

EasyTrack

ELCON BASIC SYSTEM FOR TRACKING DATA

Operating Manual



Order No.: 9537

CAUTION

Statement according to FCC part 15.19:

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.

Statement according to FCC part 15.21:

Modifications not expressly approved by this company could void the user's authority to operate the equipment.

Statement according to FCC part 15.105:

NOTE: 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 or more 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.

RF Exposure mobile:

The external antennas used for this mobile transmitter must provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Dear customer:

ELCON mobility would like to thank you for your confidence when purchasing the onboard unit **EasyTrack**. This User Manual is intended to help you to activate your **EasyTrack** and the **EasyTrack Manager** as quickly as possible. It provides you with a brief description of setup under Windows® operation systems.

Please make sure to read this user manual carefully, before you bring the unit into service!

Familiarize with the operation and functions of **EasyTrack**.

Keep the user manual and other descriptive documentation for your reference.

Should you still have questions as this manual might not cover all details, our service partner will be happy to help you.

This user manual is subject to change without notice.

Safety Notes

Before installing and starting the device, read the information given in the operating manual most carefully. In doing so, you will take advantage of the device's full scope of functions and avoid damages due to improper use.

- The device reflects the current state of the art and complies with the applicable safety standards.
- Operate the device only in proper condition and strictly according to the operating instructions.
- Works on the device, including its opening, must only be done by authorized service personnel.
- For the electrical connection of the device, ensure the correct line voltage (see chapter Technical Data)!
- Always disconnect the device from mains before you open it!
- In the event of failure, please contact the manufacturer or your agency in charge.
- Only end devices complying with the safety standard according to EN 60950 and bearing the CE-mark, are

permitted to be connected to the interfaces of the device.

- The end devices must have suitable plug connections, otherwise appropriate adapters are to be used.
- End devices must only be operated at the interfaces provided for.

Besides the safety notes mentioned above, you will find complementary installation instructions in the according chapters.

This operating manual is subject to change without notice.



For any further questions relating to the configuration and installation of your device, please refer to the manufacturer.

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1 Introduction

1.1 Practical application of EasyTrack

EasyTrack is a most efficient positioning system which is able to perform the parallel processing of up to 12 GPS satellite signals and to send data relating to the vehicle and its position to a central office/transport company via GSM radio network. The mobile device is part of a modern information and monitoring system consisting of both hard and software components serving for:

- innovative transport companies
- their partners
- and customers

The use of EasyTrack enables suppliers, transport companies and customers to get essential information about the vehicles in service as well as their cargo and position via on-line access.

1.2 Symbols used in this manual



Warning

contains **important** information on operation of your EasyTrack and EasyTrack Manager.



Caution

must be observed to avoid any problems on your PC or damage of your EasyTrack.

Notes

contain information on operation of your EasyTrack and EasyTrack Manager.

1.3 System requirements for installation

The on-board voltage is permitted for 9 ... 36V.

You can choose one of three different ways to connect the EasyTrack to your vehicles power cables:

- 1) If you connect the power pins and "Dig. Input 1" to constant power, the EasyTrack will send always SMS using the predefined interval setting.
- 2) If you connect the power pins and "Dig. Input1" to Ignition, the EasyTrack will send interval SMS only if Ignition is ON. With every power ON you will have no GPS data in the SMS until GPS position is fixed.
- 3) If you connect the power pins to constant power and "Dig. Input 1" to Ignition, the EasyTrack will send interval SMS only while Ignition is ON.

The GPS module is powered continuously, thus a GPS position can be sent with every SMS (depends on GPS availability) Note: The EasyTrack will always draw about 100mA from your vehicles battery!

The GPS antenna must be installed in such a way that its free line to the sky is ensured.

The GSM antenna must be installed in such a way that a free connection to the GSM net can be established and its shielding by metal parts is excluded.

2 Installation

Before you start the installation of the device make sure to follow the best sequence for you to work on.

