



## RF Exposure Evaluation

For

Shen Zhen LianZhongXin Electronic Co., Ltd.

optical zoom camera

Test Model: DC126

Additional Model No.: ES-ED126

Prepared for : Shen Zhen LianZhongXin Electronic Co., Ltd.  
Address : Room615, Block A, Zhihui Innovation Center, Taoyuanju South, NO.2  
Qianjin Road, BaoAn District, Shenzhen

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.  
Address : 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei,  
Shajing Street, Baoan District, Shenzhen, 518000, China  
Tel : (+86)755-82591330  
Fax : (+86)755-82591332  
Web : www.LCS-cert.com  
Mail : webmaster@LCS-cert.com

Date of receipt of test sample : April 08, 2025  
Number of tested samples : 2  
Sample number : A04075056-1, A04075056-2  
Serial number : Prototype  
Date of Test : April 08, 2025 ~ April 17, 2025  
Date of Report : April 18, 2025



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: (+86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

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| RF Exposure Evaluation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Report Reference No. ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | LCSA04075056EB                                                                                                                 |
| Date of Issue.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | April 18, 2025                                                                                                                 |
| Testing Laboratory Name.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Shenzhen LCS Compliance Testing Laboratory Ltd.                                                                                |
| Address.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China     |
| Testing Location/ Procedure.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Full application of Harmonised standards ■<br>Partial application of Harmonised standards □<br>Other standard testing method □ |
| Applicant's Name.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Shen Zhen LianZhongXin Electronic Co., Ltd.                                                                                    |
| Address.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Room615, Block A, Zhihui Innovation Center, Taoyuanju South, NO.2 Qianjin Road, BaoAn District, Shenzhen                       |
| Test Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                |
| Standard.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v06<br>FCC CFR 47 part1 1.1310<br>FCC CFR 47 part2 2.1093        |
| Test Report Form No.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | TRF-4-E-147 A/0                                                                                                                |
| TRF Originator.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Shenzhen LCS Compliance Testing Laboratory Ltd.                                                                                |
| Master TRF.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Dated 2011-03                                                                                                                  |
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| EUT Description.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | optical zoom camera                                                                                                            |
| Trade Mark.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | N/A                                                                                                                            |
| Test Model.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | DC126                                                                                                                          |
| Ratings.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Input: DC 5V<br>DC 3.7V by Rechargeable Li-ion Battery 1200mAh                                                                 |
| Result .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Pass                                                                                                                           |

Compiled by:

Kevin Huang

Supervised by:

Jack Liu

Approved by:

Gavin Liang

Kevin Huang/ Administrator

Jack Liu/ Technique principal

Gavin Liang/ Manager



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Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

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**TEST REPORT**

|                          |                       |                                        |
|--------------------------|-----------------------|----------------------------------------|
| <b>Test Report No. :</b> | <b>LCSA04075056EB</b> | <u>April 18, 2025</u><br>Date of issue |
|--------------------------|-----------------------|----------------------------------------|

|                          |                                                                                                              |
|--------------------------|--------------------------------------------------------------------------------------------------------------|
| Test Model.....          | : DC126                                                                                                      |
| EUT.....                 | : optical zoom camera                                                                                        |
| <b>Applicant.....</b>    | <b>: Shen Zhen LianZhongXin Electronic Co., Ltd.</b>                                                         |
| Address.....             | : Room615, Block A, Zihui Innovation Center, Taoyuanju<br>South, NO.2 Qianjin Road, BaoAn District, Shenzhen |
| Telephone.....           | : /                                                                                                          |
| Fax.....                 | : /                                                                                                          |
| <b>Manufacturer.....</b> | <b>: Shen Zhen LianZhongXin Electronic Co., Ltd.</b>                                                         |
| Address.....             | : Room615, Block A, Zihui Innovation Center, Taoyuanju<br>South, NO.2 Qianjin Road, BaoAn District, Shenzhen |
| Telephone.....           | : /                                                                                                          |
| Fax.....                 | : /                                                                                                          |
| <b>Factory.....</b>      | <b>: Shen Zhen LianZhongXin Electronic Co., Ltd.</b>                                                         |
| Address.....             | : Room615, Block A, Zihui Innovation Center, Taoyuanju<br>South, NO.2 Qianjin Road, BaoAn District, Shenzhen |
| Telephone.....           | : /                                                                                                          |
| Fax.....                 | : /                                                                                                          |

|                    |             |
|--------------------|-------------|
| <b>Test Result</b> | <b>Pass</b> |
|--------------------|-------------|

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.



