

Tanner Labs Embeddable 'C6701-based DSP board



Architecture Overview

The Tanner Labs compact DSP board is based on the TI TMS320C6701 floating-point DSP. The board has been designed for embedded applications and is particularly suited for data acquisition and computationally intensive jobs.

Memory Subsystem

In addition to 128Kbytes of on-chip memory, configurable as cache or mapped memory, the Tanner DSP board features 16 Mbytes of SDRAM and up to 4 Mbytes of flash memory.

I/O Subsystem

Both SPI™ and RS-232 interfaces are provided. Two RS-232 ports are mapped to McBSP0 and one SPI™ port is mapped to McBSP1. The McBSP channels are the internal high-speed serial interfaces to the DSP. The SPI™ ports are intended for interfacing with peripheral devices such as the Tanner Labs compact data acquisition module or other SPI™ -compatible peripheral. The RS-232 ports provide a standard interface to external host computers with data rates programmable from 600 baud to 230 Kbaud.

Data Acquisition Peripherals

The companion Tanner Labs compact data acquisition module provides 17 A/D channels, including sixteen 12 bit channels operating at up to 100K samples per second and one 16 bit channel operating at audio rates. Two modules can be used to yield 34 total channels. The data acquisition modules connect to the DSP module via the SPI™ interface.

Software Development

Application software development for the Tanner Labs compact DSP board is easily accomplished using the standard software development environment from TI. Code Composer Studio provides the necessary compile and debug tools in an integrated development environment, allowing the user to get a new application up and running quickly.

Board Support Libraries

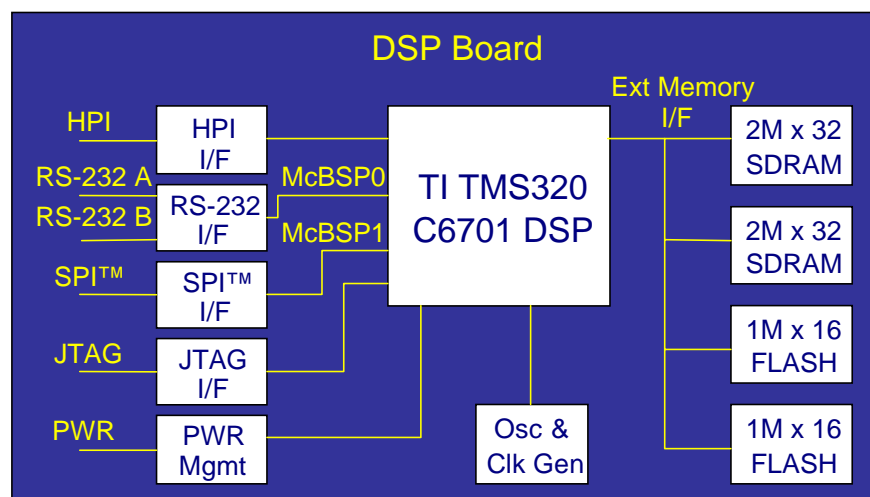
Tanner Research provides the board support libraries that are needed to utilize the RS-232 and SPI™ interfaces and other special capabilities provided by the hardware.

Host Interface

Tanner Labs provides the PC-based software and libraries used for host-DSP communications including application and data download and upload.

Specifications

- **Single 1 GFLOPS, 150-167 MHz TMS320C6701 DSP**
- **Compact board layout provides substantial computing power in a small package**
- **Up to 4 Mbyte of FLASH and 16 Mbyte of SDRAM**
- **Standard I/O interfaces including:**
 - ✓ 2 RS-232 ports
 - ✓ 1 SPI™ port
 - ✓ 1 JTAG interface
 - ✓ 1 High Speed Parallel Direct Memory Mapped Host Port Interface (HPI)
- **On-board power management**
 - ✓ A single 7-12 V DC power supply is required
- **Selectable bootmode or direct execution**
- **Technology Roadmap**
 - ✓ Support for next-generation TMS320C6711



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