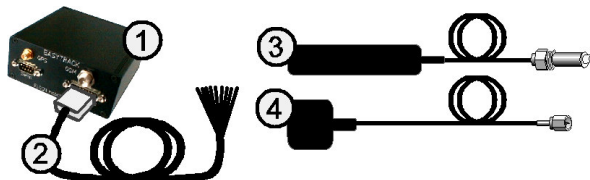
For a normal setup we recommend this sequence:

- 1) Operate the EasyTrack first close to your PC using the optional power supply for EasyTrack.
- 2) Configure the EasyTrack with your specific data (EasyTrack-ID, PIN, vehicle sensor information, interval time,...). See chapter 4.7.3
- 3) Install the EasyTrack inside the vehicle and test it. See chapter 2.5

If you own a laptop which is capable of running the EasyTrack-Manager, we recommend you to install the EasyTrack inside the vehicle and make the configuration and test on board.

2.1 Scope of supply

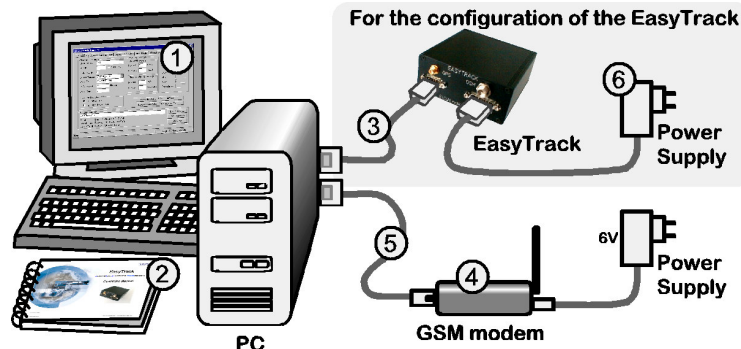
2.1.1 Vehicle equipment



1. EasyTrack device
Order no. **6618**
2. Cable loom power / input
Order no. **9409**
3. GSM antenna ¹⁾
Order no. **9411**
4. GPS antenna ¹⁾
Order no. **9410**

¹⁾ Instead of two separate antennas, a combined GSM/GPS antenna can be chosen.
Order number: **9507**
The illustrations on the following images may differ

2.1.2 Office equipment



1. PC software **EasyTrack Manager**
for Microsoft Windows® Order no. **9542**
2. EasyTrack Operating Manual
Order no. **9537**
3. Null modem cable 3m
Order no. **9541**
4. GSM/GPRS Office Modem (Triband)
Order no. **9372**
5. Connecting cable for office modem 1.8m
D-Sub connector, male/female, 9 pin.
Order no. **9512**
6. Power Supply for EasyTrack
Order no. **a0075**

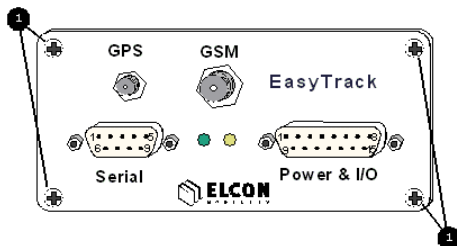
2.1.3 Optional Accessories

If your PC has no serial interface (RS232), but a USB interface, you may realize the connection to EasyTrack also via a USB converter.

- USB converter
including serial cable, adapter and driver CD
Order no. **9520**

2.2 Insertion of SIM card

Use a normal 3V or 5V SIM card for mobile phones. Before installing EasyTrack, the SIM card must be inserted into the device. For this purpose, open the 4 screws **1** at the front side of the device.



Pull the circuit board out of its enclosure. Afterwards insert the SIM card you received from the service supplier with its beveled edge at the correct position into the device (see fig. 1). If you have received a check card format SIM card, please remove the smaller section.

