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# RF Exposure evaluation

Report Reference No.: CTL2604134031-WFH

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Product Name: Record Player

Model/Type reference: R-10

List Model(s): N/A

Trade Mark: N/A

FCC ID: 2BR98-R10

Applicant's name: Shenzhen Zhonglin Information Technology Co., Ltd.

Address of applicant: Room 406, 4th Floor, Bantian Group Office Building, No. 8, Shibei Road, Yangmei Community, Bantian Street, Longgang District, Shenzhen City, China

Test specification:

47CFR §1.1310

Standard: 47CFR §2.1091

KDB447498 D01 General RF Exposure Guidance v06

TRF Originator: Shenzhen CTL Testing Technology Co., Ltd.

Master TRF: Dated 2017-01

Date of receipt of test item: April 22, 2026

Date of Test: April 22, 2026-May 26, 2026

Date of Issue: May 26, 2026

Result: Pass

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# TEST REPORT

|                          |                          |               |
|--------------------------|--------------------------|---------------|
| <b>Test Report No. :</b> | <b>CTL2604134031-WFH</b> | May 26, 2026  |
|                          |                          | Date of issue |

Product Name : Record Player

Sample No : CTL260413103002, CTL260413103004

Model /Type : R-10

Listed Models : N/A

**Applicant** : **Shenzhen Zhonglin Information Technology Co., Ltd.**

Address : Room 406, 4th Floor, Bantian Group Office Building, No. 8, Shibei Road, Yangmei Community, Bantian Street, Longgang District, Shenzhen City, China

**Manufacturer** : **Shenzhen Zhonglin Information Technology Co., Ltd.**

Address : Room 406, 4th Floor, Bantian Group Office Building, No. 8, Shibei Road, Yangmei Community, Bantian Street, Longgang District, Shenzhen City, China

The test results presented in this report relate only to the object tested.

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## \*\* Modified History \*\*

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## 1 GENERAL INFORMATION

## 1.1 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

|                     |            |
|---------------------|------------|
| Normal Temperature: | 25°C -35°C |
| Relative Humidity:  | 35%-55 %   |
| Air Pressure:       | 101 KPa    |

## 1.2 Product Description

|                             |                                                                                                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------|
| Product Name:               | Record Player                                                                                            |
| Model/Type reference:       | R-10                                                                                                     |
| Power supply:               | DC 9V from AC adapter                                                                                    |
| AC adapter information:     | Model:OBL12-0901000E<br>Input:100-240V~50/60Hz 0.5A MAX<br>Output:9.0V <del>1.0A</del>                   |
| Test Voltage:               | AC 120V/60Hz                                                                                             |
| <b>Bluetooth:</b>           |                                                                                                          |
| Version:                    | Supported BR/EDR                                                                                         |
| Modulation:                 | GFSK, $\pi/4$ DQPSK, 8DPSK                                                                               |
| Operation frequency:        | 2402MHz~2480MHz                                                                                          |
| Channel number:             | 79                                                                                                       |
| Channel separation:         | 1MHz                                                                                                     |
| Antenna type:               | PCB Antenna                                                                                              |
| Antenna gain:               | -0.58dBi provided by <input checked="" type="checkbox"/> Applicant <input type="checkbox"/> Manufacturer |
| <b>Bluetooth Low Energy</b> |                                                                                                          |
| Supported type:             | Bluetooth Low Energy                                                                                     |
| Modulation:                 | GFSK                                                                                                     |
| Operation frequency:        | 2402MHz to 2480MHz                                                                                       |
| Channel number:             | 40                                                                                                       |
| Channel separation:         | 2MHz                                                                                                     |
| Antenna type:               | PCB Antenna                                                                                              |
| Antenna gain:               | -0.58dBi provided by <input checked="" type="checkbox"/> Applicant <input type="checkbox"/> Manufacturer |

Note 1: For more details, refer to the user's manual of the EUT.

Note 2: Antenna gain and cable loss provided by the applicant.

