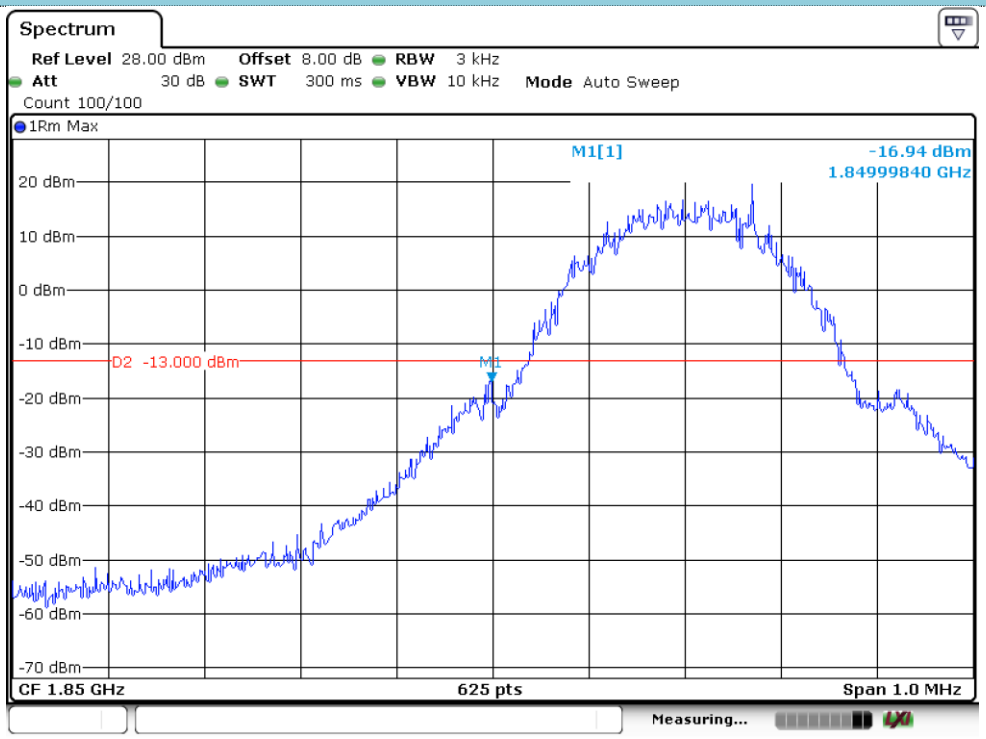
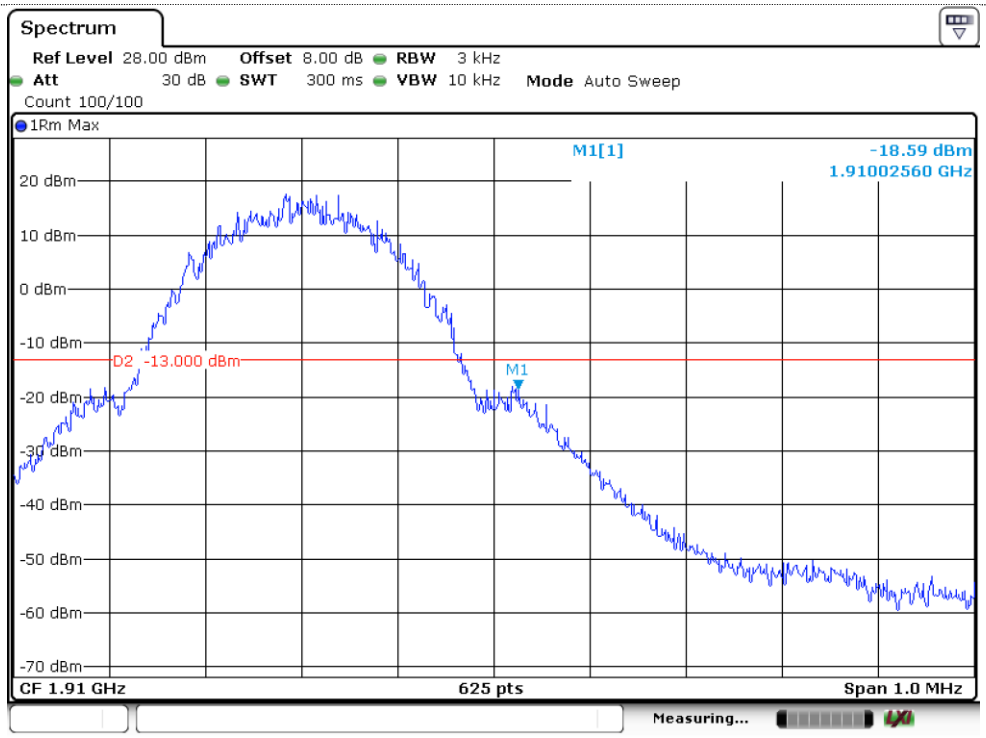
PCS1900

