# EggRider User Manual

**For EggRider V2 ebike display and mobile apps**

EggRider Team

# Table of contents

# 1. EggRider user manual

## 1.1 Personalise your eBike ride

EggRider is the fusion of an eBike display with a mobile app, allowing you to enhance the performance of your eBike ride.

EggRider now presents two distinct display options: EggRider V2 and EggRider C1. While V2 boasts a compact design, the C1 stands out with its vibrant color and larger screen.



## 1.2 Why choose EggRider?

- Intelligient design with premium feel
- Customise your settings on the go
- Road/Offroad profiles
- Ride statistics
- Continously improving
- Mobile app integrated with EggRider displays

| Android | iPhone |
|---------|--------|
|  |  |

Last update: August 6, 2024

# 2. EggRider displays setup

Please carefully follow the instructions below for a successful setup.

## 2.1 Install display on your handlebar

Find the spot on the handlebar, open the hinge, make sure no other components are pushing the display.

| Measure handlebar | Tighten the screw | Allow slight rotation |
|---|---|---|
|  |  |  |

**EggRider V2** is designed for handlebars with a diameter of **22.2mm**, and it should be mounted on a straight section of the handlebar.

**EggRider C1 display** can be adjusted to fit handlebars with diameters of **31.8mm** and **22.2mm**. It includes **a remote** designed for a **22.2mm** diameter handlebar. Ensure both the display and remote are properly installed on your bike for optimal compatibility.

⚠ **Warning**

Adjust display to a position easy to operate, using M3*10 hex set to screw and tighten. Recommended tightening torque: 0.8 newton-meters. Damage caused by excessive torque is not covered by the warranty.

## 2.2 Plug in the connector to your bike

> ≣ **Ensure that connectors are matched by type.**

Make connection only with same type of connectors. If not done so, it **voids warranty**.

# Make connection only with same type of connectors



# Connecting different types of connectors voids your WARRANTY!

**Use only authorized adapters such as female to male and male to female adapters.**

Otherwise, there's a high likelihood of damaging the display and controller.

**Ensure connectors are gently connected using the connector guide.**

Incorrectly applying force or twisting the connectors can result in damage to the connector guide, leading to **warranty voidance**.

For **RadBikes connection guide**, please see "Rad settings" or "Radv2 Settings" depending on your bike model.

## 2.3 Protocol detection

When you first connect the display it is important to check that speed shows **00.0** as shown in the picture bellow. This means the EggRider display is able to communicate correctly with your bike. If instead you see speed **--.-** or **error FF (EFF)** please follow Protocol not correctly setup in troubleshooting. Once the working protocol is found you should **NOT change** it from Display Settings page.

| Display Model | Communication OK | Communication NOT OK |
|---|---|---|
| EggRider V2 |  |  |
| EggRider C1 | EggRider C1 FF error OK | EggRider C1 FF error not OK |

## 2.4 Connect with the mobile app

| Android | iPhone |
|---|---|
|  |  |

Download the mobile app from the store by clicking on one of the images above.

## 2.5 Finding your device

At startup, an **automatic scan** for nearby devices is triggered. If the scan finishes and the device does not appear in the list, restart display and pull down on the page to manually trigger a re-scan.
Once the device shows in the list, tap on it to initiate the connection.

Do not pair from the Bluetooth menu. Connect only from the app. (see Connection troubleshooting)

## 2.6 Activation

Tap on the device in the search list. When the popup shows, choose option **Activate now**.

Inserting correct information gives you instant activation.

The following information is required:

- **Shop name** - Insert the shop where you bought EggRider display from. Start typing and chose from the suggestions.

  Example: ~~www.shop.~~ eggrider ~~.com~~ → eggrider

| | |
|---|---|
| Shop * | Where did you buy the display f |
| Order number * | Order number or ID |
| Your email * | Your email |
| Bike name | Give your bike a name |

- **Order ID** - it is usually a number and you can find it on your order email or invoice. If you bought the EggRider from a reseller, please ask your reseller for activation details.
- **Your email**

⚠ **Attention**

Inserting wrong information will lead to activation delays.

## 2.7 Important configuration

### 2.7.1 Wheel size

To calculate the **speed** we use Wheel circumference (millimeters) value from **Display settings** page.
You can use the **Wheel size** drop down helper with some predefined wheel circumferences.

The following links provide comprehensive resources for determining the wheel circumference Wheel size math or Cyclecomputer calibration

ⓘ **Info**

The **Wheel size** drop down is just a helper with predefined values for **Wheel circumference**. It is normal to go back to **Select**.

## 2.7.2 Battery

To have a good  battery percentage , you have to set the Voltage 0% V, 100% V and capacity (Ah) in the **Display settings** page.

Use the **Battery Voltage** drop down helper with predefined values for Voltage 0% and Voltage 100%. You can also manually adjust the values to your specific requirements.

These settings are used for **battery measurements only**, they don't influence the voltage cutoffs for example. Use the controller specific settings for protection.

> ⚡ **Warning**
>
> EggRider doesn't work with voltage over 60V (max 52V batteries) or with **dual battery** systems based on diodes. If you see the Display **Over Volt** message please **Stop** using the display and **Contact us via email**.



## 2.7.3 Saving settings

> ⚠️ **Warning**
>
> The information on EggRider display it is only saved permanently when the display it is powered off from it's own power button. This also includes the trip data.

## 2.7.4 Configure e-bike specific settings

One more step before you're set to go!

On specific models you need to configure the e-bike/controller specific settings to have full functionality. Please open the navigation menu and go to **E-bike settings** group and select the page relative to your e-bike/controller model.

- Bafang mid drives
- Rad Power Bikes - Rad
- Rad Power Bikes - Radv2
- Mate X
- ASI
- Kunteng

> ℹ️ **Tip**
>
> If you encounter any issues please keep in mind our **Troubleshooting page**

> ℹ️ **Tip**
>
> At the bottom of each page you can also find **Next** and **Previous** buttons to go through the user manual in sequence.

Last update: October 25, 2024

# 3. Displays

## 3.1 EggRider V2

### 3.1.1 EggRider V2 Display

**Buttons**



SHORT PRESS DEFINITIONS

`Power` short press to turn on or off

`Up` increase the assist level

`Down` decrease the assist level

`M`
**using layout v1/v2** toggles Road/OffRoad modes
**using layout v3** on main screen - cycles through dynamic menu
**using layout v3** on second screen - cycles through statistics

LONG PRESS AND COMBINATIONS DEFINITIONS

`Down` for 3 seconds to **activate headlight**

`Down` continuously to adjust **brightness**, cycling through Auto, High, Low

`Up` for 3 seconds to activate **Walk Assist** which helps the motor push the bike while walking

`Up` + `Power` when the display is OFF, hold until display turns ON to start in **update firmware** mode

`M`
**using layout v1/v2**, press `M` for 3 seconds to see second screen (trip data)

**using layout v3**, press M until the second screen shows to cycle through statistics
**using layout v3**, press M until you return to the dashboard to toggle Road/OffRoad modes

M + Power when the display is OFF, press until the display turns ON to **load default factory settings**. This resets only the display settings. Bafang also stores settings in the controller, those will still remain

> The following combinations are available from firmware version v2.6.49

With **second screen** on, press Down for 3 seconds to **reset trip**
With **second screen** on, press Up for 3 seconds to change **selected battery**

⚠ **Save settings**

Settings, mode, levels, odometer and trip data are saved when the system is shut down from Power button. If the power supply is cut before pressing the Power button, the data is not saved into the permanent memory.

**EggRider V2 display screens**

EggRider display offers different screen layouts: v1, v2, or v3. See display settings how to change the layout.

SCREENS LAYOUT V1/V2

| Main screen layout v1 | Main screen layout v2 | Second screen | Update screen |
|---|---|---|---|
|  |  |  |  |

SCREENS LAYOUT V3

| Main screen | PAS change | Trip data | Bike data |
|:---:|:---:|:---:|:---:|
|  |  |  |  |

**Main screen content**

The layout v1 is used as an example to showcase all possible icons on the screen. Although the information is positioned differently, the basic icons remain consistent across layouts. See the descriptions below for more.

- **Battery %** - Battery percentage

- **Voltage** - The battery voltage

- **Connection status** - The mobile app is connected

- **Riding profile** - It can be Road/OffRoad or Eco/Sport based on the labels selected

- **Speed** - Speed in miles per hour (mph) or kilometers per hour (kph)

- **Error (Exx)** - Shows when an error is detected (example E03 - brake on)

- **Range (Rxx)** - Indicates the remaining range in km/miles, where XX represents the distance. If there is an error, the range is not shown

- **Light** - The headlight is switched on

- **Lock** - The bike is locked. In **layout v3**, the screen displays "Locked" at the top & bottom

- **Assist Level** - The assist level the motor provides

- **Secondary Unit** - It can be Power (W), Current(A), or Efficiency (watt per distance unit)

- **Time** - Time of the day

- **Distance** - Current trip distance

**Second screen content**

LAYOUT V1 & V2

Trip

Shows trip data accumulated since the last reset. The trip can be reset manually or automatically at startup, a setting adjustable through display settings.

> ℹ **Note**
>
> If the **Reset trip** -> **At start-up**, trip data will be reset only after the bike starts moving. This is to allow downloading the past trip data via the mobile app.

- **Wh** - Energy used
- **mAh** - Capacity used
- **Wh/distance(km/mi)** - Efficiency since the last restart, lower value gives longer range
- **SpdAvg** - Average speed
- **Km/mi** - Travelled distance
- **Time** - Moving time, when speed > 0 value in hours, minutes, seconds
- **BmAh** - Full battery capacity estimation (dependent heavily on the current accuracy), shows only after certain time/distance
- **SloEff** Efficiency of the last 30 minutes of travel

Total

Lifetime stats

- **Total** - Total traveled distance in kilometers or miles
- **Wh** - Total energy used by the bike, measured in watt-hours
- **mAh** - Total capacity used from the battery, measured in milliampere-hours
- **BmAh** - Estimated full battery capacity based on the last 10 trips or so
- **R.mOhm** - Battery series resistance (calculated in the last hour or so). Lower values indicate a healthier battery with better performance, while higher values may suggest wear or inefficiency
- **BCyc** - Battery cycles, estimating how many times the battery has been fully charged, based on its declared capacity
- **Range** - Estimated distance remaining until the battery runs out

LAYOUT V3

> The layout V3 is available with firmware and app version v2.7 and above.
> It provides more detailed data compared to the layouts V1 and V2.

Trip

Shows trip data accumulated since the last reset. The trip can be reset manually or automatically at startup, a setting adjustable through display settings.

> ℹ **Note**
>
> If the **Reset trip** -> **At start-up**, trip data will be reset only after the bike starts moving. This is to allow downloading the past trip data via the mobile app.

- **Avg Spd** - Average speed
- **Avg Eff** - Average efficiency since the last restart, lower value gives longer range
- **Battery used** - Estimation of the full battery capacity, which depends heavily on current accuracy. Shown after a certain time or distance has been traveled
- **Run Time** - The total duration of the current trip during which the bike was moving (speed > 0) displayed in hours, minutes, and seconds

Motor

- **Current** - The electric current being used by the motor, measured in amperes (A)
- **Power** - The power output of the motor, measured in watts (W)

Battery

You can set up 3 battery profiles. The current profile is indicated at the top, and the data below corresponds to that profile.

- **Voltage** - Voltage
- **SOC** - The percentage of battery capacity that is currently available
- **Remaining** - The remaining energy in the battery, measured in ampere-hours (Ah).
- **Cycles** - The number of battery cycles, estimating how many times the battery has been fully charged. This calculation is based on the declared capacity of the battery
- **R.mOhm** Battery series resistance, measured in milliohms (mΩ), calculated over the past hour or so. Lower values indicate a healthier battery with better performance, while higher values may suggest wear or inefficiency

Bike

- **ODO** - Odometer, life time trip data
- **Avg Speed** - Average speed calculated based on the accumulated trip data so far
- **Avg Eff** Average efficiency calculated based on the accumulated trip data so far
- **Wh used** - Estimated energy consumption, calculated based on data from 10 or more trips. This reflects the full battery capacity utilization over time
- **Run Time** - The total duration during which the bike was moving (speed > 0), displayed in hours, minutes, and seconds

Display

- **Version** - Firmware version of the display
- **Build** - Firmware build number
- **MAC** - EggRider device ID
- **Disp Temp** - Temperature of the display in degrees Celsius

- **Disp Vol** - The electrical voltage powering the display. If the voltage is too low or fluctuates significantly, it may indicate issues with the power supply or the display's performance

Last update: August 6, 2024

## 3.1.2 EggRider V2 display specifications

**Size**

75mm x 47mm x 35mm

**Weight**

31g

**Cable length**

50cm

**Handlebar mounting bracket**

Standard 22.2mm diameter

**Clamp screw**

Hex bolt M3x10mm

**Mounting clamp pin**

2.0mm diameter and around 15mm length

**Physical buttons**

Power On/Off, Level Up/Down and popular Road/OffRoad mode switch

**Connector**

- Higo/Julet waterproof 5 pin male/female (see image)
- KM 5p screw male

**Connectivity**

Bluetooth low energy (BLE)

**Protection**

Dust and water-resistant - IP65 protection

**Voltage**

Supports direct voltage up to 60V (maximum 52v nominal voltage batteries). We can support systems with higher voltages only with specific controllers and with special connections to 12V output.

**CURRENT CONSUMPTION**

- High brightness ~ 17 mA
- Low brightness ~ 9 mA

*values are measured at 12v

# EggRider V2 & C1

## *Display pinout*

### Female
### Bafang variant

Power Lock

GND

RxD

TxD

5 1

4 2

3

P+ 48V

### Male
### Lishui/KT variant

P+ 48V

Power Lock

GND

RxD

1 5

2 4

3

TxD

**Do not connect if unsure!**
**Wrong connection will damage the display and your bike**

Last update: September 9, 2024

## 3.1.4 EggRider V2 display features

Compatible with range of controllers/motor from Bafang to RadPower bikes.

Elegant design with premium feel.

Small enough to avoid unwanted attention.

Lightweight and compact design keeping your handlebar clean.

Compatibility with range of controllers/motor including but not limited to bafang, lishui and RadPower bikes.

Voltage reading from 20V up to 60V.

OLED screen, displaying the most important information while riding without the need of your phone.

Get essential and accurate data including battery percentage, speed, power, and distance.

Access advanced statistics such as energy efficiency, range estimation, voltage, and battery cycles.

Detects real battery capacity and tracking stats of up to 3 batteries.

EggRider mobile app is available for Android and iOS, allowing easy configuration from the app.

