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## **μPAD Accessory Boards**

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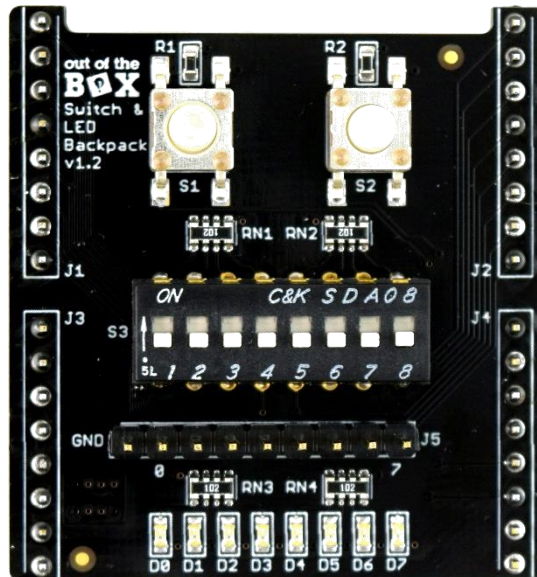
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# Switch & LED Backpack

The Switch & LED Backpack is a very basic accessory board used for interfacing with GPIO pins.

## Features

- Two tactile switches
- One 8x Dip switch
- 8 LEDs
- LSA monitoring port attached to LED pins

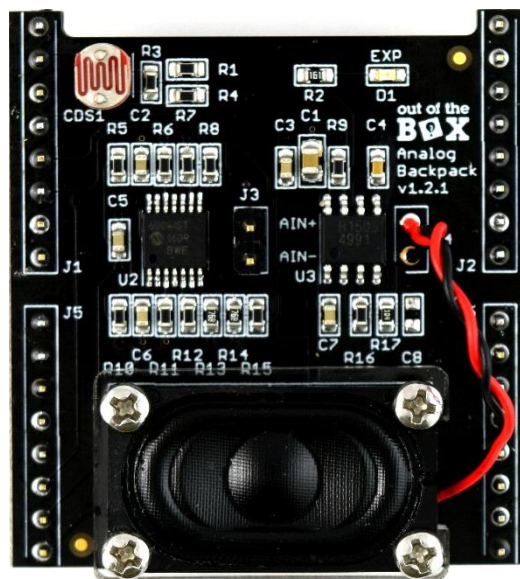


# Analog Backpack

The Analog Backpack is an accessory board that makes use of the  $\mu$ PAD Xmega's ADC and DAC peripherals.

## Features

- A CDS cell sensor (REFDES CDS1) interfaced with via a Wheatstone bridge or as a resistor divider
- $\pm 5V$  differential analog input (REFDES J3)
- Xmega DAC driven audio amplifier ( $\sim 1W$ )
  - Powered by external power supply via the  $\mu$ PAD VIN supply (DC Barrel Jack)
- External Power Indicator (REFDES D1)

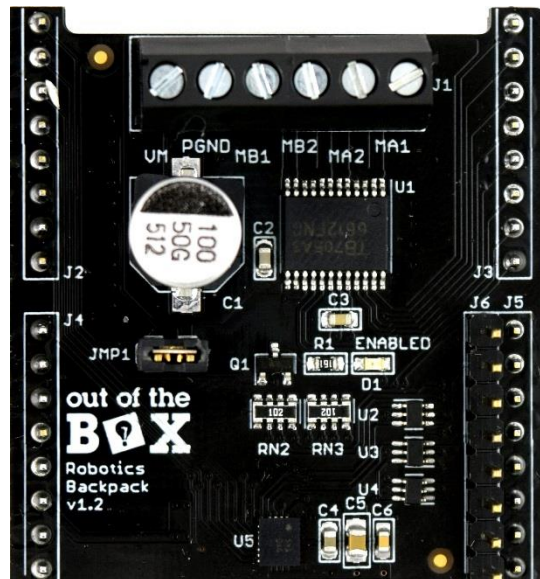


# Robotics Backpack

The Robotics Backpack is an accessory board used to control actuators and read from a inertial measurement unit (IMU).

## Features

- Up to 35V Dual 1A motor driver
  - Can be powered externally or by the  $\mu$ PAD VIN supply (DC Barrel Jack) using a shunt jumper (REFDES JMP1).
  - LED D1 indicates when motor driver is enabled rather than in standby.
- 6 degree of freedom IMU (XYZ accelerometers and gyroscopes)
  - Interface via SPI or I2C by using analog switches
- LSA header (REFDES J6) exposes SPI and I2C signals.
  - GND signal can be probed using PGND terminal or exposed GND pins on the Memory Base.



# Memory Base 2.X

The Memory Base 2.X is an accessory board used for expanding the memory of the Xmega microcontroller. The board also breaks out the external bus interface (EBI) to a right-angle header for easy use with a breadboard. This board interfaces to the  $\mu$ PAD using the 50-pin Base Connector.

## Features

- 32K bytes 10nS parallel SRAM connected to the Xmega external bus interface (EBI)
  - Address, data and control signals exposed for LSA/breadboard
- 8M bytes flash SPI ROM.
  - SPI signals exposed for LSA.

