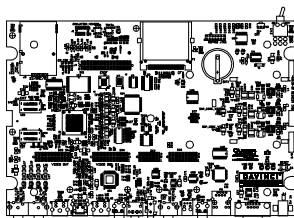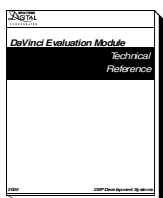# DaVinci™ Evaluation Module (EVM)
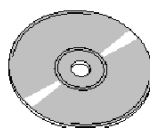
Quick Start Guide

DaVinci EVM Board	Technical Reference Manual	DaVinci EVM CD-ROM	Universal 5V Power Supply

DaVinci EVM Package Contents

Description

The DaVinci™ EVM is a development board that enables evaluation of and design with the DaVinci processors. The EVM serves as both a working platform as well as a reference design.

Usage Scenarios

Development with the Davinci EVM can proceed down two different paths. The first uses a JTAG emulator to obtain direct access to the on-chip debug state. The second uses an embedded operating system to act as a debug monitor. These two paths drive the software decisions you need to make when choosing tools and are described in more detail in the next few sections.

JTAG Based Debugging

Texas Instruments processors and DSPs are traditionally debugged using TI's Code Composer Studio IDE and a hardware JTAG emulator. This approach allows control of the processors and reister access to peripherals even with no bootstrap software running on the target and is appropriate for hardware developers, firmware writers, developers who do not plan on using an operating system and silicon verification.

Debugging with an Operating System

Many of DaVinci's media and connectivity rich target applications use an embedded operating system such as Linux or Windows CE. These operating systems help to tie the various on-chip peripherals together and provide a well defined framework for higher level application development.

To debug with an embedded operating sysem you typically need a set of host based compile tools as well as a DaVinci specific port of the operating system. Once the operating system is loaded onto the DaVinci EVM, you can debug it through a serial or network connection from your host PC.
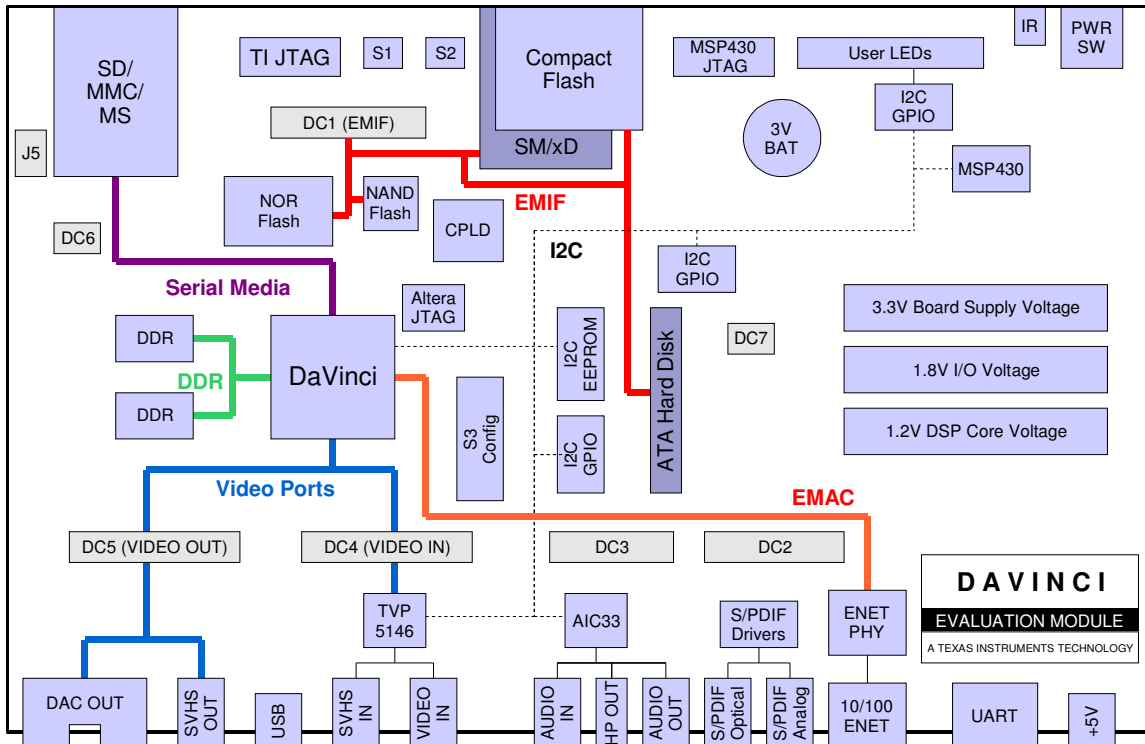
DaVinci EVM Block Diagram

Introduction to the Davinci EVM

The DaVinci family consists of DSP based system on a chip processors designed to handle today's video and connectivity driven applications. The DaVinci EVM is a reference platform that highlights the on-chip capablities. Board features include:

- 256 MB of SDRAM
- 16 MB of linear Flash memory
- 64 MB of NAND Flash memory
- Composite video inputs (1 decoder)
- Composite and component video outputs
- AIC33 stereo codec
- Stereo analog audio inputs and outputs
- S/PDIF digital audio outputs
- USB 2.0 host connector
- 10/100 Ethernet PHY
- Infrared remote interface
- 9-pin UART
- SD/MMC/MS serial media card support
- CompactFlash/SM/xD parallel media card support
- ATA hard disk interface

Configuration Switch Settings

Some DaVinci processor functions are configured at boot time via config switch S3. In the factory default configuration, the DaVinci ARM will boot out of NOR Flash and the DSP will be held in reset until released in software.

**Configuration Switch S3 Summary
(see Technical Reference for details)**

#	Default	Description
1	On	ARM Boot Mode 0
2	Off	ARM Boot Mode 1
3	On	Bus Width (16-bit)
4	Off	DSP Boot (no boot)
5-9	On	
10	Off	User Switch

Getting Started

The DaVinci EVM ships with a demo that will automatically run when you power your board. You can find instructions on running the demo and using the EVM in the **Getting Started Guide** included on CD-ROM with the kit.

Helpful Hints

1. The demo reads and writes to the hard drive while booting and playing/encoding video streams. Just as with a PC, do not turn the unit off while the hard disk is active.

2. Plug in all cables before turning the EVM on to insure proper grounding.

3. Do not unnecessarily flex the board when inserting cables or media cards. Excessive flexing can break the PCB traces.

4. The contacts on the MMC/SD connector are on the top, so when you insert cards into the slot the gold fingers should be facing upwards and the manufacturer label down.

Online Documentation

The primary places to find information about DaVinci and the DaVinci EVM are on the web. Here are the most commonly used resources:

DaVinci EVM Support Page

URL: http://c6000.spectrumdigital.com/davincievm

*   CCStudio configuration instructions
*   JTAG debug configuration
*   Frequently asked questions
*   Board level documentation and datasheets
*   Board firmware updates
*   Board schematics
*   Updated links to other online resources
*   Links to tools and software for your EVM

DaVinci Processor Information

URL: http://www.ti.com/davinci

*   Processor datasheets
*   Marketing material
*   New members of the DaVinci family
*   TI hardware and software resources