GS-TRAQ®

Powered by GlobalSat

AVL Tracking System
TR-600

V0.2

Globalsat Technology Corporation
16F., No. 186, Jian-Yi Road, Chung-Ho City, Taipei Hsien 235, Taiwan
Tel: 886.2.8226.3799/ Fax: 886.2.8226.3899
service@globalsat.com.tw
www.globalsat.com.tw

USGlobalSat Incorporated
1308 John Reed Court, City of Industry, CA 91745
Tel: 626.968.4145 / Fax: 626.968.4373
sales@usglobalsat.com
www.usglobalsat.com

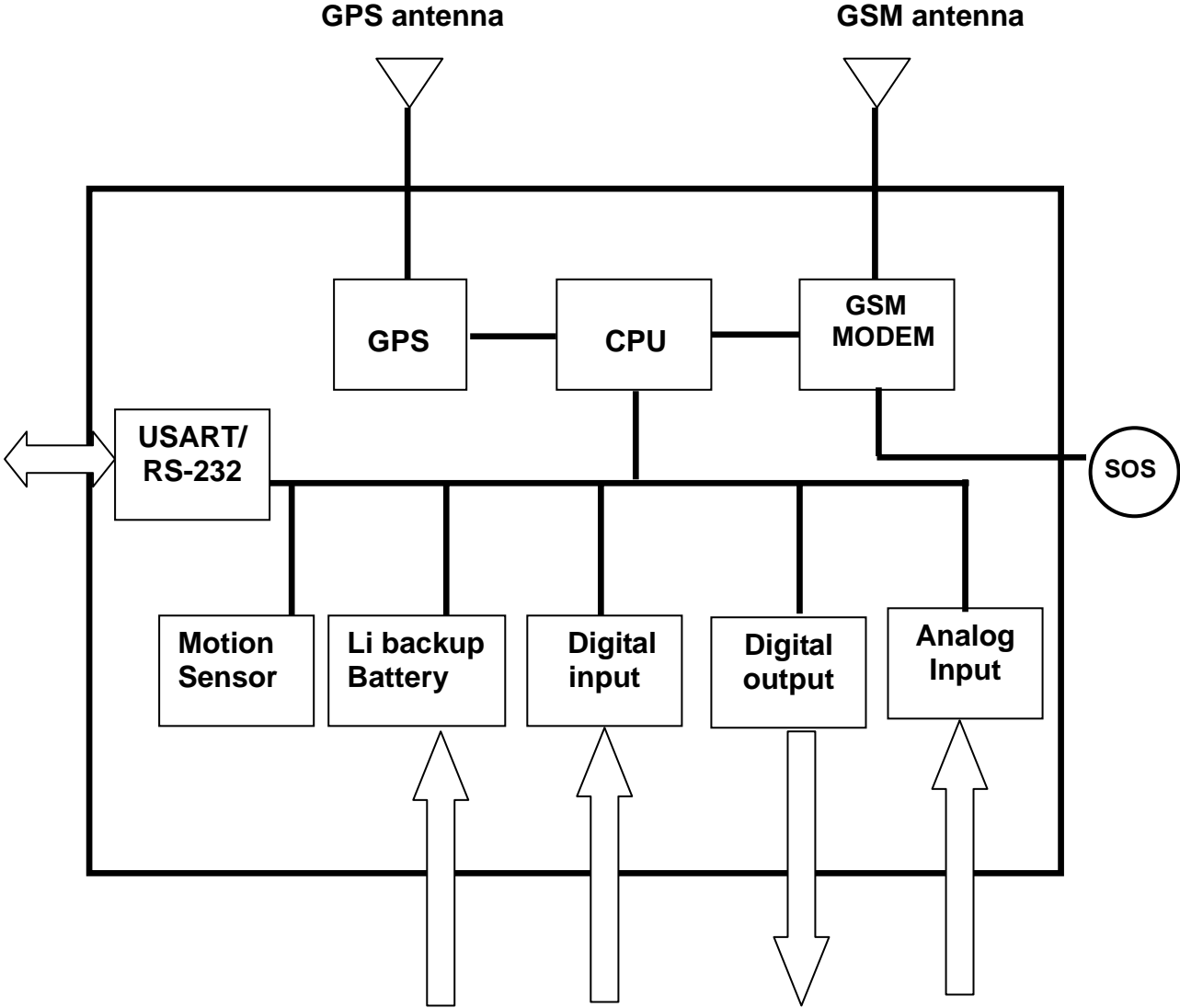**CONTENT**

1. Introduction

1.1 Introduction

TR-600 is a multi-functional and economical communication platform for vehicle positioning applications. It integrates high sensitivity GPS system and quad-band 850/900/1800/1900 MHz GSM system into a compact mechanism.

TR-600 is enclosed into a solid housing for simple installation. It provides real time GPS positions anytime and anywhere in the open sky and offers the precise position and vehicle status to back-end server or controller's cell phone to handle/ display/ calculate the necessary information. Benefits such as enhanced fleet management, improved vehicle safety, and useful emergency response are accomplished through the implementation of TR-600 system.

1.2 Features

- Build in Quad-band 850/900/1800/1900 MHz GSM system
- Build in high sensitivity GPS system
- Support AT command via SMS/ TCP/UDP
- Remote control via SMS/GPRS command
- Real-time regular GPS position feedback and vehicle status monitoring
- Build in 3 digital outputs, 3 digital inputs, ACC input, 1 analog input, 1 serial port
- Power supply for Lion battery and lead-acid battery
- Support multi geo-fence function
- OTA (On the air) firmware upgrading
- Data logger for 50,000 points
- Ignition/ Power Low/ Power Lost / Speed Limit detection alarm
- 3 LED indicators for GSM, GPS, power status
- External panic button for emergency SOS (Option)

1.3 Hardware Architecture

GPS antenna

GSM antenna

GPS

CPU

GSM MODEM

USART/ RS-232

SOS

Motion Sensor

Li backup Battery

Digital input

Digital output

Analog Input

1.4 Hardware specification

Item	Description	
Dimension	98 mm X 65 mm X 22 mm	
CPU	High performance line ARM-base 32-bit MCU	
GPS receiver	SiRF Star III high performance GPS chipset	
Temperature	Operation	-30℃ ~ + 80℃
	Storage	-40℃ ~ + 85℃
GPS Antenna	SMA Type connector Active antenna (3.3~3.8V)	
GSM Antenna	SMA Type connector	
Communication	Telit (GE865) Quad-band GSM 850/900/1800/1900 MHz	
Protocol	Voice/SMS/GPRS (TCP/UDP/HTTP)	
Built-in Memory	32 Mb	
GPS logging capacity	50,000 points	
Emergency Input	Negative trigger	1
Ignition (ACC) Input	Positive trigger	1
Digital Input Port	Negative trigger	2
	Positive trigger	1
Digital Output Port	Negative trigger	3 (300 mA)
Analog Input Port	Analog Input	1(0~28V)
Serial Port	115200 bps	
Backup battery (Option)	Internal 800 mAh Lion battery Support external Lead-acid battery (12V/24V)	
Sensor	Temperature sensor (Option)	
	Motion sensor	
	G-sensor (3-Axis Accelerometer) (Option)	
Function (Custom-made)	Support barcode reader	
	Support NMEA-0183 output for navigation	
	Support RFID reader	
	Support tire pressure monitoring system	

