

ETX-625

Intel® ULV Celeron® Processor

ETX CPU Module

With LCD, Ethernet,

Audio, PCI, ISA

ETX-625 Rev. A Manual 1st Ed.

January. 2005

Copyright Notice

This document is copyrighted, 2005. All rights are reserved. The original manufacturer reserves the right to make improvements to the products described in this manual at any time without notice.

No part of this manual may be reproduced, copied, translated, or transmitted in any form or by any means without the prior written permission of the original manufacturer. Information provided in this manual is intended to be accurate and reliable. However, the original manufacturer assumes no responsibility for its use, or for any infringements upon the rights of third parties that may result from its use.

The material in this document is for product information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, AAEON assumes no liabilities resulting from errors or omissions in this document, or from the use of the information contained herein.

AAEON reserves the right to make changes in the product design without notice to its users.

Acknowledgments

All other products' name or trademarks are properties of their respective owners.

- Award is a trademark of Award Software International, Inc.
- CompactFlash™ is a trademark of the Compact Flash Association.
- Intel®, Pentium® III, and Celeron® are trademarks of Intel® Corporation.
- Microsoft Windows® is a registered trademark of Microsoft Corp.
- ITE is a trademark of Integrated Technology Express, Inc.
- IBM, PC/AT, PS/2, and VGA are trademarks of International Business Machines Corporation.
- SoundBlaster is a trademark of Creative Labs, Inc.

Packing List

Before you begin installing your card, please make sure that the following materials have been shipped:

- 1 ETX-625 CPU Module
- 4 Screws
- 1 Quick Installation Guide
- 1 CD-ROM for manual (in PDF format) and drivers

If any of these items should be missing or damaged, please contact your distributor or sales representative immediately.

Contents

Chapter 1 General Information

1.1 Introduction.....	1-2
1.2 Features.....	1-4
1.3 Specifications.....	1-5

Chapter 2 Quick Installation Guide

2.1 Safety Precautions.....	2-2
2.2 Location of Connectors and Jumpers.....	2-3
2.3 Mechanical Drawing.....	2-5
2.4 List of Jumpers.....	2-7
2.5 List of Connectors.....	2-8
2.6 Setting Jumpers.....	2-9
2.7 TFT LCD Connector Clock Selection (JP1).....	2-10
2.8 TFT LCD Connector (CN1).....	2-10
2.9 TFT LCD Connector (CN2).....	2-11
2.10 ETX Connector.....	2-12

Chapter 3 Award BIOS Setup

3.1 System Test and Initialization.....	3-2
3.2 Award BIOS Setup	3-3

Chapter 4 Driver Installation

4.1 Installation 1	4-3
4.2 Installation 2	4-4

Appendix A Programming The Watchdog Timer

Programming the Watchdog Timer.....	A-2
-------------------------------------	-----

Appendix B I/O Information

B.1 I/O Address Map.....	B-2
B.2 1 st MB Memory Address Map.....	B-2
B.3 IRQ Mapping Chart.....	B-3
B.4 DMA Channel Assignments	B-3

Chapter

1

**General
Information**

1.1 Introduction

We are appreciating your purchase of AAEON's **E**Embedded **T**Technology **E**Xtended (**ETX**) product – the **ETX-625**.

Being an ETX compatible module, the ETX-625 was designed specially to improve the quality and speed of your product development. It will provide a more compact size and more flexibility for your various applications.

The features of the ETX-625 are based on the Intel® Ultra Low Voltage Celeron® (or optional Low Power Pentium® III) processor combined with VIA Twister and VT82C686B chipsets. It has one 144-pin SODIMM socket that allows a system memory capacity up to 512MB with non-ECC SDRAM modules. Hence, the ETX-625 can provide common PC peripheral functions such as graphics, USB, serial, parallel ports, keyboard/mouse, Ethernet, and IDE. The baseboard designer can optimize exactly which and how these functions are implemented physically.

All of AAEON's ETX modules have a standard form factor and a standard connector layout that carry a specified set of signals. By adopting this standardization, the designers can create a single system of “baseboards” that can accept present and future ETX modules. The baseboard designer can optimize exactly how each of these functions is implemented physically. Designers can place connectors precisely where needed for the application on a baseboard designed to optimally fit a system's packaging.

