SIYI

HALL-SENSOR WIDE-VOLTAGE HIGH-ACCURACY POWER MODULE USER MANUAL

SIYI Technology (Shenzhen) Co., Ltd.

SIYI.biz/en

Thank you for purchasing SIYI product.

SIYI Technology continues to empower flight control system and launches a new wide-voltage high-precision power module with a matching Hall ammeter. Supporting 7 to 100 volt voltage input and 7 to 100 volt voltage detection, the Hall sensor can achieve non-contact high-precision measurement, with fast response, reliable and flexible, compact size, and excellent heat dissipation performance. It greatly improves the stability and safety of flight controller power supply and provides high-precision data support for equipment operation!

To ensure you a good experience of the product, please read this manual carefully. If you encounter any issue using the product, please consult the manual or check the online pages of this product on SIYI official website (https://siyi.biz/en). You can also write an email to SIYI official A/S center (support@siyi.biz).

Contact Us: **SIYI Official Website** *(https://SIYI.biz/en)*

SIYI User Group - Facebook	
Facebook	
LinkedIn	
YouTube	

User Manual Update Log

Version	Date	Updates
1.0	2024.9	Initial version

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READ TIPS

Icons

Please pay more attention to content indicated with the following marks:

DANGER Dangerous manipulation probably leads to personal injuries.

WARNING Warnings on manipulation possibly leads to personal injuries.

CAUTION Cautions on what manipulation may lead to economic losses.

Prohibited **Mandatory** **Mark**

Safety

Hall-Sensor power module is designed and manufactured for professional application scenarios. Operators need to have certain basic skills, so please use it with caution. SIYI Technology does not assume any responsibility for any unnecessary product damage caused by irregular or irresponsible operation of this product, economic losses or even personal injury to the user or others. Minors must have professionals present to supervise and guide minors when using this product. SIYI Technology's products are designed for commercial use, and it is prohibited to use SIYI products for military purposes. It is prohibited to disassemble or modify this product without SIYI Technology's permission.

Storage / Carrying / Recycling

When the SIYI product you own is idle, or you want to take the SIYI product out for work, or the product has reached the end of its service life, please pay special attention to the following matters:

DANGER

When SIYI products are not in use, they should be kept away from areas easily accessible to children.

Please avoid placing SIYI products in an environment that is too hot (above 60 degrees Celsius) or too cold (below minus 20 degrees Celsius).

CAUTION

Please avoid placing SIYI products in humid or sandy environments.

When carrying and transporting SIYI products, please avoid operations that may damage components such as vibration or impact.

1 INTRODUCTION

1.1 Product Features

Wide Voltage Input

Wide Voltage Detection

The power module supports wide voltage input from 7 to 100 volts and wide voltage detection from 7 to 100 volts, providing reliable protection for flight safety.

Hall-Sensor Ammeter

Non-Contact Detection High-Precision Measurement

SIYI Technology's innovative design applies Hall sensors to ammeters to achieve non-contact current detection, which not only improves safety but also avoids measurement errors caused by contact resistance or poor contact. Compared with traditional shunts, Hall sensors eliminate insertion loss and electrical isolation, can more accurately reflect the actual value of the measured current, and have high measurement accuracy. Hall sensors are not affected by inductance, can truly transmit the waveform of the measured current, and are more accurate in measuring high-frequency and large currents.

