Basic Troubleshooting Guide

- Power supply issue
- BIOS problems
- Non supported components
- Diagnostic codes
- Jumper settings
- Shorting issues
- Component related issues

- BIOS related
- How to identify your motherboard model and BIOS version
- How to update your motherboard BIOS
- CPU Temperature
- Memory Issues
- CPU Problem

- Hard drives not detected
- Hard drives are detected at boot
- SATA configuration
- RAID controller configuration

- Clone view and Dual view setup

- Hardware issues
- Software setup
- Audio/Video troubleshooting

NEW!

- FAQ
- NVIDIA RAID

NEW!

- How to install Pentium 4 socket 775 processors

NEW!

- How to flash the BIOS FDD
- How to flash the BIOS CD
- How to flash the BIOS Flash Drive
- How to upgrade BIOS using MSI LiveUpdate Utility

- 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

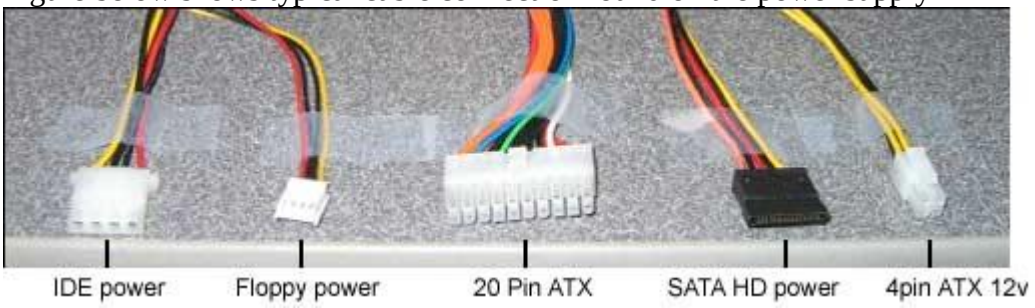
- Bypass case switch by shorting power switch pins on motherboard with small screwdriver

- 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)

The image at the right 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 ----->

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 230 volt.

Figure below shows typical cable connection found on the power supply



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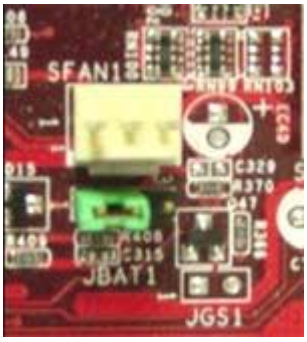
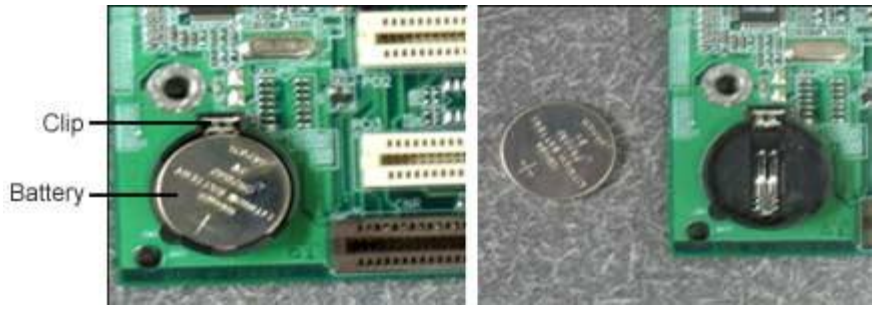
With system powered off move jumper JBAT1 from pins 1-2 to pins 2-3 for 15 seconds and then return the jumper to pins 1-2 and retest the system.



- 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)



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.

