Hand Tools and basic fittings

Computer peripherals
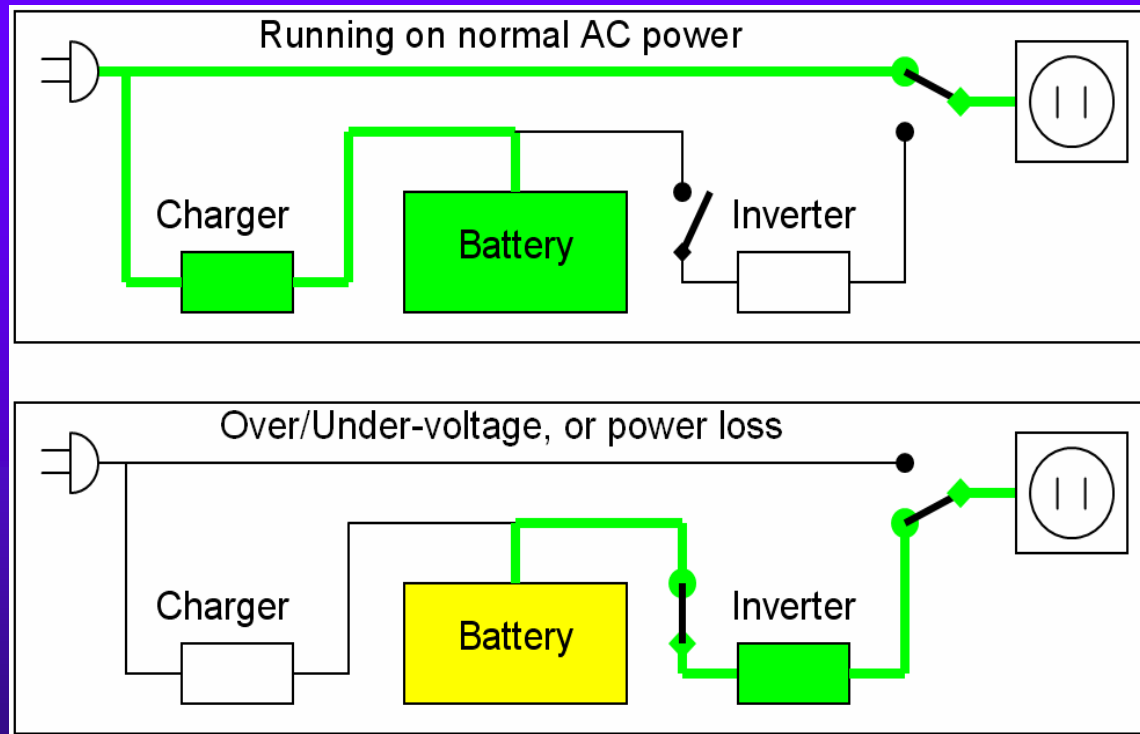
- Processor

- RAM

- Mother Board

- Hard Disk Drive (HDD)

- Floppy Disk Drive (FDD)

