# RF TEST REPORT

| | |
|---|---|
| **Applicant** | UAB TELTONIKA TELEMATICS |
| **FCC ID** | 2A3HUFMC00A |
| **Product** | Fleet Management System |
| **Brand** | TELTONIKA TELEMATICS |
| **Model** | FMC00A-QBIB0 |
| **Report No.** | R2206A0487-R1V1 |
| **Issue Date** | August 16, 2022 |

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2021)/ FCC CFR 47 Part 22H (2021)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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*Approved by: Xu Kai*


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# TABLE OF CONTENT

| Version | Revision description | Issue Date |
|---|---|---|
| Rev.0 | Initial issue of report. | August 5, 2022 |
| Rev.1 | Update description. | August 16, 2022 |
| Note: This revised report (Report No. R2206A0487-R1V1) supersedes and replaces the previously issued report (Report No. R2206A0487-R1). Please discard or destroy the previously issued report and dispose of it accordingly. | | |

# Summary of measurement results

| No. | Test Case | Clause in FCC rules | Verdict |
|---|---|---|---|
| 1 | RF Power Output and Effective Radiated Power | 2.1046<br>22.913(a)(5) | PASS |
| 2 | Radiated Spurious Emission | 2.1053 / 22.917 (a) | PASS |
| Date of Testing: June 7, 2022 ~ June 23, 2022<br>Date of Sample Received: June 6, 2022 | | | |
| Note: PASS: The EUT complies with the essential requirements in the standard.<br>FAIL: The EUT does not comply with the essential requirements in the standard.<br>All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. | | | |

**This report only tests Effective Radiated Power and Radiated Spurious Emission. For other test items, please refer to Module Report (Report No: R1805A0250-R1, FCC ID: XMR201807EG91NA).**

# 1. Test Laboratory

## 1.1. Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

## 1.2. Test facility

**FCC (Designation number: CN1179, Test Firm Registration Number: 446626)**

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

**A2LA (Certificate Number: 3857.01)**

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

## 1.3. Testing Location

| | |
|---|---|
| Company: | TA Technology (Shanghai) Co., Ltd. |
| Address: | Building 3, No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China |
| City: | Shanghai |
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| Website: | http://www.ta-shanghai.com |
| E-mail: | xukai@ta-shanghai.com |

# 2. General Description of Equipment under Test

## 2.1. Applicant and Manufacturer Information

| | |
|---|---|
| Applicant | UAB TELTONIKA TELEMATICS |
| Applicant address | Saltoniskiu st. 9B-1,Vilnius,Lithuania |
| Manufacturer | UAB TELTONIKA TELEMATICS |
| Manufacturer address | Saltoniskiu st. 9B-1,Vilnius,Lithuania |
| Factory | UAB TELTONIKA EMS |
| Factory address | Ditvos st. 6, Vilnius,Lithuania |

## 2.2. General Information

| EUT Description | | | |
|---|---|---|---|
| Model | FMC00A-QBIB0 | | |
| IMEI | 866258043620571 | | |
| Hardware Version | FMC00A-80 | | |
| Software Version | FMB.Ver.03.27.12 | | |
| Power Supply | External power supply | | |
| Antenna Type | Fixed Internal Antenna | | |
| Antenna Gain | 2.5dBi | | |
| Test Mode(s) | WCDMA Band V; LTE Band 5; | | |
| Test Modulation | (WCDMA) BPSK, QPSK;<br>(LTE) QPSK, 16QAM; | | |
| HSDPA UE Category | 24 | | |
| HSUPA UE Category | 6 | | |
| DC-HSDPA UE Category | 24 | | |
| LTE Category | 1 | | |
| Maximum E.R.P. | WCDMA Band V: | 23.47dBm | |
| | LTE Band 5: | 24.58dBm | |
| Rated Power Supply Voltage | 12V | | |
| Operating Voltage | Minimum: 10V Maximum: 30V | | |
| Operating Temperature | Lowest: -20°C Highest: +85°C | | |
| Operating Frequency Range(s) | Band | Tx (MHz) | Rx (MHz) |
| | WCDMA Band V | 824 ~ 849 | 869 ~ 894 |
| | LTE Band 5 | 824 ~ 849 | 869 ~ 894 |
| Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant. | | | |

# 3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**Test standards:**
**FCC CFR 47 Part 22H (2021)**

**FCC CFR47 Part 2 (2021)**

**Reference standard:**
**ANSI C63.26-2015**

**KDB 971168 D01 Power Meas License Digital Systems v03r01**

# 4. Test Configuration

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (X axis, vertical polarization) and the worst case was recorded.

