AEC-6643

Fanless Embedded Controller

Intel[®] NM10 Chipset

2 Gigabit Ethernet

6 USB2.0, 4 COM

1 Mini Card

1 VGA, 1 DVI-D

AEC-6643 Manual 1st Ed. Nov 2013

Copyright Notice

This document is copyrighted, 2013. 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.

- AMI is a trademark of American Megatrends Inc.
- CFast[™] is a trademark of the CompactFlash Association.
- Microsoft Windows[®] is a registered trademark of Microsoft Corp.
- Intel[®], Core[™] are trademarks of Intel Corporation.
- 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 you begin operating the product, please make sure that the following materials are enclosed:

- 1 AEC-6643 Embedded Controller
- 2 Wallmount Brackets
- 1 Screw Package
- DVD-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.

Safety & Warranty

- 1. Read these safety instructions carefully.
- 2. Keep this user's manual for later reference.
- 3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
- 4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
- 5. Keep this equipment away from humidity.
- 6. Put this equipment on a firm surface during installation. Dropping it or letting it fall could cause damage.
- 7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
- 8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- 9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- 10. All cautions and warnings on the equipment should be noted.
- 11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
- 12. Never pour any liquid into an opening. This could cause fire or electrical shock.
- 13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
- 14. If any of the following situations arises, get the equipment checked by service personnel:
 - a. The power cord or plug is damaged.
 - b. Liquid has penetrated into the equipment.
 - c. The equipment has been exposed to moisture.

- d. The equipment does not work well, or you cannot get it to work according to the user's manual.
- e. The equipment has been dropped and damaged.
- f. The equipment has obvious signs of breakage.
- DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW 0°C (32°F) OR ABOVE 40°C (104°F). IT MAY DAMAGE THE EQUIPMENT.

FCC



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.

A E C - 6 6 4 3

Below Table for China RoHS Requirements 产品中有毒有害物质或元素名称及含量

AAEON Boxer/ Industrial System

	有毒有害物质或元素					
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	~				0	0
及其电子组件		0	0	0	0	0
外部信号	~		0	0	0	0
连接器及线材	×					
外壳	×	0	0	0	0	0
中央处理器	~				0	0
与内存	X			0	0	0
硬盘	×	0	0	0	0	0
电源	×	0	0	0	0	0
O. 表示该有畫有事	物质在	该部件[近有也质	材料中的	全量也在	•

O: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。

Contents

Chapter	1	General Information	
	1.1	Introduction1	-2
	1.2	Features1	-3
	1.3	Specifications	-4
Chapter	2	Hardware Installation	
	2.1	Dimension & Connectors of AEC-66432	-2
	2.2	Connectors and Jumpers of The Main Board 2	-4
	2.3	List of Jumpers	-6
	2.4	List of Connectors	-6
	2.5	Setting Jumpers	-8
	2.6	AT/ATX Mode Selection (ATMODE) 2	-9
	2.7	Clear COMS (CLRTC)	-9
	2.8	COM2 External Power Selection (DIGITALREFENCE))
			-9
	2.9	Watchdog Timer Function Switch (WDT)2	-9
	2.1	0 COM3/COM4/COM5 RS-232 Serial Port PIN HEADE	ΞR
	(CC	DM3/COM4/COM5)2	-9
	2.1	1 Serial ATA Power Connector (SATA_PWR1)2	-10
	2.1	2 Hard Disk Drive (HDD) Installation2	-11
	2.1	3 Memory Card Installation2	-13
	2.1	4 Wallmount Kit Installation 2	-14

Chapter 3 AMI BIOS Setup

3.1	System	Test and	Initialization.	
-----	--------	----------	-----------------	--

A E C - 6 6 4 3

3.2 AMI BIOS Setup 3-3
Chapter 4 Driver Installation
4.1 Installation 4-3
Appendix A Programming The Watchdog Timer
A.1 Watchdog Timer Initial ProgramA-2
Appendix B I/O Information
B.1 I/O Address MapB-2
B.2 Memory Address MapB-4
B.3 IRQ Mapping ChartB-5
B.4 DMA Channel AssignmentsB-8
Appendix C AHCI Settings
C.1 Setting AHCI C-2

Chapter

General Information

Chapter 1 General Information 1-1

1.1 Introduction

The newest Boxer series AEC-6643 has been introduced by AAEON and it utilizes Intel® Atom[™] D2550 B3 Processor. This condensed Embedded Controller is a fanless controller which can be compatible with the latest Intel[®] processor and chipset. The cutting-edge technology has been equipped to the AEC-6643 to satisfy the versatile demands of Factory Automation, Data processing, Fleet management, and Data management.

The AEC-6643 offers low power consumption system that while operating temperatures ranging from 0° to 40°C. The AEC-6643 is a standalone high performance controller designed for long-life operation and with high reliability. It can replace traditional methods and become the mainstream controller for the Industrial Automation market. If you are looking for a multifunctional embedded controller, the AEC-6643 is definitely your best choice to fit into your vital applications.

