**Shenzhen Most Technology Service Co., Ltd.**
No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.

# RF Exposure Evaluation Report

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|---|---|
| **Report Reference No.....** : | **MTWG22020103-H** |
| **FCC ID..... :** | **2ANPB-RCC60REGO** |
| Compiled by ( position+printed name+signature).. : | File administrators Alisa Luo |
| Supervised by ( position+printed name+signature).. : | Test Engineer Sunny Deng |
| Approved by ( position+printed name+signature).. : | Manager Yvette Zhou |
| Date of issue..... : | **March 11,2022** |
| **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**..... : | **RNG International Inc.** |
| Address..... : | 17534 Von Karman Avenue irvine California United States 92614 |
| **Test specification/** Standard.....**:** | **47 CFR Part 1.1307**<br>**47 CFR Part 1.1310**<br>**KDB447498D01 General RF Exposure Guidance v06** |
| TRF Originator..... : | Shenzhen Most Technology Service Co., Ltd. |



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| **Test item description.....:** | REGO 12V 60A MPPT Solar Charger Controller |
| Trade Mark..... : | RENOGY |
| Manufacturer..... : | SRNE Solar Co., Ltd |
| Model/Type reference..... : | RCC60REGO |
| Listed Models ..... : | N/A |
| Modulation Type..... : | GFSK |
| Operation Frequency..... : | From 2402MHz to 2480MHz |
| Hardware Version..... | HY-40R204P |
| Software Version..... | RGXNY_R2TC_04_01_20191105_V1.1.hex |
| Rating..... : | DC 100V, 50A/800W Max |
| Result..... : | **PASS** |

# T E S T  R E P O R T

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|---|---|---|
| Equipment under Test | : | REGO 12V 60A MPPT Solar Charger Controller |
| Model /Type | : | RCC60REGO |
| Listed Models | : | N/A |
| Remark | | N/A |
| Applicant | : | **RNG International Inc.** |
| Address | : | 17534 Von Karman Avenue irvine California United States 92614 |
| Manufacturer | : | **SRNE Solar Co., Ltd** |
| Address | : | 4-5F, 13A Wutong Island,Neihuan Rd,Xixiang,Bao`an,ShenZhen, Guangdong |

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| **Test Result**: | **PASS** |

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 | 2022-03-11 | Initial Issue | Alisa Luo |
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| | | | |

# 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 ($mW/cm^2$) | Averaging time (minutes) |
|---|---|---|---|---|
| **(A) Limits for Occupational/Controlled Exposures** | | | | |
| 0.3–3.0 | 614 | 1.63 | *(100) | 6 |
| 3.0–30 | 1842/f | 4.89/f | *($900/f^2$) | 6 |
| 30–300 | 61.4 | 0.163 | 1.0 | 6 |
| 300–1500 | ..... | ..... | f/300 | 6 |
| 1500–100,000 | ..... | ..... | 5 | 6 |
| **(B) Limits for General Population/Uncontrolled Exposure** | | | | |
| 0.3–1.34 | 614 | 1.63 | *(100) | 30 |
| 1.34–30 | 824/f | 2.19/f | *($180/f^2$) | 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: Pd = (Pout*G)/(4* Pi * R 2) Where
Pd = power density in mW/cm2
Pout = 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
Pd id the limit of MPE, 1 mW/cm2 . 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

Antenna Gain: 2.1dBi
Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.4 in linear scale. Output Power Into Antenna & RF Exposure Evaluation Distance:

BLE

| GFSK | | | |
|---|---|---|---|
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power (dBm) |
| Lowest(2402 MHz) | -1.255 | -1.255±1 | -0.255 |
| Middle(2440MHz) | -0.118 | -0.118±1 | 0.882 |
| Highest(2480MHz) | -2.201 | -2.201±1 | -1.201 |

BLE

| Worst case: GFSK | | | | | | |
|---|---|---|---|---|---|---|
| Channel | Maximum Peak Conducted Output Power (dBm) | Maximum Peak Conducted Output Power (MW) | Antenna Gain (dBi) | Power Density at R = 20 cm (mW/cm2) | Limit | Result |
| Highest(2440 MHz) | 0.882 | 1.23 | 2.1 | 0.0004 | 1.0 | Pass |

Note: 1) Refer to report **MTWG22030128-R1 f**or EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(1.23*1.62)/(4*3.1416*$20^2$)=0.0004
Note: 3 )EUT's Bluetooth module is more than 20cm away from the human body.

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