AAEON's ETX system is your stepping-stone to a whole new world of embedded product development. Once again, thank you for your purchase of this AAEON product and we trust that your product development will be swift, sure and successful!

1.2 Features

- Onboard Intel® LP Pentium® III / ULV Celeron® Processor
- Supports CRT and LCD / TV Display
- Supports 10/100Mbps Ethernet
- Supports AC97 Audio CODEC

1.3 Specifications

System

- CPU: LP Pentium® III / ULV Celeron® Processor
- Memory: SDRAM PC-133 SODIMM, Max. 512MB
- Chipset: VIA VT8606 + VT 82C686B
- Ethernet: Realtek RTL8100, 10/100Base-TX RJ-45
- BIOS: AWARD 256KB FLASH ROM
- Watchdog Timer: Generate a Time-out System Reset
- H/W Status Monitoring: Supports Power Supply Voltages, Fan Speed and Temperatures Monitoring
- Expansion Interface: PCI, ISA
- Power Supply Voltage: +3V, +5V. AT/ATX
- Board Size: 4.5”(L) x 3.74”(W) (114mm x 95mm)
- Gross Weight: 0.66lb (0.3kg)
- Operating Temperature: 32 F~140 F (0 C~60 C)

Display

- Chip: VIA VT8606
- Memory: Shared Memory Up to 32MB

- Resolutions: Up to 1600 x 1200
- LCD Interface: TTL and LVDS
- TV-Out: Composite / S-Video

I/O

- Audio: 2CH AC97 CODEC
- USB: USB 1.1

Chapter

2

Quick Installation Guide

Notice:

The Quick Installation Guide is derived from Chapter 2 of user manual. For other chapters and further installation instructions, please refer to the user manual CD-ROM that came with the product.



2.1 Safety Precautions

Warning!

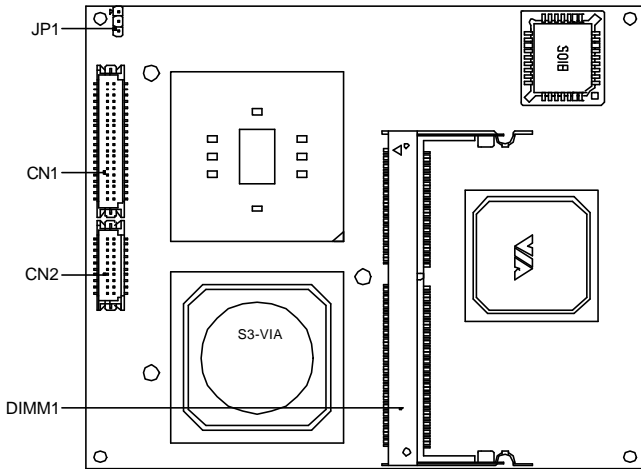
Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Caution!

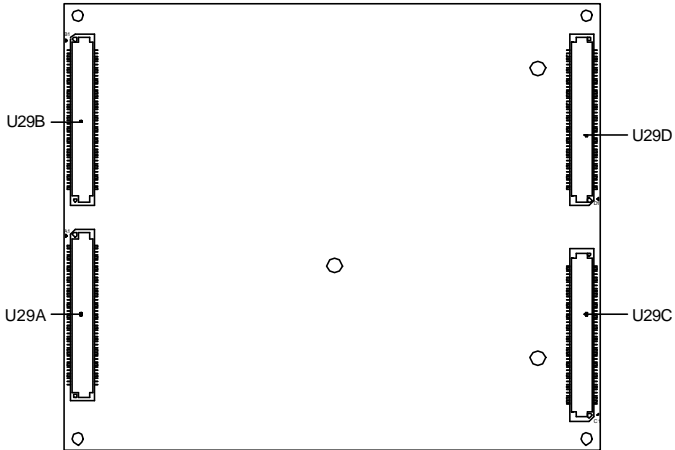
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis

2.2 Location of Connectors and Jumpers

Component Side

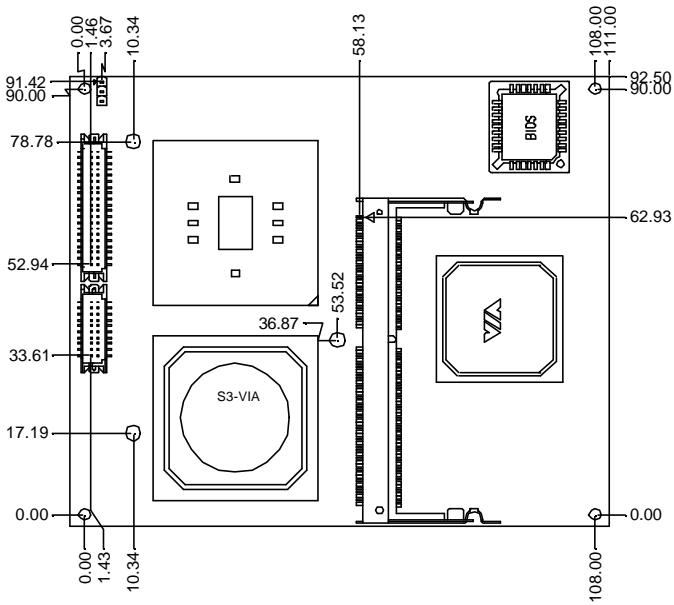


Solder Side

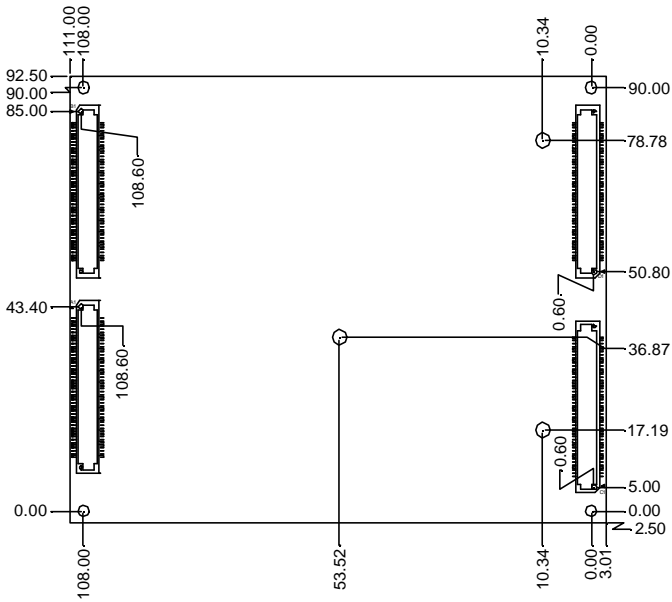


2.3 Mechanical Drawing

Component Side



Solder Side



2.4 List of Jumpers

The board has a number of jumpers that allow you to configure your system to suit your application.

The table below shows the function of each of the board's jumpers:

Jumpers

Label	Function
JP1	TFT LCD Clock Select

2.5 List of Connectors

The board has a number of connectors that allow you to configure your system to suit your application. The table below shows the function of each board's connectors:

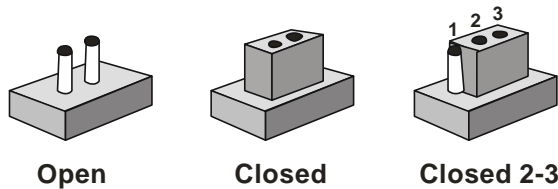
Connectors

Label	Function
CN1	TFT LCD Connector
CN2	TFT LCD Connector
U29A	ETX Connector
U29B	ETX Connector
U29C	ETX Connector
U29D	ETX Connector

2.6 Setting Jumpers

You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper you connect the pins with the clip.

To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3.



A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any change.

Generally, you simply need a standard cable to make most connections.

