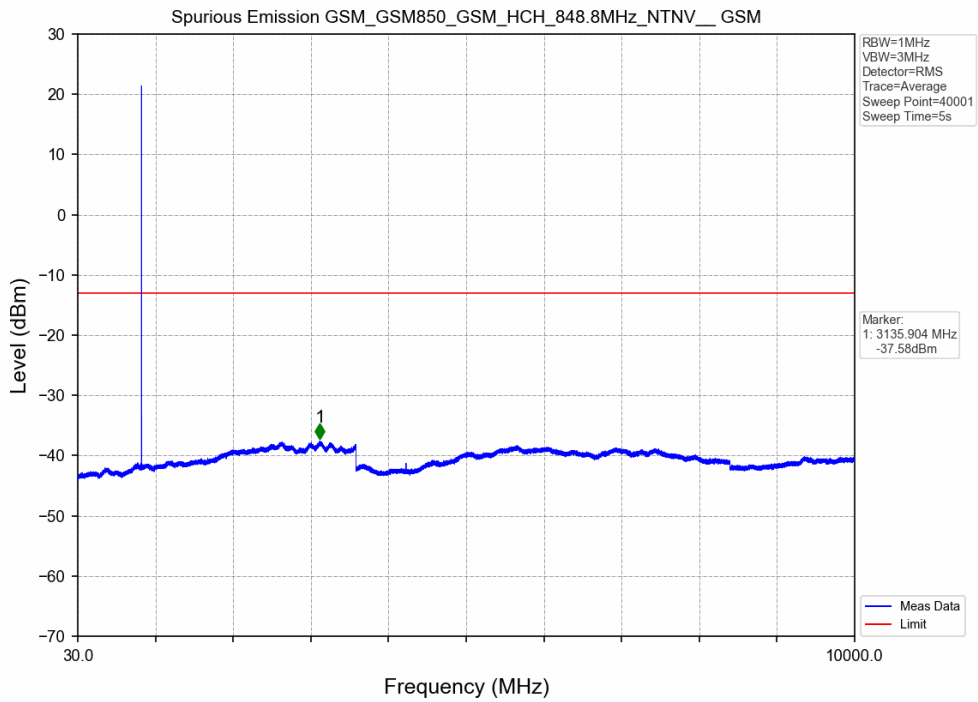

Spurious Emission GSM_PCS1900_EGPRS_HCH_1909.8MHz_NTNV__1 TX Slot
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 19049.927 MHz
-31.87dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
20000.0

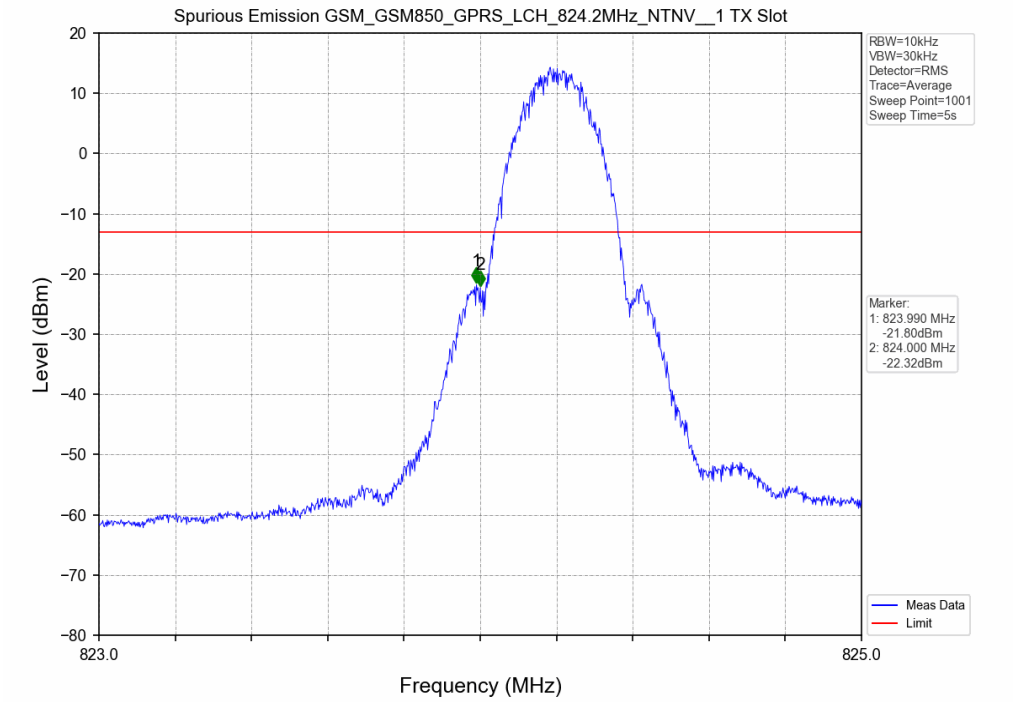

Spurious Emission GSM_GSM850_GSM_LCH_824.2MHz_NTNV__ GSM
RBW=10kHz
VBW=30kHz
Detector=RMS
Trace=Average
Sweep Point=1001
Sweep Time=5s
Marker:
1: 823.996 MHz
-21.79dBm
2: 824.000 MHz
-23.43dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
823.0
825.0

