



<https://ox32.oxbot.com/>

OX32 ESC Configurator User Manual

Content

Parameter Introduction	3
General.....	3
Rampup Setting.....	3
Braking Setting.....	4
Buzzer Setting.....	4
Protection.....	4
Telemetry & Device Info.....	4
Firmware Upgrade	5
Modify Motor Direction	8
Modify ESC Rampup Melody	10
Config Import/Export	11
Save Log	13

Parameter Introduction

General

- i. **Motor Timing:** Motor timing determines the point when current switches to the next coil. This parameter directly impacts motor efficiency and stability. Increasing motor timing increases torque but reduces efficiency and generates more heat. Keep the default value, increase it if desynchronization occurs.
- ii. **Minimum PWM Frequency:** ESC's driving frequency for the motor. Higher PWM frequencies increase efficiency and flight smoothness but reduce motor power.
- iii. **Maximum PWM Frequency:** When the maximum and minimum PWM frequencies differ, the PWM frequency will vary between the set range based on throttle input. When the highest PWM frequency is set to BY RPM, the PWM frequency changes with the motor speed. As the speed increases, the PWM frequency rises for smoother flight; as the speed decreases, the PWM frequency decreases to enhance motor control.
- iv. **Demag Compensation:** Demag compensation is a protective feature that prevents the motor from stopping or desynchronizing due to demagnetization, especially during rapid throttle increase. Keep the default setting, and increase compensation if desynchronization occurs.

Rampup Setting

- i. **Rampup Power:** The initial power provided to the motor during startup. This setting primarily affects the motor's startup behavior, ensuring smooth startup and operation. Default settings are suitable for most cases; increase this setting if using large motors or propellers.
- ii. **Soft Rampup:** Used to enable or disable the soft rampup function. When enabled, upon arming the motor, the RPM will gradually increase from the Soft Rampup Throttle value at a slower rate until it reaches the idle speed. This process limits the motor's acceleration rate to ensure a smooth startup, reducing unexpected risks. Once the idle speed is reached, the acceleration limit is removed, and the motor responds normally until it is disarmed again.
- iii. **Acceleration Rate:** Defines motor acceleration speed. Higher values increase throttle response. If desynchronization occurs, consider reducing this setting.
- iv. **Deceleration Rate:** Defines motor deceleration speed. Higher values increase throttle response. If desynchronization occurs, consider reducing this setting.
- v. **Safe Rampup:** Enables or disables the safe start function. When the battery is connected and the motor is unlocked for the first time, if the ESC detects a motor collision, it will automatically stop that motor. This function automatically deactivates when the throttle exceeds a certain value. To prevent interference with the [Turtle Mode] function, this feature will not reactivate even if the motor is locked and unlocked again, unless the battery is reconnected.

Braking Setting

- i. **Brake on Stop:** Stops the motor when the throttle is at zero, commonly used for fixed-wing aircraft to reduce drag and protect the propeller. If idle speed is enabled, the motor will maintain rotation at idle throttle, and the brake function will not be effective.
- ii. **Brake Strength on Stop:** Adjusts the braking strength when the brake on stop function is enabled.

Buzzer Setting

- i. **Beacon Delay:** After powering on, the ESC emits a beacon sound. This setting adjusts the delay for the beacon sound.
- ii. **Startup Beep Volume:** Adjusts the volume of the startup self-check sound. Note: Excessive volume may damage the motor.
- iii. **Beacon/Signal Beep Volume:** Adjusts the volume of motor beeps other than the startup sound. Note: Excessive volume may damage the motor.

Protection

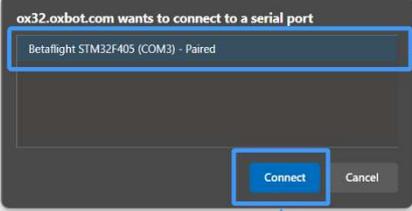
- i. **Stall protection (Sensitivity):** Detects abnormal motor speed and takes appropriate protective measures. Higher sensitivity makes it easier to detect stalling and protect the motor in time. Lower sensitivity increases the risk of motor or ESC damage during crashes or stuttering. Default settings are recommended.
- ii. **Stall protection (Duration):** Defines how long the motor stops and restarts upon detecting a stall. Longer durations provide better protection but may cause greater attitude changes. Shorter durations increase the risk of motor or ESC damage during crashes or stuttering. It is generally recommended to keep the default setting, which protects the motor while allowing the attitude to recover quickly.
- iii. **Low RPM Power Protection:** For low-KV motors with large propellers, select [On Adaptive]. For high-KV motors, enable this setting. Otherwise, try disabling this setting.
- iv. **Over-temperature Protection:** When the MCU temperature exceeds the protection limit, motor output power is reduced to prevent ESC from overheating.
- v. **Low Voltage Protection:** When the voltage drops below the limit, motor output power is reduced to prevent crashes caused by low voltage.

