

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

### 1.1 Test Result

#### 1.1.1 PCS1900\_EIRP

| Band: PCS1900 |         |            |                 |                       |            |            |         |         |
|---------------|---------|------------|-----------------|-----------------------|------------|------------|---------|---------|
| ENV           | Mode    |            | Frequency (MHz) | Conducted Power (dBm) | Gain (dBi) | EIRP (dBm) |         | Verdict |
|               | Network | Subset     |                 |                       |            | Result     | Limit   |         |
| NTNV          | GSM     | GSM        | 1850.2          | 30.13                 | -1.98      | 28.15      | <=33.01 | Pass    |
|               |         |            | 1880            | 30.02                 | -1.98      | 28.04      | <=33.01 | Pass    |
|               |         |            | 1909.8          | 29.31                 | -1.98      | 27.33      | <=33.01 | Pass    |
|               | EGPRS   | 1 TX Slot  | 1850.2          | 26.18                 | -1.98      | 24.20      | <=33.01 | Pass    |
|               |         | 2 TX Slots | 1850.2          | 25.41                 | -1.98      | 23.43      | <=33.01 | Pass    |
|               |         | 3 TX Slots | 1850.2          | 23.63                 | -1.98      | 21.65      | <=33.01 | Pass    |
|               |         | 4 TX Slots | 1850.2          | 22.44                 | -1.98      | 20.46      | <=33.01 | Pass    |
|               |         | 1 TX Slot  | 1880            | 26.08                 | -1.98      | 24.10      | <=33.01 | Pass    |
|               |         | 2 TX Slots | 1880            | 25.54                 | -1.98      | 23.56      | <=33.01 | Pass    |
|               |         | 3 TX Slots | 1880            | 23.82                 | -1.98      | 21.84      | <=33.01 | Pass    |
|               |         | 4 TX Slots | 1880            | 22.61                 | -1.98      | 20.63      | <=33.01 | Pass    |
|               |         | 1 TX Slot  | 1909.8          | 25.43                 | -1.98      | 23.45      | <=33.01 | Pass    |
|               |         | 2 TX Slots | 1909.8          | 24.90                 | -1.98      | 22.92      | <=33.01 | Pass    |
|               |         | 3 TX Slots | 1909.8          | 23.21                 | -1.98      | 21.23      | <=33.01 | Pass    |
|               |         | 4 TX Slots | 1909.8          | 22.06                 | -1.98      | 20.08      | <=33.01 | Pass    |

Note1: EIRP=Conducted Power+Antenna Gain

## 2. Frequency Stability

### 2.1 Test Result

#### 2.1.1 PCS1900

| Band: PCS1900 |                 |            |               |                  |                       |             |         |
|---------------|-----------------|------------|---------------|------------------|-----------------------|-------------|---------|
| Network       | Frequency (MHz) | Temp. (°C) | Voltage (VDC) | Freq. Error (Hz) | Freq. vs. Rated (ppm) |             | Verdict |
|               |                 |            |               |                  | Result                | Limit       |         |
| GSM           | 1850.2          | 20         | 20.4          | -3.706           | -0.0020               | -2.5 to 2.5 | Pass    |
|               |                 |            | 24            | -3.207           | -0.0017               | -2.5 to 2.5 | Pass    |
|               |                 |            | 27.6          | 2.489            | 0.0013                | -2.5 to 2.5 | Pass    |
|               |                 | -30        | 24            | 2.527            | 0.0014                | -2.5 to 2.5 | Pass    |
|               |                 | -20        | 24            | 3.386            | 0.0018                | -2.5 to 2.5 | Pass    |
|               |                 | -10        | 24            | 0.176            | 0.0001                | -2.5 to 2.5 | Pass    |
|               |                 | 0          | 24            | 3.162            | 0.0017                | -2.5 to 2.5 | Pass    |
|               |                 | 10         | 24            | 3.584            | 0.0019                | -2.5 to 2.5 | Pass    |
|               |                 | 30         | 24            | 3.866            | 0.0021                | -2.5 to 2.5 | Pass    |
|               |                 | 40         | 24            | 2.289            | 0.0012                | -2.5 to 2.5 | Pass    |
|               |                 | 50         | 24            | 5.091            | 0.0028                | -2.5 to 2.5 | Pass    |
|               | 1880            | 20         | 20.4          | 6.115            | 0.0033                | -2.5 to 2.5 | Pass    |
|               |                 |            | 24            | 5.327            | 0.0028                | -2.5 to 2.5 | Pass    |
|               |                 |            | 27.6          | 0.540            | 0.0003                | -2.5 to 2.5 | Pass    |
|               |                 | -30        | 24            | 0.871            | 0.0005                | -2.5 to 2.5 | Pass    |
|               |                 | -20        | 24            | 0.542            | 0.0003                | -2.5 to 2.5 | Pass    |
|               |                 | -10        | 24            | 0.996            | 0.0005                | -2.5 to 2.5 | Pass    |
|               |                 | 0          | 24            | 1.521            | 0.0008                | -2.5 to 2.5 | Pass    |
|               |                 | 10         | 24            | -0.701           | -0.0004               | -2.5 to 2.5 | Pass    |
|               |                 | 30         | 24            | 0.651            | 0.0003                | -2.5 to 2.5 | Pass    |
|               |                 | 40         | 24            | 1.608            | 0.0009                | -2.5 to 2.5 | Pass    |

|       |        |     |      |        |        |             |             |
|-------|--------|-----|------|--------|--------|-------------|-------------|
|       |        | 50  | 24   | 4.742  | 0.0025 | -2.5 to 2.5 | Pass        |
|       | 1909.8 | 20  | 20.4 | 12.652 | 0.0066 | -2.5 to 2.5 | Pass        |
|       |        |     | 24   | 8.698  | 0.0046 | -2.5 to 2.5 | Pass        |
|       |        |     | 27.6 | 6.184  | 0.0032 | -2.5 to 2.5 | Pass        |
|       |        |     | -30  | 24     | 10.824 | 0.0057      | -2.5 to 2.5 |
|       |        | -20 | 24   | 2.079  | 0.0011 | -2.5 to 2.5 | Pass        |
|       |        | -10 | 24   | 1.585  | 0.0008 | -2.5 to 2.5 | Pass        |
|       |        | 0   | 24   | 4.985  | 0.0026 | -2.5 to 2.5 | Pass        |
|       |        | 10  | 24   | 3.497  | 0.0018 | -2.5 to 2.5 | Pass        |
|       |        | 30  | 24   | 4.302  | 0.0023 | -2.5 to 2.5 | Pass        |
|       |        | 40  | 24   | 8.359  | 0.0044 | -2.5 to 2.5 | Pass        |
|       |        | 50  | 24   | 4.817  | 0.0025 | -2.5 to 2.5 | Pass        |
| EGPRS | 1850.2 | 20  | 20.4 | 27.559 | 0.0149 | -2.5 to 2.5 | Pass        |
|       |        |     | 24   | 27.109 | 0.0147 | -2.5 to 2.5 | Pass        |
|       |        |     | 27.6 | 24.154 | 0.0131 | -2.5 to 2.5 | Pass        |
|       |        |     | -30  | 24     | 28.351 | 0.0153      | -2.5 to 2.5 |
|       |        | -20 | 24   | 29.032 | 0.0157 | -2.5 to 2.5 | Pass        |
|       |        | -10 | 24   | 23.584 | 0.0127 | -2.5 to 2.5 | Pass        |
|       |        | 0   | 24   | 27.048 | 0.0146 | -2.5 to 2.5 | Pass        |
|       |        | 10  | 24   | 27.129 | 0.0147 | -2.5 to 2.5 | Pass        |
|       |        | 30  | 24   | 26.025 | 0.0141 | -2.5 to 2.5 | Pass        |
|       |        | 40  | 24   | 28.526 | 0.0154 | -2.5 to 2.5 | Pass        |
|       |        | 50  | 24   | 25.091 | 0.0136 | -2.5 to 2.5 | Pass        |
|       | 1880   | 20  | 20.4 | 18.837 | 0.0100 | -2.5 to 2.5 | Pass        |
|       |        |     | 24   | 24.932 | 0.0133 | -2.5 to 2.5 | Pass        |
|       |        |     | 27.6 | 20.349 | 0.0108 | -2.5 to 2.5 | Pass        |
|       |        |     | -30  | 24     | 21.226 | 0.0113      | -2.5 to 2.5 |
|       |        | -20 | 24   | 20.089 | 0.0107 | -2.5 to 2.5 | Pass        |
|       |        | -10 | 24   | 20.355 | 0.0108 | -2.5 to 2.5 | Pass        |
|       |        | 0   | 24   | 24.234 | 0.0129 | -2.5 to 2.5 | Pass        |
|       |        | 10  | 24   | 22.649 | 0.0120 | -2.5 to 2.5 | Pass        |
|       |        | 30  | 24   | 23.240 | 0.0124 | -2.5 to 2.5 | Pass        |
|       |        | 40  | 24   | 20.822 | 0.0111 | -2.5 to 2.5 | Pass        |
|       |        | 50  | 24   | 22.940 | 0.0122 | -2.5 to 2.5 | Pass        |
|       | 1909.8 | 20  | 20.4 | 20.514 | 0.0107 | -2.5 to 2.5 | Pass        |
|       |        |     | 24   | 19.162 | 0.0100 | -2.5 to 2.5 | Pass        |
|       |        |     | 27.6 | 23.203 | 0.0121 | -2.5 to 2.5 | Pass        |
|       |        |     | -30  | 24     | 22.149 | 0.0116      | -2.5 to 2.5 |
|       |        | -20 | 24   | 24.438 | 0.0128 | -2.5 to 2.5 | Pass        |
|       |        | -10 | 24   | 20.539 | 0.0108 | -2.5 to 2.5 | Pass        |
|       |        | 0   | 24   | 21.027 | 0.0110 | -2.5 to 2.5 | Pass        |
|       |        | 10  | 24   | 24.104 | 0.0126 | -2.5 to 2.5 | Pass        |
|       |        | 30  | 24   | 24.283 | 0.0127 | -2.5 to 2.5 | Pass        |
|       |        | 40  | 24   | 18.337 | 0.0096 | -2.5 to 2.5 | Pass        |
|       |        | 50  | 24   | 20.601 | 0.0108 | -2.5 to 2.5 | Pass        |

