



QUICK START GUIDE

Multi-Function LED Display

REQUIREMENTS:

To use the Multi-Function LED Display, the Network Com Port (NCP) plugin must be installed in the FinishLynx software. NCP is an optional plugin that enables the use of TCP/IP ports. If this option is not enabled on your software, please contact Lynx System Developers to upgrade to this feature. For more information please go to:

<https://www.finishedresults.com/product/finishlynx-plugins/network-com-port/>

To use the Multi-Function LED Display with FieldLynx, the FieldLynx Scoreboard plugin must be installed. For more information please visit:

<https://www.finishedresults.com/product/software/fieldlynx-event-software/>

INTRODUCTION

Finished Results Multi-Function LED Display is a plug and play solution for timers who want to show event data in real time. Easy to setup, ultra-bright LED screen, with automatic data sending.



NOTE: Before starting this setup, please ensure to have the following inventory:

- Multi-Function LED Display
- Long Ethernet data cable
- Display Power cable
- WiFi antenna (Optional)
- Tripod

*An extension cord may be needed if an outlet is not close to the working area

STEP #1: Install the Scoreboard Scripts

Before Start: Please do not run FinishLynx software

- Contact Finished Results customer service [support@finishedresults.com] and ask for the **Finished Results Multi-Function LED Display Script**

1.) Download the Finished Results Multi-Function LED Display Script [[FR-Multi-Function-FinishLynx.Iss](#) and [FR-Multi-Function-FieldLynx.Iss](#)] from the link provided by Finished Results

2.) Copy the script file [FR-Multi-Function-FinishLynx.Iss](#) from the download folder to **C:\Lynx** folder

3.) Copy the script file [FR-Multi-Function-FieldLynx.Iss](#) from the download folder to **C:\Program Files (x86)\Lynx\FieldLynx Windows** folder

STEP #2: Setup Scoreboard in FinishLynx

1.) Open **FinishLynx**

- a. Go to File and select **Options**
- b. At the Options Window select the **Scoreboard** Tab
- c. Click **New**
- d. Script; Scroll and select:
 - [FR-Multi-Function-FinishLynx.Iss](#)
- e. Name: Type **FR-Multi-Function**
- f. Serial Port: select **Network (connect)**
- g. Port: **2001** / IP Address: **192.168.0.51**
- h. Running Time: select **Normal**
 - Options: select **Send results if armed**
- i. Results: select **Auto**
 - Options: select **Always send place**
- j. Paging [**checked**] / Size **1**
 - Max [**blank**] / Time **1**
- k. Time Precision **Hundredths**

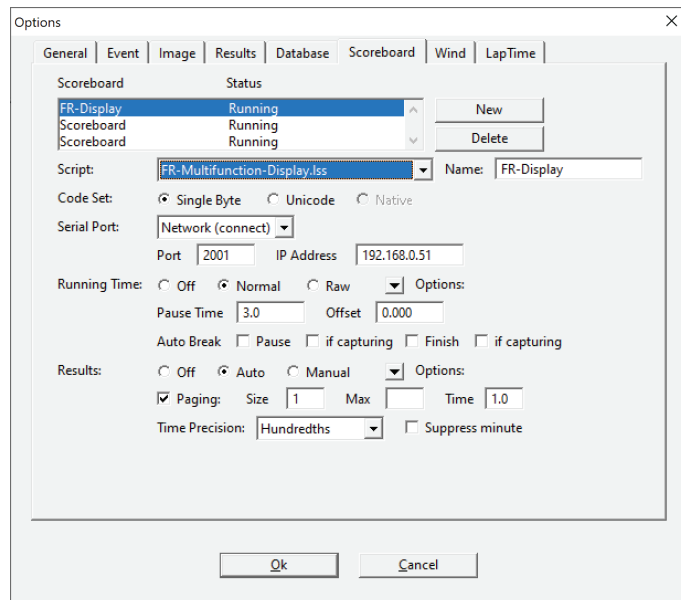


Figure 1: FinishLynx Scoreboard Options Menu



QUICK START GUIDE

Multi-Function LED Display

3.) Close and re-open *FinishLynx*

- Go to File and select *Options*
- At the Options Window select the *Score board* Tab
- The status is now shown as *Running*

