

## 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 designed 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 and real-time debugging, and the DSP/BIOS™ kernel.



## PCI BASED TMS 320C6713 DSP



PCI-6713-DSP

### Board Specifications:

PCI Bus Interface via PLX 9056 33/66Mhz

High Performance Floating-Point Digital Signal Processor (DSP): C6713B

TMS320C6713B with a system clock up to 300MHZ.

Up to 32Mbytes of SDRAM

4Mbytes of Dual-Ported SRAM between PLX and TMS320C6713B

4.0 Mbit flash memory for bootstrap program

USB 2.0 CY68001 controller

RS232C controller

Add-on connector for A/D, D/A and I/O plug-in module

User programable Cyclone FPGA w/ 48 I/O pins

Extended Temperature Devices Available

### DSP Specifications:

TMS320C67x™ DSP Core

300 Mhz

Advanced Very Long Instruction Word (VLIW)

Eight Independent Functional Units: Two ALUs (Fixed-Point) Four ALUs (Floating- and Fixed-Point) Two Multipliers (Floating- and Fixed-Point) Load-Store Architecture

With 32 32-Bit General-Purpose Registers Instruction Packing Reduces Code Size

All Instructions Conditional Instruction Set Features Native Instructions for IEEE 754

Single- and Double-Precision Byte-Addressable (8-, 16-, 32-Bit Data) 8-Bit Overflow Protection Saturation; Bit-Field Extract, Set, Clear; Bit-Counting;

Glueless Interface to SRAM, EPROM, Flash, SBSRAM, and SDRAM

512M-Byte Total Addressable External Memory Space

Enhanced Direct-Memory-Access (EDMA) Controller

(16 Independent Channels) 16-Bit Host-Port Interface (HPI)

Two Multichannel Audio Serial Ports (McASPs)

### Operating: Environmental

- Operating temperature  
Commercial: 0 to +55 °C  
Optional: -25°C to +80°C
- Non-operating: -40°C to 85 °C
- Airflow requirement: tbd CFM
- Humidity: 5 to 90% (non-cond.)
- Altitude: 0 to 10'000 ft

### Mechanical: Environmental

- Size: Full PCI bus
- Power: tbd
- Front panel I/O
- Vibration: 0.5G RMS  
20-2000 Hz rand
- Shock: 20 G, 11 ms, ½ sine
- Weight: .5 kilo
- MTBF: >tbd

