



# MiniTrack User Manual

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**ChronoTrack Systems, Inc.**

111 East Diamond Avenue  
Evansville, Indiana 47711  
U.S.A.

812-423-7800 Main  
314-406-7243 Sales  
812-759-7877 Support  
812-423-7801 Fax

[www.chronotrack.com](http://www.chronotrack.com)

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# 1. Introduction

MiniTrack is a cost-effective timing and tracking system for use at athletic events, such as a marathon or a road race. ChronoTrack “D-Tag” technology uses specially designed RFID controllers and antennas to track an EPC-certified, UHF RFID tag that is attached to the runner’s foot during the race. Using this system, ChronoTrack Systems, Inc. provides full-service race timing packages, including internationally certified race timers, bibs, tags, and race timing equipment.

## 1.1 Applicable Version

This guide applies to Mini Track Controller software version 5.2.9 and above.

## 1.2 About This Guide

This guide describes how to set up, configure, and use MiniTrack system components to time and track athletic events.



This symbol indicates cautions and warnings where necessary.

## 1.3 MiniTrack System Overview

The MiniTrack system is comprised of the components listed below. See [System Specifications](#) in the Appendix for more details.

- **D-Tag Interrogator (“Gator”) or Mat**  
A D-Tag Interrogator, also known as a Gator, is a specially designed modular track that is placed at each timing location. Each Gator is 42 inches long and is connected with other Gators until they span the entire width of the roadway at the designated timing location.
- **D-Tag Interrogator Core (Antenna)**  
A D-Tag Interrogator Core Antenna fits inside each Gator and reads participant D-Tags as they pass over that portion of track. This information is then sent to the MiniTrack controller.
- **MiniTrack Controller (Mini Series)**  
A MiniTrack controller stores and reads the RFID data that is recorded by the antennas at its timing location. The MiniTrack controller can support a configuration of up to four Gators (a span of up to 14 feet).
- **Power Cable and Power Brick**  
The Power Cable and Power Brick enable you to run the MiniTrack controller from an auxiliary battery source.
- **Cable Set**  
Cable sets include four cables which connect the Gator Core Antennas to the controller.
- **External Keypad**  
An optional numeric keypad that can be connected to the controller to enable you to manually collect select times (Logitech N305 only).
- **Client/Server Software**  
The MiniTrack controller enables you to connect to server/client software to tabulate and review results.
  - **SimpleClient** software that retrieves and manipulates controller data for use in third-party scoring software.
  - **CCSLite** software that helps establish LAN and Wi-Fi connections with the SimpleClient software.



**DOT regulations prohibit the shipping of lithium batteries by aircraft or vessel. Shipped controllers that include the Ryobi battery must include the following label: “LITHIUM BATTERIES: FORBIDDEN FOR TRANSPORT ABOARD AIRCRAFT AND VESSEL”.**

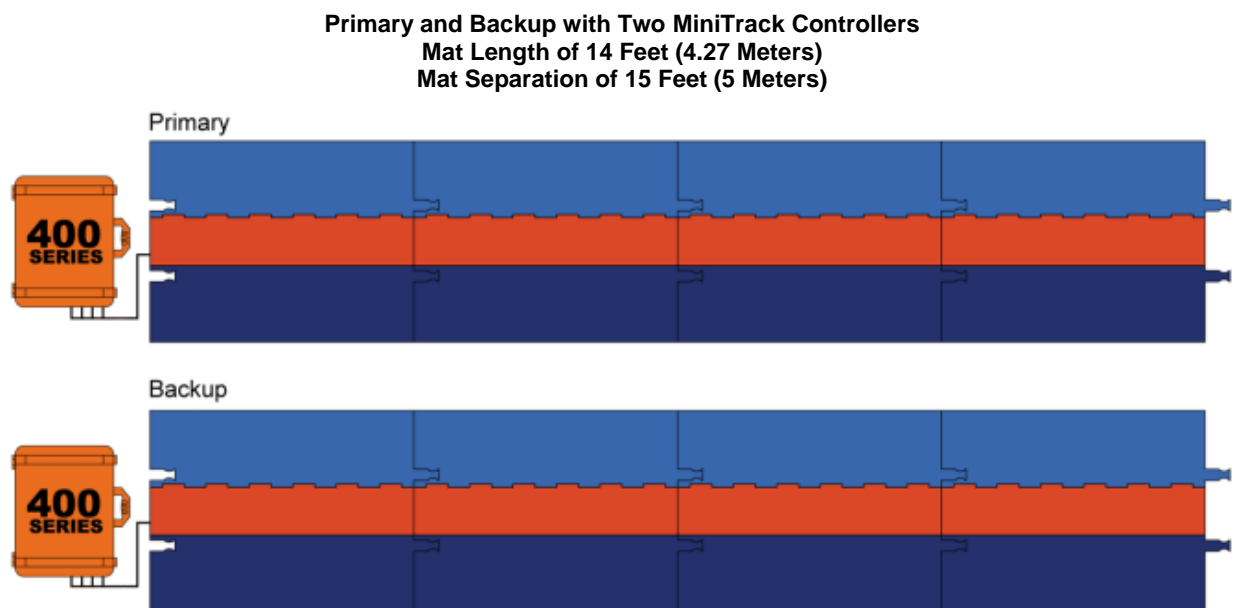
## 2. Gator Setup and Configuration

The MiniTrack Controller and modular Gators are versatile and allow for multiple configurations. Timing locations can be configured to be as narrow as 42 inches or as wide as 28 feet of continuous lengths, with one controller covering as much as 14 feet.

### 2.1 Possible Gator Configurations

In preparation for an event, it is important to determine the width of the roadway at the designated timing locations. This information is used to determine which configurations of Gators and controllers will best suit your needs. With the MiniTrack system, a backup line is recommended to increase overall performance of the system and as a fail-safe measure to ensure every tag is read.

The following are some possible configurations. Note that spacing is not to scale.



### 2.2 Positioning and Linking Gators

To position and link Gators, complete the following procedure:

1. Position the Gators on the ground with the cable compartment hinges facing in the direction from which runners will be approaching, and then link the connecting ends together. Primary and backup lines should be spaced 15 feet apart.
2. Insert the Impinj Threshold antenna into the cable compartment of each Gator, placing it in the direction of the controller with the writing on top. The Impinj logo must be readable by the runners for D-Tags; for B-Tag, it must be the opposite direction.
3. Starting with the Gator farthest from the controller, connect the Core antennas together using the appropriate cable set for your configuration. When the connectors tangibly 'click', the cables are connected correctly.



4. Pass the cables through the Gators using the top trough in the cable compartments. Make sure the cables do not cross over the top of a trough. This can cause the lid of the Gator to close unevenly and possibly damage the cable.
5. Connect the cables from the nearest Gator to the corresponding ports on the controller, matching the color of each cable to the color of the port (Red cable to red port, blue to blue, etc.)
6. The only antenna licensed for use with this controller is the Impinj Threshold Antenna P/N: IPJ-A031-USA0E using the cable sets provided by ChronoTrack Systems LLC. **CAUTION – Any changes or modifications to antenna and or cables used to attach the antennas to the controller without the express permission of ChronoTrack System LLC will void the user's authority to operate this equipment.**



## 2.3 Creating a “Dead Zone”

In order to avoid cross-reads when lines are placed next to each other (for example, two races finishing at the same location on different ChronoTrack lines) it is necessary to either create an 8' x 12' “dead zone” or use a radiant barrier (an insulation material available at most hardware stores).

