SBC82610 Series

Half-size All-in-One ISA CPU Card

User's Manual

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October 2004, Version A3
Printed in Taiwan

ESD Precautions

Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

- Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.
- Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This helps to discharge any static electricity on your body.
- Wear a wrist-grounding strap, available from most electronic component stores, when handling boards and components.

Trademarks Acknowledgments

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Chapter 1
Introduction

1.1 General Description

The **SBC82610** CPU card is an industrial grade CPU card incorporating the VIA VT8606 chipset and the VT82C686B with built-in AGP-4x VGA controller, both providing high performance and function-rich capability; furthermore, ensuring its compatibility with ISA bus passive backplanes. Its 6-layer structure reduces signal noise and meets ACPI function with its built-in power management feature. Designed for the professional embedded developers, the VIA EDEN or C3 level CPU of **SBC82610** CPU card is virtually the ultimate one-step solution to various applications. It provides fanless possibility for critical application environments with low power consumption design to improve system MTBF.

1.2 Specifications

- **Processor:**
  - VIA EDEN 400MHz, 667MHZ,or C3 800MHZ CPU (other frequency processors are manufacturer optional)
- **Chipset:**
  - VT8606 (Twister-T) + VT82C686B
- **BIOS:**
  - AWARD BIOS, Plug-and-Play 4Mbit Flash ROM with SmartView VGA BIOS Function and integrated Ethernet Novell RPL and Windows PXE Boot ROM functions
- **Standard I/O:**
  - Two serial ports; 1x RS-232, 1x RS-232/422/485
  - 1 x parallel port, SPP/EPP/ECP
  - 1 x HDD Interface
  - 1 x FDD Interface
  - 1 x PS/2 Keyboard Interface
  - 1 x PS/2 Mouse Interface
  - 1 x IrDA interface for wireless communication
- **System Memory:**
  - 1 x 168-pin DIMM socket
  - Maximum up to 512MB SDRAM
- **L2 Cache:**
  - Integrated in CPU
- **Watchdog Timer:**
  - Generates a system reset or NMI by jumper selectable
  - Software programmable time interval
  - 64 levels, 0.5~8/5~80/50~800/100~1600 seconds

- **Ethernet:**
  - Realtek 8139C PCI Bus 10/100M Base-T
  - Wake On LAN (via ATX power supply)
  - Onboard RJ-45 connector

- **DiskOnChip:** Supports 2~144 MB DiskOnChip series
- **Expansion Slot:** one 16-bit pc/104 connector
- **AC97 Link:** AC97 Link interface for external audio Codec Kit (AX93100)
- **USB Interface:** 2 USB ports with USB Spec. Rev. 1.1a compliant
- **Board ID:** Dallas DS2401 Board unique ID support

Packing List:

- **VIA Chipset Driver**
- **Ethernet Utility and Drivers**
- **VGA Drivers**

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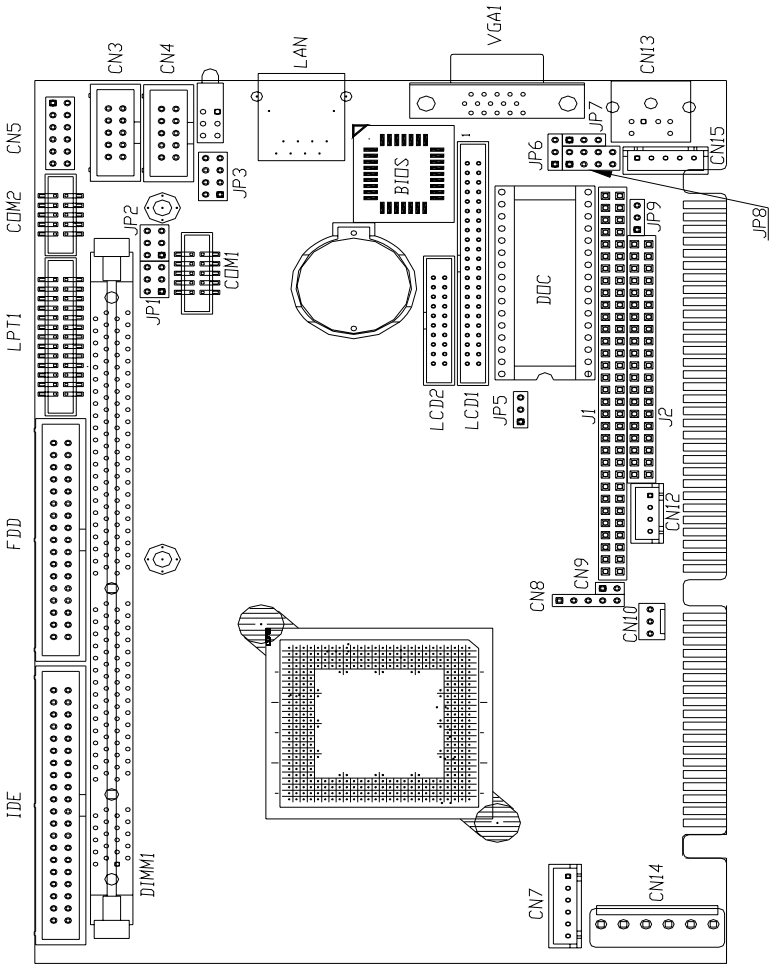
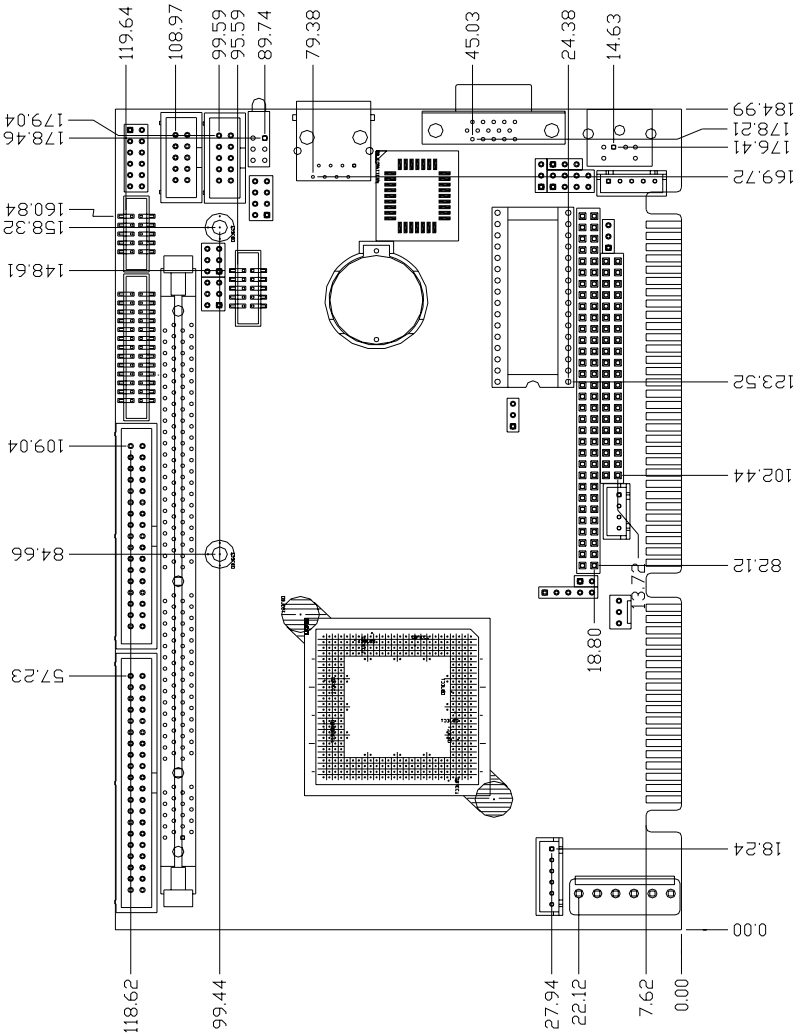
Chapter 2

Jumpers and Connectors

2.1 Jumpers and Connectors Layout

The figure below shows the locations of all jumpers and connectors on the **SBC82610VE**.

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179.04
178.46
160.84
158.32
148.61
123.52
109.04
102.44
84.66
82.12
73.72
18.80
57.23
18.24
0.00
118.62
99.44
27.94
22.12
7.62
0.00

2.2 Jumper Settings

The **SBC82610VE** is configured to match the needs of the application with the proper jumper settings.

