



# RF Exposure Evaluation Report

**Application No.:** DNT2407230222R0428-01431

**Applicant:** Shenzhen Joylemarr electronic co.,LTD

**Address of Applicant:** NO. 2 JINLONG AVE, BAOLONG STR, LONGGANG DIST, SHENZHEN, China

**EUT Description:** Wireless Colour Screen Intelligent FishFinder

**Model No.:** F13

**FCC ID:** 2BHF9-F13

**Power supply:** DC 3.7V From Battery; DC 5V From Adapter

**Trade Mark:** HARTOMPET  
47 CFR Part 2.1091

**Standards:** FCC KDB 447498 D01 v06

**Date of Receipt:** 2024/8/20

**Date of Test:** 2024/8/21 to 2024/8/26

**Date of Issue:** 2024/8/26

**Test Result:** **PASS**

**Prepared By:** Wayne Lin (Testing Engineer)

**Reviewed By:** Pengfei Chen (Project Engineer)

**Approved By:** Heise Shen (Manager)



Note: If there is any objection to the results in this report, please submit a written inquiry to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp, and is issued by the company in accordance with the requirements of the "Conditions of Issuance of Test Reports" printed in the attached page. Unless otherwise stated, the results presented in this report only apply to the samples tested this time. Partial reproduction of this report is not allowed unless approved by the company in writing.

**Dongguan DN Testing Co., Ltd.**

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Report Revise Record

| Report Version | Revise Time | Issued Date  | Valid Version | Notes           |
|----------------|-------------|--------------|---------------|-----------------|
| V1.0           | /           | Aug.26, 2024 | Valid         | Original Report |



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# 1 General Information

## 1.1 Test Location

|                |                                                                                                              |
|----------------|--------------------------------------------------------------------------------------------------------------|
| Company:       | Dongguan DN Testing Co., Ltd                                                                                 |
| Address:       | No. 1, West Fourth Street, South Xinfu Road, Wusha Liwu, Chang ' an Town, Dongguan City, Guangdong P.R.China |
| Test engineer: | Wayne Lin                                                                                                    |

## 1.2 General Description of EUT

|                          |                                                                                                                              |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer:            | Shenzhen Joylemarry electronic co.,LTD                                                                                       |
| Address of Manufacturer: | NO. 2 JINLONG AVE, BAOLONG STR, LONGGANG DIST, SHENZHEN, China                                                               |
| EUT Description::        | Wireless Colour Screen Intelligent FishFinder                                                                                |
| Test Model No.:          | F13                                                                                                                          |
| Additional Model(s):     | /                                                                                                                            |
| Chip Type:               | RA-01SC                                                                                                                      |
| Serial Number            | PR2407230222R0428                                                                                                            |
| Power Supply             | DC 3.7V From Battery; DC 5V From Adapter                                                                                     |
| Trade Mark:              | N/A                                                                                                                          |
| Hardware Version:        | V1.0                                                                                                                         |
| Software Version:        | V1.0                                                                                                                         |
| Sample Type:             | <input type="checkbox"/> Portable Device, <input type="checkbox"/> Module, <input checked="" type="checkbox"/> Mobile Device |
| Antenna Type:            | <input type="checkbox"/> External, <input checked="" type="checkbox"/> Integrated                                            |
| Antenna Gain:            | <input checked="" type="checkbox"/> Provided by applicant<br>2.5dBi                                                          |

### Remark:

\*All models are just name differences, motherboard, PCB circuit board, chip, electronic components, appearance is all the same.

\*Since the above data and/or information is provided by the applicant relevant results or conclusions of this report are only made for these data and/or information , DNT is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.



## 2 RF Exposure Evaluation

### 2.1 RF Exposure Compliance Requirement

#### 2.1.1 Limits

| Frequency range (MHz)                                          | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|----------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposures</b>        |                               |                               |                                     |                          |
| 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                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 0.3-1.34                                                       | 614                           | 1.63                          | *(100)                              | 30                       |
| 1.34-30                                                        | 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  
RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

#### Friis Formula

Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

$R$  = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance  $r$  where the MPE limit is reached.



## 2.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually

## 2.1.3 EUT RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.0 / 2.0 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

This confirmed that the device comply with MPE limit.

| Mode | Fre<br>(MHz) | Peak<br>Level<br>(dB $\mu$ V/m) | EIPR<br>Power<br>(dBm) | Target<br>power<br>(dBm) | MAX<br>Target<br>power<br>(dBm) | Antenna gain |          | Power<br>Density<br>(S)<br>(mW<br>/cm <sup>2</sup> ) | Limited<br>of<br>Power<br>Density<br>(S)<br>(mW<br>/cm <sup>2</sup> ) | Test<br>Result |
|------|--------------|---------------------------------|------------------------|--------------------------|---------------------------------|--------------|----------|------------------------------------------------------|-----------------------------------------------------------------------|----------------|
|      |              |                                 |                        |                          |                                 | (dBi)        | (Linear) |                                                      |                                                                       |                |
| ASK  | 433          | 76.11                           | -19.118                | -19 $\pm$ 1              | -18                             | 2.5          | 1.778    | 0.00001                                              | 0.289                                                                 | Complies       |

The End Report