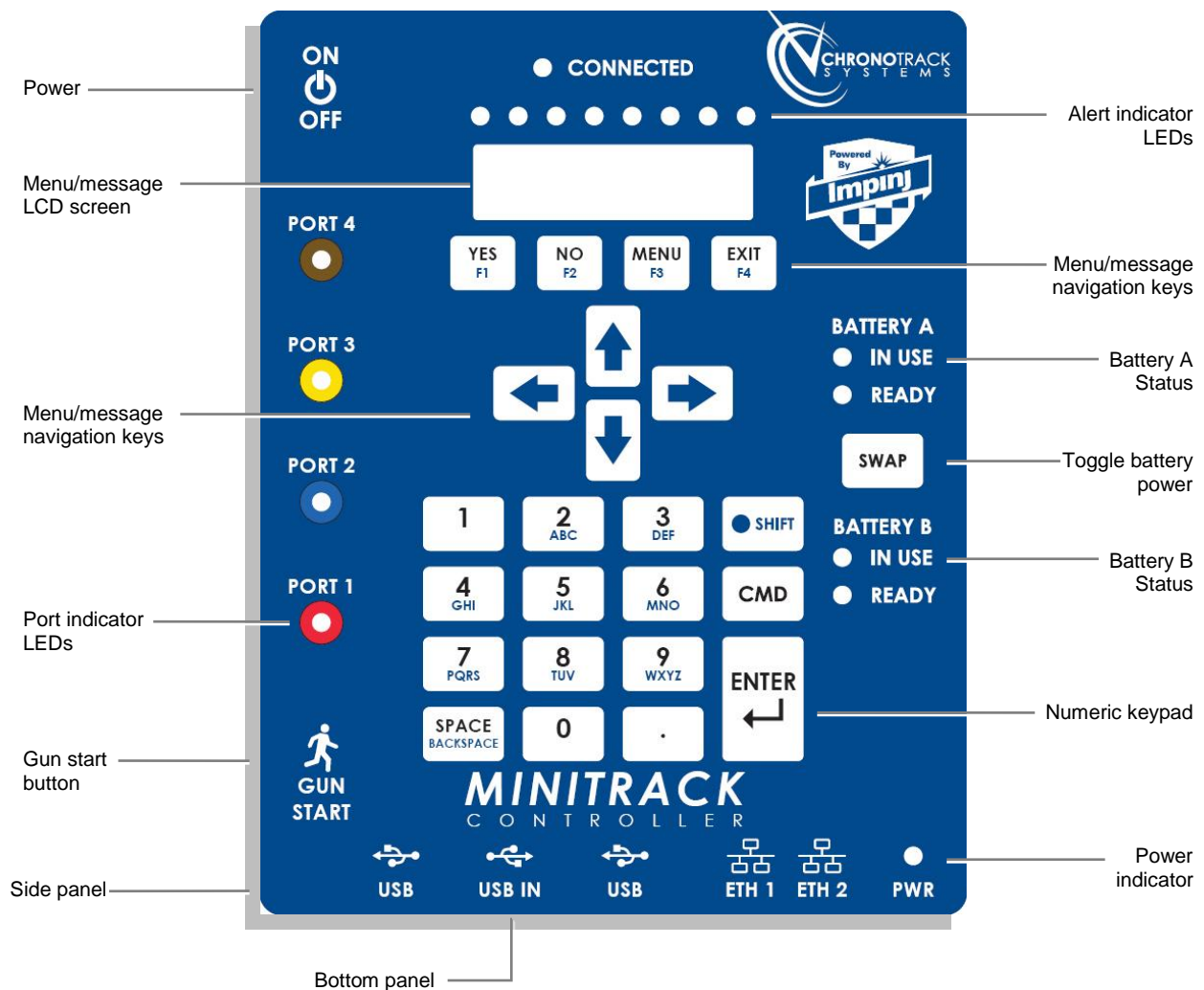
## 3. Controller Setup

### 3.1 The Controller Interface

MiniTrack Controllers are housed in crush-proof, waterproof, heat-resistant transport cases. The case also provides lid supports to shield the controller interface during inclement weather. In harsh conditions, you can place controllers in plastic bags for further protection or you can use rain covers.

The controllers include an LCD for messages, status and configuration, a TouchPad for menu interaction and LEDs to indicate status and signal events.

The MiniTrack controller interface and legend are shown as follows:



### 3.2 Powering ON

To power ON a controller, slide the power switch located on the upper portion of the side panel. The LCD displays "MiniTrack Loading...". LCD lights on the interface light up as the controller readies. When the controller is ready, the Main Screen is displayed.



### ***3.3 Checking Connected Antennas***

The controller side panel contains antenna ports. For each antenna connected, the port light turns on to indicate a connection. Each controller also comes with an RFID Detector card that can be held approximately 6" (15.25cm) from each antenna to confirm that it is operating properly

### ***3.4 Swap Battery Power***

Remove battery to swap to alternate battery or press the SWAP button on the interface.

When AC power is connected, the controller automatically uses AC power, even if batteries are connected. If AC power is disconnected, an alert sounds and a message indicates the controller has switched to battery power (if available).

The controller will shut down if no battery power is available and the AC power is disconnected.

## 4. Using the MiniTrack Controller

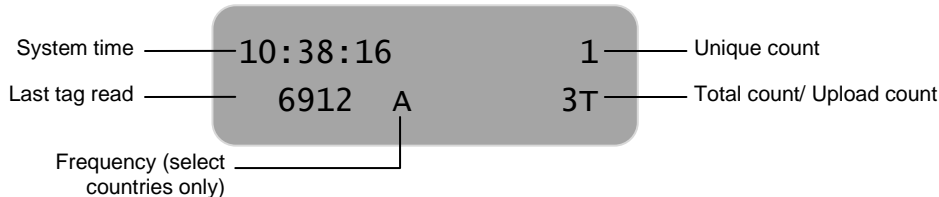
This section describes the MiniTrack controller menu. Menu commands are organized into six categories:

1. [Messages](#): view/clear alert messages and set markers
2. [Server](#): connect and set the IP address for the ChronoTrack server
3. [Tools](#): controller settings
4. [Time](#): set or synchronize ChronoSync and controller time
5. [Audio](#): turn the audible tag beep setting on/off
6. [Network](#): set controller's IP address, Netmask and Gateway
7. [Status](#): controller status and version information

See **Error! Reference source not found.** for a table of [menu commands](#).

### 4.1 The Main Screen

After a controller is powered ON, the Main Screen is displayed.





Elements of the main screen include:

- **System time**: The current system time is displayed in the top left of the Main Screen. To change the system time, see [Setting the Time and Date](#).
- **Unique count**: indicates the total number of unique D-Tags ready by the controller.
- **Last tag**: indicates the most recent tag read. Data is not displayed here until after the accurate time is calculated and assigned for the tag (about five seconds). To clear the tag count, see [Zeroing Tag Counts](#).
- **Frequency**: indicates the frequency currently in use (for models in select countries only).
- **Total uploaded (U)**: if connected to the network, the main screen displays the total number of tags uploaded by the controller.
- **Total count (T)**: if disconnected, the main screen indicates the total number of tags read by the controller. A tag is read again if a participant passes over the same timing line beyond the five second read window. For example, if the start line is also used as the finish line a tag may be read twice.



## 4.2 Menu Navigation

Use the TouchPad to access the menu or respond to messages. Menu commands are available using keys to scroll and select items or via numeric shortcuts.



### To scroll to select a menu command:

- Press  to access the menu.
- Press  arrow keys to scroll through menus.
- Press **Enter** to select the current Menu item.









### To select a menu command using a shortcut:

- Press  to access the menu.
- Use the numeric keypad to enter the shortcut numbers.  
For example, to view messages, press  -1-1.

### To exit the menu:

- Press  to return to the Main Screen, or
- Press  to return to the previous menu (move up one level).

### To change a menu item:

- Press **Enter** to select the Menu item or press  and the numeric code.
- The screen displays the current value, such as an IP address or date.
- Use the numeric keypad to enter a new value.
- To edit specific values, press  or  to move the cursor, then press   to delete. Use the numeric keypad to enter new values.
- Press **Enter**.
- When prompted, press  to confirm the new value or press  to cancel.
- Press  to exit the menu and return to the Main Screen.