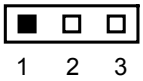
The table below is a summary of all the jumpers and their default settings for the onboard devices.

Jumper	Default Setting	Jumper Setting
JP1	COM2 Port Setting: RS-232	Short 3-5, 4-6
JP2	COM2 Port Setting: RS-232	Short 3-5, 4-6
JP3	COM2 Port Setting: RS-232	Short 1-2
JP4	Reserved	
JP5	Clear CMOS Setting: Normal	Short 1-2
JP6	Flat Panel Power Selection: **VDDM at 5V**	Short 1-2
JP7	Watchdog Trigger Mode: Disabled	Open
JP8	DiskOnChip Memory Segment : D0000-D1FFF	Short 1-2
JP9	Power Supply Selection: AT power supply	Short 1-2

2.2.1 Watchdog Timer Trigger Mode Setting: JP7

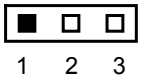
The watchdog timer is an indispensable feature of the **SBC82610VE**. It has a sensitive error detection function and a report function. When the CPU processing comes to a halt, the watchdog either generates a NMI or resets the CPU.

Options	Setting
NMI	Short 1-2
RESET	Short 2-3
Disabled (default)	Open



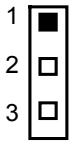
2.2.2 CMOS Clear Jumper: JP5

Options	Settings
Clear CMOS	Short 2-3
Normal (default)	Short 1-2



2.2.3 Power Selection of Flat Panel Connector (VDDM of LCD1 and LCD2): JP6

VDDM	Settings
5V (default)	Short 1-2
3.3V	Short 2-3

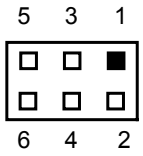


SBC82610VE supports +3.3V or +5V flat panel displays. When using such type of flat panels, configure jumper **JP6** to the appropriate voltage of the flat panel.

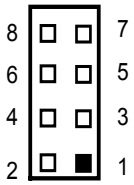
2.2.4 COM2 RS232/422/485 Settings: JP1, JP2, JP3

COM4	JP1	JP2	JP3
RS-232 (default)	Short 3-5, 4-6	Short 3-5, 4-6	Short 1-2
RS-422	Short 1-3, 2-4	Short 1-3, 2-4	Short 3-4
RS-485	Short 1-3, 2-4	Short 1-3, 2-4	Short 5-6, 7-8

JP1 and JP2

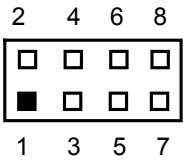


JP3



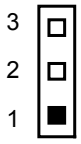
2.2.5 DiskOnChip® Memory Segment: JP8

Options	Settings
D0000 – D1FFF (default)	Short 1-2
D2000-D3FFF	Short 3-4
D4000-D5FFF	Short 5-6
D6000-D7FFF	Short 7-8



2.2.6 Power Supply Type Selection: JP9

Options	Settings
AT P/S (default)	Short 1-2
ATX P/S	Short 2-3



2.3 Connectors

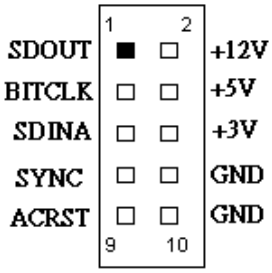
The connectors allow the CPU card to connect with other parts of the system. Ensure that all connectors are in place and firmly attached. The following table lists the function of each connector on the **SBC82610VE**.

Connectors	Label
AC97 Link Interface	CN4
USB Connector	CN3
Flat Panel Bezel Connector	CN5
ACPI Connector	CN7
IrDA Connector	CN8
CPU Fan Connector	CN10
Keyboard and Mouse Connector	CN13
Power Input Connectors	CN14 & CN12
Keyboard Connector	CN15
IDE Connector	IDE
FDD Connector	FDD
44-pin LCD Connector	LCD1
20-pin LCD Connector	LCD2
VGA Connector	VGA1
COM1	COMA1 & COM1
COM2	COM2
Printer Port Connector	LPT1
Ethernet1 Connector	LAN

2.3.1 AC97 Interface Link Connector: CN4

CN4 is an AC97 Interface Link Connector for Audio KIT

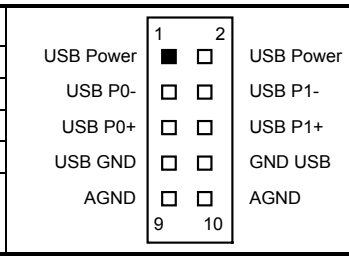
CN4



2.3.2 USB Connector: CN3

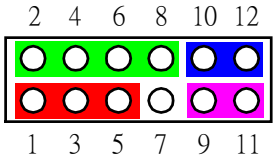
The Universal Serial Bus (USB) connector on the **SBC82610VE** is for installation of peripherals supporting the USB interface. **CN3** is the 10-pin USB connector on the **SBC82610VE**.

Pin	Description	Pin	Description
1	USB Vcc	2	USB Vcc
3	USB P0-	4	USB P1-
5	USB P0+	6	USB P1+
7	GND	8	GND
9	GND	10	GND



2.3.3 Flat Panel Bezel Connector: CN5

CN5



Power LED

This 2-pin connector, designated at ***Pins 1*** and ***3,5*** of ***CN5***, connects the system power LED indicator to its respective switch on the case. ***Pin 1*** is +, and ***pin 3,5*** is assigned as -. The Power LED lights up when the system is powered ON.

External Speaker and Internal Buzzer Connector

Pins 2, 4, 6, and ***8 of CN5*** connect to the case-mounted speaker unit or internal buzzer. ***Short pins 4-6*** when connecting the CPU card to an internal buzzer. When connecting an external speaker, set these jumpers to ***Open*** and install the speaker cable on ***pin 8*** (+) and ***pin 2*** (-).

System Reset Switch

Pins 9 & ***11*** of ***CN5*** connect to the case-mounted reset switch and allow rebooting of your computer instead of turning OFF the power switch. This is a preferred method of rebooting in order to prolong the life of the system's power supply.

HDD Activity LED

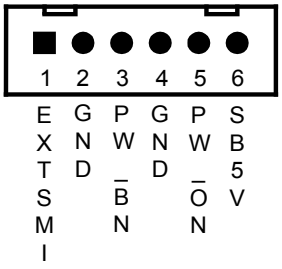
This connector extends to the hard drive activity LED on the control panel. This LED will flash when the HDD is being accessed. ***Pins* 10** & ***12 of CN5*** connect the hard disk drive and the front panel HDD LED. ***Pins 10*** is -, and ***pin 12*** is assigned as +.

2.3.4 ACPI Connector: CN7

Advanced Configuration and Power Interface (ACPI) defines a flexible and extensible interface that allows system designers to select appropriate cost/feature trade-offs for power management. The interface enables and supports reliable power management through improved hardware and operating system coordination. The specification enables new power management technology to evolve independently in operating systems and hardware while ensuring that they continue to work together.

CN7 on the **SBC82610VE** is a 6-pin header connector that provides ACPI interface.

CN7

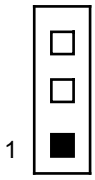


2.3.5 IrDA Connector: CN8

CN8 is a 5-pin IrDA connector for wireless communication.

2.3.6 Fan Connector: CN10

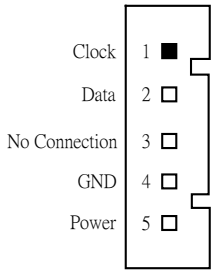
Pin	Description
1	Speed Sensor
2	+12V
3	GND



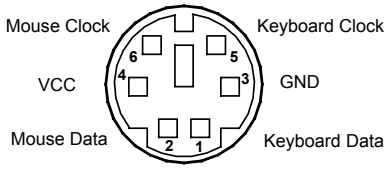
2.3.7 Keyboard and PS/2 Mouse Connectors

The **SBC82610VE** provides a keyboard interface with a 5-pin connector. **CN15, CN13** is a DIN connector for PS/2 keyboard and Mouse via "Y" Cable.

CN15



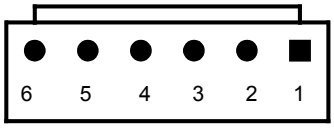
CN13



2.3.8 Power Input Connectors: CN14, CN12

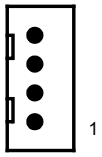
CN14 is the +5V/+12V power input connector of the **SBC82610VE**. The **SBC82610VE** needs +5V and +12V for normal operation.

