The SIS1100/310x is a joined ZEL/FZ Jülich/Struck development. The code facilitates the migration from other platforms and system integration. Windows and LINUX drivers in combination with example and user interface in a realistic SST VME master slave setup (SIS3350 ADC as VME slave e.g.)

The SIS1100/3100 is a joined ZEL/FZ Jülich/Struck development. The code facilitates the migration from other platforms and system integration. Windows and LINUX drivers in combination with example and user interface in a realistic SST VME master slave setup (SIS3350 ADC as VME slave e.g.).

**Common Functionality**
- 1U single slot form factor on VME side
- USB Express card
- VME master A16/A24/A32/D16/D32/BLT2/BHLT4/BHLT64
- Block address transfer auto increment (off for FIFO reads)
- System controller function (so be disabled by jumper)
- up to 450 m link distance

Additional SIS10x features
- SST implementation
- two front panel in- and outputs

**Additional SIS3100 features**
- hot swap (in VME64 environments)
- interrupt capability
- trigger output
- pre/post trigger capability
- autostart capability
- event directory
- multi event mode
- internal/external clock
- > 80 MHz analog bandwidth
- random clock mode for slower acquisition
- 1 to 105 (15 to 105 respective) MSamples/s per channel
- 8 channels with 12-bit/14-bit resolution
- 16 single ended or 8 differential inputs per CMC
- 16 single ended or 8 differential outputs per CMC
- P2 I/O option
- 64 MBytes SDRAM
- FLASH memory
- on board histogramming functionality
- TTL/ECL/NIM and other logic level options
- 64/512 Mb MicroSD RAM options
- flat cable, coax, connector and mixed options
- 64/512 MByte SDRAM w. DSP option
- 2 LEMO control inputs and outputs
- 4 control inputs
- 4 control outputs
- 32 input/output channels + 32 I/Os on P2

**Functionality**
- 32 channel 200 MHz Scaler/Counter implementation
- Interrupt functionality
- trigger output
- pre/post trigger capability
- interrupt capability
- hot swap (in VME64 environments)

The SIS3820 is a flexible FPGA based VME board that allows for the implementation of a variety of digital I/O designs. Examples for off the shelf firmware designs are the 32 channel 200 MHz SIS3820-scaler and the 16 channel in/16 channel out SIS3820-txscal designs.

**Common Functionality**
- 32 channel Multi Purpose Scaler
- Clock Distributor for Digitizers
- Digital I/O VME Card

**Functionality**
- VME64x to PCI, PCI Express converter
- 2 LEMO control inputs and outputs
- front panel diagnostic LEDs
- 2 LEMO control inputs and outputs
- 4 control inputs
- 4 control outputs
- 32 input/output channels + 32 I/Os on P2

**Functionality**
- up to 450 m link distance
- SST implementation
- two front panel in- and outputs

**Additional SIS10x features**
- hot swap (in VME64 environments)
- interrupt capability
- hot swap (in VME64 environments)

The SIS98xx is a VME64x to PCI Express converter board that allows for the implementation of a variety of digital I/O designs. Examples for off the shelf firmware designs are the 32 channel 200 MHz SIS9820-scaler and the 16 channel in/16 channel out SIS9820-txscal designs.

**Common Functionality**
- 32 channel Multi Purpose Scaler
- Clock Distributor for Digitizers
- Digital I/O VME Card

**Functionality**
- VME64x to PCI, PCI Express converter
- 2 LEMO control inputs and outputs
- front panel diagnostic LEDs
- 2 LEMO control inputs and outputs
- 4 control inputs
- 4 control outputs
- 32 input/output channels + 32 I/Os on P2

**Functionality**
- up to 450 m link distance
- SST implementation
- two front panel in- and outputs

**Additional SIS10x features**
- hot swap (in VME64 environments)
- interrupt capability
- hot swap (in VME64 environments)

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- 2 LEMO control inputs and outputs
- front panel diagnostic LEDs
- 2 LEMO control inputs and outputs
- 4 control inputs
- 4 control outputs
- 32 input/output channels + 32 I/Os on P2

**Functionality**
- up to 450 m link distance
- SST implementation
- two front panel in- and outputs

**Additional SIS10x features**
- hot swap (in VME64 environments)
- interrupt capability
- hot swap (in VME64 environments)

