



# ***FlashTiming***

**for *FT-FAT60***

## **User Guide**

Version 4.0



# FLASHTIMING USER GUIDE

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# 1 Installation Guide

## 1.1 Minimum System Requirement

- Pentium 4, laptop or desktop computer
- 1.6Ghz, 2MB L2 Cache
- 512MB of RAM
- 100 Gigabytes HD
- 1024 X 768 resolution monitor\*
- XP with Service Pack 2 or 3, Vista, Windows 7 Operating System
- USB 2.0 port
- Network adapter (Ethernet), if using multiple computers

\* Computers with screen resolution at or near the minimum size need to have the text size set to normal (DPI = 96pt). Otherwise, portions of the user interface may not fit on the screen.

## 1.2 Installing the Software

The FlashTiming CD contains the installation programs, setup60.exe. Install setup60.exe on the computers you will use for capturing and reviewing videos. To install the software:

1. Insert the FlashTiming CD into the CD Drive.
2. Open the Start menu and select My Computer.
3. Select the CD/DVD drive.
4. Run **Setup60**.
5. Accept all defaults in the Installation Wizard. The Installer installs .Net3.5 if needed, FlashTiming60, Device Drivers for the Digital converter and the program AviSynth.

### 1.2.1 USB Device Drivers

The FT-FAT60 Timer unit contains a digital converter manufactured by Sensoray and the USB drivers for the digital converter are installed as part of the installation process.

*Do not connect the **FT-FAT60** timer unit to your computer until after you install the device driver*

***XP Users** will receive a message that the drivers have not passed Windows Logo testing. Ignore the message and click **Continue Anyway**.*

After the drivers are installed and before running FlashTiming, plug the FT-FAT60 timer unit into your computer's USB port. You may receive a message that Windows found new drivers. (This message may appear the first time you plug the **FT-FAT60** into each USB port on your computer.) ***XP Users** will again receive the message that the drivers have not passed Windows Logo testing. Ignore the message and click **Continue Anyway**.*

If asked whether Windows can connect to Windows Update to search... , click on **No, not this time** and then click **Next**. On the next screen, click "Install the software automatically" and then **Next**.

## 2 System Set-Up

### 2.1 Hardware Setup

Follow these directions for connecting your camera to your computer with the *FT-FAT60* timer unit. See Appendix D if using the original *FT-FAT* or Pyro Bright Flash.

1. Connect the video camera to the *FT-FAT60* timer unit. Plug the RCA cable from the camera into the RCA Port labeled “From Camera” on the back panel of the *FT-FAT60*.
2. Connect the FT-FAT60 to your computer using the USB-to-USB cable. Plug the square connector of the cable into the square USB port labeled “To Computer” on the back of the FT-FAT60. Plug the other end of the USB cable into a standard USB2.0 port on your computer. A green light on the back panel of the *FT-FAT60* timer unit indicates that the unit has power.
3. Run FlashTiming and click **Video Capture** on the start up window. You will see your video image in the preview area.

#### 2.1.1 Trouble-Shooting

Verify that the light on the panel of the timer unit is green if you do not see your video image in the preview area. If the light is off, there is an issue with your USB port or possibly the USB Cable. Plug the cable into a second USB port to see if you get a green light.

A blinking green light indicates that you have power, but not a video signal. If this is the case, check all cable connections between the camera and the digital converter. Be sure the camera has power and all barrel connections are secure and locked in place.

### 2.2 Computers Setup

You can set up your FlashTiming System to work with one, two or three computers. One computer is sufficient when you have adequate time between races for one person to review the video and record the times. If you are hand-recording the results from the video then one person can easily capture and record the results. If you are exporting your results to a meet management/scoring program, such as *Hy-Tek's Meet Manager*, and there are no changes to the heat sheets at the start of the race, except for scratches, recording the results of a lane race takes very little time. Non-lane races may take a few minutes to score as you have to match the finish order of the athletes with the times.

It is not unusual, especially at the middle and high school levels, for multiple changes to be made to the heat sheets at the start of the race. Heats and even events are often combined. If your meets are pre-seeded and you are exporting time results to a meet management application, you must update the heat sheets in the application before recording the results. This may take some time and you may opt to have a second computer to review the video. In this situation, one person is dedicated to capturing the race and the videos are recorded and stored on the capture computer. Another person is responsible for reviewing the videos and recording the times on a second computer, the playback computer.

FlashTiming interfaces with the following third-party meet management and scoring software packages:

- *Hy-Tek's Meet Manager*
- *Apple Raceberry JaM's ScoreMeetLynx*
- *Easyware's Easy Meet Manager*
- *Sports Automation's TrackMate*
- *Sydex's Track Gold and Meet Manager*
- *RaceTab*

If you are using one of these programs, you may opt to use a third computer dedicated to scoring the meet. This third computer is not required, and with two computers it is easy to switch between the FlashTiming and the meet management application on the playback computer. However, three computers are most efficient for a larger meet or when you have the field and track events occurring simultaneously. The meet management operator spends most of the time entering results from the field events into the meet management application. The review judge notifies the meet management operator when all times from a race are recorded and saved. The meet management operator loads the times into the meet management application and the race is scored.

You may use an Ethernet crossover cable (sometimes called patch cable) to directly connect two computers. You need a network switch or router if you are using three computers. These computers should be connected together on a LAN isolated from other network traffic. We do not recommend using a wireless network (because of delays during playback) or a network with other computers that may be receiving network traffic during critical times during capture and playback. If the computers are connected to a larger network and any network traffic happens while you are capturing, there is a potential that frames will be lost. We recommend that the capture computer not be used in a way that would cause interfering software to be installed (adware, automatic updates, etc.) that might cause CPU usage during a capture.

### **2.2.1 Connecting Computers to a LAN**

Setting up your local area network (LAN) can often be problematic. Follow these steps for the best results when using a router:

1. Turn off wireless connections on all computers.
2. Turn off all computers.
3. Connect all computers to the router with an Ethernet cable.
4. Turn on all computers. Verify that there is a light on the router for each connected computer.
5. Turn off all Windows and third party firewalls.

See the appendix for more details on networking your computers.

### **2.3 The Capture Folder**

Video from a meet is recorded and stored on the capture computer. The playback computer is used to retrieve the video from the capture computer, review the video and record the results. By default, FlashTiming stores your videos by meets in subfolders under the folder *c:\FlashTimingVideos*. FlashTiming shares this folder and allows other

networked computers to read the videos. If you want to save your videos in another folder, you need to create a folder on the capture computer. If you are reviewing the videos on a second computer, you must share the folder and be sure that the playback computer has access to it. See the appendix for information on networking computers and sharing folders.

It is a good idea to copy the captured videos to CDs or a DVD at the end of the season and delete the subfolders and video files from your hard drive. The video files are large and take up a lot of disk space. One minute of video requires 200MB of disk space. A typical meet requires 20-40 minutes of video, or 4-8 gigabytes of disk space.

## **2.4 Scoring Data Folder Setup (Optional)**

The Scoring Data Folder is the location on your scoring computer used to exchange data files between *FlashTiming* and one of the following compatible meet management software packages:

- Hy-Tek's *Meet Manager*
- Apple Raceberry JaM's *ScoreMeetLynx*
- Sports Automation's *TrackMate*
- Sydex's Track Gold and *Meet Manager*
- EasyWare's *Easy Meet Manager*
- *RaceTab*
- DirectAthletics's *MeetPro*

These applications can be used to schedule your track and field events, seed your athletes and score your meet. When configured to exchange data with *FlashTiming*, these applications generate a list of track events and their participants. *FlashTiming* uses the list of events to identify the upcoming races and name the resulting video file. It displays the names of the athletes who participated in the race when reviewing the video to determine the athletes' times. After all times for a race are recorded, *FlashTiming* writes a file containing the times results, which is read by your meet management application.

You need to create or designate a scoring data folder on the scoring computer when you are using a meet management application. If you are scoring your meet on a separated computer, the scoring data folder must be set up for file sharing and allow other computers to write to it. See the appendix for instructions on how to network computers and set file sharing manually.

See the sections below for creating the data folder and setting your meet management application to exchange data files with *FlashTiming*.

### **2.4.1 Hy-Tek's Meet Manager**

Hy-Tek's Meet Manager users need to purchase *Meet Manager's* Photo Interface Option to exchange data with *FlashTiming*. You can check to see if the Photo Interface Option is included with your license of *Meet Manager* by doing the following:

1. Run T&F *Meet Manager*.
2. Click **Help** in the main menu bar.
3. Click **About**.
4. **Photo Finish Interface** is checked if you have the option.

### 2.4.1.1 Initialize the Photo Interface

The first time you use the Photo Finish Interface in Meet Manger you need to set the appropriate options. You only need to perform this set-up once.

1. Run T&F *Meet Manager*.
2. Click **Run** on the main menu bar.
3. Click **Interfaces** on the menu bar.
4. Click **Setup**.
5. Click **Photo Finish**.
6. If you have Release 2.0Cd\* or later, click **Flash Timing**. Otherwise, click **FinishLynx File Sharing**.
7. Click **OK**.

\* The release version number is located in the lower left corner of the main screen.

### 2.4.1.2 Erase Previously Created Event Lists and Time Files

We recommend that you remove the data files from previous meets before starting your meet. You can remove any existing data files from either the *Meet Manager* or *FlashTiming* application. To delete the files from *Meet Manager*:

1. Run T&F *Meet Manager*.
2. Click **File** on the main menu bar.
3. Click **Purge** from the drop down menu.
4. Click **Remove Data Selectively**.
5. Check **Interface Files** located at the bottom of the Remove Data Window.
6. Click **OK**.
7. Click **OK** when asked if you are sure you want to delete the files.

This deletes the event list and time results files from the data folder designated in the next step.

### 2.4.1.3 Save the Start List

We recommend that you use the default c:\tfmeets folder for your data folder. Once athletes and events are entered in *Meet Manager*, set the data folder location in *Meet Manager* and save the start list. From the *Meet Manager* application:

1. Click **Run** on the main menu bar.
2. Click **Interfaces** on the menu bar.
3. Click **Photo Finish - Flash Timing** (or **Photo Finish - FinishLynx File Sharing Mode**).
4. Click **Update Start Lists** to bring up the Update Start List Window.
5. Select a session in the Session List.
6. Check **Activate update of start lists**.
7. Click **Change Data Location**.
8. Browse to the data folder and *double click* the folder name. Be sure the name of the selected folder is displayed at the top of the dialog).
9. Click **OK** to return to the Update Start List Window.
10. Click **OK** to return to the Run Scene. A message appears, "Schedule and start list successfully copied to <data folder>".

If you choose to reuse the default c:\tfmeets folder as the meet management folder, you do not need to reset the folder at the start of each meet. Just be sure to purge the interface data before starting. You can then save the start list from the run menu by typing <Ctrl-U>. You'll see the same message as in step 10 above.

### 2.4.2 Sydex's Track Gold and Meet Manager

FlashTiming results can be saved to the computer's hard disk and then read directly into *Sydex's Track Gold and Meet Manager* with a click of a button. Create a data folder dedicated to exchanging data with *FlashTiming*, such as c:\FlashTiming. Once the folder is created, setup *Track Gold* to exchange data with FlashTiming:

1. Set up your track meet in *Track Gold and Meet Manager*.
2. Click **Meet Entry** in the Main Menu.
3. Highlight your meet in the list and click on **Change Meet Info**
4. Check **Use Finish Lynx** in the Meet Information Dialog.
5. Type in the name of the folder that are used to exchange data with FlashTiming.

The list of events and participants is automatically created when you create races/heats/flights in *Track Gold* and is stored in the designated folder.

### 2.4.3 Sports Automation's TrackMate

*FlashTiming* can read the events lists and heat sheets from Sports Automation's *TrackMate*. Time results from FlashTiming can be saved to the computer's hard disk and then read directly into *TrackMate* to score the meet. Create a data folder dedicated to exchanging data with *FlashTiming*, such as c:\FlashTiming. Once the folder is created, setup *TrackMate* to exchange data with FlashTiming:

1. Run *TrackMate* and click the **Timing System** button in the main window.
2. Click **Configure** in the Timing System window. This brings up the Configure Timing System Window.
3. Select **FlashTiming** from the *Select Timing System* List.
4. Browse to the folder that is be used to exchange data with FlashTiming.
5. Select **Hundredth of a second**.
6. Click **OK**.

Next, sort your events in the order they will be run. Click the **Event Schedule** tab in the Timing System Window. Click and drag the events to their correct position. A start list and schedule is automatically created when you create races/heats/flights in *TrackMate* and is stored in the designated folder.

### 2.4.4 Apple Raceberry JaM's ScoreMeetLynx

Apple Raceberry JaM users need to purchase the FinishLynx/FlashTiming interface option to exchange data with FlashTiming. The upgrade is called *ScoreMeetLynx*.

Once your meet is created, run *ScoreMeetLynx* and open the Roster.Text file in the Seeded directory. Check the **Records must be F.A.T.** box in the Meet Parameter dialog.

After your heats are set up and late entries are added, you need to save the event list. Click **File** in the main menu and then **Create Lynx/FlashTiming Input Files**.

*ScoreMeetLynx* displays the standard file dialog opened to the Seeded directory. Save the lynx.evt file in the seeded meet directory. Do not rename the file.

*ScoreMeetLynx* assigns event numbers to the men and women's event. It asks you for a numeric offset for event numbers to distinguish the men's from the women's event. *FlashTiming* uses the event number and description to name the video files and the resulting time results files.

*ScoreMeetLynx* creates a lynx.sch file after saving the lynx.evt file. Save the lynx.sch file in the same folder as the lynx.evt file. Click **Yes** when asked if you want to finalize the schedule.

You must resave the lynx.evt and lynx.sch files if you change your schedule of events or heat assignments.

### **2.4.5 EasyWare Easy Meet Manager**

*FlashTiming* can read the events lists and heat sheets from EasyWare's *Easy Meet Manager*. Time results from *FlashTiming* can be saved to the computer's hard disk and then imported into *Easy Meet Manager* to score the meet. Create a data folder dedicated to exchanging data with *FlashTiming*, such as c:\FlashTiming. Once the folder is created and you created your events and seeded your athletes in **Easy Meet Manager**, you need to save the list of events and seeded athletes.

1. Run *Easy Meet Manager*.
2. Click **File** in the main menu bar and then **Create FinishLynx Type File** from the dropdown menu.
3. In the standard window file dialog, browse to your meet management data folder and click **Save**. Do not rename the file.

## 3 Getting Started

Exit all other applications and disable virus checkers before starting *FlashTiming*. Virus checkers may scan the video on capture and other applications may reduce the CPU usage allocated to *FlashTiming* resulting in dropped frames and loss of video data.

To launch *FlashTiming*, either click the *FlashTiming* shortcut located on your computer's desktop, or open the **Start** menu, click **All Programs, FlashTiming60** Folder and then **FlashTiming60** from the dropdown menu. The *FlashTiming FT60* startup screen appears. Select either **Video Capture** or **Video Review** from the startup screen.

