## Introduction

The Neuron Ultra is a powerful, compact, and highly efficient product series. The SBEC in this series incorporates gallium nitride (GaN) devices, which not only reduce the product size but also enhance conversion efficiency, enabling higher operating currents and improving performance. Additionally, it offers users with a safe and efficient way to power the system with your power source connected.

The Neuron Ultra 32A SBEC features a configurable voltage output port, allowing users to select output voltages ranging from 5V to 24V. This can be done either via the onboard setting button or through a Lua script tool on ETHOS, enabling quick switching between different voltage levels. The Neuron Ultra SBEC also benefits from the heatsink shell for effective thermal dissipation.

Overview
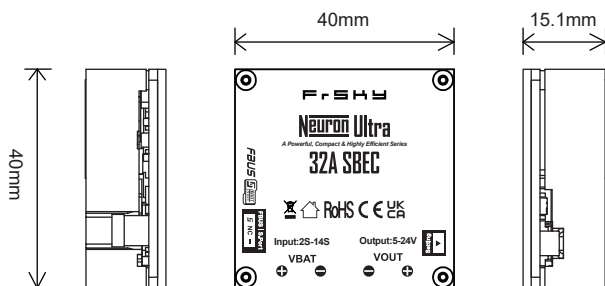
Specifications

- Size: 40×40×15.1mm (L×W×H)
- Weight: 52.8g
- Output Voltage Range: 5.0~24V
  - Preset voltage modes by using setting button: 5.0V / 7.4V / 8.4V / 12V / 24V
  - 0.5V step increment by configuring on ETHOS tool.
- Default Output Voltage Setting (adjustable): 5.0V
- Recommended Operating Current: 25A
  Maximum Continuous Current: ≤32A (24V output@14S input)
  (It varies depending on input and output voltage. A recommended operating current is 25A when using a 14S battery with a 24V output setting.)

  1. Ratings are tested under conditions at 20℃.
  2. Please make sure the adjusted Output voltage always working under the Input voltage that can be drawn from the battery/power source, and better to maintain the voltage difference of about 6 volts.)

Features

- Powerful, Compact & Highly Efficient – Neuron Ultra Series
  - Gallium Nitride (GaN) device
  - Compact Size with Enhanced Performance by Higher Conversion Efficiency
- Configurable BEC Voltage Outputs
- Multiple Preset Voltage Modes Fast Switching (by Setting Button – 5 Modes: 5.0V / 7.4V / 8.4V / 12V / 24V)
- Fin Heat Dissipation Design
- Working Status LED Indicator
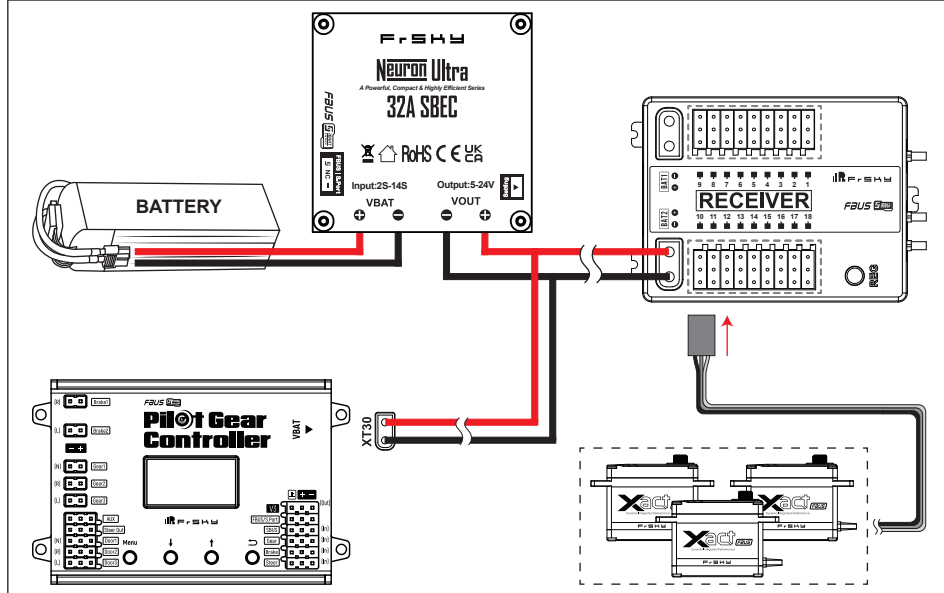- Compatible with FBUS/S.Port protocol