All mode and data rates and positions and RB size and modulations were investigated.
Subsequently, only the worst case emissions are reported.
The following testing in WCDMA/LTE is set based on the maximum RF Output Power.
Test modes are chosen to be reported as the worst case configuration below:

| Test items | Modes/Modulation |
|---|---|
| | WCDMA Band V |
| RF Power Output and Effective Radiated power | RMC/HSDPA/HSUPA<br>DC-HSDPA |
| Radiated Spurious Emission | RMC |

Test modes are chosen as the worst case configuration below for LTE Band 5.

| Test items | Bandwidth (MHz) | | | | Modulation | | RB | | | Test Channel | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.4 | 3 | 5 | 10 | QPSK | 16QAM | 1 | 50% | 100% | L | M | H |
| RF power output and Effective Radiated power | O | O | O | O | O | O | O | O | O | O | O | O |
| Radiated Spurious Emission | O | - | O | O | O | - | O | - | - | - | O | - |
| Note | 1. The mark “O” means that this configuration is chosen for testing.<br>2. The mark “-” means that this configuration is not testing. | | | | | | | | | | | |

# 5. Test Case

## 5.1. RF Power Output and Effective Radiated Power

### Ambient condition

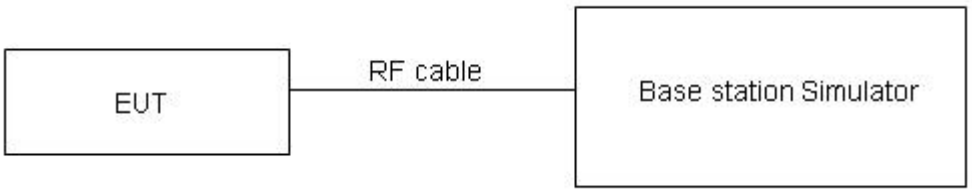
| Temperature | Relative humidity | Pressure |
|---|---|---|
| 23°C ~25°C | 45%~50% | 101.5kPa |

### Methods of Measurement

During the process of the testing, The EUT was connected to the Base Station Simulator with a known loss. The EUT is controlled by the Base Station Simulator test set to ensure max power transmission with proper modulation.

ERP can then be calculated as follows:
EIRP (dBm) = Output Power (dBm) - Losses (dB) + Antenna Gain (dBi)
where:dBd refers to gain relative to an ideal dipole.
EIRP (dBm ) = ERP (dBm) + 2.15 (dB).

### Test Setup




### Limits

No specific RF power output requirements in part 2.1046.

Rule Part 22.913(a)(5) specifies that "Mobile/portable stations are limited to 7 watts ERP".

| Limit | ≤ 7 W (38.45 dBm) |
|---|---|

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.4 dB for RF power output, *k* = 2, *U*= 1.19 dB for ERP.

### Test Results

Refer to the section 6.1 of this report for test data.

## 5.2. Radiated Spurious Emissions

**Ambient condition**

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 23°C ~25°C | 45%~50% | 101.5kPa |

