

RF Exposure Evaluation

For

Launch Tech Co., Ltd.

sensor

Test Model: LAUNCH TSENSOR-05N

| | | |
|--------------------------------|---|--|
| Prepared for | : | Launch Tech Co., Ltd. |
| Address | : | No.4012, Launch Industrial Park, North Wuhe Rd, Bantian Street, Longgang District, Shenzhen, China |
| Prepared by | : | Guangzhou LCS Compliance Testing Laboratory Ltd. |
| Address | : | No.44-1,Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China |
| Tel | : | (+86) 020-39166689 |
| Fax | : | (+86) 020-39166619 |
| Web | : | www.LCS-cert.com |
| Mail | : | webmaster@LCS-cert.com |
| Date of receipt of test sample | : | July 30, 2025 |
| Number of tested samples | : | 2 |
| Sample No. | : | A250528074-1, A250528074-2 |
| Serial number | : | Prototype |
| Date of Test | : | July 30, 2025 ~ August 04, 2025 |
| Date of Report | : | August 05, 2025 |

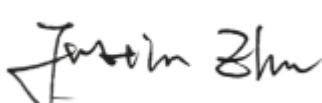
| RF Exposure Evaluation | |
|--|--|
| Report Reference No. | : LCSC07045071EC |
| Date of Issue | : August 05, 2025 |
| Testing Laboratory Name | : Guangzhou LCS Compliance Testing Laboratory Ltd. |
| Address..... | : No.44-1,Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China |
| Testing Location/ Procedure..... | : Full application of Harmonised standards <input checked="" type="checkbox"/> Partial application of Harmonised standards <input type="checkbox"/> Other standard testing method <input type="checkbox"/> |
| Applicant's Name | : Launch Tech Co., Ltd. |
| Address..... | : No.4012, Launch Industrial Park, North Wuhe Rd, Bantian Street, Longgang District, Shenzhen, China |
| Test Specification | |
| Standard | : FCC KDB publication 447498 D01 General RF Exposure Guidance v06 FCC CFR 47 part1 1.1310 FCC CFR 47 part2 2.1091 |
| Test Report Form No. | : TRF-4-E-215 A/0 |
| TRF Originator..... | : Guangzhou LCS Compliance Testing Laboratory Ltd. |
| Master TRF | : Dated 2011-03 |
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| Test Item Description | |
| : sensor | |
| Trade Mark | : N/A |
| Test Model | : LAUNCH TSENSOR-05N |
| Ratings..... | : DC 3.0V By CR2050 Battery |
| Result | : PASS |

Compiled by:



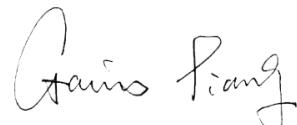
Lifeng Le / File administrators

Supervised by:



Justin Zhu / Technique Director

Approved by:



Gavin Liang/ Manager

RF Exposure Evaluation

| | |
|---|---|
| Test Report No. : LCSC07045071EC | <u>August 05, 2025</u> Date of issue |
|---|---|

EUT..... : sensor

Test Model..... : LAUNCH TSENSOR-05N

Applicant..... : Launch Tech Co., Ltd.

Address..... : No.4012, Launch Industrial Park, North Wuhe Rd, Bantian Street,
Longgang District, Shenzhen, China

Telephone..... : /

Fax..... : /

Manufacturer..... : Launch Tech Co., Ltd.

Address..... : No.4012, Launch Industrial Park, North Wuhe Rd, Bantian Street,
Longgang District, Shenzhen, China

Telephone..... : /

Fax..... : /

Factory..... : Ningbo Siming Automotive Co.,Ltd

Address..... : #360 Qiushi Road, Jishigang TownNingbo Zhejiang, China

Telephone..... : /

Fax..... : /

| | |
|--------------------|-------------|
| Test Result | PASS |
|--------------------|-------------|

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

| Report Version | Issue Date | Revision Content | Revised By |
|----------------|-----------------|------------------|------------|
| 000 | August 05, 2025 | Initial Issue | -- |
| | | | |
| | | | |

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1. Product Information

EUT : sensor
Test Model : LAUNCH TSENSOR-05N
Hardware version : /
Software version : /
Ratings : DC 3.0V By CR2050 Battery
433MHz Operation frequency : 433.92MHz
Modulation Type : ASK,FSK
Channel Number : 1
Antenna Type : Internal antenna
Antenna Gain : -13.83dBi (Max)
315MHz Operation frequency : 315MHz
Modulation Type : ASK,FSK
Channel Number : 1
Antenna Type : Internal antenna
Antenna Gain : -4.03dBi (Max)
Exposure category : General population/uncontrolled environment
EUT Type : Production Unit
Device Type : Mobile Device

Note: For a more detailed antenna description, please refer to the antenna specifications or the antenna report provided by the customer.