Pin	Description
1	+5V
2	GND
3	+12V
4	SB5V
5	GND
6	+5V



CN12 on the other hand, is the –5V and –12V power input connector of **SBC82610VE**. The corresponding pin assignment is listed on the table below.

Pin	Description
1	-12V
2	GND
3	GND
4	-5V



2.3.9 Enhanced IDE Interface Connector: IDE

The **SBC82610VE** includes an ISA bus enhanced IDE controller that can support master/slave mode and post write transaction mechanisms with 64-byte buffer, and master data transaction. This feature, connected via connector **IDE**, allows the **SBC82610VE** to handle 2 IDE drives.

40-pin IDE Interface Connector: IDE1

Pin	Description	Pin	Description	Pin	Description
1	Reset #	2	GND	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	GND	20	No connector	21	No connector
22	GND	23	IOW #	24	GND
25	IOR #	26	GND	27	IOCHRDY
28	No connector	29	No connector	30	GND-Default
31	Interrupt	32	No connector	33	SA1
34	No connector	35	SA0	36	SA2
37	HDC CS0 #	38	HDC CSI #	39	HDD Active #
40	GND				

2.3.10 Floppy Disk Controller: FDD

The **SBC82610VE** provides a 34-pin header type connector, **FDD** supporting up to two floppy drives. The floppy drives may be any one of the following types: 5.25" 360KB/1.2MB and 3.5" 720KB/1.44MB/2.88MB.

Floppy Disk Connector: FDD

Pin	Description	Pin	Description	Pin	Description
1	GND	2	Reduce write current	3	GND
4	No connector	5	GND	6	No connector
7	GND	8	Index#	9	GND
10	Motor enable A#	11	GND	12	Drive select B#
13	GND	14	Drive select A#	15	GND
16	Motor enable B#	17	GND	18	Direction#
19	GND	20	STEP#	21	GND
22	Write data#	23	GND	24	Write gate#
25	GND	26	Track 0 #	27	GND
28	Write protect#	29	GND	30	Read data#
31	GND	32	Side 1 select#	33	GND
34	Disk change#				

2.3.11 VGA/Flat Panel Connector: VGA1, LCD1, LCD2

The **SBC82610VE** has three connectors that support CRT VGA and flat panel displays, individually or simultaneously. **VGA1** is a standard 15-pin pin header connector commonly used for the CRT VGA display, and **LCD1** (44-pin) **LCD2** (20-pin) are dual-in-line headers for flat panel connection. Configuration of the VGA interface is done via the software utility and no jumper setting is required. The following two tables are the pin assignments for the CRT/VGA connector and the flat panel connector.

VGA1: CRT/VGA Connector Pin Assignment

Pin	Description	Pin	Description	Pin	Description
1	Red	2	Green	3	Blue
4	N/A	5	GND	6	AGND
7	AGND	8	AGND	9	N/A
10	GND	11	N/A	12	DDC DAT
13	Horizontal Sync	14	Vertical Sync	15	DDC CLK

LCD1: Flat Panel Connector Pin Assignment

Pin	Description	Pin	Description	Pin	Description
1	-12V	2	+12VM	3	GND
4	GND	5	VDDM	6	VDDM
7	ENAVEE	8	GND	9	P0
10	P1	11	P2	12	P3
13	P4	14	P5	15	P6
16	P7	17	P8	18	P9
19	P10	20	P11	21	P12
22	P13	23	P14	24	P15
25	P16	26	P17	27	P18
28	P19	29	P20	30	P21
31	P22	32	P23	33	GND
34	GND	35	SHFCLK	36	FLM
37	M	38	LP	39	GND
40	ENABKL	41	GND	42	-SHFCLK
43	VDDM	44	VDDM		

LCD2: Flat Panel Connector for XVGA

Pin	Description	Pin	Description	Pin	Description
1	GND	2	GND	3	P24
4	P25	5	P26	6	P27
7	P28	8	P29	9	GND
10	GND	11	P30	12	P31
13	P32	14	P33	15	P34
16	P35	17	VDDM	18	VDDM
19	+12VM	20	+12VM		

2.3.11.1 Flat Panel Connector Pin Description

Name	Description
P0~P35	Flat panel data output
ENABKL	Activity Indicator and Enable Backlight outputs
SHFCLK	Shift clock. Pixel clock for flat panel data
M	M signal for panel AC drive control
LP	Latch pulse. Flat panel equivalent of HSYNC
FLM	First line marker. Flat panel equivalent of VSYNC
+12VM	+12V power controlled by chipset
ENAVEE / ENAVDD	Power sequencing controls for panel LCD bias volt
VDDM	3.3V or 5V power controlled by chipset and selected by JP6

2.3.11.2 Flat Panel Interface Pins for Color DSTN and Color TFT LCD

	DSTN		TFT	
Pin	**16-bit**	**24-bit**	**18-bit**	**24-bit**
LP	LP	LP	HSYNC	HSYNC
FLM	FP	FP	VSYNC	VSYNC
SHFCLK	XCK	XCK	CK	CK
M			DE	DE
ENAVDD	ENAVDD	ENAVDD	ENAVDD	ENAVDD
ENABLK	ENABLK	ENABLK	ENABLK	ENABLK
P23	UR0	UR0	R5	R7
P22	UR1	UR1	R4	R6
P21	UR2	UR2	R3	R5
P20		UR3	R2	R4
P19	LR0	LR0	R1	R3
P18	LR1	LR1	R0	R2
P17	LR2	LR2		R1
P16		LR3		R0
P15	UG0	UG0	G5	G7
P14	UG1	UG1	G4	G6
P13	UG2	UG2	G3	G5
P12		UG3	G2	G4
P11	LG0	LG0	G1	G3
P10	LG1	LG1	G0	G2
P9	LG2	LG2		G1
P8		LG3		G0
P7	UB0	UB0	B5	B7
P6	UB1	UB1	B4	B6
P5		UB2	B3	B5
P4		UB3	B2	B4
P3	LB0	LB0	B1	B3
P2	LB1	LB1	B0	B2
P1		LB2		B1
P0		LB3		B0

Pin Name	TFT2X9	TFT2X12	TFT2X18
LP	LP	LP	HSYNC
FLM	FP	FP	VSYNC
SHFCLK	XCK	XCK	CK
M			DE
ENAVDD	ENAVDD	ENAVDD	ENAVDD
ENABLK	ENABLK	ENABLK	ENABLK
P35	B12	B13	B15
P34	B02	B03	B05
P33	B11	B12	B14
P32	B01	B02	B04
P31	B10	B11	B13
P30	B00	B01	B03
P29		B10	B12
P28		B00	B02
P27			B11
P26			B01
P25			B10
P24			B00
P23	G12	G13	G15
P22	G02	G03	G05
P21	G11	G12	G14
P20	G01	G02	G04
P19	G10	G11	G13
P18	G00	G01	G03
P17		G10	G12
P16		G00	G02
P15			G11
P14			G01
P13			G10
P12			G00
P11	R12	R13	R15
P10	R02	R03	R05
P9	R11	R12	R14
P8	R01	R02	R04
P7	R10	R11	R13

Pin Name	TFT2X9	TFT2X12	TFT2X18
P6	R00	R01	R03
P5		R10	R12
P4		R00	R02
P3			R11
P2			R01
P1			R10
P0			R00

2.3.12 Serial Port Interface

The serial interface onboard **SBC82610VE** consists of COM1 or COMA1 port supports RS-232 and COM2 provide RS-232/422/485 connectivity.

SBC82610VE uses two 10-pin connectors for COM2 and COM1 or a d-sub COMA1connector. Interrupt Requests on COM1 or COMA1 and COM2 are selected via IRQ4 and IRQ3 respectively. Additionally, both ports can be enabled or disabled via BIOS setting.

