

# AEC-6643

Fanless Embedded Box PC

User's Manual 2<sup>nd</sup> Ed

Last Updated: September 19, 2016

#### Copyright Notice

This document is copyrighted, 2016. 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.

#### Acknowledgement

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

- Microsoft Windows is a registered trademark of Microsoft Corp.
- Intel, Pentium, Celeron, and Xeon are registered trademarks of Intel Corporation
- Core, Atom are trademarks of Intel Corporation
- ITE is a trademark of Integrated Technology Express, Inc.
- IBM, PC/AT, PS/2, and VGA are trademarks of International Business Machines Corporation.

All other product names or trademarks are properties of their respective owners.

#### Packing List

Before setting up your product, please make sure the following items have been shipped:

Item		Quantity
•	BOXER-6643	1
•	Screw package	1
•	Wall mount brackets	2
•	DVD-ROM for manual (in PDF format) and drivers	1

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

#### About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the AAEON.com for the latest version of this document.

#### Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

- 1. All cautions and warnings on the device should be noted.
- All cables and adapters supplied by AAEON are certified and in accordance with the material safety laws and regulations of the country of sale. Do not use any cables or adapters not supplied by AAEON to prevent system malfunction or fires.
- 3. Make sure the power source matches the power rating of the device.
- 4. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- Always completely disconnect the power before working on the system's hardware.
- No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
- 7. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
- 8. Always disconnect this device from any AC supply before cleaning.
- 9. While cleaning, use a damp cloth instead of liquid or spray detergents.
- 10. Make sure the device is installed near a power outlet and is easily accessible.
- 11. Keep this device away from humidity.
- 12. Place the device on a solid surface during installation to prevent falls
- 13. Do not cover the openings on the device to ensure optimal heat dissipation.
- 14. Watch out for high temperatures when the system is running.
- 15. Do not touch the heat sink or heat spreader when the system is running
- 16. Never pour any liquid into the openings. This could cause fire or electric shock.

- 17. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
- 18. If any of the following situations arises, please the contact our service personnel:
  - i. Damaged power cord or plug
  - ii. Liquid intrusion to the device
  - iii. Exposure to moisture
  - iv. Device is not working as expected or in a manner as described in this manual
  - v. The device is dropped or damaged
  - vi. Any obvious signs of damage displayed on the device

19. DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.

#### FCC Statement



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

#### Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

#### Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

#### China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

AAEON Embedded Box PC/ Industrial System

			有毒	有害物质或	<b></b>	
部件名称	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
	(Pb)	(Hg)	(Cd)	(Cr(VI))	(PBB)	(PBDE)
印刷电路板						
及其电子组件	0	0	0	0	0	0
外部信号						
连接器及线材	0	0	0	0	0	0
外壳	0	0	0	0	0	0
中央处理器				0		0
与内存	0	0	0	0	0	0
硬盘	0	0	0	0	0	0
电源	0	0	0	0	0	0
· 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006标准规定的限量要求以下。						

X:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。

备注:

一、此产品所标示之环保使用期限,系指在一般正常使用状况下。 二、上述部件物质中央处理器、内存、硬盘、电源为选购品。

#### China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products

AAEON Embedded Box PC/ Industrial System

		Pc	bisonous or	Hazardous Su	Ibstances or Elemer	ıts
Component	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
PCB & Other Components	0	0	0	0	0	0
Wires & Connectors for External Connections	0	0	0	0	0	0
Chassis	0	0	0	0	0	0
CPU & RAM	0	0	0	0	0	0
Hard Disk	0	0	0	0	0	0
PSU	0	0	0	0	0	0

O: The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.

X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.

Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only

# Table of Contents

Chapter	1 - Produ	ct Specifications	1
1.1	1 Specif	ications	2
Chapter	2 – Hardw	vare Information	4
2.2	1 Dimer	nsions	5
2.2	2 Jumpe	ers and Connectors	6
2.3	3 List of	Jumpers	8
	2.3.1	AT/ATX Mode Selection (ATMODE)	8
	2.3.2	Clear COMS (CLRTC)	8
	2.3.3	COM2 External Power Selection (DIGITALREFENCE)	9
	2.3.4	Watchdog Timer Function Switch (WDT)	9
2.4	4 List of	Connectors	10
	2.4.1	COM2 RS-232/422/485 Connector	11
	2.4.2	COM3/COM4/COM5 RS-232 Serial Port PIN HEADER	
	(COM	3/COM4/COM5)	11
	2.4.3	Serial ATA Power Connector (SATA_PWR1)	11
2.5	5 Hard I	Disk Drive Installation	12
21			12
2.0	6 Memory	Installation	
2.0	6 Memory 7 Wallm	Installation ount Kit Installation	
2.0 2.7 Chapter	6 Memory 7 Wallm <b>3 - AMI B</b> I	Installation ount Kit Installation	
2.0 2.7 Chapter 3.7	6 Memory 7 Wallm <b>3 - AMI Bl</b> 1 Syster	Installation ount Kit Installation I <b>OS Setup</b> In Test and Initialization	
2.0 Chapter 3.2 3.2	5 Memory 7 Wallm <b>3 - AMI Bl</b> 1 Syster 2 AMI B	Installation ount Kit Installation I <b>OS Setup</b> IOS Setup	
2.0 Chapter 3.2 3.2 3.2	5 Memory 7 Wallm <b>3 - AMI B</b> 1 Syster 2 AMI B 3 Setup	Installation ount Kit Installation OS Setup n Test and Initialization IOS Setup Submenu: Main	
2. <b>Chapter</b> 3. 3. 3.	5 Memory 7 Wallm <b>3 - AMI B</b> 1 Syster 2 AMI B 3 Setup 3.3.1	Installation ount Kit Installation IOS Setup In Test and Initialization IOS Setup Submenu: Main	
2.0 Chapter 3.2 3.2 3.2 3.2	5 Memory 7 Wallm <b>3 - AMI B</b> 1 Syster 2 AMI B 3 Setup 3.3.1 4 Setup	Installation ount Kit Installation IOS Setup In Test and Initialization IOS Setup Submenu: Main Main: Security Submenu: Advanced	
2.3 Chapter 3.3 3.3 3.4	5 Memory 7 Wallm <b>3 - AMI B</b> 1 Syster 2 AMI B 3 Setup 3.3.1 4 Setup 3.4.1	Installation ount Kit Installation IOS Setup IOS Setup Submenu: Main Main: Security Submenu: Advanced Advanced: ACPI Setting	

