MSI

MICRO-STAR INTERNATIONAL

Fuzzy LX800 / LX800D Series

MS-9801 (V1.X) Mainboard

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Revision History

Revision	Revision History	Date
V1.0	First release	June 2007

Technical Support

If a problem arises with your system and no solution can be obtained from the user's manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance.

- Visit the MSI website for FAQ, technical guide, BIOS updates, driver updates, and other information: *http://global.msi.com.tw/index.php?func=faqIndex*
- Contact our technical staff at: *http://support.msi.com.tw/*

Safety Instructions

1. Always read the safety instructions carefully.

2. Keep this User's Manual for future reference.

3. Keep this equipment away from humidity.

4. Lay this equipment on a reliable flat surface before setting it up.

5. The openings on the enclosure are for air convection hence protects the equipment from overheating. DO NOT COVER THE OPENINGS.

6. Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.

7. Place the power cord such a way that people can not step on it. Do not place anything over the power cord.

8. Always Unplug the Power Cord before inserting any add-on card or module.

9. All cautions and warnings on the equipment should be noted.

10. Never pour any liquid into the opening that could damage or cause electrical shock.

11. If any of the following situations arises, get the equipment checked by service personnel:
    † The power cord or plug is damaged.
    † Liquid has penetrated into the equipment.
    † The equipment has been exposed to moisture.
    † The equipment does not work well or you can not get it work according to User's Manual.
    † The equipment has dropped and damaged.
    † The equipment has obvious sign of breakage.

12. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60^0 C (140^0F), IT MAY DAMAGE THE EQUIPMENT.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

警告使用者:
這是甲類的資訊產品,在居住的環境中使用時,可能會造成無線電干擾,
在這種情況下,使用者會被要求採取某些適當的對策。

廢電池請回收

For better environmental protection, waste batteries should be collected separately for recycling or special disposal.

FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the measures listed below.

   † Reorient or relocate the receiving antenna.

   † Increase the separation between the equipment and receiver.

   † Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

   † Consult the dealer or an experienced radio/television technician for help.

Notice 1
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2
Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.

FC **Micro-Star International**
MS-9801

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

iv

WEEE (Waste Electrical and Electronic Equipment) Statement

ENGLISH

To protect the global environment and as an environmentalist, MSI must remind you that...

Under the European Union ("EU") Directive on Waste Electrical and Electronic Equipment, Directive 2002/96/EC, which takes effect on August 13, 2005, products of "electrical and electronic equipment" cannot be discarded as municipal waste anymore and manufacturers of covered electronic equipment will be obligated to take back such products at the end of their useful life. MSI will comply with the product take back requirements at the end of life of MSI-branded products that are sold into the EU. You can return these products to local collection points.

DEUTSCH

Hinweis von MSI zur Erhaltung und Schutz unserer Umwelt

Gemäß der Richtlinie 2002/96/EG über Elektro- und Elektronik-Altgeräte dürfen Elektro- und Elektronik-Altgeräte nicht mehr als kommunale Abfälle entsorgt werden. MSI hat europaweit verschiedene Sammel- und Recyclingunternehmen beauftragt, die in die Europäische Union in Verkehr gebrachten Produkte, am Ende seines Lebenszyklus zurückzunehmen. Bitte entsorgen Sie dieses Produkt zum gegebenen Zeitpunkt ausschliesslich an einer lokalen Altgerätesammelstelle in Ihrer Nähe.

FRANÇAIS

En tant qu'écologiste et afin de protéger l'environnement, MSI tient à rappeler ceci...

Au sujet de la directive européenne (EU) relative aux déchets des équipement électriques et électroniques, directive 2002/96/EC, prenant effet le 13 août 2005, que les produits électriques et électroniques ne peuvent être déposés dans les décharges ou tout simplement mis à la poubelle. Les fabricants de ces équipements seront obligés de récupérer certains produits en fin de vie. MSI prendra en compte cette exigence relative au retour des produits en fin de vie au sein de la communauté européenne. Par conséquent vous pouvez retourner localement ces matériels dans les points de collecte.

РУССКИЙ

Компания MSI предпринимает активные действия по защите окружающей среды, поэтому напоминаем вам, что...

В соответствии с директивой Европейского Союза (ЕС) по предотвращению загрязнения окружающей среды использованным электрическим и электронным оборудованием (директива WEEE 2002/96/EC), вступающей в силу 13 августа 2005 года, изделия, относящиеся к электрическому и электронному оборудованию, не могут рассматриваться как бытовой мусор, поэтому производители вышеперечисленного электронного оборудования обязаны принимать его для переработки по окончании срока службы. MSI обязуется соблюдать требования по приему продукции, проданной под маркой MSI на территории ЕС, в переработку по окончании срока службы. Вы можете вернуть эти изделия в специализированные пункты приема.

ESPAÑOL

MSI como empresa comprometida con la protección del medio ambiente, recomienda:

Bajo la directiva 2002/96/EC de la Unión Europea en materia de desechos y/o equipos electrónicos, con fecha de rigor desde el 13 de agosto de 2005, los productos clasificados como "eléctricos y equipos electrónicos" no pueden ser depositados en los contenedores habituales de su municipio, los fabricantes de equipos electrónicos, están obligados a hacerse cargo de dichos productos al termino de su periodo de vida. MSI estará comprometido con los términos de recogida de sus productos vendidos en la Unión Europea al final de su periodo de vida. Usted debe depositar estos productos en el punto limpio establecido por el ayuntamiento de su localidad o entregar a una empresa autorizada para la recogida de estos residuos.

NEDERLANDS

Om het milieu te beschermen, wil MSI u eraan herinneren dat....

De richtlijn van de Europese Unie (EU) met betrekking tot Vervuiling van Electrische en Electronische producten (2002/96/EC), die op 13 Augustus 2005 in zal gaan kunnen niet meer beschouwd worden als vervuiling.

Fabrikanten van dit soort producten worden verplicht om producten retour te nemen aan het eind van hun levenscyclus. MSI zal overeenkomstig de richtlijn handelen voor de producten die de merknaam MSI dragen en verkocht zijn in de EU. Deze goederen kunnen geretourneerd worden op lokale inzamelingspunten.

SRPSKI

Da bi zaštitili prirodnu sredinu, i kao preduzeće koje vodi računa o okolini i prirodnoj sredini, MSI mora da vas podesti da...

Po Direktivi Evropske unije ("EU") o odbačenoj elektronskoj i električnoj opremi, Direktiva 2002/96/EC, koja stupa na snagu od 13. Avgusta 2005, proizvodi koji spadaju pod "elektronsku i električnu opremu" ne mogu više biti odbačeni kao običan otpad i proizvođači ove opreme biće prinudeni da uzmu natrag ove proizvode na kraju njihovog uobičajenog veka trajanja. MSI će poštovati zahtev o preuzimanju ovakvih proizvoda kojima je istekao vek trajanja, koji imaju MSI oznaku i koji su prodati u EU. Ove proizvode možete vratiti na lokalnim mestima za prikupljanje.

POLSKI

Aby chronić nasze środowisko naturalne oraz jako firma dbająca o ekologię, MSI przypomina, że...

Zgodnie z Dyrektywą Unii Europejskiej ("UE") dotyczącą odpadów produktów elektrycznych i elektronicznych (Dyrektywa 2002/96/EC), która wchodzi w życie 13 sierpnia 2005. tzw. "produkty oraz wyposażenie elektryczne i elektroniczne " nie mogą być traktowane jako śmieci domowe, tak więc producenci tych produktów będą zobowiązani do odbierania ich w momencie gdy produkt jest wycofywany z użycia. MSI wypełni wymagania UE, przyjmując produkty (sprzedawane na terenie Unii Europejskiej) wycofywane z użycia. Produkty MSI będzie można zwracać w wyznaczonych punktach zbiorczych.