RS-232 pin assignments for COM1 and COM2 (Pin Header)

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

RS-422/485 pin assignments for COM2 (Pin Header)

Pin #	Signal Name	
	R2-422	RS-485
1	TX-	DATA-
2	No connector	No connector
3	TX+	DATA+
4	No connector	No connector
5	RX+	No connector
6	No connector	No connector
7	RX-	No connector
8	No connector	No connector
9	GND	GND
10	No connector	No connector

NOTE: *The COM1 and COM2, ports of **SBC82610** are pin header type connectors whereas for **SBC82610** COM1 is a DB-9 connector and com2 & a pin header*

2.3.13 Parallel Port Interface

The **SBC82610VE** onboard **LPT1** is a multi-mode parallel port able to support:

- Standard mode: IBM PC/XT, PC/AT and PS/2™ compatible with bi-directional parallel port
- Enhanced mode: Enhance parallel port (EPP) compatible with EPP 1.7 and EPP 1.9 (IEEE 1284 compliant)
- High speed mode: Microsoft and Hewlett Packard extended capabilities port (ECP) IEEE 1284 compliant

The address select of the onboard parallel port in LPT1 (3BCH) or disable is done by BIOS CMOS setup.

Parallel Port Connector: LPT1

Pin	Description	Pin	Description
1	Strobe#	2	Auto Form Feed#
3	Data 0	4	Error#
5	Data 1	6	Initialize#
7	Data 2	8	Printer Select In#
9	Data 3	10	GND
11	Data 4	12	GND
13	Data 5	14	GND
15	Data 6	16	GND
17	Data 7	18	GND
19	Acknowledge#	20	GND
21	Busy	22	GND
23	Paper Empty#	24	GND
25	Printer Select		

This page does not contain any information.

Chapter 3
Hardware Description

This chapter gives a detailed explanation of the hardware features onboard the **SBC82610VE** CPU cards.

3.1 Microprocessors

The **SBC82610VE** supports VIA EDEN 400MHz, 667MHZ, or C3 800MHZ CPU (other frequency processors are manufacturer optional). Systems based on these CPUs can be operated under Windows XP/NT/2000/98/Me and MS-DOS environments. The system's performance depends on the installed CPU on the board.

3.2 BIOS

The system BIOS used in **SBC82610VE** is Award Plug and Play BIOS. The **SBC82610VE** contains a single 4M bit Flash EPROM.

3.3 I/O Port Address Map

The CPU card communicates via I/O ports. It has a total of 1KB port addresses that can be assigned to other devices via I/O expansion cards.

Address	Devices
000-01F	DMA controller #1
020-03F	Interrupt controller #1
040-05F	Timer
060-06F	Keyboard controller
070-07F	Real time clock, NMI
080-09F	DMA page register
0A0-0BF	Interrupt controller #2
0F0	Clear math coprocessor busy signal
0C0-0DF	DMA controller #2
0F1	Reset math coprocessor
0F8-0FF	Math processor
120	Disable watchdog timer operation (read)
121	Enable watchdog timer operation (read)
122	Watchdog
1F0-1F8	Fixed disk controller
200-207	Game port
300-31F	Prototype card
360-36F	Reserved
378-37F	Parallel port #1
3B0-3BF	MDA video card (including LPT1)
3C0-3CF	EGA card
3D0-3DF	CGA card
3F0-3F7	Floppy disk controller
3F8-3FF	Serial port #1 (COM1)
2F8-2FF	Serial port #2 (COM2)

3.4 Interrupt Controller

The **SBC82610VE** is a fully PC compatible control board. It consists of 16 ISA interrupt request lines and 4 of the 16 can be either ISA or PCI. The mapping list of the 16 interrupt request lines is shown below;

NMI	Parity check error
IRQ0	System timer output
IRQ1	Keyboard
IRQ2	Interrupt rerouting from IRQ8 through IRQ15
IRQ3	Serial port #2
IRQ4	Serial port #1
IRQ5	Reserved
IRQ6	Floppy disk controller
IRQ7	Parallel port #1
IRQ8	Real time clock
IRQ9	Reserved
IRQ10	Reserved
IRQ11	USB
IRQ12	PS/2 Mouse
IRQ13	Math coprocessor
IRQ14	Primary IDE channel
IRQ15	Secondary IDE Channel

3.5 VGA Interface

The Twister-T integrates S3 Graphics '128-bit ProSavage4 graphics accelerator into a single chip. TwisterT brings mainstream graphics performance to the Value PC with leading-edge 2D, 3D and DVD video acceleration into a cost effective package. Based on its capabilities, Twister-T is an ideal solution for the consumer, corporate mobile users and entry level professionals. The industrial first integrated AGP 4X solution, TwisterT combines AGP 4X performance with Microsoft Direct-X texture compression and massive 2Kx2K textures to deliver unprecedented 3D performance and image quality for the Value PC mobile market.

- High-Performance 3D Accelerator
- 128-bit 2D Graphics Engine
- DVD Playback and Video conferencing
- LCD and Flat Panel Monitor Support
- High Screen Resolution CRT Support

3.6 Real Time Clock and CMOS RAM

The **SBC82610VE** contains VT82C686B Integrated Real Time Clock (RTC) and 128 bytes of CMOS RAM. The CMOS RAM stores the system configuration information entered via the SETUP program. A battery, with power lasting 10 years, keeps the stored information on the RTC and CMOS RAM active when system power is turned off.

3.7 PC/104 Connectors

The PC/104 is an industrial standard. It is a compact form factor with dimensions of 3.6" x 3.8" and is fully compatible with the ISA Bus. The PC/104 interface is able to adapt the off-the-shelf PC/104 modules, such as sound module, fax modem module and multi-I/O module…etc.

J1: PC/104 Bus Pin Assignment

Pin#	Pin Name	Pin#	Pin Name	Pin#	Pin Name	Pin#	Pin Name
1	IOCHCHK	2	GND	3	SD7	4	RESETDRV
5	SD6	6	+5V	7	SD5	8	IRQ9
9	SD4	10	-5V	11	SD3	12	DRQ2
13	SD2	14	-12V	15	SD1	16	ENDXFR
17	SD0	18	+12V	19	IOCHRDY	20	GND
21	AEN	22	SMEMW	23	SA19	24	SMEMR
25	SA18	26	IOW	27	SA17	28	IOR
29	SA16	30	DACK3	31	SA15	32	DRQ3
33	SA14	34	DACK1	35	SA13	36	DRQ1
37	SA12	38	REFRESH	39	SA11	40	SYSCLK
41	SA10	42	IRQ7	43	SA9	44	IRQ6
45	SA8	46	IRQ5	47	SA7	48	IRQ4
49	SA6	50	IRQ3	51	SA5	52	DACK2
53	SA4	54	TC	55	SA3	56	SALE
57	SA2	58	+5V	59	SA1	60	OSC
61	SA0	62	GND	63	GND	64	GND

J2: PC/104 Bus Pin Assignments

Pin#	Pin Name	Pin#	Pin Name	Pin#	Pin Name	Pin#	Pin Name
1	GND	2	GND	3	MEMCS16	4	SBHE
5	IOCS16	6	LA23	7	IRQ10	8	LA22
9	IRQ11	10	LA21	11	IRQ12	12	LA20
13	IRQ15	14	LA19	15	IRQ14	16	LA18
17	DACK0	18	LA17	19	DRQ0	20	MEMR
21	DACK5	22	MEMW	23	DRQ5	24	SD8
25	DACK6	26	SD9	27	DRQ6	28	SD10
29	DACK7	30	SD11	31	DRQ7	32	SD12
33	+5V	34	SD13	35	MASTER	36	SD14
37	GND	38	SD15	39	GND	40	(KEY)

This page does not contain any information.

Chapter 4
Award BIOS Utility

Chapter 7 describes the different settings available in the Award BIOS that comes with the **SBC82610VE** CPU card. Also contained here are instructions on how to set up the BIOS configuration.

4.1 BIOS Introduction

The Award BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel Celeron processors in a standard IBM-AT compatible I/O system. The BIOS provides critical low-level support for standard devices such as disk drives, serial and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

4.2 BIOS Setup

The Award BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn ON the computer, the Award BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system OFF and back ON again. The following message will appear on the screen:

Press <DEL> to Enter Setup

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

Phoenix – AwardBIOS CMOS Setup Utility	
▸ Standard CMOS Features	▸ Frequency/Voltage Control
▸ Advanced BIOS Features	Load Fail-Safe Defaults
▸ Advanced Chipset Features	Load Optimized Defaults
▸ Integrated Peripherals	Set Supervisor Password
▸ Power Management Setup	Set User Password
▸ PnP/PCI Configurations	Save & Exit Setup
▸ PC Health Status	Exit Without Saving
Esc : Quit F9: Menu in BIOS F10 : Save & Exit Setup	↑ ↓ →← : Select Item
Time, Date, Hard Disk Type…	

The section below the setup items of the Main Menu displays the control keys for this menu. Another section located at the bottom of the Main Menu, just below the control keys section, displays information on the currently highlighted item in the list.