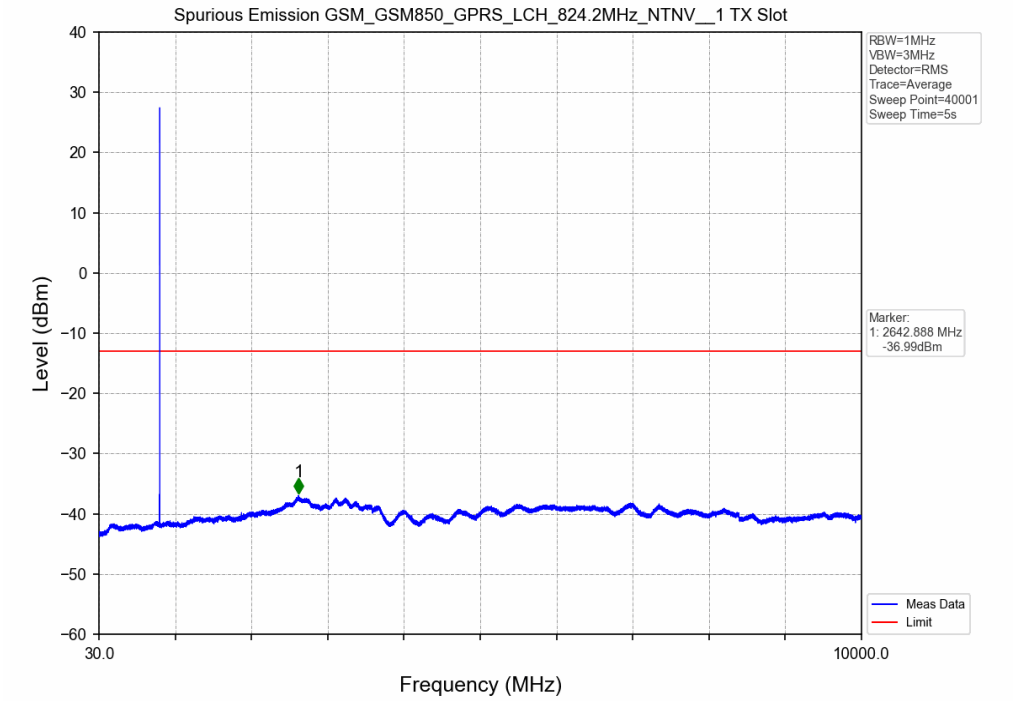

Spurious Emission GSM_GSM850_GSM_LCH_824.2MHz_NTNV__ GSM
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 3154.847 MHz
-37.64dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
10000.0
30
20
10
0
−10
−20
−30
−40
−50
−60
−70
1

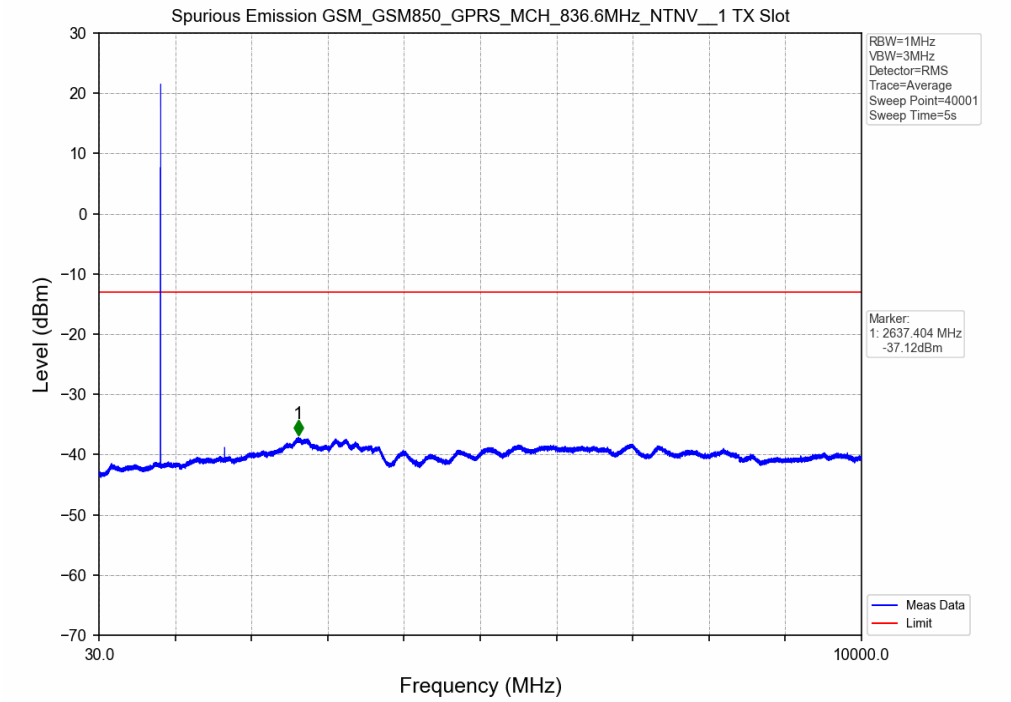

Spurious Emission GSM_GSM850_GSM_MCH_836.6MHz_NTNV__ GSM
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 3149.862 MHz
-37.66dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
10000.0
40
30
20
10
0
−10
−20
−30
−40
−50
−60
1

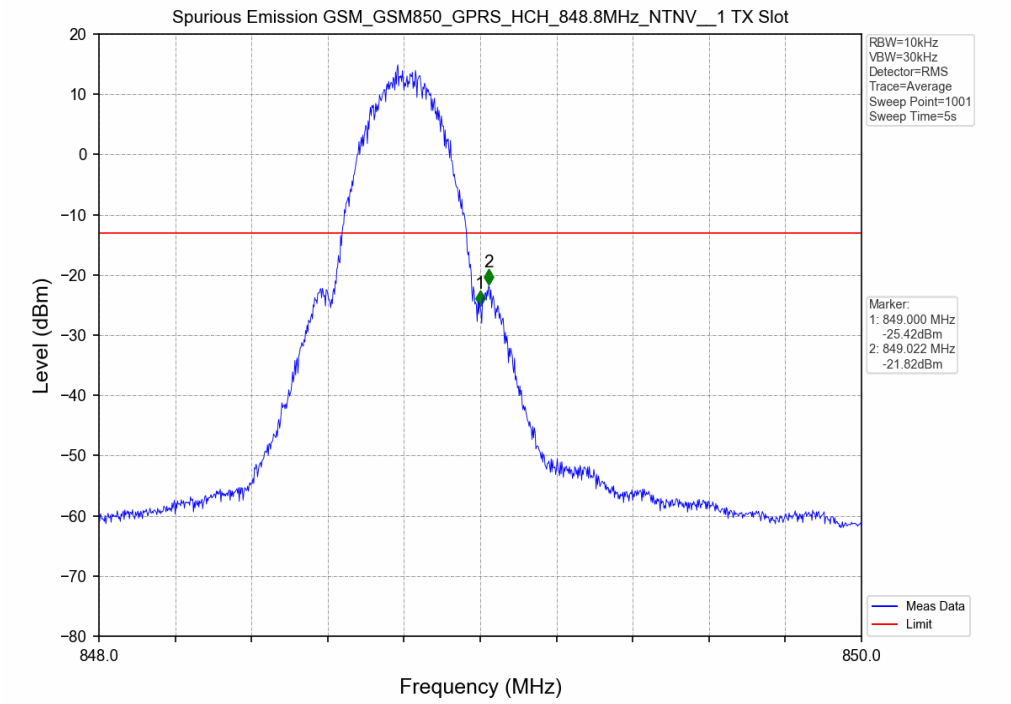

Spurious Emission GSM_GSM850_GSM_HCH_848.8MHz_NTNV__ GSM
RBW=10kHz
VBW=30kHz
Detector=RMS
Trace=Average
Sweep Point=1001
Sweep Time=5s
Marker:
1: 849.000 MHz
-23.51dBm
2: 849.022 MHz
-21.24dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
848.0
850.0

