

Zecreat Mobility Users Manual

I. Overview

This APP connects to the motor controllers of electric vehicles (such as electric scooters, electric wheelchairs, etc.) via Bluetooth BLE (Bluetooth Low Energy). It can read real-time vehicle/motor status parameters and perform visual configuration and calibration on controller parameters including speed, acceleration, and vehicle functions. It is suitable for the commissioning and maintenance of electric scooters, electric wheelchairs, electric 4WD vehicles, and other equipment equipped with a series of controllers produced by Shanghai Zhici Electronics Co., Ltd.

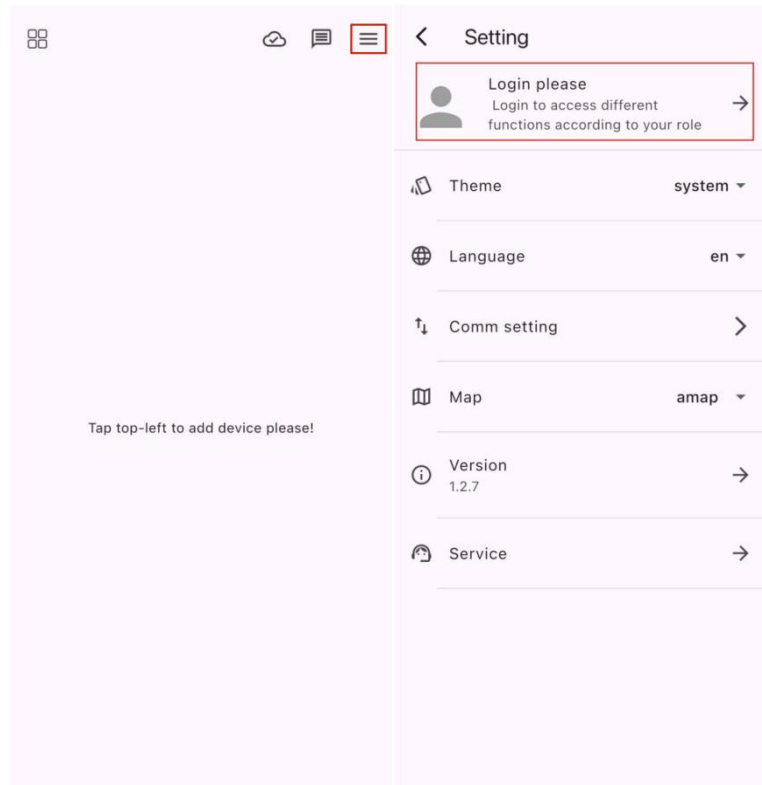
Some functions may not be available on different vehicle models. Please consult your supplier for details.

II. APP Account Registration and Login

To use this APP, you must first register an account and log in.

1. Account Registration

Tap the  icon in the upper-right corner of the APP home page to enter the settings interface. On this interface, tap **Please Login** to access the login screen.



On the login interface, click the **Register** button at the bottom to enter the registration page.

On the registration page, enter your email address or mobile phone number (phone number and email are supported for registration in Chinese Mainland; only email is supported outside Chinese Mainland).

Click **Send Verification Code**, then check your email or mobile phone for the verification code.

After receiving it, enter the code in the **Verification Code** field.

Set your login password in the **Password** field.

After reading the Privacy Policy and Terms of Service, check the checkbox to agree to the agreements, then click the **Register** button to complete registration.

The registered account has regular user permissions and cannot perform advanced functions such as controller configuration.

To obtain additional permissions, please contact your supplier for permission adjustment.