Telemetry & Device Info

- i. **Auto Telemetry Switch:** When enabled, the ESC automatically sends telemetry feedback (not bidirectional DSHOT).
- ii. **Auto Telemetry Interval:** Set the time interval for telemetry feedback.
- iii. **ESC Name:** Set the custom name for the ESC.

Firmware Upgrade

Supports both online and local firmware flashing. Please use a battery to power the ESC during the configuration process.



ox32.oxbot.com wants to connect to a serial port
Betaflight STM32F405 (COM3) - Paired

Connect Cancel

② Choose the corresponding port

③ Click "Connect"



OX32
- Your limits, defined by you. -

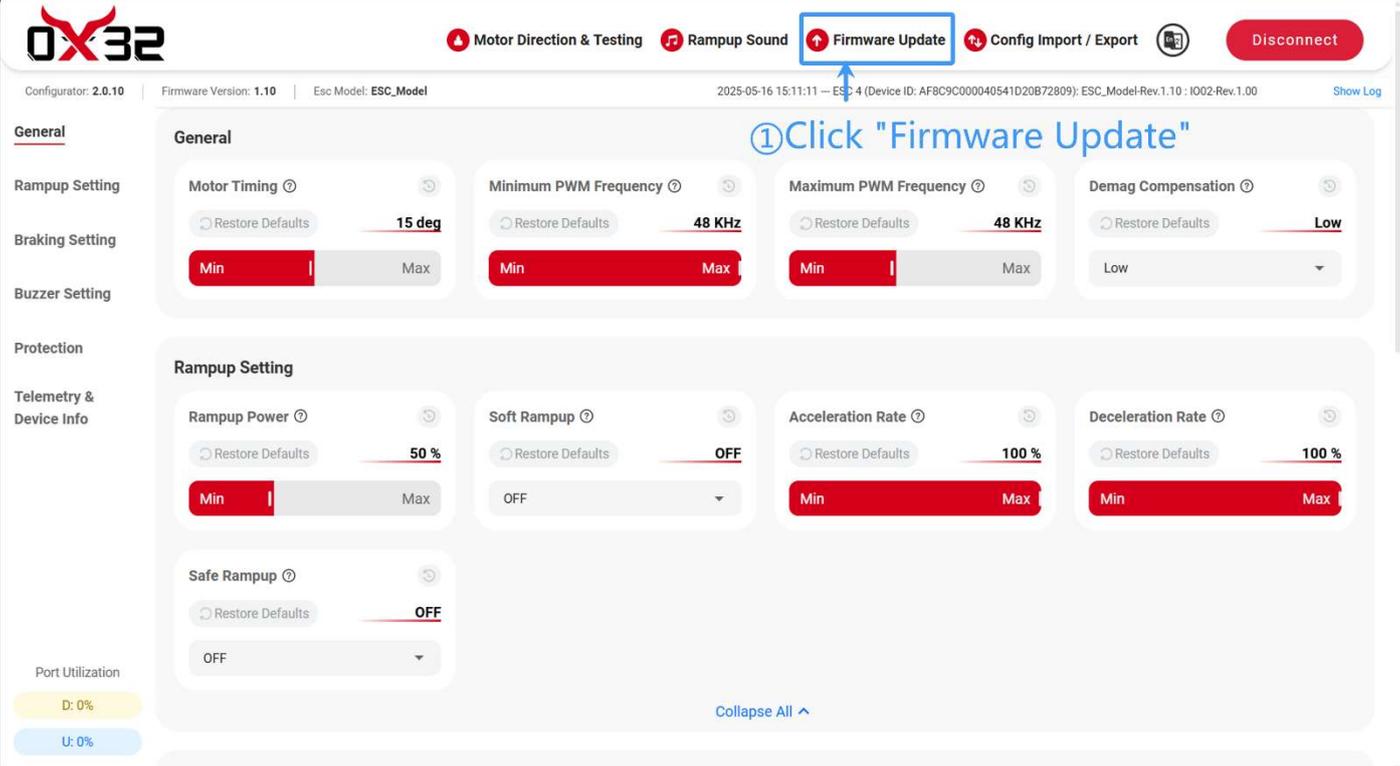
④ Click "Connect Device"

Connect Device

1155:22336 115200

① Click the dropdown row

This screenshot shows the connection dialog box in the OX32 configurator. A blue box highlights the port selection dropdown menu, with an arrow pointing to it labeled '② Choose the corresponding port'. Another blue box highlights the 'Connect' button, with an arrow pointing to it labeled '③ Click "Connect"'. A third blue box highlights the 'Connect Device' button, with an arrow pointing to it labeled '④ Click "Connect Device"'. A fourth blue box highlights the dropdown menu showing '1155:22336', with an arrow pointing to it labeled '① Click the dropdown row'. The OX32 logo and tagline are also visible.