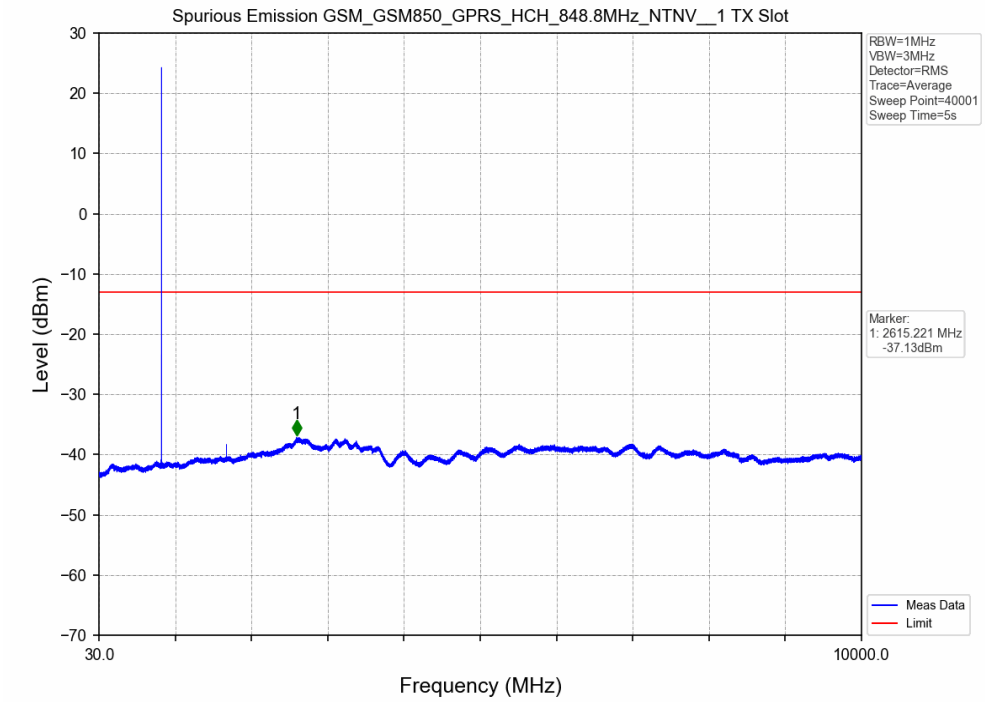

Spurious Emission GSM_GSM850_GSM_HCH_848.8MHz_NTNV__ GSM
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 3135.904 MHz
-37.58dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
10000.0

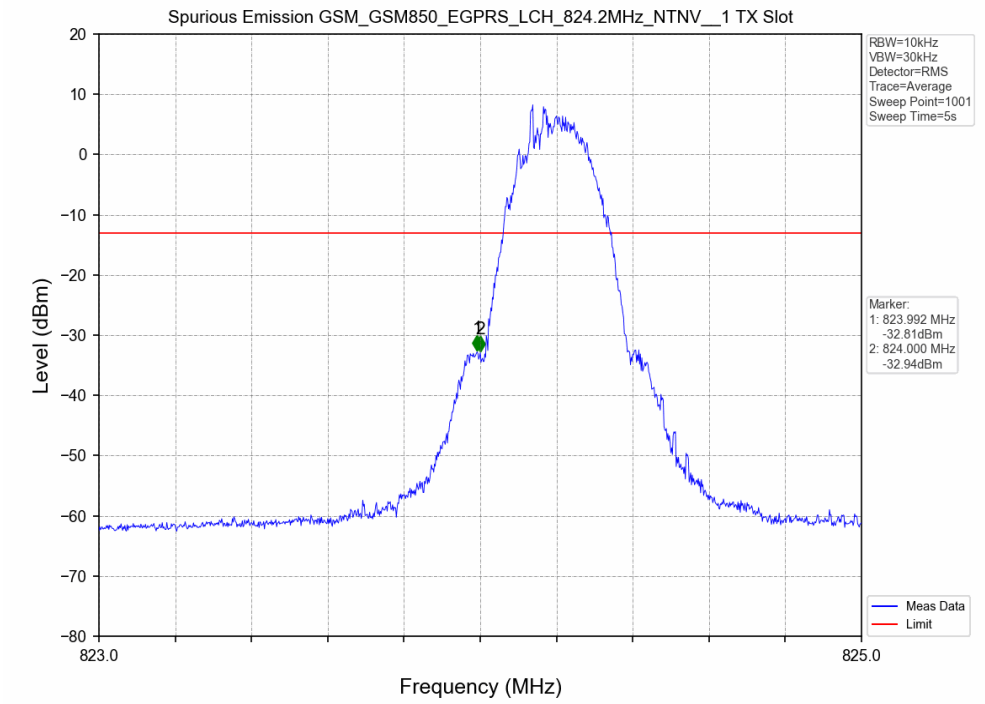

Spurious Emission GSM_GSM850_GPRS_LCH_824.2MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=RMS
Trace=Average
Sweep Point=1001
Sweep Time=5s
Marker:
1: 823.990 MHz
-21.80dBm
2: 824.000 MHz
-22.32dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
823.0
825.0

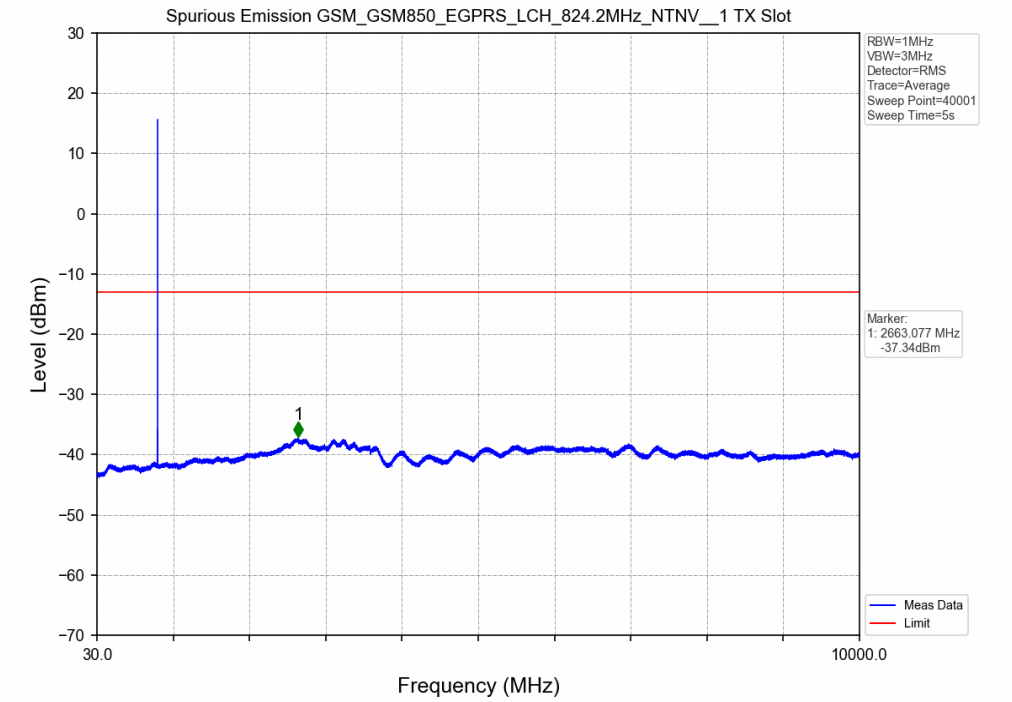

Spurious Emission GSM_GSM850_GPRS_LCH_824.2MHz_NTNV__1 TX Slot
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 2642.888 MHz
-36.99dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
10000.0