The image shows two side-by-side mobile app screens. The left screen is titled 'Login' and features a back arrow, a 'Login' button, and two input fields: 'Account[Email/Mobile]' with a red error message 'Account required' and 'Password' with a red error message 'Password length at least 8'. At the bottom are links for 'Forgot Password' and 'Register'. The right screen is titled 'Register' and has a close 'X' button. It features two tabs: 'Register by email' (selected) and 'Register by mobile'. Below the tabs are input fields for 'Email', 'Verification Code' (prefixed with '#'), and 'Password'. A 'Send Verification Code' button is positioned between the Email and Verification Code fields. At the bottom are two checkboxes for 'Please read and confirm protocol' and 'Please read and confirm policy', each with a 'Read' link, and a 'Register' button.

2. Account Login

After completing account registration, return to the login interface, enter the email or phone number used for registration, input your password, and click the **Login** button to sign in.

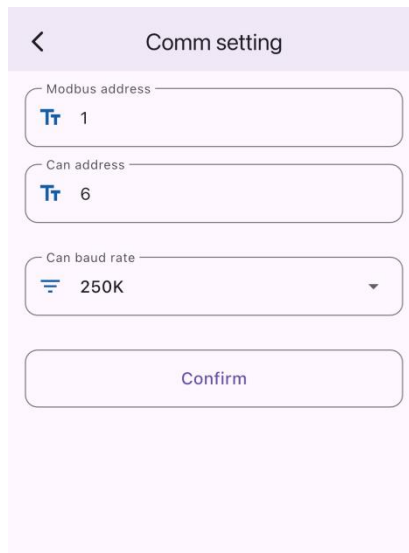
III. APP Setting

Users can configure the APP theme and language on the settings page.

In some systems, to communicate properly with the corresponding controller, it may also be necessary to configure the controller communication settings.

In the controller communication settings, you can set the **Modbus communication address**, **CAN communication address**, and **CAN baud rate**.

Before making any settings, please contact your supplier to obtain the specific communication configuration parameters for the controller in your system. .



Comm setting

Modbus address
Tr 1

Can address
Tr 6

Can baud rate
250K

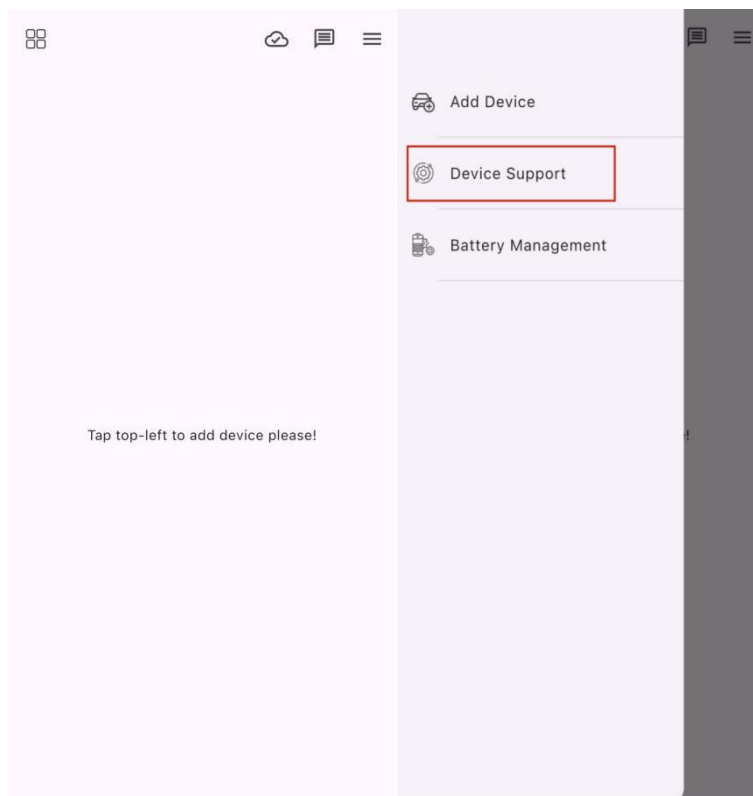
Confirm

IV. Access Device Support

Tap the icon  in the upper-left corner of the APP home page, then click the **Device Support** button to enter the device support function.

