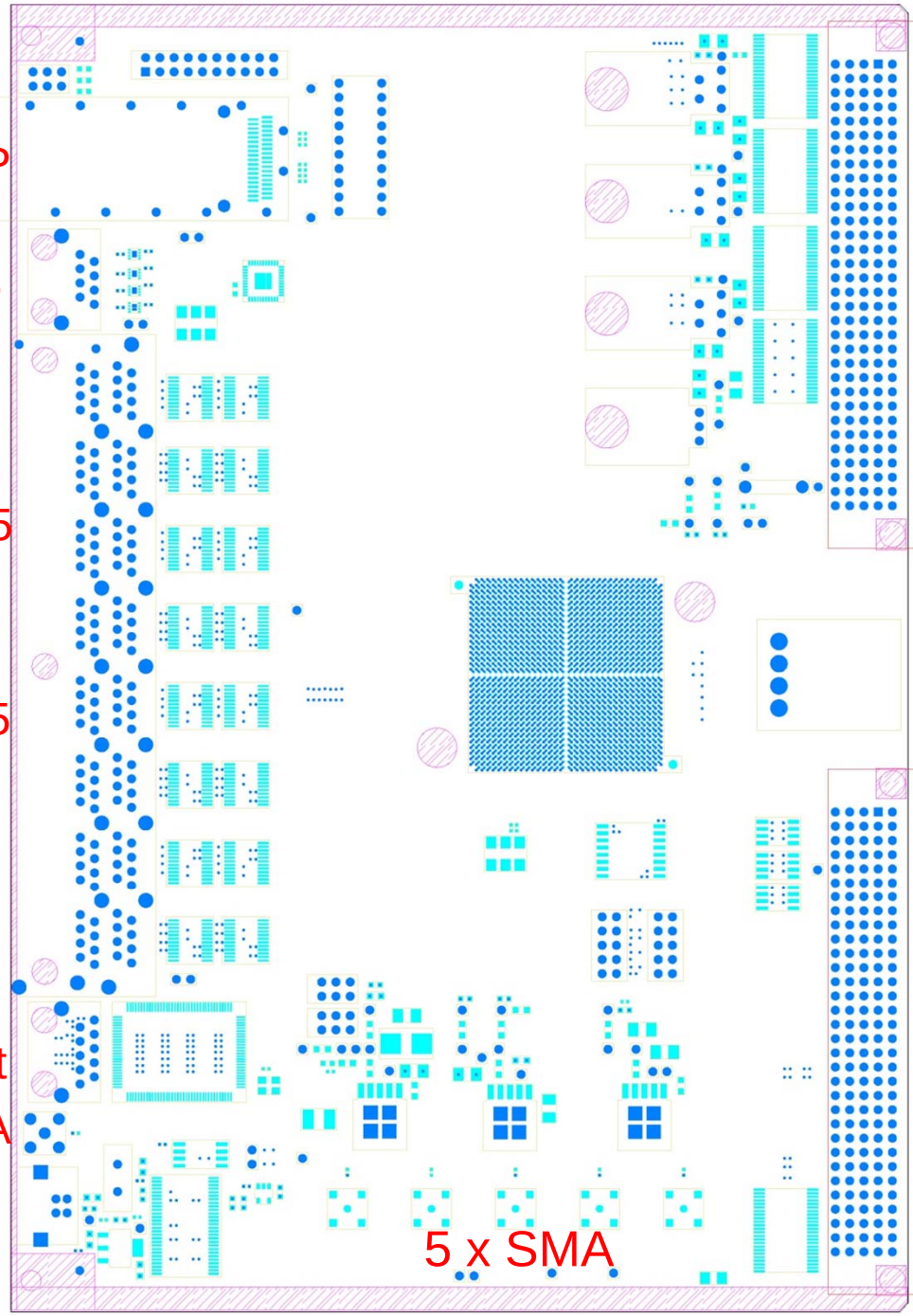
Annie’s Central Card

Status Report - 8/21/2015

The University of Chicago

