Intel® Viiv™ Technology: Performance and Technology for Entertainment PCs

1 Verified devices and services will vary, and content restrictions may apply. Wireless and network performance varies with specific hardware and software configurations, usage, and environmental interference. Use a wired connection for improved performance with online and other media. May require TV tuner card and/or remote which may be sold separately. Instant on/off feature works after initial boot, when activated. Intel network setup software currently requires a verified router and DHCP (“Always On”) or PPPoE broadband connectivity protocols. Check router and your current ISP specifications before purchasing. See www.intel.com/go/viiv_info for more information.

2 Performance based on SPECint* rate based2000 (2 copies) and energy efficiency based on Thermal Design Power (TDP), comparing Intel® Core™2 Duo E6700 to Intel® Pentium® D Processor 960. Actual performance may vary. See www.intel.com/go/performance for more information.

3 Feature available with Intel® G965 Express chipset; may not be available on all systems. Check with computer manufacturer for availability.

‡ Requires a TV tuner card.

www.intel.com
Bringing the World of Digital Entertainment to the PC

Intel® Viiv™ technology is a combination of PC hardware and software features designed and tested to work together to deliver a great entertainment experience. Intel Viiv technology-based PCs combine:

• Intel dual-core processors with performance for media playback and multitasking
• Intel Express chipsets supporting high-definition audio/visual capabilities
• Intel networking silicon for broadband connectivity
• Intel Viiv™ software and platform drivers to enable digital entertainment and additional computing features
Intel® Viiv™ Technology with the Intel® Core™2 Duo Processor Inside

Intel® Viiv™ technology-based PCs are now available with Intel’s latest platform components – the new Intel® Core™2 Duo processor and the Intel® 965 Express Chipset. These new hardware components bring significant performance enhancements to the PC entertainment experience.

Intel® Core™2 Duo Processor:
- Up to 40% more performance to enable digital media applications
- Incredible system responsiveness when running multiple media streams and multiple applications at the same time
- 2x the execution throughput for all-key 3D gaming and multimedia applications with Intel® Advanced Digital Media Boost
- Delivers an incredibly intense gaming experience with performance for more realistic simulations
- Up to 40% more power efficiency enables small, quiet and stylish PC designs that look great in any room in your home
- Enhanced entertainment experience through enhanced 1080i/1080p high-definition video playback and up to 7.1 surround sound support
- Enhanced video playback with sharp images and precise color control with Intel® Clear Video Technology
- Supports crystal clear video and audio streams from one cable with built-in support for HD™
- Enhanced TV viewing of picture-in-picture functionality with dual-tuner support

Intel® 965 Express Chipset:
- Intel® High Definition Audio supports up to 7.1 surround sound and multiple, simultaneous audio streams.
- The Intel® Graphic Media Accelerator boosts graphics performance for richer visual color and picture clarity and 3D enhancements for gaming.
- Intel® 965 Express Chipset which has features that enable an exceptional display connectivity and lifelike 3D effects for gaming
- Intel® PRO Client LAN—delivers an incredibly intense gaming experience with performance for more realistic simulations
- Intel® High Definition Audio (Intel® HD Audio)—supports up to 7.1 surround sound and audio multi-streaming capabilities
- Intel® Clear Video Technology—supports up to 7.1 surround sound and audio multi-streaming capabilities
- Intel® Intelligent Power Capability—optimizes power usage and reduces latency
- Intel® Express Chipsets
- Intel® 965 Express Chipset
- Intel® PRO Client LAN
- Intel® High Definition Audio
- Intel® Graphic Media Accelerator
- Intel® PRO Client LAN

Additional features for digital entertainment:
- Intel® Express Chipsets
- Intel® PRO Client LAN
- Intel® High Definition Audio
- Intel® Graphic Media Accelerator
- Intel® Matrix Storage Technology
- Intel® Fast Memory Access (Intel® FMA)

Technologies to deliver more performance and lower power consumption:
- Intel® Advanced Digital Media Boost—enables better performance on media applications and streaming (SIPs) by enabling execution of 128-bit instructions in a single clock cycle
- Intel® Wide Dynamic Execution—executes 4 instructions per clock cycle versus 2 per clock cycle with Intel® Netburst™ microarchitecture
- Intel® Advanced Smart Cache—increases the efficiency of the L2 cache by enabling the entire cache to be allocated to either core as needed (versus a dedicated L2 cache for each core on previous generation processors)
- Intel® Smart Memory Access—reduces memory traffic to processor bandwidth and reduces latency
- Intel® Intelligent Power Capability—optimizes energy usage of the processor cores by turning on computing functions only when needed

Intel® Dual-Core Processing Power
The “brain” of the Intel® Viiv™ technology-based PC is an Intel® dual-core processor. An Intel dual-core processor means the system has the performance for 1080i/1080p high-definition video playback and support for multiple tasks to be done in parallel – such as watching a downloaded movie enhanced by a TV shown in the background. And when powered by the new Intel® Core™2 Duo processor, the Intel® Viiv™ technology-based PC offers up to a 40% performance increase for industry-leading performance and amazing new entertainment experiences.

As networked media devices become verified for Intel® Viiv™ technology, dual-core powered Intel® Viiv™ technology adds further benefits by enabling multiple people to access entertainment from the same PC—e’en from different rooms. For example, one user can be playing a game on the PC while someone else streams music over the home network to a verified networked media device in another room.

Intel® PRO Client LAN
The inclusion of Intel® PRO Client LAN means every Intel® Viiv™ technology-based PC is broadband ready with up to 1 Gigabit Ethernet networking capability. This enables access to online entertainment and services through an Internet Service Provider.