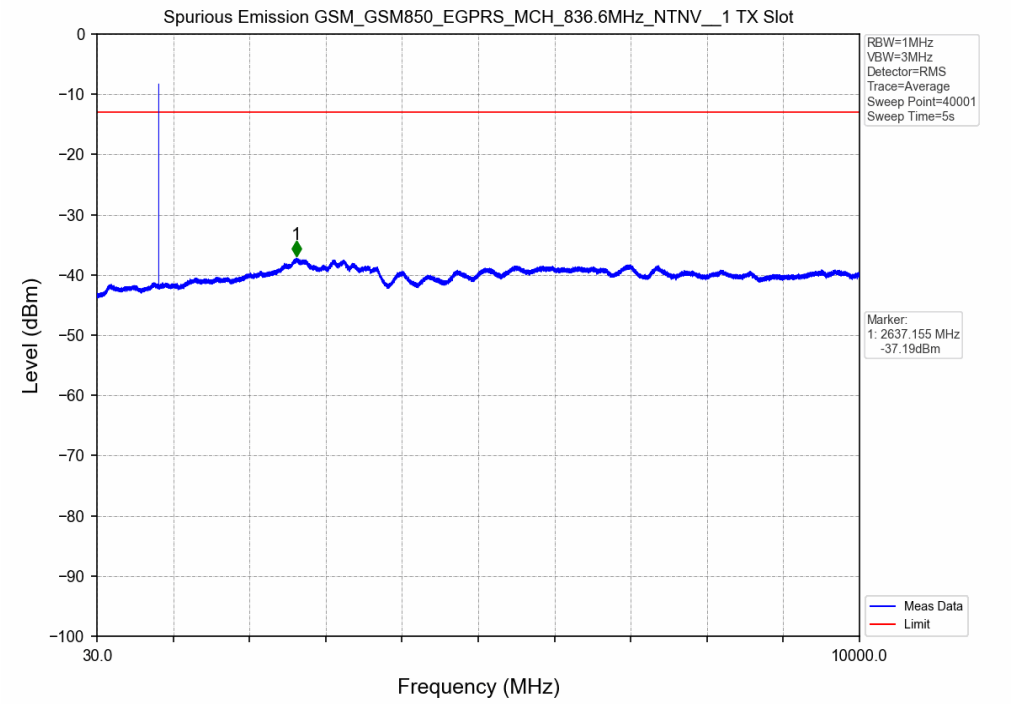

Spurious Emission GSM_GSM850_GPRS_MCH_836.6MHz_NTNV__1 TX Slot
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 2637.404 MHz
-37.12dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
10000.0
30
20
10
0
−10
−20
−30
−40
−50
−60
−70
1

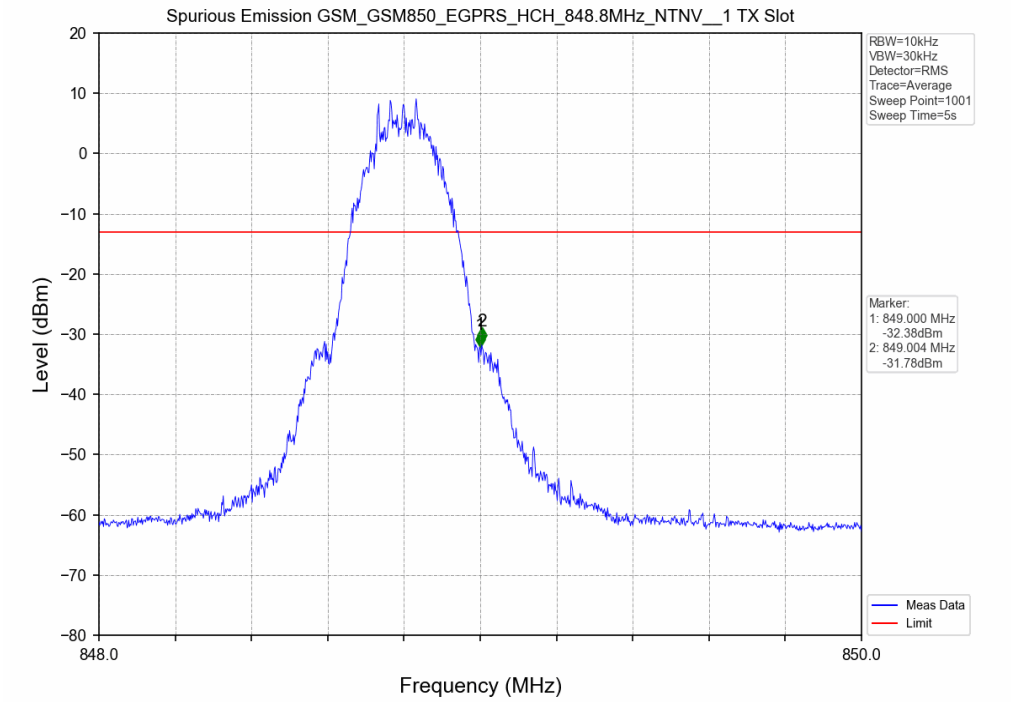

Spurious Emission GSM_GSM850_GPRS_HCH_848.8MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=RMS
Trace=Average
Sweep Point=1001
Sweep Time=5s
Marker:
1: 849.000 MHz
-25.42dBm
2: 849.022 MHz
-21.82dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
848.0
850.0
20
10
0
−10
−20
−30
−40
−50
−60
−70
−80
1
2

