

Intel® Tunnel Mountain Software Development Platform Overview, IHV Tools Update

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Intel UEFI SW Development Platform - Tunnel Mountain

- Tunnel Mountain is a new software development platform designed for UEFI Developers
- Benefits
 - Supports UDK 2010* Development
 - Long lifetime hardware platform support
 - All components commercially available, NDA not required
 - Build platforms on demand for development, debug, or validation
 - Affordable

Replacement for older Software
Development Platforms

Tunnel Mountain Components

- Intel DQ57TM Desktop Board
- Intel Core i5-650 processor and Heat Sink
- 4GB (2 x 2GB DDR3 1333) memory
- 500W Power supply
- SATA HDD 500GB
- SATA DVD-RW Optical Drive

Required
Hardware
components

- SPI Flash Programmer*

- Patchable Tunnel Mountain UDK 2010 BIOS Image, Platform Binary Package
- Tunnel Mountain Setup Documents, Getting Started Guide, Build Instruction

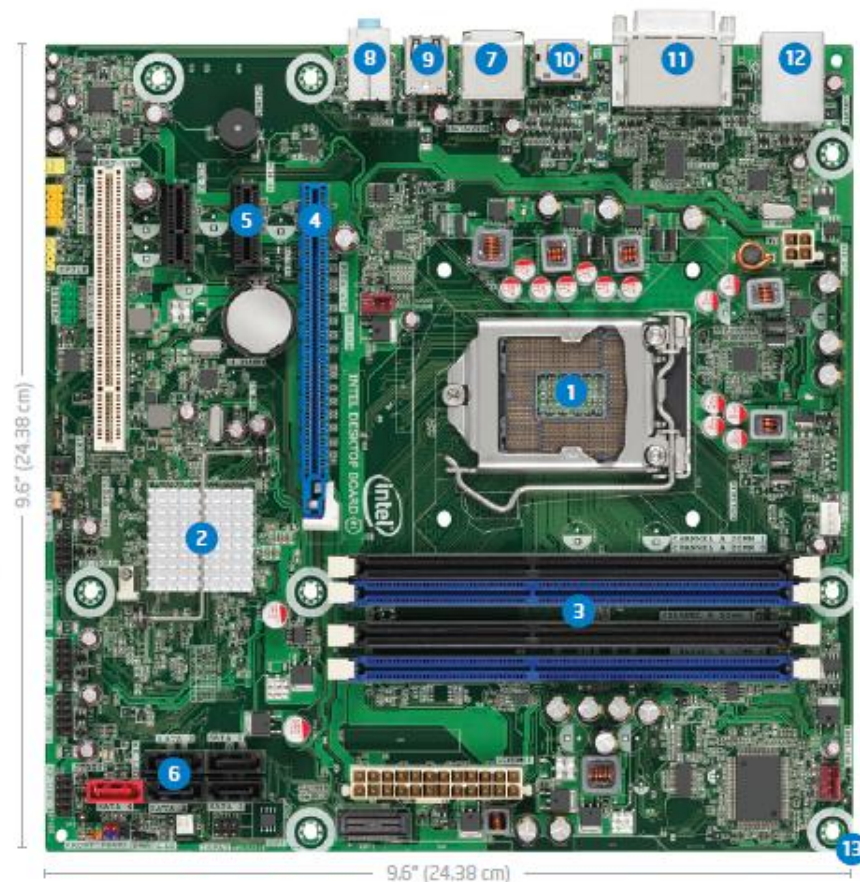
Provided by
Intel

Hardware Bill of Materials less than \$700

Intel® Desktop Board DQ57TM

The Intel Desktop Board DQ57TM supports Intel® Active Management Technology 6.0 Professional, Trusted Platform Module, and it is Microsoft Windows 7* and Microsoft Windows Vista* Premium WHQL certified.

