

# Basic Troubleshooting Guide

## Volume 1.1

**Technical Support Department**

**Presented by CSE Team**

8/12/04

# BASIC Troubleshooting Guide

The Basic troubleshooting guide is intended to provide you with a guide to problems that you may experience with the system:

- **Not Posting** (no display on power up)
- **Stability Problems**
- **No BOOT** (system will boot to a display but will not boot to operating system)

- **No Post**
  - Power supply issues P.4
  - Bios problems P.8
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  - CPU Problem P.29
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# No POST

## ➤ System has no power

- Verify that power supply is of the appropriate wattage for system.
  - 300 WATT minimum recommended for most ATX form factor systems.
    - On high end systems with fast video card, fast CPU, RAID HD array may require a larger power supply such as a 350 watt
  - P4 motherboards require ATX 2.03 spec power supply with ATX 12v 4 pin connector connected to JPW1 4pin power header on the motherboard
- Disconnect power from other devices such as drives, case fans, etc.
- Verify that case power switch is working
  - Bypass case switch by shorting power switch pins on motherboard with small screwdriver
- Verify that power supply switches are set correctly
  - Set 115/230v switch
  - Setup power supply power switch to ON for power supplies equipped with power switch
  - Verify that “Clear CMOS” jumper JBAT1 is set to pins 1-2 (Keep DATA)

# No post

## ➤ Power supply rating label example

Below (Fig 5-a) is an typical power supply rating and wattage, notice the wattage of the power supply on the label. Along with the wattage, the make and model of the power supply as well as the DC & AMP output are listed

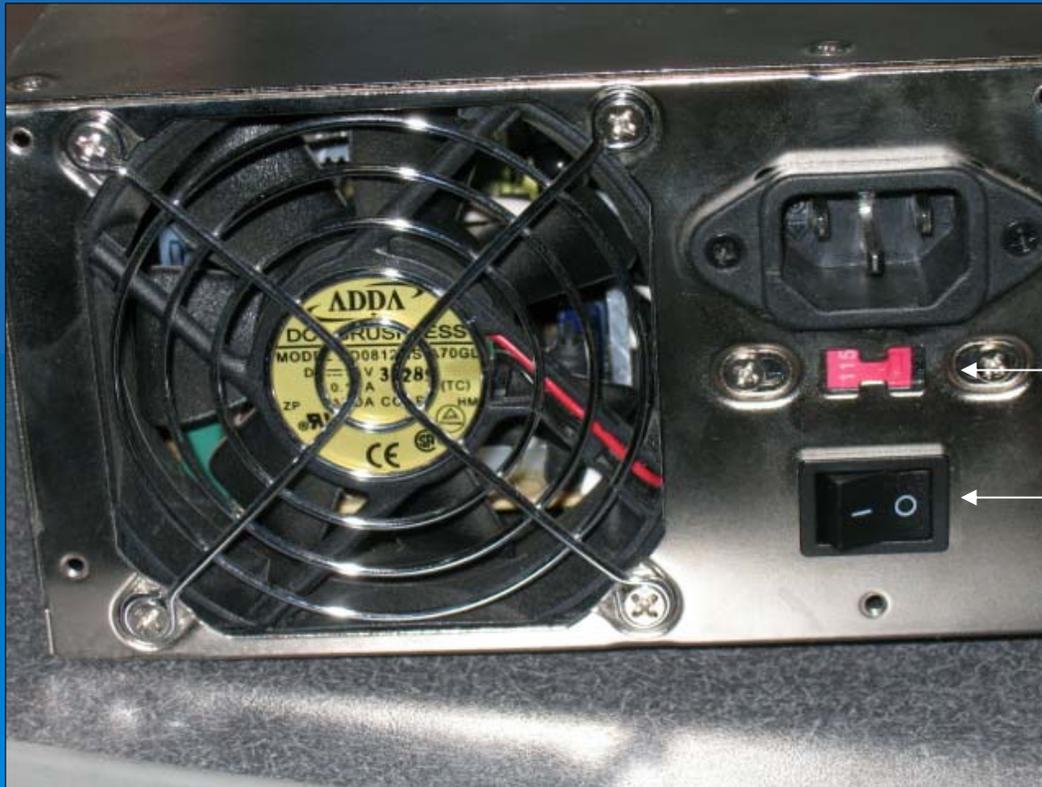


Figure 5-a

# No post

➤ **Power supply switches** (Fig 6-a)

Make sure that the power supply is switch to ON for the power supply. And also check to see if the power supply is set to either 115 volt or 220 volt.



← Voltage switch 115/230v

← Power switch “-” = on/ “o” = off

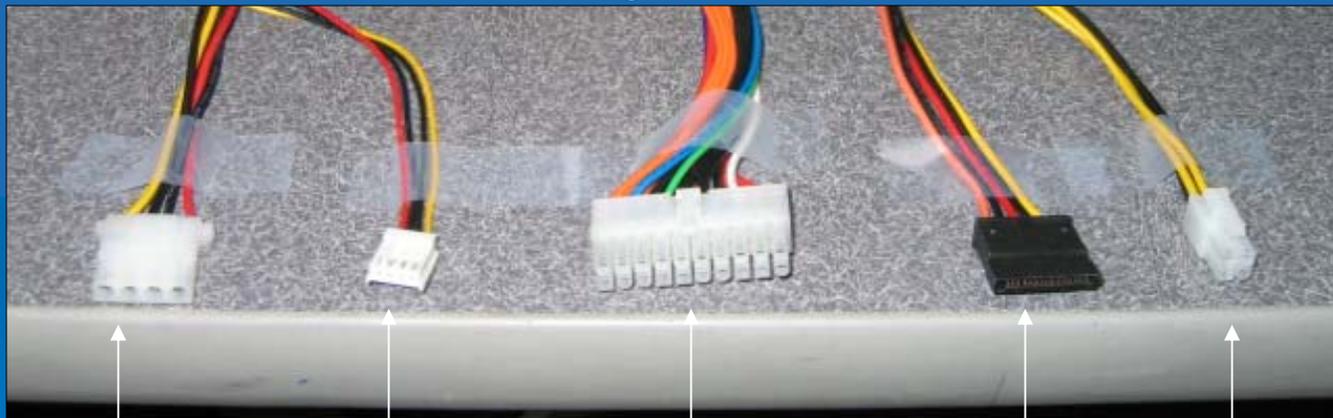
Fig 6-a

# No post

## ➤ Power supply connections

Figure 7-a shows typical cable connection found on the power supply.

Fig 7-a



IDE power

Floppy power

20 Pin ATX

SATA HD power

4pin ATX 12v

# No POST

- Incorrect BIOS settings by user
  - Clear CMOS with jumper JBAT1

With system powered off move jumper JBAT1 (Fig 8-a) from pins 1-2 to pins 2-3 for 15 seconds and then return the jumper to pins 1-2 and retest the system.

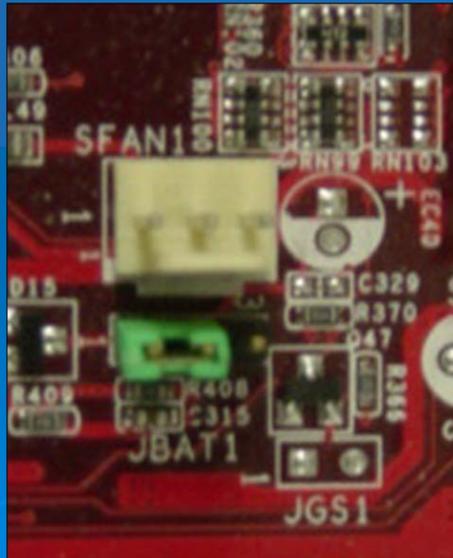


Fig 8-a

# No Post

## ➤ Clear CMOS settings by removing battery

- First locate the battery on the board. The battery is similar in shape and size to a nickel. (Fig 9-a)
- There should be a small clip on the side of the battery socket. Unclip the battery and the battery should pop up and you can to remove the battery
- Remove the battery for several minutes and then re-install the battery. (Fig 9-b)

