

RF Exposure Evaluation Report

Applicant: PORTMAN ELECTRONICS (DONGGUAN) CO., LTD.

Address of Applicant: NO#10, Luyi 2 Road, Keyuancheng, Tangxia Town

Equipment Under Test (EUT)

Product Name: CAR ALARM

Model No.: PEPS2TI, 521-03TI, T68-AM1TI

FCC ID: TBQT53-AM1WTI

Applicable standards: FCC CFR Title 47 Part 2J (§2.1093)

Date of sample receipt: 21 Mar., 2022

Date of Test: 22 Mar., to 25 May, 2022

Date of report issue: 02 Jun., 2022

Test Result: PASS

Tested by:

Mike Ou
Test Engineer

Date:

02 Jun., 2022

Reviewed by:

Wenwen Zhang
Project Engineer

Date:

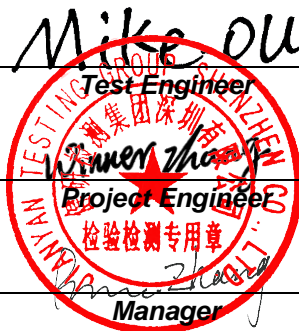
02 Jun., 2022

Approved by:

Wenwen Zhang
Manager

Date:

02 Jun., 2022



This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

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2 Version

Version No.	Date	Description
00	25 May, 2022	Original
01	02 Jun., 2022	Updated page6

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4 General Information

4.1 Client Information

Applicant:	PORTMAN ELECTRONICS (DONGGUAN) CO., LTD.
Address:	NO#10 , Luyi 2 Road, Keyuancheng, Tangxia Town
Manufacturer/Factory:	DONGGUAN PORTMAN ELECTRONIC SCIENCE AND TECHNOLOGY CO., LTD.
Address:	NO.10, LUYI 2 ROAD,TANGXIA TOWN, DONGGUAN CITY GUANGDONG PROVINCE

4.2 General Description of E.U.T.

Product Name:	CAR ALARM
Model No.:	PEPS2TI, 521-03TI, T68-AM1TI
Operation Frequency:	433.92 MHz
Modulation technology:	ASK
Antenna Type:	PCB Antenna
Antenna gain:	-6 dBi
Power Supply:	DC 3V (CR2032 battery)
Test Sample Condition:	The test samples were provided in good working order with no visible defects.
Remark:	Model No.: PEPS2TI, 521-03TI, T68-AM1TI were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being model name.

4.3 Operating Modes

Operating mode	Detail description
Tx mode	Keep the EUT in continuously transmitting mode

4.4 Additions to, Deviations, or Exclusions from the Method

No

4.5 Laboratory Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● FCC - Designation No.: CN1211 JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551. ● ISED – CAB identifier.: CN0021 The 3m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1. ● CNAS - Registration No.: CNAS L15527 JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527. ● A2LA - Registration No.: 4346.01 This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf
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4.6 Laboratory Location

<p>JianYan Testing Group Shenzhen Co., Ltd. Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China. Tel: +86-755-23118282, Fax: +86-755-23116366 Email: info-JYTee@lets.com, Website:http://jyt.lets.com</p>
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5 Technical Requirements Specification in FCC CFR Title 47 Part 2.1093

5.1 Limits

According to 447498 D01 General RF Exposure Guidance v06 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

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:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

5.2 Result

According to the calculation formula of power:

$$\text{EIRP} = P * G = (E * d)^2 / 30$$

Where:

P = transmitter output power in watts,

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator (unitless),

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

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

So,

$$P = (E * d)^2 / 30 * G$$

Frequency (MHz)	Maximum field strength @3m (dBuV/m)	Maximum field strength @3m (V/m)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (m)	Output power (mW)
433.92	82.84	0.0139	-6	0.25	3	0.23

Thus, Worse case below:

Frequency (MHz)	Max Output power (mW)	Min test distance (mm)	Result	Limit of 10-g SAR test exclusion thresholds
433.92	0.23	5	0.03	7.5

5.3 Conclusion

Cuz $0.03 < 7.5$ for 10-g SAR, the device is exempt from the SAR test and satisfies RF exposure evaluation.

-----End of report-----