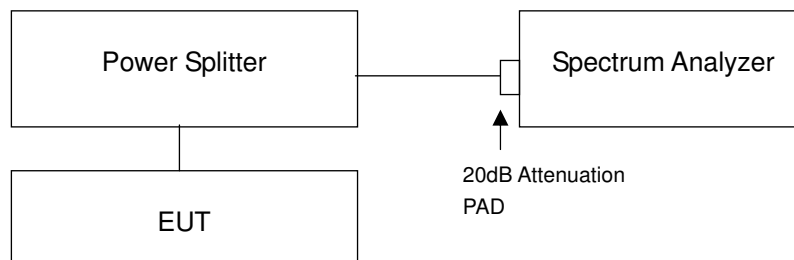


## 4.6 Conducted Spurious Emissions

### 4.6.1 Limits of Conducted Spurious Emissions Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB. The emission limit equal to  $-13\text{dBm}$ .

### 4.6.2 Test Setup

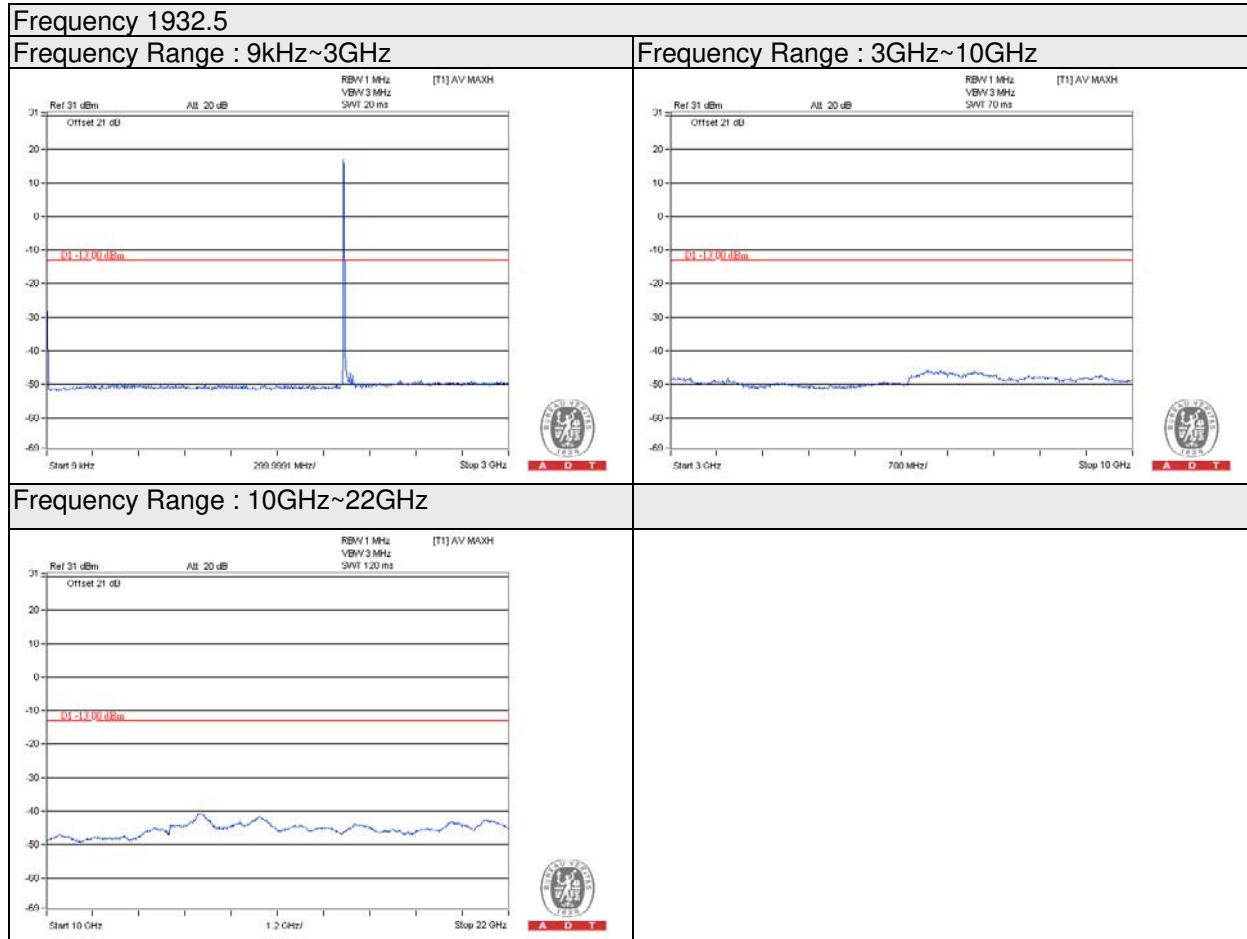


### 4.6.3 Test Procedure

- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9 kHz to 22GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

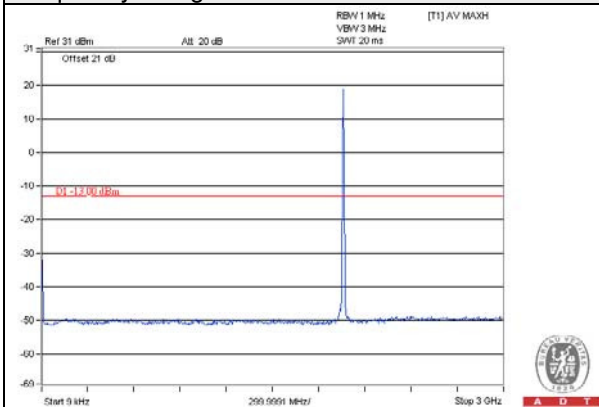
#### 4.6.4 Test Results

#### WCDMA Band 2 (Channel Bandwidth 5MHz): QPSK

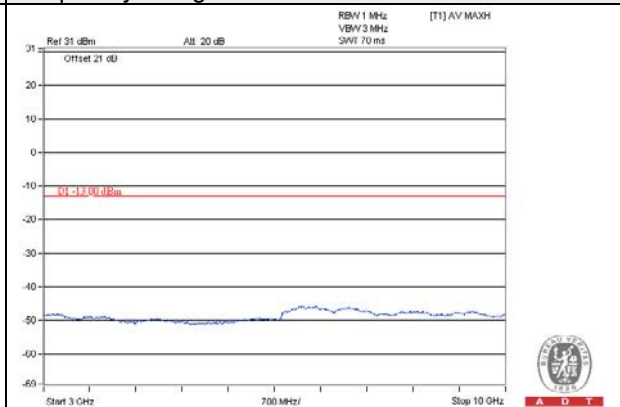


## Frequency 1960.0

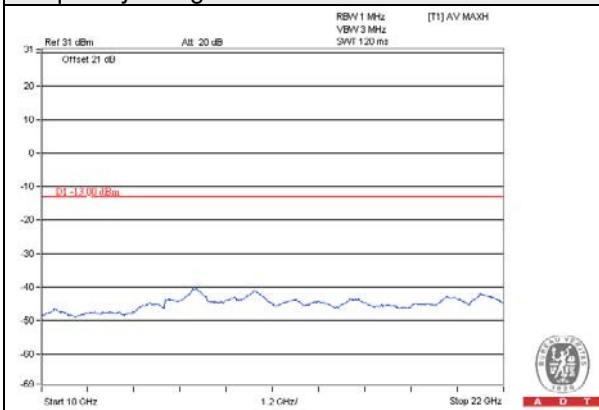
Frequency Range : 9kHz~3GHz



Frequency Range : 3GHz~10GHz

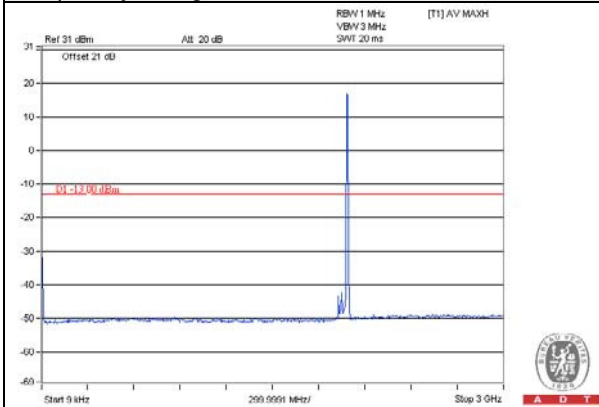


Frequency Range : 10GHz~22GHz

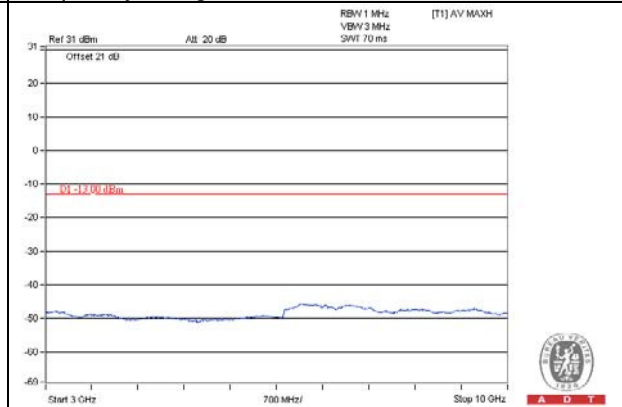


## Frequency 1987.5

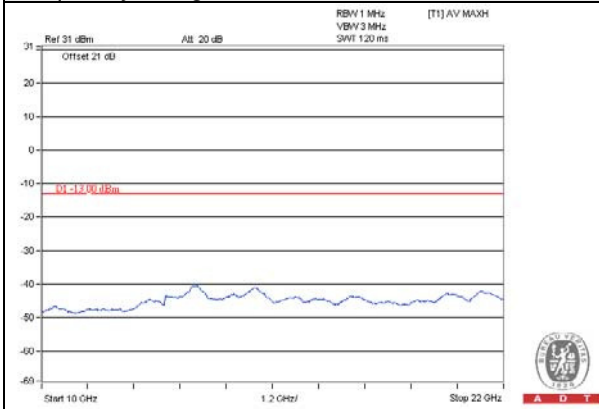
Frequency Range : 9kHz~3GHz



Frequency Range : 3GHz~10GHz



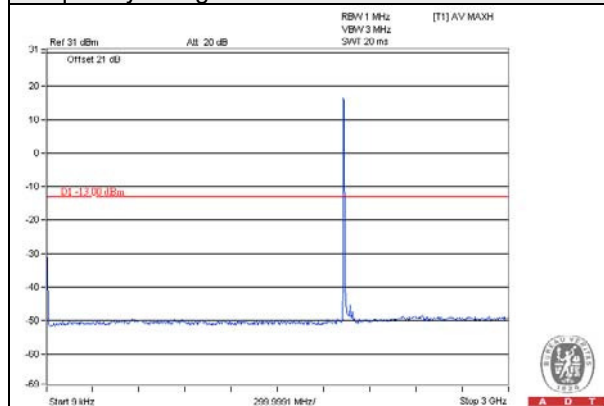
Frequency Range : 10GHz~22GHz



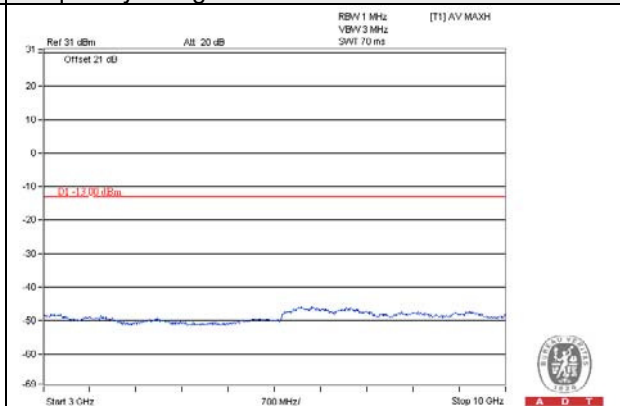
## WCDMA Band 2 (Channel Bandwidth 5MHz): 16QAM

Frequency 1932.5

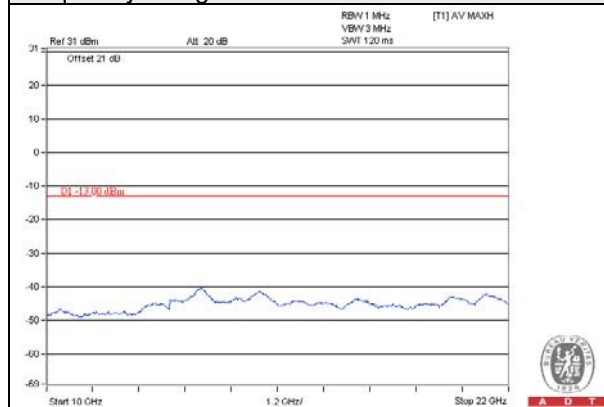
Frequency Range : 9kHz~3GHz



Frequency Range : 3GHz~10GHz

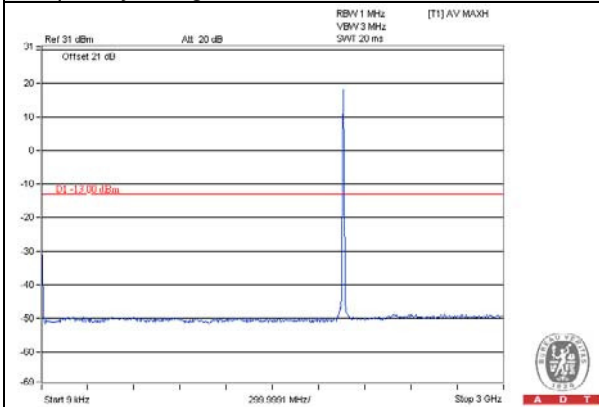


Frequency Range : 10GHz~22GHz

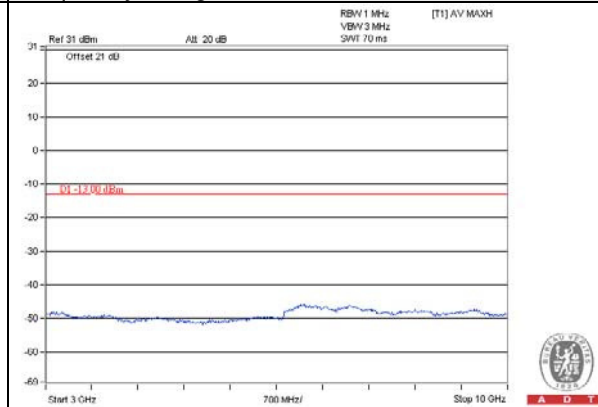


## Frequency 1960.0

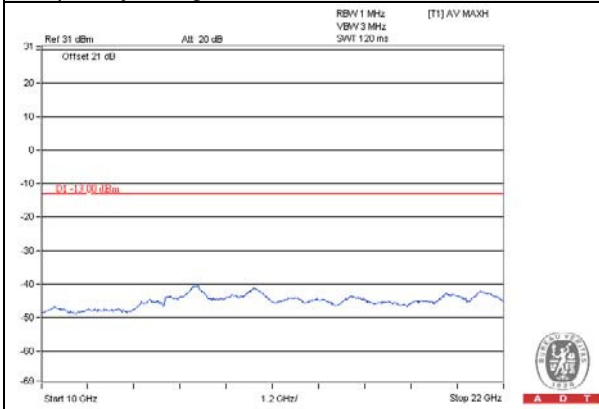
Frequency Range : 9kHz~3GHz



Frequency Range : 3GHz~10GHz

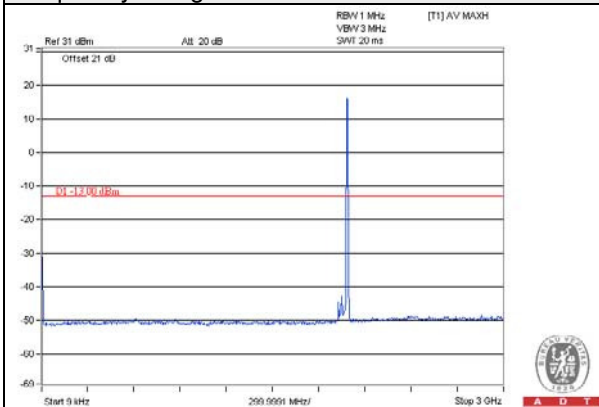


Frequency Range : 10GHz~22GHz

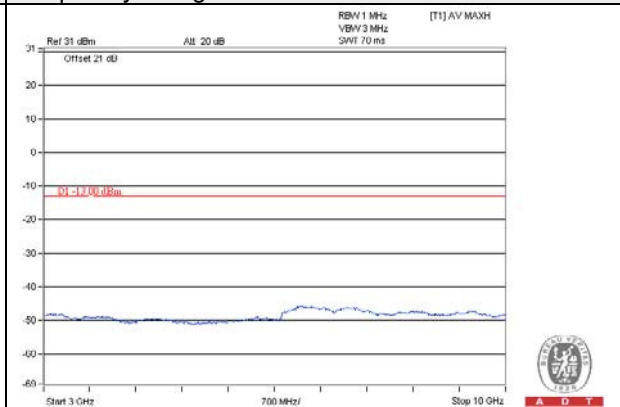


## Frequency 1987.5

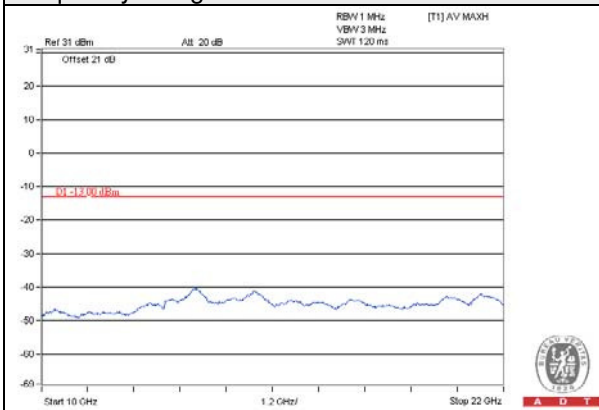
Frequency Range : 9kHz~3GHz



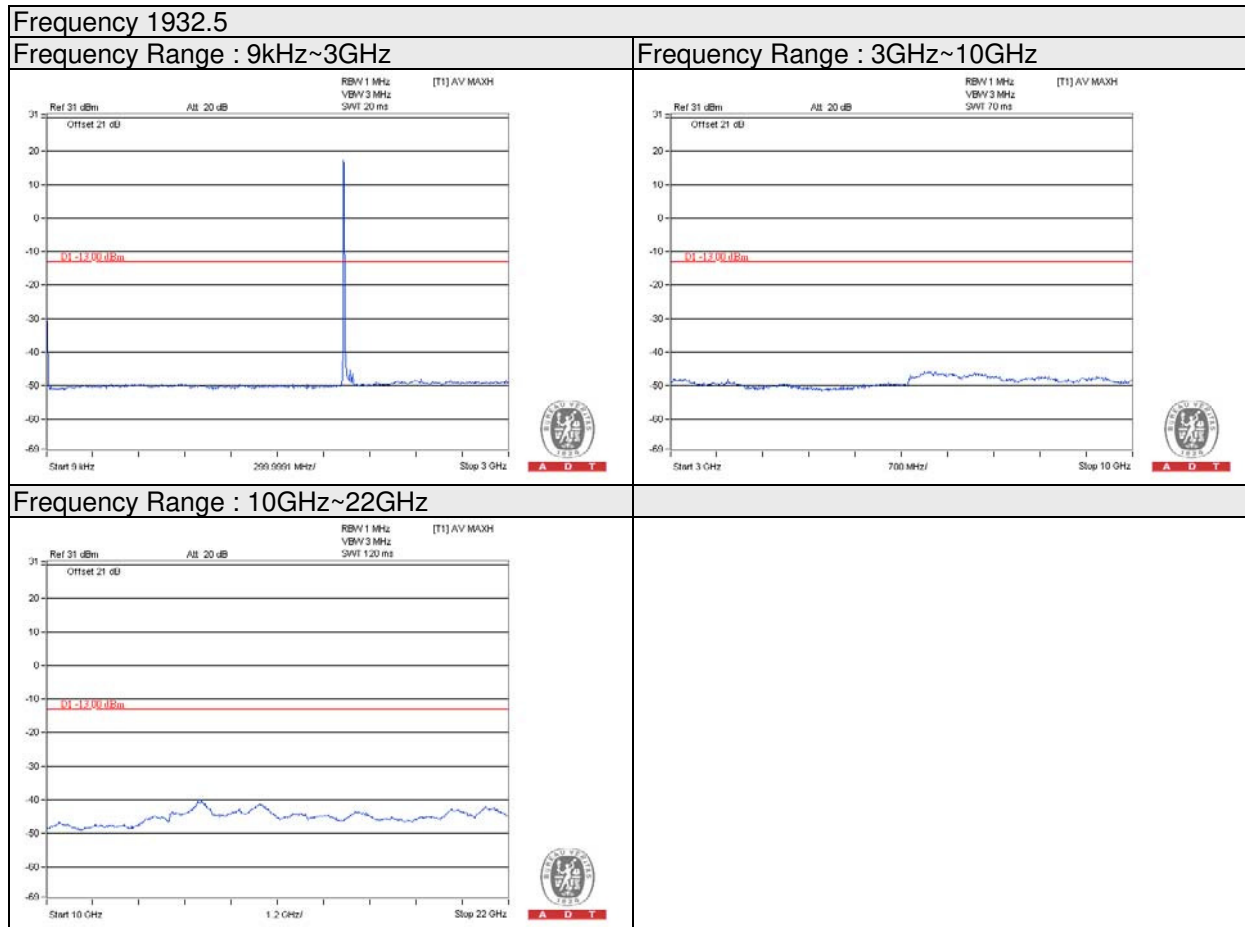
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



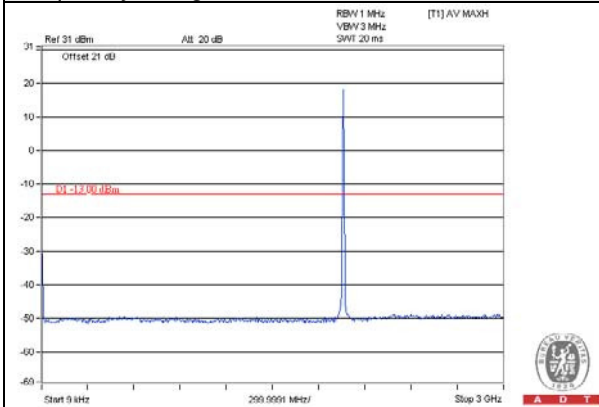
### WCDMA Band 2 (Channel Bandwidth 5MHz): 64QAM



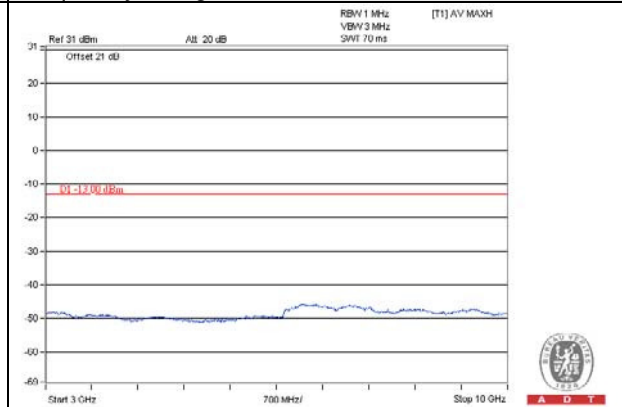


## Frequency 1960.0

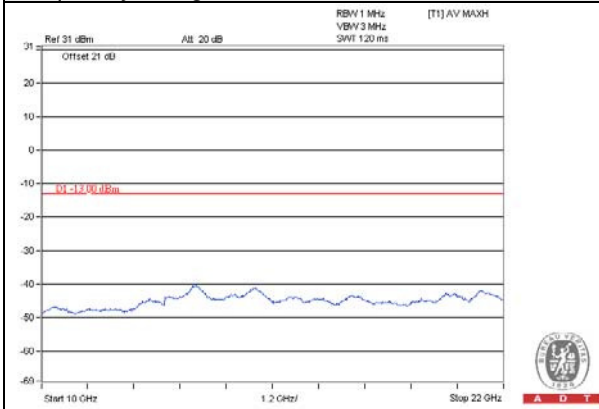
Frequency Range : 9kHz~3GHz



Frequency Range : 3GHz~10GHz

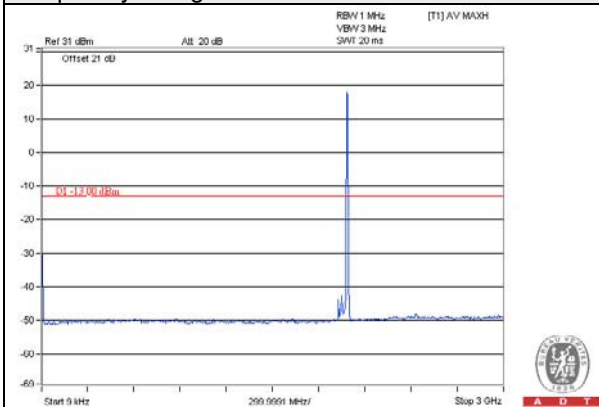


Frequency Range : 10GHz~22GHz

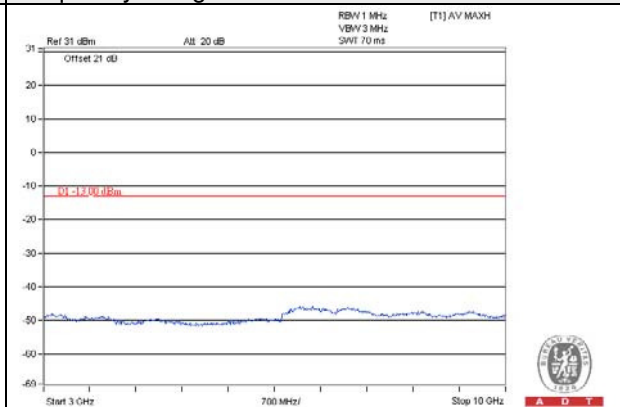


## Frequency 1987.5

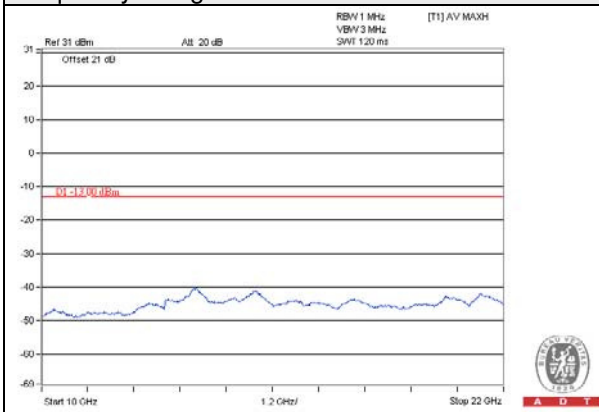
Frequency Range : 9kHz~3GHz



Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



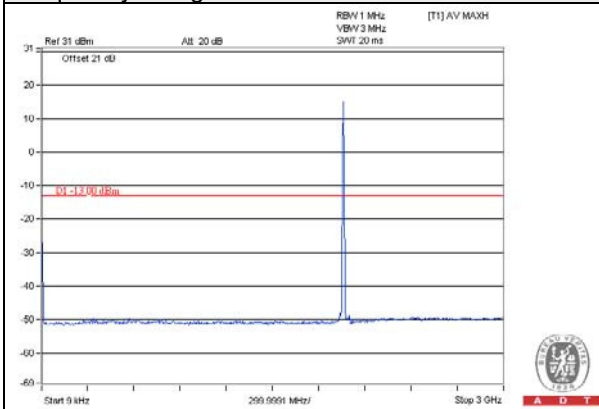
### LTE Band 2 (Channel Bandwidth 5MHz): QPSK