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. awdfl826B 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)

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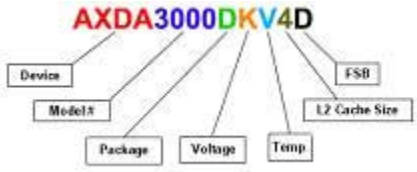
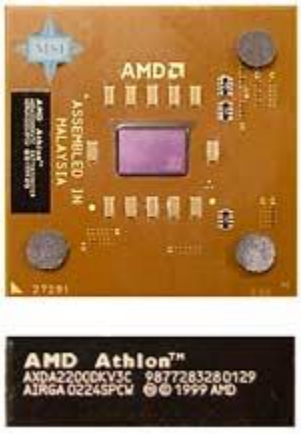
Check MSI website to verify that CPU being used is supported by motherboard

•CPU support lists available by model on MSI Taiwan website

•In addition to CPU speed being supported, verify that processors core type is supported

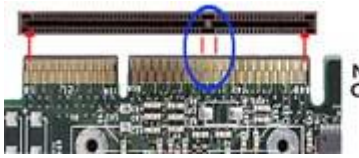
- P4 Northwood, P4 Willamette
- AMD XP Thunderbird, Thoroughbred, Barton, etc.

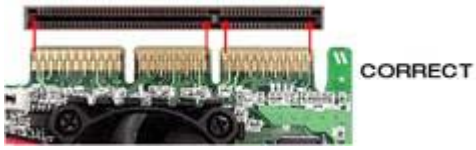




- Many of the newer chipsets will not support 3.3v AGP cards, only 1.5v AGP cards can be used on many of the P4 chipsets.
- Motherboards that require 1.5v AGP spec will list requirement in manual.

• Check with video card manufacture or verify “Golden Finger” (figure below) to determine if video card is 1.5v or 3.3v AGP spec.





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• Try re-seating memory or test with different memory

• Try re-seating video card, test system with known good video card

• Verify that CPU heatsink is properly installed and power connected

• Listing of diagnostic LED codes can be located in manual for your motherboard .

Deep 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

Deep Code	Description
1 Long, 2 Short	A video error has occurred and the BIOS cannot intialize the video screen to display any additional information

Any other beep(s)	RAM problem

D-Bracket™2	Description
	System Power ON -The D-LED will hang here if the processor is damaged or not installed properly.
	Early Chipset Initialization
	Memory Detection Test - Testing onboard memory size. The D-LED will hang if the memory module is damaged or not installed properly
	Decompressing BIOS image to RAM for fast booting
	Initializing Keyboard Controller
	Testing VGA BIOS - This will start writing VGA sign-on message to the screen
	Processor Initialization - This will show information regarding the processor (like brand name, system bus, etc...)
	Testing RTC (Real Time Clock)
	Initializing Video Interface - This will start detecting CPU clock, checking type of video onboard. Then, detect and initialize the video adapter
	BIOS Sign On - This will start showing information about logo, processor brand name, etc...
	Testing Base and Extended Memory - Testing base memory from 240K to 640K and extended memory above 1MB using various patterns
	Assign Resources to all ISA
	Initializing Hard Drive Controller - This will initialize IDE drive and controller

Initializing Floppy Drive Controller
- This will initializing Floppy Drive and controller

Boot Attempt
- This will set low stack and boot via INT 19h

Operating System Booting

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- 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.

- 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

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- 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.

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• With only CPU w/ heat sink, memory and video connected retest system

• Test motherboard with known good components
• Test components on known good system