- 1 Supports the Intel® Core™ i7 and Intel® Core™ i5 processors: Features quad-core and dual-core processors in the LGA1156 package.
- 2 Intel® Q57 Express Chipset in a single chipset design: Revolutionary new single chip increases routing space for additional onboard features and lower power consumption.
- 3 Dual-channel DDR3 with four connectors for 1333 / 1066 MHz memory support (16 GB³ max): Four DIMM connectors are directly connected to the processor via the Integrated Memory Controller.
- 4 One PCI Express* 2.0 x16 graphics connector: Increases graphics bandwidth up to 8 Gb/s per direction.
- 5 Two PCI Express x1 connectors: Designed for bandwidth-intensive applications, PCI Express x1 I/O offers up to 3.5 times the bandwidth over traditional PCI architecture.
- 6 Four SATA ports (3.0 Gb/s): Facilitate high-speed storage and data transfers with Intel® Rapid Storage Technology for RAID 0, 1, 5, and 10.
- 7 Two eSATA ports (3.0 Gb/s, one back panel port and one via internal header): Allow for the large addition of external mass storage using either single hard drives or SATA enclosures.
- 8 Six-channel Intel® High Definition Audio⁵
- 9 Fourteen USB 2.0 ports: Provides six back panel ports and an additional eight USB ports via internal headers.
- 10 DisplayPort⁴: The next generation in high-performance digital connectivity, delivering high-resolution digital display and digital audio.
- 11 Dual DVI (DVI-I and DVI-D)⁴
- 12 Intel® PRO 10/100/1000 Network Connection
- 13 MicroATX form factor



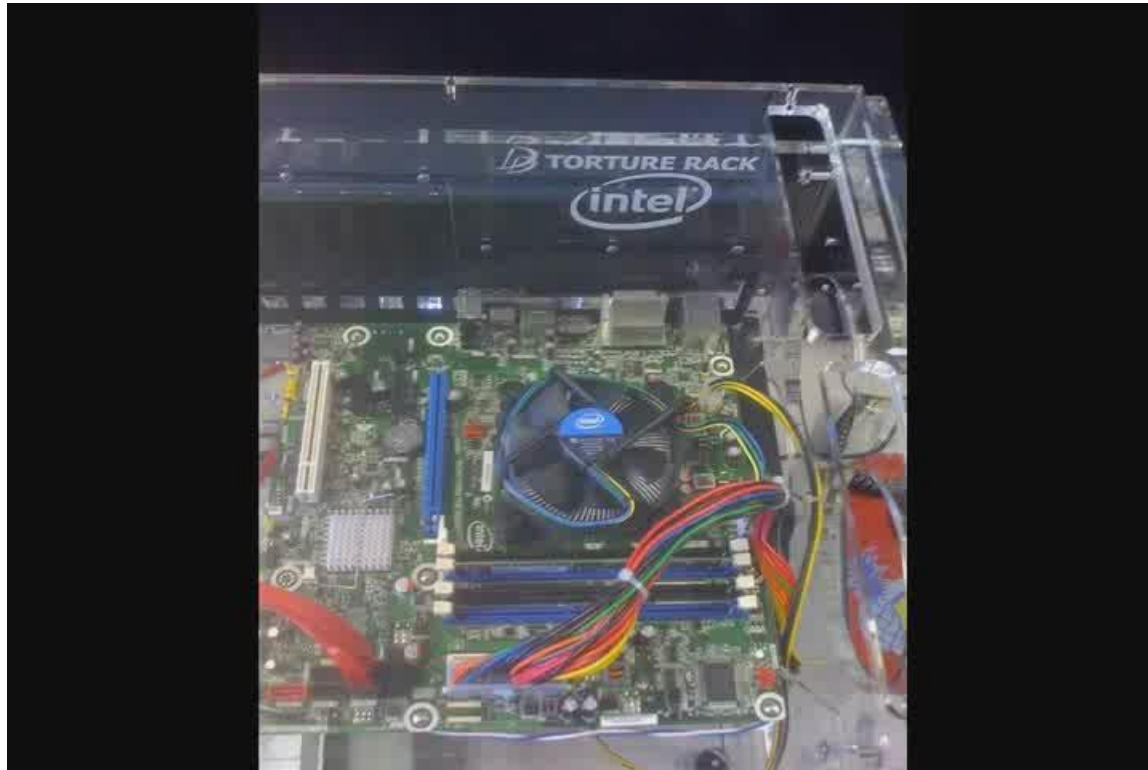
Product briefing at
<http://www.intel.com/Assets/PDF/prodbrief/322809.pdf>