- CD/DVD/Combo Drive & CD/DVD Writer

- ATX Cabinet With SMPS

- Key Board

- Mouse

- Monitor

- UPS

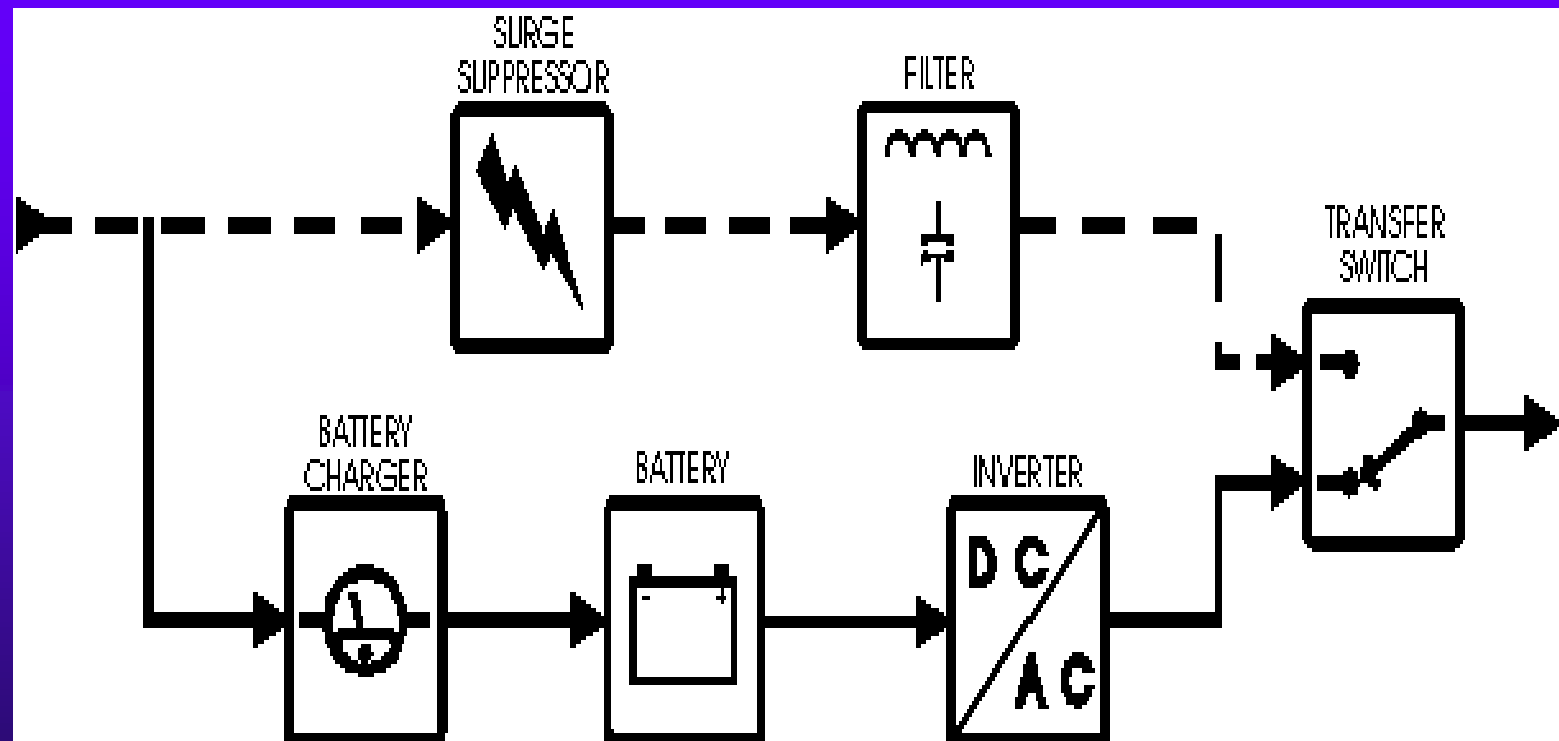- Printer

- Scanner

- Web Camera

- Pen Drive   etc….

UPS
(Uninterrupted power supply)

Offline / Standby UPS

Running on normal AC power

Charger · Battery · Inverter

Over/Under-voltage, or power loss

Charger · Battery · Inverter
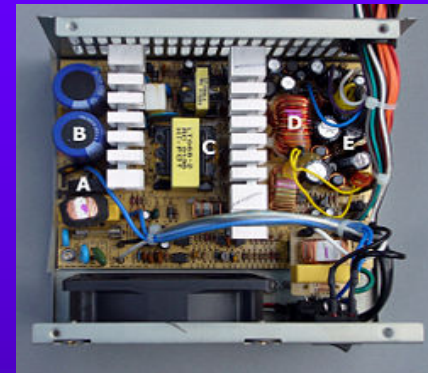
Online UPS (Double conversion UPS)

Maintanence Tips

➢●   **Charge the UPS regularly (Minimum 4 hrs per day)**

➢●   **When you switch off the main, if the working system is went off then you can confirm the UPS battery is worn-out and has to be replaced.**

➢●   **Decrease in backup time indicates the battery level is low, then chip level service is required**

SMPS
(Switched Mode Power Supply)

