

Quad Delta-Sigma Board

2016-02-22

4x AD7190 + Arduino Nano

See also [The ultra low noise 24-bit ADC: AD7190](#)

This board implements a 4 channel, ultra low noise, simultaneous sampling, 24 bit ADC. It has a dedicated oscillator and the sync line is connected to all 4 ADCs. Its intended use is to read out 4 strain gauge weighing cells in a 6-wire configuration.

With an external reference voltage it can be used for direct voltage measurements too.

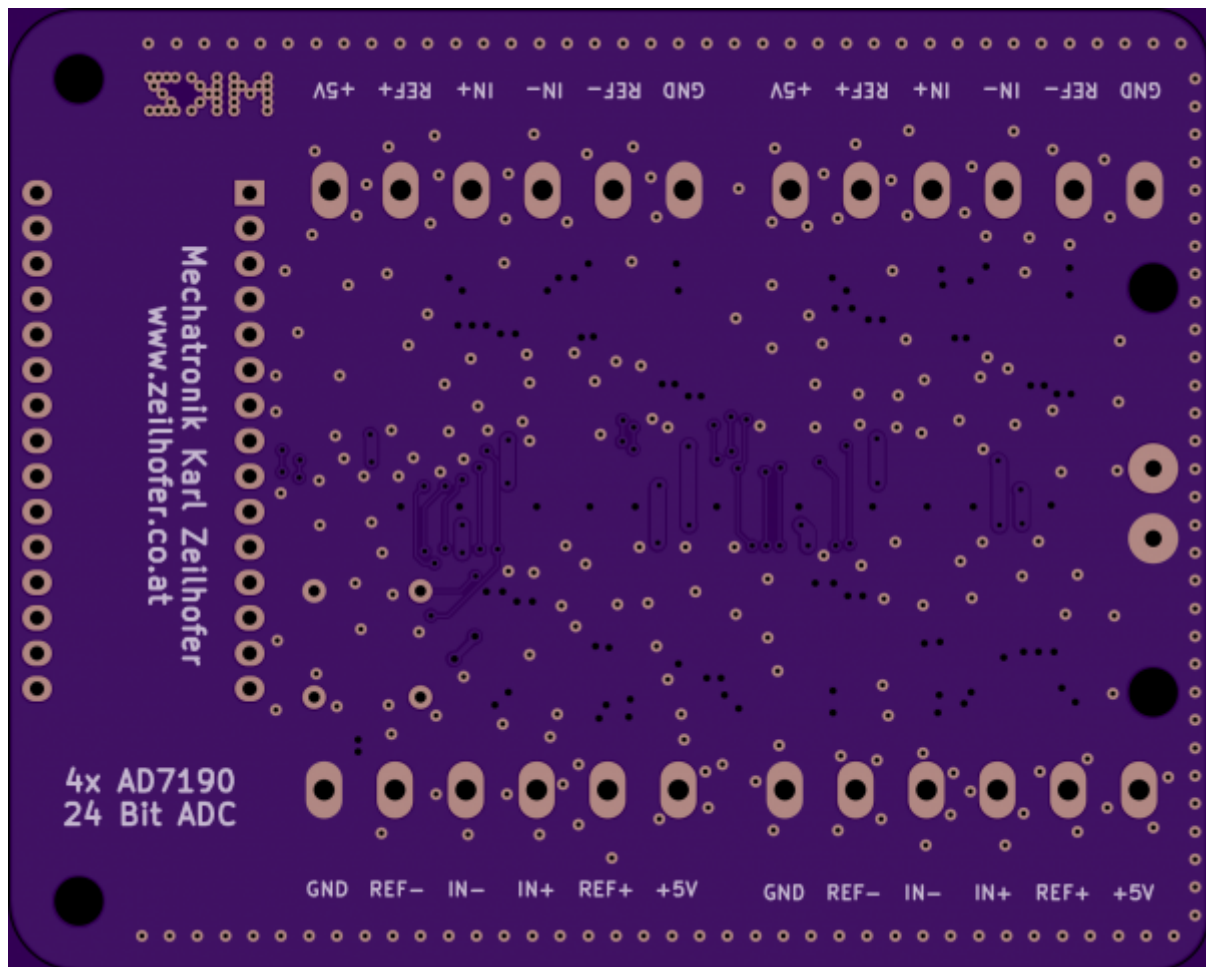
The digital part is supplied by the USB-port, and the analog part must be supplied separately from a low noise 5V power supply ([see Ultra Low Noise Linear Power Supply, using LT3042](#)).

On each ADC only one out of two differential channels is used. See also [Mehrkanal Delta-Sigma ADCs und das Abtasttheorem](#).

Top View

{ {ad7190:quad-board-top.png?direct&600 |} }

Bottom View



Configuration

ANALOG
DEVICES

AD719x

ADC Reset

ADC Read

ADC Write

CANCEL

OK

Analog Inputs

Channel Selection

✕

Ain 1 - Ain 2

✓

Ain 3 - Ain 4

✕

Temp Sensor

✕

Ain 2 - Ain 2

✕

Ain 1 - AinCom

✕

Ain 2 - AinCom

✕

Ain 3 - AinCom

✕

Ain 4 - AinCom

Gain

128

Polarity

BIPOLAR

Buffer

BUF ON

Chopping

CHOP ON

Dagnostic

Current OFF

Digital Filter

FS bits

3

First Notch (Hz)

1600

60Hz Rejection

OFF

Filter Type

SINC4

Zero Latency

Off

Clock Configuration

External

4,9152 MHz

Voltage Reference

Ref Selection

REFIN1

Ref Detect

Detect OFF

Specify what voltage is connected to ADC REFIN. The number is used for displaying results in Volts.

5,0000 V

Mode of Operation

Continuous Conversion

Digital Outputs

P0 P1 P2 P3

0 0 0 0

Power Switch

BPDSW ON

Enable

Enable

Output Data Format

Data Only

No Parity

Registers HEX

0 Status

00

1 Mode

040003

2 Config

800217

3 Data

800000

4 Chip ID

00

5 GpoCon

70

6 Offset

800000

7 FullScale

550000

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