FlashTiming FT-Display

User Guide

*FlashTiming's **FT-Display** is a multi-sport LED timer and display. It's full featured and ideal for a variety of timing purposes, informational messages and advertisements. The display can be controlled by **FT-FAT** software or any device running either iOS or Android operating system, such as your iPhone, iPad, Android smartphone or tablet.*

***FT-Display* Specifications:**

- 6” LED letters with brightness control
- 16X96 pixels at 10mm pitch, readable from 300ft
- Portable, battery powered with a 10 hour battery life
- Programmable 115db buzzer
- Water resistant, powder coated, steel case
- Weight: 30 lbs
- Dimensions: 38”L x 6.5”H x 5”D

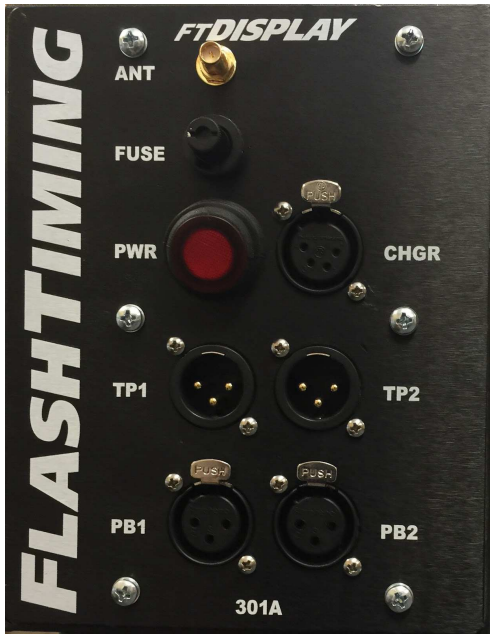
Mobile App Guide

Getting Started

1. Download the App

Download the *free* ***FT-Display*** app from the Google Play Store by going to flashtiming.com/android. Coming soon to the Apple App Store.

2. Side Panel



The power switch (PWR) and connectors are located on the left end of the display.

- **Fuse -** The FT-Display was shipped with a fuse inside the bubble wrap bag with the USB radio. Insert the fuse into the bulkhead with a flatheaded screwdriver. Push in and turn the fuse to install properly. There is also a spare fuse taped to the inside of the case. Remove the back panel to access it if necessary.
- **Power Switch (PWR) -** Turn on the power and wait until the wireless network name appears on the display.
- **Battery Charger (CHGR) -** It's best to have your ***FT-Display*** fully charged before use. The display will run 10 hours when the battery is fully charged. A warning appears on the display when the batteries are low. To preserve longevity of the batteries, immediately turn off or recharge the display when this warning appears. The display turns itself off before the batteries are fully discharged.
- **Antenna (ANT) -** Attach the antenna if using the display as a race clock or results display with FlashTiming software. The antenna is not necessary if you are using the display only with your smartphone.
- **Touchpads (TP1 and TP2) -** There are two touchpad connectors for timing the 40 yard dash 5-10-5 shuttle and other drills. Use **TP1** if you are only timing one athlete.
- **Photo Beams (PB1 and PB2) -** There are two photo beam connectors for timing the 40 yard dash 5-10-5 shuttle and other drills. Use **PB1** in FAT RaceClock mode or when only timing one athlete in TouchPad Mode.

3. Connect to the Display

FT-Display has its own wireless local area network. The network name appears on the display when it is first turned on (this may take up to one minute). When the network

name appears on the display you may connect to the display from your smartphone's Wi-Fi menu. The network is password protected and the default password for the hotspot is *flashtiming*. Both the network name and password can be changed using the ***FlashTiming*** software on a Windows computer. Refer to the ***FlashTiming FT-Display*** Window's User Guide.

4. Launch the App

Tap the ***FT-Display*** icon on your smartphone. A list of the ***FT-Display's*** modes appears in the bottom half of the screen and the ***FT-Display*** menu bar is across the top.

Menu Bar

The blue Menu Bar appears at the top of the each screen in the FT-Display app and shows three icons and the name of the current mode.

- **Wi-Fi Connection**: Check the Wi-Fi icon when the app is first launched or if there is difficulty communicating with the display. If the icon is green, then the app is communicating with the display. If the icon is red then the app may not be connected to the display's network. Press the icon to configure the network settings. Ensure that the **Server IP** is 192.168.10.1 and the **Server Port** is 8889. If the network settings are properly configured and the icon still appears red, then verify the device's Wi-Fi connectivity. The device may be out of range, switched to another Wi-Fi network, or the FT-Display may not yet be initialized. If unable to communicate with the display after the previous steps have been taken, restart both the display and the FT-Display application on your smartphone.

