EggRider User Manual

For EggRider V2 ebike display and mobile apps

EggRider Team

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1. EggRider user manual

1.1 Personalize your ebike ride

EggRider is the fusion of an e-bike display with a mobile app, allowing you to enhance the performance of your e-bike ride. You can get your riding statistics and customize your riding profile.

1.2 Why EggRider

- Compact design with premium feel
- Ebike setting personalization
- Road/Offroad profiles
- Ride statistics
- Continously improving
- Mobile apps

Android	iPhone
	

Last update: February 17, 2021

2. EggRider display setup

2.1 Install display on your handlebar

Measure handlebar	Tighten the screw	Allow slight rotation	Plug-in the connector
			

Please make sure the diameter of the handleber is **22.2 mm** in the place where you want to install EggRider display.

Screws have to be driven to exactly the right depth. Too tight, and you might break the display. Please allow some movement for display to rotate.

Find the spot on the handlebar, open the hinge, make sure no other components stop the display from fixing. Plugin the connector to your ebike

Attention

The first time you power on the display it is recommended to reset the display to defaults by pressing `M`+`Power` until display turns on. You should see **Load default settings**. (see Speed shows --.-km/h troubleshooting)

2.2 Connect with the mobile app

Android	iPhone
GET IT ON Google Play	Download on the App Store

Download the mobile app from the store by clicking on one of the images above.
At startup, an **automatic scan** is triggered for nearby devices. If the scan finishes and you still don't see the device in the list, restart display and pull down on the page to manually trigger a re-scan.
When the device shows in the list you can tap on it to initiate the connection.

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

2.3 Activation

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

> If correct information is povided, the activation is instant.

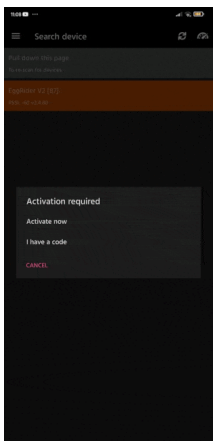
The following information is required:

- **Shop name** - Insert the shop where you bought EggRider display from. If it is a website insert **withouth www.** or **.com** (Example if you bought from www.shop.eggrider.com you should insert eggrider).This field offers suggestions while typing, so choose from the suggestions to avoid mistakes.
  Typing the first letters gives you the correct name of the shop *(see example below)*. If the shop doesn't appear in the suggestions, please contact your vendor.

Example: Choosing the shop name correctly

Type the first letters of the shop name and suggestions will appear like in the example below

Activation example



- **Order ID** - it is usually a number and you can find it on your order email or invoice
- **Your email**

Attention

Inserting wrong information will lead to activation delays.

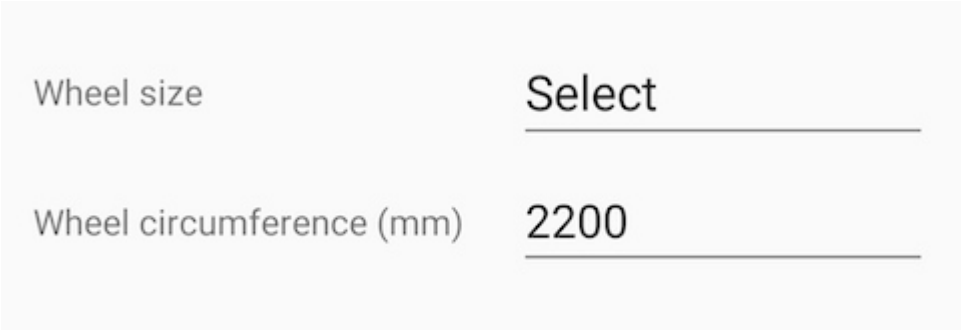
2.4 Important configuration

2.4.1 Wheel size

To calculate the **speed** we use Wheel circumference (mm) 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

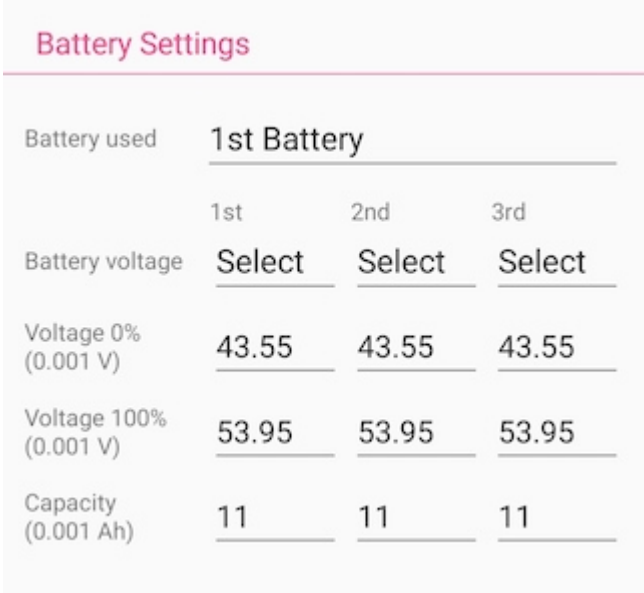
> **Info**
>
> The **Wheel size** drop down is just a helper with predefined values for **Wheel circumference**. It is normal to go back to **Select**.



2.4.2 Battery

To have a good battery percentage, you have to set the Voltage 0%/100% and capacity 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.

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



2.4.3 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.

Please carefully read the following pages to better understand EggRider.

Last update: February 19, 2021

3. Display

3.1 EggRider Display

3.1.1 Buttons

Short press definitions

`Power` short press to turn on or off

`Up` increase the assist level

`Down` decrease the assist level

`M` switch between Road and OffRoad

Long press and combinations definitions

`M` for 3 seconds to see **second screen** (trip data)

`Down` for 3 seconds to **activate headlight** and **dim the display**

`Up` for 3 seconds to activate **Walk Assist** mode. It is designed to allow motor to push the bike along while you walk beside it.

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

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

Save settings

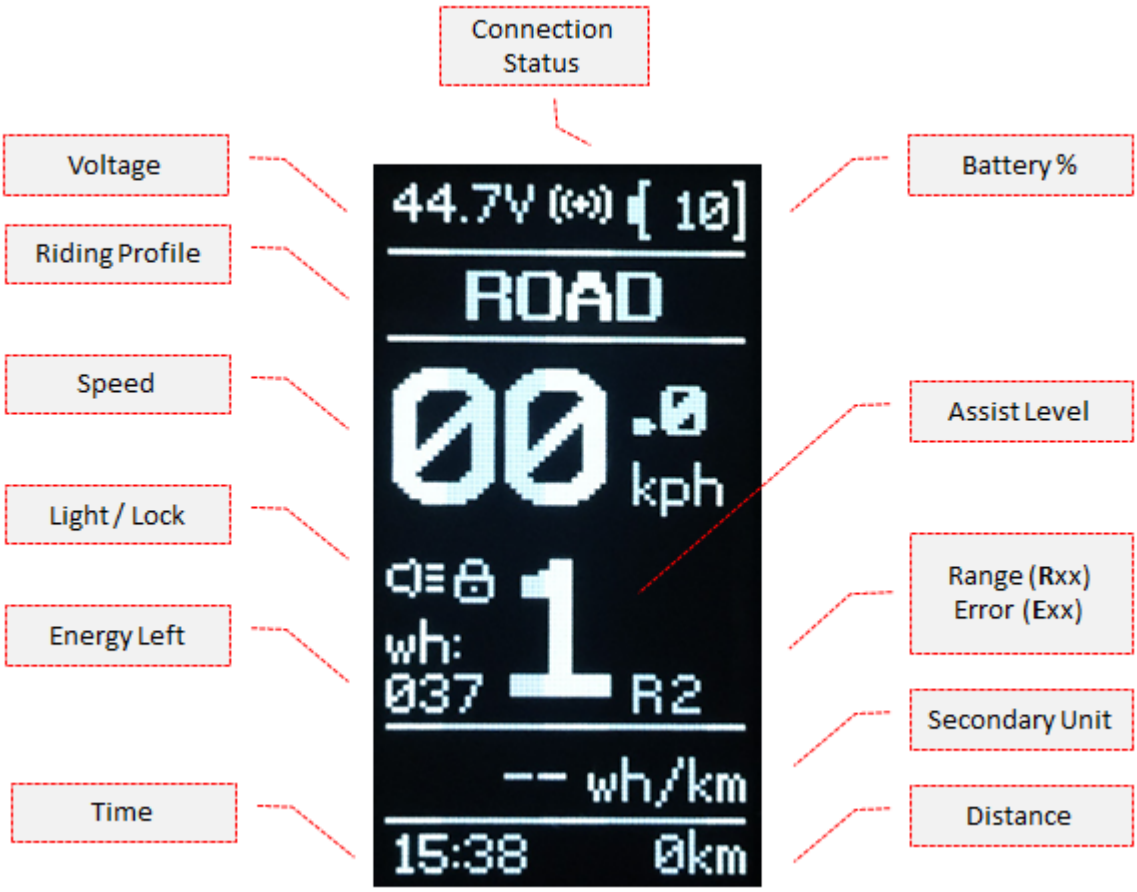
Settings, mode, levels, odometer and trip data is saved when the system is shut down from `Power` button. If the power supply is cut before pressing the `Power` button, the data is not saved into the permanent memory.

3.1.2 EggRider screens

Main screen layout V1	Main screen layout V2	Second screen	Update screen
			

3.1.3 Main screen content

You can select between the Layout V1 and V2 from the display settings in the mobile app.
On Layout V2 the Mode profile is embeded in the asssist level background: dark for Road mode and white for OffRoad mode.