TÜRKÇE

Çevreci özelliğiyle bilinen MSI dünyada çevreyi korumak için hatırlatır:

Avrupa Birliği (AB) Kararnamesi Elektrik ve Elektronik Malzeme Atığı, 2002/96/EC Kararnamesi altında 13 Ağustos 2005 tarihinden itibaren geçerli olmak üzere, elektrikli ve elektronik malzemeler diğer atıklar gibi çöpe atılamayacak ve bu elektronik cihazların üreticileri, cihazların kullanım süreleri bittikten sonra ürünleri geri toplamakla yükümlü olacaktır. Avrupa Birliği'ne satılan MSI markalı ürünlerin kullanım süreleri bittiğinde MSI ürünlerin geri alınması isteği ile işbirliği içerisinde olacaktır. Ürünlerinizi yerel toplama noktalarına bırakabilirsiniz.

ČESKY

Záleží nám na ochraně životního prostředí - společnost MSI upozorňuje...

Podle směrnice Evropské unie ("EU") o likvidaci elektrických a elektronických výrobků 2002/96/EC platné od 13. srpna 2005 je zakázáno likvidovat "elektrické a elektronické výrobky" v běžném komunálním odpadu a výrobci elektronických výrobků, na které se tato směrnice vztahuje, budou povinni odebírat takové výrobky zpět po skončení jejich životnosti. Společnost MSI splní požadavky na odebírání výrobků značky MSI, prodávaných v zemích EU, po skončení jejich životnosti. Tyto výrobky můžete odevzdat v místních sběrnách.

MAGYAR

Annak érdekében, hogy környezetünket megvédjük, illetve környezetvédőként fellépve az MSI emlékezteti Önt, hogy ...

Az Európai Unió („EU") 2005. augusztus 13-án hatályba lépő, az elektromos és elektronikus berendezések hulladékairól szóló 2002/96/EK irányelve szerint az elektromos és elektronikus berendezések többé nem kezelhetőek lakossági hulladékként, és az ilyen elektronikus berendezések gyártói kötelessé válnak az ilyen termékek visszavételére azok hasznos élettartama végén. Az MSI betartja a termékvisszavétellel kapcsolatos követelményeket az MSI márkanév alatt az EU-n belül értékesített termékek esetében, azok élettartamának végén. Az ilyen termékeket a legközelebbi gyűjtőhelyre viheti.

ITALIANO

Per proteggere l'ambiente, MSI, da sempre amica della natura, ti ricorda che....

In base alla Direttiva dell'Unione Europea (EU) sullo Smaltimento dei Materiali Elettrici ed Elettronici, Direttiva 2002/96/EC in vigore dal 13 Agosto 2005, prodotti appartenenti alla categoria dei Materiali Elettrici ed Elettronici non possono più essere eliminati come rifiuti municipali: i produttori di detti materiali saranno obbligati a ritirare ogni prodotto alla fine del suo ciclo di vita. MSI si adeguerà a tale Direttiva ritirando tutti i prodotti marchiati MSI che sono stati venduti all'interno dell'Unione Europea alla fine del loro ciclo di vita. È possibile portare i prodotti nel più vicino punto di raccolta.

CONTENTS

Chapter 1
Getting Started

Thank you for choosing the Fuzzy LX800 / LX800D Series (MS-9801 v1.X) Mini ITX mainboard from MSI.

Based on the innovative **AMD® Geode CS5536** controllers for optimal system efficiency, the Fuzzy LX800 / LX800D Series accommodates **AMD® Geode LX700/LX800/LX900** processors and supports two 184-pin 333/400 MHz DDR DIMM to provide the maximum of 2GB memory capacity.

Noiseless, Fan less and low power consumption are the advantageous of Fuzzy LX800 / LX800D Series.

Due to the IPC special application, Fuzzy LX800 / LX800D Series also provides two different power SKUs: ATX power and DC-in for your customization.

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Mainboard Specifications

Embedded Processor
- AMD® Geode LX700/LX800/LX900 x86/x87 Compatible Core 433/ 500/600 MHz
- 481-terminal PBGA (Plastic Ball Grid Array) With Internal Heatspreader
- 128K L2 cache

Chipset
- South Bridge: AMD® Geode CS5536 Companion Device

Memory Support
- DDR 333/400 SDRAM (2GB Max)
- 2 DDR DIMM slots (184pin / 2.5V)

Display
- AMD LX800 Integrated, Max Shared Memory to 64MB
- High Resolution CRT & TFT outputs
- Support Analog CRT output
- Dual Channel 24 bits LVDS Video Output
- Support RCA-Out & S-Video Out (640x480 in PAL and NTSC mode)

LAN
- 2 Realtek RTL8110SC Chipset, support 10/100/1000Mbps
- Support Wake-on-Lan

Audio
- Realtek® Audio 2 channels AC'97 codec

IDE
- 1 IDE Channel with ATA 100/66/33
- 1 CF connector Shared With 1 IDE Channel, CF only support in Master mode.
-CF supports Slave mode only by using ATA33 IDE cable.

Power Connector
- 1 ATX 20pin connector for system power (for LX800)
- 1 4-pin Internal DC Input Connector (for LX800D)
- 1 Din4 12V DC-in Connector (for LX800D)

Connectors

● **Back Panel**
- 2 RJ-45 LAN jacks
- 2 USB 2.0 ports
- 1 D-Sub VGA connector
- 1 serial port
- 1 PS2 keyboard/mouse port
- 1 Line-In/Line-Out/Mic-In stacked audio jack
- 1 TV out
- 1 S-Video out

● **Onboard Pinheaders**
- 1 USB 2.0 pinheader (2 ports)
- 1 parallel port pinheader
- 1 front audio pinheader
- 1 LVDS connector
- 3 RS232 pinheaders
- 1 DIO connector
- 1 SMBUS connector
- 1 Chassis Intrusion Switch connector
- 1 CD-in connector
- 1 TV out pinheader

Slots

- 1 Mini PCI Socket
- 1 PCI 2.2 compliant slot support 3.3V Only

Form Factor

- Mini ITX

Mounting

- 4 mounting holes
●

Environmental

Operating Temperature
● - Temperature: -10ºC ~ 70ºC
- Humidity: 85% RH

Storage Temperature
- Temperature: -20ºC ~ 80ºC
- Humidity: 25% ~ 90% RH

Block Diagram

Board Dimension

Unit : mm

Mainboard Layout

JAMP1
JAUD1
T:Line-In
M:Line- Out
B:Mic-In

JCD1

JLPT1

Audio Codec
JC1

Top : mouse
Bottom: keyboard

BIOS

J66EN_SEL1

Top: Serial Port
Bottom: VGAPort

JLVDS1

JTV1

Top: TV Out
Bottom: S-Video Out

Top: LAN jack
Bottom: USB ports

JLAN1

MINI PCI1

PRJK1
(optional SKU for DC input)

JPW1
(optional SKU for DC input)

JPWR1 (optional SKU for DC input)

PCI1

COM2 COM3 COM4

JCF_SEL

CLR_CMOS1

J1

CF1

SYSFAN1

AMD Geode CS5536

AMD Geode ALXD800EEXJ2VD

IDE1

F_USB1

BATT

IRDA

JFP1

DIMM1
DIMM2

ATX 1
(optional SKU for ATX power)

JSMB1

Fuzzy LX800 / LX800D Series (MS-9801 v1.X) Mini ITX Mainboard

Packing Contents

MSI motherboard

MSI Driver/Utility CD

Standard Cable for IDE Devices

User's Guide

Back IO Shield

Parallel and COM Port Bracket

2 COM Ports Bracket

* The pictures are for reference only. Your packing contents may vary depending on the model you purchased.