	3.4.3	Advanced: Agent Configuration	24
	3.4.4	Advanced: Intel IGD Configuration	25
	3.4.5	Advanced: PCH Configuration	
	3.4.6	Advanced: SATA Configuration	27
	3.4.7	Advanced: USB Configuration	
	3.4.8	Advanced: Onboard Devices Configuration	
	3.4.9	Advanced: APM	
3.5	Setup	submenu: Monitor	
3.6	Setup	submenu: Boot	
	3.6.1	Boot: BBS Priorities	
3.7	Setup	submenu: Save & Exit	
Chapter 4	– Drivers	s Installation	35
Chapter 4 4.1	<b>– Driver</b> s Produc	s Installation	<b>35</b> 36
Chapter 4 4.1 Appendix A	– Drivers Produc A - Watc	s Installation ct CD/DVD hdog Timer Programming	<b>35</b> 36 <b>38</b>
Chapter 4 4.1 Appendix 7 A.1	<b>– Drivers</b> Produc <b>A - Watc</b> Watch	s Installation ct CD/DVD hdog Timer Programming dog Timer Initial Programming	35 36 38 39
Chapter 4 4.1 Appendix A A.1 Appendix I	– Drivers Produc A - Watc Watch B - I/O Ir	s Installation ct CD/DVD hdog Timer Programming dog Timer Initial Programming	35 36 38 39 45
Chapter 4 4.1 Appendix A A.1 Appendix I B.1	– Drivers Produc A - Watc Watch B - I/O Ir I/O Ac	s Installation ct CD/DVD hdog Timer Programming dog Timer Initial Programming nformation	35 36 38 39 45 46
Chapter 4 4.1 Appendix A A.1 Appendix B B.1 B.2	- Drivers Product A - Watch Watch B - I/O Ir I/O Act 1 <sup>st</sup> Me	s Installation ct CD/DVD hdog Timer Programming dog Timer Initial Programming nformation ddress Map mory Address Map	35 36 38 39 45 46 48
Chapter 4 4.1 Appendix A A.1 Appendix B B.1 B.2 B.3	- Drivers Product A - Watch Watch B - I/O Ir I/O Act 1 <sup>st</sup> Me IRQ M	s Installation ct CD/DVD hdog Timer Programming dog Timer Initial Programming formation ddress Map mory Address Map	35 36 38 45 46 48 49
Chapter 4 4.1 Appendix A A.1 Appendix B B.1 B.2 B.3 B.4	Produce     Produce     A - Watch     Watch     I/O Ac     1 <sup>st</sup> Me     IRQ M     DMA (	s Installation ct CD/DVD hdog Timer Programming dog Timer Initial Programming formation ddress Map ddress Map ddress Map ddress Map channel Assignments	35 38 45 46 48 49 52
Chapter 4 4.1 Appendix A A.1 Appendix B B.1 B.2 B.3 B.4 Appendix C	Produce     Produce     A - Watch     Watch     I/O Acc     1 <sup>st</sup> Me     IRQ M     DMA (     C -AHCL	s Installation ct CD/DVD hdog Timer Programming dog Timer Initial Programming formation ddress Map ddress Map ddress Map ddress Map ddress Map Settings	35 36 38 45 46 46 49 52 53

# Chapter 1

Product Specifications

# 1.1 Specifications

Syste	em	
•	CPU	Intel <sup>®</sup> Atom <sup>TM</sup> D2550 B3 Processor
•	Memory	DDR3 800/1066 Mhz SODIMM x 1, up to 4 GB
•	Display Interface	DB-15 x 1
		DVI-D x 1
•	Ethernet	Realtek RTL-8111E, 10/100/1000Base-TX x 2
•	Storage Device	SATA 3.0Gb/s 2.5" HDD bay x 1
•	Expansion	Full-size Mini Card x 1
•	I/O	RS-232/422/485 x 1
		RS-232 x 3
		USB 2.0 x 6
		VGA x 1
		DVI-D x 1
		Line-in x 1
		Line-out x 1
		Mic-in x 1
		LAN x 2
		Antenna holes x 2
		Power switch
		Power input
•	LED Indicator	Power LED x 1, HDD active LED x 1
•	OS Support	Windows® 7
		Windows® XP
		Windows® Embedded Standard
		Linux Fedora 15 / Kernel 2.6.38.6

Mec	Mechanical		
•	Construction	Aluminum Alloy Chassis	
•	Color	Dark Gray	
•	Mounting	Wall mounted	
•	Dimension (W x H x D)	11.81" x 3.05" x 7.48"	
		(300mm x 77.5mm x 190mm)	
•	Gross Weight	12.98 lb (5.9 kg)	
•	Net Weight	6.00 lb (2.7 kg)	

#### Environmental

•	Operating Temperature	Ambient with Airflow:
		-5°C ~ 45°C (23°F ~ 113°F) – with wide temperature HDD
•	Storage Temperature	-10 ~ 60°C (14 ~ 140°F)
•	Storage Humidity	95% @ 40°C, non-condensing
•	Anti-Vibration	1 G <sub>rms</sub> / 5~500Hz/ operation –HDD
•	Anti-Shock	20 G peak acceleration (11msec. duration)
•	EMC	CE/FCC Class A

# Power

Power Requirement

12V with DC Jack

# Chapter 2

Hardware Information



Connectors on the front panel



Connectors on the rear panel

#### 2.2 Jumpers and Connectors

#### Component Side



Solder Side



AEC-6643

#### 2.3 List of Jumpers

Please refer to the table below for all of the system's connectors that you can configure for your application.

AT/ATX Mode Selection

Function

Label
ATMODE
CLRTC
DIGITALREFENCE
LVDS_VDD_SEL

/ TIMODE	
CLRTC	Clear COMS
DIGITALREFENCE	COM2 External Power Selection
LVDS_VDD_SEL	LVDS Panel Power Selection
L_BRIGHTNESS	LVDS Brightness Control Type Selection
LVDS_SWITCH	LVDS Function Enable
LCD_POWER_SEL	LVDS Panel Backlight Power Selection
WDT	Watchdog Timer Function Switch

## 2.3.1 AT/ATX Mode Selection (ATMODE)

ATMODE	Function
Close 1-2	AT
Close 2-3	ATX Mode (Default)

## 2.3.2 Clear COMS (CLRTC)

CLRTC	Function
Close 1-2	Protected (Default)
Close 2-3	Clear

-\_

### 2.3.3 COM2 External Power Selection (DIGITALREFENCE)

DIGITALREFENCE	Function
Close 15-16	+12V
Close 17-18	RI# (Default)
Close 19-20	+5V

# 2.3.4 Watchdog Timer Function Switch (WDT)

WDT	Function
Close 1-2	Disable (Default)
Close 2-3	Enable

#### 2.4 List of Connectors

Please refer to the table below for all of the system's connectors that you can configure for your application.