Frequency 1960.0

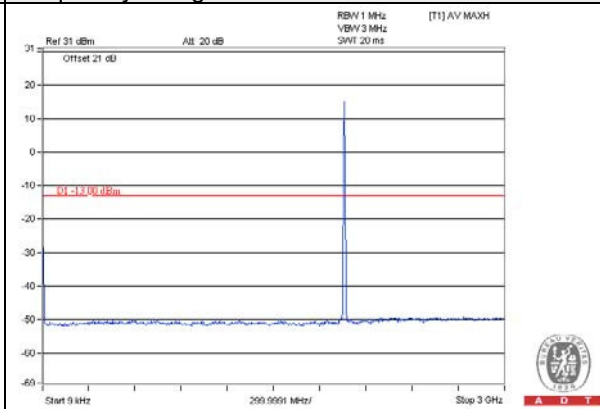
Chain 0

Frequency Range : 9kHz~3GHz

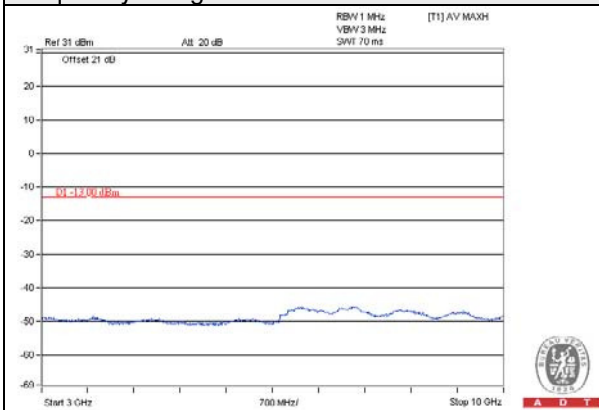


Chain 1

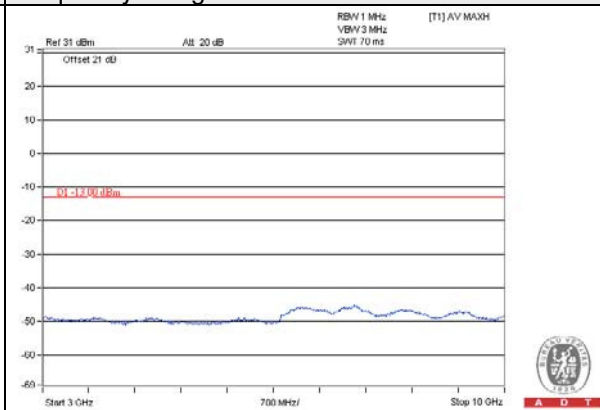
Frequency Range : 9kHz~3GHz



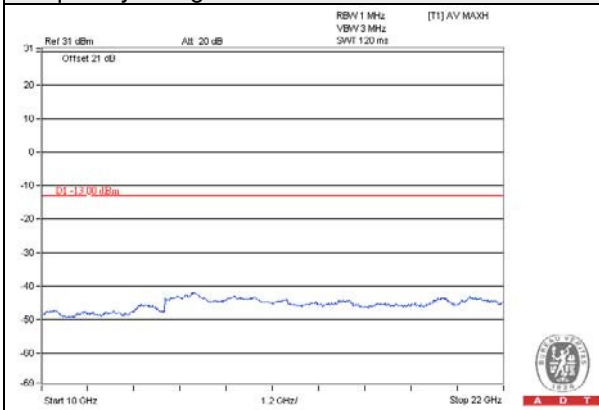
Frequency Range : 3GHz~10GHz



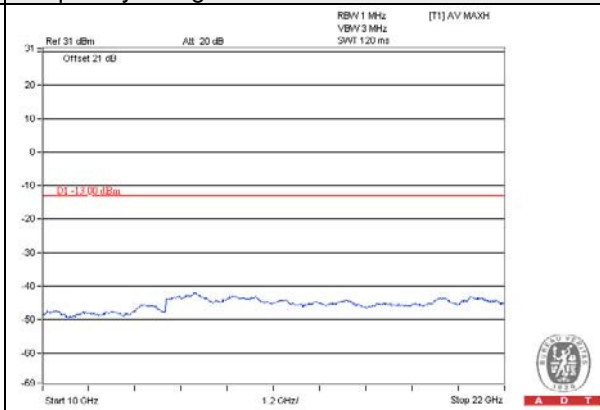
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



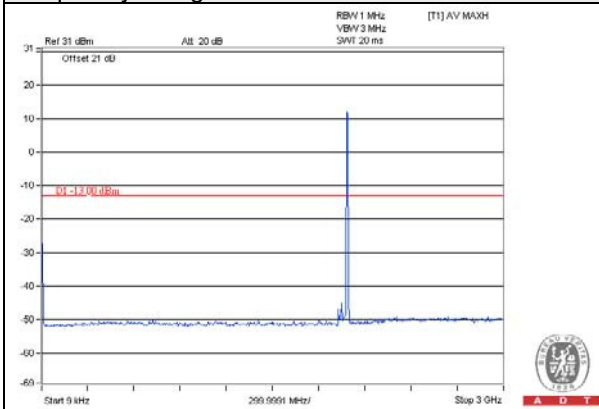
Frequency Range : 10GHz~22GHz



Frequency 1987.5

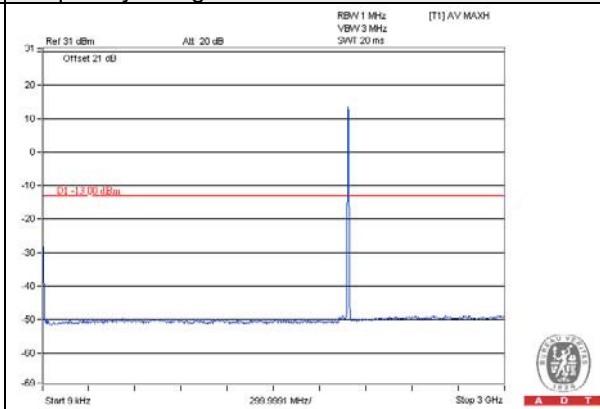
Chain 0

Frequency Range : 9kHz~3GHz

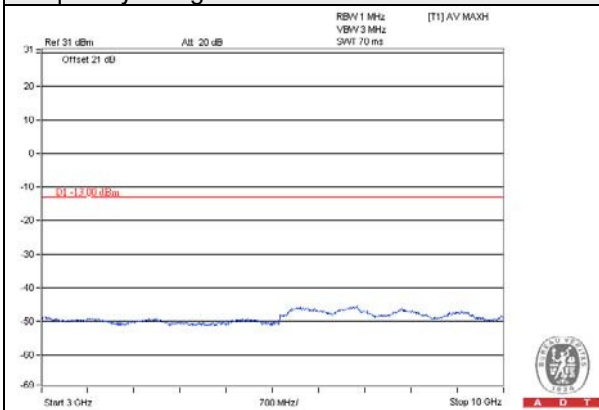


Chain 1

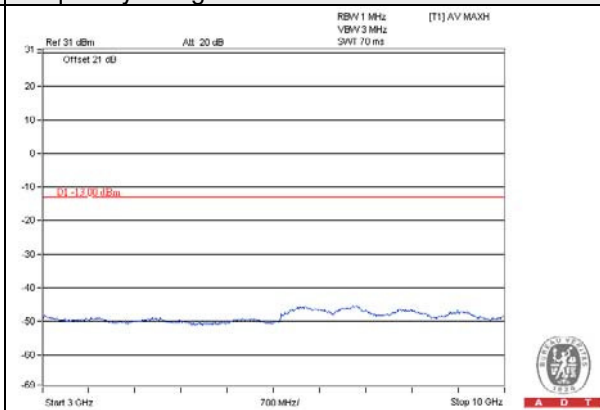
Frequency Range : 9kHz~3GHz



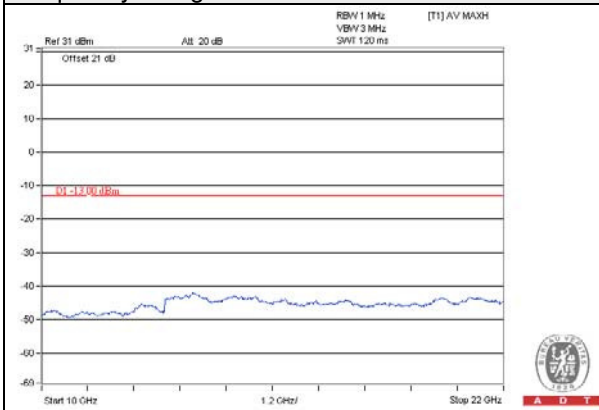
Frequency Range : 3GHz~10GHz



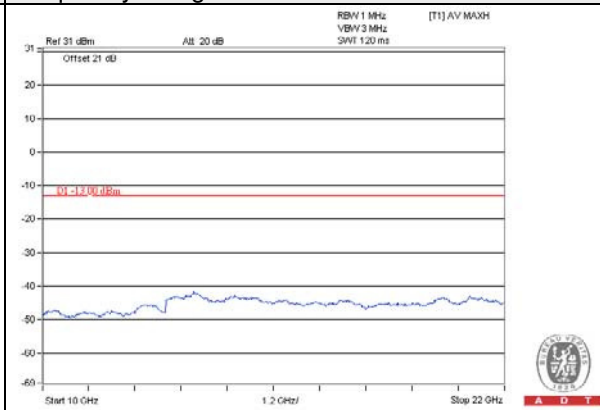
Frequency Range : 3GHz~10GHz



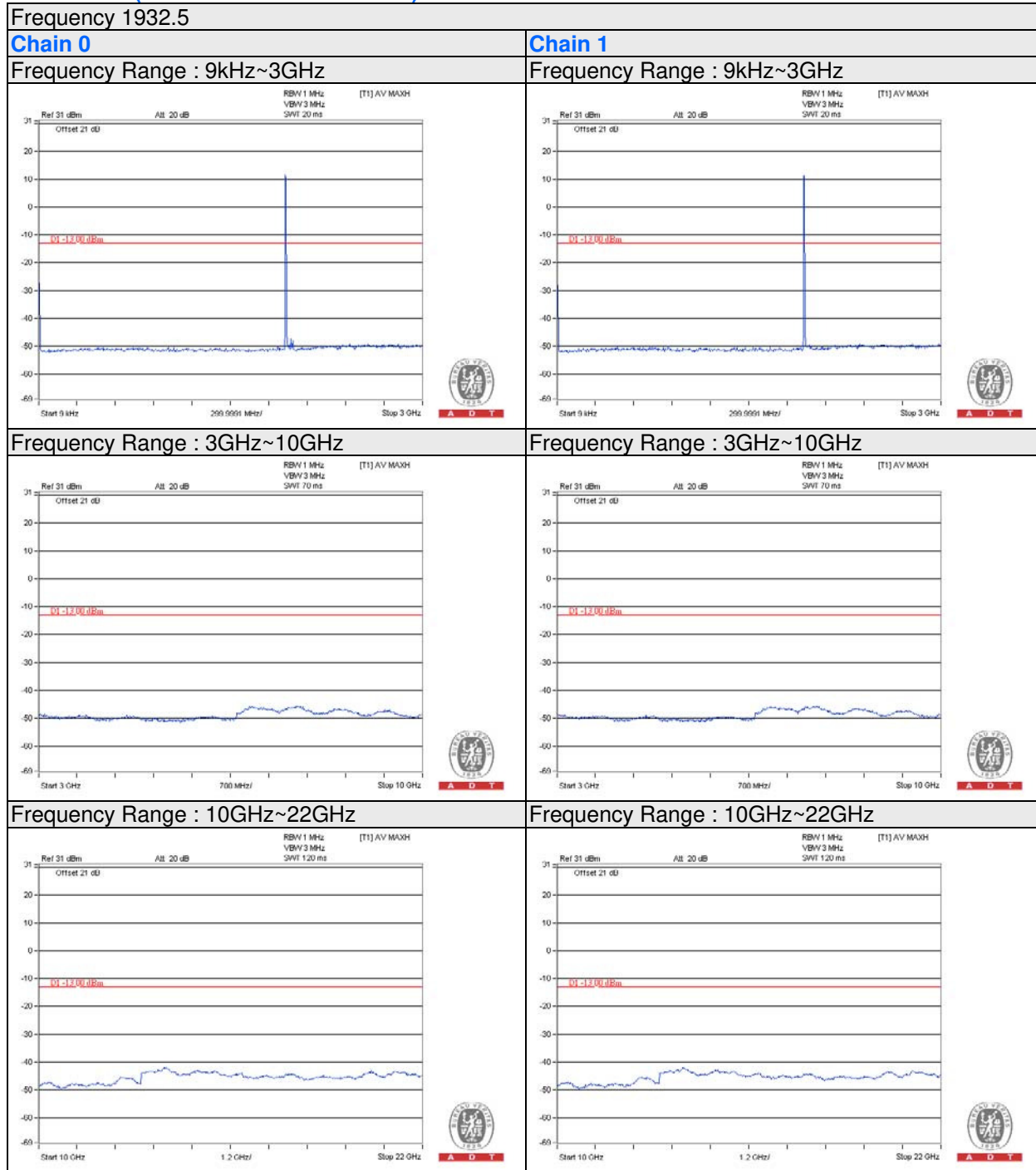
Frequency Range : 10GHz~22GHz



Frequency Range : 10GHz~22GHz



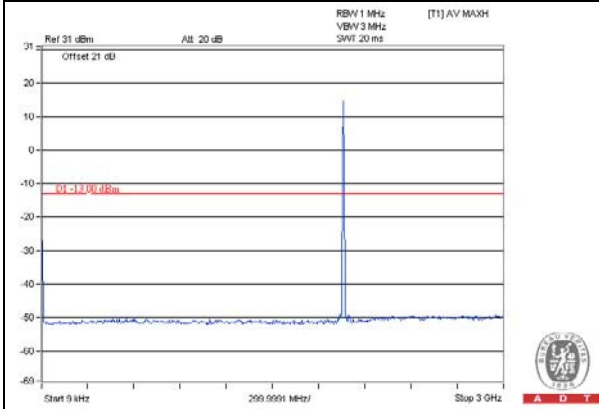
**LTE Band 2 (Channel Bandwidth 5MHz): 16QAM**



Frequency 1960.0

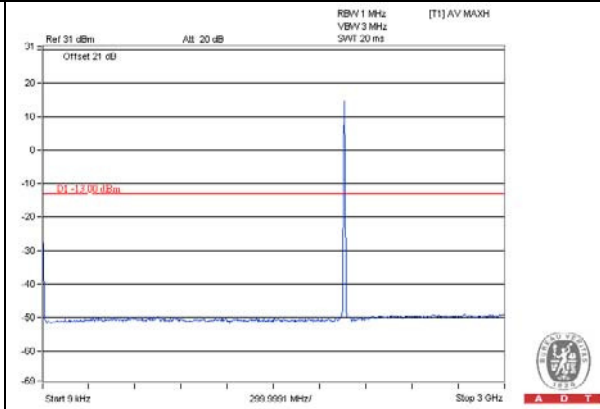
Chain 0

Frequency Range : 9kHz~3GHz

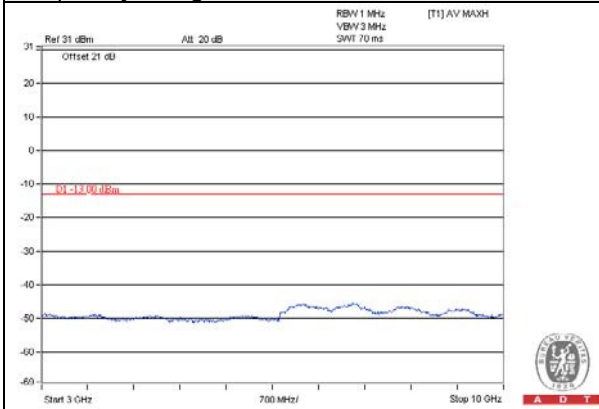


Chain 1

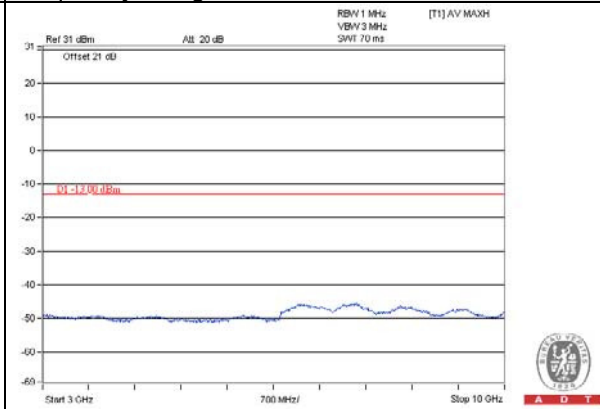
Frequency Range : 9kHz~3GHz



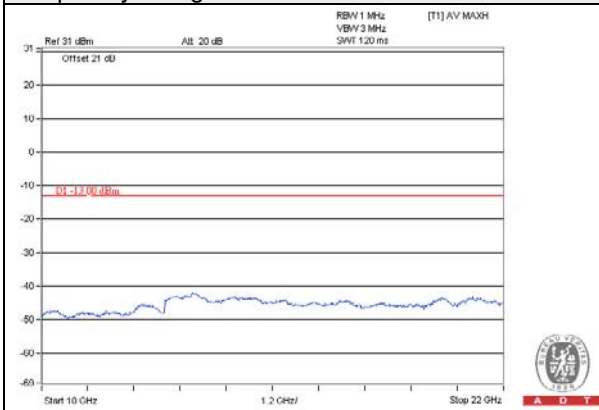
Frequency Range : 3GHz~10GHz



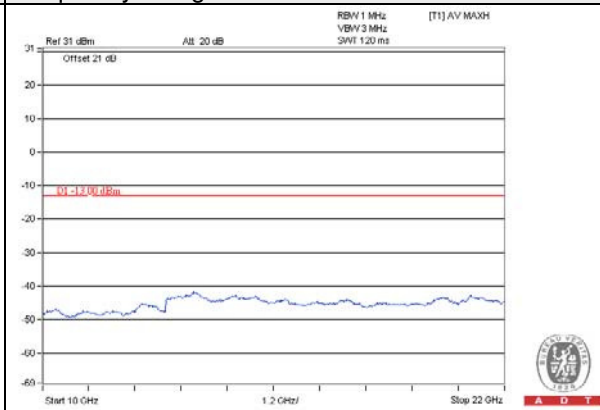
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



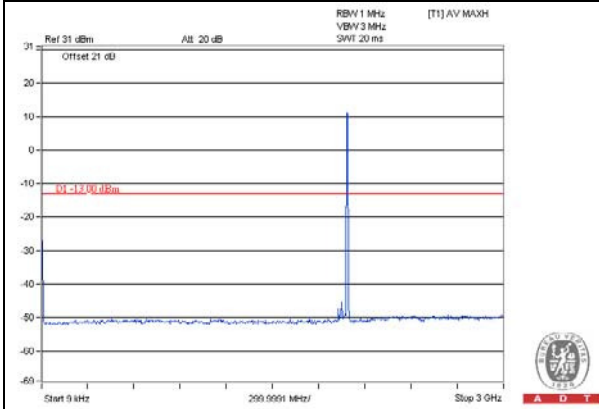
Frequency Range : 10GHz~22GHz



Frequency 1987.5

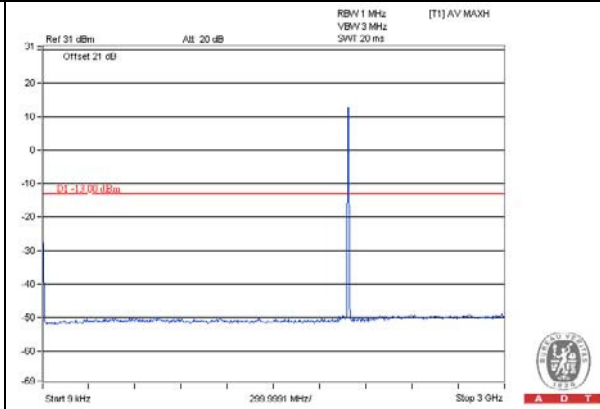
Chain 0

Frequency Range : 9kHz~3GHz

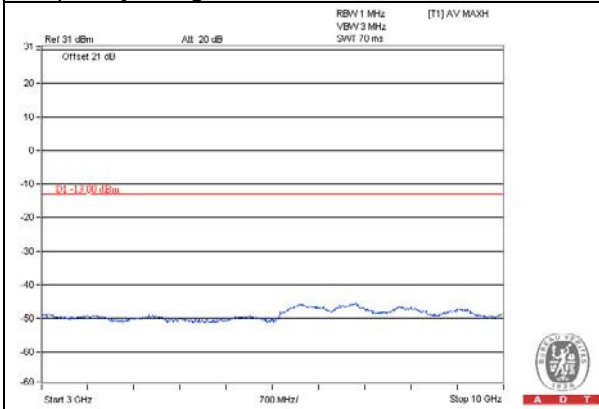


Chain 1

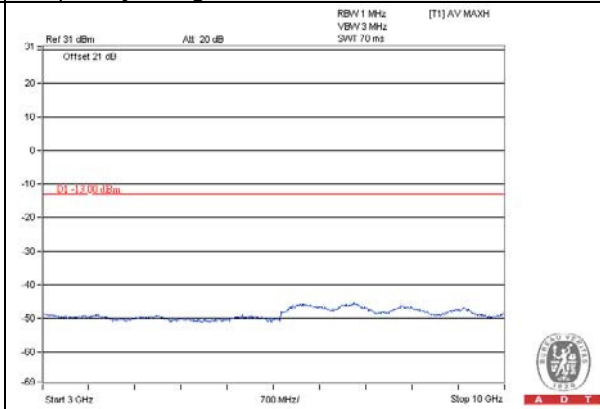
Frequency Range : 9kHz~3GHz



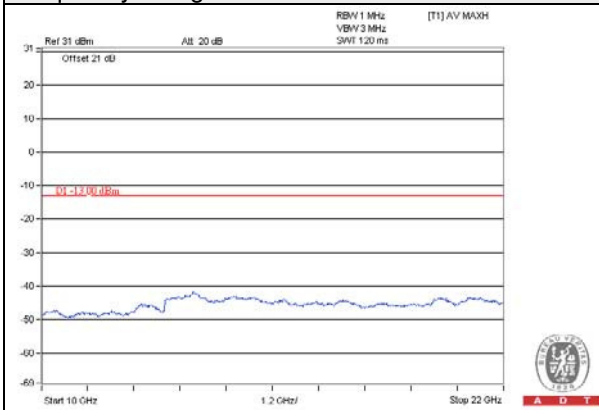
Frequency Range : 3GHz~10GHz



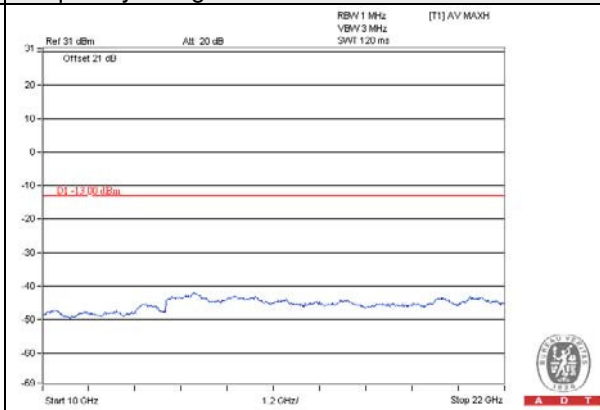
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz

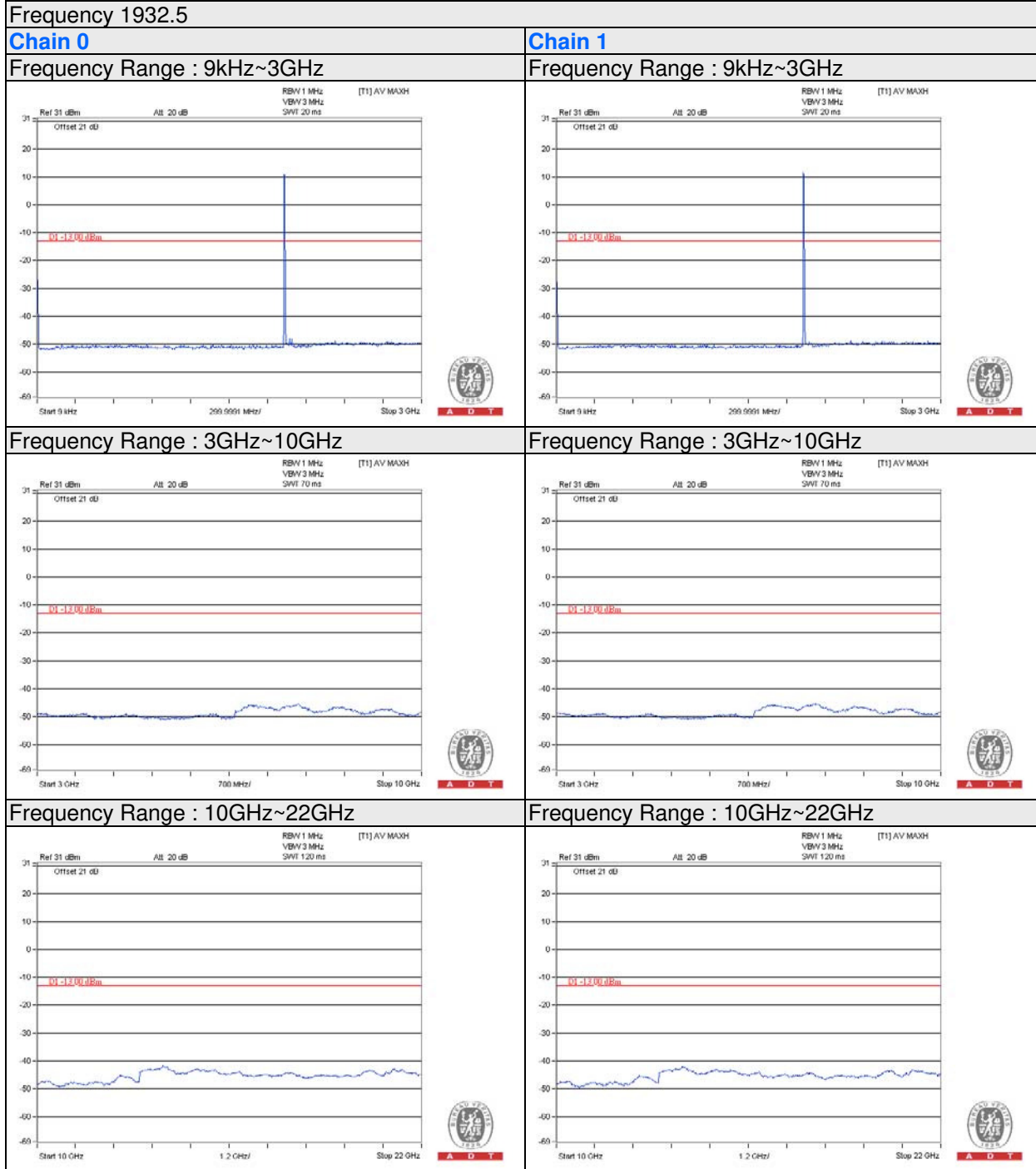


Frequency Range : 10GHz~22GHz





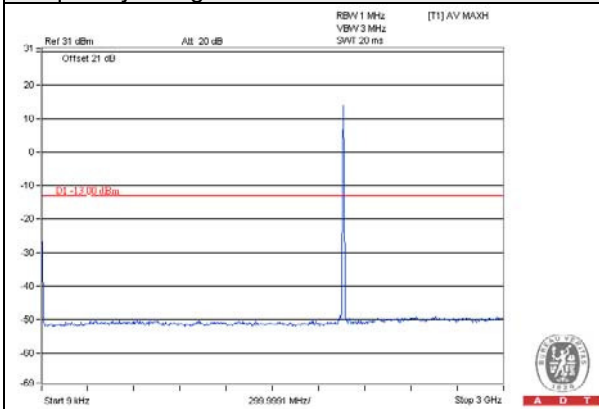
**LTE Band 2 (Channel Bandwidth 5MHz): 64QAM**



Frequency 1960.0

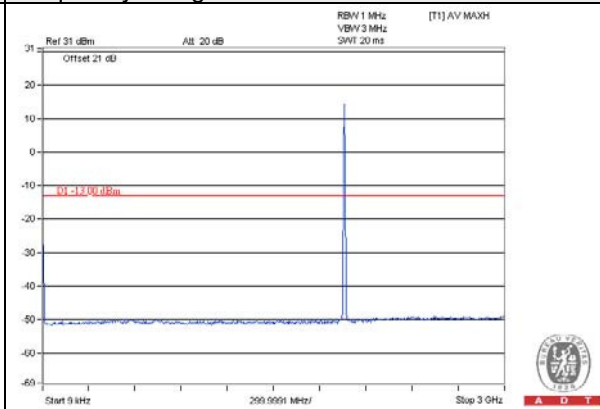
Chain 0

Frequency Range : 9kHz~3GHz

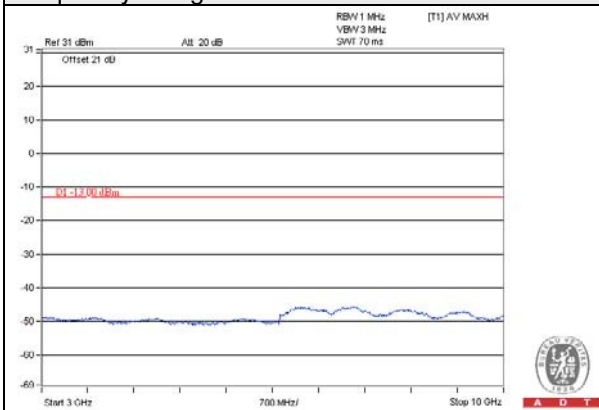


Chain 1

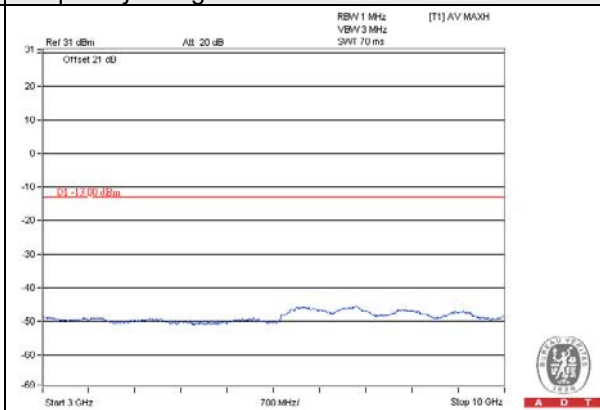
Frequency Range : 9kHz~3GHz



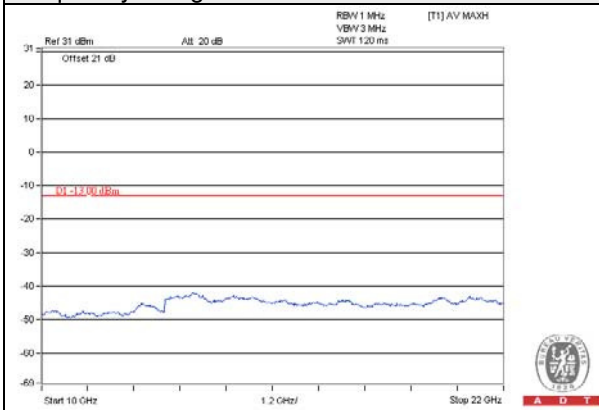
Frequency Range : 3GHz~10GHz



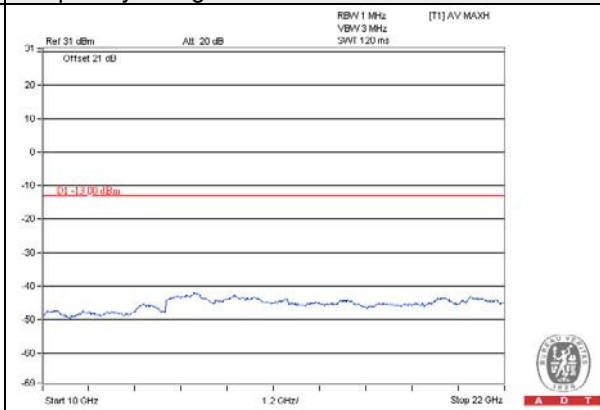
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



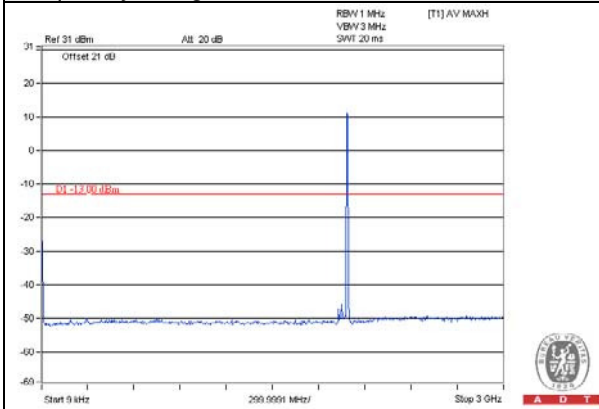
Frequency Range : 10GHz~22GHz



Frequency 1987.5

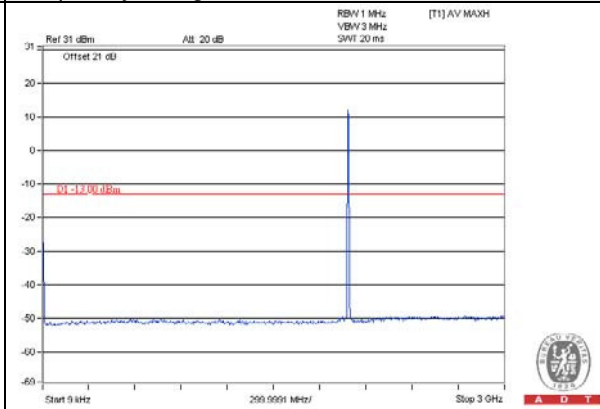
Chain 0

Frequency Range : 9kHz~3GHz

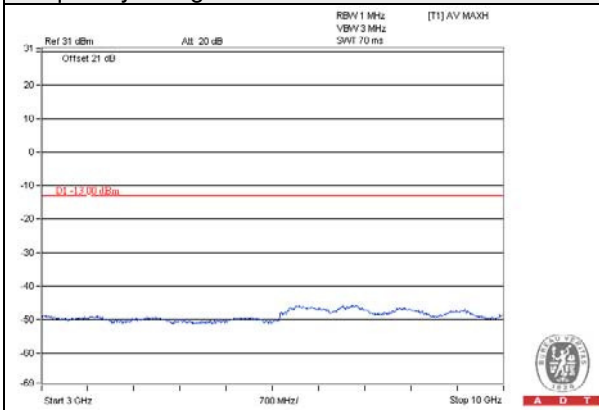


Chain 1

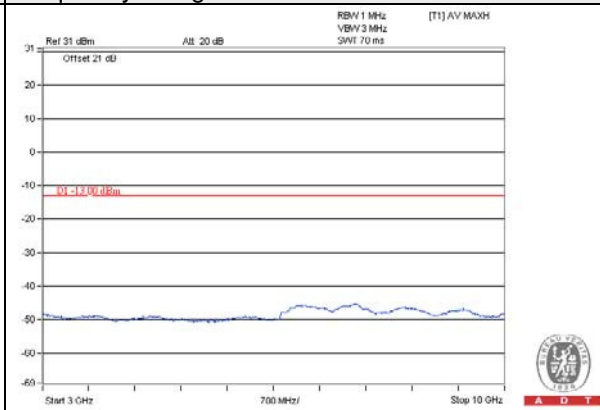
Frequency Range : 9kHz~3GHz



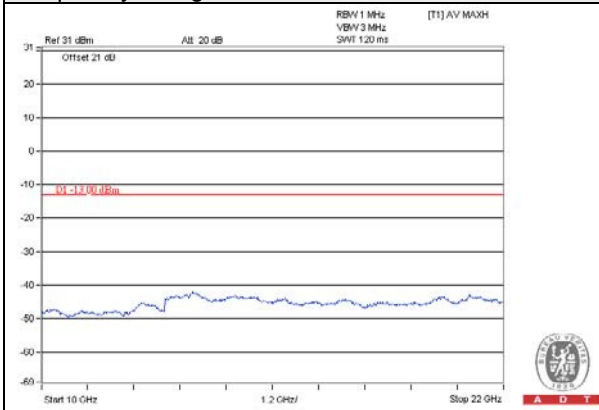
Frequency Range : 3GHz~10GHz



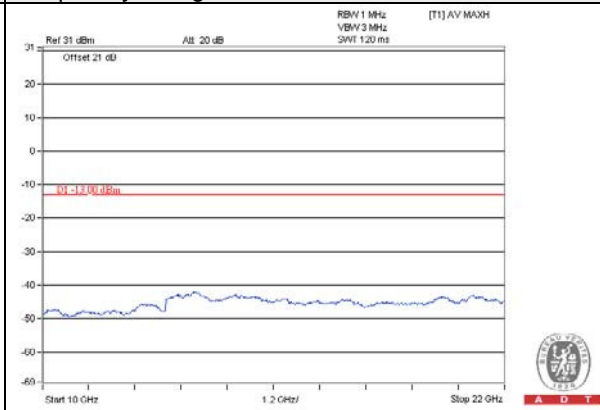
Frequency Range : 3GHz~10GHz



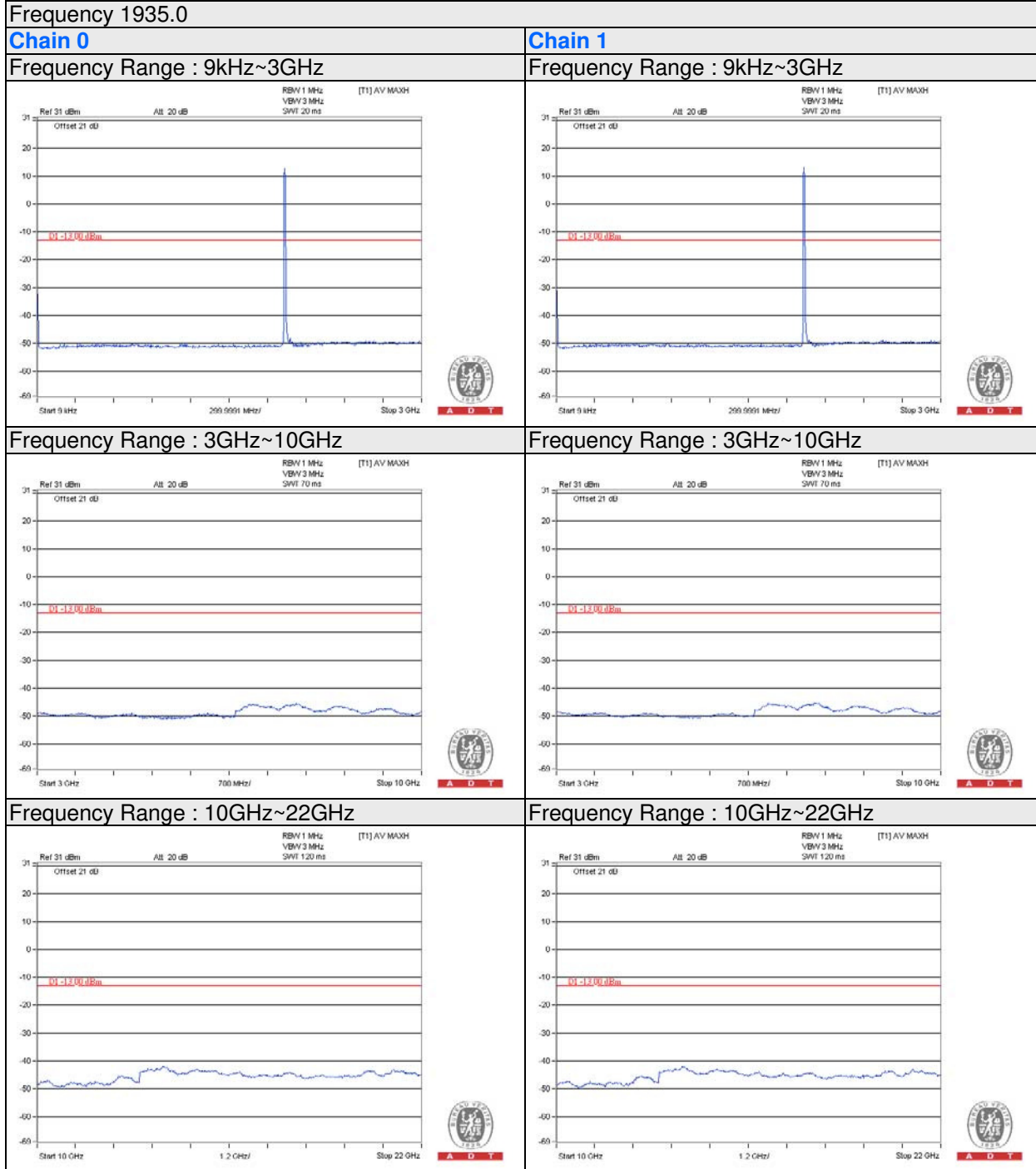
Frequency Range : 10GHz~22GHz



Frequency Range : 10GHz~22GHz



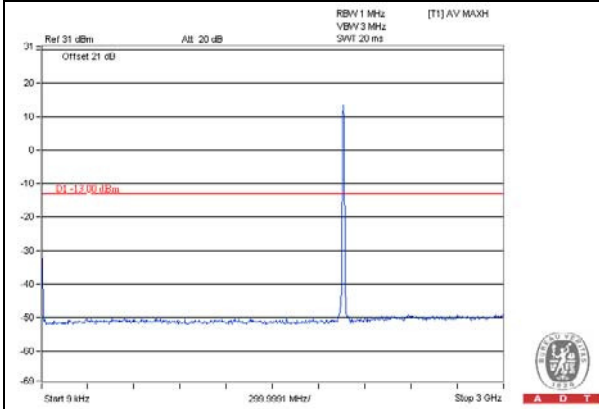
**LTE Band 2 (Channel Bandwidth 10MHz): QPSK**



Frequency 1960.0

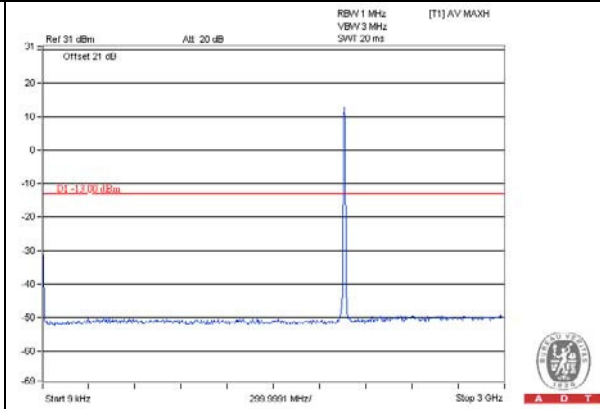
Chain 0

Frequency Range : 9kHz~3GHz

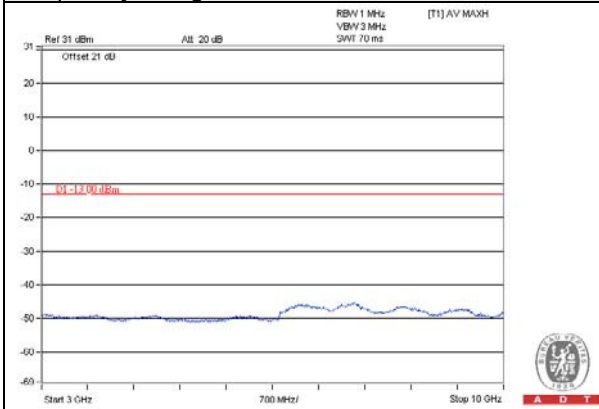


Chain 1

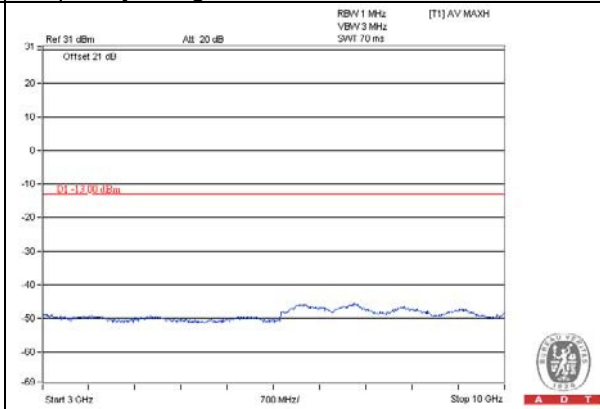
Frequency Range : 9kHz~3GHz



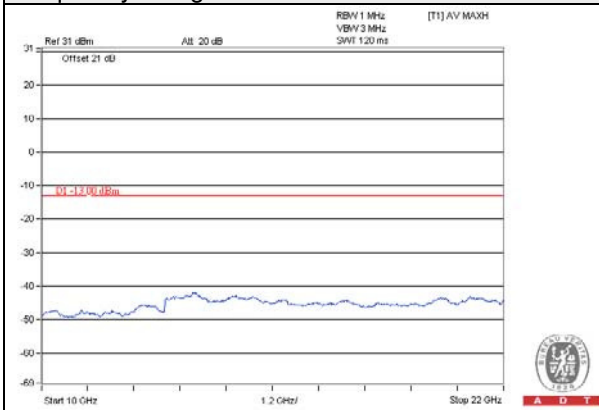
Frequency Range : 3GHz~10GHz



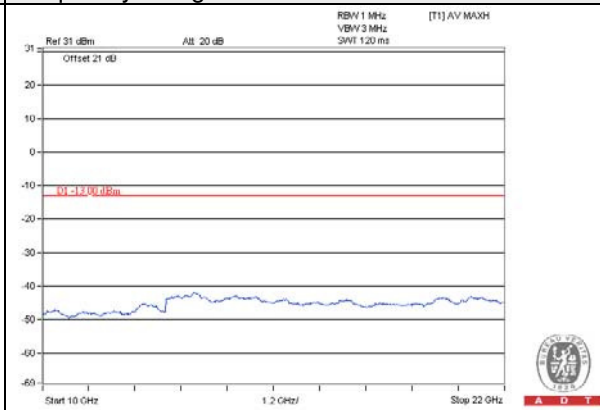
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