1-7

Chapter 2
Hardware Setup

This chapter provides you with the information about hardware setup procedures. While doing the installation, be careful in holding the components and follow the installation procedures. For some components, if you install in the wrong orientation, the components will not work properly.

Use a grounded wrist strap before handling computer components. Static electricity may damage the components.

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Quick Components Guide

JLVDS1, *p.2-14*
J2~J7, *p.2-16*
JAMP1, *p.2-10*
JCI1, *p.2-10*
COM2~4, *p.2-13*
CLR_CMOS1, *p.2-17*
IDE1, *p.2-9*
JAUD1, *p.2-10*
JCD1, *p.2-14*
JLPT1, *p.2-11*
J1, *p.2-11*
JCF_SEL, *p.2-8*
F_USB1, *p.2-13*
IRDA, *p.2-15*
JFP1, *p.2-12*
Back Panel, *p.2-7*
CF1, *p.2-9*
DIMM1,2, *p.2-3*
J66EN_SEL1, *p.2-17*
SYSFAN1, *p.2-11*
ATX1, *p.2-4*
PRJK1, *p.2-4*
JPWR1, *p.2-5*
MINIPCI1, *p.2-19*
PCI1, *p.2-18*
JSMB1, *p.2-15*
JPW1, *p.2-5*
JTV1, *p.2-15*
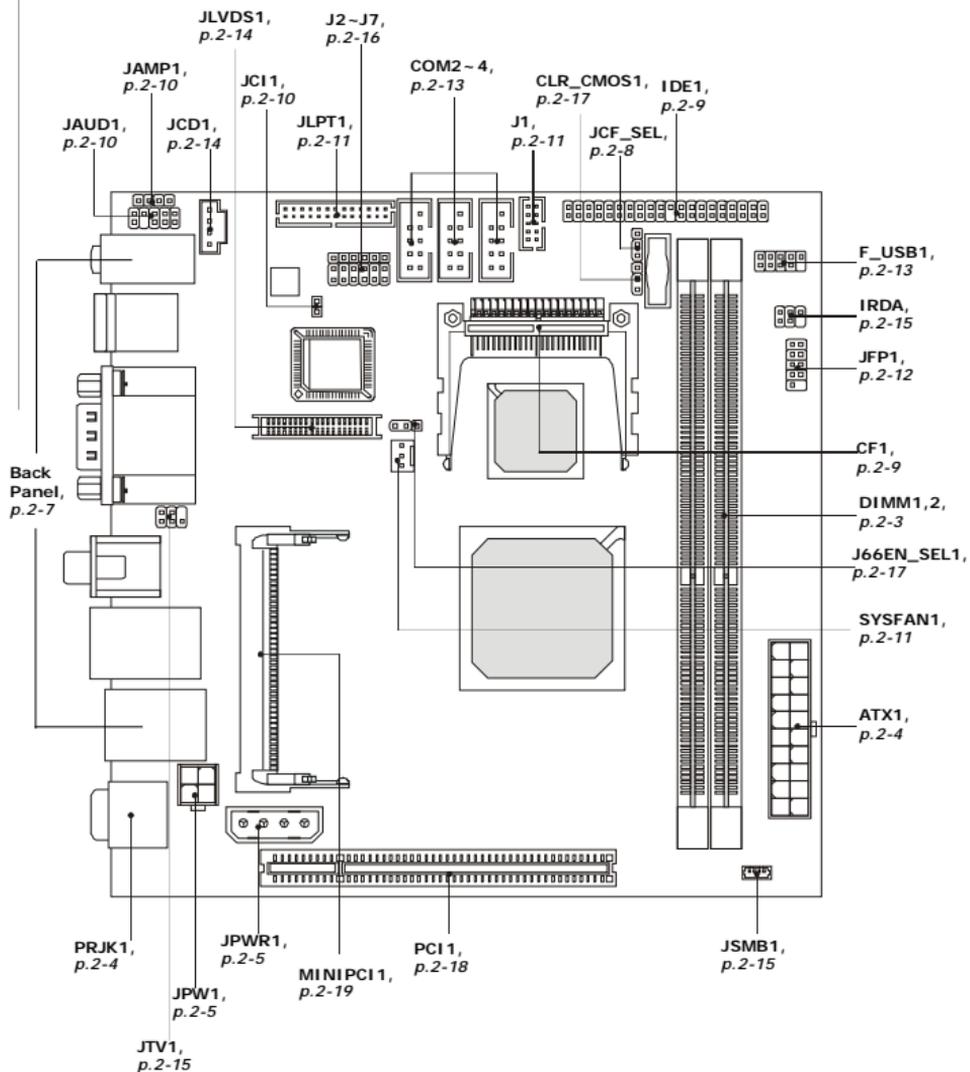
Memory

The mainboard provides two 184-pin non-ECC DDR 333/400 DIMM slot and supports up to 2GB system memory.

DDR
184-pin, 2.5V

40x2=80 pin   52x2=104 pin
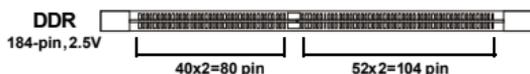
Installing DDR Modules

1. The memory module has only one notch on the center and will only fit in the right orientation.
2. Insert the memory module vertically into the DIMM slot. Then push it in until the golden finger on the memory module is deeply inserted in the DIMM slot.

Important

You can barely see the golden finger if the memory module is properly inserted in the DIMM slot.

3. The plastic clip at each side of the DIMM slot will automatically close.

Volt   Notch
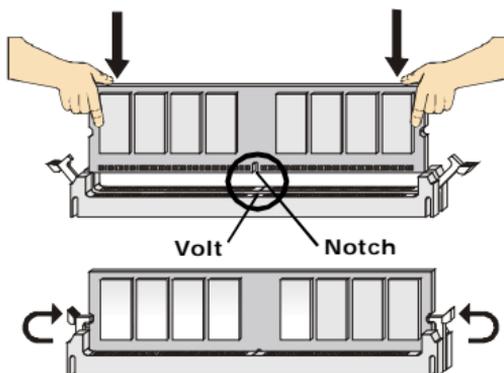
Power Supply

ATX 20-Pin System Power Connector: ATX1(optional SKU for ATX power)

This connector allows you to connect to an ATX power supply. To connect to the ATX 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.

ATX1

11   1

20   10
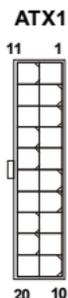
ATX1 Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS_ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

Din4 12V DC-in Connector: PRJK1 (optional SKU for external DC-in)

This connector allows you to connect to an external DC12V power supply. To connect to the DC12V power supply, make sure the plug of the power supply is inserted in the proper orientation and the polarity of pins are matched.

4   3

2   1
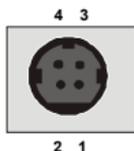
PRJK1 Definition

Hole	SIGNAL
1	GND
2	GND
3	12V
4	12V

4-Pin Internal Power Connector: JPW1 (optional SKU for internal DC-in)

This connector allows you to connect to an internal DC12V power supply. To connect to the DC12V power supply, make sure the plug of the power supply is inserted in the proper orientation and the polarity of pins are matched.

