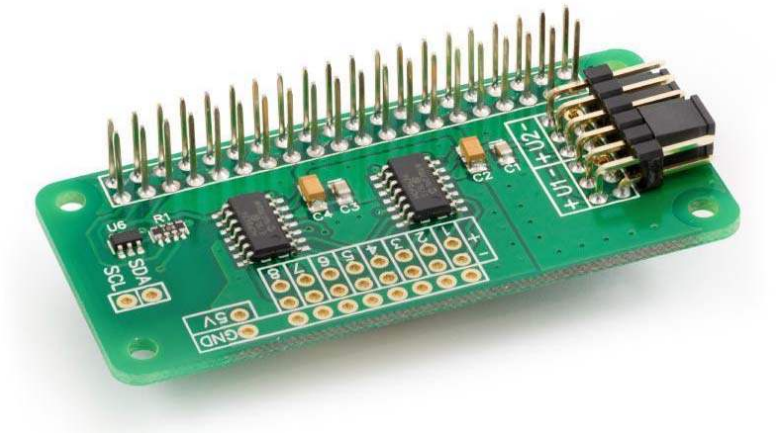


ADC Differential Pi

Features

- 8 x 18-bit differential inputs
- Control via the Raspberry Pi I2C port
- Stack up to 4 ADC Differential Pi boards on a single Raspberry Pi
- Jumper selectable I2C addresses
- Buffered 5V I2C port
- Based on the MCP3424 from Microchip Technologies Inc
- Input range of ±2.048V
- On-board 2.048V reference voltage (Accuracy ± 0.05%, Drift: 15 ppm/°C)
- On-Board Programmable Gain Amplifier (PGA): Gains of 1, 2, 4 or 8
- Programmable Data Rate Options:
  - 3.75 SPS (18 bits)
  - 15 SPS (16 bits)
  - 60 SPS (14 bits)
  - 240 SPS (12 bits)

- One-Shot or Continuous Conversion Options
  The ADC Differential Pi is an 8 channel 18 bit analogue to digital converter designed to work with the Raspberry Pi. The ADC Differential Pi is based on two Microchip MCP3424 A/D converters each containing 4 analogue inputs. The MCP3424 is a delta-sigma A/D converter with low noise differential inputs.

  We designed the ADC Differential Pi as a companion for our ADC Pi. Unlike the ADC Pi the ADC Differential Pi does not include any voltage dividers so the inputs can be used to measure a differential

  voltage range of ±2.048V. This is useful for measuring inputs below ±2.048V or allows you to use your own voltage divider to measure higher voltages.

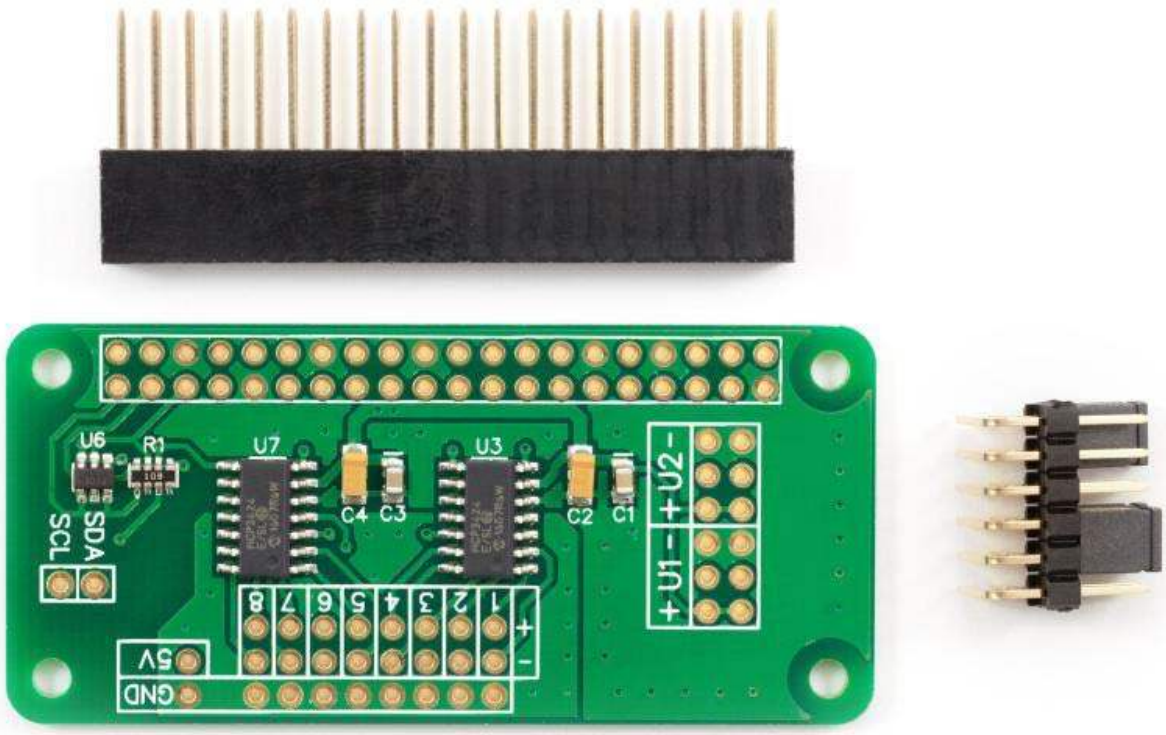
  The ADC Differential Pi is powered through the host Raspberry Pi using the GPIO port and extended pins on the GPIO connector allow you to stack the ADC Differential Pi along with other expansion boards.

  The two MCP3424 A/D converters communicate via i2c to the host Raspberry Pi giving you eight analogue inputs to use. A logic level converter is included on the ADC Pi Plus board giving you a buffered 5V i2c port making it easy to add other I2C devices which operate at 5 volts without damaging the raspberry pi 3.3 volt i2c port. The i2c buffer uses N-channel mosfets with a maximum drain current of 100mA.

  The I2C address bits are selectable using the on-board jumpers. The MCP3424 supports up to 8 different I2C addresses so with two A/D converters on each ADC Differential Pi you can stack up to 4 ADC Differential Pi boards on a single Raspberry Pi giving you 32 ADC inputs.

  The MCP3424 contains an on-board 2.048V reference voltage with an input range of ±2.048V differentially (full scale range of 4.096V/PGA). A programmable Gain Amplifier gives the user a selectable gain of x1, x2, x4 or x8 before the analogue to digital conversion takes place.

  The data rate for analogue to digital conversions is 3.75 (18 bit), 15 (16 bit), 60 (14 bit) or 240 (12 bit) samples per second. Data rate and resolution can be configured within software using the I2C interface.



https://uk.pi-supply.com/products/adc-differential-pi/3-20-19