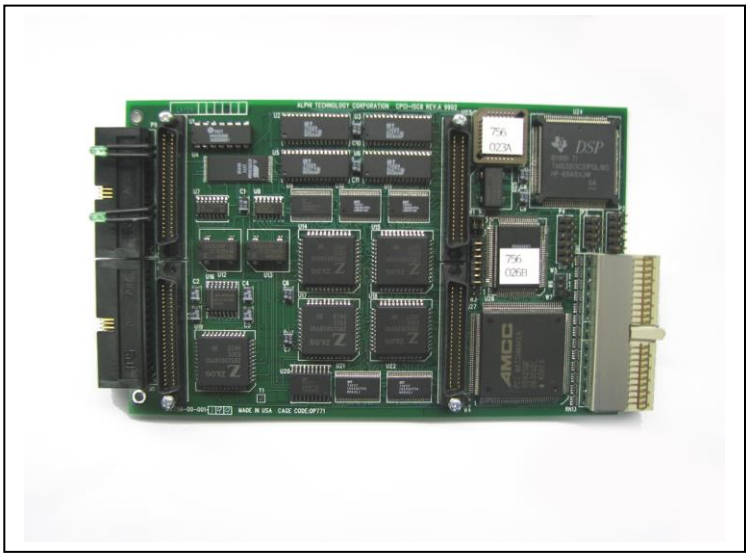
CPCI-C31-ISC8

CPCI Module

CPCI 320C31 DSP Octal Serial Controller

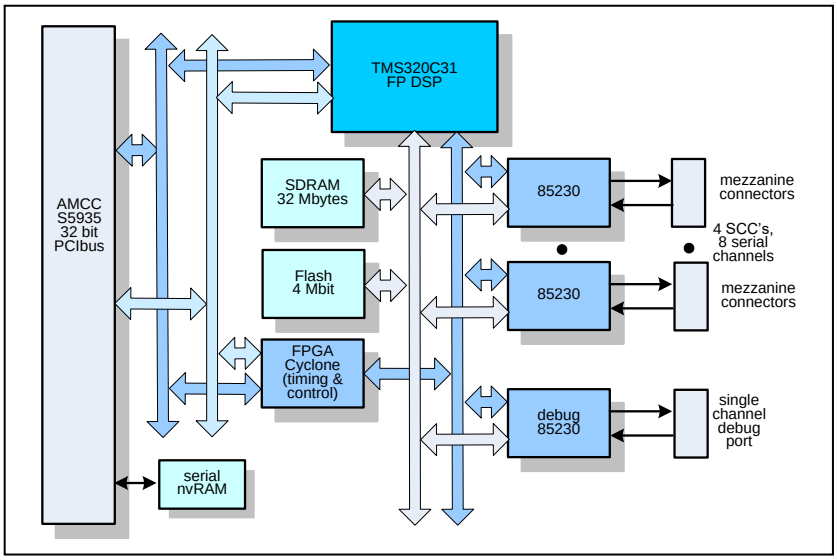
Features

- Based around the Texas Instruments floating-point Digital Signal Processor TMS320C31 at 32 MHz
- Quad 16 MHz SCC85230 serial controller with 8 serial channels total with optional mezzanine-based I/O or RS232C/RS422/RS485 drivers
- Compact PCI bus compatible
- Front panel for mezzanine I/O
- The SCC is multi-protocol including synchronous, asynchronous, Bi-sync, Xon/Xoff, HDLC, or SDLC communication protocols
- Adds high-speed, low latency IO/SIO and deterministic control to a low cost PC system solution



Block Diagram Overview

The board consists of private SDRAM and Flash memory attached to the TMS320C31 DSP at 32 MHz. An FPGA provides the timing and control. Peripherals include a serial port and connectors for IP mezzanine boards. Flash memory is available for downloading programs into a non-volatile memory. A PCIbus connector provides the interface to the host computer. The mezzanine connector area can be used for RS232, RS422, and/or RS485 drivers or other custom serial I/O configurations



Available Software Drivers and Software Tools:

- C library dll's
- Linux drivers
- Window XP drivers
- VxWorks drivers

The TMS320C31 DSP generation is supported by the TI eXpressDSP™ set of industry development tools, including a highly optimizing C/C++ Compiler, the Code Composer Studio™ Integrated Development Environment (IDE), JTAG-based emulation, real-time debugging, and the DSP/BIOS™ kernel.

Applications:

For application requiring low cost, high density I/O or unique combinations, the CPCI-C31-ISC8 is the perfect solution. The Local DSP can be used to simply move data to and from the CPCI bus or provide multi-protocol support up to the application level, etc. Custom application software can be downloaded to the DSP via the CompactPCI bus.

Alphi Technology Corporation, 6202 South Maple Avenue, Suite 120, Tempe, Arizona, 85283
Telephone: 480.838.2428 Fax: 480.838.4477
Contact Email: engineering@alphitech.com Visit: www.alphitech.com

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TMS320C31 DSP Features:

- 32-bit floating point DSP at 32 MHz
- Single-cycle instruction execution
- 2 Kbytes of internal RAM
- DMA internal co-processor for concurrent I/O and CPU operation
- Boot loader program built-in
- 64 x 32 internal cache for data
- 2 built-in timers
- Two Integer and floating point multipliers
- Parallel multiply and arithmetic/logical operations on integer or floating-point numbers in a single cycle
- Internal or external trigger support for A/D conversion synchronization tied to DSP operations
- Two 32-bit timers which can also be configured for bit I/O

PCI Bus Controller Features:

- Uses the AMCC S5935 PCI controller
- PCI 2.1 compliant master/slave
- 132 Mbytes/sec transfer rate
- Supports Windows NT service pack 2 & 3
- PCI bus operation DC to 33 MHz
- Four definable pass-through data channels
- Two 32 byte internal FIFOs with DMA
- Four mail box registers with byte level status and data strobe/interrupts
- Direct PCI and add-on interrupt pins
- Serial nvRAM interface or byte-wide non-volatile memory interface
- Performs Big Endian/Little Endian conversion

SCC/85230 Features:

- 16 MHz clock
- Programmable synchronous and isosynchronous data rates
- Asynchronous capabilities
- 5, 6, 7, or 8 bits/character
- 1, 1.5, or 2 stop bits
- Odd or even parity
- 1x, 16x, 32x, or 64x clock modes
- Direct byte oriented synchronous support
- Direct SDLC/HDLC support
- Receiver/transmitter FIFO
- DPLL for clock recovery
- Baud rate generator for each channel
- NRZ, NRZI or FM encoding/decoding with Manchester coding support

Operating Environment:

- Operating temperature
  Commercial: 0 to +70 ºC
  Optional: -25 ºC to +80 ºC
- Non-operating: -40 ºC to +85 ºC
- Airflow requirement – 5 CFM
- Humidity – 5 to 90% (non-cond)
- Altitude – 0 to 10,000 feet

Mechanical Environment:

- Size – 3U CPCI module
  100mm x 160mm
- Power – 1.5 watt
- Vibration – 0.5G, 20-2000 Hz rand
- Shock – 20G, 11 msec, ½ sine
- Weight – tbd
- MTBF – >250,000 hours

Ordering Information:

CPCI-C31-ISC8 Mezz-ICC8	3U 320C31 DSP with 8 serial communication channels
	Optional Accessories
CBL-HRS-HDR-50	50 pin HRS to header cable
TB-50-HDR	50 pin terminal block

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