



Quick Start
Users Guide

Shadow Tracker TM
i-Base



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www.AdvanTrack.com

Federal Communications Commission (FCC) Notification

This device contains Transmitter Module FCC ID: PHO-CDR915 and complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

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

FCC RF Exposure Statement

This device complies with FCC radiation exposure limits as set forth for an uncontrolled environment.

This device should be installed and operated with a minimum separation distance of 20 cm between the radiator and your body.

FCC Compliance Warning

Changes or modifications to the *i-Base* not expressly approved by Advanced Tracking Technologies, Inc. could void the user's authority to operate this product.

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 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.

Minimum System Requirements

Windows® 95, 98, NT (Service Pack 6 or higher), 2000 (Service Pack 3 or higher), ME

PentiumII® - 350 Mhz (or higher recommended)

32 MB min. (64 MB recommended)

850 MB of free Hard Drive space

CD-ROM

SVGA Monitor

Windows® compatible printer (color recommended)

Open 9 pin Com port

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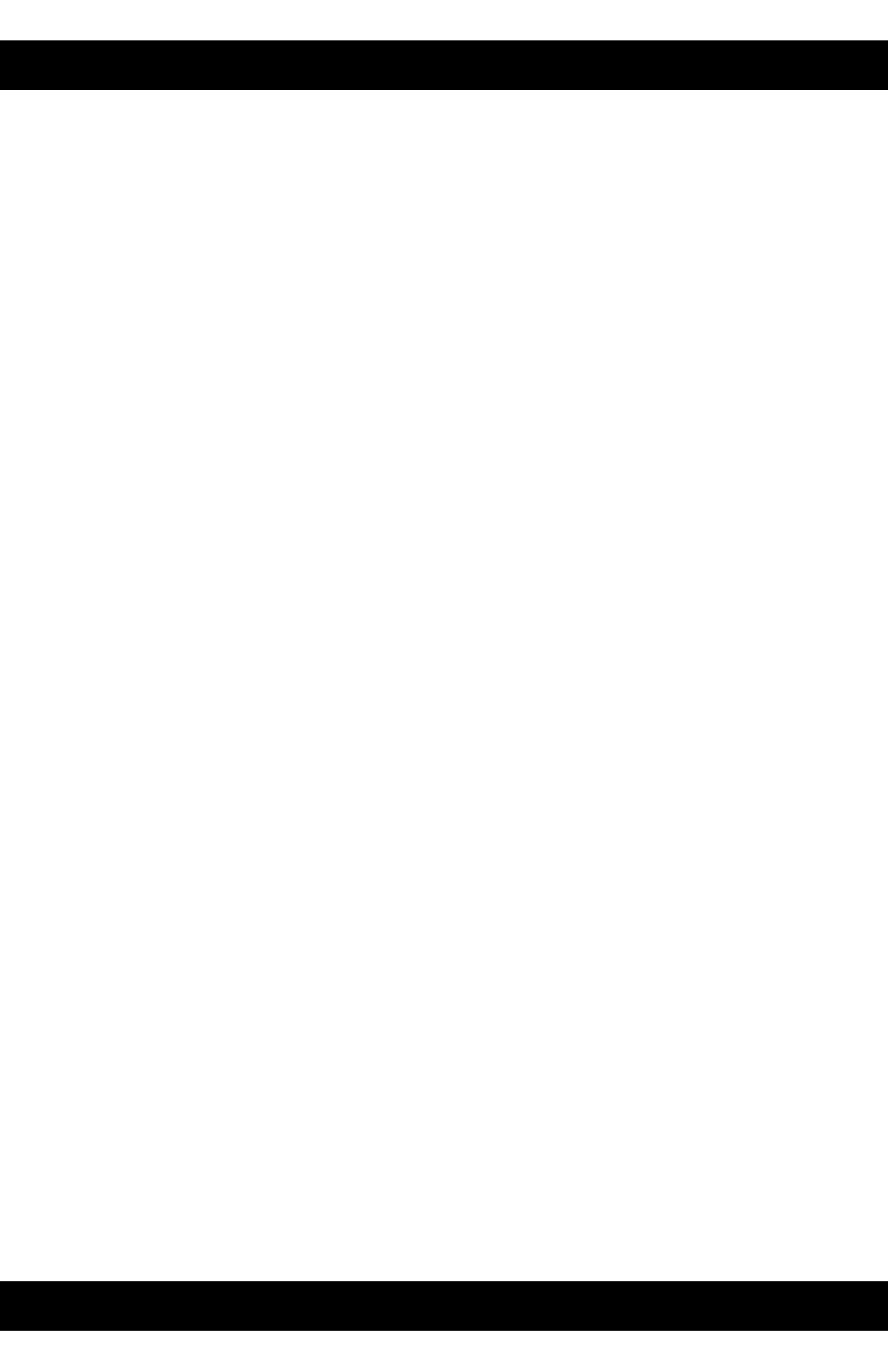
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Appendix 1