## 4.3 Menu Commands

The following table provides a summary of menu commands and a quick-reference for menu codes.






Shortcut	Command	Description
<b>1</b>	<b>Messages</b>	
1-1	View/Acknldg	View/acknowledge alert messages
1-2	Markers	Add a marker to file to divide tag times into different groups
1-2-1	Marker	General marker
1-2-2	Wave End	Create divider for wave starts
1-2-3	Next Point	Change use of MiniTrack to a different point
<b>2</b>	<b>Server</b>	
2-1	Connect	Connect to the ChronoTrack Server
2-2	Address	Set the IP address for the ChronoTrack Server
2-3	Disconnect	Disconnect from the ChronoTrack Server
<b>3</b>	<b>Tools</b>	
3-1	Zero Counts	Clear the counts that are displayed on the Main Screen ...
3-1-1	This Ctrl	...on just THIS controller
3-1-2	All Ctrls	...on ALL networked controllers
3-2	File Copy	Copy controller data to a USB device
3-2-1	Current	Copy the current tag observation files to a USB drive
3-2-2	All Files	Copy all the tag observation files to a USB drive
3-3	Mode	Change mode or settings for tag reporting
3-3-1	Low Power	Turn down antenna power
3-3-2	Immediate	Report tag read immediately (supports announcer displays)
3-3-3	Chanel set	Set the frequency the antennas use (applies to select countries only)
3-4	Maintenance	Non-race options
3-4-1	Dry	Turn on fan to aid in drying out case. Do not use during a race!
3-4-2	Reader Cmd	(Future) Send commands to reader (use only with direction from ChronoTrack)
<b>4</b>	<b>Time</b>	
4-1	Manual Sync	Manually enter and set controller's date/time
4-2	Brdcst Sync	Broadcast this controller's time to all other networked controllers
4-3	Server Sync	(Future) Pull time from the server
4-4	ChronoSync	(Future) Use ChronoSync USB device to set/read time
4-4-1	Send	Send controller's time to ChronoSync
4-4-2	Recv	Read time from ChronoSync and set time
<b>5</b>	<b>Audio</b>	
5-1	Beep On/Off	Turn tag beep on and off
<b>6</b>	<b>Network Cfg</b>	
6-1	Ctrlr IP	Set controller's IP address
6-2	Ctrlr Netmsk	Set controller's Netmask
6-3	Ctrlr Gateway	Set controller's Gateway
<b>7</b>	<b>Status</b>	
7-1	Temperature	Display reader and PowerBoard temperatures
7-2	MAC Address	Display the MAC Address of the reader
7-3	Versions	Display version information for ChronoTrack staff
7-3-1	Pwrbrd	View PowerBoard firmware version
7-3-2	Rdr S/W	View reader application version
7-3-3	Rdr H/W	View reader firmware version
7-3-4	Hdwr Ver	View version of PowerBoard hardware
7-3-5	Serial #	View controller serial number
7-4	Copyright	View copyright information

### 4.3.1 Creating a Gun Start Timestamp

To set the Gun Start during an event, press the **Gun Start** button on the MiniTrack controller side panel.

### 4.3.2 Viewing Messages

The Messages screen is used to view and acknowledge system alerts, and to view gun and marker timestamps. If multiple messages are available, the most recent message will be shown at the top of the list. To view messages:



1. Press  - **1** - **1** or press  and scroll to select **1. Messages → 1.1 View**.
2. *Accessing this screen silences the alert bell.*
3. Use  and  to scroll through messages.
4. Press  to return to the Main Screen.

#### 4.3.2.1 Viewing Current Event / Point Information

The first two messages in the queue will be the Event and Point names for the current session. This allows the user to know the exact Event/Point that their data will be in if they connect it to the server or use CCSLite and SimpleClient. Additionally, if they use the Event / Point Rename functionality, this allows the user to determine how the controller is currently configured.

### 4.3.3 Setting File Markers





Creating file markers helps you organize the data. When you set a marker, data from that point on is collected in a different session. To set a marker timestamp:

1. Press  - **1** - **2** or press  and scroll to select **1.2 Markers**.
2. Select a marker type:
  - **1.2.1 Marker** adds a general marker to differentiate data.
  - **1.2.2 Wave end** adds a marker with the label “Wave End” for improved organization.
  - **1.2.3 Next Point** adds a marker with the label “Next Point” for improved organization.



Marker timestamps are displayed on the menu/message LCD, and can also be viewed from the [Messages](#) menu.

### 4.3.4 Server Configuration

In order to transfer controller data live to a networked laptop or the ChronoTrack CCS Server, a network connection must be established with a server. To set the server address:



1. Press  - **2** - **2** or press  and scroll to select **2. Server → 2.2 Address**.
2. Use the numeric keypad to enter the IP address you wish to use as the server, then press **Enter**.
3. A message appears to confirm the IP address change. Press  to confirm or press  to cancel.

After setting the server address, you must establish the network connection. To connect to the server:

1. Press  - **2** - **1** or press  and scroll to select **2. Server → 2.1 Connect**.
2. While a connection is being attempted, the Connected LED blinks.

3. When a connection is established, the Connected LED turns on.

To disconnect from the server:




1. Press  - **2-3** or press  and scroll to select **2. Server → 2.3 Connect**.
2. The Connected LED turns off and the connection is closed.

The controller and server monitor the connection. If it is dropped, the controller will automatically attempt to reconnect. After a few times attempting without success, the controller will create an error message and light the Alert LEDs to notify the user of the problem. It will continue to attempt to connect to the server but there may be problems that require the user to intervene (i.e. CradlePoint unplugged, cellular signal not found, server inaccessible or shutdown).

## 4.3.5 Tools

### 4.3.5.1 Zeroing Tag Counts

The Zero Counts command allows you to reset the unique and total tag count numbers displayed on the Main Screen of the controller. Zero Counts also ignores all prior data in the current session. You may want to zero tag counts if you are using the same timing line for a start and finish. After all participants have crossed the start line, create a marker and then zero the count by doing the following:



1. Press  - **3-1** or press  and scroll to select **3. Tools → 3.1 Zero counts**.
2. Press  to confirm the action.

### 4.3.5.2 Copying Files to USB



When a controller is powered ON, it creates and works on one data file (AKA the current file) until the box is powered OFF. If a controller is powered ON and sees no tags during that session, an empty file is created.

You can copy the data files from a controller to a USB device to load the data into [SimpleClient](#). There are two options: *Current* and *All*. The *Current* option can be to copy the file with data currently being saved to it. This file can be copied at any time throughout the race. It can also be copied multiple times during a race as more people finish. The *All* option can be used to retrieve all of the data the controller has collected over the last 2 weeks, including the current file.

To copy the Current file to a USB device:

1. Insert a USB device into one of the USB slots on the controller. Wait for it to beep.
2. Press  - **3-2-1** or press  and scroll to select **3. Tools → 3.2 File Copy → 3.2.1 Current**.
3. Wait until the screen says "Copying-Done". Make sure the USB drive's activity indicator stops flashing and then pull the drive out of the controller.

To copy the All files to a USB device:

1. Insert a USB device into one of the USB slots on the controller. Wait for it to beep.
2. Press  - **3-2-2** or press  and scroll to select **3. Tools → 3.2 File Copy → 3.2.2 All Files**.
3. Wait until the screen says "Copying-Done". Make sure the USB drive's activity indicator stops flashing and then pull the drive out of the controller.



