



FlashTiming

for *FT-FAT60*

User Guide

Version 4.3

FLASHTIMING USER GUIDE

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1 Installation Guide

1.1 Minimum System Requirement

- Pentium 4, laptop or desktop computer
- 2.0Ghz, 2MB L2 Cache
- 2GB of RAM
- 100 Gigabytes HD
- 1024 X 768 resolution monitor*
- Vista, Windows 7, Windows 8 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 installation program, **setup60.exe**, is available for download. Download instructions are emailed to the user when the product is purchased.

Install setup60.exe on the computers you will use for capturing and reviewing videos.
To install the software:

1. Run **Setup60**.
2. 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*

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.)

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 meet management 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*
- *DirectAthletics MeetPro*
- *Easyware's Easy Meet Manager*
- *Enduro Meet Event*
- *RaceTab*
- *Runner Card*
- *Sports Automation's TrackMate*
- *Sydex's Track Gold and Meet Manager*

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. When using two computers, 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 that folder on the capture computer. If you are reviewing the videos on a second computer, you must share the new folder and be sure that the playback computer has read/write 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*
- *DirectAthletics MeetPro*
- *Easyware's Easy Meet Manager*
- *Enduro Meet Event*
- *RaceTab*
- *Runner Card*
- *Sports Automation's TrackMate*
- *Sydex's Track Gold and Meet Manager*

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 race participants when reviewing the video to determine the athletes' times. After all times for a race are recorded, *FlashTiming* writes a file containing the race 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 separate 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 previously created event lists and time 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

It is recommended that you use the default Meet Manager folder for your data folder. The default folder is *c:\tfmeets4* for version 4.0, *c:\tfmeets3* for version 3.0 and *c:\tfmeets* for version 2.0 and earlier is *c:\tfmeets*. 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. If you want to save the data to a folder other than the default:
 - a. Click **Change Data Location**.
 - b. 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).
 - c. Click **OK** to return to the Update Start List Window.
8. 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 folder, *c:\tfmeets* or *c:\tfmeets3*, 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 8 above.

2.4.2 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.Tex 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.

2.4.3 DirectAthletics MeetPro

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

1. Set up your track meet in *MeetPro*.
2. Click on **Interfaces, FlashTiming** and then **Setup**.

3. Browse and select the folder that will be used to exchange data with FlashTiming.
4. Select Auto-Update Start Lists if you want MeetPro to automatically update your start list when changes are made to the heat sheets or event list. Otherwise you can manually recreate the start list by continuing to step 5.
5. Click **Interfaces**, **FlashTiming** and then **Update Start List** to save the list of events and heats sheets. MeetPro will not create the start list if there are no races seeded.

2.4.4 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.

2.4.5 RaceTab

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

For RaceTab version 3:

1. Set up your track meet in *RaceTab*.
2. Click the **Events** tab.
3. Click the **Get Times** button on the right.
4. Browse and select the folder that will be used to exchange data with FlashTiming.
5. In the Timing System Interface window, select **FT-FAT** under *What brand is your FAT System*.
6. Select **Race Results** under *Automatic Import*
7. **Events, Teams, Schedule** and **Athletes** under *Automatic Export*.
8. Click **Save and Done**. Your event list and heat sheets are automatically saved and updated every time you change the event list or heat sheets.

Press the **Get Times** button after a race has been timed to bring in the times from FlashTiming

For RaceTab version 4:

1. Set up your track meet in *RaceTab*. Be sure to select **Yes** for *Fully Automatic Timing?* under the *Setup* tab
2. Click the **RaceTab** logo at the top left of the screen.

3. Click the **Sources** button that appears in the dropdown.
4. Select **FAT Camera** on the right hand side under *Add a Source*
5. Select **FlashTiming** as the *Vendor*:
6. Click **Browse** next to *Data Folder*:
7. Browse and select the folder that will be used to exchange data with *FlashTiming*.
8. Select **Automatic** to have RaceTab automatically update the event list and heat sheets when each heat is seeded
9. Click **Save and Done**.

Right click the **Camera Icon** in the top left and select **Get Times** after a race has been timed to bring in the times from FlashTiming

2.4.6 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.

1. Create a data folder dedicated to exchanging data between *FlashTiming* and *Sydex*, such as C:\Results (This folder name must contain less than 16 characters including "c:\")
2. Set up your track meet in *Sydex Track Gold and Meet Manager*.
3. Click **Meet Entry** in the Main Menu.
4. Highlight your meet in the list and click on **Change Meet** under the **Full Results Meets** section
5. The *Track Multi-Team Meet Entry* window appears. Click **Change Meet Info** on the bottom left.
6. Check **Use Finish Lynx or FAT** in the Meet Information Dialog on the bottom right.
7. In the text entry box next to **Lynx/Timing Folder**: type the name of the folder you created in step 1 (such as C:\Results)
8. Press **OK** to return to the *Track Multi-Team Meet Entry* page
9. Double click on an event to open the *Event Options* dialog (or select an event and click **Process Event**)
10. Seed the event by clicking **View/Change Seed List**
11. When finished seeding the event, close the window by pressing the "x"
12. In the *Event Options* dialog select **Setup Flights/Heats**. The *Event Controls/Setup* dialog appears.
13. From this menu you can generate a new heat, change an existing heat, or delete an existing heat. Note the number of *Prelims*, *Quarts*, *Semis*, and *Finals*, which will be determined by the number of athletes in the event. If eight or less contestants are seeded, there will typically only be one *Final* and no *Prelims*, *Quarts*, or *Semis*.
14. Generate a new heat by clicking **Finals** under the *Generate New* section. If a *Notice!* appears warning that the race is already present, press OK to close the popup and change the heat by clicking **Finals** under the *Change Existing* section.
15. The *Current Heat Arrangement* dialog appears. Make any necessary changes to the heat and close the dialog by pressing the 'x'
16. The LYNX.EVT file will be created in the designated folder (such as C:\Results). If the file does not appear, delete the heat by clicking **Finals** under the *Delete*

Existing section, then regenerate the heat using by clicking **Finals** under the *Generate New* section.

17. If the file is still not being created, check to verify that the name of the specified folder matches the folder on your C:\ drive and that the file does not exceed 16 characters. Also verify that your race is seeded before generating heats. Sydex will not create the start list if there are no races seeded.

2.4.7 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.

3 Getting Started

Exit all other applications and disable firewalls and virus checkers before starting *FlashTiming60*. 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*, 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.

- **Video Capture** shows live feed from the video camera and allows you to capture and save time-stamped videos of your races.
- **Video Review** allows you to play previously recorded race videos, record athlete's times and transfer the race results to your meet management application

*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. This displays the Capture Screen with live feed from the video camera. The preview area displays the FlashTiming logo if the digital converter inside the timer is not detected. If is preview area is black there is most likely a problem with the cable or connections 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 Menu Bar

The following menu items are located at the top of the Capture and Review Screen.

3.3.1 File

All the following menus items are available in the Review Screen. Only the Exit command is available in the Capture Screen.

- **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.

3.3.2 Review Video/Capture Video

This menu toggles between Review Video when in the Capture Video Screen and Capture Video when in the Review Video Screen.

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

3.3.3 Settings

See section 3.2 for details on each of the following menu items.

- **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.
- **Initialize Video Interface** – Click **Settings** from the Menu Bar and then **Initialize Video Interface** to detect video.
- **View Event List** – Click **View** from the Menu Bar and then **Event List** to see the list of scheduled events.
- **Computer/Setup Information** – Click **Settings** from the Menu Bar and then **Computer Information** to view your computer's name, workgroup and current IP address and current configuration settings.

3.3.3.1 Display

- **Select Race Clock** - Click **Settings** in the Menu Bar and then **Select Race Clock** to configure a *FlashTiming FT-SIGN*, Daktronics All Sports Scoreboard or Daktronics Matrix Display to display the race clock.
- **Select Display** – Click **Display** in the Menu Bar and then **Select Display** to send entries and results to a *FlashTiming FT-Sign* or Daktronics Matrix Display.
- **Display Settings** – Click **Display** in the Menu Bar and then **Display Settings** to set the options for showing the results and entries on the display.