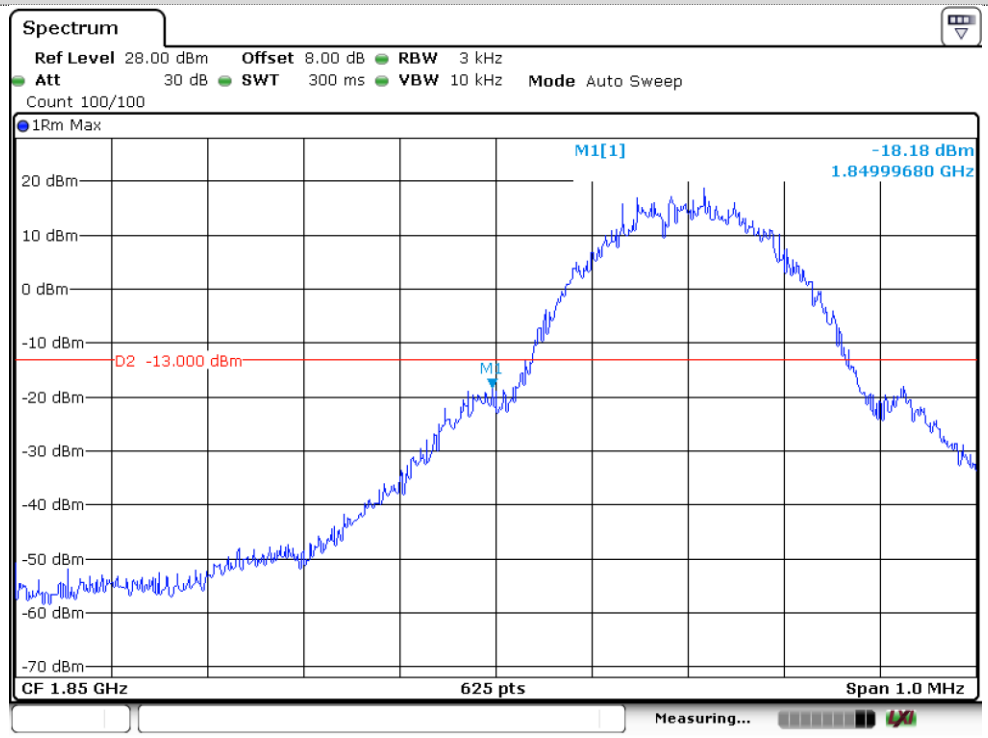



Channel 512

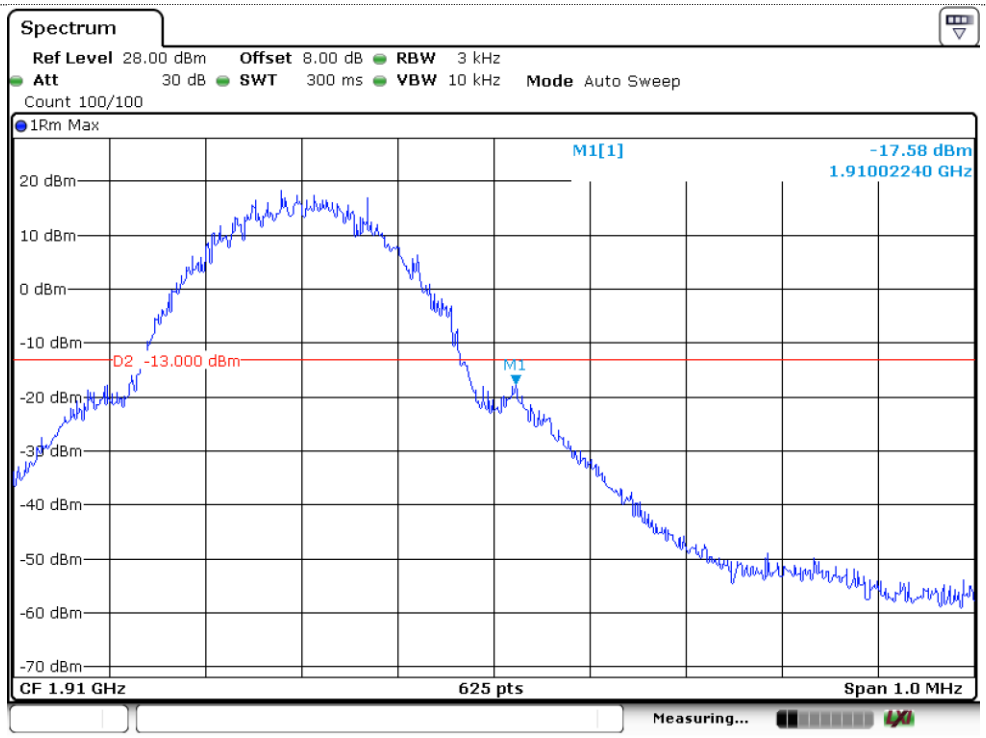



Channel 810

GPRS1900

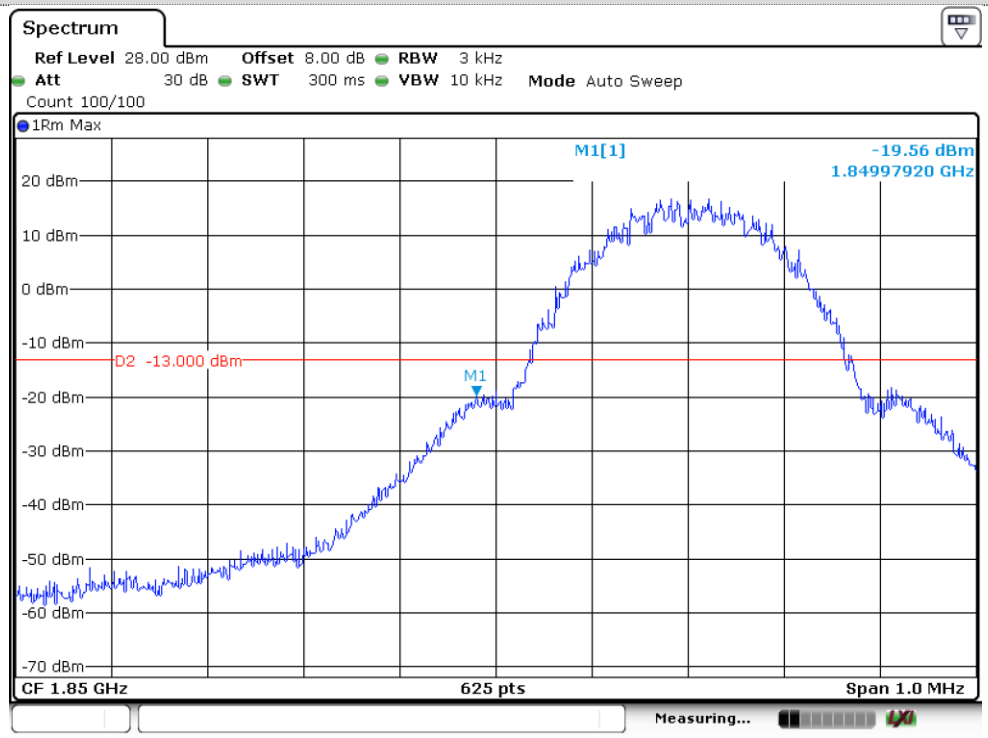



Channel 512

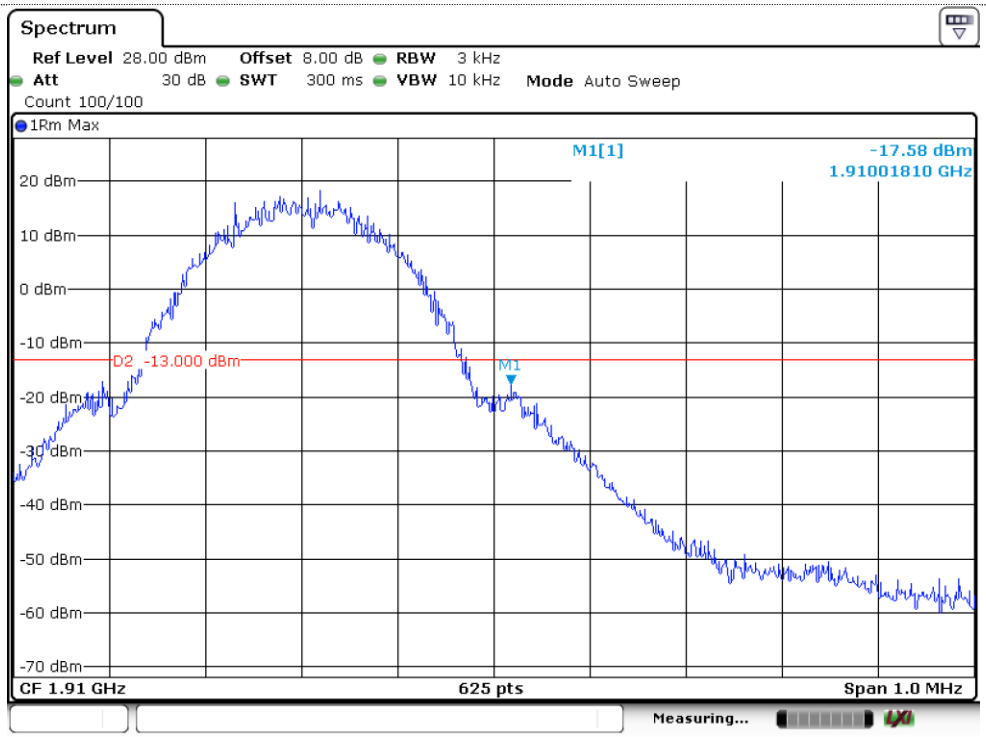



Channel 810

EGPRS1900

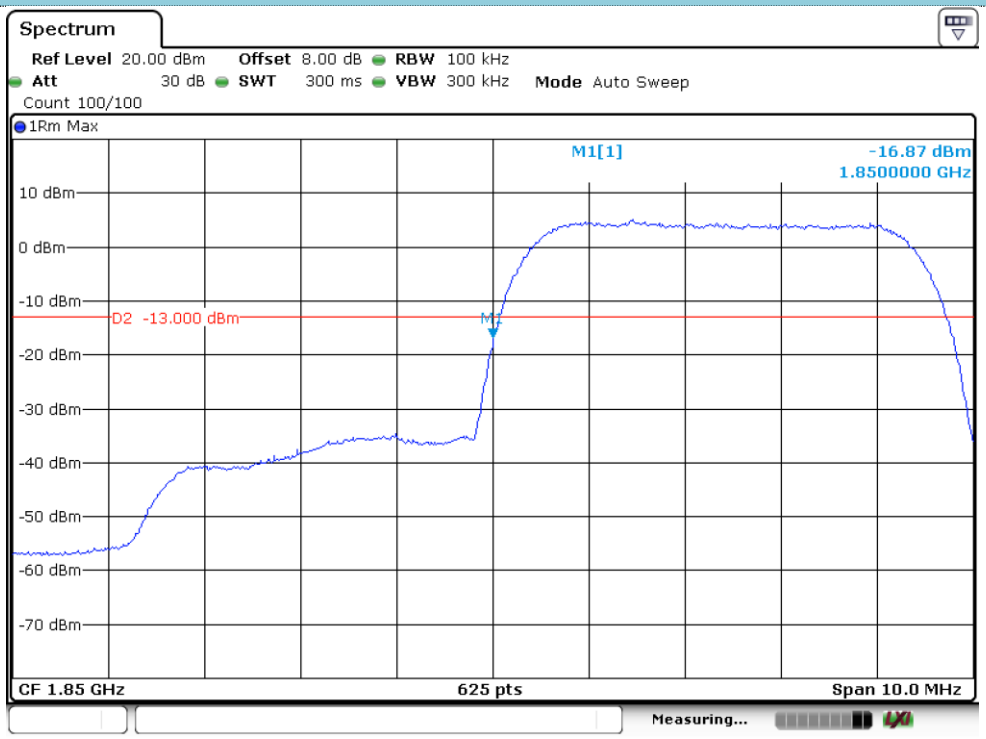



Channel 512

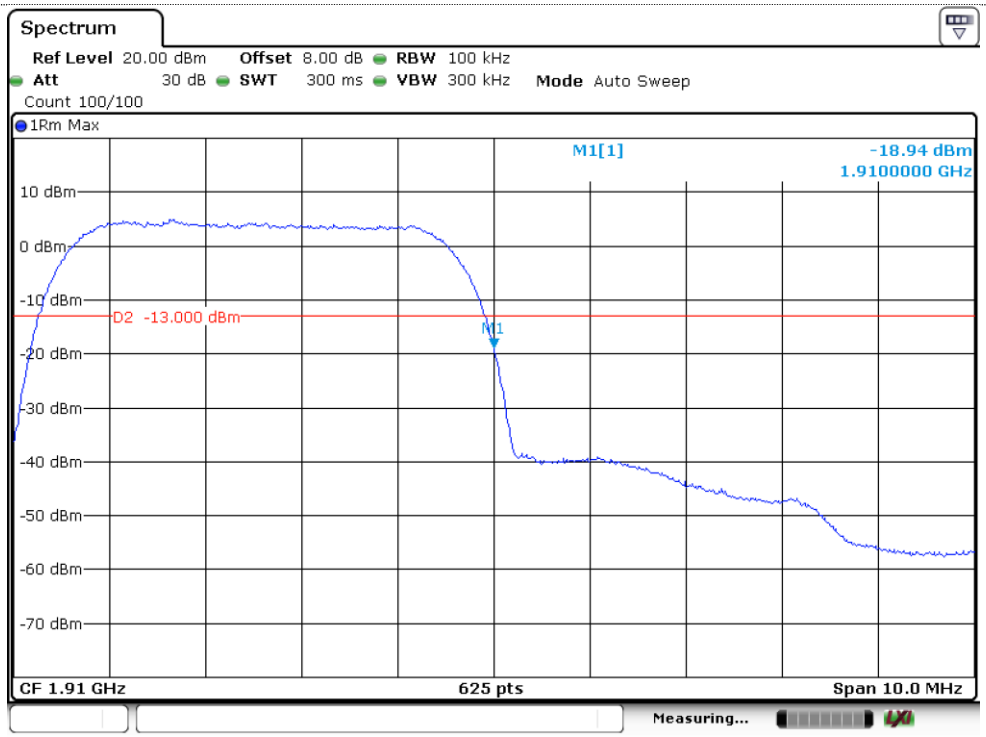



Channel 810

WCDMA Band II

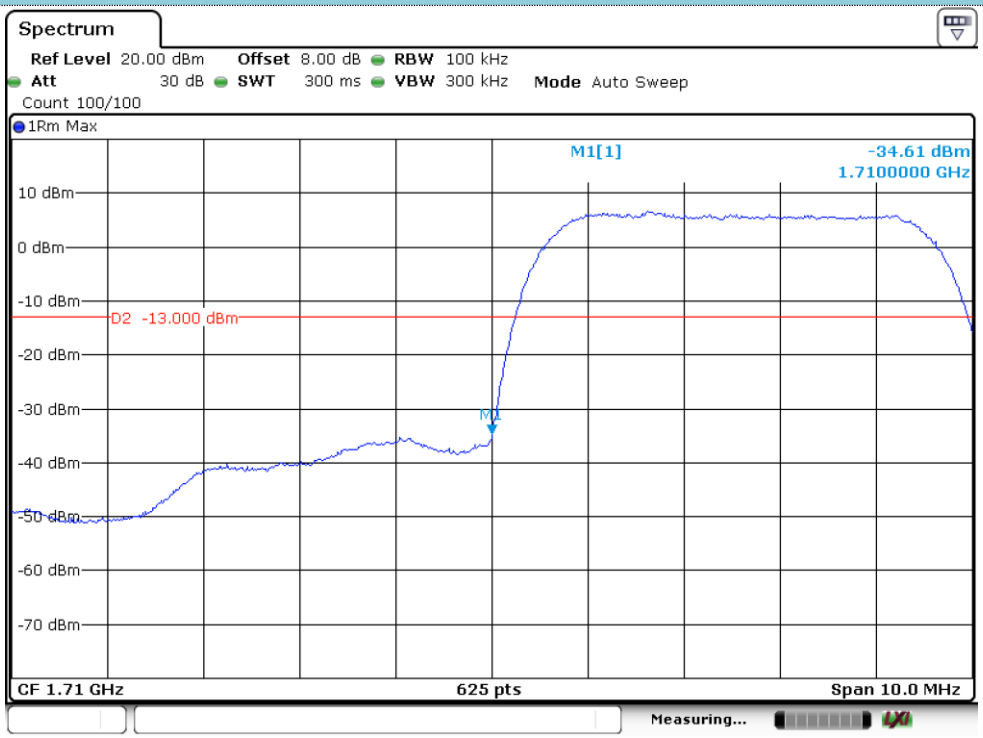



Channel 9262

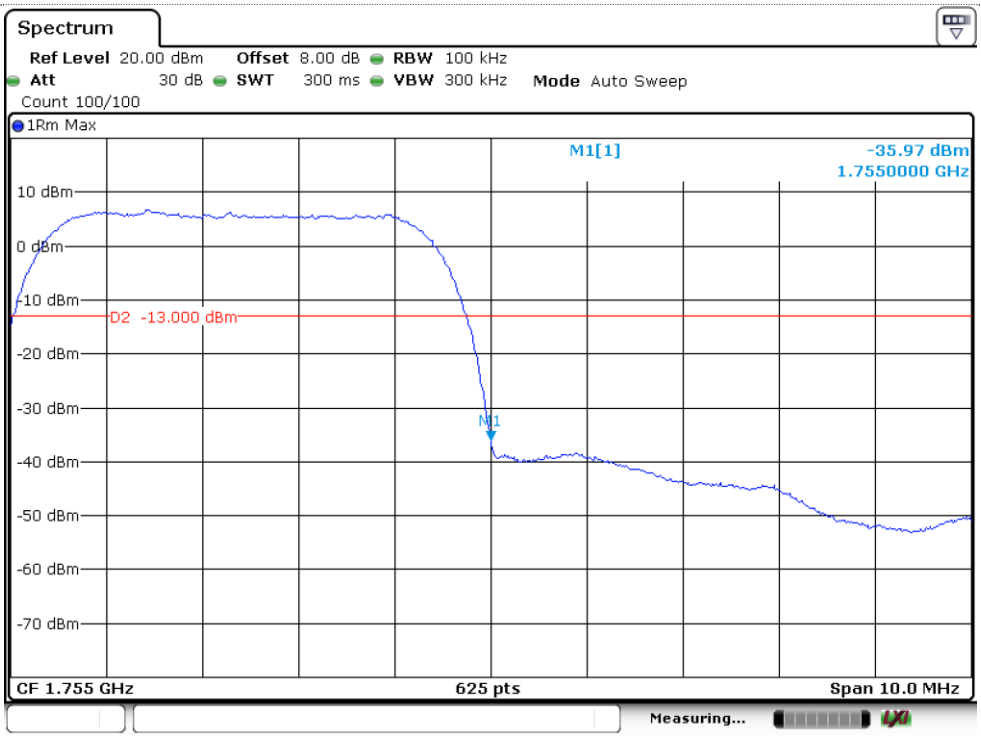



Channel 9538

WCDMA Band IV

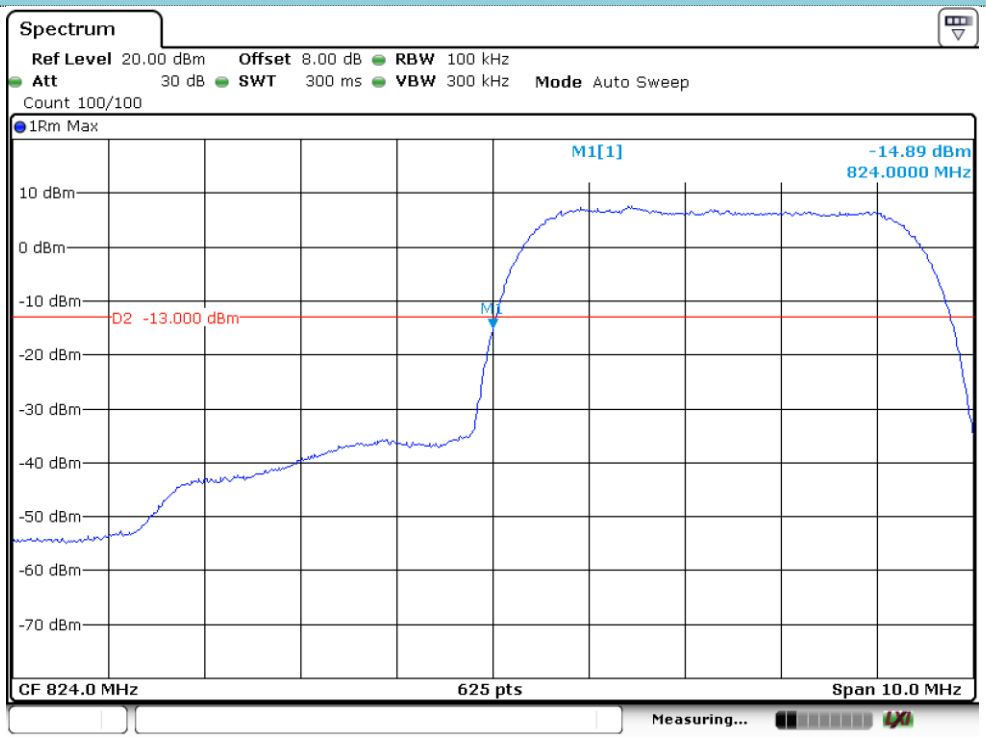



Channel 1313

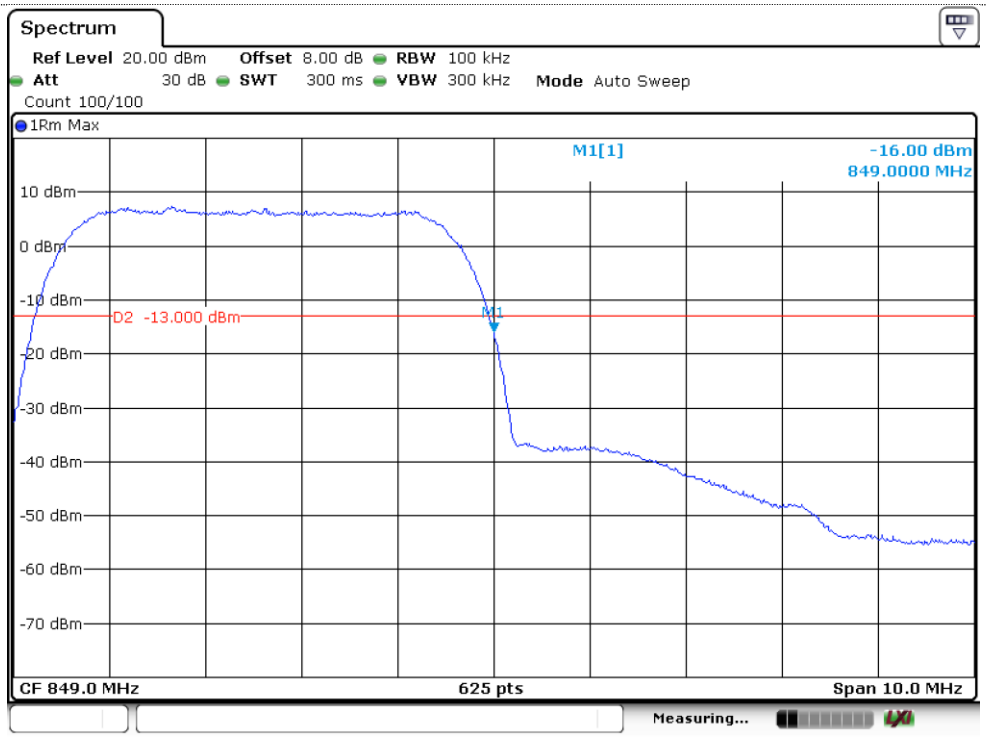



Channel 1512

WCDMA Band V




Channel 4132




Channel 4233

## 5.5. ERP and EIRP

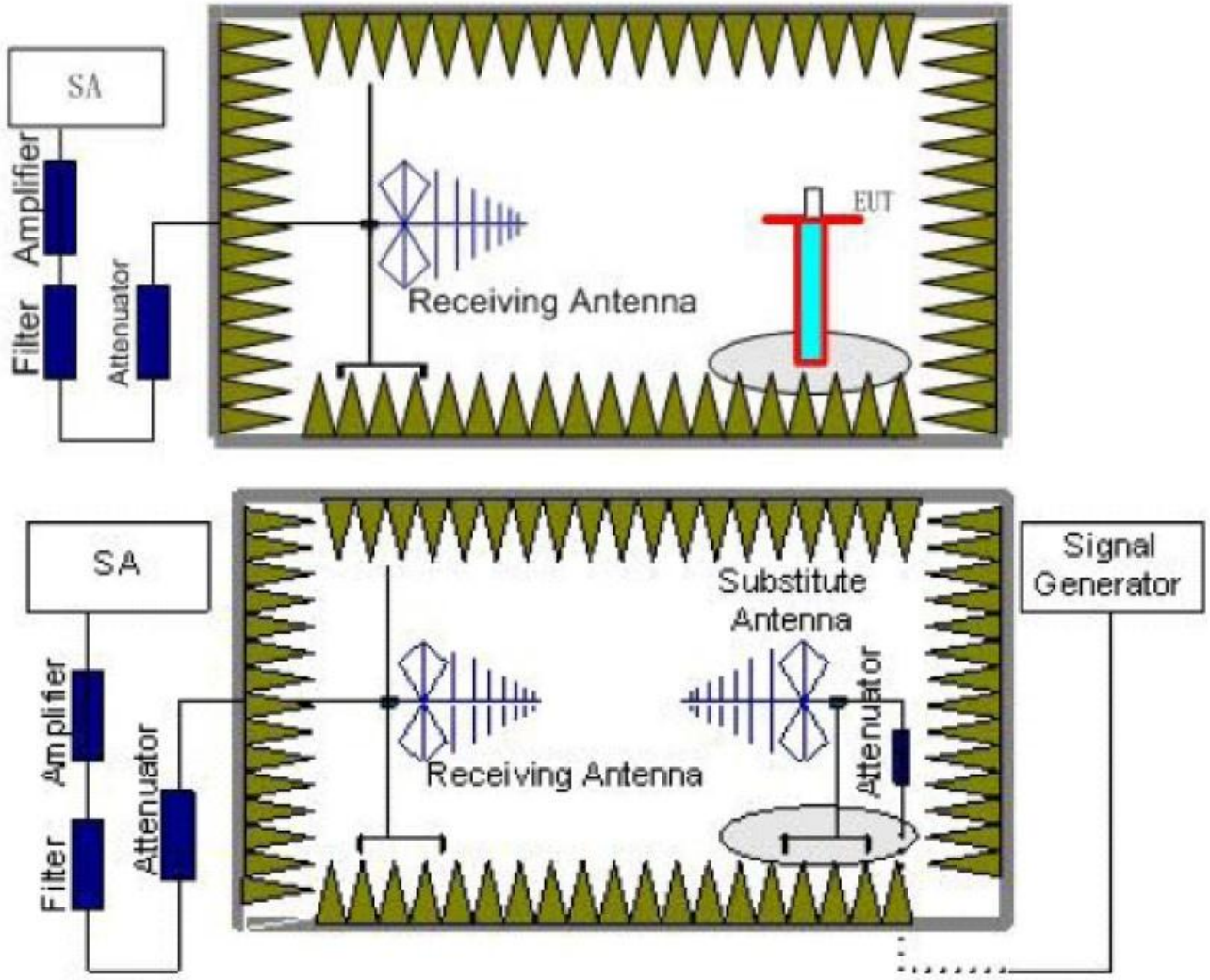
**LIMIT**

GSM850/WCDMA Band V: 7W ERP

PCS1900/WCDMA Band II: 2W EIRP

WCDMA Band V: 1W EIRP

**TEST CONFIGURATION**




**TEST PROCEDURE**

1. EUT was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.0m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz for above 1GHz and RBW=100kHz,VBW=300kHz for 30MHz to 1GHz,, And the maximum value of the receiver should be recorded as (Pr).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the

frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest isconnected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
6. The measurement results are obtained as described below:
   Power(EIRP)=PMea- PAg - Pcl + Ga
   We used SMF100A micowave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substituation test; The measurement results are amend as described below:
   Power(EIRP)=PMea- Pcl + Ga
7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
   ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