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Revision History

| Report Version | Issue Date     | Revision Content | Revised By |
|----------------|----------------|------------------|------------|
| 000            | April 18, 2025 | Initial Issue    | ---        |
|                |                |                  |            |
|                |                |                  |            |





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Tel: +(86) 0755-82591330 | E-mail: [webmaster@lcs-cert.com](mailto:webmaster@lcs-cert.com) | Web: [www.lcs-cert.com](http://www.lcs-cert.com)

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## 1. Product Information

|                                                                                                                                           |                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| EUT                                                                                                                                       | : optical zoom camera                                                                                                                      |
| Test Model                                                                                                                                | : DC126                                                                                                                                    |
| Additional Model No.                                                                                                                      | : ES-ED126                                                                                                                                 |
| Model Declaration                                                                                                                         | : PCB board, structure and internal of these model(s) are the same, So no additional models were tested                                    |
| Ratings                                                                                                                                   | : Input: DC 5V<br>DC 3.7V by Rechargeable Li-ion Battery 1200mAh                                                                           |
| Hardware Version                                                                                                                          | : V1.0                                                                                                                                     |
| Software Version                                                                                                                          | : /                                                                                                                                        |
| WIFI(2.4G Band)                                                                                                                           | :                                                                                                                                          |
| Frequency Range                                                                                                                           | : 2412MHz~2462MHz                                                                                                                          |
| Channel Spacing                                                                                                                           | : 5MHz                                                                                                                                     |
| Channel Number                                                                                                                            | : 11 Channels for 20MHz bandwidth (2412~2462MHz)<br>7 Channels for 40MHz bandwidth (2422~2452MHz)                                          |
| Modulation Type                                                                                                                           | : IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK)<br>IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) |
| Antenna Description                                                                                                                       | : Internal Antenna, 0.47dBi(Max.)                                                                                                          |
| Exposure category                                                                                                                         | : General population/uncontrolled environment                                                                                              |
| EUT Type                                                                                                                                  | : Production Unit                                                                                                                          |
| Device Type                                                                                                                               | : Portable Device                                                                                                                          |
| Note: For a more detailed antenna description, please refer to the antenna specifications or the antenna report provided by the customer. |                                                                                                                                            |



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## 2. Evaluation method and Limit

According to KDB447498 D01 General RF Exposure Guidance v06 Section 4.3.1 Standalone SAR test exclusion considerations: "Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition, listed below, is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.22 The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander (see 5) of section 4.1). To qualify for SAR test exclusion, the test separation distances applied must be fully explained and justified by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, typically in the SAR measurement or SAR analysis report, according to the required published RF exposure KDB procedures. When no other RF exposure testing or reporting is required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for the SAR test exclusion. When required, the device specific conditions described in the other published RF exposure KDB procedures must be satisfied before applying these SAR test exclusion provisions; for example, handheld PTT two-way radios, handsets, laptops & tablets etc."

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f} \text{ (GHz)}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where:}$$

- f (GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm according to f) in section 4.1 is applied to determine SAR test exclusion.

When one of the following test exclusion conditions is satisfied for all combinations of simultaneous transmission configurations, further equipment approval is not required to incorporate transmitter modules in host devices that operate in the mixed mobile and portable host platform exposure conditions. The grantee is responsible for documenting this according to Class I permissive change requirements. Antennas that qualify for standalone SAR test exclusion must apply the estimated standalone SAR to determine simultaneous transmission test exclusion.

a) The  $[\sum \text{ of (the highest measured or estimated SAR for each standalone antenna configuration, adjusted for maximum tune-up tolerance) / 1.6 W/kg}] + [\sum \text{ of MPE ratios}] \leq 1.0$ .

b) The SAR to peak location separation ratios of all simultaneously transmitting antenna pairs operating in portable device exposure conditions are all  $\leq 0.04$ , and the  $[\sum \text{ of MPE ratios}] \leq 1.0$ .

