EVBOLT, Inc.

MPE ASSESSMENT REPORT

Report Type:
FCC MPE assessment report

MODEL:
EVB-DC-B90DHD-C155NW4GCCS1,
EVB-DC-B120DHD-C155NW4GCCS1,
EVB-DC-B150DHD-C155NW4GCCS1,
EVB-DC-B180DHD-C155NW4GCCS1,
EVB-DC-B240DHD-C155NW4GCCS1

REPORT NUMBER:
2504B0863SHA-002

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TEST REPORT

Report no.: 2504B0863SHA-002

Applicant:	EVBOLT, Inc. 13450 Farm to Market 529 Rd, Houston, Texas, USA
Manufacturer:	Shenzhen HB Electronic Co Ltd. FLOOR 301, BLDG 21, ZHENGDAAN INDUSTRIAL PARK, 172 XIANGSHAN RD, LUOTIAN VILLAGE YANLUO TOWN, BAOAN DISTRICT, Shenzhen 518105, China
Factory:	Shenzhen HB Electronic Co Ltd. FLOOR 301, BLDG 21, ZHENGDAAN INDUSTRIAL PARK, 172 XIANGSHAN RD, LUOTIAN VILLAGE YANLUO TOWN, BAOAN DISTRICT, Shenzhen 518105, China
FCC ID:	2BKD4-EVBDCB240

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 Part1.1307(b)

PREPARED BY:	**REVIEWED BY:**
Project Engineer Sky Yang	Reviewer Eric Li

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Revision History

Report No.	Version	Description	Issued Date
2504B0863SHA-002	Rev. 01	Initial issue of report	April 22, 2025

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Electric Vehicle DC Charging Station
Type/Model:	EVB-DC-B90DHD-C155NW4GCCS1, EVB-DC-B120DHD-C155NW4GCCS1, EVB-DC-B150DHD-C155NW4GCCS1, EVB-DC-B180DHD-C155NW4GCCS1, EVB-DC-B240DHD-C155NW4GCCS1
Description of EUT:	The EUT is an electric vehicle DC charging station. The EUT contains certified module, the FCC ID is 2AC7Z-ESPWROOM32UE, the IC is 21098-ESPWROOMUE. All models are electrically identical except the rated power.
Rating:	EVB-DC-B90DHD-C155NW4GCCS1: Input: 480VAC±10%, 60Hz Output: 200-1000VDC, 90kW Max EVB-DC-B120DHD-C155NW4GCCS1: Input: 480VAC±10%, 60Hz Output: 200-1000VDC, 120kW Max EVB-DC-B150DHD-C155NW4GCCS1: Input: 480VAC±10%, 60Hz Output: 200-1000VDC, 150kW Max EVB-DC-B180DHD-C155NW4GCCS1: Input: 480VAC±10%, 60Hz Output: 200-1000VDC, 180kW Max EVB-DC-B240DHD-C155NW4GCCS1: Input: 480VAC±10%, 60Hz Output: 200-1000VDC, 240kW Max
Category of EUT:	Class A
EUT type:	☐ Table top ☒ Floor standing
Software Version:	-
Hardware Version:	-
Serial numbers:	A250226-10
Sample received date:	February 26, 2025
Date of test:	February 27, 2025 ~ March 20, 2025

1.2 Technical Specification

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

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1.3 Description of Test Facility

Name:	Intertek Testing Services (Shanghai FTZ) Co., Ltd.
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 L21189
	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

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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/cm2)	Averaging time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

Note: f = frequency in MHz. * = Plane-wave equivalent power density.

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/cm^2
P = Power in mW
G = numeric gain of transmit antenna
R = distance (cm)

Limit for 13.56MHz is 60.77 V/m
As we can see from the test report 2504B0863SHA-001:
51.09dBuV/m@10m=61.55dBuV/m@3m,
@20cm=@3m+40log(3/0.2)=108.59dBuV/m=0.269V/m<60.77.

The power for WIFI module refers to certificate of FCC ID: 2AC7Z-ESPWROOM32UE

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.

Frequency Range (MHz)	P		G		R (cm)	S (mW/cm2)	Limits (mW/cm2)
	(dBm)	(mW)	(dBi)	(numeric)			
2.4G WIFI	15.92	39.084	4	2.512	20	0.0195	1.0000
BLE	4.81	3.027	4	2.512	20	0.0015	1.0000
BT	7.59	5.741	4	2.512	20	0.0029	1.0000

Note: 1 mW/cm2 from 1.310 Table 1.

RFID and WIFI/Bluetooth can transmit simultaneously, so the maximum rate of MPE is,
0.269/60.77+0.0195/1 =0.0239 <1.0.

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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**********