**TEST MODE:**

Please refer to the clause 3.3

**TEST RESULTS**

☒ **Passed** ☐ **Not Applicable**

| Mode | Channel | Antenna Pol. | ERP | Limit (dBm) | Result |
|---|---|---|---|---|---|
| GSM850 | 128 | V | 31.43 | 38.45 | Pass |
| | | H | 28.65 | | |
| | 190 | V | 31.22 | | |
| | | H | 28.37 | | |
| | 251 | V | 31.65 | | |
| | | H | 28.77 | | |
| GPRS850 | 128 | V | 31.45 | 38.45 | Pass |
| | | H | 28.64 | | |
| | 190 | V | 31.35 | | |
| | | H | 28.65 | | |
| | 251 | V | 31.47 | | |
| | | H | 28.33 | | |
| EGPRS850 | 128 | V | 31.66 | 38.45 | Pass |
| | | H | 28.64 | | |
| | 190 | V | 31.37 | | |
| | | H | 28.65 | | |
| | 251 | V | 31.65 | | |
| | | H | 28.33 | | |

| Mode | Channel | Antenna Pol. | EIRP | Limit (dBm) | Result |
|---|---|---|---|---|---|
| PCS1900 | 512 | V | 30.64 | 33.00 | Pass |
| | | H | 27.43 | | |
| | 661 | V | 30.64 | | |
| | | H | 27.38 | | |
| | 810 | V | 30.36 | | |
| | | H | 27.52 | | |
| GPRS1900 | 512 | V | 30.64 | 33.00 | Pass |
| | | H | 27.55 | | |
| | 661 | V | 30.46 | | |
| | | H | 27.52 | | |
| | 810 | V | 30.38 | | |
| | | H | 27.64 | | |
| EGPRS1900 | 512 | V | 30.33 | 33.00 | Pass |
| | | H | 27.52 | | |
| | 661 | V | 30.43 | | |
| | | H | 27.52 | | |
| | 810 | V | 30.64 | | |
| | | H | 27.64 | | |

| Mode | Channel | Antenna Pol. | EIRP | Limit (dBm) | Result |
|---|---|---|---|---|---|
| WCDMA Band II | 9262 | V | 20.58 | 33.00 | Pass |
| | | H | 18.55 | | |
| | 9400 | V | 20.36 | | |
| | | H | 18.43 | | |
| | 9538 | V | 20.33 | | |
| | | H | 18.45 | | |

| Mode | Channel | Antenna Pol. | EIRP | Limit (dBm) | Result |
|---|---|---|---|---|---|
| WCDMA Band IV | 1313 | V | 21.52 | 30.00 | Pass |
| | | H | 19.33 | | |
| | 1450 | V | 21.24 | | |
| | | H | 19.52 | | |
| | 1512 | V | 21.36 | | |
| | | H | 19.58 | | |

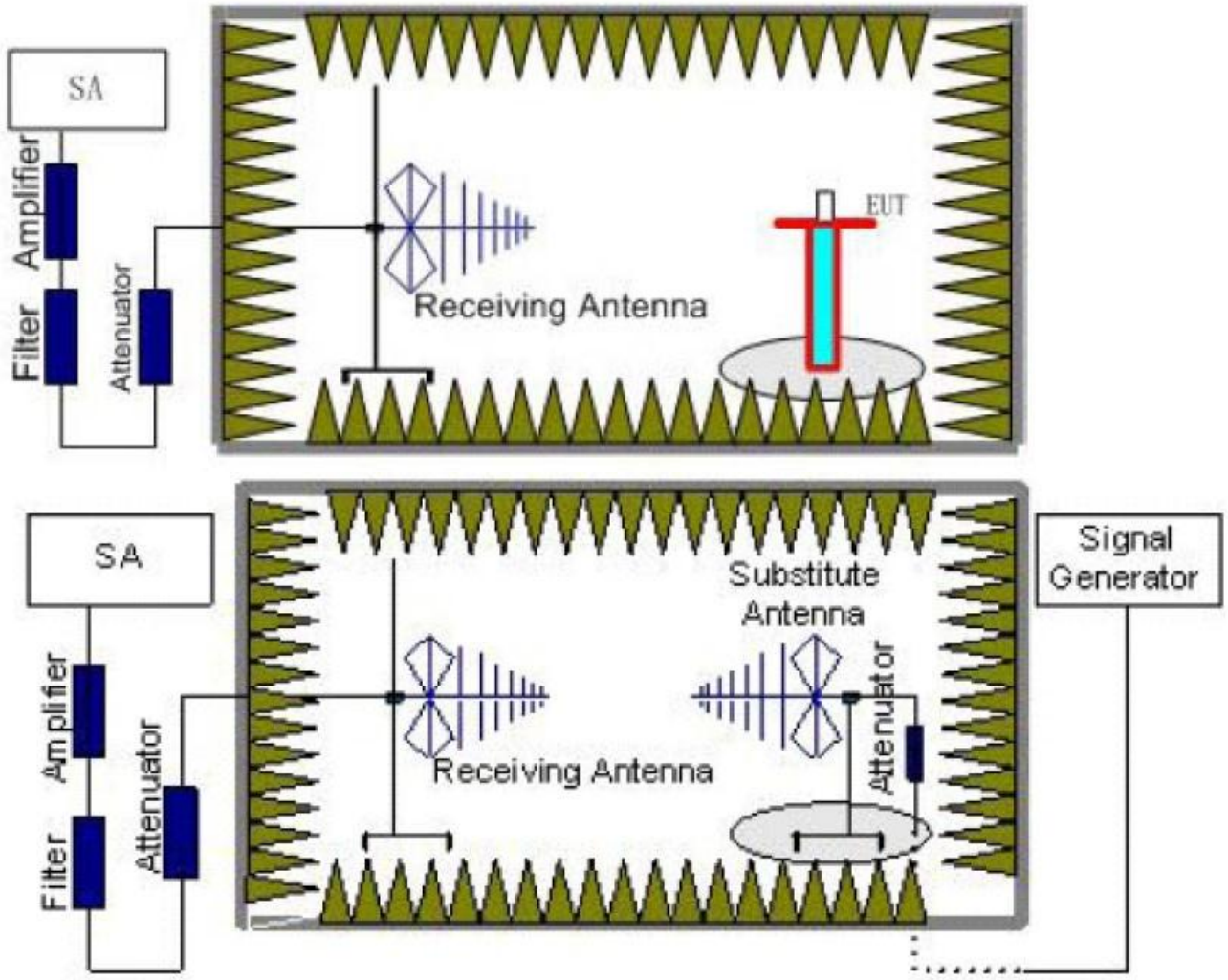
| Mode | Channel | Antenna Pol. | ERP | Limit (dBm) | Result |
|---|---|---|---|---|---|
| WCDMA Band V | 4132 | V | 19.75 | 38.45 | Pass |
| | | H | 16.33 | | |
| | 4183 | V | 19.43 | | |
| | | H | 16.52 | | |
| | 4233 | V | 19.38 | | |
| | | H | 16.52 | | |

## 5.6. Radiated Spurious Emission

**LIMIT**

-13dBm

**TEST CONFIGURATION**




**TEST RESULTS**

1. EUT was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.0m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz for above 1GHz and RBW=100kHz,VBW=300kHz for 30MHz to 1GHz, And the maximum value of the receiver should be recorded as (Pr).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest isconnected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be

performed by rotating the test item and adjusting the receiving antenna polarization.

5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
6. The measurement results are obtained as described below:
   Power(EIRP)=PMea- PAg - Pcl + Ga
   We used SMF100A micowave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substituation test; The measurement results are amend as described below:
   Power(EIRP)=PMea- Pcl + Ga
7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
   ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

**TEST MODE:**

Please refer to the clause 3.3

**TEST RESULTS**

☒ **Passed** ☐ **Not Applicable**

Note: Worst case at GSM850/PCS1900/WCDMA B2/B4/B5

| GSM850 | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | | Polarization | Level (dBm) | | |
| 128 | 41.46 | Vertical | -56.33 | -13.00 | Pass |
| | 259.91 | V | -61.19 | | |
| | 1747.34 | V | -35.41 | | |
| | 2475.28 | V | -48.62 | | |
| | 3295.11 | V | -53.84 | | |
| | 4119.70 | V | -44.08 | | |
| | 78.08 | Horizontal | -63.97 | -13.00 | Pass |
| | 259.91 | H | -56.85 | | |
| | 1762.77 | H | -29.41 | | |
| | 2577.97 | H | -38.86 | | |
| | 3295.11 | H | -51.93 | | |
| | 4119.70 | H | -44.76 | | |
| 190 | 40.74 | Vertical | -58.04 | -13.00 | Pass |
| | 259.91 | V | -60.25 | | |
| | 1672.22 | V | -50.06 | | |
| | 2212.88 | V | -52.80 | | |
| | 3343.25 | V | -45.37 | | |
| | 4179.88 | V | -45.66 | | |
| | 78.08 | Horizontal | -63.66 | -13.00 | Pass |
| | 182.21 | H | -59.02 | | |
| | 1674.06 | H | -48.44 | | |
| | 1762.77 | H | -34.68 | | |
| | 3343.25 | H | -48.50 | | |
| | 4179.88 | H | -44.09 | | |
| 251 | 41.46 | Vertical | -56.93 | -13.00 | Pass |
| | 259.91 | V | -58.81 | | |
| | 1745.42 | V | -36.57 | | |
| | 2547.01 | V | -40.39 | | |
| | 3392.09 | V | -51.11 | | |
| | 4240.94 | V | -47.57 | | |
| | 78.08 | Horizontal | -63.66 | -13.00 | Pass |
| | 259.91 | H | -56.87 | | |
| | 1745.42 | H | -39.76 | | |
| | 2547.01 | H | -44.36 | | |
| | 3392.09 | H | -47.20 | | |
| | 4240.94 | H | -48.87 | | |

Remark:
1. The emission behaviour belongs to narrowband spurious emission.
2. The emission levels of not record in the report are very lower than the limit and not show in test report.