GETTING STARTED

This Users Guide has been designed to provide you with a brief, but comprehensive overview of the following:

1. How to install your **Shadow Tracker™ Professional** software program as either an **i-Base** Standalone or **i-Base** Client/Server install type.
2. How to add and validate the **Shadow Tracker™ 2000** unit(s) to the software.
3. How to setup and configure the **i-Base**.
4. How to add the necessary driver and vehicle information to the **Shadow Tracker™ Professional** software.

When these four steps are completed and the **Shadow Tracker™ 2000** unit(s) have been installed in the vehicles, you will be

INTRODUCTION

ready to begin collecting and processing the GPS data for your vehicles.

HARDWARE COMPONENTS

You should have the following items before you begin Setup.

i-Base

Base radio unit	PN# H-93115
6 ft. RS-232 cable	PN# G-40120
A/C power supply 12v	PN# A-40103
Dipole radio antenna *	PN# G-39270

Shadow Tracker™ 2000

Mobile tracking unit	PN# H-71556
Download/Validation cable	PN# D-38105
A/C power supply 12v	PN# A-40106

*Real Time capable ***i-Base*** comes with the following parts substituted for the G-39270 antenna:

50 ft. RG-8U coax cable	PN# G-40107
Pole mount base antenna	PN# G-39251

INTRODUCTION

Base radio unit
H-93115



6 ft. RS-232 cable
G-40120

A/C power supply 12v
A-40103



Dipole radio antenna
G-39270



Mobile tracking unit
H-71556



Download/Validation cable
D-38105

A/C power supply 12v
A-40106



SOFTWARE INSTALL TYPES

Mounting hardware PN# G-39260

SMA connector PN# G-40140

Shadow Tracker™ Professional software can be installed as either a non-networked Standalone or as a networked Client/Server installation. The software can be installed on any computer which meets the minimum system requirements.

STANDALONE

A Standalone install places all of the software on one computer.

If you intend to install **Shadow Tracker™ Professional** software as a StandAlone system and intend to download wireless and non-wireless tracking units, it is recommended that the computer you use have a least (2) open 9-pin Com ports. One used exclusively for the **i-Base** and the second used to handle the non-wireless downloads.

CLIENT/SERVER

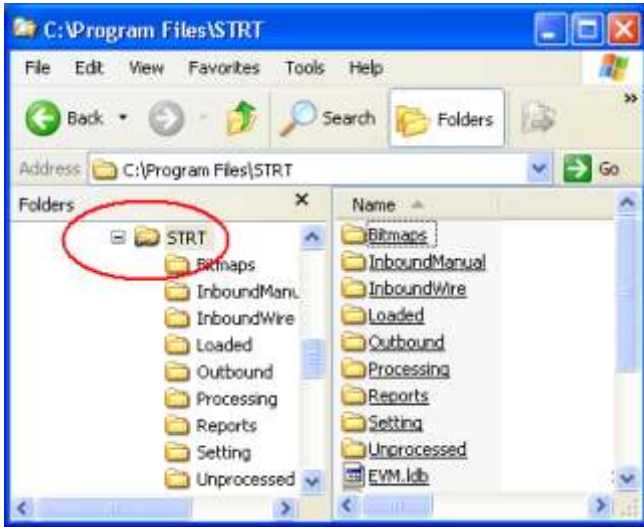
A Client/Server install places the Mapping and Reporting software on the Client Computer and the Administrative tools and Databases are installed onto the Server Computer.