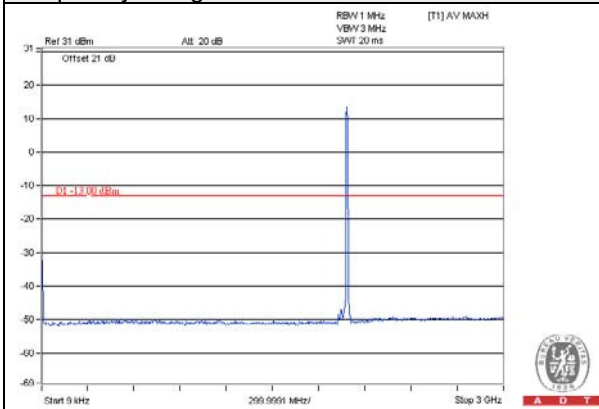
Frequency Range : 10GHz~22GHz



Frequency 1985.0

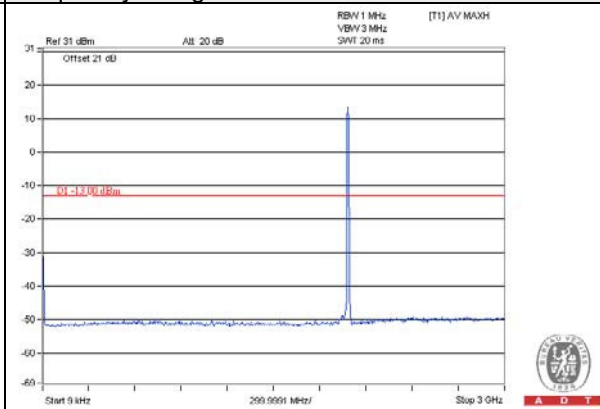
Chain 0

Frequency Range : 9kHz~3GHz

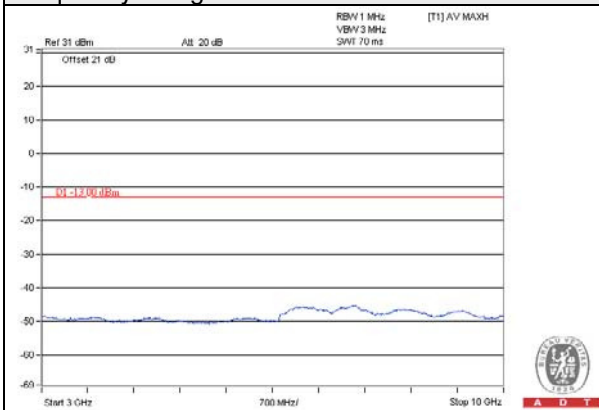


Chain 1

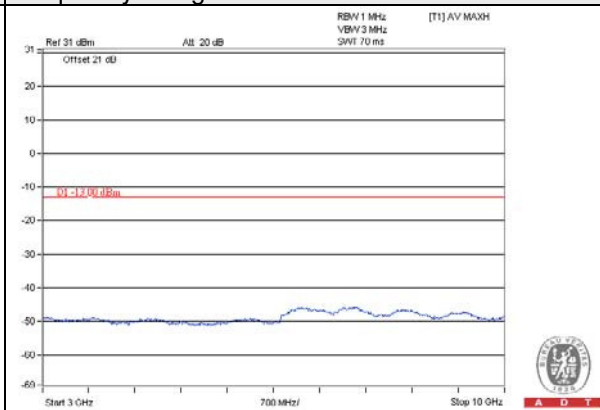
Frequency Range : 9kHz~3GHz



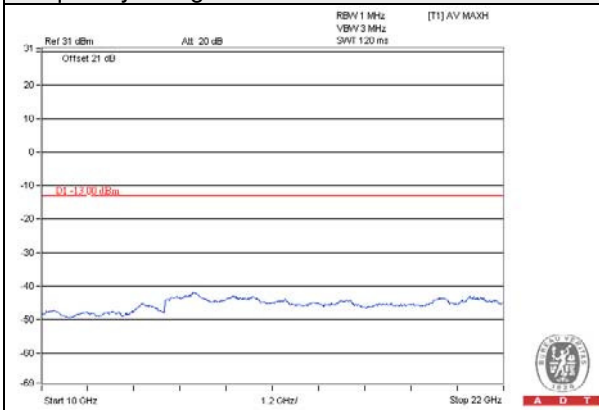
Frequency Range : 3GHz~10GHz



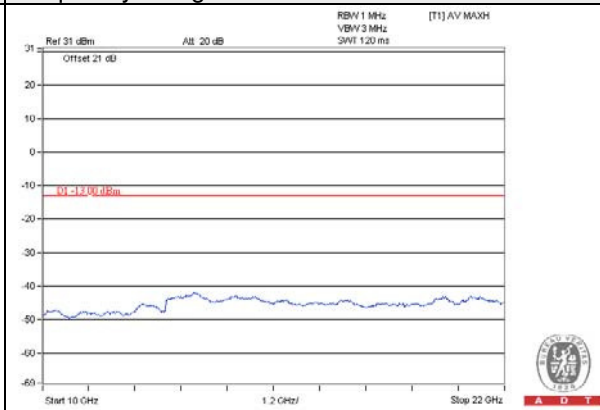
Frequency Range : 3GHz~10GHz



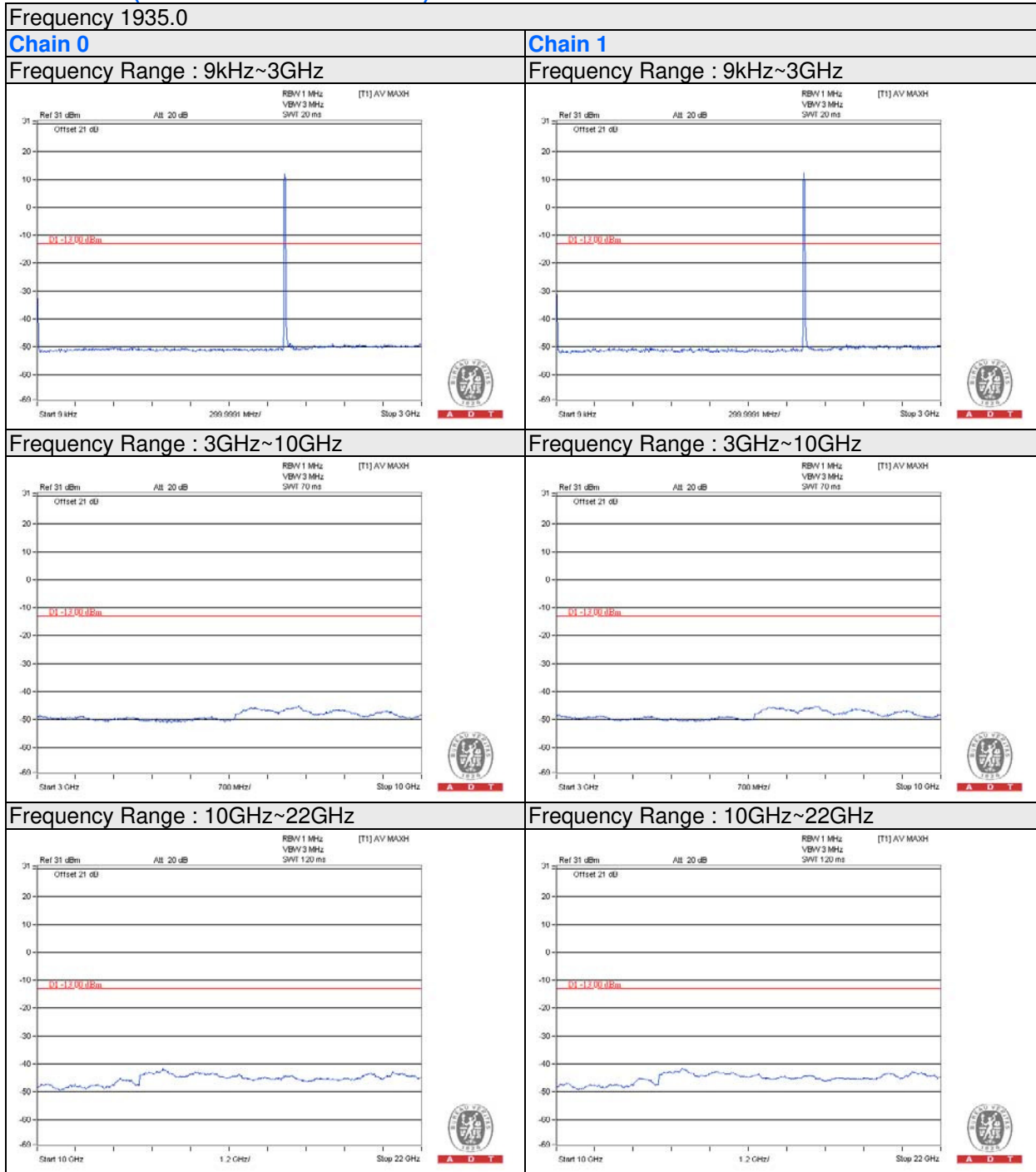
Frequency Range : 10GHz~22GHz



Frequency Range : 10GHz~22GHz



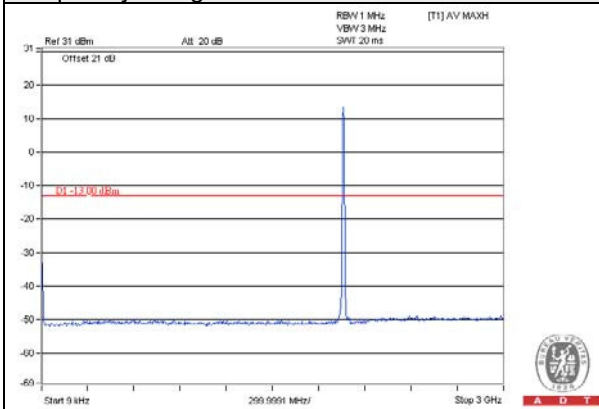
**LTE Band 2 (Channel Bandwidth 10MHz): 16QAM**



Frequency 1960.0

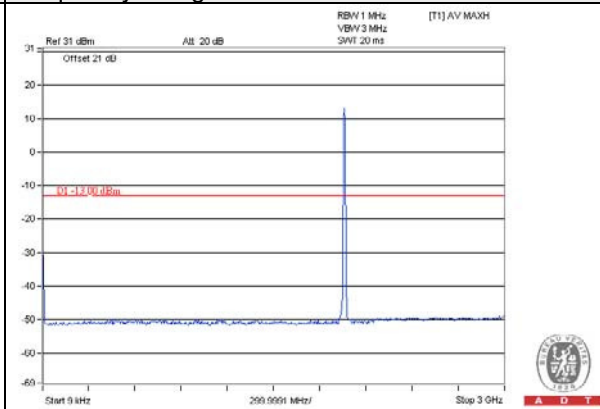
Chain 0

Frequency Range : 9kHz~3GHz

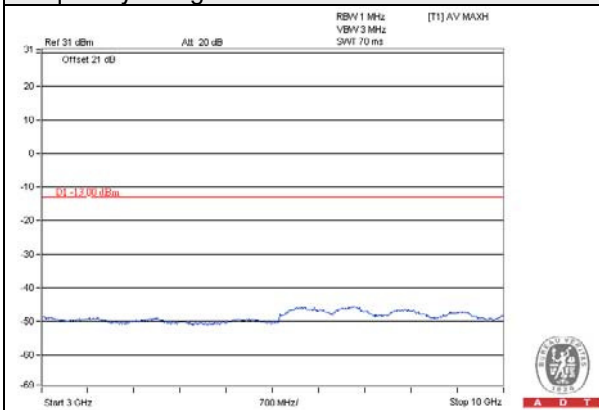


Chain 1

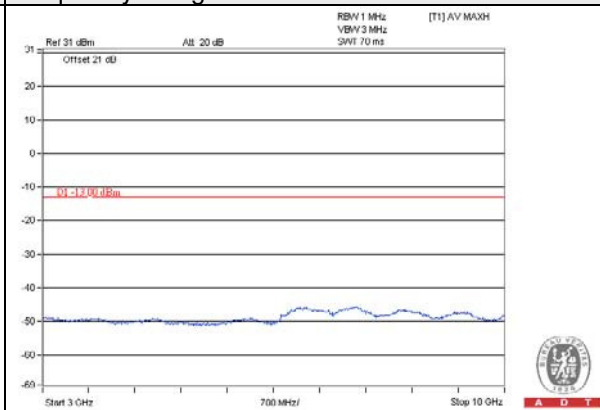
Frequency Range : 9kHz~3GHz



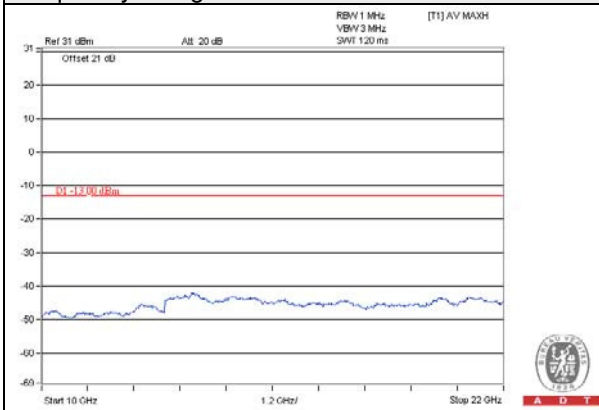
Frequency Range : 3GHz~10GHz



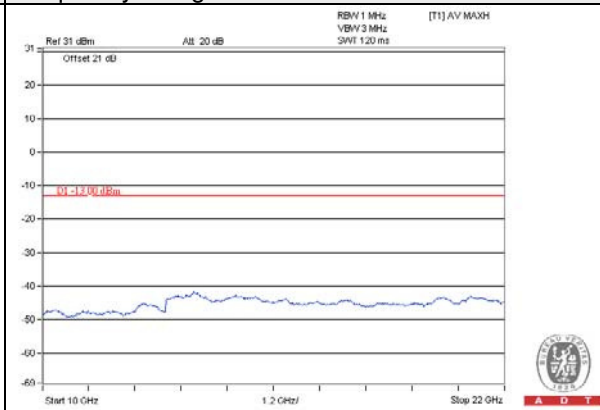
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



Frequency Range : 10GHz~22GHz

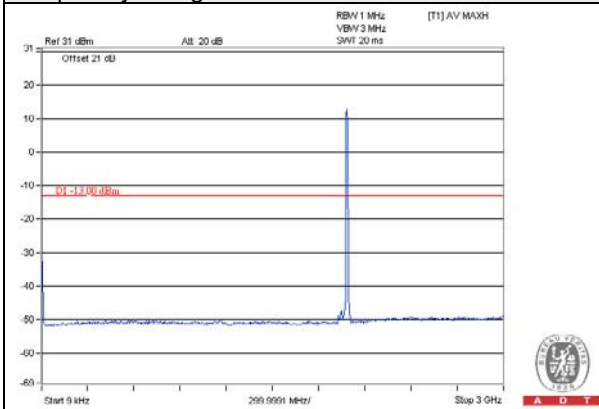




Frequency 1985.0

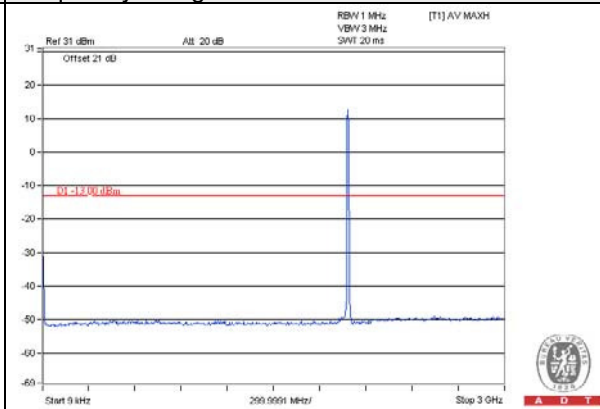
Chain 0

Frequency Range : 9kHz~3GHz

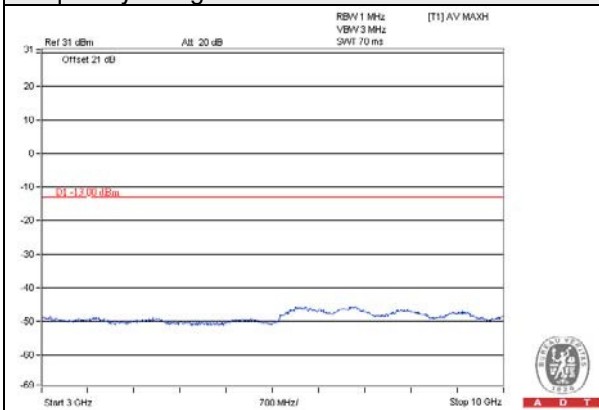


Chain 1

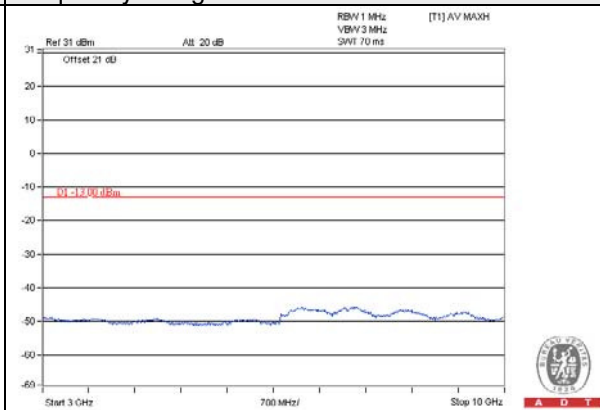
Frequency Range : 9kHz~3GHz



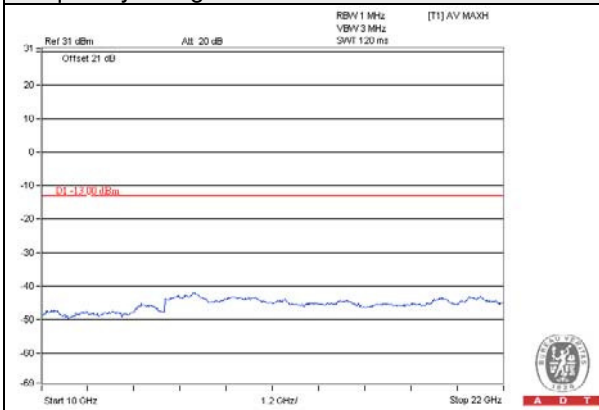
Frequency Range : 3GHz~10GHz



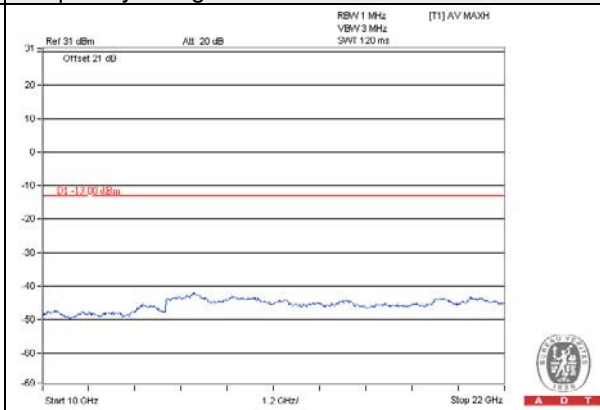
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



Frequency Range : 10GHz~22GHz



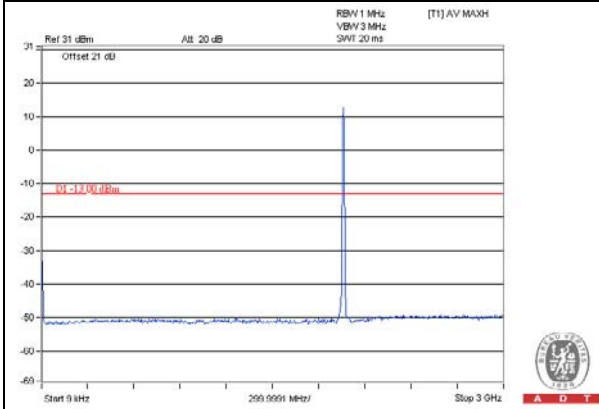
**LTE Band 2 (Channel Bandwidth 10MHz): 64QAM**



Frequency 1960.0

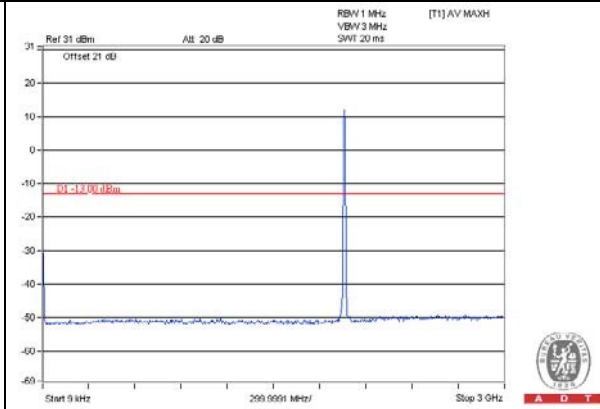
Chain 0

Frequency Range : 9kHz~3GHz

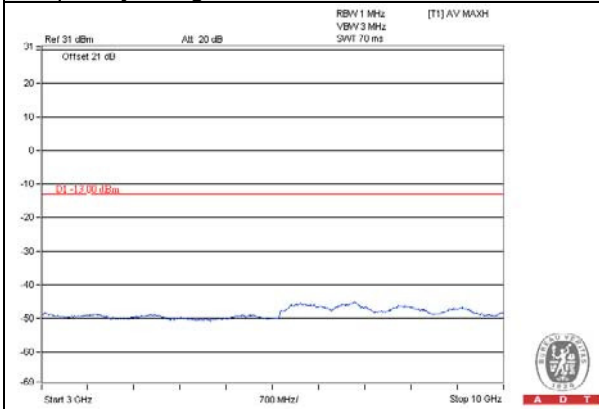


Chain 1

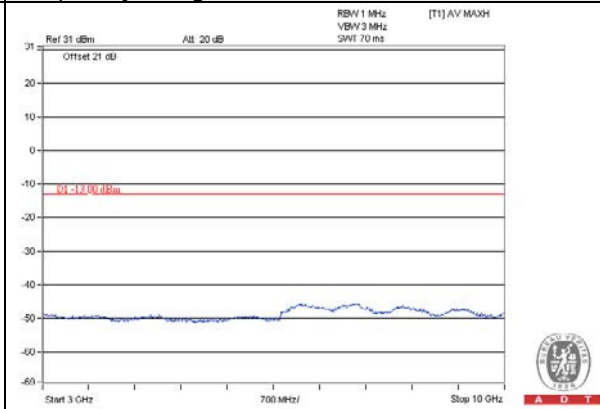
Frequency Range : 9kHz~3GHz



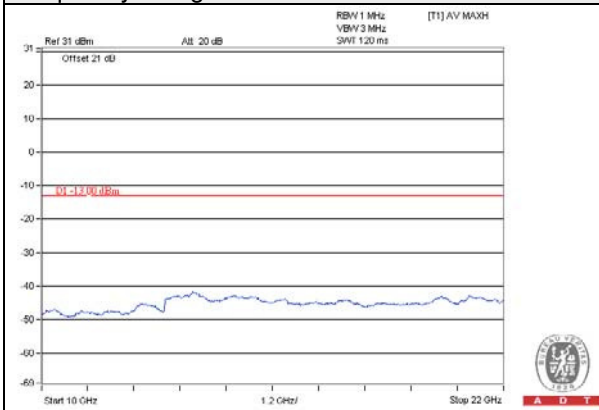
Frequency Range : 3GHz~10GHz



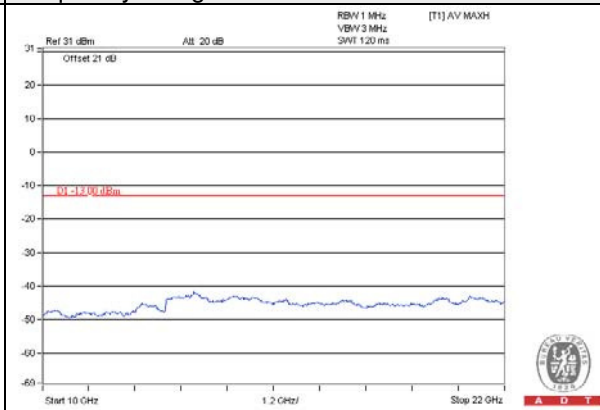
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



