RALLY CLOCK · FOR TESTERS AND EVENT CREWS

Working together

the main clock, hand-overs and setups

Three things in Rally Clock involve more than one device: copying the **main clock**, **handing over logs** to a collecting device, and **getting the event setup** from a course car. All three work the same way underneath, and all three need the same thing: the devices on one network.

What they need: one network, no internet

The devices must be on the **same Wi-Fi network or phone hotspot**. The network does **not** need internet access: the devices talk to each other directly. That's what makes it work at a control with no phone signal.

Ways to get one:

- **A travel router**, such as a GL.iNet GL-MT300N-V2 (Mango), powered from a USB power bank. It makes a Wi-Fi network wherever it is: in the sweep car, at the finish, at service or at HQ. This is the most dependable option.
- **A phone's hotspot.** One crew phone shares a hotspot and the others join it. It usually works, but try it with those phones before the event.
- **Existing Wi-Fi** at service or HQ, if it lets devices see each other (see below).

Check these once, before the event:

- **Device isolation off.** Guest networks, hotel and public Wi-Fi, and some routers keep devices from seeing each other ("AP isolation", "client isolation", "guest mode"). With isolation on, nothing below works. It is off on a GL.iNet router unless someone turns it on.
- **"No internet" warnings.** When a phone joins Wi-Fi with no internet, Android may say so and offer to disconnect. Choose to stay connected. The phone carries on using mobile data for the internet if it has any, and the Wi-Fi for Rally Clock.
- **Android 17 and later:** Rally Clock needs the **Nearby devices** permission. It asks at first launch; if it was refused, the app shows a notice with an Allow button.
- **iPhone and iPad:** Rally Clock needs **Local network** access. iOS asks the first time a screen looks for other devices; tap Allow. If it was refused, turn it on in Settings → Privacy & Security → Local Network.
- **Windows laptops:** allow Rally Clock through the firewall when Windows asks on first launch, and make sure the Wi-Fi network is set to **Private**, not Public (Settings → Network & internet → Wi-Fi → the network). A Public network blocks other devices from reaching the laptop.
- Join every device to the network once at home, so it reconnects by itself in the field.

For whoever manages the network: Rally Clock uses UDP port 47801 (finding devices, and clock timing), TCP 47802 (log hand-overs) and TCP 47803 (event setups), all on the local network only. Hand-overs are not encrypted, so use a network you control.

The main clock

A stage time is one device's finish minus another's start, so what matters most is that the devices **agree with each other**. One device becomes the main clock, and the others copy it.

On the main clock device:

1. Set its clock as well as you can first: from the internet (**Set clock**) while there's signal, or, on Android, from satellite time.
2. Clock screen (the clock icon, top right) → turn on **This is the main clock**.

On every other device:

1. Clock screen → under **Copy from another device**, the main clock appears by its control name, usually within a couple of seconds.
2. Tap **Copy**. If cars have already been timed, it asks first, because changing the clock mid-control puts earlier and later times on slightly different clocks.
3. The result shows how far the clock moved and how closely it matched: for example, "Matched SS4 · Stop: -0.119 s (±5 ms)".

How it works: the main clock announces itself on the network every 2 seconds. Copying swaps six quick timing messages with it, the same way internet time servers work, keeps the fastest exchange, and allows for the time the message spent travelling. Only the copying device changes; the main clock never does. Every change is written into that device's log, so scoring can see it.

When: copy before the devices leave for their controls, with all of them on the same network, then turn the main clock off. The clocks keep time on their own all day without any signal.

Handing over logs

A sweep car, the finish or HQ collects the controls' logs. Handing over **copies** the log: the control keeps everything it had.

On the collecting device: menu → **Collect logs** → turn on **Collect logs from controls**. It announces itself on the network. What it collects is kept on the device, including after the app restarts, and turning collecting off doesn't erase it.

On each control's device:

1. Join the collecting device's network. If the sweep car carries a travel router, the control's phone rejoins it automatically as the car arrives, if it joined that network before.
2. Open the log (the list button on the timing screen). A bar at the top says "*Rally HQ* is collecting logs".
3. Tap **Hand over**. The reply says what arrived, for example "Rally HQ has 15 records from you (12 new, 3 changed). Your copy is untouched."

Things worth knowing:

- **Hand over as often as you like.** Records already delivered aren't duplicated. A record corrected since, voided or given a car number, arrives as "changed", and the collector keeps the newest version.
- **Collectors chain.** When a collecting device hands over, it passes on everything it holds, not just its own log. The sweep car can hand its whole collection to HQ.
- **Review what is missing:** on the collecting device, the Review screen (Collect logs → the checklist icon) shows which controls are short and by which cars.
- A handed-over log includes the worker's name and phone number, if entered in Setup.
- **Moving on to another stage?** After a hand-over, the control is asked whether it is moving on, and offered the next stage (SS4 becomes SS5, and can be edited). Changing it before the first car of the next stage keeps that stage's times from being filed under the last one. Times already logged keep the stage they were taken at.

Getting the event setup

Someone who knows the event fills in the setup once. Then:

On the course car or organizer's device: Setup → **Get setup from the event** → turn on **Hand this setup out**.

On each volunteer's device: Setup → **Get setup from the event** → tap **Get it** beside the course car, then pick your control from the list. Nothing changes until you pick. A setup never touches the clock, the log, or the worker's own details.

If devices can't see each other

Work down this list:

1. **Same network?** Check the Wi-Fi name on both devices. A phone that dropped back to mobile data is not on the network.
2. **Is the other device offering anything?** A device only appears while it is the main clock, collecting logs, or handing out a setup.
3. **Android 17:** is there a "not allowed to reach others on this Wi-Fi" notice? Tap Allow.
4. **iPhone or iPad:** is Local Network on for Rally Clock (Settings → Privacy & Security → Local Network)?
5. **Windows:** is the network set to Private, and was the firewall prompt allowed?
6. **Isolation:** try a phone hotspot instead. If it works there, the Wi-Fi network is keeping devices apart.
7. Restart the app on both devices. The app reopens its connection to the network when it starts.