- **Battery %** - Battery percentage
- **Voltage** - The battery voltage
- **Connection status** - Status of the mobile app connection
- **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 or mi. It shows when there is no error. example: R16, R25 (the number being distance in km or miles)
- **Light** - Headlight status (if the headlight is switched on)
- **Lock** - If the bike is locked in assist level 0
- **Assist Level** - Indicates the assist level the motor should provide
- **Secondary Unit** - It can be Power (W), Current(A), or Efficiency (watt per distance unit)
- **Time** - It can be the hour (if the app was connected previously) or current trip time
- **Distance** - Current trip distance

3.1.4 Second screen content (subject to content change)

Trip

Stats of the trip since last reset. Based on the setting, it can be since display power on or since a manually reset.

> **Note**
>
> If the **Reset trip -> At start-up** setting is selected these values reset only after 50-100 meters of distance is traveled. This is to allow downloading these stats with 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** 00001245 - Traveled distance (km/mi)
- **Wh** Energy used
- **mAh** Capacity used
- **BmAh** Full battery capacity estimation (last 10 trips or so)
- **R.mOhm** Battery series resistance (calculated in the last hour or so)
- **BCyc** Battery cycles (calculated using the declared capacity), estimates how many times you fully charged the battery.
- **Range** Distance to go until the battery runs out

Last update: July 21, 2021

3.2 EggRider display specification

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)

CONNECTIVITY

Bluetooth low energy (BLE)

PROTECTION

Dust and water-resistant - IP65 protection

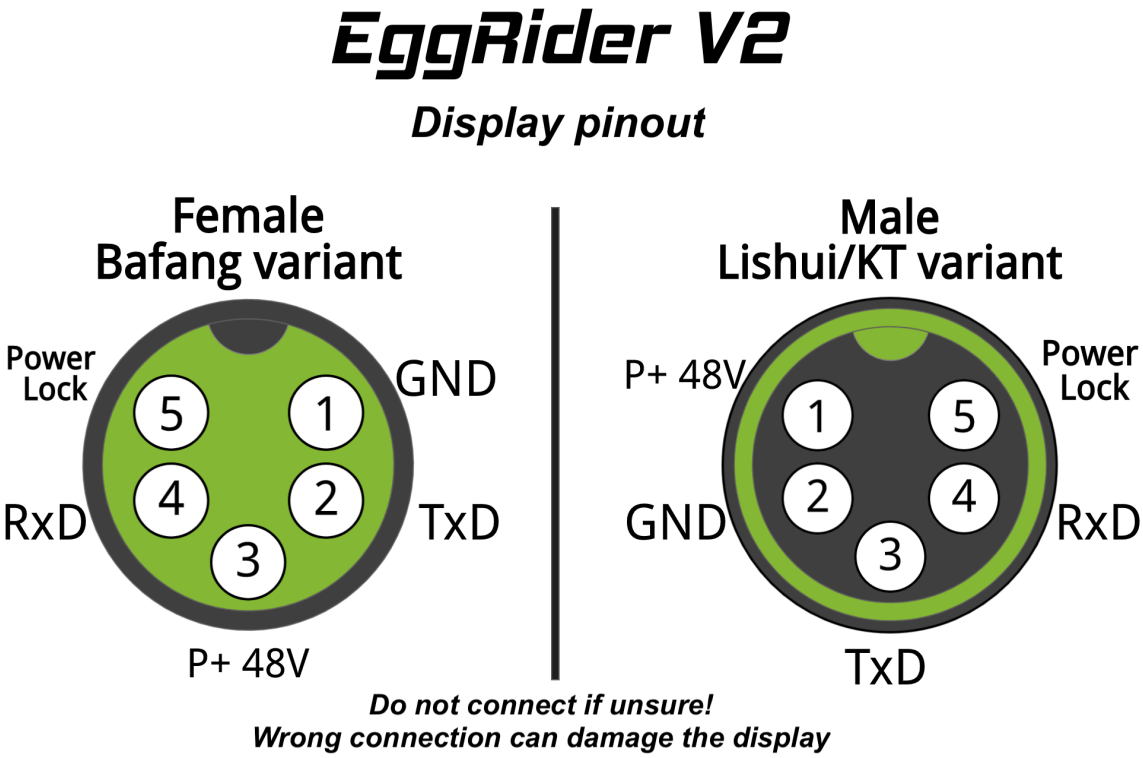
VOLTAGE

Supports direct voltage up to 60V (we can support higher voltages only with specific controllers by connecting to 12V output)

Current consumption

- Full brightness: <= 20 mA
- Low brightness (dimmed) <= 12 mA

3.3 Pinout



Last update: February 22, 2021

3.4 EggRider display features

Elegant design with premium feel.

Small enough to avoid unwanted attention.

Lightweight and compact design keeping your handlebar clean.

Voltage reading from 20V up to 60V.

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

Android and iOS mobile apps for more statistics and configurations.

Essential and accurate information; battery percentage, speed, power and distance.

Advanced stats; energy efficiency, range estimation, voltage and battery cycles.

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

EggRider mobile app available for Android and iOS.

Easy configuration from the EggRider app.

Ability to use the EggRider app as a larger display.

In-depth charts capability for your rides.

One button switch between two profiles

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

Last update: September 9, 2020

3.5 Firmware Update

3.5.1 EggRider Display Firmware Update

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

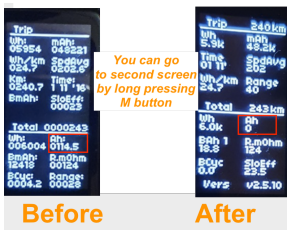
Display firmware is available in the downloads area or by selecting **Downloads** in the **About** page of the EggRider app.

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

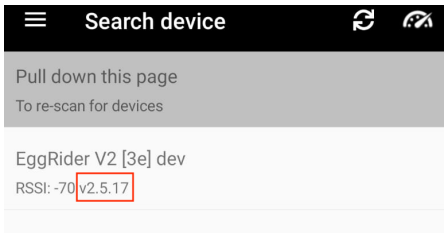
Update instructions for V2.5.23

> **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.
> The 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.

How to update EggRider display?

- **Using Google Chrome browser**
- **Using iPhone or iPad**
- **Using Android or Tablet**

Last update: June 30, 2021

3.5.2 EggRider Display firmware update using Google Chrome browser

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

Display firmware is available in the downloads area or by selecting **Downloads** in the **About** page of the EggRider app.

> **Attention**
>
> This works only with Google Chrome browser and requires Bluetooth Low Energy device.
> We successfully tested on PC, MAC, Android and iPhone.

Steps to update

1. Backup your settings and ODO stats
2. Put EggRider in **Update mode**. With EggRider Display off, press `Up`+`Power` until it shows **EggRider Updater** screen

3. Go to **Downloads section**
4. Select the latest **eggrider_fw_v_xx_stable.zip** (firmware version)
   Do not extract
5. Go to **Firmware update website** (Make sure to open in Chrome)
6. Select **Choose a firmware package**
7. Select the previously downloaded **.zip** file
8. Choose **Select device**
9. Select **EggRiderBL** from the list and tap **Pair**
10. Wait until update is finished and display restarts
11. Make sure the new firmware version is shown on the **Search page**
    a. If version is not shown correctly, disconnect from the display
    b. Pull down to refresh the display list, you should see the new version.
12. Connect with the **EggRider app** to see that the update alert disappears.

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

Last update: June 30, 2021

3.5.3 EggRider Display firmware update using Android

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

Display firmware is available in the downloads area or by selecting **Downloads** in the **About** page of the EggRider app.

The recommended app for updating the display firmware is **nRF Connect**. Alternatively you can use **nRF Toolbox**.

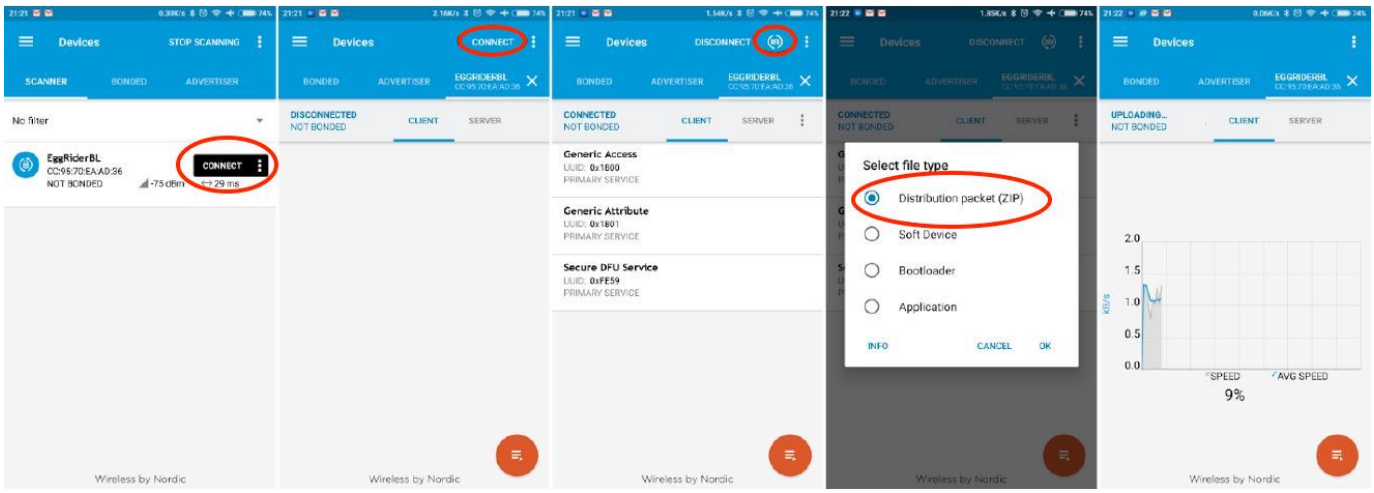
Steps to update using nRF Connect

1. Backup your settings and ODO stats
2. Download **nRF Connect** app
3. See below **Android nRF Connect screenshots**, highlighted in red where to click
4. Put EggRider in **Update mode**. With EggRider Display off, press `Up`+`Power` until it shows **EggRider Updater** screen

5. On your phone open **EggRider** app
6. Go to **About** page
7. Select **Downloads section** (goes to Bitbucket.org)
8. Select latest **eggrider_fw_v** (firmware version)
9. Open **nRF Connect** app
10. Look for **EggRiderBL** in the **Scanner** tab
11. Select **Connect** (if the connection fails get closer to the display and try again)
12. Select **DFU** (Top Right corder)
13. Select **Distribution packet (zip)**
14. Choose the file downloaded at step **7**
15. Wait until display restarts to the main screen
16. Make sure the new firmware version is shown on the **Search page**
    a. If version is not shown correctly, disconnect from the display
    b. Pull down to refresh the display list, you should see the new version.
17. Connect with the **EggRider app** to see that the update alert disappears.

