

HT550 Javelin
HT500 RBS
(Radio Base Station)
User's Manual

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1.1 Overview

This manual covers the configuration and operation of the HT550 Javelin remote unit (**Figure 1.1.0**) and HT500 Radio Base Station (**Figure 1.1.1**). The HT550 Javelin is a covert GPS tracking device which communicates via a 2.4 Ghz Spread Spectrum link over short to medium ranges. Special attention has been paid to ensure that the HT550 Javelin is as small as possible, allowing body worn use. Real time tracking of multiple Javelin devices is possible, as well as other operational modes covered in this manual.



Figure 1.1.0



Figure 1.1.1

The HT500 Base Station works in conjunction with the HT550 Javelin remote unit to provide users with an extremely flexible tracking kit. The manner in which the 2 devices communicate is based on **Communication Groups** that are setup and managed in the **Configuration Database**. Proper set up and usage of these Communication Groups is what allows various Base Stations and remote units to communicate. Please see Chapter 6 for more detailed information on setting up the Configuration Database.

The HT550 Javelin remote unit has 3 modes of operation: **Low-Power Real Time**, **Real-Time** and **User Initiated**.

Low-Power Real-Time

If configured to operate in this mode, the radio transmitter is turned off between fixes to prolong battery life. In addition, the GPS receiver is turned off between fixes if an external GPS antenna is connected.

Real-Time

Orion has implemented an innovative real time methodology to ensure that the Javelin only sends pertinent information when operating in a Real Time Mode. GPS fixes are taken, stored and sent based on several user definable parameters. Default values for the following parameters are used if no specific values are programmed by the user.

GPS fixes are recorded whenever:

- a specified time out is reached
- a certain distance has been travelled
- the remote's bearing has changed by a certain angle

User-Initiated

The HT550 Javelin can be configured to record and transmit a GPS fix when a specific input switch is triggered.

1.2 System Requirements

The following are the computer system requirements for the Orion HT550 Javelin Control Program.

Computer Requirements

In order to use the GPS equipment, and, in particular, this software, a computer is a necessity. The computer is used to retrieve information from the hardware, program the hardware, and perform data analysis on the resulting data. Ensure that the computer on which software will be installed meets these **minimum system requirements**:

Processor:	Pentium 650Mhz or better. (Queries will run faster on better CPUs)
RAM:	256 MB (or more)
Hard Drive:	At least 40 MB free space (more required for saving maps to hard drive)
Disk Drive:	CD ROM drive
Operating System:	Windows 2000, Windows XP
Accessories:	Mouse, keyboard, monitor, USB Port

Recommended system requirements:

Processor:	Pentium 1Ghz or better. (Queries will run faster on better CPUs)
RAM:	512 MB (or more)
Hard Drive:	At least 100 MB+ free space (more required for saving maps to hard drive) OpenGL Graphics Card (for ArcGIS 3D Analyst)

Adding more RAM, a faster processor, and additional hard drive space will increase the speed of moving about on the maps as well as processing the data.

1.3 Orion Contact Information

Orion Electronics Limited has been designing and manufacturing innovative electronics products since 1975. An early beginning in products for pollution control in marine environments gradually led to an emphasis in law enforcement products. All current product lines have been designed specifically for covert law enforcement use and are sold to qualified law enforcement agencies only. Our extensive warranty program, loss insurance, and responsive technical support serve to insure any Orion purchase.

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1.4 Limit to Liability

To the maximum extent permitted by law, in no event shall Orion or any other party involved in the creation, production, delivery, or licensing of the Orion product be liable to the customer or any other third party for any incidental, indirect, special or consequential damages, or any other damages whatsoever arising from the use or inability to use this Orion product, whether or not the possibility or cause of such damages was known to Orion, in no event shall Orion's liability in connection with the Orion product exceed the license fee paid for the Orion product. This includes without limitation damages for loss of equipment or life, delays, loss of information, or other pecuniary loss.

Orion has made an effort to check the contents of this document, incorporating information available at the date of preparation; however, it assumes no responsibility for errors beyond its control, nor for contingent or subsequent damages. Similarly, Orion practices a policy of continual self-improvement; we always try to incorporate any significant changes into the documentation, but there may sometimes be a delay between product changes and documentation changes. If you have any concerns, please contact Orion or its agent.

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1.5 Regulatory Information

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.

Changes or modifications not expressly approved by the party responsible for compliance to FCC Rules could void the user's authority to operate the equipment.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication.

Contact Orion Electronics' Director of Research and Development for information on radiofrequency (RF) exposure and regulatory compliance.

Mailing Address: Director of R&D
 Orion Electronics Limited
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2.1 Instructions for Warranty Coverage

After confirming that all components were received, fill out the warranty card located in Appendix IX of this manual. Be sure to include any serial numbers. Then, fax it back to Orion at 1-902-798-8188.

The warranty goes into effect upon receipt of the completed Warranty Card. If the Warranty Card has not been received, the product is not under warranty.

2.2 Missing or Damaged Equipment

If there are missing or damaged components in either the software or hardware kits, please notify Orion immediately at 1800-665-4648. Ask for the Export Coordinator at ext 321. Be prepared to provide the coordinator with the following information:

- Your name, agency, address and phone number.
- The name of the carrier from which the equipment was received. Also, the name of the individual who signed for the equipment.
- Was the box damaged?
- A list of the missing or damaged equipment including a full description of any damage.

Chapter 3

Software Installation

3.1 Installation

Note: Please ensure SkyTrack NA / SkyTrack NA Pro has been installed on the computer before installing the Orion Tracking Controls (OTC) CD.

