# FCC RADIO TEST REPORT

| | | |
|---|---|---|
| **FCC ID** | : | **AK8VTG100** |
| **Equipment** | : | **Visilion Tracker G100** |
| **Brand Name** | : | **Sony Group Corporation** |
| **Applicant** | : | **Sony Group Corporation**<br>**1-7-1 Konan Minato-ku, Tokyo, 108-0075 Japan** |
| **Manufacturer** | : | **Sony Network Communications Europe B.V.**<br>**Taurusavenue 16, 2132LS Hoofddorp, Netherlands** |
| **Standard** | : | **FCC 47 CFR Part 2, and 90(S)** |

**The product was received on Apr. 16, 2021 and testing was started from May 13, 2021 and completed on May 29, 2021. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.**

**The test results in this partial report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.**

Louis Wu

**Approved by: Louis Wu**

***Sporton International Inc. EMC & Wireless Communications Laboratory***
*No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)*

# Table of Contents

# History of this test report

| Report No. | Version | Description | Issued Date |
|---|---|---|---|
| FG140729-02C | 01 | Initial issue of report | Aug. 13, 2021 |
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# Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items | Result (PASS/FAIL) | Remark |
|---|---|---|---|---|
| 3.2 | §2.1046<br>§90.635 | Conducted Output Power and Effective Radiated Power | Pass | - |
| - | - | Peak-to-Average Ratio | - | See Note |
| - | §2.1049<br>§90.209 | Occupied Bandwidth and 26dB Bandwidth | - | See Note |
| - | §2.1051<br>§90.691 | Emission masks – In-band emissions | - | See Note |
| - | §2.1051<br>§90.691 | Emission masks – Out of band emissions | - | See Note |
| - | §2.1055<br>§90.213 | Frequency Stability for Temperature & Voltage | - | See Note |
| 3.3 | §2.1053<br>§90.691 | Field Strength of Spurious Radiation | Pass | Under limit 28.81 dB at 2443.000 MHz |
| **Note:** The module (Model: BG95-M3) makes no difference after verifying output power, this report reuses test data from the module report. | | | | |

| **Declaration of Conformity:** |
|---|
| The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. |
| **Comments and Explanations:** |
| The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification. |

**Reviewed by: Keven Cheng**

**Report Producer: Celery Wei**

# 1 General Description

## 1.1 Feature of Equipment Under Test

GSM/LTE, Bluetooth - LE and GNSS.

| Product Specification subjective to this standard | |
|---|---|
| **Antenna Type** | PIFA Antenna |
| **Antenna Gain** | LTE Band 26: -0.90 dBi |

**Remark:** The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

| EUT Information List | | | |
|---|---|---|---|
| **HW Version** | **SW Version** | **IMEI** | **Performed Test Item** |
| 0B | 0.0.0 | 867730050909229 | Conducted Measurement |
| | 1.11-fac | 864475047644835 | Radiated Spurious Emission |
| | 0.0.0 | 867730050909229 | ERP/EIRP Test |

| Accessory List | |
|---|---|
| **AC Adapter** | Model Name : UCH32 |
| | S/N : 6218W30200191 |
| **USB Cable** | Model Name : UCB24 |
| | S/N : N/A |

**Note:**

1. Above EUT list used are electrically identical per declared by manufacturer.
2. Above the accessories list are used to exercise the EUT during test, and the serial number of each type of accessories is listed in each section of this report.
3. For other wireless features of this EUT, test report will be issued separately.

## 1.2 Modification of EUT

No modifications are made to the EUT during all test items.

