User Guide

# XFX Motherboard Series

with Integrated Graphics

**nForce 630i with Geforce 7150**
**nForce 630i with Geforce 7100**
**nForce 610i with Geforce 7050**

# Before You Begin...

## Inside the 630i/610i Installation CD

The following tools and drivers are in the 630i/610i Installation CD:

❑ Motherboard Drivers for:

➢ Windows XP

➢ Windows XP 64-bit

➢ Windows Vista

➢ Windows Vista 64-bit

❑ Onboard Audio Drivers

❑ Windows XP

❑ Windows XP 64-bit

❑ Windows Vista

❑ Windows Vista 64-bit

❑ Adobe Acrobat Reader 8.0

❑ Raid Setup Floppy Disk Creator

❑ Motherboard Manual NVIDIA Software

➢ NVIDIA MediaShield Storage

➢ NVIDIA System Monitor

# Parts NOT in the Kit

This kit contains all the hardware necessary to install and connect your new XFX nForce® 630i/610i motherboard. However, it does not contain the following items that must be purchased separately to make the motherboard functional.

- ❑ **Intel microprocessor**:
  Intel Wolfdale, Intel Core 2 Extreme, Intel Core 2 Quad, Intel Core 2 Duo Pentium EE, Pentium D, Pentium
- ❑ Cooling fan for the microprocessor
- ❑ **System memory support**:
  Supports dual channel DDR2 800/1066/1333 MHz (for 630i only)

  Supports dual channel DDR2 800/1066 MHz (for 610i only)
- ❑ **Graphics Card**
  This motherboard supports one x16 PCI Express slot.
- ❑ **Power Supply**
  The power supply requirement is dependent upon the power and the of the graphics card you install. As a rule, for one graphic card you need a minimum of a 350 W power supply.

These instructions tell you how to install each of the parts listed so you can have a functioning motherboard. As you go through the installation instructions, we are assuming you have purchased the necessary parts.

# Intentions of the Kit

This kit provides you with the motherboard and all connecting cables necessary to install the motherboard into a PC cabinet. If you are *building* a PC, you will use most of the cables provided in the kit. If however, you are *replacing* a motherboard, you will not need many of the cables.

When *replacing* a motherboard in a PC cabinet, you will need to reinstall an operating system even though the current drives have an operating system.

# XFX nForce 630i/610i Motherboard

Thank you for buying the XFX NFORCE 630i/610i Motherboard. This motherboard offers the tools and performance PC users' demand.

## Motherboard Specifications

- ❑ **Processor Support**
  - ➢ Intel® Wolfdale, Yorkfield, Core2 Quad, Core2 Duo, Pentium Dual Core, Pentium & Celeron in the socket 775 package
- ❑ **Supported FSB**
  - ➢ 533/ 800/ 1066/ 1333 MHz (for 630i only)
  - ➢ 533/ 800/ 1066 MHz (for 610i only)
- ❑ **Chipset**
  - ➢ nVidia® 630i chipset (for 630i only)
  - ➢ nVidia® 610i chipset (for 610i only)
- ❑ **Memory Support**
  - ➢ DDR2 533/667/800 SDRAM (240pin/ non-ECC for 630i only)
  - ➢ DDR2 533/667SDRAM (240pin/ non-ECC for 610i only)
  - ➢ Two DDR2 DIMMs (4GB Max)
- ❑ **LAN**
  - ➢ Supports Giga LAN 10/100/1000 Fast Ethernet by Realtek RTL 8211BL (for 630i only)
  - ➢ Supports Giga LAN 10/100 Fast Ethernet by Realtek RTL 8201BL (for 610i only)
- ❑ **Audio**
  - ➢ Controlled by Realtek ALC888S
  - ➢ Supports 7.1 channels audio out

