Graphics Card

Definition

- A ***video card*** (also called a **video adapter**, **display card**, **graphics card**, **graphics board**, **display adapter** or **graphics adapter**) is an expansion card which generates a feed of output images to a display.

GPU

- A **graphics processing unit** (**GPU**), also occasionally called **visual processing unit**(**VPU**), is a specialized electronic circuit designed to rapidly manipulate and alter memory to accelerate the creation of images in a frame buffer intended for output to a display

GRAM

- Graphics card's memory keeps calculations of screen. It works as main memory of computer systems. Graphics memory takes data from gpu and stores them.Size of graphics memory is related to graphic card's performance.Capacity of graphics cards should be large to receive a high quality image with a high resolution.

GDDR

- **GDDR** or **graphics double data rate** memory refers to memory specifically designed for use on graphics cards. The memory capacity of most modern video cards ranges from 128 MB to 8 GB. Around 2003, the video memory was typically based on DDR technology. During and after that year, manufacturers moved towards DDR2, GDDR3, GDDR4 and GDDR5. The effective memory clock rate in modern cards is generally between 1 GHz and 6.3 GHz .

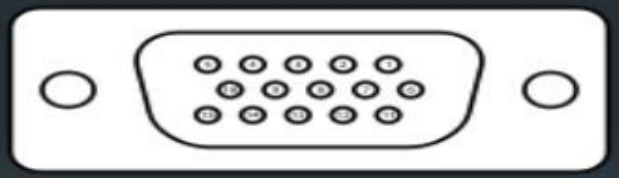
Memory Interface

- The memory interface is the amount of data that can be tranferred at one time from the memory and the GPU. Its best to think of it as a road/highway, larger the interface bit, the more faster the data can be transferred and the better performing the card is. However, Core clocks and Memory clocks are also a large factor in performance, but if a card has a larger interface and a small percentage drop in clock speeds, then that card would perform better.

Video Graphics Array (VGA) (DE-15)

- Also known as D-sub, VGA is an analog-based standard adopted in the late 1980s designed for CRT displays, also called VGA connector. Some problems of this standard are electrical noise, image distortion and sampling error in evaluating pixels. Today, the VGA analog interface is used for high definition video including 1080p and higher. While the VGA transmission bandwidth is high enough to support even higher resolution playback, there can be picture quality degradation depending on cable quality and length.

- How discernible this quality difference is depends on the individual's eyesight and the display; when using a DVI or HDMI connection, especially on larger sized LCD/LED monitors or TVs, quality degradation, if present, is prominently visible. Blu-ray playback at 1080p is possible via the VGA analog interface, if Image Constraint Token (ICT) is not enabled on the Blu-ray disc.

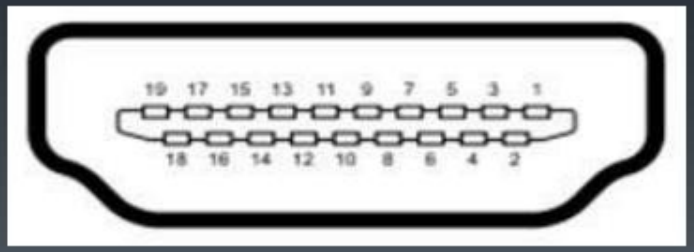


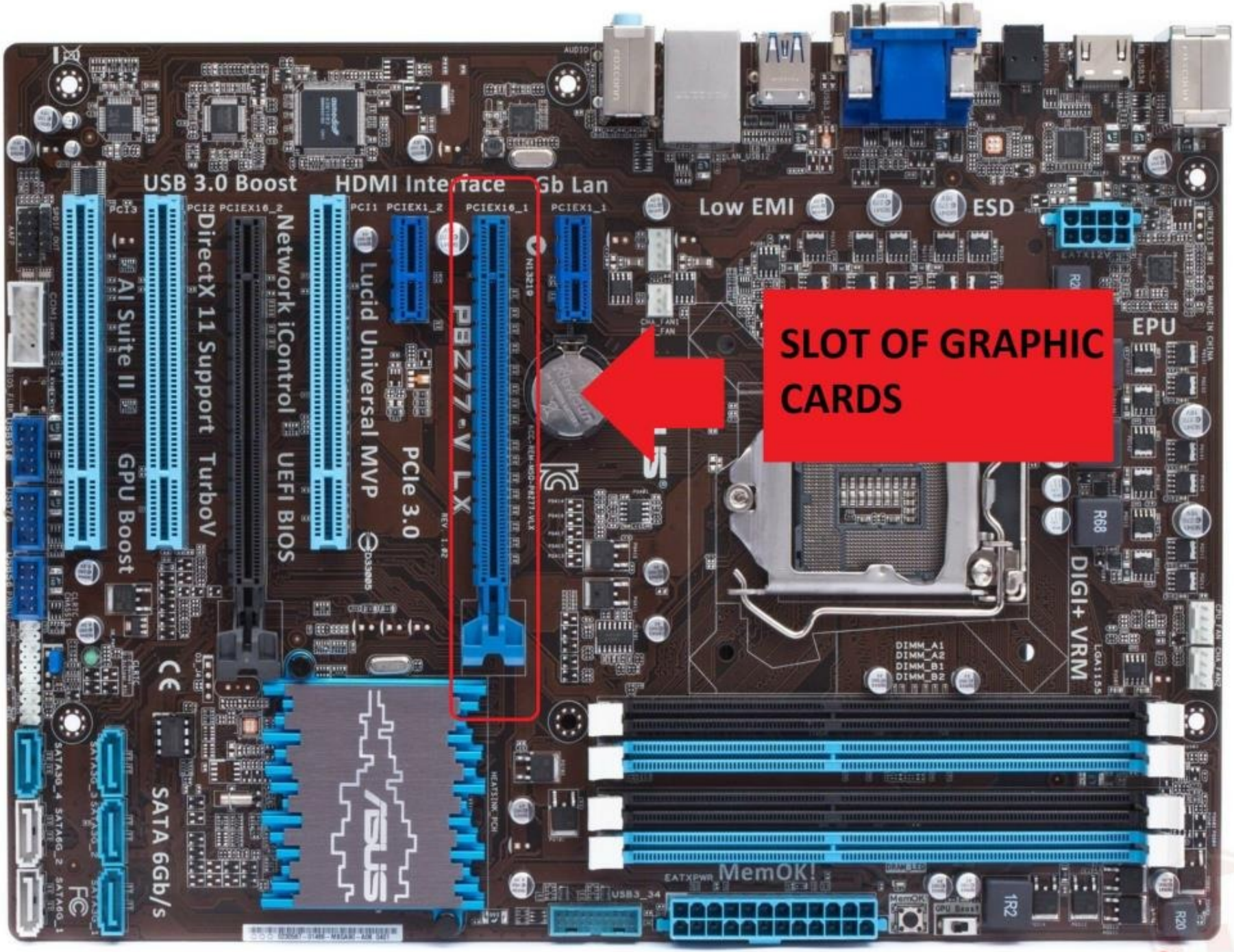
Digital Visual Interface (DVI)