*Note: You must have administrative privileges to run FlashTiming. Depending on your user control settings, you may be logged in as administrator but may not have administrator privilege when running FlashTiming. If you receive a error message while running FlashTiming that you do not have sufficient privileges, exit the program and restart by right clicking on the FlashTiming icon and then clicking "Run as administrator."*

### 3.1 Capture Video

Click the **Video Capture** button to capture videos of your races. The **Video Capture** button is disabled if the FT-FAT timer unit is not connected to your computer. Review the Hardware Set-Up instructions for connecting the FT-FAT timer unit.

Clicking the **Video Capture** button displays the Capture Screen with live feed from the video camera. If the preview area does not display the video feed, there is most likely a problem with the cabling between the *FT-FAT60* and the camera.

### 3.2 Review Video

Click the **Video Review** button to review captured videos. Clicking this button displays the Video Review Screen.

### 3.3 Settings

Before capturing or reviewing videos you must set your scoring preferences and tell *FlashTiming* where to store its data. Click the **Configure** button when you first enter the capture screen. Otherwise, set your options by selecting **Settings** in the main menu bar and then **Configure**.

#### 3.3.1 Configure FlashTiming

The Configure Window allows you to specify the location of your video files and your meet management data when using a third party meet management application. If you are not using a meet management application, you declare your preferred method for naming your captured videos.

##### 3.3.1.1 Video Capture Folder

The video capture folder is the location where *FlashTiming* stores and retrieves your captured videos. When capturing videos, *FlashTiming* can create a folder for your race

videos or you can select an existing folder to store your captured video. When reviewing videos, you must select an existing folder, which contain the saved videos.

**Create Folder for New Meet:** Select this option if you are capturing videos and want FlashTiming to create your meet folder. Enter the name and date of your meet and FlashTiming creates a folder on the computer's C drive under *C:\FlashTimingVideos*. This folder is shared and the folder permissions are set to allow other users to read the files. This option is not available if *FlashTiming* does not detect a video device.

If you are reviewing videos on a separate computer, it is recommended that you assign the computers to the same workgroup and then network the computers. When selecting an existing meet, you will be able to easily find your meet folders by selecting the capture computer. See the Appendix for information on setting Workgroups.

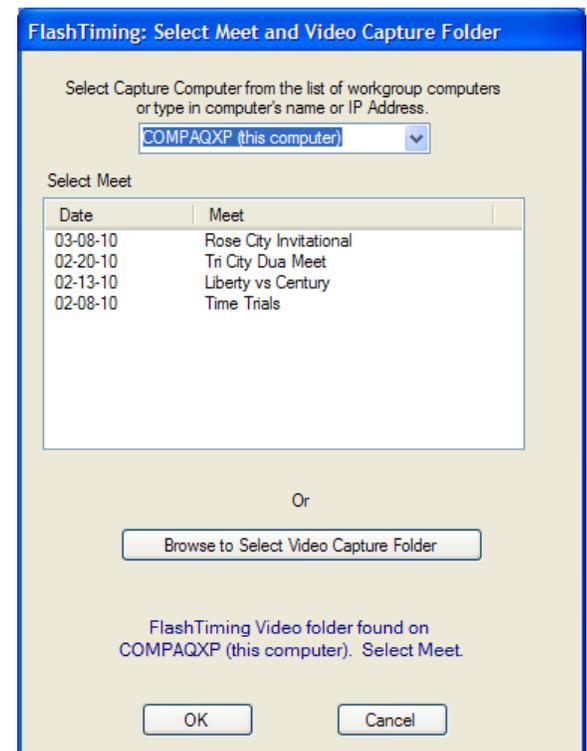
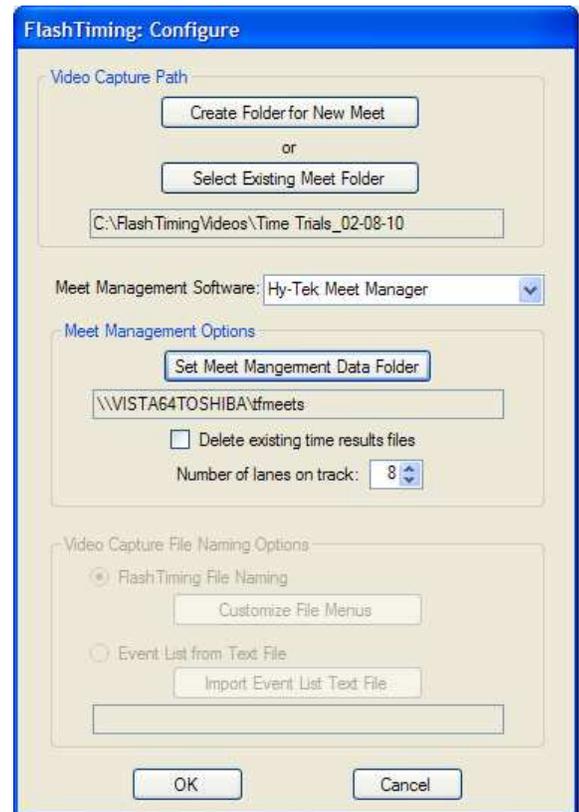
*Tip: Select **Computer/Setup Info** from the **View** menu to see the name, workgroup and IP address of the computer.*

**Select Existing Meet Folder:** Select this option if you are:

- Not capturing videos and only reviewing captured videos, or
- Capturing videos and storing your videos in a previously created folder, or
- Capturing videos and storing videos in a folder other than FlashTiming's default folder.

If you are reviewing videos that are stored in the default *FlashTimingVideos* folder, you can select the capture computer and meet in the Select Meet window.

1. Select the capture computer from the drop down list. This list contains networked computers that are in the same workgroup. If you don't see the name of the capture computer in the list, you may type in the name of the computer or the IP address. FlashTiming then displays the created meets in the list.
2. Click on the meet, and the name of the captured video folder is displayed at the bottom of the window.
3. Click **OK**.



You may retrieve videos from folders other than FlashTiming's default folder by clicking the **Browse to Select Video Capture Folder** button and then browse to the folder where you want to store and/or retrieve your videos.

Click **OK** once you selected your video capture folder.

The captured videos folder must be set for file sharing and the Capture Computer's firewall must be either turned off or setup in such a way that allows the Playback/Review Computer to access it. See the appendix for information on networking computers and sharing files.

### **3.3.1.2 Scoring Options**

#### ***3.3.1.2.1 Meet Management Software***

The next step is to specify which meet management application you wish to use with your meet. Click on the text box labeled Meet Management Software and select your meet management application from the list. Select **None** if you are not using a meet management application or if you are just reviewing video and are not recording times.

#### ***3.3.1.2.2 Scoring Folder***

You need to specify the location for saving your race results. Click **Set Meet Management Data Folder** button.

Select the meet management data folder from the browser. If you selected a meet management option, this should be the same folder specified in your meet management application. If the data folder is on another computer, you must set the folder for file sharing with write permission. If you mapped the folder to a network drive, the data path is listed in the browser as the drive letter. Otherwise, you can find the folder under My Network Places (XP users) or Network (VISTA users) in the folder browser. See *Meet Management Data Folder Setup* in the previous section for more information.

You may save your results to a text file if you selected **None** for your meet management software. The default scoring folder in this case is c:\FlashTimngResults. You may leave the folder as the default or select your own folder for saving the results.

#### ***3.3.1.2.3 Remove old results***

If you reuse the same data folder for each meet, you should remove any old race results files from the folder before reviewing videos and determining times for your current meet. Check the box **Delete existing time results files** when you first configure *FlashTiming* for your meet. If you are unable to delete the files, check that you have write permission to the meet management data folder.

**Note:** This step is unnecessary for *Sydex's Track Gold* user, since *Track Gold* deletes the results files once they are imported into *Track Gold*.

#### ***3.3.1.2.4 Number of lanes***

Enter the number of lanes on the track where the meet is hosted. This is used to as the default number of entries in the results table.

### **3.3.1.3 File Naming Options for Non-Meet Management Users**

If you are capturing videos and not using a meet management software package you must select a naming option for your captured videos. Select **None** as your meet management option and you then have two choices for naming and saving your captured video: **FlashTiming File Naming** or **Import a List of Events**. You can ignore this selection if you are only reviewing video.

#### ***3.3.1.3.1 FlashTiming File Naming***

This option provides you with a set of menus for gender, event, division, round and heat when saving your captured video file. Your menu choices create a descriptive filename for your captured video.

You may customize the event and division menus by selecting the option **FlashTiming File Naming** Option and clicking on the **Customize File Menus** button.

The list of Selected Events shows the items that will be available when saving your captured video. Customize the menu by:

1. Adding events from the list on the Available Events: Select the event in the available event list and click **Add**. The event is added to the selected events list.
2. Remove events from the Selected Event List: Select the event in the Selected Event List and click **Remove**. The event is deleted from the selected events.
3. Add new events to the list of available events: Type in a new event in the text box and click **Add Custom Event**. The event is added to your list of available events. You may now add the event to your selected event list.
4. Delete events from the available event list: Select an event in the available event list and click **Delete Above Selected Item**. This removes the item from the available event list, but not the selected list.

Click the Save button to store your new menu setting.

#### ***3.3.1.3.2 Event List Text File***

You can create your own list of scheduled events, read in the list and use the list to generate the filenames for your captured videos. Sample entries may include:

Girls Varsity 4X100  
Boys Varsity 4X100  
Boys JV 4X100  
Girls Varsity JV 1500  
Boys Varsity JV 1500  
Girls Varsity 100  
Girls JV 100 Heat 1  
Girls JV 100 Heat 2

The list is displayed in the Capture Screen and shows the upcoming events. When saving a video, you can select an event from the list to generate a descriptive filename for your captured video. The resulting filename is the event name with an “avi” extension, E.G.: Girls Varsity 4X100.avi, Girls Varsity JV 1500.avi.

The imported list must be a text (.txt) file and should contain all race events in the meet sorted in the order they will be run. Each entry should be on a new line and the list should contain separate entries for each heat.

To import a text file:

1. Click the option named **Event List from Text File**
2. Click **Import Event List Text File**.
3. Browse to the folder containing the event list text file, select the file and click **Okay**. There is an example of an event list text file on the FlashTiming CD.

### 3.3.2 Computer and Setup Information

The Computer Information dialog displays the computer's name, IPAdress and workgroup. This information is useful if you are networking computers. Click **Settings** from the Menu Bar and then click **Computer/Setup Info**.

### 3.3.3 Disk Status

It is useful to check the available disk space on the Captures Computer's hard drive before starting a meet. Click **Settings** from the Menu Bar and then click **Disk Status**. This displays the available disk space on the hard drive of the captured video folder.

Be sure you have enough space to capture your meet. 10 seconds of video requires 180 megabytes of disk space.

### 3.3.4 Initialize Video Interface

You can initialize the video camera by selecting **Settings** in the main menu bar and then **Initialize Video Interface**. The *FT-FAT60* timer unit needs to be plugged into your computer's USB2,0 port for this to succeed.

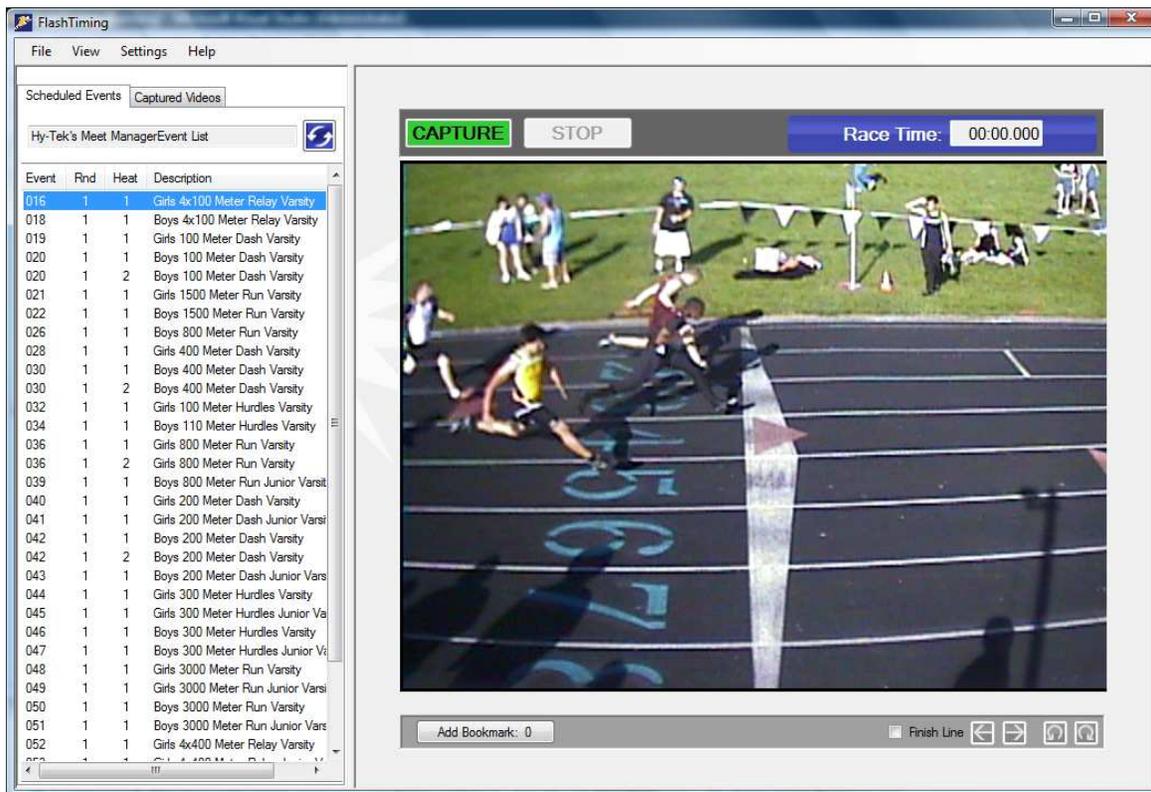
You are unable to access the video capture screen if *FlashTiming* does not detect the *FT-FAT60* timer unit on startup. Once on the review screen, you may connect the timer unit and then initialize the video interface. This will allow you to navigation to the video capture screen. You can do so by selecting **View** from the main menu and then **Video Capture**.

If you are in the capture screen and the connection from the computer to the timer unit is broken, you need to reestablish the connection and then initialize the video to restore the live feed from the video camera.

## 4 Video Capture

### 4.1 The Capture Screen

The Capture Screen shows the live feed from the video camera. Once you have configured your video settings you can capture video, view your scheduled list of events and the list of videos which you have captured.



#### 4.1.1 Capture Screen Lists

The left side of the screen contains the lists of **scheduled events** and **captured videos**. You can toggle between the two lists by clicking the appropriate tab at the top of the list. The list of scheduled events is not available if you did not set up FlashTiming to either use a meet manager application or an event text file to name your videos.

##### 4.1.1.1 Scheduled Events

The scheduled events tab shows either the list of events created by your meet management application or the contents of your event text file. The meet management application or the text file name is displayed at the top of the list.

If you selected a meet management option then the list contains the scheduled events created in your meet management application. The Event List includes the event number, the round number, the heat number and a description. Rounds are numbered 1 through 4 and indicate preliminaries, quarterfinals, semi-finals and finals. If you are using Hy-Tek's

*Meet Manager* Combined Event Option then the round number indicates the sub-event in a combined-event, such as a decathlon, and has a value 0 through 9.