1.5 Appearance
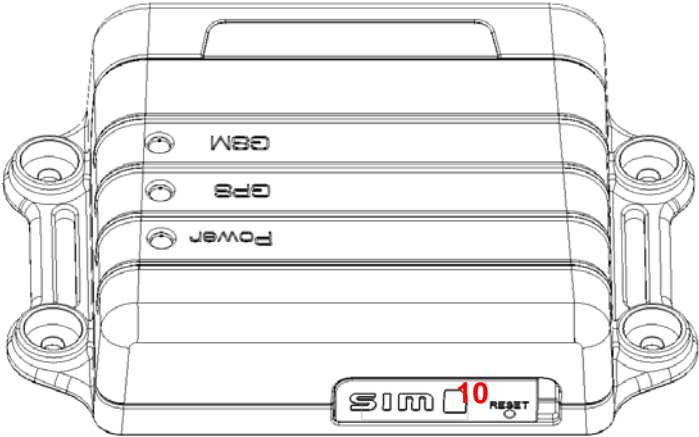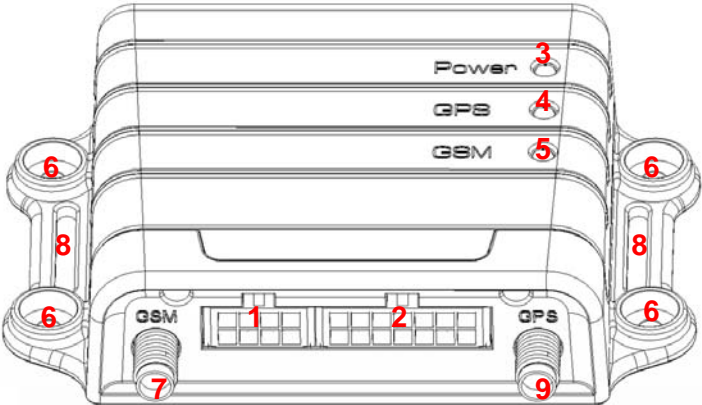
1	Peripheral interface port
2	I/O port
3	Power Status LED
4	GPS LED
5	GSM LED
6	For fixing device with screws
7	GSM antenna connector
8	For fixing device with belt
9	GPS antenna connector
10	SIM card holder

1.6 LED indicator

Power Status LED (Red)

LED	Permanently On	Slow blinking (Once every 3 seconds)
State	Main power on, device on	No main power function, backup battery on

GPS LED (Yellow)

LED	Permanently off	Fast blinking (Once every 1 second)	Slow blinking (Once every 3 seconds)
State	GPS off	GPS not fix	GPS fix

GSM LED (Green)

LED	Permanently off	Fast blinking (Once every 1 second)	Slow blinking (Once every 3 seconds)
State	GSM off	1. TR-600 is searching GSM network 2. SIM card is registering to GSM network	TR-600 is registered full service