Ability to use the EggRider app as a larger display.

In-depth charts capability for your rides.

One button switch between Offroad and Onroad.

Ability to configure several settings for two different profiles:

- Throttle yes/no switching
- Pedal assist yes/no
- Power level

Last update: August 1, 2024

## 3.2 EggRider C1

### 3.2.1 EggRider C1 Colour Display

**Buttons**



**SHORT PRESS DEFINITIONS**

`Power` press to turn on or off

`Up` increase the assist level

`Down` decrease the assist level

`M` operates dynamic menu allowing to toggle between different information: current max, power max, range, average efficiency, battery, trip and rider max (if available)

`Walk Assist` activates Walk Assist which helps the motor push the bike while walking

**LONG PRESS AND COMBINATIONS DEFINITIONS**

`Down` for 3 seconds to **activate headlight**, keep holding to toggle **display luminosity**

`Down` continuously to adjust **brightness**, cycling through Auto, High, Low

`Up` for 3 seconds to toggle parameter shown in the **arch graph**. Keep holding to cycle through available parameters: power, voltage, battery, speed and rider if available

`M` for 3 seconds to see **second screen**

Press `M` until you return to the dashboard to toggle Road/OffRoad modes

`Up` for 3 seconds to toggle parameter, shown in the **arch graph**. Keep holding to cycle through available parameters: power, voltage, battery, speed and rider if available

`Up`+`Power` when the display is OFF, press until display turns ON to start in **Update firmware** mode

`M`+`Power` when the display is OFF, press until the display turns ON to load default factory settings. This resets only the display settings. Bafang also stores settings in the controller, those will still remain

With **second screen** on, press `Up` to increase **assist level**

With **second screen** on, press `Down` to decrease **assist level**

With **second screen** on, hold `Down` for 3 seconds to **reset trip**

With **second screen** on, hold `Up` for 3 seconds to change **selected battery**, keep repeating until the desired battery profile is shown

> ⚠️ **Save settings**
>
> **Changes made to the dynamic menu and selected parameters in the arc graph** on the main menu **are not saved**. Consequently, upon powering off your Eggrider, these settings will revert to default values
>
> However, **adjustments to the battery profile, mode selection, assist levels, odometer, and trip data are retained.** To save it, please shut down the EggRider from `Power` button. If the power supply is cut before pressing the `Power` button, the data is not saved into the permanent memory.

**EggRider C1 display screens**

The EggRider C1 display offers a streamlined, one-screen solution, allowing you to seamlessly navigate between different pieces of information on the same screen with just one click of `M` button.

> ℹ️ **Note**
>
> With EggRider C1, **only the mainscreen layout V3** is available; other layouts are not supported.

**MAIN SCREEN CONTENT**

Road profile | OffRoad profile

Battery level · Parameter the arc · Connection status · The arc · Assist level

Light On · Notification Area · Speed · Dynamic Menu (Current shown) · Distance graph · Brake on

- **Battery %** - Battery percentage
- **Time** - Showing time of the day
- **Dynamic menu** - Shows different parameters by pressing [M] (in the example "current" chosen)
- **Connection status** - The mobile app is connected
- **Riding profile** - Chosen riding profile is indicated by colour theme. Blue colour theme indicates Road/Eco where as red indicates OffRoad/Sport
- **Light** - The headlight is switched on
- **Lock** - The bike is locked
- **Assist Level** - The assist level that the motor provides
- **Distance graph** - Travel distance from the ride starts to EggRider is shut. By default, the animation will be displayed (because we are fun!). Values are shown after riding your bike 1km (equivalent of 0.6mi)

**SECOND SCREEN LAYOUTS**

| Trip | ODO | Motor |
|------|-----|-------|
| TRIP<br>MOVING TIME **46**m **32**s<br>DISTANCE KM **4.3**<br>EFFICIENCY WH/KM **174**<br>AVG SPEED KPH **5**<br>BATT USED WH **753** | ODO<br>MOVING TIME **46**m **45**s<br>DISTANCE KM **21.4**<br>EFFICIENCY WH/KM **35.2**<br>AVG SPEED KPH **27**<br>BATT USED WH **755** | MOTOR<br>CUR A **40**<br>POWER W **1396**<br>RPM **334**<br>TEMP CONT C **43**<br>TEMP MOT C **65** |

| Battery | Rider* | Software |
|---------|--------|----------|
| BATT¹<br>VOLTAGE V **51.7**<br>SOC % **67**<br>REMAINING WH **668**<br>CYCLES **176**<br>RESISTANCE MOHM **24.6** | RIDER<br>POWER W **142**<br>CADENCE RPM **57**<br>TORQUE NM **24**<br>WORKOUT WH **106**<br>CALORIES KCAL **35.2** | SOFT<br>MAC ED:67:37:BF:93:73<br>VERSION **2.7.57**<br>BUILD **18B6DFA2**<br>ADC VOLTAGE V **47.5**<br>DISP TEMP C **18** |

**SECOND SCREEN CONTENT**

**Trip**

Shows trip data accumulated since the last reset. The trip can be reset manually or automatically at startup, a setting adjustable through display settings.

> ℹ️ **Note**
>
> If the Reset trip -> At start-up, trip data will be reset only after the bike starts moving. This is to allow downloading the past trip data via the mobile app.

- **Moving time** - The time when speed > 0 value in hours, minutes, seconds
- **Distance** - Travelled distance for the current trip
- **Efficiency** - Efficiency since the last restart, lower value gives longer range
- **Avg Speed** - Average speed
- **Battery used** - Estimation of the full battery capacity, which depends heavily on current accuracy. Shown after a certain time or distance has been traveled.

### ODO

It shows life time trip data. It can be treated as the accumulated trip data.

- **Moving time** - The total duration during which the bike was moving (speed > 0), displayed in hours, minutes, and seconds
- **Distance** - Total travelled distance
- **Efficiency** Average efficiency calculated based on the accumulated trip data so far
- **Avg Speed** - Average speed calculated based on the accumulated values so far
- **Battery used** - Full battery capacity estimation, takes 10+ trips into an account

### Motor

- **Current** - The electric current being used by the motor, measured in amperes (A)
- **Power** - The power output of the motor, measured in watts (W)
- **RPM** - Pedaling cadence or the motor's RPM if available
- **Temp Cont** - Controller temperature if available
- **Temp Mot** - Motor temperature if available

> ℹ️ **Note**
>
> Temperature values will only be displayed if the motor or controller provides this information. If the information is unavailable, the values will be shown as 'Zero'.

**Battery**

With EggRider displays, you can set up 3 different battery profiles. The superscripted number displayed indicates which profile you are currently using, and the data shown below is related to that profile.

- **Voltage** - Voltage
- **SOC%** - The percentage of battery capacity that is currently available
- **Remaining** - The remaining energy in the battery, measured in ampere-hours (Ah)
- **Cycles** - The number of battery cycles, estimating how many times the battery has been fully charged. This calculation is based on the declared capacity of the battery.
- **Resistance** - Battery series resistance, measured in milliohms (mΩ), calculated over the past hour or so. Lower values indicate a healthier battery with better performance, while higher values may suggest wear or inefficiency

**Rider**

[*] **This screen is only visible if bike has a torque**.

- **Power** - Human power being applied to the bike's pedals or crankset
- **Cadence** - The speed at which a cyclist is pedaling
- **Torque** - The rotational force applied to the pedals by the rider
- **Workout** - The cumulative or total energy expended over a period of time, calculated by summing up all the instantaneous powers
- **Calories** - Calories spent so far

**Soft**

- **MAC** - EggRider device ID
- **Version** - Firmware version
- **Build** - Firmware build number
- **ADC Voltage** - Display voltage, the electrical voltage powering the display. If the voltage is too low or fluctuates significantly, it may indicate issues with the power supply or the display's performance
- **Disp Temp** - Display temperature

Last update: August 23, 2024

## 3.2.2 EggRider C1 specifications

The EggRider C1 comes with a remote, enabling easy navigation and freeing up space on your main display for essential riding statistics.

**C1 display**

Size

47.4mm x 64.2mm x 29.7mm

Weight

100g (including 2 mounts)

Cable length

50cm

Handlebar mounting bracket

31.8mm diameter provided with a rubber spacer that adapts to 22.2mm diameter

Clamp screw

Hex bolt M3x10mm

Mounting clamp pin

2.0mm diameter and around 15mm length

Physical buttons

Power On/Off

Connector

- Higo/Julet waterproof 5 pin male/female (see image)
- KM 5p screw male

Connectivity

Bluetooth low energy (BLE)

Protection

Dust and water-resistant - IP65 protection

Voltage

Supports direct voltage up to 60V (maximum 52v nominal voltage batteries). We can support systems with higher voltages only with specific controllers and with special connections to 12V output.

Current consumption

- High brightness ~ 94 mA
- Low brightness ~ 36 mA

*values are measured at 12v

**C1 remote (RM 01)**

Size

17mm x43.7mm X 44.2mm

Weight

20g

Cable length (from the display)

24cm

Handlebar mounting bracket

22.2mm diameter

Clamp screw

Hex bolt M3x10mm

Physical buttons

Power On/Off, Level Up/Down, Walk-Assist and popular Road/OffRoad mode switch

Protection

Dust and water-resistant - IP65 protection

Last update: September 9, 2024

### 3.2.3 EggRider C1 colour display features

A 2-inch display with large fonts, high-contrast visuals, and vibrant colors for easy readability in any weather.

Compatible with range of controllers/motor from Bafang to RadPower bikes.

Includes a remote, essential for navigating information/settings on the larger display.

Voltage readings range from 20V up to 60V.

With just a simple click, switch between different information displayed on the screen.

Get essential and accurate data including battery percentage, speed, power, and distance.

Access advanced statistics such as energy efficiency, range estimation, voltage, battery cycles, rider data and more.

Detects real battery capacity and tracking stats of up to 3 battery profiles.

EggRider mobile app is available for Android and iOS, allowing easy configuration from the app.

In-depth charts capability for your rides.

Ability to configure several settings for two different profiles:

- Throttle yes/no switching
- Pedal assist yes/no
- Power level

Last update: September 3, 2024

# 4. Firmware Update

## 4.1 EggRider Display Firmware Update

> ⚠️ **Attention**

It is highly recommended to ensure you update your firmware to the latest available when you receive your EggRider.

Please make sure to put EggRider display in update mode when doing the update procedure!

With EggRider Display off, press `Up`+`Power` until it shows **EggRider Updater** screen

## 4.1.1 Update instructions for versions V2.5.xx +

> ⚠️ **Attention**
>
> Because of the many changes in some of the core functionalities we recommend following the steps bellow for a smooth transition.
> We tested the update from firmware version >= v2.4.11. It should also work from older firmware versions but we recommend doing a reset to defaults afterwards.
> To have access to all the features you need to use in conjunction with app >= v2.5.03

- Backup your settings and ODO stats (in rare cases they can be lost)



- Check if any of the ODO Total KM, Wh or Ah are different than before, as highlighted in the picture above. If so we recommend to reset ODO from Display Advanced settings

- To use the new features like change Display Main screen layout (with app >= v2.5.03), after update make sure to rescan for device (disconnect if already connected) and check that version shown is v2.5.23 as in picture bellow



- If you had to reset the ODO you can use the ODO distance offset to input the old ODO distance

- We recommend checking the battery specifications. For Battery Voltage 100% in display settings we now required the full battery voltage for a better battery estimation. For example, for a 48V battery it should be 54.6V. You can use the helping predefined selections if not sure. Also for Capacity (Ah) you might find that lower values than the manufactured declared capacity might work better. This --is-- because in time the battery degrades but also because sometimes the voltage cutoff is higher.

## 4.1.2 How to update EggRider display?

- **Using EggRider mobile app**
- ~~Using Google Chrome browser~~ (Deprecated)
- ~~Using iPhone or iPad~~ (Deprecated)
- ~~Using Android or Tablet~~ (Deprecated)

Last update: March 13, 2022

# 4.2 EggRider display firmware update from EggRider mobile app

> ⚠️ **Attention**
>
> It is highly recommended to ensure you have the latest firmware available on your EggRider display.

> 🔴 **Attention**
>
> Available starting from app version 2.6.03

## 4.2.1 Steps to update

1. **Backup** your settings and ODO stats
2. **Connect** to EggRider display

   > If you are unable to connect: with display off, press `Up`+`Power` until display **Update firmware** screen. Skip to step 5

3. Go to Search page and **slide right** on EggRider in the list

   **Firmware update option in Search list by sliding right**

   

4. Tap **Update**
5. Display restarts in update mode showing the following screen

   

6. **Display firmware** page will open

   > If not, go to **Search** page and slide down to scan for devices. Tap on **EggRiderBL** or **DispUpdV2**

   a. Optional - **slide left** on one item in the list to see **release notes**

   b. Optional - If you have a **specific firmware code** tap on unlock button in the right top corner to enter it

7. Tap on the latest sable version

8. Update procedure will start

9. When update is finished the EggRider display will start in normal running mode and the app will connect to it

> ⚠️ **Attention**
>
> If the update hangs, power off from the battery or unplug the cable and restart procedure.

Last update: March 13, 2022

# 5. Mobile App

## 5.1 EggRider mobile apps

Both Android and iOS apps have the same functionalities, except for short periods of time between version releases. Although generally similar in appearance, there are some visual differences due to platform-specific components.

### 5.1.1 App overview main pages



### 5.1.2 App overview stats pages

# 5.1.3 App overview settings pages



Last update: February 7, 2023

## 5.2 Dashboard page

Accessible from **Dashboard icon**

**Flashlight**

**Battery Selection**

**New Ride**

51.6
Voltage (V)

78
Battery 1 (%)

0.0
Speed (km/h)

**Back Button**

0
Power (W)

0.0
Current (A)

**Lock/Unlock**

23
Range (km)

21
Avg Efficiency (wh/km)

9.2
Distance (km)

29:03
Running Time (minutes)

*EggRider*

| 21 | 18 | 25 | 28 | 23 | 19 | 18 | 20 | 16 | 9 |

km   1   2   3   4   5   6   7   8   9

9
Road

**Decrease Assist Level**

**Increase Assist Level**

**Mode**

Shows real-time information about your riding.

- **Voltage** = Battery Voltage
- **Flashlight** = Turning on / off your headlight
- **Battery Selection** = Battery percentage | If you press on it you can change the battery
- **New Ride** = A new Ride will start and the current ride will stop
- **Speed (km/h)** = Your current speed
- **Power (W)** = Engine power
- **Lock/Unlock** = Lock/Unlock screen
- **Current (A)** = Battery current
- **Range (km)** = Distance until battery will drain
- **Avg Efficiency(wh/km)** = Efficiency on watt-hours per km
- **distance (km)** = Distance that you rode on the current ride
- **Running Time (minutes)** = Total time on the current ride
- **Decrease Assist Level** = Assist level will decrease when pressed
- **Increase Assist level** = Assist level will increase when pressed
- **Mode** = Change the current mode

Dashed values displayed can be caused by the following; a communication issue, or not connected to EggRider display.