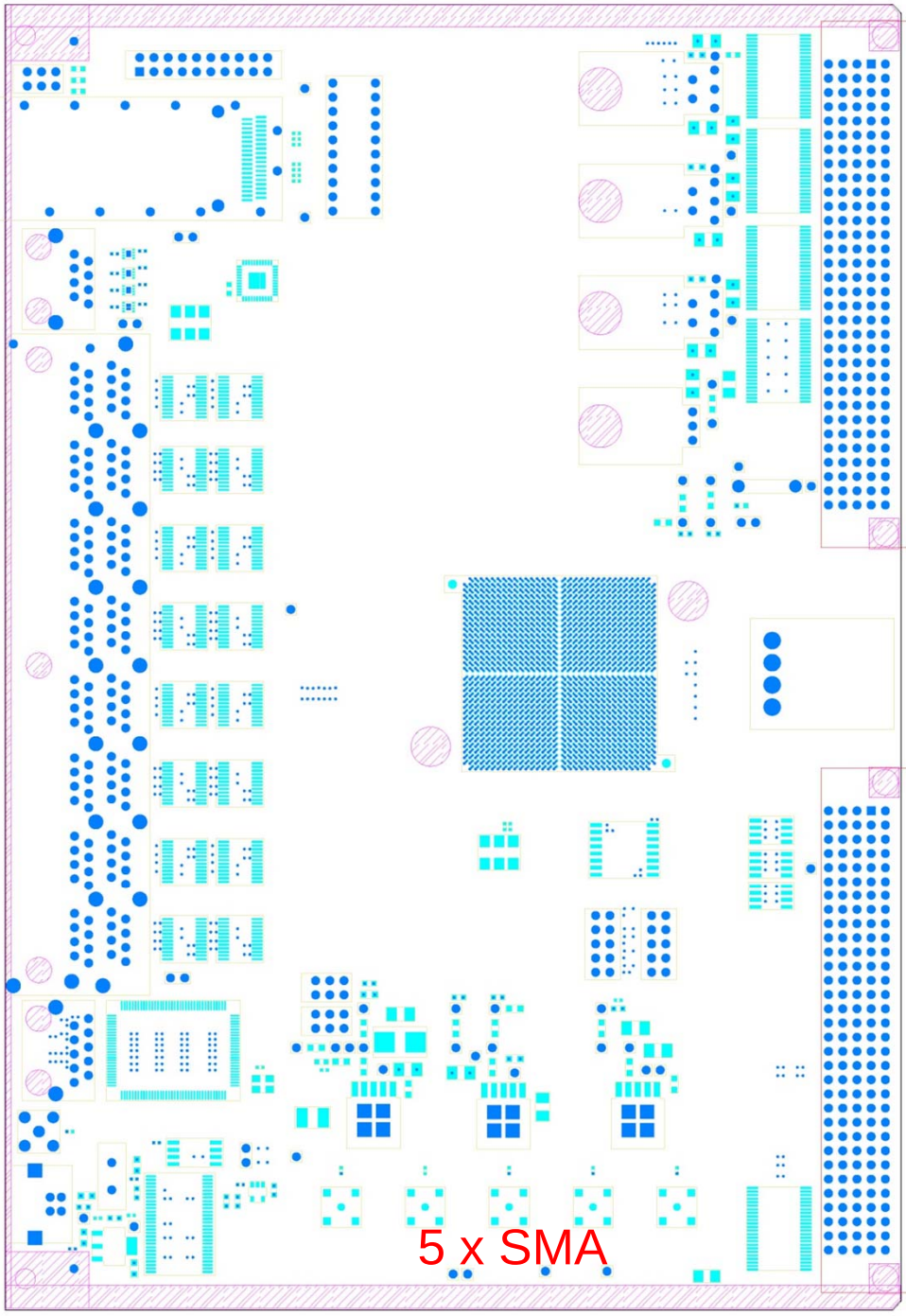
ACC Specs
General



6U VME32 or VME 64x Format
