

Quick User's Guide

**nVidia GeForce 6100 mainboard
for AMD Socket 939 processor**

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HANDLING PROCEDURES:

Static electricity can severely damage your equipment. Handle the mainboard and any other device in your system with extreme care and avoid unnecessary contact with system components on the mainboard. Always work on an antistatic surface to avoid possible damage to the mainboard from static discharge. Always have the power supply unplugged and powered off when inserting and removing devices within the computer chassis. The Manufacturer assumes no responsibility for any damage to the mainboard that results from failure to follow instruction or failure to observe safety precautions.



CAUTION



The mainboard is subject to damage by static electricity. Always observe the handling procedures.

1. Specification

● Processor Support

- ◆ Support Socket-939 based AMD Sempron/Athlon-64/Athlon-64 FX/Athlon X2 2.0GTs Hyper Transport processors with up to 4800+

● Chipset

- ◆ nVidia GeForce 6100 Chipset (GeForce 6100 + nForce 410 colayout nForce 430)
- ◆ Integrate GeForce6-class Texture engine, Support Microsoft DirectX 9.0c, Shader Model 3.0 Graphics Processing Unit, 300MHz RAMDAC for display resolutions up to and including 1920 x 1440 at 75 Hz

● Main Memory

- ◆ Four 184-pin DDR SDRAM DIMM sockets
- ◆ Support 2.5v DDR-333/400 DIMMs with dual channel architecture
- ◆ Support single-sided or double-sided, non-ECC, DIMMs with 256Mb/512Mb devices
- ◆ Support up to 4GB memory size

● Expansion Slots

- ◆ Two PCI connectors compliant with PCI v2.3
- ◆ One PCI-E (x1) connectors compliant with PCI Express 1.0a
- ◆ One PCI-E (x16) connectors compliant with PCI Express 1.0a

● USB

- ◆ Eight USB connectors compliant with USB2.0 from embedded USB controller (4 connectors at rear panel)

● P-ATA IDE

- ◆ Two IDE interface (up to 4 IDE devices) with UDMA-33/66/100/133 support from embedded IDE controller

● S-ATA II RAID

- ◆ Two S-ATA II ports with up to 300MB/s bandwidth, support RAID 0, 1 from nForce 410 or Four S-ATA II ports with up to 300MB/s bandwidth, support RAID 0, 1, 0+1 from nForce 430 for optional

● LAN

- ◆ One 10/100 Ethernet from Realtek RTL8201 LAN PHY with nForce 410, or One Gb Ethernet from Vitesse VSC8201 LAN PHY with nForce 430 for optional

● I/O

- ◆ Fintek LPC IO controller with PS/2 keyboard&mouse, floppy, printer, serial and IrDA (v1.0 compliant)

- ◆ Support Hardware Monitoring for fan speed monitoring, CPU/System temperature
- ◆ Intelligent fan speed control for CPU-fan (PWM) for quiet operation

● **Audio**

- ◆ Onboard Realtek ALC-655 selectable 2 or 6-CH audio CODEC
 - AC'97 v2.3 compliant
 - Supports CD-In, Aux-In
 - Supports automatic “jack-sensing”
 - Rear panel audio jacks configuration:

Audio Jack Color	2 channel	6 channel
Light Blue	Line-in	Rear stereo-out
Lime	Line-out	Front stereo-out
Pink	Mic-in	Center&Subwoofer

● **BIOS**

- ◆ Flash EEPROM with Award Plug & Play BIOS
- ◆ Support ACPI S3 (Suspend To RAM) mode in ACPI compliant O/S
- ◆ Support **EZ Boot** for fast bootable device selection
- ◆ Support **Magic Health** for system hardware status report during system boot-up