**Method of Measurement**

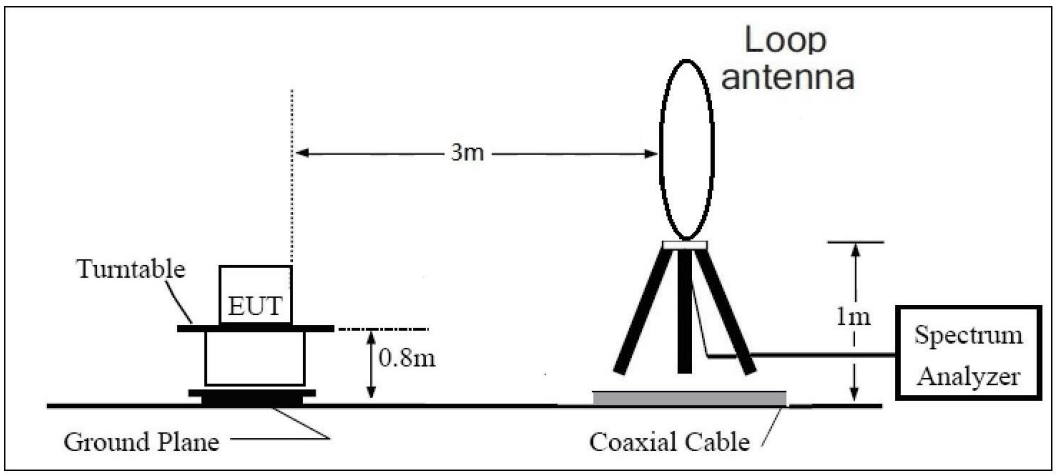
1. The testing follows FCC KDB 971168 v03r01 Section 5.8 and ANSI C63.26-2015.
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A loop antenna, A log-periodic antenna or 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.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=100kHz,VBW=300kHz, and the maximum value of the receiver should be recorded as (Pr).
5. 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 is connected 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.
6. 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.
7. The measurement results are obtained as described below:
Power(EIRP)=PMea- PAg - Pcl + Ga
The measurement results are amend as described below:
Power(EIRP)=PMea- Pcl + Ga
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP

= EIRP-2.15dB.

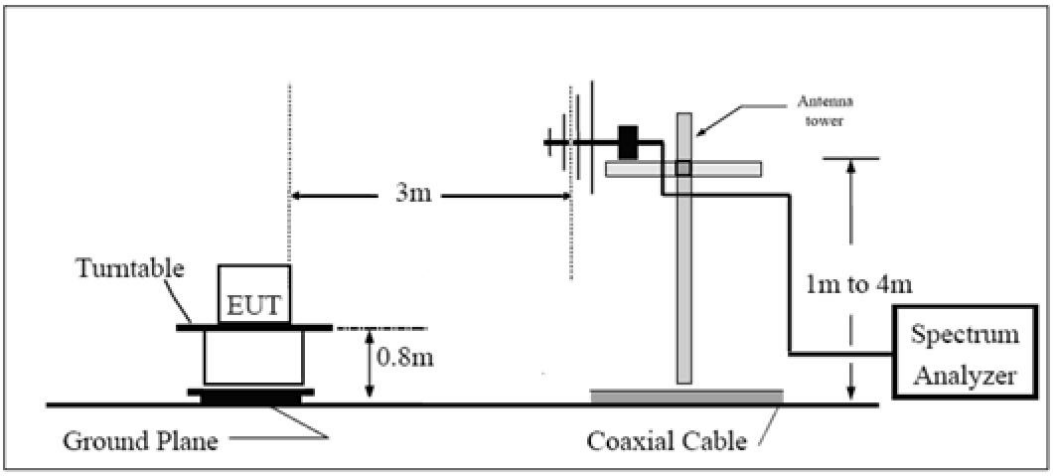
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