### 3. 99% & 26dB Bandwidth

#### 3.1 Test Result

##### 3.1.1 PCS1900\_OBW

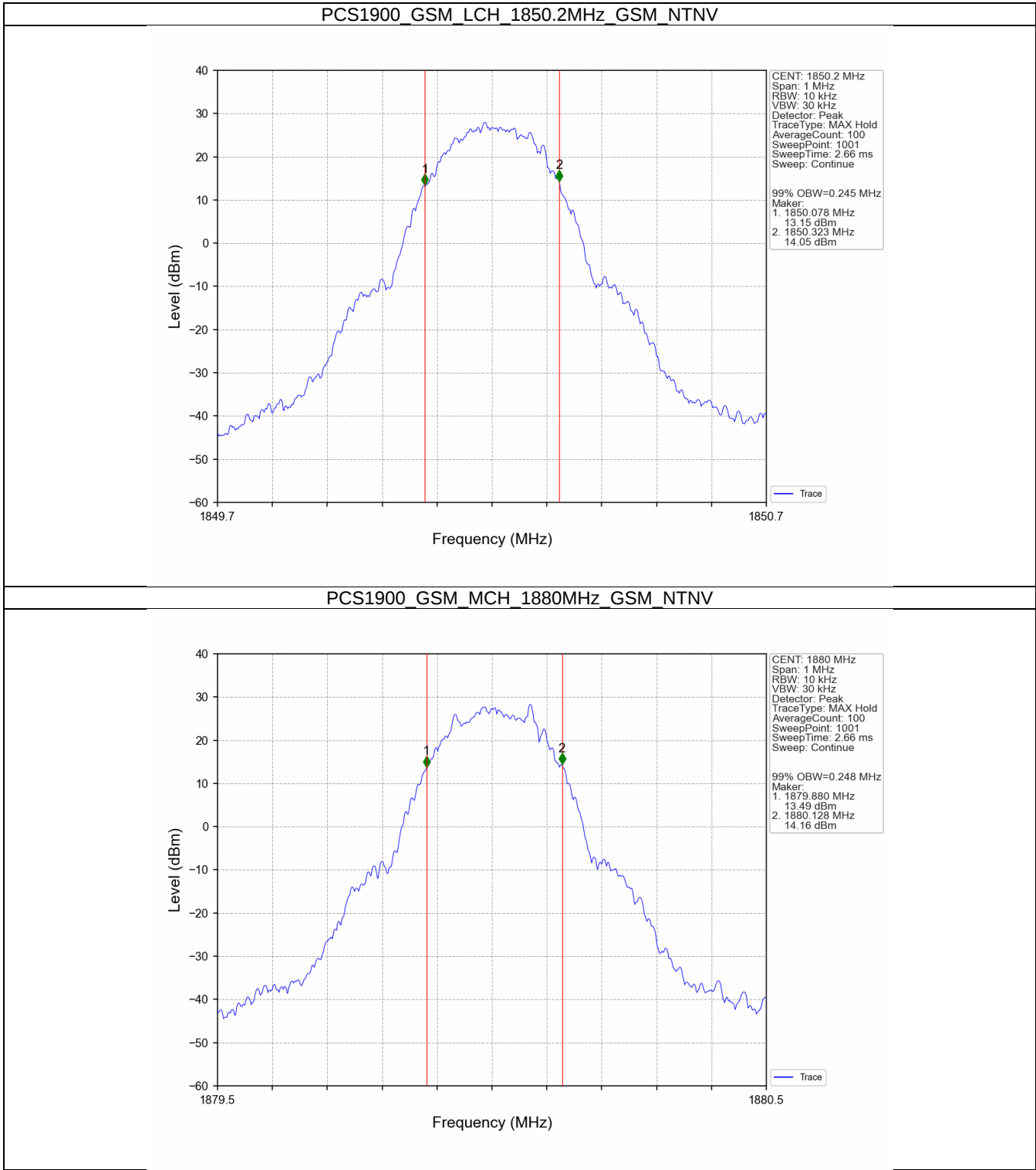
| Band: PCS1900 |         |           |                 |                              |       |         |
|---------------|---------|-----------|-----------------|------------------------------|-------|---------|
| ENV           | Mode    |           | Frequency (MHz) | 99% Occupied Bandwidth (MHz) |       | Verdict |
|               | Network | Subset    |                 | Result                       | Limit |         |
| NTNV          | GSM     | GSM       | 1850.2          | 0.245                        | /     | Pass    |
|               |         |           | 1880            | 0.248                        | /     | Pass    |
|               |         |           | 1909.8          | 0.245                        | /     | Pass    |
|               | EGPRS   | 1 TX Slot | 1850.2          | 0.238                        | /     | Pass    |
|               |         |           | 1880            | 0.244                        | /     | Pass    |
|               |         |           | 1909.8          | 0.246                        | /     | Pass    |

##### 3.1.2 PCS1900\_XDB

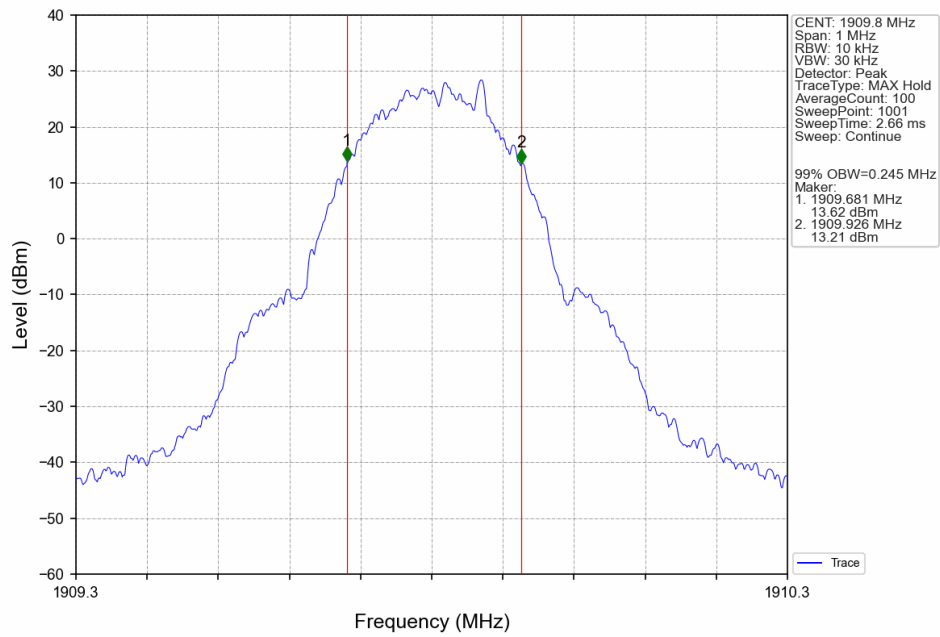
| Band: PCS1900 |         |           |                 |                      |       |         |
|---------------|---------|-----------|-----------------|----------------------|-------|---------|
| ENV           | Mode    |           | Frequency (MHz) | 26dB Bandwidth (MHz) |       | Verdict |
|               | Network | Subset    |                 | Result               | Limit |         |
| NTNV          | GSM     | GSM       | 1850.2          | 0.320                | /     | Pass    |
|               |         |           | 1880            | 0.322                | /     | Pass    |
|               |         |           | 1909.8          | 0.316                | /     | Pass    |
|               | EGPRS   | 1 TX Slot | 1850.2          | 0.310                | /     | Pass    |
|               |         |           | 1880            | 0.314                | /     | Pass    |
|               |         |           | 1909.8          | 0.321                | /     | Pass    |

3.2 Test Graph

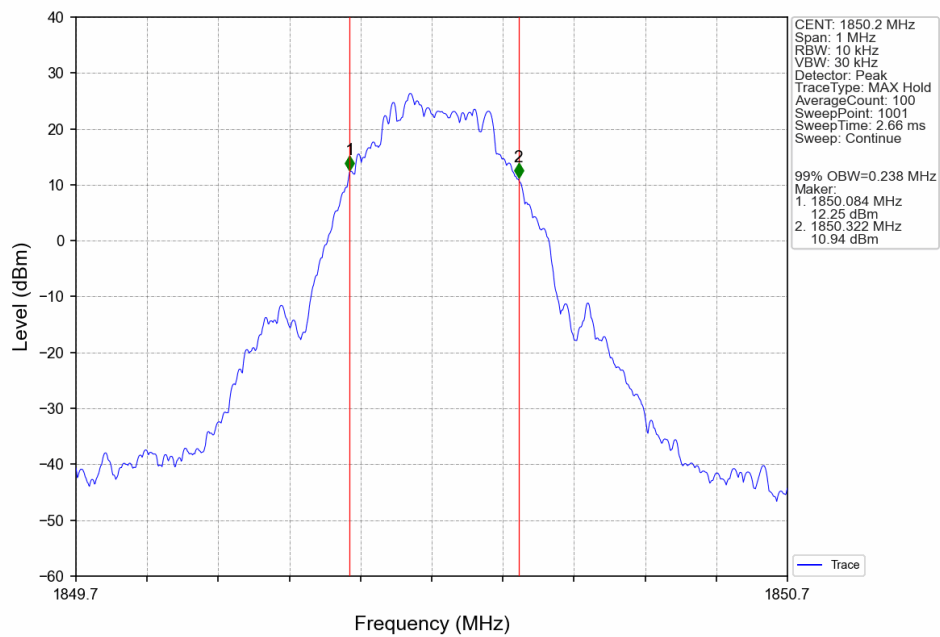
3.2.1 PCS1900\_OBW



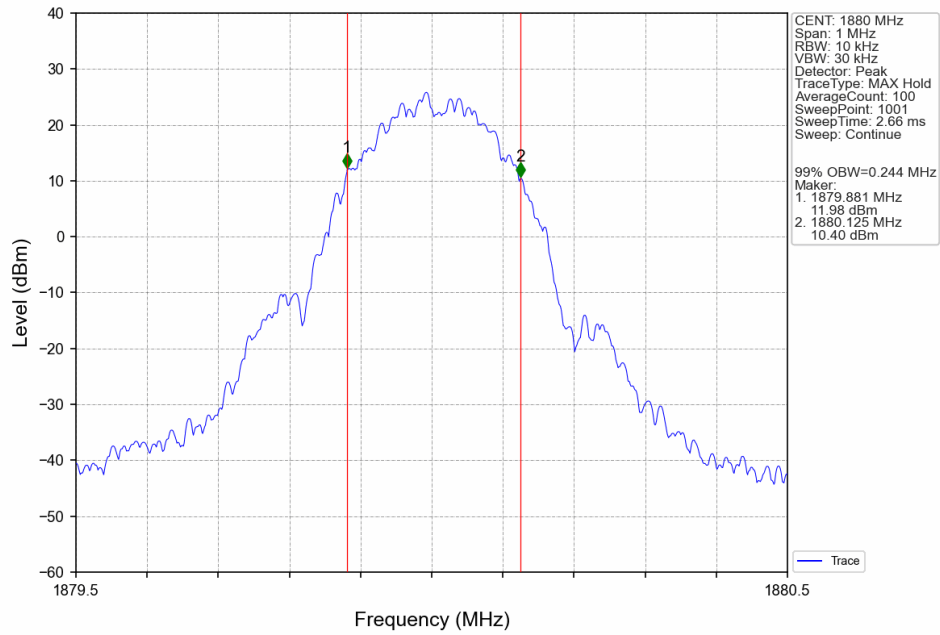
# PCS1900 GSM\_HCH\_1909.8MHz\_GSM\_NTNV