1.7 Cable description

14 Pin I/O Cable
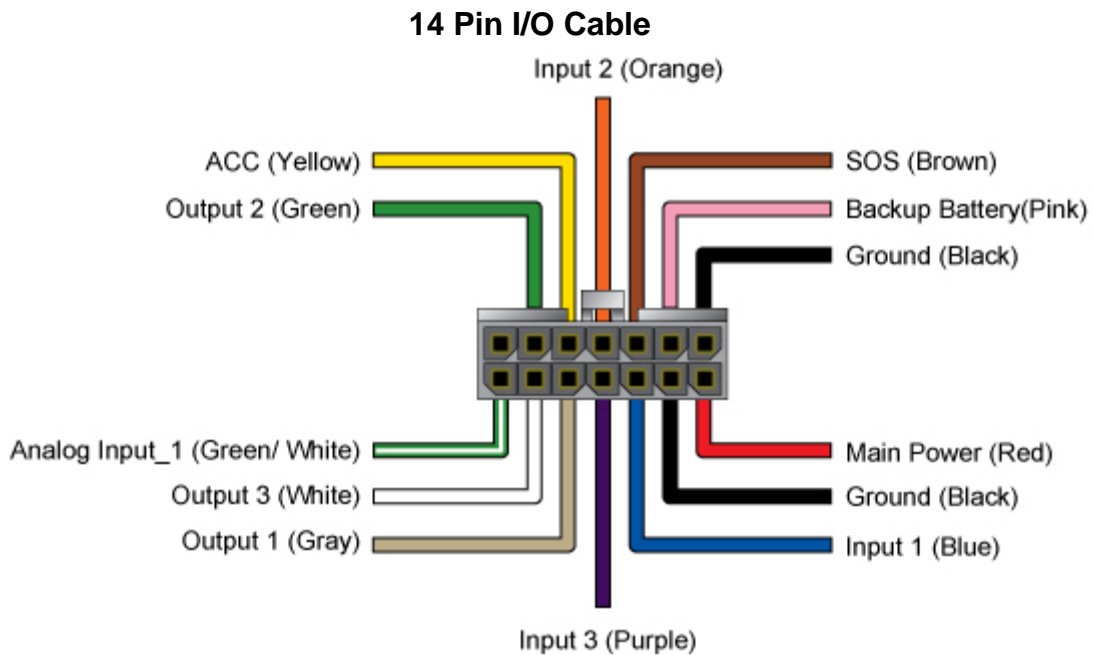
Wire Color	Description
Green/ White	**Analog Input_1**
White	**Digital Output 3** (Negative Trigger)
Gray	**Digital Output 1** (Negative Trigger)
Purple	**Digital Input 3** (Positive Trigger)
Blue	**Digital Input 1** (Negative Trigger)
Black	**Ground**
Red	**Main Power**
X	
Green	**Digital Output 2** (Negative Trigger)
Yellow	**ACC** (Positive Trigger)
Orange	**Digital Input 2** (Negative Trigger)
Brown	**SOS** (Negative Trigger)
Pink	**12V/24V Backup Battery**
Black	**Ground**
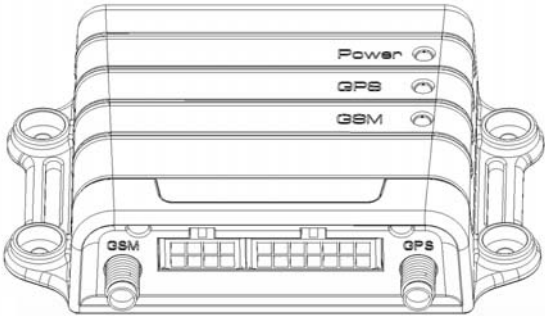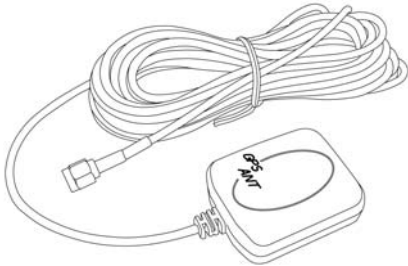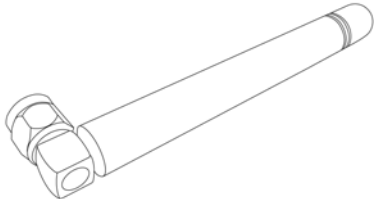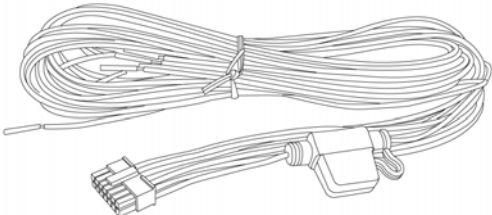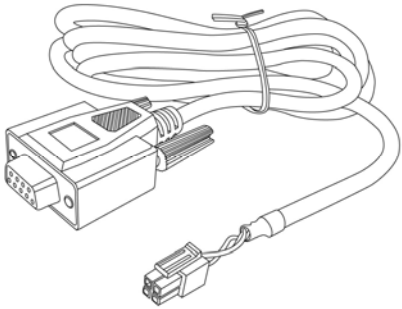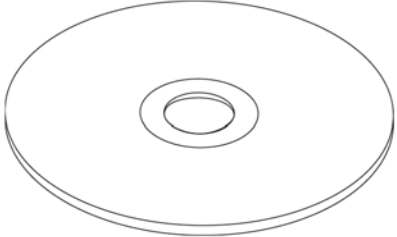
8 Pin Cable
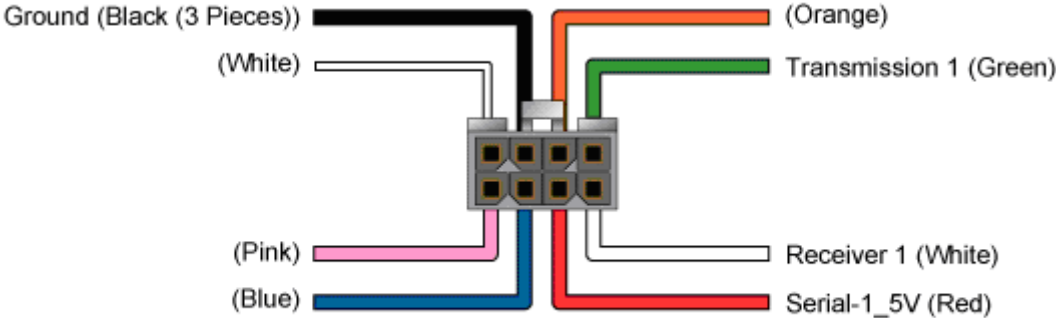
Wire Color	Description
Pink	Receiver
Blue	Receiver
Red	Serial-1_5V
White	Receiver
White	Receiver
Black (3 Pieces)	Ground
Orange	Receiver
Green	Transmission 1

1.8 Accessories

Main Unit	**GPS Antenna**
GSM Antenna	**14 Pin I/O Cable**
8 Pin Cable	**RS-232 Cable (Option)**
CD (User manual, driver)	

2 Operation

For first time users, please follow the steps below to complete the pre-installation.

2.1 Install the SIM card

With the cooper contacts face-up, align the notch on the SIM card with the notch on the SIM slot and insert the SIM card. If SIM is inserted correctly, you will not be able to see the copper contacts after inserting the card. To eject SIM card, simply, use your finger nail and apply slight pressure.

Note: *Refer to your mobile phone manual to disable the SIM PIN entry function by your mobile phone.*

Note: *Before installing or taking out SIM card, please power off TR-600.*
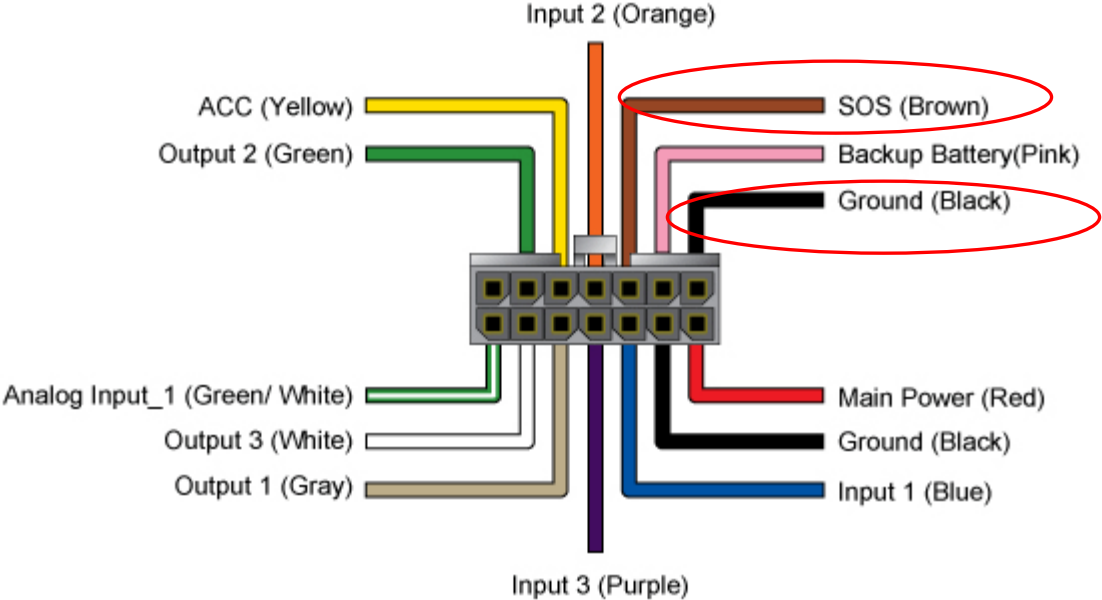
2.2 Install the GPS and GSM antenna

Install the GSM antenna to the GSM antenna connector on the left part of the back side and GPS antenna to the GPS antenna connector on the right part of the back side tightly. Please refer to the photo above.