Label	Function
CON2	+12V AUX Power Connector
CHA_FAN	System FAN Connector
COM2	COM 2 Connector
СОМЗ	COM 3 Connector
COM4	COM 4 Connector
СОМ5	COM 5 Connector
CON1	SIM Card Socket
CPU_FAN	CPU FAN Connector
DIGITALREFENCE	GPIO/SM BUS/COM2/ COM2 External Power Selection
F_PANEL	Front Panel Pin Header
KB/Ms	PS/2 Keyboard / Mouse Connector
LCD_POWE	LVDS Panel Power Connector
LPT	Parallel Port Connector
LVDS	LVDS Panel Connector
PCIEX1_1	PCI-E [x1] Slot
SATA_PWR1	Serial ATA Power Connector
SATA3G_1	SATA 0 Connector
SATA3G_2	SATA 1 Connector
USB56	USB 5 & 6 Pin Header
USB7	USB 7 Pin Header
WLAN	Mini PCI-E Slot

#### 2.4.1 COM2 RS-232/422/485 Connector

(COM3/COM4/COM5)

PIN	Signal	PIN	Signal
1	DCD (422TXD-/485DATA-)	2	RXD (422RXD+)
3	TXD(422TXD+/485DATA+)	4	DTR (422RXD-)
5	GND	6	DSR
7	RTS	8	CTS
9	RI/+12V/+5V	10	N.C.

#### 2.4.2 COM3/COM4/COM5 RS-232 Serial Port PIN HEADER

PIN	Signal	PIN	Signal	
1	DCD	2	RXD	
3	TXD	4	DTR	
5	GND	6	DSR	
7	RTS	8	CTS	
9	RI			

#### 2.4.3 Serial ATA Power Connector (SATA\_PWR1)

PIN	Signal	PIN	Signal
1	+5	2	GND
3	GND	4	+12V

AEC-6643

#### 2.5 Hard Disk Drive Installation

Step 1: Unfasten the four screws of the AEC-6643.

Step 2: Get the HDD and HDD Bracket ready. Fasten four shock washers to the HDD Bracket.



Step 3: Fasten the four screws to fix the HDD and HDD bracket.



Step 4: Fasten the four screws to install the HDD and HDD Bracket to the chasis, then connect the SATA cable to the HDD.



Step 5: Close the cover of the AEC-6643 and fasten the screws and copper cylinders.

#### 2.6 Memory Installation

Step 1: Unfasten the four screws of the AEC-6643.

Step 2: Gently push down on the tabs on either side of the DIMM slot in tandem.



Step 3: Line up the pins and firmly (but not roughly) press on the outside of Memory Card to install.



Step 4: Snap the DIMM slot tabs shut, locking the Memory Card in place.



#### 2.7 Wallmount Kit Installation

Get the brackets ready and fasten appropriate four screws on each bracket. After fastening the two brackets on the bottom lid of AEC-6643, the wallmount kit installation has been finished.



# Chapter 3

AMI BIOS Setup

AEC-6643

#### 3.1 System Test and Initialization

The system uses certain routines to perform testing and initialization. If an error, fatal or non-fatal, is encountered, a few short beeps or an error message will be outputted. The board can usually continue the boot up sequence with non-fatal errors.

The system configuration verification routines check the current system configuration against the values stored in the CMOS memory. If they do not match, an error message will be outputted, in which case you will 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:

- You are starting your system for the first time
- You have changed your system's hardware
- The CMOS memory has lost power and the configuration information is erased

The system's CMOS memory uses a backup battery for data retention, which is to be replaced once emptied.

#### 3.2 AMI BIOS Setup

The AMI BIOS ROM has a pre-installed Setup program that allows users to modify basic system configurations, which is stored in the battery-backed CMOS RAM and BIOS NVRAM so that the information is retained when the power is turned off.

To enter BIOS Setup, press <Del> or <F2> immediately while your computer is powering up.

The function for each interface can be found below.

Main – Date and time can be set here. Press <Tab> to switch between date elements

Advanced - Enable/ Disable boot option for legacy network devices

Monitor – Show the environment information

Boot - Enable/ Disable quiet Boot Option

Save & Exit – Save your changes and exit the program

# 3.3 Setup Submenu: Main

Aptio Setup Utility - Main Advanced Monitor Boot Ex	– Copyright (C) 2011 Americar it	Megatrends, Inc.
BIOS Information AEC-6643A R1.2(6643AM12) (09/02/	2013)	Set the Date. Use Tab to switch between Data elements.
CPU Information Intel(R) Atom(TM) CPU D2550 @ 1.4 Speed	36GHz 1865 MHz	
Memory Information Total Memory Speed	4096 MB 1067 MHz(DDR3)	
System Date System Time Access Level	[Thu 10/31/2013] [17:09:51] Administrator	
▶ Security		+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.1219. 0	Copyright (C) 2011 American ⊨	legatrends, Inc.

Chapter 3 – AMI BIOS Setup

#### 3.3.1 Main: Security

Aptio Setup Utility – Copyright (C) 2011 Americ Main	an Megatrends, Inc.
Password Description If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights. Administrator Password Not Installed User Password Not Installed	Set Setup Administrator Password
Administrator Password User Password	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.14.1219. Copyright (C) 2011 American	Megatrends, Inc.

#### Change User/Administrator Password

You can set a User Password once an Administrator Password is set. The password will be required during boot up, or when the user enters the Setup utility. Please Note that a User Password does not provide access to many of the features in the Setup utility.

Select the password you wish to set, press Enter to open a dialog box to enter your password (you can enter no more than six letters or numbers). Press Enter to confirm your entry, after which you will be prompted to retype your password for a final confirmation. Press Enter again after you have retyped it correctly.

#### Removing the Password

Highlight this item and type in the current password. At the next dialog box press Enter to disable password protection

# 3.4 Setup Submenu: Advanced

Aptio Setup Utili Main Advanced Monitor Boot	ty – Copyright (C) 2011 American Exit	n Megatrends, Inc.
<ul> <li>ACPI Settings</li> <li>CPU Configuration</li> <li>System Agent Configuration</li> <li>PCH Configuration</li> <li>SATA Configuration</li> <li>USB Configuration</li> <li>Onboard Devices Configuration</li> <li>APM</li> </ul>		System ACPI Parameters. +-: Select Screen 14: Select Item Enter: Select +/-: Change Opt, F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.121	9. Copyright (C) 2011 American M	legatrends, Inc.

## 3.4.1 Advanced: ACPI Setting

Aptio Setup Utilit Advanced	ty – Copyright (C) 2011 Amer	rican Megatrends, Inc.
ACPI Settings		Enable or disable 'It is now safe to turn off your computer ' string
Show Turn Off String		
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.1219	9. Copyright (C) 2011 Americ	can Megatrends, Inc.