## 3. Refer Evaluation Method

[ANSI C95.1–1999](#): IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

[FCC KDB publication 447498 D01 General 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.



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Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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[FCC CFR 47 part2 2.1093](#): Radiofrequency radiation exposure evaluation: portable devices

#### 4. Conducted Power Results

[2.4GWIFI]

| Mode      | Channel | Frequency(MHz) | Max Conducted Power (dBm) |
|-----------|---------|----------------|---------------------------|
| 11B       | 1       | 2412           | 8.31                      |
|           | 6       | 2437           | 8.55                      |
|           | 11      | 2462           | 8.85                      |
| 11G       | 1       | 2412           | 8.64                      |
|           | 6       | 2437           | 7.6                       |
|           | 11      | 2462           | 8.08                      |
| 11N20SISO | 1       | 2412           | 8.18                      |
|           | 6       | 2437           | 7.13                      |
|           | 11      | 2462           | 7.67                      |
| 11N40SISO | 3       | 2422           | 8.58                      |
|           | 6       | 2437           | 7.44                      |
|           | 9       | 2452           | 8.14                      |

#### 5. Manufacturing Tolerance

[2.4GWIFI]

| 11B (Peak)           |           |           |            |
|----------------------|-----------|-----------|------------|
| Channel              | Channel 1 | Channel 6 | Channel 11 |
| Target (dBm)         | 8.0       | 8.0       | 8.0        |
| Tolerance $\pm$ (dB) | 1.0       | 1.0       | 1.0        |
| 11G (Peak)           |           |           |            |
| Channel              | Channel 1 | Channel 6 | Channel 11 |
| Target (dBm)         | 8.0       | 7.0       | 8.0        |
| Tolerance $\pm$ (dB) | 1.0       | 1.0       | 1.0        |
| 11N20SISO (Peak)     |           |           |            |
| Channel              | Channel 1 | Channel 6 | Channel 11 |
| Target (dBm)         | 8.0       | 7.0       | 7.0        |
| Tolerance $\pm$ (dB) | 1.0       | 1.0       | 1.0        |
| 11N40SISO (Peak)     |           |           |            |
| Channel              | Channel 3 | Channel 6 | Channel 9  |
| Target (dBm)         | 8.0       | 7.0       | 8.0        |
| Tolerance $\pm$ (dB) | 1.0       | 1.0       | 1.0        |



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## 6. Evaluation Results

### 6.1 Standalone Evaluation

[2.4GWIFI]

| Band/Mode         | Frequency (GHz) | Antenna Distance (mm) | RF output power |        | SAR Test Exclusion Threshold | SAR Test Exclusion |
|-------------------|-----------------|-----------------------|-----------------|--------|------------------------------|--------------------|
|                   |                 |                       | dBm             | mW     |                              |                    |
| IEEE 802.11b      | 2.462           | 5                     | 9.0             | 7.9433 | 2.4927<3.0                   | Yes                |
| IEEE 802.11g      | 2.462           | 5                     | 9.0             | 7.9433 | 2.4927<3.0                   | Yes                |
| IEEE 802.11n HT20 | 2.412           | 5                     | 9.0             | 7.9433 | 2.4673<3.0                   | Yes                |
| IEEE 802.11n HT40 | 2.452           | 5                     | 9.0             | 7.9433 | 2.4877<3.0                   | Yes                |

Remark:

1. Output power including tune up tolerance;
2. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to f) in section 4.1 is applied to determine SAR test exclusion.

### 6.2 Simultaneous Transmission for SAR Exclusion

The sample support one BT modular. No need consider simultaneous transmission.

## 7. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

## 8. Description of Test Facility

NVLAP Accreditation Code is 600167-0.  
FCC Designation Number is CN5024.  
CAB identifier is CN0071.  
CNAS Registration Number is L4595.  
Test Firm Registration Number: 254912.

## 9. Measurement Uncertainty

| Test Item    |   | Frequency Range | Uncertainty | Note |
|--------------|---|-----------------|-------------|------|
| Output power | : | 1GHz-40GHz      | ±0.57dB     | (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.....



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