NOTE: *If you find that your computer cannot boot after making and saving system changes with Setup, the Award BIOS, via its built-in override feature, resets your system to the CMOS default settings.*

We strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your system manufacturer to provide the absolute maximum performance and reliability.

4.3 Standard CMOS Setup

"Standard CMOS Setup" allows you to record some basic hardware configurations in your computer system and set the system clock and error handling. If the motherboard is already installed in a working system, you will not need to select this option. You will need to run the Standard CMOS option, however, if you change your system hardware configurations, the onboard battery fails, or the configuration stored in the CMOS memory was lost or damaged.

Phoenix – AwardBIOS CMOS Setup Utility
Standard CMOS Features

Date (mm:dd:yy)	Wed, Aug 7 2002	Item Help
Time (hh:mm:ss)	13 : 9 : 11	
		Menu Level ▶
▶ IDE Primary Master	None	
▶ IDE Primary Slave	None	Change the Day, month, Year and Century
▶		
▶		
Drive A	1.44M, 3.5 in.	
Drive B	None	
LCD Type	T9 800x600 TFT	
Screen Expansion	Enable	
Display Type During Post	VGA Default	
Display Type After Post	VGA Default	
Halt on	All, But keyboard	
Base Memory	640K	
Extended Memory	65535K	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

At the bottom of the menu are the control keys for use on this menu. If you need any help in each item field, you can press the <F1> key. It will display the relevant information to help you. The memory display at the lower right-hand side of the menu is read-only. It will adjust automatically according to the memory changed. The following pages describe each item of this menu.

- Date

  The date format is <day>, <date> <month> <year>. Press <F3> to show the calendar.

day	The day of week, from Sun to Sat, determined by the BIOS, is read only
date	The date, from 1 to 31 (or the maximum allowed in the month), can key in the numerical / function key
month	The month, Jan through Dec.
year	The year, depends on the year of BIOS

- Time

  The time format is <hour> <minute> <second> accepting either function key or numerical key. The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

- IDE Primary Master/Primary Slave/Secondary Master/Secondary Slave

  The categories identify the types of one channel that have been installed in the computer. There are 45 predefined types and 2 user definable types are for Enhanced IDE BIOS. Type 1 to Type 45 are predefined. Type User is user-definable.

  Press <PgUp>/<+> or <PgDn>/<–> to select a numbered hard disk type or type the number and press <Enter>. 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 within this category. If your hard disk drive type does not match or is not listed, you can use Type User to define your own drive type manually.

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

  If the controller of HDD interface is ESDI, select "Type 1".
  If the controller of HDD interface is SCSI, select "None".
  If the controller of HDD interface is CD-ROM, select "None".

CYLS.	number of cylinders	LANDZONE	landing zone
HEADS	number of heads	SECTORS	number of sectors
PRECOMP	write precom	MODE	HDD access mode

  If there is no hard disk drive installed, select NONE and press <Enter>.

- Drive A type/Drive B type

  The category identifies the types of floppy disk drive A or drive B installed in the computer.

None	No floppy drive installed
360K, 5.25 in	5.25 inch PC-type standard drive; 360Kb capacity
1.2M, 5.25 in	5.25 inch AT-type high-density drive; 1.2MB capacity
720K, 3.5 in	3.5 inch double-sided drive; 720Kb capacity
1.44M, 3.5 in	3.5 inch double-sided drive; 1.44MB capacity
2.88M, 3.5 in	3.5 inch double-sided drive; 2.88MB capacity

- Select Display Device

  This item selection includes Auto, CRT, LCD and CRT+LCD

- LCD Type

  This item selection includes:

T0 640x480 TFT	T1 800x600 TFT
T2 1024x768 TFT	T3 1280x1024 TFT
T4 640x480 DSTN	T5 800x600 DSTN
T6 1024x768 DSTN	T7 1024x768 TFT
T8 640x480 TFT	T9 800x600 TFT
T10 1024x768 TFT	T11 1280x1024 TFT
T12 1400x1050 DSTN	T13 800x600 DSTN
T14 1024x768 DSTN	T15 1280x1024 DSTN

- Display Type During Post

  This item selection includes VGA DEFAULT, CRT, LCD, CRT+LCD.

- Display Type After Post

  This item selection includes VGA DEFAULT, CRT, LCD, CRT+LCD.

- Halt On

  This field determines whether the system will halt if an error is detected during power up.

No errors	The system boot will halt on any error detected. (default)
All errors	Whenever the BIOS detects a non-fatal error, the system will stop 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.

4.4 Advanced BIOS Features

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Phoenix – AwardBIOS CMOS Setup Utility
Advanced BIOS Features

		Item Help
Virus Warning	Disabled	
CPU Internal Cache	Enabled	
External Cache	Enabled	Menu Level ▶
CPU L2 Cache ECC Checking	Enabled	
Processor Number Feature	Enabled	Allows you to
Quick Power On Self Test	Enabled	choose the VIRUS
First Boot Device	Floppy	warning feature
Second Boot Device	HDD-0	for IDE Hard disk
Third Boot Device	LS120	boot sector
Boot Other Device	Enabled	protection. If this
Swap Floppy Drive	Disabled	function is enable
Boot Up Floppy Seek	Enabled	and someone
Boot Up NumLock Status	On	attempts to write
Gate A20 Option	Fast	data into this area,
Typematic Rate Setting	Disabled	BIOS will show
Typematic Rate (Chars/Sec)	6	a warning
Typematic Delay (Msec)	250	message on
Security Option	Setup	screen and alarm
OS Select For DRAM > 64MB	Non-OS2	beep
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	
Small Logo(EPA) Show	Disabled	

↑↓→← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

- Virus Warning

  This item protects the boot sector and partition table of your hard disk against accidental modifications. If an attempt is made, the BIOS will halt the system and display a warning message. If this occurs, you can either allow the operation to continue or run an anti-virus program to locate and remove the problem.

  NOTE: *Many disk diagnostic programs, which attempt to access the boot sector table, can cause the virus warning. If you will run such a program, disable the Virus Warning feature.*

- CPU Internal Cache / External Cache

  Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type on up contain internal cache memory, and most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU. These items allow you to enable (speed up memory access) or disable the cache function. By default, these are ***Enabled***.

- CPU L2 Cache ECC Checking

  When enabled, this allows ECC checking of the CPU's L2 cache. By default, this field is ***Enabled***.

- Processor Number Feature

  When a Pentium® III CPU is installed, the system automatically detects it and displays this item.

- Quick Power On Self Test

  This option speeds up Power On Self Test (POST) after you turn on the system power. If set as Enabled, BIOS will shorten or skip some check items during POST. The default setting is *"Enabled"*.

Enabled	Enable Quick POST
Disabled	Normal POST

- First/Second/Third Boot Device

  These items allow the selection of the 1st, 2nd, and 3rd devices that the system will search for during its boot-up sequence. The wide range of selection includes Floppy, LS120, ZIP100, HDD0~3, SCSI, and CDROM.

- Boot Other Device

  This item allows the user to enable/disable the boot device not listed on the First/Second/Third boot devices option above. The default setting is *Enabled*.

- Swap Floppy Drive

  This allows you to determine whether to enable Swap Floppy Drive or not. When enabled, the BIOS swaps floppy drive assignments so that Drive A becomes Drive B, and Drive B becomes Drive A. By default, this field is set to *Disabled.*

- Boot Up Floppy Seek

  During POST, BIOS will determine the floppy disk drive type, 40 or 80 tracks, installed in the system. 360Kb type is 40 tracks while 720Kb, 1.2MB and 1.44MB are all 80 tracks. The default value is *"Enabled"*.

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.
Disabled	BIOS will not search for the type of floppy disk drive by track number. There will be no warning message displayed if the drive installed is 360K.

- Boot Up NumLock Status

  This option enables and disables the numberlock function of the keypad. The default value is *"On"*.

On	Keypad functions confine with numbers
Off	Keypad functions convert to special functions (i.e., left/right arrow keys)

- Gate A20 Option

  The default value is *"Fast"*.

Normal	The A20 signal is controlled by keyboard controller or chipset hardware.
Fast	Default: Fast. The A20 signal is controlled by Port 92 or chipset specific method.

- Typematic Rate Setting

  This determines the typematic rate of the keyboard. The default value is *"Disabled"*.