- ⚠ In order to avoid any destruction of EasyTrack, the device must be switched off!
- ⚠ To reduce the risk of damaged equipment. Before any part of the circuit board is touched be sure to discharge yourself by touching a grounded surface of the device!

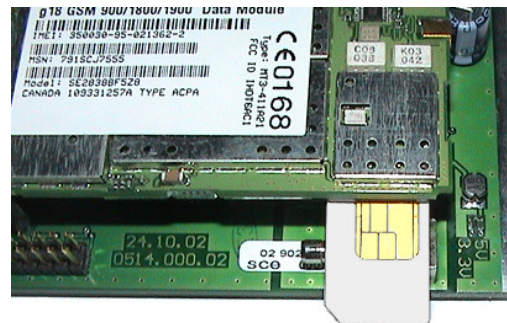


figure 1; insert SIM card

2.3 Installation position and fastening

The device is contained in a small box, which may be attached to a surface using 4 screws at the fastening points.

The device has neither a keyboard nor a display and can therefore be installed in a concealed position.

As to the installation of EasyTrack, any installation position is allowed, as long as you choose a dry place where no person can be injured.

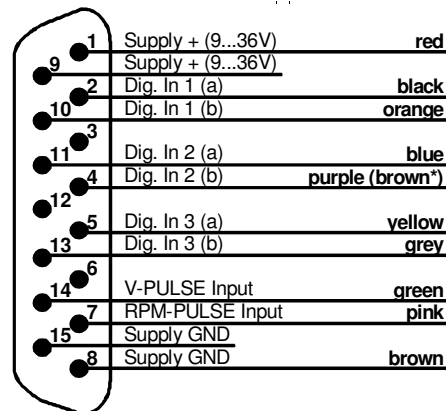
Be sure the cables are tied closely to the easy track to prevent excessive vibrating of the cables, and possible damage to the connectors.

Do not install the cables in such a way that they are tight or strained, allow some slack to avoid potential cable damage

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2.4 Connection options

POWER & I/O



view to the solder
side of the
cable connector

Digital Inputs (9...36V):

Connect the positive line to (a) and the ground to (b)

Signals with the same name are already connected inside the EasyTrack.

* on some (old) cables pin 4 was colored brown

2.5 Installation of the device

Safety notes:



Upon the installation of EasyTrack, the following safety notes must be observed!

- When disconnecting the negative pole of the battery, the safety instructions of the automobile manufacturer must be observed.
- When drilling holes for the fixing of EasyTrack, it must be paid attention to the fact that neither parts of the vehicle nor electric cables are damaged.
- The cross section of the positive and negative cable must be no less than 0.5 mm².
- In the event of faulty installation, operational malfunctions of the vehicle's electronic system or of the EasyTrack may occur.
- The manufacturer's supplied cables must be used when connecting EasyTrack to the connection points recommended by the vehicle manufacturer.
- For safety reasons we recommend that you install the GSM antenna at least one meter away from any persons in the driver's cabin

2.6 Installation instructions

See figure 2; wiring overview

- Select any installation position in the vehicle.
- Bore the fastening holes for the fastening angles.

⚠ Observe the above mentioned safety instructions!

- Fix the EasyTrack at the vehicle.
- Establish the cable connection between EasyTrack and vehicle.

⚠ To avoid short circuits, make sure that the cables neither jammed nor cut off by flexible vehicle parts!

- Selection of a suitable position of the GPS/GSM dual-function antenna.

⚠ Undisturbed satellite communication must be ensured!

- Bore the fastening holes and establish the cable grommet for the GPS/GSM dual function antenna.

⚠ Observe the above mentioned safety instructions!

- Establish the cable connection between the EasyTrack and the GPS/GSM dual-function antenna.

⚠ Bend radius must be minimum 1cm!