Show Turn Off String	Disabled	Default
	Enabled	
Enable or disable 'It is now safe to turn off your computer." String		

# 3.4.2 Advanced: CPU Configuration

Aptio Setup Utility Advanced	y – Copyright (C) 2011 A	merican Megatrends, Inc.
CPU Configuration		Enabled for Windows XP and
Intel(R) Atom(TM) CPU D2550 @ :	1.86GHz	Hyper-Threading Technology)
EM64T	Supported	and Disabled for other OS (OS
Processor Speed	1865 MHz	not optimized for
Processor Stepping	30661	Hyper-Inreading (echnology).
L1 Cache	205 2x56 KB	ner enabled core is enabled
L2 Cache	2x512 KB	
Processor Cores	2	
Intel HT Technology	Supported	
there are all and		
Hyper-threading	[Enabled]	the Salast Sanaan
Limit CPUID Maximum	[Disabled]	11: Select Item
	[01000100]	Enter: Select
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & EXIL
		LOO. LAIT

Hyper-Threading	Disabled		
	Enabled	Optimal Default, Failsafe Default	
En/Disable CPU Hyp	per-Threading function		
Execute Disable Bit	Disabled		
	Enabled	Optimal Default, Failsafe Default	
XD can prevent certain classes of malicious buffer overflow attacks when combined			
with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2,			
RedHat Enterprise 3 Update 3.)			
Limit CPUID	Disabled	Optimal Default, Failsafe Default	
Maximum	Enabled		
Disabled for Windows XP			

#### 3.4.3 Advanced: Agent Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2011 American	Megatrends, Inc.
System Agent Configuration		Config Intel IGD Settings.
▶ Intel IGD Configuration Initiate Graphic Adapter	[Auto]	
		++: Select Screen fl: Select Item Enter: Select
		+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.1219. Co	pyright (C) 2011 American M	egatrends, Inc.

Initiate Graphic	Auto	
Adapter	Enabled	Optimal Default, Failsafe Default
En/Disable CPU Hyper-Threading function		

# 3.4.4 Advanced: Intel IGD Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2011 American	Megatrends, Inc.
Intel IGD Configuration		Select the Video Device which will be activated during POST.
अलल्लालक LVDS Configuration अललललल IGFX – Boot Type		This has no effect if external graphics present.
		++: Select Screen ↑↓: Select Item
		Enter: Select +/-: Change Opt. F1: General Help
		F2: Previous Values F3: Optimized Defaults F4: Save & Exit
		LOUV EXIT
Version 2 14 1219 Po	nuright (C) 2011 American M	eratrends Inc

IGFX – Boot Type	VBIOS Default CRT	Optimal Default, Failsafe Default
	DVI	
Select the video Device which will be activated during POST.		
This has no effect if external graphics present		

#### 3.4.5 Advanced: PCH Configuration

Aptio Setup Utility - Advanced	- Copyright (C) 2011 Americar	Megatrends, Inc.
PCH Configuration		Enabled/Disabled the High Precision Event Timer
High Precision Timer		
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
	Copyright (C) 2011American ⊧	

High Precision	Disabled	
Timer	Enabled	Optimal Default, Failsafe Default
Enabled/Disabled the High Precision Event Timer.		

#### 3.4.6 Advanced: SATA Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2011 American	Megatrends, Inc.
SATA Configuration Serial-ATA Controller SATA Mode SATAG_1 (Blue) SATAG_2 (Blue)	[Enabled] [IDE] TOSHIBA MK1676 (160.0 Not Present	SATA Ports (0–1) Device Names if Present and Enabled.
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.14.1219. Co	pyright (C) 2011 American M	

SATA Controllers	Disabled	
	Enabled	Default
SATA Ports (0-1) Device Names if Present and Enabled.		
SATA Mode	IDE	Default
	AHCI	
(1) IDE Mode. (2) AHCI Mode.		

# 3.4.7 Advanced: USB Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2011 American	Megatrends, Inc.
USB Configuration		Enables Legacy USB support.
USB Devices: 1 Drive, 1 Keyboard, 1 Mouse		support if no USB devices are connected. DISABLE option will keen USB devices available
Legacy USB Support EHCI Hand—off	[Enabled] [Disabled]	only for EFI applications.
Mass Storage Devices: ADATA USB Flash Drive 1100	[Auto]	
		++: Select Screen 14: Select Item
		Enter: Select +/-: Change Opt. F1: General Help
		F2: Previous Values F3: Optimized Defaults F4: Save & Exit
		ESC: Exit

Legacy USB Support	Enabled	Optimal Default, Failsafe Default	
	Auto		
Enables Legacy USB support. AUTO option disables legacy support if no USB device are			
connected. DISABLE option will keep USB devices available only for EFI applications.			
EHCI Hand-off	Disabled	Optimal Default, Failsafe Default	
	Enabled		
This is a workaround for OSes without EHCI ownership change should be claimed by			
EHCI driver.			

# 3.4.8 Advanced: Onboard Devices Configuration

Antio Setup Utilitu	L – Copupidht (C) 2	011 American Meratrands Inc
Advanced	r – copyright (c) z	off American Acgatienus, inc.
Onboard Devices Configuration		Enabled/Disabled Azalia HD Audio
HD Audio Controller		
Serial Port 1	[Enabled]	
Serial Port 2	[Enabled]	
Serial Port 2 Mode	[RS-232]	
Serial Port 3	[Enabled]	
Serial Port 4	[Enabled]	
		++: Select Screen
		14: Select Item
		Enter: Select
		+/-: Change Upt.
		F1: General Help
		F2: Previous values
		F3: Optimized Detaults
		F4. Save & EXIL
		ESC. EXIT
Version 2.14.1219.	Copyright (C) 201	1 American Megatrends, Inc.

HD Audio Controller	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enabled/Disabled Azalia HD .	Audio.	
Serial Port 1	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable Serial Port		
Serial Port 2	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable Serial Port		
Serial Port 2 Mode	RS-232	Optimal Default, Failsafe Default
	RS-422	
	RS-485	
Select COM2 RS-232/RS-422	/RS-485	
Serial Port 3	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable Serial Port		

Serial Port 4	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable Serial Port		

#### 3.4.9 Advanced: APM



Restore AC Power Loss	Power Off	Optimal Default, Failsafe Default
	Power On	
	Last State	
Specify what state to go when	n power is re-applie	ed after a power failure (G3 state).
Power On By PCIE	Disabled	Optimal Default, Failsafe Default
	Enabled	
Power On By PCIE		
Power On By Ring	Disabled	Optimal Default, Failsafe Default
	Enabled	
Power On By Ring Note: This	item function only i	f there is a serial port (COM1)
connector on a motherboard		
Power On By RTC	Disabled	Optimal Default, Failsafe Default
	Enabled	
Power On By RTC		

# 3.5 Setup submenu: Monitor

Ap Main Advanced	tio Setup Utility Monitor Boot Ex	– Copyright (C) 201: «it	1 American Megatrends,	, Inc.
CPU Temperature MB Temperature CPU Voltage 3.3V Voltage 5V Voltage 12V Voltage		: +40 C : +32 C : +1.184 V : +3.344 V : +5.168 V : +12.032 V	++: Select 11: Select Enter: Sel +/-: Change F1: Genera. F2: Previo F3: Optimi: F4: Save & ESC: Exit	Screen Item Sct 2 Opt. 1 Help Is Values Sed Defaults Exit
		Copyright (C) 2011 (	American Megatrends, :	

