

RF Exposure Report

Report Number: 208729-4**Revision Level:** 2**Client:** Tractotomy Systems, Inc.

214 Devcon Dr. San Jose, CA 95112

Equipment Under Test: Multifunctional IoT Platform Sensor Device**Model Number:** FBO-2005**FCC ID:** 2AXA8-FBO-2005**IC ID:** 27299-FBO2005**Applicable Standards:** 47 CFR § 2.1091

RSS-102, Issue 6

FCC KDB 447498 D01 General RF Exposure Guidance v06

Report issued on: 13 June 2024**Result:** Compliant

FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER: 1935.01

Report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the Federal Government.

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1 General Information

1.1 Client Information

Name: Trackonomy Systems, Inc.
Address: 214 Devcon Dr.
City, State, Zip, Country: San Jose, CA 95132

1.2 Test Laboratory

Name: SGS North America, Inc.
Address: 12310 World Trade Drive, Suite 106/107
City, State, Zip, Country: San Diego, CA 92128, USA
Accrediting Body: A2LA
Type of lab: Testing Laboratory
Certificate Number: 1935.01
Designation ID: US1346
CAB ID: US0236

1.3 General Information of EUT

Type of Product: Multifunctional IoT Platform Sensor Device
Model Number: FBO-2005
Serial Number: *Sample 1* (Conducted Sample x 1)
Frequency Ranges: 2402 – 2480 MHz
Antenna Model: FBO-2005-ANT
Antenna Type: Inverted F PCB Antenna
Antenna Gain*: 1.5 dBi (max.)
Max Conducted Output Power: 10 dBm

*Data was not measured by SGS laboratory and therefore SGS is not responsible for accuracy. Data obtained via customer, specification sheet, previous filing or other.

1.4 Operating Modes and Conditions

Maximum power levels were utilized for all calculations. Single transmission only.

2 RF Exposure

2.1 Test Results

Test Description	Product Specific Standard	Test Result
RF Exposure	FCC Part 2.1091 RSS-102	Compliant

2.2 Test Method

The formula below calculates power density.

$$S = \frac{PG}{4\pi R^2} \quad \text{Or} \quad S = \frac{EIRP}{4\pi R^2}$$

Where;

S = Power density (mW/cm²)

P = Maximum sourced based average power delivered to antenna port (mW)

G = Maximum power gain of the antenna in the direction of interest relative to an isotropic radiator (dBi) (numerical value)

R = Distance between by-stander and antenna (cm)

EIRP = Equivalent (or effective) isotropically radiated power

2.3 Limits

The table below shows the limits applicable for equipment subject to FCC §15.247 and §2.1091.

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power Density (mW/cm ²)	Averaging Time (Minutes)
0.3 – 1.34	614	20.4	*(100)	30
1.34 - 30	824/f	26.97	*(180/f ²)	30
30 - 300	27.5	33.62	0.2	30
300 - 1500	/	/	f/1500	30
1500 – 100,000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

The table below shows the limits applicable for equipment subject to RSS-102 issue 5.

Limits for General Public/Uncontrolled Environment

Frequency Range (MHz)	Electric field strength (V _{RMS} /m)	Magnetic field strength (A _{RMS} /m)	Power Density (mW/cm ²)	Averaging Time (Minutes)
10 - 20	27.46	1.63	2	6
20 - 48	58.07/f ^{0.25}	0.1540/f ^{0.25}	8.944/f ^{0.5}	6
48 - 300	22.06	0.05852	1.291	6
300 - 6000	3.142f ^{0.3417}	0.008335f ^{0.3417}	0.02619f ^{0.6834}	6
6000 - 15000	61.4	0.163	10	6
15000 - 150000	61.4	0.163	10	616000/f ^{1.2}
150000 - 300000	0.158f ^{0.5}	4.21x10 ⁻⁴ f ^{0.5}	6.67x10 ⁻⁵ f	616000/f ^{1.2}

f = frequency in MHz

2.4 Single transmission RF Exposure Levels (mW/cm²)

2.4 GHz band, BLE per FCC §2.1091

Freq. (MHz)	Antenna Gain		Tune up conducted power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
	(dBi)	numerical	(dBm)	(mW)			
2402	1.5	1.41	10	10	20	0.003	1

2.4 GHz band, BLE per RSS-102

Freq. (MHz)	Antenna Gain		Tune up conducted power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
	(dBi)	numerical	(dBm)	(mW)			
2402	1.5	1.41	10	10	20	0.003	5.35

2.5 Simultaneous Conditions

N/A

3 Revision History

Revision Level	Description of changes	Page Affected	Revision Date
1	Initial release	-	May 30, 2024
2	Sample serial number and Conducted power correction	3 and 5	June 12, 2024