## 1.3 Emission Designator

| LTE Band 26 | | QPSK | | | 16QAM | | |
|---|---|---|---|---|---|---|---|
| BW (MHz) | Frequency Range (MHz) | Emission Designator (99%OBW) | Frequency Tolerance (ppm) | Maximum ERP(W) | Emission Designator (99%OBW) | Frequency Tolerance (ppm) | Maximum ERP(W) |
| 1.4 | 814.7~823.3 | - | - | 0.0547 | - | - | 0.0547 |
| 3 | 815.5~822.5 | - | - | 0.0560 | - | - | 0.0560 |
| 5 | 816.5~821.5 | - | - | 0.0531 | - | - | 0.0531 |
| 10 | 819.0 | - | - | 0.0540 | - | - | 0.0540 |
| 15 | 821.5 | - | - | 0.0528 | - | - | 0.0528 |

## 1.4 Testing Site

| | |
|---|---|
| **Test Site** | Sporton International Inc. EMC & Wireless Communications Laboratory |
| **Test Site Location** | No.52, Huaya 1st Rd., Guishan Dist.,<br>Taoyuan City 333, Taiwan (R.O.C.)<br>TEL: +886-3-327-3456<br>FAX: +886-3-328-4978 |
| **Test Site No.** | **Sporton Site No.** |
| | TH03-HY |
| **Test Engineer** | Benjamin Lin |
| **Temperature** | 23.2~25.1℃ |
| **Relative Humidity** | 49.9~52.4% |

| | |
|---|---|
| **Test Site** | Sporton International Inc. Wensan Laboratory |
| **Test Site Location** | No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist.,<br>Taoyuan City 333010, Taiwan (R.O.C.)<br>TEL: +886-3-327-0868<br>FAX: +886-3-327-0855 |
| **Test Site No.** | **Sporton Site No.** |
| | 03CH12-HY (TAF Code: 3786) |
| **Test Engineer** | Jack Cheng, Lance Chiang, Chuan Chu |
| **Temperature** | 22.5~26.8℃ |
| **Relative Humidity** | 54.6~66.8% |
| **Remark** | The Radiated Spurious Emissions test item subcontracted to Sporton International Inc. Wensan Laboratory. |

**Note:** The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: TW1190 and TW3786

## 1.5 Applied Standards

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

- FCC 47 CFR Part 2, 90
- ANSI / TIA-603-E
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site v01r01
- Interim Guidance for Equipment Authorization of Devices with Channel Bandwidths Combined Across Two Contiguous Service Rule Allocations OET/Lab/EACB, June 6, 2013

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. The TAF code is not including all the FCC KDB listed without accreditation.

# 2 Test Configuration of Equipment Under Test

## 2.1 Test Mode

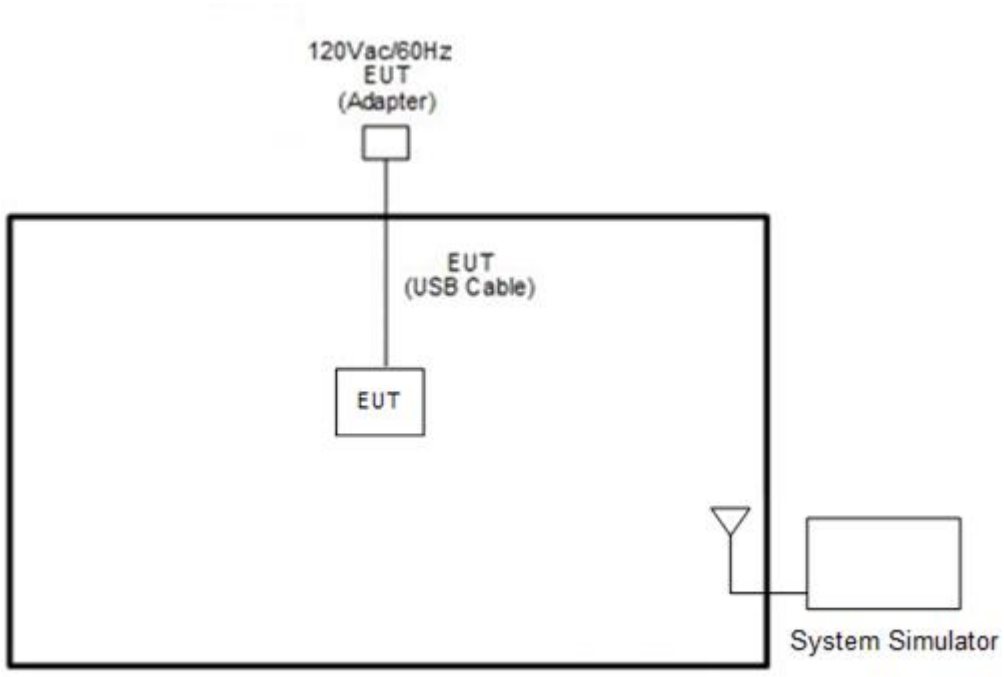
During all testing, EUT is in link mode with base station emulator at maximum power level.

