EM-568 Series

**EBX SBC with VIA CPU, VGA,
LCD, LVDS, Audio,
Ethernet, CF, PC/104
and PCI expansion**

USER'S MANUAL

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TRADEMARKS

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Chapter 1 Introduction

1.1 Introduction

EM-568 offers multi computing power options. VIA Eden-533MHz is designed especially for fan-less requirement to enable better MTBF. As an x86 architecture, the platform supports prevail operating systems such as Windows 95/98SE/XP/2000/NT and Linux. Your previous investment on these operating systems is, thus, protected in the following 4 years. With 64KB internal L2 cache integrated in the CPU, your applications are able to benefit more execution speed from this mechanism.

VIA Twister-T chipset supports 2D/3D Video Accelerator by integrating S3 Pro Savage 4. It also supports 36-bit TTL LCD and 2 channels (2x18-bit) LVDS. EM-568 is able to compatible with the most coming bigger size industrial and commercial LCDs. By enabling VRAM, the system can further cut its cost and while maintains its speed. EM-568 uses SODIMM to limit its board height and supports PC 133/PC 100.

There are two storage options in EM-568 design. One is EIDE, and the other one is CF II. EIDE supports four IDE devices. EM-568 offers 2 IDE box header to fulfill flexible hard disk placement in system design. Regarding to CF II socket, system can further cut its whole size when using popular large volume CF II form factor SSD.

EM-568 embodies the following I/O: 1 x LAN, 1 x FDD, 4 x COM, 1 x LPT, Keyboard & Mouse, 4 x USB, 1 x IrDA and 4 x DIO. Expansion slots include PC/104 and PCI. Power supply complies with AT and ATX. Watchdog timer is 16-level.

As an industrial PC embedded board, EM-568's operating temperature is ranging from 0°C to 60°C. All these numerous features provide an ideal price/performance solution for commercial and industrial applications where stability and reliability are essential.

1.2 Features

- VIA Eden-533MHz Fanless or C3 800MHz/ FSB 133MHz
- VIA VT8606 North Bridge and VT82C686B South Bridge
- Award BIOS
- S3 Pro Savage 4 2D/3D Video Accelerator
- VGA, 36-bit TTL LCD and 2×18-bit LVDS
- LCD Brightness Control via GPIO
- AC 97 Audio
- Realtek RTL 8100B
- CF Type II Socket
- PCI and PC/104 expansion slots
- 1 x LAN, 1 x FDD, 4 x COM, 1 x LPT, Keyboard & Mouse, 4 x USB, 1 x IrDA and 4 x DIO
- Watchdog Timer
- AT/ATX Power Connector

1.3 Specification

EM-568 Series

Processor	VIA low power CPU 400/ 533/ 733/800M/1G on board Default: Eden-533M (EM-568A) & C3-800M (EM-568B)
FSB	133 MHz
L2 Cache	64K on CPU
Chipset	VIA VT8606 (North) & VT686B (South)
BIOS	256KB Award license BIOS
System Memory	SODIMM socket up to 512MB PC133 / PC100 SDRAM
VGA & LCD	1〉Chip: VT8606 integrated S3 ProSavage 4, AGP 4X Graphics support 36 bit TFT/ DSTN/ STN LCD & 2 channels of 18 bit (2x18) LVDS 1-1〉Connector: a〉VGA: 2x6x2.54 mm pin header b〉TFT LCD: 2x25x1.0 mm box header c〉LVDS LCD: 2x15x1.0 mm box header (2x18 bit) 2〉Chip: Thine THC63LVDF83A or Compatible Support one channel 24 bit LVDS LCD(optional) 2-1〉Connector: LVDS LCD:1x20x1.25 mm right angle box header (24 bit) (optional) 3〉VRAM: Support 8/ 16/ 32MB memory (shared)
Audio	Chip: VIA VT1612A AC 97 Codec & NS LM1877 Amp for 2W per channel Connector: 2x8x2.0 mm pin header (Mic-in, Line-in, CD-in, Line-out & Speaker-out)
Ethernet	Chip: Realtek RTL8100B (10/100 BaseT) Connector: RJ-45 Vertical type
Solid State Disk	Connector: 50-pin socket for type I/II Compact Flash
PC/104	Connector: PC104 connector (ISA)
Expansion Bus	PCI slot
Serial Port (FOUR)	Chip: VT686B & Winbond W83877TF COM Setting: COM 1, 3 & 4 is RS-232, COM 2 is RS-232/422/485 setting by jumper COM Power: 4 COMs pin 9 all with +5V & +12V selector Connector: 2x20x2.54 mm pin header
Parallel Port	Multi-mode (SPP/ EPP/ ECP) Connector: 2x13x2.54 mm pin header
IDE (TWO)	Connector: 2x20x2.54 mm & 2x22x2.0 mm pin header
FDD	Connector: 2x17x2.54 mm pin header
USB V1.1 (FOUR)	Connector: 2* 2x5x2.54 mm pin header
PS/2 Keyboard & Mouse	Connector: 2x4x2.54 mm pin header
IRDA	Shared with COM 2 Connector: 1x5x2.54 mm pin header
RTC	3V Li battery in holder
LCD Inverter Port	Connector: 1x5x2.54 mm wafer
System Indicator	H/W Reset, Power LED, HDD LED & System alarm speaker Connector: 1x11x2.54 mm pin header
Watchdog Timer	16 levels timer intervals
Digital I/O	4 * In & 4 * Out Connector: 2x5x2.54 mm pin header
Hardware Monitoring	Chip: VT686B (South)
Power Management	Support power saving modes, normal/ standby/ suspend; APM 1.2 compliant
Power Input	AT or ATX select by adapter cable & Jumper setting Connector: 1x7x2.54 mm wafer
OS Support	WIN 98, 2000, XP & WIN NT4.0; Linux Red Hat 7.2 or later version
Temperature	Operating: 0 degree C ~ 60 degree C Storage: - 10 degree C ~ 70 degree C
Humidity	5% ~ 95% relative humidity, non-condensing
Dimension	5.75” x 8.0” EBX form factor

1.4 Unpack your EM-568 Series

Before you begin to install your card, please make sure that you received the following materials as listed below:

Standard Packing:

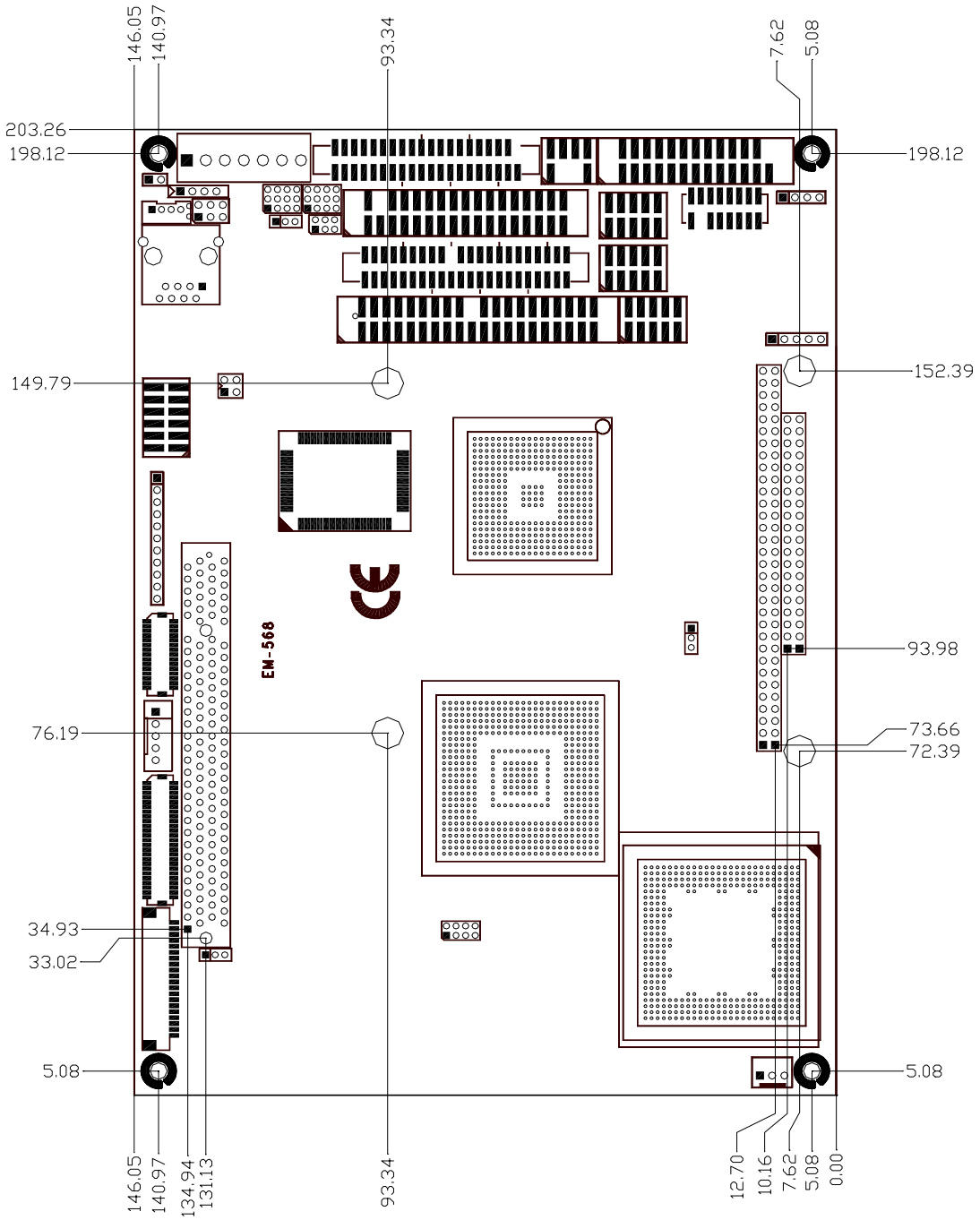
●EM-568 x 1 pc	Embedded Single Board Computer
●Driver Utility CD-ROM x 1 pc	Drivers & Utilities
●User's Manual x 1 pc	This User's Manual

Note‥All Option Kits are to be purchased separately

Option ‥ EM-568CB

●LPT cable x 1 pc	0800100250001	25P D-SUB TO 26P P26 with Key
●FDC cable x 1 pc	0800100340002	34P TO 34P P4 with Key
●IDE cable x 1 pc	0800100400004	ATA100 40P 80 Impendence P20 with Key
●USB Y cable x 1 pc	080019F100001	2×5P 2.54mm with P9
●VGA cable x 1 pc	080029F020001	2×6 2.54mm with P8 TO D-SUB 15 Female
●AT power cable x 1 pc	0800800120002	EBX (7PIN) TO AT P8 / P9 (12PIN)
●ATX power cable x 1 pc	080089D000001	20P ATX TO 7P EBX+4P HEADER×2
●PS2 cable x 1 pc	0801895080001	Keyboard / Mouse Y cable 8P Header-PS2
●SOUND cable x 1 pc	080199D160002	16P TO 5P PhoneJack×4 with Key
●COMPORT cable x 1 pc	080279D400001	40P TO 9P D-SUB Male×4 P40 with Key
●IDE cable x 1 pc	080019D440001	IDE 40P×2 TO 44P P20 with Key