**Test setup**

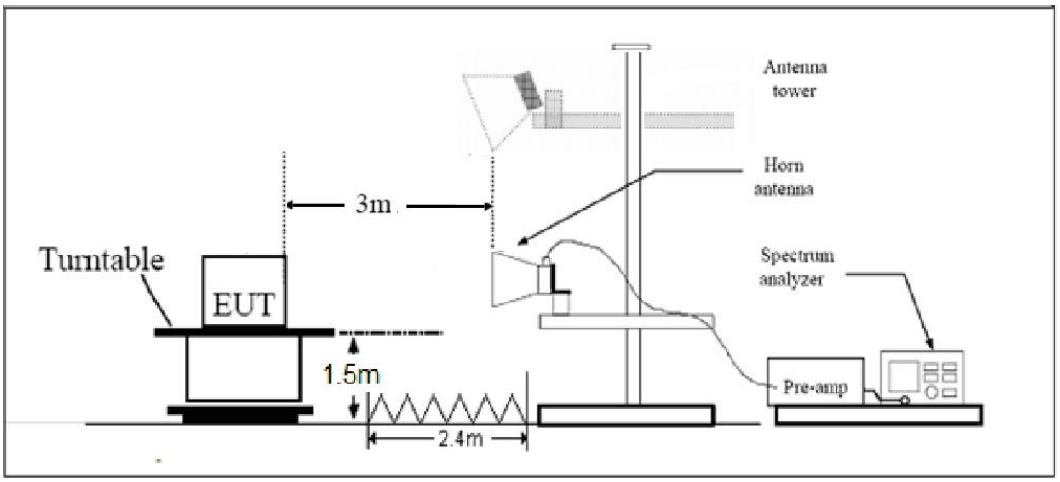
**9KHz~ 30MHz**




**30MHz~ 1GHz**




**Above 1GHz**




Note: Area side:2.4mX3.6m

### Limits

Rule Part 22.917(a) specifies that “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.”

| | |
|---|---|
| Limit | -13 dBm |

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95％ confidence level for the normal distribution is with the coverage factor $k$ = 1.96, $U$= 3.55 dB.

### Test Results

Refer to the section 6.2 of this report for test data.

# 6. Test Result

## 6.1. RF Power Output and Effective Radiated Power

| WCDMA Band V | | Maximum Output Power (dBm) | | | ERP (dBm) | | |
|---|---|---|---|---|---|---|---|
| | | Channel 4132 | Channel 4183 | Channel 4233 | Channel 4132 | Channel 4183 | Channel 4233 |
| | | 826.4 (MHz) | 836.6 (MHz) | 846.6 (MHz) | 826.4 (MHz) | 836.6 (MHz) | 846.6 (MHz) |
| RMC | 12.2k | 23.06 | 22.99 | 23.12 | 23.41 | 23.34 | 23.47 |
| | 64k | 22.99 | 22.85 | 23.06 | 23.34 | 23.20 | 23.41 |
| | 144k | 22.98 | 22.84 | 22.96 | 23.33 | 23.19 | 23.31 |
| | 384k | 22.97 | 22.83 | 22.95 | 23.32 | 23.18 | 23.30 |
| HSDPA | Sub - Test 1 | 22.79 | 22.64 | 22.69 | 23.14 | 22.99 | 23.04 |
| | Sub - Test 2 | 22.75 | 22.68 | 22.78 | 23.10 | 23.03 | 23.13 |
| | Sub - Test 3 | 22.39 | 22.32 | 22.30 | 22.74 | 22.67 | 22.65 |
| | Sub - Test 4 | 22.31 | 22.25 | 22.26 | 22.66 | 22.60 | 22.61 |
| HSUPA | Sub - Test 1 | 22.82 | 22.74 | 22.75 | 23.17 | 23.09 | 23.10 |
| | Sub - Test 2 | 22.31 | 22.26 | 22.29 | 22.66 | 22.61 | 22.64 |
| | Sub - Test 3 | 22.76 | 22.78 | 22.75 | 23.11 | 23.13 | 23.10 |
| | Sub - Test 4 | 22.77 | 22.71 | 22.76 | 23.12 | 23.06 | 23.11 |
| | Sub - Test 5 | 22.73 | 22.76 | 22.71 | 23.08 | 23.11 | 23.06 |
| DC-HSDPA | Sub - Test 1 | 22.93 | 22.86 | 22.99 | 23.28 | 23.21 | 23.34 |
| | Sub - Test 2 | 23.02 | 22.84 | 22.98 | 23.37 | 23.19 | 23.33 |
| | Sub - Test 3 | 22.51 | 22.33 | 22.47 | 22.86 | 22.68 | 22.82 |
| | Sub - Test 4 | 22.50 | 22.32 | 22.46 | 22.85 | 22.67 | 22.81 |