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•
• CPU ID issues

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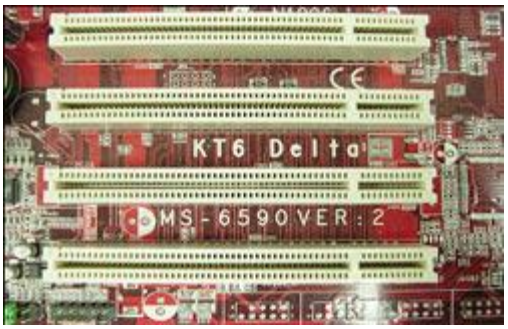
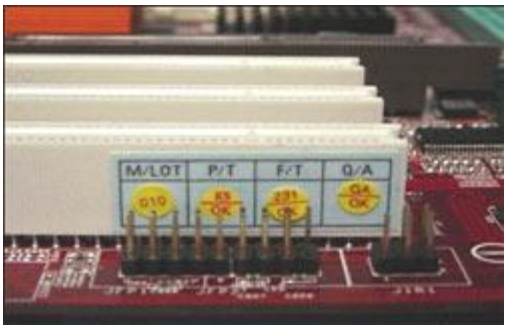
Upon boot-up, the 1st line appearing after the memory count is the BIOS version. It is usually in the format:
A6590VMS V5.2 091096 where:
1st digit refers to BIOS maker as **A** = AMI **W** = AWARD
2nd - 5th digit refers to the model number.
6th digit refers to the chipset of the MB (example: **V** = VIA, **S** = SiS, **I** = Intel, **A** = AMD)
7th - 8th 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.

Motherboard model is located between PCI slots listing both the model name and model number

The ERP number is located on the side of the last PCI slot near the edge of the motherboard



Model name: KT6 Delta
Model number: MS-6590



ERP number: 010 as listed under M/LOT

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- Download the latest BIOS for your motherboard from the MSI website.
- Extract the BIOS files to a blank formatted floppy disk
- Boot the system with a bootable floppy disk l
  - A Windows 98 or ME startup disk can be used, or you can create an MS-DOS startup disk un Windows XP.
    - To create an MS-DOS startup disk under Windows XP, right click on the 3.5” floppy drive i my computer and select format. On the format dialog box check the box next to “Create MS 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: ADSFI712.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 completed, stopping the BIOS UPDATE before it is completed will cause the system to bec functional**

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- Verify that CPU is not exceeding recommended temperature by checking the CPU temperature in the BIOS under PC Health status
- Check CPU heatsink/fan is properly installed
  - Verify that any cover over the thermal interface on the bottom of the CPU HSF is removed

- Verify that CPU HSF is recommended for your CPU
- Check for CPU overclocking which may cause overheating
  - Check CPU FSB clock
  - Check CPU Vcore voltage
- Check computer case for proper ventilation

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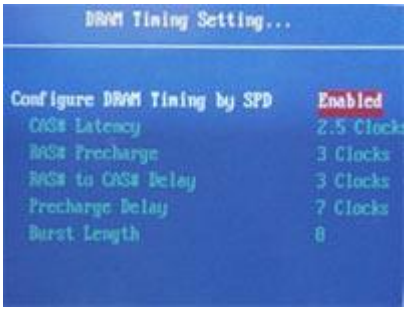
- Check memory timing in the bios
  - Set memory timing by SPD for automatic timing settings (Fig-a)
  - If that doesn't help, set memory timing manually according to memory specification listed on memory (Fig-b) or by contacting the manufacture.
- Test with a single stick of memory
  - Test each piece 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-a)

(Fig-b)

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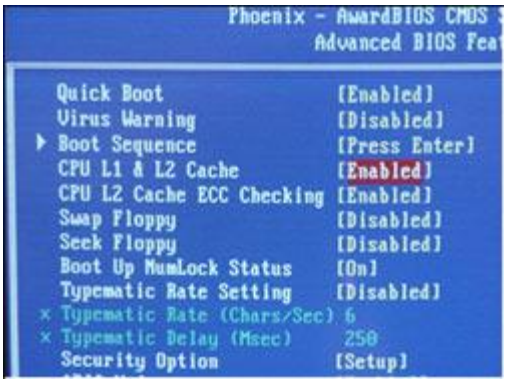
- Disable CPU internal cache (maybe listed in Bios as L1 & L2 cache (Figure below))
- Test motherboard with a different CPU or test CPU on another motherboard to verify that the CPU is good



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- 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

