FinishLynx – "COMPETITION ELITE" System

Verify that your FinishLynx "COMPETITION ELITE" system contains the components pictured here. If not, or if you need help, call: USA 978 556 9780

Item	Description	ID
	EtherLynx 2000+ camera with through-the-lens viewer and remote control iris	5L420 MC-RV
Not pictured	Timing and Color option embedded in camera	5LTE 5LCO
	F-Mount lens 24-70mm f2.8 lens	SI247028
	2 x 25 ft. Ethernet cables	C10BT
	Geared head	BG3275
	Super head clamp	BG2909
	Camera tripod	BG2036
	Capture button	1A205
	USB /Serial adapter	

Item	Description	ID
	Connection box	C-Box
	Power cord	452
	Normally closed start sensor with light	3L400
	Connection box cable	451
	500 ft. start sensor cable	3A100
	Button splitter	B-SPL
	RadioLynx Transmitter and Receiver (includes RadioLynx start sensor (red case)	
	Carrying case	1A207
	Lynx Resource CD, containing FinishLynx® 32, Wireless Serial Software Plug-in for RadioLynx, and LynxPad™ software	5LSW, 5LPSW and 9LSW01

Items not included

- Computer (laptop recommended) running Microsoft Windows. Your computer needs: two available serial ports (a 9-pin connection found on the back) or an available USB port, one available Ethernet port, and a CD drive.
- Flathead screwdriver.
- Step ladder and table.
- Plumb bob and string. The plumb bob is available at your local hardware store, and you can use virtually any type of string or twine, as long as it is at least the width of your track.
- Printer (optional).

Introduction

In this quick start guide, you will learn how to set up and configure the FinishLynx network as shown in the diagram above: set up the EtherLynx 2000+ camera and align it with the finish line using the remote positioner and remote lens, capture, evaluate, and print a FinishLynx imag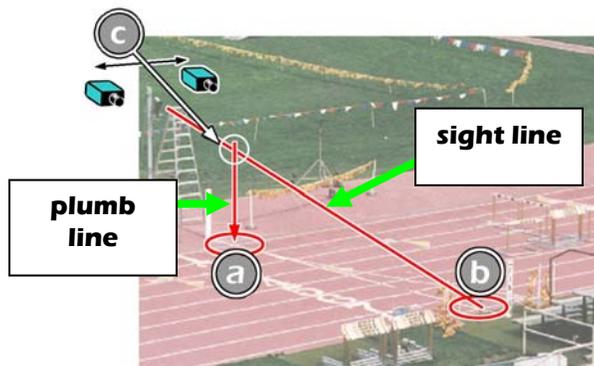e and results, configure FinishLynx to work with the scoreboard and wind gauge, and import a start list of competitors that you have created in LynxPad.

For more detailed or advanced instructions, including how to use the RadioLynx Plug-in, consult the *FinishLynx 32 Operator's Manual* or the FinishLynx online help by clicking **Help** | **Contents** from the Menu bar.

Step 1:   Go to the track!

Bring your FinishLynx COMPETITION ELITE system and an assistant to your track. Make sure there is power near the finish line, and at least three power outlets.

Set up a table near the finish line, on the infield if a power source is available. The finish line should have black lane marker boxes painted where it crosses each lane line. If not, we suggest you put black tape over the finish line to designate lane lines. This will help you align the camera and get a clearer FinishLynx image.

Competition Elite

FinishLynx Software

Wireless Serial plug-in

LynxPad

3L900

3A100

3L400

AF09N700

5L420

1A205U

C10BT-100

FinishLynx Primary and Event Management

AC

* Computer and starting pistol not included in package

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Step 2: Install the software

1) FinishLynx
   a) Insert the Lynx Resource CD into your computer's CD drive.
   b) Follow the instructions on your screen to install FinishLynx, and the RadioLynx Plug-in. When prompted, enter the serial numbers found on the back of your Lynx Resource CD jewel case.

