QINGDAO ZEALING ELECTRONIC CO. , LTD

MPE ASSESSMENT REPORT

Report Type:
FCC MPE assessment report

Model:
M15

REPORT NUMBER:
191202652SHA-002

ISSUE DATE:
Jan 08, 2020

DOCUMENT CONTROL NUMBER:
TTRFFCCMPE-01_V1 © 2018 Intertek

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Total Quality. Assured.

TEST REPORT

Report no.: 191202652SHA-002

Applicant:	QINGDAO ZEALING ELECTRONIC CO., LTD
	69 GUANGSHENG ROAD, HIGH-TECH ZONE QINGDAO CHINA,266112
Manufacturer:	QINGDAO ZEALING ELECTRONIC CO., LTD
	69 GUANGSHENG ROAD, HIGH-TECH ZONE QINGDAO CHINA,266112
FCC ID:	2AT25M15

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:	**REVIEWED BY:**
Project Engineer Stephanie Zhang	Reviewer Wakeyou Wang

TEST REPORT

Revision History

Report No.	Version	Description	Issued Date
191202652SHA-002	Rev. 01	Initial issue of report	Jan 08, 2020

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Electronic Door Lock
Type/Model:	M15
Description of EUT:	This product is an electronic lock with Bluetooth BLE,and there is only one model.
Rating:	4 High Quality AA Alkaline batteries
Category of EUT:	Class B
EUT type:	☒ Table top ☐ Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	Dec 27, 2019
Date of test:	Dec 30, 2019- Jan 07, 2020

1.2 Technical Specification

Frequency Range:	2402MHz ~ 2480MHz
Support Standards:	IEEE 802.15.1
Type of Modulation:	GFSK
Channel Number:	40(0-39)
Channel Separation:	2 MHz
Antenna Information:	PCB Antenna, 1 dBi

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: CN1175
	IC Registration Lab Registration code No.: 2042B-1
	VCCI Registration Lab Registration No.: R-4243, G-845, C-4723, T-2252
	NVLAP Accreditation Lab NVLAP LAB CODE: 200849-0
	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**

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2.2 Assessment Results

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

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

Where S = power density in mW/cm^2

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 191202652SHA-001:
The maximum radiated power = -2.72dBm = 0.535mW;
Here R is chosen to be 20cm,

$S = P / (4\pi R^2) = 0.535 / (4 * 3.14 * 20 * 20) = 0.0001\ mW/cm^2 < 1\ mW/cm^2$

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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 **********