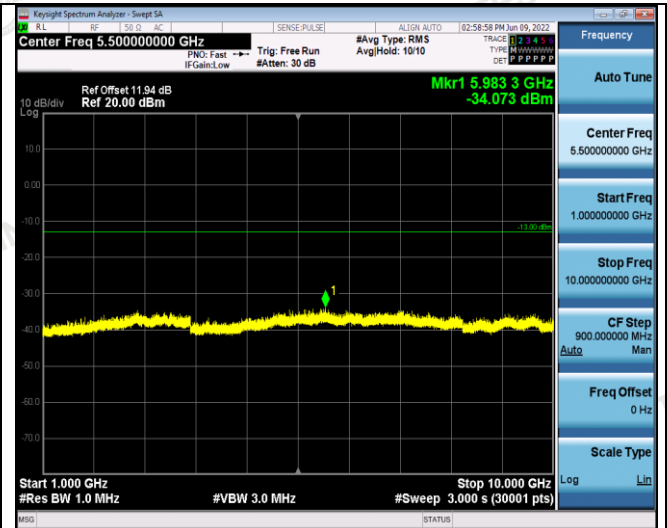


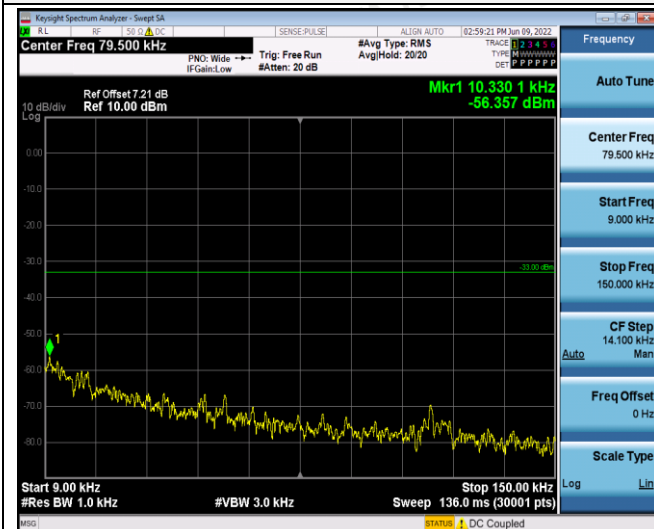
30MHz~1GHz

Channel:

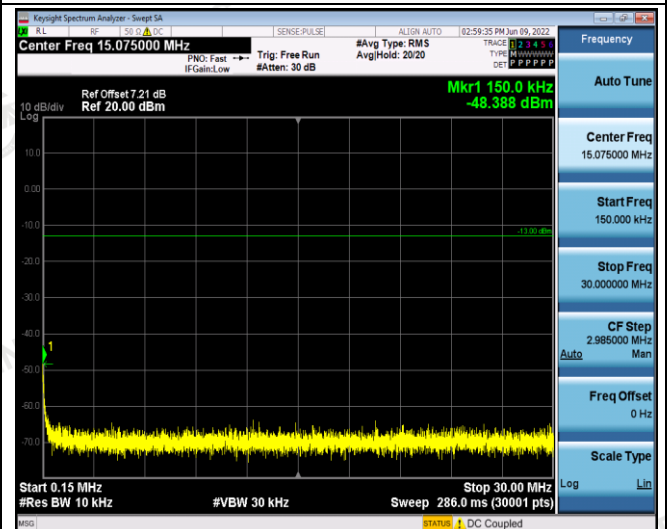


1GHz~10GHz

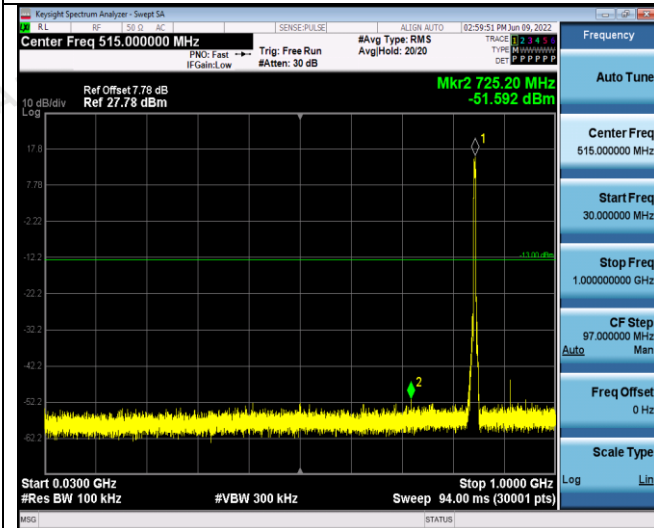
4233



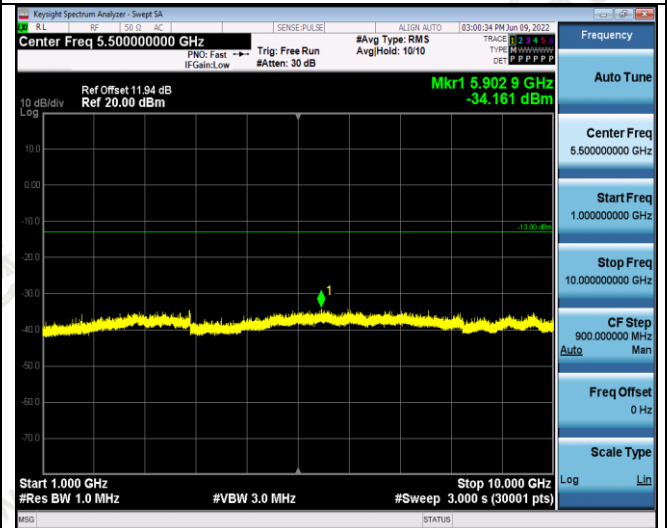
0.009~0.15MHz



0.15~30MHz



30MHz~1GHz



1GHz~10GHz

CTA TESTING

## Radiated Measurement:

**WCDMA Band II**

| Channel | Frequency (MHz) | P <sub>Mea</sub> (dBm) | P <sub>cl</sub> (dB) | Distance | G <sub>a</sub> Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---------|-----------------|------------------------|----------------------|----------|---------------------------------|-----------------|-------------|-------------|--------------|
| 9262    | 3704.80         | -40.02                 | 4.27                 | 3        | 12.34                           | -31.95          | -13         | -18.95      | H            |
|         | 5557.20         | -44.10                 | 4.99                 | 3        | 13.52                           | -35.57          | -13         | -22.57      | H            |
|         | 3704.80         | -38.61                 | 4.27                 | 3        | 12.34                           | -30.54          | -13         | -17.54      | V            |
|         | 5557.20         | -41.36                 | 4.99                 | 3        | 13.52                           | -32.83          | -13         | -19.83      | V            |
| 9400    | 3760.00         | -39.02                 | 4.38                 | 3        | 12.34                           | -31.06          | -13         | -18.06      | H            |
|         | 5640.00         | -43.37                 | 5.01                 | 3        | 13.58                           | -34.80          | -13         | -21.80      | H            |
|         | 3760.00         | -36.33                 | 4.38                 | 3        | 12.34                           | -28.37          | -13         | -15.37      | V            |
|         | 5640.00         | -41.57                 | 5.01                 | 3        | 13.58                           | -33.00          | -13         | -20.00      | V            |
| 9538    | 3815.20         | -38.26                 | 4.47                 | 3        | 12.45                           | -30.28          | -13         | -17.28      | H            |
|         | 5722.80         | -43.01                 | 5.23                 | 3        | 13.66                           | -34.58          | -13         | -21.58      | H            |
|         | 3815.20         | -36.79                 | 4.47                 | 3        | 12.45                           | -28.81          | -13         | -15.81      | V            |
|         | 5722.80         | -40.38                 | 5.23                 | 3        | 13.66                           | -31.95          | -13         | -18.95      | V            |

**WCDMA Band IV**

| Channel | Frequency (MHz) | P <sub>Mea</sub> (dBm) | P <sub>cl</sub> (dB) | Distance | G <sub>a</sub> Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---------|-----------------|------------------------|----------------------|----------|---------------------------------|-----------------|-------------|-------------|--------------|
| 1312    | 3424.80         | -38.90                 | 3.98                 | 3        | 10.98                           | -31.90          | -13         | -18.90      | H            |
|         | 5137.20         | -43.22                 | 4.11                 | 3        | 11.47                           | -35.86          | -13         | -22.86      | H            |
|         | 3424.80         | -36.74                 | 3.98                 | 3        | 10.98                           | -29.74          | -13         | -16.74      | V            |
|         | 5137.20         | -40.64                 | 4.11                 | 3        | 11.47                           | -33.28          | -13         | -20.28      | V            |
| 1413    | 3465.20         | -38.52                 | 4.01                 | 3        | 11.25                           | -31.28          | -13         | -18.28      | H            |
|         | 5197.80         | -41.40                 | 4.15                 | 3        | 11.58                           | -33.97          | -13         | -20.97      | H            |
|         | 3465.20         | -36.04                 | 4.01                 | 3        | 11.25                           | -28.80          | -13         | -15.80      | V            |
|         | 5197.80         | -38.86                 | 4.15                 | 3        | 11.58                           | -31.43          | -13         | -18.43      | V            |
| 1513    | 3505.20         | -38.25                 | 4.07                 | 3        | 11.33                           | -30.99          | -13         | -17.99      | H            |
|         | 5275.80         | -41.75                 | 4.21                 | 3        | 11.67                           | -34.29          | -13         | -21.29      | H            |
|         | 3505.20         | -35.36                 | 4.07                 | 3        | 11.33                           | -28.10          | -13         | -15.10      | V            |
|         | 5275.80         | -40.12                 | 4.21                 | 3        | 11.67                           | -32.66          | -13         | -19.66      | V            |