LED Status Indicator
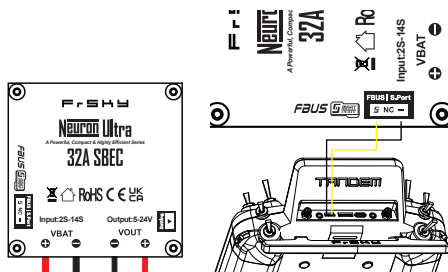
Adjusting Output voltage with Press setting button
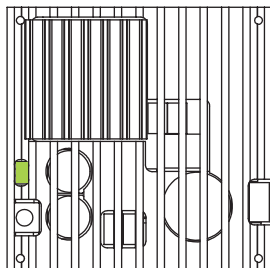
LED▶ 5.0V ---> LED Green
LED▶ 7.4V ---> LED Blue
LED▶ 8.4V ---> LED Aqua
LED▶ 12V ---> LED Red
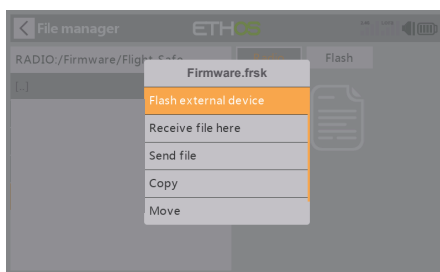LED▶ 24V ---> LED White

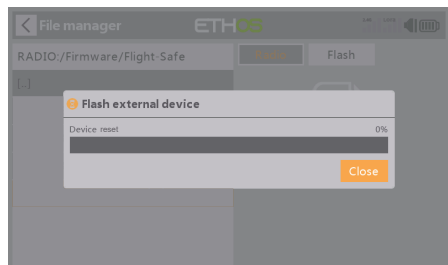## Setup Guide - Device Connection Diagram
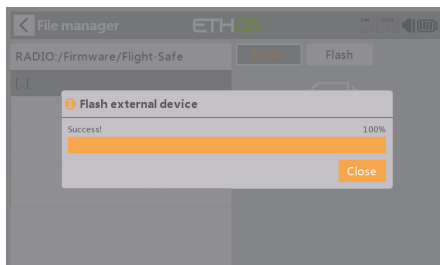
How to Update the Firmware

1. Disconnect the "+" wire, and connect only the "Signal" and "-" (Ground) wires from FBUS/S.Port port to the S.Port of your ETHOS radio.

2. Copy the firmware file to the ETHOS radio. Use the File Manager tool to locate it, then select the file and choose "Flash external device."
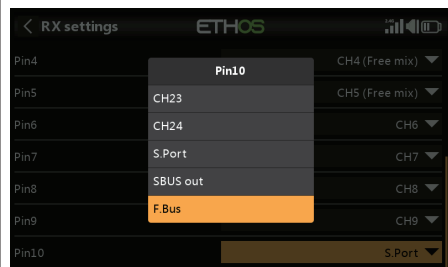

3. When a progress bar window appears with a "Device reset" message, wait approximately 3 seconds, then power on the Neuron Ultra 32A SBEC.
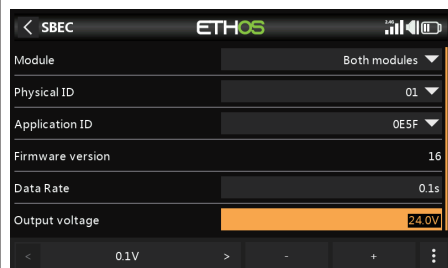

4. When the message changes to 'Flashing', wait for the progress bar to complete, this indicates that the firmware update is finished.

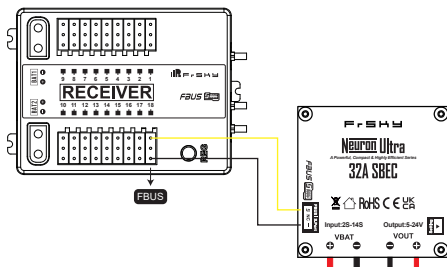## How to set SBEC Output Voltage via the ETHOS radio

1. Bind the receiver with the radio, and set the port intended for SBEC connection to FBUS mode.

3. Navigate to the SBEC configuration tool and locate the [Output voltage] setting. Set the desired voltage output to complete the configuration.
[System] ▷ [Device Config] ▷ [ESC] ▷ [SBEC] ▷ [Output Voltage]

2. Ensure the receiver is connected to the SBEC via the S.Port/FBUS interface.