For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find Z plane as worst plane.

Frequency range investigated for radiated emission is 30 MHz to 9000 MHz.

| Conducted Test Cases | Band | Bandwidth (MHz) | | | | | | Modulation | | | RB # | | | Test Channel | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.4 | 3 | 5 | 10 | 15 | 20 | QPSK | 16QAM | 64QAM | 1 | Half | Full | L | M | H |
| Max. Output Power | 26 | v | v | v | v | v | - | v | v | | v | v | v | v | v | v |
| E.R.P. | 26 | v | v | v | v | v | - | v | v | | Max. Power | | | | | |
| Radiated Spurious Emission | 26 | Worst Case | | | | | | | | | | | | v | v | v |
| Remark | 1. The mark "**v** " means that this configuration is chosen for testing<br>2. The mark "-" means that this bandwidth is not supported.<br>3. LTE Band26 transmit frequency for part22 rule is 824MHz-849MHz, for part90 rule is 814MHz-824MHz. ERP over 15MHz bandwidth complies the ERP limit line of part22 rule, therefore ERP of the partial frequency spectrum which falls within part 22 also complies. | | | | | | | | | | | | | | | |

## 2.2 Connection Diagram of Test System



## 2.3 Support Unit used in test configuration and system

| Item | Equipment | Brand Name | Model No. | FCC ID | Data Cable | Power Cord |
|---|---|---|---|---|---|---|
| 1. | System Simulator | Anritsu | MT8821C | N/A | N/A | Unshielded, 1.8 m |

## 2.4 Frequency List of Low/Middle/High Channels

| LTE Band 26 Channel and Frequency List | | | | |
|---|---|---|---|---|
| **BW [MHz]** | **Channel/Frequency(MHz)** | **Lowest** | **Middle** | **Highest** |
| 15 | Channel | 26765 | - | - |
| | Frequency | 821.5 | - | - |
| 10 | Channel | - | 26740 | - |
| | Frequency | - | 819 | - |
| 5 | Channel | 26715 | 26740 | 26765 |
| | Frequency | 816.5 | 819 | 821.5 |
| 3 | Channel | 26705 | 26740 | 26775 |
| | Frequency | 815.5 | 819 | 822.5 |
| 1.4 | Channel | 26697 | 26740 | 26783 |
| | Frequency | 814.7 | 819 | 823.3 |

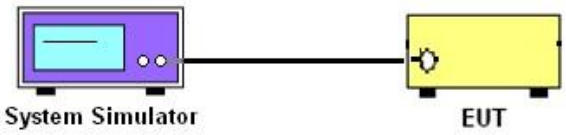
# 3 Conducted Test Items

## 3.1 Measuring Instruments

See list of measuring instruments of this test report.

### 3.1.1 Test Setup

### 3.1.2 Conducted Output Power




### 3.1.3 Test Result of Conducted Test

Please refer to Appendix A.

# 3.2 Conducted Output Power Measurement and ERP Measurement

## 3.2.1 Description of the Conducted Output Power Measurement and ERP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 100 Watts for LTE Band 26.

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, where

$P_T$ = transmitter output power in dBm

$G_T$ = gain of the transmitting antenna in dBi

$L_C$ = signal attenuation in the connecting cable between the transmitter and antenna in dB

## 3.2.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

# 3.3 Field Strength of Spurious Radiation Measurement

## 3.3.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. The power of any emission FCC Part 90.691 on any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

