Manual Version 1.3.1

RALLY TRIPMETER V1

USER MANUAL

by CLOSER Gps

CLOSER

WITH THE KNOW HOW OF

PROFESSIONALS IN MOTORSPORT

Closer GPS is a spin-off of **Vittorio Caneva Rally Schoo**l, born from over 35 years of hands-on experience in motorsport. Emerging from real-world needs identified on the field and driven by the desire to provide effective solutions to drivers and teams, Closer GPS develops advanced hardware and software for motorsport applications. The project brings together top experts from different fields, **professional athletes**, **engineers and specialists**, each contributing their unique experience and knowledge to achieve the highest level of innovation and performance.

Backed by the engineering expertise of **ARM Products** and validated through extensive testing by elite drivers, our devices ensure outstanding performance and reliability.

WHY CHOOSE US?

- Real-world product testing
- Elite driver feedback
- Top-level rally expertise
- Cutting-edge engineering
- Reliable, race-proven tech

Learn more
www.closergps.com

Our devices are tested in real-world conditions, from the special stages of the World Rally Championship to the harsh deserts of the Dakar.

VITTORIO CANEVA RALLY SCHOOL

ARM products SINCE 2011

ALL THE USER MANUALS ONLINE
Scan the QR code next to access the online section with all the complete manuals for our devices.

V1 QUICK GUIDE

Speed alert engaged/dis.
Direction change (F, N, R)

Go to next page/digit
Edit - Confirm values

Stopwatch control
m/Km display

Reset dist. or increase value when editing

BUTTONS LEGEND: **Primary function (bold): short press**
Secondary function (normal): long press

Order of pages:
Tripmeter > Time > Stopwatch > Speedometer >

GREEN LED "GPS"

Cold starts always take longer. Hot starts are faster.

Blinking:
acquiring satellites

Solid:
GPS locked

Position the device for the best satellite visibility. In tunnels, the device calculates the distance from the last valid value.

RED LED "SPEED"

To set the speed alarm, go to S.ALERT setting, edit, confirm.

Solid:
speed alarm activated

Blinking:
speed limit exceeded

Using the available accessory it is possible to receive a clear visual and acoustic warning when the speed limit is exceeded.

WHITE LED "DIRECTION"

Settable by long presses of the small white left button.

Off:
forward (F, **+**)

Fix:
neutral (N, **II**)

Blinking:
backward (R, **-**)

POWER & START-UP

Quick checklist:

1. Make sure switch is OFF (↑) before connecting power
2. **Connect 12 V DC** (rear connector) or **5V USB-C** (side port)
3. Do not use both at the same time
4. Move switch down (↓) to **turn ON**
5. **Green LED blinking**: searching for GPS signal
6. **UTC blinking:** looking for GPS time
7. **Green LED solid**: GPS lock acquired, ready to use

POWER LOSS BEHAVIOR

The device includes an internal capacitor that:

- Keeps the unit powered for a few seconds during short power drops
- Prevents rebooting during engine start or cable reconnection
- Turns off the display temporarily to save energy
- Restores previous state when power returns
- When power is lost, the last recorded distance value remains in memory. It needs 10 seconds to save it.

Contents

The Rally Tripmeter V1 is a device **designed exclusively for motorsport and competitive use**. It is **not homologated** for road use under standard vehicle regulations. If operated on public roads (e.g., during liaison sections or recce), it is the **user's sole responsibility** to ensure: full compliance with the **local traffic laws and regulations,** hat the installation and use of the device does **not interfere** with the vehicle's primary instruments or obstruct the driver's view, that any use outside of closed-course competition is in accordance with applicable **national and regional legal requirements** Closer GPS and its partners **accept no liability** for any consequences arising from misuse or unauthorized road use of this device.

1.0 Meet the device

1.1 Functions

- GPS tripmeter
- Speedometer (Live speed, Speed limit alarm)
- Stopwatch
- GPS-synchronized time

Details:

- Built-in GPS receiver, no external sensor needed
- Operates via DC 5V (USB-C) or DC 12V vehicle power
- Simple front-panel buttons for reset, direction change, functions
- Stores settings in internal memory even after power off
- Threaded rear mounting holes (M4, 48.5 mm spacing) for secure dashboard installation
- Compatible with RAM-B standard
- Led status indicator for GPS signal lock
- Led for speed limit and direction

Technical details:

- Ambient operating range: -10 °C to 50 °C
- Ultra-low power draw approx. 0,07 A | 70 mAh
- Compact dimensions: W70 × H30 × D115 mm (approx.)
- Weight: 190 g

2.0 Getting started

2.1 Quick start

The Rally Tripmeter V1 is built on a simple idea: *power it and play*.

