

# ADC PROTO™

## Manual

*All Mikroelektronika's development systems feature a large number of peripheral modules expanding microcontroller's range of application and making the process of program testing easier. In addition to these modules, it is also possible to use numerous additional modules linked to the development system through the I/O port connectors. Some of these additional modules can operate as stand-alone devices without being connected to the microcontroller.*

# Additional Board

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## ADC PROTO Additional Board

The *ADC PROTO* additional board is used to convert analog voltage signals into digital voltage signals in 12-bit resolution. The converted voltage signal is sent to a microcontroller via the Serial Peripheral Interface (SPI).

### Key features:

- 4 A/D input channels;
- A/D conversion in 12-bit resolution;
- power supply voltage ranges from 2.7 to 5.5V; and
- capable of connecting with various development systems via proto board.

### How to connect the board?

The *ADC PROTO* additional board is connected to a development system via the proto board, Figure 4. Connection between the additional and proto boards is established via the 1x6 connector CN1 provided on the additional board. A voltage signal to be converted is supplied via two screw connectors CN2 and CN3. Figure 3 shows the way of providing voltage signal for A/D conversion to the CH0 and CH1 channels.

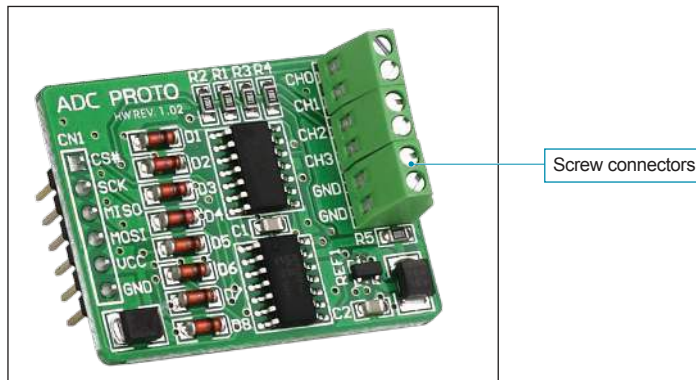


Figure 1: *ADC PROTO* additional board

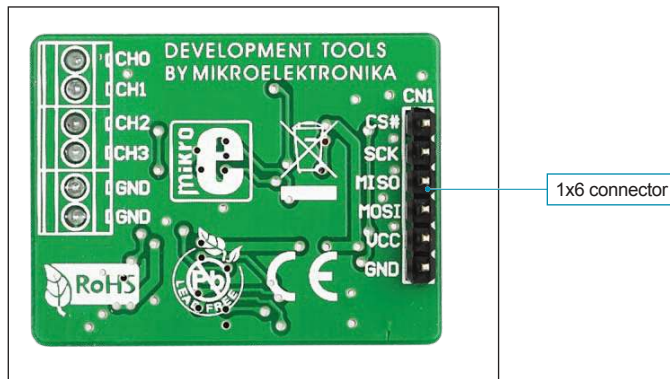


Figure 2: The back side of the additional board

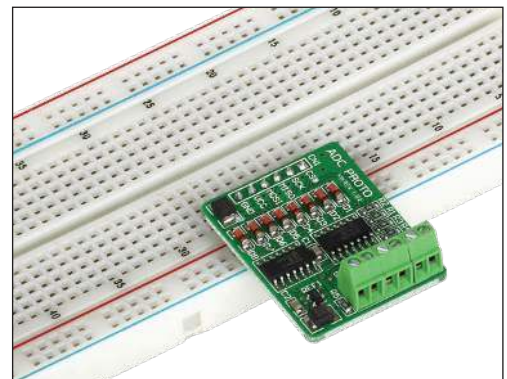
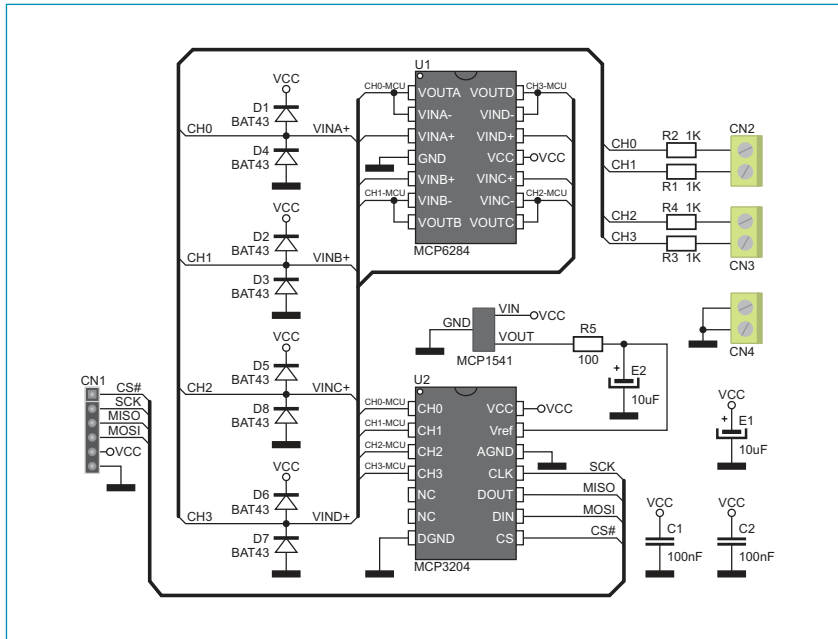


Figure 3: Additional board connected with PROTO board

**NOTE:** Digital and analog voltage signals have the common Ground.

## How does the board operate?

When the voltage signal is supplied on either of the input channels, the additional board starts to convert the analog signal into digital one. The analog voltage signal is first amplified using the operational amplifier (MCP6284), then it is sent to the A/D convertor (MCP3204), Figure 4. As already mentioned, the converted voltage signal is sent to a microcontroller via the Serial Peripheral Interface (SPI).



**Figure 4:** Additional board connection schematic



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