Enabled	Enable typematic rate and typematic delay programming
Disabled	Disable typematic rate and typematic delay programming. The system BIOS will use default value of these 2 items and the default is controlled by keyboard.

- Typematic Rate (Chars/Sec)

  This option refers to the number of characters the keyboard can type per second. The default value is *"6"*.

6	6 characters per second
8	8 characters per second
10	10 characters per second
12	12 characters per second
15	15 characters per second
20	20 characters per second
24	24 characters per second
30	30 characters per second

- Typematic Delay (Msec)

  This option sets the display time interval from the first to the second character when holding a key. The default value is *"250"*.

250	250 msec
500	500 msec
750	750 msec
1000	1000 msec

- Security Option

  This item allows you to limit access to the system and Setup, or just to Setup. The default value is *"Setup"*.

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

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

- OS Select for DRAM > 64MB

  This segment is specifically created for OS/2 when DRAM is larger than 64MB. If your operating system is OS/2 and DRAM used is larger the 64MB, you have to select "OS 2", otherwise (under non-OS2), default is NON-OS2. The default value is *"Non-OS2"*.

- Video BIOS Shadow

  Video shadowing increases the video speed by copying the video BIOS into RAM. However, it is still optional depending on the chipset design. The default value of this option is *"Enabled"*.

Enabled	Video BIOS shadowing is enabled
Disabled	Video BIOS shadowing is disabled

- C8000 - CBFFF Shadow/DC000 - DFFFF Shadow

  Shadowing ROM reduces available memory between 640KB and 1024KB. These fields determine whether optional ROM is copied to RAM or not.

4.5 Advanced Chipset Features

Since the features in this section are related to the chipset on the CPU board and are completely optimized, you are not recommended to change the default settings in this setup table unless you are well oriented with the chipset features.

Phoenix – AwardBIOS CMOS Setup Utility
Advanced Chipset Features

		Item Help
DRAM Timing By SPD	Enabled	
X DRAM Clock	Host CLK	
X SDRAM Cycle Length	3	Menu Level ▶
X Bank Interleave	Disabled	
Memory Hole	Disabled	
P2C/C2P Concurrency	Enabled	
System BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
Frame Buffer Size	16M	
AGP Aperture Size	64M	
AGP-4X Mode	Enabled	
AGP Driving Control	Auto	
AGP Driving Value	DA	
OnChip USB	Enabled	
USB Keyboard Support	Disabled	
OnChip Sound	Auto	
OnChip Modem	Disabled	
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 F6: Fail-Safe Defaults F7: Optimized Defaults

- 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.

- DRAM Clock

  This item allows you to select the DRAM clock value, depending on whether the board has paged DRAMs or EDO (extended data output) DRAMs. The available choices are 66 MHz and Host CLK.

- SDRAM Cycle Length

  When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer. The default setting is ***3***.

- Memory Hole

  To improve performance, certain space in memory is reserved for ISA cards. This memory must be mapped into the memory space below 16MB. The available choices are 15M-16M and Disabled.

- P2C/C2P Concurrency

  This item allows you to enable/disable the PCI to CPU, CPU to PCI concurrency. By default, this field is set to ***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 choice: Enabled, Disabled.

- Video RAM Cacheable

  Select Enabled allows caching of the A/B segment, resulting in better system performance.

  The Choice: Enabled, Disabled.

- AGP Aperture Size

  The field sets aperture size of the graphics. 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. The options available are 4M, 8M, 16M, 32M, 64M, 128M and 256M.

- OnChip USB

  This should be enabled if your system has a USB installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature. The available choices are Enabled and Disabled.

- USB Keyboard Support

  Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard. The options available are Enabled, Disabled.

- CPU to PCI Write Buffer

  When this field is *Enabled,* writes from the CPU to the PCI bus are buffered, to compensate for the speed 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 write cycle.

- PCI Dynamic Bursting

  This item allows you to enable/ disable the PCI dynamic bursting function.

- PCI Master 0 WS Write

  When *Enabled,* writes to the PCI bus are executed with zero wait states.

- 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 default setting is ***Disabled***.

- PCI#2 Access #1 Retry

  When disabled, PCI#2 will not be disconnected until access finishes (default). When enabled, PCI#2 will be disconnected if max retries are attempted without success.

- AGP Master 1 WS Write

  When *Enabled,* writes to the AGP (Accelerated Graphics Port) are executed with one wait states.

- AGP Master 1 WS Read

  When *Enabled,* read to the AGP (Accelerated Graphics Port) are executed with one wait states.

4.6 Integrated Peripherals

This option sets your hard disk configuration, mode and port.

Phoenix – AwardBIOS CMOS Setup Utility
Integrated Peripherals

		Item Help
OnChip IDE Channel0	Enabled	
IDE Prefetch Mode	Enabled	
Primary Master PIO	Auto	Menu Level ►
Primary Slave PIO	Auto	
Primary Master UDMA	Auto	
Primary Slave UDMA	Auto	
Init Display First	PCI Slot	
IDE HDD Block Mode	Enabled	
Onboard FDD Controller	Enabled	
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	
UART 2 Mode	Standard	
IR Function Duplex	Half	
TX, RX inverting enable	No, Yes	
Onboard Parallel Port	378/IRQ7	
Onboard Parallel Mode	Normal	
X ECP Mode Use DMA	3	
X Parallel Port EPP Type	EPP1.9	
Onboard Legacy Audio	Disabled	
X Sound Blaster	Disabled	
X SB I/O Base Address	220H	
X SB IRQ Select	IRQ 5	
X SB DMA Select	DMA 1	
X MPU-401	Disabled	
X MPU-401 I/O Address	330-333H	

↑↓→← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

- On-Chip IDE Channel0

  The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately.

  The choice: Enabled, Disabled.

- IDE Prefetch Mode

  The onboard IDE drive interface supports IDE prefetching for faster drive

accesses. If you install a primary and/or secondary add-in IDE interface, set this field to *Disabled* if the interface does not support prefetching.

- Primary Master/Slave PIO

  The four PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

  The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

- Primary Master/Slave UDMA

  Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 98 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support.

  The Choice: Auto, Disabled.

- Init Display First

  This item allows you to decide to active whether PCI Slot or on-chip VGA first.

  The choice: PCI Slot, Onboard.

- IDE HDD Block Mode

  Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

  The choice: Enabled, Disabled

- Onboard FDD Controller

  Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled in this field.

  The choice: Enabled, Disabled.

- Onboard Serial Port 1/Port 2

  Select an address and corresponding interrupt for the first, second and twist serial ports.

  The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

- UART 2 Mode

  This item allows you to select UART mode. By default, this field is set to *Standard*.

- IR Function Duplex

  This item allows you to select the IR half/full duplex function.

- TX,RX inverting enable

  This item allows you to enable the TX, RX inverting which depends on different H/W requirement. This field is not recommended to change its default setting for avoiding any error in your system.

- Onboard Parallel Port

  This item allows you to determine access onboard parallel port controller with which I/O address.

  The choice: 3BC/IRQ7, 378/IRQ7, 278/IRQ5, Disabled.

- Onboard Parallel Mode

  Select an operating mode for the onboard parallel (printer) port. Select *Normal, Compatible,* or *SPP* unless you are certain your hardware and software both support one of the other available modes.

  The choice: SPP, EPP, ECP, ECP+EPP.

- ECP Mode Use DMA

  Select a DMA channel for the parallel port for use during ECP mode.

  The choice: 3, 1.

4.7 Power Management Setup

The Power Management Setup allows you to save energy of your system effectively. It will shut down the hard disk and turn OFF video display after a period of inactivity.

Phoenix – AwardBIOS CMOS Setup Utility
Power Management Setup

		Item Help
ACPI Function	Disabled	
Power Management	Press Enter	
PM Control by APM	Yes	Menu Level ►
Video Off Option	Suspend -> Off	
Video Off Method	V/H SYNC+Blank	
MODEM Use IRQ	3	
Soft-Off by PWRBTN	Instant-Off	
Wake Up Events	Press Enter	

↑↓→← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

- ACPI Function

  This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI). The choice: Enabled, Disabled.

- Power Management

  This item allows you to select the Power Management mode.

  The choice: User Define, Min Saving, Max Saving.

- PM Control by APM

  When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock. If Advance Power Management (APM) is installed on your system, selecting Yes gives better power savings. If the Max. Power Saving is not enabled, this will be preset to *No*.