No wheel sensors, no complex setup, just connect it to power, wait a moment for GPS lock, and you're ready to measure. Designed for rally use, it's fast to install, easy to operate, and precise from the very first meter.

Here our quick start guide:

1. **Unboxing**: remove the Rally Trip V1 from the packaging. Using the supplied Allen key, screw the RAM holder onto the back if necessary using the screws provided.

2. **Mounting**: use the installation method of your choice. Place with driver's and codrivers's reach with clear sky view for GPS.

3. **Power On**: connect via USB-C (5V) or 12V socket; Move the side power switch to ON. Wait until the green light stops flashing: you will be connected to the satellites.

4. **Use**: default mode is Tripmeter; drive to check counting; press big white button to reset meters; use "next" button to change pages on the screen; see full manual for stopwatch, clock, and speedometer.

Tips for Best Use

- Mount the unit where it's easy to read and operate without glare.
- Keep it powered continuously during stages to avoid GPS reacquisition delays.
- Reset distance at the start of every section to measure it.
- Use the direction button quickly if reversing or correcting note distances.

2.2 Box contents

The Rally Tripmeter V1 is supplied in a single, complete configuration.

Each unit includes:

- Rally Tripmeter V1
- RAM-B mounting system with screws and Allen key
- Pre-installed advanced sun shield visor
- Aeronautical connector with pre-crimped wires for building a custom remote control extension
- Protective travel case
- Quick-access card with QR code linking to the online manuals

Every Tripmeter is delivered ready to use, with all core components engineered for maximum reliability and flexible installation in demanding rally environments.

A full range of compatible accessories is available separately through our official website.

2.2 Installation

The Tripmeter V1 features dual M4 threaded inserts on the back panel (48.5 mm spacing), designed for secure mounting with standard brackets. It’s compatible with RAM-style mounting systems, enabling flexible installation via:

- Windshield suction mount with extension arm
- Dashboard adhesive base
- Roll bar clamps for tubular structures

Installation Recommendations:

- Ensure clear sky visibility to allow uninterrupted GPS satellite reception.
- Mount in a location easily accessible and readable by the driver and co-driver.
- Consider installing external remote buttons for core functions, especially for resetting the meters, so you don't have to look away from the road to find the device button. Install the remote button in a location that's easy to reach without looking at it.
- Position it near a stable power source, either from the vehicle’s 12V line (fused) or a USB-C power bank for standalone operation.

2.3 Start up

- Once the unit is securely installed, ensure the power switch is set to OFF (switch in the upper position).
- Proceed to connect the power supply as described in section 3.1 either via the vehicle's 12V line or a USB-C power source.
- To power on the device, move the switch down to the ON position.
- Upon startup, the green GPS status led will blink, indicating that the unit is acquiring satellite signal. Wait until the led remains solid, this confirms GPS lock and enables precise distance and speed functions.

Note:

- During a **cold start** (e.g., after the unit has been off for a long time or moved far from its last known location), **GPS acquisition may take a couple of minutes.**
- If the green GPS led is still flashing after 5 minutes or more, turn the device OFF and ON again. It will connect to the satellites again.
- The device's location and satellite visibility can affect connection times. If you're unable to connect to satellites, consider repositioning your device in a better place.

2.4 Buttons

The Rally Tripmeter V1 features a control layout engineered for rapid use during rally stages, combining different tactile front-facing buttons.

Read the instructions for the relevant functions to understand how to use the buttons and levers.

2.4.1 🔴 **Stopwatch** control and **Display mode (m/Km) switch button** (red Button)

Main function	Short press	Start, stop and reset the stopwatch
Secondary function	Long press	Adjust screen display mode (m/Km)

2.4.2 ⚪ **Reset distance button - up button** (big white button)

Main function	Short press	Reset trip distance
	Short press	Increment digits values (when editing)

Both buttons can be mirrored by external momentary switch inputs (optional), allowing remote access from a more ergonomic position.

2.4.3 ⚪ **Speed alarm** and **Direction button** (small white button)

Main function	Short press	Activate speed alarm
Secondary function	Long press	Change movement direction **NO led**: forward (F, **+**) **FIX led**: neutral (N, **‖**) **BLINKING led**: backward (R, **-**)

2.4.4 ⚫ **Next>>** and **Settigns, edit, confirm button** (small black button)

Main function	Short press	Go to next page
Secondary function	Long press	Enter settings, edit and confirm editing

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2.5 Functions

You can switch the displayed items by short pressing the **Next>> button**. The displayed items are as follows:

Tripmeter (TRIP) ➡ Time (TIME) ➡ Stopwatch (SW) ➡ Speedometer (SPD) ➡

3.0 Wiring

3.1 Power supply

Power can be supplied from:

- DC 12V (using the red and black wires from the 6 pins back connector) from the vehicle
- DC 5V (using the USB-C port on the side) from a phone charger or similar (powerbank)

> ⚠️ | **Do not connect both at the same time.**

DC 12V (back connector wires)	Red wire:	DC +12V	Positive
	Black wire:	GND	Negative

> ⚠️ | **Add 1A fuse on the 12V power line. Check that the polarity of the wires is correct.**

DC 5V (USB-C)	USB-TypeC cable to phone adapter or power bank.