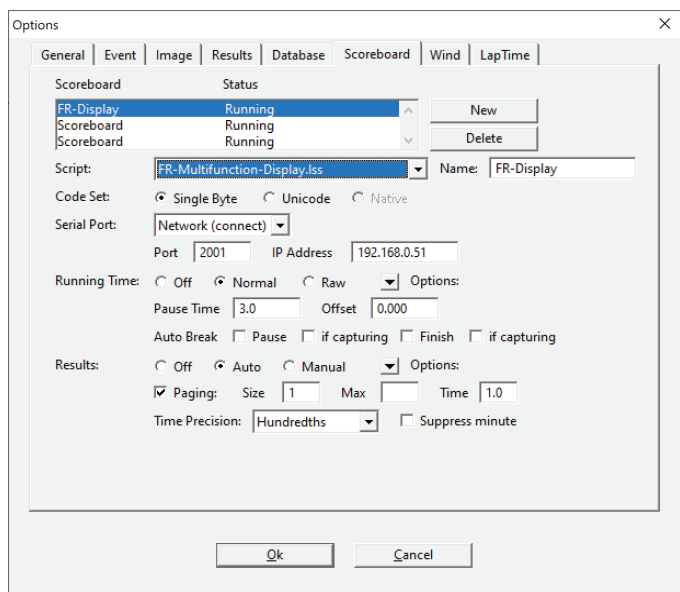


Figure 2: FinishLynx Scorboard Options Menu, Completed Setup

STEP #3: Setup Scoreboard in FieldLynx

1.) Open *FieldLynx*

- Go to *Options* and select *Preferences*
- At the *Options Window* select the Score board Tab
- Click *New*
- Name: *Type FR-Multi-Function*
- Click *Configure* and set the options below