- ➢ Compliant with Azalia Spec
- ❑ **IDE**
  - ➢ One IDE port
  - ➢ Supports Ultra DMA 66/100/133, PIO & Bus Master operation mode
- ❑ **SATA**
  - ➢ Four SATA ports support 4 SATA devices
  - ➢ Supports storage and data transfers at up to 300 MB/s
- ❑ **RAID**
  - ➢ SATA1~4 support RAID 0/ 1/ 0+1 or5 mode (for 630i only)
  - ➢ SATA1~4 support RAID 0/ RAID 1 mode (for 610i only)
- ❑ **Floppy**
  - ➢ One floppy port
  - ➢ Supports one FDD with 360KB, 720KB, 1.2MB, 1.44MB and 2.88MB
- ❑ **Connectors Back panel**
  - ➢ One PS/2 mouse port
  - ➢ One PS/2 keyboard port
  - ➢ One Serial port (for 630i only)
  - ➢ One VGA port
  - ➢ One HDMI port (for 630i only)
  - ➢ Four USB 2.0 Ports
  - ➢ One LAN jack
  - ➢ Six audio jacks
- ❑ **On-Board Pin headers**
  - ➢ Three USB 2.0 pin headers (for 630i only)
  - ➢ Two USB 2.0 pin headers (for 610i only)
  - ➢ One Serial port pin header
  - ➢ One SPDIF-Out pin header
  - ➢ One Front Panel Audio pin header
- ❑ **Slots**
  - ➢ One PCI Express x 16 slot

- ➢ One PCI Express x 1 slot
- ➢ Two PCI slots, support 3.3V/ 5V PCI bus Interface
- ❑ **Form Factor**
  - ➢ Micro-ATX (24.4 cm X 24.4 cm)
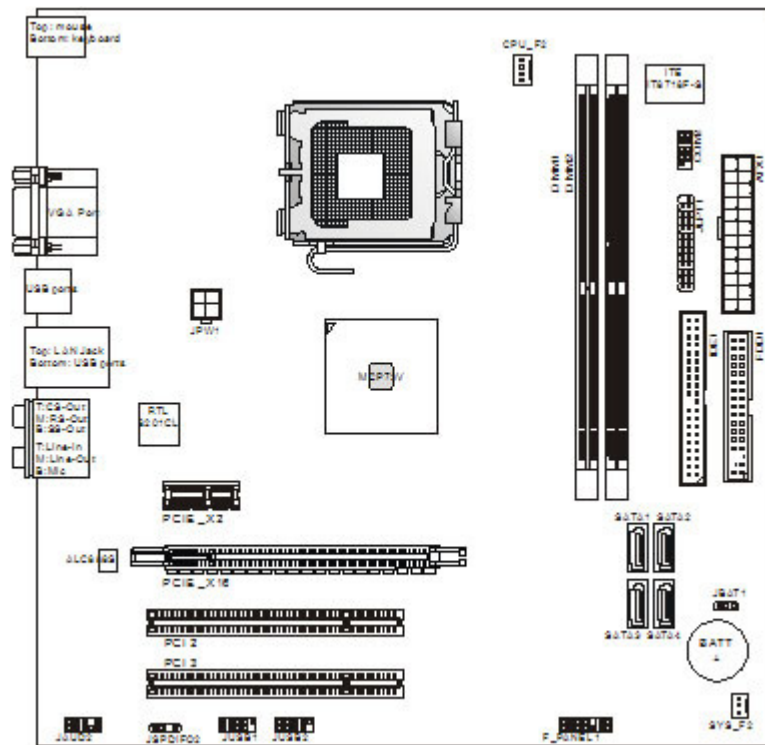- ❑ **Mounting**
  - ➢ Eight mounting holes

