

PC-2400 Series

**PC/104 Single Board Computer
with STPC Atlas CPU,
and VGA, LCD, LAN, SSD,
on-board RAM, 4xCOM, 2xUSB**

USER'S MANUAL

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Chapter 1 Introduction

1.1 Introduction

PC-2400 is a PC/104 CPU module powered by a STPC Atlas 133MHz processor. Responding to current market trends and requirements, PC-2400 embeds stable features like TFT LCD, DiskOnChip, and WatchDog Timer, all of which are designed based on most popular industrial applications.

Its 64MB onboard memory allows engineers to easily deploy PC-2400 for their specific application. The display function of this CPU module likewise matches a wide variety of display applications. Thanks to its support for both standard CRT interface and 18 bits TFT LCD panel.

Additional PC-2400 CPU module features include support for 4 COM ports, 2 USB ports, 8 digital inputs and 8 digital outputs, 1 LPT and 1 FDD. PC-2400 exhibits its I/O interface flexibility with an onboard support for both standard IDE and DiskOnChip interfaces.

The PC-2400 incorporates an onboard LAN function, a very essential and convenient solution for users as the Internet popularity and usage grow by the day. With the WatchDog function enabled, PC-2400 becomes a perennial tool to any industrial control application.

If these onboard functions aren't enough to satisfy your requisites, a PC/104 connector resides onboard for your future "stackable" upgrade purposes.

1.2 Features

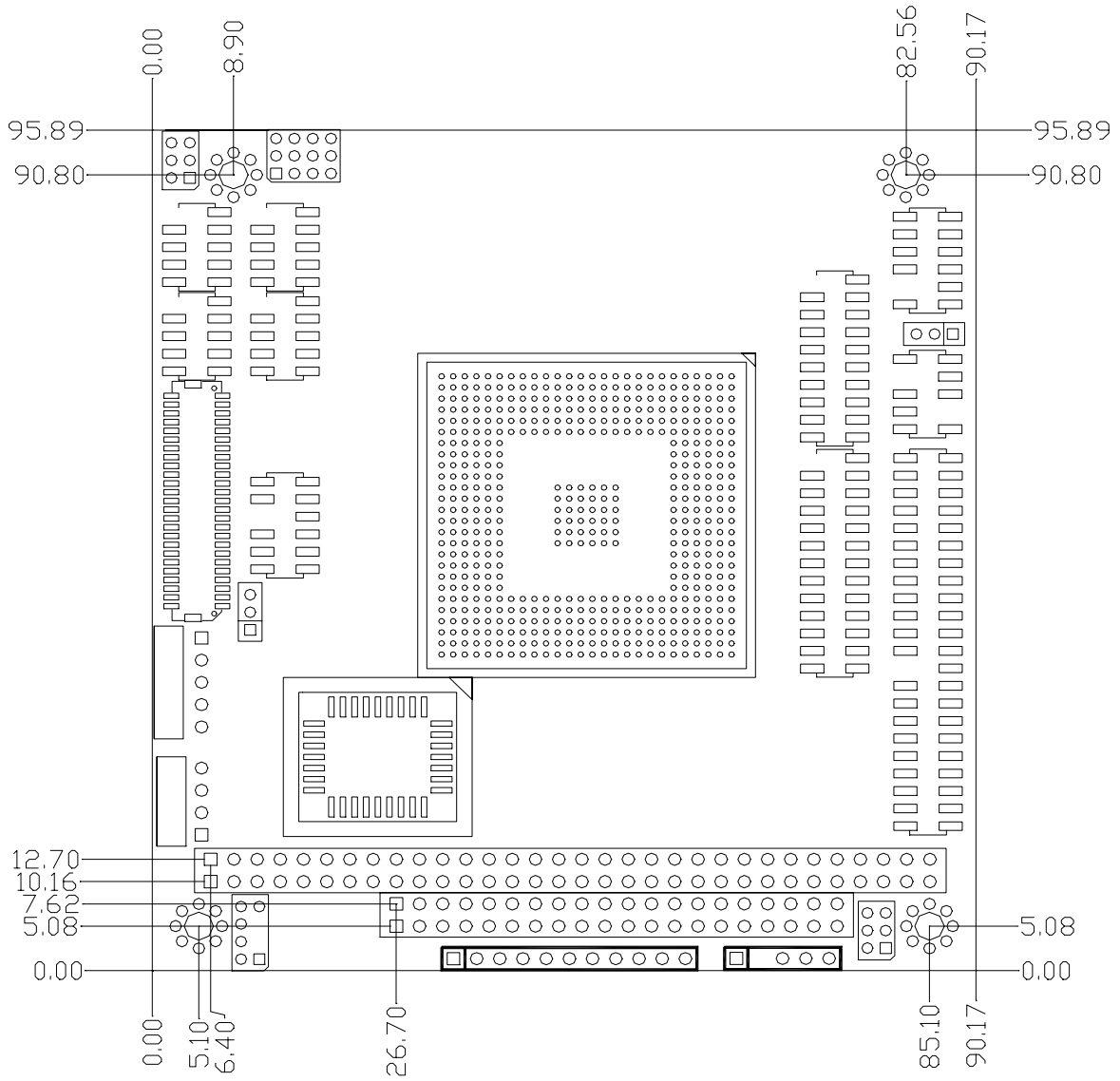
- STPC Atlas 133MHz
- Award BIOS
- VGA and support 18-bit TTL LCD
- LCD Brightness Control
- Realtek RTL 8100C
- DiskOnChip Socket
- PC/104 expansion slot
- 1 x LAN, 1 x FDD, 4 x COM, 1 x LPT, Keyboard & Mouse, 2 x USB, 1 x IrDA and 8 x DIO
- Watchdog Timer

1.2 Specification

PC-2400 Series

Processor	: Embedded STPC Atlas 133 MHz processor
VGA Chipset	: STPC Atlas
I/O Chipset	: STPC Atlas, Winbond W83977F-A
System Memory / RAM	: 64 MB SDRAM on board
Solid State Disk Support	: DiskOnChip 32 pins DIP
Ethernet Controller	: Realtek RTL 8100C, Support 10/100 Base T
IDE Interface	: One enhanced IDE port
Floppy Interface	: One Slim type floppy interface
Serial Port	: Three RS-232 and one RS-232/422/485 ports
Parallel Port	: One bi-directional parallel, support SPP/ECP/ EPP
Universal Serial Bus	: Two USB V1.1 ports
Keyboard	: Keyboard port on header
Mouse	: Mouse port on header
RTC	: Internal RTC with Li battery.
Battery	: Lithium Battery
IrDA	: Supports one IrDA Tx/Rx header
Digital I/O	: 8 TTL digital input bits & 8 TTL digital output bits
BIOS	: Award licensed BIOS 256KB
Watchdog Timer	: 256 level software time-out intervals
LCD Support	: 18-bits TFT LCD panel support
Operating Temperature	: 0 degree Celsius ~60 degree Celsius (Extended test for -20 degree Celsius ~ +70 degree Celsius)
Storage Temperature	: -20 degree Celsius ~ +85 degree Celsius
Humidity	: 10%~95%RH, non-condensing
Power Requirements	: +5 Voltages $\pm 5\%$
Power Consumption	: Typical : +5V @1.2A (64MB SDRAM)
Power Connector	: AMP 4 pins 2.54 mm
Dimensions	: 96 mm X 90 mm (3.775" ~ 3.55")
Model Extension	: PC-2400A Full function, fan-less

