



# RF EXPOSURE REPORT

**Report No.:** SET2016-06125

**Product Name:** GPS Tracker

**FCC ID:** 2AH3LSVR2

**Model No. :** SVR-2

**Applicant:** ITrax, Inc.

**Address:** 2201 Francisco Drive Suite 140-257 El Dorado Hills, CA 95762

**Dates of Testing:** 04/12/2016 — 04/21/2016

**Issued by:** CCIC-SET

**Lab Location:** Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen, 518055, P. R. China

**Tel:** 86 755 26627338    **Fax:** 86 755 26627238

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## Test Report

**Product Name** ..... : GPS Tracker

**Brand Name** ..... : ITRAX

**Trade Name** ..... : ITRAX

**Applicant** ..... : ITrax, Inc.


**Applicant Address** ..... : 2201 Francisco Drive Suite 140-257 El Dorado Hills, CA  
95762


**Manufacturer** ..... : SHENZHEN EELINK COMMUNICATION TECHNOLOGY  
CO., LTD.


**Manufacturer Address** ..... : 3 Floor ,Yu yang mansion, 2nd Road of Langshan,  
Science and Technology Park, Nanshan District ,  
ShenZhen ,CHINA

**Test Standards** ..... : FCC Part 2 (Section 2.1091)  
IEEE C95.1

**Test Result** ..... : PASS

**Tested by** ..... :   
2016.04.21  
Lu Lei, Test Engineer

**Reviewed by** ..... :   
2016.04.21  
Zhu Qi, Senior EGINEER

**Approved by** ..... :   
2016.04.21  
Wu Li'an, Manager



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Change History		
Issue	Date	Reason for change
1.0	2016-04-21	First edition

## 1. General Information

### 1.1. EUT Description

EUT Type	GPS Tracker
Hardware Version	GPT09_V13
Software Version	M6100_V1.9.8
EUT supports Radios application	GPRS
Frequency Range	GPRS 850MHz: Tx: 824.2 - 848.8MHz (at intervals of 200kHz); Rx: 869.2 - 893.8MHz (at intervals of 200kHz) GPRS 1900MHz: Tx: 1850.2 - 1909.8MHz (at intervals of 200kHz); Rx: 1930.2 - 1989.8MHz (at intervals of 200kHz)
Antenna Type	PIFA Antenna
Antenna Gain	-1dBi



## **1.2. Test Facilities**

### **CNAS-Lab Code: L1659**

CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd. CCIC is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659. A 12.8\*6.8\*6.4 (m) fully anechoic chamber was used for the radiated spurious emissions test.

### **FCC-Registration No.: 406086**

CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 406086, valid time is until October 28, 2017.

### **IC-Registration No.: 11185A-1**

CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on July. 15, 2013, valid time is until July. 15, 2016.



## 2. RF Exposure

### 2.1. Limits for maximum permissible exposure (MPE)

An estimation of MPE in this application for product is used to ensure if it complies to the rules of the standard in the regulation list above.

Maximum permissible exposure (MPE) refers to the RF energy that is acceptable for human exposure. It is broken down into two categories, Occupational/controlled and General population/uncontrolled.

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

We analysis if it comply with the limits for General population/uncontrolled exposure. The FCC’s MPE limits for field strength and power density are given in 47CFR 1.1310(Table below).These limits are generally based on recommended exposure guidelines published by the National Council on Radiation Protection and Measurements (NCRP), and also partly based on guidelines recommended by the American National Standards Institute (ANSI) in Section 4.1 of ANSI/IEEE C95.1.

(B) Limits for General Population/uncontrolled Exposure				
Frequency Range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Average time (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	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		

A rough estimation of the expected exposure in power flux density on a given point can be made with the following equation:

## 2.2. MPE calculation Formula

$$S = \frac{PG}{4\pi R^2}$$

where

**S = power density in mW/cm<sup>2</sup>**

**P = 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 (20cm)**

The antenna of the product, under normal use condition is at least 20 cm away from the body of the user. Warning statement to the user for keeping at least 20cm separation distance and the prohibition of operating to a person has been printed on the user's manual. Therefore, the S of the device is calculated with R=20cm, and if it is below the limit S, then we can conclude the device complies with the rules.

## 2.3. Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 2.4. Classification results of maximum conducted power

Test Mode	Maximum Conducted Power (dBm)	Maximum Tune up power(dBm)	Max Tune up Average Power (dBm)
GPRS 850	32.21	33	23.97
GPRS 1900	28.98	30	20.97

Note: For GSM, Duty cycle=1/8.

Test Mode	Maximum E.I.R.P. (dBm)	Maximum E.I.R.P. (mW)	Power Density (mW/cm <sup>2</sup> )	Limit of Power Density (mW/cm <sup>2</sup> )	Result
GPRS 850	22.97	198.15	0.039	0.55	PASS
GPRS 1900	19.97	99.31	0.020	1.0	PASS

Note: antenna Gain= -1dBi

## 2.5. Result

This is a Mobile Device and the maximum Power Density is 0.039(mW/cm<sup>2</sup>), which is lower than the exclusion threshold 0.55(mW/cm<sup>2</sup>).

The SAR measurement is not required.