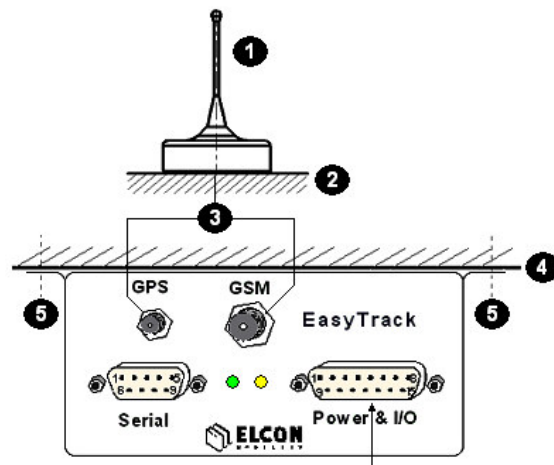


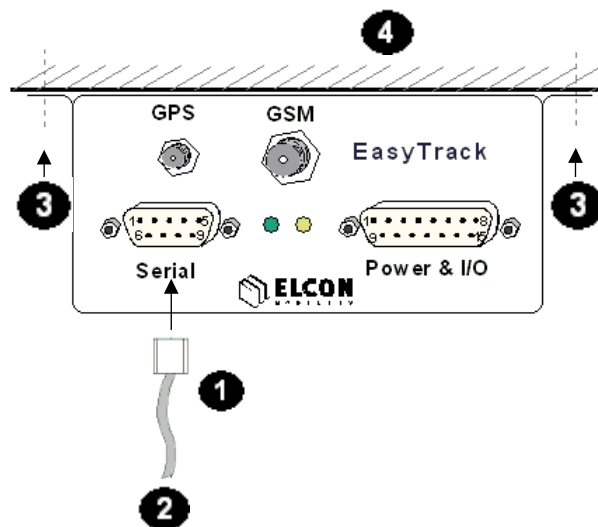
figure 2; wiring overview

- Power input of EasyTrack
- Input of v pulse and RPM pulse
- 3 digital input
- wiring cable ()

- ① GPS/GSM dual-function antenna
- ② Top of vehicle
- ③ GPS/GSM cable
- ④ Car body
- ⑤ Fastener for the fixing

2.7 Serial Interface (RS232)

- Via the serial interface RS232 it is possible to connect a PC or notebook to configure EasyTrack.
- The end devices must have compatible plug connectors. Their connection must be realized only by means of the transmission cable recommended by the manufacturer.
- It might be necessary to use suitable adapters.
- The end devices must only be connected to the interface provided for.



- ① Serial interface cable (null modem cable)
- ② Service/configuration
(possible connections: PC, Notebook)
- ③ Fastener for the fixing
- ④ Car body

3 Relevance of the LEDS

At the front side of the device, a green and a yellow LED indicate the operational status of EasyTrack.

Immediately after switching on the EasyTrack, its boot loader is started which allows the upload of new EasyTrack firmware. During this time (approx. 5 seconds) both LEDs flash rapidly. The yellow LED indicates that the hardware check is carried out. Following the hardware check, the yellow LED is turned off and the green LED flashes slowly. In this case the device is ready to operate - but it is still waiting for a valid GPS-position. The green LED will stay on permanently once the GPS position connection has been established.

The yellow LED indicates the state of Dig. Input 1. If you have connected the EasyTrack to permanent power and your vehicles ignition is connected to Dig. Input 1, the Yellow LED will be permanently on when activated by the ignition. (SMS transfer enabled) and turn off while ignition is off (SMS disabled).

Additionally there is an internal activity of the GSM-Modem displayed by flashing on the yellow LED.

The duration of the flashing helps you to determine the actual operation of the GSM-Modem:

short (approx. 0,5s):	EasyTrack checks incoming SMS.
medium (approx. 2..4s):	Sending SMS
long (> 6s) :	SMS cannot be sent

4 EasyTrack Manager

4.1 General Information

EasyTrack Manager is a software program, which works on a standard PC, equipped with Windows 9x / NT 4.0 / Windows 2000 or Windows XP. To run this program, no special hardware is required. The program name of the EasyTrack Manager is: *EasyTrackManager.EXE*. The program EasyTrack Manager consists of 2 files: the executable file *EasyTrackManager.EXE* and the initialisation file *EasyTrackManager.INI*.

