



# RF Exposure Evaluation Report

<b>Application No.:</b>	DNT240214R0346-1103
<b>Applicant:</b>	Hangzhou Qianwan Technology Co., Ltd.
<b>Address of Applicant:</b>	Room 603 - 604, Building 16, Lefu Haibang Park , Xiangwang Road, Cangqian Street, Hangzhou City, China
<b>EUT Description:</b>	DBDD GPS Tracker
<b>Model No.:</b>	D1
<b>FCC ID:</b>	2BE4R-D1
<b>Power supply</b>	DC 3.7V From Battery; DC 5V From Adapter Input AC 100-240V, 50/60Hz
<b>Trade Mark:</b>	HARTOMPET 47 CFR Part 2.1091
<b>Standards:</b>	FCC KDB 447498 D01 v06
<b>Date of Receipt:</b>	2024/3/4
<b>Date of Test:</b>	2024/3/4 to 2024/3/14
<b>Date of Issue:</b>	2024/3/15
<b>Test Result:</b>	<b>PASS *</b>

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



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

**Approved By:** Wick Feng (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.

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**Report Revise Record**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Mar. 15, 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 Xingfa Road, Wusha Liwu, Chang'an Town, Dongguan City, Guangdong P.R.China
Test engineer:	Wayne Lin

### 1.2 General Description of EUT

Manufacturer:	Shenzhen Jutai Electronic Technology Co., Ltd.
Address of Manufacturer:	304, Building 1, Sanyu Industrial Park, Xinzhuang Community, Matian Street, Guangming District, Shenzhen City
EUT Description::	DBDD GPS Tracker
Model No.:	D1
Additional Model(s):	N/A
Chip Type:	ASR3603C
Serial Number	PR240214R0346
Power Supply	DC 3.7V From Battery; DC 5V From Adapter Input AC 100-240V,50/60Hz
Trade Mark:	DBDD
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
	LTE Band 2:4dBi; LTE Band 4:4dBi; LTE Band 12:3dBi; LTE Band 17:3dBi;

#### Remark:

\*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<sub>d</sub> = power density in mW/cm<sup>2</sup>

P<sub>out</sub> = 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<sub>d</sub> 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:

Operating band	Frequency (Mhz)	Antenna Gain(dBi)	Max conducted average output power(dBm)	Output power to antenna (dBm)	EIRP(ERP) Limit (dBm)	Output power to antenna(mw)	Power density at R=20 cm(mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Conclusion
LTE B2	1850.7	4	24.82	28.82	33	762.08	0.02	1	Pass
LTE B4	1710.7	4	22.04	26.04	30	401.79	0.02	1	Pass
LTE B12	699.7	3	21.77	22.62	34.77	182.81	0.01	0.4665	Pass
LTE B17	706.5	3	21.47	22.32	34.77	170.61	0.01	0.471	Pass

This confirmed that the device comply with MPE limit.

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The End Report