*While the USB 2.0 Standard is backward-compatible with 1.0, not all USB devices meet the USB 2.0 standards. We recommend testing your flash drive before an event. We also recommend using thumb drives less than 2GB; larger drives take longer to initialize and sometimes appear to have caused the system to lock up when it has not.*

## 4.3.6 Low Power

The Low Power feature is not used for outdoor races but may apply to indoor events such as stairwells. To turn down antenna power:

1. Press - **3-3-1** or press and scroll to select **3. Tools → 3.3 Mode → 3.3.1 Low Power**.
2. Press or to adjust by 5% or to adjust by 1%.
3. Press **Enter**.
4. When prompted, press to confirm the new value or press to cancel.

### 4.3.6.1 Immediate Mode

The Immediate mode reports the tag reads immediately, allowing an announcer to view live results. Times reported are not the official time. To enable the Immediate mode:

1. Press - **3-3-2** or press and scroll to select **3. Tools → 3.3 Mode → 3.3.2 Immediate**.
2. To deactivate the Immediate mode, select **3.3.2 Immediate** again.

Select the **Immediate** mode to work with live results reporting for an announcer line. In this mode, the controller reports both immediate and official tag read times. To create an announcer line, you must also enable Immediate mode in SimpleClient. See [Creating and Using an Announcer Line](#) for more information.

### 4.3.6.2 Chanel Set

**SELECT COUNTRY MODELS ONLY:** Set the frequency of the controller. You must ensure adjacent or primary/ backup controllers do not share the same frequency.

1. Press - **3-3-3** or press and scroll to select **3. Tools → 3.3 Mode → 3.3.3 Chanel Set**.
2. Use or buttons to select A, B, C or D.
3. Press **Enter**.
4. Press to confirm the new value or press to cancel.

## 4.3.7 Dry Mode

Activating the dry mode turns on a fan to pump air through the controller box. To start the dry mode:

1. Press - **3-4-1** or press and scroll to select **3. Tools → 3.4 Maintenance → 3.4.1 Dry**.
2. The fan turns on. To deactivate the fan, select **3.4.1 Dry** again.



Do not use Dry Mode during a race!



### 4.3.7.1 Sending Reader Commands

The Reader Cmd menu item enables you to send commands directly to the reader. Use only with direction from ChronoTrack staff.



***Do not attempt to use this feature without advanced knowledge of these commands. If controllers are networked, these commands are sent to all controllers and subsequent readers on the network.***

To send a command to the reader:




1. Press  - **3-4-2** or press  and scroll to **3. Tools → 3.4 Maintenance → 3.4.2 Reader Cmd**).
2. In the menu, select the command to send.
3. Press **Enter**.

### 4.3.8 Setting the Time and Date

The Time menu gives you the option to manually set the time and date on a single controller, synchronize the controller's time to the server, or use the ChronoSync USB device to set or read the time.

#### 4.3.8.1 Setting the Date and Time on a Controller



To manually set the date and time on a controller and any others networked to it:

1. Press  - **4-1** or press  and scroll to select **4. Time → 4.1 Manual Sync**.
2. Use the numeric keypad to enter the date in [yyyy]/[mm]/[dd]. The controller inserts slashes automatically.
3. Press **Enter** to confirm the date or start typing a new date to change it.
4. When prompted, enter the correct time in [hh]:[mm]:[ss] format. The controller inserts the colons automatically.
5. Press **Enter** to accept the time.
6. Press  to confirm message.

The alert indicator LEDs light up to indicate the time has been set.

#### 4.3.8.2 Broadcast Sync



To push this controller's time to all other controllers on the same network:

1. Press  - **4-2** or press  and scroll to select **4. Time → 4.2 Brdcst Sync**.
2. All controllers on the network will receive the new time.

The alert indicator LEDs light up to indicate the time has been set.

#### 4.3.8.3 Server Sync

To synchronize the time with the server, you must first establish a connection with the server. To synchronize the time with the server:

1. Press  - **4-3** or press  and scroll to select **4. Time → 4.3 Server Sync**.
2. Press **Enter** to synchronize the time.







The Alert indicator LEDs blink while the server is being contacted. They change to ON to indicate the time has been set.

#### 4.3.8.4 ChronoSync

This USB device not yet implemented

### 4.3.9 Audio Menu

You can activate or deactivate the tag beep, which sounds when a tag is in the field. Error beeps cannot be disabled. To turn the tag beep on or off:





1. Press  **5-1** or press  and scroll to select **5. Audio → 5.1 Beep:On**.
2. Press  **5-1** or press  and scroll to select **5. Audio → 5.1 Beep:Off**.

### 4.3.10 Network Configuration



***Do not make changed here unless directed.***



Network configuration options are available to reconfigure the IP address, netmask, and gateway for LAN and Wi-Fi networks. To change network settings:

1. Press  **-6** or press  and scroll to select **6. Network Cfg.**
2. Select the network configuration option from the menu:
  - **6.1 Ctrlr IP** allows you to view or change the controller's IP address
  - **6.2 Ctrlr Netmsk** allows you to view or change the controller's Netmask
  - **6.3 Ctrlr Gatewy** allows you to view or change the controller's gateway
3. Use the numeric keypad to enter the new value. Press **Enter**.
4. When prompted, press  to confirm the new value or press  to cancel.

### 4.3.11 Temperature

The Temperature menu indicates the reader and PowerBoard temperatures in Celsius. For safe operation, the reader temperature should be below 70 and the PowerBoard temperature should be below 70.



To view the temperature of controller components:

1. Press  **7-1** or press  and scroll to **7. Status → 7.1 Temperature**.
2. If the temperature is above the safe operating level, the controller fan automatically cycles.

### 4.3.12 MAC Address



This menu option reports the MAC Address of the reader in the Controller. It displays all 12 digits of the MAC but instead of the typical 6 tuples separated with colons; it displays 6 digits, a colon separator, and the last 6 digits. This is due to the space constraints of the screen.

To view the MAC Address:

1. Press  **7-2** or press  and scroll to **7. Status → 7.2 MAC Address**.

### 4.3.13 Versions

These menu options report version information for ChronoTrack staff. You may need to access this menu to support a troubleshooting call. To look up copyright and version information:

1. Press  **7-3** or press  and scroll to **7. Status → 7.3 Versions**.
2. The Versions menu displays the following:
  - **7.3.1 PwrBrd** PowerBoard firmware version
  - **7.3.2 Reader S/W** Reader application version
  - **7.3.3 Reader H/W** Reader firmware version.
  - **7.3.4 Hdwr Ver** Version of the PowerBoard hardware
  - **7.3.5 Serial Num** Serial number of the controller

### 4.3.14 Copyright

To display the copyright of the controller:

1. Press  **7-4** or press  and scroll to **7. Status → 7.4 Copyright**.

## 4.4 Pre-configuring the MiniTrack

Starting with v5.1.3 of the MiniTrack software, the user can configure some of the settings on a controller by supplying an INI file on a USB drive. This drive must be inserted before the controller is powered on in order for the new name to take effect. Once the INI file is processed, the controller will have the specified settings. Any text editor, such as Windows Notepad, can be used to edit the file.

