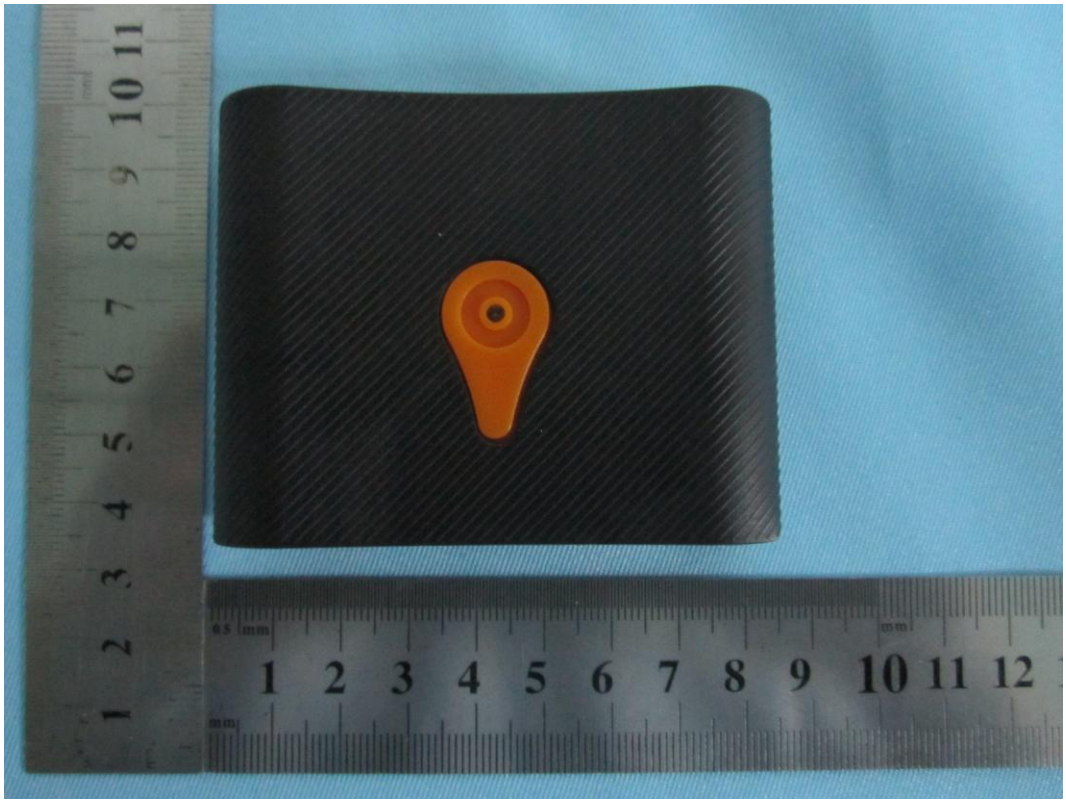
GlobaTrac LLC

Trakdot

Main Model: Luggage Trak V1
Serial Model: N/A

June 20, 2013
Report No.: 13070068-FCC-H1
(This report supersedes NONE)



Modifications made to the product : None

This Test Report is Issued Under the Authority of:		
Back Huang	Alex Liu	
Back Huang **Compliance Engineer**	**Alex Liu** **Technical Manager**	

This test report may be reproduced in full only.
Test result presented in this test report is applicable to the representative sample only.

RF Exposure Evalution Report

To: FCC 2.1091: 2012

SIEMIC, INC.
Accessing global markets

Laboratory Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.

In addition to testing and certification, SIEMIC provides initial design reviews and compliance management through out a project. Our extensive experience with China, Asia Pacific, North America, European, and international compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Accreditation Body	Scope
USA	FCC, A2LA	EMC , RF/Wireless , Telecom
Canada	IC, A2LA, NIST	EMC, RF/Wireless , Telecom
Taiwan	BSMI , NCC , NIST	EMC, RF, Telecom , Safety
Hong Kong	OFTA , NIST	RF/Wireless ,Telecom
Australia	NATA, NIST	EMC, RF, Telecom , Safety
Korea	KCC/RRA, NIST	EMI, EMS, RF , Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	Safety, EMC , RF/Wireless, Telecom
Europe	A2LA, NIST	EMC, RF, Telecom , Safety

Accreditations for Product Certifications

Country/Region	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC , RF , Telecom
Canada	IC FCB , NIST	EMC , RF , Telecom
Singapore	iDA, NIST	EMC , RF , Telecom
EU	NB	EMC & R&TTE Directive
Japan	MIC, (RCB 208)	RF , Telecom
Hong Kong	OFTA (US002)	RF , Telecom

This page has been left blank intentionally.