The **Reload Event List** button is located above the event list in the upper right of the event tab. Click this to update the event list between rounds such as preliminaries and finals to import the latest event list into FlashTiming, or to import any changes made to the event list during the meet.

#### 4.1.1.2 Captured Videos

The captured videos tab contains the name of the captured video folder, the list of all movie files (\*.avi) in the capture folder and the **Review Video** button. This captured video list is usually empty at the start of a meet. After you capture and store each race video, the filename of the captured video appears in this list.

The **Review Video** button is a shortcut to the review screen. Select a video in the list and click this button to go to the Review Screen. The selected video is loaded and ready for review.

Right click a filename in the list and a menu appears with the following items:

- **Open Video File** – This switches to the review screen and opens the selected video in the preview area. You can also open a video by selecting a video file and clicking the **Review Video** button.
- **Rename File** – This allows you to select a new name for the selected file. The Select Filename dialog appears. Select a new name and click **Rename**. You are not able to rename the video if the video is currently being viewed on the review computer.
- **Delete File** – This deletes the current file. You are asked to verify your choice. You are not able to delete the video if the video is currently being viewed on the review computer.

#### 4.1.2 The Preview Area

The preview area consists of the live video feed, the race time and video controls. The video controls are disabled until you set up a captured video folder.

The **Race Time** shows the running race clock. The time is “00:00.000” and the area surrounding the time is blue whenever the timer unit is connected and the race clock is not running. The area surrounding the race time turns red when the race clock is running.

The **Capture** and **Stop** Buttons are located above the preview area. Click the Capture button to start saving the video to a file. Click the Stop button to stop capturing the video. When you stop the video you will be given a chance to name and save the video file.

FlashTiming allows you to save pointers to frames within your captured video. With bookmarks, you may quickly go to any marked frame when reviewing the video. Click the **Bookmark** button or press the spacebar to save a pointer to the current frame during video capture.

The **FinishLine Checkbox** superimposes a line on the video and is an aid in setting up and adjusting the camera position. Use the line to determine if your camera view is

perpendicular to your finish line. Click the checkbox to toggle the finish line on or off. Use the arrows buttons to move the line left or right.

### 4.1.3 The Menu Bar

The following options are available from the Capture Screen's menu bar:

#### 4.1.3.1 File

- **Exit** - Click **File** from the Menu Bar and then **Exit** to exit the application.

#### 4.1.3.2 View Review

Click **View Review** from the Menu Bar to switch to the Video Review Screen.

#### 4.1.3.3 Settings

- **Configure**– Click **Settings** from the Menu Bar and then **Configure** to open the Configure dialog. This allows you to set the video capture and meet management data options.
- **View Event List** – Click **Settings** from the Menu Bar and then **Event List** to see the list of scheduled events. If you configured FlashTiming to work with your meet management application, then you may also view the seeded athletes for each event. The view event list option is not available if you are using the FlashTiming File Naming Menu Option to save your captured videos.
- **Computer Information** – Click **Settings** from the Menu Bar and then **Computer Information** to see your computer's name, workgroup and current IP address. This information is useful for networking your computers.
- **Show/Hide Stopwatch** - Click **Settings** from the Menus Bar and then **Show Stopwatch** to display the stopwatch. Click **Hide Stopwatch** to remove the stopwatch from the screen.
- **Disk Status**. This displays the available disk space on the hard drive of the captured video folder.
- **Initialize Digital Converter** – Click **Settings** from the Menu Bar and then **Initialize Digital Converter** if your digital converter gets disconnected. This will reestablish the connection and display the video feed in the preview area.

#### 4.1.3.4 Help

- **Content** - Click **Help** in the Menu Bar and then **Content** for information on how to use FlashTiming.
- **About** – Click **Help** in the Menu bar and then **About** to check the Version Number of the FlashTiming application.

## 4.2 Before the race

Check the camera focus and test the FT-FAT radios before each meet. For both tests, launch *FlashTiming* and bring up the Capture Screen with a view of the finish line in the preview area.

### 4.2.1 Focus the Camera

Adjust the lens on the camera until the live feed displays a crisp image. If the camera is positioned in the same position at each race, this step only needs to be performed once provided no one changes the lens position between races.

The finish line should be located in the center of the preview area and perpendicular (at a right angle) to the bottom edge of the preview window. Click the **Finish Line** box to superimpose a line on your video. Use the line to determine if your camera angle is correct. Always check the camera feed and give yourself time to adjust the focus and position of the camera before each meet.

### 4.2.2 Test the Timing System

The starter and the timing officials should test the FAT system before starting the race. Follow these steps to test the *FT-FAT* timing system:

- Position the starter at a starting location on the track with the *FT-FAT* starter unit.
- Have the starter press the Green Go Button on the starter unit. The green lights should blink on both the starter and timer units. The timer unit will also beep twice every 5 seconds.
- Press the blinking green button on the timer unit. The green blinking lights should turn solid green on both units, indicating both timing official and starter are ready.
- Have the starter fire the pistol or tap lightly on the speaker to simulate the gun blast.

The red and green lights on both the timer and starter units turn on. The starter unit will beep for 15 seconds and then the light will go off on the starter unit. Timing information appears in the Race Time box on the computer screen. The red and green lights on the timer unit will remain on while the race clock is running. Press the reset button on the *FT-FAT* Timer unit to stop the race clock.

See the Appendix for testing the Pyro Bright Flash.

## 4.3 Capturing a Race

Bring up the Capture Screen with a view of the finish line. If you have a list of Scheduled Events, click the **Scheduled Events** tabs to display the list and then select the first race from the list.

### 4.3.1 Capturing with FT-FAT

The timer unit needs to be in the idle state before starting a race: the red light should be off and the green light should pulse every five seconds. The Race Time on the screen displays “00:00.000”

The starter presses the Green “Ready” button on the starter unit to indicate that he/she is ready to start the race. The green lights on both the starter and timing units will blink. The timing official then presses the green button to indicate that the timing system is ready. The green lights on both the starter and timing units will turn solid to indicate both officials are ready for the race to start. When the gun is fired, *both* the red and green lights turn on to indicate that the race is in progress and the running race time is displayed on the screen in a red box above the preview area.

If there is a problem with the video or timing system before the starting pistol is fired, the timing official may abort the start procedure pressing the red stop button. This will alert the starter by flashing the red light and sounding a busy alarm on the starter unit.

See the Section on FT-FAT for complete instructions on using FT-FAT.

### 4.3.2 When to Capture

It is not necessary to capture the entire race. You should start capturing when the first runner approaches the finish and stop when the last racer crosses the line. Otherwise you can fill up your hard disk space with useless video (10 seconds of video requires 180 megabytes of disk space).

Click the **Capture** button when the first runners are approximately 50 meters from the finish line. The video capture may take a few seconds to initialize, so be sure to press Capture when the first runner is at least 5 seconds from the finish line.

Click **Stop** when the last runner crosses the finish line. Press the Red Stop Button on the *FT-FAT* timer unit to stop timing.

If the timer unit becomes disconnected from the computer while running the FlashTiming application, reconnect the unit, select **Settings** from the menu bar and then **Initialize Digital Converter**.

### 4.3.3 Bookmarks

You may add bookmarks to your videos while capturing by clicking the **Bookmark** button below the preview area or pressing the spacebar key. The bookmark counter will increment whenever you add a bookmark. Bookmarks are especially useful in long races where the athletes do not finish in lanes. Add a bookmark whenever an athlete finishes the race. This will make it easy for the reviewer to quickly locate the frame with the finishing time.

### 4.3.4 Backup Timer

There may be instances when the timing system does not capture the start of the race and the timer does not start. Most of these situations can be avoided by reviewing the **FT-FAT** start procedures with the starter and timing official before the start of the meet. See the Appendix if you're using a Pyro Bright Flash for tips on how to minimize a false start due to the Pyro Bright Flash timer not starting. Regardless of the procedures you put in place, it is prudent to have a back-up timer or establish a method to recall the runners if the timer does not start.

The calibrate feature in FlashTiming allows you to record hand times of all runners with one backup timer. In the event that the timing device does not start the timer when the race commences, you should still capture the video. Start capturing the video when the first runner approaches the finish line. The backup timer uses a stop watch to time the first runner. When reviewing the video, calibrate the first frame of the runner crossing the finish line with the recorded hand time. FlashTiming then computes the times of all other runners based on the recorded hand time.

#### 4.3.4.1 Stopwatch

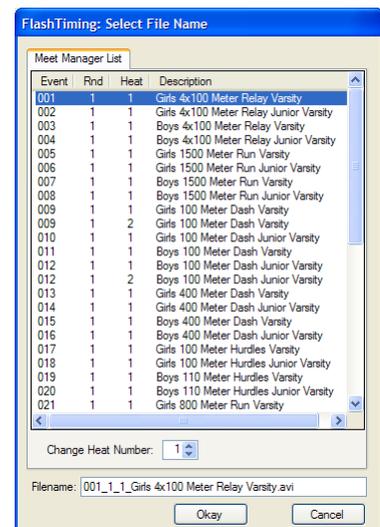
FlashTiming has a built in stopwatch, which may use to obtain a backup hand time for a race. Select **Settings** from the main menu bar and **Show Stopwatch** to display the stopwatch in the Capture Window. The capture official may click the **Start** button in the Stopwatch Window when the starting pistol is fired, which will start the stopwatch. In most cases, the FT-FAT race time is also showing in the Race Time windows. In the few instances when the FT-FAT race clock does not start, the stopwatch can be used to calibrate the first frame of the video to when the capture official presses the **Capture** button.

See Calibrate Video in the Video Review section for more details on calibrating the video and the stopwatch

## 4.4 Saving the Video

The Select File Name window appears when you click **Stop**.

- If you selected a meet management option the Meet Management Event List appears. Select the captured event from the list and select **Okay**. If you have previously selected an event in the Meet Management List on the Capture Screen, the event is highlighted in the list and the name appears in the Filename text box.
- If you are not using a meet management option and you imported an event list, the event list text file appears. Select the name of the captured event and select **Okay**. If you have previously selected an event in the Imported Event List on the Capture Screen, the event is highlighted in the list and the name appears in the Filename text box.



- If you are not using either a meet management or an imported event list, a set of menus appears. Create the file name by selecting the options for gender, event, division, round and heat.

The selected name appears in the filename text box at the bottom of the dialog. You can edit the filename in addition to selecting the name from the list.

**Important Note for Meet Management Users:** The first 8 characters of the meet management filenames are the event #, round # and heat # separated by an underscored ( \_ ). This information is used by FlashTiming to retrieve the list of athletes for the event and should not be modified. The one exception is the heat #. If a heat was added for an event and is not included in the Meet Management List, you can increment the heat number with the heat number control box above the file name.

When you click **Okay** the standard system file dialog appears. Click **Save** to store the video. This returns you to the Capture Scene. If you have previously selected an event in the scheduled events list before saving the video, the highlight advances to the next event in the list.

## 4.5 List of Captured Videos

The list of captured videos contains all movie/video files (\*.avi) in the capture folder. After you capture and store a race video, the filename of the captured video appears in this list. Click the **Capture Videos** tab in the upper left corner to display the list. You can rename, delete and review a video in the list. Right click a filename in the list and a menu appears with the following items:

- **Open Video File** – This opens the review window with the selected video loaded in the preview area. You can also open a video by selecting a video file and clicking the **Review Video** button.
- **Rename File** – This allows you to select a new name for the selected file. The Select Filename dialog appears; it is the same dialog as when you stopped capturing. Select a new name and click **Rename**. You cannot rename a file that is currently open for review on the playback computer
- **Delete File** – This deletes the current file. You are asked to verify your choice. You cannot delete a file that is currently open for review on the playback computer.

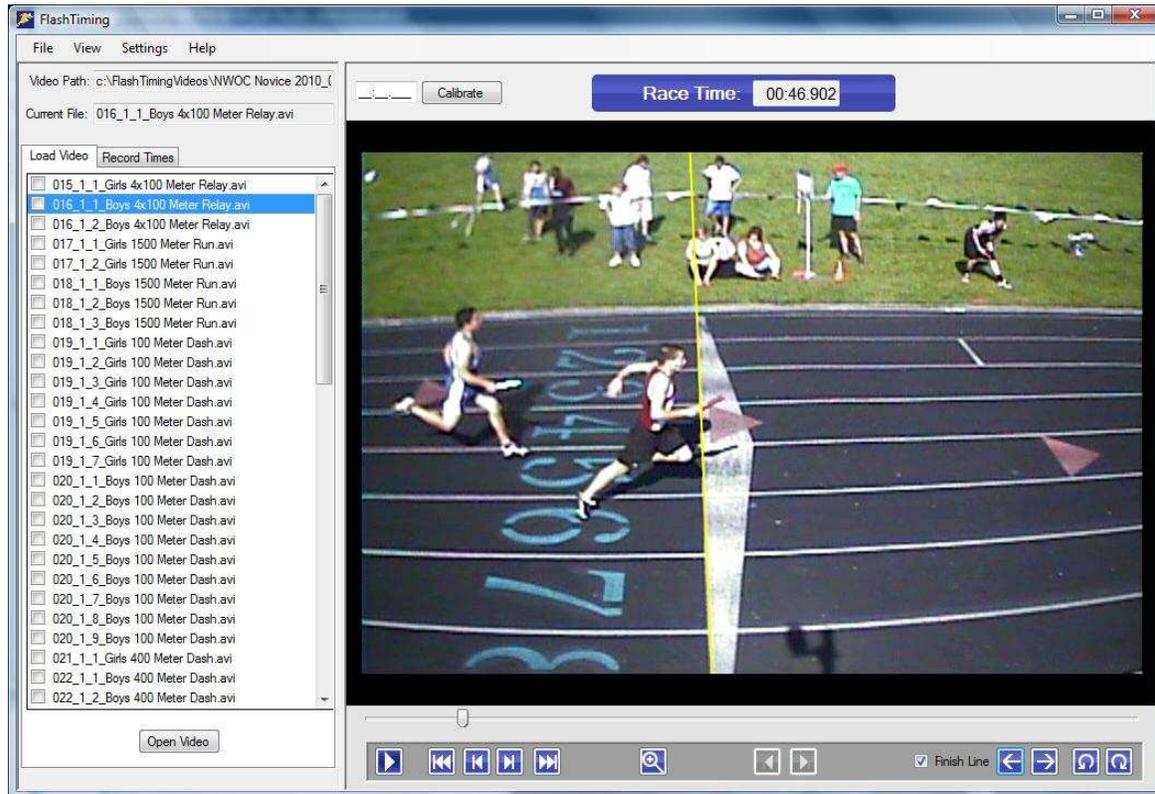
## 4.6 Keyboard Short Cuts

The following keyboard short cuts are available to access functions in the Capture Screen:

- C** – Capture Video
- S** = Stop the Video Capture
- T** – Start or Stop the stopwatch
- V** – Go to Review Screen
- W** – Show or hide the Stopwatch
- SpaceBar** or **B**– Add bookmark.

## 5 Video Review

The Video Review Screen allows you to open and playback a video. When you first open the review screen, the window shows a list of videos stored in the Captured Video Path. This folder is declared in the Configure dialog. To review a video, select a filename from the list and click the **Open Video** button. The first frame of the video appears in the preview area.



