

华北工控®

MITX-6854

Mini-ITX Industrial Motherboard

USER' Manual V1.1

USER'Manual



Industrial & Communication Computer 

MITX-6854

Mini-ITX Industrial Motherboard

USER' Manual V1.1

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Declaration of conformity



ShenZhen NORCO Intelligent Technology Co.,Ltd.

declares that the product


MITX-6854 Mini-ITX Industrial Motherboard

(reference to the specification under which conformity is declared in accordance with 89/336 EEC-EMC Directive)

- EN 55022 Limits and methods of measurements of radio disturbance
Characteristics of information technology equipment
- EN 50081-1 Generic emission standard Part 1:
Residential, commercial and light industry
- EN 50082-1 Generic immunity standard Part 1:
Residential, commercial and light industry

European Representative:

ShenZhen NORCO Intelligent Technology Co.,Ltd.

Signature:  _____

Place/Data: HONG KONG/2008

Printed Name: Anders Cheung

Position/Title: President

Declaration of conformity



Trade Name : ShenZhen NORCO Intelligent Technology Co.,Ltd.

Model Name : MITX-6854

Responsible Party : ShenZhen NORCO Intelligent Technology Co.,Ltd.

Equipment Classification : FCC Class B Subassembly

Type of Product : Mini-ITX Industrial Motherboard

Manufacturer : ShenZhen NORCO Intelligent Technology Co.,Ltd.

Supplementary Information:

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.

Signature: _____

A handwritten signature in black ink, appearing to be 'a.k.g.', written over a horizontal line.

Date: 2009

Copyright

With the exception of showing the accessories of product configuration, this manual do not create any commitment of our company. We retained the rights to change it without prior notice. We will not be responsible for any installation, the result of improper use of direct, indirect, intentional or unintentional damage or hidden dangers.

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Common Sense in Safety Application

1. Before using this product, be sure to read carefully this user's manual;
2. Any plate cards not ready to be installed shall be kept in the anti-static protective bags;
3. Before taking out the plate cards from the anti-static protective bags, first place hands on the grounding metal object for a while (e.g. 10 seconds) so as to release static electricity in body and hands;
4. While fetching plate cards, you should wear static protective gloves and have the habit of contacting brims of them;
5. In order to prevent bodily electric shock or damage to products, first turn off the AC power or unplug the power cord out of power sockets while inserting main boards or plate cards or configuring again;
6. Before it is necessary to move plate cards or the unit, be sure to unplug the AC power cords out of the power sockets;
7. Be sure to unplug AC power cords when there is an increase/decrease in plate cards for this product;
8. Before you connect or unplug any equipment, be sure to determine whether all power cords are unplugged in advance;
9. To prevent any unnecessary injuries to products due to frequent power on/off to the products, after the unit is shut down, you must wait at least 30 seconds before you restart up the unit.
- 10: If anything unexpected exists during Equipment used, please contact the professionals.

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Packing List

Thank you very much for choosing our products. Please check your package completely as the following item checklist first, if you find any components lost or damaged, please contact your retailer.

■ MITX-6854 motherboard	1 pcs
■ NORCO-4134 PCI convert Card (Optional)	1 pcs
■ User's Manual	1 pcs
■ Drive Disk	1 pcs
■ SATA Data Cable	1 pcs
■ SATA HD Power Cable (optional)	1 pcs
■ IDE Data Cable	1 pcs
■ Serial port convert cable (2x20Pin convert 4 DB9)	2 pcs
■ LPT convert cable	1 pcs
■ USB convert cable	1 pcs
■ Jumpers	4 pcs



Chapter 1

General Information

Chapter1 General Information

1.1 Introduction

MITX-6854 is fanless Mini-ITX motherboard based on Intel 945GSE+ICH7M chipset with integrated Intel Atom N270 1.6GHZ CPU(FSB 533MHz and L2 Cache 512KB).MITX-6854 has One 200 pin SO-DIMM DDRII 400/533MHz socket support system memory max. upto 2GB.With integrated graphic controller in northbridge, MITX-6854 is also provide VGA/DVI/LVDS display and Dual-Independent-Display(VGA+DVI or VGA+LVDS).MITX-6854 provides one IDE, two SATAII, eight USB2.0, ten COM and one GbE (PCI-E). Additionally, one PCI and one mini-PCIE are also provided for the system flexibility.

MITX-6854 is an integrated powerful computing platform with standard digital input/out ports、IrDA、Watchdog Timer. It is specially suitable for POS、kiosk、ATM and Rail Transportation applications.

1.2 Specifications

Configuration Standard

- Low consume Mini-ITX Standard motherboard

Dimensions

- 170mm X 170mm (L×W)

Processor

- Onboard Intel Atom N270 1.6G processor, L2 for 512KB,Power consumption is only 2.5W.Support FSB for 533MHz
- Support EM64T

Chipset

- North Bridge: Intel®945GSE (TDP 5.5~6W)
- South Bridge: Intel®ICH7M

Display

- Chipset: Intel®945GSE Graphics Memory Controller Hub (GMA950)
- VGA: 1x DB15 port, support uXGA and resolution up to 2048x1536

- DVI(Optional): SDVO signal convert DVI signal, Support resolution up to 1600x1200(DVI and LVDS combination not included),
- LVDS(Optional): SDVO signal convert 24bit LVDS signal,Support resolution up to1600x1200, GPIO Brightness control, Backlight power control.(DVI and LVDS combination not included)
- Dual Independent Display: VGA+LVDS/VGA+DVI can support dual independent display (DVI and LVDS combination not included)

System Mermory

- 1x 200Pin dual channels SODIMM Memory socket
- Support DDR II 400/533MHz memory Up to 2GB

Storage

- 2x Serial ATA II Ports, The transfer speed is up to 300MB/s
- 1x IDE Port, Support PIO、 Bus Master、 Ultra DMA33/66/100 mode, The transfer speed is up to 100MB/s
- Compact Flash: 50Pin Socket (Support DMA Mode), Share IDE channels

LAN

- Chipset: REALTEK 8111C
- Speed: 10/100/1000Mbps
- Interface:1x RJ45 Port

Audio

- Chipset: ALC888
- Audio Controller: Supports AC97 Audio stereo sound
- Audio Interface:Line-out, MIC-IN

USB Port

- 8x USB2.0 ports. The transfer speed is up to 480Mb/s
- Back panel double USB ports
- 3 group 2x5Header ports, can convert to 6x stanard USB ports

I/O Functions

- Use Winbond W83627HF I/O chip
- Support 10x Serial Ports, COM1、COM2(by I/O chipshet) double deck DB9 ports, COM1 support RS232 , COM2 support RS232/422/485 ; Through the LPC bus Extended COM3-COM10 (by F81216 chipshet),support RS232。
- Provides one 2x10Pin parallel Port, Support SPP/EPP/ECP mode
- standard PS/2 keyboard and mouse port
- 1x IrDA Port
- Programmable input/output interfaces

Expansion Interfaces

- 1x PCI Slot
- 1x Mini-PCIE Slot

Power support

- Single power input (+12V)/ Standard ATX PowerSupply

Watchdog

- Support H/W reset function

BIOS

- 8MB SPI Flash BIOS
- Support ACPI Power manage

Environmental

- Operate Temp: 0-60℃
- Storage Temp.: -40-85℃
- Operating Humidity: 5%-95%



Chapter 2

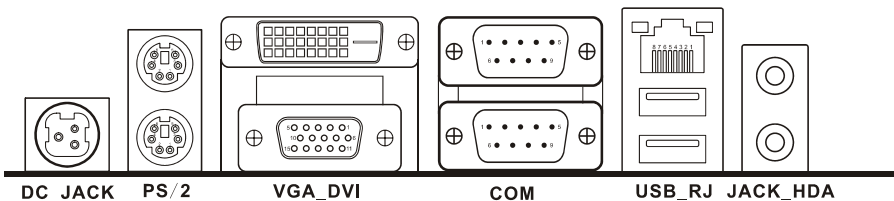
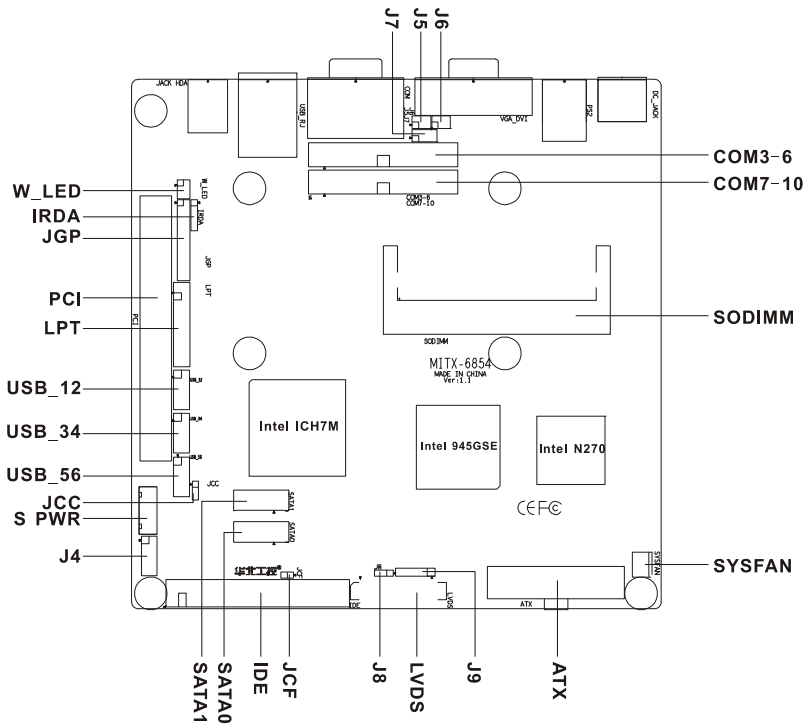
Installation Instructions

Chapter2 Installation Instructions

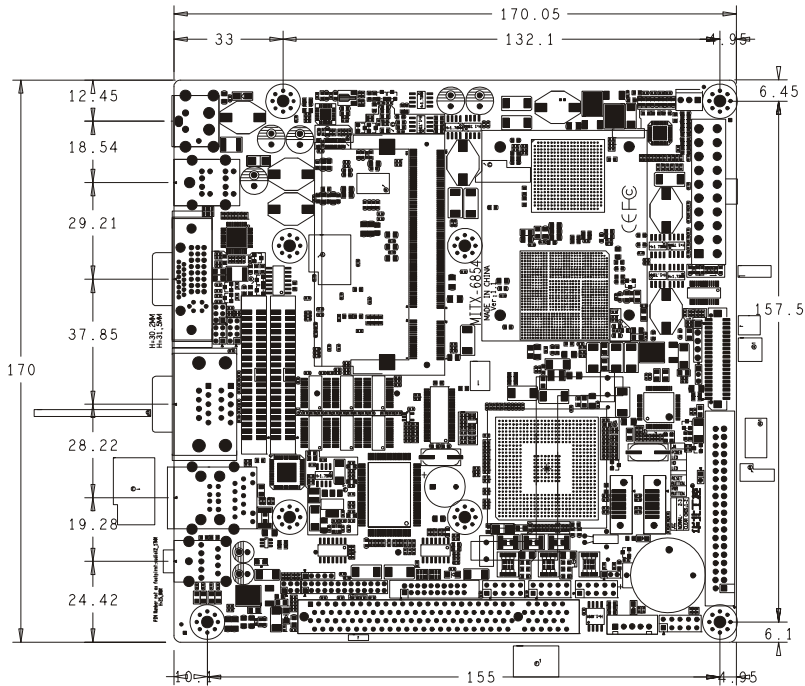
2.1 Connector Locations and Dimensions

The following picture is interface index for MITX-6854, when you install your devices, please consult it and read the following guide. During installation please care: for some devices, if incorrectly install, it will not work normally.

Note: During installation, in order to protect the part of board, please put on antistatic gloves.



MITX-6854 Connectors Locations



MITX-6854 Dimensions

2.2 Installation Steps

Please refer to the following steps to install your computer:

1. Adjust all Jumpers on the MITX-6854 per this manual.
2. Installing system memory
3. Installing Expansion card
4. Connect all of the signal line, cable, panel-control circuitry and power supply
5. Finish BIOS setup

Note:

Key components of this motherboard are Integrated circuit, and these components will be easily damaged by electrostatic influence. So, before installing motherboard, you should always follow the following precautions:

1. Disconnect your Computer from the power supply before handling it.
2. Hold side by the edges; don't touch any component or pins on the board

3. Use a grounded wrist strap while getting in touch with integrated circuit component (like as CPU, RAM).

4. Place components on a grounded antistatic bag that came with the Single Board Computer, when these components are separated from the system.

2.3 Installing SO-DIMM

The procedures for installing SODIMM are described below. Please follow these steps carefully. You can install SDRAM memory modules using 200-pin SODIMM (Small Outline Dual In-line Memory Modules).

- 1: Ensure that all power supplies to the system are switched off.
- 2: Tilt the SODIMM card approximately 25° above the board, and move it in the direction of the housing card slot. Make sure that the key in the module and the key in the housing are aligned.
- 3: Push the module into the socket until the module bottoms. There should be a slight insertion force to engage the module into the contacts.

2.4 Setting Jumpers

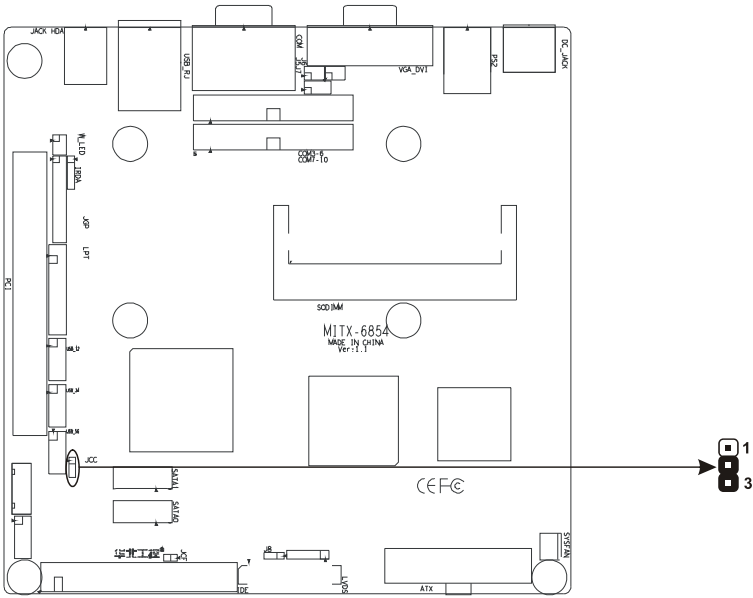
Note:

Jumpers are located on the motherboard, they represent clear CMOS jumper JCC etc. pin1 for all jumpers are located on the side with a thick white line refer to the motherboard's silkscreen , jumpers with three pins will be shown as 1-2 to represent pin1&pin2 connected and 2-3 to represent pin2&pin3 connected.