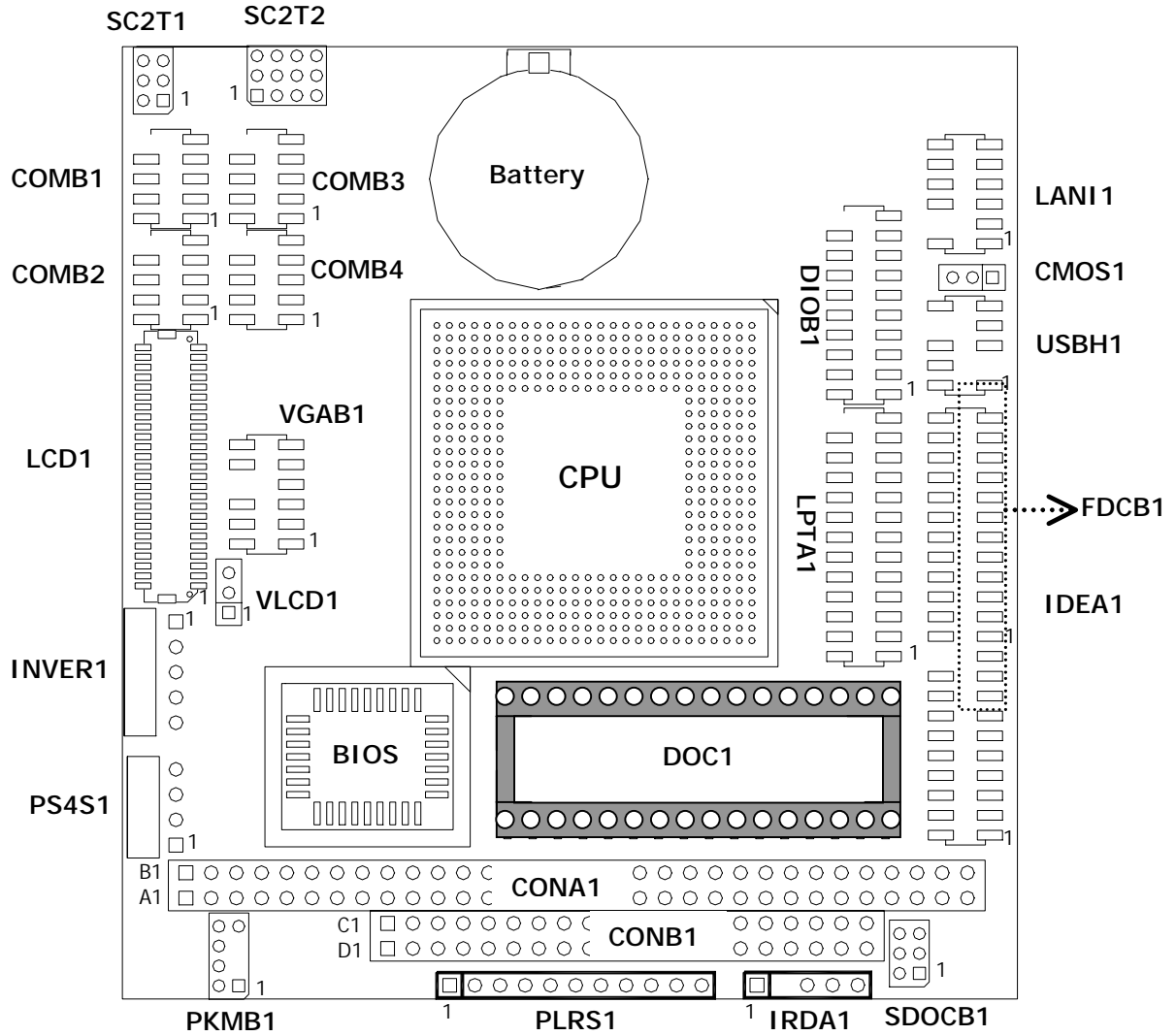
1.4 Board Layout



Chapter 2 Installation

2.1 Jumper Settings and Connectors

2.1.1 Board Outline

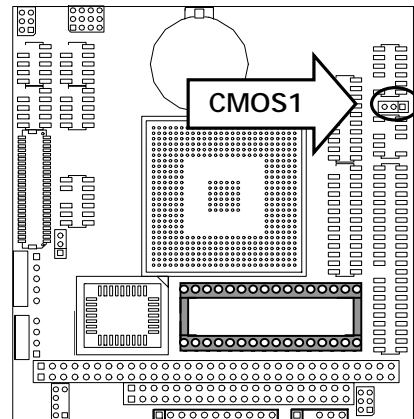
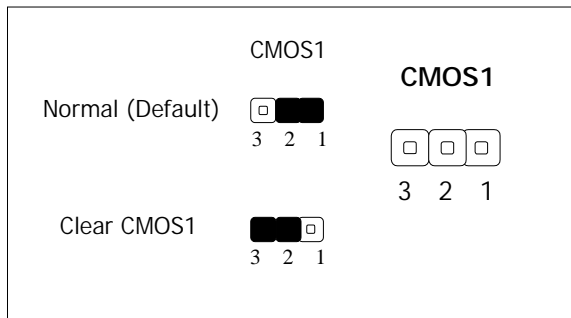


2.1.2 Jumper Settings Summary

LOCATION	FUNCTION
CMOS1	Clear CMOS Data
SC2T1/SC2T2	Select COM2 Type
VLCD1	Select Panel Voltage
SDOCB1	Select Flash Disk Address

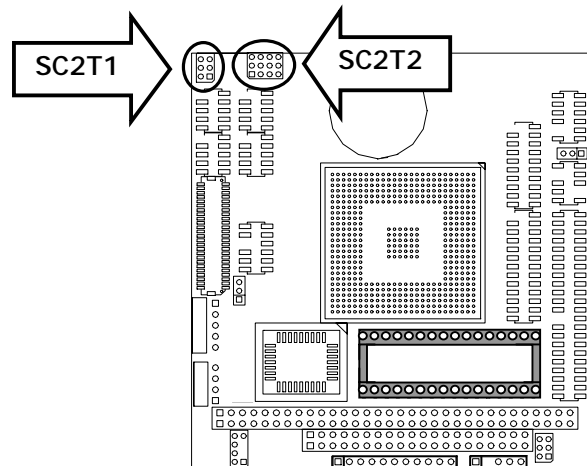
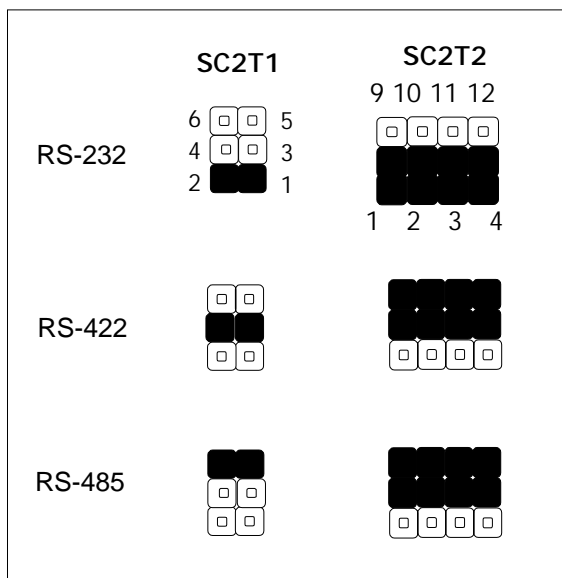
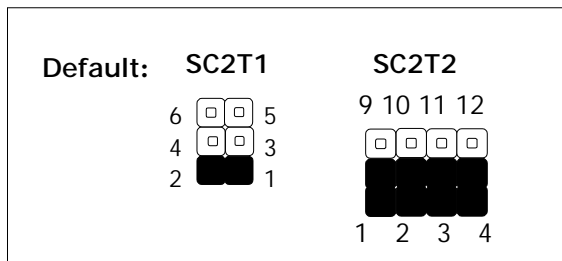
● CMOS1: Clear CMOS Data

Description	CMOS1
Normal (Default)	1-2
Clear CMOS	2-3



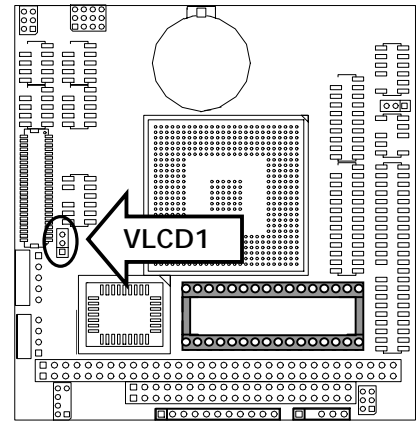
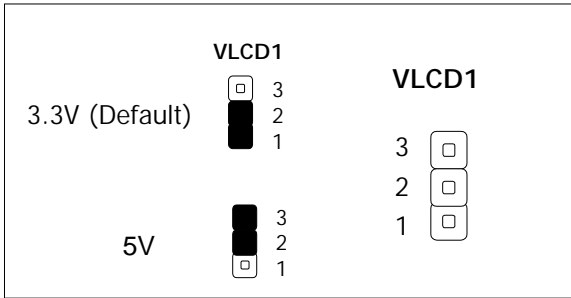
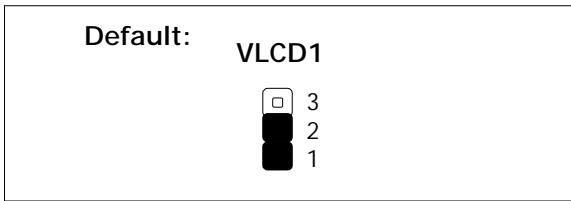
● SC2T1/SC2T2: Select COM2 Type

COM2 TYPE	SC2T1	SC2T2
RS-232 (Factory)	1-2	1-5,2-6,3-7,4-8
RS-422	3-4	5-9,6-10,7-11,8-12
RS-485	5-6	5-9,6-10,7-11,8-12



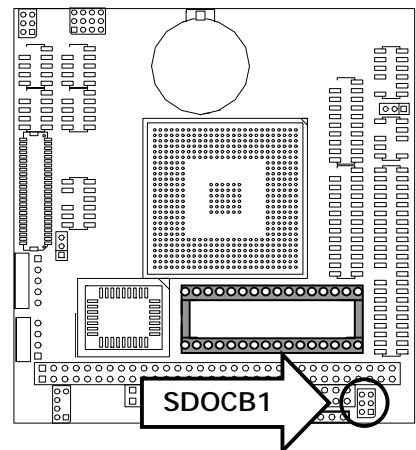
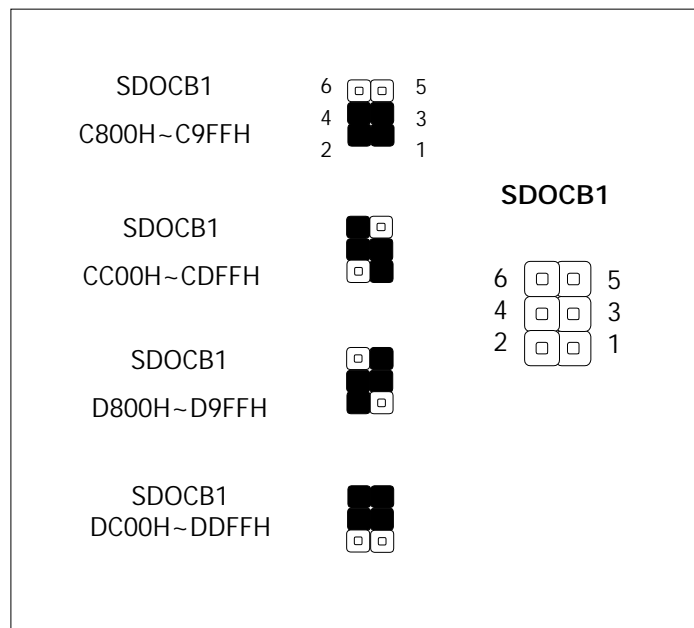
● VLCD1: Select Panel Voltage

