# RF TEST REPORT

| | |
|---|---|
| **Applicant** | Shanghai Sunmi Technology Co.,Ltd. |
| **FCC ID** | 2AH25T5F2ALN |
| **Product** | Wireless data POS System |
| **Brand** | SUNMI |
| **Model** | T5F2A |
| **Report No.** | EFTA25110159-IE-02-R1V2 |
| **Issue Date** | March 12, 2026 |

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR 47 Part 22H / FCC CFR 47 Part 24E / FCC CFR47 Part 27C / FCC CFR 47 Part 90S**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

*Prepared by: Xu Ying* | *Approved by: Xu Kai*


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| Version | Revision Description | Issue Date |
|---|---|---|
| Rev.0 | Initial issue of report. | January 30, 2026 |
| Rev.1 | Updated information. | February 10, 2026 |
| Rev.2 | Updated description. | March 12, 2026 |
| Note: This revised report (Report No.: EFTA25110159-IE-02-R1V2) supersedes and replaces the previously issued report (Report No.: EFTA25110159-IE-02-R1V1). Please discard or destroy the previously issued report and dispose of it accordingly. | | |


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# Summary of Measurement Results

| Test Case | Clause in FCC rules | Limits | Verdict |
|---|---|---|---|
| **GSM 850; WCDMA Band 5; LTE Band 5/26 (824-849MHz)** | | | |
| RF Power Output and Effective Radiated Power | 2.1046<br>22.913(a)(5) | ≤ 7 W (38.45 dBm) | PASS |
| Occupied Bandwidth | 2.1049 | No specific requirements | PASS |
| Band Edge Compliance | 2.1051<br>22.917(a) | ≤ -13 dBm | PASS |
| Peak-to-Average Power Ratio | 22.913(d)<br>KDB 971168 D01(5.7) | ≤ 13 dB | PASS |
| Frequency Stability | 2.1055<br>22.355(d)(1) | ≤ 2.5 ppm | PASS |
| Spurious Emissions at Antenna Terminals | 2.1051<br>22.917(a) | ≤ -13 dBm | PASS |
| Radiated Spurious Emission | 2.1053<br>22.917 (a) | ≤ -13 dBm | PASS |
| **GSM 1900; WCDMA Band 2; LTE Band 2** | | | |
| RF Power Output and Effective Isotropic Radiated Power | 2.1046<br>24.232(c) | ≤ 2 W (33 dBm) | PASS |
| Occupied Bandwidth | 2.1049 | No specific requirements | PASS |
| Band Edge Compliance | 2.1051<br>24.238(a) | ≤ -13 dBm | PASS |
| Peak-to-Average Power Ratio | 24.232 (d)<br>KDB 971168 D01(5.7) | ≤ 13 dB | PASS |
| Frequency Stability | 2.1055<br>24.235 | The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. | PASS |
| Spurious Emissions at Antenna Terminals | 2.1051<br>24.238(a) | ≤ -13 dBm | PASS |
| Radiated Spurious Emission | 2.1053<br>24.238(a) | ≤ -13 dBm | PASS |
| **WCDMA Band 4; LTE Band 4** | | | |
| RF Power Output and Effective Isotropic Radiated Power | 2.1046<br>27.50(d)(4) | ≤ 1 W (30 dBm) | PASS |
| Occupied Bandwidth | 2.1049 | No specific requirements | PASS |
| Band Edge Compliance | 2.1051<br>27.53(h) | ≤ -13 dBm | PASS |
| Peak-to-Average Power Ratio | 27.50(d)(5)<br>KDB971168 D01(5.7) | ≤ 13 dB | PASS |


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| Test Case | Clause in FCC rules | Limits | Verdict |
|---|---|---|---|
| Frequency Stability | 2.1055<br>27.54 | Shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation. | PASS |
| Spurious Emissions at Antenna Terminals | 2.1051<br>27.53(h) | ≤ -13 dBm | PASS |
| Radiated Spurious Emission | 2.1053<br>27.53(h) | ≤ -13 dBm | PASS |
| **LTE Band 7/38/41** | | | |
| RF Power Output and Effective Isotropic Radiated Power | 2.1046<br>27.50(h)(2) | ≤ 2 W (33 dBm) | PASS |
| Occupied Bandwidth | 2.1049 | No specific requirements | PASS |
| Band Edge Compliance | 2.1051<br>27.53(m)(4) | The attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. | PASS |
| Peak-to-Average Power Ratio | 27.50(d)(5)<br>KDB971168 D01(5.7) | ≤ 13 dB | PASS |
| Frequency Stability | 2.1055<br>27.54 | Shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation. | PASS |
| Spurious Emissions at Antenna Terminals | 2.1051<br>27.53(m) | ≤ -25 dBm | PASS |