If you intend to install the software as a Client/Server system, the computer on which you install the Server system will need at least (1) open 9-pin Com port for the **i-Base**. If you intend to download non-wireless tracking units as well, this will be performed using the Client system. The Client Computer will need (1) open 9-pin Com port.

STEPS TO INSTALL THE CLIENT/SERVER SYSTEM


If you are performing a Client/Server system install it **must** be performed in the following order:

1. Install the Server system on the Server Computer.
2. On the Server Computer, enable the **Shadow**



- Tracker™ Professional** program folder (**STRT**– default location: C:\Program Files\STRT) as a shared network resource. (top right)
3. Before installing the Client system, on the Client Computer, map a



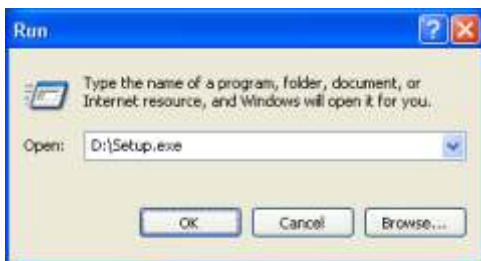
- drive letter to the shared **Shadow Tracker™ Professional** program folder on the Server Computer from step 2. (below)
4.  Install the Client system on the Client Computer.

Note: If you are not sure how to perform these steps, contact

SOFTWARE INSTALLATION


BEGIN INSTALLATION

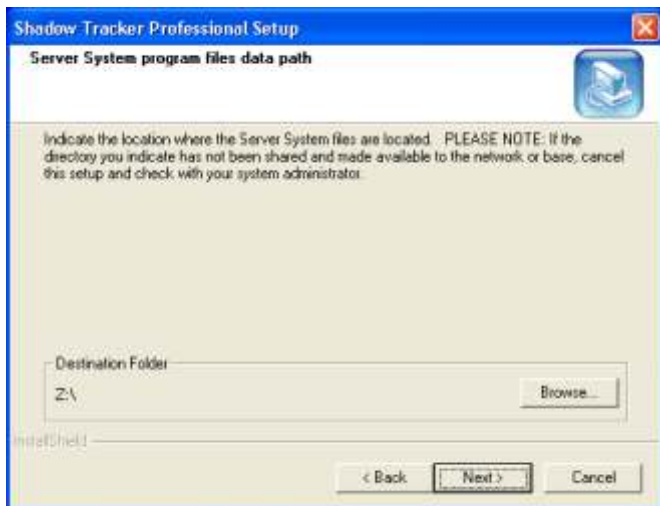
1. Insert the **Shadow Tracker™ Professional** software CD into the CD-ROM drive of your computer.
2. From the Windows Desktop click **Start**, then click **Run...**
3. In **Open:** type the drive letter of your CD-ROM drive and ":\Setup.exe"
(example – D:\Setup.exe.).



Or click **Browse** and navigate to the Setup.exe. (below)

4. Click **OK** to begin the installation and follow the instructions on your screen.
5. Click **Next** at the Welcome screen.
6. Click **Yes** to accept the License Agreement.
7. At the Registration screen enter your Name, Company and the Product CD-Key (located on the rear of the CD case) in the space provided. Click **Next**.
8. Select your Install type: Client System, Server System or Shadow Tracker™ StandAlone, click **Next**.

-  Click **Next** to accept the default location for the **Shadow Tracker™ Professional** program (recommended) or click **Browse** and select another folder. Setup will begin.
Note: If you are installing the Client system, you will be prompted



to set the “Server System program files data path”. Click **Browse** and navigate to the mapped network drive that points to the STRT folder you enabled as a shared network resource on the Server. (below). Click **Next**.

10. When prompted click **OK** to reboot your computer. On reboot the software installation will be complete.

DEFAULT LOGIN AND PASSWORD

To open a **Shadow Tracker™ Professional** program:

From the Windows Desktop click **Start**, point to **Programs**, point to **Shadow Tracker™ Professional** and click the program you wish to open.