The **Add Device** button on this page is for regular-permission users to bind their own vehicles.

Battery Management is not currently in use.。



V. Device Connection Procedure

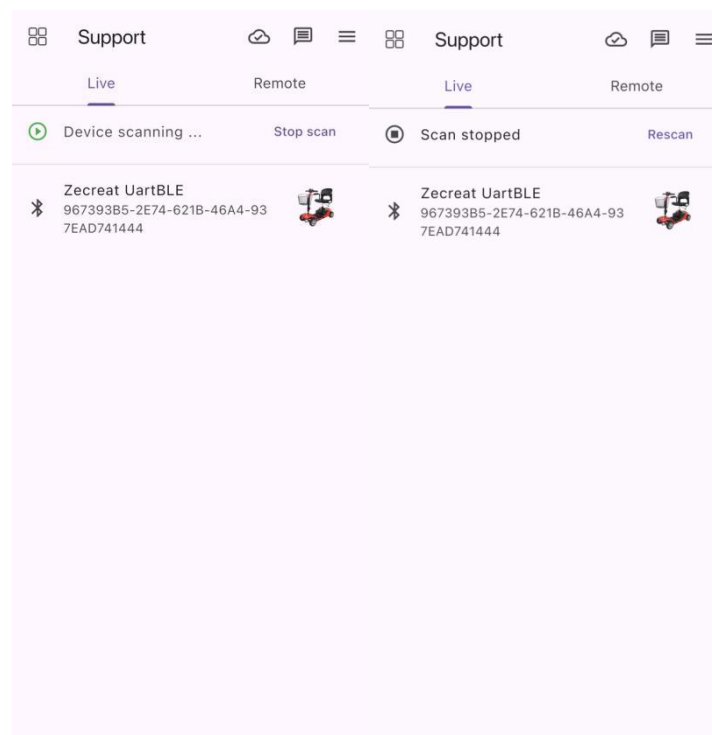
1. Step 1: Enter the device search page

After tapping **Device Support** in the main menu, you will enter the device scanning page, as shown in the figure below.

The scanning status indicates the current state: **Device scanning ...** or **Scan Stop**.

You can click **Stop scan** to manually stop scanning, or **Rescan** to restart scanning.

The scan results display the device name and unique device ID, with the corresponding vehicle icon shown on the right..



2. Step 2: Connect to the device

Tap the scanned device (e.g., Zecreat UartBLE in the image above). The APP will automatically initiate a Bluetooth connection. Once connected successfully, you will enter the device support homepage.

3. Step 3: Device Support Homepage

At the top of the device support homepage, the connected Bluetooth device name, Bluetooth connection status [**Connected**], and device MAC address are displayed. Tap **Disconnect** to terminate the connection.

Below that, the vehicle ID and controller state machine are shown.

If the controller has a fault, the controller error will be displayed under the state machine.

Further down, the motor status parameters are displayed:

speed: Motor rotor speed (unit: rpm)

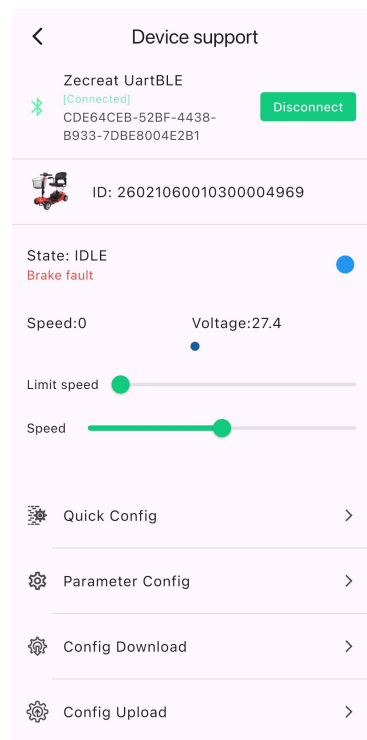
voltage: Battery voltage (unit: V)

Interactive controls: **Limit speed** (speed limit slider), **Speed** (speed adjustment slider). These are generally not used.