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<table>
<tr><th>Test Case</th><th>Clause in FCC rules</th><th>Limits</th><th>Verdict</th></tr>
<tr><td>Radiated Spurious Emission</td><td>2.1053<br>27.53(m)</td><td>≤ -25 dBm</td><td>PASS</td></tr>
<tr><td colspan="4">LTE Band 26 (814-824MHz)</td></tr>
<tr><td>RF Power Output and Effective Radiated Power</td><td>2.1046<br>90.635(b)</td><td>≤ 100 W (50 dBm)</td><td>PASS</td></tr>
<tr><td>Occupied Bandwidth</td><td>2.1049</td><td>No specific requirements</td><td>PASS</td></tr>
<tr><td>Emission Masks</td><td>2.1051<br>90.691(a)(1)</td><td>For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 $Log_{10}$(f/6.1) decibels or 50 + 10 $Log_{10}$(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.</td><td>PASS</td></tr>
<tr><td>Peak-to-Average Power Ratio</td><td>KDB 971168 D01(5.7)</td><td>≤ 13 dB</td><td>PASS</td></tr>
<tr><td>Frequency Stability</td><td>2.1055<br>90.213</td><td><table><tr><th rowspan="2">Fixed and base stations</th><th colspan="2">Mobile stations</th></tr><tr><th>Over 2 watts output power</th><th>2 watts or less output power</th></tr><tr><td>1.5</td><td>2.5</td><td>2.5</td></tr></table></td><td>PASS</td></tr>
<tr><td>Spurious Emissions at Antenna Terminals</td><td>2.1051<br>90.691</td><td>≤ -13 dBm</td><td>PASS</td></tr>
<tr><td>Radiated Spurious Emission</td><td>2.1053<br>90.691</td><td>≤ -13 dBm</td><td>PASS</td></tr>
<tr><td colspan="4">Date of Testing: (Original) July 30, 2025 ~ September 1, 2025<br>(Variant) November 20, 2025 ~ December 24, 2025<br>Date of Sample Received: (Original) July 28, 2025<br>(Variant) November 13, 2025</td></tr>
<tr><td colspan="4">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 Eurofins 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.</td></tr>
</table>


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**2AH25T5F2ALN (Report No.: EFTA25110159-IE-02-R1V2) is a variant model of 2AH25T5F2AN (Report No.: EFTA25070074-IE-02-R1).**

**The differences between variant and original is as below:**

| Description | | CPU | Frequency Band | Front Camera | eSIM | NFC | Scanner | LCD |
|---|---|---|---|---|---|---|---|---|
| Original (Main test prototype) | Configuration 1 | 6225 | 2G:B2/3/5/8<br>3G:B1/2/4/5/6/8/19<br>4G:B1/2/3/4/5/7/8/12/13/17/18/19/20/25/26/28/30/66/71/34/38/39/40/41 | Y | Y | Y | Y | TXDY675EBAPUB-13V9 |
| Variant | Configuration 3 P06120005 | 4325 | 2G:B2/3/5/8<br>3G:B1/2/4/5/6/8/19<br>4G:B1/2/3/4/5/7/8/18/19/20/26/28/34/38/39/40/41 | N | Y | Y | Y | TXDY675EBAPUB-13V8 |
| Variant | Configuration 4 P06120001 | 4325 | 2G:B2/3/5/8<br>3G:B1/2/4/5/6/8/19<br>4G:B1/2/3/4/5/7/8/18/19/20/26/28/34/38/39/40/41 | N | Y | Y | N | TXDY675EBAPUB-13V8 |

**The detailed product change description please refers to the *Difference Declaration Letter*.**

**Tested Cases refer to the following table.**

| Test Cases | Original | Variant (Configuration 3 P06120005) | Variant (Configuration 4 P06120001) |
|---|---|---|---|
| RF Power Output and Effective Radiated Power | PASS | Only tested with worst case of Original | Not test |
| Occupied Bandwidth | PASS | Only tested with worst case of Original | Not test |
| Band Edge Compliance | PASS | Only tested with worst case of Original | Not test |
| Peak-to-Average Power Ratio | PASS | Only tested with worst case of Original | Not test |
| Frequency Stability | PASS | Only tested with worst case of Original | Not test |
| Spurious Emissions at Antenna Terminals | PASS | Only tested with worst case of Original | Not test |
| Radiated Spurious Emission | PASS | Only tested with worst case of Original | Only tested with worst case of Original |


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# 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 **Eurofins 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)**

Eurofins 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)**

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

## 1.3 Testing Location

| | |
|---|---|
| Company: | Eurofins TA Technology (Shanghai) Co., Ltd. |
| Address: | Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China |
| City: | Shanghai |
| Post code: | 201201 |
| Country: | P. R. China |
| Contact: | Xu Kai |
| Telephone: | +86-021-50791141/2/3 |
| Fax: | +86-021-50791141/2/3-8000 |
| Website: | https://www.eurofins.com/electrical-and-electronics |
| E-mail: | Kain.Xu@cpt.eurofinscn.com |


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# 2 General Description of Equipment under Test

## 2.1 Applicant and Manufacturer Information

| | |
|---|---|
| Applicant | Shanghai Sunmi Technology Co.,Ltd. |
| Applicant address | Room 505, No.388, Song Hu Road, Yang Pu District, Shanghai, China |
| Manufacturer | Shanghai Sunmi Technology Co.,Ltd. |
| Manufacturer address | Room 505, No.388, Song Hu Road, Yang Pu District, Shanghai, China |

