SPI boards package, a new set of electronic boards at Synchrotron SOLEIL

Synchrotron Soleil, Paris, France

Principle of SPI BOARD PACKAGE

✓ It’s a set of electronic boards developed by ECA group. These boards can be connected together in daisy chain and communicate to the embedded controller by SPI Bus.

Objectives
Development of a new platform with up to date components that allows:
• Build solution for application requiring synchronization
• Modulaire systems with board communicating in SPI
• Easy to connect to a control system via Ethernet.
• Development with simple and reliable tools.
• Embedded low level Code

Technical choices
Microcontroller ARM cortex M3
✓ Microcontroller multipurpose used in industry and medical applications
✓ Integrated Ethernet controller
✓ Ethernet 10/100 MAC&PHY
✓ On chip Memory
✓ 256KB Flash
✓ 96KB SRAM
✓ Cortex Processor Core 80MHz.
✓ 2 SPI interfaces
✓ Tools Keil with RTX operating system and TCPnet TCP/IP stack

The existing Boards

- SPIETBOX
- SPICONTROLLER
- SPIDAC/SPADC

Applications in production using SPI Board Package

Acquisition showing the difference between old control system of HU256 undulators and the analog control made with the SPI Package. In this application we use SPICONTROLLER and SPIDAC and the process to control the undulator is embeded in SPICONTROLLER

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