Below the controller status are the submenu entries, which are:

Quick Config, Attribute Config, Config Download, Config Upload, Firmware Upgrade, Device Info

The entries for **Map Track, Live state, and Device manual** below are non-functional.



VI. Parameter Configuration

1. Quick config

If you only need to modify some common controller configurations, you can enter the quick configuration page by clicking the **Quick Config** button, as shown in the figure below.

The **Name** column lists the parameter names, the **Device** column shows the parameter values read from the controller, and the **Update** column is for the target values set by the user.

The **ADC1** and **ADC2** in the red box are the real-time sampled values of Analog Input 1 and 2 (corresponding to the throttle lever/speed control knob) on the device support homepage mentioned above, used for calibrating the throttle lever and speed control knob.

The user enters the parameters to be modified in the **Update** column, then clicks Write device in the lower-right corner to write the parameters to the controller.

Click **Read device** to re-read the current controller parameters.

After writing parameters, it is recommended to restart the controller.

The figure shows three screenshots of the 'Quick setting' interface. Each screenshot has a title bar with a back arrow, 'Quick setting', and a red box containing 'ADC1:2001,ADC2:626'. The first screenshot shows settings for 'User control' (Max push speed, L/R hand, Limit knob invert) and 'Motor 1' (Motor direction). The second screenshot shows settings for 'Reverse gear' (Max speed, Min speed, Max accel, Min accel, Max decel, Min decel) and 'General calib' (Accel min, Accel neutral, Accel max, Limit knob min, Limit knob neutral, Limit knob max). The third screenshot shows the same 'General calib' settings but with 'Calib' buttons next to the values. At the bottom of each screenshot are 'Read device' and 'Write device' buttons.

Parameter Description:

(1) Other Control Settings

Parameter Name	Function Description	Remarks
Max push speed	Maximum allowed speed when pushing while brake is unlocked (unit: rpm)	Set as required
L/R hand	Left/right-hand operation mode switch	On or Off
limit knob invert	Reverse speed limit knob (when enabled, the knob direction is inverted relative to the speed limit logic)	On or Off

(2) Motor 1 Configuration

Parameter Name	Function Description	Remarks
motor direction	Motor forward/reverse direction	On or Off

(3) Gear 1 (Forward Gear) Parameters

Parameter Name	Function Description	Remarks
Max speed	Maximum motor speed corresponding to forward gear when the speed limit knob is at maximum (unit: rpm)	Set as required
Min speed	Maximum motor speed corresponding to forward gear when the speed limit knob is at minimum(unit: rpm)	Set as required, but must be less than Max speed .
Max accel	Acceleration at maximum throttle lever opening (unit: rpm/s)	Set as required
Min accel	Acceleration at minimum throttle lever opening (unit: rpm/s)	Set as required, but must be less than Max acceleration .
Max decel	Deceleration at maximum throttle lever opening (unit: rpm/s)	Set as required
Min decel	Deceleration at minimum throttle lever opening (unit: rpm/s)	Set as required, but must be less than Max deceleration

(4) Reverse Gear Parameters

Parameters have the same meaning as those for Gear 1 (Forward Gear).

(5) General Calibration

Used to calibrate the analog input range of the throttle and speed control knob.