**WCDMA Band V**

| Channel | Frequency (MHz) | P <sub>Mea</sub> (dBm) | P <sub>cl</sub> (dB) | Distance | G <sub>a</sub> Antenna Gain (dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---------|-----------------|------------------------|----------------------|----------|----------------------------------|-----------------|-------------|-------------|--------------|
| 9262    | 1652.80         | -35.93                 | 3.02                 | 3        | 9.58                             | -29.37          | -13         | -16.37      | H            |
|         | 2479.20         | -40.74                 | 3.51                 | 3        | 10.72                            | -33.53          | -13         | -20.53      | H            |
|         | 1652.80         | -34.34                 | 3.02                 | 3        | 9.68                             | -27.68          | -13         | -14.68      | V            |
|         | 2479.20         | -38.84                 | 3.51                 | 3        | 10.72                            | -31.63          | -13         | -18.63      | V            |
| 9400    | 1673.20         | -36.15                 | 3.14                 | 3        | 9.61                             | -29.68          | -13         | -16.68      | H            |
|         | 2509.80         | -40.95                 | 3.59                 | 3        | 10.77                            | -33.77          | -13         | -20.77      | H            |
|         | 1673.20         | -34.77                 | 3.14                 | 3        | 9.61                             | -28.30          | -13         | -15.30      | V            |
|         | 2509.80         | -38.88                 | 3.59                 | 3        | 10.77                            | -31.70          | -13         | -18.70      | V            |
| 9538    | 1693.20         | -36.00                 | 3.24                 | 3        | 9.77                             | -29.47          | -13         | -16.47      | H            |
|         | 2539.80         | -40.03                 | 3.65                 | 3        | 10.89                            | -32.79          | -13         | -19.79      | H            |
|         | 1693.20         | -34.53                 | 3.24                 | 3        | 9.77                             | -28.00          | -13         | -15.00      | V            |
|         | 2539.80         | -37.39                 | 3.65                 | 3        | 10.89                            | -30.15          | -13         | -17.15      | V            |

Remark:

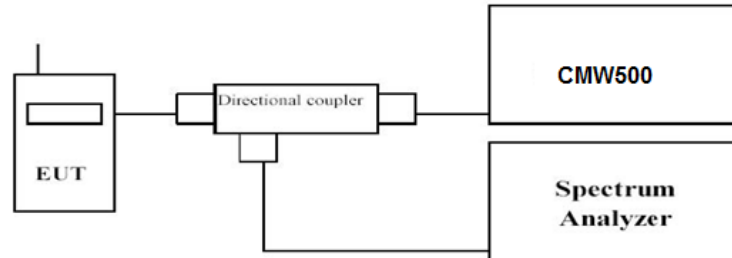
1.  $EIRP = P_{Mea}(dBm) - P_{cl}(dB) + G_a(dBi)$
2. We were not recorded other points as values lower than limits.
3.  $Margin = EIRP - Limit$

### 3.5 Peak-to-Average Ratio (PAR)

#### LIMIT

The Peak-to-Average Ratio (PAR) of the transmission may not exceed 13 dB.

#### TEST CONFIGURATION



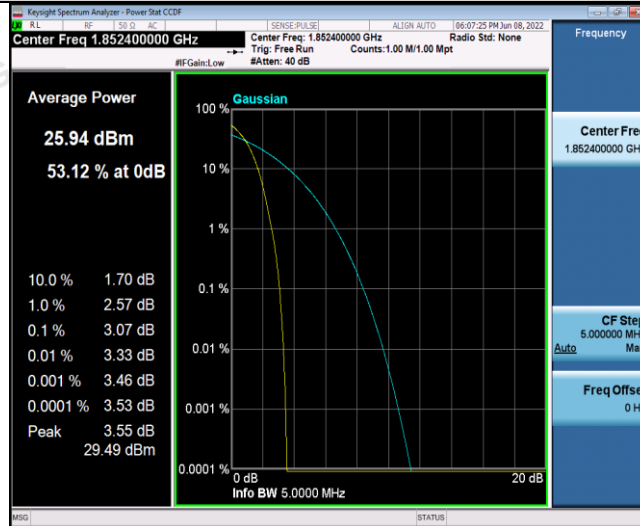
#### TEST PROCEDURE

1. Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
2. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
3. Set the number of counts to a value that stabilizes the measured CCDF curve;
4. Set the measurement interval as follows: 1). for continuous transmissions, set to 1 ms, 2). for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
5. Record the maximum PAPR level associated with a probability of 0.1%.