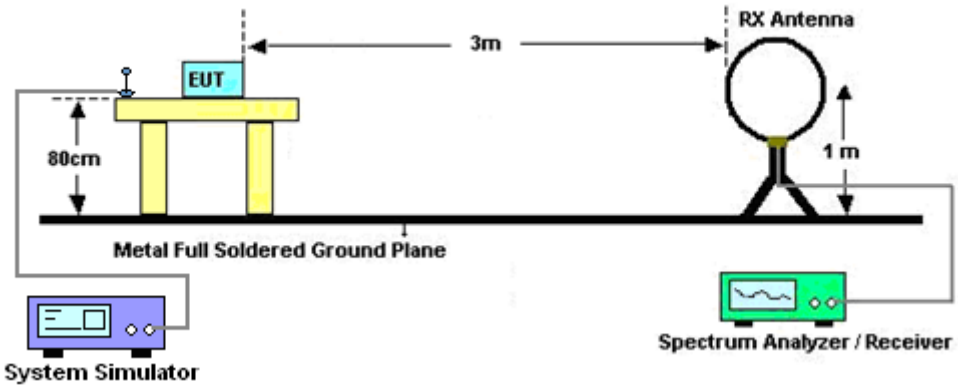
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43+10\log_{10}(P[Watts])$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

## 3.3.2 Test Procedures

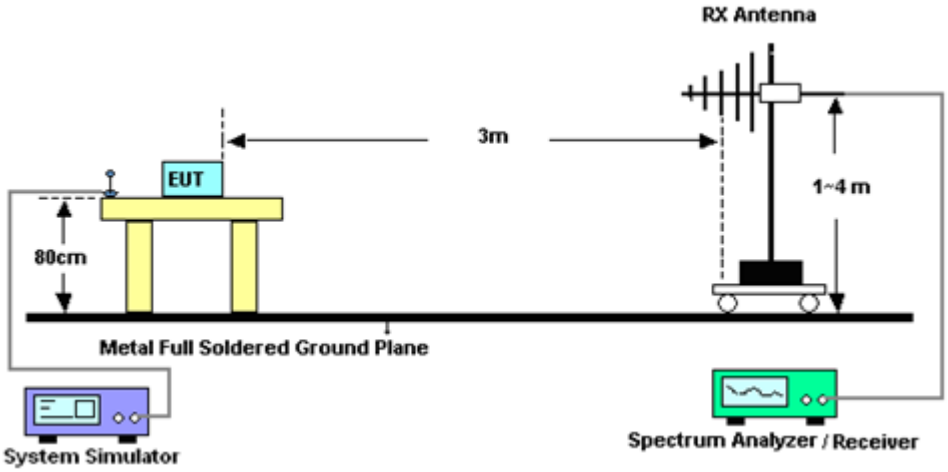
1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. For testing below 1GHz, make the measurement with the spectrum analyzer's RBW = 100 kHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
6. For testing above 1GHz, make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = EIRP - 2.15
13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
14. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

### 3.3.3 Test Setup

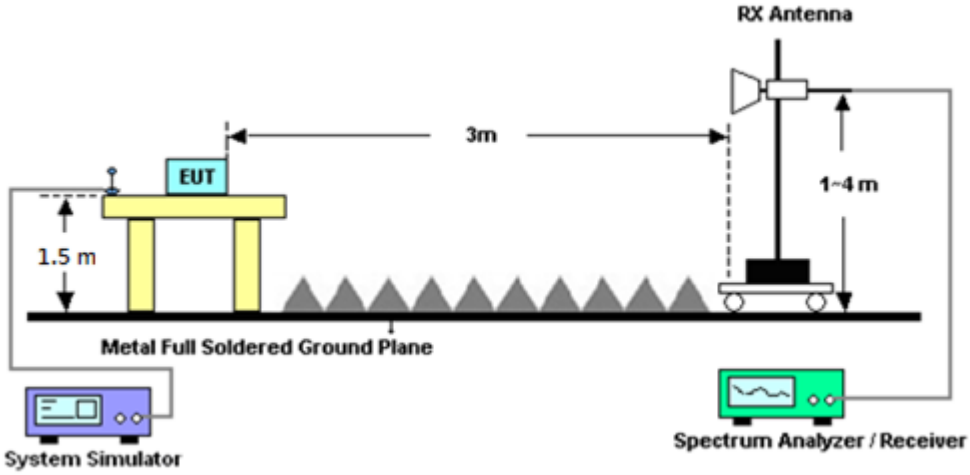
**For radiated test below 30MHz**




**For radiated test from 30MHz to 1GHz**



**For radiated test above 1GHz**




## 3.3.4 Test Result of Field Strength of Spurious Radiated

Please refer to Appendix B.

