



Readout Electronics for TPC-based MeV Gamma-ray Telescope in Space (#79)

MeV gamma ray measurement

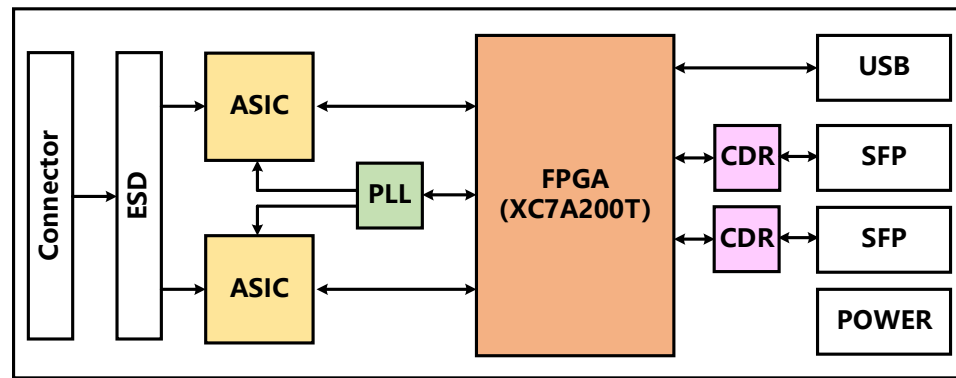
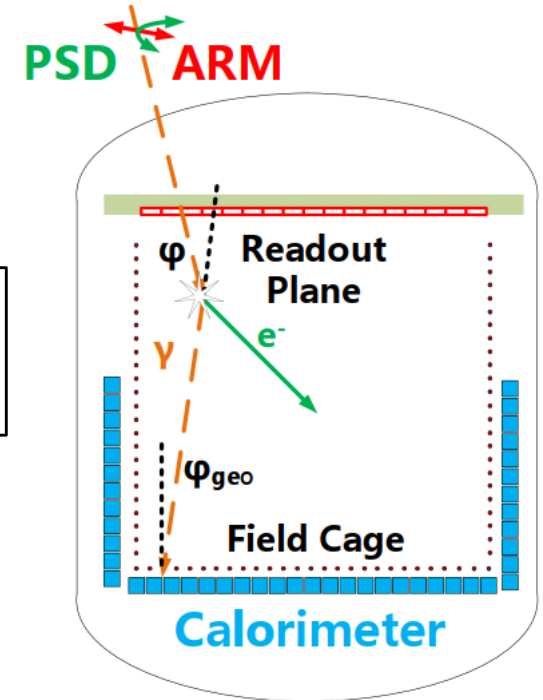
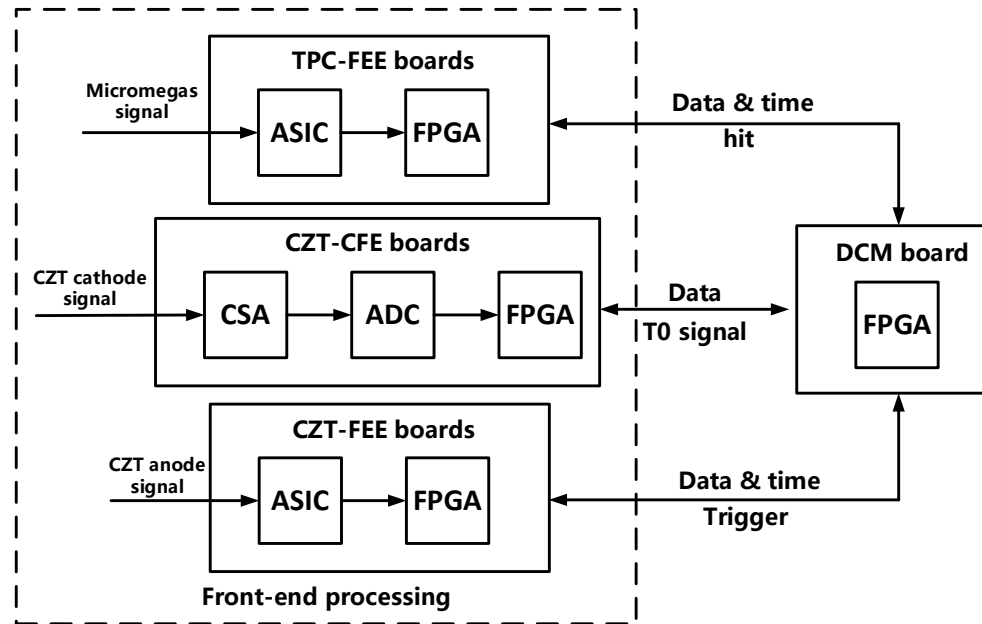
- MeV spectral line astronomy
- MeV polarization

Prototype

- 926 channel for TPC strips
- 121-pixel CdZnTe detectors

Challenges & Solutions

- **Large mount of channels**
 - Multiplexing method
- **low noise**
 - Low noise ASIC



Multiplexing method

- Multiple pads of different detectors can be connected to one readout channel.
- The cathode signal of CdZnTe shows which detector has been hit.

Test Result

- The energy resolution of a single pixel get a bit worse than the original one, from 1.5% to 1.9% at 662 keV (FWHM), but the channel amount is decreased.

Conclusion

- We have preliminarily completed the readout electronics design.