OX32

Motor Direction & Testing Rampup Sound Firmware Update Config Import / Export Disconnect

Configurator: 2.0.10 Firmware Version: 1.10 Esc Model: ESC_Model 2025-05-16 15:11:11 — ESC: 4 (Device ID: AF8C9C000040541D20B72809); ESC_Model-Rev.1.10 : IO02-Rev.1.00 Show Log

General

Rampup Setting

Braking Setting

Buzzer Setting

Protection

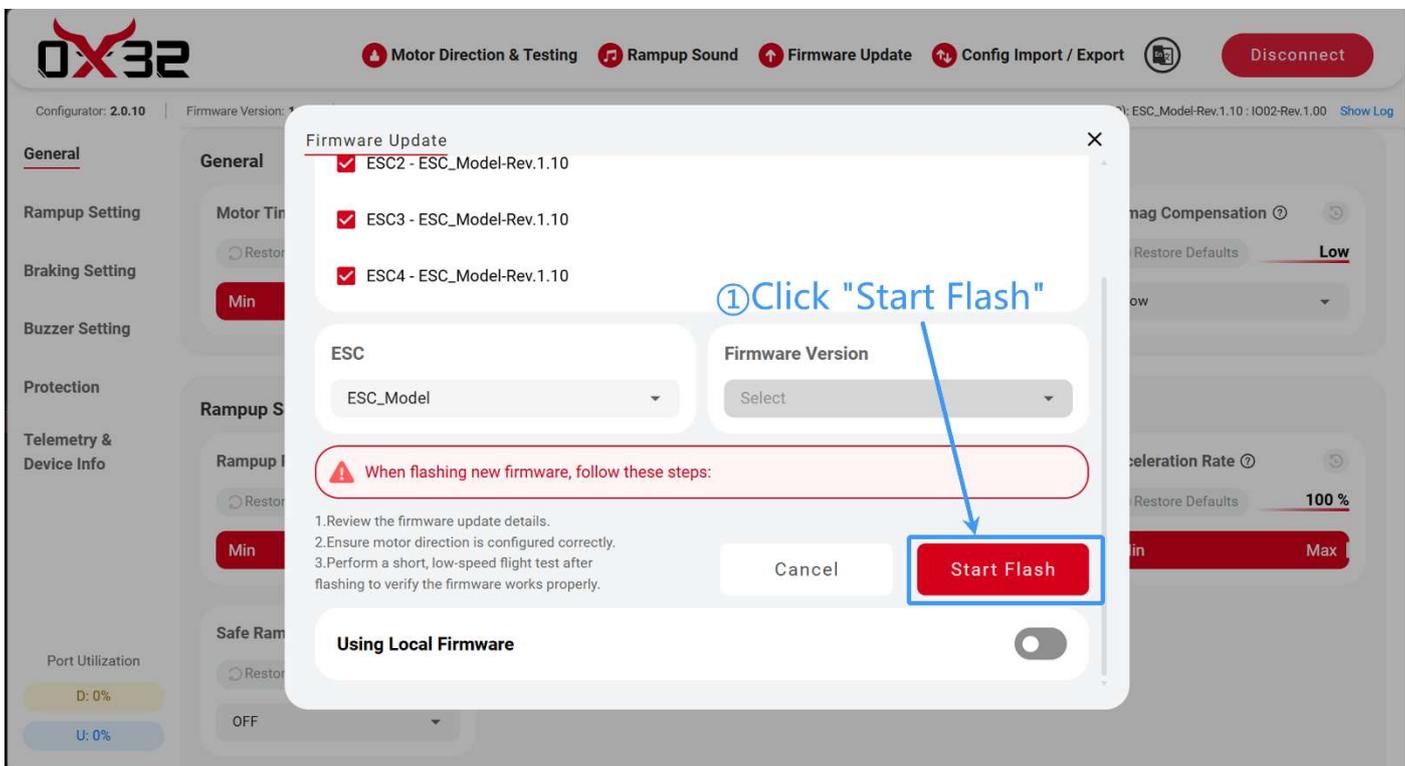
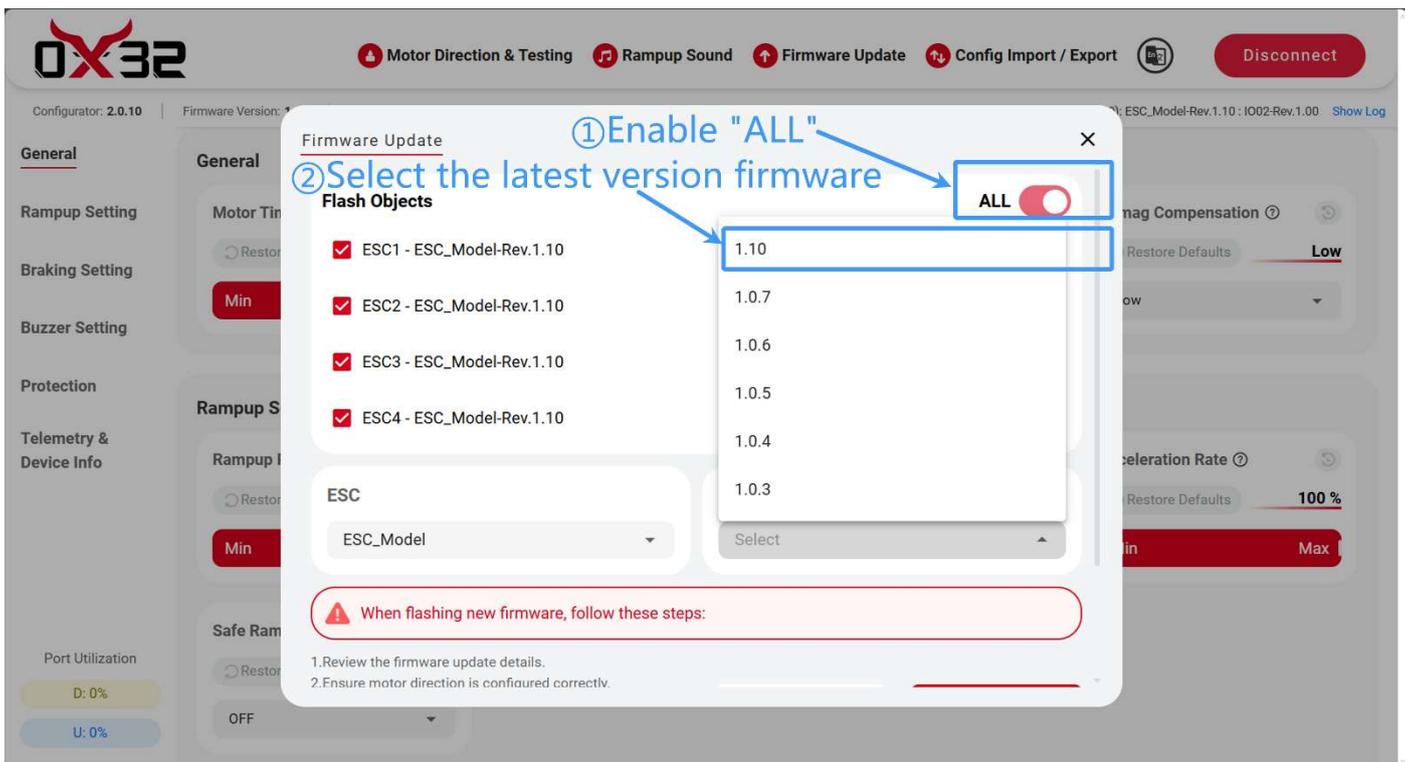
Telemetry & Device Info

Port Utilization

D: 0% U: 0%

① Click "Firmware Update"

This screenshot shows the main interface of the OX32 configurator. The 'Firmware Update' button is highlighted with a blue box and an arrow pointing to it, labeled '① Click "Firmware Update"'. The interface includes a top navigation bar with various settings and a main content area with multiple sliders and dropdown menus for configuring the ESC. The OX32 logo and tagline are at the top left. The bottom left shows port utilization for D and U channels, both at 0%.