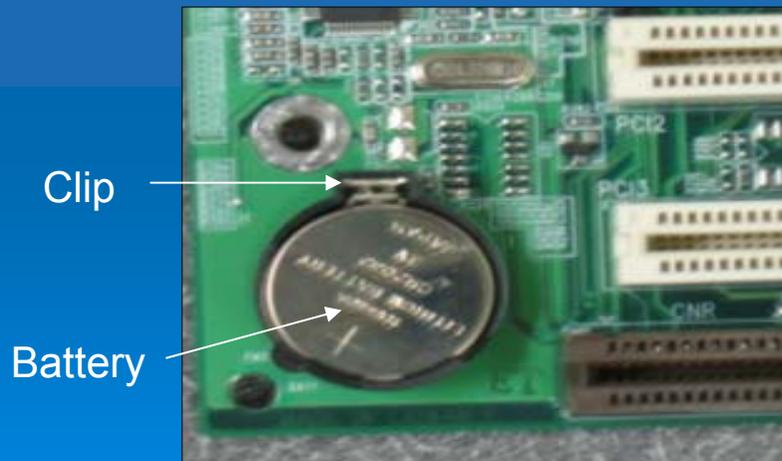


Fig 9-a

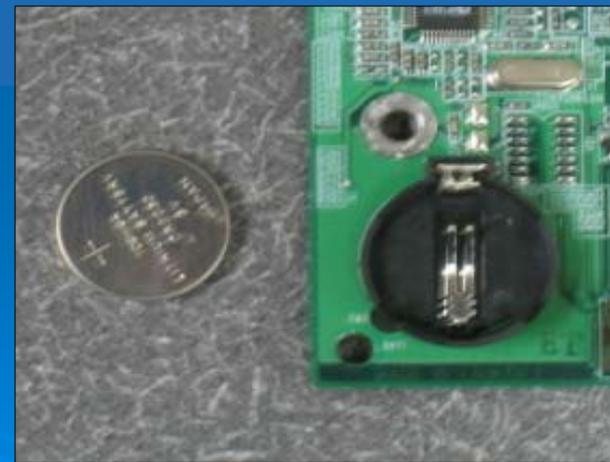


Fig 9-b

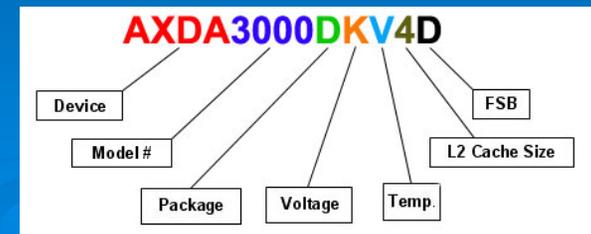
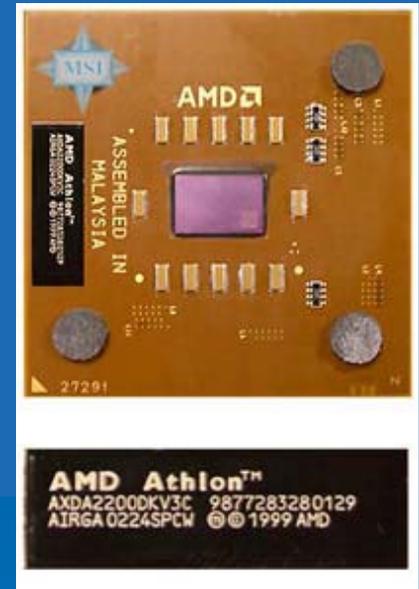
- BIOS flash failed during BIOS update
  - Try BIOS recovery for AMI or Award BIOS
    - AMI BIOS recovery procedure
      - Rename the desired AMI BIOS file to AMIBOOT.ROM and save it on a floppy disk. e.g. Rename A6712VMS.190 to AMIBOOT.ROM
      - Insert this floppy disk in the floppy drive. Turn On the system and press and hold Ctrl-Home to force update. It will read the AMIBOOT.ROM file and recover the BIOS from the A drive.
      - When 4 beeps are heard you may remove the floppy disk and restart the computer.

# No POST

- Award BIOS recovery procedure
  - Make a bootable floppy disk
  - Copy the Award flash utility files & bios file to the bootable floppy diskette
  - Open Notepad and put the following command line e.g. `awdf1826B w6777NMS.140` than save to the floppy drive and name as `Autoexec.bat`
  - Restart system with the floppy diskette that contains the Award utility & bios file (it will take less than 2 minutes before screen comes out)

# No POST

- Verify that components are supported
  - Check MSI website to verify that CPU being used is supported by motherboard
    - CPU support lists available by model on MSI Taiwan website at [www.msi.com.tw](http://www.msi.com.tw)
    - In addition to CPU speed being supported, verify that processors core type is supported
      - P4 Northwood, P4 Willamette
        - <http://processorfinder.intel.com/scripts/default.asp>
      - AMD XP Thunderbird, Thoroughbred, Barton, etc.
        - [http://www.msi.com.tw/program/products/mainboard/mbd/pro\\_mbd\\_cpu\\_support\\_detail.php?UID=amdcpu](http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_cpu_support_detail.php?UID=amdcpu)



# No POST

- Verify that video card is supported
  - Many of the newer chipsets will not support 3.3v AGP cards, only 1.5v AGP cards can be used on many of the P4 chipsets.
  - Motherboards that require 1.5v AGP spec will list requirement in manual.
  - Check with video card manufacture or verify “Golden Finger” (Fig 13-a 13-B) to determine if video card is 1.5v or 3.3v AGP spec.

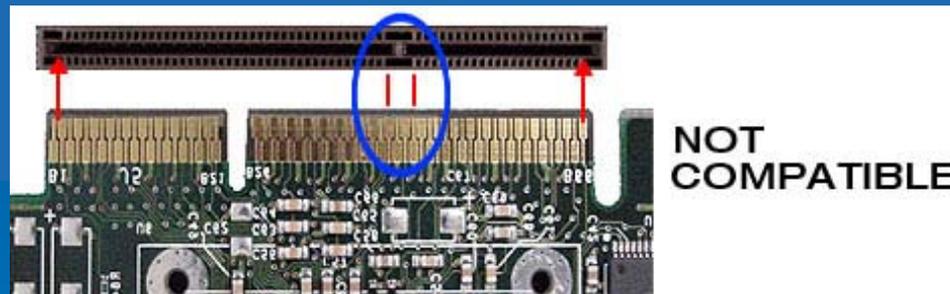


Fig 13-a

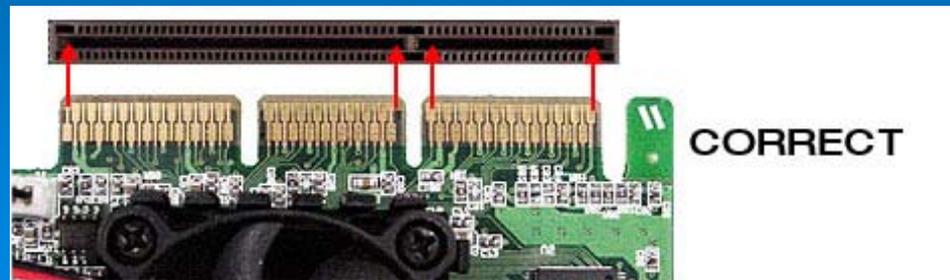


Fig 13-b

## ➤ Check Diagnostic codes

- Verify POST beep codes
  - Continues beeps or 1long 2short beeps = possible memory error
    - Try re-seating memory or test with different memory
  - 1long 2short or 8short beeps = possible video card problem
    - Try re-seating video card, test system with known good video card
  - High/Low tone (siren sound)= CPU is overheating.
    - Verify that CPU heatsink is properly installed and power connected
- Check diagnostic LED codes from D-Bracket
  - Motherboards equipped with D-Bracket may provide useful diagnostic codes for common problems on the diagnostic LEDs.
    - Listing of diagnostic LED codes can be located in manual for your motherboard.

# AMI Beep Code

Beep Code	Description
1 short	DRAMS refresh failure.
2 short	Parity circuit failure.
3 short	Base 64k RAM failure.
4 short	System timer failure.
5 short	Process failure.
6 short	Keyboard controller Gate A20 error.
7 short	Virtual mode exception error.
8 short	Display memory Read/Write test failure
9 short	ROM BIOS checksum failure.
10 short	CMOS shutdown Read/Write error.
11 short	Cache Memory error.
1 long, 3 short	Conventional/Extended memory failure.
1 long, 8 short	Display/Retrace test failed.

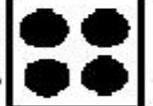
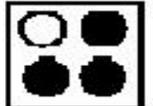
Fig 15-a

# AWARD Beep Code

Beep Code	Description
<b>1 Long, 2 Short</b>	<b>A video error has occurred and the Bios cannot initialize the video screen to display any additional information.</b>
<b>Any other beep(s)</b>	<b>RAM Problem.</b>

Fig 16-a

# What are the LED definitions of D-Bracket?

D-Bracket™2	Description
	<p>System Power ON</p> <p>- The D-LED will hang here if the processor is damaged or not installed properly.</p>
	<p>Early Chipset Initialization</p>
	<p>Memory Detection Test</p> <p>- Testing onboard memory size The D-LED will hang if the memory module is damaged or not installed properly.</p>
	<p>Decompressing BIOS image to RAM for fast booting.</p>
	<p>Initializing Keyboard Controller.</p>
	<p>Testing VGA BIOS</p> <p>- This will start writing VGA sign-on message to the screen.</p>

# What are the LED definitions of D-Bracket?

D-Bracket™2	Description
	<p><b>Processor Initialization</b> - This will show information regarding the processor (like brand name, system bus, etc...)</p>
	<p><b>Testing RTC (Real Time Clock)</b></p>
	<p><b>Initializing Video Interface</b> - This will start detecting CPU clock, checking type of video onboard. Then, detect and initialize the video adapter.</p>
	<p><b>BIOS Sign On</b> - This will start showing information about logo, processor brand name, etc....</p>
	<p><b>Testing Base and Extended Memory</b> - Testing base memory from 240K to 640K and extended memory above 1MB using various patterns.</p>
	<p><b>Assign Resources to all ISA.</b></p>
	<p><b>Initializing Hard Drive Controller</b> - This will initialize IDE drive and controller.</p>
	<p><b>Initializing Floppy Drive Controller</b> - This will initializing Floppy Drive and controller.</p>
	<p><b>Boot Attempt</b> - This will set low stack and boot via INT 19h.</p>
	<p><b>Operating System Booting</b></p>

Fig 18-a

## ➤ Verify jumper settings on motherboard

- Motherboard jumpers for particular model are normally located in section 2 “Hardware setup” of the manual.
- On motherboards equipped with jumpers to set the FSB speed, verify that the FSB speed is set correctly for your CPU.
  - Athlon based systems may require jumper setting
    - CPU FSB 200 = 100MHz on motherboard
    - CPU FSB 266 = 133MHz on motherboard
    - CPU FSB 333 = 166MHz on motherboard
    - CPU FSB 400 = 200MHz on motherboard
  - P4 based systems do not normally use a jumper to set the FSB speed, the FSB speed will be auto detected on P4 systems.