- Digital-based standard designed for displays such as flat-panel displays (LCDs, plasma screens, wide high-definition television displays) and video projectors. In some rare cases high end CRT monitors also use DVI. It avoids image distortion and electrical noise, corresponding each pixel from the computer to a display pixel, using its native resolution

High-Definition Multimedia Interface (HDMI)[

- HDMI is a compact audio/video interface for transferring uncompressed video data and compressed/uncompressed digital audio data from an HDMI-compliant device ("the source device") to a compatible digital audio device, computer monitor, video projector, or digital television.[4] HDMI is a digital replacement for existing analog video standards. HDMI supports copy protection through HDCP.




USB 3.0 Boost
HDMI Interface
Gb Lan
Low EMI
ESD
EPU
SLOT OF GRAPHIC CARDS
AI Suite II
GPU Boost
DirectX 11 Support
TurboV
Network iControl
UEFI BIOS
Lucid Universal MVP
PCIe 3.0
P8Z77-V LX
DIGI+ VRM
SATA 6Gb/s
MemOK!
PCIEX16_1
PCIEX1_1
PCIEX1_2
PCIEX16_2
PCI1
PCI2
PCI3
DIMM_A1
DIMM_A2
DIMM_B1
DIMM_B2

Motherboard interfaces :

- AGP: First used in 1997, it is a dedicated-to-graphics bus. It is a 32-bit bus clocked at 66 MHz.
- PCI-X: An extension of the PCI bus, it was introduced in 1998. It improves upon PCI by extending the width of bus to 64-bit and the clock frequency to up to 133 MHz.
- PCI Express: Abbreviated PCIe, it is a point to point interface released in 2004. In 2006 provided double the data-transfer rate of AGP. It should not be confused with PCI-X, an enhanced version of the original PCI specification.


AGP 8x Card


P211-A03-188
014-23-04
x16 PCIe Card


MAP/950 PCI/PCI-X 133 MHz
Dual 1 Mbaud RS232 + Printer Port Card
(c) 2004 Axcon OEM
TEG-DL1
94V-0 3 I-04
Designed and Assembled in Canada
CLK/1 CLK/2 CLK/4 CLK/8
PCI-X

Companies

- **ATI Technologies Inc.** was a semiconductor technology corporation based in Markham, Ontario, Canada, that specialized in the development of graphics processing units andchipsets. Founded in 1985 as Array Technologies Industry, the company was listed publicly in 1993 and was acquired by Advanced Micro Devices (AMD) in 2006

- As a major fabrication-less or fabless semiconductor company, ATI conducted research and development in-house and outsourced the manufacturing and assembly of its products. ATI and its chief rival Nvidia emerged as the two dominant players in the graphics processors industry, eventually forcing other manufacturers into niche roles.

ATI HD 7990

- **Nvidia Corporation** is an American global technology company based in Santa Clara, California. Nvidia manufactures graphics processing units (GPUs), as well as having a significant stake in manufacture of system-on-a-chip units (SOCs) for the mobile computing market. Nvidia's primary GPU product line labeled "GeForce" is in direct competition with AMD's "Radeon" products. Nvidia also joined the gaming industry with its handheld Nvidia Shield

GEFORCE GTX 690

REVIEW:
STUART DAVIDSON
DESIGN:
CRAIG HUMPHREYS

Nvidia - SLI

- **Scalable Link Interface** (**SLI**) is a brand name for a multi-GPU technology developed byNVIDIA for linking two or more video cards together to produce a single output. SLI is an application of parallel processing for computer graphics, meant to increase the processing power available for graphics.

ATI - Crossfire

- **AMD CrossFireX** (previously known as **CrossFire**) is a brand name for the multi-GPUsolution by Advanced Micro Devices, originally developed by ATI Technologies. The technology allows up to four GPUs to be used in a single computer to improve graphics performance.