1.2 Features

- Intel® Atom[™] D2550 B3 Processor
- Intel® NM10 Chipset (PCH)
- COM x 4, USB2.0 x 6
- VGA x 1, DVI-D x 1
- Gigabit Ethernet x 2
- SATA 3.0Gb/s 2.5" HDD bay x 1
- Fanless Operation

1.3 Specifications

CPU		Intel® Atom [™] D2550 B3 Processor
Chipset		Intel [®] NM10
System Mem	ory	DDR3 1066/800 Mhz DIMM X2, Max.4GB
Dicploy	VGA	DB-15 x 1
Intorfaco	DVI	DVI-D x 1
Internace	HDMI	
Storage	SSD	
Device	HDD	SATA 3.0Gb/s 2.5" HDD bay x 1
Notwork	LAN	Gigabit Ethernet
Network	Wireless	_
	USB Host	USB2.0 x 6
Deer 1/0	Audio	Mic-in/ Line-out/ Line-in
	Serial Port	rs422/rs485/rs232 x 1, rs232 x 3
	Others	Power input x 1, Power Button x 1
	USB Host	
Eront 1/0	LAN	
	Serial Port	
	Others	Optional antenna hole x 2
Expansion	Mini Card	Full-size Mini Card (PCIe[x1]+USB) x 1
Indicator	Rear	Power LED x 1, Hard Disk Drive active LED x 1
	Front	_

Power Requirement	Lockable DC jack x 1 for DC12V
System Cooling	Passive
Mounting	Wallmount
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	14°F ~ 140°F (-10°C ~ 60°C)
Anti-Vibration	1g rms / 5~ 500Hz / operation – HDD
Anti-Shock	20 G peak acceleration (11 msec. duration)
Certification EMC	CE/FCC Class A
Dimension	11.81" (W) x 3.05" (H) x 7.84" (D) (300mm x 77.5mm x 190mm)
Gross Weight	
OS Support	Windows XP Pro, Windows Embedded Standard, Windows 7, Linux by Fedora



Hardware Installation

Chapter 2 Hardware Installation 2-1

2.1 Dimension & Connectors of AEC-6643



A E C - 6 6 4 3

Connectors on the front panel



Connectors on the rear panel



2.2 Connectors and Jumpers of The Main Board

Component Side



Solder Side



2.3 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:

Label	Function
ATMODE	AT/ATX Mode Selection
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

2.4 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 of the board's connectors:

Label	Function
CON2	+12V AUX Power Connector
CHA_FAN	System FAN Connector
СОМЗ	COM 3 Connector
COM4	COM 4 Connector
COM5	COM 5 Connector
CON1	SIM Card Socket

Chapter 2 Hardware Installation 2 - 6

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

2.5 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.

2.6 AT/ATX Mode Selection (ATMODE)

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

2.7 Clear COMS (CLRTC)

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

2.8 COM2 External Power Selection (DIGITALREFENCE)

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

2.9 Watchdog Timer Function Switch (WDT)

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

2.10 COM3/COM4/COM5 RS-232 Serial Port PIN HEADER (COM3/COM4/COM5)

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

Chapter 2 Hardware Installation 2 - 9

9	R
-	

2.11 Serial ATA Power Connector (SATA_PWR1)

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

2.12 Hard Disk Drive (HDD) 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



Chapter 2 Hardware Installation 2 - 11

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.

2.13 Memory Card 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.



Chapter 2 Hardware Installation 2 - 13

2.14 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

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.

System configuration verification

These routines check the current system configuration stored in the CMOS memory and BIOS NVRAM. If system configuration is not found or system configuration data error is detected, system will load optimized default and re-boot with this default system configuration automatically.

There are four situations in which you will need to setup system configuration:

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

The AEC-6643 memory has an integral lithium battery

backup for data retention. You have to replace the battery when it finally runs down.

3.2 AMI BIOS Setup

AMI 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 and BIOS NVRAM so that it retains the Setup information when the power is turned off. Entering Setup

Power on the computer and press or <F2> immediately. This will allow you to enter Setup.

Main

Set the date, use tab to switch between date elements.

Advanced

Enable disable boot option for legacy network devices.

Monitor

Show the environment information.

Boot

Enables/disable quiet boot option.

Save&Exit

Exit system setup after saving the changes.

Setup Menu

Setup submenu: Main



Security

Aptio Setup Utility - Main	Copyright (C) 2011 American	Megatrends, Inc.
Password Description		Set Setup Administrator
If ONLY the Administrator's passworn then this only limits access to Setu only asked for when entering Setup If ONLY the User's password is set, is a power on password and must be o boot or enter Setup. In Setup the Us have Administrator rights.	d is set, up and is then this entered to ser will	Passuuru
Administrator Password User Password	Not Installed Not Installed	
Administrator Password User Password		++: Select Screen 11: 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	opyright (C) 2011 American M	egatrends, Inc.

Change User/Supervisor Password

You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility.