## 2.2 General information

| EUT Description | | | | |
|---|---|---|---|---|
| Model | T5F2A | | | |
| SN | Original | Conducted | VB03256TJ0175 | |
| | | Radiated | VB03256TJ0055 | |
| IMEI | Variant | Conducted | IMEI 1:861616080500094<br>IMEI 2:861616080500292 | |
| Lab internal SN | Variant | Radiated | Configuration 3: 251113-02-018<br>Configuration 4: 251113-02-014 | |
| Hardware Version | SM08_MB_V1.1 | | | |
| Software Version | 4.0.0 | | | |
| Power Supply | Battery / AC adapter | | | |
| Antenna Type | Internal Antenna | | | |
| Rated Power Supply Voltage | 7.74VDC | | | |
| Operating Voltage | Minimum: 6.6VDC Maximum: 8.9VDC | | | |
| Operating Temperature | Lowest: -10°C Highest: +55°C | | | |
| Testing Temperature | Lowest: -30°C Highest: +50°C | | | |
| Operating Frequency Range(s) | Mode | Tx (MHz) | Rx (MHz) | Gain (dBi) |
| | GSM850 | 824 ~ 849 | 869 ~ 894 | 2.42 |
| | GSM1900 | 1850 ~ 1910 | 1930 ~ 1990 | 0.48 |
| | WCDMA Band II | 1850 ~ 1910 | 1930 ~ 1990 | 0.48 |
| | WCDMA Band IV | 1710 ~ 1755 | 2110 ~ 2155 | 0.61 |
| | WCDMA Band V | 824 ~ 849 | 869 ~ 894 | 2.42 |
| | LTE Band 2 | 1850 ~ 1910 | 1930 ~ 1990 | 0.48 |
| | LTE Band 4 | 1710 ~ 1755 | 2110 ~ 2155 | 0.61 |
| | LTE Band 5 | 824 ~ 849 | 869 ~ 894 | 2.42 |
| | LTE Band 7 | 2500 ~ 2570 | 2620 ~ 2690 | 2.84 |
| | LTE Band 26 (824 ~ 849) | 824 ~ 849 | 869 ~ 894 | 2.42 |
| | LTE Band 26 | 814 ~ 824 | 859 ~ 869 | 2.42 |


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| | | | | |
|---|---|---|---|---|
| | (814 ~ 824) | | | |
| | LTE Band 38 | 2570 ~ 2620 | 2570 ~ 2620 | 2.80 |
| | LTE Band 41 | 2496 ~ 2690 | 2496 ~ 2690 | 2.84 |
| Test Modulation | (GSM/GPRS)GMSK, (EGPRS) GMSK/ 8PSK;<br>(WCDMA) QPSK;<br>(LTE) QPSK, 16QAM; | | | |
| GPRS Multislot Class | 33 | | | |
| EGPRS Multislot Class | 33 | | | |
| HSDPA UE Category | 24 | | | |
| HSUPA UE Category | 6 | | | |
| LTE Category | 4 | | | |
| Power Class | GSM 850: 4<br>GSM 1900: 1<br>WCDMA / LTE: 3 | | | |
| Maximum E.I.R.P./ E.R.P. | GSM850 | 33.78 dBm | | |
| | GSM1900 | 30.34 dBm | | |
| | WCDMA Band II | 23.99 dBm | | |
| | WCDMA Band IV | 24.12 dBm | | |
| | WCDMA Band V | 24.00 dBm | | |
| | LTE Band 2 | 23.97 dBm | | |
| | LTE Band 4 | 23.97dBm | | |
| | LTE Band 5 | 23.38 dBm | | |
| | LTE Band 7 | 26.78 dBm | | |
| | LTE Band 26 (824 ~ 849) | 23.23 dBm | | |
| | LTE Band 26 (814 ~ 824) | 23.51 dBm | | |
| | LTE Band 38 | 26.24 dBm | | |
| | LTE Band 41 | 26.36 dBm | | |
| **EUT Accessory** | | | | |
| Adapter 1 | Manufacturer: Shenzhen Tianyin Electronics Co.,Ltd<br>Model: TD-661G120167UF01 | | | |
| Adapter 2 | Manufacturer: Jiangsu Chenyang Electron Co., Ltd.<br>Model: UC13US | | | |
| Battery | Manufacturer: Guangdong Highpower New Energy Technology Co., Ltd.<br>Model: HPPE | | | |
| USB Cable 1 | Manufacturer: Saibao (Jiangxi) Industry Co., LTD<br>Model: SSM-A033A<br>1500cm | | | |
| USB Cable 2 | Manufacturer: Saibao (Jiangxi) Industry Co., LTD<br>Model: SSM-A063A | | | |


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| | |
|---|---|
| | 1500cm |

Note:

1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.


