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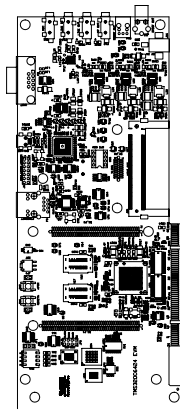
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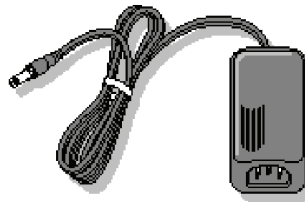
# TMS320C6424 Evaluation Module (EVM)

## Quick Start Installation Guide



C6424 EVM

### Kit Contents



+5V Universal  
Power Supply



AC Power  
Cords



Ethernet Cable



C6424 EVM Code Composer  
Studio & TMS320C6424  
Evaluation Module CD ROM



USB Cable

### System Requirements

- 500MB of free hard disk space
- Microsoft Windows™ 2000/XP
- 128MB of RAM
- 16-bit color display
- CD-ROM Drive

### Service and Support

Web	<a href="http://support.spectrumdigital.com">http://support.spectrumdigital.com</a>
E-Mail	<a href="mailto:support@spectrumdigital.com">support@spectrumdigital.com</a>

### Description

The C6424 Evaluation Module ( EVM) is an all-in-one evaluation platform for the TMS320C6424 Digital Signal Processor from Texas Instruments. It includes a target board that can be used as a reference design for interfacing the DSP to common devices such as DDR, Flash and a codec as well as a special introductory version of TI's flagship Code Composer Studio development tools. An on-board JTAG emulator allows debug from Code Composer Studio through your PC's USB port.

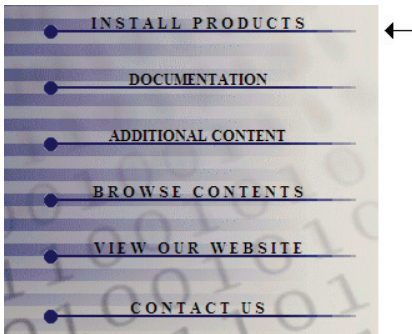
This kit contains everything you need to get started with TI DSPs. It can also be used with the full version of Code Composer Studio and an external JTAG emulator.



## Install EVM Content from the CD-ROM

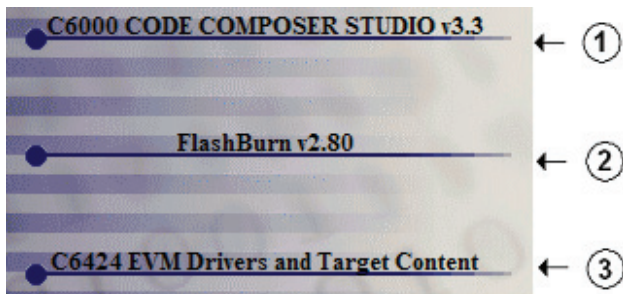
Before you install the EVM software, please make sure you are using **Administrator privileges** and any **virus checking** software is turned off. The EVM board should **not be plugged in** at this point.

1. Insert the Code Composer Studio installation CD into the CD-ROM Drive. An install menu (see below) should appear. If it does not, manually run Launch.exe from the CD-ROM. Select the **Install Products** option from the menu.



2. Install any components you need. To debug with the EVM you must have 1) a copy of **Code Composer Studio**, 2) the **target content** package for your board and 3) a copy of the **FlashBurn** plug-in.

Users of the full Code Composer Studio package can skip the EVM Code Composer installation and simply install the target content packages.



3. The installation procedure will create one icon on your desktop:

C6424 EVM CCStudio v3.3

4. Insert the TI TMS320C6424 DSP Evaluation Module Software CD into the CD-ROM drive. An installer should autostart. If it does not, manually run evm6424\_setupwin32\_1\_01\_xx\_xx.exe from the CD-ROM. Some examples will need extra configuration in order to run -- see the individual component release notes for details. Highlights include setting the following environment variables to the specified directory locations (or wherever you selected these components to be installed):

- BIOS\_INSTALL\_DIR =  
C:/CCStudio\_v3.3/bios\_5\_31\_07
- NDK\_INSTALL\_DIR = <C6424 EVM Install Dir>\ndk\_1\_92\_00\_22\_eval (for example C:\evm6424\_1\_01\_00\_06\ndk\_1\_92\_00\_22\_eval )
- BSL\_EVMC6424\_INSTALLDIR =  
C:\CCStudio\_v3.3\boards\evmc6424\_v1

You may also need to run the Code Composer Studio Component Manager from the Start menu and activate the Target Content->TMS320C64XX->Texas Instruments DSP/BIOS <5.31.07> component.