To gain access to the Administrator or **Shadow Tracker™** programs you need a user name and password.


The default login is:

ADDING THE TRACKING UNITS

Each tracking unit must be validated to the **Shadow Tracker™ Professional** software before you can begin collecting and processing GPS and other data.

To add each unit:

1. Connect and power a **Shadow Tracker™ 2000** tracking unit to your computer. (see Appendix 1)
2. Open the Administrator program.

 **Note:** In a Client/Server system the Administrator program is located on the Server Computer.

From the Windows Desktop click **Start**, point to **Programs**, point to



Shadow Tracker™ Professional, click **Administrator**.

3. Log into the program using the default username and password.

Click **ATTI**.

(above)

4. Click **Shadow Tracker™** from the menu bar and then click **Set Communications Port**.

a) If you know the Com Port # the tracking unit is connected to:

- If the Com Port # displayed **is correct**, click **Close** to return to the previous menu.
- If the Com Port # displayed **is not correct**, click **Edit** and select the correct Com Port # from the drop-down menu. Click **Save** and then click **Close** to return to the previous menu.

b) If you **Do Not** know the Com Port #:



- Click **Detect**. Administrator will attempt to locate the correct port.

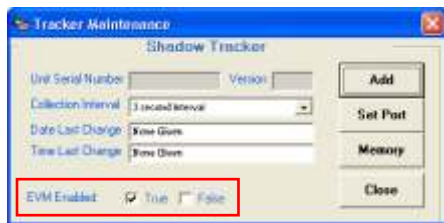
Note: Make sure there are no other devices connected to any other Com Ports when using the Detect feature. Do not attempt



to detect a port without a unit connected to it.

SOFTWARE SETTINGS

You will be given confirmation once the connection is made. (below)



Click **Close** to return to the previous menu.

Important: Make a note of the Com Port # you use for this step. This is the Com Port # that will be used to Set Base Configuration on page 12.

5. From the Administrator program click **Shadow Tracker™**, click **Maintenance** and then click **Add Shadow Tracker™**. (below left)



6. In the Tracker Maintenance window select "True" for EVM Enabled **if** you purchased the Equipment\Vehicle Monitoring software module. (above right)
7. Click **Add**. Administrator will attempt to communicate with your



unit and add it to the database for future reference. When successfully completed you will receive a confirmation message. (below)

Connect each tracking unit one at a time and repeat the above



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Service Experts of Texas
28 Units

i-Base Radio Address: 907-3841

CD Key: 6W93-543P78CD9-4979809936

Rev: JV41D022702

Unit S/N	Radio ID	Installed in Vehicle	Driver/Employee
P-100500	907-8891	<i>License # T5Y A46</i>	<i>D. Gilmour</i>
P-100431	907-8463	<i>License # JF5 L26</i>	<i>R. Waters</i>
P-100900	907-8211	<i>License # 85X K72</i>	<i>N. Mason</i>
P-102387	907-8796	<i>License # K78 356</i>	<i>R. Wright</i>
P-102428	907-8863		

process until all of your tracking units have been validated for use.

SOFTWARE SETTINGS

8. When all of the tracking units have been successfully validated they may be installed into their respective vehicles. Click **Close** to exit Tracker Maintenance.

Important: Use the **i-Base** System documentation you received (below) to document which vehicle each tracking unit will be installed into. It is also a good time to decide which Driver/Employee will be assigned to which Vehicle. This will be important in completing the remaining steps.

9. Disconnect the Download/Validation cable from the computer and note which Com Port connection was used.

SET BASE CONFIGURATION

 In a StandAlone system the **i-Base** will be connected to the StandAlone Computer. In a Client/Server system the **i-Base** will be connected to the Server Computer.

In order to establish communications with your **i-Base** the Administrator program will need to know which Com Port # will be used to connect to the **i-Base**.