**Note:**

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

# 4 List of Measuring Equipment

| Instrument | Brand Name | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|---|---|---|---|---|---|---|---|---|
| Loop Antenna | Rohde & Schwarz | HFH2-Z2 | 100488 | 9 kHz~30 MHz | Jul. 14, 2020 | May 13, 2021~ May 29, 2021 | Jul. 13, 2021 | Radiation (03CH12-HY) |
| Bilog Antenna | TESEQ | CBL 6111D & 00800N1D01 N-06 | 37059 & 01 | 30MHz~1GHz | Oct. 11, 2020 | May 13, 2021~ May 29, 2021 | Oct. 10, 2021 | Radiation (03CH12-HY) |
| Bilog Antenna | TESEQ | CBL 6111D & N-6-06 | 35414 & AT-N0602 | 30MHz~1GHz | Oct. 11, 2020 | May 13, 2021~ May 29, 2021 | Oct. 10, 2021 | Radiation (03CH12-HY) |
| Horn Antenna | SCHWARZBECK | BBHA 9120 D | 9120D-1328 | 1GHz~18GHz | Nov. 23, 2020 | May 13, 2021~ May 29, 2021 | Nov. 22, 2021 | Radiation (03CH12-HY) |
| Horn Antenna | SCHWARZBECK | BBHA 9120 D | 9120D-1212 | 1GHz~18GHz | May 20, 2020 | May 13, 2021~ May 18, 2021 | May 19, 2021 | Radiation (03CH12-HY) |
| Horn Antenna | SCHWARZBECK | BBHA 9120 D | 9120D-1212 | 1GHz~18GHz | May 18, 2021 | May 19, 2021~ May 29, 2021 | May 17, 2022 | Radiation (03CH12-HY) |
| SHF-EHF Horn Antenna | SCHWARZBECK | BBHA 9170 | 00993 | 18GHz~40GHz | Dec. 19, 2020 | May 13, 2021~ May 29, 2021 | Dec. 18, 2021 | Radiation (03CH12-HY) |
| SHF-EHF Horn Antenna | SCHWARZBECK | BBHA 9170 | BBHA9170584 | 18GHz~40GHz | Dec. 11, 2020 | May 13, 2021~ May 29, 2021 | Dec. 10, 2021 | Radiation (03CH12-HY) |
| Preamplifier | COM-POWER | PA-103 | 161075 | 10MHz~1GHz | Mar. 24, 2021 | May 13, 2021~ May 29, 2021 | Mar. 23, 2022 | Radiation (03CH12-HY) |
| Preamplifier | Keysight | 83017A | MY57280120 | 1GHz~26.5GHz | Jul. 20, 2020 | May 13, 2021~ May 29, 2021 | Jul. 19, 2021 | Radiation (03CH12-HY) |
| Preamplifier | E-INSTRUMENT TECH LTD. | ERA-100M-18G-56-01-A70 | EC1900249 | 1GHz~18GHz | Dec. 05, 2020 | May 13, 2021~ May 29, 2021 | Dec. 04, 2021 | Radiation (03CH12-HY) |
| Preamplifier | EMEC | EM18G40G | 060801 | 18GHz~40GHz | Jun. 15, 2020 | May 13, 2021~ May 29, 2021 | Jun. 14, 2021 | Radiation (03CH12-HY) |
| Preamplifier | EMEC | EM18G40G | 060715 | 18GHz~40GHz | Dec. 11, 2020 | May 13, 2021~ May 29, 2021 | Dec. 10, 2021 | Radiation (03CH12-HY) |
| Spectrum Analyzer | Agilent | N9010A | MY53470118 | 10Hz~44GHz | Sep. 14, 2020 | May 13, 2021~ May 29, 2021 | Sep. 13, 2021 | Radiation (03CH12-HY) |
| Signal Generator | Rohde & Schwarz | SMB100A | 101107 | 100kHz~40GHz | Dec. 04, 2020 | May 13, 2021~ May 29, 2021 | Dec. 03, 2021 | Radiation (03CH12-HY) |
| RF Cable | HUBER + SUHNER | SUCOFLEX 126E | 0058/126E | 30MHz~18GHz | Dec. 11, 2020 | May 13, 2021~ May 29, 2021 | Dec. 10, 2021 | Radiation (03CH12-HY) |
| RF Cable | HUBER + SUHNER | SUCOFLEX 102 | 505134/2 | 30MHz~40GHz | Feb. 22, 2021 | May 13, 2021~ May 29, 2021 | Feb. 21, 2022 | Radiation (03CH12-HY) |
| RF Cable | HUBER + SUHNER | SUCOFLEX 102 | 800740/2 | 30MHz~40GHz | Feb. 22, 2021 | May 13, 2021~ May 29, 2021 | Feb. 21, 2022 | Radiation (03CH12-HY) |
| Filter | Wainwright | WLKS1200-12SS | SN2 | 1.2GHz Low Pass Filter | Mar. 17, 2021 | May 13, 2021~ May 29, 2021 | Mar. 16, 2022 | Radiation (03CH12-HY) |
| Filter | Wainwright | WHKX12-1080-1200-15000-60SS | SN1 | 1.2GHz High Pass Filter | Mar. 17, 2021 | May 13, 2021~ May 29, 2021 | Mar. 16, 2022 | Radiation (03CH12-HY) |
| Filter | Wainwright | WHKX12-2700-3000-18000-60ST | SN2 | 3GHz High Pass Filter | Jul. 14, 2020 | May 13, 2021~ May 29, 2021 | Jul. 13, 2021 | Radiation (03CH12-HY) |