1. Insert the **Orion Tracking Controls (OTC)** CD into the CD-ROM drive.
2. The Installer automatically launches the InstallShield Wizard (**Figure 3.1.0**).

Users will be guided through the installation process in a detailed, step-by-step method.

During setup, a third-party installer will run which will copy drivers to the computer. These drivers will be detected and installed when connecting the HT550 to the computer for the first time, follow the on-screen instructions. When setup has been completed successfully, users may use their new Orion Controls under the chosen Orion-compatible mapping program.



Figure 3.1.0

A copy of the Orion Control Program will be saved under the existing default directory in the hard drive. Open the chosen mapping program to launch the Orion Control Program.

Refer to the appropriate software manual for more detailed installation instructions for the Orion-compatible mapping software.

Installing the HT550 Javelin Tracking Control will install third-party drivers which allow the computer to communicate with the HT550 Javelin using a USB cable. When installing the third-party driver on a machine running Windows XP windows may display a Windows Logo Testing dialog. (**Figure 3.1.1**)

Windows XP keeps a registry of all “Microsoft Certified” drivers, and provides a warning during any installation of an uncertified driver. This warning has nothing to do with the quality of the driver or its ability to function properly in your system. If any changes - even minor ones - are made to a Microsoft Certified driver, that driver must go through the Microsoft Certification process again, which can take some time. The warning screen appears when the driver update has not yet made its way through the entire Certification process.



Figure 3.1.1

However, just because a driver is unsigned does not mean that it will not function properly in your system. Unlike previous versions of Windows, Windows XP warns users every time they try to install a driver that Microsoft has not certified.

If you see this warning during the installation, simply tell Windows that you want to Continue Anyway and install the driver through the standard installation process.

4.1 Kit Contents

The HT550 Javelin Tracking Kit contains the HT550 Javelin unit and accessories to aid installation. The Tracking Kit should contain the following:

HT550 Javelin Tracking Kit: HT550TDK

- One (1) HT550 Javelin RF Remote Unit
- One (1) HT500 RBS RF Tracker Base Station
- One (1) HT500 RBS Remote Battery Charger Assembly
- One (1) HT550 Base Station Cigarette Adapter
- One (1) ANT-STRIP 2.4GHz Antenna
- One (1) ANT-TRM2-10 ft. GPS Antenna
- One (1) ANT-TRM5 GPS Antenna
- One (1) 90° Adjustable Knuckle Antenna
- One (1) HT550-CIU Computer Interface Cable
- One (1) HT550-RS Remote Switch
- One (1) HT550BP Battery Pack
- One (1) 6' Black USB Cable
- One (1) 12v AC Wall Adapter
- One (1) Orion Tracking Controls Software CD
- One (1) HT550 Hardware and HASP Manual
- One (1) Pelican Case

4.2 Hardware

The following section identifies and describes the various pieces of equipment that accompany the HT550 Javelin Tracking Kit.

HT550 Javelin Unit

The **HT550 Javelin** unit is shown in **Figure 4.2.0**. The unit measures approximately 1.56" x 1.1" x 0.41" without connectors or tabs and the GPS Antenna utilizes an outside 'snap-on' style (MMCX) connector. The four (4) pin contains the input switch connector and the five (5) pin contains the connection for the computer interface cable and the battery pack.



Figure 4.2.0

HT500 RBS RF Tracker Base Station

Figure 4.2.1 shows the **RF Tracker Base Station** that works in conjunction with the HT550 Javelin unit. Please refer to Chapter 6 of this manual for detailed information on using the RF Tracker Base Station.

(NOTE: The GPS Antenna Connection is currently not functional and is intended to provide added functionality in later product releases.)

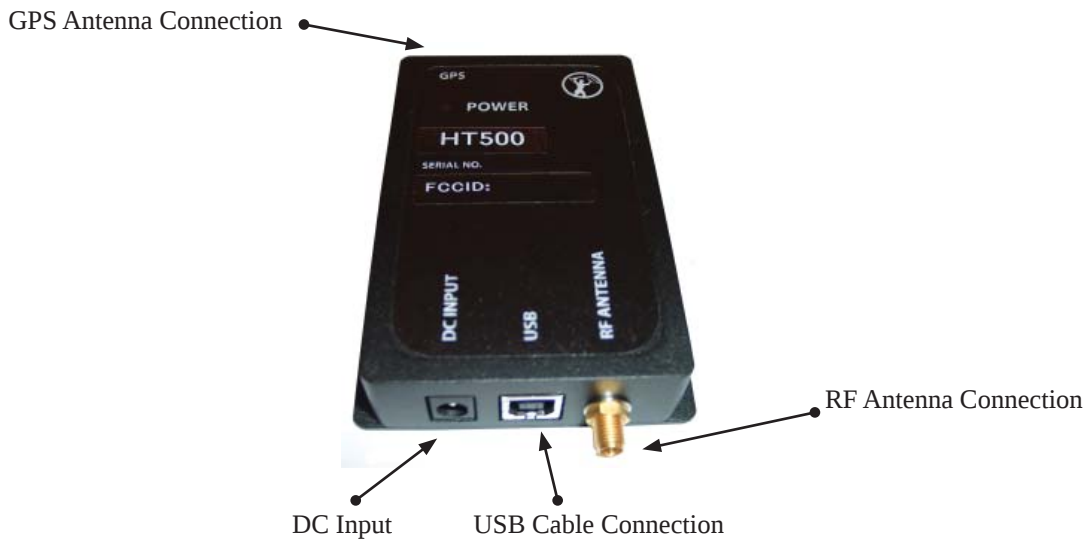


Figure 4.2.1

HT550 Battery Pack

The **HT550 Battery Pack** (**Figure 4.2.2**) is a 3.7 volt Rechargeable Lithium Battery pack for use with the HT550 Javelin device. Battery capacity is 1.8 Ah at 3.7 volts.



