RuggedBoard

ADC

https://community.ruggedboard.com

RB-ADC

The main purpose of the Industrial I/O subsystem (IIO) is to provide support for devices that in some sense perform either analog-to-digital conversion (ADC) or digital-to-analog conversion (DAC) or both.

Devices that fall into this category include:

- analog to digital converters (ADCs)
- accelerometers
- capacitance to digital converters (CDCs)
- digital to analog converters (DACs)
- gyroscopes
- inertial measurement units (IMUs)
- color and light sensors
- magnetometers
- pressure sensors
- proximity sensors
- temperature sensors

RB-ADC

Software triggers are an ADC operating mode where the software starts the conversion.

This feature is exposed by IIO through the following files:

- in_voltageX_raw: raw value of the channel X of the ADC
- in_voltage_scale: value you have to multiply in_voltageX_raw with to have a value in microvolts

Note: Reading into in_voltageX_raw will perform a software trigger on the ADC, then block until the conversion is completed, and finally return the value of this conversion.

RB-ADC

Here is the output on the RBA5D2X console that shows an ADC measure when a 3.3V DC power supply is connected between analog ground GND and ADC input in mikrobus pins

```
root@rugged-board-a5d2x-sd1:~#cat  /sys/bus/iio/devices/iio\:device0/in_voltage0_raw
4095
```

```
root@rugged-board-a5d2x-sd1:~#cat  /sys/bus/iio/devices/iio\:device0/in_voltage_scale
0.805664062
```

We can calculate the result:

4095 x 0.805664062 = 3299.19433389 mv
= 3.29 v

Connect poteniometer in analog pin of mikrobus and vary the potentiometer calculate the resultant voltage manually and using C program.

Connect-us

Developer Wiki

Open Discussions