If you highlight these items and press Enter, a dialog box appears which lets you enter a password. You can enter no more than six letters or numbers. Press Enter after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press Enter after you have retyped it correctly. The password is required at boot time, or when the user enters the Setup utility.

Removing the Password

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

A E C - 6 6 4 3

Setup submenu: Advanced

Aptio Setup Utility – Copyright (C) 2011 American Main Advanced Monitor Boot Exit	Megatrends, Inc.
 ACPI Settings CPU Configuration System Agent Configuration PCH Configuration SATA Configuration USB Configuration Onboard Devices Configuration APM 	System ACPI Parameters. ++: Select Screen T4: 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) 2011 American Mu	

ACPI Settings

Advance	Aptio Setup Utility —) d	Copyright (C) 2011 American	Megatrends, Inc.
ACPI Settings			Enable or disable 'It is now safe to turn off your computer.' string
Show Turn Off :	String	[Disabled]	++: Select Screen 11: 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 Mo	egatrends, Inc.

Options summary :

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

Aptio Setup Uti Advanced	lity – Copyright (C) 2011 Ame	erican Megatrends, Inc.
CPU Configuration		Enabled for Windows XP and
Intel(R) Atom(TM) CPU D2550 EM64T Processor Speed Processor Stepping Microcode Revision L1 Cache L2 Cache Processor Cores Intel HT Technology	<pre>@ 1.86GHz Supported 1865 MHz 30661 269 2x56 KB 2x512 KB 2 Supported</pre>	Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only one thread per enabled core is enabled.
Hyper-threading Execute Disable Bit Limit CPUID Maximum	(Enabled) (Enabled) (Disabled)	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.1	219. Copyright (C) 2011 Ameri	ican Megatrends, Inc.

Hyper-Threading	Disabled	
	Enabled	Optimal Default, Failsafe Default
En/Disable CPU Hy	per-Threading function	
Execute Disable	Disabled	
Bit	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		

System Agent Configuration

System Agent Configuration Initial IGD Configuration Initiate Graphic Adapter [Auto] ++: Select 11: Select Enter: Sel +/-: Chang F1: Genera F2: Previo F3: Optimi	, Inc.
Intel IGD Configuration Initiate Graphic Adapter [Auto] ++: Select 11: Select Enter: Sel +/-: Chang F1: Genera F2: Previo F3: Optimi	el IGD Settings.
++: Select tl: Select Enter: Sel +/-: Chang Fl: Genera F2: Previo F3: Optimi	
F4: Save 8 ESC: Exit	Screen Item ect e Opt. 1 Help us Values zed Defaults Exit
Version 2 14 1219 Convright (C) 2011 American Megatrends	Inc

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

Intel IGD Configuration

Aptio Setup Utility – Copyright (C) 2011 Americ Advanced	can Megatrends, Inc.
Intel IGD Configuration	Select the Video Device which will be activated during POST. This has no effect if
жжжжжж LVDS Configuration жжжжжж IGFX – Boot Type [VBIOS Default]	external graphics present.
	++: 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) 2011 American) Megatrends, Inc.

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

PCH Configuration

Aptio Setup Advanced	Utility – Copyright (C) 2011 Ar	merican Megatrends, Inc.
PCH Configuration		Enabled/Disabled the High
High Precision Timer		
		++: 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) 2011 Amer	rican Megatrends, Inc.

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

SATA Configuration

Aptio Setup Utili Advanced	ity – Copyright (C) 2011 America	an Megatrends, Inc.
Advanced SATA Configuration Serial-ATA Controller SATA Mode SATA36_1 (Blue) SATA36_2 (Blue)	[Enabled] [IOE] TOSHIBA MK1676 (160.0 Not Present	SATA Ports (0-1) Device Names if Present and Enabled.
Version 2.14.121	19. Copyright (C) 2011 American	Megatrends, Inc.

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.		

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 keep 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
		↑↓: 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	opyright (C) 2011 American M	legatrends, Inc.

Legacy USB Support	Enabled	Optimal Default, Failsafe Default
	Auto	
Enables Legacy USB suppo	rt. AUTO option dis	ables 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.		

Onboard Devices Configuration

Aptio Setup Utility Advanced	– Copyright (C) 2011	American Megatrends, Inc.
Onboard Devices Configuration		Enabled/Disabled Azalia HD Audio
HD Audio Controller		Induto
Serial Port 1	[Enabled]	
Serial Port 2	[Enabled]	
Serial Port 2 Mode	[RS-232]	
Serial Port 3	[Enabled]	
Serial Port 4	[Enabled]	
		tt: Calact Scheen
		11: Select Item
		Enter: Select
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit
Version 2 14 1219	Conuright (C) 2011 An	merican 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 Por	t		
Serial Port 2	Enabled	Optimal Default, Failsafe Default	
	Disabled		
Enable or Disable Serial Por	t		
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		

APM

Aptio Setup Utilit Advanced	y – Copyright (C) 2011 Am	erican Megatrends, Inc.
APM Restore AC Power Loss Power On By PCIE Power On By Ring Power On By RTC	[Power Off] [Disabled] [Disabled] [Disabled]	Specify what state to go to when power is re-applied after a power failure (G3 state).
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.14.1219	. Copyright (C) 2011 Amer.	ican Megatrends, Inc.