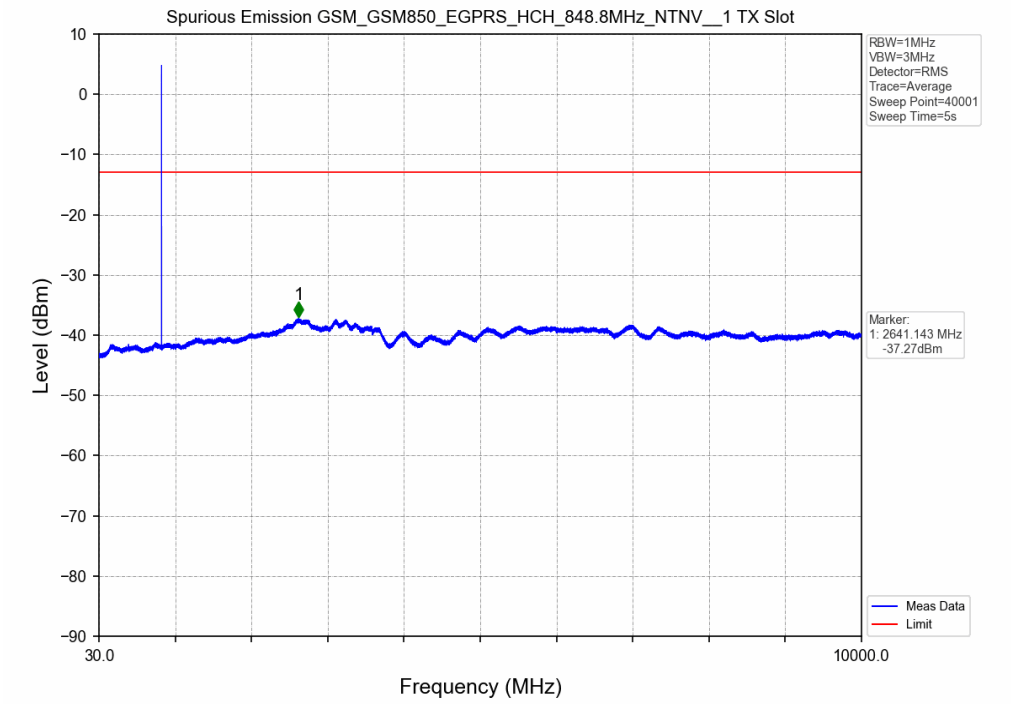

Spurious Emission GSM_GSM850_GPRS_HCH_848.8MHz_NTNV__1 TX Slot
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 2615.221 MHz
-37.13dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
10000.0


Spurious Emission GSM_GSM850_EGPRS_LCH_824.2MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=RMS
Trace=Average
Sweep Point=1001
Sweep Time=5s
Marker:
1: 823.992 MHz
-32.81dBm
2: 824.000 MHz
-32.94dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
823.0
825.0


Spurious Emission GSM_GSM850_EGPRS_LCH_824.2MHz_NTNV__1 TX Slot
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 2663.077 MHz
-37.34dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
10000.0
30
20
10
0
−10
−20
−30
−40
−50
−60
−70
1


Spurious Emission GSM_GSM850_EGPRS_MCH_836.6MHz_NTNV__1 TX Slot
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 2637.155 MHz
-37.19dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
10000.0
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
−100
1


Spurious Emission GSM_GSM850_EGPRS_HCH_848.8MHz_NTNV__1 TX Slot
RBW=10kHz
VBW=30kHz
Detector=RMS
Trace=Average
Sweep Point=1001
Sweep Time=5s
Marker:
1: 849.000 MHz
-32.38dBm
2: 849.004 MHz
-31.78dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
848.0
850.0


Spurious Emission GSM_GSM850_EGPRS_HCH_848.8MHz_NTNV__1 TX Slot
RBW=1MHz
VBW=3MHz
Detector=RMS
Trace=Average
Sweep Point=40001
Sweep Time=5s
Marker:
1: 2641.143 MHz
-37.27dBm
Meas Data
Limit
Level (dBm)
Frequency (MHz)
30.0
10000.0

# 5. Frequency stability

## 5.1 Test Result

| Test Band: PCS1900 (Frequency Error VS. Voltage) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Mode | Test Temp. | Test Volt. | Freq. Error (Hz) | | | Freq. vs. rated (ppm) | | | Limit (ppm) | Verdict |
| | | | LCH | MCH | HCH | LCH | MCH | HCH | | |
| GSM | NT | LV | -16.4335 | -13.4955 | -14.3672 | -0.0089 | -0.0072 | -0.0075 | 2.50 | PASS |
| | | NV | -16.9824 | -14.1735 | -13.2049 | -0.0092 | -0.0075 | -0.0069 | 2.50 | PASS |
| | | HV | -15.9492 | -14.1089 | -13.6246 | -0.0086 | -0.0075 | -0.0071 | 2.50 | PASS |
| EGPRS | NT | LV | -10.6866 | -15.2389 | -5.7469 | -0.0058 | -0.0081 | -0.0030 | 2.50 | PASS |
| | | NV | -7.4903 | -9.0400 | -9.3306 | -0.0040 | -0.0048 | -0.0049 | 2.50 | PASS |
| | | HV | -12.8820 | 5.5532 | 7.7809 | -0.0070 | 0.0030 | 0.0041 | 2.50 | PASS |
| GPRS | NT | LV | 2.5183 | -4.8106 | -0.6134 | 0.0014 | -0.0026 | -0.0003 | 2.50 | PASS |
| | | NV | 5.6177 | -5.1012 | -3.4546 | 0.0030 | -0.0027 | -0.0018 | 2.50 | PASS |
| | | HV | -1.0009 | 2.5183 | 12.2040 | -0.0005 | 0.0013 | 0.0064 | 2.50 | PASS |