Panel Voltage	VLCD1
+3.3V (Default)	1-2
+5V	2-3



● SDOCB1 : Select Flash Disk Address

Flash Disk Address	SDOCB1
C800H~C9FFH	1-3,2-4
CC00H~CDFFH	1-3,4-6
D800H~D9FFH	3-5,2-4
DC00H~DDFFH	3-5,4-6

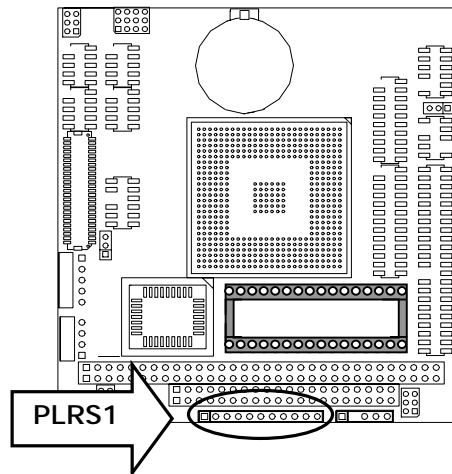


2.1.3 I/O Connectors Summary

LOCATION	FUNCTION
PLRS1	Power LED, HD LED, Reset, Speaker Connector (11 Pin 2.54mm)
IRDA1	IRDA Connector
USBH1	USB Port #1 & #2 Connector
COMB1	Serial Port #1 Connector (Header)
COMB2	Serial Port #2 Connector (Header)
COMB3	Serial Port #3 Connector (Header)
COMB4	Serial Port #4 Connector (Header)
LPTA1	Parallel Connector (26 Pin 2.0mm Pitch Header)
DIOB1	8 bits digital Input/Output ports 2x10 2.00mm Header
IDEA1	IDE Interface Connector (44Pin 2.0mm Pitch Header)
LANI1	LAN Connector
VGAB1	External VGA Connector (12 Pin Header)
PKMB1	PS/2 Keyboard & Mouse Connector (2x4 Header 2.0mm)
LCD1	Panel LCD Connector (50Pin 1.0mm JST Header)
CONA1/CONB1	PC/104 Connector (8 bit/ 16bit)
DOC1	Disk-On-Chip Socket
PS4S1	4-Pin Power Connector (Small-4P)
INVER1	LCD INVERTER Connector

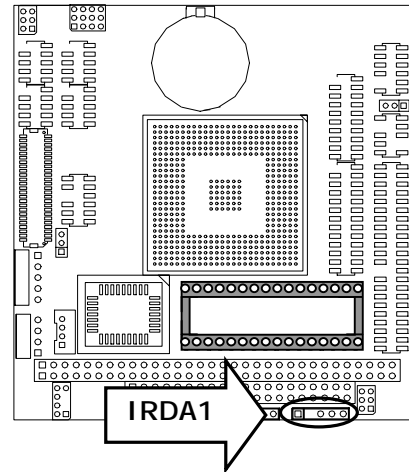
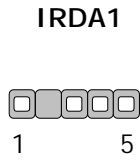
● **PLRS1: Power LED, HD LED, Reset, Speaker Connector (11 Pin 2.54mm)**

Pin No.	Description
1	Power LED +
2	Power LED +
3	GND
4	HDD LED +
5	HDD LED -
6	RESET SW +
7	RESET SW - (GND)
8	External Speaker -
9	NC
10	NC
11	External Speaker +



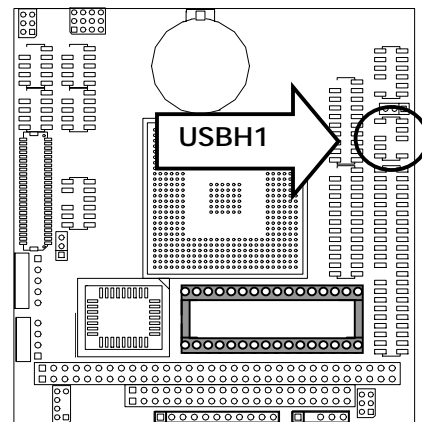
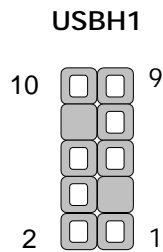
● IRDA1: IRDA Connector

Pin No.	Description
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX



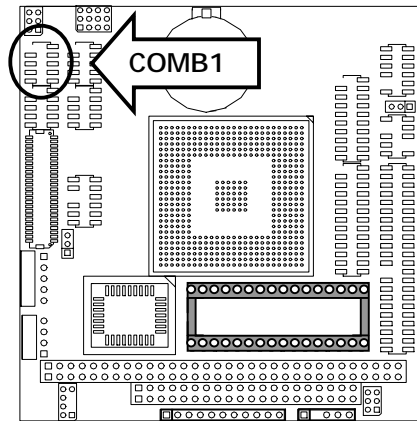
● USBH1: USB Port #1 & #2 Connector

Pin No.	Description	Pin No.	Description
1	USB_VCC	2	Ground
3	Key	4	USBD2+
5	USBD1-	6	USBD2-
7	USBD1+	8	Key
9	Ground	10	USB_VCC

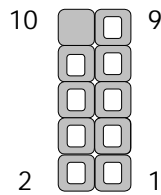


● COMB1: Serial Port #1 Connector (Header)

Pin No	Description
	RS-232
1	Data Carrier Detect (DCD1 #)
2	Data Set Ready (DSR1 #)
3	Receive Data (RXD1)
4	Request To Send (RTS1 #)
5	Transmit Data (TXD1)
6	Clear To Send (CTS1 #)
7	Data Terminal Ready (DTR1 #)
8	Ring In (RI4)
9	Ground
10	KEY

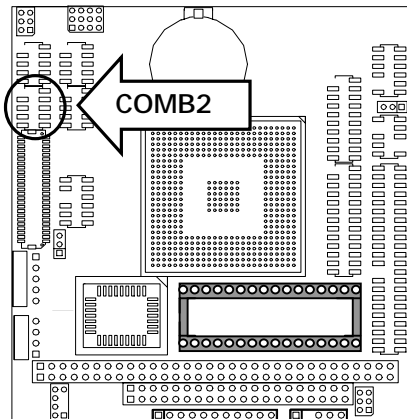


COMB1

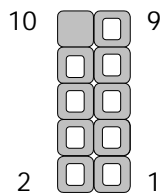


● COMB2 : Serial Port #2 Connector (Header)

Pin No.	Description		
	RS-232 (Default)	RS-422	RS-485
1	Data Carrier Detect (DCD2#)	Transmit Data- (TXD-)	Data-
2	Receive Data (RXD2)	Transmit Data+ (TXD+)	Data+
3	Transmit Data (TXD2)	Receive Data+ (RXD+)	NC
4	Data Terminal Ready (DTR2#)	Receive Data- (RXD-)	NC
5	Ground	NC	NC
6	Data set Ready (DSR2#)	NC	NC
7	Request To Send (RTS2#)	NC	NC
8	Clear To Send (CTS2#)	NC	NC
9	RI2#	NC	NC
10	KEY	KEY	KEY

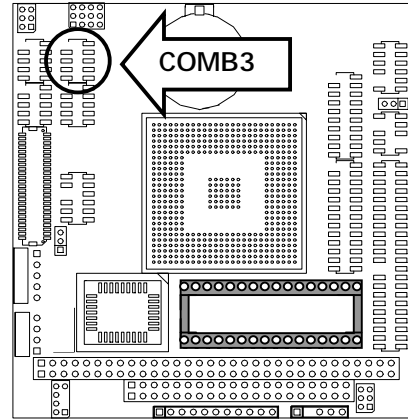


COMB2

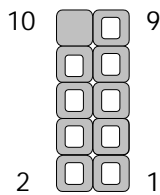


● COMB3: Serial Port #3 Connector(Header)

Pin No	Description
	RS-232
1	Data Carrier Detect (DCD3 #)
2	Data Set Ready (DSR3 #)
3	Receive Data (RXD3)
4	Request To Send (RTS3 #)
5	Transmit Data (TXD3)
6	Clear To Send (CTS3 #)
7	Data Terminal Ready (DTR3 #)
8	Ring In (R13)
9	Ground
10	KEY