Restore AC Power Loss	Power Off	Optimal Default, Failsafe Default	
	Power On		
	Last State		
Specify what state to go whe	n power is re-appli	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 if there is a serial port (COM1)			
connector on a motherboard.			
Power On By RTC	Disabled	Optimal Default, Failsafe Default	
	Enabled		
Power On By RTC			

Monitor

A¤ Main Advanced	otio Setup Utility — Copyright Monitor Boot Exit	(C) 2011 American	Megatrends, Inc.
CPU Temperature MB Temperature CPU Voltage 3.3V Voltage 5V Voltage 12V Voltage	: +40 C : +32 C : +1.184 : +3.344 : +5.168 : +12.032	V V V V	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
) 2011 American Mu	

Boot

Aptio Setup Utili Main Advanced Monitor <mark>Boo</mark> t	ty – Copyright (C) 2011 Americar Exit	n 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	[UEFI: ADATA USB F1] [SATA: TOSHIBA MK16] [Realtek PXE BO2 DOO]	
Network Device BBS Priorities Hard Drive BBS Priorities		
		<pre>++: Select Screen ↓: Select Item Enter: Select</pre>
		+/−: 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 ⊧	iegatrends, Inc.

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

BBS Priorities

Aptio Setup Utility Boot	y – Copyright (C) 2011 America	n Megatrends, Inc.
Boot Option #1	[InnostorInnostor 1.00]	Sets the system boot order ++: Select Screen 11: 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) 2011 American	Megatrends, Inc.

Setup submenu: Exit

Aptio Setup Utility – Copyright (C) 2011 Americ Main Advanced Monitor Boot <mark>Exit</mark>	an Megatrends, Inc.
Main Advanced Monitor Boot Exit Save Changes & Exit Discard Changes & Reset Discard Changes & Reset Restore Defaults	<pre>Exit system setup after saving the changes. ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.14.1219. Copyright (C) 2011 American	Megatrends, Inc.

.

Chapter

Driver Installation

Chapter 4 Driver Installation 4-1

The AEC-6643 comes with an AutoRun DVD-ROM that contains all drivers and utilities that can help you to install the driver automatically.

Insert the driver DVD, the driver DVD-title will auto start and show the installation guide. If not, please follow the sequence below to install the drivers.

Follow the sequence below to install the drivers:

Step 1 – Install INF Driver	
Step 2 – Install VGA Driver	
Step 3 – Install LAN Driver (Realtek LAN Chip)	
Step 4 – Install Audio Driver	
Step 5 – Install AHCI Driver	

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the AEC-6643 DVD-ROM into the DVD-ROM drive. And install the drivers from Step 1 to Step 8 in order.

Step 1 – Install INF Driver

- 1. Click on the *STEP 1-INF* folder and select the OS folder your system is
- 2. Double click on the *infinst_autol.exe* file located in each OS folder
- 3. Follow the instructions that the window shows
- 4. The system will help you install the driver automatically

Step 2 – Install VGA Driver

- Click on the STEP2-VGA folder and select the OS folder your system is
- 2. Double click on the **Setup.exe** file located in each OS folder
- 3. Follow the instructions that the window shows
- 4. The system will help you install the driver automatically

<u>Note 1:</u> 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. Click on the **STEP3-LAN** folder and select the OS folder your system is
- 2. Double click on the *setup.exe* file located in each OS folder
- 3. Follow the instructions that the window shows
- 4. The system will help you install the driver automatically
- Step 4 –Install AUDIO Driver
 - 1. Click on the **STEP4-AUDIO** folder and select the OS folder your system is
 - 2. Double click on the **Setup.exe** file located in each OS folder
 - 3. Follow the instructions that the window shows
 - 4. The system will help you install the driver automatically

Step 5 – Install AHCI Driver Please refer to the *Appendix C AHCI Settings*

Appendix A

Programming the Watchdog Timer

Appendix A Programming the Watchdog Timer A-1

A.1 Watchdog Timer Initial Program

Table 1 : SuperIO relative register table		
Default Value Note		Note
Index 0x2E(Note1)	SIO MB PnP Mode Index Register	
	UX2E(Note1)	0x2E or 0x4E
Data	0x2F (Note2)	SIO MB PnP Mode Data Register
		0x2F or 0x4F

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

A E C - 6 6 4 3

******	***************************************
// SuperIO rela	tive 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 r	elative definition (Please reference to Table 2)
#define byte	TimerLDN //This parameter is represented from Note3
#define byte	TimerReg //This parameter is represented from Note4
#define byte	TimerVal // This parameter is represented from Note24
#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
*****	***************************************

A E C - 6 6 4 3

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();

}

A E C - 6 6 4 3

// Procedure : AaeonWDTEnable VOID AaeonWDTEnable (){ WDTEnableDisable(EnableLDN, EnableReg, EnableBit, 1); } // Procedure : AaeonWDTConfig VOID 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); }