| Test Band: PCS1900 (Frequency Error VS. Temperature) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Mode | Test Volt. | Test Temp. | Freq. Error (Hz) | | | Freq. vs. rated (ppm) | | | Limit (ppm) | Verdict |
| | | | LCH | MCH | HCH | LCH | MCH | HCH | | |
| GSM | NV | -30.00 | -15.2066 | -12.3978 | -15.9169 | -0.0082 | -0.0066 | -0.0083 | 2.50 | PASS |
| | | -20.00 | -16.3689 | -15.5295 | -14.3349 | -0.0088 | -0.0083 | -0.0075 | 2.50 | PASS |
| | | -10.00 | -14.1735 | -12.5592 | -11.8812 | -0.0077 | -0.0067 | -0.0062 | 2.50 | PASS |
| | | 0.00 | -15.9815 | -14.4964 | -13.1726 | -0.0086 | -0.0077 | -0.0069 | 2.50 | PASS |
| | | 10.00 | -16.4335 | -12.1072 | -14.2381 | -0.0089 | -0.0064 | -0.0075 | 2.50 | PASS |
| | | 20.00 | -14.6578 | -11.8489 | -14.6255 | -0.0079 | -0.0063 | -0.0077 | 2.50 | PASS |
| | | 30.00 | -14.7869 | -12.7206 | -13.3341 | -0.0080 | -0.0068 | -0.0070 | 2.50 | PASS |
| | | 40.00 | -14.0443 | -13.7538 | -12.8498 | -0.0076 | -0.0073 | -0.0067 | 2.50 | PASS |
| | | 50.00 | -15.1421 | -13.1403 | -12.5269 | -0.0082 | -0.0070 | -0.0066 | 2.50 | PASS |
| EGPRS | NV | -30.00 | -12.3009 | -23.1167 | 5.7469 | -0.0066 | -0.0123 | 0.0030 | 2.50 | PASS |
| | | -20.00 | -7.7486 | -8.4266 | 3.3254 | -0.0042 | -0.0045 | 0.0017 | 2.50 | PASS |
| | | -10.00 | 5.8760 | -10.9126 | -13.3018 | 0.0032 | -0.0058 | -0.0070 | 2.50 | PASS |
| | | 0.00 | 1.3560 | 2.5506 | -5.1657 | 0.0007 | 0.0014 | -0.0027 | 2.50 | PASS |
| | | 10.00 | 18.3384 | 13.6246 | -17.2084 | 0.0099 | 0.0072 | -0.0090 | 2.50 | PASS |
| | | 20.00 | -15.8846 | 3.4223 | 0.5811 | -0.0086 | 0.0018 | 0.0003 | 2.50 | PASS |
| | | 30.00 | -9.4598 | -15.9492 | 3.3254 | -0.0051 | -0.0085 | 0.0017 | 2.50 | PASS |
| | | 40.00 | -4.1649 | -1.8726 | -4.1972 | -0.0023 | -0.0010 | -0.0022 | 2.50 | PASS |
| | | 50.00 | -1.6466 | -21.7930 | 9.9763 | -0.0009 | -0.0116 | 0.0052 | 2.50 | PASS |
| GPRS | NV | -30.00 | -9.5566 | -1.8403 | 4.1326 | -0.0052 | -0.0010 | 0.0022 | 2.50 | PASS |
| | | -20.00 | -1.3560 | 4.8752 | -1.3560 | -0.0007 | 0.0026 | -0.0007 | 2.50 | PASS |
| | | -10.00 | 3.7129 | 1.1946 | -8.2652 | 0.0020 | 0.0006 | -0.0043 | 2.50 | PASS |
| | | 0.00 | 6.2957 | 11.0418 | 7.6517 | 0.0034 | 0.0059 | 0.0040 | 2.50 | PASS |
| | | 10.00 | 16.2075 | -1.6143 | 6.5217 | 0.0088 | -0.0009 | 0.0034 | 2.50 | PASS |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 20.00 | -4.7460 | -4.1003 | 3.7129 | -0.0026 | -0.0022 | 0.0019 | 2.50 | PASS |
| | | 30.00 | -5.3917 | -1.3560 | -13.0112 | -0.0029 | -0.0007 | -0.0068 | 2.50 | PASS |
| | | 40.00 | -7.1029 | -4.6169 | -12.5592 | -0.0038 | -0.0025 | -0.0066 | 2.50 | PASS |
| | | 50.00 | 4.4877 | -8.8786 | 0.3874 | 0.0024 | -0.0047 | 0.0002 | 2.50 | PASS |

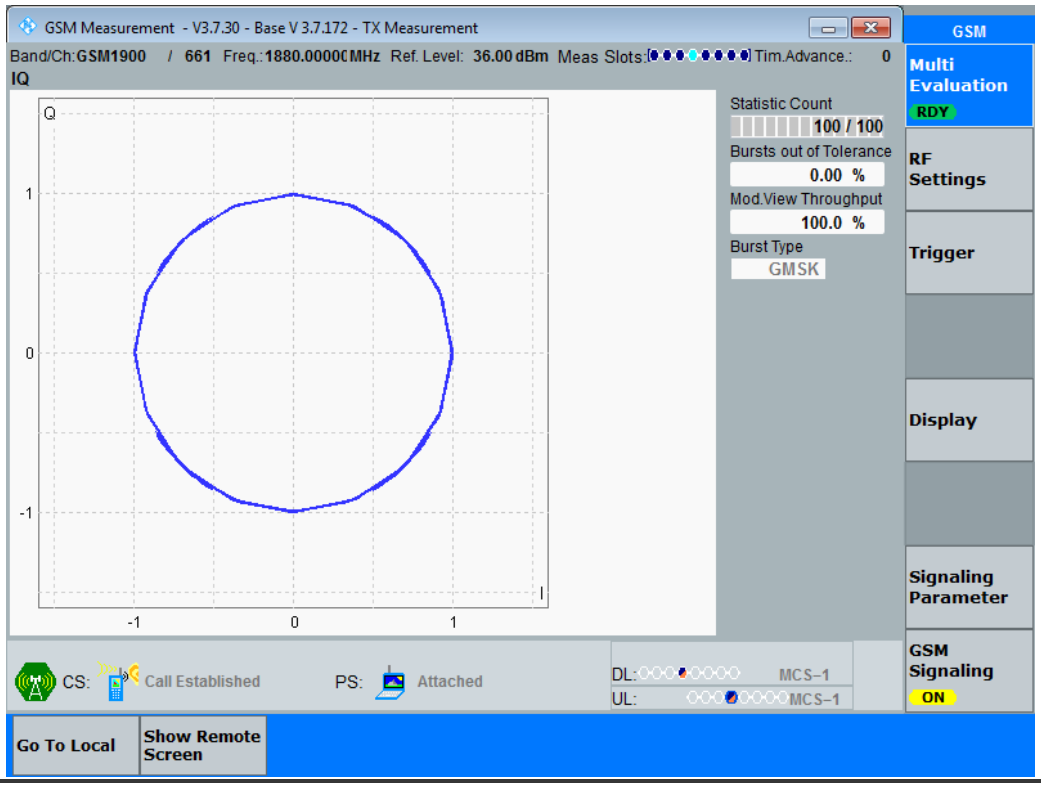
| Test Band: GSM850 (Frequency Error VS. Voltage) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Mode | Test Temp. | Test Volt. | Freq. Error (Hz) | | | Freq. vs. rated (ppm) | | | Limit (ppm) | Verdict |
| | | | LCH | MCH | HCH | LCH | MCH | HCH | | |
| GSM | NT | LV | -0.0646 | 4.6814 | 0.5489 | -0.0001 | 0.0056 | 0.0006 | 2.50 | PASS |
| | | NV | 0.2906 | 1.2914 | -0.4197 | 0.0004 | 0.0015 | -0.0005 | 2.50 | PASS |
| | | HV | 0.4197 | 2.3246 | 1.7757 | 0.0005 | 0.0028 | 0.0021 | 2.50 | PASS |
| EGPRS | NT | LV | -9.0078 | -5.2303 | -6.9737 | -0.0109 | -0.0063 | -0.0082 | 2.50 | PASS |
| | | NV | 0.6457 | -7.3612 | -7.8777 | 0.0008 | -0.0088 | -0.0093 | 2.50 | PASS |
| | | HV | -20.2755 | -5.5532 | -6.3926 | -0.0246 | -0.0066 | -0.0075 | 2.50 | PASS |
| GPRS | NT | LV | -6.0697 | -1.6789 | -2.5183 | -0.0074 | -0.0020 | -0.0030 | 2.50 | PASS |
| | | NV | -1.0331 | 2.3569 | 3.0672 | -0.0013 | 0.0028 | 0.0036 | 2.50 | PASS |
| | | HV | -3.1963 | 6.3603 | 0.6780 | -0.0039 | 0.0076 | 0.0008 | 2.50 | PASS |