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# 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 (2025)**

**FCC CFR 47 Part 24E (2025)**

**FCC CFR 47 Part 27C (2025)**

**FCC CFR 47 Part 90S (2025)**

**Reference standard:**

**FCC CFR 47 Part 2 (2025)**

**ANSI C63.26-2015**

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


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# 4 Test Configuration

There is more than one SIM card slot, each one should be applied throughout the compliance test
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 GSM/WCDMA/LTE/NR is set based on the maximum RF Output Power.
The following testing in different Bandwidth is set to detailin the following table:
ENDC test Effective Isotropic Radiated Power and RSE, report only show worst mode.
Test modes are chosen to be reported as the worst case configuration below for NR Band:

| **Test items** | **Modes/Modulation** | |
|---|---|---|
| | GSM 850 / GSM 1900 | WCDMA Band 2/4/5 |
| RF Power Output and Effective (Isotropic) Radiated power | GSM<br>GPRS<br>EGPRS | RMC<br>HSDPA/HSUPA |
| Occupied Bandwidth | GSM<br>GPRS(1Tx slot)<br>EGPRS(1Tx slot) | RMC |
| Band Edge Compliance | GSM<br>GPRS(1Tx slot)<br>EGPRS(1Tx slot) | RMC |
| Peak-to-Average Power Ratio | GSM<br>GPRS(1Tx slot)<br>EGPRS(1Tx slot) | RMC |
| Frequency Stability | GSM | RMC |
| Spurious Emissions at Antenna Terminals | GSM | RMC |
| Radiated Spurious Emission | GSM | RMC |


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Test modes are chosen to be reported as the worst case configuration below for LTE Band:

| Test items | Modes | Bandwidth (MHz) | | | | | | Modulation | | RB | | | Test Channel | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.4 | 3 | 5 | 10 | 15 | 20 | QPSK | 16QAM | 1 | 50% | 100% | L | M | H |
| RF Power Output and Effective Isotropic Radiated Power | LTE 2 | O | O | O | O | O | O | O | O | O | O | O | O | O | O |
| | LTE 4 | O | O | O | O | O | O | O | O | O | O | O | O | O | O |
| | LTE 5 | O | O | O | O | - | - | O | O | O | O | O | O | O | O |
| | LTE 7 | - | - | O | O | O | O | O | O | O | O | O | O | O | O |
| | LTE 26 | O | O | O | O | O | - | O | O | O | O | O | O | O | O |
| | LTE 38 | - | - | O | O | O | O | O | O | O | O | O | O | O | O |
| | LTE 41 | - | - | O | O | O | O | O | O | O | O | O | O | O | O |
| Occupied Bandwidth | LTE 2 | O | O | O | O | O | O | O | O | - | - | O | O | O | O |
| | LTE 4 | O | O | O | O | O | O | O | O | - | - | O | O | O | O |
| | LTE 5 | O | O | O | O | - | - | O | O | - | - | O | O | O | O |
| | LTE 7 | - | - | O | O | O | O | O | O | - | - | O | O | O | O |
| | LTE 26 | O | O | O | O | O | - | O | O | - | - | O | O | O | O |
| | LTE 38 | - | - | O | O | O | O | O | O | - | - | O | O | O | O |
| | LTE 41 | - | - | O | O | O | O | O | O | - | - | O | O | O | O |
| Band Edge Compliance | LTE 2 | O | O | O | O | O | O | O | O | O | - | O | O | - | O |
| | LTE 4 | O | O | O | O | O | O | O | O | O | - | O | O | - | O |
| | LTE 5 | O | O | O | O | - | - | O | O | O | - | O | O | - | O |
| | LTE 7 | - | - | O | O | O | O | O | O | O | - | O | O | - | O |
| | LTE 26 | O | O | O | O | O | - | O | O | O | - | O | O | - | O |
| | LTE 38 | - | - | O | O | O | O | O | O | O | - | O | O | - | O |
| | LTE 41 | - | - | O | O | O | O | O | O | O | - | O | O | - | O |
| Peak-to-Average Power Ratio | LTE 2 | O | O | O | O | O | O | O | O | - | - | O | O | O | O |
| | LTE 4 | O | O | O | O | O | O | O | O | - | - | O | O | O | O |
| | LTE 5 | O | O | O | O | - | - | O | O | - | - | O | O | O | O |
| | LTE 7 | - | - | O | O | O | O | O | O | - | - | O | O | O | O |
| | LTE 26 | O | O | O | O | O | - | O | O | - | - | O | O | O | O |
| | LTE 38 | - | - | O | O | O | O | O | O | - | - | O | O | O | O |
| | LTE 41 | - | - | O | O | O | O | O | O | - | - | O | O | O | O |
| Frequency Stability | LTE 2 | O | O | O | O | O | O | O | - | - | - | O | O | - | O |
| | LTE 4 | O | O | O | O | O | O | O | - | - | - | O | O | - | O |
| | LTE 5 | O | O | O | O | - | - | O | - | - | - | O | - | O | - |
| | LTE 7 | - | - | O | O | O | O | O | - | - | - | O | O | - | O |
| | LTE 26 | O | O | O | O | O | - | O | - | - | - | O | - | O | - |
| | LTE 38 | - | - | O | O | O | O | O | - | - | - | O | O | - | O |
| | LTE 41 | - | - | O | O | O | O | O | - | - | - | O | O | - | O |
| Spurious Emissions at Antenna Terminals | LTE 2 | O | O | O | O | O | O | O | - | O | - | - | O | O | O |
| | LTE 4 | O | O | O | O | O | O | O | - | O | - | - | O | O | O |
| | LTE 5 | O | O | O | O | - | - | O | - | O | - | - | O | O | O |
| | LTE 7 | - | - | O | O | O | O | O | - | O | - | - | O | O | O |
| | LTE 26 | O | O | O | O | O | - | O | - | O | - | - | O | O | O |
| | LTE 38 | - | - | O | O | O | O | O | - | O | - | - | O | O | O |
| | LTE 41 | - | - | O | O | O | O | O | - | O | - | - | O | O | O |
| Radiated | LTE 2 | O | - | O | - | - | O | O | - | O | - | - | - | O | - |
| | LTE 4 | O | - | O | - | - | O | O | - | O | - | - | - | O | - |