2.3 Install the Emergency button

There is a line of the 14 pin IO cable for connecting push button for emergency help.

One end of the button must be connected to the SOS line and the other end must be connected to the ground line.
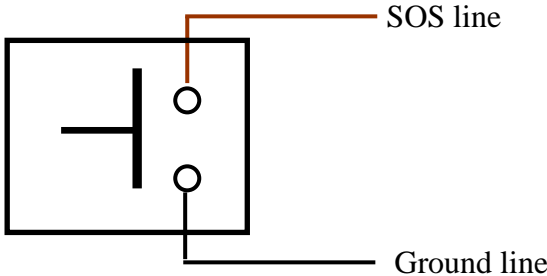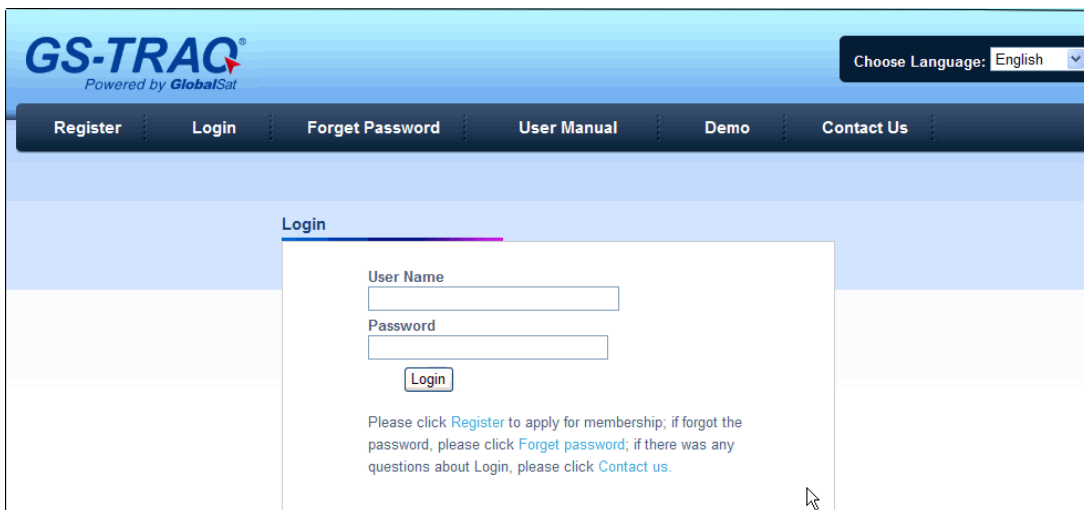
3 Free Web Service

3.1 Preparation for Use Website

- Be certain your SIM card has credit and verify with telecom operator for GPRS activation. Or, you may verify GPRS connectivity by inserting SIM card to the mobile phone. Next, test by utilizing your web browser.
- Contact your telecom operator concerning GPRS setting parameters.
- Contact your telecom operator to **disable** *voicemail*, *call waiting*, and *call forwarding* functions to the SIM card.
- Disable the SIM PIN entry of the SIM card via mobile phone.
- Tracker IMEI and serial number information can be found on the bottom of TR-600.

3.2 Account creation

Please turn on your web browser and go to http://traq.gstraq.com/

Next, click the **Register** hyperlink.

Read **Agreement**, check **I Agree**, and click **Next** button.

Agreement

Agreement

Please read and agree to these terms of use before you continue using this service. Globalsat may, at its sole discretion, modify these terms and conditions at any time, and you must in such case agree to be bound by such modifications or discontinue using the service.

1. USAGE
You agree that the Service is provided on an AS IS basis. Globalsat disclaims all responsibility and liability for the availability, timeliness, security or reliability of the Service. Globalsat also reserves the right to modify, suspend or discontinue the Service with or without notice at any time and without any liability to you.

You agree that you will use the Service in compliance with all applicable laws, rules and regulations. You agree that you will use Globalsat Website Service for non-commercial purposes only. You shall not: (i) prevent others from using the Service; (ii) use the Service for any fraudulent or inappropriate purpose. Violation of any of the foregoing may result in immediate termination of this Agreement, and may subject you to other legal consequences. Globalsat reserves the right, but shall have no obligation, to investigate your use of the Service in order to determine whether a violation of the Agreement has occurred or to comply with any applicable law.

2. RIGHTS
You acknowledge that Globalsat owns all rights in and to the Service, including without limitation all intellectual property rights. Accordingly, you agree that you will not copy, reproduce, alter, modify, or create derivative works from the Service.

Globalsat will keep your data privately with your permission, as we understand that privacy is of importance to you. However, you do agree that Globalsat may monitor or disclose your data in order to comply with applicable laws, rules and regulations. Globalsat reserves the right to use anonymous data from the Service to develop our

I Agree ☐

Cancel   Next ->

Check the preparation again and click **Next** button.

圖待網站更新（目前為 TR-203 與 TR-151）

Select your **Time Zone**, enter **Device IMEI** and **Serial No.**, select your **Country code**, enter **Device Phone Number**, **Device Name**, and click **Next** button.

Enter the required device information.

Device Type:
⊙ TR-600
Time Zone:
Asia/Taipei(GMT+8)
Device IMEI:

Device Serial No:

Country Code:
African(+236)   (Please select your country code.)
Device Phone Number:
(Please enter local number. Example:09716532xxx)
Device Name:
(Please enter device name. Example: Tracker ...)

Previous   Next

Create your login profile by entering **User Name**, **Password**, and **Email**, and click **Next** button.

Please print this page or write down your **User Name**, **Password** and click "**Click to start Setup**" button.

Please select your country and telecom operator. Selecting your telecom operator will bring out the concerning GPRS parameters. If you do not find your telecom operator in the pull-down menu or the information in the pull-down menu is incorrect, please click "**User Define**". And then please contact your telecom operator about the GPRS parameter. Please click **Auto Send SMS** button.

Step4. Enter the GPRS setting parameter.

Please contact your telecom operator about the GPRS parameter and fill in it.

Attention:
1. Because system service providers change without notice, there may be errors in pull-down menu and thus errors can cause incorrect setting, We suggest you to contact your system service provider about GPRS parameters before set-up. Otherwise, incorrect parameters will make TR device can not connect to GPRS to send back data. If your system service provider is not in pull-down menu, or the info in pull-down menu is incorrect, please press "User Define" in right hand side to set up GPRS paramet manually.

2. Some system service providers sell pre-paid/value pre-loaded SIM cards, and their parameter settings may be different with monthly-plan SIM card. As a result, please contact your system service providers before set-up.