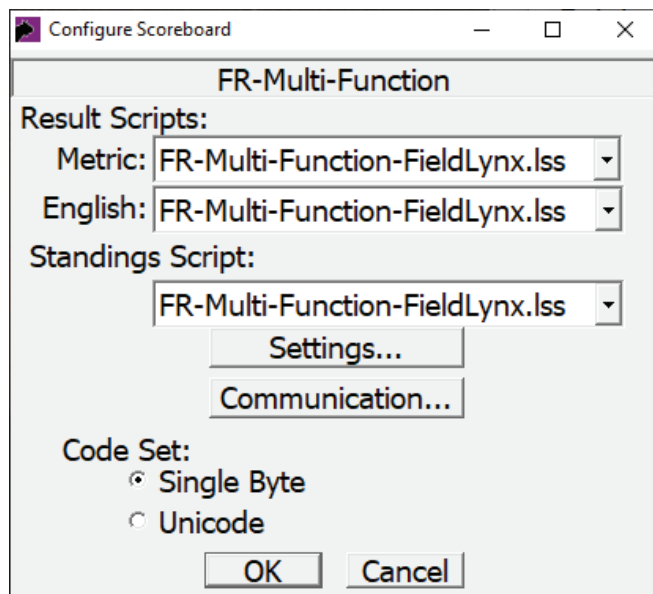


Figure 3: FieldLynx Scoreboard Configuration

- Click *Settings* and set the settings below

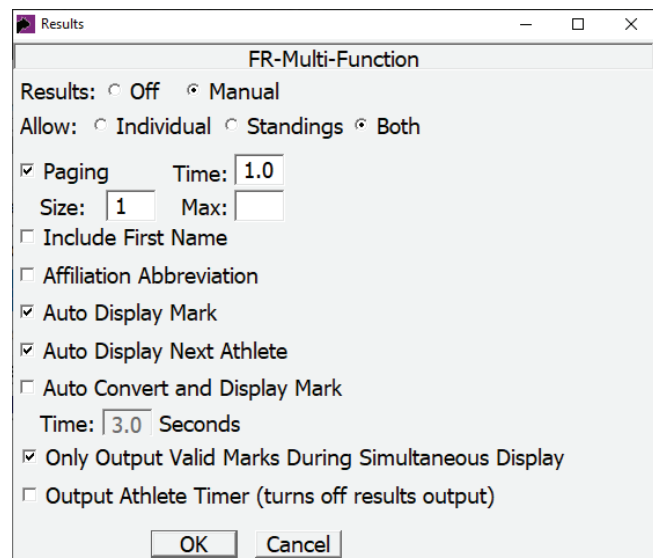


Figure 4: FieldLynx Scoreboard Settings

- Click *OK*
- Click *Communication* and set the settings below



QUICK START GUIDE

Multi-Function LED Display

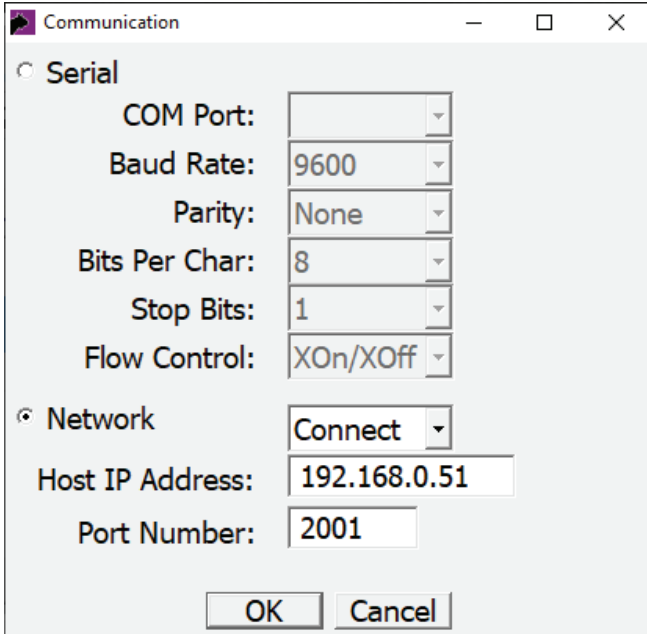


Figure 5: FieldLynx Communication Settings

- i. Click **OK**
- 2.) Close and Re-Open **FieldLynx**

STEP #4: Setup FR Multi-Function Display

- 1.) Open tripod to preferred height and stability level for your event. Then, place the LED Display on the tripod



Figure 6: FR Multi-Function Display placed on Tripod

- 2.) **Insert** and **twist** to lock the power connector to the display power socket



Figure 7: FR Multi-Function Display power socket

- 3.) **Connect** the **Ethernet (communication) cable** at the display Ethernet Jack



Figure 8: FR Multi-Function Display Ethernet port

- 4.) Be sure both cables are safely locked in place



Figure 9: FR Multi-Function Display side/front views



QUICK START GUIDE

Multi-Function LED Display

5.) Connect the other end of the Ethernet communication cable at the timing **network switch or router**



Figure 10: Example Network router

6.) Connect the display power cable to a surge protected power source. It takes about a minute for the display to boot and show the default screen

STEP #5: Multi-Function Display Features for Track

1.) In FinishLynx, go to Scoreboard, select '**Show time of day**'. The FinishLynx Computer's time of day will show up on the display. Go back and deselect this option

2.) Choose an event from the schedule icon



Display screen will show **0.0** and **event's name**

3.) Use the **start sensor** to start the time. Display screen shows the **running time**

4.) Capture and evaluate the race image

Use the following keystroke combination to show results:

- ALT + S** to stop the running time at the LED display
- ALT + E** to show results

5.) Open a new event, LED display automatically shows **new race name** and **0.0**