A E C - 6 6 4 3

```
*****
                                               *****
VOID SIOEnterMBPnPMode(){
      Switch(SIOIndex){
             Case 0x2E:
                    IOWriteByte(SIOIndex, 0x87);
                    IOWriteByte(SIOIndex, 0x01);
                    IOWriteByte(SIOIndex, 0x55);
                    IOWriteByte(SIOIndex, 0x55);
                    Break;
             Case 0x4E:
                    IOWriteByte(SIOIndex, 0x87);
                    IOWriteByte(SIOIndex, 0x01);
                    IOWriteByte(SIOIndex, 0x55);
                    IOWriteByte(SIOIndex, 0xAA);
                    Break;
      }
}
      SIOExitMBPnPMode(){
VOID
      IOWriteByte(SIOIndex, 0x02);
      IOWriteByte(SIOData, 0x02);
}
      SIOSelectLDN(byte LDN){
VOID
      IOWriteByte(SIOIndex, 0x07); // SIO LDN Register Offset = 0x07
      IOWriteByte(SIOData, LDN);
}
      *****
```

A E C - 6 6 4 3

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);</pre> TmpValue |= (Value << BitNum);</pre> 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

Appendix B I/O Information B-1

A E C - 6 6 4 3

B.1 I/O Address Map

▲ 🎆 輸入/輸出(IO)	
[00000000 - 0000001F]	直接記憶體存取控制器
[00000000 - 00000CF7]	PCI bus
	主機板資源
	可程式插斷控制器
	主機板資源
	」可程式插斷控制器
19 [00000028 - 00000029]	」可程式插斷控制器
<u>1</u> 9 [0000002C - 0000002D] 可程式插斷控制器
<u>1</u> 9 [0000002E - 0000002F]	主機板資源
19 [00000030 - 00000031]	」可程式插斷控制器
)可程式插斷控制器
)可程式插斷控制器
] 可程式插斷控制器
	〕淾統計時器
19 [00000044 - 0000005F]	主機板資源
[000004E - 000004F]	主機板資源
[0000050 - 0000053]	〕 条統計時器
19 [00000061 - 00000061]] 主機板資源
19 [00000062 - 00000063]] 主機板資源
] 主機板資源
19 [00000065 - 00000065]] 主機板資源
19 [00000065 - 0000006F]	主機板資源
19 [00000067 - 00000067]] 主機板資源
	主機板資源
19 [00000070 - 00000077]	条統 CMOS/即時時鐘
<u>1</u> [00000072 - 0000007F]	主機板資源
[0000080 - 0000080]	王機板資源
] 王機板資源
[0000081 - 0000091]	」且接記憶體仔取控制器
	王機板資源 主機振算源
	土機板資源 主機振客源
10000008C - 0000008E] 土㈱板資源 土㈱転物源
	土焼饭貞凉 1. 主機転物酒
- [00000092 - 00000092]	土偾恢复深 古拉扫塔腊方丽统制器
10000003 - 000009F]	且按記憶證任以任制薪 1 可把式场影达制器
	」 9 1座 刊 御園1 江 制 森 1 - 十 郷 伝 容 酒
	」 工協恢复 <i>隊</i> 1 可把式场影控制架
	」 57年以湖創江向静 1 可把式场影达制架
) 可提升场副江向静
I [00000080 - 00000081	1 可沒式场影达制器
- 00000B1	「」 11年 - 4 (11月1日) 11 (11日) 11日 (11日) 11日 (11日) 11日) 11

Appendix B I/O Information B-2

A E C - 6 6 4 3

	[000000B2 - 000000B3] 主機板資源
💻	[000000B4 - 000000B5] 可程式插斷控制器
	[000000B8 - 000000B9] 可程式插斷控制器
	[000000BC - 000000BD] 可程式插斷控制器
	[000000C0 - 000000DF] 直接記憶體存取控制器
	[000000E0 - 000000EF] 主機板資源
j 🖳	[000000F0 - 000000F0] 數值資料處理器
💻	[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
···· j 🖳	[00000400 - 0000047F] 主機板資源
···· 🖳	[000004D0 - 000004D1] 主機板資源
···· 🖳	[000004D0 - 000004D1] 可程式插斷控制器
····]	[00000500 - 0000053F] 主機板資源
	[00000500 - 0000057F] 主機板資源
····	[00000600 - 0000061F] 主機板資源
1	[00000680 - 0000069F] 主機板資源
	[00000800 - 0000081F] Intel(R) N10/ICH7 Family SMBus Controller - 27DA
1	[00000A00 - 00000A1F] 主機板資源
1	[00000A20 - 00000A2F] 主機板資源
···· 🖳	[00000D00 - 0000FFFF] PCI bus
	[0000D000 - 0000D0FF] Realtek PCIe GBE Family Controller #2
··· · P	[0000D000 - 0000DFFF] Intel(R) N10/ICH7 Family PCI Express Root Port - 27D4
	[0000E000 - 0000E0FF] Realtek PCIe GBE Family Controller
	[0000E000 - 0000EFFF] Intel(R) N10/ICH7 Family PCI Express Root Port - 27D2
🖉	[0000F000 - 0000F01F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CB
Ÿ.	[0000F020 - 0000F03F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CA
Ÿ.	[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	[UUUUFFFF - UUUUFFFF] 王磯板資源
··· · · · · · · · ·	[UUUUFFFF - UUUUFFFF] 王隈极貧湯