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**Functionality**
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- SST implementation
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**Additional SIS10x features**
- hot swap (in VME64 environments)
- interrupt capability
- hot swap (in VME64 environments)
Board Level Data Acquisition Products

SIS3302 4/8 channel 100 MS/s 16-bit VME ADC

- 4/8 channels with 16-bit resolution
- 1 - 100 MSample/s per channel
- > 50 MHz analog bandwidth
- 32 MSample/channel memory
- random clock mode for slower acquisition
- programmable offset (DACs)
- internal/external clock
- A32/D32/BLT32/MBLT64/2eVME

SIS3320-250 8 channel 250 MS/s 12-bit VME ADC

- 8 channels with 12-bit resolution
- 40 - 250 MSample/s per channel
- > 100 MHz analog bandwidth
- 32 MSample/channel memory
- random clock mode for slower acquisition
- internal/external clock
- programmable offset (DACs)
- A32/D32/BLT32/MBLT64/2eVME

SIS3350 4 channel 500 MS/s 12-bit VME ADC

The SIS350 is a 4 channel 6U VME digitizer/transient recorder with a sampling rate of up to 500 MS/s per channel and 12-bit resolution. The board has a width of one VME slot. The use of FPAGAs for data handling and implementation of the VME interface allows for maximum flexibility.

Functionality
- 4 channels
- 12-bit resolution
- 1 to 500 MSample/s per channel
- > 250 MHz analog bandwidth
- 32 MSample/channel memory
- (32 MSample option)
- internal clock
- external clock with variable threshold
- programmable offset (DACs)
- programmable gain (VGAs)
- multi event mode
- event directory
- auto start capability
- pre/post trigger capability
- 2/4/8/16/32/64/128 sample averaging mode
- trigger generation/output
- additional LVDS in/out signals
- single width 6U VME card
- A32/D32/BLT32/MBLT64/2eVME/SST
- in-field JTAG and VME firmware upgrade
- 1/2/4 GBit optical link (SFF LC)
- 10/100/1000 MBit Ethernet

SIS100 AdvancedMC GLink/VITA 57 Carrier Board

The SIS100 will be a single width mid-height AdvancedMC module with single lane PCI Express functionality (AMC.1). The first function is to extend our optical Link family into the xTCA world. The second stuffing option is the single VITA 57 FMC carrier, with target applications like fast I/O.

CO-10 system equipped with Gamma firmware

Custom Development Example: Dual 250 MS/s 12-bit Digitizer

The FADCCHRON is a full custom board that was originally developed for use in radiation monitoring. The flexible FPGA based architecture allows for adaptation to other applications.

- two 12-bit 250 MS/s digitizer channels, input Range: ±5 volts (others on request), active analog split for input signals, analog bandwidth > 125 MHz, LEMO 00 connectors
- TTL 50 Ω input on LEMO 00 connector
- 4 opto coupled inputs on pin header
- 2 photomos solid state relays contacts
- 2 push-buttons
- Xilinx Virtex IV XCV200-11FF672C FPGA
- 32 MBit serial PROM for FPGA firmware
- 4 Mbyte FLASH EEPROM for Power PC (FPGA) use
- 128 Mbyte DDR2 memory
- 10/100/1000 Ethernet and GLink connection option
- 14 status/diagnosis LEDs
- in field firmware upgrade over JTAG

250 MS/s 12-bit VME ADC

SIS3350 4 channel 500 MS/s 12-bit VME ADC

- 4/8 channels with 12-bit resolution
- 40 - 250 MSample/s per channel
- > 100 MHz analog bandwidth
- 32 MSample/channel memory
- random clock mode for slower acquisition
- programmable offset (DACs)
- A32/D32/BLT32/MBLT64/2eVME

2009: Product Highlights

As we are entering our 12th year in business we are excited to have the second generation of our renown PC to VME interface on the market. In combination with our latest deep memory digitizer boards you will experience unprecedented readout performance. At the same time the increasingly important role of flexible generic and dedicated firmware on the frontend cards is taken into account in close co-operation with the user.

We are looking forward to learning about your requirements and to implementing a full or partial custom solution in case we do not have an off-the shelf design that can be used.

ATCA/µTCA

With the next generation of accelerators, like FAIR and XFEL, and their experiments looking into the use of the ATCA standard -and its flavors like µTCA- we are proud to announce the development of our first AdvancedMC card. The board will have the stuffing options 4 GBit Link Interface and VITA 57 FMC carrier card.