# 3.6 Setup submenu: Boot

Aptio Setup Utility – Main Advanced Monitor Boot Exit	Copyright (C) 2011 American	Megatrends, Inc.
Bootup NumLock State Full Screen Logo Option ROM Messages	[On] [Disabled] [Force BIOS]	Select the keyboard NumLock state
Boot Option Priorities Boot Option #1 Boot Option #2 Boot Option #3 Network Device BBS Priorities Hard Drive BBS Priorities	[UEFI: ADATA USB F1] [SATA: TOSHIBA MK16] [Realtek PXE BO2 DOO]	
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Version 2 14 1219 Co	nuright (C) 2011 American M	ESC: Exit

Bootup NumLock State	On	Optimal Default, Failsafe Default			
	Off				
Select the key board NumLoo	ck state				
Full Screen Logo	Disabled	Optimal Default, Failsafe Default			
	Enabled				
Enables/Disables Full Screen	Logo				
Option ROM Messages	Force BIOS	Set display mode for Option ROM			
	Keep Current				
Set display mode for option ROM					

## 3.6.1 Boot: BBS Priorities

Aptio Setup Utility - Boot	– Copyright (C) 2011 Americar	Megatrends, Inc.
Boot Option #1	[InnostorInnostor 1.00]	Sets the system boot order
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.1219. (	Copyright (C) 2011American M	egatrends, Inc.

# 3.7 Setup submenu: Save & Exit

Aptio Setup Utility – Copyright (C) 2011 Americ Main Advanced Monitor Boot <mark>Exit</mark>	an Megatrends, Inc.
Save Changes & Exit Discard Changes & Exit Save Changes & Reset Discard Changes & Reset Restore Defaults	Exit system setup after saving the changes.
	<pre>+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>

# Chapter 4

Drivers Installation

AEC-6643

The AEC-6643 comes with a product DVD that contains all the drivers and utilities you need to setup your product. Insert the DVD and follow the steps in the autorun program to install the drivers.

In case the program does not start, follow the sequence below to install the drivers.

#### Step 1 – Install INF Driver

- 1. Click on the STEP 1-INF folder and select your OS folder
- Double click on the infinst\_autol.exe file located in each OS folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### Step 2 - Install Graphic Driver

- 1. Open the STEP2 VGA folder and select your OS
- 2. Double click on the Setup.exe file located in each OS folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### Note 1: If the OS is Windows® XP, you have to install the driver of dotNet Framework first. Simply click on dotnetfx35.exe located in dotNet Framwork folder.

#### Step 3 – Install LAN Driver (Realtek Chip)

- 1. Open the STEP3 LAN folder and select your OS
- 2. Open the setup.exe file in the folder
- 3. Follow the instructions

4. Drivers will be installed automatically

#### Step 4 – Install Audio Driver

- 1. Open the STEP4 Audio folder and select your OS
- 2. Open the Setup.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### Step 5 – Install AHCI Driver

Please refer to Appendix C AHCI Settings

# Appendix A

Watchdog Timer Programming

AEC-6643

#### A.1 Watchdog Timer Initial Programming

Table 1 : SuperIO relative register table				
Default Value Note				
Index	<b>0x2E</b> (Note1)	SIO MB PnP Mode Index Register 0x2E or 0x4E		
Data	<b>0x2F</b> (Note2)	SIO MB PnP Mode Data Register 0x2F or 0x4F		

Table 2 : Watchdog relative register table					
	LDN	Register	BitNum	Value	Note
Timer Counter	<b>0x07</b> (Note3)	<b>0x73</b> (Note4)		(Note24)	Time of watchdog timer (0~255) This register is byte access
Counting Unit	<b>0x07</b> (Note5)	<b>0x72</b> (Note6)	<b>7</b> (Note7)	1(Note8)	Select time unit. 1: second 0: minute
Watchdog Enable (KRST)	<b>0x07</b> (Note9)	<b>0x72</b> (Note10)	<b>6</b> (Note11)	<b>1</b> (Note12)	0: Disable 1: Enable
Timeout Status	<b>0x07</b> (Note13)	<b>0x71</b> (Note14)	<b>0</b> (Note15)	1	1: Clear timeout status

#### // SuperIO relative definition (Please reference to Table 1) #define byte SIOIndex //This parameter is represented from Note1 #define byte SIOData //This parameter is represented from Note2 #define void IOWriteByte(byte IOPort, byte Value); #define byte IOReadByte(byte IOPort); // Watch Dog relative definition (Please reference to Table 2) #define byte TimerLDN //This parameter is represented from Note3 #define byte TimerReg //This parameter is represented from Note4 TimerVal // This parameter is represented from Note24 #define byte #define byte UnitLDN //This parameter is represented from Note5 #define byte UnitReg //This parameter is represented from Note6 **#define byte** UnitBit //This parameter is represented from **Note7** #define byte UnitVal //This parameter is represented from Note8 #define byte EnableLDN //This parameter is represented from Note9 **#define byte** EnableReg //This parameter is represented from Note10 #define byte EnableBit //This parameter is represented from Note11 #define byte EnableVal //This parameter is represented from Note12 #define byte StatusLDN // This parameter is represented from Note13 #define byte StatusReg // This parameter is represented from Note14

#define byte StatusBit // This parameter is represented from Note15

Appendix A – Watchdog Timer Programming

}

#### VOID Main(){

- // Procedure : AaeonWDTConfig
- // (byte)Timer : Time of WDT timer.(0x00~0xFF)
- // (boolean)Unit : Select time unit(0: second, 1: minute).

\*\*\*\*\*\*\*\*\*\*

#### AaeonWDTConfig();

// Procedure : AaeonWDTEnable

- // This procudure will enable the WDT counting.
- AaeonWDTEnable();

******	***************************************
// Prod	cedure : AaeonWDTEnable
VOID	AaeonWDTEnable (){
}	WDTEnableDisable(EnableLDN, EnableReg, EnableBit, 1);
// Prov VOID	cedure : AaeonWDTConfig AaeonWDTConfig (){ // Disable WDT counting WDTEnableDisable(EnableLDN, EnableReg, EnableBit, 0); // Clear Watchdog Timeout Status WDTClearTimeoutStatus(); // WDT relative parameter setting WDTParameterSetting();
VOID	WDTEnableDisable(byte LDN, byte Register, byte BitNum, byte Value){
}	SIOBitSet(LDN, Register, BitNum, Value);
VOID	WDTParameterSetting(){ // Watchdog Timer counter setting SIOByteSet(TimerLDN, TimerReg, TimerVal); // WDT counting unit setting SIOBitSet(UnitLDN, UnitReg, UnitBit, UnitVal);
VOID	WDTClearTimeoutStatus(){
}	SIOBitSet(StatusLDN, StatusReg, StatusBit, 1);

# VOID SIOExitMBPnPMode(){ IOWriteByte(SIOIndex, 0x02);

}

VOID SIOEnterMBPnPMode(){ Switch(SIOIndex){ Case 0x2E:

IOWriteByte(SIOData, 0x02);

Break;

## VOID SIOSelectLDN(byte LDN){

IOWriteByte(SIOIndex, 0x07); // SIO LDN Register Offset = 0x07 IOWriteByte(SIOData, LDN);

