

# Roller Timing User Manual

This manual specifically applies to Roller Timing with software version 2.0.

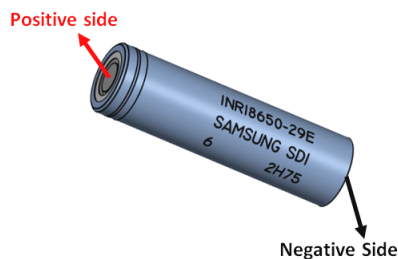
## Introduction

Welcome to Roller Timing – the precision timing system designed to enhance your Inline Speed skating training experience.

## Important Notices

1. **Antenna Installation:** Prior to powering on, ensure the antenna is securely fastened. Operating the device without the antenna may result in damage to the device.
2. **Waterproofing:** None of the components are waterproof. Avoid exposing the system to water or moisture.
3. When not using the system for more than 3 months, please remove the batteries to significantly lengthen their lifespan.
4. **Heat Exposure:** Prevent contact with hot surfaces to avoid equipment damage.

## Batteries



**Important!** Never insert batteries the wrong way. This will destroy the electronics inside! The big flat side is the negative / ground side.

## Getting Started: Setting Up Lap Timing

1. **Device Setup:** Install antennas, insert batteries, and power on all devices.

2. **Laser Station Setup:** Choose one laser station, navigate to setup, and select "Start + Finish." (This is the default after powering on.)
3. **Minimum Delay Configuration:** Set the minimum delay to half your standard lap time.
4. **Positioning Laser Stations:** Place one station on the finish line's one side and another without display on the opposite side. Align them for top LEDs to emit purple light.
5. **LED Behavior:** Purple fade: ready for timing, white: crossing detected, red: cooldown time running.
6. **Lap Display Selection:** Choose the desired lap display time. (Sets the time that laps will get displayed for.)

## Sprint Timer Setup

1. **Lap Timer Configuration:** Set up a lap timer at the starting point.
2. **Start Laser Adjustment:** Configure the start laser function as "Start."
3. **Finish Setup:** Set the laser station at the finish line to "Finish."
4. **Distance Selection:** Specify the distance on the finish station for inclusion in results.

## WiFi/Web Interface Integration

The display features a web interface that can be viewed from any WiFi-capable device.

- A WiFi network named "RollerTiming" will be available.
- Connect to "RollerTiming" using the password "GettingFaster."
- Note that this network lacks internet access, which is not an issue.
- Access the page <http://8.8.8.8>, you can type "8.8.8.8" in your browser.
- Utilize this interface to configure the device, view lap times, download data, employ the start gun, and set up cloud uploading.
- When encountering issues with the website, consider using an alternate browser.

## Start Gun

1. For initiating a start, choose from multiple options:
  - Using the laser stations (beep sounds) » Start Gun
  - Utilizing the display (beep sounds) » Start Gun
  - Via phone: On the webpage, select the Start Gun.

## Checkpoints for Enhanced Tracking

To monitor split times during sprints or laps, use the "checkpoint" function. Accurate operation necessitates setting the distance from the start accordingly.

Lap times are displayed for half the duration of laps. They are viewable in the web interface or downloaded data.

## Cloud Data Upload

Roller Timing can automatically upload all times to Roller Results. To set up this feature, access the web interface and follow provided steps.

Also, enable the cloud upload option in the WiFi display page.

Post-configuration, the device will automatically search for your WiFi network during boot-up and upload data seamlessly.

The upload process consumes no more than 5MB data, ensuring safe use with smartphone hotspots.

To view your uploaded data open <https://www.roller-results.com/roller-timing> or find it in your profile on the top right corner. You need to be logged in to Roller results.

## Data Download

Utilize the web interface to download sessions. The file downloaded is a .csv (comma-separated values) file, compatible with Excel and similar software.

For importing in Excel, navigate to Data > Get External Data > Text/CSV, and choose a "," as the delimiter.

## Transmission Range

Theoretical maximum transmission range is around 5km, assuming no interference, reflecting surfaces, and a clear line of sight between the antennas. For optimal performance:

- Be sure all antennas are mounted securely.
- Extend all antennas.
- Place the display in line of sight with all stations.
- Line of sight between stations is not vital, only between stations and the display.

## Lap Count Display

The display's top left corner indicates the lap count. When font size is set to large, only one digit is displayed. Choose small font size to view two digits.

## Menu Options

- **Setup**
  - **Display time:** (seconds) Choose the desired lap time visibility. For instance, if lap times are 20 seconds but you choose over 30 seconds, only lap times (without counting) will be displayed.
  - **Brightness:** Adjust light intensity between 5% and 100% based on ambient lighting. Note that bright sunlight may reduce visibility.
  - **Lap display:** Setting this to speed will calculate your average lap speed. This can also be used with two stations in start and finish configuration. Note that the distance setting has to be accurate for this to work.
  - **Display Font Size:** (S/L), opt for small numbers (3x5 pixels) or large numbers (4x8 pixels).
  - **System Settings:** Factory reset, advanced setup, and statistics for nerds.
  - **Info**

## Technical Specifications

- Maximum Laser Station Distance: 10 m

- Batteries: LIION 18650 cells 3.7V (2.75-4.2V) 3500 mAh
- Maximum Laser Angle:  $\leq \pm 5^\circ$

**Display:**

- 8x32 pixels
- 16 Million colors

Please feel free to reach out for further assistance or inquiries.

## Charging

The battery size was chosen to ensure you can always finish your training session.

Expected battery runtimes:

- Display at 100% brightness: 2h
- Display at 10% brightness: 4h
- Station with display: 10h
- Station without display: 24h

All devices have a USB C port for charging. To charge them, move the power switch to the on position and apply power via USB. The charging process will take up to 5 hours.

For charging the display via USB, you will need to lower the display brightness to its lowest setting because the USB port is not able to both charge and run the display at high brightness.

For faster charging, you can also remove the batteries and charge them externally. (You need a Liion 18650 charger.)

## Troubleshooting

Display or station is rebooting:

- In case you are powering using USB C: confirm that batteries are correctly inserted, and the power switch is in the on position.
- Confirm that the battery is charged.

Web interface is not working:

- Give it some time to connect. Sometimes WiFi takes up to 20 seconds on the first connect.
- Restart your phone's WiFi.
- Double-check WiFi credentials.
- Try this exact URL: <http://8.8.8.8>.
- Try using a different browser.
- Factory reset the display. This will keep your data but only reset settings.

Cloud shows an error on the screen:

- Check that [www.roller-results.com](http://www.roller-results.com) is working. If not, then there is some maintenance going on. Please try again later.
- Otherwise, please contact me and describe what happened.

Other Problems:

Feel free to contact me. I'm always happy to assist or fix things.