3.3.4 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.

3.4 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**.

3.4.1 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.

3.4.1.1 Video Capture Folder

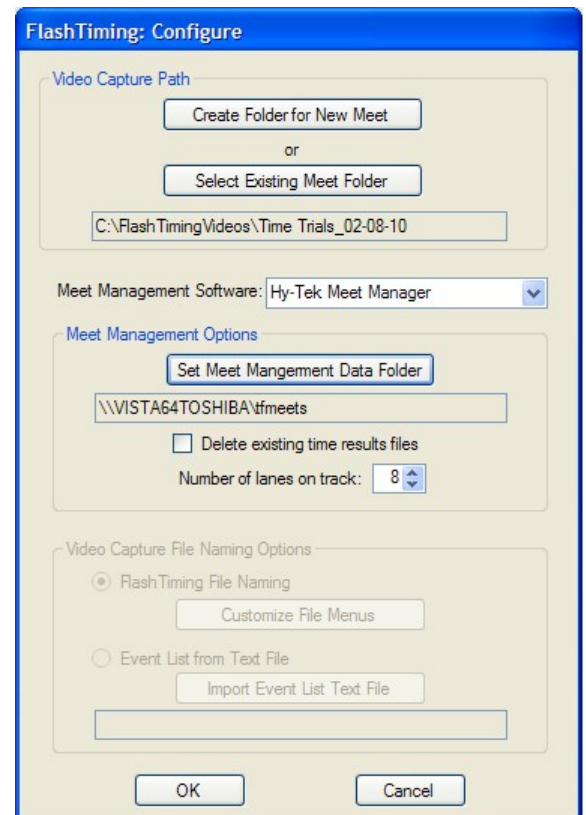
The video capture folder is the location where FlashTiming stores and retrieves your captured videos. When capturing videos, FlashTiming can create a folder for your race videos or you can select an existing folder to store your captured video. When reviewing videos, you must select an existing folder which contains 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 and write the files.

(Note: FlashTiming attempts to set the permission for C:\FlashTimingVideos folder. If it is unsuccessful, you will not be able to access to the folder. In this case, you must set the folder for sharing and give everyone read and write permissions. See the appendix for information on how to share folders.)

It is recommended that you assign the computers to the same workgroup if you are reviewing videos on a separate computer. 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.

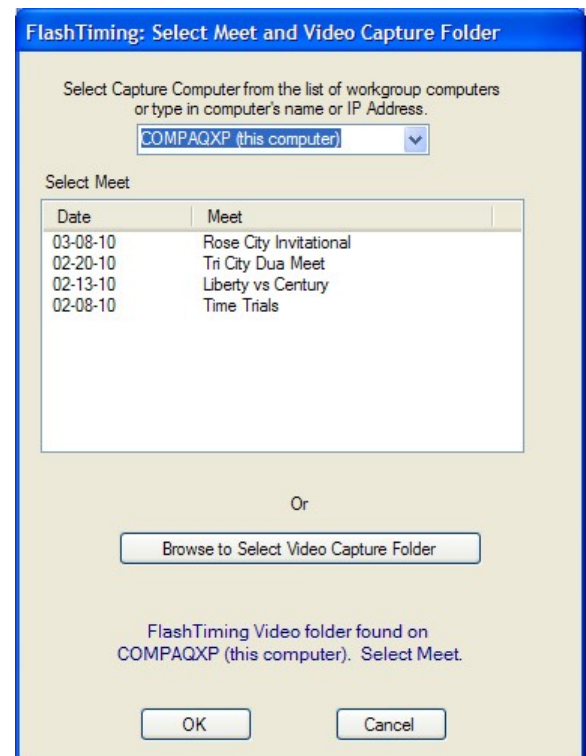
3.4.1.2 Scoring Options

3.4.1.2.1 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.

3.4.1.2.2 Scoring Folder

You need to specify the location for saving your race results. Click **Set ScoringFolder** button.



Select the meet management data folder from the browser if you selected a meet management option. This folder 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.

3.4.1.2.3 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*.

3.4.1.2.4 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.

3.4.1.3 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.

3.4.1.3.1 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.

3.4.1.3.2 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.

3.4.2 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.

3.4.3 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**.

3.4.4 Event Information

Click **Settings** from the Menu Bar and then click **Show 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.

3.4.5 Disk Status

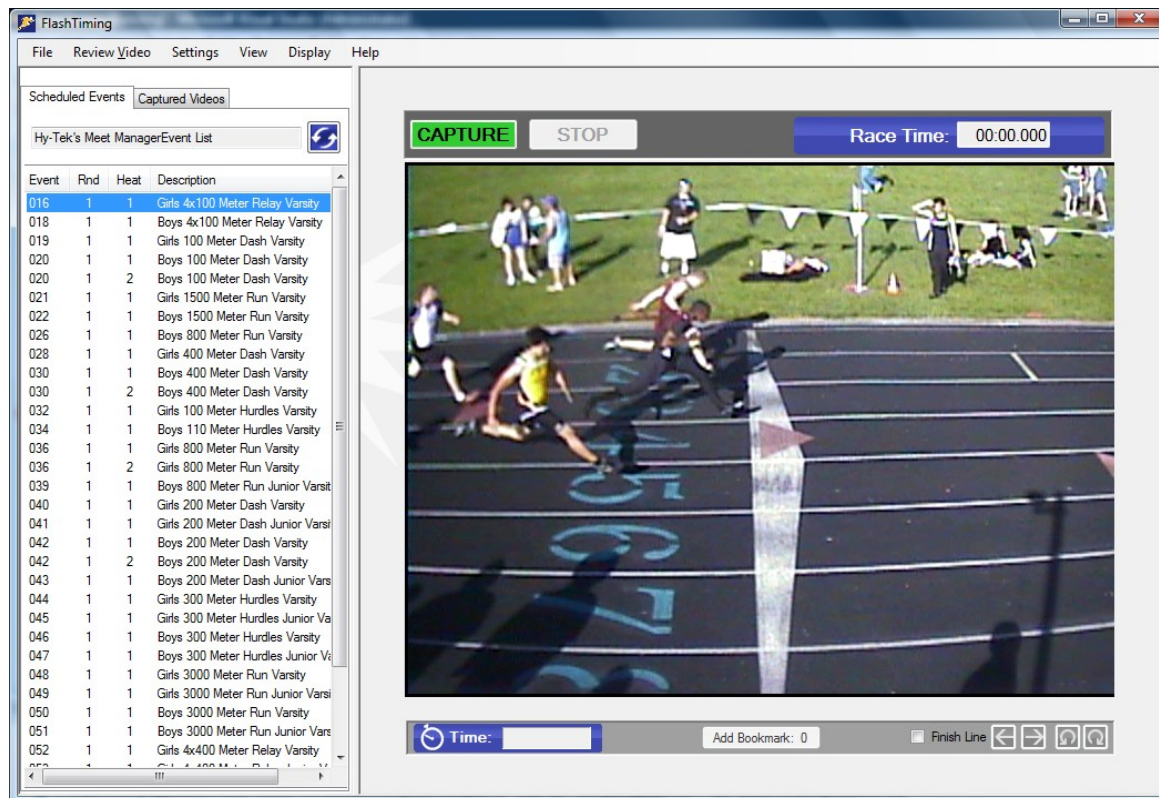
It is useful to check the available disk space on the Captures Computer's hard drive before starting a meet. Click **Settings** from the Menu Bar and then click **Disk Status**. This displays the available disk space on the hard drive of the captured video folder.

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

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 lists all movie files (*.avi) in the capture folder. The name of the capture folder is displayed at the top of the list and there is a **Review Video** button at the bottom of the list. The 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 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.

Controls for the stopwatch, bookmark and finish line are located below the preview area. FlashTiming provides a built-in manual stopwatch, which can be used as a backup timer. It also allows you to save pointers, referred to as bookmarks, 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.

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.

4.1.3 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.

4.1.4 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.

Important: Hold the starting pistol at least 18 inches from the starting unit when firing the gun. Positioning the gun any closer may damage the starter unit's sensor.

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.