6.) Repeat for all events in schedule

STEP #6: Multi-Function Display Features for Track

- 1.) Set up an event in FieldLynx
- 2.) Select an athlete
- 3.) The athlete's name will show on the display
- 4.) Enter a mark
- 5.) The athlete's place, name, and mark will show on the display
- 6.) To show Standings, click

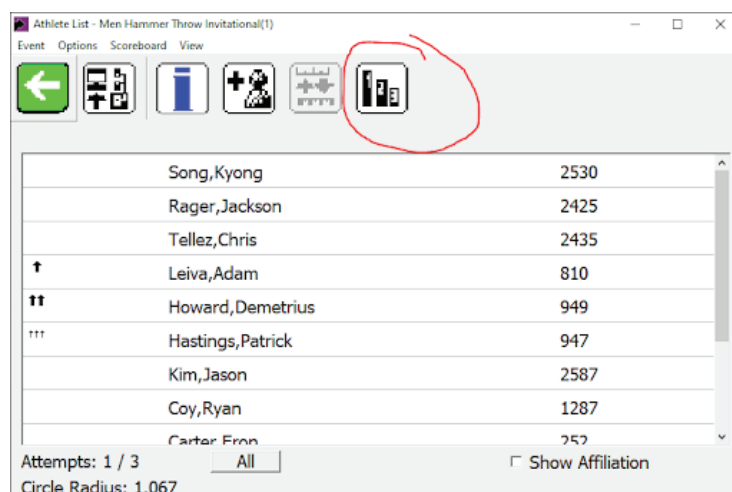


Figure 11: FieldLynx, Show standings

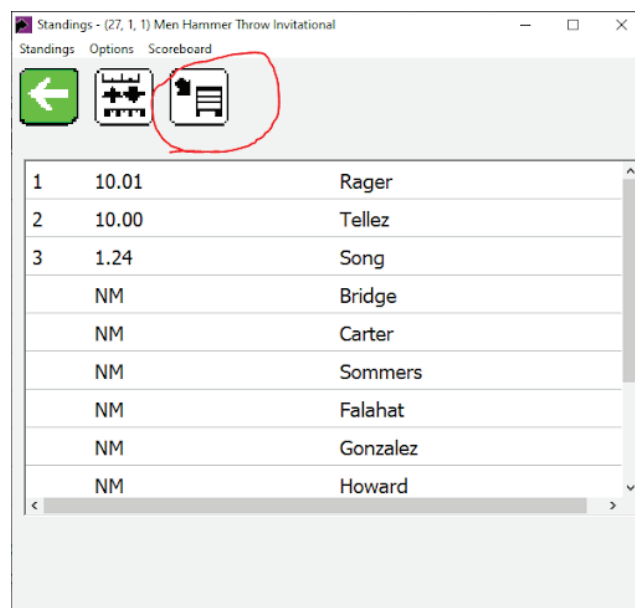


Figure 12: FieldLynx, Show standings

7.) The display will rotate through each athlete and display their **best mark**



QUICK START GUIDE

Multi-Function LED Display

STEP #7: Manual Program mode and NumPad

1.) Using the included number pad, you can control the other modes for the display



Figure 13: Example NumPad

2.) The NumPad is wireless and powered by a AA battery

3.) Press the Esc key on the NumPad to exit the current mode

4.) Use the + and - keys to rotate through the different modes

5.) Press the Enter key to select a mode

6.) **Lynx Mode**

- Will display the IP address of the display to connect to
- Send data using FinishLynx or FieldLynx
- The template will automatically adjust to Track Mode or Field Mode

7.) **Lap Counter Mode**

- Type in the number of laps for the current race
- Press the - or Enter key to count down a lap
- Press the + key to count up a lap

8.) **Clock Up Mode**

- Enter the start time in HH:MM:SS format
- Press enter
- The time will start counting up
- While the time is counting, press the enter key to reset the clock to the initial time you entered again