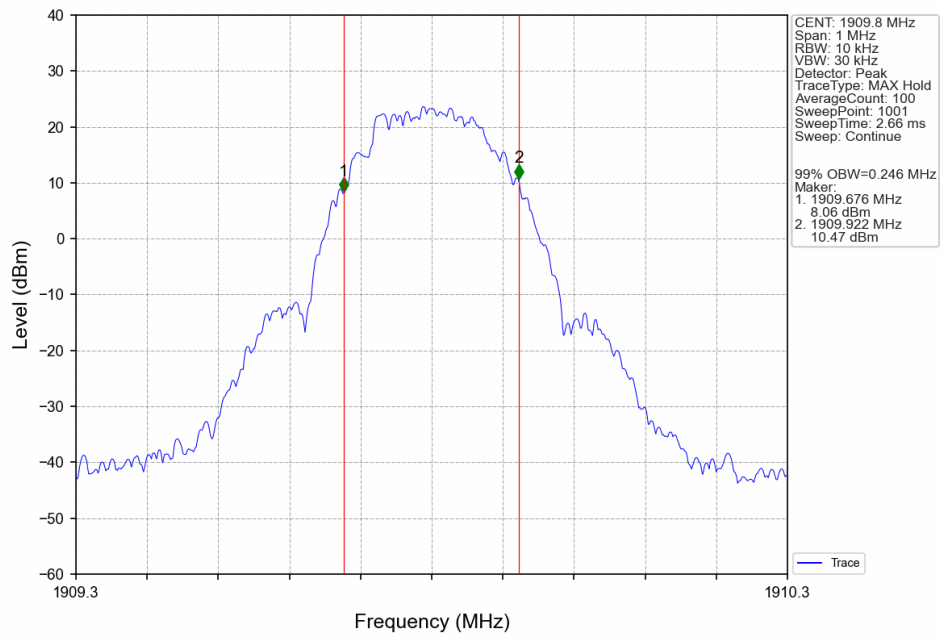
# PCS1900 EGPRS LCH\_1850.2MHz\_1 TX Slot\_NTNV



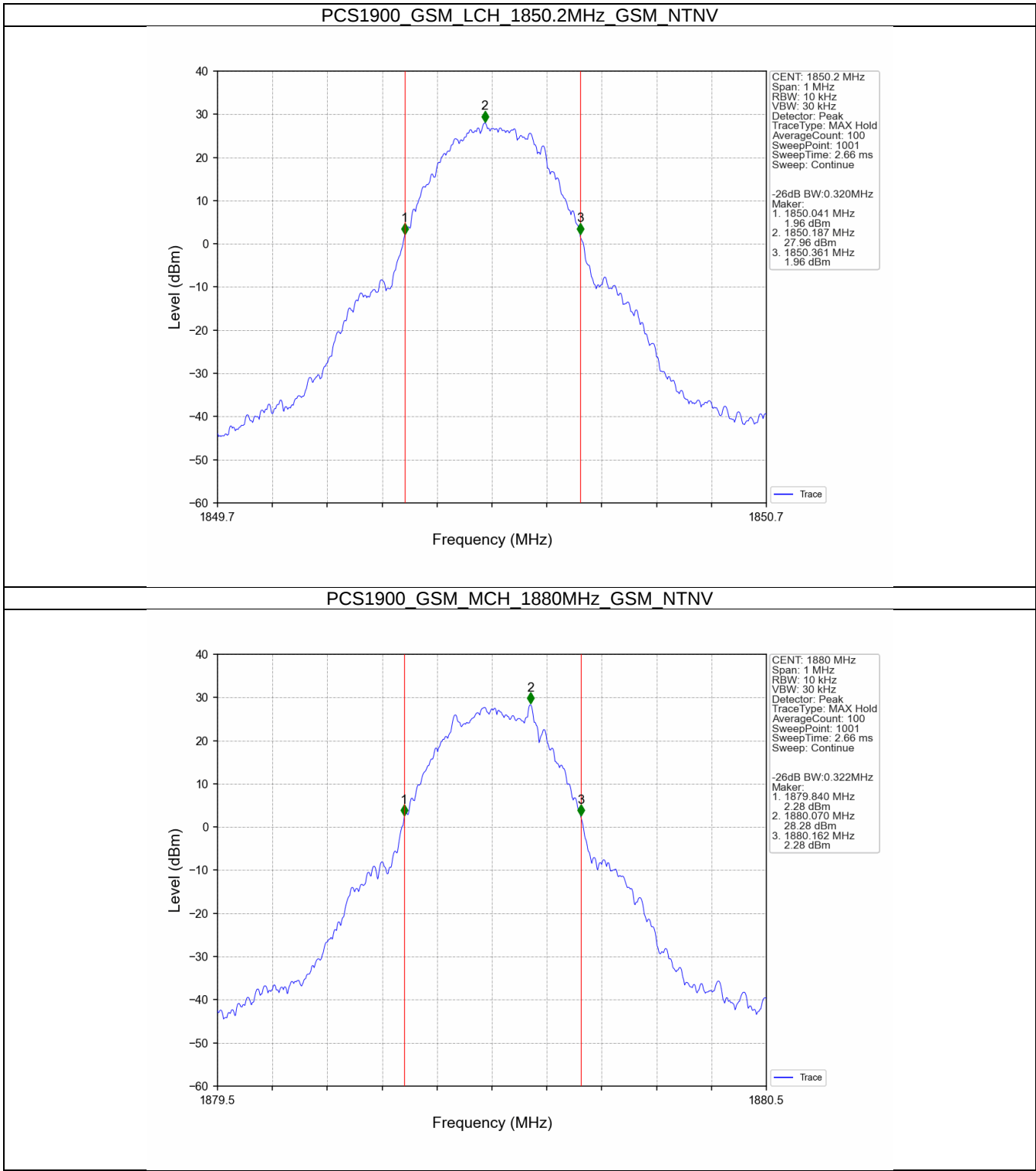
# PCS1900\_EGPRS\_MCH\_1880MHz\_1 TX Slot\_NTNV



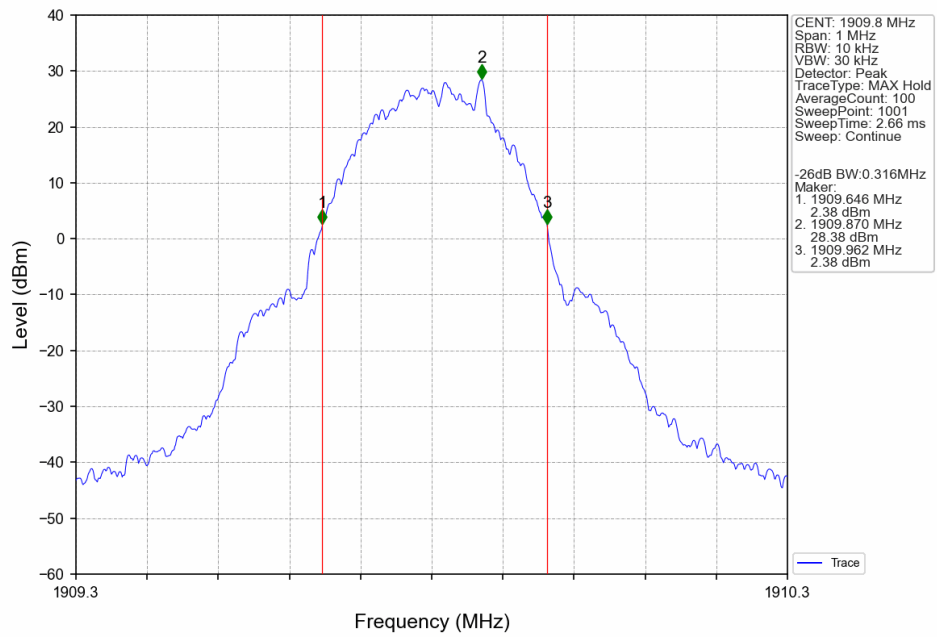
# PCS1900\_EGPRS\_HCH\_1909.8MHz\_1 TX Slot\_NTNV



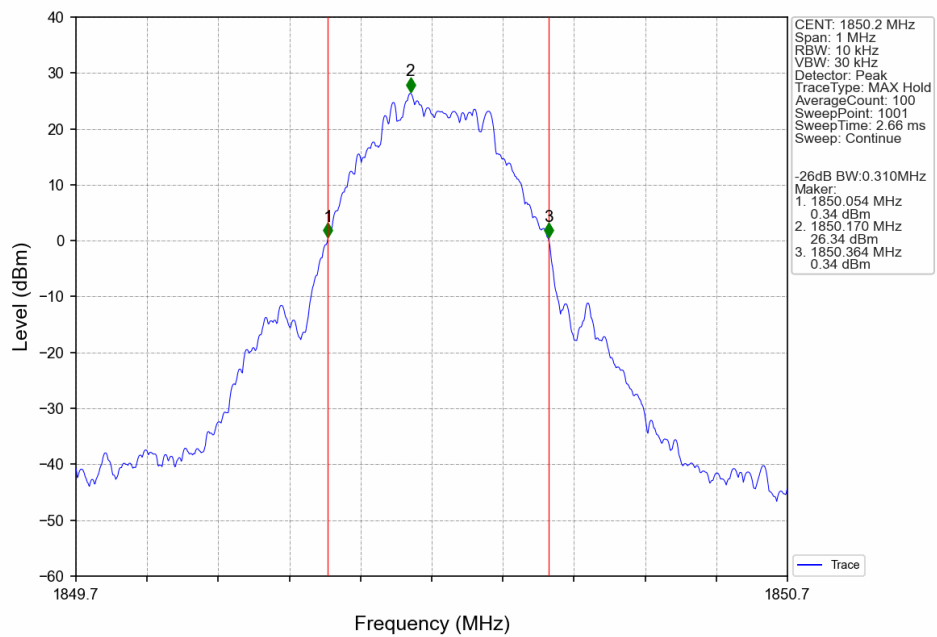
3.2.2 PCS1900\_XDB



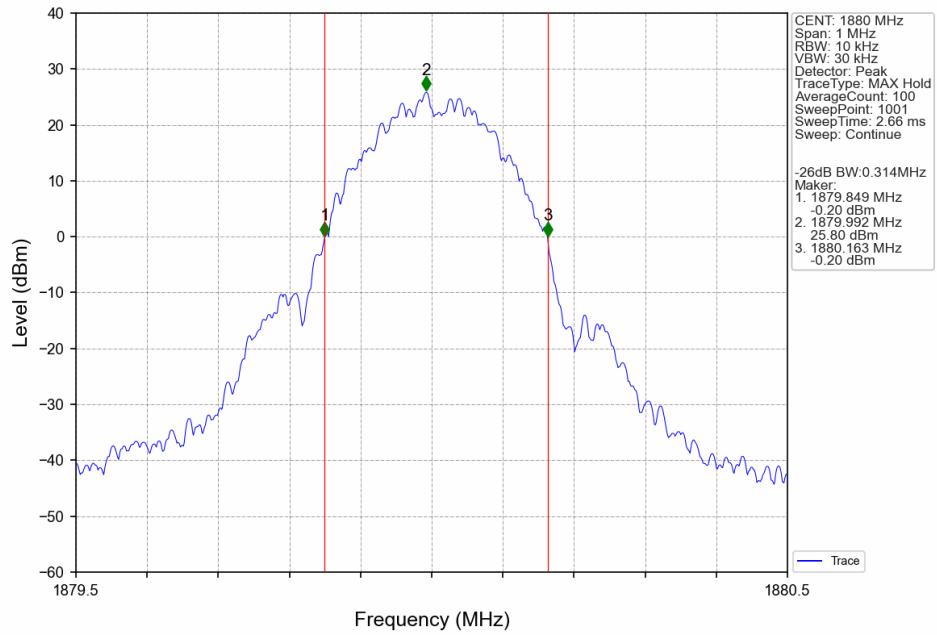
# PCS1900 GSM\_HCH\_1909.8MHz\_GSM\_NTNV