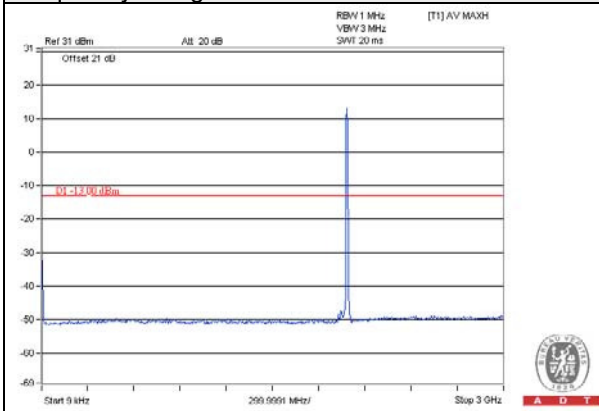
Frequency Range : 10GHz~22GHz



Frequency 1985.0

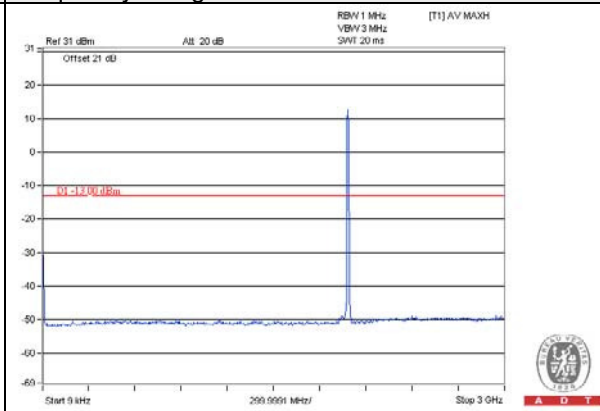
Chain 0

Frequency Range : 9kHz~3GHz

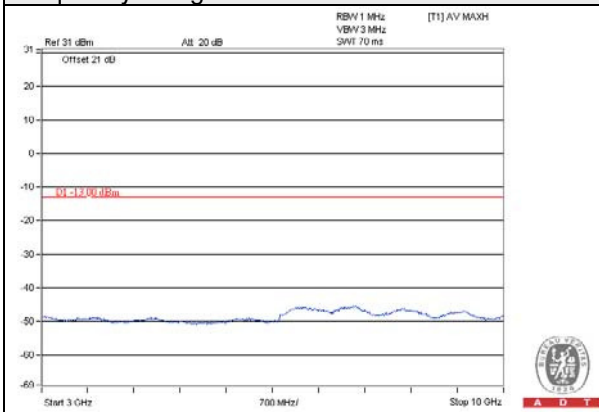


Chain 1

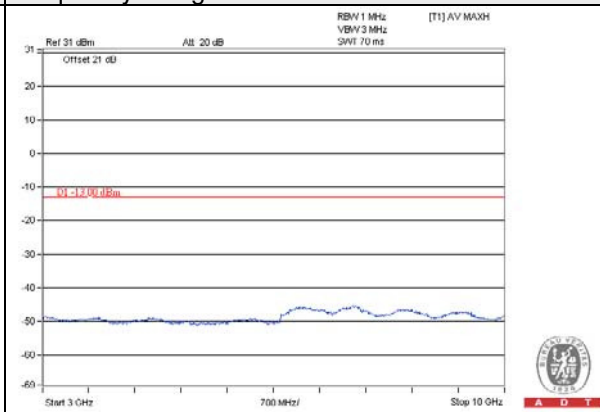
Frequency Range : 9kHz~3GHz



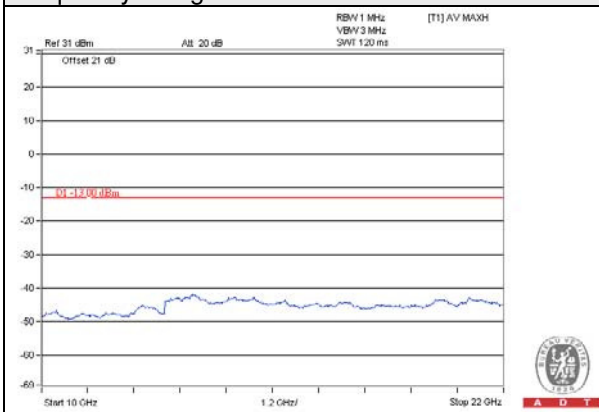
Frequency Range : 3GHz~10GHz



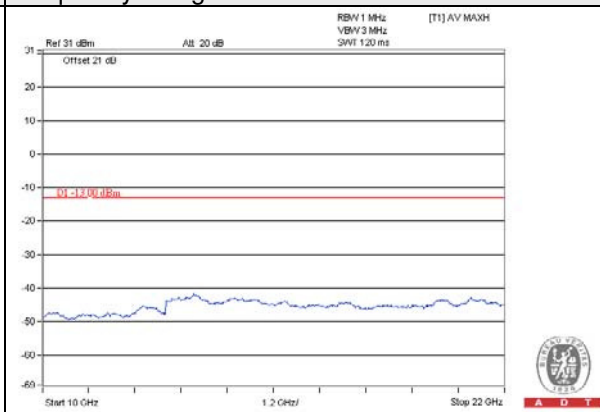
Frequency Range : 3GHz~10GHz



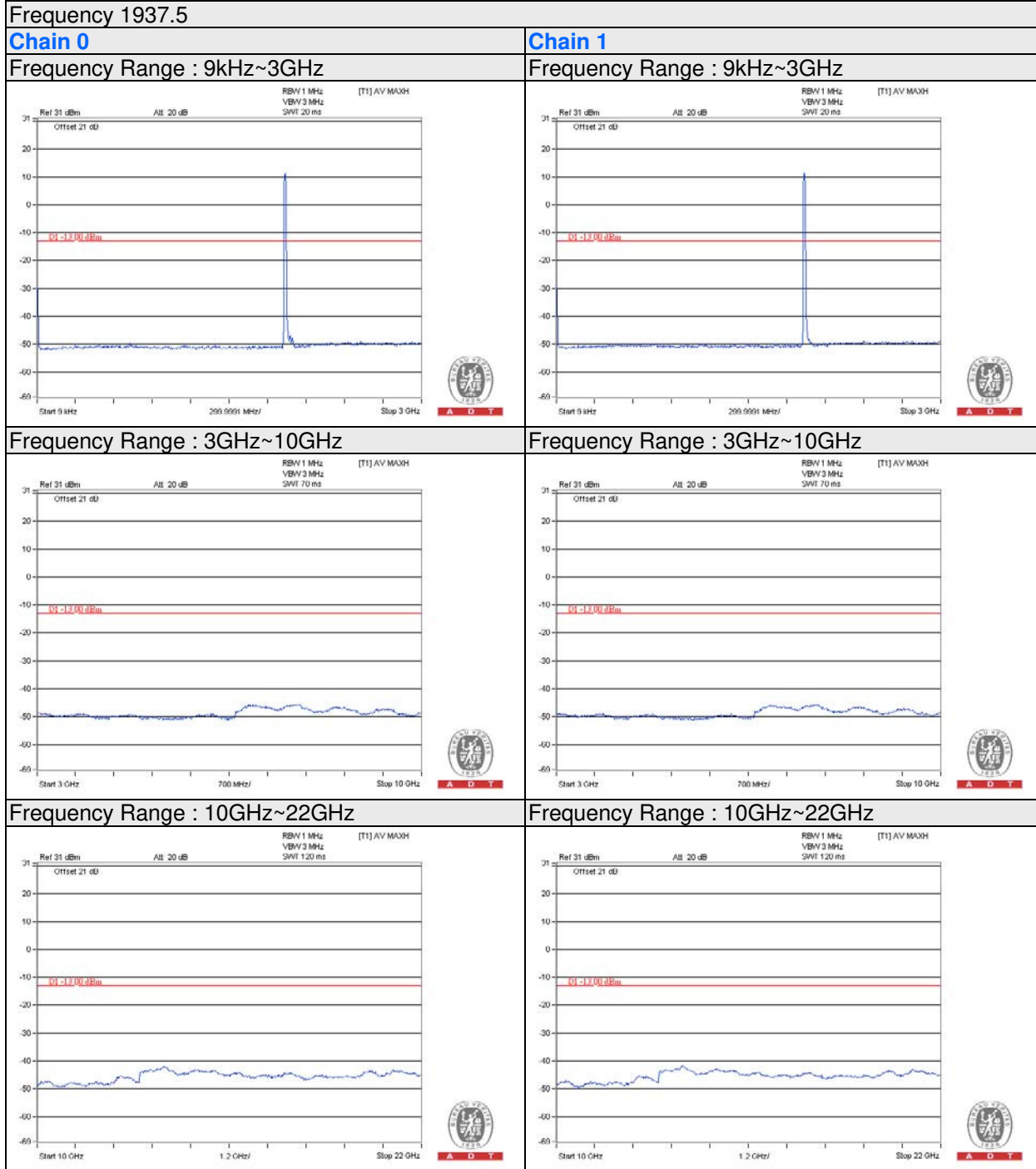
Frequency Range : 10GHz~22GHz



Frequency Range : 10GHz~22GHz



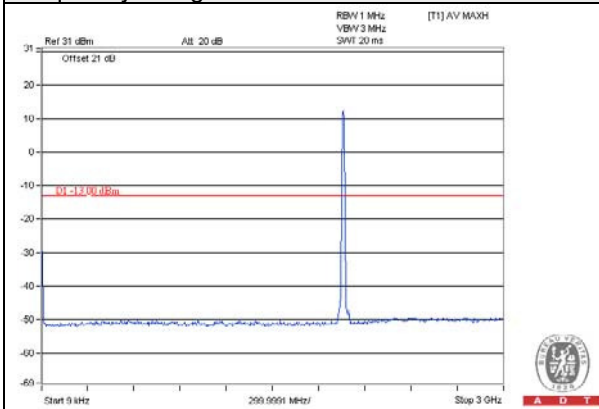
**LTE Band 2 (Channel Bandwidth 15MHz): QPSK**



Frequency 1960.0

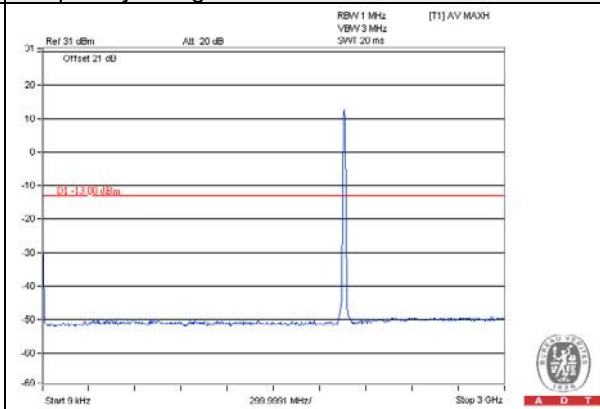
Chain 0

Frequency Range : 9kHz~3GHz

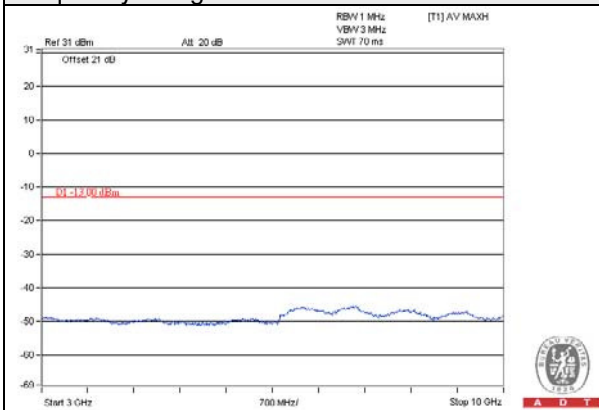


Chain 1

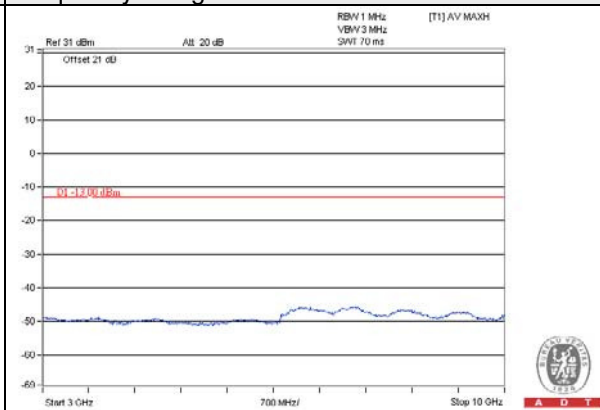
Frequency Range : 9kHz~3GHz



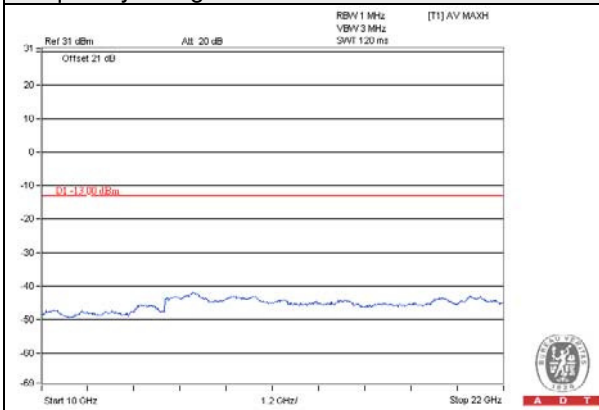
Frequency Range : 3GHz~10GHz



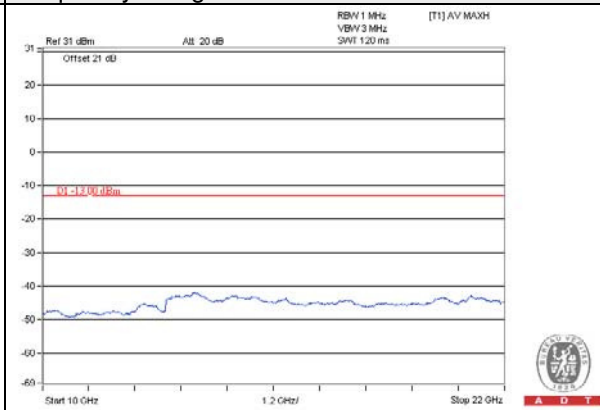
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



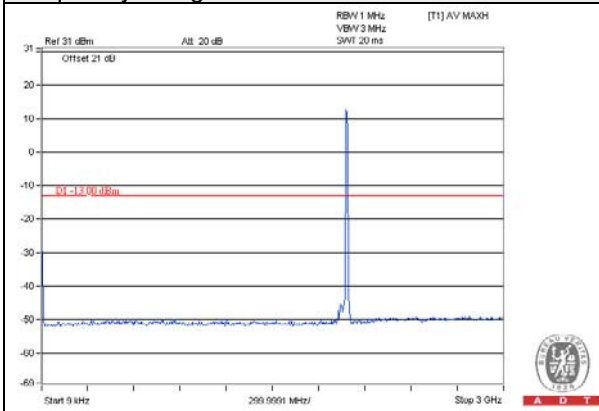
Frequency Range : 10GHz~22GHz



Frequency 1982.5

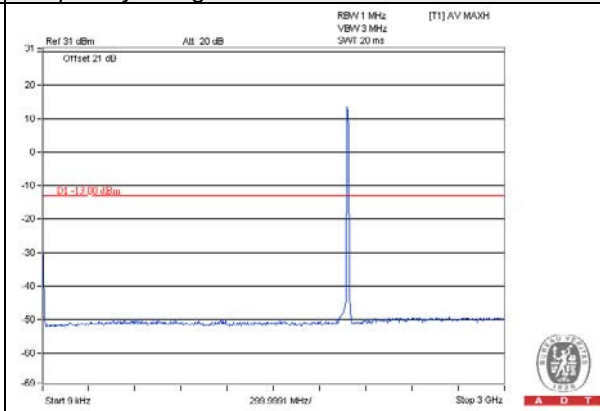
Chain 0

Frequency Range : 9kHz~3GHz

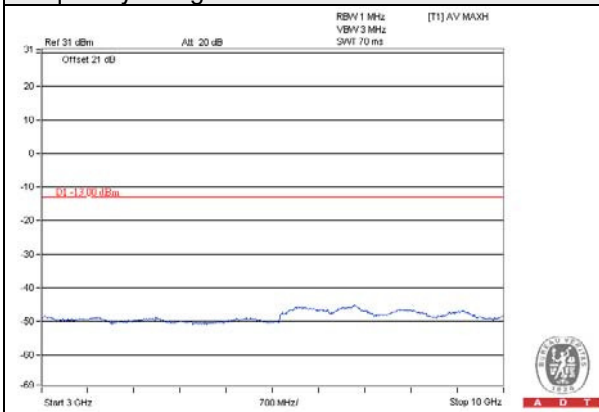


Chain 1

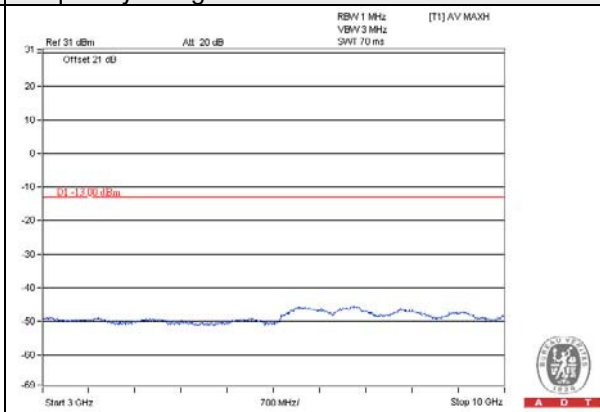
Frequency Range : 9kHz~3GHz



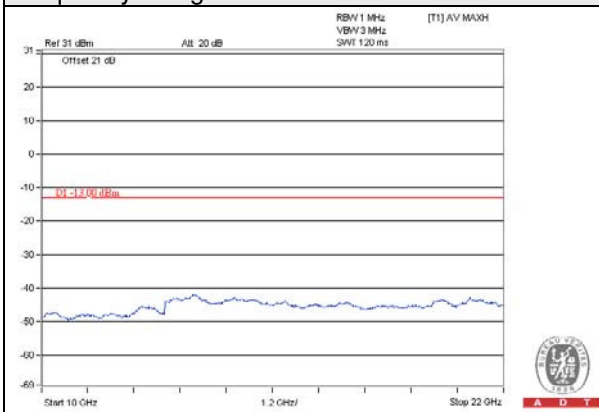
Frequency Range : 3GHz~10GHz



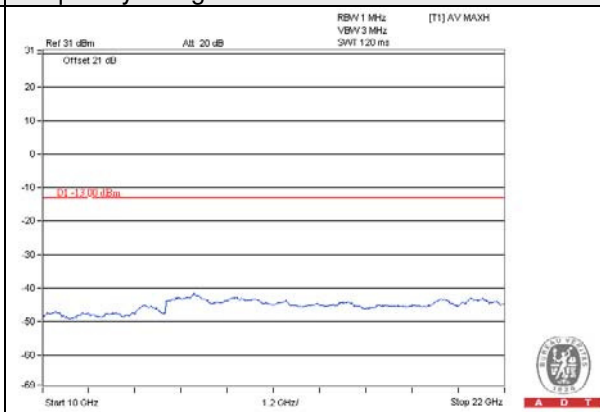
Frequency Range : 3GHz~10GHz



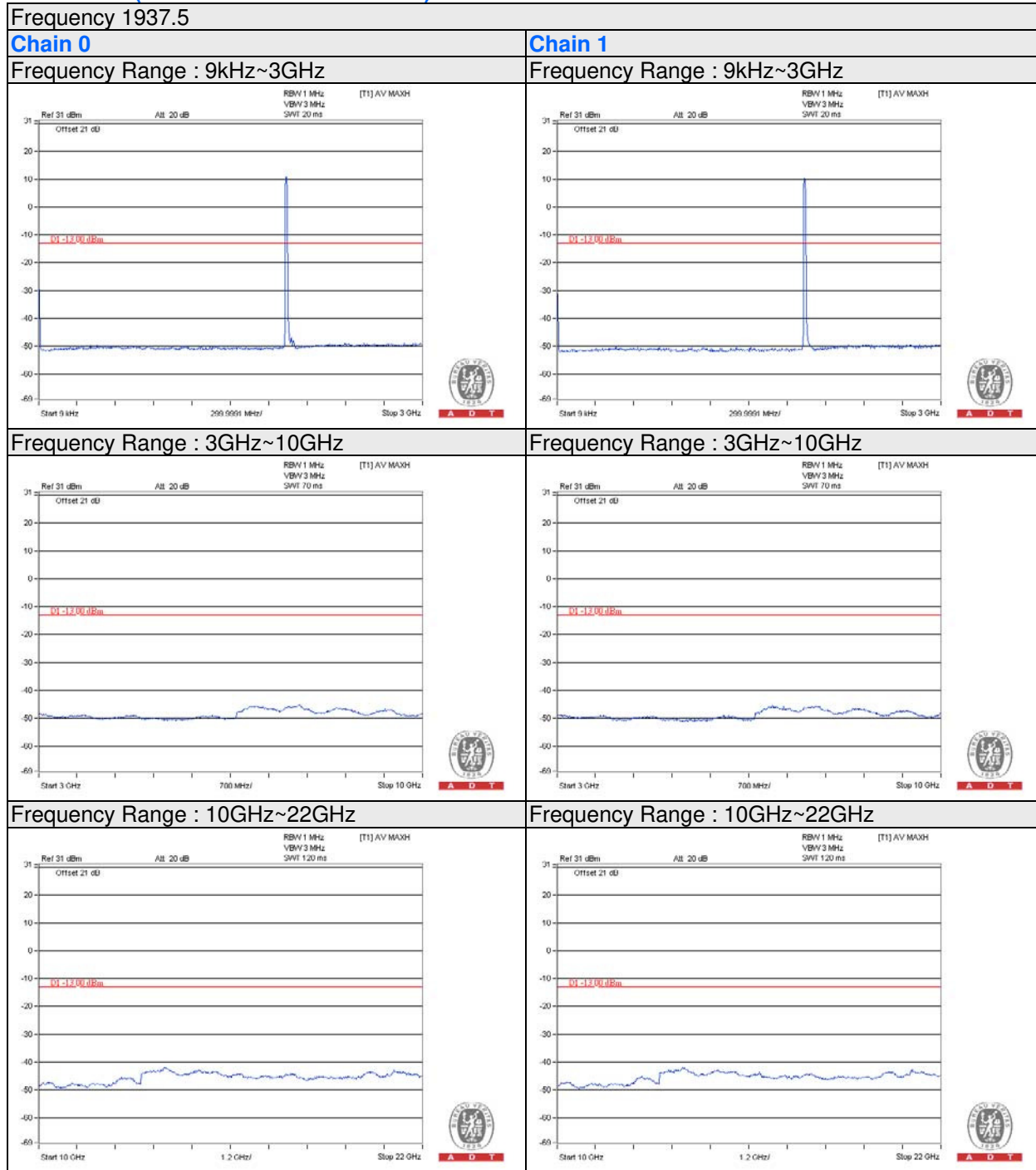
Frequency Range : 10GHz~22GHz



Frequency Range : 10GHz~22GHz



**LTE Band 2 (Channel Bandwidth 15MHz): 16QAM**

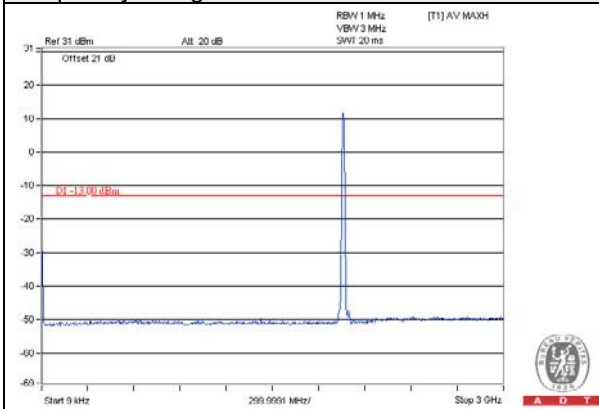




Frequency 1960.0

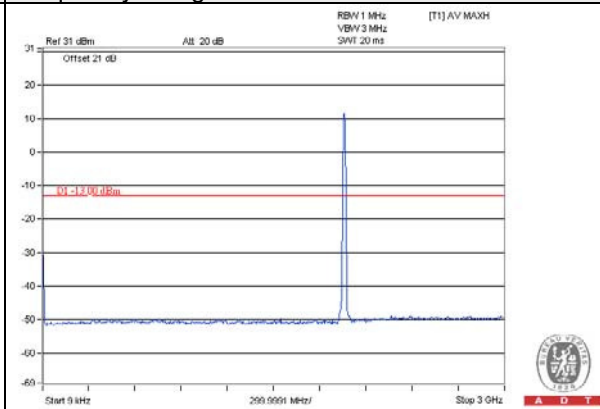
Chain 0

Frequency Range : 9kHz~3GHz

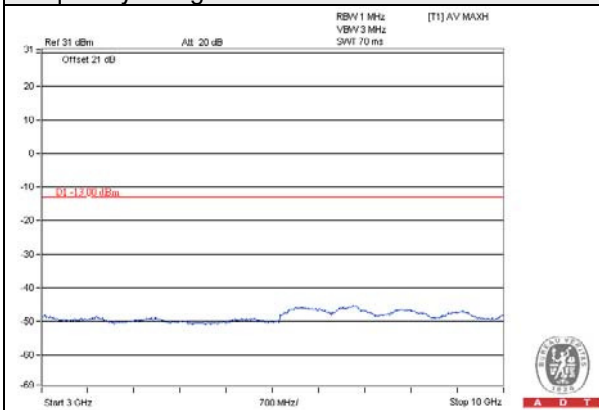


Chain 1

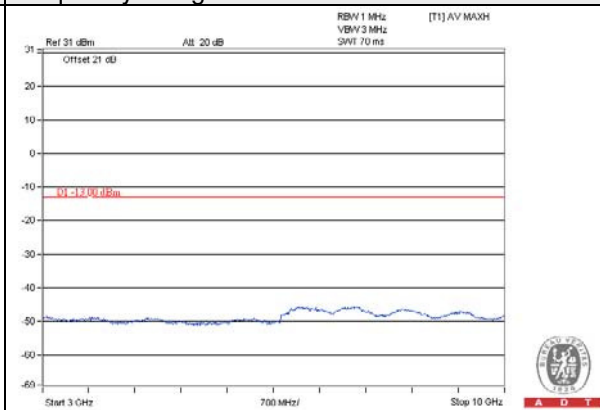
Frequency Range : 9kHz~3GHz



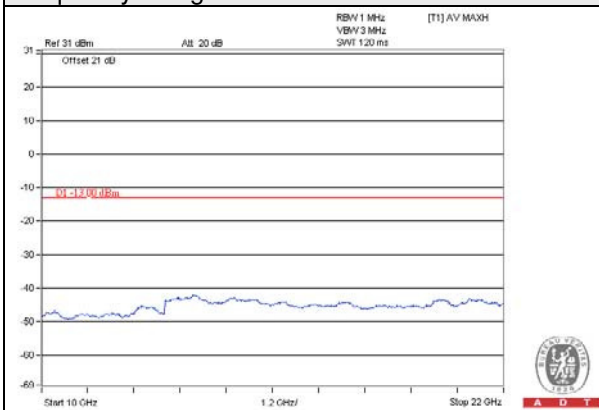
Frequency Range : 3GHz~10GHz



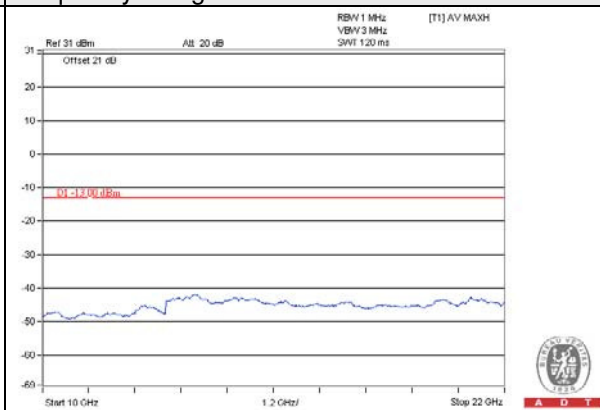
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