To begin:



1. Connect and power the **i-Base** to your computer. (see Appendix 2)

Important: Be sure to connect the RS-232 Serial connection cable

The last step to complete your system is to setup your Employee/Driver information and Vehicle information into the **Shadow Tracker™ Professional** software. When the data from the tracking unit is extracted, the Driver/Vehicle relationships you define here are used to display the GPS tracking data on the map and in reports. For more detailed information regarding this section, please refer to the **Shadow Tracker™ Professional** software manual.



Note: In a Client/Server system, this portion of the setup can be accessed through the Client system only.

~~ADDING DRIVER/EMPLOYEE INFORMATION~~

1. From the Windows Desktop click **Start**, point to **Programs**, point to **Shadow Tracker™ Professional**, click **Shadow Tracker™**.
2. Log into the program using the default username and password.



Click **Start**.
(below)

3. From the program menu bar click **File**, point to **Open** and click **Employee Records**.

SOFTWARE SETTINGS

- Click **File** and then click **New Employee**.

Add A New Employee

ID Number: 1
Accounting System ID: 454-16-9875

Last Name: Gilmour First Name: D MI: Active? True False

Address Information
5984 Main Street
Apt 197
Spring TX 77373-

Home Phone: (281) 654-8942 Mobile Phone: (281) 659-4213
Work Phone: (713) 956-8478

Save Cancel

- Add the appropriate information for the Driver/Employee. (below)
Click **Save**.

Repeat this process for each Driver/Employee.

When you are finished click **File** and **Exit** to close Employee Records.

ADDING VEHICLE INFORMATION

Each vehicle must be assigned to a group. You can have multiple groups of vehicles or just one.

- From the program menu bar click **File**, point to **Open** and click **Vehicle Records**.
- To create a Group, click **File** and then click **New Group**. Indicate a

Add A Group

Group Name: Group ID:

Description of the Group:

Grid of 16 vehicle icons (various colors and types).

Save Close

Group Name, Description and select a color to display on the map for the group.

Click **Save**. (below)

3. Once you have all of the groups you need, you may begin adding

Port	Name	Date	State1	State2

the vehicles. Click **File** and then click **New Vehicle/Equipment** from the menu bar. In the New Vehicle window fill in the necessary information regarding each vehicle. Click **Save**. (below)

ASSIGNING THE TRACKER TO A VEHICLE

Once the Vehicle record has been saved it must be assigned to a **Shadow Tracker™ 2000** unit.

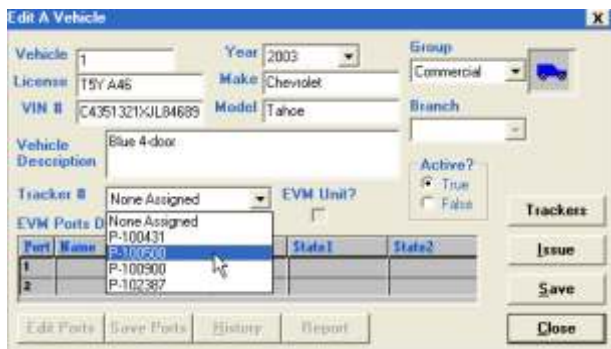
License	Group	Group Name	Active	Description
T5Y A46		Commercial	True	Blue 4-door

Groups:

- Commercial
- Residential

SOFTWARE SETTINGS

1. Open the vehicle record you just created by clicking the License number in the Vehicle Records window. (below)



The screenshot shows the 'Edit A Vehicle' window with the following fields and controls:

- Vehicle: 1
- Year: 2003
- Group: Commercial
- License #: T5Y A46
- Make: Chevrolet
- Branch: [Dropdown]
- VIN #: C4351321XJL84689
- Model: Tahoe
- Vehicle Description: Blue 4-door
- Tracker #: None Assigned
- EVM Unit?:
- Active?: True, False
- EVM Ports Table:

Port	Name	State1	State2
1	P-100900		
2	P-102387		

Buttons at the bottom: Edit Ports, Save Ports, History, Report, Trackers, Issue, Save, Close.

2. In the Edit A Vehicle window select the tracker serial number to be assigned to this vehicle. Click the down arrow beside the **Tracker #** text box and click the correct serial number. (below) Click **Save** and then click **Close**.