## 5.2.1 Record your ride

Real-time information is recorded by the app only when this page is visible and connected.

Make sure you send the app in the background from this page (press the `Home` button on your phone) if you want to record in your statistics while using other apps.

In order to save the stats of your ride you will need to do the following:

1. After you finish the ride press on **"New Ride"**

2. Next, go in the **"Rides"** page

3. Press on your last Ride

4. Press on **"share"** icon

5. Save your file on your phone or share it with your friends!

Remember that some operating systems can still kill the app running in the background. If this is the case, go into your system settings and disable any optimization or similar settings. Also on Android, you might have the option to lock the app which will prevent it from being killed by the operating system.

To return to the settings pages, press the settings icon on the right (on android it can also be achieved using the `Back` button)

Last update: February 22, 2023

## 5.3 Search page

Accessible from menu **Search**

It shows the list of EggRider displays in range.

When the app starts, it scans for EggRider devices nearby and displays them in the list. You can also trigger the scan manually by pulling down on the page.

**Tap on the device name in the list to connect with the app**



You can also slide from left to right or from right to left in order to check the other options.

- **Rename** -> You can rename your EggRider display

- **Update** -> Enter in Update mode (you need to be connected first)

- **Connect** -> You can connect to the EggRider display

- **Disconnect** -> Disconnect from EggRider display

## 5.3.1 Troubleshooting

If your device is not showing up in the list

- Make sure the app has access to bluetooth under your phone's settings

- Make sure the EggRider display is plugged in and turned on

- Restart the EggRider display

- Pull down the page to refresh the scan

Last update: February 20, 2023

## 5.4 Rides

> Accessible from menu **Rides**

Shows a list of rides recorded from the app or the display. Each ride shows its source label, running time, distance, and date it was recorded in the app:

**The rides page with the options by sliding right or left**



In the **Rides** page, on the top bar you have the following extra actions:

- **Delete Rides** - It deletes all Rides with distance < 0.1 km



- **Get Display stats** - Display Last Ride Stats

Rides are differentiated by the source labels.

- **App** - Real-time information recorded by app when connected to EggRider display. (Tapping shows Ride summary).



**Ride recorded by the app**

- **Display A (Auto)** - At every connection the app collects automatically the last ride data recorded by display (Tapping shows Display stats).



**Display A (Auto) ride**

- **Display M (Manual)** - Manually collected ride data recorded by display (tapping shows Display stats).



**Display M (Manual) ride**

## 5.4.1 Ride Summary

Accessible from the Rides list page by tapping on a ride labelled with App.



**Tap in Rides list**          **Ride Summary**

In the **Ride Summary** page, on the top bar you have the following extra actions:

- **Delete Graph** - deletes all the data points related to the trip but keeps the summary stats. You might consider this for saving memory.



- **Export trip** - generates a **.csv** file of the trip available for viewing and sharing outside the app.

## 5.4.2 Ride Graph

Accessible in the **Ride Summary** page by tapping **Distance Graph** or **Time Graph** buttons.



**Distance Graph** - Shows the ride real-time information distance based (having the distance on the x (horizontal) axis).

**Time Graph** - Shows the ride real-time information time based (having the time on the x (horizontal) axis).

**Y (vertical) axis** are as follows:

- **right side axis** - it is plotted only altitude
- **left side axis** - are plotted all the other values

| Distance graph | Time graph |
| --- | --- |
|  |  |

These graphs also support two fingers pinch for zoom in/out.

To go back to **Ride summary**, press the arrow in the left top corner (or `Back` button on android).



## 5.4.3 Display Stats

Accessible from the **Rides list** page by tapping on a ride labelled with **Display A** or **Display M**.

| Tap in Rides list | Display Stats |
|---|---|



**ODO labels** - These represent the cumulative or lifetime data values tracked by the display. ODO, short for "odometer," records information that accumulates over the entire lifespan of the device. For instance, this could include total distance traveled, overall usage time, or other similar statistics.

**Ride labels** - These pertain to specific data values related to individual display trips. Unlike ODO labels, which cover overall data, ride labels focus on metrics that are relevant to each separate trip. These metrics might encompass information such as distance, duration, speed, energy consumption, and more, providing insights into each ride taken using the EggRider display.

**Battery labels** - This section displays a trio of distinct columns, each dedicated to presenting detailed statistics specific to an individual battery. This arrangement ensures a comprehensive view of the performance metrics for each battery.

To go back to **Rides list** select **Rides** on the top right corner of the screen.

Last update: August 10, 2023

## 5.5 Display settings

Accessible from menu **Display Settings**

### 5.5.1 Preferred units

It allows you to select units for measurement to specify various distance, speed and altitude. You could see this in the mobile app and your display.

Options

- Metric (km, m, kph=km/h)
- Imperial (mi, ft, mi/h)

**Secondary unit**

It controls which value to show on the display main screen for the secondary unit.

- Power, W
- Current, A
- Efficiency, wh/distance

**Protocol**

For each protocol type there are two options, one normal and one Rx/Tx Swap. The last one is to help when the communications wires are inverted.

> ⓘ **Info**
>
> When set to **Auto** the display will try to autodetect the protocol at the next startup.

Options

- Auto

- Bafang

- Lishui

- Kunteng

- Tonseng

- ASI

- Bafang Rx/Tx Swap

- Lishui Rx/Tx Swap

- Kunteng Rx/Tx Swap

- Tonseng Rx/Tx Swap

- ASI Rx/Tx Swap

**Reset Trip**

This setting controls when the current trip data is reset on the display. There are two options:

1. **Manually**: The trip will only reset when manually requested from the **Dashboard** page or from display second screen see EggRider v2 button combinations or EggRider c1 button combinations.

2. **At Start-up**: The trip will reset after every power cycle. However, the old trip information is retained and can be downloaded by the app until the bike starts to move.

**Immobilizer**

NO LOCK

Default behavior, no action taken.

LOCKED LEVEL 0 (CONNECT WITH APP TO UNLOCK)

Display will always start locked in assist level 0. You have to connect with the mobile app to unlock to be able to change the assist level or mode profile.
This is intended to cut-off the motor until connected with the mobile app. This setting will also be set if display is locked from dashboard and then power off but it has to be expressly disabled from settings (on dashboard can be disabled only temporary).

**Road restrict**

Option to inhibit changing profile from Road to OffRoad with the M button on the display.
If set to **Yes** you can only change profile from OffRoad to Road and based on the option use the mobile app for both ways or also the display when the app is connected.

Options are:

- No
- Yes (Change modes only from app)
- Yes (Change modes from the display when the app is connected)

**Startup with road**

Decides if the display should always start with the Road profile.

Options are **No** or **Yes**.

**PowerOff**

The time after which the display should power off.

Options

- Never
- After 5 minutes
- After 2 hours
- After 10 hours

**Mode labels**

The labels used on the display to identify the current profile settings.

Options

- Road/OffRoad
- Eco/Support

**Assist levels**

The number of assist levels to be used when using [ Up ] and [ Down ] buttons. Each option also includes assist level 0.

> ⚠ **Attention**
>
> Keep in mind that when you select lower than 9 assist levels, EggRider uses internally the levels beween **()** for pages like power levels or for the bafang basic assist levels. This is to allow changing the number of assist levels witouth altering the power levels.
>
> - 3 - [0, 1(1), 2(5), 3(9)]
> - 5 - [0, 1(1), 2(3), 3(5), 4(7), 5(9)]

Options are 9, 3 and 5

**Display main screen layout**

Select from 3 main display screen layouts:

- **Main screen v1** clearly shows Offroad/Road labels at the top of the screen.
- **Main screen v2** uses the assist level background color to differentiate modes - dark for Road and white for OffRoad.
- **Main screen v3** display OffRoad/Road labels and features a dynamic menu to toggle various parameters, such as power and range. Note that the EggRider v2 button combinations & EggRider V2 second screen content differ from layouts v1 and v2. This layout is available from apps and firmwares v2.7

> ℹ **Info**
>
> **With EggRider C1**, only the mainscreen layout V3 is available; other layouts are not supported. See for more: EggRider c1 button combinations & screens

**Keep headlight at startup**

This is a convenient feature to keep the headlight as it was before shutting down.

Options are **No** or **Yes**.

> ℹ **Info**
>
> This option is deprecated with firmware and app version v2.7 and above.

**Mode button press function**

Option to change the short and long press functionality of the ⌸M button.

Options

- Short - Mode Change / Long - Stats
- Short - Stats / Long - Mode Change

**Bafang switch mode**

The Road/OffRoad mode switch behavior for bafang controllers.

ONLY LIVE DATA

Consists in switching only between **Max speed Road** and **Max speed OffRoad** settings from the **Display Settings** page

LIVE DATA AND SETTINGS

Consists of switching between the **Max speed Road** and **Max speed OffRoad** setting from the **Display settings** page plus the relative **Road/OffRoad** mode for the **Bafang Basic**, **Bafang Pedal**, **Bafang Throttle** profile settings.

> ⚠️ **Warning**
>
> If you are an unexperienced user we highly recommend using **Only live data** setting until you get familiarised with the bafang settings.

**Max speed (km/h)**

Determines the speed limits for Road and OffRoad. This values can be overwritten by the specific bike/controller settings.

**Wheel size**

Offers some predefined **Rim + Tire** options to populate **Wheel circumference** with the right value.

> ℹ️ **Info**
>
> The **Wheel size** drop down is just a helper with predefined values for **Wheel circumference**. It is normal to go back to **Select** after the app is restarted.

**Wheel circumference (mm)**

This value is used to calculate the speed. Please use rim + tire value for this setting.

The following links provide comprehensive resources for determining the wheel circumference **Wheel size math** or **Cyclecomputer calibration**

> ℹ️ **Tip**
>
> If you think the speed measurement is not precise, you can use this field as a factor to increase or decrease your speed measurement.

## 5.5.2 Battery Settings

EggRider has up to 3 battery profiles. You can use these profiles to track stats independently if you have more than one battery.

Please be sure you are setting at least the battery selected profile correctly. You can leave the other battery profiles as they are by default if not used.

To maximize the **battery percentage precision**, please set the following fields correctly.

**Battery used**

Represents the battery profile to be used.

Options are 1st, 2nd and 3rd

**Battery voltage**

Offers some predefined values to populate the Voltage 0% and 100%.

Options are 24V, 36V, 48V, 52V, 72V.

> ⚡ **Attention**
>
> Never connect EggRider to a battery bigger than 52V nominal. EggRider display works up to 60V when directly connected. With certain controllers we can overcome this limit by connecting to a 12V output.

> ℹ️ **Info**
>
> **Battery voltage** drop down is just a helper with predefined values for **Voltage 0%** and **Voltage 100%**. It is normal to go back to **Select**.

**Voltage 0%**

The empty battery voltage.
This field has a resolution of 0.01 V.

**Voltage 100%**

The full battery voltage.
This field has a resolution of 0.01 V.

**Capacity**

The capacity of the battery measured in ampere hour (Ah).
This field has a resolution of 0.01 Ah.

Last update: August 6, 2024

# 5.6 Display advanced settings

## 5.6.1 Voltage calibration

> Available with firmware and mobile apps version > v2.1.0

This should be done only if the voltage displayed is not accurate or the battery percentage is not 100% after you just fully charged your battery.

The calibration is maintained once the operation is successful, so it is not necessary to repeat.

> ⚠ **Essential**
>
> **Full battery** (preferably just after disconnected from the plug) or a **multimeter**.

> ⚠ **Attention**
>
> Please ensure that you have the right Voltage 0% and 100% relative to your battery which can be found in EggRider settings page. You can select from the drop down Select to auto-fill these values.

**Full battery method**

With **full battery** select your battery voltage and then press **Calibrate**

**Multimeter method**

If you have a **multimeter** at hand, insert the battery voltage read with your multimeter under **FullVoltage** and then press **Calibrate**

> ⚠ **Attention**
>
> If your voltage difference is greater than 2.5V you will receive a popup alert. If you are sure about your voltage then follow the steps used for the following example (adapt accordingly):

**Voltage calibration for more than 2.5V example**

EggRider voltage read is 38V and you know that the voltage should be 41.6V.
(41.6V - 38V = 3.6V > 2.5V)

Steps

1. Write into FullVoltage 40V (38V + 2V), press `Calibrate`
2. Check that the new voltage shown on the dashboard is 40V and get back to display advanced settings
3. Repeat step 1, 2 until the voltage difference is lower than 2.5V
4. Write into FullVoltage 41.6 (40 V + 1.6 V), press `Calibrate`
5. Check that the new voltage shown on the dashboard is is 41.6V.

## 5.6.2 RESET BATTERY STATS

Option to reset battery statistics.

Options

- 1st Battery
- 2nd Battery
- 3rd Battery

## 5.6.3 BATTERY CHARGING

This function allows you to set an alarm when the battery reaches a specific voltage.
Steps to setup:

1. Enable **Monitor charging when is locked**

2. Select the your desired voltage

3. Open **Dashboard** page and press **Lock** icon

4. Start charging your battery

5. When the voltage on the dashboard will reach the voltage you set at step 2, a sound alarm and a popup will be triggered

6. Please see Notes below

**Notes**

Make sure your phone is on loud.

When you start charging the voltage should be at least 1 volt lower than your desired voltage.

This does not stop your charging, it is just an allert.

Your phone has to be connected at all time, connection loss might disable the functionality.

## 5.6.4 CURRENT CALIBRATION

Option to calibrate current if you know that the controller provides the current with an offset.

## 5.6.5 ODO Reset

Function used to permanently reset the ODO stats

## 5.6.6 ODO Offset

Function used to set an offset to the ODO distance in case you want to have your old display distance in the odo total distance

## 5.6.7 ASI password

In case you have an ASI controller that has been locked with a password, you can insert the password here so that EggRider can still change the settings

Last update: March 3, 2023

# 5.7 App settings

> Accessible from menu **App Settings**

## 5.7.1 CONNECTION

**Startup connection**

With auto, when the app is started, it tries to connect to the latest connected display.

- Manually
- Auto at startup

**Background re-connection**

- No
- Retry 30 seconds
- Retry 1 minute
- Retry 5 minutes
- Retry 10 minutes
- Retry 15 minutes

## 5.7.2 LOCATION

**Use GPS data**

Enabling this functionality offers altitude measurements in the ride stats.