Figure 4.2.2

HT550 Battery Pack Charger

The **HT550 Battery Pack Charger** (**Figure 4.2.3**) is used to recharge the HT550BP. Power to the charger is supplied via the supplied wall adapter.



Figure 4.2.3

Antennas

Four antennas are shipped with the HT550 Javelin Deluxe Tracking Kit.

Figure 4.2.4 shows the **ANT-STRIP 2.4GHz antenna** for use with the HT550 Javelin Remote unit. The antenna is omni-directional, but should be located as high as possible to ensure maximum range.



Figure 4.2.4

Figure 4.2.4 shows the **ANT-TRM2-10 ft. GPS antenna**. The ANT-TRM2-10 is for use with the HT500 RBS. (GPS functionality in the HT500 RBS is not currently enabled, but will be added in future firmware releases of the Javelin system.



Figure 4.2.5

Figure 4.2.5 shows the **ANT-TRM5 GPS antenna** designed for use with the HT550 Javelin remote unit. Antenna should be located as high as possible, with the best possible “view” of the sky for optimum results.



Figure 4.2.6

Figure 4.2.6 shows the **90° adjustable knuckle antenna** designed for use with the HT500RBS.

Important: The HT500 RBS must be mounted in such a way that a separation distance of 20 cm (8”) is maintained between the antenna and the bodies of nearby persons.



Figure 4.2.7

Computer Interface Cable

Programming of the HT550 requires a **Computer Interface Unit (Figure 4.2.7)** which is used to connect the HT550 unit to a computer. Connection details can be found in Chapter 5 “Computer Connection”.



Figure 4.2.7

Remote Input Switch

The **Remote Input Switch (Figure 4.2.8)** can be used to acquire a GPS fix, or to power up or down the GPS receiver and/or RF transceiver. The remote input switch connects to the HT550 Javelin via a 4 pin Omnetics connector.



Figure 4.2.8

12 Volt Cigarette Adapter

The **12 volt Cigarette Adapter (Figure 4.2.9)** can be used to power the HT500 RBS from a 12 volt automotive source or power supply.



Figure 4.2.9

Note: The purpose and configuration of individual HT550 Javelin and HT500 Radio Base Station (RBS) settings is described later in this manual. Only the unit ID (found on the enclosure) is required for the Configuration Database.

5.1 Communication Group Introduction

HT550 Javelins and HT500 Radio Base Stations (RBS) are organized in Communication Groups. Both units **MUST** be in the same group to communicate with one another.

A group allows a set of HT550 Javelins to communicate with a set of HT500 RBSs but:

- An HT550 Javelin can communicate with only one HT500 RBS at a time.
- An HT500 RBS can communicate with up to five HT550 Javelins at a time.

Why would I want to configure multiple HT550 Javelins to work with a single HT500 RBS?

The multiple access scheme in the HT550 Javelin allows up to 5 HT550s to work with a single HT500 RBS. This reduces the number of HT500 RBSs that need to be plugged into your computer for multi tracking purposes.

Why would I want to configure multiple HT500 RBS Radio Base Stations to work with a single HT550 Javelin?

If an HT550 Javelin goes out of range of one of the HT500 RBSs in the group, it may be picked up by one of the other HT500 RBSs to allow tracking to continue in another location. This presents interesting possibilities for placing HT500 RBS operators at different locations as part of an advanced tracking operation. The group database may be configured once with all of the HT550s and HT500 RBSs in a tracking operation, and then the database file can be shared among the HT500 RBS operators who will take part in the operation. This reduces manual data entry and eliminates potentially costly mistakes.

The **Configuration Database** is the tool that allows users to combine the HT550 Javelin devices with HT500 RBS Base Stations in **Groups**.

Note: The HT500 Base Station and the HT550 Javelin share the same Configuration Database.

5.2 Communication Groups Tab

After the HT550 Javelin and HT500 RBS software have been installed as described in Chapter 3, the Configuration Database can be opened by selecting the “**Configuration**” button (Figure 5.2.0) on the HT550 Javelin and HT500 RBS HASP (control program).



Figure 5.2.0

Note: The procedure for opening a HASP varies depending on the mapping application being used. If required, refer to your DAS manual or DAS help file for instructions.

To create a new group select the <new> entry in the Groups dialog box (Figure 5.2.1).

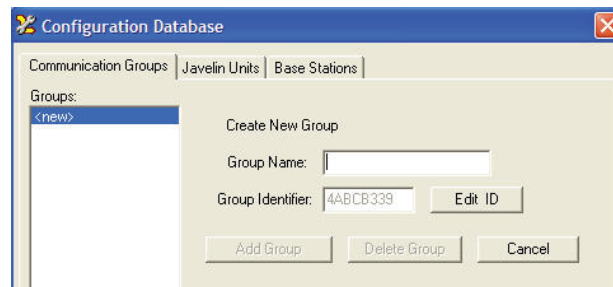


Figure 5.2.1

Enter a suitable Group name in the **Group Name** field. The **Group Identifier** is an 8 digit hexadecimal (base 16) number. Each digit in a hexadecimal number is one of the numerals 0-9 or letters A-F. Codes can be edited to having HT550 Javelins or HT500 RBS devices assigned to the group by selecting the **Edit ID** button.

Note: Editing these codes is not recommended unless necessary.

Once the Group Name and Group Identifier have been determined select the **Add Group** button to create the new Group.