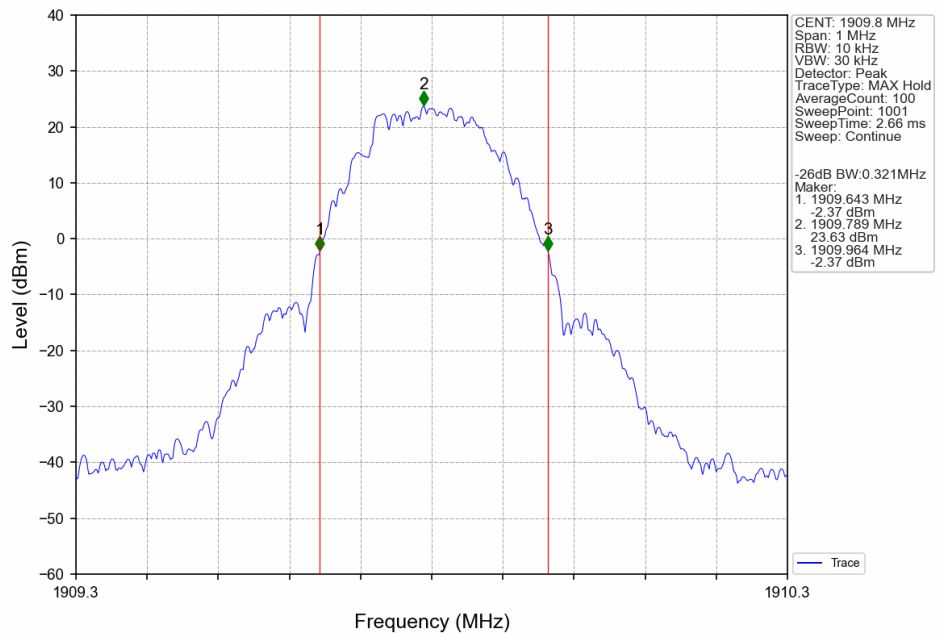
# PCS1900 EGPRS LCH\_1850.2MHz\_1 TX Slot\_NTNV



# PCS1900\_EGPRS\_MCH\_1880MHz\_1 TX Slot\_NTNV



# PCS1900\_EGPRS\_HCH\_1909.8MHz\_1 TX Slot\_NTNV



## 4. Peak-Average Ratio

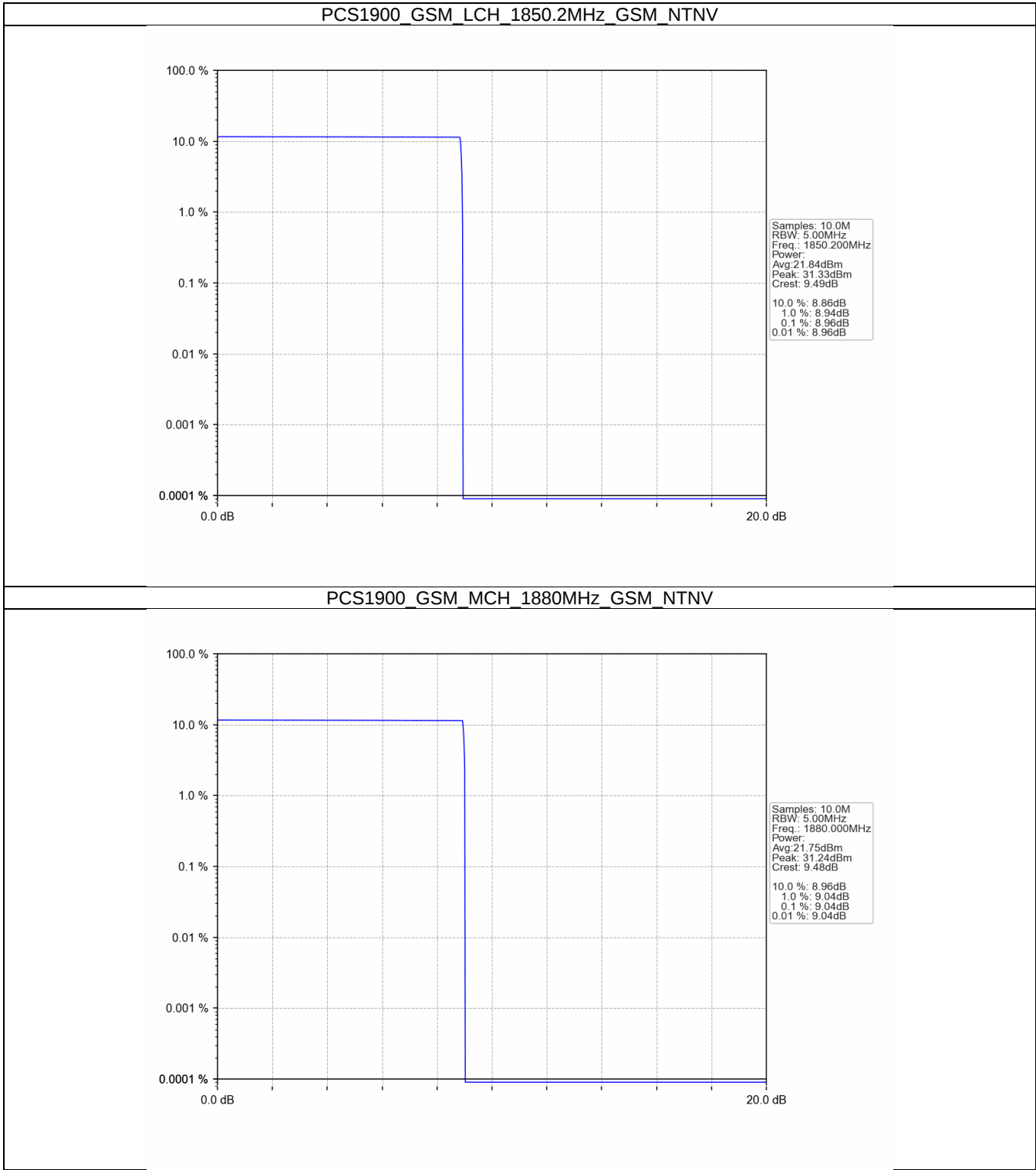
### 4.1 Test Result

#### 4.1.1 PCS1900

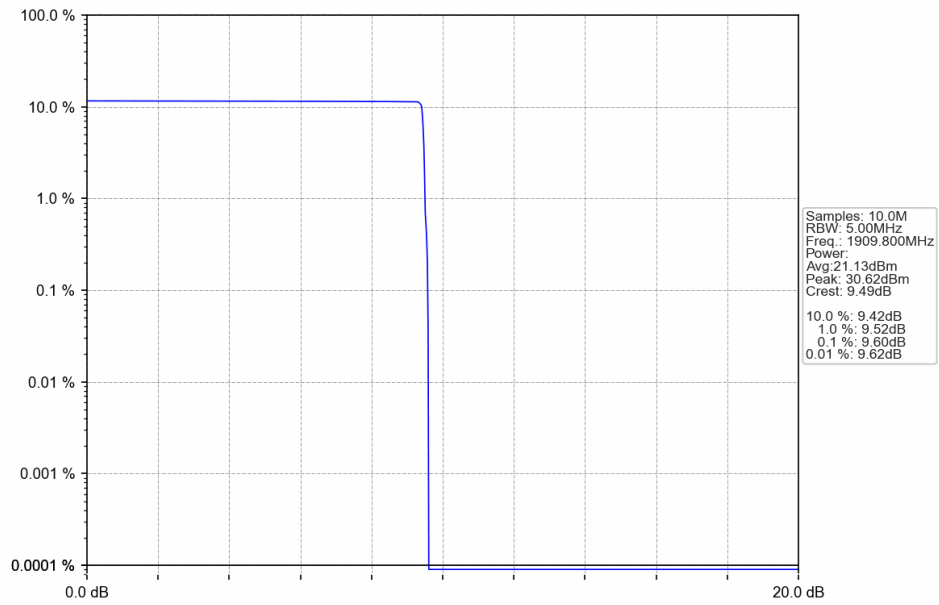
| Band: PCS1900 |         |            |                 |                         |       |         |
|---------------|---------|------------|-----------------|-------------------------|-------|---------|
| ENV           | Mode    |            | Frequency (MHz) | Peak-Average Ratio (dB) |       | Verdict |
|               | Network | Subset     |                 | Result                  | Limit |         |
| NTNV          | GSM     | GSM        | 1850.2          | 8.96                    | <=13  | Pass    |
|               |         |            | 1880            | 9.04                    | <=13  | Pass    |
|               |         |            | 1909.8          | 9.60                    | <=13  | Pass    |
|               | EGPRS   | 4 TX Slots | 1850.2          | 8.50                    | <=13  | Pass    |
|               |         |            | 1880            | 8.50                    | <=13  | Pass    |
|               |         |            | 1909.8          | 8.44                    | <=13  | Pass    |