> **i** | To start up the unit, first **ensure the lateral power switch is in the OFF position** (up position) before connecting any power source.
>
> Once the unit is correctly powered, slide the **switch down to turn it ON**.

The tripmeter is equipped with a **capacitor**. The capacitor acts as a small temporary battery. It prevents the device from shutting down if it is briefly without power.

When the capacitor becomes active:
- when the vehicle's engine is started and the battery voltage drops
- when the power cable is disconnected from the tripmeter

In these cases, the capacitor provides a small charge reserve to prevent the device from resetting and allows time to restore the correct power supply voltage or reconnect the device without shutting down.

If a few seconds too many pass, the screen is automatically deactivated to give more autonomy to the microprocessor, so that it can remain on longer while waiting for the power to be restored.

3.2 Powerbank use

Thanks to its ultra-low power consumption, the device can run for many hours using a powerbank, duration varies based on the powerbank's capacity.

The device is compatible with powerbanks using **Power Delivery (PD) technology** thanks to its engineering.

N.B: **Not all powerbanks are suitable for low-power devices**: many are designed to shut off automatically if they detect minimal power draw, as a battery-saving feature.

To ensure uninterrupted operation:

- Use a powerbank designed for **low current devices**.
- Some models feature **automatic low-power mode**.
- Others require **manual activation** of this mode to prevent auto shut-off.

> **i** | When purchasing a powerbank, look for one specifically **compatible with small electronics**, such as AirPods or fitness trackers. This ensures reliable performance with your device.

3.3 Remote controls

To make operation easier while driving, it is possible to connect remote buttons to control the device's main functions. Here are the available options:

3.3.1 Custom Wiring (aeronautical connector)

All *RAW* version devices come with:

- **Pre-crimped wiring** with **loose wire ends** for custom installation including:
  - **White wires**: control the **large white button** (trip reset).
  - **Yellow wires**: control the **large red button** (stopwatch control).

Users can create their own wiring harness, route it to the desired position inside the vehicle, and insert a **momentary button** on the line.

Yellow wires:	Red button control
White wires:	Big white button trip control

3.3.2 Remote Tripmeter Reset Button

Another available accessory is the Remote Tripmeter Reset Button, which:

- Connects directly to the device's side jack input (Jack 3,5 mm version).
- Allows for easy trip reset without custom wiring.
- It is also available in a version with solder wires for connection with aeronautical connector wiring.

3.3.3 Ready-to-Use Accessories

A full range of compatible accessories (including the acoustic and visual warning for Speed Alert) is available separately through our official website. Visit our websites for the latest accessories available.

4.0 Functions

4.1 Tripmeter

The Tripmeter function continuously measures distance using high-precision GPS data. This function is essential in rallying for **navigating roadbooks, pace notes, and official time controls**, ensuring the crew stays perfectly aligned with stage or liaison timing. The system calculates distance travelled from the moment it receives GPS lock and begins counting based on the selected **direction mode** (Forward/Paused/Backward).

Distances can be **reset manually** at reference points and **calibrated** to match official rally measurements for maximum accuracy.

4.1.1 Switching measurement direction

The measurement direction can be changed with the related button (long press, white button).
Here how the led indicator (white) works:

- **NO led:** forward (+, the values are added)
- **FIX led:** neutral (pause, calculations are paused)
- **BLINKING led**: backward (-, the values are subtracted)

4.1.2 Reset Distance

To clear the distance, short press the **big white button**.

4.1.3 Switching display unit

By **l**ong pressing **the red button** switch between meters (ideal for drivers when taking pace notes) and kilometers display (ideal setting for codrivers while following roadbook indications).

4.2 Clock

Current time is displayed after receiving a GPS signal.

4.2.1 Time zone set

How to set your calibration value:

1. Switch to **Clock** display.
2. Press and hold the **edit - confirm black button**.
3. Tap **white button** to adjust UTC offset by ±1h.
4. Press and hold the **edit - confirm black button** to confirm.

Note: Daylight Saving Time (DST) is not updated automatically. When switching between standard time and daylight saving time, manually adjust the time zone by adding or subtracting one hour as needed.