### 5.1 Menu Bar

The menu bar at the top of the Video Review Screen provides options to:

#### 5.1.1 File

- **Open** – You may open a video file in a folder other than the Captured Video Path. Click **File** from the menu bar and then **Open...** Use the standard Windows Open Dialog to browse to the folder and open the video file.
- **Save As** - You may save the current video frame as a Bitmap (.BMP). Click **File** from the menu bar and then **Save As...** Use the standard Windows Save Dialog to save the image.
- **Print Preview** – You may preview the printed image of the current video frame. Click **File** from the menu bar and then **Print Preview**.
- **Page Setup** – You can set options for the default printer. Click **File** from the menu bar and then **Page Setup**.

- **Print Video Frame**– You may print the current video frame. Click **File** from the menu bar and then **Print Video Frame...** Use the standard Windows Print Dialog to print the image.
- **Print Results** – You may print the current race results to your default Windows printer. Click **File** from the menu bar and then **Print Race Results** to print the data displayed in the race result table.
- **Exit** - Click **File** from the menu bar and then **Exit** to exit the application.

### 5.1.2 View

- **Video Capture** - Click **View** from the menu bar and then **Video Capture** to switch to the Capture Screen. This option is only available if the FlashTiming detects a video signal from the timer unit.  
**View Event List** – Click **View** from the Menu Bar and then **Event List** to see the list of scheduled events. If you configured FlashTiming to work with your meet management application, then you may also view the seeded athletes for each event. The view event list option is not available if you are using the FlashTiming File Naming Menu Option to save your captured videos.
- **Computer Information** – Click **Settings** from the Menu Bar and then **Computer Information** to see your computer's name, workgroup and current IP address. This information is useful for networking your computers.

### 5.1.3 Settings

- **Configure**– Click **Settings** from the Menu Bar and then **Configure** to open the Configure dialog. This allows you to set the video capture and meet management options.
- **Disk Status** - Click **Settings** from the Menu Bar and then **Disk Status**. This displays the available disk space on the hard drive of the captured video folder.
- **Initialize Digital Converter** – You will not be able to navigate to the capture window if the timer unit is not detected at application startup. If you connect the timer unit to your computer after starting the FlashTiming application, click **Settings** from the Menu Bar and then **Initialize Digital Converter** to detect if the converter is connected.

### 5.1.4 Help

- **Content** - Click **Help** in the Menu Bar and then **Content** for information on how to use FlashTiming.
- **About** – Click **Help** in the Menu bar and then **About** to check the Version Number of the FlashTiming application.

## 5.2 List of Captured Videos

The list of captured videos contains all movie files (\*.avi) in the capture folder. Click on the filename to select the name and then click the **Open Video** button at the bottom of the list to open the video. You may also open a video by double clicking on the filename.

There is a check box preceding each filename. This box is automatically checked whenever you review a video and save the times of the athletes. You can manually check and uncheck the box at any time to manually keep track of reviewed videos.

Right click a filename in the list and a menu appears with the following items:

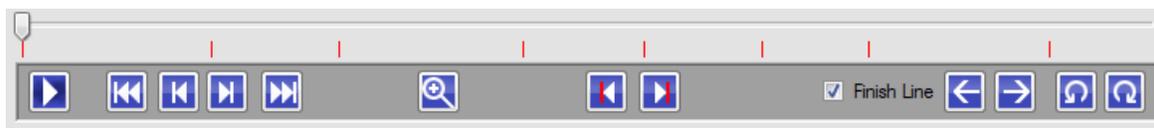
- **Open Video File** – This opens the selected video in the preview area. You can also open a video by selecting a video file and clicking the **Open Video** button.
- **Rename File** – This allows you to select a new name for the selected file. The Select Filename dialog appears. Select a new name and click **Rename**. You are not able to rename the video if the file is stored on another computer and you do not write permissions to the folder.
- **Delete File** – This deletes the current file. You are asked to verify your choice. You are not able to delete the video if the file is stored on another computer and you do not write permissions to the folder.
- **Close Video** – This is the only option available if the selected video is currently loaded in the preview area.
- **Check/Uncheck Video** – This will place/remove the checkmark before the file name. It is the same as checking the box.

### 5.3 Video Controls

The video controls are located under the video preview area and allow you to advance and rewind the video. Once you open a video, use the video controls to navigate through your video and display a finish line over the video. The **Track Bar** lets you move quickly through the video. Click and drag the position indicator on the track bar to move to any frame in the video.

The red lines located under the track bar indicate bookmarks placed on the video during capture. You can drag the track bar to the red indicator or use the bookmark controls to advance the video to a bookmarked frame. If there are no bookmarks, the bookmark controls are disabled.

The finish line controls allow you to superimpose a yellow line over the finish line on the video to make it easier to determine the instance when an athlete's torso crosses the finish line.



The video controls located from left to right are as follows:

#### **Playback Controls:**

- **Play/Pause:** Click this button to start the video. Clicking this button a second time stops the video.
- **Video Start:** Click this button to rewind the video to the first frame.

- **Step Back:** Click this button to rewind the video one frame.
- **Step Forward:** Click this button to advance the video one frame.
- **Video End:** Click this button to go to the last frame of the video.

### **Zoom:**

- **Zoom In/Out:** Click the **Zoom In** button to enlarge the video image in the preview area. Reposition the viewable portion of the image by clicking on the video and dragging it in any direction. You can play the video while in zoom mode, but it may be jerky depending on the processor speed of your computer. It is best to single step through the frames in zoom mode. Click the **Zoom** button a second time to return to the normal image size.

### **Bookmarks:**

- **Previous Bookmark:** Click this to move to the next bookmark to the left of the track bar indicator.
- **Next Bookmark:** Click this to move to the next bookmark to the right of the track bar indicator.

### **Finish Line:**

- **Finish Line Checkbox:** Check the Finish Line box to display or remove the superimposed finish line from the video. Use the finish line controls to align the superimposed line with the actual finish line in the video
- **Finish Line Left Arrow:** Click this to move the finish line to the left.
- **Finish Line Right Arrow:** Click this to move the finish line to the right.
- **Finish Line Rotate Counter Clockwise:** Click this to rotate the superimposed finish line counter clockwise.
- **Finish Line Rotate Clockwise:** Click this to rotate the finish line clockwise.

Other means for controlling the video include:

- **Left Arrow Key** – Press the **Left Arrow Key** on the keyboard to rewind the video one frame. Press and hold the arrow key to rewind the video in slow motion.
- **Right Arrow Key** – Press the **Right Arrow Key** on the keyboard to advance the video one frame. Press and hold the arrow key to advance the video in slow motion.
- **Tab Key** – Press the **Tab Key** on the keyboard to advance to the next bookmark.
- **Shift+Tab Key** – Simultaneously press the **Shift** and **Tab Keys** on the keyboard to rewind the video to the previous bookmark.
- **Preview Screen** – Click the preview area when the video is playing to stop the video.
- **Mouse Scroll Wheel** – Use the mouse wheel to advance and rewind the video.

## 5.4 Calibrate the Video

The *FT-FAT* timer unit encodes the race time on each video frame and FlashTiming retrieves and displays the time from the captured video file. The encoded time on the video frame that shows the runner crossing the finish line is the time that is assigned to the athlete. If the timing device did not activate at the start of the race, or you are using Pyro Bright Flash (see Appendix), you need to calibrate the video to obtain the race times. There is no need to calibrate the video if you are using *FT-FAT*.

FlashTiming can compute an athlete's time based on the time from any one frame of the video. In the case where the timing device did not activate, you can record the times provided you have the finish time of one athlete. This calibration feature allows you to record hand times of all runners with only one backup timer per event.

To calibrate the video when there are no times on the video and you have the time of a runner, advance the video to the frame showing the torso of the timed athlete crossing the finish line. Enter the athlete's hand time in the text box to the right of the calibrate button and click Calibrate.

If the capture official used the FlashTiming's built in Stopwatch to hand time the race, you can click the **Stopwatch** button to calibrate the video. This option is not available if the stopwatch feature was not used.



The time appears in the **Race Time** box rounded up to the nearest hundredth of a second. If times are displayed on the video you can verify the calibrated time and the current time are correct. As you navigate through the video, the current time tracks the video time to the nearest hundredth.

Click the **Clear Calibrate** Button if you calibrated a video that has *FT-FAT* encoded time and you want to revert back to the *FT-FAT* encoded time.

## 5.5 Determining an Athlete's Time

Advance the video to the frame showing the first runner crossing the finish line. Toggle the **Play/Pause** button or click and drag the **Track Bar** located under the video to locate a video frame of the runner nearing to the finish line. Use the **Step Backward** and **Step Forward** buttons to position the runner's torso on the finish line. You can also use the mouse wheel and the left and right arrow keys to step through the video frames.

NFHS, rule 5-8, article 1 states that the runner's time is the moment when his or her *torso* crosses the near plane of the finish line. The time encoded on the video frame with the runner's torso on or over the finish line is the athlete's fully automatic time, also known as FAT. If the timing device failed to start and you are using the calibrated times based on a stop watch, then the athlete's times is displayed in the **Race Time** box are considered hand times and are not automatic times.

To determine the athletes' place in a close race, it may be necessary to zoom in on the finish line. Click the **Zoom In** Button to enlarge the video image in the preview area.

You may reposition the viewable portion of the image by clicking on the video and dragging it in any direction.

## 5.6 Record Times

You can record the athletes' times for a race in *FlashTiming*, save the results and export those results if you selected a scoring option. You can then import the results into your meet management application. To do this, you must first have set the scoring option and the data location path in setup.

Click the **Record Times** tab at the top of the video list to start recording the times from the videos. This option is not available if you chose "do not score meet" while configuring *FlashTiming*. See section 3.3.1 for more information on configuring subsection *Do Not Show Athletes*, below, for information on recording the times.

### 5.6.1 Meet Management Scoring Option

Users of a meet management application can choose to bring in a list of participating athletes for each race. They must first verify the race information and load the athletes before recording the times

#### 5.6.1.1 Verify the Race Information

The race information is displayed at the top of the Record Times Tab including the event number, round number and heat number. This information is generated by your meet management application and extracted from the video filename. Verify that the event #, round # and heat # are correct for the event you are recording. If the capture official edited the filename or incorrectly saved the video under another event, you may have to enter the event information.

- **Event #:** This is the number assigned by the meet management application for the event.
- **Round #:** Rounds are numbered 1 through 4 and indicate preliminaries, quarterfinals, semi-final and final. In a multi-event, such as a decathlon, the round number is the sub-event and has a value 0 through 9.
- **Heat #:** This is the heat number for the current event.



The screenshot shows a software interface with two tabs: "Load Video" and "Record Times". The "Record Times" tab is active. Below the tabs is a section titled "Event Information" containing three dropdown menus: "Event:" with the value "11", "Round:" with the value "1", and "Heat:" with the value "1". Below these are three radio button options: "Do Not Show Athletes" (unselected), "Load Athletes" (selected), and "Load Athletes from Multiple Events" (unselected). A "Continue" button is located to the right of the radio buttons.

#### 5.6.1.2 Load Athletes

You have three options for loading the athletes and determining their times:

- **Do Not Show Athletes:** This option allows you to record the times for a race without regard to who the participants are. The meet management operator is responsible for making sure the athletes ran in their assigned lanes. This option is not available with *Sydex's Track Gold and Meet Manager*.
- **Load Athletes:** This option loads participating athletes' name, competitor number and team affiliation into *FlashTiming* and assigns a time to the athlete. Any

changes to the race start list/heat sheets must be made in the meet management program and saved before loading the athletes and recording their times.

- **Load Athletes from Multiple Events:** Events, such as the boys and girls 3000M, are sometimes combined into one race but still scored separately. This option allows you to easily run multiple events together and score them separately. Changes to the start lists for all events must be made in the meet management program and saved before loading the athletes and recording their time.

You may record the times as soon as the race is over and the video file is saved if you choose not to show the athletes' names. If you choose either of the other options, then you must first make adjustments to the heat sheets before recording the times. These changes must be made in the meet management program and saved before you load the athletes in FlashTiming and record their times. After a race, get the heat sheet/start lists from the clerk of the course and update the participants and their lane assignments in your meet management application to match with those who actually competed in the event. You do not need to update the lists if the only changes to the original start lists/heat sheets were scratches.

**Hy-Tek's Meet Manager** - In *Meet Manager's* Run menu, click the Adjust button to change lane assignments, add and delete athletes. Save the changes and return to Run Scene. Type <Ctrl-U> from the Run Scene to save the updated *Meet Manager* Event and Athlete Lists.

**Sports Automation TrackMate** – Make changes to the lane assignments and heat as in a normal meet. *TrackMate* automatically updates the data files.

**Sydex's Track Gold and Meet Manager** – Make changes to the lane assignments and heat as in a normal meet. *Track Gold* automatically updates the data files.

**Apple Raceberry JaM's ScoreMeetLynx** – Select Edit from the *ScoreMeetLynx's* main menu bar. In the drop down menu, you have the option to Add Late Entries, Redraw Heats and Scratch Athletes. Make the necessary changes to your heat sheets and resave the list:

1. Select **File** from the main menu and then **Create Lynx/FlashTiming Input File**.
2. Click **Save** in the Windows standard file dialog.
3. Click **No** when asked "Append data to the existing file?"
4. Enter the same numeric offset as when you first saved the file. Click **OK**.
5. Save the Lynx.sch file in the same location.
6. If you did not add any heats, check **Leave existing file in place**. Otherwise check **Remove old file**. Click **OK**.
7. Answer **Yes** when asked "Finalized schedule file?"

**EasyWare's Easy Meet Manager** – Make changes to the lane assignments and heat as in a normal meet and then resave the event list: Click **File** in the main menu bar and then **Create FinishLynx Type File** from the dropdown menu. In the standard window file dialog, browse to your meet management data folder and click **Save**.

Click **Continue** in *FlashTiming's* Record Times tab after you saved the changes in your meet management application. This displays the results table for recording the times. If you saved your changes in the meet management application after you loaded the athletes

into *FlashTiming*, click the **Continue** button again and the results table updates with the new data.

You cannot continue if the event is not defined in your meet management application.

FlashTiming exchanges event lists and heat sheets with your meet management application by writing files to the shared data folder. If results have previously been saved for this race, a dialog appears asking if you want to load the previously saved results. Click **Yes** to retrieve your previously saved results. If you have not saved any results for a race and you see this dialog, it is an indication that there are old results in your meet management data folder. We recommend that you always delete any previous results files before starting the meet. Otherwise, you may inadvertently read files created by a previous meet. You can delete old time result files in the configure dialog.

### 5.6.2 Record the Times for Each Athlete

When you are ready to record the times, **advance the video** to the frame showing the first runner crossing the finish line. Use the Video Controls located under the video to navigate through the video. When you have the runner's torso positioned on or over the finish line, **record the time** by clicking the appropriate row in the table containing the athlete's name or lane number. The time on the current video frame is entered in the list. Advance the video to the next runner and **repeat** until all athletes' times are recorded.

#### 5.6.2.1 Do Not Show Athletes

This is the quickest way to record the times as you do not need to know who participated in the race and there is no need to update the participants in the meet management application before recording the time.