4.2 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** tab to display the list and then select the first race from the list.

4.2.1 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.

4.2.2 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**.

4.2.3 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 a frame where the runner is close to the finish line. The reviewer can then quickly move to the frame that shows the runners torso breaking the near plane of the finish line and get the FAT time for that runner.

4.2.4 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 records the time of a runner with a stop watch. When reviewing the video, calibrate the frame of the runner crossing the finish line with the recorded hand time. *FlashTiming* then computes the times of all other runners based on that hand time.

4.2.4.1 Stopwatch

FlashTiming has a built in stopwatch, which may use to obtain a backup hand time for a race. The StopWatch button is the leftmost button on the bar underneath the preview area. If the capture official clicks the **StopWatch** button when the starting pistol is fired, the built-in stopwatch starts and the button turns red to indicate that it is running. When the race starts, the FT-FAT race time shows in the Race Time windows and the stopwatch is redundant. In the few instances when the FT-FAT race clock does not start, the stopwatch can be used to calibrate the video. See Calibrate Video in the Video Review section for more details on calibrating the video and the stopwatch.

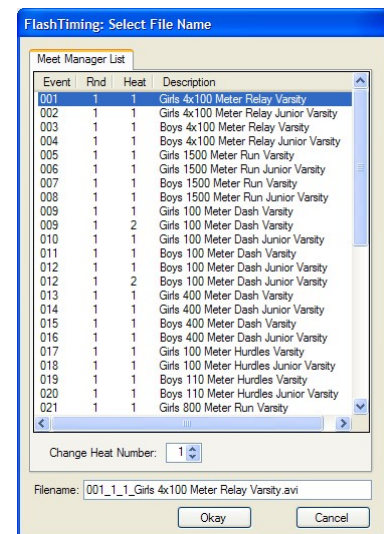
It's also possible to set a start time for the built-in stop watch. This is useful if you are timing cross country events that start in wave. Time each wave with a stopwatch and then sync the race time to FlashTiming's stopwatch and capture each wave separately.

The stopwatch will stop automatically when you stop the video capture.

4.3 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.

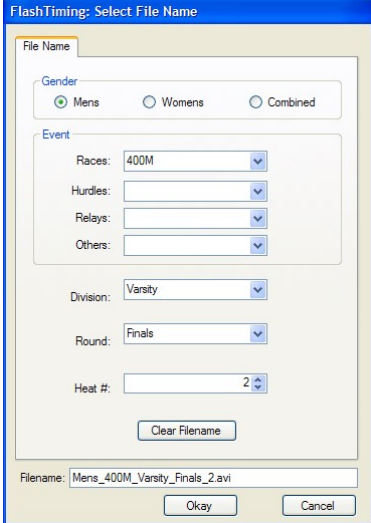


The selected name appears in the filename text box at the bottom of the dialog. You can edit the filename in addition to selecting the name from the list.

Important Note for Meet Management Users: The first 8 characters of the meet management filenames are the event #, round # and heat # separated by an underscore (_). 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.

The saved file will also appear in the Captured Video List.

The image shows a software dialog box titled "FlashTiming: Select File Name". It contains several sections: "Gender" with radio buttons for "Mens" (selected), "Womens", and "Combined"; "Event" with dropdown menus for "Races" (set to "400M"), "Hurdles", "Relays", and "Others"; "Division" with a dropdown menu set to "Varsity"; "Round" with a dropdown menu set to "Finals"; and "Heat #" with a numeric input field set to "2". There is a "Clear Filename" button below these fields. At the bottom, a "Filename:" label is followed by a text box containing "Mens_400M_Varsity_Final_2.avi". "Okay" and "Cancel" buttons are at the bottom right.

4.4 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.

4.5 Race Clocks

FlashTiming can display the race time on a FT-Display or a Daktronics Galaxy Matrix Displays or All Sports Scoreboard. Click **Display** in the main menu and then **Select Race Clocks**. Select either **FT-Displays** or **Daktronics Matrix/All Sports**.

4.5.1 FT-Displays

FlashTiming can display the race time on multiple FT-Displays. It communicates with the FT-Displays via a wireless radio link and the FlashTiming USB radio unit must be connected to the capture computer to communicate with the FT-Displays.

FlashTiming first searches for all race clocks in radio range and will list all the displays it detects. When all known displays are detected click **Stop** and then **Next**.

Check the FT-Displays on which you want to display the race times. If you have multiple displays or want to test the radio communication click the **Test** button next to each display to verify and identify the displays. The **Test** button will clear all displays in radio range and show a test message.

Click **Next** once you have selected the displays to use. FlashTiming will initialize to accept or reject the race times.

4.5.2 Daktronics Displays

FlashTiming can display the race clock on Daktronics matrix displays controlled by a Venus 4600, Venus 5000, Venus 6000, Venus 6500, or Venus 7000 computer or an All Sports Scoreboard.

Click **Display** in the main menu, **Select Race Clocks** and then **Daktronics Matrix/All Sports**. There are two methods for connecting *FlashTiming* to a Daktronics scoreboard/display: Serial Port or UDP.

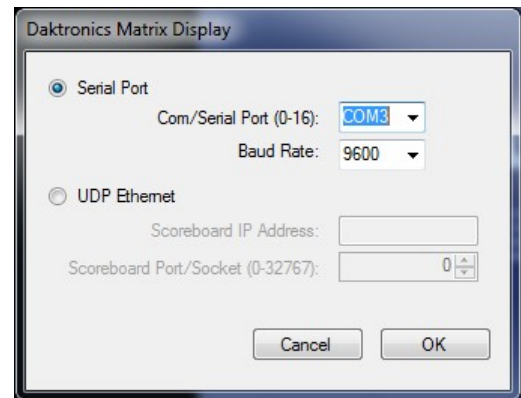
4.5.2.1 Serial Port

Click the **Com/Serial Port** option and select the com port and baud rate.

4.5.2.2 UDP

Click the **UDP Ethernet** option. Enter the IP address and socket number of the scoreboard computer.

Refer to your Daktronics manual for more information on setting up the scoreboard.



4.5.3 Race Clock Display and Toolbar

Once the race clock is initialized, a toolbar appears at the top of the screen, just below the menu bar that allows you to clear and reset the race clock.

The race time appears on the scoreboard when either the start is detected by the FT-FAT system or when you click on the Stop Watch timer. The race clock will continue running until the time is stopped by pushing the red button on the timer unit if it is a FAT time, or by stopping the stopwatch if the time is a hand time.

See Section 6 for information on setting up matrix displays to show the race entries.