2.4.1 Clear CMOS (JCC)

This jumper is used to erase CMOS data and reset system BIOS information. The procedure for clearing CMOS is:

1. Turn off the system.
- 2: Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5~10 seconds, then move the cap back to pins 1-2.
3. Turn on the system. The BIOS is now reset to its default setting

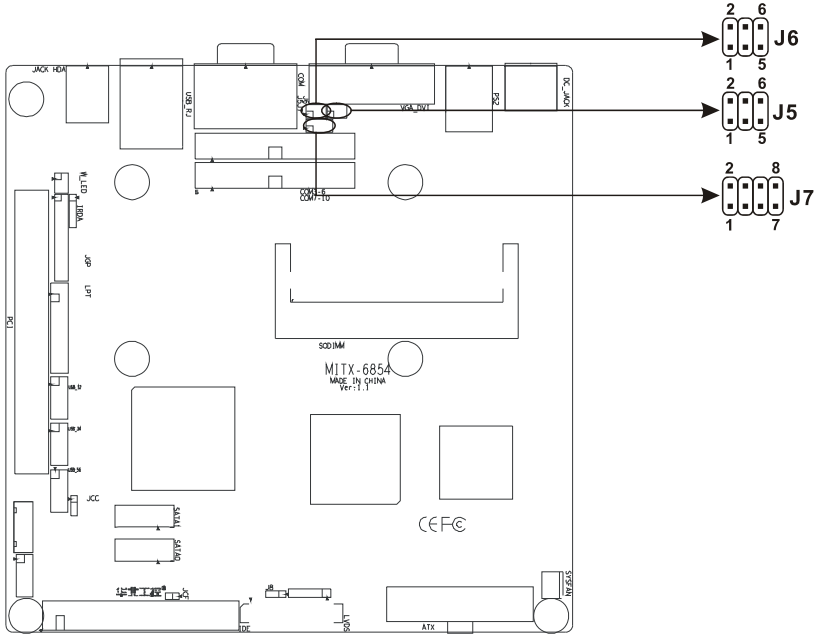


setting	JCC
1-2	Clear CMOS(BIOS renew to initialization)
2-3	Nomal status(default)

! Do not clear CMOS when power switch on, or it harm to the motherboard.

2.4.2 COM2 setting (J5, J6, J7)

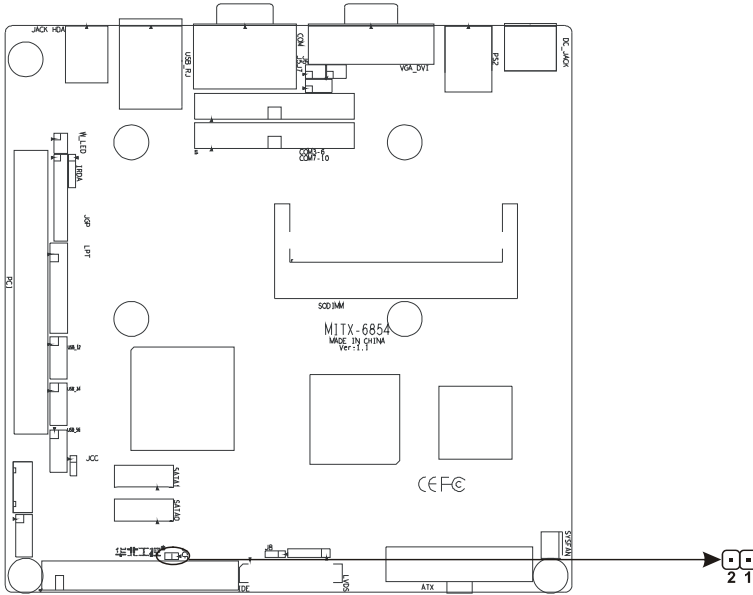
COM2 can be configured to operate in RS-232, RS-422, or RS-485 mode (RS232 for default.). This is done via J5, J6 and J7.



COM2 RS232 (default)		COM2 RS422		COM2 RS485	
J5	3-5 4-6	J5	1-3 2-4	J5	1-3 2-4
J6	3-5 4-6	J6	1-3 2-4	J6	1-3 2-4
J7	1-2	J7	3-4	J7	5-6 7-8

2.4.3 CF Card Master/Slave Selection (JCF)

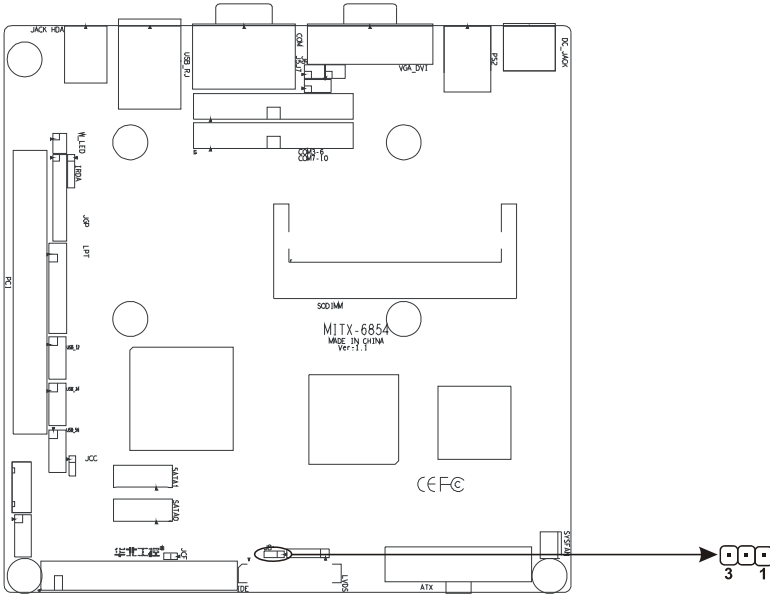
This jumper for setting CF card as master or slave, close JCF jumper (plug JCF cover), CF card is set as master. When you need to set it as slave, open the cover please! Master for default.



Setting	JCF
Close	Set CF card as master(default)
Open	Set CF card as slaver

2.4.4 LCD Power Selection (J8)

Before use LCD device, please make sure the powersupply is adjusted accordingly. J8 is to adjust the powersupply of LVDS and TFT.



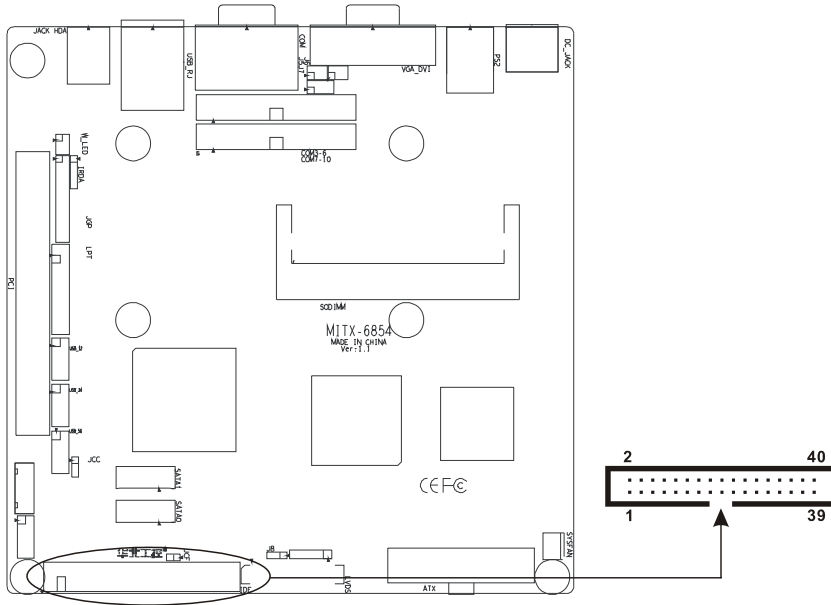
Panel VCC Selection		
J8	1-2	5V
	2-3	3.3V

2.5 External Connector

⚠ Please carefully read this manual when connecting external connector, so as to avoid damage to the motherboard!

2.5.1 IDE Connector (IDE1)

This IDE connector is for 2 IDE devices. If you have two IDE hard disks in system, the second disk must be set as slave disk by jumper setting.



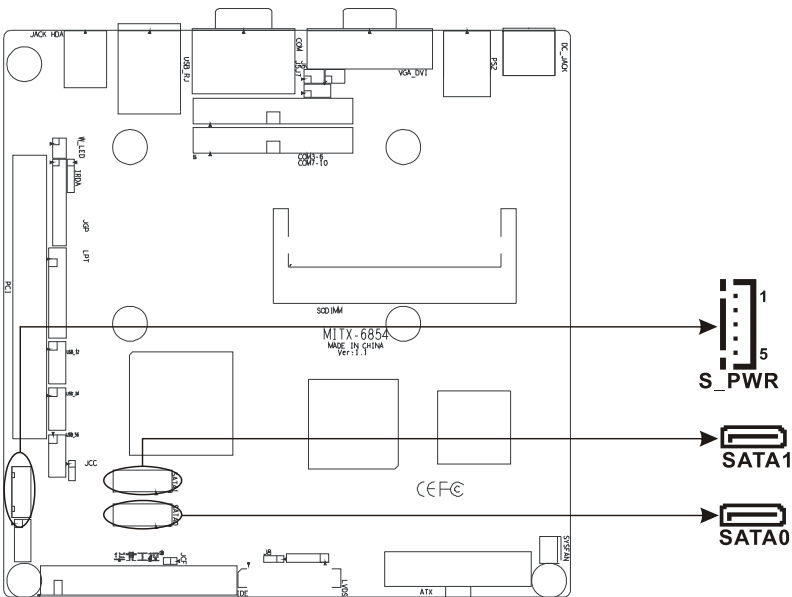
IDE:

Pin Name	Pin		Pin Name
IDERST#	1	2	GND
DDP 7	3	4	DDP 8
DDP 6	5	6	DDP 9
DDP 5	7	8	DDP 10
DDP 4	9	10	DDP 11
DDP 3	11	12	DDP 12
DDP 2	13	14	DDP 13
DDP 1	15	16	DDP 14

DDP 0	17	18	DDP 15
GND	19	20	VCC
IDE_PDDREQ#	21	22	GND
IDE_PDIOW	23	24	GND
IDE_PDIOR	25	26	GND
IDE_PIORDY	27	28	ALE
IDE_PDDACK#	29	30	GND
INT_RQR14	31	32	NC
IDE_PDA1	33	34	P66DET#
IDE_PDA0	35	36	IDE_PDA2
IDE_PDCS1#	37	38	IDE_PDCS3
ACTP#	39	40	GND

2.5.2 SATA Connector&SATA Power Connector (SATA0, SATA1, S_PWR)

MITX-6854 supports Serial ATA via two connectors (SATA0, SATA1). Data transfer rates up to 300 MB/s, enabling very fast data and file transfer, and independent DMA operation on two ports.



SATA Port Pin define:

Pin	Pin Name
1	GND
2	SATA_TXP
3	SATA_TXN
4	GND
5	SATA_RXN
6	SATA_RXP
7	GND

S_PWR (SATA Power Connector) :

Pin	Pin Name
1	+12V
2	GND
3	VCC
4	GND
5	VCC3

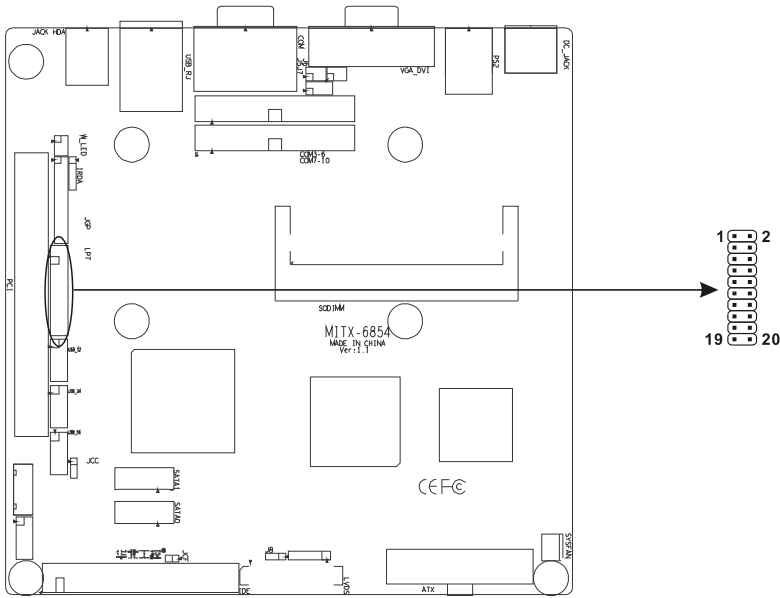
2.5.3 CF Card Socket (Compact Flash)

One standard 50pin Compact Flash Socket on board (Image Omitted).

Note: The CF card socket share channels with IDE. IDE channel support only two IDE devices, when Compact Flash card was install, only one IDE device can be connected.

2.5.4 Parallel Port (LPT)

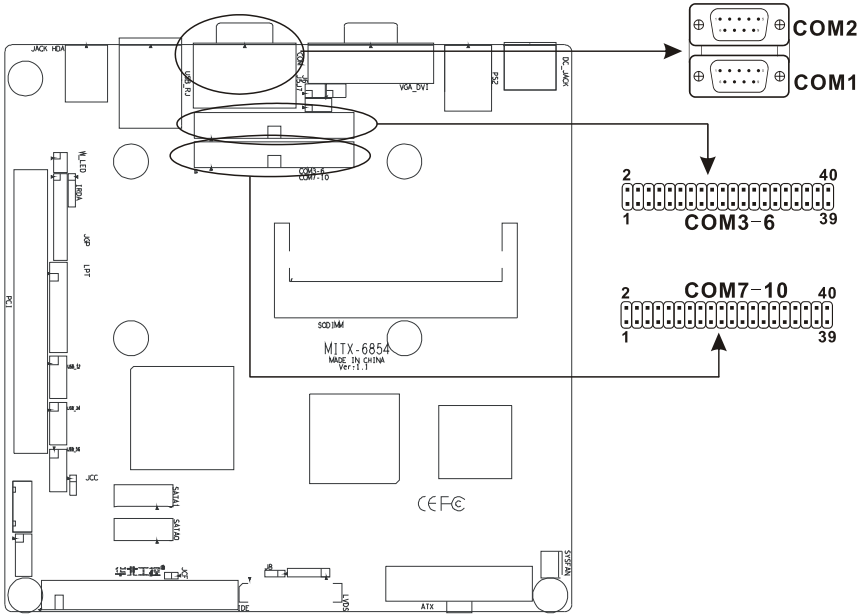
Normally, the parallel port is used to connect the card to a printer. The board includes a multi-mode (ECP/EPP/SPP) parallel port accessed via LPT and a 20-pin flat-cable connector. You will need an adapter cable if you use a traditional DB-25 connector. The adapter cable has a 20-pin connector on one end, and a DB-25 connector on the other. The parallel port interrupt channel is designated to be IRQ7. You can select ECP/EPP DMA channel via BIOS setup.



Pin Name	Pin		Pin Name
T_STB#	1	2	T_AFD#
PDQ0	3	4	T_ERR#
PDQ1	5	6	T_INIT#
PDQ2	7	8	T_SLIN#
PDQ3	9	10	GND
PDQ4	11	12	GND
PDQ5	13	14	GND
PDQ6	15	16	T_BUSY
PDQ7	17	18	T_PE
T_ACK#	19	20	T_SLCT

2.5.5 Serial Port (COM1,COM2,COM3-6,COM7-10)

The board provides ten serial ports (COM1-COM10), you can open or close serial port in bios setting options. COM1~COM10 both support RS232, COM2 even support RS422 /485, you can select COM2 transmission mode by jumper setting, particular setting please consult “2.4.2 COM2 RS-232/422/485 setting”.