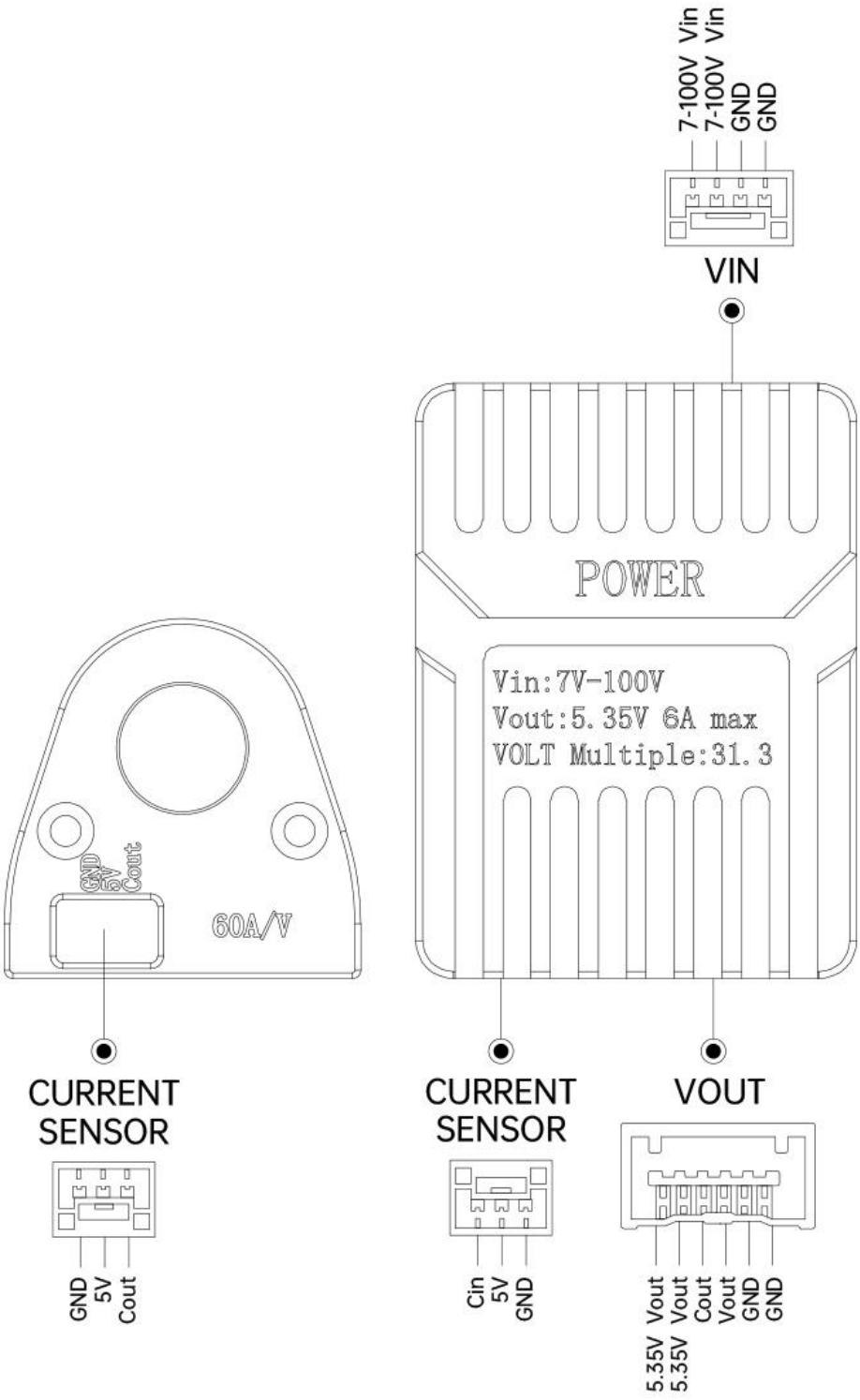
Compact & Lightweight

Excellent Heat Dissipation Performance

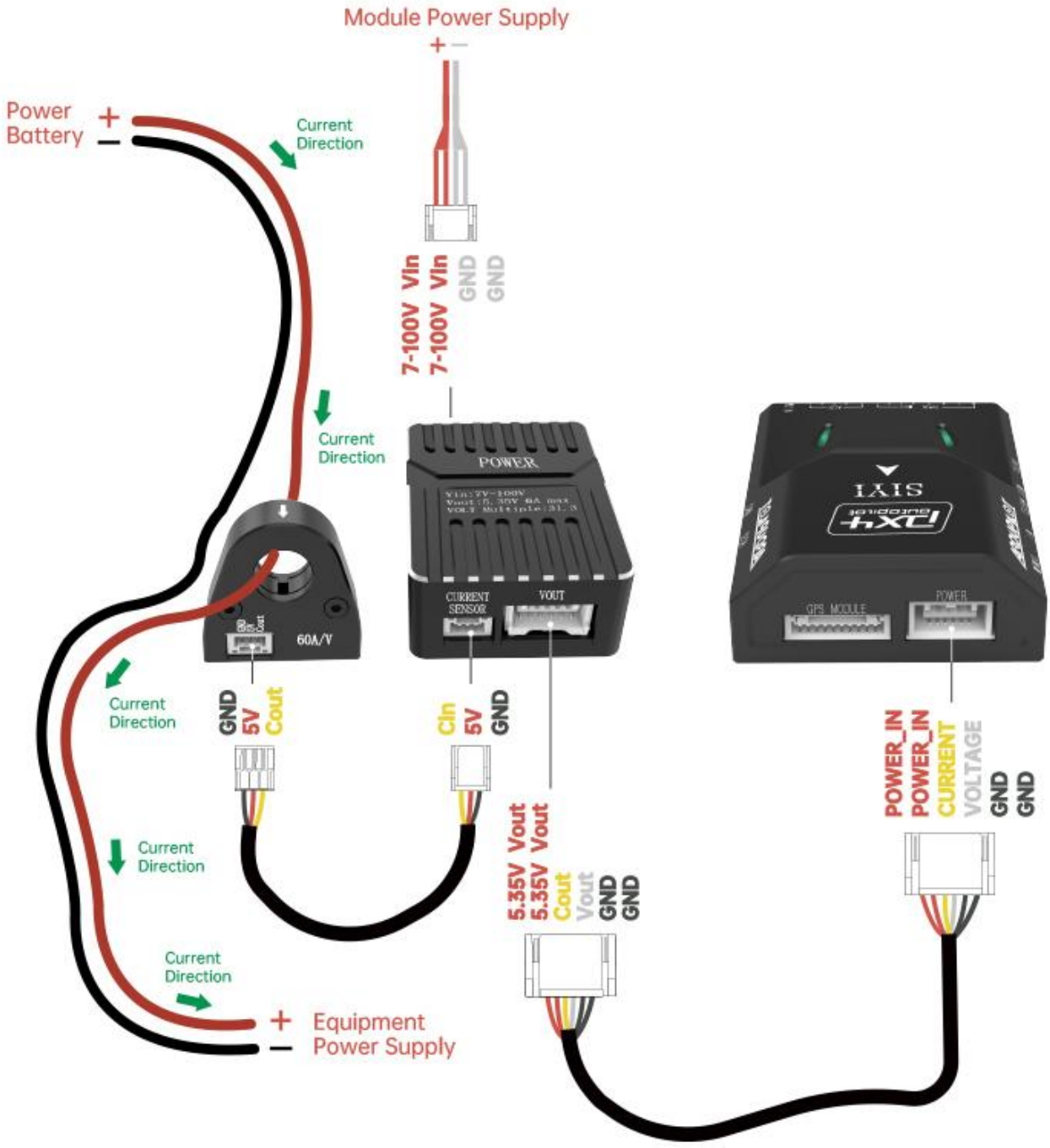
Born for the smart robotic ecosystem, minimalist design, small as millimeters, light as millet. All-aluminum alloy structure, high heat transfer coefficient and uniform

heat dissipation.