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

Android nRF Connect screenshots example



Last update: June 30, 2021

3.5.4 EggRider Display firmware update using iPhone

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

Display firmware is available in the downloads area or by selecting **Downloads** in the **About** page of the EggRider app.

The recommended app for updating the display firmware is nRF Connect. Alternatively you can use nRF Toolbox.

Updating using nRF Connect (New Version)

Steps to update using nRF Connect (Old Version)

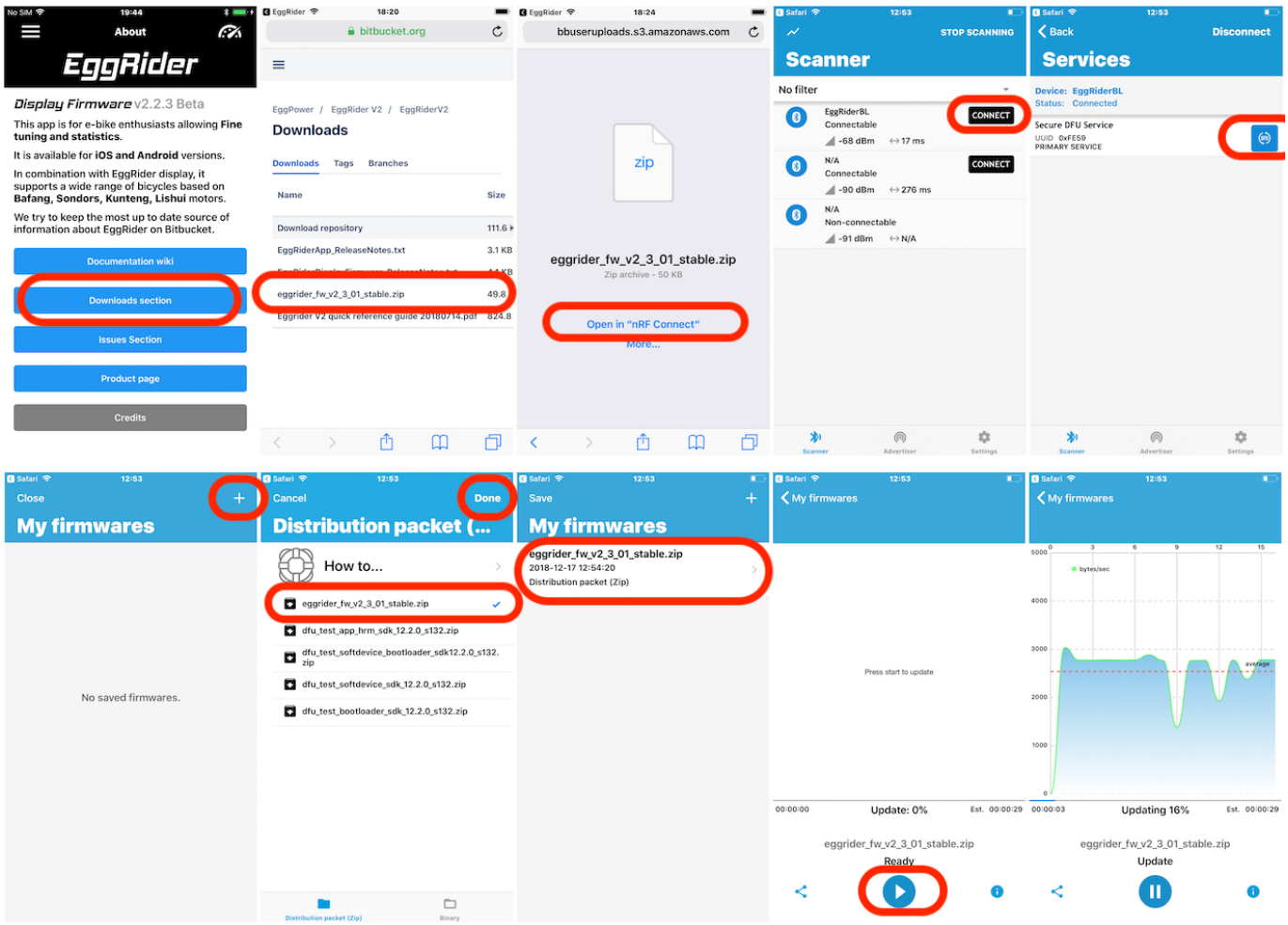
1. Backup your settings and ODO stats
2. Download **nRF Connect** app
3. See below **iOS nRF Connect screenshots**, highlighted in red where to click
4. Put EggRider in **Update mode**. With EggRider Display off, press `Up`+`Power` until it shows **EggRider Updater** screen

5. On your phone open **EggRider** app
6. Go to **About** page
7. Select **Downloads section** (goes to Bitbucket.org)
8. Select latest **eggrider_fw_v** (firmware version)
9. Select **Open in "nRF Connect"**
10. Look for **EggRiderBL** in the **Scanner** tab
11. Select **Connect** (if the connection fails get closer to the display and try again)
12. Select **DFU**
13. On **My firmwares** page select **+** from the top right corner
14. Choose the file downloaded at step **7**
15. Select **Done** from top right corner
16. On **My firmwares** page select the firmware

17. Select `Play` button
18. Wait until display restarts to the main screen
19. Make sure the new firmware version is shown on the **Search page**
    a. If version is not shown correctly, disconnect from the display
    b. Pull down to refresh the display list, you should see the new version.
20. Connect with the **EggRider app** to see that the update alert disappears.

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

iOS nRF Connect screenshots example



Last update: June 30, 2021

4. Mobile App

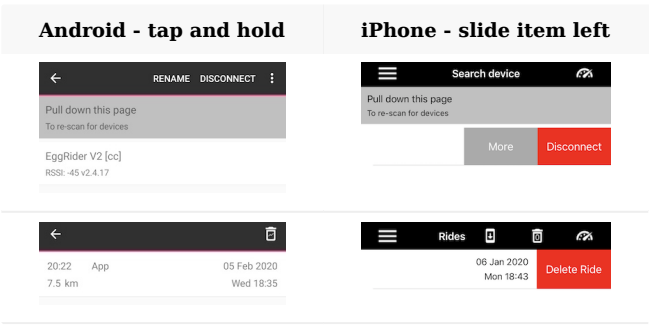
4.1 EggRider mobile apps

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.

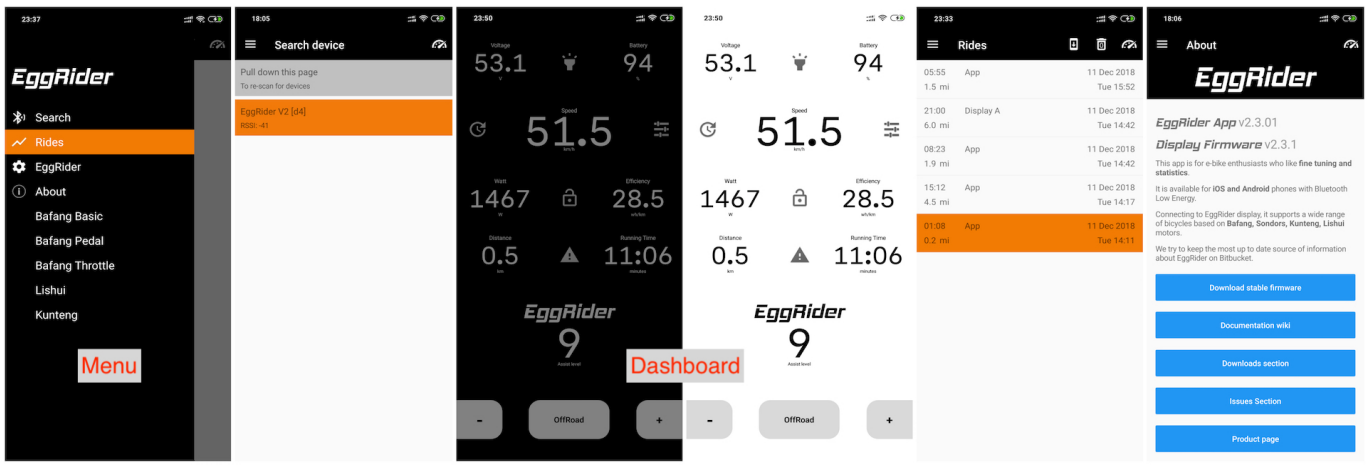
4.1.1 Main Android and iOS differences

On Android, when in main pages press ‘Back’ to kill the app (and on any other page navigates back to the previous page).