B.2 Memory Address Map

⊿ - 📇 -	AEC6643-PC
Þ	🧾 直接記憶體存取 (DMA)
4	
	種類 [0000000 - 00000FFF] 主機板資源
	種類 [0000000 - 00000FFF] 主機板資源
	種類 [0000000 - 00003FFF] 主機板資源
	📲 [000A0000 - 000BFFFF] Intel(R) Graphics Media Accelerator 3600 Series
	📲 [000A0000 - 000BFFFF] PCI bus
	📲 [000C0000 - 000DFFFF] PCI bus
	📲 [000E0000 - 000EFFFF] PCI bus
	📲 [000F0000 - 000FFFFF] PCI bus
	📲 [BF800000 - BFFFFFF] PCI bus
	📲 [C0000000 - FEBFFFF] PCI bus
	[DFC00000 - DFCFFFF] Intel(R) Graphics Media Accelerator 3600 Series
	[DFD00000 - DFD03FFF] Realtek PCIe GBE Family Controller #2
	[DFD00000 - DFDFFFFF] 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 - DFEFFFFF] Intel(R) N10/ICH7 Family PCI Express Root Port - 27D2
	[DFE04000 - DFE04FFF] Realtek PCIe GBE Family Controller
	GFF04000 - DFF043FF] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
	[DFF05000 - DFF053FF] Intel(R) N10/ICH7 Family USB2 Enhanced Host Controller - 27CC
	────────────────────────────────────
	IFED40000 - FED44FFF] PCI bus
	Intel(R) 82802 Firmware Hub Device
	FF000000 - FFFFFFF Intel(R) 82802 Firmware Hub Device
	‱e [HC00000 - HHHFFFF] 王隈板資源
⊳ .	■
⊳	■ 劉//劉出(IO)

A E C - 6 6 4 3

B.3 IRQ Mapping Chart

4	_ 插	斷要求	t (IRQ)	
	1	(ISA)	0x0000000 (00)	糸統計時器
		(ISA)	0x0000003 (03)	通訊連接埠 (COM2)
		(ISA)	0x00000004 (04)	通訊連接埠 (COM1)
		í (ISA)	0x0000007 (07)	通訊連接埠 (COM3)
		(ISA)	0x0000008 (08)	条統 CMOS/即時時鐘
		(ISA)	0x0000000A (10)	通訊連接埠 (COM4)
		(ISA)	0x000000D (13)	數值資料處理器
		(ISA)	0x0000051 (81)	Microsoft ACPI-Compliant System
		(ISA)	0x0000052 (82)	Microsoft ACPI-Compliant System
	I	(ISA)	0x0000053 (83)	Microsoft ACPI-Compliant System
		(ISA)	0x00000054 (84)	Microsoft ACPI-Compliant System
	j u	(ISA)	0x00000055 (85)	Microsoft ACPI-Compliant System
		(ISA)	0x0000056 (86)	Microsoft ACPI-Compliant System
	I	(ISA)	0x00000057 (87)	Microsoft ACPI-Compliant System
		(ISA)	0x0000058 (88)	Microsoft ACPI-Compliant System
		(ISA)	0x0000059 (89)	Microsoft ACPI-Compliant System
	j u	(ISA)	0x000005A (90)	Microsoft ACPI-Compliant System
	I	(ISA)	0x000005B (91)	Microsoft ACPI-Compliant System
	I	(ISA)	0x0000005C (92)	Microsoft ACPI-Compliant System
		(ISA)	0x000005D (93)	Microsoft ACPI-Compliant System
	j u	(ISA)	0x000005E (94)	Microsoft ACPI-Compliant System
	j u	(ISA)	0x000005F (95)	Microsoft ACPI-Compliant System
		(ISA)	0x0000060 (96)	Microsoft ACPI-Compliant System
		(ISA)	0x00000061 (97)	Microsoft ACPI-Compliant System
		(ISA)	0x0000062 (98)	Microsoft ACPI-Compliant System
		(ISA)	0x0000063 (99)	Microsoft ACPI-Compliant System
	I	(ISA)	0x0000064 (100)	Microsoft ACPI-Compliant System
		(ISA)	0x0000065 (101)	Microsoft ACPI-Compliant System
		(ISA)	0x0000066 (102)	Microsoft ACPI-Compliant System
	j 🖳	(ISA)	0x0000067 (103)	Microsoft ACPI-Compliant System
	····]	(ISA)	0x0000068 (104)	Microsoft ACPI-Compliant System
	j u	(ISA)	0x0000069 (105)	Microsoft ACPI-Compliant System
	j 🖳	(ISA)	0x000006A (106)	Microsoft ACPI-Compliant System
	j 🖳	(ISA)	0x000006B (107)	Microsoft ACPI-Compliant System
	j 🖳	(ISA)	0x000006C (108)	Microsoft ACPI-Compliant System
	j u	(ISA)	0x000006D (109)	Microsoft ACPI-Compliant System
	I	(ISA)	0x000006E (110)	Microsoft ACPI-Compliant System
		(ISA)	0x000006F (111)	Microsoft ACPI-Compliant System
	j u	(ISA)	0x00000070 (112)	Microsoft ACPI-Compliant System
	I	(ISA)	0x00000071 (113)	Microsoft ACPI-Compliant System
	j🌉	(ISA)	0x0000072 (114)	Microsoft ACPI-Compliant System
	<u>1</u>	(ISA)	0x0000073 (115)	Microsoft ACPI-Compliant System
	1	(ISA)	0x0000074 (116)	Microsoft ACPI-Compliant System