## Motherboard Layout
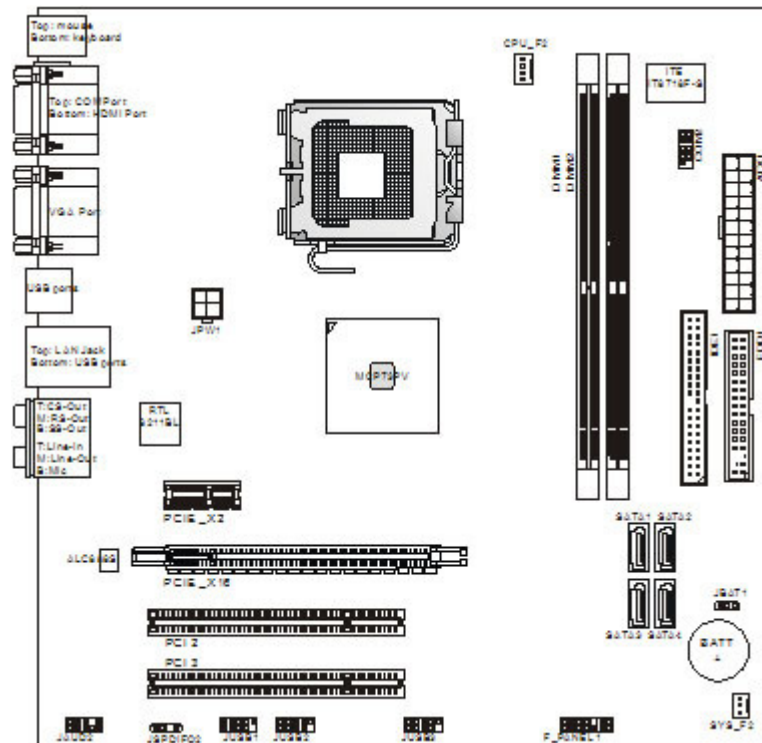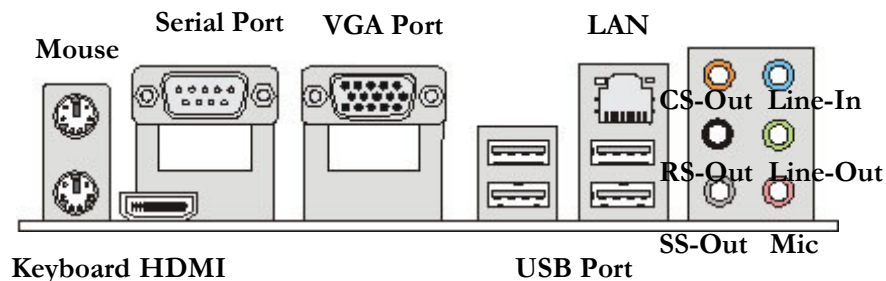


**nForce 630i with Geforce 7150**

**nForce 630i with Geforce 7100**
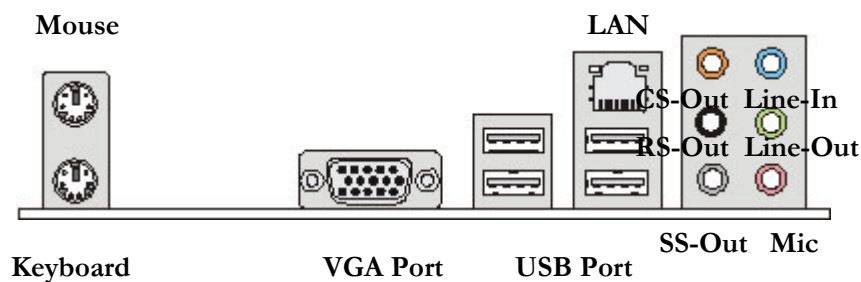
**Micro-ATX Mainboard**

**nForce 610i with Geforce 7050**

**Micro-ATX Mainboard**

# Rear Panel

Serial Port · VGA Port · LAN · Mouse · CS-Out · Line-In · RS-Out · Line-Out · SS-Out · Mic · Keyboard HDMI · USB Port

**For nForce 630i with Geforce 7150**

**For nForce 630i with Geforce 7100**

Mouse · LAN · CS-Out · Line-In · RS-Out · Line-Out · SS-Out · Mic · Keyboard · VGA Port · USB Port

**For nForce 610i with Geforce 7050**

❑ **Mouse/Keyboard Connector**

➢ The standard PS/2® mouse/keyboard DIN connector is for a PS/2® mouse/keyboard.

❑ **Serial Port (630i only)**

➢ The serial port is a 16550A high speed communications port that sends/ receives 16 bytes FIFOs. You can attach a serial mouse or other serial devices directly to the connector.

❑ **VGA Port**

➢ The DB15-pin female connector is provided for monitor.

❑ **HDMI Port (630i only)**

➢ The High-Definition Multimedia Interface (HDMI) is an all-digital audio/video interface capable of transmitting uncompressed streams. HDMI supports all TV format, including standard, enhanced, or high-definition video, plus multi-channel digital audio on a single cable.