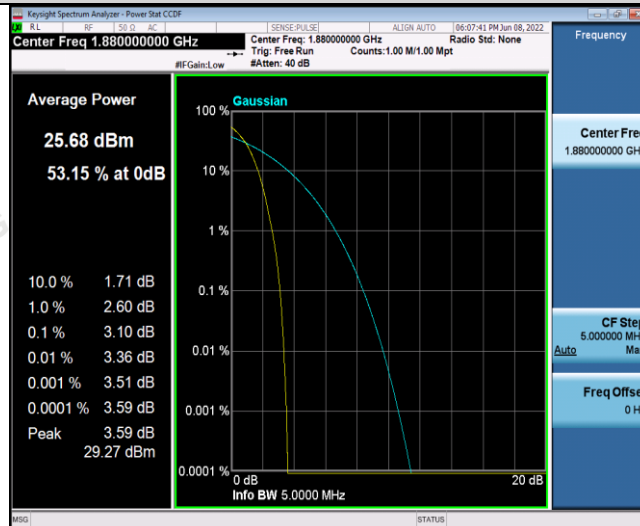
#### TEST RESULTS

| Test mode     | Channel | Frequency (MHz) | PAPR Value (dB) | Limits (dB) | Verdict |
|---------------|---------|-----------------|-----------------|-------------|---------|
| WCDMA Band II | 9262    | 1852.4          | 3.07            | 13.0        | Pass    |
|               | 9400    | 1880.0          | 3.1             | 13.0        | Pass    |
|               | 9538    | 1907.6          | 2.83            | 13.0        | Pass    |
| WCDMA Band IV | 1312    | 1712.4          | 8.4             | 13.0        | Pass    |
|               | 1413    | 1732.6          | 8.38            | 13.0        | Pass    |
|               | 1513    | 1752.6          | 8.42            | 13.0        | Pass    |
| WCDMA Band V  | 4132    | 826.4           | 3.21            | 13.0        | Pass    |
|               | 4183    | 836.6           | 3.05            | 13.0        | Pass    |
|               | 4233    | 846.6           | 2.93            | 13.0        | Pass    |