1.5 Board Layout



Chapter 2 Installation

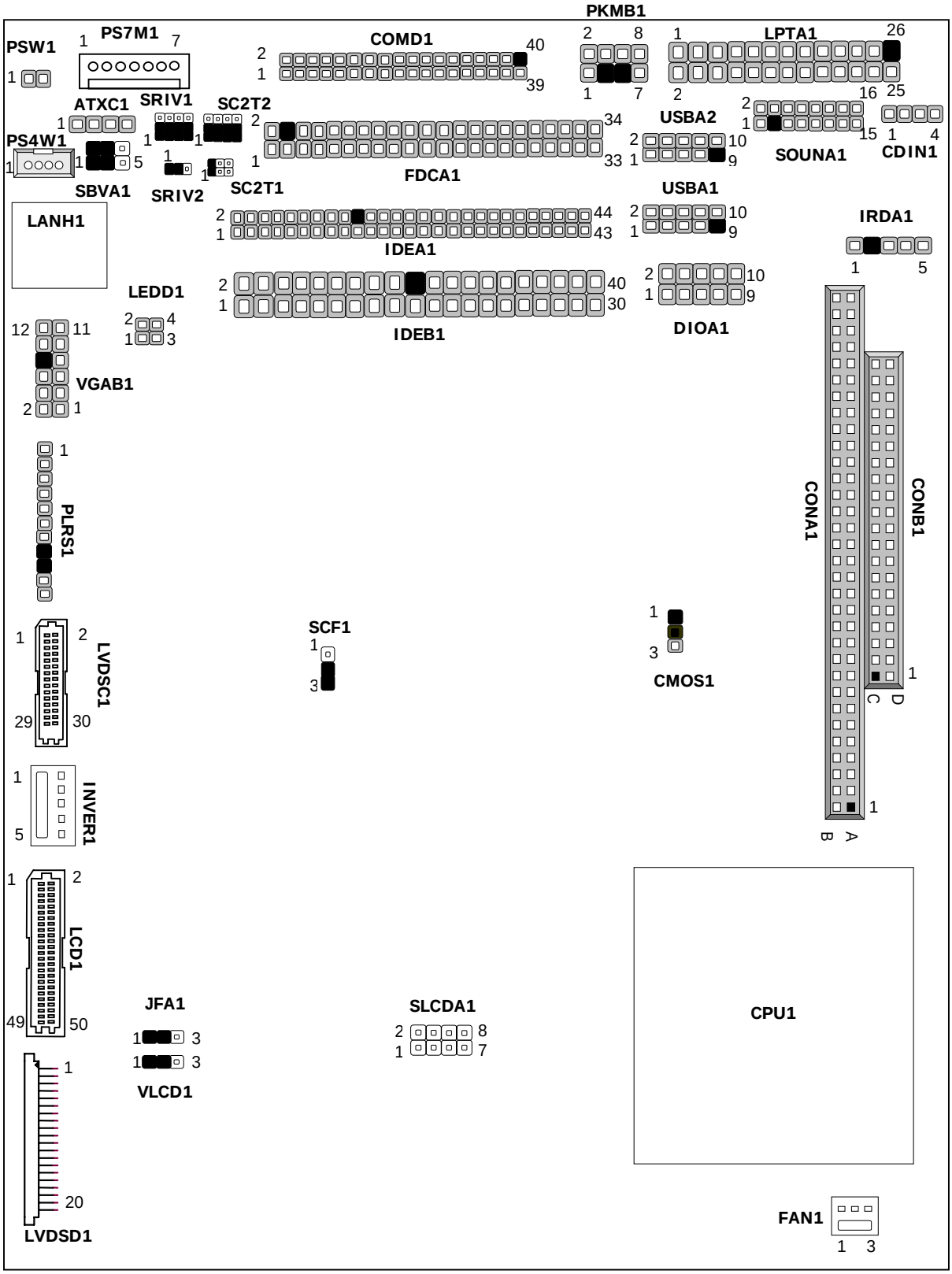
2.1 System Memory Installation

Step 1: Insert the RAM module into the SODIMM socket

Step 2: Press Module down till clip hold.

2.2 Jumper Settings and Connectors

2.2.1 Board Outline

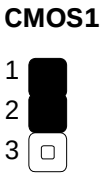


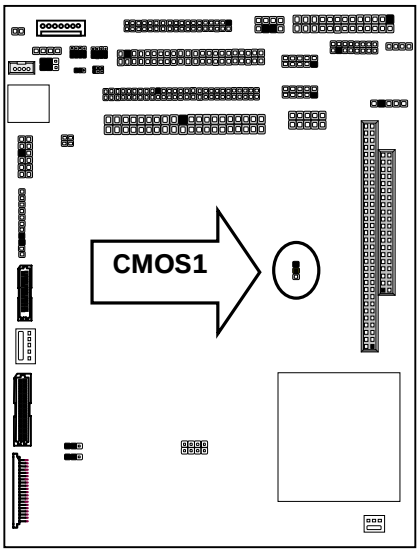
2.2.2 Jumper Settings Summary

LOCATION	FUNCTION
CMOS1	Clear CMOS Data
SC2T1/SC2T2	Select COM2 Type
SRIV1/SRIV2	Select COM port pin 9 Type
VLCD1	Select Panel Voltage
SBVA1	Select AT/ATX Power
SCF1	Master/Slave Select
JFA1	Factory Setting
SLCDA1	Select Panel Type

- **CMOS1 : Clear CMOS Data**

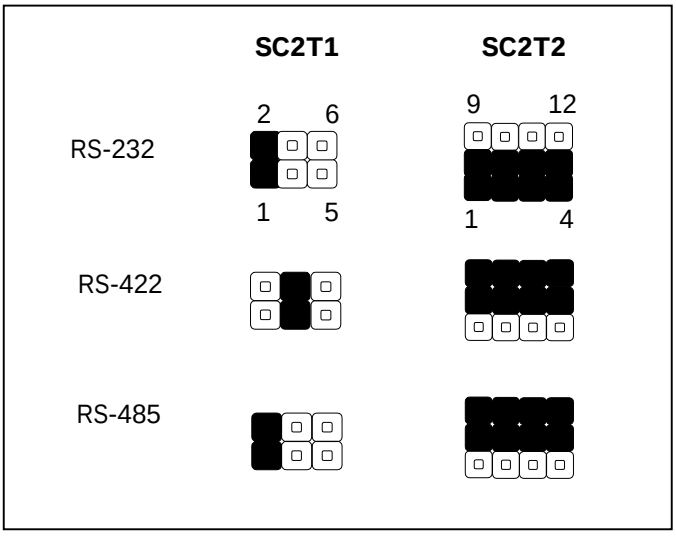
Description	CMOS1
Normal (Default)	1-2
Clear CMOS	2-3

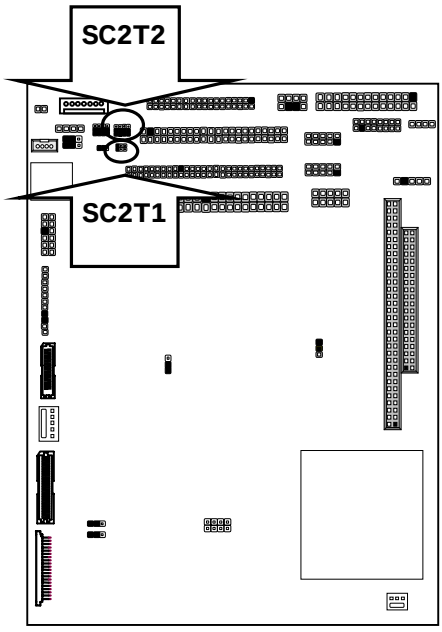




- **SC2T1/SC2T2: Select COM2 Type**

COM1 TYPE	SC2T1	SC2T2
RS-232 (Default)	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

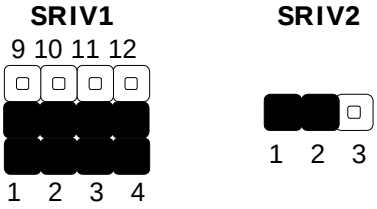


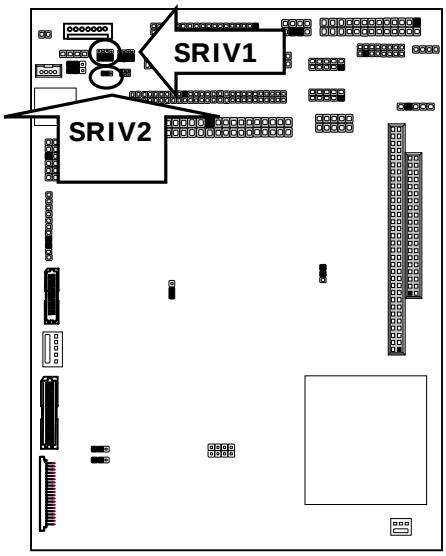


●SRIV1, SRIV2: Select COM port pin 9 Type

Pin 9 Type	SRIV1	SRIV2
RI	1-5,2-6,3-7,4-8	1-2
+5V	5-9,6-10,7-11,8-12	1-2
+12V	5-9,6-10,7-11,8-12	2-3

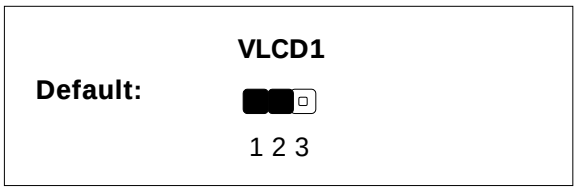
Default: RI

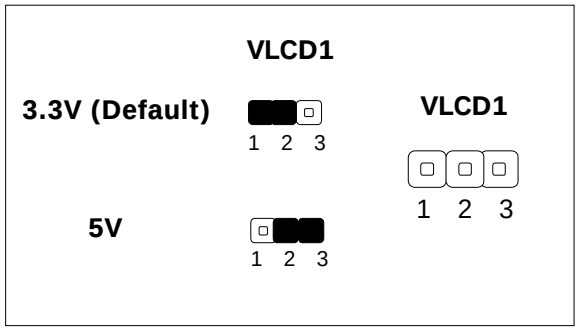


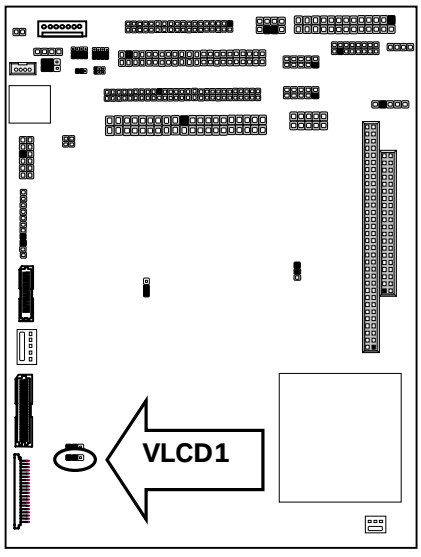


● **VLCD1: Select Panel Voltage**

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



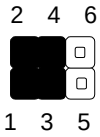




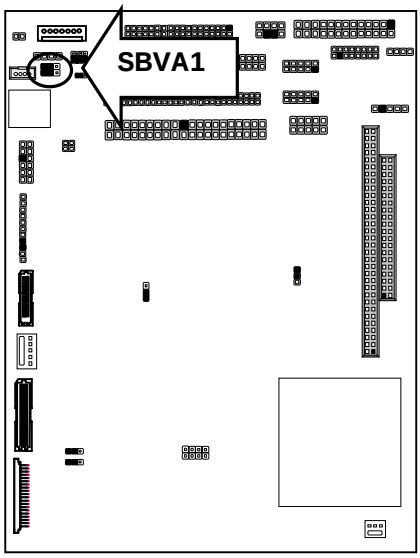
- **SBVA1: Select AT/ATX power (2x3 Pin 2.54mm)**

Power Type	SBVA1
AT	1-3,2-4 (Default)
ATX	3-5,4-6

Default:

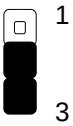


SBVA1

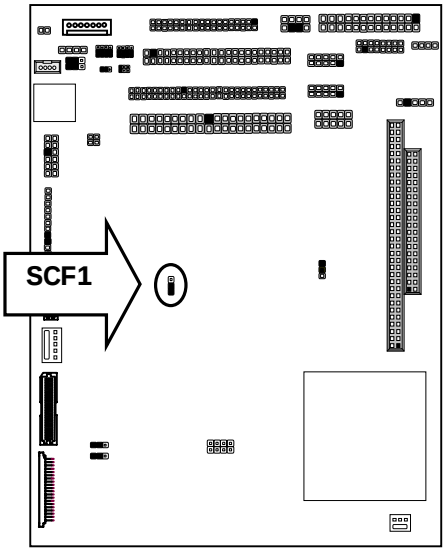


- **SCF1: Master/Slave Select**

Compact Flash Card	ATA Disk Chip	SCF1
Master	Slave	1-2
Slave	Master	2-3 (Default)



