RF Exposure Report (FCC)

Report No.:	WIR128384-FCC-Track-RF Exposure
Test Model:	PGW-2005
Received Date:	August 20, 2023
Test Date:	September 02, 2023– September 04, 2023
Issued Date:	October 11, 2023
Applicant:	Trackonomy Systems
Address:	214 Devcon Dr, San Jose, CA 95112
Issued By:	Eurofins Electrical and Electronic Testing NA, Inc.
Lab Address:	3162 Belick St. Santa Clara CA, 95054

ACCREDITED
CERT #591.02

1. Certificate of Conformity

Product:	Multifunctional IoT Platform Sensor
Brand:	Trackonomy Systems
Test Model:	PGW-2005
FCC ID:	2AXA8-PGW-2005
Series Model:	N/A
Sample Status:	Engineering Sample
Applicant:	Trackonomy Systems
Test Date:	September 02, 2023– September 04, 2023
Standard:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.1-1992

Christopher Martin
Christopher Martin
Test Engineer, Wireless Laboratory

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made.

Gary Chou
Gary Chou
Wireless Engineering Manager, Wireless Laboratory

Revision	Report Date	Reason for Revision
∅	October 11, 2023	Initial Issue.

2. RF Exposure

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
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; *Plane-wave equivalent power density

2.1 MPE Calculation Formula

$Pd = (Pout*G) / (4*pi*r^2)$

Where

Pd = power density in mW/cm^2

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

2.2 Antenna Gain

Lora:
Antenna Manufacturer/ Model:
TAOGLAS/ FXP14.07.0100A
Antenna Type: Flexible PCB antenna
Antenna Gain:
6.01 dBi

Bluetooth:
Antenna Manufacturer/ Model:
TAOGLAS/ GW.22.5151
Antenna Type: Dipole Antenna
Antenna Gain: 4.64 dBi

2.3 Calculation Result worst case of Maximum Conducted Power

Type/ Band	Frequency Band (MHz)	Max Power (tune up) (dBm)	Max Power (tune up) (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
Lora	915	12	15.849	6.01	20	0.012588	0.61
Bluetooth LE	2402	3.89	2.4491	4.64	20	0.001419	1

The maximum calculations of above situations are less than the limit.
The SAR evaluation is not required.

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

3. This device contains

TYPE	Model No.	FCC ID	Note
-	-	-	-

4. Conclusion

Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Worse case

Total MPE Percentage for

Lora = 0.020636066< 1

Bluetooth LE = 0.001419< 1

Therefore, the maximum calculations of above situations are less than the "1" limit.
The SAR evaluation is not required.