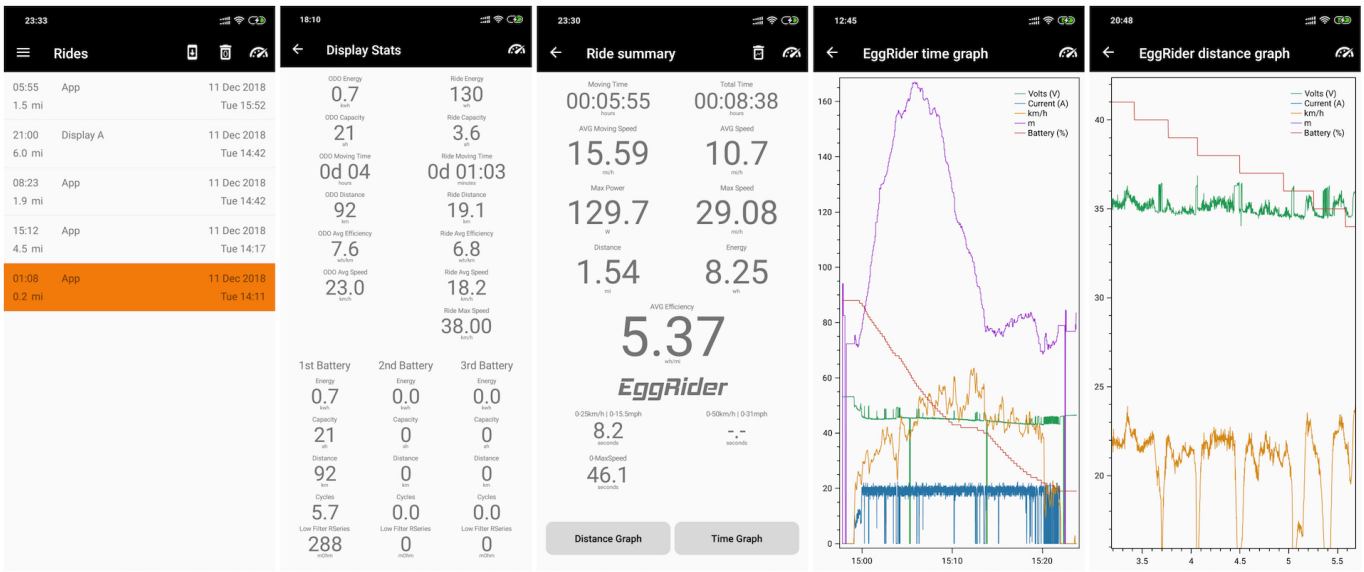
To trigger actions on items from lists pages (like **Search device** or **Rides**) you have to:



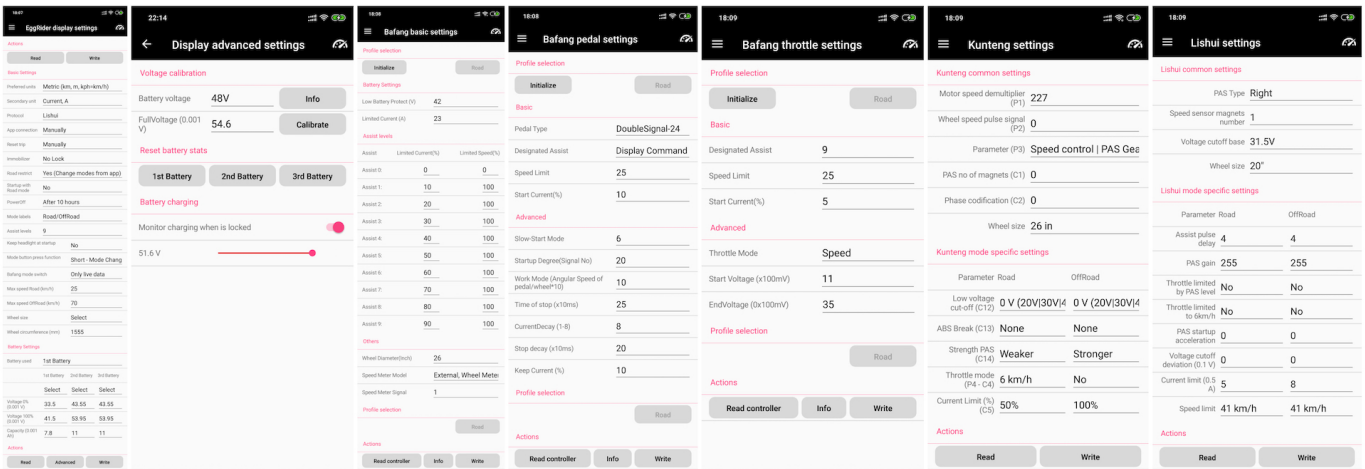
4.1.2 App overview main pages



4.1.3 App overview stats pages



4.1.4 App overview settings pages



Last update: February 17, 2021

4.2 Dashboard page

> Accessible from menu **Dashboard**

Shows real-time information about your riding.

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

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.

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: September 9, 2020

4.3 Search page

Accessible from menu **Dashboard**

It shows the list of EggRider displays in range.
Tap on the device name in the list to connect with the app.

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.

4.3.1 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 plugged in and turned on
- Restart the EggRider display
- Pull down the page to refresh the scan

Last update: September 9, 2020

4.4 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. Rides are differentiated by the source labels.

With **App** - Real-time information collected by the app when connected to EggRider display. (includes GPS information such as altitude).

With **Display A (Auto)** - The last display ride data read at every connection.

With **Display M (Manual)** - It will allow you to see your last ride data by tapping **Display Stats** .

To go back, tap `Rides` button in the top left corner.

The following functions are displayed on the top of the screen:

- **Display Last Ride Stats** and **Delete all Rides** with distance < 0.1 km
- **Delete Ride** - It deletes all ride-related information.

4.4.1 Ride Summary

Accessible from menu **Rides**.

It shows recorded rides stats.

4.4.2 Ride Distance/Time Graph

Accessible from **Ride Summary** screen by tapping **Distance Graph** or **Time Graph**. Shows the ride's real-time information by having x-axis as distance or time.

Distance Graph -The ride real-time information (having x-axis as distance).

Time Graph -The ride real-time information (having x-axis as time).

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

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

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.

4.4.3 Display Stats

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

ODO labels -lifetime display data values.

Ride labels -individual display trip specific values.

Three individual columns for each battery's stats.

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

Last update: September 9, 2020

4.5 Display settings

> Accessible from menu **Display Settings**

4.5.1 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

It controls when the current trip is reset on the display. If **Manually** selected, the trip will reset only when requested from the **Dashboard** page. When selected **At start-up** the trip will reset after every power cycle but keeps the old trip information so it can be downloaded by the app until bike starts to move.

Options

- Manually
- At start-up

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 include assist level 0.

> **Attention**
>
> Keep in mind that internally when selected lower than 9 assist levels the following levels are used for 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, 5(2), 9(3)]
> - 5 - [0, 1, 3(2), 5(3), 7(4), 9(5)]

Options are 9, 3 and 5

Keep headlight at startup

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

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

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.

> **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**

> **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.

4.5.2 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. EggRider display works up to 60V when directly connected. With certain controllers we can overcome this limit by connecting to a 12V output.

> **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: July 21, 2021

4.6 Display advanced settings

4.6.1 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.

4.6.2 RESET BATTERY STATS

Option to reset battery statistics.

Options

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

4.6.3 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.

4.6.4 CURRENT CALIBRATION

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

4.6.5 ODO Reset

Function used to permanently reset the ODO stats

4.6.6 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

4.6.7 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: April 26, 2021

4.7 App settings

> Accessible from menu **App Settings**

4.7.1 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

4.7.2 LOCATION

Use GPS data

Enabling this functionality offers altitude measurements in the ride stats.

4.7.3 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

4.7.4 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: June 30, 2021

4.8 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: April 26, 2021

5. E-bike Settings

5.1 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: September 9, 2020

5.2 Bafang

5.2.1 **Bafang settings**

Attention

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.)

Attention

If you are not familliar 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.

Info

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.

Info

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

Bafang switch mode setup

Available with firmware and mobile app version > v2.2.07

FIRST CONFIGURATION

> **Important**
>
> 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.

BAFANG ERROR CODES

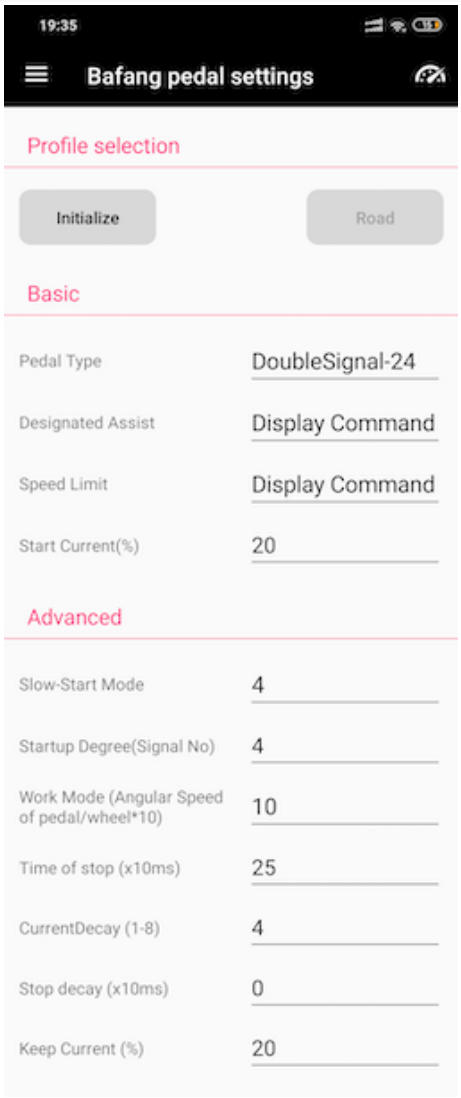
E03 - Brake ON (03H)
E04 - Throttle doesn’t go back (in the furthest position) (04H)
E05 - Throttle fault (05H)
E06 - Low voltage protection (06H)
E07 - Over voltage protection (07H)
E08 - Hall signal wires fault on the motor (08H)
E09 - Phase wire fault on the motor (09H)
E10 - Controller temperature 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)