SCF1



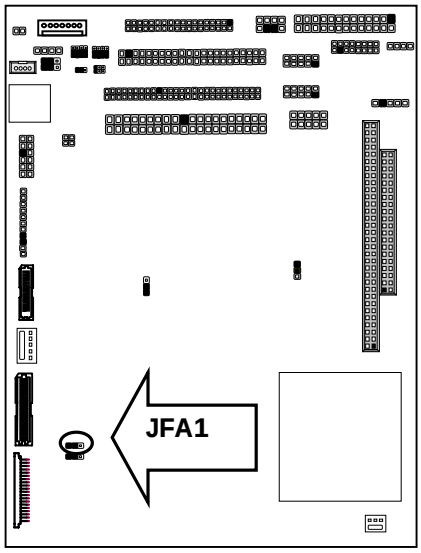
- **JFA1: Factory Setting**

Defaut: 1-2

Pin No.	Description
1	3VSB
2	Pin A14
3	-GNT1

JFA1

1 3

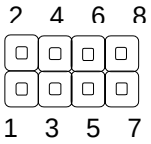


- **SLCDA1: Select Panel Type (2x4 Pin)**

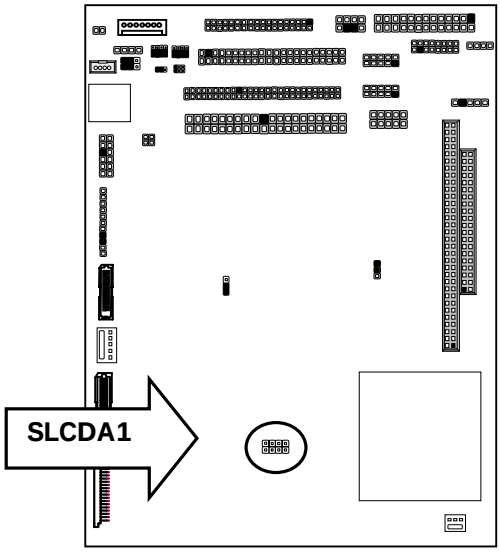
Note: Different type of LCD panel with the same resolution will have different jumper setting for selection.

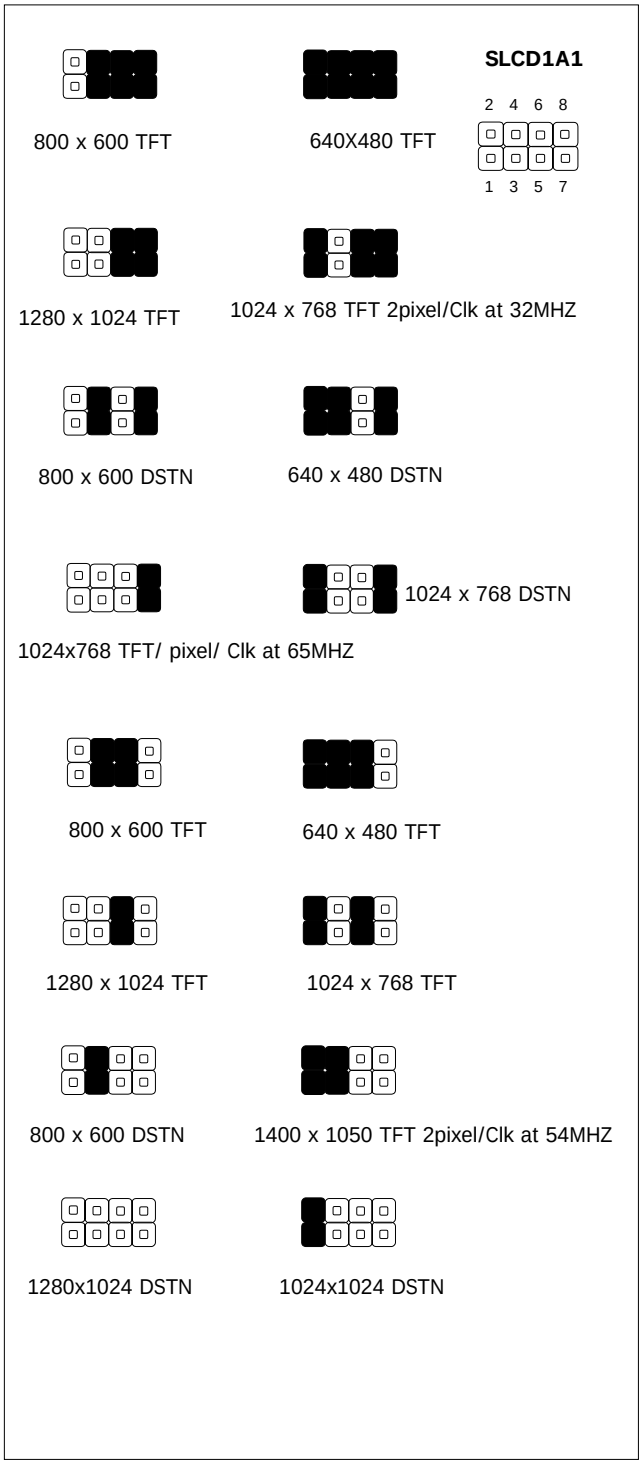
Panel Type	SLCD1
640 x 480 TFT	1-2,3-4,5-6,7-8
800 x 600 TFT	3-4,5-6,7-8
1024 x 768 TFT 2pixel/Clk at 32MHZ	1-2,5-6,7-8
1280 x 1024 TFT	5-6,7-8
640 x 480 DSTN	1-2,3-4,7-8
800 x 600 DSTN	3-4,7-8
1024 x 768 DSTN	1-2,7-8
1024 x 768 TFT 1pixel/Clk at 65MHZ	7-8
640 x 480 TFT	1-2,3-4,5-6
800 x 600 TFT	3-4,5-6
1024 x 768 TFT	1-2,5-6
1280 x 1024 TFT	5-6
1400 x 1050 TFT 2pixel/Clk at 54MHZ	1-2,3-4
800 x 600 DSTN	3-4
1024 x 768 DSTN	1-2
1280 x 1024 DSTN	OFF

Default
All OFF:



SLCDA1



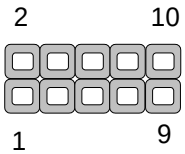


2.2.3 I/O Connectors Summary

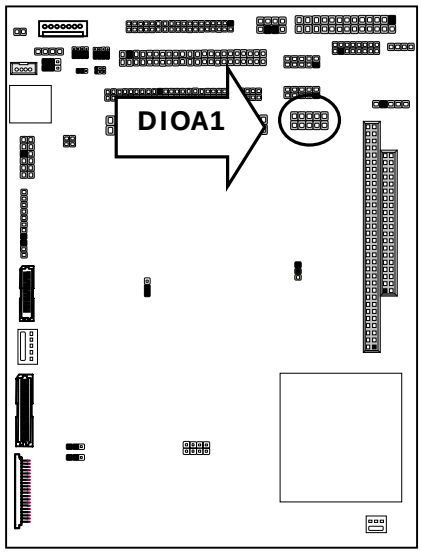
LOCATION	FUNCTION
DIOA1	Digital Input/ Digital Output Ports (2×5 Pin 2.54mm Header)
PLRS1	Power LED, HD, LED, Reset, Speaker Connector (11Pin 2.54mm)
FAN1	3 Pin FAN Connector
CONA1 /CONB1	PC/104 Connector (8 bit/16 bit)
LANH1	RJ-45 180° LAN Connector
LEDD1	2×2 Pin Lan Link & Active LED
IRDA1	IRDA1 Connector
INVER1	LCD Inverter Connector
CF1	Compact Flash Connector
USBA1	USB Port #1 &#2 Connector 2×5 Pin 2.54mm
USBA2	USB Port #3 &#4 Connector 2×5 Pin 2.54mm
PKMB1	PS/2 Keyboard & Mouse Connector (2×4 Header 2.54mm)
VGAB1	External VGA Connector (12 Pin Header)
IDEA1	IDE Interface Connector (44Pin 2.0mm Pitch Header)
IDEB1	IDE Interface Connector (40Pin 2.54mm Pitch Header)
SOUNA1	Sound Connector 2×8 Header 2.00mm
FDCA1	Floppy Interface Connector (34 Pin Header)
CDIN1	CD_IN Connector (2.54mm Pitch 180°)
LPTA1	Parallel Connector (26 Pin 2.54mm Pitch Header)
LVDSC1	LVDS Panel Connector(2×15P 1.0mm)
COMD1	COM1, COM2, COM3, COM4 Connector
LCD1	Panel LCD Connector (50 Pin 1.0mm JST Header)
PS7M1	7 Pin Power Connector
PS4W1	4-Pin Power Connector (WAFER 4P 2.00mm)
ATXC1	For ATX Function
PSW1	For ATX Power Button
LVDSD1	LVDS Connector (20Pin 1.27mm Pitch)

- **DIOA1: Digital Input/ Digital Output Ports(2x5 Pin 2.54mm Header)**

Pin No.	Description	Pin No.	Description
1	IN0	2	OUT0
3	IN1	4	OUT1
5	IN2	6	OUT2
7	IN3	8	OUT3
9	Ground	10	Ground



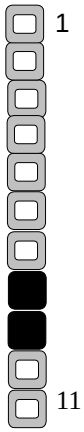
DIOA1



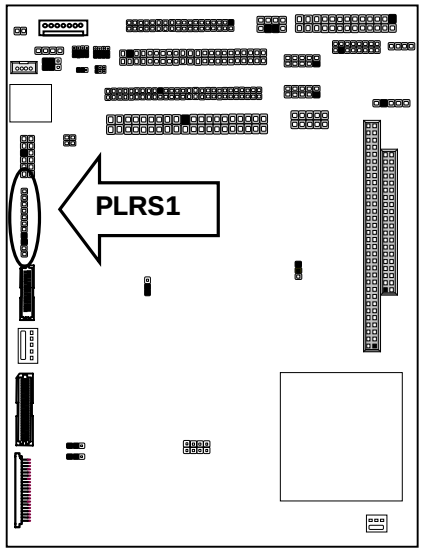
- **PLRS1: Power LED, HD LED, Reset, Speaker Connector (11 Pin 2.54mm)**

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	Internal Buzzer -
10	NC
11	External Speaker +