- Video Off Option

  When enabled, this feature allows the VGA adapter to operate in a power

saving mode.

Always On	Monitor will remain on during power saving modes.
Suspend --> Off	Monitor blanked when the system enters the Suspend mode.
Susp,Stby --> Off	Monitor blanked when the system enters either Suspend or Standby modes.
All Modes --> Off	Monitor blanked when the system enters any power saving mode.

- Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC + Blank	This causes the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
DPMS	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards to select video power management values.
Blank Screen	This option only writes blanks to the video buffer.

- Video Off Method

In suspending, this item allows you to select the CRT closed method under APM mode.

The choice: Blank Screen, V/H SYNC+Blank, DPMS

- MODEM Use IRQ

APM 1.2 function used only.

The choice: NA, 3, 4, 5, 7, 9, 10, 11

- Soft-off by PWRBTN

  This only works with systems using an ATX power supply. It also allows user to define the type of soft power OFF sequence the system will follow.

Instant-Off (default)	This option follows the conventional manner systems perform when power is turned OFF. Instant-Off is a soft power OFF sequence requiring only the switching of the power supply button to OFF.
Delay 4 Sec.	Upon turning OFF system from the power switch, this option will delay the complete system power OFF sequence by approximately 4 seconds. Within this delay period, system will temporarily enter into Suspend Mode enabling you to restart the system at once.

- Wake Up Events

  An input signal on the network 2 awakens the system from a soft-off state.

4.8 PNP/PCI Configuration

This section describes the PCI bus system configuration. PCI or Personal Computer Interconnect is a system which allows I/O devices to operate at speeds nearing the speed of the CPU when communicating with its own special components. This section covers some very technical items, and it is strongly recommended that only experienced users should make changes to the default settings.

Phoenix – AwardBIOS CMOS Setup Utility
PnP/PCI Configurations

		Item Help
PNP OS Installed	No	
Reset Configuration Data	Disabled	Menu Level ►
Resources Controlled By	Auto (ESCD)	
X IRQ Resources	Press Enter	Select Yes if you are using a Plug and play capable operating system select No if you need the BIOS to configure non-boot devices
X DMA Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
Assign IRQ For VGA	Enabled	
Assign IRQ For USB	Enabled	

↑↓→← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

- PNP OS Installed

  This item allows you to determine install PnP OS or not. The options available are Yes and No.

- Reset Configuration Data

  Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup or if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot. The options available are Enabled and Disabled.

- Resource 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. The options available are Auto and Manual.

- IRQ Resources

  When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

- DMA Resources

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

  1. Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific DMA channel.
  2. PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

  The default value is *"PCI/ISA PnP"*.

- PCI/VGA Palette Snoop

  Leave this field at *Disabled*.

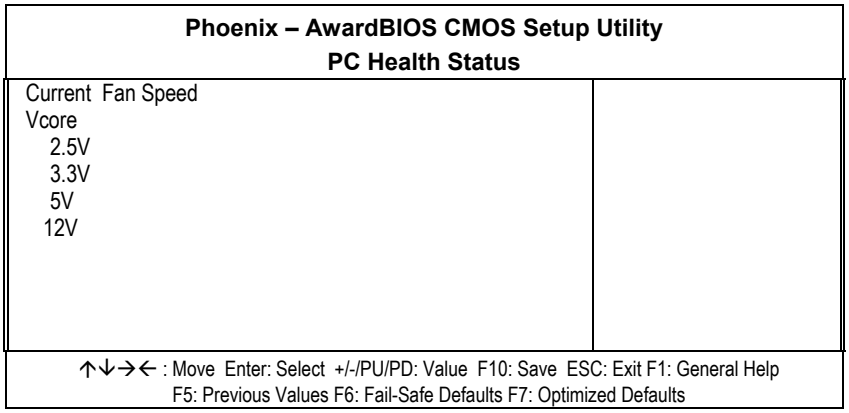
  The choice: Enabled, Disabled.

- Assign IRQ For USB/VGA

  Enable/Disable to assign IRQ for USB/VGA. The options available are Enabled, Disabled

4.9 PC Health Status

This section is to monitor the current hardware status of the CPU fan speeds and the core voltages. This is available only if there is hardware monitoring mechanism onboard.



- Current FAN Speed

  These optional and read-only fields show the current speeds in RPM (revolution per minute) for the CPU fan and chassis fan as monitored by the hardware monitoring IC.

- Vcore/2.5V/3.3V/5V/12V

  Show you the voltage of Vcore/2.5V/3.3V/5V/12V

4.10 Frequency/Voltage Control

CMOS Setup Utility-Copyright © 1984-2001 Award Software Frequency/Voltage Control		
Auto Detect DIMM/PCI Clk	Enabled	
Spread Spectrum	Disabled	Menu Level ▶
CPU Host/PCI Clock	Default	
↑↓→← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

- Auto Detect DIMM/PCI Clk

  When enabled, this item will auto detect if the DIMM and PCI socket have devices and will send clock signal to DIMM and PCI devices. When disabled, it will send the clock signal to all DIMM and PCI socket.

  The choice: Enabled, Disabled.

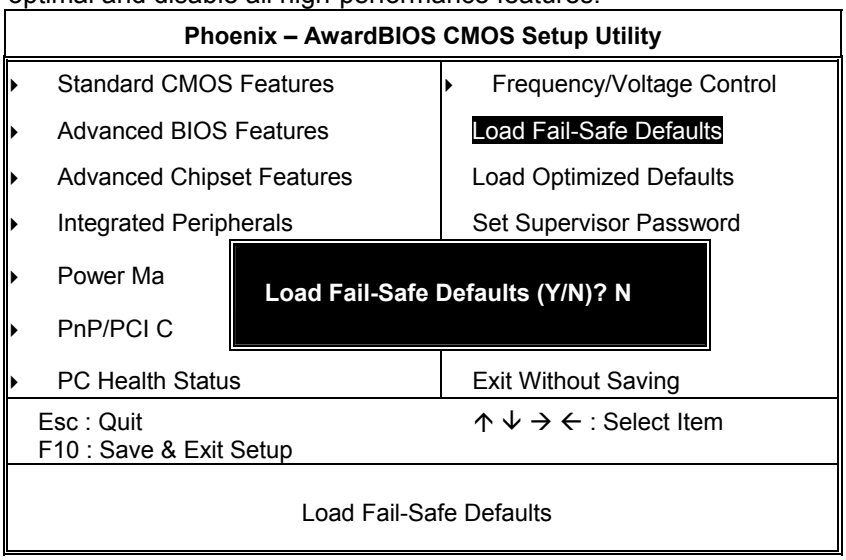
- Spread Spectrum

  This item allows you to enable/disable the spread spectrum modulate.

  The choice: Enabled, Disabled.

4.11 Load Fail-Safe Defaults

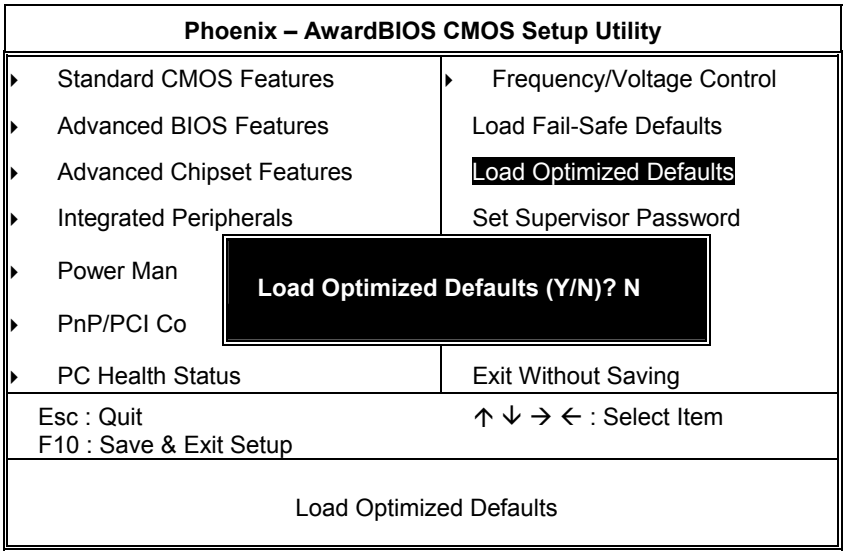
This option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high-performance features.



To load BIOS defaults value to CMOS SRAM, enter "Y". If not, enter "N".