Can work as Stand Alone

ACC Specs

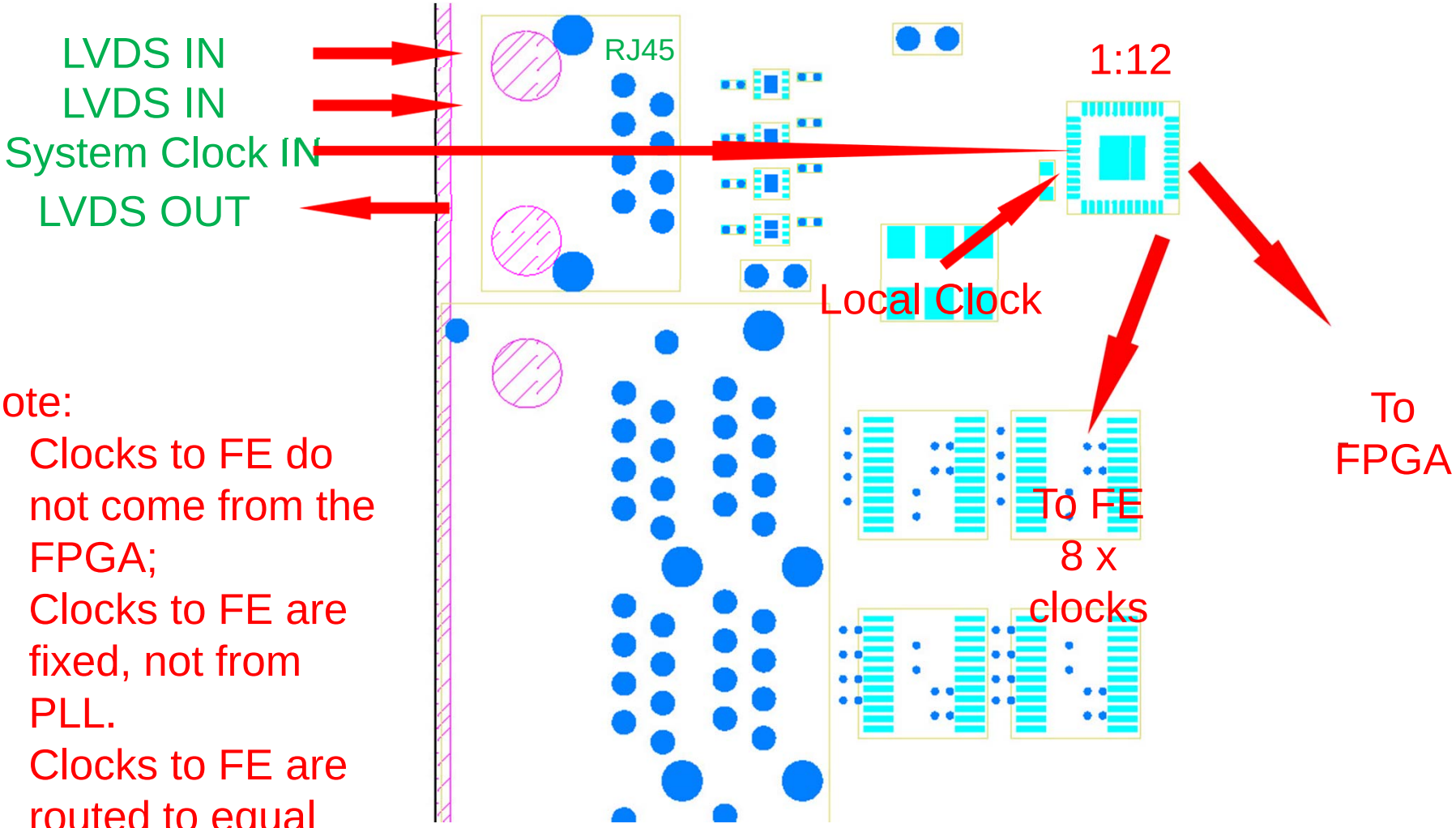
System



LVDS System Interface
RJ45 with:

- LVDS Clock in
- 2 x LVDS In
- 1 x LVDS Out

Annie System Interface and Clock Distribution

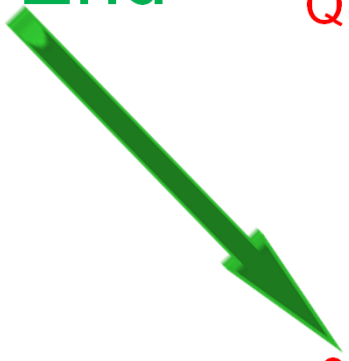


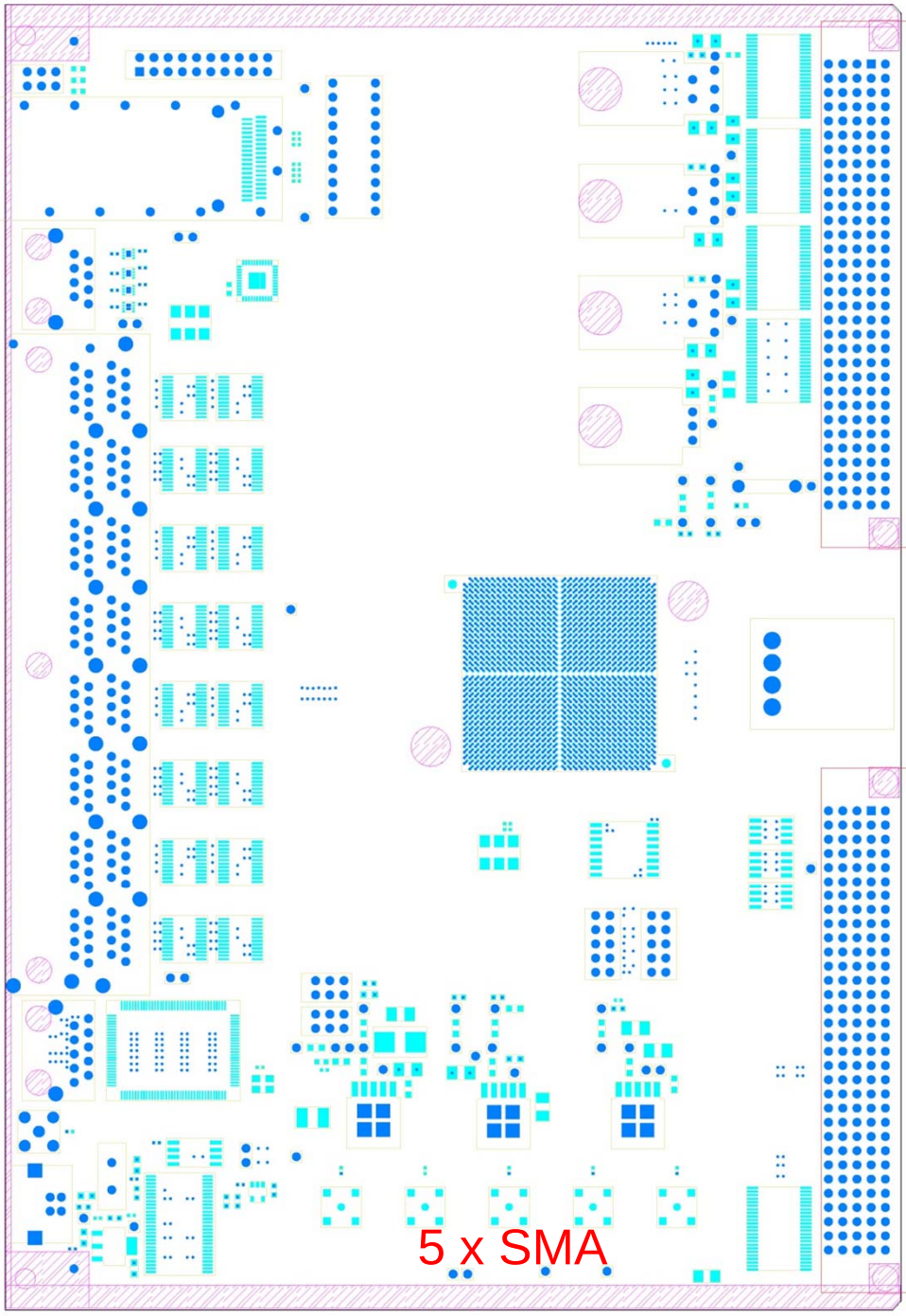
Note:

- Clocks to FE do not come from the FPGA;
- Clocks to FE are fixed, not from PLL.
- Clocks to FE are routed to equal length (+/-2.5mm)