5.3 Javelin Units Tab

The **Javelin Units** Tab (**Figure 5.3.0**) is used to add HT550 Javelins to the Configuration Database so they can be added to Communication Groups.

Javelin Units

Figure 5.3.0

Figure 5.3.1 displays the **Javelin Units** portion of the **Configuration Database**. Use this window to add Javelin units to the database so that they may be configured to communicate with certain Base Stations.

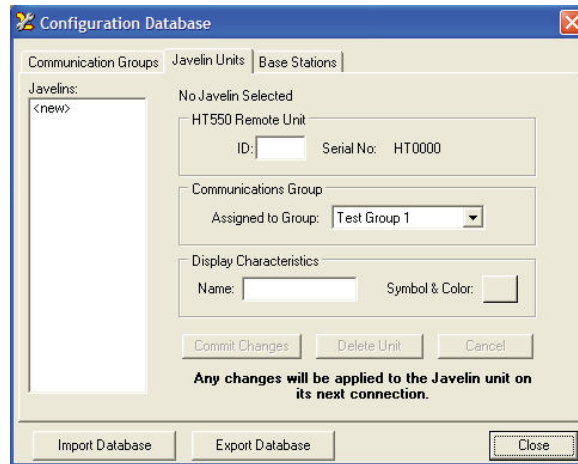


Figure 5.3.1

Javelin units are added to the database the same way Communication Groups are added; by simply selecting <new> in the **Javelins** column to the left, and then typing an ID in the **HT550 Remote Unit ID** field. (**The Javelin ID is always the Serial Number of the device.**)

Assigned to Group

After the new Javelin unit has been added, users will need to assign the unit to a group. In the **Communications Group** section, select the down arrow next to **Assigned to Group**. All the groups that were set up in the Communication Groups dialog will appear in this drop down list. Select the group that the Javelin is to belong to.

Display Characteristics

The **Display Characteristics** section of the Javelin units dialog allows users to name the Javelin device and select an icon for use during real time tracking. Names must be no longer than 12 alpha numeric characters.

The **Symbol and Color** dialog allows users to choose exactly how the target will appear in the mapping software. Scroll down either list to make the desired selections, and select OK when complete. A sample of the target chosen will show to the right of the dialog (**Figure 5.3.2**).



Figure 5.3.2

Once the unit details have been entered, select the **Commit Changes** button to apply the settings. If the device in question is not currently connected to the computer, the changes will be applied the next time the Javelin unit is connected.

5.4 Base Stations Tab

The **Base Stations Tab** (Figure 5.4.0) is used to add HT500 Base Stations to the Configuration Database so they can be added to Communication Groups.

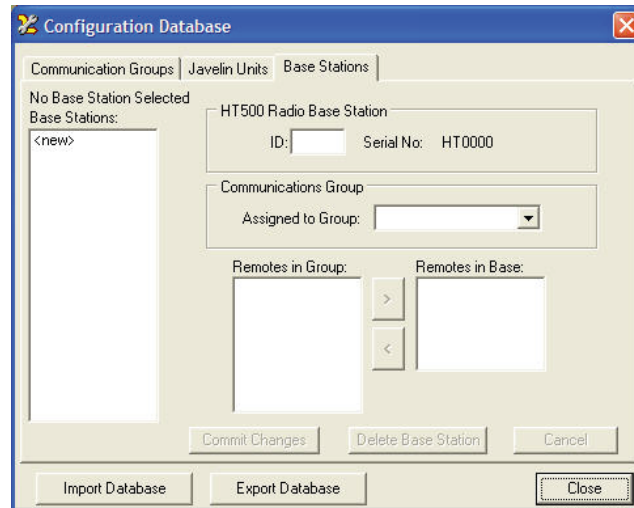


Figure 5.4.0

Base Stations are added to the database the same way Communication Groups and Javelin units are added; by simply selecting **<new>** in the **Base Stations** column to the left, and then typing an ID in the **HT500 Radio Base Station** field.

Note: Base Stations will only communicate with Javelin units that are assigned to the same group and loaded in the Base Station Use the **Remotes in Group** and **Remotes in Base** area to view the Javelin units assigned to the same group and load them into the Base Station. Please see Section 6.3 for more detailed information on the Configuration Database.

Users must select **Commit Changes** for the changes to be applied to the Base Station.

Import Database: It is possible to import other databases that include various Javelin devices, HT500 RBS devices and pre configured groups. This is especially useful when transferring Group information to other operators of HT500 RBS devices.

Note: After selecting the file to import, a warning dialog will display: “The Database import will add new information to the database but will not overwrite any existing settings.” The import function appends the information that is different, but doesn’t change anything already in the settings.

Export Database: It is possible to export the database that includes various Javelin devices, HT500 RBS devices and pre configured Groups. This is especially useful when transferring Group information to other operators of HT500 RBS devices.

Close: The **Close** button will close the Configuration Database window and the HASP from which it was opened will be displayed.

Note: The first time an HT550 Javelin or HT500 Base Station is connected to a particular computer the Found New Hardware Wizard will run. For the option “Connect to Windows Update?”, select “No, not this time”.

6.1 HT550 Javelin Direct Connection

The HT550 Javelin is configured and records can be downloaded through direct connection to a computer with the software installed (see Chapter 3 for software installation instructions). The unit can be connected directly with the Computer Interface Cable via an available USB port.

Complete the following steps to connect the HT550 Javelin directly to a computer:

1. Plug the 5-pin Omnetics connector of the Computer Interface cable into the HT550 Javelin.
2. Plug the USB into an available USB port on the computer.
3. When an HT550 HASP is loaded the software will automatically recognize any connected HT550's. Multiple HT550 Javelin devices can be connected concurrently.