| Instrument | Brand Name | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|---|---|---|---|---|---|---|---|---|
| Hygrometer | TECPEL | DTM-303B | TP140349 | N/A | Oct. 02, 2020 | May 13, 2021~ May 29, 2021 | Oct. 01, 2021 | Radiation (03CH12-HY) |
| Controller | EMEC | EM1000 | N/A | Control Turn table & Ant Mast | N/A | May 13, 2021~ May 29, 2021 | N/A | Radiation (03CH12-HY) |
| Antenna Mast | EMEC | AM-BS-4500-B | N/A | 1m~4m | N/A | May 13, 2021~ May 29, 2021 | N/A | Radiation (03CH12-HY) |
| Turn Table | EMEC | TT2000 | N/A | 0~360 Degree | N/A | May 13, 2021~ May 29, 2021 | N/A | Radiation (03CH12-HY) |
| Software | Audix | E3 6.2009-8-24 | RK-000989 | N/A | N/A | May 13, 2021~ May 29, 2021 | N/A | Radiation (03CH12-HY) |
| Base Station(Measure) | Anritsu | MT8821C | 626200253 41 | N/A | Oct. 05, 2020 | May 18, 2021 | Oct. 04, 2021 | Conducted (TH03-HY) |
| Spectrum Analyzer | Rohde & Schwarz | FSV40 | 101397 | 10Hz~40GHz | Nov. 27, 2020 | May 18, 2021 | Nov. 26, 2021 | Conducted (TH03-HY) |
| Programmable Power Supply | GW Instek | PSS-2005 | EL890094 | 1V~20V 0.5A~5A | Oct. 05, 2020 | May 18, 2021 | Oct. 04, 2021 | Conducted (TH03-HY) |
| Coupler | Warison | 20dB 25W SMA Directional Coupler | #B | 1-18GHz | Jan. 09, 2021 | May 18, 2021 | Jan. 08, 2022 | Conducted (TH03-HY) |

# 5 Uncertainty of Evaluation

**Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)**

| | |
|---|---|
| **Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))** | **3.07 dB** |

**Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)**

| | |
|---|---|
| **Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))** | **3.21 dB** |

**Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)**

| | |
|---|---|
| **Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))** | **3.80 dB** |