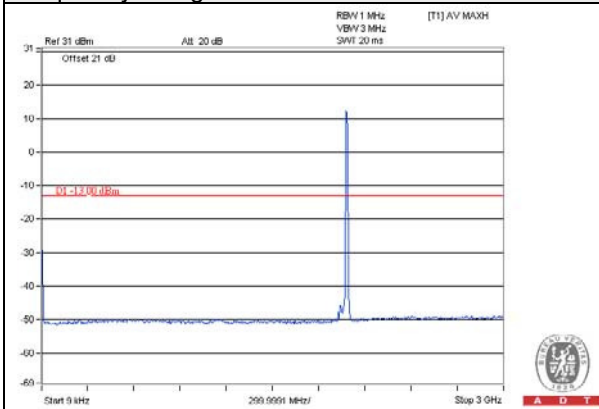
Frequency Range : 10GHz~22GHz



Frequency 1982.5

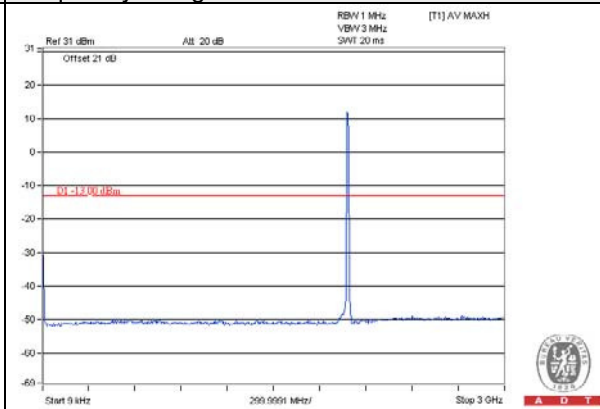
Chain 0

Frequency Range : 9kHz~3GHz

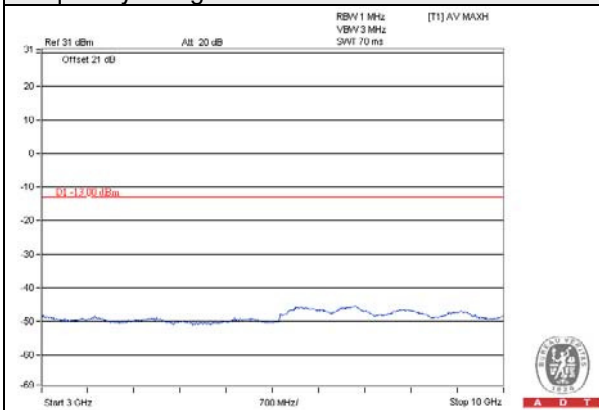


Chain 1

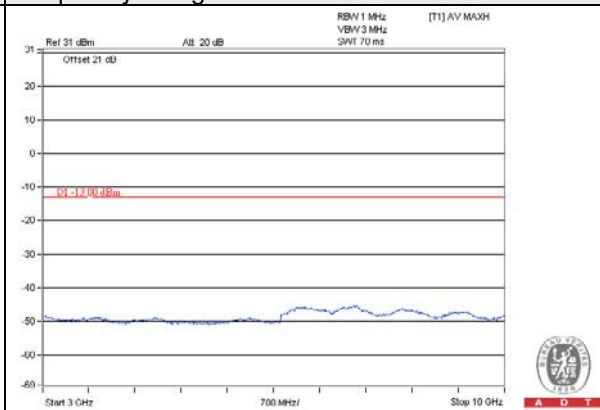
Frequency Range : 9kHz~3GHz



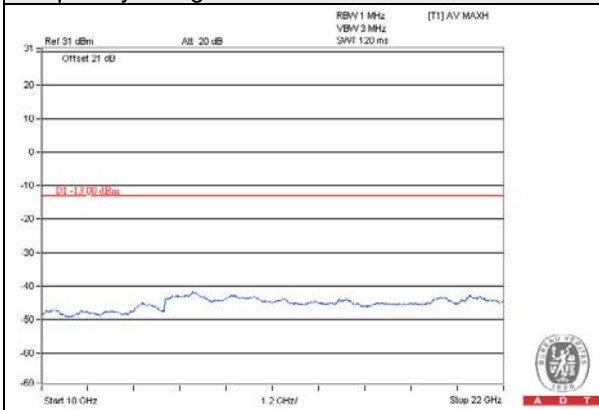
Frequency Range : 3GHz~10GHz



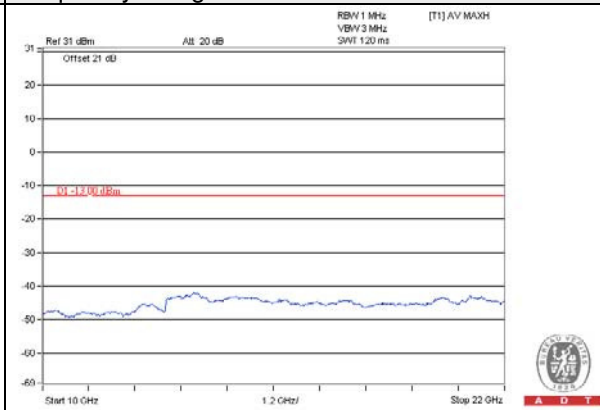
Frequency Range : 3GHz~10GHz



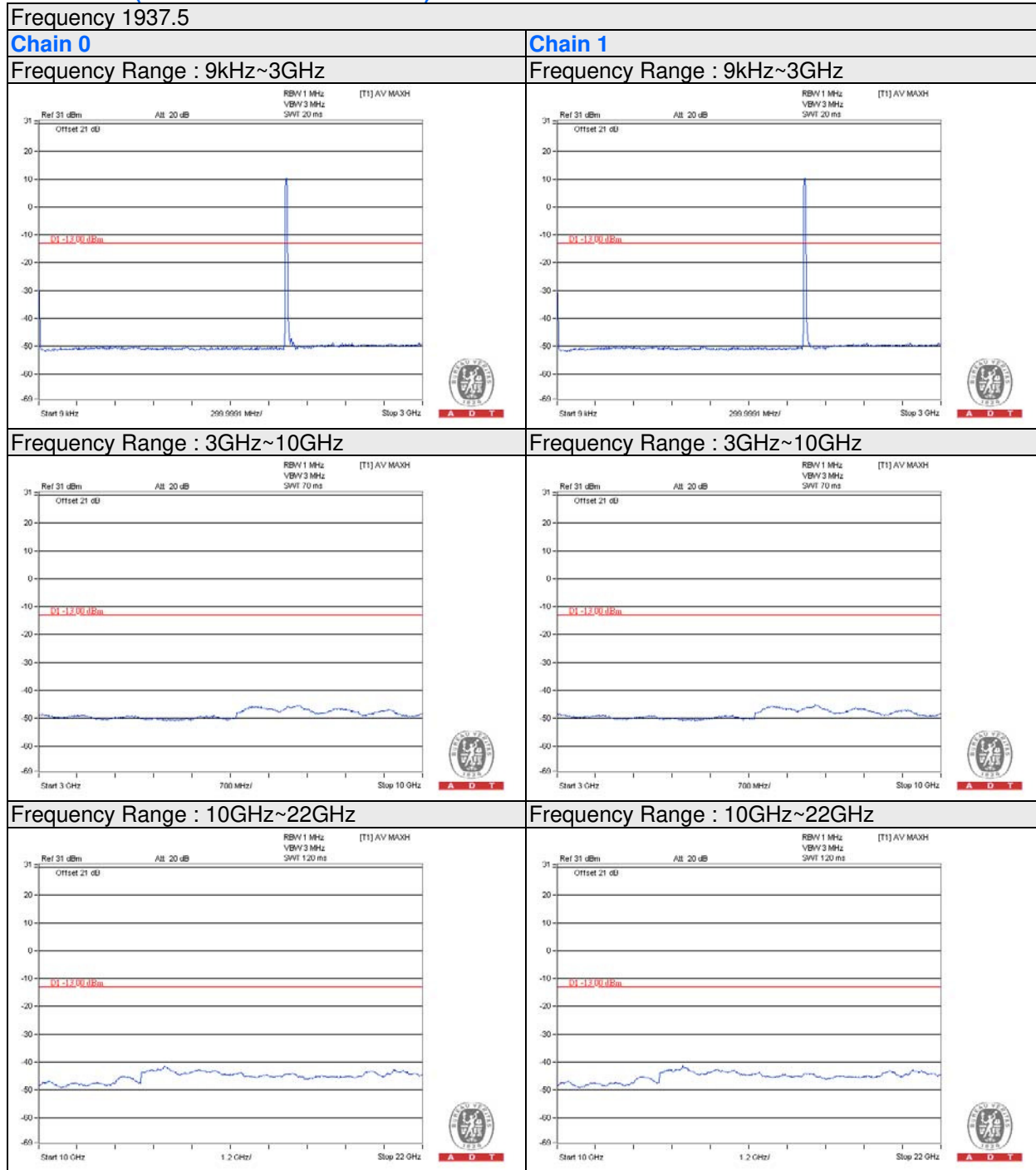
Frequency Range : 10GHz~22GHz



Frequency Range : 10GHz~22GHz



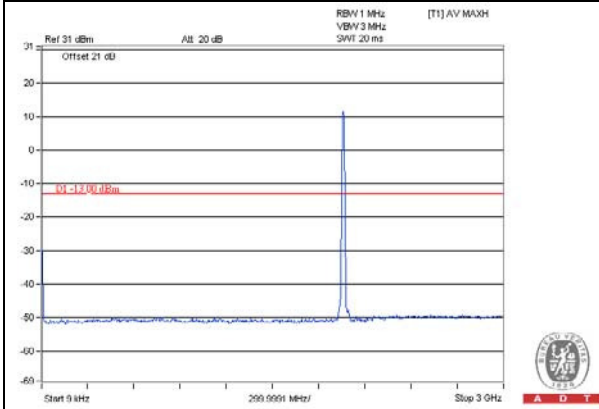
### LTE Band 2 (Channel Bandwidth 15MHz): 64QAM



Frequency 1960.0

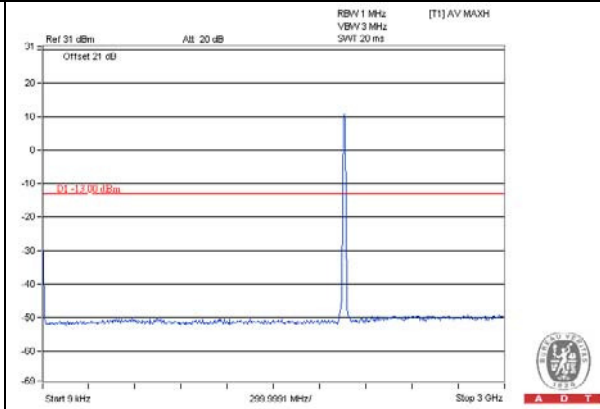
Chain 0

Frequency Range : 9kHz~3GHz

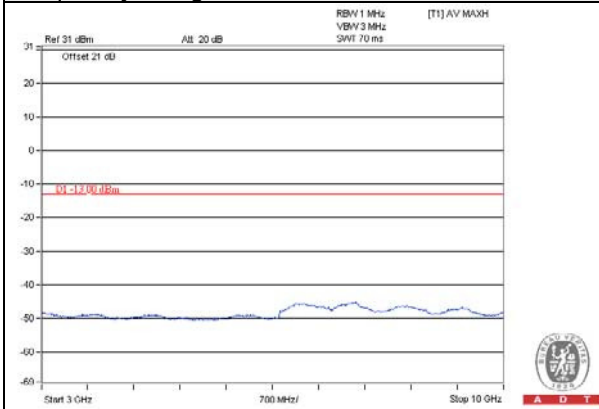


Chain 1

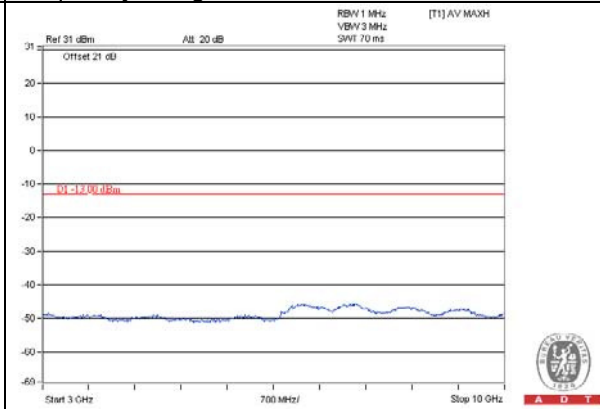
Frequency Range : 9kHz~3GHz



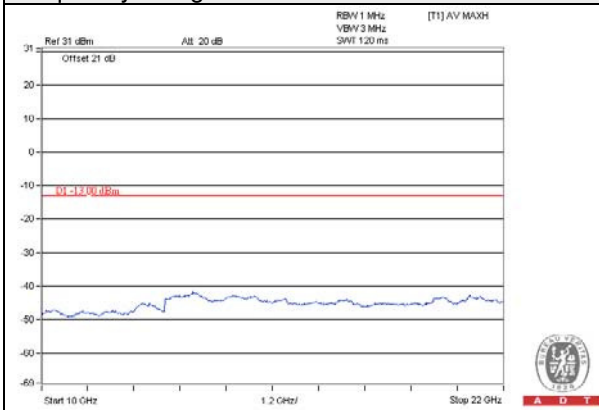
Frequency Range : 3GHz~10GHz



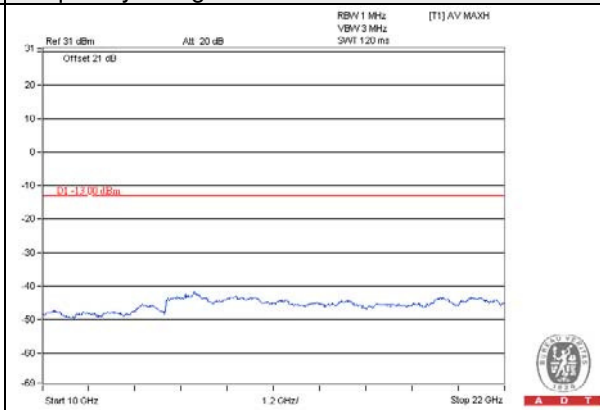
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



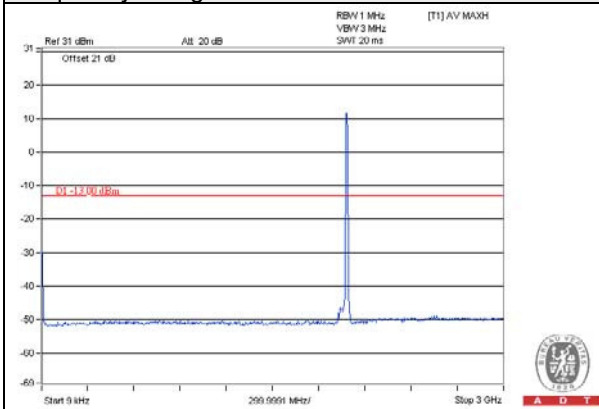
Frequency Range : 10GHz~22GHz



Frequency 1982.5

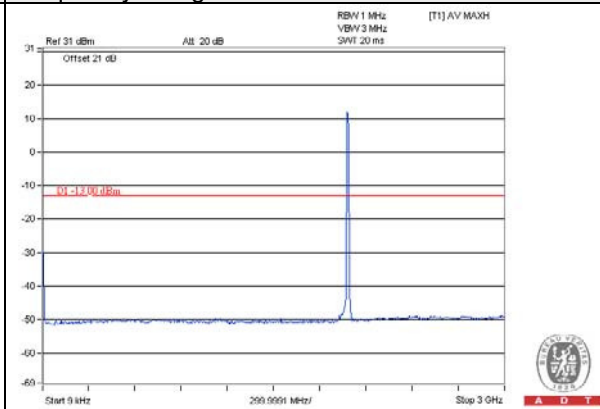
Chain 0

Frequency Range : 9kHz~3GHz

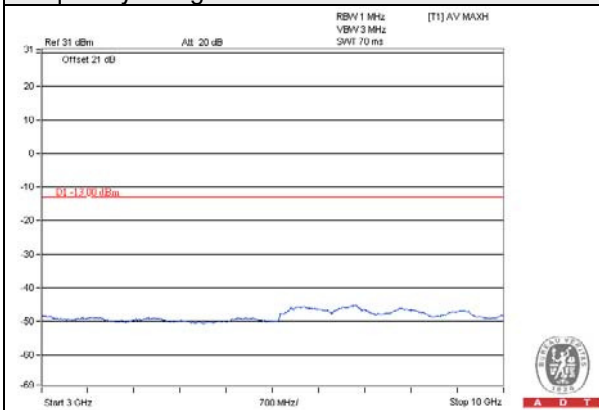


Chain 1

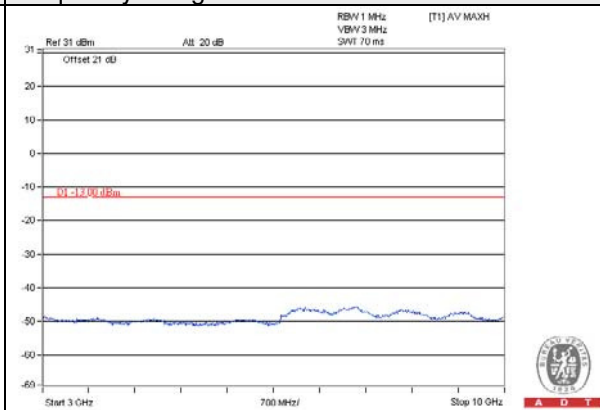
Frequency Range : 9kHz~3GHz



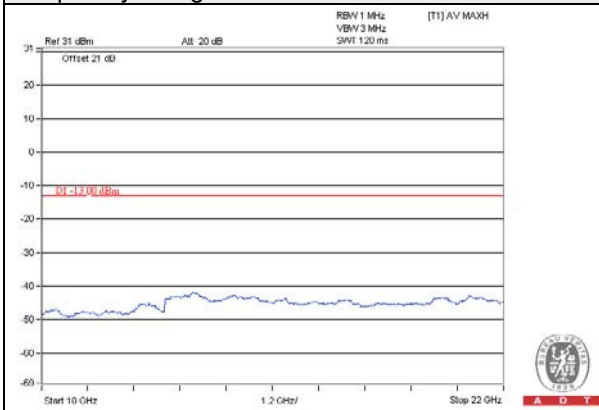
Frequency Range : 3GHz~10GHz



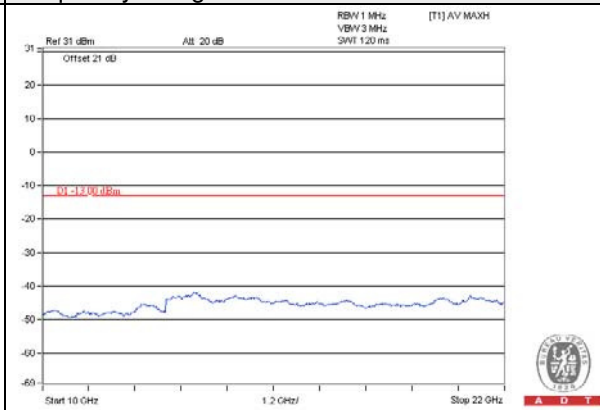
Frequency Range : 3GHz~10GHz



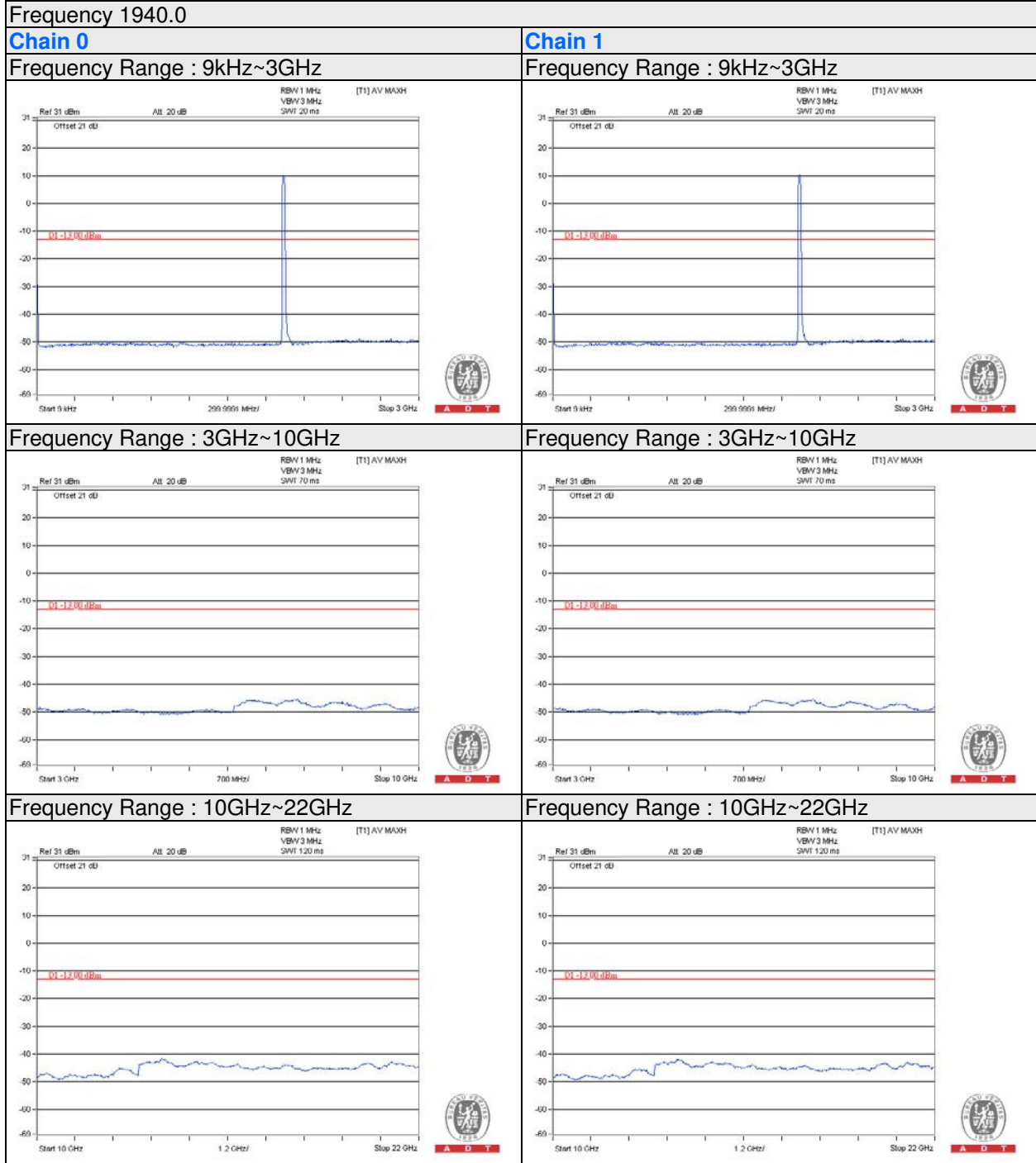
Frequency Range : 10GHz~22GHz



Frequency Range : 10GHz~22GHz



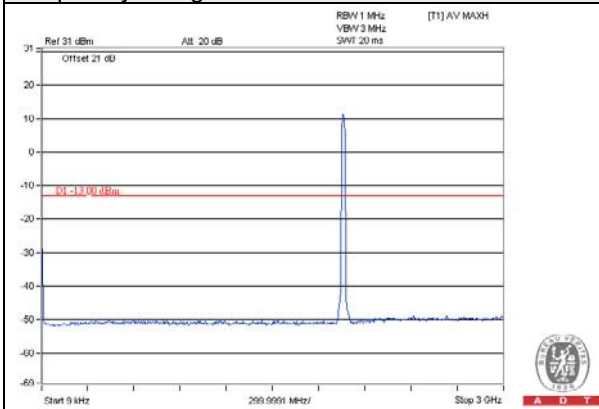
**LTE Band 2 (Channel Bandwidth 20MHz): QPSK**



Frequency 1960.0

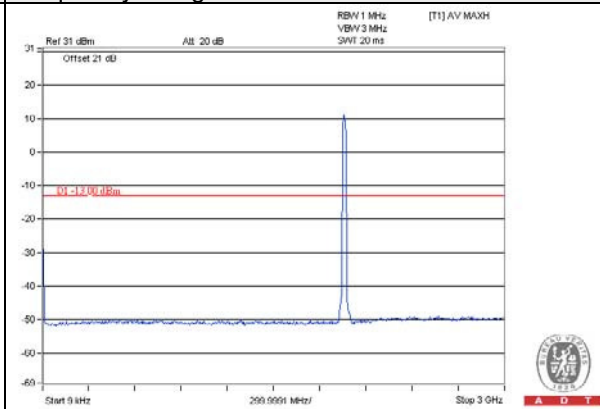
Chain 0

Frequency Range : 9kHz~3GHz

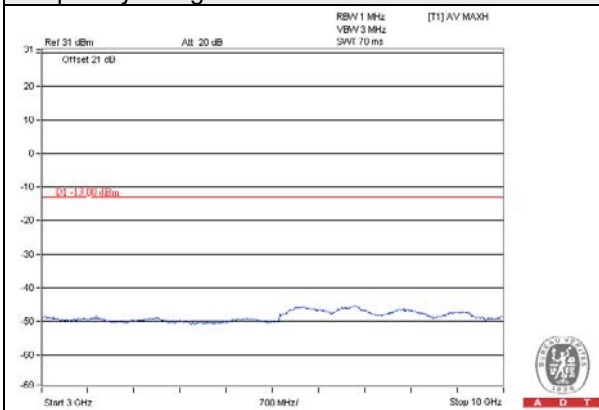


Chain 1

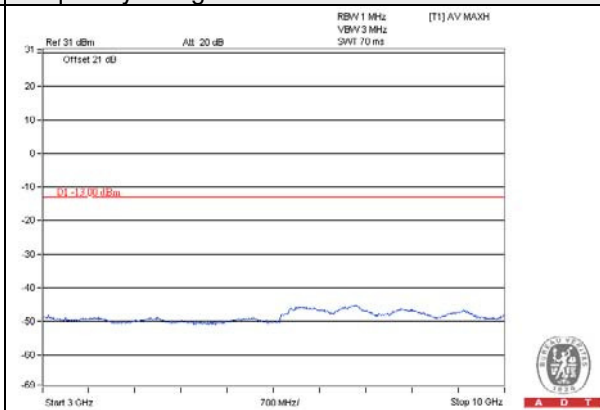
Frequency Range : 9kHz~3GHz



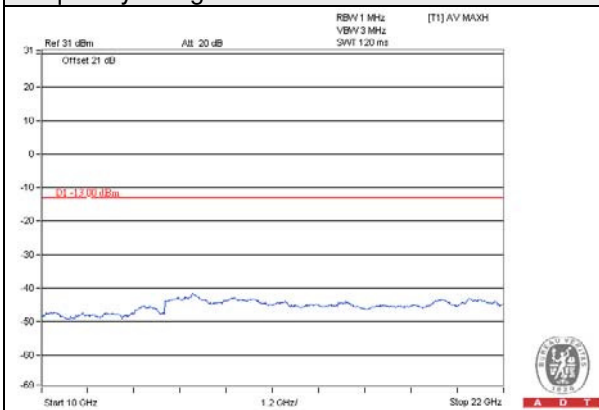
Frequency Range : 3GHz~10GHz



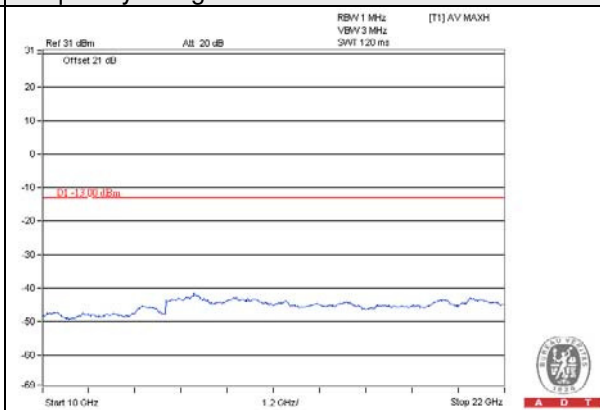
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