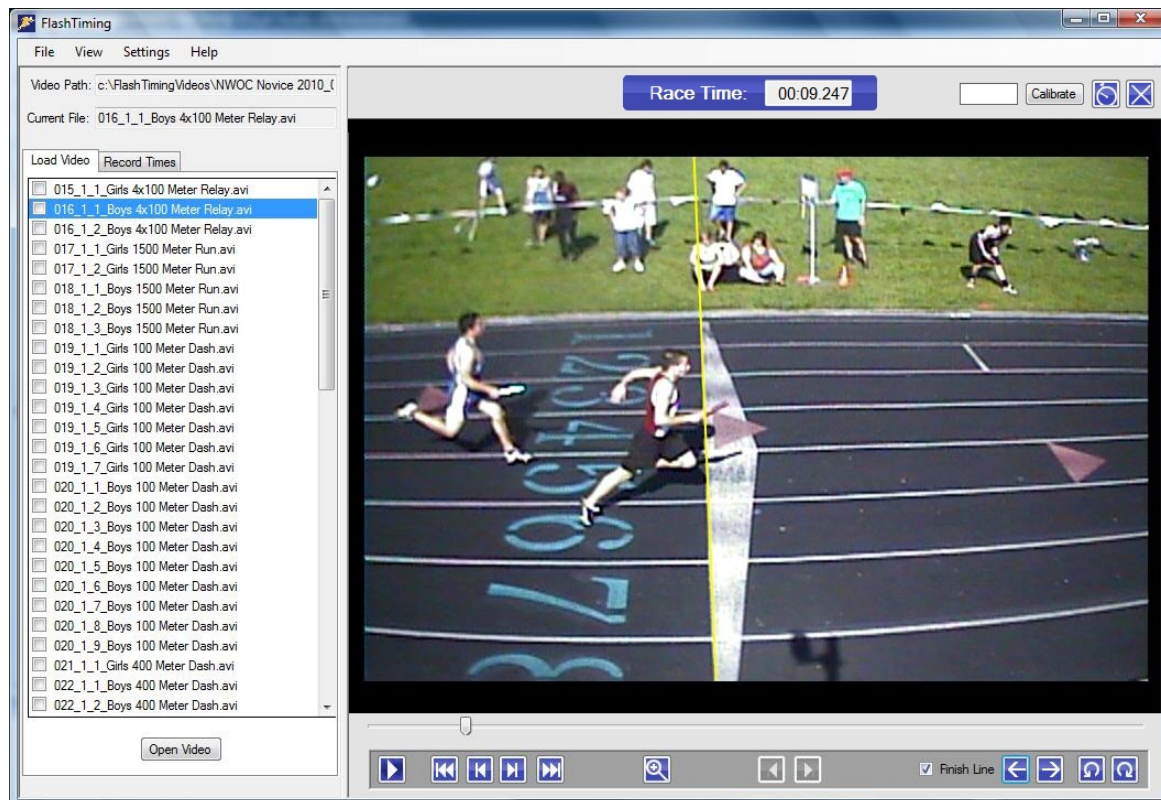
4.6 Keyboard Short Cuts

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

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

5 Video Review

The Video Review Screen allows you to open and playback saved videos. The first step is to set the capture video and the scoring data folders in the Configure dialog. Review Section 3 for information on setting the folders. Once the capture folder is declared, the list of captured videos files are displayed on the left side of the Review window. Select a filename from the list and click the **Open Video** button to review a video. The first frame of the video appears in the preview area.



5.1 List of Captured Videos

The list of captured videos contains all movie files (*.avi) in the capture folder. This list is initially empty at the start of the meet and will grow as videos are captured. The videos are sorted by their capture time with the most recent file at the top of the list.

Click on the video filename 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 click the check 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.

5.2 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 near plane of 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.
- **> or . Key** – Press the **> . key** on the keyboard to advance to the next bookmark.
- **< or , Key** – Press **<, key** on the keyboard to rewind the video to the previous bookmark.
- **P** – Plays or pauses the video.
- **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.

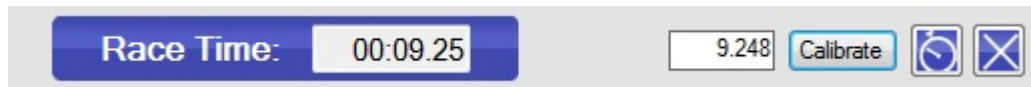
5.3 Calibrate the Video

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, 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 near plane of 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.

5.4 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 or beyond the near plane of 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.

5.5 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 record the times from the videos.

Skip the next section if you are not using a meet manager scoring option and see Sections 5.6.2, **Record the Times for Each Athlete** and 5.6.2.1 **Do Not Show Athletes**.

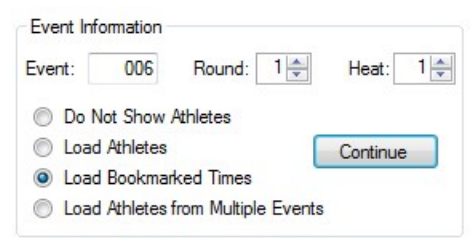
5.5.1 Meet Management Scoring Option

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.

5.5.1.1 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.

A screenshot of the 'Event Information' dialog box. It contains three input fields: 'Event:' with the value '006', 'Round:' with the value '1', and 'Heat:' with the value '1'. Below these fields are four radio button options: 'Do Not Show Athletes', 'Load Athletes', 'Load Bookmarked Times' (which is selected), and 'Load Athletes from Multiple Events'. A 'Continue' button is located to the right of the radio buttons.

5.5.1.2 Load Athletes

You have four 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. If you are using a scoring package, 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 Bookmarks:** This option allow you to load the times of all the bookmarks associated with the captured bookmark. It is used mostly for getting time for cross

country events where times are matched with a list of athletes in the scoring package.

- **Load Athletes from Multiple Events:** Events, such as the boys and girls 3200M, 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.

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**.

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.

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.

5.5.2 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.

5.5.2.1 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. This is the only option available if you are not using a meet management scoring package. If you are using a meet management scoring package there is no need to update the participants in the meet management application before recording the time. This can be done later when the participants are known and then the times can be associated with the participants.

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

Event Information

Event: Round: Heat:

☒ Do Not Show Athletes
☐ Load Athletes
☐ Load Bookmarked Times
☐ Load Athletes from Multiple Events

Men 1500 Meter Run Run w Event Junior Varsity

of Lanes/Athletes:

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

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*.

5.5.2.2 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.

Check the **Auto Sort** box to sort the times as you record them. This moves all entries with times to the bottom of the list and makes it easier to find athletes in non-lane races which have lots of participants.

5.5.2.1 Load Bookmarks

The load bookmarks options brings in all the bookmarked times associated with the video. This option is most useful when scoring cross country events. It lists all the bookmark times in the results table, which can then be saved and imported into your Cross Country Scoring Package. You enter the athletes in their finish order in the Cross Country Scoring Package and then match the runners to the times.

Event Information

Event: 005 Round: 1 Heat: 6

☐ Do Not Show Athletes
☒ Load Athletes
☐ Load Bookmarked Times
☐ Load Athletes from Multiple Events

Continue

Event 005, Round 1, Heat 6
Girls 100 Meter Dash

☐ Auto Sort Athlete's ID #:

Lane	Time	ID #	Name	School
1		4521	Richardson, Mt...	South Eugene
2		4754	Thomas, Alexa	Summit
3		317	Miller-Moylan, ...	Beaverton
4		196	Turner, Sara	Barlow
5		144	Allen, Macie	Barlow
6		3536	Shriner, Kamin	Oregon City
7		3217	Simms-Garcia, ...	McNary
8		828	Hammon, Court...	Central Cath

Save Times

Event Information

Event: 006 Round: 1 Heat: 1

☐ Do Not Show Athletes
☐ Load Athletes
☒ Load Bookmarked Times
☐ Load Athletes from Multiple Events

Continue

Boys 1500 Meter Run Frosh Soph

of Lanes/Athletes: 19

Lane	Time	ID #	Name	School
1	04:43.152			
2	04:43.569			
3	04:44.754			
4	04:44.754			
5	04:46.673			
6	04:46.739			
7	04:51.377			
8	04:52.679			
9	04:53.713			
10	04:57.667			
11	04:58.835			
12	04:59.435			
13	04:59.652			

Save Times

5.5.2.2 Load Athletes from Multiple Events

It is not uncommon for longer non-lane races, such as the boys and girls 3000M, 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.

The screenshot shows the 'Event Information' dialog box with the following settings: Event: 9, Round: 1, Heat: 1. The 'Load Athletes from Multiple Events' radio button is selected. Below the dialog box, a list of events is shown: '007_1_1 Boys 1500 Meter Run Varsity' and '008_1_1 Boys 1500 Meter Run Junior Varsity'. Below the event list is a table of athletes with columns: Lane, Time, ID #, Name, and School. The table contains 10 rows of athlete data. A 'Save Times' button is located at the bottom right of the interface.

Lane	Time	ID #	Name	School
1		254	Giles, Ryan	LIBR
2		422	Sumner, J...	LIBR
3		423	Sylwester, ...	CENT
4		290	Jensen, S...	CENT
5		320	Little, Nath...	LIBR
6		233	Fagergren, ...	CENT
7		220	Corbin, De...	CENT
8		178	Bacon, De...	CENT
9		385	Ray, Andr...	CENT
10		408	Scott, Taly	CENT

5.5.3 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.

5.5.3.1 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.

The screenshot shows a dialog box titled 'FlashTiming: Record Time'. It contains the text: 'You have already recorded a time for this athlete. Do you want to overwrite the previous time?'. Below the text is a text input field containing '00:09.21'. At the bottom of the dialog box are three buttons: 'Clear Time', 'Overwrite', and 'Cancel'.