 Repeat this process until a Vehicle Record has been created for each vehicle and each Vehicle Record has been assigned to the appropriate **Shadow Tracker™ 2000**.

Note: When making these selections, refer to the *i-Base* System documentation you modified earlier to track which Vehicle each tracking unit would be installed into.

ASSIGNING THE DRIVER/EMPLOYEE TO A VEHICLE

In order to view historical tracks and create reports, it is necessary to create a record of which Driver/Employee will be assigned to which vehicle for a given time frame. This is called Vehicle Issue.

1. From the Vehicle Records window click **File** and then click **Vehicle Issue**

Note: When making these selections, refer to the *i-Base* System documentation you modified earlier to track which Driver/Employee would be assigned to which Vehicle.

2. In the Vehicle Issue window click **Add**. Fill in the information to associate an employee with each vehicle. Select a vehicle **License**

The screenshot shows the 'Vehicle Issue' window with the 'Issue by License' tab selected. It contains a table with the following data:

#	License	Driver	Date	Issued	Time	Issued
1	TSR A46	Gimour, D	01/01/2003	01/01/2010	00:00:00	23:59:00
2	JF5 L26	Waters, R	01/01/2003	01/01/2010	00:00:00	23:59:00
3	09K K72	Mason, N	01/01/2003	01/01/2010	00:00:00	23:59:00

Below the table is a form for adding a new record:

- License: K78 356
- Driver: Wright, R
- Date from: 01/01/2003 thru 01/01/2010
- Time from: 00:00 thru 23:59
- Buttons: Add, Edit, Save, Cancel, Close

and a **Driver** from the drop down menus. In **Date from:** the date entered should be at least one day prior to when you began collecting data with the tracking unit. Usually **Date thru:** is set for at least one year after **Date from:**. **Time from:** should be set to 00:00:00 and **Time thru** set to 23:59:00 to cover the entire day. (below) Click **Save**.

3. Repeat this process until all of the Driver/Employees have been assigned to the appropriate Vehicle. Click **Close** to exit the Vehicle Issue window.

SPECIFICATIONS AND FEATURES

i-Base SPECIFICATIONS

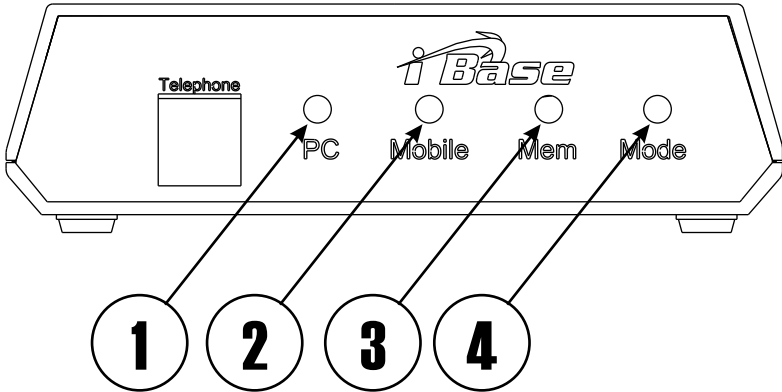
Length	7.3 inches
Width	5.0 inches
Height	1.6 inches
Weight	14 ounces
Transmission Rate	902-908 mHZ
Peak Current	700mA
Memory	8 MB/800 travel hours maximum
Wireless Data Download Rate	115200 baud
A/C Adapter	
Input	120V AC 60Hz 9W
Output	12V DC 500mA

Depending upon your specific needs, ATTI offers a variety of antenna packages and options that may increase or improve your coverage area. For more information contact ATTI Sales.

i-Base FEATURES

Automatic Historical Data Download
Supports up to 40 vehicles
Cost Effective
Shadow Tracker™ Professional Software supported

SPECIFICATIONS AND FEATURES



- 1. PC**
Red: The **i-Base** is receiving data without the aid of a computer.
Green: The **i-Base** is connected to a computer and is downloading its data into the software.
- 2. Mobile**
Off: Listening for mobile tracking units.
Blinking: Extracting data from mobile tracking unit(s).
- 3. Mem**
Red: When the **i-Base** memory is full, this light will be red.
Green: Normal operating color is green.
- 4. Mode**
Red: This denotes that the **i-Base** is in Update mode.