## 5.7.3 SHOW GRAPH LINES

Options

- Dark Theme (Enables dark theme for graphs pages)
- Volts (V)
- Current (A
- Speed (km/h)
- Speed GPS (km/h)
- Altitude
- Battery (%)
- Display Temp (C)
- Motor Temp (c)
- Accuracy Position (m)
- Altitude accuracy threshold - the threshold for position accuracy under which it will show the altitude in the graphs

## 5.7.4 Others

**Dashboard version**

- Dashboard v1
- Dashboard v2 - as Dashboard v1 plus live efficiency graphs, range and current values

**Range adaptability factor**

This value decides how fast the mobile app range estimation changes. A higher value will give more steadier estimation behavior while lower values will give range estimation values closer to the actual type of riding

Last update: November 30, 2021

## 5.8 Power levels

From app >= v2.5.03 and firmware >= v2.5.17

This page offers the possibility to adjust individually each assist level power and speed limit.

It is used for ASI and Lishui controllers. Please see the e-bike specific pages for more information.

Last update: November 30, 2021

# 6. eBike Settings

## 6.1 Ebike settings overview

The settings specific to the controller/ebike are visible after the first successful connection to the display and they show based on the protocol detection.

Settings in these pages are used for controller configuration and for profile switching between Road/OffRoad modes.

After a successful write, the settings are stored in the display memory as well as in the app's memory. Doing this succesfully, settings will be visible even when the app is not connected.

Last update: November 30, 2021

## 6.2 Bafang

### 6.2.1 **Bafang settings**

This settings are relative only to the Bafang controllers integrated in their mid-drive units (such as the BBSxx series). Most of the times the **Bafang hub motors don't have** these settings available, since they use different controllers (such as Lishui, Kunteng, etc.)

**Bafang switch mode setup**

Instructions on configuring Road and OffRoad mode with different settings

If you are not familiar with the Bafang settings we recommend using **Only live data** for **Bafang switch mode** in **Display settings** page until you understand their functionality. For more information on how to proceed visit the **Mobile App/Display settings page** section.

**FIRST CONFIGURATION**

Do not change profile by pressing `M` on display during this procedure.

1. Make sure display is set to **Road** mode
2. Select **Live data and settings** for **Bafang switch mode** in the Display settings page, press Write then Read to check its saved.
3. After first connection, an automatic read for Bafang Basic, Pedal and Throttle pages will be executed. At the end of this procedure both profiles Road and OffRoad would be identical. In case of failure this action can be triggered manually from `Initialize` from one of the pages
4. Make sure to save the initial configuration from every page before modifying. (Take screenshots of all the pages).
5. Modify settings as desired
6. You have to `Write` successfully to be able to use switch mode from display or mobile app
7. Switch profile settings by pressing `Road` or `OffRoad` from any page.

**SUCCESSIVE CONFIGURATIONS**

1. Make sure display and mobile app are showing the same Road or OffRoad mode.
2. Follow steps 5, 6, 7 from First Configuration

> ⚠️ **Attention**
>
> If the app and display are out of sync, use `Read controller` to see the last settings written to controller by either the app/display or your own tool.

If you experience intermittent power cuts, it is most probably because you reach a speed limit or voltage cutoff. It can also be due to wrong configuration on the Pedal advanced settings.

> By using a low gear, your motor may not reach its full potential.

**BAFANG ERROR CODES**

E03 - Brake ON (03H)

E04 - Throttle doesn't go back (in the furthest position) (04H)

E05 - Throttle fault (05H)

E06 - Low voltage protection (06H)

E07 - Over voltage protection (07H)

E08 - Hall signal wires fault on the motor (08H)

E09 - Phase wire fault on the motor (09H)

E10 - Controller temperature is too high, and reaches the protection point (10H)

E11 - Temperature sensor inside controller fault (11H)

E12 - Current sensor fault (12H)

E13 - Temperature sensor inside battery fault (13H)

E14 - Temperature sensor inside the motor fault (14H)

E21 - Speed sensor fault (21H)

E22 - BMS communication fault (22H)

E23 - Light fault (23H)

E24 - Light sensor fault (24H)

E25 - Torque sensor torque signal fault (25H)

E26 - Torque sensor speed signal fault (26H)

E30 - Communication fault (30H)

**BAFANG BBS01 250W DEFAULT CONFIGURATION**

| Basic | Pedal | Throttle |
|---|---|---|

**Basic**

☰ **Bafang basic settings**

Profile selection

Initialize | Road

Battery Settings

| Low Battery Protect (V) | 31 |
|---|---|
| Limited Current (A) | 15 |

Assist levels

| Assist | Limited Current(%) | Limited Speed(%) |
|---|---|---|
| Assist 0 | 0 | 0 |
| Assist 1 | 28 | 44 |
| Assist 2 | 37 | 51 |
| Assist 3 | 46 | 58 |
| Assist 4 | 55 | 65 |
| Assist 5 | 64 | 72 |
| Assist 6 | 73 | 79 |
| Assist 7 | 82 | 86 |
| Assist 8 | 91 | 93 |
| Assist 9 | 100 | 100 |

Others

| Wheel Diameter(Inch) | 26 |
|---|---|
| Speed Meter Model | External, Wheel Me |
| Speed Meter Signal | 1 |

**Pedal**

☰ **Bafang pedal settings**

Profile selection

Initialize | Road

Basic

| Pedal Type | DoubleSignal-24 |
|---|---|
| Designated Assist | Display Command |
| Speed Limit | Display Command |
| Start Current(%) | 20 |

Advanced

| Slow-Start Mode | 4 |
|---|---|
| Startup Degree(Signal No) | 4 |
| Work Mode (Angular Speed of pedal/wheel*10) | 10 |
| Time of stop (x10ms) | 25 |
| CurrentDecay (1-8) | 4 |
| Stop decay (x10ms) | 0 |
| Keep Current (%) | 20 |

**Throttle**

☰ **Bafang throttle settings**

Profile selection

Initialize | Road

Basic

| Designated Assist | Display Command |
|---|---|
| Speed Limit | 40 |
| Start Current(%) | 10 |

Advanced

| Throttle Mode | Speed |
|---|---|
| Start Voltage (x100mV) | 11 |
| EndVoltage (0x100mV) | 35 |

**BAFANG ULTRA M620 DEFAULT CONFIGURATION**

| Basic | Pedal | Throttle | Torque |
|---|---|---|---|

**Basic** — Bafang basic settings

Profile selection

[ Initialize ] [ Road ]

Battery Settings

| | |
|---|---|
| Low Battery Protect (V) | 41 |
| Limited Current (A) | 30 |

Assist levels

| Assist | Limited Current(%) | Limited Speed(%) |
|---|---|---|
| Assist 0 | 1 | 1 |
| Assist 1 | 10 | 100 |
| Assist 2 | 18 | 100 |
| Assist 3 | 25 | 100 |
| Assist 4 | 40 | 100 |
| Assist 5 | 50 | 100 |
| Assist 6 | 60 | 100 |
| Assist 7 | 70 | 100 |
| Assist 8 | 80 | 100 |
| Assist 9 | 100 | 100 |

Others

| | |
|---|---|
| Wheel Diameter(Inch) | 28 |
| Speed Meter Model | External, Wheel Me |
| Speed Meter Signal | 1 |

**Pedal** — Bafang pedal settings

Profile selection

[ Initialize ] [ Road ]

Basic

| | |
|---|---|
| Pedal Type | BB-Sensor-32 |
| Designated Assist | Display Command |
| Speed Limit | Display Command |
| Start Current(%) | 30 |

Advanced

| | |
|---|---|
| Slow-Start Mode | 5 |
| Startup Degree(Signal No) | 4 |
| Work Mode (Angular Speed of pedal/wheel*10) | 10 |
| Time of stop (x10ms) | 20 |
| CurrentDecay (1-8) | 4 |
| Stop decay (x10ms) | 0 |
| Keep Current (%) | 30 |

**Throttle** — Bafang throttle settings

Profile selection

[ Initialize ] [ Road ]

Basic

| | |
|---|---|
| Designated Assist | 9 |
| Speed Limit | 40 |
| Start Current(%) | 10 |

Advanced

| | |
|---|---|
| Throttle Mode | Speed |
| Start Voltage (x100mV) | 15 |
| EndVoltage (0x100mV) | 36 |

**Torque** — Bafang torque settings

| | |
|---|---|
| Base Voltage (mV) | 0 |
| Error Voltage Min (mV) | 300 |
| Error Voltage Max (mV) | 4300 |
| 0 Speed Boost Time (x10ms) | 120 |

Delta Voltage (mV)

| | | | |
|---|---|---|---|
| 0-5 Kg | 200 | 5-10 Kg | 200 |
| 10-15 Kg | 200 | 15-20 Kg | 200 |
| 20-30 Kg | 400 | 30-40 Kg | 400 |
| 40-50 Kg | 400 | 50-60 Kg | 400 |

Speeds

| | Spd0 | Spd20 | Spd40 |
|---|---|---|---|
| Start (kg) | 20 | 16 | 12 |
| Full (kg) | 50 | 45 | 40 |
| Return (kg) | 12 | 9 | 6 |
| MinCur (%) | 10 | 10 | 15 |
| MaxCur (%) | 100 | 100 | 100 |
| KeepCur (%) | 4 | 4 | 3 |
| CurDecay | 3 | 3 | 3 |
| StartDegree | 1 | 1 | 1 |

| | Spd60 | Spd80 | Spd100 |
|---|---|---|---|
| Start (kg) | 10 | 8 | 6 |
| Full (kg) | 35 | 30 | 25 |
| Return (kg) | 5 | 4 | 4 |
| MinCur (%) | 15 | 10 | 10 |
| MaxCur (%) | 100 | 100 | 100 |
| KeepCur (%) | 2 | 2 | 2 |
| CurDecay | 2 | 2 | 2 |
| StartDegree | 1 | 1 | 1 |

**BAFANG BBSHD 1000W CONFIGURATION EXAMPLES**

⚠ **Disclaimer**

The following examples are for demonstration purpose only. The EggRider V2 & C1 displays do not ensure legal compliance. Please check your local laws before riding to make sure you are riding legally and safely.

**Example 1**

### Features

- power limited to 250w

- speed limited to 25 km/h

- throttle limited to 6 km/h (by forcing it to the specially configured **assist 2**. To disable the throttle set **designated assist** to **0** and make sure that **Assist 0** has **limited current** and **limited speed** set to **1**)

- 5 pedal assist levels

| Basic | Pedal | Throttle | Display settings |
|---|---|---|---|

**Basic**

☰ Bafang basic settings

Profile selection

| Initialize | | Road |
|---|---|---|

Battery Settings

| Low Battery Protect (V) | 43 |
|---|---|
| Limited Current (A) | 30 |

Assist levels

| Assist | Limited Current(%) | Limited Speed(%) |
|---|---|---|
| Assist 0 | 1 | 1 |
| Assist 1 | 4 | 100 |
| Assist 2 | 100 | 24 |
| Assist 3 | 6 | 100 |
| Assist 4 | 8 | 100 |
| Assist 5 | 10 | 100 |
| Assist 6 | 11 | 100 |
| Assist 7 | 13 | 100 |
| Assist 8 | 15 | 100 |
| Assist 9 | 17 | 100 |

Others

| Wheel Diameter(Inch) | 26 |
|---|---|
| Speed Meter Model | External, Wheel Meter |
| Speed Meter Signal | 1 |

**Pedal**

☰ Bafang pedal settings

Profile selection

| Initialize | | Road |
|---|---|---|

Basic

| Designated Assist | Display Command |
|---|---|
| Speed Limit | Display Command |
| Start Current(%) | 10 |
| Keep Current (%) | 100 |

Advanced

| Pedal Type | DoubleSignal-24 |
|---|---|
| Slow-Start Mode | 8 |
| Startup Degree(Signal No) | 4 |
| Work Mode (Angular Speed of pedal/wheel*10) | Undetermined |
| Time of stop (x10ms) | 8 |
| CurrentDecay (1-8) | 4 |
| Stop decay (x10ms) | 0 |

**Throttle**

☰ Bafang throttle settings

Profile selection

| Initialize | | Road |
|---|---|---|

Basic

| Designated Assist | 2 |
|---|---|
| Speed Limit | Display Command |
| Start Current(%) | 90 |

Advanced

| Throttle Mode | Current |
|---|---|
| Start Voltage (x100mV) | 11 |
| End Voltage (0x100mV) | 35 |

**Display settings**

☰ Display settings

Basic Settings

| Preferred units | Metric (km, m, kph=km/h) |
|---|---|
| Secondary unit | Power, W |
| Protocol | Bafang |
| Reset trip | Manually |
| Immobilizer | No Lock |
| Road restrict | No |
| Startup with Road mode | No |
| PowerOff | After 2 hours |
| Mode labels | Road/OffRoad |
| Assist levels | 5 |

**Example 2**

### Features

- speed not limited

- peak power up to 1500w (not recommended to hold the throttle at 30A current draw for more than a few seconds)

- 5 assist levels (can be set to 9 in the **display settings**)

- throttle always full power (not based on the assist level selected on the display)

## Basic

**Bafang basic settings**

Profile selection

Initialize | OffRoad

Battery Settings

| Low Battery Protect (V) | 43 |
| Limited Current (A) | 30 |

Assist levels

| Assist | Limited Current(%) | Limited Speed(%) |
|---|---|---|
| Assist 0 | 1 | 1 |
| Assist 1 | 10 | 100 |
| Assist 2 | 17 | 100 |
| Assist 3 | 28 | 100 |
| Assist 4 | 39 | 100 |
| Assist 5 | 50 | 100 |
| Assist 6 | 60 | 100 |
| Assist 7 | 75 | 100 |
| Assist 8 | 88 | 100 |
| Assist 9 | 100 | 100 |

Others

| Wheel Diameter(Inch) | 26 |
| Speed Meter Model | External, Wheel Meter |
| Speed Meter Signal | 1 |

## Pedal

**Bafang pedal settings**

Profile selection

Initialize | OffRoad

Basic

| Designated Assist | Display Command |
| Speed Limit | Display Command |
| Start Current(%) | 5 |
| Keep Current (%) | 100 |

Advanced

| Pedal Type | DoubleSignal-24 |
| Slow-Start Mode | 2 |
| Startup Degree(Signal No) | 4 |
| Work Mode (Angular Speed of pedal/wheel*10) | Undetermined |
| Time of stop (x10ms) | 4 |
| CurrentDecay (1-8) | 4 |
| Stop decay (x10ms) | 0 |

## Throttle

**Bafang throttle settings**

Profile selection

Initialize | OffRoad

Basic

| Designated Assist | 9 |
| Speed Limit | Display Command |
| Start Current(%) | 5 |

Advanced

| Throttle Mode | Current |
| Start Voltage (x100mV) | 11 |
| End Voltage (0x100mV) | 35 |

## Display settings

**Display settings**

Basic Settings

| Preferred units | Metric (km, m, kph=km/h) |
| Secondary unit | Power, W |
| Protocol | Bafang |
| Reset trip | Manually |
| Immobilizer | No Lock |
| Road restrict | No |
| Startup with Road mode | No |
| PowerOff | After 2 hours |
| Mode labels | Road/OffRoad |
| Assist levels | 5 |

Last update: August 23, 2024

## 6.2.2 Bafang basic settings

Accessible from menu **Bafang Basic**.