3.You can put the SIM card into your cellular phone; open web browser to connect internet, in order to ensure GPRS parameters are correct and the function of GPRS is on.

Please choose the country ===> choose operator.

Country: :	=== Choose Country ===
Your telecom operator:	= Choose telecom operator =
GPRS APN:	
GPRS User Name: :	
GPRS Password: :	

User Define

Website provides 3 pieces of free SMS for setting the GPRS parameters of TR Device.

After receiving the setup SMS, TR device will use the setup GPRS setting and connect to the web side.

If you fail to set up at the first time and would like to re-set up, please login Web Server; click "setup" tab, and then go to "Send setup SMS" to do it again.

You could send the free SMS by clicking [Auto send SMS] button.
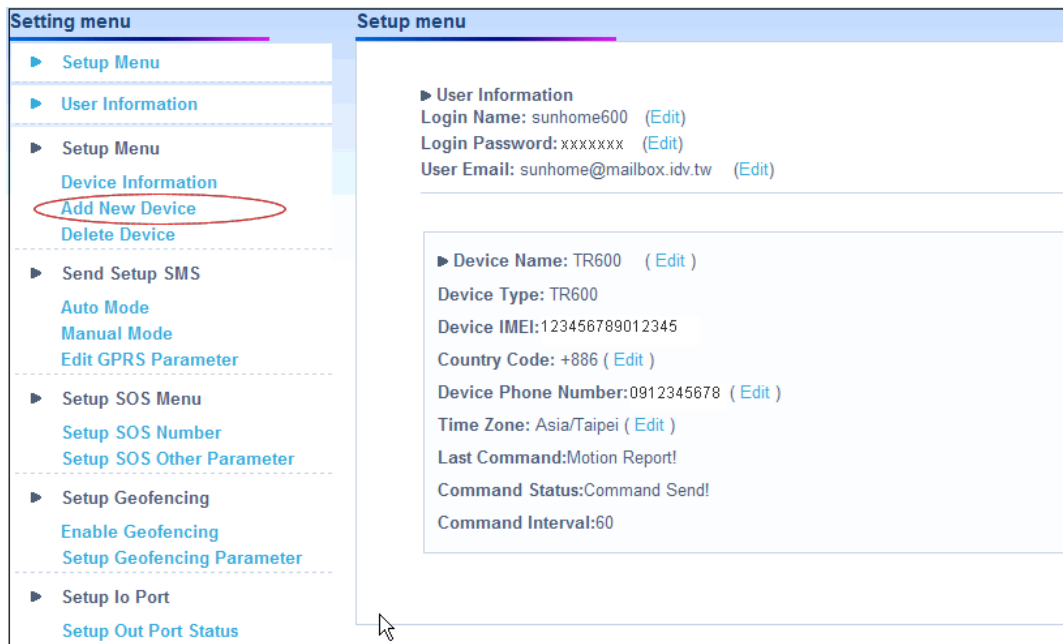
Please click **Send** button.

圖待網站更新（目前為 TR-203 與 TR-151 畫面)

3.3 Account creation

Perform the following: **Setup** → **Add New Device**

Then please refer to **3.2 Create Account** to enter the concerning information of the device

After adding the required information and sending out the SMS, you could switch to use separate device by selecting in the **Device** pull-down menu on the upper right corner of the webpage.
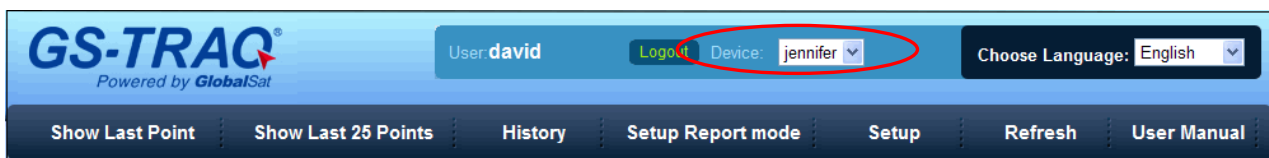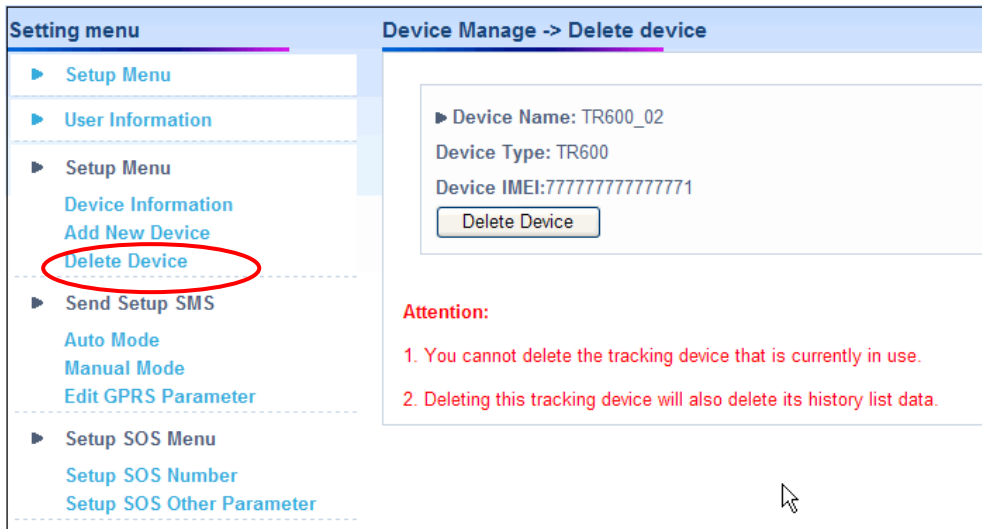

3.4 Delete device from your account

Perform the following: **Setup** → **Delete Device**

Please select the device you would like to delete.

And then please click **Delete Device** button.