4.2 Test Graph

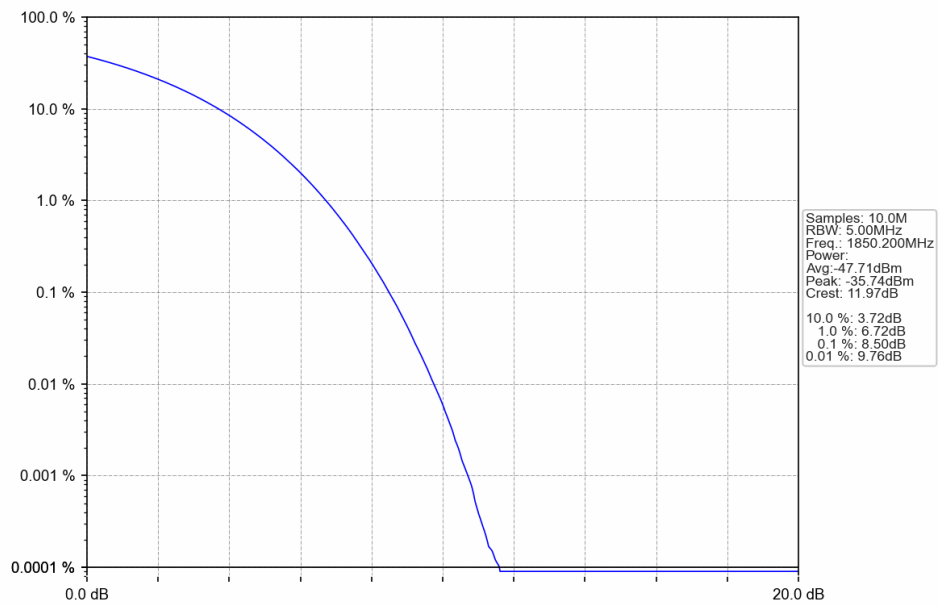
4.2.1 PCS1900



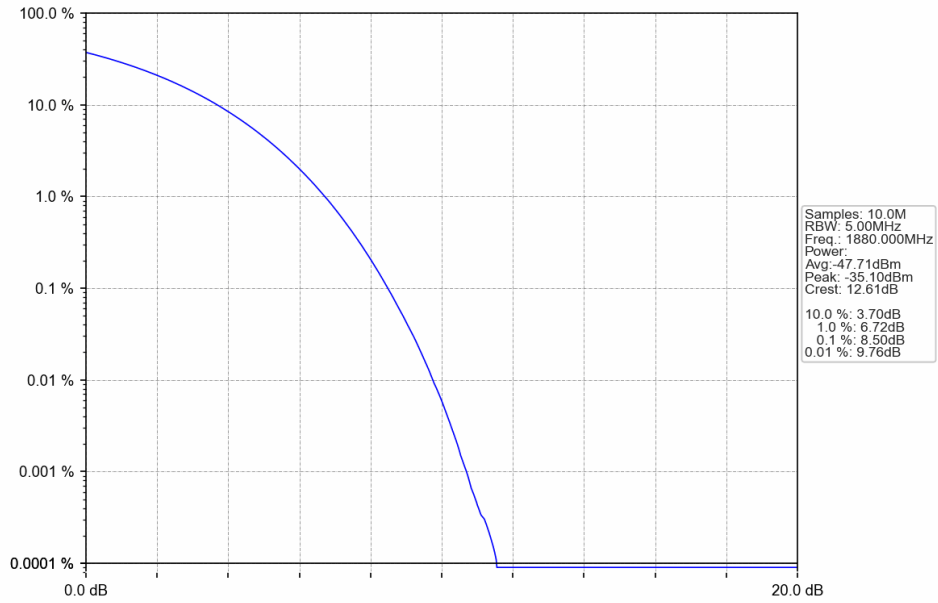
# PCS1900 GSM\_HCH\_1909.8MHz\_GSM\_NTNV



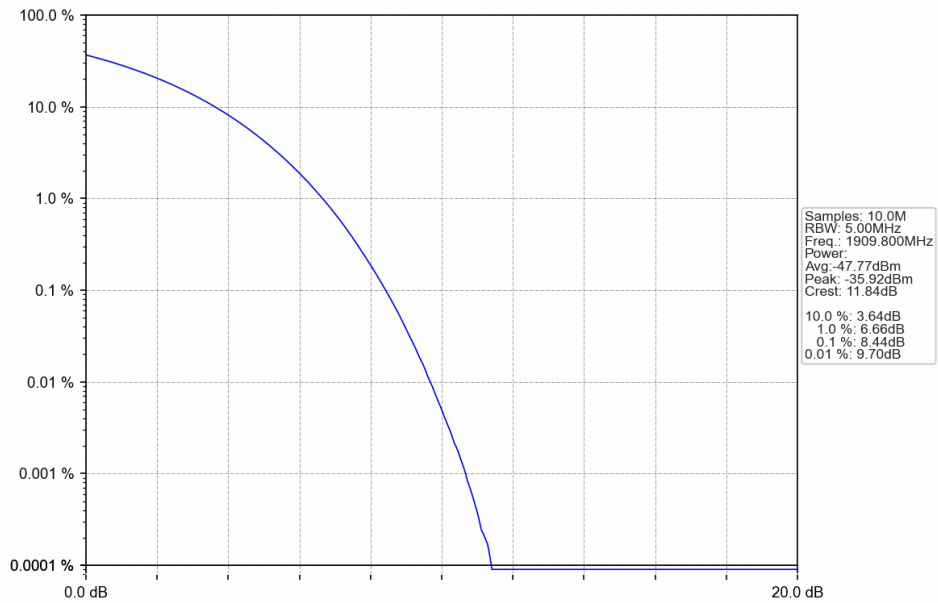
# PCS1900 EGPRS LCH\_1850.2MHz\_4 TX Slots NTN



# PCS1900 EGPRS MCH 1880MHz 4 TX Slots NTN



# PCS1900 EGPRS HCH 1909.8MHz 4 TX Slots NTN



## 5. Spurious Emission

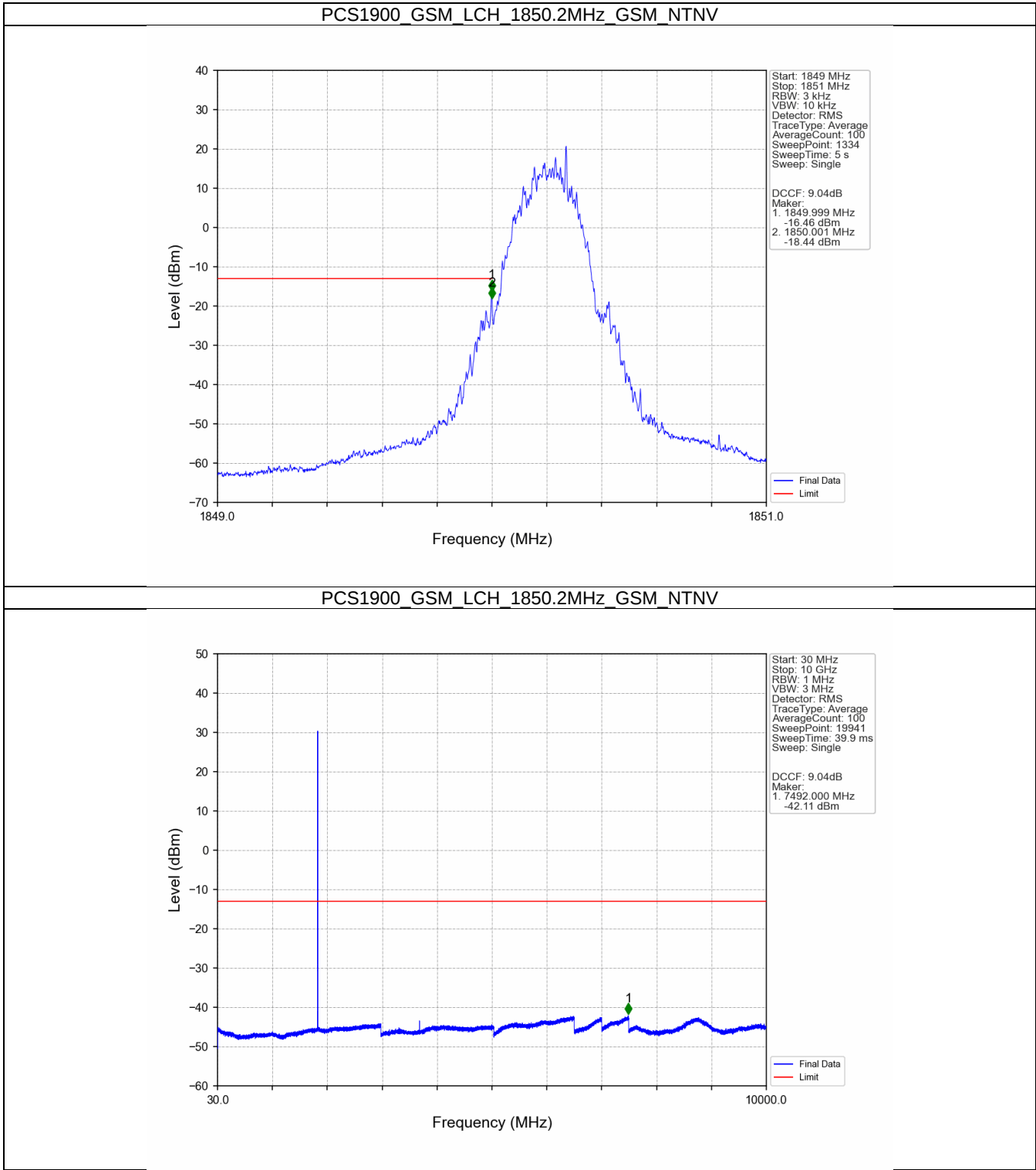
### 5.1 Test Result

#### 5.1.1 PCS1900

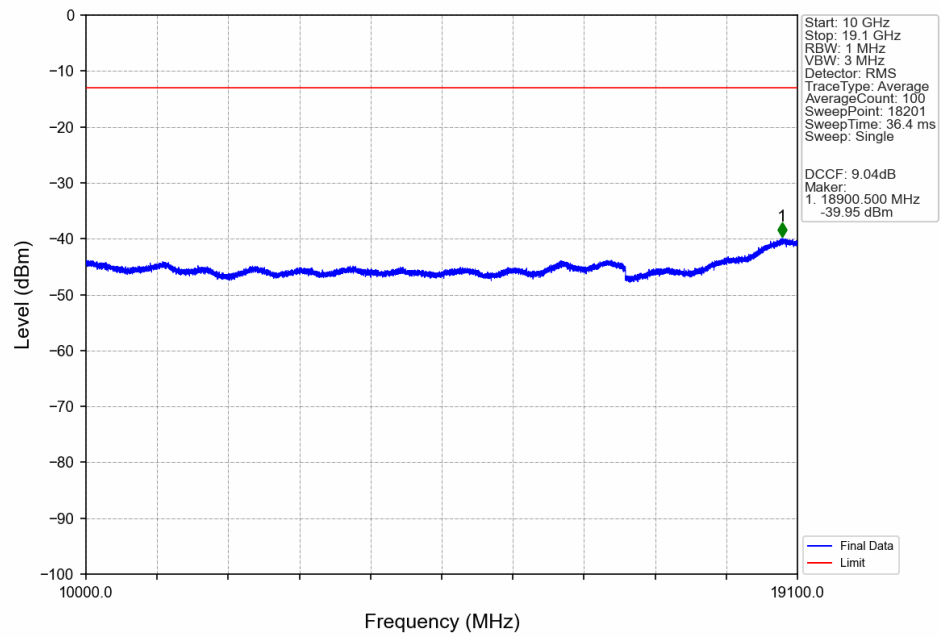
| Band: PCS1900 |         |           |                    |                     |       |         |
|---------------|---------|-----------|--------------------|---------------------|-------|---------|
| ENV           | Mode    |           | Frequency<br>(MHz) | Spurious Emission   |       | Verdict |
|               | Network | Subset    |                    | Result              | Limit |         |
| NTNV          | GSM     | GSM       | 1850.2             | Refer To Test Graph |       | Pass    |
|               |         |           | 1880               | Refer To Test Graph |       | Pass    |
|               |         |           | 1909.8             | Refer To Test Graph |       | Pass    |
|               | EGPRS   | 1 TX Slot | 1850.2             | Refer To Test Graph |       | Pass    |
|               |         |           | 1880               | Refer To Test Graph |       | Pass    |
|               |         |           | 1909.8             | Refer To Test Graph |       | Pass    |