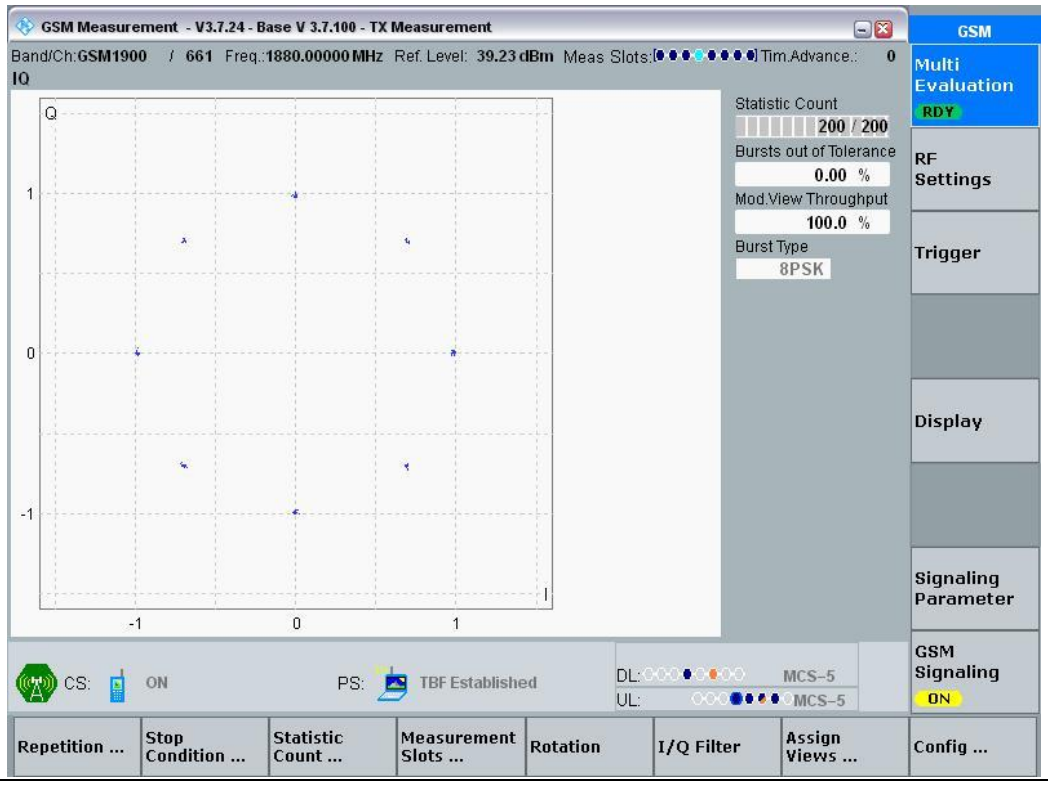
| Test Band: GSM850 (Frequency Error VS. Temperature) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Mode | Test Volt. | Test Temp. | Freq. Error (Hz) | | | Freq. vs. rated (ppm) | | | Limit (ppm) | Verdict |
| | | | LCH | MCH | HCH | LCH | MCH | HCH | | |
| GSM | NV | -30.00 | 0.9040 | 1.4206 | 1.9694 | 0.0011 | 0.0017 | 0.0023 | 2.50 | PASS |
| | | -20.00 | 1.3560 | 0.6134 | 0.3229 | 0.0016 | 0.0007 | 0.0004 | 2.50 | PASS |
| | | -10.00 | 1.8726 | 2.1309 | 1.6789 | 0.0023 | 0.0025 | 0.0020 | 2.50 | PASS |
| | | 0.00 | 0.9363 | 0.9363 | 2.1954 | 0.0011 | 0.0011 | 0.0026 | 2.50 | PASS |
| | | 10.00 | 0.8717 | -0.3229 | -0.5166 | 0.0011 | -0.0004 | -0.0006 | 2.50 | PASS |
| | | 20.00 | 3.5192 | 0.0646 | 1.0977 | 0.0043 | 0.0001 | 0.0013 | 2.50 | PASS |
| | | 30.00 | 2.4537 | 2.1632 | 1.7434 | 0.0030 | 0.0026 | 0.0021 | 2.50 | PASS |
| | | 40.00 | 3.7452 | 1.4529 | 1.7112 | 0.0045 | 0.0017 | 0.0020 | 2.50 | PASS |
| | | 50.00 | 2.7120 | 0.8394 | 0.4843 | 0.0033 | 0.0010 | 0.0006 | 2.50 | PASS |
| EGPRS | NV | -30.00 | -3.0672 | -7.1352 | -7.7163 | -0.0037 | -0.0085 | -0.0091 | 2.50 | PASS |
| | | -20.00 | 0.6134 | -5.9729 | -6.0052 | 0.0007 | -0.0071 | -0.0071 | 2.50 | PASS |
| | | -10.00 | -3.6483 | -5.8115 | -4.0034 | -0.0044 | -0.0069 | -0.0047 | 2.50 | PASS |
| | | 0.00 | 4.4554 | -5.8115 | -4.8106 | 0.0054 | -0.0069 | -0.0057 | 2.50 | PASS |
| | | 10.00 | -2.3569 | -6.5863 | -5.0043 | -0.0029 | -0.0079 | -0.0059 | 2.50 | PASS |
| | | 20.00 | -7.6517 | -6.3603 | -4.5200 | -0.0093 | -0.0076 | -0.0053 | 2.50 | PASS |
| | | 30.00 | 3.6806 | -6.1343 | -5.2303 | 0.0045 | -0.0073 | -0.0062 | 2.50 | PASS |
| | | 40.00 | -4.0680 | -5.3595 | -4.0034 | -0.0049 | -0.0064 | -0.0047 | 2.50 | PASS |
| | | 50.00 | -6.5540 | -5.4240 | -5.0689 | -0.0080 | -0.0065 | -0.0060 | 2.50 | PASS |
| GPRS | NV | -30.00 | -2.0986 | -4.0357 | -2.4860 | -0.0025 | -0.0048 | -0.0029 | 2.50 | PASS |
| | | -20.00 | -0.6457 | 3.1640 | -4.7783 | -0.0008 | 0.0038 | -0.0056 | 2.50 | PASS |
| | | -10.00 | -3.9066 | -1.2914 | 0.9040 | -0.0047 | -0.0015 | 0.0011 | 2.50 | PASS |