3.5 Set up SOS Parameters

SOS Phone Number

1. Perform the following: **Setup → Setup SOS Number**
2. Enter destination phone number to receive emergency SMS.
3. Please click **Send** button.
4. **Next, go to Setup SOS Other Parameter**
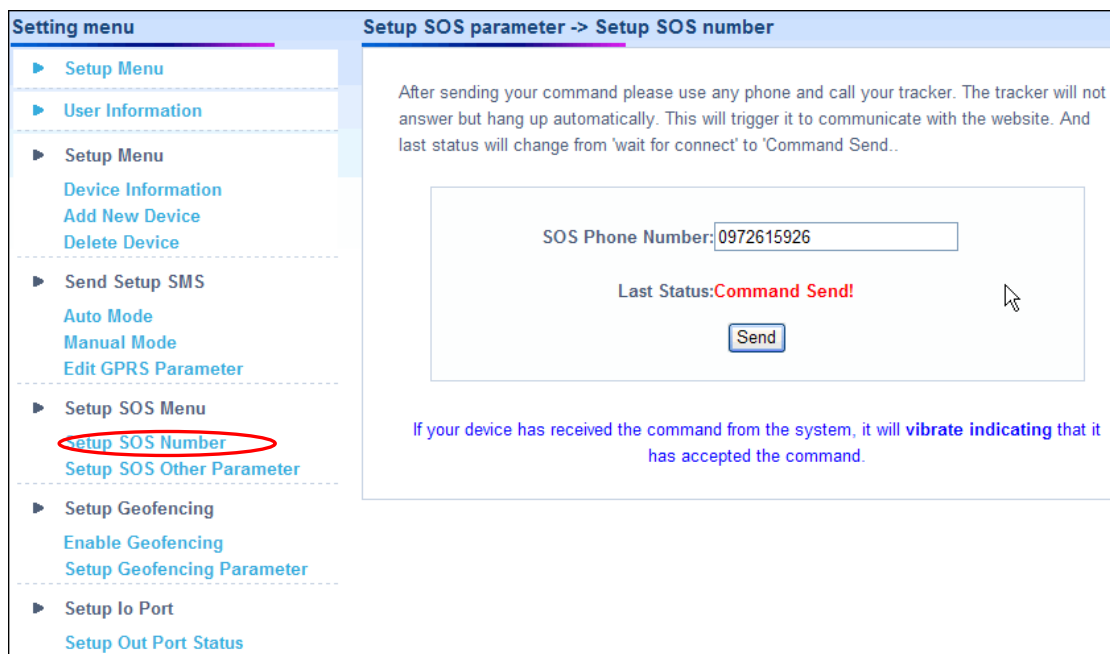
SOS Time Zone

1. Select SOS Time Zone and SOS Report Type

2. Click **Send** button.

3. Then please copy the SMS and send it to the phone number of TR-600 by your mobile phone.
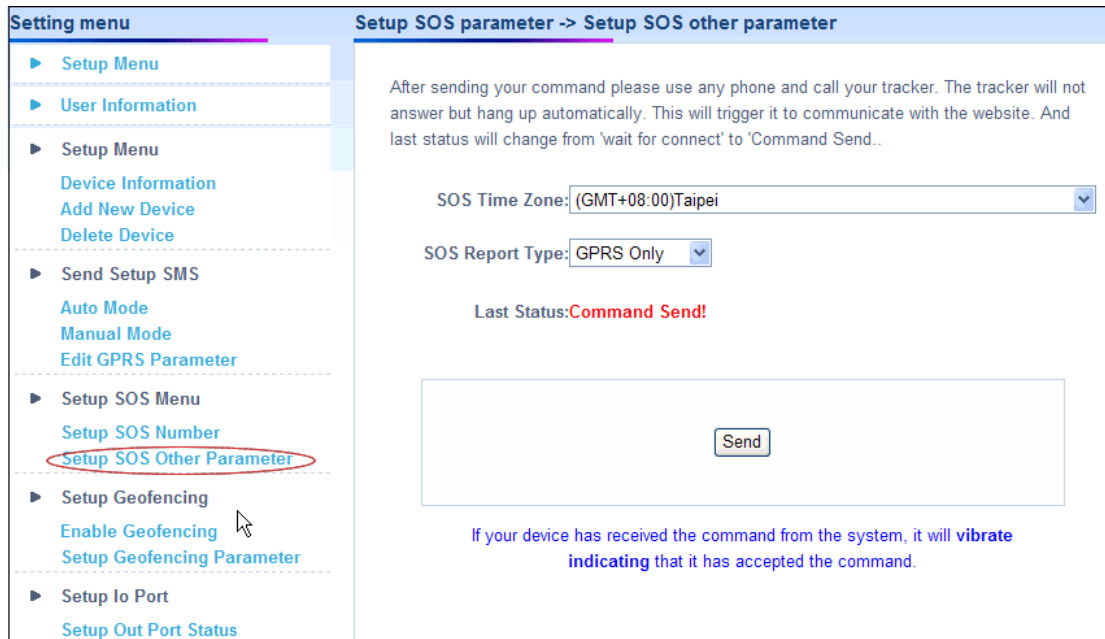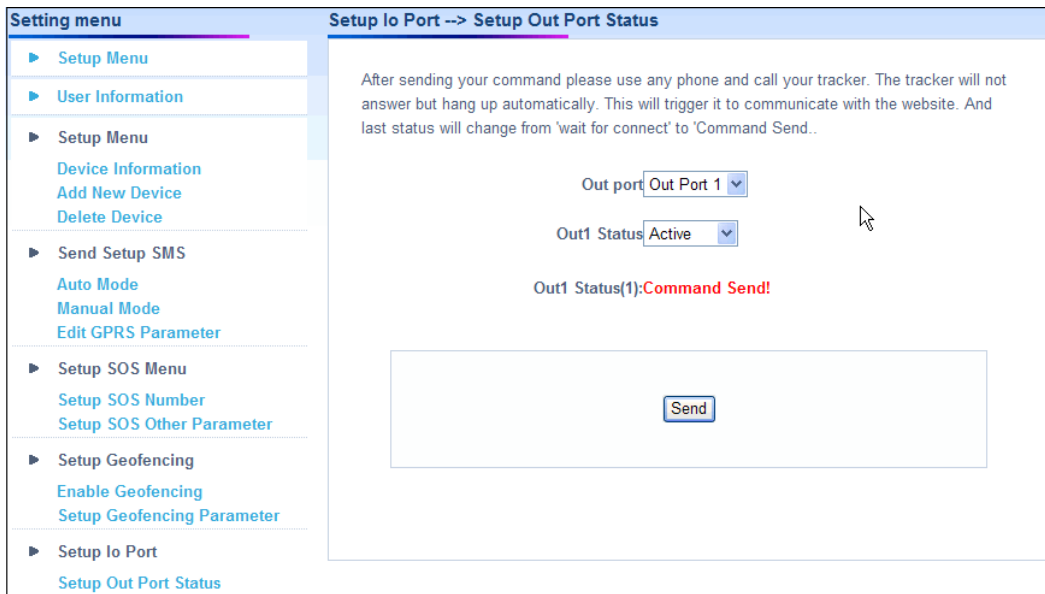
Note: *.The content of SOS report includes GPS fix date and time. The GPS date and time will be according to the setting of SOS Time Zone.*