**Buttons**

`Initialize` - Reads all Bafang Basic/Pedal/Throttle settings at once. After this procedure both Road/OffRoad would have identical settings.

`Road` or `OffRoad` - switch between profiles.

`Read controller` - reads Bafang Basic settings.

`Info` - provides information for the Bafang switch mode.

`Write` - writes the Basic settings to controller. If the operation is successful it updates the settings on the display as well.

**BATTERY SETTINGS**

> ⚡ **Attention**
>
> Please use settings in the range for your motor for **Low Battery Protect** and **Limited Current**. Each controller has its own harware limitations which cannot be bypassed. The controller will reject values outside its capabilities.

**Example of Bafang controller limits**

This can be found in the EggRider app **About** page.



**LOW BATTERY PROTECT (V)**

Value to prevent battery voltage cutoff (most likely your battery will have a BMS that will shut off power when the voltage gets too low). If your battery shuts down before reaching this value you should increase it.

> If you get **Low Battery Protect (V)** error, it means means you are outside your controller accepted limits. Following the example picture above you can set values between 38V and 43V.

**LIMITED CURRENT (A)**

Represents the global current limit in ampere (A). This sets the power level that the drive unit will pull from the battery pack.

Current limit affects your bike power, as the following formula shows:

**Battery voltage (V) * Currrent limit (A) = Power (W)** (For example: **48V * 20A = 960W**)

> If you get **Limited Current (A)** error, it means you are outside your controller accepted limits. Following the example picture above you can set a value of maximum to 28A.

> ⚡ **Attention**
>
> Keep this current limit the same for both Road/OffRoad profiles to avoid unexpected behavior. Some bafang controllers misbehave when this value changes without a power on/off cycle.

## Assist levels mapping

Each row, defines for each assist level the relative limited current and limited speed.

> 🔥 **Tip**
>
> To have no power on Level 0, set both Current and Speed Limit to 0. In some cases it is required a value of 1.

**ASSIST**

Identifies the assist level

**LIMITED CURRENT(%)**

The percentage of the current from the **Limited current (A)**.
For example if your bike has 250W and you set this setting to 50% you will have 125W. If you set it to 100% you will have 250W.

**LIMITED SPEED(%)**

The percentage of the speed limit.

Cases

- If **Speed Limit** is set to a value on **Bafang Pedal** or **Bafang Throttle** pages, then the percentage is from that value.
- If **Speed Limit** is set to **Display command**, then the percentage is from the **Max Speed Road** or **Max Speed OffRoad**.

**OTHERS**

**WHEEL DIAMETER (INCH)**

**SPEED METER MODEL**

Options

- External, Wheel Meter
- Internal, Motor Meter
- By Motor Meter

**SPEED METER SIGNAL**

The number of magnets per one wheel revolution, default **1**.

Last update: July 19, 2024

## 6.2.3 Bafang pedal settings

Accessible from menu **Bafang Pedal**

### Buttons

`Initialize` - Reads all Bafang Basic/Pedal/Throttle settings at once. After this procedure both Road/OffRoad would have identical settings.

`Road` or `OffRoad` - switch between profiles.

`Read controller` - reads controller Pedal settings.

`Info` - provides information for the Bafang switch mode.

`Write` - writes the Pedal settings to controller. If the operation is successful it updates the settings on the display as well.

### BASIC

**DESIGNATED ASSIST**

The value of the assist power level.

If set to **Display command** the assist level shown on the display would be considered.

**Disable pedal assist**

1. Set **Designated Assist** to **0**
2. Configure **Assist Levels** in **Bafang basic settings** page
3. For **Assist 0** set **Limited Current(%) = 0** and **Limited Speed = 0**. In some cases value **1** should be set
4. Your **Pedal assist** should no longer work

**Enable pedal assist - PAS dependent**

1. Set **Designated assist** to **Display Command**
2. Configure **Assist Levels** in **Bafang basic settings** page
3. Set desired values for **Limited Current(%)** and **Limited Speed** for **Assist 1 - 9**
4. Your **Pedal assist** should be limited based on the PAS level you see on display

**Enable pedal assist - always max power**

1. Set **Designated assist** to **9**
2. Configure **Assist Levels** in **Bafang basic settings** page
3. For **Assist 0** set **Limited Current(%) = 100** and **Limited Speed = 100**
4. Your **Pedal assist** should work the same (speed and current limit) no matter what PAS level you see on display

SPEED LIMIT

The value of the speed limit.

If set to **Display command** the value from **Max Speed Road** or **Max Speed OffRoad** from **Display settings** page will be used.

START CURRENT(%)

The initial percentage of current delivered. This variable is vital for not killing the controller. The lower the Start Current is set the less power is directed to the PAS system upon startup, this will create less strain on the controller and on your bike's drivetrain when starting from a standstill, especially if you are in a gear that is too high. 100% **Start Current** will peak at well over 1000w draw. A lower value will give you a smoother acceleration.

KEEP CURRENT(%)

The percentage of current that is maintained at a certain rate of pedaling (cadence). It is the percentage of the current limit set per each level of PAS.

E.g.: For 50% current limit set for level 5, if the **keep current** is set to 70%, the keep the current limit will drop to 35% while pedaling faster(at a higher cadence), but once the cadence drops the current will increase back to the current limit set for the certain level. The pedaling cadence value can be modified by changing the value of **current decay**.

## ADVANCED

PEDAL TYPE

Options

- None
- DH-Sensor-12
- BB-Sensor-32
- DoubleSignal-24

SLOW-START MODE

Controls how quickly the power ramps up.

STARTUP DEGREE (SIGNAL NO)

The number of sensor steps before the start up commences. The maximum accepted is 20. 24 is a full pedal revolution. Too few makes start-up occur with too slight a pedal movement. Lower number is less pedal movement to start the motor. Does not work properly with 1 or 0.

WORK MODE (ANGULAR SPEED OF PEDAL/WHEEL *10)

Adjusts the amount of power that can be applied to each pedal rotation. The higher the number the greater the power applied to each rotation. This might affect at what rpm peak power sits in PAS operation, changing it doesn't seem to be noticeable so we advise to leave it alone.

**TIME OF STOP (X10MS)**

This affects how quickly the drive stops after you stop pedaling.. If you set it to 0 the PAS system ceases to work. 25 is probably too high. This setting disables the PAS if it is set less than 5. I strongly recommend setting this to 5, especially if you want to use the PAS system without using e-brakes.

> ⚠️ **Tips**
>
> Some people report that setting this lower (as low as 5) may affect the startup delay on the throttle If you set this less than 10 on the v2 of the BBS02 controllers then your PAS will not work properly at all. On the older BBS02v1 controllers and the BBSHD controllers you can set this as low as 5 before you start having issues with the PAS

**CURRENT DECAY(1-8)**

Determines how high up the pedal cadence rpm range it starts to reduce power, 8 being the highest. There is no detail on actual rpm speeds for the **Current Decay** setting. The lower this setting is the sooner the drive unit will start cutting back on the power as you pedal faster.

**STOP DECAY (X10MS)**

The amount of time the decay system takes to cut after pedaling stops.

Last update: July 19, 2024

## 6.2.4 Bafang throttle settings

> Accessible from menu **Bafang Throttle**

### Buttons

`Initialize` - Reads all Bafang Basic/Pedal/Throttle settings at once. After this procedure both Road/OffRoad would have identical settings.

`Road` or `OffRoad` - switch between profiles.

`Read controller` - reads controller Throttle settings.

`Info` - provides information for the Bafang switch mode.

`Write` - writes the Throttle settings to controller. If the operation is successful it updates the settings on the display as well.

### BASIC

**DESIGNATED ASSIST**

The value of the assist power level.

If set to **Display command** the assist level shown on the display would be considered.

**Disable throttle assist**

1. Set **Designated Assist** to **0**

2. Configure **Assist Levels** in **Bafang basic settings** page

3. For **Assist 0** set **Limited Current(%) = 0** and **Limited Speed = 0**. In some cases value **1** should be set

4. Your **Throttle assist** should no longer work

**Enable throttle assist - PAS dependent**

1. Set **Designated assist** to **Display Command**

2. Configure **Assist Levels** in **Bafang basic settings** page

3. Set desired values for **Limited Current(%)** and **Limited Speed** for **Assist 1 - 9**

4. Your **Throttle assist** should be limited based on the PAS level you see on display

**Enable throttle assist - always max power**

1. Set **Designated assist** to **9**

2. Configure **Assist Levels** in **Bafang basic settings** page

3. For **Assist 0** set **Limited Current(%) = 100** and **Limited Speed = 100**

4. Your **Throttle assist** should work the same (speed and current limit) no matter what PAS level you see on display

**SPEED LIMIT**

The value of the speed limit.

If set to **Display command** the value from **Max Speed Road** or **Max Speed OffRoad** from **Display settings** page will be used.

**START CURRENT (%)**

Percentage of available current when throttle initially applied.Lower values for smoother startup: `5` or `10` gives a much smoother startup. This can be set all the way down to `1` .

**ADVANCED**

**THROTTLE MODE**

Options

- Speeed
- Current

> ℹ️ **Tip**
>
> Switching this to Current Mode (instead of Speed mode) has an improvement in the throttle response smoothness.

**START VOLTAGE (X100MV)**

> ⚡ **Attention**
>
> Do not change this value unless you really know what you are doing.

This is the throttle input starting voltage. The point at which the controller responds to input is at 1.1 volts, so set value to 11 which = 1.1 volts. As you begin to roll on the throttle the voltage moves up from zero and when it reaches 1.1v the motor begins to turn. Best to leave between 10 and 15. Too low and the display will throw an error as the motor will want to run continuously. If you change the throttle you will need to find the new lowest setting.

**END VOLTAGE (0X100MV)**

> ⚡ **Attention**
>
> Do not change this value unless you really know what you are doing.

You can set the max range to 42 which is the max input the controller accepts from throttle input 4.2v. If you set lower than this value your throttle response is not as linear or smooth as it could be.

Last update: July 19, 2024

## 6.2.5 **Bafang torque settings**

> Accessible from menu **Bafang Torque Settings**.

This page can be used only with Bafang mid-drive motors with torque sensors. The fact that the page is available in the app doesn't mean your motor has torque sensor.

These settings don't change when switching modes Road/OffRoad. They are changed only when programming from the app.

**Basic Settings**

BASE VOLTAGE

ERROR VOLTAGE MIN (MV)

ERROR VOLTAGE MAX (MV

0 SPEED BOOST TIME (X10MS)

**Delta Voltage (MV)**

**Speeds**

Last update: July 19, 2024

## 6.3 Lishui settings (LSW)

> Accessible from menu **Lishui**

Consists of common settings section shared by both profiles Road and OffRoad and profile independent settings.

`Read` - reads the settings stored on the display

`Write` - writes the modified settings to the display.

> ⚠ **Attention**
>
> After writing settings, turn off your display from the `Power` button in order to save the settings permanently. Some settings take effect only after a power on/off cycle.

Lishui controllers do not broadcast factory setting values, so in particular cases you have to find the right settings for your controller by trying different combinations.

### 6.3.1 Settings explanation

**PAS type**

Side on which the PAS sensor is mounted. However there are many cases where the bike manufacturer modifies the sensor slightly, so please use the other way around if the assist doesn't work correctly.

Options

- Left
- Right

**Speed sensor magnets number**

Represents the number of magnets used for speed measurement. Most hub motors have an additional hall switch on the shaft for speed measuring purposes. In this case please set it to **1**. Some other might have the speed sensor on the motor before the reduction, if that is the case please set it to **5**.

**Voltage cutoff base**

The base under-voltage protection at controller.

Options are

- 21V - for 24V batteries
- 31.5V - for 36v batteries
- 42V - for 48v batteries

**Wheel size**

Internal controller wheel size in inches. This is used for internal controller speed limit purposes and it does not affect the speed measurements of the display.

Options are 16", 18", 20", 22", 24", 26", 700C, 28"

**Assist pulse delay**

This settings determines how fast the motor assist starts when using the pedals. Lower values will make the motor assist quicker.

> ⚠️ **Attention**
>
> To avoid accidental power on we recommend using a value that starts the motor assist after at least half turn of the pedals

**PAS gain**

Can be a value between 0 and 255 and is correlated to the PAS number of magnets. Example of values:

- 128 - for PAS with 6 magnets
- 64 - for PAS with 12 magnets

This field can have different behavior but mainly is the pedal assist power

**Throttle limited by PAS level**

Options

- **Yes** - Throttle power is limited by the assist level
- **No** - Throttle has maximum power all the time regardless of the assist level

**Throttle limited to 6 Km/h**

Options

- **Yes** - Throttle works only up to 6 kph.
- **No** - Throttle is available at any speed

**PAS startup acceleration**

The power ramp for assist. Lower value means softer start.

Options are 0, 1, 2, 3.

**Voltage cutoff deviation (0.1 V)**

Value to fine tune the battery voltage cutoff. If your battery shuts down before reaching 0% this should be increased.
You have to sum this value to the base cutoff voltage to get the actual voltage cutoff the motor will impose.

For example if voltage cutoff base is 31.5V and voltage cutoff deviation is -2.5V then your actual voltage cutoff will be 29V.

This field accepts values between -12.6 and 12.7v with increments of 0.1 volts.

**Current limit (0.5 A)**

> ⚠️ **Attention**
>
> Please do not exceed the maximum current you can find on your controller label. Also keep in mind that some controllers are not accepting values lower than a threshold resulting in defaulting to a specific value.

Value to set main power of the bike. Lower value means lower power.

This field accepts values between 0A to 31.5A with increments of 0.5 ampere.

**Speed limit**

Internal controller speed limit at which assistance is stopped.

**Running strategy**

These are different algorithms strategies to try to overcome some of the Lishui protocol limitations.

NORMAL

When using **Normal strategy**, only the speed % values from the power levels are utilized, while the power % values are ignored.