6.2 HT550 Javelin HASP

Once the HT550 HASP has been loaded the HT550 HASP dialog (**Figure 6.2.0**) will be displayed. The HT550 HASP dialog displays all available information on any connected HT550 Javelin devices.



Figure 6.2.0

Select Remote Unit: Use the drop down menu to change the currently viewed device to another. Javelin device names are the serial number of the connected device. (Because the HT550 connects via USB it is possible to have multiple HT550 devices connected concurrently.)

Member of Group: Displays the group that the HT550 is currently assigned to. For more information on Groups please refer to section 6.3.

Last Record Downloaded: Indicates the last record number downloaded.

Total Records: Indicates the number of records currently stored in memory.

Firmware Revision: Indicates the Firmware Revision number of the HT550 device. (Important information for technical support.)

Download Records: Use the Download Records button to download stored records from the connected Javelin device.

The Download Records dialog (**Figure 6.2.1**) shows the last record downloaded and the total number of records currently stored in memory. The dialog will automatically start at the last record downloaded, though users may select the range of records to be downloaded. Range must correspond to the number of records in memory.



Figure 6.2.1

Clear Memory: Use the Clear memory button to clear all records from the Javelin's memory. A warning dialog (**Figure 6.2.2**) is displayed to prevent accidental clearing of memory. **Records can not be retrieved once they are cleared.**



Figure 6.2.2

6.3 Unit Settings

Use the **Unit Settings** button to bring up the Settings dialog (**Figure 6.3.0**) for the current Javelin device.

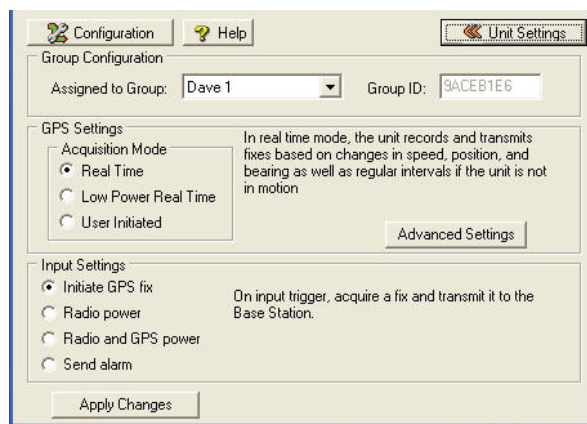


Figure 6.3.0

6.3.1 Group Configuration

Assigned to Group: This dialog displays the current group assignment for the Javelin device. Group Assignment can be changed using the drop down menu. For more information on Group Assignment please refer to section 6.3.

Group ID: Displays the Group Identification code for the selected group. This field cannot be changed within the Javelin Unit Settings dialog.

6.3.2 GPS Settings

The HT550 Javelin has 3 different modes of operation: **Real Time**, **Low Power Real Time**, and **User Initiated**.

1. Real Time

The Javelin records and transmits fixes based on changes in speed, position and bearing as well as regular intervals if the unit is not in motion. To configure the parameters for **Real Time Mode** select the **Advanced Settings** button within the GPS Settings dialog.

Advanced Settings (Figure 6.3.1)

Default Real Time Fix Interval: This number defines how often the Javelin will record and transmit a GPS fix when neither the Maximum Distance or Maximum Bearing are exceeded. Minimum value is 1 second and maximum value is 120 seconds. (Default setting is 30 seconds)

Figure 6.3.1

Maximum Distance Between Fixes: Select the maximum distance the device can travel before it records and transmits a GPS fix. Minimum value is 1 meter, maximum value is 1 kilometer. (Default setting is 15 meters)

Maximum Bearing Change: Select the number of degrees in bearing change by the device to have the Javelin record and transmit a GPS fix. Minimum value is 2 degrees and the maximum value is 180 degrees. (Default setting is 7 degrees)

2. Low Power Real Time

The unit records and transmits fixes at the specified time interval. If an external GPS antenna is connected the GPS receiver will power down between fixes. The maximum time interval is 24 hours and the minimum is 2 minutes. Enter the desired time interval in the **Interval** dialog boxes (Figure 6.3.2).

Figure 6.3.2

3. User Initiated

In user initiated mode (Figure 6.3.3) the unit records and transmits fixes when the user triggers the input switch. If an external GPS antenna is connected the GPS receiver will power down between fixes.

Figure 6.3.3

6.3.3 Input Settings

The HT550 Javelin is able to perform various actions based upon input triggers. Users are able to trigger the input of the Javelin using the supplied input switch.

NOTE: Input settings are disabled when the Javelin is configured to operate in User Initiated Mode.

Initiate GPS Fix: Upon sensing the input trigger the Javelin will acquire a GPS fix and transmit it to the Base Station.

Radio Power: Upon sensing the input trigger the Javelin will power down (or up) the remote's communication transceiver, making remote detection difficult.

Radio and GPS power: Upon sensing the input trigger, the Javelin will power down (or up) the remote's communication transceiver and GPS receiver making remote detection very difficult.

Send Alarm: Upon sensing the input trigger the Javelin will set (or un-set) the alarm mode on the remote. When in alarm mode the Javelin records and transmits GPS fixes at 1 second intervals.

6.3.4 Apply Changes

Once all parameters have been programmed in the **Unit Settings** dialog, select **Apply Changes** to have the settings applied to the current Javelin device. If settings have been changed but not applied, a red label will appear between the Help button and the Unit Settings button stating "SETTINGS CHANGED".

6.4 Help

Users can select the **Help** button to access the online help file.

Note: The first time an HT550 Javelin or HT500 Base Station is connected to a particular computer the Found New Hardware Wizard will run. For the option “Connect to Windows Update?”, select “No, not this time”.