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 the bookmark feature when capturing to place a marker in the video when an athlete nears the finish line. You can use these markers in the review screen to quickly advance to the video frame showing the athlete near the finish 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 bookmarkers and the raised flag help identify the finishers and skip over those runners who still have a lap to go. Another method is to form a chute in lane 4 for example by placement of a cone on the finish line inside that lane. Instruct the runners coming off the last curve of the race to run for the cone. This makes it straight forward in the video review to separate the finishers from the athletes that have more laps to run.

5.5.4 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 replace the bookmarks, any bookmarks currently displayed are erased and replaced with markers, which point 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.

5.5.5 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 Displays

You may display race entries and heat results on *FlashTiming's* FT-Displays or Daktronics Matrix displays.

6.1 Daktronics Matrix Display

FlashTiming can display entries and results on a Daktronics Galaxy Matrix Displays controlled by a Venus 4600, Venus 5000, Venus 6000, Venus 6500, or Venus 7000 computer. You must first setup the communication protocol for sending data to the display and then set the display parameters.

6.1.1 Communication Protocol

Daktronics Communications Server (DCS) is the software that receives and sends out Real Time Data (RTD) from your timing system to your display. DCS must be running on the computer that operates your display and the computer must be connected to the timing system via serial port or Local Area Network. See Daktronics support for instructions on how to make these connections and utilize that software. To set up FlashTiming to use the Daktronics Display:

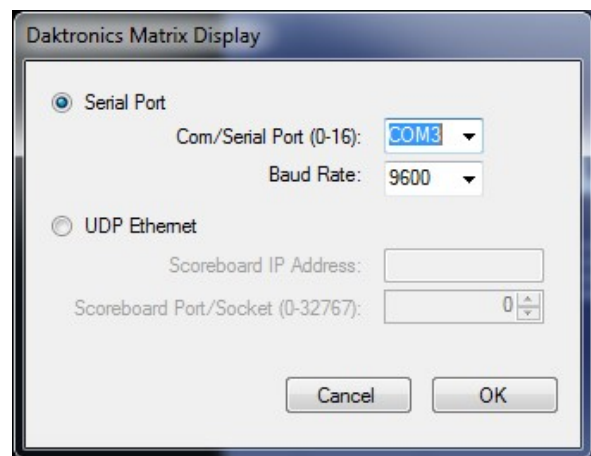
Click **Display** in the main menu, **Select Display** and then **Daktronics Matrix**. There are two methods for connecting *FlashTiming* to a Daktronics scoreboard/display: Serial Port or UDP.

6.1.1.1 Serial Port

Click the **Com/Serial Port** option and select the com port and baud rate.

6.1.1.2 UDP

Click the **UDP Ethernet** option. Enter the IP address and socket number of the scoreboard computer.



Refer to your Daktronics manual for more information on setting up the scoreboard.

6.1.2 Display Options

You must set your display options after selecting the Daktronics Matrix as you display. Click on **Display** and then **Display Settings** to bring up the display option window.

Lines of Text: Enter the number of lines of text your display is setup to display. is the total number of rows your board is setup to display.

Characters per Line: Enter the maximum number of characters your board can display across one row.

Cycle Time: The display will cycle through the “pages” of text if the results or entries contain more lines of text than will fit on the screen. Cycle Time is the amount of time in seconds that a page will remain on the screen before the next page is displayed.

of times to cycle: Enter the number of times the display should cycle through multi-page results or entries. Enter ‘0’ to continue cycling through the results until the next set of data is sent to the display.

Note: If all data for the entries or results fit on the display, the data will remain on the screen for *Cycle Time X # of times to cycle* seconds. If *# of times to cycle* equals 0, the data will remain on the display until new data is sent to the display.

of lines for Race Description: You may specify the number of lines to be used for the race description (0, 1 or 2 lines). This is useful if your display can only show a few lines of text. 1 line will show the race description. The second line shows the heat #.

Display Race Description on all screens: Check the box if you want the race description to be displayed on all screens of a multi-page results or entries. Again, this is useful on smaller displays.

Automatically send saved results to display: Check the box if you want race results to be sent to the display whenever you click the **Save Times** button in the Review Screen.

Test Connection: Click this button to send a test message to the display.

6.1.3 Display Tool Bar

The display tool bar appears below the menu bar after a display is selected.

- **Clear** – Clears the display
- **Entries** – Posts the entries of the currently selected event on the display from either the capture or review screens. In the capture screen, select the event from the Schedule List of Events. In the review screen, you must load the video and then load the athletes for the event before you can post the entries.
- **Results** – Post the race results on the displays. This will display the results for athletes whose times are recorded in the result table in the review screen.
- **Auto Results** – Turn **On** auto results to display the athletes times as they are being determined in the review screen. This will update the results on the display every time an athlete’s time is entered in the results table.
- **Race Title** – The race title is truncated to the number of characters that can be displayed on one row. You may overwrite the race title and substitute abbreviations to make the title more meaningful.

7 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*.

7.1 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.

7.2 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.

7.3 DirectAthletics MeetPro

Click the **Enter Results** Tab to score your meet. Click **Get Event Results** button (above the entries grid) and 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. To import just the currently selected heat, toggle the **Get Event Results** button to **Get Heat Results**.

7.4 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.

7.5 RaceTab

Click the **Event** tab and select the event from the list on the left side. Click the **Get Times** buttons and the times from *FlashTiming* will be imported for the select event.

7.6 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.

7.7 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.

7.8 Keyboard Short Cuts

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

S - Save Times

P – Play or Pause the video

V – Go to Capture Screen

> or **.** – Next Bookmark

< or **,** – Previous Bookmark

0-9 – You may enter a number when the record tab is opened and the results table is displayed. This will enter the time from the current video frame into the table with the lane number. Pressing **0** enters the time into lane 10.

Shortcut keys are not active when the cursor is positioned in a text entry box, such as the calibrate box.

8 FT-FAT Radios

8.1 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.

8.2 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.

8.3 Powering the Units

8.3.1 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.

8.3.2 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.

8.3.3 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.

8.4 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.

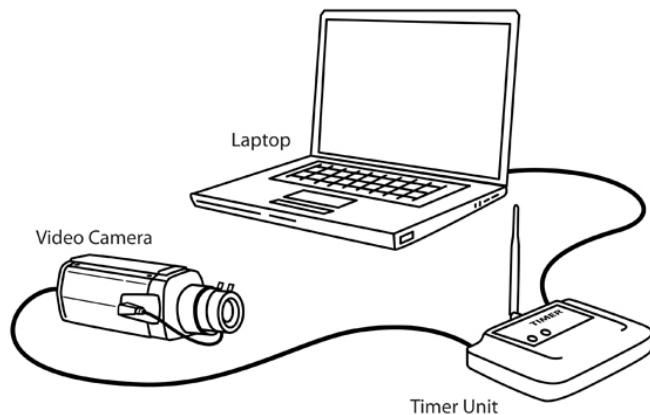
You may verify the channel number by removing and replacing a battery. The units beep the 'channel number plus one' whenever you replace the batteries. For example, if a radio is set to channel 0 and a battery is removed and replaced, the radio will beep one time.

8.5 Setup

The starter unit is positioned next to the starting official on the starting line. The radio unit should be located at least 18 inches from the starting pistol when the gun is up. If placed any closer, the gun blast may damage the sound sensor in the starter unit. The unit 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.

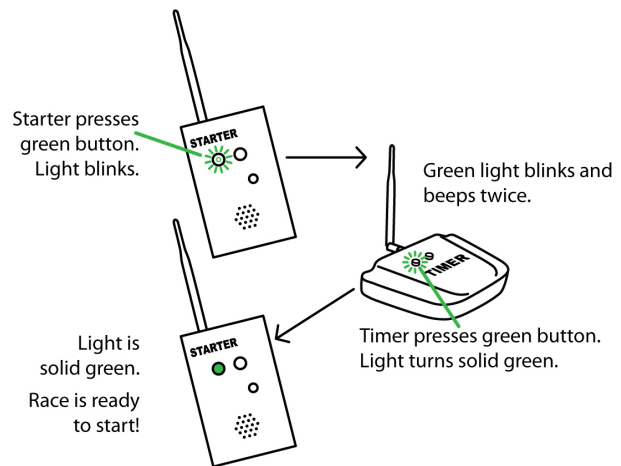


8.6 Starting a Race

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** 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.

