



[TI Home](#) > [Semiconductors](#) > [DSP](#) > [TMS320C6000™ DSP Platform](#) >

## DM64x Digital Media Developer's Kit with NTSC Camera

TMDXDMK642, Status:ACTIVE

	TMDXDMK642-0E	TMDXDMK642
<b>Name</b>	DM64x Digital Media Developer's Kit with Euro Power Cord and PAL Camera	DM64x Digital Media Developer's Kit with NTSC Camera
<b>Status</b>	ACTIVE	ACTIVE
<b>Host</b>	PC	PC
<b>OS</b>	WIN 98, 2000, NT, XP	WIN 98, 2000, NT, XP

### Product Description

#### Description

Immediately start developing multi-channel, multi-format digital media applications or other future-ready high-performance video & imaging applications using the DM64x Digital Media Developer's Kit (DMDK). Loaded with starterware, supported by award winning eXpressDSP™ host tools and target software and offered at an exceptional price/performance ratio, the DMDK is a comprehensive fully integrated development platform and an easy-to-use, robust tool suite. Leveraging the high performance TMS320C64x DSP core, this development platform supports TI's [TMS320DM642](#), DM641 & DM640 digital media processors.

Two types of users are targeted to jump-start your application development:

- Experienced with programmable DSP (either TI or other) and want to add multimedia functionality to an existing or new product/system
- Experienced in video with a background in analog or fixed function hardwired chipsets/ASIC/SOC with minimum experience in writing target DSP software, and who want to use a fully software programmable DSP to increase the performance, flexibility and functionality of a video & imaging system.

This comprehensive development kit contains a PCI form factor DM642 Evaluation Module (EVM), a complete set of [eXpressDSP](#) host development tools and target software, an [XDS560](#) high speed advanced emulator, NTSC or PAL camera and cables. The DMDK enables you to:

- Start application software development immediately
- Understand DSP functionality for video experts
- Build video, audio & internet streaming functionality into existing designs
- Simplify overall system design
- Differentiate your product with cutting edge software
- Design for flexibility to respond to evolving standards

No matter what your experience level with programmable DSPs you will find this all-in-one Digital Media Kit is easy-to-use because it is loaded with starterware.

The tools and target software included with this kit allow you to start and finish development fast.

[Code Composer Studio](#)'s comprehensive, integrated development environment brings complete build and debug tooling, world-class compilers and industry unique analysis and visualization capabilities via JTAG Real-Time Data Exchange (RTDX) to quickly find and fix problems.

[DSP/BIOS](#)<sup>™</sup> is a scalable real-time kernel and has been proven in thousands of customer designs. As an integral part of the Code Composer Studio<sup>™</sup> Development Tools, DSP/BIOS requires no runtime license fees. It enables you to develop and deploy sophisticated applications more quickly than with traditional DSP software methodologies and eliminates the need to develop and maintain custom operating systems or control loops.

The [Device Driver Kit](#) (DDK) provides you with ready to use DSP/BIOS device drivers for TI DSP peripherals and working examples to develop your own device drivers so you can spend more time developing your application to differentiate your product.

Initial low-level design decisions are eliminated when using the eXpressDSP [Reference Framework 5](#) (RF5) because it provides a getting started solution in the early stages of application development. This easy-to-use source code is common to many applications. RF5 is designed to handle anywhere from 1 to 100+ channels of data, and from 1 to 100+ different algorithms. It makes maximal use of several of the advanced DSP/BIOS capabilities such as the task module (TSK) and semaphore module (SEM). This allows truly dynamic, multi-channel, multi-rate operation where any channel can block any other channel. Streams like audio and video can easily be mixed together. The latest [algorithms](#) that comply with the TMS320 [DSP Algorithm Standard](#) from over one hundred TI third parties can be quickly and easily integrated into the included starterware to accelerate your evaluation and development of digital media solutions.

Source code is available for Video Application demos for Composite/S-Video In/Out, Capture/Display pass-thru, On-Screen Display (OSD) and Audio Loopback.

Streaming Media executable demos with object code libraries are included for Video Loopback (H.263, MPEG-2 video and JPEG), TCP/IP Networking stack (Client/Configuration), Network camera and Audio Loopback (G.729).