7.1 HT500 Base Station Direct Connection

The HT500 RBS connects to the computer using the supplied USB cable to any available USB port. Multiple HT500 RBS's can be connect concurrently.

Complete the following steps to connect the HT500 Base Station directly to a computer:

1. Plug the USB connector into the HT500 RBS. The supplied USB cable has 2 USB connectors on it. The rectangular connector end is used for the Base Station.
2. Plug the standard USB connector into an available USB port on the computer.
3. When an HT500 RBS HASP is loaded the software will automatically recognize any connected HT500's. Multiple HT500 RBS devices can be connected concurrently.

When the HT500 RBS HASP is first opened (**Figure 7.1.0**) it will automatically populate with the information from any HT500 RBS devices currently connected to the computer. Each connected base station will have its own tab, with the serial number displayed.

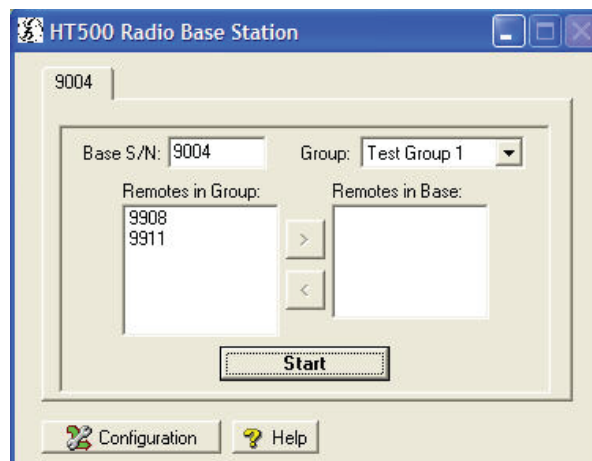


Figure 7.1.0

Select a group from the **Group** drop down menu to access all associated Javelin devices. To add additional HT550 Javelin devices to the group use the **Configuration** button as described in section 6.3.

Tracking

To begin real time tracking of the Javelin remote units, select the devices from the **Remotes in Group** dialog and use the arrow keys to move them into the **Remotes in Base**. Once all the desired remotes are added to the Remotes in base dialog, select the **Start** button to begin tracking.

7.2 Real Time Tracking

The Real Time tracking dialog (**Figure 7.2.0**) displays all requested information for up to five (5) connected Javelin devices. If more than one (1) HT500 RBS is connected to the tracking computer, users can alternate between HT500 RBS's by using the tabs with the HT500 RBS serial number.

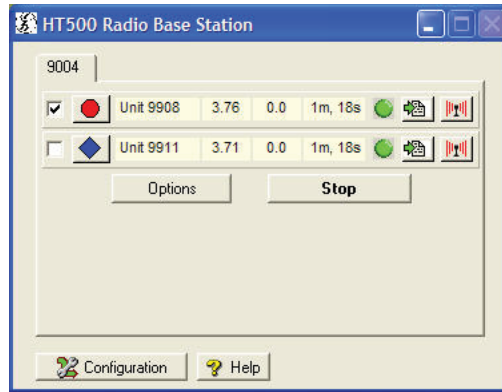
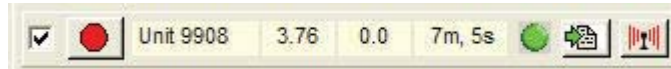


Figure 7.2.0

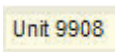
Each Javelin remote unit loaded from the **Group** is displayed along with its current status. Holding the mouse cursor above any icon or field will bring up a brief description of the icon or field.



Map Follows this Target: Place a check mark in this field to have the mapping software center on this specific Javelin remote unit. Other devices will still be visible if they are within the area of the current zoom level.



Target Symbol and Color: This icon is the shape and color icon that was chosen to represent this device during programming of the Javelin remote device. Select this button to change the symbol and/or color. (See Section 6.3.2)



Target Name: Displays the name of the remote unit as entered into the Configuration database.

For the remainder of the fields, the user may choose to display certain preferences

Options (Figure 7.2.1, next page): Select the **Options** button to change the information that is displayed in the **Battery Status**, **Fix Information** and **Fix Age/Memory Status** fields.

Chapter 7

HT500 Radio Base Station Configuration

Options con't: The Options dialog allows user to modify the information that is displayed within the Javelin Status bar during real time tracking.

NOTE: Changes in the options menu are applied to all Javelin remote devices.



Figure 7.2.1

Battery Status: Users can choose to have the current input voltage that the Javelin is receiving from its power source, or to display the current Power Consumption in mWh.

Fix Information: Users can choose to have the current speed of the target displayed, or the current direction of the Javelin device.

Fix Age / Memory Status: Users can choose to have the time since last reported GPS fix displayed, or the number of records that have been received since the start of the live tracking session.

Speed Units: Users can choose to have the current speed of the target displayed in Miles per hour, or Kilometers per hour.

Download Options: Users can choose to download all records in memory upon a download request, or to download only the records accumulated since the last download.

Once all changes have been made, select **OK** to apply the changes to the display bar or select **Cancel** to return to the previous screen without applying changes.



RF Signal Status: The RF Signal Status icon provides visual feedback on the current state of the connection between the Javelin remote unit and the HT500 RBS. **Green** indicates a good connection, **Yellow** indicates a marginal connection and **Red** indicates no connection.



Download: The Download records from remote unit will initiate a download from the selected unit. Once the download has begun a progress bar will replace the status fields. Abort the download by selecting the **Abort** Download button. Users will be prompted to save the track after the download is complete.