JPW1

```
2 □□ 1
4 □□ 3
```
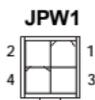
JPW1 Pin Definition

PIN	SIGNAL
1	GND
2	GND
3	12V
4	12V

Disk Drive Power: JPWR1 (optional SKU for DC input)

This connector delivers power to IDE devices.

```
⊙ ⊙ ⊙ ⊙
4  3  2  1
```
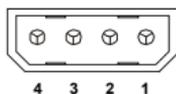
JPWR1 Definition

Hole	SIGNAL
1	5V
2	GND
3	GND
4	12V

Power Consumption

Power Supply : LEMACS
Model : AX2-5300FB-2S(V)
AC INPUT : 115V230V 60/50Hz 9/5A
FUSE RATING : 6A/250V
DC OUTPUT : 300W
 +5V 30A   +12V 12A   +3.3V 14A,
-5V 0.5A   -12V 0.5A   +5VSB 1.5A
+5V AND +3.3V TOTAL MAX : 150W

A. Playing DVD - Power DVD 7.0

	Measured Voltage	Measured Amp.	Watts
Main Board +3.3V	3.4054	0.713	2.4281
Main Board +5V	5.0959	0.037	0.1885
Main Board 5VSB	5.0808	0.067	0.3404
Main Board +12V	11.762	0.584	6.8690
Main Board Power Consumption			9.8260

B. Playing MP3 - Media Player

	Measured Voltage	Measured Amp.	Watts
Main Board +3.3V	3.4053	0.712	2.4246
Main Board +5V	5.1219	0.032	0.1639
Main Board 5VSB	5.0811	0.067	0.3404
Main Board +12V	11.625	0.552	6.4170
Main Board Power Consumption			9.3459

C. Running Network Application - Files Copy

	Measured Voltage	Measured Amp.	Watts
Main Board +3.3V	3.3993	1.606	5.4593
Main Board +5V	5.1177	0.038	0.1945
Main Board 5VSB	5.0808	0.063	0.3201
Main Board +12V	11.66	0.586	6.8328
Main Board Power Consumption			12.8066

D. Idle

	Measured Voltage	Measured Amp.	Watts
Main Board +3.3V	3.4054	0.724	2.4655
Main Board +5V	5.1238	0.043	0.2203
Main Board 5VSB	5.0811	0.069	0.3506
Main Board +12V	11.619	0.46	5.3447
Main Board Power Consumption			8.3812

E. S3 Mode

	Measured Voltage	Measured Amp.	Watts
Main Board +3.3V	0	0	0.0000
Main Board +5V	0.3965	0	0.0000
Main Board 5VSB	5.0615	0.225	1.1388
Main Board +12V	0.0115	0	0.0000
Main Board Power Consumption			1.1388

Back Panel

Line-In · **Mouse** · **Serial Port** · **RCA out** · **LAN Port** · **Line-Out** · **Mic-In** · **LAN Port** · **Keyboard** · **VGA Port** · **S-Videoout** · **USB Ports**
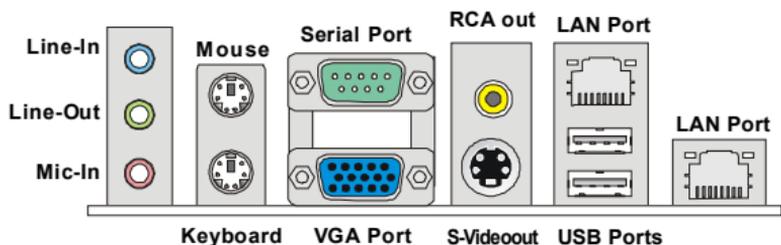
▶ **Audio Port Connectors**
These audio connectors are used for audio devices. You can differentiate the color of the audio jacks for different audio sound effects.
- **Blue audio jack** - Line In is used for external CD player, tapeplayer or other audio devices.
- **Green audio jack** - Line Out, is a connector for speakers or headphones.
- **Pink audio jack** - Mic In, is a connector for microphones.

▶ **Mouse/Keyboard Connector**
The standard PS/2® mouse/keyboard DIN connector is for a PS/2® mouse/keyboard.

▶ **Serial Port Connector**
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 Connector**
The DB15-pin female connector is provided for VGA monitors.

▶ **RCA Out**
The RCA connector allows users to connect display devices for **composite** video input/output.
Composite video, also called baseband video or RCA video, is the analog waveform that conveys the image data in a conventional NTSC and PAL television signal. Composite video contains chrominance (hue and saturation) and luminance (brightness) information, along with synchronization and blanking pulses, all together in a single signal.

▶ **S-Video Out**
The S-Video connector allows users to connect display devices for **component** video input/output.
S-Video (Super-Video, sometimes referred to as Y/C Video, or component video) is a video signal transmission in which the luminance signal and the chrominance signal are transmitted separately to achieve superior picture clarity. The luminance signal (Y) carries brightness information, which defines the black and white portion, and the chrominance signal (C) carries color information, which defines hue and saturation. An S-Video connection brings better video quality than a composite/RCA connection.

2-7

▶ **LAN (RJ-45) Jacks**

The standard RJ-45 jacks are for connection to Local Area Network (LAN). You can connect network cables to them.

Activity Indicator ———— ———— Link Indicator

|		Left LED	Right LED
		Active LED	100M/1000M Speed LED
LED Color		Yellow	Green/Orange
10M Cable Plug-in	No Transmission	OFF	OFF
	Transition	Yellow(Blinking)	OFF
100M Cable Plug-in	No Transmission	OFF	Green(Lighting)
	Transition	Yellow(Blinking)	Green(Lighting)
1000M Cable Plug-in	No Transmission	OFF	Orange(Lighting)
	Transition	Yellow(Blinking)	Orange(Lighting)
In S3/S4/S5 Standby State		OFF	OFF

▶ **USB Connectors**

The OHCI (Open Host Controller Interface) Universal Serial Bus root is for attaching USB devices such as keyboard, mouse, or other USB-compatible devices.

Connectors

### ATA100 Hard Disk Connector: IDE1

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA 33/66/100 controller that provides PIO mode 0~4, Bus Master, and Ultra DMA 33/66/100 function. You can connect hard disk drives, CD-ROM and other IDE devices.

The Ultra ATA100 interface boosts data transfer rates between the computer and the hard drive up to 100 megabytes (MB) per second.

IDE1

Compact Flash Card Slot: CF

This Compact Flash slot shares one channel of the IDE controller. You can install one Compact Flash type I / type II device.

CF1
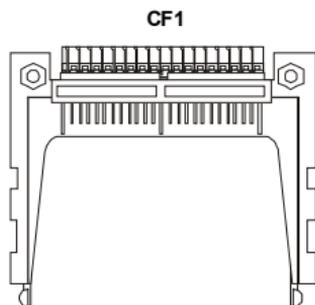
CF Mode Selecting Jumper: JCF_SEL1

This jumper is used to select Master/ Slave mode of the CF device.

JCF_SEL1

Master   Slave
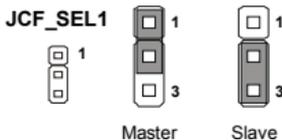
Important

* The CF1 slot and the IDE1 connector shares and uses the same channel, CF1 and IDE1 can support up to 2 IDE devices without CF device or 1 IDE device with 1 CF device.
* If you install two IDE devices, you must configure the second drive to Slave mode by setting its jumper. Refer to the hard disk documentation supplied by hard disk vendors for jumper setting instructions.
* If you install one IDE device with ATA100 IDE cable and one CF device, you must configure the CF drive to Master mode by setting jumper JCF_SEL1. CF only support Master mode by using the ATA100 IDE cable.
* CF only support Slave mode by using ATA33 IDE cable.

2-9

Audio Amplifier Connector: JAMP1

The 5W JAMP1 is used to connect audio amplifiers to enhance audio performance.

Pin Definition

JAMP1
1 □□□□

PIN	SIGNAL
1	AMP_L-
2	AMP_L+
3	AMP_R-
4	AMP_R+
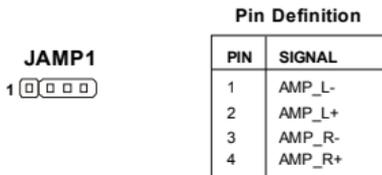
Front Panel Audio Connector: JAUD1

The JAUD1 front panel audio connector allows you to connect the front panel audio and is compliant with Intel® Front Panel I/O Connectivity Design Guide.

