



# RF EXPOSURE REPORT

**Certificate No.** : TBC-C-202404-0272-3  
**Applicant** : Shenzhen Leyifeng Technology Co.,Ltd  
**Equipment Under Test (EUT)**  
**EUT Name** : Smart watch  
**Model No.** : D8pro  
**Series Model No.** : D8,D7,D9,D9pro,D11,D12,D77,D88,D69,D58  
**Brand Name** : KarenBand  
**Receipt Date** : 2024-04-29  
**Test Date** : 2024-04-29 to 2024-05-10  
**Issue Date** : 2024-05-10  
**Standards** : EN 62479: 2010  
**Conclusions** : **PASS**

In the configuration tested, the EUT complied with the standards specified above. The EUT technically complies with the Council Directive 2014/53/EU relating to radio equipment.

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This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

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## Revision History

Report No.	Version	Description	Issued Date
TBR-C-202404-0272-6	Rev.01	Initial issue of report	2024-05-10

# 1 General Information

## 1.1 Client Information

<b>Applicant</b>	:	Shenzhen Leyifeng Technology Co.,Ltd
<b>Address</b>	:	3/F.Buiding B,Xinzhongtai Science and Technology park,Gushuyi,Xixiang,Bao'an District,Shenzhen,China
<b>Manufacturer</b>	:	Shenzhen Leyifeng Technology Co.,Ltd
<b>Address</b>	:	3/F.Buiding B,Xinzhongtai Science and Technology park,Gushuyi,Xixiang,Bao'an District,Shenzhen,China

## 1.2 General Description of EUT (Equipment Under Test)

<b>EUT Name</b>	:	Smart watch
<b>Model(s)</b>	:	D8pro, D8,D7,D9,D9pro,D11,D12,D77,D88,D69,D58
<b>Model Difference</b>	:	All models are identical in the same PCB layout, interior structure and electrical circuits, The only difference is model name for commercial purpose.
<b>Product Description</b>	:	Operation Frequency: Bluetooth: 2402MHz~2480MHz
	:	Modulation Type: GFSK(1Mbps) Pi/4-DQPSK(2Mbps) 8DPSK(3Mbps)
<b>Power Supply</b>	:	USB Input: DC 5V DC 3.8V 240mAh Rechargeable Li-ion battery
<b>Software Version</b>	:	2.0
<b>Hardware Version</b>	:	1.0

**Note:**

- (1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. This Test Report is EN 62479 under RED Article 3.2.
- (2) More information about the RF function, please refer the RF test reports.

### 1.3 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1/F.,Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

#### **CNAS (L5813)**

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

#### **A2LA Certificate No.: 4750.01**

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351.

#### **IC Registration No.: (11950A)**

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A.

## 2 Conformity Assessment Methods

### 2.1 General Considerations

Compliance of electromagnetic emissions from electronic and electrical equipment with the basic restrictions usually is determined by measurements and, in some cases, calculation of the exposure level. If the electrical power used by or radiated by the equipment is sufficiently low, the electromagnetic fields emitted will be incapable of producing exposures that exceed the basic restrictions. This standard provides simple EMF assessment procedures for this low power equipment.

For transmitter intended for use with more than one antenna configuration option, the combination of transmitter and antenna(s) which generates the highest available antenna power and/or average total radiated power shall be assessed.

### 2.2 Low-power exclusion level ( $P_{max}$ ) based on considerations of SAR

Low-power electronic and electrical equipment is deemed to comply with the provisions of this standard if it can be demonstrated using routes B, C or D that the available antenna power and/or the average total radiated power is less than or equal to the applicable low-power exclusion level  $P_{max}$ .

When SAR is the basic restriction, a conservative minimum value for  $P_{max}$  can be derived, equal to the localized SAR limit ( $SAR_{max}$ ) multiplied by the average mass ( $m$ ):

$$P_{max} = SAR_{max} m$$

Example values of  $P_{max}$  according to Equation are provided in follows for cases described by the ICNIRP Guidelines, IEEE Std C95.1-1999 and IEEE Std C95.1-2005 where SAR limits are defined. Other exposure guidelines or standards may be applicable depending on national regulations.

Note: Unless otherwise mentioned in other applicable regulations or standards, the most recent edition IEEE C95.1-2005 takes precedence over the previous edition IEEE C95.1-1999.