COM1:

Pin	Pin Name	Signal description
1	DCD	Data Carrier Detect
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Ground
6	DSR	Data Set Send
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicator

When COM2 is set as RS232/RS422/RS485, pins define as following:

RS485	RS422	RS232	Pin		RS232	RS422	RS485
DATA-	TX-	DCD	1	2	RXD	TX+	DATA+
NC	RX+	TXD	3	4	DTR	RX-	NC
GND	GND	GND	5	6	DSR	NC	NC
NC	NC	RTS	7	8	CTS	NC	NC

NC	NC	RI	9				
----	----	----	---	--	--	--	--

COM3-6:

Pin Name	Pin		Pin Name
HDCD#3	1	2	HDSR#3
HRXD3	3	4	HRTS#3
HTXD3	5	6	HCTS#3
HDTR#3	7	8	HRI#3
GND	9	10	GND
HDCD#4	11	12	HDSR#4
HRXD4	13	14	HRTS#4
HTXD4	15	16	HCTS#4
HDTR#4	17	18	HRI#4
GND	19	20	GND
HDCD#5	21	22	HDSR#5
HRXD5	23	24	HRTS#5
HTXD5	25	26	HCTS#5
HDTR#5	27	28	HRI#5
GND	29	30	GND
HDCD#6	31	32	HDSR#3
HRXD6	33	34	HRTS#6
HTXD6	35	36	HCTS#6
HDTR#6	37	38	HRI#6
GND	39	40	GND

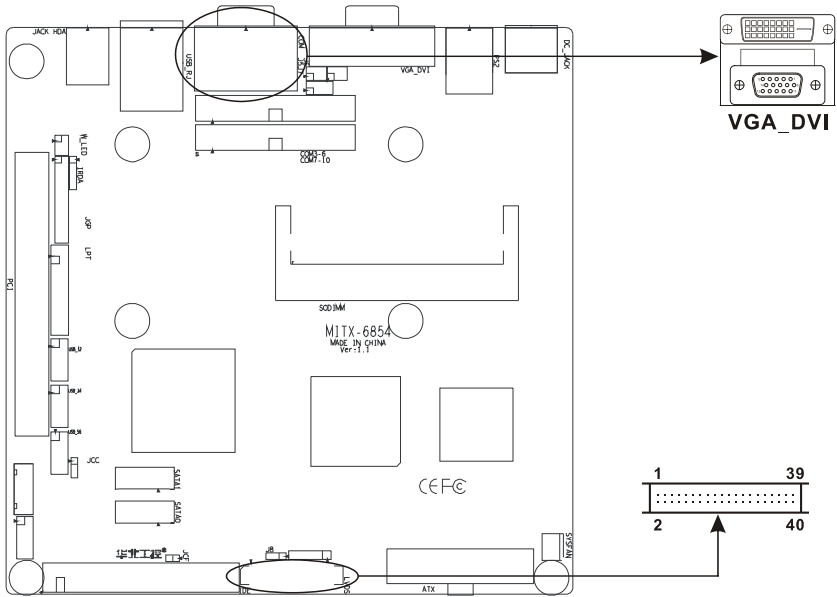
COM7-10:

Pin name	Pin		Pin name
HDCD#7	1	2	HDSR#7
HRXD7	3	4	HRTS#7
HTXD7	5	6	HCTS#7
HDTR#7	7	8	HRI#7

GND	9	10	GND
HDCD#8	11	12	HDSR#8
HRXD8	13	14	HRTS#8
HTXD8	15	16	HCTS#8
HDTR#8	17	18	HRI#8
GND	19	20	GND
HDCD#9	21	22	HDSR#9
HRXD9	23	24	HRTS#9
HTXD9	25	26	HCTS#9
HDTR#9	27	28	HRI#9
GND	29	30	GND
HDCD#10	31	32	HDSR#10
HRXD10	33	34	HRTS#10
HTXD10	35	36	HCTS#10
HDTR#10	37	38	HRI#10
GND	39	40	GND

2.5.6 Display interfaces (VGA, DVI, LVDS)

This board provides two display ports, standard 15pin VGA can be connected with CRT devices directly, DVI or LVDS connector can be connected with LCD-compatible devices (DVI and LVDS combination not included).



VGA:

Pin	Pin Name	Pin	Pin Name	Pin	Pin Name
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	SDA
3	BLUE	8	GND	13	HSYNC
4	NC	9	+5V	14	VSYNC
5	GND	10	GND	15	5VDDCK

DVI (Optional):

Pin Name	Pin		Pin Name
TDC2#	1	2	TDC2
GND	3	4	NC

NC	5	6	SC-DDC
SD-DDC	7	8	NC
TDC1#	9	10	TDC1
GND	11	12	NC
NC	13	14	VCC
GND	15	16	HP-DETECT
TDC0#	17	18	TDC0
GND	19	20	NC
NC	21	22	GND
TLC	23	24	TLC#
GND	25	26	GND
NC	27	28	NC

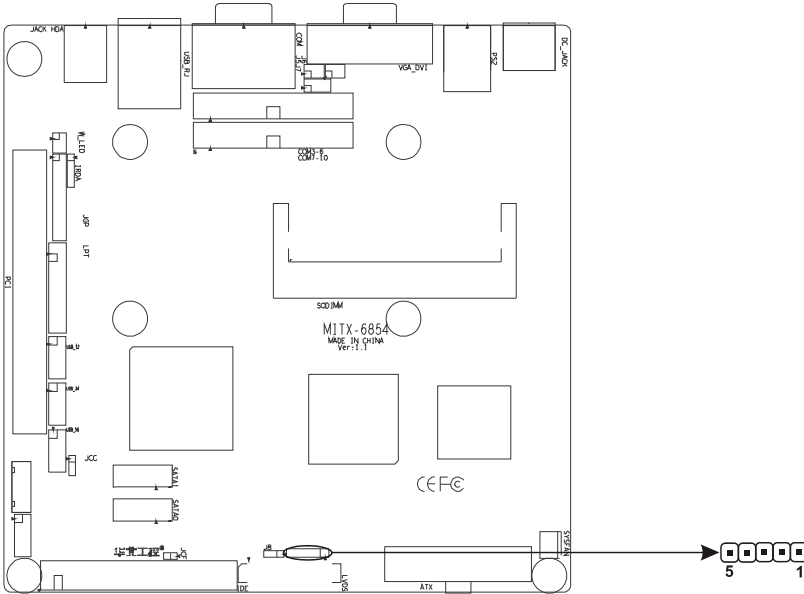
LVDS (Optional):

Pin Name	Pin		Pin Name
VDD	1	2	VDD
GND	3	4	GND
LDC0#	5	6	LDC4#
LDC0	7	8	LDC4
GND	9	10	GND
LDC1#	11	12	LDC5#
LDC1	13	14	LDC5
GND	15	16	GND
LDC2#	17	18	LDC6#
LDC2	19	20	LDC6
GND	21	22	GND
LL1C#	23	24	LL2C#
LL1C	25	26	LL2C
GND	27	28	GND
SD_DDC	29	30	SC_DDC
GND	31	32	GND
LDC3#	33	34	LDC7#

LDC3	35	36	LDC7
GND	37	38	GND
NC	39	40	NC

2.5.7 LVDS PANEL BACKLIGHT (J9)

The LCD inverter is connected to J9 via a 5-pin connector to provide +5V/+12V power.



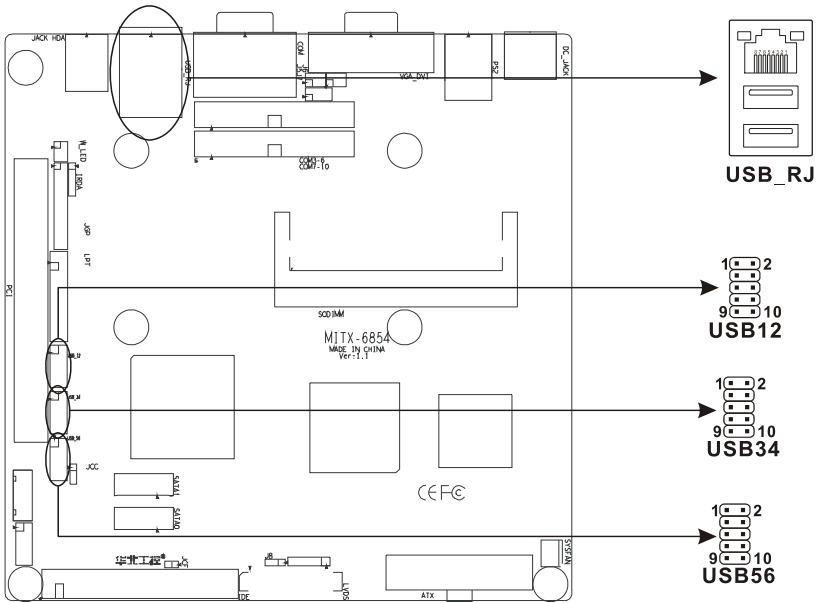
J9:

Pin	Pin Name
1	+12V
2	L_BKLTEN
3	GND
4	L_BKLTCTL
5	VCC

2.5.8 USB&Ethernet (USB_RJ,USB_12,USB_34,USB_56)

The board provides up to eight USB Ports,One RJ45 Ethernet interface.Thereinto, USB_RJ include 2x USB2.0 ports and 1x 10/100/1000Mb RJ45 Ethernet interface, The board

provides 3 group 2 x 5 pin header connectors (USB_12, USB_34, USB_56). You will need an adapter cable if you use a standard USB connector. The adapter cable has a 2 x 5-pin connector with protect function for plug in wrong direction on one end and a USB connector on the other. Two LEDs beside RJ-45, Ethernet LAN port LED status:



RJ45 PORT LED state description:

LILED state		Network link status	ACTLED(Yellow) state	Message transfer status
On	Green (100Mbps)	effective	On	transferring
	Orang (1000Mbps)			
Off		noneffective	Off	No message transferring

Standard USB ports define:

Pin	Pin Name
1	+5V
2	USB DATA-
3	USB DATA+

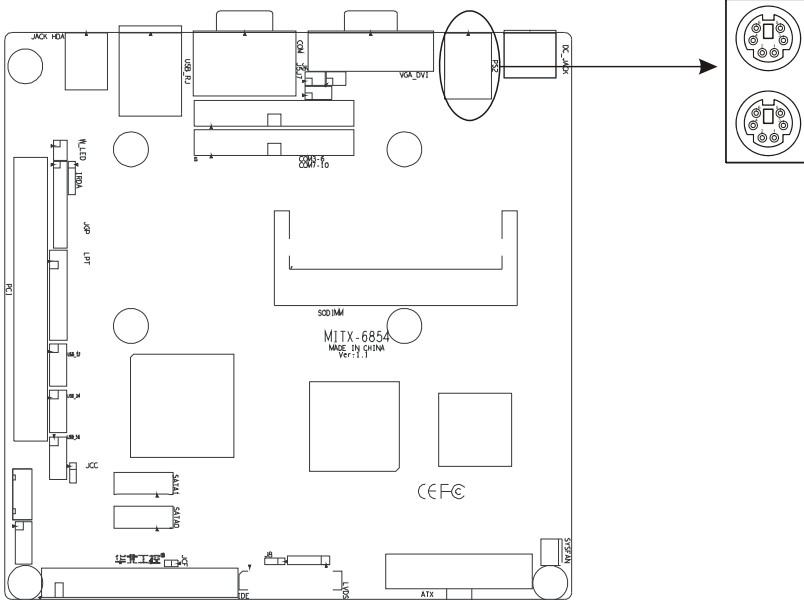
4	GND
---	-----

USB1-6 ports define:

Pin Name	Pin		Pin Name
+5V	1	2	GND
USB DATA-	3	4	GND
USB DATA+	5	6	USB DATA+
GND	7	8	USB DATA-
GND	9	10	+5V

2.5.9 Keyboard/Mouse connector (PS/2)

Tow PS/2 ports for KB/MS: Green for Mouse and Purple for Keyboard.



Mouse:

Pin	Pin Name
7	+5V
8	GND
9	NC
10	MS_DAT A

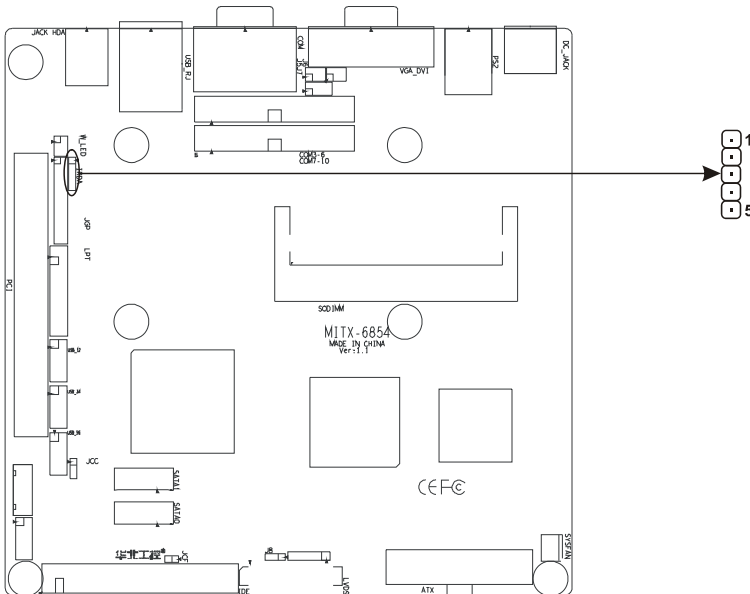
11	MS_CLK
12	NC

Keyboard:

Pin	Pin Name
1	+5V
2	GND
3	NC
4	KB_DATA
5	KB_CLK
6	NC

2.5.10 IRDA interface (IRDA)

This board provides a group of IrDA pins, supports IrDA version1.0 SIR or SHARP ASK-IR protocol infrared ray data transmission function.

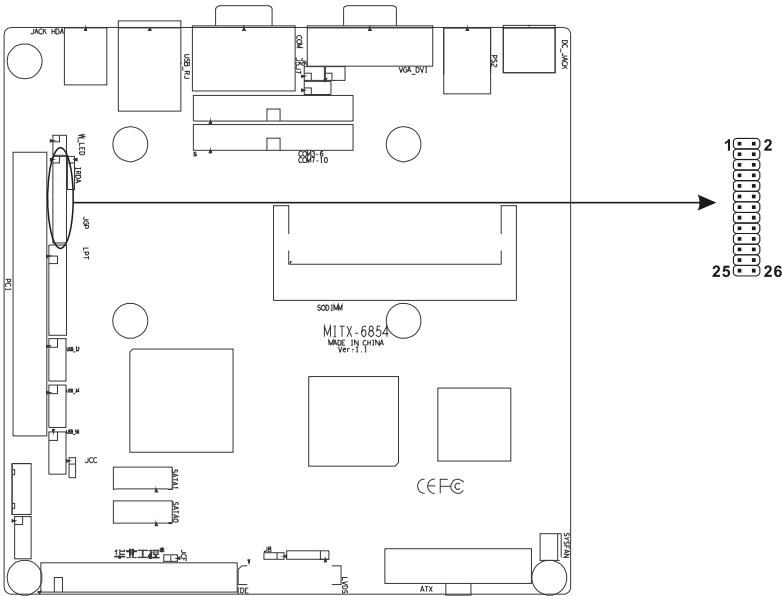


Pin	Pin Name
1	+5V

2	NC
3	IRRX
4	GND
5	IRTX

2.5.11 GPIO (J10)

The board supports 24-bit GPIO through the GPIO connector. The 24 digital input/output can be programmed to read or control devices, with input or output defined. The default setting is 12 bits input and 12 bits output.



