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ALPHI TECHNOLOGY CORPORATION

PCI-DSP-6713B-MFIO

PCI Module

Summary

The PCI-DSP-6713-MFIO is a high performance and flexible DSP + I/O board for servo control and data acquisition. Real-time control in low cost PCI based systems. The design is based around the Texas Instruments floating-point Digital Signal Processor TMS- 320C6713. Ideally suited for ultra high-speed, wide dynamic range signals and signal processing. Supported by a local I/O bus , there is virtually an unlimited customization of the input-output peripherals as well as hardware-accelerated signal processing, the PCI-DSP-6713-MFIO adds high-speed, low latency IO and deterministic control to low cost PC systems. This is a perfect solution for a wide array of advanced real-time control applications such as digital servo controls, military SONAR - RADAR, aerospace communication systems, test systems, adaptive control, vibration, semiconductor testing, and other high-speed acquisition & controls systems

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.

Available Drivers :

- Labview
- Linux
- Window XP

PCI INDUSTRIAL PICMG COMPUTERS

TMS 320C6713 DSP
16 BIT AD, 16 BIT DA, DIGITAL I/O, USB PORT

PCI-6713-MFIO

Board Features:

PCI Bus Interface 3.3 / 5 Volt via PLX 9056 33/66MHz
High Performance Floating-Point Digital Signal Processor (DSP): TMS320C6713B with a 300MHzsystem clock.
Up to 32Mbytes of SDRAM
4Mbytes of Dual-Ported SRAM- PCI and DSP
4.0 Mbit flash memory for bootstrap program
USB 2.0 CY68001 controller
RS232C controller
Internal / External trigger
16 independent 16 bit differential A/D upto 1 MSPS
16 independent buffered 16 bit D/A, 2µS settling
User programable Cyclone w/ 48 buffered I/O

DSP Specifications:

TMS320C6713B™ DSP @ 300 Mhz
64K-Byte L2 Unified Cache/Mapped RAM, and 192K-Byte Additional L2 Mapped RAM
Dual 32 bit general purpose timers
16 channel EDMA 'Enhanced DMA'
16-bit Host-Port Interface (HPI)

PCI Bus:

PCI Bus Interface 3.3 / 5 Volt
PLX 9056 33/66MHz 32-bit, PCI r2.2 compliant
3.3V I/O, 5V tolerant bus interfaces

Multi-Board Synchronization :

Multiple board synchronization via software control for clocks and triggers.

Debug Port:
JTAG emulator port, RS-232 RJ45

ADC Specifications:

16 channels, 16 bit ADC per channel
Simultaneous Sampling
Sample and Hold Converter
High precision internal reference
Speed Options :
- 250, 500, 1000 KSPS

External trigger / Internal trigger
128k byte FIFO
Instrumentation Amplifier per channel
Software programmable gain : 1, 2, 4, 8
Differential Input:
- +- 1.25 volt input
- +- 2.5 volt input
- +-5 volt input
- +-10 volt input

Over-voltage protection (+/-40v)
ADC jumper selectable gain: 1, 2, 4, 8

DAC Specifications:

16 Channel, Ultra Precise 16 bit DAC
External load capability
Fast 2 µS settling time, Settling .0015% for 10v
High precision internal reference
4-quadrant multiplying DAC possibility with external reference, Low noise
Buffered outputs : -10 to 10 volt

Digital I/O Specifications:

Dedicated Cyclone for user program
32 bit access
48 user I/O pins, controlled in groups of 8
TTL, 64 mA Buffered I/O
Direct read back of register
Direct output control
Pre programmed output latch w/ output strobe
Change of state detection & interrupt
Edge selection : positive/negative or both
(2) 32 bit timers
Digital Debounce

I/O panel connectors:

50 pin SCSI for digital I/O
68 pin SCSI for analog I/O
Standard USB 2.0 connector
RJ45 for RS-232
Micro DB-9 for triggers and external clock