**Example values of SAR-based  $P_{max}$**

Guideline/ Standard	SAR limit, $SAR_{max}$ W/kg	Averaging mass, m g	$P_{max}$ mW	Exposure tier	Region of body
ICNIRP	2	10	20	General public	Head and trunk
	4	10	40	General public	Limbs
	10	10	100	Occupational	Head and trunk
	20	10	200	Occupational	Limbs
IEEE Std C95.1-1999	1.6	1	1.6	Uncontrolled environment	Head, trunk, arms, legs
	4	10	40	Uncontrolled environment	Hands, wrists, feet and ankles
	8	1	8	Controlled environment	Head, trunk, arms, legs
	20	10	200	Controlled environment	Hands, wrists, feet and ankles
IEEE Std	2	10	20	Action level	Body except

C95.1-2005					extremities and pinnae
	4	10	40	Action level	Extremities and pinnae
	10	10	100	Controlled environment	Body except extremities and pinnae
	20	10	200	Controlled environment	Extremities and pinnae

When power density is the basic restriction, a conservative minimum value for  $P_{max}$  can be derived, equal to the power density limit (s) multiplied by the averaging area (a);

$$P_{max} = S_a$$

Therefore, equation yields conservative values for  $P_{max}$  of 20 mW and 100 mW for general public and occupational exposures, respectively.

### 2.3 RF Exposure Evaluation

According to EN 62479 Clause 4.2 Low-power exclusion level ( $P_{max}$ ), low-power electronic and electrical equipment can be demonstrated using routes B, C or D that the available antenna power and/or the average total radiated power is less than or equal to the applicable low-power exclusion level  $P_{max}$ .

$P_{max} = 20\text{mW}(13\text{ dBm})$  according to ICNIRP Guidelines, since the EUT is General public used.

Remark:

- B: The input power level to electrical or electronic components that are capable of radiating electromagnetic energy in relevant frequency range is so low that the available antenna power and/or the average total radiated power can not exceed the low-power exclusion level defined in 4.2.
- C: The available antenna power and/or the average total radiated power are limited by product standards for transmitters to levels below the low-power exclusion level defined in 4.2.
- D: Measurements or calculations show that the available antenna power and/or the average total radiated power are below the low-power exclusion level defined in 4.2.

### 3 Test Results Summary

#### 3.1 Transmit Power

BT 1Mbps				
Frequency (MHz)	Power (dBm)	Power (mW)	Limit (mW)	Result
2402	3	1.995	20	PASS
2441	2.97	1.982	20	PASS
2480	2.94	1.968	20	PASS
BT 2Mbps				
Frequency (MHz)	Power (dBm)	Power (mW)	Limit (mW)	Result
2402	2.28	1.690	20	PASS
2441	1.85	1.531	20	PASS
2480	1.83	1.524	20	PASS
BT 3Mbps				
Frequency (MHz)	Power (dBm)	Power (mW)	Limit (mW)	Result
2402	2.25	1.679	20	PASS
2441	1.85	1.531	20	PASS
2480	1.83	1.524	20	PASS
BLE 1Mbps				
Frequency (MHz)	Power (dBm)	Power (mW)	Limit (mW)	Result
2402	5.08	3.221	20	PASS
2440	5.31	3.396	20	PASS
2480	5.13	3.258	20	PASS
BLE 2Mbps				
Frequency (MHz)	Power (dBm)	Power (mW)	Limit (mW)	Result
2402	5.12	3.251	20	PASS
2440	5.42	3.483	20	PASS
2480	5.18	3.296	20	PASS

More details please refer to RF Report for more details.

#### 3.2 Test Result

The result: PASS

From results of RF report can be assumed that the compliance criteria is Fulfilled (max radiated power is less than 20mW). The assumption is made with an uncertainty of 30%.

\*EN 62479:2010 Annex A: Derivation of low-power exclusion level from ICNIRP and IEEE exposure limits.

The ICNIRP guidelines provide SAR limits of 2W/kg, and averaging mass 10g, over the 10MHz to 300 GHz frequency range for general public and occupational exposures, respectively, and a conservative minimum value for  $P_{max}=20mW$ . So when the equipment radiated power is less than 20mW, it complies with EMF basic restrictions.

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