| LTE Band 5 | | | | Maximum Output Power(dBm) | | | ERP (dBm) | | |
|---|---|---|---|---|---|---|---|---|---|
| BW | Modulation | RB size | RB offset | Channel/Frequency(MHz) | | | | | |
| | | | | 20407 /824.7 | 20525 /836.5 | 20643 /848.3 | 20407 /824.7 | 20525 /836.5 | 20643 /848.3 |
| 1.4MHz | QPSK | 1 | 0 | 23.83 | 23.93 | 23.87 | 24.18 | 24.28 | 24.22 |
| | | 1 | 2 | 23.97 | 24.02 | 24.23 | 24.32 | 24.37 | 24.58 |
| | | 1 | 5 | 23.76 | 23.94 | 23.92 | 24.11 | 24.29 | 24.27 |
| | | 3 | 0 | 23.83 | 23.77 | 24.04 | 24.18 | 24.12 | 24.39 |
| | | 3 | 2 | 23.81 | 23.79 | 24.03 | 24.16 | 24.14 | 24.38 |
| | | 3 | 3 | 23.87 | 23.84 | 23.98 | 24.22 | 24.19 | 24.33 |
| | | 6 | 0 | 22.86 | 22.86 | 22.95 | 23.21 | 23.21 | 23.30 |
| | 16QAM | 1 | 0 | 23.44 | 22.82 | 22.85 | 23.79 | 23.17 | 23.20 |
| | | 1 | 2 | 23.47 | 23.03 | 23.04 | 23.82 | 23.38 | 23.39 |
| | | 1 | 5 | 23.29 | 22.83 | 22.84 | 23.64 | 23.18 | 23.19 |

| BW | Modulation | RB size | RB offset | Channel/Frequency(MHz) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 20415 /825.5 | 20525 /836.5 | 20635 /847.5 | 20415 /825.5 | 20525 /836.5 | 20635 /847.5 |
| 3MHz | QPSK | 1 | 0 | 23.95 | 24.06 | 23.83 | 24.30 | 24.41 | 24.18 |
| | | 1 | 7 | 24.19 | 24.10 | 24.01 | 24.54 | 24.45 | 24.36 |
| | | 1 | 14 | 23.79 | 23.77 | 23.96 | 24.14 | 24.12 | 24.31 |
| | | 8 | 0 | 23.13 | 23.07 | 22.92 | 23.48 | 23.42 | 23.27 |
| | | 8 | 4 | 22.92 | 23.01 | 22.96 | 23.27 | 23.36 | 23.31 |
| | | 8 | 7 | 22.97 | 23.01 | 23.05 | 23.32 | 23.36 | 23.40 |
| | | 15 | 0 | 23.09 | 23.07 | 23.04 | 23.44 | 23.42 | 23.39 |
| | 16QAM | 1 | 0 | 22.73 | 23.28 | 23.55 | 23.08 | 23.63 | 23.90 |
| | | 1 | 7 | 23.04 | 23.61 | 24.09 | 23.39 | 23.96 | 24.44 |
| | | 1 | 14 | 22.82 | 23.21 | 23.53 | 23.17 | 23.56 | 23.88 |
| BW | Modulation | RB size | RB offset | Channel/Frequency(MHz) | | | | | |
| | | | | 20425 /826.5 | 20525 /836.5 | 20625 /846.5 | 20425 /826.5 | 20525 /836.5 | 20625 /846.5 |
| 5MHz | QPSK | 1 | 0 | 23.94 | 24.02 | 23.81 | 24.29 | 24.37 | 24.16 |
| | | 1 | 13 | 24.17 | 24.09 | 23.98 | 24.52 | 24.44 | 24.33 |
| | | 1 | 24 | 23.76 | 23.72 | 23.92 | 24.11 | 24.07 | 24.27 |
| | | 12 | 0 | 23.11 | 23.03 | 22.89 | 23.46 | 23.38 | 23.24 |
| | | 12 | 6 | 22.89 | 22.96 | 22.92 | 23.24 | 23.31 | 23.27 |
| | | 12 | 13 | 22.94 | 22.98 | 23.01 | 23.29 | 23.33 | 23.36 |
| | | 25 | 0 | 23.07 | 23.03 | 22.99 | 23.42 | 23.38 | 23.34 |
| | 16QAM | 1 | 0 | 22.68 | 23.26 | 23.53 | 23.03 | 23.61 | 23.88 |
| | | 1 | 13 | 23.02 | 23.58 | 24.07 | 23.37 | 23.93 | 24.42 |
| | | 1 | 24 | 22.79 | 23.17 | 23.50 | 23.14 | 23.52 | 23.85 |
| BW | Modulation | RB size | RB offset | Channel/Frequency(MHz) | | | | | |
| | | | | 20450 /829 | 20525 /836.5 | 20600 /844 | 20450 /829 | 20525 /836.5 | 20600 /844 |
| 10MHz | QPSK | 1 | 0 | 23.91 | 23.98 | 23.78 | 24.26 | 24.33 | 24.13 |
| | | 1 | 25 | 24.16 | 24.05 | 23.96 | 24.51 | 24.40 | 24.31 |
| | | 1 | 49 | 23.74 | 23.71 | 23.89 | 24.09 | 24.06 | 24.24 |
| | | 25 | 0 | 23.08 | 22.98 | 22.85 | 23.43 | 23.33 | 23.20 |
| | | 25 | 13 | 22.87 | 22.92 | 22.89 | 23.22 | 23.27 | 23.24 |
| | | 25 | 25 | 22.91 | 22.93 | 22.97 | 23.26 | 23.28 | 23.32 |
| | | 50 | 0 | 23.04 | 22.98 | 22.95 | 23.39 | 23.33 | 23.30 |
| | 16QAM | 1 | 0 | 22.66 | 23.22 | 23.48 | 23.01 | 23.57 | 23.83 |
| | | 1 | 25 | 22.98 | 23.56 | 24.03 | 23.33 | 23.91 | 24.38 |
| | | 1 | 49 | 22.77 | 23.14 | 23.48 | 23.12 | 23.49 | 23.83 |