\*\*\*\*\*\*\*\*\*

IOWriteByte(SIOIndex, 0x87); IOWriteByte(SIOIndex, 0x01); IOWriteByte(SIOIndex, 0x55); IOWriteByte(SIOIndex, 0x55);

IOWriteByte(SIOIndex, 0x87); IOWriteByte(SIOIndex, 0x01); IOWriteByte(SIOIndex, 0x55); IOWriteByte(SIOIndex, 0xAA);

Break;

Case 0x4E:

}

}

}

#### VOID SIOBitSet(byte LDN, byte Register, byte BitNum, byte Value){

Byte TmpValue;

SIOEnterMBPnPMode(); SIOSelectLDN(byte LDN); IOWriteByte(SIOIndex, Register); TmpValue = IOReadByte(SIOData); TmpValue &= ~(1 << BitNum); TmpValue |= (Value << BitNum); IOWriteByte(SIOData, TmpValue); SIOExitMBPnPMode();

}

}

#### VOID SIOByteSet(byte LDN, byte Register, byte Value){

SIOEnterMBPnPMode(); SIOSelectLDN(LDN); IOWriteByte(SIOIndex, Register); IOWriteByte(SIOData, Value); SIOExitMBPnPMode();

# Appendix B

I/O Information

# B.1 I/O Address Map

	輸り	λ/輸出(	IO)						
-		[00000]	000 -	000000	1F]	直接調	2億體	存取控	制器
		[00000]	000 -	000000	F7]	PCI b	us		
		[00000]	010 -	000000	1F]	主機相	反資源		
		[00000]	020 -	000000	21]	可程式	式插斷	控制器	
		[00000]	022 -	000000	3F]	主機材	反資源		
		[00000]	024 -	000000	25]	可程式	式插斷	控制器	
	L.	[00000]	028 -	000000	29]	可程式	式插斷	控制器	
	Ļ	[00000]	02C -	000000	2D]	可程	式插斷	控制器	ł
	Ļ	[00000]	02E -	000000	2F]	主機材	反資源		
	Ļ	[00000]	030 -	000000	31]	可程式	式插斷	控制器	
	Ļ	[00000]	034 -	000000	35]	可程式	式插斷	控制器	
	Ļ	[00000]	038 -	000000	39]	可程式	式插斷	控制器	
	Ļ	[00000]	03C -	000000	3D]	可程	式插斷	控制器	1
	Ļ	[00000	040 -	000000	43]	系統調	计時器		
	Ņ	[00000]	044 -	000000	5F]	主機相	反資源		
	Ņ	[00000]	04E -	000000	4F]	主機相	反資源		
	Ņ	[00000]	050 -	000000	53]	条統詞	计時器		
	Ņ	[00000]	061 -	000000	61]	主機	反資源		
	L.	[00000]	062 -	000000	63]	主機	反資源		
	L.	[00000]	063 -	000000	63]	主機	反資源		
	L.	[00000]	065 -	000000	65]	主機	反資源		
	L.	[00000]	065 -	000000	6F]	主機相	反資源		
1	L.	[00000]	067 -	000000	67]	主機	反資源		
1	L.	[00000]	070 -	000000	70]	主機	反資源		
1	L.	[00000]	070 -	000000	77]	<b>条統</b> (	CMOS	(即時)	詩鐘
1	Ļ	[00000]	072 -	000000	7F]	主機権	反資源		
1	Ļ	[00000]	- 080	000000	80]	主機	反資源		
	Ļ	[00000]	- 080	000000	80]	主機	反資源		
	Ļ	[00000	081 -	000000	91]	直接調	記憶體	存取控	制器
	Ļ	[00000]	084 -	000000	86]	主機	反資源		
	Ļ	[00000]	- 880	000000	88]	主機	反資源		
	Ļ	[00000]	08C -	000000	8E]	主機	反資源		
1	Ļ	[00000]	090 -	000000	9F]	主機相	反資源		
	Ļ	[00000	092 -	000000	92]	主機	反資源		
	Ļ	[00000	093 -	000000	9F]	直接詞	己憶體	存取控	制器
1	L.	[00000	0A0 -	000000	A1]	可程:	式插斷	控制器	
1	Ļ	[00000	0A2 -	000000	BF]	主機	反資源		
1	Ļ	[00000	0A4 -	000000	A5]	可程:	式插斷	控制器	
1	L.	[00000	0A8 -	000000	A9]	可程:	式插斷	控制器	ł
1	1	[00000	0AC -	000000	AD]	可程	式插曹	· 控制者	
1	Ļ	[00000	0B0 -	000000	B1]	可程言	式插斷	控制器	
	_						· · ·		

# anless Embedded Box

Appendix B – I/O Information

	[000000B2 - 000000B3] 主機板資源
<u>ı</u>	[000000B4 - 000000B5] 可程式插斷控制器
, <b>t</b>	[000000B8 - 000000B9] 可程式插斷控制器
<u>ı</u>	[000000BC - 000000BD] 可程式插斷控制器
, <b>t</b>	[000000C0 - 000000DF] 直接記憶體存取控制器
, <b>I</b>	[000000E0 - 000000EF] 主機板資源
, <b>t</b>	[000000F0 - 000000F0] 數值資料處理器
, <b>I</b>	[00000290 - 0000029F] 主機板資源
	[000002E8 - 000002EF] 通訊連接埠 (COM4)
🖓	[000002F8 - 000002FF] 通訊連接埠 (COM2)
	[000003B0 - 000003BB] Intel(R) Graphics Media Accelerator 3600 Series
	[000003C0 - 000003DF] Intel(R) Graphics Media Accelerator 3600 Series
🖓	[000003E8 - 000003EF] 通訊連接埠 (COM3)
	[000003F8 - 000003FF] 通訊連接埠 (COM1)
····	[00000400 - 0000047F] 主機板資源
<b>, </b>	[00000400 - 0000047F] 主機板資源
····	[000004D0 - 000004D1] 主機板資源
····	[000004D0 - 000004D1] 可程式插斷控制器
<u>I</u>	[00000500 - 0000053F] 主機板資源
	[00000500 - 0000057F] 主機板資源
, <b>I</b>	[00000600 - 0000061F] 主機板資源
····	[00000680 - 0000069F] 主機板資源
···· j 🖳	[00000800 - 0000081F] Intel(R) N10/ICH7 Family SMBus Controller - 27DA
····]	[00000A00 - 00000A1F] 主機板資源
····	[00000A20 - 00000A2F] 主機板資源
····	[00000D00 - 0000FFFF] PCI bus
·	[0000D000 - 0000D0FF] Realtek PCIe GBE Family Controller #2
<b>j</b> 🖳	[0000D000 - 0000DFFF] Intel(R) N10/ICH7 Family PCI Express Root Port - 27D4
<b>P</b>	[0000E000 - 0000E0FF] Realtek PCIe GBE Family Controller
<b>I</b>	[0000E000 - 0000EFFF] Intel(R) N10/ICH7 Family PCI Express Root Port - 27D2
ij	[0000F000 - 0000F01F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CB
🟺	[0000F020 - 0000F03F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CA
🟺	[0000F040 - 0000F05F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C9
🟺	[0000F060 - 0000F07F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C8
	[0000F080 - 0000F08F] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
- 🕞	[0000F090 - 0000F093] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
	[0000F0A0 - 0000F0A7] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
	[0000F0B0 - 0000F0B3] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
	[0000F0C0 - 0000F0C7] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
	[0000F0D0 - 0000F0D7] Intel(R) Graphics Media Accelerator 3600 Series
1	[0000FFFF - 0000FFFF] 主機板資源
1	[0000FFFF - 0000FFFF] 主機板資源
	· ····· · · ·