Building your Tunnel Mountain System



- Assemble system
- Connect SPI Flash Programmer
- Backup Original BIOS
- Download Tunnel Mountain BIOS Image
- Patch BIOS Image with Mac Address for your board
- Write Image to Board Flash
- Test system by booting system to Shell

Tunnel Mountain System Setup Video



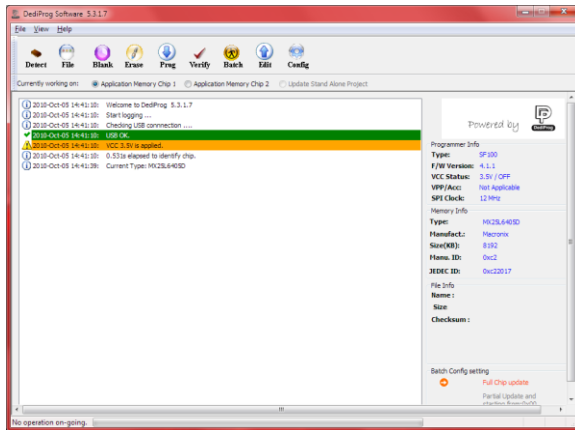
Click to play video

Connecting SPI Flash Programmer



Click to play video

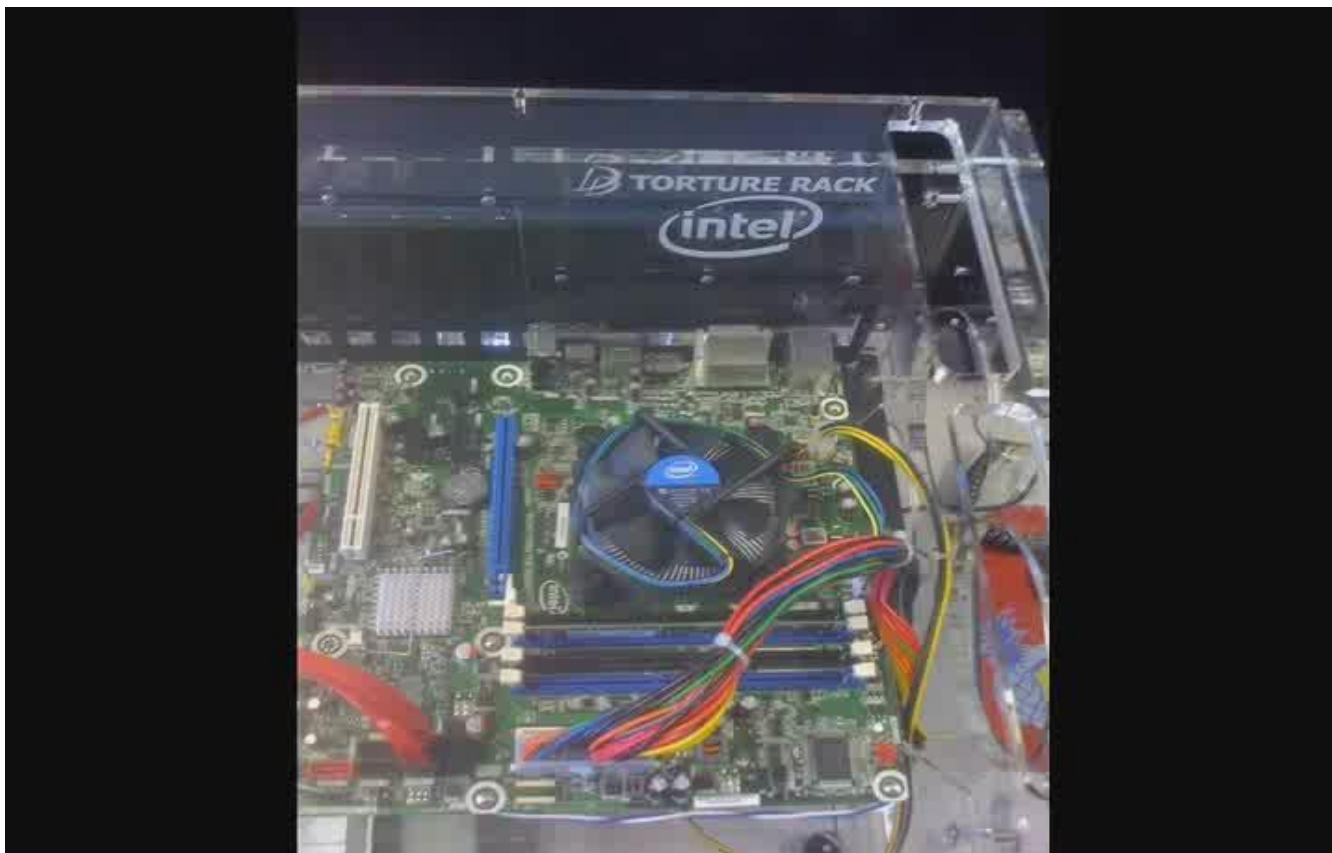
Patching BIOS Image, Write Flash to Board