Default :
8-9 (ON) Internal Buzzer

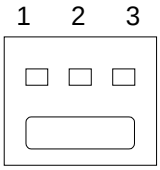


PLRS1

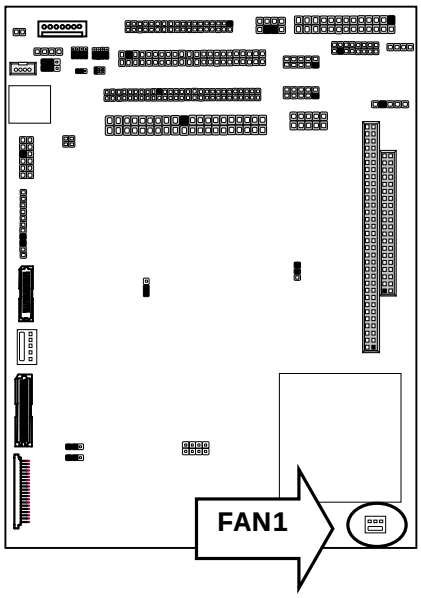


- **FAN1: 3-Pin FAN Connector (For EM-568B only)**

Pin No.	Description
1	Ground
2	+5V
3	FAN Status



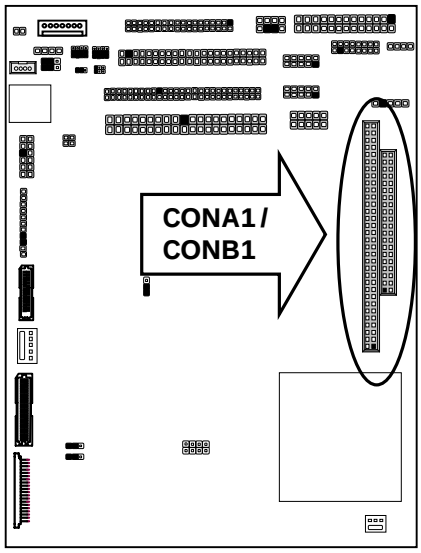
FAN1

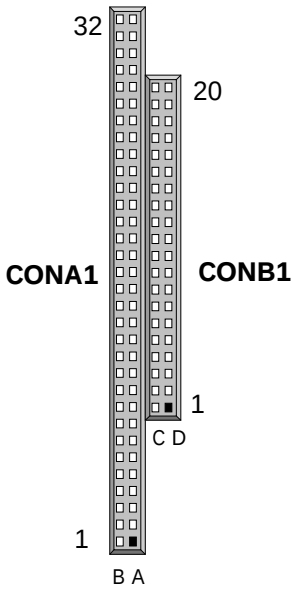


● **CONA1:PC/104 Connector（8 bit）**

● **CONB1:PC/104 Connector（16 bit）**

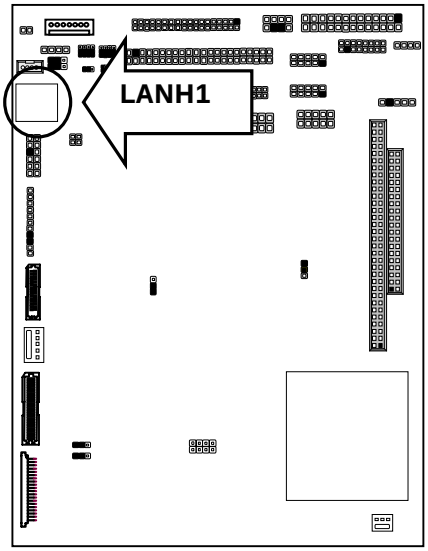
Pin No.	Description			
	CONA1		CONB1	
	Row A	Row B	Row C	Row D
1	IOCHCK#	Ground	Ground	Ground
2	SD7	RSTDRV	SBHE#	MEMMCS16#
3	SD6	+5V	LA23	IOCS16#
4	SD5	IRQ9	LA22	IRQ10
5	SD4	-5V	LA21	IRQ11
6	SD3	DRQ2	LA20	IRQ12
7	SD2	-12V	LA19	IRQ15
8	SD1	0 WS#	LA18	IRQ14
9	SD0	+12V	LA17	DACK0#
10	IOCHRDY	NC	MEMR#	DRQ0
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	---	---





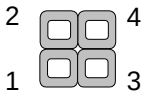
●LANH1 : RJ-45 180° LAN Connector

Pin No.	Description
	Fast E-Net
1	TX+
2	TX-
3	RX+
4	T45
5	T45
6	RX-
7	T78
8	T78

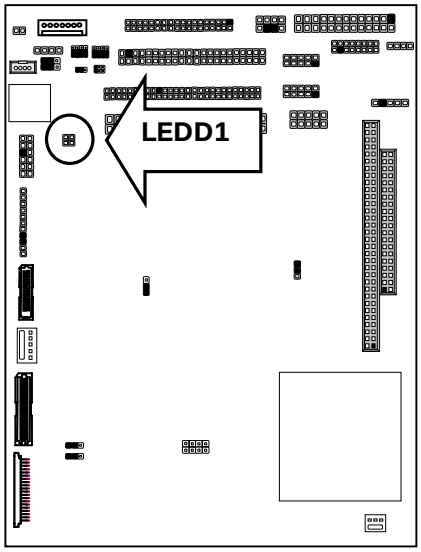


●LEDD1: 2x2 Pin Lan Link & Active LED

Pin No.	Signal	Pin No.	Signal
1	3VSB	2	LINK LED-
3	3VSB	4	ACTIVE LED-



LEDD1

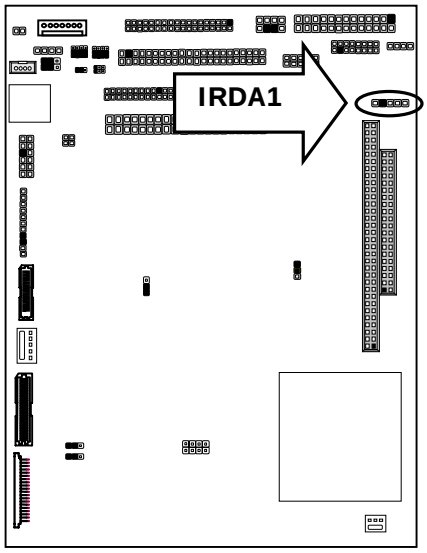


●IRDA1: IRDA Connector

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

1 5

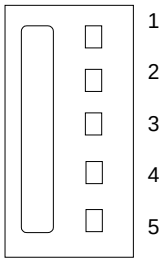
IRDA1

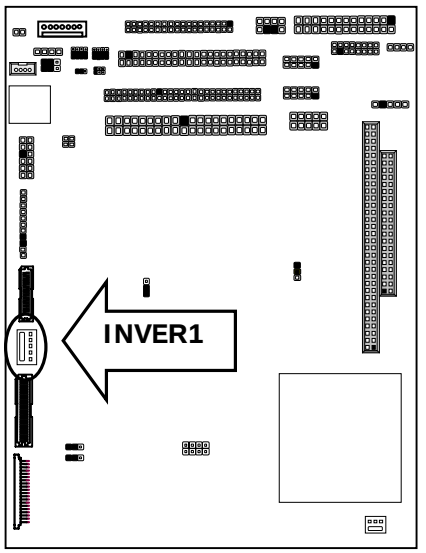


●INVER1: LCD INVERTER Connector

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

INVER1





※Regular pin 5 (bright) output is 1.8V. But output can be adjusted by below software tools.

E568LAWD.EXE for output: 0 ~ 3.3V

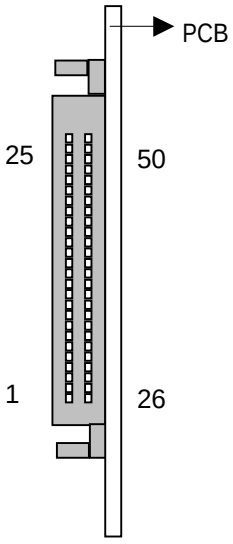
Brightness Adjust Operation:

Power-on by DOS booting disk, execute software tool and push "+" bottom to increase voltage or push "-" bottom to decrease voltage.

●CF1: Compact Flash Connector (on solder side)

Pin No.	Description	Pin No.	Description
1	GND	26	CD1-
2	DATA3	27	DATA11
3	DATA4	28	DATA12
4	DATA5	29	DATA13
5	DATA6	30	DATA14
6	DATA7	31	DATA15
7	CE1#	32	CE2#
8	A10	33	VS1#
9	OE#	34	IOR#
10	A9	35	IOW#
11	A8	36	WE#
12	A7	37	READY#
13	CFVCC3	38	CFVCC3
14	A6	39	CSEL
15	A5	40	VS2#
16	A4	41	RESET
17	A3	42	WAIT#
18	A2	43	INPACK#
19	A1	44	REG#
20	A0	45	DASP#
21	DATA0	46	DIAG#
22	DATA1	47	DATA8
23	DATA2	48	DATA9
24	WP	49	DATA10
25	CD2-	50	GND

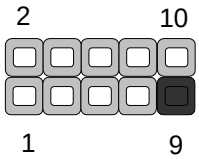
CF1



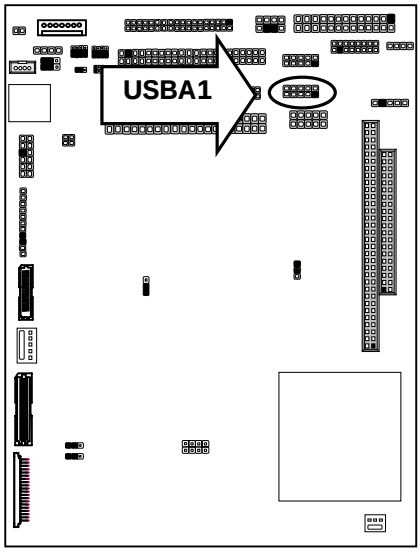
∗ CF1 is on the solder side

●USBA1: USB Port #1 & #2 Connector 2x5 Pin 2.54mm

Pin No.	Description	Pin No.	Description
1	USB_VCC	2	USB_VCC
3	USBD0-	4	USBD1-
5	USBD0+	6	USBD1+
7	Ground	8	Ground
9	KEY	10	USB Ground #2

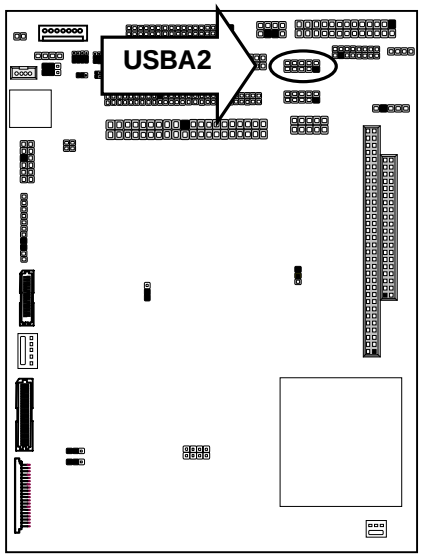


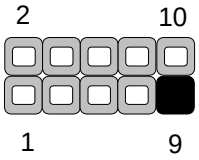
USBA1



●USBA2: USB Port #3 & #4 Connector 2x5 Pin 2.54mm

Pin No.	Description	Pin No.	Description
1	USB_VCC	2	USB_VCC
3	USBD2-	4	USBD3-
5	USBD2+	6	USBD3+
7	Ground	8	Ground
9	KEY	10	USB Ground #4

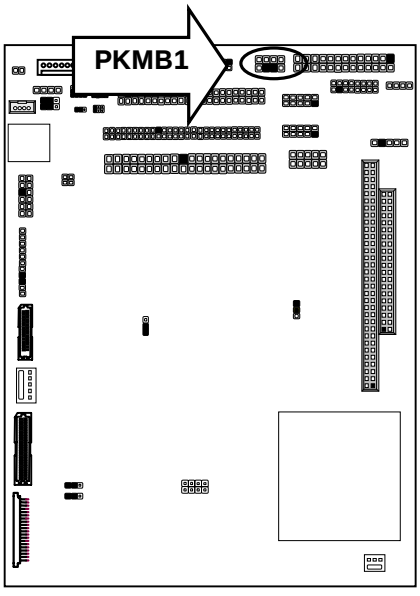


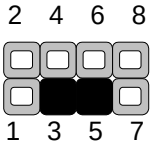


USBA2

●PKMB1: PS/2 Keyboard & Mouse Connector (2x4 Header 2.54mm)