You associate the time with a lane for races that are run in lanes. Once you have a runner's torso positioned on the finish line, you click in the row that corresponds to the athlete's lane. The time on the current video frame is entered in the Time column next to the lane #. Continue with each athlete. If no one ran in a lane, leave the time blank. Any changes to the lane assignments must be made in the meet management program before importing in the times into the application.

For a race that does not finish in lanes, record the times of the athletes in the order they cross the finish line. First, enter the number of participants in the box labeled **# of Lanes/Athletes**. This redraws the table with the number of lanes/rows entered. Place the first athlete's torso on the finish lane and click in the first row. Advance the video to the frame that shows the second athlete crossing the finish lane and click on the second row. Continue until you have recorded all athletes. You must re-order the athletes in the meet management program to match the finish order before the times are imported.

This option is not available with *Sydex's Track Gold and Meet Manager*.

Lane	Time	ID #	Name	School
1				
2				
3				
4				
5				
6				
7				
8				

### 5.6.2.2 Load Athletes

With this option, you must make changes to lane assignments in the meet management application and save them before loading the athletes into *FlashTiming*. If the only changes to the heat sheets are scratches then you do not have to make the change in the meet management application. When you click **Continue**, the table only displays the lanes that have athletes assigned.

Lane races are scored the same as if you did not show the athletes' names. Position the runner's torso on the finish line and click in the row that corresponds to the athlete's lane. The time on the current video frame is entered in the Time column next to the lane #. Continue with each athlete. If an athlete scratched, leave the time blank.

For a race that did not finish in lanes, you must know the order in which the athletes finished the race. After you obtain the finish order from the finish line judge, position the first athlete on the finish line in the video, locate their name in the list and click the row. If you assigned competitor numbers to the athletes, you can also enter the number in the text box above the athletes' list. This finds the athlete in the list and assigned the time of the current video frame. Leave the time blank for any athlete who is in the list but did not compete.

Event Information  
 Event: 10 Round: 1 Heat: 1  
 Do Not Show Athletes  
 Load Athletes  
 Load Athletes from Multiple Events

Event 10, Round 1, Heat 1  
 Girls 100 Meter Dash Junior Varsity

Athlete's ID #:

Lane	Time	ID #	Name	School
2		22	Mendoza, Sirenia	PIED
3		119	Carlson, Alisha	RIVR
4		32	Sleezer, Sarah	PIED
5		141	Richardson, Alys...	RIVR
6		30	Rothaug, Rose	PIED
7		128	Graham, Denise	RIVR

### 5.6.2.3 Load Athletes from Multiple Events

It is not uncommon for longer non-lane races, such as the boys and girls 3200M, to be run together at some smaller dual meets. This option is useful if you combined events but still need to score the events separately. First, make any adjustments to the start lists of each of the combined races in the meet management program and save them before loading the athletes. When you press **Continue**, a list of scheduled events appears. Select the events that were run together and hit **Okay**.

Your result table contains the athletes from all the selected events. Above the table is a list of the events you selected. If you click an event, the athletes in that event are highlighted.

Record the times for the athletes as you would for a non-lane race. Get the finish order of all the athletes and record their times either by clicking on their name in the list or entering their competitor number. When you save the times, *FlashTiming* separates the athlete's into their events and writes a separate result file for each event.

Event Information  
 Event: 5 Round: 1 Heat: 1  
 Do Not Show Athletes  
 Load Athletes  
 Load Athletes from Multiple Events

007\_1\_1\_Boys 1500 Meter Run Varsity  
 008\_1\_1\_Boys 1500 Meter Run Junior Varsity

Athlete's ID #:

Lane	Time	ID #	Name	School
1		177	Writers, Jordan	RIVR
2		65	Jensen, Sam	PIED
3		154	Gilles, Ryan	RIVR
4		106	Sylwester, Dy...	PIED
5		163	Little, Nathan	RIVR
6		51	Fagergren, Fr...	PIED
7		47	Chen, Gordon	PIED
8		42	Blosl, Richard	PIED
1		99	Sanchez, Car...	PIED
2		77	Matagora, Nico	PIED
3		114	Walker, Nath...	PIED
4		78	Matia, Andrew	PIED
5		53	Flynn, Connor	PIED

Save Times

### 5.6.3 Athlete's Menu

Right click on any row in the results table and the athlete's menu appears. With this menu, you may select the status of a registered athlete in the event, edit an existing time or go to the video frame showing the athlete's time.

The menu contains the following status codes for the athletes.

- SCR for Scratch
- DNF for Did Not Finish
- DNS for Did Not Start
- DQ for Disqualified
- FS for False Start
- NT for No Time

Select one of the codes and it will be entered in place of the time

#### 5.6.3.1 Edit an Athlete's Time

The athlete's menu also allows you to edit or clear the recorded time. To change a previously recorded time of an athlete either select Edit Time from the athlete's menu or position the video on the frame containing the new time and click the athlete or row in the list. A dialog appears warning that the time is already recorded. You may accept the time from the current frame, manually enter a new time, clear the time or cancel the dialog.



### 5.6.4 Determining Athletes in Non-Lane Races

It is not always possible to identify a runner or read a hip number on the video. Therefore, we strongly recommend that the finish line official records the finish order of the athletes in all races that do not finish in lanes. The official reviewing the video can then match the name with the athlete and time in the video.

Athletes often lap the slower runners in longer races such as the 3000M or 3200M races. Sometimes, the field of view on the video is not large enough to show whether the runner stopped or continued running and this makes it difficult to determine the finishers. We suggest that you use a stopwatch/printer to record the finish times of the athletes for these longer races. You can use this data to quickly advance to the video frame corresponding to the athlete's stopwatch time and then record the FAT time by positioning the torso on the finish line. It is also useful to have someone stand on the finish line opposite the camera and raise a flag when a runner finishes. Both the printer times and the raised flag help identify the finishers and skip over those runners who still have a lap to go.

### 5.6.5 Save the Times

Click the **Save Times** button after the times for all the athletes have been recorded. This saves a result file in the scoring data folder. The results are saved in a file with a .lif extension if you selected a meet management option in the configure window. If you are not using a meet management scoring packet, then the result file will be saved in the scoring folder with a file name the same as the video file and a .txt extension. E.G. If the video file is named "Girls 100M JV.avi", the results are saved in "Girls 100M JV.txt".

You are given the option to replace the existing bookmarks with the race results when you save the times. If you select to do replace the bookmarks, any bookmarks currently displayed are erased and replaced with markers, which points to the athletes' times.

*Apple Raceberry JaM's ScoreMeetLyn* and *EasyWare's Easy Meet Manager* users must select the results files when they import the times, so it's important to note the filename when you save the times.

A checkmark is added in front of the filename in the captured video list to indicate that the times have been recorded for the event.

### **5.6.6 Print the Times**

You may also print the race results to the default printer. Click **File** in the main menu and then **Print Results** to obtain a printed copy of your results.

## 6 Reading Times into the Meet Management Application

You need to import the results into your meet management application after the times for a race have been recorded and saved by *FlashTiming*.

### 6.1 Hy-Tek's Meet Manger

Click **Run** in the main menu of *Meet Manager*. In the Run the Meet scene, click the race in the event list and press the **Get Times** button. Your *FlashTiming* results are read in and recorded. If an event had multiple heats, you must get the times for all heats before scoring the event.

### 6.2 Sydex's Track Gold and Meet Manager

Results from *FlashTiming* are automatically read in when you process results for a race in *Track Gold*, provided they are present in the designated data folder. *Track Gold* removes the results file from the data folder once it is read.

### 6.3 Sports Automation's TrackMate

*TrackMate* monitors the data folder and flashes the **Timing System** button red and yellow in the main window whenever it detects a new results file. Click the flashing **Timing System** button and the Pending Results window appears. Select the events for which you want to get the times and then press the **Assign** button to import the times to the proper events.

Note that you can also read in times for each individual heat from the *Enter Results* window. When results are available for a particular heat, a flashing button appears on the heat page. When you press this button, you can “assign” the results for the heat.

### 6.4 Apple Raceberry JaM's ScoreMeetLynx

The *FlashTiming* results files are automatically named using the event number, round number and heat number. The numbers are separated by '-' and the filename has the extension "lif". For example, the results file for event 12, round 1, heat 3 is named "012-1-03.lif". *ScoreMeetLynx* users must select the corresponding result file for each heat when importing the times from *FlashTiming*. Be sure to note of the filename when you save the times in *FlashTiming*.

To read the results into *ScoreMeetLynx*:

1. Click the **Enter Results** button.
2. Select the event in the event list and click **Okay**
3. Enter the heat number, check **Get times from Lynx/FlashTiming/MacFinish file** and then click **Okay**.
4. You are asked to locate the file with a standard File Open dialog. Locate the results file in your meet management data folder. Click **Okay** and the results are imported.

## 6.5 EasyWare Easy Meet Manager

The *FlashTiming* results files are automatically named using the event number, round number and heat number. The numbers are separated by '-' and the filename has the extension "lif". For example, the results file for event 12, round 1, heat 3 is named "012-1-03.lif". *Easy Meet Manager* users must select the corresponding result file for each heat when importing the times from *FlashTiming*. Be sure to note the filename when you save the times in *FlashTiming*.

1. Click **Enter Results** from the *Easy Meet Manager's* main menu bar.
2. Select **FlashTiming** from the **Type of Electronic Timer** drop down menu and then **Ok**.
3. Select the event and heat to score.
4. In the lower right corner, select **Match by Time Order** if the event did not finish in lanes and you did not show the athletes when recording the times in *FlashTiming*. Otherwise, select Match by **Lane/Bib/Position**.
5. Click **Retrieve from File** and the Import Text File of Times Window appears.
6. Browse to your meet management data folder and select the lif file for the heat.
7. Click on **Import File** and your times are read into the athlete's table.

## 6.6 Keyboard Short Cuts

The following keyboard short cuts are available to access functions in the Review Screen:

**S** - Save Times

**P** - Print Times

**V** - Go to Capture Screen

> or . - Next Bookmark

< or , - Previous Bookmark

## 7 FT-FAT Radios

### 7.1 Overview

It is crucial that the starter and timing officials communicate before the start of each race to indicate that they're both ready for the race to begin. The **FT-FAT** system has this essential communication integrated into each unit. READY buttons and green lights are used to indicate the officials are ready to start the race. STOP buttons and flashing red lights alert the officials to hold off.

**FT-FAT**, includes two radio-linked units, a starter unit and a timer unit. The starter unit, located next to the starting official, detects the start of the race when the starting pistol is fired and starts the race clock. The timer unit is connected to the capture computer and video camera. It receives a live video feed from the video camera, encodes the time on each frame of the video and passes the video on to the computer for storage and review.

### 7.2 Buttons, Lights and Sounds

Communication between meet officials and the **FT-FAT** is done with push buttons, lights, and sounds. They indicate the starting and timing officials' readiness to start the race. There are two light/button combinations on each unit, the green light/ ready button and the red light/stop button. The officials communicate with each other by pressing the buttons.

- *Green/Ready Button:* is used by either official to signal to the other that they're ready to start the race.
- *Red/Stop Button:* is used by either official to signal to the other that they are not ready to start the race, to recall the race or to reset the race clock.

The lights and sounds on the units convey the message and indicate the current state.

- *Idle State:* The green light pulses every 5 seconds when the unit is in the idle state to indicate that the unit is on and waiting to receive a signal.
- *Are You Ready? State:* This state is indicated by the green blinking light. This occurs when one official presses the green ready button to signal that they're ready to start the race. The unit beeps twice every 5 seconds on the unit that needs to acknowledge.
- *Ready to Start Race State:* This state is indicated by a steady green light. Both officials signaled their readiness to start the race.
- *Race in Progress State:* The solid green and red lights indicate that the race is in progress.
- *Not Ready Signal:* This state is indicated by a flashing red light and busy tone.
- *Radios not Communicating Signal:* Indicated by a flashing red light and a rapid busy tone. The start of the race needs to be postponed until communication between the radios is established or a backup timer is in place and ready.

## **7.3 Powering the Units**

### **7.3.1 Power ON**

Press the READY button to turn on the unit. When turned on, the radio searches for the other unit. The starter unit turns on and immediately sends an “*Are You Ready?*” signal to the starter. A flashing green light indicates success. A red flashing light accompanied by a rapid busy signal on either unit indicates that the other unit was not detected. Press the red button to turn off the flashing lights. The timer unit beeps twice when turned on.

### **7.3.2 Power OFF**

Turn the radios off by pressing the red button and holding for 5 seconds. The unit beeps 4 times and then turns off.

The radios automatically turn off after a period of inactivity to conserve battery power. The starter unit turns off after being in the *Idle* state for 10 minutes. The timer unit turns off after 30 minutes in the *Idle* state. Note: *You lose the live feed on the capture screen when the timer unit powers off since the video feed passes through the timer unit.* Simply press the green ready button to turn on the timer unit and restore the video feed.

### **7.3.3 Battery Test**

You may check the voltage of the batteries in the starter unit by powering off the unit and then pressing the Red Stop button. The number of chimes indicates battery strength:

- 4 - full battery charge
- 3 - good battery
- 2 - Check the battery again during a long race.
- 1 - Low battery. Change the batteries before the race.

The starter unit requires 3 AA batteries. Replace all the batteries at the same time. Do not mix used batteries with new batteries. All batteries should be of the same type. You may also choose to use rechargeable batteries. The unit performs a battery test whenever the batteries are replaced.

It is recommended that you check the battery level before each meet.

## **7.4 Radio Channels**

The radio units communicate over a preset radio channel. In some cases, the preselected channel may interfere with other radio operations in the area and the radios may not be able to communicate with each other.

To verify that the units are communicating:

- Place the units within a short distance (1-400 feet) of each other with no obstacles in between the two.
- If units are off, press the red button on both units and check that the battery charge is good.
- Press the green button on the timer unit to turn it on, and then press the green button on the starter unit.

The Green Ready light blinks green on both units if the units are communicating. Press the red button on both units to turn off the lights and reset.

The blinking Red Stop light and rapid busy signal sound alerts the user if the unit does not detect the other radio. If the units are not communicating, you need to switch radio channels on both units. The channel dial is located under the black plug on the front of the units. You need a small flat-head screwdriver to change the channel and may need a flashlight to view the channel dial. There are 16 channels numbered 0-9 and A-F.

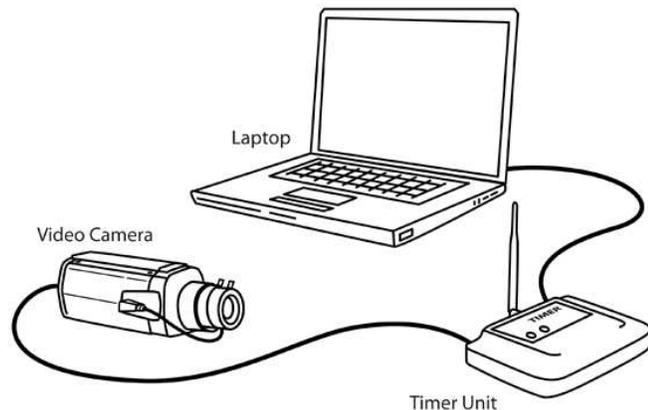
Turn the units off and remove the plugs. Insert the screwdriver head into the slot on the channel dial and turn to select a new channel. Set the channel switch to the same setting on the other radio unit. Turn the radios back on and check if they communicate. Replace the plug if the green lights flash on both radios.