Dediprogram

- Download Patchable Tunnel Mountain BIOS Image
- Patch Tunnel Mountain BIOS image with Mac Address for your board
- Write updated Tunnel Mountain BIOS Image to Board using SPI Flash Programmer
- Test flash by booting to Shell

Tunnel Mountain booting to Shell



Next Steps

- Visit <http://developer.intel.com/technology/efi> for latest information on Tunnel Mountain
- Tunnel Mountain Hardware components are available now for purchase
- Patchable Tunnel Mountain UDK 2010 BIOS Image available for download Early Q1 2011
 - Limited beta release targeting for Q4
 - Contact bailey.t.cross@intel.com if you are interested in participating as a early validation partner
- Intel is investigating offering a complete assembled Tunnel Mountain SDP. Please contact me if this is of interest to your company

UDK2010 Available on tianocore.org



tianocore.org

UDK2010
Open Source
UEFI Development Kit

Develop. Contribute. Advance.

<http://www.tianocore.Sourceforge.net>

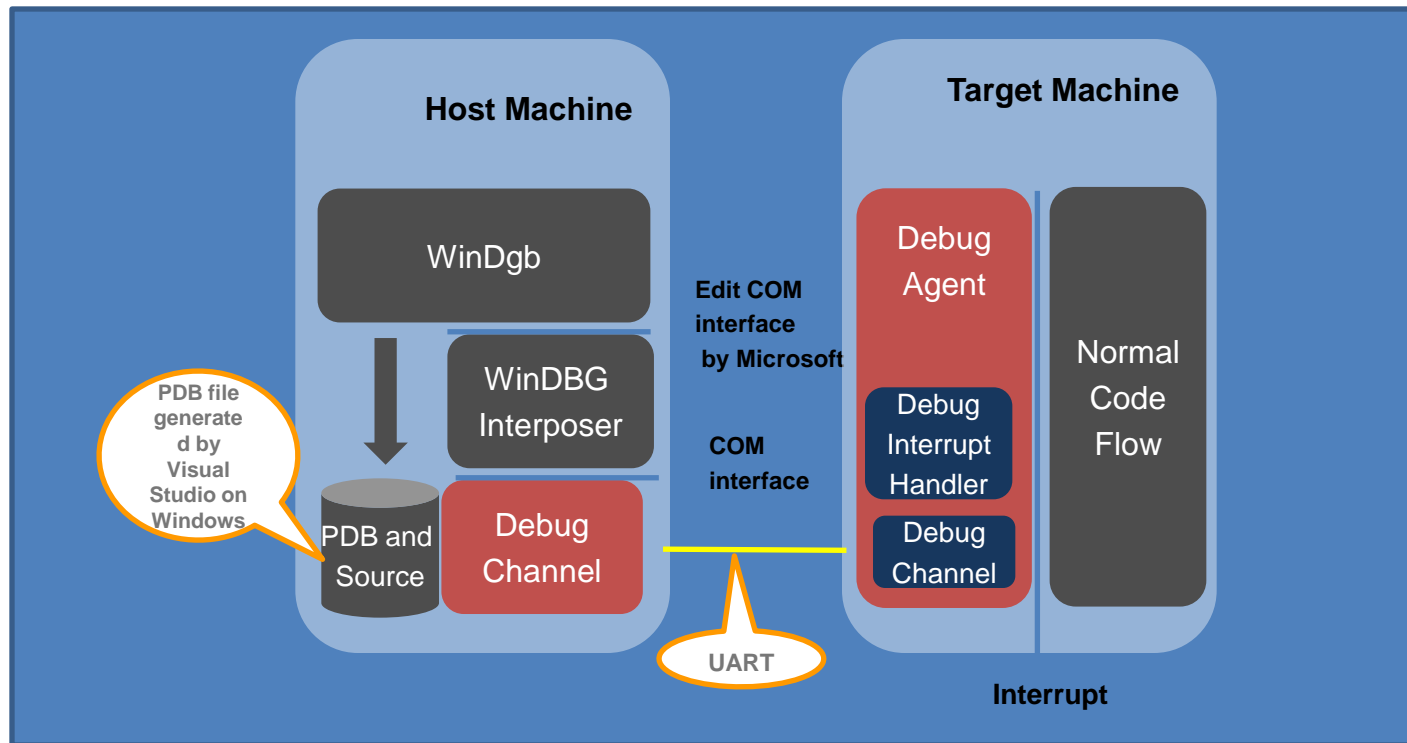
Tools for IHVs

- EFI Tool Kit for UDK 2010
 - Adds Ansi C Library support to UEFI applications
 - Available for X64 and ia32 by end of Q4
- Intel® UEFI Development Kit Debugger Tool released Sept 2010

Intel® UEFI Development Kit Debugger Tool

Full Featured EDK II Source Code Debugger

- Go/Halt/Go till, Step into, step over commands supported
- View and edit local variables and global variables
- View disassembly, Call-stack in PEI and PE



**UEFI-based open source
debugger solutions available on tianocore.org**

es Group



Intel® UEFI Development Kit Debugger Tool Demo



Beyond BIOS 2nd edition promotion



2nd Edition - *Beyond BIOS* available Q4 2010

To receive a complementary copy of the book
Register at
<http://www.intel.com/intelpress/register.htm>

Enter "Beyond BIOS Offer" plus the serial
number on the back of this voucher in the
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Offer not valid for Intel employees. Limited time offer.

See me after the presentation or Visit us at Room 1521

UEFI IHVs Resources

UEFI Forum

UEFI Forum website content:

- Home
- About UEFI
- Join UEFI
- UEFI Specifications and Tools
- News
- UEFI Events
- UEFI Learning Center
- Members Pages

Welcome What's New: UEFI Specifications Update!