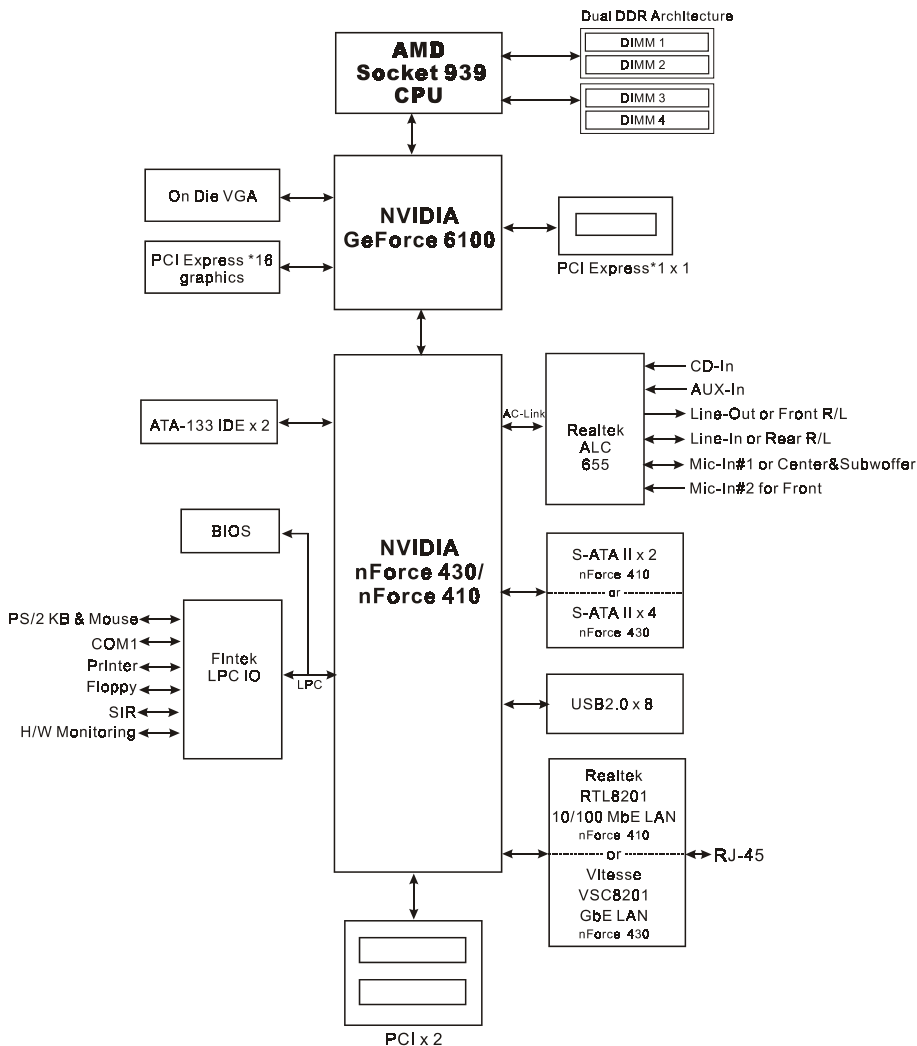
● **Special Features**

- ◆ Support KBPO function – Keyboard power on, turn on the computer from keyboard
- ◆ Support Wake-On-LAN by PME
- ◆ Support USB resume in S3
- ◆ Support Asynchronous clocking mode between FSB and PCI/PCI-E
- ◆ PowerBIOS for excellent overclocking features:
 - Programmable FSB and PCI Clock output frequency with 1MHz fine tuning
 - Support BIOS adjustable CPU multiplier, FSB clock, PCI-E x16 clock, DIMM frequency
 - Support BIOS adjustable CPU Core voltage, Chipset voltage, DIMM voltage settings

● **Form Factor**

- ◆ 245mm x 245mm Micro-ATX size

1.2 Block Diagram



2. Setting up the mainbaord

Before assembling the mainboard into the PC case we recommend you to do the following:

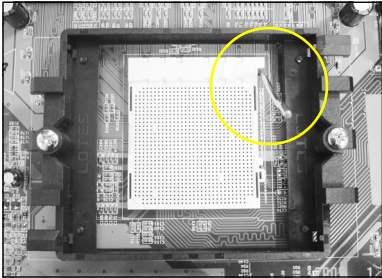
1. CPU Installation
2. DDR Memory Insertion

After the mainboard is fitted into the case, you may

3. Install Add-on VGA or PCI cards
4. Connect the internal cables and wires
5. Connect your external peripherals to the rear I/O port

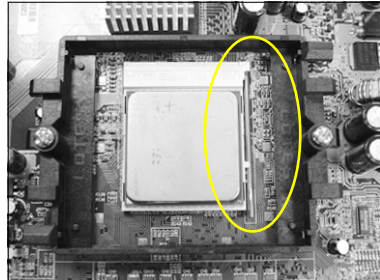
3. Installation

3.1 CPU Installation



Step 1

Open the socket by raising the actuation lever.