4.2 Summary of functionalities

- Writing configuration data into the EasyTrack,
- Reading configuration data from the EasyTrack
- Receiving SMS data from EasyTrack via GSM office modem
- Sending SMS data via GSM office modem
- Logging data from EasyTrack within a tracking file for displaying the coordinates within a map
- Logging data from EasyTrack and other sources of informations within a LOG file

4.3 System Requirements

Hardware:

PC-compatible computer with:

- Intel® Pentium® Processor or compatible with 266 MHz or higher
- 32 MB RAM
- 5 MB of disk space
- 640 x 480 minimum screen resolution
- minimum one serial port

Software:

The EasyTrack Manager is a 32-bit application. It runs on Microsoft®

- Windows 95 / 98 / 98 SE
- Windows NT 4.0
- Windows 2000
- Windows XP

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4.4 First Steps

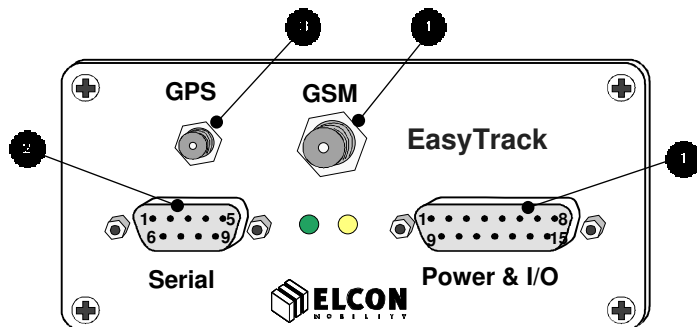


figure 3; front view

- Make sure that your PC and the EasyTrack are switched off.
- Connect your EasyTrack to the main power supply connector ❶ and have a look on the LEDs to check the proper operation of EasyTrack. Directly after power-up, both LEDs flash quickly for the period of 5 seconds. Afterwards, the green LED indicates the hardware status, while the yellow LED indicates the communication status with the GSM modem. The green LED flashes slowly (1 s on/1 s off) if everything is in order.
- Plug one end of the null modem cable supplied into the appropriate port ❷ of the EasyTrack and the other end into a free serial port (e.g. COM1 or COM2) on your PC.
- Plug the antenna connector for GPS into port ❸.
- Plug the antenna connector for GSM into port ❹.
- Switch the computer on and follow the instructions of the chapter: *Installation*

4.5 Installation / Deinstallation

To install EasyTrack Manager on your computer

- 1) Start Windows®
- 2) Insert the EasyTrack Manager CD into the CD-ROM drive, and then follow the directions on the screen. If the installation program does not start automatically, click on **Start** and then on **Run**. In the **Run** dialog box, enter **E:\SETUP.EXE** in the command line and click on the OK button. If your CD-ROM drive has a drive letter other than **E**, substitute the appropriate letter. The installation program starts. The subsequent procedure is menu-driven. The remainder of the installation is automatic, so that it is not required to enter any further information.



figure 4; Splash Screen

- 3) Select the preferred options and follow the on-screen instructions.
- 4) After the EasyTrack Manager software has been successfully installed, click on the button **Finish** to exit the installation program.

4.6 Uninstall EasyTrack Manager

To uninstall EasyTrack Manager on your computer, click on

Start ▶ Program Files ▶ ELCON mobility ▶ EasyTrack Manager ▶ Uninstall EasyTrack Manager

or start the SETUP.EXE of EasyTrack Manager from the CD-ROM and follow the on-screen instructions.