| PCS1900 | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | | Polarization | Level (dBm) | | |
| 512 | 47.39 | Vertical | -60.62 | -13.00 | Pass |
| | 259.91 | V | -63.25 | | |
| | 1764.70 | V | -40.09 | | |
| | 1852.10 | V | -47.44 | | |
| | 3700.48 | V | -45.12 | | |
| | 9253.71 | V | -26.00 | | |
| | 41.46 | Horizontal | -58.01 | -13.00 | Pass |
| | 182.21 | H | -65.93 | | |
| | 1764.70 | H | -40.49 | | |
| | 1850.07 | H | -36.61 | | |
| | 3700.48 | H | -49.19 | | |
| | 9253.71 | H | -27.74 | | |
| 661 | 41.46 | Vertical | -57.55 | -13.00 | Pass |
| | 414.90 | V | -66.65 | | |
| | 1762.77 | V | -41.04 | | |
| | 1880.81 | V | -36.46 | | |
| | 5643.40 | V | -37.82 | | |
| | 9402.51 | V | -32.36 | | |
| | 47.22 | Horizontal | -62.13 | -13.00 | Pass |
| | 156.09 | H | -67.77 | | |
| | 1764.70 | H | -43.39 | | |
| | 1880.81 | H | -39.53 | | |
| | 5643.40 | H | -37.20 | | |
| | 9402.51 | H | -23.66 | | |
| 810 | 47.55 | Vertical | -62.59 | -13.00 | Pass |
| | 259.91 | V | -59.48 | | |
| | 1764.70 | V | -37.48 | | |
| | 1909.96 | V | -46.34 | | |
| | 5725.84 | V | -41.91 | | |
| | 9553.71 | V | -33.90 | | |
| | 259.91 | Horizontal | -59.70 | -13.00 | Pass |
| | 414.90 | H | -66.65 | | |
| | 1747.34 | H | -45.45 | | |
| | 1909.96 | H | -49.78 | | |
| | 5725.84 | H | -36.33 | | |
| | 7641.47 | H | -44.10 | | |

Remark:
1. The emission behaviour belongs to narrowband spurious emission.
2. The emission levels of not record in the report are very lower than the limit and not show in test report.

| WCDMA Band II | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | | Polarization | Level (dBm) | | |
| 9262 | 39.61 | Vertical | -57.89 | -13.00 | Pass |
| | 266.39 | V | -63.49 | | |
| | 1852.10 | V | -40.35 | | |
| | 1933.18 | V | -38.44 | | |
| | 3705.85 | V | -53.09 | | |
| | 9041.46 | V | -47.05 | | |
| | 38.64 | Horizontal | -61.03 | -13.00 | Pass |
| | 266.39 | H | -63.87 | | |
| | 1852.10 | H | -41.59 | | |
| | 1933.18 | H | -49.83 | | |
| | 3700.48 | H | -47.87 | | |
| | 7969.71 | H | -48.61 | | |
| 9400 | 41.75 | Vertical | -59.96 | -13.00 | Pass |
| | 179.04 | V | -69.54 | | |
| | 1880.81 | V | -39.74 | | |
| | 1960.99 | V | -39.36 | | |
| | 3754.53 | V | -43.55 | | |
| | 8581.52 | V | -46.12 | | |
| | 78.08 | Horizontal | -65.97 | -13.00 | Pass |
| | 266.39 | H | -62.15 | | |
| | 1880.81 | H | -42.13 | | |
| | 1960.99 | H | -47.13 | | |
| | 3754.53 | H | -45.87 | | |
| | 8950.13 | H | -45.82 | | |
| 9538 | 47.22 | Vertical | -60.61 | -13.00 | Pass |
| | 429.75 | V | -76.19 | | |
| | 1887.02 | V | -44.60 | | |
| | 1987.01 | V | -40.98 | | |
| | 3809.38 | V | -50.99 | | |
| | 8593.97 | V | -45.81 | | |
| | 78.08 | Horizontal | -64.74 | -13.00 | Pass |
| | 266.39 | H | -60.56 | | |
| | 1989.20 | H | -49.41 | | |
| | 2580.81 | H | -46.45 | | |
| | 3814.91 | H | -49.16 | | |
| | 7630.40 | H | -47.21 | | |

Remark:
1. The emission behaviour belongs to narrowband spurious emission.
2. The emission levels of not record in the report are very lower than the limit and not show in test report.

| WCDMA Band IV | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | | Polarization | Level (dBm) | | |
| 1313 | 41.46 | Vertical | -57.66 | -13.00 | Pass |
| | 180.93 | V | -65.99 | | |
| | 1425.97 | V | -55.11 | | |
| | 2113.10 | V | -47.05 | | |
| | 4107.77 | V | -53.80 | | |
| | 9094.06 | V | -46.27 | | |
| | 47.06 | Horizontal | -63.73 | -13.00 | Pass |
| | 245.69 | H | -64.19 | | |
| | 1360.17 | H | -54.88 | | |
| | 2580.81 | H | -46.61 | | |
| | 4107.77 | H | -55.55 | | |
| | 8924.21 | H | -47.23 | | |
| 1450 | 41.46 | Vertical | -58.09 | -13.00 | Pass |
| | 182.21 | V | -66.35 | | |
| | 1337.94 | V | -55.07 | | |
| | 2141.14 | V | -50.42 | | |
| | 5218.30 | V | -51.97 | | |
| | 9949.65 | V | -45.48 | | |
| | 77.80 | Horizontal | -64.77 | -13.00 | Pass |
| | 176.54 | H | -63.79 | | |
| | 1355.70 | H | -55.26 | | |
| | 2141.14 | H | -48.89 | | |
| | 5225.88 | H | -52.08 | | |
| | 8593.97 | H | -45.77 | | |
| 1512 | 38.24 | Vertical | -59.71 | -13.00 | Pass |
| | 245.69 | V | -64.18 | | |
| | 2155.30 | V | -47.16 | | |
| | 2577.97 | V | -31.33 | | |
| | 5256.28 | V | -49.83 | | |
| | 8004.46 | V | -47.41 | | |
| | 77.80 | Horizontal | -65.09 | -13.00 | Pass |
| | 266.39 | H | -63.07 | | |
| | 1307.43 | H | -54.82 | | |
| | 2519.18 | H | -47.97 | | |
| | 5256.28 | H | -50.99 | | |
| | 9595.37 | H | -45.88 | | |

Remark:
1. The emission behaviour belongs to narrowband spurious emission.
2. The emission levels of not record in the report are very lower than the limit and not show in test report.

| WCDMA Band V | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Spurious Emission | | Limit (dBm) | Result |
| | | Polarization | Level (dBm) | | |
| 4132 | 39.47 | Vertical | -57.43 | -13.00 | Pass |
| | 78.08 | V | -67.04 | | |
| | 1891.17 | V | -37.33 | | |
| | 2519.18 | V | -47.50 | | |
| | 4474.73 | V | -55.35 | | |
| | 9595.37 | V | -43.97 | | |
| | 38.52 | Horizontal | -63.75 | -13.00 | Pass |
| | 78.37 | H | -64.66 | | |
| | 1892.45 | H | -35.85 | | |
| | 2517.52 | H | -38.47 | | |
| | 4476.38 | H | -55.36 | | |
| | 9594.58 | H | -49.48 | | |
| 4183 | 40.88 | Vertical | -57.42 | -13.00 | Pass |
| | 266.39 | V | -65.44 | | |
| | 1747.34 | V | -34.61 | | |
| | 2577.97 | V | -37.54 | | |
| | 4107.77 | V | -53.70 | | |
| | 8457.96 | V | -46.80 | | |
| | 90.50 | Horizontal | -64.60 | -13.00 | Pass |
| | 182.21 | H | -63.87 | | |
| | 1747.34 | H | -34.61 | | |
| | 2577.97 | H | -37.54 | | |
| | 4107.77 | H | -53.70 | | |
| | 7843.58 | H | -48.58 | | |
| 4233 | 41.46 | Vertical | -56.41 | -13.00 | Pass |
| | 91.79 | V | -67.02 | | |
| | 1747.34 | V | -29.62 | | |
| | 2384.53 | V | -50.78 | | |
| | 4107.77 | V | -53.59 | | |
| | 7958.16 | V | -47.66 | | |
| | 182.21 | Horizontal | -63.22 | -13.00 | Pass |
| | 266.39 | H | -62.45 | | |
| | 1747.34 | H | -39.27 | | |
| | 2519.18 | H | -50.30 | | |
| | 4107.77 | H | -53.59 | | |
| | 8963.12 | H | -46.43 | | |

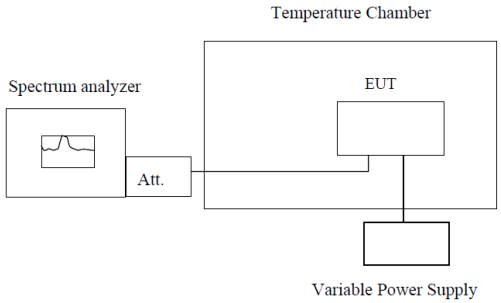
Remark:
3. The emission behaviour belongs to narrowband spurious emission.
4. The emission levels of not record in the report are very lower than the limit and not show in test report.

## 5.7. Frequency stability V.S. Temperature measurement

**LIMIT**

2.5ppm

**TEST CONFIGURATION**




**Note :** Measurement setup for testing on Antenna connector

**TEST PROCEDURE**

1. The equipment under test was connected to an external DC power supply and input rated voltage.
2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.
3. The EUT was placed inside the temperature chamber.
4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°Coperating frequency as reference frequency.
5. Turn EUT off and set the chamber temperature to –30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.
6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

**TEST MODE:**

Please refer to the clause 3.3

**TEST RESULTS**

☒ **Passed** ☐ **Not Applicable**

Note:Worst case at GSM850/PCS1900/WCDMA B2/B4/B5 mid channel

| Reference Frequency: GSM850 Middle channel=190 channel=836.6MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (°C) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 16 | 0.019 | 2.50 | Pass |
| | -20 | 15 | 0.018 | | |
| | -10 | 18 | 0.022 | | |
| | 0 | 17 | 0.020 | | |
| | 10 | 16 | 0.019 | | |
| | 20 | 15 | 0.018 | | |
| | 30 | 17 | 0.020 | | |
| | 40 | 15 | 0.018 | | |
| | 50 | 17 | 0.020 | | |
| Reference Frequency: PCS1900 Middle channel=661 channel=1880MHz | | | | | |
| Power supplied (Vdc) | Temperature (°C) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 15 | 0.008 | 2.50 | Pass |
| | -20 | 14 | 0.007 | | |
| | -10 | 13 | 0.007 | | |
| | 0 | 15 | 0.008 | | |
| | 10 | 16 | 0.009 | | |
| | 20 | 14 | 0.007 | | |
| | 30 | 16 | 0.009 | | |
| | 40 | 13 | 0.007 | | |
| | 50 | 14 | 0.007 | | |

| Reference Frequency: WCDMA Band II Middle channel=9400 channel=1880MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (°C) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 8 | 0.004 | 2.50 | Pass |
| | -20 | 9 | 0.005 | | |
| | -10 | 6 | 0.003 | | |
| | 0 | 5 | 0.003 | | |
| | 10 | 8 | 0.004 | | |
| | 20 | 4 | 0.002 | | |
| | 30 | 8 | 0.004 | | |
| | 40 | 9 | 0.005 | | |
| | 50 | 7 | 0.004 | | |
| Reference Frequency: WCDMA Band IV Middle channel=1450 channel=1740MHz | | | | | |
| Power supplied (Vdc) | Temperature (°C) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 11 | 0.006 | 2.50 | Pass |
| | -20 | 12 | 0.007 | | |
| | -10 | 13 | 0.007 | | |
| | 0 | 15 | 0.009 | | |
| | 10 | 14 | 0.008 | | |
| | 20 | 12 | 0.007 | | |
| | 30 | 16 | 0.009 | | |
| | 40 | 13 | 0.007 | | |
| | 50 | 14 | 0.008 | | |