4.3 Stopwatch

This is equipped with a simple stopwatch.

How to use the stopwatch:

1. Switch to **Stopwatch** display.
2. Press **RED** to start the countdown to the next full minute.

Timer **starts** when:

- **automatically**: countdown hits 00 second (a new minute starts)
- **automatically**: car moves during countdown
- **manually**: red button is pressed again

To **end** timing (finishline): press the **red button**
To **reset** press **red button** again

4.4 Speedometer

Current speed is displayed after receiving the GPS signal expressed in km/h.

4.4.1 Speed Alert

The **Speed Alert** function allows the co-driver to monitor and manage vehicle speed during road sections, especially where **speed limits are enforced** (e.g. liaison zones, time controls, remote service areas).

Activation: Short press the small white button on the left.
Confirmation: A red LED on the left side of the screen turns on.
Alarm: When the set speed is exceeded, the entire display flashes.
Extended Alert: Using the specific accessory additional visual feedback and a strong audible alerts are triggered.

How to set your speed limit: go to settings to set S.ALARM speed (read 5.1.4)

5.0 OPTIONS

5.1 Settings menu

- To **enter the settings menu**, from any screen, **long-press the black button**.
- To **move** from option to option, **short-press** the black button.
- Once you've identified the option you want to change, **long-press black button to edit.**
    - **Short-pressing the black button** moves the digit sideways.
    - **Short-pressing the white buttons** (upper or lower) increases or decreases the digit value.
- To confirm the change, **long-press the black button to exit** and return to the main screen.

5.1.1 Distance Calibration

Please calculate the calibration value using the formula below.

Value = device distance / Official Standard Distance (Road Book)
Example: device distance: **10.50 km**, OSD: **10.00 km** ⇨ 10.50 / 10.00 = **1.05000**

The calibration value is stored internally even when the power is turned off.

How to set your calibration value:

1. Enter the settings menu (long press black button). You see “Calib”.
2. Long Press the **black button to edit it**.
3. Use the **white buttons** to increase or decrease the blinking (selected) digit value, **black button** (short press) to move the cursor and select another digit to change.
4. Confirm by pressing and holding the **black button** again.

5.1.2 Time zone set

How to set your time zone:

1. Enter the settings menu (**long press black button**).
2. One **black button short press** to move to Utc screen
3. Long Press the **black button to edit it**.
4. Use the **white buttons** to increase or decrease your timezone offset
5. Confirm by long pressing the **black button**.

5.1.3 Led and screen brightness

How to set leds and screen brightness:

1. Enter the settings menu (**long press black button**).
2. Two **black button short presses** to move to LEd screen
3. Long Press the **black button to edit it**.
4. Use the **white buttons** to increase or decrease the brightness level (Hi or Lo)
5. Confirm by long pressing the **black button**.

5.1.4 Speed alert set:

How to set Speed Alert value:

1. Enter the settings menu (**long press black button**).
2. Three **black button short presses** to move to S.ALErt screen
3. Long Press the **black button to edit it**.
4. Use the **white buttons** to increase or decrease the speed value
5. Confirm by long pressing the **black button**.

To enable this function, press the **lower white button (trip2)** on any screen you are on. The alert led (red) will light up when this function is enabled:

When you get under **<5 km/h>** of the set limit, the alert led will flash.

6.0 GPS

5.1 Description

The Rally Tripmeter V1 is equipped with an **integrated high-sensitivity GPS receiver**, eliminating the need for external sensors or wheel probes. This module is responsible for providing **real-time data** for:

- Distance measurement
- Speed display
- UTC time synchronization

6.2 GPS start-up and lock

Upon powering on, the device automatically begins acquiring satellite signals. During this phase:

- The **GPS status led** will **flash**, indicating the unit is searching for satellites.
- Once a reliable fix is obtained, the **led will remain solid**, confirming that GPS-based functions (distance, speed, time) are active.

> **i** | During a **cold start**—for example, if the unit was powered off for several hours or relocated significantly—it may take up to several minutes to establish satellite lock.
>
> To ensure optimal performance, always install the unit with **clear line-of-sight to the sky**, avoiding placement under metallic roofs or deep dashboards.

6.3 Performance Tips

- Avoid placing the device near high-interference sources such as inverters or Wi-Fi routers.
- Satellite lock is generally achieved within **30 seconds** in normal conditions.
- For competitive use, allow the unit to acquire GPS before the start of a stage or liaison to ensure all functions are available.

Want to understand why accurate trip distances matter in rallying?
Read the article: *Why are accurate distance calls in Rally Pacenotes so important?*

For training, setup sessions or custom installs:
Vittorio Caneva Rally School
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