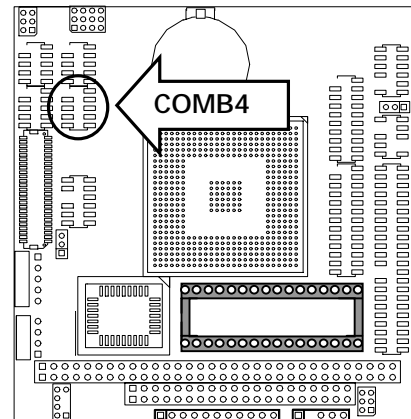


COMB3

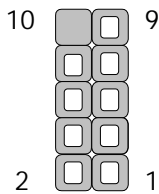


● COMB4: Serial Port #4 Connector(Header)

Pin No	Description
	RS-232
1	Data Carrier Detect (DCD4 #)
2	Data Set Ready (DSR4 #)
3	Receive Data (RXD4)
4	Request To Send (RTS4 #)
5	Transmit Data (TXD4)
6	Clear To Send (CTS4 #)
7	Data Terminal Ready (DTR4 #)
8	RI4#
9	Ground
10	KEY

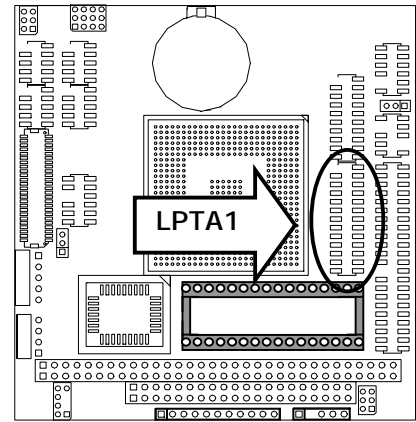


COMB4

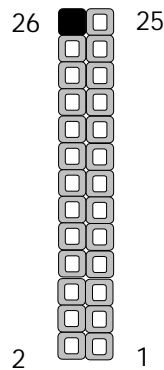


● **LPTA1 : Parallel Connector (26 Pin 2.0mm Pitch Header)**

Pin No.	Description	Pin No.	Description
1	Strobe #	2	Auto Form Feed
3	Data0	4	Error #
5	Data1	6	Initialize #
7	Data2	8	Printer Select IN #
9	Data3	10	Ground
11	Data4	12	Ground
13	Data5	14	Ground
15	Data6	16	Ground
17	Data7	18	Ground
19	Acknowledge #	20	Ground
21	Busy	22	Ground
23	Paper Empty	24	Ground
25	Printer Select	26	KEY

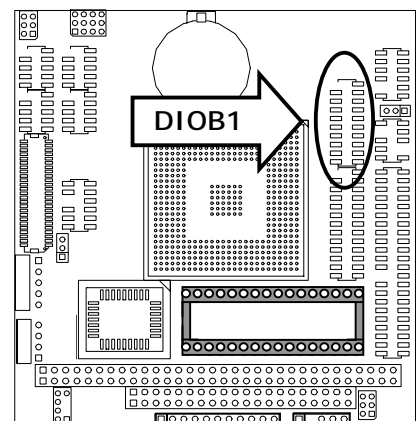


LPTA1

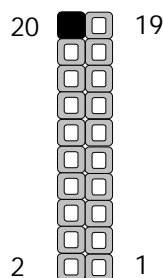


● **DI0B1 : 8 bits digital Input/Output ports 2x10 2.00mm Header**

Pin No.	Description	Pin No.	Description
1	DO0	2	DO1
3	DO2	4	DO3
5	DO4	6	DO5
7	DO6	8	GO7
9	GND	10	GND
11	DI0	12	DI1
13	DI2	14	DI3
15	DI4	16	DI5
17	DI6	18	DI7
19	GND	20	KEY

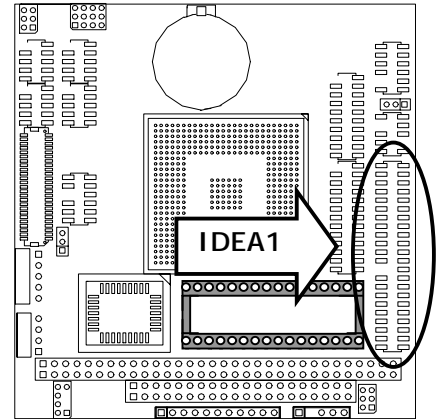


DI0B1

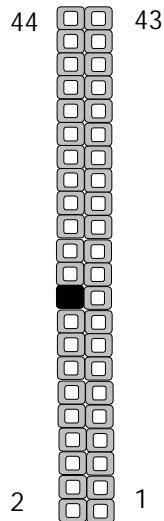


● **IDEA1 : IDE Interface Connector (44Pin 2.0mm Pitch Header)**

Pin No.	Description	Pin No.	Description
1	Reset #	2	Ground
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Ground	20	NC
21	DMA REQ #	22	Ground
23	IOW #	24	Ground
25	IOR #	26	Ground
27	IOCHRDY	28	Ground
29	DMA ACK #	30	Ground
31	Interrupt	32	NC
33	SA 1	34	NC
35	SA 0	36	SA 2
37	HDC CS 0#	38	HDC CS 1#
39	HDD Active	40	Ground
41	VCC	42	VCC
43	Ground	44	NC

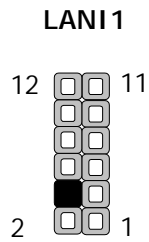
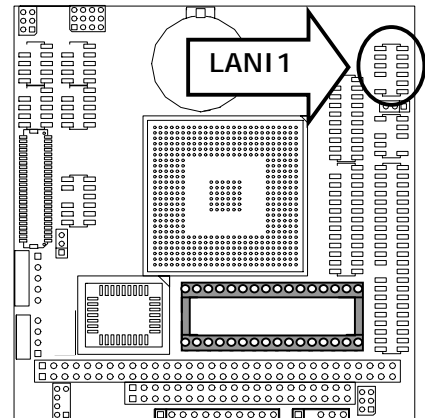


IDEA1



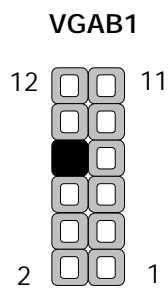
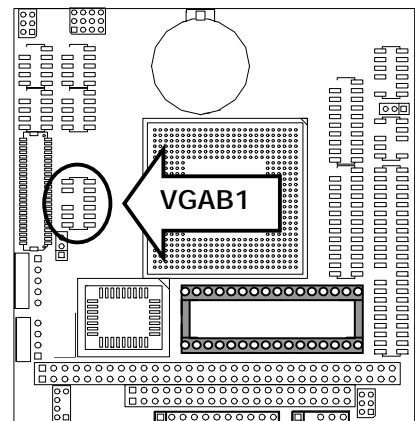
● LANI1: LAN Connector

Pin No.	Description	Pin No.	Description
1	TX+	2	TX-
3	LGND	4	KEY
5	RX+	6	RX-
7	T45	8	T78
9	LSPEED+	10	LSPEED-
11	LNKACT+	12	LNKACT-



● VGAB1: External VGA Connector (12 Pin Header)

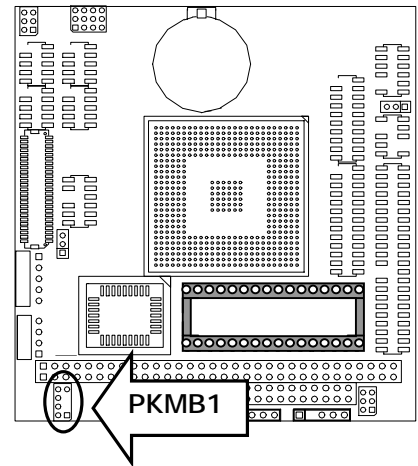
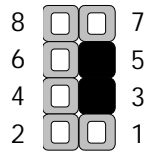
Pin No.	Description	Pin No.	Description
1	R	2	Ground
3	G	4	Ground
5	B	6	Ground
7	H-SYNC	8	KEY
9	V-SYNC	10	Ground
11	Detect-display Data	12	Detect-display CLOCK



● PKMB1:PS/2 Keyboard & Mouse Connector (2x4 Header 2.0mm)

Pin No.	Description	Pin No.	Description
1	KBCLK	2	GND
3	KEY	4	KBDATA
5	KEY	6	MSDATA
7	MSCLK	8	VCC

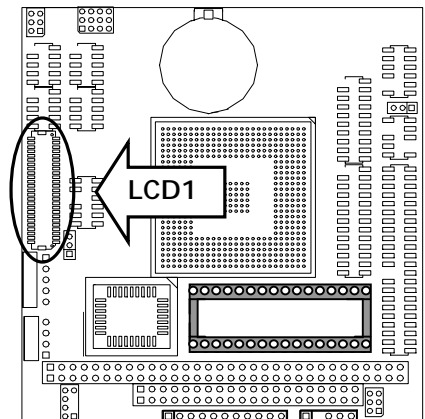
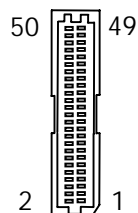
PKMB1



● LCD1:Panel LCD Connector (50Pin 1.0mm JST Header)