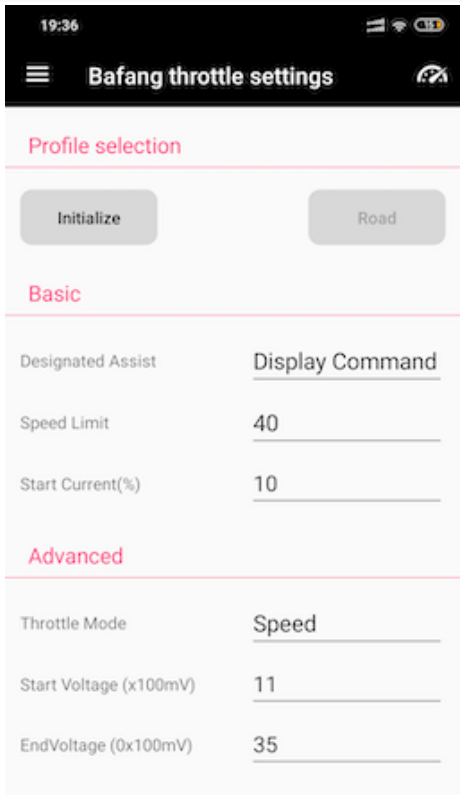
BAFANG BBS01 250W DEFAULT CONFIGURATION

Basic

Pedal

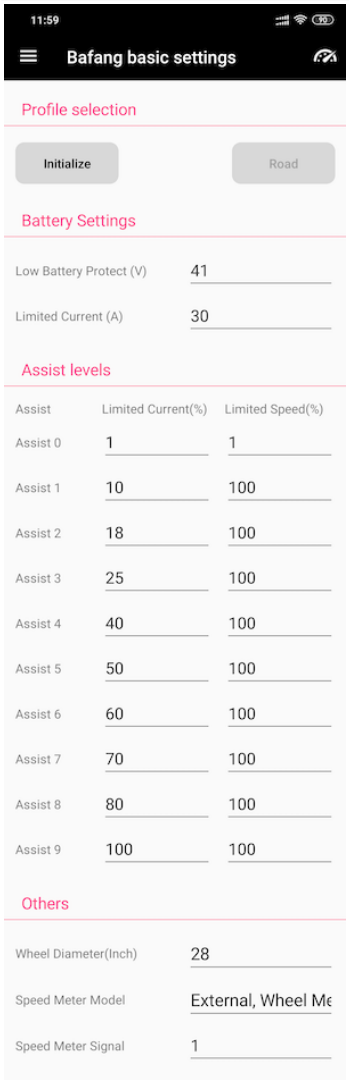


Throttle

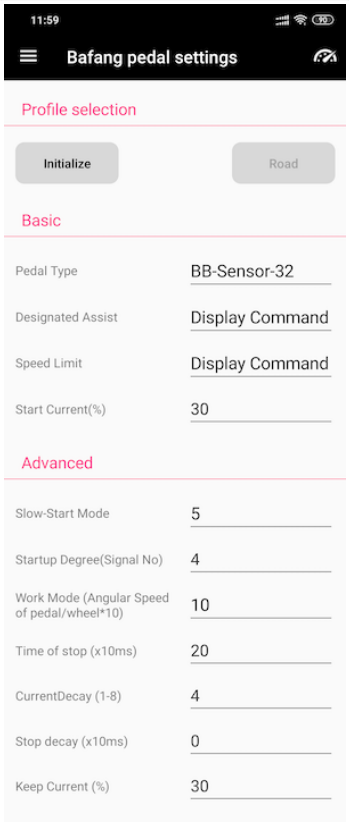


BAFANG ULTRA M620 DEFAULT CONFIGURATION

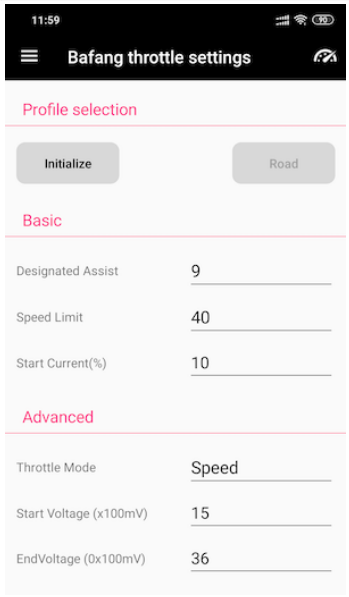
Basic



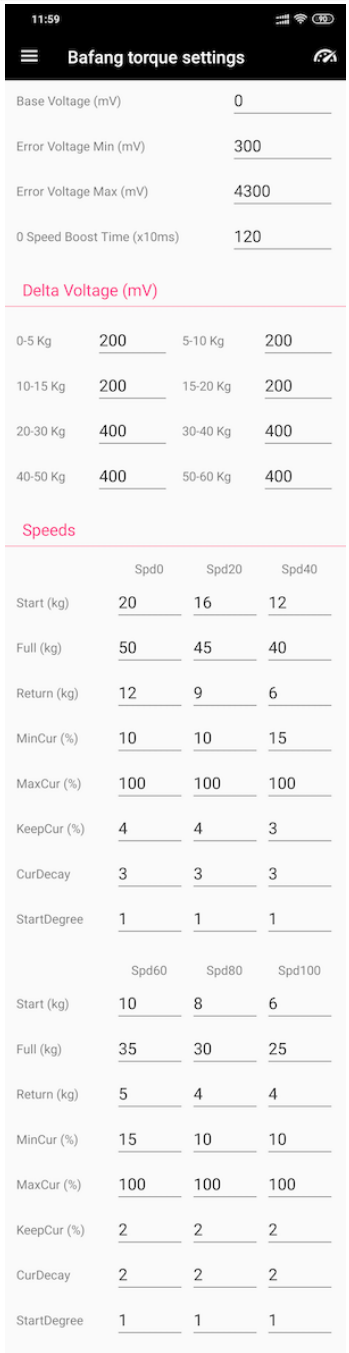
Pedal



Throttle



Torque



BAFANG BBSHD 1000W CONFIGURATION EXAMPLES

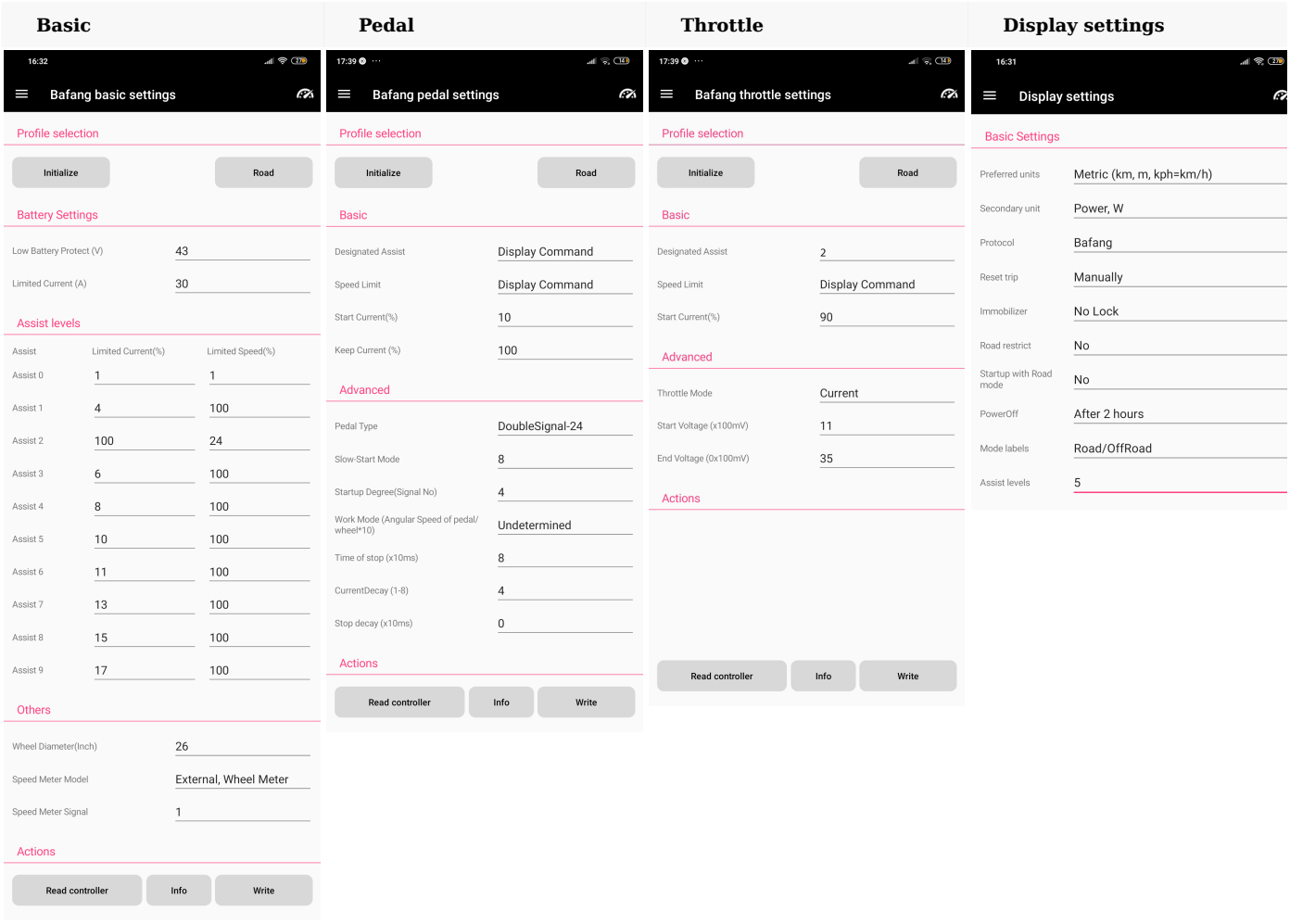
Disclaimer

The following examples are for demonstration purpose only. The EggRider V2 display does 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

