Xiamen Joint Tech. Co., Ltd

MPE ASSESSMENT REPORT

Report Type:
FCC Part §2.1091, §2.1093 and §1.1307(b) assessment report

Model:
JNT-EVCD1/2*xxAC/01C/xx/xx,
JNT-EVCD3/2*xxAC/01C/xx/xx

REPORT NUMBER:
221101150SHA-002

ISSUE DATE:
March 8, 2023

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Report no.: 221101150SHA-002

Total Quality. Assured.

TEST REPORT

Applicant:	Xiamen Joint Tech. Co., Ltd Building #1, No. 268 HouXiang Rd,Xinyang Industrial Park, Haicang District, XIAMEN Fujian
Manufacturer:	Xiamen Joint Tech. Co., Ltd Building #1, No. 268 HouXiang Rd,Xinyang Industrial Park, Haicang District, XIAMEN Fujian
Manufacturing Site:	Xiamen Joint Tech. Co., Ltd Building #1, No. 268 HouXiang Rd,Xinyang Industrial Park, Haicang District, XIAMEN Fujian
Product Name:	Electric Vehicle AC Charger
Type/Model:	JNT-EVCD1/2*xxAC/01C/xx/xx,JNT-EVCD3/2*xxAC/01C/xx/xx
FCC ID:	2A2RN-ACEVCN3P4

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 Dylan Tang	Reviewer Wakeyou Wang

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Revision History

Report No.	Version	Description	Issued Date
221101150SHA-002	Rev. 01	Initial issue of report	March 8, 2023

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Electric Vehicle AC Charger
Type/Model:	JNT-EVCD1/2*xxAC/01C/xx/xx,JNT-EVCD3/2*xxAC/01C/xx/xx "xx"denotes Wattage,can be 16=16A, 32=32A, 40=40A,48=48A. "xx"denotes Colour, can be SR=Silver, RD=Red, BK=Black, BU=Blue or other colour. "xx"denotes Function, can be WF=WiFi+BT, 4G=4G, RF=RFID, RF/WF=RFID+WiFi , RF/WF/4G=RFID+WiFi+4G
Description of EUT:	The EUT is Electric Vehicle AC Charger with RFID Function, it Supports WIFI and LTE function, the wireless modular FCC ID is 2AC7Z- ESPWROOM32 and XMR201909EC25AFX. There are some series model and they are same except the appearance. So choose JNT-EVCD1/2*xxAC/01C/xx/xx to test as representative.
Rating:	200-240V ~ 60Hz
EUT type:	☒ Table top ☐ Floor standing
Software Version:	N3P4_C_1.0.0
Hardware Version:	N3P4 V1.0
Serial numbers:	0230308-32-001(for radiation sample)
Sample received date:	December 1, 2022
Date of test:	December 1, 2022 ~ March 7, 2023

1.2 Technical Specification

Frequency Range:	13.56 MHz ~ 13.56 MHz
Modulation:	ASK
Antenna gain:	3dBi

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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 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/cm^2)	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: 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**

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 = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 221101150SHA-001:
61.8dBuV/m@3m, @20cm=@3m+40log(3/0.2)=108.8dBuV/m=0.275V/m<60.77.

The power for WIFI modular refer certificate of FCC ID: 2AC7Z- ESPWROOM32
The power for LTE modular refer certificate of FCC ID: XMR201909EC25AFX

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.

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Frequency band	Power		Antenna Gain	R	S	Limits
(MHz)	dBm	mW	dBi	(cm)	(mW/cm^2)	(mW/cm^2)
2412 - 2462	16.62	45.92	2	20	0.018	1
LTE Band 71	25.00	316.23	4	20	0.252	0.45

Note: 1 mW/cm2 from 1.310 Table 1.

RFID，RFID and WIFI Module can simultaneous transmitting, so the maximum rate of MPE is,
0.275/60.77+0.018/1=0.0225<=1.0.

RFID，RFID , WIFI and LTE Module can simultaneous transmitting, so the maximum rate of MPE is,
0.275/60.77+0.018/1+0.252/0.45=0.5825 <=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**********