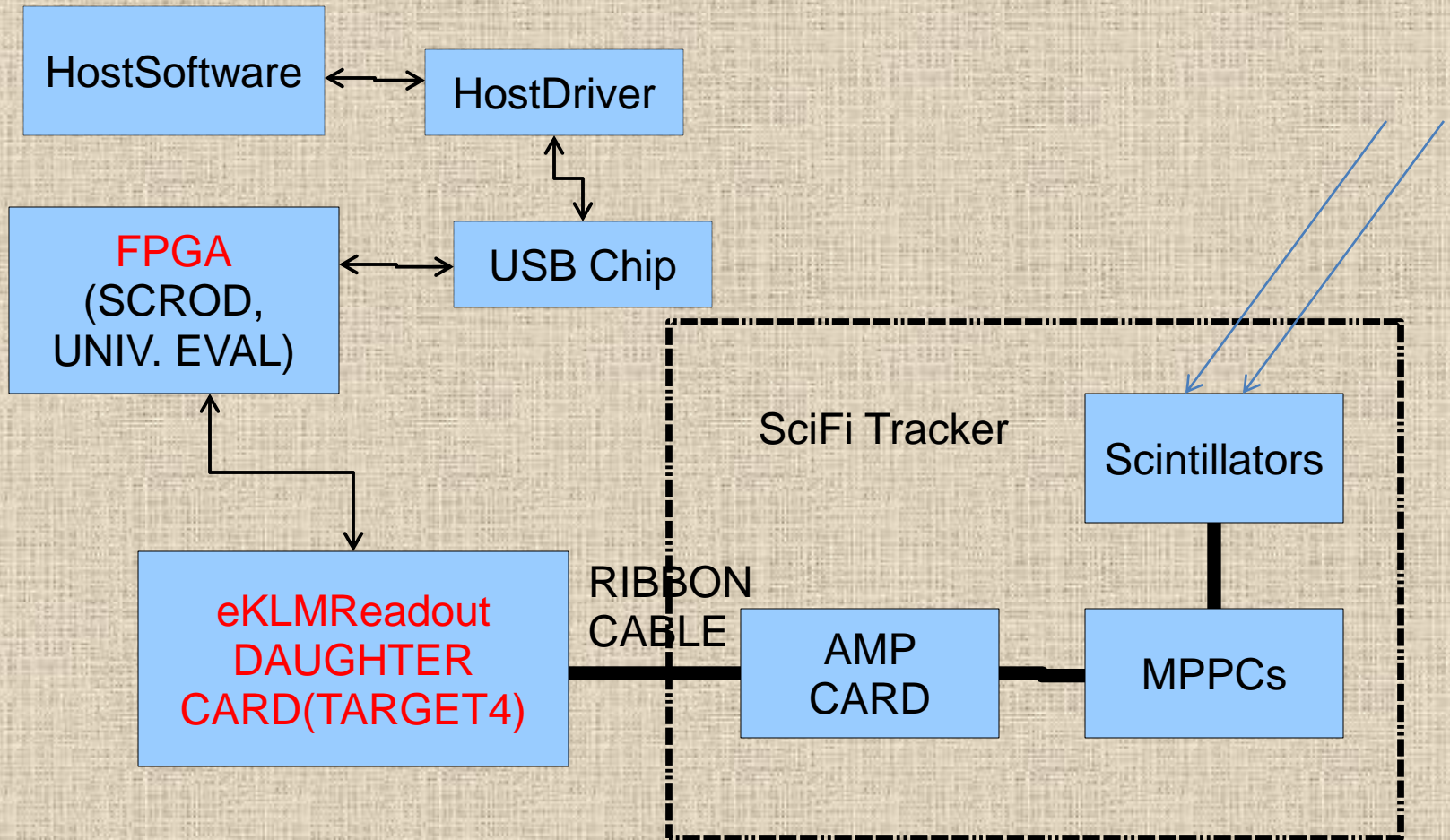# SciFi Tracker Readout System
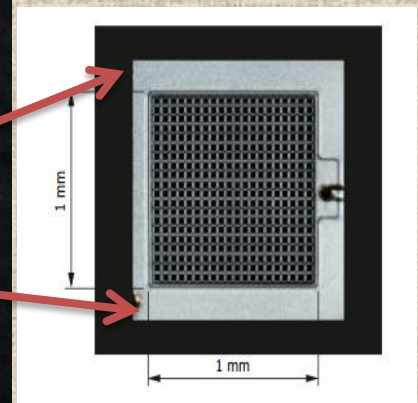