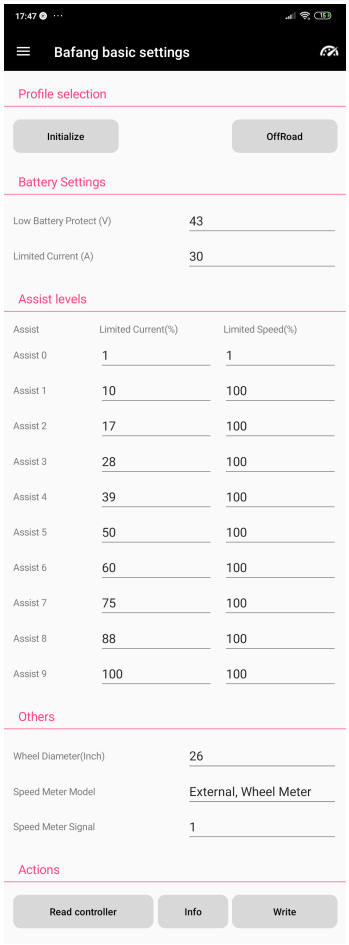


Example 2

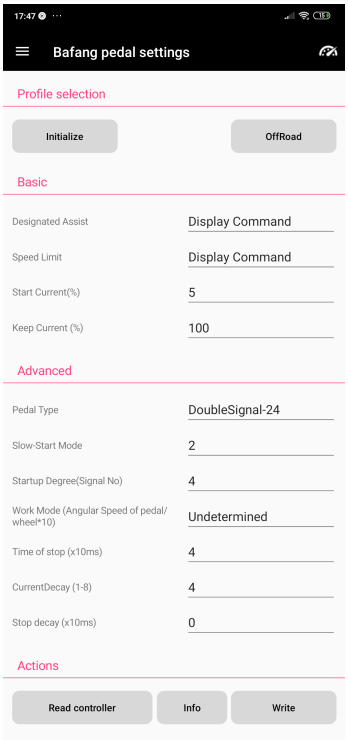
Features

- 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)

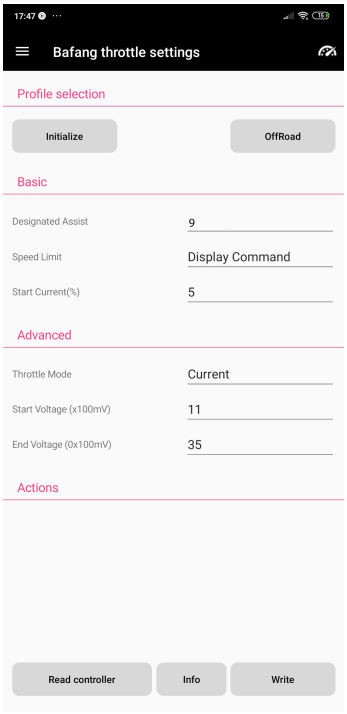
Basic



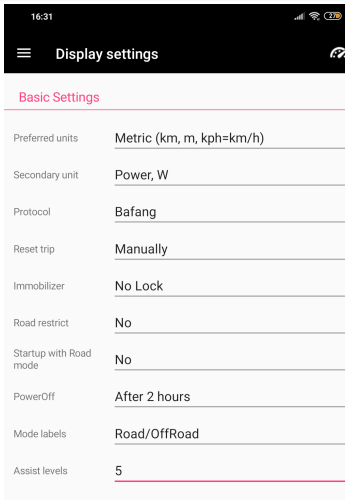
Pedal



Throttle



Display settings



Last update: February 19, 2021

5.2.2 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.

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.

Info

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.

BATTERY SETTINGS

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.

For 48V battery packs it sould be set aproximately to 43V

LIMITED CURRENT (A)

Represents the global current limit in ampers (A).

This sets the power level that the drive unit will pull from the battery pack. Be aware that just because it is set lower, it does not mean that it may not draw more amps for brief periods. If you don’t want to stress the battery pack, you may want to set this number a bit lower than you think (2-3 amps lower). This preventive measure is beneficial for lower powered units such as BBS02, if your watt meter shows that it is pulling too much power on a regular basis. This variable will be set lower than 25 if you have a BBS01 or a BBS02 with a lower power level rating than 750W. If this is set lower than 25 from the factory you CANNOT RAISE it safely unless you are sure it is a 750 Watt unit & controller (it should be specified on the bottom of the unit) and your battery can handle the draw .

> **Attention**
>
> Keep this value the same on both Road/OffRoad profiles to avoid unexpected behaviour. 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.

ASSIST

The number of the assist level

LIMITED CURRENT(%)

The percentage of the current from the **Limited current (A)**.

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

```
It is set by default to the value of "1".
```

Last update: November 5, 2020

5.2.3 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.

> **Tip**
>
> To **disable pedal assist** set **Dessignated Assist = 0** and in Bafang Basic page set for Assist 0, **Limited Current(%) = 0** and **Limited Speed(%) = 0**.

> **Tip**
>
> To have always **maximum power** for **pedal assist** set **Dessignated Assist = 9** and in Bafang Basic page set for Assist 9, **Limited Current(%) = 100** and **Limited Speed(%) = 100**.

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

CURRENTDECAY(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: November 5, 2020

5.2.4 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.

> **Tip**
>
> To **disable throttle** set **Dessignated Assist = 0** and in Bafang Basic page set for Assist 0, **Limited Current(%) = 0** and **Limited Speed(%) = 0**.

> **Tip**
>
> To have always **maximum power** for **throttle** set **Dessignated Assist = 9** and in Bafang Basic page set for Assist 9, **Limited Current(%) = 100** and **Limited Speed(%) = 100**.

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

> **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: November 5, 2020

5.2.5 **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: November 5, 2020

5.3 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.

5.3.1 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.

SPEED LIMITATION

When in speed limitation, the values that are used from power levels are only the speed %.

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 LIMITATION

When in current limitation, both values power and speed % are used.

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.

RADPOWER MODE

Replicates the RadPower original display running mode. When using this option you should set to 5 assist levels.

> Power levels maps are not used with this option

Last update: April 26, 2021

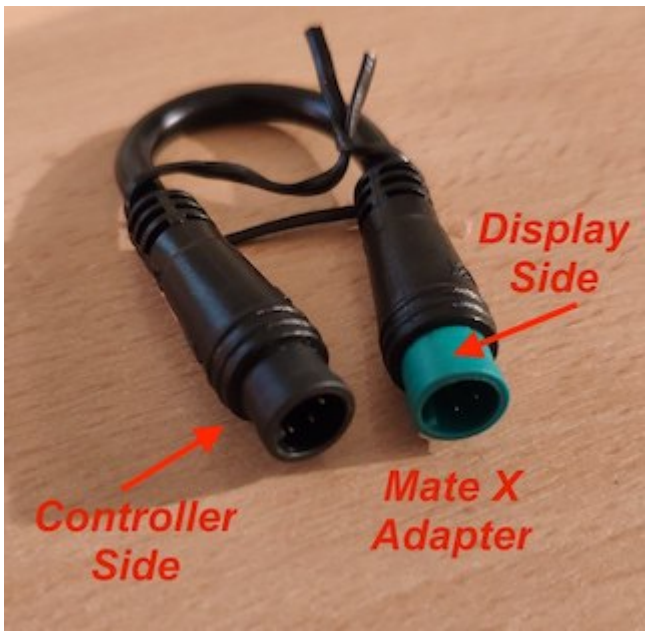
5.4 EggRider V2 Mate X settings

> 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

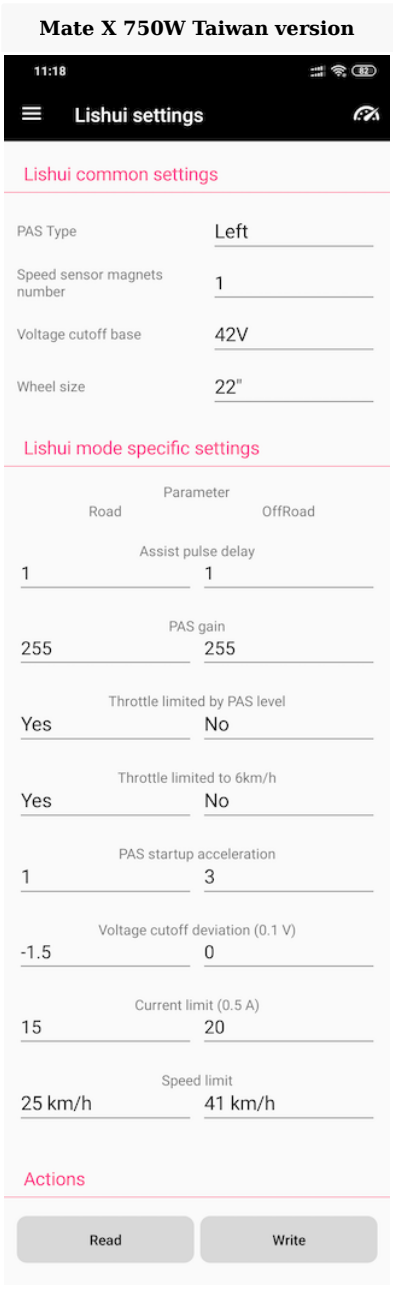
5.4.1 Settings example

> **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



Last update: April 26, 2021

5.5 EggRider V2 Rad Power bikes settings

Accessible from menu **Lishui**

All Rad Power bikes have Lishui controllers with custom connectors. They require EggRider with specific RadPower connector and the display protocol used should be Lishui or Lishui Rx/Tx. To see the parameters description 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**)

Please check:

- Current Limit
- Running strategy

5.5.1 Settings example

Attention

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

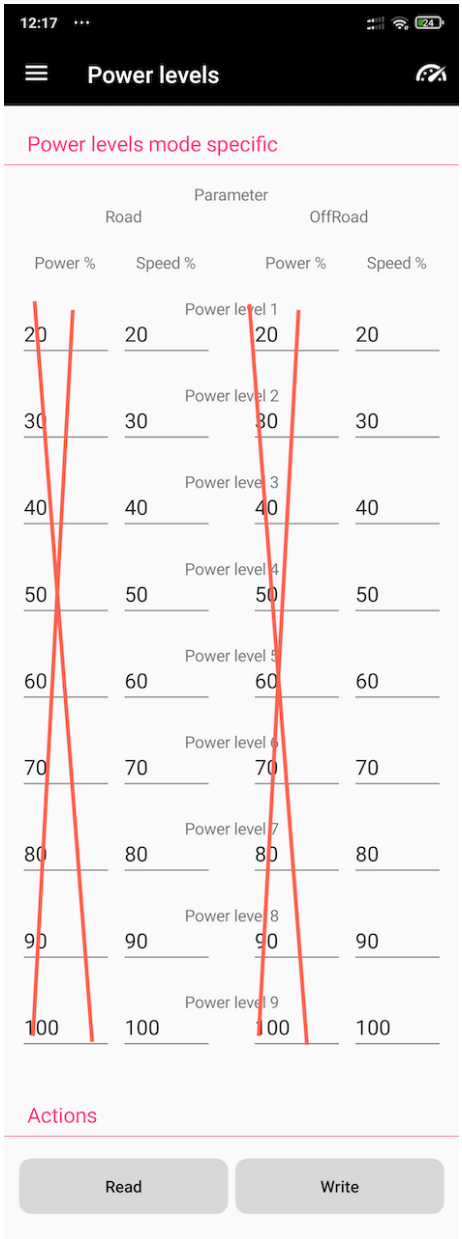
If you want to increase the speed limit above 41 km/h, you can change wheel size to 16" on the **Lishui settings** page. This change will affect all speed limits.