OX32 Motor Direction & Testing Rampup Sound Firmware Update Config Import / Export Disconnect

Configurator: 2.0.10 Firmware Version: Show Log

Firmware Update [X]

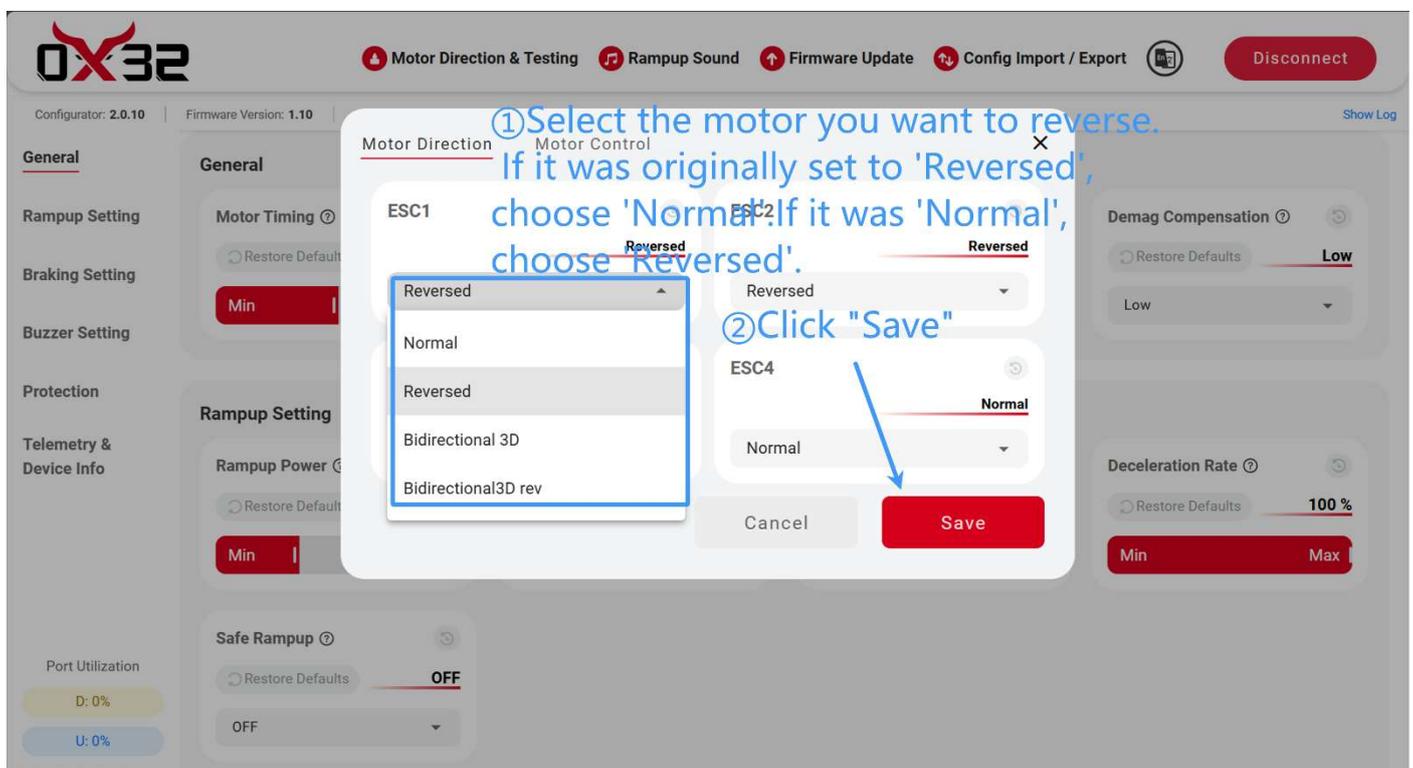
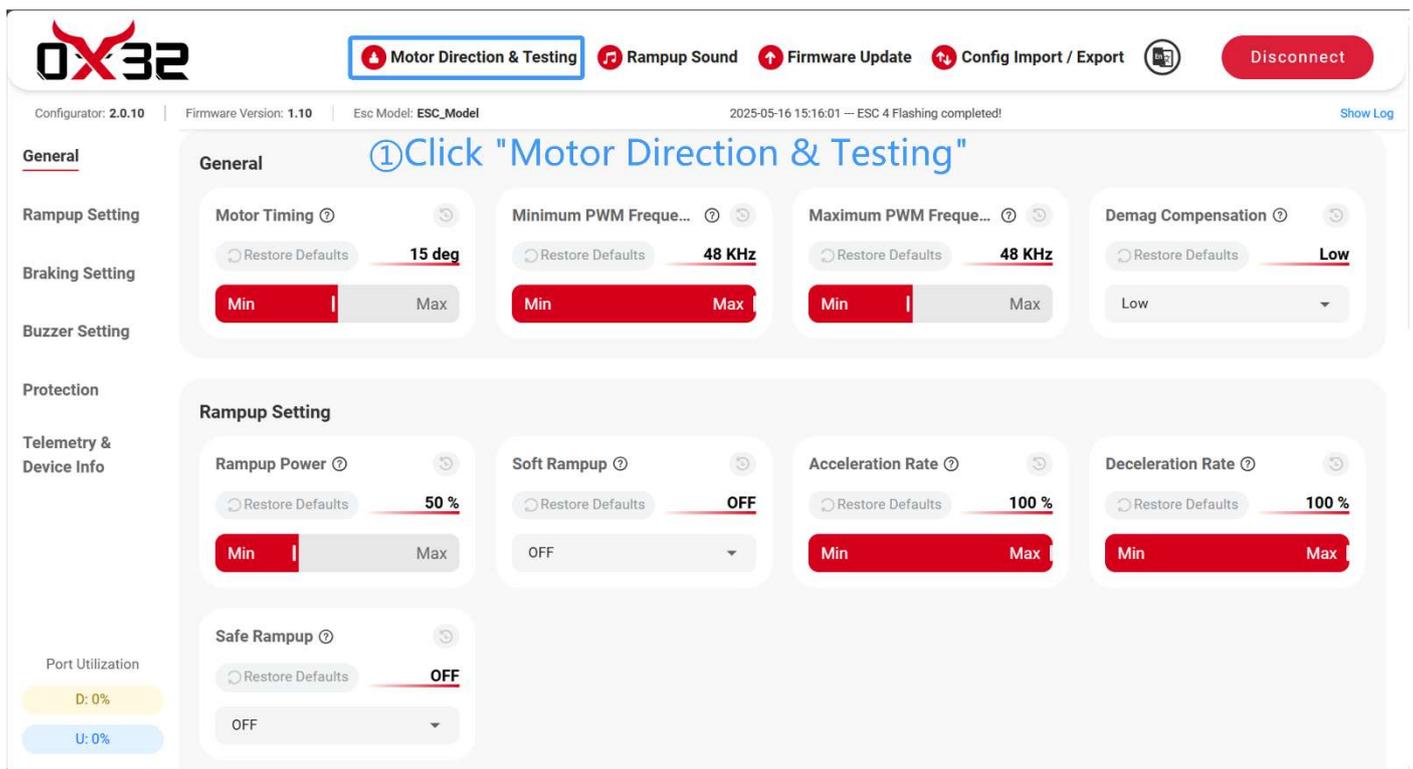
Flash Objects