GPIO define:

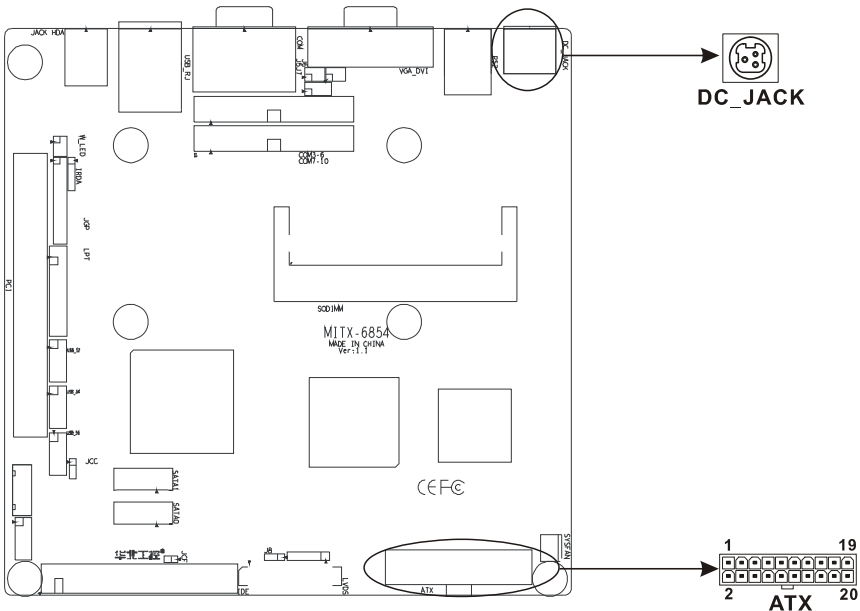
Pin Name	Pin		Pin Name
GP10	1	2	VCC
GP11	3	4	ICH_GPIO6
GP12	5	6	ICH_GPIO7
GP13	7	8	ICH_GPIO9
GP14	9	10	ICH_GPIO10

GP15	11	12	ICH_GPIO12
GP16	13	14	ICH_GPIO14
GP17	15	16	ICH_GPIO15
ICH_GPIO33	17	18	ICH_GPIO24
ICH_GPIO34	19	20	ICH_GPIO25
ICH_GPIO35	21	22	ICH_GPIO26
ICH_GPIO38	23	24	ICH_GPIO27
GND	25	26	ICH_GPIO28

2.5.12 Power Connectors (ATX, DC_JACK)

MITX-6854 provides two optional power supplies, but can't be used at the same time, users can choose on their own needs:

- 1: ATX (ATX): ATX power supply
- 2: Single power supply (DC_JACK): +12V input



ATX:

Pin Name	Pin	Pin Name
----------	-----	----------

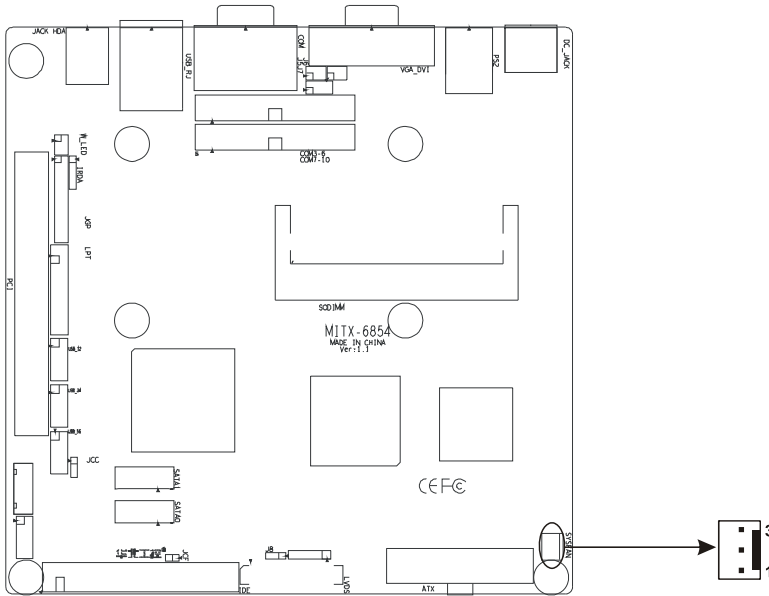
+3.3V	11	1	+3.3V
-12V	12	2	+3.3V
GND	13	3	GND
PS-ON	14	4	+5V
GND	15	5	GND
GND	16	6	+5V
GND	17	7	GND
-5V	18	8	PW-OK
+5V	19	9	+5V SB
+5V	20	10	+12V

2.5.13 CPUFAN connector (CPUFAN)

This board provide a 3Pin CPU fan socket, attention:

(1) Electric current for fan \leq 350mA (4.2W, 12V).

(2) Please ensure that the fan wire is consistent with the wire for this socket. The power cord must be in the middle position. In addition, ensure the GND cord wire (usually black) and fan rotation output pulse signal wire (in other color). It is recommended that the fan with rotary speed detection be used.



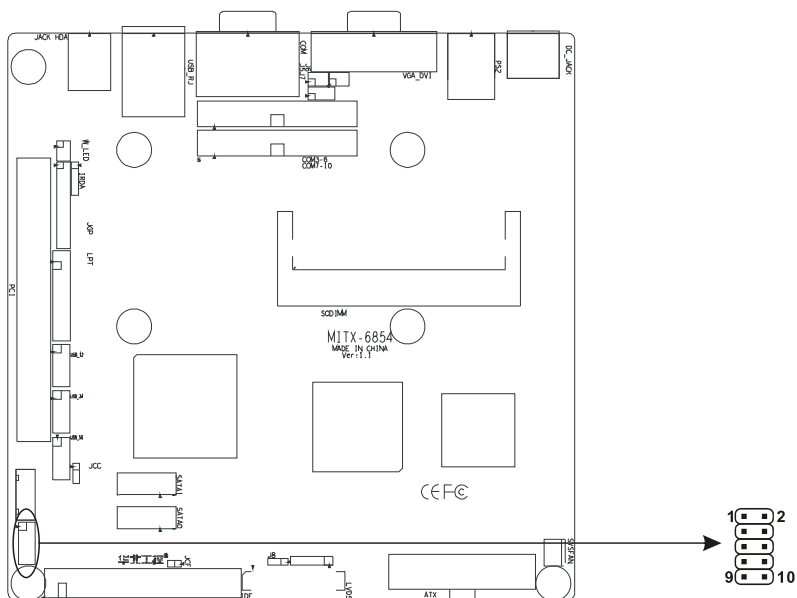
Pin	Pin Name
1	GND
2	+12V
3	Speed detect

2.5.14 Audio (JACK_HDA)

The onboard audio controller provides SPEAKER-OUT or MIC-IN function, and you can recognize them by location (The MIC-IN is the jack near PCB, and the SPEAKER-OUT is at the far end of PCB) or color (Red is MIC-IN, and green is SPEAKER-OUT).

2.5.15 Front Panel connector (J4)

J4 use to connect function button or LED on front panel.



Front Panel connector define:

Pin Name	Pin		Pin Name
GRELED+	1	2	GRELED-
HDD_LED+	3	4	HDD_LED-
NC	5	6	GND
RSTBTN	7	8	GND
PWRSW-	9	10	PWRSW+

Particular connection as below, according to the table above, advert to their polarity; When relevant polarity connected wrong, relevant function won't work normally.

POWER LED
HD LED
RESET BUTTON
POWER BUTTON

1) System Power LED Pins (J4 pin1, pin2 for PWLED)

Connecting system power LED cable and these pins, (pin 1 is LED anode),when system power switch on, power LED on; When system power switches off, power LED off.

2) HD LED Pins (J4 pin3,pin4 for HDD LED)

As a rule, there is a HD LED on the panel of chassis, while HD device (like hard Disk) is reading or writing (no matter which HD device), LED will flash, shows that IDE device is running. Connect IDE LED on chassis panel and these pins (pin3 is LED anode).

3) Reset Button Pins(J4 pin7,pin8 for RESET)

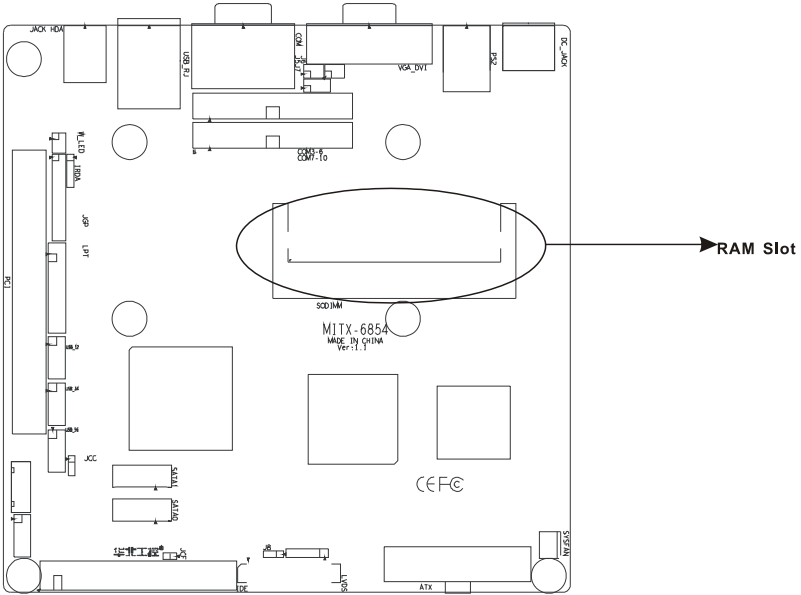
Connect this pins and RESET switch on panel of chassis with cable. When system can not work on, reset can make system restart, without turning on/off the power, thereby it can prolong system serviceable life.

4) Power On/Off Control Pins (J4 pin9,pin10 for POWER BUTTON)

Connect these two pins with bounce switch on panel of chassis, can switch-on or switch-off power.

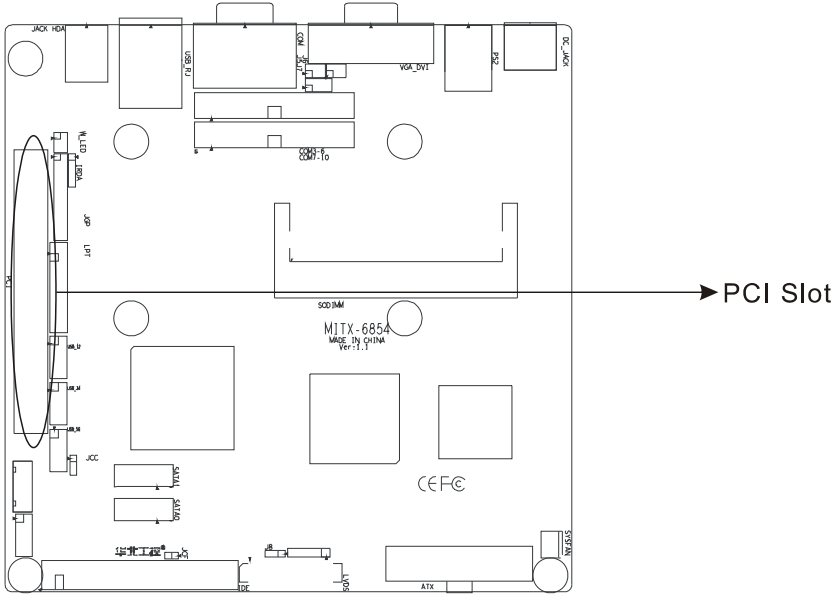
2.5.16 RAM Slot (SODIMM)

MITX-6854 has One 200 Pin SO-DIMM DDRII 400/533MHz socket support system memory max. upto 2GB.



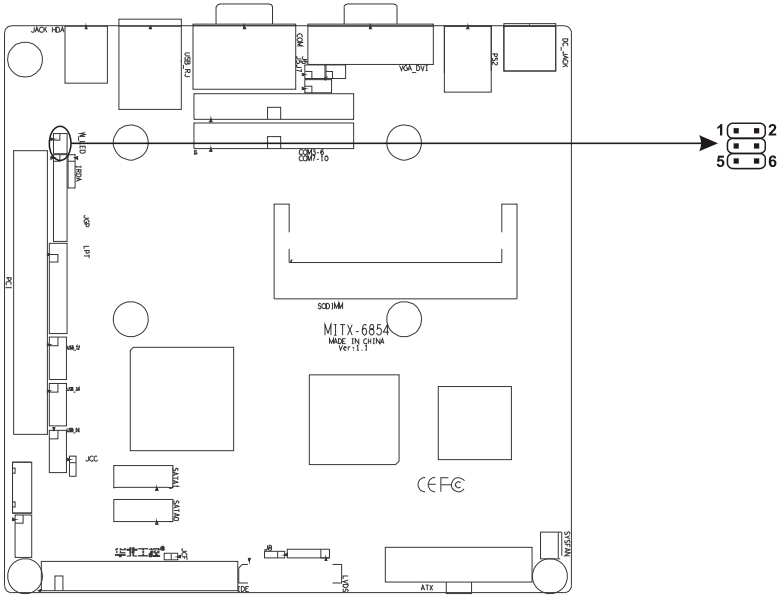
2.5.17 PCI Slot (PCI)

This board provides one PCI slot, Optional PCI convert card can be extended to two PCI slot.



2.5.18 Mini PCIE (MINI_PCIE,W_LED)

The back device of motherboard provides a mini PCI slot (Image Omitted), the user can expand mini PCI according to own need. User can display its status through caller identification when using Mini PCI card.



W_LED:

Pin Name	Pin		Pin Name
LED_WWAN#	1	2	VCC3.3SB
LED_WPAN#	3	4	VCC3.3SB
LED_WLAN#	5	6	VCC3.3SB



Chapter 3

BIOS Setup

Chapter3 BIOS Setup

Award BIOS upgrade:

It is true that hardware and software are upgrading all the time. When your IPC can not support the newest processor (for example), you should upgrade the BIOS to try to keep up with the latest technology. Upgrading (or flashing) the BIOS is not an easy attempt. To make sure upgrade succeed, please follow the instruction below:

AWDFLASH.EXE is the program for BIOS to modify and upgrade, need to be run in DOS mode.

Use boot disk load DOS, run Amiflash.exe and write the newest file:XXXX.bin into the Flash IC.

Order format: A:\Awdflash XXXX.bin

If you need to add other parameters, please add <space>/? after the order format.

Example: Awdflash 6854I100.bin /P /B /C /N /X

Remarks:

1. Upgrading BISO may cause your system crash, so please operate carefully.
2. Please use the upgrading program in the CD-ROM provided by us
3. Please do not power off or reboot the system when upgrading, otherwise, the BIOS maybe be damaged.
4. Please backup your BIOS before upgrading

Award BIOS Description:

Awards BIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed memory (CMOS RAM) so that it retains the setup information when the power is turned off

Award BIOS Setup

Power on your computer, when this information display in your screen: Del->SETUP please press "DEL", then it will enter BIOS setup interface.

1. Power on or Reset computer.
2. When "Press to enter setup" in screen, please press .
3. Use the "←↑→↓" to choose the option which your want to modify, press <Enter> and show

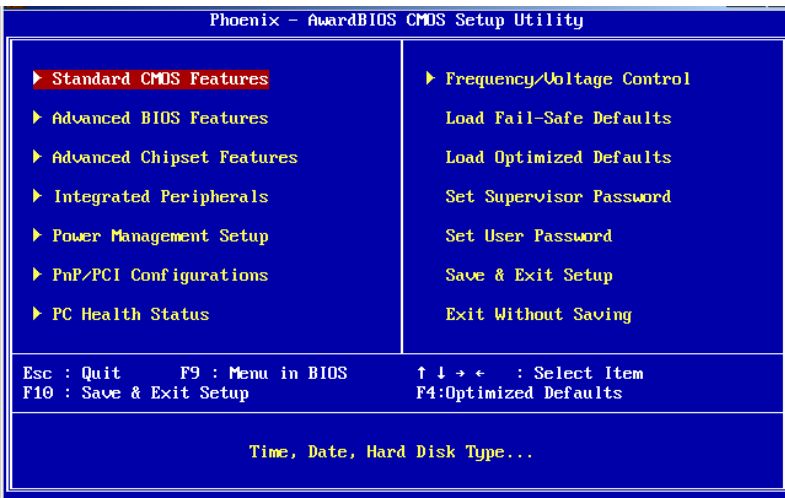
the sub-menu.

4. Use the “←↑→↓”and <Enter> to modify the value.

5. At any time, press<Esc> can back to the father-menu

Note: The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.