- **Brightness:** Tap the Brightness icon to set the display's brightness, check the battery percentage, or clear the display (the clock cannot be running to clear the display).

- **Settings**: Each mode has its own set of options and preferences, which can be accessed by tapping the Settings icon in the menu bar.

- **Mode**: The current mode is displayed in the upper right of ***FT-Display*** Menu Bar. Tap the mode name to bring up a list of modes and change to another screen.

FT-Display Modes

Once connected, the ***FT-Display*** app can be used to control the display in one of the following modes:

FAT Race Clock

FAT mode can be used in conjunction with the ***FT-FAT*** timing system to automatically detect the start of a race, track the number of laps, and provide an unofficial winning time with the ***FT Photo Beam***. See the last section of this manual for using the display with the ***FT-FAT60*** or ***FT-FAT120*** system.

Set-up

- Plug in the photobeam to the port on the side of the display marked PB1
- Place the display near the finish line with the photobeam
- Align the reflector with the photobeam. The red and yellow lights will illuminate on the photobeam when it is properly aligned with the reflector.
    - If unable to align the photo beam and reflector, try starting from a shorter distance and slowly moving the reflector further and further until the desired distance is reached.
    - It may be necessary to adjust the heights of the tripods in order to keep the photo beam aligned on uneven surfaces.

Settings

- **Photo Beam Display Time -** Set the number of seconds for the time to display when the photo beam is broken before resuming the running clock. Set the value to zero to stop the clock when the beam is broken (This setting only applicable when the ***FT Photo Beam*** is connected to the display.)
- **Split Prediction -** Turn **On** to show the runner's projected finish time based on the current pace. Turning on *Split Prediction* disables the *Lap Counter.* The *Track Length, Display Location,* and *Event Length* need to be set when using the *Split Prediction:*
    - **Track Length -** Enter the track length. The standard track length is 400 meters.
    - **Display Location -** Enter the distance from the start of the race to the location of the ***FT-Display.***.
    - **Event Length -** Enter the total distance of the running event.

Controls

- **Arrows**
    - These controls are used to keep track of the number of laps remaining in a race. Set the lap counter by pressing the left and right arrow buttons at the top of the screen. If the current lap is set to zero, the number does not show on the display. If set to any other value, the display shows the lap number in the top left of the display.
    - If *Split Prediction* is turned on, these arrows set the display to show the runner's predicted finishing time based on the current lap and the *Split Prediction* settings (*Track Length, Display Location* and *Event Length*), Press the right arrow after all the runners (or lead group) have passed the display to set the prediction for the next lap.

- **Start/Stop** toggles between starting and stopping the clock. **Start** resumes the clock from the currently displayed time. If the ***FT-FAT*** fully automatic timing system is used to start the race, the FAT start always takes precedence over the manual start.
- **Reset** sets the display to 0:00.00. The clock must be stopped to reset the display.
- **Arm Photo Beam** toggles between arming and disarming the photo beam. An asterisk appears in the bottom left corner of the display when the photo beam is armed.
- **Sync** - Synchronizes the ***FT-Display*** split prediction with the smartphone app.

STOPWATCH

StopWatch mode can be used on race day or during practice. The clock counts up from a designated start time and has the ability to track lap and split times. A lap counter can be added to the display.

Settings

- **Lap/Split Display Time** - set the number of seconds for either the lap or split time to display on the ***FT-Display*** before resuming the running clock.
- **Buzz on star**t - turn **On** for the buzzer to sound when the clock starts.
- **Buzz on Stop** - turn **On** for the buzzer to sound when the clock stops.

Controls

- **Lap Counter** can be used to keep track of the number of laps remaining in a race, or the number of laps completed. Set the lap counter by pressing the left and right arrow buttons at the top of the screen. If the Lap Counter is set to zero the number does not display. If set to any other value, the display shows the lap number in the top left of the screen.
- **Timer Readout** shows the current running time. Tap on the time when the clock is stopped to adjust the time.
- **Start/Stop** toggles between starting and stopping the clock. **Start** resumes the clock from the currently displayed time.
- **Reset** sets the display to 0:00.00. The clock must be stopped to reset the display.
- **Split** displays the time at which the the split button was pressed. The split time remains on the display for the number of seconds configured in the Settings menu or until the Split or Lap button is pressed. The display then resumes from the current race time.
- **Lap** displays the amount of time between laps. The clock displays the amount of time between the last lap time and the current lap time. The lap time remains on the display for the number of seconds configured in the Settings menu or until the Lap or Split button is pressed. The display then resumes from the current race time.