TECHNICAL SUPPORT

Technical Support is available Monday – Friday from 8AM – 5PM Central Time*.

Please contact us at:

Main: (713) 353-6065

Tech: (713) 353-6020

Sales: (800) 279-0035

Fax: (713) 353-6050

E-Mail: Tech@AdvanTrack.com

CONNECTING THE *Shadow Tracker™ 2000*

To connect the *Shadow Tracker™ 2000*:

1. Connect one end of the Download / Validation cable (PN# D-38105) to a Com Port on the computer.

Connect the other end to the connection marked “Terminal” on the back of the tracking unit. (below)

2. Plug the A/C power supply 12v (PN# A-40106) into a 120V wall socket.

Connect the other end to the connection marked “Power” on the



 back of the tracking unit. (below)

Note: There are two instances when the *Shadow Tracker™ 2000* needs to be temporarily connected to the computer.

- Validating the *Shadow Tracker™ 2000* to the *Shadow Tracker™ Professional* software.
- Utilizing the Com Port Detect feature in determining the Com

CONNECTING THE *i-Base*

To connect your *i-Base*:

1. Connect the Dipole radio antenna (PN# G-39270) into the back of the *i-Base* at the connection marked "Ant". (below) Tighten securely.
2. On the StandAlone or Server Computer, connect one end of the 6 ft. RS-232 Serial connection cable (PN# G-40120) to the same Com Port connection used to add the tracking units. (page 9)

Connect the other end to the connection marked "Com" on the back of the *i-Base*. Tighten securely.

3. Plug one end of the A/C power supply 12v (PN# A-40103) into a 120V wall socket.

Connect the other end to the connection marked "Power" on the back of the *i-Base*. You should see the LED indicators on the unit light up.



TROUBLESHOOTING CHECKLIST

Minimum requirements for GPS Data collection by a *Shadow Tracker™ 2000* mobile unit in the vehicle

1. Constant 12 volt DC power to the RED wire. This can be verified by looking at the LED lights on the front of the unit, are any LED's lit?
2. GPS satellite signal acquisition. This can be verified by looking at the GPS LED. The LED will be RED when the unit has NOT acquired a signal and it will be GREEN when the unit HAS acquired a signal. If the GPS LED is RED check the location of the GPS antenna on the vehicle, try moving to another location. Keep in mind that when first powered up the unit may take up to 15 minutes to acquire a GPS satellite signal
3. Switched ignition power to the blue reference wire. This can be verified by connecting the direct connect harness to the Harness Tester and verifying the RED LED is on when the vehicles ignition is on and the vehicle is running.



Note: Some vehicle circuits are on timers meaning they will supply power for a time then remove power. We recommend on problem vehicles to actually drive the vehicle for at least two minutes monitoring the LED lights on the Harness tester.

4. Vehicle speed must be above 11 miles per hour. This minimum speed is adjustable but this should only be a concern on vehicles such as street sweepers or other slow moving vehicles. Contact Tech Support for help if you must adjust this setting.

Minimum requirements for Data Transmission from the *Shadow Tracker™ 2000* mobile unit to the *i-Base*.

1. Mobile units must have minimum memory usage of 00.19% before they can transmit historical data to the *i-Base*. This is about 10

APPENDIX 3

minutes of actual driving. The mobile unit will transmit a real-time/status packet every minute even when empty.

2. Radio signal strength must meet the minimum threshold currently set in the

i-Base. To view the actual radio signal strength the **i-Base** must be put into monitor mode. This is done by running the IBase Activity Monitor program which can be found at "C:\Program Files\Strt\Inboundwire\IBaseMon.exe". While in monitor mode note the Radio ID and its current signal strength, if the current signal strength is below the configured minimum threshold only real-time data will be sent. Once the signal strength is above the configured minimum threshold then the mobile will begin to download historical data. The minimum threshold is set in the Administrator program. Click **Shadow Tracker**, click **Maintenance** and then click **Base Unit Configuration**, the current setting will be displayed there. (see page 12) If you change this setting it will only be updated in the **i-Base** after the next download is requested.