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

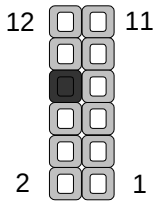




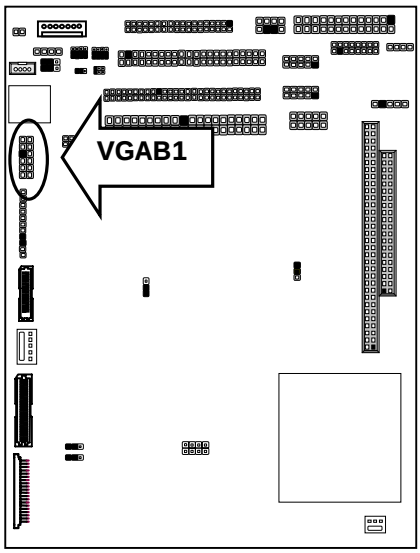
PKMB1

● **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

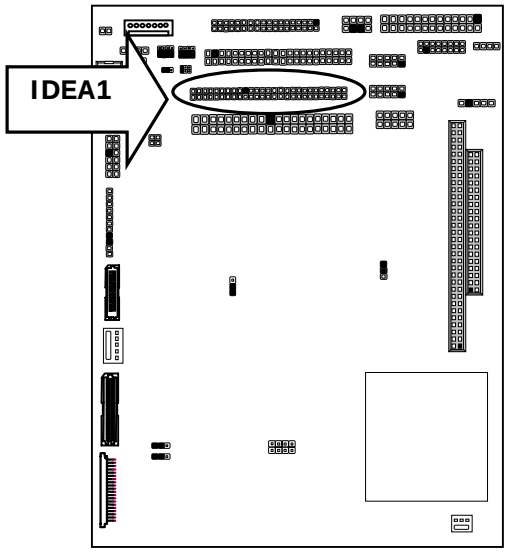


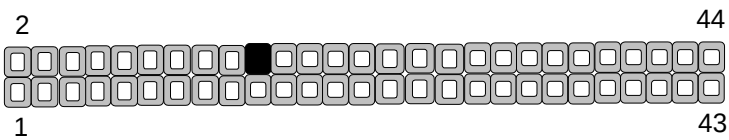
VGAB1



●**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	Key
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

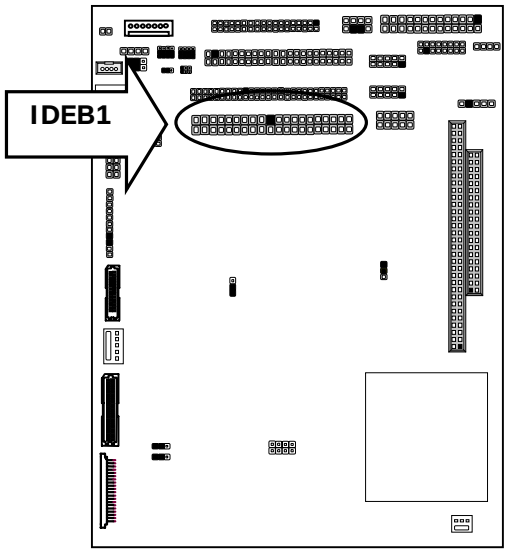


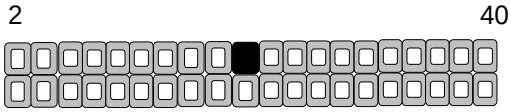


IDEA1

●IDEB1: IDE Interface Connector (40Pin 2.54mm 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	Key
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	SA1	34	PD80P
35	SA0	36	SA2
37	HDC CS0 #	38	HDC CS1 #
39	HDD Active LED #	40	Ground

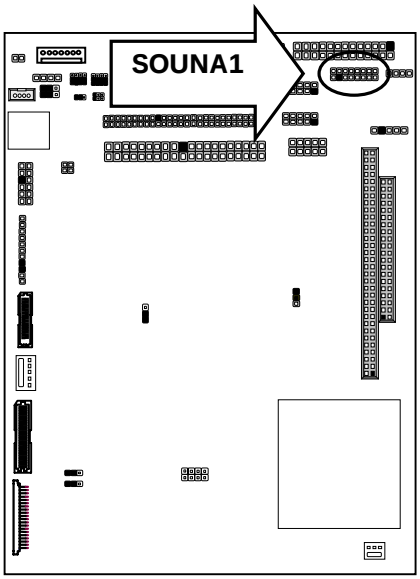


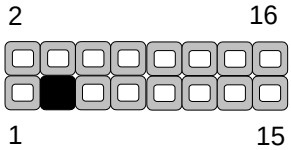


IDEB1

●SOUNA1: Sound connector 2x8 Header 2.00mm

Pin No.	Description	Pin No.	Description
1	MIC-IN	2	GND
3	KEY	4	GND
5	GND	6	LIN-R
7	LIN-L	8	GND
9	GND	10	LOUT-R
11	LOUT-L	12	GND
13	GND	14	SPKO-R
15	SPKO-L	16	GND

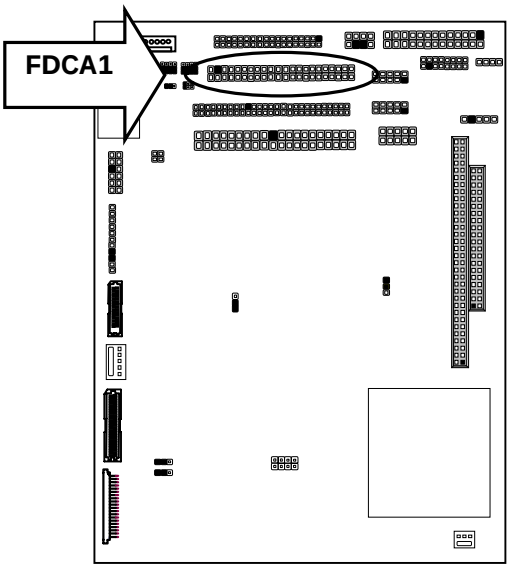


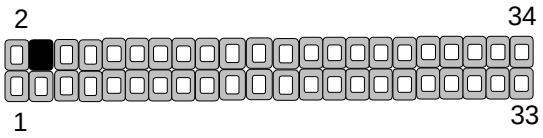


SOUNA1

●FDCA1 : Floppy Interface Connector (34 Pin Header)

Pin No.	Description	Pin No.	Description
1	Ground	2	Density Select
3	Ground	4	KEY
5	Ground	6	DS1
7	Ground	8	Index #
9	Ground	10	Motor Enable A #
11	Ground	12	Drive Select B #
13	Ground	14	Drive Select A #
15	Ground	16	Motor Enable B #
17	Ground	18	Direction #
19	Ground	20	Step #
21	Ground	22	Write Data #
23	Ground	24	Write Gate #
25	Ground	26	Track 0 #
27	Ground	28	Write Protect #
29	NC	30	Read Data #
31	Ground	32	Head Side Select #
33	NC	34	Disk Change #



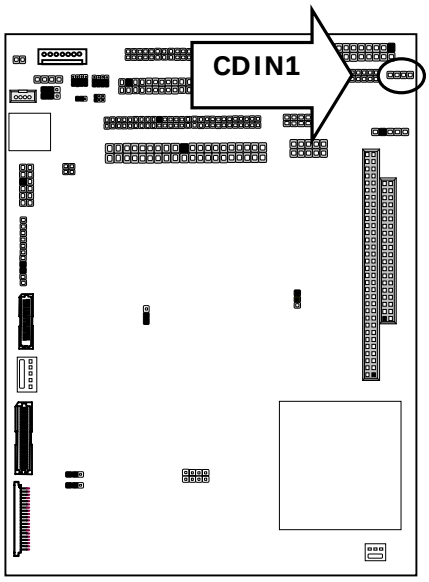


FDCA1

●CDIN1: CD_IN Connector

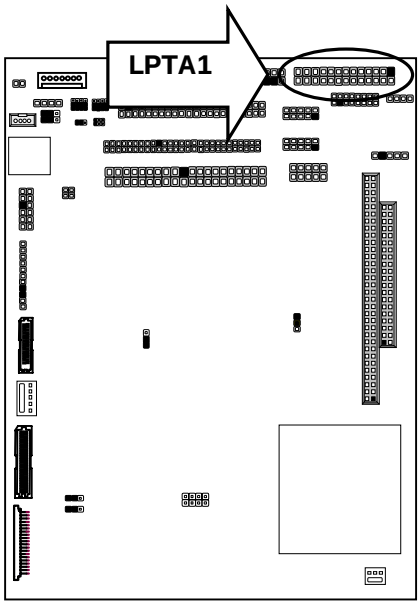
Pin No.	Description
1	CDL
2	CO_GND
3	CO_GND
4	CDR

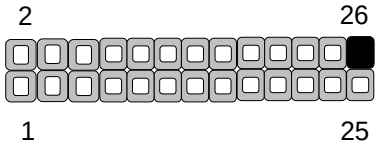
CDIN1



●LPTA1: Parallel Connector (26 Pin 2.54mm 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

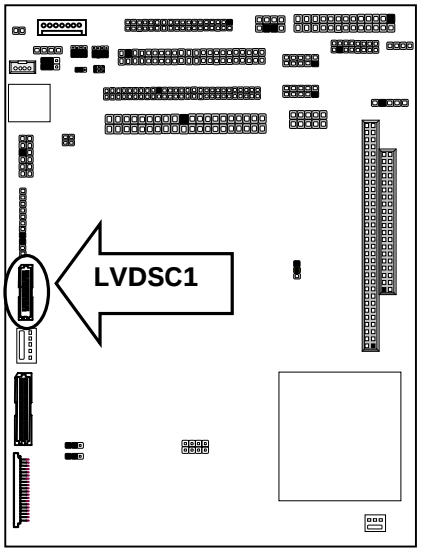


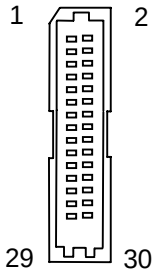


LPTA1

●LVDSC1: LVDS Panel Connector 2x15P 1.0mm SMT

Pin No.	Description	Pin No.	Description
1	FVCC	2	FVCC
3	GND	4	GND
5	NC	6	+12V
7	Y0M	8	Z0M
9	Y0P	10	Z0P
11	GND	12	GND
13	Y1M	14	Z1M
15	Y1P	16	Z1P
17	GND	18	GND
19	Y2M	20	Z2M
21	Y2P	22	Z2P
23	GND	24	GND
25	YCM	26	ZCM
27	YCP	28	ZCP
29	GND	30	GND

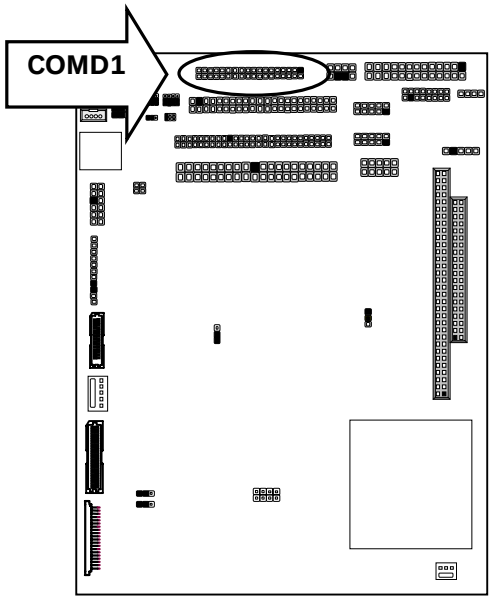


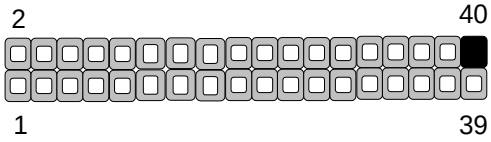


LVDSC1

● **COMD1: COM1,COM2,COM3,COM4 Connector**

Pin No.	Description	Pin No.	Description
1	NDCD1	2	NDSR1
3	NSIN1	4	NRTS1
5	NSOUT1	6	NCTS1
7	NDTR1	8	CA-D9
9	GND	10	NC
11	COM2_1	12	NDSR2
13	COM2_2	14	NRTS2
15	COM2_3	16	NCTS2
17	COM2_4	18	CB-P9
19	GND	20	NC
21	NDCD3	22	NDSR3
23	NSIN3	24	NRTS3
25	NSOUT3	26	NCTS3
27	NDTR3	28	CC-P9
29	GND	30	NC
31	NDCD4	32	NDSR4
33	NSIN4	34	NRTS4
35	NSOUT4	36	NCTS4
37	NDTR4	38	CD-P9
39	GND	40	KEY

