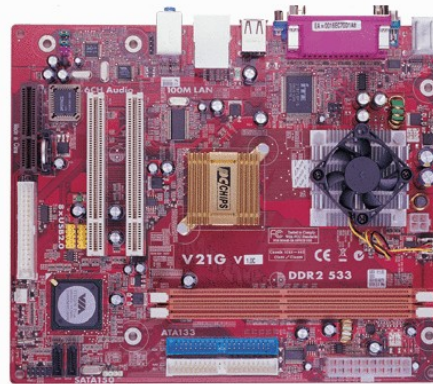

Nimitz After School Enrichment



Hands On: Build a Computer

James Liu, Nimitz PTA
2008 May 2



Classroom Rules

1. Respect the desk you are using – some other student normally sits in it!
2. Kids need to use gloves whenever handle components
3. Return tools their place when done.
4. Clean up your desk and area around you before leaving.

Quiz on Last Lesson

1. Why do we call CD/DVD ROM Drives “Optical Drives?”

2. True or False?

a) Hard disks forget their data when they are powered off.

b) We can be rough with hard disks, but gentle with optical drives.

3. The hard disk spins at 7200 RPM. What does RPM stand for? And is there a reason we recommend all 4 screws to secure the hard disk, and only 2 for floppy or optical drives?

Reminder When Handling Electronic Components

- Be careful of Electro-Static Discharge (ESD)
- Always discharge static from your body by touching the metal of the back of the PC case before handling a component.
- Hold component by corners whenever possible and avoid touching any pins
- Avoid dropping, tapping, knocking or shaking computer components

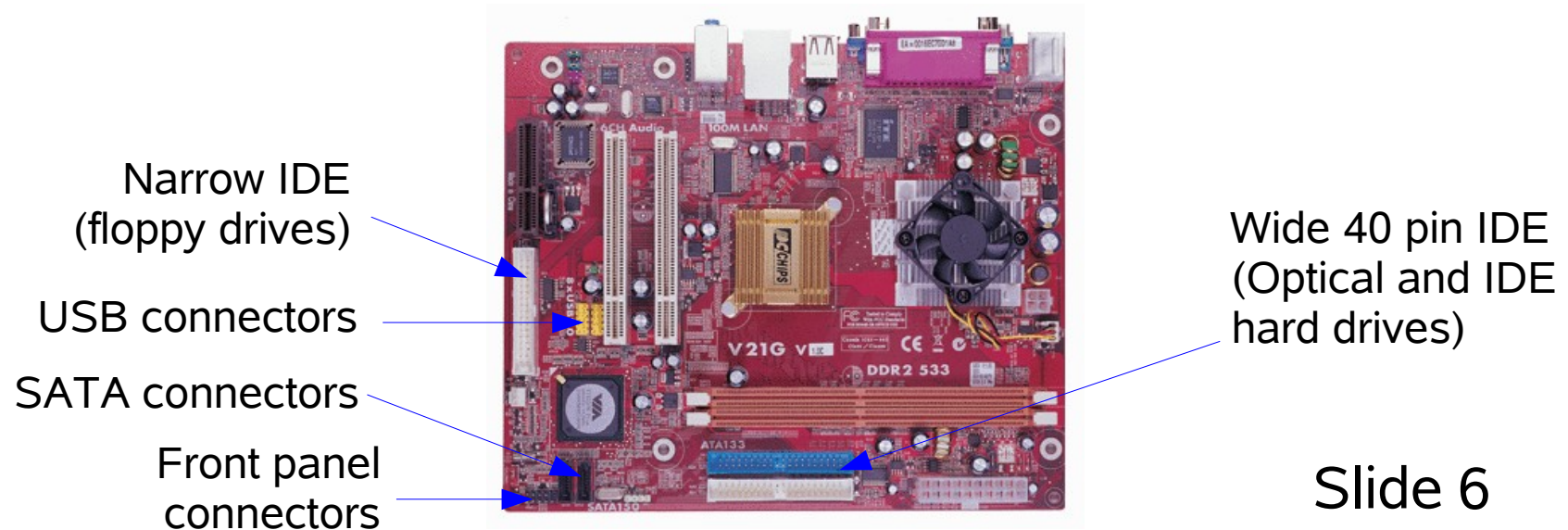
Building a PC Parts List

- Case & Power Supply. Motherboard & CPU . Memory. Hard Disk
Optical Drive.
- **Peripheral Drives** – Floppy drive, USB memory reader.
- **Other parts** – you need keyboard, mouse and monitor, and optional stuff like monitor, speakers, etc.



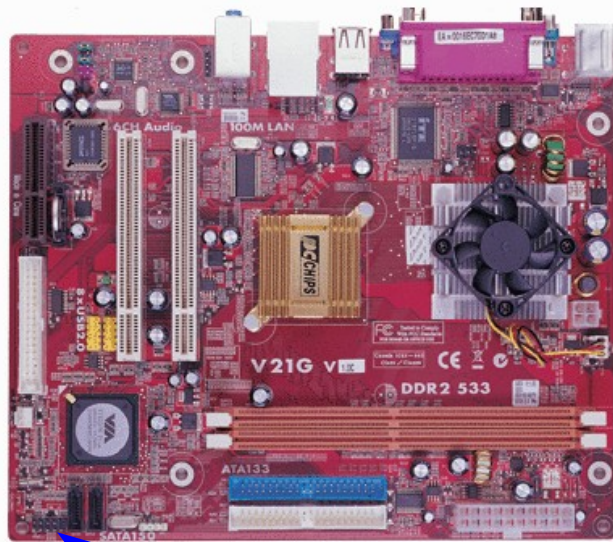
Install Cables

- SATA cable – to hard disk
- IDE cables – wide one to optical drive, narrower one to floppy drive
- USB cable – to flash memory reader
- Power cables – to all SATA and IDE drives
- Front Panel – power/reset/LED wires

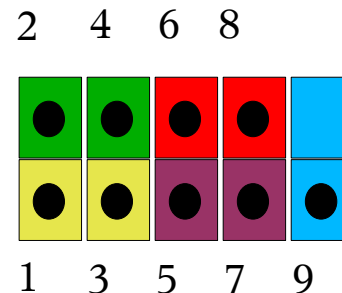


Front Panel Control Wires

- Power Switch (pins 6 & 8)
- Reset Switch (pins 5 & 7)
- Power Light (Power L.E.D. - pins 2 & 4)
- Hard Disk Light (HDD L.E.D. - pins 1 & 3)
- L.E.D = Light Emitting Diode (special tiny light bulb used in electronics)



Front panel connectors



Front Panel Pins

*Pin 9 not used

Test the PC

Hook up keyboard,
mouse, and monitor

Plug in Power
Supply

Turn on Power and
Push Front Panel
Button.



Does the System Power On?

Does system boot and display something on the Screen? Success!!!! Or do we have blue or black screen of death?



Error – Failure to Post... try again
0xffce800

Last Step

**Install
Operating
System**

Installing an Operating System

**Boot from
install CD or
DVD**

Review

How to Build a PC

1. Get Parts
2. Install in order: **I/O Shield**, **Motherboard**, **CPU**, **memory**, **drives**, **cables**, **front panel connectors**. Close up case.
3. Install Operating System Software

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