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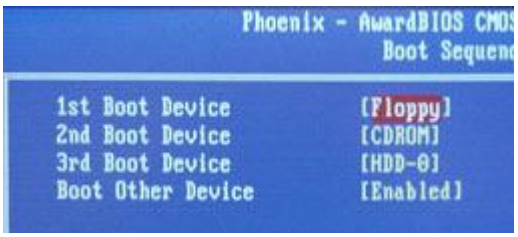
- Verify boot sequence is set correctly for your configuration in the BIOS under Advanced BIOS Features
- Test system with bootable floppy disk or with a bootable cd



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- 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-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

(Fig-a)

- 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

- Under Advanced BIOS Features
  - Boot Sequence – Select your S-ATA hard drive
- Under Integrated peripherals
  - VT8237 SATA-IDE Controller – Make sure its enabled

- Right after booting off of the Windows cd, you need to push the F6 key when prompted (Fig-a)
- Next when prompted (Fig-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-a)

(Fig-b)

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

(Fig-a)

(Fig-b)

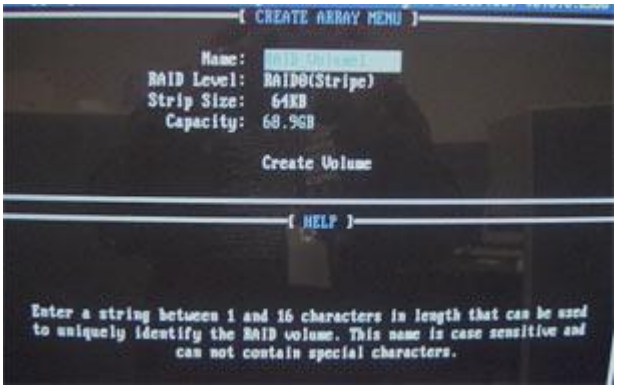
- Push Control-F once prompted to enter the Promise RAID Setup.
- Next, select Auto Setup (Fig-a)
- Now select Performance (Striping) or Security (Mirroring), and then push Control-Y to configure the RAID Array and save the settings. (Fig-b)

(Fig-a)

(Fig-b)

- Push Control-I once prompted to enter the Intel ICH5R RAID Setup.
- Next, select option 1. Create RAID Volume, (Fig-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. (Fig-b)

(Fig-a)



(Fig-b)

- 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.

- Right after booting off of the Windows cd, you need to push the F6 key when prompted (Fig-a)
- Next when prompted (Fig-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 Arrayto be installed onto.

(Fig-a)

(Fig-b)

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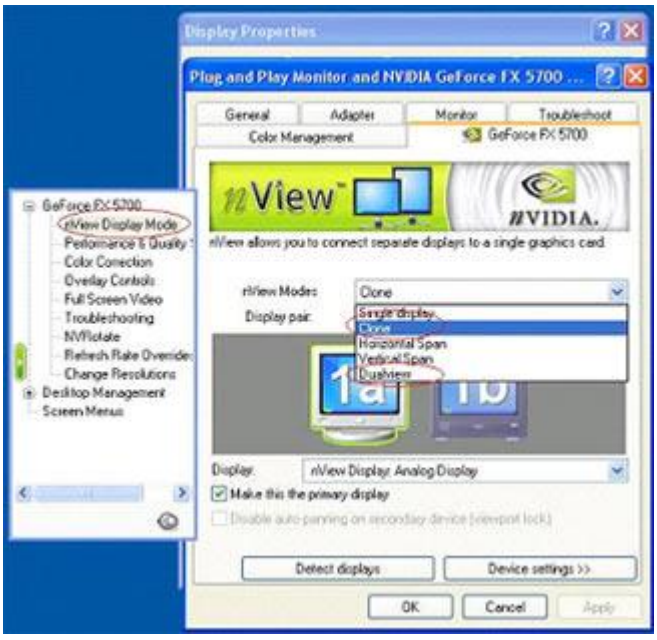
Clone Function duplicates the exact content of the primary display to the secondary (TV/2nd monitor)