❑ **LAN (RJ-45) Jack**

The standard RJ-45 jack is for connection to single Local Area Network (LAN). You can connect a network cable to it.

❑ **USB Port**

The USB (Universal Serial Bus) port is for attaching USB devices such as keyboard, mouse, or other USB-compatible devices.

❑ **Audio Ports**

These audio connectors are used for audio devices. You can differentiate the color of the audio jacks for different audio sound effects.

➢ **CS-Out (Orange)** - Center/ Subwoofer Out in 5.1/ 7.1 channel mode.

➢ **RS-Out (Black)** - Rear-Surround Out in 4/ 5.1/ 7.1 channel mode.

➢ **SS-Out (Gray)** - Side-Surround Out 7.1 channel mode.

➢ **Line-In (Blue)** - Line In, is used for external CD player, tape player or other audio devices.

➢ **Line-Out (Green)** - Line Out, is a connector for speakers or headphones.

➢ **Mic (Pink)** - Mic, is a connector for microphones.

# Hardware Installation

This section will guide you through the installation of the motherboard. The topics covered in this section are:

- ❑ Preparing the motherboard
  - ➢ Installing the CPU
  - ➢ Installing the CPU fan
  - ➢ Installing the memory
- ❑ Installing the motherboard
- ❑ Connecting cables and setting switches

## Safety Instructions

**To reduce the risk of fire, electric shock, and injury, always follow basic safety precautions.**

**Remember to remove power from your computer by disconnecting the AC main source before removing or installing any equipment from/to the computer chassis.**

# Preparing the Motherboard

The motherboard shipped in the box does **not** contain a CPU or memory. You need to purchase these to complete this installation.

## Installing the CPU

Be very careful when handling the CPU. Make sure not to bend or break any pins on the back. Hold the processor only by the edges and do not touch the bottom of the processor.



Use the following procedure to install the CPU onto the motherboard.

1. Unhook the socket lever by pushing *down* and *away* from the socket.

2. Lift the load plate. There is a protective socket cover on the load plate to protect the socket when there is no CPU installed.

3. Remove the protective socket cover from the load plate.

4. Remove the processor from its protective cover, making sure you hold it only by the edges.
   It is a good idea to save the cover so that whenever you remove the CPU, you have a safe place to store it.



5. Align the notches in the processor with the notches on the socket.

6. Lower the processor straight down into the socket with out tilting or sliding it into the socket
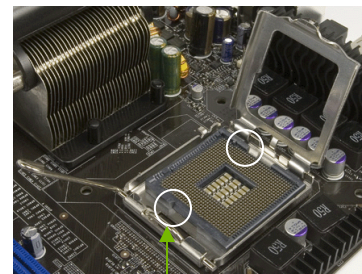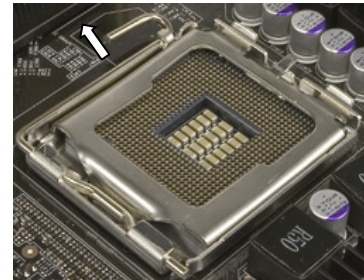
Align notches with notches on the CPU

> **Note:** Make sure the CPU is fully seated and level in the socket.

7. Close the load plate over the CPU and press down while you close and engage the socket lever.

# Installing the CPU Fan

There are many different fan types that can be used with this motherboard. Follow the instruction that came with you fan assembly. Be sure that the fan orientation is correct for your chassis type and your fan assembly.

# Installing Memory DIMMs

Your new motherboard has two 1.8V 240-pin slots for DDR2 memory. These slots support 256 MB, 512 MB 1 GB and 2 GB DDR2 technologies. They also support dual channel DDR2 memory technology up to 10.7GB/s. There must be at least one memory bank populated to ensure normal operation. Use the following the recommendations for installing memory.

❑ **One DIMM**:  Install into slot 1. You can install the DIMM into any slot, however, slot 1 is preferred.

❑ **Two DIMMs**:  Install into slots 1 and 2.