ACC Specs

Front End





LED

QSFP

RJ45

8 x RJ45

or

16 x RJ45

VME P1

+5V

VME P2

Ethernet

SMA

USB

5 x SMA

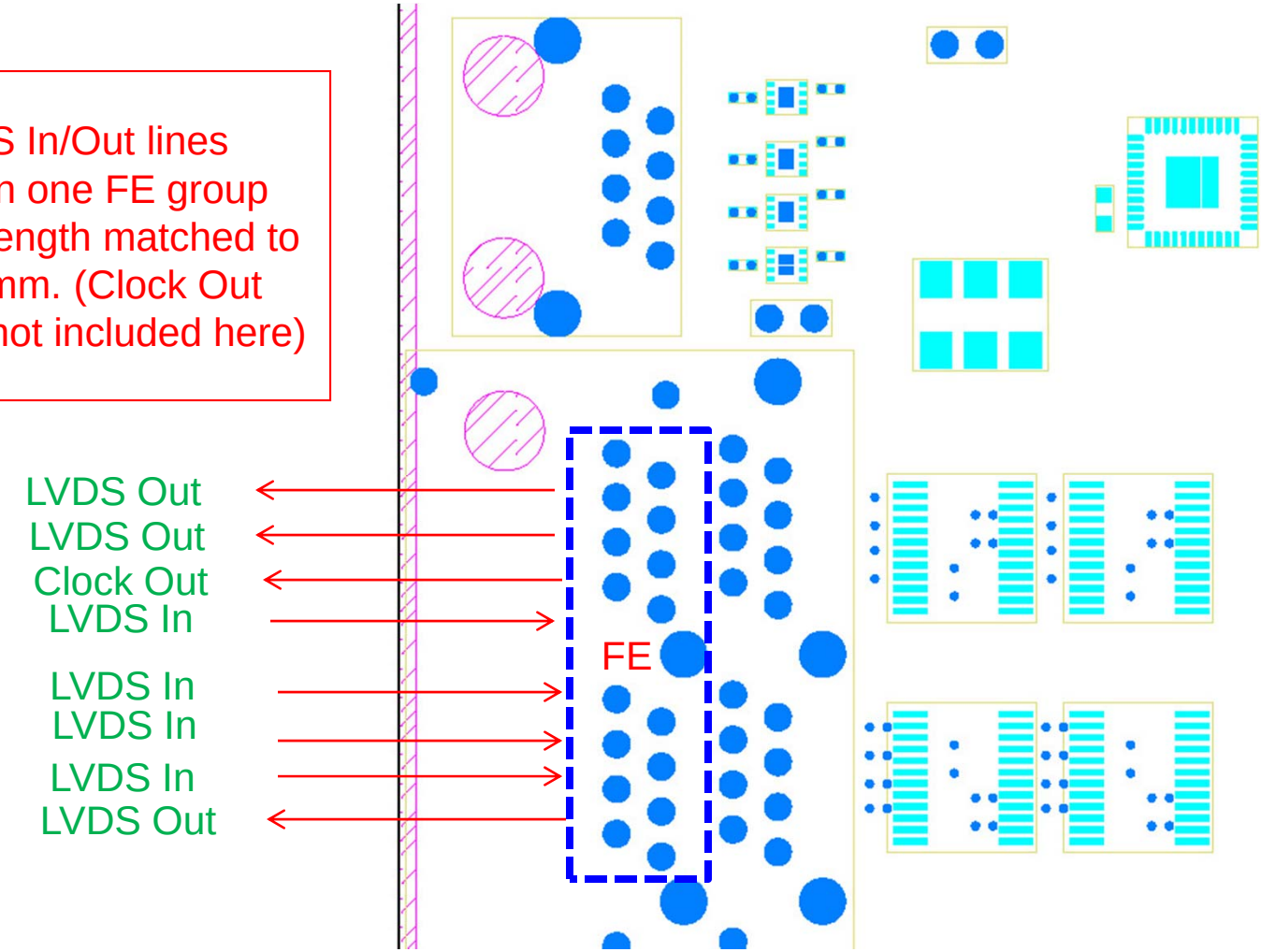
LVDS Front End Interface

Each FE Unit serviced via 2xRJ45
ACC can service 4 or 8 FE Units.