## 6.2. Radiated Spurious Emissions

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in the report.

WCDMA Band V CH-Middle

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 1675.65 | -57.69 | 1.70 | 8.70 | Vertical | -52.84 | -13.00 | 39.84 | 45 |
| 3 | 2506.90 | -55.54 | 2.30 | 12.00 | Vertical | -47.99 | -13.00 | 34.99 | 225 |
| 4 | 3346.40 | -65.69 | 2.70 | 12.70 | Vertical | -57.84 | -13.00 | 44.84 | 90 |
| 5 | 4183.00 | -65.12 | 3.00 | 12.50 | Vertical | -57.77 | -13.00 | 44.77 | 45 |
| 6 | 5019.60 | -61.37 | 3.40 | 12.50 | Vertical | -54.42 | -13.00 | 41.42 | 135 |
| 7 | 5856.20 | -60.07 | 3.40 | 12.80 | Vertical | -52.82 | -13.00 | 39.82 | 180 |
| 8 | 6692.80 | -59.71 | 4.10 | 11.50 | Vertical | -54.46 | -13.00 | 41.46 | 90 |
| 9 | 7529.40 | -58.32 | 4.20 | 12.20 | Vertical | -52.47 | -13.00 | 39.47 | 315 |
| 10 | 8366.00 | -57.28 | 4.30 | 12.50 | Vertical | -51.23 | -13.00 | 38.23 | 45 |
| Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.<br>2. The worst emission was found in the antenna is Vertical position. | | | | | | | | | |

LTE Band 5 1.4MHz CH-Middle

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 1671.95 | -53.96 | 1.70 | 8.70 | Vertical | -49.11 | -13.00 | 36.11 | 0 |
| 3 | 2508.20 | -51.23 | 2.30 | 12.00 | Vertical | -43.68 | -13.00 | 30.68 | 45 |
| 4 | 3346.00 | -65.56 | 2.70 | 12.70 | Vertical | -57.71 | -13.00 | 44.71 | 0 |
| 5 | 4182.50 | -63.12 | 3.00 | 12.50 | Vertical | -55.77 | -13.00 | 42.77 | 90 |
| 6 | 5019.00 | -60.63 | 3.40 | 12.50 | Vertical | -53.68 | -13.00 | 40.68 | 45 |
| 7 | 5855.50 | -59.96 | 3.40 | 12.80 | Vertical | -52.71 | -13.00 | 39.71 | 315 |
| 8 | 6692.00 | -58.44 | 4.10 | 11.50 | Vertical | -53.19 | -13.00 | 40.19 | 45 |
| 9 | 7528.50 | -58.09 | 4.20 | 12.20 | Vertical | -52.24 | -13.00 | 39.24 | 180 |
| 10 | 8365.00 | -56.30 | 4.30 | 12.50 | Vertical | -50.25 | -13.00 | 37.25 | 90 |
| Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.<br>2. The worst emission was found in the antenna is Vertical position. | | | | | | | | | |

