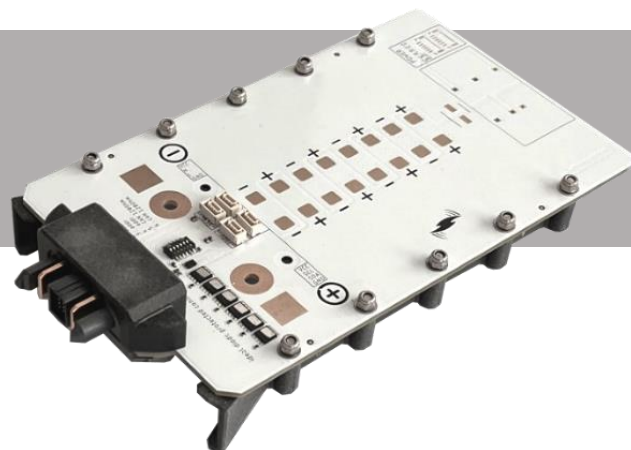




# Datasheet

## Carrier board for smart batteries aeroPAX6



The carrier board is the mounting interface between your drone or application and aeroPAX6 smart batteries. It connects the batteries mechanically and electrically and provides communication interfaces.

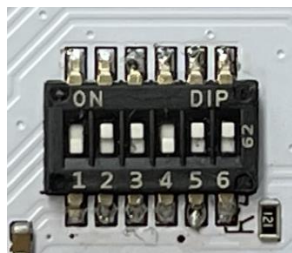
### General information

Maximum voltage	60 V
Maximum continuous current (tested)	80 A
Dimensions	204mm x 106mm x 39mm
Weight	150 g

### Addressing

The carrier boards are equipped with a dip-switch element, that allows you to set the address of the battery tray and set a 120Ohm CAN bus termination resistor. The flight controller needs to have the same address configured as set on the battery tray. When using several batteries in one system each tray needs a unique address. And any battery inserted into that specific tray will report to the same address.

To activate address readings, the board needs to be connected to a logic voltage supply.



The switch on the right side (marked with ON) codes for a 1, and the switch on the left side codes for a 0. The 4-bit address is decoded:

$$address = bit1 \times 1 + bit2 \times 2 + bit3 \times 4 + bit4 \times 8$$

For example:

Bit1= 0; bit2=1; bit3=1; bit4=0



$$address = 0 \times 1 + 1 \times 2 + 1 \times 4 + 0 \times 8 = 6$$

The addresses 0 (all bits 0) and 15 (all bits 1) are reserved and should not be used in an application.

## Communication interfaces

The carrier board comprises two connectors for a CAN bus interface, which makes it possible to daisy chain several devices. The I2C interface can be used for debugging and programming purposes. We provide a library to interact with the battery over I2C. The aeroPAX6 has an isolated I2C transceiver thereby enabling serial and parallel usage of the batteries.

Please note that the vcc of the CAN connectors and the vcc of the I2C connectors are connected.

## Mounting interface

The rails that carry the battery have through holes to connect to the carrier PCB as well as to the application. Always secure your screws by means of a suitable technique and control them on a regular basis.

## Standard model

The standard model features two screw connectors for the positive and negative voltage as well as soldering pads for current distribution. It is suited for applications where there are no parallel batteries.

We have added connectors for an isolated 5V 2A buck converter (Meanwell NSD10-12S5). That you can use to power your application.

## Protected model

The protected model with ideal diode output protection is recommended for applications with parallel batteries.

It has the same features as the standard model with the addition of the ideal diode output protection.

Current flow is only permitted in the discharge direction of the batteries. This prevents the batteries to exchange charges between each other in case of different voltages especially when inserting a fully charged battery into a system that still contains a partly charged battery. During battery swapping, the open terminals of the battery connector are disconnected by the ideal diode to prevent an accidental short circuit by the user.

## Customization

The carrier board can be customized to fit the needs of your specific application.

Please contact us to discuss your customization requirements.

Possible customizations could be:

- More screw connectors for current distribution
- Certain connectors for current distribution



- A different buck converter
- Reduced size or holes to reduce weight.
- More can bus connectors.
- Fixed address configuration and fixed can bus termination.