ATX PSU power up sequence and cable connector pin outs with voltages

10	+12 Vdc Yellow	+5 Vdc Red	20
9	+5 V Standby Purple	+5 Vdc Red	19
8	Power Good\OK Grey	- 5 Vdc White	18
7	Com/Sig Gnd Black	Com/Sig Gnd Black	17
6	+5 Vdc Red	Com/Sig Gnd Black	16
5	Com/Sig Gnd Black	Com/Sig Gnd Black	15
4	+5 Vdc Red	PSU On Signal Green	14
3	Com/Sig Gnd Black	Com/Sig Gnd Black	13
2	+ 3.3 Vdc Orange	- 12 Vdc Blue	12
1	+ 3.3 Vdc Orange	+ 3.3 Vdc & Sense, Orange	11

Tips to remember

1. *System will not boot if the standby voltage (+5) is less than 4.7 or the 12V line is less than 11.4V.*

2. *2. Voltage of Ground wire is always zero for a perfect SMPS*

3. *3. If the voltage of black wire is greater than zero then we can reach the assumption that there is no proper earthing.*

4. *4. The easy way to check a SMPS is to short the pins 14(green), 15(black) or 14(green), 13(black). At the time of shorting, if the fan is spinning then the SMPS is working otherwise it is not working.*

5. *5.Even if the fan is spinning and if the machine is not booting then we can fix the voltage levels are varying. Now replacement of SMPS or chip level servicing is needed.*