This can have a different result based on the controller configuration. Some Lishui controller are limited in speed, so this option will change the speed limit of each assist level. Other Lishui controllers are limited in current so this option will change the current limitation of each assist level.

CURRENT SIMULATION

When using **Current simulation strategy**, both values power % and speed % are utilised.

Power % is used to change the current limit and speed % is used to limit the assistance based on the display settings speed limits.

> In this mode throttle will be limited by pass level even if the option is set to No in the settings.

> ⚠️ **Attention**
>
> Please keep in mind that if **Power %** * **Current limit** is lower than the controller accepted threshold then it will default to a defined value which will be higher which will result in an undesired assist level behavior.

RAD

**Rad strategy** mimics the original RadPower display running mode. When this option is used, you should set to 5 assist levels from display settings.

For more settings on RAD bikes, please see Rad

Power levels maps are ignored when using this option.

Last update: July 23, 2024

# 6.4 Mate X settings

> Accessible from menu **Lishui**

All mate X version have Lishui controllers. For information about each setting option please consult the Lishui settings page

> ⚠️ **Attention**
>
> If speed shows **--.- km/h** on EggRider display, please reset to default factory settings with the following procedure When the display is off, press M + Power until display turns on. (You should see **Load default settings**)

> ❗ **Important**
>
> If you received your display with an adapter please make sure it is connected correctly.
> Wrong connection can damage the display and the bike.



Please check:

- Current Limit
- Running strategy

## 6.4.1 Settings example

> ⚠️ **Attention**
>
> Make sure to change **Current limit** according to your controller parameters. Usually they can be found on the controller label.

If you want to increase the speed limit above 41 km/h, you can change wheel size to 16" on the **Lishui settings** page. This change will affect all speed limits.

If speed measurements don't seem to be correct, please use **wheel circumference** from **Display settings** page to adjust.

**Mate X 750W Taiwan version**

| Display | Lishui |
|---|---|

**Display settings** ☰ 🕹

**Basic Settings**

| | |
|---|---|
| Preferred units | Metric (km, m, kph=km/h) |
| Secondary unit | Power, W |
| Protocol | Lishui Or Lishui Rx/Tx Swap |
| Reset trip | Manually |
| Immobilizer | No Lock |
| Road restrict | No |
| Startup with Road mode | No |
| PowerOff | After 5 minutes |
| Mode labels | Road/OffRoad |
| Assist levels | 5 |
| Display main screen layout | Main Screen V2 |
| Keep headlight at startup | No |
| Mode button press function | Short - Mode Chang |
| Max speed Road (km/h) | 25 |
| Max speed OffRoad (km/h) | 45 |
| Wheel size | Select |
| Wheel circumference (mm) | 1780 |

**Battery Settings**

| | 1st | 2nd | 3rd |
|---|---|---|---|
| Battery used | 1st Battery | | |
| Battery voltage | 48V | Select | Select |
| Voltage 0% (0.01 V) | 43.55 | 41.5 | 41.5 |
| Voltage 100% (0.01 V) | 54.6 | 54.6 | 54.6 |
| Capacity (0.01 Ah) | 14 | 10.4 | 10.4 |

**Lishui settings** ☰ 🕹

**Lishui common settings**

| | |
|---|---|
| PAS Type | Left |
| Speed sensor magnets number | 1 |
| Voltage cutoff base | 42V |
| Wheel size | 22" |

**Lishui mode specific settings**

| Parameter | Road | OffRoad |
|---|---|---|
| Assist pulse delay | 1 | 1 |
| PAS gain | 255 | 255 |
| Throttle limited by PAS level | Yes | No |
| Throttle limited to 6km/h | Yes | No |
| PAS startup acceleration | 1 | 3 |
| Voltage cutoff deviation (0.1 V) | -1.5 | 0 |
| Current limit (0.5 A) | 15 | 20 |
| Speed limit | 25 km/h | 41 km/h |

Last update: August 23, 2024

# 6.5 Rad Power Bikes

## 6.5.1 Rad settings

Accesible from menu **Lishui**. The display protocol used should be Lishui or Lishui Rx/Tx. For more details, please see Lishui settings page.

For model compatibility, please see rad compatibility list.

The EggRider Rad version can have green or black connector but it is important to be a screw connector as shown in the pictures below.

**How to connect EggRider display to Rad bikes**

# How to connect *EggRider* to Rad bikes

**Step 1:** Align the arrows

**Step 2:** Gently push the connectors together

## DO NOT TWIST THE CONNECTORS!

If you twist the connectors you will permanently damage your *EggRider* and this is NOT covered under WARRANTY

**Step 3:** Gently secure the silver screw

> **⚠ Attention**
>
> If speed shows **--.- km/h** on EggRider display, please see section protocol detection.

**Example Settings**

EggRider offers different type of strategies depending on your needs:

- Current Limit
- Running strategy

> **⚠ Attention**
>
> Ensure you adjust the Current limit to match your controller's specifications, which are usually listed on the controller label.

- If you want to increase the speed limit above 41 km/h, you can change wheel size to 16" on the **Lishui settings** page. This change will affect all speed limits.
- If speed measurements don't seem to be correct please use **wheel circumference** from **Display settings** page to adjust.

**RAD RUNNER CONFIGURATION EXAMPLE**

> Please keep in mind that when **Running strategy** is set as **Normal** only the **Speed %** values are used.

## Power Levels

**≡  Power levels**

### Power levels mode specific

| | Parameter | | |
|---|---|---|---|
| Road | | OffRoad | |
| Power % | Speed % | Power % | Speed % |

**Power level 1**

| 20 | 20 | 20 | 20 |

**Power level 2**

| 30 | 30 | 30 | 30 |

**Power level 3**

| 40 | 40 | 40 | 40 |

**Power level 4**

| 50 | 50 | 50 | 50 |

**Power level 5**

| 60 | 60 | 60 | 60 |

**Power level 6**

| 70 | 70 | 70 | 70 |

**Power level 7**

| 80 | 80 | 80 | 80 |

**Power level 8**

| 90 | 90 | 90 | 90 |

**Power level 9**

| 100 | 100 | 100 | 100 |

## Display

**≡  Display settings**

### Basic Settings

| Preferred units | Metric (km, m, kph=km/h) |
|---|---|
| Secondary unit | Power, W |
| Protocol | Lishui Or Lishui Rx/Tx Swap |
| Reset trip | Manually |
| Immobilizer | No Lock |
| Road restrict | No |
| Startup with Road mode | No |
| PowerOff | After 5 minutes |
| Mode labels | Road/OffRoad |
| Assist levels | 5 |
| Display main screen layout | Main Screen V2 |
| Keep headlight at startup | No |
| Mode button press function | Short - Mode Chang |
| Max speed Road (km/h) | 25 |
| Max speed OffRoad (km/h) | 45 |
| Wheel size | Select |
| Wheel circumference (mm) | 1780 |

### Battery Settings

| Battery used | 1st Battery | | |
|---|---|---|---|
| | 1st | 2nd | 3rd |
| Battery voltage | 48V | Select | Select |
| Voltage 0% (0.01 V) | 43.55 | 41.5 | 41.5 |
| Voltage 100% (0.01 V) | 54.6 | 54.6 | 54.6 |
| Capacity (0.01 Ah) | 14 | 10.4 | 10.4 |

## Lishui

**≡  Lishui settings**

### Lishui common settings

| PAS Type | Left |
|---|---|
| Speed sensor magnets number | 1 |
| Voltage cutoff base | 42V |

### Lishui mode specific settings

| | Parameter | |
|---|---|---|
| Road | | OffRoad |

**Running strategy**

| Normal | | Normal |

**Assist pulse delay**

| 4 | | 4 |

**PAS gain**

| 100 | | 100 |

**Throttle limited by PAS level**

| Yes | | No |

**Throttle limited to 6km/h**

| Yes | | No |

**PAS startup acceleration**

| 0 | | 0 |

**Voltage cutoff deviation (0.1 V)**

| 0 | | 0 |

**Current limit (0.5 A)**

| 7 | | 10.5 |

**Wheel size**

| 20" | | 20" |

**Speed limit**

| 25 km/h | | 41 km/h |

**Cruise**

| No | | No |

**RAD WAGON CONFIGURATION EXAMPLE**

- If Power % and Current limit are set too low, the controller might use a higher default value than the calculated value (Power % / 100 * Current limit).
- If set too high, the controller might use a lower default value.
- The limits can vary from controller to controller so you might have to find the limits that work for you.
- Speed limits for "Power levels" are taken from the EggRider display settings.

| Power Levels | Display | Lishui |
|---|---|---|

## Power Levels

≡ **Power levels**    🏁

### Power levels mode specific

| | Parameter | | |
|---|---|---|---|
| Road | | OffRoad | |
| Power % | Speed % | Power % | Speed % |

**Power level 1**

| 35 | 100 | 50 | 100 |
|---|---|---|---|

**Power level 2**

| 38 | 100 | 55 | 100 |
|---|---|---|---|

**Power level 3**

| 41 | 100 | 60 | 100 |
|---|---|---|---|

**Power level 4**

| 44 | 100 | 65 | 100 |
|---|---|---|---|

**Power level 5**

| 47 | 100 | 70 | 100 |
|---|---|---|---|

**Power level 6**

| 50 | 100 | 75 | 100 |
|---|---|---|---|

**Power level 7**

| 53 | 100 | 80 | 100 |
|---|---|---|---|

**Power level 8**

| 56 | 100 | 90 | 100 |
|---|---|---|---|

**Power level 9**

| 59 | 100 | 100 | 100 |
|---|---|---|---|

## Display

≡ **Display settings**    🏁

### Basic Settings

| Preferred units | Metric (km, m, kph=km/h) |
|---|---|
| Secondary unit | Current, A |
| Protocol | Lishui Or Lishui Rx/Tx Swap |
| Reset trip | Manually |
| Immobilizer | No Lock |
| Road restrict | No |
| Startup with Road mode | No |
| PowerOff | After 5 minutes |
| Mode labels | Road/OffRoad |
| Assist levels | 5 |
| Display main screen layout | Main Screen V2 |
| Keep headlight at startup | No |
| Mode button press function | Short - Mode Chang |
| Max speed Road (km/h) | 25 |
| Max speed OffRoad (km/h) | 45 |
| Wheel size | Select |
| Wheel circumference (mm) | 2400 |

### Battery Settings

| Battery used | 1st Battery | | |
|---|---|---|---|
| | 1st | 2nd | 3rd |
| Battery voltage | 48V | Select | Select |
| Voltage 0% (0.01 V) | 43.55 | 41.5 | 41.5 |
| Voltage 100% (0.01 V) | 54.6 | 54.6 | 54.6 |
| Capacity (0.01 Ah) | 14 | 10.4 | 10.4 |

## Lishui

≡ **Lishui settings**    🏁

### Lishui common settings

| PAS Type | Left |
|---|---|
| Speed sensor magnets number | 1 |
| Voltage cutoff base | 42V |

### Lishui mode specific settings

| | Parameter | |
|---|---|---|
| Road | | OffRoad |

**Running strategy**

| Current simulation | Current simulation |
|---|---|

**Assist pulse delay**

| 4 | 4 |
|---|---|

**PAS gain**

| 100 | 100 |
|---|---|

**Throttle limited by PAS level**

| Yes | No |
|---|---|

**Throttle limited to 6km/h**

| Yes | No |
|---|---|

**PAS startup acceleration**

| 0 | 0 |
|---|---|

**Voltage cutoff deviation (0.1 V)**

| 0 | 0 |
|---|---|

**Current limit (0.5 A)**

| 19.5 | 19.5 |
|---|---|

**Wheel size**

| 28" | 28" |
|---|---|

**Speed limit**

| 25 km/h | 41 km/h |
|---|---|

**Cruise**

| No | No |
|---|---|

Last update: July 23, 2024

## 6.5.2 Radv2 settings

Accesible from menu **ASI**.

For model compatibility, please see radv2 compatibility list.

**How to connect EggRider display to Rad bikes**

Disconnect the connector that links the Rad LCD display to your bike (not the remote). Then, connect the EggRider display to the connector that was originally attached to the Rad LCD. For a visual reference, please see the picture below:



⚠️ **Attention**

If speed shows **--.- km/h** on EggRider display, ensure the connection to your bike is done correctly as shown above. If the issue continues, please see section protocol detection.

ℹ️ **Reset your display to initial settings**

RadV2 comes with pre-configured settings. To get back to the initial settings, please reset to default factory settings with the following procedure: when the display is off, press [M]+[Power] until display turns on. (You should see **Load default settings**). For more, see EggRider v2 button combinations or EggRider c1 button combinations.

**Important ASI settings**

> ⚠️ **Attention**
>
> Please use your judgment when adjusting values. Exceeding manufacturer specifications can shorten your bike's lifespan. Before increasing any parameters in ASI settings, test for short periods and monitor performance and temperature in different scenarios like flat ground and uphill.

**THROTTLE MAX POWER (W)**

Only applies to Rad bikes with throttle. This setting controls the motor's maximum power output (in watts) when the throttle is fully engaged. Higher values boost acceleration and top speed, while lower values enhance battery life and provide smoother power delivery.

**PAS MAX POWER (W)**

This setting controls the maximum power output (in watts) that the motor delivers when using the Pedal Assist System (PAS). Higher values provide stronger assistance while pedaling, enhancing acceleration and climbing ability. Lower values conserve battery and provide a more moderate assist.

**MOTOR PHASE CURRENT (A)**

This setting controls the current (measured in amps, A) supplied to the motor's phases. Adjusting this parameter can affect the motor's torque output and overall performance. Higher current settings typically increase torque but may also affect battery consumption and heat generation.

**BATTERY CURRENT LIMIT (%)**

The battery current limit determines the maximum current that can be drawn from the battery. However increasing the battery current limit may lead to faster and more robust torque assistance.

**PAS MAX SPEED**

This setting determines the maximum speed (in miles per hour, for example) that the Pedal Assist System (PAS) will provide. It sets an upper limit regardless of the PAS level selected.

More settings definitions can be found ASI settings.