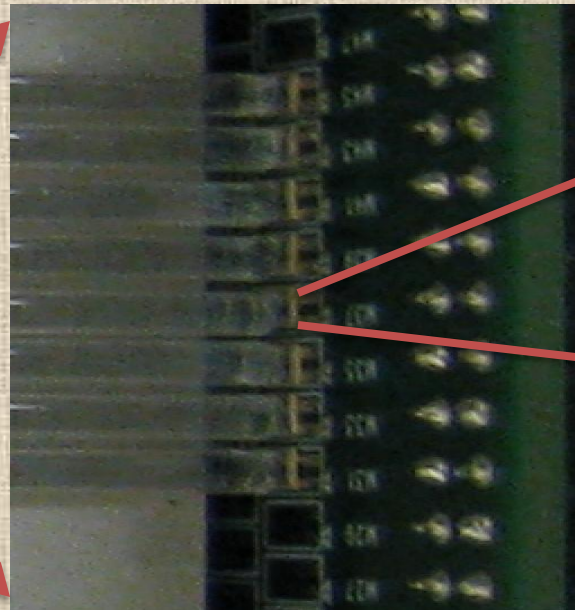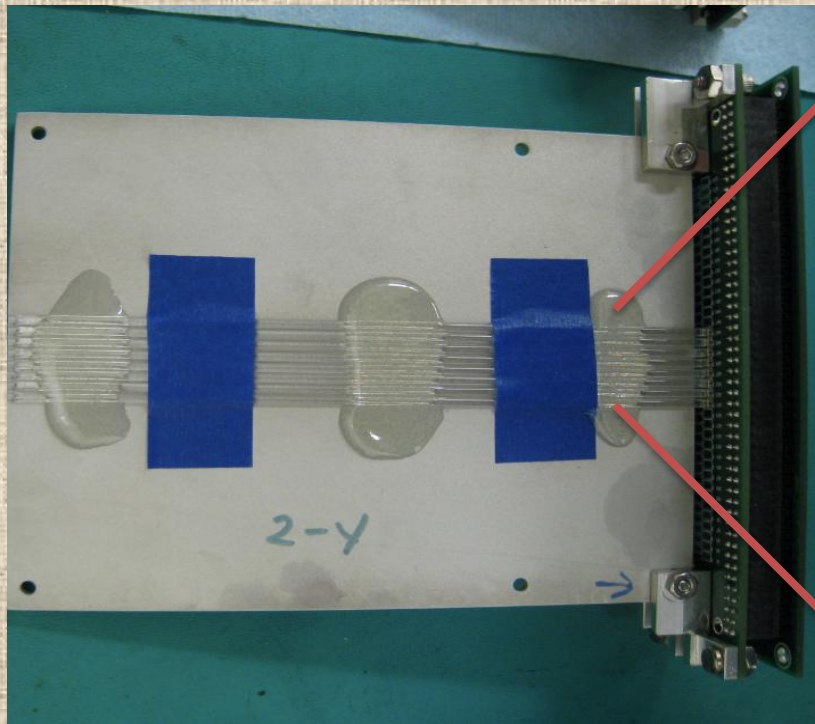
Adam Goss   Xiaowen Shi