2) LynxPad
   a) Insert the Lynx Resource CD into your computer's CD drive.
   b) Follow the instructions on your screen to install LynxPad. When prompted, enter the serial number found on the back of your Lynx Resource CD jewel case.

3) USB/Serial adapter
   a) Insert the CD supplied with the USB adapter into your computer's CD drive and follow the instructions to install the driver software.

Step 3: Evaluate a sample image

1) Start FinishLynx.
2) Click **File** from the Menu bar and select **Open**….
3) Double-click **Sprint.evn**. The sample FinishLynx image appears on your screen.
   Note: This sample is a two-camera image.
4) Click the mouse once on the torso of a competitor on the left side of the screen. A red hairline appears.
5) If necessary, click and hold the red crosshair in the middle of the hairline and drag it up or down until the correct lane number for that competitor is highlighted in red on the left side of your screen.
6) Press the **Enter** key on your computer. The finisher's time appears in the start list above the image.

   c) Start FinishLynx by clicking the Microsoft Windows **Start** button and selecting **All Programs** | **FinishLynx**.
   d) Verify that you have correctly installed the RL Plug-in by clicking **Help** from the Menu bar and selecting **About…**. When the **About FinishLynx** dialog appears, the RL Plug-in is listed with the serial numbers you entered during installation.

7) Repeat these steps for all of the competitors on the screen. You have just successfully evaluated a race in FinishLynx.
8) Click **File** | **Close window**. If you want to reuse the image later for practice evaluation, click **No** when asked to save your changes. Close FinishLynx.

Step 4: Set up the Primary Camera Position

1) Open the legs of the tripod in a position in line with the finish line, preferably on the infield and approximately 3 meters back.
2) Extend the legs of the tripod so they are approximately 2-3 meters high.
3) On the side of the finish line closest to the camera, hold the plumb bob so that it is suspended directly above the middle of the finish line. This is the plumb line, shown as (**a**) in the image below.
4) Tie string to the screw on the top of the tripod head. Have your assistant take the other end of the string to the far side of the finish line and hold the string taught. This is the sight line, shown as (**b**) in the image below.
5) Move the tripod to the left or right until the plumb line and sight line touch at position (**c**) in the image below. The tripod is now in the plane of the finish line.

sight line

plumb line

Step 5: Mount the Primary camera

1) Secure the geared head to the top of the tripod.
2) Note how the mounting plate is attached to the top of the geared head. Then, pull back on the lever at the top of the geared head to release the mounting plate.
3) Tighten the mounting plate to the bottom of the camera by turning the screw with a flathead screwdriver.
4) Attach the camera and mounting plate to the tripod by clicking the mounting plate into place on the geared head.
5) With the camera lens lined up with and facing the finish line, make minor adjustments to the tripod legs so both bubbles on the tripod are centered.
6) Connect the cable for the remote iris adjustment between the port marked REMOTE on the back of the camera and the port on the through-the lens viewer.

Step 6: Configure the network

1) On your FinishLynx Computer, click the Microsoft Windows Start button and select **Control Panel**, or click **Start** | **Settings** | **Control Panel**.
2) Double-click **Network Connections**.
3) Right-click the **Local Area Connection** associated with the network interface card (NIC) in use and select **Properties**. The Local Area Connection Properties dialog appears.
4) Make sure you see a line that reads, Internet Protocol (TCP/IP). You may have to scroll down to see it. If you do not see this line:
    a) Click **Install** and select **Protocol**.
    b) Click **Add**....
    c) Click to select the Microsoft **TCP**/IP option and then click **OK**.
5) Check the box next to Internet Protocol (**TCP**/**IP**).
6) Click to select Internet Protocol (**TCP**/**IP**) and then click **Properties**. The Internet Protocol (**TCP**/**IP**) Properties dialog appears.
7) Click the **Use the following IP Address**: button and then type the following numbers:
8) **IP address**: 192.168.0.5
9) **Subnet mask**: 255.255.255.0. Click **Ok** and then click **Ok** again.
10) **If you are running Microsoft Windows XP, follow these steps to disable the firewall. Otherwise, skip to step 9.**
    a) **Right-click My Network Places on your computer's desktop and select Properties. The Network Connections screen appears.**
    b) **Right-click the Local Area Connection associated with your NIC, and select Properties. The Local Area Connection dialog appears.**
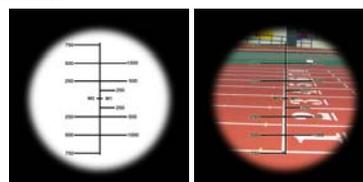   c) **Click the Advanced tab.**