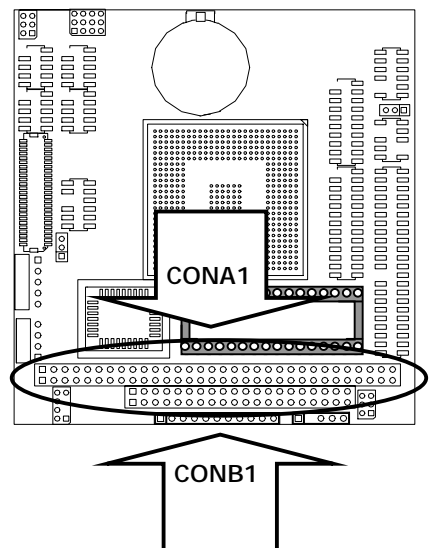
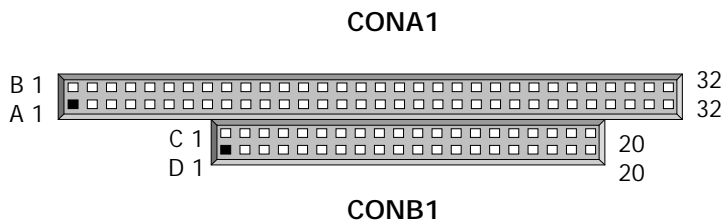
Pin No.	Signal	Pin No.	Signal
1	FVCC	2	FVCC
3	FHSYN	4	FVSYN
5	ENAB	6	NC
7	ENVEE	8	ENVDD
9	SFCLK	10	NC
11	GND	12	GND
13	TFT-R0	14	NC
15	TFT-R1	16	NC
17	TFT-R2	18	NC
19	TFT-R3	20	NC
21	TFT-R4	22	NC
23	TFT-R5	24	NC
25	TFT-G0	26	NC
27	TFT-G1	28	NC
29	GND	30	TFT-G2
31	NC	32	TFT-G3
33	NC	34	TFT-G4
35	NC	36	TFT-G5
37	NC	38	GND
39	TFT-B0	40	NC
41	TFT-B1	42	NC
43	TFT-B2	44	NC
45	TFT-B3	46	NC
47	TFT-B4	48	NC
49	TFT-B5	50	NC

LCD1



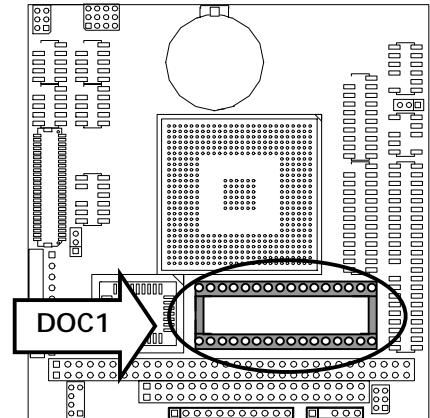
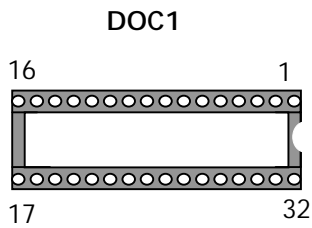
- CONA1:PC/104 Connector (8 bit)
- CONB1:PC/104 Connector (16 bit)

Pin No.	Description			
	CONA1		CONB1	
	Row A	Row B	Row C	Row D
1	IOCHCK#	Ground	Ground	Ground
2	SD7	RSTDRV	SBHE#	MEMCS16#
3	SD6	+5V	LA23	IOCS16#
4	SD5	IRO9	LA22	IRQ10
5	SD4	-5V	LA21	IRQ11
6	SD3	DRQ2	LA20	IRQ12
7	SD2	-12V	LA19	IRQ15
8	SD1	0 WS#	LA18	IRQ14
9	SD0	+12V	LA17	DACK0#
10	IOCHRDY	NC	MEMR#	DRQ0
11	AEN	SMEMW#	MEMW#	DACK5#
12	SA19	SMEMR#	SD8	DRQ5
13	SA18	IOW#	SD9	DACK6#
14	SA17	IOR#	SD10	DRQ6
15	SA16	DACK3#	SD11	DACK7#
16	SA15	DRQ3	SD12	DRQ7
17	SA14	DACK1#	SD13	+5V
18	SA13	DRQ1	SD14	MASTER#
19	SA12	REFRESH#	SD15	Ground
20	SA11	SYSCLK	NC	Ground
21	SA10	IRQ7	---	---
22	SA9	IRQ6	---	---
23	SA8	IRQ5	---	---
24	SA7	IRQ4	---	---
25	SA6	IRQ3	---	---
26	SA5	DACK2#	---	---
27	SA4	TC	---	---
28	SA3	BALE	---	---
29	SA2	+5V	---	---
30	SA1	OSC	---	---
31	SA0	Ground	---	---
32	Ground	Ground	---	---



● **DOC1 : Disk-On-Chip Socket**

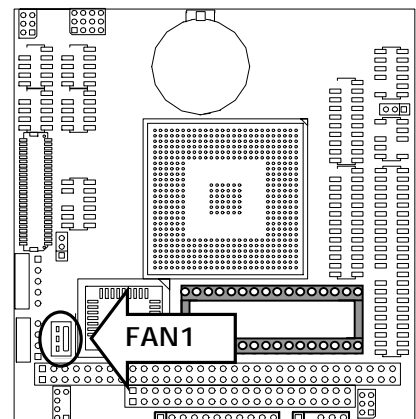
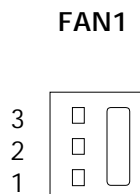
Pin No.	Description	Pin No.	Description
1	AEN	17	SD3
2	IOW#	18	SD4
3	SA15	19	SD5
4	SA12	20	SD6
5	SA7	21	SD7
6	SA6	22	CE#
7	SA5	23	SA10
8	SA4	24	SMEMR#
9	SA3	25	SA11
10	SA2	26	SA9
11	SA1	27	SA8
12	SA0	28	SA13
13	SD0	29	SA14
14	SD1	30	+5V
15	SD2	31	SMEMW#
16	GND	32	+5V



● **FAN1 : 3 Pin FAN Connector (Only PC-2400B has)**

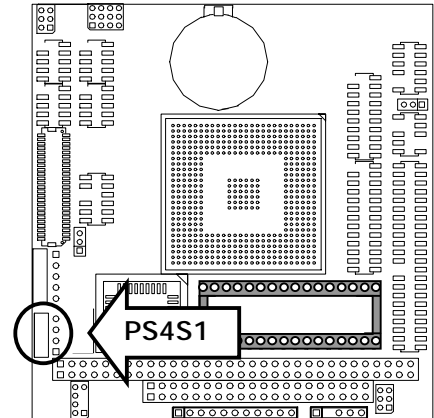
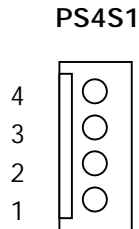
Pin No.	Description
1	Ground
2	+12V
3	FAN Status

Default: OFF



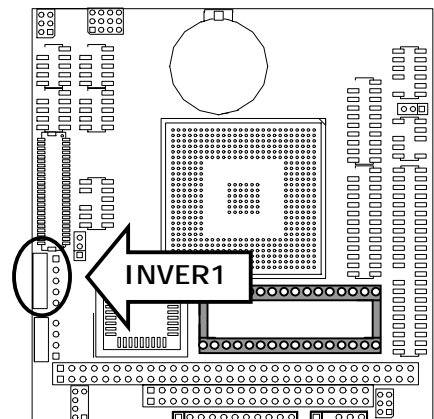
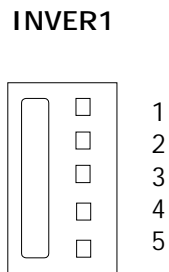
● PS4S1:4-Pin Power Connector (Small-4P)

Pin No.	Description
1	5V
2	Ground
3	Ground
4	12V



● INVER1 : LCD INVERTER Connector

Pin No.	Description
1	GND
2	+5V
3	+12V
4	ENVEE
5	Bright



Chapter 3 BIOS Setup

Award's ROM BIOS provides a built-in Setup program that allows users to modify the basic system configuration and settings. The modified data will be stored in a battery-backed CMOS RAM so that this data will be retained even when the power is turned off. In general, the information saved in the CMOS RAM remains unchanged unless there is a configuration change in the system, such as hard drive replacement or new equipment installment.