5.2 Test Graph

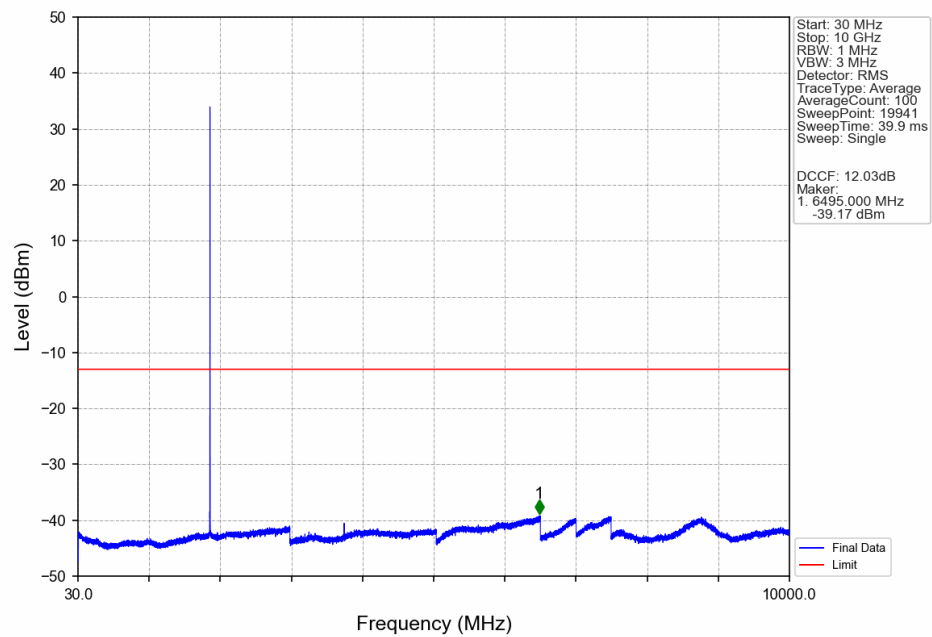
5.2.1 PCS1900



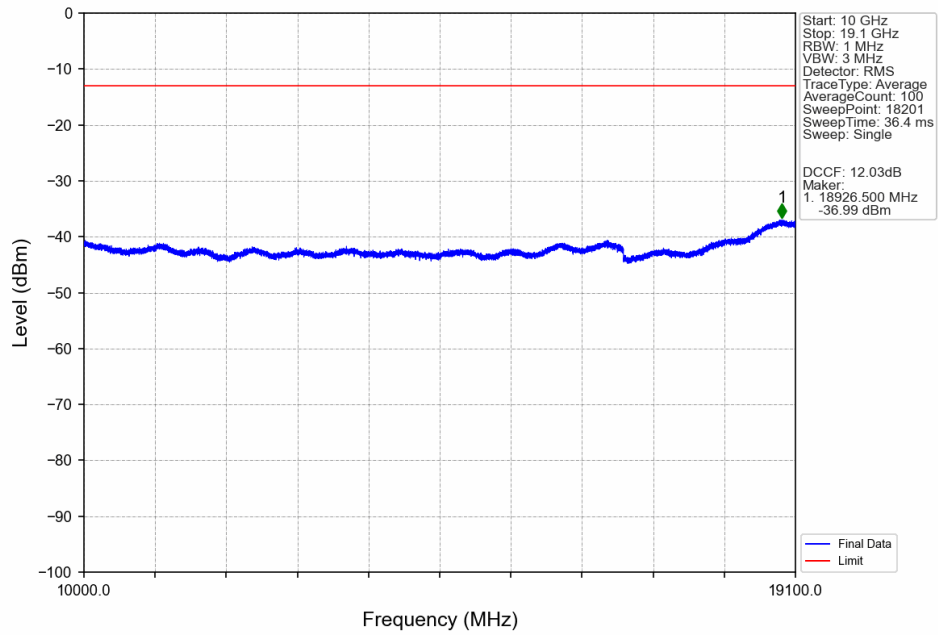
# PCS1900 GSM LCH 1850.2MHz GSM NTN



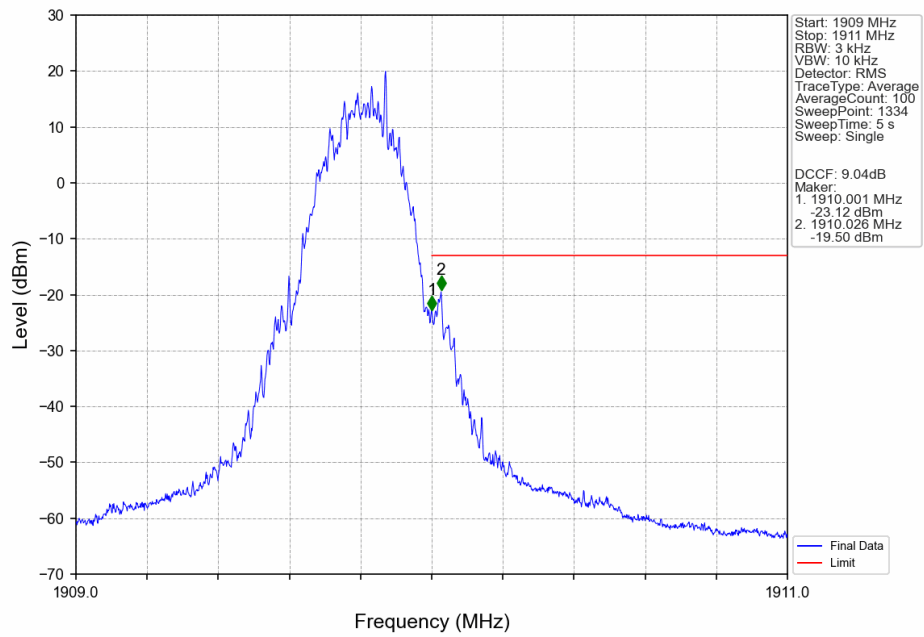
# PCS1900 GSM MCH 1880MHz GSM NTN



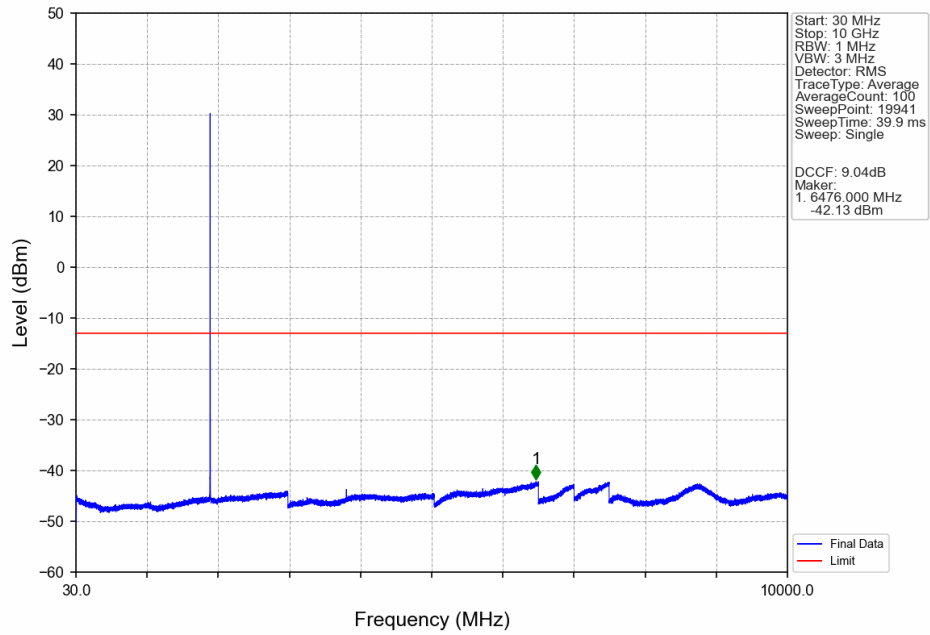
# PCS1900\_GSM\_MCH\_1880MHz\_GSM\_NTNV



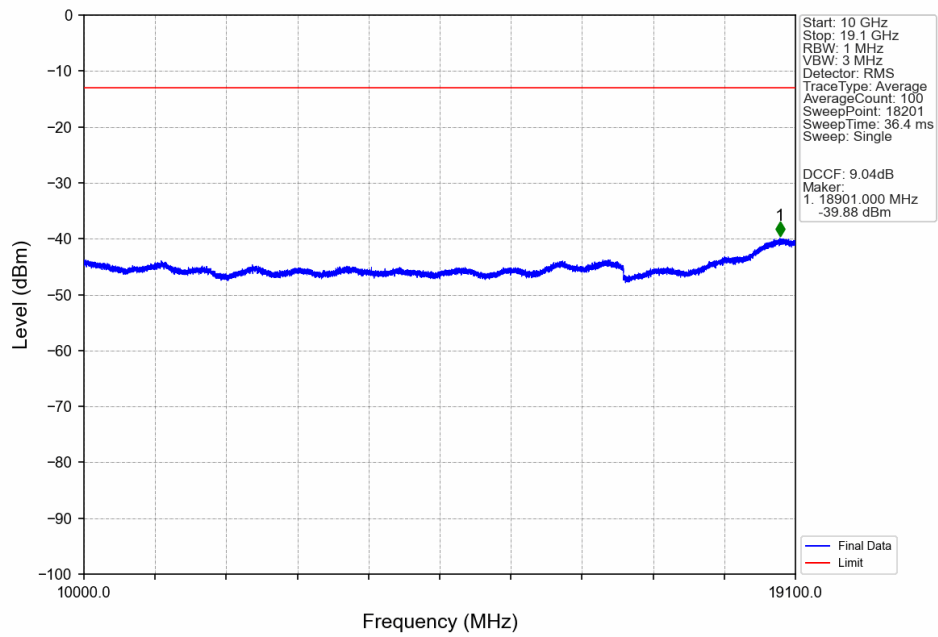
# PCS1900\_GSM\_HCH\_1909.8MHz\_GSM\_NTNV



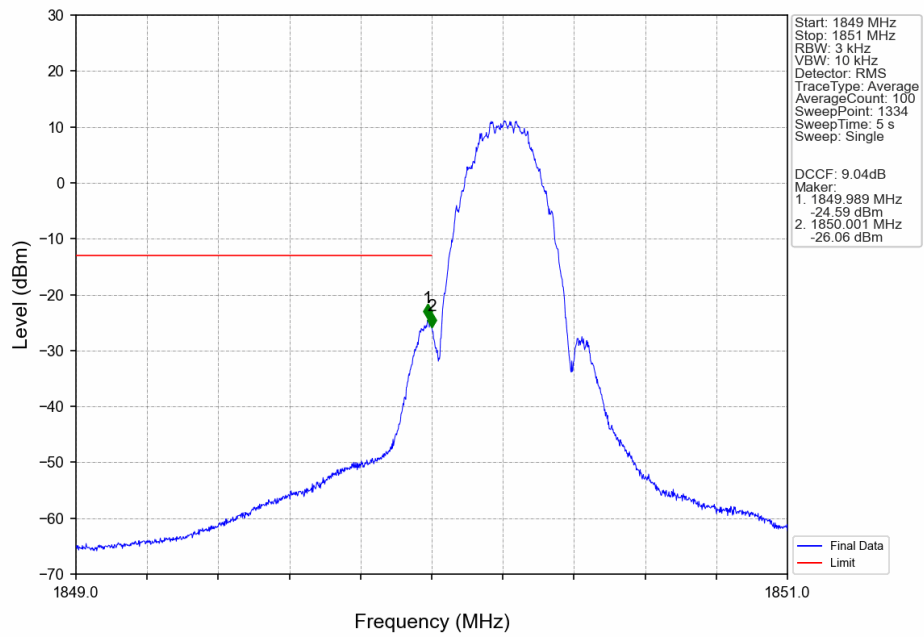
# PCS1900 GSM\_HCH\_1909.8MHz\_GSM\_NTNV