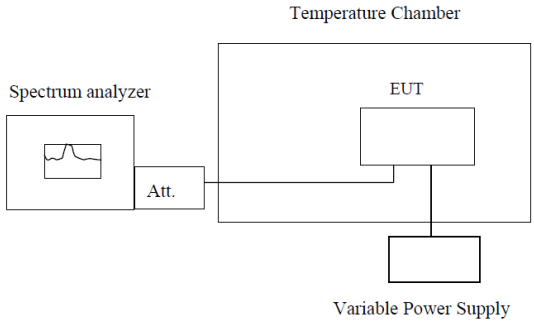
| Reference Frequency: WCDMA Band V Middle channel=4182 channel=836.6MHz | | | | | |
|---|---|---|---|---|---|
| Power supplied (Vdc) | Temperature (°C) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 6 | 0.007 | 2.50 | Pass |
| | -20 | 8 | 0.010 | | |
| | -10 | 9 | 0.011 | | |
| | 0 | 7 | 0.008 | | |
| | 10 | 8 | 0.010 | | |
| | 20 | 6 | 0.007 | | |
| | 30 | 4 | 0.005 | | |
| | 40 | 8 | 0.010 | | |
| | 50 | 7 | 0.008 | | |

## 5.8. Frequency stability V.S. Voltage measurement

**LIMIT**

2.5ppm

**TEST CONFIGURATION**




**Note :** Measurement setup for testing on Antenna connector

**TEST PROCEDURE**

1. Set chamber temperature to 25°C. Use a variable DC power source topower the EUT and set the voltage to rated voltage.
2. Set the spectrum analyzer RBW lowenough to obtain the desired frequency resolution and recorded the frequency.
3. Reduce the input voltage to specified extreme voltage variation (+/- 15%) and endpoint, recordthe maximum frequency change.

**TEST MODE:**

Please refer to the clause 3.3

**TEST RESULTS**

☒ **Passed** ☐ **Not Applicable**

Note:Worst case at GSM850/PCS1900/WCDMA B2/B4/B5 mid channel

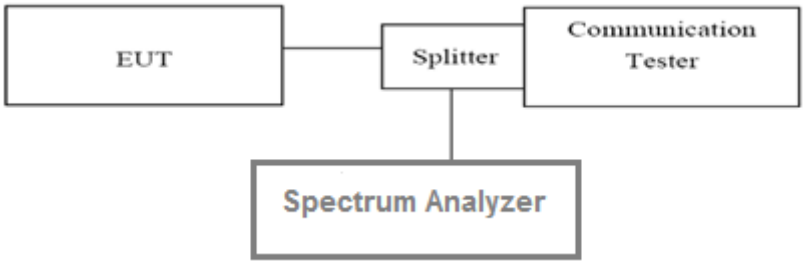
| Reference Frequency: GSM850 (GSM link) Middle channel=190 channel=836.6MHz | | | | | |
|---|---|---|---|---|---|
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.35 | 16 | 0.019 | 2.50 | Pass |
| | 3.80 | 18 | 0.022 | | |
| | 3.60 | 17 | 0.020 | | |
| Reference Frequency: PCS1900 (GSM link) Middle channel=661 channel=1880MHz | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.35 | 15 | 0.008 | 2.50 | Pass |
| | 3.80 | 14 | 0.007 | | |
| | 3.60 | 13 | 0.007 | | |
| Reference Frequency: WCDMA Band II Middle channel=9400 channel=1880MHz | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) Result | |
| | | Hz | ppm | | |
| 25 | 4.35 | 8 | 0.004 | 2.50 | Pass |
| | 3.80 | 9 | 0.005 | | |
| | 3.60 | 7 | 0.004 | | |
| Reference Frequency: WCDMA Band IV Middle channel=1450 channel=1740MHz | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.35 | 11 | 0.006 | 2.50 | Pass |
| | 3.80 | 12 | 0.007 | | |
| | 3.60 | 13 | 0.007 | | |
| Reference Frequency: WCDMA Band V Middle channel=4183 channel=836.6MHz | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 4.35 | 6 | 0.007 | 2.50 | Pass |
| | 3.80 | 7 | 0.008 | | |
| | 3.60 | 9 | 0.011 | | |

## 5.9. Peak-Average Ratio

**LIMIT**

13dB

**TEST CONFIGURATION**




**TEST PROCEDURE**

According with KDB 971168
1. The signal analyzer' s CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. Forcontinuoussignals(>98% duty cycle), the measurement interval was set to 1ms. For bursttransmissions, the spectrum analyzer is set to use an internal " RF Burst" trigger that issynced with an incoming pulse and the measurement interval is set to less than the durationof the " on time" of one burst to ensure that energy is only captured during a time in whichthetransmitter is operating at maximum power

**TEST MODE:**

Please refer to the clause 3.3

**TEST RESULTS**

☒ **Passed** ☐ **Not Applicable**

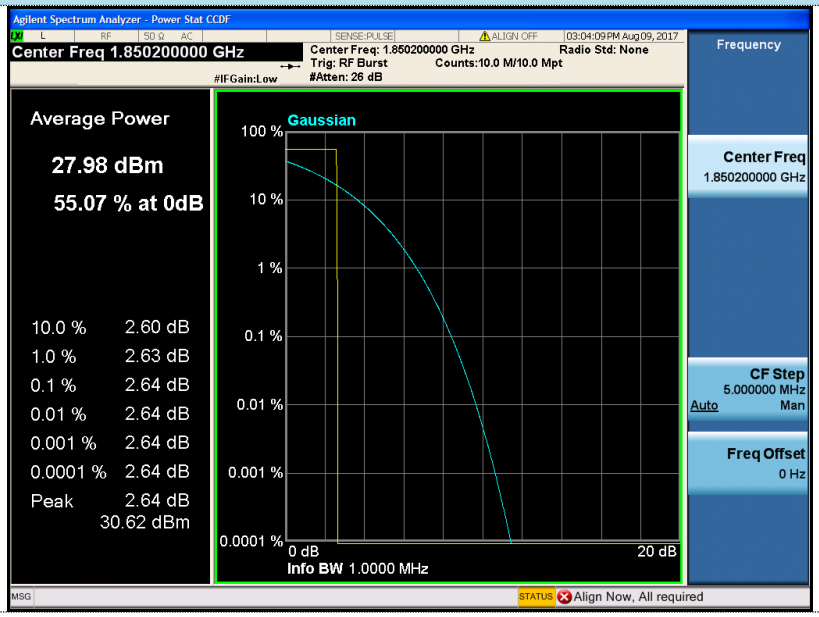
Note:Worst case PCS1900,WCDMA BAND1900, WCDMA BAND1700

| Band | Channel | Frequency(MHz) | PAR | Limit(dB) | Result |
|---|---|---|---|---|---|
| PCS1900 | 512 | 1850.2 | 2.64 | 13.00 | Pass |
| | 661 | 1880.0 | 2.63 | 13.00 | Pass |
| | 810 | 1909.8 | 2.64 | 13.00 | Pass |

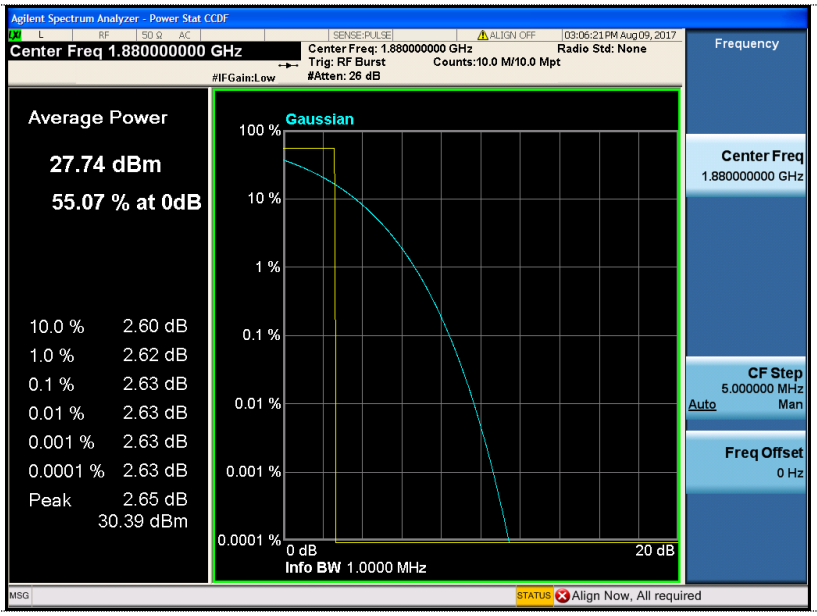
| Band | Channel | Frequency(MHz) | PAR | Limit(dB) | Result |
|---|---|---|---|---|---|
| WCDMA BAND II | 9262 | 1852.4 | 3.01 | 13.00 | Pass |
| | 9400 | 1880.0 | 3.01 | 13.00 | Pass |
| | 9538 | 1907.6 | 2.84 | 13.00 | Pass |

| Band | Channel | Frequency(MHz) | PAR | Limit(dB) | Result |
|---|---|---|---|---|---|
| WCDMA BAND IV | 1313 | 1712.6 | 3.58 | 13.00 | Pass |
| | 1450 | 1740.0 | 3.47 | 13.00 | Pass |
| | 1512 | 1752.4 | 3.08 | 13.00 | Pass |