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

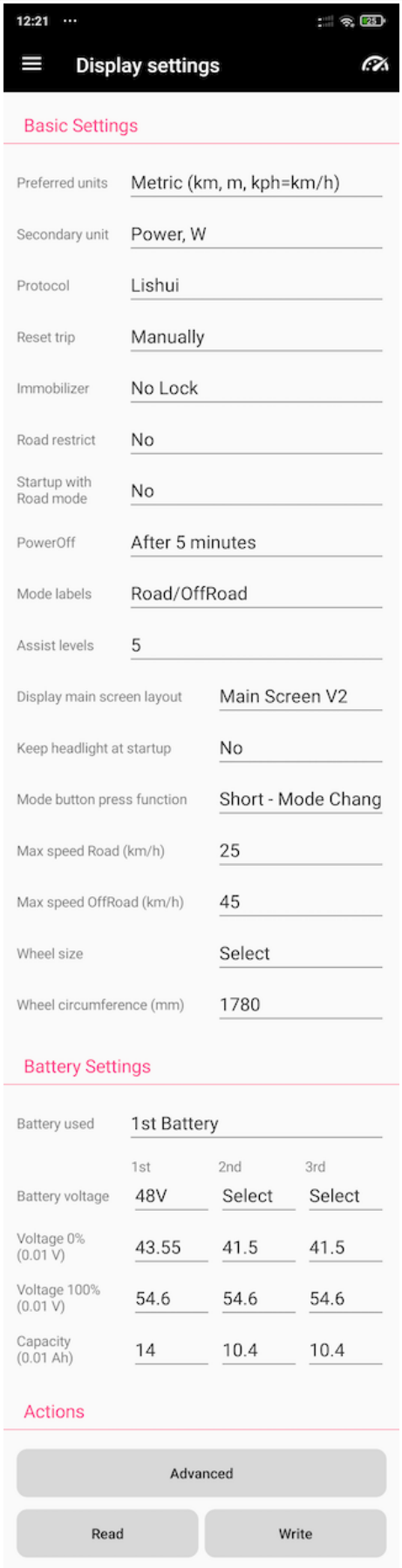
Rad Runner configuration example

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

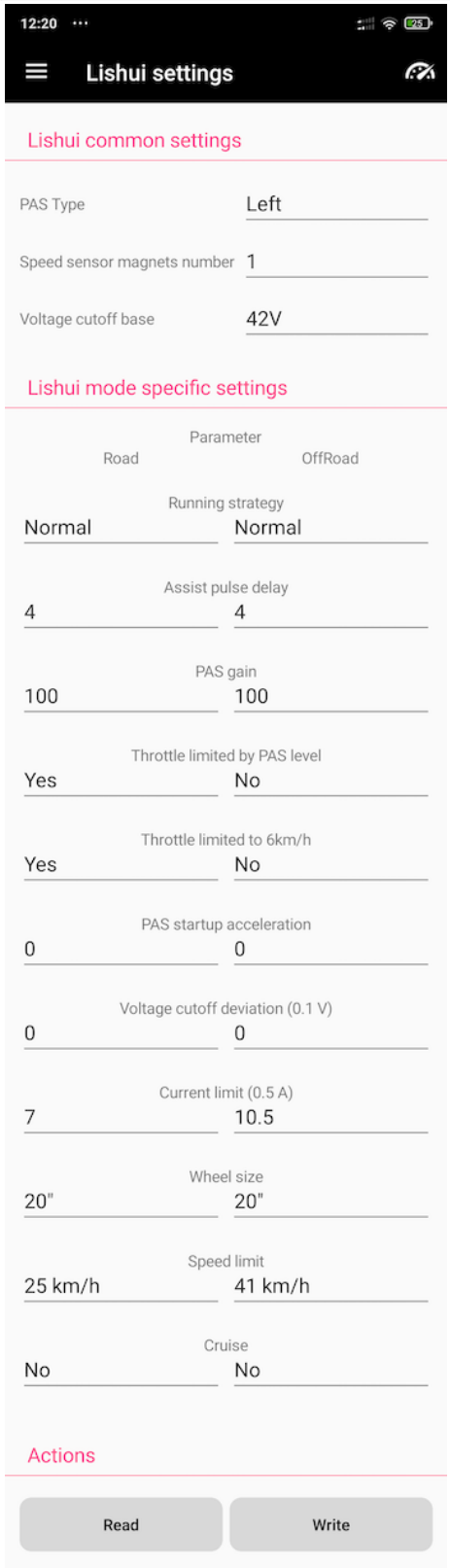
Power Levels



Display



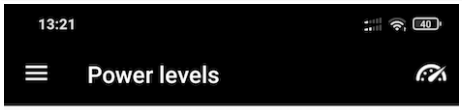
Lishui



Rad Wagon configuration example

> Please keep in mind that if you set **Power %** and **Current limit** too low, the controller might default to a value that is higher that the complesive current calculated by **Power %** / 100 * **Current limit**. Similar if set too high you might end up with a lower default value set by controller. This vary from controller to controller so you might have to find the limits that work for you.
> Also the speed limits used by the **Power levels** are the ones from the **EggRider display settings**

Power Levels



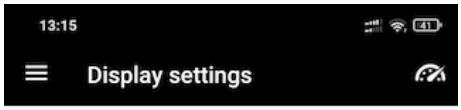
Power levels mode specific

	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

Actions

Read | Write

Display



Basic Settings

Preferred units	Metric (km, m, kph=km/h)
Secondary unit	Current, A
Protocol	Lishui
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

Actions

Advanced

Read | Write

Lishui

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

Actions

Read | Write

Last update: July 21, 2021

5.6 Kunteng settings (KT)

Discontinued

Unfortunately due to some hardware incompatibility in communication voltage levels we decided to discontinue the Kunteng(KT) version until further notice. If you are a customer that already purchased this version and you are experiencing issues please get back to us.

Accessible from menu **Kunteng**

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.

5.6.1 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.

5.6.2 Kunteng Mode Specific Settings

Low voltage cut-off (C12)

OPTIONS

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

ABS Break (C13)

Options

- None
- Best brake regen
- General brake regen
- Weaker brake regen
- Poor brake regen
- Bad brake green

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: September 9, 2020

5.7 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 can connect the EggRider display to the 12v output.

This configuration requires an external switch to power on/off the controller. Another option is to short circuit the ASI pin # 21 and 22 which will power on the controller when the battery is on.

This setup will loose the functionality to power on/off the controller from EggRider display.

> Power lock pin on the EggRider display should be left free.

ASI BAC500/800 pin #	ASI pin function	EggRider pin function
13	+12V	P+
16	Gnd	GND
17	Display Rx	TxD
18	Display Tx	RxD
21	Key out - External switch	-
22	Key in - External switch	-

Throttle Max Power (W)

PAS Max Power (W)

Motor Phase Current (A)

Regen Ratio (%)

Throttle Max Speed (km/h)

Pas Max Speed (km/h)

Battery Current Limit (%)

Field Weakening (Max 50%)

Last update: June 30, 2021

6. EggRider display compatibility

There are two main things to consider for compatibility:

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

> ⚠ **Attention**
>
> Having the same `connector/pinout` doesn't guarantee a compatibility.

6.1 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 we support more types of connectors, not only julet/higo 5 pin waterproof. Additionally we can create an adapter for you if you are happy to provide the pictures of your controller label and the connector.

6.2 Compatibility list

6.2.1 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.

6.2.2 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 👎

UART display connector	CANbus display connector
	

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

6.2.3 Mate bikes

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

Attention

EggRider V2 is not compatible with **Mate classic** bikes.

Bike compatibility list:

- MATE X 250
- MATE X 250+
- MATE X 750S

Controllers supported:

- Lishui LSW1545-5-2M
- Lishui LSW856-66M
- Lishui LSW856-66-1M

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

6.2.4 RadPower bikes

Compatible bikes:

- RadMission
- RadRunner Plus
- RadRunner
- RadRhino
- RadRhino Step-Thru
- RadMini
- RadWagon
- RadRover
- RadCity
- RadCity Step-Thru

6.2.5 CoastCycles bikes:

Compatible bikes:

- Buzzraw
- Buzzraw X

6.2.6 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 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	✅

6.3 Accelerated Systems Controllers

ASI controllers are compatible with EggRider V2 display 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

6.4 CYC Motor

CYC motors that use ASI controllers are compatible.