JAUD1

9   1
□□□□□
10   2
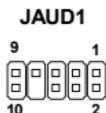
JAUD1 Pin Definition

PIN	SIGNAL	DESCRIPTION
1	AUD_MIC	Front panel microphone input signal
2	AUD_GND	Ground used by analog audio circuits
3	AUD_MIC_BIAS	Microphone power
4	AUD_VCC	Filtered +5V used by analog audio circuits
5	AUD_FPOUT_R	Right channel audio signal to front panel
6	AUD_RET_R	Right channel audio signal return from front panel
7	HP_ON	Reserved for future use to control headphone amplifier
8	KEY	No pin
9	AUD_FPOUT_L	Left channel audio signal to front panel
10	AUD_RET_L	Left channel audio signal return from front panel

Important

If you don't want to connect to the front audio header, pins 5 & 6, 9 & 10 have to be jumpered in order to have signal output directed to the rear audio ports. Otherwise, the Line-Out connector on the back panel will not function.

9   5
□□□□□
10   6

Chassis Intrusion Switch Connector: JCI1

This connector connects to a 2-pin chassis switch. If the chassis is opened, the switch will be short. The system will record this status and show a warning message on the screen. To clear the warning, you must enter the BIOS utility and clear the record.

JCI1

CHASSIS ☐ 1
GND ☐ 2
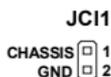
Digital IO Connector: J1

The J1 connects to the General-Purpose Input/Output (GPIO) peripheral module.

J1

10 ☐ 9
2 ☐ 1
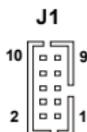
J1 Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	GND	2	VCC5F
3	N_GPO3	4	N_GPO1
5	N_GPO2	6	N_GPO0
7	N_GPI3	8	N_GPI1
9	N_GPI2	10	N_GPI0

System Fan Power Connectors: SYSFAN1

The fan power connectors support system cooling fan with +12V. When connecting the wire to the connectors, always take 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.

SYSFAN1

SENSOR ☐
+12V ☐
GND ☐
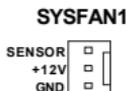
Front Panel Connector: JFP1

The mainboard provides one front panel connector for electrical connection to the front panel switches and LEDs. The JFP1 is compliant with Intel® Front Panel I/O Connectivity Design Guide.

JFP1

HDD LED +/- | Power LED +/-
Reset Switch +/- | Power Switch +/-
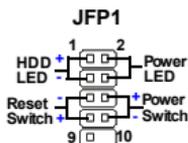
JFP1 Pin Definition

PIN	SIGNAL	DESCRIPTION
1	HD_LED +	Hard disk LED pull-up
2	FPPWR/SLP	MSG LED pull-up
3	HD_LED -	Hard disk active LED
4	FPPWR/SLP	MSG LED pull-up
5	RST_SW -	Reset Switch low reference pull-down to GND
6	PWR_SW +	Power Switch high reference pull-up
7	RST_SW +	Reset Switch high reference pull-up
8	PWR_SW -	Power Switch low reference pull-down to GND
9	RSVD_DNU	Reserved. Do not use.

Parallel Port Header: JLPT1

The mainboard provides a 26-pin header for connection to an optional parallel port bracket. The parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.

JLPT1
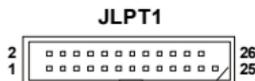
PIN	SIGNAL	PIN	SIGNAL	PIN	SIGNAL	PIN	SIGNAL
1	RSTB#	2	AFD#	15	PRND6	16	GND
3	PRND0	4	ERR#	17	PRND7	18	GND
5	PRND1	6	PINIT#	19	ACK#	20	GND
7	PRND2	8	LPT_SLIN#	21	BUSY	22	GND
9	PRND3	10	GND	23	PE	24	GND
11	PRND4	12	GND	25	SLCT	26	Key (No Pin)
13	PRND5	14	GND				

Front USB Connector: F_USB1

The mainboard provides one USB 2.0 pinheader that is compliant with Intel® I/O Connectivity Design Guide. USB 2.0 technology increases data transfer rate up to a maximum throughput of 480Mbps, which is 40 times faster than USB 1.1, and is ideal for connecting high-speed USB interface peripherals such as **USB HDD**, **digital cameras**, **MP3 players**, **printers**, **modems and the like**.

F_USB1

```
2 □□□□□ 10
1 □□□□□ 9
```

Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	VCC	2	VCC
3	USB0-	4	USB1-
5	USB0+	6	USB1+
7	GND	8	GND
9	Key (no pin)	10	USBOC

Important

Note that the pins of VCC and GND must be connected correctly to avoid possible damage.

Serial Port Connector: COM 2, COM3, COM4

The mainboard provides three 9-pin headers as serial port COM2, COM3 and COM4. These ports are 16550A high speed communication port that sends/receives 16 bytes FIFOs. You can attach a serial mouse or other serial devices directly to it.

Pin Definition

```
      □ 9
8 □ □
  □ □
  □ □
2 □ □ 1
```
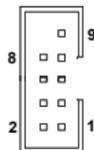
COM 2 / COM3 / COM4

PIN	SIGNAL	DESCRIPTION
1	DCD	Data Carry Detect
2	SIN	Serial In or Receive Data
3	SOUT	Serial Out or Transmit Data
4	DTR	Data Terminal Ready
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicate

CD-In Connector: JCD1

The connector is for CD-ROM audio connector.

JCD1

- R
- GND
- L
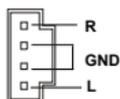
LVDS Flat Panel Connector: JLVDS1

The LVDS (Low Voltage Differential Signal) connector provides a digital interface typically used with flat panels. After connecting an LVDS interfaced flat panel to the JLVDS1, be sure to check the panel datasheet and set the J1 LVDS Power Selection Jumper to a proper voltage.

JLVDS1

40 ... 2
39 ... 1
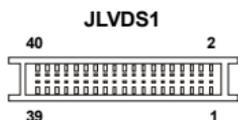
SIGNAL	PIN		SIGNAL
+12V	2	1	+12V
+12V	4	3	+12V
GND	6	5	+12V
GND	8	7	VCC5
LCD_VDD	10	9	LCD_VDD
LDDC_DATA	12	11	LDDC_CLK
LVDS_VDDEN	14	13	L_BKLTCTL
GND	16	15	L_BKLTEN
LA_DATA0	18	17	LA_DATA0#
LA_DATA1	20	19	LA_DATA1#
LA_DATA2	22	21	LA_DATA2#
LA_CLK	24	23	LA_CLK#
LA_DATA3	26	25	LA_DATA3#
GND	28	27	GND
LB_DATA0	30	29	LB_DATA0#
LB_DATA1	32	31	LB_DATA1#
LB_DATA2	34	33	LB_DATA2#
LB_CLK	36	35	LB_CLK#
LB_DATA3	38	37	LB_DATA3#
GND	40	39	GND

TV-Out Connector: JTV1

The mainboard provides a TV-Out connector.
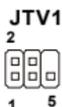
JTV1

JTV1 Pin Definition

Pin	Description	Pin	Description
1	TVGND	2	LCVBS
3	LY	4	TVGND
5	LC	6	Key (no pin)

IrDA Infrared Module Header: IRDA1

The connector allows you to connect to IrDA Infrared module. You must configure the setting through the BIOS setup to use the IR function. IRDA1 is compliant with Intel® Front Panel I/O Connectivity Design Guide.

IRDA1

Pin Definition

Pin	Signal
1	NC
2	Key (no pin)
3	VCC5
4	GND
5	IRTX
6	IRRX

SMBus Connector: JSMB1

The connector allows you to connect to SMBus devices.

JSMB1

Pin Definition

Pin	Signal
1	VCC5F
2	SMBCLK
3	GND
4	SMBDATA-

Jumpers

COM Port Power Jumpers: J2, J3, J5, J6

These jumpers specify the operation voltage of the serial port COM1~4.

