

RF Exposure Evaluation Report

Product : Automotive Key
Trade mark : FinDreams
Model/Type reference : D1-315
Test Model No.: : D1-315
Serial Number : N/A
Report Number : EED32081225101
FCC ID : 2A5DHD1-315
Date of Issue : Sep. 24, 2022
Test Standards : 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB 447498D01 General
RF Exposure Guidance v06
Test result : PASS

Prepared for:

FinDreams Technology Company Limited
No.3009 BYD Road, Maluan Street, Pingshan New District, Shenzhen

Prepared by:

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1 Version

Version No.	Date	Description
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3 General Information

3.1 Client Information

Applicant:	FinDreams Technology Company Limited
Address of Applicant:	No.3009 BYD Road,Maluan Streetl,Pingshan New District,Shenzhen
Manufacturer:	FinDreams Technology Company Limited
Address of Manufacturer:	No.3009 BYD Road,Maluan Streetl,Pingshan New District,Shenzhen
Factory:	FinDreams Technology Company Limited
Address of Factory:	No.3009 BYD Road,Maluan Streetl,Pingshan New District,Shenzhen

3.2 General Description of EUT

Product Name:	Automotive Key	
Model No.:	D1-315	
Test Model No.:	D1-315	
Trade Mark:	FinDreams	
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location	
Frequency Range:	315MHz	
Modulation Type:	FSK	
Number of Channels:	1	
Antenna Type:	Internal antenna	
Antenna Gain:	-18dBi	
Power Supply:	Battery	Model:CR2032 DC 3.0V
Test voltage:	DC 3.0V Battery	
Sample Received Date:	Aug. 10, 2022	
Sample tested Date:	Aug. 11, 2022 to Sep. 09, 2022	
Remark:	1.N/A:The product is powered by DC 3.0V Battery. 2.Company Name and Address shown on Report, the sample(s) and sample Information were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.	

3.3 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

3.4 Deviation from Standards

None.

3.5 Abnormalities from Standard Conditions

None.

3.6 Other Information Requested by the Customer

None.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06
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 Exclusion Threshold condition, listed below, is satisfied.

Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$
$$f(\text{GHz}) \text{ is the RF channel transmit frequency in GHz}$$

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 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 is applied to determine SAR test exclusion

4.1.2 EUT RF Exposure

$$e_{irp} = p_t \times g_t = (E \times d)^2 / 30$$

where:

p_t = transmitter output power in watts,

g_t = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m, $10^{((dB\mu V/m)/20)/10^6}$,

d = measurement distance in meters (m)---3m,

$$\text{So } p_t = (E \times d)^2 / 30 / g_t$$

The worst case (refer to report EED32O81225101) is below:

Antenna polarization: Horizontal		
Frequency (MHz)	Level (dBuV/m)	Polarization
315	88.19	Peak
315	58.13	Average

Antenna polarization: Vertical		
Frequency (MHz)	Level (dBuV/m)	Polarization
315	74.36	Peak
315	44.30	Average

For 433.92MHz wireless:

Field strength = 88.19dB μ V/m @3m

Ant. gain -18dBi; so Ant numeric gain=0.016

$$\text{So } p_t = \{ [10^{(88.19/20)/10^6} \times 3]^2 / 30 / 0.016 \} \times 1000 \text{mW} = 12.36 \text{mW}$$

$$\text{So } (12.36 \text{mW} / 5 \text{mm}) \times \sqrt{0.315 \text{GHz}} = 1.39,$$

$$1.39 < 3.0 \text{ for 1-g SAR}$$

So the SAR report is not required.

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32O81225101 for EUT external and internal photos.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***