CPU side

DIMM Slot 1
DIMM Slot 2

Card-edge
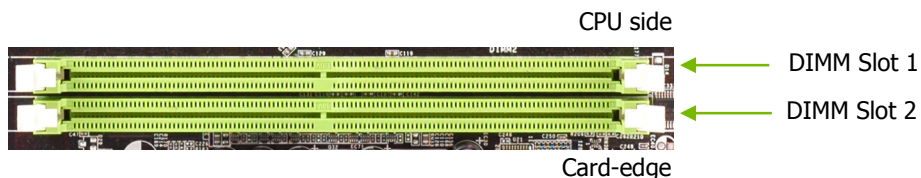
Use the following procedure to install memory DIMMs. Note that there is only one gap near the center of the DIMM slot. This slot matches the slot on the memory DIMM to ensure the component is installed properly.

1. Unlock a DIMM slot by pressing the module clips outward.

2. Align the memory module to the DIMM slot, and insert the module vertically into the DIMM slot. The plastic clips at both sides of the DIMM slot automatically lock the DIMM into the connector.

# Installing the Motherboard

The sequence of installing the motherboard into the chassis depends on the chassis you are using and if you are replacing an existing motherboard or working with an empty chassis. Determine if it would be easier to make all the connections prior to this step or to secure the motherboard and then make all the connections. It is normally easier to secure the motherboard first.

Use the following procedure to install the I/O shield and secure the motherboard into the chassis.

**Note:** Be sure that the CPU fan assembly has enough clearance for the chassis covers to lock into place and for the expansion cards. Also make sure the CPU Fan assembly is aligned with the vents on the covers.

## Installing the I/O Shield

The motherboard kit comes with an I/O shield that is used to block radio frequency transmissions, protects internal components from dust and foreign objects, and promotes correct airflow within the chassis.

Before installing the motherboard, install the I/O shield from the *inside* of the chassis. Press the I/O shield into place and make sure it

fits securely.  If the I/O shield does not fit into the chassis, you would need to obtain the proper size from the chassis supplier.

## Securing the Motherboard into the Chassis

Most computer chassis have a base with mounting studs or spacers to allow the mother board to be secured to the chassis and help to prevent short circuits. If there are studs that do not align with a mounting hole on the motherboard, it is recommended that you remove that stud to prevent the possibility of a short circuit. In most cases, it is recommended to secure the motherboard using a minimum of nine (9) spacers.

1. Carefully place the motherboard onto the studs/spacers located inside the chassis.
2. Align the mounting holes with the studs/spacers.
3. Align the connectors to the I/O shield.
4. Ensure that the fan assembly is aligned with the chassis vents according to the fan assembly instruction.
5. Secure the motherboard with a minimum of eight-to-ten screws.
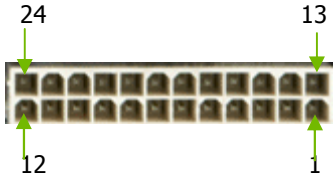
# Connecting Cables and Setting Switches

This section takes you through all the connections and switch settings necessary on the motherboard. This will include:

❑ Power Connections
  ➢ 24-pin ATX power
  ➢ 4-pin ATX 12V power
❑ Internal Headers
  ➢ Front panel
  ➢ IEEE 1394a
  ➢ USB Headers
  ➢ Audio
  ➢ Speaker
  ➢ COM
❑ FDD
❑ IDE
❑ Serial ATA II
❑ Chassis Fans
❑ Rear panel USB 2.0 Adapter
❑ Expansion slots
❑ CMOS jumper settings
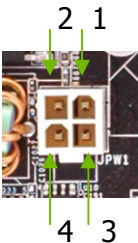❑ Power Connections

## ATX 24-Pin Power Connector: ATX1

This connector allows you to connect an ATX 24-pin power supply. To connect the ATX 24-pin power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are

aligned. Then push down the power supply firmly into the connector. You may use the 20-pin ATX power supply as you like. If you'd like to use the 20-pin ATX power supply, please plug your power supply along with pin 1 & pin 13 (refer to the image at the right hand). There is also a foolproof design on pin 11, 12, 23 & 24 to avoid wrong installation.

| Connector | Pin | Signal | Pin | Signal |
|-----------|-----|--------|-----|--------|
|  | 1 | +3.3V | 13 | +3.3V |
|  | 2 | +3.3V | 14 | -12V |
|  | 3 | GND | 15 | GND |
|  | 4 | +5V | 16 | PS_ON |
|  | 5 | GND | 17 | GND |
|  | 6 | +5V | 18 | GND |
|  | 7 | GND | 19 | GND |
|  | 8 | PWROK | 20 | RSVD |
|  | 9 | +5V_AUX | 21 | +5V |
|  | 10 | +12V | 22 | +5V |
|  | 11 | +12V | 23 | +5V |
|  | 12 | +3.3V | 24 | GND |

## ATX 12V Power Connector: JPW1

This 12V power connector JPW1 is used to provide power to the CPU.