- UEFI Specification**: Current UEFI Spec: v2.3 approved May, 09. Current Activities: Implementation and writer's guides.
- UEFI Shell Specification**: Current Shell Spec: v2.0, approved Oct, 08. Current Activities: Implementation support.
- PI Specification**: Current PI Spec: v1.2, approved May, 09. Current Activities: Implementation support.
- UTWG Self-test Specification**: Current version: SCTv2.1 released May, 09. Next Release: v2.3 SCT target mid 2010.
- PI Distribution Package Specification**: Current version: v1.0 released May, 09. Current Activities: Implementation support.

www.uefi.org

UEFI Open Source

SourceForge project page for UEFI:

Introducing UDK2010
Beginning a new era for the UEFI Open Source Community

Welcome to the UEFI Open Source Community Master project. This project is the gateway to all open source projects associated with UEFI and part of UEFI specifications through the Platform Consortium based environment for running pre-boot applications and for running an operating system. It specifies the basic interface an operating system and the platform firmware.

To learn more about getting involved in the community see How To Contribute.

Sub-projects	Summary	Sourceforge project URL	Download
EDK2-fat-driver	EDK-fat-driver	https://sourceforge.net/projects/edk2-fat-driver	Download
EDK2-fat-driver	EDK-fat-driver	https://sourceforge.net/projects/edk2-fat-driver	Download

www.tianocore.org

Intel UEFI Resources

Intel Extensible Firmware Interface (EFI) website content:

- For Business
- For Home
- Products
- Support
- About Intel

Extensible Firmware Interface (EFI) and Unified EFI (UEFI)

Background

The Unified EFI (UEFI) specification (previously known as the EFI specification) defines an interface between an operating system and platform firmware. The interface consists of data tables that contain platform-related information, boot services calls, and runtime service calls that are available to the operating system and its loader. These provide a standard environment for booting an operating system and running pre-boot applications.

The UEFI specification was primarily intended for the next generation of IA architecture-based computers, and is an outgrowth of the "Intel® Boot Initiative" (BI) program that began in 1998. Intel's original version of this specification was publicly named EFI ending with the EFI 1.10 version. In 2005 the Unified EFI Forum was formed as an industry-wide organization to promote adoption and continue the development of the EFI specification. Using the EFI 1.10 specification as the starting point, this industry group released the development of the EFI specification. The current version of the UEFI Specification can be found at the UEFI web site.

More information Specifications

The latest version of the UEFI specification is available from the UEFI web site.

<http://developer.intel.com/technology/efi>

Intel EBC Compiler

Intel Software Evaluation Center content:

Intel® C Compiler for EFI Byte Code

30 day evaluation versions of Intel® Software Development Products. For High Performance Computing Products, you can get free 30 day account after requesting the evaluator license or visit Intel® SW. For evaluating Intel® Parallel Studio, you can access free support. Please note that the product will cease to function at the end of the 30 day evaluation period. Review the system requirements for the product(s) you wish to evaluate.

Select the product(s) you wish to download:

Intel® Parallel Studio

- Intel® Parallel Studio (Includes Intel® Parallel Composer, Intel® Parallel Inspector, Intel® Parallel Amplifier)

Compiler Products

- Intel® Parallel Studio Professional Edition
- Intel® Compiler Professional Edition
- Intel® Cluster Toolkit
- Intel® Cluster Toolkit Compiler Edition
- Intel® Cluster Ready
- Intel® Integrated Performance Primitives
- Intel® Math Kernel Library
- Intel® MPI Library
- Intel® Parallel Studio

<http://software.intel.com/en-us/articles/intel-software-evaluation-center/#compilers>

UEFI Books

Two UEFI books:

- Harnessing the UEFI Shell: Moving the platform beyond BIOS** by Michael Robinson, Tom Livers, Vincent Dierker and Robert Hines.
- Beyond BIOS: Implementing the Unified Extensible Firmware Interface with Intel's Framework** by Vincent Dierker, Michael Hines, Tom Livers and Robert Hines.

www.intel.com/intelpress

Training/IHVs Contact

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Software & Services Group