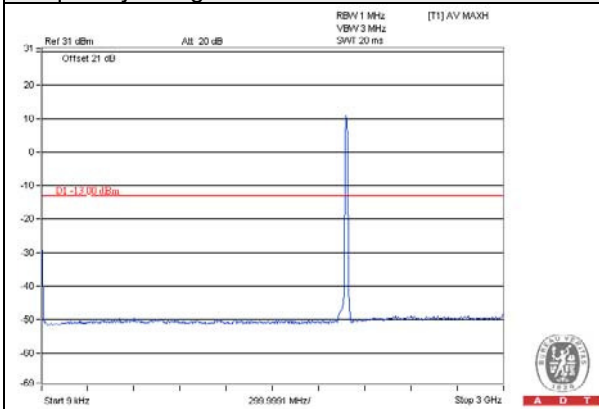
Frequency Range : 10GHz~22GHz



Frequency 1980.0

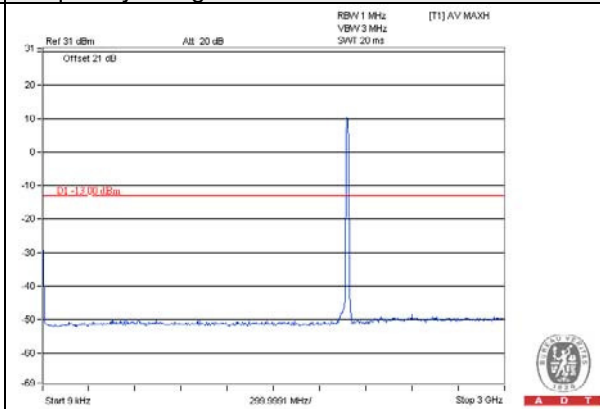
Chain 0

Frequency Range : 9kHz~3GHz

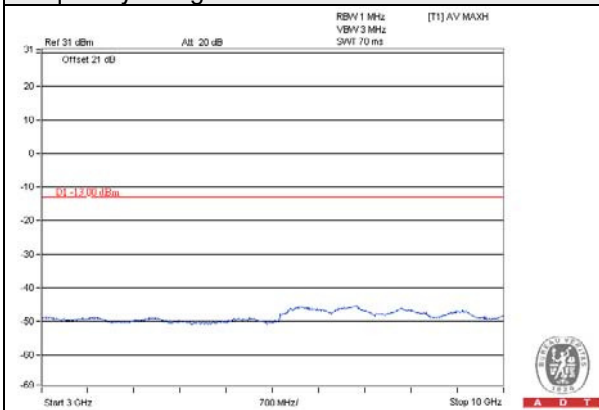


Chain 1

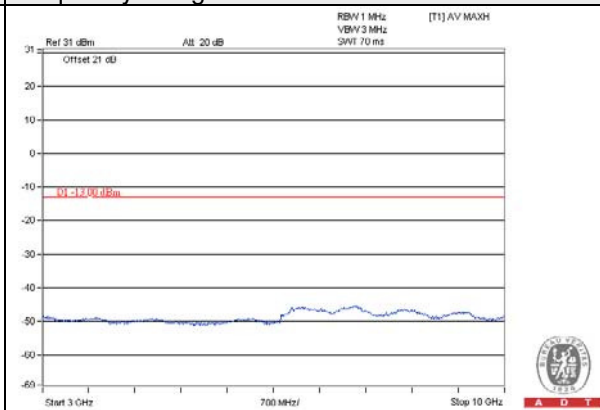
Frequency Range : 9kHz~3GHz



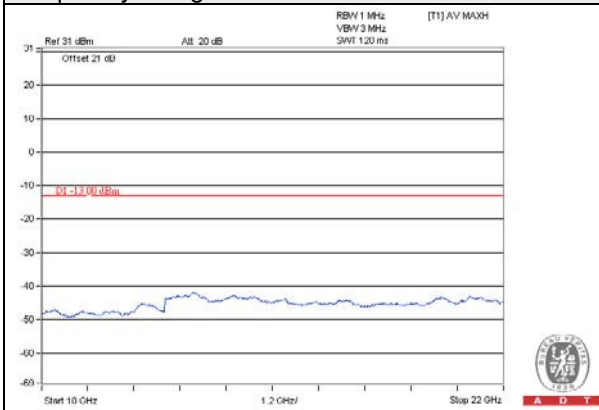
Frequency Range : 3GHz~10GHz



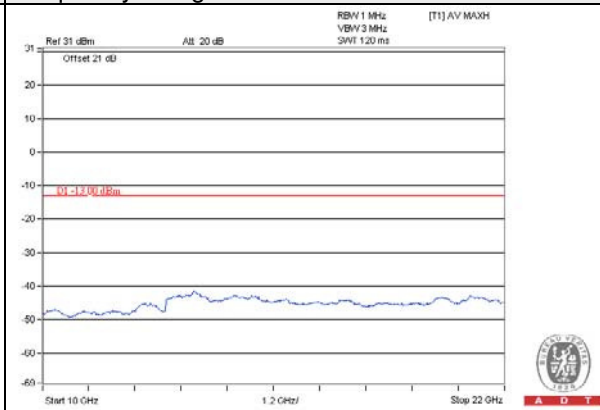
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz

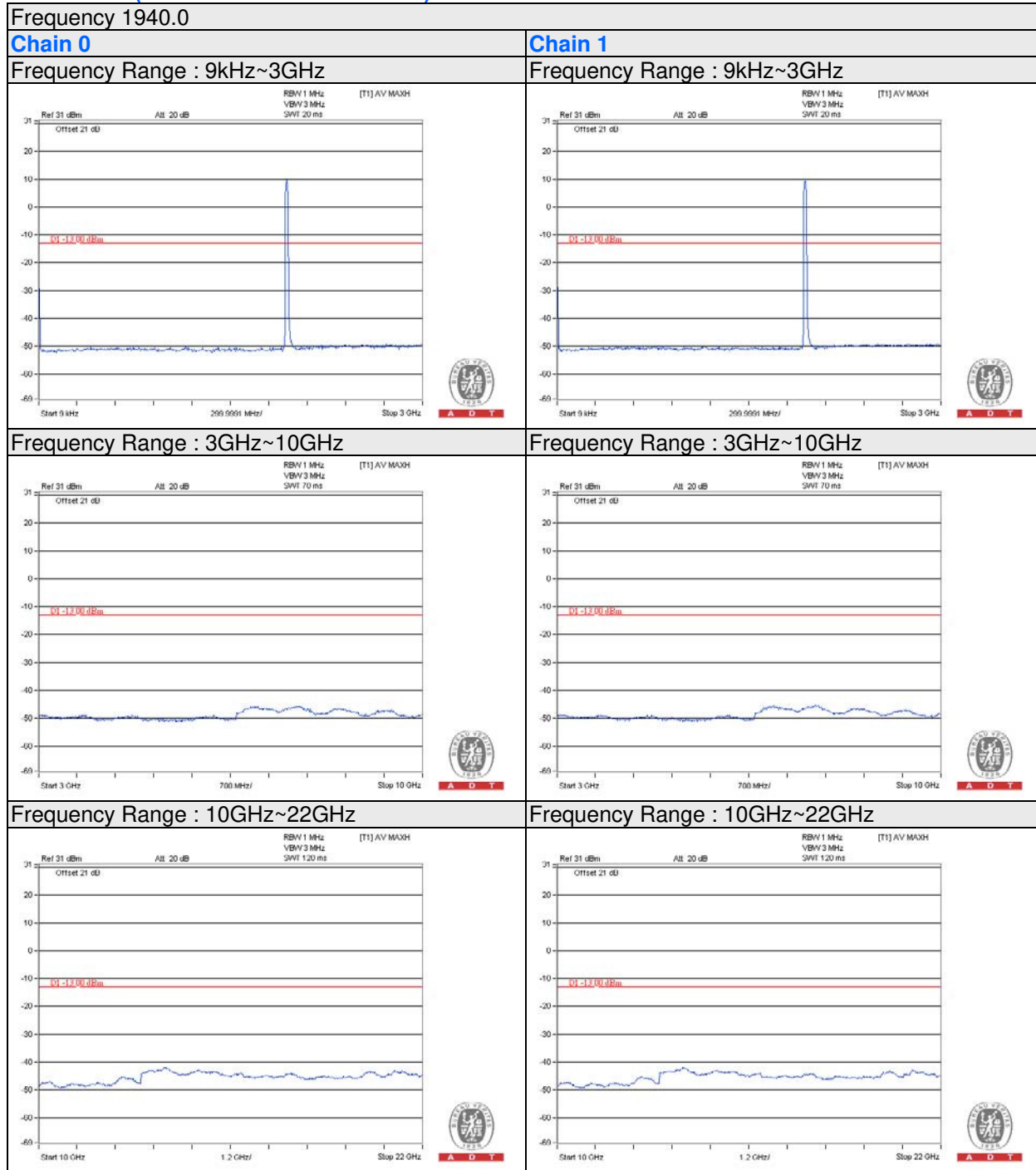


Frequency Range : 10GHz~22GHz





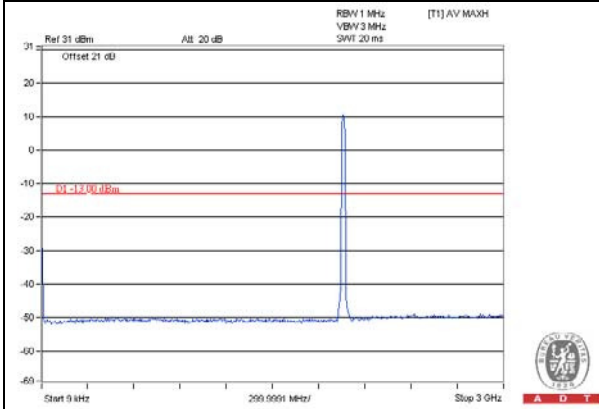
**LTE Band 2 (Channel Bandwidth 20MHz): 16QAM**



Frequency 1960.0

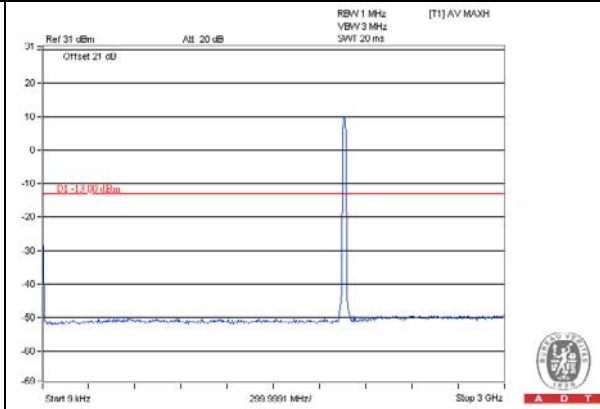
Chain 0

Frequency Range : 9kHz~3GHz

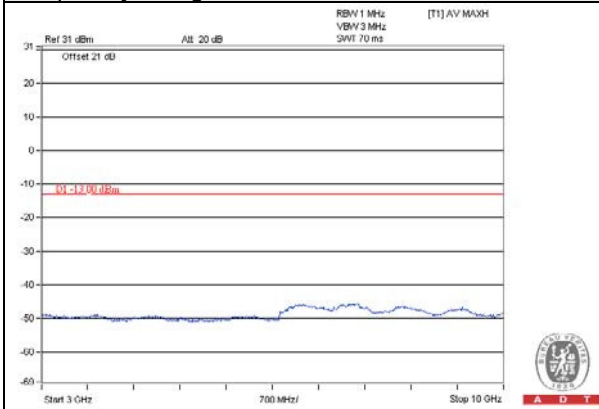


Chain 1

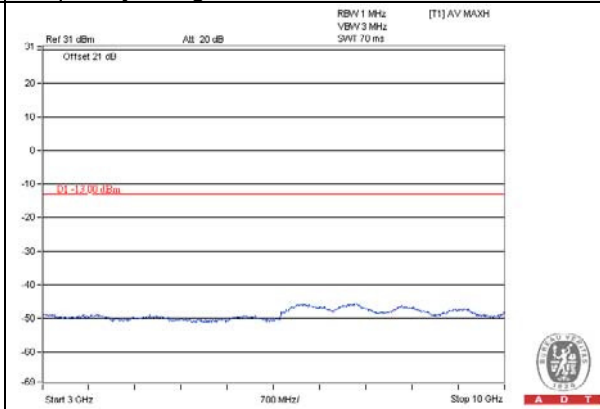
Frequency Range : 9kHz~3GHz



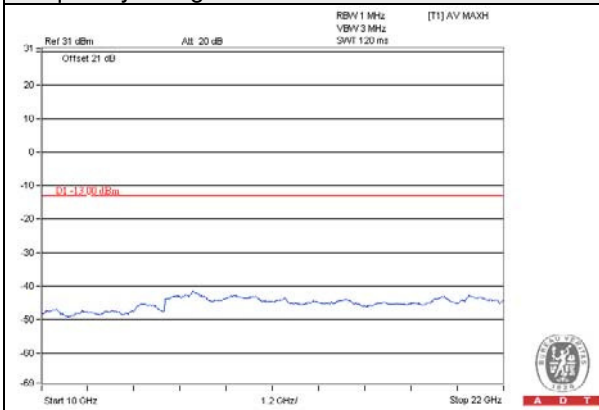
Frequency Range : 3GHz~10GHz



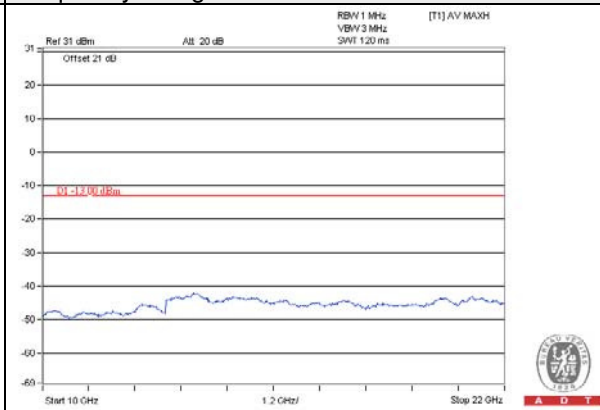
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



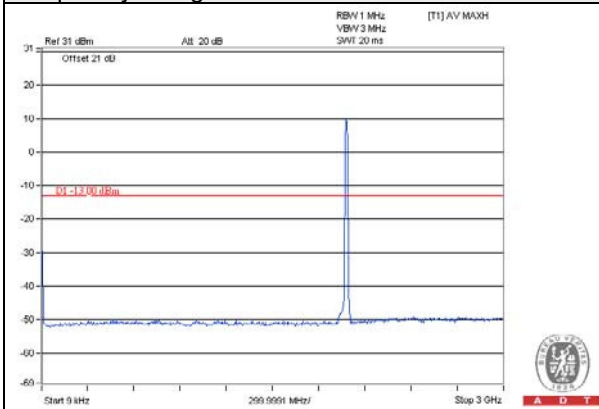
Frequency Range : 10GHz~22GHz



Frequency 1980.0

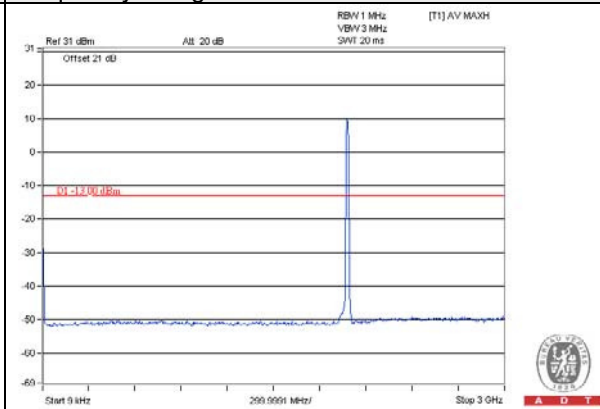
Chain 0

Frequency Range : 9kHz~3GHz

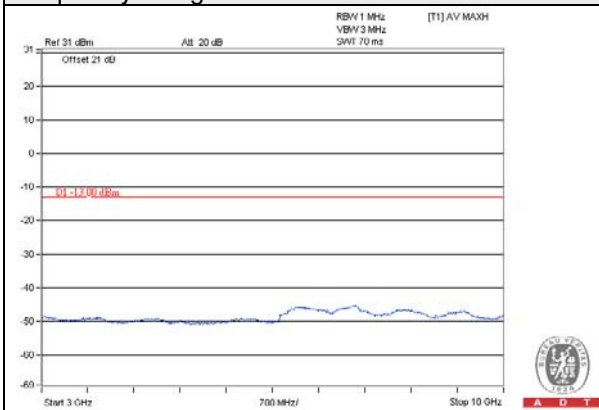


Chain 1

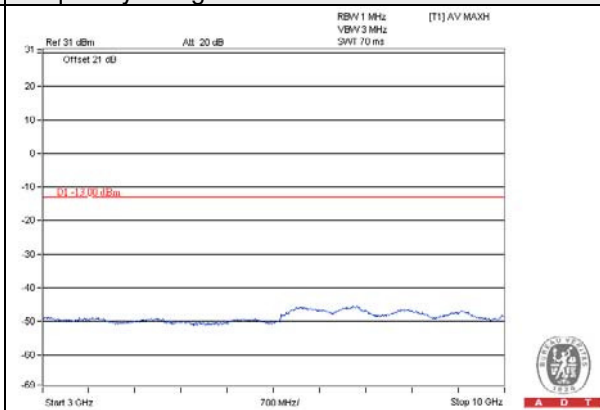
Frequency Range : 9kHz~3GHz



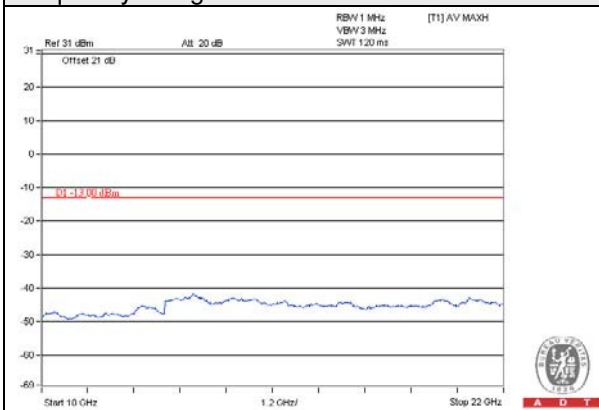
Frequency Range : 3GHz~10GHz



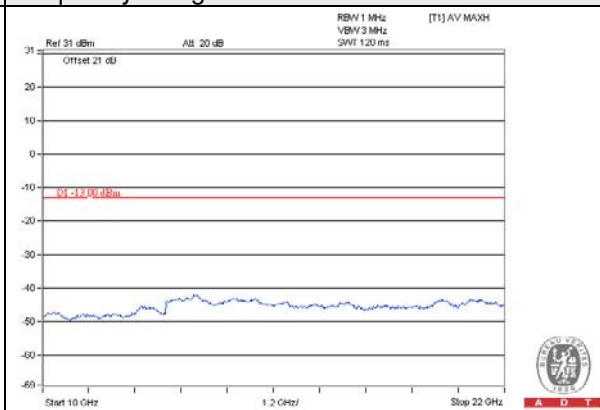
Frequency Range : 3GHz~10GHz



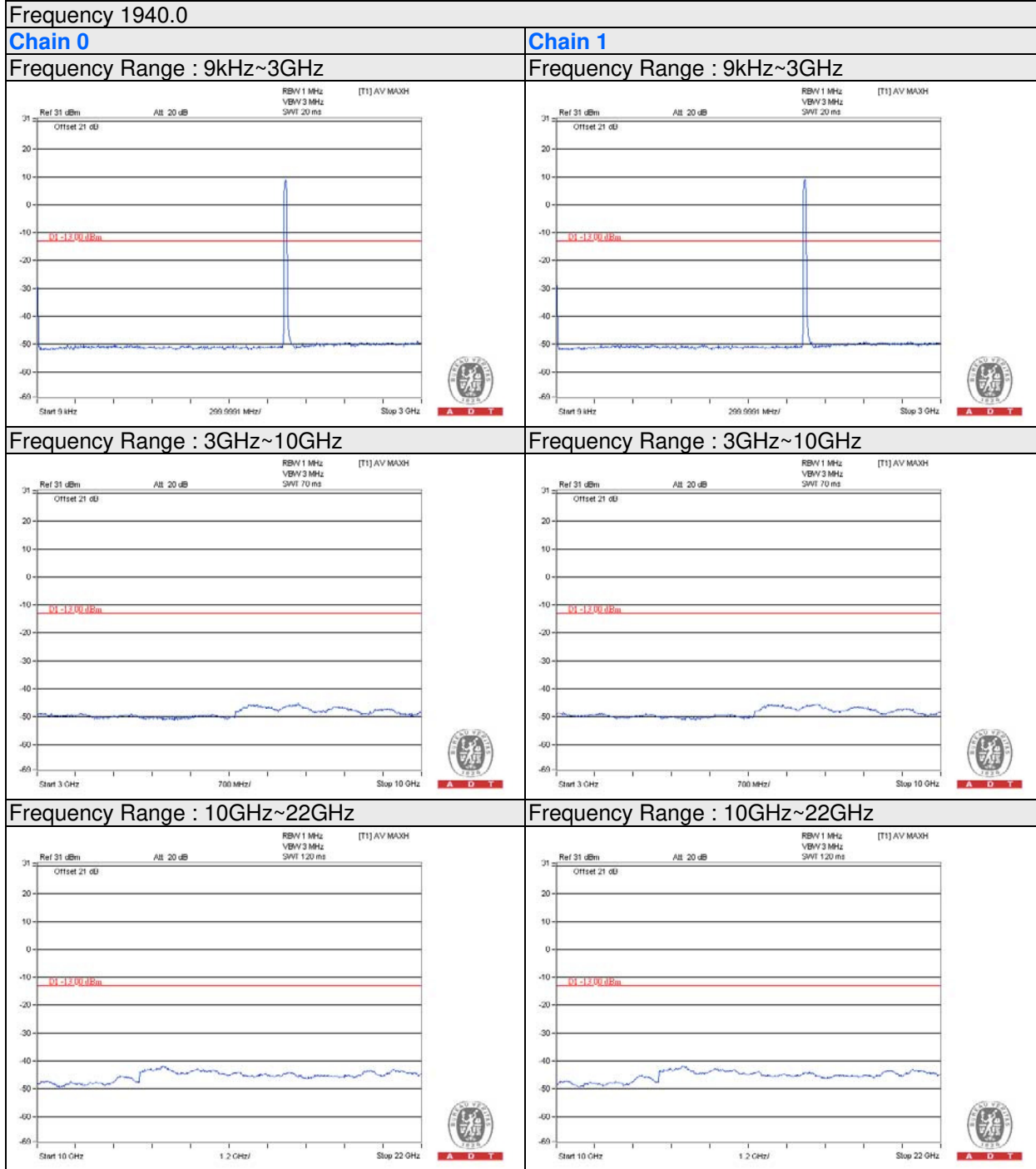
Frequency Range : 10GHz~22GHz



Frequency Range : 10GHz~22GHz



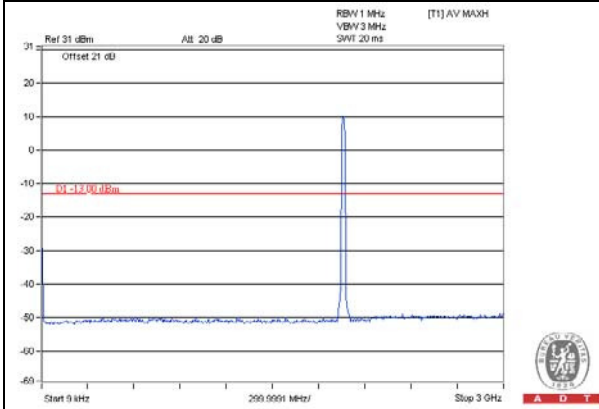
**LTE Band 2 (Channel Bandwidth 20MHz): 64QAM**