8.6.1 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.

8.6.2 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.

8.6.3 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.

8.7 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.

8.8 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 antenna 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 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.

8.9 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.

8.10 FCC Notice

The following notice applies to the Starter Unit and Timer Unit:

Contains FCC ID: MCQ-XBPS3B

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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.

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.

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.

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) This file path cannot be greater than 16 characters including "C:\".
 - d. When configuring Flash Timing, **Set Meet Management Data Folder** these two must match exactly.
 - e. Click **OK**.

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.

Select Events For This Meet

Men's Events List

Event Name
100 METER
1000 METER
10K-O
110M HURD
1500 METER
1600M
1600M REL
200 METER
300M HURD
3200M
3200M REL
35# WGT

Add Event(s) ==>>

Men's Selected Events

Event	Order
DISCUS	02
SHOT PUT	04
HIGH JUMP	06
POLE VAULT	08
LONG JUMP	10
TRIPLE JUMP	12
3200M REL	14
400M REL	16
3200M	18
110M HURD	20
100 METER	22
800 METER	24

Remove Change Order

Women's Events List

Event Name
1000 METER
100M
100M HURD
10K-O
1500 METER
1600M
1600M REL
20# WT
200 METER
3000 METER
300L HURD
3200M

Add Event(s) ==>>

Women's Selected Events

Event	Order
DISCUS	01
SHOT PUT	03
HIGH JUMP	05
POLE VAULT	07
LONG JUMP	09
TRIPLE JUMP	11
3200M REL	13
400M REL	15
3200M	17
100M HURD	19
100M	21
800 METER	23

Remove Change Order

Save Setup For Future Meets

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.

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.

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.

Ref#	In/F	Team	Mark	Tie HF Relay Members
1	4	IVC	A 00:01.390	
2	5	HALL	A 00:02.710	
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

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 two or three computers networked together: the capture computer, the review 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.
- Review 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 – Maintains the list of events and heat sheets from your meet management software and shares those lists to FlashTiming software, retrieves the time results and scores the event.

If only using two computers, we recommend that you dedicate one computer for capturing and review videos and score the meet on the second computer.

The computers must be networked together and folders must be set for sharing to enable the above tasks. We recommend that you turn off your wireless when using FlashTiming.

Follow these steps to network your computers and share files.

1. Assign computers to the same workgroup.
2. Connect your computers your router/switch
3. Set the computers to a private network.
4. Set the computers for sharing
5. Turn off firewalls.
6. Set folders for sharing.

You may need special permissions if you are using a school computer and may need help from your tech staff to do these steps.

Many of the following instructions require that you type key words into the Windows Search box. To bring up the Windows Search Box in:

Windows 7 or Windows 10: Click the **Start button** . The Search box is located at the bottom of the start menu.

Windows 8: If the desktop is visible, click the window key to bring up the Windows 8 Start Window. Start typing and the search box appears in the upper right.

Note: When typing in keywords into the Windows Search Box, it usually only takes a few characters before options start appearing. It may not be necessary to type in the entire keyword before the desired option appears in the search list.

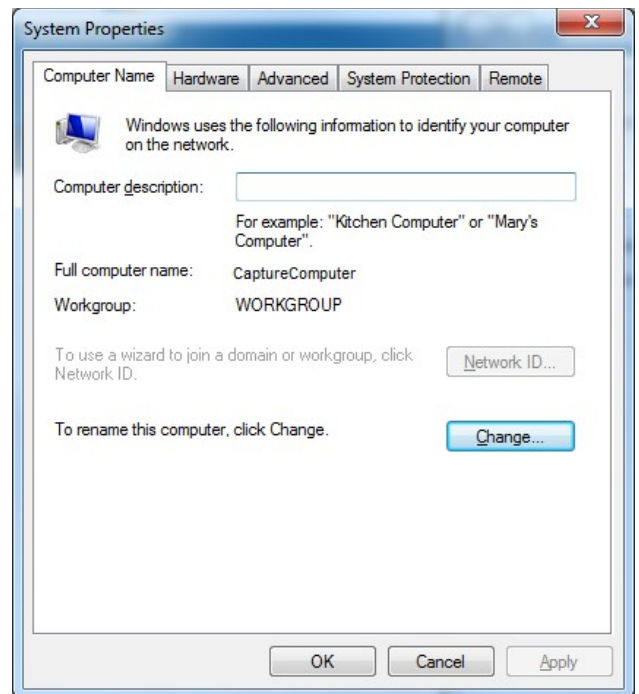
It may also take a couple of seconds for the list to populate with all the search results. Be patient if you don't see the option appear immediately.

The appearance of the windows on your computer may be slightly different than the images below. Look for the corresponding text on your computer if the image does not exactly match

1. Assign all Computers to the same Workgroup

Assigning computers to the same workgroup makes it easier to share and locate folders on a network. To find your Computer's Name and Workgroup or Domain

1. Open System Properties:
In the Windows Search Box, type **workgroup**.
2. Click **Change workgroup name** and the System Properties Windows appear.
3. Make note of each computer name and verify that all computers belong to the same workgroup or domain.
4. If your computers are on different workgroup or domains. Click the Change... button and make the Workgroup Name the same on all computers. You can also change the computer name. Click OK.



You need to reboot the computer for the name and workgroup 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.

Note: You will not be able to discover all the computers on the network if any of the computers have the same name.

2. Connect your computers to a router or switch.

Connect your computers to a router or switch. Be sure your wireless is turned off.

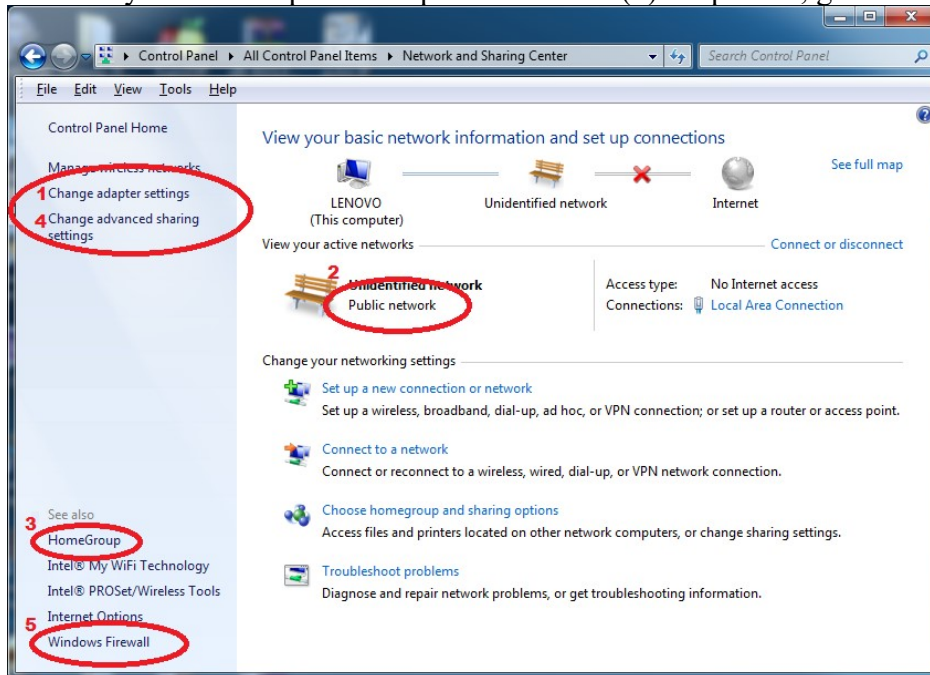
1. Open Network and Sharing Center:
In the Windows Search Box, type **Network and Sharing Center** and click **Network and Sharing Center** in the list.
2. Click **Change adapter settings** in the upper left panel (1 in figure below)
3. Right click on the Wireless Connection and click Disable.