J2,J3,J5,J6

Pin Definition

Pin	Signal
1	VCC12F
2	VCC_COM
3	VCC5F

12V   5V
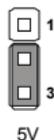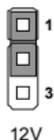
AT/ATX Power Jumper: J4

This jumper is used to select AT or ATX power.

J4

AT   ATX

LCD Power Source Jumper: J7

This jumper is used to select the power source of LCD.

Pin Definition

Pin	Signal
1	VCC3
2	LCD_SRC (default VCC3)
3	VCC5

J7
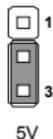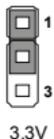
3.3V   5V

PCI Frequency Jumper: J66EN_SEL1

This jumper is used to select the frequency of PCI bus.

J4

33MHz

66MHz
(default)
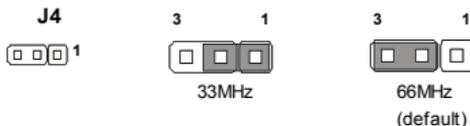
Clear CMOS Jumper: CLR_CMOS1

There is a CMOS RAM onboard that has a power supply from external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time it is turned on. If you want to clear the system configuration, set the CLR_CMOS1 (Clear CMOS Jumper) to clear data.

CLR_CMOS1

Keep Data   Clear Data
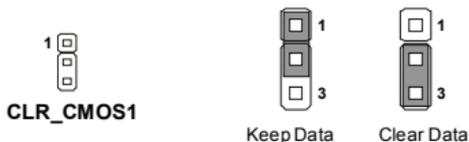
Important

You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

Slots

PCI (Peripheral Component Interconnect) Slot

The PCI slot supports LAN cards, SCSI cards, USB cards, and other add-on cards that comply with PCI specifications. At 32 bits and 33 MHz, it yields a throughput rate of 133 MBps.

> **Warning**
>
> *This PCI slot can only support the 3.3V PCI card.*
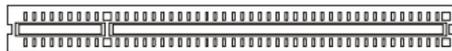
PCI Slot

PCI Interrupt Request Routing

The IRQ, acronym of interrupt request line and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus pins as follows:

	Order 1	Order 2	Order 3	Order 4
32-bit PCI1	INT A#	INT B#	INT C#	INT D#

> **Important**
>
> *When adding or removing expansion cards, make sure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to configure any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.*

Mini PCI Slot

This is a 32 bits, 33 MHz and 133 MBps PCI slot, only select the MiniPCI adapters can be installed.
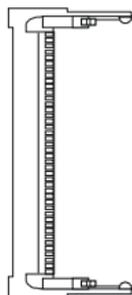
Mini PCI Slot

Installing Mini PCI Cards

1. Insert the card at an angle of 45 degrees into the Mini PCI slot, Line up the notch in the card with the small tab in the slot and slide the card into the slot until the golden finger is almost invisible.
2. Push the Mini PCI card down until the two snaps on either side of the card lock into place.

45°

Notch

Lock
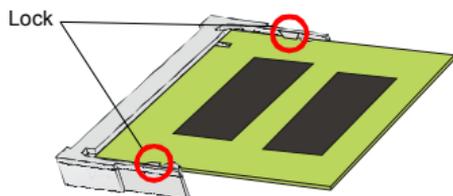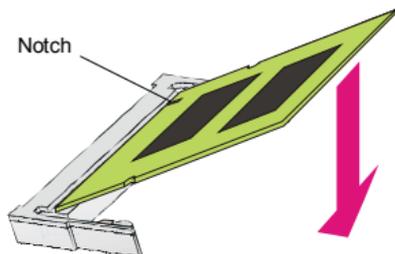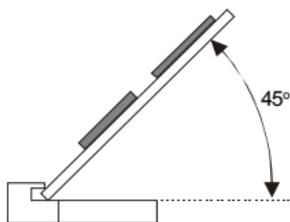
Removing Mini PCI Cards

If you need to remove a card in the Mini PCI slot, spread the tabs in the slot away from the notches in the card. The card should pop up slightly. Lift the card to a 45-degree angle and then gently slide the card out of the slot.
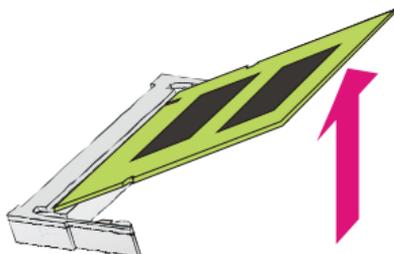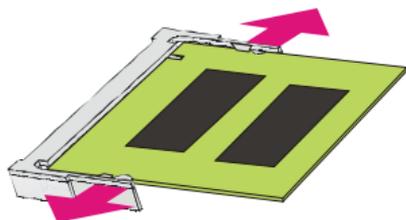
Chapter 3
BIOS Setup

This chapter provides information on the BIOS Setup program and allows you to configure the system for optimum use.
You may need to run the Setup program when:

≈ An error message appears on the screen during the system booting up, and requests you to run SETUP.

≈ You want to change the default settings for customized features.

MSI
MICRO-STAR INTERNATIONAL

MS-9801 Mainboard

Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <DEL> key to enter Setup.

Press DEL to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Important

1. The items under each BIOS category described in this chapter are under continuous update for better system performance. Therefore, the description may be slightly different from the latest BIOS and should be held for reference only.

2. Upon boot-up, the 1st line appearing after the memory count is the BIOS version. It is usually in the format:

   W9081AMS V1.0 081006 where:

   1st digit refers to BIOS maker as A = AMI, W = AWARD, and P = PHOENIX.
   2nd - 5th digit refers to the model number.
   6th digit refers to the chipset.
   7th - 8th digit refers to the customer as MS = all standard customers.
   V1.0 refers to the BIOS version.
   081006 refers to the date this BIOS was released.

3-2

Control Keys

<↑>	Move to the previous item
<↓>	Move to the next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select the item
<Esc>	Jumps to the Exit menu or returns to the main menu from a submenu
<+/PU>	Increase the numeric value or make changes
<-/PD>	Decrease the numeric value or make changes
<F10>	Save all the CMOS changes and exit

Getting Help

After entering the Setup menu, the first menu you will see is the Main Menu.

Main Menu

The main menu lists the setup functions you can make changes to. You can use the arrow keys (↑↓) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Sub-Menu

If you find a right pointer symbol (as shown in the right view) appears to the left of certain fields that means a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. You can use arrow keys (↑↓) to highlight the field and press <Enter> to call up the sub-menu. Then you can use the control keys to enter values and move from field to field within a sub-menu. If you want to return to the main menu, just press the <Esc >.
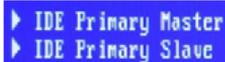
General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

The Main Menu

▶ **Standard CMOS Features**
Use this menu for basic system configurations, such as time, date etc.

▶ **Advanced BIOS Features**
Use this menu to setup the items of AMI® special enhanced features.

▶ **Advanced Chipset Features**
Use this menu to change the values in the chipset registers and optimize your system's performance.

▶ **Integrated Peripherals**
Use this menu to specify your settings for integrated peripherals.

▶ **Power Management Setup**
Use this menu to specify your settings for power management.

▶ **PNP/PCI Configurations**
This entry appears if your system supports PnP/PCI.

▶ **Load Fail-Safe Defaults**
Use this menu to load the default values set by the mainboard manufacturer.

▶ **Load Optimized Defaults**
Use this menu to load the default values set by the mainboard manufacturer specifically for optimal performance of the mainboard.

▶ **Set Supervisor Password**
Use this menu to set the password for supervisors.

▶ **Set User Password**
Use this menu to set the password for users.

▶ **Save & Exit Setup**
Save changes to CMOS and exit setup.

▶ **Exit Without Saving**
Abandon all changes and exit setup.