2.7 TFT LCD Connector Clock Select (JP1)

Pin	Signal	Pin	Signal
1-2	Normal Clock (Default)	2-3	Invert Clock

2.8 TFT LCD Connector (CN1)

Flat Panel Connector			
Pin	Signal	Pin	Signal
1	+5 Volt.	2	+5 Volt.
3	Ground	4	Ground
5	+3.3 Volt.	6	+3.3 Volt.
7	ENVDD	8	Ground
9	N/A	10	N/A
11	B0	12	B1
13	B2	14	B3
15	B4	16	B5
17	N/A	18	N/A
19	G0	20	G1
21	G2	22	G3
23	G4	24	G5
25	N/A	26	N/A
27	R0	28	R1
29	R2	30	R3
31	R4	32	R5
33	Ground	34	Ground

35	Dot Clock	36	FLM (VSYNC)
37	DE	38	LP (HSYNC)
39	N/A	40	ENABKL

2.9 TFT LCD Connector (CN2)

Flat Panel Connector			
Pin	Signal	Pin	Signal
1	Ground	2	Ground
3	B10	4	B11
5	B12	6	B13
7	B14	8	B15
9	G10	10	G11
11	G12	12	G13
13	G14	14	G15
15	R10	16	R11
17	R12	18	R13
19	R14	20	R15

2.10 ETX Connector

X1 – PCI, USB, Audio (U29A)			
Pin	Signal	Pin	Signal
1	GND	2	GND
3	PCICLK3	4	PCICLK4
5	GND	6	GND
7	PCICLK1	8	PCICLK2
9	REQ3#	10	GNT3#
11	GNT2#	12	3V/NC
13	REQ2#	14	GNT1#
15	REQ1#	16	3V/NC
17	GNT0#	18	NC
19	VCC	20	VCC
21	NC/DREQ2/SERIRQ	22	REQ0#
23	AD0	24	3V/NC
25	AD1	26	AD2
27	AD4	28	AD3
29	AD6	30	AD5
31	CBE0#	32	AD7
33	AD8	34	AD9
35	GND	36	GND
37	AD10	38	AUXAL
39	AD11	40	MIC
41	AD12	42	AUXAR

43	AD13	44	ASVCC
45	AD14	46	SNDL
47	AD15	48	ASGND
49	CBE1#	50	SNDR
51	VCC	52	VCC
53	PAR	54	SERR#
55	GPERR#	56	N/C
57	PME#	58	USB2#
59	LOCK#	60	DEVSEL#
61	TRDY#	62	USB3#
63	IRDY#	64	STOP#
65	FRAME#	66	USB2
67	GND	68	GND
69	AD16	70	CBE2#
71	AD17	72	USB3
73	AD19	74	AD18
75	AD20	76	USB0#
77	AD22	78	AD21
79	AD23	80	USB1#
81	AD24	82	CBE3#
83	VCC	84	VCC
85	AD25	86	AD26
87	AD28	88	USB0
89	AD27	90	AD29

91	AD30	92	USB1
93	PCIRST#	94	AD31
95	INTC#	96	INTD#
97	INTA#	98	INTB#
99	GND	100	GND

X2 – ISA (U29B)

Pin	Signal	Pin	Signal
1	GND	2	GND
3	SD14	4	SD15
5	SD13	6	MASTER#
7	SD12	8	DREQ7
9	SD11	10	DACK7#
11	SD10	12	DREQ6
13	SD9	14	DACK6#
15	SD8	16	DREQ5
17	MEMW#	18	DACK5#
19	MEMR#	20	DREQ0
21	SA17	22	DACK0#
23	SA18	24	IRQ14
25	SA19	26	IRQ15
27	SA20	28	NC/IRQ12
29	SA21	30	IRQ11
31	SA22	32	IRQ10
33	SA23	34	IO16#
35	GND	36	GND
37	SBHE#	38	M16#

39	SA0	40	OSC
41	SA1	42	BALE
43	SA2	44	TC
45	SA3	46	DACK2#
47	SA4	48	IRQ3
49	SA5	50	IRQ4
51	VCC	52	VCC
53	SA6	54	IRQ5
55	SA7	56	IRQ6
57	SA8	58	IRQ7
59	SA9	60	SYSCLK
61	SA10	62	REFSH#
63	SA11	64	DREQ1
65	SA12	66	DACK1#
67	GND	68	GND
69	SA13	70	DREQ3
71	SA14	72	DACK3#
73	SA15	74	IOR#
75	SA16	76	IOW#
77	SA18	78	SA17
79	SA19	80	SMEMR#
81	IOCHRDY	82	AEN
83	VCC	84	VCC
85	SD0	86	SMEMW#
87	SD2	88	SD1
89	SD3	90	NOWS#
91	DREQ2	92	SD4
93	SD5	94	IRQ9