    d) **Make sure the box under Internet Connection Firewall is unchecked.**
    e) **Click Ok and then exit the Network Connections screen.**
11) Restart your computer.
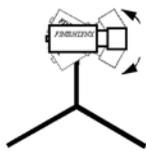
Step 7: Connect the Cables to your Primary Camera

1) Connect the female end of connection box cable to the port on the back of the camera labeled **Connection Box** and the male end to the left side of the connection box.
2) Connect one of the Ethernet cables to the back of the camera labeled **10 Base T** and to one of the connection box ports labeled **Ethernet**. Set the "**Hub**" switch on the connection box to "**No**."
3) Connect an Ethernet cable between the remaining Ethernet port on the connection box and the Ethernet card/port on your FinishLynx computer
4) Connect the black power cord to the back of your camera and plug the other end into the power source.
5) If using RadioLynx wireless start system, you will configure this later. Do not connect the start sensor and cable at this time.
6) If using a wired start detection system, connect the male end of the start sensor cable to the connection box where it says **Start**. Attach the start sensor to the other end of the cable and keep the start sensor close by.
7) Connect the supplied USB to Serial adapter to a USB port on the back of your computer.
8) Connect the capture button cable to the 9-pin serial port on the USB adapter.
9) Turn on the camera by switching the black power button on the back.
10) You should see a green link light indicating a connection at Port 3 on the Hub, if you do not, check that your Hub and camera are powered on, and the Ethernet cable is properly connected.

Step 8: Align the Primary camera
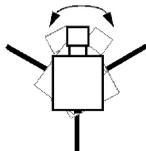
1) Position yourself so that you can look into the eyepiece on the side of the through-the lens viewer.
2) Flip the lever on top of the lens mount so that you can see the finish line through the viewer. Adjust the focus so that the view of the finish line is clear and sharp.
3) Use the markings on the screen in the viewer as a guide to help you align the center line in the viewer perfectly with the finish line, as shown below.
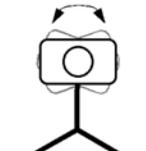

4) Flip the lever on top of the lens mount back to the Camera position – so that viewer is directing image to the sensor.

NOTE If running a wireless Ethernet card, you must disable it while the camera is booting.

5) Start FinishLynx. Wait while the green status bar in the lower right corner of the screen completes its cycle.

6) Click , the red camera alignment icon in the top left hand corner of the FinishLynx Hardware Control screen. The icon turns green, and image appears on the computer monitor. Because you are only taking a picture of the finish line, the picture on your computer screen does not resemble anything recognizable. In the next steps, your goal is to obtain an image with a white background (the color of the finish line) and black lane lines.

Tilt   **Pan**   **Swivel**

1) Have your assistant run through the finish line and watch where he/she appears on the computer monitor. The goal is for the runner's torso to be fully visible in both the inside and outside lanes. Now, have your assistant run through the inner-most and outer-most lanes. Adjust the **tilt** of the camera until he/she is clearly visible on both ends of the finish line.

Step 9: Configure FinishLynx camera settings

Primary Camera

1) In the Hardware Control window, select the Primary camera by clicking on it and highlighting it

2) Click | **Parameters** | **AGC**.

3) Click **Rate** and type a value in the field between **600**-**800** for sprints (400m and under) or type **500** for distance events. Change this value when moving between sprints and distance races, or else the competitors in your FinishLynx image appear distorted.
Note: Image distortion does not affect timing accuracy.

