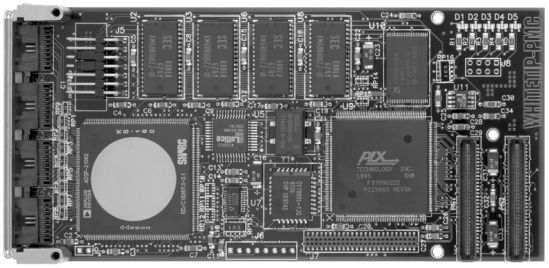
Whitetip-PMC

Single Processor ADSP-2106x PCI Mezzanine Card



Compact, Single-Width PMC Module

The Whitetip-PMC provides the high-performance Analog Devices' ADSP-2106x SHARC® DSP on a compact, single-width PMC module, making it compatible with any standard PMC-capable carrier board. You can use the Whitetip-PMC as an additional processor resource or as an interface to route data to and from a SHARC DSP system when it is located on a non-SHARC DSP board.

External Memory

The module incorporates an optional 512K x 32 bank of zero-wait-state SRAM for general purpose code and data storage, as well as 2M x 8 FLASH memory for embedded storage. Both memories are accessible from the SHARC processor. The SHARC processor can access the SRAM from the PCI bus and can be configured to boot from the FLASH.

PCI Interface

The Whitetip-PMC's 32-bit master/slave PCI interface provides rapid access (132 MB/s peak transfer rate) to and from the PMC carrier board. It supports hardware interrupts in both directions as well as host-based booting of the SHARC DSP.

Link Ports and Serial Ports

Up to four of the SHARC DSP's 40 MB/s parallel link ports are available off-module via connectors on the PMC bezel for dedicated interprocessor communications. To complement the link ports, factory options allow two SHARC processor serial ports to be routed to the PMC bezel in place of two of the link ports. These synchronous serial ports provide additional communication routes with data rates of up to 40 Mb/s per serial port.

Available Development Tools

BittWare offers a complete software development kit that allows you to easily integrate the Whitetip-PMC into your system. The software tools include a comprehensive host interface library, a standard I/O library, and diagnostic utilities. The board is also fully compatible with Analog Devices' VisualDSP®, and it supports in-circuit emulation.

Features

- One ADSP-2106x SHARC DSP providing up to 120 MFLOPS
- Single-width PCI Mezzanine Card (PMC) with master/slave PCI interface
- Up to 512K x 32 zero-wait-state external SRAM
- 2M x 8 bootable FLASH memory
- Up to four 40 MB/s SHARC link ports available off-module
- Up to two SHARC serial ports available off-module
- Supports in-circuit emulation
- Complete development tools available

BittWare

Specifications

BOARD ARCHITECTURE

Processor
- One 40 MHz Analog Devices ADSP-2106x SHARC DSP

External Memory
- Up to 512K x 32 bits (2 MB) zero-wait-state SRAM (in addition to the SHARC's on-chip SRAM)
- 2M x 8 bit bank of FLASH memory can be configured to boot the SHARC processor

Link Ports
- A minimum of two or a maximum of four (factory option) links are available on external connectors through the PMC bezel
- Two links are routed to the PMC Direct-Connect interface

Serial Ports
- Up to two serial ports can be routed to the PMC bezel in place of two of the link ports

PCI Interface
- 32-bit master/slave (132 MB/s peak transfer rate)
- All internal SHARC processor memory, IOP registers, and external SRAM are mapped to PCI memory space
- Supports hardware interrupts in both directions and host-based booting of SHARC processors

Debug Port
- 14-pin IDC header for IEEE JTAG 1149.1 boundary scan with extensions for in-circuit emulation
- Supports White Mountain DSP ICE emulators

Power
- 5V @ 800 mA typical, 1.2 A max

Size
- 149mm x 74mm (5.9" x 2.9")

ADSP-2106X SHARC DSP

Processing Rate
- 40 MHz, 25 ns instruction rate, 120 MFLOPS, 40 MIPS

Arithmetic
- 32/40-bit floating point, 32-bit integer

Off-chip Addressing
- 4 Gigawords addressable memory space
- Memory addressable as 16-, 32-, 40-, or 48-bit words
- Programmable wait-state generation

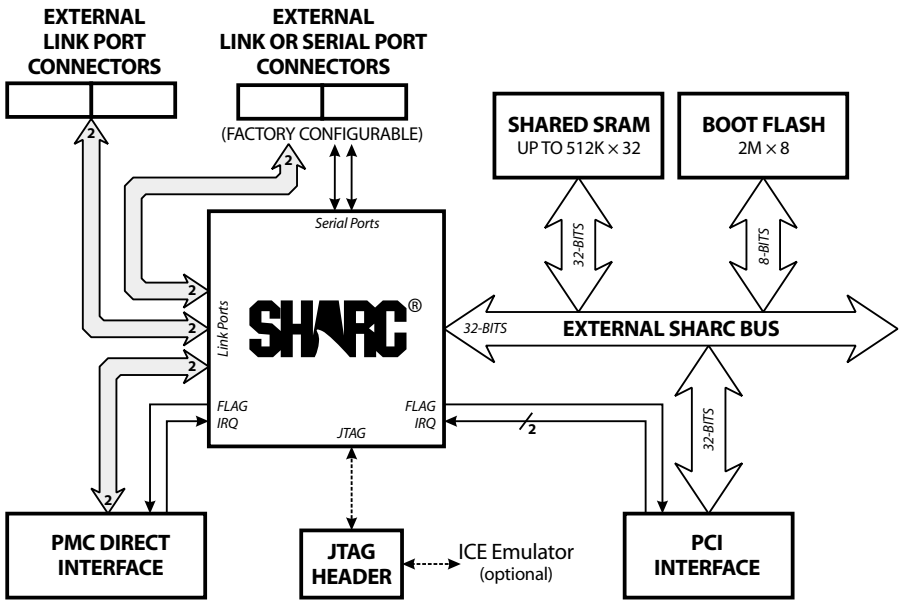
On-chip Memory
- 2/4 Mbits (21062/21060) dual-ported SRAM organized x32 or x48

I/O
- Integrated I/O processor with ten-channel DMA controller, six 40 MB/s link ports, and two 40 Mb/s serial ports

SOFTWARE SUPPORT

Host Interface
- The DSP21k Toolkit for Windows 95®, Windows 98, and Windows NT contains a C-callable library of board control and communications routines
- Porting kit available for other operating system platforms
- Linux port available

Development Tools
- Analog Devices VisualDSP tools; includes ANSI C compiler, assembler, linker, simulator, and source code debugger



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