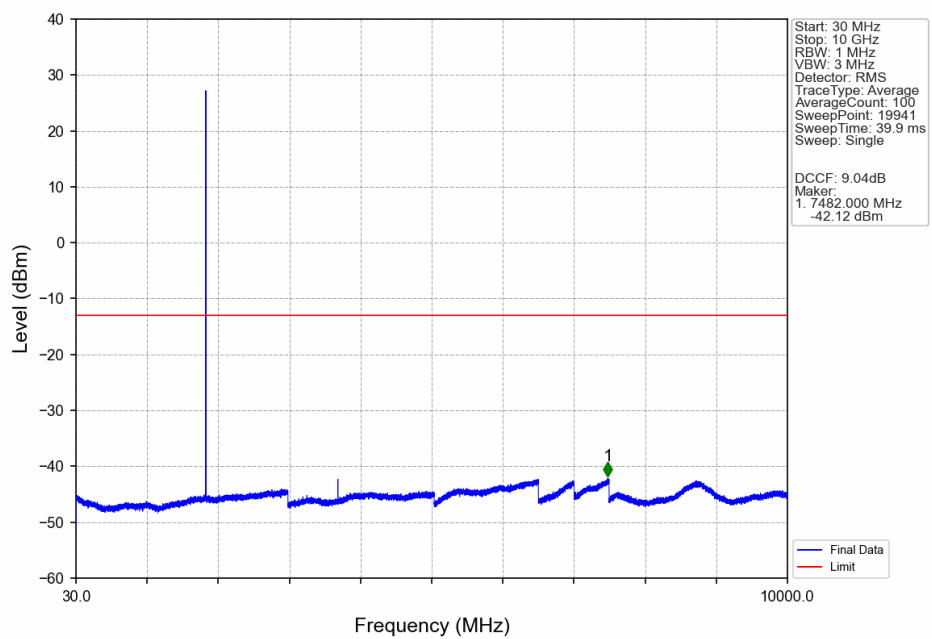
# PCS1900 GSM\_HCH\_1909.8MHz\_GSM\_NTNV



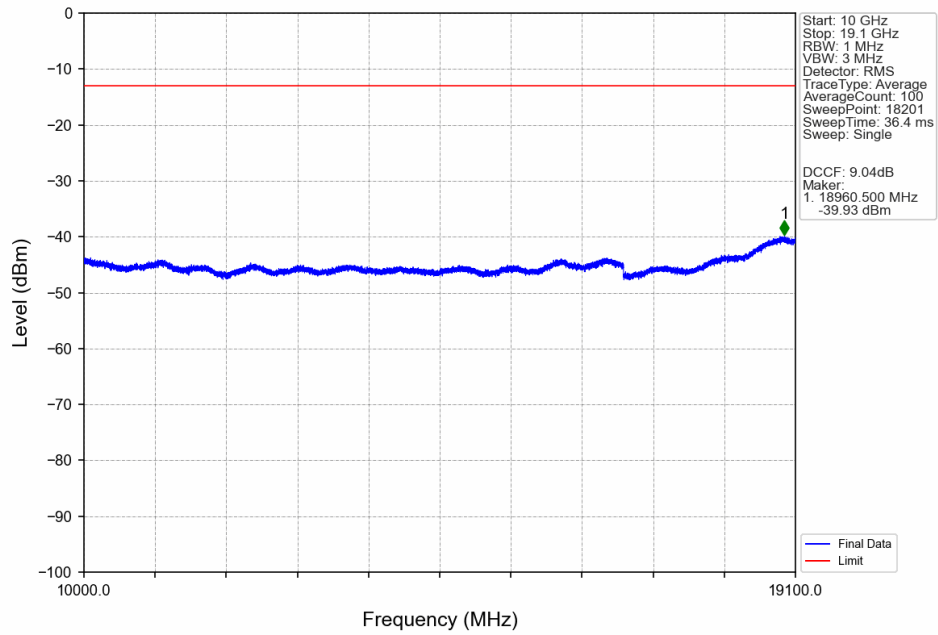
# PCS1900 EGPRS LCH 1850.2MHz 1 TX Slot\_NTNV



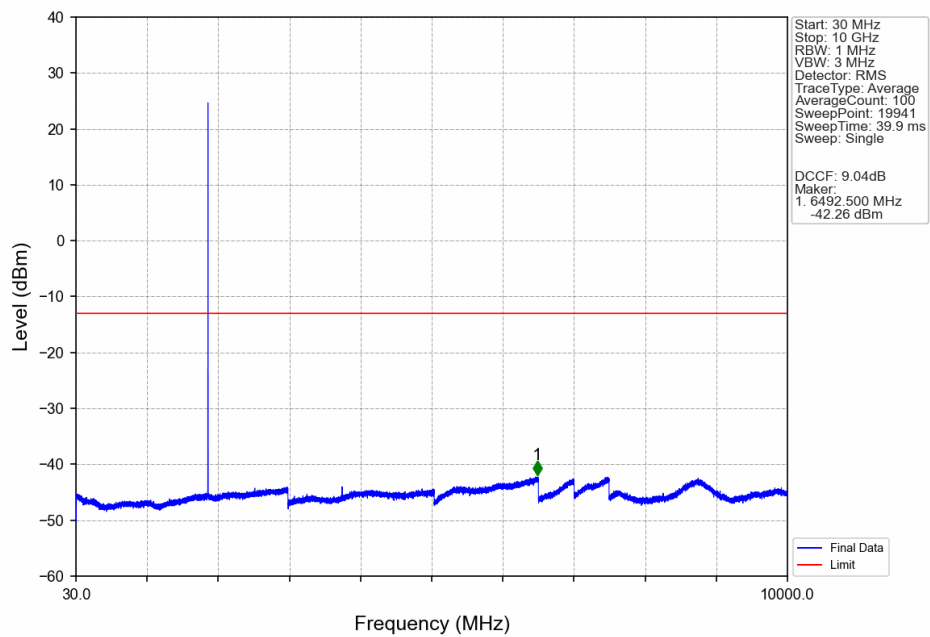
# PCS1900 EGPRS LCH 1850.2MHz 1 TX Slot\_NTNV



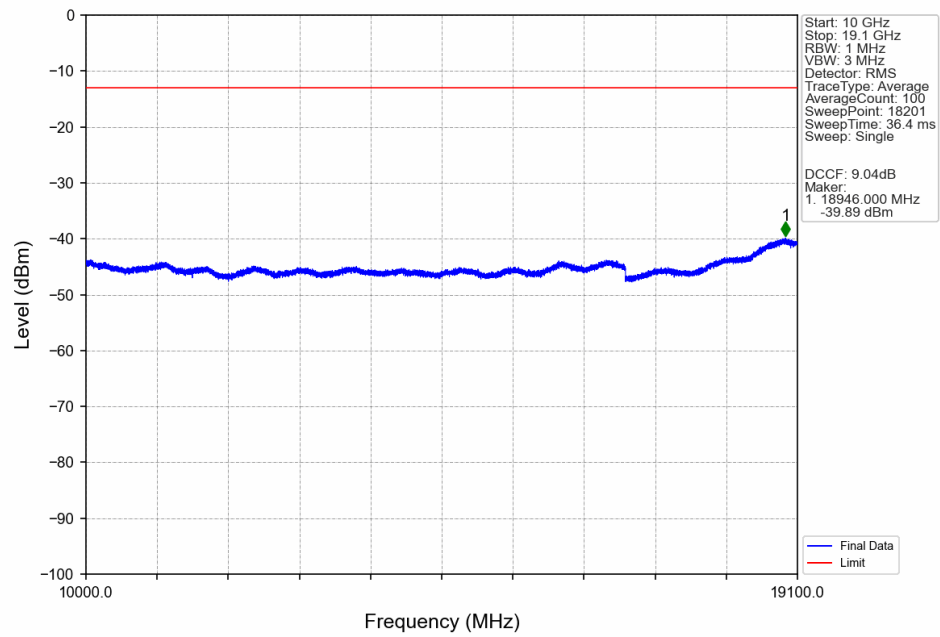
# PCS1900 EGPRS LCH 1850.2MHz 1 TX Slot NTN



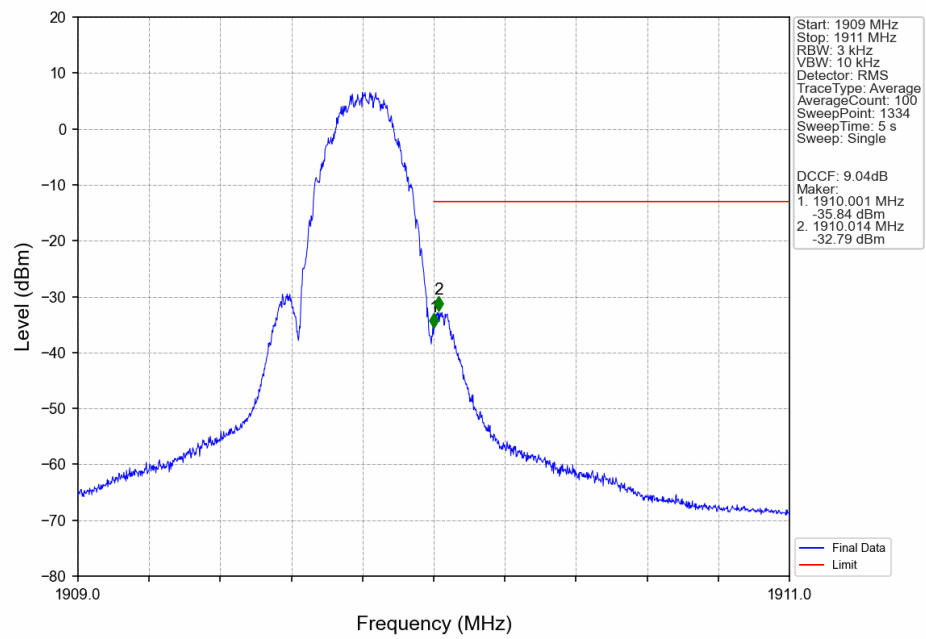
# PCS1900 EGPRS MCH 1880MHz 1 TX Slot NTN



