

## SDCM3

### Line array readout electronics

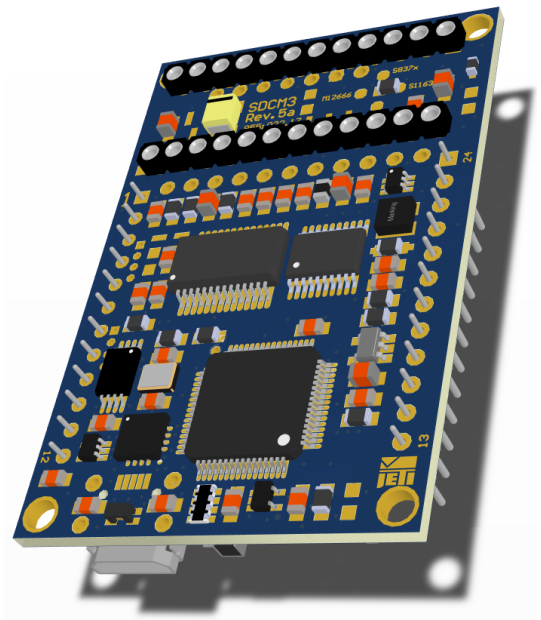
The **SDCM3** spectrometer processing electronics is a versatile powerful 32-bit RISC processor-based operation electronics for miniature spectrometers.

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:

- 96 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 like control syntax for setting of operation parameters, configuration, measurement, data format, endianes, 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 LV-TTLUART communication interface
- 8N1, 3 000 000, 1 000 000, 921 600, 230 400, 115 200 or 38 400 bit/s
- Digital trigger input LV-TTL
- Shutter/lamp control output LV-TTL
- 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 2.1 + EDR Interface Class 2
- 10/100Mbit Ethernet module using TCP/IP protocol
- Li-polymere battery charger from USB-power
- DC/DC converter from Li-polymer battery
- PWM output with 5V or programmable current up to 150mA ( e.g. for Laser diode, LED as Light source etc.)
- FPC 10 pin connector for graphical touch screen color-LCD (SK-FT 834) WQGA

## Specifications

|                               |                                                                                                                      |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Power supply</b>           | USB powered or 5 V DC externally                                                                                     |
| <b>Operation current</b>      | up to 500 mA                                                                                                         |
| <b>ADC resolution</b>         | 16 bit, 2 bit RMS (without oversampling), 4 bit INL, no missing code                                                 |
| <b>Sampling speed</b>         | Max. 5 MS/ s                                                                                                         |
| <b>Sampling mode</b>          | Sample and Hold: 1,4 - fold prog. oversampling or Correlated Double Sampling                                         |
| <b>Analog video inputs</b>    | 2 (odd and even), programmable for positive or negative video signals                                                |
| <b>Input full scale range</b> | 2 V or 4 V, programmable                                                                                             |
| <b>Gain</b>                   | 1 ... 5 programmable in 64 steps                                                                                     |
| <b>Offset</b>                 | External compensation or programmable up to +/- 300 mV                                                               |
| <b>Supported sensors</b>      | S11639, S13496x, S9226, S8378 ( <b>CMOS</b> )<br>G11620 ( <b>InGaAs</b> )<br>C12880MA (Hamamatsu micro spectrometer) |