95	SD6	96	SD7
97	IOCHK#	98	RSTDRV
99	GND	100	GND

X3 – VGA, LCD, Video, COM1, COM2, LPT, IRDA, K/B and MS (U29C)

Pin	Signal	Pin	Signal
1	GND	2	GND
3	R	4	B
5	HSY	6	G
7	VSX	8	DDCK
9	DETECT#/NC	10	DDDA
11	TX2CLK#	12	NC
13	TX2CLK	14	NC
15	GND	16	GND
17	TX2OUT1	18	TX2OUT2
19	TX2OUT#1	20	TX2OUT#2
21	GND	22	GND
23	NC	24	TX2OUT0
25	NC	26	TX2OUT#0
27	GND	28	GND
29	TX1OUT#2	30	TX1CLK
31	TX1OUT2	32	TX1CLK#
33	GND	34	GND
35	TX1OUT0	36	TX1OUT1
37	TX1OUT#0	38	TX1OUT#1
39	VCC	40	VCC
41	NC	42	LTGIO0 /NC

43	NC	44	ENVDD
45	ENVEE	46	ENVDD
47	COMP	48	Y
49	SYNC	50	C
51	NC	52	NC
53	VCC	54	GND
55	STB#	56	AFD#
57	NC	58	PD7
59	IRRX	60	ERR#
61	IRTX	62	PD6
63	RXD2	64	INIT#
65	GND	66	GND
67	RTS2#	68	PD5
69	DTR2#	70	SLIN#
71	DCD2#	72	PD4
73	DSR2#	74	PD3
75	CTS2#	76	PD2
77	TXD2#	78	PD1
79	RI2#	80	PD0
81	VCC	82	VCC
83	RXD1	84	ACK#
85	RTS1#	86	BUSY#
87	DTR1#	88	PE
89	DCD1#	90	SLCT#
91	DSR1#	92	MSCLK
93	CTS1#	94	MSDAT
95	TXD1	96	KBCLK
97	RI1#	98	KBDAT

99	GND	100	GND
----	-----	-----	-----

X4 - IDE1, IDE2, Ethernet, Miscellaneous (U29D)

Pin	Signal	Pin	Signal
1	GND	2	GND
3	5V_SB	4	RSTIN#
5	PS_ON	6	SPEAKER
7	PWRBTN#	8	BATT
9	CPUFAN/NC	10	LILED
11	NC/WDRST#	12	ACTLED
13	ROMKBCS#	14	SPEEDLED
15	NC	16	SMBCLK
17	VCC	18	VCC
19	OVCR#/DACK2	20	GPIOD
21	EXTSMI#	22	SMBDATA
23	SMBCLK	24	SMBDATA
25	SIDE_CS3#	26	SMBALR#/CPUFAN
27	SIDE_CS1#	28	NC
29	SIDE_A2	30	PIDE_CS3#
31	SIDE_A0	32	PIDE_CS1#
33	GND	34	GND
35	PDIAG_S/PDIAG_P	36	PIDE_A2
37	SIDE_A1	38	PIDE_A0
39	SIDE_INTRQ	40	PIDE_A1
41	BATLOW#/PDIAG_S	42	NC
43	SIDE_AK#	44	PIDE_INTRQ
45	SIDE_RDY	46	PIDE_AK#
47	SIDE_IOR#	48	PIDE_RDY

49	VCC	50	VCC
51	SIDE_IOW#	52	PIDE_IOR#
53	SIDE_DRQ	54	PIDE_IOW#
55	SIDE_D15	56	PIDE_DRQ
57	SIDE_D0	58	PIDE_D15
59	SIDE_D14	60	PIDE_D0
61	SIDE_D1	62	PIDE_D14
63	SIDE_D13	64	PIDE_D1
65	GND	66	GND
67	SIDE_D2	68	PIDE_D13
69	SIDE_D12	70	PIDE_D2
71	SIDE_D3	72	PIDE_D12
73	SIDE_D11	74	PIDE_D3
75	SIDE_D4	76	PIDE_D11
77	SIDE_D10	78	PIDE_D4
79	SIDE_D5	80	PIDE_D10
81	VCC	82	VCC
83	SIDE_D9	84	PIDE_D5
85	SIDE_D6	86	PIDE_D9
87	SIDE_D8	88	PIDE_D6
89	NC/RING#	90	PDIAG_P/LWAKE/RING#
91	RXD#	92	PIDE_D8
93	RXD	94	SIDE_D7
95	TXD#	96	PIDE_D7
97	TXD	98	HDRST#
99	GND	100	GND

Chapter

3

**Award
BIOS Setup**

3.1 System Test and Initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see 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.