4.12 Load Optimized Defaults

This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.



To load SETUP defaults value to CMOS SRAM, enter "Y". If not, enter "N".

4.13 Set Supervisor/User Password

You can set either supervisor or user password, or both of then. The differences between are:

1. **Supervisor password:** can enter and change the options of the setup menus.
2. **User password:** just can enter but do not have the right to change the options of the setup menus.

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password with eight characters at most, and press <Enter>. The password typed will now clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

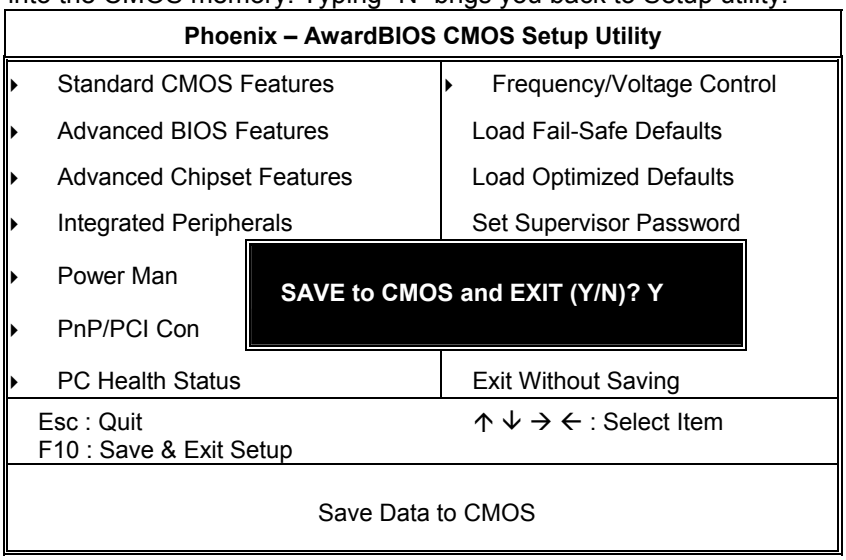
When a password is enabled, you have to type it every time you enter Setup. This prevents any unauthorized person from changing your system configuration.

Additionally when a password is enabled, you can also require the BIOS to request a password every time the system reboots. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to "System", the password is required during boot up and entry into Setup. If set as "Setup", prompting will only occur prior to entering Setup.

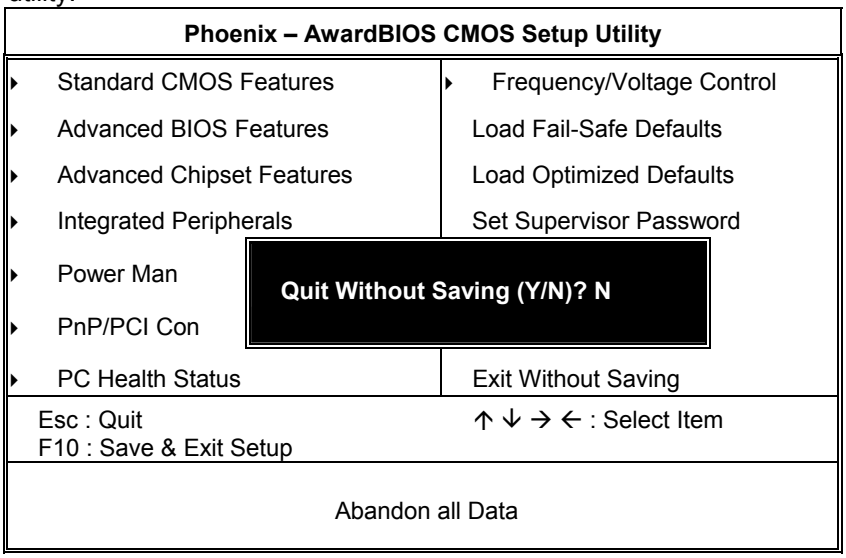
4.14 Save & Exit Setup

This allows you to determine whether or not to accept the modifications. Typing "Y" quits the setup utility and saves all changes into the CMOS memory. Typing "N" brigs you back to Setup utility.



4.15 Exit Without Saving

Select this option to exit the Setup utility without saving the changes you have made in this session. Typing "Y" will quit the Setup utility without saving the modifications. Typing "N" will return you to Setup utility.



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Appendix A

Watchdog Timer

The **SBC82610VE** CPU card uses version 2.0 of the watchdog timer. This onboard WDT generates either a system reset or non-maskable interrupt (NMI), depending on the settings made on jumper **JP7** of **SBC82610VE**. Follow the steps below to enable and program the watchdog function of **SBC82610VE**.

Start

↓

Un-Lock WDT	**:**	**OUT 120H 0AH ; enter WDT function** **OUT 120H 0BH ; enable WDT function**

↓

Set multiple (1~4)	**:**	**OUT 120 0NH ; N=1,2,3 or 4**

↓

Set base timer (0~F)	**:**	**OUT 121 0MH ; M=0,1,2,…F**

↓

WDT counting

↓

re-set timer	**:**	**OUT 121 0MH ; M=0,1,2,…F**

↓

IF No re-set timer	**:**	**WDT time-out, generate RESET or NMI**

↓

IF to disable WDT	**:**	**OUT 120 00H ; Can be disable at any time**

M	N			
	1	2	3	4
0	0.5 sec.	5 secs.	50 secs.	100 secs.
1	1 sec.	10 secs.	100 secs.	200 secs.
2	1.5 secs.	15 secs.	150 secs.	300 secs.
3	2 secs.	20 secs.	200 secs.	400 secs.
4	2.5 secs.	25 secs.	250 secs.	500 secs.
5	3 secs.	30 secs.	300 secs.	600 secs.
6	3.5 secs.	35 secs.	350 secs.	700 secs.
7	4 secs.	40 secs.	400 secs.	800 secs.
8	4.5 secs.	45 secs.	450 secs.	900 secs.
9	5 secs.	50 secs.	500 secs.	1000 secs.
A	5.5 secs.	55 secs.	550 secs.	1100 secs.
B	6 secs.	60 secs.	600 secs.	1200 secs.
C	6.5 secs.	65 secs.	650 secs.	1300 secs.
D	7 secs.	70 secs.	700 secs.	1400 secs.
E	7.5 secs.	75 secs.	750 secs.	1500 secs.
F	8 secs.	80 secs.	800 secs.	1600 secs.

Appendix B

ISA Golden Finger

The **SBC82610VE** provides a free ISA golden finger for expansion of ISA devices.

Signal	Pin	Pin	Signal	Signal	Pin	Pin	Signal
GND	B1	A1	-IOCHK	-DACK2	B26	A26	A5
RESDRV	B2	A2	D7	TC	B27	A27	A4
+5V	B3	A3	D6	ALE	B28	A28	A3
IRQ9	B4	A4	D5	+5V	B29	A29	A2
-5V	B5	A5	D4	14.3MHz	B30	A30	A1
DREQ2	B6	A6	D3	GND	B31	A31	A0
-12V	B7	A7	D2	-MEMCS16	D1	C1	-SBHE
-0WS	B8	A8	D1	-IOCS16	D2	C2	LA23
+12V	B9	A9	D0	IRQ10	D3	C3	LA22
GND	B10	A10	IOCHRDY	IRQ11	D4	C4	LA21
-SMEMW	B11	A11	AEN	IRQ12	D5	C5	LA20
-SMEMR	B12	A12	A19	IRQ15	D6	C6	LA19
-IOW	B13	A13	A18	IRQ14	D7	C7	LA18
-IOR	B14	A14	A17	-DACK0	D8	C8	LA17
-DACKS	B15	A15	A16	DREQ0	D9	C9	-MEMR
DREQ3	B16	A16	A15	-DACK5	D10	C10	-MEMW
-DACK1	B17	A17	A14	DREQ5	D11	C11	SD8
DREQ1	B18	A18	A13	-DACK6	D12	C12	SD9
-REFSH	B19	A19	A12	DREQ6	D13	C13	SD10
SYSCLK	B20	A20	A11	-DACK7	D14	C14	SD11
IRQ7	B21	A21	A10	DREQ7	D15	C15	SD12
IRQ6	B22	A22	A9	+5V	D16	C16	SD13
IRQ5	B23	A23	A8	-MASTER	D17	C17	SD14
IRQ4	B24	A24	A7	GND	D18	C18	SD15
IRQ3	B25	A25	A6				