# B.2 1<sup>st</sup> Memory Address Map

⊿ - 📇 AEC6643-PC
▶ · 圓 直接記憶體存取 (DMA)
⊿ ■ 記憶體
[DFC00000 - DFCFFFFF] Intel(R) Graphics Media Accelerator 3600 Series
[DFD00000 - DFD03FFF] Realtek PCIe GBE Family Controller #2
[] [DFD00000 - DFDFFFF] Intel(R) N10/ICH7 Family PCI Express Root Port - 27D4
DFD04000 - DFD04FFF] Realtek PCIe GBE Family Controller #2
DFE00000 - DFE03FFF] Realtek PCIe GBE Family Controller
[DFE00000 - DFEFFFF] Intel(R) N10/ICH7 Family PCI Express Root Port - 27D2
EVENTSCHOOL - DEEUAFFF] Realtek PCIe GBE Family Controller
Torseses and the second
····································
····································
····································
IFED40000 - FED44FFF1 PCI hus
■ [FED45000 - FED8FFFF] 主機板資源
□ [FEE00000 - FEE00FFF] 主機板資源
IFF000000 - FFFFFFF1 Intel(R) 82802 Firmware Hub Device
FF000000 - FFFFFFF Intel(R) 82802 Firmware Hub Device
▶ · 🏢 插斷要求 (IRQ)
· · · · · · · · · · · · · · · · · · ·

## B.3 IRQ Mapping Chart

4

1	【插】	新要求	t (IRQ)		
		(ISA)	0x0000000	(00)	条統計時器
		(ISA)	0x0000003	(03)	通訊連接埠 (COM2)
		(ISA)	0x0000004	(04)	通訊連接埠 (COM1)
		(ISA)	0x0000007	(07)	通訊連接埠 (COM3)
	, <b>I</b>	(ISA)	0x0000008	(08)	系統 CMOS/即時時鐘
	\Upsilon	(ISA)	0x000000A	(10)	通訊連接埠 (COM4)
	j <b>u</b>	(ISA)	0x000000D	(13)	數值資料處理器
	<u>j</u>	(ISA)	0x0000051	(81)	Microsoft ACPI-Compliant System
		(ISA)	0x0000052	(82)	Microsoft ACPI-Compliant System
	, <b>I</b>	(ISA)	0x0000053	(83)	Microsoft ACPI-Compliant System
		(ISA)	0x0000054	(84)	Microsoft ACPI-Compliant System
	<u>j</u>	(ISA)	0x0000055	(85)	Microsoft ACPI-Compliant System
	<u>j</u>	(ISA)	0x0000056	(86)	Microsoft ACPI-Compliant System
		(ISA)	0x0000057	(87)	Microsoft ACPI-Compliant System
		(ISA)	0x0000058	(88)	Microsoft ACPI-Compliant System
	<u>j</u>	(ISA)	0x0000059	(89)	Microsoft ACPI-Compliant System
	<b>j</b>	(ISA)	0x000005A	(90)	Microsoft ACPI-Compliant System
	<u>j</u>	(ISA)	0x000005B	(91)	Microsoft ACPI-Compliant System
	, <b>I</b>	(ISA)	0x000005C	(92)	Microsoft ACPI-Compliant System
		(ISA)	0x000005D	(93)	Microsoft ACPI-Compliant System
		(ISA)	0x000005E	(94)	Microsoft ACPI-Compliant System
		(ISA)	0x000005F	(95)	Microsoft ACPI-Compliant System
		(ISA)	0x0000060	(96)	Microsoft ACPI-Compliant System
		(ISA)	0x0000061	(97)	Microsoft ACPI-Compliant System
		(ISA)	0x0000062	(98)	Microsoft ACPI-Compliant System
		(ISA)	0x0000063	(99)	Microsoft ACPI-Compliant System
		(ISA)	0x0000064	(100)	Microsoft ACPI-Compliant System
		(ISA)	0x0000065	(101)	Microsoft ACPI-Compliant System
		(ISA)	0x0000066	(102)	Microsoft ACPI-Compliant System
		(ISA)	0x0000067	(103)	Microsoft ACPI-Compliant System
		(ISA)	0x0000068	(104)	Microsoft ACPI-Compliant System
	, <b>I</b>	(ISA)	0x0000069	(105)	Microsoft ACPI-Compliant System
	, <b>I</b>	(ISA)	0x000006A	(106)	Microsoft ACPI-Compliant System
		(ISA)	0x000006B	(107)	Microsoft ACPI-Compliant System
		(ISA)	0x000006C	(108)	Microsoft ACPI-Compliant System
	<u>j</u>	(ISA)	0x000006D	(109)	Microsoft ACPI-Compliant System
	, <b>I</b>	(ISA)	0x000006E	(110)	Microsoft ACPI-Compliant System
		(ISA)	0x000006F	(111)	Microsoft ACPI-Compliant System
		(ISA)	0x00000070	(112)	Microsoft ACPI-Compliant System
	1	(ISA)	0x00000071	(113)	Microsoft ACPI-Compliant System
		(ISA)	0x00000072	(114)	Microsoft ACPI-Compliant System
		(ISA)	0x0000073	(115)	Microsoft ACPI-Compliant System
		(ISA)	0x0000074	(116)	Microsoft ACPI-Compliant System