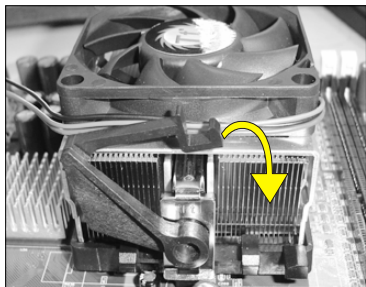


Step 2

- 1) Align pin 1 on the CPU with pin 1 on the CPU socket as shown above. Insert the CPU and make sure it is fully inserted into the socket.
- 2) Close the socket by lowering and locking the actuation lever.

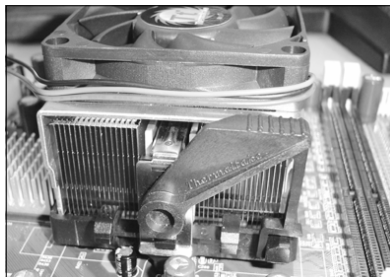


The CPU is keyed to prevent incorrect insertion, do not force the CPU into the socket. If it does not go in easily, check for mis-orientation.



Step 3

Insert the heatsink as shown above. Press the clips in the direction of the arrows shown above to secure the assembly to the CPU socket.



Step 4

Plug the CPU fan power into the motherboard's CPU fan connector. The installation is complete.



- Thermal compound and qualified heatsink recommended by AMD are a must to avoid CPU overheat damage.
- Apply heatsink thermal compound/paste to the CPU.

3.2 DDR Memory Insertion

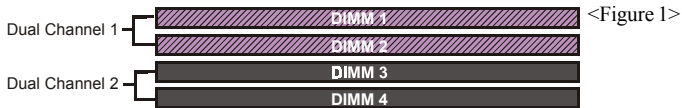
The mainboard accommodates four 184-pin DIMMs (Dual In-line Memory Modules):

- Supports up to 4.0GB of 333/400MHz DDR SDRAM.
- Supports DRAM configurations defined in the JEDEC DDR DIMM specification.

Dual Channel interface:

- Dual channel memory access offers increased system performance.
- For dual channel to operate, both channel must be populated with same amount of memory, preferably of the same type.
- The four DIMM sockets are divided into two colors to help you identify the channel pairs <Figure 1>. Each dual channel pair has the same color, e.g. DIMM1 and DIMM2.

To obtain best performance, simply mount DIMM sockets of the same color.



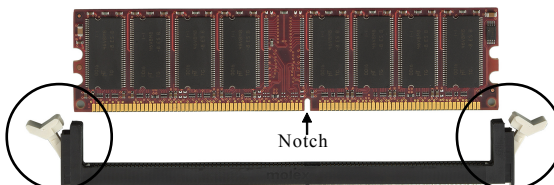
Memory configurations supported:

	1 DIMM (64-bit)		2 DIMM (64-bit)		2 DIMM (128-bit)		4 DIMM (128-bit)	
DIMM#1	SS/DS		SS/DS	SS/DS		SS/DS		SS/DS
DIMM#2					SS/DS			SS/DS
DIMM#3		SS/DS	SS/DS			SS/DS		SS/DS
DIMM#4						SS/DS		SS/DS

* SS: Single-Sided DIMM, DS: Double-Sided DIMM

Memory Installation :

- ① To install, align the notch on the DIMM module with the connector.
- ② Press straight down as shown in the figure until the white clips close and the module fits tightly into the DIMM socket.

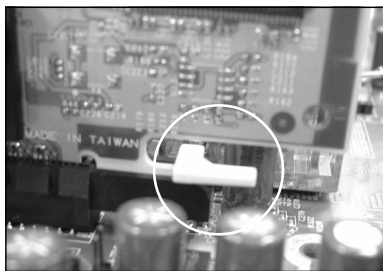


3.3 VGA and PCI card installation

This mainboard is equipped with on-chip graphics engine, you may connect a VGA monitor directly to its rear port. However, if you need to install VGA card follow the steps below.