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| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spurious Emission | LTE 5 | O | - | O | O | - | - | O | - | O | - | - | - | O | - |
| | LTE 7 | - | - | O | - | - | O | O | - | O | - | - | - | O | - |
| | LTE 26 | O | - | O | - | O | - | O | - | O | - | - | - | O | - |
| | LTE 38 | - | - | O | - | - | O | O | - | O | - | - | - | O | - |
| | LTE 41 | - | - | 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. | | | | | | | | | | | | | | |


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# 5 Test Case Results

## 5.1 RF Power Output and Effective Isotropic Radiated Power

**Ambient condition**

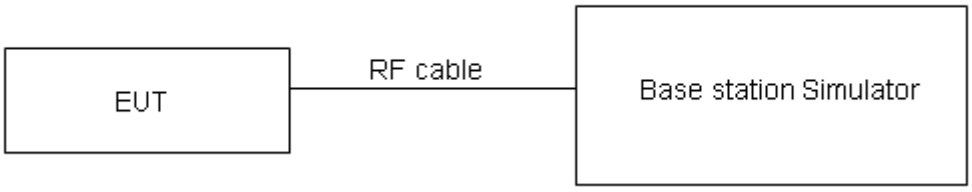
| Temperature | Relative humidity | Pressure |
|---|---|---|
| 15°C ~ 35°C | 20% ~ 80% | 86 kPa ~ 106 kPa |

**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) + Antenna Gain (dBi)
EIRP (dBm) = ERP (dBm) + 2.15 (dB.)

**Test Setup**




**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/EIRP.

**Test Results**

**The detailed test data see EFTA25110159-IE-02-R1-ANNEX A.**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## 5.2 Occupied Bandwidth

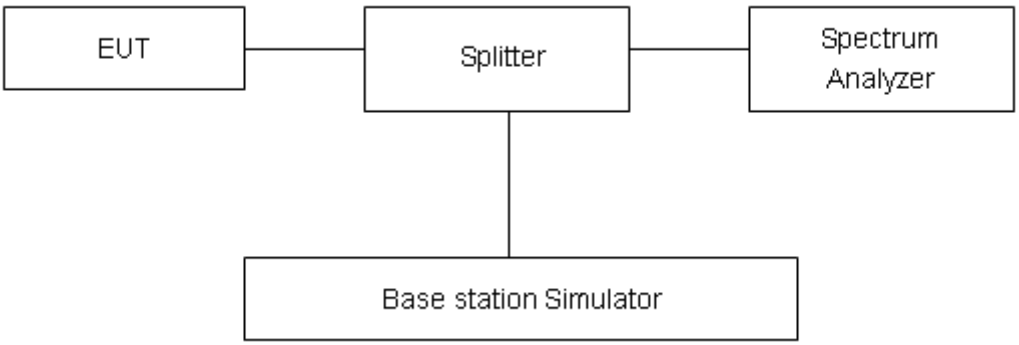
**Ambient condition**

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 15°C ~ 35°C | 20% ~ 80% | 86 kPa ~ 106 kPa |

**Method of Measurement**

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.
RBW is set to ⩾1%EBW, VBW is set to 3x RBW.
99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

**Test Setup**




**Measurement Uncertainty**

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 2, *U*=624Hz.

**Test Results**

**The detailed test data see EFTA25110159-IE-02-R1-ANNEX B.**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## 5.3 Band Edge Compliance

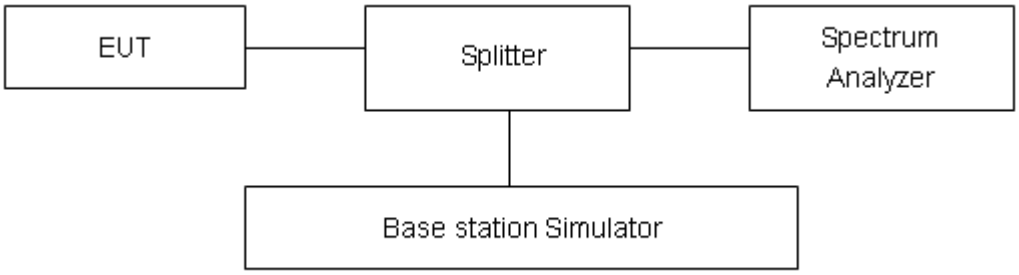
### Ambient condition

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 15°C ~ 35°C | 20% ~ 80% | 86 kPa ~ 106 kPa |

### Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured.
The testing follows KDB 971168 D01 v03r01 Section 6.0
The EUT was connected to spectrum analyzer and system simulator via a power divider.
The band edges of low and high channels for the highest RF powers were measured.
For LTE Band 7/38 set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
For LTE Band 41 the middle channel, high channel set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge. Beyond the 1 MHz band from the band edge, RBW=1MHz was used; Low channel set RBW >= 2% EBW in the 1MHz band immediately outside and adjacent to the band edge. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
RBW is set to ⩾1%EBW, VBW is set to 3x RBW on spectrum analyzer.
Set spectrum analyzer with RMS detector.
The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
Checked that all the results comply with the emission limit line.

### Test Setup




### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 1.96, *U*=0.684dB.

### Test Results

**The detailed test data see EFTA25110159-IE-02-R1-ANNEX C.**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## 5.4 Peak-to-Average Power Ratio (PAPR)

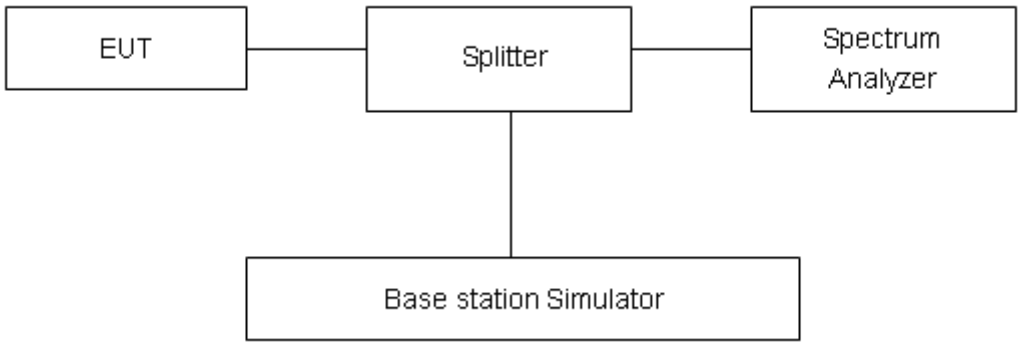
### Ambient condition

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 15°C ~ 35°C | 20% ~ 80% | 86 kPa ~ 106 kPa |

### Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (*e.g.*, dBm). Determine the PAPR from:
PAPR (dB) = PPk (dBm) - PAvg (dBm).

### Test Setup




### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for thenormal distribution is with the coverage factor k = 2, U= 0.4 dB.

### Test Results

**The detailed test data see EFTA25110159-IE-02-R1-ANNEX D.**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## 5.5 Frequency Stability

**Ambient condition**

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 15°C ~ 35°C | 20% ~ 80% | 86 kPa ~ 106 kPa |

**Method of Measurement**

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size.

(1)With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2)Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

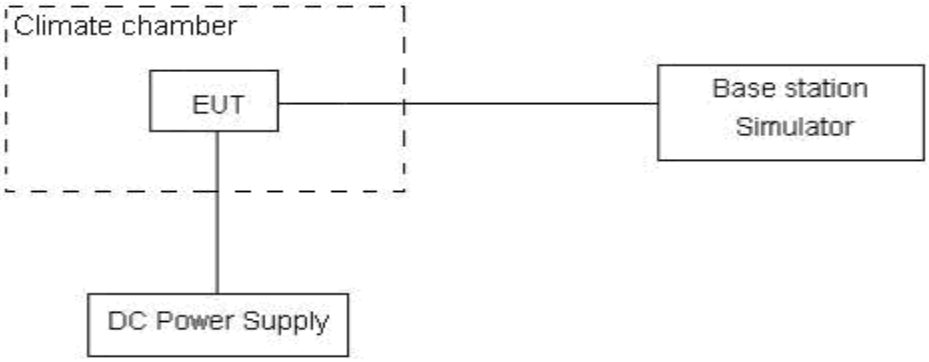
Frequency Stability (Voltage Variation)

The frequency stability shall be measured with variation of primary supply voltage as follows:

**Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 6.6 V and 8.9V, with a nominal voltage of 7.74V.

**Test setup**




**Measurement Uncertainty**

The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor $k$ = 3,$U$=0.01ppm.