When the SETUP program starts, you can see the CMOS Setup Utility Main screens are as follows:



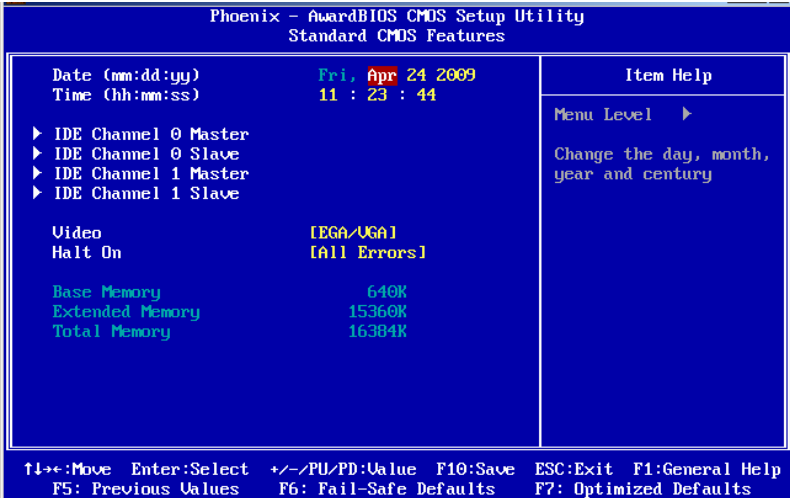
Award BIOS on the map is the main menu. Main Menu 12 set to provide the functions and two out of the way, the user needs according to their own set of corresponding projects. The following BIOS settings will be explained the various items.

3.1 Standard CMOS Setup

The CMOS RAM is powered by an onboard button cell battery. When you finish BIOS setup, the data in CMOS RAM will be automatically backed up to Flash ROM. If operation in harsh industrial environments causes a soft error, BIOS will recheck the data in CMOS RAM and automatically restore the original data in Flash ROM to CMOS RAM for booting.

Note: If you intend to change the CMOS setting without restoring the previous backup, you have to click on "DEL" within two seconds of the "CMOS checksum error..." display screen

message appearing. Then enter the "Setup" screen to modify the data. If the "CMOS checksum error" Message appears again and again, please check to see if you need to replace the battery in your system.



Date

Format: Day/Month/Date/Year ; < Day><Month><Date><Year> can be set by user.

Time

The times format in <hour> <minute> <second>, base on the 24-hour time

IDE Channel 0/1 Master/Slave

These 4 options are IDE HDD setting items. Important: Please select the right option for your IDE devices. Please make sure that the specifications of the IDE devices are comply with the content of the device list. If not: the device will be fail. In the main menu, we have another auto detection function item to facilitate the settings.If the HDD interface is SCSI, please select Not Installed.

1. <LBA/Large>: HDD LBA/Large mode On/Off mode switch. Currently, HDD that size is bigger than 540MB should turn on this Option. But in some Novell Netware 3.xx or 4.xx etc version netbased OS need it be Off.
2. <Block Mode>: Turn this option to be On will help the R/W speed of HDD to be faster. But some of the old HDD don't support this mode, and this option should be Off in this case.

3. <PIO Mode>: Support PIO Mode0~Mode5(DMA/33)。 Use BIOS program to auto check the HDD, this option of PIO mode will be set.

Important: If your system installed an IDE device (i.e. HDD, CD-ROM Driver), you should go to the BIOS setting, and let the system auto detect the device. If you are using swapable HDD, you can change the type to Auto, or set the Primary and Secondary to Auto. Here, Primary means the first IDE interface: IDE0 on the motherboard; and Secondary means the second IDE device, and it refers to the IDE1 interface on the motherboard.

Every IDE device can have two IDE devices as Master/Slave.

Video

Select EGA or VGA display.option item: <EGA/VGA>, <CGA 40>, <CGA 80>, <MONO>.

Halt On

The item determines whether the computer will stop if an error is detected during power up.

<No Errors>: The system boot will not stop for any error.

<All Errors>: Whenever the BIOS detects a non-fatal error the system will be stopped

<All, But Keyboard>: The system boot will not stop for a keyboard error; it will stop for all other errors. (Default value)

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

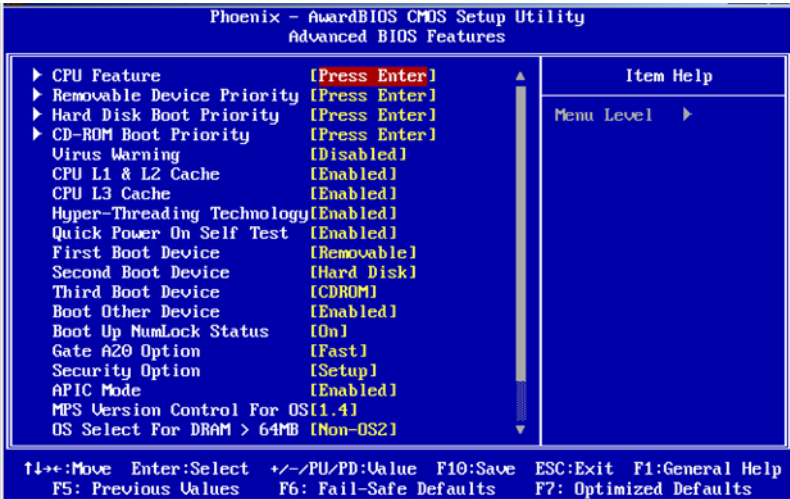
Extended Memory

The BIOS POST will determine the amount of extended memory (above 1 MB in CPU's memory address map) installed in the system.

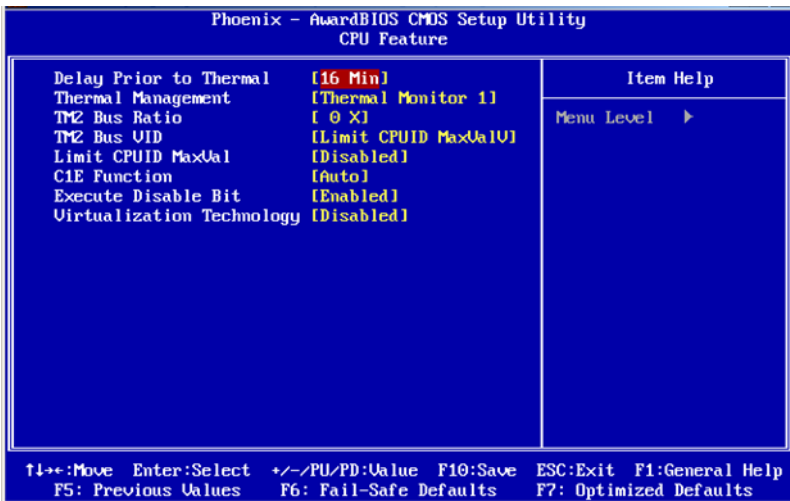
Total Memory

This item displays the total system memory size.

3.2 Advanced BIOS Features



3.2.1 CPU Feature



Delay Prior to Thermal

When the temperature of CPU has reached the preset temperature by the factory, the clock of the motherboard will be delayed. The temperature device is activated, and the detector inside the CPU is also activated to maintain the limit of temperature of CPU. This can be set to <4 Min>, <8 Min>, <16 Min>, <32 Min>.

Thermal Management

Choice of thermal management monitor. option: <Thermal Management 1(default)>, <Thermal Management 2>.

TM2 Bus Ratio

Performance Management bus will be activated when the hard mode detector turn hot from cool. Min=0 Max= 255 Input DEC code = Option:<0X (Default)>.

TM2 Bus VID

Performance Management bus voltage will be activated when the hard mode detector turn hot from cool.Option: <0.8375 V(Default)>,<0.8375-1.6000>.

Limit CPUID Maxval

Set CPU ID MaxVal, Max is 3. In WinXP, it is set as<Disabled>. Option: <Disabled (Default)>, <Enabled>.

C1E Function

CPU C1E Funcion option. Option: <Auto (default)>.

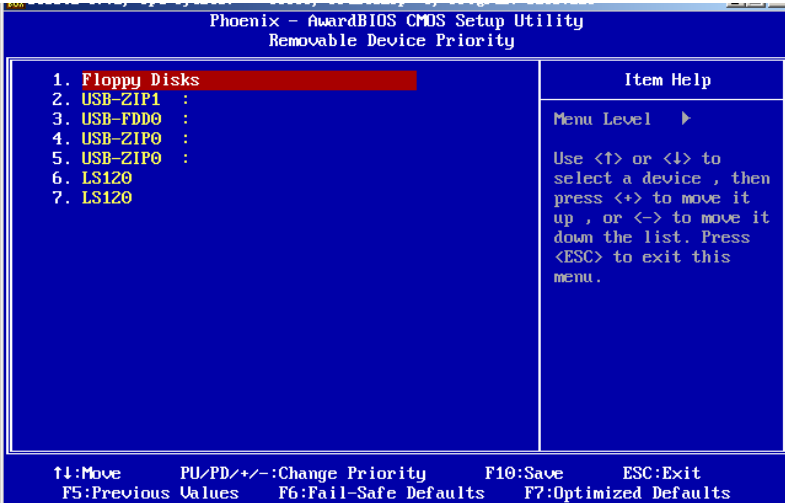
Execute Disable Bit

Set if the CPU is protected by hardware antivirus Option: <Disabled>, <Enabled(Default)>.

Virtualization Technology

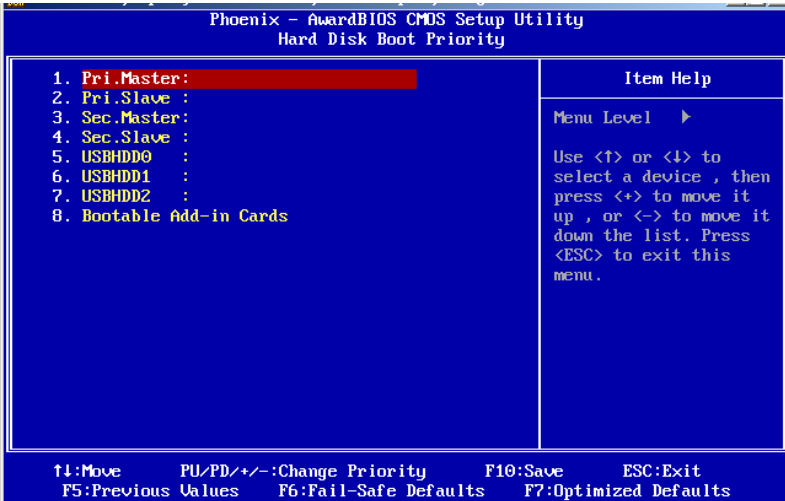
Set if use the additional hardware function provided by Vanderpool technology. Option: <Disabled>, <Enabled(Default)>.

3.2.2 Removable Device Priority



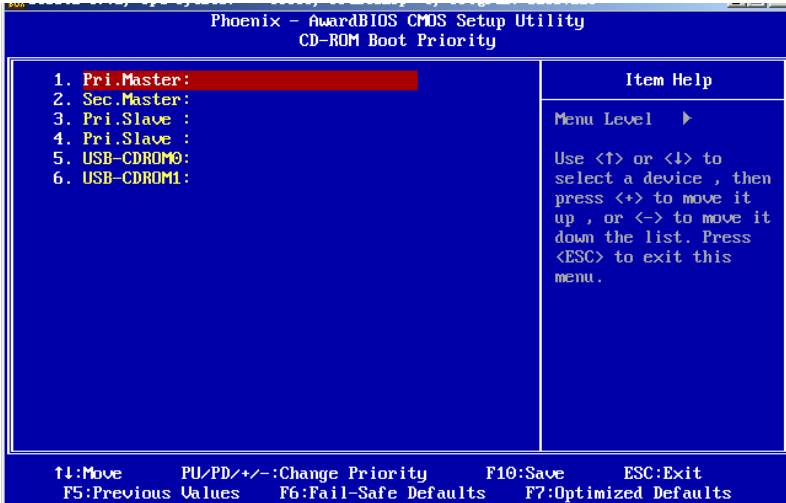
The above-mentioned items are the order of boot devices, can not be amendment.

3.2.3 Hard Disk Boot Priority



The above-mentioned items are the order of boot devices, can not be amendment.

3.2.4 CD-ROM Boot Priority



The above-mentioned items are the order of boot devices, can not be amendment.

Virus Warning

If enabled, a warning message and alarm beep activates if someone attempts to write here. The commands are <Enabled> or <Disabled>.

CPU L1&2 Cache

This item allows the user to <Enabled (default)>/<Disable> CPU L1&L2 cache.

CPU L3 Cache

This item allows the user to <Enabled (default)>/<Disable> CPU L3 cache.

Hyper-Threading Technology

This item allows the user to Enabled/Disabled Hyper-threading support for the Intel® Pentium®4 processor with HT Technology. The Choices : < Enabled (default)>, <Disabled>.

Quick Power On Self Test

This option speeds up the Power-On Self Test (POST) conducted as soon as the computer is turned on. When enabled, BIOS shortens or skips some of the items during the test.

When disabled, the computer conducts normal POST procedures.

First/Second/Third Boot Device

The BIOS tries to load the OS with the devices in the sequence selected. Choices are: <Floppy>, <LS/ZIP>, <HDD>, <SCSI>, <CDROM>, <LAN>, and <Disabled>.

Boot Other Device

If this option is set as [Enabled], system can be booted from other devices if it is fail to boot from the first, second or third device. Options: <Disabled (Prohibited)>; <Enabled (Default)>.

Boot Up NumLock Status

This item allows the user to activate the Number Lock key at system boot. The Choices :< On (Default)>, <Off>

Gate A20 Option

<Normal>: A pin in keyboard controller controls GateA20

<Fast (Default)>: Chipset controls GateA20

The typematic rate is the rate key strokes repeat as determined by the keyboard controller. The commands are "Enabled" or "Disabled." Enabling allows the typematic rate and delay to be selected.

Security Option

This field allows you to limit access to the System and Setup. The default value is Setup. When you select System, the system prompts for the User Password every time you boot up. When you select Setup, the system always boots up and prompts for the Supervisor Password only when the Setup utility is called up.

APIC Mode

APIC stands for Advanced Programmable Interrupt Controller. The default setting is <Enabled>.

MPS Version Control For OS

This option specifies the MPS (Multiprocessor Specification) version for your operating

system. MPS version 1.4 added extended configuration tables to improve support for multiple PCI bus configurations and improve future expandability. The default setting is < 1.4 >.

OS Select For DRAM > 64MB

This option allows the system to access greater than 64MB of DRAM memory when used with OS/2 that depends on certain BIOS calls to access memory. The default setting is <Non-OS/2>.

Report NO FDD For WIN95

If you are using Windows 95/98 without a floppy disk drive, select Enabled to release IRQ6. This is required to pass Windows 95/98's SCT test. You should also disable the Onboard FDC Controller in the Integrated Peripherals screen when there's no floppy drive in the system. If you set this feature to Disabled, the BIOS will not report the missing floppy drive to Win95/98.

Full Screen LOGO Show

The splash screen can display the company LOGO. Option: <Enabled>, <Disabled>.

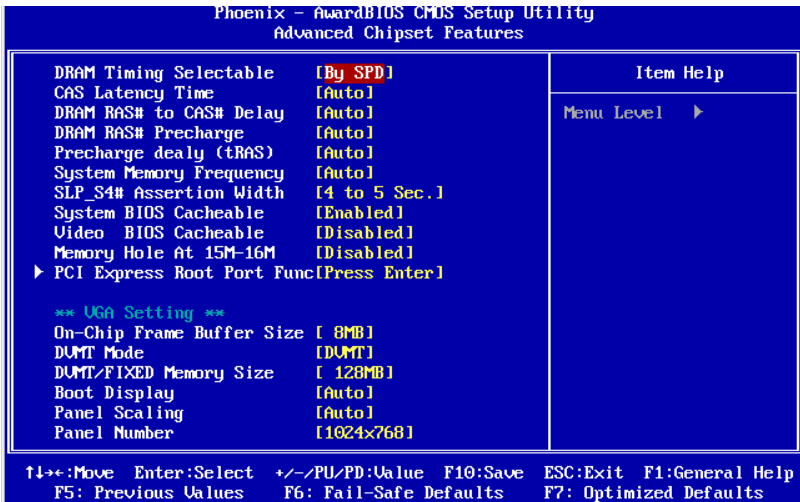
Small Logo(EPA) Show

The EPA logo appears at the right side of the monitor screen when the system is boot up. The default setting is < Enabled >.