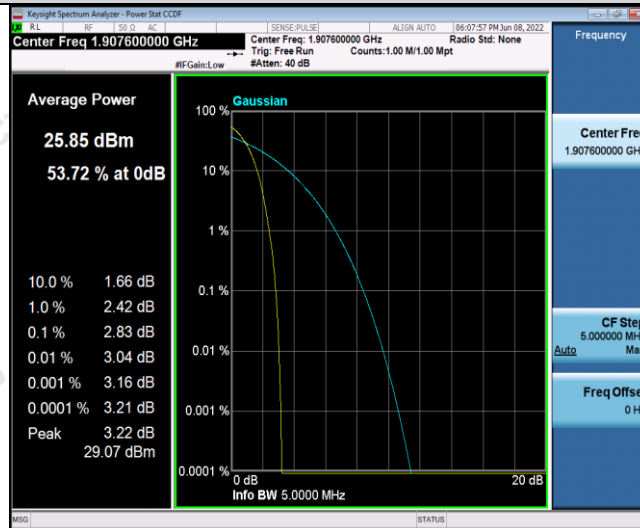
### Band2-9262



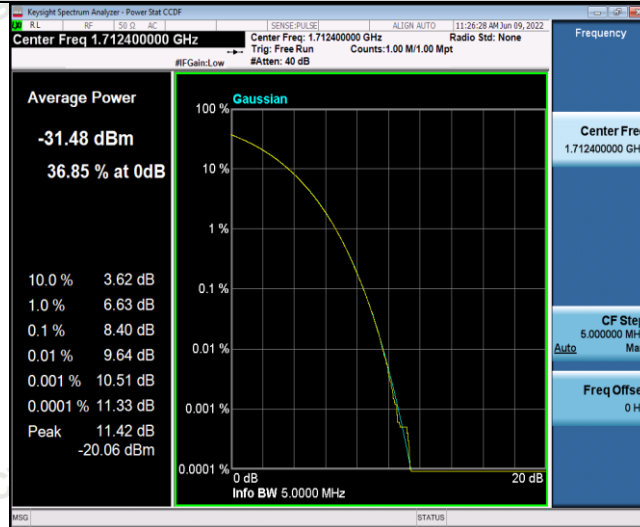
### Band2-9400



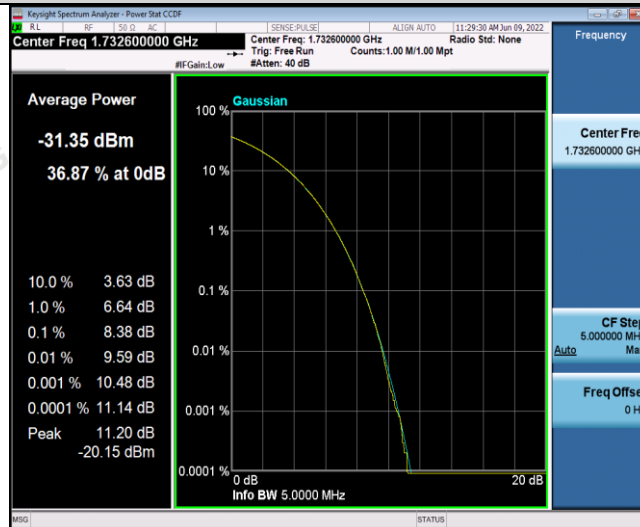
### Band2-9538



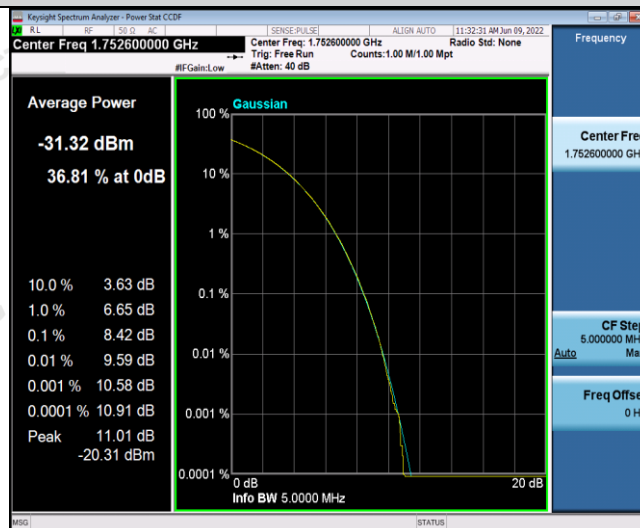
### Band4-1312



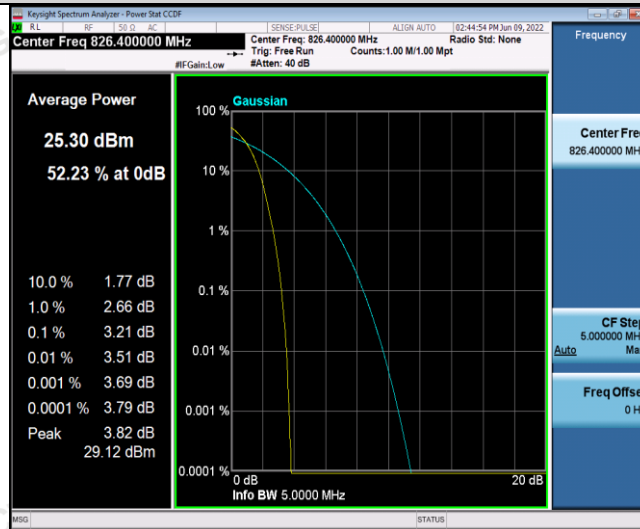
### Band4-1413



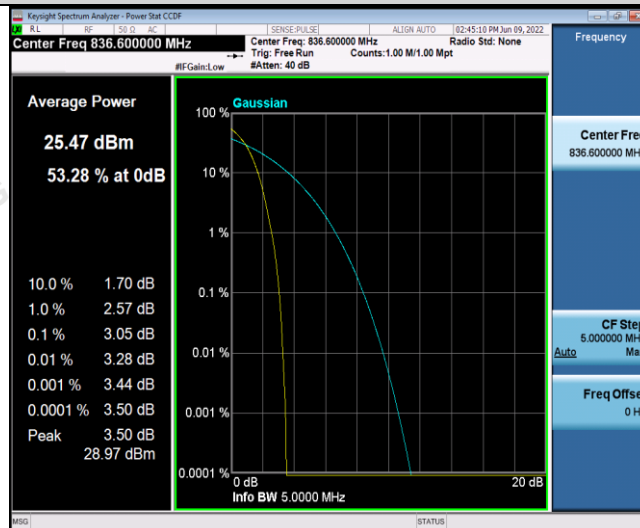
### Band4-1513



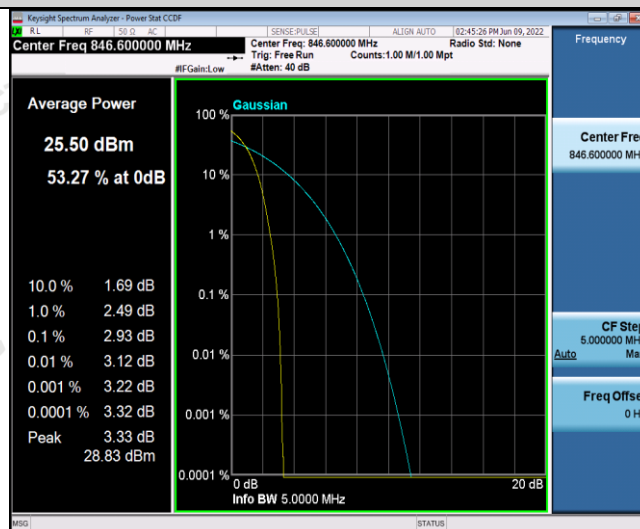
Band5-4132



Band5-4183



Band5-4233

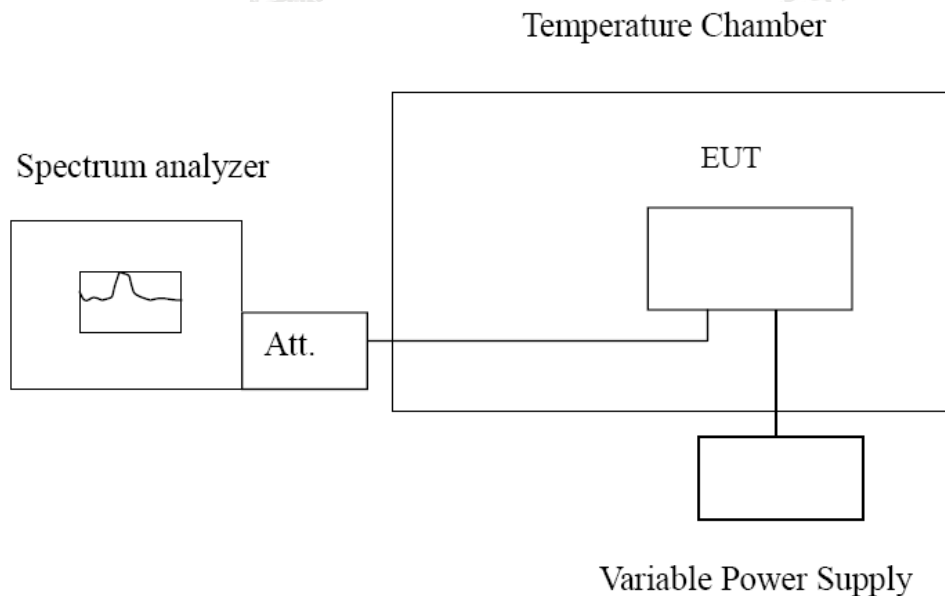


### 3.6 Frequency Stability under Temperature & Voltage Variations

#### LIMIT

Cellular Band:  $\pm 2.5$ ppm PCS Band: Within the authorized frequency block

#### TEST CONFIGURATION



#### TEST PROCEDURE

The EUT was setup according to EIA/TIA 603C

##### **Frequency Stability under Temperature Variations:**

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

##### **Frequency Stability under Voltage Variations:**

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ( $\pm 15\%$ ) and endpoint, record the maximum frequency change.

#### TEST RESULTS

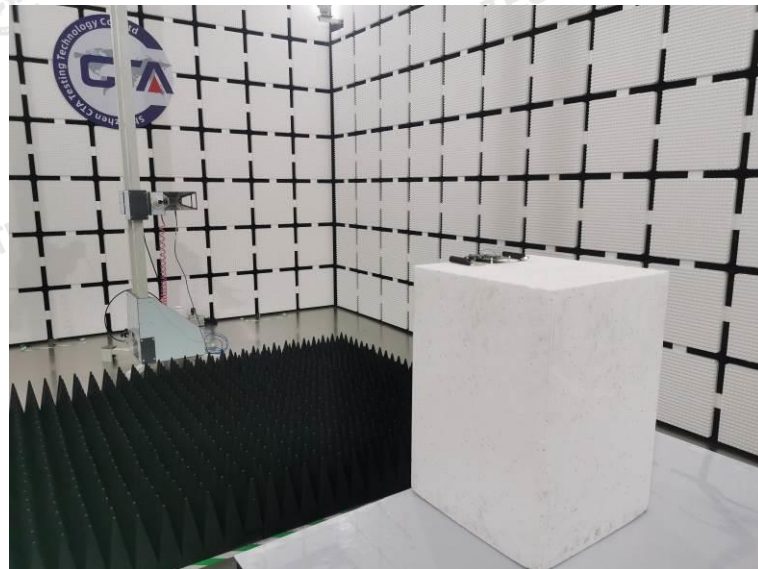


| Reference Frequency: WCDMA Band II Middle channel=9400 channel=1880MHz |                  |                 |           |             |        |
|--|------------------|-----------------|-----------|-------------|--------|
| Voltage ( V )  | Temperature (°C) | Frequency error |           | Limit (ppm) | Result |
|  |                  | Hz              | ppm       |             |        |
| 3.70   | -30              | -10.54          | -0.005690 | ±2.5        | Pass   |
|  | -20              | -13.19          | -0.007120 |             |        |
|  | -10              | -13.02          | -0.007029 |             |        |
|  | 0                | -11.82          | -0.006287 |             |        |
|  | 10               | -9.38           | -0.004989 |             |        |
|  | 20               | -11.29          | -0.006005 |             |        |
|  | 30               | -10.76          | -0.005641 |             |        |
|  | 40               | -9.61           | -0.005038 |             |        |
| 4.26   | 25               | -10.54          | -0.005690 |             |        |
| End point 3.15   | 25               | -13.19          | -0.007120 |             |        |