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

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



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Card not detecting

- Re-seat the card in PCI slot
- Try installing into another PCI slot

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Will not auto run

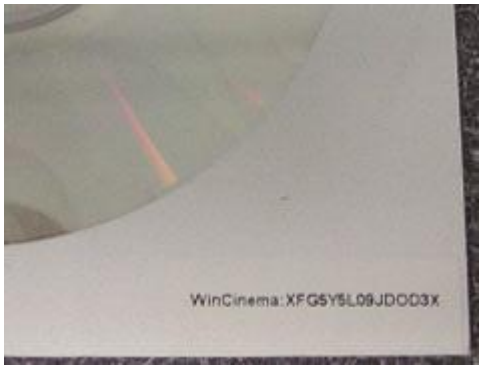
- Manually run "demo32.exe" file from auto run folder in CD (usually drive D)

Requires a serial number

- Found on CD label (Fig-a) or on CD sleeve (Fig-b)

After starting installation follow onscreen directions.

(Fig-a)



(Fig-b)

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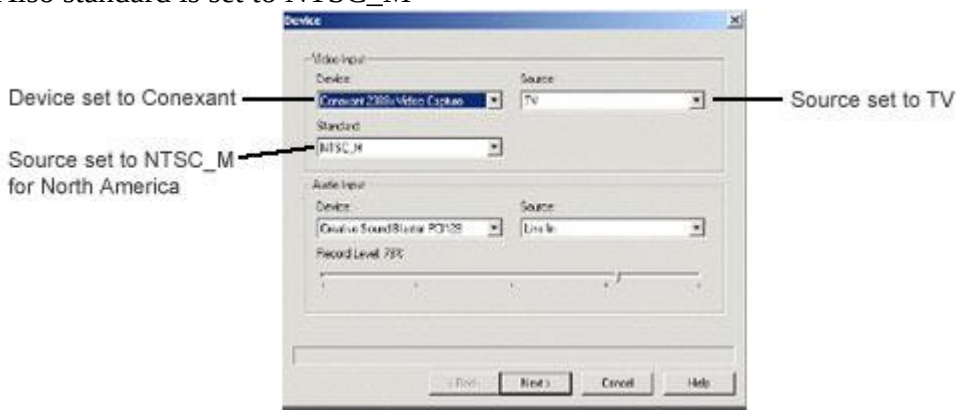
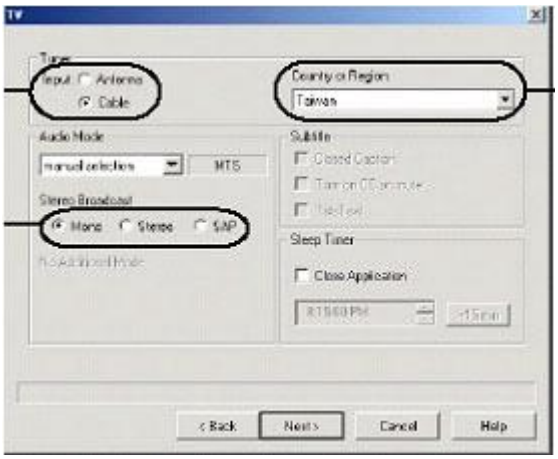
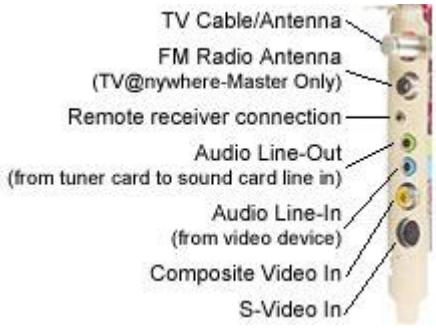
- Ensure source is set to TV (Figure below)
- And device is set to Conexant 2388
- Also standard is set to NTSC_M