3.1 Running AWARD BIOS

The Setup Utility is stored in the BIOS ROM. When the power of the computer system is turned on, a screen message will appear to give you an opportunity to call up the Setup Utility while the BIOS will enter the Power On Self Test (POST) routines. The POST routines perform various diagnostic checks while initializing the board hardware. If the routines encounter an error during the tests, the error will be reported in one of two ways, a series of short beeps or an error message on the screen. There are two kinds of errors, fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

Press <F1> to RESUME

Write down the message and press the F1 key to continue the boot up sequence. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

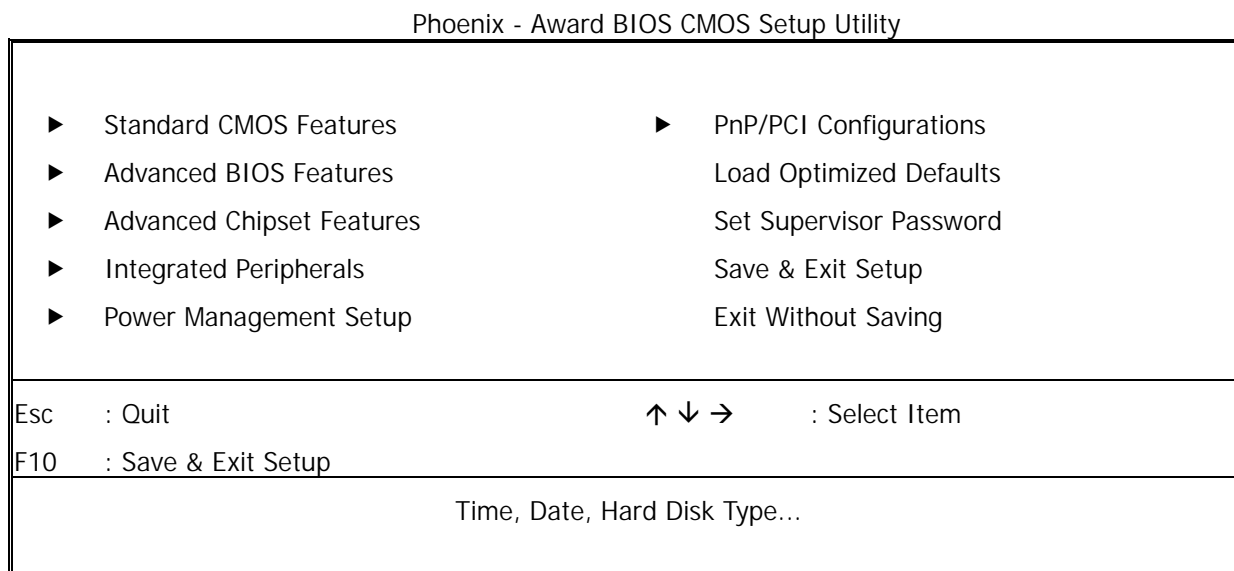
Entering Setup

Turn on the power of the computer system and press immediately. If you don't have the chance to respond, reset the system by simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys, or by pushing the 'Reset' button on the system cabinet. You can also restart by turning the system OFF then ON.

3.2 CMOS Setup Utility

To access the AWARD BIOS SETUP program, press the key. The screen display will appear as shown below:

Main Program Screen



This screen provides access to the utility's various functions.

Listed below is explanation of the keys displayed at the bottom of the screen:

<ESC>: Exit the utility.

<↑ ↓ → ←>: Use arrow keys ↑ ↓ → ← to move cursor to your desired selection.

<F1> : General Help

<F10>: Saves all changes made to Setup and exits program.

Standard CMOS Setup: Use this menu for basic system configurations.

Advanced BIOS Features: Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features: Use this menu to change the values in the chipset registers and optimizes 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 Optimized Defaults: Use this menu to load the BIOS default values that are factory settings for optimal performance system operations.

Set Supervisor Password: Use this menu to set Supervisor Passwords.

Save & Exit Setup: Save CMOS value changes to CMOS and exit setup.

Exit Without Saving: Abandon all CMOS value changes and exit setup.

IDE Primary Master / Primary Slave : Press PgUp / <+> or PgDn / <-> to select Manual, None, Auto type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Manual to define your own drive type manually.

If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is SCSI, the selection shall be None

If the controller of HDD interface is CD-ROM, the selection shall be None

Here is a brief explanation of drive specifications:

- **Access Mode:** The settings are Auto, Normal, Large, and LBA.
- **Cylinder:** Number of cylinders
- **Head:** Number of heads
- **Precomp:** Write precom
- **Landing Zone:** Landing Zone
- **Sector:** Number of sectors

Drive A : Select the correct specifications for the diskette drive(s) installed in the computer.

None	No diskette drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5in	3 1-2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in	3 1-2 inch double-sided drive; 1.44 megabyte capacity
2.88M, 3.5 in	3 1-2 inch double-sided drive; 2.88 megabyte capacity

Note: 1. Not Installed could be used as an option for diskless workstations.

2. Highlight the listing after each drive name and select the appropriate entry.

Halt On: During the power-on-self-test (POST), the computer stops if the BIOS detect a hardware error. You can tell the BIOS to ignore certain errors POST and continue the boot-up process. These are the selections:

All errors	The system boot will be stopped for any error that may be detected.
No errors	Whenever the BIOS detects a non-fatal error the system will not be stopped and you will be prompted
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

First / Second / Third / Other Boot Device: The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The settings are Floppy, LS120, HDD-0/HDD-1/HDD-2/HDD-3, SCSI, CDROM, Enabled, and Disabled.

Boot Up NumLock Status: The default setting is On. If it set Off the cursor controls will function on the numeric keypad.

Security Option: This setting controls the password in the main screen. The options are Setup and System. Select Setup and it will protect the Setup Utility settings from being tampered with. Select System if you want to use password feature every time the system boots up. The default setting is *Setup*. You can create your password by using the SUPERVISOR/USER PASSWORD utility on the main program screen.

PS2 Mouse Function Control: This option enable Award BIOS support for a PS/2-type mouse.

Video BIOS Shadow: The default setting is *Enabled* which will copy the VGA display card BIOS into system DRAM to improve performance.

C8000-CBFFF Shadow to DC000-DFFFF Shadow: The default setting for the shadow feature is Disabled. When enabled, the ROM with the specific address is copied into system DRAM. It will also reduce the size of memory available to the system. After you have made your selection in the BIOS FEATURES SETUP, press the <ESC> key to go back to the main program screen.

Full Screen LOGO Show: As the system boots custom company LOGO will appear instead of the system information prior to the initialization of the operating system.

3.5 Advanced Chipset Features

When you select the ADVANCED CHIPSET FEATURES SETUP on the main program, the screen display will appear as:

Advanced Chipset Features Screen

Phoenix - Award BIOS CMOS Setup Utility

Advanced Chipset Features

Memory Hole (15M - 16M)	[Disabled]	Item Help
ISA Clock	[PCICLK/4]	Menu Level ►
SDRAM CAS Latency Time	[3]	
SDRAM RAS Precharge Time	[3]	
SDRAM RAS to CAS Delay	[3]	
SDRAM Cycle Time Tras/Trc	[6/8]	
Video Memory Size	[2.0M]	

↑ ↓ → ← Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help
F5: Previous Values F7: Optimized Defaults

Memory Hole: 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 16MB.

ISA Clock: This function changes the clock frequency of the ISA bus (14.3MHz/2 and PCICLK/4)

SDRAM CAS Latency Time: Options : 2, 3 This controls the time delay (in clock cycles - CLKs) that passes before the SDRAM starts to carry out a read command after receiving it.

SDRAM RAS Precharge Time: Options : 2, 3. This option sets the number of cycles required for the RAS to accumulate its charge before the SDRAM refreshes.

SDRAM RAS to CAS Delay: Options : 2, 3. This option allows you to insert a delay between the RAS (Row Address Strobe) and CAS (Column Address Strobe) signals.

SDRAM Cycle Time Tras/Trc: Options : 5/6, 6/8. This feature toggles the minimum number of clock cycles required for the Tras and the Trc of the SDRAM.

Video Memory Size: This option allows the user to select the VGA share memory size.

3.6 Integrated Peripherals

When you select the *INTEGRATED PERIPHERALS* on the main program, the screen display will appear as:

Integrated Peripherals Setup Screen

Phoenix - Award BIOS CMOS Setup Utility

Integrated Peripherals

Onboard Serial Port 1	3F8/IRQ4	Item Help
Onboard Serial Port 2	2F8/IRQ3	Menu Level ►
Onboard Serial Port 3	[3E8]	
Serial Port 3 Use IRQ	[IRQ10]	
Onboard Serial Port 4	[2E8]	
Serial Port 4 Use IRQ	[IRQ11]	
UART4 Mode Select	[Normal]	
Onboard Parallel Port	[378]	
Parallel Port Use IRQ	[IRQ7]	
Parallel Port Mode	[SPP]	
LPT ECP Mode Use DMA	3	

↑ ↓ → ← Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help
F5: Previous Values F7: Optimized Defaults

Onboard Serial Port 1 / Port 2 / Port 3 / Port 4 : Select an address and corresponding interrupt for the first and second serial ports. The settings are 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ10, 2E8/IRQ5, Disabled, Auto.

Onboard Serial Port 3: The choices: Disabled (Default), 3F8H, 2F8H, 3E8H, and 2E8H.

Serial Port 3 Use IRQ: The choices: IRQ10, IRQ11, IRQ4, IRQ3, IRQ5, IRQ9, IRQ12.

Onboard Serial Port 4: The choices: Disabled (Default), 3F8H, 2F8H, 3E8H, and 2E8H.

Serial Port 4 Use IRQ: The choices: IRQ10, IRQ11, IRQ4, IRQ3, IRQ5, IRQ9, IRQ12.

UART4 Mode Select: This item allows you to select which mode for the Onboard Serial Port. The settings are Normal, HPSIR, and ASKIR.

Onboard Parallel Port: This item allows you to determine onboard parallel port controller I/O address setting. The settings are Disabled, 3BC/IRD7, 378/IRQ7, and 278/IRQ5.