3.6 Set up Digital Output

There are 3 digital outputs of TR-600. Below please find the corresponding positions. You could activate or deactivate on the GS-TRAQ website..
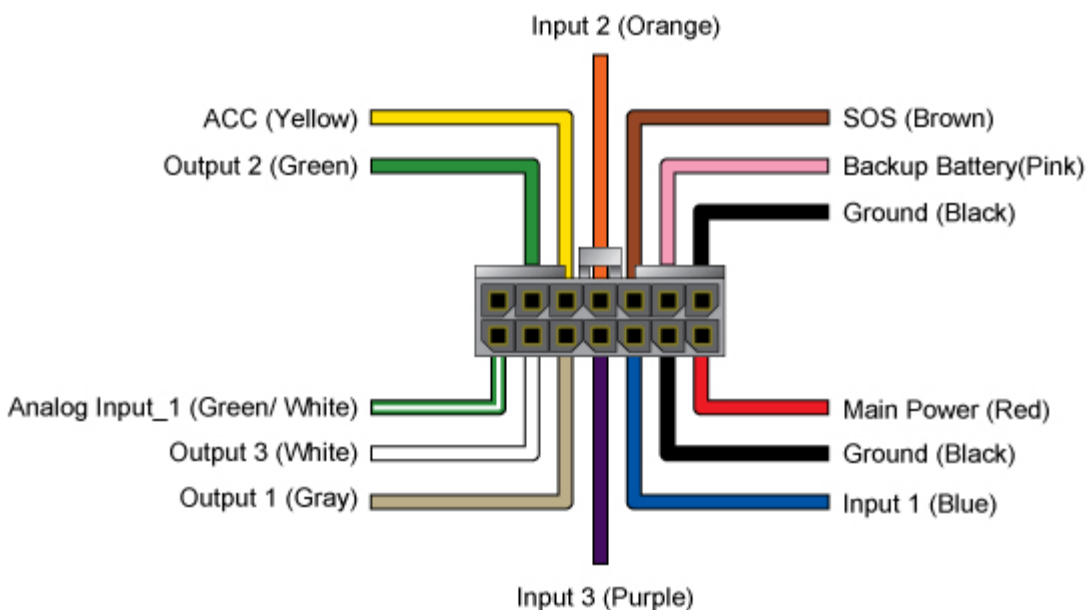
1. Perform the following: **Setup → Setup Out Port Status**
2. Select digital output port in the pull-down menu of **Out port.**
3. Select **Active** to activate that digital output or Disactive to deactivate that digital output in the pull-down menu of **Out Status**.
4. Click **Send** button.
5. Then please copy the SMS and send it to the phone number of TR-600 by your mobile phone

3.7 TR-600 Motion report

1. Select **Setup Report Mode** on the menu bar.
2. Select **Motion Report** in the pull-down menu of **Report Command**
3. Enter value for **Report Interval (Static)** (Range 30~65535 seconds) and **Report Interval (Moving)**. (Range 10~65535 seconds)
4. Click **Send** button.
5. Then please copy the SMS and send it to the phone number of TR-600 by your mobile phone

3.8 Stop TR-600 Motion report

Stop Motion Reporting
1. Select **Setup Report Mode** on the menu bar.
2. Select **Stop Report** in the pull-down menu of **Report Command**
3. Click **Send** button. TR-600 will stop motion report.
4. Then please copy the SMS and send it to the phone number of TR-600 by your
   mobile phone
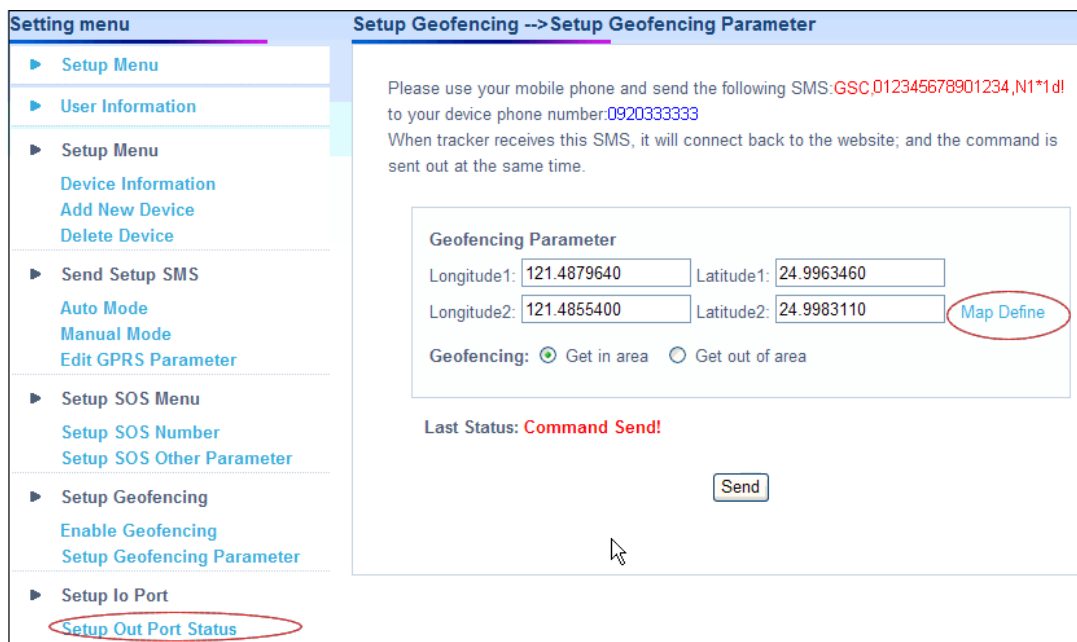
3.9 TR-600 Geo-fence Function