**Example Settings**

**RADV2 CONFIGURATION EXAMPLE**

### Power Levels

**≡ Power levels**

#### Power levels mode specific

| | Parameter | | |
|---|---|---|---|
| Road | | OffRoad | |
| Power % | Speed % | Power % | Speed % |

**Power level 1**

| 20 | 20 | 20 | 100 |

**Power level 2**

| 30 | 30 | 30 | 100 |

**Power level 3**

| 40 | 40 | 40 | 100 |

**Power level 4**

| 50 | 50 | 50 | 100 |

**Power level 5**

| 60 | 60 | 60 | 100 |

**Power level 6**

| 70 | 70 | 70 | 100 |

**Power level 7**

| 80 | 80 | 80 | 100 |

**Power level 8**

| 90 | 90 | 90 | 100 |

**Power level 9**

| 100 | 100 | 100 | 100 |

### Display

**≡ Display settings**

#### Basic Settings

| | |
|---|---|
| Preferred units | Metric (km, m, kph=km/h) |
| Secondary unit | Current, A |
| Protocol | ASI |
| Reset trip | Manually |
| Immobilizer | No Lock |
| Road restrict | No |
| Startup with Road mode | No |
| PowerOff | After 10 hours |
| Mode labels | Road/OffRoad |
| Assist levels | 9 |
| Display main screen layout | Main Screen V1 |
| Mode button press function | Short - Mode Chang |
| Max speed Road (km/h) | 25 |
| Max speed OffRoad (km/h) | 70 |
| Wheel size | Select |
| Wheel circumference (mm) | 2200 |

#### Battery settings

| | | | |
|---|---|---|---|
| Battery used | 1st Battery | | |
| | 1st | 2nd | 3rd |
| Battery voltage | Select | Select | Select |
| Voltage 0% (0.01 V) | 43.55 | 43.55 | 43.55 |
| Voltage 100% (0.01 V) | 54.6 | 54.6 | 54.6 |
| Capacity (0.01 Ah) | 11 | 11 | 11 |

### ASI

**≡ Asi settings**

#### ASI mode specific settings

| | Parameter | |
|---|---|---|
| Road | | OffRoad |

**Throttle Max Power (W)**

| 250 | 800 |

**PAS max power (W)**

| 250 | 500 |

**Motor phase current (A)**

| 50 | 50 |

**Regen ratio (%)**

| 0 | 0 |

**Throttle Max Speed**

| 6 | 40 |

**Pas Max Speed**

| 25 | 50 |

**Battery Current Limit (%)**

| 100 | 100 |

**Field Weakening (Max 50%)**

| 0 | 10 |

Last update: August 6, 2024

## 6.6 Kunteng settings (KT)

Accessible from menu **Kunteng**

> ⚡ **Attention**
>
> RadPower Bikes with a upgraded **Kunteng** controller are not compatible with EggRider display.

Consists of one common settings section shared by both profiles Road and OffRoad and profile independent settings.

Speed limits are used from EggRider display settings page.

`Read` - reads the settings stored on the display

`Write` - writes the modified settings to the display.

> ⚠ **Attention**
>
> After writing settings, turn off your display from the `Power` button in order to permanently save the settings.

## 6.6.1 Settings example

| Display | Kunteng |
|---|---|

**☰ Display settings** ⏱

### Basic Settings

| | |
|---|---|
| Preferred units | Metric (km, m, kph=km/h) |
| Secondary unit | Current, A |
| Protocol | Kunteng Rx/Tx Swap |
| Reset trip | Manually |
| Immobilizer | No Lock |
| Road restrict | No |
| Startup with Road mode | No |
| PowerOff | After 5 minutes |
| Mode labels | Road/OffRoad |
| Assist levels | 5 |
| Display main screen layout | Main Screen V2 |
| Keep headlight at startup | No |
| Mode button press function | Short - Mode Chang |
| Max speed Road (km/h) | 25 |
| Max speed OffRoad (km/h) | 45 |
| Wheel size | Select |
| Wheel circumference (mm) | 2400 |

### Battery Settings

| | 1st | 2nd | 3rd |
|---|---|---|---|
| Battery used | 1st Battery | | |
| Battery voltage | 48V | Select | Select |
| Voltage 0% (0.01 V) | 43.55 | 41.5 | 41.5 |
| Voltage 100% (0.01 V) | 54.6 | 54.6 | 54.6 |
| Capacity (0.01 Ah) | 14 | 10.4 | 10.4 |

**☰ Kunteng settings** ⏱

### Kunteng common settings

| | |
|---|---|
| Motor speed demultiplier (P1) | 100 |
| Wheel speed pulse signal (P2) | 1 |
| Assist mode (P3) | Torque \| Max Power |
| PAS no of magnets (C1) | 6 |
| Phase codification (C2) | 0 |
| Wheel size | 26 in |

### Kunteng mode specific settings

| Parameter | Road | OffRoad |
|---|---|---|
| Low voltage cut-off (C12) | 0 V (20V\|30V\|40V) | 0 V (20V\|30V\|40V) |
| ABS Break (C13) | None | None |
| Strength PAS (C14) | General | General |
| Throttle mode (P4 - C4) | 6 km/h | Yes |
| Current Limit (%) (C5) | 75% | 100% |

## 6.6.2 Kunteng Common Settings

**Motor speed demultiplier**

**Wheel speed pulse signal (P2)**

Options are 0, 1, 2, 3, 4, 5, and 6.

**Assist mode (P3)**

Options

- Speed control / PAS Gear Ratio
- Torgue I Max Power

**PAS no of magnets(C1)**

Options are 0, 1, 2, 3, 4, 5, 6 and 7.

**Phase codification**

Options are 0, 1, 2, 3, 4, 5, 6 and 7.

**Wheel Size**

Options are 6 in, 8 in, 12 in, 14 in, 14 in, 16 in, 18 in, 20 in, 22 in, 24 in, 26 in, 700c and 28 in.

## 6.6.3 Kunteng Mode Specific Settings

**Low voltage cut-off (C12)**

OPTIONS

- -2V ()
- -1.5V
- -1V
- -0.5V
- 0V
- +0.5V
- +1V
- +1.5V
- +2V

**ABS brake (C13)**

Options

- None
- Minimum Motor Brake
- Low Motor Brake
- Medium Motor Brake
- High Motor Brake
- Maximum Motor Brake

**Strength PAS(C14)**

Options

- Weaker
- General
- Stronger

**Throttle mode(P4-C4)**

Options

- Yes
- 6km/h
- 12km/h
- Assist
- No

**Current limit (%) (C5)**

Options are 50%, 67%, 75%, 80%, 83%, 87%, 91% and 100%.

Last update: July 19, 2024

# 6.7 ASI - Accelerated Systems Inc settings

Accessible from menu **ASI settings**

`Read` - reads the settings stored on the display

`Write` - writes the modified settings to the display.

Requires EggRider display firmware >= v2.4.83 and ASI firmware controller version >= V5.921

For first time use please ensure to write ASI settings and power off display from `Power` button.

At each `M` press on EggRider display, the relative profile settings are written to the controller but they are not permanently saved on the controller.

**Required Asi controller configuration**

- Flash parameter read access code (address 62) - 0
- Display Protocol (address 66) - Disabled
- Assist Mode Source (address 210) - Network Gains

**Pinout setup for batteries bellow 60v fully charged**

Do not confuse with nominal voltage. A 52v battery fully charged goes to 58.8v

| ASI BAC500/800 pin # | ASI pin function | EggRider pin function |
|:---:|:---:|:---:|
| 16 | Gnd | GND |
| 17 | Display Rx | TxD |
| 18 | Display Tx | RxD |
| 21 | Key out | P+ |
| 22 | Key in | Power Lock |

**Necessary pinout setup for batteries over 60V**

Please do not connect EggRider to a power source over 60v as it will permanently damage the display.

With ASI controller to go above 60v you **MUST** connect the EggRider display to the 12v output. This configuration requires an external switch to power on/off the controller.

This setup will loose the functionality to power on/off the controller from EggRider display, but still requires to start the display after the main switch has been powered on.

**Start sequence:**

1. Main Switch/key turn/press ON (power the controller)
2. Press power button on the display (Turns ON EggRider)

**Stop sequence:**

1. Press power button on the display (Turns Off EggRider and also save settings/data)
2. Main Switch/key turn/press OFF (cuts power to controller)

CONNECTION FOR BAC500, BAC555, BAC800, BAC855

Mount a switch between ASI pins # 21 and # 22 or between your battery + pole and ASI pin # 22. Another option is to short circuit the ASI pin # 21 and 22 which will power on the controller automatically when the battery is on.

| ASI pin # | ASI pin function | EggRider pin function | Notes |
|-----------|------------------|------------------------|-------|
| 13 | +12V (90mA max!) | P+ | |
| 16 | Gnd | GND | |
| 17 | Display Rx | TxD | |
| 18 | Display Tx | RxD | |
| - | - | Power lock | Keep free |
| 21 | Key out | - | Connect to ext switch |
| 22 | Key in | - | Connect to ext switch |

CONNECTION FOR BAC2000, BAC4000, BAC8000

Mount a switch between your battery + pole and ASI pin # 9

You should definitively secure this wire section with a 500mA fuse.

| ASI pin # | ASI pin function | EggRider pin function | Notes |
|-----------|------------------|------------------------|-------|
| 16 | +12V (50mA max!) | P+ | |
| 14 or 15 | Gnd | GND | |
| 13 | Display Rx | TxD | |
| 3 | Display Tx | RxD | |
| - | - | Power lock | Keep free |
| 9 | Key in | - | Connect to ext switch key from batt+ |

## 6.7.1 ASI settings definitions

> ⚠️ **Attention**
>
> Please use your judgment when adjusting values. Exceeding manufacturer specifications can shorten your bike's lifespan. Before increasing any parameters in ASI settings, test the system in short periods on flat ground to monitor performance and temperature.

**Throttle max power (W)**

Only applies to bikes with throttle. This setting defines the maximum power (in watts) that the motor can deliver when the throttle is fully engaged. It determines how much power the motor can output under full throttle, affecting acceleration and overall performance.

**PAS max power (W)**

This parameter specifies the maximum power (in watts) the motor will use during Pedal Assist System (PAS) operation.Higher values provide stronger assistance while pedaling, enhancing acceleration and climbing ability. Lower values conserve battery and provide a more moderate assist.

**Motor phase current (A)**

Motor Phase Current refers to the amount of current (in amps) flowing through each phase of the motor. This setting influences the motor's torque and efficiency. Higher current settings typically increase torque but may also affect battery consumption and heat generation.

**Regen ratio (%)**

The Regen Ratio represents the percentage of energy that is recovered and fed back into the battery during regenerative braking. A higher percentage means more energy is recuperated, improving overall efficiency.

**Throttle max speed**

Throttle Max Speed indicates the highest speed that the bike can reach when the throttle is fully applied. This setting limits the maximum speed achievable through throttle control.

**Pas max speed**

This setting determines the maximum speed (in miles per hour, for example) that the Pedal Assist System (PAS) will provide. It sets an upper limit regardless of the PAS level selected.

**Battery current limit (%)**

The battery current limit determines the maximum current that can be drawn from the battery. However increasing the battery current limit (e.g.100%-120%) may lead to faster and more robust torque assistance.

**Field weakening (Max 50%)**

Field Weakening is a technique used to extend the maximum speed of the motor beyond its normal limits. The "Max 50%" indicates the maximum allowable weakening of the magnetic field, which can increase the motor's speed but may reduce efficiency.

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Last update: July 19, 2024

# 7. EggRider display compatibility

If you want to check compatibility with your bike please complete EggRider compatibility form.

There are two main things to consider for compatibility:

- **Hardware** - voltage, connector and pinout compatibility
- **Software** - communication protocol compatibility

> ⚠️ **Warning**
>
> Having the same `connector/pinout` or bike model doesn't guarantee a compatibility.

> ⚡ **Attention**
>
> EggRider is **not compatible** with **CAN bus** systems.

> Do not make a connection if connectors are not the same type. Do not use unauthorized adapters such as female to female and male to male adapters because most likely they will burn the display and controller.



## 7.1 How to find out controller brand?

> ⚠️ **Attention**
>
> It is important to identify your controller brand, do not confuse this with the motor brand.

You can find the controller by following the display cable.

If you have a **hub wheel motor**, most probably your controller is Kunteng or Lishui.

The hub motor ebikes mostly have the controller in an aluminum box attached to the frame or integrated in the battery mount or the bike frame.

If you identified your controller as Kunteng(KT) or Lishui(LSW), keep in mind that there are more types of connectors, not only julet/higo 5 pin waterproof.

## 7.2 Compatibility list

### 7.2.1 Bafang hub motors

Bafang hub motors are not neccesarly compatible. It is important to understand what controller brand you have. Please read all this page carefully.

### 7.2.2 Bafang mid drive motors

Bafang mid-drive motors have 2 types of controllers based on the communication protocol

1. UART communication - Compatible

2. CANbus communication - Not Compatible

Bafang mid drive ebikes have the controller integrated into the motor and the type is written on the case. EggRider is compatible with Bafang mid drive systems:

- Bafang BBS01 250W 350W 500W 750W

- Bafang BBS02 250W 350W 500W 750W

- Bafang BBS03 BBSHD LUNA 750W 1000W 1500W 2500W Ludacris

- Bafang Ultra M620

- Bafang Ultra 1000W

- Bafang MM G510 1000

- Bafang M600

- Bafang Max

- Bafang MM G320

- Bafang MM G330 250

- Bafang MM G340

- Bafang M300

- Bafang M400

## 7.2.3 Mate bikes

Compatible with all **Mate X** versions. Please select Mate X EggRider version.

> ⚡ **Attention**
>
> **Mate classic** bikes are not compatible with EggRider display.

Bike compatibility list:

- MATE X 250

- MATE X 250+

- MATE X 750S

- MATE City 250

Controllers supported:

- Lishui LSW1545-5-2M

- Lishui LSW856-66M

- Lishui LSW856-66-1M

> ⚡ **Attention**
>
> EggRider is not compatible with the following Mate X Controllers:
>
> - YCSH-C

Motors supported:

- Bafang RM G060.750.DC 48V 750W SWX02

- Shengyi DGW25 SY25N4820TA 48V 250W

- Shengyi DGW25 SY254820SJ 48V 500W

- JiaBo CZJB JB-104C2 24V-60V 750W

Replaces the following displays:

- Key-Disp KD51C-D

- Bafang DPC-14 / 850C 3.2-inch MATE-customized TFT LCD color display

- Ukriver UKC1 / UK-CT-18 / UKCT-18 3.5-inch MATE-customized TFT LCD color display

## 7.2.4 RadPower bikes

> ⚡ **Attention**
>
> EggRider is not compatible with RadPower bikes with upgraded **Kunteng (KT)** controllers.

EggRider offers **2 different versions** for RadPower bikes.

If you are unable to find your specific bike model in the Rad and Radv2 lists below, please complete EggRider compatibility form.

