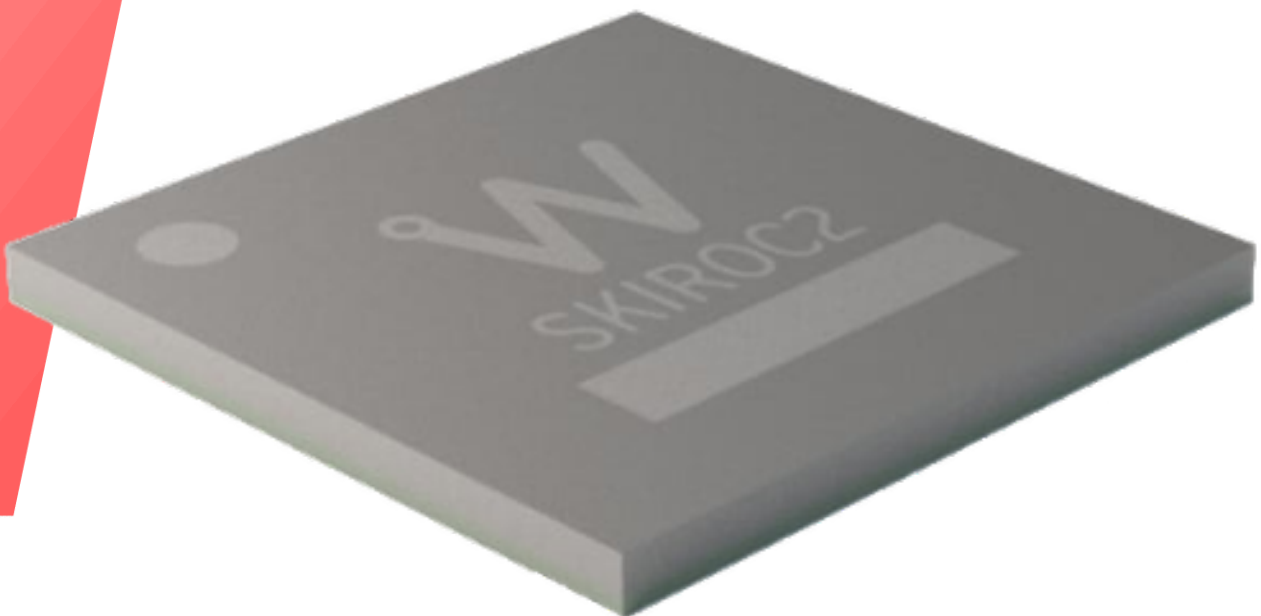


Discontinued

SKIROC 2A

**PIN Diode and Low
Gain Silicon
Detector Read-Out
Chip**



Features

- **TRL Technology Readiness Level 8** - Full system using ASIC running
- **Detector Read-Out** Si PIN Diodes
- **Number of Channel** 64
- **Signal Polarity** Positive
- **Sensitivity** Trigger on 0.2fC

Description

SKIROC2A IS DEPRECATED - NOT RECOMMENDED FOR NEW DESIGN

Please consider **Psiroc** for new design

SKIROC is a 64-channel front-end ASIC designed to readout silicon PIN diodes. Each channel is made of a variable-gain and low-noise charge preamplifier followed by two shapers – one with a gain of 1 and the other with a gain of 10 – to provide a charge measurement from 0.2 fC up to 10 pC. A time tagging is performed by a 12-bit TDC ramp. The charges and times are stored in a 15-depth Switched Capacitor Arrays (SCA), the values of which are converted by a multi-channel 12-bit Wilkinson ADC and sent to an integrated 4 Kbytes memory. The analog value of the charge is also available on an output pin. The trigger chain is composed of a high gain fast shaper and a discriminator and allows each channel to auto trigger down to 0.2 fC. Thresholds of the 64 discriminators are set by a common 10-bit DAC and an individual 4-bit DAC per channel. Each discriminator output is sent to an 8-bit delay cell (delay time tunable between 100 ns and 300 ns) to provide the Hold signal for the SCA cells of the slow channel. The power consumption is around 6.2 mW/channel and each stage can be individually shut down when not used. 616 slow control parameters are available to set various configurations and ensure the versatility of the chip.

Technical Specifications

Detector Read-Out

PIN Diodes, Silicon strips

Number of Channels

64

Signal Polarity

Positive

Sensitivity

Trigger on 0.2 fC

Timing Resolution

Not relevant

Dynamic Range

10 pC

Packaging & Dimension

BGA 400 (17x17mm)

Power Consumption

400mW

Inputs

64 charge inputs

Outputs

- 1 multiplexed analog charge output that can be daisy chained
- 12-bit charge and time measurement
- Wired OR of the 64 discriminators
- Multiplexed trigger output

Internal Programmable Features

- Common gain adjustment for the input preamps from 400fF up to 6pF (4 bits)
- common trigger threshold adjustment (10 bits) and individual threshold (4 bits)
- 12-bit charge and time measurement
- 64 trigger masks, multiplexed analog output, multiplexed trigger output

Ordering Options

Code	Description
WWSKIROC2ABA	SKIROC 2A - PIN diode and low gain silicium detector read out chip - BGA (Ball Grid Array) (Discontinued)

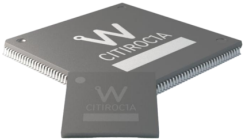
Related Products

GEMROC 1



Micromegas and GEMs semi digital read out chip

CITIROC 1A



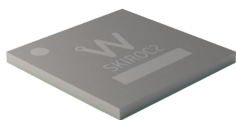
Scientific instrumentation SiPM read out chip

PSIROC



PIN Diodes, Silicon Strips amnd GEMs Read-Out Chip

SKIROC 2A



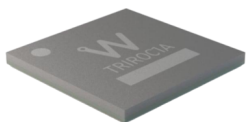
PIN Diode and Low Gain Silicium Detector Read-Out Chip

MAROC 3A



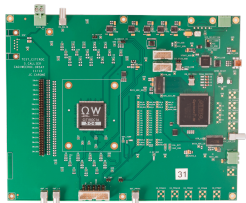
Photomultiplier tubes read out chip

TRIROC 1A



All in one SiPM read out for multimodal PET inserts

Weeroc Testboards



Control Systems for Weeroc ASICs

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