9.) **Clock Down Mode**

- Enter the start time in HH:MM:SS
- Press enter
- The time will start counting down
- While the time is counting, press the enter key to reset the clock to the initial time you entered
- When the time reaches 0, the time will remain paused on the display until the enter key is pressed

10.) **Clock Down Auto Mode**

- Enter the start time in HH:MM:SS
- Press enter
- The time will start counting down
- While the time is counting, press the enter key to reset the clock to the initial time you entered
- When the time reaches 0, the time will automatically reset to the initial time you entered and start counting down

STEP #8: Storage and Transportation

1.) Place the Finished Results Multi-Function LED Display in the **protective bag**. Power and communication cable should be placed at the bag's front pocket



Figure 14: Carry bag may come in different color or shape

- Close tripod legs
- During transportation and storage, **do not place any kind of equipment** or sharp tools over the display bag
- Store in a cool dry place



QUICK START GUIDE

Multi-Function LED Display

STEP #9: IP Address Configuration

- 1.) Note: If needed, contact support@finishedresults.com and we can remote desktop in to assist you with this process
- 2.) Download PuTTY: <https://www.putty.org>
- 3.) Connect your laptop to the display via Ethernet
- 4.) The default ethernet IP address is **192.168.0.51**
- 5.) Make sure your laptop's ethernet port is on the same IP range. Common settings for a Lynx laptop are below

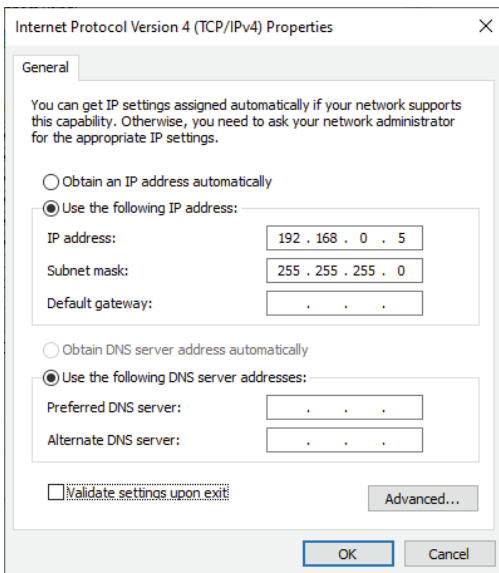


Figure 15: IP Properties on Lynx Laptop

- 6.) Open PuTTY and enter **192.168.0.51**

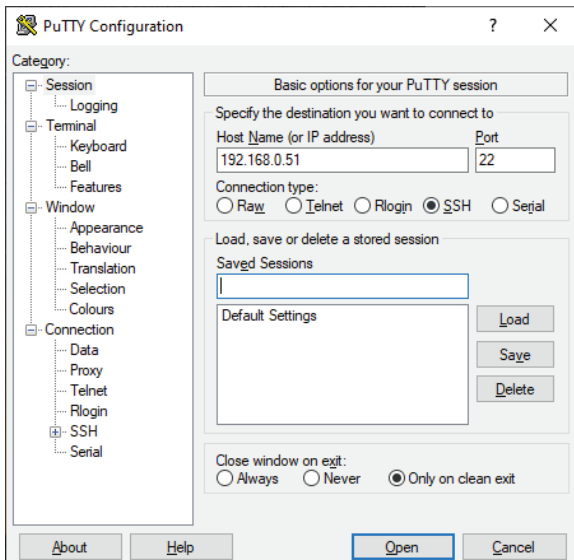


Figure 16: PuTTY Configuration

- 7.) Click Open
- 8.) **Login Name: pi**
Password: frDisplay
- 9.) Type in:
sudo nano /etc/dhcpd.conf
- 10.) Press Enter
- 11.) Using the arrow keys on your keyboard, go to the end of the file
- 12.) Change the static ip_address for your Ethernet or WiFi networks, keep **/24** at the end of the IP address

