



RF Exposure Evaluation Report

For:
Trackonomy Systems, Inc.

Brand:
Trackonomy

Marketing Name:
Multifunctional IoT Platform Wall-plug

Model Number:
PGW-2003

Product Description:
Multifunctional IoT Platform Wall-plug

FCC ID: 2AXA8-PGW-2003

Per:
CFR Part Part1 (1.1307 & 1.1310), Part 2 (2.1091),
FCC KDB 447498 D04 Interim General RF Exposure Guidance v01
ISED RSS-102 Issue 5

Report number: EMC_TRACK_001_23001_FCC_RF_Exposure

DATE: 2023-08-28



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CETECOM Inc.

411 Dixon Landing Road • Milpitas, CA 95035 • U.S.A.
Phone: + 1 (408) 586 6200 • Fax: + 1 (408) 586 6299 • E-mail: Contact@cetecom.com • <http://www.cetecom.com>
CETECOM Inc. is a Delaware Corporation with Corporation number: 2905571

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1 Assessment

This RF Exposure evaluation report provides evidence for compliance of the equipment (as identified in section 3 of this test report) with the RF Exposure limits for mobile devices as defined in FCC CFR Part 1.1307, Part 2 (2.1093) under worst case conditions (measured or rated RF output power including tune-up tolerance, antenna gain, the distance towards the human body, multiple transmitter information as presented by the applicant).

In addition, maximum antenna gain or minimum distance towards the human body is calculated respectively, where relevant.

The device meets the limits stipulated by the above given FCC rule parts based on available specifications for worst-case conditions at a separation distance greater than 20cm to the body.

Company	Description	Model No.
Trackonomy Systems, Inc.	Multifunctional IoT Platform Wall-plug	PGW-2003

Responsible for Testing Laboratory:

Arndt Stoecker			
2023-08-28	Compliance	(Director of Regulatory Services)	
Date	Section	Name	Signature

Responsible for the Report:

Art Thammanavarat			
2023-08-28	Compliance	(Senior EMC Engineer)	
Date	Section	Name	Signature

The test results of this test report relate exclusively to the test item specified in Section 3. CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM Inc. USA.

2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the EMC Test Report

Company Name:	CETECOM Inc.
Department:	Compliance
Street Address:	411 Dixon Landing Road
City/Zip Code	Milpitas, CA 95035
Country	USA
Telephone:	+1 (408) 586 6200
Fax:	+1 (408) 586 6299
EMC Lab Manager:	Arndt Stoecker
Responsible Project Leader:	Sangeetha Sivaraman

2.2 Identification of the Client

Client Firm/Name:	Trackonomy Systems, Inc.
Street Address:	214 Devcon Drive
City/Zip Code	San Jose, CA 95112
Country	USA

2.3 Identification of the Manufacturer

Manufacturer's Name:	Same as Client
Manufacturers Address:	
City/Zip Code	
Country	

3 Equipment under Assessment

Brand:	Trackonomy
Model No:	PGW-2003
Marketing name:	Multifunctional IoT Platform Wall-plug
FCC-ID :	2AXA8-PGW-2003
HW Version :	V2
SW Version :	V2
Product Description:	Data transmission for IoT platform
Radios included in the device:	<ul style="list-style-type: none"> ❖ Lora: HopeRF RFM95CW-915S2 <ul style="list-style-type: none"> ○ FCC ID: 2ASEORFM95C ❖ Bluetooth LE: Murata Electronics North America MBN52832 <ul style="list-style-type: none"> ○ FCC ID: HSW2832
Power Specifications:	100-240VAC/50-60Hz
Operating Temperature Range:	T min: -20 °C / T max: +60 °C
Sample Revision:	<input checked="" type="checkbox"/> Production Unit <input type="checkbox"/> Pre-Production
Product dimensions [mm]:	127.3 L x 72 W x 46 H
Note: The information of the EUT specifications in the table above is provided by the client.	

4 RF Exposure Limits and FCC and ISED Basic Rules

4.1 FCC

4.1.1 § 2.1091(c)(1)

Evaluation of compliance with the exposure limits in § 1.1310 of this chapter, and preparation of an EA if the limits are exceeded, is necessary for mobile devices with single RF sources having either more than an available maximum time-averaged power of 1 mW or more than the ERP listed in Table 1 to § 1.1307(b)(3)(i)(C), whichever is greater. For mobile devices not exempt by § 1.1307(b)(3)(i)(C) at distances from 20 centimeters to 40 centimeters and frequencies from 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 of this chapter is necessary if the ERP of the device is greater than ERP_{20cm} in the formula below. If the ERP of a single RF source at distances from 20 centimeters to 40 centimeters and frequencies from 0.3 GHz to 6 GHz is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP) in comparison with the following formula only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

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

4.1.2 § 2.1091(c)(2)

For multiple mobile or portable RF sources within a device operating in the same time averaging period, routine environmental evaluation is required if the formula in § 1.1307(b)(3)(ii)(B) of this chapter is applied to determine the exemption ratio and the result is greater than 1.

4.1.3 § 1.1307(b)(3)(ii)(B)

in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

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

5 Evaluations

5.1 FCC RF Exposure (Standalone)

Radio	Tech-Band	Freq-Low _[GHz]	Pwr _[dBm]	Power _[W]	Ant-G _[dBi]	EIRP _[W]	ERP _[W]	Threshold ERP _[W]	ERP < Threshold ERP _[W]	FCC 2.1093(c)(1) Pth _[mW] = ERP _{20cm}
BT	LE	2.4020	2.38	0.0017	3.00	0.003	0.002	0.77	Yes	3060.00
LoRa	N/A	0.9020	12.01	0.0159	3.00	0.032	0.019	0.46	Yes	1840.08

Conclusion:

- The maximum RF emissions from this equipment fulfills the SAR exclusion threshold limits for separation distance between the antenna and the human body greater than 20 mm. SAR is not required.

6 Revision History

Date	Report Name	Changes to report	Prepared by
8/28/2023	EMC_TRACK_001_23001_FCC_RF_Exposure	Initial Version	Art Thammanavarat

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