

Keenon Robotics Co., Ltd.

MPE ASSESSMENT REPORT

Report Type:

FCC MPE assessment report

Model:

T5

REPORT NUMBER:

210400137SHA-002

ISSUE DATE:

Aug 27, 2021

DOCUMENT CONTROL NUMBER:

TTRFFCCMPE-01_V1 © 2018 Intertek



Applicant: Keenon Robotics Co., Ltd.
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Shanghai, China

Manufacturer: Keenon Robotics Co., Ltd.
11F, Building 56, No. 1000, Jinhai Road, Pudong District,
Shanghai, China

FCC ID: 2AZLQ-T5

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:

KDB447498 D01 General RF Exposure Guidance v06

FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

PREPARED BY:

Project Engineer

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REVIEWED BY:

Reviewer

Daniel Zhao

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Revision History

Report No.	Version	Description	Issued Date
210400137SHA-002	Rev. 01	Initial issue of report	Aug 27, 2021

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Delivery Robot
Type/Model/PMN/HVIN:	T5
Description of EUT:	EUT is a Delivery Robot and has only one mode. EUT supports WIFI function.
Rating:	DC48V Docking Station: C1 Input: 100-240V~, 50/60Hz, 2.5A Output: 54.6VDC, 3A Charger:BC254480030 Input:100-240V~, 50/60Hz, 2.5A Output:54.6VDC, 3A
Category of EUT:	Class B
EUT type:	<input type="checkbox"/> Table top <input checked="" type="checkbox"/> Floor standing
Software Version:	V1.2
Hardware Version:	V3.10.0
Sample No.:	0210219-07-003
Sample received date:	Feb 20, 2021
Date of test:	Feb 21~Jul 20, 2021

1.2 Technical Specification

Frequency Range:	2412MHz ~ 2462MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20, IEEE 802.11n-HT40
Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT20: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT40: OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Channel Number:	11 Channels for 802.11b, 802.11g and 802.11n(HT20) 7 Channels for 802.11n(HT40)
Data Rate:	IEEE 802.11b: Up to 11 Mbps IEEE 802.11g: Up to 54 Mbps IEEE 802.11n-HT20: Up to MCS7 IEEE 802.11n-HT40: Up to MCS7
Channel Separation:	5 MHz
Antenna Information:	3dBi, PIFA antenna

1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0051
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

2 MPE Assessment

Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density S_{eq} (W/m ²)
0-1 Hz	-	$3,2 \times 10^4$	4×10^4	-
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10 000	4 000/f	5 000/f	-
0,025-0,8 kHz	250/f	4/f	5/f	-
0,8-3 kHz	250/f	5	6,25	-
3-150 kHz	87	5	6,25	-
0,15-1 MHz	87	0,73/f	0,92/f	-
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	$0,0037 f^{1/2}$	$0,0046 f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

2.2 Assessment Results

Power density (S) is calculated according to the formula:

$$S = PG / (4\pi R^2)$$

Where S = power density in mW/cm²

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 210400137SHA-001:

The maximum radiated power = 19.00dBm = 79.43 mW;

Here R is chosen to be 20cm,

$$S = PG / (4\pi R^2) = 79.43 / (4 * 3.14 * 20 * 20) = 0.0158\text{mW/cm}^2 < 1 \text{ mW/cm}^2$$

Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.

To ensure compliance, operations at closer than this distance is not recommended.

***** END *****