1.2 Interface & Pinouts



1.3 Typical Connection Diagram



Power Flight Controller and Measure Current through Hall-Sensor Ammeter

1.4 Technical Specifications

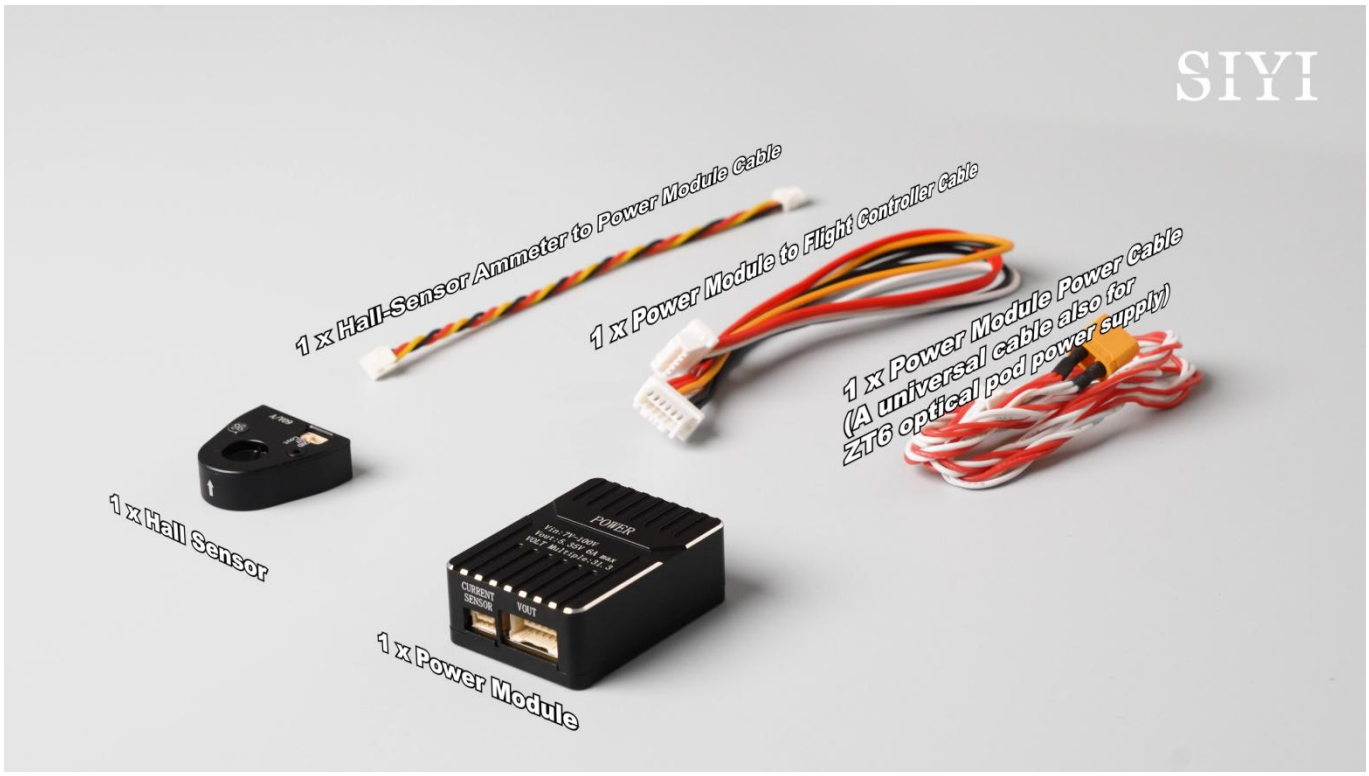
Power Module

Voltage Input Range	7 ~ 100 V
Voltage Divider Ratio	31.303
Voltage Output	5.35 V（±0.03 V）
Max Current Output	6 A
Product Dimension	42.5 x 31.5 x 16 mm
Product Weight	28.6 g

Hall Sensor

Current Measuring Accuracy	±0.1 A
Measuring Radio	60 A / V
Max Measuring Current	180 A
Wire Hole Diameter	9 mm
Wire Hole Length	21 mm
Product Dimension	25 x 25 x 9 mm
Product Weight	9.4 g

1.5 Packing List



1 x Power Module

1 x Hall Sensor

1 x Power Module to Flight Controller Cable
1 x Hall-Sensor Ammeter to Power Module Cable
1 x Power Module Power Cable
(A universal cable also for ZT6 optical pod power supply)

2 GET READY TO USE HALL-SENSOR POWER MODULE

This chapter mainly introduces the basic settings and calibration instructions of the Hall-sensor power module.