Signal Remote Unit: The HT550 Javelin has an internal vibration device which can be used to covertly notify the user. Select the Signal Remote Unit to cause the vibration device to vibrate for a 2 second pulse.

Select the **Stop** button to close the active connection with all connected Javelin devices. Once selected a warning dialog (**Figure 7.2.2**) will appear to ensure that disconnection is intended.

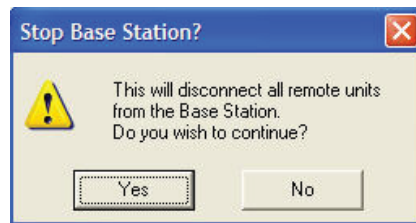


Figure 7.2.2

7.3 Help

Users can select the **Help** button to access the online help file.

The HT550 Javelin unit is also capable of vibratory feedback. An explanation of the possible vibratory patterns are listed and explained below.

HT550 Vibration Patterns

1. **Start User Initiated Fix** - 1 Second of Vibration followed by 1 second of non-vibration. Repeated 3 times.
2. **Got User Initiated Fix** - 4 $\frac{1}{2}$ second vibrations with a $\frac{1}{2}$ second pause between each vibration.
3. **Start Alarm Mode** – 2 Second Vibration followed by 1 second pause, followed by 2 second vibration.
4. **End Alarm mode** – 2 Second Vibration, $\frac{1}{2}$ second pause, 1 second vibration, $\frac{1}{2}$ second pause, 2 second vibration.
5. **RF OFF (RF & GPS Off)** – 2 second vibration, 2 second pause, 2 second vibration.
6. **RF ON (RF and GPS On)** – 1 second vibration, 2 second pause, 1 second vibration.
7. **Remote Signal (HASP)** – 2 Second Vibration.

Time Zones (USA)



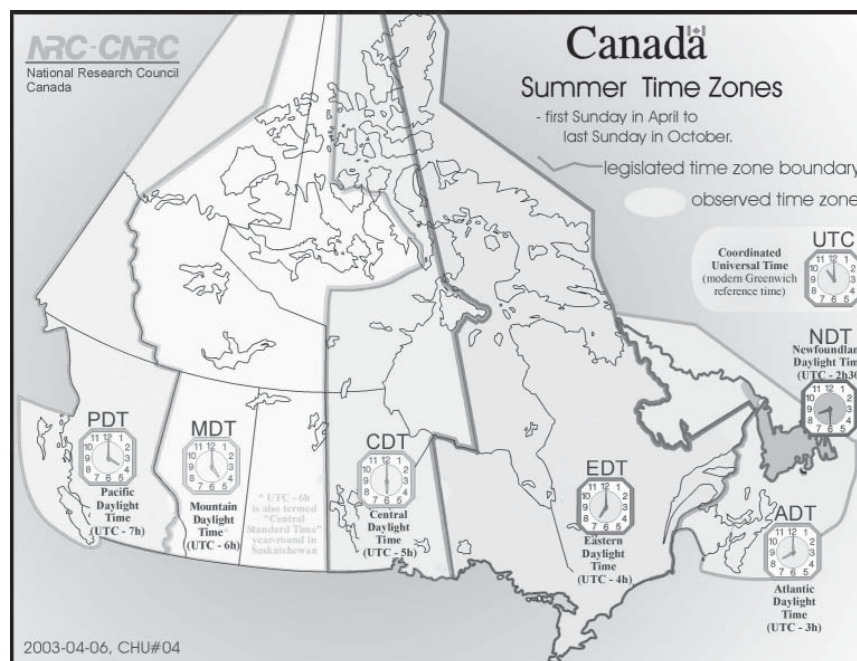
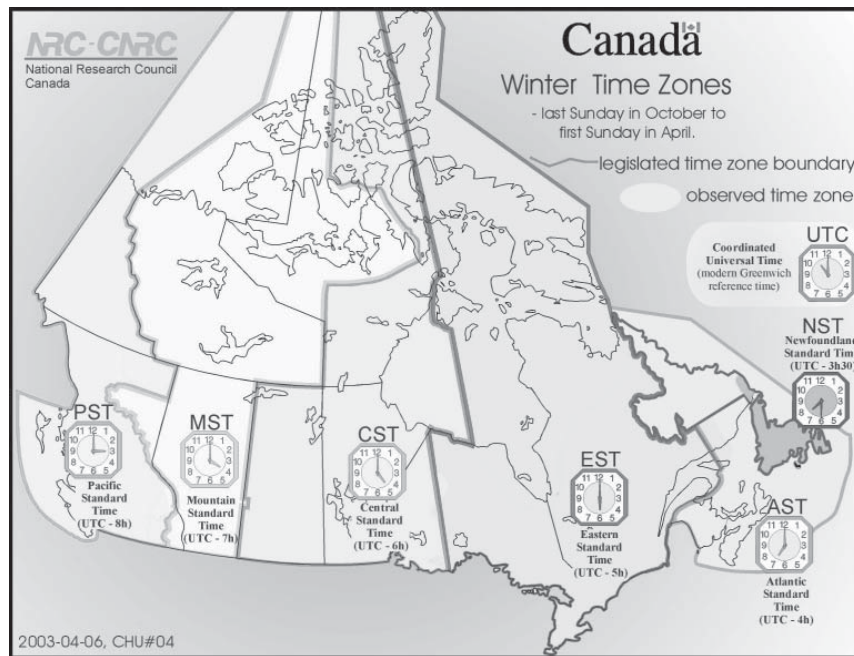
Daylight Saving Time

1. Not all States and Provinces participate in Daylight Savings. (e.g. Saskatchewan). Check with the local area to see if the target's region is also such an exception.

