

# **A High-Rate Energy-Resolving Photon-Counting ASIC for Spectral Computed Tomography**

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## **Abstract:**

We describe a high-rate energy-resolving photon-counting ASIC aimed for spectral computed tomography. The chip has 160 channels and 8 energy bins per channel. It demonstrates a noise level of ENC  $\approx 214$  electrons at 5 pF input load at a power consumption of  $< 5$  mW/channel. Maximum count rate is 17 Mcps at a peak time of 40 ns, made possible through a new filter reset scheme, and maximum read-out frame rate is 37 kframe/s.