- Verify that the CMOS jumper is set correctly.
  - Clear CMOS jumper (normally JBAT1) must be set to “Keep settings” to allow the system to POST
  - If JBAT1 is set to “clear CMOS” position the motherboard will not power on or post
    - On most MSI motherboards you will set JBAT1 as listed below
      - JBAT1 pins 1-2 Keep settings
      - JBAT1 pins 2-3 Clear CMOS settings
      - Verify the correct setting for your motherboard in manual as the correct setting may vary from model to model

## Motherboard shorting to case causing no POST

- Test the motherboard outside of the case to verify that the motherboard is not shorting to the case and causing a problem
  - With only the CPU and heat sink, memory, and video card (or onboard video) connected to the motherboard, place the motherboard on a non-conductive surface and retest the motherboard
  - Check the case mounting standoffs to verify that they are lining up correctly with the mounting holes on the motherboard.

# No POST

- Eliminate components as possible cause
  - Test system with minimal components installed.
    - With only CPU w/ heat sink, memory and video connected retest system
  - Verify that all of the components on the system are in good working order
    - Test motherboard with known good components
    - Test components on known good system

# Stability Problems

- Verify that you have the latest BIOS installed for your motherboard.
  - BIOS updates can fix many stability problems
    - Memory timing issues
    - CPU ID issues
- Latest BIOS update can be found on the MSI website or obtained using the Live update utility.

# How do I identify the BIOS version

- Upon boot-up, the 1st line appearing after the memory count is the BIOS version. It is usually in the format: A6590VMS V5.2 091096 where:
  - 1st digit refers to BIOS maker as **A** = AMI (Fig 24-a) **W** = **AWARD** (Fig 24-b)
  - 2nd - 5th digit refers to the model number.
  - 6th - 7th digit refers to the customer as MS = all standard customers.
  - V5.2 refers to the BIOS version.
  - 091096 refers to the date this BIOS is released.



Fig 24-a

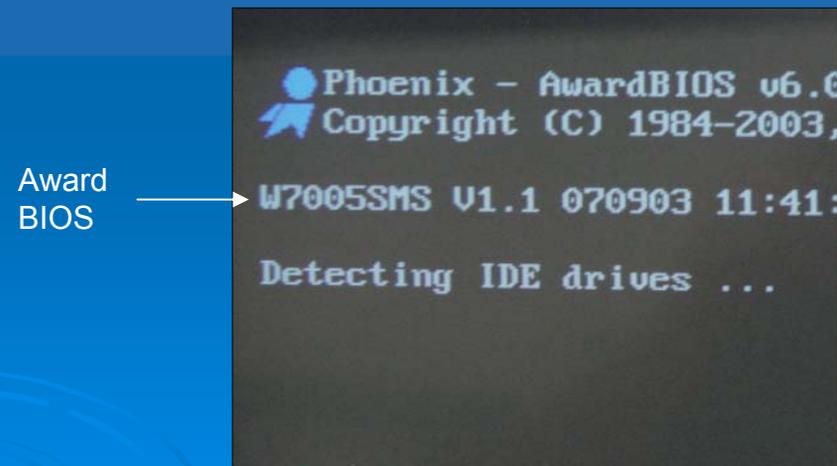


Fig 24-b

# How to identify your motherboard model version and ERP number

Motherboard model is located between PCI slots listing both the model name and model number (Fig 25-a)

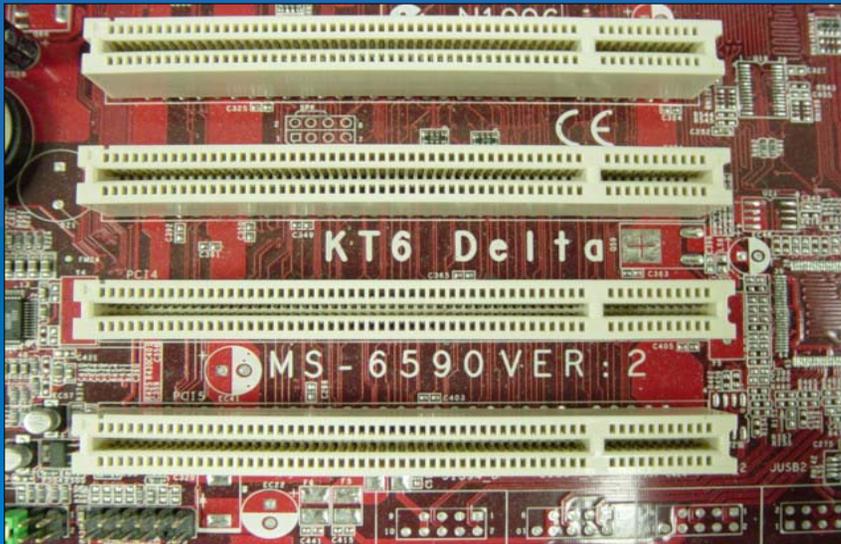


Fig 25-a

Model name: KT6 Delta  
Model number: MS-6590

The ERP number is located on the side of the last PCI slot near the edge of the motherboard (Fig 25-b)

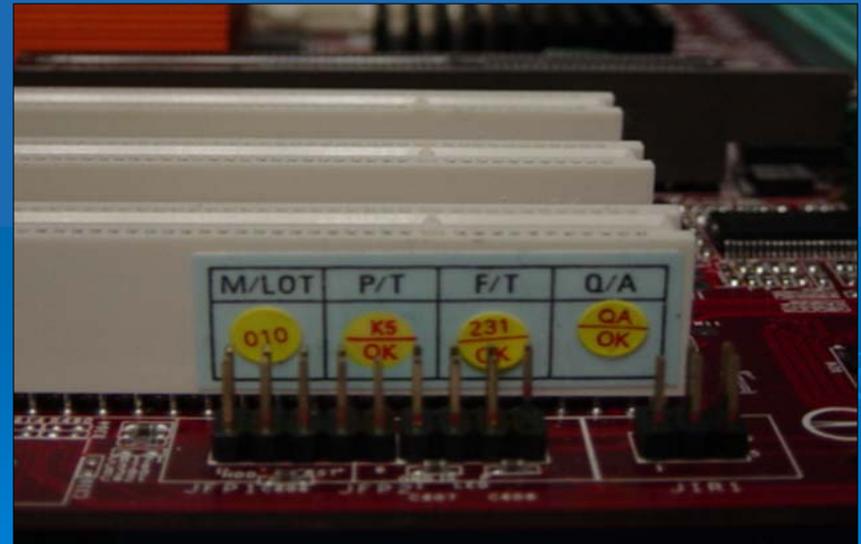


Fig 25-b

ERP number: 010 as listed under M/LOT

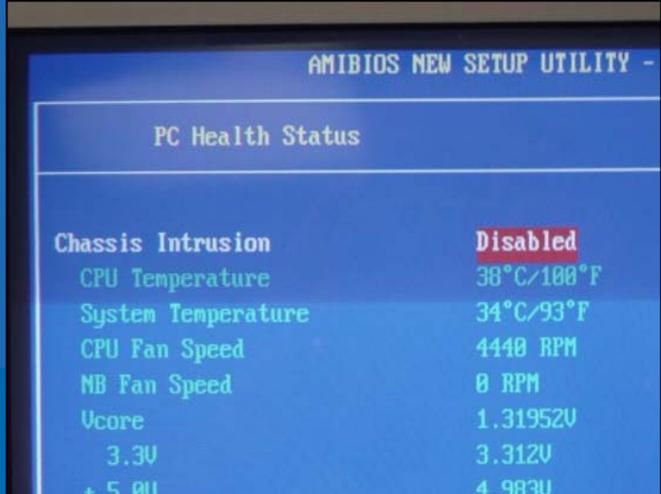
# How to update the BIOS

- Download the latest BIOS for your motherboard from the MSI website.
  - [http://www.msi.com.tw/program/support/bios/bos/spt\\_bos\\_list.php?kind=1](http://www.msi.com.tw/program/support/bios/bos/spt_bos_list.php?kind=1)
- Extract the BIOS files to a blank formatted floppy disk
- Boot the system with a bootable floppy disk
  - A Windows 98 or ME startup disk can be used, or you can create an MS-DOS startup disk under Windows XP.
    - To create an MS-DOS startup disk under Windows XP, right click on the 3.5" floppy drive icon under my computer and select format. On the format dialog box check the box next to "Create MS-DOS startup disk"
- Replace the boot disk with the floppy disk containing the BIOS files
- At the A:\ prompt, you will type in the following command  
A:\FLASHUTILITY BIOSFILE.VER  
The flash utility will be the .EXE file included in the BIOS download  
Example: ADSF712.EXE =BIOS FLASH UTILITY  
The BIOS file will end with the version number  
Example: A6728ims.210 = BIOS file version 2.1
- To update the BIOS using the example above you would type the following command  
A:\ADSF712 A6728ims.210  
Follow the onscreen prompts to update the BIOS
- Reboot the system once the BIOS update has been completed
- **DO NOT TURN OFF THE POWER or RESET/REBOOT the SYSTEM before the BIOS update is completed, stopping the BIOS UPDATE before it is completed will cause the system to become non-functional**

# Stability Problems

## ➤ CPU Temperature

- Verify that CPU is not exceeding recommended temperature by checking the CPU temperature in the BIOS under PC Health status (Fig 27-a)
- Check CPU heatsink/fan is properly installed
  - Verify that cover over thermal interface is removed
  - Verify that CPU HSF is recommended for CPU
- Check for CPU overclocking which may cause overheating
  - Check CPU FSB clock
  - Check CPU Vcore voltage
- Check computer case for proper ventilation



AMIBIOS NEW SETUP UTILITY -

PC Health Status

Chassis Intrusion	Disabled
CPU Temperature	38°C/100°F
System Temperature	34°C/93°F
CPU Fan Speed	4440 RPM
NB Fan Speed	0 RPM
Vcore	1.31952V
3.3V	3.312V
+5.0V	4.983V

Fig 27-a

## ➤ Memory Issues

- Check memory timing in the bios
  - Set memory timing by SPD for automatic timing settings (Fig 28-a)
  - If that doesn't help, set memory timing manually according to memory specification listed on memory (Fig 28-b) or by contacting the manufacture.
- Test with a single stick of memory
  - Test each piece of memory individually to verify memory is in good working condition
  - Test each DIMM slot on the motherboard
- Re-seat the memory in the DIMM slot to verify that it is properly installed.