You may verify the channel number by removing and replacing a battery. The units beep the 'channel number plus one' whenever you replace the batteries. For example, if a radio is set to channel 0 and a battery is removed and replaced, the radio will beep one time.

## 7.5 Setup

The starter unit is positioned next to the starting official on the starting line. The radio unit should be located 1 to 2 feet from the starting pistol when the gun is up. It can attach to the starter stand or a tripod, or be held in the starter's other hand.

The timer unit is attached to the timing/capture computer. A video camera is located at the finish line and is connected to the timer unit with a standard video cable. The unit acquires the video signal from the finish line video camera and passes it to the computer via the USB2 cable.



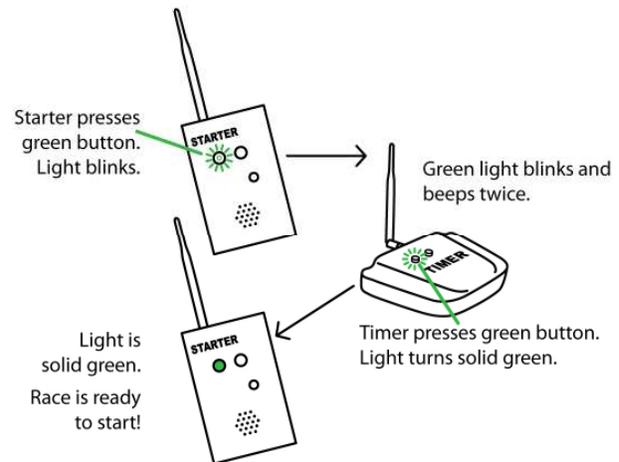
The two *FT-FAT* radios may need to be in sight of each other to communicate. The radio signals travel up to 1000 feet reliably and up to 1 mile in ideal conditions. Glass windows of a press box should not impede communication. The signals may travel through a wood structure, but should be thoroughly tested before the meet. Metal structures may obstruct the radio signals.

## 7.6 Starting a Race

Once the runners are ready, the starter and timing officials must check with each other to establish that they are both ready to start the race. The starter usually initiates this exchange by pressing the Green Ready Button on the starter unit. This sends an "Are you ready?" signal to the timer unit. The green lights on both the units blink, indicating that the starter is ready and is waiting for the timing official to acknowledge the signal. The timer unit also beeps twice every 5 seconds to attract the attention of the official.

The timing official confirms that the FAT timing system is ready to capture video of the next race by pressing the flashing green button on the unit. This sends a “Yes, I’m ready” signal back to the starter and the ready lights turn solid green on both units, indicating that both the starter and timer are ready for the race to begin.

This example shows the starter initiating this “handshake procedure”, but the timer may also send the “Are you ready?” signal to the starter, in which case the starter responds by pressing the flashing green button when the starter is ready for the race to start.



The starter has 5 minutes to start the race once the units are in the *Ready-to-Start* state and the Ready Light is solid green. The race clock starts when the starter fires the starting pistol. Once the race clock starts, the red and green lights are illuminated on both the *FAT-FAT* units, indicating the race is in progress and the timer is running. The lights on the timer’s unit remain on for the duration of the race. The lights on the starter unit remain on for 15 seconds after the race begins. The starter may recall the race in this time frame and reset the units to their ready state. After the 15 seconds, the lights on the starter unit turn off to conserve the batteries and only the timing official can stop the race clock. The timing official presses the Red Stop button on the timer unit when the last runner crosses the finish line. This stops and resets the race clock and sets the unit to the *Idle* state.

### 7.6.1 Abort the Start Procedure

Both the starter and the timer may abort the process at any time before the starting pistol is fired by pressing the Red Stop Button. This sends a “Not Ready” signal to the other unit causing it to sound a busy signal and flash the red light. The flashing light and sound stop after 10 seconds or when the Red Stop button is pushed on the unit.

### 7.6.2 No Response/Time Out

An official has 5 minutes to respond after the other official presses the green button, otherwise the units time out and return to the *Idle* state. When an official presses the Green Ready button, the green lights blink on both units. If the other official does not acknowledge the signal by pressing a button within 5 minutes, both units will sound the “Not Ready” signal (I.E. flashing red light and busy tone) and then return to the *Idle* state. Either official must reinitialize the “Are you ready?” signal before continuing.

Likewise, the starter has 5 minutes to start the race once the green light turns solid green and the units are in the *Ready to Start Race* state. The green light blinks rapidly and the unit starts beeping for the last 30 seconds of this time period to indicate the system is about to abort. This is a signal that the starter only has a few seconds to start the race. If this occurs, it is recommended that the starter aborts the process by pressing the red STOP

button. This ensures the starter has enough time to adequately start the race and the timing official is ready. It's also a safeguard against the units timing out just as the starter pulls the trigger.

### **7.6.3 Recall the race**

After the race starts, the starter may press the Red Stop button to recall the race up to 15 seconds after the race begins when both the red and greens lights are on. This resets the race clock and restores the *FT-FAT* units to the *Ready to Start Race* state. (i.e. Lights are solid green on both units). The starter then has 5 minutes to restart the race before the units time out. The officials must reinitiate the “handshake” procedure if the starter does not press the red stop button within the recall period or if the units timeout before the restart.

Whenever the timing official presses the stop button the race clock resets and units are set to the *Idle* state. If the timing official presses the stop button within the first 5 seconds of the start, the starter unit sounds a warning signal. This indicates a possible issue with the timing device and the starter may recall the race

If the timer unit does not catch the start of the race, the FlashTiming software can calculate the times of all the runners from the video based on one hand time. The resulting times will not be FAT but the video will determine the order position and all runners times will be based from the one hand time. The protocol for the timer to recall the race should be discussed before the race. If FAT times are not necessary, you may decide not to recall the race and use the calibrated hand times from the video.

## **7.7 Race Clock Inadvertently Starts**

The race clock starts once the units are in the *Ready to Start Race* state and the starter unit detects the loud bang from the starting pistol. The starter unit may mistakenly start the race clock from loud sounds or from the unit being bumped. The unit beeps and the green and red lights both turn on when this occurs. The starter can press the Stop Button within 15 seconds of this occurring and the unit will go back to the *Ready to Start Race* state. Otherwise, the timer needs to press the stop button to reset both units.

## **7.8 Radios Do Not Communicate**

If a unit is unable to send a signal to its mate when a green button is pressed, the red light flashes along with a rapid busy signal. This is similar to the busy signal that occurs when an official presses the abort button. The distinction is that the tones are played closer together and the signal usually occurs immediately after pressing a button.

It is recommended that the starter test the radio communication whenever the starter moves to a new starting position on the track and before the next race. Simply press the green GO button. If the green light flashes, then the radios are good to go. Press the red stop button to let the timer know it was only a test. If the red light on the starting unit flashes accompanied by a rapid busy signal, the radios are not communicating and you must resolve the situation before the next race.

There are several reasons why the radios may not communicate:

1. *Metal Stadiums may deflect or interfere with radio communication.*  
The FT-FAT system includes an external antenna with a 13-foot extension wire and magnetic base for use in metal spectator stands and/or press box. To use:
  - a. Unscrew the antenna on the timer unit and replace with the 13ft wire connected to the magnetic base.
  - b. Remove the black cap on the magnetic base and screw the external antenna to the base.
  - c. Attached the magnetic base to the exterior of the press box and in line of sight of the starter unit. Ideally, the antennae should be placed above the stands and press box.
2. *The receiving unit is turned off.*  
Verify both units are turned on. The units turn themselves off after a period of inactivity to conserve power. Press any button to turn on the units.
3. *The batteries are low on the starter unit.*  
Perform a battery check on the starter unit. This test should be done at the start of each meet.
4. *There is an object interfering with the radio communication.*  
Be sure there is line of sight between the radios. Sometimes, just moving the position of either the starter or the timer units a few inches may correct the problem. Something as narrow as a goal post can interfere with the radio communication if it is exactly on a line between the two units.

The next set of causes are less likely to occur during a meet, but should be checked if communication is not established after checking the above 3 items.

5. *There is interference on the radio channel.*  
Someone is operating a radio on the same channel. Even if the radios were successfully tested before the start of the meet, there is a possibility that another device is using the same radio channel and causing interference. Select a new radio channel; change channels on both radios and test. Refer to section 7.4, *Radio Channels*, for more information on setting channels.
6. *The units are not set to the same radio channels.*  
This situation only happens if someone manually sets the radios to different channels and should not occur once the channels are set and tested.
7. *The radios are out of range.*  
The radios are able to communicate over 1000 ft. under most conditions. This distance should be sufficient for most track events.

## **7.9 Test the Units**

It is recommended that you test the radio communication at each of the start positions before your track meet. There is no need to setup the computers and video cameras to do the tests. Position a person with the timer unit where the timing system is to be located during your track meet. Perform the green light test at each of the 4 starting lines around your track. Try several positions at each starting line to identify any “dead” radio zones. Let your starter know if they exist to minimize problems during the meet.

## Appendix A: Tips for Hy-Tek Meet Manager Users

Times are loaded into *Meet Manager* from the **Run the Meet** scene in the *Meet Manager* application. Click the race in the event list and simply hit the **Get Times** button. Your FlashTiming results are recorded. Here are some tips for importing times from FlashTiming into *Meet Managers*

### ***Before the Start of the Meet:***

Set up your **Meet Manager Data Location**. From the Run scene:

1. Select **Interfaces** from the Menu Bar.
2. Click **Photo Finish - FlashTiming**. For *Meet Manager* users with release prior to version 2.Bg, click **Photo Finish - FinishLynx File Sharing Mode**.
3. Select **Update Start Lists**.
4. Check the **Activate update of start lists**.
5. Click **Change Data Location** and select the folder to store the *Meet Manager Data*.  
**NOTE:** Be sure to double click the folder in the list and verify that the folder name is displayed at the top of the dialog before you hit okay. (If you just single click and hit okay, it doesn't accept the new folder. It looks like it accepted the change because the folder name is highlighted.)
6. Click **Ok** in the Update Start List dialog.

These steps need to be completed before you configure FlashTiming to use *Meet Manager*. Be sure that the **Activate update of start list** box is checked (step 4). This allows you to update the start list from the run scene.

### ***7.10 Make Corrections to the Heat Sheets***

You must update the race participants in *Meet Manager* before you record the times in *FlashTiming* if you select **Load Athletes** in *FlashTiming's* Record Time tab. If you select **Do Not Show Athletes**, you must update the athletes before importing the times into *Meet Manager*.

1. *Get the heat/finish line sheets from the clerk of the course.* If there are no scratches, changes to lane positions or addition of athletes, you can go ahead and record the times in *FlashTiming*.
2. *Make changes to the Athlete's list.* From the **Run the Meet** scene:
  - a. Click the race in the event list. If you need to add a heat, type <Ctrl-H>.
  - b. Click the **Adjust Button** in the middle section of the screen - the preview/adjust screen is displayed and shows all heats of the events.
    - To scratch an athlete, double click the athlete's name and select **Yes** in the confirmation dialog.
    - To change the lane position of an athlete, click and drag the athlete's name to a new lane. If the new lane is empty, the athlete is moved to the lane. If there is someone in the new lane, the athletes' positions are switched.
    - To add an athlete, click the **Show Eligible Athletes** button. (For relay races, click **Show Schools**.) Click and drag a name from the Eligible Athletes List to

an empty lane position in the event.

If the athlete name is not in the **Eligible Athletes List**, click the **Athlete Menu** button and add the athlete.

When all the updates have been made, click **Accept**. This returns you to the **Run the Meet** scene with your updated athlete list.

You can scratch and reposition athletes within a heat without going to the Adjust Menu. Simply follow the same steps on the athlete list in the Run Menu as you did in the Adjust menu.

- To scratch an athlete, double click the athlete's name and select **Yes** in the Confirmation dialog.
- To change the lane position of an athlete, click and drag the athlete's name to a new lane. If the new lane is empty, the athlete is moved to the lane. If there is someone in the new lane, the athletes' positions are switched.

If the only changes to a race are scratches, you can record the times in *FlashTiming* and leave the times blank for any athletes who did not run. You can delete the athletes in *Meet Manager* after you import the times for the race.

3. *Save your changes for FlashTiming*. Type <Ctrl-U> from the Run scene to save your changes to the *Meet Manager* Data Location Path. There is a confirmation message "**Photo Schedule and start lists successfully copied to <folder>**".

**NOTE:** You may get a similar message that states, "Schedule successfully created". This is an indication that the **Activate update of start lists** box is not checked in the Update Start List dialog and your changes are not saved.

4. *Record your results in FlashTiming* – Once all changes have been made to the athlete list in *Meet Manager* and the changes have been saved you can record the times in *FlashTiming*. On the Playback computer, load the video and the athletes. If the video and athletes were loaded before the updated athlete list was saved from *Meet Manager*, simply click the **Load Athlete** button to load the new list.

## **7.11 Import Results into Meet Manager**

Once all the updates have been made to the list of participants, select the event from the event list, and click the **Get Times** button. Your *FlashTiming* results are automatically entered for the event.

If the list of athletes and lane assignments from *FlashTiming* do not match the *Meet Manager* list, *Meet Manager* displays the edited list when you attempt to get the times. Make the adjustments to the *Meet Manager* list and then click the **Get Times** button again. If you accept the list without making the adjustments, only the times for the matching athletes are loaded.

## APPENDIX B: Tips for Sydex Users

Sydex and FlashTiming exchange information by storing data in a mutually agreed folder. When setting up the meet we must make sure that the two pieces of software can communicate properly. This can be accomplished by making sure that the folders the software uses are synced properly by each. Follow the steps below to ensure FlashTiming and Sydex Track Gold work properly together.