Note:

If the EasyTrack Manager does not start or run properly, try to repair your installation by calling the SETUP.EXE of EasyTrack Manager from the CD-ROM. Select the Repair button in the following dialog. This option fixes missing or corrupt files, shortcuts, and registry entries.

If you need to update or repair the EasyTrack Manager all CSV files (for Mappoint) and also the LOG file will remain on your computer. So no data will get lost.

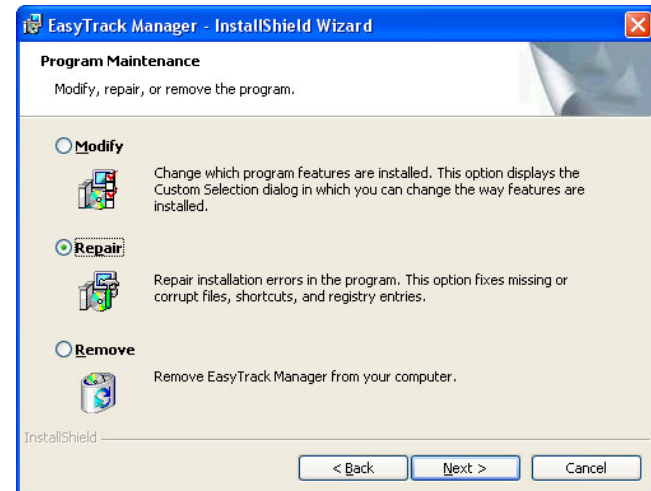


figure 5; repair installation

4.7 Working with EasyTrack Manager

4.7.1 Starting EasyTrack Manager

Click one after the other on the following buttons on your task bar:

Start ▶ Program Files ▶ ELCON mobility ▶ EasyTrack Manager ▶ EasyTrack Manager, to start the program, or do a double click on the EasyTrack Manager symbol in the new program group.

Click on **Start** and then in succession

Program Files ▶ ELCON mobility ▶ EasyTrack Manager ▶ EasyTrack Manager to start the program or do a double click onto the EasyTrack Manager symbol which is displayed on the desktop screen.

4.7.2 Presentation of EasyTrack Manager

The application has been developed for a monitor resolution of at least 640*480 pixels. After the program start, a start-up sequence is displayed for approx. 5 sec. After that, the main window is opened with a number of individual work packages implemented on register cards. For the EasyTrack configuration as well as for the configuration of the application, the following register cards are available:

- Configuration
- Actual Data

- SMS Data
- Office Modem (GSM)
- Settings
- Firmware Upload and
- Info.

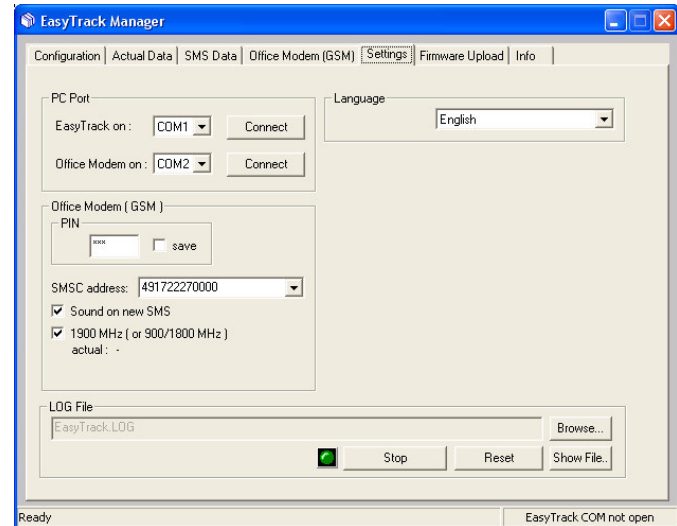


figure 6; main window

4.7.2.1 Start-Up Sequence

For the start-up sequence, the EasyTrack Manager shows the following message box for 5 seconds. The displaying of the start-up window can be terminated by pressing the left mouse key within the displaying window. As an alternative, the ESC key can be used. After the start-up sequence, the last used register card is shown.