Intel® Express Chipsets
Intel® Viiv™ technology-based platforms also contain an Intel® Express chipset which has features that enable an exceptional digital media experience. For example:
- The Intel® Graphic Media Accelerator boosts graphics performance for richer visual color and picture clarity and 3D enhancements for gaming.
- Intel® High Definition Audio supports up to 7.1 surround sound and multiple, simultaneous audio streams.

In addition, Intel® Viiv™ technology-based PCs must also include audio codecs and audio jacks supporting a minimum of 5.1 surround sound.

Hardware that Delivers
At the heart of a great digital entertainment experience is a great consumer PC. Every Intel® Viiv™ technology-based PC has been enabled with Intel-based hardware to deliver the features needed to enjoy digital entertainment. Intel® Viiv™ technology-based PCs include:

- Intel® Dual-Core Processing Power
- Intel® PRO Client LAN
- Intel® Express Chipsets

Additional features for digital entertainment:
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Entertainment Services and Peripherals

Intel® Viiv™ technology-based PCs not only deliver great entertainment, they have also been tested (verified) to work with an expanding range of entertainment content services and peripherals that can enhance how consumers access, control and share digital media.

Coming in the second half of 2006, Intel will verify new networked media devices and wireless routers to work with Intel Viiv technology. These peripheral devices connect to other consumer electronic equipment, like TVs and stereo systems, to enable users to play media from the PC throughout the home over a home network.

Verified entertainment services, applications and media devices will carry an “Enjoy with Viiv technology” identifier to make them more easily recognized as having been tested to work with Intel Viiv technology-based PCs.

With Intel® Viiv™ technology-based PCs, users can personalize their entertainment experience by downloading news, movies, music files, games and much more from Intel Viiv technology-verified services. As new tested (verified) networked media devices begin shipping later this year, users will be able to share digital media from online services, as well as music, photos or home movies from their own collection, throughout their home over a home network.  

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The Intel® Viiv™ Media Library includes a variety of software components that enable users to manage, access and share their own personal digital media and protected content from other devices on their home network. It also includes other features to enhance sharing of digital content:

- The Intel® Viiv™ Media Library can be configured by the user to automatically update the database when new media is added or removed.
- Users can remotely browse, access and play media available on the network.
- The Software Premium Content Module (SPCM) plug-in enables streaming of content and services that have been protected by the content providers with digital rights management (DRM) schemes from an Intel Viiv technology-based PC to Intel Viiv technology-verified media devices connected to the home network. The SPCM plug-in transcribes DRM-protected content into the industry standard DTCP-IP protocol (DTCP-IP) then uses cryptographic technologies to protect the content from illegal copying, intercepting and tampering as the content is streamed over the network. The SPCM features and drivers available in the Intel® Viiv™ Software include a SPCM for Microsoft® Windows Media* DRM encoded content—one of today’s more prevalent digital media formats.

**Media Streaming and Management**

**Intel® Smart Streaming Technology** facilitates a wide variety of file formats for unprotected personal media in the PC into a format that a verified networked device can play even if the device itself does not support the original media format.

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**Remote User Interface (RUI) Service** enables the Intel Viiv technology-based PC to act as a “visual off” after the system has been booted. Users can remotely access a display in another room from their Intel Viiv technology-based PC by logging into the verified services and applications that support RUI. Intel Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC. Intel® Quick Resume Technology enables users to turn on and off their Intel Viiv technology-based PC on and off much like a TV—with the push of a button on the remote or PC.

**Enhanced Storage Performance**

**Matrix Storage Technology** is a feature of the Intel® Viiv™ technology-based PC, which helps speed data retrieval from the hard drive and can help users protect important media files when the system is booted. Intel® Matrix Storage Technology is a platform driver feature and includes a backup and restore interface which can help users with dual RAID systems to preserve personal memories and valuable digital photos, videos and music by automating the storage of data and media on the second hard drive.

For single-drive systems, Intel® Matrix Storage Technology improves storage performance through Native Command Queuing (NCQ), by harnessing the quad DMA (direct memory access) controllers, and through hardware and software optimizations. SMART alerting also notifies users when the drive detects potential failure.

**Simplied Device Set Up**

**Intel® Hub Connect technology** can help simplify the process of adding verified devices to a home network. Using an Intel Viiv technology-based PC, and a verified router, Intel Hub Connect technology can identify and configure Intel Viiv technology-verified devices on a protected wireless network.

When an Intel Viiv technology-verified device is turned on and connected to a display device (such as a TV mounted on a wall), the device will generate a unique 12-digit alphanumeric PIN code. The user then enters the PIN (which is valid for only a limited time period for added security) in the setup software on the Intel Viiv technology-based PC to set up the device on the home network. The PIN identifies the device so it can be automatically configured using the Intel Viiv Software. Hub Connect technology manages—eliminating the need to know or enter complicated network credentials, such as the SSID or security keys.

In addition, Hub Connect technology contains a network management feature which enables users to view information on connected devices, internet connection and network status using a remote control through a graphical user interface.
A Complete Solution for Compelling Entertainment

Intel® Viiv™ technology-based PCs offer performance and features to get the most from today's digital entertainment—with hardware and software that enables users to manage, enjoy and access their own media and new entertainment services available today. With PC technologies for high-definition entertainment, combined with an expanding set of verified applications, online entertainment services and peripherals, Intel® Viiv™ technology-based PCs can transform the way users enjoy digital entertainment.

Learn more online
http://www.intel.com/viiv/