Summary Screen Show

This item allows you to open or close the screen shows a summary. Option: <Disabled (default)>, <Enabled>.

3.3 Advanced Chipset Features



DRAM Timing Selectable

This option refers to the method by which the DRAM timing is selected. The default is <By SPD>.

CAS Latency Time

You can configure CAS latency time in HCLKs as 2 or 2.5 or 3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU. The default is <Auto>.

DRMA RAS# to CAS# Delay

This option allows you to insert a delay between the RAS (Row Address Strobe) and CAS (Column Address Strobe) signals. This delay occurs when the DRAM is written to, read from or refreshed. Reducing the delay improves the performance of the DRAM. The default is <Auto>.

DRAM RAS# Precharge

This option sets the number of cycles required for the RAS to accumulate its charge before the DRAM refreshes. The default setting for the Active to Precharge Delay is <3>.

Precharge dealy (tRAS)

This item allows user to adjust memory precharge time. The choices: [4], [5], [6], [7], [8], [9], [10], [Auto].

System Memory Frequency

This item allows user to adjust memory frequency to improvement performance.

SLP_S4# Assertion Width

This item allow user to set the SLP_S4# Assertion Width。The choices : <4---5 Sec(default)>, <3 to 4 Sec>, <2 to 3 Sec>, <1 to 2Sec>.

System BIOS Cacheable

The setting of Enabled allows caching of the system BIOS ROM at F0000h- FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

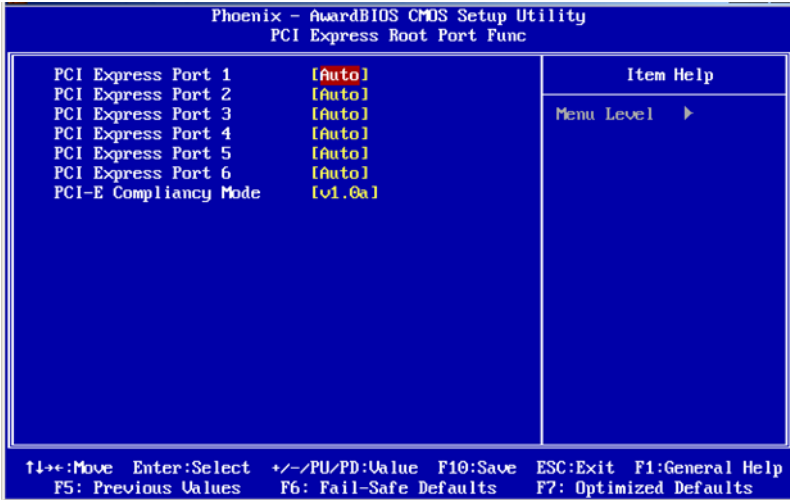
Video BIOS Cacheable

The Setting Enabled allows caching of the video BIOS ROM at C0000h-C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

Memory Hole At 15M-16M

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB. The choices are <Enabled> and <Disabled>.

PCI Express Root Port Func



PCI Express port 1-6

Set whether use PCI-E 1-6 port. The choices:<Auto(default)>, <Disabled>, <Enabled>.

PCI-E Compliancy Mode

This option allows you to choose the PCI-E Compliancy Mode. The choices: <v1.0a (default)>, <v1.0>.

VGA Setting

On-Chip Frame Buffer Size

This item allows the user to adjust on-chip graphics of memory buffer. The choices: <1MB>, <8MB(default)>.

DVMT Mode

This item allows the user to adjust Intel's Dynamic Video Memory Technology (DVMT).Bios provides three options to choose (DVMT, FIXED and Both).

DVMT/FIXED Memory Size

This item allows the user to adjust DVMT/FIXED graphics memory size.

Boot Display

This item allows the user to decide that display mode.

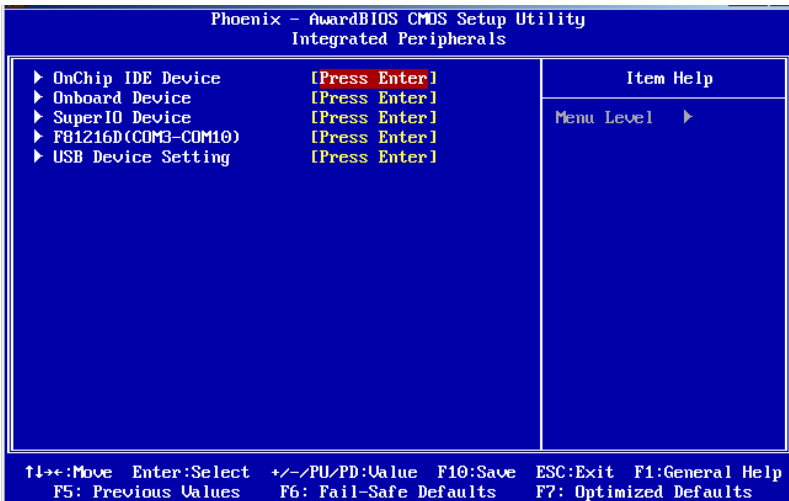
Panel Scaling

Set Panel Scaling function. The choices:<Auto (default) >,<On>,<Of>.

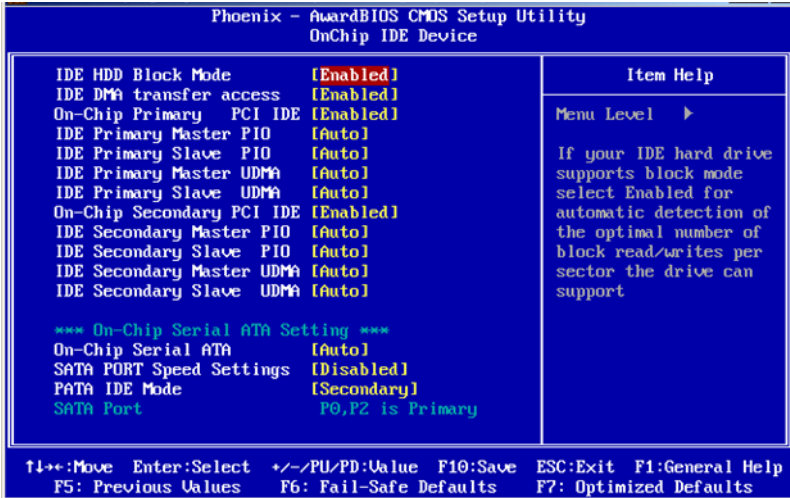
Panel Number

These fields allow you to select the LCD Panel type. The setting values for these ports are:
<1024 x 768>,<1280 x 1024 >,<1400 x 1050>,<1600 x 1200 >.

3.4 Integrated peripherals



3.4.1 OnChip IDE Device



IDE HDD Block Mode

You can enable the Primary IDE channel and/or the Secondary IDE channel. Any channel not enabled is disabled. This field is for systems with only SCSI drives.

IDE DMA transfer access

DMA transfer access, The choices: <Disabled>, <Enabled(default)>.

On-Chip Primary/Secondary PCI IDE

Some UDMA cables use a hole in the ribbon cable as a cable detect mechanism to determine if a UDMA IDE or standard IDE cable is installed. The default setting is <Enabled>.

IDE Primary/Secondary Master/Slave PIO

Four IDE PIO (Programable Input and Output) options can allow you to assign PIO mode(1-4) for each IDE device. Mode 0 to 4 provides the increasing performance. In Auto mode, the system will auto detect the best working mode. The choices: <Auto>, <Mode 0>, <Mode 1>, <Mode 2>, <Mode 3>, <Mode 4>.

IDE Primary/Secondary Master/Slave UDMA

Ultra DMA/33/66/100 can be used when your IDE HDD support this kind of function. In the meantime, the OS includes a DMA driver (Windows 95 OSR2 or third-party IDE BUS control

and driving programe)。If your HDD and your OS can support Ultra DMA/33, Ultra DMA/66 or Ultra DMA/100, Select Auto to enable BIOS support. Options: [Auto], [Disabled].

On-Chip Serial ATA Setting

On-Chip Serial ATA

This can be set to [Disabled: SATA Prohibited], [Auto: Detect SATA device by BIOS], [Combined Mode: Simulate the IDE setting], [Enhanced Mode: Allow to use all IDE and SATA connection interface], [SATA Only: use SATA only].

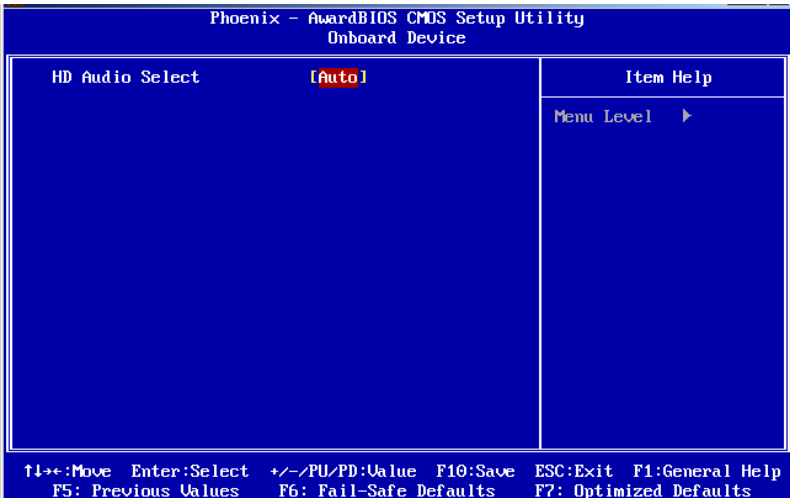
SATA PORT Speed Setting

This option is used to set the speed of SATA ports. The choices: <Disabled>,<Force GED I >, <Force GED II >.

PATA IDE Mode

Select this option to set the mode of the parallel IDE interface。Default setting for [Secondary].

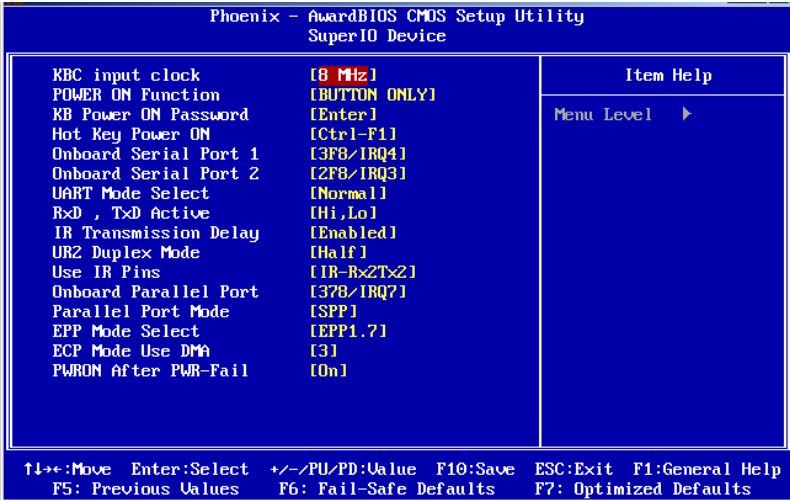
3.4.2 Onboard Device



HD Audio Select

Select <Disabled> if you do not want to use AC-97 audio/Modem. The choices: <Auto (default)>, <Disabled>.

3.4.3 Super IO Device



KBC input clock

Select KBC (KeyBroad Control) 's clock. The faster the clock, thefaster the speed:
 The choices: <8MHz>, <12MHz>, <16MHz>.

POWER ON Function

Select the method to start the computer. Button only is use the power button to control. Keyboard 98 isuse some special power switch. Hotkey is use shortcut of Ctrl+F11 or ALT+F12. If the keyboard is too old, the boot of the computer may fail. Mouse Left and Mouse Right is use mouse to start the computer, some PS/2 mice probably don't support this option. The choices: <Button Only>, <Keyboard 98>, <Hot Key>, <Mouse Left>, <Mouse Right>.

KB Power ON Password

If this is setted as <Password> in POWER ON Function, you can use this to set the password for the booting of PS2 mouse

Hot Key Power ON

If this is setted as <HotKey> in POWER ON Function, you can use this to set the hot key for PS/2 keyboard, options are from CtrlF1 to CtrlF12.

Onboard Serial Port 1/2

For settings reference the Appendix for the serial resource allocation, and Disabled for the onboard serial connector. The choices: [Auto], [3F8/IRQ4], [2F8/IRQ3], [3E8/COM4], [2E8/COM3], [Disabled].

UART Mode Select

This item allows you to select UART mode. The choices : < IrDA>, <ASKIR>, <Normal>.

RxD,TxD Active

This item allows you to determine the active of RxD, TxD. The Choices: <Hi, Hi,> ,<Lo, Lo,> ,<Lo,Hi,>, <Hi, Lo.>.

IR Transmission Delay

This item allows you to enable/disable IR transmission delay. The choices:<Enabled>, <Disabled>.

UR2 Duplex Mode

This item allows you to select the IR half/full duplex function. The choices:<Half>,<Full>.

Use IR Pins

Please refer to your IR equipment, setting the correct signal TxD and RxD. Option: <RxD2>, <TxD2>, <IR-Rx2Tx2>.

IR Transmission Delay

This item allows you to enable/disable IR transmission delay. The choices:<Enabled>, <Disabled>.

Onboard Parallel Port

This field sets the address of the on-board parallel port connector. You can select either 3BCH/IRQ7, 378H/IRQ7, 278H/IRQ5 or Disabled. If you install an I/O card with a parallel port, make sure there is no conflict in the address assignments. The CPU card can support up to three parallel ports, as long as there are no conflicts for each port.

Parallel Port Mode

This field allows you to set the operation mode of the parallel port. The setting “Normal” allows normal speed operation, but in one direction only. “EPP” allows bi-directional parallel port operation at maximum speed. “ECP” allows the parallel port to operate in bi-directional mode and at a speed faster than the maximum data transfer rate. “ECP + EPP” allows normal speed operation in a two-way mode.

EPP Mode Select

This field allows you to select EPP port type 1.7 or 1.9. The choices: <EPP1.7>, <1.9>.

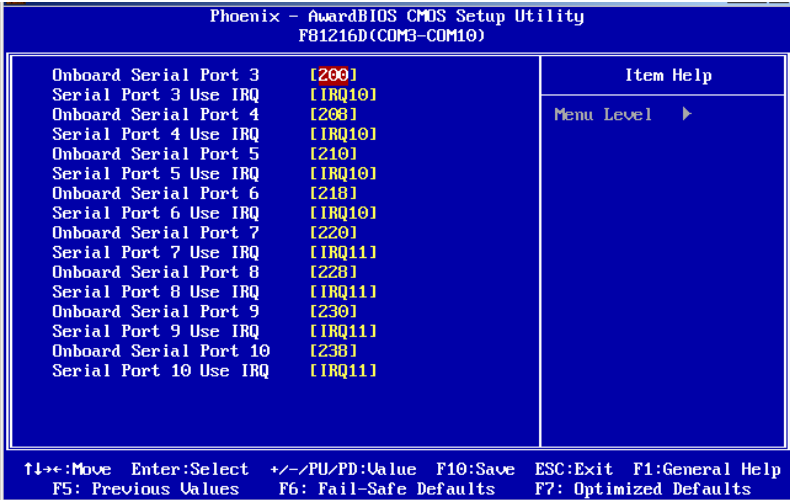
ECP Mode Use DMA

This selection is available only if you select “ECP” or “ECP + EPP” in the Parallel Port Mode field. In ECP Mode Use DMA, you can select DMA channel 1, DMA channel 3, or Disable. Leave this field on the default setting.

PWRON After PWR-Fail

Use this to set up the system after power failure. The “Off” setting keeps the system powered off after power failure, the “On” setting boots up the system after failure, and the “Former-Sts” returns the system to the status before power failure. Default setting :<on>.