Data flow through the system.

The **i-Base** wirelessly downloads and stores the historical data from the **Shadow Tracker™ 2000** mobile units independently, without the



```
CA\ IBASE DATA EXTRACTOR
IBASE FIRMWARE VERSION 1.2:1-31-2002
CHECKING FOR REALTIME DATA IN IBASE
MAKING REALTIME FILE
0 REAL TIME FILES WRITTEN
GETTING FAT
BYTES IN IBASE FLASH: 26752
GOT THE FAT
DOWNLOADS IN IBASE= 1
SEG= 0
SEGMENT FETCH COMPLETE
STARTING GPS FILE WRITE
ADDING ENTRY TO SERDEF FILE
GPS FILE WRITE COMPLETE
DATA OPERATIONS COMPLETE
```

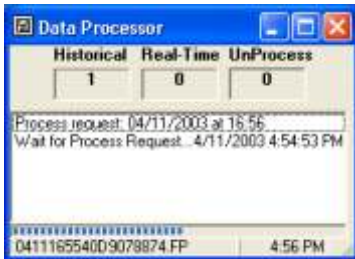
need for a computer. The historical data remains in non-volatile memory in the **i-Base** until a download is requested by the **Shadow Tracker™ Professional** software program.

When a download is either requested or scheduled from the **i-Base** the WirelessGrabber executes the IBase Data Extractor program, which handles the communications and data transfer between the



Computer and the **i-Base**. (below)

The IBase Data Extractor program downloads the data from the **i-Base** and writes a binary file, with a .BIN extension, into the **InboundWire** folder then the **i-Base** is erased. The binary file is then

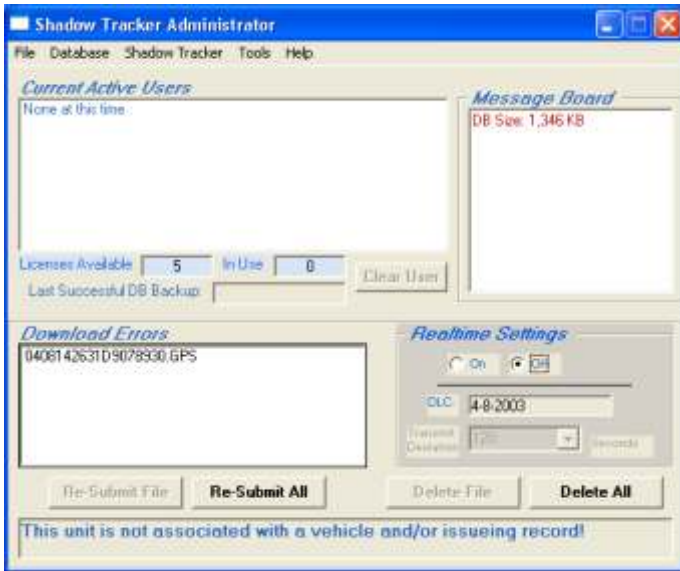


decompressed into a text file, with a .GPS extension, which is placed into the same **InboundWire** folder.

After this GPS file is written the IBase Data Extractor program will

APPENDIX 3

close and the Wireless Grabber program will pickup the file and run it against several validation checks for data integrity. (below)
If the GPS file passes the validation checks it is replicated and placed into the **Processing** folder with a .FP and .GPP extension. Once the files are placed into the **Processing** folder and the Data Processor program is requested to "Process Files" it picks up the file and



processes it line by line into the database. (below)
If either the Wireless Grabber or Data Processor programs encounter a problem with the file it will be moved to the **Unprocessed** folder and an error will be written into the database for this file.
If you are seeing downloads from certain units in the IBase Data Extractor program but are not able to view historical data for a particular vehicle then it may be that the files are in **Unprocessed**. Unprocessed files can be viewed in the Administrator program. By clicking on the file name in the Download Errors List you will see the reason why the file did not process, i.e. "Unit not Validated for use

i-Base
Quick Start User Guide
Manual Number: M-21810
Revision: 5/06/2003



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