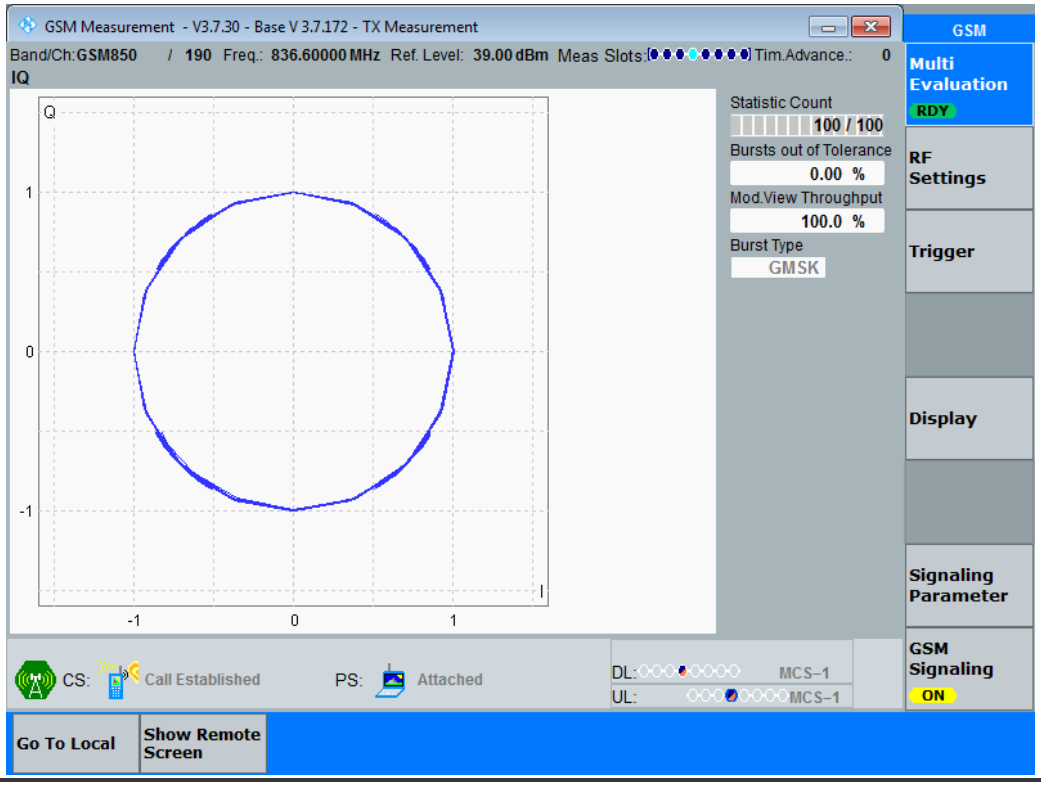
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.00 | -4.9720 | -1.5174 | -1.0009 | -0.0060 | -0.0018 | -0.0012 | 2.50 | PASS |
| | | 10.00 | -1.1623 | 1.3883 | 1.2591 | -0.0014 | 0.0017 | 0.0015 | 2.50 | PASS |
| | | 20.00 | -2.0340 | 2.0017 | -0.9363 | -0.0025 | 0.0024 | -0.0011 | 2.50 | PASS |
| | | 30.00 | -1.8403 | -0.0323 | -4.3909 | -0.0022 | 0.0000 | -0.0052 | 2.50 | PASS |
| | | 40.00 | -0.7103 | -0.4843 | -1.9049 | -0.0009 | -0.0006 | -0.0022 | 2.50 | PASS |
| | | 50.00 | -3.5837 | 2.5183 | -5.1334 | -0.0043 | 0.0030 | -0.0060 | 2.50 | PASS |

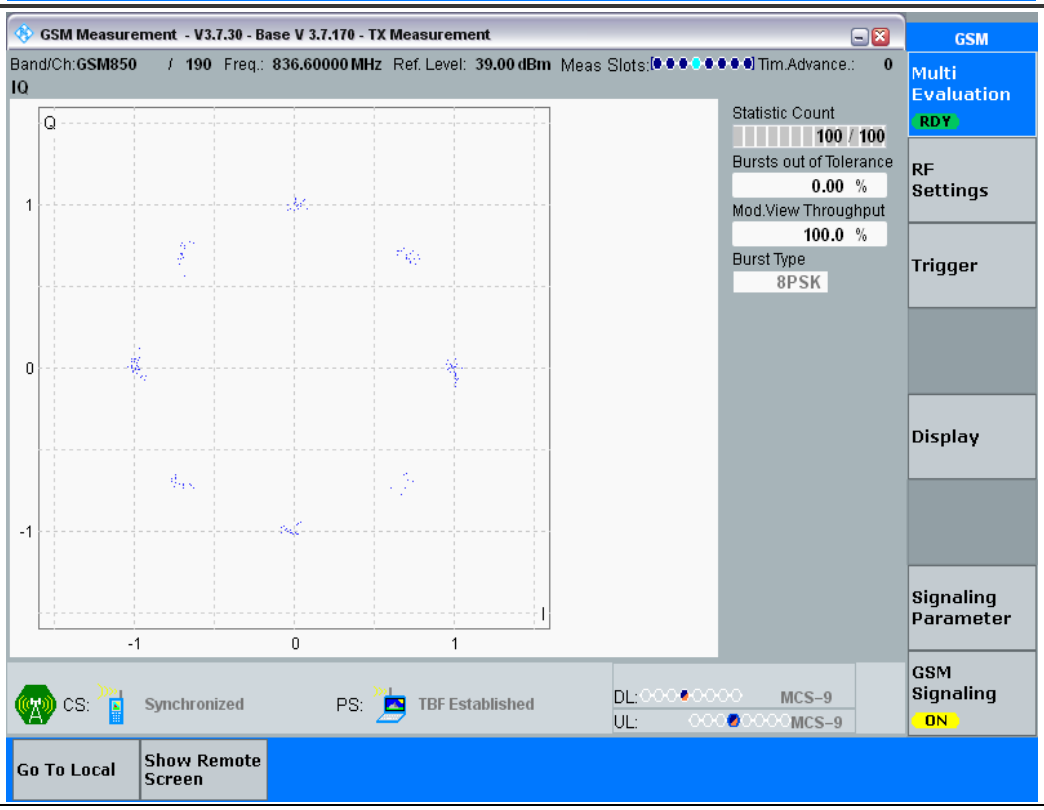
# 6. Modulation Characteristics

## 6.1 Test Graph






Note: Only record the worst test result.