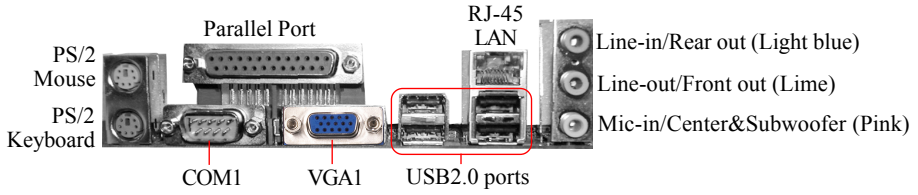
To install a VGA card into the VGA slot or a PCI expansion card:

1. Remove the bracket (on the PC case) for the slot you intend to use.
2. Firmly press down the card into the slot until it is completely seated. For an VGA card ensure the VGA slot clicker is locked as shown in the picture below.

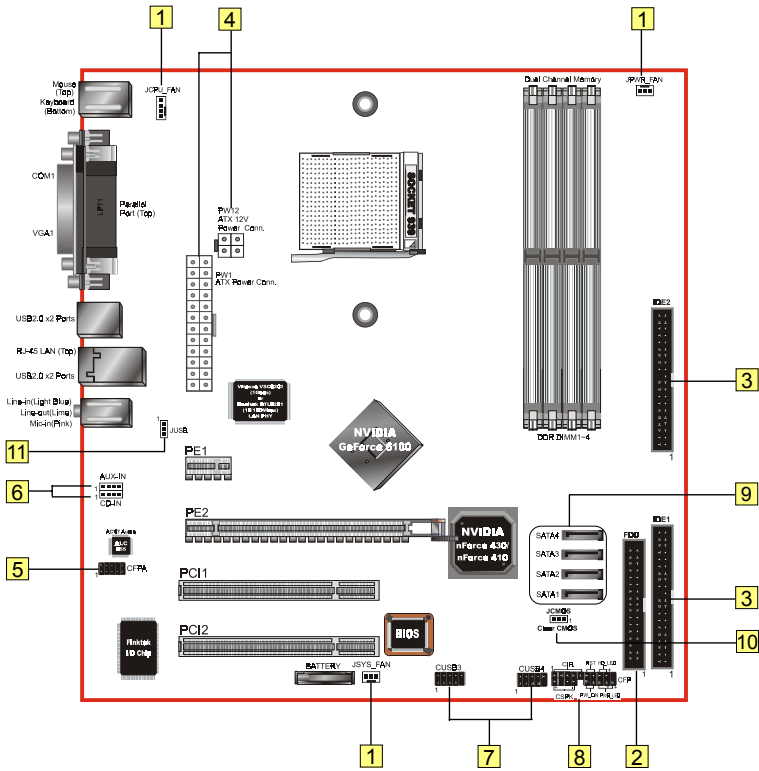


3. Secure the card's bracket to the PC case with a screw.

3.4 Rear IO Port

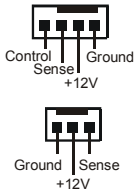


3.5 Internal Connectors



Connectors **Figure** **Descriptions**

- 1 JCPU_FAN
- JPWR_FAN
- JSYS_FAN



CPU / Power Fan Power Connectors

JCPU_FAN: Connect the CPU fan to this connector.

JPWR_FAN: Use this connector if you are installing an additional fan in the unit.

JSYS_FAN: The chassis fan will provide adequate airflow throughout the chassis to prevent overheating the CPU.

- 2 FDD



Floppy Drive Connector

- 3 IDE1
- Primary IDE
- IDE2
- Secondary IDE

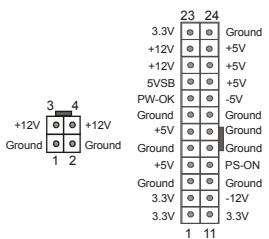


Primary/Secondary IDE Connector

Connects to the IDE device, i.e. HDD and CD-ROM device.

When using two IDE drives on the same connector, one must be set to Master mode and the other to Slave mode. Refer to your disk drive user's manual for details.

