



FAST FRONT-END READOUT ELECTRONICS FOR PHOTON AND ELECTRON COUNTING APPLICATIONS

Based on developments for experiments at the LHC, CERN has developed various high performance read-out chips for a potential use in medical imaging, life science applications and material research. In combination with ultra fast photon and electron detectors, this technology offers extremely fast and low-noise photon and electron counting possibilities, providing significant advances in domains such as photon sciences and electron spectroscopy.

AREA OF EXPERTISE

- Fast and radiation hard binary front-end electronics for particle tracking with silicon strip detectors in LHC experiments at CERN.

IP STATUS

- Various ready-to-use chip models can be licensed and are available off the shelf or can be produced on short-term. CERN provides support and solutions (data acquisition, chip boards, readout software) for integration of such chips with user specific detectors and support structures upon request.

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Find out more at:
kt.cern

FEATURES

- Compact packaging through 0.25 μ m CMOS technology
16 to 128 channels per chip.

APPLICATIONS

- Electron spectroscopy.
- Electron and photon counting in life science and medical imaging.

ADVANTAGES

- Low power consumption (<2mW / channel).
- Maximal few hundred electrons noise for input capacities less than 10pF.
- High counting rate (5 MHz/mm²).
- High radiation hardness.

LIMITATIONS

- For the application domain of Computer Tomography (CT), this technology is exclusively marketed by Interon AS, Norway.