ζ	Σ	
C	5	

<u>;</u>	(ISA)	0x0000075 (117)
	(ISA)	0x0000076 (118)
,1	(ISA)	0x0000077 (119)
	(ISA)	0x0000078 (120)
	(ISA)	0x00000079 (121)
	(ISA)	0x000007A (122)
,1	(ISA)	0x000007B (123)
, 🜉	(ISA)	0x000007C (124)
<u>j</u> Ę	(ISA)	0x000007D (125)
<u>1</u>	(ISA)	0x000007E (126)
	(ISA)	0x000007F (127)
1 <b>L</b>	(ISA)	0x0000080 (128)
····]	(ISA)	0x0000081 (129)
1	(ISA)	0x0000082 (130)
····]	(ISA)	0x0000083 (131)
····]	(ISA)	0x0000084 (132)
····]	(ISA)	0x0000085 (133)
	(ISA)	0x0000086 (134)
1	(ISA)	0x0000087 (135)
1	(ISA)	0x0000088 (136)
1	(ISA)	0x0000089 (137)
1	(ISA)	0x000008A (138)
<b>;</b>	(ISA)	0x000008B (139)
1	(ISA)	0x000008C (140)
1	(ISA)	0x000008D (141)
1	(ISA)	0x000008E (142)
1	(ISA)	0x000008F (143)
1	(ISA)	0x00000090 (144)
1	(ISA)	0x00000091 (145)
1	(ISA)	0x00000092 (146)
1	(ISA)	0x00000093 (147)
1	(ISA)	0x00000094 (148)
1	(ISA)	0x00000095 (149)
1	(ISA)	0x00000096 (150)
1	(ISA)	0x00000097 (151)
1	(ISA)	0x00000098 (152)
1	(ISA)	0x00000099 (153)
1	(ISA)	0x0000009A (154)
1	(ISA)	0x0000009B (155)
1	(ISA)	0x0000009C (156)
1	(ISA)	0x0000009D (157)
- 12	(ISA)	0x000009E (158)
1	(ISA)	UXUUUUUU9F (159)
	(ISA)	0x000000A0 (160)

Microsoft ACPI-Compliant System Microsoft ACPI-Compliant System

19 (ISA) 0x00000A1 (161)	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
19 (ISA) 0x000000A3 (163)	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
19 (ISA) 0x000000A6 (166)	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
19 (ISA) 0x00000A8 (168)	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
19 (ISA) 0x00000AA (170)	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
ISA) 0x000000AD (173)	Microsoft ACPI-Compliant System
(ISA) 0x00000AE (174)	Microsoft ACPI-Compliant System
(ISA) 0x00000AF (175)	Microsoft ACPI-Compliant System
(ISA) 0x00000B0 (176)	Microsoft ACPI-Compliant System
(ISA) 0x00000B1 (177)	Microsoft ACPI-Compliant System
(ISA) 0x00000B2 (178)	Microsoft ACPI-Compliant System
(ISA) 0x00000B3 (179)	Microsoft ACPI-Compliant System
ISA) 0x000000B4 (180)	Microsoft ACPI-Compliant System
(ISA) 0x000000B5 (181)	Microsoft ACPI-Compliant System
(ISA) 0x000000B6 (182)	Microsoft ACPI-Compliant System
(ISA) 0x00000B7 (183)	Microsoft ACPI-Compliant System
(ISA) 0x000000B8 (184)	Microsoft ACPI-Compliant System
(ISA) 0x000000B9 (185)	Microsoft ACPI-Compliant System
(ISA) 0x00000BA (186)	Microsoft ACPI-Compliant System
(ISA) 0x000000BB (187)	Microsoft ACPI-Compliant System
(ISA) 0x00000BC (188)	Microsoft ACPI-Compliant System
(ISA) 0x000000BD (189)	Microsoft ACPI-Compliant System
(ISA) 0x00000BE (190)	Microsoft ACPI-Compliant System
(PCI) 0x000000B (11)	ntel(R) N10/ICH7 Family SMBus Controller - 27DA
(PCI) 0x00000010 (16)	ntel(R) N10/ICH7 Family PCI Express Root Port - 27D0
(PCI) 0x00000010 (16) I	ntel(R) N10/ICH7 Family USB Universal Host Controller - 27CB
(PCI) 0x00000011 (17)	ntel(R) N10/ICH7 Family PCI Express Root Port - 27D2
(PCI) 0x00000012 (18)	ntel(R) N10/ICH7 Family PCI Express Root Port - 27D4
(PCI) 0x00000012 (18)	ntel(R) N10/ICH7 Family USB Universal Host Controller - 27CA
(PCI) 0x00000013 (19)	ntel(R) N10/ICH7 Family PCI Express Root Port - 27D6
(PCI) 0x00000013 (19)	ntel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
(PCI) 0x00000013 (19)	ntel(R) N10/ICH7 Family USB Universal Host Controller - 27C9
(PCI) 0x00000016 (22)	High Definition Audio 控制器
(PCI) 0x00000017 (23)	ntel(R) N10/ICH7 Family USB Universal Host Controller - 27C8
(PCI) 0x00000017 (23)	ntel(R) N10/ICH7 Family USB2 Enhanced Host Controller - 27CC
(PCI) 0xFFFFFFFC (-4) Re	ealtek PCIe GBE Family Controller #2
(PCI) 0xFFFFFFFD (-3) R	ealtek PCIe GBE Family Controller
(PCI) 0xFFFFFFFE (-2) Int	el(R) Graphics Media Accelerator 3600 Series

Appendix B – I/O Information

#### B.4 DMA Channel Assignments

Direct memory access (DMA)

4 Direct memory access controller

# Appendix C

AHCI Settings

AEC-6613

#### C.1 Setting AHCI

#### OS installation to setup AHCI mode

Step 1: Copy below files from "Driver CD -> Step7-RAID&AHCI\ WinXP\_32" to Disk.



Step 2: Connect the USB Floppy drive to the board and insert the diskette from previous step.

Step 3: Configure SATA Controller to AHCI mode in BIOS SETUP Menu: Advanced ->

SATA Configuration ->	SATA	Mode ->	AHCI	Mode
-----------------------	------	---------	------	------

SATA Controller(s)	[Enabled]	Determines how SATA
SATA Mode Selection	[AHCI]	controller(s) operate.
Serial ATA Port 1 Port 1 Hot Plug Serial ATA Port 2 Port 2 Hot Plug Slot Hot Plug Hinland Slot Slot Hot Plug Hot Plug	NDC HD2500KS-0 (250.0 [Enabled] [Enabled] MXTOR STM3320 (320.0 [Enabled] [Enabled] Enaty [Enabled] Enaty [Enabled] [Disabled] [Disabled]	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

#### Step 4: Configure DVD/CD-ROM drive as the first boot device.



#### Step 5: Save changes and exit BIOS SETUP



#### Step 7 – Press "F6" to install AHCI driver

Windows Setup							
Press F6 if	you need	to install	a third	party SCSI	or RAID	driver	

#### Step 8 – Press "S" to install AHCI driver

Windows Setup
Setup could not determine the type of one or more mass storage devices installed in your system, or you have chosen to manually specify an adapter. Currently, Setup will load support for the following mass storage devices(s):
<none></none>
* To specify additional SCSI adapters, CD-ROM drives, or special disk controllers for use with Windows, including those for which you have a device support disk from a mass storage device manufacturer, press S.
* If you do not have any device support disks from a mass storage device manufacturer, or do not want to specify additional mass storage devices for use with Windows, press ENTER.
S-Specify Additional Device ENTER-Continue F3-Exit

#### Step 9 - Choose "Intel(R) NM10 Express Chipset".



Step 10 - The following messages will appear on the screen. Press "S" to specify

additional SCSI adapters. Press "ENTER" and Windows Setup will continue to install OS.