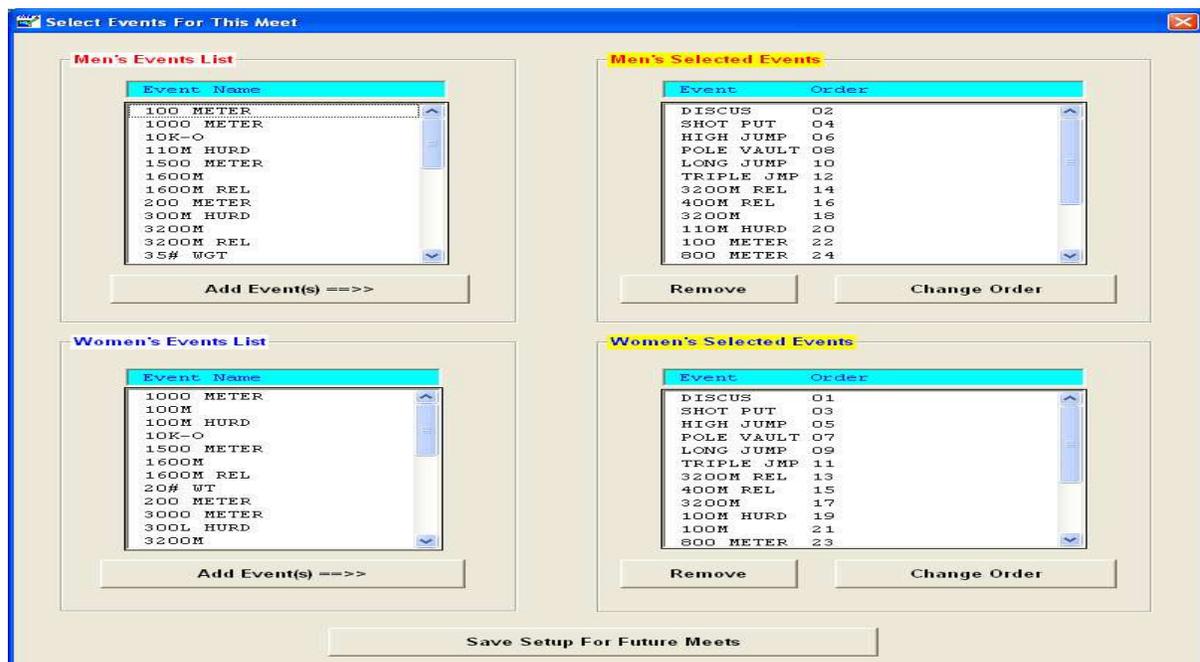
### 7.12 Data sharing:

1. Open Sydex Track Gold's Main Menu
2. In *Add/Change Data* - Choose *Meet Entry*
3. Choose the Meet you wish to score at the top of the page
4. Under *Full Results Meets* – choose *Change Meet*
5. Now choose *Change Meet Info*:
  - a. We must now set the folder that the programs can use to share data:
  - b. Check the boxes for Use Field Lynx and Use Field Lynx or other FAT
  - c. Set the folder for the data (Default is C:\LYNX)
  - d. When configuring Flash Timing, *Set Meet Management Data Folder* these two must match exactly.
  - e. Click *OK*.

### 7.13 Event Sequencing and Numbering

Now choose *Select Events at This Meet*

1. **Mens & Womens Selected Events:** Make the order of events mirrored in the top and bottom windows
2. Each event must be assigned a unique number.



3. If you are running a Mens and Womens meet **make the top windows numbers even in sequence and make the bottom window numbers odd in sequence\*\*\* (Critical)**
4. Flash Timing needs each event by gender to have a unique event id number. If the Mens 100 Dash and the Womens 100 Dash are both event 12 Flash Timing can not differentiate between the two. Sydex will not process the results properly.
5. Hit **Save Setup For Future Meets** when the events are all set.

## 7.14 Data Files In C:\LYNX Folder

Once the meet is set go and you have processed the events to the C:\LYNX folder on the machine. You will find the LYNX.EVT. You can open this file in Notepad.

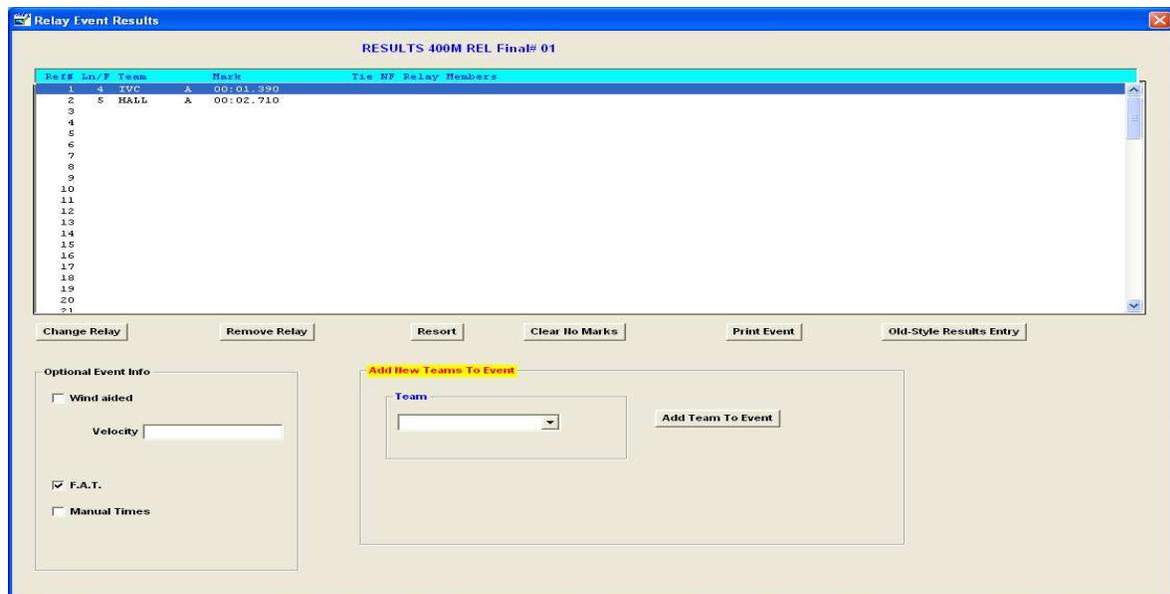
The LYNX.EVT file will show the Events and Seeding that Flash Timing uses when you are processing an Event and Load Athletes to determine their times.

After you process each event and **Save Times**, Flash Timing creates an LIF file that Track Gold uses to load the times into the software to create Results. After Track Gold processes each event it deletes these files.

## 7.15 Processing the Results

To process the results from Flash Timing with the Track Gold software follow the next steps.

On the Track Gold Main Menu hit **Meet Entry** and choose the meet you are scoring. Then choose **Change Meet** and in the main window double click the event to process. The **Men's/Women's Event Options** window will open. You must click on **Process Results**. This will open the **Events Result Control** window. In the event windows double click on the event to process. The **Event Results** window will now open and pull the times into Track Gold. You will see the processed results from Flash Timing.



This process deletes the LIF file from the C:\LYNX folder and you can now see the results when you **View/Print Results** in the **Track Gold Main Menu**.

To save the LIF files you can follow this procedure. Create a shortcut to the C:\LYNX folder on the desktop. After you have Saved Times in Flash Timing open the C:\LYNX folder and you will see three files: LYNX.EVT, and the Event LIF. Right click in the window and create a new folder, name it Meet Name Data. Right click the LIF file and copy it then right click on the folder you have created and Paste. This will create a copy of the LIF file that you can have access to at a later time. Remember after you Process the event, the LIF file will be deleted unless you save it as previously outlined.

## Appendix C: Networking your Computers

The ideal setup when running your meet is to have three computers networked together: the capture computer, the playback computer and the scoring computer. The operator of each computer is responsible for the following tasks:

- Capture Computer – Reads list of scheduled events from the scoring computer. Captures video of the finish line for the events and saves the video files on the capture’s computer hard drive.
- Playback Computer –Retrieves video from the capture computer and a list of race participants from the scoring computer, reviews the video, determines the athlete’s times and saves the results on the scoring computer.
- Scoring Computer – Saves the list of events and heat sheets from your meet management software, retrieves the time results and scores the event.

The computers must be networked together and folders must be set for sharing to enable the above tasks.

Follow these steps to network your computers and share files.

1. Set the IP addresses.
2. Assign computers to the same workgroup.
3. Plug the computers into the network switch or router.
4. Reboot the computers.
5. Turn off firewalls.
6. Set folders for sharing.

### ***Set the Computers’ IP Addresses***

The computers IP Addresses must be set appropriately if they are to recognize each other on the network. You can use either a network router or a simple switch when networking your computers. The advantage of a router is that it automatically assigns the IP address for you. You have to manually set the IP address of each computer when using a switch.

Follow these steps to set the IP address, regardless if you are using a router or a switch. If you are using a crossover cable to connect two computers, follow the instructions for a network switch.

#### ***XP Home, XP Professional, Vista***

1. Click on the Windows **Start** menu.
2. Click on **Control Panel**. This displays the Control Panel window.  
*XP Home Users:* If the Control Panel Windows has the title “Select a category”, click on **Switch to Classic View** in the left panel.
3. *XP Home and XP Professional Users:* Click on **Network Connection**. This brings up the Network Connection Window.

*Vista Users:* Click on **Network and Sharing Center**. This brings up the Network and Sharing Window. Then click on **Manage Network Connection** in the left panel.

4. **Right click** on **Local Area Connection** and then **Properties**.
5. In the General Tab, click the box labeled **File and Printer Sharing for Microsoft Networks** if it is not checked. This enables you to share files on the network.
6. *XP Users:* Select **Internet Protocol (TCP/IP)** in the scrollable list.  
*Vista Users:* Select **Internet Protocol Version 4 (TCP/IPv4)** in the scrollable list.
7. Click on the **Properties** button.
8. If you are using a router, click on **Obtain an IP address automatically**, and then **OK**. If you are using a switch:
  - a. Click on **Use the following IP address**.
  - b. Enter **192.168.0.1** for the **IP Address** on first computer.
  - c. Enter and **255.255.255.0** for the **Subnet mask**.
  - d. You can ignore the other fields. Click Okay.
  - e. Repeat these steps on each computer, incrementing the IP address. Assign the second computer an IP address of 192.168.0.2. If you are using a third computer, set the IP address to be 192.168.0.3.

*Win7 Users:*

1. Click **Start Button** go to **Control Panel**.
2. Click on **Network and Sharing Center**.
3. Click on **Change Adapter Settings** on left side then Rt Click **Local Area Connection** then click **Properties**.
4. Select **Internet Protocol Version 4 (TCP/IPv4)** in the scrollable list.
5. Click on the **Properties** button.
6. If you are using a router, click on **Obtain an IP address automatically**, and then **OK**. If you are using a switch:
  - a. Click on **Use the following IP address**.
  - b. Enter **192.168.0.1** for the **IP Address** on first computer.
  - c. Enter and **255.255.255.0** for the **Subnet mask**.
  - d. You can ignore the other fields. Click Okay.
  - e. Repeat these steps on each computer, incrementing the IP address. Assign the second computer an IP address of 192.168.0.2. If you are using a third computer, set the IP address to be 192.168.0.3.

There is a red X next to Local Area Connection in the Network Connection Window if you are not connected to the network router or switch. This disappears once you connect to the switch or router. A yellow exclamation mark indicates that the IP address is incorrect. Both these symbols disappear once all of your computer IP addresses have been set and you restarted the computer. We suggest that you reboot after you assign all computers to the same workgroup (steps are below).

## **7.16 Assign all Computers to the same Workgroup or Homegroup (Win 7)**

Assigning computers to the same workgroup makes it easier to share and locate folders on a network. First, decide on a workgroup name for your network, then for each computer on the network:

### *XP Users*

1. Right click on **My Computer**. **My Computer** can be found in the Windows start menu and sometimes on the desktop.
2. Click **Properties**.
3. Click on the **Computer Name** tab in the System Properties dialog –
4. Note the full computer name. You need to identify the computer by this name.
5. If the Workgroup Names of your computers are different, click on **Change...** and make the Workgroup Name the same on all computers. You can also change the computer name. Click OK.

### *Vista Users and Window7 when connecting with non Window7 computers*

1. Right click on **Computer**. **Computer** can be found in the Windows start menu and sometimes on the desktop.
2. Click **Properties**.
3. Note the full computer name for both the Capture and Playback Computer.
4. If the Workgroup Names of your computers are different, click on **Change...** and make the Workgroup Name the same on both computers. You can also change the computer name. Click OK.

### *Windows 7 – Create a Homegroup if all computers are Windows 7*

1. Click **Start Button** then select **Control Panel** and in the Control Panel select **Network and Sharing Center**
2. **Choose Homegroup sharing options** then **Create a homegroup**. Check share **Documents** box. You will receive a password that you use to connect all of the computers using this Homegroup.
3. Go to the other machines repeat the process and use the Homegroup password.

### *All Users*

You need to reboot the computer for the name change to take effect. Before you reboot, connect the computer to the network switch or router with an Ethernet cable. After you reboot, turn off your firewall and set the captured videos and the meet management data folders for sharing.

## **7.17 Turn off all firewalls and virus checkers.**

Firewalls and virus checkers may interfere with a networked computers ability to access shared folders. XP users should turn off the firewall, or set them in such a way that allows

the networked computers to access the shared folders. Vista and Windows 7 users should set their network location type to private (Instructions are listed under the section, "Set Folders for Sharing"). To turn off the Windows Firewall:

1. Click on the Windows **Start** menu.
2. Click on **Control Panel**. This displays the Control Panel window.
3. If the Control Panel Windows has the title "Select a category", click on **Switch to Classic View** in the left panel.
4. Click on **Windows Firewall**.
5. Click on **Off** and then **OK**.

Your anti-virus software, such as Norton or McAfee, may have a separate firewall. Be sure that any firewall and virus checking is turned off.

You should restore your firewalls and anti-virus settings after the meet.

## ***Setting Computers for Sharing***

### ***XP Professional Users***

Enable Simple File Sharing. This facilitates setting up folder shares on computers running XP Professional. Simple File Sharing (SFS) is always enabled and cannot be disabled in Windows XP Home Edition. The following set of steps can be skipped by XP Home Users.

1. Open **My Computer** from the Start Menu or Windows XP Desktop. A new My Computer window appears.
2. Open the **Tools** menu and choose the "**Folder Options...**" option from this menu. A new Folder Options window appears.
3. Click on the **View** tab and locate the "**Use Simple File Sharing** (Recommended)" checkbox in the list of Advanced Settings. It should be located near or at the bottom of the list.
4. To enable **Simple File Sharing**, ensure this checkbox is checked.
5. Click **OK** to close the Folder Options window. The settings for Simple File Sharing are now updated; no computer reboot is required.

### **Tips:**

1. Enabling Simple File Sharing prevents the ability to assign user-level passwords to shares. When Simple File Sharing is enabled on a computer, remote users are not prompted for a password when accessing that computer's shares.
2. If the Windows XP Professional computer is part of a Windows domain rather than a Windows workgroup, this process for enabling or disabling Simple File Sharing has no effect. Simple File Sharing always remains disabled for computers joined to domains.

### ***Vista Users***

To enable file sharing, do the following:

1. In the **Sharing and Discovery** section of the **Network and Sharing Center** window, click the down arrow next to **File sharing**.

2. Within the **File sharing** settings, click **Turn on file sharing**, and then click **Apply**.

To disable password protected sharing, do the following:

1. In the **Sharing and Discovery** section of the **Network and Sharing Center** window, click the down arrow next to **Password protected sharing**.
2. Within the **Password protected sharing** settings, click **Turn off password protected sharing**, and then click **Apply**.

When you disable password protected sharing, the computer sharing the folder does not require a user account or password. Anyone on your network can access the shared folders of the computer (provided the folder was shared for the Guest or Everyone account). This behavior is equivalent to simple file sharing in Windows XP.

Next, set both the captured video folder on the capture computer and the meet management data folder to sharing. To set a folder for sharing:

1. Open **Computer** and navigate to the folder to be shared.
2. Right click on the folder.
3. Select **Share** from the drop down menu. The File Sharing Window is displayed.
4. Click the arrow in the drop down menu and select **Everyone**.
5. Click Add and Everyone is added to the list of users.
6. To allow other users to change files or folders or create new files or folders, select **Co-owner** as the permission level. You'll need to do this for the meet management data folder.
7. Click **Share**. The folder icon should now display the share symbol (two people on top of the folder icon).