The installation will install a documentation index called "index\_manuals\_c6424.html" that points to documentation of the NDK, PSP, DAIS Developers Kit.

## Connect the EVM to Your PC

1. Connect the supplied USB cable to your PC or laptop. We recommend that anyone making hardware modifications connect through a USB hub for safety.
2. If you plan to connect a microphone, speaker, or expansion card these must be plugged in properly before you connect power to the EVM board.
3. Connect the included +5V power adapter brick to your AC power source using the AC power cord.
4. Apply power to the EVM by connecting the power brick to the 5V input on the EVM.
5. Make sure your EVM CD-ROM is installed in your CD-ROM drive. Now connect the EVM to your PC using the included USB. After few seconds Windows will launch its "Add New Hardware Wizard" and prompt for the location of the EVM drivers.
6. Follow the instructions on the screens and let Windows find the USB driver files "targ645x.inf" and "sdbus2em.sys" on the EVM CD-ROM. On XP systems Windows will find the drivers automatically.

## Starting Code Composer

To start Code Composer Studio, double click the C6424 EVM CCStudio icon on your desktop.



The C6424 EVM, DSK6455 and DSKTCI6482 all use the emulation driver named "sgo645xdsk.dvr".

## C6424 EVM Hardware Registration

The 6424 EVM hardware can be registered using the on-line registration process at [www.spectrumdigital.com](http://www.spectrumdigital.com). Spectrum Digital, Inc. warrants the products it produces for one (1) year after the date of purchase. For a product to be considered "in warranty", Spectrum Digital must be notified of the defect within one (1) year after being purchased from Spectrum Digital or one of its authorized resellers. Spectrum Digital is not responsible for accidents, improper installation of connections, misuse, neglect or unauthorized modifications. If the product qualifies for warranty repair Spectrum Digital may repair or replace the product at its discretion.

## Related Documentation

A complete list of related documentation is available in the on-line help. The path to this documentation is (assuming you choose `c:\CCStudio_v3.3` as the default path)

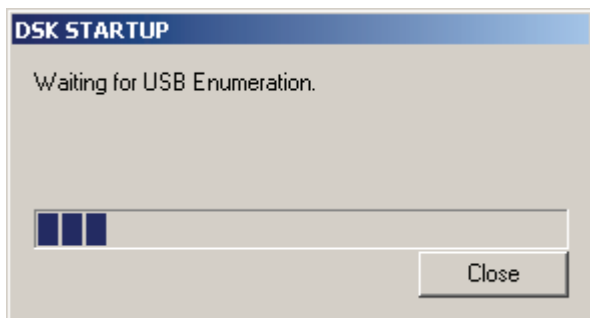
`c:\CCStudio_v3.3\docs\pdf manuals_ccs_full_c6000.html`

## Debug Hints and Trouble Shooting

1. If installing on Windows XP and your PC is connected to the internet through a firewall the USB install may take up to 15 minutes if you let it complete normally. The work-around for this issue is to simply disconnect your network cable during the USB hardware install.
2. Make sure all of the Configuration Switches (SW3) are set in the "off" position. This configures the EVM for the factory default settings of little endian processor mode booting out of the on-board Flash memory.
3. Some of the Help Files are links to Adobe Acrobat PDF files. If you intend to access these files you must have Adobe Acrobat installed on your system.
4. If you want to verify a successful USB driver install, open your device manager by right clicking on the My Computer icon on your desktop and selecting Properties --> HW --> Device Manager. You should see a new class "SD USB Based Debug Tools" and one Spectrum Digital TMS320C64Plus Target installed.
5. The BUSY LED above the USB connector comes on when power is applied to the EVM. Do not launch Code Composer until the LED is off.

## Error Messages

Many of the error messages below refer to USB enumeration issues. The following window will appear when launching CCS or the Diagnostic Utility indicating the enumeration status.



1. Message:  
Failed: Requires Win98, Win2K or Win XP.  
Problem: Your operating system does not support USB.
2. Message:  
Failed: USB device is NOT enumerated or plugged in.  
Problem: Windows cannot find the EVM. Check power and USB Cable.
3. Message:  
Failed: Load USB Application.  
Problem: Loader could not download the EVM emulation application. The on-board emulation controller could be in a bad state. Cycle power on the EVM.
4. Message:  
Failed: USB Channel in use by another app.  
Problem: Another application is using the EVM USB communication channel. Only one application is allowed to communicate to the EVM over the USB channel at the same time. Check for active applications using the Windows Task Manager if open application is not obvious.
5. Message:  
Waiting for USB Enumeration.  
Status: This is a status message which indicates that Code Composer Studio is waiting for communication with the on-board JTAG emulator to be established. This should take less than 10 seconds. Do not hit the close button unless it is clear that something is wrong (the progress bar runs forever).