

# TEST REPORT

Report No.: SHATBL2604022W02

**Applicant** : Shanghai AllyNav Technology Co.,Ltd.

**Product Name** : GNSS RECEIVER

**Brand Name** : N/A

**Model Name** : R100

**FCC ID** : 2AT4H-R100

**Test Standard** : FCC 47 CFR Part 2.1091

**Date of Test** : 2026.05.22~2026.08.19

**Report Prepared by** :

*Emily*

(Emily)

**Report Approved by** :

*Guozheng Li*

(Guozheng Li)

**Authorized Signatory** :

*Terry Yang*

(Terry Yang)



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## REVISION HISTORY

| Rev. | Issue Date | Revisions       | Revised by  |
|------|------------|-----------------|-------------|
| 00   | 2026.08.19 | Initial Release | Guozheng Li |

## DECLARATION OF REPORT

1. The device has been tested by ATBL, and the test results show that the equipment under test (EUT) is in compliance with the requirements of 47 CFR Part 2.1091. And it is applicable only to the tested sample identified in the report.

2. This report shall not be reproduced except in full, without the written approval of ATBL, this document only be altered or revised by ATBL, personal only, and shall be noted in the revision of the document.

3. The general information of EUT in this report is provided by the customer or manufacture, ATBL is only responsible for the test data but not for the information provided by the customer or manufacture.

4. The results in this report is only apply to the sample as tested under conditions. The customer or manufacturer is responsible for ensuring that the additional production units of this model have the same electrical and mechanical components.

## 1. GENERAL DESCRIPTION

### 1.1. Applicant

Name : Shanghai AllyNav Technology Co.,Ltd.

Address : Room 201, Buliding 1, No 215, Gaoguang RD, Qingpu District, Shanghai, China

### 1.2. Manufacturer

Name : Shanghai AllyNav Technology Co.,Ltd.

Address : Room 201, Buliding 1, No 215, Gaoguang RD, Qingpu District, Shanghai, China

### 1.3. Factory

Name : Shanghai AllyNav Technology Co.,Ltd.

Address : Room 201, Buliding 1, No 215, Gaoguang RD, Qingpu District, Shanghai, China

#### 1.4. General Information of EUT

| General Information         |                                                                                                      |
|-----------------------------|------------------------------------------------------------------------------------------------------|
| Equipment Name              | GNSS RECEIVER                                                                                        |
| Brand Name                  | N/A                                                                                                  |
| Model Name                  | R100                                                                                                 |
| Series Model                | R101                                                                                                 |
| Model Difference            | Only housing color differs; all internal hardware, software and performance parameters are the same. |
| Sample No.                  | 202603010001002                                                                                      |
| Power Input                 | DC 9V-36V from AC Adapter                                                                            |
| Adapter                     | Input:100-240V~2.0A 50/60Hz<br>Output:13.5V== 5.0A                                                   |
| Battery                     | N/A                                                                                                  |
| Hardware version            | N/A                                                                                                  |
| Software version            | N/A                                                                                                  |
| Operating Temperature Range | -20℃ ~ +70℃                                                                                          |
| Connecting I/O Port(s)      | Refer to the remark below.                                                                           |

Remark:

The above information of EUT was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

#### 1.5. Modification of EUT

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

#### 1.6. Laboratory Information

|                         |   |                                                                                        |
|-------------------------|---|----------------------------------------------------------------------------------------|
| Company Name            | : | Shanghai ATBL Technology Co., Ltd.                                                     |
| Address                 | : | Building 8, No.160 Basheng Road, Waigaoqiao Free Trade Zone, Pudong New Area, Shanghai |
| Telephone               | : | +86(0)21-51298625                                                                      |
| FCC-Registration Number | : | 485917                                                                                 |
| Designation Number      | : | CN1306                                                                                 |
| A2LA Number             | : | 6184.01                                                                                |
| CNAS Number             | : | CNAS L14531                                                                            |
| ISED Designation Number | : | 27371                                                                                  |
| CAB identifier          | : | CN0116                                                                                 |

## 2. FCC 47CFR §2.1091 Requirement

### 2.1. Test Standards

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

FCC KDB447498 D01 General RF Exposure Guidance v06: Mobile and Portable Device, RF Exposure, Equipment Authorization Procedures.