TIMER

The Timer mode counts down from a designated start time. It can be used to countdown to an event, or ensure that athletes are completing a workout in a designated time.

Settings

- **Buzz on star**t - turn **On** for the buzzer to sound when the user starts the clock.
- **Buzz on Stop** - turn **On** for the buzzer to sound when the user stops the clock.
- **Buzz on Zero** - turn **On** for the buzzer to sound when the clock reaches zero.

Controls

- **Timer Readout** shows the current running time. Tap on the time when the clock is stopped to set the timer.
- **Start/Stop** toggles between starting and stopping the clock. **Start** resumes the clock from the currently displayed time.
- **Reset** sets the display to the designated start time. The clock must be stopped to reset the display.

PERIOD CLOCK

The Period Clock can be used as a game clock in an athletic event such as a soccer or basketball game or to keep your practice on schedule with the Auto Advance and Interim features.

Settings

- **Count Up** - Turn **On** for the period clock to count up. By default the period clock counts down.
- **Auto Advance** - Turn **On** to automatically advance to the next period when the clock reaches the end of a period. If auto advance is turned off, the operator must manually advance the period counter, reset the clock and start the next period.
- **Interim** - Set the number of seconds as a interim time between each period. This option is used in conjunction with the Auto Advance feature to allow for a transition time between drills. Set the value to zero for no transition time.
- **Custom Periods** - Turn **On** to create custom periods of different lengths.
- **Buzz of Period Start** - Turn **On** to sound the buzzer at the start of each period.
- **Buzz on Period End** - Turn **On** to sound the buzzer at the end of each period.

Controls

- **Period Counter** - Change the period counter by pressing the left and right arrow buttons at the top of the screen. The period counter advances automatically when the Auto Advance option is set.
- **Timer Readout** shows the current running time. Tap on the time when the clock is stopped to adjust the time.
- **Edit Periods** Set the number of periods and period length. Iif *Custom Periods* are enabled each period needs to be manually added
- **Start/Stop** toggles between starting and stopping the clock. Start resumes the clock from the currently displayed time.
- **Reset** sets the display to the start of the period. The clock is set to the period length if the clock is counting down, or to zero if the clock is counting up.

- **Buzzer** sounds the buzzer at any time.

Cross Country

Cross country mode allows for multiple displays to be positioned along the race course. Each display shows the sign location, the current race time, the course length and the predicted finish time based on the current runner's pace.
This mode is similar to split prediction in FAT RaceClock Mode, but the user needs to connect to each sign's wi-fi network before syncing the clock.

> Note: if using multiple FT-Displays it may be useful to assign one smartphone to each display and start the signs at the same time, rather than attempting to use the same phone to connected to each display in a limited amount of time.

Settings

- **Number of Displays -** The number of displays on the course.
- **Course Length -** The total course length.
- **Display Locations -** Enter the distance from the start of the race to the display location for each display.

Controls

- **Display Counter -** Sets the display to show the runner's predicted finishing time based on the display's location and the course length. Press the left and right arrow to select the display's location. Press Sync to display the course marker, race time, course length and projected finish time.
- **Timer Readout** shows the current running time. Tap on the time when the clock is stopped to adjust the time.
- **Start/Stop** toggles between starting and stopping the clock. **Start** resumes the clock from the currently displayed time.
- **Reset** sets the display to 0:00.00. The clock must be stopped to reset the display.
- **Sync** - Synchronizes the ***FT-Display*** with the smartphone app and sets the predicted time based on the display's location.

Interval Clock

The Interval Clock is designed for paced workouts with scheduled rest periods and a pace buzzer.

Settings

- **Count Up** - Turn **On** for the interval clock to count up. Turn **Off** to count down.
- **Auto Advance** - Turn **On** to automatically advance to the next interval when the clock reaches the end of a interval. If auto advance is turned off, the operator must manually advance the interval counter, reset the clock and start the next interval.
- **Cool Down** - Set the number of seconds as a cool down period between each interval. This options is used in conjunction with the Auto Advance feature to allow for a rest time between sets. Set the value to zero for no cool down time.
- **Custom Intervals** - Turn **On** to create custom intervals of different lengths.
- **Buzzer Intervals** - Set the number of times to sound the buzzer within each interval. (For a 60 second interval, 1 sounds at the start and stop of each interval, 2 sounds the buzzer every 30 seconds, and 3 sounds the buzzer every 20 seconds, etc...)