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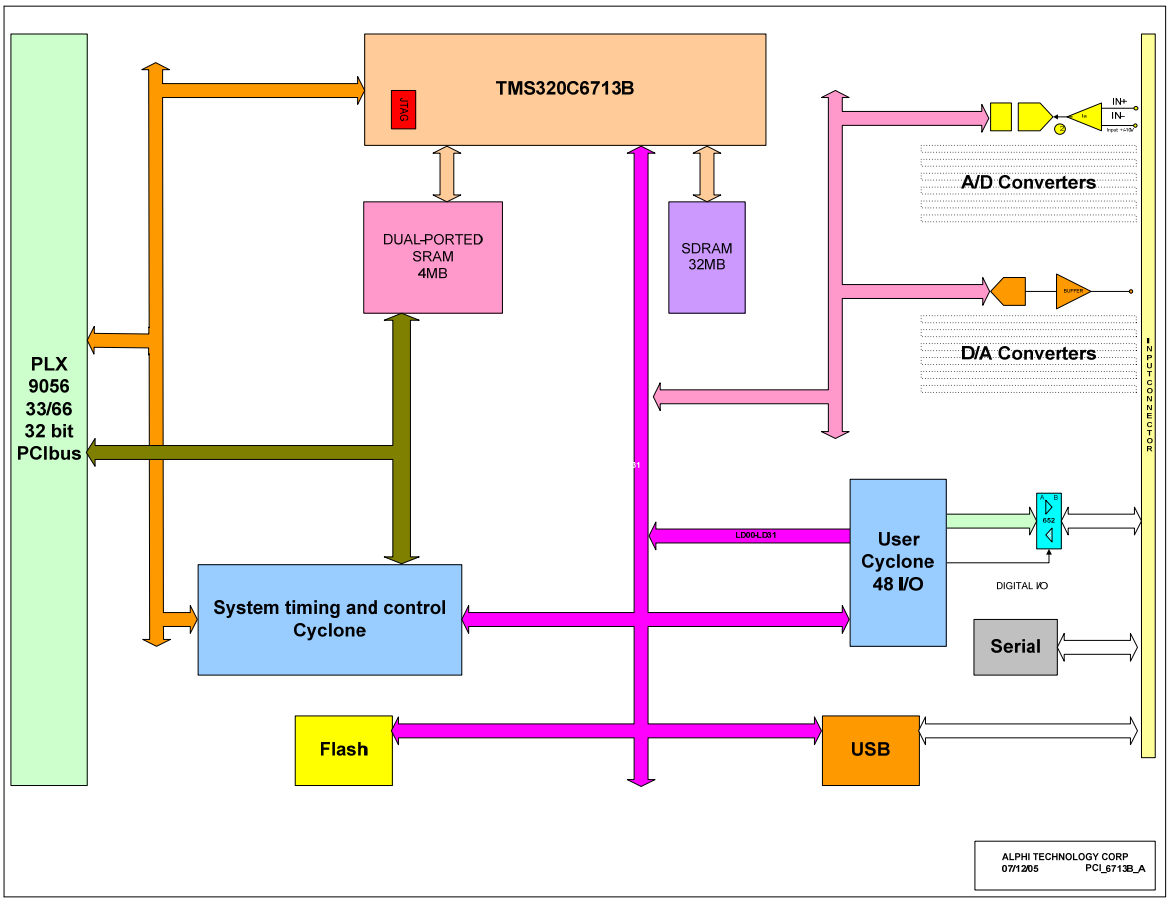
PCI Module



Functional Block Diagram

Mechanical & Environmental

- Operating temperature 0 to +55 °C
- Airflow requirement: 10 CFM
- Humidity: 5 to 90% (non-cond.)
- Altitude: 0 to 10'000 ft
- Full size PCI card
- Front panel I/O
- Power: +5v 1 amp, +12v 1 amp
- Vibration: 0.5G RMS 20-2KHz rand
- Shock: 20 G, 11 ms, ½ sine
- Weight: 2 lbs
- MTBF: >12000 hour

Ordering Information

PCI-6713-MFIO-	1	8 CH A/D @ 250K, 8 CH D/A@ 2us, 24 I/O, TTL
PCI-6713-MFIO-	2	16 CH A/D @ 250K, 16 CH D/A@ 2us, 48 I/O, TTL
PCI-6713-MFIO-	3	8 CH A/D @ 500K, 8 CH D/A@ 2us, 24 I/O, TTL
PCI-6713-MFIO-	4	16 CH A/D @ 500K, 16 CH D/A@ 2us, 48 I/O, TTL
PCI-6713-MFIO-	5	8 CH A/D @ 1M , 8 CH D/A@2us, 24 I/O, TTL
PCI-6713-MFIO-	6	16 CH A/D @ 1M , 16 CH D/A@ 2us, 48 I/O, TTL

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