System configuration verification

These routines check the current system configuration against the values stored in the CMOS memory. If they do not match, the program outputs an error message. You will then need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The CMOS memory has lost power and the configuration information has been erased.

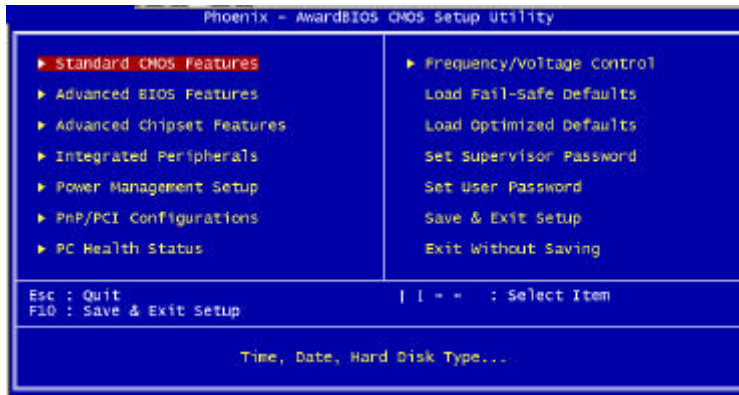
The ETX-625 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 Award BIOS Setup

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

Entering Setup

Power on the computer and press immediately. This will allow you to enter Setup.



Standard CMOS Features

Use this menu for basic system configuration. (Date, time, IDE, etc.)

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 optimize your system performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals. (Primary slave, secondary slave, keyboard, mouse etc.)

Power Management Setup

Use this menu to specify your settings for power management. (HDD power down, power on by ring, KB wake up, etc.)

PnP/PCI Configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This menu allows you to set the shutdown temperature for your system.

Frequency/Voltage Control

Use this menu to specify your settings for auto detect DIMM/PCI clock and spread spectrum.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While AWARD has designated the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

Set Supervisor/User Password

Use this menu to set Supervisor/User Passwords.

Save and Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

You can refer to the "AAEON BIOS Item Description.pdf" file in the CD for the meaning of each setting in this chapter.

Chapter

4

**Driver
Installation**

The ETX-625 comes with a CD-ROM which contains most of drivers and utilities of your needs.

There are several installation ways depending on the driver package under different Operating System application.

Please follow the sequence below to install the drivers:

Step 1 – Install VIA 4 in 1

Step 2 – Install VGA (Graphic) Driver

Step 3 – Install Audio Driver

Step 4 – Install LAN (Ethernet) Driver

For installation procedures of each driver, you may refer to section 4.1-4.2.

4.1 Installation 1:

Applicable for Windows 98SE/2000/XP

1. Insert the ETX-625 CD-ROM into the CD-ROM Drive.
2. From the CD-ROM, select the desired component Driver folder, and then select the desired Operation System folder to double click on the Setup.exe icon. A driver installation screen will appear.
(Notice: take VGA Driver installation under XP for example, choose the corresponding folder depending on your OS)
(Notice: click "Ethernet\Realtek_81xx\wdm\setup.exe" folder to install LAN Driver)
3. A driver installation screen will appear, please follow the onscreen instructions to install the driver in sequence and click on the Next button.
(Notice: In some cases the system will ask you to insert OS Setup CD ROM and key in its path. Then click on the OK button to key in path.)
4. Click on the **Finish** button to finish installation process. And allow the system to reboot.