Standard CMOS Features

The items in Standard CMOS Features Menu includes some basic setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

▶ **Date (mm:dd:yy)**
This allows you to set the system to the date that you want (usually the current date). The format is <day><month> <date> <year>.

day	Day of the week, from Sun to Sat, determined by BIOS. Read-only.
month	The month from Jan. through Dec.
date	The date from 1 to 31 can be keyed by numeric function keys.
year	The year can be adjusted by users.

▶ **Time (hh:mm:ss)**
This allows you to set the system time that you want (usually the current time). The time format is <hour> <minute> <second>.

▶ **IDE Primary Master/ Slave**
Press <Enter> to enter the sub-menu.

> ▶ **IDE HDD Auto-Detection**
> Press Enter to auto-detectthe HDD on this channel. Ifdetection is successful, itfills the remaining fields onthis menu.

> ▶ **IDE Primary Master/Slave**
> Selecting "manua" lets you set the remaining fields onthis screen. Selects the type of fixed disk. "User Type" will let you select thenumber of cylinders, heads, etc.
> **Note:**PRECOMP=65535 means NONE!

▶ **Access Mode**
Choose the access mode for this hard disk.

▶ **Capacity**
Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.

▶ **Cylinder**
Set the number of cylinders for this hard disk.

▶ **Head**
Set the number of read/write heads.

▶ **Precomp**
Warning: Setting a value of 65535 means no hard disk.

▶ **Landing Zone**
Number of landing zone.

▶ **Sector**
Number of sectors per track.

▶ **Video**
Select the default video device.

▶ **Halt On**
Select the situation in which you want the BIOS to stop the POST process and notify you.

▶ **Base Memory**
Displays the amount of conventional memory detected during boot up.

▶ **Extended Memory**
Displays the amount of extended memory detected during boot up.

▶ **Total Memory**
Displays the total memory available in the system.

Advanced BIOS Features
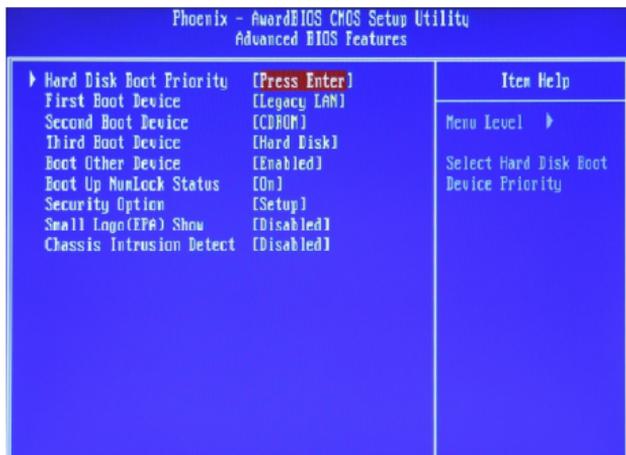
▶ **Hard Disk Boot Priority**
Press [Enter] to enter a sub menu which shows every current hard drive installed.
Use [PageUp] or [PageDown] key to select the first boot hard disk.

▶ **First/Second/Third Boot Device & Boot From Other Device**
The items allow you to set the sequence of boot devices where BIOS attempts to load
the disk operating system.

▶ **Boot Up NumLock Status**
This setting is to set the Num Lock status when the system is powered on. Setting to
[On] will turn on the Num Lock key when the system is powered on. Setting to [Off]
will allow users to use the arrow keys on the numeric keypad.

▶ **Security Option**
Select whether the password is required every time the system boots or only when
you enter setup.

| System | The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt. |
| Setup | The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. |

Note: To disable security, select PASSWORD SETTING at Main Menu and then you
will be asked to enter password. Do not type anything and just press<Enter>, it will
disable security. Once the security is disabled, the system will boot and you can
enter Setup freely.

▶ **Small Logo(EPA) Show**
This item enables you to show the EPA logo (brand specific graphics) on the bootup screen. Settings are:

      [Disabled]   Shows the normal POST screen at boot.
      [Enabled]   Shows a still image (EPA logo) on the screen at boot.ot.

▶ **Chassis Intrusion Detect**
The field enables or disables the feature of recording the chassis intrusion status and issuing a warning message if the chassis is once opened. To clear the warning message, set the field to [Reset]. The setting of the field will automatically return to [Enabled] later.

Advanced Chipset Features

▶ **CPU Frequency**
This setting allows you to specify the CPU frequency.

▶ **Memory Frequency**
This setting allows you to specify the memory frequency.

▶ **CAS Latency**
This controls the timing delay (in clock cycles) before SDRAM starts a read command after receiving it. Smaller clocks increase system performance while bigger clocks provide more stable system performance.

▶ **Video Memory Size**
The field specifies the size of system memory allocated for video memory.

▶ **Output display**
This setting allows you to select the type of output display.

▶ **VT1622 Support**
VT1622 support TV-Out with 640x480 resolution; TV modes of NTSC, PAL.

▶ **Flat Panel Configuration**
Press <Enter> to enter the sub-menu.

　　▶ **Flat Panel Type**
　　Select the type of Flat Panel Monitor.

3-10

▶ **Resolution**
Specify the resolution of the monitor.

▶ **Data Bus Type**
Select the type of Date Bus.

▶ **Refresh Rate**
Specify the refresh rate of the monitor.

▶ **HSYNC Polarity**
Select the active polarity of the HSYNC signal to the monitor.

▶ **VSYNC Polarity Active**
Select the active polarity of the VSYNC signal to the monitor.

▶ **SHFCLK Active Period**
Select the active period of the SHFCHK signal.

▶ **LP Active Period**
Select the active period of the LDE/MOD (LP) signal.

▶ **Onboard Audio**
The field allows you to enable/disable the onboard audio.

▶ **Onboard USB1.1**
The field allows you to enable/disable the onboard USB1.1.

▶ **Onboard USB2.0**
The field allows you to enable/disable the onboard USB2.0.

Integrated Peripherals

▶ **Onboard Serial Port 1/ 2/ 3/ 4, Serial Port 3/ 4 Use IRQ**
Select an address and corresponding interrupt for the serial port 1/ 2/ 3/ 4.

▶ **Serial Port2 Mode Select**
This setting allows you to specify the operation mode for serial port 2.

[Normal]	RS-232C Serial Port
[IrDA]	IrDA-compliant Serial Infrared Port
[ASKIR]	Amplitude Shift Keyed Infrared Port

▶ **RxD, TxD Active**
This setting controls the receiving and transmitting speed of the IR peripheral in use.

▶ **IR Transmission Delay**
This setting determines whether the IR transmission rate will be delayed while converting to receiving mode.

▶ **UR2 Duplex Mode**
This setting controls the operating mode of IR transmission/reception. Under [Full] Duplex mode, synchronous, bi-directional transmission/reception is allowed. Under [Half] Duplex mode, only asynchronous, bi-directional transmission/reception is allowed.

▶ **Use IR Pins**
Consult your IR peripheral documentation to select the correct setting of the TxD and RxD signals.

3-12

▶ **Onboard Parallel Port**
Select an address and corresponding interrupt for the parallet port.

▶ **Parallel Port Mode**
To operate the onboard parallel port as Standard Parallel Port only, choose [SPP]. To operate the onboard parallel port in the EPP mode simultaneously, choose [EPP]. By choosing [ECP], the onboard parallel port will operate in ECP mode only. Choosing [ECP + EPP] will allow the onboard parallel port to support both the ECP and EPP modes simultaneously.

▶ **EPP Mode Select**
Select the EPP mode.

▶ **ECP Mode Use DMA**
Select the DMA channel for ECP mode.