**Test Results**

**The detailed test data see EFTA25110159-IE-02-R1-ANNEX E.**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## 5.6 Spurious Emissions at Antenna Terminals

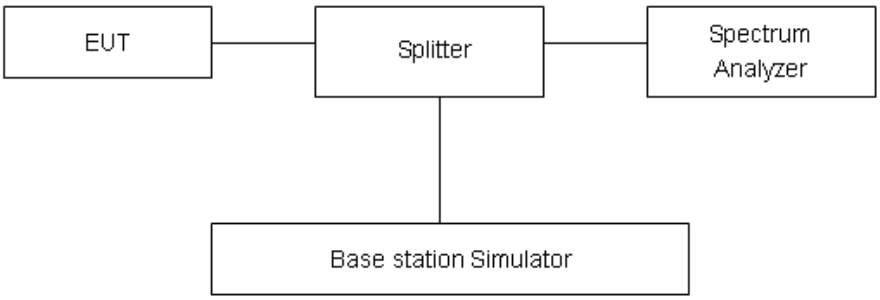
**Ambient condition**

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 15°C ~ 35°C | 20% ~ 80% | 86 kPa ~ 106 kPa |

**Method of Measurement**

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.
RBW is set to 1 kHz (0.009MHz~ 0.15 MHz),
RBW is set to 10 kHz (0.15 MHz~ 30 MHz)
RBW is set to 100 kHz (30MHz~1000 MHz)
RBW is set to 1000 kHz (above 1000MHz)
For Band 2/7/38/41/66, the RBW is set to 100KHz below 1G, and the factor is 10dB for 1MHz.
Sweep is set to AUTO.
Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

**Test setup**




**Measurement Uncertainty**

The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor *k* = 1.96.

| Frequency | Uncertainty |
|---|---|
| 9kHz-1GHz | 0.684 dB |
| above 1GHz | 1.407 dB |

**Test Results**

**The detailed test data see EFTA25110159-IE-02-R1-ANNEX F.**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## 5.7 Radiated Spurious Emission

**Ambient condition**

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 15°C ~ 35°C | 20% ~ 80% | 86 kPa ~ 106 kPa |

**Method of Measurement**

1. The testing follows FCC KDB 971168 D01 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 for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz, 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.


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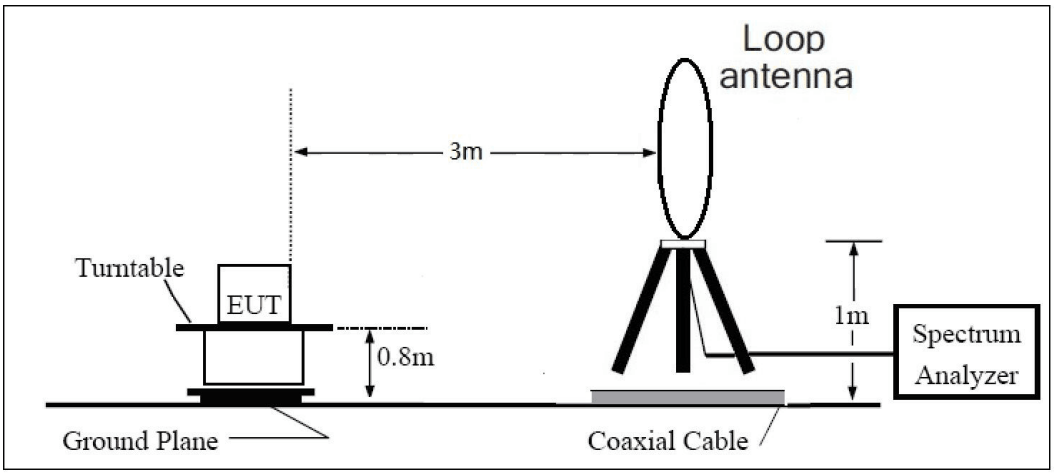
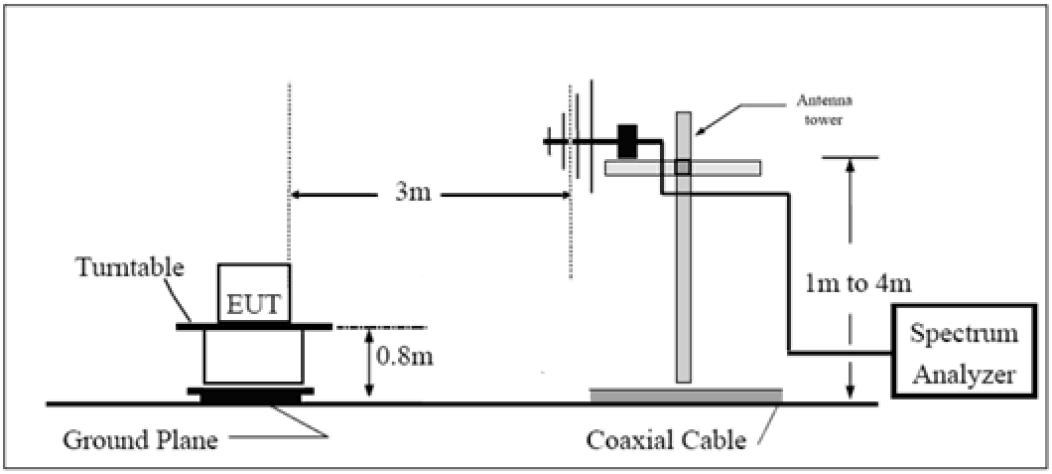
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

