SPAR ~ SOFTWARE

Final Presentation

8/26/2005

Lasse Heikkinen
Introduction

- Windows application
- OpenGL
- USB
User interface

➢ “Oscilloscope” screen
➢ Few toolbars
Under the hood

➢ Typical message flow:

Trigger toolbar

Mainframe

Application window

Signal processing

Document

View

Visual presentation

S P A R board
Under the hood ~ Mainframe

- Handles menus, keyboard commands and messages from toolbars

Shortcut keys
- Ctrl+1
- Space

Toolbars
- Volts/div toolbar
- Trigger toolbar
- Time/div toolbar

Menus
- View
  - Channel bar
- Tools
  - Pedestal...

Mainframe
Under the hood ~ Document

- All signal processing here
- USB communications

SPAR board

Document
- Load data
- Wrapping
- Pedestals
- Calibrations
- Prepare to screen
- Save to file
- Configure SPAR

View
Under the hood ~ View

- Draws waveforms, gridlines, texts and markers
USB packet

Packet structure:

- CH1 data
- CH2 data
- CH8 data

8 x 520 bytes = 4160 bytes

- Sample 0
- Sample 1
- Sample 259

260 x 2 bytes = 520 bytes

- Hitbus bit
- CHn bits
- ADC bits

(1 + 3 + 12) bits = 2 bytes
Installer

- Setup.exe was created with InnoSetup 5
- InnoSetup 5 is a free installer for Windows programs
- http://www.jrsoftware.org/isinfo.php
USB

- FX2 USB firmware was modified to support EEPROM and 48MHz clock
- No changes to Windows driver (ezusb.sys)
- Created a C++ class for USB-communications
Hawai'i

- People are friendly
- Perfect climate!
- Nature is beautiful
- Lots of fun activities
- High cost of living