# Specification

Product Name：ETHGPS006

Product Model：ETHGPS006_V1.0_240401

| configure | parameter | function |
|---|---|---|
| Communication | Ethernet、UART | required |
| Gyro | | optional |
| Buzzer | | optional |
| SNMP | | optional |
| GPS | | optional |
| LCD | | optional |

| Signature and seal of the supplier | Signature and seal of the customer |
|---|---|
| | |

| | | | | | |
|---|---|---|---|---|---|
| Edit | AmorZhang | Verify | | Approve | |
| Date | | Date | | Date | |

| Version | Date | Editor | Version Revision Note |
|---|---|---|---|
| V1.0 | 2024.04.17 | AmorZhang | Create the first draft |
| V1.1 | 2024.09.10 | AmorZhang | Add the LCD interface, increase the number of analog diagram |
| | | | |
| | | | |

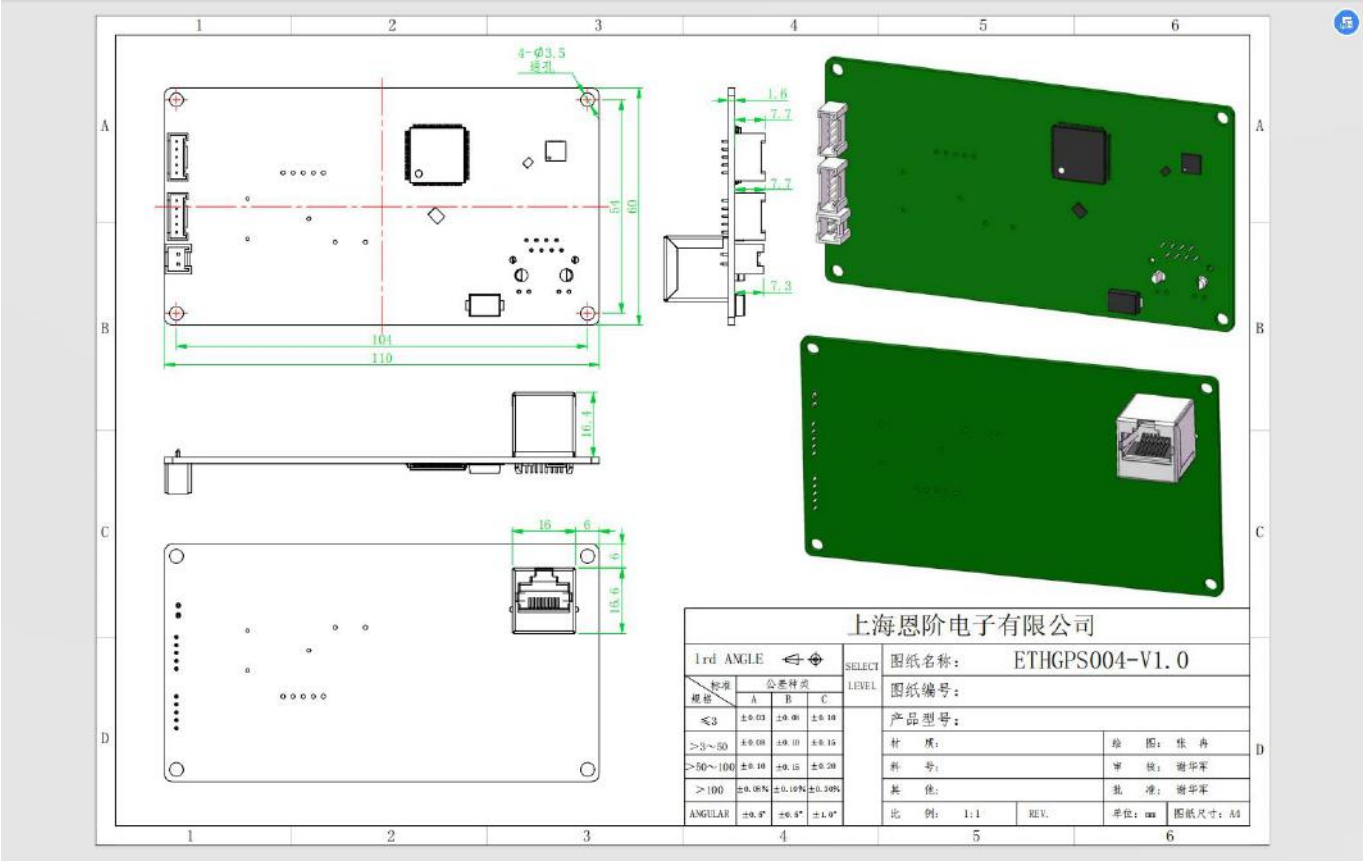
# Content

# 1、Application scenarios

This product is a main control transfer board applied in the communication backup power solution, with the advantages of small size, light weight, long life, high temperature resistance and so on. Intelligent battery Management system (BMS) independently developed by the level, The battery adopts modular design to help operators reduce the workload and cost of base station operation and maintenance, implement intelligent management, energy saving and emission reduction, and significantly reduce the operation cost of base station and improve the operational efficiency. Data communication with cloud platform through SNMP protocol and Ethernet protocol, and remote parameter configuration and data monitoring through human-computer interaction of upper computer software.