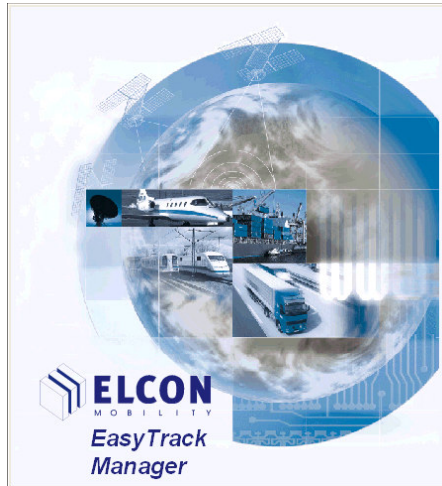


figure 7; start-up screen

4.7.2.2 Status Bar

The status bar is displayed in the lowest line of the application window. On the right side of the status bar you can see the status of the communication to an EasyTrack. The following states are considered:

- EasyTrack COM not open** The COM port indicated on the register card **Settings** is not open.
- EasyTrack not available** The interface indicated could be opened, however, it cannot communicate with an EasyTrack.
- EasyTrack available** Communication with an EasyTrack exists.

4.7.2.3 Use of the keyboard

Via the TAB key the name of a register card can be selected. If one card has shown the input focus as displayed in **figure 6**, another register tab can be selected via the right or left cursor keys. The controls on one register card can be chosen by the TAB key. If the input focus is on a combo box, the list box of this combo box is about to be made visible with the key F4.

4.7.3 Register Card “Settings”

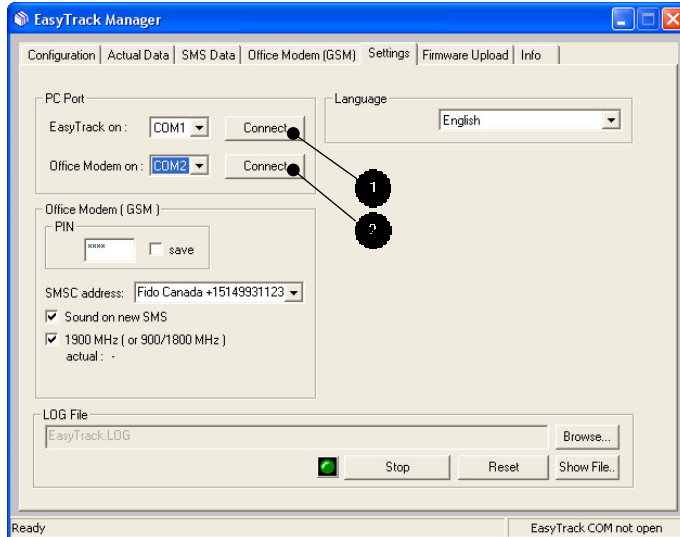


figure 8; Register Card **Settings**

- **PC Port**

After the first start of the EasyTrack Manager, the application is not connected automatically to a COM port. The user has to define, which COM port shall be used by the application. After the definition of the COM port, press the appropriate **Connect** button to connect the COM port to the EasyTrack (see ❶) or the GSM office modem (see ❷). If a connection has been established, the appropriate button text is switched to **Disconnect**. All COM ports are closed automatically if the application is closed.

- **Language**

In the field **Language** one of two national languages (English and German) can be chosen to be used by the application for the text display and file entries.

- **Office Modem (GSM)**

The GSM modem is a GSM900/1800/1900 Phase II+ device. 1900MHz band is used in North America; see checkbox **1900MHz**.

PIN

Depending on the type of your SIM card, it may be protected against misuse by a four- to eight-digit PIN.

⇒ If required, enter the according PIN, which is stored on the SIM card, into the input field. If no pin is required, select the checkbox **automatic**