The file format is as follows:

```
{ctrlr}. {field}={name}
```

The fields are as follows:

- **ctrlr** = the serial number of the controller to be set; 'ALL' can be used to set every controller
- **field** = the name of the setting to change
- **value** = the value to use for the specified field

### 4.4.1 Fields

There are shared fields between the two types of controllers and the Event Screen of the ChronoView website:

Event view	Mini	Pro	Field	Description	Limit	Example
N	Y	Y	EVENT	Event name	16 char length; A-Z and 0-9	CHICAGOHALF
Y	Y	Y	POINT	Point name	16 char length; A-Z and 0-9	Start
N	N	Y	CONTROLLERS	Number of controllers at this point	1-8	2
N	N	Y	READERS	Number of readers at this point	1-16	2
N	N	Y	GATORS	Number of gators at this point	1-64	16
N	Y	Y	SERVER	IP address of the	Standard IP	50.17.233.218

Event view	Mini	Pro	Field	Description	Limit	Example
				Chronotrack server	address	
N	N	Y	WIFIPOWER	Power the WiFi on or off	ON/OFF	ON
N	N	Y	GPRSPower	Power the GPRS on or off	ON/OFF	OFF
N	Y	Y	GATEWAY	IP address of the network gateway	Standard IP address	172.20.23.1
Y	N	N	DISTANCE	Identifies controller distance from start	All decimal numbers	3.3
Y	N	N	CONTACT	Contact name of timer at point (name can contain spaces)	A-Z, a-z, 0-9	Bob Square
Y	N	N	PHONE	Phone number of timer at point	Phone # or Skype user	812.759.7877
Y	N	N	EFIRST	Expected first runner time at point	Free form	0:25
Y	N	N	ELAST	Expected last runner time at point	Free form	1:20
Y	N	N	NOTE	Notes associated with point	Free form	Watch for manhole cover in WB lane

## 4.4.2 Clearing Values

There are three methods to use if the event or point name needs to be returned to its default value:

1. INI file with no lines in it
2. INI file with a line for the controller to clear but nothing after the equal sign  
10043.EVENT=
3. INI file with a line for the controller to clear and the key word 'default' as the name  
10043.EVENT=default

Values cannot be cleared on the Pro Series controllers at this time.

## 4.4.3 Comments

Comment are allowed in the file— just start the line with a hash mark (#). Blank lines are also allowed.

## 4.4.4 File and Directory Names

The INI file should be placed on a USB drive in the 'New' directory in the root directory. For example, if your USB drive is at F:, the full path would be

```
F:\New\CtrlCfg.ini
```

## 4.4.5 Example

The following is a sample file:

```
# This file lists all controllers used for the Pumpkin Run 2011. Note that it
# also clears controllers that were not used in the race (10004 & 2382).
# The start is handled by 1 Pro controller, the 5K is handled by 1 Mini, and
# the finish is handled by 2 Pros.

# 'ALL' can be used to set a value for every controller. This first group
# of configs will demonstrate.
# *****
# Set every controller's event to 'PUMPKIN2011'
ALL.EVENT= PUMPKIN2011
# Set every controller's WiFi off
```

```

ALL.WIFIPOWER=OFF
# Set every controller to auto connect when done booting
ALL.SERVER-AUTO-CONNECT = TRUE
# Set every controller's server setting
ALL.SERVER=50.17.233.218

# This group sets up the POINT value for each controller.
# *****
2223.POINT =START
10305.POINT =5K
2385.POINT = FINISH
2102.POINT = FINISH

# Clear the unused controllers.
# *****
10004.EVENT=
10004.POINT=
10006.EVENT=
10006.POINT=

# Start Line
# *****
# Only one 800 controller at the start.
2223.CONTROLLERS = 1
# An 800 has 2 readers.
2223.READERS = 2
# Will use 8 gators at this line.
2223.GATORS = 8
# Turn on the Cell Modem.
2223.GPRSPower = ON
# Clear the Gateway.
2223.GATEWAY =

# 5K Line
# *****
# A Mini needs to have a gateway defined in order to use the CradlePoint.
10305.GATEWAY=172.20.23.1

# Finish Line
# *****
# Two 800 controllers at the finish.
2385.CONTROLLERS = 2
# Each 800 has 2 readers.
2385.READERS = 4
# Will use 14 gators at this line.
2385.GATORS = 14
# Turn off the Cell Modem -- using LAN cable.
2385.GPRSPower = OFF
# Clear the Gateway.
2385.GATEWAY =

2102.CONTROLLERS = 2
2102.READERS = 4
2102.GATORS = 14
2102.GPRSPower = OFF
2102.GATEWAY =

```

## 4.5 Collecting Select Times

If you would like to use the MiniTrack to collect select times, you can purchase and connect the wireless number keypad (see [System Specifications](#)). Collecting select times allows timers to cross-reference select times with times from the controller and identify participants who were not automatically tracked due to tag damage or loss. These times show up right in the scoring software simplifying the lookup task.

NOTE: You must use SimpleClient v0.4.7 or later to view the results—previous versions do not provide support for Select Time data stream.

### 4.5.1 Using the Keyboard

Key	Action
. (period)	Test key, the controller beeps to confirm the device connection
0-9	Numeric entry, limited to 5-digit bib identifiers
=	Primer for a gun start; type equal sign, then type enter when the gun goes off
Enter	Submits entry, assigning the time stamp to either the bib number or the gun start
Back	Erases the last key entered; also works for the gun start primer (=)
Clear	Clears the complete entry since the last entry was submitted (Enter key)

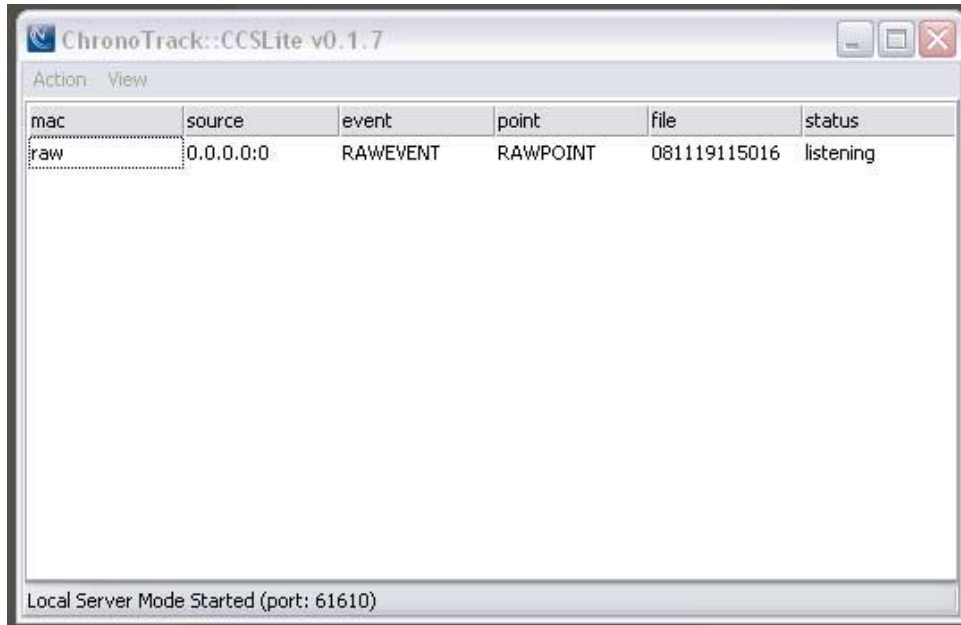
To use the wireless keyboard to manually collect times:

1. Insert the USB receiver for the wireless keyboard into an available port on the MiniTrack controller. The controller will beep when the USB is inserted.
2. Turn on the numeric keypad, using the power switch on the back of the device.
3. Press '.' (period) to test the connection. You should hear an audible beep.
4. Press the equal sign (=) to prime for a gun start, then press Enter when the gun sounds.
5. Use the numeric keys (0-9) to enter bib numbers. Press Enter to submit each bib number. The bib can be 5 digits maximum.
6. It is a good idea to test the wireless connection every so often by hitting the period key. This makes sure you still have a connection to the Mini and is due to the limited range of the wireless system. If the Mini does not beep, the fix is to unplug and plug in the USB receiver.

## 5. Using CCSLite

CCSLite is an application that acts as a bridge between wired (LAN) and Wi-Fi network connections on the controller and SimpleClient, an application for retrieving and manipulating controller data.

CCSLite must be running when establishing a wired or Wi-Fi network.