Frequency 1960.0

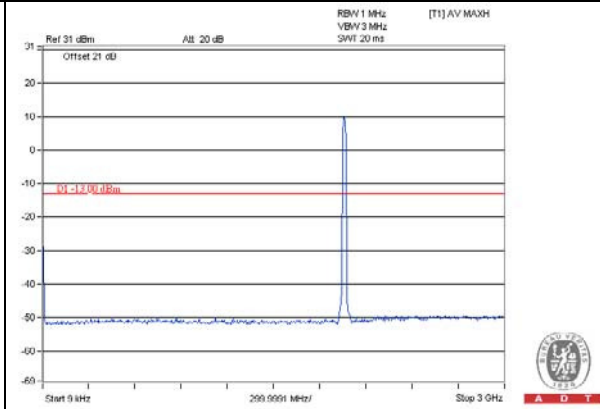
Chain 0

Frequency Range : 9kHz~3GHz

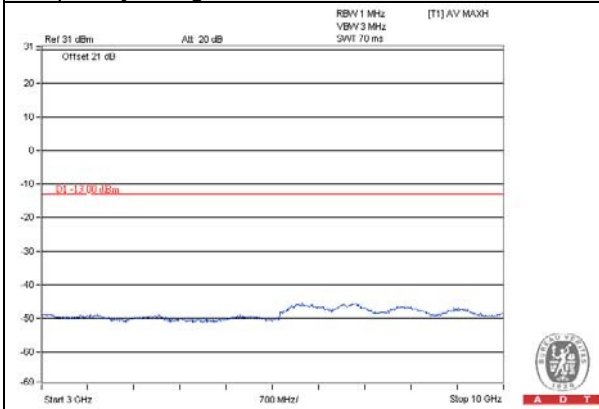


Chain 1

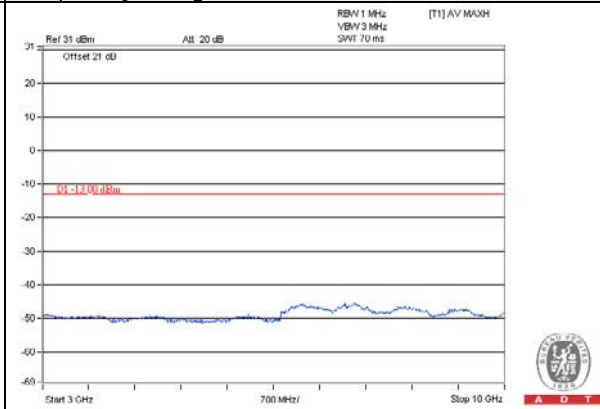
Frequency Range : 9kHz~3GHz



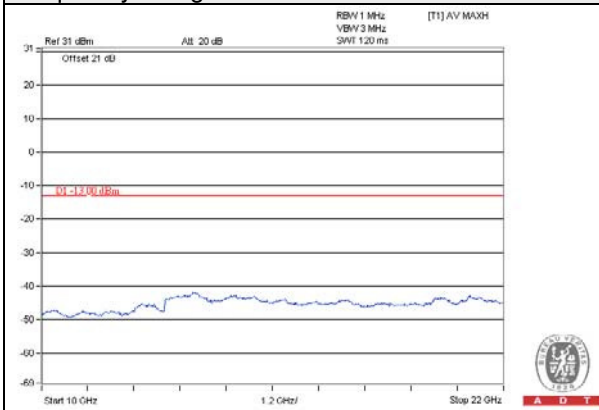
Frequency Range : 3GHz~10GHz



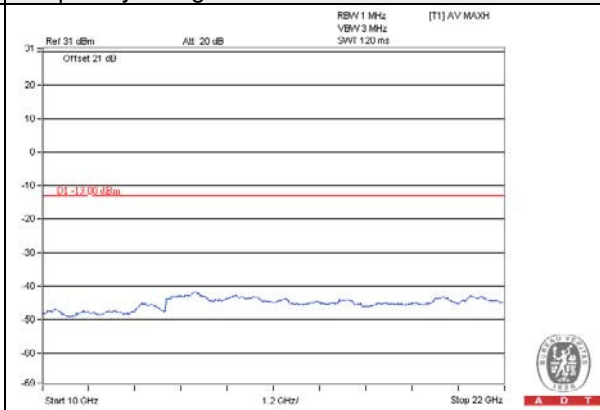
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



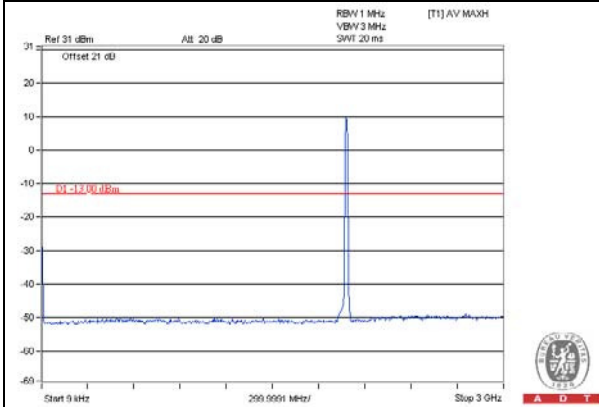
Frequency Range : 10GHz~22GHz



Frequency 1980.0

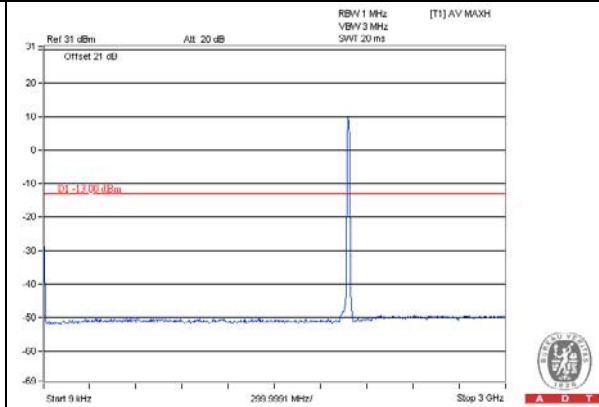
Chain 0

Frequency Range : 9kHz~3GHz

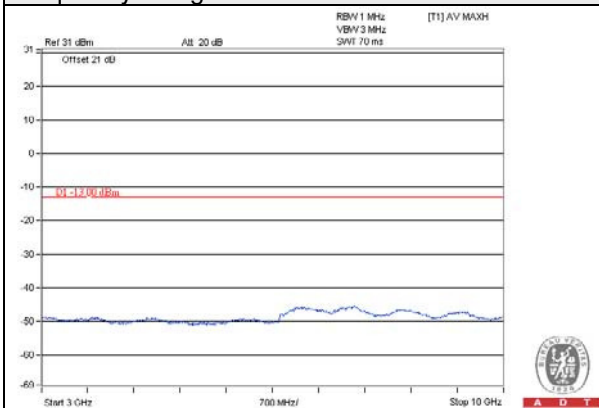


Chain 1

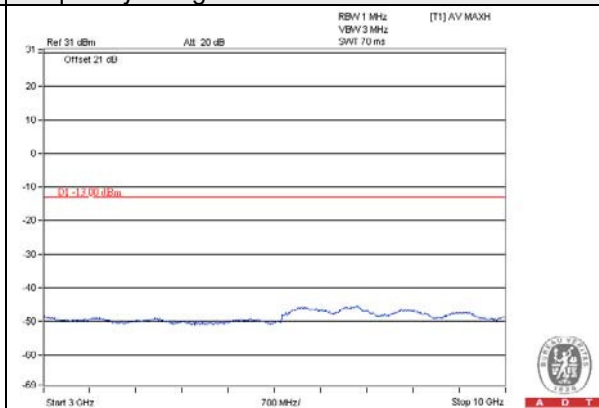
Frequency Range : 9kHz~3GHz



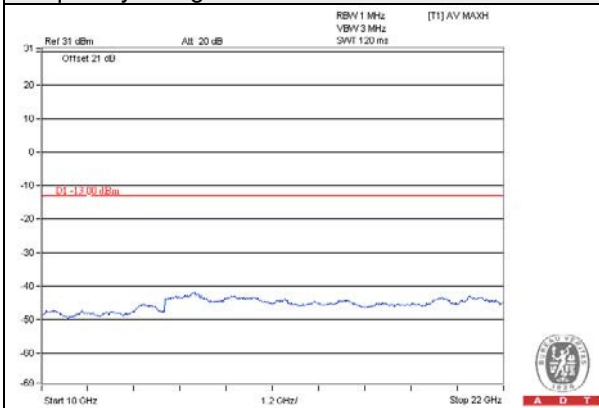
Frequency Range : 3GHz~10GHz



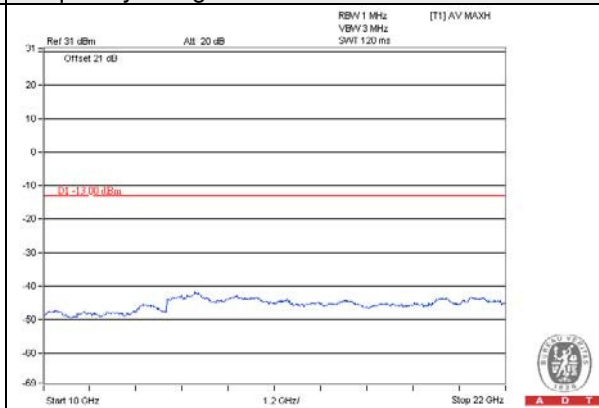
Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~22GHz



Frequency Range : 10GHz~22GHz



## 4.7 Radiated Emission Measurement

### 4.7.1 Limits of Radiated Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB. The emission limit equal to  $-13\text{dBm}$ .

### 4.7.2 Test Procedure

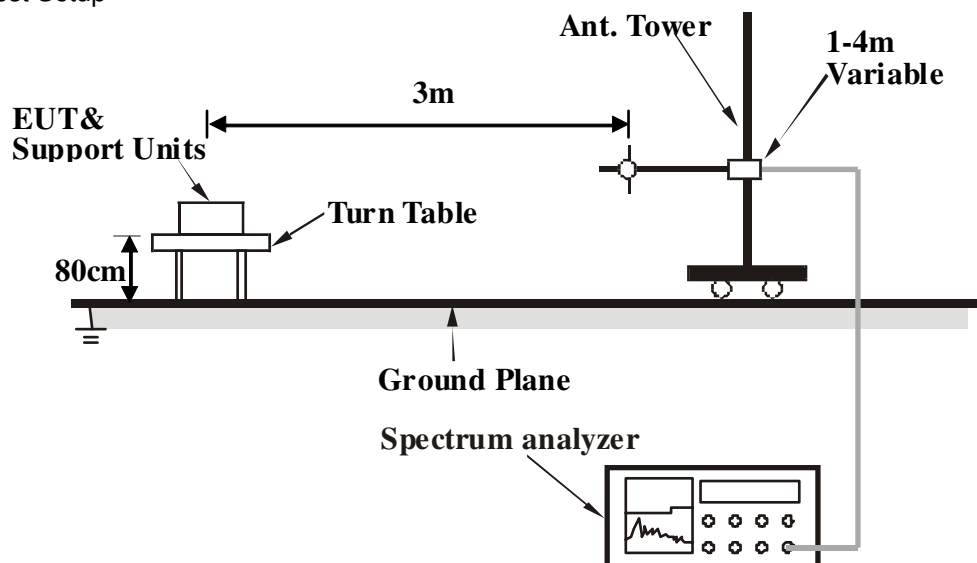
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G
- c.  $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ .
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}$ .

**NOTE:** The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

### 4.7.3 Deviation from Test Standard

No deviation.

#### 4.7.4 Test Setup



For the actual test configuration, please refer to the attached file (Test Setup Photo).



#### 4.7.5 Test Results

BELOW 1GHz

**WCDMA Band 2 (Channel Bandwidth 5MHz): 16QAM**

|      |                   |                 |                |
|------|-------------------|-----------------|----------------|
| Mode | TX channel 1960.0 | Frequency Range | Below 1000 MHz |
|------|-------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |               |                       |                        |            |             |             |
|---|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| No.   | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1   | 49.40       | -50.37        | -53.68                | 6.78                   | -46.90     | -13.00      | -33.90      |
| 2   | 161.92      | -50.42        | -59.14                | 6.78                   | -52.36     | -13.00      | -39.36      |
| 3   | 458.74      | -48.63        | -56.92                | 6.78                   | -50.14     | -13.00      | -37.14      |
| 4   | 594.54      | -49.80        | -54.63                | 6.78                   | -47.85     | -13.00      | -34.85      |
| 5   | 778.84      | -48.64        | -50.65                | 6.78                   | -43.87     | -13.00      | -30.87      |
| 6   | 982.54      | -49.62        | -49.09                | 6.78                   | -42.31     | -13.00      | -29.31      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |               |                       |                        |            |             |             |
| No.   | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1   | 61.04       | -49.89        | -50.10                | 6.78                   | -43.32     | -13.00      | -30.32      |
| 2   | 152.22      | -50.21        | -56.67                | 6.78                   | -49.89     | -13.00      | -36.89      |
| 3   | 342.34      | -49.44        | -56.90                | 6.78                   | -50.12     | -13.00      | -37.12      |
| 4   | 670.20      | -49.44        | -54.04                | 6.78                   | -47.26     | -13.00      | -34.26      |
| 5   | 784.66      | -49.35        | -51.49                | 6.78                   | -44.71     | -13.00      | -31.71      |
| 6   | 955.38      | -49.49        | -49.01                | 6.78                   | -42.23     | -13.00      | -29.23      |

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

**LTE Band 2 (Channel Bandwidth 15MHz): QPSK**

|      |                   |                 |                |
|------|-------------------|-----------------|----------------|
| Mode | TX channel 1960.0 | Frequency Range | Below 1000 MHz |
|------|-------------------|-----------------|----------------|

**Antenna Polarity & Test Distance: Horizontal at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 70.76       | -42.55        | -47.97                | 1.26                   | -46.71     | -13.00      | -33.71      |
| 2   | 99.84       | -40.26        | -47.55                | 1.53                   | -46.02     | -13.00      | -33.02      |
| 3   | 192.92      | -40.73        | -46.76                | 2.16                   | -44.60     | -13.00      | -31.60      |
| 4   | 291.91      | -49.06        | -51.22                | 2.68                   | -48.54     | -13.00      | -35.54      |
| 5   | 800.18      | -50.93        | -46.80                | 4.45                   | -42.35     | -13.00      | -29.35      |
| 6   | 904.93      | -51.67        | -46.86                | 4.73                   | -42.13     | -13.00      | -29.13      |

**Antenna Polarity & Test Distance: Vertical at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 70.71       | -43.24        | -48.70                | 1.26                   | -47.44     | -13.00      | -34.44      |
| 2   | 97.93       | -42.57        | -49.95                | 1.51                   | -48.44     | -13.00      | -35.44      |
| 3   | 148.38      | -48.31        | -48.86                | 1.83                   | -47.03     | -13.00      | -34.03      |
| 4   | 319.06      | -48.22        | -52.03                | 2.80                   | -49.23     | -13.00      | -36.23      |
| 5   | 800.17      | -52.67        | -49.33                | 4.45                   | -44.88     | -13.00      | -31.88      |
| 6   | 875.83      | -51.57        | -46.54                | 4.66                   | -41.88     | -13.00      | -28.88      |

**Remarks:**

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



ABOVE 1GHz

**WCDMA Band 2 (Channel Bandwidth 5MHz): 16QAM**

|      |                   |                 |               |
|------|-------------------|-----------------|---------------|
| Mode | TX channel 1932.5 | Frequency Range | Above 1000MHz |
|------|-------------------|-----------------|---------------|

**Antenna Polarity & Test Distance: Horizontal at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 3864.73     | -53.54        | -66.76                | 18.82                  | -47.94     | -13.00      | -34.94      |
| 2   | 5272.22     | -45.75        | -59.96                | 21.80                  | -38.16     | -13.00      | -25.16      |
| 3   | 5797.59     | -63.83        | -78.03                | 22.78                  | -55.25     | -13.00      | -42.25      |
| 4   | 10504.24    | -64.97        | -82.71                | 30.05                  | -52.66     | -13.00      | -39.66      |
| 5   | 13528.03    | -71.08        | -87.76                | 33.51                  | -54.25     | -13.00      | -41.25      |
| 6   | 14968.18    | -63.81        | -79.48                | 33.78                  | -45.70     | -13.00      | -32.70      |

**Antenna Polarity & Test Distance: Vertical at 3 M**

| No.      | Freq. (MHz)    | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm)    | Limit (dBm)   | Margin (dB)   |
|----------|----------------|---------------|-----------------------|------------------------|---------------|---------------|---------------|
| 1        | 3160.75        | -60.99        | -72.37                | 16.12                  | -56.25        | -13.00        | -43.25        |
| 2        | 3864.22        | -61.59        | -74.79                | 18.82                  | -55.97        | -13.00        | -42.97        |
| <b>3</b> | <b>5272.14</b> | <b>-32.78</b> | <b>-46.00</b>         | <b>21.80</b>           | <b>-24.20</b> | <b>-13.00</b> | <b>-11.20</b> |
| 4        | 8872.29        | -65.76        | -84.23                | 28.72                  | -55.51        | -13.00        | -42.51        |
| 5        | 10408.06       | -67.62        | -85.75                | 30.02                  | -55.73        | -13.00        | -42.73        |
| 6        | 14152.00       | -64.25        | -81.37                | 34.16                  | -47.21        | -13.00        | -34.21        |

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



|      |                   |                 |               |
|------|-------------------|-----------------|---------------|
| Mode | TX channel 1960.0 | Frequency Range | Above 1000MHz |
|------|-------------------|-----------------|---------------|

**Antenna Polarity & Test Distance: Horizontal at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 3920.19     | -54.99        | -68.43                | 18.99                  | -49.44     | -13.00      | -36.44      |
| 2   | 5272.01     | -37.63        | -51.84                | 21.80                  | -30.04     | -13.00      | -17.04      |
| 3   | 5881.00     | -62.81        | -76.89                | 22.81                  | -54.08     | -13.00      | -41.08      |
| 4   | 8872.16     | -65.88        | -84.30                | 28.72                  | -55.58     | -13.00      | -42.58      |
| 5   | 9496.25     | -66.54        | -84.53                | 29.15                  | -55.38     | -13.00      | -42.38      |
| 6   | 14968.02    | -64.02        | -79.69                | 33.78                  | -45.91     | -13.00      | -32.91      |

**Antenna Polarity & Test Distance: Vertical at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 3160.13     | -61.02        | -72.40                | 16.12                  | -56.28     | -13.00      | -43.28      |
| 2   | 3921.25)    | -61.41        | -74.88                | 18.99                  | -55.89     | -13.00      | -42.89      |
| 3   | 6568.03     | -67.33        | -81.41                | 24.09                  | -57.32     | -13.00      | -44.32      |
| 4   | 8872.26     | -65.84        | -84.31                | 28.72                  | -55.59     | -13.00      | -42.59      |
| 5   | 10408.17    | -67.61        | -85.74                | 30.02                  | -55.72     | -13.00      | -42.72      |
| 6   | 14152.40    | -64.34        | -81.46                | 34.16                  | -47.30     | -13.00      | -34.30      |

**Remarks:**

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



|      |                   |                 |               |
|------|-------------------|-----------------|---------------|
| Mode | TX channel 1987.5 | Frequency Range | Above 1000MHz |
|------|-------------------|-----------------|---------------|

**Antenna Polarity & Test Distance: Horizontal at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 3975.71     | -53.28        | -66.96                | 19.15                  | -47.81     | -13.00      | -34.81      |
| 2   | 5962.43     | -64.81        | -78.85                | 22.91                  | -55.94     | -13.00      | -42.94      |
| 3   | 8104.02     | -67.06        | -84.21                | 27.47                  | -56.74     | -13.00      | -43.74      |
| 4   | 8872.17     | -65.88        | -84.30                | 28.72                  | -55.58     | -13.00      | -42.58      |
| 5   | 9880.63     | -66.61        | -85.74                | 29.52                  | -56.22     | -13.00      | -43.22      |
| 6   | 13336.05    | -72.74        | -89.12                | 33.09                  | -56.03     | -13.00      | -43.03      |

**Antenna Polarity & Test Distance: Vertical at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 3592.19     | -56.61        | -67.27                | 17.07                  | -50.20     | -13.00      | -37.20      |
| 2   | 3975.28     | -55.64        | -69.35                | 19.15                  | -50.20     | -13.00      | -37.20      |
| 3   | 6568.02     | -57.33        | -71.41                | 24.09                  | -47.32     | -13.00      | -34.32      |
| 4   | 8872.63     | -55.53        | -74.01                | 28.73                  | -45.28     | -13.00      | -32.28      |
| 5   | 9496.07     | -55.32        | -73.91                | 29.15                  | -44.76     | -13.00      | -31.76      |
| 6   | 10984.56    | -56.91        | -69.77                | 28.72                  | -41.05     | -13.00      | -28.05      |

**Remarks:**

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

**LTE Band 2 (Channel Bandwidth 15MHz): QPDK**

|      |                   |                 |               |
|------|-------------------|-----------------|---------------|
| Mode | TX channel 1937.5 | Frequency Range | Above 1000MHz |
|------|-------------------|-----------------|---------------|

**Antenna Polarity & Test Distance: Horizontal at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 3496.31     | -43.52        | -56.57                | 17.74                  | -38.83     | -13.00      | -25.83      |
| 2   | 3874.55     | -33.55        | -47.18                | 18.85                  | -28.33     | -13.00      | -15.33      |
| 3   | 5812.39     | -33.40        | -47.26                | 22.78                  | -24.48     | -13.00      | -11.48      |
| 4   | 7750.07     | -42.29        | -58.44                | 26.66                  | -31.78     | -13.00      | -18.78      |
| 5   | 10672.89    | -43.33        | -59.81                | 30.21                  | -29.60     | -13.00      | -16.60      |
| 6   | 12488.16    | -45.51        | -59.15                | 31.56                  | -27.59     | -13.00      | -14.59      |

**Antenna Polarity & Test Distance: Vertical at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 3304.43     | -43.23        | -55.35                | 16.92                  | -38.43     | -13.00      | -25.43      |
| 2   | 3875.13     | -34.27        | -47.29                | 18.86                  | -28.43     | -13.00      | -15.43      |
| 3   | 5811.66     | -34.57        | -48.01                | 22.78                  | -25.23     | -13.00      | -12.23      |
| 4   | 7750.19     | -42.83        | -58.64                | 26.66                  | -31.98     | -13.00      | -18.98      |
| 5   | 10165.11    | -41.62        | -58.10                | 29.75                  | -28.35     | -13.00      | -15.35      |
| 6   | 12008.07    | -46.96        | -59.67                | 31.09                  | -28.58     | -13.00      | -15.58      |

**Remarks:**

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



|      |                   |                 |               |
|------|-------------------|-----------------|---------------|
| Mode | TX channel 1960.0 | Frequency Range | Above 1000MHz |
|------|-------------------|-----------------|---------------|

**Antenna Polarity & Test Distance: Horizontal at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 3208.35     | -41.47        | -54.10                | 16.50                  | -37.60     | -13.00      | -24.60      |
| 2   | 3919.88     | -32.76        | -46.38                | 18.99                  | -27.39     | -13.00      | -14.39      |
| 3   | 5879.59     | -34.37        | -48.15                | 22.81                  | -25.34     | -13.00      | -12.34      |
| 4   | 7840.46     | -42.05        | -58.17                | 26.85                  | -31.32     | -13.00      | -18.32      |
| 5   | 10768.43    | -41.23        | -57.57                | 30.40                  | -27.17     | -13.00      | -14.17      |
| 6   | 12104.02    | -44.58        | -58.14                | 31.28                  | -26.86     | -13.00      | -13.86      |

**Antenna Polarity & Test Distance: Vertical at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 3649.25     | -43.19        | -54.91                | 17.70                  | -37.21     | -13.00      | -24.21      |
| 2   | 3920.73     | -34.20        | -47.21                | 18.99                  | -28.22     | -13.00      | -15.22      |
| 3   | 5879.67     | -35.51        | -48.82                | 22.81                  | -26.01     | -13.00      | -13.01      |
| 4   | 7840.92     | -43.76        | -59.52                | 26.85                  | -32.67     | -13.00      | -19.67      |
| 5   | 10244.48    | -41.80        | -58.38                | 29.91                  | -28.47     | -13.00      | -15.47      |
| 6   | 12632.20    | -46.63        | -58.68                | 31.82                  | -26.86     | -13.00      | -13.86      |

**Remarks:**

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



|      |                   |                 |               |
|------|-------------------|-----------------|---------------|
| Mode | TX channel 1982.5 | Frequency Range | Above 1000MHz |
|------|-------------------|-----------------|---------------|

**Antenna Polarity & Test Distance: Horizontal at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 3633.32     | -37.41        | -49.53                | 17.47                  | -32.06     | -13.00      | -19.06      |
| 2   | 3965.48     | -33.68        | -47.26                | 19.12                  | -28.14     | -13.00      | -15.14      |
| 3   | 5946.92     | -33.59        | -47.34                | 22.89                  | -24.45     | -13.00      | -11.45      |
| 4   | 7930.77     | -42.79        | -58.89                | 27.05                  | -31.84     | -13.00      | -18.84      |
| 5   | 10904.79    | -42.83        | -58.80                | 30.51                  | -28.29     | -13.00      | -15.29      |
| 6   | 12625.01    | -45.99        | -58.75                | 31.81                  | -26.94     | -13.00      | -13.94      |

**Antenna Polarity & Test Distance: Vertical at 3 M**

| No. | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| 1   | 3965.11     | -35.52        | -48.41                | 19.11                  | -29.30     | -13.00      | -16.30      |
| 2   | 4305.53     | -44.29        | -57.41                | 20.64                  | -36.77     | -13.00      | -23.77      |
| 3   | 5946.42     | -35.57        | -48.79                | 22.89                  | -25.90     | -13.00      | -12.90      |
| 4   | 7930.38     | -43.29        | -59.01                | 27.05                  | -31.96     | -13.00      | -18.96      |
| 5   | 10760.72    | -42.25        | -58.16                | 30.38                  | -27.78     | -13.00      | -14.78      |
| 6   | 12721.04    | -47.04        | -58.54                | 32.01                  | -26.53     | -13.00      | -13.53      |

**Remarks:**

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



## 5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).





## Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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The address and road map of all our labs can be found in our web site also.

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