ESC1 - ESC_Model-Rev.1.10	100%	✓
ESC2 - ESC_Model-Rev.1.10	100%	✓
ESC3 - ESC_Model-Rev.1.10	100%	✓
ESC4 - ESC_Model-Rev.1.10	100%	✓

⚠ Do not exit this interface until flashing is complete;

①After flashing,click "Exit" → **Exit**

Modify Motor Direction



There is a chance the modification may fail. If it does, please reconnect the configurator and repeat the modification process until it succeeds.

OX32 Motor Direction & Testing Rampup Sound Firmware Update Config Import / Export Disconnect

Configurator: 2.0.10 Firmware Version: 1.10 Esc Model: ESC_Mo...

Motor Direction **Motor Control** ← ① Click "Motor Control" ×

Enable motor control / Battery : 6s@24.76V

② Enable motor control →

③ Gently raise the throttle and check whether the motor is spinning in the expected direction ←

1500 1000 1000 1000 1000 1000 1000 1000 1000 1000

Master ESC1 ESC2 ESC3 ESC4

⚠ Warning: Remove all propellers before using this feature to avoid injury.

Before testing motor, ensure ESC protocol is correctly configured, or the motor cannot start.
If enabling bi-directional Dshot, ensure the firmware supports it, or the motor won't start.