## 1.3 Test Facility

### 1.3.1 Test laboratory

|                      |                                                                                                                             |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Company Name:</b> | Shenzhen CTL Testing Technology Co., Ltd.                                                                                   |
| <b>Address 1:</b>    | Zone A.1/F..Warehouse 2.Baisha Technology Park, No.3011,Shahexi Road, Nanshan District,Shenzhen.518055,P.R.C.               |
| <b>Address 2:</b>    | Fl.A1, Bldg.A3, No.2533 GuanGuang Road, Fenghuang Community Fenghuang Street, Guangming District, Shenzhen, Guangdong, PR.C |

### 1.3.2 Test location

All tests were performed at:

|                                                        |                                                                                                                             |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Company Name:</b>                                   | Shenzhen CTL Testing Technology Co., Ltd.                                                                                   |
| <input type="checkbox"/> Main location                 | Zone A.1/F..Warehouse 2.Baisha Technology Park, No.3011,Shahexi Road, Nanshan District,Shenzhen.518055,P.R.C.               |
| <input checked="" type="checkbox"/> Satellite location | Fl.A1, Bldg.A3, No.2533 GuanGuang Road, Fenghuang Community Fenghuang Street, Guangming District, Shenzhen, Guangdong, PR.C |

### 1.3.3 Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

#### CNAS-Lab Code: L7497

Shenzhen CTL Testing Technology Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

#### A2LA-Lab Cert. No. 4343.01

Shenzhen CTL Testing Technology Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

#### IC CAB identifier: CN0041

#### Main Company Number :9618B

#### Satellite Company Number:35187

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements with Main Company Number:9618B and Satellite Company Number:35187.

#### FCC-Registration No.: 399832

#### Designation No.: CN1216

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation No.: CN1216. Test Firm Registration 399832.

## 1.4 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the Shenzhen CTL Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole

responsibility of continued compliance of the device.

Hereafter the best measurement capability for CTL laboratory is reported:

| Test                                 | Measurement Uncertainty                                             | Notes |
|--------------------------------------|---------------------------------------------------------------------|-------|
| Conducted Emission 0.15-30MHz        | $\pm 3.11\text{dB}$                                                 | (1)   |
| Radiated Emission 0.009~30MHz        | $\pm 3.66\text{dB}$                                                 | (1)   |
| Radiated Emission 30~1000MHz         | $\pm 4.5\text{dB}$                                                  | (1)   |
| Radiated Emission Above 1GHz         | $\pm 5.08\text{dB}$                                                 | (1)   |
| 20dB Emission Bandwidth              | $\pm 1.9\%$                                                         | (1)   |
| Carrier Frequency Separation         | $\pm 1.9\%$                                                         | (1)   |
| Maximum Power Spectral Density Level | $\pm 0.98\text{ dB}$                                                | (1)   |
| Number of Hopping Channel            | $\pm 1.9\%$                                                         | (1)   |
| Time of Occupancy                    | $\pm 0.11\%$                                                        | (1)   |
| Max Peak Conducted Output Power      | $\pm 0.98\text{ dB}$                                                | (1)   |
| Band-edge Spurious Emission          | $\pm 1.21\text{dB}$                                                 | (1)   |
| Conducted RF Spurious Emission       | 9kHz-7GHz: $\pm 1.09\text{dB}$<br>7GHz-26.5GHz: $\pm 3.27\text{dB}$ | (1)   |

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=1.96$ .
- (2) Decision rule for Statement of Conformity: The measurement uncertainty is not taken into account but only measured result.

## 2 METHOD OF MEASUREMENT

### 2.1 Applicable Standard

[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 KDB447498 D01 General RF Exposure Guidance v06](#): Mobile and Portable Device, RF Exposure, Equipment Authorization Procedures.