Power Management Setup
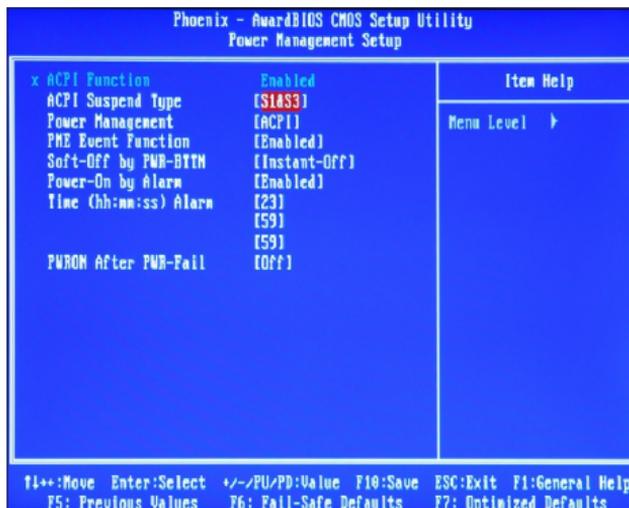
▶ **ACPI Function**
This item is to activate the ACPI (Advanced Configuration and Power Management Interface) Function.

▶ **ACPI Suspend Type**
This item specifies the power saving modes for ACPI function. If your operating system supports ACPI, such as Windows 2000/ XP , you can choose to enter the Standby mode in S1 or S3 fashion through the setting of this field. S1 sleep mode is a low power state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system context. S3 sleep mode is a lower power state where the in formation of system configuration and open applications/files is saved to main memory that remains powered while most other hardware components turn off to save energy. The information stored in memory will be used to restore the system when a "wake up" event occurs.

▶ **Power Management**
This item is to select Power Management Function.

▶ **PME Event Function**
You may disable activity monitoring of some common I/O events and interrupt requests so they do not wake up the system. The default wake-up event is keyboard activity. When On (or enabled, in the case of LPT & COM), any activity from one of the listed system peripheral devices or IRQs wakes up the system. A power-management (PM) event awakens the system from, or resets activity timers for, Suspend mode. You can disable monitoring of common interrupt requests so they do not generate PM events.

3-14

▶ **Soft-Off by PWR-BTTN**
When [Enabled], turning the system off with the on/off button places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity.

▶ **Power-On by Alarm**
When you select [Enabled], fields appear that let you set the alarm that returns the system to Full On state.

▶ **Time (hh:mm:ss) Alarm**
The field specifies the time for *Power-On by Alarm*. Format is <hour><minute> <second>.

▶ **PWRON After PWR-Fail**
This item specifies whether your system will reboot after a power failure or interrupt occurs. Settings are:

        [Off]   Always leaves the computer in the power off state.
        [On]   Always leaves the computer in the power on state.
        [Last State]   Restores the system to the status before power failure
                           or interrupt occurred.

PNP/PCI Configurations

This section describes configuring the PCI bus system and PnP (Plug & Play) feature. PCI, or **P**eripheral **C**omponent **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

```
            Phoenix - AwardBIOS CMOS Setup Utility
                    PnP/PCI Configurations

  PNP OS Installed        [No]                   Item Help
  Init Display First      [Onboard]
  Reset Configuration Data [Disabled]        Menu Level    ▶

  Resources Controlled By  [Auto(ESCD)]      Select Yes if you are
x IRQ Resources           Press Enter        using a Plug and Play
x Memory Resources        Press Enter        capable operating
                                             system Select No if
                                             you need the BIOS to
                                             configure non-boot
                                             devices
```

▶ **PNP OS Installed**
When set to [Yes], BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows 98. When set to [No], BIOS will initialize all the PnP cards. So, select [Yes] if your operating system is Plug & Play aware.

▶ **Init Display First**
This item specifies which VGA card is your primary graphics adapter.

▶ **Reset Configuration Data**
The ESCD (Extended System Configuration Data) NVRAM (Non-volatile Random Access Memory) is where the BIOS stores resource information for both PNP and non-PNP devices in a bit string format. When the item is set to [Enabled], the system will reset ESCD NVRAM right after the system is booted up and then set the setting of the item back to [Disabled] automatically.

▶ **Resources Controlled By**
The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows® 98/2000. If you set this field to [Manual], choose specific resources by going into each sub-menu that follows this field.

3-16

▶ **IRQ Resource**
Press <Enter> to enter the sub-menu.

  ▶ **IRQ 3/4/5/7/9/10/11/14/15**
  These items specify the bus where the specified IRQ line is used.
  The settings determine if AMIBIOS should remove an IRQ from the pool of avail-
  able IRQs passed to devices that are configurable by the system BIOS. The
  available IRQ pool is determined by reading the ESCD NVRAM. If more IRQs must
  be removed from the IRQ pool, the end user can use these settings to reserve
  the IRQ by assigning an [Reserved] setting to it. Onboard I/O is configured by
  AMIBIOS. All IRQs used by onboard I/O are configured as [Available]. If all IRQs
  are set to [Reserved], and IRQ 14/15 are allocated to the onboard PCI IDE, IRQ 9
  will still be available for PCI and PnP devices.

Important

*IRQ (Interrupt Request) lines are system resources allocated to I/O devices.
When an I/O device needs to gain attention of the operating system, it sig-
nals this by causing an IRQ to occur. After receiving the signal, when the
operating system is ready, the system will interrupt itself and perform the
service required by the I/O device.*

▶ **Memory Resource**
Press <Enter> to enter the sub-menu.

  ▶ **Reserved Memory Base**
  These items specify the reserved memory base.

  ▶ **Reserved Memory Length**
  These items specify the reserved memory length.

Load Fail-Safe / Optimized Defaults

The two options on the main menu allow users to restore all of the BIOS settings to the default Fail-Safe or Optimized values. The Optimized Defaults are the default values set by the mainboard manufacturer specifically for optimal performance of the mainboard. The Fail-Safe Defaults are the default values set by the BIOS vendor for stable system performance.

When you select Load Fail-Safe Defaults, a message as below appears:
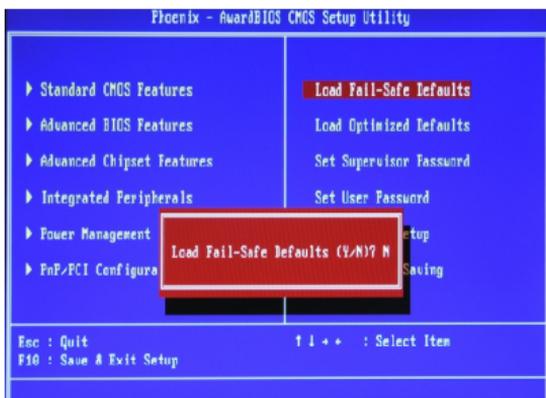
Pressing *[OK]* loads the BIOS default values for the most stable, minimal system performance.

When you select Load Optimized Defaults, a message as below appears:
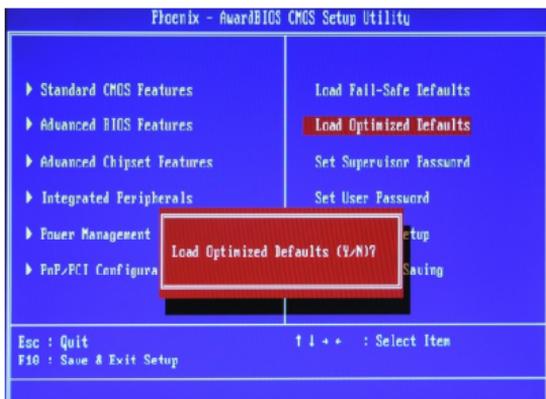
Pressing *[OK]* loads the default factory settings for optimal system performance.

Set BIOS Password

When you select this function, a message as below will appear on the screen:

Type the password, up to six characters in length, and press <Enter>. The password typed now will replace any previously set password from CMOS memory. You will be prompted to confirm the password. Retype the password and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.
To clear a set password, just press <Enter> when you are prompted to enter the password. A message will show up confirming the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup without entering any password.
When a password has been set, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.