

# Zhejiang Guangwei Electric & Tools Co.,Ltd

## MPE ASSESSMENT REPORT

**Report Type:**  
FCC MPE assessment report

**Model:**  
EAD02-03, EAD02-07, EAD02-09, EAD02-11,  
EAP02-03, EAP02-07, EAP02-09, EAP02-11

**REPORT NUMBER:**  
231100180SHA-003

**ISSUE DATE:**  
March 27, 2024

**DOCUMENT CONTROL NUMBER:**  
TTRFFCCMPE-01\_V1 © 2018 Intertek





Total Quality. Assured.

## TEST REPORT

Intertek Testing Services Shanghai  
Building No.86, 1198 Qinzhou Road (North)  
Caohejing Development Zone  
Shanghai 200233, China

Telephone: 86 21 6127 8200

[www.intertek.com](http://www.intertek.com)

Report no.: 231100180SHA-003

**Applicant:** Zhejiang Guangwei Electric & Tools Co.,Ltd  
No.55th Lingxiu RD, Jiashan County, Zhejiang Province, China

**Manufacturer:** Zhejiang Guangwei Electric & Tools Co.,Ltd  
No.55th Lingxiu RD, Jiashan County, Zhejiang Province, China

**Factory:** Zhejiang Guangwei Electric & Tools Co.,Ltd  
No.55th Lingxiu RD, Jiashan County, Zhejiang Province, China

**FCC ID:** 2BEMCEAD02

### 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  
Sky Yang

### REVIEWED BY:

Reviewer  
Eric Li

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

**TEST REPORT****Revision History**

Report No.	Version	Description	Issued Date
231100180SHA-003	Rev. 01	Initial issue of report	March 27, 2024

**TEST REPORT****1 GENERAL INFORMATION****1.1 Description of Equipment Under Test (EUT)**

Product name:	EV Charging Wallbox
Type/Model:	EAD02-03, EAD02-07, EAD02-09, EAD02-11, EAP02-03, EAP02-07, EAP02-09, EAP02-11
Description of EUT:	The EUT is an AC electric vehicle charger. EAD02-03, EAD02-07, EAD02-09 and EAD02-11 are electrically identical except rated power, same difference between EAP02-03, EAP02-07, EAP02-09 and EAP02-11. Two series are electrically identical except the appearance. We test EAD02-11 and list the worst results in the reports.
Rating:	EAD02-03, EAP02-03: 208VAC/240VAC, 50/60Hz, 16A Max EAD02-07, EAP02-07: 208VAC/240VAC, 50/60Hz, 32A Max EAD02-09, EAP02-09: 208VAC/240VAC, 50/60Hz, 40A Max EAD02-11, EAP02-11: 208VAC/240VAC, 50/60Hz, 48A Max
EUT type:	<input checked="" type="checkbox"/> Table top <input type="checkbox"/> Floor standing
Software Version:	-
Hardware Version:	-
Serial numbers:	A240105-56
Sample received date:	January 5, 2024
Date of test:	January 8, 2024~ January 10, 2024

**1.2 Technical Specification**

Frequency Range:	13.56 MHz ~ 13.56 MHz
Modulation:	ASK
Antenna gain:	PCB antenna

**TEST REPORT****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.: CN0014
	VCCI Registration Lab Member No.: 3598 (Registration No.: R-14243, G-10845, C-14723, T-12252)
	A2LA Accreditation Lab Certificate Number: 3309.02

**TEST REPORT****2 MPE Assessment****Test result:** Pass**2.1 MPE Assessment Limit****Mobile device exposure for standalone operations:**

According to §1.1310, the limit for general population/uncontrolled exposures

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
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

Note: Limit for 13.56MHz is 60.77 V/m

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**

**TEST REPORT**

## 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<sup>2</sup>

P = Radiated transmit power in mW

R = distance (cm)

As we can see from the test report 231100180SHA-002:

$$58.5 \text{ dBuV/m} @ 3\text{m}, @ 20\text{cm} = @ 3\text{m} + 40\log(3/0.2) = 105.54 \text{ dBuV/m} = 0.189 \text{ V/m} < 60.77.$$

The power for WIFI/Bluetooth module refers to certificate of FCC ID: 2AC7Z-ESP32WROOM32E

The power for Bluetooth module refers to certificate of FCC ID: 2ATPO-PB03

The power for LTE module refers to certificate of FCC ID: XMR202008EC25AFXD

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

Module	Frequency Range (MHz)	EIRP		Antenna Gain (dBi)	R (cm)	S (mW/cm <sup>2</sup> )	Limits (mW/cm <sup>2</sup> )
		(dBm)	(mW)				
2ATPO-PB03	BLE(1M)	9.5	8.91	1.5	20	0.00177	1
	BLE(2M)	9.5	8.91	1.5	20	0.00177	1
2AC7Z- ESP32WROOM32E	BLE	11.4	13.80	3.4	20	0.00274	1
	BT	13.4	21.88	3.4	20	0.00435	1
	WIFI 2.4G	29.4	870.96	3.4	20	0.173	1
XMR202008EC25AFXD	WCDMA Band II	29.1	812.83	4.1	20	0.162	1
	WCDMA Band IV	29.1	812.83	4.1	20	0.162	1
	WCDMA Band V	29.1	812.83	4.1	20	0.162	0.549
	LTE Band 2	29.1	812.83	4.1	20	0.162	1
	LTE Band 4	29.1	812.83	4.1	20	0.162	1
	LTE Band 5	29.1	812.83	4.1	20	0.162	0.549
	LTE Band 12	29.1	812.83	4.1	20	0.162	0.466
	LTE Band 13	29.1	812.83	4.1	20	0.162	0.518
	LTE Band 14	29.1	812.83	4.1	20	0.162	0.525
	LTE Band 66	29.1	812.83	4.1	20	0.162	1
	LTE Band 71	29.1	812.83	4.1	20	0.162	0.442

Note: 1 mW/cm<sup>2</sup> from 1.310 Table 1.

RFID and all modules can transmit simultaneously, so the maximum rate of MPE is,  
 $0.189/60.77 + 0.00177/1 + 0.173/1 + 0.162/0.442 = 0.544 < 1.0$ .

**TEST REPORT**

## **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\*\*\*\*\*