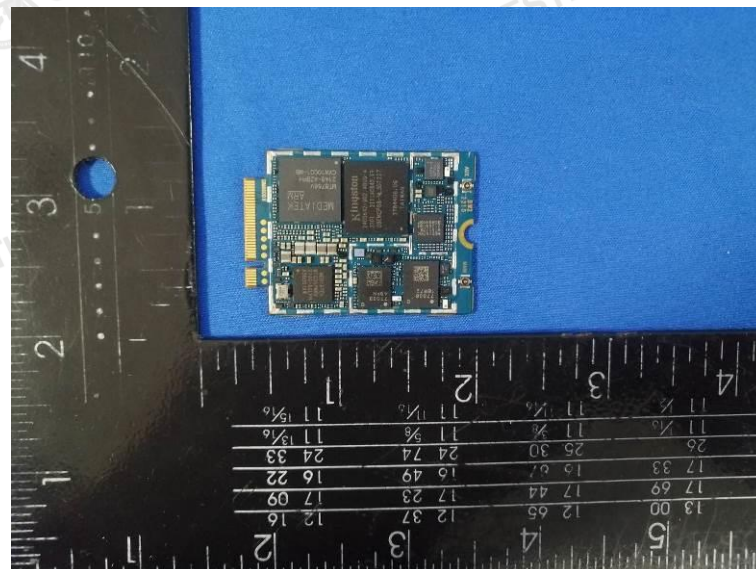
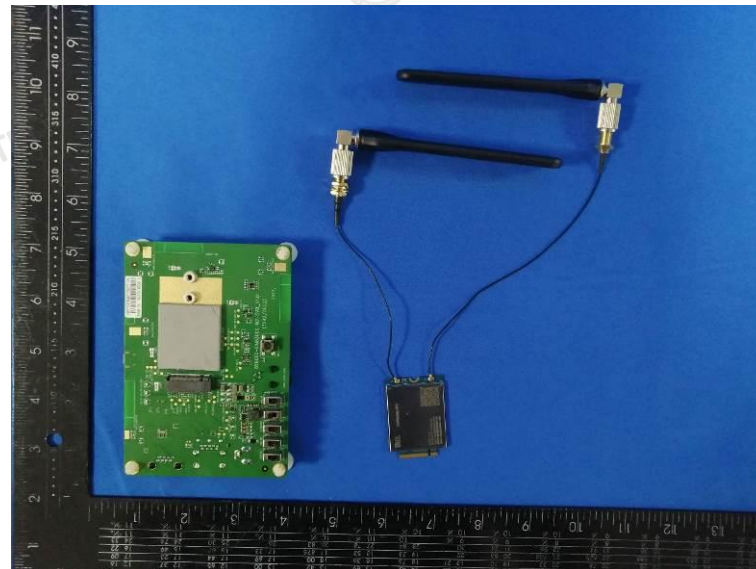
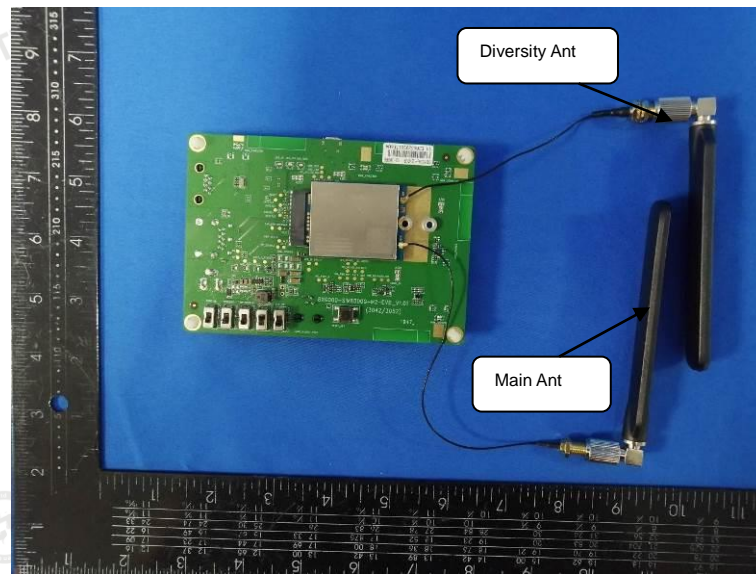
| Reference Frequency: WCDMA Band IV Middle channel=1413 channel=1732.6MHz |                  |                 |           |             |        |
|--|------------------|-----------------|-----------|-------------|--------|
| Voltage ( V )  | Temperature (°C) | Frequency error |           | Limit (ppm) | Result |
|  |                  | Hz              | ppm       |             |        |
| 3.70   | -30              | -17.09          | -0.009980 | ±2.5        | Pass   |
|  | -20              | -14.07          | -0.008217 |             |        |
|  | -10              | -14.05          | -0.008205 |             |        |
|  | 0                | -14.45          | -0.008340 |             |        |
|  | 10               | -15.52          | -0.008958 |             |        |
|  | 20               | -13.90          | -0.008023 |             |        |
|  | 30               | -10.71          | -0.006111 |             |        |
|  | 40               | -10.82          | -0.006174 |             |        |
| 4.26   | 25               | -17.09          | -0.009980 |             |        |
| End point 3.15   | 25               | -14.07          | -0.008217 |             |        |