Demag Compensation ⌵ Restore Defaults Low

Acceleration Rate ⌵ Restore Defaults 100%

Braking Setting

Brake on Stop ⌵ Restore Defaults OFF

Brake Strength on Stop ⌵ Restore Defaults 100%

Min Max

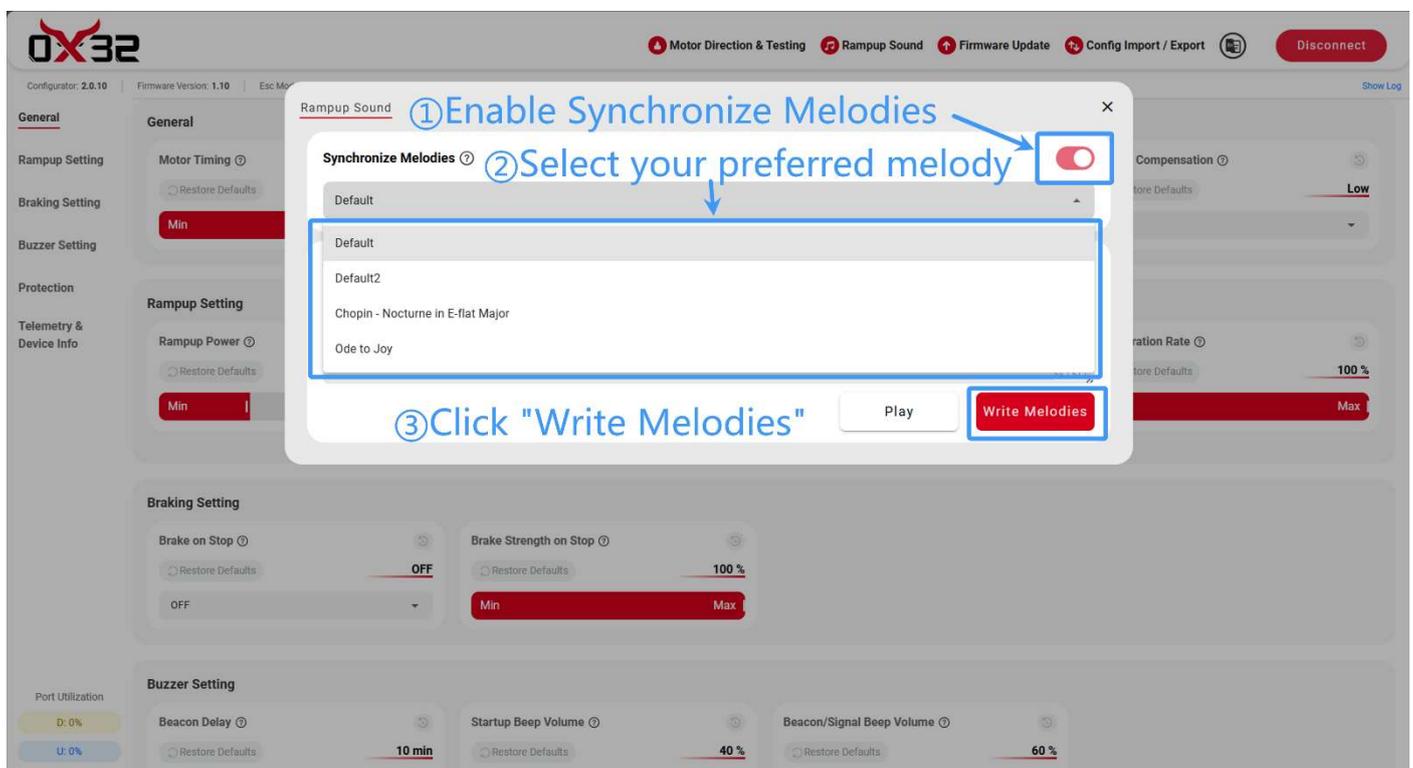
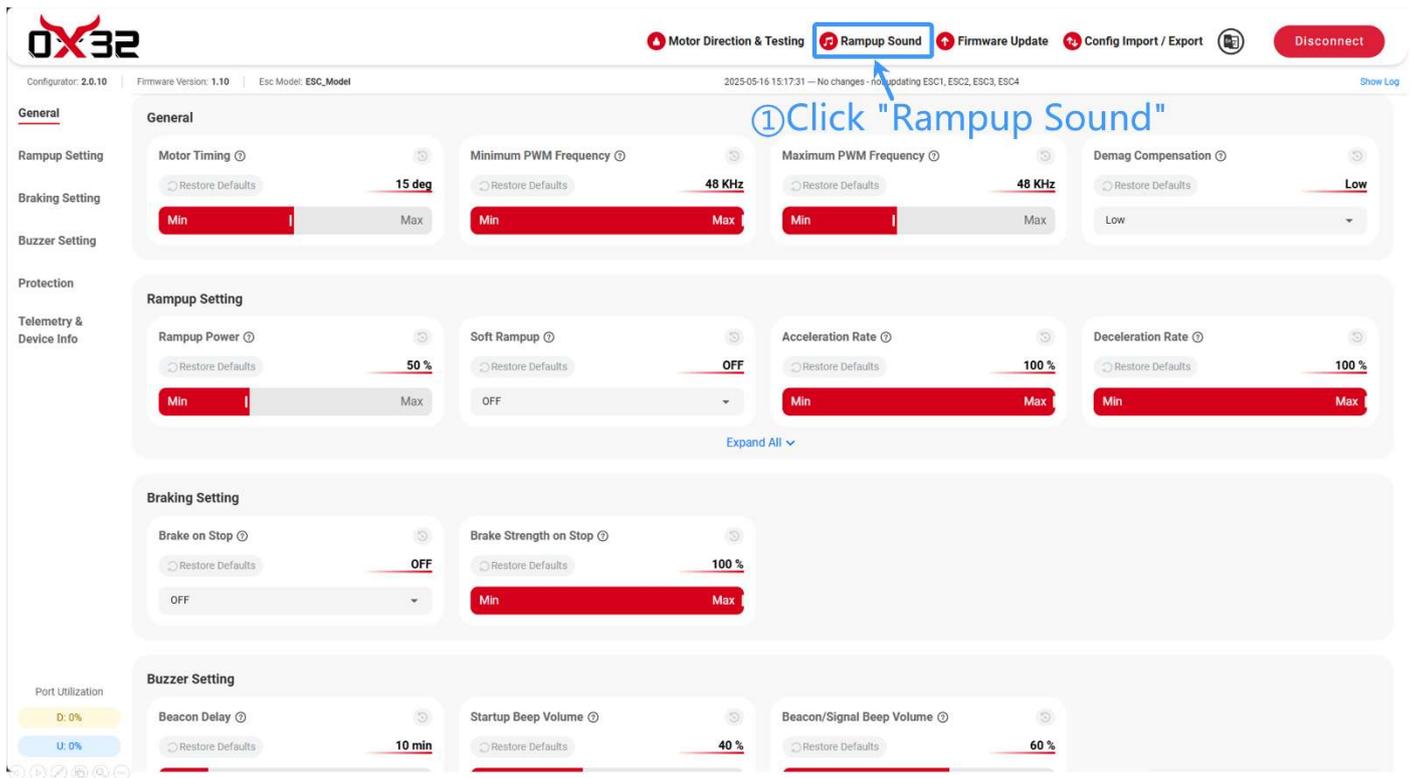
Buzzer Setting