1. Maker sure that all the connectors are connected to proper ATX power supplies to ensure stable operation of the mainboard.

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2. Power supply of 350 watts (and above) is highly recommended for system stability.

# Connecting IDE Hard Disk Drives

The IDE connector supports Ultra ATA 133/100/66 IDE hard disk drives.

1. Connect the blue connector (the cable end with a single connector) to the motherboard.

2. Connect the black connector (the cable with the two closely spaced black and gray connectors) to the Ultra ATA master device.

3. Connect the gray connector to a slave device.

If you install two hard disk drives, you must configure the second drive as a slave device by setting its jumper accordingly. Refer to the hard disk documentation for the jumper settings.

**Note:** If an ATA-66/100 disk drive and a disk drive using any other IDE transfer protocol are attached to the same cable, the maximum transfer rate between the drives may be reduced to that of the slowest drive.

# Connecting Serial ATA Cables

This connector is a high-speed Serial ATA interface port. Each connector can connect to one Serial ATA device.
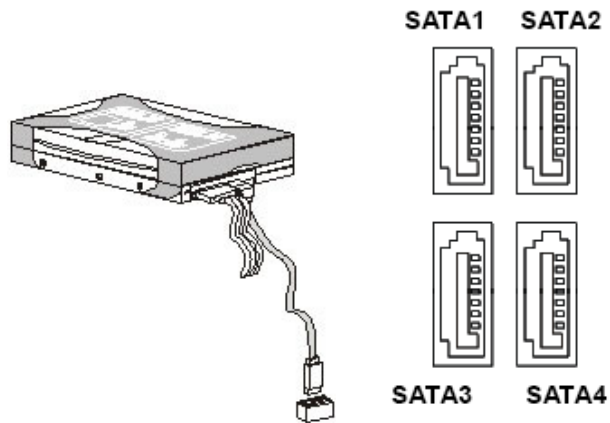
# Connecting Internal Headers

## Front Panel Header

These connectors are for electrical connection to the front panel switches and LEDs.

| Front Panel Header Pins | | | |
|---|---|---|---|
|  | **Label** | **Pin** | **Description** |
| | HD_LED | 1 | Hard disk activity LED |
| | | 3 | |
| | PWRLED | 2 | Front Panel Power LED |
| | | 4 | |
| | RESET | 5 | Reset Switch |
| | | 7 | |
| | PWRSW | 6 | Power Switch |
| | | 8 | |
| | No Connection | 9 | |
| | Empty | 10 | |

# Audio

## Front USB Connector: JUSB1 / JUSB2 / JUSB3

This connector, compliant with Intel® I/O Connectivity Design Guide, is ideal for connecting high-speed USB interface peripherals such as **USB HDD**, **digital cameras**,

| USB Header | | | | |
|---|---|---|---|---|
| | **Pin** | **Signal** | **Pin** | **Signal** |
| | 1 | 5V_DUAL | 2 | 5V-DUAL |
| | 3 | D 0- | 4 | D 1- |
| | 5 | D 0+ | 6 | D 1+ |
| | 7 | GND | 8 | GND |
| | 9 | No connect | 10 | Empty |

## Front Panel Audio Connector: JAUD2

This connector allows you to connect the front panel audio and is compliant with Intel® Front Panel I/O Connectivity Design Guide.
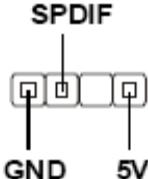
# S/PDIF-Out Connector: JSPDIFO2

This connector is used to connect S/PDIF (Sony & Philips Digital Interconnect Format) interface for digital audio transmission.