Many routers and switched have lights on the front panel corresponding to the port on the back. Check that the correct lights are showing on the front panel.

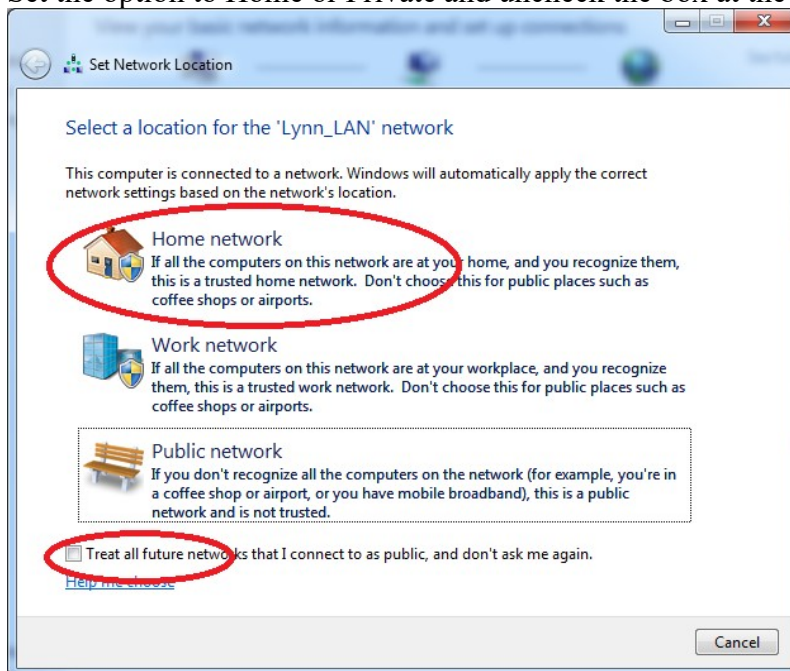
3. Set the Computer's Network to Private

Follow these steps to set the network to private on all computers.

1. Open Network and Sharing Center:
In the Windows Search Box, type **Network and Sharing Center** and click **Network and Sharing Center** in the list.
2. Check if you are on a private or public network (2). If private, go to the next section



3. If the text, **Public Network**, displays in blue and is a link, click on it. Set the option to Home or Private and uncheck the box at the bottom of the window.



In the next window, click **Cancel**.

4. If the text, **Public Network**, is not selectable, click on **HomeGroup (3)** in the lower left panel of the Network and Center.
 - a. Click on **Start the HomeGroup troubleshooter** at the bottom of the window titled “Change homegroup settings”.
 - b. Click on **Next** in the window titled “Troubleshoot and help prevent computer problems”.
 - c. A window displays “Detecting Problems...” followed by the “Troubleshoot network problems” window. Click **Skip this step**.
 - d. A diagnostic window appears, followed by a window titled “Change the network location to Home”. Click **Apply this fix**.
 - e. Click **Cancel** in the next window.

You are now on a private network.

4. Set the Private Sharing Options

Click on **Change advance sharing settings (4)** in the upper left panel of the Network and Sharing Center. Set the following options:

Windows 7:

Expand the options for Home or Work and set the following:

1. Turn on network discovery
2. Turn on file and printer sharing
3. Turn on sharing so anyone with network access can read and write files in the Public folders
4. Use 128-bit encryption to help protect file sharing connections
5. Turn **off** password protected sharing
6. Use user accounts and passwords to connect to other computers.

Windows 8 and 10:

Expand the options for Private and set the following:

1. Turn on network discovery and check turn on automatic setup of connected devices.
2. Turn on file and printer sharing
3. Use user accounts and passwords to connect to other computers.

Expand the options for All Networks and set the following:

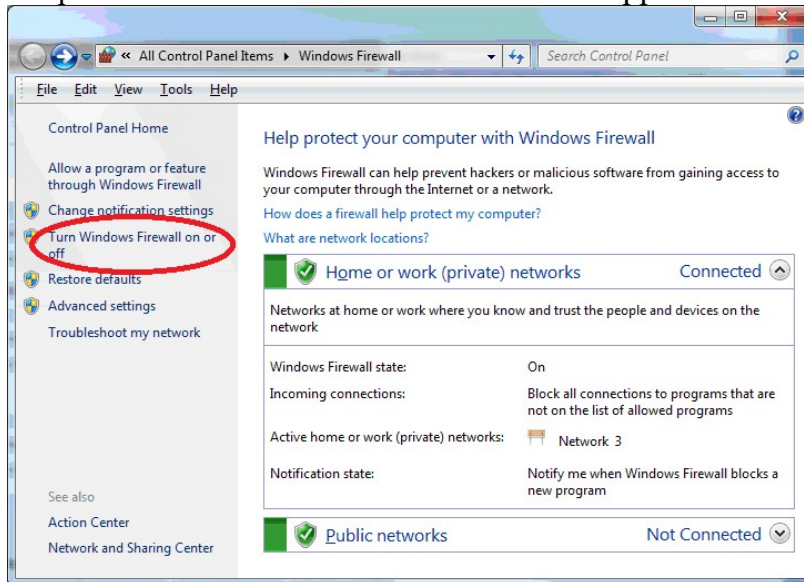
4. Turn on sharing so anyone with network access can read and write files in the Public folders
5. Use 128-bit encryption to help protect file sharing connections
6. Turn **off** password protected sharing

If you made any changes, click **Save changes** at the bottom. You'll need to log off and back on for the changes to take effect.

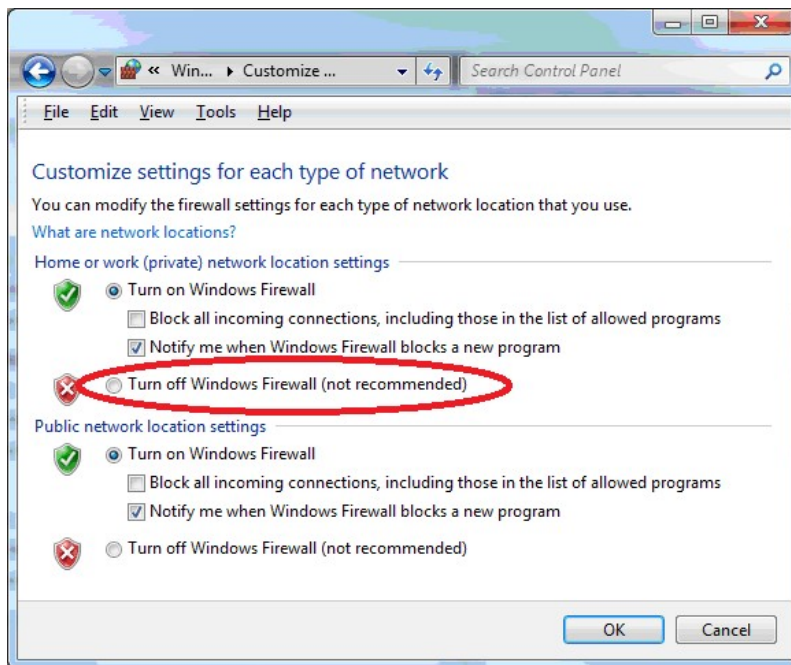
5. Turn off all firewalls and virus checkers

Firewalls and virus checkers may interfere with a networked computer's ability to access shared folders. Users should either turn off their firewall or allow FlashTiming to communicate through the firewall. To turn off the Windows Firewall:

1. Click on Windows Firewall (5) in the Network and Sharing Center; locate in the lower left panel. The Windows Firewall Windows appears



2. Click **Turn Windows Firewall on or off** in the left panel.
3. Turn the firewall off for your network type (private or home)