^	2	2	2	А	9
А	U -	υ	Ο	4	0

,1	(ISA)	0x0000075 (117)	Mi
j u	(ISA)	0x0000076 (118)	Mi
j u	(ISA)	0x0000077 (119)	Mi
j u	(ISA)	0x0000078 (120)	Mi
j <u>u</u>	(ISA)	0x0000079 (121)	Mi
j	(ISA)	0x000007A (122)	Mi
j	(ISA)	0x000007B (123)	Mi
····]	(ISA)	0x000007C (124)	Mi
····]	(ISA)	0x000007D (125)	Mi
j u	(ISA)	0x000007E (126)	Mi
j 🖳	(ISA)	0x000007F (127)	Mie
j 🖳	(ISA)	0x0000080 (128)	Mi
j 🖳	(ISA)	0x0000081 (129)	Mi
····]	(ISA)	0x0000082 (130)	Mi
····]	(ISA)	0x0000083 (131)	Mi
····]	(ISA)	0x0000084 (132)	Mi
I	(ISA)	0x0000085 (133)	Mi
j 🖳	(ISA)	0x0000086 (134)	Mi
j <u>u</u>	(ISA)	0x0000087 (135)	Mi
I	(ISA)	0x0000088 (136)	Mi
I	(ISA)	0x0000089 (137)	Mi
I	(ISA)	0x000008A (138)	Mi
I	(ISA)	0x000008B (139)	Mi
I	(ISA)	0x000008C (140)	Mi
(<u>1</u>	(ISA)	0x000008D (141)	Mi
1	(ISA)	0x000008E (142)	Mi
1	(ISA)	0x000008F (143)	Mie
1	(ISA)	0x00000090 (144)	Mi
1	(ISA)	0x00000091 (145)	Mi
1	(ISA)	0x00000092 (146)	Mi
1 <u>-</u>	(ISA)	0x00000093 (147)	Mi
1 <u>1</u>	(ISA)	0x00000094 (148)	Mi
1	(ISA)	0x00000095 (149)	Mi
1 <u>–</u>	(ISA)	0x00000096 (150)	Mi
- 1 <u>–</u>	(ISA)	0x00000097 (151)	Mi
- 12	(ISA)	0x00000098 (152)	Mi
- 12	(ISA)	0x00000099 (153)	Mi
1	(ISA)	0x000009A (154)	Mi
1	(ISA)	0x000009B (155)	Mi
1	(ISA)	0x000009C (156)	Mi
1 <u></u>	(ISA)	0x0000009D (157)	Mi
1	(ISA)	0x000009E (158)	Mi
- 12	(ISA)	UXUUUUUU9F (159)	Mie
1 <u>–</u>	(ISA)	0x000000A0 (160)	Mi

crosoft ACPI-Compliant System icrosoft ACPI-Compliant System crosoft ACPI-Compliant System icrosoft ACPI-Compliant System crosoft ACPI-Compliant System icrosoft ACPI-Compliant System crosoft ACPI-Compliant System icrosoft ACPI-Compliant System crosoft ACPI-Compliant System icrosoft ACPI-Compliant System crosoft ACPI-Compliant System crosoft ACPI-Compliant System crosoft ACPI-Compliant System crosoft ACPI-Compliant System