| Front Panel Audio Connector | | | | |
|---|---|---|---|---|
| AC'97 Audio Pin Definition | | | HD Audio Pin Definition | |
| Pin | Signal | Description | Signal | Description |
| 1 | MIC | Microphone input signal | MIC_L | Microphone - Left channel |
| 2 | GND | Ground | GND | Ground |
| 3 | MIC_PWR | Microphone power | MIC_R | Microphone - Right channel |
| 4 | NC | Not Used | PRESENCE# | Active low signal-signals BIOS that a High Definition Audio dongle is connected to the analog header. PRESENCE# = 0 when a High Definition Audio dongle is connected |
| 5 | LINE out_R | Right channel audio signal to front panel | LINE out_R | Analog Port - Right channel |
| 6 | NC | Not Used | MIC_JD | Jack detection return from front panel microphone JACK1 |
| 7 | NC | Not Used | Front_JD | Jack detection sense line from the High Definition Audio CODEC jack detection resistor network |
| 8 | Key | Empty | NC | No control |
| 9 | LINE out_L | Left channel audio signal to front panel | LINE out_L | Analog Port - Left channel |
| 10 | NC | Not Used | LINEout_JD | Jack detection return from front panel JACK2 |

**SPDIF Connector**

SPDIF

GND    5V

| Pin | Signal |
|-----|--------|
| 1 | +5V |
| 2 | Empty |
| 3 | Audio Out |
| 4 | Ground |

# Fan Connections
## Fan Power Connectors: CPU_F2, SYS_F2
The fan power connectors support system cooling fan with +12V. When connecting the wire to the connectors, always note that the red wire is the positive and should be connected to the +12V; the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.

Control
SENSOR
+12V
GND

CPU_F2

SENSOR
+12V
GND

SYS_F2
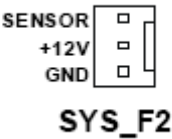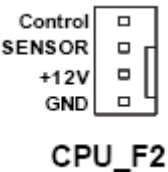
# COM1

The motherboard kit provides an additional serial COM header for your machine. Connect one side of a switching cable to the header and then attach the serial COM device to the other side of the cable.

# FDD Connector

The motherboard supports a standard 360K, 720K, 1.2M, 1.44m, and a 2.88M floppy disk drive (FDD).

# Expansion Slots

The XFX nForce 780i SLI motherboard contains six expansion slots, four PCI Express slots and two PCI slots. For a full list of PCI Express x16 graphics card supported by this motherboard, go to www.xfxforce.com.

## PCI Slots

The two PCI slots support many expansion cards such as a LAN card, USB card, SCSI card and other cards that comply with PCI specifications. When installing a card into the PCI slot, be sure that it is fully seated. Secure the card's metal bracket to the chassis back panel with the screw used to hold the blank cover.


32-bit PCI Slot

## PCI Express x1 Slot

There is one PCI Express x1 slot that is designed to accommodate less bandwidth-intensive cards, such as a modem or LAN card. The x1 slot provides 250 MB/sec bandwidth.

PCI Express x1 Slot

## PCI Express x16 Slots

There is one PCI Express x16 slot reserved for graphics or video cards. The bandwidth of the x16 slot is up to 4GB/sec (8GB/sec concurrent). The design of this motherboard supports one PCI-Express graphics cards using NVIDIA's SLI technology with multiple displays.

When installing a PCI Express x16 card, be sure the retention clip snaps and locks the card into place. If the card is not seated properly, it could cause a short across the pins. Secure the card's metal bracket to the chassis back panel with the screw used to hold the blank cover.


PCI Express x16 Slot

# Jumper Settings

The motherboard contains a 3-pin BIOS configuration jumper that enables all board configurations to be done in the BIOS Setup program.

## Clear CMOS Jumper: JBAT1

The motherboard uses the CMOS RAM to store all the set parameters. The CMOS can be cleared by removing the CMOS jumper.

Use the following procedure to clear CMOS:

1. Turn off the AC power supply and connect pins 2 and 3 together using the jumper cap. It normally takes about 1 to 2 minute for the CMOS to clear.

2. Return the jumper setting to normal (pins 1 and 2 together with the jumper cap).

3. Turn the AC power supply back on.