2. Evaluation Method

Systems operating under the provisions of FCC 47 CFR 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. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

In accordance with KDB447498D01 for Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modelled or measured field strengths or power density, is ≤ 1.0 . The MPE ratio of each antenna is determined at the minimum test separation distance required by the operating configurations and exposure conditions of the host device, according to the ratio of field strengths or power density to MPE limit, at the test frequency. Either the maximum peak or spatially averaged results from measurements or numerical simulations may be used to determine the MPE ratios. Spatial averaging does not apply when MPE is estimated using simple calculations based on far-field plane-wave equivalent conditions. The antenna installation and operating requirements for the host device must meet the minimum test separation distances required by all antennas, in both standalone and simultaneous transmission operations, to satisfy compliance.

3. Limit

3. 1 Refer Evaluation Method

[ANSI C95.1–2019](#): IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz

[FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v06](#): Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

[FCC CFR 47 part1 1.1310](#): Radiofrequency radiation exposure limits.

[FCC CFR 47 part2 2.1091](#): Radiofrequency radiation exposure evaluation: mobile devices.

3. 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 ²) | 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 ²)* | 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 ²) | Averaging Time (minute) |
| Limits for Occupational/Uncontrolled Exposure | | | | |
| 0.3 – 3.0 | 614 | 1.63 | (100)* | 30 |
| 3.0 – 30 | 824/f | 2.19/f | (180/f ²)* | 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

4. 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

5. Antenna Information

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

| Internal/ External Identification | Antenna type and antenna number | Operate frequency band | Maximum antenna gain |
|--------------------------------------|---------------------------------------|---------------------------|------------------------------------|
| Internal | Internal antenna | 433.92MHz&315MHz | 433.92: -13.83dBi 315: -4.03dBi |

6. Conducted Power

Test Procedure

TX frequency range: 433.92MHz(Worst result)

Device category: Mobile device (Distance: 20cm) Max. Field Strength: 59.99dBuV/m @3m

$$EIRP=E-104.8+20\log D=59.99-104.8+20\log 3= -35.27\text{dBm}$$

Turn-up: -35.0±1

TX frequency range: 315MHz(Worst result)

Device category: Mobile device (Distance: 20cm) Max. Field Strength: 60.63dBuV/m @3m

$$EIRP=E-104.8+20\log D=60.63-104.8+20\log 3= -34.63\text{dBm}$$

Turn-up: -34.0±1

7. Measurement Results

7.1 Standalone MPE Evaluation

As declared by the Applicant, the EUT is a wireless device used in a fix 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, $r = 20\text{cm}$, as well as the gain of the used antenna refer to antenna information, the RF power density can be obtained.

| Frequency | Output power | | Antenna Gain (dBi) | Antenna Gain (linear) | MPE (mW/cm ²) | MPE Limits (mW/cm ²) |
|-----------|--------------|--------|--------------------------|-----------------------------|------------------------------|--|
| | dBm | mW | | | | |
| 433.92 | -34.0 | 0.0004 | -13.83 | 0.0414 | 0.000000003 | 0.2893 |
| 315 | -33.0 | 0.0005 | -4.03 | 0.3954 | 0.000000039 | 0.2100 |

Remark:

1. Output power including tune-up tolerance;
2. Output power was adjusted to duty cycle at 100% if measured duty cycle less than 98%;
3. MPE evaluate distance is 20cm from user manual provide by manufacturer.

7.2 Simultaneous Transmission MPE Evaluation

The sample support one antenna. No need consider simultaneous transmission.

8. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

9. Description of Test Facility

CNAS Registration Number is L11555

A2LA Certificate Number: 5099.01

FCC Designation Number is CN1379

Test Firm Registration Number: 729882

10. Measurement Uncertainty

433/315

| Test Item | Frequency Range | Uncertainty | Note |
|------------------------|-----------------|-------------|------|
| Radiation Uncertainty | 9KHz~30MHz | ±3.10dB | (1) |
| | 30MHz~200MHz | ±2.96dB | (1) |
| | 200MHz~1000MHz | ±3.10dB | (1) |
| | 1GHz~26.5GH | ±4.20dB | (1) |
| Conduction Uncertainty | 150kHz~30MHz | ±1.63dB | (1) |
| Power disturbance | 30MHz~300MHz | ±1.60dB | (1) |

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

-----THE END OF REPORT-----