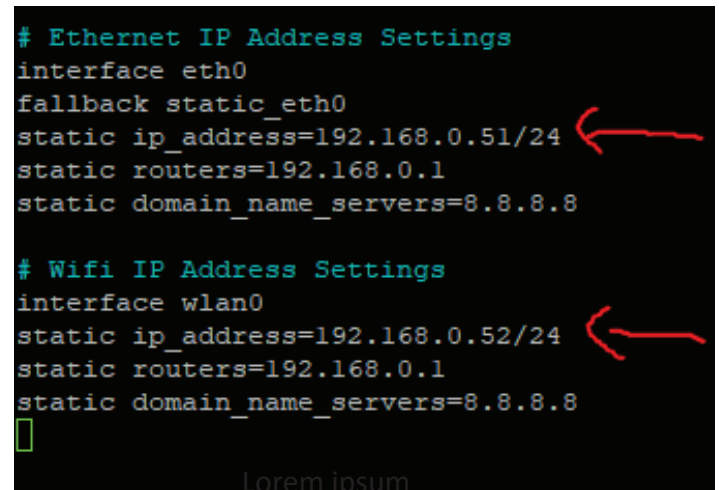


Figure 17: Ethernet/WiFi Address Settings

- 13.) To save, **press ctrl+x, then press Y**, then press Enter
- 14.) Type:
sudo reboot
- 15.) Press Enter, the display will restart and the new IP addresses will become active
- 16.) Note: If you would like to use DHCP to obtain an ip address, comment out each line in the image above by placing a # at the start of each line, then save the file and reboot.

STEP #10: WiFi Configuration

- 1.) Note: If needed, contact support@finishedresults.com and we can remote desktop in to assist you with this process
- 2.) Turn on the WiFi access point you plan to connect to
- 3.) Download PuTTY: <https://www.putty.org>
- 4.) Connect your laptop to the display via Ethernet
- 5.) The default ethernet IP address is **192.168.0.51**



QUICK START GUIDE

Multi-Function LED Display

- 6.) Type: `sudo raspi-config`
 - 7.) Press **Enter**
 - 8.) Select **Network Options**
 - 9.) Select **Wi-Fi**
 - 10.) Type in your WiFi SSID and press Enter
 - 11.) Type in your WiFi Password and press Enter
 - 12.) It will take a few seconds to try connecting to your WiFi, please make sure the Access Point is turned on
 - 13.) Press tab and select Finish
 - 14.) Type: `sudo reboot`
 - 15.) Press Enter, the display will restart and the display will connect to your WiFi
- ADVANCED CONFIGURATION BELOW.**
- 16.) Note: if the previous steps worked for you, then you do not need to follow these steps
 - 17.) If your access point is not turned on or you want more advanced control over multiple WiFi networks follow the steps below
 - 18.) Type:


```
sudo nano /etc/wpa_supplicant/wpa_supplicant.conf
```
 - 19.) Press **Enter**
 - 20.) Create or edit a network using the image below as an example

- 21.) A higher priority number means that the display will attempt to connect to that WiFi network first
- 22.) Please double check that your settings match the same format as the image
- 23.) To save, **press ctrl+x, then press Y**, then press Enter
- 24.) Type: `sudo reboot`
- 25.) Press Enter, the display will restart and will be ready to connect to one of the WiFi networks you configured

This completes the Finished Results Multi-Function LED Display Quick Start Guide for FinishLynx.

```

pi@fr-display: ~
/etc/wpa_supplicant/wpa_supplicant.conf Modified
ctrl_interface=DIR=/var/run/wpa_supplicant GROUP=netdev
update_config=1
country=US

network={
    ssid="Some-Wifi-Network"
    psk="somePassword"
    priority=2
}

network={
    ssid="Test-Wifi-2.4"
    psk="myPassword"
    priority=1
}
  
```

Figure 18: Example Image Advanced WiFi Control