### 2.2. Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

| Frequency Range(MHz)                        | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density (mW/cm <sup>2</sup> ) | Averaging Time (minute) |
|---------------------------------------------|------------------------------|------------------------------|-------------------------------------|-------------------------|
| Limits for Occupational/Controlled Exposure |                              |                              |                                     |                         |
| 0.3 – 3.0                                   | 614                          | 1.63                         | (100) *                             | 6                       |
| 3.0 – 30                                    | 1842/f                       | 4.89/f                       | (900/f <sup>2</sup> )*              | 6                       |
| 30 – 300                                    | 61.4                         | 0.163                        | 1.0                                 | 6                       |
| 300 – 1500                                  | /                            | /                            | f/300                               | 6                       |
| 1500 – 100,000                              | /                            | /                            | 5                                   | 6                       |

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

| Frequency Range(MHz)                        | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density (mW/cm <sup>2</sup> ) | Averaging Time (minute) |
|---------------------------------------------|------------------------------|------------------------------|-------------------------------------|-------------------------|
| Limits for Occupational/Controlled Exposure |                              |                              |                                     |                         |
| 0.3 – 3.0                                   | 614                          | 1.63                         | (100) *                             | 30                      |
| 3.0 – 30                                    | 824/f                        | 2.19/f                       | (180/f <sup>2</sup> )*              | 30                      |
| 30 – 300                                    | 27.5                         | 0.073                        | 0.2                                 | 30                      |
| 300 – 1500                                  | /                            | /                            | f/1500                              | 30                      |
| 1500 – 100,000                              | /                            | /                            | 1.0                                 | 30                      |

F=frequency in MHz

\*=Plane-wave equivalent power density

### 2.3. MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S=PG/4\pi R^2$$

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

### 2.4. Antenna Information

EUT can only use antennas certificated as follows provided by manufacturer;

| Transmitter Circuit | Operating Band | Peak Gain (dBi) | Antenna Type |
|---------------------|----------------|-----------------|--------------|
| Chain 0             | LTE Band 2     | 0.7             | PCB Antenna  |
|                     | LTE Band 5     | 2.2             |              |
|                     | LTE Band 7     | 4.6             |              |
|                     | LTE Band 13    | -1.7            |              |
|                     | LTE Band 25    | 0.7             |              |
|                     | LTE Band 38    | 4.2             |              |
|                     | LTE Band 41    | 4.6             |              |

### 2.5. Manufacturing Tolerance

| Function    | Target (dBm) | Tolerance ± (dB) |
|-------------|--------------|------------------|
| LTE Band 2  | 24.41        | 1.00             |
| LTE Band 5  | 24.22        | 1.00             |
| LTE Band 7  | 24.42        | 1.00             |
| LTE Band 13 | 24.06        | 1.00             |
| LTE Band 25 | 25.03        | 1.00             |
| LTE Band 38 | 25.78        | 1.00             |
| LTE Band 41 | 25.21        | 1.00             |

Note: The target power has included the maximum transmission power and tolerance values.

## 2.6. Test Result

As declared by the Applicant, the EUT is a wireless device used in a Mobile application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance,  $r = 20\text{cm}$ , and the gain of the applied antenna refers to Section 4, the RF power density can be obtained.

| Modulation Type | Output power (Target) |        | Antenna Gain (dBi) | Antenna Gain (linear) | MPE (mW/cm <sup>2</sup> ) | MPE Limits (mW/cm <sup>2</sup> ) | Result |
|-----------------|-----------------------|--------|--------------------|-----------------------|---------------------------|----------------------------------|--------|
|                 | dBm                   | mW     |                    |                       |                           |                                  |        |
| LTE Band 2      | 25.41                 | 347.54 | 0.7                | 1.1749                | 0.0812                    | 1.0000                           | PASS   |
| LTE Band 5      | 25.22                 | 332.66 | 2.2                | 1.6596                | 0.1098                    | 0.5667                           | PASS   |
| LTE Band 7      | 25.42                 | 348.34 | 4.6                | 2.8840                | 0.1999                    | 1.0000                           | PASS   |
| LTE Band 13     | 25.06                 | 320.63 | -1.7               | 0.6761                | 0.0431                    | 0.5000                           | PASS   |
| LTE Band 25     | 26.03                 | 400.87 | 0.7                | 1.1749                | 0.0937                    | 1.0000                           | PASS   |
| LTE Band 38     | 26.78                 | 476.43 | 4.2                | 2.6303                | 0.2493                    | 1.0000                           | PASS   |
| LTE Band 41     | 26.21                 | 417.83 | 4.6                | 2.8840                | 0.2397                    | 1.0000                           | PASS   |

Note:

1. Only the worst-case power for each band is recorded in this report.
2. The calculated RF power density is below the applicable MPE limit, meeting the requirements of 47 CFR Part 2.1091.
3. Output power (Target) includes 1 dB production turn-up tolerance for worst-case evaluation.
4. Minimum separation distance used for MPE calculation is 20 cm.

\*\*\*\*\*END OF THE REPORT\*\*\*\*\*