### 5.1 Configuration of CCSLite

To configure CCSLite, complete the following steps:

1. Start the CCSLite application on your computer.
2. Make sure Windows is not blocking TCP port 61610. When CCSLite is started for the first time, you are prompted to choose whether or not the program is allowed to listen for incoming connections. If not, this setting can be altered manually—see [Adding a Firewall Exception for CCSLite](#).
3. From the menu, click **Action > Storage Directory**, and set the path where CCSLite will store controller data.
4. From the menu, click **Action > SimpleClient Path**, and select the SimpleClient executable to use when opening data streams from the CCSLite controller grid.
5. Close CCSLite to store the settings and apply them for the next start-up of CCSLite.

### 5.2 Establishing Controller Connections

To establish controller connections with CCSLite:

1. Start the CCSLite application on your computer.
2. On the controller, make a server connection to CCSLite, using the local IP address of your computer as the server address.
3. If the controller is connected to CCSLite, you will find a new row in CCSLite's connection grid displayed on the main screen.
4. Double-click the entry of the controller in the CCSLite grid. This will open an instance of SimpleClient showing you the available sessions from that controller's active file.

### 5.3 *CCSLite Raw Mode*

If controllers are connected to the local network, CCSLite will listen for tag observations straight from the readers. This is called *raw mode*.

This information does not contain markers (event names, point names, gun markers, and manual markers) and controller software is completely ignored. However, a backup of all raw observation data on the local network is available for use.

The raw stream also contains the information gathered from a “raw reader dump” in case of a controller lock-up. Raw reader dumps are the final option in data recovery and should only be used if all other actions have failed. To isolate data from the different controllers on the network, a virtual point configuration file (with .rmg extension) can be used (see [Creating Virtual Points](#)).

### 5.4 *Adding a Firewall Exception for CCSLite*

If you use a 3<sup>rd</sup>-party firewall, check the supplied documentation. Otherwise, complete the following steps to add a firewall exception to Windows XP:

1. Start the security center: From the Windows **Start** menu, open the **Control Panel** and select the **Security Center** menu item.
2. From the Security Center, open the **Windows Firewall** settings.
3. On the **General** tab, make sure the **Don't allow exceptions** box is unchecked if the firewall is activated (preferred).
4. On the **Exceptions** tab, check to see if the list box of allowed exceptions shows CCSLite. If not, unlock the program by using either the **Add Program** button or the **Add Port** button.

**NOTE:** If you choose to add the program to the exception list, this port is only unlocked for the CCSLite program started from the specified path. You will block it again if you change the path of CCSLite. Instead, add TCP port 61610 to ensure that any program attaching to that port can be reached, regardless of its program path. Also, there may be other applications running with firewalls set (specifically programs like anti-virus, spyware protection, and ad blockers); either disable these programs, or add exceptions for CSSLite.

## 6. Using SimpleClient

SimpleClient is an application used to retrieve and manipulate controller data. Data from events, including real-time stats, can be filtered and streamed from SimpleClient to your computer or directly into your race scoring software.

### 6.1 *SimpleClient Operation Modes*

There are two modes of operation when working with SimpleClient:

- [Local network mode](#)
- [Internet server mode](#)

#### 6.1.1 Local Network Mode

Local network mode is used when connecting controllers through the wired (LAN) or wireless network (802.11). To load controller files in this mode, you must either use CCSLite as a bridging application (see [Using CCSLite](#)), or load them from a USB drive. To load from USB, use one of the following methods:

- From the SimpleClient main menu, click **File > Load Controller File**.
- Drag and drop a .mrk or .csv file onto the ChronoTrack logo on the SimpleClient main screen.

#### 6.1.2 Internet Server Mode

Controllers can send their data to the ChronoTrack CCS servers located on the Internet by using either the built-in cellular modem or a connected router (wired LAN or wireless 802.11).

The following servers are available for North American users:

- **Main server:** east01-us.chronotrack.com (50.17.233.218)
- **Backup server:** east02-us.chronotrack.com (50.17.233.220)

The CCS Server will show sessions from all controllers and any uploaded events. This data is stored for approximately three weeks.

To obtain data from the CCS Server online and use it on your local computer, establish a connection with the CCS Server using your ChronoTrack user account. See [Connecting to the Server and Retrieving Data](#) for more information.

## 6.2 *Connecting to the Server and Retrieving Data*

You can send data from a controller into SimpleClient by connecting to the CCS Server. To connect to the CCS Server, complete the following procedure:

1. Establish a network connection on the controller. See [Establishing Network Connections](#).
2. Start the SimpleClient application on your computer.
3. If you want to be connected directly to your scoring software, see [Establishing a Direct Socket Connection with Scoring Software](#).
4. From the main menu, click **CCS Server > Connect**.
5. A connection box is displayed. Make sure that the box contains the following information:
  - Hostname: 50.17.233.218 or east01-us.chronotrack.com
  - TCP Port: 61612
  - Your log-in username
  - Your password
6. Click **Connect**.



The Select Device Session screen is displayed and you are now connected to the server with all of your events.

**SimpleClient::Select Device Session**

Event Name:  ☒ All events

id	device id	event	point	start date	session	device status
1111	00d0c9a9c830	TURKEYTROT	2NDLOOP	2008-11-27 07:47:33	open	offline
1109	00d0c9a9c830	TURKEYTROT	START	2008-11-27 07:41:25	closed	offline
1103	00d0c9a9c830	TURKEYTROT	START	2008-11-27 07:19:19	closed	offline
1099	00d0c9a9c830	TURKEYTROT	START	2008-11-27 06:54:05	open	offline
1112	00d0c9ab5999	TURKEYTROT	FINISH	2008-11-27 07:50:55	open	offline
1097	00d0c9ab5999	TURKEYTROT	FINISH	2008-11-27 06:14:31	open	offline
1171	00d0c9ac5354	TURKEYTROT	TT8KFIN	2008-12-05 23:03:25	closed	offline

☒ Activate Tag Range Filtering Ranges for Event:

timercode	timename	eventcode	eventname	min. bib	max. bib
28	Split Second Timing	0	TURKEYTROT	1	999999

Time Shift:  
☒ disabled  
☐ UTC to local timezone  
☐ manual   
☐ 00:00 Start

Rename Event:  ☐ Immediate Mode  
 Rename Point:  ☐ Ignore Clear Markers

7. Filter to display only your current event by unchecking **All events**.
8. Use the drop-down list to select the event from which you want to retrieve data.
9. Click on the segment to load, then click **Select** at the bottom of the screen.

The SimpleClient main screen is displayed. You can now either start streaming the data and/or save the data for import into your software:

- To start the data stream onto your computer, click **Play**. If you have a direct connection with your scoring software, you will see the times in your software.
  - To save the data, click **Play**. From the main menu, click **File > Save As**.
10. Repeat these steps to connect to other checkpoints. Alternately, open a new session of SimpleClient to run multiple streams at the same time.

## 6.3 Streaming Data

After selecting a file segment to stream onto your computer (see [Connecting to the Server and Retrieving Data](#)), use the following buttons on the SimpleClient interface to start, stop, and rewind data:

- **Play**: Starts the data stream into a buffer on your computer.
- **Stop**: Stops the data stream. To pick up where you left off, press **Play**.
- **Rewind**: Starts the data stream over from the beginning.

As the data plays, there are two red numbers above the buttons. The first red number indicates the size of the save buffer (see [Saving SimpleClient Data](#)). The second indicates the size of the invalidated tags buffer (see [Tag Invalidation](#)).

The middle section of the screen displays the data for each tag as it plays.

## 6.4 Tag Invalidation

Tags can be invalidated in order to prevent them from appearing in your race scoring software. There are three features that can be used to specify which tags should be invalidated:

- Activated tag range filtering
- Ignore same tag for X seconds
- Activated invalidate negative times

To inspect tags that have been invalidated, from the SimpleClient main menu, select **View > Invalidated Tags**.

