



## SDCM3

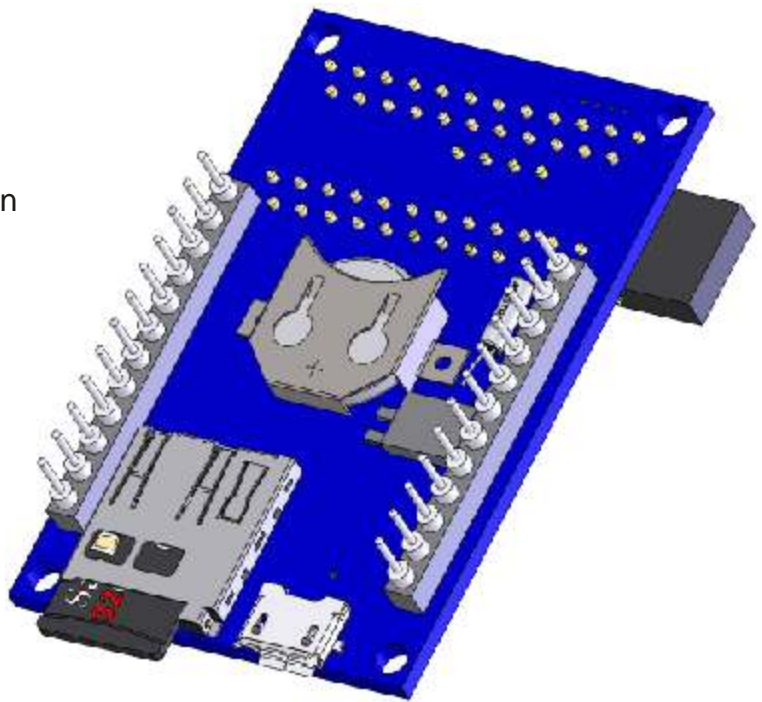
### Spectrometer Processing Electronics

The **SDCM3** spectrometer processing electronics is a versatile powerful 32 bit RISC processor based operation electronics for miniature spectrometers.

It can control three CMOS linear imaging arrays, mounted on a mini-spectrograph. It's ideally featured for embedded or mobile spectroscopic applications.

The **SDCM3** spectrometer processor electronics has the following advanced features:

- ◆ 100 MHz MIPS 4K core based RISC CPU with 512 kB flash program memory and 128 kB RAM
- ◆ Possibility of in field programming by integrated bootloader
- ◆ Firmware, that can be used in general application or user specific OEM applications in spectroscopy
- ◆ SCPI compliant control syntax for setting of operation parameters, configuration, measurement, data format, endianness, etc.
- ◆ User accessible nonvolatile memory of 64 kB (e.g. for linearization, straylight compensation etc.)
- ◆ 16 bit 5 MS/s ADC with programmable offset correction and gain
- ◆ Power supply via USB or external 5 V
- ◆ Power down feature by digital input or by SCPI command to reduce the current consumption, useful in mobile, battery powered devices
- ◆ USB Full speed communication interface with up to 3 Mbit/s via virtual COM port driver
- ◆ LV-TTLUART communication interface, digital trigger input LV-TTL
- ◆ Shutter/lamp control output LV-TTL
- ◆ SPI master or slave communication interface with up to 20 Mbit/s
- ◆ Busy or 5 V power supply output
- ◆ Optional microSD card (FATS formatted) for storing of measurements (with timestamps, needs RTCC)
- ◆ Optional real time clock / calendar (RTCC)



#### Optional add-on piggy back board with:

- ◆ Bluetooth Interface (100 m)
- ◆ Li-polymer battery charger from USB-power
- ◆ DC/DC converter from Li-polymer battery
- ◆ Laser diode controller for RAMAN, SERS, Pointer etc.
- ◆ FPC 10 pin connector for graphical touch screen color-LCD (SK-FT 834) WQGA

# Specifications

|                        |   |
|------------------------|---|
| Power supply           | USB powered or 5 V DC externally  |
| Operation current      | up to 500 mA  |
| ADC Resolution         | 16 bit, 2 bit RMS (without oversampling), 4 bit INL, no missing code          |
| Sampling speed         | max. 5 MS/s   |
| Sampling mode          | Sample and Hold: 1, 4 - fold prog. oversampling or Correlated Double Sampling |
| Analog inputs          | 2 (odd and even), programmable for positive or negative video signals         |
| Input full scale range | 2 V or 4 V, programmable  |
| Gain                   | 1 ... 5 programmable in 64 steps  |
| Offset                 | External compensation or programable up to +/- 300 mV                         |