# Appendix A. Test Results of Conducted Test

## Conducted Output Power(Average power & ERP)

| LTE Band 26 Maximum Average Power [dBm] (GT - LC = -0.9 dB) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BW [MHz] | RB Size | RB Offset | Mod | Lowest | Middle | Highest | ERP (dBm) | ERP (W) |
| 15 | 1 | 0 | QPSK | 20.08 | - | - | 17.23 | 0.0528 |
| 15 | 1 | 5 | | 19.95 | - | - | | |
| 15 | 6 | 0 | | 20.23 | - | - | | |
| 15 | 1 | 0 | 16-QAM | 20.01 | - | - | | |
| 15 | 1 | 5 | | 19.95 | - | - | | |
| 15 | 6 | 0 | | 20.28 | - | - | | |
| 10 | 1 | 0 | QPSK | - | 20.08 | - | 17.32 | 0.0540 |
| 10 | 1 | 5 | | - | 20.00 | - | | |
| 10 | 6 | 0 | | - | 19.30 | - | | |
| 10 | 1 | 0 | 16-QAM | - | 20.14 | - | | |
| 10 | 1 | 5 | | - | 19.85 | - | | |
| 10 | 6 | 0 | | - | 20.37 | - | | |
| 5 | 1 | 0 | QPSK | 20.10 | 20.16 | 20.22 | 17.25 | 0.0531 |
| 5 | 1 | 5 | | 20.30 | 20.03 | 20.02 | | |
| 5 | 6 | 0 | | 19.47 | 19.50 | 19.35 | | |
| 5 | 1 | 0 | 16-QAM | 20.11 | 20.15 | 20.11 | | |
| 5 | 1 | 5 | | 20.00 | 19.96 | 19.92 | | |
| 5 | 6 | 0 | | 19.34 | 19.36 | 19.31 | | |
| 3 | 1 | 0 | QPSK | 20.47 | 20.53 | 20.38 | 17.48 | 0.0560 |
| 3 | 1 | 5 | | 20.36 | 20.34 | 20.28 | | |
| 3 | 6 | 0 | | 18.37 | 18.44 | 18.35 | | |
| 3 | 1 | 0 | 16-QAM | 19.58 | 19.55 | 19.41 | | |
| 3 | 1 | 5 | | 19.44 | 19.43 | 19.36 | | |
| 3 | 6 | 0 | | 18.34 | 18.43 | 18.28 | | |
| 1.4 | 1 | 0 | QPSK | 20.43 | 20.37 | 20.36 | 17.38 | 0.0547 |
| 1.4 | 1 | 5 | | 20.25 | 20.17 | 20.15 | | |
| 1.4 | 6 | 0 | | 18.23 | 18.32 | 18.36 | | |
| 1.4 | 1 | 0 | 16-QAM | 19.42 | 19.46 | 20.38 | | |
| 1.4 | 1 | 5 | | 19.32 | 19.38 | 20.15 | | |
| 1.4 | 6 | 0 | | 18.17 | 18.20 | 19.40 | | |
| Limit | ERP < 7W | | | Result | | | Pass | |