Parallel Port Mode: There are three options SPP (default), ECP and ECP/EPP. Change the mode from *Normal* to the enhanced mode only if your peripheral device can support it. When it is set to ECP mode, the printer port always uses DMA3.

LPT ECP Mode Use DMA: Select a DMA channel for the parallel port for use during ECP mode. The settings are 3 and 1.

3.7 Power Management Setup

The *Power Management Setup* controls the CPU card's *Green* features. When you select the *POWER MANAGEMENT SETUP* on the main program, the screen display will appear as:

Power Management Setup Screen

Phoenix - Award BIOS CMOS Setup Utility

Power Management Setup

Power Management	[User Define]	Item Help
Video Off Option	[Susp, Stby -> Off]	Menu Level ►
Video Off Method	[V/H SYNC+Blank]	
Suspend Mode	[Disable]	
HDD Power Down	[Disable]	

↑ ↓ → ← Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help
 F5: Previous Values F7: Optimized Defaults

Power Management:

User Defined	Allow you to set each mode individually. When not disabled, each of the ranges is from 1 min. to 1 hr. except for HDD Power Down, which ranges from 1 min. to 15 min. and disabled.
Min. Saving	Minimum power management. Doze Mode=1hr. Standby Mode =1hr., Suspend Mode=1hr., and HDD Power Down=15min.
Max. Saving	Maximum power management. –Only available for SL CPU's. Doze Mode=1min., Standby Mode=1min., Suspend Mode=1min., and HDD Power Down=1min.

Video Off Option: This option is for choosing the setting in which the monitor will turn off. The default setting is Suspend.

Always On	Always turn on.
Suspend	During Suspend mode, the monitor will be turned off.

Video Off Method: This determines the manner in which the monitor is blanked. The default setting is DPMS.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blank to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

Suspend Mode: If system activity is not detected for the length of time specified in this field, all devices except CPU will be shut off. Settings are Disabled, 4 Min, 8 Min, 12 Min, 16Min, 32Min, 48Min and 64Min.

HDD Power Down: When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active. The settings are: Disable, 2~15 Min.

3.8 PnP/PCI Configuration

Both the ISA and PCI buses on the CPU card use system IRQs & DMAs. You must set up the IRQ and DMA assignments correctly through the PnP/PCI Configuration Setup utility; otherwise the motherboard will not work properly.

PnP/PCI Configuration Setup Screen

Phoenix – Award BIOS CMOS Setup Utility

PnP/PCI Configurations

Reset Configuration Data	[Disabled]	Item Help
Resources Controlled By	[Manual]	Menu Level ► Default is Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot
► IRQ Resources	[Press Enter]	
► DMA Resources	[Press Enter]	

↑ ↓ → ← Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help
F5: Previous Values F7: Optimized Defaults

Reset Configuration Data: Normally, you leave this field *Disabled*, Select *Enabled* to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

The settings are: Enabled and Disabled.

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. If you set this field to *Manual* choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a ►). The settings are Auto (ESCD), Manual.

IRQ Resources: When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt.

			Item Help
IRQ-3	assigned to	[Legacy ISA]	Menu Level ►►► Legacy ISA for devices compliant with the original PC AT bus specification, /ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.
IRQ-4	assigned to	[Legacy ISA]	
IRQ-5	assigned to	[PCI /ISA PNP]	
IRQ-7	assigned to	[Legacy ISA]	
IRQ-9	assigned to	[PCI /ISA PNP]	
IRQ-10	assigned to	[PCI /ISA PNP]	
IRQ-11	assigned to	[PCI /ISA PNP]	
IRQ-12	assigned to	[PCI /ISA PNP]	
IRQ-14	assigned to	[PCI /ISA PNP]	
IRQ-15	assigned to	[PCI /ISA PNP]	

DMA Resources: The sub menu can let you control the DMA resource.

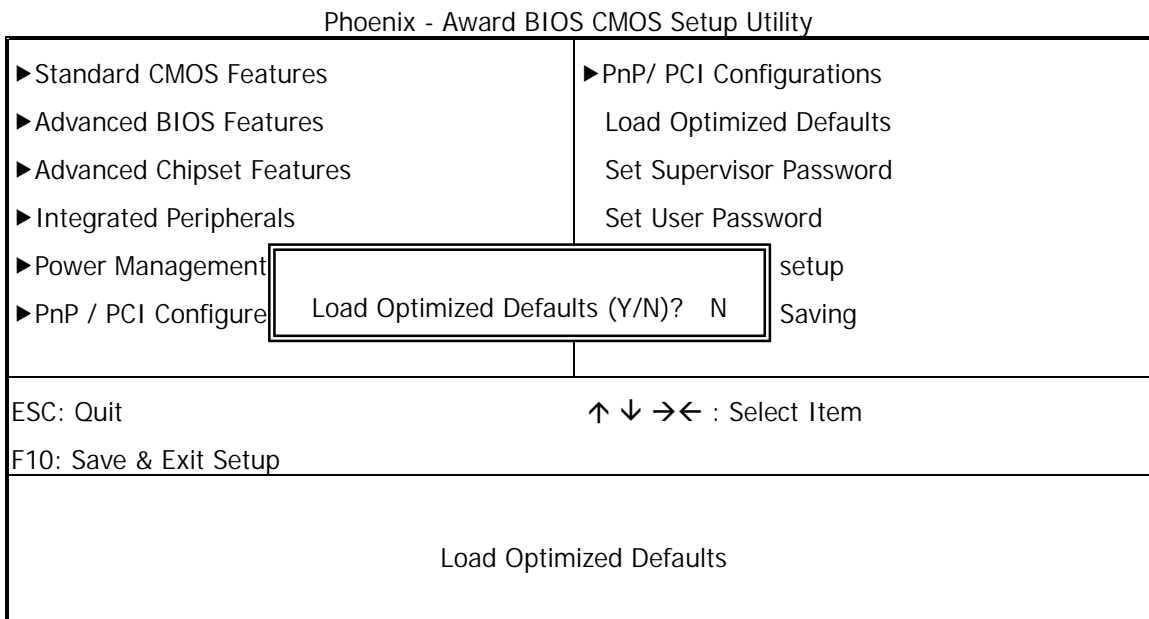
			Item Help
DMA-0	assigned to	[PCI /ISA PnP]	Menu Level ►►► Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.
DMA-1	assigned to	[PCI /ISA PnP]	
DMA-3	assigned to	[PCI /ISA PnP]	
DMA-5	assigned to	[PCI /ISA PnP]	
DMA-6	assigned to	[PCI /ISA PnP]	
DMA-7	assigned to	[PCI /ISA PnP]	

3.9 Load Optimized Defaults

When you press *Enter* on this item, you get a confirmation dialog box with a message similar to:

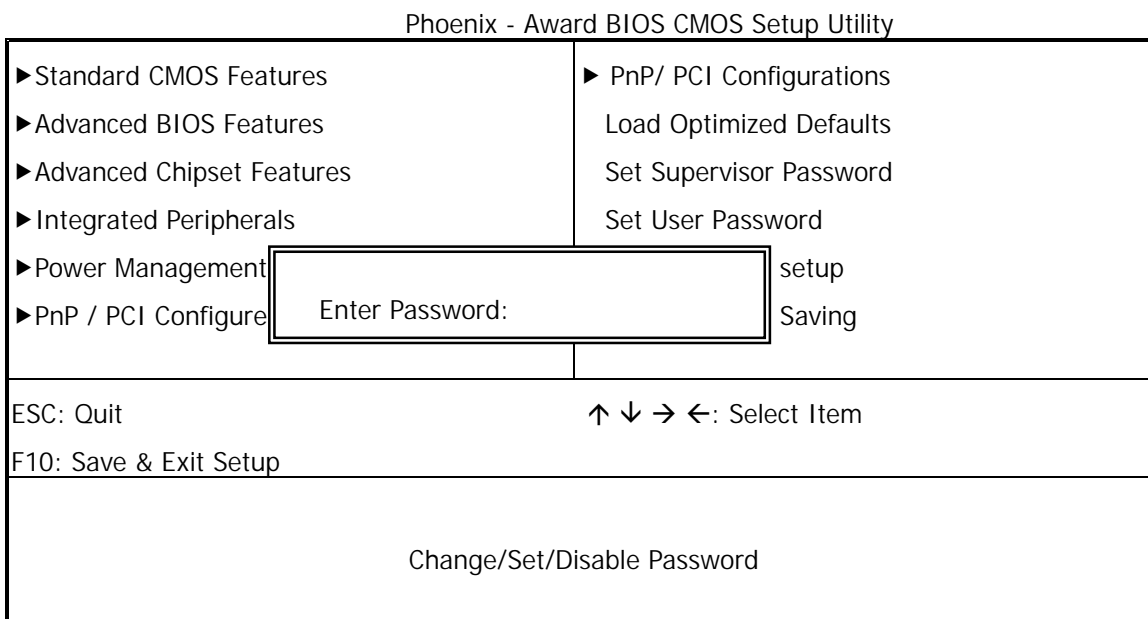
Load Optimized Defaults (Y/N)? N

Pressing *Y* loads the default values that are factory settings for optimal performance system operations.