The [XDS560](#)<sup>™</sup> Emulator is a PCI-based next-generation emulator that supports high-speed RTDX on enabled processor for real-time data transfer rates of over 2 MB/s, to provide an unparalleled level of real-time visibility into an executing application to assist developers in debugging real-time systems. It increases productivity through faster start up for larger applications by enabling code download speeds of up to more than 500 KB/s.

## Features

**For more technical references, schematics, quick start guide, and FAQ's on the DM642 EVM, visit [Spectrum Digital](#).**

### **DM642 EVM Hardware features:**

#### DSP & Memory

- 600 Mhz DM642 DSP
- 4 MBytes Flash, 32 MB of 133 MHz SDRAM and 256 kbit I2C EEPROM

#### Video Capture

- 3 Female RCA connectors for composite video input (NTSC, PAL)
- 1 Female S-Video connector for component (Y-C) video input (NTSC, PAL)

#### Video Display

- 3 Female RCA connectors (1 for composite video output, and 3 for RGB output or HDTV)

- 1 Female S-Video connector for RGB monitor output
- 1 Female 15-pin VGA connector for RGB monitor output
- On-Screen Display support (OSD FPGA)

#### Audio

- 2 Channel Line In (stereo), 8kHz to 96 kHz sampling rate
- 2 Channel Line Out (stereo)
- 1 Microphone Input (mono)
- 1 SPDIF output

#### Connectivity

- Can be used as a PCI plug-in card or stand-alone with an external power supply brick (+5V)
- 10BASE-T or 100 Base-TX using single RJ-45 connector
- Dual UART interface
- Daughter card interface for video port and memory bus expansion

#### Emulation, Power, Miscellaneous

- 14-pin JTAG for external emulation hardware support
- 60-pin next generation emulation header for advanced emulation features such as Trace and High Speed Real-Time Data Exchange
- Boot mode selection via switches
- Push button reset
- 8 User defined LEDs and GPIOs
- On-board switching voltage regulators for adjustable DSP core voltage (+1.2 to +1.4) and fixed +1.8V (OSD FPGA) and +3.3V

#### DM642 EVM Software:

- Code Composer Studio v2.20 for the DM64x generation of processors only
- DSP/BIOS Real Time Kernel
- CCStudio 2.20.18 patch including DM642 Chip Support Package, DSP/BIOS kernel support for the new peripherals (Video Port, VIC, EMAC, MDIO)
- [Device Driver Kit](#) (DDK) v1.1, which includes drivers for DM642 video capture and display drivers for the DM642 EVM card, AIC23 audio codec driver, Dual UART driver, Generic McASP data mover driver for C64x DSPs, and PCI target-side driver.
- eXpressDSP [Reference Framework 5](#)
- Video Application Demos including source code for: Capture/Display Pass-thru Demos (Composite/S-Video In/Out), On-Screen Display (OSD), Audio Loopback
- Streaming Media Executable Demos (with object code libraries) Video Loopback demos
- (H.263, MPEG-2 video and JPEG), TCP/IP Networking stack (Client/Configuration), Network Camera Demo and Audio Loopback (G.729)

#### The full contents of the kit include:

- DM642 EVM Baseboard
- [Code Composer Studio](#) v2.20 for the DM64x generation of processors only
- [DSP/BIOS](#) Real Time Kernel
- [Advanced PCI Emulator](#): XDS560 PCI
- DM642 EVM CD (contents described above)
- NTSC or PAL Camera
- Video Cables (2 RCA & 1 S-Video)
- DM642 EVM Quick Start Guide
- DM642 EVM Technical Reference
- 5V/5A Power Supply
- Multilingual Regulatory Compliance Statement

#### Ordering Information:

- TMDXDMK642 includes a standard US power cord and NTSC camera

- TMDXDMK642-0E version includes a European power cord and PAL camera

The EVM Baseboard has extensive daughter card interface expansion capabilities for memory, peripheral and video port expansion. Three expansion connectors can be used to accept plug-in daughter cards to allow users or third parties to build on the EVM to extend its capabilities and provide customer and application specific I/O.

#### **What's Included**

- [TMDXEVM642,DM642 Evaluation Module](#)
- [CCSTUDIO,Code Composer Studio IDE](#)
- [XDS560,XDS560](#)
- [TMS320DM642,Video/Imaging Fixed-Point Digital Signal Processor](#)
- Includes a DM642 only restricted version of Code Composer Studio
- NTSC or PAL Camera, Video Algorithms