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MAROC: Multi Anode Readout Chip

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MAROC is the readout chip designed for the ATLAS luminometer made of Roman pots. This ASIC has been realised in SiGe 0.35µm technology and is an evolution of the OPERA_ROC ASIC developed and installed on the OPERA experiment to auto-trigger and readout 64 channels Hamamatsu multi anode PMTs.
Its main features are a 100% trigger rate for signal greater than 1/3 photoelectron, a charge measurement up to 30 photoelectrons with a linearity of 2% or better and a crosstalk less than 1%. A 12-bit Wilkinson ADC has been embedded to digitalise charge measurement.
In order to check the functionalities of MAROC, laboratory tests have been performed and have showed a good global behaviour of the chip, which allows using it for beam tests of a complete Roman Pot at CERN during autumn 2007.

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