Shenzhen HB Electronic Co Ltd.

MPE ASSESSMENT REPORT

Report Type:
IC MPE assessment report

MODEL:
HBE-DC30KW01HW-U-A7NW4G

REPORT NUMBER:
2401B1362SHA-004

ISSUE DATE:
April 21, 2025

DOCUMENT CONTROL NUMBER:
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TEST REPORT

Report no.: 2401B1362SHA-004

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IC:	32422-HBEDC30KW

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
RSS-102: Issue 6 (December 2023)

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

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Revision History

Report No.	Version	Description	Issued Date
2401B1362SHA-004	Rev. 01	Initial issue of report	April 21, 2025

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	EV DC Charger
Type/Model:	HBE-DC30KW01HW-U-A7NW4G
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.
Rating:	Input: 380-480VAC, 50/60Hz Output: 200-1000VDC, 30kW
Category of EUT:	Class A
EUT type:	☒ Table top ☐ Floor standing
Software Version:	-
Hardware Version:	-
Serial numbers:	A250324-10
Sample received date:	March 24, 2025
Date of test:	March 25, 2025 ~ April 9, 2025

1.2 Technical Specification

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

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
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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 Test Exclusion Limit

Section 5.3.2: Electric field strength levels, magnetic field strength levels and power density levels (10 MHz to 300 GHz)
According RSS-102 Table 7(RF field strength and power density limits for devices used by the general public)

Frequency range (MHz)	Electric field (V_{RMS}/m)	Magnetic field (A_{RMS}/m)	Power density (W/m2)	Reference period (minutes)
10 - 20	27.46	0.0728	2	6
20 - 48	$58.07/f^{0.25}$	$0.1540f^{0.25}$	$8.944/f^{0.5}$	6
48 – 300	22.06	0.05852	1.291	6
300 – 6000	$3.142f^{0.3417}$	$0.008335f^{0.3417}$	$0.02619f^{0.6834}$	6
6000 – 15000	61.4	0.163	10	6
15000 – 150000	61.4	0.163	10	$616000/f^{1.2}$
150000 - 300000	$0.158f^{0.5}$	$4.21*10^{-4}f^{0.5}$	$6.67*10^{-5}f$	$616000/f^{1.2}$

Note: ƒ is frequency in MHz.

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:
$S = PG / (4\pi R^2)$
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 27.46 V/m
As we can see from the test report 2401B1362SHA-002:
59.0dBuV/m@3m, @20cm=@3m+40log(3/0.2)=106.04dBuV/m=0.2V/m <27.46.

The power for WIFI module refers to certificate of IC: 21098-ESPWROOMUE

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	0.5366
BLE	4.81	3.027	4	2.512	20	0.0015	0.5351
BT	7.59	5.741	4	2.512	20	0.0029	0.5351

Note: 1 mW/cm2 from 1.310 Table 1.

RFID, LTE and WIFI/Bluetooth can transmit simultaneously, so the maximum rate of MPE is, 0.2/27.46+0.0195/0.5366=0.0436 <1.0.

Therefore, the MPE requirement is deemed to be satisfied without test.

**********END**********