4) Click **Ok**.

5) Open a new event in FinishLynx by clicking in the top left corner of the screen.

6) Capture a small amount of image containing a white object, such as a person wearing a white t-shirt.

7) Right-click and draw a box around a small amount of the white image. You may need to zoom in to the image to do this.

8) Click **Image** from the Menu bar and select **Set white balance**.

9) Reset the **Gain** value by clicking . The **Camera Settings** dialog appears.

10) Click the **Parameters** tab.

11) In the Gain Method: line, click **AGC,** and then click **Ok**.

Step 10: Create a competition directory for FinishLynx and LynxPad to share

1) Right-click on your computer desktop and select **New** | **Folder**. When the **New Folder** appears, change the name to **Practice competition**.

2) In FinishLynx, click **File** | **Options…**. Click the **Browse** button on the **Event Directory:** and navigate to the **Practice competition** directory you just created. Then, click **Ok**.

3) Still in FinishLynx, click **File** | **Options…** and click the **Database** tab. Click the **Browse…** button next to the **Input and Output Directory:** and navigate to the **Practice competition** directory. Then, click **Ok**.

4) Now, start LynxPad by clicking the Windows **Start** button and then **All Programs** | **LynxPad**.

5) Click **File** | **Options…** and **uncheck** the **Load Existing Results on Program Start** box. Then, click **Ok**.

6) Open the sample competition by clicking **File | Open.** Navigate to **C:\LynxPadData\Sample** and then double-click the **lynx.cmp** file. A practice competition opens on the screen.

7) Still in LynxPad, click **File** | **Options…**. Click the **Browse** button next to the **Directory:** text field. Navigate to the **Practice competition** file you created earlier. Select it and click **Ok**. Click **Apply** and then click **Ok** again.

8) Still in LynxPad, click **File** | **Save as…** and navigate to the **Practice competition** folder. Then, click **Ok**. Now, FinishLynx can get start lists created in LynxPad, and LynxPad can import results generated by FinishLynx.

Step 11: Use FinishLynx with data from LynxPad

1) In FinishLynx, click to load the schedule of events from LynxPad. The **Goto Event** dialog appears.

2) Click the **Load Schedule** button once. Click the drop-down list under the **Load Schedule** button. A list of events appears. Click to select the "**110 Meter Hurdles Men (9, 3, 1)**" event in the list, and then click **Ok**. The first heat of the third round of the men's 110m hurdles opens on the FinishLynx screen.

3) Clap your hands together sharply over the start sensor. This simulates the firing of the starting gun and starts the yellow FinishLynx timer.

4) Have your assistant run through the finish line while you press down and hold the red capture button to capture the image. Release the button as soon as he/she has run completely through the finish line.

5) Practice evaluating the image by following the same steps you followed earlier in *Step 3: Evaluate a sample image on page 2*.

6) Click **File** | **Save** to save the race to the **Practice competition** directory.

7) Crop space between competitors in your FinishLynx image by right-clicking and drawing a box around the unwanted space. Release the mouse button and select **Crop** from the dialog that appears.

8) (Optional) Print the results and a portion of the FinishLynx image by right-clicking on the image and drawing a box around the portion you want to appear in your printout; for example, the first place finisher or a close finish between two competitors. Click **Ok** and then select the printer from the **Print** dialog to send the image with results to the printer.

9) Click **File** | **Close window** and then click **Yes** to save changes you made to the FinishLynx image when you cropped it.

10) In LynxPad, click to highlight **Men 110 Meter Hurdles** in the **Events** window. The start list appears in the **Heats** window.

11) Still in LynxPad, click **Competition** | **Refresh All Results**. The results from the race you just evaluated appear in LynxPad.

This completes the *FinishLynx* COMPETITION ELITE *System Quick Start Guide*.

Next: follow the instructions that came with the RadioLynx wireless start system.