

Test Report

Prepared for: OMCO SOLAR

Model: TC1.4.0.00

Description: Self-Sustained IoT Solar Tracker Controller

Project No: p2570007

Serial Number: 2501.001

FCC ID: 2BUGQ-TC14XMOS2279

To

FCC Part 1.1310

FCC Part 1.1307

Date of Issue: September 23, 2025

On behalf of the applicant:

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Phoenix AZ 85043

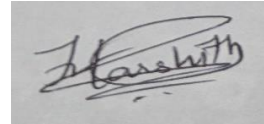
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Reviewed / Authorized By:



Harshith Devaraja
EMC Engineer

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Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	September 23, 2025	Harshith Devaraja	Original Document

Current revision of the test report replaces any prior versions. Only the current version of the test report is valid.

EUT Description

Model:	TC1.4.0.00
Serial:	2501.001
Firmware:	2.0.0
Software:	2.0.0
Description:	Self-Sustained IoT Solar Tracker Controller
Additional Information:	Usage: Fixed
Receipt of Sample(s):	September 17, 2025
EUT Condition:	Visual Damage No State of Development Production/Production Equivalent

Average Power calculations

Average Power = Peak Power * duty-cycle%

Tuned Frequency (MHz)	Measured peak Electric field strength value (dBμV/m)	Radiated Peak Output Power (mW)	Duty Cycle (%)	Average Power (mW)
902.3	118.399	206.5	100	206.5
908.5	118.396	206.3	100	206.3
914.9	118.561	214.3	100	214.3

MPE Evaluation

This is a fixed device used in Uncontrolled Exposure environment.

Limits Controlled Exposure 47 CFR 1.1310 Table 1, (A)

0.3-3.0 MHz:	Limit [mW/cm ²] = 100
3.0-30 MHz:	Limit [mW/cm ²] = (900/f ²)
30-300 MHz:	Limit [mW/cm ²] = 1.0
300-1500 MHz:	Limit [mW/cm ²] = f/300
1500-100,000 MHz	Limit [mW/cm ²] = 5

Limits Uncontrolled Exposure 47 CFR 1.1310 Table 1, (B)

0.3-1.234 MHz:	Limit [mW/cm ²] = 100
1.34-30 MHz:	Limit [mW/cm ²] = (180/f ²)
30-300 MHz:	Limit [mW/cm ²] = 0.2
300-1500 MHz:	Limit [mW/cm ²] = f/1500
1500-100,000 MHz	Limit [mW/cm ²] = 1.0

Test Data

Test Frequency, MHz	914.9
Power, mW (P)	214.3 (Radiated output power)
Numerical gain (G)	1
Distance (R)	20 cm

$S = \frac{P * G}{4\pi r^2}$
Power Density (S) mw/cm ²

Power Density (S) = 0.0426 mw/cm ²
Limit = (from above table) = 0.6095 mw/cm ²

Determination of Exemption
47 CFR 1.1307 (b)(3)(i)(B)

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Note: Max output power value is obtained from associated report.

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

$$\begin{aligned} ERP_{20 \text{ cm}} &= 2040 * 0.9149 \text{ GHz} \\ &= 1866.396 \text{ mW} \end{aligned}$$

Separation distance (d) = 20 cm

$$P_{th} = 1866.396 \text{ mW}$$

Average power of the EUT = 214.3 mW

The fixed EUT is exempt from the obligation to perform a routine environmental evaluation to demonstrate compliance with the RF exposure limits in § 1.1310 shown above.

END OF TEST REPORT