Beacon Delay ⌵ Restore Defaults 10 min

Startup Beep Volume ⌵ Restore Defaults 40%

Beacon/Signal Beep Volume ⌵ Restore Defaults 60%

Modify ESC Rampup Melody



Config Import/Export

The screenshot shows the OX32 configurator interface. At the top right, the 'Config Import / Export' menu item is highlighted with a blue box and a blue arrow pointing to it. A blue text annotation '① Click "Config/Export"' is positioned above the arrow. The interface includes a top navigation bar with 'Motor Direction & Testing', 'Rampup Sound', 'Firmware Update', and 'Config Import / Export'. Below the navigation bar, there are several sections for configuration: 'General' (Motor Timing, Minimum PWM Frequency, Maximum PWM Frequency, Demag Compensation), 'Rampup Setting' (Rampup Power, Soft Rampup, Acceleration Rate, Deceleration Rate), 'Braking Setting' (Brake on Stop, Brake Strength on Stop), and 'Buzzer Setting' (Beacon Delay, Startup Beep Volume, Beacon/Signal Beep Volume). A 'Disconnect' button is located in the top right corner.

Restore Default Settings

The screenshot shows the OX32 configurator interface with the 'Config Import / Export' dropdown menu open. The 'Restore Default Settings' option is highlighted with a blue box and a blue arrow. A blue text annotation '① Click "Restore Default Setting"' is positioned above the arrow. The dropdown menu contains three options: 'Restore Default Settings', 'Export Settings', and 'Import Settings'. The background interface is dimmed, showing the same configuration sections as the previous screenshot.

Export Settings

The screenshot shows the OX32 configurator interface. A dialog box titled "Config Import / Export" is open, displaying three options: "Restore Default Settings", "Export Settings", and "Import Settings". The "Export Settings" option is highlighted with a blue box. A blue arrow points from this option to a text box on the right side of the screen.

① Click "Export settings" to get a JSON file — this file is your configuration file.

Import Settings

The screenshot shows the OX32 configurator interface. A dialog box titled "Config Import / Export" is open, displaying three options: "Restore Default Settings", "Export Settings", and "Import Settings". The "Import Settings" option is highlighted with a blue box. A blue arrow points from this option to a text box on the right side of the screen.

① Click "Import Settings", select the configuration file you want to import, and then click Confirm.

Save Log

The log file can help us identify issues encountered during firmware flashing, including the status of the program's operation. If you experience problems while configuring the ESC, you can save the log file and send it to us so we can help you analyze and resolve the issue.

