

Discontinued

GEMROC 1

**Micromegas and
GEMs semi digital
read out chip**



Features



- **Packages:** PQFP160
- **Optimized for** GEMs
Micromegas
- **Number of channels:** 64
- **Outputs:** 2 encoded data outputs per channel streamed out in serial, 1 multiplexed charge output, 3 multiplexed trigger outputs or 3 trigger OR of the 64 channels
- **Input Polarity:** Negative

Description

GEMROC1 IS DEPRECATED - NOT RECOMMENDED FOR NEW DESIGN Please consider **Psiroc** for new design

GEMROC is a 64-channel front-end ASIC designed to readout negative fast ($<1\text{ns}$) and short ($<10\text{ns}$) current pulses from low gain detectors (GEMs, Micromegas, ...). GEMROC 1 provides a semi-digital readout with three thresholds tunable from 1 fC to 500 fC and integrates a 128-deep digital memory to store the 2 x 64 discriminator outputs as well as the timestamp from a 24b counter. The three thresholds are set internally by three 10-bit DACs. The gain of each channel can be tuned individually from 0 to 2 over 8 bits, allowing the compensation of non-uniformity between the 64 detector channels. Each channel can auto trigger down to 1 fC input charge. A multiplexed charge measurement up to 500fC is integrated.

The power consumption is 1.5 mW/channel and the chip can be fully power-pulsed allowing a significant power reduction by disabling unused blocks.

Technical Specifications

Detector Read-Out

Micromegas, GEM

Number of Channels

64

Signal Polarity

Negative

Sensitivity

Trigger 1 fC

Timing Resolution

Not relevant

Dynamic Range

500 fC

Packaging & Dimension

PQFP160

Power Consumption

100mW

Inputs

64 current inputs

Outputs

- 2 encoded data outputs per channel streamed out in serial
- 1 multiplexed charge output
- 3 multiplexed trigger outputs or 3 trigger OR of the 64 channels

Internal Programmable Features

- Trigger threshold adjustment (10bits)
- 3*64 trigger masks
- multiplexed latched trigger or direct OR64 trigger outputs

Evaluation systems

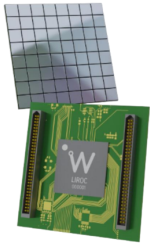
Evaluation systems

Ordering Options

Code	Description
WWGEMROC1QAA	GEMROC 1 - Micromegas and GEMs semi digital read out chip - QFP (Quad Flat Pack) (Discontinued)

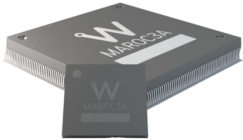
Related Products

LIROC 1



SiPM Analogue Read-out Chip for Lidar and Photon Counting Application

MAROC 3A



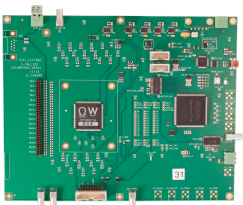
Photomultiplier tubes read out chip

CITIROC 1A



Scientific instrumentation SiPM read out chip

Weeroc Testboards



Control Systems for Weeroc ASICs

TEMPOROC



Multi-Purpose Mixed-Signal SiPM read-out ASIC

SKIROC 2A



PIN Diode and Low Gain Silicon Detector Read-Out Chip



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