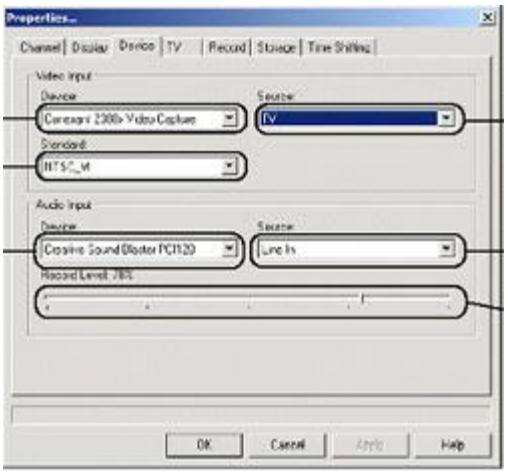
- Ensure correct country is selected (i.e. USA)
- Also input should be set to antenna or cable depending on your setup.
  Note: digital cable not supported



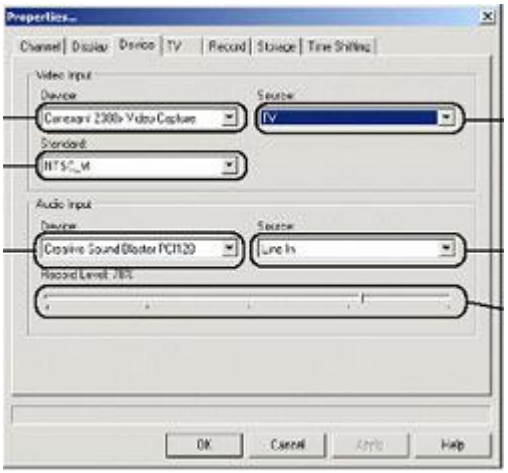
- Make sure sound and video output from source device are connected to composite Video In or S-Video In and Line In of TV card and sound card respectively



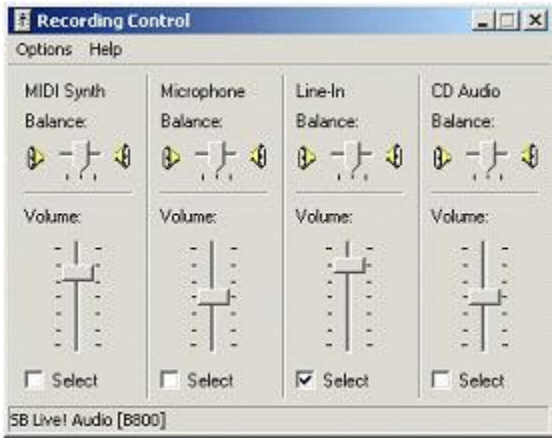
- Ensure source is set to composite or S-Video depending on input being used.
- Ensure cable is connected to Video Out on source
- Start source playing before activating PVS software.



- 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



- Make sure Line-In is selected in sound properties recording controls
- Make sure Line-In volume is not too low



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Answer: If this occurs, the 12V 4pin power connector (JPW1) needs to be connected to the mo

Answer: Yes you can, just make sure to enable the correct controller in the BIOS, under integr peripherals/onboard device/RAID config.

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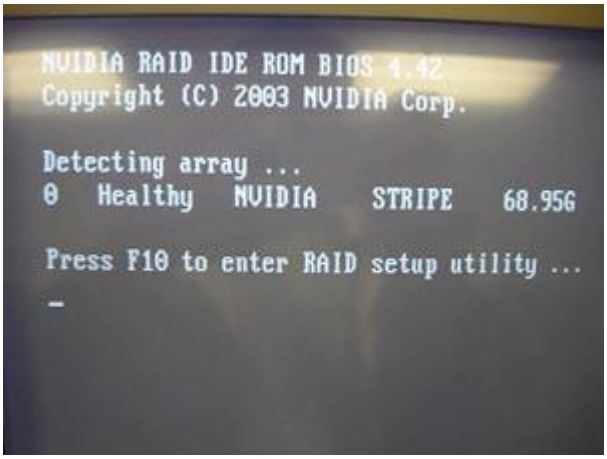
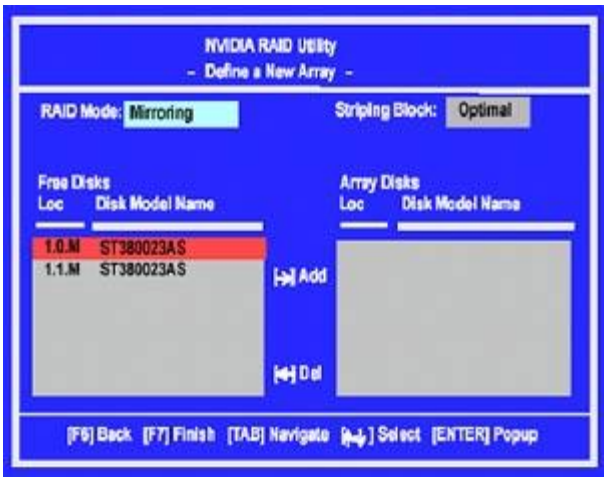
- First, you need to go into the motherboard bios, under integrated peripherals/onboard device/Raid config, and enable the IDE/SATA connection you are using in which you want to Raid, and then save and exit out of the bios.

