Data Sheet

Hybrid DSP Data Acquisition Solutions

Optical Fiber for sFPDP, Ethernet, Infiniband (150 meters and 1000 MBytes / second)

or PCI, PCI-X or PCI-Express

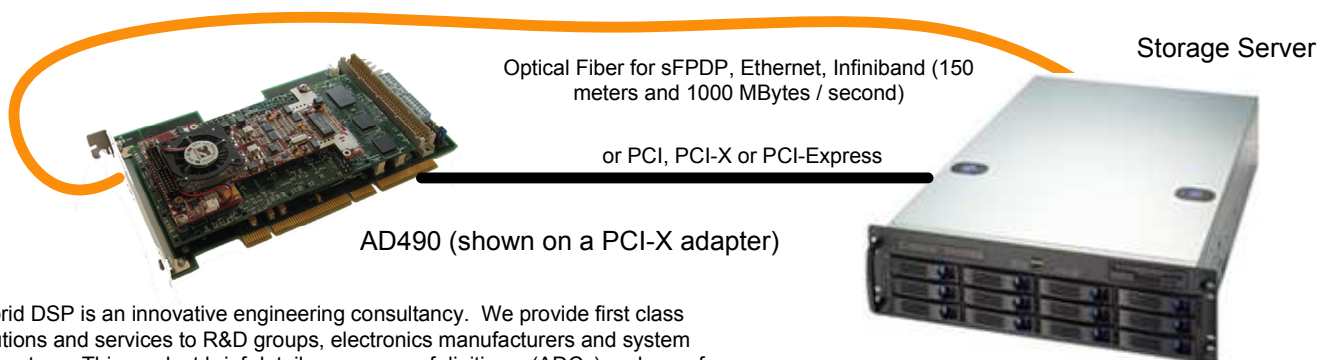AD490 (shown on a PCI-X adapter)

Storage Server

System shown above is one of many possible arrangements

Hybrid DSP is an innovative engineering consultancy. We provide first class solutions and services to R&D groups, electronics manufacturers and system integrators. This product brief details our range of digitizers (ADCs) and waveform generators (DACs). For Project Services and Storage Systems please see the separate brochures.

Hybrid DSP uses and recommends the following components from 4DSP. They are ideally suited for the most demanding requirements: highest bandwidth, greatest on-board processing resources and longest cable length (optical). If you want to design and build a system for high speed acquisition and storage then working with us means dealing with the engineers with the most experience in using these products. In most cases we have written the Windows and Linux software and optimized device drivers that comes with these products ourselves and which are now used and supplied by the hardware manufacturer!

All 4DSP digitizers and waveform generators have…

- High speed DSP processing in two Xilinx Virtex-4 ® FPGA (to choice),
- Off-the-shelf and custom IP cores including DDC,
- 128MB DDR2 SDRAM, 32MB QDR2 SRAM devices (32MB), 128Mbit flash device,
- Hostless, PCI, PCI-X or PCI-Express interfaces (750MBPS sustained),
- Via adapter can be used in cPCI racks or PCI/PCI-Express workstations
- 4x 2.5Gbps optical transceivers for sFPDP, Gigabit Ethernet, Infiniband etc,
- FPGA Reference Design, software and source code ("Plug and play")
- Windows or Linux API, tools and drivers
- On board clock generation

Digitizers and Waveform Generators

- AD491 2-channel 1000MSPS digitizer (ADC)
  Two ADC channels, 30MHz to 1000MHz (1GHz) sampling range
  8-bit data resolution

- AD490 2-channel 210MSPS digitizer (ADC)
  Two ADC channels, 40MHz to 210MHz sampling range
  12-bit data resolution

- AD484 4-channel 125MSPS digitizer (ADC)
  Four A/D channels, 10MHz to 125MHz sampling range
  14-bit data resolution

- AD481 2-channel 1000MSPS waveform generator (DAC)
  Two DAC channels, 300MHz to 1000MHz (1GHz) waveform generation
  14-bit data resolution

- AD450 2-channel 125MSPS digitizer (ADC) and DAC
  Two 14-bit ADC channels, 20MHz to 125MHz sampling range
  Two 16-bit DAC channels, 20MHz to 160MHz sampling range
  Ideal for Multiple Inputs Multiple Outputs in a small form factor

CameraLink

- Camera Link Frame Grabbers
  VID471: Base/Medium/Full configuration via two mini CL connectors
  VID472: Two Base configurations via two mini CL connectors

Product Range Summary:
AD491 2-channel 1000MSPS digitizer
AD490 2-channel 210MSPS digitizer
AD484 4-channel 125MSPS digitizer
AD481 2-channel 1000MSPS DAC
AD450 2-channel 125MSPS digitizer & DAC

What makes these products special?
- Massive FPGA processing resources - two Xilinx Virtex-4 FPGAs of choice up to LX160 with speed grade 12
- DDC, Polyphase Filterbank, (Floating Point) FFT, JPEG Compression IP cores available off the shelf
- Easy to integrate custom IP cores
- High speed PCI, PCI-X or PCI-Express interface (> 750MBPS sustained)
- Use in PCI workstation, cPCI racks, single board computer or hostless solutions
- True high speed distributed data acquisition - optical I/O allows up to 150 meter cable length at 1000 MBytes / second (1 Gigabyte / second)

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