Setup Geo-fence area

1. Select **Setup** on the menu bar.
2. Select **Setup Geo-fencing Parameter.**
3. Click on **Map Define**

4. Then you could enter a specific address or city or landmark in the field of **Address Search**
   and then click **Go** button. Map will move to the entered location. For example, the map will
   show as below after entering Washington D.C.
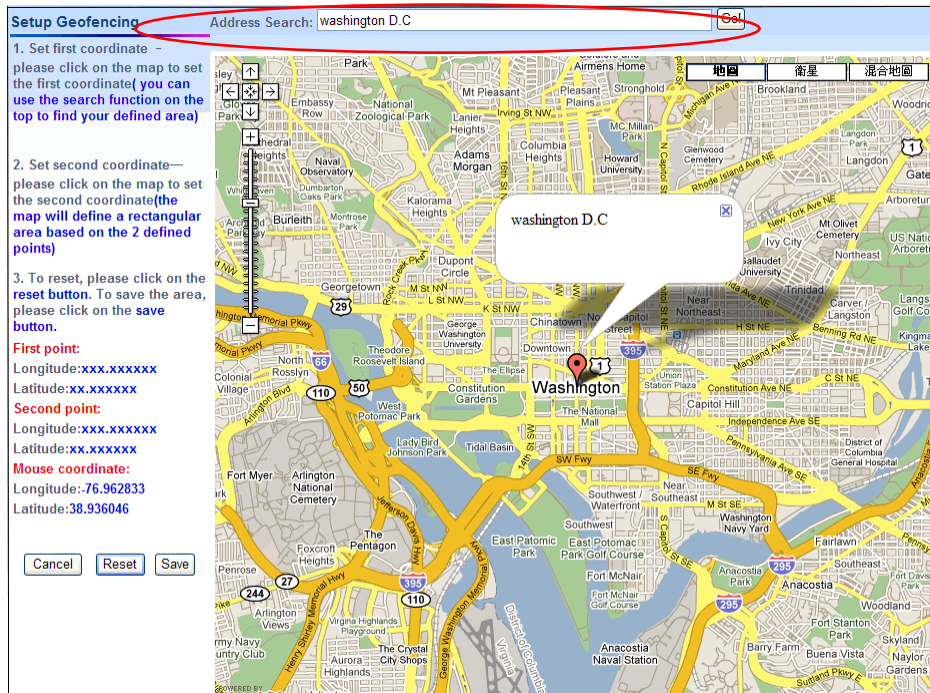
5. Please move the cursor and click on the two points of the map to form a geo-fence area like
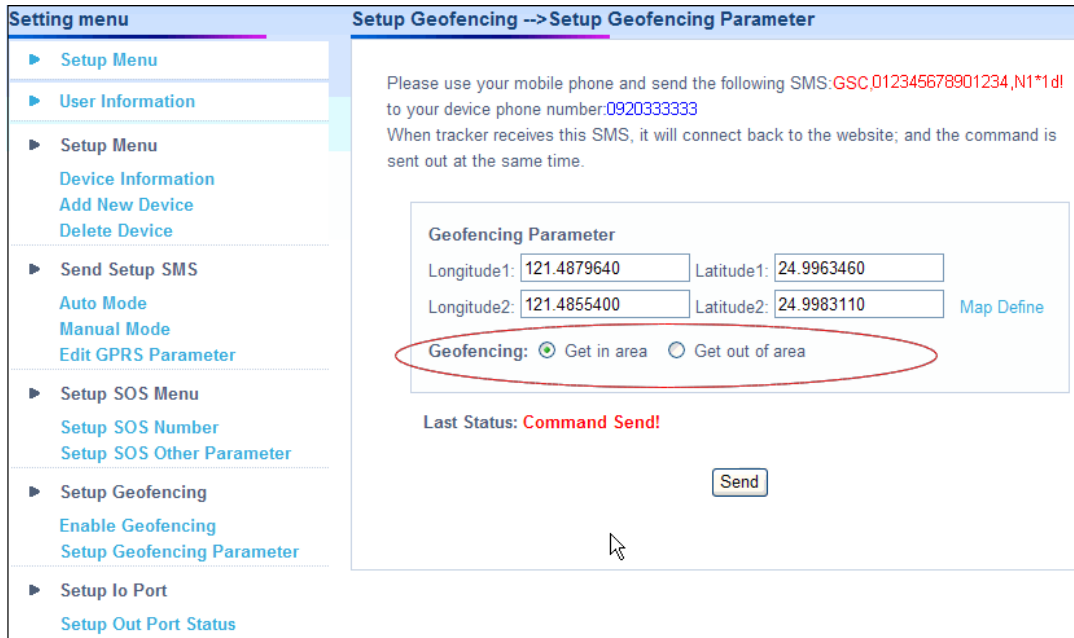   the screenshot below.
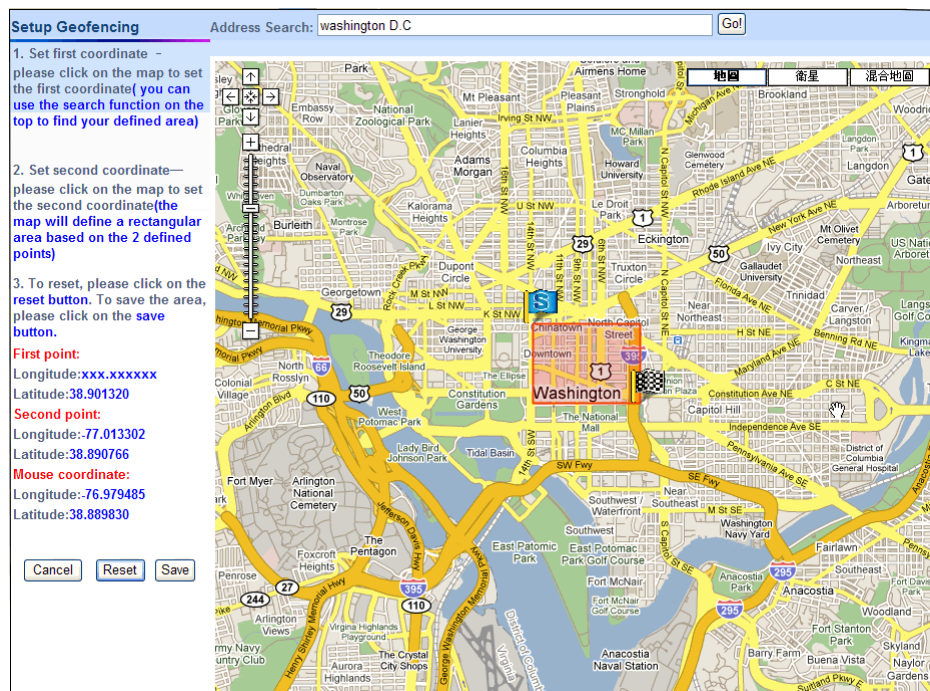
6. Please click **Save** button to save the area. If you want to reset the area, you could click on

Reset button to set the area again.

7. After clicking **Save** button, please select you want to receive the geo-fence alarm report when tracker gets in the geo-fence area or gets out of the geo-fence area.

8. And then click **Send** button to send out the setting.

9. Then please copy the SMS and send it to the phone number of TR-600 by your mobile phone. It will make TR-600 connect to the website for getting the setting.

The steps above are for setting geo-fence area. You have to enable the geo-fence function by the steps below.

Enable Geo-fence function

1. Select **Setup → Enable Geo-fencing**
2. Click **Enable**
3. Enter the mobile phone number for receiving the geo-fence alarm report in the field of **Geo-fencing Phone Number**.

4. And then click **Send** button to send out the setting.

5. Please copy the SMS and send it to the phone number of TR-600 by your mobile phone. It will make TR-600 connect to the website for getting the command of enable geo-fence.

Industry Canada statement:

This device complies with RSS-132 & RSS-133 of the Industry Canada Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

FCC NOTES

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

FCC RF Exposure requirements:

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE:

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.