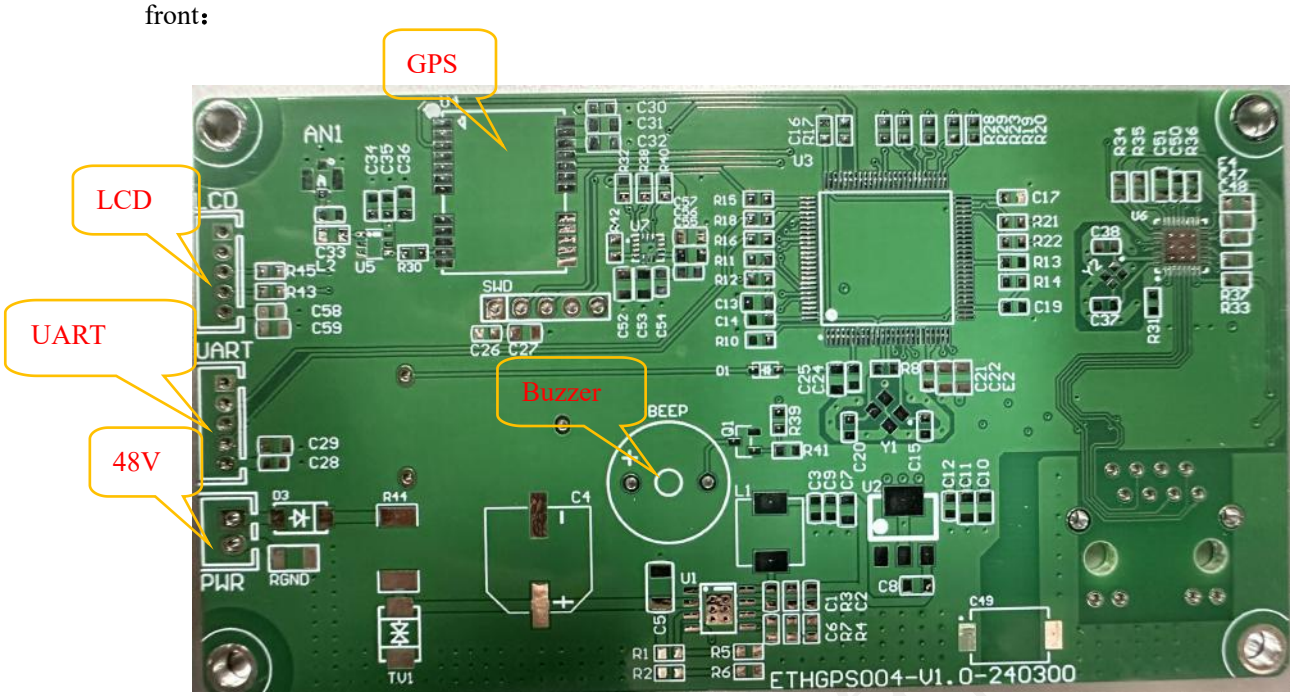
# 2、Appearance and size

## 2.1、Dimensional drawing

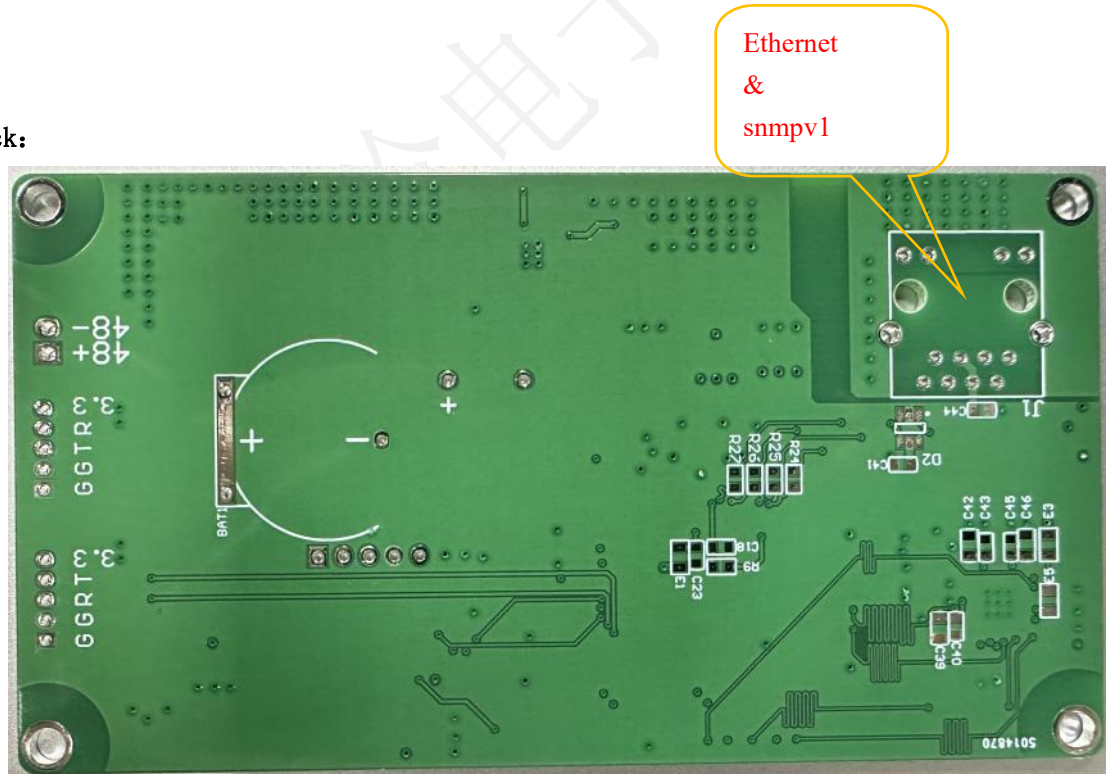


## 2.2、Refer to the physical picture

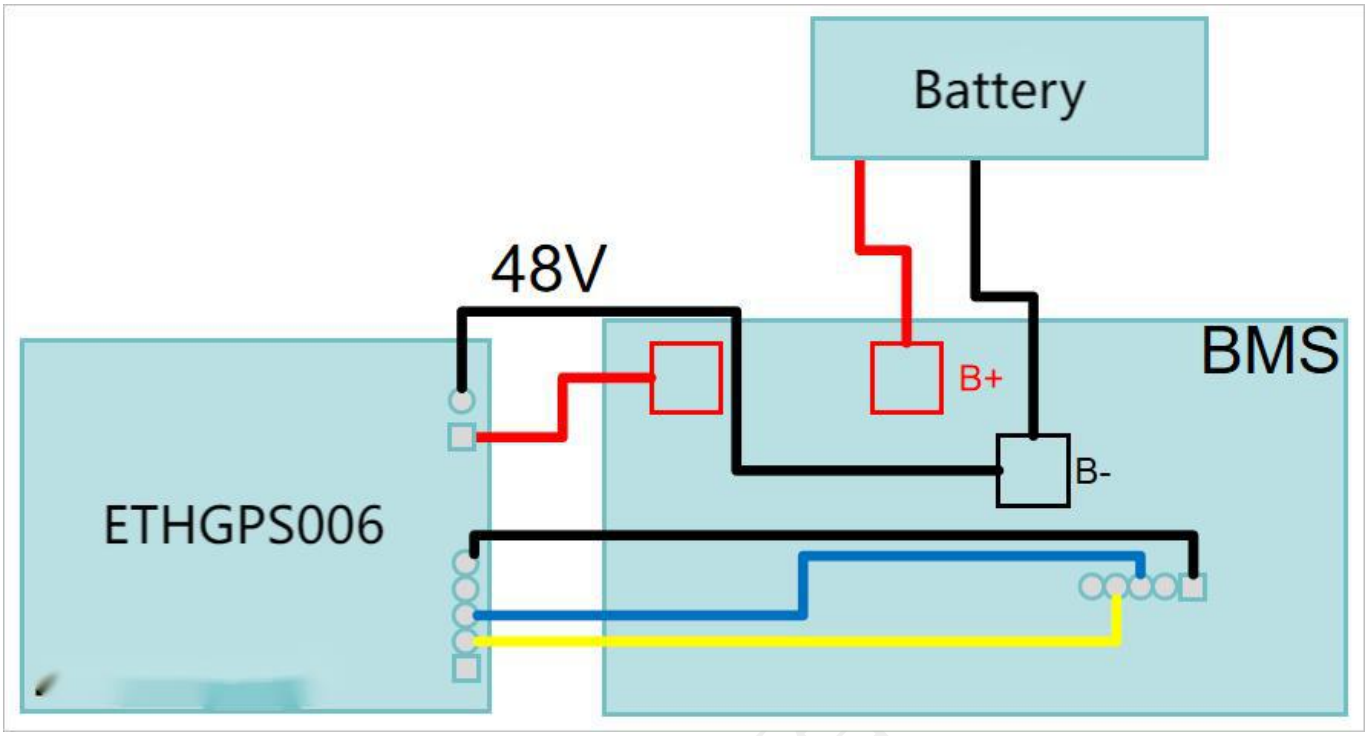
front：



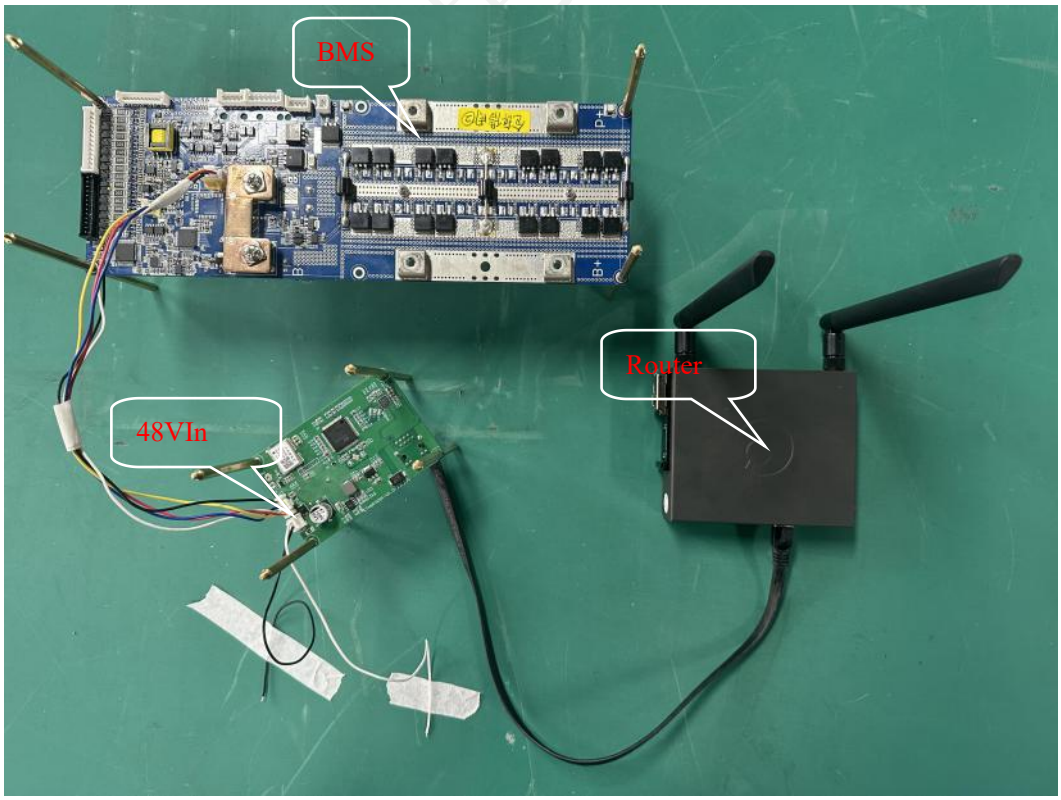

back：



2.3、Connect the reference diagram




schematic diagram




picture of real products

# 3、Functional characteristics

## 3.1、Ethernet communication

Support for SNMP protocol communication, version of SNMP V1.

## 3.2、UART

Communicate with the BMS to obtain the status parameters of the battery pack.

## 3.3、GPS

The GPS satellite is used to provide three-dimensional position, three-dimensional speed and other information to all parts of the world in real time.

## 3.4、Buzzer

When the device is determined to be stolen, the buzzer begins to operate, half a second ring, it needs to be manually removed.