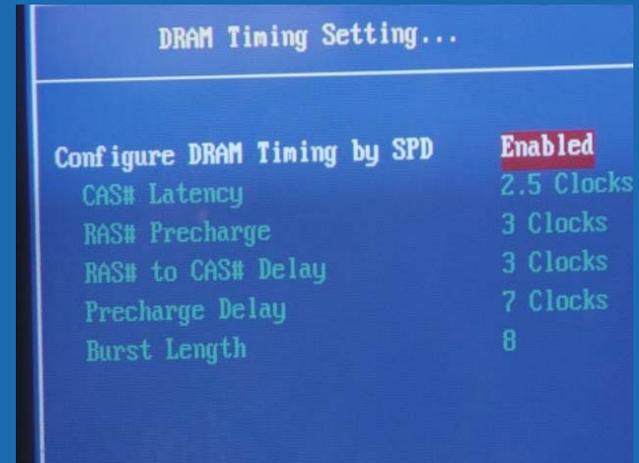


Fig 28-a



Fig 28-b

# Stability Problems

- CPU Problem (not heat related)
  - Disable CPU internal cache (maybe listed in Bios as L1 & L2 cache (Fig 29-a))
  - Test motherboard with a different CPU or test CPU on another motherboard to verify that the CPU is good

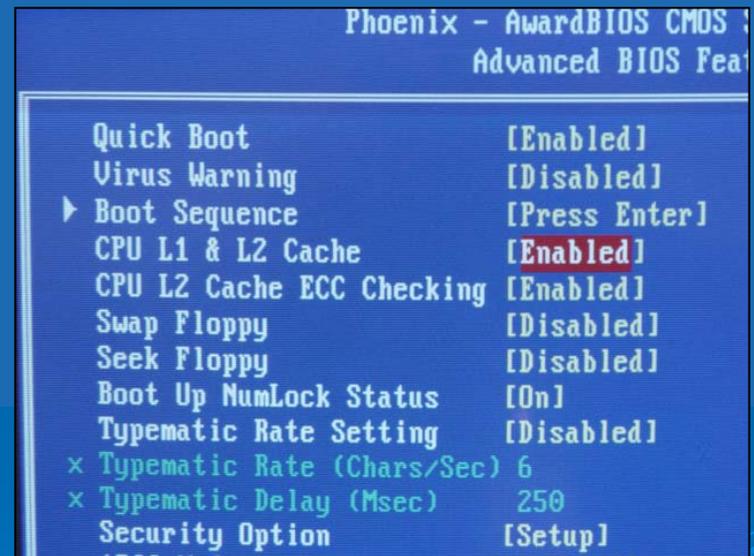


Fig 29-a

# No Boot (system does post)

## ➤ Drives not detected at Boot

- Check jumper settings on all IDE devices
- Verify that IDE controller is configured correctly in the bios
- Check to make sure that the drive is connected to the correct controller
  - Make sure drives are configured correctly for RAID
  - Verify Onchip IDE configuration for ICH5 SATA operation is set correctly
- Test drives with different IDE/SATA cables

# No Boot (system does post)

- Drives detected at Boot
  - Verify boot sequence is set correctly for your configuration in the BIOS under Advanced Bios Features (Fig 31-a)
  - Test system with bootable floppy disk or with a bootable cd

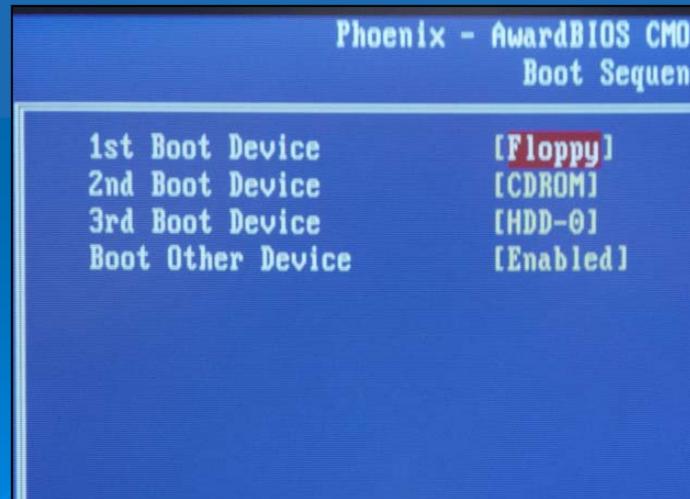


Fig 31-a

# How to Configure and Install Windows 2000/XP with a Single SATA Hard Drive.

- **Configuring Bios Settings for the Intel ICH5(R)**
  - Under Advanced Bios Features
    - Boot Sequence – Select your S-ATA hard drive
  - Under Integrated peripherals
    - Onboard Promise – Disable
    - On-Chip ide configuration (Intel ICH5(R) Only) (Fig 32-a)
    - Operate Mode – Select Native mode for Windows XP, Select Legacy mode for Windows 9x/ME/2000
    - ATA Configuration – Select S-ATA only
    - S-ATA Keep Enabled – Yes(Default)
    - P-ATA Keep Enabled – Select Yes
    - P-ATA Channel Selection – Both(Default)
    - Combined Mode Option – P-ATA 1st Channel(Default)
    - S-ATA Ports Definition – P0-1st/P1-2nd
    - Configure S-ATA as Raid(ICH5R Only) – Select No for single hard drive configuration
- **Configuring Bios Settings for the Promise Controller**
  - Under Advanced Bios Features
    - Boot Sequence – Select your S-ATA hard drive
  - Under Integrated peripherals
    - Onboard Promise - Select as S-ATA
    - On-Chip ide configuration(Intel ICH5(R) Only)
    - Operate Mode – Select Native mode for Windows XP, Select Legacy mode for Windows 9x/ME/2000
    - ATA Configuration – Select P-ATA only
    - S-ATA Keep Enabled – Select No
    - P-ATA Keep Enabled – No(Default)
    - P-ATA Channel Selection – Select Both
    - Combined Mode Option – P-ATA 1st Channel(Default)
    - S-ATA Ports Definition – P0-1st/P1-2nd(Default)
    - Configure S-ATA as Raid(ICH5R Only) – Select No for single hard drive configuration
- **Configuring Bios Settings for the Via VT8237**
  - Under Advanced Bios Features
    - Boot Sequence – Select your S-ATA hard drive
  - Under Integrated peripherals
    - VT8237 SATA-IDE Controller – Make sure its enabled

On-Chip IDE Configuration	
On-Chip ATA(s) Operate Mode	Legacy Mode
ATA Configuration	P-ATA Only
S-ATA Keep Enabled	No
P-ATA Keep Enabled	No
P-ATA Channel Selection	Both
Combined Mode Option	P-ATA 1st Channel
S-ATA Ports Definition	P0-3rd./P1-4th.
Configure S-ATA as RAID	No

Fig 32-a

# How to Configure and Install Windows 2000/XP with a Single SATA Hard Drive.

- **Installing Windows 2000/XP on a single S-ATA Hard Drive.**
  - Right after booting off of the Windows cd, you need to push the F6 key when prompted (Fig 33-a)
  - Next when prompted (Fig 33-b) install the correct driver from the floppy disk provided with the motherboard, press the S key to specify the driver, and select the correct driver depending on which controller you are using, then press enter key to continue.
  - After this Windows 2000/XP will continue the installation, and will detect the S-ATA hard drive to be installed onto.



Fig 33-a

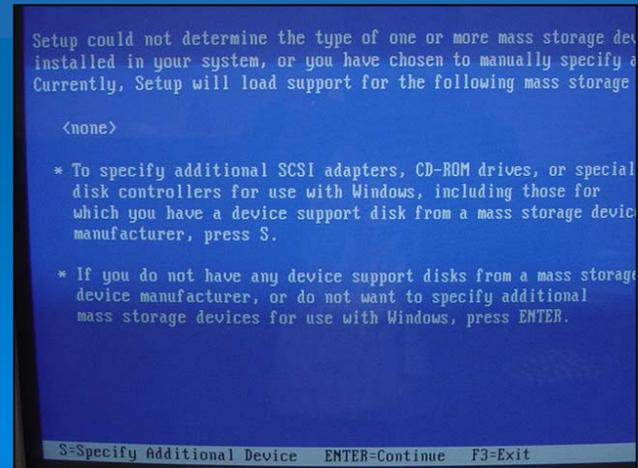


Fig 33-b

# How to Configure and Install Windows 2000/XP on a Raid Array.

## ➤ Configure Raid Array First.

### • For the Via VT8237 Raid

- Push the Tab key once prompted to enter the Via VT8237 Setup.
- Next, Select Create Array (Fig 34-a)
- Select Array mode, and choose either Striping or Mirroring, then select the first option, Auto Setup to configure the Raid Array (Fig 34-b), then go back to the Main Menu screen, and select the Select Boot Array option (Fig 34-a), to make the array you just created bootable.