## 7.2.5 Rad

Compatible RadPower bikes feature a 5-pin screw connector for the display as shown below and use a Lishui controller;



EggRider Rad compatible with the following models:

- RadExpand 5
- RadCity 1/2/3/4
- RadMini 1/2/3/4
- RadMission 1
- RadRhino 1/5
- RadRover 1/2/3/4/5
- RadRunner 1/1 Plus/2
- RadWagon 1/2/3/4

## 7.2.6 Radv2

Compatible RadPower bikes feature 5-pin julet connector for display as shown below and use ASI controller:



EggRider Radv2 is compatible with the following models:

- RadCity 5 Plus
- RadRhino 6 Plus
- RadRover 6 Plus
- RadRunner 3 Plus
- RadTrike 1

## 7.2.7 Urban Drivestyle bikes

> ⚠️ **Attention**
>
> If you can't find your model in the list below or you want to be sure about compatibility, please provide the information required here

Compatible Urban Drivestyle bikes:

- Unimoke V4
- Unimoke V5
- Unimoke V6

## 7.2.8 CoastCycles bikes:

Compatible bikes:

- Buzzraw
- Buzzraw X

## 7.2.9 Lishui (LSW) controllers

Lishui has different models of controllers. Some of them are compatible, some are not. It is important to provide us with the code on the controller so we can make a list of compatible controllers.

> ☰ **Click to see compatibility list**

| Controller | Compatibility |
|---|---|
| Lishui LSW1599-4M | |
| Lishui LSW 1350 | |
| Lishui LSW943-217-1M | |
| Lishui LSW686-21F | |
| Lishui LSW 947-54F | |
| Lishui LSW352-89F | |
| Lishui LSW1584-1M | |
| Lishui LSW1596-2F | |
| Lishui LSW765-28-48F | |
| Lishui LSW1332-47F | |
| Lishui LSW781-62-7 | |
| Lishui LSW-1405-4-7F | |
| Lishui LSW352-89FA | |
| Lishui LSW1023-3-2 | |
| Lishui LSW1350-11-1F | |
| Lishui LSW125-11-1M | |
| Lishui LSW1106-58-020F | |
| Lishui LSW1188-29-1F | |
| Lishui LSW1433-2F | |
| Lishui LSW1155-37M | |
| Lishui LSW1568-13-4M | |
| Lishui LSW1497-2-1f | |
| Lishui LSW1659-14F | |

## 7.3 Accelerated Systems Controllers

ASI controllers are compatible with EggRider V2 and C1 displays if you have access to Bacdoor app. Please provide us picture with your display cable, battery voltage and controller model.

Please read our dedicated page for more information

- ASI BAC 300

- ASI BAC 500

- ASI BAC 800

- ASI BAC 355

- ASI BAC 555

- ASI BAC 855

- ASI BAC 4000

- ASI BAC 8000

## 7.4 CYC Motor

CYC motors that use ASI controllers are compatible.

> ⚡ **Attention**
>
> Special connection is required if you have battery greater than 52V.
> Please read our dedicated ASI page for more information

Compatible versions

- CYC motor X1 Pro Gen 2 with controller ASI BAC855 or BAC2000

- CYC motor X1 Stealth with controller ASI BAC855

## 7.5 Kunteng (KT) Controller

> ⚡ **Attention**
>
> RadPower Bikes with a upgraded **Kunteng** controller are not compatible with EggRider display.

### 7.5.1 Other compatible bikes:

- Aostirmotor S07-B

- Voltbike Yukon 750 Limited

- Mycle Cargo Electric Bike

- Ride 1UP

## 7.6 Check compatibility

If you are still unsure and would like us to check compatibility, please complete EggRider compatibility form.

- bike brand

- bike model

- year of manufacture

- picture of controller label

- picture of display connector - display side

- picture of display connector - controller side

- picture of display

> ⚠ **Attention**
>
> For display connector pictures please specify which connector goes to controller and which to display

See the example pictures below.

| Controller label | Display connector | Display |
|:---:|:---:|:---:|
|  |  |  |

## 7.7 EggRider V2 & C1 Pinout

# EggRider V2 & C1

## *Display pinout*

### Female
### Bafang variant

Power Lock
GND

5 1
4 2
3

RxD
TxD

P+ 48V

### Male
### Lishui/KT variant

P+ 48V
Power Lock

1 5
2 4
3

GND
RxD

TxD

**Do not connect if unsure!**
**Wrong connection will damage the display and your bike**

---

Last update: August 23, 2024

# 8. Troubleshooting

## 8.1 Solve mobile app connection problems

### 8.1.1 My phone doesn't connect to EggRider display

If the display appears on the **Search Device** page but doesn't connect when tapping or doesn't appear at all please follow the instructions below:

> ℹ **Info**
>
> Sometimes the mobile app fails to connect because of corrupted Bluetooth cache of the phone. The following procedure usually solves the problem.

1. Go to **App settings** page and set
2. **Startup connection** -> **Manually**
3. **Background re-connection** -> **No**
4. Close the app from memory.
5. Turn off Bluetooth.
6. Power off the phone
7. Power off display
8. Power on display and phone
9. Turn on Bluetooth (do not pair)
10. Turn on GPS
11. Open the app, give permissions and try to connect again

## 8.2 EggRider display speed shows --.- km/h

EggRider display showing speed as **--.-km/h** or **error FF (EFF)** can be caused by the following reasons:

1. Protocol is not correctly setup
2. Communication port issue
3. Controller is not compatible
4. Bafang error 30H

### 8.2.1 Protocol is not correctly setup

EggRider display supports multiple bike communication protocols, each controller brand has two possible options, for example **Bafang** and **Bafang Rx/Tx Swap**, but only one of them will work with your bike.

Most of the time the protocol is auto-detected when display is reset to factory settings. To reset, when display is OFF press `M` + `Power` buttons until display turns ON.
For more combinations, see EggRider v2 buttons or EggRider c1 buttons

> Once identified the protocol that works with your bike please don't change it when taking settings examples from somewhere else.

After reset, if speed is not shown as **0.0 km/h**, please follow the steps below:

1. Connect to display with mobile app
2. Go to **Display settings** page, press `Read`, change **Protocol** type to your controller's brand name (example: Bafang) and press `Write`.
3. Restart the display
4. Check if speed shows **0.0km/h**
5. If speed still shows **--.-km/h**, repeat from step 1 and change protocol to the Rx/Tx swap version. (example: Bafang Rx/Tx Swap)

> Do not confuse controller brand with motor brand. For EggRider, it is important to identify the controller.

If none of the above works it is most likely because of the reasons 2) or 3). In this case please **Contact us via email**.

## 8.2.2 Communication port issue

This is usually the case if EggRider was previously showing the speed correctly. The issue can be either on EggRider display or on the controller side.

How to identify where the issue is?

- By connecting another compatible display to your bike or controller. If speed shows correctly then it is an issue on EggRider display. In this case please **Contact us via email**.
- By connecting EggRider to another bike or controller. If it works correctly then the issue is on controller side.

## 8.2.3 Controller is not compatible

If the issue is not resolved by following the above steps then it is most likely a software incompatibility, please **Contact us via email**.

## 8.2.4 Bafang error 30H

Some users have reported encountering error FF known on Bafang as **Error 30H** with specific Bafang controllers, particularly when trying to change controller settings with cable or EggRider app. This error might indicate that the controller has restricted the ability to modify settings.

A common sign of this issue is if the error occurs while adjusting Bafang controller settings.

**Potential solution**

Many users have resolved this issue by reinstalling the firmware on the controller. While we don't have direct experience with this process, the following resources may be useful:

- How to Reinstall Bafang Firmware - YouTube
- Updating Bafang Firmware - California E-bike

It appears that some versions of Bafang controller firmware may limit the number of times settings can be changed (e.g., up to 5 times), or in some cases, may not allow changes at all. Additionally, the error can occur when incompatible settings are written to the controller.

Based on customer feedback, using the above resources has successfully resolved the 30H error. However, we are unaware of whether the issue may reoccur in the future.

**Preventing error 30H from recurring**

Once the 30H error has been resolved, you can help prevent it from recurring by using the EggRider display without modifying the Bafang controller settings. Follow these steps to do so:

1. Open the EggRider App.
2. Navigate to the **Display settings** page.
3. Select **Bafang switch mode**.
4. Choose **Only live data**.

This setting ensures that the EggRider display shows real-time data without changing any Bafang controller settings, minimizing the chances of encountering error 30H again.

## 8.3 Settings Errors

### 8.3.1 No Lishui Settings

If you see on the EggRider display the following error **No Lishui Settings** please do the followings:

1. Connect to the EggRider display
2. Go to **Lishui settings** page
3. Configure the Lishui settings to match your bike (RadPower or Mate X Lishui settings examples)
4. Press Write
5. Restart the EggRider

### 8.3.2 No ASI Settings

If you see on the EggRider display the following error **No ASI Settings** please do the followings:

> ⚠️ **Attention**
>
> First, please make sure that you have the newest firmware version. You can update your EggRider display by doing the following

1. Connect to the EggRider display

2. Go to **ASI settings** page

3. Configure the settings to match your bike (ASI settings examples)

4. Press Write

5. Restart the EggRider

## 8.3.3 Switch failed B

 If you see on the EggRider display the following error **Switch failed B** please do the followings:

1. Connect to the EggRider display

2. Follow carefully the steps from Bafang first configuration

Last update: September 11, 2024

# 9. Support

We are here to help.

> ⚠️ **Attention**
>
> If you have hardware issues, please **contact us over email** and let us know your order number and description of the issue.

You can use our **EggRider users Facebook group** for your generic questions or feedback. In this way everyone can see the response and benefit from it.

It's really important that you check out **EggRider issues page** first. If you can't find your problem in the list above then you can **Create a new issue** (requires login).

Please also consider reading our **Frequently asked questions**

> ⚠️ **Attention**
>
> Please avoid to contact us personally and use the above mentioned dedicated channels.

Last update: November 30, 2021

# 10. Road map

These functionalities are not to consider in specific order

- Login functionality with user profiles
- App notifications
- Improved app dashboard
- Improved display graphics
- Improving background stability
- Predefined settings and settings sharing
- Raising issues from the app
- App multilingual support
- Human power information for systems with torque sensor

Last update: November 30, 2021

# 11. EggRider Release Notes

Latest stable releases:

> Please follow carefully the update instructions: Update instructions

- EggRider Firmware **v2.6.65** -> Release notes
- EggRider App Android **v2.8.03** -> Release notes
- EggRider App iOS **v2.8.03** -> Release notes

Some known issues:

- Accelerating while display is powering on results in wrong battery measurement
- App Startup connection and Background re-connection can create unintended behavior

Last update: July 25, 2024

# 12. Disclaimer

> **⚡ Attention**
>
> Having the same `connector/pinout`, `controller` or `bike model` doesn't guarantee a compatibility.

> **⚡ Disclaimer**
>
> The EggRider V2 and C1 displays do not ensure legal compliance. It provides all the flexibility that the motor or controller can offer. The Road/Eco and OffRoad/Sport are merely 2 independently configured profiles. Please check your local laws before riding to make sure you are riding legally and safely.

> **⚠ Warranty**
>
> By changing specific settings, you can void the warranty of your motor/bike. You can also experience a significant loss of range due to the high speed and power output. Please use your own judgement.

The app and display interface might vary significantly from the shown screenshots. Please get in touch if you cannot see all the content.

The battery and range estimations need a couple of trips before providing reliable enough data.

The battery capacity estimation relies heavily on the current estimation. According to our experience, the estimated capacity is about 60% of the actual battery capacity. This might be due to a tolerance stack-up in the current measurement, battery voltage vs level non-linearity, etc. We are confident we can improve it over time, and we are open to suggestions.

Last update: August 23, 2024

# 13. Frequently asked questions

### What is the difference between EggRider V2 and C1?

The main difference between the EggRider V2 and EggRider C1 lies in the display. The EggRider C1 features a larger color screen and includes a remote, which enhances data visualization like the arc and graphics on the main screen.
Both displays maintain the same level of compatibility with devices and use the same mobile app.

### Am I required to have the phone connected to the display while riding?

No, EggRider display works without the need of the mobile app connection.

### Can I connect with more than one phone?

Yes, you can use more phones to connect to EggRider display, you have to activate for every phone.

### Why are my EggRider settings not saved?

When you write the EggRider settings from the app to the display, they are saved permanently only when you press the `Power` on the display.

### What is the maximum power EggRider supports?

EggRider can support virtually any power. You have to keep in mind that the maximum power it is given by your motor controller and that it can't be bypassed.

### What is the maximum voltage EggRider supports?

EggRider supports direct voltage up to 60V (maximum 52v nominal voltage batteries). We can support systems with higher voltages only with specific controllers and with special connections to 12V output.

### Why do I get an alert even if I updated my EggRider: "Your EggRider display version (Unknown/v2.x.x) is lower than the supported version by the app (v2.x.x)?"

You have to connect with the app to the display to make the warning disappear after an update.

### What does "R10", "R35"... means on the display?

The Rxx represents the range in km/mi. If there is an error it will be replaced with Exx representing the error code.

**Why trip data is not registered when my phone is in the pocket?**

You have to make sure the app is allowed to run in the background. Please search for "Lock App in background"

**When does a trip stop recording?**

At every connection a new trip is started and it ends on disconnection or by pressing "Restart" icon on the Dashboard page.

**What happens if I connect my display wrongly?**

If your display comes with adapters (Lishui/Mate X/Rad) Please make sure it is connected correctly.

> Please do not use male-to-male or female-to-female adapters. Wrong connection can damage the display or the bike and void your warranty. **Contact us via email**

**How can I configure different Road and OffRoad mode settings?**

If you see Road or OffRoad button gray out please follow the **initial Bafang setup**

**Speed is not accurate. How can I fix this?**

In order to get an accurate speed on EggRider display, you will need to configure your **wheel size**.

**Why my headlight is not turning on?**

This usually happens when you did not set up your **protocol** correctly. If that is not the case it can be that EggRider doesn't support this functionality on your bike or there is a hardware problem with your system.

**Why I can't see speed on my display (--.- km/h or error E FF)?**

This usually happens when you did not set up your **protocol** correctly.

**My EggRider turned off when I still had plenty of battery left. How can i fix this?**

In order to fix this you will need to configure your **battery settings** .

**Why do I get "No Lishui Settings / No ASI Settings" error on my display.**

You get this notification if Lishui or ASI settings have not been configured yet. This is a common error that happens when you set up EggRider for the first time. In order to fix this please check our **Troubleshooting Page** .

**My connectors are both female?**

Please do not use male-to-male adapters. Wrong connection can damage the display or the bike and void your warranty. **Contact us via email**

**My connectors are both male?**

Please do not use female-to-female adapters. Wrong connection can damage the display or the bike and void your warranty. **Contact us via email**

Last update: September 3, 2024