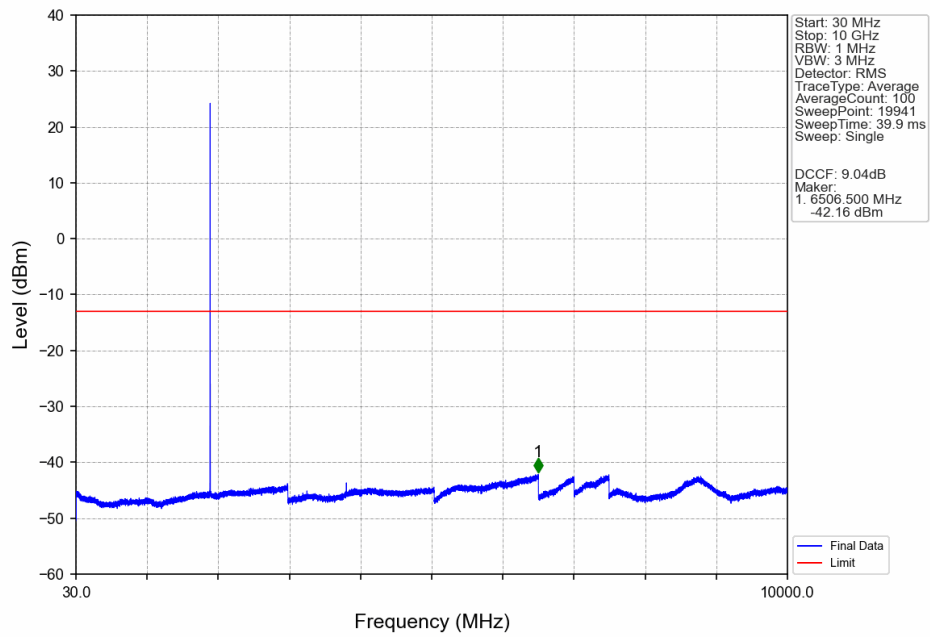
# PCS1900\_EGPRS\_MCH\_1880MHz\_1 TX Slot\_NTNV



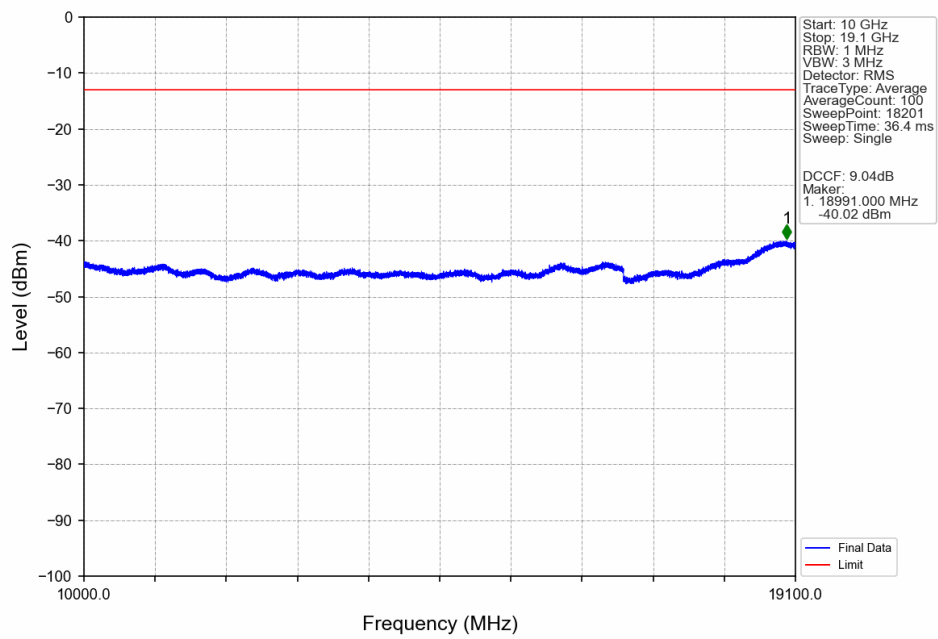
# PCS1900\_EGPRS\_HCH\_1909.8MHz\_1 TX Slot\_NTNV



# PCS1900 EGPRS HCH 1909.8MHz 1 TX Slot\_NTNV



# PCS1900 EGPRS HCH 1909.8MHz 1 TX Slot\_NTNV



## 6. Field Strength of Spurious Radiation

**Test Band = GSM 1900\_**

**Test Channel = Low Channel**

| Data List |                 |                |             |           |             |             |             |            |
|-----------|-----------------|----------------|-------------|-----------|-------------|-------------|-------------|------------|
| NO.       | Frequency [MHz] | Reading [dBμV] | Factor [dB] | AF [dB/m] | Level [dBm] | Limit [dBm] | Margin [dB] | Polarity   |
| 1         | 3700.4          | 49.28          | -48.51      | 28.82     | -65.67      | -13.00      | 52.67       | Horizontal |
| 2         | 5550.6          | 49.93          | -47.66      | 32.62     | -60.37      | -13.00      | 47.37       | Horizontal |
| 3         | 7400.8          | 49.42          | -46.17      | 36.22     | -55.79      | -13.00      | 42.79       | Horizontal |
| 4         | 9251            | 47.18          | -43.20      | 37.75     | -53.53      | -13.00      | 40.53       | Horizontal |
| 5         | 11101.2         | 47.25          | -40.36      | 39.49     | -48.88      | -13.00      | 35.88       | Horizontal |
| 6         | 12951.4         | 48.52          | -39.41      | 38.83     | -47.32      | -13.00      | 34.32       | Horizontal |

| Data List |                 |                |             |           |             |             |             |          |
|-----------|-----------------|----------------|-------------|-----------|-------------|-------------|-------------|----------|
| NO.       | Frequency [MHz] | Reading [dBμV] | Factor [dB] | AF [dB/m] | Level [dBm] | Limit [dBm] | Margin [dB] | Polarity |
| 1         | 3700.4          | 51.99          | -48.51      | 28.82     | -62.96      | -13.00      | 49.96       | Vertical |
| 2         | 5550.6          | 49.96          | -47.66      | 32.62     | -60.34      | -13.00      | 47.34       | Vertical |
| 3         | 7400.8          | 48.92          | -46.17      | 36.22     | -56.29      | -13.00      | 43.29       | Vertical |
| 4         | 9251            | 46.93          | -43.20      | 37.75     | -53.78      | -13.00      | 40.78       | Vertical |
| 5         | 11101.2         | 47.40          | -40.36      | 39.49     | -48.73      | -13.00      | 35.73       | Vertical |
| 6         | 12951.4         | 48.85          | -39.41      | 38.83     | -46.99      | -13.00      | 33.99       | Vertical |

**Test Band = GSM 1900\_**  
**Test Channel = Mid Channel**

| Data List |                 |                |             |           |             |             |             |            |
|-----------|-----------------|----------------|-------------|-----------|-------------|-------------|-------------|------------|
| NO.       | Frequency [MHz] | Reading [dBμV] | Factor [dB] | AF [dB/m] | Level [dBm] | Limit [dBm] | Margin [dB] | Polarity   |
| 1         | 3760            | 49.16          | -48.31      | 28.92     | -65.49      | -13.00      | 52.49       | Horizontal |
| 2         | 5640            | 58.60          | -47.62      | 32.66     | -51.62      | -13.00      | 38.62       | Horizontal |
| 3         | 7520            | 49.22          | -45.85      | 36.40     | -55.49      | -13.00      | 42.49       | Horizontal |
| 4         | 9400            | 47.09          | -43.05      | 37.96     | -53.26      | -13.00      | 40.26       | Horizontal |
| 5         | 11280           | 46.88          | -40.44      | 39.47     | -49.34      | -13.00      | 36.34       | Horizontal |
| 6         | 13160           | 48.43          | -38.58      | 39.04     | -46.37      | -13.00      | 33.37       | Horizontal |

| Data List |                 |                |             |           |             |             |             |          |
|-----------|-----------------|----------------|-------------|-----------|-------------|-------------|-------------|----------|
| NO.       | Frequency [MHz] | Reading [dBμV] | Factor [dB] | AF [dB/m] | Level [dBm] | Limit [dBm] | Margin [dB] | Polarity |
| 1         | 3759.75         | 56.94          | -48.31      | 28.92     | -57.72      | -13.00      | 44.72       | Vertical |
| 2         | 5640            | 55.82          | -47.62      | 32.66     | -54.40      | -13.00      | 41.40       | Vertical |
| 3         | 7520            | 48.58          | -45.85      | 36.40     | -56.13      | -13.00      | 43.13       | Vertical |
| 4         | 9400            | 46.67          | -43.05      | 37.96     | -53.68      | -13.00      | 40.68       | Vertical |
| 5         | 11280           | 47.00          | -40.44      | 39.47     | -49.22      | -13.00      | 36.22       | Vertical |
| 6         | 13160           | 48.61          | -38.58      | 39.04     | -46.19      | -13.00      | 33.19       | Vertical |

**Test Band = GSM 1900\_**  
**Test Channel = High Channel**

| Data List |                 |                |             |           |             |             |             |            |
|-----------|-----------------|----------------|-------------|-----------|-------------|-------------|-------------|------------|
| NO.       | Frequency [MHz] | Reading [dBμV] | Factor [dB] | AF [dB/m] | Level [dBm] | Limit [dBm] | Margin [dB] | Polarity   |
| 1         | 3819.6          | 50.11          | -48.20      | 29.01     | -64.34      | -13.00      | 51.34       | Horizontal |
| 2         | 5729.5          | 50.48          | -47.54      | 32.69     | -59.63      | -13.00      | 46.63       | Horizontal |
| 3         | 7639.2          | 49.62          | -44.82      | 36.37     | -54.09      | -13.00      | 41.09       | Horizontal |
| 4         | 9549            | 47.95          | -42.31      | 38.17     | -51.45      | -13.00      | 38.45       | Horizontal |
| 5         | 11458.8         | 48.60          | -40.07      | 39.45     | -47.27      | -13.00      | 34.27       | Horizontal |
| 6         | 13368.6         | 49.17          | -39.15      | 39.35     | -45.88      | -13.00      | 32.88       | Horizontal |

| Data List |                 |                |             |           |             |             |             |          |
|-----------|-----------------|----------------|-------------|-----------|-------------|-------------|-------------|----------|
| NO.       | Frequency [MHz] | Reading [dBμV] | Factor [dB] | AF [dB/m] | Level [dBm] | Limit [dBm] | Margin [dB] | Polarity |
| 1         | 5729.25         | 55.53          | -47.54      | 32.69     | -54.58      | -13.00      | 41.58       | Vertical |
| 2         | 3819.6          | 55.47          | -48.20      | 29.01     | -58.98      | -13.00      | 45.98       | Vertical |
| 3         | 7639.2          | 49.62          | -44.82      | 36.37     | -54.09      | -13.00      | 41.09       | Vertical |
| 4         | 9549            | 47.41          | -42.31      | 38.17     | -51.99      | -13.00      | 38.99       | Vertical |
| 5         | 11458.8         | 49.23          | -40.07      | 39.45     | -46.64      | -13.00      | 33.64       | Vertical |
| 6         | 13368.6         | 48.21          | -39.15      | 39.35     | -46.84      | -13.00      | 33.84       | Vertical |