- 4 PW1
- PW12



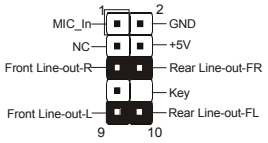
PW1: 24-pin ATX Power Connector

PW12: 4-pin ATX12V Power Connector

The plugs of the power cables are designed to fit in only one orientation.


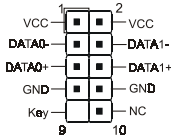
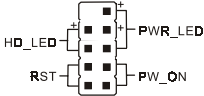


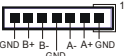

The PW1 and PW12 Power Connector must be used simultaneously.


- 5 CFPA



CFPA: Front Panel Audio Connector

This connector is used only if the speaker and microphone needs to be plugged at the front of the PC case. Otherwise, leave the jumpers at the default position.

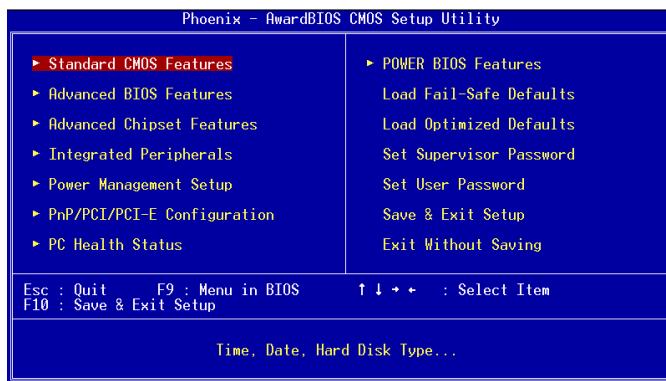
Connectors	Figure	Descriptions
6 CD-IN AUX-IN		CD-IN/AUX-IN: CD Audio-in connectors These connectors are used to receive audio from a CD-ROM drive, TV tuner or MPEG card.
7 CUSB3 CUSB4		CUSB3/CUSB4: Four USB2.0 header This mainboard includes 4 additional onboard USB ports. To use these additional USB ports, a USB bracket is required. Please contact your retailer for details.
8 CFP		CFP: Case Front Panel Connector <ul style="list-style-type: none"> ◆ HD_LED This LED indicates hard drive activity. ◆ PWR_LED Connects to the power indicator on the PC case. ◆ RST Connects to the RESET switch on the PC case. ◆ PW_ON Connects to the Power button on the PC case, to turn on the system. To turn off the system, press the power button for 4 seconds.
CIR		CIR: IR connector For connection to an IrDA receiver unit.
CSPK		CSPK: Speaker Connects to the case's speaker for PC beeps.
9 SATA1~SATA4 or SATA1~SATA2		SATA1 ~ SATA4: Four Serial ATA II Connectors from nForce 430, or SATA1 ~ SATA2: Two Serial ATA II Connectors from nForce 410 These connectors enable you to connect Serial ATA HDDs or optical drives type.
10 JCMOS	 Settings: 1-2: Normal (Default) 2-3: Clear CMOS	JCMOS: Clear CMOS data Jumper This resets the BIOS CMOS data back to the factory default values. Recommend to leave at Normal (default) position.

Connectors	Figure	Descriptions
11 JUSB	 <p>Settings: 1-2: Enabled 2-3: Disabled</p>	<p>JUSB: USB S3 Wake up Jumper</p> <p>This jumper disconnects 5V standby voltage to USB devices. This means USB devices will not be able to wake-up the system from S3 (Suspend to RAM) power saving mode.</p>

4. BIOS

BIOS Setup

When you start up the computer for the first time you need to enter the BIOS CMOS Setup Utility. Power on the computer and press key during POST (Power On Self Test). The BIOS CMOS SETUP UTILITY opens as shown below:



