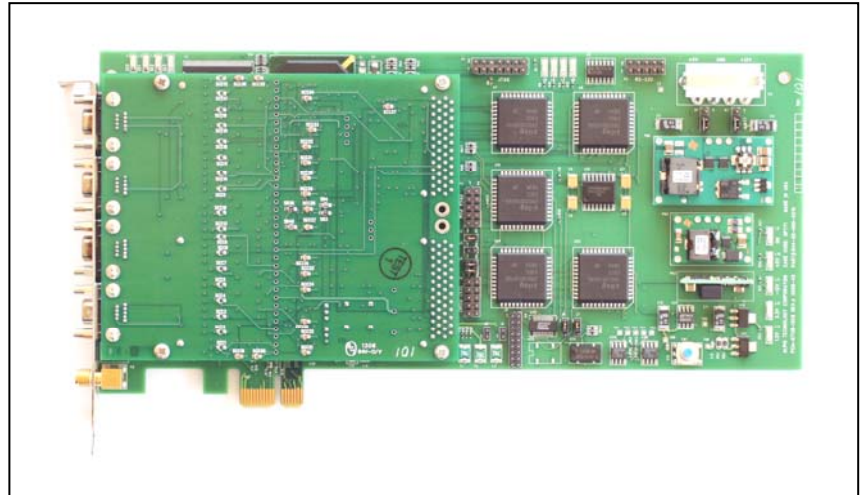


PCIe 320C6317B DSP Octal Serial Controller

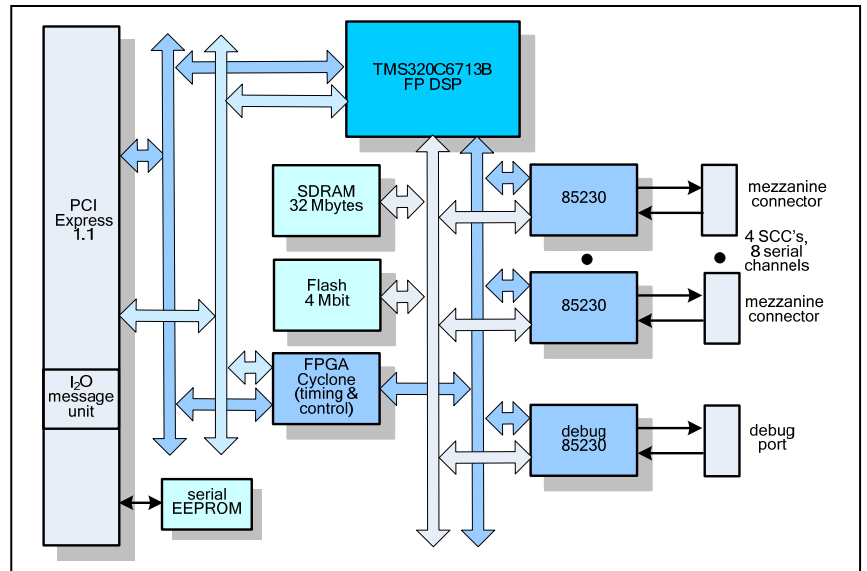
Features

- Based around the Texas Instruments floating-point Digital Signal Processor TMS-320C6713B at 300 MHz
- Quad 16 MHz SCC85230 serial controller with 8 serial channels total with optional mezzanine-based I/O or RS232C/RS422/RS485 drivers, WANTap, DNVT.
- PCI Express x1 Lane-250 MB/s
- Front panel serial 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 DSP. 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 PCIe - 1X Lane bus connector provides the interface to the host computer.



Available Software Drivers and Software Tools:

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

The TMS320C67x 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 PCIe-6713-ISC8 is the perfect solution. The Local DSP can be used to simply move data to and from the PCIe bus or provide multi-protocol support up to the application level, etc. Custom application software can be downloaded to the DSP via the PCIe-4x bus.

TMS320C6713B DSP Features:

- TMS320C6713B™ DSP @ 300 MHz
- 32/64 bit data word
- 8 32-bit instructions/cycle
- Up to 2400 MIPS/MFLOPS
- Advanced very long instruction word DSP core with 8 independent functional units – 2 ALU's (fixed point, 4 ALU's (floating/fixed point, and 2 multipliers (floating/fixed point
- L1/L2 memory architecture: 4K byte L1P program cache, 4K byte L1D data cache (2-way), 256 K byte L2 memory total with 64K-Byte L2 Unified Cache/Mapped RAM, and 192K-Byte Additional L2 Mapped RAM
- Load-store architecture with 32 32-bit general purpose registers
- Native instructions for IEEE 754 single and double precision operations
- 32-bit external memory interface with a glueless interface to SRAM, EPROM, Flash, SBSRAM, and SDRAM with 512 Mbyte total addressable external memory space
- Dual 32 bit general purpose timers
- 16 channel EDMA 'Enhanced DMA'
- Two inter-integrated circuit bus (I²C Bus)
- 16-bit Host-Port Interface (HPI)
- IEEE-1149.1 (JTAG) boundary scan compatible

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

PCIe Bus:

- 3.3V I/O, 5V tolerant bus interfaces
- Local Bus Clock rates at 66MHz
- Compliant PCIe Specification, r1.0a
- PCIMG 1.x
- Multiple DMA operational modes
- Direct master data transfers
- Direct slave data transfers
- Power: 1.0 Watt

Operating Environment:

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

Mechanical Environment:

- Size –PCIe module
 Standard Full size PCI Express Card
- Power – 1.0 watt
- Vibration – 0.5G, 20-2000 Hz rand
- Shock – 20G, 11 msec, ½ sine
- Weight – tbd
- MTBF – >250,000 hours



Ordering Information:

PCIe-6713B-ISC8-1	3xU 320C6713B DSP with 8 serial communication channels
PCIe-6713B-ISC8-2	3xU 320C6713B DSP with WANTap
PCIe-6713B-ISC8-3	3U 320C6713B DSP- 8 x RS 422
PCIe-6713B-ISC8-4	3U 320C6713B DSP- 8 x RS 232

Optional Accessories

CBL-50-HRS	Cable
TB-50-HRS	Terminal block