

## RF Exposure Evaluation Report

**Report Reference No.**..... : **MTEB24110291-H**

**FCC ID**..... : **2BBXG-EVIPOWER248N**

Compiled by

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Date of issue..... : **Dec.19,2024**

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

Address..... : No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park,  
Nanshan, Shenzhen, Guangdong, China.

**Applicant's name**..... : **EVIQO TECHNOLOGIES LIMITED**

Address..... : UNIT 2A,17/F, GLENEALY TOWER NO.1 GLENEALY CENTRAL  
HONG KONG 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.....: N/A

Model/Type reference.....: EVIPOWER248N

Listed Models .....: EVIPOWER2XXN  
(XX stands for current, which can be 40,48)

Modulation Type.....: ASK

Operation Frequency.....: 315MHz

Hardware Version.....: V1.0

Software Version.....: UC2-R\_ULOS2.0.3

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

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

## TEST REPORT

Equipment under Test : Electric Vehicle AC Charger

Model /Type : EVIPOWER248N

Listed Models : EVIPOWER2XXN  
(XX stands for current, which can be 40,48)

Remark : Difference in current

Applicant : EVIQU TECHNOLOGIES LIMITED

Address : UNIT 2A,17/F, GLENEALY TOWER NO.1 GLENEALY CENTRAL  
HONG KONG China

Manufacturer : Fuzhou Ulandpower Technology Co., Ltd.

Address : 15/F, Building 1, Manfo Center, High tech Zone, Minhou County,  
Fuzhou City, Fujian Province, China, ZIP CODE: 350108

|                     |             |
|---------------------|-------------|
| <b>Test Result:</b> | <b>PASS</b> |
|---------------------|-------------|

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       | 2024-12-19 | 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)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| Frequency range (MHz)  | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|--|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposures</b>        |                               |                               |                                     |                          |
| 0.3–3.0 .....  | 614                           | 1.63                          | *(100)                              | 6                        |
| 3.0–30 .....   | 1842/f                        | 4.89/f                        | *(900/f <sup>2</sup> )              | 6                        |
| 30–300 .....   | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300–1500 .....   | .....                         | .....                         | f/300                               | 6                        |
| 1500–100,000 .....   | .....                         | .....                         | 5                                   | 6                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 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                       |

F= Frequency in MHz

Friis Formula

Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$  Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

$R$  = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance  $r$  where the MPE limit is reached.

### 2.1.3 EUT RF Exposure

For 315MHz wireless:

Field strength=70.53dBuV/m

EIRP =70.53dBuV/m-95.2= -24.67dBm

| Channel | EIRP      | Tune up tolerance (dBm) | Maximum tune-up Power (dBm) | Maximum tune-up Power (MW) | Power Density at R = 20 cm (mW/cm <sup>2</sup> ) | Limit | Result |
|---------|-----------|-------------------------|-----------------------------|----------------------------|--|-------|--------|
| 315 MHz | -24.67dBm | ±1                      | -23.67                      | 0.004                      | 0.0000008  | 0.21  | Pass   |

Note: 1) Refer to report MTEB24050211-R for EUT test Max Conducted average Output Power value.

Note: 2)  $P_d = (EIRP)/(4 * \pi * R^2) = (0.004)/(4 * 3.1416 * 20^2) = 0.0000008$

Contains FCCID: 2AC7Z-ESPWROOM32UE

### EUT RF Exposure Evaluation operations

| Test Mode    | Frequency Range(MHz) | Antenna gain |         | Max. conducted output Power |       | Evaluation Distance (cm) | Power Density (mW/cm <sup>2</sup> ) | MPE Limit (mW/cm <sup>2</sup> ) |
|--------------|----------------------|--------------|---------|-----------------------------|-------|--------------------------|-------------------------------------|---------------------------------|
|              |                      | dBi          | numeric | dBm                         | mW    |                          |                                     |                                 |
| 802.11b      | 2412-2462            | 4            | 2.512   | 15.92                       | 39.08 | 20                       | 0.0195                              | 1.0                             |
| 802.11g      |                      | 4            | 2.512   | 12.31                       | 17.02 | 20                       | 0.0085                              | 1.0                             |
| 802.11n-HT20 |                      | 4            | 2.512   | 12.23                       | 16.71 | 20                       | 0.0084                              | 1.0                             |
| 802.11n-HT40 | 2422-2452            | 4            | 2.512   | 8.95                        | 7.85  | 20                       | 0.0039                              | 1.0                             |
| BLE          | 2402-2480            | 4            | 2.512   | 4.81                        | 3.03  | 20                       | 0.0015                              | 1.0                             |
| BT3.0        | 2402-2480            | 4            | 2.512   | 7.59                        | 5.74  | 20                       | 0.0029                              | 1.0                             |

Note: WIFI and BT/BLE can't transmit simultaneously.

Simultaneous TX (wifi2.4G+315MHz)

| Mode            | Power Density(mW/m <sup>2</sup> ) |       | Conclusion |
|-----------------|-----------------------------------|-------|------------|
|                 | Results                           | Limit |            |
| Simultaneous TX | 0.0195                            | 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 (wifi2.4G+315MHz) =0.0195/1+0.0000008/0.21=0.0195

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