Watch Tutorial Videos Directly

SIYI Hall Sensor Wide Voltage High Precision Power Module

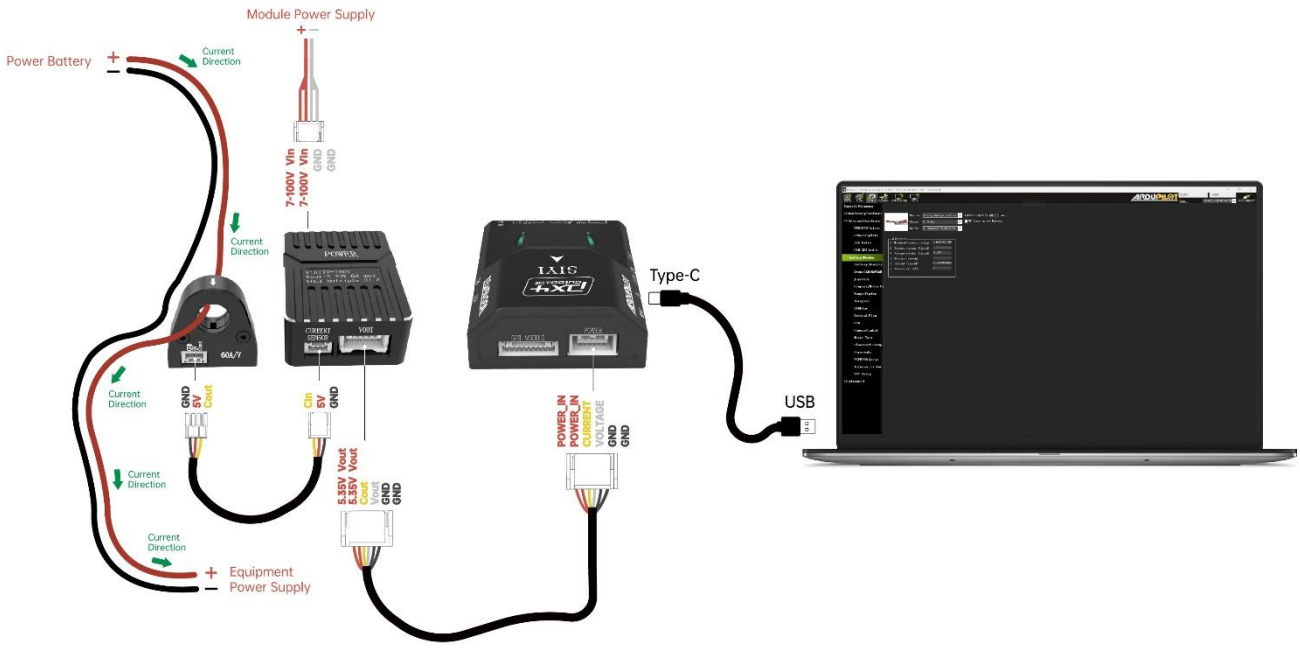
https://www.youtube.com/watch?v=nmNure_2FW4&list=PLnwDdKcxuIbe5dS5WggA83lJvdKa1W6zH&index=10

2.1 Configuring & Calibrating through Mission Planner

Let’s take an example of using the power module with N7 autopilot.