Appendix II

Time Zone Maps

Time Zone Maps - Canada



Electrostatic discharge or ESD is more commonly referred to as static electricity. ESD is produced by friction between two surfaces that are in intimate contact. Some materials such as synthetics have a higher capacity than others for holding static charges. This is especially true in dry environments. In an office, something as routine as walking over carpet or getting out of a upholstered chair can create a static charge. Electronic components can be damaged at ESD levels not sensed by humans. Most people do not sense static charges below 4000 volts while only a few hundred volts can damage many devices. This damage is not often catastrophic but it will degrade the performance and life span of the device. It is important to realize that ESD damage is accumulative and repeated exposure to ESD can result in below average performance and or product failure.

Orion Electronics Limited employs state of the art ESD controls during each stage of its manufacturing process. This includes but is not limited to the use of static dissipative work surfaces, floor coverings, heel straps, and wrist grounding straps. ESD protection has also been designed into the hardware at the circuit board level.

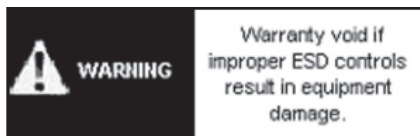
BEWARE:

The safeguards employed by Orion do have their limitations. ESD controls and handling procedures should be employed when handling Orion equipment which is open with circuit boards or serial ports exposed.

Some things to avoid in order to limit ESD exposure:

1. Carpeting in the areas in which equipment is opened with circuit boards or serial ports exposed.
2. Glass surfaced work areas.
3. Areas in which individuals frequently experience static electricity shocks.

Call Orion for more information on how to deal with high-risk ESD areas at 1-800-665-4648.



This Warranty may be subject to applicable Federal, State or Provincial Limitations and Regulations.

INSTRUCTIONS FOR WARRANTY COVERAGE

After confirming that all components were received, fill out the warranty card located in Appendix V of this manual. Be sure to include any serial numbers. Fax it back to Orion at 1-902-798-8188.

The warranty goes into effect upon receipt of the completed Warranty Card. If the Warranty Card has not been received, the product is not under warranty.

MISSING OR DAMAGED EQUIPMENT

If there are missing or damaged components in either the software or hardware kits, please notify Orion immediately at 1800-665-4648. Ask for the Export Coordinator at extension 321. Be prepared to provide the coordinator with the following information:

- Your name, agency, address and phone number.
- The name of the carrier from which the equipment was received. Also, the name of the individual who signed for the equipment.
- Was the box damaged?
- A list of the missing or damaged equipment including a full description of any damage.

TERMS OF WARRANTY

Orion Electronics Limited warrants the equipment and its components for a period of one (1) calendar year from the date of purchase, to the original purchaser, under normal use and service, and only against defective materials and/or workmanship. This includes Orion manufactured software. Please refer to Orion's software license Agreement.

Orion Electronics Limited, or its agents, will repair or replace any part or whole of the equipment that is deemed defective within the terms and conditions of this warranty by the company, or its agents, during the one (1) year warranty period. All equipment meeting the conditions of the warranty will be repaired or replaced by like equipment on a "one for one" basis at Orion's discretion. Future product upgrades that improve unit performance beyond original stated specifications of the delivered product are not part of the original product warranty. Orion's liability is limited to the repair / replacement of hardware / software actually purchased from Orion.

The equipment must be packaged so as to protect it from the rigors of shipment, and must be insured and shipped at the customer's cost. If found to be defective under warranty terms, it will be return shipped at Orion's expense.

CONDITIONS OF WARRANTY

The Warranty will be null and void if;

- The equipment has been damaged due to improper use or installation.
- The equipment is damaged or destroyed if used in a service for which the equipment was not advertised or designed to do.

- If it is damaged by improper service by unauthorized personnel, or by the substitution of improper parts or the deemed substitution of improper parts from other equipment.
- The equipment is damaged by the application of voltages higher than those specified, or used with the wrong polarity.
- The equipment is damaged by the use of chemical or other compounds used to clean it.
- The equipment is repeatedly damaged due to improper electrostatic discharge controls and handling techniques.

Orion Electronics Limited does not authorize any person to create for it any other obligation or liability in connection with the equipment. The responsibility of Orion Electronics Limited is limited to the warranty herein provided, and the equipment is accepted by the customer subject to such limitation and the conditions listed above.

LOSS / DAMAGE REPLACEMENT WARRANTY

In addition, all on - target components (meaning those parts and accessories required for proper installation) are covered under a separate loss / damage replacement warranty which lasts for the life of the unit. Lost, stolen or irreparably damaged items can be replaced for 50% of current list price at the time of the incident.

WARRANTY		
Please fill in and return within 60 days by fax to 1-902-798-8188.		
Return of this warranty ensures you are registered under our warranty program, enables you to 24 hour tech support and allows us to notify you of product and software updates.		
Name & Title _____	Agency Name _____	
Full Mailing Address _____		

Phone _____	Fax _____	Cell _____
Email _____		
Date Equipment Received _____		In Good Order _____
Model _____		
Serial Numbers _____		

PLEASE FILL OUT THIS

Customer Satisfaction Survey

TO HELP US SERVE YOU BETTER

- 1

Why did you choose this particular product?
- 2

What kind of application is it being used for?

☐ Homicides

☐ Bait Cars

☐ Arson

☐ Sexual Predators

☐ Narcotics

☐ Paranoid Suspects

☐ Break & Enters

☐ Homeland Security

☐ Agent Protection

☐ High Value Cargo

☐ Other (Please Specify)
- 3

Are there any additions or improvements you'd like to see implemented?
- 4

Additional comments

1-800-NO LIMIT

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