



Datasheet – Cube Power Module for Cube Autopilot

Description

Cube Power Module is a voltage monitoring and power distribution module designed specifically for the Cube Autopilot series. It accurately measures battery voltage up to 14S LiPo (58.8 V) and communicates over I2C using a calibrated digital front-end. It also includes dual independent 5.3 V / 3 A outputs for redundant autopilot power. The module is enclosed in a rugged CNC-machined aluminum housing for mechanical stability and EMI protection.

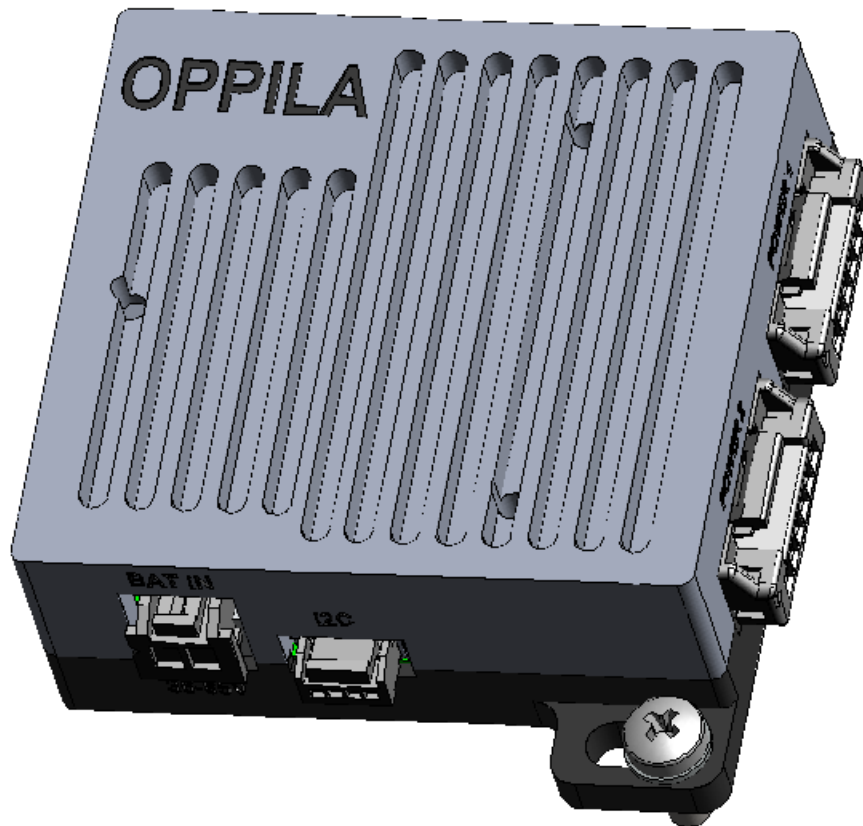


Fig1: High-Precision I2C based Power Module for Cube Autopilot

Features

- Supports battery input from 2S to 14S (7 V – 58.8 V)
- Accurate digital voltage telemetry (± 0.1 V)
- Fixed I2C address (0x42) for Cube Autopilot compatibility
- Dual independent 5.3 V / 3A power outputs (Power1 and Power2)
- LED indicators for input power and output rails
- Reverse voltage protection up to 58.8 V (14S)
- Built-in surge protection
- CNC-machined aluminum enclosure (included)

Applications

- Cube Autopilot-based UAVs and drones
- Battery voltage monitoring systems
- Flight control power distribution
- Robotics and automation requiring I2C-based power monitoring

Specifications

| Parameter | Value |
|------------------------------|-------------------------------------|
| Input Voltage Range | 7 V – 58.8 V (2S – 14S LiPo) |
| Voltage Measurement Accuracy | ±0.1 V |
| I2C Address | Fixed at 0x42 |
| Output Voltage (Power1) | 5.3 V / 3 A |
| Output Voltage (Power2) | 5.3 V / 3 A |
| Enclosure | CNC-machined aluminum |
| Dimensions in millimeter | 57.5 × 47.5 x 19 (including mounts) |
| Mounting | 2 × M3 oval slots |
| Weight | 50 grams approx. |
| Operating Temperature | –40 °C to +85 °C |

Connector Pinouts

1. Battery Input

| Pin | Signal | Description |
|-----|--------|------------------|
| 1 | Vbat | Battery positive |
| 2 | PGND | Power ground |

2. I2C Communication

| Pin | Signal | Description |
|-----|---------|--------------------------|
| 1 | INA_3V3 | Logic supply (3.3 V ref) |
| 2 | I2C_SCL | I2C clock line |
| 3 | I2C_SDA | I2C data line |
| 4 | PGND | Signal ground |