This function must be used together with the **ADC1** and **ADC2** values in the upper-right corner of this page:

- **ADC1** corresponds to the accelerator
- **ADC2** corresponds to the speed limiter

Calibration must be performed separately at:

- Minimum accelerator/speed limiter value
- Accelerator mid-position
- Maximum accelerator/speed limiter value:

Parameter Name	Function Description	Remarks
Accel min	Throttle minimum sampling value. Move the throttle lever and observe the ADC1 value. Hold when ADC1 reaches its minimum value.	Tap Calib to collect automatically.
Accel neutral	Throttle mid-position sampling value. Release the throttle lever.	Tap Calib to collect automatically.
Accel max	Throttle maximum sampling value. Move the throttle lever and observe the ADC1 value. Hold when ADC1 reaches its maximum value.	Tap Calib to collect automatically.
Limit knob min	Speed limiter knob minimum sampling value. Rotate the knob and observe the ADC2 value. Hold when ADC2 reaches its maximum value.	Tap Calib to collect automatically.
Limit knob neutral	This value is meaningless. Set the speed limiter knob to the middle position.	Tap Calib to collect automatically.
Limit knob max	Speed limiter knob maximum sampling value. Rotate the knob and observe the ADC2 value. Hold when ADC2 reaches its maximum value.	Tap Calib to collect automatically.

Calibration Notes: Before calibration, please lift the vehicle wheels off the ground or release the electromagnetic brake to ensure safety.

2. Parameter Config

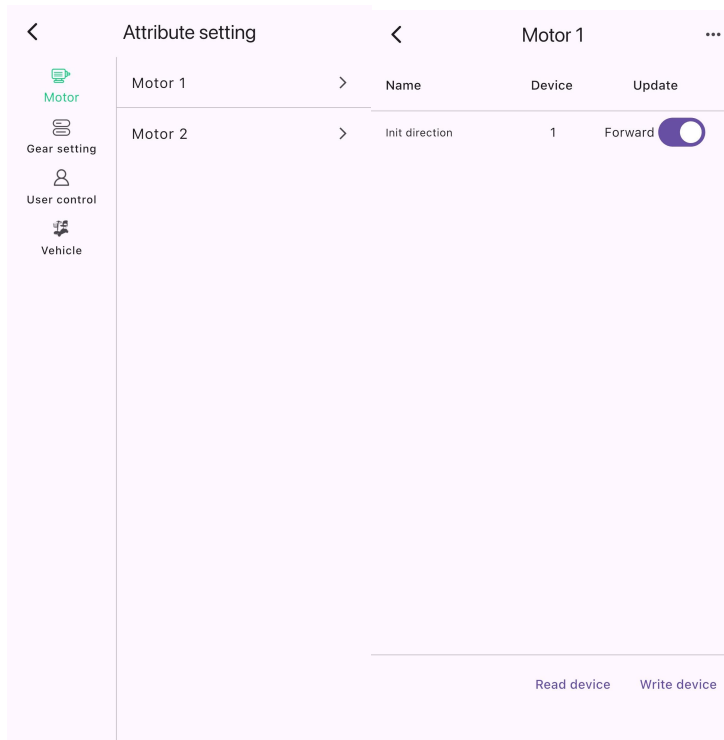
If the settings in Quick Configuration do not meet your requirements, you may enter the Parameter Configuration page for further setup, which includes the following core submenus:

(1) Motor 1 Parameters

This page is used to configure motor-related parameters.

Do not modify them randomly unless you are a professional; incorrect settings may cause motor burnout.

After modifying parameters, click the **Write device** button to write to the controller.



Parameter Name	Function Description	Remarks
Initial direction	Motor initial direction,Used to adjust the motor rotation direction	Adjust according to actual conditions

(2) Gear Configuration

This page is similar to Gear 1 parameter configuration in Quick Configuration, but provides more parameters for setup.

After setting the parameters, click **Write device** to write to the device.

You must also return to the **Gear setting** page and click **Save** in the lower-right corner to store the settings in the controller.

There are a total of 5 forward gears and 1 reverse gear. Below we use Forward Gear 1 as an example for illustration; the configuration for other gears is identical.

