

RF Exposure Evaluation Report

Report Reference No...... : **MTEB24040188-H**

FCC ID..... : **2A2RN-ACEVCN13P1IW**

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Date of issue..... : **April 16, 2024**

Representative Laboratory Name. : **Shenzhen Most Technology Service Co., Ltd.**

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Applicant's name..... : **Xiamen Joint Tech. Co., Ltd**

Address..... : Building #1, No.268 HouXiang Rd, Xinyang, Industrial Park, Haicang
District, XIAMEN, Fujian, XIAMEN, China

Test specification/ Standard..... : **47 CFR Part 1.1307; 47 CFR Part 1.1310**
KDB447498D01 General RF Exposure Guidance v06

TRF Originator..... : Shenzhen Most Technology Service Co., Ltd.

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Test item description..... : Electric Vehicle AC Charger

Trade Mark..... : Joint

Model/Type reference..... : JNT-EVC10/40AC/01C/BK/RF/WF

Listed Models : JNT-EVC10/XXAC/01C/YY/RF/WF;
XX stands for current; YY stands for colour

Modulation Type..... : ASK

Operation Frequency..... : 13.56MHz

Hardware Version..... : N1-3P1

Software Version..... : N1-3P1_C_1

Rating..... : AC 240V/60Hz

Result..... : **PASS**

TEST REPORT

Equipment under Test : Electric Vehicle AC Charger

Model /Type : JNT-EVC10/40AC/01C/BK/RF/WF

Listed Models : JNT-EVC10/XXAC/01C/YY/RF/WF;
XX stands for current; YY stands for colour

Remark : Difference in Appearance colour and current.

Applicant : **Xiamen Joint Tech. Co., Ltd**

Address : Building #1, No.268 HouXiang Rd, Xinyang, Industrial Park, Haicang District, XIAMEN, Fujian, XIAMEN, China

Manufacturer : **Xiamen Joint Tech. Co., Ltd**

Address : Building #1, No.268 HouXiang Rd, Xinyang, Industrial Park, Haicang District, XIAMEN, Fujian, XIAMEN, China

Test Result:	PASS
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The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2024-04-16	Initial Issue	Alisa Luo

2. SAR Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

2.1.2 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C): 33

- 1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$
- 2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$
- 3) SAR measurement procedures are not established below 100 MHz.

When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any SAR test results below 100 MHz to be acceptable.³⁴

2.1.3 EUT RF Exposure

$$\text{EIRP} = \text{PT} * \text{GT} = (\text{E} \times \text{D})^2 / 30$$

where:

PT = transmitter output power in watts,

GT = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m, $10^{(\text{dB}\mu\text{V/m})/20}/10^6$,

D = measurement distance in meters (m)---3m,

$$\text{So PT} = (\text{E} \times \text{D})^2 / 30 / \text{GT}$$

The worst case (refer to report **MTEB24040186-R**) is below:

Antenna polarization: Horizontal		
Frequency (MHz)	Level (dBuV/m)	Polarization
13.56	78.5	Peak

For 13.56MHz wireless:

Field strength=78.5 dBuV/m

Ant gain:3dBi;so Ant numeric gain=2

$$\text{EIRP} = \text{PT} * \text{GT} = (\text{E} \times \text{D})^2 / 30 = (10^{(\text{dB}\mu\text{V/m})/20} / 10^6 * 3)^2 / 30 = 0.0000192$$

$$\text{So PT} = \text{EIRP} / \text{GT} = 0.0000096 \text{W} = 0.0096 \text{mW}$$

$$\text{So } (0.0096 \text{mW} / 5 \text{mm}) * \sqrt{0.01356 \text{GHz}} = 0.00022357$$

exclusion=0.00022357<3.0 for 1-g SAR

So the SAR report is not required.

Contains FCCID:2AC7Z-ESPWROOM32

Mode	Frequency	Antenna Gain		AV Output Power		Evaluation Distance	Power Density	MPE Limit
	(MHz)	(dBi)	(numeric)	(dBm)	(mW)	(cm)	(mW/cm ²)	(mW/cm ²)
802.11b	2412	2	1.58	17.00	50.12	20	0.0158	1
802.11g	2412	2	1.58	17.00	50.12	20	0.0158	1
802.11n HT20	2412	2	1.58	17.00	50.12	20	0.0158	1
802.11n HT40	2422	2	1.58	17.00	50.12	20	0.0158	1
BLE	2440	2	1.58	8.00	6.31	20	0.0020	1

Worst case EDR(8DPSK):

Model	Frequency (MHz)	Antenna Gain		Output Power		Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
EDR (8DPSK)	2441	2.0	1.58	8.00	6.31	20	0.0020	1.0

Note: The target power :6±2dBm, which declared by the Manufacturer.

Simultaneous TX (NFC+2.4G)

Mode	Power Density(mW/m ²)		Conclusion
	Results	Limit	
Simultaneous TX	0.0159	1.0	PASS

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

Results(NFC+WIFI2.4g)=0.000207/3+0.0158/1=0.0159

.....THE END OF REPORT.....