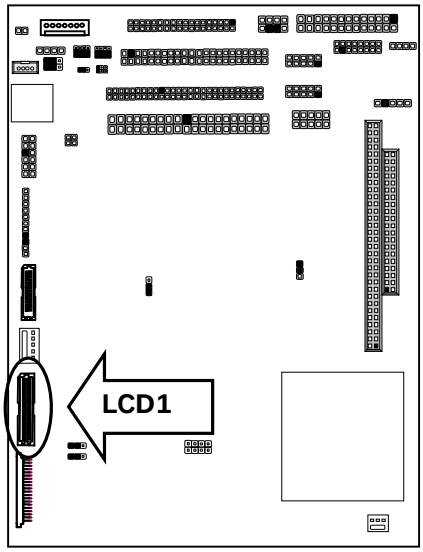


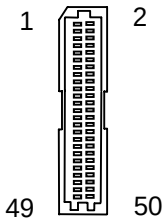


COMD1

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

Pin No.	Signal	Pin No.	Signal
1	FVCC	2	FVCC
3	LP-HSYNC	4	FLM-VSYNC
5	M/DE	6	NC
7	ENAVEE	8	ENAVDD
9	SHFCLK	10	+12V
11	GND	12	GND
13	P0	14	P1
15	P2	16	P3
17	P4	18	P5
19	P6	20	P7
21	P8	22	P9
23	P10	24	P11
25	P12	26	P13
27	P14	28	P15
29	GND	30	P16
31	P17	32	P18
33	P19	34	P20
35	P21	36	P22
37	P23	38	GND
39	P24	40	P25
41	P26	42	P27
43	P28	44	P29
45	P30	46	P31
47	P32	48	P33
49	P34	50	P35



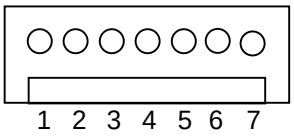


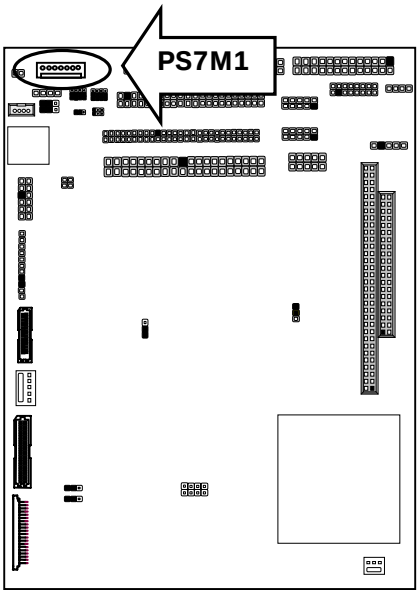
LCD1

●PS7M1:7Pin Power Connector

Pin No.	Description
1	+5V
2	GND
3	GND
4	+12V
5	NC
6	GND
7	+5V

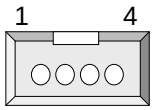
PS7M1



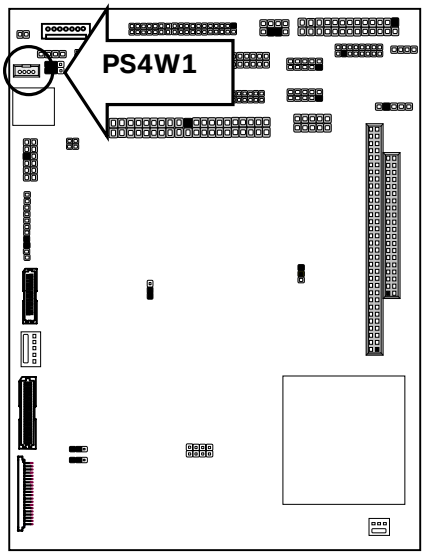


●PS4W1: 4-Pin Power Connector (WAFER 4P 2.00mm)

Pin No.	Description
1	GND
2	-5V
3	GND
4	-12V



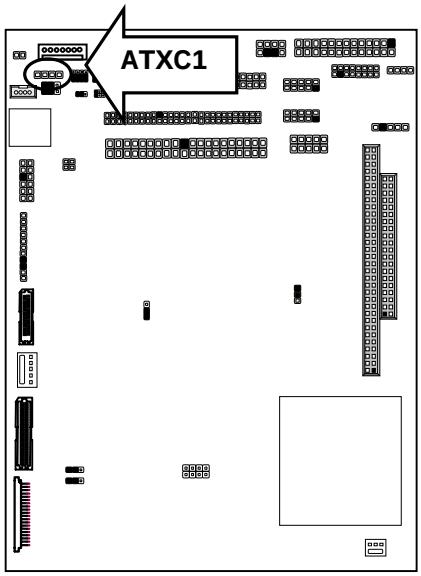
PS4W1



●ATXC1: For ATX Function

Pin No.	Description
1	GND
2	+5V STANDBY
3	GND
4	PSON

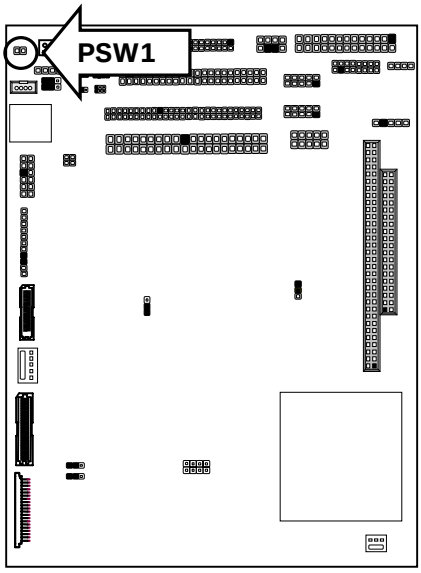
ATXC1



●PSW1: For ATX Power Button

Pin No.	Description
1	PANSW
2	GND

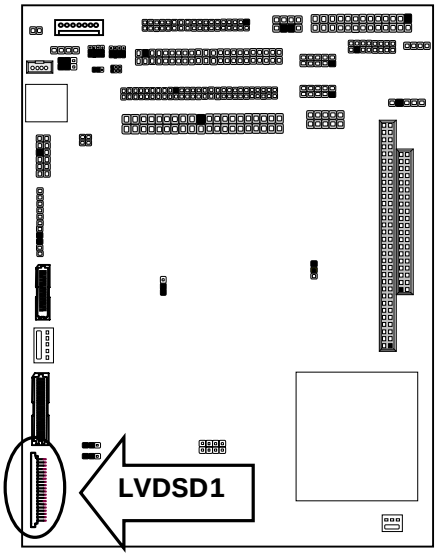
PSW1



●LVDSD1: LVDS CONNECTOR(20Pin 1.27mm Pitch) (Optional)

Pin No.	Description
1	FVCC
2	FVCC
3	GND
4	GND
5	RXIN0-
6	RXIN0+
7	GND
8	RXIN1-
9	RXIN1+
10	GND
11	RXIN2-
12	RXIN2+
13	GND
14	RXCLKIN-
15	RXCLKIN+
16	GND
17	RXIN3-
18	RXIN3+
19	GND
20	NC

LVDSD1



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 <Del> 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 <DEL> key. The screen display will appears as shown below:

Main Program Screen

Phoenix - Award BIOS CMOS Setup Utility

▶ Standard CMOS Features	▶ PC Health Status
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set Supervisor Password
▶ Integrated Peripherals	Set User Password
▶ Power Management Setup	Save & Exit Setup
▶ PnP/PCI Configurations	Exit Without Saving
Esc : Quit	↑ ↓ → : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type...	

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.

PC Health Status: This entry shows your PC health status. If Hardware Monitor Chipset is installed.

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.

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

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

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

3.3 Standard CMOS Setup

When you select the STANDARD CMOS SETUP on the main program, the screen display will appears as:

Standard CMOS Setup Screen

Phoenix - Award BIOS CMOS Setup Utility

Standard CMOS Features

	Date (mm:dd:yy)	Mon, Feb 17, 2003	Item Help
	Time (hh:mm:ss)	13 : 25 : 38	Menu Level ►
►	IDE Primary Master	[IBM-DJNA-370910]	Change the day, month,
►	IDE Primary Slave	[None]	year and century
►	IDE Secondary Master	[IDE/ATAPI CD-ROM 50X]	
►	IDE Secondary Slave	[None]	
	Drive A	[1.44M, 3.5 in.]	
	Drive B	[None]	
	Halt On	[All , But Disk/Key]	
	Base Memory	640K	
	Extended Memory	252928K	
	Total Memory	253952K	

↑ ↓ → Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help

F5: Previous Values F7:Optimized Defaults

The Standard CMOS Setup utility is used to configure the following components such as date, time, hard disk drive, floppy drive, display and memory. Once a field is highlighted, on-line help information is displayed in the left bottom of the Menu screen.

Set Date: Month, Date, and Year.

Set Time: Hour, Minute and Second. Use 24-hour clock format (for p.m. time, add 12 to the hour number, e.g. you would enter 4:30 p.m. as 16:30). When you select the STANDARD CMOS SETUP on the main program, the screen display will appears as:

IDE Primary Master / Primary Slave

Secondary Master / Secondary 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 and Drive B: 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:

No errors	Whenever the BIOS detects a non-fatal error the system will not be stopped and you will be prompted
All errors	The system boot will be stopped for any error that may be detected.
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.

3.4 BIOS Features Setup

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

BIOS Features Setup Screen

Phoenix - Award BIOS CMOS Setup Utility

Advanced BIOS Features

		Item Help
Virus Warning	[Disabled]	Menu Level ►
Quick Power On Self Test	[Enabled]	Allow you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
First Boot Device	[Floppy]	
Second Boot Device	[HDD-0]	
Third Boot Device	[CDROM]	
Boot Other Device	[Enabled]	
Swap Floppy Drive	[Disabled]	
Floppy Disk Access Control	[R/W]	
Boot Up NumLock Status	[On]	
Security Option	[Setup]	
PS2 Mouse Function Control	[Enabled]	
HDD S.M.A.R.T Capability	[Enabled]	
Video BIOS Shadow	[Enabled]	
C8000 - CBFFF Shadow	[Disabled]	
CC000 - CFFFF Shadow	[Disabled]	
D0000 - D3FFF Shadow	[Disabled]	
D4000 - D7FFF Shadow	[Disabled]	
D8000 - DBFFF Shadow	[Disabled]	
DC000 - DFFFF Shadow	[Disabled]	
Full Screen LOGO Show	[Disabled]	

↑ ↓ → Move Enter: Select +/-/PU/PD: ValueF10: Save Esc: Exit F1: General Help

F5: Previous Values F7: Optimized Defaults

The following explains the options for each of the features as listed in the above menu:

Virus Warning: The default setting of Virus Warning is Disabled. When it is enabled, any attempt to write the boot sector and partition table will halt the system and cause a warning message to appear. If this happens, you can use an anti-virus utility on a virus free, bootable floppy diskette to reboot, to clean and to investigate your system.

Quick Power On Self Test: The default setting is Enabled. This speeds up the Power On Self Test (POST) by skipping some items that are normally checked during the full POST. If your system is functioning normally, you can choose this feature to speed up the booting process.

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, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, LAN, and Disabled.

Swap Floppy Drive: The default setting is Disabled. This setting gives you an option to swap A and B floppy disks. Normally, the floppy drive A is the one at the end of the cable and drive B is at the other end. If you set this option to Enabled, the Drive A will function as Drive B, and vice-versa under the DOS.

Hard Disk Write Protect: This option specifies the write protect function of Hard Disk Drive.

Floppy Disk Access Control: This option specifies the read/write access that is set when booting from a floppy drive.