2.1.1 Basic Settings

Steps

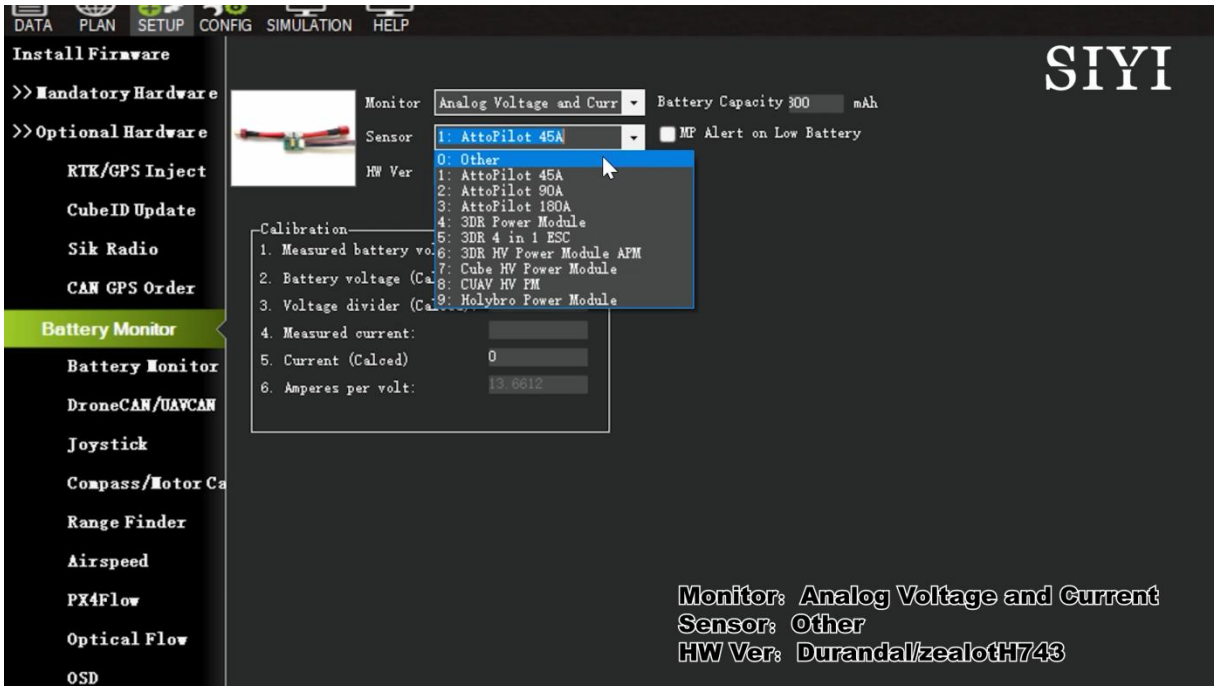


1. Please refer to the above picture and connect the power module, the flight controller, and the PC.

2. Run Mission Planner, go to “SETUP – Optional Hardware – Battery Monitor”.

3. Select the below parameters accordingly.

- Monitor: Analog Voltage & Current
- Sensor: Other
- HW Ver: Duranda / Zealot H743