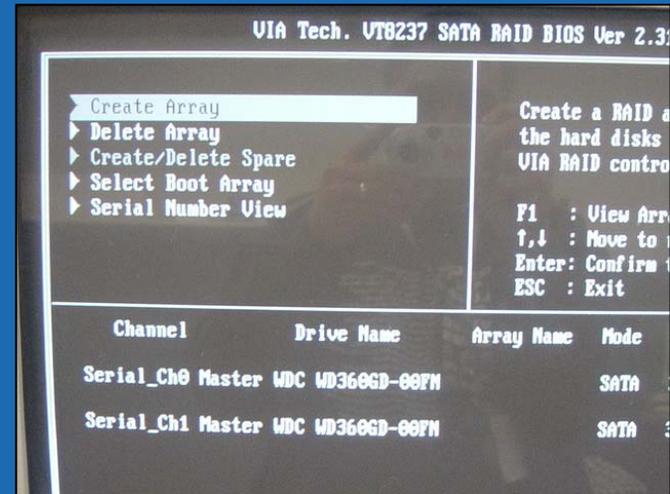


Fig 34-a

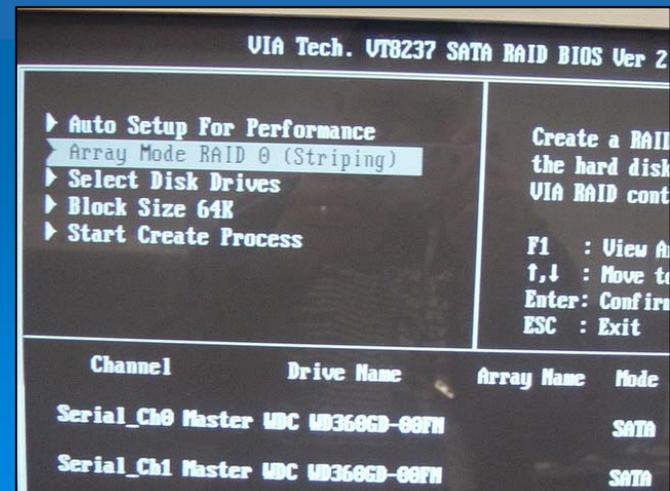


Fig 34-b

# How to Configure and Install Windows 2000/XP on a Raid Array.

## ➤ For the Promise Raid

- Push Control-F once prompted to enter the Promise Raid Setup.
- Next, select Auto Setup (Fig 35-a)
- Now select Performance (Striping) or Security (Mirroring), and then push Control-Y to configure the Raid Array and save the settings. (Fig 35-b)

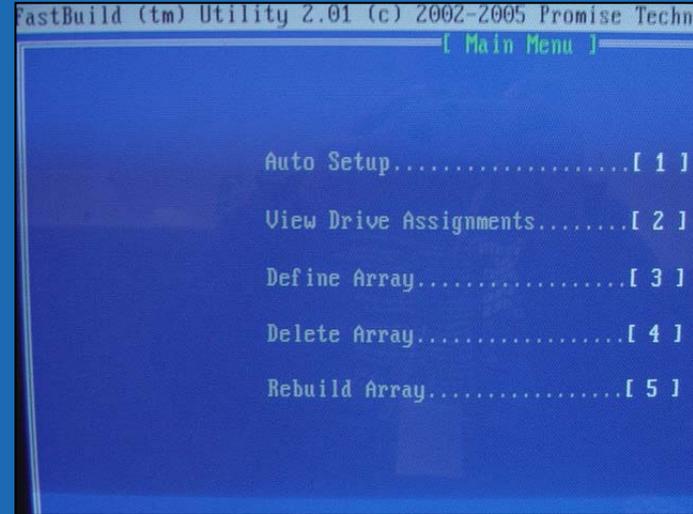


Fig 35-a



Fig 35-b

# How to Configure and Install Windows 2000/XP on a Raid Array.

## ➤ For the Intel ICH5R Raid

- Push Control-I once prompted to enter the Intel ICH5R Raid Setup.
- Next, select option 1. Create Raid Volume, (Figure 36-a)
- Now name the Raid Volume, then select the Raid Level, Raid0(Stripe) or Raid1(Mirror), next choose the Strip Size, and then create the volume. (Figure 36-b)



Fig 36-a

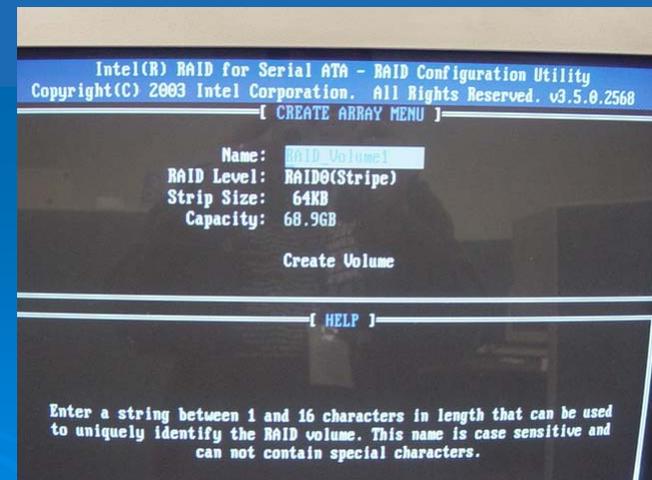


Fig 36-b

## ➤ Next Configuring Bios Settings for Raid Array.

- Under Integrated Peripherals
  - Depending on which controller you are using, ICH5R, Promise, or Via VT8237, make sure to enable the Raid option.
- Under Advanced Bios Features
  - Boot Sequence – Select your Raid Array
  - Save and exit out of the bios, and boot off of the Windows cd.

# How to Configure and Install Windows 2000/XP on a Raid Array.

- **Installing Windows 2000/XP on a Raid Array.**
  - Right after booting off of the Windows cd, you need to push the F6 key when prompted (Fig 38-a)
  - Next when prompted (Fig 38-b) install the correct driver from the floppy disk provided with the motherboard, press the S key to specify the driver, and select the correct driver depending on which controller you are using, then press enter key to continue.
  - After this Windows 2000/XP will continue the installation, and will detect the Raid Array to be installed onto.



Fig 38-a

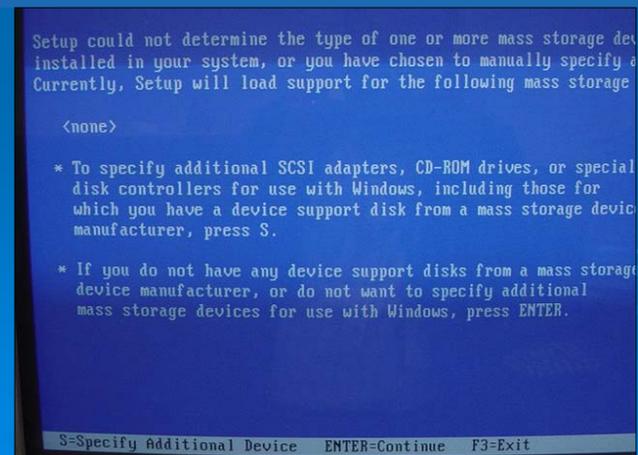


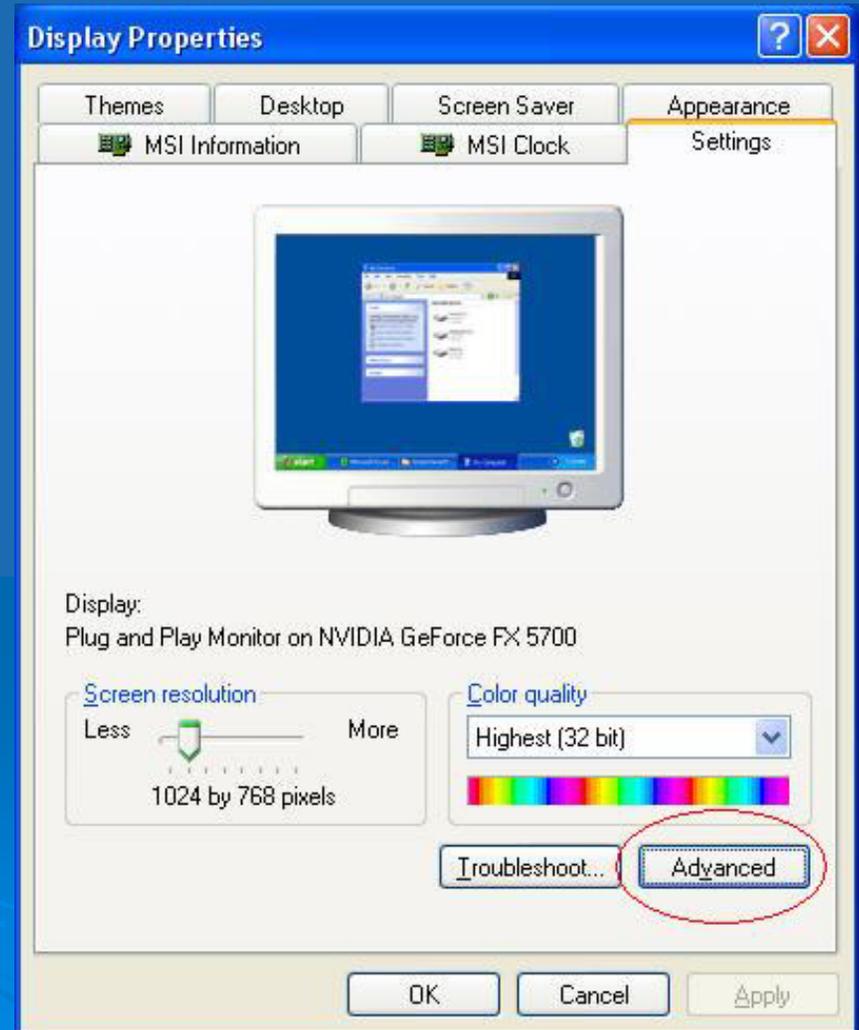
Fig 38-b

## nView Functions

- nView: Clone Function duplicates the exact content of the primary display to the secondary (TV/2nd monitor)
- nView: Dual View Function expands the screen of the primary display to the secondary (TV/2nd monitor) and allows both the primary and secondary to display different contents