Controls

- **Interval Counter** - Change the interval counter by pressing the left and right arrow buttons at the top of the screen. The interval counter advances automatically when the Auto Advance option is set.
- **Timer Readout** shows the current running time. Tap on the time when the clock is stopped to adjust the time.
- **Edit Interval** sets the number of intervals and interval length. If *Custom Intervals* are enabled, each interval needs to be manually added.
- **Start/Stop** toggles between starting and stopping the clock. Start resumes the clock from the currently displayed time.
- **Reset** sets the display to the start of the interval. The clock is set to the interval length if the clock is counting down, or to zero if the clock is counting up.
- **Buzzer** sounds the buzzer at any time.

Touch Pad

The Touch Pad mode can be used in conjunction with your FT PhotoBeam and FT Touchpad to time the 40 yard dash, 5-10-5 shuttle, or other speed and agility drill to accurately benchmark your athletes. You may test one or two athletes at a time. The athletes' times are reported on the display and your smartphone.

Set-up

- Plug in the photobeam to the port on the side of the display marked PB1
    - If timing two athletes at once, plug the second photobeam into PB2
- Place the display near the finish line with the photobeam(s)

- Align the reflector(s) with the photobeam(s). The red and yellow lights will illuminate on the photobeam when it is properly aligned with the reflector
    - If unable to align the photo beam and reflector, try starting from a shorter distance and slowly moving the reflector further and further until the desired distance is reached
    - It may be necessary to adjust the heights of the tripods in order to keep the photo beam aligned on uneven surfaces
- Place the cable reel with the touchpad near the base of the display.
- Unwind the reel until the touchpad is outside the reel.
- Leaving the reel on the ground and holding the touchpad in your hand walk to the desired starting position and place the touchpad on the ground. The reel should easily unwind as you walk.
- Lastly plug in the cable end of the touchpad located at the top of the reel into the display port labeled TP1.
- If timing two athletes at once repeat the above steps for the second touchpad and port TP2.

Settings

- **Side-by-Side** - Turn **On** if timing two athletes at once.
- **Auto Arm Photo Beam** - Turn **On** to automatically arm the photo beam after the touch pad is released. The beam will be armed after the *Photo Eye Delay* time and number of *Laps* have been satisfied.
    - **Photo Beam Delay** - Set the number of seconds after the touch pad is released or the beam is broken and before the photo beam is armed. If the athlete starts at the finish line or breaks the beam multiple times during the drill (such as the 5-10-5 shuttle), the delay time needs to be set to a sufficient amount of time for the athlete's body to completely clear the beam.
    - **Laps** - Enter the number of times the athlete photo beam is broken before stopping the clock. (Enter 1 for the 40 yard dash, or 2 for the 5-10-5 shuttle.)
- **Reset Delay** - Enter the number of seconds to display the time before automatically arming the touchpad for the next runner. Enter 0 to manually reset the touchpad. *Note*: the athlete's times are reported on the smartphone as well as the display.The times on the smartphone are not cleared when the touchpad is reset and the smartphone maintains a record of all the times.

Controls

- **Arm Touchpad** arms the touchpad if the clock is not running. The display shows "Ready" when the touchpad is armed. When the touchpad is pressed the display reads "Set". After pressing the touchpad for two seconds the display reads "0:00.00"'. When the touchpad is released the clock starts.
- **Arm Photo Beam** toggles between arming and disarming the photo beam. An asterisk appears in the bottom left corner of the display when the photo beam is armed. Any movement that breaks the photo beam after it is armed stops the clock. The athlete's time

is displayed on both the ***FT-Display*** and the smartphone.
If *Auto Arm Photo Beam* is turned on, pressing *Arm Photo Beam* overrides the *Photo Beam Delay* time and *Laps.*

- **Clear Results** clears the athletes times on the smartphone Athletes' times are reported on the controlling device and added to the list Lane 1 or Lane 2, depending on which photo beam was broken. Clear Results deletes both lists.

Field Events/Performance Board

The Performance Board mode can be used for field events to display an athlete's name and distance or height.

Settings

- **Dual Dimensions** - Turn **On** to have the display toggle between metric and English units.
- **Toggle Time Delay** - Enter the number of seconds before switching between units.

Controls

- **Contestant Name** - Enter the athlete's name. This option is only available if Small font is selected.
- **Enter Results** - Select the units to display the results, either **m/cm** for metric or **ft/in** for English and enter the results in the text boxes.
- **Display Results** - Shows the athlete's name if entered and the results in the specified units. The results toggle between metric and english if Dual Dimensions is turned on.
- **Clear Display** - Erases all text on the ***FT-Display.***
- **Font size** - Select either **Small**, **Medium** or **Large** Font.