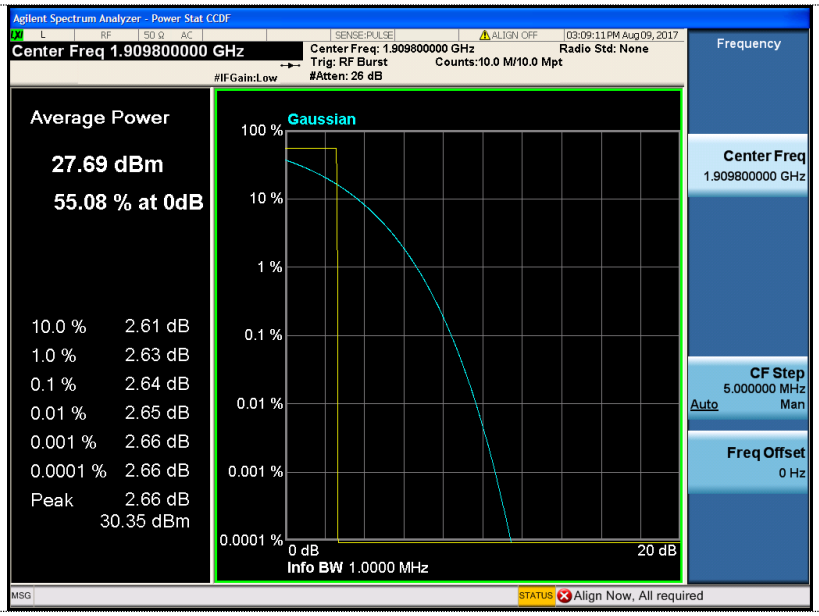
PCS1900



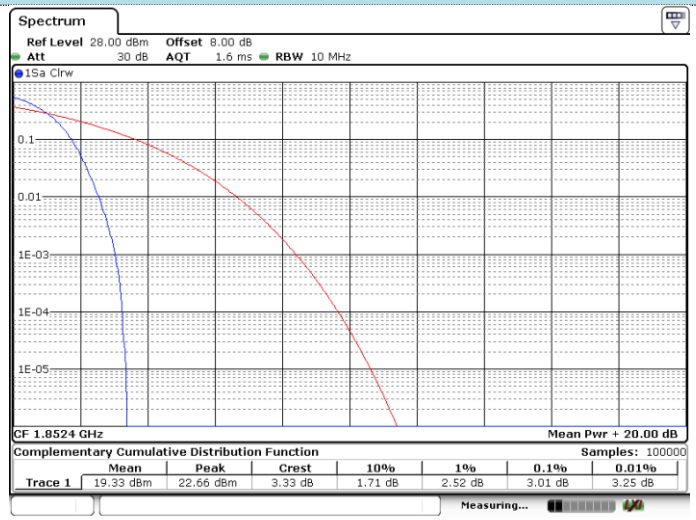
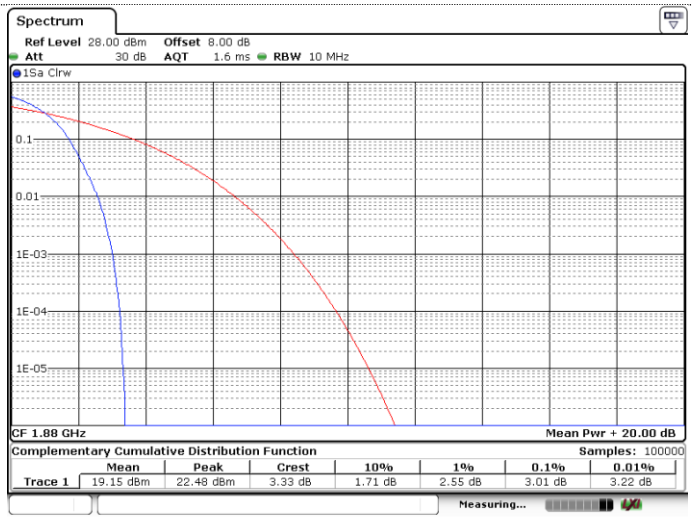
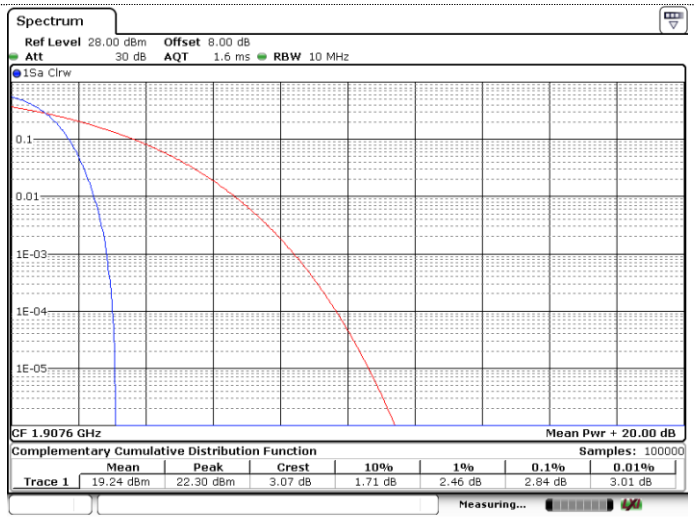

Channel 512




Channel 661

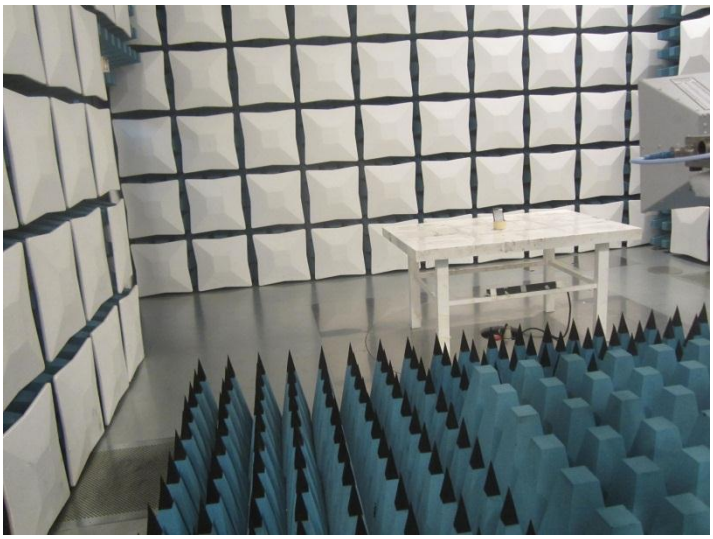



Channel 810

| WCDMA BAND II |
|---|
|  |
| Channel 9262 |
|  |
| Channel 9400 |
|  |
| Channel 9538 |

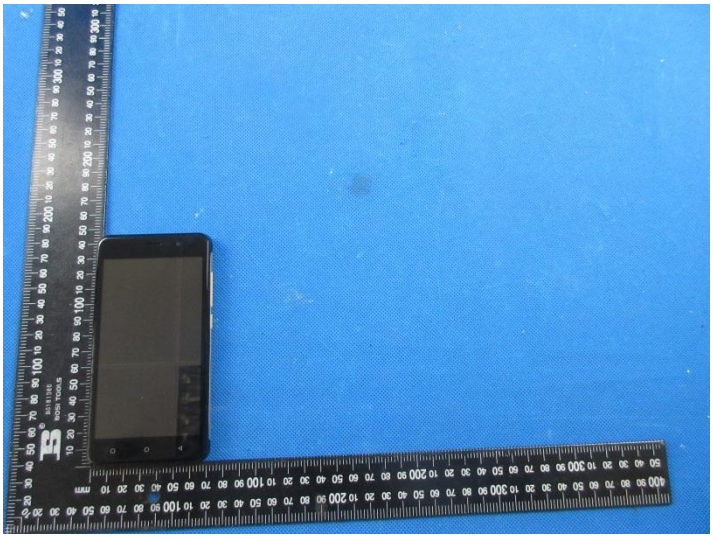
# 6. Test Setup Photos of the EUT

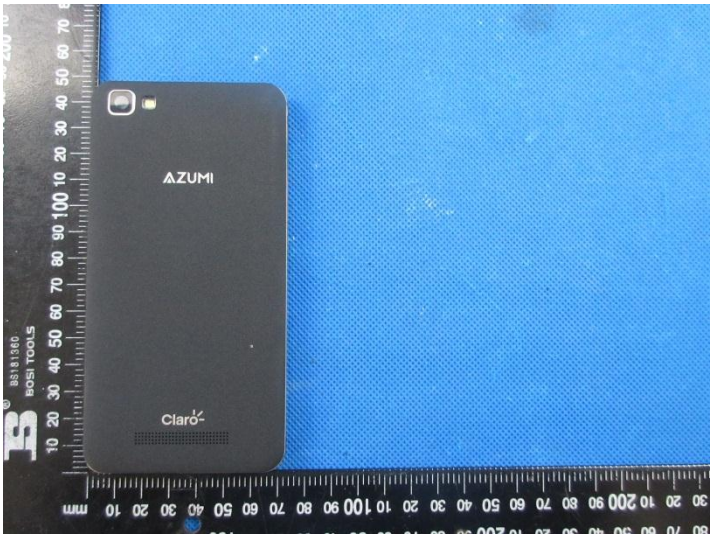
Radiated emission:



# 7. External and Internal Photos of the EUT

## External photos of the EUT



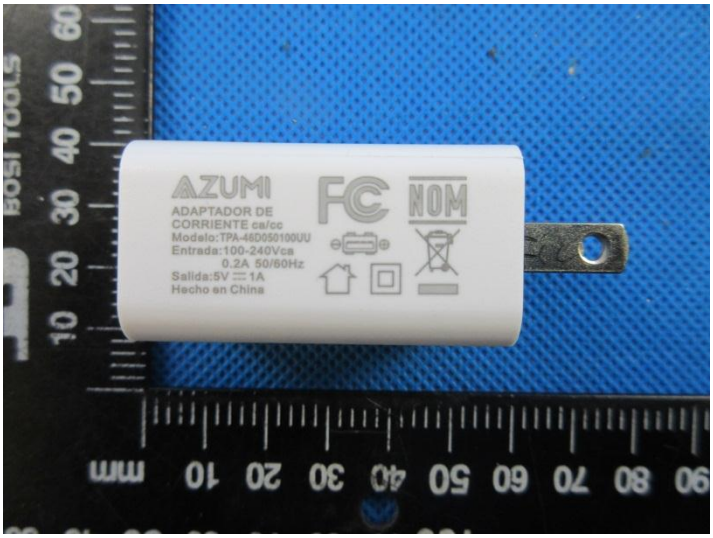




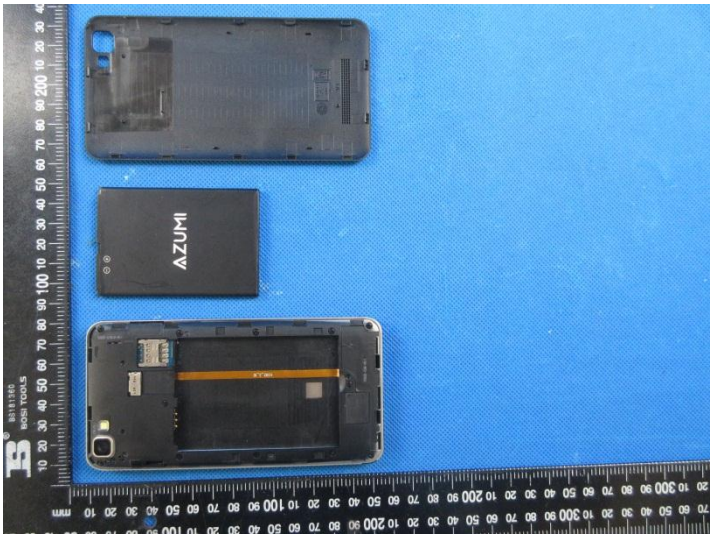
AZUMI


AZUMI

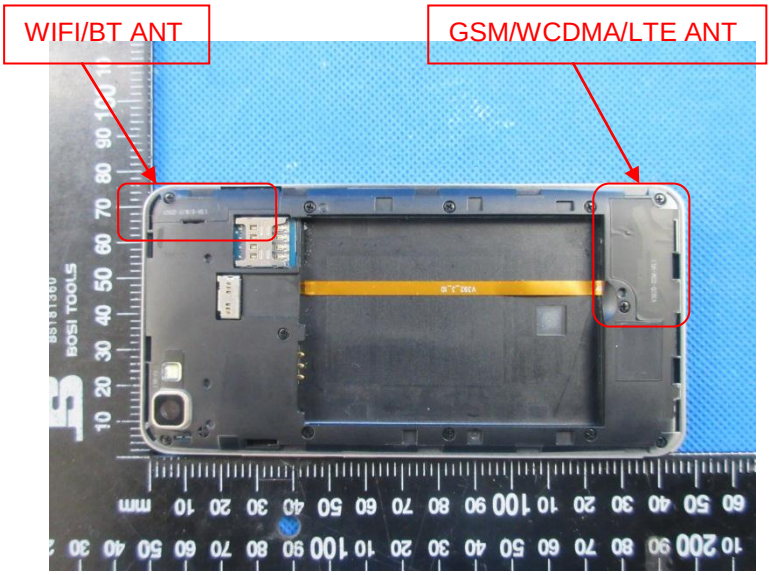

AZUMI

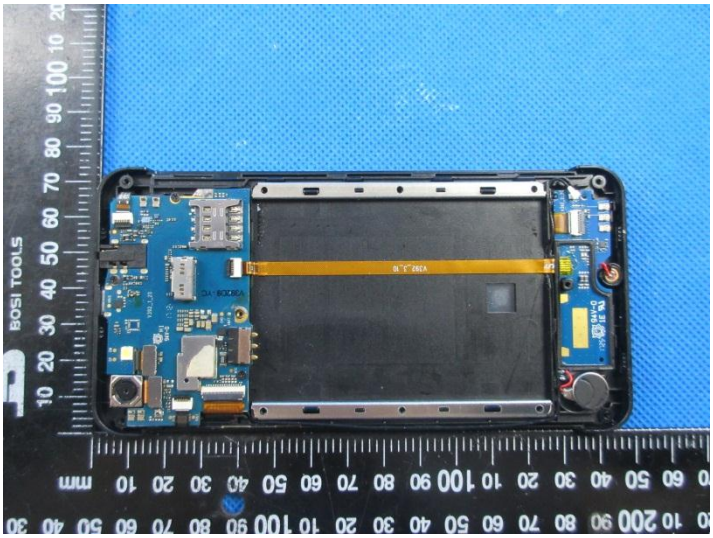

AZUMI
ADAPTADOR DE
CORRIENTE ca/cc
Modelo:TPA-46D050100UU
Entrada:100-240Vca
0.2A 50/60Hz
Salida:5V ⎓ 1A
Hecho en China
FC
NOM

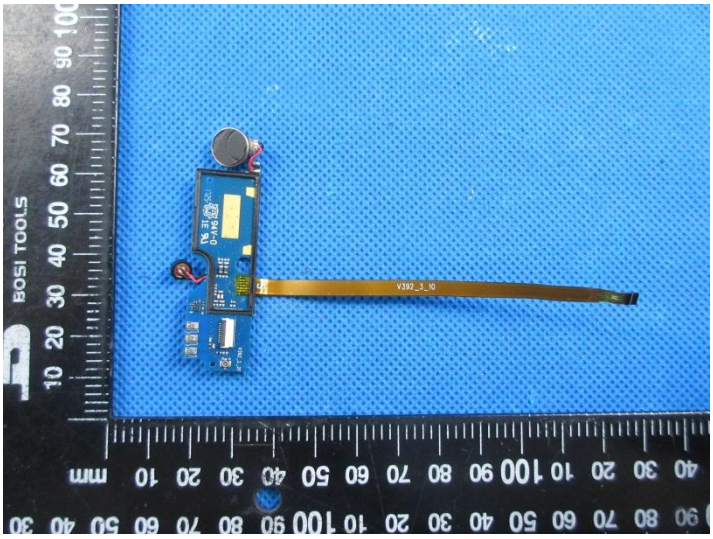
# Internal photos of the EUT

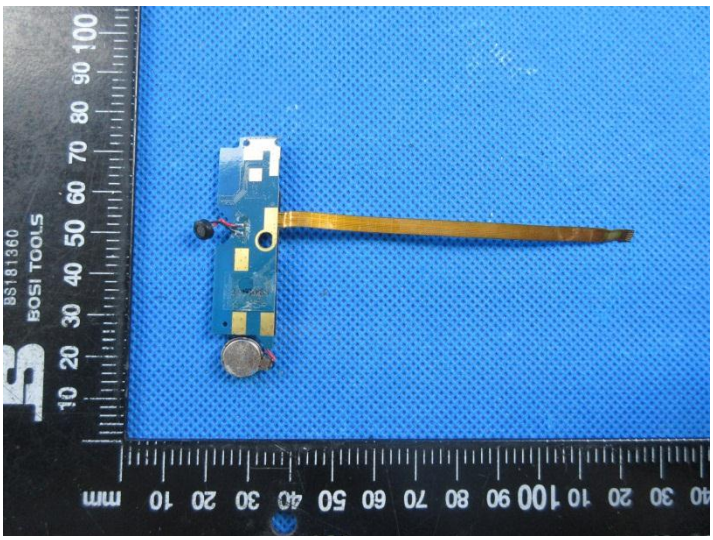


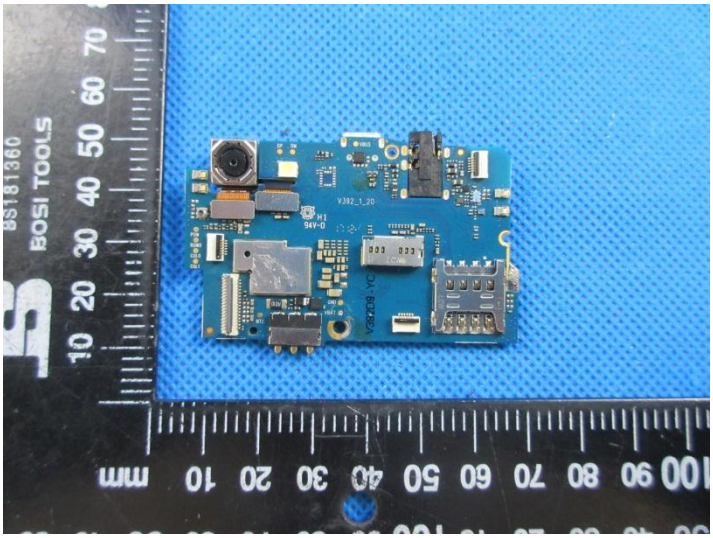


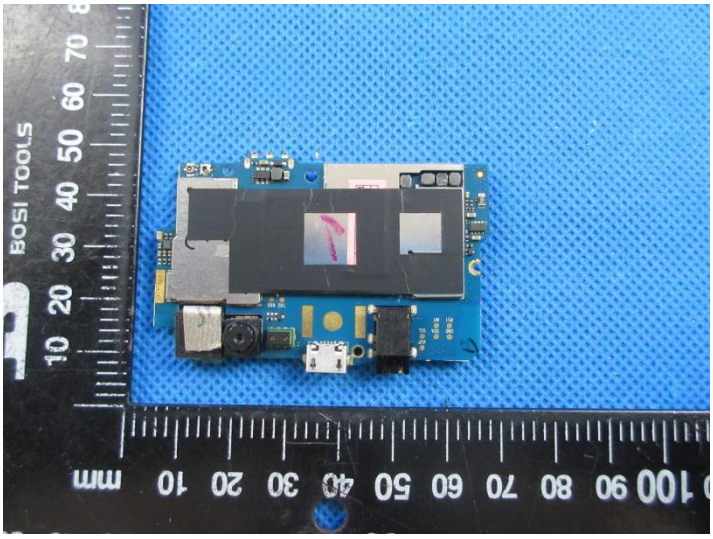


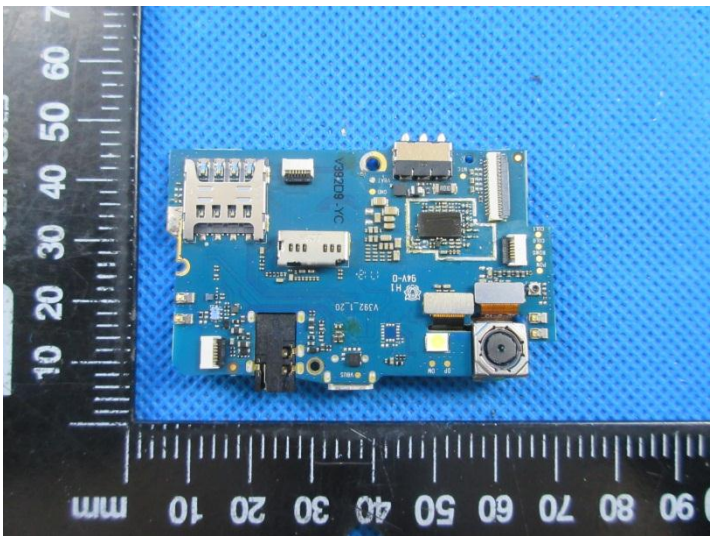


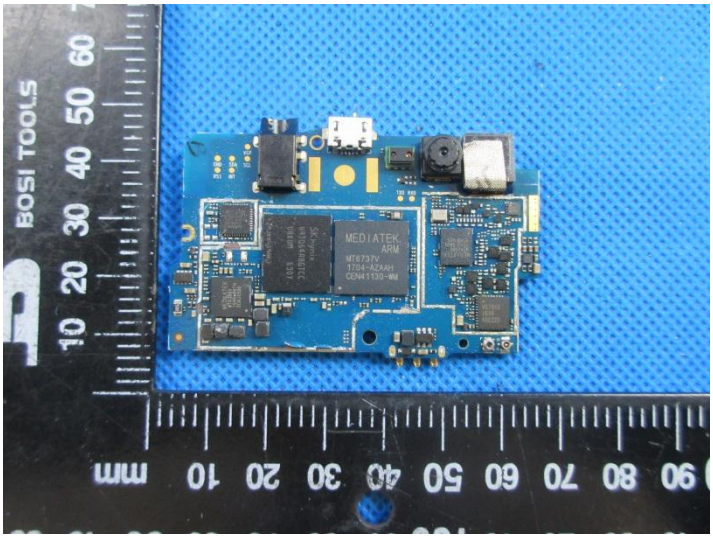



BOSI TOOLS
BS181360


BOSI TOOLS
BS181360


BOSI TOOLS






**.....End of Report.....**