The screen shows all invalidated tags listed by order of arrival. The reason for invalidation of each tag is also shown.

If a tag has been invalidated in error, it can be revalidated:

1. Select the tag entries on the grid that should be revalidated.
2. Right-click and select **Validate Selected**.

The revalidated tags will be removed from the grid and the observations will be put at the end of the save buffer, ready to be streamed to the race scoring software or saved to text file.



## 6.5 File Formats

SimpleClient lets you export data and specify how the files are formatted (separators, line terminators, etc.). This is useful when you need to send data to a third-party application that requires a specific file format.

To specify file formats, from the main menu, click **File > File Format**. See [File Format Specifications](#) in the Appendix for information about available formats and syntax.

## 6.6 Saving SimpleClient Data

You can manually save the current feed/buffer, or configure SimpleClient to save files automatically:

- To save the current buffer in SimpleClient (as indicated by the first red number on the main screen), from the main menu, click **File > Save File**.
- To automatically save files, click **File > Auto Save** and set the path where the files should be saved. You can then configure your scoring software to retrieve data from that path.

If you want each session that you open for a different point to be automatically saved using the point designation as the file name, click **File > Auto Save** and check **Single Point/File**. When this option is not checked, each stream is saved to its event designation (so you can have multiple points in a file belonging to the same event) and uses the event designation in the file name.

When saving files, both manually and with Auto Save, the output is sent to either a text file or, if established, to a direct socket connection, for streaming into your scoring software. A direct socket connection is the preferred solution with RunScore scoring software.

## 6.7 Filtering Data

Filters can be applied to organize your data. You can filter out bib numbers from previous events or filter by various segments such as leagues. Tag filters can be created online and applied in SimpleClient so that only tag data within specified bib ranges, event codes, and/or timer codes is streamed.

The Select Session File screen in SimpleClient is used to activate tag range filters that you create online. To filter the data shown in SimpleClient, complete the following procedure:

1. On the Select Session screen, select the point containing the data you want to filter.
2. Select the **Activate Tag Range Filtering** option.
3. The **Tag Ranges for Event** drop-down menu contains a list of tag ranges that you have created pre-event. Select the tag ranges for your event.
4. The columns in the middle of the screen display the filtering selections of timer and event codes and names, and minimum and maximum bib numbers. D-Tags are assigned a timer and event code when they are printed and encoded.

### 6.7.1 Creating Tag Ranges for an Event

To create tag ranges for an event, complete the following procedure:

1. Prior to the event, log in to the ChronoTrack StreamManager at <https://secure.chronotrack.com> with your valid ChronoTrack user account. After logging in, a Welcome page with your name is displayed.
2. Click the **Manage Events** heading.
3. Click **Add an Event**.
4. Enter the information about your event.
5. Click **Submit**. The page now shows the tag range you created.
6. To save the tag ranges locally to your computer, from the main menu, click **CCS Server > Update Local TagRange DB**.

## 6.8 Creating Virtual Points

Some events, like triathlons, will utilize multiple points at the same location (run in, bike out). For these types of events, it is possible either to use multiple controllers in normal mode, or to split up the points based on individual Gators or combinations of Gators from a single controller. To split the point names, you will need to relocate point information on your readers and Gators by creating and loading a virtual point file in Simple Client. This file specifies which MAC addresses should be assigned to which reader and ports.

The virtual point file must be an ASCII file with an RMG file extension. The text must be semicolon-delimited with each new point on a separate row. The syntax for each row is:

**[ReaderMACAddress];[FirstGatorID];[LastGatorID];[NameOfNewPoint]**

Valid Gator IDs are 1, 2, 4, and 8.

Below is an example of a virtual point file:

```
003487;1;1;GATOR1
003487;2;2;GATOR2
003487;4;4;GATOR3
003487;8;8;GATOR4
```

This example relocates each Gator to a new point name. The most common setup would be to separate both readers and can be done like this:

```
003487;1;8;READER1
0034AF;1;8;READER2
```

After creating the virtual point file, load it into SimpleClient with the following steps:

1. From the SimpleClient main menu, click **Settings > Relocate Point Info on Reader/Gator**.
2. Select **Virtual Points**.
3. Click **Configure**.

The file is now loaded and will be included in the Select Session screen, labeled "Virtual Points".

## 6.9 *Creating and Using an Announcer Line*

Announcers can view live data about participants during an event with an announcer line. To create, load, and view an Announcer Line, do the following:

1. Create a bib file.

A bib file is an ASCII semicolon-delimited file with field headers. The field headers are displayed as column headers in the announcer line. The first field header must be the bib number, but you can add as many other fields as you like. Below is an example of the first few lines of a bib file:

```
BIB;FIRSTNAME;LASTNAME;AGE;SEX;CITY;DIVCODE
25;Scott;Abrams;51;M;LA PINE;G
26;Julio A;Aguirre;62;M;HIGHLAND PARK;I
27;Claus G.;Ahrens;25;M;JERSEY CITY;C
```

2. From the SimpleClient main menu, click **File > Load Bib File** and select the file you just created. This loads the file into SimpleClient.
3. In order to view live data streaming into the Announcer Line, make sure there is a network connection with the controller, then put the controller into Immediate mode (see [Immediate Mode](#)).
4. Enable Immediate mode in SimpleClient by selecting it from the **Tag Mode** drop-down list on the Select Session screen.  
**NOTE:** When the controller and SimpleClient are in Immediate mode, tags are only reported once despite the number of reads.
5. From the SimpleClient main menu, click **View > Announcer Display**.
6. On the SimpleClient main screen, click the **Play** button.

You can resize the Announcer Display window to zoom text by dragging the edges.

The **Flush Queue** option clears the grid and can be used to help announcers keep up with participants if the streaming data is coming in too quickly (like runners crossing a finish line). Other options are available to set the scroll speed in seconds, change number of rows, colors, and more.

To hide tags that do not contain participant data, from the Announcer Display window, click **View > Hide Unknown Tags**.

## 6.10 *Loading Controller Files*

After copying a file from a controller to a USB device, load it into SimpleClient by doing one of the following:

- From the SimpleClient main menu, click **File > Load Controller File**, then select the file to load.
- Drag the file onto the SimpleClient main screen.

When you load a controller file, the Select Session screen displays the event and point names. If markers exist in the file, any tags after a marker are listed on another row.

To stream the data, select the event and point and click **Select**, then click the **Play** button on the SimpleClient main screen.

To connect directly to your scoring software, follow the instructions under [Establishing a Direct Socket Connection with Scoring Software](#). Alternately, you can save the data to a file that you can import into your scoring software by clicking **File > Save File** from the main menu.

Repeat this process to import, play, and save other files that you have copied from the controller.

## 6.11 Establishing a Direct Socket Connection with Scoring Software

You can connect SimpleClient to your scoring software with a direct socket connection. This enables data to stream directly into your scoring software when you start a data stream in SimpleClient.

To establish a direct socket connection, complete the following procedure:

1. Open your scoring software (for example, RunScore, Race Director, or your own software).
2. Initialize your software to allow connections from SimpleClient on port 61611.
3. Open SimpleClient.
4. On the main menu, click **Direct Socket Out**, and make sure **Enabled** and **Auto Reconnect** are checked.
5. Click **Direct Socket Out > Connect**.

A connection window is displayed showing the hostname as "local host" and the TCP port as "61611".

6. Click **Connect** on the connection window.

Connecting opens the socket so that when you play data in SimpleClient, the data is also streamed directly into the scoring application.

## 6.12 Setting Time Intervals for Pass Counts and Same Tag Observations

You can set the time interval for pass counts so that if the same tag is read twice within a specified time, it is not marked as a second lap. For example, if it takes at least five minutes to complete one lap, you could set the time interval to four minutes so that any tags read twice within four minutes are not counted.