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

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

### 2.2 Evaluation Method and 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

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

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  $\leq 1.0$ . 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 Conducted Power Results

#### Bluetooth

| Mode      | Frequency (MHz) | Peak Conducted Output Power (dBm) |
|-----------|-----------------|-----------------------------------|
| GFSK      | 2402            | -0.58                             |
|           | 2441            | -0.38                             |
|           | 2480            | -0.80                             |
| Pi/4DQPSK | 2402            | 0.35                              |
|           | 2441            | 0.55                              |
|           | 2480            | 0.15                              |
| 8DPSK     | 2402            | 0.77                              |
|           | 2441            | 0.97                              |
|           | 2480            | 0.56                              |

#### BLE

| Mode | Frequency (MHz) | Peak Conducted Output Power (dBm) |
|------|-----------------|-----------------------------------|
| 1M   | 2402            | -0.57                             |
|      | 2440            | -0.24                             |
|      | 2480            | -0.57                             |
| 2M   | 2402            | -0.45                             |
|      | 2440            | -0.08                             |
|      | 2480            | -0.44                             |

### 4 Manufacturing Tolerance

#### Bluetooth

| GFSK                 |           |            |            |
|----------------------|-----------|------------|------------|
| Channel              | Channel 0 | Channel 39 | Channel 79 |
| Target (dBm)         | 0.0       | 0.0        | -1.0       |
| Tolerance $\pm$ (dB) | 1.0       | 1.0        | 1.0        |
| Pi/4DQPSK            |           |            |            |
| Channel              | Channel 0 | Channel 39 | Channel 79 |
| Target (dBm)         | 0.0       | 0.0        | 0.0        |
| Tolerance $\pm$ (dB) | 1.0       | 1.0        | 1.0        |
| 8DPSK                |           |            |            |
| Channel              | Channel 0 | Channel 39 | Channel 79 |
| Target (dBm)         | 1.0       | 1.0        | 1.0        |
| Tolerance $\pm$ (dB) | 1.0       | 1.0        | 1.0        |

#### BLE

| GFSK_1M              |           |            |            |
|----------------------|-----------|------------|------------|
| Channel              | Channel 0 | Channel 19 | Channel 39 |
| Target (dBm)         | 0.0       | 0.0        | 0.0        |
| Tolerance $\pm$ (dB) | 1.0       | 1.0        | 1.0        |
| GFSK_2M              |           |            |            |
| Channel              | Channel 0 | Channel 19 | Channel 39 |
| Target (dBm)         | 0.0       | 0.0        | 0.0        |
| Tolerance $\pm$ (dB) | 1.0       | 1.0        | 1.0        |

## 5 Evaluation Results

### 5.1 Standalone Evaluation

#### Bluetooth

| Mode      | f (GHz) | Antenna Distance (cm) | RF output power |        | G (Num.) | Result      | SAR Test Exclusion |
|-----------|---------|-----------------------|-----------------|--------|----------|-------------|--------------------|
|           |         |                       | dBm             | mW     |          |             |                    |
| GFSK      | 2.402   | 20                    | 1.0             | 1.2589 | 0.8750   | 0.0002<1.0  | Yes                |
| Pi/4DQPSK | 2.402   | 20                    | 1.0             | 1.2589 | 0.8750   | 0.0002<1.0  | Yes                |
| 8DPSK     | 2.402   | 20                    | 2.0             | 1.5849 | 0.8750   | 0.0003< 1.0 | Yes                |

#### BLE

| Mode | f (GHz) | Antenna Distance (cm) | RF output power |        | G (Num.) | Result     | SAR Test Exclusion |
|------|---------|-----------------------|-----------------|--------|----------|------------|--------------------|
|      |         |                       | dBm             | mW     |          |            |                    |
| 1M   | 2.440   | 20                    | 1.0             | 1.2589 | 0.8750   | 0.0002<1.0 | Yes                |
| 2M   | 2.440   | 20                    | 1.0             | 1.2589 | 0.8750   | 0.0002<1.0 | Yes                |

Remark:

1. Output power including tune up tolerance;
2. When the minimum test separation distance is < 20cm, In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091

## 6 Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB447498 D01 General RF Exposure Guidance v06, No SAR is required.

\*\*\*\*\*THE END\*\*\*\*\*