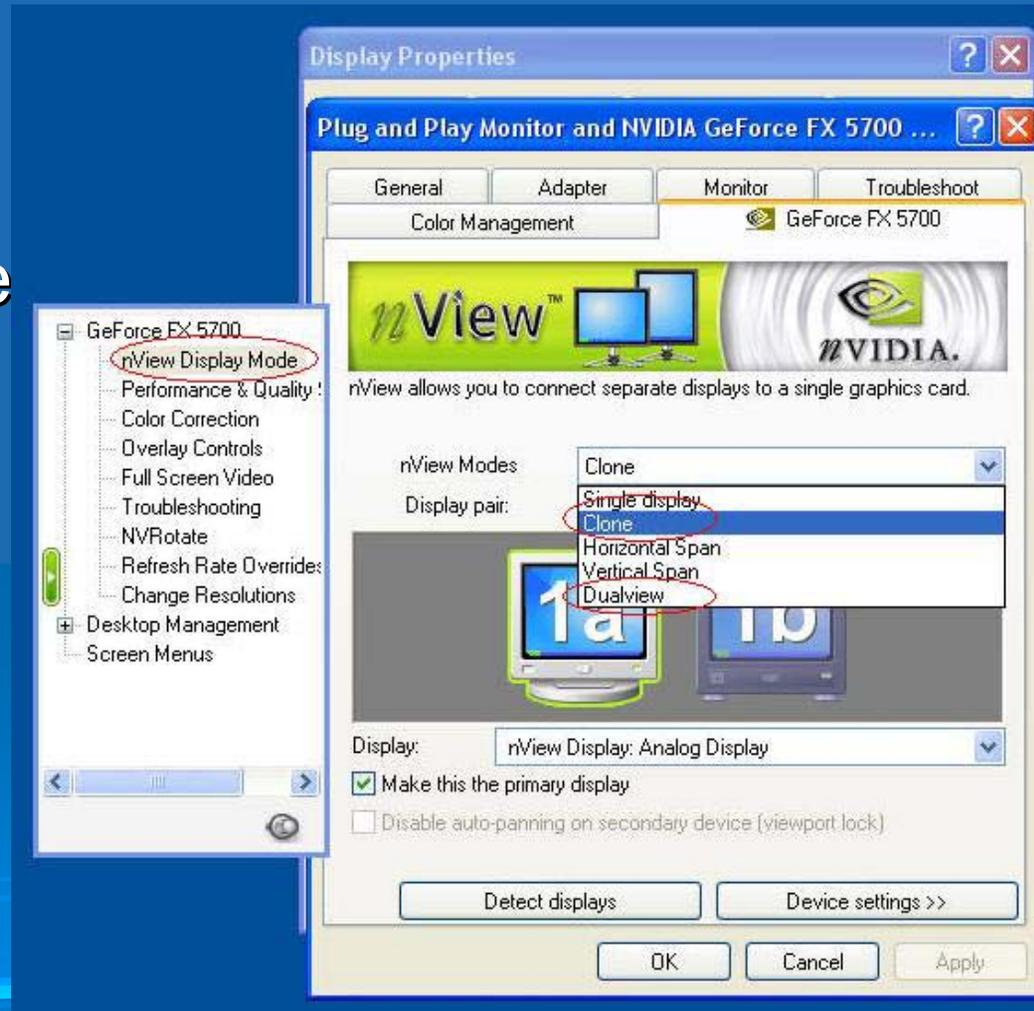
# nView Functions

- Connect the TV/2nd Monitor to the video card before powering up the computer
- Go to Display Properties by right-click on the Desktop Screen
- Click on Settings
- Click on Advanced



# nView Functions

- Click on:
- FX5700 Tag
- nView Display Mode
- Clone or Dual View Function



# TV@nywhere Troubleshooting Guide

# Hardware installation

- Card not detecting
  - Re-seat the card in PCI slot
  - Try installing into another PCI slot

- Will not auto run
  - Manually run “demo32.exe” file from auto run folder in cd (usually drive D)
- Requires a serial number
  - Found on CD label (Fig 44-a) or on CD sleeve (Fig 44-b)
- After starting installation follow onscreen directions.



Fig 44-a

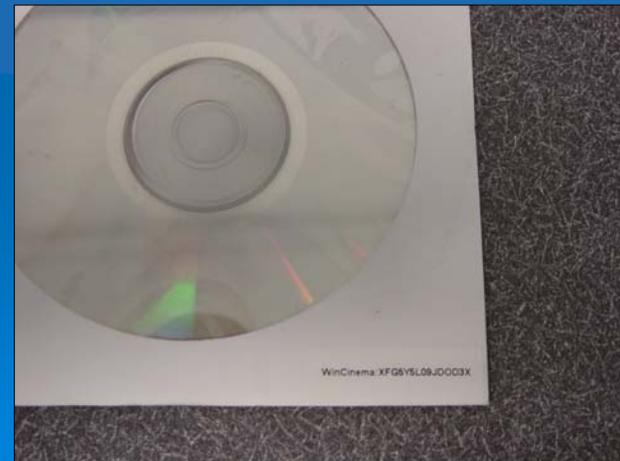


Fig 44-b

# Usage issues

- Will not detect channels
  - Ensure source is set to TV (Fig 45-a)
  - And device is set to Conexant 2388
  - Also standard is set to NTSC\_M

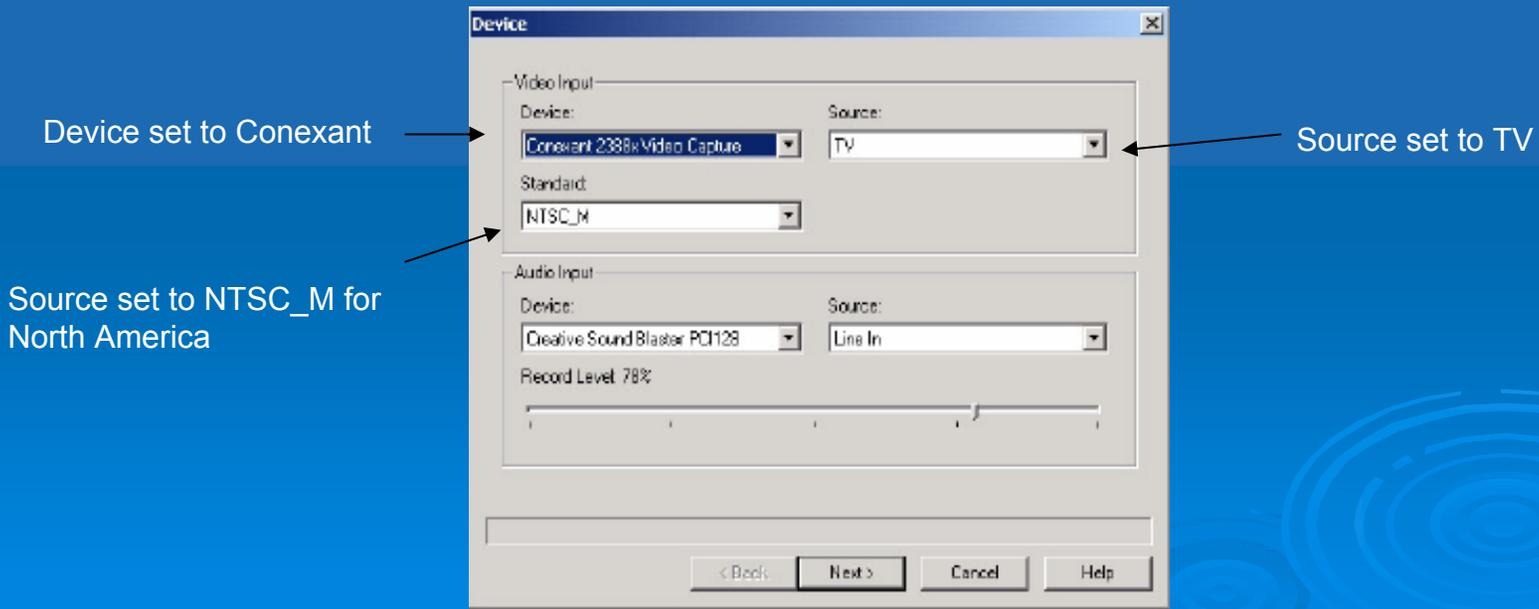


Fig 45-a

# Usage issues

- Not detecting channels correctly
  - Ensure correct country is selected (i.e. USA)
  - Also input should be set to antenna or cable depending on your setup. (Fig 46-a)

