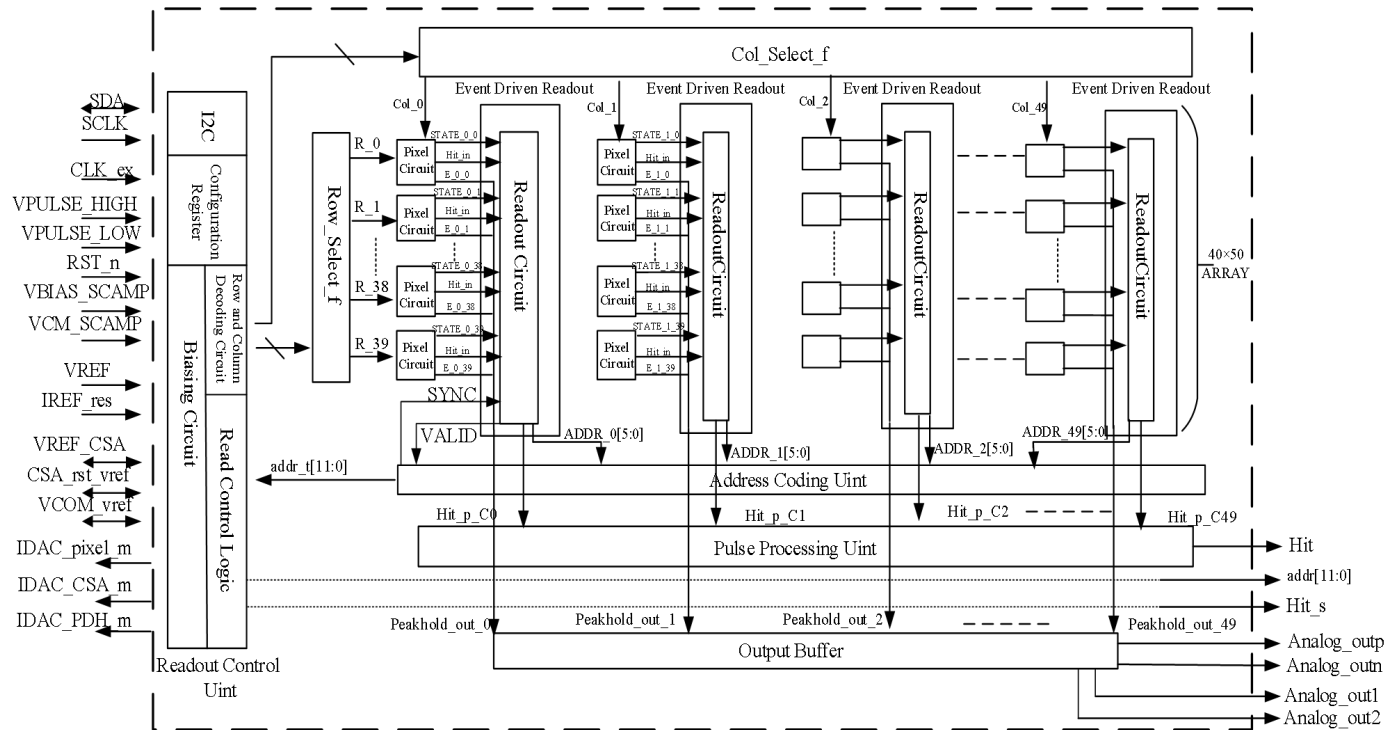
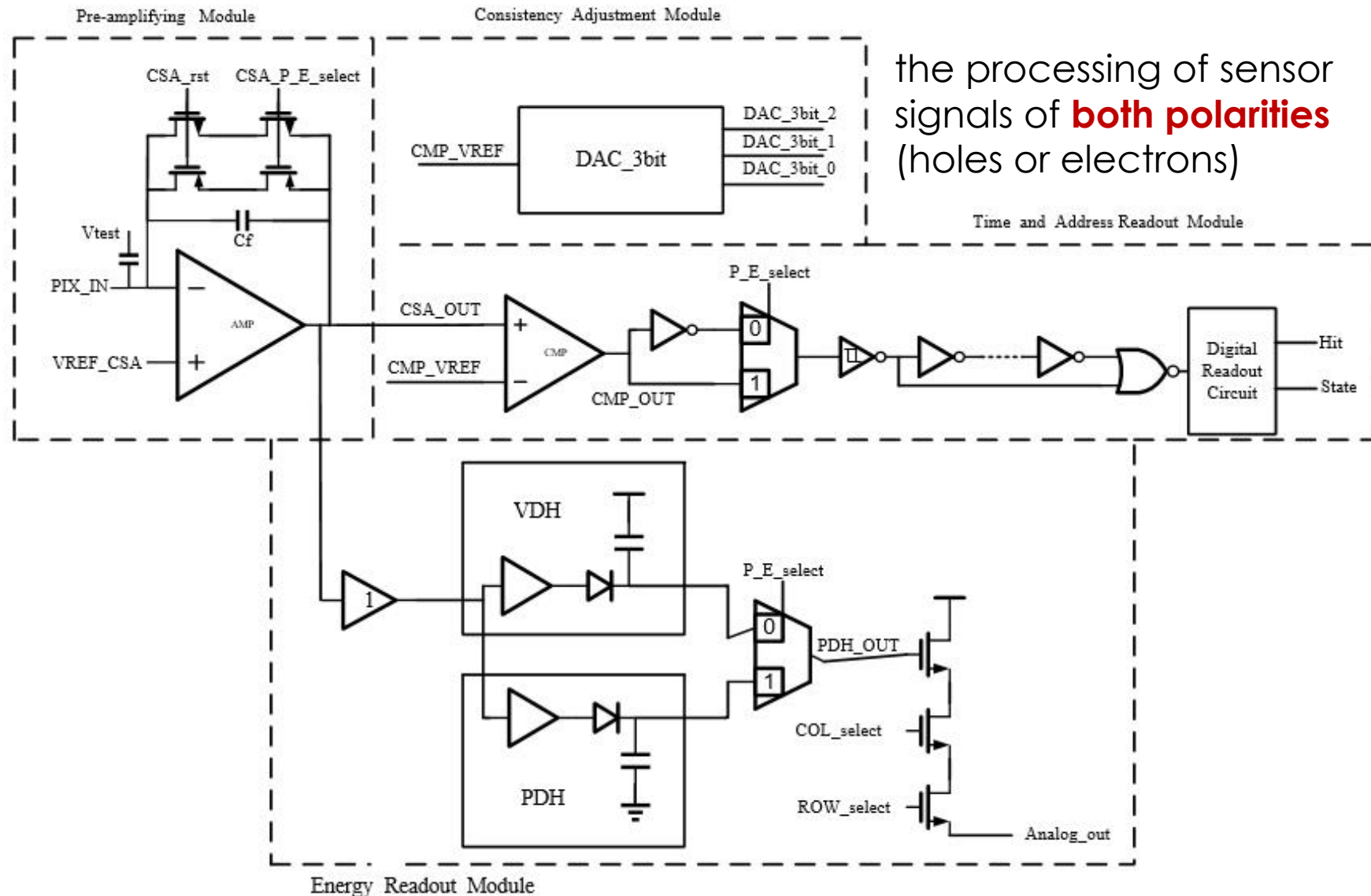


Design of a Pixel Readout Chip for Silicon Drift Detector With Event Driven Readout Method



- ◆ A **low noise** pixel readout chip
- ◆ used in **X-ray pulsar-based navigation**
- ◆ a matrix of 40×50 pixels with a pitch of **80 um**
- ◆ uses the **event-driven method** to output the address, energy and arrival time

Pixel Design



the processing of sensor signals of **both polarities** (holes or electrons)

- The voltage gain of CSA is **$96.13 \mu V/e^-$**
- the equivalent noise charge (ENC) is equal to **$36 e^- rms$** (@ **$C_{det}=50fF$**).
- The pixel-to-pixel offset spread of the pixel matrix reached **$\sigma = 1.51 mV rms$** after correction by trim DAC.