<

Attribute setting

Motor

Gear setting

User control

Vehicle

1st gear >

2nd gear >

3rd gear >

4th gear >

5th gear >

Reverse gear >

<

1st gear

Name

Device

Update

Max speed 4000 4000

Min speed 300 300

Max accel 1200 1200

Min accel 500 500

Max decel 2800 2800

Min decel 1000 1000

Key off decel 30000 30000

Emergency stop decel 12000 12000

Emergency reverse speed 1000 1000

Emergency reverse duration 0 0

Save

Read device

Write device

Parameter Name	Function Description	Remarks
Max speed	Maximum motor speed corresponding to forward gear when the speed limit knob is at maximum (unit: rpm)	Set as required
Min speed	Maximum motor speed corresponding to forward gear when the speed limit knob is at minimum(unit: rpm)	Set as required, but must be less than Max speed .
Max accel	Acceleration at maximum throttle lever opening (unit: rpm/s)	Set as required
Min accel	Acceleration at minimum throttle lever opening (unit: rpm/s)	Set as required, but must be less than Max acceleration .
Max decel	Deceleration at maximum throttle lever opening (unit: rpm/s)	Set as required
Min decel	Deceleration at minimum throttle lever opening (unit: rpm/s)	Set as required, but must be less than Max

		deceleration
Key off decel	Deceleration when key is off (Unit: rpm/s)	Set as required
Emergency stop decel	Deceleration when emergency button is triggered (Unit: rpm/s)	Set as required
Emergency reverse speed	Reverse speed when emergency button is triggered (Unit: rpm)	Set as required
Emergency reverse duration	Reverse speed duration when emergency button is triggered (Unit: ms, 0 = disable this function)	Set as required

(3) User Control Settings

This page is used to configure the logic and mode of control inputs.

After modifying parameters, click the **Write device** button to write to the controller.

The screenshot shows the 'User control' settings page. On the left, there is a sidebar with icons for Motor, Gear setting, User control (highlighted), and Vehicle. The main area is titled 'Attribute setting' and 'User control'. It contains a table with the following parameters:

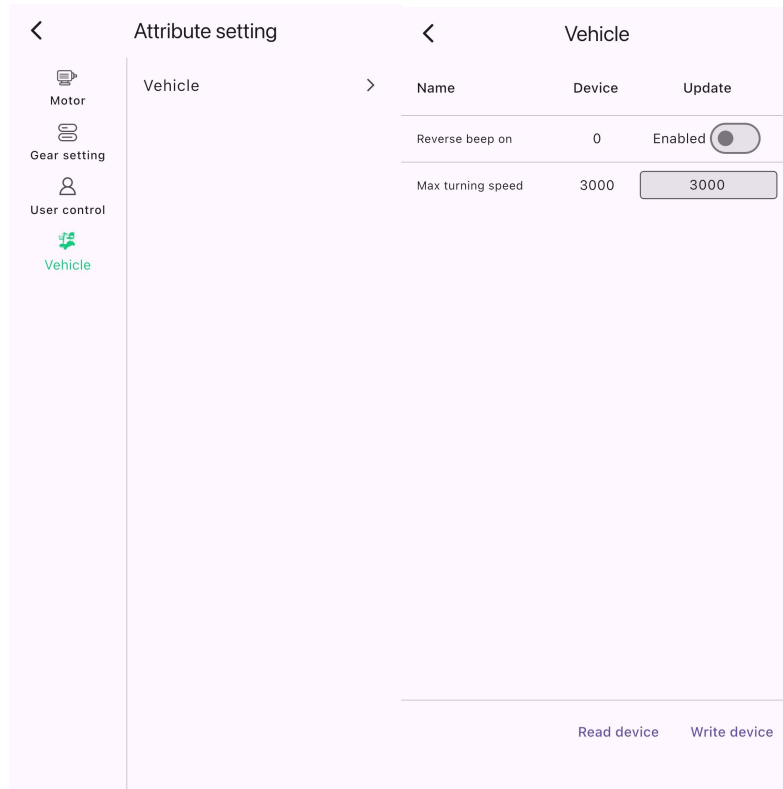
Name	Device	Update
Observer enable spd	1000	1000
Max push speed	1500	1500
Input 1 polarity	1	Bipolarity
Input 1 inverted	0	☐
Input mode	3	Pot serial
Input 2 function	1	Speed limit
Input 2 inverted	1	☒

At the bottom right, there are two buttons: 'Read device' and 'Write device'.