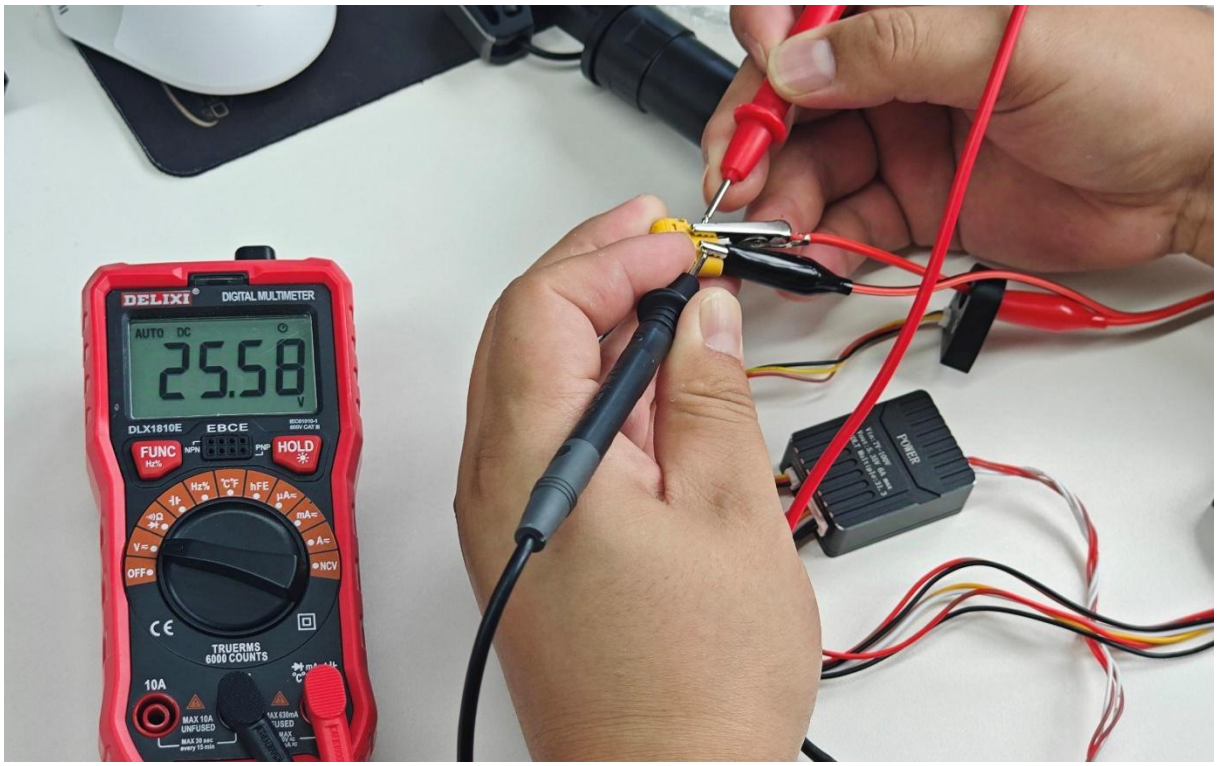


4. Then input the calibration parameters.

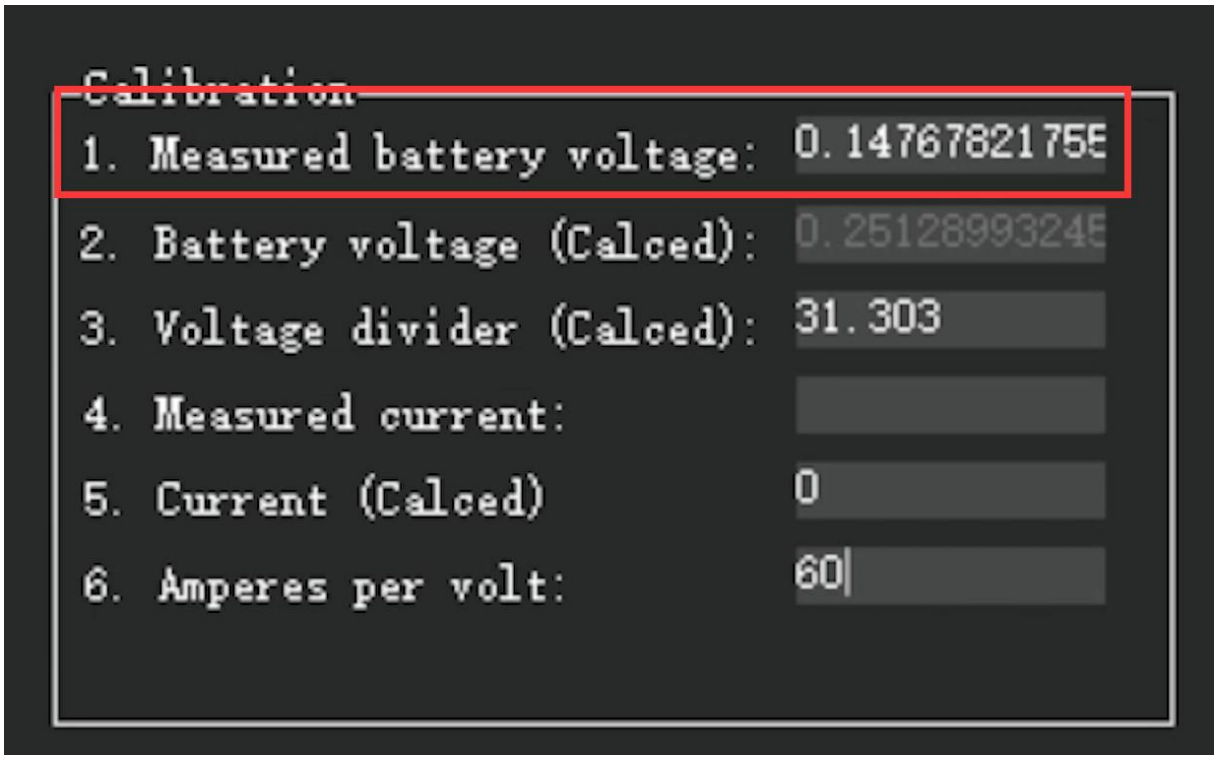
- Voltage Divider: 31.303
- Amperes per volt: 60

2.1.2 Calibrate Battery Voltage

Calibrating battery voltage can improve measuring accuracy.



Use a multimeter to measure the actual battery voltage, and input the voltage measured by the multimeter into this menu and save it.

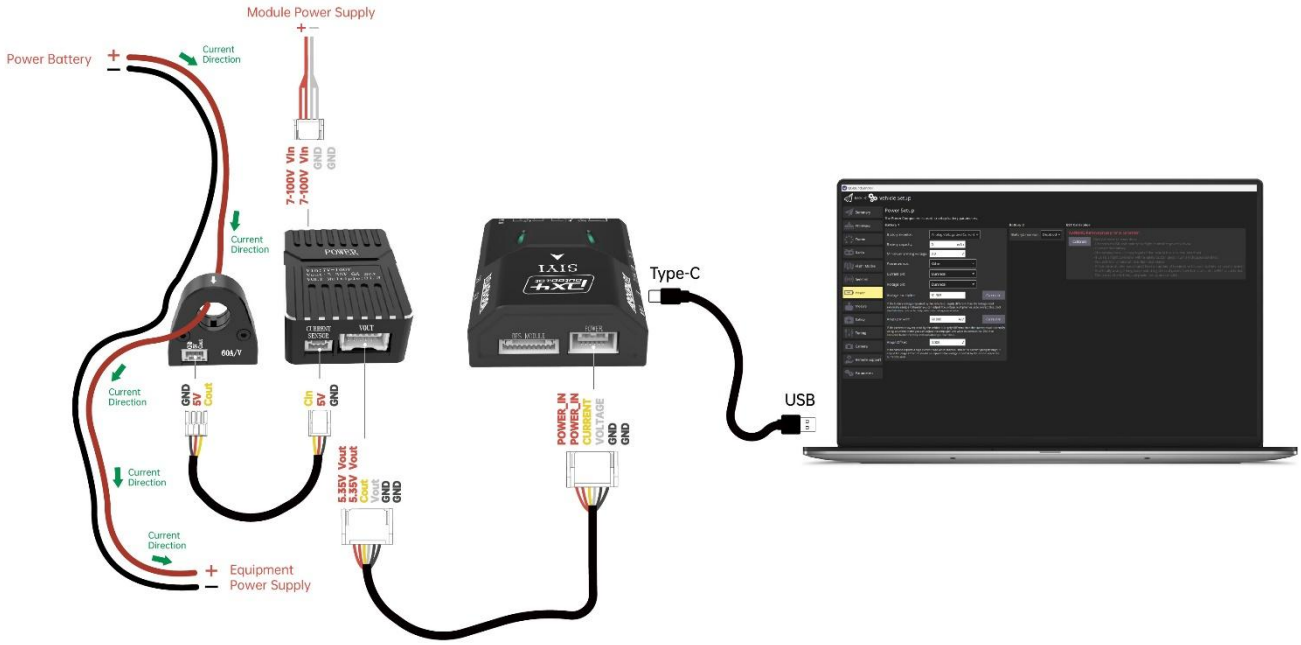


2.2 Configuring & Calibrating through QGroundControl

Let’s take an example of using the power module with N7 autopilot.