3.4.4 F81216D[COM3-COM10]



Onboard Serial Port 3

This option for configure I/O address of serial port3(COM3).The choices: <200>, <208>, <210>, <218>, <Disabled>. When using multiple serial ports, the same I / O port address can not be used.

Serial Port 3 Use IRQ

This option for configure IRQ of serial port3(COM3), The choices: <IRQ3>, <IRQ4>, <IRQ5>, <IRQ9>, <IRQ10>, <IRQ11>.

Onboard Serial Port 4

This option for configure I/O address of serial port4(COM4).The choices: <200>, <208>, <210>, <218>, <Disabled>. When using multiple serial ports, the same I / O port address can not be used.

Serial Port 4 Use IRQ

This option for configure IRQ of serial port4(COM4), The choices: <IRQ3>, <IRQ4>, <IRQ5>, <IRQ9>, <IRQ10>, <IRQ11>.

Onboard Serial Port 5

This option for configure I/O address of serial port5(COM5).The choices: <200>, <208>,

<210>, <218>, <Disabled>. When using multiple serial ports, the same I / O port address can not be used.

Serial Port 5 Use IRQ

This option for configure IRQ of serial port5(COM5), The choices: <IRQ3>, <IRQ4>, <IRQ5>, <IRQ9>, <IRQ10>, <IRQ11>.

Onboard Serial Port 6

This option for configure I/O address of serial port6(COM6).The choices: <200>, <208>, <210>, <218>, <Disabled>. When using multiple serial ports, the same I / O port address can not be used.

Serial Port 6 Use IRQ

This option for configure IRQ of serial port6(COM6), The choices: <IRQ3>, <IRQ4>, <IRQ5>, <IRQ9>, <IRQ10>, <IRQ11>.

Onboard Serial Port 7

This option for configure I/O address of serial port7(COM7).The choices: <220>, <228>, <230>, <238>, <Disabled>. When using multiple serial ports, the same I / O port address can not be used.

Serial Port 7 Use IRQ

This option for configure IRQ of serial port7(COM7), The choices: <IRQ3>, <IRQ4>, <IRQ5>, <IRQ9>, <IRQ10>, <IRQ11>.

Onboard Serial Port 8

This option for configure I/O address of serial port8(COM8).The choices: <220>, <228>, <230>, <238>, <Disabled>. When using multiple serial ports, the same I / O port address can not be used.

Serial Port 8 Use IRQ

This option for configure IRQ of serial port8(COM8), The choices: <IRQ3>, <IRQ4>, <IRQ5>, <IRQ9>, <IRQ10>, <IRQ11>.

Onboard Serial Port 9

This option for configure I/O address of serial port9(COM9).The choices: <220>, <228>, <230>, <238>, <Disabled>. When using multiple serial ports, the same I / O port address can not be used.

Serial Port 9 Use IRQ

This option for configure IRQ of serial port9(COM9), The choices: <IRQ3>, <IRQ4>, <IRQ5>, <IRQ9>, <IRQ10>, <IRQ11>.

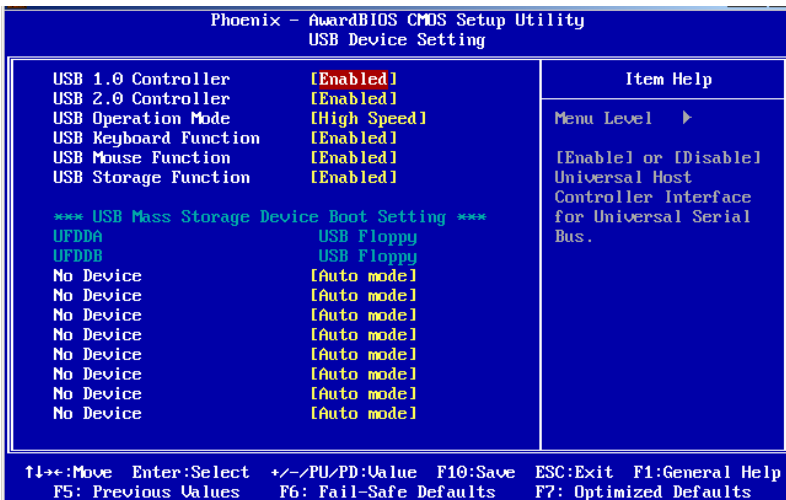
Onboard Serial Port 10

This option for configure I/O address of serial port10(COM10).The choices: <220>, <228>, <230>, <238>, <Disabled>. When using multiple serial ports, the same I / O port address can not be used.

Serial Port 10 Use IRQ

This option for configure IRQ of serial port10(COM10), The choices: <IRQ3>, <IRQ4>, <IRQ5>, <IRQ9>, <IRQ10>, <IRQ11>.

3.4.5 USB Device Setting



USB 1.0 Controller

Select Enabled, if your system contains a Universal Serial Bus (USB) controller and you

have USB peripherals. The choices are <Enabled> and <Disabled>.

USB 2.0 Controller

This entry is used to disable/enable the USB 2.0 controller only. The BIOS itself may or may not have high-speed USB support. If the BIOS has high speed USB support built in, the support will automatically turn on when a high speed device is attached. The choices are <Enabled> or <Disabled>.

USB Operation Mode

Set the USB 2.0 controller to< Hi Speed (480 Mbps)> or <Full Speed (12 Mbps)>.

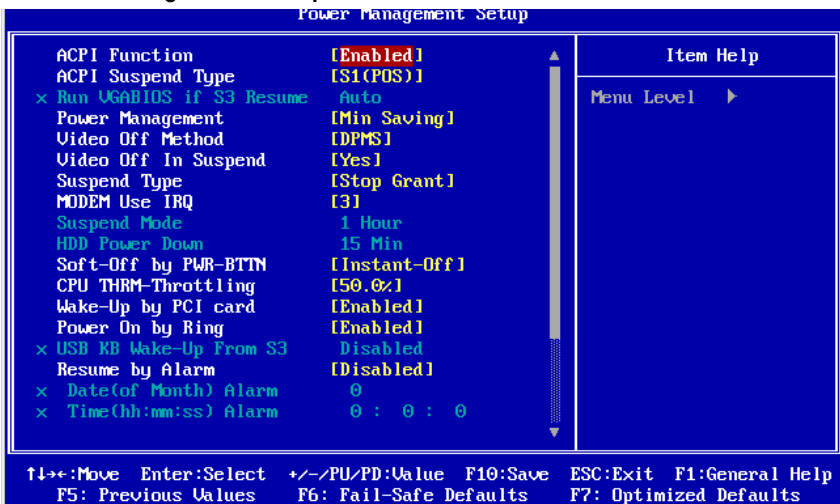
USB Keyboard/Mouse Function

Select .Enabled. if you plan to use a USB keyboard/Mouse. The choices are<Enabled>and <Disabled>.

USB Storage Function

Select <Enabled> if you plan to use an external USB storage device to boot system under DOS mode. The choices are <Enabled> and <Disabled>.

3.5 Power Management Setup



ACPI Function

This is item to activate the ACPI function. If you OS support ACPI-aware, For example: Windows 98SE/2000/ME, choice <Enabled>.Option: <Enabled>, <Disabled>.

ACPI Suspend Type

This item allows user to select sleep state when in suspend.

<S1 (POS)>: The suspend mode is equivalent to a software power down;

<S3 (STR) (default)>: The system shuts down with the exception of a refresh current to the system memory.

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. HDD Power Down
2. Suspend Mode

There are four selections for Power Management, three of which have fixed mode settings <User Define(default)>: Allows you to set each mode individually.When not disabled,each of the ranges are from 1 min.to1 hour.except for HDD Power Down which ranges from 1 min.to 15 min.and disable

<Min Saving>: Minimum power management, Suspend Time Out = 1 Hour, HDDPower Down = 15 Min

<Max Saving>: Maximum power management, Suspend Time Out = 1 Min, HDDPower Down = 1Min

Video Off Method

This item allows user to determine the manner is which the monitor is blanked.

V/H SYNC+Blank: This option will cause system to turn off vertical and horizontal synchronization ports and write blanks to the video buffer.

<Blank Screen>: This option only writes blanks to the video buffer.

<DPMS(default)> :Initial display power management signaling.

Video Off In Suspend

This item allows users to turn off video when system is in suspend mode.. option item: <No>,<Yes(default)>.

Suspend Type

This item allows users to determine the suspend type.. option item: <Stop Grant(default)>,<PwrOn Suspend>.

MODEM Use IRQ

This determines the IRQ in which the MODEM can use.The choices: <3(default)>, <4>, <5>, <7>, <9>, <10>, <11>, <NA>.

Soft-Off by PER-BTIN

If you choose "Instant-Off", then pushing the ATX soft power switch button once will switch the system to "system off" power mode. You can choose "Delay 4 sec." If you do, then pushing the button for more than 4 seconds will turn off the system, whereas pushing the button momentarily (for less than 4 seconds) will switch the system to "suspend" mode. The choices: <Instant-off (default)>, <Delav 4 Sec>.

CPU THRM-Throttling

This field allows you to select the CPU THRM-Throttling rate. The choices:<25.0%>, <50.0%>, <75.0%>.

Wake-Up by PCI Card

Select [Enabled] when the incident occurred in any PCI cards, PCI cards will be issued by PME signal so that the boot system back to full status.The choices :< Enabled>、<Disabled(default)>。

Power On by Ring

When Enabled an input signal on the serial Ring Indicator (RI) line (in other words, anincoming call on the modem) awakens the system from a soft off state. The choices :< Enabled (default)>,<Disabled>.

Resume by Alarm

When Enabled, your can set the date and time at which the RTC (real time clock) alarm awakens the system from Suspend mode. The choices :< Enabled>,<Disabled (default)>.

Primary and Secondary IDE 0/1

When Enabled, the system will resume from suspend mode if Primary IDE 0 /1 or Secondary IDE 0/1 is active. The choices :< Enabled>, <Disabled>.

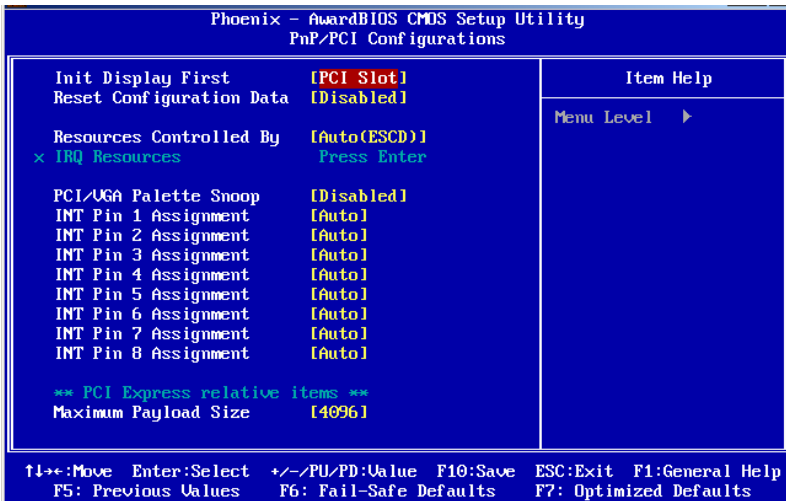
FDD, COM, LPT Port

When Enabled, the system will resume from suspend mode if FDD, COM port, or LPT port is active. The choices :< Enabled>, <Disabled>.

PCI PIRQ[A-D]#

When Enabled, the system will resume from suspend mode if interrupt occurs. The choices :< Enabled>, <Disabled>.

3.6 PnP/PCI Configurations



Init Display First

This option has two options: [PCI slot]/[AGP], and you can use the options to select the sequence of display card when boot up. If you use AGP display card, you can set to [AGP]; If you are using the PCI display card, you can set it to [PCI slot].

It is recommended using the [AGP] display card, and the graphic performance will be increase dramatically.

Reset Configuration Data

Default is <Disable>. Select Enable to reset Extended System Configuration Data (ESCD) if you have installed a new add-on and system configuration has caused such a conflict that OS cannot boot.

Resources Controlled By

The commands here are <Auto>or <Manual>.Choosing <manual> requires you to choose resources from each following sub-menu. <Auto> automatically configures all of the boot and Plug and Play devices but you must be using Windows 95 or above.

PCI/VGA Palette Snoop

When set to <Enabled>, various VGA devices which are working on different bus can handle data from CPU on different color palette of different video device. Stored in the 5th bit in the PCI device command cache is the VGA color palette(0 is disabled). For example: if there are two VGA devices(one is PCI and the other is ISA), the setting should be like: if any ISA adaptor installed in the system require VGA color palette, this item should be set to <Enabled>.

INT Pin1-8 Assignment

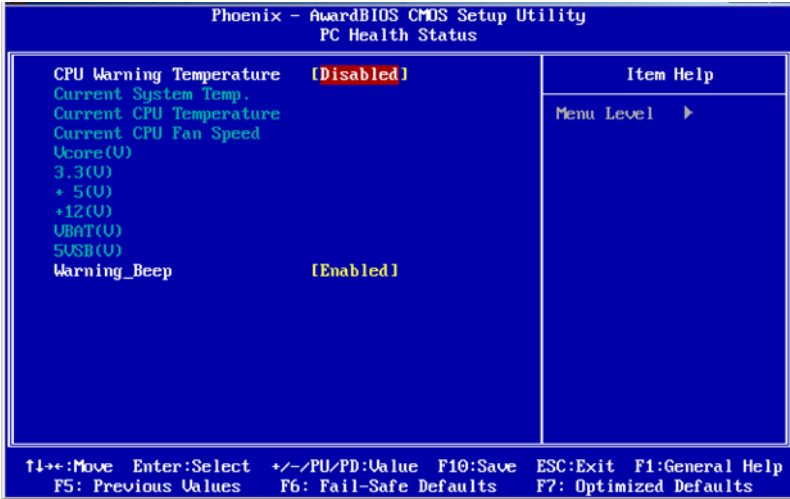
The option to connect to the computer's motherboard, a PCI interface device designated IRQ allocation, The choice: <AUTO>, <3>, <4>, <5>, <7>, <9>, <10>, <11>.

Maximum Payload Size

This allows you to set the PCI Express devices largest TLP (Transport Layer Packet) payload value. The choice: <128>, <256>, <512>, <1024>, <2048>, <4096>.

3.7 PC Health Status

Annotate: (Green shows the following numerical values for the read-only)



CPU Warning Temperature

The system will give an automatic warning if the CPU temperature goes over the selected setting.default setting :< disabled>.

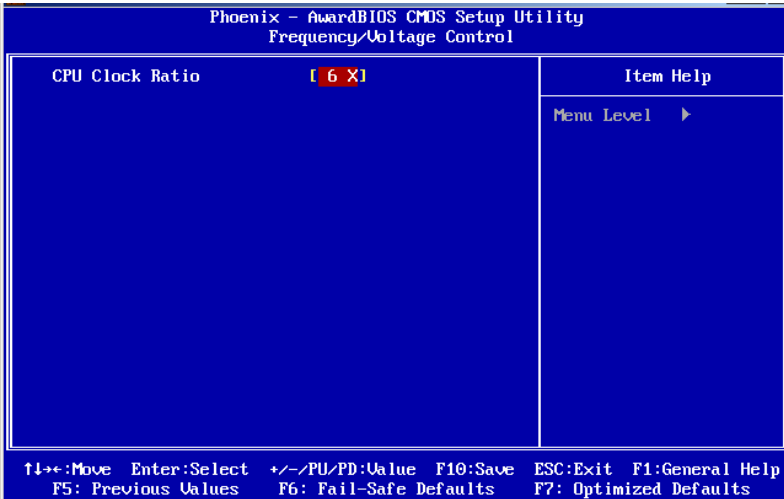
Current SYS Temperature, VCore, V1.8, 5V, 12V, Fan Speed

This shows the current monitoring of all hardware devices / components such as CPU voltage state, temperature and speed of all fans.