Monitors

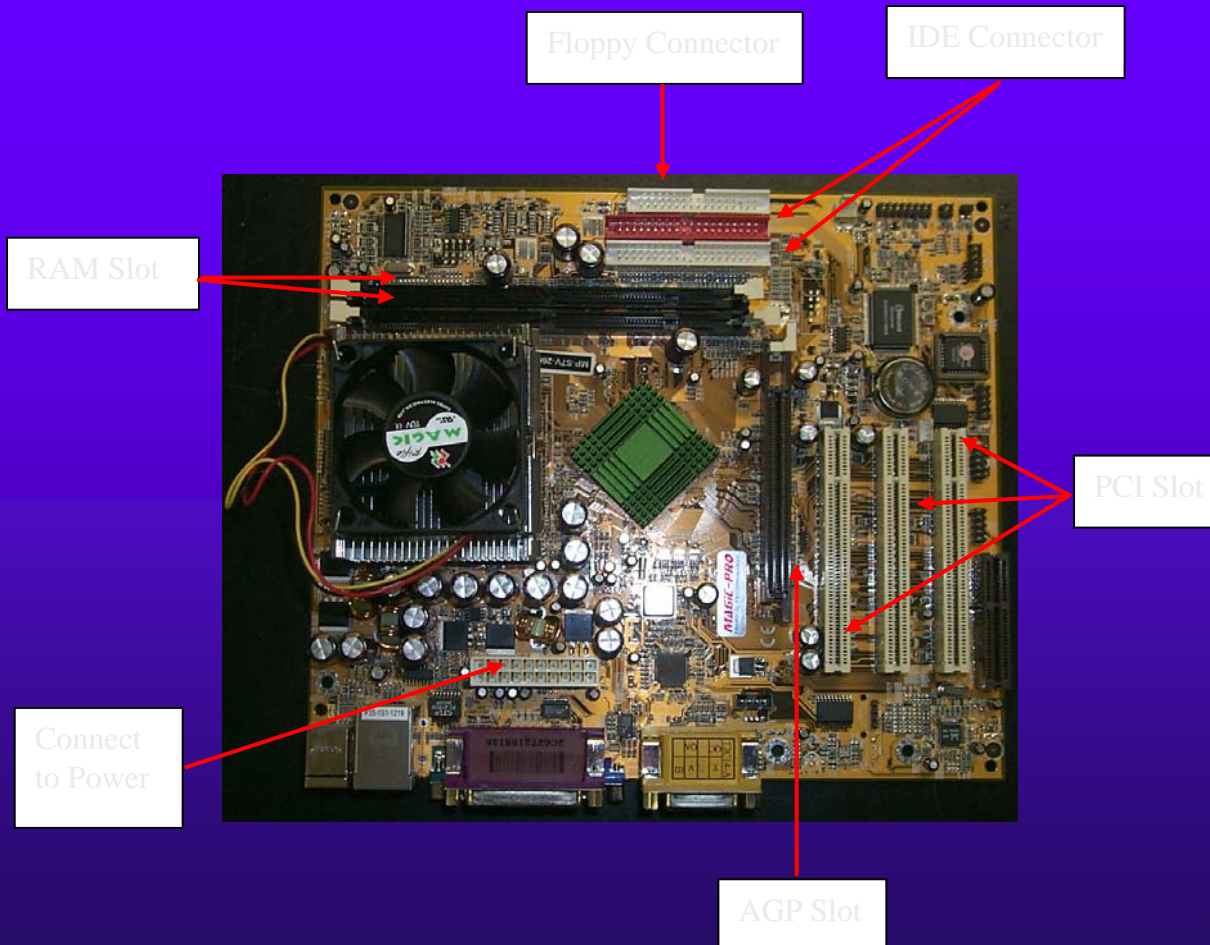CRT (Cathode Ray Tube) Monitor

LCD Flat Panel Monitor

TFT-LCD Monitor
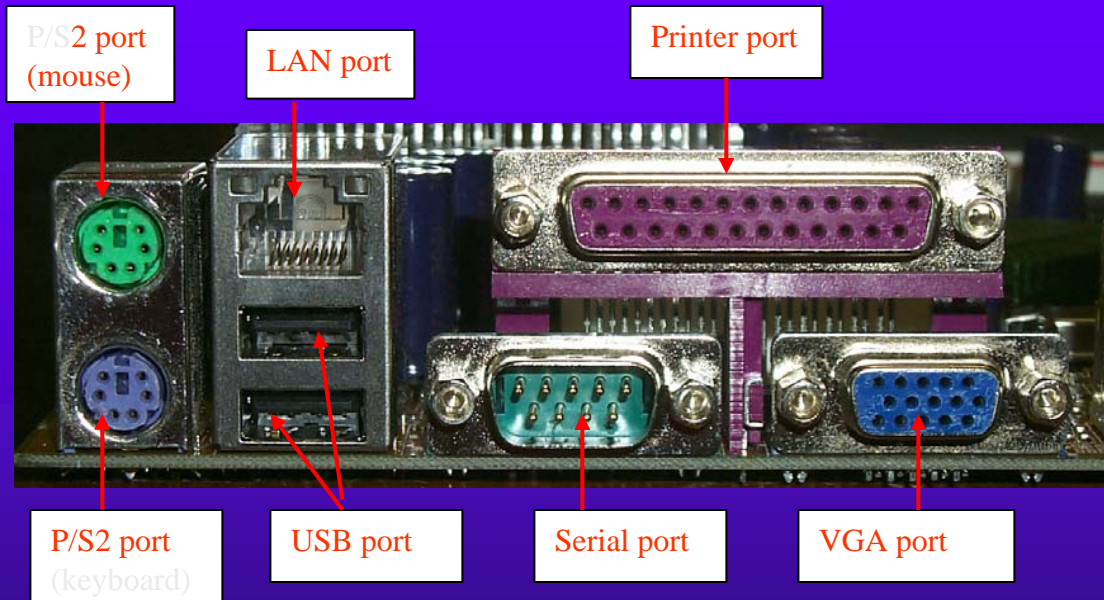
Mouse - Pointing Device

- **USB Mouse** - This type of mouse has a USB connector and requires a free USB port.
- **Cordless Mouse** - A cordless mouse (as the name suggests) has no cable, this type of mouse utilises batteries for its power supply.
- **Optical Mouse** - An optical mouse utilises optical electronics to track the mouse's position and movement, they are preferred over standard mechanical mice as they tend to be more reliable and require less maintenance.
- **Laser Optical Mouse-** Laser mouse uses a laser to track movement.
- **Wireless Optical Mouse-** Wireless/cordless Technology is used to transfer information.

Mother Board

Floppy Connector

IDE Connector

RAM Slot

PCI Slot

Connect to Power

AGP Slot

Ports

P/S2 port
(mouse)

LAN port

Printer port

P/S2 port
(keyboard)

USB port

Serial port

VGA port

PIN CONNECTORS

- ◆ **Power Switch**
- ◆ **Power LED Switch**
- ◆ **Reset Switch**
- ◆ **HDD LED**
- ◆ **Speaker**
- ◆ **CPU Fan**

Jumpers

Jumpers are pins on a Mother Board or other devices that are used to provide configuration information to the hardware.