**\*Note: digital cable not supported**

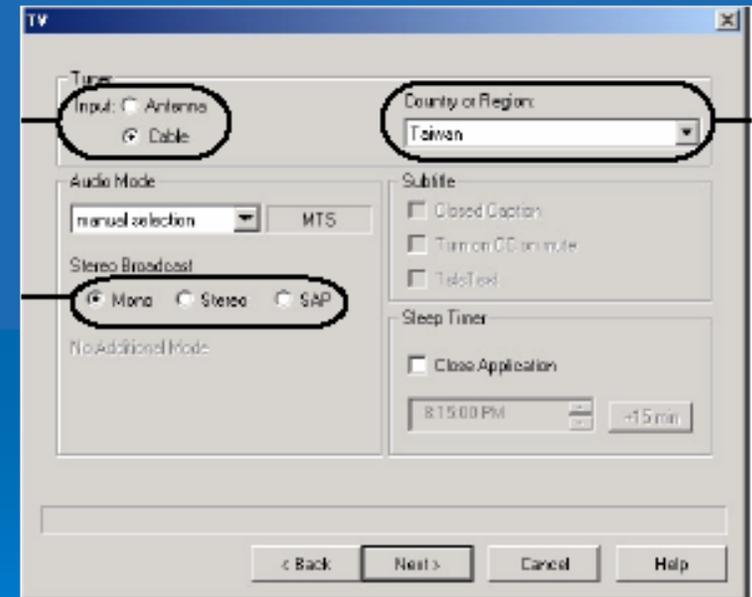


Fig 46-a

# Capture issues

- No sound or video when capturing from external video source
  - Make sure sound and video output from source device are connected to composite video in or s-video in and line in of TV card and sound card respectively (Fig 47-a)

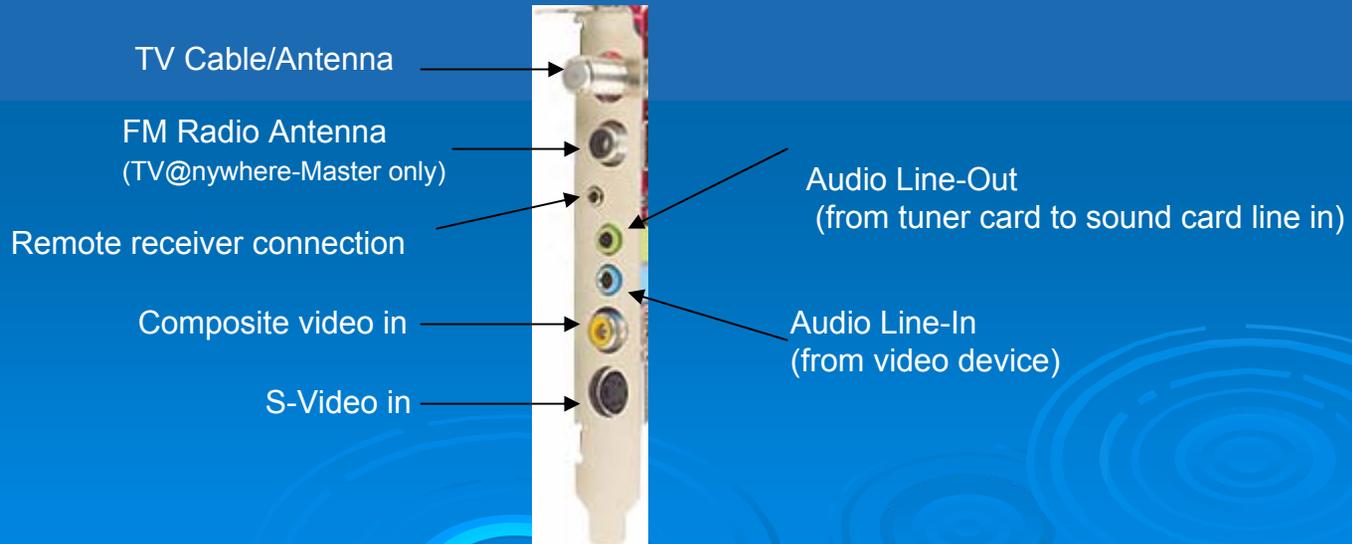


Fig 47-a

# Capture issues

- Sound but no video
  - Ensure source is set to composite or s-video depending on input being used.
  - Ensure cable is connected to video out on source
  - Start source playing before activating PVS software.

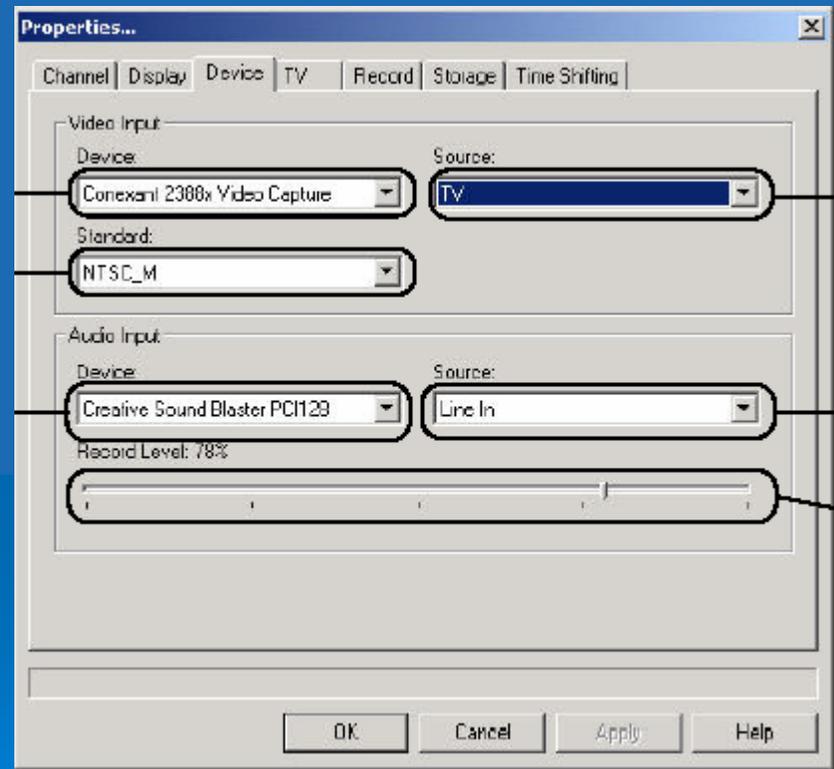


Fig 48-a

# Capture issues

- Video but no sound
  - Ensure audio input is set to line in
  - Also check that sound card is listed under audio input device
  - Check that audio cable is connected to audio out on source and line in on sound card.

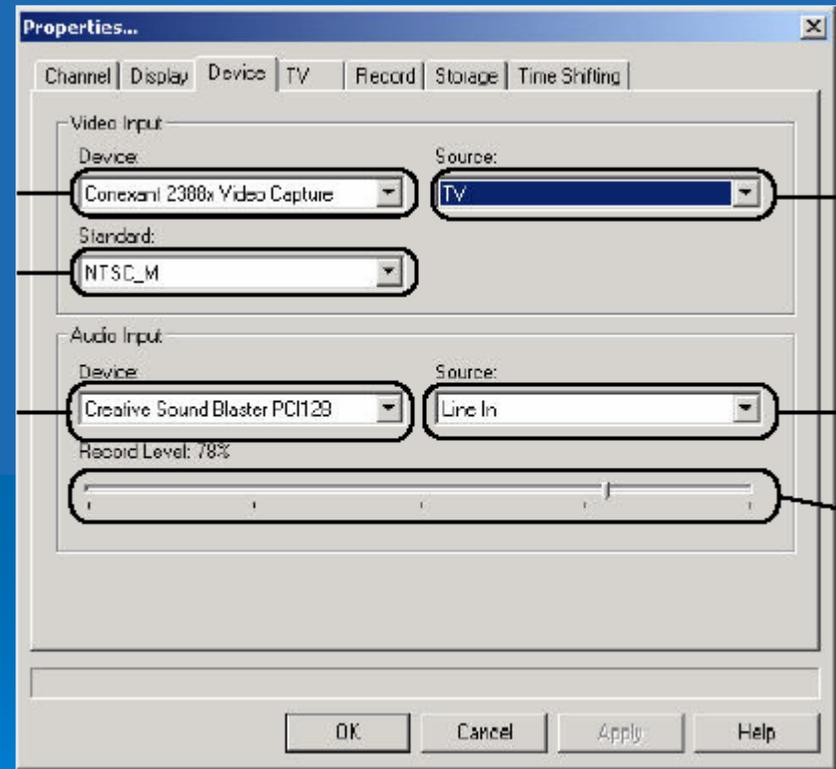


Fig 49-a

# Capture issues

- Video but no sound
  - Make sure line in is selected in sound properties recording controls
  - Make sure line in volume is not too low.