Warning_Beep

This allows you to decide, if your system chassis temperature is too high or when the invasion occurred whether or not to issue a beep sound. Option: [Enabled], [Disabled].

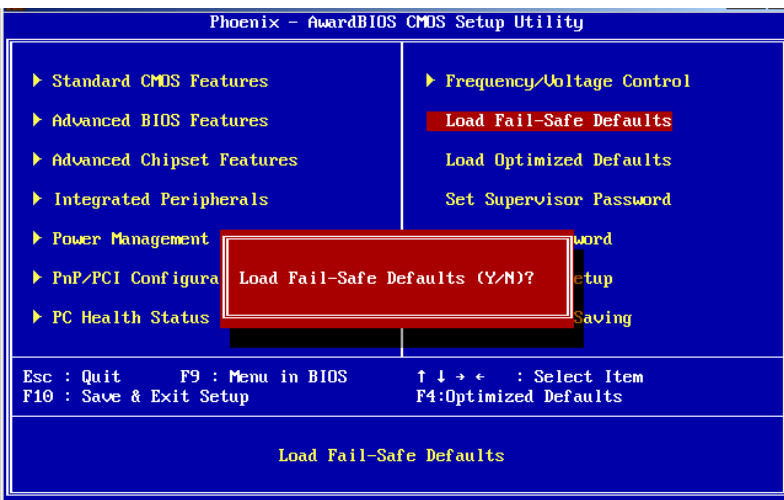
3.8 Frequency/Voltage Control



CPU Clock Ratio

If the CPU clock ratio is not set, you probably need to set the ratio of the CPU clock before the system can display properly. If you are using the CPU which clock is locked, you needn't to set CPU clock ratio and the system can be work.

3.9 Load Fail-Safe Defaults



If the system is not stable after installation, this function can be helpful. In this case, the

system will cancel some of the function which enhance the system, and the system will run in very strict status. So, it is easy to find the safe value and remove errors from the motherboard.

When this option is selected, the host windows will prompt:

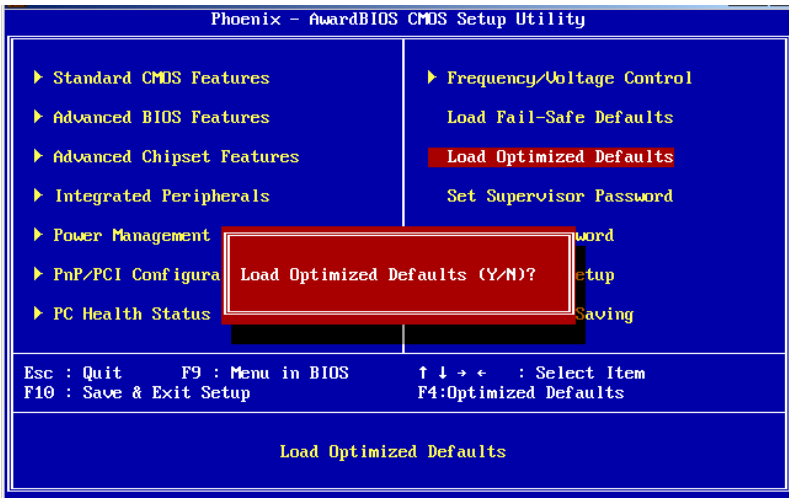
Load BIOS Defaults (Y/N) ?

Keyin “Y”, and press Enter to execute this function.

important: This function will not influence the [Standard CMOS Setup].

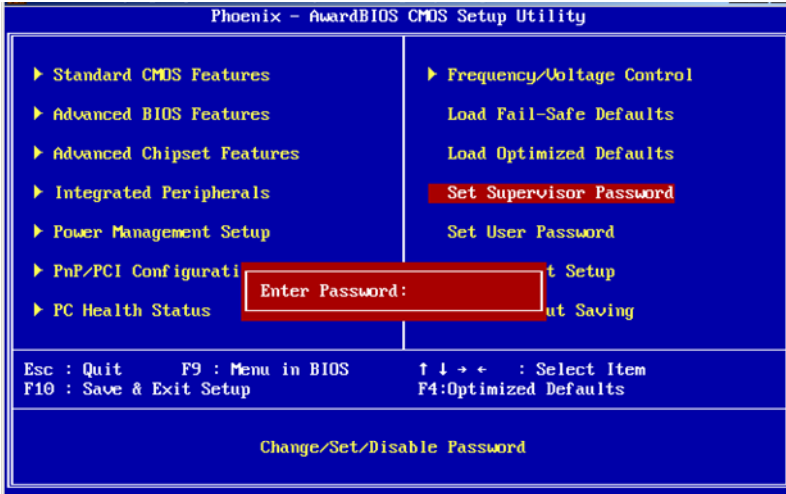
Keyin Supervisor Pass word can input and revise CMOS BIOS's value, and Supervisor Password is set to protect the CMOS against willful revising. If IDE HDD is used by user, function can get the parameters of the HDD and record them to standard CMOS settings. Max four IDE parameters can be get from HDD.

3.10 Load Optimized Defaults



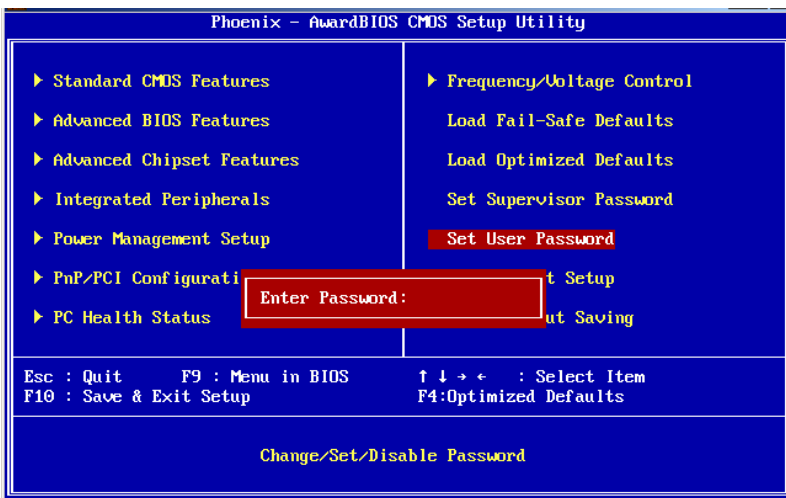
Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs. Press <Y> to load the default values setting for optimal performance system operations.

3.11 Set Supervisor Password



Supervisor password level is high than users, you can load CMOS, amend setup by supervisor, also can be used to boot PC. If you select this option and press enter ,the information "ENTER PASSWORD" will be shows on screen, here you can input your password. do not be excess than 8 characters, then press enter, the password you inputted will replace the former one. Press enter again to confirm.

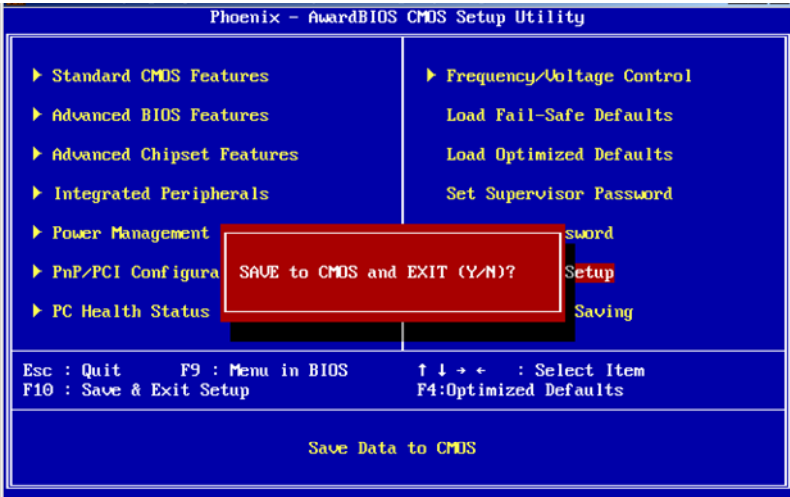
3.12 Set User Password



<User Password Setting> function for a setting password. If you want to set the password,

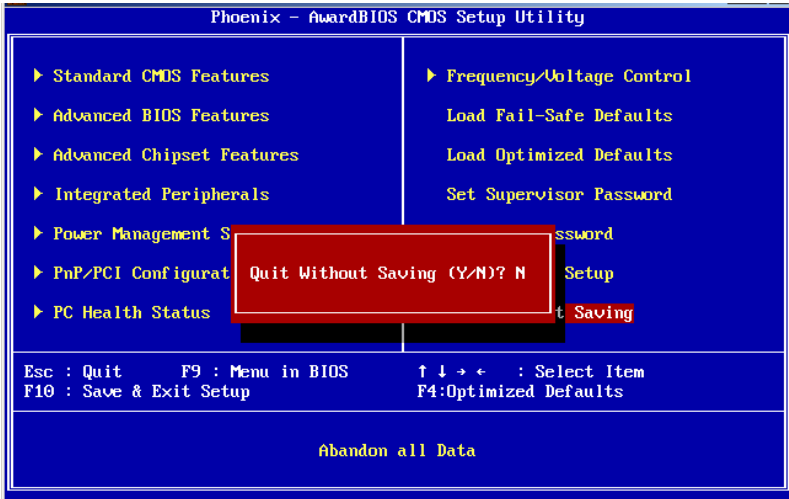
first enter the current password to identify your password by y, the screen automatically return to the main screen. Enter the User Password can use the system, but can not modify the contents of CMOS

3.13 Save&Exit Setup



If you select this and press <Enter>, the values entered in the setup utilities will be recorded in the CMOS memory of the chipset. The microprocessor will check this every time you turn your system on and compare this to what it finds as it checks the system. This record is required for the system to operate.

3.14 Exit Without Saving



Selecting this option and pressing <Enter> lets you exit the setup program without recording any new values or changing old ones.



Appendix

Appendix

Appendix 1: Driver Installation

Please install the driver as per the following steps:

Plug programmed disk into CD-ROM, so installation of the driver can be made either automatically or manually. Now manually installation instructions are given as below:

- 1) A variety of options available regarding manually installation, which you can check from Device Manager.
- 2) Right click "my computer ", select "management", and go to "Device Manager"
- 3) Right click "display controller" in the menu of graphic card, select "Properties ", click "Driver", select "update driver".
- 4) Select "Show the list of all drivers which are designated locations so that choices can be made from it ", select "next."
- 5) Select the location of display driver, click "ok"
- 6) Implement the installation, restart the system.

Proceed with the installation of other drivers after restarting the system, till all installations are implemented. Then user can see that it says device is working

Appendix 2 : Watchdog programmer guide

watchdog reference code (ASM) :

Set the port to realize watchdog function through DEBUG order, so that it can carry out Watchdog Timer's various functions.

port instruction:

2EH : Address register

2FH : Data register

Example: Set Watchdog Timer for 30 Seconds, DEBUG in DOS:

C:\>debug

-o 2e 87

-o 2e 87 ; Decode

-o 2e 2b

-o 2f e0 ; bit4=0, set pin as watchdog func

-o 2e 07

-o 2f 08 ; Choose register

-o 2e 30

-o 2f 01 ; Activation logic devices

-o 2e f5

-o 2f 00 ; Set timer units as second / (set as min: o 2f 08)

-o 2e f6

-o 2f 1E ; Set Timer Count to 30 sec. (Max support FF = 255, when it set as 00

Watchdog function stop

-o 2fe aa ; locked register

-q

C:\>

=====

watchdog reference code(**c++ language**):

```
outputb (0x2e, 0x87)
outputb (0x2e, 0x87) // Open SUPER IO register
outputb (0x2e, 0x2B)
outputb (0x2f, 0xE0) //bit4=0 ,set pin as watchdog func
outputb (0x2E, 0x07)
outputb (0x2F, 0x08) //select logical device
outputb (0x2e, 0x30)
outputb (0x2f, 0x01) //active the device
outputb (0x2e, 0xF5)
outputb (0x2f, 0x00) // Set timer units as second / ( Set timer units as minute: outputb (0x2f,
0x08) )
outputb (0x2e, 0xF6)
outputb (0x2f, 0x1E) // Set Timer Count to 30 sec
outputb (0x2E, 0xAA) // locked register
//----- code end -----
```

Appendix3 : GPIO Instruction

MITX-6854 provides a twelve way input and a twelve way output programable interface. Input and output of the interfaces are independent. In the GPIO interface, there are 26 Pin which are link to 24 digital bits. This interface is generated by the onboard chip on PCI bus, and the bus number is 0, device number is 18 and function number is 0. This interface is using the 3rd basic address register. According to PCI standard, the basic address are allocated by the BIOS dynamically, and it is a MUST normally to obtain the basic address before program this interface(if there are no other PCI expansion device, the basic address is: CC00H).

GPIO's interface debugging program is attached in the CD of the packinglist. Running the GPIO executable file will start the GPIO debug program.

Appendix 4: Glossary

ACPI

Advanced Configuration and Power Management Interface for short.ACPI specifications allow OS to control most power of computer and its extended devices. Windows 98/98SE, Windows 2000 and Windows ME are all support ACPI, it provide users a flexible system power management.

ATX:

AT extended, a motherboard layout according with modern standard replaced BabyAT. It changes disposal of many components, and do some new high efficiency design, so it is widely used now.

BIOS

Basic in/out system.It's a kind of software including all in/out control code interface in PC. It will do hardware testing while system booting, then system runs, it provides an interface between OS and hardware. BIOS is stored in a ROM chip.

BUS

In a computer system, it's the channels among different parts for exchanging data; it's also a group of hardware line. BUS here means part lines inside CPU and main components of memory.

Chipset

Integrated chips for executing one or more function.Here "Chipset" means system level chipset structured by Southbridge & Northbridge; it decides motherboard's structure and main functions.

CMOS

Complementary Metal-Oxide Semiconductor, a widely used semiconductor with the characteristic of high speed but low power. CMOS we mention here means part of obligate space in on-board CMOS RAM, for saving date, time, system information and system parameter etc.

COM

Computer-Output Microfilm. A universal serial communication interface, usually adopts normative OB 9 connector.

DIMM: Dual Inline Memory Module. It's a small circuit board with memory chipset, providing 64bit bus width.

DRAM

Dynamic Random Access Memorizer. It's a normal type of memory often with a transistor and a capacitance to store 1 bit. With the development of the technology, more and more types and specification of ORAM exist in computer application. Now: SDRAM, DDR SDRAM and RDRAM are generally used.

IDE:

Driver specification for integrated device electronics, for connecting HDD / CD-ROM device.

IRDA:

Infrared Data Association for short, here means infrared transmit interface, to connect infrared transmit devices. This sort of device transmits data by infrared light-wave without connecting any cables. It has been developed a standard now.

LAN

Network interface. Network grouped by correlative computers in a small area, generally in a company or a building. Local area network is buildup by sever, workstation, some communications links, as a rule. Terminals can access data and devices anywhere through cables, so, many users can share costly device and resource.

LED

Light-Emitting Diode. a semiconductor device that shines when power supply is connected, often use to denote info lightly, for example, to denote power on or HDD work normally.

LPT

Line print terminal. The denomination reserved by DOS, is used to denote universal parallel

interface, and connect printer in a general way.

POST

Self-test when power on. While booting, BIOS will do once uninterrupted testing operation to the system, including RAM, keyboard, hard disk driver etc. Check them in normal situation and work well.

PS/2

A keyboard & mouse connective interface specification developed by IBM.PS/2 is a DIN interface with only 6PIN; it also can connect other devices, like modem.

USB

It's Universal Serial Bus for short. A hardware interface adapts to low speed external devices, and is always used to connect keyboard, mouse etc. One PC can connect 127 USB devices Max, providing 12Mbit/s transmit bandwidth; USB supports hot swap and multi- data stream, namely, you can plug USB devices while system is running, system can auto-detect and makes it work on.

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