# ATRI/Electronics Status 7/6/2011

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## ATRI rev B status

- 3 boards produced at local assembly house completed
- Early testing:
  - FPGA is OK
  - USB is OK, with caveat
    - Board has 2 USB connections: through SBC and through connector
    - The idea was that if you plugged in a USB cable with an SBC plugged in, it would switch over to the cabled connection
    - That doesn't work (due to dumb mistake)
    - Fixed with a careful single-transistor inverter mod sitting on the existing resistor pads
    - So now the "plug in, switch over" does work
  - This, plus daughterboard connections, is basically all we need

# Daughterboard connection testing

- Used several old DDA boards to make "test" boards
- Place pullup resistors (2k) on every pin
- Put FPGA pulldowns (~7k) on every pin
- Step through all connections in FPGA, driving the pin, then tristating it and watching for the signal to float back up in non-zero time
- Firmware being written now, almost done (fairly trivial)

#### ATRI rev B



### ATRI rev B (in testing)



#### **DB** connection testing

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## DB connection testing, cont.

- Dumb bug in testing firmware
  - Wasn't checking for shorts against adjacent pins (was still checking driven value)
- Can check for shorts with no additional hardware
  - Pullups, then drive low, and make sure they stay low
- Should be done for NTU board
  - For UH board will be checked before shipping

# Schedule

- NTU board shipped (but only out today due to shipping delays at University)
- UH board shipped probably tomorrow

# TDA/DDA schedule

- Boards have arrived for both DDA and TDA
- First TDA boards assembled, but not tested because missing a few 0402 passives (bought in 0603 package, may try to fit on pads for one)
- DDA rev C finished and testing soon
- Assembly was pretty quick (~3 hours) for TDA

### TDA



# TDA/DDA parts

- Have enough parts/boards for ~15 of each
- Most parts are pretty available
- Bill of materials are on DDA/TDA DocDB sites http://ara.physics.wisc.edu/cgi-bin/DocDB/ShowDocument?docid=256 http://ara.physics.wisc.edu/cgi-bin/DocDB/ShowDocument?docid=155

Cost/board is around \$100 (BOM shows \$115/\$125 but doesn't list quantity discounts)

Boards are \$5/each if we buy the same boards