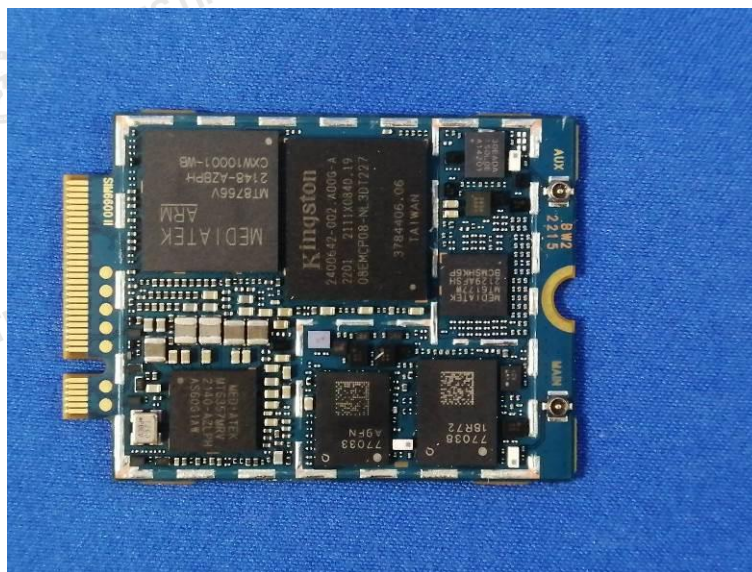
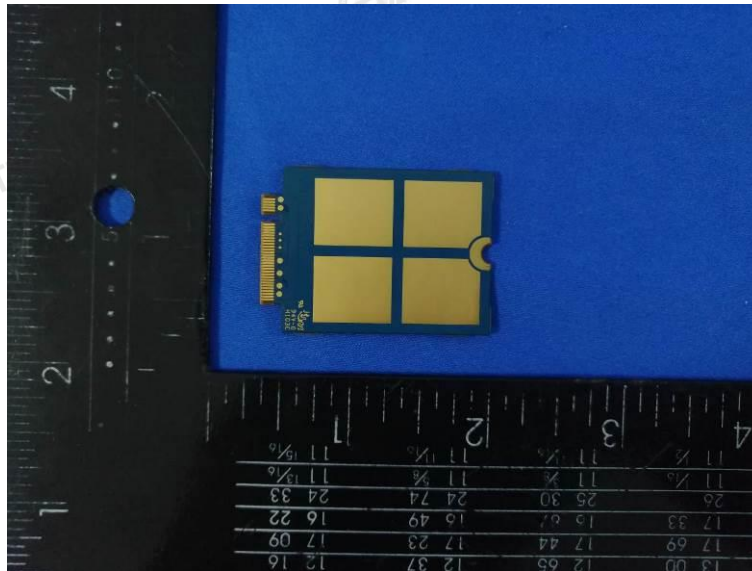
| Reference Frequency: WCDMA Band V Middle channel=4182 channel=836.6MHz |                  |                 |           |             |        |
|--|------------------|-----------------|-----------|-------------|--------|
| Voltage ( V )  | Temperature (°C) | Frequency error |           | Limit (ppm) | Result |
|  |                  | Hz              | ppm       |             |        |
| 3.70   | -30              | -9.97           | -0.012064 | ±2.5        | Pass   |
|  | -20              | -10.69          | -0.012936 |             |        |
|  | -10              | -10.43          | -0.012621 |             |        |
|  | 0                | -9.56           | -0.011427 |             |        |
|  | 10               | -11.03          | -0.013184 |             |        |
|  | 20               | -7.91           | -0.009455 |             |        |
|  | 30               | -7.02           | -0.008292 |             |        |
|  | 40               | -8.09           | -0.009556 |             |        |
| 4.26   | 25               | -9.97           | -0.012064 |             |        |
| End point 3.15   | 25               | -10.69          | -0.012936 |             |        |

#### 4 Test Setup Photos of the EUT



### 5 External and Internal Photos of the EUT





\*\*\*\*\* End of Report \*\*\*\*\*