# Appendix B. Test Results of Radiated Test

## LTE Cat M1 Band 26

| LTE Cat M1 Band 26 / 5MHz / QPSK | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Channel | Frequency ( MHz ) | ERP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | SPA Reading (dBm) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Lowest | 1629 | -52.96 | -13 | -39.96 | -61.32 | -58.49 | 0.91 | 8.59 | H |
| | 2443 | -46.68 | -13 | -33.68 | -60.08 | -54.01 | 1.14 | 10.62 | H |
| | 3257 | -56.95 | -13 | -43.95 | -72.38 | -65.40 | 1.32 | 11.92 | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | 1629 | -49.06 | -13 | -36.06 | -56.96 | -54.59 | 0.91 | 8.59 | V |
| | 2443 | -41.81 | -13 | -28.81 | -55.28 | -49.14 | 1.14 | 10.62 | V |
| | 3257 | -56.57 | -13 | -43.57 | -72.49 | -65.02 | 1.32 | 11.92 | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| Middle | 1634 | -54.10 | -13 | -41.10 | -62.48 | -59.64 | 0.92 | 8.61 | H |
| | 2451 | -48.52 | -13 | -35.52 | -61.95 | -55.86 | 1.14 | 10.63 | H |
| | 3267 | -56.97 | -13 | -43.97 | -72.37 | -65.44 | 1.32 | 11.94 | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | 1634 | -50.20 | -13 | -37.20 | -58.1 | -55.74 | 0.92 | 8.61 | V |
| | 2451 | -42.01 | -13 | -29.01 | -55.53 | -49.35 | 1.14 | 10.63 | V |
| | 3267 | -56.43 | -13 | -43.43 | -72.31 | -64.90 | 1.32 | 11.94 | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Highest | 1640 | -53.62 | -13 | -40.62 | -62.01 | -59.18 | 0.92 | 8.63 | H |
| | 2456 | -48.27 | -13 | -35.27 | -61.7 | -55.62 | 1.14 | 10.64 | H |
| | 3280 | -56.99 | -13 | -43.99 | -72.37 | -65.49 | 1.32 | 11.97 | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | 1640 | -49.24 | -13 | -36.24 | -57.13 | -54.80 | 0.92 | 8.63 | V |
| | 2456 | -43.97 | -13 | -30.97 | -57.51 | -51.32 | 1.14 | 10.64 | V |
| | 3280 | -56.57 | -13 | -43.57 | -72.43 | -65.07 | 1.32 | 11.97 | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |

**Remark:** Spurious emissions within 30-1000MHz were found more than 20dB below limit line

| LTE Cat M1 Band 26 / 10MHz / QPSK | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Channel | Frequency ( MHz ) | ERP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | SPA Reading (dBm) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Middle | 1629 | -52.20 | -13 | -39.20 | -60.56 | -57.73 | 0.91 | 8.59 | H |
| | 2444 | -48.03 | -13 | -35.03 | -61.44 | -55.36 | 1.14 | 10.62 | H |
| | 3258 | -57.09 | -13 | -44.09 | -72.52 | -65.54 | 1.32 | 11.92 | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | 1629 | -49.96 | -13 | -36.96 | -57.86 | -55.49 | 0.91 | 8.59 | V |
| | 2444 | -42.96 | -13 | -29.96 | -56.45 | -50.29 | 1.14 | 10.62 | V |
| | 3258 | -56.78 | -13 | -43.78 | -72.69 | -65.23 | 1.32 | 11.92 | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |

| LTE Cat M1 Band 26 / 15MHz / QPSK | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Channel | Frequency ( MHz ) | ERP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | SPA Reading (dBm) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Lowest | 1630 | -53.51 | -13 | -40.51 | -61.87 | -59.04 | 0.91 | 8.59 | H |
| | 2445 | -48.10 | -13 | -35.10 | -61.51 | -55.44 | 1.14 | 10.62 | H |
| | 3256 | -57.31 | -13 | -44.31 | -72.73 | -65.76 | 1.32 | 11.91 | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | 1632 | -50.91 | -13 | -37.91 | -58.81 | -56.45 | 0.91 | 8.60 | V |
| | 2448 | -44.14 | -13 | -31.14 | -57.63 | -51.48 | 1.14 | 10.63 | V |
| | 3256 | -56.32 | -13 | -43.32 | -72.23 | -64.77 | 1.32 | 11.91 | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |

| LTE Cat M1 Band 26 / 15MHz / QPSK | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Channel | Frequency ( MHz ) | ERP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | SPA Reading (dBm) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| 824MHz | 1632 | -52.88 | -13 | -39.88 | -61.25 | -58.42 | 0.91 | 8.60 | H |
| | 2456 | -47.04 | -13 | -34.04 | -60.47 | -54.39 | 1.14 | 10.64 | H |
| | 3280 | -57.28 | -13 | -44.28 | -72.66 | -65.78 | 1.32 | 11.97 | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | 1632 | -48.91 | -13 | -35.91 | -56.81 | -54.45 | 0.91 | 8.60 | V |
| | 2456 | -42.78 | -13 | -29.78 | -56.31 | -50.13 | 1.14 | 10.64 | V |
| | 3280 | -56.44 | -13 | -43.44 | -72.3 | -64.94 | 1.32 | 11.97 | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |

THE END