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

HDD S.M.A.R.T Capability: SMART (Self-Monitoring, Analysis, and Reporting Technology) is a technology developed to manage disk drive reliability by predicting device failures. Award BIOS can warn of possible device failure, allowing time for backups or drive replacement.

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 Chipset Features Setup

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

Chipset Features Setup Screen

Phoenix - Award BIOS CMOS Setup Utility

Advanced Chipset Features

	Spread Spectrum	[Disabled]	Item Help
	DRAM Timing By SPD	[Enabled]	
	Memory Hole	[Disabled]	Menu Level ▶
	P2C/C2P Concurrency	[Enabled]	
	System BIOS Cacheable	[Enabled]	
	Video RAM Cacheable	[Enabled]	
	Frame Butter Size	[8M]	
	AGP Aperture Size	[64M]	
	AGP-4X Mode	[Enabled]	
	AGP Driving Control	[Auto]	
X	AGP Driving Value	[DA]	
	Panel Type	[1024×768 TFT 65Mhz]	
	CPU to PCI Write Buffer	[Enabled]	
	PCI Dynamic Bursting	[Enabled]	
	PCI Master 0 WS Write	[Enabled]	
	PCI Delay Transaction	[Disabled]	
	PCI#2 Access #1 Retry	[Enabled]	
	AGP Master 1 WS Write	[Disabled]	
	AGP Master 1 WS Read	[Disabled]	

↑ ↓ → Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help

F5: Previous Values F7: Optimized Defaults

Spread Spectrum: When the system clock generator pulses, the extreme values of the pulse generate excess EMI. Enabling pulse spectrum spread modulation changes the extreme values from spikes to flat curves, thus reducing EMI. This benefit may in some cases be outweighed by problems with timing-critical devices, such as a clock-sensitive SCSI device.

DRAM Timing By SPD: This item allows you to select the value in this field, depending on whether the board has paged DRAMs or EDO (extended data output) DRAMs.

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.

P2C / C2P Concurrency: This item allows you to Enable or Disable the PCI to CPU, CPU to PCI concurrency. The default setting is *Enabled*.

System BIOS Cacheable: Selecting *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. The settings are *Enabled* and *Disabled*.

Video RAM cacheable: The choices: Enabled, Disabled (Default).

Frame Butter Size: The choices: 2M, 4M, 8M(Default), 16M, and 32M.

AGP Aperture Size: Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

AGP 4X Mode: Setting AGP rate to 4X or 2X.

AGP Driving Control: This item allows you to adjust the AGP driving force. Choose Manual to key in an AGP Driving Value in the next selection. This field is recommended to set in *Auto* for avoiding any error in your system. The default setting is *Auto*.

AGP Driving Value: This item allows you to adjust the AGP driving force.

Panel Type: Please select the type of panel you are incorporating with our single board computer. Consult your panel manual for detail information.

CPU to PCI Write Buffer: When this field is *Enabled*, writes from the CPU to the PCI bus is buffered, to compensate for the differences between the CPU and the PCI bus. When disabled, the writes are not buffered and the CPU must wait until the write is complete before starting another cycle. The default setting is *Enabled*.

PCI Dynamic Bursting: This item allows you to enable or disable the PCI dynamic bursting function. The settings are *Enabled* or *Disabled*.

PCI Master 0 WS Write: When enabled, writes to the PCI bus and are executed with zero wait states. The settings are *Enabled* or *Disabled*.

PCI Delay Transaction: The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.1. The settings are *Enabled* or *Disabled*.

PCI#2 Access #1 Retry: When disabled, PCI#2 will not be disconnected until access finishes. When enabled, PCI#2 will be disconnected if max retries are attempted without success. The default setting is *Enabled*.

AGP Master 1 WS Write: Implements a single delay when writing from the AGP Bus. Normally, two wait states are used, allowing for greater stability, but check with your motherboard manufacturer to see if they have already implemented a Master latency of zero, in which case the lowest writing here of 1 will reduce performance.

AGP Master 1 WS Read: Implements a single delay when reading from the AGP Bus. Normally, two wait states are used, allowing for greater stability, but check with your motherboard manufacturer to see if they have already implemented a Master latency of zero, in which case the lowest reading here of 1 will reduce performance.

3.6 Integrated Peripherals

When you select the *INTEGRATED PERIPHERIALS* on the main program, the screen display will appears as:

Integrated Peripherals Setup Screen

Phoenix - Award BIOS CMOS Setup Utility

Integrated Peripherals

			Item Help
	On-Chip Primary PCI IDE	[Enabled]	
	On-Chip Secondary PCI IDE	[Enabled]	Menu Level ►
	USB Controller	[Enabled]	
	USB Keyboard Support	[Disabled]	
	USB Mouse Support	[Disabled]	
	AC97 Audio	[Auto]	
	Init Display First	[Add-On Card]	
	Onboard FDC Controller	[Enabled]	
	Onboard Serial Port 1	[3F8/IRQ4]	
	Onboard Serial Port 2	[2F8/IRQ3]	
X	UART Mode Select	[Normal]	
X	UR2 Duplex Mode	Half	
	Onboard Parallel Port	[378/IRQ7]	
	Parallel Port Mode	[SPP]	
X	ECP Mode Use DMA	3	
X	Parallel Port EPP Type	Epp1.9	
	Onboard Serial Port 3	[Disabled]	
X	Serial Port 3 Use IRQ	[IRQ10]	
	Onboard Serial Port 4	[Disabled]	
X	Serial Port 4 Use IRQ	[IRQ11]	
	Sound Blaster	[Enabled]	

↑ ↓ → Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help

F5: Previous Values F7: Optimized Defaults

On-Chip Primary PCI IDE: The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary IDE interface. Select Disabled to deactivate this interface. The settings are Enabled and Disabled.

On-Chip Secondary PCI IDE: The chipset contains a PCI IDE interface with support for two IDE channels. Select *Enabled* to activate the secondary IDE interface. Select *Disabled* to deactivate this interface. The settings are *Enabled* and *Disabled*.

USB Controller: Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals

USB Keyboard/Mouse Support: Set this option to *Enabled* or *Disabled* the USB keyboard/ mouse support. The default setting is *Disabled*.

AC97 Audio: This option sets the AC97 Audio.

Init Display First: This item allows you to decide to active whether PCI Slot of VGA card or AGP first. The settings are *Add-On Card* and *Onboard AGP*.

Onboard FDC Controller: Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you want to use it. If you install add-in FDC or the system has no floppy drive, select Disabled in this field. The settings are *Enabled* and *Disabled*.

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

UART Mode Select: This item allows you to select which mode for the Onboard Serial Port 2. The settings are *Normal, HPSIR,* and *ASKIR*.

UR2 Duplex Mode: This item allows you to select the is half/full duplex function. The default setting is *Half*

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

Parallel Port Mode: There are four options *SPP* (default), *EPP*, *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.

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

Parallel Port EPP Type: Select EPP port type 1.7 or 1.9.

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

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

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

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

Sound Blaster: This option let you enable or disable the onboard Sound Blaster function.

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 appears as:

Power Management Setup Screen

Phoenix - Award BIOS CMOS Setup Utility

Power Management Setup

ACPI function	[Disabled]	Item Help
Power Management	[User Define]	Menu Level ▶
Video Off In Suspend	[Suspend -> Off]	
Video Off Method	[V/H SYNC+Blank]	
Suspend Mode	[Disabled]	
HDD Power Down	[Disabled]	
LPT & COM	[Disabled]	
Power On by LAN/Ring	[Disabled]	
Power On by RTC Alarm	[Disabled]	For ATX
Date (of Month)	0	
Resume Time(hh:mm:ss)	0:48:2	
PwrOn After AC Power Loss	[On]	

↑ ↓ → Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help

F5: Previous Values F7: Optimized Defaults

ACPI Function: This item allows you to enable or disable the Advanced Configuration and Power Management (ACPI). The settings are *Enabled* and *Disabled*.

Power Management:

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.
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.

Video Off In Suspend: 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.
All Modes	During All Modes mode, the monitor will be turned off.

Video Off Method: This determines the manner in which the monitor is blanked. The default setting is *V/H SYNC+Blank*.

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: Power saving by suspends mode setting.

HDD Power Down: Options are from *1 Min* to *15 Min* and *Disable*. The IDE hard drive will spin down if it is not accessed within a specified length of time.

LPT & COM: Print Port and COM Port turn on/off.

Power On by LAN/Ring: When Enabled, an input signal on the serial LAN/Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

Power On by RTC Alarm: Power-on interval by RTC setting.

PwrOn After AC Power Loss: This option specifies the Power ON/OFF Status after AC power loss.

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

			Item Help
	PNP OS Installed	[No]	
	Reset Configuration Data	[Disabled]	Menu Level ►
			Select Yes if you are
	Resources Controlled By	[Manual]	using a Plug and Play
►	IRQ Resources	[Press Enter]	capable operating
►	DMA Resources	[Press Enter]	system. Select No if
►	Memory Resources	[Press Enter]	you need the BIOS to
			configure non-boot
	PCI/VGA Palette Snoop	[Disabled]	devices.
	PCI Latency Timer (CLK)	[32]	
	INT Pin 1 Assignment	[Auto]	
	INT Pin 2 Assignment	[Auto]	
	INT Pin 3 Assignment	[Auto]	
	INT Pin 4 Assignment	[Auto]	

↑ ↓ → Move Enter: Select +/-/PU/PD: ValueF10: Save Esc: Exit F1: General Help

F5: Previous Values F7: Optimized Defaults

PNP OS Installed: When set to *Yes*, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows 95 or 98. When set to *No*, BIOS will initialize all the PnP cards. So, for non-PnP operating system (DOS, Netware), this option must set to *Yes*.

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 proceeded 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 ►►►
IRQ-4	assigned to	[Legacy ISA]	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.
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 ►►►
DMA-1	assigned to	[PCI /ISA PnP]	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-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]	

Memory Resources: This option specifies the size of the memory area reserved for legacy ISA adapter cards.

PCI/VGA Palette Snoop: Leave this field at *Disabled*. The settings are *Enabled, Disabled*.

PCI Latency Timer (CLK): This option specifies the latency timings (in PCI clocks) for PCI devices installed in the PCI expansion slots.

The Latency Timer limits the time that device can hold the PCI bus. The timer starts when the device gains bus ownership, and counts down at the rate of the PCI clock. When the counter reaches zero, the device is required to release the bus.

INT Pin 1/2/3/4 Assignment: These options specify the IRQ priority for PCI devices installed in the PCI expansion slots.

3.9 PC Health Status (Optional)

This section helps you to get more information about your system including CPU temperature, FAN speed and voltages. It is recommended that you contact your motherboard supplier to get proper value about your setting of the CPU temperature.

Phoenix - Award BIOS CMOS Setup Utility

PC Health Status

CPU Temperature	38℃/ 100℉	Item Help
System Temperature	27℃/ 80℉	Menu Level ►
FAN1	0 RPM	
Vcore	1.17 V	
+2.5V	2.47 V	
+3.3V	3.25 V	
+5V	4.92 V	

↑ ↓ → Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help

F5: Previous Values F7: Optimized Defaults

CPU Temperature: This item shows the CPU temperature.

System Temperature: This item displays the value of system temperature.

FAN1: This item displays the value of FAN1 speed.