**Test setup**

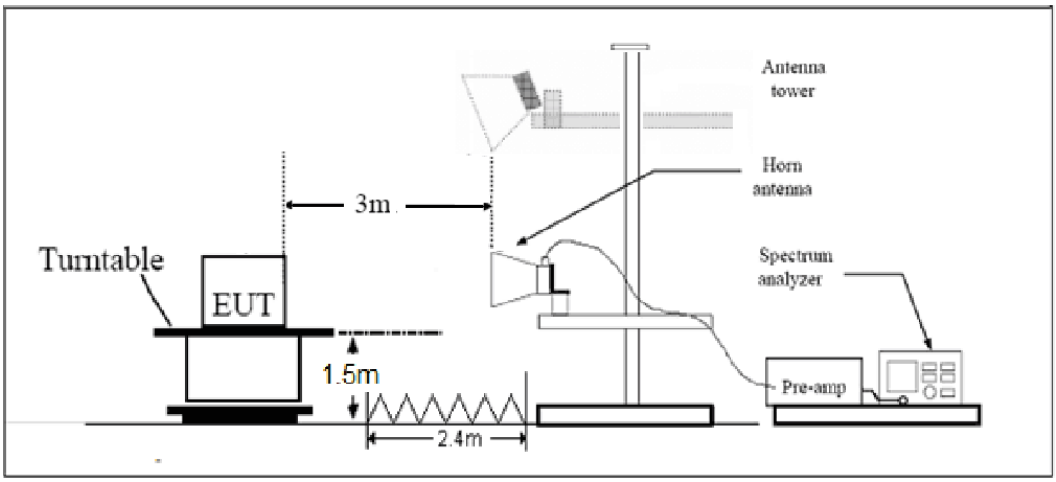
**9KHz~ 30MHz**




**30MHz~ 1GHz**




**Above 1GHz**




Note: Area side:2.4mX3.6m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**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**

**The detailed test data see EFTA25110159-IE-02-R1-ANNEX G.**


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# 6 Main Test Instruments

**Date of Testing: (Original) July 30, 2025 ~ September 1, 2025**

| Name | Manufacturer | Type | Serial Number | Calibration Date | Expiration Date |
|---|---|---|---|---|---|
| Wireless Communication Tester | Anritsu | MT8821C | 6201538758 | 2025-05-06 | 2026-05-05 |
| Climate Chamber | WEISS | VT 4002 | 58226119450010 | 2025-05-06 | 2026-05-05 |
| Wireless Communication Tester | R&S | CMW500 | 150415 | 2025-05-06 | 2026-05-05 |
| Spectrum Analyzer | Keysight | N9020A | MY52330084 | 2025-05-06 | 2026-05-05 |
| DC Power Supply | UNI-T | UTP1310+ | C220795889 | 2025-05-06 | 2026-05-05 |
| Spectrum Analyzer | R&S | FSV3030 | 101411 | 2024-12-02 | 2025-12-01 |
| Spectrum Analyze | Agilent | N9010A | MY47191109 | 2025-05-06 | 2026-05-05 |
| Attenuator | HASCO | HA18A-10 | 0003 | / | / |
| Spectrum Analyzer | R&S | FSV30 | 100815 | 2024-12-02 | 2025-12-01 |
| TRILOG Broadband Antenna | SCHWARZBECK | VULB 9163 | 391 | 2022-09-29 | 2025-09-28 |
| Horn Antenna | SCHWARZBECK | BBHA 9120D | 1594 | 2023-12-05 | 2026-12-04 |
| Horn Antenna | ETS-Lindgren | 3160-09 | 00102643 | 2024-09-24 | 2027-09-23 |
| Software | R&S | EMC32 | 10.35.10 | / | / |

**Date of Testing: (Variant) November 20, 2025 ~ December 24, 2025**

| Name | Manufacturer | Type | Serial Number | Calibration Date | Expiration Date |
|---|---|---|---|---|---|
| Wireless Communication Tester | Anritsu | MT8821C | 6201538758 | 2025-05-06 | 2026-05-05 |
| Climate Chamber | WEISS | VT 4002 | 58226119450010 | 2025-05-06 | 2026-05-05 |
| Wireless Communication Tester | R&S | CMW500 | 150415 | 2025-05-06 | 2026-05-05 |
| DC Power Supply | UNI-T | UTP1310+ | C220795889 | 2025-05-06 | 2026-05-05 |
| Spectrum Analyzer | Keysight | N9020B | MY63470131 | 2025-05-06 | 2026-05-05 |
| Software | MW | MTS 8200 | V2.0.0.0 | / | / |


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| | | | | | |
|---|---|---|---|---|---|
| Spectrum Analyzer | R&S | FSV30 | 100815 | 2024-12-02 | 2025-12-01 |
| | | | | 2025-11-24 | 2026-11-23 |
| TRILOG Broadband Antenna | SCHWARZBECK | VULB 9163 | 1439 | 2024-07-06 | 2027-07-05 |
| Horn Antenna | SCHWARZBECK | BBHA 9120D | 1594 | 2023-12-05 | 2026-12-04 |
| Software | R&S | EMC32 | 10.35.10 | / | / |


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# 7 The EUT Appearance

**Refer to *EUT Appearance*.**


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# 8 Test Setup Photos

**Refer to *Part22_24_27_90 Test Setup.***


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# 9 Product Change Description

**The Product Change Description are submitted separately.**

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


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