Motivation

- To do particle physics
- To have a fast and reliable system to record the events
- To combine the DAC_Mon and TARGET_ASIC daughter cards into one daughter cards to make the system more compact
- Update TARGET1 to TARGET4
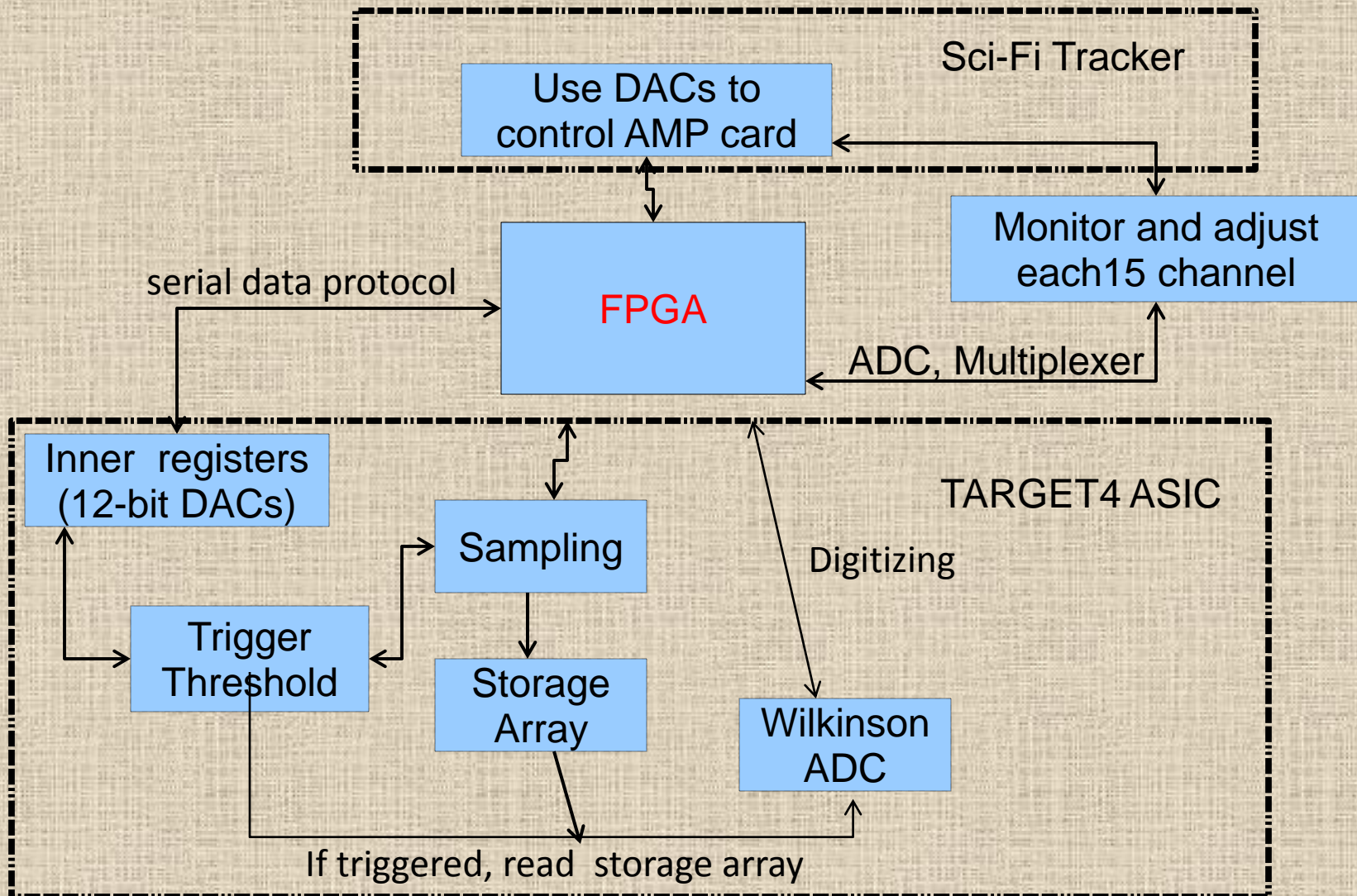
System Diagram

SciFi Tracker

- **Sc**intillating **Fi**ber **Tracker**
- **MPPC(Multi-Pixel Photon Counter)**

Board Schematic & Layout

- 3.8''x2.5''   4 layers
- Use 80-pin connectors, 2 of them will connect to Univesal Eval board and the extra one for analog signals
- 15 out of TARGET4's 16 channels are used
- Data output from TARGET(2.5V) to 3.3V FPGA bank(one direction) on Eval board. Need to be careful in the firmware! (only IN!)
- Due to a large number of configurable registers inside TARGET4, new board uses less components
- The length of analog signal trace is shorter

Firmware Diagram
(goal for final presentation)

Firmware

- Board is almost done except couple parts which will be here soon
- Need to make the trigger work for at least one channel before final presentation
- Need to understand how Wilkinson ADC work