Parameter Name	Function Description	Remarks
Observation enable spd	Observer enable speed – observer is enabled above this speed (Unit: rpm)	To be set by professionals only. Do not modify without

		proper guidance.
Max push speed	Maximum speed allowed when pushing with brake unlocked (Unit: rpm)	
input 1 polarity	Analog input 1 polarity (Bipolarity = bidirectional, accelerator controls forward and reverse; Unipolarity = unidirectional)	Determined by the characteristics of the accelerator.
input 1 inverted	Analog input 1 inversion (When enabled, throttle direction is reversed)	
input mode	Control input mode (via comm = control via bus; Handle = Hall-type throttle grip; Pot parallel = speed-limiting potentiometer in parallel with accelerator potentiometer; Pot serial = speed-limiting potentiometer in series with accelerator potentiometer)	Select according to the type of accelerator.
Input 2 function	Input 2 function (Not used = Input 2 not used; Speed limit = Input 2 used as speed limit; Speed diff = Input 2 used for differential speed; Brake = Input 2 used as brake input)	
Input 2 inverted	Input 2 inversion (When enabled, the direction of the speed limit knob is reversed)	

(4) Vehicle Function Configuration



Used to configure global parameters related to vehicle safety, prompts and mechanics.

Click **Write device** to save changes after modification.:

Parameter Name	Function Description	Remarks
Reverse beep on	Reverse warning beep enable When enabled, the buzzer sounds a warning tone during reverse operation.	
Max turning speed	Maximum motor speed limit during turning to prevent rollover, Unit: rpm	

VII. Configuration Backup and Restore

1. Configuration Download

On the device homepage, click **Config Download** to write the backed-up configuration file into the controller and quickly restore parameters.

This is suitable for rapid configuration after equipment maintenance or controller replacement.

2. Configuration Upload

On the device homepage, click **Config Upload** to export and back up all current parameters of the controller to the server, for later restoration or batch configuration of the same model equipment.

After uploading the configuration, you need to contact your supplier. The configuration will be available for download only after being approved in the server backend.

VIII. Firmware Upgrade

On the device support homepage, click **Firmware Upgrade** to enter the firmware upgrade page.

Available firmware versions are listed on this page. Select the appropriate firmware to start the upgrade process, then click the **Upgrade start** button to begin.

Note:

You must select the correct firmware corresponding to your device.

During the upgrade, keep your phone on the upgrade page. Do not answer calls or switch the app to the background..

IX. Device information

On the device support homepage, click **Device Info** to view information such as the controller ID, software version, and hardware version.

X. Operating Precautions and Safety Specifications

Safety First:

All parameter modifications and calibration must be performed **when the vehicle is stationary**.

Operation while driving should be prohibited to avoid the risk of losing control.

Parameter Modification Principles:

- Only non-professionals may adjust parameters such as speed, acceleration, reverse gear, and vehicle prompt functions.
- Motor parameters and overcurrent protection parameters **must not be modified arbitrarily**.
- Acceleration/deceleration parameters should be adjusted gradually to prevent sudden sharp changes that may cause vehicle instability.

- It is recommended to set the maximum reverse speed to below 50% of the forward speed for safety.
- The maximum turning speed should be set lower than the maximum forward speed to prevent rollover.

Bluetooth Connection Notes:

- Before connecting, ensure the vehicle controller is powered on and the Bluetooth module is functioning properly.
- If connection fails: close and reopen the APP, restart the controller, reconnect the Bluetooth module, then scan and connect again.
- For stable connection, keep the distance **within 5 meters** to avoid Bluetooth signal interference..