3.10 Set Supervisor / User Password

The *SUPERVISOR/USER PASSWORD* utility sets the password. The SBC is shipped with the password disabled. If you want to change the password, you must first enter the current password, and then at the prompt -- enter your new password. The password is case sensitive, and can be up to 8 alphanumeric characters. Press <Enter> after you have finished typing in the password. At the next prompt, confirm the new password by re-typing it and pressing <Enter> again. When you are done, the screen automatically reverts to the main screen. Remember that when you use this feature, the *Security Option* line in BIOS FEATURES SETUP will determine when entering the password will be required.



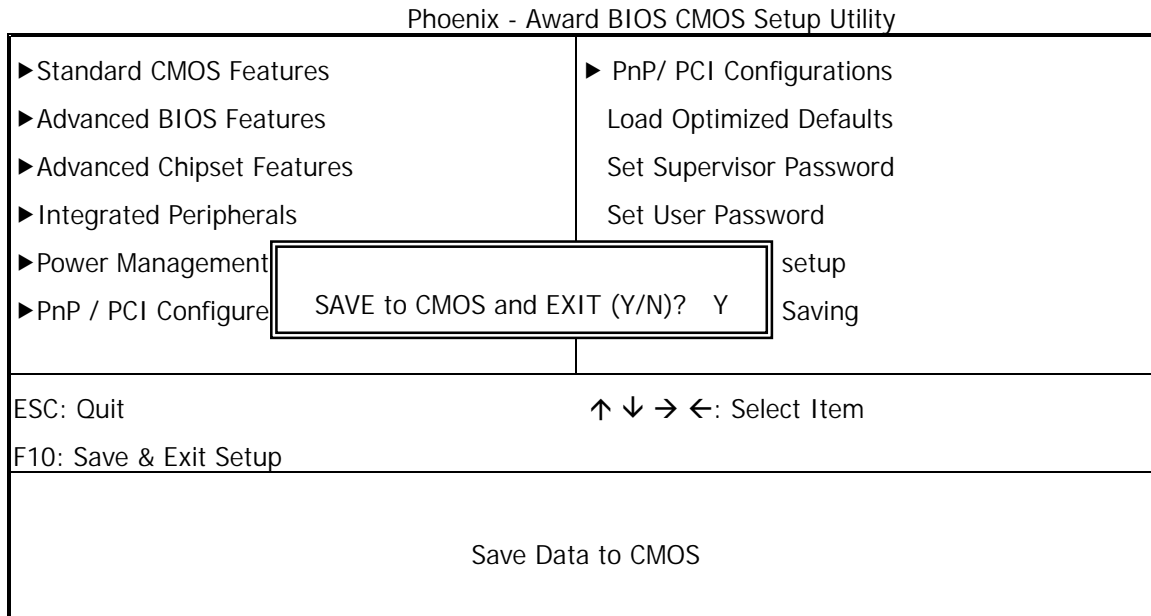
To disable the password, press the <Enter> key instead of entering a new password when the Enter Password in the dialog box appears. A message will appear confirming that the password is disabled.

If you have set both supervisor and user password, only the supervisor password allows you to enter the BIOS SETUP PROGRAM.

Note: If you forget your password, the only way to solve this problem is to discharge the CMOS memory.

3.11 Save & Exit Setup

Select this option and press the <Enter> key to save the new setting information in the CMOS memory and continue with the booting process.



3.12 Exit Without Saving

Select this option and press the <Enter> key to exit the Setup Utility without recording any new values or changing old ones.

Phoenix - Award BIOS CMOS Setup Utility	
▶ Standard CMOS Features	▶ PnP/ PCI Configurations
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set Supervisor Password
▶ Integrated Peripherals	Set User Password
▶ Power Management	setup
▶ PnP / PCI Configure	Saving
Quit Without Saving (Y/N)? N	
ESC: Quit	
↑ ↓ → ←: Select Item	
F10: Save & Exit Setup	
Abandon all Data	

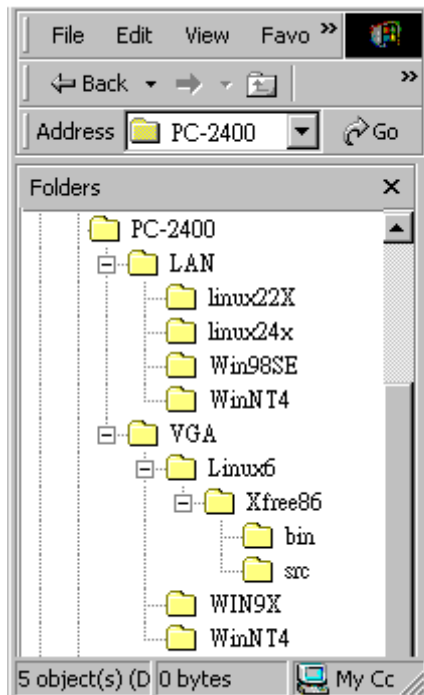
Chapter 4 Drivers Support

4.1 Use Your Driver CD-ROM

This chapter provides information on how to install the drivers in generally and related directory that come with the CD-ROM in the package. Please follow the instructions set forth on the screen carefully.

1. Find the directory for your O/S accordingly.
2. Always read the README.TXT before installation
3. Run the *.EXE and follow the installation prompt step by step.

4.2 File Directory



Note: Windows XP and ME should optimally configure the VIA chipset. Not need to run VIA Chipset Software Installation Utility.

APPENDIX A. Watch-Dog Timer

To use the watch-dog timer:

For DOS system :

Execute the **W977WD.EXE** file under DOS, Then key-in **1~255**. The system will reboot automatically according to the time-out you set.

Syntax: W977WD nnn nnn=1~255 minutes

Ex: After 4 minutes, reset system

W977WD 4↵

APPENDIX B. LCD Bright Control

Execute the **BRIT.EXE**

Press "+" Key to increase brightness

Press "-" Key to decrease brightness

APPENDIX C. How to use Digital I/O

Step1 : Setup GPIO to Input or Output.

Step2 : Write Data to Output Pin or via Input Pin read data

✧ GPIO function setup port Address

GPIO 0~7 : 320H

GPIO 8~15: 328H

1: Input

0: Output

✧ GPIO Data port Address

GPIO 0~7: 326H

GPIO 8~15: 32EH

EX: 1. GPIO 0~7 defined Output and write 38 data,

Under DOS system :

Debug↵

-O 320 00↵

-O 926 38↵

2. GPIO 8~15 defined to Input and read data,

Under DOS system :

Debug↵

-O 328 FF↵

-I 32E↵

Terms and Conditions

Date: 2004.05.20

Warranty Policy

1. All products are warranted against defects in materials and workmanship on a period of two years from the date of purchase by the customer.
2. The buyer will bear the return freight charges for goods that are returned for repair within the warranty period whereas manufacturer will bear the other way after repair.
3. The buyer will pay for repair (for the replaced materials plus service time) and transportation charges (both ways) for items after the expiration of the warranty period.
4. If the RMA Service Request Form does not meet the stated requirement as listed on "RMA Service", RMA goods will be returned at the customer expense.
5. The following conditions are excluded from this warranty..
 - A. Improper or inadequate maintenance by the customer.
 - B. Unauthorized modification or misuse.
 - C. Operation outside of the environmental specifications for the product.

RMA Service

1. **Request a RMA#:**

Complete and fax to Supplier the "RMA Request Form" to obtain a RMA number.

2. **Shipping:**

- A. The customer is requested to fill up the problem code as listed. If none of the code is selected, please write the symptom description on the remark.
- B. Ship the defective units with freight prepaid.
- C. Mark the RMA # clearly on the box.
- D. Shipping damage as a result of inadequate packing is the customer's responsibility.
- E. Use the original packing materials whenever possible.

3. **All RMA# are valid for 30 days only:**

When RMA goods are received after valid RMA# period, the goods will be rejected.

RMA Service Request Form

When requesting RMA service, please fill out this **RMA Service Request Form**.

Without this form your RMA will be REJECTED!!!

RMA No:	Reasons to Return: <input type="checkbox"/> Repair(Please include failure details) <input type="checkbox"/> Testing Purpose		
Company:	Contact Person:		
Phone No.	Purchased Date:		
Fax No.:	Applied Date:		
Return Shipping Address: _____			
Shipping by: <input type="checkbox"/> Air Freight <input type="checkbox"/> Sea <input type="checkbox"/> Express : _____ <input type="checkbox"/> Others:			
Item	Model Name	Serial Number	Configuration

Item	Problem Code	Failure Status

***Problem Code:**

- | | | | |
|------------------------|------------------------------|--------------------|--------------------------|
| 01: D.O.A. | 07: BIOS Problem | 13: SCSI | 19: DIO |
| 02: Second Time R.M.A. | 08: Keyboard Controller Fail | 14: LPT Port | 20: Buzzer |
| 03: CMOS Data Lost | 09: Cache RMA Problem | 15: PS2 | 21: Shut Down |
| 04: FDC Fail | 10: Memory Socket Bad | 16: LAN | 22: Panel Fail |
| 05: HDC Fail | 11: Hang Up Software | 17: COM Port | 23: CRT Fail |
| 06: Bad Slot | 12: Out Look Damage | 18: Watchdog Timer | 24: Others (Pls specify) |

Request Party

Confirmed By Supplier

Authorized Signatures / Date

Authorized Signatures / Date