< CMOS Setup Utility>

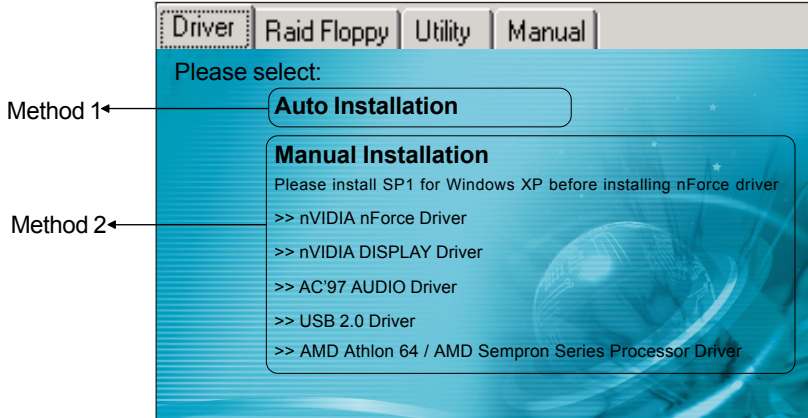
Select and enter "Load Optimized Defaults" page. This page loads the factory settings for optimal system performance. Follow the simple on-screen instructions to complete this procedure. Press "ESC" to exit and select "Save & Exit Setup" to continue to boot.



For more information regarding BIOS settings refer to the complete manual in the bundled CD.

5. Driver Installation

Once the operating system has been installed, you need to install the drivers for the mainboard.



Insert the bundled CD into the CD-ROM and the main menu screen will appear. The main menu displays links to the supported drivers, utilities and software.

► **Method 1**

This item installs all drivers automatically.

► **Method 2**

This item allows you to install the drivers selectively.

Step 1 : Click “**nVIDIA nForce Driver**” to install chipset driver.

Step 2 : Click “**nVIDIA DISPLAY Driver**” to install onboard graphics driver.

Step 3 : Click “**AC'97 AUDIO Driver**” to install audio driver.

Step 4 : Click “**USB V2.0 Driver**” to install USB 2.0 driver.

Step 5 : Click “**AMD Athlon 64 / AMD Sempron Series Processor Driver**” to install AMD series processor driver.

6. Flashing the BIOS



Do NOT flash the system BIOS unless it is really necessary.

Updating and flashing the BIOS content risks BIOS data corruption which may cause system unable to power-on.

Download the xxxxx.EXE file corresponding to your model from our website to an empty directory on your hard disk or floppy. Run the downloaded xxxxx.EXE file and it will self extract. Copy these extracted files to a bootable floppy disk.

Note: The floppy disk should contain NO device drivers or other programs.

1. Type "A:\AWDFLASH and press <Enter> Key.
2. You will see the following setup screen.
3. Please key in the xxxxx.bin BIOS file name.
4. If you want to save the previous BIOS data to the diskette, please key in [Y], otherwise please key in [N].

```
(C)Award FLASH MEMORY WRITER V7.88
Software 2000 All Rights Reserved

ForXXXX -H83627-6A69LPA9C-0 DATE: 05/11/2000
Flash Type - XXXXX E82B02AB /3.3V
File Name to Program : _____

Error Message:
```

```
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ForXXXX -H83627-6A69LPA9C-0 DATE: 05/11/2000
Flash Type - XXXXX E82B02AB /3.3V
File Name to Program : xxxxx.bin

Error Message: Do You Want To Save Bios (Y/N)
```

5. Key in File Name to save previous BIOS to file.
6. To confirm and proceed, please key in [Y] to start the programming.

```
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Software 2000 All Rights Reserved

ForXXXX -H83627-6A69LPA9C-0 DATE: 05/11/2000
Flash Type - XXXXX E82B02AB /3.3V
File Name to Program : xxxxx.bin
File Name to Save : xxxxx.bin

Error Message:
```

```
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ForXXXX -H83627-6A69LPA9C-0 DATE: 05/11/2000
Flash Type - XXXXX E82B02AB /3.3V
File Name to Program : xxxxx.bin
Checksum : 9384H
File Name to Save : xxxxx.bin

Error Message: Are you sure to program (y/n)
```

7. The BIOS update is finished.
8. Keep this BIOS floppy disk for future use.

```
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Software 2000 All Rights Reserved

ForXXXX -H83627-6A69LPA9C-0 DATE: 05/11/2000
Flash Type - XXXXX E82B02AB /3.3V
File Name to Program : xxxxx.bin
Checksum : 4B04H
Verifying Flash Memory 7FE00 OK

Write OK No Update Write Fail
F1: Reset F10: Exit
```