LTE Band 5 5MHz CH-Middle

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 1668.60 | -55.30 | 1.70 | 8.70 | Vertical | -50.45 | -13.00 | 37.45 | 45 |
| 3 | 2503.30 | -51.81 | 2.30 | 12.00 | Vertical | -44.26 | -13.00 | 31.26 | 90 |
| 4 | 3466.20 | -65.80 | 2.70 | 12.70 | Vertical | -57.95 | -13.00 | 44.95 | 45 |
| 5 | 4215.90 | -64.92 | 3.00 | 12.50 | Vertical | -57.57 | -13.00 | 44.57 | 315 |
| 6 | 5165.60 | -59.99 | 3.40 | 12.50 | Vertical | -53.04 | -13.00 | 40.04 | 180 |
| 7 | 5815.30 | -60.81 | 3.40 | 12.80 | Vertical | -53.56 | -13.00 | 40.56 | 90 |
| 8 | 6765.00 | -59.83 | 4.10 | 11.50 | Vertical | -54.58 | -13.00 | 41.58 | 135 |
| 9 | 7614.70 | -58.21 | 4.20 | 12.20 | Vertical | -52.36 | -13.00 | 39.36 | 270 |
| 10 | 8464.40 | -56.66 | 4.30 | 12.50 | Vertical | -50.61 | -13.00 | 37.61 | 45 |
| Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.<br>2. The worst emission was found in the antenna is Vertical position. | | | | | | | | | |

LTE Band 5 10MHz CH-Middle

| Harmonic | Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 1664.40 | -58.27 | 1.70 | 8.70 | Vertical | -53.42 | -13.00 | 40.42 | 315 |
| 3 | 2496.60 | -53.51 | 2.30 | 12.00 | Vertical | -45.96 | -13.00 | 32.96 | 180 |
| 4 | 3328.00 | -65.60 | 2.70 | 12.70 | Vertical | -57.75 | -13.00 | 44.75 | 135 |
| 5 | 4160.00 | -64.97 | 3.00 | 12.50 | Vertical | -57.62 | -13.00 | 44.62 | 270 |
| 6 | 4992.00 | -61.01 | 3.40 | 12.50 | Vertical | -54.06 | -13.00 | 41.06 | 0 |
| 7 | 5824.00 | -61.47 | 3.40 | 12.80 | Vertical | -54.22 | -13.00 | 41.22 | 180 |
| 8 | 6656.00 | -59.38 | 4.10 | 11.50 | Vertical | -54.13 | -13.00 | 41.13 | 225 |
| 9 | 7488.00 | -57.62 | 4.20 | 12.20 | Vertical | -51.77 | -13.00 | 38.77 | 180 |
| 10 | 8320.00 | -57.51 | 4.30 | 12.50 | Vertical | -51.46 | -13.00 | 38.46 | 180 |
| Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.<br>2. The worst emission was found in the antenna is Vertical position. | | | | | | | | | |

# 7. Main Test Instruments

| Name | Manufacturer | Type | Serial Number | Calibration Date | Expiration Date |
|---|---|---|---|---|---|
| Signal Analyzer | R&S | FSV40 | 101297 | 2021-12-12 | 2022-12-11 |
| Loop antenna | SCHWARZBECK | FMZB1519 | 1519-047 | 2020-04-02 | 2023-04-01 |
| TRILOG Broadband Antenna | SCHWARZBECK | VULB 9163 | 391 | 2019-12-16 | 2022-12-15 |
| Horn Antenna | Schwarzbeck | BBHA 9120D | 1594 | 2020-12-17 | 2023-12-16 |
| Software | R&S | EMC32 | 9.26.0 | / | / |

********END OF REPORT ********

# ANNEX A: The EUT Appearance

**The EUT Appearance is submitted separately.**

# ANNEX B: Test Setup Photos

**The Test Setup Photos is submitted separately.**