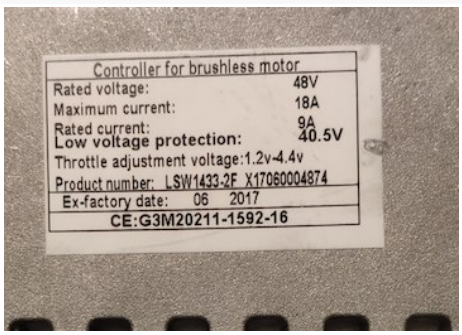
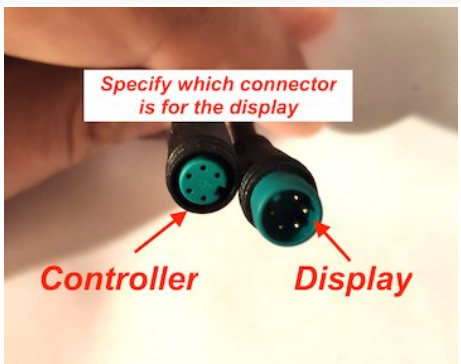
> **Attention**
>
> Special connection is required if you have battery greater than 52V.
> Please read our dedicated ASI page for more information

Compatible versions

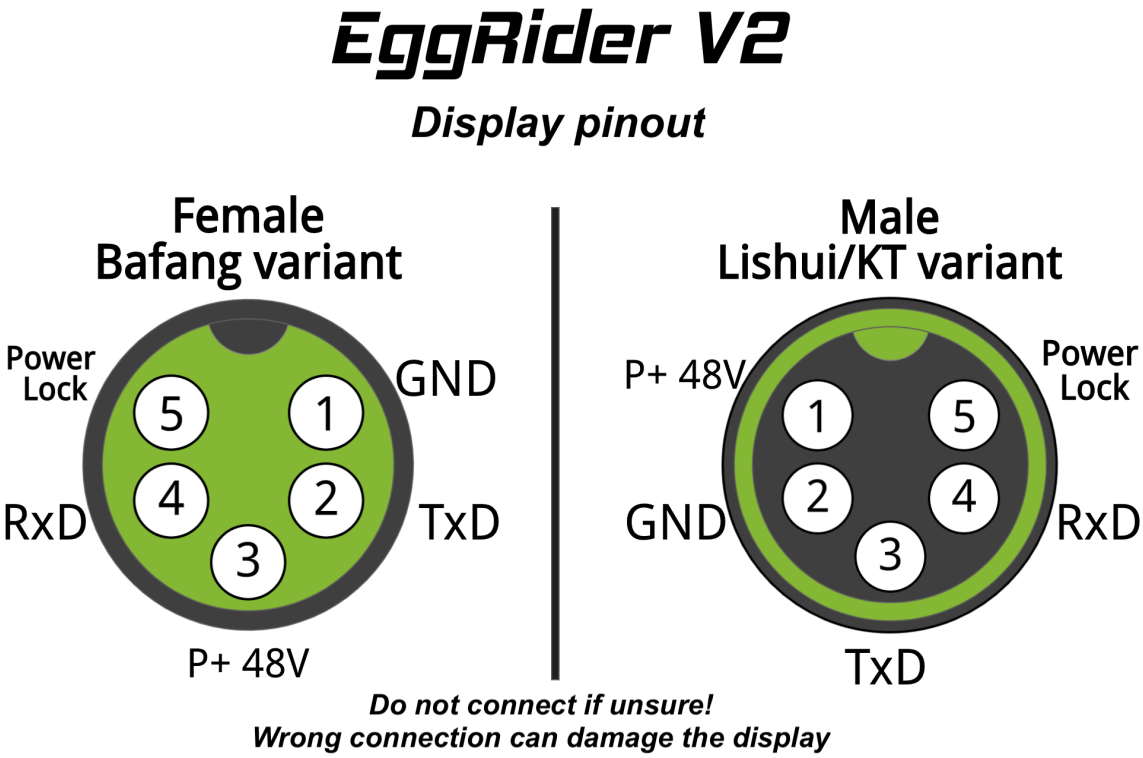
- CYC motor X1 Pro Gen 2 with controller ASI BAC855 or BAC2000
- CYC motor X1 Stealth with controller ASI BAC855

6.5 Check compatibility

If you are still unsure and would like to check compatibility, please send an email to compatibility@eggrider.com with a picture of your controller label and the connector that goes to the display and the display itself. See the below picture examples.

Controller label	Display connector	Display
		

6.6 EggRider V2 Pinout



Last update: June 30, 2021

7. Troubleshooting

7.1 Solve mobile app connection problems

7.1.1 My phone doesn't connect to EggRider V2

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:

> **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

7.1.2 Display keeps disconnecting

> **Info**
>
> Usually this happens because the app is not allowed to run in the background, so it disconnects when exiting the app. To prevent this from happening follow the steps below:

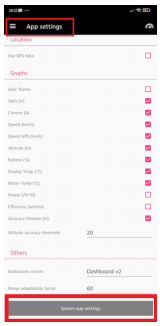
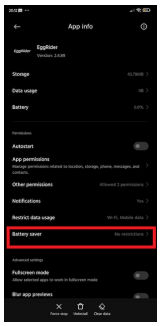
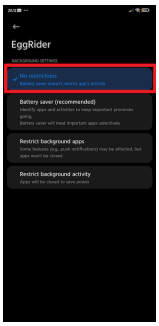
7.1.3 **Android Devices**

Turning off battery optimization for the app:

You have the ability to be redirected to **System app setting** directly from the EggRider app.
Follow these steps below:

1. Open **App Settings** page in the EggRider App
2. Click on **System app settings**
3. In the **Permissions** or **Advanced setting** sections you will find an option called *Battery Saver*, *Battery Optimization* or *Allow running in background*
4. Click on the option and make sure app is allowed to run in background, battery optimization is disabled.

Click to see the example

Step 1	Step 2	Step 3
		

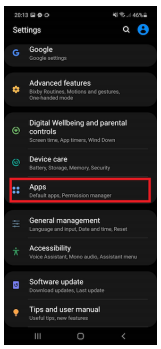
Info

Depending on the look and the version of Android the steps may vary a little.
Below you can find examples that will help you understand what to look for when searching for battery optimization settings.

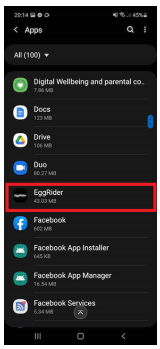
Samsung(S10, S20, Note, ...)

Click to see the steps

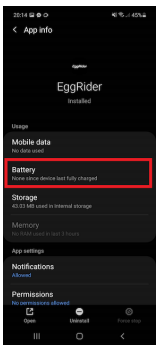
Step 1



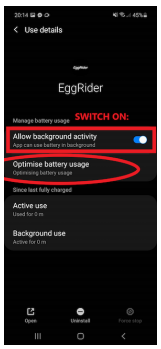
Step 2



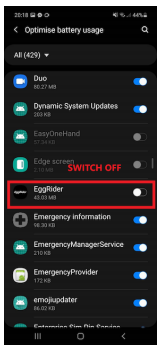
Step 3



Step 5

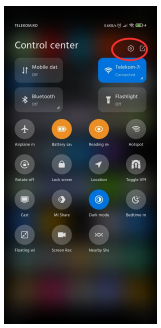
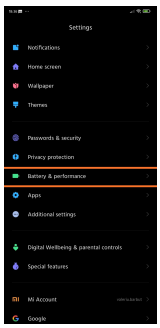
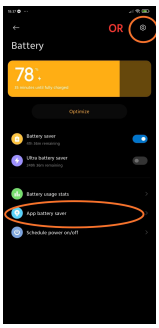


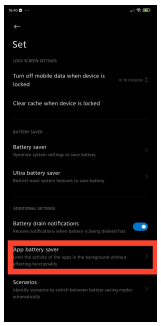
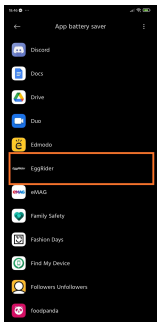
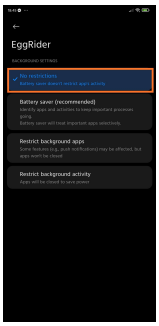
Step 5



Xiaomi(Mi, Redmi running MIUI 12)

Click to see the steps

Step 1	Step 2	Step 3
		

Step 4	Step 5	Step 6
		

Info

For slightly lower versions of MIUI the same principles apply but may vary a little.

7.2 EggRider display speed shows --.- km/h

EggRider display showing speed as **--.-km/h** can be caused by the following reasons

1. Protocol is not correctly setup.
2. Communication port issue
3. The display is not compatible with the connected controller.

7.2.1 Protocol is not correctly setup

Protocol has a list of various configurations, each controller brand having two possible options for example: Bafang and Bafang Rx/Tx Swap.

Most of the time the protocol is autodetected when display is reset to defaults: while display is off press `Menu` + `Power` buttons. (see Button combinations)

If by resetting is not show speed 0.0 km/h, the following steps should be followed:

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)

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

If none of the above options works it is most likely because of the reasons 2) or 3). In this case please contact over email.

7.2.2 Communication port is issue

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

How to identify where the issue is?

- By connecting EggRider to another another bike or controller. If it works correctly then the issue is on controller side.
- By connecting another compatible display to your bike or controller. If speed shows correctly then it is an issue on EggRider display. In this is the case please contact over email for warranty.

7.2.3 EggRider display is not compatible with the connected controller

If after the previous steps you are still facing issues then most likely it is a software incompatibility. Please contact us over email to arrange a return.

Last update: February 19, 2021

8. 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: April 26, 2021

9. 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: December 6, 2020

10. EggRider Release Notes

Latest stable releases:

> Please follow carefully the update instructions: Update instructions

- EggRider Firmware **v2.5.59** -> Release notes
- EggRider App Android **v2.5.05** -> Release notes
- EggRider App iOS **v2.5.05** -> 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

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Last update: July 21, 2021

11. Disclaimer

Disclaimer

The EggRider V2 display does not ensure legal compliance. It does provide 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: September 21, 2020

12. Frequently asked questions

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

No, EggRider display works withouth 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.

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 dissapear 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/Xmate/Rad) Please make sure it is connected correctly. Wrong connection can damage the display or the bike and void your warranty.

Last update: September 9, 2020