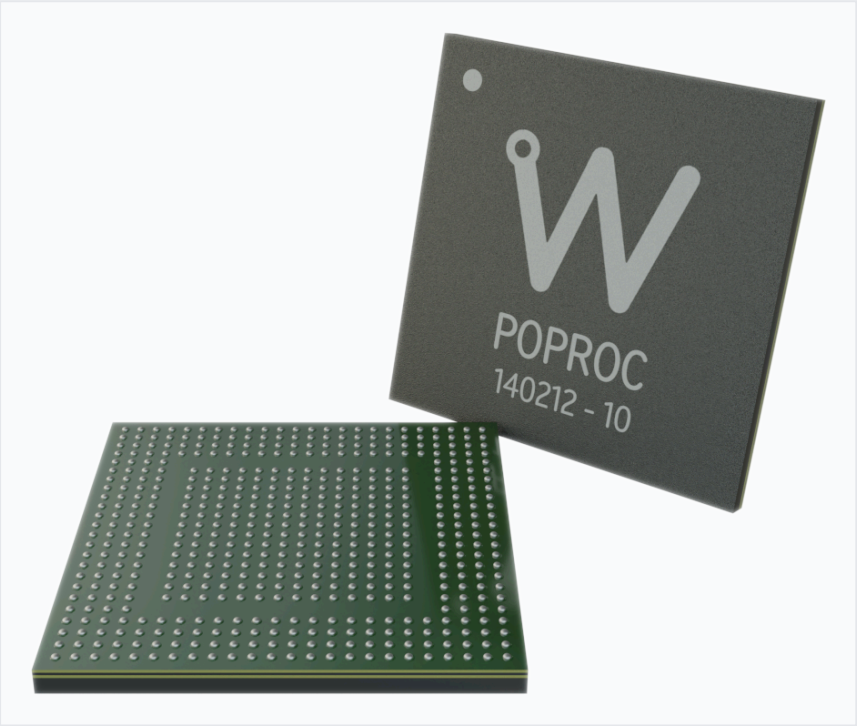
POPROC

MA-PMT readout out chip

BGA516	64	MA-PMT, PMT
Package	No. of Channels	Compatible Detectors



POPROC is a 64-channel MA-PMT and PMT readout ASIC for fast single-photon counting. It accepts negative-polarity inputs and provides a differential trigger output for each channel, with sensitivity down to 1/3 photo-electron. The fully analog chip delivers better than 20ps FWHM timing resolution, 100% efficiency for separating single photo-electrons spaced by 3 ns, and counting rates up to 300MHz per channel. Channel-by-channel trigger-threshold calibration is provided by 6-bit DACs.

Overview

Product Highlights

- TRL Technology Readiness Level
- Detector Read-Out MA-PMT, PMT
- Number of Channel 64
- Signal Polarity Negative
- Sensitivity Trigger on 1/3 photo-electron

Product Description

POPROC is a MA-PMT readout out chip, specifically design for fast counting output. This chip is fully analog and features differential trigger output for each detector channel. The ASIC is designed to accept negative polarity input and can readout up to 64 channels.

POPROC allows triggering down to 1/3 p.e. and provides low-voltage differential trigger output for each channel with an excellent timing resolution (better than 20ps FWHM) and excellent double-peak separation (100% efficiency on 3 ns separated single photo-electrons). POPROC allows fast single photon counting over 300MHz per channel.

Channel-by-channel calibration on the trigger threshold is also possible thanks to 6-bit DACs.

POPROC features a GHz measurement line composed of a current conveyor followed by a fast discriminator and low swing differential output driver.

For more information, visit the **Weeroc website**. For customer and technical support on Weeroc ASICs, please contact Weeroc directly using the details provided on their **Contact us** page.

AT A GLANCE	
Package	**BGA516**
No. of Channels	**64**
Compatible Detectors	**MA-PMT, PMT**
Input Polarity	**Negative**
Main Applications	**PHA, Photon counting**
Time Measurement	**Trigger-based**

 — © 2026 CAEN S.p.A. All rights reserved. Specifications are subject to change without notice.

Technical Specifications

TRL Technology Readiness Level

5 – First measurement conclusive in lab

Available versions	Poproc1 – available
Detector Read-Out	MA-PMT, PMT
Number of Channel	64
Signal Polarity	Positive, Negative
Sensitivity	Trigger on 1/3 photo-electron
Timing Resolution	Better than 20 ps FWHM on single photo-electron Better than 3 ns double-peak separation on single photo-electron Over 300MHz photon counting rate
Dynamic Range	Over 100 photo-electrons
Packaging & Dimension	BGA 20×20 mm2 516 balls Flip-Chip low inductance packaging technology
Power Consumption	210mW – Supply voltage: 1.2 V
Inputs	64 analogue inputs
Outputs	64 differential (CLPS) triggers
Internal Programmable Features	Trigger threshold programming (10bits), 64 x 6-bit channel-wise threshold adjustment, ASIC-wise polarity selector, preamp bandwidth adjustment, individual trigger masking
Evaluation systems	Poproc evaluation system Poproc + picoTDC read-out system

CAEN S.p.A. · Via Vetraia 11, 55049 Viareggio (LU) Italy · www.caen.it — © 2026 CAEN S.p.A. All rights reserved. Specifications are subject to change without notice.

Ordering Information

ORDERING CODE	DESCRIPTION
WWPOPROCAAAA	POPROC – 64ch Read-Out Chip for MA-PMT and PMT (BGA)

1. Ordering codes and descriptions are reproduced from the product record. Availability is confirmed at order entry.

Related Products

CATIROC 1 — Large photomultiplier arrays read out chip

CITIROC 1A — Scientific instrumentation SiPM read out chip

GEMROC 1 — Micromegas and GEMs semi digital read out chip

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

MAROC 3A — Photomultiplier tubes read out chip

PETIROC 2A — SiPM read out for time of flight PET

PSIROC — PIN Diodes, Silicon Strips amnd GEMs Read-Out Chip

RADIOROC 2 — Multi-purpose SiPM analogue read-out chip

SKIROC 2A — PIN Diode and Low Gain Silicium Detector Read-Out Chip

TRIROC 1A — All in one SiPM read out for multimodal PET inserts

 — © 2026 CAEN S.p.A. All rights reserved. Specifications are subject to change without notice.