Text

FT-Display can be used to display text for announcements and advertisements.

Controls

- **Text Entry** - Enter a message in the text box.
- **Display Text** - Shows the text on the ***FT-Display***.
- **Clear Display** - Erases any text on the ***FT-Display.***
- **Font size** - Select either **Small**, **Medium** or **Large** font size.
    - Small font displays two rows of text with a maximum of 16 characters each.
    - Medium font has a maximum of 12 characters.
    - Large font has a maximum of 8 characters.
- **Text Alignment** - Select either **Left**, **Center** or **Right** alignment.

Troubleshooting

If you have trouble connecting to the display's Wi-Fi network try the following:

- Cycle the power on the display. Wait until the Wi-Fi names appears on the display. The display first displays "Initializing", followed by "FlashTiming". The Wi-Fi name will appear when the Wi-Fi network is available for connection.
- Turn your phone's Wi-Fi off and back on again. This can be done in Settings.
- Close the app and launch again. On iOS devices this can be done by pressing the Home button two times quickly then swipe the app upwards. On Android hold down the Home button and swipe the app to the right.

FlashTiming Guide

Your ***FT-Display*** can be used to display the FAT racetime from the capture screen, or to post race results from the review page.

Setting up the Display:

- To set up the display go to the **Display** dropdown and select **FT-Displays**.
- The **Select Displays** window appears. Wait until all known displays are shown in the window, then select the **Next** button.
- Select which displays will be used for race clocks and results. Only one display can be used to display results, but multiple race clocks can be selected. If you are unsure which display is associated with the Display ID, press the **Test** button. The display will read Test FT-Display. Once you have made your selection press the **Next** button.
- The display(s) will be initialized. Click the **Finish** button.

Using the Display as a Race Clock:

- Once you have initialized the display as a race clock, simply start the race, using the normal starting procedure. When the race is started the race clock displays the race time.
- When the **Abort** or **Stop** button is pressed from the capture computer, the race clock will stop. If the starter aborts the race, the clock will re-initialize to 0:00.00
- To reset the clock to 0:00.00, press the **Reset Clock** button in the **Display Options** toolbar near the top of the capture screen.
- To clear the display press the **Clear All** button in the **Display Options** toolbar.
- The **Reset Clock** and **Clear All** buttons are disabled while the race is running.

Photo Beam:

- If using an photo beam with your ***FT-Display*** , you can enable the photo beam while the race is running by pressing the **Photo Beam: Off** button. The button text will read **Photo Beam: On** and an asterisk will appear on the bottom left of the display when the photo beam is armed.
- When the photo beam is broken the race clock will be paused for 10 seconds. This is an unofficial time and will not affect the FAT time.
- To disarm the photo beam, press the **Photo Beam: On** button. The button will read **Photo Beam: Off** and the asterisk will no longer be displayed on the display.

Display Settings for the Race Clock:

- Go to the **Display** dropdown and select **Display Settings**.
- The display can pause the race clock when a bookmark is set to display an unofficial winning time. To use this feature select the **Show Split Time on first bookmark** option. The clock will be paused for a user defined number of seconds before resuming the race time.
- The display brightness can be adjusted using the slider at the bottom of the **Display Settings** popup.

- The battery level of each display can be shown by pressing the **Check Battery** button at the bottom of the **Display Settings** popup.

Using the Display for Results:

- To display results go to the Review screen and record times as normal. Once every athlete has been assigned a time, press the **Results** button in the **Display Options** toolbar. The display will first show the event name and heat, and then cycle through each athlete, displaying their place, name, school, and result.
- Select the **Auto Results: On** option from the **Display Options** toolbar to automatically send results to the display every time an athlete is assigned a time.
- To clear the display press the **Clear All** button in the **Display Options** toolbar.

Display Settings for Results:

- Go to the **Display** dropdown and select **Display Settings**.
- The amount of time to display each result can be changed by setting the **Cycle Time** option
- The number of times to cycle each result can be changed by setting the **number of times to cycle** option
- Results can automatically be sent to the display when the **Save Times** button is pressed from the **Record Times** tab. Choose this option by selecting the **Automatically send saved results to display** option.
- The display brightness can be adjusted using the slider at the bottom of the **Display Settings** popup.
- The battery level of each display can be shown by pressing the **Check Battery** button at the bottom of the **Display Settings** popup.