## 3.5、Gyro

The information collected by the gyroscope (MPU6050) mainly includes the angular acceleration of the x-axis, y-axis and z-axis rotation and the quaternion output through the digital motion processor DMP. MCU calculates the movement acceleration of the device by the x axis, y axis and z axis rotation acceleration, and MCU calculates the pitch Angle and roll Angle data by the quaternion acquisition. Note: The gyroscope chip is kept positive upward when initialization in case the gyroscope fails, resulting in abnormal subsequent gyroscope data reading. In addition, it takes about one minute for ETHGPS006 to initialize after power on, because the gyroscope needs delay before initialization, and FLASH needs the power stability of the board before reading and writing.

After turning on the anti-theft function switch, ETHGPS006 will record the current attitude information. If the acceleration deviation continuously exceeds 0.3 $m/s^2$ for ten seconds, it is judged that the device is stolen;Any pitch or roll angle deviation exceeds 30 for ten seconds. If the stolen alarm is triggered by mistake, you can close the stolen alarm by closing the stolen switch through the upper organ.

# 4、Interface definition

## 4.1、Ethernet

The Ethernet communication interface definition:

| Pin number | Feet name | Defined declaration |
|---|---|---|
| 1 | TX+ | Send data+ |
| 2 | TX- | Send data- |
| 3 | RX+ | Receive data+ |
| 4 | NC | Unused |
| 5 | NC | Unused |
| 6 | RX- | Receive data- |
| 7 | NC | Unused |
| 8 | NC | Unused |

## 4.2、UART

UART interface definition:

| Pin number | Feet name | Defined declaration |
|---|---|---|
| 1 | GND | Ground |
| 2 | GND | Ground |
| 3 | LTXD | Send data |
| 4 | LRXD | Receive data |
| 5 | VCC | Power supply |

## 4.3、48V

48V 接口定义：

| Pin number | Feet name | Defined declaration |
|---|---|---|
| 1 | + | Positive pole |
| 2 | - | Negative pole |

## 4.4、LCD 通信

LCD 通信接口定义：

| Pin number | Feet name | Defined declaration |
|---|---|---|
| 1 | GND | Ground |
| 2 | GND | Ground |
| 3 | LRXD | Receive data |

| | | |
|---|---|---|
| 4 | LTXD | Send data |
| 5 | VCC | Power supply |

## 6、Notes

- The use process should pay attention to anti-static, moisture-proof, waterproof, etc.
- Please follow the design parameters and conditions of use, and shall not exceed the value in this specification, otherwise the protective plate may be damaged.
- After combining the battery pack and the protection panel, if there is no voltage output or no charge, please check if the wiring is correct.
- The company reserves the right of final interpretation.