4.2 Installation 2:

Applicable for Windows 98SE/2000/XP

1. Insert the **ETX-625 CD-ROM** into the CD-ROM Drive.
2. Click on **Start** button, select the **Settings**, and then click on the **Control Panel** icon.
3. Double click on the **Add/Remove Hardware** icon and **Add New Hardware Wizard** will appear. Click on the **Next** button.
4. Select **Search for the best driver for your device (Recommended)** and click on the **Next** button.
5. Select **Specify a location**, click on **Have Disk** button then key in the CD-ROM path and specify component drivers and OS folders. Then click on the **Next** button.
6. The Wizard shows that Windows driver file search for the device. Click on the **Next** button.
7. The system will ask you to insert Windows 98 CD ROM. Click on the **OK** button to insert CD-ROM and key in path.
8. Click on the **OK** button.
9. Click on the **Finish** button to finish installation process. And allow the system to reboot.

Appendix

A

Programming the Watchdog Timer

Programming the Watchdog timer

An on-board watchdog timer reduces the chance of disruptions which CPLD (compact programmable logical device) interference can cause. This is an invaluable protective device for standalone or unmanned applications. When the watchdog timer activates (CPU processing has come to a halt), it can reset the system, or generate an interrupt on IRQ10, IRQ11, IRQ15, and NMI. This can be set via I/O Port 444, the functions as following:

0:	RESET
1:	NMI
2:	IRQ10
3:	IRQ11
4:	IRQ15

If you decide to program the watchdog timer, you must write data to I/O port 443 (hex). The output data is a value timer. You can write from 01 (hex) to FF (hex) for input second data, and the related timer is 1 to 255 seconds.

After data entry, your program must refresh the watchdog timer by rewriting the I/O port 443 (hex) while simultaneously setting it. When you want to disable the watchdog timer, your program should read a Hex value from I/O port 80 (hex).

The following procedure is a sample program for the watchdog timer:

- Type C:\DOS\Debug <Enter>
- To start watchdog timer and set function “Reset” type:
 - o 444 0<Enter>; out 444h data 0.

- To input watchdog timers timer-out interval of 5 seconds type: o
o 443 05<Enter>; out 443h data 05.
- To disable the watchdog timer type:
i 80<Enter>

The time interval data of the watchdog timer is shown in binary code (8 bits).

Sample 2 : 5 seconds

0	0	0	0	0	1	0	1
---	---	---	---	---	---	---	---

Appendix

B

I/O Information

B.1 I/O Address Map

Address	Description	User Address
000-01F	DMA Controller #1	000-000F
020-03F	Interrupt Controller #1, Master	020-021
040-05F	System Time	040-043
060-06F	8042 (Keyboard Controller)	060-064
070-07F	Real time Clock, NMI (non-maskable Interrupt) Mask	070-073
080-09F	DMA Page Register	080-08F
0A0-0BF	Interrupt Controller #2	0A0-0A1
0C0-0DF	DMA Controller #2	0C0-0DF
0F0-0FF	Math Coprprocessor	0F0-0FF
170-177	Secondary IDE Channel	170-177
1F0-1F7	Primary IDE Channel	1F0-1F7
2E8-2EF	Serial Port 4	2E8-2EF
2F8-2FF	Serial Port 2	2F8-2FF
378-37F	Parallel Printer Port 1	378-37F
3B0-3DF	EGA / VGA card	3B0-3DF
3E8-3EF	Serial Port 3	3E8-3EF
3F0-3F7	Diskette Controller	3F2-3F7
3F8-3FF	Serial Port 1	3F8-3FF

B.2 1st MB Memory Address Map

Memory Address	Description
00000-9FFFF	System memory
A0000-BFFFF	VGA buffer
C0000-CFFFF	VGA BIOS
E0000-FFFFF	System BIOS

B.3 IRQ Mapping Chart

IRQ0	System Timer	IRQ8	System CMOS / Real time clock
IRQ1	Keyboard	IRQ9	Microsoft ACPI – Compliant system
IRQ2	Cascade to IRQ Controller	IRQ10	COM4
IRQ3	COM2	IRQ11	COM3
IRQ4	COM1	IRQ12	PS/2 mouse
IRQ5	Unused	IRQ13	FPU
IRQ6	Floppy Disk Controller	IRQ14	Primary IDE
IRQ7	Printer	IRQ15	Secondary IDE

B.4 DMA Channel Assignments

DMA Channel	Function
0	Available
1	Available
2	Standard Floppy Disk Controller
3	Available
4	Direct Memory Access Controller
5	Available
6	Available
7	Available