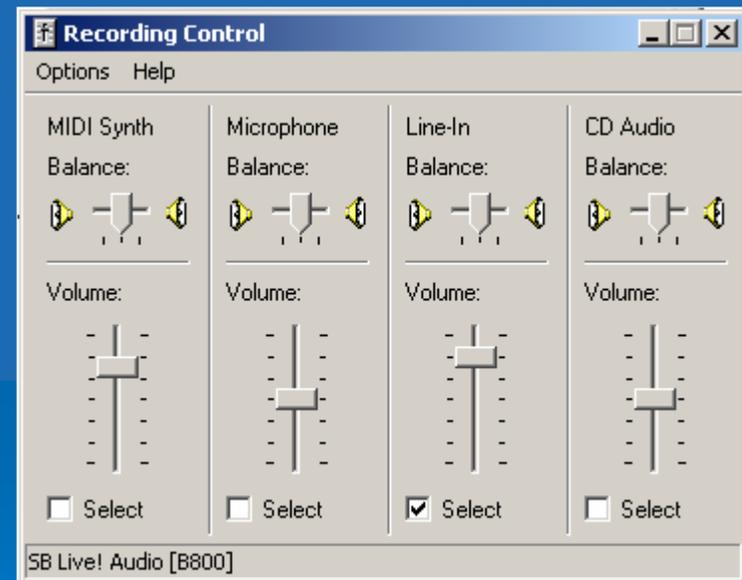


Fig 50-a



## FAQ

- Question: System fan and power supply fan are spinning but the CPU fan is not, and the motherboard is not post
  - Answer: If this occurs, the 12V 4pin power connector(JPW1) needs to be connected to the motherboard.
- Question: Can I Raid an IDE hard drive with a SATA hard drive?
  - Answer: Yes you can, just make sure to enable the correct controller in the bios, under integrated peripherals/onboard device/Raid config.



## How to configure the onboard Raid

- First you need to go into the motherboard bios, under integrated peripherals/onboard device/Raid config, and enable the IDE/SATA connection you are using in which you want to Raid, and then save and exit out of the bios.





## How to configure the onboard Raid

- Next you will need to setup your raid configuration, by pushing F10 to enter Raid setup. (Fig 53-a)
- Now select Striping, Mirroring, Striping+Mirroring, Spanning. (Fig 53-b)
- Next push the tab key, and select the striping block size you want. (Fig 53-b)
- Push the tab key again, and select the hard drives you want to include in the Raid array. (Fig 53-b)
- Then push F7 to save and finish the Raid array. (Fig 53-b)
- Now push Ctrl-X to exit the Raid setup, after exiting the Raid setup, restart your system and go into the motherboard bios. (Fig 53-c)
- Go to Advanced BIOS Features, select the 1st/2nd/3rd boot device as hard disk. Then go to the Hard Disk Boot Priority option, and select the hard drive you want to boot from, and then save and exit out of the bios. (Fig 53-d)

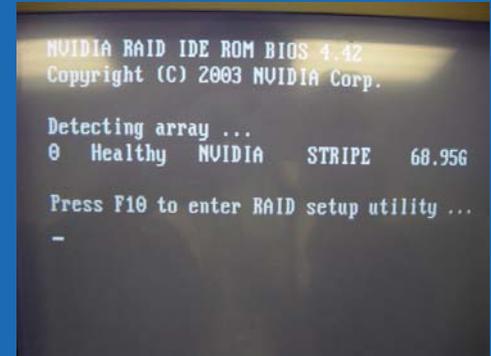


Fig 53-a

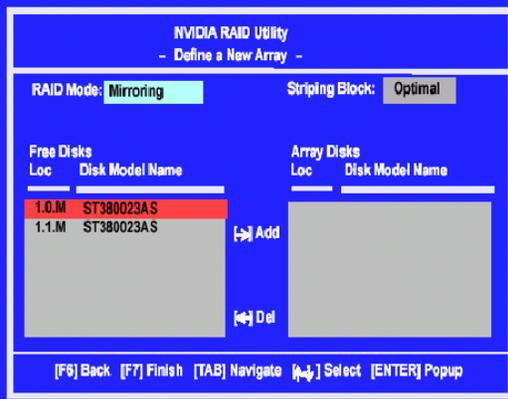


Fig 53-b



Fig 53-c



Fig 53-d



## How to install Windows 2000/XP using the onboard Raid

- Right after booting off of the Windows cd, you need to push the F6 key when prompted (Fig 54-a)
- Next when prompted (Fig 54-b) push the S key, and install the Nvidia Raid Class Driver, then push the S key again, and install the Nvidia Nforce Storage Controller Driver, in which the screen will look like this(Fig 54-c), then push enter to continue.
- After this Windows 2000/XP will continue the installation, and will detect the Raid array to be installed onto.



Fig 54-a

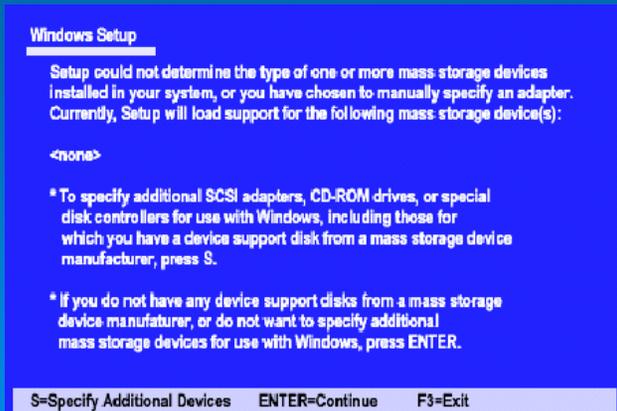


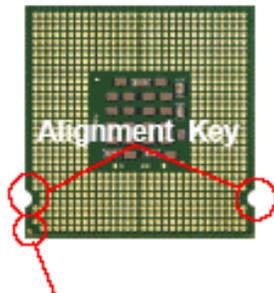
Fig 54-b



Fig 54-c

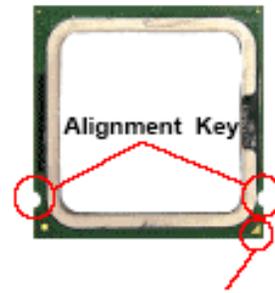
# Socket 775 LGA CPU installation

The pin-pad side of LGA 775 CPU.



Yellow triangle is the Pin 1 indicator

The surface of LGA 775 CPU.  
Remember to apply some silicone heat transfer compound on it for better heat dispersion.



Yellow triangle is the Pin 1 indicator

The unique MSI CPU Clip for easy CPU installation.



# Socket 775 LGA CPU installation

## Step 1

The CPU has a land side cover on the bottom to protect the CPU contact from damage. Rotate it to make the pin 1 indicator (yellow triangle) in the right-bottom corner.



land side cover

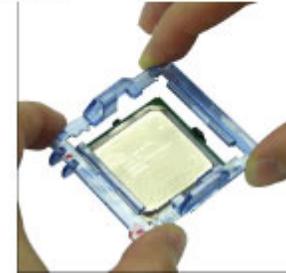
## Step 2

Take out the accompanying CPU clip and rotate it for the same direction as the CPU (Pin 1 indicator, the red triangle is in the left-bottom corner).



## Step 3

Align the 3 points (the Pin 1 indicator and the two alignment keys) of both the CPU and the CPU Clip, and use your 4 fingers to push the CPU Clip down clip them (the CPU clip is up and the CPU is down) together.



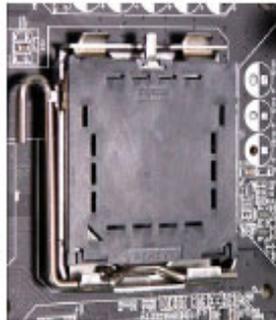
## Step 4

The land side cover now is removed.



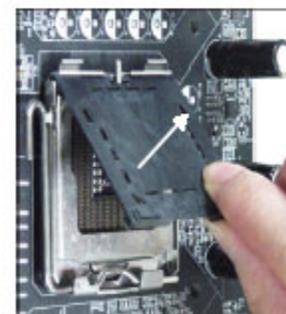
## Step 5

The CPU has a plastic cap on it to protect the contact from damage. Before you have installed the CPU, always cover it to protect the socket pin.



## Step 6

Remove the cap from lever hinge side (as the arrow shows).



# Socket 775 LGA CPU installation



## Step 7

The pins of socket reveal. Then lift up the load lever.



## Step 8

Lift the load lever up and open the load plate.



## Step 9

Correctly align the red triangle of CPU clip with the CPU chamfer, the red arrow with the left-side socket edge, and the red spot to the hook of the socket.



## Step 10

Put the whole module onto the CPU socket.



## Step 11

Push down the CPU hardly to install the CPU into the socket housing frame.



## Step 12

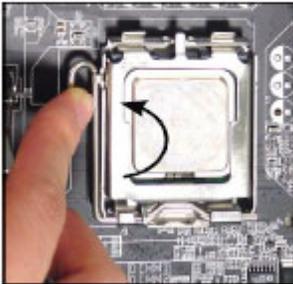
Visually inspect if the CPU is seated well into the socket, then remove the CPU clip with 2 fingers. Then cover the load plate onto the package.



# Socket 775 LGA CPU installation

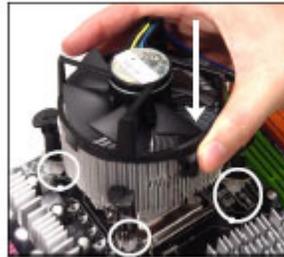
## Step 13

Press down the load lever lightly onto the load plate, and then secure the lever with the hook under retention tab.



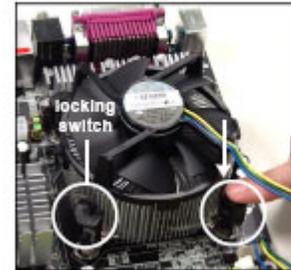
## Step 14

Align the holes on the mainboard with the cooler. Push down the cooler until its four clips get wedged into the holes of the mainboard.



## Step 15

Press the four hooks down to fasten the cooler. Then rotate the locking switch (refer to the correct direction marked on it) to lock the hooks.



Please make sure the black plastic cap is on the CPU bracket to protect the socket pin when the CPU is not installed or when sending the board for service.

End of presentation