CONTENTS

1. EXECUTIVE SUMMARY & EUT INFORMATION

The purpose of this test programme was to demonstrate compliance of the GlobaTrac LLC, Trakdot and model: Luggage Trak V1 against the current Stipulated Standards. The Trakdot has demonstrated compliance with the FCC 2.1091: 2012.

EUT Information

EUT Description	:	**Trakdot**
Main Model	:	**Luggage Trak V1**
Serial Model		**N/A**
Antenna Gain	:	**GPRS850: 2.0 dBi** **GPRS1900: 2.0 dBi** **BLE: 3.0 dBi**
Input Power	:	**3 V DC**
Maximum Conducted Peak Power to Antenna	:	**GPRS850: 31.71 dBm** **GPRS1900: 29.42 dBm** **BLE:1.028 dBm**
Classification Per Stipulated Test Standard	:	**FCC 2.1091: 2012**

2. TECHNICAL DETAILS

Purpose	**Compliance testing of Trakdot with stipulated standard**
Applicant / Client	**GlobaTrac LLC 2930 Westwood Blvd., Suite 250, Los Angeles, CA. 90064 USA**
Manufacturer	**Linktop Technology Co., Ltd 2F Torch Building, No.1 Torch Road, Huli District, Xiamen, Fujian, China**
Laboratory performing the tests	**SIEMIC Nanjing (China) Laboratories NO.2-1,Longcang Dadao, Yuhua Economic Development Zone, Nanjing, China Tel:+86(25)86730128/86730129 Fax:+86(25)86730127 Email:info@siemic.com**
Test report reference number	**13070068-FCC-H1**
Date EUT received	**May 17, 2013**
Standard applied	**FCC 2.1091: 2012**
Dates of test	**June 18, 2013**
No of Units	**#1**
Equipment Category	**PCE&DTS**
Trade Name	**GlobaTrac**
RF Operating Frequency (ies)	**GPRS850 TX : 824.2 ~ 848.8 MHz; RX : 869.2 ~ 893.8 MHz GPRS1900 TX : 1850.2 ~ 1909.8 MHz; RX : 1930.2 ~ 1989.8 MHz BLE: 2402-2480MHz**
Number of Channels	**299CH (GPRS1900) and 124CH (GPRS850) BLE: 40 CH**
Modulation	**GSM: GMSK Bluetooth: GFSK**
FCC ID	**2AADDTRAK**

3. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FCC §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm2)	Averaging Time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	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

Test Data

Predication of MPE limit at a given distance

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

Where: S = power density (in appropriate units, e.g. mW/cm2)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Test Result: Pass

GSM 850 :

Maximum peak output power at antenna input terminal: 31.71 (dBm)
Maximum peak output power at antenna input terminal: 1482.52 (mW)

Prediction distance: >20 (cm)
Predication frequency: 836.6 (MHz)
Antenna Gain (typical): 2.0 (dBi)
Antenna Gain (typical): 1.585 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.468 (mW/cm^2)
MPE limit for general population exposure at prediction frequency: 0.558 (mW/cm^2)

0.468 (mW/cm^2) < 0.558 (mW/cm^2)

PCS 1900 :

Maximum peak output power at antenna input terminal: 29.42 (dBm)
Maximum peak output power at antenna input terminal: 874.98 (mW)

Prediction distance: >20 (cm)
Predication frequency: 1909.8 (MHz)
Antenna Gain (typical): 1.5 (dBi)
Antenna Gain (typical): 1.585 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.276 (mW/cm^2)
MPE limit for general population exposure at prediction frequency: 1.0 (mW/cm^2)

0.276 (mW/cm^2) < 1.0 (mW/cm^2)

BLE :

Maximum peak output power at antenna input terminal: 1.028 (dBm)
Maximum peak output power at antenna input terminal: 1.27 (mW)

Prediction distance: >20 (cm)
Predication frequency: 2402 (MHz)
Antenna Gain (typical): 3 (dBi)
Antenna Gain (typical): 1.995 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.0005 (mW/cm^2)
MPE limit for general population exposure at prediction frequency: 1.0 (mW/cm^2)

0.0005 (mW/cm^2) < 1.0 (mW/cm^2)