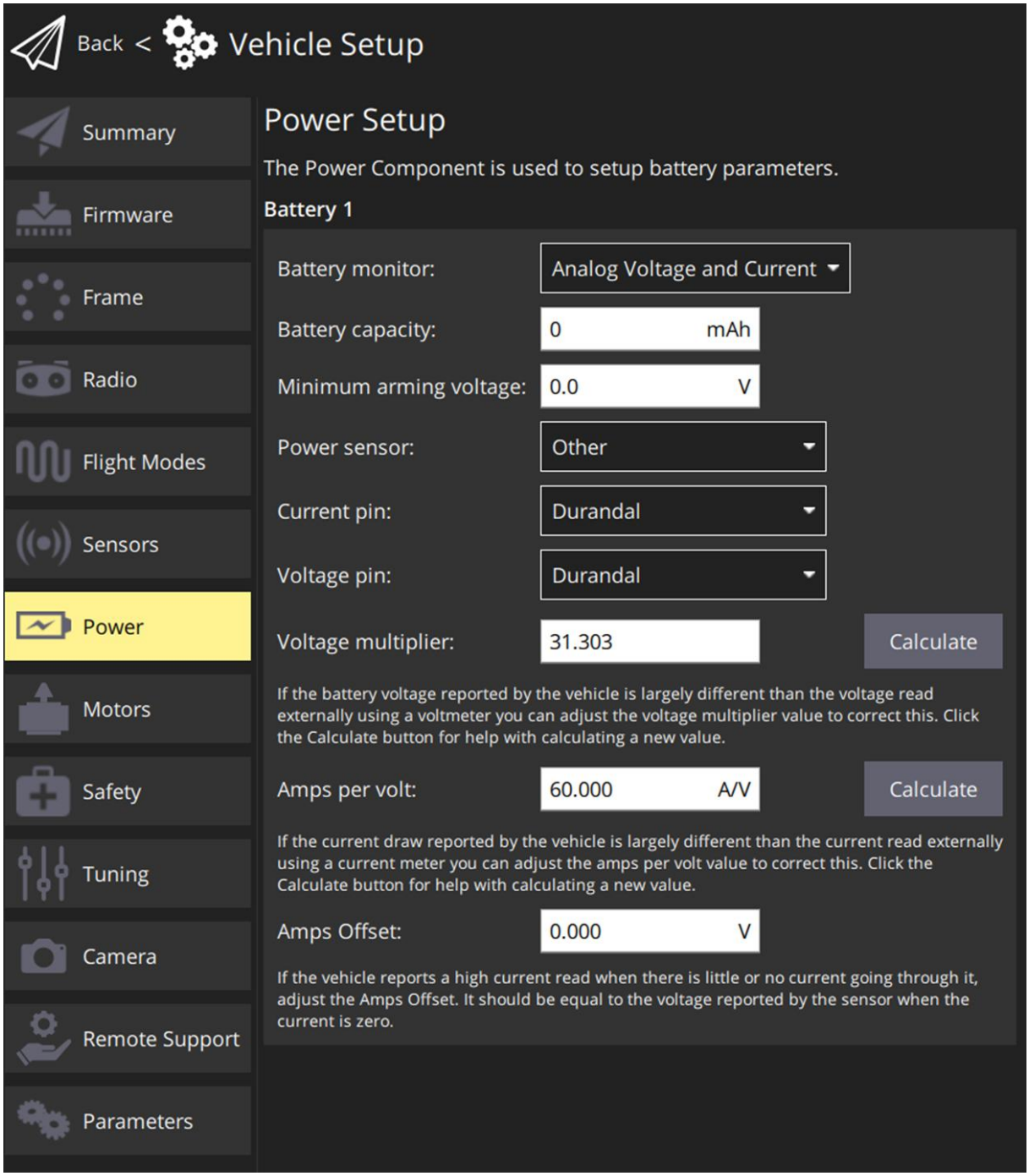
2.2.1 Basic Settings

Steps



1. Please refer to the above picture and connect the power module, the flight controller, and the PC.

2. Run QGroundControl, go to “Vehicle Setup – Power”.



3. Select the below parameters accordingly.

- Battery monitor: Analog Voltage & Current
- Power sensor: Other
- Current pin: Durandal

