

# The new age of motherboards



**ASSIGN  
BUSTER**

The New Age [pic]Motherboards, Shubhankar have taken the example of ASUS P7H57D-V EVO or simply known as Intel H57 Express Chipset.

But first we will discuss about normal motherboards. The primary component of a computer is the motherboard. The motherboard is the hub which is used to connect all of the computers essential components.

As its name suggests, the motherboard acts as a parent board, which takes the form of a large printed circuit with connectors for expansion cards, memory modules, the processor, etc.[pic]Now I won't go into all the information available to me about the old motherboards but now I will tell you about the H57. It delivers new technologies and innovative capabilities.

This chipset supports the latest Intel Core i3 and Core i5 LGA 1156 socket processors that have an on-die integrated graphics and DDR3 memory controller. Highlighted features include Super speed USB 3.0 support that promises a super-fast transfer rate of up to 5 GBPS; which is an improvement of almost 10 times over USB 2.0.

Additionally, backwards compatibility with USB 2.0 assures users of long term use of their life. H57 Series Motherboards with USB 3.

0 and Display Port Interface Delivering Super speed Data Transfer and Richer Video Quality for Exceptional Hi-Def Multimedia Platform Gacy USB 2.0.

Chipset - The chipset is an electronic circuit whose job is to coordinate data transfers between the various components of the computer processor. As the chipset is integrated into the motherboard, it is important to choose a motherboard which includes a recent chipset, in order to maximize the

computers upgradeability. Features of the Old System VRM (Voltage Regulator Module) It used to be that every digital chip on a motherboard ran at the same voltage. That began to change as chip designers dropped voltage to save power or move into a more advanced semiconductor manufacturing process. The smaller transistor in an advanced process needs lower voltages; otherwise it might arc between the transistors. The processor has moved most quickly down this voltage curve, and now it needs a special voltage that is different from the 3.

3V or 5V used by the rest of the board. New chipsets and memory are also starting to use lower voltages. Clocks The PC motherboard has components running at several different frequencies. In system design, multiple clocks can be either asynchronous or synchronous.

Two clock signals are said to be synchronous if one can be derived from the other. For instance, the FSB runs at a multiple of the internal CPU clock. As an example, a 600 MHz Pentium III would have a multiple of 6, running synchronously with the 100 MHz system bus. The PCI bus is derived from this same clock, so the PCI bus would run at 1/3 of the system clock (33 MHz).

Connectors Well cover most of the connectors during our tour of a couple of real motherboards. Things have gotten a lot easier for connecting to a motherboard, since there are now fewer connectors and most of the critical ones are now "keyed" (and color coded) to prevent improper cable insertion. Not all of the features on a motherboard are needed for each system implementation, so you may find that several of the connectors are unused.

**Jumpers** Most new motherboards now offer a “ jumper-less” mode where all functions are controlled through the BIOS. Often a new motherboard doesn't need to have a single jumper changed. Some motherboards allow users to disable the BIOS control and handle all settings through onboard jumpers.

**Riser Cards** In our discussion of AC97, we mentioned the ability to avoid the cost of a full PCI card for audio or networking. Instead, there are a couple of competing standards for simple, low-cost cards that provide external connectors to audio devices, modems or networking. These riser cards plug into a special socket, instead of a PCI connector. From the back of the PC, it looks no different.

Like many PC standards, there is a version promoted by Intel, and then there is a standard used by almost everyone else.

**Features and Benefits of The New System**

**Intel® Flexible Display Interface<sup>2</sup>** - An innovative path for two independently controlled channels of integrated graphics display data to be transported to the Intel® 5 Series Chipset. Support for HDMI, Display Port\* and DVI<sup>2</sup> - High Definition Multimedia Interface (HDMI) delivers uncompressed HD video and uncompressed multi-channel audio in a single cable, supporting all HD formats including 720p, 1080i, and 1080p. Dual-independent display expands the viewable workspace to two monitors.

**Intel® Rapid Storage Technology** - With additional hard drives added, Intel® Rapid Storage Technology provides quicker access to digital photo, video, and data files on single-drive or multi-drive systems with RAID 0, 5, and 10, and greater data protection against a hard disk drive failure with RAID 1, 5, and 10. Support for external SATA (e SATA) enables the full SATA interface speed outside the chassis, up to 3 GB/s.

Intel® Rapid Recover Technology – Intel's latest data protection technology provides a recovery point that can be used to quickly recover a system should a hard drive fail or if there is data corruption. The clone can also be mounted as a read-only volume to allow a user to recover individual files.

Intel® Remote PC Assist Technology – This technology enables you to make a fast call for help and request remote technical assistance if you encounter a problem with your PC, even when the OS, network software, or applications are not functioning.

Intel® High Definition Audio – Integrated audio support enables premium digital surround sound and delivers advanced features such as multiple audio streams and jack re-tasking.

Intel® Quiet System Technology – Intelligent system fan speed control algorithms use operating temperature ranges more efficiently to reduce system noise by minimizing fan speed changes.

Universal Serial Bus (USB) – Hi-Speed USB 2.0, provides greater enhancement in performance with a design data rate of up to 480 megabits per second (Mbps) with up to 14 USB 2.0 Ports. USB 2.0 rate matching hub – Enables lower power requirements and manages the transition of the communication data rate from the high speed of the host controller to the lower speed of USB full speed/low speed devices.

Serial ATA (SATA) 3 GB/s – High-speed storage interface supports faster transfer rate for improved data access with up to 6 SATA ports.

eSATA – SATA interface designed for use with external SATA devices.

It provides a link for 3 GB/s data speeds to eliminate bottlenecks found with current external storage solutions.

SATA port disable – Enables individual SATA ports to be enabled or disabled as needed. This feature provides added

protection of data by preventing malicious removal or insertion of data through SATA ports. Especially targeted for e SATA ports. PCI Express\* 2.0 interface – Offers up to 2.5GT/s for fast access to peripheral devices and networking with up to 8 PCI Express\* 2.0 x1 ports, configurable as x2 and x4 depending on motherboard designs.

USB port disable – Enables individual USB ports to be enabled or disabled as needed. This feature provides added protection of data by preventing malicious removal or insertion of data through USB ports. Intel® integrated 10/100/1000 – Support for the Intel® 82578DC Gigabit Network Connection. Green technology – Intel integrates environmental performance goals into every aspect of design and manufacturing. Intel® 45nm high-k metal gate process technology is lead-free, and since 2008, Intel has produced halogen-free products. The new system also has the best functions of the old system as well making it far better than the old system.[pic]Thus, here I finish my article on the motherboards.

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