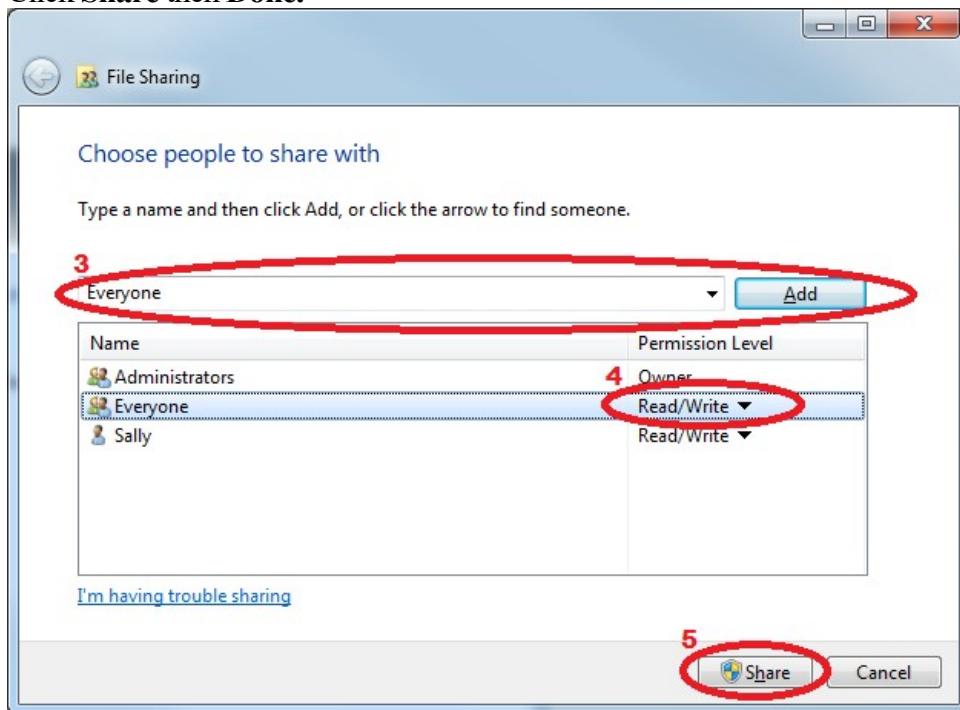
Your anti-virus software, such as Norton or McAfee, may have a separate firewall. Be sure that any firewall and virus checking is turned off.

6. Set Folders for Sharing

You must set your video capture folder for sharing if you are reviewing videos on a separate computer than the one 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.

Windows 7 Users: Sharing Folders/Files

1. Right Click the **Folder** you wish to share.
2. Click on **Share With** and then **Specific People**.
3. Click on the pull down arrow and select **Everyone** then click **Add**.
4. **Everyone** will appear in the bottom window. Click on the Read arrow and change to **Read/Write**.
5. Click **Share** then **Done**.



Verify that the computers are networked once all these steps are completed,

Bring up a file browser and select **Network** from the left panel. A list of networked computers appears on the right side under "Computers". On the Review computer:

- Click on the Capture Computer and you should see the folder "FlashTiming Videos".
- Click on the Scoring Computer (if different than the review computer) and you should see the scoring folder. E.G. "tfmeets5 if running Hy-Tek Meet Manager Version 5.

On the Capture Computer, click on the Scoring Computer and you should see the scoring folder.

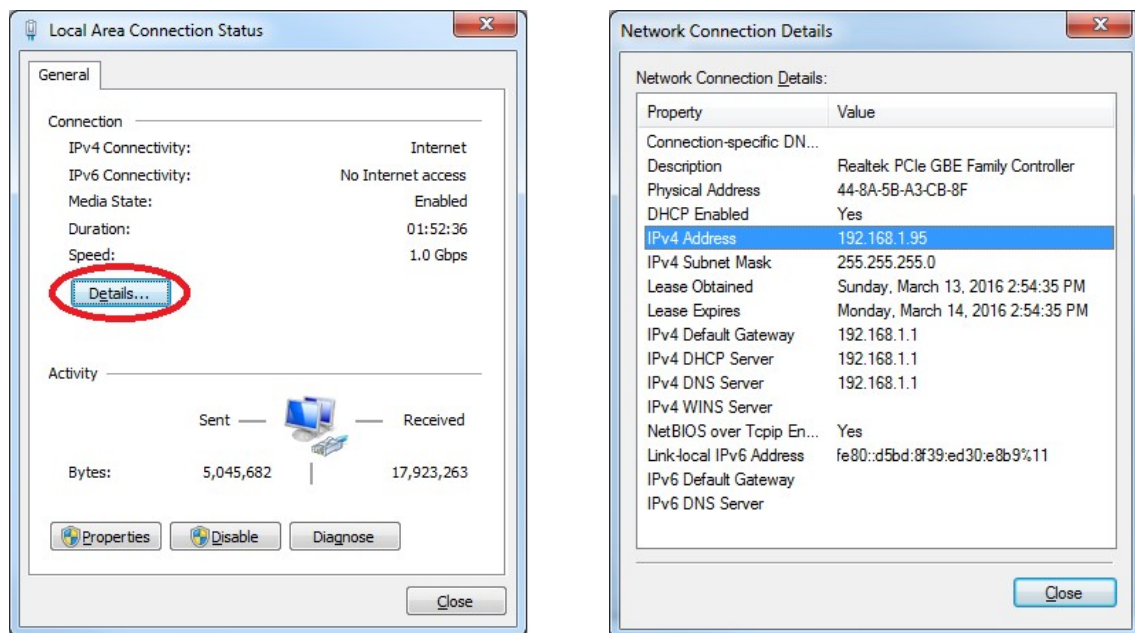
If you don't see the other computer, verify the IP addresses are correct.

Check the Computer's IP Address

The computers' IP Addresses must be set appropriately to be able to find the other computers on the network.

To find your computer's IP address

1. Click on **Change adapter settings (1)** in the Network and Sharing Center, located in the upper panel. The Network Connections window appears.
2. Double click the active network connection. The Local Area Connection Status appears:
3. Click **Details**. Your computer's IP address appears in the Value column, next to IPv4 Address.



Check the IP address and subnet mask to be sure that the computers are on the same network.

If the subnet mask is “255.255.255.0” then the first 3 numbers for the IP address need to be the same on all computers and the last number of the IP address needs to be different for each computer.

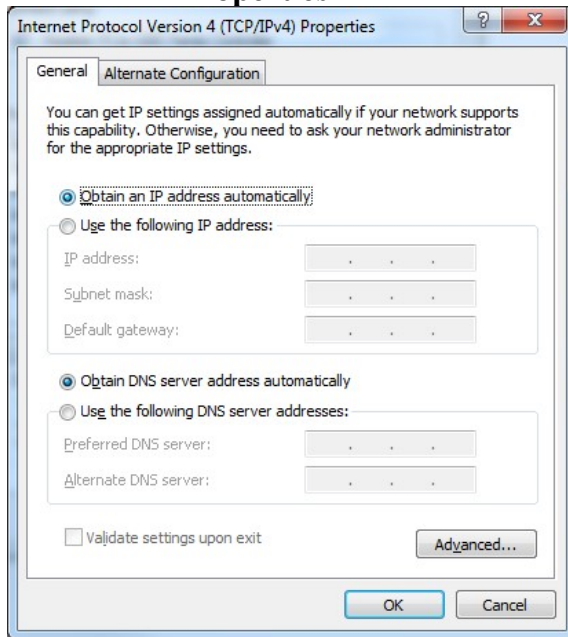
If the subnet mask is “255.255.0.0” then the first 2 numbers of the IP address need to be the same on all computers and the last number of the IP address needs to be different for each computer.

You will not be able to see all the computers if:

- the leading group of numbers of the IP addresses is different, or
- any of the computers have the identical IP address.

Set the Computer's IP Address

1. Stay in the Network Connection Window. (Click on **Change adapter settings** (1) in the Network and Sharing Center, located in the upper panel.)
2. Right click on **Ethernet** (or **Local Area Connection** on some versions or Win7) and then **Properties**.
3. In the Networking 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.
4. Click on the **Properties** button.



5. If you set the properties for all computers to **“Obtain an IP address automatically”**, Windows will assign IP automatically if using Windows7 or greater.
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.

Appendix D: 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 8 PM Pacific Time.

FlashTiming Support:

- email: support@flashtiming.com
- phone:
 (971) 998-2349 PST
 (309) 274-2970 or (309) 369-6208 CST
- fax: (503) 647-2090