Appendix B I/O Information B-6

	(ISA) 0x00000A1 (161	l) Microsoft ACPI-Compliant System
j ų	(ISA) 0x00000A2 (162	2) Microsoft ACPI-Compliant System
	(ISA) 0x00000A3 (163	3) Microsoft ACPI-Compliant System
<u>j</u>	(ISA) 0x000000A4 (164	 Microsoft ACPI-Compliant System
	(ISA) 0x00000A5 (165	Microsoft ACPI-Compliant System
	(ISA) 0x00000A6 (166	 Microsoft ACPI-Compliant System
	(ISA) 0x00000A7 (167	7) Microsoft ACPI-Compliant System
	(ISA) 0x00000A8 (168	3) Microsoft ACPI-Compliant System
	(ISA) 0x000000A9 (169	Microsoft ACPI-Compliant System
	(ISA) 0x000000AA (170)) Microsoft ACPI-Compliant System
	(ISA) 0x00000AB (171	l) Microsoft ACPI-Compliant System
	(ISA) 0x00000AC (172	2) Microsoft ACPI-Compliant System
	(ISA) 0x00000AD (17	Microsoft ACPI-Compliant System
	(ISA) 0x00000AE (174	 Microsoft ACPI-Compliant System
	(ISA) 0x00000AF (175	i) Microsoft ACPI-Compliant System
<u>j</u>	(ISA) 0x00000B0 (176	i) Microsoft ACPI-Compliant System
	(ISA) 0x00000B1 (177) Microsoft ACPI-Compliant System
	(ISA) 0x00000B2 (178) Microsoft ACPI-Compliant System
<u>1</u>	(ISA) 0x00000B3 (179) Microsoft ACPI-Compliant System
	(ISA) 0x00000B4 (180) Microsoft ACPI-Compliant System
	(ISA) 0x00000B5 (181	.) Microsoft ACPI-Compliant System
	(ISA) 0x00000B6 (182) Microsoft ACPI-Compliant System
	(ISA) 0x00000B7 (183) Microsoft ACPI-Compliant System
, 🖳	(ISA) 0x00000B8 (184) Microsoft ACPI-Compliant System
	(ISA) 0x0000089 (185	i) Microsoft ACPI-Compliant System
j ų	(ISA) 0x00000BA (186	Microsoft ACPI-Compliant System
	(ISA) 0x00000BB (187) Microsoft ACPI-Compliant System
	(ISA) 0x00000BC (188	3) Microsoft ACPI-Compliant System
	(ISA) 0x00000BD (189	9) Microsoft ACPI-Compliant System
	(ISA) 0x00000BE (190) Microsoft ACPI-Compliant System
	(PCI) 0x000000B (11)	Intel(R) N10/ICH7 Family SMBus Controller - 27DA
<u>I</u>	(PCI) 0x0000010 (16)	Intel(R) N10/ICH7 Family PCI Express Root Port - 27D0
🏺	(PCI) 0x0000010 (16)	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CB
····]	(PCI) 0x0000011 (17)	Intel(R) N10/ICH7 Family PCI Express Root Port - 27D2
	(PCI) 0x0000012 (18)	Intel(R) N10/ICH7 Family PCI Express Root Port - 27D4
🏺	(PCI) 0x0000012 (18)	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CA
	(PCI) 0x0000013 (19)	Intel(R) N10/ICH7 Family PCI Express Root Port - 27D6
	(PCI) 0x0000013 (19)	Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
🏺	(PCI) 0x0000013 (19)	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C9
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(PCI) 0x0000016 (22)	High Definition Audio 控制器
🏺	(PCI) 0x0000017 (23)	Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C8
···· 🖡	(PCI) 0x0000017 (23)	Intel(R) N10/ICH7 Family USB2 Enhanced Host Controller - 27CC
· 🔮	(PCI) 0xFFFFFFC (-4)	Realtek PCIe GBE Family Controller #2
	(PCI) 0xFFFFFFD (-3)	Realtek PCIe GBE Family Controller
	(PCI) 0xFFFFFFFE (-2)	Intel(R) Graphics Media Accelerator 3600 Series

B.4 DMA Channel Assignments

Direct memory access (DMA)

Appendix C

AHCI Settings

Appendix CAHCI Settings C-1

A E C - 6 6 4 3

C.1 Setting AHCI

OS installation to SETUP AHCI Mode

Step 1: Copy below files from "Driver CD -> Step7-RAID&AHCI\

WinXP_32" to diskette.



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

Aptio Setup Ut: Advanced	ility – Copyright (C) 2011 Amer	ican Megatrends, Inc.
Advanced SATA Controller(s) SATA Hode Selection Serial ATA Port 1 Port 1 Hot Plug Serial ATA Port 2 Port 2 Hot Plug Cfast Slot Slot Hot Plug HiniCard Slot Slot Hot Plug	Emplied] (AUC1 AUC AD2500KS-0 (250.0 (Enabled) MNATOR STM320 (320.0 (Enabled) Emplied) Emplied (Enabled) Empty (Enabled) Empty (Enabled) (Disabled) (Enabled) (Disabled) (Disabled)	Determines how SATA controller(s) operate. **: Select Screen 14: Select Item
		Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save A Exit ESC: Exit

Appendix CAHCI Settings C-2

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



Step 5: Save changes and exit BIOS SETUP



Appendix CAHCI Settings C-3

Step 6 – Boot to DVD/CD-ROM device to install OS

Step 7 - Press "F6" to install AHCI driver

Windows	Setup										
Press	F6 if	you	need	to	install	a thir	d party	SCSI	or RAID	driver.	

Step 8 - Press "S" to install AHCI driver



Appendix CAHCI Settings C-4
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.