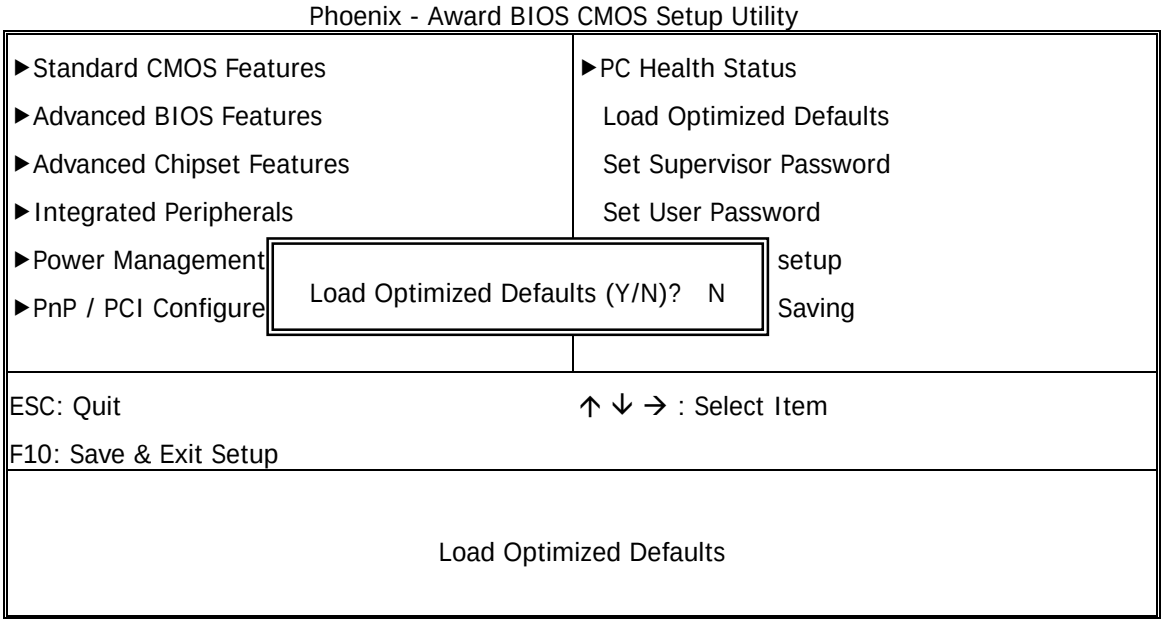
Vcore: This item shows the current system voltage.

3.10 Load Optimized Defaults

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

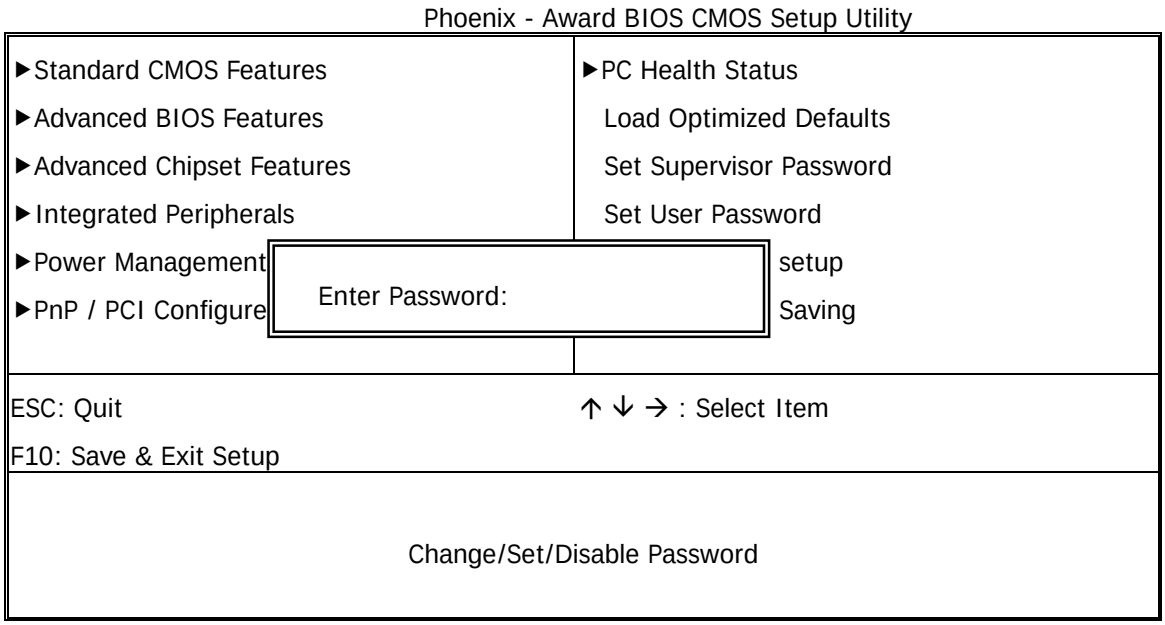
Load Optimized Defaults (Y/N)? N

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



3.11 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.



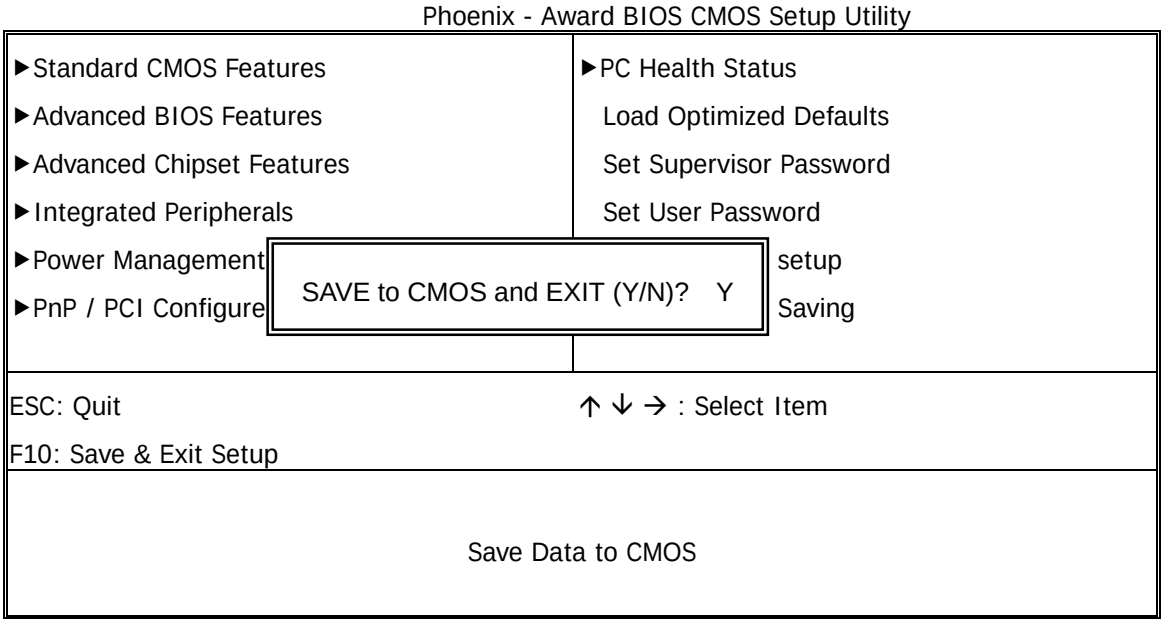
To disable the password, press the <Enter> key instead of entering a new password when the *Enter Password* in the dialog box appears. A message will appear confirming that the password is disabled.

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.

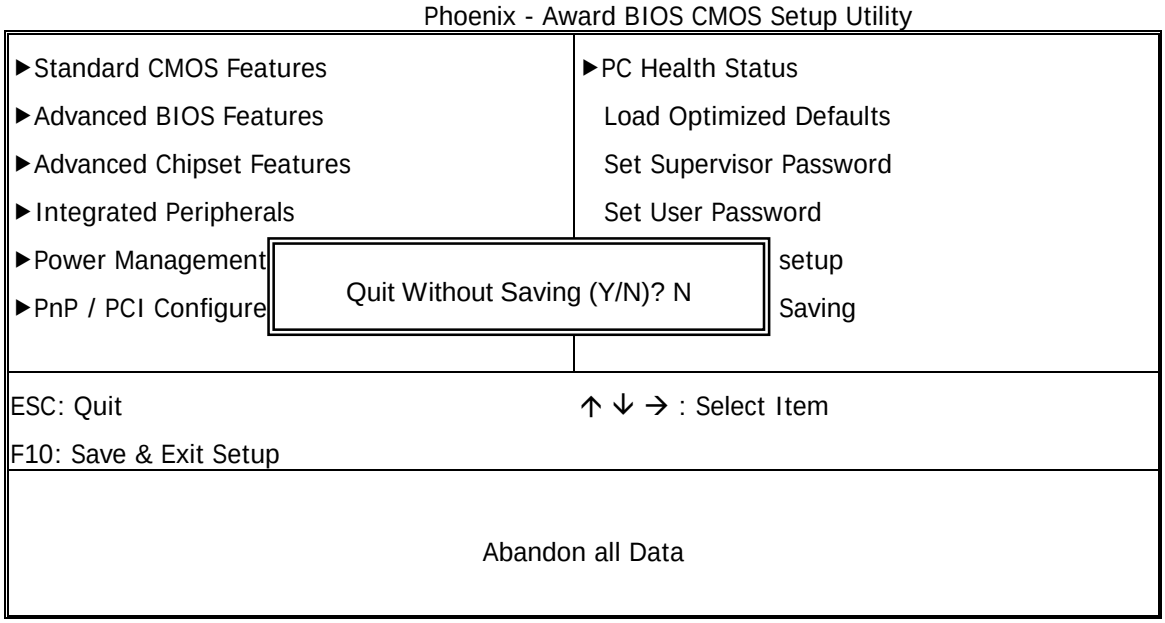
3.12 Save & Exit Setup

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



3.13 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.



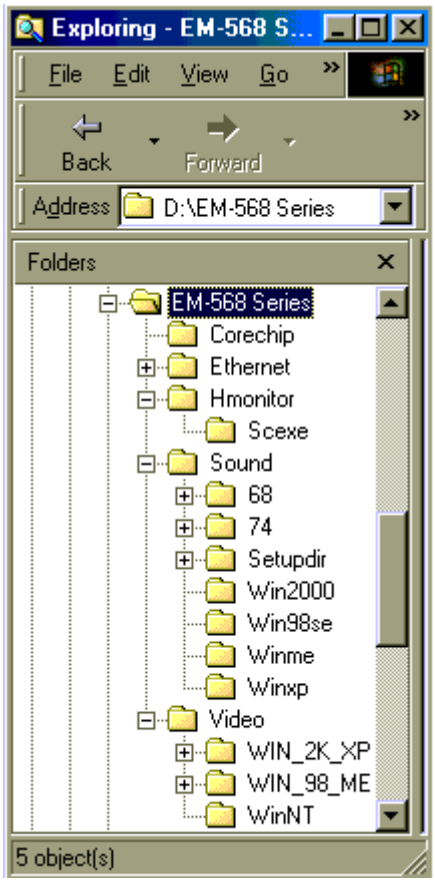
Chapter 4 Drivers Support

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 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:

Step 1. Enable and re-trigger the Watchdog timer: Output port **443H**
Step 2. Disable : Output port **441H**

EX.1: For DOS

Execute the **DEBUG.EXE** file under DOS, Then key-in **O443**. The system will reboot automatically according to the time-out you set.

Enable	**Disable**
C:\DOS> DEBUG	C:\DOS> DEBUG
O 443 0~F	O 441 0~F

EX.2: For assemble Language

```
Enable:
        :
        :
MOV   DX, 443H
OUT   DX, AL
        :
        :

Disable:
        :
        :
MOV   DX, 441H
OUT   DX, AL
        :
```

APPENDIX B. Digital I/O

Input Port: I440H
Output Port: O440H

APPENDIX C. Brightness Control

Under Command:

RUN E568LAWD.EXE

EM-568 Panel Brilight Control . For AWD BIOS.

VT686B GP04 (push up) ……. Press +

VT686B GP05 (push down) ….. Press-

Please input (+ / - /other key to exit)

Terms and Conditions

Date: 2003.07.11

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: ☐ Repair(Please include failure details) ☐ Testing Purpose
Company:	Contact Person:
Phone No.	Purchased Date:
Fax No.:	Applied Date:
Return Shipping Address: _____	
Shipping by: ☐ Air Freight ☐ Sea ☐ Express:_____ ☐ 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**