ACC Specs

Front End Interface

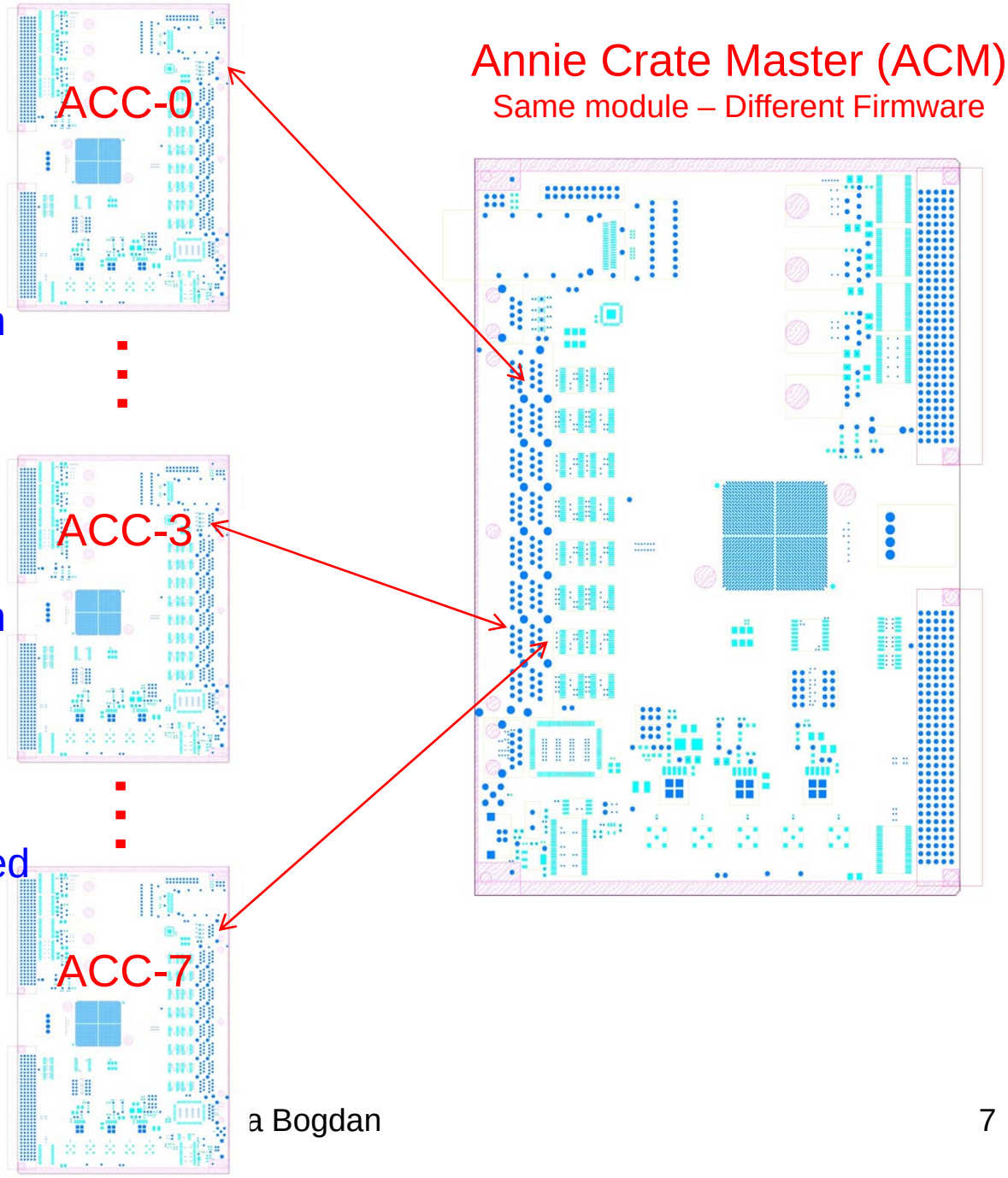
LVDS In/Out lines within one FE group are length matched to +/-5mm. (Clock Out line not included here)



Annie Crate Architecture

- Double Width ACM:
  One ACM Card can service 8 ACCs. System can be extended in multiples of 8, in a pyramid scheme.
- Single Width ACM:
  One ACM Card can service 4 ACCs. System can be extended in multiples of 4, in a pyramid scheme.

- New ACM can be designed to service up to 16 ACCs.



ACC - situation and plans

Questions/To Do List:

- Finalize Specifications;
- Finalize Schematic, Layout;
  http://edg.uchicago.edu/~bogdan/AnniesCentralCard/index.html
- Finalize Top Level FPGA Design;
- Start work on functional FPGA Design.