µAUS Design Experience

- Block Diagrams!
  - » Blueprints for implementation
- Modular Development
  - » parallel implementation of components
  - » facilitates component evolution and simplifies system integration
- Gantt Chart
- IP Cores, USB IC, Graphing library
  - » Shorten development time
- Xilinx ISE Versioning Problem

Cost & Size

- Hardware Size
  - » 1 x 2 sqr. inches

- Estimated Hardware Cost
  - » $24.48 Xilinx XC3S200-4FTG256C FPGA
  - » $8.53 FTDI FT2232C USB IC
  - » No more than $134 total hardware cost
    - – $99 Digilent S3Board Starter Kit
    - – $35 DLP-2232M Module

Conclusion

- We developed a μAUS A-mode Ultrasonic Imaging Subsystem

- μAUS Key Features
  - » Portable
  - » Low Cost and Power Consumption
  - » High Speed

Future Work

- Improve Sampling Frequency
  - » Reduce the depth of combinational logic
- Add DVI Video Support
- Design the System so that it does not rely on the vsync signal from the VGA monitor
- Support Firewire
  - » Faster than USB
- Reduce Hardware Cost
  - » Use alternative FPGA
  - » Mass Production