

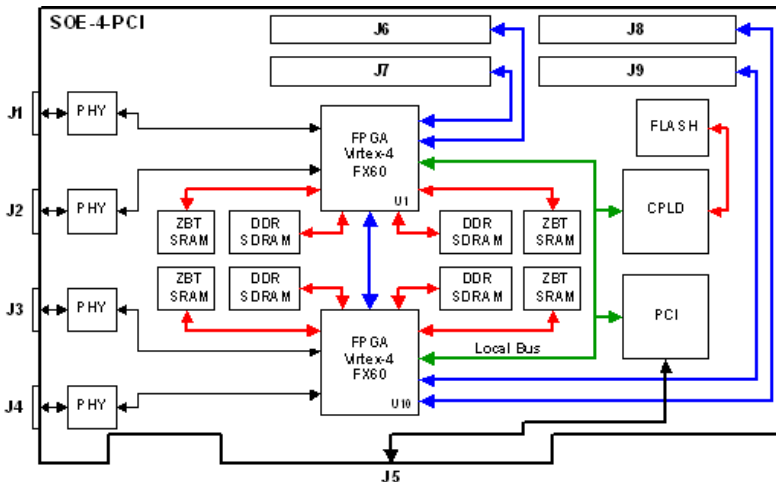
# SOE-4-PCI StreamBlade™ DATA SHEET

## FEATURE SUMMARY

- Four Independent Stream Offload Engines
- Two Xilinx XC4VFX60 FPGAs
- Four PowerPC 405 Cores (450 MHz)
- Four 10/100/1000 Ethernet Ports
- 128M x 32 bits DDR2 SDRAM
- 16M x 16 bits ZBT SRAM
- Four LVTTTL/LVCMOS 30-bit I/O via 40-pin ATA connectors
- Four Serial (RS-232)
- PCI 3.0 compliant



## STREAM OFFLOAD ENGINE



Embedded Systems Design, Inc. (ESD) StreamBlade™ SOE-4-PCI single board computer allows developers to take full advantage of the four independent Stream Offload Engines (SOEs). The StreamBlade™ SOE-4-PCI single board computer is designed to transport real-time streaming data and utilizes ESD's Stream Offload Engine (SOE) technology to provide real-time streaming data paths between distributed processing nodes. The StreamBlade™ SOE-4-PCI utilizes two Xilinx Virtex-4 FX40 FPGAs to implement four independent SOEs that provide zero-copy, full TCP/IP offload, and 10/100/1000 Ethernet connectivity for each configured 40 Pin ATA connector.

The ESD StreamBlade™ SOE-4-PCI single board computer reduces development time and

increases reliability for Communications, Medical, and Industrial applications. The ESD StreamBlade™ SOE-4-PCI single board computer provides users with direct access to each SOE via a 40 pin ATA connector and/or Ethernet RJ-45 connection.

ESD's SOE technology acts to decouple real-time streaming data source and sink processing nodes, allowing real-time processing jitter to occur without data loss.

## CONFIGURABILITY

The 40 pin ATA connectors provide access to FPGA pins and allow developers the freedom to customize the connectivity necessary to interface with a variety of real-time streaming data sources and sinks that support interfaces such as Ethernet, RS-232, RS-422, G.703, LVDS, and ECL.

ESD StreamBlade™ single board computers can be configured to run without a host. StreamBlade™ single board computers may be configured into any host with available PCI slots including passive PCI back-planes.

## SOE-4-PCI SPECIFICATIONS

Feature	Function	Detail
Form Factor	Card Dimension	6.6" x 4.2", 167.64 mm x 106.68 mm (Short Add-In)
	Card Type	PCI 3.0 compliant

## ORDERING INFORMATION

Call for pricing and availability: (410) 712-7290.



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Feature	Function	Count	Detail
Bus Interface	PCI	32-bit	33 MHz, target (no master)
	Local	32-bit	33 MHz for PCI Host access to CPLD/FPGA interfaces
	Cross Connect	16/8	16 Single Ended or 8 Differential Signals for inter-FPGA communications
Streaming Processors	FPGA	2	Xilinx XC4VFX60 FPGAs
	CPU	4	PowerPC 405 Cores (450 MHz Max) - Two per FPGA
Memory	DDR2 SDRAM	4	32M X 32 Bits (128M Bytes) - Two per FPGA
	ZBT SRAM	4	4M X 16 Bits (8M Bytes) - Two per FPGA
Non-Volatile Memory	Flash	1	64MB for FPGA Configuration and Power PC Code
I/O - Plate	Ethernet	4	RJ-45 connectors with activity LEDs - Two per FPGA
			Tri-Mode Ethernet MAC Cores (IEEE Std 802.3-2002 compliant) - Two (usable) per FPGA
			Marvell 88E111 Gigabit Ethernet Transceiver - Two per FPGA
I/O - Additional	LVTTL/LVCMOS	4	40-pin ATA connectors (30 available pins, 3.3/2.5 Volt selectable per FPGA) - Two per FPGA
	Serial	4	10-pin headers (RS-232 port) - Two per FPGA
	JTAG	1	4-pin header for FPGA/PPC Debug
Clocks	On-board Oscillator	1	100 MHz - available to both FPGAs
	PCI Bus Clock	1	33MHz - available to both FPGAs
Miscellaneous	LED	8	Four per FPGA

Feature	Function	Value
Power	Quiescent	3.0 Watt
	Operational	8.0 Watt – 2 PPC on 1 FPGA max freq 12.0 Watt – 2x(1 PPC on 1 FPGA max freq)
Voltage	Board Supply	3.3 Volt - standard (5 Volt option)
Environmental <sup>1</sup>	Temperature	0°C to 70°C - operational
		-40°C to +85°C - storage
	Air Flow	-
	Shock	up to 10g at 10ms - operational
		0.25g (5-100Hz) - operational 2.0g (5-100Hz) - storage
	Humidity	0-95% at 40°C non-condensing - operational
0-95% at 40°C non-condensing - storage		
Altitude	0-15000 ft (0-4572 m)	

<sup>1</sup> preliminary Jan 2007