### **Window 7 Users**

1. Click **Start Button** then select **Control Panel** and in the Control Panel select **Network and Sharing Center**.
2. Under: **View your active networks:** You will see **Home, Work,** or **Public network** in blue print, click the word and you will have 3 choices, choose **Home network** then Check Documents then **Next**. This will also create a Homegroup.
3. **Change advanced sharing settings:** (Left Side panel)
4. **Home or Work (current profile) turn on**
  - a. **Turn on network discovery**
  - b. **Turn on file and print sharing**
  - c. **Turn on Public sharing folder**
  - d. **Media Streaming-Leave alone**
  - e. **File sharing connections-Use 128 bit encryption**
  - f. **Password protected sharing-Turn off** If you turn this on you will have to enter the User (formatted as: *Computer Name\User*) and the password when you map to the folder or try to access it.
  - g. If the computers have different operating systems you can use the same setting or **Use user accounts and passwords to connect to other computers**. If you use this setting you will have to enter the User (*ComputerName\User*) and the password when you access

- folders and shared drives.
- h. Click **Save Changes**

## **7.18 Set Folders/Files for Sharing**

You must set your video capture folder for sharing if you are reviewing videos on a separate computer than that on which you are capturing videos. If you are scoring on a separate computer, then your meet management folder must also be set for sharing. You must also enable others to write to the folder if you are reviewing videos on one computer and scoring on another.

### ***XP Home and Professional Users***

Set both the captured video folder on the capture computer and the meet management data folder to sharing. To set a folder for sharing:

1. Open **My Computer** and navigate to the folder to be shared.
2. Right click on the folder.
3. Select **Sharing and Security** from the drop down menu.
4. Check the box marked **Share this folder on the network**. If this box is not available, it's an indication that you are not on a network.
5. If you are sharing the meet management data folder, click on the box labeled **Allow network users to change my files**.
6. Click **OK**.

The folder icon should include the share symbol (a hand under the folder.)

### ***Vista Users***

Vista users need to set the network location type and enable file sharing. The network location type in Windows Vista is a setting that allows Windows Vista to automatically configure security and other settings based on the type of network to which the computer is connected. You want to set the type to Private. This is for computers connected to a network that has some level of protection from the Internet and contains known or trusted computers.

To view the current network location type, do the following,

1. Click the Windows **Start Button**.
2. Right-click **Network**.
3. Click **Properties**. This displays the **Network and Sharing Center** window. The Network Location Type is displayed in parentheses after the network name. If your network type not set to Private, do the following:
  1. Click **Customize** to the right of the network name and location type.
  2. In the **Set Network Location** dialog box, click **Private**, and then click **Next**.
  3. In the **Successfully set network settings** dialog box, click **Close**.

By changing your network location type to private, network discovery is automatically enabled in the **Sharing and Discovery** section of the **Network and Sharing Center** window. The following additional file and printer sharing options must be manually set: *Enable File Sharing* and *Disable Password protected sharing*

### *Windows 7 Users: Sharing Folders/Files*

1. Right Click **Start Button**.
2. Choose **Open Windows Explorer**.
3. Click on the **C: Drive**.
4. Right Click the **Folder/File** you wish to share or create a new folder.
5. **Share With** choose **Specific People**.
6. Click on the pull down arrow and elect **Add Everyone** then click **Add**.
7. **Everyone** will appear in the bottom window click on the Read arrow and change to **Read/Write**.
8. Click **Share** then **Done**.

## **7.19 Map the Shared Folder to a Drive**

This step makes it easy to find the capture and meet management folders on another computer, especially with XP. On the capture computer, map a drive to the meet management folder on the scoring computer. On the playback computer, map a drive to the both the meet management folder on the scoring computer and the captured videos folder on the capture computer.

To map a drive:

1. Click on the Window Start menu and then right click (**My**) **Computer**.
2. Select **Map Network Drive...** in the drop down menu. This opens the Map Network Drive window.
3. Select a drive letter, or note the letter selected.
4. Browse to the computer containing the folder.
  - a. *On XP*, you can find the computer under “My Network Places\Entire Network\Microsoft Windows Network\<Workgroup Name>”.
  - b. *On Vista/Win7* you can find the computer name under “Network”.
5. Locate the folder and select **OK**.
6. Click **Finish** in the Map Network Drive Window.

You can now find the folder listed as drive letter under **My Computer (Computer)** for VISTA/Win 7). Open **My Computer (Computer)** to verify.

You should disconnect the drive when the meet is finished. Open **My Computer (Computer)** and right click on the drive/shared folder. Click **Disconnect**.

## **7.20 Networking Techniques:**

1. Finding IP address of a computer
  - a. **Access Command Prompt**( <Windows key + R> will open the window, type cmd and hit enter) or Start-All Programs-Accessories-Command Prompt.
  - b. Type: **IPconfig**.
  - c. Identify the computer's IP address.
2. **Pinging** other computers to see if they are on the network
  - a. **Access Command Prompt** (<Windows key + R> will open the window, type cmd and hit enter) or Start-All Programs-Accessories-Command Prompt
  - b. Type **Ping** either the IP address of the other computer or the Computer Name (**Ping 192.168.1.10 or Ping Computer Name**). Click **Enter** on the keyboard.
  - c. If **Request Timed Out** you do not have a network connection to that computer.
  - d. Check setup, cabling, router/switch
3. **Tip:** Setup the same user account and password on all computers
  - a. Click on the Window Start menu and then click **Control Panel**
  - b. Choose **User Accounts**
  - c. Add the same User and Password on all computers and log into these accounts when you are going to run a meet.
4. **Tip:** If a window pops up asking for a **User Name and Password** you must enter in the User Name as (Computer Name\User Name then the Password)

## Appendix D: Hardware Setup with ADVC55

Follow these directions for connecting your camera to you computer with either the original *FT-FAT* or Pyro Bright Flash and the Grass Valley ADVC55 digital converter.

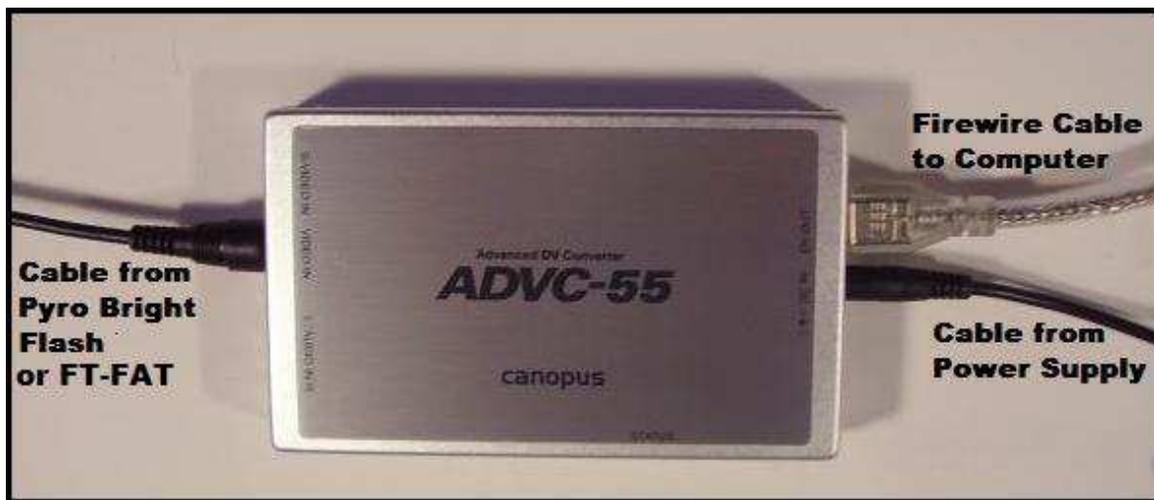
### 7.21 Digital Converter

Connect the digital converter to the laptop or computer used to capture the video. If the computer has a 6-pin firewire jack, plug the firewire (IEEE 1394) cable into the 6-pin jack on the digital converter labeled “DV Out” and the other end into the firewire jack on your computer.

Most laptops and some desktop computers only come with a 4-pin firewire jack. This situation requires a power supply for the digital converter. Use the 6-pin to 4-pin firewire cable that comes with the power supply to connect the digital converter to your computer. Plug the power cable into the connector labeled “DC In”.

Check the DIP switches next to the power supply outlet. Verify that switch two is on and all other switches are in the off position (flipped up).

If the digital converter becomes disconnected from the computer while running the FlashTiming application, reconnect the unit, select **Settings** from the menu bar and then **Initialize Digital Converter**.



**Cable Setup for the Digital Converter with Power Supply**

### Setup with *FT-FAT*

Follow these steps if using *FT-FAT*:

1. Use the 3-foot RCA cable provided with your *FT-FAT* radios to connect the digital converter to the *FT-FAT* Timer Unit. Connect one male RCA plug into the outlet marked **Video In** on the video converter and the other end in the outlet marked **To Digital Converter** on the *FT-FAT* Timer Units.
2. Plug the male RCA connector from the video camera into the RCA outlet on the *FT-FAT* Timer Unit marked **From Camera**.

## **Setup with the Pyro Bright Flash**

Follow these steps if using the Pyro Bright:

1. Connect the Pyro Bright Flash male RCA plug into the outlet marked Video In on the video converter.
2. Plug the female RCA connector from the Pyro Bright Flash to the cable from the CCTV camera.
3. Plug the Pyro Bright Flash power supply into a standard wall outlet.

## **Trouble-Shooting**

Verify that the light on the side of the digital converter is green. If the light is off, check the power supply to the digital converter. A red light indicates that you have power, but not a video signal. If this is the case, check all cable connections between the camera and the digital converter. Be sure any barrel connections are secure and locked in place. If you still have a red light, recycle the power.

## Appendix E: Pyro Bright Flash

### 7.22 Test the Pyro Bright Flash before the Meet

The starter and the capture officials should test the system before starting the race.

- Position the starter at a starting location on the track with a FlashTiming Flash Unit or a starting pistol that produces a flash bright enough to set off the Pyro Bright Flash.
- Aim the Pyro Bright Flash at the FlashTiming Flash Unit or the Pistol.
- If using the Flash Unit, have the starter point the Flash Unit at the Pyro Bright Flash and press the test button on the back of the Flash Unit. Otherwise, the starter needs to fire the pistol while the Pyro Bright Flash is aimed at it.

Timing information appears in the preview area and the Pyro Bright Flash emits a high pitch sound. This high pitch sound from the Pyro Bright Flash indicates it captured the start of the race and the timer is working. Press the reset button on the Pyro Bright Flash to stop the timer.

### 7.23 Capturing with the Pyro Bright Flash

Be sure the timing clock in the Pyro Bright Flash is reset before starting to capture a race. The Pyro Bright Flash unit should be silent and no times should display in the preview area on the screen.

Aim the Pyro Bright Flash at the FlashTiming Flash Unit or starting pistol. When the gun goes off, timing information appears in the preview area and the Pyro Bright Flash timing alarm sounds. *The Pyro Bright Flash did not trigger if the timing information is not visible on the screen and you do not hear the alarm.*

Click **Stop** when the last runner crosses the finish line. Press the reset button on the Pyro Bright Flash to stop timing.

### 7.24 Reviewing Videos

#### Calibrate the Video

All videos must be calibrated if using the Pyro Bright Flash. To do so, advance the video to a frame showing the first athlete crossing the finish line. This does not have to be the exact frame, but the closest approximation. Enter the time on the video frame into the text box to the right of the Calibrate button and click **Calibrate**.

## **7.25 Tips for Pyro Bright User for Capturing the Start of the Race**

There have been a few instances at meets where the flash does not go off or the timer in the Pyro Bright Flash does not start. Here are some situations to be aware of which may cause problems:

1. The starter has his back to the flash unit: The starter needs to be positioned such that the starting pistol is near the flash. The flash is set off by the acoustic energy created when the starting pistol is fired. If the starter has his back to the flash, not enough energy reaches the flash unit to trigger it. Position the starter stand so that there is a line of site to the Pyro Bright Flash and the flash unit and a line of site between the pistol and the flash unit. The flash can be bolted to either side of the stand. It takes a 3/16" Allen wrench to switch it.
2. The flash unit is turned off: Make sure the flash unit is turned on. The flash can run for 4-5 hours with a fresh set of batteries, so it's not necessary to turn the flash off during a meet. Some starters choose to turn off the flash when moving the starting stand since the flash is sensitive to bumps when moving. Be sure to turn it back on. One way to "measure" the battery life left is to count the seconds from the time you hit the flash test button until the light under the button turns on. A fresh set of batteries turns on the light in about five seconds. As the battery life goes down, it takes longer for the light to go on.
3. The starter fires the pistol when the Pyro Bright Flash is not aimed at the flash: There needs to be a way for the person aiming the Pyro Bright Flash to signal to the starter that they are ready. In most situations, you can accomplish this with a hand wave. We had a case during an evening meet where the starter was in an unlit portion of the track and was hard to see. The person with the Pyro Bright Flash was still trying to locate the flash in the scope when the pistol was fired. There is a second hole on the starter stand that has a 3/8" x 24 thread. Radio Shack sells a CB radio whip antennae, part number 21903, for \$25 that screws into the hole. The antenna is stainless steel and several feet long. You can place a flag or ribbon on the top to make the starter easier to find.
4. Someone obstructs the line of sight from the flash to the Pyro Bright Flash just as the pistol is fired and the Pyro Bright Flash does not register the flash.
5. Camera flashes from the audience set off the Pyro Bright Flash: This can cause a conflict if someone in the line of sight of the Pyro Bright Flash snaps a picture at the start of the race.
6. The ammo is a dud: The ammo produces enough sound for the runners to start but not enough for the flash to go off.

Most of these situations can be avoided (or minimized) by reviewing the procedures with the starter and Pyro Bright Flash operator before the start of the meet. Regardless, you should either have back-up timers or establish a method to recall the runners when the timer does not start. Our Pyro Bright Flash operator sounds a fog horn if the timing does not start and the starter fires a recall shot when he hears the fog horn.

It's important that no other applications or background processes are running when you capture video. Turn off Norton or any other anti-virus software you may have running.

We recommend that the capture computer is not connected to the internet or be used in a way that would cause interfering software to be installed (adware, automatic updates, etc.) that might cause CPU usage during a capture.

The Pyro Bright Flash is easily set off by radio signals from cell phones, 2-way radios, score board timers and bright light. This doesn't interfere with the timing since once the race is started and the timer is running the electronics do not turn off the Pyro Bright Flash. It is annoying, however, to have the Pyro Bright Flash inadvertently turn on, especially when you are getting ready to start a new race. The best way to avoid this is to keep the offending electronics at a safe distance from the Pyro Bright Flash.

## **Appendix F: Technical Support**

We are committed to providing high quality fully automatic timing systems with excellent customer service. FlashTiming support personnel are available for assistance to help ensure your success. Telephone us Monday through Friday, from 8AM until 5 PM Pacific Time.

FlashTiming Support:

- email: [support@flashtiming.com](mailto:support@flashtiming.com)
- phone: (971) 998-2349
- fax: (503) 647-2090