- 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.
- Next push the tab key, and select the striping block size you want.
- Push the tab key again, and select the hard drives you want to include in the Raid array.
- Then push F7 to save and finish the Raid array.

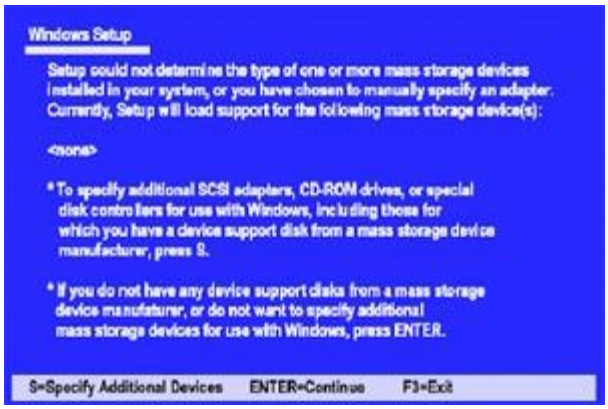


- Now push Ctrl-X to exit the Raid setup, after exiting the Raid setup, restart your system and go into the motherboard bios.

- 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.

•Right after booting off of the Windows cd, you need to push the F6 key when prompted

•Next when prompted 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, then push enter to continue.



•After this Windows 2000/XP will continue the installation, and will detect the Raid array to be installed onto.

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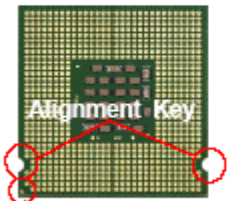
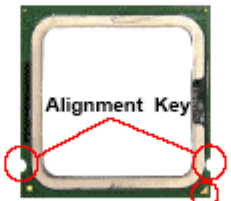
The pin-pad side of LGA 775 CPU.



Yellow triangle is the Pin 1 indicator

Step 1

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

Step 2

The unique MSI CPU easy CPU installation.

Step 3

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.

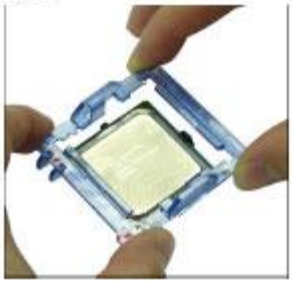
land side cover

Step 4

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 5

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 6

The land side cover now is removed.

Step 7

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 8

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

Step 9

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

Step 10

Lift the load lever up and open the load plate.

Step 11

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 12

Put the whole module onto the CPU socket.

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

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

Step 13

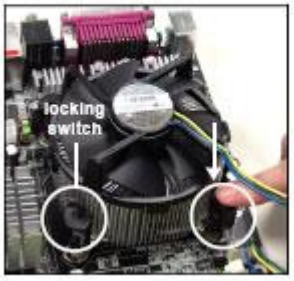
Press down the load lever lightly onto the load plate, and then secure the lever with the hook under retention tab.

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.