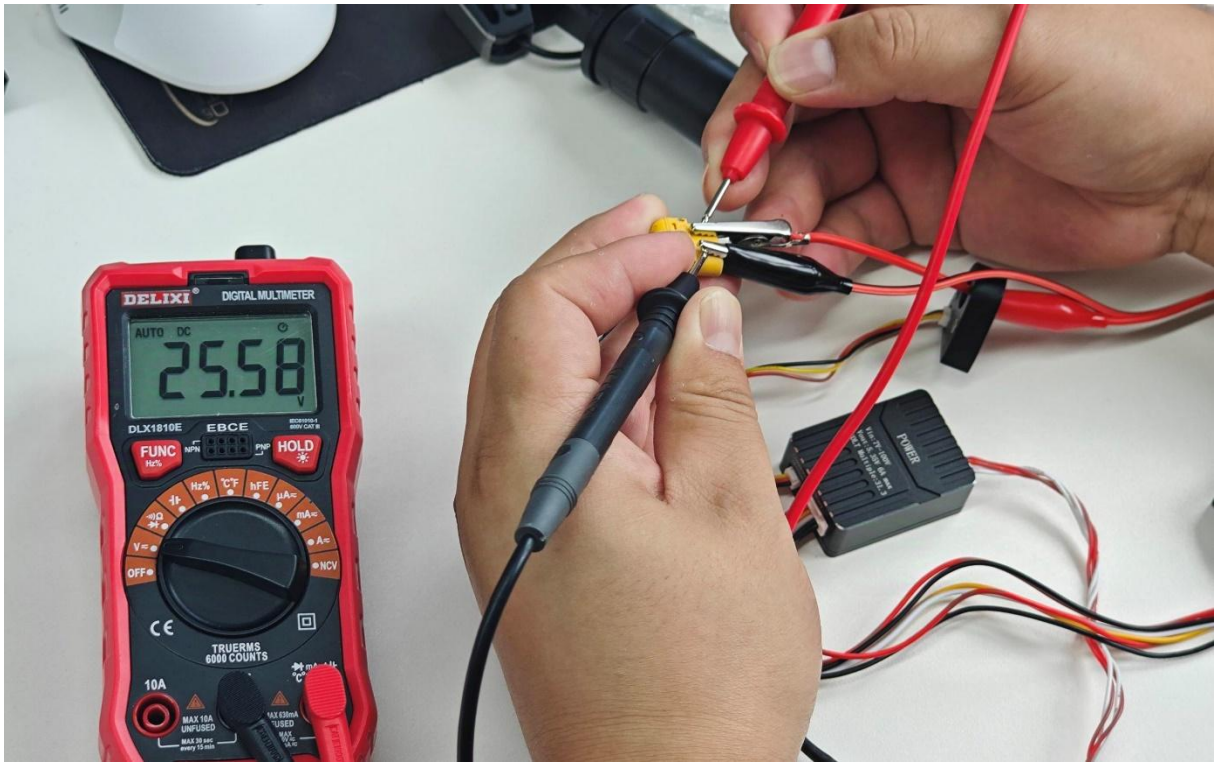
- Voltage pin: Durandal

4. Then input the calibration parameters.

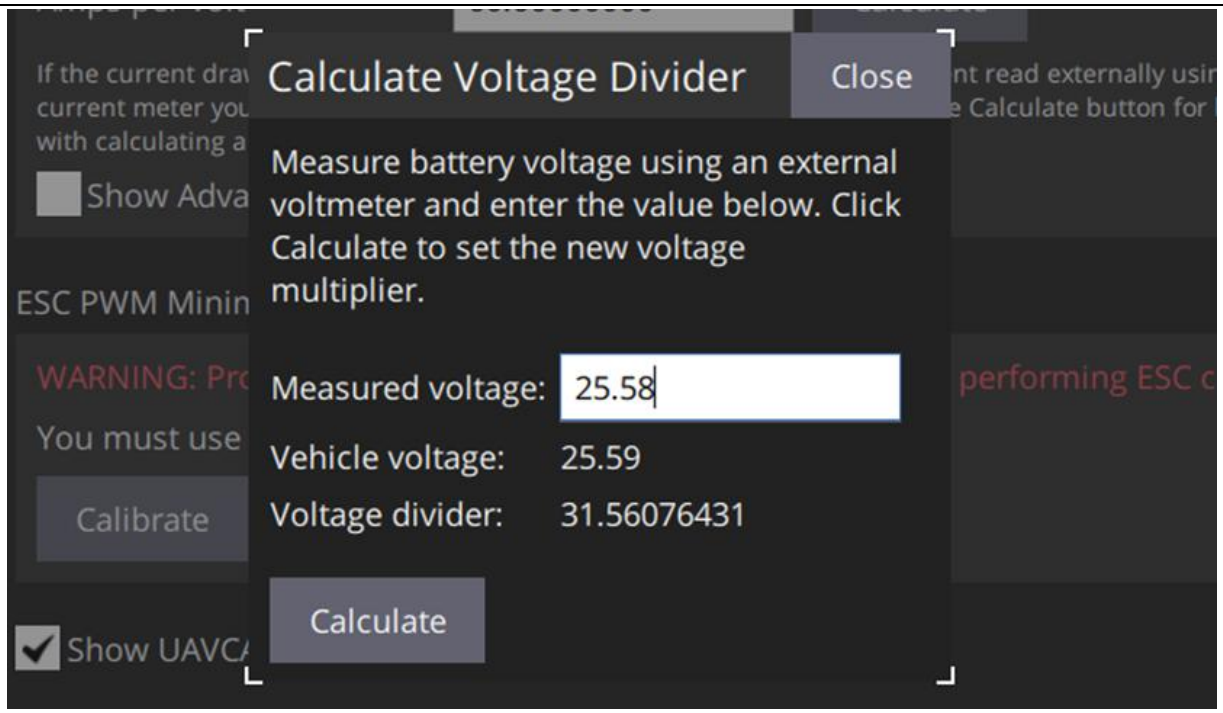
- Voltage multiplier: 31.303
- Amps per volt: 60

2.2.2 Calibrate Battery Voltage

Calibrating battery voltage can improve measuring accuracy.



Use a multimeter to measure the actual battery voltage, and input the voltage measured by the multimeter into this menu and save it.


Calculate Voltage Divider
Close
Measure battery voltage using an external voltmeter and enter the value below. Click Calculate to set the new voltage multiplier.
Measured voltage:
25.58
Vehicle voltage:
25.59
Voltage divider:
31.56076431
Calculate
Show Adva
ESC PWM Minin
WARNING: Pro
You must use
Calibrate
Show UAVC
performing ESC c

3 AFTER-SALE SERVICE

Please visit the SIYI Technology support page at Service and Support - SIYI Technology | Empowering and Building an Intelligent Robot Ecology for the latest after-sales and warranty information.