To set the time interval from the SimpleClient main menu, click **Settings > Time Interval for Pass Count**.

You can also specify that the same tag should be ignored for a specified number of seconds. This is useful to prevent the same tag from being reported twice when you have primary and backup lines. To set this option, from the main menu, click **Settings > Ignore Same Tag for ... Seconds**. Ignored tags are placed in the invalidated tags list (see [Tag Invalidation](#)).

## 6.13 Creating Time Shifts

If the controller time was not accurate for your needs when it was collecting data, you can adjust the time using SimpleClient. To create a time shift, use the **Time Shift** set of options on the Select Session screen:

- [Disabled](#): No time shift adjustments.
- [UTC to local timezone](#): Shifts the time to match your computer's local time.
- [Manual](#): Enables you to enter a specific time.
- [00:00 Start](#): Used to set the date and time if the time at Gun Start was a zero time.

### 6.13.1 Disabled

By default, tag observations are not time-shifted. Since most race scoring software cannot handle dates and the ChronoTrack controller holds both date and time, the controller timing information needs to be converted. To allow timing events with a duration over 24 hours, the normal output mode is in a special 24h+ format. To convert the controller time to 24h+ format, SimpleClient introduces a concept of base dates. When a session is selected and the stream is started, the first tag observation or gun marker (whichever comes first) is inspected. The date found in this tag observation or gun marker is now set as the base date. Each consecutive observation or marker is inspected for its date and compared to the base date. If the date is the same, a normal time output can be expected, ranging

between 0:00:00.00 and 23:59:59.99. If the date found is later than the base date, the difference in days is multiplied by 24 and added to the hours section of the time of day. If the date found is earlier than the base date, the output will contain a negative time showing the difference between the observed time and midnight at the base date. If you do not want to output negative times, you can disable the output of negative times from the SimpleClient **Settings** menu.

### 6.13.2 UTC to Local Timezone

Use this mode when you synchronize the controllers by GPS to the UTC timezone. In this mode, the difference between UTC timezone and your computer's timezone setting will be used for a time shift, resulting in timing output converted to local time of day. After times are shifted, SimpleClient will continue to use its base date logic.

### 6.13.3 Manual

If you find a controller to be off by a specific amount of time, you can use the manual option to adjust the controller's misaligned timing. A positive offset will increase the times, while a negative offset will decrease times. After times are shifted, SimpleClient will continue to use its base date logic.

### 6.13.4 00:00 Start

This option can be used for multiple timing issues and is very powerful. By setting the date and time part of this option, you pinpoint an exact moment in time on which the timing output of SimpleClient will be equal to 0:00:00.00. The difference between a tag observation's date and time and this zero point will be the output to your race scoring software.

By only setting the date and keeping the time to 0:00:00, you can set the base date manually, overriding SimpleClient's automated base date discovery in case it gives you timing errors. By also setting the time, you can actually convert SimpleClient's output to race time instead of time of day. If you enter both date and time equal to the gun time, you will get this behavior. If you have used a gun marker on the controller and its timing information is displayed on SimpleClient's session form, you can drag the gun marker to the **00:00 Start** Time Shift option to automatically fill it in.

## 6.14 Renaming Events/Points

Events and points can be renamed in SimpleClient. On the Select Session screen, type the new names in the **Rename Event** and **Rename Point** text boxes. When you change an event or point name in SimpleClient, the name is relabeled in the text file output or direct socket protocol.

## 6.15 More SimpleClient Functions

More SimpleClient functions are described below.

- To view gun times, from the main menu, click **View > Gun Times**. This displays information about each gun start set in the file.
- To view invalidated tags, from the main menu, click **View > Invalidated Tags**.
- If you have already loaded a session from a controller file, you can go back to the same CSV file and select another session from it to load. To do this from the main menu, click **File > Show Available Sessions**. This option is only available when working in local mode (as opposed to server mode, when you are connected to the CCS Server).
- If you are working on a session, you can close local mode and switch to a CCS Server stream without closing Simple Client. To do this from the main menu, click **File > Close Local mode**.

## 7. Troubleshooting

The following table lists issues that might arise when using the ChronoTrack system and provides steps for troubleshooting.

Issue	Steps to Resolution
Controller will not connect to CCSLite	<ul style="list-style-type: none"><li>• Disable all firewalls on the PC</li><li>• Make sure that the PC IP address is in the range 172.20.23.2-49</li></ul>
Antenna will not report connected on controller	<ul style="list-style-type: none"><li>• Check the cable connections at controller and antenna</li><li>• Swap ports to confirm working antenna and cables</li></ul>
Wireless numeric keypad is not working	<ul style="list-style-type: none"><li>• Verify the correct device model/brand; see System Specifications</li><li>• Ensure the device is powered on (power switch on back of keyboard)</li><li>• Press '.' (period) on the keypad to test connectivity; an audible beep should sound if the device is connected</li></ul>
USB device not recognized	<ul style="list-style-type: none"><li>• To confirm the controller recognizes your USB device, insert the USB into the MiniTrack after it has completed the boot sequence</li><li>• It should beep (10 to 20 seconds) or give an error alert (if you have one of the known directory structures on the drive).</li><li>• If neither of the above happens, you will need to use a different USB drive.</li></ul>

## 8. Appendix

### 8.1 System Specifications



*DOT regulations prohibit the shipping of lithium batteries by aircraft or vessel. Shipped controllers must include the following label: "LITHIUM BATTERIES: FORBIDDEN FOR TRANSPORT ABOARD AIRCRAFT AND VESSEL".*

Component	Specification
D-Tag Interrogator ("Gator")	<ul style="list-style-type: none"> <li>• ADA-compliant</li> <li>• Physical dimensions: 42"(L)x33"(W)x1.25"(H)</li> <li>• Weight: 27lbs</li> </ul>
D-Tag Mini Interrogator ("MiniGator")	<ul style="list-style-type: none"> <li>• <b>NOT</b> ADA-compliant</li> <li>• Physical dimensions: 36"(L)x14"(W)x1.25"(H)</li> <li>• Weight: 12lbs</li> </ul>
ChronoTrack Controller	<ul style="list-style-type: none"> <li>• MiniTrack provides four ports</li> <li>• About 2 hours per Ryobi #P104 battery</li> <li>• LCD with keypad</li> <li>• Four powered USB A ports</li> <li>• One USB B port</li> <li>• Two LAN ports</li> <li>• LED system status indicators</li> <li>• Buzzer</li> <li>• 24V DC connection</li> <li>• Physical dimensions: 16.0"(L)x13.0"(W)x6.9"(H)</li> <li>• Weight (no batteries): 12lbs</li> <li>• Weight (with batteries): 16lbs</li> </ul>
Cable Sets (Short/Long)	<ul style="list-style-type: none"> <li>• Belden 7808R</li> <li>• BNC-Male to BNC-Male</li> <li>• Short set for connecting up to 14 feet of linked Gators</li> <li>• Long set for connecting up to 14-28 feet of linked Gators</li> </ul>
AC Power Cable	<ul style="list-style-type: none"> <li>• 3-prong grounded male plug (NEMA 5-15) to 3-pin shroud female (IEC-320 C13)</li> <li>• 14' AWG 18/3</li> <li>• SJT</li> </ul>
Power Brick	<ul style="list-style-type: none"> <li>• Input: 100-240V, 50/60Hz, 1.5A AC</li> <li>• Output: +24V, 2.5A DC</li> </ul>
Wireless number keypad (optional)	<ul style="list-style-type: none"> <li>• Logitech N305</li> <li>• Physical dimensions 6.7 x 2.8 x 8.8 inches</li> <li>• Weight: 10.6 ounces</li> <li>• Extended 3 year battery life</li> <li>• Plug-in receiver for numeric entry</li> <li>• 2.4 GHz connection</li> <li>• ~30' (~9m) range</li> </ul>



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