3. Power Output 1 (Power1)

| Pin | Signal | Description |
|-----|--------|------------------------|
| 1 | PGND | Power ground |
| 2 | 5.3V | Regulated Output 5.3 V |
| 3 | NC | Not connected |
| 4 | NC | Not connected |
| 5 | PGND | Power ground |
| 6 | 5.3V | Regulated Output 5.3 V |

4. Power Output 2 (Power2)

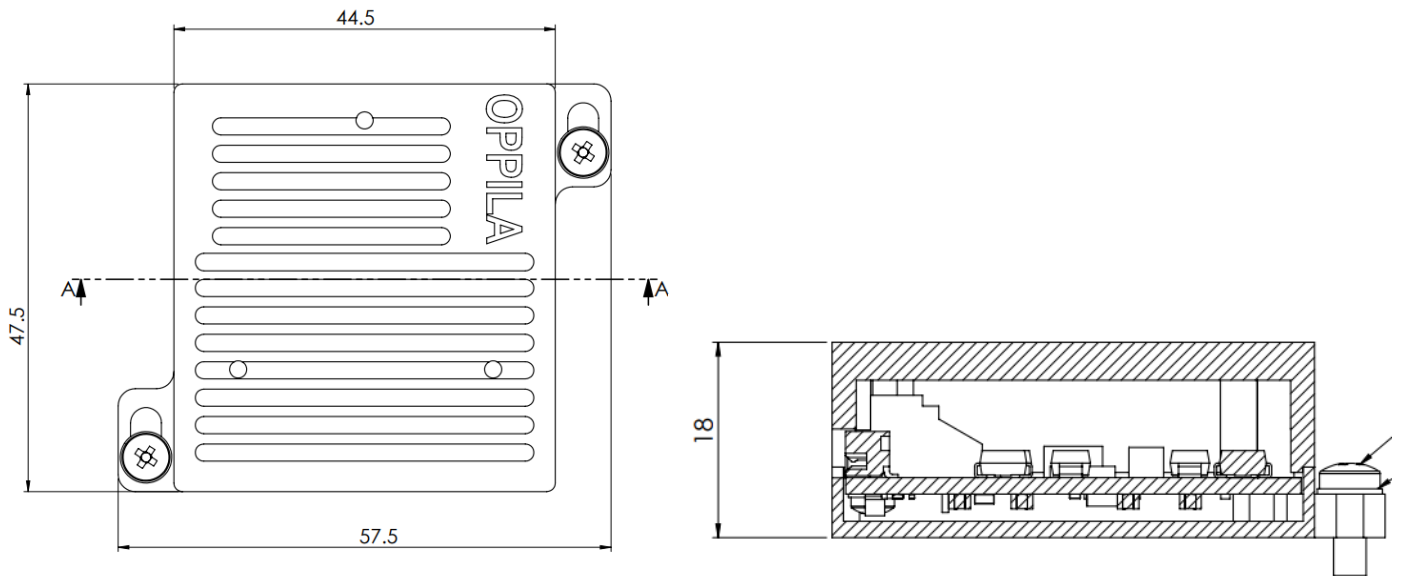
| Pin | Signal | Description |
|-----|--------|--------------|
| 1 | PGND | Power ground |

| | | |
|---|------|------------------------|
| 2 | 5.3V | Regulated Output 5.3 V |
| 3 | NC | Not connected |
| 4 | NC | Not connected |
| 5 | PGND | Power ground |
| 6 | 5.3V | Regulated Output 5.3 V |

Mechanical & Environmental

| Parameter | Value |
|-----------------------|----------------------------------------------|
| Dimensions | 57.5 mm x 47.5 mm x 18 mm (including mounts) |
| Mounting | 2 × M3 oval slots |
| Weight | 50 g |
| Enclosure | CNC-machined aluminum (included by default) |
| Operating Temperature | −20 °C to +85 °C |

Dimensional drawing



Ordering Information:

OP – CPM 5V3 DC 3A

Manufacturer: Oppila Microsystems Private Limited.

Product Series: CPM

Voltage: Regulated output voltage: 5.3 V

Channel Type: Dual independent output channels

Output Current: Maximum output current per channel: 3 A

Part Number Configuration:

| OP | CPM | 5V3 | DC | 3A |
|------------------------------------------------|----------------|----------------|---------------------|----------------|
| Manufacturer | Series | Output Voltage | Output channels | Output Current |
| OP – Oppila Microsystems Private Limited | Product Series | 5V0 – 5.0 V | SC – Single channel | 2A – 2.0 A |
| | | 5V3 – 5.3 V | DC – Dual channel | 3A – 3.0 A |
| | | 5V5 – 5.5V | | 5A – 5.0A |

For custom voltage, current options, please contact us.

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